Digital Communication Practical Lab Manual

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Introduction to Digital Communication Pearson Education India
This is a concise presentation of the concepts underlying the design of digital communication systems, without the detail that can overwhelm students. Many examples, from the basic to the cutting-edge, show how the theory is used in the design of modern systems and the relevance of this theory will motivate students. The theory is supported by practical algorithms so that the student can perform computations and simulations. Leading edge topics in coding and wireless communication make this an ideal text for students taking just one course on the subject. Fundamentals of Digital Communications has coverage of turbo and LDPC codes in sufficient detail and clarity to enable hands-on implementation and performance evaluation, as well as 'just enough' information theory to enable computation of performance benchmarks to compare them against. Other unique features include space-time communication and geometric insights into noncoherent communication and equalization.
Principles of Digital Communication Springer Science & Business Media
This is a student supplement associated with: Electronic Communications: A System Approach, 1/e Jeffrey S. Beasley Jonathan D. Hymer Gary M. Miller ISBN: 0132988631
Digital Communications Elsevier
This book concerns digital communication. Specifically, we treat the transport of bit streams from one geographical location to another over various physical media, such as wire pairs, coaxial cable, optical fiber, and radio. We also treat multiple-access channels, where there are potentially multiple transmitters and receivers sharing a common medium. Ten years have elapsed since the Second Edition, and there have been remarkable advances in wireless communication, including cellular telephony and wireless local-area networks. This Third Edition expands treatment of communication theories underlying wireless, and especially advanced techniques involving multiple antennas, which tum the traditional single-input single-output channel into a multiple-input multiple-output (MIMO) channel. This is more than a trivial advance, as it stimulates many advanced techniques such as adaptive antennas and coding techniques that take advantage of space as well as time. This is reflected in the addition of two new chapters, one on the theory of MIMO channels, and the other on diversity techniques for mitigating fading. The field of error-control coding has similarly undergone tremendous changes in the past decade, brought on by the invention of turbo codes in 1993 and the subsequent rediscovery of Gallager's low-density parity-check codes. Our treatment of error-control coding has been rewritten to reflect the current state of the art. Other materials have been reorganized and reworked, and three chapters from the previous edition have been moved to the book's Web site to make room.
Digital Communications 2 New Age International
This is a modern textbook on digital communications and is designed for senior undergraduate and graduate students, whilst also providing a valuable reference for those working in the telecommunications industry. It provides a simple and thorough access to a wide range of topics through use of figures, tables, examples and problem sets. The author provides an integrated approach between RF engineering and statistical theory of communications. Intuitive explanations of the theoretical and practical aspects of telecommunications help the reader to acquire a deeper understanding of the topics. The book covers the fundamentals of antennas, channel modelling, receiver system noise, A/D conversion of signals, PCM, baseband transmission, optimum receiver, modulation techniques, error control coding, OFDM, fading channels, diversity and combining techniques, MIMO systems and cooperative communications. It will be an essential reference for all students and practitioners in the electrical engineering field.
Digital Communication Manual Pearson Education India
This book is designed to serve as a text for senior undergraduate level students in electronics and communication, and telecommunication engineering. It is as well designed to serve as a text for self study and reference book for practicing engineers working in the field of digital communications. The main objective of penning this book has been to make learning intricate concepts a pleasant experience. Features Integrated with Figures and diagrams in abundance, Plentiful worked examples, Lots of exercise problems with answers. Basic principles of Fourier transform have been discussed. Basic properties of Probability and Random Processes have been discussed to characterise random signals and noise. An introduction discussing the building blocks of digital communication system has been added to prepare the student before diving deep into the subject. Matched filters and correlators are discussed step by step with relevant signal constellation diagrams showing the decision boundaries with emphasis on understanding the concept of detection and estimation as foundation. Different types of sampling, multiplexing and reconstruction techniques have been discussed to understand the link between analog and digital world. Generation, transmission and regeneration of signals using PCM and other coding techniques have been discussed in depth. Different types of line coding schemes and effect of noise have been discussed before proceeding to digital modulation schemes. Various digital modulation schemes have been discussed along with diagrams and importance is given to probability of error calculation. Principle of spread-spectrum modulation, its advantages and applications are discussed. A Manual on Advance Communication Lab Practice Contents The Fourier Transforms Probability, Random variables and Random Processes Introduction to Digital Communications Detection and Estimation Sampling Process Waveform Coding Technique Baseband Data Transmission Digital Modulation Spread Spectrum Modulation Appendices. Experiments on Digital Communication Experiments on Fiber Optical Communication Experiments on Wave Guides Experiments on Microstrip Transmission Lines Experiments on Microstrip Transmission Lines Experiments on Microstrip Transmission Lines
An Introduction to The Principles of Digital Communication LAP Lambert Academic Publishing
Digital communications plays an important role in numerical transmission systems due to the proliferation of radio beams, satellite, optic fibbers, radar, and mobile wireless systems. This book provides the fundamentals and basic design techniques of digital communications with an emphasis on the systems of telecommunication and the principles of baseband transmission. With a focus on examples and exercises, this book will prepare you with a practical and real-life treatment of communication problems. - A complete analysis of the structures used for emission or reception technology - A set of approaches for implementation in current and future circuit design - A summary of the design steps with examples and exercises for each circuit
Introduction to Communication Systems Elsevier
Showcasing the essential principles behind modern communication systems, this accessible undergraduate textbook provides a solid introduction to the foundations of communication theory. Carefully selected topics introduce students to the most important and fundamental concepts, giving students a focused, in-depth understanding of core material, and preparing them for more advanced study. Abstract concepts are introduced to students 'just in time' and reinforced by nearly 200 end-of-chapter exercises, alongside numerous MATLAB code fragments, software problems and practical lab exercises, firmly linking the underlying theory to real-world problems, and providing additional hands-on experience. Finally, an accessible lecture-style organisation makes it easy for students to navigate to key passages, and quickly identify the most relevant material. Containing material suitable for a one- or two-semester course, and accompanied online by a password-protected solutions manual and supporting instructor resources, this is the perfect introductory textbook for undergraduate students studying electrical and computer engineering.

