GET the facts.

SECOND EDITION, JUNE 1996

PowerPC™

Apple

IBM

MOTOROLA

the PowerPC™ ALLIANCE

The PowerPC Alliance marshals the vast financial
and technological resources of
Apple®, IBM®, and Motorola®
to develop leadership products
based on a common instruction set architecture
that spans a full spectrum
of operating systems and applications.

GET the facts... on PowerPC *PERFORMANCE*

"Last fall, the PowerPC Alliance announced it would ship the 166MHz PowerPC 603e microprocessor in mid-1996. I am impressed that they have exceeded that performance mark with the 200- and 180MHz 603e parts and that their prices are significantly better than those of comparable Intel processors." — Linley Gwennap, Editor in Chief, Microprocessor Report

Industry's First Volume 200MHz Microprocessors for Desktop & Portable Systems

Motorola and IBM have completed the development of enhanced versions of the PowerPC 603e™ and the new PowerPC 604e™ microprocessors. The new processors will be manufactured by both companies initially at speeds of 200-, 180-, and 166MHz — making them the first mainstream, volume desktop and portable microprocessors announced in the industry at 200MHz — and will ship in systems from a wide variety of manufacturers by the end of 1996.

The PowerPC 603e and PowerPC 604e microprocessors offer significant performance improvements over the originals. The microprocessors exceed the performance targets set last year by Motorola and IBM for the initial PowerPC 603e and PowerPC 604e offerings by up to 30 percent. In addition, the 200MHz microprocessors will be available up to six months earlier than stated previously. The increased performance is realized through microprocessor design enhancements — including doubling of caches on the PowerPC 604e — and aggressive use of the latest manufacturing technology processes. They are also significantly smaller and use less power than their predecessors.

Apple Computer, Motorola Computer Group, Power Computing and UMAX plan to announce systems that use the new PowerPC microprocessors before the end of 1996.

The performance of the 603e at 200MHz is more than three times greater than the original PowerPC 603™ announced less than two years ago and 45 percent better than the 603e at 120MHz. This performance also exceeds that of the fastest Pentium available today while using significantly less power. The high-performance and low power consumption of the entire 603e line allow manufacturers to build systems ranging from sub-notebooks and laptops to high-performance notebooks and entry desktop systems.

The PowerPC 604e at 200MHz represents approximately a four fold increase in desktop computing power over the original PowerPC 601™. The PowerPC 604e is the AIM Alliances' flagship desktop and entry server microprocessor and is capable of running in uni- or multiprocessor environments.

Performance Camparison

Not only do PowerPC microprocessors outperform the competition, but they do so in a smaller and cooler package. Size affects a microprocessor's cost (smaller ones cost less), while heat output affects which models it can be used in (hotter processors need more space, cooling systems, and electrical power, which precludes their use in notebook computers).

The size, heat output, and cost of the PowerPC microprocessor are significantly less than those of the leading CISC processor. All of these factors — combined with its performance — make the PowerPC a less expensive more versatile foundation for the next generation of personal computers.

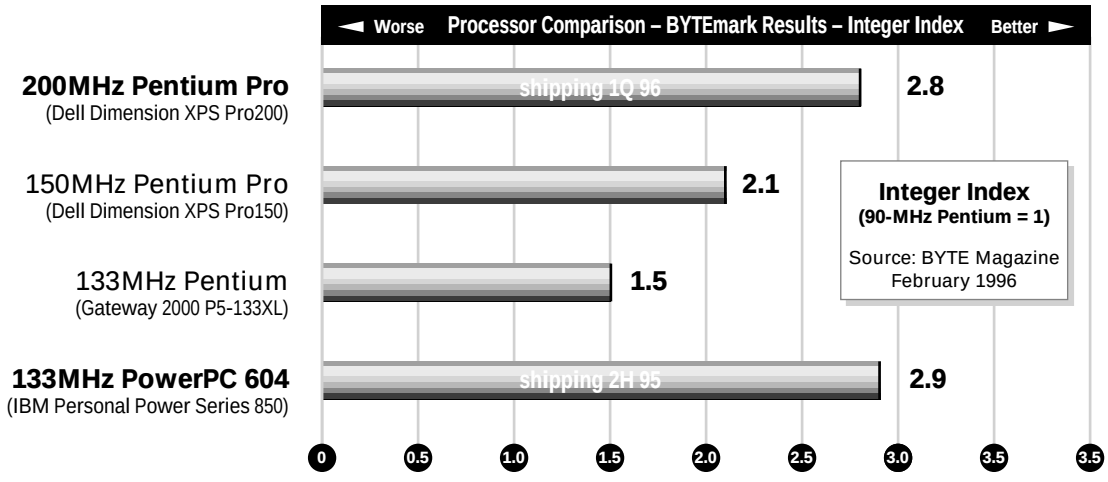
According to *Microprocessor Report*

Microprocessor Report, the leading journal of microprocessor information, recently began comparing PowerPC processors with Intel processors using the "P-rating" standard agreed upon by AMD, Cyrix and other x86-compatible processor manufacturers. In the February 12, 1996 issue, *Microprocessor Report* found that the PowerPC 603e microprocessor matches Pentium for identical clock rates.

