

The Book Of Wireless A Painless Guide To Wi Fi And Broadband Wireless

Expert contributors drawn from the ranks of academia and industry have authored chapters in such areas as third-generation wireless, wireless sensor networks, RF power amplifiers, spread spectrum modulation, signal propagation, antennas, and other key subjects that engineers working in RF and wireless need to be familiar with. This is far more than just a tutorial or reference guide—it is a "guided tour" through the world of cutting-edge RF and wireless design, combining theory, applications, and philosophies behind the RF/wireless design process. The multiple and sometimes overlapping chapters reiterate and emphasize the fundamentals in the context of different types of wireless applications. Here are just a few benefits that readers will gain from reading this book: *A refresher and update of wireless principles and techniques. *Information about the latest (and forthcoming) RF and wireless circuits, products and systems. *Guidelines, approaches, and techniques to RF/wireless design. *Examples of typical applications with an emphasis on real-world situations including existing and forthcoming new components and integrated circuits. *Coverage of new and emerging wireless topics heretofore not widely covered in print (e.g. UWB, RFID, IR, etc.) * A comprehensive survey of current RF and wireless engineering practice * Heavy emphasis on practical applications and design guidelines * Multiple contributors assure a wide range of perspectives and avoids individual bias

A cellular network or mobile network is a wireless network distributed over land areas called cells, each served by at least one fixed-location transceiver, known as a cell site or base station. In a cellular network, each cell uses a different set of frequencies from neighboring cells, to avoid interference and provide guaranteed bandwidth within each cell. When joined together these cells provide radio coverage over a wide geographic area. This enables a large number of portable transceivers (e.g., mobile phones, pagers, etc.) to communicate with each other and with fixed transceivers and telephones anywhere in the network, via base stations, even if some of the transceivers are moving through more than one cell during transmission. Cellular networks offer a number of desirable features: More capacity than a single large transmitter, since the same frequency can be used for multiple links as long as they are in different cells Mobile devices use less power than with a single transmitter or satellite since the cell towers are closer Larger coverage area than a single terrestrial transmitter, since additional cell towers can be added indefinitely and are not limited by the horizon Major telecommunications providers have deployed voice and data cellular networks over most of the inhabited land area of the Earth. This allows mobile phones and mobile computing devices to be connected to the public switched telephone network and public Internet. Private cellular networks can be used for research or for large organizations and fleets, such as dispatch for local public safety agencies or a taxicab company.

The last decade has witnessed an unprecedented development and growth in global wireless communications systems, technologies and network "traffic" generated over network infrastructures. This book presents state-of-the-art energy-efficient techniques, designs and implementations that pertain to wireless communication networks such as cellular networks, wireless local area networks (WLANs) and wireless ad hoc networks (WAHNS) including mobile ad hoc networks (MANETs), and wireless sensor networks (WSNs) as they are deployed across the world to facilitate "always on" reliable high-speed wireless access from anywhere, at anytime to accommodate the new paradigm of the "Internet of Things" (IoT). The pervasive and exponential growth of Wi-Fi and the impact of bandwidth-intensive applications on the energy consumption of Wi-Fi-enabled devices are discussed along with energy harvesting as an advantageous option to power WAHNS. The book aims to serve as a useful

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reference for researchers, students, regulatory authorities, and educators.

A new look at the early history of wireless communication.

Wireless Communications Standards: A Study of IEEE 802.11, 802.15, and 802.16 is one of the latest books in the IEEE Standards Wireless Networks Series, and it is the only book of its kind that covers all of the current 802 wireless standards! Presented in a clear style, by Dr. Todor Cooklev of San Francisco State University, the book is accessible to a wide audience. It is aimed at engineers, computer scientists, managers, and marketing specialists. It can also be used as the primary textbook for a one-semester advanced undergraduate/graduate level course on wireless communication standards, or as a complementary textbook for a course in wireless communications.

