
Microstrip Array Antenna Hfss

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Design of Nonplanar Microstrip Antennas and Transmission Lines
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LOPEZ SHANIYA

Advancement in Microstrip Antennas with Recent Applications LAP Lambert Academic Publishing
The book is a collection of best papers presented in the Second International Conference on Microelectronics Electromagnetics and Telecommunication (ICMEET 2016), an international colloquium, which aims to bring together academic scientists, researchers and research scholars to discuss the recent developments and future trends in the fields of microelectronics, electromagnetics and telecommunication. Microelectronics research investigates semiconductor materials and device physics for developing electronic devices and integrated circuits with data/energy efficient performance in terms of speed, power consumption, and functionality. The book discusses various topics like analog, digital and mixed signal circuits, bio-medical circuits and systems, RF circuit design, microwave and millimeter wave circuits, green circuits and systems, analog and digital signal processing, nano electronics and giga scale systems, VLSI circuits and systems, SoC and NoC, MEMS and NEMS, VLSI digital signal processing, wireless communications, cognitive radio, and data communication.

Microstrip Antennas Springer Nature

Microstrip is the name given to a type of open wave guide structure which is now commonly used in present day electronics not only as transmission lines but for circuit components such as filters, couplers, resonators etc. They have some well-known advantages such as small size, lightweight, low profile and low cost. This work had a broader scope of analysis, design, fabrication, testing and implementation of aperture coupled microstrip patch antenna array with omni-directional pattern. An aperture coupled microstrip antenna used aperture coupling and does not require a direct connection between the patch and the feed line. A small aperture in the ground plane located under the patch allows coupling from the feed line. The feed network requirement for the array to the required amplitude distributions has been addressed. Typically, these arrays of microstrip antennas are used to reduce overall ripple in the roll pattern of the antenna. This entire project has been carried out in LRDE, DRDO, Bangalore.

Microstrip Antenna Design for Wireless Applications John Wiley & Sons

This book is a compilation of research work in the interdisciplinary areas of electronics, communication, and computing. This book is specifically targeted at students, research scholars and academicians. The book covers the different approaches and techniques for specific applications, such as particle-swarm optimization, Otsu's function and harmony search optimization algorithm, triple gate silicon on insulator (SOI) MOSFET, micro-Raman and Fourier Transform Infrared Spectroscopy (FTIR) analysis, high-k dielectric gate oxide, spectrum sensing in cognitive radio, microstrip antenna, Ground-penetrating radar (GPR) with conducting surfaces, and digital image forgery detection. The contents of the book will be useful to academic and professional researchers alike.

Advances in Electronics, Communication and Computing Springer

As the demand for broadband services continues to grow worldwide, traditional solutions, such as digital cable and fiber optics, are often difficult and expensive to implement, especially in rural and remote areas. The emerging WiMAX system satisfies the growing need for high data-rate applications such as voiceover IP, video conferencing, interactive gaming, and multimedia streaming. WiMAX deployments not only serve residential and enterprise users but can also be deployed as a backhaul for Wi-Fi hotspots or 3G cellular towers. By providing affordable wireless broadband access, the technology of WiMAX will revolutionize broadband communications in the developed world and bridge the digital divide in developing countries. Part of the WiMAX Handbook, this volume focuses on the applications of WiMAX. The book describes the logical architecture of IEEE 802.16, introduces some of the main IEEE 802.16 family standards, compares WiMAX to Wi-Fi, and studies the feasibility of supporting VoIP over WiMAX. It also looks at the residential use of WiMAX as well as the strategies of using WiMAX in remote locales and rural communities. In addition, the book examines the backhaul requirements of a large fixed wireless network and the problem of centralized routing and scheduling for IEEE 802.16 mesh networks. With the revolutionary technology of WiMAX, the lives of many will undoubtedly improve, thereby leading to greater economic empowerment.

