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KEY=ANALOG - HALEY JOHNSON

DESIGN OF ANALOG CMOS INTEGRATED CIRCUITS

McGraw-Hill Companies **This textbook deals with the analysis and design of analog CMOS integrated circuits, emphasizing recent technological developments and design paradigms that students and practicing engineers need to master to succeed in today's industry. Based on the author's teaching and research experience in the past ten years, the text follows three general principles: (1) Motivate the reader by describing the significance and application of each idea with real-world problems; (2) Force the reader to look at concepts from an intuitive point of view, preparing him/her for more complex problems; (3) Complement the intuition by rigorous analysis, confirming the results obtained by the intuitive, yet rough approach.**

DESIGN OF ANALOG CMOS INTEGRATED CIRCUITS

College le Overruns

DESIGN OF CMOS PHASE-LOCKED LOOPS

FROM CIRCUIT LEVEL TO ARCHITECTURE LEVEL

Cambridge University Press **This modern, pedagogic textbook from leading author Behzad Razavi provides a comprehensive and rigorous introduction to CMOS PLL design, featuring intuitive presentation of theoretical concepts, extensive circuit simulations, over 200 worked examples, and 250 end-of-chapter problems. The perfect text for senior undergraduate and graduate students.**

CMOS (Analog and Digital)

CMOS (Analog and Digital), CMOS (Analog and Digital), MOS (Analog and Digital).

CMOS ANALOG CIRCUIT DESIGN

RF MICROELECTRONICS

Prentice Hall The Acclaimed RF Microelectronics Best-Seller, Expanded and Updated for the Newest Architectures, Circuits, and Devices Wireless communication has become almost as ubiquitous as electricity, but RF design continues to challenge engineers and researchers. In the 15 years since the first edition of this classic text, the demand for higher performance has led to an explosive growth of RF design techniques. In *RF Microelectronics, Second Edition*, Behzad Razavi systematically teaches the fundamentals as well as the state-of-the-art developments in the analysis and design of RF circuits and transceivers. Razavi has written the second edition to reflect today's RF microelectronics, covering key topics in far greater detail. At nearly three times the length of the first edition, the second edition is an indispensable tome for both students and practicing engineers. With his lucid prose, Razavi now Offers a stronger tutorial focus along with hundreds of examples and problems Teaches design as well as analysis with the aid of step-by-step design procedures and a chapter dedicated to the design of a dual-band WiFi transceiver Describes new design paradigms and analysis techniques for circuits such as low-noise amplifiers, mixers, oscillators, and frequency dividers This edition's extensive coverage includes brand new chapters on mixers, passive devices, integer-N synthesizers, and fractional-N synthesizers. Razavi's teachings culminate in a new chapter that begins with WiFi's radio specifications and, step by step, designs the transceiver at the transistor level. Coverage includes Core RF principles, including noise and nonlinearity, with ties to analog design, microwave theory, and communication systems An intuitive treatment of modulation theory and wireless standards from the standpoint of the RF IC designer Transceiver architectures such as heterodyne, sliding-IF, directconversion, image-reject, and low-IF topologies. Low-noise amplifiers, including cascode common-gate and commonsource topologies, noise-cancelling schemes, and reactance-cancelling configurations Passive and active mixers, including their gain and noise analysis and new mixer topologies Voltage-controlled oscillators, phase noise mechanisms, and various VCO topologies dealing with noise-power-tuning trade-offs All-new coverage of passive devices, such as integrated inductors, MOS varactors, and transformers A chapter on the analysis and design of phase-locked loops with emphasis on low phase noise and low spur levels Two chapters on integer-N and fractional-N synthesizers, including the design of frequency dividers Power amplifier principles and circuit topologies along with

transmitter architectures, such as polar modulation and outphasing

ANALYSIS AND DESIGN OF ANALOG INTEGRATED CIRCUITS, 5TH EDITION

Wiley Global Education This is the only comprehensive book in the market for engineers that covers the design of CMOS and bipolar analog integrated circuits. The fifth edition retains its completeness and updates the coverage of bipolar and CMOS circuits. A thorough analysis of a new low-voltage bipolar operational amplifier has been added to Chapters 6, 7, 9, and 11. Chapter 12 has been updated to include a fully differential folded cascode operational amplifier example. With its streamlined and up-to-date coverage, more engineers will turn to this resource to explore key concepts in the field.

