

Compact Wideband Dual Polarized Microstrip Patch Antenna

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Omnidirectional Slots Antenna Junping Geng 2020-12-03 Omnidirectional antenna with high gain, low profile, vertical polarization, even CP polarization is very difficult to design, although it is from the dipole. In this book, a novel idea that the running wave in the coaxial wire is disturbed by the orthogonal slot array on the cylindrical metal shell is introduced, which radiates the CP wave in omni-direction. When feeding on two ends of the coaxial wire respectively, there will appear left hand circularly polarized (LHCP) omnidirectional radiation or right hand circularly polarized (RHCP) omnidirectional radiation. By introducing the T-shaped feed structure, the coaxial wire with slot array can conveniently produce the LHCP and RHCP radiation diversity with one end feeding. In the further, combining with the directional antenna, it will generate the pattern diversity in the half-sphere space. The antenna of the coaxial wire with slot array can further transform into conical CP beam antenna if the coaxial wire becomes into a conical frustum. By introducing the PIN diode into the slot, the antenna of the coaxial wire with slot array can radiate the reconfigurable directional beam by switching the states of the PIN diodes. By introducing a novel switchable microwave circuit, the omnidirectional /directional pattern switchable antenna can be realized easily. This book proposes a continues method to develop the potentialities of the omnidirectional antenna. And the readers can study the method or ideas of the omnidirectional slots antenna, even graft the CP or diversity methods to other antennae.

Proceedings of the 2009 International Conference on Signals, Systems and Automation (ICSSA 2009) Himanshu Soni 2010-04-30 This book is a collection of papers from the 2009 International Conference on Signals, Systems and Automation (ICSSA 2009). The conference at a glance: - Pre-conference Workshops/Tutorials on 27th Dec, 2009 - Five Plenary talks - Paper/Poster Presentation: 28-29 Dec, 2009 - Demonstrations by SKYVIEWInc, SLS Inc., BSNL, Baroda Electric Meters, SIS - On line paper submission facility on website - 200+ papers are received from India and abroad - Delegates from different countries including Poland, Iran, USA - Delegates from 16 states of India - Conference website is seen by more than 3000 persons across the world (27 countries and 120 cities)

Mechatronics and Automatic Control Systems Wego Wang 2013-11-18 This book examines mechatronics and automatic control systems. The book covers important emerging topics in signal processing, control theory, sensors, mechanic manufacturing systems and automation. The book

presents papers from the 2013 International Conference on Mechatronics and Automatic Control Systems in Hangzhou, held in China during August 10-11, 2013.

Industrial Internet of Things Anand Sharma 2022-04-06 This book focuses on the key technologies, challenges, and research directions of the Industrial Internet of Things (IIoT). It provides a basis for discussing open principles, methods, and research problems, and provides a systematic overview of the state-of-the-art research efforts, directions, and potential challenges associated with IIoT. Industrial Internet of Things: Technologies and Research Directions covers how industry automation is projected to be the largest and fastest-growing segment of the market. It explores the collaborative development of high-performance telecommunications, military, industrial, and general-purpose embedded computing applications, and offers a systematic overview of the state-of-the-art research efforts and new potential directions. Researchers, academicians, and professionals working in this inter-disciplinary area will be interested in this book.

Proceedings of the International Conference on Paradigms of Communication, Computing and Data Sciences Mohit Dua 2022-01-01 This book gathers selected high-quality research papers presented at the International Conference on Paradigms of Communication, Computing and Data Sciences (PCCDS 2021), held at the National Institute of Technology, Kurukshetra, India, during May 07–09, 2021. It discusses high-quality and cutting-edge research in the areas of advanced computing, communications, and data science techniques. The book is a collection of latest research articles in computation algorithm, communication, and data sciences, intertwined with each other for efficiency.

