

A Compact Microstrip Patch Antenna For Lte Applications

This book is a collection research papers and articles from the 2nd International Conference on Communications and Cyber-Physical Engineering (ICCCE – 2019), held in Pune, India in Feb 2019. 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.

Compact and Broadband Microstrip Antennas John Wiley & Sons

This book provides insights into the First International Conference on Communication, Devices and Computing (ICCDC 2017), which was held in Haldia, India on November 2–3, 2017. It covers new ideas, applications and the experiences of research engineers, scientists, industrialists, scholars and students from around the globe. The proceedings highlight cutting-edge research on communication, electronic devices and computing, and address diverse areas such as 5G communication, spread spectrum systems, wireless sensor networks, signal processing for secure communication, error control coding, printed antennas, analysis of wireless networks, antenna array systems, analog and digital signal processing for communication systems, frequency selective surfaces, radar communication, and substrate integrated waveguide and microwave passive components, which are key to state-of-the-art innovations in communication technologies.

This proceedings book showcases the latest research work presented at the Second Edition of the Mediterranean Symposium on Smart City Application (SCAMS 2017), which was held in Tangier, Morocco on October 15–27, 2017. It presents original research results, new ideas and practical development experiences that concentrate on both theory and practice. It includes papers from all areas of Smart City Applications, e.g. Smart Mobility, Big Data, Smart Grids, Smart Homes and Buildings, clouds, crowds, mashups, social networks, and security issues. The conference stimulated cutting-edge research discussions among pioneering researchers, scientists, industrial engineers, and students from all around the world. The topics covered in this book also focus on innovative issues at the international level by bringing together experts from different countries. The scope of SCAMS 2017 included methods and practices that combine various emerging internetworking and data technologies to capture, integrate, analyze, mine, annotate, and visualize data in a meaningful and collaborative manner. A series of international workshops were organized as invited sessions during the SCAMS 2017: The 2nd International Workshop on Smart Learning & Innovative Educations The 1st International Workshop on Smart Healthcare The 1st International Workshop on Mathematics for Smart City The 1st International Workshop Industry 4.0 and Smart Manufacturing This book comprises select proceedings of the 4th International Conference on

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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.

This book presents selected papers from the 3rd International Conference on Micro-Electronics and Telecommunication Engineering, held at SRM Institute of Science and Technology, Ghaziabad, India, on 30-31 August 2019. It covers a wide variety of topics in micro-electronics and telecommunication engineering, including micro-electronic engineering, computational remote sensing, computer science and intelligent systems, signal and image processing, and information and communication technology.

Besides lot of advantages of Microstrip Patch Antenna some severe limitations like narrow bandwidth, low power output, low gain hindered it to use in some application specially where wideband, high gain & high power is essential. In modern days researchers are concentrated to overcome these limitations. The design of dual or multi-frequency patch antennas are also very much important because any one can use a single antenna instead of two or more antenna operating in the single frequency. Compact microstrip patch antenna design is also important in modern days as the area is a major constrained in the MMIC design. In this book new and novel approaches to design dual, multi-frequency, compact and broadband microstrip patch antennas are discussed which are very new and published in different international journals by the author. This book constitutes of eight chapters among which first three chapters are about the basic concept and the last one is for major findings and future scope of work for the young researchers. Other four chapters are for novel approaches for designing different types of microstrip patch antennas.

This book presents select papers from the International Conference on Emerging Trends in Communication, Computing and Electronics (IC3E 2018). Covering the latest theories and methods in three related fields – electronics, communication and computing, it describes cutting-edge methods and applications in the areas of signal and image processing, cyber security, human-computer interaction, machine learning, electronic devices, nano-electronics, wireless sensor networks, antenna and wave propagation, and mobile communication. The contents of this book will be beneficial to students, researchers, and professionals working in the field of networks and communications.

