

## General Description

The 6S Battery Cell Monitor & Balancer is a precision instrument that ensures multi-cell batteries are maintained in an optimal state, improving system reliability and prolonging battery life.



Figure 1 – 6S Battery Cell Monitor & Balancer

The 6S Battery Cell Monitor & Balancer does exactly as its name suggests: it monitors cells within a 6S battery, and it balances those cells if and when they require it.

## Usage

The Battery Balancer plugs directly into the balance connector present on most Lithium-based batteries. In many cases, this is the only connection required. A pair of indicator lights on the front panel give a “go / no go” indication of the battery's state of balance and state of charge. More detailed battery information is available via the CAN bus.

The Battery Balancer can be used in two ways:

- As a hand-held battery verification tool, or
- Installed in a UAV, either with or without interfacing to the vehicle's CAN bus.

Installation into a UAV confers a number of operational advantages:

- Batteries do not need to be removed periodically to check for balance.
- Battery status is available instantly, either directly from the front-panel LEDs, or remotely from the telemetry data sent on the CAN bus.
- Batteries are maintained in a state of balance, improving flight-readiness.

## Features

- Transforms a “dumb” battery into a smart (self-balancing) battery.
- Supports multiple battery chemistries – LiPo, LiS and LiFe.
- Galvanically isolated CAN interface, allowing stacking (for series connected batteries).
- Battery temperature monitoring with suitable external sensor.
- User-friendly configuration software.
- Rich variety of balancing control options.
- Seamless integration with 250W PMU.
- Weight: 45g.
- Dimensions: 80 x 35 x 11.5mm.

## Specifications in brief

### Electrical:

<b>Battery chemistries</b>	LiPo, LiS, LiFe
<b>Battery voltage</b>	26.4 VDC (max.)
<b>Battery cell count</b>	6S
<b>Battery temperature sensor</b>	10k NTC (external)
<b>Balancing current</b>	0.45 Amps (max.)
<b>Voltage measurement accuracy</b>	±3 mV (typ.)
<b>Power dissipation</b>	2 Watts (max.)
<b>Visual indicators</b>	Balance (red/green), charge (red/green)

### Miscellaneous:

<b>Environmental protection class</b>	IP50
<b>Operating temperature range</b>	-40 to +85°C
<b>Altitude rating</b>	10,000m
<b>Cooling</b>	Passive conduction & convection
<b>Enclosure</b>	Lightweight custom-machined aluminium
<b>Dimensions</b>	80 x 35 x 11.5mm
<b>Weight</b>	45g
<b>Connectors</b>	JST XH (balance), JST GH (CAN x 2, Auxiliary), micro-USB (configuration)
<b>Communications protocols</b>	CAN (up to 1Mb/S), galvanically isolated