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Find the *Emerson / Motorola cPCI-6020* at our website: ***Click HERE***

CPCI-6020

CompactPCI Host Slot Processor Board

Embedded Computing for Business-Critical Continuity™

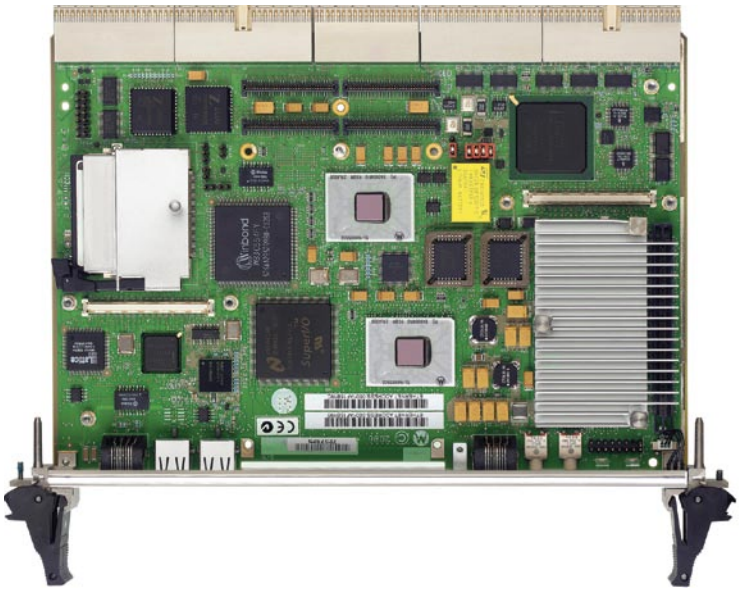
The CPCI-6020 series pushes performance and functionality of the PowerPlus Architecture to unprecedented levels

- MPC7410 processor
- High-performance L2 cache
- High-performance, low-latency SDRAM subsystem
- Up to 2GB of ECC protected capacity
- New DMA capability
- Variety of persistent memory types and capacities
- Dual 10/100BaseT Ethernet
- Four optional USB ports (two in the front)
- Two async serial ports, two async/sync serial ports
- Single PMC slot
- PCI Enhanced IDE (EIDE) controller and floppy disk controller
- On-board debug monitor with self-test diagnostics
- Four 32-bit timers, three watchdog timers

The Emerson Network Power CPCI-6020 series is a family of CompactPCI host-slot processor modules and the first host-slot modules to benefit from Emerson's PowerPlus III Architecture. The CPCI-6020 provides substantial investment protection to deployed infrastructure by providing an easy upgrade and migration to state-of-the-art features and performance. Utilizing low-power, high-performance MPC7410 processors with 2MB of secondary cache, dual peripheral component interconnect (PCI) buses for the on-board peripherals and a 64-bit bridge to the CompactPCI® interface, the CPCI-6020 series packs optimum performance and functionality in a single CompactPCI slot.

The CPCI-6020-MCPTM-01 transition module provides industry standard connector access to EIDE, one RJ-45 connector and one 10-pin header providing access to the asynchronous serial ports, one PIM, two RJ-45 connectors for rear Ethernet and two additional sync/async serial ports via a single connector.

Designed with relevant standards, compatibility and interoperability in mind, the CPCI-6020 is compliant with PICMG® 2.1 (Hot Swap), VITA 36 (PIM), IEEE 1386.1 (PMC) and Emerson's high availability system architecture specifications. The CPCI-6020 supports booting a complete range of real-time operating systems and kernels which may be purchased from companies such as Wind River Systems, Inc. and other leading providers.

