

# XPort3200

Freescale QorIQ P1020 Processor-Based Conduction- or Air-Cooled XMC/PMC IEEE 1588v2 Grandmaster Clock Module

- ▶ Freescale QorIQ P1020 processor with dual PowerPC e500v2 cores at 800 MHz
- ▶ Conduction or air cooling
- ▶ Extended shock and vibration tolerance
- ▶ 1 GB of DDR3-667 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
- ▶ 256 MB of NOR flash (with redundancy)
- ▶ 16 GB of NAND flash
- ▶ IEEE 1588v2 ordinary clock
- ▶ IEEE 1588v2 boundary clock
- ▶ 1 PPS and configurable frequency output
- ▶ 1 PPS and reference frequency input (optional)
- ▶ High-precision oven-controlled oscillator (OCXO)
- ▶ GPS support (optional)
- ▶ Linux BSP



## XPort3200

The XPort3200 is a rugged, IEEE 1588v2 Precision Time Protocol (PTP) ordinary clock with grandmaster capabilities. Hardware options range from commercial/air-cooled to full-military conduction-cooled solutions.

The XPort3200 is capable of providing nanosecond-level time and frequency synchronization for Ethernet networks. Support for multicast and optional unicast packets, along with grandmaster and slave operation, provide a complete IEEE 1588v2 solution.

1 PPS and input clock synchronization, as well as configurable clock and 1 PPS outputs, allow for synchronizing the grandmaster to an external time reference or providing a frequency reference to an external device.

# X-ES

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**Processor**

- Freescale QorIQ P1020 processor
- Dual PowerPC e500v2 cores at 800 MHz
- 256 kB of shared L2 cache

**IEEE 1588v2**

- Ordinary clock support
- Boundary clock support
- Grandmaster support
- Multicast synchronization support
- Unicast synchronization support (optional)
- Nanosecond-level resolution
- On-card GPS time synchronization (optional)

**Memory**

- 1 GB of DDR3-667 SDRAM
- 256 MB of NOR flash (with redundancy)
- 16 GB of NAND flash

**Synchronous Ethernet**

- Support for distributing clock over Ethernet
- Support for recovering Ethernet clock connection

**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 ports
- 3.3 V GPIO
- One USB 2.0 port
- 1 PPS and reference frequency input (optional)
- 1 PPS and configurable clock output

**Software Support**

- Linux BSP

**Physical Characteristics**

- Conduction- or air-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 g <sup>2</sup> /Hz (maximum), 5 to 2000 Hz	0.04 g <sup>2</sup> /Hz (maximum), 5 to 2000 Hz	0.1 g <sup>2</sup> /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

