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Datasheet

PrPMC800/800ET Series

High-Performance Processor PMC

MOTOROLA
intelligence everywhere™



An ideal solution for embedded applications such as medical, telecom and defense

The PrPMC800/800ET series processor PCI mezzanine card (PMC) is the ideal solution when time-to-market and flexibility are important. Apart from 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.

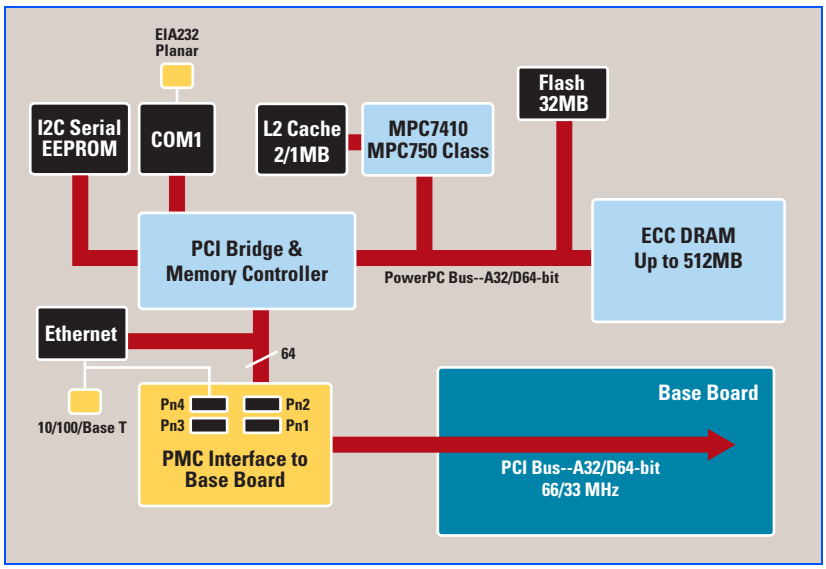
Processor PMC (PrPMC) modules provide a complete host CPU and memory subsystem to a base board full of PCI-based I/O controllers in a compact, rugged, industry-standard form factor. The PrPMC isolates the complexities of a high-speed CPU, cache and memory signals from application-specific hardware, enabling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

Processing Core Design
- MPC7410 or MPC750 class microprocessor
- AltiVec technology
- Latest high-performance PowerPlus III Architecture

Memory Subsystem
- 2MB/1MB of L2 cache
- Up to 512MB on-board ECC SDRAM
- 32MB on-board Flash
- 72-bit ECC memory controller ASIC

Interface Features
- Single-wide PMC with a 66/33 MHz PCI interface
- Optional 10/100BaseT Ethernet interface
- 64-bit PCI host bridge
- One async serial debug port
- Hardware DMA channel

Other Features
- Four 32-bit timers
- Two watchdog timers
- Extended operating temperatures



SPECIFICATIONS

Processor

Microprocessor:	MPC7410	MPC7410	MPC7410	MPC750 class
Clock Frequency:	400 MHz	450 MHz	500 MHz	450 MHz
On-chip Cache (I/D):	32KB/32KB	32KB/32KB	32KB/32KB	32KB/32KB
L2 Cache:	1MB	2MB	2MB	1MB
Cache Bus Clock Frequency:	200 MHz	180 MHz	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 I^2C Serial EEPROM:	8KB
EEPROM/Flash:	32MB surface mount (on-board programmable), up to 512MB addressable on carrier (optional)

Asynchronous 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
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:	Depends on model; 10/100BaseT can be routed to front panel or to the Pn4 connector for carrier board I/O

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
PRPMC800-11*xx*:	2.5 A typical, 3.1 A maximum
PRPMC800-21*xx*:	2.5 A typical, 3.0 A maximum
PrPMC800-52*xx*:	3.4 A typical, 4.0 A maximum
PrPMC800-12*xx*:	3.3 A typical, 3.9 A maximum
PrPMC800-13*xx*:	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

Environmental

	Operating	**Nonoperating**
Temperature:	–40° C to +70° C (for -1361, -1369, -2361) 0° C to 55° C (for all other models) forced air cooling	–40° C to +70° C
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; 5-50 Hz; 0.1 octaves/min 3.0 G sine sweep; 50-500 Hz; 0.25 octaves/min

Safety

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

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)

Motorola Computer Group 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 * (see note below); Immunity: EN55024

***Note:** Class A (non-residential) for front Ethernet versions and Class B for rear and no Ethernet versions.

ORDERING INFORMATION

The following part numbers are available to order.

Part Number	Description
33 MHz PCI, Front Ethernet*	
*Requires PRPMC-CABLE-003.	
PRPMC800-1261:	450 MHz MPC7410, 256MB ECC SDRAM
PRPMC800-1271:	450 MHz MPC7410, 512MB ECC SDRAM
PRPMC800-5261:	450 MHz MPC750 class, 256MB ECC SDRAM
PRPMC800-5271:	450 MHz MPC750 class, 512MB ECC SDRAM
PRPMC800ET-1361:	500 MHz MPC7410, 256MB ECC SDRAM
33 MHz PCI, Rear Ethernet	
PRPMC800-1159:	400 MHz MPC7410, 128MB ECC SDRAM
PRPMC800-1259:	450 MHz MPC7410, 128MB ECC SDRAM
PRPMC800-1269:	450 MHz MPC7410, 256MB ECC SDRAM
PRPMC800-1279:	450 MHz MPC7410, 512MB ECC SDRAM
PRPMC800-5269:	450 MHz MPC750 class, 256MB ECC SDRAM
PRPMC800-5279:	450 MHz MPC750 class, 512MB ECC SDRAM
PRPMC800ET-1369:	500 MHz MPC7410, 256MB ECC SDRAM

66 MHz PCI, No Ethernet	
PRPMC800-2151:	400 MHz MPC7410, 128MB ECC SDRAM
PRPMC800-2261:	450 MHz MPC7410, 256MB ECC SDRAM
PRPMC800-2271:	450 MHz MPC7410, 512MB ECC SDRAM
PRPMC800-6261:	450 MHz MPC750 class, 256MB ECC SDRAM
PRPMC800-6271:	450 MHz MPC750 class, 512MB ECC SDRAM
PRPMC800ET-2361:	500 MHz MPC7410, 256MB ECC SDRAM
Note: Additional PrPMC800 series models may be available; contact your local sales representative for details.	
Related Products	
PRPMC-CABLE-003	Ethernet dongle for front Ethernet models
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	

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This datasheet incorporates information from the PM8LP-D1 datasheet.

PM800-D5 04/04

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