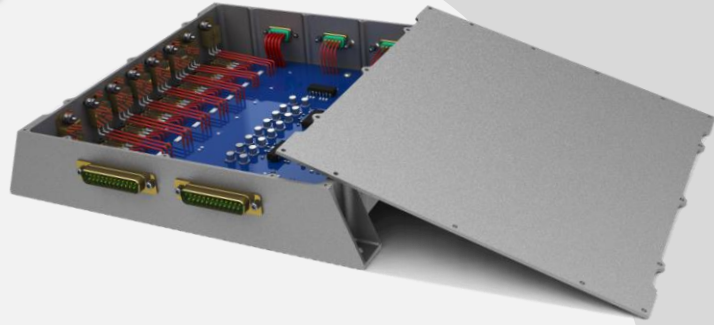


HIGH RELIABILITY RADIATION HARDENED 28V REGULATOR & BATTERY MANAGEMENT



DESCRIPTION

The Voltage Regulator & Battery Management (VREG) interfaces the solar array and a lithium-based battery to conform a semi-regulated power distribution bus in a direct transfer energy configuration.

Based on sequential switch regulator VREG control, the average current value in bus limited avoiding battery damage.

VREG can work without a digital platform support, avoiding extra hardware.

Bus voltage value set at 28 v, which can be changed in fly via onboard computer (optional).

The VREG can accommodate to a total power output of 400W to 850W with minimum component variation.

The battery charger implements a constant current charge control loop, suitable for lithium-ion & lithium-polymer technologies.

Up to 16 pre-conditioning analog measurements, including battery telemetry (current, intermediate voltage and 3 thermal status) are available.

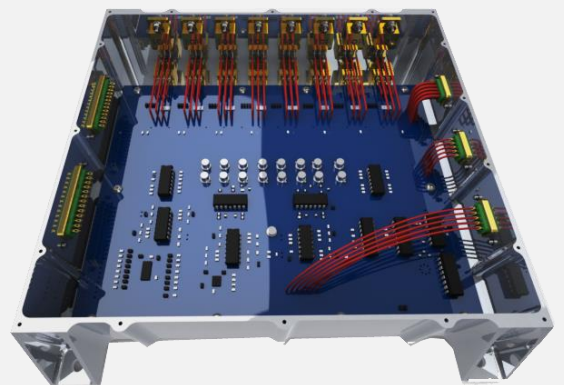
Fuse based protection to avoid the bus short-circuit in case of switch failure.

FEATURES

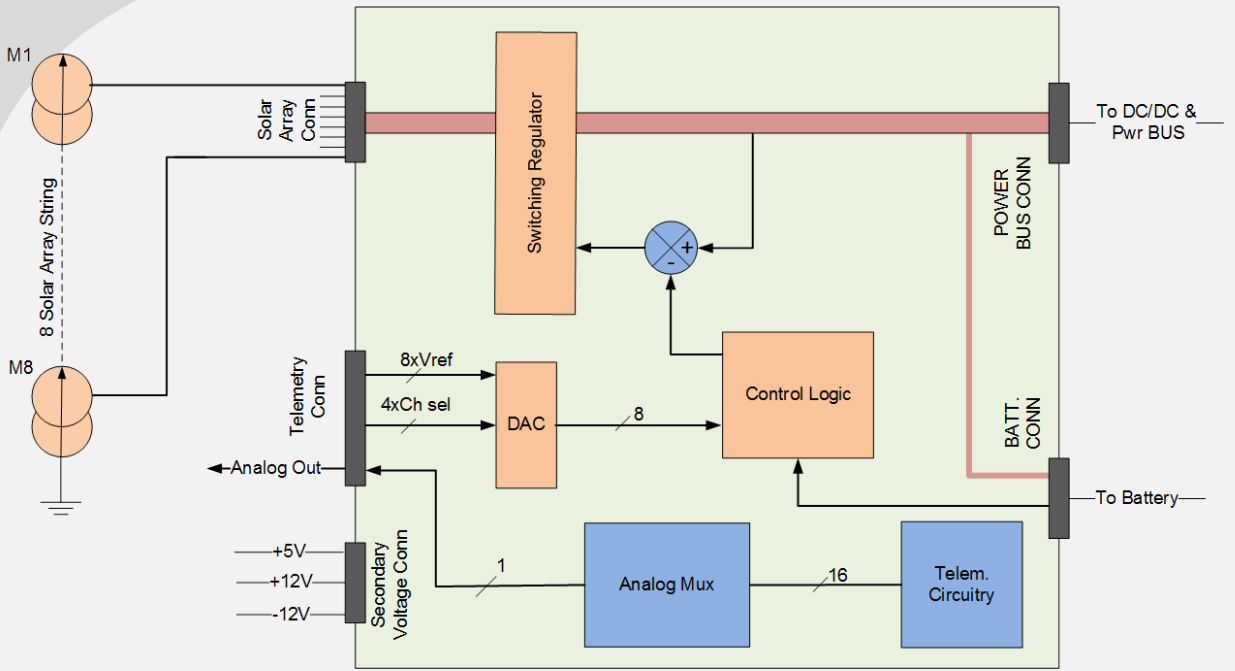
- Very high efficiency solar array interface (up to 90%).
- Extended temperature range -40° to 70° C (mil qualification components).
- Total Dose > 100 krad(Si)
- SEE >75 MeV cm²/mg.
- Applicable for 28V voltage bus level.
- Easy re configuration to 50V voltage bus level.
- Capable to commute up to 8 solar array string.
- PWM based battery charge current regulation.
- Independent control, without digital platform.
- Output Ripple < 30mVrms (100Hz – 5KHz) @ 28V voltage bus.
- Direct connection battery – Power distribution bus.
- Suitable for lithium battery technology.
- Fuse based protection for power bus.
- 16 multiplexer analog measurement including battery telemetry.
- Pre adapted temperature telemetry (thermistor).
- Workmanship per IPC-A610.

APPLICATIONS

- Medium power distribution for LEO application.
- Optimal use for sun synchronous orbit.



BLOCK DIAGRAM



CONNECTORS



MECHANICAL OUTLINE