According to *BYTE Magazine*

In the February 1996 issue, *BYTE Magazine* compared leading high-performance microprocessors and found that, in terms of actual performance, a PowerPC 604™ microprocessor running at 133MHz is roughly equivalent to a Pentium Pro running at 200MHz.

When it ships in systems later this year, the recently announced 200MHz PowerPC 604e with *doubled caches and 50% faster clock speed* will out-perform *any* announced Intel processor.



GET the facts... on the PowerPC *SPECIFICATION*

The PowerPC Platform

The PowerPC Platform (formerly referred to as CHRP) is an open computing reference architecture based on the RISC-based PowerPC microprocessor. Jointly developed by Apple, IBM, and Motorola, this new architecture enables a single computer system to run multiple operating systems such as Mac™ OS, Windows NT™, AIX® and Solaris™. The PowerPC Platform specifications combine the advantages of the Power Macintosh™ and the standard PC environment into a single, unified computer design which is scalable from portables to high-end multiprocessor systems.

The PowerPC Platform enables a new range of flexibility and choice for users, computer manufacturers, and component suppliers. PowerPC Platform-compliant designs deliver the power and flexibility to drive the next generation of performance-hungry applications, engineered to meet emerging customer requirements to support video, multimedia, virtual reality, speech recognition, 3D graphics and enhanced communications. Systems built to the PowerPC Platform specifications will also benefit from standard industry components which drive system cost down.

Benefits of the PowerPC Platform specifications include:

- A new level of freedom for computer buyers to purchase systems that can be paired with different operating systems to meet specific needs; for example, the graphics design department could use Mac OS, and the accounting department could use Windows NT on the same system. Users of the same system could use the powerful multimedia capabilities of the Mac OS, access departmental workgroup applications running Windows NT, and integrate with AIX-based enterprise applications.
- A new level of application richness and choice for users. The PowerPC Platform offers users access to multiple, leading 32-bit operating systems while maintaining support for PowerPC legacy applications, all for a single hardware investment.
- A new level of freedom for software designers to harness the superior performance and unique architecture of the PowerPC microprocessor, including its superior desktop graphics and multimedia capabilities, on all supported operating systems.
- A new level of freedom for computer manufacturers to build hardware without committing to support a single, fixed operating system. Mac OS, Windows NT, AIX, and Solaris ports are in development for computers built to the PowerPC Platform specifications. This unifying architecture also increases computer

manufacturers' ability to differentiate hardware solutions by allowing them to select from a broader range of industry standard support logic (i.e., chipsets), peripherals, and firmware products produced by leading vendors. This translates to more cost-effective system solutions and lower prices for consumers.

- A variety of peripherals and extension cards coming from both the IBM PC–compatible and Macintosh® worlds using the PCI bus standard will benefit system vendors, MIS directors and users.

The PowerPC Platform specifications deliver on the commitment made by Apple, IBM and Motorola to create a common system–level architectural standard. The unified standard is flexible and scalable to support future migration to industry standards like USB and Firewire. It is also compatible with existing software applications that support either the earlier PowerPC Reference Platform (PR*P) specification or the Power Macintosh system standard.

Systems using the latest PowerPC processors, demonstrating compelling price–performance points, and a growing number of Mac OS licensees will give Mac OS customers more choices and expand the market. Companies in Europe, Asia, Japan, and the US are working on bringing systems to market. These systems will cover price–points from low through high–end, will be based on Apple Licensed Designs and the PowerPC Platform specifications, and will support both Mac OS and Windows NT. Support for AIX and Solaris will be available in 1997.

For More Information

The following publications contain additional information on the PowerPC Platform specifications and the PowerPC Architecture:

- *PowerPC Microprocessor Common Hardware Reference Platform, A System Architecture* (Morgan Kaufman Publishing, ISBN 1-55860-394-8)
- *Macintosh Technology in the Common Hardware Reference Platform* (Morgan Kaufman Publishing, ISBN 1-55860-393-X)
- *The PowerPC Architecture* series, Books I, II and III (IBM and Motorola)

These documents and a detailed technical manual are available from AIM Alliance members via the World Wide Web at one or more of the following URLs:

- Apple — **http://chrp.apple.com**
- IBM — **http://www.chips.ibm.com/products/ppc**
- Motorola — **http://www.mot.com/SPS/PowerPC/**

Open Firmware bindings are available from Sun Microsystems' World Wide Web page at **ftp://playground.sun.com/pub/p1275/bindings/chrp**.

