XPedite8270

13th Gen Intel® Core™ i7 Processor-Based 3U VPX-REDI Module with 64 GB of LPDDR5 and Microsemi® PolarFire™ SoC FPGA

- Supports 13th Gen Intel® Core™ i7 series (formerly Raptor Lake-P) processors
- Designed with SecureCOTS™ technology to support enhanced security and trusted computing
- Microsemi® PolarFire™ SoC FPGA with 256 MB SPI NOR flash
- 3U VPX (VITA 46) module
- Compatible with multiple VITA 65 OpenVPX™ slot profiles
- Ruggedized Enhanced Design Implementation (REDI) per VITA 48
- 64 GB of LPDDR5 ECC SDRAM
- 256 GB of UFS NAND flash
- XMC site with x4 PCI Express interface and rear I/O support
- One 40GBASE-KR4 Ethernet port
- Two 10GBASE-KR Ethernet ports
- One 10/100/1000BASE-T Ethernet port
- One x4 Gen4 and one x2 Gen3 PCI Express interfaces
- Two USB 2.0 ports
- Two RS-232 serial ports or one RS-422/485 serial port
- One DisplayPort interface
- SOSA-aligned to AMPS profile MODA3-16.2.15-1-F2C-(E8)(P4F)(2E7-E3)(N-D1-U1-U1-M3/M4/M5-G1)<XA0> (compatibility with other profiles may be possible, contact factory for options)
- Wind River VxWorks BSP
- X-ES Enterprise Linux (XEL) BSP
- Contact factory for availability of Microsoft Windows drivers and other operating systems

XPedite8270

The XPedite8270 is a secure, high-performance, 3U VPX-REDI, single board computer aligned to the Sensor Open System Architecture (SOSA) standard. Based on the 13th Gen Intel® Core™ i7 series (formerly Raptor Lake-P) line of processors, the XPedite8270 is an ideal choice for applications requiring maximum data and information protection along with high performance and power savings.

The XPedite8270 integrates SecureCOTS™ technology with a Microsemi® PolarFire™ System-on-Chip (SoC) FPGA for hosting custom functions to protect data from being modified or observed and provides an ideal solution when stringent security capabilities are required.

The XPedite8270 provides fast and efficient I/O with one 40GBASE-KR4, two 10GBASE-KR, and one 10/100/1000BASE-T Ethernet ports. It supports 64 GB of LPDDR5 ECC SDRAM in addition to numerous I/O ports, including USB 2.0, PCI Express, RS-232 or RS-422/485 serial, and DisplayPort video through the backplane connectors. The XPedite8270 provides additional expansion capabilities by including an integrated XMC site. This XMC site includes a x4 PCI Express connection to the Intel® Core™ i7 processor and X12d, X16d, and X64s I/O mapped directly to the VPX backplane connectors.

Wind River VxWorks and X-ES Enterprise Linux (XEL) Board Support Packages (BSPs) are available.

X-ES
Extreme Engineering Solutions

"Fast, Flexible, Customer-Focused Embedded Solutions"

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Processor

- Supports 13th Gen Intel® Core™ i7 series (formerly Raptor Lake-P) processors

Memory

- 64 GB of LPDDR5 ECC SDRAM
- 256 GB of UFS NAND flash
- 64 MB NOR boot flash
- 64 kB EEPROM

Security and Management

- Microsemi® PolarFire™ SoC FPGA with 256 MB SPI NOR flash
- Designed with SecureCOTS™ technology to support enhanced security and trusted computing
- System voltage monitor, power-on/reset control, non-volatile write-protection control
- Trusted Platform Module (TPM) 2.0
- IPMI Controller (IPMC), supporting Tier 1, Tier 2, and Tier 3 operating modes

VPX (VITA 46) P0 I/O

- Two IPMB connections to an IPMI Controller

VPX (VITA 46) P1 I/O

- One 40GBASE-KR4 Ethernet port to P1.A
- Two 10GBASE-KR Ethernet ports
- One x4 PCI Express Gen4-capable interface
- XMC X12d I/O
- One maintenance serial port, software configurable to LVTTL or RS-232
- One single-ended FPGA GPIO

VPX (VITA 46) P2 I/O

- One 10/100/1000BASE-T Ethernet port
- One DisplayPort HBR2-capable interface
- One x2 PCI Express Gen3-capable interface
- Two USB 2.0 ports
- Two RS-232 serial ports or one RS-422/485 serial port
- Three single-ended FPGA GPIOs
- XMC X8d I/O
- XMC X16s I/O

Software Support

- UEFI firmware
- Wind River VxWorks BSP
- X-ES Enterprise Linux (XEL) BSP
- Contact factory for availability of Microsoft Windows drivers and other operating systems

XMC Site

- One x4 PCI Express Gen3-capable interface

Physical Characteristics

- 3U VPX-REDI conduction- or air-cooled form factor
- SOSA-aligned to AMPS profile MODA3-16.2.15-1-F2C-(E8)(P4F)(2E7-E3)(N-D1-U1-U1-M3/M4/M5-G1)<XA0> (compatibility with other profiles may be possible, contact factory for options)
- Dimensions: 100 mm x 160 mm
- 1.0 in. pitch with Two-Level Maintenance (2LM) support

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
- Thermal performance will vary based on CPU frequency and application
- Contact X-ES for air-cooled development options

Power Requirements

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

Ruggedization Level	**Level 5**
Cooling Method	Conduction-Cooled
Operating Temperature	-40 to +85°C (board rail surface)
Storage Temperature	-55 to +105°C (maximum)
Vibration	0.1 g²/Hz (maximum), 5 to 2000 Hz
Shock	40 g, 11 ms sawtooth
Humidity	Up to 95% non-condensing