

Microstrip Antenna Hfss Example

Microstrip and Printed Antenna Design
New Developments and Applications in Sensing Technology
Reconfigurable Wideband Circularly Polarized Microstrip Patch Antenna for Wireless Applications
Microstrip Antennas
Design and Applications of Active Integrated Antennas
Microstrip Antenna Design Handbook
Antennas
GPS/GNSS Antennas
Mutual Coupling Between Antennas
Proceedings of the Eighth Asia International Symposium on Mechatronics
Antennas for Wireless Sensor Network Applications
Advances in Intelligent Information Hiding and Multimedia Signal Processing
Wireless Power Transfer Algorithms, Technologies and Applications in Ad Hoc Communication Networks
Mobile Computing and Sustainable Informatics
3D Printing of Sensors, Actuators, and Antennas for Low-Cost Product Manufacturing
Microstrip Patch Antennas (Second Edition)
Advances in Signal and Data Processing
Reflectarray Antennas
Microwave Systems and Applications
Smart Intelligent Computing and Applications
Microwave Antenna Theory and Design
Fractal Signatures in the Dynamics of an Epidemology
RF Circuit Design Techniques for MF-UHF Applications
Antenna and EM Modeling with MATLAB Antenna Toolbox
ICCCE 2021
Advancement in Microstrip Antennas with Recent Applications
Reconfigurable Antenna Design and Analysis
Development of Engineered Magnetic Materials for Antenna Applications
Broadband Microstrip Antennas
Antenna Technology for Terahertz Wireless Communication

Smart Antennas
Emerging Technologies and Applications for a Smart and Sustainable World
RF Modelling and Characterization of Tyre Pressure Sensors and Vehicle Access Systems
Advanced Computing
Mechanical Engineering, Materials and Energy
Reflectarray Antennas
Millimeter Wave Technology in Wireless PAN, LAN, and MAN
Compact and Broadband Microstrip Antennas
Microstrip Antenna Design
Characteristic Modes

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2019-12-13 Randy Bancroft 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.
2011-01-22 Subhas Chandra Mukhopadhyay This book has focussed on different aspects of smart sensors and sensing technology, i.e. intelligent measurement, information processing, adaptability, recalibration, data fusion, validation, high reliability and integration of novel and high performance sensors in the areas of magnetic, ultrasonic, vision and

image sensing, wireless sensors and network, microfluidic, tactile, gyro, flow, surface acoustic wave, humidity and ultra-wide band. While future interest in this field is ensured by the constant supply of emerging modalities, techniques and engineering solutions, as well as an increasing need from aging structures, many of the basic concepts and strategies have already matured and now offer opportunities to build upon. The book has primarily been focussed for postgraduate and research students working on different aspects of design and developments of smart sensors and sensing technology.

2012 Ahmed Khidre In this thesis, developments of rectangular microstrip patch antenna to have circular polarization agility with wideband performance, for wireless applications are presented. First, a new technique to achieve circularly polarized (CP) probe feed single-layer microstrip patch antenna with wideband characteristics is proposed. The antenna is a modified form of the popular E-shaped patch, used to broaden the impedance bandwidth of a basic rectangular patch antenna. This is established by letting the two parallel slots of the E-patch unequal. Thus, by introducing asymmetry two orthogonal currents on the patch are excited and circularly polarized fields are realized. The proposed technique exhibits the advantage of the simplicity inherent in the E-shaped patch design. It requires only slot lengths, widths, and position parameters to be determined. Also, it is suitable for later adding the reconfigurable capability. With the aid of full-wave simulator Ansoft HFSS, investigations on the effect of various dimensions of the antenna have been carried out via parametric analysis. Based on these investigations, a design procedure for a CP E-shaped patch is summarized. Various design examples with different substrate thicknesses and material types are presented and compared, with CP U-slot patch antennas, recently proposed in the literature. A prototype has been constructed following the suggested design procedure to cover the IEEE 802.11b/g WLAN band. The performance of the fabricated antenna was measured and compared with the simulation results for the reflection coefficient, axial ratio, radiation pattern, and antenna gain. Good agreement is achieved between simulation and measured results

