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Digital Communications

Digital Communications is a classic book in the area that is designed to be used as a senior or graduate level text. The text is flexible and can easily be used in a one semester course or there is enough depth to cover two semesters. Its comprehensive nature makes it a great book for students to keep for reference in their professional careers. This all-inclusive guide delivers an outstanding introduction to the analysis and design of digital communication systems. Includes expert coverage of new topics: Turbocodes, Turboequalization, Antenna Arrays, Digital Cellular Systems, and Iterative Detection. Convenient, sequential organization begins with a look at the history and classification of channel models and builds from there.

Digital Communication

Springer Science & Business Media This book is for designers and would-be designers of digital communication systems. The general approach of this book is to extract the common principles underlying a range of media and applications and present them in a unified framework. Digital Communication is relevant to the design of a variety of systems, including voice and video digital cellular telephone, digital CATV distribution, wireless LANs, digital subscriber loop, metallic Ethernet, voiceband data modems, and satellite communication systems. New in this Third Edition: New material on recent advances in wireless communications, error-control coding, and multi-user communications has been added. As a result, two new chapters have been added, one on the theory of MIMO channels, and the other on diversity techniques for mitigating fading. Error-control coding has been rewritten to reflect the current state of the art. Chapters 6 through 9 from the Second Edition have been reorganized and streamlined to highlight pulse-amplitude modulation, becoming the new Chapters 5 through 7. Readability is increased by relegating many of the more detailed derivations to appendices and exercise solutions, both of which are included in the book. Exercises, problems, and solutions have been revised and expanded. Three chapters from the previous edition have been moved to the book's Web site to make room for new material. This book is ideal as a first-year graduate textbook, and is essential to many industry professionals. The book is attractive to both audiences through the inclusion of many practical examples and a practical flavor in the choice of topics. Digital Communication has a Web site at : http://www.ece.gatech.edu/~barry/digital/, where the reader may find additional information from the Second Edition, other supplementary materials, useful links, a problem solutions manual, and errata.

Communication Systems Engineering

Thorough coverage of basic digital communication system principles ensures that readers are exposed to all basic relevant topics in digital communication system design. The use of CD player and JPEG image coding standard as examples of systems that employ modern communication principles allows readers to relate the theory to practical systems. Over 180 worked-out examples throughout the book aids readers in understanding basic concepts. Over 480 problems involving applications to practical systems such as satellite communications systems, ionospheric channels, and mobile radio channels gives readers ample opportunity to practice the concepts they have just learned. With an emphasis on digital communications, Communication Systems Engineering, Second Edition introduces the basic principles underlying the analysis and design of communication systems. In addition, this book gives a solid introduction to analog communications and a review of important mathematical foundation topics. New material has been added on wireless communication systems—GSM and CDMA/IS-94; turbo codes and iterative decoding; multicarrier (OFDM) systems; multiple antenna systems. Includes thorough coverage of basic digital communication system principles—including source coding, channel coding, baseband and carrier modulation, channel distortion, channel equalization, synchronization, and wireless communications. Includes basic coverage of analog modulation such as amplitude modulation, phase modulation, and frequency modulation as well as demodulation methods. For use as a reference for electrical engineers for all basic relevant topics in digital communication system design.

Synchronization in Digital Communication Systems

Cambridge University Press Do you need to know how to develop more efficient digital communication systems? Based on the author's experience of over thirty years in industrial design, this practical guide provides detailed coverage of synchronization subsystems and their relationship with other system components. Readers will gain a comprehensive understanding of the techniques needed for the design, performance analysis and implementation of synchronization functions for a range of different modern communication technologies. Specific topics covered include frequency-looked loops in wireless receivers, optimal OFDM timing phase determination and implementation, and interpolation filter design and analysis in digital resamplers. Numerous implementation examples help readers to develop the necessary practical skills, and slides summarizing key concepts accompany the book online. This is an invaluable guide and essential reference for both practicing engineers and graduate students working in digital communications.

