Lynx – High Performance Single Board Computer

Lynx is a high performance general purpose single board computer, designed for critical tasks in a harsh radiation environment, with flexible communication and interface capabilities. The processing capability is provided by the quad core ARM processor delivering more than 30,000 DMIPS / 32,000 CoreMarks. The IO capability is implemented in a reprogrammable FPGA allowing late tailoring to a specific programme need without hardware redesign.

- Artificial Intelligence
- Visual Navigation & Autonomous Control
- Software Defined Radio
- Payload Computer
- Image Processing and Compression
- Manned space, LEO, GEO & Deep space

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**Massive processing performance**
- ARM processor with 4 x CPU cores
  - >30,000 DMIPS
  - >32,000 CoreMarks
- 32 KiB L1 instruction/data cache, 2 MiB L2 cache
- 4/8 GiByte DDR4 processing memory with ECC
- 4/8/16 GiByte Flash memory with ECC
- 512 MiByte DDR2 FPGA memory with ECC

**Key Features**
- Standard Form Factor: 6U SpaceVPX Serial (optional)
- Flexibility
  - Mezzanine board (optional)
  - FPGA with standard IPs & framework for additions
- Mature Software Development Environment
- Qualified 2020; Flight proven in orbit 2021
- Designed for 15 years in GEO orbit

**Front Interfaces**
- 3 x SpaceWire
- 2 x UART
- 2 x MIL-STD-1553B (optional)
- 2 x CAN
- 16 x GPIO
- Test & debug
  - Gigabit Ethernet
  - UART

**Backplane Interfaces**
- 8 x HSSL (SERDES Rx/Tx) @ 3 Gbps
- PCI express
  - 4 Lanes End Point
  - 1 Lane Root Complex
- 10 x SpaceWire
- 2 x I2C
- 6 x SPI
- 2 x UART
- 32 x GPIO
- Lynx cross-strapping
- Power supply

**Budgets**
- Form factor: 6U-160, 5 HP
  - 234 x 160 x 25.4 mm
- Power consumption: 10-15 W
- Mass: 1 kg incl. frame
- In-orbit life time: 15 years

**Rear Interfaces**
- 2 x UART
- 2 x MIL-STD-1553B (optional)
- 2 x CAN
- 16 x GPIO
- Test & debug
  - Gigabit Ethernet
  - UART

**Software**
- Front-panel interface configuration
- Backplane connector
  - VPX ANSI VITA 46
  - VPX ANSI VITA 63.0
  - Compact PCI
  - Compact PCI serial
- Custom module frame
- Mezzanine board

**Options**
- Front-panel interface configuration
- Backplane connector
  - VPX ANSI VITA 46
  - VPX ANSI VITA 63.0
  - Compact PCI
  - Compact PCI serial
- Custom module frame
- Mezzanine board

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