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# Ansoft Hfss Antenna Design Examples

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Mechanical Engineering, Materials and Energy  
 Microstrip and Printed Antennas: Applications-Based Designs  
 Approximate Antenna Analysis for CAD  
 Intelligent Communication and Automation Systems  
 Radio Frequency Identification Fundamentals and Applications  
 Advancement in Microstrip Antennas with Recent Applications  
 Microstrip Antenna Design for Wireless Applications  
 RFID at Ultra and Super High Frequencies  
 Computational Methodologies for Electrical and Electronics Engineers  
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 DESIGN OF TRI-BAND L SHAPED PARASITIC PATCH ANTENNA  
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 RFID-Enabled Sensor Design and Applications  
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 Handbook of Microwave and Radar Engineering  
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 International Conference on Communication, Computing and Electronics Systems  
 Antenna and EM Modeling with MATLAB Antenna Toolbox

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Design Examples*

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## WEBB POPE

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*Mechanical Engineering, Materials and Energy* Elsevier

This comprehensive reference text discusses concepts of intelligence communication and automation system in a single volume. The text discusses the role of artificial intelligence in communication engineering, the role of machine learning in communication systems, and applications of image and video processing in communication. It covers important topics including smart sensing systems, intelligent hardware design, low power system design using AI techniques, intelligent signal processing for biomedical applications, intelligent robotic systems, and network security

applications. The text will be useful for senior undergraduate and graduate students in different areas including electrical engineering, and electronics and communications engineering. Microstrip and Printed Antennas: Applications-Based Designs BoD - Books on Demand  
Original research on SHM sensors, quantification strategies, system integration and control for a wide range of engineered materials New applications in robotics, machinery, as well as military aircraft, railroads, highways, bridges, pipelines, stadiums, tunnels, space exploration and energy production Continuing a critical book series on structural health monitoring (SHM), this two-volume set (with full-text searchable CD-ROM) offers, as its subtitle implies, a guide to greater integration and control of

SHM systems. Specifically, the volumes contain new research that will enable readers to more efficiently link sensor detection, diagnostics/quantification, overall system functionality, and automated, e.g., robotic, control, thus further closing the loop from inherent signal-based damage detection to responsive real-time maintenance and repair. SHM performance is demonstrated in monitoring the behavior of composites, metals, concrete, polymers and selected nanomaterials in a wide array of surroundings, including harsh environments, under extreme (e.g., seismic) loading and in space. New information on smart sensors and network optimization is enhanced by novel statistical and model-based methods for signal processing and data quantification. A special feature of the book is its

explanation of emerging control technologies. Research in these volumes was initially presented in September 2013 at the 9th International Workshop on Structural Health Monitoring (IWSHM), held at Stanford University and sponsored by the Air Force Office of Scientific Research, the Army Research Laboratory, and the Office of Naval Research.

Approximate Antenna Analysis for CAD  
Wiley

**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

*Intelligent Communication and Automation Systems* BoD – Books on Demand

This step-by-step guide provides the reader with a detailed and thorough introduction to practical antenna design and model implementation In this book, Hubregt J. Visser provides an introduction to the fundamentals of antenna design and the implementation of design models. A variety of antennas for wireless applications and communications systems are explained, and the real-life use of the antennas is demonstrated through extensive use of application examples. The author includes discussions on the design process of several antennas, such as intravascular MR Antennas, PCB antennas, RFID antennas, rectennas etc. Furthermore, emphasis is placed on

Computer Aided Design (CAD) using approximated models. Key Features Includes coverage on intravascular MR Antennas, PCB antennas, RFID antennas, rectennas, etc Comprehensively details the application areas, modeling, analysis, and validation processes for individual antennas Discusses the use of equivalent dipole antennas, equivalent transmission line networks and electrostatics Introduces many antennas and models that have not been covered in previous publications (such as MRI Antennas, for example) This book will be of interest to microwave and antenna engineers. Graduate and post-graduate antennas students studying BSc and MSc courses, as well as research assistants will also find this book insightful.

#### **Radio Frequency Identification Fundamentals and Applications**

DEStech Publications, Inc

This book combines theory with practical applications for the analysis and design of a wide variety of antenna configurations simulated on FEKO, the leading real-world commercial software programme.

#### **Advancement in Microstrip Antennas with Recent Applications** John Wiley & Sons

In the past, very little practical information or training has been available for engineers, technicians and students in the area of radio frequency identification (RFID) systems at ultra high frequencies (UHF) and super high frequencies (SHF). Here, Dominique Paret offers you a complete guide to the theory, components, practical application areas and standards in RFID at UHF and SHF. He achieves an expert balance between theory and technology, finance and other aspects, providing a clear view of the entire field. This book deals with the real aspects of contactless applications in detail, and divided into five parts, covers: Basic principles, general considerations and the market, defining all essential terms and the different tags and applications. Wave propagation principles and theory. Communication and transmission, baseband signals, carrier modulation and interactions, discussing communication modes between the base station and tag, and energy transfer modes. International safety standards and regulations, including International Organization for Standardization (ISO) and Open Systems Interconnection (OSI) models, and methods for evaluating commercial tags. Components for tags and base stations. This comprehensive reference is ideal for computer and electronics engineers working on the design and development of RFID systems

for the electronics industry, as well as for those in other industries such as automotive, security and transport, who want to implement RFID into their business. Dominique Paret's book is also a solid and thorough technical introduction to the subject for graduate level students and researchers in electronics and industrial engineering design.

