ARTISAN®
TECHNOLOGY GROUP

Your **definitive** source for quality pre-owned equipment.

Artisan Technology Group
(217) 352-9330 | sales@artisantg.com | artisantg.com

Full-service, independent repair center
with experienced engineers and technicians on staff.

We buy your excess, underutilized, and idle equipment
along with credit for buybacks and trade-ins.

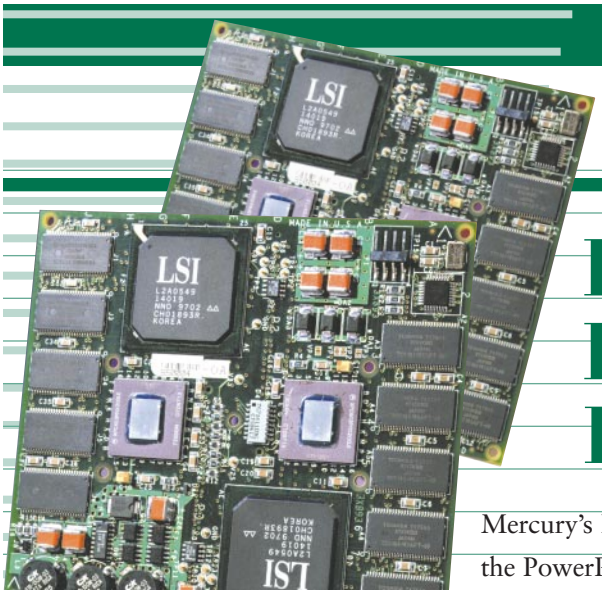
Custom engineering
so your equipment works exactly as you specify.

- Critical and expedited services
- In stock / Ready-to-ship
- Leasing / Rentals / Demos
- ITAR-certified secure asset solutions

Expert team | Trust guarantee | 100% satisfaction

All trademarks, brand names, and brands appearing herein are the property of their respective owners.

Find the *Mercury Computer Systems Motorola PowerPC 603* at our website: *Click HERE*



Computer Systems, Inc.
MERCURY

RACE® Series PowerPC 603 Daughtercards

Scalable from One to Hundreds of Processors

Configurable with SHARC and i860 in a Single System

Connectivity with RACEway ANSI/VITA Standard

Mercury's RISC processor offerings use the PowerPC™ 603 processor and are the first in a series of planned PowerPC compute nodes (CNs) to be supported by the RACE® architecture. The PowerPC CN brings compiled code performance with vector capabilities to the RACE heterogeneous environment. Its high-performance capability with both scalar and vector code complements the RACE DSP node based on the SHARC® processor. The RACE heterogeneous environment integrates both RISC and DSP processors, matching different processor types to different computational stages of the application. This offers significant advantages over single-processor type or custom designs by reducing overall system power, space, and cost.

PowerPC Compute Node

A PowerPC CN consists of a processor, DRAM, and a Mercury-designed ASIC. The CN ASIC provides high-performance functions needed for real-time multicomputer DSP and scientific processing. Each CN runs Mercury's MC/OS™ runtime environment, which provides a single-software interface for heterogeneous multicomputing. Systems can be configured to support from one to hundreds of PowerPC processors in a standard VME environment spanning multiple VMEbus slots.

These daughtercards can also be used in Mercury's RACE Series MultiPort™ systems.

Each PowerPC CN contains the following:

PowerPC Processor

The CN contains a PowerPC processor with modern superscalar RISC features, such as branch prediction and speculative execution, that enhance compiled code performance. The two 16-Kbyte four-way set associative physical caches for instructions and data is another feature that enhances scalar code performance.

DMA Controller

Each PowerPC CN has a DMA controller to support RACEway transfers at 160 Mbytes/s concurrently with CN processing. The DMA controller works from a linked list in memory so that a complex chain of DMA requests requires no processor overhead.

