XPedite5550

NXP Dual-Core QorIQ P2020 Processor-Based Conduction- or Air-Cooled COM Express® Module

- NXP QorIQ P2010 and P2020 processors with dual Power Architecture® e500v2 cores at up to 1.2 GHz
- Conduction or air cooling
- Extended shock and vibration tolerance
- Up to 8 GB of DDR3-800 ECC SDRAM
- x2 PCI Express interface
- x1 PCI Express interface
- Three Gigabit Ethernet ports
- Two serial ports
- USB 2.0 port
- Up to 256 MB of NOR flash (with redundancy)
- Up to 16 GB of NAND flash
- Wind River VxWorks BSP
- Linux BSP
- Green Hills INTEGRITY-178 BSP
- QNX Neutrino (contact factory)
- LynuxWorks LynxOS (contact factory)

XPedite5550

The XPedite5550 is a ruggedized COM Express® module that complies with the COM Express® Compact form factor (95 mm x 95 mm) and supports an enhanced Type 5 pinout. COM Express® provides a standards-based form factor to bring processing to a wide range of applications. Available in both conduction- and air-cooled versions, the XPedite5550 supports the NXP (formerly Freescale) QorIQ P2020 processor. 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.

The XPedite5550 complements processor performance with up to 8 GB of DDR3-800 ECC SDRAM. It also hosts numerous I/O ports, including three Gigabit Ethernet ports or three SerDes Ethernet ports, a single x2 PCIe port, a single x1 PCIe port, a single USB 2.0 port, two I²C ports, two serial ports, one Serial Peripheral Interface (SPI), IEEE 1588 support, and P2020 local bus.

The XPedite5550 provides a high-performance, feature-rich solution for current and future generations of embedded applications. For customers seeking lower overall power consumption, the XPedite5550 can be designed with the NXP P1020 processor. Operating system support packages for the XPedite5550 include Wind River VxWorks, Green Hills INTEGRITY-178, and Linux 2.6.

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Extreme Engineering Solutions
3225 Deming Way, Suite 120 • Middleton, WI 53562
Phone: 608.833.1155 • Fax: 608.827.6171
sales@xes-inc.com • http://www.xes-inc.com

Processor

- NXP 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 DDR3-800 SDRAM
- Up to 256 MB of NOR flash (with redundancy)
- Up to 16 GB of NAND flash

COM Express®

- Type 5FS pinout, see board manual for details
- Compact form factor (95 mm x 95 mm)

Ruggedization and Reliability

- Class III PCB fabrication and assembly
- Soldered DDR3 ECC SDRAM
- Tin whisker mitigation
- Designed and tested for extended solder joint reliability
- Additional mounting holes for rugged and conduction-cooled environments
- Bootloader and BIT support

Interface

- Three 10/100/1000BASE-T or 1000BASE-X ports
- SPI
- IEEE 1588
- Two PCIe (x2, x1)
- One USB 2.0 port
- Two I²C
- Two serial ports
- P2020 local bus

Software Support

- Wind River VxWorks BSP
- Linux BSP
- Green Hills INTEGRITY-178 BSP
- QNX Neutrino (contact factory)
- LynuxWorks LynxOS (contact factory)

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 ambient
Vibration	0.002 g²/Hz, 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