Hfss Waveguide Cavity Slot Antenna

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DARIO WHITNEY

Smart Antennas Bentham Science

Publishers
This book covers the homogenization principles and mixing rules for determining the macroscopic dielectric and magnetic properties of different types of media. Sihvola (electromagnetics, Helsinki U. of Technology, Finland) discusses subjects such as the characteristic differences between a mixture and its parts, and ways that mixing results are applied to different materials in geophysics and biology. Distributed by INSPEC. Annotation copyrighted by Book News, Inc., Portland, OR
Antenna-in-Package Technology and Applications Springer
This book explains one of the hottest topics in wireless and electronic devices community, namely the wireless communication at mmWave frequencies, especially at the 60 GHz ISM band. It provides the reader with knowledge and techniques for mmWave antenna design, evaluation, antenna and chip packaging. Addresses practical engineering issues such as RF material evaluation and selection, antenna and packaging requirements, manufacturing tolerances, antenna and system interconnections, and antenna One of the first books to discuss the emerging research and application areas, particularly chip packages with integrated antennas, wafer scale mmWave phased arrays and imaging Contains a good number of case studies to aid understanding Provides the antenna and packaging technologies for the latest and emerging applications with the emphases on antenna

integrations for practical applications such as wireless USB, wireless video, phase array, automobile collision avoidance radar, and imaging

Planar Microwave Engineering Springer Nature

This book comprises select proceedings of the 43rd National Systems Conference on Innovative and Emerging Trends in Engineering Systems (NSC 2019) held at the Indian Institute of Technology, Roorkee, India. The contents cover latest research in the highly multidisciplinary field of systems engineering, and discusses its various aspects like systems design, dynamics, analysis, modeling and simulation. Some of the topics covered include computing systems, consciousness systems, electrical systems, energy systems, manufacturing systems, mechanical systems, literary systems, social systems, and quantum and nano systems. Given the scope of the contents, this book will be useful for researchers and professionals from diverse engineering and management background.

Morgan & Claypool Publishers

This book describes and provides design guidelines for antennas that achieve compactness by using the slot radiator as the fundamental building block within a periodic array, rather than a phased array. It provides the basic electromagnetic tools required to design and analyse these novel antennas, with sample calculations where relevant. The book presents a focused introduction and valuable insights into the relevant

antenna technology, together with an overview of the main directions in the evolving technology of compact planar arrays. While the book discusses the historical evolution of compact array antennas, its main focus is on summarising the extensive body of literature on compact antennas. With regard to the now ubiquitous slot radiator, it seeks to demonstrate how, despite significant antenna size reductions that at times even seem to defy the laws of physics, desirable radiation pattern properties can be preserved. This is supported by an examination of recent advances in frequency selective surfaces and in metamaterials, which can, if handled correctly, be used to facilitate physics-defying designs. The book offers a valuable source of information for communication systems and antenna design engineers, especially thanks to its overview of trends in compact planar arrays, yet will also be of interest to students and researchers, as it provides a focused introduction and insights into this highly relevant antenna technology.

Advances in Systems Engineering

Springer Nature

AI in Healthcare AI in Healthcare is an interdisciplinary, dynamic field with significant relevance to the current situation AI in Healthcare leveraged AI s power to improve patient care and ROI

Recent Innovations in Computing

McGraw Hill Professional

This volume presents peer reviewed and selected papers of the International Youth Conference on Electronics,

Telecommunications and Information Technologies (YETI-2020), held in Peter the Great St. Petersburg Polytechnic University, St. Petersburg on July 10–11, 2020. It discusses current trends and major advances in electronics, telecommunications, optical and information technologies, focusing, in particular, on theoretical and practical aspects of developing novel devices and materials, improving data processing methods and technologies. The conference brings together young researchers and early-career scientists participating in a series of lectures and presentations, establishing contacts with potential partners, sharing new project ideas and starting new collaborations. *Latest Trends in Design and Application* Springer Nature

microwaves

Fundamentals of 5G Mobile Networks IGI Global

This reference provides the reader with focused information about microstrip antenna design and applications. Readers are first introduced to the basic design of microstrip antennas. Subsequent chapters explain how microstrip antennas are suitable for practical applications. These chapters cover topics such as fractal and defected ground structure antennas, microstrip antenna evaluation, and the use of microstrip antennas in mobile communications and IoT applications. Scholars, researchers, and industrial professionals involved in the fields of electronics and electrical engineering as well as instrumentation will benefit from

the information given in this book.
Analysis and Design John Wiley & Sons
Issues in Electronic Circuits, Devices, and Materials: 2013 Edition is a ScholarlyEditions™ book that delivers timely, authoritative, and comprehensive information about Microwave Research. The editors have built Issues in Electronic Circuits, Devices, and Materials: 2013 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Microwave Research in this book to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in Electronic Circuits, Devices, and Materials: 2013 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at http://www.ScholarlyEditions.com/.
Proceedings of the YETI 2020, St. Petersburg, Russia BoD – Books on Demand
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 technologies behind WiMAX, its performance capabilities, and its control mechanisms. The book introduces programmable baseband processors suited for WiMAX systems, describes an innovative methodology for the design of multi-band WiMAX antennas, addresses space-time block codes, and reviews space-frequency/space-time-frequency code design criteria. It also proposes a combined call admission control and scheduling scheme, focuses on the performance analysis of the IEEE 802.16 mesh mode, and analyzes the performance of both single-input-single-output and space-time-block-coded OFDM systems in mobile environments. The final section establishes a framework of an ideal reservation period controller, examines the ecosystem in which scheduling for IEEE 802.16e systems must be performed, and presents a fuzzy logic controller for admission control. With the revolutionary technology of WiMAX, the lives of many

will undoubtedly improve, thereby leading to greater economic empowerment.

