MitySOM-5CSE (P/N 5CSE-L2-3Y8-RC)

CRITICAL LINK

Minimize your risk.

Lower your costs.

Reduce development time.

Improve application performance.

Differentiate your products.

The MitySOM-5CSE is a highly configurable, small form-factor System-on-Module (SOM) designed for high-throughput applications requiring a hard-core Cortex-A9 applications processor tightly integrated with FPGA fabric. The MitySOM-5CSE combines the Altera Cyclone V System-on-Chip (SoC), memory subsystems, and onboard power supplies. The MitySOM-5CSE provides a complete and flexible CPU + FPGA infrastructure for highly integrated embedded systems.
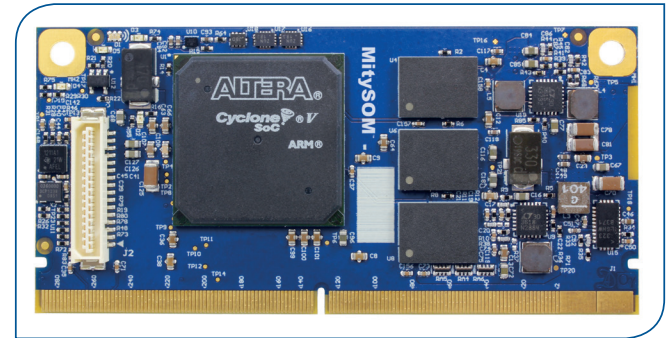
5CSX-H6-42A-RC module pictured here. Actual Size.

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

○ Based on an Altera Cyclone V System on Chip

○ Combines FPGA fabric and ARM Cortex-A9

○ High-bandwidth interconnect

○ Integrated with:
  ○ DDR3 SDRAM
  ○ NOR FLASH
  ○ Power supplies
  ○ JTAG
  ○ Convenient card-edge interface

Features:

Hard Processor System (HPS)

○ Single-core ARM Cortex – A9 MPCore processor, 600MHz
○ NEON coprocessor with double-precision FPU
○ 32KB/32KB L1 caches
○ 512KB shared L2 cache
○ 25K Logic Elements

Memory

○ 512MB DDR3 CPU/FPGA RAM
○ 16MB QPSI NOR FLASH

High-Bandwidth System Interfaces:

○ 133 I/O
○ 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

Growth Options

The MitySOM-5CSE and the MitySOM-5CSX offer several upgrade options: various speed grades, memory configurations, and operating temperature.
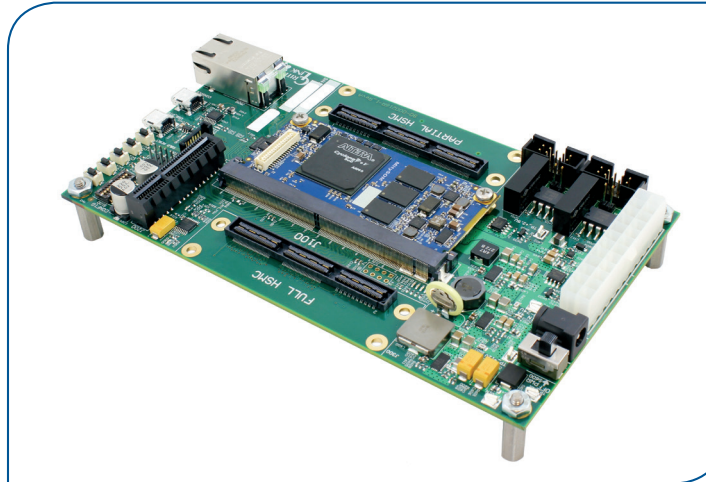
MSRP $199 @ Quantity 100

MitySOM

MitySOM-5CSE Development Kit (P/N 80-000708)

MitySOM®

High-Speed Interfaces and Interconnect

Integrating FPGA power with ARM flexibility poses a major challenge: data movement between the two. The MitySOM-5CSE 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-5CSE's high-speed interfaces are configurable. By combining the high-speed interconnect with 640Mbps SerDes-capable I/O's and dual gigabit Ethernet interfaces, the system supports high-bandwidth I/O, while efficiently processing data onboard.

Development Kit 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
- ○ HSMC interfaces (x2)
- ○ USB OTG
- ○ Console serial to USB converter
- ○ Isolated CAN Bus (x2)
- ○ SD card

The MitySOM-5CSE DEVELOPMENT KIT SOFTWARE

The MitySOM-5CSE development kit comes with all the software to get up and running quickly and easily

- ○ Linux Operating System is pre-loaded onto the SD card and will boot to a Linux prompt automatically upon power-up
- ○ Virtual Machine Image provided on a USB drive; installed development tools include Quartus, Qsys, ARM DS5 (evaluation versions) & GNU Toolchain
- ○ uBoot, Linux kernel, and sample ARM& FPGA source code is pre-loaded
- ○ Sample projects available to be used as a starting point for your application

**MSRP $499
Development Kit
(P/N 80-000708)**

CRITICAL LINK

Altera Design Services Network™

Rev 08/14

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