

**Compaq Chooses SMT for Alpha** . . . . . 1  
 Semiconductor processing will soon bestow budgets of more than 100 million transistors upon us, and new ideas for turning those transistors into performance are popping up all around. Compaq, for its forthcoming 21464, has selected simultaneous multithreading as its approach. Among advanced architectures, SMT machines have the unique capability to harness both instruction-level and thread-level parallelism, shifting resources dynamically between them to increase execution-unit utilization and maximize throughput.

**Editorial: New Rules Enable Faster Mobile CPUs** . . . . . 3  
 The large performance gap between desktop and mobile processors persists. Upcoming variable-clock-speed technologies from Intel and AMD may mask the problem by allowing mobile processors to run at higher frequencies, but they will not solve the problem of cooling such processors in the ever-smaller notebook enclosures.

**Most Significant Bits** . . . . . 4  
 AMD outlines processor roadmap; NeoMagic adds 3D to mobile graphics; Acer, ArtX announce core logic with graphics.

**Embedded News** . . . . . 5  
 ADI's first TigerSharc DSP has sharp teeth; Vitamin C for DSPs.

**Napalm Ignites Graphics Market** . . . . . 12  
 The new VSA-100 offers quality features absent in previous 3dfx chips. The company will build graphics cards with up to four of these chips, delivering 1.3 Gpixels/s of rendering performance to the game market. Quantum 3D will offer subsystems with up to 32 chips and more than 10 Gpixels/s of performance for the professional market.

**Mips vs. Lexra: Definitely Not Aligned.** . . . . . 14  
 Mips Technologies' patent-infringement lawsuit against Lexra focuses on a few unique instructions in the MIPS architecture. But neither company's arguments seem overwhelmingly persuasive and both have good legal and financial reasons for settling this case out of court.

**Motorola Cellular DSP Does It All** . . . . . 18  
 Motorola's DSP56690—sporting a 56600 DSP core, an M-Core 210 microcontroller, and a vast assortment of memory and peripherals—becomes the first embedded processor capable of supporting all of the world's myriad wireless-telephony standards.

**The Slater Perspective: Information Appliances Seek Subsidies** . . . 20  
 Information appliances are inching closer to reality. But these limited-function devices are being held back by high costs. To get past this obstacle, information appliances may look to e-businesses like Amazon.com for subsidies that will enable them to lower prices.

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