demonstrating a high gain and wideband performance. Second, a polarization reconfigurable single feed E-shaped patch antenna with wideband performance is proposed. The antenna is capable of switching from right-hand circular polarization (RHCP) to left-hand circular polarization (LHCP) and vice versa, with the aid of two RF PIN diodes that act as RF switches. The proposed structure which is simple; consists of a single-layer single fed radiating E-shaped patch and RF switch placed on each of its slots at an appropriate location. The design targets WLAN IEEE 802.11b/g frequency band (2.4- 2.5 GHz) as one example of the wireless applications. The idea is based on the first proposed design. In other words, if one of the switches is ON and the other is OFF, the two slot lengths will become effectively unequal and circular polarization will be obtained. If the states of the two switches are reversed, circular polarization with opposite orientation will be obtained at the same frequency band. Full-wave simulator Ansoft HFSS is again used for the analysis. Complete detailed DC biasing circuit of the switches for integration with the antenna is presented. Also, characterizations of the microwave components used in the biasing circuit are discussed. Antenna prototype has been fabricated and tested. Simulation results along with the measured one, for the reflection coefficient, axial ratio, radiation pattern, and antenna gain agree well, showing wide bandwidth and high gain for the two circularly polarized modes.

2011-04-04 N Nasimuddin In the last 40 years, the microstrip antenna has been developed for many communication systems such as radars, sensors, wireless, satellite, broadcasting, ultra-wideband, radio frequency identifications (RFIDs), reader devices etc. The progress in modern wireless communication systems has dramatically increased the demand for microstrip antennas. In this book some recent advances in microstrip antennas are presented.

2018-05-31 Mohammad S. Sharawi This comprehensive new resource guides professionals in the latest methods used when designing active integrated antennas (AIA) for wireless communication devices for various standards. This book provides complete design procedures for the various elements of such active integrated antennas such as the

matching network, the amplifier/active element as well as the antenna. This book offers insight into how active integration and co-design between the active components (amplifier, oscillator, mixer, diodes) and the antenna can provide better power transfer, higher gains, increased efficiencies, switched beam patterns and smaller design footprints. It introduces the co-design approach of active integrated antennas and its superior performance over conventional methods. Complete design examples are given of active integrated antenna systems for narrow and wideband applications as well as for multiple-input-multiple-output (MIMO) systems. Readers find the latest design methods for narrow and broadband RF matching networks. This book provides a complete listing of performance metrics for active integrated antennas. The book serves as a complete reference and design guide in the area of AIA.

2001 Ramesh Garg 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.

2008-09-15 Yi Huang Practical, concise and complete reference for the basics of modern antenna design *Antennas: from Theory to Practice* discusses the basics of modern antenna design and theory. Developed specifically for engineers and designers who work with radio communications, radar and RF engineering, this book offers practical and hands-on treatment of antenna theory and techniques, and provides its readers the skills to analyse, design and measure various antennas. Key features: Provides thorough coverage on the basics of transmission lines, radio waves and propagation, and antenna analysis and design Discusses industrial standard design software tools, and antenna measurement equipment, facilities and techniques Covers electrically

small antennas, mobile antennas, UWB antennas and new materials for antennas Also discusses reconfigurable antennas, RFID antennas, Wideband and multi-band antennas, radar antennas, and MIMO antennas Design examples of various antennas are provided Written in a practical and concise manner by authors who are experts in antenna design, with experience from both academia and industry This book will be an invaluable resource for engineers and designers working in RF engineering, radar and radio communications, seeking a comprehensive and practical introduction to the basics of antenna design. The book can also be used as a textbook for advanced students entering a profession in this field.

