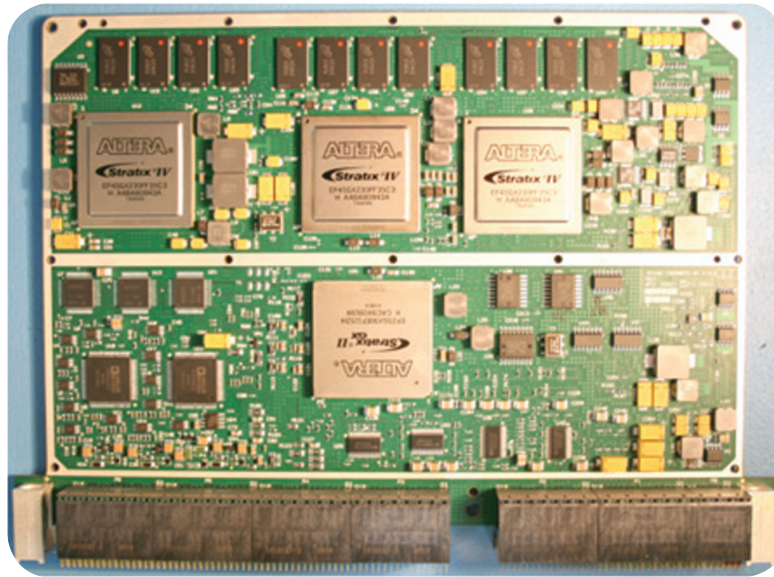


ADAPTABLE ISR MODULE (AIM)

High-performance, real-time requirements



Available with up to four FPGA devices to support a wide array of sensor and video processing applications

FPGA capacity provides a highly flexible processing platform that can be tailored to specific processing requirements

High speed memory interfaces and substantial capacity handle high volumes of data required for video processing applications

DVI, PCI Express, A/D and D/A channels, and high performance digital channels support a wide array of industry standard inputs or outputs

Multiple control interfaces (VME, PCI Express and serial ports) allow for integration into existing systems or allow for expansion with minimal impact to existing hardware designs

The Adaptable ISR Module (AIM), a General Dynamics Mission Systems-developed commercial product, is a high-performance, real-time sensor or video processing module easily adaptable for multiple platform applications.

Product Summary

The AIM can simultaneously process up to 6 independent full HD video streams supporting resolutions up to 1920 x 1200 with full real time video processing functions such as symbology overlays, scaling, rotation, zoom, color space management, Haloing and supports user definable windowing. This high performance real time module has proven performance with less than 35ms latency over -40 to +85 degrees centigrade.

The AIM is a modular design with scalable FPGA, memory and IO resources designed to be easily adaptable to meet varying platform needs.

The design supports either embedded applications where the design functions as a hardware accelerator for real time algorithm processing, as a display processor where video merge and formatting is required, or as a standalone asset that provides processing with embedded processors for applications such as symbology generation, encryption, or compression.

Adaptable ISR Module (AIM)

Technical Specifications

- Module Power (Typical): 40 Watts
- FPGA Resources: Up to 1 million Altera LE
- Durability: 20 years
- MTBF - Tactical Airborne: 40,000 hours
- Operating Temperature: (-40° to +85°C) at card edge
- External Memory: 1.5 GBytes
- Internal Memory: 7 MBytes
- Non-operating Temperature: -55° to +95°C
- Memory Resources: 1.5 GBytes
- Sine Vibration: 10g
- Random Vibration: 11 Grms
- Basic Shock: 30g, 11 ms
- Humidity: 100% RH condensing
- Altitude: 15,240 m (50,000 ft)
- Mass: 1.6 lb
- Three DVI channels
- Eleven A/D channels, 14 bit, 125 mega-samples per second
- Four digital channels up to 6.5 Gbit/sec

Architecture

The AIM design supports a wide range of applications from Intelligence, Surveillance and Reconnaissance processing, video processing, and sensor processing as well as intensive real time algorithm performance. Timing and simulation assessments are easily supported to ensure real time constraints are met for high-performance, low-latency applications.

GENERAL DYNAMICS
Mission Systems

For more information contact • Christopher Haider • Christopher.Haider@gd-ms.com • Tel 952.921.6491 • www.gdmissionsystems.com

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