Printed MIMO Antenna Engineering Mohammad S. Sharawi 2014-05-01 Wireless communications has made a huge leap during the past two decades. The multiple-input-multiple-output (MIMO) technology was proposed in the 1990's as a viable solution that can overcome the data rate limit experienced by single-input-single-output (SISO) systems. This resource is focused on printed MIMO antenna system design. Printed antennas are widely used in mobile and handheld terminals due to their conformity with the device, low cost, good integration within the device elements and mechanical parts, as well as ease of fabrication. A perfect design companion for practicing engineers, this book provides full design examples from literature, along with detailed illustrations for the various antenna geometries. This resource overviews the various applications that currently depend on printed MIMO antennas, and provides design guidelines and remarks throughout the book for guidance.

ICT Analysis and Applications Simon Fong 2020-02-03 This book proposes new technologies and discusses future solutions for ICT design infrastructures, as reflected in high-quality papers presented at the 4th International Conference on ICT for Sustainable Development (ICT4SD 2019), held in Goa, India, on 5–6 July 2019. The conference provided a valuable forum for cutting-edge research discussions among pioneering researchers, scientists, industrial engineers, and students from all around the world. Bringing together experts from different countries, the book explores a range of central issues from an international perspective.

Proceedings of International Conference on Wireless Communication Hari Vasudevan 2022-01-15 This book comprises selected papers presented at the International Conference on Wireless Communication (ICWiCOM 2021), which is organized by the Department of Electronics and Telecommunication Engineering, D. J. Sanghvi College of Engineering, Mumbai, India, during October 8–9, 2021. The book focuses on specific topics of wireless communication, like signal and image processing applicable to wireless domains, networking, microwave and antenna design, and telemedicine systems. Covering three main areas – Antenna Design, Networking & Signal Processing, Embedded Systems and Internet of Things (IoT) – it is a valuable resource for postgraduate and doctoral students.

Plasmonic Metamaterials and Electromagnetic Devices Zhen Liao 2022-08-25

Advances in Smart Grid and Renewable Energy Karma Sonam Sherpa 2021-01-04 This book comprises select proceedings of the international conference ETAEERE 2020, and primarily focuses on renewable energy resources and smart grid technologies. The book provides valuable

information on the technology and design of power grid integration on microgrids of green energy sources. Some of the topics covered include solar PV array, hybrid microgrid, daylight harvesting, green computing, photovoltaic applications, nanogrid applications, AC/DC/AC converter for wind energy systems, solar photovoltaic panels, PEM fuel cell system, and biogas run dual-fueled diesel engine. The contents of this book will be useful for researchers and practitioners working in the areas of smart grids and renewable energy generation, distribution, and management.

Evolutionary Multi-Criterion Optimization Hisao Ishibuchi 2021-03-24 This book constitutes the refereed proceedings of the 11th International Conference on Evolutionary Multi-Criterion Optimization, EMO 2021 held in Shenzhen, China, in March 2021. The 47 full papers and 14 short papers were carefully reviewed and selected from 120 submissions. The papers are divided into the following topical sections: theory; algorithms; dynamic multi-objective optimization; constrained multi-objective optimization; multi-modal optimization; many-objective optimization; performance evaluations and empirical studies; EMO and machine learning; surrogate modeling and expensive optimization; MCDM and interactive EMO; and applications.

Innovative Systems for Intelligent Health Informatics Faisal Saeed 2021-05-05 This book presents the papers included in the proceedings of the 5th International Conference of Reliable Information and Communication Technology 2020 (IRICT 2020) that was held virtually on December 21–22, 2020. The main theme of the book is “Innovative Systems for Intelligent Health Informatics”. A total of 140 papers were submitted to the conference, but only 111 papers were published in this book. The book presents several hot research topics which include health informatics, bioinformatics, information retrieval, artificial intelligence, soft computing, data science, big data analytics, Internet of things (IoT), intelligent communication systems, information security, information systems, and software engineering.

