

Microwave Line Of Sight Link Engineering

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Microwave Mobile Communications (An IEEE Press Classic Reissue) - William C Jakes 1994-05-16

This is an IEEE classic reissue of the book published by John Wiley & Sons in 1974. This definitive text and reference covers all aspects of microwave mobile systems design. Encompassing ten years of advanced research in the field, it reviews basic microwave theory, explains how cellular systems work and presents useful techniques for effective systems development. Key features include: complete coverage of microwave propagation techniques to design successful cellular systems, extensive chapters covering the broad fundamentals of microwave usage in mobile radio propagation and the functions of mobile radio antennas, comprehensive treatment of modulation methods, interference, noise, layout and control of high-capacity systems, and more! The return of this classic volume should be welcomed by all those seeking an authoritative and complete source of information on this emerging technology.

Fundamentals of Telecommunications - Roger L. Freeman 2005-05-20

The Second Edition of this critically-acclaimed text continues the standard of excellence set in the first edition by providing a thorough introduction to the fundamentals of telecommunication networks without bogging you down in complex technical jargon or math. Although focusing on the basics, the book has been thoroughly updated with the latest advances in the field, including a new chapter on

metropolitan area networks (MANs) and new sections on Mobile Fi, ZigBee and ultrawideband. You'll learn which choices are now available to an organization, how to evaluate them and how to develop strategies that achieve the best balance among cost, security and performance factors for voice, data, and image communication.

The Engineering Index Annual - 1989

Since its creation in 1884, Engineering Index has covered virtually every major engineering innovation from around the world. It serves as the historical record of virtually every major engineering innovation of the 20th century. Recent content is a vital resource for current awareness, new production information, technological forecasting and competitive intelligence. The world's most comprehensive interdisciplinary engineering database, Engineering Index contains over 10.7 million records. Each year, over 500,000 new abstracts are added from over 5,000 scholarly journals, trade magazines, and conference proceedings. Coverage spans over 175 engineering disciplines from over 80 countries. Updated weekly.

Software-Defined Radio for Engineers - Alexander M. Wyglinski 2018-04-30

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.

Advances of Science and Technology - Nigus Gabbiye Habtu 2020-03-16

This book constitutes the refereed post-conference proceedings of the 7th International Conference on Advancement of Science and Technology, ICAST 2019, which took place in Bahir Dar, Ethiopia, in August 2019. The 76 revised full papers were carefully reviewed and selected from more than 150 submissions. The papers present economic and technologic developments in modern societies in five tracks: agro-processing industries for sustainable development, water resources and environmental engineering, recent advances in electrical, electronics and computing technologies, product design, manufacturing and systems organization, and material science and engineering.

Journal of the Institution of Engineers (India). - 1983

Microwave Engineering - David M. Pozar
2011-11-22

Pozar's new edition of Microwave Engineering

includes more material on active circuits, noise, nonlinear effects, and wireless systems. Chapters on noise and nonlinear distortion, and active devices have been added along with the coverage of noise and more material on intermodulation distortion and related nonlinear effects. On active devices, there's more updated material on bipolar junction and field effect transistors. New and updated material on wireless communications systems, including link budget, link margin, digital modulation methods, and bit error rates is also part of the new edition. Other new material includes a section on transients on transmission lines, the theory of power waves, a discussion of higher order modes and frequency effects for microstrip line, and a discussion of how to determine unloaded.

Radio System Design for Telecommunications - Roger L. Freeman 2006-11-03

Step-by-step tutorial to master current design techniques for wireless communication systems The Third Edition of Radio System Design for Telecommunications brings this highly acclaimed book fully up to date with the latest technological advances and new applications. At the same time, the hallmarks of the previous editions, including the text's popular tutorial presentation, have been retained. Readers therefore get all the tools and guidance they need to master an essential set of current design techniques for radio systems that operate at frequencies of 3 MHz to 100 GHz. Using simple mathematics, the author illustrates design concepts and applications. The book's logical organization, beginning with a discussion of radio propagation problems, enables readers to progressively develop the skills and knowledge needed to advance in the text. Topics that are new to the Third Edition include: Chapter devoted to wireless LANs (WLANs) as detailed in IEEE 802.11 Subsections covering IEEE 802.15, 802.16, 802.20, and the wireless metropolitan area network (WMAN) WiFi, WiMax, and UWB applications that have recently experienced explosive growth Broadband radio in telecommunications, as well as

