

**IA-64: A Parallel Instruction Set** . . . . . 1  
 Revealing another piece of the Merced puzzle, Intel and HP have released the IA-64 programmers manual. The document describes the operation of previously undisclosed features such as the register-frame mechanism, the x86 compatibility mode, and the modern—but surprisingly conventional—instruction set.

**Editorial: Scorched Earth Blocks Intel Competitors** . . . . . 3  
 With steep price cuts in its Celeron line, Intel has sapped the profits from the low-cost desktop PC market, leaving competitors in the lurch. Can anyone rise above the fruitless low-end market to challenge Intel?

**Most Significant Bits** . . . . . 4  
 TSMC wins 0.18-micron foundry race; Pentium III gets faster, cheaper; HP posts fastest SPEC results; Motorola takes capacitance to new low.

**Embedded News** . . . . . 5  
 Nintendo to battle PlayStation with PowerPC; TI's 'C5000 goes low power.

**National Quits PC Processors** . . . . . 12  
 Unable to eke out a profit against mighty Intel in the PC-processor business, National is giving up. While the company continues to pursue information-appliance sockets with its existing x86 cores, it will terminate or sell its Cyrix operation and future cores.

**Rise Lays Out Roadmap to Mainstream** . . . . . 15  
 Not particularly sad to hear about Cyrix's misfortunes, Rise hopes to fill the void with new 0.18-micron versions of its mP6 processor.

**ARC Expands DSP Capabilities** . . . . . 16  
 Following the trend toward more DSP capabilities in embedded-processor cores, ARC Cores has introduced version 3.0 of its customer-customizable VHDL core. At 250 MHz, the V3 can crank out one billion 16-bit MACs per second—faster than many true DSPs.

**Jade Enriches MIPS Embedded Family** . . . . . 18  
 Now focusing exclusively on the embedded market, MIPS Technologies has introduced Jade (aka 4K), based on the new MIPS32 instruction-set architecture. Jade cores will operate at up to 150 MHz and measure a tiny 2–3 mm<sup>2</sup> in a 0.25-micron process.

**SiS Defends Turf Against Intel's 810** . . . . . 22  
 Aiming to give Intel a run for the chip-set business, SiS has introduced an integrated P6-bus chip with twice the 3D performance of the 810.

**The Slater Perspective: The Multifunction Device Quandary** . . . . . 23  
 Dedicated devices are the easiest to use; multifunction devices are more complex, but integration has benefits. Which way will it go?

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