
Plotting Antenna Radiation Pattern Matlab

The Impact of the 4th Industrial Revolution on Engineering Education

Antenna and EM Modeling with MATLAB Antenna Toolbox

Proceedings of International conference on Antenna Technologies

Design of Digital Phase Shifters for Multipurpose Communication Systems

Proceedings of the 9th International Conference on Advanced Intelligent Systems and Informatics 2023

Micro-Electronics and Telecommunication Engineering

Modern Antenna Handbook

MATLAB Simulations for Radar Systems Design

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Smart Antennas and Signal Processing for Communications, Biomedical, and Radar Systems

Practical Antenna Handbook 5/e

Applied Electromagnetics

Phased Arrays for Radio Astronomy, Remote Sensing, and Satellite Communications

Basic Antenna & Wave Propagation with its MATLAB Volume I

Theory of Electromagnetic Well Logging

Radar Systems Analysis and Design Using MATLAB Second Edition

Practical Antenna

Recent Developments in Intelligent Nature-Inspired Computing

Smart Antennas with MATLAB, Second Edition

Matlab - Modelling, Programming and Simulations

Radar Systems Analysis and Design Using MATLAB

Smart Antennas and Electromagnetic Signal Processing in Advanced Wireless Technology

Scientific and Engineering Applications Using MATLAB

Handbook of Research on 5G Networks and Advancements in Computing, Electronics, and Electrical Engineering

PBG based Terahertz Antenna for Aerospace Applications
Design and Analysis of Microstrip Patch Antenna for Beginners
Introduction to Radar Using Python and MATLAB
Electromagnetic Waves, Materials, and Computation with MATLAB®
Communication System Engineering Using MATLAB
Fundamentals of Electromagnetics with MATLAB
Teaching Electromagnetics
IEEE International Symposium on Phased Array Systems and Technology
Innovations in Computer Science and Engineering
Foundations of Antenna Engineering: A Unified Approach for Line-of-Sight and Multipath
Radar and EW Modeling in MATLAB and Simulink
Antenna Theory
Handbook of Research on Emerging Designs and Applications for Microwave and Millimeter Wave Circuits
Antenna Theory and Design

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Matlab*

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The Impact of the 4th Industrial Revolution on Engineering
Education IGI Global

The most complete, current guide to smart antenna design and performance. Featuring new coverage of reconfigurable antennas, vector antennas, and direction-finding antennas, this up-to-date resource offers a rigorous review of the basic electromagnetic principles that drive smart antenna design and deployment. Case studies and worked examples using MATLAB are provided. End-of-chapter assignments reinforce the concepts presented. Thoroughly revised to reflect recent developments and the latest

technologies, this is a comprehensive reference for all professionals, students, and researchers in the field of smart antennas. Smart Antennas with MATLAB, Second Edition, covers: Fundamentals of electromagnetic fields Antenna fundamentals Array fundamentals Principles of random variables and processes Propagation channel characteristics Angle-of-arrival estimation Smart antennas Direction finding Electromagnetic vector sensors Smart antenna design and optimization *Antenna and EM Modeling with MATLAB Antenna Toolbox* Springer Nature Antennas are an important component of every communication systems, including radio, television, satellite, radar, and cellular networks which transmits and receive radio waves over the wireless channel. The field of antenna is quite vast, and with the

current development in the wireless technologies enormous amount of work and effort has been put in the design, analysis, and applications of antennas. As an individual, a reader has to put a lot of effort to understand the modern antenna analysis and design for various applications. Therefore, the editors and authors of this book have come-up with an idea of putting all the necessary information required at one centralized place in the form of a book. The readers of this book will be able to access all the necessary information of antennas, from basic to advanced, theory to practical and its modern applications. The text provides information on antenna design for next generation communication systems and IoT applications, followed by the integration of the antennas in the wireless system, and also covers multi-input and multi-output (MIMO) antennas, metasurface antennas, reconfigurable antennas, fractal antennas and design of beamforming networks. This book: Focuses on modern antennas for 5G communication systems and next-generation Internet of Things (IoT) networks Highlights fractal radiator-based printed linear antenna arrays designed for direct broadcast satellite applications with a particular focus on direct-to home (DTH) services Covers the implementation of modern swarm intelligence optimization techniques for antenna array pattern synthesis Includes general framework for the design and optimization of metasurface antennas Presents design and development of high-gain millimeter-wave beam switching antennas using passive frequency selective surfaces (FSS) This book can also serve as a valuable reference for undergraduate, post-graduate students, as well as researchers working in radio frequency (RF) and microwave.

