

A Broadband Hf Amplifier Using Low Cost

Advances in electronics have pushed mankind to create devices, ranging from - credible gadgets to medical equipment to spacecraft instruments. More than that, modern society is getting used to—if not dependent on—the comfort, solutions, and astonishing amount of information brought by these devices. One ?eld that has continuously bene?ted from those advances is the radio frequency integrated c- cuit (RFIC) design, which in its turn has promoted countless bene?ts to the mankind as a payback. Wireless communications is one prominent example of what the - vances in electronics have enabled and their consequences to our daily life. How could anyone back in the eighties think of the possibilities opened by the wireless local area networks (WLANs) that can be found today in a host of places, such as public libraries, coffee shops, trains, to name just a few? How can a youngster, who lives this true WLAN experience nowadays, imagine a world without it? This book dealswith the design oflinearCMOS RF PowerAmpli?ers(PAs). The RF PA is a very important part of the RF transceiver, the device that enables wireless communications. Two important aspects that are key to keep the advances in RF PA design at an accelerate pace are treated: ef?ciency enhancement and frequen- tunable capability. For this purpose, the design of two different integrated circuits realizedina0. 11?mtechnologyispresented,eachoneaddressingadifferentaspect. With respect to ef?ciency enhancement, the design of a dynamic supply RF power ampli?er is treated, making up the material of Chaps. 2 to 4.

Front cover -- Titelseite -- Impressum -- Acknowledgments -- Contents -- List of Abbreviations and Acronyms -- Abstract -- Zusammenfassung -- Chapter 1 Introduction -- 1.1 Principle of the Partitioning Design Approach -- 1.2 Dissertation Organization -- Chapter 2 Investigation of Planar-Interconnection -- 2.1 Active Chip Device Interconnection -- 2.1.1 Die Attach -- 2.1.2 Wire Bonding Pad-To-Microstrip -- 2.2 Microstrip-to-Microstrip Interconnection -- 2.2.1 Soldering -- 2.2.2 Multi-Wire Bonding -- 2.2.3 Copper Ribbon -- 2.2.4 Silver- Painting -- Chapter 3 Analysis and Modeling of Passive SMD Components -- 3.1 SMD Resistor -- 3.2 SMD Capacitor -- 3.3 SMD Inductor -- Chapter 4 Modeling of AlGaAs/GaAs HEMT Chip Device -- 4.1 AlGaAs/GaGa HEMT Chip -- 4.2 Modeling Approach Overview -- 4.3 Small-Signal Modeling -- 4.3.1 Extrinsic Parameter Extraction -- 4.3.2 Intrinsic Parameter Extraction -- 4.4 Large-Signal Modeling -- 4.4.1 Gate Current and Charge Models -- 4.4.2 Drain Current Model -- 4.4.3 Model Verification -- Chapter 5 Demonstrator Design of a Class-AB Power Amplifier Following -- 5.1 Micro-Packaged Device Characterization -- 5.1.1 Small-Signal Performance -- 5.1.2 Large-Signal Performance -- 5.2 Bias Network Design -- 5.2.1 Drain Bias Network -- 5.2.2 Gate Bias Network -- 5.3 Matching Network Design -- 5.3.1 Matching Impedance Determination -- 5.4 Power Amplifier Performance Evaluation -- 5.4.1 Small-Signal Performance -- 5.4.2 Large-Signal Performance -- Chapter 6 Conclusions and Outlook -- Appendix -- Appendix A THLR In-Fixture Calibration -- Appendix B Precise Determination of Substrate Permittivity -- Appendix C Schematic Circuit of the Designed Power Amplifier Demonstrator -- Appendix D Power Amplifier Design Following the Conventional Design Approach -- References -- Back cover

An invaluable tool for anyone involved in the technologies of wireless, cellular telephone, telecommunications, avionics, and other forms of electronic communication using radio waves, this handbook provides up-to-date information on how the newest equipment works, and how to fix any problems that arise.

This Technical Note covers the experimental progress with broadband toroid transformers in a medium-powered high-frequency, vacuum-tube, linear amplifier. Toroids have been used successfully in transistor application with excellent efficiency and broad bandwidth. A bandwidth of 2 to 30 mc can be obtained with a single toroid transformer and transistors. Transistor applications require extremely low impedances; therefore, bandwidth is not a major problem. (Author).

