XPedite7872

Intel® Xeon® D-2800 Processor-Based 3U VPX-REDI Module with 64 GB of DDR4, 100 Gigabit Ethernet, and SecureCOTS™

- Supports Intel® Xeon® D-2800 series (formerly Eddy Lake) processors
- Up to 20 Xeon®-class cores in a single, power-efficient SoC package
- SKUs available with native extended temperature support
- Designed with SecureCOTS™ technology to support enhanced security and trusted computing
- Microsemi® PolarFire™ SoC FPGA with 256 MB SPI 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 DDR4 ECC SDRAM in four channels
- 256 GB of onboard NAND flash
- One 100GBASE-KR4 Ethernet port
- One 25G/10GBASE-KR Ethernet port
- One 1000BASE-KX Ethernet port (with build option for 10GBASE-KR Ethernet)
- Four x4 Gen3-capable PCI Express interfaces (can also be configured as two x8 interfaces or one x16 interface)
- Two serial maintenance ports
- RDMA over Converged Ethernet (RoCE) v2 internet layer protocol support
- Compatible with SOSA module profile SLT3-PAY-1F1U1S1S1U1U4F1J-14.6.13-0
- Wind River VxWorks BSP
- X-ES Enterprise Linux (XEL) BSP
- Contact factory for PCI Express Gen4 and alternative Ethernet configuration availability
- Contact factory for availability of Microsoft Windows drivers and other operating systems

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The XPedite7872 is a secure, high performance single board computer aligned to the Sensor Open System Architecture (SOSA) standard. It is based on the Intel® Xeon® D-2800 series (formerly Eddy Lake) of processors, making it an optimal choice for computationally heavy applications requiring maximum data and information protection.

This 3U VPX-REDI module 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 XPedite7872 provides incredible speed with one 100GBASE-KR4 Ethernet port, one 25G/10GBASE-KR Ethernet port, and one 1000BASE-KX Ethernet port (also available as one 10GBASE-KR Ethernet port through build configuration). These Gigabit Ethernet ports offer fallback redundancy to help ensure a consistent processor throughput of up to 100 Gbps is available at all times.

The XPedite7872 also accommodates up to 64 GB of DDR4 ECC SDRAM in four channels and up to 256 GB of onboard NAND flash, in addition to four x4 PCI Express Gen3-capable interfaces (also configurable as two x8 interfaces or one x16 interface).

Compatible with SOSA module profile SLT3-PAY-1F1U1S1S1U1U4F1J-14.6.13-0, the XPedite7872 is the perfect fit for high-throughput compute workloads, delivering the performance and scalability needed for demanding applications.

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

- Intel® Xeon® D-2800 series (formerly Eddy Lake) processor
- Up to 20 Xeon®-class cores in a single, power-efficient SoC package
- SKUs available with native extended temperature support

Memory

- 64 GB of DDR4 ECC SDRAM in four channels
- 256 GB of onboard NAND flash
- 64 MB NOR boot flash
- 64 kB EEPROM

Security and Management

- Microsemi® PolarFire™ SoC FPGA with 256 MB SPI 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)

VPX (VITA 46) P1 I/O

- One 100GBASE-KR4 Ethernet port to P1.A
- One 25G/10GBASE-KR Ethernet port and one 1000BASE-KX Ethernet port (with build option for 10GBASE-KR Ethernet) to P1.B
- Ethernet ports allow up to 100 Gbps aggregate processor throughput
- One FPGA LVDS pair
- Two serial maintenance ports
- One single-ended FPGA GPIO
- One x4 PCI Express Gen3-capable interface to P1.C
- One x4 PCI Express Gen3-capable interface to P1.D

VPX (VITA 46) P2 I/O

- One x4 PCI Express Gen3-capable interface to P2.A
- One x4 PCI Express Gen3-capable interface to P2.B

Software Support

- RDMA over Converged Ethernet (RoCE) v2 internet layer protocol 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

Physical Characteristics

- 3U VPX-REDI conduction-cooled form factor
- Compatible with SOSA module profile SLT3-PAY-1F1U1S1S1U1U4F1J-14.6.13-0
- Dimensions: 100 mm x 160 mm
- 0.8 in. pitch without solder-side cover
- 1.0 in. pitch with Two-Level Maintenance (2LM) support

