

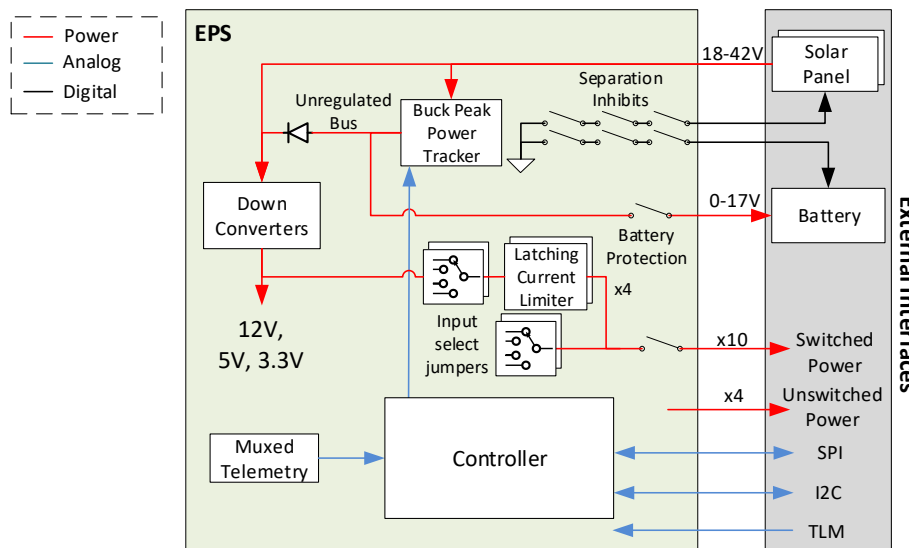
150-Watt CubeSat Electric Power Subsystem

FACT SHEET



OVERVIEW

Cubic Aerospace's 150-Watt CubeSat Electric Power Subsystem (EPS) is a radiation tolerant, flexible peak power tracking solution capable of efficient solar array power conversion and battery charging. The EPS card provides regulated 3.3-Volt, 5-Volt, and 12-Volt power, as well as unregulated battery power through switched and un-switched, current-limited outputs. The system accepts commands and provides telemetry via SPI and I²C interfaces. The EPS includes battery under/over-voltage and over-current protection in addition to a configurable watchdog timer for spacecraft loads.



SPECIFICATIONS

Dimensions	93 x 93 x 17	mm
Mass	140	g
S/A Conversion Efficiency ₁	> 96	%
12V Output Conversion Efficiency ₁	> 94	%
5V Output Conversion Efficiency ₁	> 93	%
3.3V Output Conversion Efficiency ₁	> 88	%
Typical Quiescent Power Consumption ₂	1.2	W
Operating Temperature ₃	-40 to +105	°C
Single Event Effects	Operate through: LET > 37 Survive: LET > 55	MeV-cm ² /mg
Total Ionizing Dose	30	kRad (Si)

1. Typical Efficiency at >50% load, does not include ohmic loss from output switches
2. All converters enabled, no external loads
3. Designed to operate at full power with a 60°C interface temperature

FEATURES

Power Generation

- >150-Watt maximum input power (18-42 V)
- Solar array peak power tracking

Charging

- 16.8-Volt max charge voltage
- 7-Amp max charge current

Outputs

- +5.0-Volt regulated bus (6 A)
- +3.3-Volt regulated bus (3 A)
- +12.0-Volt regulated bus (4 A)
- Unregulated battery bus (10 A)
- 10x switched outputs
 - 15 mΩ typ. resistance
- 4x un-switched outputs

C&DH

- I²C @ 400 kbps
- SPI
- System configuration, telemetry, and output control

Built-In Protection

- Battery over charge/discharge
- Battery over-current
- Programmable watchdog timer
- Output latching current limiters
- Two-fault tolerant separation inhibits

INQUIRIES

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