The book was found

Sigma Delta Modulators: Nonlinear Decoding Algorithms And Stability Analysis (The Springer International Series In Engineering And Computer Science)



Nonlinear Decoding Algorithms and Stability Analysis

Edited by

Jonathan Allen





Synopsis

Analog-to-digital (A/D) converters are key components in digital signal processing (DSP) systems and are therefore receiving much attention as DSP becomes increasingly prevalent in telephony, audio, video, consumer products, etc. The varying demands on conversion rate, resolution and other characteristics have inspired a large number of competing A/D conversion techniques. Sigma Delta Modulators: Nonlinear Decoding Algorithms and Stability Analysis is concerned with the particular class of A/D techniques called oversampled noise-shaping (ONS) that has recently come into prominence for a number of applications. The popularity of ONS converters is due to their ease of implementation and robustness to circuit imperfectors. An ONS converter consists of an encoder that generates a high-rate, low-resolution digital signal, and a decoder that produces a low-rate, high-resolution digital approximation to the analog encoder input. The conventional decoding approach is based on linear filtering. Sigma Delta Modulators presents the optimal design of an ONS decoder for a given encoder. It is shown that nonlinear decoding can achieve gains in signaling ratio and the encoder architecture. The book then addresses the instability problem that plagues higher-order ONS encoders. A new stability concept is introduced that is well-suited to ONS encoders, and it is applied to the double-loop encoder as well as to the class of interpolative encoders. It is shown that there exists a trade-off between stability and SNR performance. Based on the results, explicit design examples are presented. Sigma Delta Modulators: Nonlinear Decoding Algorithms and Stability Analysis is a valuable reference source for researchers and engineers in industry and academia working on or interested in design and analysis of A/D converters, particularly to those working in quantization theory and signal reconstruction, and can serve as a text for advanced courses on the subjects treated.

Book Information

Series: The Springer International Series in Engineering and Computer Science (Book 213) Hardcover: 252 pages Publisher: Springer; 1993 edition (January 31, 1993) Language: English ISBN-10: 0792393090 ISBN-13: 978-0792393092 Product Dimensions: 6.1 x 0.7 x 9.2 inches Shipping Weight: 1.3 pounds (View shipping rates and policies) Average Customer Review: Be the first to review this item Best Sellers Rank: #8,741,289 in Books (See Top 100 in Books) #91 in Books > Computers & Technology > Programming > Software Design, Testing & Engineering > Coding Theory #978 in Books > Computers & Technology > Hardware & DIY > Microprocessors & System Design > Computer Design #2553 in Books > Engineering & Transportation > Engineering > Electrical & Electronics > Circuits > Design

Download to continue reading...

Sigma Delta Modulators: Nonlinear Decoding Algorithms and Stability Analysis (The Springer International Series in Engineering and Computer Science) Spatial Light Modulators and Applications: Spatial Light Modulators for Applications in Coherent Communication, Adaptive Optics and Maskless Lithography Anatomy of Core Stability: A Trainer's Guide to Core Stability Turbo Codes: Principles and Applications (The Springer International Series in Engineering and Computer Science) Iterative Detection: Adaptivity, Complexity Reduction, and Applications (The Springer International Series in Engineering and Computer Science) Turbo Coding (The Springer International Series in Engineering and Computer Science) Complexity of Lattice Problems: A Cryptographic Perspective (The Springer International Series in Engineering and Computer Science) Important Developments in Soliton Theory (Springer Series in Nonlinear Dynamics) Analytics: Data Science, Data Analysis and Predictive Analytics for Business (Algorithms, Business Intelligence, Statistical Analysis, Decision Analysis, Business Analytics, Data Mining, Big Data) Linear and Nonlinear Programming (International Series in Operations Research & Management Science) Lean Six Sigma: and Lean QuickStart Guides - Lean Six Sigma QuickStart Guide and Lean QuickStart Guide (Lean Six Sigma For Service, Lean Manufacturing) Lean Six Sigma: The Ultimate Beginners Guide - Learn Everything You Need To Know About Six Sigma And Boost Your Productivity! (Lean, Six Sigma, Quality Control) Lean Six Sigma: The Ultimate Guide To Lean Six Sigma With Tools For Improving Quality And Speed! (Lean, Six Sigma, Quality Control) Statistics and Data Analysis for Financial Engineering: with R examples (Springer Texts in Statistics) In Search of Sisterhood: Delta Sigma Theta and the Challenge of the Black Sorority Movement Banach Space Theory: The Basis for Linear and Nonlinear Analysis (CMS Books in Mathematics) Genetic Algorithms and Engineering Design (Engineering Design and Automation) Structure and Interpretation of Computer Programs - 2nd Edition (MIT Electrical Engineering and Computer Science) Robotics, Vision and Control: Fundamental Algorithms in MATLAB (Springer Tracts in Advanced Robotics) Python: Python Programming For Beginners - The Comprehensive Guide To Python Programming: Computer Programming, Computer Language, Computer Science

<u>Dmca</u>