

XCalibur1642

End of Life

NXP Eight-Core P4080 Processor-Based Conduction-Cooled 6U VPX Module

Please contact X-ES Sales

- ▶ NXP (formerly Freescale) QorIQ P4080 processor with eight Power Architecture® e500mc cores at up to 1.5 GHz
- ▶ Alternate NXP QorIQ processors available: P3041, P4040, P5010, P5020
- ▶ 6U VPX module
- ▶ Compatible with multiple VITA 65 OpenVPX™ slot profiles
- ▶ Conduction-cooled
- ▶ VITA 46.11 Tier 1 and Tier 2 IPMI Controller (IPMC)
- ▶ Compliant to the VITA 48.2 Type 1, Two-Level Maintenance (2LM) standard
- ▶ 2 to 16 GB of dual-channel DDR3 ECC SDRAM at up to 1333 MHz
- ▶ Up to 512 MB of NOR flash (with redundancy)
- ▶ Up to 64 GB of CPU NAND flash
- ▶ x4 PCI Express lanes from CPU to switch
- ▶ x8 PCI Express to XMC sites
- ▶ Two x4 (x8 total) PCI Express lanes from switch to P1
- ▶ Two SATA ports (P3041, P50x0 only)
- ▶ XAUI to VPX P2
- ▶ Two USB 2.0 ports
- ▶ Four Gigabit Ethernet ports
- ▶ Two RS-232/422/485 serial ports
- ▶ Two XMC/PrPMC interfaces
- ▶ Linux BSP
- ▶ Wind River VxWorks BSP
- ▶ Green Hills INTEGRITY BSP
- ▶ Contact factory for availability of QNX Neutrino and LynuxWorks LynxOS BSPs



XCalibur1642

The XCalibur1642 is a high-performance, 6U VPX, single board computer supporting NXP (formerly Freescale) QorIQ P3, P4, and P5 processors. With eight Power Architecture® e500mc cores running at up to 1.5 GHz, the P4080 delivers enhanced performance and efficiency for today's embedded computing applications.

The P4080 processor brings the raw power of eight e500mc cores running at up to 1.5 GHz and dual-channel DDR3 memory, delivering unparalleled multi-core performance. For applications which are more power conscious, the P3041 processor offers four e500mc cores running at up to 1.5 GHz with a single channel of DDR3 memory, all within a significantly reduced power envelope. Applications requiring the performance of a true 64-bit processor are satisfied by the P5020 processor, which offers dual e5500 cores running at up to 2 GHz and beyond with high-performance Floating-Point Units and dual-channel DDR3 memory. Additional reduced-function processors are available to meet any power and performance budget.

The XCalibur1642 is a conduction-cooled design compliant with the Two-Level Maintenance (2LM) standard defined in VITA 48.2 Type 1. The XCalibur1642 is a powerful, feature-rich solution for the next generation of compute-intensive embedded applications. Operating system support for Wind River VxWorks, Green Hills INTEGRITY, QNX Neutrino, LynuxWorks LynxOS, and Linux is available.

X-ES

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...Always Fast

Extreme Engineering Solutions

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Processor

- NXP (formerly Freescale) QorIQ P4080 processor
- Eight Power Architecture® e500mc cores at up to 1.5 GHz
- 128 kB L2 cache per core
- 1 MB L3 cache per channel
- IEEE 754 Floating-Point Unit (FPU) support

Alternate Processor Configurations

- P3041 processor with four Power Architecture® e500mc cores at up to 1.5 GHz
- P4040 processor with four Power Architecture® e500mc cores at up to 1.5 GHz
- P5010 processor with one 64-bit Power Architecture® e5500 core at up to 2 GHz
- P5020 processor with two 64-bit Power Architecture® e5500 cores at up to 2 GHz

Memory

- 2 to 16 GB of dual-channel DDR3 ECC SDRAM at up to 1333 MHz
- Up to 512 MB of NOR flash (with redundancy)
- Up to 64 GB of CPU NAND flash

VPX

- VITA 46.0
- VITA 46.11 (System Management on VPX)
- VITA 46.4 (two x4 PCIe lanes to P1)
- VITA 46.7 (two 1000BASE-TX and two 1000BASE-BX Ethernet ports to P4)
- VITA 46.9 (XMC and PMC I/O to P3, P4, P5, P6, mapping P3w1P4-P64s+X12d+X8d)
- VITA 48.2 Type 1 Two-Level Maintenance (2LM)
- Compatible with multiple VITA 65 OpenVPX™ slot profiles

Back Panel I/O

- Two RS-232/422/485 serial ports to P5
- Two USB 2.0 ports to P6
- Two 1000BASE-BX Ethernet ports to P4
- Two 1000BASE-TX Ethernet ports to P4
- XAUI to P2
- Two SATA ports capable of 3 Gb/s to P2 (P3041, P50x0 only)

IPMI

- Onboard management controller
- VITA 46.11 Tier 1 and Tier 2 IPMI Controller (IPMC)

XMC/PrPMC

- PCI-X (64/32-bit, 100/66 MHz)
- PCI (64/32-bit, 66/33 MHz)
- x8 PCI Express port to P15 and P25 (XMC)

Software Support

- Linux LSP
- Wind River VxWorks BSP
- Greens Hills INTEGRITY BSP
- QNX Neutrino BSP (contact factory)
- LynuxWorks LynxOS BSP (contact factory)

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 1	Level 3	Level 5
Cooling Method	Standard Air-Cooled	Rugged Air-Cooled	Conduction-Cooled
Operating Temperature	0 to +55°C ambient †	-40 to +70°C ambient †	-40 to +85°C (board rail surface)
Storage Temperature	-40 to +85°C ambient	-55 to +105°C ambient	-55 to +105°C (maximum)
Vibration	0.002 g ² /Hz (maximum), 5 to 2000 Hz	0.04 g ² /Hz (maximum), 5 to 2000 Hz	0.1 g ² /Hz (maximum), 5 to 2000 Hz
Shock	20 g, 11 ms sawtooth	30 g, 11 ms sawtooth	40 g, 11 ms sawtooth
Humidity	Up to 95% non-condensing	Up to 95% non-condensing	Up to 95% non-condensing

† Contact factory for airflow rate details.

