

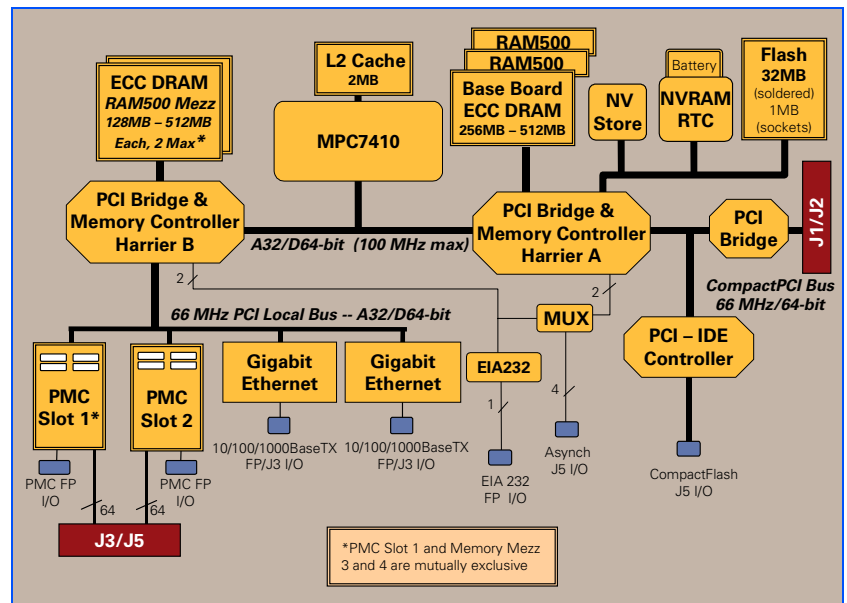
Providing a new level of functionality and performance, while bringing leading-edge flexibility and value through standards compliance.

The 805 series of CompactPCI® boards combines the latest high-performance microprocessors, Motorola's PowerPlus III Architecture, new dual 10/100/1000BaseTX capable Ethernet, enhanced PCI mezzanine card (PMC) slots (up to two 32/64-bit slots, depending on memory configuration) and the ability to support up to 2.5GB of ECC protected memory. All this is available in a single CompactPCI slot.

Using the high-performance MPC7410 processor, a 64-bit local PCI bus for the on-board peripherals and a new dual bridge architecture that also brings new DMA capabilities, the 805 series offers maximum performance and flexibility in a most efficient package.

The product set now offers compliance with PICMG® 2.16 (CompactPCI packet switching backplane), PICMG 2.9 (system management interface), Hot Swap Specification (PICMG 2.1), PICMG 2.0 CompactPCI specification, PICMG 2.1 keying of CompactPCI boards, PICMG 1.1 PCI-PCI bridging and IEEE 1386 standard for PMCs. This series of boards is also designed to be compatible with the proposed VITA 32 draft standard for processor mezzanines.

- MPC7410 microprocessor
- 2MB of secondary backside L2 cache
- Up to 2.5GB ECC DRAM
- Dual 10/100/1000BaseTX Ethernet interface
- Two 32/64-bit PMC expansion slots with front panel and backplane I/O
- 32MB on-board Flash memory for user-specified requirements
- Two 32-pin PLCC/CLCC sockets for Flash memory; up to 1MB of socketed/removable Flash memory for on-board firmware or user-specified requirements
- Optional CompactFlash memory card socket for CompactFlash memory on transition module
- On-board debug monitor with self-test diagnostics
- Four async serial ports
- 32KB NVRAM and time-of-day clock with replaceable battery backup
- Eight 31-bit timers, four watchdog timers



IEEE P1386.1 Compliant PMC Slots

The 805 series features dual PMC slots with support for both front-panel and backplane I/O. Both PMC slots support 32/64-bit operations at 33 MHz. In addition to providing high-performance expansion I/O, the IEEE P1386.1 compliant PMC slots form a common architecture for future generations. Changing I/O requirements can be satisfied by simply replacing PMCs while reusing the same base platform and software, reducing the long-term cost of ownership.

PowerPlus III Architecture

The third-generation architecture, PowerPlus III Architecture, builds upon Motorola's leading technology by offering higher system performance through hardware DMA engines and compliance with PCI 2.2 standard. A number of elements in the design of the PowerPlus III Architecture contribute to its outstanding performance including the processor/memory subsystem, high-speed local bus, optimally decoupled architecture, decoupling the processor from PCI and the advanced CompactPCI interface that reduces PCI delays.

