Datasheet

PrPMC880

AltiVec ENABLED PROCESSOR PMC MODULE

MOTOROLA
intelligence everywhere™

Processing Core Design
- 1 GHz MPC7447 microprocessor
- 128-bit AltiVec technology

Memory Subsystem
- Up to 1GB on-board DDR SDRAM
- 72-bit ECC memory controller
- 64MB Flash

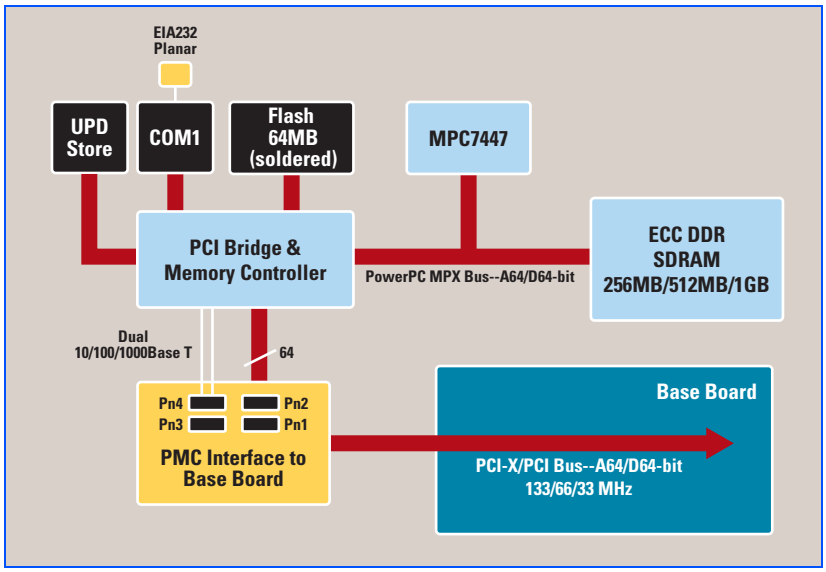
Interface Features
- Single-wide PMC with a 66/33 MHz PCI interface
- Up to 133 MHz PCI-X support
- Dual 10/100/1000BaseT Ethernet interface
- 64-bit PCI host bridge
- Async serial debug port

Other Features
- Four 32-bit timers
- Two watchdog timers
- Real time clock
- Optional front panel or rear Pn4 I/O

The PrPMC880 gives you another leap in performance with a PowerPC® processor at 1 GHz. Motorola's fastest processor mezzanine to date, the PrPMC880 has internal L2 cache and a maximum size heat sink, packaged in a standard single-width PMC form factor. This module is compatible with the recently approved VITA 32 processor PMC standard.

With AltiVec™ technology, high-performance vector parallel processing operations are performed on multiple data elements by a single instruction. This support is especially useful for SIMD (single instruction, multiple date) and vector-capable applications. DDR memory up to 1GB and an excellent thermal profile means the PrPMC880 can address the computational needs of most applications. Also defense and aerospace, telecom and industrial automation applications can benefit from the front-panel access to the Ethernet and the serial port.

A PrPMC is a small board-level module with a low-profile processor and memory subsystem that uses an industry-standard interface to plug on to an I/O base board. With 64MB of Flash memory, up to 1GB of on-board memory, dual Gigabit Ethernet I/O and up to a 133 MHz PCI-X interface, the PrPMC880 is ideal for proprietary architectures requiring a performance upgrade.



SPECIFICATIONS

Processor

Microprocessor:	MPC7447
Clock Frequency:	1 GHz
On-chip L2 Cache:	512KB

Memory

ECC Protected Main Memory:	266 MHz DDR SDRAM
Memory Protection:	ECC
On-board Capacity:	256MB, 512MB or 1GB
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

Asynchronous Serial Port

Controller:	Integrated
Number of Ports:	One
Async Baud Rate, b/s max.:	38.4K EIA-232, 115Kb/s raw

IEEE P1386.1 Interface

Address/Data:	A32/D32/A64/D64, PMC Pn1, Pn2, Pn3, Pn4 connectors
PCI Bus Clock:	33 MHz or 33/66 MHz; 100/133 MHz (PCI-X)
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:	Integrated
Connector:	10/100/1000BaseT routed to Pn4 connector for carrier board I/O with optional routing to front panel

Real-Time Clock

Controller:	MAX 6900
Configuration:	Real-time clock via I2C with super capacitor for up to 12 hours of backup power

Counters/Timers

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

Miscellaneous

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

Power Requirements

	+ 3.3V ±5% @ 20° C
PrPMC880-*x2x1*:	5.8 A typ.,
VIO:	PCI buffer diode clamping voltage

Environmental

	Operating	**Nonoperating**
Temperature:	0° C to +55° C, forced air cooling	–40° C to +85° C
Humidity (NC):	10% to 90%	10% to 90%
Vibration:	0.5 G RMS, 20–2000 Hz random	6 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)

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 Ethernet versions.

ORDERING INFORMATION

Part Number	Description
PrPMC880-2261	1 GHz MPC7447 processor, 256MB DDR SDRAM, front and rear Gigabit Ethernet and serial port
PrPMC880-2271	1 GHz MPC7447 processor, 512MB DDR SDRAM, front and rear Gigabit Ethernet and serial port
PrPMC880-3261	1 GHz MPC7447 processor, 256MB DDR SDRAM, dual rear Gigabit Ethernet and rear serial port
PrPMC880-3271	1 GHz MPC7447 processor, 512MB DDR SDRAM, dual rear Gigabit Ethernet and rear serial port
Related Products	
PRPMC-CABLE-005	Front Ethernet and serial to RJ-45 connector
Documentation	
PPMC880A/IH	PrPMC880 Installation and Use manual
PPMC880A/PG	PrPMC880 Programmer's Reference Guide
Documentation is available for online viewing and ordering at http://www.motorola.com/computer/literature	

Motorola Computer Group Regional Offices

NORTH AMERICA: Tempe, AZ 1 800 759 1107 or +1 602 438 5720

EUROPE: Loughborough, UK +44 1509 634300

EAST MEDITERRANEAN: Tel Aviv, Israel +972 3 568 4388

ASIA: Shanghai, China +86 21 5292 5693

PACIFIC RIM: Tokyo, Japan +81 3 5424 3101

ASIA/PACIFIC: Hong Kong +852 2966 3210

MOTOROLA

www.motorola.com/computer

PM880-D1 09/03