2013 B. Rama Rao Introduction to GNSS antenna performance parameters -- FRPAs and high-gain directional antennas -- Multiband, handset, and active GNSS antennas -- Adaptive GPS antennas -- Ground plane, aircraft fuselage, and other platform effects on GPS antennas -- Measurement of the characteristics of GNSS antennas -- Antennas and site considerations for precise applications.

2021-06-28 Trevor S. Bird *Mutual Coupling Between Antennas* A guide to mutual coupling between various types of antennas in arrays such as wires, apertures and microstrip patches or antennas co-sited on platforms *Mutual Coupling Between Antennas* explores the theoretical underpinnings of mutual coupling, offers an up-to-date description of the physical effects of mutual coupling for a variety of antennas, and contains techniques for analysing and assessing its effects. The book puts the topic in historical context, presents an integral equation approach, includes the current techniques, measurement methods, and discusses the most recent advances in the field. With contributions from noted experts on the topic, the book reviews practical aspects of mutual coupling and examines applications that clearly demonstrate where the performance is impacted both positively and negatively. *Mutual Coupling Between Antennas* contains information on how mutual coupling can be analysed with a wide range of methods from direct computer software using discrete methods, to integral equations and Greens function methods as well as approximate asymptotic methods. This important

text: Provides a theoretical background for understanding mutual coupling between various types of antennas Describes the interaction that occurs between antennas, both planned and unplanned Explores a key aspect of arrays in any wireless, radar or sensing system operating at radio frequencies Offers a groundbreaking book on antenna mutual coupling Written for antenna engineers, technical specialists, researchers and students, Mutual Coupling Between Antennas is the first book to examine mutual coupling between various types of antennas including wires, horns, microstrip patches, MIMO antennas, co-sited antennas and arrays in planar or conformal configurations.

2022-07-12 Baoyan Duan The book presents high-quality papers from the Eighth Asia International Symposium on Mechatronics (AISM 2021). It discusses the latest technological trends and advances in electromechanical coupling and environmental adaptability design of electronic equipment, sensing and measurement, mechatronics in manufacturing and automations, energy harvesting & storage, robotics, automation and control systems. It includes papers based on original theoretical, practical and experimental simulations, development, applications, measurements, and testing. The applications and solutions discussed in the book provide excellent reference material for future product development.

2008 Griogair W. M. Whyte The objective of this thesis is to present an analysis of antennas, which are applicable to wireless sensor networks and, in particular, to the requirements of the Speckled Computing Network Consortium. This was done through a review of the scientific literature on the subject, and the design, computer simulation, and experimental verification, of various suitable designs of antenna The first part of this thesis outlines what an antenna is and how it radiates. An insight is also given to the fundamental limitations of antennas. As antennas investigated in this thesis are planar-printed designs, an insight into the types of feed lines applicable, such as microstrip, CPW and slotline, is given. To help characterise the antennas investigated, the fundamental antenna analysis parameters, such as impedance bandwidth, S-parameters, radiation pattern, directivity, antenna

efficiency, gain and polarisation are discussed. Also discussed is the 3D electromagnetic simulation software, HFSS, which was used to simulate the antennas in this thesis. To help illustrate the use of HFSS, a proximity-coupled patch antenna, operating at 5.8 GHz, was used as an example. A range of antennas were designed, manufactured and tested. These used conventional printed circuit boards (PCBs) and Gallium Arsenide (GaAs) substrates, operating at a range of frequencies from 2.4 GHz to 12 GHz. A review was conducted into relevant, suitable radio architectures such as, conventional narrowband systems, Ultra-Wide Band (UWB), and simplified radio architectures such as those based on the diode rectifier method, and Super Regenerative Receivers (SRR). There were several UWB antennas designed, which operate over a 3.1 Å-10.16 GHz operational band with a VSWR = 2. All the UWB antennas were required to transmit a UWB pulse with minimal distortion, which placed a requirement of linear phase and low values of group delay to minimise distortion on the pulse. UWB antennas investigated included a Vivaldi antenna, which was large, directional and gave excellent pulse transmission characteristics. A CPW-fed monopole was also investigated, which was small, omni-directional and had poor pulse transmission characteristics. A UWB dipole was designed for use in a UWB channel modelling experiment in collaboration with Strathclyde University. The initial UWB dipole investigated was a microstrip-fed structure that had unpredictable behaviour due to the feed, which excited leakage current down the feed cable and, as a result, distorted both the radiation pattern and the pulse. To minimise the leakage current, three other UWB dipoles were investigated. These were a CPW-fed UWB dipole with slots, a hybrid-feed UWB dipole, and a tapered-feed UWB dipole. Presented for these UWB dipoles are S-parameter results, obtained using a vector network analyser, and radiation pattern results obtained using an anechoic chamber. There were several antennas investigated in this thesis directly related to the Speckled Computing Consortiums objective of designing a 5mm³ 'Speck'. These antennas were conventional narrowband antenna designs operating at either 2.45 GHz or 5.8 GHz. A Rectaxial antenna was designed at 2.45 GHz, which had excellent

