

AUDIO/VIDEO

A visionary's view of portable displays. The thin-film-transistor LCD isn't ideal for color flat panels, but it's the best we've got—and it works.

However, the future holds a host of non-LCD flat-panel contenders. David Mentley, Stanford Resource; *Portable Design*, 3/98, p. 52, 2 pp.

Displays. A guide to the most common styles of off-the-shelf displays. *Electronic Products*, 4/98, p. 81, 6 pp.

CPUS

Selecting a microcontroller. Here's a "back-to-basics" look at how to choose a microcontroller. Ross Bannatyne and Greg Viot, *Embedded Systems Programming*, 4/98, p. 95, 8 pp.

DSP

The brave new world of DSP. Digital signal processing is a technology in transition. The wireless revolution is turning the customary semiconductor business model on its head—with heavy-duty implications for developers. Patrick Walsh, *Portable Design*, 3/98, p. 23, 8 pp.

Variety spices up I/O on DSP boards. This survey discusses how some of the latest DSP boards handle I/O. Sam Shearman, *Personal Engineering*, 4/98, p. 25, 6 pp.

IC DESIGN

It's time to shift to static verification/sign-off. With timing more critical than ever, simulation-based verification has run out of steam. Static-timing sign-off is needed for system-on-a-chip design. Barbara Tuck, *Computer Design*, 3/98, p. 53, 2 pp.

Systems-on-a-chip prompt transitions for development tools. There are similarities and differences between traditional, or board-based, embedded systems development and the process steps for an SOC-based embedded system. Arnie Berger, Applied Microsystems; *Computer Design*, 3/98, p. 14, 5 pp.

IP design flow centers on automatic HDL translation. Designers at SICAN developed a new ASIC design flow that automatically translates VHDL into Verilog, producing intellectual property available in both languages. Jake Karrfalt and Thomas Oberthür, *Integrated System Design*, 4/98, p. 15, 4 pp.

The new RTL analysis methodology. Meeting the challenges of very deep sub-micron design requires a new approach—the RTL virtual prototype. Steven Schultz, *Integrated System Design*, 4/98, p. 22, 4 pp.

Chip place-and-route tools lay it on the line. With interconnect-dominated deep-submicron designs, physical layout tools determine whether your design is successful. Jim Lipman, *EDN*, 3/26/98, p. 71, 6 pp.

Electromigration wreaks havoc on IC design. Current IC-design practices make perfect conditions for electromigration, which causes broken connections. A thorough understanding of the problem and its prevention helps prolong an IC's life. Jim Lloyd and David Overhauser, Simplex Solutions; *EDN*, 3/26/98, p. 145, 4 pp.

MEMORY

In-system logic-level-controlled data protection. Flash memory makes it possible to integrate many functions, but integration spells a need for data protection. Of the various techniques, each has its strengths and weaknesses. George Dixon and Mark McClain, AMD; *Portable Design*, 3/98, p. 35, 4 pp.

Flash file systems replace spinning media in PCs. This article shows how to install a flash disk on a system as well as how to write the software that allows this device to look like a disk to a BIOS. Pascal Dornier, PC Engines; *Personal Engineering*, 4/98, p. 43, 6 pp.

MISCELLANEOUS

Computer engineering 30 years after the IBM Model 91. The Model 91's story shows how practitioners must change to ensure continued innovation in computer engineering. Michael Flynn, Stanford University; *Computer*, 4/98, p. 27, 5 pp.

Resuscitating Fairchild. Can a strategy that focuses on standard product businesses breathe new life into the legendary Fairchild name? Bruce Rayner, *Electronic Business*, 4/98, p. 59, 4 pp.

PERIPHERALS

Embedding Ethernet connectivity. You can embed Ethernet connectivity into almost any device that generates serial, analog, or digital signals. Richard Daniel, Intelligent Instruments; *Embedded Systems Programming*, 4/98, p. 3, 5 pp.

SYSTEM DESIGN

Pentium drives embedded modules. Modules—packaged Pentium subsystems—provide an easy form factor for design portability and fast design-ins. Robert Baraga, Intel; *RTC*, 3/98, p. 25, 3 pp.

High system speeds are making clock design a critical problem. Because the clock is the heartbeat of a digital system, distributing a clean, synchronized signal is a critical high-speed design problem. Charles Small, *Computer Design*, 3/98, p. 27, 2 pp.

PCB design becomes focus of entire design process. Once merely a step along the way, PCB design has become the focus of the entire new-product development process. Charles Small, *Computer Design*, 3/98, p. 58, 5 pp.

Co-verification handles more complex embedded systems. New techniques give hardware and software designers greater visibility of the internal workings of increasingly complex embedded systems. Arnold Berger, Applied Microsystems; *Electronic Design*, 3/9/98, p. 9, 5 pp.

What a designer should know about front-end power systems. Here's a look at recent trends and some tips for specifying front-end AC/DC supplies. Michael Wagner, Lambda Electronics; *Electronic Products*, 3/98, p. 43, 2 pp.

Battery selection isn't an afterthought. A battery's chemistry influences a portable's charging circuitry, power distribution, shape, size, and function. Cheryll McKinnon, *Portable Design*, 4/98, p. 22, 7 pp.