

# XPand6215

Intel® Xeon® D-1500 Processor-Based Rugged Small Form Factor (SFF) COTS System with Xilinx Kintex® Ultrascale™ FPGA

- ▶ Small Form Factor (SFF) sub-½ ATR system
- ▶ Includes one XPedite7670 Intel® Xeon® D-1500 family processor-based 3U VPX-REDI SBC
- ▶ Includes one hosted XPort3305 XMC with one 10 Gigabit Ethernet interface
- ▶ Includes one XPedite2570 Xilinx Kintex® Ultrascale™ FPGA module with FireFly connectors
- ▶ One 10GBASE-SR Ethernet port
- ▶ Twelve 10.3125 Gb/s optical transmitter links
- ▶ Twelve 10.3125 Gb/s optical receiver links
- ▶ Two 10/100/1000BASE-T Gigabit Ethernet SBC ports
- ▶ Two USB 2.0 SBC ports
- ▶ Four RS-232/422/485 SBC ports
- ▶ 44 FPGA LVDS pairs
- ▶ Supports one removable memory module
- ▶ Certificate of Volatility with read/write enable hardware discrete
- ▶ MIL-STD-461E/F, MIL-STD-810, MIL-STD-704F qualified
- ▶ Convection- and conduction-cooled, environmentally sealed chassis
- ▶ Integrated 28 VDC power supply



## XPand6215

The XPand6215 is a Commercial-Off-the-Shelf (COTS) rugged system based on the Intel® Xeon® D-1500 family of processors and the Xilinx Kintex® Ultrascale™ FPGA. With multiple high-speed fiber-optic interfaces on the front panel, this system delivers impressive bandwidth and performance for a wide range of signal processing applications.

The XPand6215 is a Small Form Factor (SFF) system comprised of two 3U VPX modules. In the first slot, the XPedite7670 single board computer features an Intel® Xeon® D-1500 (formerly Broadwell-DE) processor, offering up to 16 Xeon®-class cores in a single, power-efficient System-on-Chip (SoC) package. The XPedite7670 hosts an XPort3305 10 Gigabit Ethernet XMC module, which provides a 10GBASE-SR Ethernet port through a fiber connector on the XPand6215 front panel.

Eight lanes of PCI Express Gen3 connect the XPedite7670 to the XPedite2570 in the second slot. This high-performance, reconfigurable FPGA processing module is based on the powerful Xilinx Kintex® Ultrascale™ XCKU115 FPGA. The XPedite2570 provides twelve high-data-rate, protocol-independent fiber-optic transmitters and receivers, accessible through a second fiber connector on the XPand6215 front panel.

This fully rugged system is designed to meet the rigorous standards of MIL-STD-810 and DO-160, while integrating the latest power-saving and performance-enhancing technology. The heat from the internal conduction-cooled modules is conducted to sidewall heat exchangers, where it is dissipated to the ambient environment by convection cooling and to an attached cold plate by conduction cooling. The system includes an integrated 28 VDC power supply and MIL-STD-461 EMI filtering.

# X-ES

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**First Slot I/O (XPedite7670 and XPort3305)**

- One SATA port to removable memory bay
- Four RS-232/422/485 serial ports to J2
- Two USB 2.0 ports to J2
- Two 10/100/1000BASE-T Ethernet ports to J2
- One 10GBASE-SR Ethernet port to J4

**Second Slot I/O (XPedite2570)**

- Twelve LVDS pairs to J2
- 32 LVDS pairs to J3
- Eight GPIO signals to J3
- Twelve 10.3125 Gb/s optical transmitter links to J5
- Twelve 10.3125 Gb/s optical receiver links from J5

**Slot-to-Slot Connectivity**

- One x8 PCI Express Gen3 interface

**Removable Memory Bay**

- Supports one X-ES ruggedized 2.5 in. Solid-State Drive (SSD) with optional integrated encryption
- Up to 512 GB of SLC NAND flash

**Physical Characteristics**

- Dimensions: 11.59 in. (L) x 4.87 in. (W) x 3.97 in. (H)
- Weighs 8.75 lbs. without SSD
- Weighs 9.11 lbs. with SSD

**Power Supply**

- Integrated power supply
- MIL-STD-704 28 VDC input voltage support
- MIL-STD-461 EMI filtering

**Thermal**

- The system is designed and tested to operate in ambient temperatures down to -40°C and in extreme high temperatures. Maximum operating temperature is dependent on configuration and usage. Contact X-ES for more information.

