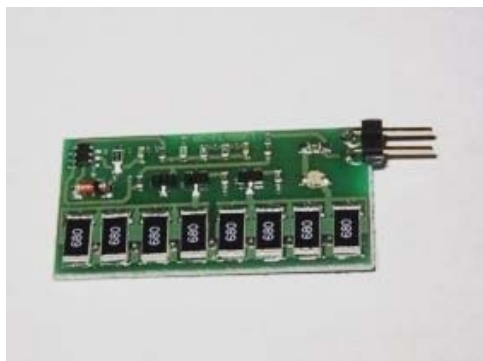




LIPO EQ PRO Professional LiPo cells Equalizer



LipoEqPro is a professional, high precision LiPo cell equalizer; used during a charge cycle will ensure that the connected cell is monitored to optimize the charge state.

During a normal charge cycle, all the cells in a battery pack are charged with the same current flowing in the pack, assuming that each cell will receive the same energy. This is only true when all the cells are perfectly identical and all the cells have exactly the same voltage level at the start of the charge process: if one cell has a different value than others, it will receive more or less energy than others during the charge process, that is controlled by monitoring the complete pack, not the single cells.

At the end one or more cells in the pack are not charged at the same level of others; for this reason a battery pack in these conditions is called 'unbalanced' and this will lower the battery pack performance.

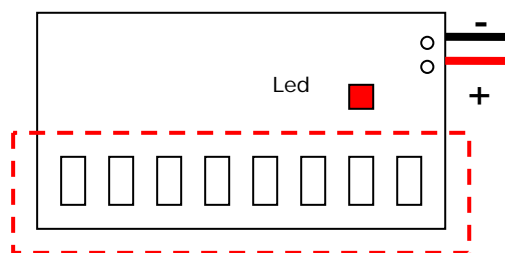
To solve this problem it is necessary to balance the pack with a special charge cycle in which each cell will end the charge at its own maximum charge value, regardless of the starting voltage and of the status of other cells in the pack. This means that each cell in the pack is individually monitored during the charge process and the charge can be terminated (for each single cell) at the right moment.

LipoEqPro does exactly this job, monitoring a cell during charge and using a resistive load to dissipate the excess current when the cell reaches the right charge value. In this way all the other cells can continue the charge process until every cell reaches the right value.

The red Led on the board is switched on when the cell is very close to the maximum charge value and the cell current is reduced by inserting the

resistive load. The LED starts blinking at low rate and blinks faster and faster according with the charge state of the connected cell.

To balance (or equalize) a battery pack you have to use one **LipoEqPro** circuit for each cell; the charge can be halted when all the LED of the all the boards are on and all cells are charged exactly at the same value. When connected, three short blinks of the LED mean the board is working correctly.



!! DANGER HOT AREA!!

The circuits used to balance a pack must be absolutely of the same type: it is not possible to use, on the same pack, different equalizer circuits.

LipoEqPro works with a microcontroller (the smallest in the world!!) and it is based on a special algorithm using a digital control to validate the activation threshold, avoiding the accuracy loss introduced by the standard circuits with hysteresis feedback. This and the hi-quality components (0,1% accuracy) will ensure the very high precision of the device (0,2%).

The eight power resistors dissipate 420 mA at the nominal threshold voltage; the charge current must be programmed (on the charger) to be the same or a little less.



The power resistors will become very hot during charge cycle. Do not touch the red marked area in the picture during or immediately after the end of the cycle.

Dimension (mm)	19x37
Number of LiPo cell	1
Detection accuracy	0,2%
Threshold voltage	4,16
Current consumption @ 3.9V (mA)	9
Current consumption @ 4.16V (mA)	420