The XCalibur4840 is a secure, high-performance single board computer based on the Intel® Xeon® D-2700 series (formerly Ice Lake-D) processors, making it an optimal choice for computationally heavy applications requiring maximum data protection.

This 6U VPX-REDI module integrates SecureCOTS™ technology with a Microsemi® PolarFire™ 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 XCalibur4840 provides incredible speed with two 40GBASE-KR4, two 1000BASE-X, and two 10/100/1000BASE-T Ethernet ports. It accommodates up to 64 GB of DDR4 ECC SDRAM in four channels and up to 32 GB of onboard SLC NAND flash in addition to numerous I/O ports, including USB 2.0, PCIe, and RS-232/422/485 serial through the backplane connectors. The XCalibur4840 provides additional expansion capabilities by including two integrated XMC/PMC sites. These sites each include an x8 PCIe connection to the Intel® Xeon® D processor and X12d+X8d I/O mapped directly to the VPX backplane connectors. Additionally, each mezzanine site offers a single PMC connector, which provides a build option for P64s or X38s to the VPX backplane connectors.

The XCalibur4840 offers a SOSA-aligned pinout compatible with backplane slot profile SLT6-PAY-4F1Q2U2T-10.2.1. The AMPS profile is MODA6-12.2.1-1-F2C-(2E18/E8)(4P4F)(2E2-2E3), although limitations apply. Contact factory for details.

Wind River VxWorks and X-ES Enterprise Linux (XEL) Board Support Packages (BSPs) are available.
**Processor**
- Intel® Xeon® D-2700 series (formerly Ice Lake-D) 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
- 32 GB of SLC NAND flash
- 64 MB NOR boot flash
- 64 kB EEPROM

**Security and Management**
- Microsemi® PolarFire™ FPGA with 128 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) P0 I/O**
- Two IPMB connections to an IPMI Controller (IPMC)

**VPX (VITA 46) P1 I/O**
- Two general-purpose interrupts

**VPX (VITA 46) P2 I/O**
- Four x4 PCI Express Gen3-capable interfaces

**Software Support**
- UEFI firmware
- Wind River VxWorks BSP
- X-ES Enterprise Linux (XEL) BSP
- Contact factory for availability of Green Hills INTEGRITY, QNX Neutrino, and LynxWorks LynxOS BSPs, as well as Microsoft Windows drivers

**Physical Characteristics**
- 6U VPX conduction-cooled form factor
- SOSA-aligned pinout compatible with backplane slot profile SLT6-PAY-4F1Q2U2T-10.2.1
- SOSA-aligned to AMPS profile MODA6-12.2.1-1-F2C-(2E18/E8)(4P4F)(2E2-2E3)
- Dimensions: 233.35 mm x 160 mm

**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.