matching ($S_{11} = -20\text{dB}$) at the frequency of operation, and an omnidirectional radiation pattern with a maximum gain of 2.69 dBi as measured in a far-field anechoic chamber. Attempts were made to increase the frequency of operation but this proved unsuccessful. Also investigated were antennas that were designed to be integrated with a 5.8 GHz MMIC transceiver. The first antenna investigated was a compact-folded dipole, which provided an insight into miniaturisation of antennas and the effect on antenna efficiency. The second antenna investigated was a 'patch' antenna. The 'patch' antenna utilised the entire geometry of the transceiver as a radiation mechanism and, as a result, had a much improved gain compared to the compact-folded dipole antenna. As the entire transceiver was an antenna, an investigation was carried into the amount of power flow through the transceiver with respect to the input power.

2021-04-20 Jeng-Shyang Pan This book presents selected papers from the Sixteenth International Conference on Intelligent Information Hiding and Multimedia Signal Processing, in conjunction with the Thirteenth International Conference on Frontiers of Information Technology, Applications and Tools, held on November 5-7, 2020, in Ho Chi Minh City, Vietnam. It is divided into two volumes and discusses the latest research outcomes in the field of Information Technology (IT) including information hiding, multimedia signal processing, big data, data mining, bioinformatics, database, industrial and Internet of things, and their applications.

2016-11-18 Sotiris Nikolettas This book is the first systematic exposition on the emerging domain of wireless power transfer in ad hoc communication networks. It selectively spans a coherent, large spectrum of fundamental aspects of wireless power transfer, such as mobility management in the network, combined wireless power and information transfer, energy flow among network devices, joint activities with wireless power transfer (routing, data gathering and solar energy harvesting), and safety provisioning through electromagnetic radiation control, as well as fundamental and novel circuits and technologies enabling the wide application of wireless powering. Comprising a total of

27 chapters, contributed by leading experts, the content is organized into six thematic sections: technologies, communication, mobility, energy flow, joint operations, and electromagnetic radiation awareness. It will be valuable for researchers, engineers, educators, and students, and it may also be used as a supplement to academic courses on algorithmic applications, wireless protocols, distributed computing, and networking. 2022-07-15 Subarna Shakya This book gathers selected high-quality research papers presented at International Conference on Mobile Computing and Sustainable Informatics (ICMCSI 2022) organized by Pulchowk Campus, Institute of Engineering, Tribhuvan University, Nepal, during 27-28 January 2022. The book discusses recent developments in mobile communication technologies ranging from mobile edge computing devices, to personalized, embedded and sustainable applications. The book covers vital topics like mobile networks, computing models, algorithms, sustainable models and advanced informatics that supports the symbiosis of mobile computing and sustainable informatics.