Wireless communications have become indispensable part of our lives. The book deals with the security of such wireless communication. The technological background of these applications have been presented in detail. Special emphasis has been laid on the IEEE 802.11x-standards that have been developed for this technology. A major part of the book is devoted to security risks, encryption and authentication. Checklists have been provided to help IT administrators and security officers to achieve the maximum possible security in their installations, when using wireless technology. This is the second edition of the book. The updates include the latest the IEEE 802.11-standard, an updated chapter on PDA, the increased relevance of smart phones and tablets, widespread use of WLAN with increased security risks.

With the increased functionality demand for mobile speed and access in our everyday lives, broadband wireless networks have emerged as the solution in providing high data rate communications systems to meet these growing needs. Broadband Wireless Access Networks for 4G: Theory, Application, and Experimentation presents the latest trends and research on mobile ad hoc networks, vehicular ad hoc networks, and routing algorithms which occur within various mobile networks. This publication smartly combines knowledge and experience from enthusiastic scholars and expert researchers in the area of wideband and broadband wireless networks. Students, professors, researchers, and other professionals in the field will benefit from this book's practical applications and relevant studies.

"This book offers cutting edge approaches for the provision of quality of service in wireless local area networks"--Provided by publisher.

Wireless networks of moving objects have drawn significant attention recently. These types of networks consist of a number of autonomous or semi-autonomous wireless nodes/objects moving with diverse patterns and speeds while communicating via several radio interfaces simultaneously. To overcome current shortcomings, a number of research challenges have to be addressed in this area, ranging from initial conceptualization and modelling, to protocols and architectures engineering, and development of suitable tools, applications and services, and to the elaboration of realistic use-case scenarios by taking into account corresponding societal and economic aspects. By applying a systematic approach the objective of this book is to assess the state of the art and consolidate the main research results achieved in this area. It was prepared as the Final Publication of the COST Action IC0906 "Wireless Networking for Moving Objects (WiNeMO)". The book contains 15 chapters and is a show-case of the main outcomes of the action in line with its scientific goals. The book will serve as a valuable reference for undergraduate students, post-graduate students, educators, faculty members, researchers, engineers, and research strategists working in this field.

Provides information on analyzing wireless networks through wardriving and penetration testing.

In 1873 Scottish physicist James Clerk Maxwell first advanced the idea that there might be electromagnetic waves that were similar to light waves, a startling concept to the scientists of his day. About 13 years later, German physicist Heinrich Hertz demonstrated in his laboratory

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that electromagnetic radiation did indeed exist. But it was not until after Hertz's death that a young Italian named Guglielmo Marconi got the idea for a practical communications system based on Hertz's work. Marconi was surprised and disappointed that the Italian government was not interested in his newly discovered wireless communications system, and thus he took his equipment to England. From that point on, the wireless became identified with Britain. From these beginnings, wireless radio became the basis of a revolution that has resulted in the satellite communications of today. This history first looks at Marconi's invention and then explores its many applications, including marine radio, cellular telephones, police and military uses, television and radar. Radio collecting is also discussed, and brief biographies are provided for the major figures in the development and use of the wireless.

Provides a detailed analysis of the standards and technologies enabling applications for the wireless Internet of Things
The Wireless Internet of Things: A Guide to the Lower Layers presents a practitioner's perspective toward the Internet of Things (IoT) focusing on over-the-air interfaces used by applications such as home automation, sensor networks, smart grid, and healthcare. The author—a noted expert in the field—examines IoT as a protocol-stack detailing the physical layer of the wireless links, as both a radio and a modem, and the media access control (MAC) that enables communication in congested bands. Focusing on low-power wireless personal area networks (WPANs) the text outlines the physical and MAC layer standards used by ZigBee, Bluetooth LE, Z-Wave, and Thread. The text deconstructs these standards and provides background including relevant communication theory, modulation schemes, and access methods. The author includes a discussion on Wi-Fi and gateways, and explores their role in IoT. He introduces radio topologies used in software-defined radio implementations for the WPANs. The book also discusses channel modelling and link budget analysis for WPANs in IoT. This important text: Introduces IEEE 802.15.4, ITU-T G.9959, and Bluetooth LE as physical layer technology standards enabling wireless IoT
Takes a layered approach in order to cultivate an appreciation for the various standards that enable interoperability Provides clarity on wireless standards with particular focus on actual implementation
Written for IoT application and platform developers as well as digital signal processing, network, and wireless communication engineers; *The Wireless Internet of Things: A Guide to the Lower Layers* offers an inclusive overview of the complex field of wireless IoT, exploring its beneficial applications that are proliferating in a variety of industries.

