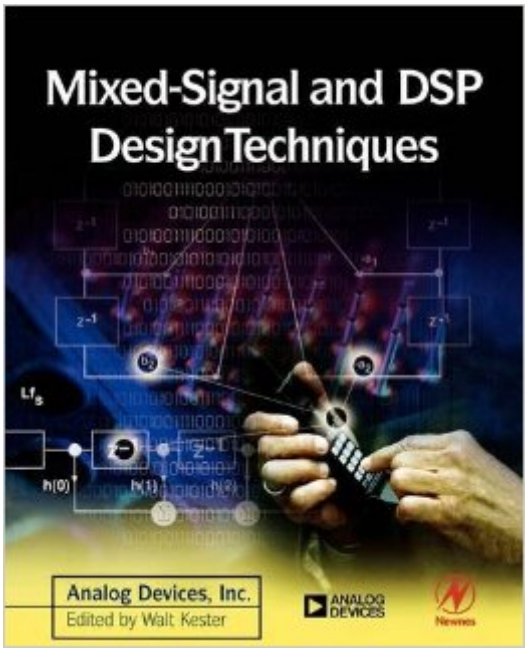
Mixed-signal And DSP Design Techniques (Analog Devices)



Synopsis

The reader is provided with information on how to choose between the techniques and how to design a system that takes advantage of the best features of each of them. Imminently practical in approach, the book covers sampled data systems, choosing A-to-D and D-to-A converters for DSP applications, fast Fourier transforms, digital filters, selecting DSP hardware, interfacing to DSP chips, and hardware design techniques. It contains a number of application designs with thorough explanations. Heavily illustrated, the book contains all the design reference information that engineers need when developing mixed and digital signal processing systems. *Brought to you from the experts at Analog Devices, Inc.*A must for any electrical, electronics or mechanical engineer's reference shelf*Design-oriented, practical volume

Book Information

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Customer Reviews

This book is based on a set of Seminar Notes that had previously been available only from Analog Devices. It's refreshing to see this new edition, from Newnes, edited by Walt Kester, with its updated information-particularly in the digital signal-processing (DSP) area.Packed with design information from engineers with years of experience, and backed up by many references, this volume covers the details of both analog and digital signal-processing (DSP), as well as the requisite analog-digital interfacing. Perhaps the best way to review it is to let the chapter headings speak for themselves:

Introduction-about real-world signals and signal processing, with a practical example Sampled data systems: Discrete time sampling, static transfer functions and dc errors, ac errors in data converters, D/A converter dynamic performance A/D converters for DSP applications: Successive-approximation, sigma-delta, flash, subranging (pipelined), bit-per-stage D/A converters for DSP applications: DAC structures, low-distortion architectures, logic, interpolating, sigma-delta, direct digital synthesis (DDS) Fast Fourier transform (FFT): Discrete Fourier transform (DFT), fast Fourier transform, FFT hardware and benchmarks, DSP requirements for real-time FFT, spectral leakage and windowing Digital filters: Finite impulse response (FIR), implementations in DSPs, circular buffering, FIR designing, infinite impulse response (IIR), design techniques for IIR, multirate, adaptive DSP hardware: Microcontrollers, microprocessors, and DSPs; DSP requirements; ADSP-21xx 16-bit fixed-point core; fixed-point vs.

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