HIGH-SPEED CMOS CIRCUITS FOR OPTICAL RECEIVERS

Springer Science & Business Media With the exponential growth of the number of Internet nodes, the volume of the data transported on the backbone has increased with the same trend. The load of the global Internet backbone will soon increase to tens of terabits per second. This indicates that the backbone bandwidth requirements will increase by a factor of 50 to 100 every seven years. Transportation of such high volumes of data requires suitable media with low loss and high bandwidth. Among the available transmission media, optical fibers achieve the best performance in terms of loss and bandwidth. High-speed data can be transported over hundreds of kilometers of single-mode fiber without significant loss in signal integrity. These fibers progressively benefit from reduction of cost and improvement of performance. Meanwhile, the electronic interfaces used in an optical network are not capable of exploiting the ultimate bandwidth of the fiber, limiting the throughput of the network. Different solutions at both the system and the circuit levels have been proposed to increase the data rate of the backbone. System-level solutions are based on the utilization of wave-division multiplexing (WDM), using different colors of light to transmit several sequences simultaneously. In parallel with that, a great deal of effort has been put into increasing the operating rate of the electronic transceivers using highly-developed fabrication processes and novel circuit techniques.

FUNDAMENTALS OF MICROELECTRONICS

John Wiley & Sons Fundamentals of Microelectronics, 2nd Edition is designed to build a strong foundation in both design and analysis of electronic circuits this text offers conceptual understanding and mastery of the material by using modern examples to motivate and prepare readers for advanced courses and their careers. The book's unique problem-solving framework enables readers to deconstruct complex problems into components that they are familiar with which builds the confidence and

intuitive skills needed for success.

CMOS ANALOG DESIGN USING ALL-REGION MOSFET MODELING

Cambridge University Press **The essentials of analog circuit design with a unique all-region MOSFET modeling approach.**

THE DESIGN OF CMOS RADIO-FREQUENCY INTEGRATED CIRCUITS

Cambridge University Press **This book, first published in 2004, is an expanded and revised edition of Tom Lee's acclaimed RFIC text.**

OP AMPS FOR EVERYONE

DESIGN REFERENCE

Newnes **The operational amplifier ("op amp") is the most versatile and widely used type of analog IC, used in audio and voltage amplifiers, signal conditioners, signal converters, oscillators, and analog computing systems. Almost every electronic device uses at least one op amp. This book is Texas Instruments' complete professional-level tutorial and reference to operational amplifier theory and applications. Among the topics covered are basic op amp physics (including reviews of current and voltage division, Thevenin's theorem, and transistor models), idealized op amp operation and configuration, feedback theory and methods, single and dual supply operation, understanding op amp parameters, minimizing noise in op amp circuits, and practical applications such as instrumentation amplifiers, signal conditioning, oscillators, active filters, load and level conversions, and analog computing. There is also extensive coverage of circuit construction techniques, including circuit board design, grounding, input and output isolation, using decoupling capacitors, and frequency characteristics of passive components. The material in this book is applicable to all op amp ICs from all manufacturers, not just TI. Unlike textbook treatments of op amp theory that tend to focus on idealized op amp models and configuration, this title uses idealized models only when necessary to explain op amp theory. The bulk of this book is on real-world op amps and their applications; considerations such as thermal effects, circuit noise, circuit buffering, selection of appropriate op amps for a given application, and unexpected effects in passive components are all discussed in detail. *Published in conjunction with Texas Instruments *A single volume, professional-level guide to op amp theory and applications *Covers circuit board layout techniques for manufacturing op amp circuits.**

SYSTEMATIC DESIGN OF ANALOG CMOS CIRCUITS

Cambridge University Press **This hands-on guide contains a fresh approach to efficient and insight-driven integrated circuit design in nanoscale-CMOS. With downloadable MATLAB code and over forty detailed worked examples, this is essential reading for professional engineers, researchers, and**

graduate students in analog circuit design.

