
A Guide To LiPo Batteries

— And Chargers! —

By Manash

What LiPo Batteries actually are?

Lithium Polymer batteries are a newer type of battery now used in many consumer electronics devices.



General Purpose LiPo Batteries



7.4V

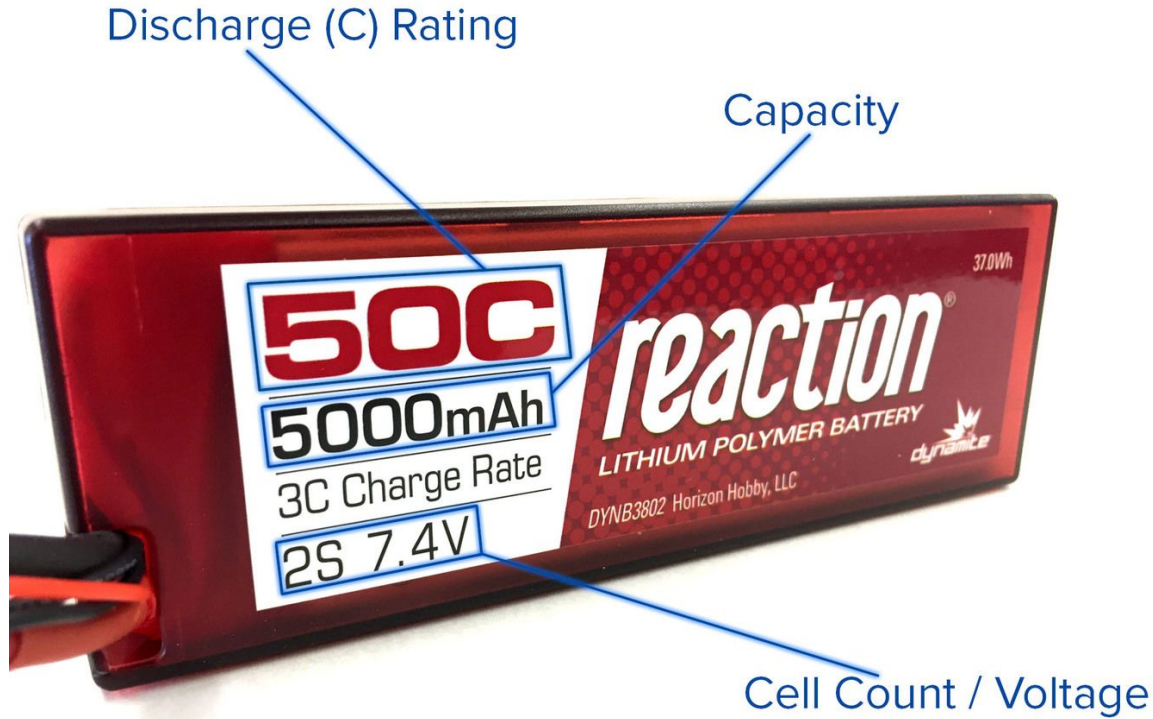


11.1V



14.8V

All about LiPo Battery Rating



Nominal Voltage of a Cell

- LiPo batteries are fully charged when they reach 4.2v/cell.
- Their minimum safe charge, is 3.0v/cell.
- **3.7v is pretty much in the middle, and that is the nominal charge of the cell.**

Voltage / Cell Count

- A LiPo cell has a nominal voltage of **3.7V**.
- **3S** Means 3 Cell in Series = $3.7 + 3.7 + 3.7 = 11.1V$
- **3S1P** Means 3 Cells in **S**eries and 1 Cell in **P**arallel =
 $3 \times 1 = 3$ Cells In Total = $3.7 + 3.7 + 3.7 = 11.1V$
- **3S2P** Means 3 Cells in **S**eries and 2 Cells in **P**arallel =
 $3 \times 2 = 6$ Cells in Total = $3.7 + 3.7 + 3.7 = 11.1V$

Question

What does 2P2S mean?