offset frequency division multiplex (OFDM), a new technique for transmitting information in an interference environment The use of very small aperture satellite terminal (VSAT) systems as an economical alternative to public switched telecommunication networks (PSTN) Review questions and problems at the end of each chapter engage readers' newfound skills and knowledge and help them assess whether they are ready to progress to the next chapter. References are provided for readers who want to investigate particular topics in greater depth. Students in wireless telecommunications will find the book's tutorial style ideal for learning all the ins and outs of radio system design, whereas professionals in the industry will want to refer to the Third Edition for its clear explanations of the latest technology and applications.

Microwave Engineering - Gérard Barué 2008-07-25

Everything readers need to implement and support a wireless point-to-point communications environment In order to cope with the tremendous explosion of the telecommunications market, the field of wireless communications has greatly expanded in the past fifty years, especially in the domains of microwave radio systems including line-of-sight, satellites, and tropospheric-scatter. Now, *Microwave Engineering: Land & Space Radiocommunications* answers the growing worldwide demand for an authoritative book on this important and emerging subject area. In five succinct chapters, the book introduces students and practicing engineers to the main propagation phenomena that are encountered and that must be considered in the design and planning for any given system type and frequency of operation: Electromagnetic wave propagation—An introduction to the fundamental theory of radiation and propagation of electromagnetic waves, polarization, antenna properties, free space attenuation, atmospheric refractivity, diffraction, reflection, multipath and scattering mechanisms, hydrometeor effects, and probability distributions Principles of digital

communication systems—Modulation techniques, signal processing, error probability, spectral characteristics, spectrum efficiency, thermal noise, intermodulation, jamming, and interference Microwave line-of-sight systems—Path profile, flat fading and frequency-selective fading, interferometric method for space and frequency diversity techniques, International Standards and ITU Recommendations, optimization of the frequency-plan resource, link budget, quality, reliability, and availability Microwave transhorizon systems—Design of beyond-the-horizon communication systems, properties of scattering and diffraction modes, multipath statistical relations, long-term and short-term field strength variations, quality of service, optimization of antenna alignment, and experimental analysis of various diversity and combining methods Satellite communications—Design of satellite communications systems, orbital parameters, Earth-satellite geometry, uplink and downlink budgets for both space and Earth segments, and total system noise temperature *Microwave Engineering: Land & Space Radiocommunications* is suitable for engineers involved in wireless telecommunications, as well as for students and members of various seminars and workshops.

Performance and Multipath Fading Modelling of a Line-of-sight Microwave Link - Chun Feng Hu 1998

Microwave and RF Design of Wireless Systems - David M. Pozar 2000-11-29

David Pozar, author of *Microwave Engineering*, Second Edition, has written a new text that introduces students to the field of wireless communications. This text offers a quantitative and design-oriented presentation of the analog RF aspects of modern wireless telecommunications and data transmission systems from the antenna to the baseband level. Other topics include noise, intermodulation, dynamic range, system aspects of antennas and filter design. This unique text takes an

integrated approach to topics usually offered in a variety of separate courses on topics such as antennas and propagation, microwave systems and circuits, and communication systems. This approach allows for a complete presentation of wireless telecommunications systems designs. The author's goal with this text is for the student to be able to analyze a complete radio system from the transmitter through the receiver front-end, and quantitatively evaluate factors. Suitable for a one-semester course, at the senior or first year graduate level. Note certain sections have been denoted as advanced topics, suitable for graduate level courses.

