

Industrial solutions

solectrix
high end electronics solutions



Innovative components
by Solectrix

2022



SXoM

System-on-Module solutions
by Solectrix

The System-on-Module approach

System-on-Modules are the state-of-the-art solution for applications in highly technologized areas such as medical technology, the automotive industry, industrial automation, aerospace and others. Their modular approach allows for a high degree of customization on the application hardware side while offering a wide choice of standardized system cores compliant with the respective SoM format. The need for ultra-compact modules that combine CPU and FPGA led to the launch of the SXoM series, a line of System-on-Module boards by Solectrix.

Solectrix is a member of SGET, the Standardization Group for Embedded Technologies. For more information on the SMARC specification please visit www.sget.org

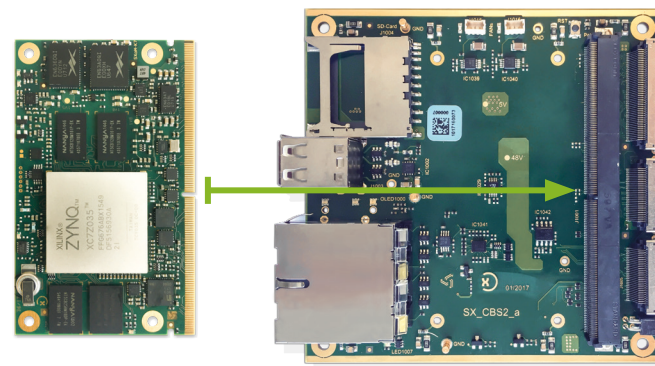


Applications

Motion capturing and analysis
Medical and scientific imaging
Security and surveillance
High-end machine vision
Traffic monitoring

SXoM advantages

- + State-of-the-art technology**
SXoMs are based on the latest technology. Profit from our specialists' research and development know-how!
- + Lower development risk and costs**
SXoMs offer proven and reliable solutions. Building on ready-to-use SXoMs enables you to reduce your development and project costs.
- + Shorter time-to-market**
Our SXoMs provide basic design structures. This allows you to focus on the development of the application-specific parts of your product and to achieve a shorter time-to-market.



SXoM ME-ZU

System-on-Module
compliant with COM Express specification



- + System-on-Module compliant with COM Express specification
- + COM Express Basic form factor: 95 mm × 125 mm
- + COM Express Type 7 connectors
- + Powered by Xilinx Zynq UltraScale+ ZU11/17/19EG MPSoC
- + Gigabit Ethernet and USB 2.0 PHYs
- + FPGA IP cores and implementation support available on request
- + **Accessory options:**
SXoM ME-ZU active cooling solution, Art. No. 500922
Linux board support package (BSP), Art. No. 500926

FPGA Fabric Features

599K – 1,143K logic elements
21.1 – 34.6 Mbit block RAM
1,590 – 2,928 DSP blocks
2 GB DDR4 SDRAM, 64-bit interface up to 2,400 Mb/s

Art. No. 500921
(default model with XCZU11EG-1FFVC1760E)

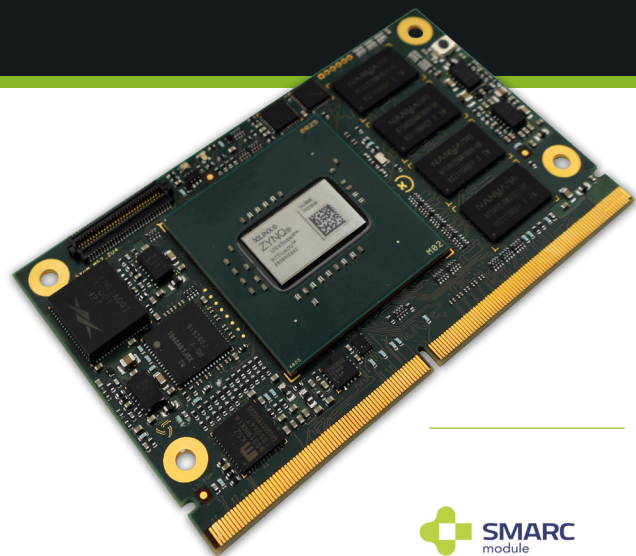
APU (Application Processing Unit): Quad-core ARM Cortex-A53 MPCore, 1.2 GHz clock frequency (speed grade –1)
RPU (Real-Time Processing Unit): Dual-core ARM Cortex-R5, 500 MHz clock frequency (speed grade –1)
GPU (Graphics Processing Unit): ARM Mali-400 MP2, 600 MHz clock frequency (speed grade –1)
2 GB DDR4 SDRAM + 512 MB ECC memory, 72-bit interface up to 2,400 Mb/s
8 GB eMMC
2× 512 Mb QSPI serial NOR Flash