2023-02-10 Rupinder Singh This book discusses the 3D printing of sensors, actuators, and antennas and illustrates how manufacturers can create smart materials that can be effectively used to prepare low-cost products. The book also includes how to select the appropriate process for your manufacturing needs. 3D Printing of Sensors, Actuators, and Antennas for Low-Cost Product Manufacturing offers the most recent developments in 3D printing of sensors, actuators, and antennas for low-cost product manufacturing; the book highlights some of the commercially available low-cost 3D printing processes that have higher efficiency and accuracy. Fundamental principles and working methodologies are presented with a critical review of the past work involved and current trends with future predictions. It covers composite and polymeric materials widely used and specifically focuses on low-cost elements. Recent breakthroughs and advantages in product manufacturing when printing smart materials are also discussed. Manufacturing engineers, product designers, manufacturing industries, as well as graduate students, and research scholars will find this book very useful for their work and studies.

2017-07-10 Kai Fong Lee 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.

2021-01-11 S. N. Merchant This book presents the select peer-reviewed proceedings of the International Conference on Signal and Data Processing (ICSDP) 2019. It examines and deliberates on the recent progresses in the areas of communication and signal processing. The book includes topics on the recent advances in the areas of wired and wireless communication, low complexity architecture of MIMO receivers, applications on wireless sensor networks and internet of things, signal processing, image processing and computer vision, VLSI embedded systems, cognitive networks, power electronics and automation, mechatronics based applications, systems and control, cognitive science and machine intelligence, information security and big data. The contents of this book will be useful for beginners, researchers, and professionals interested in the area of communication, signal processing, and allied fields.

2018-02-23 Payam Nayeri 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.

2017-01-11 Sotirios Goudos Microwave systems are key components of every modern wireless communication system. The main objective of this book was to collect as many different state-of-the-art studies as possible in order to cover in a single volume the main aspects of microwave systems and applications. This book contains 17 chapters written by acknowledged experts, researchers, academics, and microwave engineers, providing comprehensive information and covering a wide range of topics on all aspects of microwave systems and applications. This book is divided into four parts. The first part is devoted to microwave components. The second part deals with microwave ICs and innovative techniques for on-chip antenna design. The third part presents antenna design cases for microwave systems. Finally, the last part covers different applications of microwave systems.

2018-10-01 Suresh Chandra Satapathy The proceedings covers advanced and multi-disciplinary research on design of smart computing and informatics. The theme of the book broadly focuses on various innovation paradigms in system knowledge, intelligence and sustainability that may be applied to provide realistic solution to varied problems in society, environment and industries. The volume publishes quality work pertaining to the scope of the conference which is extended towards deployment of emerging computational and knowledge transfer approaches, optimizing solutions in varied disciplines of science, technology and healthcare.

1962 Samuel Silver

2023-12-01 Santo Banerjee The recent COVID-19 pandemic threw the world into complete chaos with its rapid and devastating spread. Scientists are still trying to obtain a better understanding of the patterns of COVID-19 and trying to get a deeper understanding of mutant strains and their pathogenicity by performing genomic sequences of more samples. Fractal-based analysis provides its unique forecasting policy to reduce the spread of COVID-19, and in general, of any outbreaks. The book presents fractal and multifractal models of COVID-19 and reviews the impact of the pandemic including epidemiology, genome organization, transmission cycle, and control strategies based on mathematical models towards developing an immune intervention. Also, it covers non-clinical aspects such as economic development with graphical illustrations, meeting the needs of onlookers outside the sector who desire additional information on the epidemic. The fractal signatures describe the fractal textures in the patterns of Coronavirus. Studies on the epidemiology of COVID-19 in relation with the fractals and fractal functions serve to exhibit its irregular chaotic nature. Moreover, the book with its wide coverage on the Hurst exponent analysis and the fractal dimension estimation, greatly aids in measuring the epidemiology.

