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ports; Timer/counters; 8253 timer modes; MC68230 modes; Timer processors; Real-time clocks; Serial ports; Serial peripheral interface; I2C bus; M-Bus (Motorola); What is an RS232 serial port?; Asynchronous flow control; UART implementations; DMA controllers; A generic DMA controller; DMA controller models; Channels and control blocks; Sharing bus bandwidth; DMA implementations; Chapter 5. Interfacing to the analogue world; Analogue to digital conversion techniques
Sample rates and sizeCodecs; Power control; Chapter 6. Interrupts and exceptions; What is an interrupt?; Interrupt sources; Recognising an interrupt; The interrupt mechanism; MC68000 interrupts; RISC exceptions; Fast interrupts; Interrupt controllers; Instruction restart and continuation; Interrupt latency; Do's and Don'ts; Chapter 7. Real-time operating systems; What are operating systems?; Operating system internals; Multitasking operating systems; Scheduler algorithms; Priority inversion; Tasks, threads and processes; Exceptions; Memory model; Memory management address translation
Commercial operating systemsResource protection; Linux; Disk partitioning; Chapter 8. Writing software for embedded systems; The compilation process; Native versus cross-compilers; Run-time libraries; Writing a library; Using alternative libraries; Using a standard library; Porting kernels; C extensions for embedded systems; Downloading; Chapter 9. Emulation and debugging techniques; Debugging techniques; The role of the development system; Emulation techniques; Chapter 10. Buffering and other data structures; What is a buffer?; Linear buffers; Directional buffers; Double buffering
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Sommario/riassunto

In this new edition the latest ARM processors and other hardware developments are fully covered along with new sections on Embedded Linux and the new freeware operating system eCOS. The hot topic of embedded systems and the internet is also introduced. In addition a fascinating new case study explores how embedded systems can be developed and experimented with using nothing more than a standard PC.* A practical introduction to the hottest topic in modern electronics design* Covers hardware, interfacing and programming in one book* New material on Embedded Linux for embedded int