GET the facts... on the PowerPC *FAMILY*

The PowerPC family of microprocessors is the result of the collaborative efforts of hundreds of engineers from Apple, IBM and Motorola, working in the world's largest joint microprocessor design center, Somerset, in Austin, Texas. Design teams worked in parallel, producing the first four PowerPC microprocessors in just two years, a remarkable feat considering their complexity. Efforts are currently focused on developing new, more powerful PowerPC microprocessors, consistent with the PowerPC architectural guidelines, as well as enhancing the existing family.

The PowerPC microprocessor family is broadly scalable in its uses. For high-performance applications, such as highly parallel supercomputers, members of the PowerPC family contain multiple execution units for symmetrical superscalar operation, cache memory for data and instructions and efficient multiprocessing interface capability. New 200- and 180MHz PowerPC microprocessors provide unprecedented power for new desktop and mobile systems. For energy-efficient applications that require both performance and power conservation, such as laptop computers, versions of the PowerPC microprocessor family provide automatic energy saving modes. Other highly integrated PowerPC microprocessors are versions designed for hand-held, battery-powered applications. From palmtop personal information managers (PIMs) to multi-dimensional data analysis, PowerPC microprocessors offer the most scalable computing solutions available today.

Combining the power and performance of PowerPC microprocessors and leading operating systems, the PowerPC Alliance is ideally suited to provide alternative desktop and mobile computing solutions for high-volume markets. All companies have taken steps to ensure that PowerPC delivers the right toolkit to help developers and manufacturers take advantage of these high-volume markets. And that translates into affordable, powerful choices for consumers.

Open Standard Provides Unprecedented Design Freedom

The PowerPC Architecture™ is an open standard, not tied to any single operating system, software application package or hardware configuration. This allows design

engineers and software programmers unprecedented freedom to create innovative and differentiated new systems for customers and marketplaces.

Powerful, Flexible and Cost Effective

The PowerPC Architecture provides a complete foundation for today's computing applications, with all the necessary building blocks to bring future products to market. Since the architecture is scalable, it is also a powerful, flexible and cost-effective choice for a variety of embedded control applications.

Why RISC?

Computers run software by converting higher-level programming languages into machine-readable code. RISC microprocessors streamline this process. Whereas traditional CISC (complex instruction-set computing) processors contain a wide variety of instructions to handle many different tasks, RISC processors contain only those instructions that are used most often. On the rare occasion when a complex instruction is needed, a RISC processor builds it from a combination of basic instructions.

RISC processors are optimized to execute these basic instructions very quickly. The performance gains achieved by speeding up the most-used instructions more than compensate for the time spent "creating" seldom-used complex instructions.

Before the PowerPC microprocessor, RISC technology was used only in systems designed for raw computational power. For example, most engineering workstations and commercial database servers use RISC processors. These computers have generally been designed to meet the needs of the UNIX operating system and therefore have been excessively difficult for many PC users to install, learn, use, and maintain.

The PowerPC Alliance believes that RISC technology is the next important technology in personal computing. RISC processors are now being manufactured in high enough volumes to make it cost-effective for the personal computer market.

Why PowerPC?

When the PowerPC Alliance began to look for the microprocessor that could take RISC computing into the next decade, the search was based on specific criteria. After reviewing most of the leading architectures in the industry, Apple, IBM, and Motorola agreed on PowerPC.

MICROSOFT® WINDOWS NT™

SOLARIS™

PowerPC offers:

- **A mainstream standard backed by major vendors.** With the rapid adoption of the architecture and the anticipated sales of Apple, IBM, Motorola, and others, PowerPC processors have quickly become the most popular RISC processor in the world and a superior alternative to the Intel 80x86 standard.
- **A scalable architecture that can be used in any type of computer.** Until now, RISC microprocessor systems vendors have optimized their products for high-end workstations and server systems. PowerPC microprocessors are the first mainstream RISC microprocessors that can be used in low-cost computers. Developers of PowerPC processors have already created a wide range of system configurations to meet the needs of different types of computer users.
- **Industry-leading technology.** The cooperation between Apple, IBM and Motorola brings superior expertise in both microprocessor design and manufacturing to the PowerPC processor effort.
- **Proven high-volume productions.** Originally, RISC processors were principally used by specialized workstation vendors. Today, Motorola and IBM have proven their ability to manufacture the millions of microprocessors needed for the personal computer market — with over *4 million* PowerPC microprocessors shipped to date — in addition to supporting lower volumes for specialized markets. This high-volume capacity contributes to the lower unit cost per part.
- **Superior development tools.** Any new microprocessor architecture needs excellent compilers, debuggers, and other development tools to be successful. Because the Alliance derived PowerPC microprocessors from the POWER architecture already used in IBM's RS/6000™ workstations, many compatible development products already exist and are optimized for PowerPC. A number of leading software providers have created PowerPC software development kits for Windows NT, Mac OS, and UNIX, as well as firmware and hardware abstraction layer (HAL) kits.