Proceedings of First International Conference on Computational Electronics for Wireless Communications Sanyog Rawat 2022-01-03 This book includes high-quality papers presented at Proceedings of First International Conference on Computational Electronics for Wireless Communications (ICWC 2021), held at National Institute of Technology, Kurukshetra, Haryana, India, during June 11–12, 2021. The book presents original research work of academics and industry professionals to exchange their knowledge of the state-of-the-art research and development in computational electronics with an emphasis on wireless communications. The topics covered in the book are radio frequency and microwave, signal processing, microelectronics and wireless networks.

2021 IEEE 4th International Conference on Electronic Information and Communication Technology (ICEICT) IEEE Staff 2021-08-18 It is the fourth forum to provide a platform for bringing together researchers, practitioners, and academia to present and discuss ideas, challenges and potential solutions on established or emerging topics related to research and practice in antennas, information technology and communication systems. The first forum ICEICT was successfully inaugurated by Harbin Institute of Technology and IEEE Harbin Section in Harbin in 2016. The second forum ICEICT was successfully inaugurated by Harbin Engineering University and IEEE Harbin Section in Harbin in 2019. The third forum ICEICT was successfully inaugurated by Shenzhen University and IEEE Harbin Section in November in 2020.

GPS and GNSS Technology in Geosciences George P. Petropoulos 2021-02-18 GPS and GNSS Technology in Geosciences offers an interdisciplinary approach to applying advances in GPS/GNSS technology for geoscience research and practice. As GPS/GNSS signals can be used to provide useful information about the Earth's surface characteristics and land surface composition, GPS equipment and services for commercial purposes continues to grow, thus resulting in new expectations and demands. This book provides case studies for a deeper understanding of the operation and principles of widely applied approaches and the benefits of the technology in everyday research and activities. Presents processing, methods and techniques of GPS/GNSS implementation that are utilized in in-situ data collection in design and systems analysis. Offers an all-inclusive, critical overview of the state-of-the-art in different algorithms and techniques in GPS/GNSS. Addresses

both theoretical and applied research contributions on the use of this technology in a variety of geoscience disciplines

The World of Applied Electromagnetics Akhlesh Lakhtakia 2017-08-08 This book commemorates four decades of research by Professor Magdy F. Iskander (Life Fellow IEEE) on materials and devices for the radiation, propagation, scattering, and applications of electromagnetic waves, chiefly in the MHz-THz frequency range as well on electromagnetics education. This synopsis of applied electromagnetics, stemming from the life and times of just one person, is meant to inspire junior researchers and reinvigorate mid-level researchers in the electromagnetics community. The authors of this book are internationally known researchers, including 14 IEEE fellows, who highlight interesting research and new directions in theoretical, experimental, and applied electromagnetics.

INTERNET OF THINGS AND ITS APPLICATIONS Keshav Prasad Dahal 2022 This volume constitutes selected papers presented at the International Conference on IoT and its Applications 2020. The research papers presented were carefully reviewed and selected from several initial submissions on the topics - the Internet of Things (IoT) and its applications such as smart cities, smart devices, agriculture, transportation and logistics, healthcare, etc. The book contains peer-reviewed chapters written by leading international scholars from around the world. This book will appeal to students, practitioners, industry professionals, and researchers working in the field of IoT and its integration with other technologies to develop comprehensive solutions to real-life problems.

Printed Antennas Binod Kumar Kanaujia 2020-11-22 Printed antennas have become an integral part of next-generation wireless communications and have been found to be commonly used to improve system capacity, data rate, reliability, etc. This book covers theory, design techniques, and the chronological regression of the printed antennas for various applications. This book will provide readers with the basic conceptual knowledge about antennas along with advanced techniques for antenna design. It covers a variety of analytical techniques and their CAD applications and discusses new applications of printed antenna technology such as sensing. The authors also present special reconfigurable antennas such as ME dipole, polarization, feeding, and DGS. The book will be useful to students as an introduction to design and applications of antennas. Additionally, experienced researchers in this field will find this book a ready reference and benefit from the techniques of research in printed antennas included in this book. Following are some of the salient features of this book: Covers a variety of analytical techniques and their CAD applications Discusses new applications of printed antenna technology such as sensing Examines the state of design techniques of printed antenna Presents special reconfigurable antennas such as ME dipole, polarization, feeding, and DGS

