

AT A GLANCE

AMD Ships Pentium Competitor 1
 AMD will soon begin shipments of its 5K86 in versions called the P75 and P90. The company rates these chips at the same performance as 75- and 90-MHz Pentium processors, respectively. Using the K5 core, the new devices run at 75 and 90 MHz. The company plans to deploy 5K86 parts rated as high as P150 by the end of the year. To accomplish this, it will enhance the K5 core to increase its efficiency, and it will use an improved version of its current 0.35-micron CMOS process. At just \$99, the P90 part is priced well below comparable Pentiums; this aggressive pricing should enable AMD to meet its goal of 3 million 5K86 shipments in 1996.

Editorial: The Industry Needs Strong Number Twos 3
 Although Intel and Microsoft dominate the PC industry, both vendors have been spurred to develop better products sooner by their remaining competitors. If PC makers continue to spurn these competitors, competition could disappear entirely, leaving Intel and Microsoft with less motivation to improve their products.

Most Significant Bits 4
 Cyrix to enter PC business; IBM updates POWER plans; PA-8000 schedule slips; AMD axes NexGen 586; SMC buys Efar, enters chip-set business; LSI samples chip set for set-top box; Erratum: S3 ViRGE.

Java's Virtual World 8
 Sun has applied the Java name to a variety of technologies. The two key aspects are the Java language and the virtual machine (VM). The former is an object-oriented programming language similar to C++, distinguished by its portability and dynamic linking. Java programs are compiled into "bytecodes" that are later executed by the VM. The VM is simple to port to multiple CPU types, allowing Java programs to run on many different processors.

Implementing the Java Virtual Machine 12
 The Java VM can be implemented in software or hardware. It uses a complex instruction set with a variable instruction length. Using a stack model, the VM encodes common instructions in a single byte, reducing code space. The VM must handle the complex features of Java, however, including object resolution and error checking. Sun's proposed Java chips will probably use microcode or trap to software to execute these more complex instructions.

Revised Model Reduces Cost Estimates 18
 Changes to the MDR Cost Model result in lower cost estimates than previously published. The new model shows that Pentium, at \$40, costs about half as much to build as AMD's 5K86 or Cyrix's 6x86. At \$144, Pentium Pro compares well to high-end RISC processors.

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