The alliance of Apple, IBM, and Motorola has produced not just a new RISC architecture, but a new level of performance for computers.

The PowerPC Microprocessors

Apple, IBM, and Motorola designed the first five members of the PowerPC microprocessor family simultaneously. Each processor is designed to meet the needs of a different segment of the marketplace.

The **PowerPC 601** microprocessor is the first 32–bit implementation of the PowerPC architecture. It provides high levels of performance for desktop, workstation, and symmetric multiprocessing computer systems and offers design flexibility through operation at either 2.5 volts (601v) or 3.6 volts (601).

The **PowerPC 602**™ microprocessor is the lowest–power implementation of the PowerPC architecture. This microprocessor is designed for use in advanced home entertainment and educational devices with audio/video, multimedia, and complex graphics requirements. The PowerPC 602 is also applicable for low–power business and commercial devices with speech recognition and synthesis, wireless communications, and hand–writing recognition.

The **PowerPC 603** and **PowerPC 603e** microprocessors, two other low–power implementations, offer workstation–level performance packed into a low–cost design. These microprocessors are ideal for desktop computers, notebooks, and entry–level systems. The PowerPC 603 features separate 8–Kbyte instruction and data caches, while the PowerPC 603e offers 16–Kbyte instruction and data caches.

The **PowerPC 604** and **PowerPC 604e** microprocessors are 32–bit implementations of the PowerPC architecture designed for use in departmental servers, high–performance desktop, workstation, and symmetric multiprocessing computer systems. They are software and bus compatible with the PowerPC 601, PowerPC 603, and PowerPC 603e microprocessors. The PowerPC 604 features separate 16–Kbyte instruction and data caches, while the PowerPC 604e offers 32–Kbyte instruction and data caches.

The **PowerPC 620**™ microprocessor is a 64–bit implementation of the PowerPC architecture providing high levels of performance for enterprise servers, technical and scientific workstations and symmetric multiprocessing computer systems.

GET the facts... on PowerPC *HARDWARE*

The PowerPC Alliance is fully committed to the success of the PowerPC technology. This commitment is shared by a growing number of hardware manufacturers, developers and vendors. The wide range of products available from all these sources gives the consumer an exceptional range of choices at competitive prices.

Alaris Incorporated

47338 Fremont Blvd.
Fremont, CA 94538

Contact: Clement Lam
800-317-2348 (Tel.)
510-770-5769 (Fax)

New Alaris PowerPC systems deliver superior performance, quality and value. Standard 133MHz Alaris PowerPC systems feature 256KB–512KB L2 cache, 8MB–256MB RAM, 1.2GB Fast-SCSI hard drive, 64-bit graphics/video accelerator, 4X CD-ROM drive, 3 PCI slots, 5 ISA slots, and Windows NT. Alaris PowerPC systems carry a three-year warranty and are available through authorized Alaris resellers. These systems are expected to outperform and cost less than comparably equipped PCs.

Apple Computer

1 Infinite Loop
Cupertino, CA 95014

Contact: Apple Computer
408-996-1010 (tel.)
800-505-0171 (Apple Facts FaxBack)
http://www.info.apple.com

With the introduction of the PowerPC 601 RISC processor in Macintosh® computers, Apple created the Power Macintosh™ line, the first personal computers to integrate the PowerPC processor with an industry-standard operating system. Today, desktop and notebook computers based on the PowerPC 603 and 604 have joined the Power Macintosh line, offering up to twice the performance of previous models. Now people in business, on the go, in schools, and in the home can take advantage of the power of the PowerPC microprocessor with the Power Macintosh, PowerBook®, and Macintosh Performa® computers and network and workgroup servers from Apple.

Bandai Corporation of America

14241 East Firestone Drive, Suite 210
La Mirada, CA 90638

Contact: Kimi Matuski
310-404-1600 (Tel.)
310-404-1900 (Fax)

Bandai Corporation's "Power Player for Pippin" is a low-cost multimedia platform suitable for both on-line and CD-based interactive content. Based on Mac OS and the PowerPC 603 processor, the Power Player delivers high quality text and graphics

through standard television sets. It also supports serial ports, networking, CD-quality sound I/O, user-installable memory, PCI-compatible system expansion, and a wide range of input devices. Developed by Apple Computer, *Pippin* is a reference design for a very simple-to-use, low cost, Power PC-based multimedia engine. For more information on the Pippin reference design, contact Apple at 408-996-1010 or http://www.pippin.apple.com.