Computing, Communication and Signal Processing Brijesh Iyer 2018-09-12 This book highlights cutting-edge research on various aspects of human-computer interaction (HCI). It includes selected research papers presented at the Third International Conference on Computing, Communication and Signal Processing (ICCASP 2018), organized by Dr. Babasaheb Ambedkar Technological University in Lonere-Raigad, India on January 26–27, 2018. It covers pioneering topics in the field of computer, electrical, and electronics engineering, e.g. signal and image processing, RF and microwave engineering, and emerging technologies such as IoT, cloud computing, HCI, and green computing. As such, the book offers a valuable guide for all scientists, engineers and research students in the areas of engineering and technology.

Circularly Polarized Antennas Steven Shichang Gao 2013-01-11 This book presents a comprehensive insight into the design techniques for different types of CP antenna elements and arrays In this book, the authors address a broad range of topics on circularly polarized (CP) antennas. Firstly, it introduces to the reader basic principles, design techniques and characteristics of various types of CP antennas, such as CP patch antennas, CP helix antennas, quadrifilar helix antennas (QHA), printed quadrifilar helix antennas (PQHA), spiral antenna, CP slot antennas, CP dielectric resonator antennas, loop antennas, crossed dipoles, monopoles and CP horns. Advanced designs such as small-size CP antennas, broadband, wideband and ultra-wideband CP antennas are also discussed, as well as multi-band CP antennas and dual CP antennas.

The design and analysis of different types of CP array antennas such as broadband CP patch arrays, dual-band CP arrays, CP printed slot arrays, single-band and multi-band CP reflectarrays, high-gain CP waveguide slot antennas, CP dielectric resonator antenna arrays, CP active arrays, millimetre-waveband CP arrays in LTCC, and CP arrays with electronically beam-switching or beam-steering capabilities are described in detail. Case studies are provided to illustrate the design and implementation of CP antennas in practical scenarios such as dual-band Global Navigation Satellite Systems (GNSS) receivers, satellite communication mobile terminals at the S-band, Radio Frequency Identification (RFID) readers at 2.4 GHz, and Ka-band high-speed satellite communication applications. It also includes the detailed designs for a wideband Logarithmic spiral antenna that can operate from 3.4-7.7 GHz. In addition, the book offers a detailed review of the recent developments of different types of CP antennas and arrays. Presents comprehensive discussions of design techniques for different types of CP antennas: small-size CP antennas, broadband CP antennas, multi-band CP antennas and CP arrays. Covers a wide range of antenna technologies such as microstrip antennas, helix, quadrifilar helix antenna, printed quadrifilar helix antenna, dielectric resonator antennas, printed slots, spiral antennas, monopoles, waveguide slot arrays, reflectarrays, active arrays, millimetre-wave arrays in LTCC, electronically beam-switching arrays and electronically beam-steerable arrays. Reviews recent developments in different types of CP antennas and arrays, reported by industries, researchers and academics worldwide. Includes numerous case studies to demonstrate how to design and implement different CP antennas in practical scenarios. Provides both an introduction for students in the field and an in-depth reference for antenna/RF engineers who work on the development of CP antennas. Circularly Polarized Antennas will be an invaluable guide for researchers in R&D organizations; system engineers (antenna, telecom, space and satellite); postgraduates studying the subjects of antenna and propagation, electromagnetics, RF/microwave/millimetre-wave systems, satellite communications and so on; technical managers and professionals in the areas of antennas and propagation.

Handbook of Research on Natural Computing for Optimization Problems Mandal, Jyotsna Kumar 2016-05-25 Nature-inspired computation is an interdisciplinary topic area that connects the natural sciences to computer science. Since natural computing is utilized in a variety of disciplines, it is imperative to research its capabilities in solving optimization issues. The Handbook of Research on Natural Computing for Optimization Problems discusses nascent optimization procedures in nature-inspired computation and the innovative tools and techniques being utilized in the field. Highlighting empirical research and best practices concerning various optimization issues, this publication is a comprehensive reference for researchers, academicians, students, scientists, and technology developers interested in a multidisciplinary perspective on natural computational systems.