2017-12-19 Abdullah Eroglu Magnetic resonance imaging, semiconductor processing, and RFID are some of the critical applications within the medium frequency (MF) to ultrahigh frequency (UHF) range that require RF designers to have a solid understanding of analytical and experimental RF techniques. Designers need to be able to design components and devices cost effectively, and integrate them with high efficiency, minimal loss, and required power. Computer-aided design (CAD) tools also play an important part in helping to reduce costs and improve accuracy through optimization. RF Circuit Design Techniques for MF-UHF Applications explains how to design, simulate, and implement RF/microwave components and devices for applications within the medium frequency (MF) to ultrahigh frequency (UHF) range. The book makes RF design simple by expertly blending theory, simulation, and practical application examples. A Practical Guide to RF Circuit Design in the MF-UHF Range: Theory, Simulation, and Real-

World Application Examples After a review of network parameters used in the analysis of RF components and devices, the book examines MF-UHF design techniques in detail. These include techniques for designing high-power microstrip circuits, directional couplers, transformers, composite and multilayer inductors, filters, combiners/dividers, and RFID systems. For every device, the book gives the required theory and then explains the verification process with CAD tools. In addition, each design is illustrated with real-life implementation examples that use a variety of CAD tools such as MATLAB®, Mathcad, HFSS™, Ansoft Designer®, Sonnet®, and PSpice®. Design tables, curves, and charts are included to demonstrate an efficient design process. Throughout, the book also offers practical hints to help engineers shorten the design time. Design MF-UHF Devices More Cost-Effectively The book reflects the optimum design methodology used in RF engineering, from the application of theory, to simulation for verification, to experimentation. Packed with useful techniques, tips, and examples, it is an invaluable resource for engineers, researchers, and students working in the MF-UHF range.

2021-05-11 Sergey N. Makarov ANTENNA AND EM MODELING WITH MATLAB ANTENNA TOOLBOX™ An essential text to MATLAB Antenna Toolbox™ as accessible and easy-to-use full-wave antenna modeling tool Antenna and EM Modeling with MATLAB Antenna Toolbox™ is a textbook on antennas intended for a one semester course. The core philosophy is to introduce the key antenna concepts and follow them up with full-wave modeling and optimization in the MATLAB Antenna Toolbox™. Such an approach will enable immediate testing of theoretical concepts by experimenting in software. It also provides the direct path to research work. The fundamental families of antennas — dipoles, loops, patches, and traveling wave antennas — are discussed in detail, together with the respective antenna arrays. Using antenna parameters such as impedance, reflection coefficient, efficiency, directivity, and gain, the reader is introduced to the different ways of understanding the performance of an antenna. Written for senior undergraduates, graduates as well as RF/Antenna engineers, Antenna and EM Modeling with Antenna Toolbox™ is a resource that: Provides 14 video assisted

laboratories on using Antenna Toolbox™ Includes approximately 50 real-world examples in antenna and array design Offers approximately 200 homework problems Provides multiple ready-to-use standalone MATLAB® scripts

2022-05-15 Amit Kumar This book is a collection of research articles presented at the 4th International Conference on Communications and Cyber-Physical Engineering (ICCCE 2021), held on April 9 and 10, 2021, at CMR Engineering College, Hyderabad, India. ICCCE is one of the most prestigious conferences conceptualized in the field of networking and communication technology offering in-depth information on the latest developments in voice, data, image, and multimedia. Discussing the latest developments in voice and data communication engineering, cyber-physical systems, network science, communication software, image, and multimedia processing research and applications, as well as communication technologies and other related technologies, it includes contributions from both academia and industry. This book is a valuable resource for scientists, research scholars, and PG students working to formulate their research ideas and find the future directions in these areas. Further, it may serve as a reference work to understand the latest engineering and technologies used by practicing engineers in the field of communication engineering.

2013-03-06 Ahmed Kishk 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.