Digital Communications: Fundamentals & Applications, 2/E Firewall Media
There have been considerable developments in information and communication technology. This has led to an increase in the number of applications available, as well as an increase in their variability. As such, it has become important to understand and master problems related to establishing radio links, the layout and flow of source data, the power available from antennas, the selectivity and sensitivity of receivers, etc. This book discusses digital modulations, their extensions and environment, as well as a few basic mathematical tools. An understanding of degree level mathematics or its equivalent is a prerequisite to reading this book. Digital Communication Techniques is aimed at licensed professionals, engineers, Masters students and researchers whose field is in related areas such as hardware, phase-locked loops, voltage-controlled oscillators or phase noise.
ELECTRONICS LAB MANUAL (VOLUME 2) John Wiley & Sons
Digital Communications is the result of the author’s 38 years’ experience in teaching, and in design and development of various wireless communication systems. It covers all primary areas in digital communication systems in engineering. The book intends to give the students a grasp of the basic issues of communication systems during transition from analog to digital. To make the reading interesting as well as systematic, conscious efforts have been made to explain the basics of technology, avoiding complex mathematics as far as possible. Numerical problems are then introduced to help the students fully understand the concepts and applications. KEY FEATURES • Complete and thorough introduction to the analysis and design of digital communication systems • Concepts explained with practical applications derived from the personal experience of the author • Analytical steps of all derivation without any external reference • Numerous numerical examples to help students understand the fundamental applications of the concepts in practice
Digital Communication A Practical Guide to Data Communication Networking Prentice Hall
Combining theoretical knowledge and practical applications, this advanced-level textbook covers the most important aspects of contemporary digital communication systems. Introduction to Digital Communication Systems focuses on the rules of functioning digital communication system blocks, starting with the performance limits set by the information theory. Drawing on information relating to turbo codes and LDPC codes, the text presents the basic methods of error correction and detection, followed by baseband transmission methods, and single- and multi-carrier digital modulations. The basic properties of several physical communication channels used in digital communication systems are explained, showing the transmission and reception methods on channels suffering from intersymbol interference. The text also describes the most recent developments in the transmission techniques specific to wireless communications used both in wireline and wireless systems. The case studies are a unique feature of this book, illustrating elements of the theory developed in each chapter. Introduction to Digital Communication Systems provides a concise approach to digital communications, with practical examples and problems to supplement the text. There is also a companion website featuring an instructors’ solutions manual and presentation slides to aid understanding. Offers theoretical and practical knowledge in a self-contained textbook on digital communications Explains basic rules of recent achievements in digital communication systems such as MIMO, turbo codes, LDPC codes, OFDMA, SC-FDMA Provides problems at the end of each chapter with an instructors’ solutions manual on the companion website Includes case studies and representative communication system examples such as DVB-S, GSM, UMTS, 3GPP-LTE
Advanced Communication Skills Laboratory Manual New Age International
This book is evolved from the experience of the author who taught all lab courses in his three decades of teaching in various universities in India. The objective of this lab manual is to provide information to undergraduate students to practice experiments in electronics laboratories. This book covers 118 experiments for linear/analog integrated circuits lab, communication engineering lab, power electronics lab, microwave lab and optical communication lab. The experiments described in this book enable the students to learn: • Various analog integrated circuits and their functions • Analog and digital communication techniques • Power electronics circuits and their functions • Microwave equipment and components • Optical communication devices This book is intended for the B.Tech students of Electronics and Communication Engineering, Electrical and Electronics Engineering, Biomedical Electronics, Instrumentation and Control, Computer Science, and Applied Electronics. It is designed not only for engineering students, but can also be used by BSc/MSc (Physics) and Diploma students. KEY FEATURES • Contains aim, components and equipment required, theory, circuit diagram, pin-outs of active devices, design, tables, graphs, alternate circuits, and troubleshooting techniques for each experiment • Includes viva voce and examination questions with their answers • Provides exposure on various devices TARGET AUDIENCE • B.Tech (Electronics and Communication Engineering, Electrical and Electronics Engineering, Biomedical Electronics, Instrumentation and Control, Computer Science, and Applied Electronics) • BSc/MSc (Physics) • Diploma (Engineering)
Digital Communications Springer Science & Business Media
An accessible undergraduate textbook introducing key fundamental principles behind modern communication systems, supported by exercises, software problems and lab exercises.