"This anthology combines 15 years of microstrip antenna technology research into one significant volume and includes a special introductory tutorial by the co-

editors. Covering theory, design and modeling techniques and methods, this source book is an excellent reference tool for engineers who want to become more familiar with microstrip antennas and microwave systems. Proven antenna designs, novel solutions to practical design problems and relevant papers describing the theory of operation and analysis of microstrip antennas are contained within this convenient reference."

This book focuses on recent advances in the field of microstrip antenna design and its applications in various fields including space communication, mobile communication, wireless communication, medical implants and wearable applications. Scholars as well as researchers and those in the electronics/ electrical/ instrumentation engineering fields will benefit from this book. The book shall provide the necessary literature and techniques using which to assist students and researchers would design antennas for the above-mentioned applications and will ultimately enable users to take measurements in different environments. It is intended to help scholars and researchers in their studies, by enhancing their the knowledge and skills in on the latest applications of microstrip antennas in the world of communications such as world like IoT, D2D, satellites and wearable devices, to name a few. FEATURES Addresses the complete functional framework workflow in printed antenna design systems Explores the basic and high-level concepts, including advanced aspects in planer design issues, thus serving as a manual for those in the the industry while also assisting beginners Provides the latest techniques used for antennas in terms of structure, defected ground, MIMO and fractal designs Discusses case studies related to data-intensive technologies in microchip antennas in terms of the most recent applications and similar uses for the Internet of Things and device-to-device communication

This volume contains 87 papers presented at FICTA 2014: Third International Conference on Frontiers in Intelligent Computing: Theory and Applications. The conference was held during 14-15, November, 2014 at Bhubaneswar, Odisha, India. This volume contains papers mainly focused on Network and Information Security, Grid Computing and Cloud Computing, Cyber Security and Digital Forensics, Computer Vision, Signal, Image & Video Processing, Software Engineering in Multidisciplinary Domains and Ad-hoc and Wireless Sensor Networks.

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

systems; conical conformal microstrip tracking antenna; and microstrip field diagnostics.

The book focuses on soft computing and its applications to solve real-world problems in different domains, ranging from medicine and health care, to supply chain management, image processing and cryptanalysis. It includes high-quality papers presented at the International Conference on Soft Computing: Theories and Applications (SoCTA 2018), organized by Dr. B. R. Ambedkar National Institute of Technology, Jalandhar, Punjab, India. Offering significant insights into soft computing for teachers and researchers alike, the book inspires more researchers to work in the field of soft computing.

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.

The conference provides an overview of the state of the art developments and innovations in Antennas, Propagation, and Measurements, highlighting the latest requirements for future applications

This book is a collection of the best research papers presented at the 8th International Conference on Innovations in Electronics and Communication Engineering at Guru Nanak Institutions Hyderabad, India. Featuring contributions by researchers, technocrats and experts, the book covers various areas of communication engineering, like signal processing, VLSI design, embedded systems, wireless communications, and electronics and communications in general, as well as cutting-edge technologies. As such, it is a valuable reference resource for young researchers.

This two-volume set constitutes the refereed post-conference proceedings of the 8th International Conference on Advancement of Science and Technology, ICAST 2020, which took place in Bahir Dar, Ethiopia, in October 2020. The 74 revised full papers were carefully reviewed and selected from more than 200 submissions of which 157 were sent out for peer review. The papers present economic and technologic developments in modern societies in 6 tracks: Chemical, food and bio-process engineering; Electrical and computer engineering; IT, computer science and software engineering; Civil, water resources, and environmental engineering; Mechanical and industrial engineering; Material science and engineering.

This conference proceedings summarizes invited publications from the two IDES (Institute of Doctors Engineers and Scientists) International conferences, both held in Bangalore/ India. Compact antennas are a subject of growing interest from industry and scientific community to

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equip wireless communicating objects. The need for high performance small antennas and RF front ends is the challenge for future and next generation mobile devices. This book brings the body of knowledge on compact antennas into a single comprehensive volume. It is designed to meet the needs of electrical engineering and physics students to the senior undergraduate and beginning graduate levels, and those of practicing engineers.