MCPTM-02

The MCPTM-02 transition module provides industry-standard connector access to two RJ-45 Ethernet connectors, one serial port connector (configured as EIA DTE) and two PIM slots for PMC interface modules or serial port access (ports 2 through 4). One socket for optional CompactFlash memory is also provided in addition to a 512B serial EEPROM for vital product data.

MCIPTM-02

The MCIPTM-02 transition module is similar to the MCPTM-02 transition module since it provides industry-standard connector access to one serial port connector (configured as EIA DTE), two PIM slots for PMC interface modules or serial port access (ports 2 through 4) and one socket for optional CompactFlash memory. However, this transition module is designed for systems implementing PICMG 2.16 backplanes (in place of external Ethernet access) and supports four COM ports via RJ-45 connectors.

Firmware Monitor

Firmware must fulfill the traditional functions of test and initialization, in addition to operating system boot support. The 805 series firmware monitor exceeds these requirements plus expands features like power-up tests with extensive diagnostics, as well as a powerful evaluation and debug tool for simple checkout or when high-level development debuggers require additional support. All this is included with the 805 series firmware, plus it supports booting both operating systems and kernels.

Operating Systems

The 805 series supports booting a complete range of real-time operating systems, kernels and embedded Linux cores that may be purchased from software providers including Wind River, MontaVista Software and other leading providers.

SPECIFICATIONS

Processor

| | |
|-----------------------------|-----------------|
| Microprocessor: | 500 MHz MPC7410 |
| On-chip Cache (I/D): | 32K/32K |
| On-board Cache (L2): | 200 MHz, 2MB |

Memory

| | |
|--|--|
| ECC Protected Main Memory Capacity: | 256MB to 2.5GB |
| Architecture: | 64-bit, single interleave |
| EEPROM/Flash: | On-board programmable |
| Capacity: | 1MB via two 32-pin PLCC/CLCC sockets, 32MB surface mount, 16KB serial EEPROM for vital product data, IDE Flash socket on transition module |
| NVRAM: | 32KB; 24KB available for users |
| Cell Capacity Life: | 5 years at 100% duty cycle, 25° C |
| Removable Battery: | Yes |

CompactPCI Interface

| | |
|-----------------------|-----------------------------------|
| Controller: | Intel 21555 |
| Address/Data: | A32/D32/D64 |
| PCI Bus Clock: | 33 MHz |
| Signaling: | 3.3V output; input defined by VIO |

Dual Ethernet Interface

| | |
|---------------------------|--|
| Controller: | Two Intel 82544 |
| Interface Speed: | 10/100/1000Mb/s |
| PCI Local bus DMA: | Yes, with PCI burst |
| Connector: | Dual RJ-45 on front panel; both channels routed to J3 for optional use on transition module or for PICMG 2.16 compliant backplane access |

Asynchronous Serial Ports

| | |
|-----------------------------------|-------------------------------------|
| Controller: | 16C550C compatible UARTs |
| Number of Ports: | Four |
| Async Baud Rate, bps max.: | 38.4K EIA-232 |
| Connector (COM1): | Front panel; also RJ-45 on MCPTM-02 |
| Connector (COM2/3/4): | Routed to J5 |

Counters/Timers

| | |
|-----------------------------------|--------------------------|
| TOD Clock Device: | M48T37V; 32KB NVRAM |
| Real-Time Timers/Counters: | Four 32-bit programmable |
| Watchdog Timer: | Time-out generates reset |

IEEE P1386.1 PCI Mezzanine Card Slot

| | |
|-----------------------|--|
| Address/Data: | A32/D32/D64, PMC JN1, JN2, JN3, JN4 connectors |
| PCI Bus Clock: | 33/66 MHz |
| Signaling: | 5V |
| Power: | +3.3V, +5V, 12V, 7.5 watts maximum per PMC slot |
| Module Types: | Two single-wide or one double-wide, front panel I/O or J3 and J5 I/O |

Hot Swap

Compliant with PICMG Hot Swap Specification, Revision 2.0

Power Requirements

(maximum)

| | +3.3V ±5% | +5V ±5% | +12V ±5% | -12V ±5% |
|--------------------|----------------------|----------------|-----------------|---------------------|
| MCPN805-130 | 6.4 A | 5.0 A | 20 mA | <10 mA |