Be, Inc.

800 El Camino Real, Ste. 300
Menlo Park, CA 94025

Contact: Be, Inc.
415-462-4141 (Tel.)
http://www.be.com

The BeBox is a high-performance, low-cost PowerPC system which meets the demands of sophisticated computer users and developers who are frustrated by the limitations of current architectures. Featuring multiple PowerPC processors, an innovative new operating system, true preemptive multi-tasking, an integrated database, fast I/O, and a wide range of expansion options, the BeBox is poised to become a significant alternative platform for next generation applications.

Bull

OEM Division
300 Concord Road
Billerica, MA 01821

Contact: Roland Clarke
508-294-6069 (Tel.)
508-294-4553 (Fax)

Bull, widely recognized as the world leader in PowerPC symmetric multiprocessing (SMP), is offering a complete range of technologies from subassemblies to complete SMP systems. Bull's innovative PowerScale architecture is built around a patented high-speed data crossbar (throughput up to 1.4 GB/sec.) providing a dedicated address bus and private point-to-point data paths. It is the only 8-way SMP implementation for the PowerPC available today and it supports multiple generations of PowerPC processors. The OEM division provides immediate and extensive access to support services provided by the PowerScale engineering teams.

Computer and Communication Research Laboratories (CCL)

X000, 195–11, Sec. 4
Chung Hsing Road
Chutung, Hsinchu, Taiwan 310, R.O.C.

Contact: Carol Yu
886-35-915581 (Tel.)
886-35-820240 (Fax)

Taiwan NewPC Consortium (TNPC) was formed by Computer and Communication Research Laboratories (CCL) and the Taiwan Electrical and Electronic Manufacturers Association (TEEMA) in 1993. The TNPC, which consists of more than twenty Taiwan PC companies, is moving aggressively to make Taiwan an import design and manufacturing center for RISC–based personal computer systems. Its debut system is the TNPCstation P34GB (PowerPC Platform-compliant, PowerPC 604, 100-150MHz).

DayStar Digital, Inc.

5556 Atlanta Highway
Flowery Branch, GA 30542

Contact: Daystar Digital, Inc.
770-967-2077 (Tel.)
770-967-3018 (Fax)

The Genesis MP, DayStar's new high-performance media-publishing system, is built around the Mac OS. It uses a revolutionary new multiprocessing (MP) technology developed in partnership with Apple Computer. Genesis MP is the first and only Mac OS-based platform designed explicitly for the workstation user — a platform that has the ease of use and broad application base of the Macintosh with more processing power than hard-to-use UNIX-based workstations from SGI and Sun Microsystems.

DTK Computer

SF 13, No. 14, LN 609
Sec. 5 Chun Hsin Road
San Chung, Taipei Hsien, R.O.C.

Contact: Michelle Nguyen
818-810-0098 (Tel.)
818-810-0090 (Fax)

DTK Computer is the maker of the PAD-0108 and the PAD-0400. The PAD-0108 features a PowerPC 601 100MHz microprocessor and the PAD-0400 is built around a PowerPC 604 133MHz microprocessor.

FIC Group

6F., Formosa Plastics Rear Building
201-24, Tung Hwa N. Road
Taipei, Taiwan, R.O.C.

Contact: Jiin-Chaung Lue
886-2-218-4866 x524 (Tel.)
886-2-218-4862 (Fax)

The FIC Group's LEO PowerPCs are available with either a PowerPC 603e (100MHz) or PowerPC 604 (133MHz) microprocessor.

FirePower Systems

190 Independence Drive
Menlo Park, CA 94025

Contact: Sales
415-462-3000 (Tel.)
415-462-3051 (Fax)

FirePower Systems, Inc. provides the industry's leading computer suppliers with uni- and multiprocessor systems based on PowerPC microprocessors. FirePower's innovative products, which range from designs to complete systems, are supplied to OEM customers to license or purchase.

GVC Corporation

No.22, Pei Yuan Road
Chung Li Industrial Park, Chung Li City
Taoyuan Hsien, Taiwan, R.O.C.

Contact: Ming Sun
886-3-4622999 x222 (Tel.)
886-3-4628941 (Fax)

GVC is by no means content with mearly securing a prominent share of the global computer and communications market. With its advanced technology and excellent

production capability, GVC intends to prove to the world that “made in Taiwan” is synonomous with highest quality. GVC products include modems, LANs, PCs, multimedia adapter cards, and large-screen color monitors.

International Business Machines Corp.

1580 Route 52, Bldg. 504
Hopewell Junction, NY 12533-6531

Contact: IBM Microelectronics
800-PowerPC (Tel.)