#### **Microstrip Antenna Design for Wireless Applications** ScholarlyEditions

The most up-to-date, comprehensive treatment of classical and modern antennas and their related technologies Modern Antenna Handbook represents the most current and complete thinking in the field of antennas. The handbook is edited by one of the most recognizable, prominent, and prolific authors, educators, and researchers on antennas and electromagnetics. Each chapter is authored by one or more leading international experts and includes coverage of current and future antenna-related technology. The information is of a practical nature and is intended to be useful for researchers as well as practicing engineers. From the fundamental parameters of antennas to antennas for mobile wireless communications and medical applications, Modern Antenna Handbook covers everything professional engineers, consultants, researchers, and students need to know about the recent developments and the future direction of this fast-paced field. In addition to antenna topics, the handbook also covers modern technologies such as metamaterials, microelectromechanical systems (MEMS), frequency selective surfaces (FSS), and radar cross sections (RCS) and their applications to antennas, while five chapters are devoted to advanced numerical/computational methods targeted primarily for the analysis and design of antennas.

*RFID at Ultra and Super High Frequencies* Springer Nature

This two-volume set (CCIS 873 and CCIS 874) constitutes the thoroughly refereed proceedings of the 9th International Symposium, ISICA 2017, held in Guangzhou, China, in November 2017. The 101 full papers presented in both volumes were carefully reviewed and selected from 181 submissions. This first volume is organized in topical sections on neural networks and statistical learning: neural architecture search, transfer of knowledge; evolutionary multi-objective and dynamic optimization: optimal control and design, hybrid methods; data mining: association rule learning, data management platforms; Cloud computing and multiagent systems: service models,

Cloud engineering; everywhere connectivity: IoT solutions, wireless sensor networks.

*Computational Methodologies for Electrical and Electronics Engineers* Artech House

This practical resource provides a current and comprehensive treatment of GPS/GNSS antennas, taking into account modernized systems and new and developing applications. The book presents a number of key applications, describing corresponding receiver architectures and antenna details. You find important discussions on antenna characteristics, including theory of operation, gain, bandwidth, polarization, phase center, mutual coupling effects, and integration with active components. Moreover, you get expert guidance on the design of adaptive arrays and signal processing techniques used to mitigate interference such as jamming. Addressing critical GNSS antenna high precision requirements, this in-depth book explains the relationships between antenna gain, satellite visibility, geometric dilution of precision, and the carrier-to-noise density ratio. The book delineates requirements for both dual-band and tri-band antennas. You get detailed coverage of a wide range of antenna designs, including microstrip patch, quadrafilax helix, axial mode helix, spiral, inverted L, and planar inverted F antennas. Moreover, you find a discussion on new magnetic metamaterial substrates and other dielectric substrate materials. Further, this comprehensive book presents designs for very compact GNSS antennas for personal handheld devices and automobiles.

*Issues in Electronic Circuits, Devices, and Materials: 2013 Edition* Springer Science & Business Media

This book explains one of the hottest topics in wireless and electronic devices community, namely the wireless communication at mmWave frequencies, especially at the 60 GHz ISM band. It provides the reader with knowledge and techniques for mmWave antenna design, evaluation, antenna and chip packaging. Addresses practical engineering issues such as RF material evaluation and selection, antenna and packaging requirements, manufacturing tolerances, antenna and system interconnections, and antenna One of the first books to discuss the emerging research and application areas, particularly chip packages with integrated antennas, wafer scale mmWave phased arrays and imaging Contains a good number of case studies to aid understanding Provides the antenna and packaging technologies for the latest and emerging applications with the emphases

on antenna integrations for practical applications such as wireless USB, wireless video, phase array, automobile collision avoidance radar, and imaging  
*Switched Parasitic Antennas for Cellular Communications* Springer Nature  
This book, entitled Radio Frequency Identification Fundamentals and Applications, Bringing Research to Practice, bridges the gap between theory and practice and brings together a variety of research results and practical solutions in the field of RFID. The book is a rich collection of articles written by people from all over the world: teachers, researchers, engineers, and technical people with strong background in the RFID area. Developed as a source of information on RFID technology, the book addresses a wide audience including designers for RFID systems, researchers, students and anyone who would like to learn about this field. At this point I would like to express my thanks to all scientists who were kind enough to contribute to the success of this project by presenting numerous technical studies and research results. However, we couldn't have published this book without the effort of InTech team. I wish to extend my most sincere gratitude to InTech publishing house for continuing to publish new, interesting and valuable books for all of us.

