

AXIS Overview

AXIS Advanced Multiprocessor Integrated Software

Features

Multiprocessor Application

- AXIS's integrated modular architecture provides libraries and GUI tools to greatly accelerate multi-core and multiprocessor application development.

Advanced Multiprocessor Integrated Software

- Interprocessor Communications
AXIS offers seamless scalable processing elements, high throughput, low latency communications between tasks, processors, boards and systems. It is processor and RTOS independent.
- Multiprocessor Productivity Tools
Visualization and automation tools maximize user efficiency, while monitoring and tracking tools optimize system performance.
- Optimized High Performance DSP Libraries
The AXIS suite includes the VSIPL Industry Standard compatible RSPL Signal and Vector processing library.

Universal Interface Layer

- AXIS provides a hardware and operating system abstraction layer, with a common interface across GE Embedded Systems hardware, and independent of the RTOS.

Real-Time Operating Systems*

- AXIS supports industry standards (VxWorks®, LynxOS®, INTEGRITY, Linux®).
- Board Support Package
The low level hardware abstraction

supports onboard peripherals and enables RTOS features.

- HardwareAXIS hardware supports GE Intelligent Platforms boards. Contact the factory for the latest list.

Overview

AXIS Advanced Multiprocessor Integrated Software from GE Intelligent Platforms accelerates the development and production deployment of the most demanding signal processing applications. Developed for multiprocessors systems, AXIS provides:

- **Fully Integrated Software Modules**
AXIS shortens development times, reducing project costs and accelerating time to market. The modular architecture puts the control in the engineer's hands.
- **Performance**
The software environment offers high throughput, low latency, reconfigurable communications able to support the most demanding of data intensive applications. Optimized libraries deliver the maximum performance for the specific application.
- **Scalability**
The AXIS environment offers seamless migration from development to production deployment. Engineers can reconfigure or scale the system depending on the appli-

cation demands, adding or subtracting processing elements as needed.

- **Portability**

AXIS is processor and RTOS independent, supporting industry standards and providing future flexibility and peace of mind. The software environment supports interoperability between GE Embedded Systems products today and in the future, with seamless integration between the single board computer (SBC), signal processing and sensor I/O.

- **Simplicity**

The integrated environment ensures ease-of-use while hiding the complexities of the underlying hardware architecture. The system visualization increases productivity and performance, while positionless communications provide consistency between tasks, processors, boards and systems.



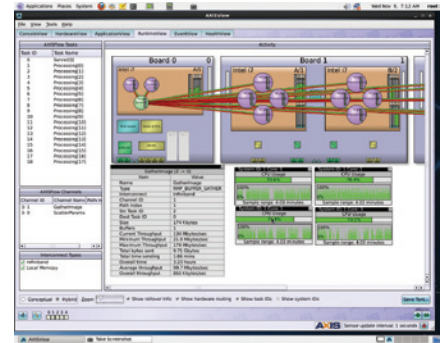
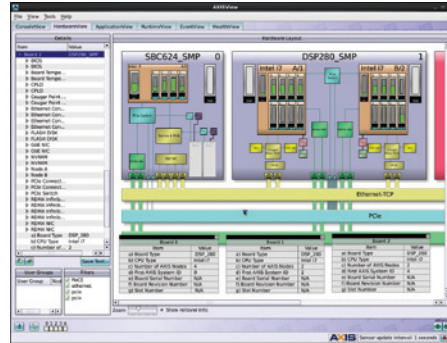
AXIS Overview - AXIS Advanced Multiprocessor Integrated Software

AXIS Multicomputer

Open Architecture, COTS Multiprocessor Solutions

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| 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 |

Sample Screenshots of HardwareView and ApplicationView Tools



AXIS Advanced Multiprocessor Integrated Software provides all the tools a developer needs to maximize performance, increase productivity and reduce time-to-solution under one integrated framework. All software modules can be used independently or in conjunction with each other.

The AXIS Environment

AXISFlow - Interprocessor Communications

Provides abstraction of data movement from hardware and operating system

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|----------------------|--|
| DMA Support | High sustained data throughput with minimal processor overhead. Allows for concurrent data movement and processing, maximizing application performance |
| No-copy Transfers | Pointer passing for fast on-processor messaging |
| Data Manipulation | Data striding, scatter/gather and multicast channels supported. Easily integrates data reorganization into the application |
| Positionless Methods | Application is agnostic to inter/intra board transfers and underlying transport mechanisms |
| Seamless Integration | Supports GE single board computers, multiprocessor DSP boards and I/O modules |

AXISView - Multiprocessor Productivity Tools

Integrates system development and debug environment

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|-----------------|---|
| ConsoleView | Provides a tool for managing multiple consoles for multiple processors. Allows common commands to be targeted to sub-groups of the multiple processors |
| HardwareView | Automatically determines multiprocessor configuration, and displays graphical view |
| ApplicationView | GUI allows developer to build pictorial representation of application, route interprocessor communication channels and auto-generate routing tables. Automatically generates application launch code. |
| RuntimeView | Graphical visualization of processor load and interprocessor bandwidth utilization |
| EventView | Synchronized, system wide visualization of operating system events for real-time tuning of multiprocessor applications |

AXISLib - Optimized High Performance DSP Libraries

Provides maximum math performance with choice of API

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|---------------------|--|
| Comprehensive | Hundreds of math, signal and vector processing algorithms. Minimal overhead, high sustained processing rates. |
| Functionality | Minimal overhead, high sustained processing rates |
| Maximum Performance | Optimized for Altivec and PowerPC pipeline |
| VSIPL API | VSIPL library. Core 1.0 implementation with 512 functions. Industry standard API for customers requiring portability |
| RSPL API | GE API for customers requiring maximum performance |

GE Intelligent Platforms Contact Information

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Global regional phone numbers are listed by location on our web site at www.ge-ip.com/contact

www.ge-ip.com/axisdemo