A comprehensive evaluation of Fi-Wi, enabling readersto design links using channel estimation and equalizationalgorithms
This book provides a detailed study of radio over fiber (ROF)based wireless communication systems, otherwise called fiberwireless (Fi-Wi) systems. This is an emerging hot topic where theabundant bandwidth of optical fiber is directly combined with theflexibility and mobility of wireless networks to provide broadbandconnectivity. Its application is increasing because of thegrowing demand for broadband wireless services. In such a systemthe transmission of the radio signals over a fiber is an importanttask. This book provides substantial material on the radio overfiber part of the complete fiber-wireless system, including newresearch results on the compensation methods. The early chapters provide fundamental knowledge required for anon-expert engineering professional as well as senior/graduatelevel students to learn this topic from scratch. The latter part ofthe book covers advanced topics useful for researchers and seniorstudents. Therefore, this book provides a comprehensiveunderstanding of the system for readers who will gain enoughknowledge to design Fi-Wi links of their own by learning how todevelop Fi-Wi channel estimation and equalization algorithms. Thisconcept is completely novel in current literature and has beenpatented by the author. Readers are expected to have a basic understanding of fiberoptics and wireless communications to easily follow the book and toappreciate the concepts. Basics of the Fi-Wi system and signalprocessing approaches are clearly explained. It covers amultidisciplinary topic and acts as a bridge between optical andwireless

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communication domains. In the increasingly demanding telecommunications profession, engineers are expected to have knowledge in both optical and wireless communications and expected design combined/hybrid systems. Hence, the book is written in such a way that both optical and wireless professionals will be able to easily understand and perceive the concepts. follows a logical process from basic principles through to advanced topics, providing a wide range of interest for researchers, practicing engineers, students, and those required to build such networks explains detailed system design concepts and the limitations and advantages in each configuration, appealing to design engineers, and largely avoiding system specifics demonstrates the author's exclusive patent, showing how to develop baseband signal processing algorithms for Fi-Wi systems, which is a key requirement for the successful deployment of Fi-Wi systems contains tables, numerical examples and case studies, facilitating a good quantitative understanding of the topic

This book provides a comprehensive overview of the most relevant research and standardization results in the area of wireless networking for Industrial IoT, covering both critical and massive connectivity. Most chapters in this book are intended to serve as short tutorials of particular topics, highlighting the main developments and ideas, as well as giving an outlook of the upcoming research challenges. The book is divided into four parts. The first part focuses on challenges, enablers and standardization efforts for reliable low-latency communication in Industrial IoT networks. The next part focuses on massive IoT, which requires cost- and energy-efficient technology components to efficiently connect a massive number of low-cost IoT devices. The third part covers three enabling technologies in the context of Industrial IoT: Security, Machine Learning/Artificial Intelligence and Edge Computing. These enablers are applicable to both connectivity types, critical and massive IoT. The last part covers aspects of Industrial IoT related to connected transportation that are important in, for example, warehouse and port logistics, product delivery and transportation among industries. Presents a comprehensive guide to concepts and research challenges in wireless networking for Industrial IoT; Includes an introduction and overview of such topics as 3GPP standardization for Industrial IoT, Time Sensitive Networking, system dependability over wireless networks, energy-efficient wireless networks, IoT security, ML/AI for Industrial IoT and connected transportation systems; Features contributions by well-recognized experts from both academia and industry.

