

DSP230

Quad Freescale MPC8641D Dual Fabric VPX Multiprocessor

Features

- Four Freescale MPC8641D processors
- Eight banks DDR2 SDRAM, up to 8 Gbytes total
- Tundra serial RapidIO fabric to all nodes and P1
- PCIe to all nodes, XMC site and P2
- Gigabit Ethernet to all nodes
- Eight serial ports
- One XMC site with PCIe support
- Node management controller
- Rugged 6U VITA 46 form factor for air and conduction cooled systems

Software

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

The DSP230 sets the standard for deployed COTS multiprocessors aimed at rugged defense and aerospace applications either as a stand alone card or as part of an integrated AXIS™ MultiComputer.

The DSP230 boasts four or eight e600 cores with AltiVec SIMD engines in a COTS, 6U, VITA 46 form factor for air and conduction cooled systems.

Each 8641D node has two banks of 256 or 512 Mbytes 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 Tundra's serial RapidIO (sRIO).

The dual fabric architecture supports concurrent data flow to all nodes over sRIO and PCIe for maximum bandwidth and Gigabit Ethernet for development and system management.

A wide range of system architectures is possible by combining multiple DSP230s with our SBC610 VITA 46 8641D single board computer (SBC) and other members of our 6U VPX multiprocessor family.

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 46 or VITA 48/REDI

Processors

- Four MPC8641 single or dual core
Clocked at 1 GHz

Memory

- Eight banks DDR2 SDRAM
 - 512 Mbytes per bank (standard)
 - 1 Gbyte per bank (future)
- Two banks of 256 Mbytes FLASH

Dual Fabric Architecture

- Tundra serial RapidIO switch
 - Four x4 ports to P1
 - One x4 port to each 8641D
 - Up to 3.125 GHz operation per lane
- PCIe switch
 - 1 x8 port to each 8641D node
 - 1 x8 port to XMC site
 - 1 x8 or 2 x4 ports to P2

Network

- Gigabit Ethernet switch
 - One port to each 8641D
 - Two ports to the backplane

Node management controller

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

Serial

- Eight ports to the backplane
 - Four RS232
 - Four RS232 or RS422

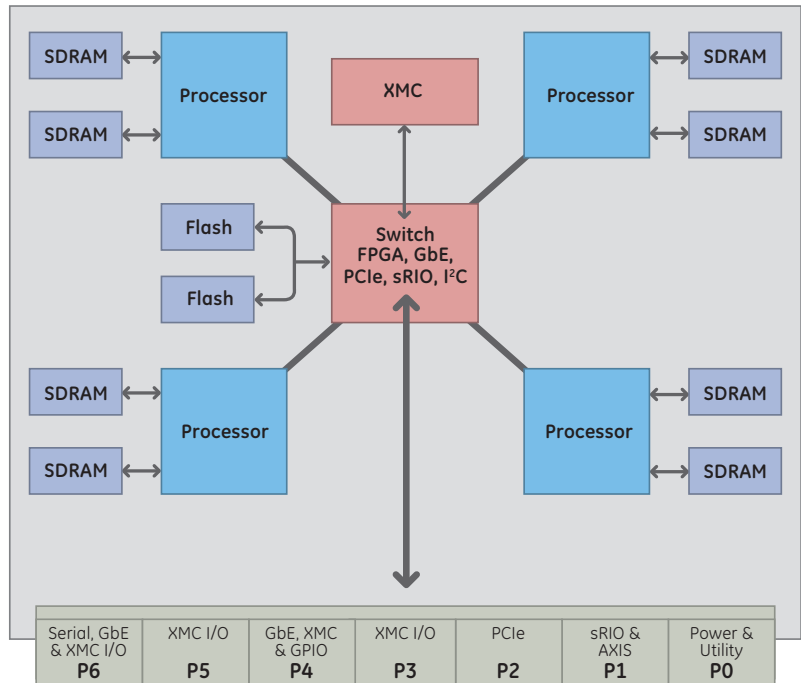
Ruggedization

- Levels 1 to 5

Software

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

Block Diagram



Ordering Information

DSP230-1054Z*: 6U VITA 46 Quad 8641 PowerPC multiprocessor with dual fabric architecture.
Level 1 air cooled build with one XMC site.

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

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

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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Enabled Hardware