Digital Communication John Wiley & Sons
Market_Desc: · Graduate and Undergraduate Students · Instructors in Engineering· Engineers About The Book: This book offers the most complete, up-to-date coverage available on the principles of digital communications. It focuses on basic issues, relating theory to practice wherever possible. Numerous examples, worked out in detail, have been included to help the reader develop an intuitive grasp of the theory. Because the book covers a broad range of topics in digital communications, it satisfies a variety of backgrounds and interests, and offers a great deal of flexibility for teaching the course. The author has included suggested course outlines for courses at the undergraduate or graduate levels.
Introduction to Digital Communications John Wiley & Sons
Introduction to Digital Communications explores the basic principles in the analysis and design of digital communication systems, including design objectives, constraints and trade-offs. After portraying the big picture and laying the background material, this book lucidly progresses to a comprehensive and detailed discussion of all critical elements and key functions in digital communications. - The first undergraduate-level textbook exclusively on digital communications, with a complete coverage of source and channel coding, modulation, and synchronization. - Discusses major aspects of communication networks and multiuser communications - Provides insightful descriptions and intuitive explanations of all complex concepts - Focuses on practical applications and illustrative examples. - A companion Web site includes solutions to end-of-chapter problems and computer exercises, lecture slides, and figures and tables from the text
Digital Communication for Practicing Engineers Laxmi Publications, Ltd.
It is a complete training in digital communications in the same book with all the aspects involved in such training: courses, tutorials with many typical problems targeted with detailed solutions, practical work concretely illustrating various aspects of technical implementation implemented. It breaks down into three parts. The Theory of information itself, which concerns both the sources of information and the channels of its transmission, taking into account the errors they introduce in the transmission of information and the means of protect by the use of appropriate coding methods. Then for the technical aspects of transmission, first the baseband transmission is presented with the important concept and fundamental technique of equalization. The performance evaluation in terms of probability of errors is systematically developed and detailed as well as the online codes used. Finally, the third part presents the Transmissions with digital modulation of carriers used in radio transmissions but also on electric cables. A second important aspect in learning a learner's knowledge and skills is this book. It concerns the "Directed Work" aspect of a training. This is an ordered set of 33 typical problems with detailed solutions covering the different parts of the course with practical work. Finally, the last aspect concerns the practical aspects in the proper sense of the term, an essential complement to training going as far as know-how. We propose here a set of 5 practical works.
Digital Communication- A Simplified Approach PHI Learning Pvt. Ltd.
This textbook is for undergratuate students of electronics and telecommunication engineering and allied disciplines, as well as diploma and science courses. This book offers on introductory survey of the conceptual development of the subject. It provides a simple and lucid presentations of the essential principles, formulae and definitions of Digital Communications.
Introduction to Communication Systems S. Chand Publishing
This third edition has been revised to include expanded coverage of digital communications. New topics include spread-spectrum systems, cellular communication systems, global positioning systems (GPS), and a chapter on emerging digital technologies such as SONET, ISDN and video compression.
Digital Communication Cambridge University Press
With The Global Trends In Communication And Data Networks, Leading To Idn And Isdn, There Is A Special Need For A Comprehensive Book On Thestate-Of-The-Art In Digital Communication. In The Absence Of Such A Reference Book, Most Of Our Senior Professionals And Academics Find It Very Hard To Keep Themselves Abreast Of The Recent Developments Leading To Information Revolution And Digital Revolution. The Present Volume Is An Attempt To Fill This Gap.The Book Consists Of Ten Chapters, And Discusses Such Topics As, Principles Of Digital Modulation, Source Encoding, Data Transmission Through Cables And Optical Fibres, Digital Radio Including Satellite Communication, Data Networks And Digital Switching, Information Theory And Coding, Survival Of Communication Including Spread Spectrum Techniques, And Future Trends Including Isdn. Conceptually The Chapters Attempt To Discuss From A System Point Of View, A Total Digital Communication Network, E.G., Idn, And The Total Range Of Signal Processing Techniques Has Been Presented In Subsequent Chapters, Thus Maintaining A Continuity Of Thought From End-To-End.The Book Is, Therefore, Addressed To Both Professionals In Telecommunications And Senior Students In This Area.
Digital Signal Processing John Wiley & Sons
Offering comprehensive, up-to-date coverage on the principles of digital communications, this book focuses on basic issues, relating theory to practice wherever possible. Topics covered include the sampling process, digital modulation techniques and error-control coding.
Lab Manual for Electronic Communications Vikas Publishing House
This supplement contains worked out solutions to the chapter end problem sets found in Digital Communication, Second Edition, ISBN 0-7923-9391-0.