



## Radiation Tolerant VNX+ System

### OVERVIEW

The IDEAS-TEK Radiation Tolerant VNX+ System (RTVS) provides modular computing and networking capabilities to space payloads and spacecraft targeting 3-to-5-year nominal lifetime missions. RTVS integrates Rad-hard power supplies and system management subsystems that can be combined with COTS or Radiation tolerant units to enable the deployment of SWAP-C high performance radiation tolerant systems for a wide range of space applications in an accelerated timeframe at a reasonable cost.

The RTVS can be as compact as 1500 cubic cm (96 cubic inches) and weight as little as 1.5Kg depending on the configuration. The system is conduction cooled and can grow to accommodate additional functionality with minimal engineering effort.

### COMPLIANCE

The RTVS is backplane-based modular system aligned with VNX+ (VITA 90) to facilitate re-use and interoperability during the implementation of fault-tolerant, high-performance systems for spacecraft and other high-availability applications.

### APPLICATION

The RTVS is designed with computing and networking in mind. It provides 1000Base-T and RS-422/485 interfaces and can be expanded to accommodate other interfaces like SpaceWire, LDVS, RF, and optical. IDEAS-TEK's ecosystem of VNX+ solutions include CPUs, GPUs, and FPGA modules that provide significant flexibility when configuring a system. RTVS is ideal for the following applications:

- Command and Data Handling
- Machine Learning
- Image Processing
- Data Processing
- Networking



### KEY FEATURES

#### General

- VITA 90 aligned modular system
- Power supply and system management functions implemented
- 2 to 4 slots for customizations

#### Ecosystems

- Dual-core ARM/GPU
- Radiation Mitigated NVIDIA GPU
- Xilinx MPSoC and FPGAs
- Microchip FPGAs
- AI accelerator engines

#### System Management

- RH ARM Cortex M4

#### Environmental Resiliency

- -20°C to 50°C typical

#### Radiation Tolerance

- 100KRAD TID (Baseline)
- SEL-free up to 65MeV (Baseline)

#### Availability

- EDU units available in September 2024

### DISCLAIMER

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