With transfer speeds up to 11 Mbps the 802.11 wireless network standard is set to revolutionize wireless LANs. Matthew Gast's definitive guide to the standard is aimed at administrators, architects and security professionals.

This book describes the technologies involved in all aspects of a large networking system and how the various devices can interact and communicate with each other. Using a bottom up approach the authors demonstrate how it is feasible, for instance, for a cellular device user to communicate, via the all-purpose TCP/IP protocols, with a wireless notebook computer user, traversing all the way through a base station in a cellular wireless network (e.g., GSM, CDMA), a public switched network (PSTN), the Internet, an intranet, a local area network (LAN), and a wireless LAN access point. The information bits, in travelling through this long path, are processed by numerous disparate communication technologies. The authors also describe the technologies involved in infrastructure less wireless networks.

A broad introduction to the fundamentals of wireless communication engineering technologies Covering both theory and practical topics, Fundamentals of Wireless Communication Engineering Technologies offers a sound survey of the major industry-relevant aspects of wireless communication engineering technologies. Divided into four main sections, the book examines RF, antennas, and propagation; wireless access technologies; network and service architectures; and other topics, such as network

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management and security, policies and regulations, and facilities infrastructure. Helpful cross-references are placed throughout the text, offering additional information where needed. The book provides: Coverage that is closely aligned to the IEEE's Wireless Communication Engineering Technologies (WCET) certification program syllabus, reflecting the author's direct involvement in the development of the program A special emphasis on wireless cellular and wireless LAN systems An excellent foundation for expanding existing knowledge in the wireless field by covering industry-relevant aspects of wireless communication Information on how common theories are applied in real-world wireless systems With a holistic and well-organized overview of wireless communications, *Fundamentals of Wireless Communication Engineering Technologies* is an invaluable resource for anyone interested in taking the WCET exam, as well as practicing engineers, professors, and students seeking to increase their knowledge of wireless communication engineering technologies.

Security Smarts for the Self-Guided IT Professional Protect wireless networks against all real-world hacks by learning how hackers operate. *Wireless Network Security: A Beginner's Guide* discusses the many attack vectors that target wireless networks and clients--and explains how to identify and prevent them. Actual cases of attacks against WEP, WPA, and wireless clients and their defenses are included. This practical resource reveals how intruders exploit vulnerabilities and gain access to wireless networks. You'll learn how to securely deploy WPA2 wireless networks, including WPA2-Enterprise using digital certificates for authentication. The book provides techniques for dealing with wireless guest access and rogue access points. Next-generation wireless networking technologies, such as lightweight access points and cloud-based wireless solutions, are also discussed. Templates, checklists, and examples give you the hands-on help you need to get started right away. *Wireless Network Security: A Beginner's Guide* features: Lingo--Common security terms defined so that you're in the know on the job IMHO--Frank and relevant opinions based on the author's years of industry experience In Actual Practice--Exceptions to the rules of security explained in real-world contexts Your Plan--Customizable checklists you can use on the job now Into Action--Tips on how, why, and when to apply new skills and techniques at work This is an excellent introduction to wireless security and their security implications. The technologies and tools are clearly presented with copious illustrations and the level of presentation will accommodate the wireless security neophyte while not boring a mid-level expert to tears. If the reader invests the time and resources in building a lab to follow along with the text, s/he will develop a solid, basic understanding of what "wireless security" is and how it can be implemented in practice. This is definitely a recommended read for its intended audience. - Richard Austin, IEEE CIPHER, IEEE Computer Society's TC on Security and Privacy (E109, July 23, 2012) Are you tired of buying security books and at the end discover that they contain only theory and no practical examples at all? Do you want to setup your own hacking lab and learn through practice? If yes, then this is the book for you! *Hacking Wireless Networks* - The ultimate hands-on guide, is a book written for people who seek to practice the techniques of assessing the security of wireless infrastructures. Through 30 real life scenarios and more than 300 figures the book examines in details the following areas: - Discovery and Profiling of wireless networks - Denial of Service attacks -

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Attacks against WEP secured wireless networks - Attacks against WPA/WPA2 secured wireless networks - Bypass techniques for popular Authentication mechanisms - Encryption keys cracking using special techniques - Attacks against the Access Point's management interface - Attacks against special security features like WPS - Stealthy techniques to avoid getting caught by wireless IDS Now that the world agrees that wireless security is central to computer security, it is time to put theory into practice. You've probably heard the expression, "It's time to cut the cord." Well, it may be time to "cut the cables" at your office and free yourself from your desk and computer.