Answer

2 Series 2 Parallel

=

7.4V

Next Parameter: CAPACITY

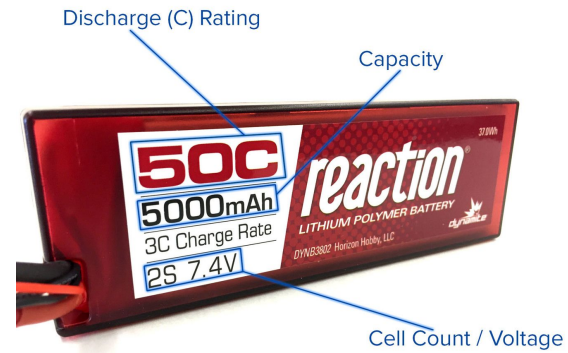
Capacity means how much power the battery can hold. Obviously!

1000mAh = 1 Amp Hour (1Ah)

Discharge Rating : C Rating

The C Rating is simply a measure **of how fast the battery can be discharged safely and without harming the battery.**

C Rating Continued



$$50C = 50 \times \text{Capacity (in Amps)}$$

Calculating the C-Rating of our example battery:

$$50 \times 5 = 250A$$

Charging of a LiPo Battery

They charge using a system called **CC/CV** charging. It stands for **C**onstant **C**urrent / **C**onstant **V**oltage.