Digital Microwave Communication - George Kizer
2013-06-24

The first book to cover all engineering aspects of microwave communication path design for the digital age. Fixed point-to-point microwave systems provide moderate-capacity digital transmission between well-defined locations. Most popular in situations where fiber optics or satellite communication is impractical, it is commonly used for cellular or PCS site interconnectivity where digital connectivity is needed but not economically available from other sources, and in private networks where reliability is most important. Until now, no book has adequately treated all engineering aspects of microwave communications in the digital age. This important new work provides readers with the depth of knowledge necessary for all the system engineering details associated with fixed point-to-point microwave radio path design: the why, what, and how of microwave transmission; design objectives; engineering methodologies; and design philosophy (in the bid, design, and acceptance phase of the project). Written in an easily accessible format, *Digital Microwave Communication* features an appendix of specialized engineering details and formulas, and offers up chapter coverage of: A Brief History of Microwave Radio Microwave Radio Overview System Components Hypothetical Reference Circuits Multipath Fading Rain Fading Reflections and

Obstructions Network Reliability Calculations Regulation of Microwave Radio Networks Radio Network Performance Objectives Designing and Operating Microwave Systems Antennas Radio Diversity Ducting and Obstruction Fading Digital Receiver Interference Path Performance Calculations Digital Microwave Communication: Engineering Point-to-Point Microwave Systems will be of great interest to engineers and managers who specify, design, or evaluate fixed point-to-point microwave systems associated with communications systems and equipment manufacturers, independent and university research organizations, government agencies, telecommunications services, and other users.

Microwave and RF Design, Volume 1 - Michael Steer 2019-09

Microwave and RF Design: Radio Systems is a circuits- and systems-oriented approach to modern microwave and RF systems. Sufficient details at the circuits and sub-system levels are provided to understand how modern radios are implemented. Design is emphasized throughout. The evolution of radio from what is now known as 0G, for early radio, through to 6G, for sixth generation cellular radio, is used to present modern microwave and RF engineering concepts. Two key themes unify the text: 1) how system-level decisions affect component, circuit and subsystem design; and 2) how the capabilities of technologies, components, and subsystems impact system design. This book is suitable as both an undergraduate and graduate textbook, as well as a career-long reference book.

Key Features

- * The first volume of a comprehensive series on microwave and RF design
- * Open access ebook editions are hosted by NC State University Libraries at <https://repository.lib.ncsu.edu/handle/1840.20/36776>
- * 31 worked examples
- * An average of 38 exercises per chapter
- * Answers to selected exercises
- * Coverage of cellular radio from 1G through 6G
- * Case study of a software defined radio illustrating how modern radios partition functionality between

analog and digital domains * A companion book, *Fundamentals of Microwave and RF Design*, is suitable as a comprehensive undergraduate textbook on microwave engineering

Handbook of Electrical Engineering Calculations - Arun G. Phadke 2018-10-03

Written by experienced teachers and recognized experts in electrical engineering, *Handbook of Electrical Engineering Calculations* identifies and solves the seminal problems with numerical techniques for the principal branches of the field -- electric power, electromagnetic fields, signal analysis, communication systems, control systems, and computer engineering. It covers electric power engineering, electromagnetics, algorithms used in signal analysis, communication systems, algorithms used in control systems, and computer engineering. Illustrated with detailed equations, helpful drawings, and easy-to-understand tables, the book serves as a practical, on-the-job reference.

NTIA Report - 1979

Evaluating AAL Systems Through Competitive Benchmarking - Indoor Localization and Tracking - Stefano Chessa 2012-09-08

This book constitutes the refereed proceedings of the international competition aimed at the evaluation and assessment of Ambient Assisted Living (AAL) systems and services, EvAAL 2011, which was organized in two major events, the Competition in Valencia, Spain, in July 2011, and the Final workshop in Lecce, Italy, in September 2011. The papers included in this book describe the organization and technical aspects of the competition, and provide a complete technical description of the competing artefacts and report on the experience lessons learned by the teams during the competition.

A Broadcast Engineering Tutorial for Non-Engineers - Skip Pizzi 2014-04-24

A Broadcast Engineering Tutorial for Non-Engineers is the leading publication on the basics of broadcast technology. Whether you are new to the

industry or do not have an engineering background, this book will give you a comprehensive primer of television, radio, and digital media relating to broadcast—it is your guide to understanding the technical world of radio and television broadcast engineering. It covers all the important topics such as DTV, IBOC, HD, standards, video servers, editing, electronic newsrooms, and more. This long-awaited fourth edition includes new standards and identifies and explains the emerging digital technologies that are revolutionizing the industry, including: HDTV—and "UltraHD" IP-based production and distribution and Internet delivery (including "over-the-top" TV) Connected/Smart TV, Mobile TV Second Screens and Social TV "Hybrid" broadcasting (over-the-air and online convergence) Podcasting and Mobile Apps Connected Cars