Broadband Microstrip Antennas IET

Microstrip patch antennas have become the favorite of antenna designers because of their versatility and having the advantages of planar profile, ease of fabrication, compatibility with integrated circuit technology, and conformability with a shaped surface. There is a need for graduate students and practicing engineers to gain an in depth understanding of this subject. The first edition of this book, published in 2011, was written with this purpose in mind. This second edition contains approximately one third new materials. The authors, Prof KF Lee, Prof KM Luk and Dr HW Lai, have all made significant contributions in the field. Prof Lee and Prof Luk are IEEE Fellows. Prof Lee was the recipient of the 2009 John Kraus Antenna Award of the IEEE Antennas and Propagation Society while Prof. Luk receives the same award in 2017, both in recognition of their contributions to wideband microstrip antennas.

Antenna Technology for Terahertz Wireless Communication Artech House Publishers

International Conference on Computing, Communication and Security (ICCCS 2020) is a premier conference in the computer, communication and Signal processing fields ICCCS 2020 is to be held at Indian Institute of Technology Patna, Bihar, India during October 14-16, 2020. The conference aims at bringing together researchers in academia, industry and practitioners in the world working on computing, communications and security. It creates an interdisciplinary platform for discussion and exchange various ideas to find out the solution of new emerging and challenging problems. *Proceedings of 2nd International Conference on Micro-Electronics, Electromagnetics and Telecommunications* Artech House Publishers

This useful tool provides the reader with a current overview of where microstrip patch antenna

technology is at, and useful information on how to design this form of radiator for their given application and scenario. Practical design cases are provided for each goal.

Microstrip Antenna World Scientific

This thoroughly updated third edition of this popular book covers all types of printed microstrip antenna design, from rectangular to circular, broadband and dual band, and millimeter wave microstrip antenna to microstrip arrays. The book features new analysis of rectangular and circular microstrip antenna efficiency, and surface wave phenomena. Rectangular microstrip antenna cross polarization analysis and mitigation is expanded upon. Microstrip antenna array geometry options have been added to the text. The design of Vivaldi antennas has been revised and updated based on recent analysis. A chapter has been added which addresses design considerations for millimeter wave microstrip antennas and arrays. Sections addressing the design of shorted annular, patch-ring, corporate fed OMA, stripline series slot, inverted F, RFID Loop Coupler, CPW monopole, and characteristic mode antennas have been added. The appendices have been enlarged, and address PIM, efficiency computation, twin strip and parallel plate transmission line, the history of the decibel, return loss and reflection loss, new impedance matching methods, as well as a new appendix on baluns for printed antennas. Written with commercial applications in mind and aimed at practicing engineers, this book covers printed antennas and their design from the perspective of a seasoned consulting engineer who has worked many years in the field and has implemented all design concepts and technologies featured in the book and is essential reading for antenna designers and engineers.

Design of Microstrip Disk Antenna Arrays John Wiley & Sons

The book discusses basic and advanced concepts of microstrip antennas, including design procedure and recent applications. Book topics include discussion of arrays, spectral domain, high Tc superconducting microstrip antennas, optimization, multiband, dual and circular polarization, microstrip to waveguide transitions, and improving bandwidth and resonance frequency. Antenna synthesis, materials, microstrip circuits, spectral domain, waveform evaluation, aperture coupled antenna geometry and miniaturization are further book topics. Planar UWB antennas are widely covered and new dual polarized UWB antennas are newly introduced. Design of UWB antennas with single or multi notch bands are also considered. Recent applications such as, cognitive radio, reconfigurable antennas, wearable antennas, and flexible antennas are presented. The book audience will be comprised of electrical and computer engineers and other scientists well versed in microstrip antenna technology.

International Conference on Artificial Intelligence: Advances and Applications 2019 Springer Science & Business Media

Antenna Theory and Microstrip Antennas offers a uniquely balanced analysis of antenna fundamentals and microstrip antennas. Concise and readable, it provides theoretical background, application materials, and details of recent progress. Exploring several effective design approaches, this book covers a wide scope, making it an ideal hands-on resource for professionals seeking a refresher in the fundamentals. It also provides the basic grounding in antenna essentials that is required for those new to the field. The book's primary focus is on introducing practical techniques that will enable users to make optimal use of powerful commercial software packages and