THE GM/ID METHODOLOGY, A SIZING TOOL FOR LOW-VOLTAGE ANALOG CMOS CIRCUITS

THE SEMI-EMPIRICAL AND COMPACT MODEL APPROACHES

Springer Science & Business Media IC designers appraise currently MOS transistor geometries and currents to compromise objectives like gain-bandwidth, slew-rate, dynamic range, noise, non-linear distortion, etc. Making optimal choices is a difficult task. How to minimize for instance the power consumption of an operational amplifier without too much penalty regarding area while keeping the gain-bandwidth unaffected in the same time? Moderate inversion yields high gains, but the concomitant area increase adds parasitics that restrict bandwidth. Which methodology to use in order to come across the best compromise(s)? Is synthesis a mixture of design experience combined with cut and tries or is it a constrained multivariate optimization problem, or a mixture? Optimization algorithms are attractive from a system perspective of course, but what about low-voltage low-power circuits, requiring a more physical approach? The connections amid transistor physics and circuits are intricate and their interactions not always easy to describe in terms of existing software packages. The gm/ID synthesis methodology is adapted to CMOS analog circuits for the transconductance over drain current ratio combines most of the ingredients needed in order to determine transistors sizes and DC currents.

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transconductance over drain current ratio combines most of the ingredients needed in order to determine transistors sizes and DC currents.

CMOS

CIRCUIT DESIGN, LAYOUT, AND SIMULATION

John Wiley & Sons This edition provides an important contemporary view of a wide range of analog/digital circuit blocks, the BSIM model, data converter architectures, and more. The authors develop design techniques for both long- and short-channel CMOS technologies and then compare the two.

NOISE ANALYSIS OF RADIO FREQUENCY CIRCUITS

Springer Science & Business Media Predicting noise in RF systems at the design stage is extremely important. This book concentrates on developing noise simulation techniques for RF circuits. The authors present a novel approach of performing noise analysis for RF circuits.

MICROELECTRONICS

Wiley By helping students develop an intuitive understanding of the subject, Microelectronics teaches them to think like engineers. The second edition of Razavi's Microelectronics retains its hallmark emphasis on analysis by inspection and building students' design intuition, and it incorporates a host of new pedagogical features that make it easier to teach and learn from, including: application sidebars, self-check problems with answers, simulation problems with SPICE and MULTISIM, and an expanded problem set that is organized by degree of difficulty and more clearly associated with specific chapter sections.

HIGH-FREQUENCY INTEGRATED CIRCUITS

Cambridge University Press A transistor-level, design-intensive overview of high speed and high frequency monolithic integrated circuits for wireless and broadband systems from 2 GHz to 200 GHz, this comprehensive text covers high-speed, RF, mm-wave, and optical fibre circuits using nanoscale CMOS, SiGe BiCMOS, and III-V technologies. Step-by-step design methodologies, end-of chapter problems, and practical simulation and design projects are provided, making this an ideal resource for senior undergraduate and graduate courses in circuit design. With an emphasis on device-circuit topology interaction and optimization, it gives circuit designers and students alike an in-depth understanding of device structures and process limitations affecting circuit performance.

RADIO FREQUENCY INTEGRATED CIRCUIT DESIGN

Artech House This newly revised and expanded edition of the 2003 Artech House classic, Radio Frequency Integrated Circuit Design, serves as an up-

to-date, practical reference for complete RFIC know-how. The second edition includes numerous updates, including greater coverage of CMOS PA design, RFIC design with on-chip components, and more worked examples with simulation results. By emphasizing working designs, this book practically transports you into the authors' own RFIC lab so you can fully understand the function of each design detailed in this book. Among the RFIC designs examined are RF integrated LC-based filters, VCO automatic amplitude control loops, and fully integrated transformer-based circuits, as well as image reject mixers and power amplifiers. If you are new to RFIC design, you can benefit from the introduction to basic theory so you can quickly come up to speed on how RFICs perform and work together in a communications device. A thorough examination of RFIC technology guides you in knowing when RFICs are the right choice for designing a communication device. This leading-edge resource is packed with over 1,000 equations and more than 435 illustrations that support key topics."