Demonstrated MTBF

(based on a sample of eight boards in accelerated stress environment)

| | |
|------------------------|---------------|
| Mean: | 214,322 hours |
| 95% Confidence: | 121,141 hours |

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 (0.58 in.) |

Miscellaneous

Recessed reset/abort switch on front panel; three LEDs for FAIL, CPU activity and hot swap

MCPTM-02 Transition Module**I/O Connectors**

Asynchronous Serial Ports: One RJ-45 connector labeled as COM1; COM2, COM3 and COM4 are accessible via PIM interface

Ethernet: Two RJ-45

PIM Card Slot

Power: +3.3V, +5V, +12V, -12V

Module Types: Two single-wide or one double-wide

Note: Jn0 PIM connectors incorporate other 805 series I/O for future host interface modules.

CompactFlash Memory Card Interface

Controller: PC1646U26

Interface: ATA, true IDE mode

CompactFlash Cards (optional): Motorola CFLASH-xxx series

Connector: One standard Type II 50-pin socket

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 | Nonoperating |
|-----------------------|---------------------------------------|----------------------------------|
| Temperature: | 0° C to +55° C, forced air cooling | -40° C to +85° C |
| Humidity (NC): | 10% to 80% | 10% to 90% |
| Vibration: | 0.5 G RMS, 20–2000 Hz random | 6.0 Gs RMS, 20–2000 Hz random |

Safety

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

Electromagnetic Compatibility (EMC)

(results pending)

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)

This product was 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

ORDERING INFORMATION

The following items are available to order:

| Part Number | Description |
|--|--|
| All MCxx805 configurations use an MPC7410 CPU running at 500 MHz with dual 10/100/1000BaseTX Ethernet ports and dual PMC slots. Model numbers, bus compatibility, memory size and PMC site configurations are shown below. | |
| MCPN805-130 | cPCI Bus, 256MB DRAM, 33 MHz PMC |
| MCPN805-330 | cPCI Bus, 512MB DRAM, 33 MHz PMC |
| MCPM805-230 | cPCI & PICMG 2.9 Bus, 256MB DRAM, 66 MHz (3.3V only) PMC |
| MCPM805-430 | cPCI & PICMG 2.9 Bus, 512MB DRAM, 66 MHz (3.3V only) PMC |
| MCIP805-130 | PICMG 2.9 Bus, 256MB DRAM, 33 MHz PMC |
| MCIP805-330 | PICMG 2.9 Bus, 512MB DRAM, 33 MHz PMC |
| ECC Memory Expansion Modules | |
| Note: Four modules maximum and you must select "bottom" first and then "top." | |
| RAM500-005 | 128MB ECC DRAM (top) |
| RAM500-015 | 128MB ECC DRAM (bottom) |
| RAM500-006 | 256MB ECC DRAM (top) |
| RAM500-016 | 256MB ECC DRAM (bottom) |
| RAM500-010 | 512MB ECC DRAM (top) |
| RAM500-020 | 512MB ECC DRAM (bottom) |

| Part Number | Description |
|---|---|
| Related Products | |
| MCPTM-02 | 805 transition module/PIM carrier, two RJ-45 Ethernet connectors, one RJ-45 async serial port connector, COM2–COM4 accessible via PIM slots, one CompactFlash socket, two PIM slots |
| MCIPTM-02 | 805 transition module/PIM carrier for systems implementing PICMG 2.16 backplanes; COM1–COM4 accessible via ganged 4-port RJ-45 connectors, one CompactFlash socket, two PIM slots |
| CFLASH-xxx | CompactFlash memory card (where xxx = number of MB) |
| Documentation | |
| MCPN805A/IH | MCPN805/MCIP805/MCPM805 CompactPCI Single Board Computer Installation and Use Manual |
| MCPN805A/PG | MCPN805/MCIP805/MCPM805 CompactPCI Single Board Computer Programmer's Reference Guide |
| PPCBUGA1/UM and PPCBUGA2/UM | PPC Bug Firmware Package User's Manual |
| PPCDIAA/UM | PPC Bug Diagnostics Manual |
| Documentation is available for online viewing and ordering at http://www.motorola.com/computer/literature . | |

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