

General Description

The 15S Battery Cell Monitor & Balancer is a precision device that ensures multi-cell batteries are maintained in an optimal state, improving system reliability and prolonging battery life.

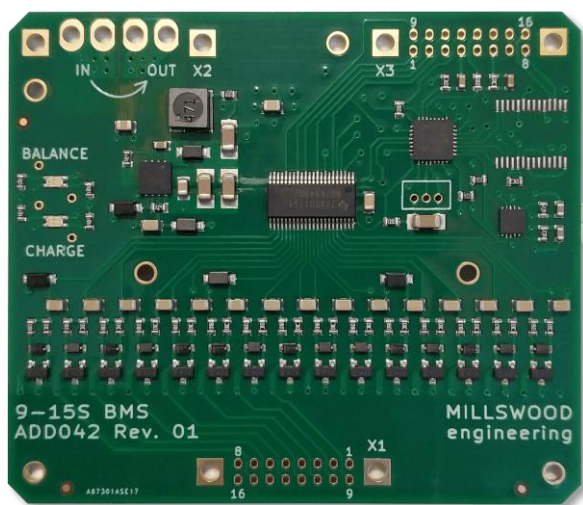


Figure 1 – 15S Battery Cell Monitor & Balancer

The 15S Battery Cell Monitor & Balancer does exactly as its name suggests: it monitors cells within a battery, and it balances those cells if and when they require it. Comprehensive data detailing the battery's internal state is sent via the CAN interface.

Usage

The Battery Balancer is intended to be connected to a battery, installed into a UAV and interfaced to the vehicle's CAN bus. 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.

Use of the battery balancer 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.
- Supports 9 to 15S batteries.
- Bidirectional 80 Amp current sensor.
- CAN interface provides control and monitoring of voltages, currents, temperatures.
- Battery temperature monitoring with up to 3 external sensors.
- User-friendly configuration software.
- Rich variety of balancing control options.
- Seamless integration with 1700W GCU.
- Weight: 23 grams (0.8 ounces).
- PCB dimensions: 62 x 72mm.

Specifications in brief

Electrical:

Battery chemistries	LiPo, LiS, LiFe
Battery voltage	65 VDC (max.)
Battery cell count	9S, 10S, 11S, 12S, 13S, 14S or 15S
Battery temperature sensor	3 x 10k NTC (external)
Balancing current	3 x 0.5 Amps (max.)
Cell measurement accuracy	±10 mV (typ.)
Internal current sense range	±80 Amps
Visual indicators	Balance (red/green), charge (red/green)
Communications interface	CAN (up to 1Mb/S)

Miscellaneous:

Operating temperature range	-40 to +85°C
PCB dimensions	62 x 72mm
Weight	23 grams
Connectors	Hirose DF11 (balance, interface) micro-USB (configuration) Options: Harwin M80 (balance, interface, current sense)