

# **Analogue and Digital Communication Lab (EL-3003) LABORATORY MANUAL**

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**Analogue Conventional Amlitude Modulation and  
Demodulation using Matlab**

**(LAB # 06, LLO 02)**

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# Digital Communication Lab Manual Using Matlab Qpsk

**John G. Proakis, Masoud Salehi**



## **Digital Communication Lab Manual Using Matlab Qpsk:**

**Digital Communications With Lab Manual, 3/E** Bhat K. N. Hari, 2010-09      *LAB PRIMER THROUGH MATLAB®*  
NAVAS, K. A., JAYADEVAN, R., 2014-02-19 This systematically designed laboratory manual elucidates a number of techniques which help the students carry out various experiments in the field of digital signal processing digital image processing digital signal processor and digital communication through MATLAB in a single volume A step wise discussion of the programming procedure using MATLAB has been carried out in this book The numerous programming examples for each digital signal processing lab image processing lab signal processor lab and digital communication lab have also been included The book begins with an introductory chapter on MATLAB which will be very useful for a beginner The concepts are explained with the aid of screenshots Then it moves on to discuss the fundamental aspects in digital signal processing through MATLAB with a special emphasis given to the design of digital filters FIR and IIR Finally digital communication and image processing sections in the book help readers to understand the commonly used MATLAB functions At the end of this book some basic experiments using DSP trainer kit have also been included Audience This book is intended for the undergraduate students of electronics and communication engineering electronics and instrumentation engineering and instrumentation and control engineering for their laboratory courses in digital signal processing image processing and digital communication Key Features Includes about 115 different experiments Contains several figures to reinforce the understanding of the techniques discussed Gives systematic way of doing experiments such as Aim Theory Programs Sample inputs and outputs Viva voce questions and Examination questions      Digital Signal Processing Laboratory Experiments Using MATLAB Hardik Modi, 2014-03-24 Technical Report from the year 2014 in the subject Computer Science Technical Computer Science language English abstract This is Laboratory Manual of Digital Signal Processing All experiments are performed on MATLAB e g List of Experiments 1 To represent basic signals like Unit Impulse Ramp Unit Step Exponential 2 To generate discrete sine and cosine signals with given sampling frequency 3 To represent complex exponential as a function of real and imaginary part 4 To determine impulse and step response of two vectors using MATLAB 5 To perform convolution between two vectors using MATLAB 6 To perform cross correlation between two vectors using MATLAB      *Problem-Based Learning in Communication Systems Using MATLAB and Simulink* Kwonhue Choi, Huaping Liu, 2016-02-10 Designed to help teach and understand communication systems using a classroom tested active learning approach Discusses communication concepts and algorithms which are explained using simulation projects accompanied by MATLAB and Simulink Provides step by step code exercises and instructions to implement execution sequences Includes a companion website that has MATLAB and Simulink model samples and templates password matlab      **Digital Signal Processing for Wireless Communication using Matlab** E.S. Gopi, 2021-10-21 The updated book presents Matlab illustrations on various digital signal processing DSP techniques such as random process time varying wireless system model and detection and estimation theory used in wireless

communication The book also covers recent wireless techniques like OFDM massive MIMO techniques non orthogonal multiple access millimeter wave MIMO full duplex cognitive radio co operating communication unmanned aerial vehicles etc This book is suitable for those who are doing basic and applied research in digital signal processing for wireless communication

**MATLAB/Simulink for Digital Communication** Won Y. Yang, 2018-03-02

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**Differential QPSK Based Communication**

**System** Syed Wahaj Ul Haq, Shahzad Ahmed, Tehseen Sattar, 2013-01 This book can be used as a guide for building a digital communication system using digital signal processor In this book digital and analog modulation techniques are explained using plots Differential Quadrature Phase Shift Keying Transmitter and Receiver block level designs are explained using practical results The aim of this project is to implement a Differential Quadrature Phase Shift Keying based communication system on the Texas Instruments TMS320C6713 digital signal processor In this communication system at transmitter and receiving side root raised cosine pulse shaping technique is used to reduce Inter symbol Interference At receiver side we have to recover differentially modulated signal and have to do Symbol Synchronization For symbol synchronization we have used Gardner's Algorithm

**Communication Systems Principles Using MATLAB** John W. Leis, 2018-10-16 Discover the basic telecommunications systems principles in an accessible learn by doing format Communication Systems Principles Using MATLAB covers a variety of systems principles in telecommunications in an accessible format without the need to master a

large body of theory The text puts the focus on topics such as radio and wireless modulation reception and transmission wired networks and fiber optic communications The book also explores packet networks and TCP IP as well as digital source and channel coding and the fundamentals of data encryption Since MATLAB is widely used by telecommunications engineers it was chosen as the vehicle to demonstrate many of the basic ideas with code examples presented in every chapter The text addresses digital communications with coverage of packet switched networks Many fundamental concepts such as routing via shortest path are introduced with simple and concrete examples The treatment of advanced telecommunications topics extends to OFDM for wireless modulation and public key exchange algorithms for data encryption Throughout the book the author puts the emphasis on understanding rather than memorization The text also Includes many useful take home skills that can be honed while studying each aspect of telecommunications Offers a coding and experimentation approach with many real world examples provided Gives information on the underlying theory in order to better understand conceptual developments Suggests a valuable learn by doing approach to the topic Written for students of telecommunications engineering