Performance Optimization of Digital Communications Systems

CRC Press Because fine-tuning the parameters of a system is critical to a developer's success, Performance Optimization of Digital Communications Systems examines particular optimization problems in digital communications, presenting analytical techniques in combination with SystemView and MATLAB simulations. Consisting of ten chapters, this monograph presen

Fundamentals of Digital Communication

Cambridge University Press This is a concise presentation of the concepts underlying the design of digital communication systems, without the detail that can overwhelm students. Many examples, from the basic to the cutting-edge, show how the theory is used in the design of modern systems and the relevance of this theory will motivate students. The theory is supported by practical algorithms so that the student can perform computations and simulations. Leading edge topics in coding and wireless communication make this an ideal text for students taking just one course on the subject. Fundamentals of Digital Communications has coverage of turbo and LDPC codes in sufficient detail and clarity to enable hands-on implementation and performance evaluation, as well as 'just enough' information theory to enable computation of performance benchmarks to compare them against. Other unique features include space-time communication and geometric insights into noncoherent communication and equalization.

Introduction to Digital Communication Systems

John Wiley & Sons Combining theoretical knowledge and practical applications, this advanced-level textbook covers the most important aspects of contemporary digital communication systems. Introduction to Digital Communication Systems focuses on the rules of functioning digital communication system blocks, starting with the performance limits set by the information theory. Drawing on information relating to turbo codes and LDPC codes, the text presents the basic methods of error correction and detection, followed by

baseband transmission methods, and single- and multi-carrier digital modulations. The basic properties of several physical communication channels used in digital communication systems are explained, showing the transmission and reception methods on channels suffering from intersymbol interference. The text also describes the most recent developments in the transmission techniques specific to wireless communications used both in wireline and wireless systems. The case studies are a unique feature of this book, illustrating elements of the theory developed in each chapter. Introduction to Digital Communication Systems provides a concise approach to digital communications, with practical examples and problems to supplement the text. There is also a companion website featuring an instructors' solutions manual and presentation slides to aid understanding. Offers theoretical and practical knowledge in a self-contained textbook on digital communications Explains basic rules of recent achievements in digital communication systems such as MIMO, turbo codes, LDPC codes, OFDMA, SC-FDMA Provides problems at the end of each chapter with an instructors' solutions manual on the companion website Includes case studies and representative communication system examples such as DVB-S, GSM, UMTS, 3GPP-LTE

Digital Communications and Signal Processing (Second Edition)

Universities Press

Principles of Digital Communication

Cambridge University Press The renowned communications theorist Robert Gallager brings his lucid writing style to the study of the fundamental system aspects of digital communication for a one-semester course for graduate students. With the clarity and insight that have characterized his teaching and earlier textbooks, he develops a simple framework and then combines this with careful proofs to help the reader understand modern systems and simplified models in an intuitive yet precise way. A strong narrative and links between theory and practice reinforce this concise, practical presentation. The book begins with data compression for arbitrary sources. Gallager then describes how to modulate the resulting binary data for transmission over wires, cables, optical fibers, and wireless channels. Analysis and intuitive interpretations are developed for channel noise models, followed by coverage of the principles of detection, coding, and decoding. The various concepts covered are brought together in a description of wireless communication, using CDMA as a case study.

Multi-Carrier Systems & Solutions 2009

Proceedings from the 7th International Workshop on Multi-Carrier Systems & Solutions, May 2009, Herrsching, Germany

Springer Science & Business Media The 7th International Workshop on Multi-Carrier Systems and Solutions was held in May 2009. In providing the proceedings of that conference, this book offers comprehensive, state-of-the-art articles about multi-carrier techniques and systems.

Neonatal Monitoring Technologies: Design for Integrated Solutions

Design for Integrated Solutions

IGI Global "This book presents a unique integration of knowledge from multidisciplinary fields of engineering, industrial design, and medical science for the healthcare of a specific user group"--Provided by publisher.

