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FERMI

Deep Space On-Board Computer

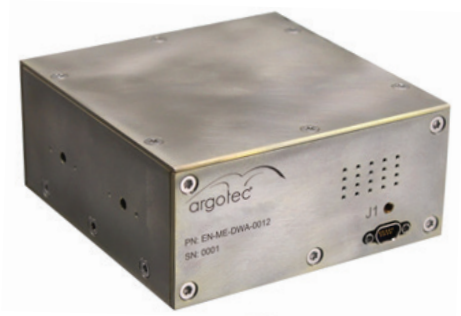
2020 PRODUCT SHEET

Product Brief

The FERMI on-board computer is a rad-hard avionics unit for deep space and mission-critical applications, featuring a dual-core CPU, an FPGA chipset and embedded mass memory. It works in synergy with the customizable on-board software to provide full spacecraft and payloads control, all inside a compact 0.4U case.

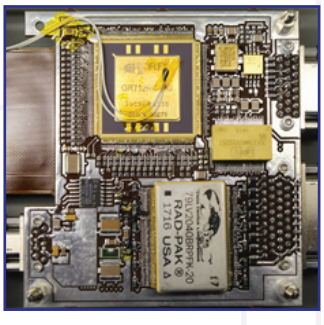
With a wide variety of external interfaces and a low typical power consumption of 5W, FERMI OBC is particularly suitable for small satellite platforms where volume and power constraints are design drivers.

The powerful FPGA allows for built-in hardware acceleration when computational performance is a must-have. All critical components feature a TID rating of at least 100 krad (Si), SEL immunity up to 80 MeV-cm2/mg and SEU protection.



CPU Board

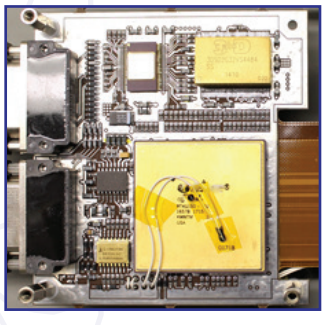
The CPU board provides the required interfaces and devices to offer complete satellite control capability. It features a Dual-Core LEON3FT SPARC V8 Processor with fault-tolerant memory controller, 20 Mbit EEPROM + 5 Mbit EEPROM, 256 Mbyte SDRAM, all EDAC-protected from SEU. The available interfaces include RS422, SPI, UART and GPIOs.



FPGA Board

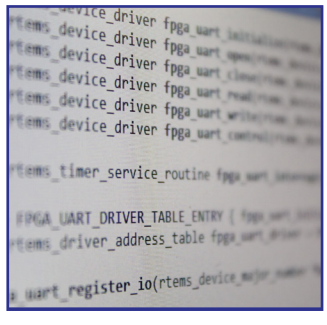
The high-speed rad-hard FPGA acts as an extension of the CPU and can act as chipset for additional interfaces, hardware accelerator and mass memory controller, and can be used to implement advanced payload management. It features a 16 GB ECC-corrected mass memory, as well as SpaceWire, RS422, LVDS, SPI, I2C and GPIO interfaces.

The presence of this board is up to the user.



On-Board Software

Specifically designed for Argotec's on-board computers, the on-board software offers a ready-to-use environment based on RTEMS operating system. It features built-in task manager, command and telemetry management as per ECSS-E-ST-70-41C, data handling functions and support for FDIR service. The custom BSP allows the user to develop its own application software to meet mission-specific requirements.



For further information

info@argotecgroup.com
www.argotecgroup.com