CPCI7203

PICMG 2.30 3U Processor Board

Embedded Computing for Business-Critical Continuity™

Ideal for high performance applications in space-constrained applications

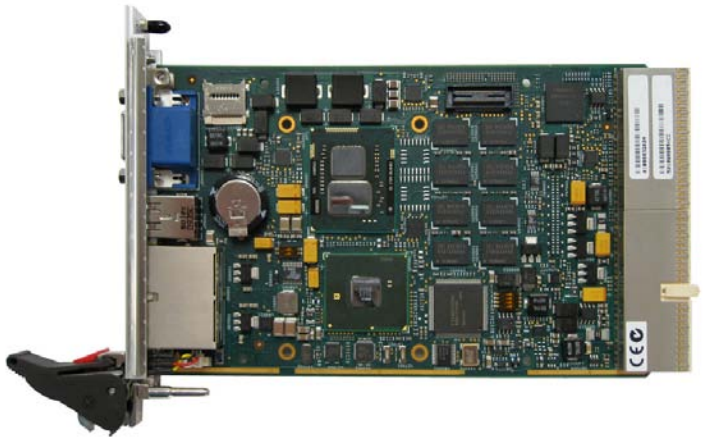
- Intel Core i7 integrated dual-core processor (1.06 GHz ULV or 2.0 GHz LV)
- 1GB, 2GB or 4GB ECC-protected DDR3-800/1066 (soldered)
- Mobile Intel® 5 Series chipset: Ibex Peak-M PCH
- VGA interface
- Two on-board Gigabit Ethernet interfaces
- Four USB 2.0 ports
- Four PCI Express interfaces
- Two SATA interfaces
- One UART port
- Full PICMG 2.1, R2.0 Hot Swap specification compliance
- PICMG 2.9 System Management specification support
- PICMG 2.30 CompactPCI® PlusIO support
- Optional rear transition module

The Emerson Network Power CPCI7203 single-board computer (SBC) uses the Intel® Core™ i7 integrated dual-core processor in the 3U form factor for high performance applications in space-constrained applications. On-board memory includes up to 4GB DDR3 and 256KB non-volatile Ferroelectic Random Access Memory (FeRAM). FeRAM does not require batteries or periodic refreshes and offers many more read/write cycles and faster performance than flash memory, which benefits critical non-volatile data storage, data logs and dynamic program updates. Connectivity includes two Gigabit Ethernet ports, four USB 2.0 ports, one VGA, one serial port, two SATA ports, one universal PCI and four PCI Express (2.5Gbps) interfaces. The Trusted Platform Module (TPM) enhances data security and encryption capabilities. The CPCI7203 supports a range of operating system and software options including Wind River VxWorks, Fedora 11/Red Hat 6 Linux, VMware and Microsoft® Windows®.

The CPCI7203 is a low-power, high-performance SBC that offers full hot swap compliance per PICMG® 2.1 and supports the PICMG 2.9 System Management and PICMG 2.30 CompactPCI PlusIO which supports the new serial buses on the J2 connector for data transfer rates of up to 5Gbit per second.

The Intelligent Platform Management Interface (IPMI) supports the PICMG 2.9 specification; the blade can host the Baseboard Management Controller (BMC) or act as a Peripheral Management controller (PM) node.

The CPCI7203 board is a superior choice for a wide range of industrial, medical and military/aerospace applications, such as railway control, semiconductor processing, robotics, image processing, vehicle communications and on-board flight information systems.



RoHS 6/6 COMPLIANT

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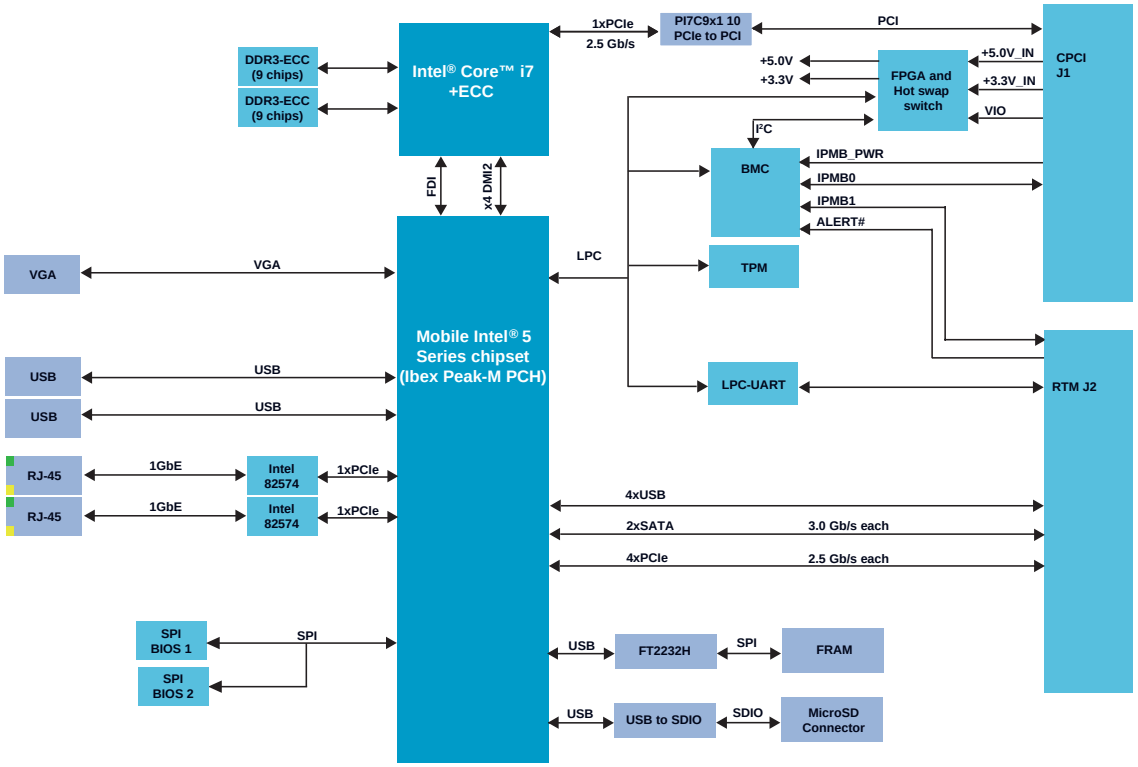
CPCI7203 Block Diagram



