



LITERATURE WATCH

AUDIO/VIDEO

Balancing in three dimensions. Graphics-chip suppliers walking a tightrope to success are encountering numerous obstacles that may cause their downfall. Brian Dipert, *EDN*, 4/27/00, p. 55, 10 pp.

8-VSB versus OFDM: more than a tempest in a TV? The U. S. and Europe use different modulation schemes for digital TV. The Europeans say their OFDM system is more robust. A U.S. broadcasting company agrees, but the FCC doesn't. Could the FCC's rejection of OFDM portend the end of over-the-air TV in the U. S.? Dan Strassberg, *EDN*, 5/25/00, p. 89, 5 pp.

BUSES

PCI-X boosts bus bandwidth to 1 Gbps. PCI-X, a new bus protocol, aims to provide high-speed I/O for servers and workstations. Learn the fundamentals of PCI-X and how it differs from PCI. Laverly Nwaekwe and Syeed Chowdhury, Synopsis; *EDN*, 5/11/00, p. 135, 6 pp.

DEVELOPMENT TOOLS

Deep-submicron timing closure. New and highly anticipated flows will succeed in melding logic and physical design, only if they resolve the critical-path timing problems currently plaguing DSM design. Steve Schulz, Texas Instruments; *ISD*, 6/00, p. 29, 6 pp.

DSP

Advanced VLIW architectures unleash raw DSP horsepower. A new wave of DSPs boasts a tenfold improvement in signal processing while slashing power to a new low. Ashok Bindra, *Electronic Design*, 5/15/00, p. 73, 7 pp.

Implement a single-chip, multichannel VoIP DSP engine. The VoIP engine's scalable design handles a full T1 trunk (24 channels) of compressed voice or fax signals over an IP network. Shaul Berger, Infineon Technologies; *Electronic Design*, 5/15/00, p. 101, 4 pp.

IC DESIGN

Modeling the wiring of deep submicron ICs. In the era of interconnect-dominated chip performance, a tighter wire-modeling technique yields faster signals because it can leave less margin for error. Martin Walker, Frequency Technology; *IEEE Spectrum*, 3/00, p. 65, 7 pp.

Evaluating ASIC reuse. Monitoring various design metrics helps allocate necessary resources to various phases of the development process. Mike Augarten, Teradyne; *ISD*, 6/00, p. 40, 4 pp.

Package-design techniques help high-speed devices reach full potential. Chip makers must consider as many factors for today's device packages as they once had to weigh for the device itself. Louis Shixi Liu, Ph.D, Asat; *EDN*, 5/11/00, p. 171, 3 pp.

IBM's famed Cu wiring ignites chip process war. Semiconductor manufacturers are accelerating their efforts to develop new materials, with most concentrating on interconnect materials. Low-*k* materials are already being introduced to follow copper-based technology. Hiroki Eda et al., *NEA*, 5/00, p. 44, 6 pp.

MEMORY

Memory cards: designing with a full deck. Selecting a small-form-factor, removable-mass-storage module requires understanding not only the "black-box" characteristics but also the cost and capabilities of the technology inside. Brian Dipert, *EDN*, 5/25/00, p. 69, 12 pp.

MISCELLANEOUS

A new species of hardware. Ordinary hardware does the same old job until it wears out, whereas evolvable hardware adapts itself to a changing task. Moshe Sipper, Swiss Federal Institute of Technology; *Spectrum*, 3/00, p. 59, 6 pp.

PROCESSORS

Scalable, reconfigurable processor adjusts logic for top performance. An array of processing tiles, coupled with a reprogrammable fabric, can adjust its on-chip resources in a single cycle to optimize itself for the task at hand. Dave Bursky, *Electronic Design*, 5/15/00, p. 66, 4 pp.

SYSTEM DESIGN

Reliability: first step to availability. To achieve 100% availability—actually 99.999%—electronic equipment must operate 24 hours a day, 7 days a week without failures, or at best with minimal downtime. Sam Davis, *RTC*, 4/00, p. 16, 5 pp.

High availability: architectural considerations. When a high-availability system is created, the architecture must eliminate multiple sources of downtime, not just hardware-related outages. Fred Rehhausser, Sun; *RTC*, 4/00, p. 27, 5 pp.

Digital convergence is coming: are mobile-phone RF parts ready? Multiple transmitters and receivers in the same mobile-phone package are on the horizon, and this new technology will present RF designers with plenty of new technical challenges. Sami Haapoja, Nokia Mobile Phones; *EDN*, 4/27/00, p. 125, 4 pp.

Timing tricks for PICs. The upside of using a microcontroller with single-cycle instructions is the ease and precision with which your code can synchronize its timing. This article presents five timing tricks that will help you do just that. Robert Scott; *Embedded Systems Programming*, 5/00, p. 108, 6 pp.

