Constellation On Board Computer

The Constellation On Board Computer product is a high quality On Board Computer based on COTS technology to offer a cost effective and highly performant product. The computer has a fully redundant architecture with robust failure handling and radiation mitigation to provide a highly reliable solution.

KEY FEATURES

- Fully cross-strapped dual redundant architecture with redundant reconfiguration functions allowing fully user defined reconfiguration sequences.
- Highly performant processor and extensive I/O support that can be tailored according to customer needs.
- Manufacturing highly automated and optimized for large quantities.
- Optional integrated GNSS receiver, with support for GPS and Galileo, with an accuracy of 3.5m rms 3D.
- TM/TC compliant to CCSDS format including AES256 encryption/decryption and authentication on both TM and TC links.

HERITAGE

- >3000 failure free equipment years in orbit
- >300 Launcher On-Board Computers
- >120 Satellite Data Handling Systems
- Latest OBCs in orbit: Hispasat 36W-1, Göktürk 1A, ExoMars Trace Gas Orbiter, Galileo FOC 9-14, Sentinel 2A & 2B

RUAG Space | Product Group Electronics
sales.electronics.usa@ruag.com
sales.electronics.europe@ruag.com
www.ruag.com/space
- Integrated software development environment
- Advanced software debug tool chain
- Fast Ethernet debug link
- Operating system independent boot and driver software
- Cross compiler suite
- Board support package for operating systems and hypervisors

Hypervisor and Operating System
- VxWorks
- PikeOS
- RTEMS

(basic configuration)
- Volume: 274 x 75 x 187 mm³
- Power consumption: 22 W
- Mass: 3.7 Kg
- Temperature: -20 to +60°C
- Random vibration: 15g RMS
- Shock: 2000g @2000Hz

GNSS Rx (optional)
- Tracks GPS L1 C/A or Galileo L1B / L1C
- Signals and provides position, velocity and time
- Accuracy down to a maximum error of 3.5m RMS 3D with use of dynamic filtering
- Pulse Per Second (PPS) time error < 1µs RMS
- Operation with or without external LNA

Radiation Tolerance
- Total Ionising Dose (TID) allows 10 years in LEO
- All memories with ECC
- Latch-up protection

Options
- Additional I/O
- Non-redundant unit

Reliability
- Reliability / half 500 FIT
- (FIDES std)
- No single-point failures
- Fully dual-redundant architecture