This book constitutes the proceedings of the First International Conference on Emerging Trends in Engineering (ICETE), held at University College of Engineering and organised by the Alumni Association, University College of Engineering, Osmania University, in Hyderabad, India on 22–23 March 2019. The proceedings of the ICETE are published in three volumes, covering seven areas: Biomedical, Civil, Computer Science, Electrical & Electronics, Electronics & Communication, Mechanical, and Mining Engineering. The 215 peer-reviewed papers from around the globe present the latest state-of-the-art research, and are useful to postgraduate students, researchers, academics and industry engineers working in the respective fields. Volume 2 presents papers on the theme “Advances in Decision Sciences, Image Processing, Security and Computer Vision – International Conference on Emerging Trends in Engineering (ICETE)”. It includes state-of-the-art technical contributions in the areas of electronics and communication engineering and electrical and electronics engineering, discussing the latest sustainable developments in fields such as signal processing and communications; GNSS and VLSI; microwaves and antennas; signal, speech and image processing; power systems; and power electronics.

The increasing demand for wireless communications has revolutionised the lifestyle of today's society and one of the key components of wireless technology is antenna design. Broadband planar antennas are the newest generation of antennas boasting the attractive features required, such as broad operating bandwidth, low profile, light weight, low cost and ease of integration into arrays or Radio Frequency (RF) circuits, to make them ideal components of modern communications systems. Research into small and broadband antennas has been spurred by the rapid development of portable wireless communication devices such as cell phones, laptops and personal digital assistants. This all-encompassing volume, *Broadband Planar Antennas: Design and Applications*, systematically describes the techniques for all planar antennas from microstrip patch antennas, suspended plate antennas and planar inverted-L/F antennas to planar dipole antennas. Also discussed are some of the most recent outcomes such as broadband antenna issues in promising ultra-wideband applications. Clearly describes the fundamentals of planar antennas and categorises them according to their radiation characteristics Introduces the advanced progress in broadband planar antennas for modern wireless communications Includes a wealth of case studies, design guidelines, figures and tables This text is essential reading for antenna, RF and microwave engineers and manufacturers within the telecommunications industry. Its highly accessible approach will also appeal to researchers, postgraduate students and academic lecturers.

This book describes about the experimental and simulation work carried out on rectangular microstrip antennas (RMAs). The various RMAs have been designed and fabricated on easily available, low cost FR4 dielectric material at S-band frequency. The patch element (radiator) is excited using co-axial probe feed technique. The effect of slots, slits, stubs in enhancing the various antenna parameters such as compactness, impedance bandwidth and gain are studied in detail. Compactness, impedance bandwidth and gain of RMA has been enhanced using various techniques such as patch with slots, slits on patch, stubs loaded patch on 0.16 cm thick dielectric material with inverted patch configuration having air as a substrate medium. With these techniques, a compactness of 78%, 12.41% of bandwidth. It is also concluded that by etching the various slits on the patch having a superstrate thickness of 0.24 cm (2.4 mm thick Yagi-RMA and 2.4 mm thick H-RMA). This technique reduced the maximum physical size (compactness) of the antenna upto 98.3 % with a gain of 7.13 dB. These antennas may find

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applications in the wireless, microwave communication systems operating in L and S band of frequency range.

The book comprises selected papers presented at the International Conference on Wireless Communication (ICWiCOM), which is organized by D. J. Sanghvi College of Engineering's Department of Electronics and Telecommunication Engineering. 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 – networking, antenna designs and embedded systems applicable to communication – it is a valuable resource for postgraduate and doctoral students.

