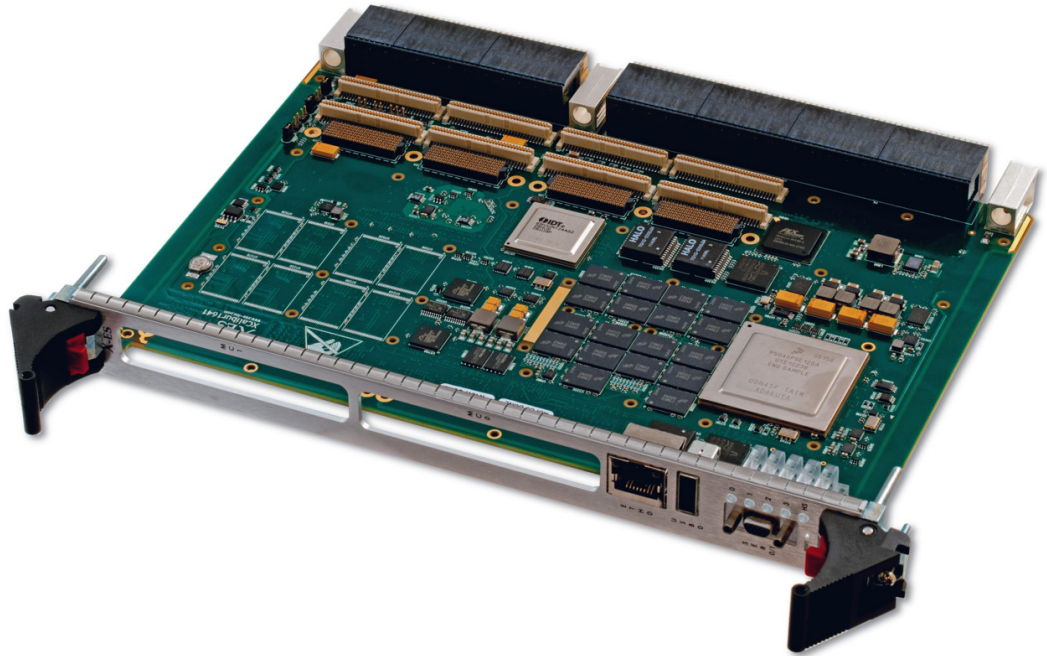# XCalibur1641

End of Life

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

Please contact X-ES Sales

- ❯ NXP QorIQ P4080 processor with eight Power Architecture® e500mc cores at up to 1.5 GHz

- ❯ Alternate NXP QorIQ processors available: P3041 and P4040

- ❯ 6U VPX module

- ❯ Conduction or air cooling

- ❯ VITA 46.11 Tier 1 and Tier 2 IPMI Controller (IPMC)

- ❯ 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

- ❯ Up to two SATA ports

- ❯ XAUI to VPX P2

- ❯ Two USB 2.0 ports

- ❯ Four Gigabit Ethernet ports

- ❯ Two serial ports

- ❯ Two XMC/PrPMC interfaces

- ❯ NXP hypervisor support for secure partitioning

- ❯ Linux BSP

- ❯ Wind River VxWorks BSP

- ❯ Green Hills INTEGRITY-178 tuMP BSP

- ❯ Contact factory for availability of QNX Neutrino and LynuxWorks LynxOS BSPs

XCalibur1641

The XCalibur1641 is a high-performance, 6U VPX, single board computer supporting NXP (formerly Freescale) QorIQ P3 and P4 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 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.

The XCalibur1641 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-178 tuMP, QNX Neutrino, LynuxWorks LynxOS, and Linux is available. Wind River VxWorks and Linux BSPs may optionally be paired with the NXP hypervisor software to facilitate secure partitioning.

