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DIGITAL ELECTRONICS AND LOGIC DESIGN Principles of Digital
Electronics Digital Electronics Understanding Digital Electronics
Introduction to Digital Electronics Fundamental of Digital Electronics And
Microprocessors Digital Electronics Basic Digital Electronics Digital
Electronics Digital Electronics: A Primer - Introductory Logic Circuit Design
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Electronics Analogue and Digital Electronics for Engineers Principles and
Applications of Digital Electronics Digital Electronic Circuits - The
Comprehensive View Digital Electronics: Principles & Practice Digital
Electronics Basic Digital Electronics Fundamentals of Digital Electronics
Digital Electronics Digital Electronics Foundation of Digital Electronics and
Logic Design Digital Electronics Digital Electronics with Arduino
Understanding Digital Electronics Basic Digital Electronics Digital
Electronics A Practical Approach to Digital Electronics Introduction to
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Digital Electronics Handbook of Digital Electronics Digital Electronics FCS

Electronic Control & Digital Electronics L2 Digital Electronics 1 Integrated
Circuits in Digital Electronics Digital Electronics Digital Electronics:
Principles and Theories

DIGITAL ELECTRONICS AND LOGIC DESIGN

2002-01-01

designed as a textbook for undergraduate students in electrical engineering electronics computer science and information technology this up to date well organized study gives an exhaustive treatment of the basic principles of digital electronics and logic design it aims at bridging the gap between these two subjects the many years of teaching undergraduate and postgraduate students of engineering that professor somanathan nair has done is reflected in the in depth analysis and student friendly approach of this book concepts are illustrated with the help of a large number of diagrams so that students can comprehend the subject with ease worked out examples within the text illustrate the concepts discussed and questions at the end of each chapter drill the students in self study

Principles of Digital Electronics

2009

this book teaches the basic principles of digital circuits it is appropriate for an introductory course in digital electronics for the students of b sc computer science b sc electronics b sc information technology b sc

physics bachelor of computer applications bca postgraduate diploma in computer applications master of computer applications mca the book emphasizes the must know concepts that should be covered in an introductory course and provides an abundance of clearly explained examples so essential for a thorough understanding of the principles involved in the analysis and design of digital computers the book takes students step by step through digital theory focusing on number representation systems and codes for representing information in digital systems use of logic gates in building digital circuits basic postulates and theorems of boolean algebra karnaugh map method for simplifying boolean functions arithmetic circuits such as adders and subtractors combinational circuit building blocks such as multiplexers decoders and encoders sequential circuit building blocks such as flip flops counters and registers operation of memory elements such as ram dram magnetic disk magnetic bubble optical disk etc

- 1 number systems and codes
- 2 logic gates and circuits
- 3 boolean algebra
- 4 combinational logic circuits
- 5 sequential logic circuits
- 6 counters and shift registers
- 7 memory elements

Digital Electronics

2007-09-27

the fundamentals and implementation of digital electronics are essential to understanding the design and working of consumer industrial electronics

communications embedded systems computers security and military equipment devices used in applications such as these are constantly decreasing in size and employing more complex technology it is therefore essential for engineers and students to understand the fundamentals implementation and application principles of digital electronics devices and integrated circuits this is so that they can use the most appropriate and effective technique to suit their technical need this book provides practical and comprehensive coverage of digital electronics bringing together information on fundamental theory operational aspects and potential applications with worked problems examples and review questions for each chapter digital electronics includes information on number systems binary codes digital arithmetic logic gates and families and boolean algebra an in depth look at multiplexers de multiplexers devices for arithmetic operations flip flops and related devices counters and registers and data conversion circuits up to date coverage of recent application fields such as programmable logic devices microprocessors microcontrollers digital troubleshooting and digital instrumentation a comprehensive must read book on digital electronics for senior undergraduate and graduate students of electrical electronics and computer engineering and a valuable reference book for professionals and researchers

Understanding Digital Electronics

1982

don't be left behind by modern developments in digital electronics they present a fascinating new world of achievement which can be easy to understand if you start at the beginning everyone is familiar with digital displays on watches and clocks and calculators for example each number is formed from seven rectangular light bulbs with the correct number of bulbs switched on by a digital circuit to light up the number required digital electronics in fact is based on devices which work on an on off basis or count in steps of 1 i.e. in digits the basic devices are quite simple but when interconnected with tens hundreds or even thousands of similar devices can perform a fantastic range of calculations store and give out information solve problems etc all at fantastic speed it is the number and complexity of interconnections of such devices that can be bewildering not how the actual devices work their working can be studied in three different ways mechanical equivalents in terms of switches and symbols called block logic which anyone can understand because you can see how it works truth tables which display all possible conditions of a digital device from which you choose the one you want e.g. the ten possible states of a digital number display binary arithmetic for working out solutions mathematically plus of course the basic digital circuits involved which provide all the functions required how digital electronics works with

clear line drawings to illustrate circuits and their applications is what this book is all about it starts from first principles and works right through to talking to computers the author has considerable experience in the field of practical electronics and is noted for his ability to explain technicalities in language that is easy to understand