The safest charge rate for most LiPo batteries is

1C, or 1 X capacity of battery in Amps

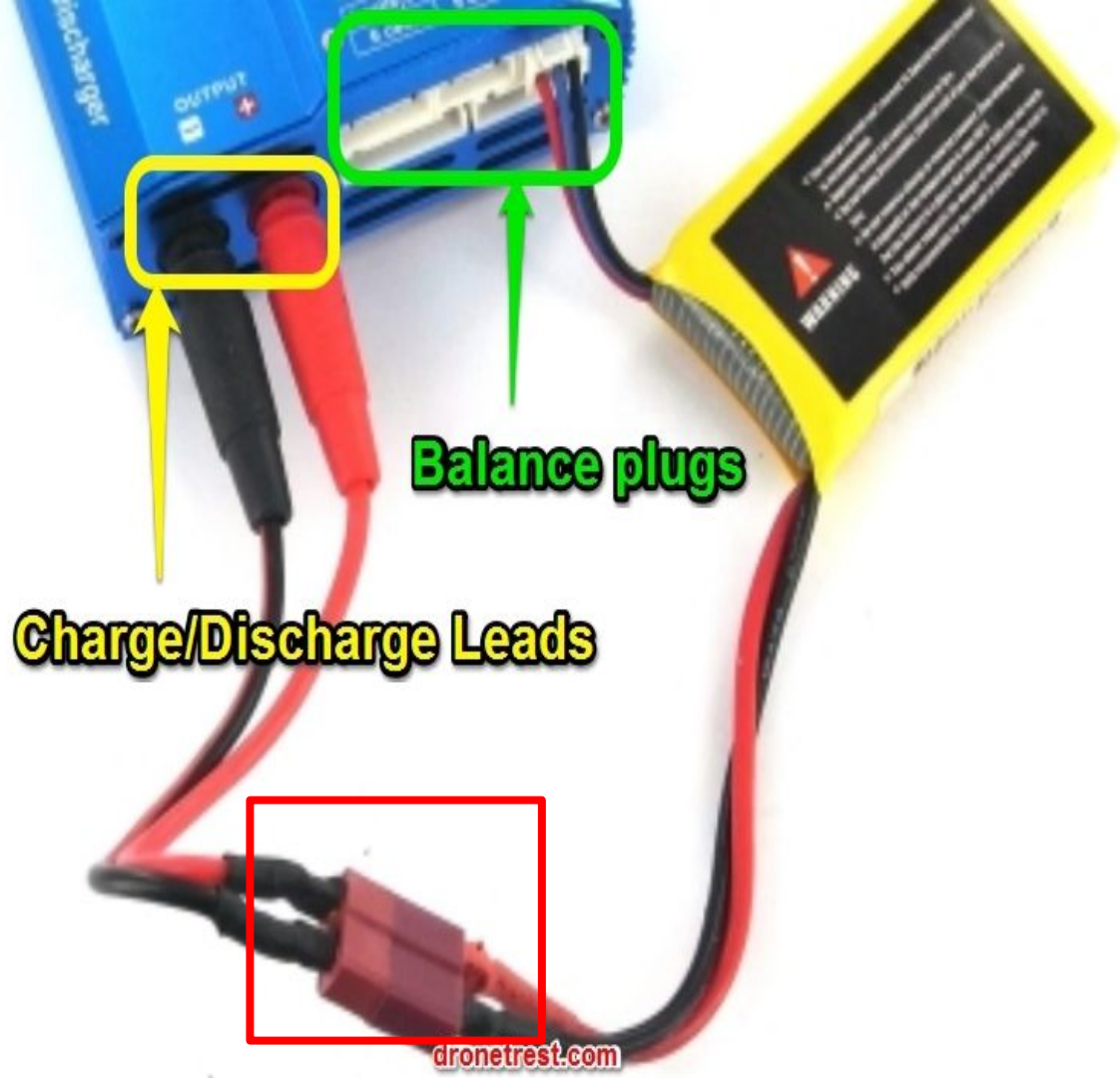
iMAX B6 Battery Charger



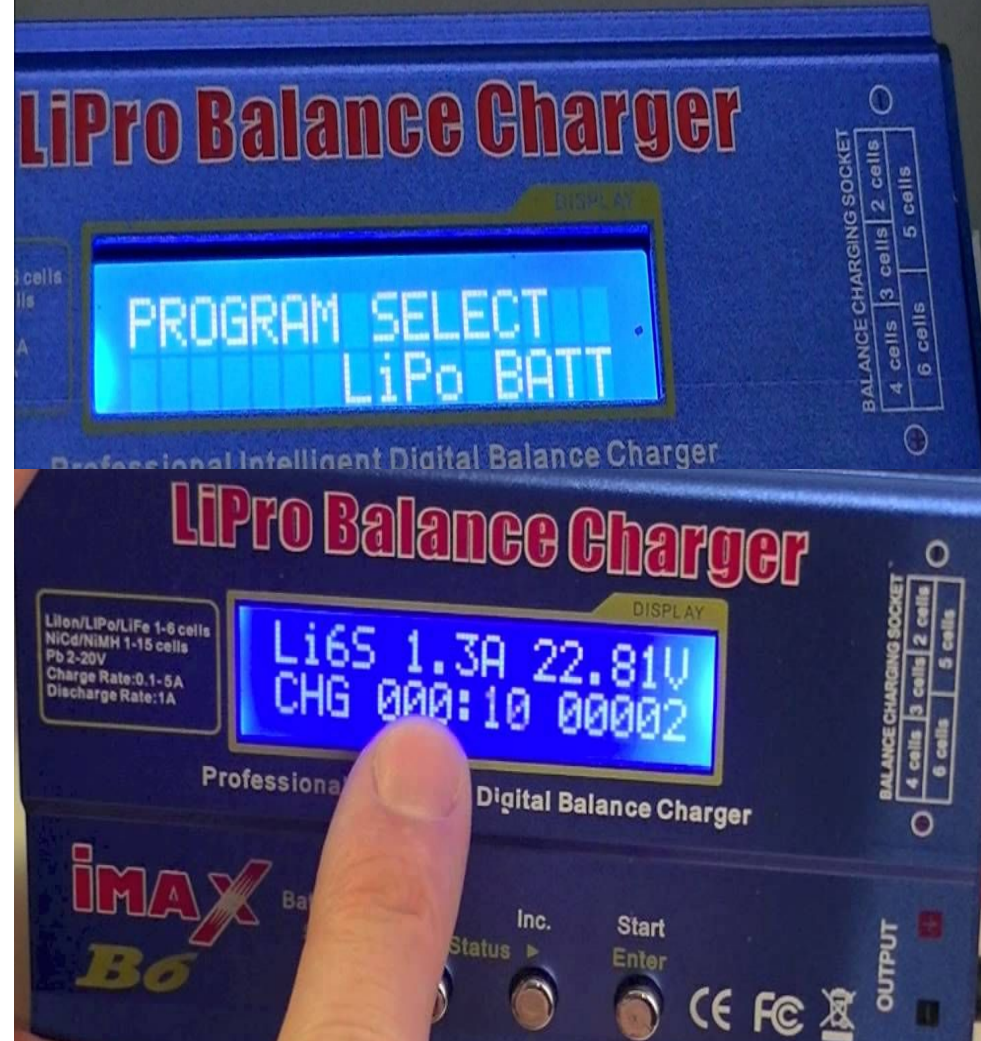
- Supports Up To 6 Cells
- Ensures maximum safety

