

# ProtonVPX-Box™ Modular Platform

## OVERVIEW

ProtonVPX-Box™ is a modular digital avionics platform designed to accommodate multiple configurations to meet mission objectives. The system utilizes a high-speed 3U VPX mesh backplane, which precludes the need for SRIO switches and SpW routers. Encased in a rugged thick-wall aluminum chassis, the ProtonVPX-Box is anchored by a Proton600K™ multi-core high-performance space processor in a baseline 5-slot configuration: Proton600K Multi-Core Computer, SSR, Digital I/O, Analog I/O, and Power Supply.



## APPLICATIONS

- Command & Data Handling
- Flight Computer
- Propulsion Control
- Multi-Core Data Processor
- Solid State Digital Data Recorder
- Image and/or Signal Processor
- Payload Sequencer

## KEY FEATURES

- Programmable On Orbit
- Radiation Tolerant up to 100 krads
- Accommodates Redundancy

## SPACE-HARDENED CARD ENCLOSURE

- ProtonVPX High-Speed Backplane connection up to 6.25 Gb per second
- Antivibration guides and rails
- Latch/Lock



## SPECIFICATIONS

<b>ENVIRONMENT</b> <ul style="list-style-type: none"> <li>• Temperature Range</li> <li>• Vibration</li> <li>• Parts Level Options</li> <li>• Suitability</li> </ul>	-40°C to +100°C GSFC-STD-7000 (NASA GEVS) Acceptance Levels Commercial Space, NASA Levels 1, 2, 3 LEO, MEO, GEO, Cislunar
<b>SWAP</b> (Chassis, P600K, SSR, DI/O, AI/O, Power Supply) <ul style="list-style-type: none"> <li>• Dimensions</li> <li>• Mass</li> <li>• Power Consumption</li> <li>• Input Voltage</li> </ul>	10.35" L x 5.93" W x 5.7" H 6 kg 40 W 28 V DC

## BASELINE 5-SLOT CONFIGURATION

	<p><b>PROTON600k Multi-core Computer</b></p> <ul style="list-style-type: none"> <li>• 1000BASE-T Ethernet with PHY</li> <li>• 8 GPIO and 16 LVDS</li> <li>• See Proton600K Datasheet for details</li> <li>• EM and FM units in production</li> </ul>	
	<p><b>PROTONVPX Solid State Recorder</b></p> <ul style="list-style-type: none"> <li>• NAND Flash-Based SSR</li> <li>• Includes H-Core and Error Correction</li> </ul>	
	<p><b>PROTONVPX SpaceWire</b></p> <ul style="list-style-type: none"> <li>• 3x SpaceWire or option for SpaceFibre</li> <li>• Other Digital I/O Cards Available: Ethernet RS422 CAN</li> </ul>	
	<p><b>PROTONVPX Analog I/O</b></p> <ul style="list-style-type: none"> <li>• Differential Inputs and Outputs x16</li> <li>• Voltage Reference</li> </ul>	
	<p><b>PROTONVPX Power Supply</b></p> <ul style="list-style-type: none"> <li>• +28 VDC Power Input</li> <li>• +3.3 VDC Output</li> <li>• +5.0 VDC Output</li> </ul>	