IMP3A
3U CPCI QorIQ-based Single Board Computer

Features
- Freescale QorIQ processor up to 1.2 GHz
  - Two e500v2 cores
  - Shared 512 KB L2 Cache with ECC
  - Integrated DDR3 memory controller with ECC
- Up to 4 GB DDR3 SDRAM with ECC
- 8 GB SATA SSD Flash and 128 KB of NVRAM
- One PCI-X PMC expansion site
- Rear IO
  - 2x Gigabit Ethernet
  - 2x COM ports
  - 1x USB 2.0 ports
  - 2x SATA ports
  - Up to 64x PMC I/O
  - 16x GPIO
- Operating system support for VxWorks®, and Linux®
- Single slot 3U CompactPCI form factor
- Compliant to PCIM® 2.0 R3.0

The IMP3A is the first Freescale QorIQ-based single board computer to join the PowerPact3 family of 3U CompactPCI processors. This product is designed for demanding applications where size-, weight-, and power-constraints (SWAP) are critical to success. With the new P2020 and P2010 processor options the IMP3A will deliver unparalleled performance in a single slot solution.

Features of the QoriQ P2 processor are:
- System on Chip (SoC) processors with high-performance e500 cores built on Power Architecture Technology
- 45 nanometer technology delivers unprecedented performance per watt, enabling power-efficient designs
- Dual- and single-core products

The IMP3A is offered with an impressive range of I/O that includes two Gigabit Ethernet channels, up to 16 GPIO, two SATA channels, two COM ports, and USB 2.0.

The IMP3A can be factory configured as either a system slot SBC supporting 46 pins of PMC I/O to J2, or a peripheral slot SBC supporting 64 pins of PMC I/O to J2.

Available in air- and conduction-cooled build levels, the IMP3A is fully supported by comprehensive Deployed Test Software (BIT and BCS) and support planned for popular real time operating systems including VxWorks, Integrity and LynxOS®.
IMP3A 3U CPCI QorIQ-based Single Board Computer

**Specifications**

**Processor**
- Support for Freescale QorIQ P2020 and P2010 operating at 1.2 GHz
- Two e500v2 cores
- 36-bit physical addressing
- Double-precision floating-point support
- Shared 512 KByte L2 Cache with ECC

**DDR3 SDRAM**
- Up to a 6 GByte DDR3 SDRAM with ECC
- 800 MByte/s data rate

**Flash Memory**
- Up to 512 MByte NOR Flash memory
- 8 GByte SSD (Solid State Disk)
- 16 MBytes allocated for boot code, 8 MBytes per core
  - Each 8 MBytes feature four independent 2 MByte boot regions

**CompactPCI Interface**
- PICMG 2.0 R3.0 compliant capable of 33 MHz and 66 MHz
- 5V and 3.3V VIO supported
- System controller and peripheral modes supported

**Gigabit Ethernet**
- 2x Gigabit Ethernet to P2
- 10/100BaseT also supported

**Serial I/O**
- 2x RS232/422 COM ports to P2

**USB**
- 1x USB 2.0 to P2

**SATA**
- 2x SATA (150MB/s) to P2

**General Purpose I/O**
- 16 GPIO, all of which are 5V tolerant, each capable of generating an interrupt.

**PMC Extension Slot**
- One IEEE P1386 (level 1-3) and VITA 20-2001 (levels 4-5)
- All levels are compliant to IEEE-P1386.1 (PMC) and VITA 39-2003 (PCI x PMC)
- PMC site is both 5V and 3.3V tolerant
  - 64-bit/133 MHz PCI-x supported
  - 64 I/O pins to J2 in peripheral-only mode
  - 46 I/O pins to J2 in system slot/peripheral mode

**NVRAM/Real-Time Clock/Watchdog/ETI**
- 128 KByte non-volatile FRAM
- Real-time clock with 1 second resolution
- 2x Watchdog timers (programmable 32-bit timer)
- Elapsed time indicator (record power cycles and on-time)

**Temperature Sensors**
- On-board ambient temperatures

**Power Requirements**
- +5V and 3.3V required
- ±12V only if required by mounted PMC module

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**Environmental**

<table>
<thead>
<tr>
<th></th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
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<tbody>
<tr>
<td><strong>Cooling Method</strong></td>
<td>Convection</td>
<td>Convection</td>
<td>Convection</td>
<td>Conduction</td>
<td>Conduction</td>
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<tr>
<td><strong>Conformal Coating</strong></td>
<td>Optional</td>
<td>Standard</td>
<td>Standard</td>
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<td>Standard</td>
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<tr>
<td><strong>High/Low Temp</strong></td>
<td>0 to 55°C</td>
<td>-20 to +65°C</td>
<td>-40 to +75°C</td>
<td>-40 to +75°C</td>
<td>-40 to +85°C</td>
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<tr>
<td><strong>Operational</strong></td>
<td>1300 ft/m</td>
<td>1300 ft/m</td>
<td>600 ft/m</td>
<td>At cold wall</td>
<td>At cold wall</td>
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<tr>
<td><strong>Random Vibration</strong></td>
<td>0.002g/Hz**</td>
<td>0.002g/Hz**</td>
<td>0.04g/Hz**</td>
<td>0.1g/Hz**</td>
<td>0.1g/Hz**</td>
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<tr>
<td><strong>Shock</strong></td>
<td>20g***</td>
<td>20g***</td>
<td>20g***</td>
<td>40g***</td>
<td>40g***</td>
</tr>
</tbody>
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**About GE Intelligent Platforms**

GE Intelligent Platforms, a General Electric Company (NYSE: GE), is an experienced high-performance technology company and a global provider of hardware, software, services, and expertise in automation and embedded computing. We offer a unique foundation of agile, advanced and ultra-reliable technology that provides customers a sustainable advantage in the industries they serve, including energy, water, consumer packaged goods, government and defense, and telecommunications. GE Intelligent Platforms is a worldwide company headquartered in Charlottesville, VA and is part of GE Home and Business Solutions. For more information, visit www.ge-ip.com.

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