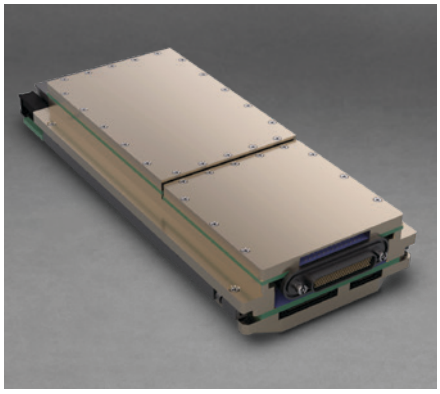
RADIATION TOLERANT, LOW POWER SIERRA GPU SINGLE BOARD COMPUTER



High performance data processing capabilities are essential to spacecraft autonomous operations, image processing, data fusion, or AI/ML applications.

The Sierra GPU SBC integrates a 75G Flop GPU SoC with a radiation tolerant FPGA on a single extended 3U VPX board. The GPU SoC provides four x86 CPUs, GPU cores, and peripheral I/O such as PCIe and Ethernet. The GPU/FPGA pair, coupled with FMC+ I/O capability, provides a very flexible high performance Heterogeneous Compute Platform (HPC) for computational intensive applications, all in a low SWaP package.

The Sierra GPU SBC can be integrated with other Moog VPX Plug-In cards such as other SBCs, FPGA based I/O cards, Non-Volatile Memory cards, and Power Supply cards to create state of the art high performance data processing systems for the space market.

FEATURES

- AMD Steppe Eagle GPU SoC
  - 75 GFLOPs, 1.2GHz
  - 4G Byte DDR-3 w/ SECDED
  - 32G Bytes NAND Flash
  - 512Mb NOR Flash
  - Linux Software and BSP Support
- RTG4 Rad Tolerant FPGA
  - 2 Banks of 2G Byte DDR-3 w/EDAC or 2G Byte DDR-3 w/RS Encoding
  - Reprogrammable
- High Speed PCIe interface between FPGA and GPU
- FMC+ for custom front panel I/O
- Standard Interfaces
  - 1000BaseT Ethernet
  - RS-422

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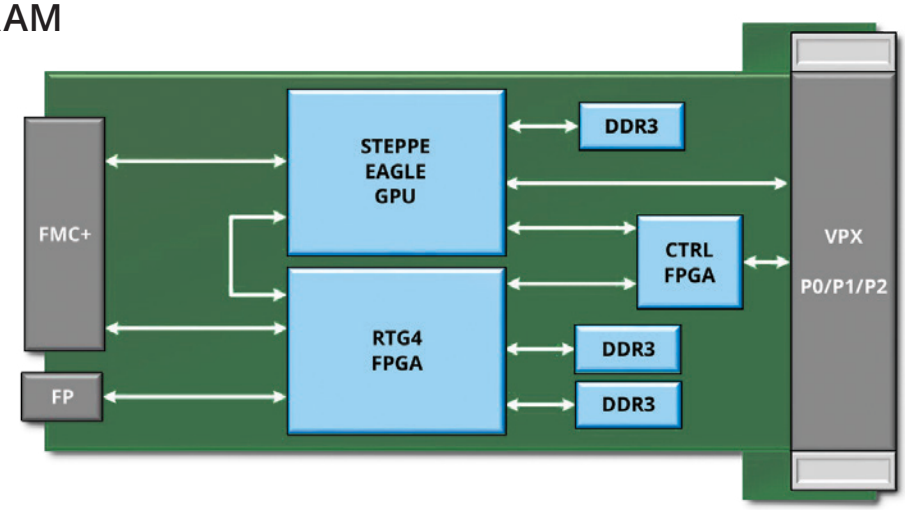
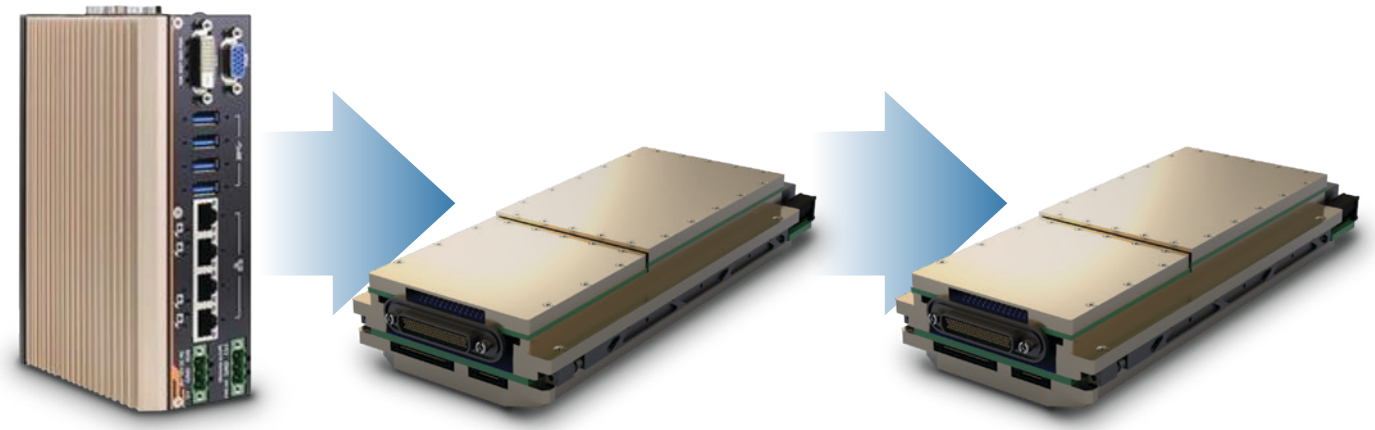
RADIATION TOLERANT, SIERRA GPU SBC

BLOCK DIAGRAM



SOFTWARE DEVELOPMENT PATH



Low Cost Software Development Unit

Engineering Model

Flight Unit

SWaP AND ENVIRONMENTAL

- Size: Extended (220mm) 3U, 1.6" Pitch
- Weight: 1295g
- Power: 17.5W
- Nominal Operating Temp: -10C to +45C
- Vibration: GEVS

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