Fundamentals of Microwave and RF Design - Michael Steer 2019-09

Fundamentals of Microwave and RF Design enables mastery of the essential concepts required to cross the barriers to a successful career in microwave and RF design. Extensive treatment of scattering parameters, that naturally describe power flow, and of Smith-chart-based design procedures prepare the student for success. The emphasis is on design at the module level and on covering the whole range of microwave functions available. The orientation is towards using microstrip transmission line technologies and on gaining essential mathematical, graphical and design skills for module design proficiency. This book is derived from a multi volume comprehensive book series, *Microwave and RF Design*, Volumes 1-5, with the emphasis in this book being on presenting the fundamental materials required to gain entry to RF and microwave design. This book closely parallels the companion series that can be consulted for in-depth analysis with referencing of the book series being familiar and welcoming. Key Features * A companion volume to a comprehensive series on microwave and RF design * Open access ebook editions are

hosted by NC State University Libraries at <https://repository.lib.ncsu.edu/handle/1840.20/36776>
* 59 worked examples * An average of 24 exercises per chapter * Answers to selected exercises * Emphasis on module-level design using microstrip technologies * Extensive treatment of design using Smith charts * A parallel companion book series provides a detailed reference resource

Wireless Internet Of Things: Principles And Practice - Gyasi-agyei Amoakoh 2020-04-22

Conference Record - 1990

Microwave Line of Sight Link Engineering - Pablo Angueira 2012-07-25

A comprehensive guide to the design, implementation, and operation of line of sight microwave link systems The microwave Line of Sight (LOS) transport network of any cellular operator requires at least as much planning effort as the cellular infrastructure itself. The knowledge behind this design has been kept private by most companies and has not been easy to find. Microwave Line of Sight Link Engineering solves this dilemma. It provides the latest revisions to ITU reports and recommendations, which are not only key to successful design but have changed dramatically in recent years. These include the methodologies related to quality criteria, which the authors address and explain in depth. Combining relevant theory with practical recommendations for such critical planning decisions as frequency band selection, radio channel arrangements, site selection, antenna installation, and equipment choice, this one-stop primer: Describes the procedure for designing a frequency plan and a channel arrangement structure according to ITU current standards, illustrated with specific application examples Offers analytical examples that illustrate the specifics of calculations and provide order of magnitude for parameters and design factors Presents case studies that describe real-life projects, putting together the puzzle pieces necessary when facing a real design

created from scratch Microwave Line of Sight Link Engineering is an indispensable resource for radio engineers who need to understand international standards associated with LOS microwave links. It is also extremely valuable for students approaching the topic for the first time.

Introduction to Wireless Communications and Networks - Krishnamurthy Raghunandan 2022-03-31

This book provides an intuitive and accessible introduction to the fundamentals of wireless communications and their tremendous impact on nearly every aspect of our lives. The author starts with basic information on physics and mathematics and then expands on it, helping readers understand fundamental concepts of RF systems and how they are designed. Covering diverse topics in wireless communication systems, including cellular and personal devices, satellite and space communication networks, telecommunication regulation, standardization and safety, the book combines theory and practice using problems from industry, and includes examples of day-to-day work in the field. It is divided into two parts – basic (fundamentals) and advanced (elected topics).

Drawing on the author's extensive training and industry experience in standards, public safety and regulations, the book includes information on what checks and balances are used by wireless engineers around the globe and address questions concerning safety, reliability and long-term operation. A full suite of classroom information is included.

Signal Level Distributions and Fade Event Analyses for a 5 GHz Microwave Link Across the English Channel - D. R. Wortendyke 1979

Reference Manual for Telecommunications Engineering, 2 Volume Set - Roger L. Freeman 2002

Contains a compendium of the most frequently used data in day-to-day telecommunications engineering work: tables, graphs, figures, formulae, nomograms, performance curves, standards highlights, constants

and statistics. Designed for easy and rapid access. Comprehensive reference for designing, building, purchasing, using or maintaining all kinds of telecommunications systems. Central source of information on transmission, switching, traffic engineering, numbering, signaling, noise, modulation and forward error correction.