CMOS CIRCUITS FOR ELECTROMAGNETIC VIBRATION TRANSDUCERS

INTERFACES FOR ULTRA-LOW VOLTAGE ENERGY HARVESTING

Springer Chip-integrated power management solutions are a must for ultra-low power systems. This enables not only the optimization of innovative sensor applications. It is also essential for integration and miniaturization of energy harvesting supply strategies of portable and autonomous monitoring systems. The book particularly addresses interfaces for energy harvesting, which are the key element to connect micro transducers to energy storage elements. Main features of the book are: - A comprehensive technology and application review, basics on transducer mechanics, fundamental circuit and control design, prototyping and testing, up to sensor system supply and applications. - Novel interfacing concepts - including active rectifiers, MPPT methods for efficient tracking of DC as well as AC sources, and a fully-integrated charge pump for efficient maximum AC power tracking at sub-100 μ W ultra-low power levels. The chips achieve one of the widest presented operational voltage range in standard CMOS technology: 0.44V to over 4.1V. - Two special chapters on analog circuit design - it studies benefits and obstacles on implemented chip prototypes with three goals: ultra- low power, wide supply voltage range, and integration with standard technologies. Alternative design approaches are pursued using bulk-input transistor stages in forward-bias operation for amplifiers, modulators, and references. - Comprehensive Appendix - with additional fundamental analysis, design and scaling guidelines, circuit implementation tables and dimensions, schematics, source code listings, bill of material, etc. The discussed prototypes and given design guidelines are tested with real vibration transducer devices. The intended readership is graduate students in advanced courses, academics and lecturers, R&D engineers.

DESIGN OF INTEGRATED CIRCUITS FOR OPTICAL COMMUNICATIONS

John Wiley & Sons The only book on integrated circuits for optical communications that fully covers High-Speed IOs, PLLs, CDRs, and transceiver design including optical communication The increasing demand for high-speed transport of data has revitalized optical communications, leading to extensive work on high-speed device and circuit design. With the proliferation of the Internet and the rise in the speed of microprocessors and memories, the transport of data continues to be the bottleneck, motivating work on faster communication channels. Design of Integrated Circuits for Optical Communications, Second Edition deals with the design of high-speed integrated circuits for optical communication transceivers. Building upon a detailed understanding of optical devices, the book describes the analysis and design of critical building blocks, such as transimpedance and limiting amplifiers, laser drivers, phase-locked loops, oscillators, clock and data recovery circuits, and multiplexers. The Second Edition of this bestselling textbook has been fully updated with: A tutorial treatment of broadband circuits for both students and engineers New and unique information dealing with clock and data recovery circuits and multiplexers A chapter dedicated to burst-mode optical communications A detailed study of new circuit developments for optical transceivers An examination of recent implementations in CMOS technology This text is ideal for senior graduate students and engineers involved in high-speed circuit design for optical communications, as well as the more general field of wireline communications.

HIGH-SPEED CMOS CIRCUITS FOR OPTICAL RECEIVERS

PRINCIPLES OF DATA CONVERSION SYSTEM DESIGN

Wiley-IEEE Press This advanced text and reference covers the design and implementation of integrated circuits for analog-to-digital and digital-to-analog conversion. It begins with basic concepts and systematically leads the reader to advanced topics, describing design issues and techniques at both circuit and system level. Gain a system-level perspective of data conversion units and their trade-offs with this state-of-the art book. Topics covered include: sampling circuits and architectures, D/A and A/D architectures; comparator and op amp design; calibration techniques; testing and characterization; and more!