Proceedings of International conference on Antenna Technologies
John Wiley & Sons

This book covers all the emerging trends in artificial intelligence (AI) and the Internet of Things (IoT). The Internet of Things is a term that has been introduced in recent years to define devices that are able to connect and transfer data to other devices via the Internet. While IoT and sensors have the ability to harness large volumes of data, AI can learn patterns in the data and quickly extract insights in order to automate tasks for a variety of business benefits. Machine learning, an AI technology, brings the ability to automatically identify patterns and detect anomalies in the data that smart sensors and devices generate, and it can have significant advantages over traditional business intelligence tools for analyzing IoT data, including being able to make operational predictions up to 20 times earlier and with greater accuracy than threshold-based monitoring systems. Further, other AI technologies, such as speech recognition and computer vision can help extract insights from data that used to require human review. The powerful combination of AI and IoT technology is helping to avoid unplanned downtime, increase operating efficiency, enable new products and services, and enhance risk management.

Design of Digital Phase Shifters for Multipurpose Communication Systems IGI Global

Readily available commercial software enables engineers and students to perform routine calculations and design without necessarily having a sufficient conceptual understanding of the anticipated solution. The software is so user-friendly that it usually produces a beautiful colored visualization of that solution,

often camouflaging the fact that t

Proceedings of the 9th International Conference on Advanced Intelligent Systems and Informatics 2023 CRC Press

The advent of the emerging fifth generation (5G) networks has changed the paradigm of how computing, electronics, and electrical (CEE) systems are interconnected. CEE devices and systems, with the help of the 5G technology, can now be seamlessly linked in a way that is rapidly turning the globe into a digital world. Smart cities and internet of things have come to stay but not without some challenges, which must be discussed. The Handbook of Research on 5G Networks and Advancements in Computing, Electronics, and Electrical Engineering focuses on current technological innovations as the world rapidly heads towards becoming a global smart city. It covers important topics such as power systems, electrical engineering, mobile communications, network, security, and more. This book examines vast types of technologies and their roles in society with a focus on how each works, the impacts it has, and the future for developing a global smart city. This book is ideal for both industrial and academic researchers, scientists, engineers, educators, practitioners, developers, policymakers, scholars, and students interested in 5G technology and the future of engineering, computing, and technology in human society.

Micro-Electronics and Telecommunication Engineering
OrangeBooks Publication

This book focuses on high-gain antennas in the terahertz spectrum and their optimization. The terahertz spectrum is an unallocated EM spectrum, which is being explored for a number of applications, especially to meet increasing demands of high

data rates for wireless space communications. Space communication systems using the terahertz spectrum can resolve the problems of limited bandwidth of present wireless communications without radio-frequency interference. This book describes design of such high-gain antennas and their performance enhancement using photonic band gap (PBG) substrates. Further, optimization of antenna models using evolutionary algorithm based computational engine has been included. The optimized high-performance compact antenna may be used for various wireless applications, such as inter-orbital communications and on-vehicle satellite communications.

Modern Antenna Handbook CRC Press

The book presents high-quality papers from the Sixth International Conference on Microelectronics and Telecommunication Engineering (ICMETE 2022). It discusses the latest technological trends and advances in major research areas such as microelectronics, wireless communications, optical communication, signal processing, image processing, big data, cloud computing, artificial intelligence, and sensor network applications. This book includes the contributions of national and international scientists, researchers, and engineers from both academia and the industry. The contents of this book are useful to researchers, professionals, and students alike.

MATLAB Simulations for Radar Systems Design A B M Nasiruzzaman

THE DEFINITIVE ANTENNA REFERENCE--FULLY REVISED AND EXPANDED! Design and build your own antennas with the help of this unique guide. Updated and revised to provide clear answers to questions frequently asked by hobbyists and electronics

technicians, Practical Antenna Handbook, Fifth Edition blends theoretical concepts with hands-on experience--requiring only high school mathematics Reorganized to flow logically from broad physical principles to specific antenna design and construction techniques, the book begins by covering the fundamentals. Then the half-wave dipole is discussed both as an excellent antenna in its own right and as a conceptual tool for predicting the performance of other designs. Transmission line impedance matching techniques--and a companion Smith chart tutorial--lead into "must have" accessories for tuning, monitoring, and troubleshooting antenna system performance. Other tools, such as antenna modeling software and network analyzer add-ons for PCs and Macs, are addressed, and concluding chapters offer fresh insights into support structures and installation techniques. NEW TOPICS COVERED INCLUDE: Characteristics of all-driven and parasitic arrays Beverages and small MF/HF receiving loops Top-loaded shunt-fed towers and other verticals Theory and design of Yagi beams Effect of real ground on propagation and antenna patterns, impedance, and efficiency Lightning protection and four kinds of ground systems Zoning and restrictive covenants COVERS A WIDE VARIETY OF ANTENNAS: Dipoles and inverted-Vs Quads, delta, and NVIS loops Wire arrays (bobtail curtain, half-square, rhombic) Verticals and shunt-fed towers Rotatable Yagi beams MF/HF receiving antennas (flag, pennant, K9AY, Beverage) Mobile and portable antennas VHF/UHF/microwave antennas And many more GO TO WWW.MHPROFESSIONAL.COM/CARR5 FOR: * Tables of worldwide geographic coordinates and antenna dimensions vs. frequency * Supplier updates * Author's blog * Additional photographs and schematics * Links to tutorials and