*DESIGN OF TRI-BAND L SHAPED PARASITIC PATCH ANTENNA* IGI Global

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.

*Advanced Millimeter-wave Technologies* IGI Global

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.

*GPS/GNSS Antennas* Artech House  
*Issues in Electronic Circuits, Devices, and Materials: 2013 Edition* is a ScholarlyEditions™ book that delivers timely, authoritative, and comprehensive information about Microwave Research. The editors have built *Issues in Electronic Circuits, Devices, and Materials: 2013 Edition* on the vast information databases of ScholarlyNews.™ You can expect the information about Microwave Research in this book to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of *Issues in Electronic Circuits, Devices, and Materials: 2013 Edition* has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at <http://www.ScholarlyEditions.com/>.

*Antennas* John Wiley & Sons

This comprehensive handbook provides readers with a single-source reference to the theoretical fundamentals, physical mechanisms and principles of operation of all known microwave devices and various radars. The author discusses proven methods of computation and design development, process, schematic, schematic-technical and construction peculiarities of each breed of the microwave devices, as well as the most popular and original technical solutions for radars. Coverage also includes the history of creation of the most widely used radars,

as well as guidelines for their potential upgrading. Offers readers a comprehensive, systematized view of all contemporary knowledge, acquired during the last 20 years, on radars and related disciplines; Provides a single-source reference on the physical mechanisms and principles of operation of the basic components of radio location devices, including theoretical aspects of designing the necessary, high-efficiency electronic devices and systems, as well as key, practical methods of computation and design; Presents complex topics using simple language, minimizing mathematics.

### **Design and Applications of Active Integrated Antennas**

Artech House Issues in Electronic Circuits, Devices, and Materials: 2012 Edition is a ScholarlyEditions™ eBook that delivers timely, authoritative, and comprehensive information about Lasers and Photonics. The editors have built Issues in Electronic Circuits, Devices, and Materials: 2012 Edition on the vast information databases of ScholarlyNews.™ You can expect the information about Lasers and Photonics in this eBook to be deeper than what you can access anywhere else, as well as consistently reliable, authoritative, informed, and relevant. The content of Issues in Electronic Circuits, Devices, and Materials: 2012 Edition has been produced by the world's leading scientists, engineers, analysts, research institutions, and companies. All of the content is from peer-reviewed sources, and all of it is written, assembled, and edited by the editors at ScholarlyEditions™ and available exclusively from us. You now have a source you can cite with authority, confidence, and credibility. More information is available at <http://www.ScholarlyEditions.com/>.

[Issues in Electronic Circuits, Devices, and Materials: 2012 Edition](#) Springer Nature

This book includes high-quality papers presented at the International Conference on Communication, Computing and Electronics Systems 2020, held at the PPG Institute of Technology, Coimbatore, India, on 21-22 October 2020. The book covers topics such as automation, VLSI, embedded systems, integrated device technology, satellite communication,

optical communication, RF communication, microwave engineering, artificial intelligence, deep learning, pattern recognition, Internet of Things, precision models, bioinformatics, and healthcare informatics.

[Practical Antenna Design for Wireless Products](#) Springer

RFID (radio-frequency identification) is an emerging communication system technology and one of the most rapidly growing segments of today's automatic identification data collection industry. This cutting-edge resource offers you a solid understanding of the basic technical principles and applications of RFID-enabled sensor systems. The book provides you with a detailed description of RFID and its operation, along with a fundamental overview of sensors and wireless sensor networks. Moreover, this practical reference gives you step-by-step guidance on how to design RFID-enabled sensors that form a wireless sensor network. You also find detailed coverage of state-of-the-art RFID/sensor technology and worldwide applications.

[Antennas](#) Artech House

This book unites two different technologies: parasitic antenna arrays driven via analogue circuits that control the electromagnetic waves generated by the antenna array; and MIMO technology for multi-antenna arrays, typically driven by digital techniques in the baseband domain. The combination of these two technologies has revealed a novel functionality that breaks through the conventional MIMO paradigm, allowing MIMO transmission over the air with the use of antenna arrays that may consist of only a single active element, that is surrounded by a number of passive neighboring antennas. The contributions in the book show the capability of such systems to also perform MIMO transmission. This fact holds the potential of revolutionizing the way small-form wireless terminals operate and seems to set the scene for a win-win situation, achieving MIMO transmission with very small and cheap antenna arrays. The book is structured to provide a well-rounded treatment of the various facets of this newly discovered wireless communication

capability. All relevant technical angles, ranging from information theoretic to electromagnetic considerations; from analogue circuit to digital baseband control for signal generation; and from channel modeling to communication theoretic aspects are taken into account. A good balance between theory, practical considerations and over-the-air experimentation is proposed and reflected in the chapter outline. Finally, a discussion and early evidence related to potential applications as well as the relevance to current and upcoming wireless standards is provided.

[Smart Intelligent Computing and Applications](#) CRC Press

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, Wide-band 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.

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