MitySOM-5CSx System on Module and Development Kit

Minimize your risk.

Lower your costs.

Reduce development time.

Improve application performance.

Differentiate your products.

The MitySOM-5CSx is a highly configurable, small form-factor System-on-Module (SOM) designed for high-throughput applications requiring dual hard-core Cortex-A9 applications processors tightly integrated with FPGA fabric. The MitySOM-5CSx combines the Altera Cyclone V System-on-Chip (SoC), memory subsystems, and an onboard power supplies. The MitySOM-5CSx provides a complete and flexible CPU + FPGA infrastructure for highly integrated embedded systems.

Actual Size.

With a fully integrated System-on-Module built for high-throughput applications:

- Altera Cyclone V System on Chip up to 110K LE
- Combines FPGA fabric and dual ARM Cortex-A9's
- High-bandwidth interconnect
- Integrated with:
  - DDR3 SDRAM
  - NOR Flash
  - Power supplies
  - JTAG
  - Convenient card-edge interface

Features:

Hard Processor System (HPS)

- Dual-core ARM Cortex – A9 MPCore processor
- 4,000 MIPS (up to 800MHz per core)
- NEON coprocessor with double-precision FPU (one per core)
- 32KB/32KB L1 caches per core
- 512KB shared L2 cache

Memory

- 1GB DDR3 CPU/FPGA RAM x32 bits + ECC
- Optional 256MB DDR3 FPGA RAM x8 bits*
- 32MB QPSI NOR FLASH

*Selecting this FPGA direct connect to DDR will reduce the number of I/O options available.

High-Bandwidth System Interfaces:

- Six 3.125Gbps transceivers
- PCIe Hard Core
- Up to 133 I/O, many supporting 740Mbps SerDes
- 2 Gigabit Ethernet interfaces

High-Bandwidth On-Chip Interfaces

- 102Gbps HPS-to-FPGA interface
- 102Gbps FPGA-to-SDRAM Interface

Integrated Power Management

JTAG Connector On-Module

Card-Edge Interface

High Level OS Support

- Linux
- Micrium uC/OS
- Android
- QNX
- Windows CE

Applications:

- Machine Vision
- Scientific Imaging
- Motor Control
- Medical Imaging
- Medical Instrumentation
- Test and Measurement
- Industrial Instrumentation
- Military/Aerospace

Altera Design Services Network™

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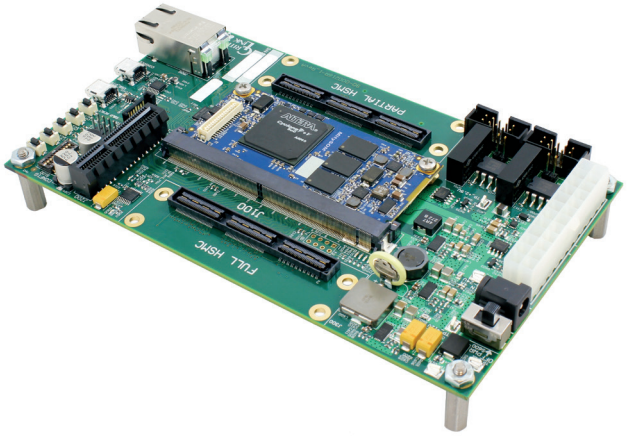
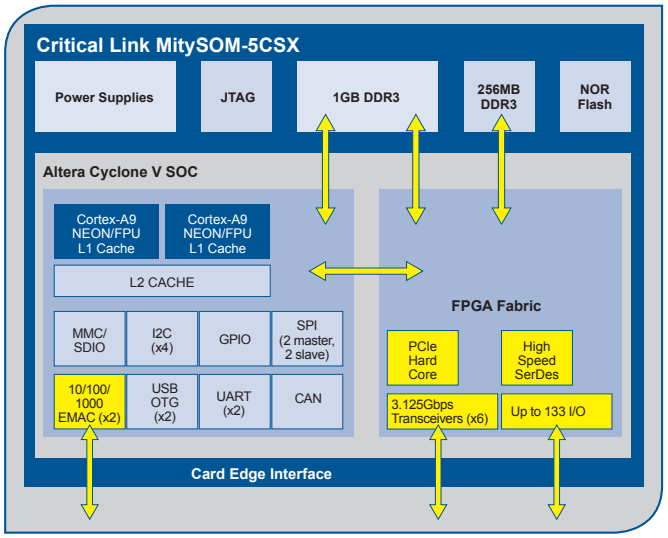
High-Speed Interfaces and Interconnect

Integrating FPGA power with ARM flexibility poses a major challenge: data movement between the two. The MitySOM-5CSx solves this with high-speed AXI bus interconnects between FPGA fabric and the Hard Processor System (HPS). The FPGA also has high-bandwidth access to HPS system memory, while maintaining cache coherency without processor intervention. The MitySOM-5CSx's high-speed interfaces are configurable. By combining the high-speed interconnect with six 3.125Gbps transceivers, a PCIe hard core, 740Mbps SerDes-capable I/O's, and dual gigabit Ethernet interfaces, the system supports high-bandwidth I/O, while efficiently processing data while onboard.





Growth Options

The MitySOM-5CSx Family offers several upgrade options: various speed grades, memory configurations, and operating temperature.

The MitySOM-5CSx DEVELOPMENT KIT

The MitySOM-5CSx Development Kit has all the necessary hardware and software to begin product development immediately, including a base board reference design, Linux development environment, sample applications, and a design guide for customizing the base board for your specific requirements. Developers can also work with Critical Link engineers to handle any customizations. Full technical datasheets are available for the MitySOM-5CSx, and other members of the Critical Link SOM family, at www.CriticalLink.com.

Features

- 4″ x 7″
- 18V to 24V input or standard ATX
- Battery for real-time clock
- 3 user switches
- On/off, warm reset, cold reset switches
- Boot select switches
- Footprint for FPGA serial PROM

Interfaces

- Gigabit Ethernet
- PCIe, 4 lanes
- HSMC interfaces (x2)
- SATA
- USB OTG
- Console serial to USB converter
- Isolated CAN Bus (x2)
- SD card

Dev Kits
$499 & $799

Rev 01/16

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