

OBC-M7

Versatile Onboard Computing Platform

For Micro- and Nano-Satellites

Features

- Two fully independent onboard computer modules in shared enclosure.
- 2x ARM® Cortex-M7 Main Processing Units
 - Powerful DSP instructions
 - Double precision hardware FPU
 - Upto 300 MHz operating frequency
 - Real-time OS incl. hardware drivers, filesystem and IDE
 - Real-time clock, watch-dogs, etc.
- Memory
 - 2x1 64 MB FLASH (NOR) mass storage
 - 2x1 4 Mbit FRAM application memory
- Interfaces
 - 2x2 RS485/RS422 UART
 - 2x2 RS485 CAN
 - 2x2 I2C
 - 2x4 GPIO
- Onboard power conditioning with 3.3 - 28 V input
- Reliability
 - Radiation total dose tested EEE parts
 - Vibration rated for all launch vehicles
- High-Quality Enclosure
 - Min. 1.5 mm Al shielding in all directions
 - PC-104 compatible mounting holes

Description

The OBC-M7 is an onboard computing platform consisting of two independent ARM Cortex-M7 modules, each with separate power supply, interfacing, and storage. The dual architecture makes the OBC-M7 a suitable choice for hot/cold redundancy solutions often desired for mission critical subsystems, such as T&C, GNC, or management of valuable payloads. The application of the OBC-M7 is further enhanced by the powerful DSP functionality provided with the Cortex-M7 architecture, which makes it possible to port heavy floating-point processing such as ADCS or RvD algorithms without severe performance penalties and error-prone quantization. If redundancy is not required, the OBC-M7 provides a advantageous platform for combining different subsystem functionality, such as ADCS and T&C, in a compact form-factor.

By default, the OBC-M7 is configured either as an on-board data handling unit with telemetry collection functionality, or as an OS-only installation for designers to write their own application.

To mitigate integration and radiation risks, the OBC-M7 uses high-quality Micro-D connectors and is protected by an 1.5 mm Al enclosure.

