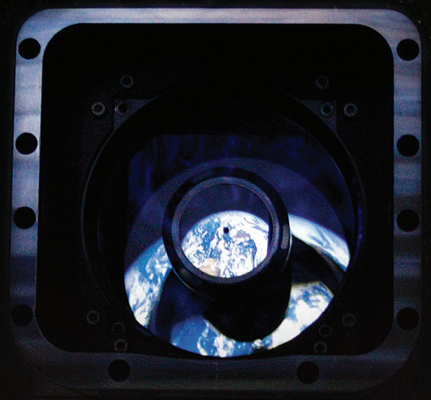


Our vision

To make space intelligent, accessible, and actionable buy bringing advance computing to the space edge.

NOVI provides the compute foundation for intelligent space systems. Through flight-proven On-Board Computers (OBCs) NOVI enables advanced computing, AI, and actionable intelligence at the space edge for applications ranging from Geo-Intelligence and Missile Defense - to Space Autonomy, Lunar Operations, and Satellite Servicing.

NOVI also offers end-to-end missions-as-a-service, providing and operating highly-integrated smart satellites that can take advantage of on-board edge computing.

Founded in 2017, NOVI is focused on enabling the transition from Earth Observation (EO) to near real-time Earth Monitoring (EM) and Geospatial Intelligence (GEOINT), as well as improving Space Domain Awareness (SDA) and Space Situational Awareness (SSA) through the implementation of advanced on-board edge computing and artificial intelligence in space.

The NOVI team is based in Arlington, VA outside of DC, and has deep domain knowledge, core competencies, and expertise in space electronics and the full satellite life-cycle including: mission CONOPS, requirements development, integrated spacecraft design, hardware fabrication and procurement, AI&T, launch and regulatory licensing, and in-space mission operations.

NOVI

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Equipment described herein may fall under the U.S. Export Administration Regulations and may be subject to licensing requirements under either the ITAR or the EAR.

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NOVI

SP240 ON-BOARD COMPUTER

ENABLING COMPUTING AT THE SPACE EDGE

SP240 On-Board Computer

Featuring a state-of-the-art AMD Versal adaptive SoC, NOVI's AI-enabled SP240 OBC is a highly-optimized edge processor that offers un-paralleled machine-learning performance in a power efficient CubeSat form factor, while being powerful enough to operate larger payloads and satellite missions.

The AMD Versal is a high-performance heterogenous compute platform with application and real-time processing cores, AI engines for ML based workflows, and programmable logic for flexible I/O. Latch-up (SEL) immunity and robust upset (SEU) mitagation make it ideal for the space radiation environment.

NOVI's SP240 OBC also features a radiation-hardened Vorago MCU which performs system monitoring and SEU mitigation functions. It can also be used as an ulltra-low-power processing option for other spacecraft systems.

SP240 OBC reached TRL 9 in January 2025



Performance

AMD/Xilinx Versal (AI Edge Series)

- Application Processor: Dual-core ARM® Cortex®-A72
- Real-time Processor: Dual-core ARM® Cortex®-R5F
- Programmable Logic (FPGA)
- AI Engines: High-performance parallel compute cores
- 12 TOPS ML performance
- 8 GB DDR4

Vorago ARM MCU

- Low-power ARM® Cortex®-M4
- Embedded rad-hard FRAM

Software Support

AMD/Xilinx Versal

- Embedded Linux

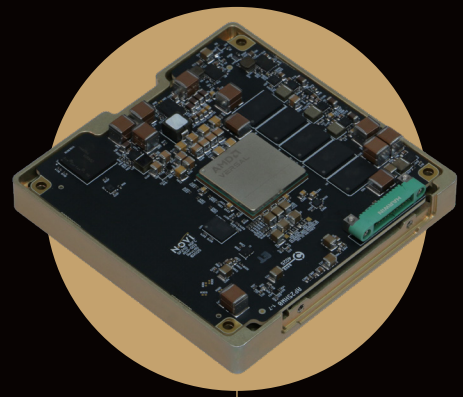
Vorago ARM MCU

- FreeRTOS™

Flexible IO

Highly customizable and reconfigurable with:

- GPIO (UART, CAN, I2C, SPI, etc.)
- RS-422 (Bidirectional and Unidirectional)
- Multiple 1G ethernet interfaces
- 10G/25G/40G/100G ethernet
- High-speed serial (PCIe, JESD204B, SLVS-EC, SpaceWire, etc.)
- High-speed parallel interfaces (LVDS, MIPI, etc.)
- Analog inputs and outputs
- USB 2.0
- M.2 NVMe



SP240 OBC interface board with cover removed

Radiation Tolerance

- Radiation-hardened Vorago ARM MCU
- SEL immune Xilinx processor
- Built in SEU/SEFI mitigation
- ECC protection on all memory interfaces
- Redundant storage for boot images and data
- Optional rad-tolerant NVMe
- Similar radiation-hardened version duration, MEO, GEO, and beyond GEO, and beyond

Power

- Single wide input range power supply (5-28V)
- Low-power mode: <750 mW
- High-performance modes: 5-50W (application dependent)

Mechanical

- Housing Dimensions: 93 mm x 93 mm x 25 mm
- Mounting: PC-104 through holes or screw-locking keyed inserts
- Customizable mounting options and form factor