

Literature Watch

Buses

FDDI dual attachment station on a PC-AT interface card. A low cost, low power FDDI interface card for end station applications is described. Manohar Rao Mahavadi, AMD, Microprocessors and Microsystems, 3/93, pg 101, 7 pgs.

Barnacles on the ISA bus: starting the '386SX development card. The first step in adding your own circuits to a standard '386SX motherboard is to come up with a bus interface board. Ed takes that first step as he starts building his Firmware Development Card. Ed Nisley, The Computer Applications Journal, 4/93, pg 42, 10 pgs.

Development Tools

PC-based design tools take on workstation chores. In the past, PC-based tools were used only for simple schematic capture and PCB layout tasks. But bolstered by increased processing power and DOS innovations, these tools are ready to tackle serious design tasks. Mike Donlin, Computer Design, 3/93, pg 57, 6 pgs.

Microprocessor development systems. Some recent announcements of in-circuit emulators and other debugging hardware. Electronic Products, 3/93, pg 73, 6 pgs.

Simulating at high levels shows promise. But lingering difficulties diminish gains made by using simulation in a top-down design environment. Lisa Maliniak, Electronic Design, 3/18/93, pg 43, 7 pgs.

DSPs

Applications case history. DSP card gives golf simulator the power of virtual reality. Personal Engineering & Instrumentation News, 3/93, pg 62, 2 pgs.

Graphics

No-frills compression delivers low-cost PC video. Hardware-acceleration chip set that processes strictly in RGB color space eliminates MAC operations and avoids analog complications. Jack Shandle, Electronic Design, 3/4/93, pg 37, 4 pgs.

JPEG compression chip cuts system design tasks. Compression engine integrates color-space conversion, memory control, and interface logic. Milt Leonard, Electronic Design, 3/4/93, pg 109, 3 pgs.

Memory

Cache architectures under pressure to match CPU performance. Ordinary DRAM is getting wider, but it can no longer pretend to keep up with processor speeds. The traditional solution—first- and second-level cache—is still the chosen approach for most designers, but several new technologies are competing to make cache unnecessary. Don Tuite, Computer Design, 3/93, pg 91, 7 pgs.

Miscellaneous

Workstations vs PCs. Personal computers have gotten so powerful, and workstations have gotten so inexpensive, that the two categories of computer, once separated by a wide price and performance gulf, now overlap. Charles H. Small, EDN, 3/18/93, pg 164, 9 pgs.

ISSCC: digital technology. Achieving higher operating speeds always has been a hot topic at the International Solid State Circuits Conference (ISSCC), and this year is no exception. This past ISSCC discussed some of the fastest forthcoming microprocessors and memory chips. Dave Bursky, Electronic Design, 3/4/93, pg 48, 8 pgs.

ISSCC: advanced technology. Two themes are apparent if not unexpected: IC compression engines for the desktop and coffee table; and silicon that can handle fiber data rates for wide-area networking. A third, but unrelated, theme in advanced technologies is the rapid expansion of artificial-intelligence technology into silicon. Jack Shandle, Electronic Design, 3/4/93, pg 73, 5 pgs.

Peripheral Chips

Advanced ICs enhance audio applications. To meet the demands of today's audio systems, IC manufacturers are refining existing devices and innovating new ones. Dave Pryce, EDN, 3/18/93, pg 83, 6 pgs.

Chip set for NT systems is the first for R4x00 CPUs. Optimized for RISC PCs, an 8-chip set simplifies system design and ups speed with an I/O cache and hardware-based scatter-gather. Dave Bursky, Electronic Design, 3/18/93, pg 128, 3 pgs.

Processors

Microcontroller timers coordinate hardware events, CPU processing. To ensure that your μ C meets application timing deadlines, you've got to estimate overall system timing—and there aren't any tools to help. Ray Weiss, EDN, 3/18/93, pg 113, 6 pgs.

Motorola 68HC05L family has nine LCD/8-bit μ C combinations. Ray Weiss, EDN, 3/18/93, pg 140, 2 pgs.

The MC88110 implementation of precise exceptions in a super-scalar architecture. Nasr Ullah, Matt Holle, Motorola Inc., Computer Architecture News, 3/93, pg 15, 11 pgs.

RISC faces reality—and reality blinks. For embedded systems designers who want a versatile, yet inexpensive, RISC processor, the AMD29205 proves to be a solid contender with its low power consumption and small size. Tom Cantrell, The Computer Applications Journal, 4/93, pg 62, 6 pgs.

System Design

A fault-tolerant multi-transputer architecture. A fault-tolerant architecture where the processing nodes are automatically reconfigured in the event of a fault and the computations continue from the stage where the fault occurred. R. Krishna Kumar, S. K. Sinha, L. M. Patnaik, Indian Institute of Science, Microprocessors and Microsystems, 3/93, pg 75, 7 pgs.