SXoM MS2-ZU

System-on-Module
compliant with SMARC 2.0 specification

NEW



- + System-on-Module compliant with SMARC 2.0 specification by SGET
- + Ultra-compact form factor: 82 mm × 50 mm
- + Powered by Xilinx Zynq UltraScale+ ZU4/5/7 CG/EG MPSoC
- + FPGA IP cores and implementation support available on request
- + Accessory options:
 - SXoM MS2-ZU heat sink, Art. No. 501042
 - Linux board support package (BSP) on request

FPGA Fabric Features

192K – 504K logic elements
4.5 – 11 Mbit block RAM
13.5 – 27 Mbit UltraRAM
728 – 1728 DSP blocks

CPU Features

APU (Application Processing Unit): Dual-core (with CG MPSoC) or quad-core (with EG MPSoC)
ARM Cortex-A53 MPCore, 1.2 GHz clock frequency (speed grade –1)
RPU (Real-Time Processing Unit): Dual-core ARM Cortex-R5, 500 MHz clock frequency (speed grade –1)
GPU (Graphics Processing Unit): ARM Mali-400 MP2, 600 MHz clock frequency (speed grade –1, only with EG MPSoC)
2 GB DDR4 SDRAM (default, 4 GB optional), 64-bit interface up to 2,400 Mb/s
8 GB eMMC
512 Mb QSPI serial NOR Flash

Art. No. 500909
(default model with XCZU4CG-1FBVB900E)

SXoM CBS2

SMARC 2.0 carrier board

The SXoM CBS2 is a universal carrier board for SMARC 2.0 modules. The board provides essential standard interfaces in the form of dual USB and dual Ethernet connectors and an SD card socket. Most of the SMARC connector's signals are led to three separate board-to-board connectors for connection of an application-specific I/O board. As a universal SMARC carrier board, the SXoM CBS2 enables fast software evaluation on your System-on-Module target platform, shortening your development time.



- + Carrier Board for SMARC 2.0 modules
- + Dual Ethernet interface
- + Dual USB interface
- + SD Card socket
- + 4× board-to-board connectors
 - 48V power interface on 4-pin Samtec SQT connector
 - High-speed interface on 60-pin Samtec LSHM connector
 - I/O interface on 100-pin Samtec LSHM connector
 - Additional SMARC 1.1 signals (e.g., from SXoM MS1-C5) on 60-pin Samtec LSHM connector
- + I²C multiplexer Texas Instruments PCA9545A for control of:
 - I²C GPIO expander Maxim MAX7314
 - 9 GPIO lines to 3 on-board RGB LEDs
 - 4 GPIO lines to board-to-board I/O interface
 - 2 GPIO lines to I²C fan controllers
 - 1 GPIO line to I²C temperature sensor
 - 2× I²C fan controller Maxim MAX6650
 - I²C temperature sensor Texas Instruments LM75B
 - I²C EEPROM Atmel AT24C04D
- + Battery socket (CR2032) for real-time clock on SMARC module
- + 2× fan interface on 3-pin Molex PicoBlade connector
- + Board dimensions: 100 mm × 100 mm

