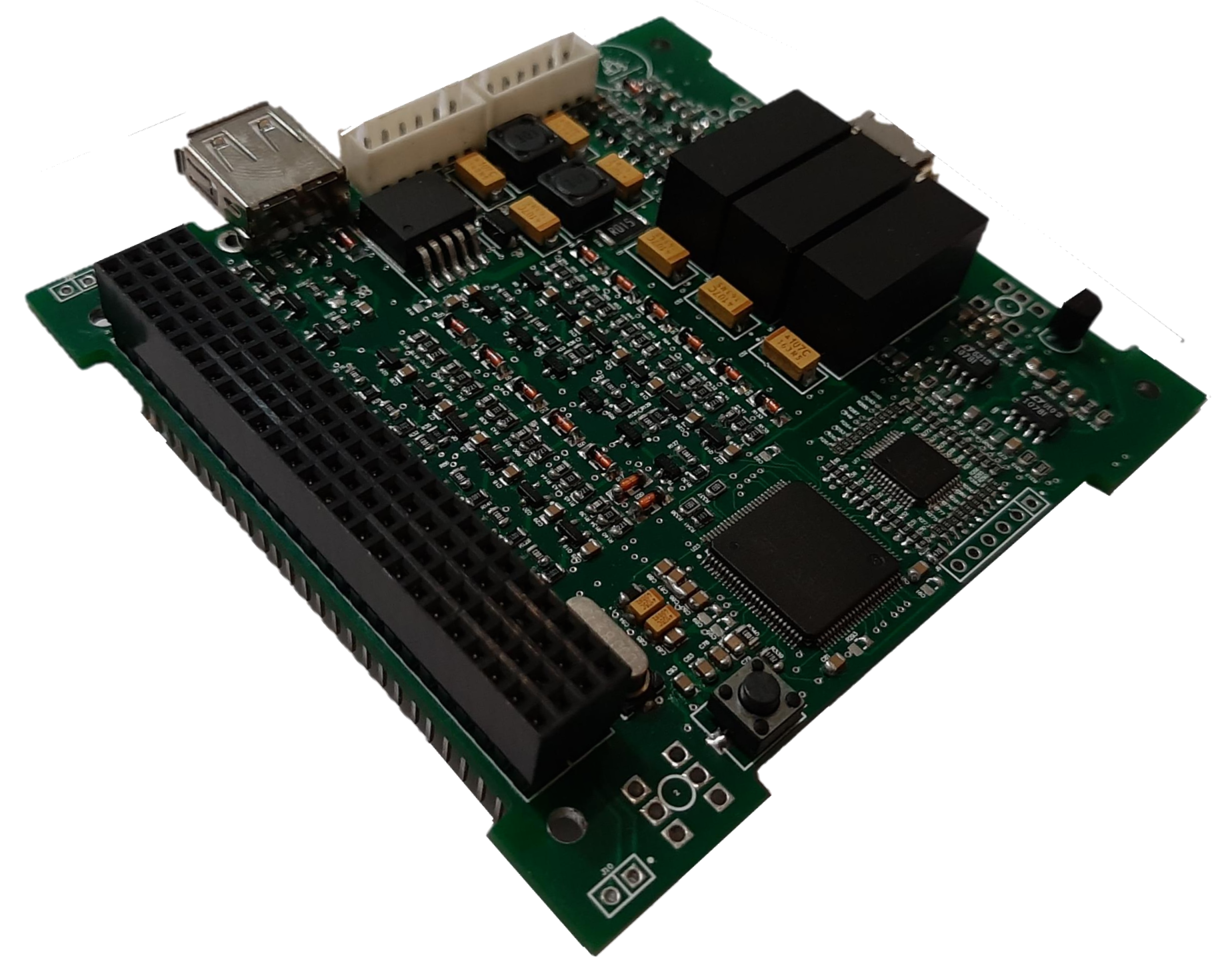
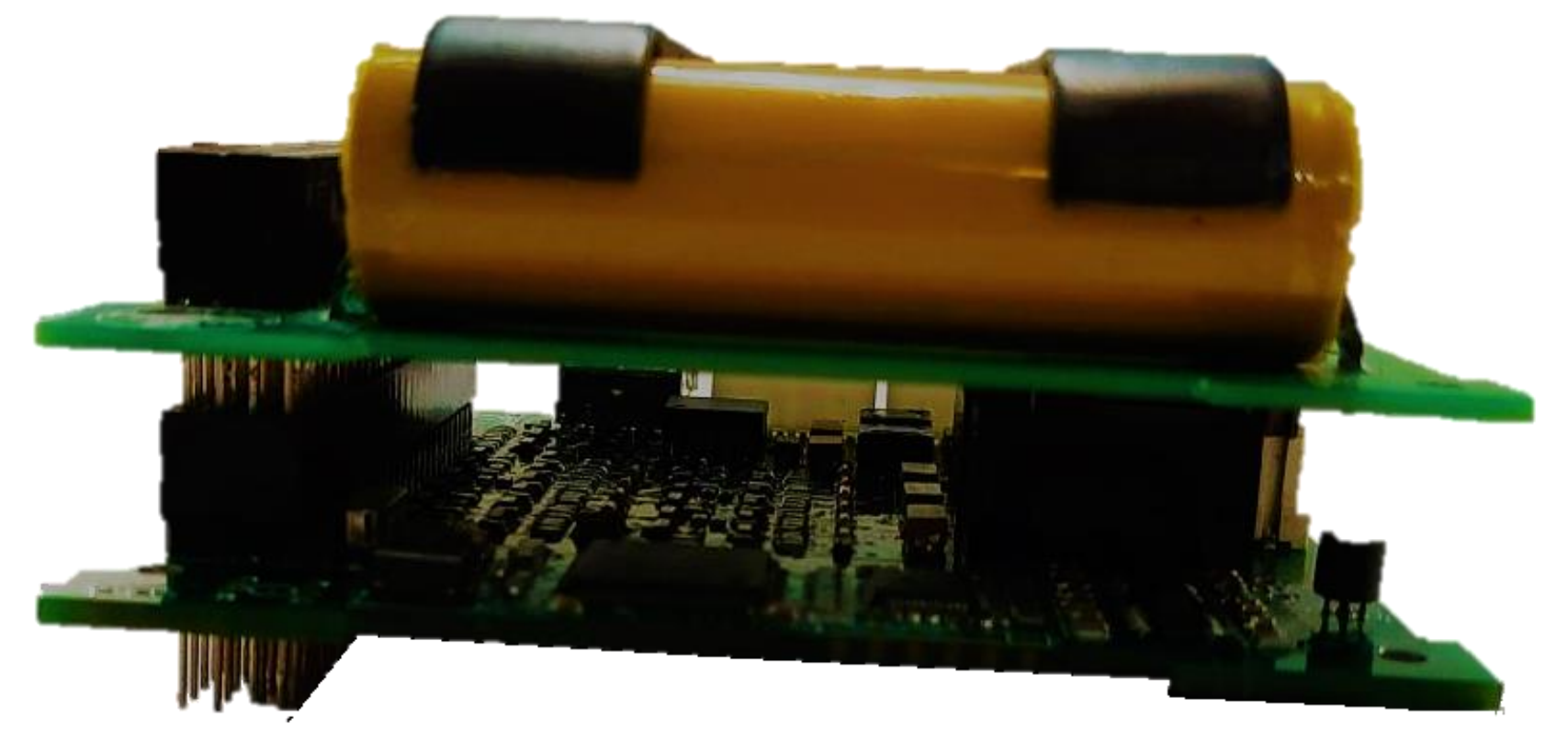


