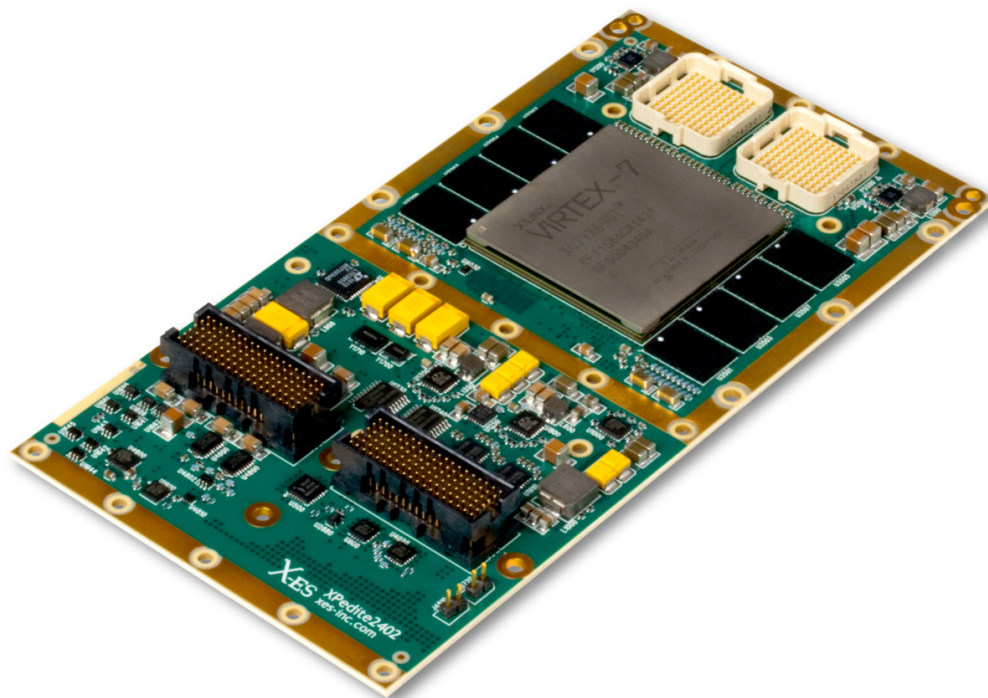# XPedite2402

End of Life

Virtex-7 FPGA-Based Conduction- or Air-Cooled Fiber-Optic I/O XMC Module

Please contact X-ES Sales

- AMD (formerly Xilinx) Virtex-7 FPGA XC7VX690T

- Conduction- or air-cooled XMC module

- Twelve 10.3125 Gb/s optical transceiver links

- Up to 8 GB of DDR3 SDRAM in two channels

- Front panel I/O using MTP/MPO

- Non-volatile FPGA SPI configuration flash

- Linux support

XPedite2402

The XPedite2402 is a high-performance, reconfigurable, conduction- or air-cooled XMC module based on the user-programmable AMD (formerly Xilinx) Virtex-7 family of FPGAs. With dual x8 PCI Express Gen3 interfaces, external memory, and twelve high-speed fiber-optic transceivers, the XPedite2402 is ideal for customizable, high-bandwidth, data-processing applications.

The XPedite2402 incorporates 12 fiber-optic transceivers. Each transceiver is driven directly by an FPGA high-speed serial (HSS) link and gives the developer full control over data protocols such as Aurora, Serial FPDP (sFPDP), Fibre Channel, Infiniband, and Gigabit Ethernet. The fiber-optic transceivers utilize multi-fiber MT connectors, which can easily be connected to the backplane (VITA 66).

The XPedite2402 is designed to be a user-programmable FPGA resource, using the powerful Virtex-7 690T FPGA to support high-performance signal processing, sensor I/O, data recording, and linking systems in a range of protocols.

X-ES' Firmware Development Kit (FDK) includes IP blocks, HDL, Test Benches, Linux drivers, and complete example designs for the XPedite2402.

X-ES
Extreme Engineering Solutions

"Fast, Flexible, Customer-Focused Embedded Solutions"

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FPGA

- AMD (formerly Xilinx) Virtex-7 690T for high-performance logic and DSP applications

Supported FPGAs

- Virtex-7 XC7VX690T
- Support for commercial and industrial temperature as well as -2, -3 speed grades

Memory

- Up to 8 GB of DDR3 SDRAM in two 64-bit channels

P15

- x8 PCI Express Gen3 port

P16

- 18 differential LVDS user I/O
- Two single-ended user I/O
- x8 GTH transceivers
- Can be used as x8 PCI Express Gen3 port

Front Panel I/O

- Dual multi-fiber ribbons with MTP/MPO connectors

Software

- Linux support
- X-ES' Firmware Development Kit (FDK)

Physical Characteristics

- XMC conduction- or air-cooled form factor
- Dimensions: 149 mm x 74 mm

Environmental Requirements

Contact factory for appropriate board configuration based on environmental requirements.

- Supported ruggedization levels (see chart below): 1, 3, 5
- Conformal coating available as an ordering option

Power Requirements

- Power will vary based on configuration and usage. Please consult factory.

Ruggedization Level	Level 1	Level 3	Level 5
Cooling Method	Standard Air-Cooled	Rugged Air-Cooled	Conduction-Cooled
Operating Temperature	0 to +55°C ambient [†]	-40 to +70°C ambient [†]	-40 to +85°C (board rail surface)
Storage Temperature	-40 to +85°C ambient	-55 to +105°C ambient	-55 to +105°C (maximum)
Vibration	0.002 g²/Hz (maximum), 5 to 2000 Hz	0.04 g²/Hz (maximum), 5 to 2000 Hz	0.1 g²/Hz (maximum), 5 to 2000 Hz
Shock	20 g, 11 ms sawtooth	30 g, 11 ms sawtooth	40 g, 11 ms sawtooth
Humidity	Up to 95% non-condensing	Up to 95% non-condensing	Up to 95% non-condensing

[†] Contact factory for airflow rate details.

XPedite2402