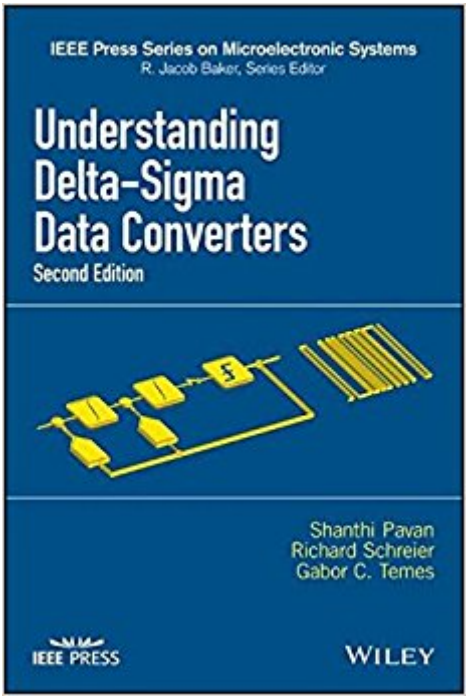
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Understanding Delta-Sigma Data Converters (IEEE Press Series On Microelectronic Systems)



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Synopsis

This new edition introduces operation and design techniques for Sigma-Delta converters in physical and conceptual terms, and includes chapters which explore developments in the field over the last decade Includes information on MASH architectures, digital-to-analog converter (DAC) mismatch and mismatch shaping Investigates new topics including continuous-time Ã â •Ã Â£ analog-to-digital converters (ADCs) principles and designs, circuit design for both continuous-time and discrete-time Ã â •Ã Â£ ADCs, decimation and interpolation filters, and incremental ADCs Provides emphasis on practical design issues for industry professionals

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Customer Reviews

This new edition introduces novel analysis and design techniques for delta-sigma (Ã â •Ã Â£) converters in physical and conceptual terms, and includes new chapters that explore developments in the field over the last decade. This book explains the principles and operation ofÃ Â delta-sigma analog-to-digital converters (ADCs) in physical and conceptual terms in accordance with the most recent developments in the field. The interest of Ã â •Ã Â£ converter designers has shifted significantly over the past decade, due to many new applications for data converters at the far ends of the frequency spectrum. Continuous-timeÃ Â delta-sigma A/D converters with GHz clocks, of both lowpass and bandpass types, are required for wireless applications. At the other extreme, multiplexed ADCs with very narrow (sometimes 10 Hz wide) signal bandwidths, but very high accuracy are needed in the interfaces of biomedical and environmental sensors. To reflect the

changing needs of designers, the second edition includes significant new material on both theory and design techniques. New text has been added, that: Includes insight on MASH architectures, digital-to-analog converter (DAC) mismatch and mismatch shaping Gives information and intuition behind several new topics, Ã Â including continuous-time Ã â •Ã Â£ ADCs, circuit design for both continuous-time and discrete-time Ã â •Ã Â£ ADCs, decimation and interpolation filters, and incremental ADCs Provides information on practical design issues for industry professionals.

Shanthi Pavan is a Professor of electrical engineering at the Indian Institute of Technology, India, and has been the Editor-In-Chief of the IEEE Transactions on Circuits and Systems, and a Distinguished Lecturer of the IEEE Solid State Circuits Society. Ã Â He is a Fellow of the Indian National Academy of Engineering. Richard Schreier was a Division Fellow in Analog Devices Inc. and an Adjunct Professor at the University of Toronto, Canada, when he retired in 2016. From 1991-1997 he was a Professor at Oregon State University.He was named an IEEE Fellow in 2015. Gabor Temes is a Distinguished Professor Emeritus of the University of California, and Professor in the School of Electrical Engineering and Computer Science at Oregon State University, USA.Ã Â He is an IEEE Life Fellow and a member of the US National Academy of Engineering.

Excellent Book!I have been actively working on DSM structures for more than a decade, started with the yellow book, moved to green book and now, the blue book! This book by no means is a minor revision, it revised the older generation with much needed improvements, state of the art, analysis, etc etc.While the previous revision (aka Green book) is an excellent book in terms of architectures and fundamentals of noise-shaping, it lacks in some important aspects. The blue book addresses these- Translation the top level architecture to Circuit level- Detailed CT and DT implementation- Loop delay compensation- The new state of the art architectures!And goes beyond by providing excellent analysis on loop filter characteristics, circuit non idealities among others. My junior phd students love this book, and the senior ones have purchased this despite having the previous revision.I highly recommend this book, even if you already have the green book, if you want to only learn about DSM, or actively researching on this field. My Thanks goes to Prof. Temes, Pavan and Schreirer for all their efforts.

Must have book for people working in Sigma delta data converters. Especially CTDSMs are dealt with great detail and intuitions are given wherever possible.

I received this second edition of the book through the Prime pre-order. In this edition, the authors have put in significant amount of effort to bring the text to the present state-of-the-art in Delta-Sigma Data Converter design by including a clear and detailed exposition on Continuous-time and Incremental Delta-Sigma converters, and augmenting other important topics including mismatch shaping, MASH/Noise-coupling, Bandpass architectures, Circuit-level implementations and non-idealities, and decimation filters. Furthermore, inclusion of details on transistor-level design enables the book to be used as a standalone text for a course on Mixed-Signal IC Design or Oversampling Data Converters. I would recommend this edition as a valuable addition to your bookshelf even if you have the previous one.

good book!

I am a university professor, specialized on analog and mixed-signal circuit design. I have read almost all books related to data converters.This is absolutely the best book on delta-sigma ADC/DAC. The new version greatly expands out the earlier one.Simply a must buy.

Very nicely rewritten by Dr. Pavan. Lot of practical details provided. Earlier version was math intensive - I like this version a lot.

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