STAR - 1965

Scientific and Technical Aerospace Reports - 1991

Network World - 1988-06-13

For more than 20 years, Network World has been the premier provider of information, intelligence and insight for network and IT executives responsible for the digital nervous systems of large organizations. Readers are responsible for designing, implementing and managing the voice, data and video systems their companies use to support everything from business critical applications to employee collaboration and electronic commerce. *Frequency Management Engineering Principles VHF/UHF/SHF Communication Links* - United States. Federal Aviation Administration 1981

Telecommunication System Engineering - Roger L. Freeman 2015-07-31

From the review of the Third Edition: "A must for anyone involved in the practical aspects of the telecommunications industry." —CHOICE Outlines the expertise essential to the successful operation and design of every type of telecommunications networks in use today New edition is fully revised and expanded to present authoritative coverage of the important developments that have taken place since the previous edition was published Includes new chapters on hot topics such as cellular radio, asynchronous transfer mode, broadband technologies, and network management

Mobile Radio Network Design in the VHF and UHF Bands - Adrian Graham 2007-01-11

An essential element of radio technology and propagation is how to use radio technology and

knowledge of radio propagation to design a network that meets the needs of customers. Mobile Radio Network Design in the VHF and UHF Bands provides the technical and fundamental knowledge required for advanced mobile radio network design to achieve this in terms that the engineer will understand, and augments this with essential information gleaned from the authors' extensive experience in mobile radio network design. In this book you will find out how some of the most highly-regarded radio network designers around go about designing radio networks that actually meet the needs of the network subscriber and of the network operator. It describes a well-proven framework that meets the essential need of ensuring that each step of the design project is carried out against known, unique and unambiguous requirements, and that these requirements have been extensively validated against the original requirements. Reveals the secrets behind coverage design, capacity planning, interference analysis and reduction, frequency assignment and verifying that the delivered network actually performs as promised Introduces the concept of documentary deliverables as part of the project and underlines the need for method statements, user requirement, functional, test and design specifications Provides readers with a far greater understanding of the methods and processes necessary to bring about the successful completion of a radio network project Highlights vital aspects of radio network projects that are not always apparent to every engineer, but which may have a vital impact on the success of the project The powerful approach used in this book will help to ensure the successful completion of every project and will be the basis for ensuring contractual compliance at every stage. It is an indispensable resource for all radio network design consultants and engineers, network operator technical managers, radio regulation engineers and military radio network planners.

Telecommunication Transmission Handbook -

Roger L. Freeman 1981-11-27

This brings together 14 basic disciplines of telecommunication transmission in one standard engineering reference manual. Emphasizes the delivery of signal from source to sink. Focuses on speech telephony, data/telegraph, facsimile and video. Analyzes essential concepts and techniques for point-to-point signal transmission. Offers a wealth of theoretical and on-the-job techniques for transmission problem solving, and stresses practical approach to design. Covers both North American and European practice and references CCITT/CCIR, EIA, FCC and ANSI standards and recommendations. Numerous tables, nomograms and curves are included.

Fundamental of Microwave & Radar Engineering - K K Sharma 2011

For B.E./B.Tech. Students. This book is intended as an introductory text on MICROWAVE and RADAR ENGINEERING. The fundamentals principle on microwave theory and techniques are thoroughly explained in the simplest language. IT contains comprehensive up-to-date text for a standard course on transmission lines, waveguides, passive waveguide components, ferrite devices, microwave tubes, microwave semiconductor devices, microwave measurements, microwave antennas, and various microwave communication systems. This book also covers the RADAR system and microwave propagation at length. This written text is supplemented with a large number of suitable diagrams, photographs and a good number of solved examples for better understanding of subject.

Radio-Frequency and Microwave Communication Circuits - Devendra K. Misra 2012-04-12

The products that drive the wireless communication industry, such as cell phones and pagers, employ circuits that operate at radio and microwave frequencies. Following on from a highly successful first edition, the second edition provides readers with a detailed introduction to RF and microwave circuits. Throughout, examples

from real-world devices and engineering problems are used to great effect to illustrate circuit concepts.

* Takes a top-down approach, describing circuits in the overall context of communication systems. * Presents expanded coverage of waveguides and FT mixers. * Discusses new areas such as oscillators design and digital communication. *An Instructor's Manual presenting detailed solutions to all the problems in the book is available from the Wiley editorial department.

