

PrPMC8005E Series

High-Performance Processor PMC

DATASHEET

KEY FEATURES

MPC7410 PowerPC® microprocessor

AltiVec technology

Latest high-performance PowerPlus III Architecture

2MB/1MB of L2 cache

Up to 512MB on-board ECC SDRAM

32MB on-board flash

72-bit ECC memory controller ASIC

Single-wide PMC with a 66/33 MHz PCI interface

Optional 10/100BaseT Ethernet interface

64-bit PCI host bridge

One asynchronous serial debug port

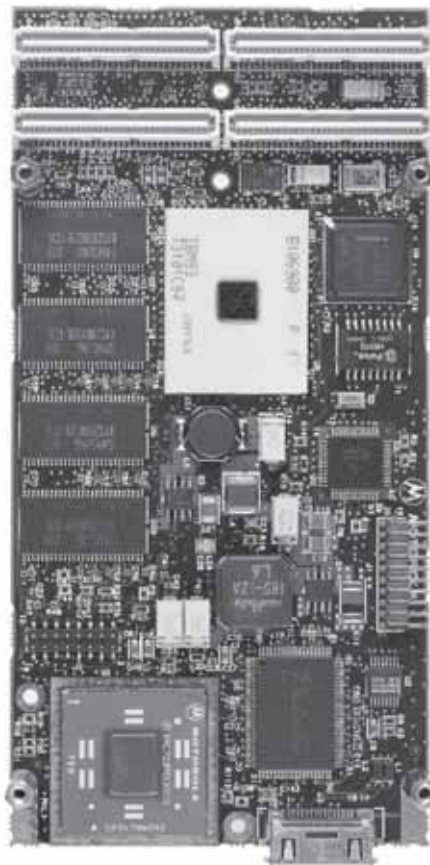
Hardware DMA channel

Four 32-bit timers

Two watchdog timers

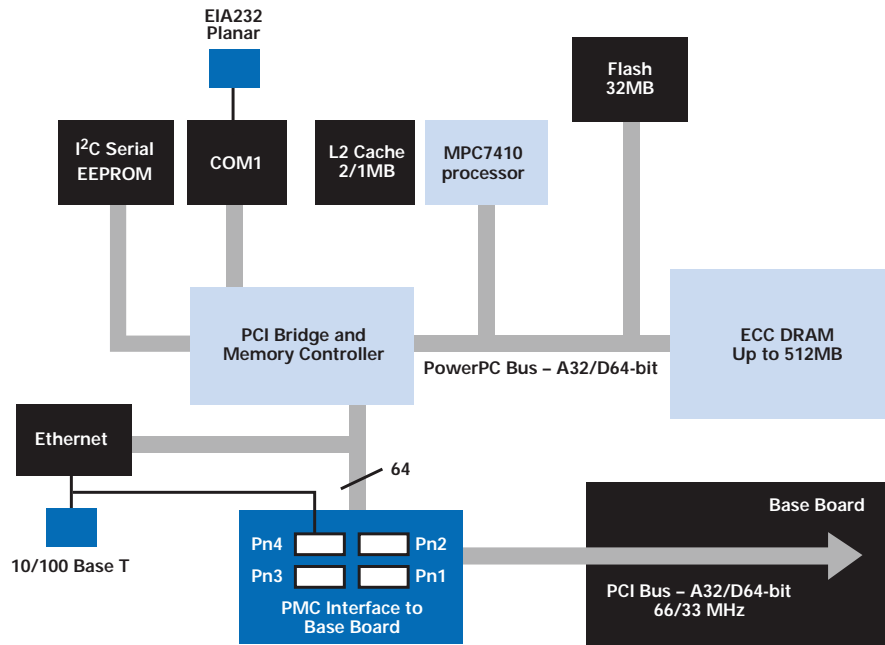
Processor PMC (PrPMC) modules provide a complete host CPU and memory subsystem to a base board full of PCI-based I/O controllers in a compact, rugged, industry standard form factor. The PrPMC isolates the complexities of a high-speed CPU, cache and memory signals from application-specific

hardware, enabling OEMs to focus on their market requirements while simplifying their product release. These modules also simplify CPU and memory upgrades in performance-driven embedded and telecom applications.



