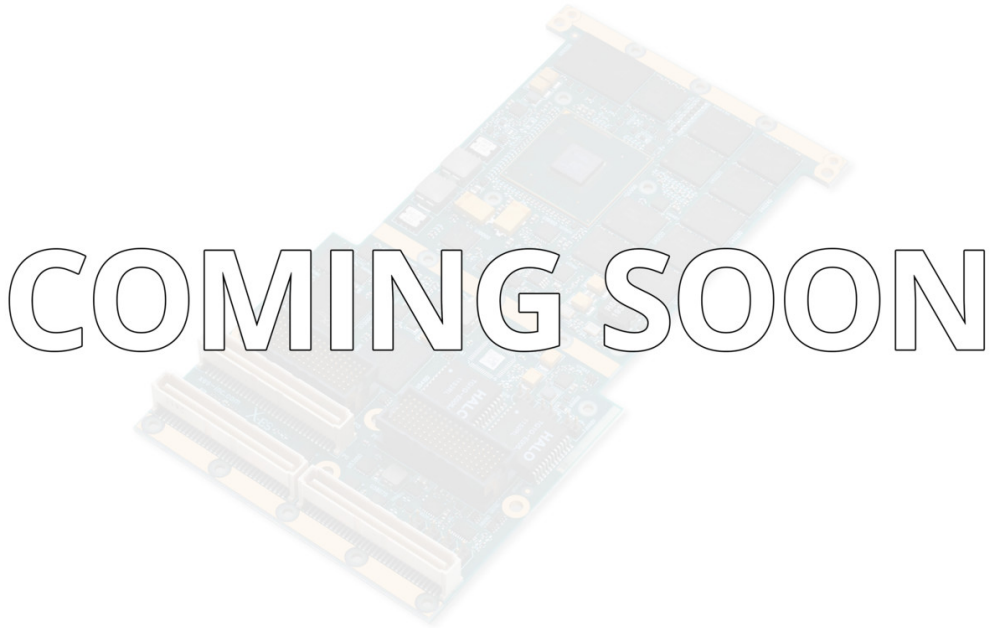
XPedite8300

Intel® Core™ Ultra (Series 3) Processor-Based XMC 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 XMC module
- Up to 64 GB of LPDDR5 SDRAM with in-band ECC
- Up to 512 GB of onboard NVMe storage
- One 100GBASE-KR4 Ethernet port or two 25GBASE-KR Ethernet ports
- One 10/100/1000BASE-T Ethernet port
- Two USB 2.0 ports
- Two RS-232/422/485 serial ports
- Two x1 and one x8 PCI Express Gen4-capable interfaces
- One DisplayPort 1.4 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



XPedite8300

The XPedite8300 is a secure, high-performance XMC 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 XPedite8300 delivers superior performance and efficiency for today's network information processing and high performance embedded computing applications.

The XPedite8300 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 XPedite8300 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 XPedite8300 also provides fast and efficient I/O, including 100GBASE-KR4 or 25GBASE-KR Ethernet, 10/100/1000BASE-T Ethernet, USB 2.0, PCI Express, I²C, and RS-232/422/485 serial ports.

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
- System voltage monitor, power-on/reset control, non-volatile write-protection control
- Trusted Platform Module (TPM) 2.0

P15 XMC Interface

- One x8 PCI Express Gen4-capable interface
- Four single-ended GPIO

P16 XMC Interface

- One 100GBASE-KR4 Ethernet port or two 25GBASE-KR Ethernet ports
- One 10/100/1000BASE-T Ethernet port
- Two USB 2.0 ports
- Two RS-232/422/485 serial ports
- Two x1 PCI Express Gen4-capable interfaces
- One DisplayPort 1.4 interface
- One I²C port
- 3.3 V GPIO

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

- Conduction-cooled XMC form factor
- Dimensions: 149 mm x 74 mm, 10 mm stacking height