2021-05-31 Mohammad Ali This exciting new book focuses on the analysis and design of reconfigurable antennas for modern wireless communications, sensing, and radar. It presents the definitions of basic antenna parameters, an overview of RF switches and explains how to characterize their insertion loss, isolation, and power handling issues. Basic reconfigurable antenna building blocks, such as dipoles, monopoles, patches and slots are described, followed by presentations on frequency reconfigurable antennas, pattern reconfigurable antennas, and basic scanning antenna arrays. Switch biasing in an electromagnetic environment is discussed, as well as simulation strategies of reconfigurable antennas, and MIMO (Multiple Input Multiple Output) reconfigurable antennas. Performance characterization of reconfigurable antennas is also presented. The book provides information for the technical professional to design frequency reconfigurable, pattern reconfigurable, and MIMO antennas all relevant for modern wireless communication systems. Readers learn how to select switching devices, bias them properly, and understand their role in the overall reconfigurable antenna design. The book presents practical experimental implementation issues, including losses due to switches, materials, and EMI (Electromagnetic Interference) and shows how to address those.

2005 Kevin Buell

2003 Girish Kumar A guide to broadband microstrip antennas, offering information to help you choose and design the optimum broadband microstrip antenna configurations for your applications, without sacrificing other antenna parameters. The text shows you how to take advantage of the light-weight, low volume benefits of these antennas, by providing explanations of the various configurations and simple design equations that help you analyze and design microstrip antennas with speed and confidence. This practical resource presents an understanding of the radiation mechanism and characteristics of microstrip antennas, and provides guidance on designing new types of planar monopole antennas with multi-octave bandwidth. The authors explore how to select

and design proper broadband microstrip antenna configurations for compact, tunable, dual-band and circular polarization applications. Moreover, the work compares all the broadband techniques and suggests the most attractive configuration.

2023-07-11 Uri Nissanov This book discusses terahertz (THz) wireless communication, particularly for 6G enabling technologies, including antenna design, and channel modeling with channel characteristics for the success of reliable 6G wireless communication. The authors describe THz microstrip antenna technologies with different substrates and introduce some useful substrates to reduce the conductor and substrate losses at the THz frequencies. The discussion also includes the design of the THz unit-cell microstrip antenna and the techniques to boost the microstrip antennas' gain, directivity, and impedance bandwidth (BW), which influence the wireless communication range which is highly affected by the path losses of atmospheric conditions, and transmit and receive data rates, respectively. Moreover, this book discusses the multi-beam and beamforming THz antenna technologies with the multi-user-multiple-input-multiple-output (MU-MIMO) features. Additionally, this book describes the reconfigurable capabilities, artificial intelligence, machine learning, and deep learning technologies that will influence the success of 6G wireless communication and the authors suggest a remedy for integrating multiple radios into the system-on-chip (SoC) design.

2022-02-03 Praveen Kumar Malik This book presents the latest techniques for the design of antenna, focusing specifically on the microstrip antenna. The authors discuss antenna structure, defected ground, MIMO, and fractal design. The book provides the design of microstrip antenna in terms of latest applications and uses in areas like IoT and device-to-device communication. The book also provides the current methods and techniques used for the enhancement of the performance parameters of the microstrip antenna. Chapters enhance the knowledge and skills of students and researchers in the latest in the communications world like IoT, D2D, satellite, wearable devices etc. The authors discuss applications such as microwave imaging, medical implants, hyperthermia treatments, and wireless wellness monitoring

and how a decrease in size of antenna help facilitate application potential. Provides the latest techniques used for the design of antenna in terms of its structure, defected ground, MIMO and fractal design; Outlines steps to resolve issues with designing antenna, including the latest design and design parameters for microstrip antenna; Presents the design of conformal and miniaturized antenna structures for various applications.

2022-09-12 Akhil Jabbar Meerja This reference distills information about emerging technologies and applications for smart city design and sustainable urban planning. Chapters present technology use-cases that have radical novelty and high scalability with a prominent impact on community living standards. These technologies prepare urban and rural dwellings for the transformation to the smart world. Applications and techniques highlighted in the book use a combination of artificial intelligence and IoT technologies in areas like transportation, energy, healthcare, education, governance, and manufacturing, to name a few. The book serves as a learning resource for smart city design and sustainable infrastructure planning. Scholars and professionals who are interested in understanding ways for transforming communities into smart communities can also benefit from the cases presented in the book.