Performance Metering Logic

PowerPC CNs provide non-intrusive hardware performance metering facilities that enable application performance tuning and real-time data-flow analysis, essential for developing real-time multicomputer applications. A PowerPC CN can be directed to collect performance metrics on processor operations, memory bandwidth utilization, RACEway crossbar port usage and contention, or memory

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

contention. The information can be used to locate sub-optimal code sections during execution of the application and is accessible with SuperVision, Mercury's multicomputer debug program.

Error-Correcting Memory (DRAM)

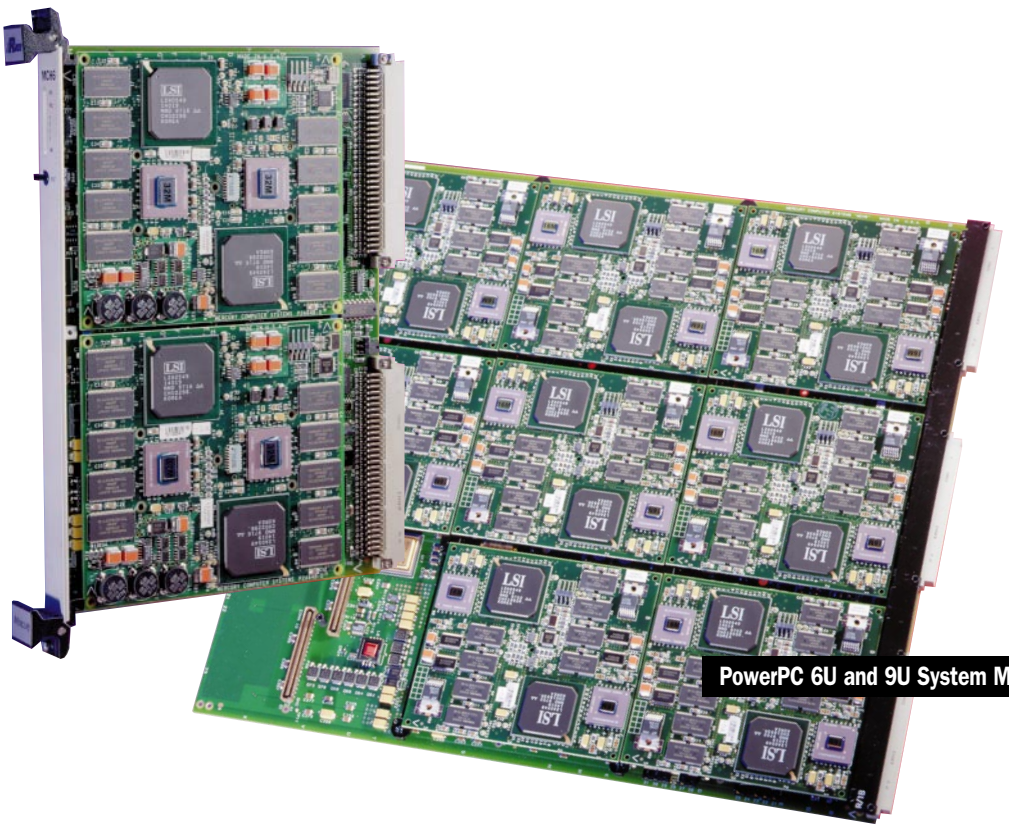
The PowerPC CN memory contains error-correcting circuitry for improved data integrity. One-bit errors are corrected on the fly, and uncorrected two-bit errors generate an interrupt error condition.

RACEway Broadcast Support

The PowerPC CN supports RACEway crossbar broadcast capabilities for enhanced bandwidth utilization. As the initiator of a broadcast, either the PowerPC processor or the DMA controller may issue any of the broadcast or multicast modes provided by the RACEway crossbar. As a receiver of broadcast data, the PowerPC CN has the programmable option of accepting or ignoring the data.