Charging A LiPo Using iMAX B6

- Connect the plugs to the iMAX B6 First [Connect the battery last] (Yellow part)
- Then connect the LiPo Charging leads with the charger's. (Red part)
- Connect the balance plugs. (Green part)



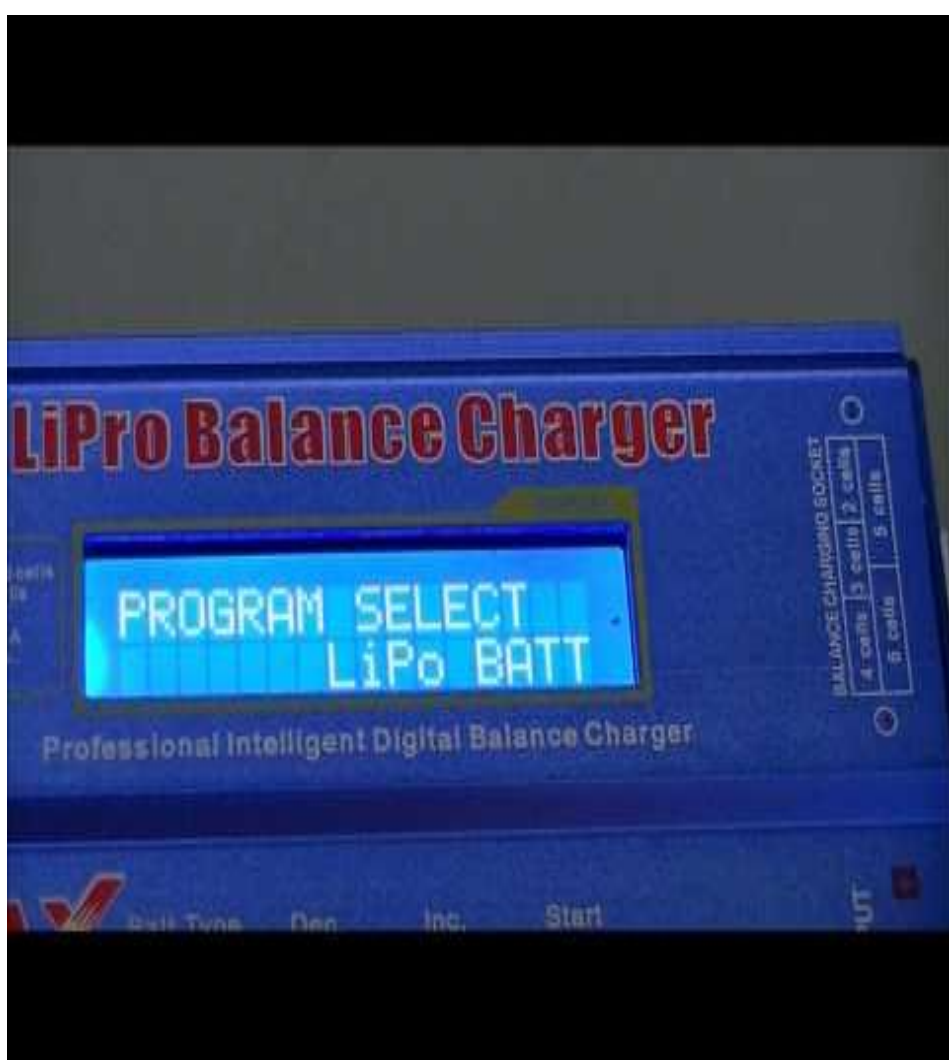
- Turn on the charger
- Select LiPo from the option, set **Balance Charging**.
- **Select Rating according to the connected LiPo**
- **Press and Hold ENTER for 3 seconds** to enable charging prompt.
- Press **ENTER** again to start charging



**Charger will beep 3* times
upon completion.**

Disconnect everything in the reverse order.