Wireless networks are the waves of the future—literally. *Wireless Networks For Dummies* guides you from design through implementation to ongoing protection of your system and your information so you can: Remain connected to the office in airports and hotels Access the Internet and other network resources in the lunchroom, conference room, or anywhere there's an access point Use your PDA or laptop to query your database from the warehouse or the boardroom Check e-mail wirelessly when you're on the road Get rid of the cable clutter in your office *Wireless Networks For Dummies* was coauthored by Barry D. Lewis, CISSP, and Peter T. Davis, who also coauthored *Computer Security For Dummies*. Barry Lewis is president of an information security consulting firm and an internationally known leader of security seminars. Peter Davis is founder of a firm specializing in the security, audit, and control of information. Together, they cut through the cables, clutter, and confusion and help you: Get off to a quick start and get mobile with IrDA (Infrared Data Association) and Bluetooth Perform a site survey and select the right standard, mode, access point, channel and antenna Check online to verify degree of interoperability of devices from various vendors Install clients and set up roaming Combat security threats such as war driving, jamming, hijacking, and man-in-the-middle attacks Implement security and controls such as MAC (Media Access Control) and protocol filtering, WEP (Wireless Equivalent Privacy), WPA, (Wi-Fi Protected Access), EAP (Extensible Authentication Protocol), and VPN (Virtual Private Network) Set up multiple access points to form a larger wireless network Complete with suggestions of places to get connected, Web sites where you can get more information, tools you can use to monitor and improve security, and more, *Wireless Networks For Dummies* helps you pull the plug and go wireless!

Learn the essentials of wireless networking Configure, manage, and secure wireless networks using the step-by-step details in this practical resource. *Wireless Network Administration: A Beginner's Guide* shows you how to work with the latest wireless networking standards, including the 802.11x family, on Windows, Mac, and Linux platforms. The book covers wireless network planning, design, hardware, services, protocols, device configuration, security, troubleshooting, and more. This hands-on guide will get you started administering wireless networks in no time. Get details on regulatory and technical organizations Learn about different wireless standards and the basics of RF technologies Understand and determine client-side hardware requirements, including chipsets and various wireless interfaces Select infrastructure-side wireless hardware, such as antennas, wireless access points (WAPs), residential gateways, switches/controllers, routers, and bridges Learn about WLANs, WWANs, WMANs, and WPANs Work with standard wireless network protocols--TCP/IP (IPv4 and IPv6) Understand DNS, DHCP, and other supporting infrastructure services Secure wireless networks using cryptography Configure infrastructure devices, including a

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wireless access point device and wireless network switches and controllers Configure and manage wireless Microsoft Windows, Mac OS X, and Linux clients Plan, design, survey, deploy, and troubleshoot your wireless network

The only way to stop a hacker is to think like one! Wireless technology is a new and rapidly growing field of concentration for network engineers and administrators. Innovative technology is now making the communication between computers a cordless affair. Wireless devices and networks are vulnerable to additional security risks because of their presence in the mobile environment. Hack Proofing Your Wireless Network is the only book written specifically for architects, engineers, and administrators responsible for securing their wireless networks. From making sense of the various acronyms (WAP, WEP, SSL, PKE, PKI, SSH, IPSEC) to the implementation of security policies, plans, and recovery protocols, this book will help users secure their wireless network before its security is compromised. The only way to stop a hacker is to think like one...this book details the multiple ways a hacker can attack a wireless network - and then provides users with the knowledge they need to prevent said attacks. Uses forensic-based analysis to give the reader an insight into the mind of a hacker With the growth of wireless networks architects, engineers and administrators will need this book Up to the minute Web based support at www.solutions@syngress.com

This book has been considered by academicians and scholars of great significance and value to literature. This forms a part of the knowledge base for future generations. So that the book is never forgotten we have represented this book in a print format as the same form as it was originally first published. Hence any marks or annotations seen are left intentionally to preserve its true nature.

