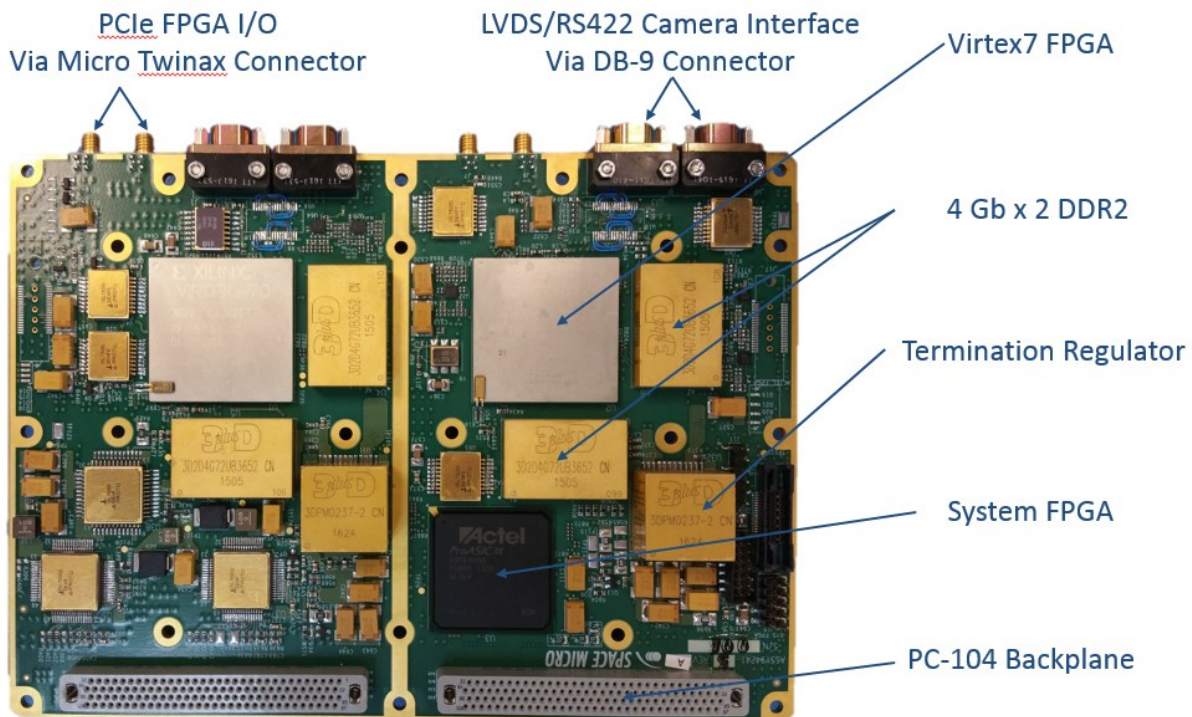


FEATURES

- 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.



SPECIFICATIONS

Radiation Tolerance

SEL

SEU

>63 (MeV-cm²/mg)
< 1 per 1,000 days (1.0 E-4, 90%
Worst Case GEO (Orbit dependent)
TTMR™ technology for SEU detection/mitigation.

TID

SEFI

100krad (Si), Orbit dependent
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