Mobile Satellite Communications Handbook

RHETT DOWNS

Satellite Communications Pocket Book Elsevier
Mobile satellite services are set to change with the imminent launch of satellite personal communication services (S-PCS), through the use of non-geostationary satellites. This new generation of satellites will be placed in low earth orbit or medium earth orbit, hence, introducing new satellite design concepts. One of the first texts to cover this rapidly evolving field, this text provides the reader with an overview of mobile satellite systems, from their initial introduction (Inmarsat), current satellite-PCS (referring to such systems as Globalstar), through to Satellite-UMTS and an understanding of the following: * The design concepts associated with non-geostationary satellite systems (constellation, link budgets, Doppler) * The concepts of UMTS (network architecture, aims, in the context of IMT-2000) and the role foreseen for the satellite component (complementary to terrestrial network, network extension, global availability) * Inter-working between satellite and terrestrial networks (network architecture, ATM Adaptation Layer) * Radio interface technologies (WB-CDMA, TDMA, transmission environment) * Regulatory issues * Future services and applications * Potential satellite markets (prediction techniques, effect of tariffing policies on potential market) With leading edge information, this valuable resource will be indispensable to researchers, engineers, operators and market evaluators in satellite service industries and research institutions, as well as postgraduates and research students in the field.
Satellite Communications Systems IET
This book discusses current theory regarding global mobile satellite communications (GMSC) for maritime, land (road and rail), and aeronautical applications. It covers how these can enable connections between moving objects such as ships, road and rail vehicles and aircrafts on one hand, and on the other ground telecommunications subscribers through the medium of communications satellites, ground earth stations, Terrestrial Telecommunication Networks (TTN), Internet Service Providers (ISP) and other wireless and landline telecommunications providers. This new edition covers new developments and initiatives that have resulted in land and aeronautical applications and the introduction of new satellite constellations in non-geostationary orbits and projects of new hybrid satellite constellations. The book presents current GMSC trends, mobile system concepts and network architecture using a simple mode of style with understandable technical information, characteristics, graphics, illustrations and mathematics equations. The first edition of Global Mobile Satellite Communications (Springer, 2005) was split into two books for the second edition—one on applications and one on theory. This book presents global mobile satellite communications theory.
Handbook Mobile-satellite Services John Wiley & Sons
With 26 entirely new and 5 extensively revised chapters out of the total of 39, the Mobile Communications Handbook, Third Edition presents an in-depth and up-to-date overview of the full range of wireless and mobile technologies that we rely on every day. This includes, but is not limited to,

everything from digital cellular mobile radio and evolving personal communication systems to wireless data and wireless networks Illustrating the extraordinary evolution of wireless communications and networks in the last 15 years, this book is divided into five sections: Basic Principles provides the essential underpinnings for the wide-ranging mobile communication technologies currently in use throughout the world. Wireless Standards contains technical details of the standards we use every day, as well as insights into their development. Source Compression and Quality Assessment covers the compression techniques used to represent voice and video for transmission over mobile communications systems as well as how the delivered voice and video quality are assessed. Wireless Networks examines the wide range of current and developing wireless networks and wireless methodologies. Emerging Applications explores newly developed areas of vehicular communications and 60 GHz wireless communications. Written by experts from industry and academia, this book provides a succinct overview of each topic, quickly bringing the reader up to date, but with sufficient detail and references to enable deeper investigations. Providing much more than a "just the facts" presentation, contributors use their experience in the field to provide insights into how each topic has emerged and to point toward forthcoming developments in mobile communications.

Satellite Communications IET

Satellite Communications and Navigation Systems publishes the proceedings of the 2006 Tyrrhenian International Workshop on Digital Communications. The book focuses on the integration of communication and navigation systems in satellites.

