XCalibur1645

Not Recommended for New Designs

NXP QorIQ 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 processors P3041 and P4040)
- 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 with the VITA 48.2 Type 1, Two-Level Maintenance (2LM) standard
- 2 to 16 GB of DDR3 ECC SDRAM in two channels
- 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 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
- NXP hypervisor support for secure partitioning
- Linux BSP
- Wind River VxWorks BSP
- Green Hills INTEGRITY BSP
- Contact factory for availability of QNX Neutrino and LynuxWorks LynxOS BSPs

XCalibur1645

The XCalibur1645 is a high-performance, 6U VPX, single board computer supporting NXP (formerly Freescale) QorIQ P3 and P4 processors. Featuring a conduction-cooled design compliant with the Two-Level Maintenance (2LM) standard defined in VITA 48.2 Type 1, the XCalibur1645 is a powerful, feature-rich solution for the next generation of compute-intensive embedded 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 that 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. Additional reduced-function processors are available to meet any power and performance budget.

Operating system support is available for Wind River VxWorks, Green Hills INTEGRITY, QNX Neutrino, LynuxWorks LynxOS, and Linux. Wind River VxWorks and Linux BSPs may optionally be paired with the NXP hypervisor software to facilitate secure partitioning.

X-ES Extreme Engineering Solutions

...Always Fast

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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

Memory

- 2 to 16 GB of DDR3 ECC SDRAM in two channels
- Up to 512 MB of NOR flash (with redundancy)
- Up to 64 GB of CPU NAND flash

IPMI

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

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 P3w3P4-X38s+X8d+X12d and P5w3P6-X38s+X8d+X12d)
- 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-TX Ethernet ports to P4
- Two 1000BASE-BX Ethernet ports to P4
- XAUI to P2
- Two SATA ports capable of 3 Gb/s to P2 (P3041 only)
- Two x4 PCI Express interfaces to P1

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 BSP with optional NXP hypervisor support for secure partitioning
- Wind River VxWorks BSP with optional NXP hypervisor support for secure partitioning
- 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.

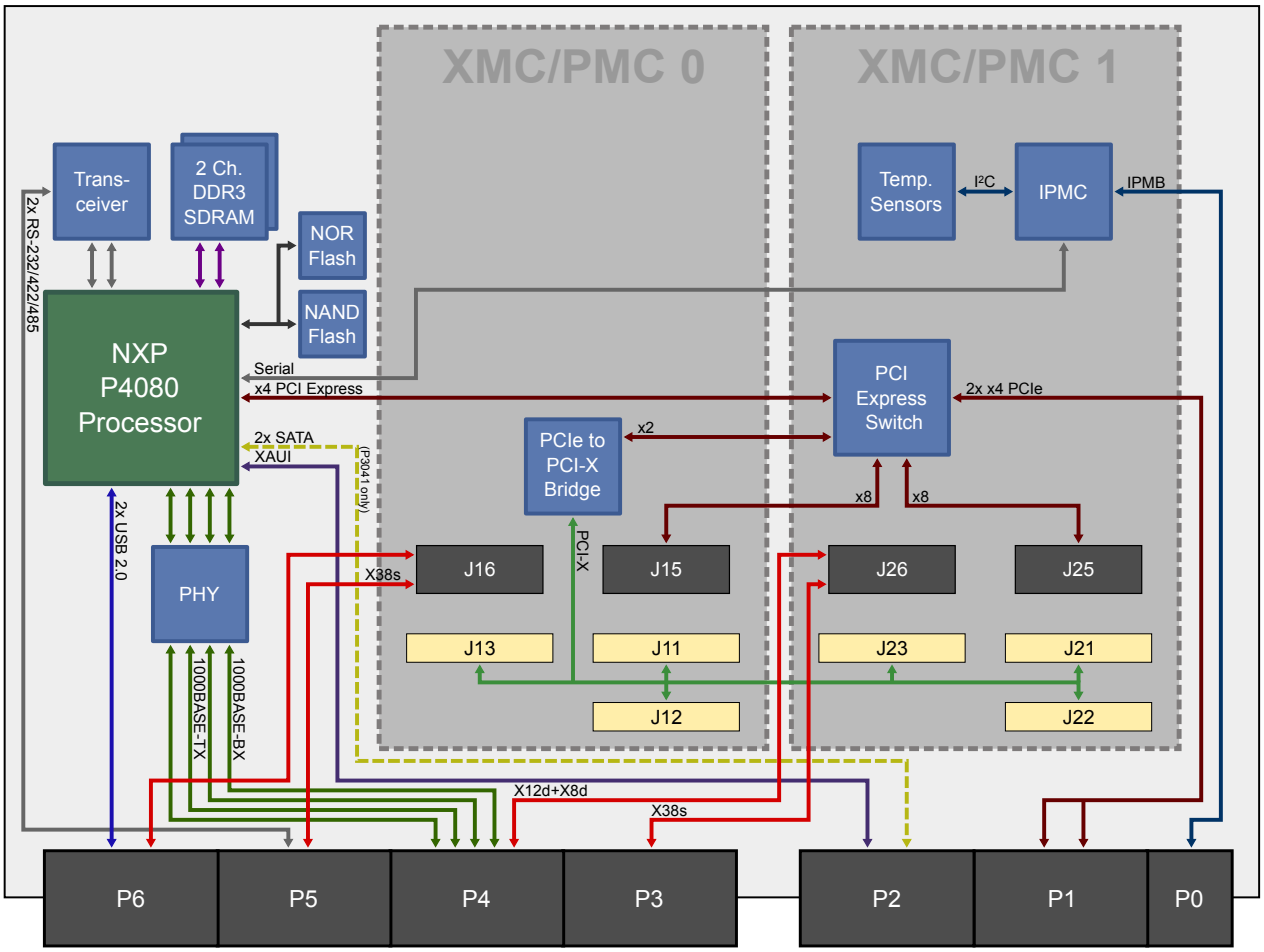
- Supported ruggedization levels (see chart below): 5
- Conformal coating available as an ordering option

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 g²/Hz (maximum), 5 to 2000 Hz	0.04 g²/Hz (maximum), 5 to 2000 Hz	0.1 g²/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.



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