CMOS RECEIVER FRONT-ENDS FOR GIGABIT SHORT-RANGE OPTICAL COMMUNICATIONS

Springer Science & Business Media This book describes optical receiver solutions integrated in standard CMOS technology, attaining high-speed short-range transmission within cost-effective constraints. These techniques support short reach applications, such as local area networks, fiber-to-the-home and multimedia systems in cars and homes. The authors

show how to implement the optical front-end in the same technology as the subsequent digital circuitry, leading to integration of the entire receiver system in the same chip. The presentation focuses on CMOS receiver design targeting gigabit transmission along a low-cost, standardized plastic optical fiber up to 50m in length. This book includes a detailed study of CMOS optical receiver design - from building blocks to the system level.

ANALOG INTEGRATED CIRCUIT DESIGN

The 2nd Edition of Analog Integrated Circuit Design focuses on more coverage about several types of circuits that have increased in importance in the past decade. Furthermore, the text is enhanced with material on CMOS IC device modeling, updated processing layout and expanded coverage to reflect technical innovations. CMOS devices and circuits have more influence in this edition as well as a reduced amount of text on BiCMOS and bipolar information. New chapters include topics on frequency response of analog ICs and basic theory of feedback amplifiers.

HIGH-SPEED DEVICES AND CIRCUITS WITH THZ APPLICATIONS

CRC Press Presenting the cutting-edge results of new device developments and circuit implementations, **High-Speed Devices and Circuits with THz Applications** covers the recent advancements of nano devices for terahertz (THz) applications and the latest high-speed data rate connectivity technologies from system design to integrated circuit (IC) design, providing relevant standard activities and technical specifications. Featuring the contributions of leading experts from industry and academia, this pivotal work: Discusses THz sensing and imaging devices based on nano devices and materials Describes silicon on insulator (SOI) multigate nanowire field-effect transistors (FETs) Explains the theory underpinning nanoscale nanowire metal-oxide-semiconductor field-effect transistors (MOSFETs), simulation methods, and their results Explores the physics of the silicon-germanium (SiGe) heterojunction bipolar transistor (HBT), as well as commercially available SiGe HBT devices and their applications Details aspects of THz IC design using standard silicon (Si) complementary metal-oxide-semiconductor (CMOS) devices, including experimental setups for measurements, detection methods, and more An essential text for the future of high-frequency engineering, **High-Speed Devices and Circuits with THz Applications** offers valuable insight into emerging technologies and product possibilities that are attractive in terms of mass production and compatibility with current manufacturing facilities.

MILLIMETER-WAVE CIRCUITS FOR 5G AND RADAR

Cambridge University Press Discover the concepts and techniques needed to design millimeter-wave circuits for current and emerging wireless system applications.

APPLIED ELECTROMECHANICAL DEVICES AND MACHINES FOR ELECTRIC MOBILITY SOLUTIONS

BoD - Books on Demand In this book, highly qualified multidisciplinary scientists present their recent research that has been motivated by the significance of applied electromechanical devices and machines for electric mobility solutions. It addresses advanced applications and innovative case studies for electromechanical parameter identification, modeling, and testing of; permanent-magnet synchronous machine drives; investigation on internal short circuit identifications; induction machine simulation; CMOS active inductor applications; low-cost wide-speed operation generators; hybrid electric vehicle fuel consumption; control technologies for high-efficient applications; mechanical and electrical design calculations; torque control of a DC motor with a state-space estimation; and 2D-layered nanomaterials for energy harvesting. This book is essential reading for students, researchers, and professionals interested in applied electromechanical devices and machines for electric mobility solutions.

RADIO FREQUENCY INTEGRATED CIRCUITS AND SYSTEMS

Cambridge University Press Equips students with essential industry-relevant knowledge through in-depth explanations, practical applications, examples, and exercises.