Proceedings of the International Conference on Recent Cognizance in Wireless Communication & Image Processing Nitin Afzalpulkar 2016-04-28 This volume comprises the proceedings of the International Conference on Recent Cognizance in Wireless Communication & Image Processing. It brings together content from academicians, researchers, and industry experts in areas of Wireless Communication and Image Processing. The volume provides a snapshot of current progress in computational creativity and a glimpse of future possibilities. The proceedings include two kinds of paper submissions: (i) regular papers addressing foundation issues, describing original research on creative systems development and modeling; and (ii) position papers describing work-in-progress or research directions for computational creativity. This work will be useful to professionals and researchers working in the core areas of wireless communications and image processing.

Advanced Antenna Array Engineering for 6G and Beyond Wireless Communications Yingjie Jay Guo 2021-10-20 Advanced Antenna Array Engineering for 6G and Beyond Wireless Communications Reviews advances in the design and deployment of antenna arrays for future generations of wireless communication systems, offering new solutions for the telecommunications industry Advanced Antenna Array

Engineering for 6G and Beyond Wireless Communications addresses the challenges in designing and deploying antennas and antenna arrays which deliver 6G and beyond performance with high energy efficiency and possess the capability of being immune to interference caused by different systems mounted on the same platforms. This timely and authoritative volume presents innovative solutions for developing integrated communications networks of high-gain, individually-scannable, multi-beam antennas that are reconfigurable and conformable to all platforms, thus enabling the evolving integrated land, air and space communications networks. The text begins with an up-to-date discussion of the engineering issues facing future wireless communications systems, followed by a detailed discussion of different beamforming networks for multi-beam antennas. Subsequent chapters address problems of 4G/5G antenna collocation, discuss differentially-fed antenna arrays, explore conformal transmit arrays for airborne platforms, and present latest results on fixed frequency beam scanning leaky wave antennas as well as various analogue beam synthesizing strategies. Based primarily on the authors' extensive work in the field, including original research never before published, this important new volume: Reviews multi-beam feed networks, array decoupling and de-scattering methods Provides a systematic study on differentially fed antenna arrays that are resistant to interference caused by future multifunctional/multi-generation systems Features previously unpublished material on conformal transmit arrays based on Huygen's metasurfaces and reconfigurable leaky wave antennas Includes novel algorithms for synthesizing and optimizing thinned massive arrays, conformal arrays, frequency invariant arrays, and other future arrays Advanced Antenna Array Engineering for 6G and Beyond Wireless Communications is an invaluable resource for antenna engineers and researchers, as well as graduate and senior undergraduate students in the field.

Intelligent Data Communication Technologies and Internet of Things D. Jude Hemanth 2019-11-10 This book focuses on the emerging advances in distributed communication systems, big data, intelligent computing and Internet of Things, presenting state-of-the-art research in frameworks, algorithms, methodologies, techniques and applications associated with data engineering and wireless distributed communication technologies. In addition, it discusses potential topics like performance analysis, wireless communication networks, data security and privacy, human computer interaction, 5G Networks, and smart automated systems, which will provide insights for the evolving data communication technologies. In a nutshell, this proceedings book compiles novel and high-quality research that offers innovative solutions for communications in IoT networks.

Computational Intelligence in Data Mining—Volume 2 Himansu Sekhar Behera 2015-12-09 The book is a collection of high-quality peer-reviewed research papers presented in the Second International Conference on Computational Intelligence in Data Mining (ICCIDM 2015) held at Bhubaneswar, Odisha, India during 5 – 6 December 2015. The two-volume Proceedings address the difficulties and challenges for the seamless integration of two core disciplines of computer science, i.e., computational intelligence and data mining. The book addresses different methods and techniques of integration for enhancing the overall goal of data mining. The book helps to disseminate the knowledge about some innovative, active research directions in the field of data mining, machine and computational intelligence, along with some current issues and applications of related topics.