This course-tested text is an ideal starting point for engineers and physicists entering the field of particle accelerators. The fundamentals are comprehensively introduced, derivations of essential results are provided and a consistent notation style used throughout the book allows readers to quickly familiarize themselves with the field, providing a solid theoretical basis for further studies. Emphasis is placed on the essential features of the longitudinal motion of charged particle beams, together with the corresponding RF generation and power amplification devices for synchrotron and storage ring systems. In particular, electrical engineering aspects such as closed-loop control of system components are discussed. The book also offers a valuable resource for graduate students in physics, electronics engineering, or mathematics looking for an introductory and self-contained text on accelerator physics.

This book presents the challenges and solutions of designing power amplifiers at RF and mm-Wave frequencies in a silicon-based process technology. It covers practical power amplifier design methodologies, energy- and spectrum-efficient power amplifier design examples in the RF frequency for cellular and wireless connectivity applications, and power amplifier and power generation designs for enabling new communication and sensing applications in the mm-Wave and THz frequencies. With this book you will learn: Power amplifier design fundamentals and methodologies Latest advances in silicon-based RF power amplifier architectures and designs and their integration in wireless communication systems State-of-the-art mm-Wave/THz power amplifier and power generation circuits and systems in silicon Extensive coverage from fundamentals to advanced design topics, focusing on various layers of abstraction: from device modeling and circuit design strategy to advanced digital and mixed-signal architectures for highly efficient and linear power amplifiers New architectures for power amplifiers in the cellar and wireless connectivity covering detailed design methodologies and state-of-the-art performances Detailed design techniques, trade-off analysis and design examples for efficiency enhancement at power back-off and linear amplification for spectrally-efficient non-constant envelope modulations Extensive coverage of mm-Wave power-generation techniques from the early days of the 60 GHz research to current state-of the-art reconfigurable, digital mm-Wave PA architectures Detailed analysis of power generation challenges in the higher mm-Wave and THz frequencies and novel technical solutions for a wide range for potential applications, including ultrafast wireless communication to sensing, imaging and spectroscopy Contributions from the world-class experts from both academia and industry

Applicable for bookstore catalogue

Includes a searchable index of QST product reviews, a database on over 1000 equipment and parts suppliers, and several other programs.

The book provides a comprehensive, lucid, and clear introduction to the world of guided wave optical components and devices. Bishnu Pal has collaborated with some of the greatest minds in optics to create a truly inclusive treatise on this contemporary topic. Written by leaders in the field, this book delivers cutting-edge research and essential information for professionals, researchers, and students on emerging

topics like microstructured fibers, broadband fibers, polymer fiber components and waveguides, acousto-optic interactions in fibers, higher order mode fibers, nonlinear and parametric process in fibers, revolutionary effects of erbium doped and Raman fiber amplifiers in DWDM and CATV networks, all-fiber network branching component technology platforms like fused fiber couplers, fiber gratings, and side-polished fiber half-couplers, arrayed waveguides, optical MEMS, fiber sensing technologies including safety, civil structural health monitoring, and gyroscope applications. * Accessible introduction to wide range of topics relating to established and emerging optical components. * Single-source reference for graduate students in optical engineering and newcomer practitioners, focused on components. * Extensive bibliographical information included so readers can get a broad introduction to a variety of optical components and their applications in an optical network.

RF CMOS Power Amplifiers: Theory Design and Implementation focuses on the design procedure and the testing issues of CMOS RF power amplifiers. This is the first monograph addressing RF CMOS power amplifier design for emerging wireless standards. The focus on power amplifiers for short is distance wireless personal and local area networks (PAN and LAN), however the design techniques are also applicable to emerging wide area networks (WAN) infrastructure using micro or pico cell networks. The book discusses CMOS power amplifier design principles and theory and describes the architectures and tradeoffs in designing linear and nonlinear power amplifiers. It then details design examples of RF CMOS power amplifiers for short distance wireless applications (e, g., Bluetooth, WLAN) including designs for multi-standard platforms. Design aspects of RF circuits in deep submicron CMOS are also discussed. RF CMOS Power Amplifiers: Theory Design and Implementation serves as a reference for RF IC design engineers and RD and R&D managers in industry, and for graduate students conducting research in wireless semiconductor IC design in general and with CMOS technology in particular.