LIFE SYSTEM MODELING AND INTELLIGENT COMPUTING

INTERNATIONAL CONFERENCE ON LIFE SYSTEM MODELING AND SIMULATION, LSMS 2010, AND INTERNATIONAL CONFERENCE ON INTELLIGENT COMPUTING FOR SUSTAINABLE ENERGY AND ENVIRONMENT, ICSEE 2010, WUXI, CHINA, SEPTEMBER 17-20, 2010, PROCEEDINGS

Springer Science & Business Media This book is part II of a two-volume work that contains the refereed proceedings of the International Conference on Life System Modeling and Simulation, LSMS 2010 and the International Conference on Intelligent Computing for Sustainable Energy and Environment, ICSEE 2010, held in Wuxi, China, in September 2010. The 194 revised full papers presented were carefully reviewed and selected from over 880 submissions and recommended for publication by Springer in two volumes of Lecture Notes in Computer Science (LNCS) and one volume of Lecture Notes in Bioinformatics (LNBI). This particular volume of Lecture Notes in Computer Science (LNCS) includes 55 papers covering 7 relevant topics. The 56 papers in this volume are organized in topical sections on advanced evolutionary computing theory and algorithms; advanced neural network and fuzzy system theory and algorithms; modeling and simulation of societies and collective behavior; biomedical signal processing, imaging, and visualization; intelligent computing and control in distributed power

generation systems; intelligent methods in power and energy infrastructure development; intelligent modeling, monitoring, and control of complex nonlinear systems.

DESIGNING ANALOG CHIPS

Virtualbookworm Publishing A comprehensive introduction to CMOS and bipolar analog IC design. The book presumes no prior knowledge of linear design, making it comprehensible to engineers with a non-analog background. The emphasis is on practical design, covering the entire field with hundreds of examples to explain the choices. Concepts are presented following the history of their discovery. Content: 1. Devices Semiconductors, The Bipolar Transistor, The Integrated Circuit, Integrated NPN Transistors, The Case of the Lateral PNP Transistor, CMOS Transistors, The Substrate PNP Transistor, Diodes, Zener Diodes, Resistors, Capacitors, CMOS vs. Bipolar; 2. Simulation, DC Analysis, AC Analysis, Transient Analysis, Variations, Models, Diode Model, Bipolar Transistor Model, Model for the Lateral PNP Transistor, MOS Transistor Models, Resistor Models, Models for Capacitors; 3. Current Mirrors; 4. Differential Pairs; 5. Current Sources; 6. Time Out: Analog Measures, dB, RMS, Noise, Fourier Analysis, Distortion, Frequency Compensation; 7. Bandgap References; 8. Op Amps; 9. Comparators; 10. Transimpedance Amplifiers; 11. Timers and Oscillators; 12. Phase-Locked Loops; 13. Filters; 14. Power, Linear Regulators, Low Drop-Out Regulators, Switching Regulators, Linear Power Amplifiers, Switching Power Amplifiers; 15. A to D and D to A, The Delta-Sigma Converter; 16. Odds and Ends, Gilbert Cell, Multipliers, Peak Detectors, Rectifiers and Averaging Circuits, Thermometers, Zero-Crossing Detectors; 17. Layout.

CMOS ANALOG AND MIXED-SIGNAL CIRCUIT DESIGN

PRACTICES AND INNOVATIONS

CRC Press The purpose of this book is to provide a complete working knowledge of the Complementary Metal-Oxide Semiconductor (CMOS) analog and mixed-signal circuit design, which can be applied for System on Chip (SOC) or Application-Specific Standard Product (ASSP) development. It begins with an introduction to the CMOS analog and mixed-signal circuit design with further coverage of basic devices, such as the Metal-Oxide Semiconductor Field-Effect Transistor (MOSFET) with both long- and short-channel operations, photo devices, fitting ratio, etc. Seven chapters focus on the CMOS analog and mixed-signal circuit design of amplifiers, low power amplifiers, voltage regulator-reference, data converters, dynamic analog circuits, color and image sensors, and peripheral (oscillators and Input/Output [I/O]) circuits, and Integrated Circuit (IC) layout and packaging. Features: Provides practical knowledge of CMOS analog and mixed-signal circuit design Includes recent research in CMOS color and

image sensor technology Discusses sub-blocks of typical analog and mixed-signal IC products Illustrates several design examples of analog circuits together with layout Describes integrating based CMOS color circuit

THE ART OF ANALOG LAYOUT

For Electrical Engineering courses in analog layout or professional layout designers. This text covers the issues involved in successfully laying out analog integrated circuits. Hastings provides clear guidance and does not stress theoretical physics or mathematical analysis of layouts. He emphasizes cross-sections of devices and carrier-based models of device operation as compared to the more common geometric and schematic representation of devices.