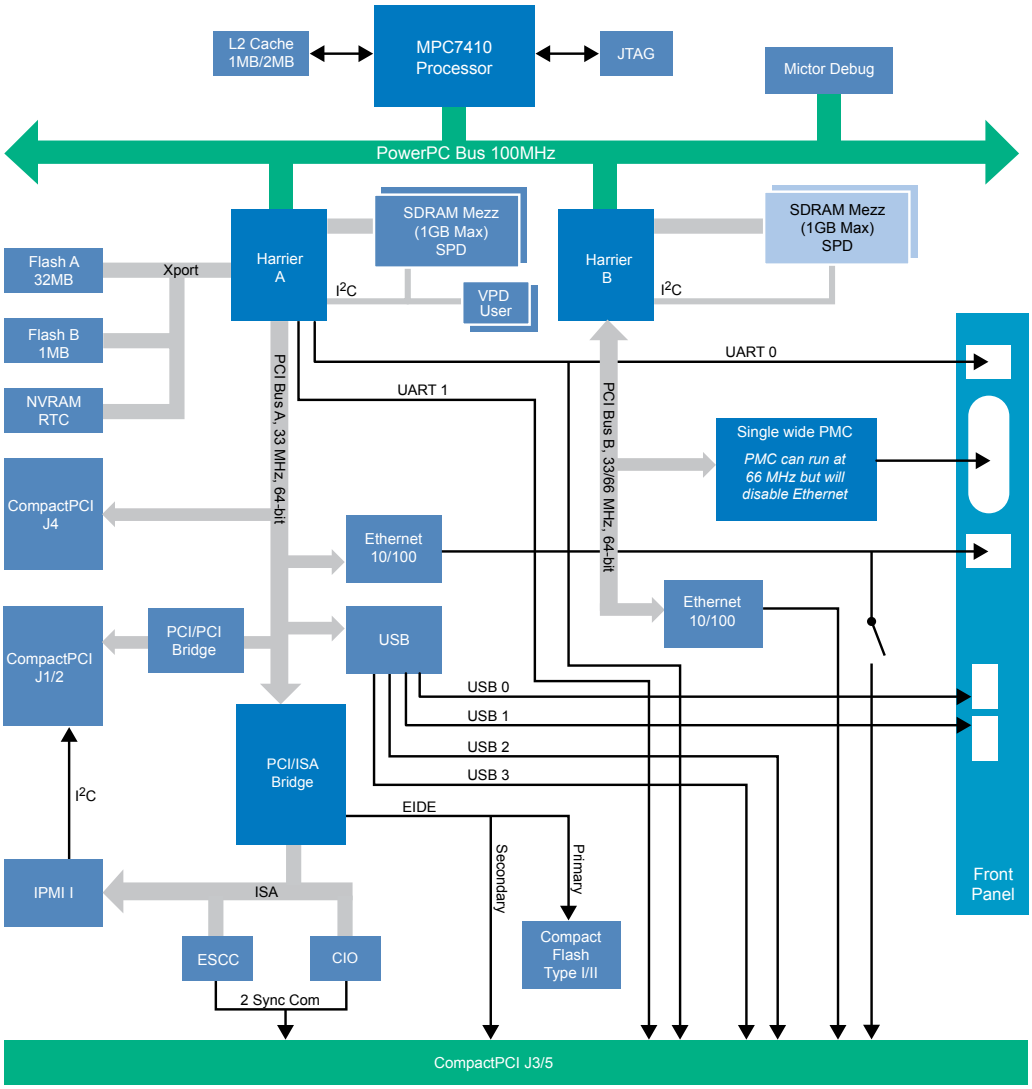


RoHS 6/6 COMPLIANT

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CPCI-6020 Block Diagram



Specifications

PROCESSING SUBSYSTEM

- Processor: 500 MHz MPC7410 processor
- On-chip L1 Cache (I/D): 32K/32K
- High-Performance L2 Cache: 200 MHz parity protected, 2MB
- Frontside Bus: 100 MHz

CONTROLLER AND MEMORY SUBSYSTEM

- Dynamic Memory: ECC protected synchronous dynamic RAM
- Capacity: Up to four RAM500 mezzanines yielding 2GB maximum capacity
- Additional Functions: Dual DMA engine—See the Harrier ASIC Programmer's Reference Guide for details; dual multi-processor interrupt controller (MPIC). One DMA engine per Harrier controller.
- Single Cycle Accesses: 10 read/5 write
- Read Burst Mode: 8-1-1-1 idle; 3-1-1-1 aligned page hit (CL3)
- Write Burst Mode: 4-1-1-1 idle; 3-1-1-1 aligned page hit

COMPACTPCI INTERFACE

- Controller: Intel® 21154
- Address/Data: A32/D32/D64 with parity
- PCI Bus Clock: 33/66 MHz, PCI 2.1 compliant
- Signaling: 3.3V output, input defined by VIO

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ETHERNET INTERFACE

- Controller: Dual Intel® 82551IT
- Interface Speed: 10/100Mbps
- PCI Local bus DMA: Yes, with PCI burst
- Connector: One RJ-45 on front panel, one TM port RJ-45 via Jx

PERSISTENT MEMORY

- Flash Capacity (bootable): 1MB via two 32-pin PLCC sockets; additional 32MB surface mount; selectable via reset vector
- CompactFlash: Single Type I/II memory card socket for large capacity needs (50-pin socket)
- Controller: W83C554
- Interface: ATA, true IDE mode
- NVRAM: 32KB total capacity, 4KB available for user data
- Cell Storage Life: 50 years at 55° C
- Cell Capacity Life: 10 years at 100% duty cycle
- Removable Battery: Yes
- SROM/Serial EEPROM: AT93C46 SROMs for Ethernet configuration; two 8KB dual-address I2C devices for vital product data (VPD) and user configuration data; separate 256 byte standard I2C serial EEPROMs (on mezzanines) for memory VPD

