

18650 Li-ion battery mobile power expansion board V8



Products	1
Main Features	2
Product Parameters.....	3
Instructions for use.....	4

Products

First of all, thank you for purchasing our 18650 mobile power. This product is a highly integrated mobile power IC, with over-current, over-charge, under-voltage and over-temperature protection, the same also has a built-in protection IC for lithium batteries, so it greatly improves the user's convenience! This mobile power product also has the advantages of high current and high conversion rate, suitable for most users of the characteristics of use!

Main features

High performance conversion: The mobile power extension board is designed for single 18650 lithium batteries, capable of converting the DC power from the battery into stable 5V/3A and 3.3V/1A dual output, suitable for most smart devices charging needs, high conversion efficiency and low energy consumption.

Multiple safety protection: Integrated short-circuit protection, over-charging and over-discharging protection, overheating protection and other safety mechanisms, all-round protection of battery and device safety, worry-free use.

Easy to assemble and carry: Adopting V8 version design, simple structure, easy to install single 18650 battery by yourself (need to bring your own), lightweight and portable, ideal for outdoor travelling and emergency backup.

Strong compatibility: Supports mainstream 18650 lithium battery models on the market, widely compatible with various brands of batteries, easy to purchase replacement.

DIY Friendly: For users who like to get their hands dirty, the expansion board is reserved with welding points, which is convenient for circuit modification or function expansion to achieve personalised customisation.



Product Parameter

1. Input port: MICROUSB
2. Input requirements: 5V constant voltage power supply can do charging power input, matching charger 5V1A or more
3. Output port: USB or expansion port
4. Output parameters 5V/3A or 3V/1A
5. Output parameters 5V/3A or 3V/1A
6. Conversion efficiency of up to 95% (high conversion rate)
7. Operating temperature: -20°C~70°C

Caution.

Because the reverse connection protection will affect the battery charging and discharging, so the product is currently no anti-reverse connection protection, customers must be installed correctly before using the battery positive and negative poles, reverse connection will burn!

Battery voltage in 3.2V-4.2V normal operation, the battery should not be connected in series, series will be the voltage increases, such as the need for larger battery capacity can be connected in parallel, please do not connect in series!



Instructions for use

Operating Instructions:

Click to switch on, press the key three shutdown // (non-automatic shutdown mode) If you need to change the non-working automatic shutdown mode, please refer to the third point of the above-mentioned product parameters can be

Charging power display:

100% (five LEDs are fully illuminated) 80-99% (D5 is blinking) 60-80% (D4 is blinking) 40-60% (D3 is blinking) 20-40% (D2 is blinking) 0-20% (D1 is blinking)

Discharge power display instructions:

80-100% (five LED full light) 60-80% (D5 out) 40-60% (D4, D5 out) 20-40% (D3, D4, D5 out) 5-20% (D2, D3, D4, D5 out) 1-5% (D1 in blinking) 0% (all out)

Intelligent input and output, do not have to worry about charging time is too long, free of user worries!

In summary, this single 18650 lithium battery mobile power expansion board V8, with its practical and efficient energy management, comprehensive security protection and convenient DIY features, become the ideal component to build a personal portable power supply, suitable for the pursuit of high performance and convenience of the user community.

**2 x 18650 Lithium Battery Shield V8 Mobile Power Expansion Board Module 5V/3A
3V/1A Micro USB for Arduino ESP32 ESP8266**



Product Description

The module is a portable mobile power supply that supports two voltage outputs, 3V/1A and 5V/2.2A.