INTRODUCTION TO ANALOG-TO-DIGITAL CONVERTERS

CRC Press Analog-to-digital (A/D) and digital-to-analog (D/A) converters, or data converters in short, play a critical role as interfaces between the real analog world and digital equipment. They are now indispensable in the field of sensor networks, internet of things (IoT), robots, and automatic driving vehicles, as well as high-precision instrumentation and wideband communication systems. As the world increasingly relies on digital information processing, the importance of data converters continues to increase. The primary purpose of this book is to explain the fundamentals of data converters for students and engineers involved in this fascinating field as a newcomer. The book will also help students who have learned the basics of analog circuit design to understand the state-of-the-art data converters. It is desirable for readers to be familiar with basic analog IC design and digital signal processing using z-transform.

DIGITAL INTEGRATED CIRCUIT DESIGN

FROM VLSI ARCHITECTURES TO CMOS FABRICATION

Cambridge University Press This practical, tool-independent guide to designing digital circuits takes a unique, top-down approach, reflecting the nature of the design process in industry. Starting with architecture design, the book comprehensively explains the why and how of digital circuit design, using the physics designers need to know, and no more.

MONOLITHIC PHASE-LOCKED LOOPS AND CLOCK RECOVERY CIRCUITS

THEORY AND DESIGN

John Wiley & Sons Featuring an extensive 40 page tutorial introduction, this carefully compiled anthology of 65 of the most important papers on phase-locked loops and clock recovery circuits brings you comprehensive coverage of the field-all in one self-contained volume. You'll gain an understanding of the analysis, design, simulation, and implementation of

phase-locked loops and clock recovery circuits in CMOS and bipolar technologies along with valuable insights into the issues and trade-offs associated with phase locked systems for high speed, low power, and low noise.

ANALYSIS AND DESIGN OF ANALOG INTEGRATED CIRCUITS

John Wiley & Sons This edition combines the consideration of metal-oxide-semiconductors (MOS) and bipolar circuits into a unified treatment that also includes MOS-bipolar connections made possible by BiCMOS technology. Contains extensive use of SPICE, especially as an integral part of many examples in the problem sets as a more accurate check on hand calculations and as a tool to examine complex circuit behavior beyond the scope of hand analysis. Concerned largely with the design of integrated circuits, a considerable amount of material is also included on applications.

CMOS DIGITAL INTEGRATED CIRCUITS

ANALYSIS AND DESIGN

The fourth edition of CMOS Digital Integrated Circuits: Analysis and Design continues the well-established tradition of the earlier editions by offering the most comprehensive coverage of digital CMOS circuit design, as well as addressing state-of-the-art technology issues highlighted by the widespread use of nanometer-scale CMOS technologies. In this latest edition, virtually all chapters have been re-written, the transistor model equations and device parameters have been revised to reflect the significant changes that must be taken into account for new technology generations, and the material has been reinforced with up-to-date examples. The broad-ranging coverage of this textbook starts with the fundamentals of CMOS process technology, and continues with MOS transistor models, basic CMOS gates, interconnect effects, dynamic circuits, memory circuits, arithmetic building blocks, clock and I/O circuits, low power design techniques, design for manufacturability and design for testability.

ANALOG CIRCUITS

BoD - Books on Demand The invariable motif for analog design is to explore the new circuit topologies, architectures and CAD technologies to overcome the design challenges coming from the new applications and new fabrication technologies. In this book, a new architecture for a SAR ADC is proposed to eliminate the process mismatches and minimize the errors. A collection of DG-MOSFET based analog/RFICs present the excellent performance; the automated system for a passive filter circuits design is presented with the local searching engaging; interval analysis is used to solve some problems for linear and nonlinear analog circuits and a symbolic method is proposed to solve the testability problem.