As we all know by now, wireless networks offer many advantages over fixed (or wired) networks. Foremost on that list is mobility, since going wireless frees you from the tether of an Ethernet cable at a desk. But that's just the tip of the cable-free iceberg. Wireless networks are also more flexible, faster and easier for you to use, and more affordable to deploy and maintain. The de facto standard for wireless networking is the 802.11 protocol, which includes Wi-Fi (the wireless standard known as 802.11b) and its faster cousin, 802.11g. With easy-to-install 802.11 network hardware available everywhere you turn, the choice seems simple, and many people dive into wireless computing with less thought and planning than they'd give to a wired network. But it's wise to be familiar with both the capabilities and risks associated with the 802.11 protocols. And 802.11 Wireless Networks: The Definitive Guide, 2nd Edition is the perfect place to start. This updated edition covers everything you'll ever need to know about wireless technology. Designed with the system administrator or serious home user in mind, it's a no-nonsense guide for setting up 802.11 on Windows and Linux. Among the wide range of topics covered are discussions on: deployment considerations network monitoring and performance tuning wireless security issues how to use and select access points network monitoring essentials wireless card configuration security issues unique to wireless networks With wireless technology, the advantages to its users are indeed plentiful. Companies no longer have to deal with the hassle and expense of wiring buildings, and households with several computers can avoid fights over who's online. And now, with 802.11 Wireless Networks: The Definitive Guide, 2nd Edition, you can integrate wireless technology into your current

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infrastructure with the utmost confidence.

Wireless technology has become extremely important for human life and nearly everyone carries at least one cell/mobile phone. Voice communication affects our daily lives and we are influenced by day-to-day routine. Wireless systems are being explored for numerous applications in addition to their current communication function. One can only imagine the possible innovations from an area is expanding at an unprecedented rate and offers significant future potentials. This volume is a carefully selected collection of papers that characterizes the technology and establishes its use.

A revealing insider's perspective details the birth and development of the wireless industry in America and the individuals who pioneered this movement, including Seattle entrepreneur Craig McCaw and John Kluge of Metromedia.

Advanced Wired and Wireless Networks brings the reader a sample of recent research efforts representative of advances in the areas of recognized importance for the future Internet, such as ad hoc networking, mobility support and performance improvements in advanced networks and protocols. Advanced Wired and Wireless Networks is structured to meet the needs of a professional audience in industry, as well as graduate-level students in computer science and engineering.

Important new insights into how various components and systems evolved Premised on the idea that one cannot know a science without knowing its history, History of Wireless offers a lively new treatment that introduces previously unacknowledged pioneers and developments, setting a new standard for understanding the evolution of this important technology. Starting with the background-magnetism, electricity, light, and Maxwell's Electromagnetic Theory-this book offers new insights into the initial theory and experimental exploration of wireless. In addition to the well-known contributions of Maxwell, Hertz, and Marconi, it examines work done by Heaviside, Tesla, and passionate amateurs such as the Kentucky melon farmer Nathan Stubblefield and the unsung hero Antonio Meucci. Looking at the story from mathematical, physics, technical, and other perspectives, the clearly written text describes the development of wireless within a vivid scientific milieu. History of Wireless also goes into other key areas, including: The work of J. C. Bose and J. A. Fleming German, Japanese, and Soviet contributions to physics and applications of electromagnetic oscillations and waves Wireless telegraphic and telephonic development and attempts to achieve transatlantic wireless communications Wireless telegraphy in South Africa in the early twentieth century Antenna development in Japan: past and present Soviet quasi-optics at near-mm and sub-mm wavelengths The evolution of electromagnetic waveguides The history of phased array antennas Augmenting the typical, Marconi-centered approach, History of Wireless fills in the conventionally accepted story with attention to more specific, less-known discoveries and individuals, and challenges traditional assumptions about the origins and growth of wireless. This allows for a more comprehensive understanding of how various components and systems evolved. Written in a clear tone with a broad scientific audience in mind, this exciting and thorough treatment is sure to become a classic in the field.