Smart Antennas: Recent Trends in Design and Applications IGI Global
Modern wireless communications hardware is underpinned by RF and microwave design techniques. This insightful book contains a wealth of circuit layouts, design tips, and practical measurement techniques for building and testing practical gigahertz systems. The book covers everything you need to know to design, build, and test a high-frequency circuit. Microstrip components are discussed, including tricks for extracting good performance from cheap materials. Connectors and cables are also described, as are discrete passive components, antennas, low-noise amplifiers, oscillators, and frequency synthesizers. Practical measurement techniques are presented in detail, including the use of network analyzers, sampling oscilloscopes, spectrum analyzers, and noise figure meters. Throughout the focus is practical, and many worked examples and design projects are included. There is also a CD-ROM that contains a variety of design and analysis programs. The book is packed with indispensable information for students taking courses on RF or microwave circuits and for practising engineers.

WiMAX CRC Press
This book brings together papers from the 2019 International Conference on Communications, Signal Processing, and Systems, which was held in Urumqi,

China, on July 20–22, 2019. Presenting the latest developments and discussing the interactions and links between these multidisciplinary fields, the book spans topics ranging from communications to signal processing and systems. It is chiefly intended for undergraduate and graduate students in electrical engineering, computer science and mathematics, researchers and engineers from academia and industry, as well as government employees.

Select Proceedings of MAI 2021 John Wiley & Sons

This book highlights technology trends and challenges that trace the evolution of antenna design, starting from 3rd generation phones and moving towards the latest release of LTE-A. The authors explore how the simple monopole and whip antenna from the GSM years have evolved towards what we have today, an antenna design that is compact, multi-band in nature and caters to multiple elements on the same patch to provide high throughput connectivity. The scope of the book targets a broad range of subjects, including the microstrip antenna, PIFA antenna, and the monopole antenna to be used for different applications over three different mobile generations. Beyond that, the authors take a step into the future and look at antenna requirements for 5G communications, which already has the 5G drive in place with prominent scenarios and use-cases emerging. They examine these, and put in place the challenges that lie ahead for antenna design, particularly in mm-Wave design.

The book provides a reference for practicing engineers and under/post graduate students working in this field.

A Practical Guide to Theory, Measurement, and Circuits John Wiley & Sons

Stutzman's 3rd edition of Antenna Theory and Design provides a more pedagogical approach with a greater emphasis on computational methods. New features include additional modern material to make the text more exciting and relevant to practicing engineers; new chapters on systems, low-profile elements and base station antennas; organizational changes to improve understanding; more details to selected important topics such as microstrip antennas and arrays; and expanded measurements topic.

Substrate-Integrated Millimeter-Wave Antennas for Next-Generation Communication and Radar Systems Springer Nature

Modelling and computations in electromagnetics is a quite fast-growing research area. The recent interest in this field is caused by the increased demand for designing complex microwave components, modeling electromagnetic materials, and rapid increase in computational power for calculation of complex electromagnetic problems. The first part of this book is devoted to the advances in the analysis techniques such as method of moments, finite-difference time- domain method, boundary perturbation theory, Fourier analysis, mode-matching method, and analysis based on circuit theory. These

techniques are considered with regard to several challenging technological applications such as those related to electrically large devices, scattering in layered structures, photonic crystals, and artificial materials. The second part of the book deals with waveguides, transmission lines and transitions. This includes microstrip lines (MSL), slot waveguides, substrate integrated waveguides (SIW), vertical transmission lines in multilayer media as well as MSL to SIW and MSL to slot line transitions. *Proceedings of the 8th International Conference on Communications, Signal Processing, and Systems* Springer Nature