Fifth International ITG Conference on Source and Channel Coding (SCC)

Margret Schneider

Contemporary Communication Systems Using MATLAB

Cengage Learning Featuring a variety of applications that motivate students, this book serves as a companion or supplement to any of the comprehensive textbooks in communication systems. The book provides a variety of exercises that may be solved on the computer using MATLAB. By design, the treatment of the various topics is brief. The authors provide the motivation and a short introduction to each topic, establish the necessary notation, and then illustrate the basic concepts by means of an example. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

RF and Microwave Applications and Systems

CRC Press This volume, RF and Microwave Applications and Systems, includes a wide range of articles that discuss RF and microwave systems used for communication and radar and heating applications. Commercial, avionics, medical, and military applications are addressed. An overview of commercial communications systems is provided. Past, current, and emerging cellular systems, navigation systems, and satellite-based systems are discussed. Specific voice and data commercial systems are investigated more thoroughly in individual chapters that follow. Detailed discussions of military electronics, avionics, and radar (both military and automotive) are provided in separate chapters. A chapter focusing on FR/microwave energy used for therapeutic medicine is also provided. Systems considerations including thermal, mechanical, reliability, power management, and safety are discussed in separate chapters. Engineering processes are also explored in articles about corporate initiatives, cost modeling, and design reviews. The book closes with a discussion of the underlying physics of electromagnetic propagation and interference. In addition to new chapters on WiMAX and broadband cable, nearly every existing chapter features extensive updates and several were completely rewritten to reflect the massive changes areas such as radio navigation and electronic warfare.

The RF and Microwave Handbook - 3 Volume Set

CRC Press By 1990 the wireless revolution had begun. In late 2000, Mike Golio gave the world a significant tool to use in this revolution: The RF and Microwave Handbook. Since then, wireless technology spread across the globe with unprecedented speed, fueled by 3G and 4G mobile technology and the proliferation of wireless LANs. Updated to reflect this tremendous growth, the second edition of this widely embraced, bestselling handbook divides its coverage conveniently into a set of three books, each focused on a particular aspect of the technology. Six new chapters cover WiMAX, broadband cable, bit error ratio (BER) testing, high-power PAs (power amplifiers), heterojunction bipolar transistors (HBTs), as well as an overview of microwave engineering. Over 100 contributors, with diverse backgrounds in academic, industrial, government, manufacturing, design, and research reflect the breadth and depth of the field. This eclectic mix of contributors ensures that the coverage balances fundamental technical issues with the important business and marketing constraints that define commercial RF and microwave engineering. Focused chapters filled with formulas, charts, graphs, diagrams, and tables make the information easy to locate and apply to practical cases. The new format, three tightly focused volumes,

provides not only increased information but also ease of use. You can find the information you need quickly, without wading through material you don’t immediately need, giving you access to the caliber of data you have come to expect in a much more user-friendly format.

Applications in Electronics Pervading Industry, Environment and Society

APPLEPIES 2021

Springer Nature

Fundamentals of Communication Systems

For one- or two-semester, senior-level undergraduate courses in Communication Systems for Electrical and Computer Engineering majors. This text introduces the basic techniques used in modern communication systems and provides fundamental tools and methodologies used in the analysis and design of these systems. The authors emphasize digital communication systems, including new generations of wireless communication systems, satellite communications, and data transmission networks. A background in calculus, linear algebra, basic electronic circuits, linear system theory, and probability and random variables is assumed.

Software-Defined Radio for Engineers

Artech House Based on the popular Artech House classic, Digital Communication Systems Engineering with Software-Defined Radio, this book provides a practical approach to quickly learning the software-defined radio (SDR) concepts needed for work in the field. This up-to-date volume guides readers on how to quickly prototype wireless designs using SDR for real-world testing and experimentation. This book explores advanced wireless communication techniques such as OFDM, LTE, WLA, and hardware targeting. Readers will gain an understanding of the core concepts behind wireless hardware, such as the radio frequency front-end, analog-to-digital and digital-to-analog converters, as well as various processing technologies. Moreover, this volume includes chapters on timing estimation, matched filtering, frame synchronization message decoding, and source coding. The orthogonal frequency division multiplexing is explained and details about HDL code generation and deployment are provided. The book concludes with coverage of the WLAN toolbox with OFDM beacon reception and the LTE toolbox with downlink reception. Multiple case studies are provided throughout the book. Both MATLAB and Simulink source code are included to assist readers with their projects in the field.