This much-anticipated volume builds on the author's best selling and classic work, RF Power Amplifiers for Wireless Communications (Artech House, 1999), offering experienced engineers a more in-depth understanding of the theory and design of RF power amplifiers. An invaluable reference tool for RF, digital and system level designers, the book includes discussions on the most critical topics for professionals in the field, including envelope power management schemes and linearization.

Essential reading for experts in the field of RF circuit design and engineers needing a good reference. This book provides complete design procedures for multiple-pole Butterworth, Chebyshev, and Bessel filters. It also covers capacitors, inductors, and other components with their behavior at RF frequencies discussed in detail. *Provides complete design procedures for multiple-pole Butterworth, Chebyshev, and Bessel filters *Covers capacitors, inductors, and other components with their behavior at RF frequencies discussed in detail

"This authoritative resource offers a complete understanding of state-of-the-art and cutting-edge techniques for designing and fabricating broadband microwave amplifiers. The book covers the complete design cycle, detailing each stage in a practical, hands-on manner." "This comprehensive reference illustrates the formulation of small- and large-signal device models to help professionals accurately simulate amplifier performance, and covers all the practical aspects and circuit components used in fabrication. Engineers find design examples of various types of amplifiers that are applicable in broadband systems such as optical communications, satellite communications, spread-spectrum communications, wireless local area networks, electronic warfare, instrumentation, and phased array radar. The book also provides an in-depth treatment of ultra-broadband microwave amplifiers." --Book Jacket.

RF and Microwaves is currently in the forefront as a fundamental technology in numerous industrial and commercial applications. As applications of RF and microwaves continue to evolve and as this technology becomes a common factor in the scientific and engineering communities it is imperative that university students and practicing scientists and engineers become thoroughly familiar with the measurement principles, electronics, and design fundamentals underlying this technology. RF and Microwaves is currently in the forefront as a fundamental technology in numerous industrial and commercial applications. As applications of RF and microwaves continue to evolve and as this technology becomes a common factor in the scientific and engineering communities it is imperative that university students and practicing scientists and engineers become thoroughly familiar with the measurement principles, electronics, and design fundamentals underlying this technology. Advanced RF & Microwave Circuit Design is the quickest way to master this powerful subject, and information contained within the pages of this book will make every key electronic, measurement, and design principle you need a simple task. The book introduces concepts on a wide range of materials and has several advantages over existing texts, including: 1. The presentation of a series of scientific postulates and axioms, which lays the foundation for any of the engineering sciences and is unique to this book compared with similar RF and Microwave texts. 2. The presentation of classical laws and principles of electricity and magnetism, all inter-related, conceptually and graphically. 3. There is a shift of emphasis from rigorous mathematical solutions of Maxwell's equations, and instead has been aptly placed on simple yet fundamental concepts that underlie these equations. This shift of emphasis will promote a deeper understanding of the electronics, particularly at RF/Microwave frequencies. 4. Fundamentals of electronics have been amply treated, which makes an easy transition to RF/Microwave principles and prevents a gap of knowledge in the reader's mind.

Monolithic Microwave Integrated Circuit (MMIC) is an electronic device that is widely used in all high frequency wireless systems. In developing MMIC as a product, understanding analysis and design techniques, modeling, measurement methodology, and current trends are essential. Advances in Monolithic Microwave Integrated Circuits for Wireless Systems: Modeling and Design Technologies is a central source of knowledge on MMIC development, containing research on theory, design, and practical approaches to integrated circuit devices. This book is of interest to researchers in industry and academia working in the areas of circuit design, integrated circuits, and RF and microwave, as well as anyone with an interest in monolithic wireless device development.

Four leaders in the field of microwave circuit design share their newest insights into the latest aspects of the technology The third edition of Microwave Circuit Design Using Linear and Nonlinear Techniques delivers an insightful and complete analysis of microwave circuit design, from their intrinsic and circuit properties to circuit design techniques for maximizing performance in communication and radar systems. This new edition retains what remains relevant from previous editions of this celebrated book and adds brand-new content on CMOS technology, GaN, SiC, frequency range, and feedback power amplifiers in the millimeter range region. The third edition contains over 200 pages of new material. The distinguished engineers, academics, and authors emphasize the commercial applications in telecommunications and cover all aspects of transistor technology. Software tools for design and microwave circuits are included as an accompaniment to the book. In addition to information about small and large-signal amplifier design and power amplifier design, readers will benefit from the book's treatment of a wide variety of topics, like: An in-depth discussion of the foundations of RF and microwave systems, including Maxwell's equations, applications of the technology, analog and digital requirements, and elementary definitions A treatment of lumped and distributed elements, including a discussion of the parasitic effects on lumped elements Descriptions of active devices, including diodes, microwave transistors, heterojunction bipolar transistors, and

