

**Coppermine Outruns Athlon** . . . . . 1  
 Intel introduces its 0.18-micron Pentium III, code-named Coppermine, into the performance PC, mobile, and workstation segments at speeds up to 733 MHz. An on-chip 256K cache reduces cost and improves performance by a full speed grade on most applications.

**Editorial: Why Change Instruction Sets?** . . . . . 3  
 While Intel and HP spend their efforts developing a new ISA to exploit instruction-level parallelism, other vendors are sticking with their existing ISA and focusing on thread-level parallelism instead.

**Most Significant Bits** . . . . . 4  
 Infrastructure issues slow Athlon ramp in Q3; Merced becomes Itanium; ATI Mobility moves to 128 bits.

**Embedded News** . . . . . 5  
 Massana's DSP coprocessor bolts onto CPUs; ADI adopts AMBA for new DSPs.

**PowerPC G4 Gains Velocity** . . . . . 10  
 Motorola's next-generation PowerPC processor with AltiVec will use a longer pipeline to reach speeds of more than 700 MHz. It also sports a 22-GByte/s 256K on-chip L2 cache.

**IBM PowerPC 440 Core Hits 1,000 MIPS** . . . . . 16  
 IBM's forthcoming two-way superscalar core for high-end embedded applications will deliver 1,000 MIPS at 555 MHz.

**Sun Makes MAJC With Mirror** . . . . . 18  
 With its new MAJC-5200, Sun goes after thread-level parallelism with a two-core chip multiprocessor enhanced for Java execution.

**Mips Plays Hardball With Soft Cores** . . . . . 22  
 The Mips 5Kc, the first implementation of the MIPS64 ISA, is the first synthesizable 64-bit processor core from any vendor.

**AMD Shows Big Server Plans** . . . . . 24  
 AMD will use a high-speed link called LDT to connect up to eight Athlon processors and I/O bridges. The company has also disclosed plans to add 64-bit extensions to its future SledgeHammer CPU.

**Intel 840 Brings RDRAM to Workstations** . . . . . 28  
 Intel's new 840 chip set is the first workstation core logic to support both dual Direct RDRAM channels and 4x AGP.

**VolumePro vg1000 Expands 3D Vision** . . . . . 30  
 Mitsubishi has disclosed its next-generation volume-rendering accelerator with twice the performance of the current vg500.

**The Slater Perspective: Direct RDRAM (Almost) Arrives in PCs** . . . 31  
 With its strongest benefits still in the future, Direct Rambus DRAM is struggling to gain a foothold in today's PC market.

**Literature Watch** . . . . . 33

**Patent Watch** . . . . . 34

**Chart Watch: Workstation Processors** . . . . . 35

**Resources** . . . . . 36

*Recent IC Announcements will return in the next issue.*

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