Make the most of your wireless network...without becoming a technical expert! This book is the fastest way to connect all your wireless devices, get great performance with everything from streaming media to printing, stay safe and secure, and do more with Wi-Fi than you ever thought possible! Even if you've never set up or run a network before,

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this book will show you how to do what you want, one incredibly clear and easy step at a time. Wireless networking has never, ever been this simple! Who knew how simple wireless networking could be? This is today's best beginner's guide to creating, using, troubleshooting, and doing more with your wireless network...simple, practical instructions for doing everything you really want to do, at home or in your business! Here's a small sample of what you'll learn:

- Buy the right equipment without overspending
- Reliably connect Windows PCs, Macs, iPads, Android tablets, game consoles, Blu-ray players, smartphones, and more
- Get great performance from all your networked devices
- Smoothly stream media without clogging your entire network
- Store music and movies so you can play them anywhere in your home
- Keep neighbors and snoopers out of your network
- Share the files you want to share—and keep everything else private
- Automatically back up your data across the network
- Print from anywhere in the house—or from anywhere on Earth
- Extend your network to work reliably in larger homes or offices
- Set up a “guest network” for visiting friends and family
- View streaming videos and other web content on your living room TV
- Control your networked devices with your smartphone or tablet
- Connect to Wi-Fi hotspots and get online in your car
- Find and log onto hotspots, both public and hidden
- Quickly troubleshoot common wireless network problems

Michael Miller is the world's #1 author of beginning computer books. He has written more than 100 best-selling books over the past two decades, earning an international reputation for his friendly and easy-to-read style, practical real-world advice, technical accuracy, and exceptional ability to demystify complex topics. His books for Que include *Computer Basics Absolute Beginner's Guide*; *Facebook for Grown-Ups*; *My Pinterest*; *Ultimate Digital Music Guide*; *Speed It Up! A Non-Technical Guide for Speeding Up Slow PCs*, and *Googlepedia: The Ultimate Google Resource*. Category: Networking Covers: Wireless Networking User Level: Beginning

Wireless Networking Absolute Beginner's Guide Que Publishing

The third edition of this popular reference covers enabling technologies for building up 5G wireless networks. Due to extensive research and complexity of the incoming solutions for the next generation of wireless networks it is anticipated that the industry will select a subset of these results and leave some advanced technologies to be implemented later,. This new edition presents a carefully chosen combination of the candidate network architectures and the required tools for their analysis. Due to the complexity of the technology, the discussion on 5G will be extensive and it will be difficult to reach consensus on the new global standard. The discussion will have to include the vendors, operators, regulators as well as the research and academic community in the field. Having a comprehensive book will help many participants to join actively the discussion and make meaningful contribution to shaping the new standard. "This book is designed to provide readers with relevant theoretical frameworks and latest technical and institutional solutions for transcoding multimedia in mobile and wireless networks"--Provided by publisher.

Provides information on wireless networking, covering such topics as 802.11 standards, hotspots, and setting up a wireless network.

Provides instructions on ways to insure security in wireless LAN systems with information on war driving, firewalls, WPA, 802.1x, VPN, and radio frequency.

