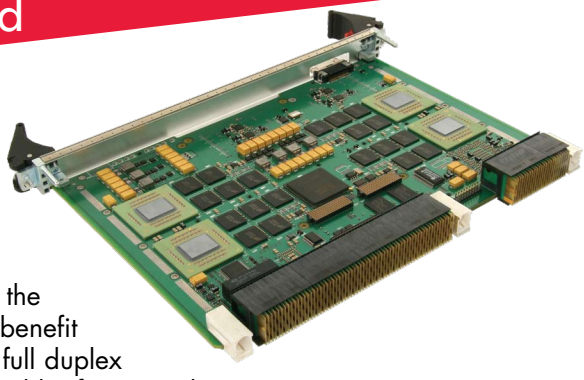
Fact Sheet

CHAMP-AV6

Quad/Octal Freescale Power Architecture™ MPC8640/8641 VPX Card



The CHAMP-AV6 quad Freescale Power Architecture Processor board pairs FreeScale's latest AltiVec™-enabled processor with the serial switched fabric capabilities native to the new military aerospace COTS standard, VITA 46. The VITA 46 standard was collaboratively developed by COTS industry leaders and prime military integrators to marry high-speed serial interconnect with a form-factor and feature set specifically suited to military/ aerospace applications.

Multi-processor systems based on the CHAMP-AV6 will benefit from the 10GB/s full duplex bandwidth provided by four Serial RapidIO® (SRIO) ports, approximately 10x faster than the best VME/StarFabric implementation.

The CHAMP-AV6 is equipped with four Power Architecture processors MPC8641/8641D devices providing either 4 or 8 processing cores on the board. Streaming data applications will benefit from the 8GB/s memory bandwidth and up to 4GB of DDR2 SDRAM. A PCI Express® (PCIe) XMC site allows the addition of new generation mezzanine modules with 20-pairs of 3.125GB/s I/O to the backplane enabling the capture of sensor data for radar, signal intelligence and electro-optical systems. The AV6 features an on-board Gigabit Ethernet (GbE) switch permitting integration with command and control networks.

The CHAMP-AV6 is supported with a VxWorks® Board Support Package (BSP), high performance inter-processor communication libraries, DSP function libraries and the Continuum Insights multi-processor development and debug tools.

Learn More
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CHAMP-AV6

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BSP AND FIRMWARE

Features

- Four FreeScale Power Architecture MPC8641/8641D CPUs at 1.0GHz
- On-board SRIO interconnect
- Four SRIO ports to the VITA 46 core fabric
- Option for PCIe port to the VITA 46 core fabric
- Up to 1GB DDR2 SDRAM with ECC per processor
- 256MB Flash with write protection
- Protected backup Flash
- 128KB NVRAM
- GbE with on-board switch
  - Each processor has GbE connection to on-board GbE switch
  - Two ports from GbE switch routed to backplane
- One XMC site with x8 PCIe interface
- Additional x8 PCIe interface to the backplane
- Four EIA-232 serial ports
- Two EIA-422 serial ports
- Multi-board synchronous time-stamping feature
- Real-time Clock
- Temperature sensors
- Sixteen discrete LVTTL I/O signals
- VxWorks BSP
- Continuum Insights multi-processor development tools
- Continuum Vector DSP function library
- VITA 48 1" pitch format
- Range of air- and conduction-cooled ruggedization levels available

Figure 1: CHAMP-AV6 Block Diagram