ASYNCHRONOUS SERIAL PORTS

- Controller: PC97317
- Number of Ports: Two, 16550-compatible
- Configuration: EIA-574-DTE
- Async Baud Rate, bps max.: 38.4K EIA-232, 115Kb/s raw
- Connector (COM1): Front panel RJ-45, also RJ-45 on CPCI-6020-MCPTM-01
- Connector (COM2): Routed to J3, 10-pin header on CPCI-6020-MCPTM-01

SYNCHRONOUS SERIAL PORTS

- Controller: Z85230/Z8536
- Number of Ports: Two
- Configuration: TTL to P2 (both ports), SIM on MCPTM-01
- Baud Rate, bps max.: 2.5MB sync, 38.4KB async
- Oscillator Clock Rate (PCLK): 10 MHz/5 MHz
- Connector: Routed to J3, HD-50 on CPCI-6020-MCPTM-01

EIDE INTERFACE

- Controller: W83C554F
- Connector: Routed to J5, one 40-pin header on CPCI-6020-MCPTM-01; plus on-board CompactFlash

USB

- Controller: µPD720101
- Connectors: Two Series A receptacles on front panel, two separate ports routed to J5

IEEE P1386.1 PCI MEZZANINE CARD SLOT

- Address/Data: A32/D32/D64, PMC PN1, PN2, PN3, PN4 connectors
- PCI Bus Clock: 33 MHz or 66 MHz
- Signaling: 3.3V
- Power: +3.3V, +5V, 12V, 7.5 watts maximum per PMC slot
- Module Types: Basic, single-wide, front panel I/O or J3 I/O

COUNTERS/TIMERS

- TOD Clock Device: MT48T37, 32KB NVRAM
- Real-Time Timers/Counters: Four 32-bit programmable
- Watchdog Timers: Three, time-out generates reset

POWER REQUIREMENTS

(not including power required by PMC, PIM or SIMs)

	+3.3V ±5%	+5V ±5%	12V ±5%
CPCI-6020:	2.6 A typ.	2.8 A typ.	15 mA typ.
	3.5 A max.	3.75 A max.	20 mA max.

BOARD SIZE

- Height: 233.4 mm (9.2 in.)
- Depth: 160.0 mm (6.3 in.)
- Front Panel Height: 261.8 mm (10.3 in.)
- Width: 19.8 mm (0.8 in.)
- Max. Component Height: 14.8 mm (0.6 in.)

FRONT PANEL DETAIL AND CONTENT

- LED Indicators: Board FAIL and CPU Activity status
- Recessed Switches: Reset and Abort

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Transition Modules

TRANSITION MODULE I/O CONNECTORS

- Asynchronous Serial Ports: RJ-45 labeled as COM1. Two 10/100 Mbps Ethernet ports ENET1 & ENET2. ENET1 shares with Ethernet port of CPCI-6020 on the front panel and requires custom-built option to activate it.
- Synchronous Serial Ports: Two (Serial 3 and Serial 4). User configurable via the installation of SIMs. Two 60-pin connectors on planar for installation of two serial interface modules. Single 50-pin external connector with Y-cable adapter.
- EIDE: One 40-pin header

BOARD SIZE

- Height: 233.4 mm (9.2 in.)
- Depth: 80.0 mm (3.1 in.)
- Front Panel Height: 261.8 mm (10.3 in.)
- Width: 19.8 mm (0.8 in.)

All Modules

ENVIRONMENTAL

	Operating	Non-operating
Temperature:	0° C to +55° C, forced air cooling exit air	–40° C to +85° C
Humidity (NC):	5% to 90%	5% to 95%
Vibration:	0.1 g from 5-200 Hz and back to 5 Hz at a rate of 0.1 octave/ minute	5-20 Hz at 0.01 g^2/Hz

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, results pending:
  - CE Mark per European EMC Directive 89/336/EEC with Amendments; Emissions: EN55022 Class B; Immunity: EN55024

SAFETY

All printed wiring boards (PWBs) are manufactured with a flammability rating of 94V-0 by UL recognized manufacturers.

Ordering Information

Part Number	Description
CPCI-60206E-500	500 MHz, 7410 processor, USB, 6E
CPCI-60206E-505	500 MHz, 7410 processor, 6E
Transition Module	
CPCI-60206E-MCPTM-01	CPCI-6020 transition module, 6E
Mezzanine Card	
RAM5006E-005	128MB ECC DRAM (top), 6E
RAM5006E-015	128MB ECC DRAM (bottom), 6E
RAM5006E-006	256MB ECC DRAM (top), 6E
RAM5006E-016	256MB ECC DRAM (bottom), 6E
RAM5006E-010	512MB ECC DRAM (top), 6E
RAM5006E-020	512MB ECC DRAM (bottom), 6E
Memory Modules	
CFLASH6E-256	256MB CompactFlash memory card, 6E
CFLASH6E-512	512MB CompactFlash memory card, 6E
Documentation	
6806800A51A	CPCI-6020 Installation and Use

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