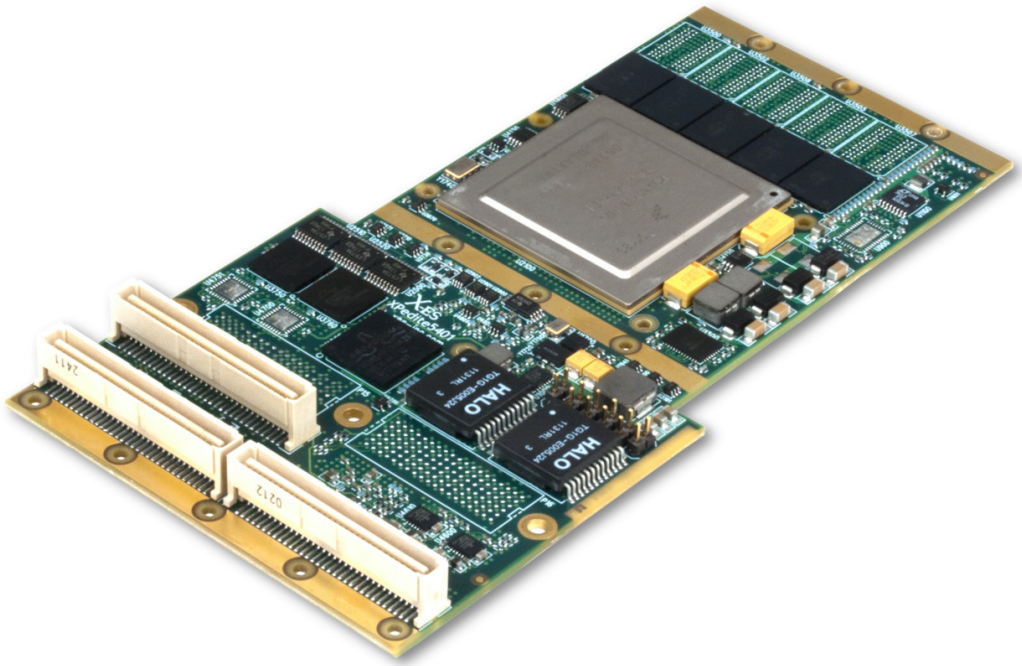
XPedite5401

NXP QorIQ P4080 Eight-Core Processor-Based Conduction-Cooled XMC/PMC Module with Two Gigabit Ethernet Ports

- NXP QorIQ P4080 processor with eight Power Architecture® e500mc cores at up to 1.5 GHz
- Alternate NXP QorIQ processors: P3041, P4040, P5010, P5020
- Conduction-cooled
- Extended shock and vibration tolerance
- Up to 8 GB of DDR3-1333 ECC SDRAM in two channels
- Up to 256 MB of NOR flash (with redundancy)
- Up to 16 GB of NAND flash
- Hardware write-protection for NVRAM
- PCI PrPMC interface
- x4 PCI Express interface to P15
- XAUI to P16
- Two Gigabit Ethernet ports to P14/P16
- Two USB 2.0 ports
- Two RS-232/422/485 serial ports to P14/P16
- Two SATA ports to P16
- Linux BSP
- Wind River VxWorks BSP
- Green Hills INTEGRITY-178 tuMP BSP



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The XPedite5401 is a high-performance XMC/PrPMC supporting NXP (formerly Freescale) QorIQ P3, P4, and P5 processors. With a number of processor options to choose from, X-ES can provide a product to meet the specific power and performance requirements of 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 to deliver 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 XPedite5401 provides a high-performance, feature-rich solution for current and future generations of embedded applications. Wind River VxWorks, Linux and Green Hills INTEGRITY-178 tuMP Board Support Packages (BSPs) are available.

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 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

- Up to 8 GB of up to DDR3-1333 ECC SDRAM in two channels
- Up to 256 MB of NOR flash (with redundancy)
- Up to 16 GB of NAND flash

PrPMC Interface

- 66/33 MHz PCI
- 32-bit bus interface

P15 XMC Interface

- x4 configurable PCI Express

P14/P16 XMC/PMC Interface

- Two 10/100/1000BASE-T Ethernet ports
- Two RS-232/422/485 serial ports
- 3.3 V GPIO
- Two USB 2.0 ports
- Two SATA ports capable of 3 Gb/s to P16 (optional)
- XAUI port (optional)

Software Support

- Linux BSP
- Wind River VxWorks BSP
- Green Hills INTEGRITY-178 tuMP BSP

Physical Characteristics

- Conduction-cooled XMC/PMC form factor
- Dimensions: 143.75 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): 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 (300 LFM)	-40 to +70°C (600 LFM)	-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	0% to 95% non-condensing	0% to 95% non-condensing	0% to 95% non-condensing