Innovations in Electronics and Communication Engineering H. S. Saini 2019-02-07 This book gathers selected papers presented at the 7th International Conference on Innovations in Electronics and Communication Engineering, held at Guru Nanak Institutions in Hyderabad, India. It highlights contributions by researchers, technocrats and experts regarding the latest technologies in electronic and communication engineering, and addresses various aspects of communication engineering, including signal processing, VLSI design, embedded systems, wireless communications, and electronics and communications in general. Covering cutting-edge technologies, the book offers a valuable resource, especially for young researchers.

Electronics and Communications Engineering T. Kishore Kumar 2019-06-07 Every day, millions of people are unaware of the amazing processes

that take place when using their phones, connecting to broadband internet, watching television, or even the most basic action of flipping on a light switch. Advances are being continually made in not only the transmission of this data but also in the new methods of receiving it. These advancements come from many different sources and from engineers who have engaged in research, design, development, and implementation of electronic equipment used in communications systems. This volume addresses a selection of important current advancements in the electronics and communications engineering fields, focusing on signal processing, chip design, and networking technology. The sections in the book cover: Microwave and antennas Communications systems Very large-scale integration Embedded systems Intelligent control and signal processing systems

Cloud Computing and Security Xingming Sun 2018-10-31 This six volume set LNCS 11063 – 11068 constitutes the thoroughly refereed conference proceedings of the 4th International Conference on Cloud Computing and Security, ICCCS 2018, held in Haikou, China, in June 2018. The 386 full papers of these six volumes were carefully reviewed and selected from 1743 submissions. The papers cover ideas and achievements in the theory and practice of all areas of inventive systems which includes control, artificial intelligence, automation systems, computing systems, electrical and informative systems. The six volumes are arranged according to the subject areas as follows: cloud computing, cloud security, encryption, information hiding, IoT security, multimedia forensics.

Advancement in Microstrip Antennas with Recent Applications Ahmed Kishk 2013-03-06 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 Communication, Computing and Electronics Systems V. Bindhu 2021-03-25 This book includes high-quality papers presented at the International Conference on Communication, Computing and Electronics Systems 2020, held at the PPG Institute of Technology, Coimbatore, India, on 21–22 October 2020. The book covers topics such as automation, VLSI, embedded systems, integrated device technology, satellite communication, optical communication, RF communication, microwave engineering, artificial intelligence, deep learning, pattern recognition, Internet of Things, precision models, bioinformatics, and healthcare informatics.

Optical and Wireless Technologies Manish Tiwari 2021-09-01 This book comprises select proceedings of the 4th International Conference on Optical and Wireless Technologies (OWT 2020). The contents of this volume focus on research carried out in the areas of Optical Communication, Optoelectronics, Optics, Wireless Communication, Wireless Networks, Sensors, Mobile Communications and Antenna and Wave Propagation. The volume also explores the combined use of various optical and wireless technologies in next generation applications, and their latest developments in applications like photonics, high speed communication systems and networks, visible light communication, nanophotonics, wireless and MIMO systems. This book will serve as a useful reference to scientists, academicians, engineers and policy-makers interested in the field of optical and wireless technologies.

Antennas for Multiple Applications Vol.-I Dr. Sudeep Baudha, Mr. Manish Varun Yadav 2021-01-01 Recent wireless technology mostly depends on the microwaves and millimeter waves. To transmit these waves we require antennas. Antenna is an important and integral part of any wireless

communication system. From the initial days, researchers worldwide have tried various techniques for enhancing bandwidth and efficiency of antenna structures. Broadband antennas are such antennas which have operating bandwidth (Impedance bandwidth or fractional bandwidth) greater than 10% and high efficiency antennas generally possess radiation efficiency greater than 50%. Main advantage of broadband antennas with high efficiency is that, instead of single application these structures are useful for multiple applications. Many approaches such as slot cutting, EBG loading, resonator loading, aperture coupling, fractal geometry, substrate removal, grooved ground plane etc.