* - Not sure, need to check



Troubleshooting

- Sometimes LiPo **might be discharged to below 3V** then the iMAX B6 will **refuse to charge.**
- The workaround for that is to charge it using **NiMH charging method.**
- Check out the video.

DON'Ts

- DISCHARGE THE LIPO THROUGH BALANCE PORTS



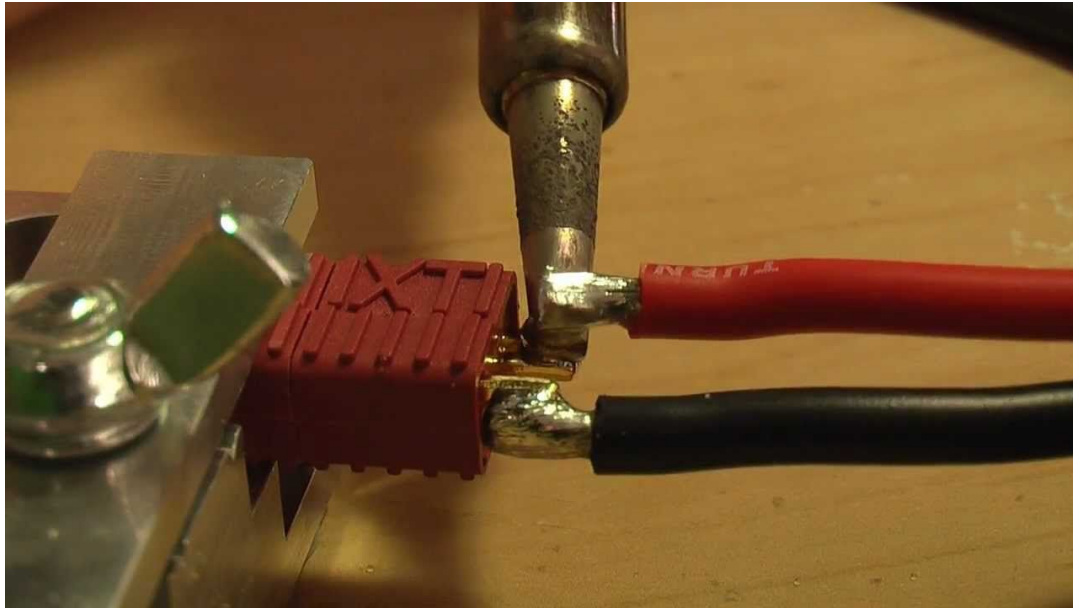
- DISCHARGE THE LIPO UNDER 3.0V PER CELL

DON'Ts

- GO AWAY WHILE THE LIPO IS BEING CHARGED.
- SHORT THE LIPO
- LEFT UNUSED FOR A LONG TIME
- UNPACK THE LIPO (LIPO CAN CARRY HIGH AMOUNT OF CHARGE EVEN AFTER BEING DESTROYED)

D0s

- MAKE SAFE CONNECTORS BY SOLDERING T/DEAN CONNECTOR



DOs

- **USE THE LIPO EVERY NOW AND THEN**
- **DISPOSE THE LIPO PROPERLY IF IT DOESN'T WORK ANYMORE**
- **KEEP PACKED WHEN NOT USING**

Reference

- Best lipo guide:

<https://rogershobbycenter.com/lipoguide/>

- Charging Discharging Safety:

<https://www.maxamps.com/lipo-care.php>

- Official iMAX B6 Manual:

http://www.skyrc.com/download/IMAX_B6_Manual.pdf.80

[80e517a1de969503f0992b5b056363](http://www.skyrc.com/download/IMAX_B6_Manual.pdf.8080e517a1de969503f0992b5b056363)