Satellite Communication Systems Springer Science & Business Media

With a Preface by noted satellite scientist Dr. Ahmad Ghais, the Second Edition reflects the expanded user base for this technology by updating information on historic, current, and planned commercial and military satellite systems and by expanding sections that explain the technology for non-technical professionals. The book begins with an introduction to satellite communications and goes on to provide an overview of the technologies involved in mobile satellite communications, providing basic introductions to RF Issues, power Issues, link issues and system issues. It describes early commercial mobile satellite communications systems, such as Marisat and Marecs and their military counterparts. The book then discusses the full range of Inmarsat and other current and planned geostationary, low earth orbiting and hybrid mobile satellite systems from over a dozen countries and companies. It is an essential guide for anyone seeking a comprehensive understanding of this industry and military tool. • Revised edition will serve both technical and non-technical professionals who rely every day on mobile satellite communications • Describes and explains historic, current, and planned civil, commercial, and military mobile satellite communication systems. • First Edition charts and tables updated and expanded with current material for today's mobile satellite technology.

Satellite Communications Systems Engineering Butterworth-Heinemann

Extracts from the constitution and convention of the International Telecommunication Union and radio regulations / frequency allocations / administrative provisions for stations / distress and safety communications / digital selective-calling / charging, accounting and refunds / radio telegrams / radiotelex / radiotelephony.

Signal Processing for Mobile Communications Handbook CRC Press

This updated and expanded second edition reflects the state of earth station design and ground segment architecture. From international telephone network gateways to direct broadcast home receivers, today’s broad range of ground systems and devices require satellite communication engineers and business managers to have a broad and sound understanding of the design and operating principles of earth stations and ground control facilities. This book explores the delivery end of the satellite link and its relationship to delivery of services. Authored by a leading authority in the field, the book provides engineers and managers with the knowledge they need to devise their own approach to implementing and managing earth stations and the overall ground segment. Readers find practical guidance in an array of critical areas, including: preparing requirements, performing preliminary analyses, reviewing hardware designs, managing the introduction of the overall ground segment, and more.

Manual on the Aeronautical Mobile Satellite (Route) Service Springer Science & Business Media

The first edition of Satellite Communications Systems Engineering (Wiley 2008) was written for those concerned with the design and performance of satellite communications systems employed in fixed point to point, broadcasting, mobile, radio navigation, data relay, computer communications, and related satellite based applications. This welcome Second Edition continues the basic premise and enhances the publication with the latest updated information and new technologies developed since the publication of the first edition. The book is based on graduate level satellite communications course material and has served as the primary text for electrical engineering Masters and Doctoral level courses in satellite communications and related areas. Introductory to advanced engineering level students in electrical, communications and wireless network courses, and electrical engineers, communications engineers, systems engineers, and wireless network engineers looking for a refresher will find this essential text invaluable.

Handbook on Satellite Communications Artech House

An essential overview of satellite communications from the organization that sets the international standards Since their introduction in the mid-1960s, satellite communications have grown from a futuristic experiment into an integral part of today's "wired world." Satellite communications are at the core of a global, automatically switched telephony network. Assembled by the International Telecommunication Union--the international organization that sets the standards for this rapidly growing industry--the Handbook on Satellite Communications, Third Edition brings together basic facts about satellite communications as related to the fixed-satellite service (FSS). It covers the main principles, technologies, and operation of equipment in a tutorial form. Updated to include the latest technologies and information, the Third Edition provides both the standards and technical information needed to implement and interact with satellite communication systems, including: * The components and basic characteristics of a satellite communication system * Regulatory considerations and system planning * SDH and ATM satellite transmissions * Analog and digital baseband signal processing and multiplexing * Carrier modulation techniques * Geostationary and non-geostationary systems * Interconnection of satellite and terrestrial networks * LEOS satellite networks and other recent developments As digital modulation and transmission replace analog techniques, and as satellites in non-geostationary and lower-altitude orbits open the way to new applications, satellite communications will continue to grow in use and importance. Everyone involved in the administration and operation of satellite communications will find this a crucial resource.

The Basics of Satellite Communications Artech House

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

Global Mobile Satellite Communications Springer

Despite the proliferation of new communications technologies, the decades-old satellite industry is shifting with the times. Now in its second edition, this guide addresses the myriad aspects of the technology in its current form and explores the paths it is expected to take in the future.