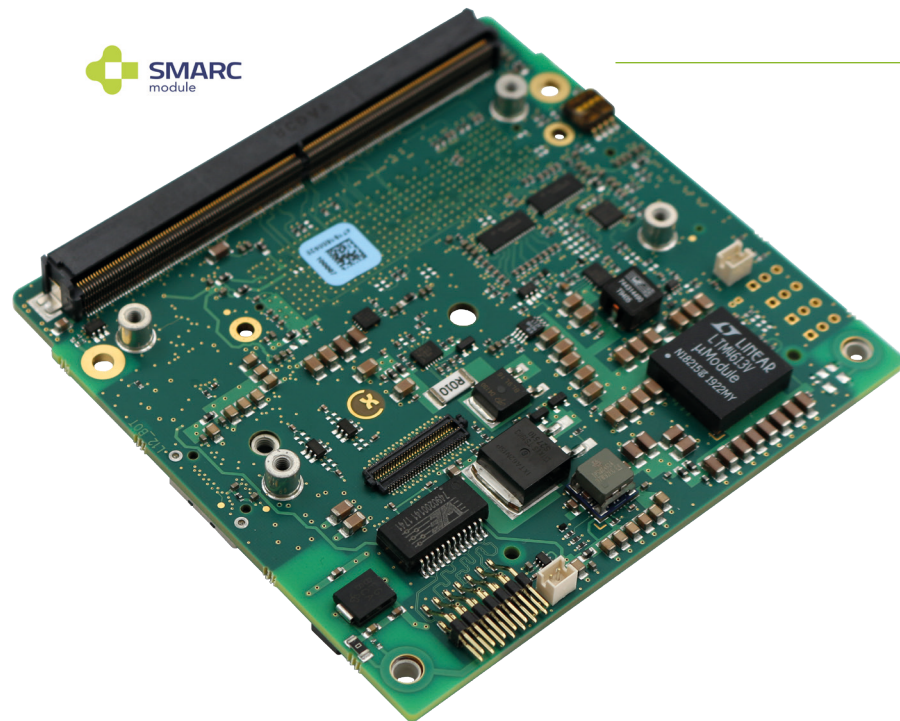
Art. No. 500717



SXoM CBS2 eNUC 1

Embedded NUC SMARC 2.0 carrier board

The SXoM CBS2 eNUC 1 is a universal carrier board for SMARC 2.0 modules. The board provides USB and Gigabit Ethernet interfaces and an M.2 slot (B+M type). An FMC extension slot enables the connection of an application-specific I/O board to take advantage of the flexibility offered by SMARC modules with CPU and FPGA components. The PCB is based on the embedded NUC (eNUC) standard and compatible with the ARINC 836A (miniMRP) form factor. It was designed for use in aviation applications.



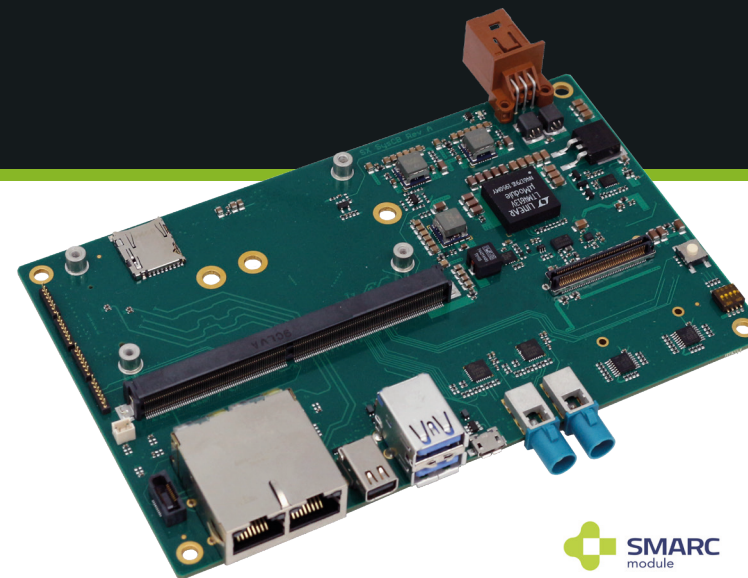
- + Carrier Board for SMARC 2.0 modules
- + FMC extension slot
- + M.2 slot (B+M type) with PCIe x4
- + microSD card slot
- + USB interface
- + Gigabit Ethernet interface
- + Expansion interface for additional high-speed lines from selected SMARC modules (8 Tx, 8 Rx), e.g., the SXoM MS2-ZU
- + 9 - 36 VDC in; 80 W power supply
- + PCB based on embedded NUC (eNUC) standard
- + Compatible with ARINC 836A form factor
- + Operating temperature -10 to +60 °C out of housing, ext. temperature -20 to +85 °C on request
- + Accessories available on request: M.2 SS

Art.No. 500763

SXoM CBS2 ISP

SMARC 2.0 carrier board for imaging applications

NEW



The SXoM CBS2 ISP is a SMARC 2.0 carrier board. It comes with a Mini DisplayPort socket, two DSI/GMSL2 connectors on Maxim MAX9295A serializers and a socket for camera adapters from Solectrix's SX proFRAME 3.0 product line. Thus, it is particularly suited for use as a versatile IO board for a SMARC module that serves as a system core in imaging applications.

Essential standard interfaces are provided in the form of dual USB and dual Ethernet connectors and an USB OTG port. Mass storage can be connected via M.2 and microSD card sockets.

As a universal SMARC carrier board, the SXoM CBS2 ISP enables fast software evaluation on your System-on-Module target platform, shortening your development time.

- + SMARC interface for SMARC 2.0 modules
- + 2x Gigabit Ethernet interface
- + 2x USB 3.0 interface
- + USB 2.0 OTG interface
- + Mini DisplayPort interface
- + SX camera adapter 3.0 interface
 - compatible with proFRAME 3.0 camera adapters
- + 2x DSI/GMSL2 interface
 - with 2x Maxim MAX9295A serializer for connection of matching displays
- + microSD card slot
- + M.2 slot (B+M type) with PCIe x2
- + 23x Multi Function Pins, which can be used as GPIOs or as the following interfaces:
 - 4x UART
 - 3x I²C
 - 1x SPI
- + Board dimensions: 160 mm × 100 mm

Art.No. 501041



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