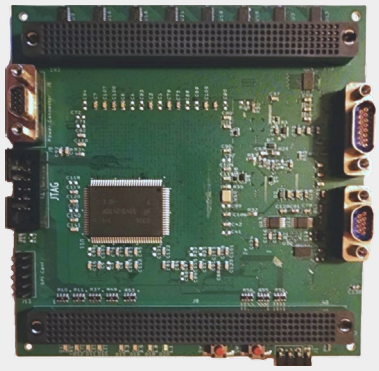
Space Systems Engineering for Design, Test, Integration and Operations

Providing multi-disciplinary engineering capabilities and products
across the space industry for over 10 years.

Recent Missions Supported by Our Staff:

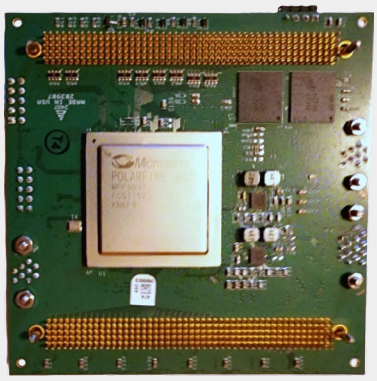
OSAM-2, Landsat 9, Landsat Next, JPSS, TIRS-2, MSR-CCRS, SWFO, OSAM-1, DART, Dragonfly, TRACERS, Europa Clipper, MUSTANG

NMC-1 Radiation Tolerant Computer



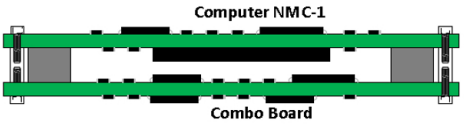
The Next Age of Avionics for CubeSat, SmallSat, or any Spacecraft

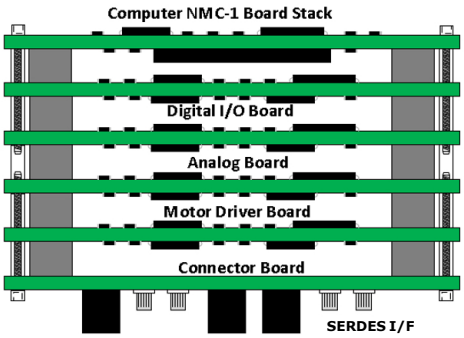
- Lower Cost, High Reliability
- Reprogrammable On-Orbit
- Incremental Compilation capable
- Modular, Scalable, Customizable for your applications
- Massive Parallel Processing
- Ground Based versions available for development, simulation or configurable test equipment



Features

- Most advanced, most radiation tolerant (100 KRAD), space-rated, reconfigurable FPGA on the market:
  Microchip RT PolarFire®





- SWaP optimized 1U CubeSat (96mm x 96mm) form factor
- Multicore capable for added processing and efficiency
- P^{3}C enabled Incremental On-Orbit Compiling
- Versatility and processing power of RISC V
- Full support for C applications and programming
- 512K x32 high-speed SRAM (scrubbing+EDAC)
- Substantial logic resources with 481 kLUTs
- Myriad of use cases supported with 462 GPIO
- Stacking connectors allow modularity and ease assembly
- Two standard EIA-422 transceivers
- Dynamic programmable clocking reduces power
- 8G to 128Gbit x8 high-speed parallel flash memory (60 KRAD)
- Customizable I/O using our daughter Cards
- 3 SERDES 2-wire twisted pair 250 Mbit/s token ring network channels for expansion and data transfer (1.2 Gbit/s high-speed version available)

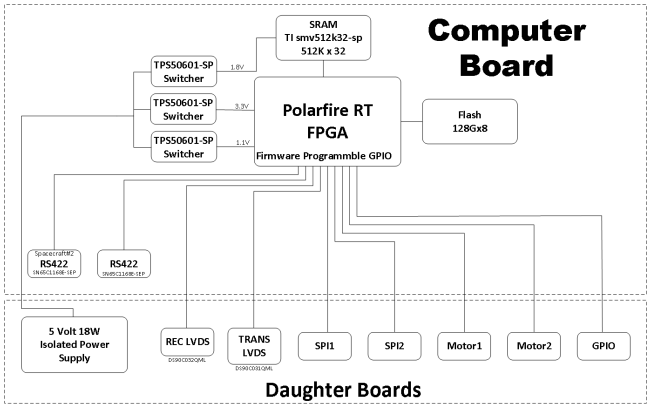
Patent Pending

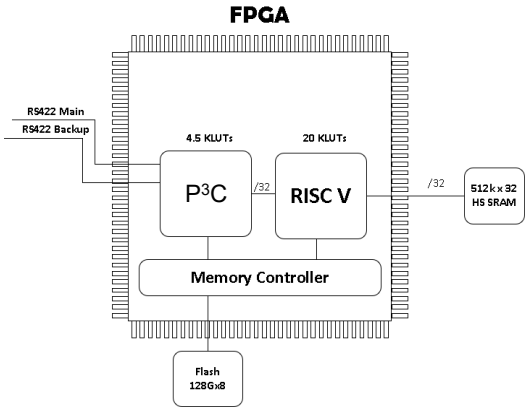
nextage-llc.com
support@nextage-llc.com

Specifications

The NMC-1 Space Computer is designed using Microchip's latest radiation tolerant FPGA. Following in the footsteps of their very popular and reliable RTG4™ FPGA. The RTG4™ has substantial space heritage. The RT PolarFire® reduces power requirements, increases processing speed and greatly increases the number of LUTs and memory.

RT PolarFire® is SEU immune, greatly increasing its reliability in space environments and reducing the need for TMR and other design complications to protect against data corruption and avoid system reboots needed to clear SEU errors.





RT PolarFire®

Performance

- 100KRAD
- SEU Immunity
- Math blocks: 1480
- SRAM: 30Mbits (950,000 32-bit cells)
- Non-Volatile Memory: 56 Kbits
- 481,000 LUTs
- 3.3V GPIO 800 Mbit/s
- 1.8V High-Speed IO 1333 Mbit/s
- High-Speed SERDES 10.3125Ghz
- Integrated dual PCIe for up to ×4 Gen2 endpoint

RISC-V®

- 32-bit RISC V Soft-core Processor
- Uses less than 20 KLUTs
- Floating Point Coprocessor available
- Microchip Soft Console C/C++ Tool-chain

Power

- Input Voltage: 6 - 35 Vdc
- Typical Power Consumption: 1 - 3 W (dependent upon FPGA usage)
- 1V, 3.3V and 1.8V Dedicated Switching Power Regulators on CPU PCB