Mobile and Wireless Communications

Key Technologies and Future Applications

IET Two of the fastest growing sectors of communications today are mobile and Internet, both of which have had a profound effect on people's lives. The convergence between these two sectors not only presents great opportunities for the future of "unplugged" telecommunications, but also great challenges in understanding the relative position of different technologies in this future. This book reviews the contribution of different wireless access technologies to that future and looks at the opportunities of opening up access to telecommunications systems, via application programming interfaces (APIs). The economic and regulatory issues associated with wireless communications are also discussed, with a look at the history and potential future of mobility from a user perspective.

Digital Communication over Fading Channels

John Wiley & Sons The four short years since Digital Communication over FadingChannels became an instant classic have seen a virtual explosion ofsignificant new work on the subject, both by the authors and bynumerous researchers around the world. Foremost among these is agreat deal of progress in the area of transmit diversity andspace-time coding and the associated multiple input-multiple output(MIMO) channel. This new edition gathers these and other results,previously scattered throughout numerous publications, into asingle convenient and informative volume. Like its predecessor, this Second Edition discusses in detailcoherent and noncoherent communication systems as well as a largevariety of fading channel models typical of communication linksfound in the real world. Coverage includes single- and multichannelreception and, in the case of the latter, a large variety ofdiversity types. The moment generating function (MGF)-basedapproach for performance analysis, introduced by the authors in thefirst edition and referred to in literally hundreds ofpublications, still represents the backbone of the book'spresentation. Important features of this new edition include: * An all-new, comprehensive chapter on transmit diversity,space-time coding, and the MIMO channel, focusing on performanceevaluation * Coverage of new and improved diversity schemes * Performance analyses of previously known schemes in new anddifferent fading scenarios * A new chapter on the outage probability of cellular mobile radiosystems * A new chapter on the capacity of fading channels * And much more Digital Communication over Fading Channels, Second Edition is anindispensable resource for graduate students, researchersinvestigating these systems, and practicing engineers responsiblefor evaluating their performance.

A First Course in Digital Communications

Cambridge University Press A concise introduction to the core concepts in digital communication, providing clarity and depth through examples, problems and MATLAB exercises. Its simple structure maps a logical route to understand the most basic principles in digital communication, and also leads students through more in-depth treatment with examples and step-by step instructions.

Turbo Codes

Desirable and Designable

Springer Science & Business Media PREFACE The increasing demand on high data rate and quality of service in wireless communication has to cope with limited bandwidth and energy resources. More than 50 years ago, Shannon has paved the way to optimal usage of bandwidth and energy resources by bounding the spectral efficiency vs. signal to noise ratio trade-off. However, as any information theorist, Shannon told us what is the best we can do but not how to do it [1]. In this view, turbo codes are like a dream come true: they allow approaching the theoretical Shannon capacity limit very closely. However, for the designer who wants to implement these codes, at first sight they appear to be a nightmare. We came a huge step closer in striving the theoretical limit, but see the historical axiom repeated on a different scale: we know we can achieve excellent performance with turbo codes, but not how to realize this in real devices.

Radio Design in Nanometer Technologies

Springer Science & Business Media Radio Design in Nanometer Technologies is the first volume that looks at the integrated radio design problem as a "piece of a big puzzle", namely the entire chipset or single chip that builds an entire wireless system. This is the only way to successfully design radios to meet the stringent demands of today’s increasingly complex wireless systems.

Coding for MIMO Communication Systems

John Wiley & Sons Coding for MIMO Communication Systems is a comprehensive introduction and overview to the various emerging coding techniques developed for MIMO communication systems. The basics of wireless communications and fundamental issues of MIMO channel capacity are introduced and the space-time block and trellis coding techniques are covered in detail. Other signaling schemes for MIMO channels are also considered, including spatial multiplexing, concatenated coding and iterative decoding for MIMO systems, and space-time coding for non-coherent MIMO channels. Practical issues including channel correlation, channel estimation and antenna selection are also explored, with problems at the end of each chapter to clarify many important topics. A comprehensive book on coding for MIMO techniques covering main strategies Theories and practical issues on MIMO communications are examined in detail Easy to follow and accessible for both beginners and experienced practitioners in the field References at the end of each chapter for further reading Can be used with ease as a research book, or a textbook on a graduate or advanced undergraduate level course This book is aimed at advanced undergraduate and postgraduate students, researchers and practitioners in industry, as well as individuals working for government, military, science and technology institutions who would like to learn more about coding for MIMO communication systems.

