

## SXoM-SF2

### Ultra-compact System-on-Module

**SXoM M-SF2** is a complete System-on-Module (SoM) in an ultra-compact 55 mm x 30 mm form factor. The board is designed to function as the system core of modular platforms for high-performance DSP applications.

## SXoM-SF2

 Low Power

The core of SXoM-SF2 is a **Microsemi® SmartFusion® 2 M2S050 SoC** (System-on-a-Chip) that combines a flash-based FPGA fabric featuring 56K logic cells with an ARM®-based hard processor system running at 166 MHz.

### Applications

Motion capturing & analysis

Security and surveillance

Traffic monitoring

Medical & scientific imaging

High-end machine vision

Airborne imaging

### Compatible Evaluation Carrier Boards

Carrier board in PCI Express Mini Card module format available from Solectrix

### Key Features

- + Ultra-compact form factor: 55 mm x 30 mm
- + Powered by Microsemi® SmartFusion2® M2S050 SoC
- + Flash-based Microsemi® FPGA fabric
- + ARM-based hard processor system
- + 512 MByte DDR3 SDRAM × 16 bit



# SXoM-SF2

## Ultra-compact System-on-Module

### FPGA Fabric Features

Microsemi® FPGA fabric

56K logic elements

1.314 MByte block memory

72 DSP blocks (18x18)

### CPU Features

ARM Cortex®-M3 processor, 166 MHz clock frequency

207.5 DMIPS (Dhrystone 2.1) at 166 MHz

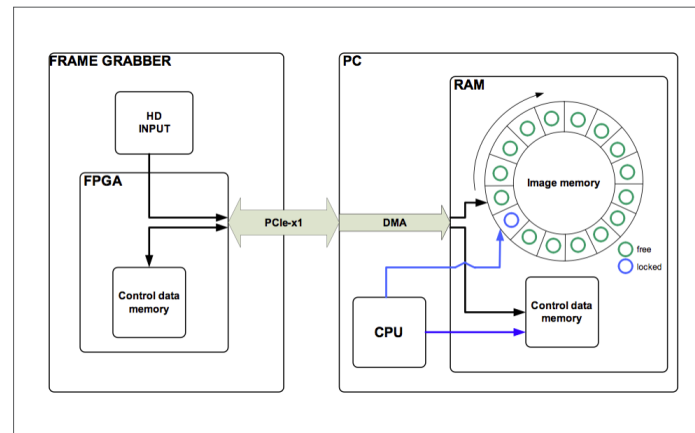
8 KByte instruction cache

64 KByte embedded SRAM

256 KByte of embedded non-volatile Flash memory

## Application Example: 4K Video Grabber PCIe Mini Card Module

This practical example of SXoM M-SF2 in action uses the SoC as the DSP unit on a PCI Express Mini Card module for image processing. The SoC is mounted on an I/O board providing two HD-SDI connectors as inputs for image data, the standard PCIe Mini Card interface to the Mini Card carrier board as well as a USB interface for in-system programming of the FPGA. The SoC processes the incoming image data and makes it available using the PCIe-based streaming server concept developed by Solectrix.



### Features implemented in the SoC

- + 3D/HD-SDI receiver (connectors on carrier board), supported formats:
  - 1280 × 720 pixels, 4:2:2
  - 1920 × 1080 pixels, 4:2:2
- + Metadata and audio extraction
- + High-quality scaling and RAW bypass for image data
- + PCI Express 2.0 x1 interface to host (5 Gbit/s)
  - PCIe-based streaming server for image data

① Product and specifications are subject to change without notice.



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