Daughtercard Configurations

PowerPC daughtercards are available in six configurations: the P2A8B, P2A16B, P2A32B, P2A64B, P1A32B and P1A64B. Each daughtercard contains one or two PowerPC CNs, and each CN has 8, 16, 32 or 64 Mbytes of memory. Two daughtercards (up to four PowerPC processors) can be configured on a 6U RACE MCH6™ motherboard. Up to eight daughtercards can be configured on a 9U RACE MCH9™ motherboard (refer to the data sheet on RACE MCH Series motherboards for more information).



PowerPC 6U and 9U System Modules

Software

The PowerPC daughtercards are supported by Mercury's heterogeneous software package for the RACE Series. This software package is a common development and run-time package supporting multiple processor types, including i860, SHARC, and PowerPC CNs, and I/O in the same system. This allows system designers to optimize for performance, low cost, and maximum processor density.

Software includes the MC/OS runtime environment, ANSI C compiler and linker, Scientific Algorithm Library (SAL), and mxgdb, a process-level debugger. A common application programming interface (API) is provided by MC/OS, SAL, and Parallel Application System (PAS™), as well as a common user interface by SuperVision and mxgdb, simplifying the heterogeneous programming environments (see respective data sheets for more information).

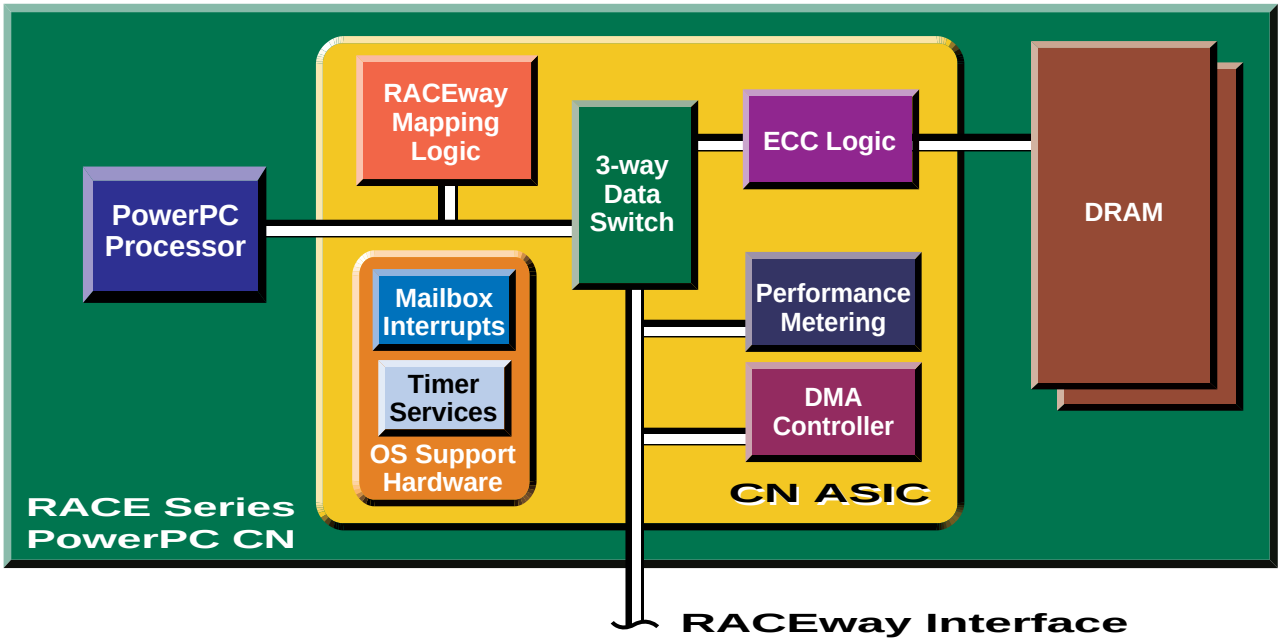
Optional Software

SuperVision

The system-level debugger, available as an optional layered product, can simultaneously view and interact with all CN types in the multicomputer system.