computational electromagnetics used in full wave analysis and antenna design. Going beyond particular numerical computations to teach broader concepts, the author systematically presents the all-important spectral domain approach to analyzing microstrip structures including antennas. In addition to a discussion of near-field measurement and the high-frequency method, this book also covers: Elementary linear sources, including Huygen's planar element, and analysis and synthesis of the discrete and continuous arrays formed by these elementary sources The digital beam-forming antenna and smart antenna Cavity mode theory and related issues, including the design of irregularly shaped patches and the analysis of mutual coupling Based on much of the author's own internationally published research, and honed by his years of teaching experience, this text is designed to bring students, engineers, and technicians up to speed as efficiently as possible. This text purposefully emphasizes principles and includes carefully selected sample problems to ease the process of understanding the often intimidating area of antenna technology. Paying close attention to this text, you will be able to confid

Microstrip Antennas CRC Press

Based on Bahl and Bhartia's popular 1980 classic, *Microstrip Antennas*, this all new book provides the detail antenna engineers and designers need to design any type of microstrip antenna. After addressing essential microchip antenna theory, the authors highlight current design and engineering practices, emphasizing the most pressing issues in this area, including broadbanding, circular polarization, and active microstrip antennas in particular. Special design challenges, ranging from dual polarization, high bandwidth, and surface wave mitigation, to choosing the proper substrate, and shaping an antenna to achieve desired results are all covered.

WiMAX Archers & Elevators Publishing House

The book reviews developments in the following fields: circular microstrip antennas; microstrip patch antennas; circular polarisation and bandwidth; microstrip dipoles; multilayer and parasitic configurations; wideband flat dipole and short-circuit microstrip patch elements and arrays; numerical analysis; multiport network approach; transmission-line model; rectangular microstrip antennas; low-cost printed antennas; printed phased-array antennas; circularly polarised antenna arrays; microstrip antenna feeds; substrate technology; computer-aided design of microstrip and triplate circuits; resonant microstrip antenna elements and arrays for aerospace applications; mobile and satellite systems; conical conformal microstrip tracking antenna; and microstrip field diagnostics.

Handbook of Microstrip Antennas Institution of Engineering and Technology

"This anthology combines 15 years of microstrip antenna technology research into one significant volume and includes a special introductory tutorial by the co-editors. Covering theory, design and modeling techniques and methods, this source book is an excellent reference tool for engineers who want to become more familiar with microstrip antennas and microwave systems. Proven antenna designs, novel solutions to practical design problems and relevant papers describing the theory of operation and analysis of microstrip antennas are contained within this convenient reference."

Microstrip and Printed Antenna Design IET

This book provides engineers with a comprehensive review of the state-of-the-art in reflectarray antenna research and development. The authors describe, in detail, design procedures for a wide

range of applications, including broadband, multi-band, multi-beam, contour-beam, beam-scanning, and conformal reflectarray antennas. They provide sufficient coverage of basic reflectarray theory to fully understand reflectarray antenna design and analysis such that the readers can pursue reflectarray research on their own. Throughout the book numerous illustrative design examples including numerical and experimental results are provided. Featuring in-depth theoretical analysis along with practical design examples, *Reflectarray Antennas* is an excellent text/reference for engineering graduate students, researchers, and engineers in the field of antennas. It belongs on the bookshelves of university libraries, research institutes, and industrial labs and research facilities.

DESIGN AND ANALYSIS OF C-BAND ANTENNA BASED ON FSS USING HFSS John Wiley & Sons
Covers latest design and design parameters in the field of microstrip antenna. Discusses design of wearable antennas in detail. Presents design of conformal and miniaturized antenna structures for various applications. Covers methods and techniques for the enhancement of the performance parameters of the microstrip antenna. Discusses latest techniques in the field of microstrip antennas and its applications

Microstrip Antennas Springer Nature

Substrate integrated waveguide (SIW) is a new type of transmission line. It implements a waveguide on a piece of printed circuit board by emulating the side walls of the waveguide using two rows of metal posts. It inherits the merits both from the microstrip for compact size and easy integration, and from the waveguide for low radiation loss, and thus opens another door to design efficient microwave circuits and antennas at a low cost. This book presents a two-dimensional fullwave analysis method to investigate an SIW circuit composed of metal and dielectric posts. It combines the cylindrical eigenfunction expansion and the method of moments to avoid geometrical discretization of the posts. The method is presented step-by-step, with all the necessary formulations provided for a practitioner who wants to implement this method by himself. This book covers the SIW circuit printed on either homogeneous or inhomogeneous substrate, the microstrip-to-SIW transition and the speed-up technique for the simulation of symmetrical SIW circuits.