microwave FET Two-port networks, including S-Parameters from SPICE analysis and the derivation of transducer power gain Perfect for microwave integrated circuit designers, the third edition of Microwave Circuit Design Using Linear and Nonlinear Techniques also has a place on the bookshelves of electrical engineering researchers and graduate students. It's comprehensive take on all aspects of transistors by world-renowned experts in the field places this book at the vanguard of microwave circuit design research. Improving the performance of the power amplifier is the most pressing problem facing designers of modern radio-frequency (RF) transceivers. Linearity and power efficiency of the transmit path are of utmost importance, and the power amplifier has proven to be the bottleneck for both. High linearity enables transmission at the highest data rates for a given channel bandwidth, and power efficiency prolongs battery lifetime in portable units and reduces heat dissipation in high-power transmitters. Cartesian feedback is a power amplifier linearization technique that acts to soften the tradeoff between power efficiency and linearity in power amplifiers. Despite its compelling, fundamental advantages, the technique has not enjoyed widespread acceptance because of certain implementation difficulties. Feedback Linearization of RF Power Amplifiers introduces new techniques for overcoming the challenges faced by the designer of a Cartesian feedback system. The theory of the new techniques are described and analyzed in detail. The book culminates with the results of the first known fully integrated Cartesian feedback power amplifier system, whose design was enabled by the techniques described. Feedback Linearization of RF Power Amplifiers is a valuable reference work for engineers in the telecommunications industry, industry researchers, academic researchers.

Advanced, specialized coverage of microstrip filter design Microstrip Filters for RF/Microwave Applications is the only professional reference focusing solely on microstrip filters. It offers a unique and comprehensive treatment of filters based on the microstrip structure and includes full design methodologies that are also applicable to waveguide and other transmission line filters. The authors include coverage of new configurations with advanced filtering characteristics, new design techniques, and methods for filter miniaturization. The book utilizes numerous design examples to illustrate and emphasize computer analysis and synthesis while also discussing the applications of commercially available software. Other highlights include: Lowpass and bandpass filters Highpass and bandstop filters Full-wave electromagnetic simulation Advanced materials and technologies Coupled resonator circuits Computer-aided design for low-cost/high-volume production Compact filters and filter miniaturization Microstrip Filters for RF/Microwave Applications is not only a valuable design resource for practitioners, but also a handy reference for students and researchers in microwave engineering.

Summarizes cutting-edge physical layer technologies for multi-mode wireless RF transceivers. Includes original contributions from distinguished researchers and professionals. Covers cutting-edge physical layer technologies for multi-mode wireless RF transceivers. Contributors are all leading researchers and professionals in this field.

A majority of people now have a digital mobile device whether it be a cell phone, laptop, or blackberry. Now that we have the mobility we want it to be more versatile and dependable; RF power amplifiers accomplish just that. These amplifiers take a small input and make it stronger and larger creating a wider area of use with a more robust signal. Switching mode RF amplifiers have been theoretically possible for decades, but were largely impractical because they distort analog signals until they are unrecognizable. However, distortion is not an issue with digital signals—like those used by WLANs and digital cell phones—and switching mode RF amplifiers have become a hot area of RF/wireless design. This book explores both the theory behind switching mode RF amplifiers and design techniques for them. *Provides essential design and implementation techniques for use in cma2000, WiMAX, and other digital mobile standards *Both authors have written several articles on the topic and are well known in the industry *Includes specific design equations to greatly simplify the design of switchmode amplifiers

Electronic Circuits covers all important aspects and applications of modern analog and digital circuit design. The basics, such as analog and digital circuits, on operational amplifiers, combinatorial and sequential logic and memories, are treated in Part I, while Part II deals with applications. Each chapter offers solutions that enable the reader to understand ready-made circuits or to proceed quickly from an idea to a working circuit, and always illustrated by an example. Analog applications cover such topics as analog computing circuits. The digital sections deal with AD and DA conversion, digital computing circuits, microprocessors and digital filters. This edition contains the basic electronics for mobile communications. The accompanying CD-ROM contains PSPICE software, an analog-circuit-simulation package, plus simulation examples and model libraries related to the book topics.