Environmental Requirements

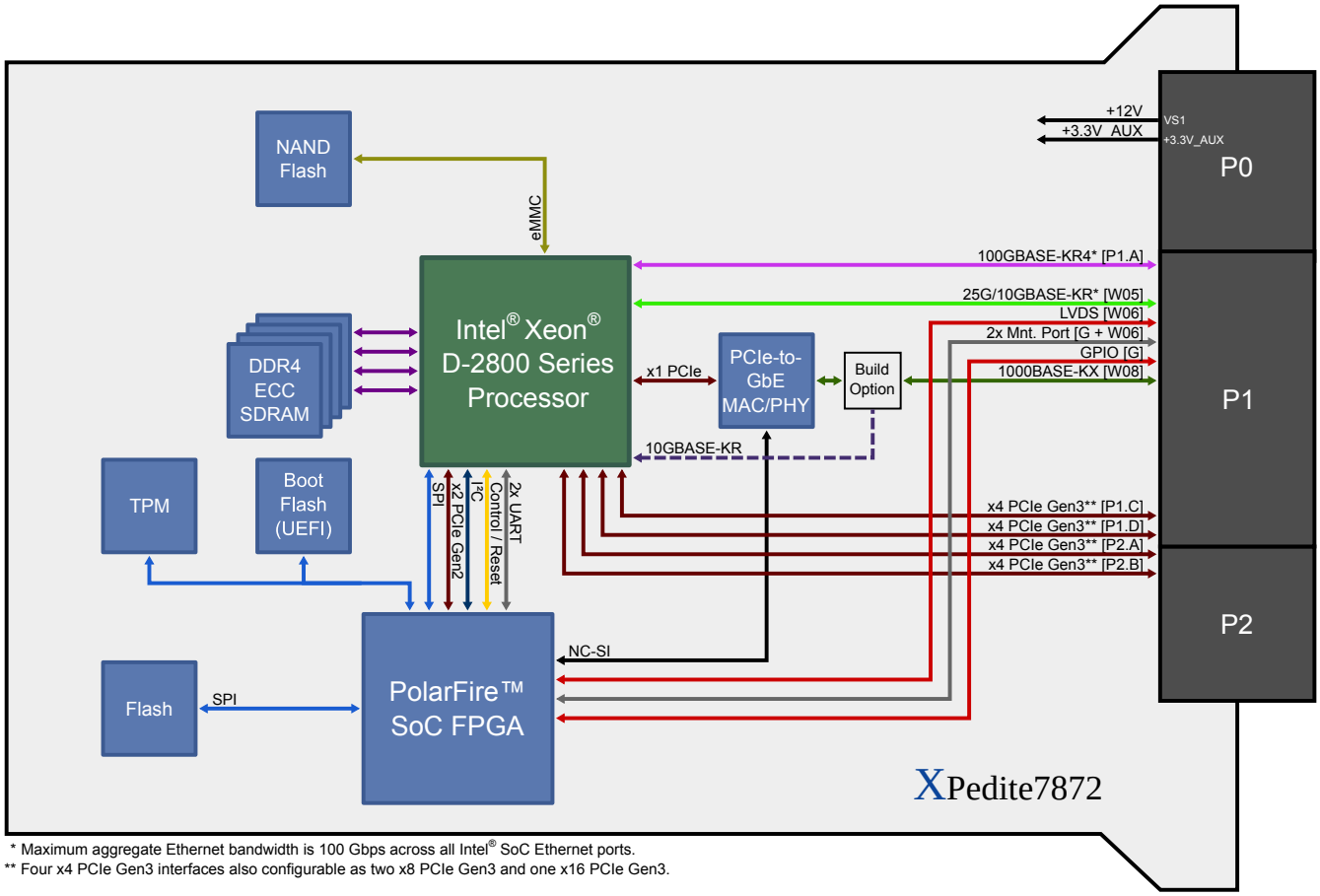
Contact factory for appropriate board configuration based on environmental requirements

- 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

- SOSA Power: +12 V and +3.3 V_AUX (+5 V and +3.3 V not required)

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



* Maximum aggregate Ethernet bandwidth is 100 Gbps across all Intel® SoC Ethernet ports.
** Four x4 PCIe Gen3 interfaces also configurable as two x8 PCIe Gen3 and one x16 PCIe Gen3.