Micro USB port input

Type A USB output

0.5A current charging

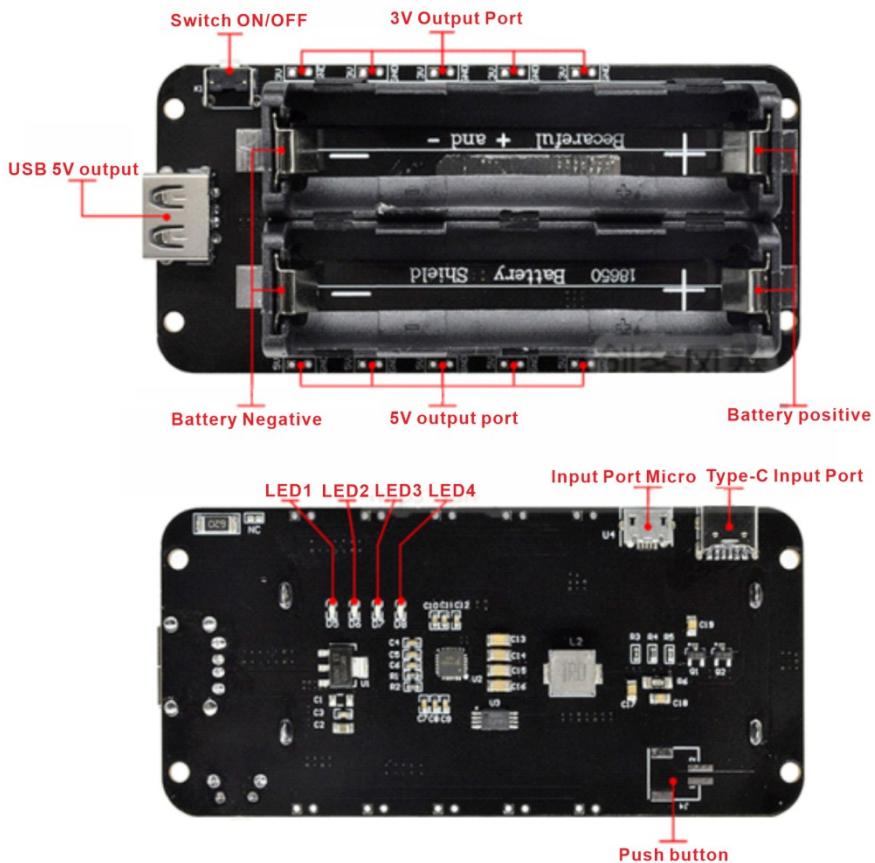
1 switch to control USB output 5 ~ 8v input voltage

LED Indication (Green color indicates, Red color indicates charging)

3v output port X3

5V Output Port X3 Be careful with the "+" and "-", you should follow the direction "+" and "-" on the PCB.

Description of interfaces and components



Instructions for use

Rated current for 5V voltage output is 2.2A

Maximum support 3A current (not recommended for over load, easy to damage the module and speed up the service life)

The current output depends on the quality of the 18650 battery!

MICRO USB charging current 600mA-800mA, support up to two 18650 batteries.

It is recommended to use two 18650 batteries, which can be longer!

When the switch is toggled to NOMAL, the current output is lower than 30ma, it will automatically stop and turn to standby mode in about 10 seconds. When the switch is flipped to HOLD, it will stay on no matter what the situation is, until the battery is dead (the 2512 resistor on the back will get hot).

Special Note: Battery installation must determine the positive and negative poles, the board has clearly marked positive and negative poles! Incorrect installation will burn the module!

Dimensional drawings

100.3mm*48.3mm



18650 mobile power

Smart mobile power

MANUAL

Table of contents

Product advantages, product parameters	01
Operating instructions, display instructions	02
Notes, application areas	03

First of all, thank you for choosing our 18650 mobile power supply. This product is a highly integrated mobile power IC with over-current, over-charge, under-voltage, and over-temperature protection. It also has a built-in protection IC for lithium batteries, which greatly improves user convenience! This mobile power product also has the advantages of high current and high conversion rate, which is suitable for most users.