specialized calculators

Radar Signal Analysis and Processing Using MATLAB John Wiley & Sons

The discipline of antenna theory has experienced vast technological changes. In response, Constantine Balanis has updated his classic text, Antenna Theory, offering the most recent look at all the necessary topics. New material includes smart antennas and fractal antennas, along with the latest applications in wireless communications. Multimedia material on an accompanying CD presents PowerPoint viewgraphs of lecture notes, interactive review questions, Java animations and applets, and MATLAB features. Like the previous editions, Antenna Theory, Third Edition meets the needs of electrical engineering and physics students at the senior undergraduate and beginning graduate levels, and those of practicing engineers as well. It is a benchmark text for mastering the latest theory in the subject, and for better understanding the technological applications. An Instructor's Manual presenting detailed solutions to all the problems in the book is available from the Wiley editorial department.

Recent Trends in Electronics and Communication John Wiley & Sons

Simulation is integral to the successful design of modern radar systems, and there is arguably no better software for this purpose than MATLAB. But software and the ability to use it does not guarantee success. One must also: Understand radar operations and design philosophy Know how to select the radar parameters to meet the design req

Recent Trends and Advances in Artificial Intelligence and

Internet of Things Springer Nature

The book is a collection of high-quality peer-reviewed research papers presented at the third International Conference on Innovations in Computer Science and Engineering (ICICSE 2015) held at Guru Nanak Institutions, Hyderabad, India during 7 - 8 August 2015. The book discusses a wide variety of industrial, engineering and scientific applications of the emerging techniques. Researchers from academic and industry present their original work and exchange ideas, information, techniques and applications in the field of Communication, Computing, and Data Science and Analytics.

Smart Antennas and Signal Processing for Communications, Biomedical, and Radar Systems McGraw Hill Professional

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

Practical Antenna Handbook 5/e Springer Nature

The development of nature-inspired computational techniques has enhanced problem solving in dynamic and uncertain environments. By implementing effective computing strategies, this ensures adaptable, self-organizing, and decentralized behavioral techniques. Recent Developments in Intelligent Nature-Inspired Computing is an authoritative reference source for the latest scholarly material on natural computation methods and applications in diverse fields. Highlighting multidisciplinary studies on swarm intelligence, global optimization, and group technology, this publication is an ideal reference source for professionals, researchers, scholars, and engineers interested in the latest developments in computer science methodologies.

Applied Electromagnetics Artech House

Theory of Electromagnetic Well Logging provides a much-needed and complete analytical method for electromagnetic well logging technology. The book presents the physics and mathematics behind the effective measurement of rock properties using boreholes, allowing geophysicists, petrophysicists, geologists and engineers to interpret them in a more rigorous way. Starting with the fundamental concepts, the book then moves on to the more classic subject of wireline induction logging, before exploring the

subject of LWD logging, concluding with new thoughts on electromagnetic telemetry. Theory of Electromagnetic Well Logging is the only book offering an in-depth discussion of the analytical and numerical techniques needed for expert use of those new logging techniques. - Features in-depth analysis of the analytical and numerical techniques needed for expert use of logging techniques - Includes software codes, providing a handy tool for understanding logging tool physics and design of new logging tools - Provides a detailed glossary of all key terms within the introductory chapter

Phased Arrays for Radio Astronomy, Remote Sensing, and Satellite Communications IGI Global

