



LITERATURE WATCH

AUDIO/VIDEO

The internet audio (r)evolution. MP3 has launched digital audio into the mainstream, revolutionizing the way people collect and play music. However, our vision of what constitutes a portable player is evolving at a pace faster than Moore's law dictates. Nicholas Cravotta, *EDN*, 2/3/00, p. 101, 6 pp.

BUSES

An empirical analysis of the IEEE-1394 serial bus protocol. An empirical analysis using the statistics collector and analyzer exposes the unique, complex arbitration mechanisms used by IEEE-1394 nodes and their effect on the performance of higher-level protocols. Dan Steinberg, Technion-Israel Institute of Technology; *IEEE-Micro*, 1/00, p. 58, 8 pp.

DEVELOPMENT TOOLS

Smart tools illuminate deeply embedded systems. Techniques such as simulation—previously the preserve of hardware designers—are entering the software development arena, and silicon vendors are teaming up with hardware- and software-tool designers to provide combination tools that present systemwide real-time visibility. David Marsh, *EDN*, 2/3/00, p. 129, 6 pp.

Development tools unleash network processors' power. A new generation of multi-processor network processors provides performance to build networking equipment. But state-of-the-art development tools allow you to tap into that performance. Markus Levy, *EDN*, 2/3/00, p. 115, 5 pp.

DSP

The TigerSHARC DSP architecture. This highly parallel DSP architecture based on a short-vector memory system incorporates techniques found in general-purpose computing. It promises sustained performance close to its peak computational rates of 900 MFLOPS. Jose Fridman and Zvi Greenfield, Analog Devices; *IEEE-Micro*, 1/00, p. 66, 11 pp.

IC DESIGN

Shrink wrapped. Innovative packaging technologies abound. But which packagers have the waterfront property? Dean Takahashi, *Electronic Business*, 2/00, p. 100, 4 pp.

Developing a design methodology for embedded memories. Embedding custom memories into fast and small microprocessors demands a design methodology that encompasses the entire design flow and takes into account such challenges as timing, electromigration, and embedded test. Eric Hall and George Costakis, Puyallup; *ISD*, 1/00, p. 13, 5 pp.

Copper interconnection. The semiconductor industry has accepted the need to switch from aluminum to copper interconnects in chip manufacturing. But it's a bumpy road to the promised land. Gina Fraone, *Electronic Business*, 2/00, p. 79, 3 pp.

Managing noise on the K6-III. Shrinking line widths demand attention to noise issues, so design methodologies must change to include comprehensive noise analysis. Ted Williams, Morphics Technology, and Luke Tsai, AMD; *ISD*, 2/00, p. 19, 6 pp.

MEMORY

The slammin', jammin' DRAM scramble. System evolutions, technology capabilities, and economic realities combine to make DRAM the intriguing and unconventional black sheep of an otherwise relatively staid and predictable memory family. Brian Dipert, *EDN*, 1/20/00, p. 68, 12 pp.

MISCELLANEOUS

Beyond bits: the future of quantum information processing. Two of the 20th century's most powerful ideas, quantum mechanics and computer science, are uniting into a yet more powerful body of knowledge, giving birth to new technologies and applications in a wide variety of industries. Andrew Steane, Oxford University, and Eleanor Rieffel, FX Palo Alto Laboratory; *Computer*, 1/00, p. 38, 8 pp.

Solving Einstein's equations on supercomputers. Globally distributed scientific teams, linked to the most powerful supercomputers, are running visual simulations of Einstein's equations on the gravitational effects of colliding black holes. Gabrielle Allen, Max Planck Institute, et al., *Computer*, 12/99, p. 52, 7 pp.

Toward things that think for the next millennium. Things that think will help people realize the true benefits and potential of computing, but only if those who develop technology change the way they think about computing and computing devices. Janet Wilson, *Computer*, 1/00, p. 72, 5 pp.

PROCESSORS

1-GHz CPUs among the eye opens unveiled at ISSCC 2000. For years, companies have been using ISSCC to unveil ever-increasing CPU clock frequencies. This year, three companies in Session MP5 will detail 64- and 32-bit processors that clock at 1GHz. Dave Bursky, *Electronic Design*, 1/24/00, p. 25, 3 pp.

The birth of a new processor. HP wants to make its servers run faster and better compete with the likes of Sun Microsystems and IBM. Intel, on the other hand, is looking for a little respect outside the safe confines of the desktop-processor market. Russ Britt, Investor's Business Daily; *Electronic Business*, 1/00, p. 62, 4 pp.

