# Chip set supercharges Pentium PC

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As owner of the world's most pervasive microprocessor architecture, **Intel Corp.** of Santa Clara, Calif., continually protects its asset from market predators. Today (*22 March*), Intel announces its 82430 Peripheral Component Interconnect (PCI) bus chip set **to cure the personal computer's Achilles' heel, its slow I/O.**

New supercharged Pentium PCs will compete against workstations from **Sun Microsystems, Inc.** of Mountain View, Calif., the Power PC from **Apple Computer, Inc.** of Cupertino, Calif., and **IBM Corp.** of Armonk, N.Y., and others. The massive PC industry driving Pentium system costs down could quickly overwhelm these other workstation architectures.

The 82430 PCI chip set
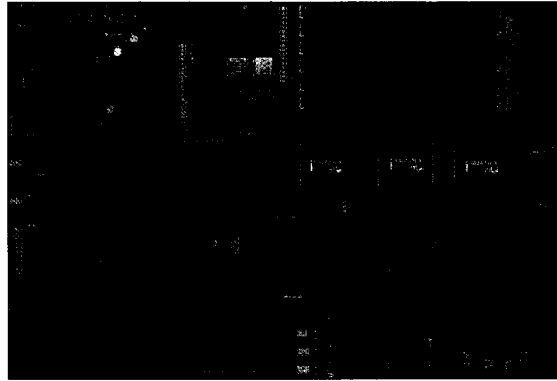
Intel Corp. of Santa Clara, Calif., is serious about providing a total Pentium solution. With the 82430 PCI bus chip set it introduced today, it is now possible to build a high-performance Pentium-based PC.

enables the system architecture to build workstation-class performance for a PC price. It contains two 82433 local bus accelerators (LBX), an 82434LX PCI cache/memory controller (PCMC) and a PCI-to-ISA (82375EB) or PCI-to-EISA (82374EB) bus bridge.

In a typical PC, the LBX and PCMC manage memory transfers between the Pentium and main memory over a high-speed host bus. In addition, the devices direct data transfers between peripherals on the mezzanine PCI bus and main memory.

The PCMC and two LBXs provide a dual-port data interface to the PC's DRAM memory. The PCI bus resides on one port, the Pentium on the other. With the dual port, the CPU (on the host bus) and a PCI device (via the PCI bus) can access main memory concurrently.

The chip set supports Pentium's on-board first-level cache in both write-through and a write-back modes. It also integrates cache tag RAM for an external second-level cache. The set allows PC manufacturers to build systems with a range of price/performance.

Samples of the set are available now, with production next quarter. Devices for building a PC with a low speed ISA expansion bus costs $76; chips for PCs with an EISA bus cost $98, both in 10,000 unit quantity.

LOCAL BUS BATTLE ABOUT TO BEGIN

On the eve of the Pentium announcement from **Intel Corp.** of Santa Clara, Calif., a battle is brewing over which high-speed local bus should be used in 486- and Pentium-based systems. Why the brouhaha over local buses?

With its higher data transfer rate, **the "local bus" is key to the success of new multimedia video and graphics applications,** says consultant Mary Ann Bader, of San Jose, Calif. market research firm **VLSI Research Inc.**

One contestant is **Video Electronics Standards Association's** local VL-Bus. VESA is an international organization that sets industry-wide graphics standards. Another is the **Peripheral Component Interconnect,** or PCI bus, that Intel is offering as an industry standard.

Glen Schuster, hardware applications manager at Santa, Clara-based **S3 Inc.,** a supplier of graphics chips for both buses, says **high-speed burst capability is the PCI advantage.** Serving 64-bit processors, PCI transfers data up to 128 megabytes/second.

VESA VL is shipping now, but the 32-bit bus is non-multiplexed, meaning it has separate address and data lines. If the bus goes to a full 64-bits, the number of address and data pins could make it difficult to build.

PCI is a multiplexed bus; address and data lines are multiplexed thus keeping the pin counts comparable to the 32-bit VESA bus.

Thus, VESA VL has the advantage for 486-based systems, while PCI will have the advantage for Pentium-based systems.

Schuster says Intel is offering a PCI chip set for the 486, which indicates an attempt to displace VESA VL even in 32-bit applications.

By contrast, he knows of no company building VESA VL chips for Pentium or other 64-bit processors.