A Broadcast Engineering Tutorial for Non-engineers - Graham Jones 2005

"A Broadcast Engineering Tutorial for Non-Engineers, Third Edition, is your guide to understanding the technical world of radio and television broadcast engineering. - This book provides an introduction to the technologies and equipment that comprise modern broadcasting systems. Written by Graham Jones, of the NAB Science and Technology Department, for those without engineering backgrounds, it will also be useful for engineering trainees and others who are new to the industry. - It serves as a decoder to industry jargon, so you can know what you are talking about - or just sound like you do."--Jacket.
New Directions in Internet Management - Sanjiv Purba 2001-10-18

What is the business model for making money on the Internet and how does it function? The answer to this question will determine the shape of the Internet over the near term. As the Internet business model continues to evolve, so will Internet management. And with the demise of the Internet greatly exaggerated, it will continue to be a driving force

The Satellite Communication Applications Handbook, Second Edition - Bruce R. Elbert 2004

Since the publication of the best-selling first edition of the Satellite Communication Applications Handbook, the satellite industry has experienced explosive growth thanks to a flood of innovations in consumer electronics, broadcasting, the Internet, transportation, and broadband telecommunications.

This second edition covers all the latest advances in satellite technology and applications and features new chapters on mobile digital audio radio and VSAT networks. It updates and expands upon the engineering and management topics that made the first edition a must-have for every satellite communications professional as well as network architects. Engineers get the latest technical details into operations, architectures, and systems components. Managers are brought up to date with the latest business applications as well as regulatory and legal decisions affecting domestic and international markets. The treatment is also of value to marketing, legal, regulatory, and financial and operations professionals who must gain a clear understanding of the capabilities and issues associated with satellite space and ground facilities and services.

Practical Radio Engineering and Telemetry for Industry - David Bailey 2003-06-16

Instrumentation and control, and electrical power engineering are increasingly reliant on radio-based communication technology. This is a comprehensive book covering the essentials of telemetry and radio communications. It explains the principles of telemetry and radio communications, describes their application and equips you with the skills to analyse, specify and debug telemetry and radio communications systems. Key issues addressed in this book are: * how to design and install radio (wireless) links * apply latest satellite technologies to your telemetry system * how to design and install microwave links * troubleshoot telemetry communications problems * tips, tricks and traps with radio links · A guide to the design, installation and utilization of radio applications in instrumentation and control, and electrical power engineering · Explains the principles of telemetry and radio communications, describes their application and equips you with the skills to analyse, specify and debug telemetry and radio communications systems · Addresses topical areas such as designing and installing wireless

communications links, the application of satellite technologies in telemetry, microwave links, etc.

High Frequency and Microwave Engineering - Ed Da Silva 2001

CD-ROM contains: PUFF 2.1 for construction and evaluation of circuits.

Introduction to Satellite Communication - Bruce R. Elbert 2008

The book covers all the fundamentals of satellites, ground control systems, and earth stations, considering the design and operation of each major segment. You gain a practical understanding of the basic construction and usage of commercial satellite networks. How parts of a satellite system function, how various components interact, which role each component plays, and which factors are the most critical to success."

Microwave Radio Transmission Design Guide - Trevor Manning 2009

This newly revised second edition provides a current, comprehensive treatment of the subject with a focus on applying practical knowledge to real-world networks. It includes a wealth of important updates, including discussions on backhaul capacity limitations, ethernet over radio, details on the latest cellular radio standards (2.5G, 3G, and 4G). You also learn about recent changes in spectrum management, including the availability of unlicensed bands and new mm band frequencies between 70 and 90 GHz. Additionally, you find more details on the fundamentals of antennas, especially at VHF/UHF levels. Written in an easy-to-understand style, the author provides practical guidelines based on hands-on experience. You find valuable assistance in designing and planning SDH/SONET broadband networks, wireless local loop networks, and backhaul for mobile radio networks. Moreover, this authoritative volume covers frequency planning for radio networks, digital radio equipment characteristics, and fading in radio systems. Using practical case studies, **Microwave Radio Transmission Design Guide, Second Edition** gives you proven advice that helps

you save time and money when developing new

networks, and reduces your risk of encountering problems during design and planning.