

XPedite8370

Intel® Core™ Ultra Processor (Series 3)-Based 3U VPX-REDI Module with 64 GB of LPDDR5 and Microchip PolarFire™ SoC FPGA

- Supports Intel® Core™ Ultra processors (Series 3) (formerly Panther Lake)
- Designed with SecureCOTS™ technology to support enhanced security and trusted computing
- Microchip PolarFire™ SoC FPGA with 256 MB SPI NOR flash
- Conduction- or air-cooled 3U VPX (VITA 46) module
- Compatible with multiple VITA 65 OpenVPX™ slot profiles
- Ruggedized Enhanced Design Implementation (REDI) per VITA 48
- Up to 64 GB of LPDDR5 SDRAM with in-band ECC
- Up to 512 GB of NVMe storage
- One XMC site with x8 PCI Express Gen4-capable interface and rear I/O support
- One 100GBASE-KR4 Ethernet port
- Up to two 25GBASE-KR Ethernet ports
- One 10/100/1000BASE-T Ethernet port
- Two USB 2.0 ports
- Two RS-232 serial ports or one RS-422/485 serial port
- One x4 and one x1 PCI Express Gen4-capable interfaces
- One DisplayPort interface
- One maintenance serial port, software configurable as LVCMOS or RS-232
- RDMA over Converged Ethernet (RoCE) v2 internet layer protocol support
- Supports SOSA I/O Intensive profile (SLT3-PAY-1F1F2U1TU1T1U1T-14.2.16)
- SOSA-aligned to AMPS profile MODA3-16.2.15-1-F2C-(E18)(P4F)(2E15-E3) (P4U-D1-U1-U1-M3/M4/M5-G1)<XB0> (compatibility with other profiles may be possible, contact factory for options)
- Wind River VxWorks BSP
- X-ES Enterprise Linux (XEL) BSP
- Linux Yocto BSP
- Contact factory for availability of Microsoft Windows drivers and other operating systems



XPedite8370

The XPedite8370 is a secure, high-performance, 3U VPX-REDI, single board computer based on the Intel® Core™ Ultra processor (Series 3) (formerly Panther Lake) and aligned to the Sensor Open System Architecture (SOSA) I/O Intensive profile (SLT3-PAY-1F1F2U1TU1T1U1T-14.2.16). Ideal for ruggedized systems requiring high-bandwidth processing and low power consumption, the XPedite8370 delivers superior performance and efficiency for today's network information processing and high performance embedded computing applications.

The XPedite8370 integrates SecureCOTS™ technology with a Microchip 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 XPedite8370 supports up to 64 GB of LPDDR5 SDRAM with in-band ECC in eight channels and up to 512 GB of onboard NVMe storage. The XPedite8370 also provides fast and efficient I/O, with one 100GBASE-KR4, up to two 25GBASE-KR, and one 10/100/1000BASE-T Ethernet ports and including USB 2.0, PCI Express, RS-232 or RS-422/485 serial, and DisplayPort video through the backplane connectors. The XPedite8370 provides additional expansion capabilities by including an integrated XMC site, which includes a x8 PCI Express connection to the Intel® Core™ Ultra processor and X12d, X16s, and X8d I/O mapped directly to the VPX backplane connectors.

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



Extreme Engineering Solutions

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Processor

- Supports Intel® Core™ Ultra processors (Series 3) (formerly Panther Lake)

Memory

- Up to 64 GB of LPDDR5 SDRAM with in-band ECC
- Up to 512 GB of onboard NVMe storage
- 64 MB NOR boot flash
- 64 kB EEPROM

Security and Management

- Microchip 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 100GBASE-KR4 Ethernet port to P1.A
- Up to two 25GBASE-KR Ethernet ports (configuration restrictions apply; contact factory for details)
- One x4 PCI Express Gen4-capable interface (not available on all processor SKUs)
- One maintenance serial port, software configurable as LVCMOS or RS-232
- One single-ended FPGA GPIO
- XMC X12d I/O

VPX (VITA 46) P2 I/O

- One 10/100/1000BASE-T Ethernet port
- Two USB 2.0 ports
- Two RS-232 serial ports or one RS-422/485 serial port
- One x1 PCI Express Gen4-capable interface
- One DisplayPort HBR2-capable interface
- Three single-ended FPGA GPIOs
- XMC X8d I/O
- XMC X16s I/O

XMC Site

- One x8 PCI Express Gen4-capable interface

Software Support

- RDMA over Converged Ethernet (RoCE) v2 internet layer protocol support
- UEFI firmware
- Wind River VxWorks BSP
- X-ES Enterprise Linux (XEL) BSP
- Linux Yocto BSP
- Contact factory for availability of Microsoft Windows drivers and other operating systems

Physical Characteristics

- 3U VPX-REDI conduction- or air-cooled form factor
- Supports SOSA I/O Intensive profile (SLT3-PAY-1F1F2U1TU1T1U1T-14.2.16)
- SOSA-aligned to AMPS profile MODA3-16.2.15-1-F2C-(E18)(P4F)(2E15-E3)(P4U-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 g ² /Hz (maximum), 5 to 2000 Hz
Shock	40 g, 11 ms sawtooth
Humidity	Up to 95% non-condensing