Reconfigurable Active and Passive Planar Antennas for Wireless Communication Systems SHIBAN KISHEN. K SINGH KOUL (RAJESH.) 2022 This book presents state-of-the-art trends in reconfigurable active and passive planar antennas and their applications in wireless communication systems operating in the frequency band 5-6 GHz. Due to various key features such as multifunction antenna design, compactness, planar nature, and low cost, these technologies are becoming popular for current and future wireless applications. This book discusses different novel antenna designs and their working principles in detail. The modern and future wireless systems require wideband antennas to accommodate various channels in a single band or in separate bands. The carrier aggregation (CA) has been introduced in the modern wireless systems such as LTE-advanced systems and 5G./6G. In CA, a device can use several channels for transmission and reception. The used channels can exist in the same frequency band (intra-band CA) or in distinct bands (inter-band CA). To accommodate more channels, more bandwidth is required within the operating band. For portable devices, circularly polarized (CP) antennas are more advantageous over linearly polarized antennas since in CP antennas, there is low risk of misalignment and, hence encountering interference. Circularly polarized antenna also provides higher link reliability for the portable devices. To provide high data rates, more bandwidth is needed to accommodate more channels. Various multifunction, compact, and wideband antennas for plethora of applications are addressed in detail in this book. The scope of developing reconfigurable active antennas for application in beam switching, beam steering, wireless charging, security systems, etc., is described. This book concludes by giving glimpses of antenna requirements for future wireless communication systems.

Low-Visibility Antennas for Communication Systems Albert Sabban 2015-09-18 Low-visibility antennas have many attractive features, such as being low-profile, flexible, lightweight, small-volume, and low-cost. Low-Visibility Antennas for Communication Systems provides explicit guidelines for the development of these antennas. Offering valuable insight into emerging antenna technologies, the book: Introduces the fundamental t

Compact and Broadband Microstrip Antennas Kin-Lu Wong 2004-04-07 Compact microstrip antennas are of great importance in meeting the miniaturization requirements of modern portable communications equipment This book is a comprehensive treatment of design techniques and test data for current compact and broadband microstrip designs Summarizes the work of the author and his graduate students who have published over 80 refereed journal articles on the subject in the past few years Advanced designs reported by various other prestigious antenna designers are incorporated as well

Microstrip Patch Antennas (Second Edition) Kai Fong Lee 2017-07-10 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.

Surface Electromagnetics Fan Yang 2019-06-20 Provides systematic coverage of the theory, physics, functional designs, and engineering applications of advanced electromagnetic surfaces.

Enabling 6G Mobile Networks Jonathan Rodriguez 2021 This book tackles the 6G odyssey, providing a concerted technology roadmap towards the 6G vision focused on the interoperability between the wireless and optical domain, including the benefits that are introduced through virtualization and software defined radio. The authors aim to be at the forefront of beyond 5G technologies by reflecting the integrated works of several major European collaborative projects (H2020-ETN-SECRET, 5GSTEPFWD, and SPOTLIGHT). The book is structured so as to provide insights towards the 6G horizon, reporting on the most recent developments on the international 6G research effort. The authors address a variety of telecom stakeholders, which includes practicing engineers on the field developing commercial solutions for 5G and beyond products; postgraduate researchers that require a basis on which to build their research by highlighting the current challenges on radio, optical and cloud-based networking for ultra-dense networks, including novel approaches; and project managers that could use the principles and applications for shaping new research proposals on this highly dynamic field. Provides a concerted technology roadmap towards the 6G vision focused on the interoperability between the wireless and optical domain; Discusses the benefits of 6G, introduced through virtualization and software defined radio; Includes concepts as well as applications to provide a base for the reader to acquire new knowledge on optical, wireless, and cloud computing.