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

Basic Antenna & Wave Propagation with its MATLAB

Volume I John Wiley & Sons

STUDENT COMPANION SITE Every new copy of Stuart Wentworth's Applied Electromagnetics comes with a registration code which allows access to the Student's Book Companion Site. On the BCS the student will find: * Detailed Solutions to Odd-Numbered Problems in the text * Detailed Solutions to all Drill Problems from the text * MATLAB code for all the MATLAB

examples in the text * Additional MATLAB demonstrations with code. This includes a Transmission Lines simulator created by the author. * Weblinks to a vast array of resources for the engineering student. Go to www.wiley.com/college/wentworth to link to Applied Electromagnetics and the Student Companion Site. ABOUT THE PHOTO Passive RFID systems, consisting of readers and tags, are expected to replace bar codes as the primary means of identification, inventory and billing of everyday items. The tags typically consist of an RFID chip placed on a flexible film containing a planar antenna. The antenna captures radiation from the reader's signal to power the tag electronics, which then responds to the reader's query. The PENI Tag (Product Emitting Numbering Identification Tag) shown, developed by the University of Pittsburgh in a team led by Professor Marlin H. Mickle, integrates the antenna with the rest of the tag electronics. RFID systems involve many electromagnetics concepts, including antennas, radiation, transmission lines, and microwave circuit components. (Photo courtesy of Marlin H. Mickle.)

Theory of Electromagnetic Well Logging Artech House

This book gathers papers presented at the 22nd International Conference on Interactive Collaborative Learning (ICL2019), which was held in Bangkok, Thailand, from 25 to 27 September 2019. Covering various fields of e-learning and distance learning, course and curriculum development, knowledge management and learning, real-world learning experiences, evaluation and outcomes assessment, computer-aided language learning, vocational education development and technical teacher training, the contributions focus on innovative ways in which higher

education can respond to the real-world challenges related to the current transformation in the development of education. Since it was established, in 1998, the ICL conference has been devoted to new approaches in learning with a focus on collaborative learning. Today, it is a forum for sharing trends and research findings as well as presenting practical experiences in learning and engineering pedagogy. The book appeals to policymakers, academics, educators, researchers in pedagogy and learning theory, school teachers, and other professionals in the learning industry, and further and continuing education.

Radar Systems Analysis and Design Using MATLAB Second Edition Blue Rose Publishers

An introduction to radar systems should ideally be self-contained and hands-on, a combination lacking in most radar texts. The first edition of Radar Systems Analysis and Design Using MATLAB® provided such an approach, and the second edition continues in the same vein. This edition has been updated, expanded, and reorganized to include advances in the field and to be more logical in sequence. Ideal for anyone encountering the topic for the first time or for professionals in need of on-the-job reference, this book features an abundance of MATLAB programs and code. Radar Systems Analysis and Design Using MATLAB®, Second Edition presents the fundamentals and principles of radar along with enough rigorous mathematical derivations to ensure that you gain a deep understanding. The author has extensively revised chapters on radar cross-section and polarization, matched filter and radar ambiguity function, and radar wave propagation. He also added information on topics such as PRN codes, multipath and refraction, clutter and MTI processing, and

high range resolution. With all MATLAB functions updated to reflect version 7.0 and an expanded set of self-test problems, you will find this up-to-date text to be the most complete treatment of radar available, providing the hands-on tools that will enrich your learning.

Practical Antenna CRC Press

The purpose of this book is to present 10 scientific and engineering works whose numerical and graphical analysis were all constructed using the power of MATLAB® tools. The first five chapters of this book show applications in seismology, meteorology and natural environment. Chapters 6 and 7 focus on modeling and simulation of Water Distribution Networks.

Simulation was also applied to study wide area protection for interconnected power grids (Chapter 8) and performance of conical antennas (Chapter 9). The last chapter deals with depth positioning of underwater robot vehicles. Therefore, this book is a collection of interesting examples of where this computational package can be applied.

Recent Developments in Intelligent Nature-Inspired Computing
CRC Press

This book aims to cover a new emerging need in designing digital phase shifter for modern communication systems. With the advancement of new generation mobile communication systems, directed beams of antenna arrays save a substantial amount of power as well as improve the communication quality. In this regard, beam-forming circuits, such as digital phase shifters (DPS) constitute essential parts of the antenna array systems. Therefore, this book is devoted to the design of digital phase shifters for various communications systems. Nowadays, phase

array systems demand compact phase shifters suitable for chip implementation with wide phase-range and broad frequency band. Each chapter of this book is organized as stand-alone in such a way that the reader requires no specific background acquired from the other chapters. For each phase shifter topology introduced in this book, the reader is furnished with explicit design equations to construct the circuit under consideration. Furthermore, design equations are programmed using MATLAB to

assess the electrical performance of the phase shifters with ideal and lossy components. MATLAB design programs are given at the end of each chapter as appendices and provided as soft copy on the web page of the book. In chapters 12 and 14, MMIC layouts for the lattice and T-section based DPS are provided for the readers. It is hoped that an interested reader can immediately identify the “optimum phase shifter topology” for the need under consideration with its estimated electric performance.