

XPedite2470

3U VPX Xilinx Virtex-7 FPGA Module with FMC Site

- ▶ Xilinx Virtex-7 FPGA XC7VX690T
- ▶ 3U VPX (VITA 46) module
- ▶ FMC-compliant carrier card (VITA 57) with High Pin Count (HPC) connector
- ▶ Four channels of x32 DDR3 SDRAM, up to 1 GB each
- ▶ 128 MB of user NOR flash
- ▶ LVDS and high-speed GTX transceiver connectivity between FPGA and FMC
- ▶ Eight high-speed GTX lanes to FMC
- ▶ Eleven high-speed GTX lanes to P1 fabric interconnect
- ▶ FPGA Development Kit (FDK)



XPedite2470

The XPedite2470 is a high-performance, reconfigurable, conduction- or air-cooled, 3U VPX, FPGA processing module based on the Xilinx Virtex-7 family of FPGAs. With multiple high-speed fabric interfaces, external memory, Xilinx Virtex-7 FPGA, an FMC site, and high-density I/O, the XPedite2470 is ideal for customizable, high-bandwidth, signal-processing applications.

The XPedite2470's DDR3 SDRAM and flexible I/O routing makes it perfect for high-speed, bandwidth-intensive, data-streaming applications. The card provides numerous I/O capabilities through its FMC daughter card interface, allowing access to single-ended and differential I/O and configurable GTX transceivers. An FMC daughter card can expand the capabilities of the XPedite2470 by providing technologies such as Digital Signal Processing (DSP), high-frequency Digital-to-Analog Conversion (DAC), and high-frequency Analog-to-Digital Conversion (ADC).

The XPedite2470 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.

X-ES

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Extreme Engineering Solutions

9901 Silicon Prairie Parkway • Verona, WI 53593

Phone: 608.833.1155 • Fax: 608.827.6171

sales@xes-inc.com • <https://www.xes-inc.com>

FPGA

- Xilinx Virtex-7 for high-performance logic and DSP applications
- Up to 4 GB of DDR3 SDRAM in four channels
- 128 MB of user NOR flash

Supported FPGAs

- Xilinx Virtex-7 XC7VX690T (default)
- Xilinx Virtex-7 XC7VX485T
- Support for commercial and industrial temperature as well as -1, -2, -3 speed grades

Development Support

- X-ES FPGA Development Kit (FDK)

FMC (VITA 57)

- FPGA LVDS I/O
- x8 GTX transceivers
- Six LVDS GPIO
- Support for 1.8 V, 1.5 V, 1.2 V, and 1.35 V VADJ

VPX (VITA 46) P1 I/O

- x8 GTX transceivers configurable as x8 PCI Express interface to P1.A
- Three additional GTX lanes

VPX (VITA 46) P2 I/O

- Nine FPGA LVDS GPIO
- FMC GPIO
- One RS-232 serial port

Physical Characteristics

- 3U VPX-REDI conduction- or air-cooled form factor
- Dimensions: 100 mm x 160 mm
- 0.8 in. pitch without solder-side cover
- 0.85 in. and 1.0 in. pitch with solder-side cover

Environmental Requirements

Contact factory for appropriate board configuration based on environmental requirements.

- Supported ruggedization levels (see chart below): 5
- Conformal coating available as an ordering option
- Contact X-ES for air-cooled development options

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 g ² /Hz (maximum), 5 to 2000 Hz	0.04 g ² /Hz (maximum), 5 to 2000 Hz	0.1 g ² /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.