Handbook of Satellite Applications John Wiley & Sons

Business Earth Stations for Telecommunications Walter L. Morgan and Denis Rouffet This practical guide provides telecommunications managers with the basic information and procedures needed to configure a telecommunications network to meet the communications needs of their organization. It offers invaluable insights into the planning needs of managers, manufacturers, sellers, and installers of microterminals. The authors give you a complete overview of microterminal technology for the next decade, including: their history and nature, why they are used, who uses them and how service is provided, potential applications, an overview of the U.S. microterminal market, a look at network operators, and the economics of microterminal versus terrestrial services. 1988 (0 471-63556-1) 234 pp. A Basic Atlas of Radio-Wave Propagation Shigekazu Shibuya Now, in one source, planners and designers of telecommunications operating organizations can get direct guidelines for radio system planning and design. Carefully organized to present basic concepts of radio-wave propagation and system design, this indispensable work fully details even the most difficult mathematical theories and equations with graphic presentations that beginners and non-specialists will find particularly helpful. It presents all of the essential design elements required for VHF, UHF, and SHF radio in easy-to-follow chart form. In addition, every problem in this book can be explored using a computer. 1987 (0 471-88183-X) 778 pp. Radio System Design for Telecommunications (1-100 GHz) Roger L. Freeman Here’s how to plan, engineer, and design analog and digital radiolinks in the point-to-point telecommunications service. Telecommunications expert Roger Freeman covers every aspect of radio system design used in telecommunications, including siting criteria, hardware layout, performance predictions, links and system analysis, facility planning, and frequency assignment information. The book also describes how radiolinks operate and how to select the necessary performance parameters and equipment specifications to meet the needs of various customers. 1987 (0 471-81236-6) 560 pp.

An Introduction to Satellite Communications Springer Science & Business Media

With a Preface by noted satellite scientist Dr. Ahmad Ghais, the Second Edition reflects the expanded user base for this technology by updating information on historic, current, and planned commercial and military satellite systems and by expanding sections that explain the technology for non-technical professionals. The book begins with an introduction to satellite communications and goes on to provide an overview of the technologies involved in mobile satellite communications, providing basic introductions to RF Issues, power Issues, link issues and system issues. It describes early commercial mobile satellite communications systems, such as Marisat and Marecs and their military counterparts. The book then discusses the full range of Inmarsat and other current and planned geostationary, low earth orbiting and hybrid mobile satellite systems from over a dozen countries and companies. It is an essential guide for anyone seeking a comprehensive understanding of this industry and military tool. • Revised edition will serve both technical and non-technical professionals who rely every day on mobile satellite communications • Describes and explains historic, current, and planned civil, commercial, and military mobile satellite communication systems. • First Edition charts and tables updated and expanded with current material for today’s mobile satellite technology

Communications Satellite Handbook CRC Press

Updates from unremarked dates material used in the Institute's vacation schools at Surrey University, which over the past 15 years have become the de-facto industry standard in satellite communications. The approach concentrates on the design and planning of systems, includes little theory, and just quotes equations rather than deriving them. New material has been added on the history and background of the field; the business aspects of satellite communications; and on new applications in mobile and personal communication systems, multimedia systems, military business and small satellites, navigation, and positioning. Graduate, undergraduate, and practicing engineers should benefit from the treatment. Annotation copyrighted by Book News, Inc., Portland, OR

World Satellite Communications and Earth Station Design John Wiley & Sons

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.

