IRIS CONTROL ELECTRONICS

SINGLE PISTON LOW COST CRYOCOOLER ELECTRONICS (SP-LCCE)

RADIATION HARDENED, SPACE QUALIFIED CRYOCOOLER ELECTRONICS WITH ACTIVE BALANCER CONTROL.

Iris Technology's SP-LCCE is a Single Piston, Low Cost Cryocooler Electronics (SP-LCCE) package that is radiation hardened and space qualified.

The electronics were specifically adapted from our LCCE and LCCE-2 designs to operate the Ametek/Sunpower line of single piston cryocoolers such as the MT, CT and GT models.

In addition to basic cryocooler control functionality, the SP-LCCE provides active balancer control with 2 motor outputs; the primary output for the main cryocooler motor and the second output for the optional Active Balancer motor that Sunpower offers.

The SP-LCCE also has an accelerometer input to measure exported vibration from the cryocooler and computes and applies canceling waveforms to the balancer motor.

Active Vibration Cancellation (AVC) is highly effective at reducing exported vibration to barely measurable levels across 3 harmonics products.

The electronics set is fully developed and flown, giving it a Readiness Level 9 (TRL).

Fully rad hard up to 100 krad

Power levels up to 180 W – 10 W for active balancer

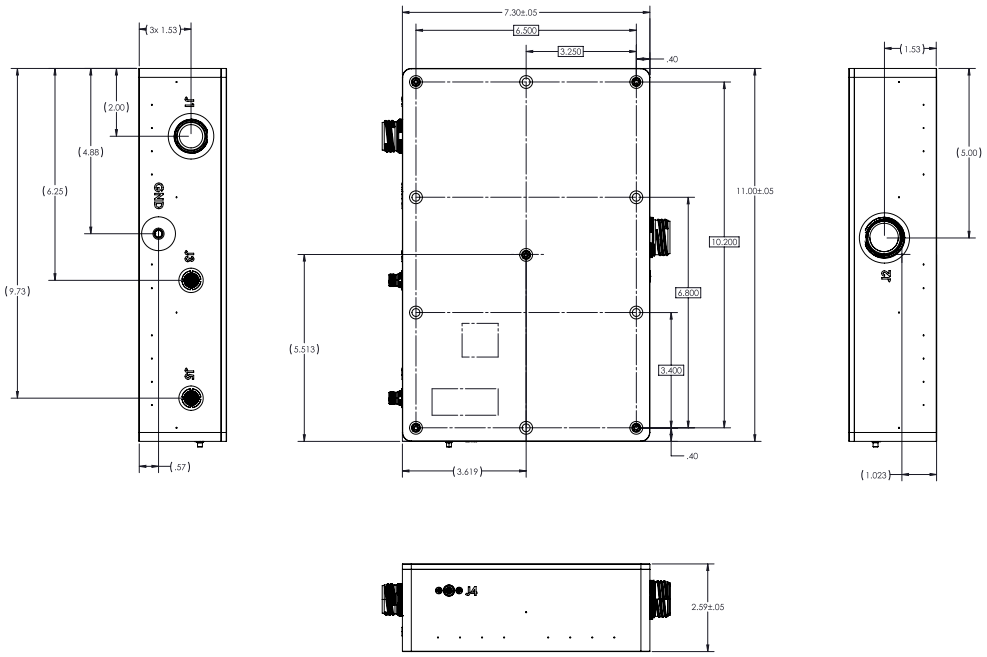
Selected on NASA missions

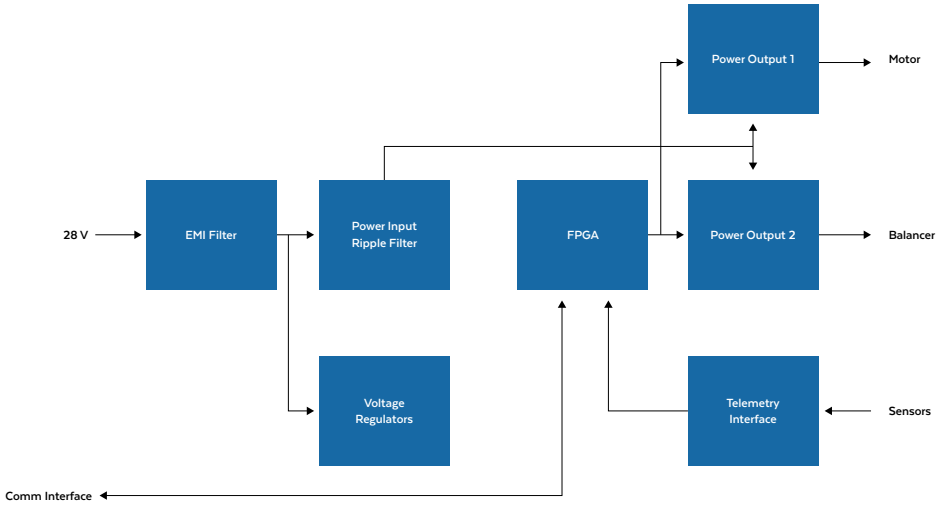
TRL 9 design

SP-LCCE CRYOCOOLER CONTROL ELECTRONICS

SPECIFICATIONS	
# of Motors	2
Mass (g)	~1700
Volume (cm)	12.6 x 14.2 x 3.1
Input Voltage (VDC)	22 - 37
Total Output Power (WAC)	180W + 10W Balancer
# of Temp. Sensors	2
Vibration Control	*Yes
Input Ripple Filter	Yes
TRL	9
Cooler Agnostic	Yes
Radiation Tolerance (TID)	< 100 kRad
Circuit Type	FPGA
Efficiency (%)	85
# of Coolers/Controller	1
Vibration Control/Controller	2

*Launch locks available if required





For More Information About Our Cryocooler Control Electronics and Other Aerospace Solutions, Email Us At: **aerospace@iristechnology.com**

IRIS TECHNOLOGY
CAGE 78535
PO Box 15115, Irvine, CA 92623-5115
Tel 949-975-8410 Fax 949-975-8498 Toll free 866-240-9540
www.iristechnology.com

NSF-ISR Registered to AS9100 (with ISO 9001)