IBM offers high-performance PowerPC microprocessor-based products. Whether you are choosing a system for a mobile application, desktop, workstation, or enterprise server solution, you can rest assured you’ve made the smartest possible decision by choosing a system from IBM that is based on the IBM PowerPC family of RISC microprocessors.

IBM RISC System/6000™
http://www.austin.ibm.com
800-IBM-CALL (Tel.)
800-2IBM-FAX (Fax)

IBM AS/400™
http://AS400.rochester.ibm.com

IPC Technologies

2121 Energy Drive
Austin, TX 78758

Contact: Austin Direct
800-752-1577 (Tel.)

Driven by the PowerPC 604 microprocessor, Austin’s PowerPlay systems from IPC Technologies, Inc. are designed to maximize new 32-bit applications while maintaining compatibility with current 16-bit Windows software. There’s no learning curve with these systems because you’ll enjoy the ease-of-use associated with the intuitive Windows NT interface. Standard configurations include SCSI-2, audio, CD-ROM and built-in networking.

Motorola Computer Group

2900 S. Diablo Way
Tempe, AZ 85282

Contact: Motorola Computer Group
1-800-759-1107 (Tel.)
http://www.mot.com/computer/

The Motorola Computer Group's PowerStack™ family is based on the Motorola PowerPC family of superscalar RISC microprocessors and a variety of computer system I/O buses. The PowerStack family of clients, servers, multi-user computers and single board computers is based on the PowerPC 603, PowerPC 603e and PowerPC 604 microprocessors. Models of the PowerStack family will support a wide range of requirements from desktop clients and small servers to servers supporting entire enterprises. Furthermore, PowerStack components employ an

innovative design concept in computer packaging where expansion modules snap together in stacks with no internal wires, jumpers or cables. PowerStack systems and servers presently run on the Windows NT and AIX operating systems. The systems are also designed to support other mainstream operating system options as they become available.

Mitac

9th Fl. No. 75, Ming Sheng E. Rd.
Sec. 3, Taipei, Taiwan, R.O.C.

Contact: Mike Tseng
510-440-3549 (Tel.)
510-440-3604 (Fax)

Mitac is the maker of the PPC 6000 and PPC 6100, PowerPC 604-based, 100 – 133MHz personal computers.

Parsytec

245 W. Roosevelt Road
Bldg .9, Unit 60
West Chicago, IL 60185

Contact: Reinhard Rinn
708-293-9500 (Tel.)
708-293-9525 (Fax)

Based on PowerPC microprocessors, Parsytec's CC series builds embedded parallel supercomputers from the foundations of the world's most dynamic technology arena, the PC market, by combining innovative systems architecture, packaging and communication technology with standard form factor PC modules. The CC system architecture is based on the integration of fully-functional computer nodes, each including disk and other I/O, into a single parallel system. The nodes are linked via a high speed network and routers in an ATM local area network fashion.

Power Computing Corporation

12337 Technology Blvd.
Austin, TX 78727-6104

Contact: Power Computing Corp.
800-999-7279 (Tel.)
info@powercc.com

Chosen by Apple as the first licensed manufacturer of Mac OS compatibles, Power Computing Corporation was created with a single focus: to provide more choices, more service and more affordability to the personal computer user. Power Computing's award-winning line of Mac OS compatibles are based on the PowerPC 601 and 604 microprocessors and offer both NuBus and PCI slots, variable RAM and hard drive configurations as well as a Quad-Spin (4X) CD-ROM. All systems come with a wealth of bundled software. Power Computing's unprecedented customer support includes a 30-day money back guarantee, toll-free lifetime technical support, and inexpensive on-site service warranty plans.

Reply Corporation

4435 Fortran Drive
San Jose, CA 95134

Contact: Ray Vallejo
408-956-2730 (Tel.)
408-942-7753 (Fax)
http://www.reply.com

Reply Corporation became an early enabler of PowerPC technology through an alliance with the Motorola RISC Division to manufacture PowerPC 603 and PowerPC 604 systems based on the "Big Bend" reference design. A continued close relationship with Motorola provides Reply with up-to-date advances and key information about PowerPC technology. This experience builds on Reply's reputation in the industry as a designer and manufacturer of cost-effective high-performance systems and motherboards.

Tatung Co.

1840 McCarthy Blvd.
Milpitas, CA 95035

Contact: James Hwang
408-383-0988 (Tel.)
408-383-0886 (Fax)
http://www.tatung.com.tw/

Tatung, the largest computer and electronics company in Taiwan, offers the best price/performance PowerPC systems designed around the PowerPC 604 microprocessor. Housed in a Baby-AT form factor casing, the TPC–5740 provides speeds of 100MHz and more. Up to 192MB of memory and 1 MB L2 cache can be installed. For more expansion capabilities, this system has a total of three PCI and three ISA bus slots. The motherboard includes two serial ports and one parallel port, SCSI-2, and FDC. The TPC–5740 supports a range of operating systems, including Windows NT, Solaris, and AIX.

