DSP221

NXP QorIQ T2081 based Rugged 6U VXS Single Board Computer

The DSP221 is the latest NXP QorIQ™-based product to join Abaco's family of rugged 6U VME and VXS single board computers.

The DSP221 supports the high performance T2081 processor which brings the benefits of AltiVec™ co-processing to a 4-core platform, each of which is dual threaded, offering eight virtual cores, consuming up to 25W.

Incremental system resource expansion is provided by two mezzanine sites, both of which are XMC/PMC capable

Fully rugged by design
Designed specifically for harsh environments, the DSP221 is ideal for a wide range of applications where high reliability is a must,

including critical industrial, aerospace and defense applications.

Available in air and conduction-cooled ruggedization levels, the DSP221 offers a straightforward upgrade path for both new customers and existing DSP220 users looking to modernize existing systems

The DSP221 has operating system support planned for VxWorks™ 7

FEATURES:

- 6U VXS single board computer
- Power Architecture™ AMP (advanced multiprocessing) CPU
- T2081 (eight e6500 virtual cores)
- 8GB DDR3L with ECC (up to 8 GB)
- 512 MB NOR Flash
- 32 GB NAND Flash solid-state drive
- 512 kB non-volatile nvSRAM
- 2x independent PMC/XMC sites
- 2x 10/100/1000BASE-T Ethernet
- 2x RS232 ports
- 4x single-ended GPIO (5V tolerant)
- Baseboard Management Module (BMM)

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Specifications

Integrated Host Processor
- Support for T2081 NXP QorIQ AMP CPUs
- T2081 up to 1.8 GHz
  - Eight e6500 virtual cores (4 cores, dual threaded and with AltiVec co-processing)
  - Double-precision floating-point support
  - 2 MB banked L2 cache, 512MB platform cache

DDR3 SDRAM
- 8 GB DDR3 SDRAM with ECC Single Bank

Flash Memory
- 512MB NOR Flash memory
- Protected BANC Boot Area
- 32 GB NAND Flash SATA Solid State Drive

Backplane
- Fully VME64 Host/slave capable

Mezzanine Sites
- Two XMC/PMC sites with x4 PCI Express (Gen2) or 64-bit PCI-X at up to 133 MHz

Gigabit Ethernet
- 2x 10/100/1000BASE-T Ethernet

Rear I/O
- 2x RS-232 UART ports
- 4x 5V-tolerant GPIO, each capable of generating an interrupt.

NVRAM / Real-Time Clock / Watchdog / ETI
- 512 kB non-volatile nvSRAM
- Real-time clock with 1 second resolution
- Avionics watchdog timer with windowed operation and independent
- Elapsed Time Indicator (records power cycles and on-time)
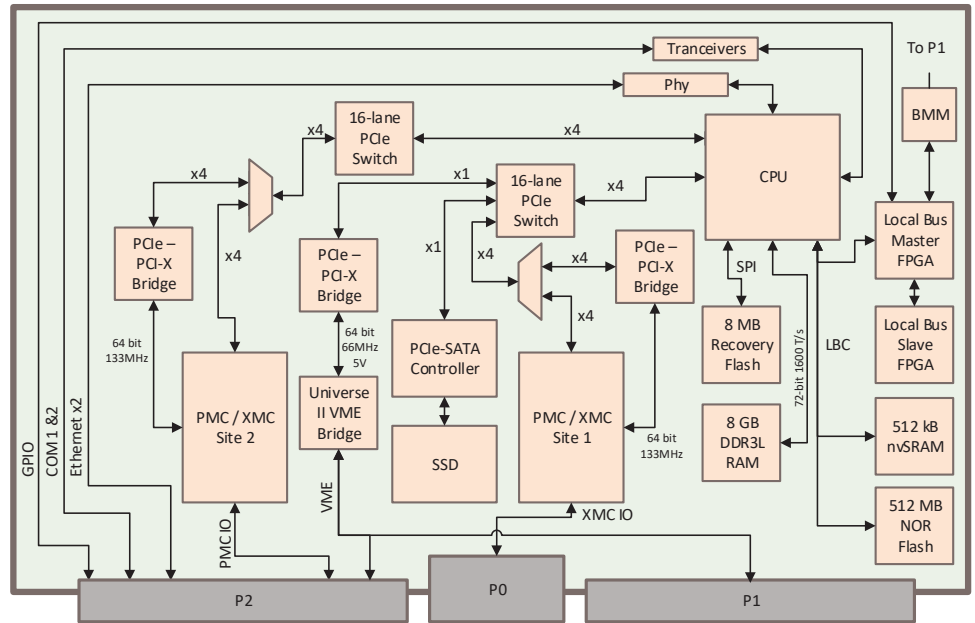
Transition Modules
- RTM part number DSP220RTM

Temperature Sensors
- On-board ambient temperature and processor core temperature sensors

Power Requirements
- Operates from single +5V supply
- +5V stand-by optional, for RTC backup +/-12V only if required by mezzanine module

Block Diagram