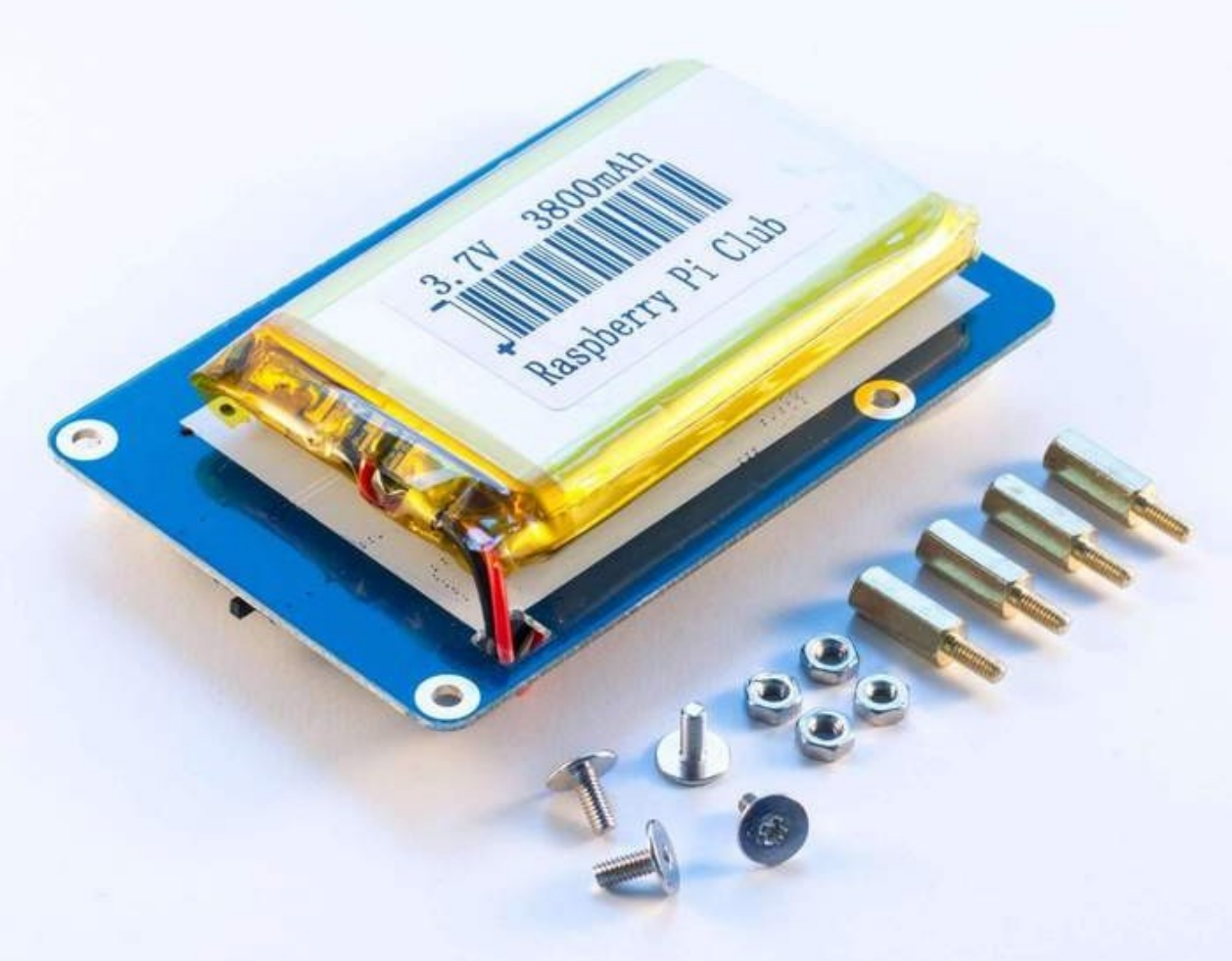
Welcome!

Thank you very much for purchasing our AZ-Delivery Raspberry Pi PowerPack v2.0 . On the following pages, we will introduce you to how to use and setup this handy device.

