



Product Brief

Mars MX1

Spartan-6 LX FPGA Module



Overview

The Mars MX1 FPGA module is equipped with fully EtherCAT-compliant dual Fast Ethernet PHYs and fast DDR2 SDRAM. It is thus perfectly suited for compact SoPC systems based on the Xilinx Microblaze soft processor communicating via real-time field buses.

The SO-DIMM form factor allows space-saving hardware designs as well as quick and simple integration of the module into the target application.

The Mars MX1 FPGA module reduces development effort, redesign risk and improves time-to-market.

Benefits

- Simple, low cost and yet rugged assembly thanks to the industry-standard SO-DIMM form factor
- Simple and low-cost integration thanks to the on-board standard interfaces (Ethernet)
- Fast boot times and support for execution-in-place (XiP) thanks to the 4 bit parallel SPI FLASH
- High-bandwidth program and data memory thanks to the high-performance hard-macro memory controller
- Lowest power consumption thanks to the high-efficiency DC/DC converters and support for SUSPEND.
- Many IP cores are available from Xilinx, Enclustra and 3rd parties.

Highlights

- Low-cost, low-power FPGA
- Comes in the handy SO-DIMM form factor
- Available with different FPGA densities
- Available in industrial temperature range
- Supports Fast Ethernet and is fully EtherCAT-compliant

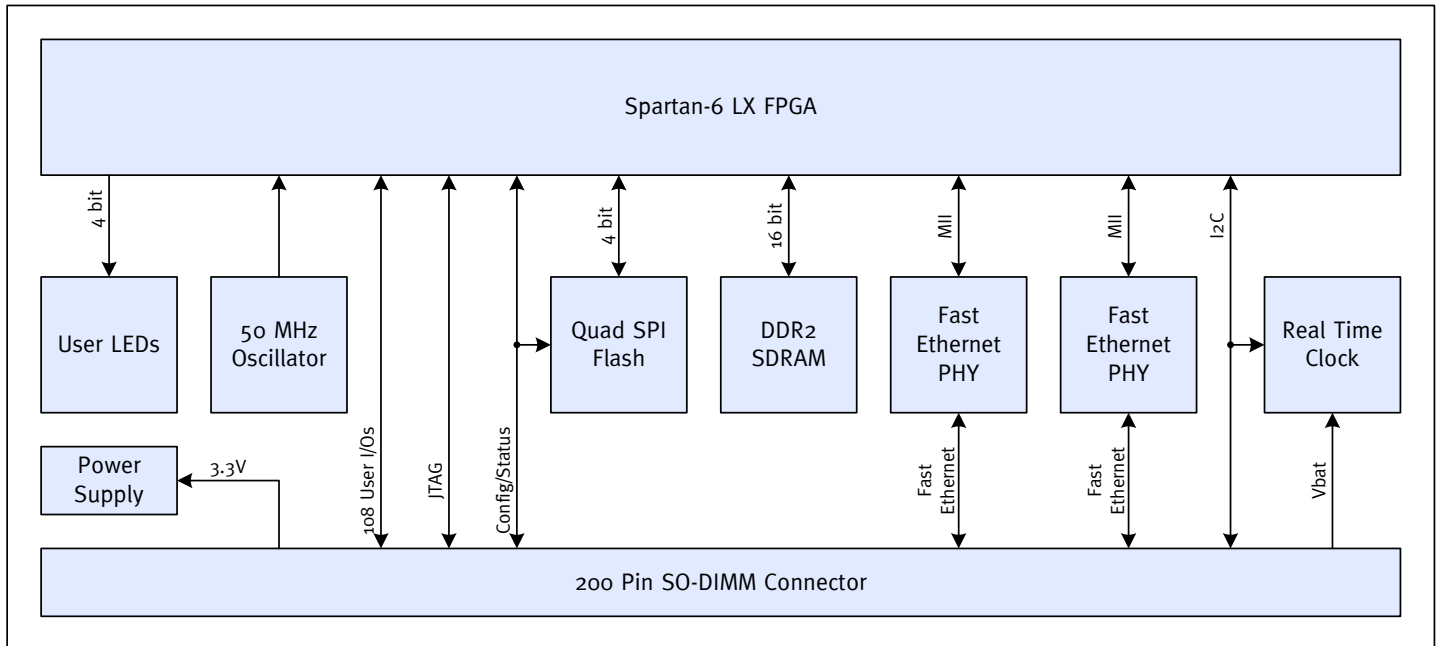
Features

- Xilinx Spartan-6 LX FPGA in the CSG324 package (XC6SLX16 and XC6SLX45 as standard options)
- SO-DIMM form factor (68 x 30 mm, 200 pins)
- 108 user I/Os, single-ended or differential
- Up to 16 MB quad SPI FLASH
- Up to 256 MB DDR2 SDRAM
- Dual Fast Ethernet PHYs (fully EtherCAT-compliant)
- Real Time Clock (± 5 ppm, with temperature sensor)
- Single 3.3V supply voltage



Module Architecture

Mars MX1 FPGA Module



Product Selection Matrix

Product Number	FPGA	Quad SPI FLASH	DDR2 SDRAM	Ethernet PHY	Real Time Clock	Temp. Range
MA-MX1-16-3C	XC6SLX16-3CSG324C	16 MB	128 MB	Dual 100 Mbps	✓	0..+70°C
MA-MX1-16-3I	XC6SLX16-3CSG324I	16 MB	128 MB	Dual 100 Mbps	✓	-40..+85°C
MA-MX1-45-3C	XC6SLX45-3CSG324C	16 MB	128 MB	Dual 100 Mbps	✓	0..+70°C
Custom Configurations	XC6SLX 9 - 1L CSG324 C 16 2 I 25 3 45	✗ 4 MB 8 MB 16 MB	✗ 64 MB 128 MB 256 MB	✗ Single 100 Mbps Dual 100 Mbps	✗ ✓	0..70°C -40..+85°C

Minimum order quantities may apply for custom module configurations. Please contact us.

Target Applications

- Industrial Automation
- Medical Testing
- Communications
- Motion Control
- Embedded Computing
- Digital Signal Processing

Related Products

- Enclustra Mars Starter Base Board
- Enclustra FMC Drive Evaluation Board
- Enclustra Universal Drive Controller IP Core