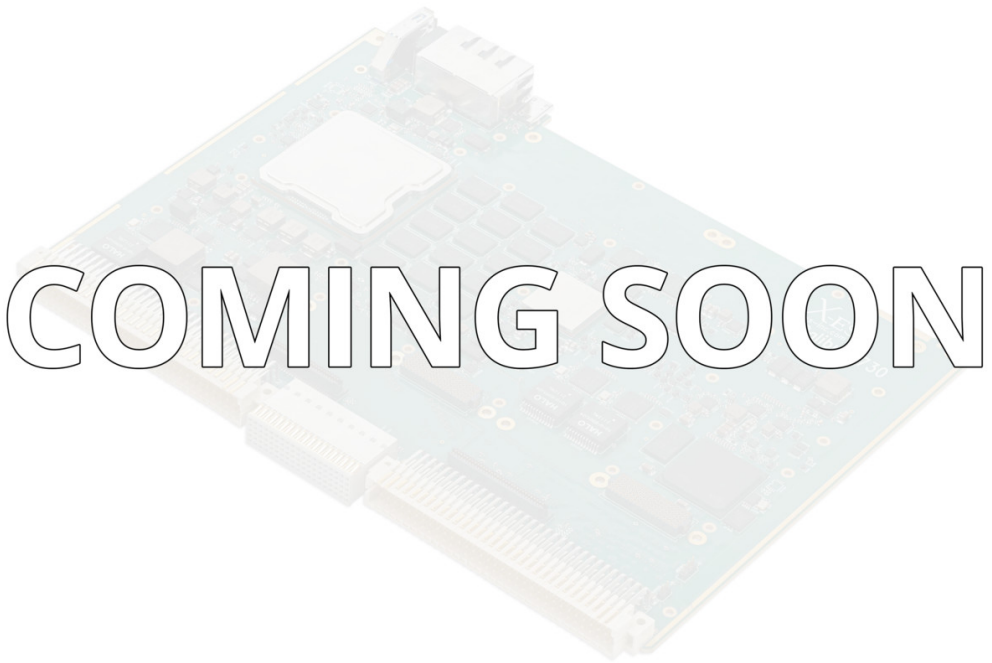
XCalibur5330

Intel® Core™ Ultra (Series 3) Processor-Based 6U VME 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
- Air-cooled 6U VME module
- Up to 64 GB of LPDDR5 SDRAM with in-band ECC
- Up to 512 GB of onboard NVMe storage
- Two XMC/PMC interfaces
- 33/66 MHz 32-bit PCI interface
- One M.2 site to support one x2 PCI Express Gen4-capable interface (optional)
- Up to five 10/100/1000BASE-T Ethernet ports
- Three USB 2.0 ports
- Four RS-232 or two RS-422/485 serial ports
- One DisplayPort++ interface
- 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 XCalibur5330 is a secure, high-performance 6U VME single board computer based on the Intel® Core™ Ultra processor (Series 3) (formerly Panther Lake). Ideal for ruggedized systems requiring high-bandwidth processing and low power consumption, the XCalibur5330 delivers superior performance and efficiency for today's network information processing and high performance embedded computing applications.

The XCalibur5330 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 XCalibur5330 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 XCalibur5330 also provides fast and efficient I/O, including 10/100/1000BASE-T Ethernet, USB 2.0, PCI, DisplayPort++, and RS-232 or RS-422/485 serial ports through the backplane connectors. An optional M.2 site is also available.

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

X-ES
Extreme Engineering Solutions

"Fast, Flexible, Customer-Focused Embedded 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
- Trusted Platform Module (TPM) 2.0

Additional Features

- Non-volatile memory write protection
- DS1339 I²C Real-Time Clock (RTC) powered via VBAT or optional battery

VME

- VME64 (VITA 1-1994 R2002)
- VME64x (VITA 1.1-1997 R2003)
- 2eSST (VITA 1.5-2003)
- Ethernet on VME64x (VITA 31.1-2003)
- PMC I/O on VME (VITA 35-2000)

