Literature Watch

Buses

Designing PCI-compliant master/slave interfaces for add-on cards. Unlike ISA and EISA, PCI presents a number of electrical, physical, and functional issues you need to understand. Bernie Rosenthal and Ron Sartore, Applied Micro Circuits; *EDN,* 3/30/95, p. 97, 7 pp.

Development Tools

Embedded tools add features to meet developers' needs. Developing graphical user interfaces should get easier. More embedded development tools are running on PCs under Windows. Sherrie Van Tyle, *Electronic Design,* 3/20/95, p. 79, 7 pp.

Tools offer a smooth ride on the PCI bus. Pioneering designers with the PCI bus experienced hardships because they had to create their debugging tools. Today, a wide range of PCI-specific tools makes your debugging job much easier. Markus Levy, *EDN,* 3/30/95, p. 32, 7 pp.

I/O-buffer modeling spec simplifies simulation for high-speed systems. The emerging IBIS standard for behavioral modeling of I/O buffers is a relatively platform-independent alternative to Spice models. Derrick Duehren, Will Hobbs, et al, Intel; *EDN,* 3/16/95, p. 65, 5 pp.

DSPs

DSP ICs penetrate into low-cost applications. DSP cores and microcontrollers with DSP functions solve cost-sensitive system problems. Dave Bursky, *Electronic Design,* 3/20/95, p. 51, 4 pp.

Graphics/Video

Customize MPEG subsystems with an audio-decoder core. CompCore Multimedia's CA1 circuit block is a digital-audio decoder for MPEG-1 and MPEG-2. Dave Bursky, *Electronic Design,* 3/20/95, p. 152, 2 pp.

Controllers give portables desktop performance. Cirrus Logic's new Nordic chips offer a PCI connection and support for full-motion video in a notebook PC. Richard Nass, *Electronic Design,* 3/20/95, p. 167, 2 pp.

Peripherals

100Base-T4: A turbocharge for today's network. Fast Ethernet postpones radical surgery on older LANs by offering a 10× boost that's smooth, easy, and inexpensive to deploy. Lee Goldberg, *Electronic Design,* 3/20/95, p. 59, 9 pp.

100Base-T4 transceiver simplifies adapter, repeater, and switch designs. Cypress's CY7C971 is the first complete 100Base-T4 transceiver chip to reach the market. Lee Goldberg, *Electronic Design,* 3/20/95, p. 155, 4 pp.

Ease file transfers with IrDA-protocol wireless infrared. IrDA-standardized point-and-shoot data transfer is convenient and inexpensive. Bill Travis, *EDN,* 3/30/95, p. 59, 8 pp.

Decipher high-sample-rate ADC specs. Designers must thoroughly understand ADC specifications to properly determine the converters' overall system performance. Phillip Louzon, *Electronic Design,* 3/20/95, p. 91, 7 pp.

Processors

Partners in platform design. To create a successful new high-performance processor, the chip architects and compiler designers must collaborate from the project's very start. Marc Tremblay and Partha Tirumalai, Sun Microsystems; *IEEE Spectrum,* 4/95, p. 21, 7 pp.

Coping with a flexible architecture. Rooted in workstation technology, the PowerPC architecture must adapt easily to the full range of computing foreseen for the next 10 years. Richard Comerford, *IEEE Spectrum,* 4/95, p. 27, 6 pp.

Throughput in a counterflow pipeline processor. In this design, instructions flow in one direction while their results go in the opposite direction, simplifying bypass logic and data paths. Aimee Severson and Brent Nelson, Brigham Young University; *Computer Architecture News,* 3/95, p. 5, 8 pp.

Software-efficient RISC core trims system memory needs. ARM's dual-instruction-set "Thumb" CPU core doubles program code density by using both 16- and 32-bit commands. Dave Bursky, *Electronic Design,* 3/20/95, p. 163, 3 pp.

Superscalar vs. VLIW. In excerpts from Internet postings, a key UltraSparc designer faces off against a long-time VLIW advocate, formerly of Multiflow. Marc Tremblay, Sun, John O'Donnell, Equator; *Computer Architecture News,* 3/95, p. 25, 4 pp.

Programmable Logic

Simple PLDs keep in step. A survey of current PLDs with fewer than 1,000 gates and 44 pins. Jeff Child, *Computer Design,* 3/95, p. 130, 5 pp.

High-density PLDs. Faster time-to-market and off-the-shelf delivery make high-density programmable devices more attractive as production units. John Gallant, *EDN,* 3/16/95, p. 31, 5 pp.

System Design

ATM-based multimedia servers. This paper proposes three scalable, subsystem-based multimedia designs using ATM to increase bandwidth. Reza Rooholamini, Dell Computer, Vladimir Cherkassky, University of Minnesota; *IEEE Multimedia,* 3/16/95, p. 39, 14 pp.

Multiprocessor "servers": the new low-cost supercomputers. Most major computer vendors are combining multiple processors in a single system, improving throughput. Charles H. Small, *EDN,* 3/16/95, p. 59, 3 pp.

Multichip modules innovating packaging solutions. When faced with the challenge of increasing silicon density on constantly shrinking board space, designers are beginning to implement multichip modules instead of conventional single-chip packages. Robert Yamashita, MicroModule Systems; *IC Card Systems and Design,* 3–4/95, p. 20, 4 pp.

