

AUDIO/VIDEO

Get set for set-top boxes: finally a reality. With a variety of new devices, software, and reference designs, set-top boxes seem poised to enter the mainstream. Markus Levy, *EDN*, 2/18/99, p. 65, 8 pp.

Integrated tuner circuit puts television in new places. The world's first single-chip TV tuner cuts cost, power, and space, while outperforming its older "canned" rivals. Lee Goldberg, *Electronic Design*, 1/25/99, p. 34, 4 pp.

BUSES

Future computing: the serial-bus revolution takes off. Serial buses play well outside the box, but they may have a hard time creeping inside. Jeff Child, *Electronic Design*, 1/11/99, p. 95, 4 pp.

Spice provides signal-integrity clues for high-speed systems. As you raise the clock rate—and thus the signal rise and fall times—to squeeze more performance from a design, understanding the effects of termination schemes is more important than ever. Ken Boorum, Hewlett-Packard; *EDN*, 2/18/99, p. 89, 3 pp.

Proposed I/O standards aim to avoid performance bottlenecks. Recent proposals for new I/O standards no longer rely solely on device scaling to achieve performance. Future I/O subsystems will also embody significant architectural changes. Mike Elphick, *Electronic Systems*, 1/99, p. 24, 2 pp.

Crossbar switches race toward next-gen performance. Companies are advancing the art of multiprocessing through their use of crossbar technology. John Bond, *Electronic Systems*, 1/99, p. 26, 2 pp.

Driving the low-voltage ones and zeros into the express lane. As bus speeds move higher and die shrinks drive operating voltages lower, the logic used to tie your subsystems together—and to the outside world—must keep pace. Paul Gendreau Jr., *Portable Design*, 1/99, p. 16, 4 pp.

DEVELOPMENT TOOLS

Design methodologies for DSM ASIC designs. The latest deep-submicron process technologies require interactions among tools and the various aspects of the design to ensure successful silicon. Ravi Thumarukudy, GDA Technologies; *ISD*, 3/99, p. 38, 4 pp.

Tool suite enables designers to craft customized embedded processors. When standard CPU cores don't fit the bill, a malleable core and a new tool suite allow you to create an optimized solution. Dave Bursky, *Electronic Design*, 2/8/99, p. 33, 4 pp.

DSP

TMS320C62x/C67x DSPs. Parallel processing and high-speed clocks are multiplying the throughput of new DSPs, but they come burdened with complexity and cost. Don Morgan, Ultra Stereo Labs; *Embedded Systems Programming*, 2/99, p. 79, 5 pp.

IC DESIGN

Configurable processing platforms: a new design paradigm for systems on a chip. A novel approach supports the key advantages of SOCs but controls the unpredictability that often plagues efforts to design them. Cary Ussery, Improv Systems; *Electronics Journal*, 2/99, p. 10, 6 pp.

Choosing between an ASIC and standard chips today. IP and SOC design methods are creating a viable alternative to ASIC implementations and standard ICs for some applications: semicustom application-specific standard products. Dan Schlosky, *Silicon Strategies*, 2/99, p. 25, 4 pp.

MISCELLANEOUS

Chip-scale packaging is your route to the most compact portables. From microprocessors to flash memory to passives, chip-scale packaging is having an impact on the design of portable products across the board. But the advantages of a package not much larger than the silicon chip or the component itself can be offset by implementation issues. Patrick Walsh, *Portable Design*, 2/99, p. 16, 4 pp.

What has influenced computing innovation? New computing products, processes, and services typically stem from the complex interaction of government, industry, and academia. But can past successes reveal specific patterns? Thomas Hughes, Univ. of Penn. and Jerry Sheehan, National Research Council; *Computer*, 2/99, p. 33, 11 pp.

Fighting an enemy of the substrate with optical proximity correction. As device feature sizes shrink below 0.25 microns, printed wafer patterns don't match those drawn by designers. Avant's Taurus-OPC is a comprehensive solution for the problem of proximity effects. Mike Rieger and John Stirniman, Avant; *Electronics Journal*, 2/99, p. 20, 6 pp.

PROCESSORS

Eight-bit processors—all over the map. Eight-bit MCUs are advancing on all frontiers, some getting smaller and some bigger. They run at clock speeds from 32 KHz to 100 MHz. Some are new, and many are very old. Why is there so much diversity? Rick Grehan, Metrowerks; *Embedded Systems*, 2/99, p. 63, 7 pp.

PROGRAMMABLE LOGIC

Laser-programmable gate arrays: a faster route to silicon. Complex RTL designs can now be taken from source to silicon quickly with LPGA technology, which combines the fast prototyping of FPGAs with the performance and low production costs of ASICs. Nick Heaton and David Head, Excel Consultants; *Electronics Journal*, 2/99, p. 16, 4 pp.

SYSTEM DESIGN

Pentiums add muscle to small SBCs. Half-ISA, PC/104, and EBX bulk up for high-performance industrial, communications applications. John Wranovics, *RTC*, 2/99, p. 63, 3 pp.