Product advantages

1. Protection mechanism:
 - ① Input overvoltage protection
 - ② Output overcurrent / short circuit protection
 - ③ Charge timeout / overvoltage protection
2. Output current up to 3A, efficiency up to 95%
3. With LED recognition power reserve

Product parameters

1. This mobile power supply has a built-in lithium battery protection IC, which has overcurrent, overvoltage, undervoltage, etc.
2. The USB port output and mobile power board have expansion ports 3.3V and 5V output ports, which is convenient for customer needs and use. Greatly reduces the problem of fewer ports
- 3.4 level LED lights show power, the default boot is always in working state, you need to manually shut down (if necessary, change to non-working state Automatic shutdown mode, just cut off the middle line of the "NC" bit or remove the "ROUT" resistor)
4. 1.8A charge, 3A discharge, highly integrated mobile power IC
5. Motherboard size: 100mm * 48mm * 21mm (length * width * height)
6. Input port: MICROUSB (Android port) type, wide voltage, up to 6.5V input
7. Input requirements: 5V constant voltage power supply can be used for charging power input, matching charger 5V1A or more
8. Output port: USB or expansion port
9. Output parameter 5V / 3A or 3.3V / 1A
10. Conversion efficiency up to 95% (high conversion rate)
11. Working temperature: -20 °C ~ 70 °C

Instructions

- 1.Click to boot
2. Press and hold the button to shut down // (non-automatic shutdown mode) If you need to change the non-automatic shutdown mode, please refer to the third point of the product parameters
- 3.Charge display indication

The LED light shows the power as follows:

Battery voltage (charge mode)	Flashing / Solid	Flashing mode
0-3.0	LED1 / No long light	0.5 second 50% fast flash
3.0-3.5	LED1 / None	25% flash for 1 second
3.5-3.8	LED2 / LED1	25% flash for 1 second
3.8-4.0	LED3 / LED2-1	25% flash for 1 second
4.0-4.2	LED4 / LED3-1	25% flash for 1 second
4.2	No flash / LED4-1	—

4. Discharge power display description

The LED lights are displayed as follows when boosting:

Battery voltage (discharge mode)	Flashing / steady on for 5 seconds	Flashing mode
0-2.4	Neither light	Shutdown
2.4-3.0	LED4-1 / No long light	Flash 6 times under voltage alarm
3.0-3.5	None / LED1	—
3.5-3.7	None / LED2-1	—
3.7-3.9	None / LED3-1	—
3.9-4.2	None / LED4-1	—
VIO overload	LED4-1 / None	6 flashes
Chip over temperature	LED4-1 / None	6 flashes

- 5, 4 road LED power status indication, automatically turn off after 3 seconds, the battery is less than 3V alarm 6 protection, less than 2.4 V full shutdown, no action
- 6, battery current as low as 3uA after standby
7. Intelligent input and output, do not need to worry about long charging time, so that users do not have to worry about it.

Precautions

- ① After getting the product, first install the battery to charge and activate it. Be sure to install the positive and negative batteries correctly, otherwise it will directly damage the module.
- ② In the process of use, please do not pull out the battery directly when the module is not turned off, otherwise the module will open the protection function, and the phenomenon that the battery

cannot be turned on when the battery is installed again, at this time, the battery needs to be installed and charged to solve it. When you need to unplug the battery, shut down the module first and then unplug the battery(Press and hold the button to shut down).

③ The module has a power saving function, the indicator light will turn off after turning on for only about three seconds! But it is still in a state of output work. If you need to shut down, please manually press and hold for about two seconds until the LED light is off

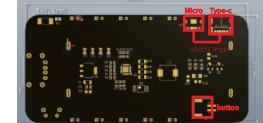
④ The maximum output power of the module is 5V / 3A, and it is also related to the device and battery power. If the instantaneous current of the load device is greater than 3A, it is recommended to start the module before connecting the load, because the excessive current may cause IC error. It is judged that the overload current is too large to protect. 2. The battery voltage works normally from 3.2V to 4.2V. Do not connect the bat-teries in series. The voltage in series will increase. If the battery capacity needs to be increased in parallel, do not connect in series.

⑤ The battery voltage works normally from 3.2V to 4.2V. Do not connect the bat-teries in series. The voltage in series will increase. If the battery capacity needs to be increased in parallel, do not connect in series.

Application area

- 1.Mobile power
2. Other battery-powered equipment

Product PCB drawing:



- 1.Click to boot
- 2.Press and hold the button to shut down