Substrate-Integrated Millimeter-Wave Antennas for Next-Generation Communication and Radar Systems The first and only comprehensive text on substrate-integrated mmW antenna technology, state-of-the-art antenna design, and emerging wireless applications Substrate-Integrated Millimeter-Wave Antennas for Next-Generation Communication and Radar Systems elaborates the most important topics related to revolutionary millimeter-wave (mmW) technology. Following a clear description of fundamental concepts including substrate-integrated waveguides and loss analysis, the text treats key design methods, prototyping techniques, and experimental setup and testing. The authors also highlight applications of mmW antennas in 5G wireless communication and next-generation radar systems. Readers are prepared to

put techniques into practice through practical discussions of how to set up testing for impedance matching, radiation patterns, gain from 24GHz up to 325 GHz, and more. This book will bring readers state-of-the-art designs and recent progress in substrate-integrated mmW antennas for emerging wireless applications. Substrate-Integrated Millimeter-Wave Antennas for Next-Generation Communication and Radar Systems is the first comprehensive text on the topic, allowing readers to quickly master mmW technology. This book: Introduces basic concepts such as metamaterials Huygens's surface, zero-index structures, and pattern synthesis Describes prototyping in the form of fabrication based on printed-circuit-board, low-temperature-co-fired-ceramic and micromachining Explores applications for next-generation radar and imaging systems such as 24-GHz and 77-GHz vehicular radar systems Elaborates design methods including waveguide-based feeding network, three-dimensional feeding structure, dielectric loaded aperture antenna element, and low-sidelobe synthesis The mmW is one of today's most important emerging technologies. This book provides graduate students, researchers, and engineers with the knowledge they need to deploy mmW systems and develop new antenna designs with low cost, low loss, and low complexity.

Fractal Apertures in Waveguides, Conducting Screens and Cavities World Scientific

This book deals with the design and analysis of fractal apertures in waveguides, conducting screens and cavities using numerical electromagnetics and field-solvers. The aim is to obtain design solutions with improved accuracy for a wide range of applications. To achieve this goal, a few diverse problems are considered. The book is organized with adequate space dedicated for the design and analysis of fractal apertures in waveguides, conducting screens and cavities, microwave/millimeter wave applications followed by detailed case-study problems to infuse better insight and understanding of the subject. Finally, summaries and suggestions are given for future work. Fractal geometries were widely used in electromagnetics, specifically for antennas and frequency selective surfaces (FSS). The self-similarity of fractal geometry gives rise to a multiband response, whereas the space-filling nature of the fractal geometries makes it an efficient element in antenna and FSS unit cell miniaturization. Until now, no efforts were made to study the behavior of these fractal geometries for aperture coupling problems. The aperture coupling problem is an important boundary value problem in electromagnetics and used in waveguide filters and power dividers, slotted ground planes, frequency selective surfaces and metamaterials. The present book is intended to initiate a study of the characteristics of fractal apertures in waveguides, conducting screens and

cavities. To perform a unified analysis of these entirely dissimilar problems, the “generalized network formulation of the aperture problems” by Mautz and Harrington was extended to multiple-aperture geometry. The authors consider the problem of coupling between two arbitrary regions coupled together via multiple apertures of arbitrary shape. MATLAB codes were developed for the problems and validated with the results available in the literature as well as through simulations on ANSOFT's HFSS.
Theory and Design Springer
The gold-standard reference on the design and application of classic and modern antennas—fully updated to reflect the latest advances and technologies This new edition of the “bible of antenna engineering” has been updated to provide start-to-finish coverage of the latest innovations in antenna design and application. You will find in-depth discussion of antennas used in modern communication systems, mobile and personal wireless technologies, satellites, radar deployments, flexible electronics, and other emerging technologies, including 5G, terahertz, and wearable electronics. Antenna Engineering Handbook, Fifth Edition, is bolstered by real-world examples, hundreds of illustrations, and an emphasis on the practical aspects of antennas. Featuring 60 chapters and contributions from more than 80 renowned experts, this acclaimed resource is edited by one of the world’s leading antenna authorities. This edition features all of the classic antenna types,

plus new and emerging designs, with 13 all-new chapters and important updates to nearly all chapters from past editions. Antenna Engineering Handbook, Fifth Edition, clearly explains cutting-edge applications in WLANs, automotive systems, PDAs, and handheld devices, making it an indispensable companion for today's antenna practitioners and developers. Coverage includes: •Antenna basics and classic antennas•Design approaches for antennas and arrays•Wideband and multiband antennas•Antennas for mobile devices and PDAs, automotive applications, and aircraft•Base station and smart antennas•Beamforming and 5G antennas•Millimeter-wave and terahertz antennas•Flexible, wearable, thin film, origami, dielectric, and on-chip antennas•MIMO antennas and phased arrays•Direction-finding and GPS antennas•Active antennas•Low-profile wideband antennas•Nanoantennas•Reflectors and other satellite and radio-telescope antennas•Low-frequency, HF, VHF, UHF, ECM, and ESM antennas•Impedance-matching techniques and material characteristics•Metastructured and frequency selective surfaces•Propagation and guided structures•Computational techniques and toolsets•Indoor and outdoor measurements

Substrate-Integrated Millimeter-Wave Antennas for Next-Generation Communication and Radar Systems John Wiley & Sons

This book is a collection of selected peer-

reviewed papers presented at the International Conference on Signal Processing and Communication (ICSC 2018). It covers current research and developments in the fields of communications, signal processing, VLSI circuits and systems, and embedded systems. The book offers in-depth discussions and analyses of latest problems across different sub-fields of signal processing and communications. The contents of this book will prove to be useful for students, researchers, and professionals working in electronics and electrical engineering, as well as other allied fields.

Antenna Design for Narrowband IoT: Design, Analysis, and Applications

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.