Communication, Cloud and Big Data

Proceedings of CCB 2014

ACCB Publishing Analysis of big data is becoming a hot stuff for engineers, researchers and business enterprises now a days. It refers to the process of collecting, organizing and analyzing large sets of data to discover hidden patterns and other useful information. Not solely can massive information analytics assist to know the knowledge contained inside the information, however it will additionally facilitate to determine the information that is most significant to the business and future business choices. Cloud computing is the type of computing that relies on sharing computing resources rather than having local servers or personal devices to handle applications. Cloud computing aims at applying traditional supercomputing, or high-performance computing power to perform tens of trillions of computations per second, in consumer-oriented applications such as financial portfolios, to deliver personalized information, to provide data storage etc. Since big data places on networks, storage and servers, requirements arise to analyse this huge amount data on the cloud. Even cloud providers also welcome this new business opportunity of supporting big data analysis in the cloud. But in the same time they are facing various, architectural and technical hurdles. Therefore, big data analysis in cloud attacting many researchers now a days. The National Conference on Communication, Cloud and Big Data (CCB) 2014 organized by Department of Information Technology, SMIT has received keen response from researchers across the country. Each paper went through reviews process and finally, 30 papers were selected for presentation. The papers are an even mix of research topics from the fields of Communication, Cloud and Big Data and its applications in various fields of engineering and science.

Digital Communication

Springer Science & Business Media This book concerns digital communication. Specifically, we treat the transport of bit streams from one geographical location to another over various physical media, such as wire pairs, coaxial cable, optical fiber, and radio waves. Further, we cover the mul tiplexing, multiple access, and synchronization issues relevant to constructing com munication networks that simultaneously transport bit streams from many users. The material in this book is thus directly relevant to the design of a multitude of digital communication systems, including for example local and metropolitan area data net works, voice and video telephony systems, the integrated services digital network (ISDN), computer communication systems, voiceband data modems, and satellite communication systems. We extract the common principles underlying these and other applications and present them in a unified framework. This book is intended for designers and would-be designers of digital communication systems. To limit the scope to manageable proportions we have had to be selective in the topics covered and in the depth of coverage. In the case of advanced information, coding, and detection theory, for example, we have not tried to duplicate the in-depth coverage of many advanced textbooks, but rather have tried to cover those aspects directly relevant to the design of digital communication systems.

Channel Coding Techniques for Wireless Communications

Springer Nature This book discusses the latest channel coding techniques, MIMO systems, and 5G channel coding evolution. It provides a comprehensive overview of channel coding, covering modern techniques such as turbo codes, low-density parity-check (LDPC) codes, space–time coding, polar codes, LT codes, and Raptor codes as well as the traditional codes such as cyclic codes, BCH, RS codes, and convolutional codes. It also explores MIMO communications, which is an effective method for high-speed or high-reliability wireless communications. It also examines the evolution of 5G channel coding techniques. Each of the 13 chapters features numerous illustrative examples for easy understanding of the coding techniques, and MATLAB-based programs are integrated in the text to enhance readers’ grasp of the underlying theories. Further, PC-based MATLAB m-files for illustrative examples are included for students and researchers involved in advanced and current concepts of coding theory.

Information and Communications Security

12th International Conference, ICICS 2010, Barcelona, Spain, December 15-17, 2010 Proceedings

Springer Annotation. This book constitutes the refereed proceedings of the 12th International Conference on Information and Communications Security, ICICS 2010, held in Barcelona, Spain, in December 2010. The 31 revised full papers presented together with an invited talk were carefully reviewed and selected from 135 submissions. The papers are organized in topical sections on access control, public key cryptography and cryptanalysis, security in distributed and mobile systems, cryptanalysis, authentication, fair exchange protocols, anonymity and privacy, software security, proxy cryptosystems, and intrusion detection systems.

Modern Communications

A Systematic Introduction

Cambridge University Press A concise and approachable introductory text for a single-semester course, organized systematically rather than historically. Combining theory with practical implementation, and accompanied online by PowerPoint slides, a solutions manual, and additional problems, it is ideal for a first communications course.

