

XPedite5501

**Not Recommended
for New Designs**

NXP QorIQ P2020 Dual-Core Processor-Based Conduction-Cooled XMC/PMC Module **Please contact X-ES Sales**

- › NXP QorIQ P2020 processor with dual Power Architecture® e500v2 cores at up to 1.2 GHz
- › Alternate NXP QorIQ processors: P1011, P1020, and P2010
- › Conduction cooling
- › Extended shock and vibration tolerance
- › Up to 8 GB of DDR3 ECC SDRAM
- › x4 PCI Express or serial RapidIO interface to P15
- › PCI PrPMC interface
- › Two Gigabit Ethernet ports to P14 or P16
- › Two RS-232/422/485 serial ports to P14 or P16
- › One USB 2.0 port
- › Up to 256 MB of NOR flash (with redundancy)
- › Up to 16 GB of NAND flash
- › Detachable front panel for development
- › Linux BSP
- › Wind River VxWorks BSP
- › QNX Neutrino BSP
- › Green Hills INTEGRITY-178 BSP



XPedite5501

The XPedite5501 is a high-performance, XMC/PrPMC, single board computer supporting NXP (formerly Freescale) QorIQ P1 and P2 processors. Hardware options range from commercial/air-cooled to full-military conduction-cooled solutions. With dual Power Architecture® e500v2 cores running at up to 1.2 GHz, the P2020 delivers enhanced performance and efficiency for today's network information processing and other embedded computing applications.

Complementing processor performance, the XPedite5501 features up to 8 GB of DDR3 ECC SDRAM. A configurable SerDes interface (PCI Express or Serial RapidIO) to the XMC connector and a conventional PCI interface to the PMC connectors provide ample bandwidth to the P2020. Two Gigabit Ethernet ports, a USB 2.0 port, and two RS-232/422/485 ports are routed to P14 or P16 for additional system flexibility. A detachable front panel provides one Gigabit Ethernet port and one RS-232 serial port for development.

The XPedite5501 provides a high-performance, feature-rich solution for current and future generations of embedded applications. Additionally, for customers seeking a maximum power of just 8 W, the XPedite5501 can be designed with the NXP QorIQ P1020 processor. Operating system support packages for the XPedite5501 include Wind River VxWorks, QNX Neutrino, Green Hills INTEGRITY-178, and Linux 2.6.

X-ES

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Processor

- NXP (formerly Freescale) QorIQ P2020 processor
- Dual Power Architecture® e500v2 cores at up to 1.2 GHz
- 512 kB of shared L2 cache

Alternate Processor Configurations

- P1011 processor with one Power Architecture® e500v2 core at up to 800 MHz
- P1020 processor with two Power Architecture® e500v2 cores at up to 800 MHz
- P2010 processor with one Power Architecture® e500v2 core at up to 1.2 GHz

Memory

- Up to 8 GB of DDR3 SDRAM
- 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 or Serial RapidIO

P14/P16 XMC/PMC Interface

- Two Gigabit Ethernet ports
- Two RS-232/422/485 serial ports
- 3.3 V GPIO
- One USB 2.0 port

Front Panel I/O

- One Gigabit Ethernet port
- One RS-232 serial port

Software Support

- Linux BSP
- Wind River VxWorks BSP
- QNX Neutrino BSP
- Green Hills INTEGRITY-178 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 †	-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.

