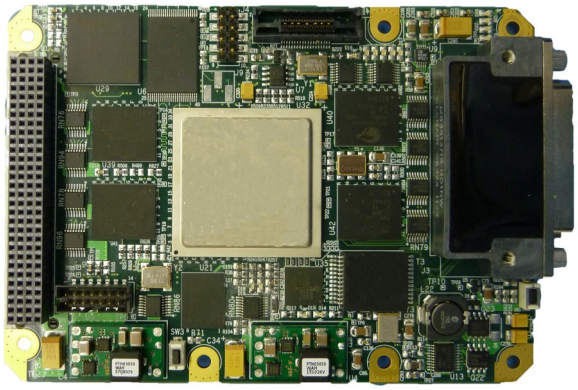
Proton300k™ FPGA Reconfigurable Computer

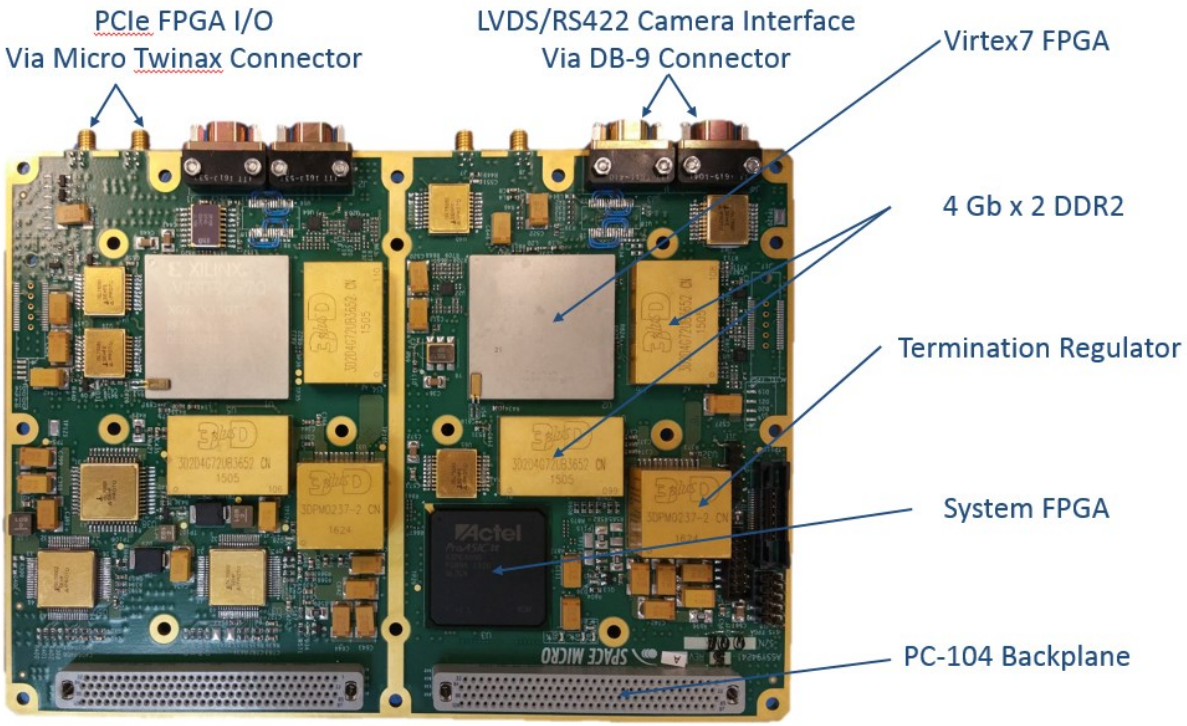
SPACE MICRO



FEATURES

- Radiation hardening utilizes Space Micro's patented mitigation technologies
- 3U, 6U PCI-104S Form Factors
- Applications include C&DH, Payload electronics, image processing
- Actel or Xilinx FPGA's available
- Customizable parts level

The Space Micro Proton 300k™ is a FPGA based reconfigurable computer system. The number and type of FPGA's can be selected by the customer, the popular PCI-104S format is configured for either an Actel RTAX series or Virtex ™ series from Xilinx. The Virtex Series FPGA's are mitigated for SEFI with Space Micro's patented H-Core II™ watch dog. SEU's are also improved with Space Micro's patented TTMR™. On-Board memory is 8GB, based on our flight proven NAND Flash module. Much of the circuitry is similar to the IPC-5000 Image processing computer which features flight heritage on the ORS-1 mission.



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SPECIFICATIONS

Radiation Tolerance	
SEL	>63 (MeV-cm2/mg)
SEU	< 1 per 1,000 days (1.0 E-4, 90% Worst Case GEO (Orbit dependent) TTMR™ technology for SEU detection/mitigation.
TID	100krad (Si), Orbit dependent
SEFI	100% recoverable H-Core™ technology for SEFI detection/mitigation
Performance	Xilinx Virtex 7 FPGA using either • Xilinx Platform Flash Memory (Engineering Model) • Rad Hard TMR Flash (Flight Model) 2 Channels LVDS video • Each channel includes 14-bit Video Data and Video Clock • Each channel has Control Signals including Line Sync, Frame Sync, and Data Valid SGMII Gigabit Ethernet, 10/100/1000 BaseT Interface SDLC IMU via RS422 Interface Four 4M X 18 QDR2 +SRAM 200MHz (currently operating at 180MHz) 32-bit, 33/66MHz PCI-104 Interface (currently operating at 33MHz)
Mechanical Options	PCI-104 stretch [3.6 x 5"] Standard 3U, 100x160 mm [3.74 x 6.3”] Option 6U, 233x160mm [9.2 x 6”] (option) other custom sizes available
Parts Level Options	Commercial Space, NASA Levels I, II, III Class S / B (options)
Environmental	-24 to +61˚C Temp. Range
Hardware Models	Software Development Unit (SDU) Engineering Model Flight
Services Available	TTMR Software Optimization

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