Introduction to Satellite Communication Elsevier

Satellite Communications Systems Systems, Techniques and Technology Third Edition Gerard Maral Ecole Nationale Supérieure des Télécommunications, Toulouse, France and Michel Bousquet Ecole Nationale Supérieure de l'Aeronautique et l'Espace, Toulouse, France Translated by J. C. C. Nelson, University of Leeds, UK Since publication of the first edition, satellite communications systems have become increasingly sophisticated. This revised, updated and extended third edition of Satellite Communications Systems covers the entire field of satellite communications engineering from the techniques of orbital mechanics and radio wave propagation to the design of communication links and earth stations. The authors analyse numerous satellite communications systems, demonstrate how the components interact within these systems, and detail the relationship between the system and its environment. This book introduces the reader to all areas of satellite communication engineering

and emphasises the trade-offs that can be exercised within the constraints of technology, regulations and competition. Distinguishing Features: - A wealth of mathematical, technical and operational data relevant to all aspects of communication spacecraft design and usage - Discusses the most recent developments in this evolving field, such as ATM, SDH applications, the INTERSAT IDR standard and orbital mechanics for space communications, earth station antenna subsystems and communications payload - Extensive illustrations throughout - Survey of the state-of-the-art technology This book is aimed at advanced students, engineers and designers in the field of satellite and mobile radio communications and communication engineers. Visit Our Web Page! http://www.wiley.com/

Mobile Satellite Communications Springer Science & Business Media

Satellites are increasingly used for global communications, as well as for radio and television transmissions. With the growth of mobile communications, and of digital technology, the use of satellite systems is set to expand substantially and already all students of electronics or communications engineering must study the subject. This book steers a middle path between offering a basic understanding of the process of communication by satellite and the methodology used; and the extensive mathematical analysis normally adopted in similar texts. It presents the basic concepts, using as much mathematical content as is necessary to make the process understandable. The principles introduced are backed up by examples of actual applications showing how professional systems engineers have achieved the required system performance capabilities. The practical systems chosen are representative of modern day applications and comprise an international communications system, an international maritime system and a regional system.

Satellite Communications Systems Engineering John Wiley & Sons

Provides an invaluable, detailed and up-to-date coverage of atmospheric effects and their impact on satellite communications systems design and performance. Significant progress has been made in the last decade in the understanding and modelling of propagation effects on radio wave propagation in the bands utilized for satellite communications. This book provides a comprehensive description and analysis of all atmospheric effects of concern for today’s satellite systems, and the tools necessary to design the links and to evaluate system performance. This book will serve as an excellent reference to communications engineers, wireless network and system engineers, system designers and graduate students in satellite communications and related areas. Key features: Provides the state of the art in communications satellite link design and performance from the practicing engineer perspective – concise descriptions, specific procedures and comprehensive solutions Contains the calculations and tools necessary for evaluating system performance Provides a complete evaluation of atmospheric effects, modelling and prediction Focuses on the satellite free-space link as the primary element in the design and performance for satellite communications, and recognizes the importance of free-space considerations such as atmospheric effects, frequency of operation and adaptive mitigation techniques a solutions manual is available directly from the author (lippolit@gwu.edu)

Mobile Satellite Communications Handbook, 2nd Edition John Wiley & Sons

This is an extensively revised and updated new edition of the best-selling Mobile Antenna Systems Handbook. Comprehensive, authoritative and practical, it provides the information you need to understand the relationship between the elements involved in antenna systems design for mobile communications. You get sound advice in choosing the appropriate antenna for any given requirement - including antennas for ITS, access to the latest modeling formulas for macro, micro and pico cell propagation, and guidance on the latest RF safety standards and measurement techniques.

Global Mobile Satellite Communications Applications Wiley

The first edition of Satellite Communications Systems Engineering (Wiley 2008) was written for those concerned with the design and performance of satellite communications systems employed in fixed point to point, broadcasting, mobile, radio navigation, data relay, computer communications, and related satellite based applications. This welcome Second Edition continues the basic premise and enhances the publication with the latest updated information and new technologies developed since the publication of the first edition. The book is based on graduate level satellite communications course material and has served as the primary text for electrical engineering Masters and Doctoral level courses in satellite communications and related areas. Introductory to advanced engineering level students in electrical, communications and wireless network courses, and electrical engineers, communications engineers, systems engineers, and wireless network engineers looking for a refresher will find this essential text invaluable.