Wireless technology is a truly revolutionary paradigm shift, enabling multimedia communications between people and devices from any location. It also underpins exciting

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applications such as sensor networks, smart homes, telemedicine, and automated highways. This book provides a comprehensive introduction to the underlying theory, design techniques and analytical tools of wireless communications, focusing primarily on the core principles of wireless system design. The book begins with an overview of wireless systems and standards. The characteristics of the wireless channel are then described, including their fundamental capacity limits. Various modulation, coding, and signal processing schemes are then discussed in detail, including state-of-the-art adaptive modulation, multicarrier, spread spectrum, and multiple antenna techniques. The concluding chapters deal with multiuser communications, cellular system design, and ad-hoc network design. Design insights and tradeoffs are emphasized throughout the book. It contains many worked examples, over 200 figures, almost 300 homework exercises, over 700 references, and is an ideal textbook for students. This textbook takes a unified view of the fundamentals of wireless communication and explains cutting-edge concepts in a simple and intuitive way. An abundant supply of exercises make it ideal for graduate courses in electrical and computer engineering and it will also be of great interest to practising engineers.

"Professor Andreas F. Molisch, renowned researcher and educator, has put together the comprehensive book, *Wireless Communications*. The second edition, which includes a wealth of new material on important topics, ensures the role of the text as the key resource for every student, researcher, and practitioner in the field." —Professor Moe Win, MIT, USA

Wireless communications has grown rapidly over the past decade from a niche market into one of the most important, fast moving industries. Fully updated to incorporate the latest research and developments, *Wireless Communications, Second Edition* provides an authoritative overview of the principles and applications of mobile communication technology. The author provides an in-depth analysis of current treatment of the area, addressing both the traditional elements, such as Rayleigh fading, BER in flat fading channels, and equalisation, and more recently emerging topics such as multi-user detection in CDMA systems, MIMO systems, and cognitive radio. The dominant wireless standards; including cellular, cordless and wireless LANs; are discussed. Topics featured include: wireless propagation channels, transceivers and signal processing, multiple access and advanced transceiver schemes, and standardised wireless systems. Combines mathematical descriptions with intuitive explanations of the physical facts, enabling readers to acquire a deep understanding of the subject. Includes new chapters on cognitive radio, cooperative communications and relaying, video coding, 3GPP Long Term Evolution, and WiMax; plus significant new sections on multi-user MIMO, 802.11n, and information theory. Companion website featuring: supplementary material on 'DECT', solutions manual and presentation slides for instructors, appendices, list of abbreviations and other useful resources.

This book provides the fundamental knowledge of the classical matching theory problems. It builds up the bridge between the matching theory and the 5G wireless communication resource allocation problems. The potentials and challenges of implementing the semi-distributive matching theory framework into the wireless resource allocations are analyzed both theoretically and through implementation examples. Academics, researchers, engineers, and so on, who are interested in efficient distributive wireless resource allocation solutions, will find this book to be an exceptional resource.

Smart phones are just the beginning . . . A tech exec's New York Times bestselling, groundbreaking analysis of the impact of mobile intelligence. With the perspective of a historian, the precision of a technologist, and the pragmatism of a CEO, Michael J. Saylor of MicroStrategy provides a panoramic view of the future mobile world. He describes how: A Harvard education will be available to anyone with the touch of a screen. Cash will become virtual software and crime proof. Cars, homes, fruit, animals, and more will be tagged so they can tell you about themselves. Buying an item will be as easy as pointing our mobile device to

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scan and pay. Land and capital will become more of a liability than an asset. Social mobile media will push all businesses to think and act like software companies. Employment will shift as more service-oriented jobs are automated by mobile software. Products, businesses, industries, economies, and even society will be altered forever as the Mobile wave washes over us and changes the landscape. With so much change, *The Mobile Wave* is a guidebook for individuals, business leaders, and public figures who must navigate the new terrain as mobile intelligence changes everything. “The visionary picture he paints of the future is captivating, informative, and thought-provoking . . . Readers will be able understand and appreciate his clear and engaging exploration of a complex, red-hot, and thoroughly up-to-the minute topic.”—USA Today “A thoughtful romp across invention and innovation.”—Fortune “A blueprint for impending change and a sober warning for the laggards who resist it.”—Forbes.com

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