AUDIO/VIDEO

Getting glitzy with graphics for embedded systems. Crisp, colorful, snappy 2D and 3D graphics are now appearing in a diverse set of hardware platforms other than PCs, workstations, and arcade games. Increasing chip densities and better APIs are leading the change. Brian Dipert, *EDN*, 4/1/99, p. 79, 9 pp.

Implementing Neon: a 256-bit graphics accelerator. High-performance 3D-graphics accelerators traditionally require multiple chips on multiple boards. In contrast, Compaq's Neon—a single chip—performs like a multichip design, accelerating OpenGL 3D rendering and X11 and Windows NT 2D rendering. Joel McCormack, Compaq, et al.; *IEEE Micro*, 3/99, p. 58, 11 pp.

BUSES

Future I/O: switched fabric for next-generation servers and clusters. To promote and develop Future I/O as a standard, its developing companies have founded the Future I/O Alliance. One of the driving forces is the proprietary system technologies developed by the alliance partners. Ray Weiss, *RTC*, 3/99, p. 49, 2 pp.

DEVELOPMENT TOOLS

Don't be illogical when choosing logic-analysis tools. Instrument makers now offer specialized tools that—though not true logic analyzers—perform related and often complementary functions. Dan Strassberg, *EDN*, 3/18/99, p. 81, 7 pp.

DSP

General-purpose processors target floating-point DSP. As general-purpose CPUs increase their floating-point performance, does a dedicated DSP still make sense for your design? Steve Paavola, Sky Computers; *EDN*, 4/1/99, p. 119, 4 pp.

Should you be using a media-processor chip? Media processors combine high performance and low cost to handle the complexities of video, audio, communications, and graphics in emerging computer and consumer-electronics applications. But general-purpose microprocessors and dedicated chips are also strong contenders. Mike Elphick, *Electronic Systems*, 2/99, p. 46, 8 pp.

A DSP for every application. No digital signal processor is right for every application. Knowing what to expect from digital signal processing is the first step in finding a chip that fits your needs. Don Morgan, Ultra Stereo Labs; *Embedded Systems Programming*, 4/99, p. 83, 6 pp.

MEMORY

Ternary content-addressable memories serve as adjunct to software-based routing algorithms. Network equipment designers use CAMs to expand processor-based switch performance into the domain of ASIC-based switches and routers without losing flexibility. Robert Gott, *Electronic Systems*, 2/99, p. 14, 2 pp.

Using high-level design and verification for embedded memories. With embedded-memory requirements for system-on-a-chip (SOC) design being so complex, users need help with both memory design and system-level verification. Barbara Tuck, *Electronic Systems*, 2/99, p. 26, 2 pp.

Integrating flash memory in an embedded system. Turn on to the power and ease of flash! It's easy to tie into your system, and you can't beat having in-system programmability. Ethan Bordeaux and Stefan Hacker, Analog Devices; *Circuit Cellar*, 4/99, p. 13, 5 pp.

Serial flash memories rise to meet changing system needs. As NAND-style flash memories get pushed to higher densities, chip architectures must evolve to better match system-performance demands. Dave Bursky, *Electronic Design*, 3/22/99, p. 77, 5 pp.

MISCELLANEOUS

Solid growth ahead for electronics. Now that all the data is in for 1998, it's instructive to review last year's trends and take a stab at predicting the next couple of years. Daryl Delano, *Electronic Business*, 4/99, p. 15, 2 pp.

PROCESSORS

IBM's S/390 G5 microprocessor design. A high-frequency CISC processor, microarchitecture features, and reliability enhancements were crucial in building CMOS-based systems that could outperform those based on bipolar circuit technology. Timothy Slegel et al., IBM; *IEEE Micro*, 3/99, p. 12, 11 pp.

Pentium III hits 500 MHz. Pentium III PCs run at dizzying speeds. They promise to accelerate Web applications, simplify voice recognition programs, and liven up games. But it's up to software makers to deliver the goods. Scott Spanbauer, *PC World*, 4/99, p. 48, 7 pp.

AMD's K6-III shifts into overdrive. After years of eating Intel's dust, AMD catches up to the Pentium III in business performance with its wickedly fast new chip. Lincoln Spector, *PC World*, *5/99*, p. 46, 5 pp.

IBM's Deep Blue chess grandmaster chips. The IBM Deep Blue supercomputer that defeated world chess champion Gary Kasparov in 1997 employed 480 custom chess chips. This article describes the design philosophy, general architecture, and performance of the chess chips. Feng-hsiung Hsu, IBM T.J. Watson Research Center; *IEEE Micro*, 3/99, p. 70, 12 pp.

PROGRAMMABLE LOGIC

Application nonspecific. Are complex programmable devices coupled with in-system programming becoming the de facto design-in? Philip Ling, *New Electronics*, 3/23/99, p. 37, 2 pp.

SYSTEM DESIGN

Design for power so you don't burn notebook users. A design-for-power approach, using power analysis at every stage of the design process, will deliver higher performance, better reliability, and more features at reduced cost. Don Gottfried, Sente; *Portable Design*, 3/99, p. 35, 2 pp.