

DSP220

Quad Freescale MPC8641D VXS Multiprocessor

Features

- Four Freescale MPC8641D processors
- Eight banks DDR2 SDRAM, up to 8 GBytes total
- Serial RapidIO fabric to all nodes
- Gigabit Ethernet to all nodes
- Eight serial ports
- One XMC site with sRIO support
- VME 2eSST interface
- Node management controller
- Rugged 6U VITA 41.2 form factor for air, spray and conduction cooled systems

Software

- AXIS Advanced Multiprocessor Integrated Software
- GE Fanuc Built-In-Test (BIT) for PowerPC®
- BSPs for VxWorks® and LynxOS®

DSP220 sets the standard for deployed COTS multiprocessors aimed at rugged defense and aerospace applications either as a standalone card or as part of an integrated AXIS™ MultiComputer.

DSP220 boasts four or eight e600 cores with AltiVec SIMD engines in a COTS, 6U, VITA 41.2 form factor for air, spray and conduction cooled systems.

Each 8641D node has two banks of 256 or 512 MByte, or 1 GByte DDR2 SDRAM for maximum performance.

System densities of 4 to 144 processor cores per enclosure are possible with high-speed fabric interconnect to all nodes over Serial RapidIO (sRIO).

VME 2eSST and Gigabit Ethernet provide concurrent data and management planes.

A wide range of system architectures is possible by pairing multiple DSP220s with the CRX800, our VITA 41.2 23-port sRIO switch card.

Layered software support for industry leading COTS real-time operating systems is standard. BSPs for VxWorks and LynxOS are available along with GE Fanuc's Built-In-Test (BIT) for PowerPC.

AXIS Advanced Multiprocessor Integrated Software provides a suite of fully integrated modules for system development, visualization and deployment.

AXISView provides an intuitive GUI for system visualization and productivity tools that greatly reduce development time and time to market.

AXISLib VSIPL and RSPL optimized math and function libraries provide a wide range of optimized functions for the PowerPC AltiVec platform.

AXISFlow supports high throughput, low latency, inter processor communication (IPC) across all system nodes to maximize system performance, and increase flexibility in the design of the most demanding signal and data processing applications.

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Specifications

Form factor

- 6U VITA 41.2

Processors

- Four MPC8641 single or dual core
Clocked at 1 GHz

Memory

- Eight banks DDR2 SDRAM
 - 256 MBytes per bank (default)
 - 512 MBytes per bank (optional)
 - 1 GByte per bank (future)
- Two banks of 256 MBytes FLASH

Fabric interface

- Serial RapidIO switch
 - Two x4 ports to P0
 - One x4 port to each 8641D
 - Two x4 ports to XMC Pn5 connector
 - Up to 3.125 GHz operation per lane

XMC site

- 2 x4 sRIO to Pn5 per VITA 42.2
- 16 diff pairs from Pn4 and
- 16 to 31 single ended to P2

Network

- Gigabit Ethernet switch
 - Two ports to each 8641D
 - Two ports to P2 connector

Node management controller

- Inter-node and inter-board
 - Time stamp, synchronization
 - Mail boxes, semaphores

Serial

- Eight ports to P2 connector
 - Four RS232
 - Four RS232 or RS422

Bus Interface

- VME 2eSST

Ruggedization

- Levels 1 to 6

Software

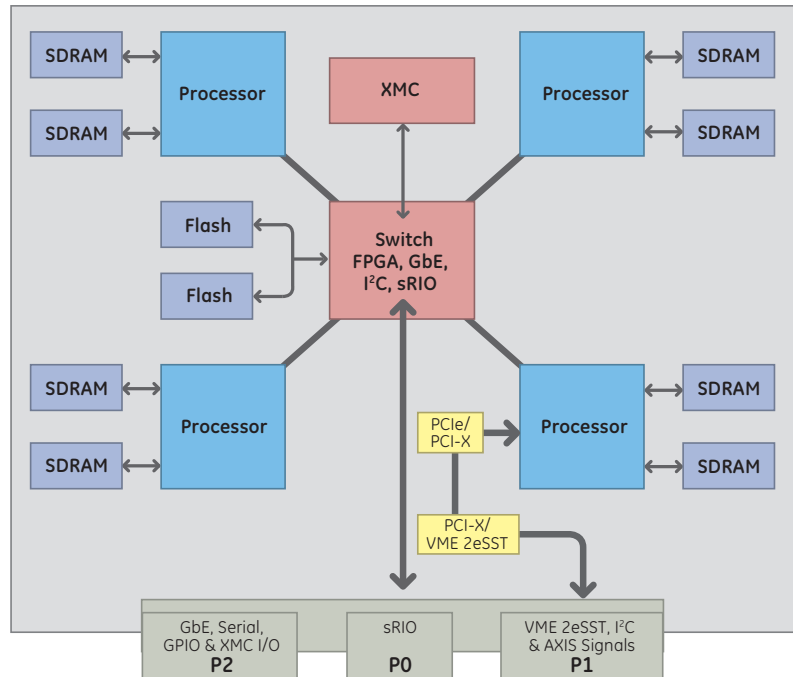
- GE Fanuc Built-in-Test (BIT)
- BSPs for LynxOS and VxWorks
- AXIS Advanced Multiprocessor Integrated Software

AXIS Multicomputer

Open Architecture, COTS Multiprocessor Solutions

Customer Application
AXIS Advanced Multiprocessor Integrated Software
Universal Interface Layer (UIL)
Board Support Package (BSP)
Built-in-Test (Configurable POST)
I/O, SBCs, Multiprocessors, Fabric Switches

Block Diagram



Ordering Information

DSP220-1012z*

6U VITA 41.2 Quad 8641 PowerPC Multiprocessor with Serial RapidIO and VME2eSST support.
Level 1 air-cooled build with one VITA 42.2 compliant XMC site.

* Please contact sales for board support packages available for VxWorks and LynxOS real-time operating systems.

About GE Fanuc Intelligent Platforms

GE Fanuc Intelligent Platforms is a leading global provider of embedded computing solutions for a wide range of industries and applications. Our comprehensive product offering includes many types of I/O, single board computers, high performance signal processors, fully integrated, rugged systems including flat panel displays, plus high speed networking and communications products. The company is headquartered in the U.S. and has design, manufacturing and support offices throughout the world. Whether you're looking for one of our standard products or a fully custom solution, GE Fanuc Intelligent Platforms has the breadth, experience and 24/7 support to deliver what you need. For more information, visit www.gefanuc.com.

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Additional Resources

For more information, please visit the GE Fanuc Intelligent Platforms web site at:

www.gefanuc.com



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