Foreword; Preface; Introduction to radio frequencies; Signals and noise; Radio receivers; RF amplifiers; Mixers; Oscillators; IF amplifiers and filters; Demodulators; Capacitors; Inductors; Tuning and matching; Splitters and hybrids; Monolithic microwave integrated circuits; Measuring inductors and capacitors; RF power measurement; Filtering against EMI/RFI; Noise cancellation bridges; Bibliography; Index.

Switchmode RF and Microwave Power Amplifiers, Third Edition is an essential reference book on developing RF and microwave switchmode power amplifiers. The book combines theoretical discussions with practical examples, allowing readers to design high-efficiency RF and microwave power amplifiers on different types of bipolar and field-effect transistors, design any type of high-efficiency switchmode power amplifiers operating in Class D or E at lower frequencies and in Class E or F and their subclasses at microwave frequencies with specified output power, also providing techniques on how to design multiband and broadband Doherty amplifiers using different bandwidth extension techniques and implementation technologies. This book provides the necessary information to understand the theory and practical implementation of load-network design techniques based on lumped and transmission-line elements. It brings a unique focus on switchmode RF and microwave power amplifiers that are widely used in cellular/wireless, satellite and radar communication systems which offer major power consumption savings. Provides a complete history of high-efficiency Class E and Class F

techniques Presents a new chapter on Class E with shunt capacitance and shunt filter to simplify the design of high-efficiency power amplifier with broader frequency bandwidths Covers different Doherty architectures, including integrated and monolithic implementations, which are and will be, used in modern communication systems to save power consumption and to reduce size and costs Includes extended coverage of multiband and broadband Doherty amplifiers with different frequency ranges and output powers using different bandwidth extension techniques Balances theory with practical implementation, avoiding a cookbook approach and enabling engineers to develop better designs, including hybrid, integrated and monolithic implementations

This is a rigorous tutorial on radio frequency and microwave power amplifier design, teaching the circuit design techniques that form the microelectronic backbones of modern wireless communications systems. Suitable for self-study, corporate training, or Senior/Graduate classroom use, the book combines analytical calculations and computer-aided design techniques to arm electronic engineers with every possible method to improve their designs and shorten their design time cycles.

This book provides a detailed review of power amplifiers, including classes and topologies rarely covered in books, and supplies sufficient information to allow the reader to design an entire amplifier system, and not just the power amplification stage. A central aim is to furnish readers with ideas on how to simplify the design process for a preferred power amplifier stage by introducing software-based routines in a programming language of their choice. The book is in two parts, the first focusing on power amplifier theory and the second on EDA concepts. Readers will gain enough knowledge of RF and microwave transmission theory, principles of active and passive device design and manufacturing, and power amplifier design concepts to allow them to quickly create their own programs, which will help to accelerate the transceiver design process. All circuit designers facing the challenge of designing an RF or microwave power amplifier for frequencies from 2 to 18 GHz will find this book to be a valuable asset.

IMDC-SDSP conference offers an exceptional platform and opportunity for practitioners, industry experts, technocrats, academics, information scientists, innovators, postgraduate students, and research scholars to share their experiences for the advancement of knowledge and obtain critical feedback on their work. The timing of this conference coincides with the rise of Big Data, Artificial Intelligence powered applications, Cognitive Communications, Green Energy, Adaptive Control and Mobile Robotics towards maintaining the Sustainable Development and Smart Planning and management of the future technologies. It is aimed at the knowledge generated from the integration of the different data sources related to a number of active real-time applications in supporting the smart planning and enhance and sustain a healthy environment. The conference also covers the rise of the digital health, well-being, home care, and patient-centred era for the benefit of patients and healthcare providers; in addition to how supporting the development of a platform of smart Dynamic Health Systems and self-management.

A Comprehensive and Up-to-Date Treatment of RF and Microwave Transistor Amplifiers This book provides state-of-the-art coverage of RF and microwave transistor amplifiers, including low-noise, narrowband, broadband, linear, high-power, high-efficiency, and high-voltage. Topics covered include modeling, analysis, design, packaging, and thermal and fabrication considerations. Through a unique integration of theory and practice, readers will learn to solve amplifier-related design problems ranging from matching networks to biasing and stability. More than 240 problems are included to help readers test their basic amplifier and circuit design skills-and more than half of the problems feature fully worked-out solutions. With an emphasis on theory, design, and everyday applications, this book is geared toward students, teachers, scientists, and practicing engineers who are interested in broadening their knowledge of RF and microwave transistor amplifier circuit design.