Scientific Study from the year 2021 in the subject Engineering - Communication Technology, , course: M. Tech, language: English, abstract: Microstrip patch antenna is used to send onboard parameters of article to the ground while under operating conditions. By the study of this book we find out how to investigate a new method of teaching microstrip patch antenna design for undergraduate students by using MATLAB. Effect of changes in basic parameter microstrip patch antenna on its radiation pattern and other parameters to study the effect of resonant frequency and substrate parameters like, relative dielectric constant, substrate thickness on the radiation parameters of bandwidth and physical dimension of the microstrip patch antenna can be determined by using GUI. In this book we develops simple CAD (GUI) formulas that describe the basic properties of microstrip patch antenna using MATLAB. By the usage of this teaching tool we can analyze the behaviour of the microstrip patch antenna and design of it for different material. Satellite communication and wireless communication has been developed rapidly in the past decades and it has already a dramatic impact on human life. In the last few years, the development of wireless local area networks (WLAN) represented one of the principal interests in the information and communication field. Thus, the current trend in commercial and government communication systems has been to develop low cost, minimal weight, low profile antennas that are capable of maintaining high performance over a large spectrum of frequencies. This technological trend has focused much effort into the design of microstrip (patch) antennas. The variety in design that is possible with microstrip antenna probably exceeds that of any other type of antenna element. In addition, once the shape and operating mode of the patch are selected, designs become very versatile in terms of operating frequency, polarization, pattern, and impedance. They are extremely low profile, lightweight, simple and inexpensive to fabricate using modern day printed circuit board technology, compatible with microwave and millimeter-wave integrated circuits (MMIC), and have the ability to conform to planar and non planar surfaces.

This book gathers high-quality research papers presented at the 3rd International Conference on Advanced Computing and Intelligent Engineering (ICACIE 2018). It includes sections describing technical advances and the latest research in the fields of computing and intelligent engineering. Intended for graduate students and researchers working in the disciplines of computer science and engineering, the proceedings will also appeal to researchers in the field of electronics, as they cover hardware technologies and future communication technologies. the conference scope will be in the area of Artificial intelligence, Data science, Internet of things, Machine Learning, Wireless Networks, Social Data Analytics, pattern recognition, Image and video processing, Neural networks, Information retrieval and Data Structure and algorithms

The Proceedings of First International Conference on Opto-Electronics and Applied Optics 2014, IEM OPTRONIX 2014 presents the research contributions presented in the conference by researchers from both India and abroad. Contributions from established scientists as well as students are included. The book is organized to enable easy access to various topics of interest. The first part includes the Keynote addresses by Phillip Russell, Max Planck Institute of the Light Sciences, Erlangen, Germany and Lorenzo Pavesi, University of Trento, Italy. The

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second part focuses on the Plenary Talks given by eminent scientists, namely, Azizur Rahman, City University London, London; Bishnu Pal, President, The Optical Society of India; Kamakhya Ghatak, National Institute of Technology, Agartala; Kehar Singh, Former Professor, India Institute of Technology Delhi; Mourad Zghal, SUPCOM, University of Carthage, Tunisia; Partha Roy Chaudhuri, IIT Kharagpur; S K. Bhadra, CSIR-Central Glass and Ceramic Research Institute, Kolkata; Sanjib Chatterjee, Raja Ramanna Centre for Advanced Technology, Indore; Takeo Sasaki, Tokyo University, Japan; Lakshminarayan Hazra, Emeritus Professor, University of Calcutta, Kolkata; Shyam Akashe, ITM University, Gwalior and Vasudevan Lakshminarayanan, University of Waterloo, Canada. The subsequent parts focus on topic-wise contributory papers in Application of Solar Energy; Diffraction Tomography; E.M. Radiation Theory and Antenna; Fibre Optics and Devices; Photonics for Space Applications; Micro-Electronics and VLSI; Nano-Photonics, Bio-Photonics and Bio-Medical Optics; Non-linear Phenomena and Chaos; Optical and Digital Data and Image Processing; Optical Communications and Networks; Optical Design; Opto-Electronic Devices; Opto-Electronic Materials and Quantum Optics and Information Processing.