Cellular Communications

A Comprehensive and Practical Guide

John Wiley & Sons Even as newer cellular technologies and standards emerge, many of the fundamental principles and the components of the cellular network remain the same. Presenting a simple yet comprehensive view of cellular communications technologies, Cellular Communications provides an end-to-end perspective of cellular operations, ranging from physical layer details to call set-up and from the radio network to the core network. This self-contained source for practitioners and students represents a comprehensive survey of the fundamentals of cellular communications and the landscape of commercially deployed 2G and 3G technologies and provides a glimpse of emerging 4G technologies.

Wireless Personal Communications

Research Developments

Springer Science & Business Media The area of personal and wireless communications is a burgeoning field. Technology advances and new frequency allocations for personal communication services (PCS) are creating numerous business and technical opportunities. It is becoming clear that an essential requirement for exploiting opportunities is the ability to track the dramatic changes in wireless technology, which is a principal aim of this book. Wireless Personal Communications: Research Developments places particular emphasis on the areas of signal processing, propagation and spread-spectrum, and emerging communication systems. This book contains new results on adaptive antennas for capacity improvements in wireless communication systems, as well as state-of-the-art information on the latest technical developments. Also included are several chapters which discuss the impact of defense conversion on the wireless industry, and related competitive issues. The six parts of the book each focus on a distinct issue in wireless communications. Part I contains several tutorial chapters on key areas in wireless communications. The first chapter is on radio wave propagation for emerging wireless personal communication systems. Chapter two contains a comprehensive study of emerging DSP-based interference rejection techniques for single channel (antenna) systems. Chapter three deals with spread spectrum wireless communications, explaining the concept of spread spectrum, modeling techniques for spread spectrum, and current applications and research issues for spread spectrum systems. Part II focuses on digital signal processing and spread spectrum, two means of creating interference and multipath robust communications. Part III concerns propagation aspects of wireless communications. Part IV discusses the performance of emerging wireless systems. Part V describes the opportunities and pitfalls of defense conversion from the perspective of several U.S. defense firms that have successfully made the transition to commercial wireless. The final section discusses a number of competitive issues regarding personal communication services.

The Technology and Business of Mobile Communications

An Introduction

John Wiley & Sons Provides an introduction to the technical and business aspects of mobile telecommunications, exploring the complete eco-system of the industry with the key segments and how they interact with each other. This industry has seen rapid technical advancements in recent years, yet the basics of providing coverage and capacity to the end users have not changed. The authors introduce these technical basics to the reader and then show how a network is deployed. Technical innovation has been pivotal to the rapid advancement of this industry and the book details some of the main innovations over the years. The book highlights some of the current challenges the industry is facing and how innovation is driven by these challenges. Mobile operators business structures are examined, from the purchasing spectrum to deploying the network and attracting and retaining customers. The role of the regulator is not overlooked, and its role in ensuring a competitive market where consumers have sufficient choice. The authors detail current challenges faced by the operators and how they are using business innovation to overcome these challenges. In describing the changing face of mobile telecoms, the book covers business challenges as well as the technological challenges faced today by the industry. The advent of the Smart phones, which support multiple technologies that compliment and sometimes compete with mobile cellular technology has had a profound impact on the industry, sometimes challenging the role of the mobile operator. A discussion of these yet-unanswered challenges provides some insight into where the industry is heading. The technical aspects of this book are pitched at undergraduate first year mathematics and physics subject levels, making it easily comprehensible to the undergraduate students studying relevant fields. As the title denotes, this book will be at an introductory level, giving a broad coverage to many of the significant technical and business aspects of the industry.

Noise Tolerant Data Authentication for Wireless Communication

Springer This book provides insight into the challenges in providing data authentication over wireless communication channels. The authors posit that established standard authentication mechanisms – for wired devices – are not sufficient to authenticate data, such as voice, images, and video over wireless channels. The authors propose new mechanisms based on the so-called soft authentication algorithms, which tolerate some legitimate modifications in the data that they protect. The authors explain that the goal of these algorithms is that they are tolerant to changes in the content but are still able to identify the forgeries. The authors go on to describe how an additional advantage of the soft authentication algorithms is the ability to identify the locations of the modifications and correct them if possible. The authors show how to achieve this by protecting the data features with the help of error correcting codes. The correction methods are typically based on watermarking, as the authors discuss in the book. Provides a discussion of data (particularly image) authentication methods in the presence of noise experienced in wireless communication; Presents a new class of soft authentication methods, instead of the standard hard authentication methods, used to tolerate minor changes in image data; Features authentication methods based on the usage of authentication tags as well as digital watermarks.

