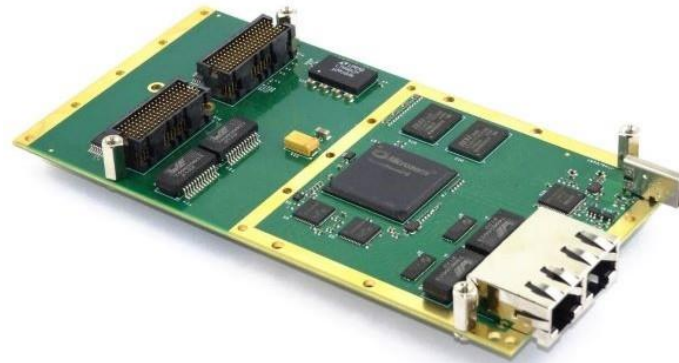


## SoC FPGA XMC Mezzanine for Safety Critical Applications



The XMC602 is a reliable high-speed switched interconnect Mezzanine board featuring the Microsemi SmartFusion<sup>®</sup> 2 System-on-Chip FPGA. Designed to address the high-reliability requirements of safety critical, and mission critical systems in industrial, aviation, military and communications applications.

The Microsemi SmartFusion<sup>®</sup> 2 SoC FPGA has an integrated ARM Cortex-M3 processor, which is very well suited for highly deterministic real-time applications. Due to the fact that the FPGA is flash based, the device offers some clear advantages in comparison to SRAM based FPGAs. The power usage is low and it is immune to single event upsets (SEUs) which makes it ideal for aerospace applications. Furthermore, the XMC602 is equipped with ECC memory which protects against data corruption by automatically detecting and correcting memory errors.

For connectivity to other devices/systems, the XMC602 supports PCIe Gen2 and two Gigabit Ethernet interfaces are available on the rear or front. To protect the XMC602 from outside attacks, Secure Boot is available for the processor and FPGA. Microsemi has designed a unique secure boot protocol for protecting third-party FPGA logic from being cloned, reverse engineered or tampered with.

AcQ provides software utilities and example VHDL code to support application development.

### **Additional interfaces**

JTAG and UART are available on the front over a USB connector. In the standard configuration, UART is also available over the rear using the XMC connector.

### **AFDX<sup>®</sup> / ARINC-664 P7**

The board is ideally suited to host an AFDX<sup>®</sup> end system. Please contact AcQ to discuss how the XMC602 can help meet your AFDX<sup>®</sup> / ARINC-664 P7 needs.

## Features

### General

- XMC board
- Microsemi SmartFusion®2 M2S050T(S), other types on request (e.g. FPGA only)
- 1 bank of DDR3 with ECC:
  - 18-bit wide
  - 512 MBytes
- 4 lane PCIe Gen2 interface through P15 connector
- Two independently configurable Gigabit interfaces:
  - SGMII over rear
  - 10/100/1000 BASE -T over rear or front (user configurable)

### General

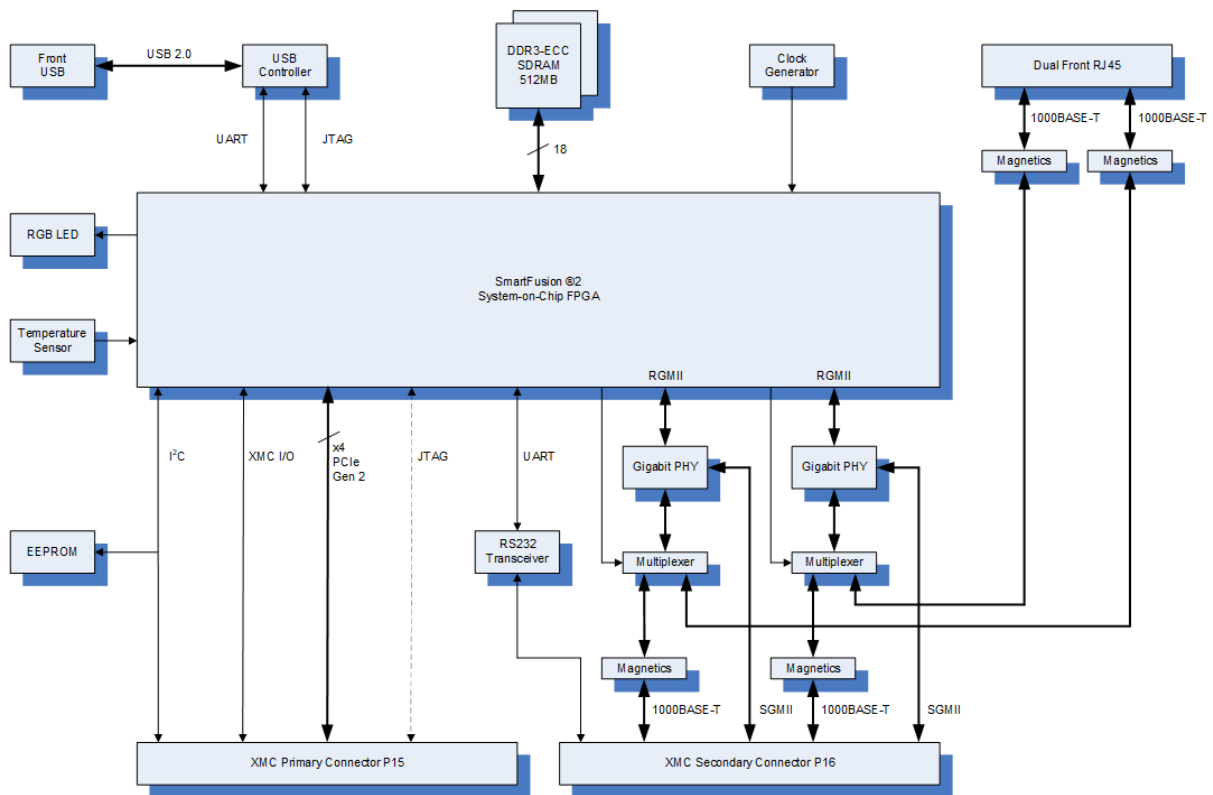
- Front USB connector for UART/JTAG
- RS232 level UART interface over rear
- Optionally: JTAG interface over rear
- On-board temperature monitoring
- Secure Boot for FPGA & Processor
- Air-cooled or conduction cooled
- Operation temperature of components is at least -40..+85° Celsius

### Ordering information

Contact us for details to determine the optimal configuration for your needs.

Configuration options include:

- Air-cooled or conduction cooled,
- Type of SoC FPGA,
- JTAG over rear or front.



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