MAIN FEATURES

- 3.3V, 5V and Raw Battery buses are provided.
- Flexible design: different solar cell types/string lengths.
- Can interface to up to 6 solar arrays; one per spacecraft facet
- Compatible with Lithium Ion and Lithium Polymer batteries.
- Telemetry and telecommand via I2C interface or I/O interface via OBC.
- Bus over-current and battery under-voltage protection.
- USB battery charger.
- Compatible with dead launch via separation switches.

APPLICATIONS

- CubeSat and CubeSat Kit satellites.
- Nanosatellites with a power requirement from 1W to 10W orbit average power.



Technical Description (also see 'Block Diagram' on the next page).

CHR

The output voltage of the panels is converted to a voltage suitable for charging the battery using the Battery Charge Regulators. The charger is a dc-dc boost converter that converts the Non-regulated input voltage to regulated output voltage.

A centralized End of Charge Voltage controller provides constant current/constant voltage charge regime suitable for lithium ion and lithium polymer batteries.

Battery Charge Regulators has the ability to interface to the 5V USB line from the main connector. This allows battery charge via USB and EGSE power to the spacecraft during test.

BATTERY

lithium-polymer or lithium-Ion battery can be integrated as a daughter board.

TLM/TC

Telemetry and telecommand functionality is handled by a dedicated I2C-I/O compatible microcontroller. Telemetry channels include array and battery currents, voltages and temperatures. Telecommands provide reset/run capability on each power bus.

DC-DC

Synchronous rectifiers provide high efficiency dc-dc converters to regulate to 5V and 3.3V from the raw battery voltage.

PROTECTIONS

An over-current on any of the 3 buses triggers the timed disconnection of the power bus in question. An unloading function disables the outputs when the battery voltage is less than 6.5V, re-activating once the battery recovers to 7.5V.

Performance Specifications

(Performances can be adapted to mission specific needs).

SYSTEM UNIT	PERFORMANCES
40W BCR	Input voltage: 3.5V to 40V depending on mission configuration. Output voltage: 0V to 65V max. Output current: 3A max Efficiency: >80%
5V Regulator	Efficiency: >81% Output voltage: 5V +/- 1% over lifetime and temperature Output current: 0mA to 1000A Passed EMI test: Standard EN55022, FCC part 15_Class A (6)
Two 3.3V Regulator	Efficiency: >76% Output voltage: 3.3 +/- 1% over lifetime and temperature Output current: 0mA to 1075mA Passed EMI test: Standard EN55022, FCC part 15_Class A (6)
Power Distribution Line with Over Current Protection	Seven line 3.3V Four line 5V One line battery bus
Power System Mechanical Details	83g (without battery stand offs). Typical dimensions : 95mm (l) x 90mm (w) x 18.6mm

Please contact us with your specific requirements

Block Diagram