Specifications

HARDWARE PROCESSOR/CHIPSET

- 1.06 or 2.0 GHz Intel® Core™ i7 dual-core processor
- 2MB or 4MB on-chip L2 cache; 32KB L1 cache
- Intel® Ibex Peak-M PCH
- Dual DDR3-800/1066 memory controller
- 1x lane PCI Express
- x4 DMI Interface to PCH
- No frontside bus, north bridge is integrated in the processor

MEMORY

- Dual channel 17.0GB/s memory architecture
- 1GB, 2GB or 4GB ECC-protected DDR3-1066 with ECC

USER FLASH MEMORY

- 4GB MicroSD flash module
- 256KB FRAM (NVRAM)

BOOT FLASH MEMORY

- 64MB SPI flash
- Support for crisis recovery

COMPACTPCI INTERFACE

- Universal CompactPCI Bus
- System- and peripheral-slot capability (32-bit/66 MHz)

I/O CAPABILITIES

- Two Gigabit Ethernet interfaces
- IPMI 1.5 remote platform and system management support (PICMG 2.9)
- VGA (front)
- Four USB 2.0 ports (two front/two rear)
- Four PCI Express interfaces (rear)
- One UART port (rear)
- Two SATA interfaces (rear)

OPTIONAL TRANSITION MODULES

- PCI Express, USB 2.0, UART, SATA, Reset

OTHER FEATURES

- Trusted Platform Module (TPM)
- Watchdog timer
- POST codes, status and user LEDs
- Reset switch
- Locking ejector handles
- Power-up ramping and in-rush current protection
- Hot swap support (PICMG 2.1, R2.0)

POWER REQUIREMENTS

- Maximum for 1.06 GHz, 1GB memory variant
  - 3.3V 2A 6.6W
  - 5.0V 7.5A 37.5W
  - 44W (maximum total power dissipation)
- Maximum for 2.06 GHz, 2GB memory variant
  - 3.3V 2A 6.6W
  - 5.0V 10A 50W
  - 57W (maximum total power dissipation)
- Maximum for 2.0 GHz, 4GB memory variant
  - 3.3V 2A 6.6W
  - 5.0V 10A 50W
  - 57W (maximum total power dissipation)

ELECTROMAGNETIC COMPATIBILITY (EMC)

- Intended for use in systems meeting the following regulations:
  - U.S.: FCC Part 15, Subpart B, Class A (non-residential)
  - Canada: ICES-003, Class A (non-residential)
- Emerson board products are tested in a representative system to the following standards:
  - CE Mark per European EMC Directive 89/336/EEC with Amendments
  - Emissions: EN55022 Class B; Immunity: EN55024

ENVIRONMENTAL REQUIREMENTS

- Operating temperature 0°C to +55°C
- Relative humidity 5% to 95% at +40°C (non-condensing)
- Operating altitude: –300 m to +4500 m
- Product complies with flammability ratings according to UL-94V0
- Airflow: 300LFM = 1.54 m/s
- Tested and certified to NEBS Criteria Level 3 requirements (Bellcore GR-1089-CORE; Issue 3, October 2003, and GR-63-CORE, Issue 2, April 2002)
- Operating vibration: 5 to 500 Hz sinusoidal, 2 G (1 oct/min); 5-62 Hz, 5 m/s; 62-500 Hz, 20 m/s
- Operating shock: 5 G, 20 ms half sine x 3

MTBF

Calculated per Telcordia SR-332, Issue 1 and based on a ground fixed, controlled environment assuming an inlet air temperature of between 0° C and 50° C. 200,000 hours

DOCUMENTATION

- Installation Guide and Technical Reference Manual
- Hardware Release Notes
- UEFI BIOS Release Notes
- Linux Installation and Programmer's Guides

Ordering Information

Part Number	Description
CPCI7203-10-1GB	3U Intel® Core™ i7 1.06 GHz, 1GB DDR3
CPCI7203-20-2GB	3U Intel Core i7 2.0 GHz, 2GB DDR3
CPCI7203-20-4GB	3U Intel Core i7 2.0 GHz, 4GB DDR3
CPCI7203-RTM	3U CPCI7203 RTM

SOLUTION SERVICES

Emerson Network Power provides a portfolio of solution services optimized to meet your needs throughout the product lifecycle. Design services help speed time-to-market. Deployment services include global 24x7 technical support. Renewal services enable product longevity and technology refresh.

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Emerson Network Power
Offices: Tempe, AZ U.S.A. 1 800 759 1107 or +1 602 438 5720
Paris, France +33 1 60 92 31 20 • Munich, Germany +49 89 9608 2333 • Tel Aviv, Israel +972 9 9560361
Hong Kong +852 2176 3540 • Shanghai, China +86 21 3395 0289 • Tokyo, Japan +81 3 5403 2730 • Seoul, Korea +82 2 3483 1500
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