**Communication Systems Principles Using MATLAB** is the hands on resource for mastering the basic concepts of telecommunications in a learn by doing format Contemporary Communication Systems Using MATLAB John G. Proakis,Masoud Salehi,1998 This text contains a large number of MATLAB based problems dealing with topics covered in a first course in communication systems Each chapter contains fundamental concepts briefly reviewed and presents illustration problems using MATLAB Each chapter contains a list of MATLAB files used **MATLAB/Simulink for Digital Communication** ,2009 Digital Communications With Lab Manual Kn Hari Bhat,2009-01-01 Advance Communication Lab Manual Dr. Preeta Sharan,2009 **Implementation of a Digital Communication System Using QPSK Modulation** Dilip B. Ghatе,1995 With the advances in high speed programmable digital signal processing DSP chips modern communications links are using a combination of DSP techniques and digital communications methods to realize faster reconfigurable and modular systems This thesis details the software implementation of a modern digital communication system combining various DSP functions channel Forward Error Correcting FEC algorithms and digital modulation methods The digital modulation schemes considered here include both baseband and Quadrature Phase Shift Keying QPSK techniques The proposed communication system will serve as a practical tool useful for simulating the transmission of any digital data The various modules of the system include source encoders decoders data compression functions channel encoders decoders and modulators demodulators Implementation consists of coding the various link functions in C and integrating them as a complete system The results show the viability of a QPSK modulated digital communications link and point the direction of future research towards software radio *Essentials of Digital Signal Processing Using MATLAB* Vinay K. Ingle,John G. Proakis,2011-03 In this supplementary text MATLAB is used as a computing tool to explore traditional DSP topics and solve problems to gain insight This greatly expands the range and complexity of problems that students can effectively study in the

course Since DSP applications are primarily algorithms implemented on a DSP processor or software a fair amount of programming is required Using interactive software such as MATLAB makes it possible to place more emphasis on learning new and difficult concepts than on programming algorithms Interesting practical examples are discussed and useful problems are explored Digital Signal Processing with MATLAB Manual MD Ariful Islam,2022-08-12 This laboratory manual deals with the basics of Digital Signal Processing DSP Lab experiment I hope this manual will be very useful for those who want to learn DSP by solving various problems Each program has been written in the MATLAB software according to the various questions and the output is shown step by step *Digital Communication Systems Using MATLAB and Simulink* Dennis Silage,2009 Digital Communication using MATLAB and Simulink is intended for a broad audience For the student taking a traditional course the text provides simulations of the MATLAB and Simulink systems and the opportunity to go beyond the lecture or laboratory and develop investigations and projects For the professional the text facilitates an expansive review of and experience with the tenets of digital communication systems **Digital Signal Processing Using MATLAB** Vinay Ingle,John Proakis,2006-08-10 This supplement to any standard DSP text is one of the first books to successfully integrate the use of MATLAB in the study of DSP concepts In this book MATLAB is used as a computing tool to explore traditional DSP topics and solve problems to gain insight This greatly expands the range and complexity of problems that students can effectively study in the course Since DSP applications are primarily algorithms implemented on a DSP processor or software a fair amount of programming is required Using interactive software such as MATLAB makes it possible to place more emphasis on learning new and difficult concepts than on programming algorithms Interesting practical examples are discussed and useful problems are explored This updated second edition includes new homework problems and revises the scripts in the book available functions and m files to MATLAB V7 Important Notice Media content referenced within the product description or the product text may not be available in the ebook version **Digital Signal Processing Using MATLAB** Vinay K. Ingle,John G. Proakis,2011-01-01 In this supplementary text MATLAB is used as a computing tool to explore traditional DSP topics and solve problems to gain insight This greatly expands the range and complexity of problems that students can effectively study in the course Since DSP applications are primarily algorithms implemented on a DSP processor or software a fair amount of programming is required Using interactive software such as MATLAB makes it possible to place more emphasis on learning new and difficult concepts than on programming algorithms Interesting practical examples are discussed and useful problems are explored Important Notice Media content referenced within the product description or the product text may not be available in the ebook version **Introduction to Digital Signal Processing Using MATLAB with Application to Digital Communications** K.S. Thyagarajan,2018-05-28 This textbook provides engineering students with instruction on processing signals encountered in speech music and wireless communications using software or hardware by employing basic mathematical methods The book starts with an overview of

signal processing introducing readers to the field It goes on to give instruction in converting continuous time signals into digital signals and discusses various methods to process the digital signals such as filtering The author uses MATLAB throughout as a user friendly software tool to perform various digital signal processing algorithms and to simulate real time systems Readers learn how to convert analog signals into digital signals how to process these signals using software or hardware and how to write algorithms to perform useful operations on the acquired signals such as filtering detecting digitally modulated signals correcting channel distortions etc Students are also shown how to convert MATLAB codes into firmware codes Further students will be able to apply the basic digital signal processing techniques in their workplace The book is based on the author s popular online course at University of California San Diego      **Quadrature Phase Shift Keying (QPSK/DQPSK). ,2007**



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