UMAX

8F., 68, Sec.3, Nanking E. Rd.
Taipei, Taiwan, R.O.C.

Contact: Daniel Chen
886-2-517-0055 x301 (Tel.)
886-2-517-2017 (Fax)

UMAX, one of the world's largest suppliers of image scanners, image applications and multimedia products, now offers personal computers. As a member of the Taiwan NewPC Consortium (TNPC), UMAX is fully committed to the success of the PowerPC technology. UMAX aims to provide the range of system products customers demand.

Universal Scientific Industrial Co.

141 Lane 351, Taiping Road Sec. 1
Tsao Tuen Nan-Tou, Taiwan, R.O.C.

Contact: Steven Su
886-49-350876 x130 (Tel.)
886-49-350491 (Fax)

The all-in-one PowerPC Platform! With an LPX form factor integrated with an ATI high-performance VGA chip, and a Super I/O chip, the USI PRO-155 excels in value, performance and reliability.

GET the facts... on PowerPC *OPERATING SYSTEMS*

The PowerPC architecture is the first truly open standard for advanced computing. Mindful that computer users tend to be more concerned with the availability of critical application software packages than with the hardware running them, the PowerPC Alliance has set a goal for the PowerPC family to run every major contemporary operating system. Thousands of applications run on these operating systems. Users of PowerPC microprocessor-based systems can select application packages for everything from word processing to the most complex database management software. For more information on available applications for PowerPC systems, please contact specific OS vendors.

Mac OS

Apple's Mac OS operating system was the first mainstream OS for personal computers to support the PowerPC RISC microprocessor. Today, the Mac OS is used on well over 50% of all PowerPC microprocessor-based computers. The Mac OS takes advantage of PowerPC to offer the highest performance in personal computing, demonstrated by many independent benchmark studies. The Mac OS provides users the most fulfilling way to get what they want out of their computers by offering the easiest user experience, as well as integrated, leading-edge technologies for graphics, multimedia, communications, and collaboration for customers to implement smart solutions and remain a step ahead. Future versions of the Mac OS will take further advantage of the power of PowerPC to deliver new levels of ease of use and a re-architected foundation for performance and concurrency, that will allow users to work in new and more productive ways than ever before.

Manufacturer:	Apple Computer
Telephone:	408-996-1010
	800-505-0171 (Apple Product & Support Information)
	http://www.info.apple.com
Availability:	Now

Windows NT

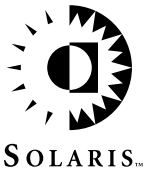
Microsoft's newest release of Windows NT includes support for systems based on the PowerPC family of microprocessors. Windows NT Server 3.51 now includes a tool to help customers manage Client Access Licenses for Microsoft BackOffice products and a utility that enables over-the-network installation of the Windows 95® operating system. Windows NT Workstation 3.51 provides support for Windows 95-compatible applications, popular fax software, a replaceable Winlogon screen and additional devices including PCMCIA.

Manufacturer:	Microsoft Corp.
Contact:	Microsoft
Telephone:	800-759-5474
Availability:	Now

AIX for PowerPC

IBM's industrial strength UNIX-based, multi-threaded 32-bit operating system lets you tackle even the most demanding business and engineering applications with confidence. The AIX platform also provides an unmatched level of interoperability and scalability for extensive growth options. AIX Version 4 for PowerPC contains all the qualities you expect in a premier server platform and is the basis for new PowerPC and Symmetric MultiProcessing (SMP) systems.

Manufacturer:	IBM Corp.
Contact:	Pat Kehoe
Telephone:	512-838-4075
Availability:	Now



Solaris (PowerPC Edition)

The Solaris operating environment is a powerful and flexible UNIX PowerPC platform. Solaris combines high-performance multi-tasking, multi-threading and multi-user capabilities with industry-leading enterprise network technologies. Solaris provides unlimited, transparent access to systems, servers, printers, remote databases and other resources. Its broad scalability supports virtually any application and configuration needed — for today and in the future.

Manufacturer:	SunSoft, Inc.
Contact:	Laura Mishima
Telephone:	415-786-5526
Availability:	Now

Firmware, Support Logic and Add-In Devices

Firmware, support logic, and add-in devices and chipsets for PowerPC microprocessor-based systems are available from a variety of vendors. Using products from any of these sources can significantly reduce the time and investment required during motherboard development, and the range of choices available will enable you to differentiate your products in the marketplace. For further information about any of these products, please contact specific vendors.