Circularly Polarized Antennas Steven Shichang Gao 2014-02-03 This book presents a comprehensive insight into the design techniques for different types of CP antenna elements and arrays In this book, the authors address a broad range of topics on circularly polarized (CP) antennas. Firstly, it introduces to the reader basic principles, design techniques and characteristics of various types of CP antennas, such as CP patch antennas, CP helix antennas, quadrifilar helix antennas (QHA), printed quadrifilar helix antennas (PQHA), spiral antenna, CP slot antennas, CP dielectric resonator antennas, loop antennas, crossed dipoles, monopoles and CP horns. Advanced designs such as small-size CP antennas, broadband, wideband and ultra-wideband CP antennas are also discussed, as well as multi-band CP antennas and dual CP antennas. The design and analysis of different types of CP array antennas such as broadband CP patch arrays, dual-band CP arrays, CP printed slot arrays, single-band and multi-band CP reflectarrays, high-gain CP waveguide slot antennas, CP dielectric resonator antenna arrays, CP active arrays, millimetre-waveband CP arrays in LTCC, and CP arrays with electronically beam-switching or beam-steering capabilities are described in detail. Case studies are provided to illustrate the design and implementation of CP antennas in practical scenarios such as dual-band Global Navigation Satellite Systems (GNSS) receivers, satellite communication mobile terminals at the S-band, Radio Frequency Identification (RFID) readers at 2.4 GHz, and Ka-band high-speed satellite communication applications. It also includes the detailed designs for a wideband Logarithmic spiral antenna that can operate from 3.4-7.7 GHz. In addition, the book offers a detailed review of the recent developments of different types of CP antennas and arrays. Presents comprehensive discussions of design techniques for different types of CP antennas: small-size CP antennas, broadband CP antennas, multi-band CP antennas and CP arrays. Covers a wide range of antenna technologies such as microstrip antennas, helix, quadrifilar helix antenna, printed quadrifilar helix antenna, dielectric resonator antennas, printed slots, spiral antennas, monopoles, waveguide slot arrays, reflectarrays, active arrays, millimetre-wave arrays in LTCC, electronically beam-switching arrays and electronically beam-steerable arrays. Reviews recent developments in different types of CP antennas and arrays, reported by industries, researchers and academics worldwide. Includes numerous case studies to demonstrate how to design and implement different CP antennas in practical scenarios. Provides both an introduction for students in the field and an in-depth reference for antenna/RF engineers who work on the

development of CP antennas. Circularly Polarized Antennas will be an invaluable guide for researchers in R&D organizations; system engineers (antenna, telecom, space and satellite); postgraduates studying the subjects of antenna and propagation, electromagnetics, RF/microwave/millimetre-wave systems, satellite communications and so on; technical managers and professionals in the areas of antennas and propagation.

MIMO Antennas for Wireless Communication Leeladhar Malviya 2020-12-15 The desired objective of this book is to investigate diversity and mutual coupling effects on MIMO antenna designs for WLAN/WiMAX/LTE applications, controlled with diversity and ground modification techniques including equivalent circuit diagrams. Diversity techniques in MIMO antennas leading to the performance improvement ratings are demonstrated and deliberated. The book contributes towards the development of 2:1 VSWR MIMO antennas with diversity techniques for indoor/outdoor applications for high data rate, QOS, and SNR. The improved MIMO antenna structures are investigated and presented in this book including part of massive MIMO to provide the important aspects of emerging technology. Aimed at researchers, professionals and graduate students in electrical engineering, electromagnetics, communications and signal processing including antenna theory and design, smart antennas, communication systems, this book: Investigates real time MIMO antenna designs for WLAN/WiMAX/LTE applications. Covers effects of ECC, MEG, TARC, and equivalent circuit. Addresses the coupling and diversity aspects of antenna design problem for MIMO systems. Focus on the MIMO antenna designs for the real time applications. Exclusive chapter on 5G Massive MIMO along with case studies throughout the book.