The Motorola PrPMC8005E series processor PCI mezzanine card (PMC) is the ideal solution when time-to-market and flexibility are important. In addition to the highlighted features, this PMC module also includes a full-length heatsink, creating a CPU package capable of handling the thermal requirements of complex tasks.

BLOCK DIAGRAM



SPECIFICATIONS

PROCESSOR

Microprocessor: MPC7410 class
Clock Frequency: 400 – 500 MHz
On-chip Cache (I/D): 32KB/32KB
L2 Cache: 1MB – 2MB
Cache Bus Clock Frequency: 180 MHz – 225 MHz

MEMORY

ECC Protected Main Memory: PC100 SDRAM
On-board Capacity: Up to 512MB
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
User I2C Serial EEPROM: 8KB
EEPROM/Flash: 32MB surface mount (on-board programmable), up to 512MB addressable on carrier (optional)

SYNCHRONOUS SERIAL PORT

Controller: 16C550 compatible
Number of Ports: One
Configuration: DTE
Async Baud Rate, b/s max.: 38.4K EIA-232, 115Kb/s raw

IEEE P1386.1 INTERFACE

Address/Data: A32/D32/D64, PMC Pn1, Pn2, Pn3, Pn4 connectors
PCI Bus Clock: 33 MHz or 66/33 MHz capable
Signaling: 3.3V output; VIO input
Power: +3.3V
Height: 13.5 mm from top of carrier board (one slot)
Module Type: Single-wide

ETHERNET

Controller: Intel® 82559ER/82551IT
PCI Bus Master: 33 MHz with PCI burst
Connector: Models configured for Ethernet routing via Pn4 do not have a front bezel.

COUNTERS/TIMERS

Real-Time Timers/Counters: Four 32-bit programmable
Watchdog Timers: Two, time-out generates interrupt or reset

MISCELLANEOUS

Reset, Abort and JTAG/COP via on-board debug connector
Two planar LEDs for Fail and CPU active

POWER REQUIREMENTS

(AltiVec disabled)

+ 3.3V ± 5% @ 20° C

PrPMC8005E-12xx: 3.3 A typical, 3.9 A maximum

PrPMC8005E-13xx: 4.1 A typical, 4.5 A maximum

VIO: PCI buffer diode clamping voltage

DEMONSTRATED MTBF

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

Mean: 190,509 hours

95% Confidence: 107,681 hours

SAFETY

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

ENVIRONMENTAL

	Operating	Non-operating
Temperature:	0° C to 55° C forced air cooling	
Humidity (NC):	5% to 85%	5% to 95%
Vibration:	1.0 G sine sweep, 5.0 to 100 Hz, 25 octaves/min	0.5 G sine sweep; 50-500 Hz; 0.1 octaves/min 3.0 G sine sweep; 5-50 Hz; 0.25 octaves/min

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)

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: EN55082-1

ORDERING INFORMATION

Part Number	Description
33 MHz PCI, Front Ethernet	
PRPMC8005E-1261	450 MHz MPC7410, 256MB ECC SDRAM
33 MHz PCI, Rear Ethernet	
PRPMC8005E-1259	450 MHz MPC7410, 128MB ECC SDRAM
PRPMC8005E-1269	450 MHz MPC7410, 256MB ECC SDRAM
66 MHz PCI, No Ethernet	
PRPMC8005E-2261	450 MHz MPC7410, 256MB ECC SDRAM
PRPMC8005E-2271	450 MHz MPC7410, 512MB ECC SDRAM
Note: Additional PrPMC800 series models may be available; contact your local sales representative.	
Documentation	
PPMC800A/IH	PrPMC800 Installation and Use manual
PPMC800A/PG	PrPMC800 Programmer's Reference Guide
Documentation is available for online viewing and ordering at http://www.motorola.com/computer/literature	

SOLUTION SERVICES

Motorola 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. And solution extras include enhanced warranty and repairs.

Sales Offices

Tempe, AZ U.S.A. 1 800 759 1107 or +1 602 438 5720

Paris, France +33 1 69 35 25 88

Munich, Germany +49 89 608 14-0

Loughborough, UK +44 1509 634300

Tel Aviv, Israel +972 3 568 4385

Shanghai, China +86 215292 5693

Tokyo, Japan +81 3 5424 3101

Hong Kong, China +852 2966 3209

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