XMC/PMC

- 33/66 MHz 32-bit PCI interface to PMC connectors
- x4 PCI Express Gen4-capable interface to J15
- x8 PCI Express Gen4-capable interface to J25

Front Panel I/O

- One 10/100/1000BASE-T Ethernet interface (standard)
- One 10/100/1000BASE-T Ethernet interface (optional, mutually exclusive placement with XMC/PMC 0)
- One USB 2.0 port
- One DisplayPort++ HBR2-capable interface

Rear Panel I/O

- Three 10/100/1000BASE-T Ethernet ports
- Two USB 2.0 ports
- Four RS-232 or two RS-422/485 serial ports
- 3.3 V GPIO signals
- PMC I/O

Internal I/O

- One M.2 site to support one x2 PCI Express Gen4-capable interface (optional, mutually exclusive placement with XMC/PMC 0)

Software 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 VME air-cooled form factor
- 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.

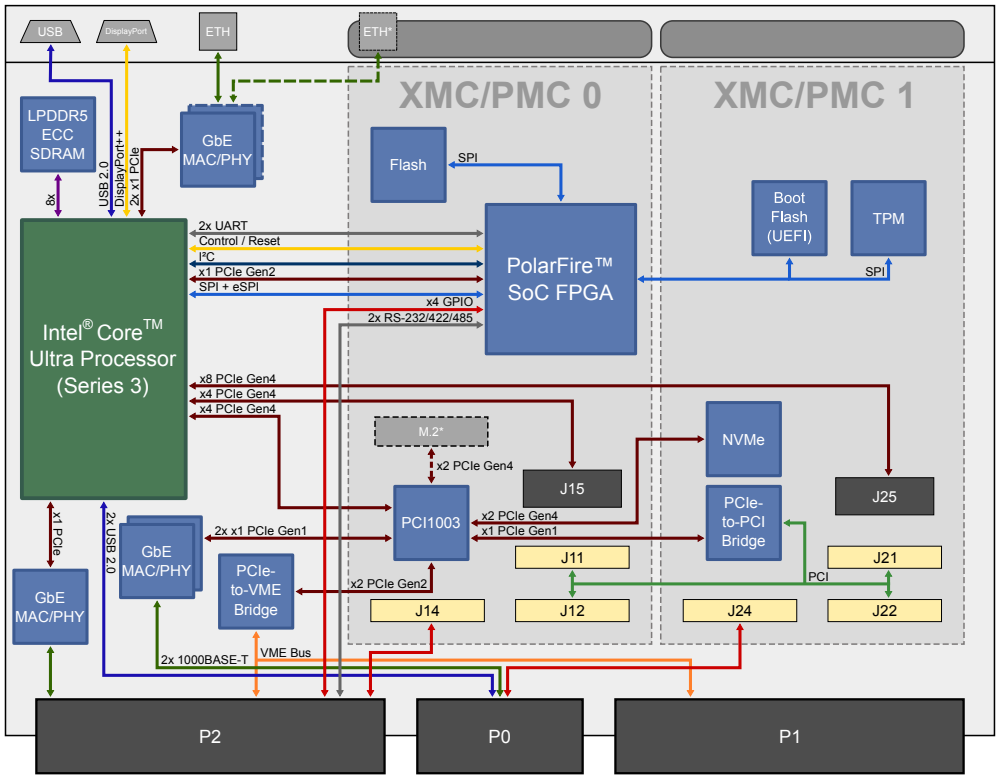
- Supported ruggedization levels (see chart below): 1
- All components support junction temperatures of -40 to +85°C or greater
- Conformal coating available as an ordering option
- Thermal performance will vary based on CPU frequency and application

Power Requirements

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

Ruggedization Level	**Level 1**
Cooling Method	Standard Air-Cooled
Operating Temperature	0 to +55°C ambient †
Storage Temperature	-40 to +85°C ambient
Vibration	0.002 g²/Hz (maximum), 5 to 2000 Hz
Shock	20 g, 11 ms sawtooth
Humidity	Up to 95% non-condensing

† Contact factory for airflow rate details.



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* Dotted front-panel interfaces and M.2 site available only in configurations where XMC/PMC 0 site connectors are not populated.