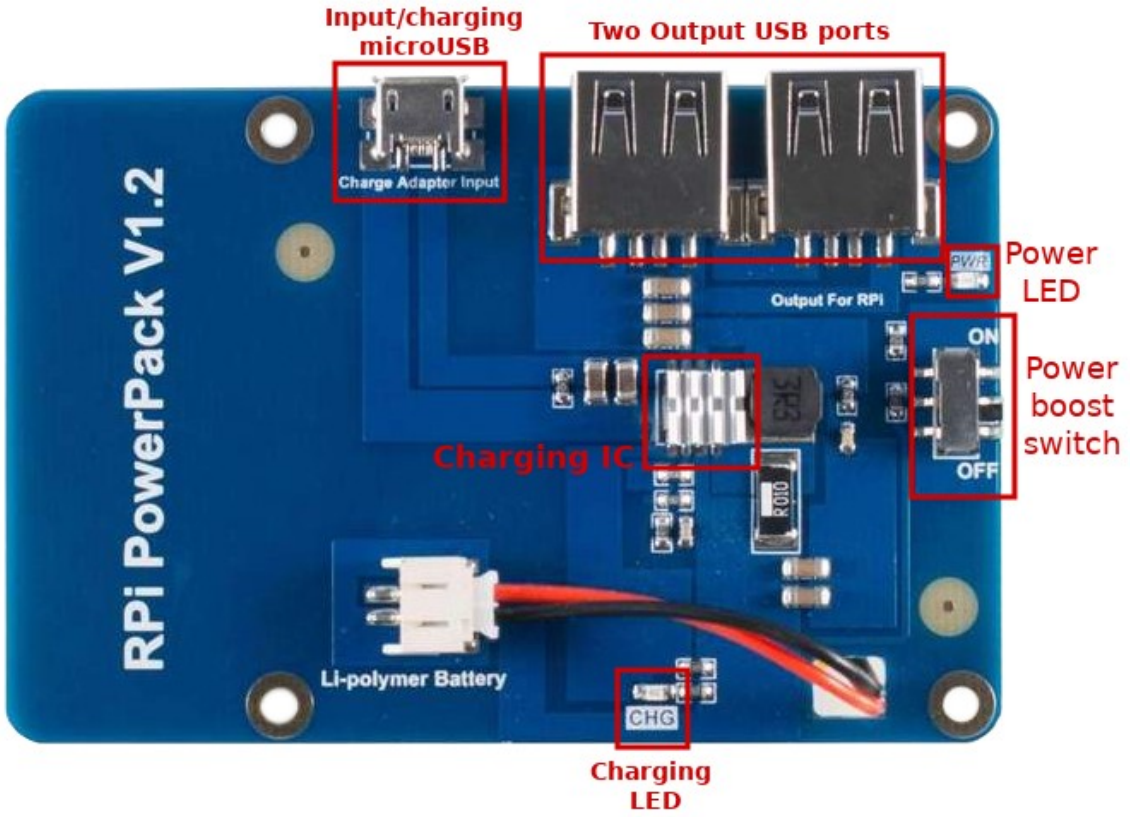
Have fun!



Specifications

Battery capacity:	3800mAH
Maximum discharge current:	1.8A
No-load output voltage:	5.1V ± 0.1V
Standard charging current/voltage:	1.0A / 5.0V
Cut-off voltage of fully charging the Li-ion battery:	4.18V - 4.2V

This module is designed for the Raspberry Pi 3 Model B specially, but it can be used for other Raspberry Pi boards except Raspberry Pi Zero. The board has two USB type - A ports. One supplies power for the Raspberry Pi and the other is for example for the embedded LCD screen.



Working modes

A charging IC (integrated chip) is the center of the whole board. When connected to power, the chip can work under in the charging mode or step-up mode.

If the USB type-A power output ports do not have any external load connected (like Raspberry Pi, or LCD screen), just connected input of 5V to the Micro USB charging port, then the integrated chip enters the charging mode. Since the chip has already integrated a current-limiting resistor by default, the voltage will charge the Li-ion battery and also output 4.6 ÷ 4.7V via the output USB type-A port. The onboard ON LED will light up, no matter whether the power output switch is on or off.

The chip will enter normal mode when the 5V input is not connected (not charging). In this mode, two output USB ports output 2.5V each. We use power boost switch for power boosting, when each output USB ports can output a maximum 5V, and two ports together can output a maximum 1.8A current in total. The chip comes with the current limiting protection; for example it will turn off the output when the output current is 1.9A or larger.

Charging mode

Working duration of Battery PowerPack when powering the Raspberry Pi 3 depends on the loads. If you just connect a Raspberry Pi 3 with timing program running in the background, it can last up to 9 hours. If then you connect a small 2.2'', or 3.5'' LCD screen, it can last up to 6 hours on average (with a smaller LCD will last longer). With an HDMI 5'' or 7'' display, it can last up to 2.5 hours.

The charging time of the battery PowerPack depends on the output current of charging unit. Usually we suggest charging with 5V - 1A. It can also be charged with 5V - 0.5A or 5V - 2.5A, because the integrated chip will adjust the charging current itself. The max current required is 1A; the actual charging current will be 0.7A ÷ 0.8A. When fully discharged, if charged with 5V - 1A, it needs around 3 hours to be fully charged. When the battery PowerPack is charging, charging LED will blink, and when it is fully charged, the charging LED will stop blinking and be turned on until we disconnect the charging input. When we disconnect the charging input, the charging LED will turn off.

It is recommendable **NOT to power** anything while the PowerPack is in **charging mode**. But the integrated chip can output 4.6V ÷ 4.7V via the output USB ports, and for example power the Raspberry Pi. Under this circumstance, please note that the chip is in charging mode and it can't be used to power Raspberry Pi and other large power devices at the same

time, for it will result in unstable use. It would be better applied only when it just powers one Raspberry Pi which remotely connects to other devices.

You can replace the onboard Li-ion battery, **BUT** the replaced battery must be 3.7V for one cell, and you can choose any capacity you want, like 5000mAh ÷ 10000mAh. The larger capacity you use, the larger dimensions battery will have. **Make sure the polarity of the new battery (anode and cathode) match that of the old one, or, if not, you can destroy the integrated chip.**

Application example

Top side (cable and Raspberry Pi not included) Bottom side

We use mounting screws to connect PowerPack board to Raspberry Pi 3 board. To power up Raspberry Pi 3 we use USB cable type A to microUSB, because output port of PowerPack is USP type A port, and power input on Raspberry Pi 3 is microUSB connector.

You've done it, you can now use your PowerPack for your projects.

Now it is time to learn and make the Projects on your own. You can do that with the help of many example scripts and other tutorials, which you can find on the internet.

If you are looking for the high quality products for Arduino and Raspberry Pi, AZ-Delivery Vertriebs GmbH is the right company to get them from. You will be provided with numerous application examples, full installation guides, eBooks, libraries and assistance from our technical experts.

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Have Fun!

Impressum

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