Wireless Security: Models, Threats, and Solutions

McGraw Hill Professional Nichols and Lekkas uncover the threats and vunerablilities unique to the wireless communication, telecom, broadband, and satellite markets. They provide an overview of current commercial security solutions available on the open market.

Signal Processing for Mobile Communications Handbook

CRC Press In recent years, a wealth of research has emerged addressing various aspects of mobile communications signal processing. New applications and services are continually arising, and future mobile communications offer new opportunities and exciting challenges for signal processing. The Signal Processing for Mobile Communications Handbook provi

Wireless Communications

Principles, Theory and Methodology

John Wiley & Sons Understand the mechanics of wireless communication Wireless Communications: Principles, Theory and Methodology offers a detailed introduction to the technology. Comprehensive and well-rounded coverage includes signaling, transmission, and detection, including the mathematical and physics principles that underlie the technology's mechanics. Problems with modern wireless communication are discussed in the context of applied skills, and the various approaches to solving these issues offer students the opportunity to test their understanding in a practical manner. With in-depth explanations and a practical approach to complex material, this book provides students with a clear understanding of wireless communication technology.

UWB Communication Systems

A Comprehensive Overview

Hindawi Publishing Corporation Ultrawideband (UWB) communication systems offer an unprecedented opportunityto impact the future communication world. The enormous available bandwidth, the wide scope of the data rate / rangetrade-off, as well as the potential for very low-cost operation leading topervasive usage, all present a unique opportunity for UWB systems to impactthe way people and intelligent machines communicate and interact with theirenvironment. The aim of this book is to provide an overview of the state of the art of UWBsystems from theory to applications. Due to the rapid progress of multidisciplinary UWB research, such an overviewcan only be achieved by combining the areas of expertise of severalscientists in the field. More than 30 leading UWB researchers and practitioners have contributed tothis book covering the major topics relevant to UWB. These topics includeUWB signal processing, UWB channel measurement and modeling, higher-layerprotocol issues, spatial aspects of UWB signaling, UWB regulation andstandardization, implementation issues, and UWB applications as well aspositioning. The book is targeted at advanced academic researchers, wireless designers, and graduate students wishing to greatly enhance their knowledge of allaspects of UWB systems

Handbook of Research on Progressive Trends in Wireless Communications and Networking

IGI Global "This book brings together advanced research on diverse topics in wireless communications and networking, including the latest developments in broadband technologies, mobile communications, wireless sensor networks, network security, and cognitive radio networks"--

Undersea Fiber Communication Systems

Elsevier Description This book provides a detailed overview of the evolution of undersea communications systems, with emphasis on the most recent breakthroughs of optical submarine cable technologies based upon Wavelength Division Multiplexing, optical amplification, new-generation optical fibers, and high-speed digital electronics. The role played by submarine-communication systems in the development of high-speed networks and associated market demands for multiplying Internet and broadband services is also covered. Importance of This Topic This book will fill the gap between highly specialized papers from large international conferences and broad-audience technology review updates. The book provides a full overview of the evolution in the field and conveys the dimension of the large undersea projects. In addition, the book uncovers the myths surrounding marine operations and installations in that domain, which have remained known so far to only very few specialists.

Mobile Broadband

Including WiMAX and LTE

Springer Science & Business Media This book addresses the emerging technology for Orthogonal Frequency Division Multiple Access (OFDMA), covering OFDMA physical layer as well as network technology. The book also includes information on IEEE 802.16e and WiMAX networks and also offers a comparison with other OFDMA technologies. OFDMA is the fastest growing area in the wireless marketplace, and the backbone of systems used in WiMAX. WiMAX is the technology that enables wireless users to communicate at any time from any location without having to find a WiFi hotspot.