XPedite7572

5th Gen Intel® Core™ i7 Broadwell-H Based Conduction- or Air-Cooled 3U VPX-REDI Module with SecureCOTS™

- Supports 5th generation Intel® Core™ i7 (Broadwell-H) processors (available Q4 2015)
- Supports 4th generation Intel® Core™ i7 (Haswell) processors
- SecureCOTS™ for secure and trusted processing
- SmartFusion®2 SoC with 1 GB DDR3-667 ECC SDRAM and 32 MB SPI Flash
- 3U VPX (VITA 46) module
- Compatible with multiple VITA 65 OpenVPX™ slot profiles
- Ruggedized Enhanced Design Implementation (REDI) per VITA 48
- Conduction or air cooling
- Up to 16 GB of DDR3L-1600 ECC SDRAM in two channels
- Up to 32 GB of NAND flash
- XMC site with a x8 PCIe interface and rear I/O support
- One XMC (P16) SATA port for secure storage
- Two PCIe Fat Pipe P1 fabric interconnects
- Up to four Gigabit Ethernet ports
- Four SATA ports and two USB 2.0 ports
- Two HDMI/DVI-D or Dual-Mode DisplayPort interfaces
- Two RS-232/422/485 serial ports
- Wind River VxWorks and Linux BSPs
- Microsoft Windows drivers
- Contact factory for availability of Green Hills INTEGRITY, QNX Neutrino, and LynuxWorks LynxOS BSPs

XPedite7572

The XPedite7572 is a secure and high-performance, 3U VPX-REDI, single board computer based on the 5th generation Intel® Core™ i7 Broadwell-H processor. The XPedite7572 is an optimal choice for computationally-heavy applications requiring maximum data and information protection. With integrated SecureCOTS™ technology, the XPedite7572 protects data from being modified or observed and provides an ideal solution when stringent security capabilities are required.

The XPedite7572 includes a customizable SmartFusion®2 security SoC, which can control and monitor the Core i7 subsystem, as well as host custom functions such as data encryption. Additional circuit board enhancements and optimized Two-Level Maintenance (2LM) metalwork provide added protection to the physical hardware. The XPedite7572 also accommodates up to 16 GB of DDR3L-1600 ECC SDRAM in two channels, and up to 32 GB of secure, onboard SATA NAND flash. The XPedite7572 leverages Intel® Iris™ Pro graphics for graphics-intensive applications and serves as a general-purpose GPU for demanding data processing applications.

The XPedite7572 provides numerous I/O interfaces through the backplane connectors, including up to four Gigabit Ethernet ports, USB 2.0 ports, SATA, graphics, and RS-232/422/485 serial ports. The XPedite7572 supports additional expansion from an integrated XMC site. This XMC site includes a x8 PCIe connection to the Intel® Core™ i7 processor and I/O mapped directly to the VPX backplane connectors. Wind River VxWorks and Linux Board Support Packages (BSPs) are available, as well as Microsoft Windows drivers.

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Extreme Engineering Solutions
3225 Deming Way, Suite 120 • Middleton, WI 53562
Phone: 608.833.1155 • Fax: 608.827.6171
sales@xes-inc.com • http://www.xes-inc.com

Processor

- 5th generation Intel® Core™ i7 (Broadwell-H)
- 4th generation Intel® Core™ i7 (Haswell)
- Intel® Turbo Boost Technology
- Intel® Hyper-Threading Technology
- AVX instruction set extensions
- Integrated high-performance 3D graphics controller
- Up to Intel® Iris™ Pro Graphics 6200

Memory

- Up to 16 GB of dual-channel DDR3L-1600 ECC SDRAM
- Up to 32 GB of SATA NAND flash
- 64 MB NOR boot flash

SmartFusion®2

- 1 GB of DDR3-667 ECC SDRAM
- 32 MB SPI user flash
- 64 kB of embedded SRAM
- Up to 512 kB of embedded non-volatile memory
- Up to 2074 kbits of FPGA fabric RAM
- 10/100BASE-T Ethernet (optional)
- External PLL (optional)

XMC Site

- x8 PCI Express Gen3-capable port
- One SATA port capable of 6 Gb/s
- SmartFusion®2 I/O for secure storage solutions

VPX (VITA 46) P0 I/O

- SmartFusion®2 I²C port

VPX (VITA 46) P1 I/O

- x4 PCI Express Gen2-capable Fat Pipe interface to P1.A
- x4 PCI Express Gen2-capable Fat Pipe interface to P1.B
- Two 1000BASE-BX Ethernet ports or one 10/100/1000BASE-T Ethernet port
- XMC P16 I/O, mapping P1w9-X12d per VITA 46.9

VPX (VITA 46) P2 I/O

- Multiple Ethernet and I/O options (see Manual)
- Four SATA ports capable of 6 Gb/s
- Two USB 2.0 ports
- Two HDMI/DVI-D or Dual-Mode DisplayPort interfaces
- Two RS-232/422/485 serial ports
- 3.3 V GPIO signals

Security and Management

- SmartFusion®2 security FPGA
- System voltage monitor, power-on/reset control, non-volatile write-protection control
- SATA NAND quick-erase, internal zeroization
- Non-Deterministic Random Number Generator, Encryption
- Environmental sensors (see Manual)
- Trusted Platform Module (TPM)

Software Support

- Wind River VxWorks BSP
- Linux BSP
- Microsoft Windows drivers
- Contact factory for availability of Green Hills INTEGRITY, QNX Neutrino, and LynuxWorks LynxOS BSPs

Physical Characteristics

- 3U VPX-REDI conduction- or air-cooled form factor
- Optional Two-Level Maintenance (2LM) metalwork (1.0 in. pitch)

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
- Thermal performance will vary based on CPU frequency and application

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 g²/Hz, 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	0% to 95% non-condensing	0% to 95% non-condensing	0% to 95% non-condensing