Environmental Requirements

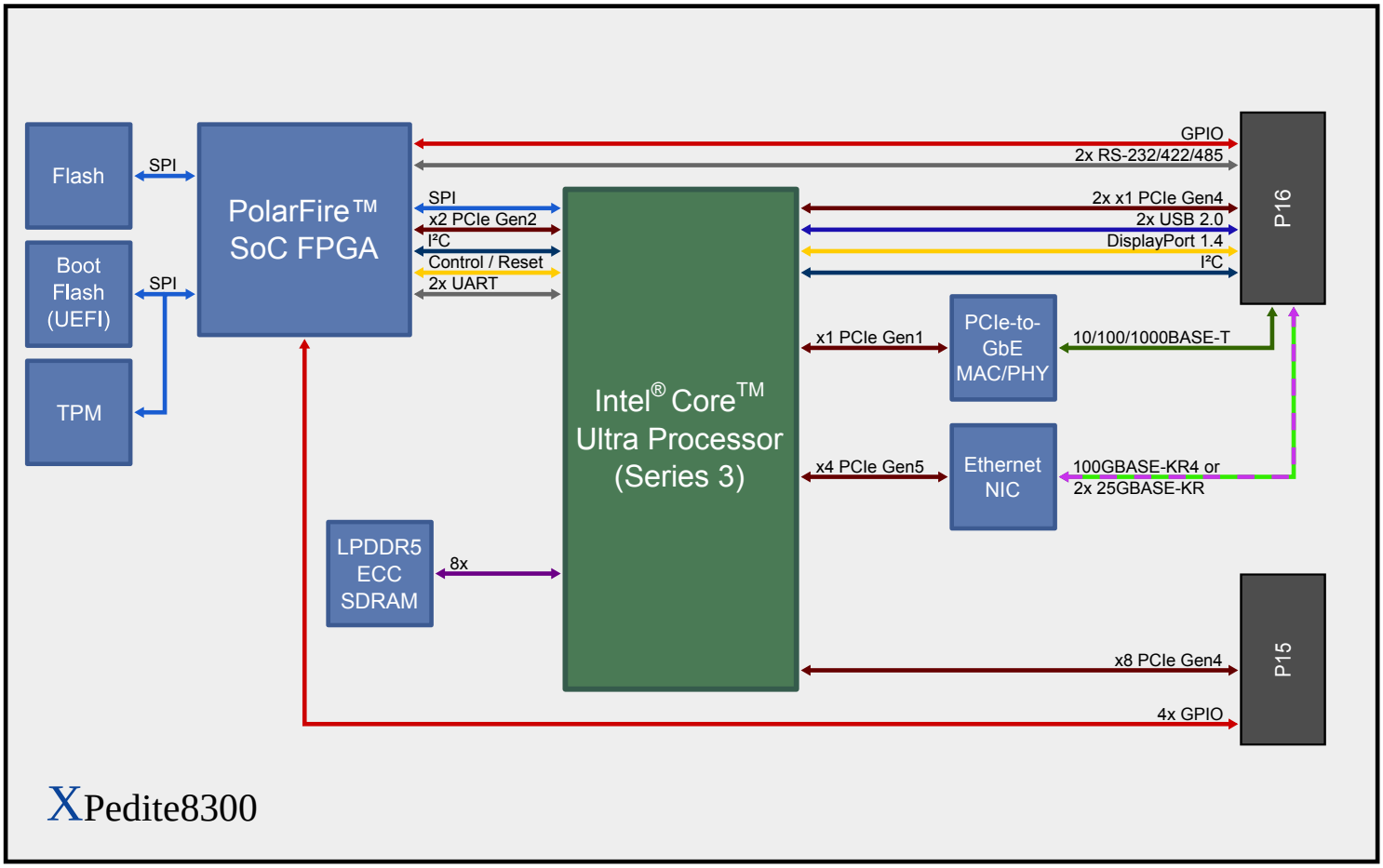
Contact factory for appropriate board configuration based on environmental requirements.

- Supported ruggedization levels (see chart below): 5
- Conformal coating available as an ordering option

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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