

# XPedite2400

Virtex-7 FPGA-Based Conduction- or Air-Cooled Digital Signal Processing XMC Module with 14-bit 2500 MSPS DAC

- ▶ Xilinx Virtex-7 FPGA XC7VX690T
- ▶ Conduction- or air-cooled XMC module
- ▶ 14-bit 2500 MSPS AD9739 DAC
- ▶ Up to 2 GB of DDR3 SDRAM in two channels
- ▶ Front panel I/O
- ▶ Non-volatile FPGA configuration flash
- ▶ 128 MB of user NOR flash
- ▶ Linux support



## XPedite2400

The XPedite2400 is a high-performance, reconfigurable, conduction- or air-cooled XMC module based on the Xilinx Virtex-7 family of FPGAs. With a x8 PCI Express interface, external memory, and flexible, high-density I/O, the XPedite2400 is ideal for customizable, high-bandwidth, data-processing applications.

The XPedite2400 utilizes the AD9739, a high-frequency 14-bit Digital Analog Converter (DAC) that provides 2500 MSPS, for Digital Signal Processing (DSP).

The XPedite2400 provides a high-performance, feature-rich solution capable of interfacing to and processing streaming data from a wide variety of sensors. The X-ES FPGA Development Kit (FDK) is provided to support the requirements of high-performance, real-time, embedded streaming data applications and simplify FPGA development. It includes IP blocks, example FPGA designs, and software to control and communicate with FPGAs. A Linux Software Development Kit (SDK) is available.

# X-ES

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**FPGA**

- Xilinx Virtex-7 for high-performance logic and DSP applications
- Standard FPGA is Xilinx Virtex-7 XC7VX690T

**Additionally Supported FPGAs**

- Xilinx Virtex-7 XC7VX330T
- Xilinx Virtex-7 XC7VX415T
- Xilinx Virtex-7 XC7VX485T
- Support for commercial and industrial temperature as well as -1, -2, -3 speed grades

**Memory**

- Up to 2 GB of DDR3 SDRAM in two 64-bit channels
- 128 MB of user NOR flash

**XMC Interface**

- x8 PCI Express port
- Four GPIO via I<sup>2</sup>C expander

**P14 User I/O**

- 22 FPGA differential/LVDS user I/O

**P16 I/O**

- Four GPIO via I<sup>2</sup>C expander
- Ten GTX transceivers

**Front Panel I/O**

- MMCX for DAC output
- MMCX for external clock and trigger inputs

**Software**

- X-ES FPGA Development Kit (FDK)
- Linux support

**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 (300 LFM)	-40 to +70°C (600 LFM)	-40 to +85°C (board rail surface)
Storage Temperature	-40 to +85°C ambient	-55 to +105°C ambient	-55 to +105°C ambient
Vibration	0.002 g <sup>2</sup> /Hz, 5 to 2000 Hz	0.04 g <sup>2</sup> /Hz (maximum), 5 to 2000 Hz	0.1 g <sup>2</sup> /Hz (maximum), 5 to 2000 Hz
Shock	20 g, 11 ms sawtooth	30 g, 11 ms sawtooth	40 g, 11 ms sawtooth
Humidity	0% to 95% non-condensing	0% to 95% non-condensing	0% to 95% non-condensing