Different types of SIW circuits are shown and simulated using the proposed method. In addition, several slot antennas and horn antennas fabricated using the SIW technology are also given. Table of Contents: Introduction / SIW Circuits Composed of Metallic Posts / SIW Circuits with Dielectric Posts / Even-Odd Mode Analysis of a Symmetrical Circuit / Microstrip to SIW Transition and Half Mode SIW / SIW Antennas

Microstrip Antennas CRC Press

The progress in modern tiny multifunctional wireless devices has dramatically increased the demand for microstrip antennas in recent years. Furthermore, in the last few years, such microstrip antennas found numerous applications in both the military and the commercial sectors. Therefore, microstrip patch antenna has become a major focus to the researchers in the field of antenna engineering. In this book, some recent advances in microstrip antennas are presented. This book contains mainly three sections. In the first section, some new approaches to modern analytical techniques rather than the conventional cavity model, transmission line model, or spectral domain analysis have been

discussed. In the second section of the book, a light has been showered on some new techniques for bandwidth enhancement of microstrip radiators. In the last section of the book, the recent trends in microstrip antenna research have been showcased. Some newfangled application-oriented approach to this field is vividly discussed. The book's main objective is to facilitate the microstrip antenna researchers for exploring the subject in more vibrant manner and also to revolutionize wireless communications. A sufficient number of topics have been covered, some for the first time in a research handbook. I hope that the book will surely be beneficial for scientists, practicing engineers, and researchers working in the field of microstrip antennas.

Reflectarray Antennas BoD – Books on Demand

This book introduces research presented at the “International Conference on Artificial Intelligence: Advances and Applications-2019 (ICAIAA 2019),” a two-day conference and workshop bringing together leading academicians, researchers as well as students to share their experiences and findings on all aspects of engineering applications of artificial intelligence. The book covers research in the areas of artificial intelligence, machine learning, and deep learning applications in health care, agriculture, business and security. It also includes research in core concepts of computer networks, intelligent system design and deployment, real-time systems, WSN, sensors and sensor nodes, SDN and NFV. As such it is a valuable resource for students, academics and practitioners in industry working on AI applications.

Antenna Theory and Microstrip Antennas Artech House Microwave Library

This book describes various methods to enhance the directivity of planar antennas, enabling the next generation of high frequency, wireless communication. The authors discuss various applications to the terahertz regime of the electromagnetic spectrum, with an emphasis on gain enhancement mechanisms. The numerical models of these antennas are presented and the analytical results are supported, using commercial simulators. The multilayer substrate microstrip transmission line at terahertz frequency is also explored and a method to obtain the various parameters of this interconnect at high frequency is described. This book will be a valuable resource for anyone needing to explore the terahertz band gap for future wireless communication, in an effort to solve the bandwidth (spectrum scarcity) problem.

2020 International Conference for Emerging Technology (INCET) John Wiley & Sons

Substrate Integrated Antennas and Arrays provides a single source for cutting-edge information on substrate integrated circuits (SICs), substrate integrated waveguide (SIW) feeding networks, SIW slot array antennas, SIC traveling-wave antennas, SIW feeding antennas, SIW monopulse antennas, and SIW multibeam antennas. Inspired by the author's extensive research, this comprehensive book: Describes a revolutionary SIC-based antenna technique with the potential to replace existing antenna technologies Examines theoretical and experimental results connected to electrical and mechanical performance Explains how to overcome difficulties in meeting bandwidth, gain, and efficiency specifications Substrate Integrated Antennas and Arrays offers valuable insight into the state of the art of SIC and SIW antenna technologies, presenting research useful to the development of wireless communication base station antennas, portable microwave point-to-point systems, collision avoidance radars, conformal antennas, and satellite antennas.