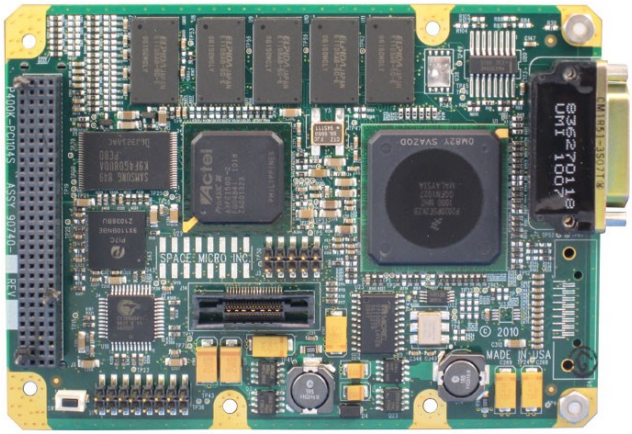
Proton400k™ Single Board Computer

SPACE MICRO



FEATURES

- Radiation hardening utilizes Space Micro's patented mitigation technologies
- 3U, 6U PCI-104S Form Factors
- Applications include C&DH, Payload electronics, custom applications
- Multiple memory and interface options available
- Capacity, speed and power requirements suitable to be sole computer for micro- and nano-satellites handling both housekeeping and payloads.
- Multiple operating system options including Linux and VxWorks
- Freescale advanced 45 nm dual-core microprocessor

SPECIFICATIONS

Performance	Freescale P2020 high performance processor 1 Ghz, 32-bit dual core processor with 36-bit physical addressing capable of up to 4,800 MIPS
Memory	512 MB - 1GB DDR 3/2 with EDAC 512 MB boot MRAM (2X) 32 Gb RH NAND Flash
Power	8 to 12 Watts (depending on peripherals & speed)
Mechanical Options	PCI-104 stretch [3.6 x 5"] 3U, 100x160 mm [3.74 x 6.3"] 6U, 233x160mm [9.2 x 6"] (option) other custom sizes (option)
Hardware Models	Software Development Unit (SDU) Engineering Model Flight (Conduction cooled)

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SPECIFICATIONS

Radiation Tolerance

SEL	>63 (MeV-cm2/mg)
SEU	< 1 per 1,000 days (90% Adams worst case) TTMR™ technology for SEU detection/mitigation. 100krad (Si), Orbit dependent
TID	100% recoverable
SEFI	Patented H-Core™ technology for SEFI detection/mitigation

Interfaces

I/O Bus	32bit, 33 MHz
3.3V	I/O Voltage
UART	4-channel buffered
16 GPIO	Prog. General-purpose I/O
Options	SGMII Ethernet; SpaceWire; CAN

Operating System and Software Support
GNU-based tool chain support, with multiple operating system options:
Linux Board Support Package (BSP)
VxWorks Board Support Package
RTEMS

Parts Level Options
Commercial Space, NASA Levels I, II, III
Class S / B (options)

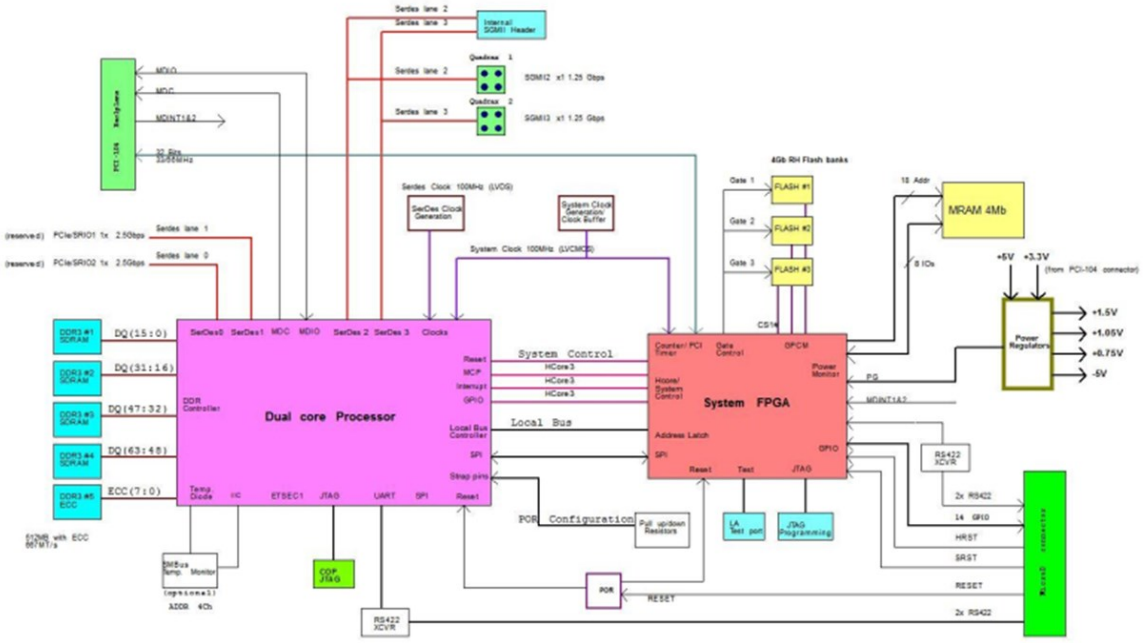
Environmental

Operating Temp	-24 to +61˚C
Random Vibe	>10 Grms, 3-Axis

Services Available
TTMR Software Optimization

Standard Testing
Acceptance testing

Thermal cycles



P400k SBC Block Diagram

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