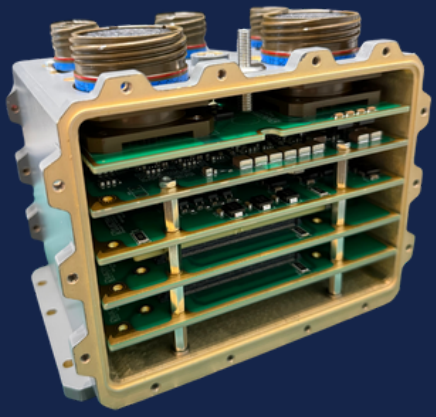
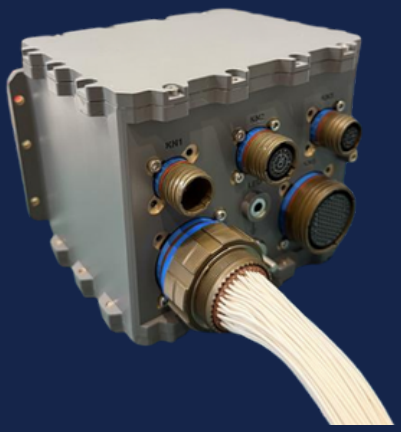
ELECTRA IC
Design & Verification

Military Grade Electronic Control Unit EIE-20070000





The Military Grade Electronic Control Unit (MGECU) is a rugged, modular, and real-time control solution designed for air, land, and naval platforms operating in harsh environments. Built to meet stringent MIL-STD requirements, including MIL-STD-810, MIL-STD-461, MIL-STD-1275, and MIL-STD-704. MGECU ensures uninterrupted performance under extreme conditions, delivering high reliability and flexibility for defense and industrial applications. The MGECU can be used as a system-level controller for MAST control, thermal management, power distribution, actuator control, and auxiliary platform subsystems.

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Features

FUNCTIONAL SPECS

- Real-time control for mission-critical applications
- Multi-protocol support: CAN, RS-485, RS-422, Ethernet
- Sensor fusion for analog (0–10 V, 0–20 mA) and digital sensors
- Actuator control via PWM, DAC (0–10 V), and Digital I/O
- Discrete I/O channels with fault detection:
  - 15 channel OPEN/28V Outputs
  - 5 channel OPEN/SHORT Outputs
  - 25 channel OPEN/GND Inputs
  - 7 channel OPEN/28V Inputs
- Redundant MCU architecture for high reliability
- Over-the-Air (OTA) software update capability

EQUIPMENT FUNCTIONAL SPECS

- MIL-STD-704 and MIL-STD-1275 compliant power input (28 VDC nominal)
- MIL-STD-810 and MIL-STD-461 compliance for ruggedness and EMI/EMC
- Built-in self-test and health monitoring
- Outputs error statistics and system status
- Real-Time Operating System (RTOS) for deterministic performance
- Dimensions: 150x140x120mm
- Weight: 2.4Kg
- Power consumption: 85W

INTERFACE SPECS

- One Ethernet port (100 Mbps)
- 3 × RS-422 ports (adjustable baud rates)
- 7 × RS-485 ports
- CAN Bus interface
- SPI and I^2C sensor interfaces
- Digital and analog input/output channels

ENVIRONMENTAL SPECS

- Rugged design with conduction cooling
- Operating temperature: -40°C to +55°C
- Vibration and shock resistance per MIL-STD-810
- Humidity tolerance up to 95% RH
- EMI/EMC compliance per MIL-STD-461