This two-volume set (CCIS 1075 and CCIS 1076) constitutes the refereed proceedings of the Third International Conference on Advanced Informatics for Computing Research, ICAICR 2019, held in Shimla, India, in June 2019. The 78 revised full papers presented were carefully reviewed and selected from 382 submissions. The papers are organized in topical sections on computing methodologies; hardware; information systems; networks; software and its engineering.

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. .

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. The contributed volume aims to explicate and address the difficulties and challenges for the seamless integration of two core disciplines of computer science, i.e., computational intelligence and data mining. Data Mining aims at the automatic discovery of underlying non-trivial knowledge from datasets by applying intelligent analysis techniques. The interest in this research area has experienced a considerable growth in the last years due to two key factors: (a) knowledge hidden in organizations' databases can be exploited to improve strategic and managerial decision-making; (b) the large volume of data managed by organizations makes it impossible to carry out a manual analysis. 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

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data mining, machine and computational intelligence, along with some current issues and applications of related topics.

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. Master's Thesis from the year 2013 in the subject Electrotechnology, grade: First Class, , course: Master Of Engineering, language: English, abstract: In today's modern communication industry, antennas are the most important components required to create a communication link. Microstrip antennas are the most suited for aerospace and mobile applications because of their low profile, light weight and low power handling capacity. These antennas can be designed in a variety of shapes in order to obtain enhanced gain and bandwidth for dual band and tri-band operation. This book focus on a detailed study of how to design and simulate a microstrip fed rectangular patch antenna using IE3D software with effect of antenna dimensions length (L), width (W), relative dielectric constant , substrate thickness (t) on the radiation parameters of bandwidth and gain. The design parameters of the antenna calculated using the transmission line model. Here antenna operates for tri- band operation, the operating bands are GSM , PCA and UTMS for antenna geometry -I and WLAN and WiMAX for antenna geometry -II. The fractional bandwidths (FB) after simulation obtain under criterion (S_{11}

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

The microstrip antenna is one of the most preferable for small equipment, especially when a built-in antenna is required. It has many advantages such as low profile and easy fabrication. However for low-frequency applications, the microstrip size becomes too large for practical implementation. The problems in microstrip antenna technology are the reduction of the antenna sizes and to obtain a larger bandwidth. The aim of this dissertation is to design and simulate compact microstrip patch antennas with good bandwidth. A semi-elliptical microstrip patch antenna with semi-elliptical parasitic patch is designed and investigated for Ku-band applications in Chapter 2. In this chapter stepwise simulation results have been presented while changing the various parameters of the patch and ground. Ultra-wideband (UWB) antennas have been a

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research and development topic of increased interest in the industry. The Federal Communication Commission (FCC) has recently allocated 7.5 GHz of bandwidth (3.1 to 10.6 GHz) for Ultra-wideband (UWB) applications.

This useful tool provides the reader with a current overview of where microstrip patch antenna technology is at, and useful information on how to design this form of radiator for their given application and scenario. Practical design cases are provided for each goal.

Table of contents

This book includes the original, peer-reviewed research papers from the 2nd International Conference on Electrical Systems, Technology and Information (ICESTI 2015), held in September 2015 at Patra Jasa Resort & Villas Bali, Indonesia. Topics covered include: Mechatronics and Robotics, Circuits and Systems, Power and Energy Systems, Control and Industrial Automation, and Information Theory. It explores emerging technologies and their application in a broad range of engineering disciplines, including communication technologies and smart grids. It examines hybrid intelligent and knowledge-based control, embedded systems, and machine learning. It also presents emerging research and recent application in green energy system and storage. It discusses the role of electrical engineering in biomedical, industrial and mechanical systems, as well as multimedia systems and applications, computer vision and image and signal processing. The primary objective of this series is to provide references for dissemination and discussion of the above topics. This volume is unique in that it includes work related to hybrid intelligent control and its applications.

Engineers and researchers as well as teachers from academia and professionals in industry and government will gain valuable insights into interdisciplinary solutions in the field of emerging electrical technologies and its applications.

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