

XCalibur5340

Intel® Core™ Ultra (Series 3) Processor-Based 6U VPX 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-cooled 6U VPX (VITA 46) module
- ▶ Up to 64 GB of LPDDR5 SDRAM with in-band ECC
- ▶ Up to 512 GB of onboard NVMe storage
- ▶ Two XMC interfaces
- ▶ One 100GBASE-KR4 and two 25GBASE-KR Ethernet ports
- ▶ Up to three 10/100/1000BASE-T Ethernet ports
- ▶ Up to three USB 2.0 ports
- ▶ Two maintenance serial ports, software configurable as UART or RS-232
- ▶ Two RS-232 or one RS-422/485 serial ports
- ▶ One x2 and one x8 PCI Express Gen4-capable interfaces
- ▶ One DisplayPort++ interface (optional) and one DisplayPort or HDMI interface
- ▶ RDMA over Converged Ethernet (RoCE) v2 internet layer protocol support
- ▶ Supports SOSA Payload profile (SLT6-PAY-4F1Q1H4U1T1S1S1TU2U2T1H-10.6.3-0)
- ▶ SOSA-aligned to AMPS Payload profile MODA6-12.6.3-1-0-F2C-(1E18)(P4D-N)(2E15-2E3)(1P4U,~1P4U-D5-U1-U1-M3/M4/M5-G1-G2)[N][N]<N-N><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



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The XCalibur5340 is a secure, high-performance 6U VPX single board computer based on the Intel® Core™ Ultra processor (Series 3) (formerly Panther Lake) and aligned to the Sensor Open System Architecture (SOSA) Payload profile (SLT6-PAY-4F1Q1H4U1T1S1S1TU2U2T1H-10.6.3-0). Ideal for ruggedized systems requiring high-bandwidth processing and low power consumption, the XCalibur5340 delivers superior performance and efficiency for today's network information processing and high performance embedded computing applications.

The XCalibur5340 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 XCalibur5340 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 XCalibur5340 also provides fast and efficient I/O, including 100GBASE-KR4, 25GBASE-KR, and 10/100/1000BASE-T Ethernet, USB 2.0, PCI Express, and RS-232 or RS-422/485 serial ports through the backplane connectors.

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



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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 3 operating mode

VPX (VITA 46) P0 I/O

- Two IPMB connections to an IPMI Controller (IPMC)

VPX (VITA 46) P1 I/O

- One 100GBASE-KR4 Ethernet port
- One maintenance serial port, software configurable as UART or RS-232

VPX (VITA 46) P2 I/O

- One x8 PCI Express Gen4-capable interface

VPX (VITA 46) P3 I/O

- P64s to J24 (optional)

VPX (VITA 46) P4 I/O

- Two 25GBASE-KR Ethernet ports
- Two 10/100/1000BASE-T Ethernet ports
- Two USB 2.0 ports
- Two RS-232 or one RS-422/485 serial ports
- One x2 PCI Express Gen4-capable interface
- One DisplayPort or HDMI interface

VPX (VITA 46) P5 I/O

- One maintenance serial port, software configurable as UART or RS-232
- X24s+X12d+X8d

VPX (VITA 46) P6 I/O

- XMC J16 I/O per VITA 46 x24s+x12d+x8d (optional)

XMC

- x4 PCI Express Gen4-capable interface to J15
- x4 PCI Express Gen4-capable interface to J25

Front Panel I/O

- One 10/100/1000BASE-T Ethernet port (optional)
- One USB 2.0 port (optional)
- One DisplayPort++ interface (optional)

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

- 6U VPX conduction-cooled form factor
- Supports SOSA Payload profile (SLT6-PAY-4F1Q1H4U1T1S1S1TU2U2T1H-10.6.3-0)
- SOSA-aligned to AMPS Payload profile MODA6-12.6.3-1-0-F2C-(1E18)(P4D-N)(2E15-2E3)(1P4U,~1P4U-D5-U1-U1-M3/M4/M5-G1-G2)[N][N]<N-N><XB0> (compatibility with other profiles may be possible, contact factory for options)
- Dimensions: 233 mm x 160 mm

Environmental Requirements

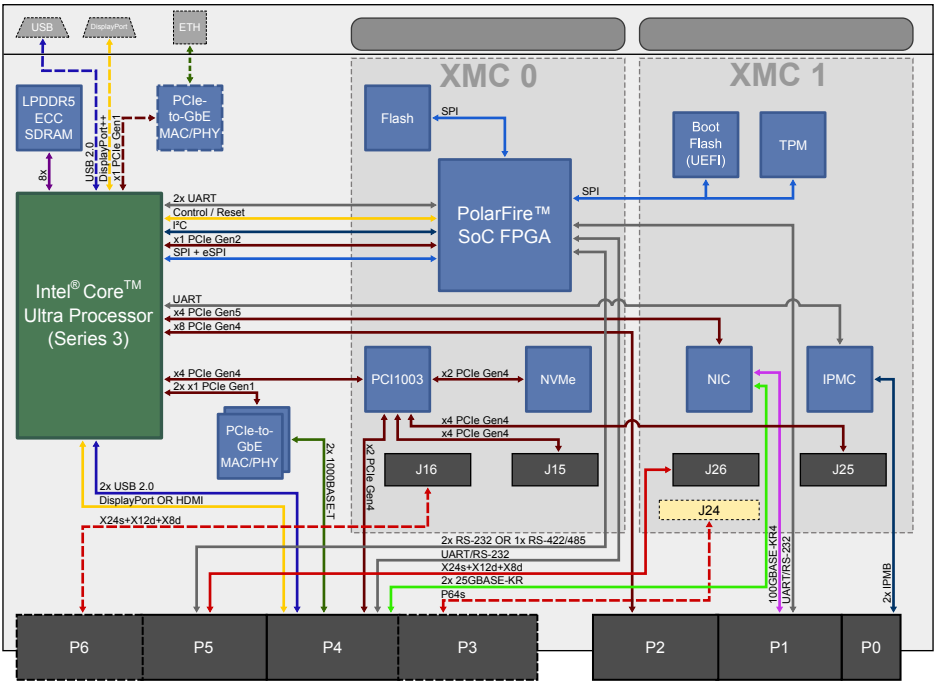
Contact factory for appropriate board configuration based on environmental requirements. Additional ruggedization levels may also be possible to support.

- Supported ruggedization levels (see chart below): 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 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



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