Firmware Providers

Company	Contact	Phone
Firmworks	Greg Hill	415-917-6985
Softex	Mahendra Bhansali	512-452-8836

Support Logic Providers

Company	Contact	Phone
CMD	Scott Wille	714-454-0800
National Semiconductor	Chris Sherman	512-218-3360
SMC	Russ O'Neil	516-435-6032
VLSI	Kevin Mankin	408-434-7582
Winbond	C.S. Wu	408-474-1667

Add-In Device Manufacturers

Company	Peripheral	Bus	Contact	Phone
3Com	Ethernet boards	PCI	Frank Howley	408-465-0337
3D Labs	3D graphics chips	PCI	Neil Trevett	408-436-3456
Adaptec	ATM, SCSI chips, boards	PCI	Jim Miller	408-957-7965
Adaptive Solutions	Imaging card	PCI	Job Rabinowitz	503-690-1236
Advanced Systems	SCSI chips/boards	PCI	George Moore	408-383-9400
Arcana Technology	Infrared mouse	—	Jack Copper	412-441-6611
Asante	Ethernet boards	PCI	John Huie	408-435-8388
ATI	Graphics boards	PCI	Henry Quan	905-882-2608
ATTO Technology	SCSI devices	PCI	Robert Girardi	716-691-1999
Cirrus Logic	Graphics chips	PCI	Cirrus Logic	510-623-8300
CMD	EIDE and IDE controllers	PCI	Scott Wille	714-454-0800

Company	Peripheral	Bus	Contact	Phone
Creative Labs	Sound boards	ISA	Don McCord	919-859-3010
Crystal Semiconductor	Sound chips	ISA	Scott Griffin	512-442-7555
DEC	Ethernet & FDDI boards	PCI	George Nielsen	508-486-5510
Diamond	Video boards	PCI	Ken Comstock	408-325-7225
DPT	SCSI controller boards	PCI	Sales	800-322-4378
Elisa	3D graphics	PCI	Thomas Neubert	408-935-0350
Evans & Sutherland	3D graphics	PCI	Patrick Nola	801-582-5847
Farallon	Ethernet	PCI	Ken Hasse	510-814-5217
Fore Systems	ATM	PCI	Laurie Ann Sims	412-635-3691
FWB	SCSI devices	PCI	Phil Montero	415-325-4392
Hermstedt	ISDN	PCI	Matthias Wolbert	49-621-76500
Integra Technology	Ethernet boards	PCI	Solutions Center	206-223-1996
International Software	3D graphics	PCI	Don Forster	800-488-4721
Interphase	ATM	PCI	Jim Gleason	214-654-5000
Linotype Hell	Color transformations	PCI	Frank Kupke	516-434-2064
Matrox	Video boards	PCI	George Rigas	514-685-2630
National Instruments	IEEE-488	PCI	Dudley Baker	512-794-5411
Number 9	Video boards	PCI	Larry McIntosh	617-674-0009
Olicon	Communications boards	PCI	Ed Meleniak	201-941-1681
Omnicomp	3D graphics boards	PCI	Kelly Stuart	713-464-2990
PDI	Video capture	PCI	Anna Cabellon	206-882-0218
QLogic	Fast SCSI	PCI	Eric Leppanen	714-668-5383
Radius, Inc.	Various components	PCI	Radius, Inc.	800-5-RADIUS
Rockwell	FDDI boards	PCI	Tom Coldwell	805-562-3164
Second Wave	PCI to NuBus bridge	PCI	Lark Doley	512-329-9283
SMC	Ethernet boards Super I/O	ISA ISA	Bob Sparanese Russ O'Neil	714-707-4831 516-435-6032
STB	Video	PCI	Vanessa Hewett	214-234-8750
Symbios Logic	SCSI chips & boards	PCI	Dennis Synder	719-533-7493
SysKonnect	FDDI boards	PCI	Sys Konnect	408-437-3812
U.S. Robotics	Modems	—	Bill Sector	847-676-7393
Waccom	Graphics tablets	PCI	Mike Tassels	360-750-8882
Western Digital	SCSI chips, controllers & controller boards	PCI	Western Digital	714-932-5000
YARC	3D boards	PCI	Jody Champion	800-272-9572

PowerPC Alliance Contacts

Apple Computer, Inc.

1 Infinite Loop
Cupertino, CA 95014

Apple Product and Support Information

800-505-0171
408-996-1010
http://www.info.apple.com

IBM Microelectronics Division

1580 Route 52, Bldg. 504
Hopewell Junction, NY 12533-6531
800-PowerPC
http://www.chips.ibm.com

MOTOROLA

Semiconductor Products

General Information:

800-845-MOTO
512-434-1502
email: motorola@selectnet.bga.com
http://www.mot.com/PowerPC/

Development Tools:

800-347-8384
512-891-2999
email: ppcinfo@risc.sps.mot.com