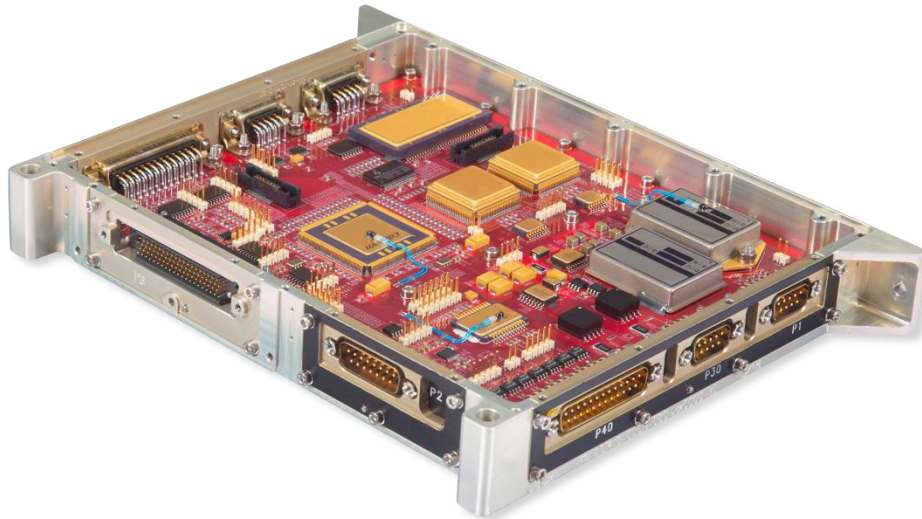


## Spacecraft On-Board Computer (OBC)



### 1. Brief Description

Based on a dual-core LEON3-FT, our On-Board Computer (OBC) provides exceptional processing power and data communication via multiple data buses. Designed to provide reliable data handling and platform control for advanced LEO satellites, the OBC is a radiation tolerant design with high availability achieved through On-board Fault Detection, Isolation and Recovery (FDIR).

### 2. Key Features

- GR712RC with Dual-Core LEON3-FT Sparc V8 Processor (Up to 80 MHz)
- RTEMS Real Time Operating System (RTOS)
- On-board data buses; CAN, SpaceWire, MIL-STD-1553B, RS422 UART, PPS
- Tolerant to Single Event Effects (SEE) in operation and storage
- Available in dual redundant hot/warm configuration
- Companion FPGA module for AES-256 encryption of TTC link

### 3. Technical Specifications

General	
Processor	Dual-Core LEON3-FT Sparc V8
System Clock	40 MHz (up to 80 MHz)
FPU	IEEE-754 compliant, double precision
Boot Memory	2 MB
Non-Volatile Memory	8 MB MRAM
Operational Memory	32 MB SRAM
Operating Temperature	- 30°C to +70°C
Timing Synchronization	500 us with PPS
Radiation	- TID: > 20 kRAD - SEE: > 43 MeV·cm <sup>2</sup> /mg
Expected Lifespan	> 5 years in LEO
EMC Compliance	MIL-STD-461

Interfaces	
CAN	2x CAN 2.0, 1 Mbps
SpaceWire	4x SpW, 40 Mbps
MIL-STD-1553	2x MIL-STD-1553B, dual bus with Bus Controller capability
UART	6x RS422, 115.2 Kbps
TC/TM	2x LVDS, 250 Kbps, CCSDS compliant
PPS	2x RS422/LVDS
Development & Debugging	JTAG & Ethernet

Size, Weight & Power	
Volume	215 x 175 x 30 mm <sup>3</sup>
Mass	0.95 Kg
Input Voltage	16 V to 40 V
Nominal Power Consumption	4.8 W