Broadband RF and Microwave AmplifiersCRC Press

All the design and development inspiration and direction a hardware engineer needs in one blockbuster book! Janine Love site editor for RF Design Line, columnist, and author has selected the very best RF design material from the Newnes portfolio and has compiled it into this volume. The result is a book covering the gamut of RF front end design from antenna and filter design fundamentals to optimized layout techniques with a strong pragmatic emphasis. In addition to specific design techniques and practices, this book also discusses various approaches to solving RF front end design problems and how to successfully apply theory to actual design tasks. The material has been selected for its timelessness as well as for its relevance to contemporary RF front end design issues. Contents: Chapter 1 Radio waves and propagation Chapter 2 RF Front End Design Chapter 3 Radio Transmission Fundamentals Chapter 4 Advanced Architectures Chapter 5 RF Power Amplifiers Chapter 6 RF Amplifiers CHAPTER 7 Basics of PA Design Chapter 8 Power Amplifiers Chapter 9 RF/IF Circuits Chapter 10 Filters Chapter 11 Transmission Lines and PCBs as Filters Chapter 12 Tuning and Matching Chapter 13 Impedance Matching Chapter 14 RF Power Linearization Techniques *Hand-picked content selected by Janine Love, RF DesignLine site editor and author *Proven best design practices for antennas, filters, and layout *Case histories and design examples get you off and running on your current project Broadband RF and Microwave Amplifiers provides extensive coverage of broadband radio frequency (RF) and microwave power amplifier design, including well-known historical and recent novel schematic configurations, theoretical approaches, circuit simulation results, and practical implementation strategies. The text begins by introducing two-port networks to illustrate the behavior of linear and nonlinear circuits, explaining the basic principles of power amplifier design, and discussing impedance matching and broadband power amplifier design using lumped and distributed parameters. The book then: Shows how dissipative or lossy gain-compensation-matching circuits can offer an important trade-off between power gain, reflection coefficient, and operating frequency bandwidth Describes the design of broadband RF and microwave amplifiers using real frequency techniques (RFTs), supplying numerous examples based on the MATLAB® programming process Examines Class-E power amplifiers, Doherty amplifiers, low-noise amplifiers, microwave gallium arsenide field-effect transistor (GaAs FET)-distributed amplifiers, and complementary metal-oxide semiconductor (CMOS) amplifiers for ultra-wideband (UWB) applications Broadband RF and Microwave Amplifiers combines theoretical analysis with practical design to create a solid foundation for innovative ideas and circuit design techniques.

A comprehensive review to the theory, application and research of machine learning for future wireless communications In one single volume, Machine Learning for Future Wireless Communications provides a comprehensive and highly accessible treatment to the theory, applications and current research developments to the technology aspects related to machine learning for wireless communications and networks. The technology development of machine learning for wireless communications has grown explosively and is one of the biggest trends in related academic, research and industry communities. Deep neural networks-based machine learning technology is a promising tool to attack the big challenge in wireless communications and networks imposed by the increasing demands in terms of capacity, coverage, latency, efficiency flexibility, compatibility, quality of experience and silicon convergence. The author – a noted expert on the topic – covers a wide range of topics including system architecture and optimization, physical-layer and cross-layer processing, air interface and protocol design, beamforming and antenna configuration, network coding and slicing, cell acquisition and handover, scheduling and rate adaption, radio access control, smart proactive caching and adaptive resource allocations. Uniquely organized into three categories: Spectrum Intelligence, Transmission Intelligence and Network Intelligence, this important resource: Offers a comprehensive review of the theory, applications and current developments of machine learning for wireless communications and networks Covers a range of topics from architecture and optimization to adaptive resource allocations Reviews state-of-the-art machine learning based solutions for network coverage Includes an overview of the applications of machine learning algorithms in future wireless networks Explores flexible backhaul and front-haul, cross-layer optimization and coding, full-duplex radio, digital front-end (DFE) and radio-frequency (RF) processing Written for professional engineers, researchers, scientists, manufacturers, network operators, software developers and graduate students, Machine Learning for Future Wireless Communications presents in 21 chapters a comprehensive review of the topic authored by an expert in the field.

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