2015-05-12 Brzeska, Malgorzata Dominika

2021-02-10 Deepak Garg This two-volume set (CCIS 1367-1368) constitutes reviewed and selected papers from the 10th International Advanced Computing Conference, IACC 2020, held in December 2020. The 65 full papers and 2 short papers presented in two volumes were thoroughly reviewed and selected from 286 submissions. The papers are organized in the following topical sections: Application of Artificial Intelligence and Machine Learning in Healthcare; Using Natural Language Processing for Solving Text and Language related Applications; Using Different Neural Network Architectures for Interesting applications; Using AI for Plant and Animal related Applications.- Applications of Blockchain and IoT.- Use of Data Science for Building Intelligence Applications; Innovations in Advanced Network

Systems; Advanced Algorithms for Miscellaneous Domains; New Approaches in Software Engineering.

2011-12-22 Grace Chang These are selected papers from the 2011 International Conference on Mechanical Engineering, Materials and Energy, ICMEME2011, held in Dalian. The papers reveal the latest developments, in the field of Mechanical Engineering, Materials and Energy ... from fundamentals to new technologies and applications. In particular, they cover the topics of Mechatronics and Automation, Mechanical Manufacturing Systems, Signal Processing, Manufacturing Technology and Processing and Materials Science and Technology.

2018-02-20 Payam Nayeri 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, em style="mso-bidi-font-style: normal;"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.

2008-05-28 Shao-Qiu Xiao Driven by the demand for high-data-rate, millimeter wave technologies with broad bandwidth are being explored in high-speed wireless communications. These technologies include gigabit wireless personal area networks (WPAN), high-speed wireless local area networks (WLAN), and high-speed wireless metropolitan area networks (WMAN). As a result of this technological push, standard organizations are actively calling for specifications of millimeter wave applications in the above wireless systems. Providing the guidance

needed to help you navigate through these new technologies, Millimeter Wave Technology in Wireless PAN, LAN, and MAN covers the fundamental concepts, recent advances, and potential that these millimeter wave technologies will offer with respect to circuits design, system architecture, protocol development, and standardization activities. The book presents essential challenges and solutions related to topics that include millimeter wave monolithic integrated circuit (MMIC), packaging technology of millimeter wave system and circuits, and millimeter wave channel models. With numerous figures, tables and references, this text allows speedy access to the fundamental problems, key challenges, open issues, future directions, and further readings on millimeter wave technologies in relation to WPAN, WLAN, and WMAN. 2004-04-07 Kin-Lu Wong 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 1988 K. C. Gupta

2015-06-15 Yikai Chen Describes how to systematically implement various characteristic mode (CM) theories into designs of practical antenna systems This book examines both theoretical developments of characteristic modes (CMs) and practical developments of CM-based methodologies for a variety of critical antenna designs. The book is divided into six chapters. Chapter 1 provides an introduction and discusses the recent advances of the CM theory and its applications in antenna engineering. Chapter 2 describes the formulation of the characteristic mode theory for perfectly electrically conducting (PEC) bodies and discusses its numerical implementations. Chapter 3 presents the CM theory for PEC structures embedded in multilayered medium and its applications. Chapter 4 covers recent advances in CM theory for dielectric bodies and also their applications. Chapter 5 discusses the CM

theory for N-port networks and its applications to the design of antenna arrays. Finally, Chapter 6 discusses the design of platform-integrated antenna systems using characteristic modes. This book features the following: Introduces characteristic mode theories for various electromagnetic structures including PEC bodies, structures in multilayered medium, dielectric bodies, and N-port networks Examines CM applications in electrically small antennas, microstrip patch

antennas, dielectric resonator antennas, multipoint antennas, antenna arrays, and platform mounted antenna systems Discusses numerical algorithms for the implementation of the characteristic mode theories in computer code Characteristic Modes: Theory and Applications in Antenna Engineering will help antenna researchers, engineers, and students find new solutions for their antenna design challenges.