

Literature Watch

ASICs

Face-off: GaAs vs. BiCMOS for high-performance ASICs and systems.

Donald C. Larson, TriQuint Semiconductor, Glenn Raskin, Motorola Computer Design, 8/93, p. A10, 4 pp.

Testing fully diffused blocks embedded in complex ASICs.

Barbara Tuck, Computer Design, 8/93, p. A12, 6 pp.

Buses

PCI may end proliferation of mezzanine approaches.

Warren Andrews, Computer Design, 8/93, p. 42, 2 pp.

Development Tools

Mixing VHDL and Verilog HDL models.

William Fazakerly, Ikos Systems; Computer Design, 8/93, p. A20, 4 pp.

Graphics

XRAM caching scheme attacks graphics DRAM barrier.

Jeffrey Child, Computer Design, 8/93, p. 50, 2 pp.

Memory

A high-performance object-oriented memory.

Craig Hyatt, North Carolina State University; Computer Architecture News, 9/93, p. 11, 9 pp.

Fast DRAMs can be swapped for SRAM caches.

Dave Bursky, Electronic Design, 7/22/93, p. 55, 8 pp.

Miscellaneous

Unix meets Windows NT: Showdown at the OS corral.

With Unix moving onto new, powerful PCs, and a new 32-bit operating system from Microsoft moving onto workstations, a fight for supremacy is certain. Gary Legg, EDN, 8/5/93, p. 71, 6 pp.

Berkeley's Patterson predicts exciting times.

"In the competition between computer architectures," says David A. Patterson of the University of California at Berkeley, "only a very stubborn person would argue that RISC didn't win." Dick Price, IEEE Micro, 8/93, p. 4, 3 pp.

Fujitsu's multipronged SPARC

attack. Shalini Chatterjee, Sun-World, 8/93, p. 22, 2 pp.

RISC vs. CISC for realtime: a software perspective.

James W. Talbot, Wind River Systems; Computer Design, 8/93, p. 74, 3 pp.

Peripheral Chips

PCMCIA-sized radio links portable

WLAN terminals. Milt Leonard, Electronic Design, 8/5/93, p. 45, 4 pp.

Processors

RISC chips muscle into embedded applications.

Now you can get the power of RISC technology without the penalty of cumbersome, power-hungry desktop CPU chips. Choices range from repackaged RISC engines to a RISC μ C. Ray Weiss, EDN, 8/5/93, p. 45, 5 pp.

Microcontrollers perform signal

processing. Digital filtering done on chip may eliminate external components. Doug Horan, Zilog; Electronic Products, 8/93, p. 25, 6 pp.

RISC finding a place in real-life, realtime applications.

The latest generation of super RISC processors is beginning to offer performance advantages that can no longer be ignored by the realtime community. Warren Andrews, Computer Design, 8/93, p. 67, 5 pp.

Shifting register windows.

Using fewer register elements than a seven-window SPARC organization, shifting register windows more than halves spill/refill memory traffic, and reduces visible spill/refill cycles by an order of magnitude. Gordon Russell, Paul Shaw, University of Strathclyde; IEEE Micro, 8/93, p. 28, 8 pp.

Implementing precise interruptions in pipelined RISC processors.

Chia-Jiu Wang, University of Colorado, Frank Emmett, NCR; IEEE Micro, 8/93, p. 36, 8 pp.

Cheapskate upgrade.

Weitek announces a \$1500 SPARC chip swap for SPARCstation 2 and IPX users. Mark Cappel, Sunworld, 8/93, p. 11, 1 p.

How does processor MHz relate to end-user performance?

Steven W. White, IBM, Phil D. Hester, IBM, Jack W. Kemp, IBM, G. Jeanette McWilliams, Performance InDeed; IEEE Micro, 8/93, p. 8, 9 pp.

Pentium: More RISC than CISC.

The Pentium moves Intel closer to true RISC, but 80x86 compatibility has forced some compromises. Dick Pountain, Byte, 9/93, p. 195, 6 pp.

Cache performance of the SPEC92 benchmark suite.

Jeffrey D. Gee, Sun Microsystems, Mark D. Hill, Dionisios N. Pnevmatikatos, University of Wisconsin, Alan Jan Smith, University of California at Berkeley; IEEE Micro, 8/93, p. 17, 11 pp.

Programmable Logic

Use a reprogrammable approach to boundary scan for FPGAs.

David George, Viewlogic Systems; EDN, 8/5/93, p. 97, 6 pp.

System Design

Waiting algorithms for synchronization in large-scale multi-processors.

Beng-Hong Lim, Anant Agarwal, MIT; ACM Transactions on Computer Systems, 8/93, p. 253, 42 pp.

Parallel processing comes down to earth.

Lessons learned by building massively parallel processing systems are being applied to desktop problem-solving. Jack Shandle, Electronic Design, 8/19/93, p. 56, 6 pp.

Design considerations for RISC microprocessors in realtime embedded systems.

Alan Booker, John McKeeman, IBM; Computer Design, 8/93, p. 71, 2 pp.

A system level view of RISC and realtime.

Tom Griffiths, Force Computers; Computer Design, 8/93, p. 81, 3 pp.

Subnotebook systems minimize trade-offs.

Portable-system designers try to reduce size, weight, power consumption, and cost while increasing performance. Richard Nass, Electronic Design, 8/5/93, p. 57, 7 pp.