Parallel Application System

PAS allows DSP and RISC processors to be programmed using a high-level set of library calls in various programming models. PAS enables users to scale applications simply by changing a runtime variable, which allows developers to create one set of software for multiple hardware configurations. Full heterogeneous software support for PowerPC, SHARC, and i860 processors is available starting with MC/OS Version 4.



PowerPC Daughtercard Specifications

Configuration:	P2A8B	P2A16B	P2A32B	P2A64B	P1A32B	P1A64B
RACEway ports	2	2	2	2	1	1
Compute Nodes (CNs)	2	2	2	2	1	1
Mbytes DRAM per CN	8	16	32	64	32	64
Mbytes DRAM per daughtercard	16	32	64	128	32	64

Daughtercard Electrical/Mechanical Specifications

Configuration:	P2A8B	P2A16B	P2A32B	P2A64B	P1A32B	P1A64B
Power (watts)	14	14	12	12	6	6
Weight (pounds)	.26	.26	.27	.27	.25	.25

Dimensions for all daughtercard types: 5.000" x 4.435"

These daughtercards are supplied with both 5.0V and 3.3V from the motherboard. The power numbers are the amount of 5V power the motherboard draws as a result of the daughtercard being present. They assume the motherboard is converting 5V to 3.3V and include the power lost in this conversion.

Commercial/Environmental Specifications

Operating temperature* 0˚C to 40˚C at an altitude of 10,000 feet
(inlet air temperature at motherboard's recommended minimum airflow)

Storage temperature -40˚C to 85˚C

Relative humidity 10 to 90% (non-condensing)

As altitude increases, air density decreases, hence the cooling effect of a particular number of CFM decreases. Many manufacturers specify altitude and temperature which are not simultaneous. Notice that the above operating temperature is specified simultaneously with an altitude. Different limits can be achieved by trading among altitude, temperature, performance and airflow.

Contact Mercury for more information.

Ordering Information

P2A8B-D	2	200 MHz PowerPC CNs
	8	Mbytes DRAM per CN
P2A16B-D	2	200 MHz PowerPC CNs
	16	Mbytes DRAM per CN
P2A32B-D	2	200 MHz PowerPC CNs
	32	Mbytes DRAM per CN
P2A64B-D	2	200 MHz PowerPC CNs
	64	Mbytes DRAM per CN
P1A32B-D	1	200 MHz PowerPC CNs
	32	Mbytes DRAM per CN
P1A64B-D	1	200 MHz PowerPC CNs
	64	Mbytes DRAM per CN

Computer Systems, Inc.
MERCURY
The Ultimate Performance Machine

199 Riverneck Road
Chelmsford, MA 01824-2820 U.S.A.
978-256-1300 · Fax 978-256-3599
800-229-2006 · http://www.mc.com

RACE and the RACE logo are registered trademarks and MCH6, MCH9, MC/OS, and PAS are trademarks of Mercury Computer Systems, Inc. PowerPC is a trademark of IBM Corp. and SHARC is a registered trademark of Analog Devices Inc. Other products mentioned may be trademarks or registered trademarks of their respective holders. Mercury believes this information is accurate as of its publication date and is not responsible for any inadvertent errors. The information contained herein is subject to change without notice. Copyright © 1996, 1997, 1998 Mercury Computer Systems, Inc.

DS-49-05

Artisan Scientific - Quality Instrumentation ... Guaranteed | (888) 88-SOURCE | www.artisan-scientific.com

Artisan Technology Group is an independent supplier of quality pre-owned equipment

Gold-standard solutions

Extend the life of your critical industrial, commercial, and military systems with our superior service and support.

We buy equipment

Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

Learn more!

Visit us at **artisantg.com** for more info on price quotes, drivers, technical specifications, manuals, and documentation.

Artisan Scientific Corporation dba Artisan Technology Group is not an affiliate, representative, or authorized distributor for any manufacturer listed herein.

We're here to make your life easier. How can we help you today?

(217) 352-9330 | sales@artisantg.com | artisantg.com

ARTISAN® TECHNOLOGY GROUP