X-ES
Extreme Engineering Solutions

"Fast, Flexible, Customer-Focused Embedded Solutions"

Extreme Engineering Solutions
9901 Silicon Prairie Parkway • Verona, WI 53593
Phone: 608.833.1155 • Fax: 608.827.6171
sales@xes-inc.com • https://www.xes-inc.com

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 up to two 1000BASE-BX Ethernet ports to P4)
- VITA 46.9 (PMC and XMC I/O to P3, P4, P5, P6, mapping P3w1P4-P64s+X12d+X8d)
- One or two USB 2.0 ports to P6
- XAUI to P2
- Two SATA ports capable of 3 Gb/s to P2 (optional)

XMC/PrPMC

- PCI-X (64/32-bit, 100/66 MHz)
- PCI (64/32-bit, 66/33 MHz)
- x8 PCI Express port to J15 and J25 (XMC)

Front Panel I/O (Optional)

- Two RS-232 serial ports
- One Gigabit Ethernet port
- One USB 2.0 port
- General-purpose LEDs

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-178 tuMP BSP
- Contact factory for availability of QNX Neutrino and LynxWorks LynxOS BSPs

Physical Characteristics

- 6U VPX-REDI conduction- or air-cooled form factor
- Dimensions: 233 mm x 160 mm
- 0.8 in. pitch
- 1.0 in. pitch Two-Level Maintenance (2LM)

Environmental Requirements

Contact factory for appropriate board configuration based on environmental requirements.

- Supported ruggedization levels (see chart below): 1, 3, 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.
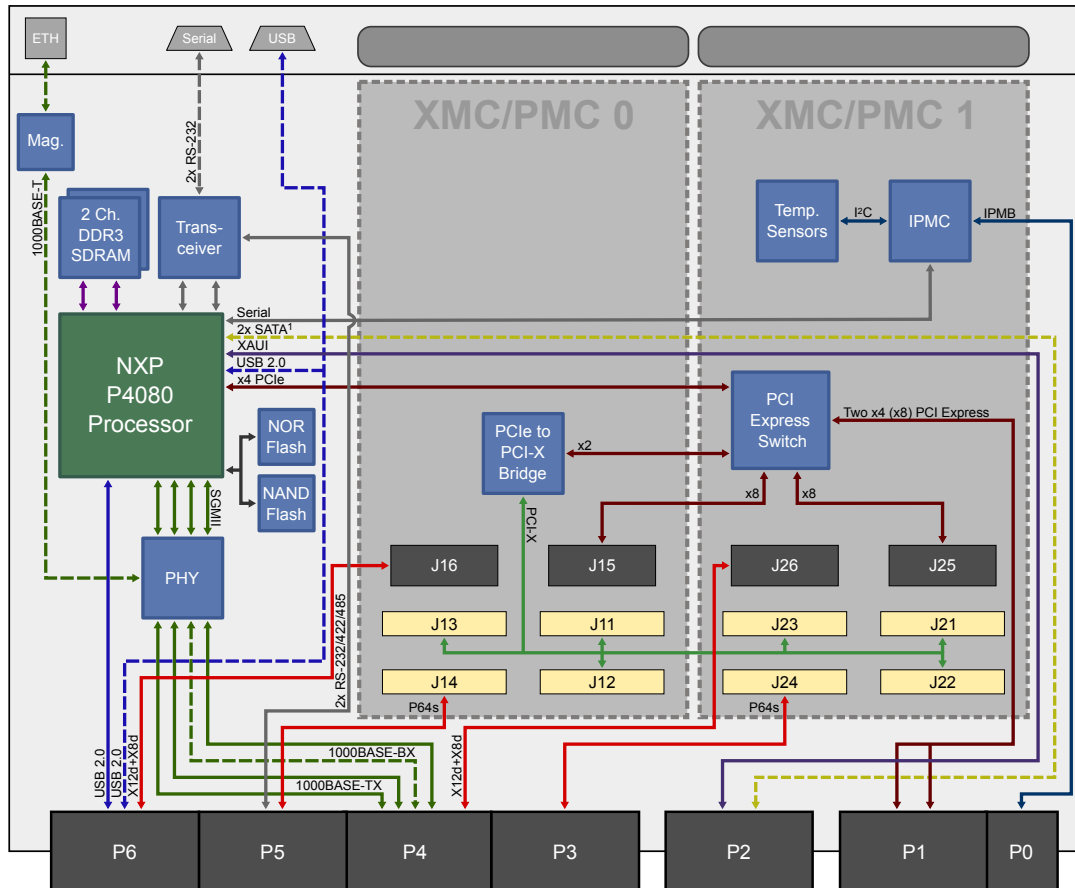
XCalibur1641

[1] 2x SATA available on P3041 only