Introduction to Digital Electronics

1998-03-27

this text takes the student from the very basics of digital electronics to an introduction of state of the art techniques used in the field it is ideal for any engineering or science student who wishes to study the subject from its basic principles as well as serving as a guide to more advanced topics for readers already familiar with the subject the coverage is sufficiently in depth to allow the reader to progress smoothly onto higher level texts

Fundamental of Digital Electronics And Microprocessors

2005-01-01

in the recent years there has been rapid advances in the field of digital electronics and microprocessor this book is intended to help students to

keep pace with these latest developments the present book is revised version of earlier book introduction to digital computers by the same author now this book is written in a lucid and simple language which gives clear explanation of basics of digital electronics computers and microprocessors

Digital Electronics

2013-09-05

an essential companion to john c morris s analogue electronics this clear and accessible text is designed for electronics students teachers and enthusiasts who already have a basic understanding of electronics and who wish to develop their knowledge of digital techniques and applications employing a discovery based approach the author covers fundamental theory before going on to develop an appreciation of logic networks integrated circuit applications and analogue digital conversion a section on digital fault finding and useful ic data sheets completes the book

Basic Digital Electronics

1991

assuming no prior knowledge of digital circuits this book introduces binary

variables and boolean algebra and leads through to complex combinational circuits including programmable logic devices it also covers sequential circuits and discusses the interfacing of analogue and digital systems includes exercises with answers annotation copyrighted by book news inc portland or

Digital Electronics

2018-10-01

this book is extensively designed for the third semester ece students as per anna university syllabus r 2013 the following chapters constitute the following units chapter 1 2 and unit 1chapter 3 covers unit 2 chapter 4 and 5 covers unit 3chapter 6 covers unit 4chapter 7 covers unit 5chapter 8 covers unit 5 chapter 1 introduces the number system binary arithmetic and codes chapter 2 deals with boolean algebra simplification using boolean theorems k map method quine mccluskey method logic gates implementation of switching function using basic logical gates and universal gates chapter 3 describes the combinational circuits like adder subtractor multiplier divider magnitude comparator encoder decoder code converters multiplexer and demultiplexer chapter 4 describes with latches flip flops registers and counters chapter 5 concentrates on the analysis as well as design of synchronous sequential circuits design of synchronous counters sequence generator and sequence detector chapter 6

concentrates the design as well as analysis of fundamental mode circuits pulse mode circuits hazard free circuits asm chart and design of asynchronous counters chapter 7 discussion on memory devices which includes rom ram pla pal sequential logic devices and asic chapter 8 concentrate on the comparison operation and characteristics of rtl dtl ttl ecl and mos families we have taken enough care to present the definitions and statements of basic laws and theorems problems with simple steps to make the students familiar with the fundamentals of digital design

Digital Electronics: A Primer – Introductory Logic Circuit Design

2015-01-27

this practical introduction explains exactly how digital circuits are designed from the basic circuit to the advanced system it covers combinational logic circuits which collect logic signals to sequential logic circuits which embody time and memory to progress through sequences of states the primer also highlights digital arithmetic and the integrated circuits that implement the logic functions based on the author s extensive experience in teaching digital electronics to undergraduates the book translates theory directly into practice and presents the essential information in a compact digestible style worked problems and examples are accompanied

by abbreviated solutions with demonstrations to ensure that the design material and the circuits operation are fully understood this is essential reading for any electronic or electrical engineering student new to digital electronics and requiring a succinct yet comprehensive introduction

Digital Electronics 1

2016-06-20

the omnipresence of electronic devices in our everyday lives has been accompanied by the downscaling of chip feature sizes and the ever increasing complexity of digital circuits this book is devoted to the analysis and design of digital circuits where the signal can assume only two possible logic levels it deals with the basic principles and concepts of digital electronics it addresses all aspects of combinational logic and provides a detailed understanding of logic gates that are the basic components in the implementation of circuits used to perform functions and operations of boolean algebra combinational logic circuits are characterized by outputs that depend only on the actual input values efficient techniques to derive logic equations are proposed together with methods of analysis and synthesis of combinational logic circuits each chapter is well structured and is supplemented by a selection of solved exercises covering logic design practices

Introduction to Digital Electronics, 1/e

1993

designed to provide a comprehensive and practical insight to the basic concepts of digital electronics this book brings together information on theory operational aspects and practical applications of digital circuits in a succinct style that is suitable for undergraduate students spread across 16 chapters the book walks the student through the first principles and the karnaugh mapping reduction technique before proceeding to elaborate on the design and implementation of complex digital circuits with ample examples and exercises to reinforce theory and an exclusive chapter allotted for electronic experiments this textbook is an ideal classroom companion for students

Digital Electronics

1984-10-18

this easy to understand book illustrates practical applications using circuits the user will face in the design engineer field electronics workbench cd rom included contains electronics workbench version 5 and ewb multisim version 6 circuit data files as well as solutions to the in text altera and xilinx examples providing users with additional reinforcement and

feedback concerning exercises and problems programmable logic devices
cplds timing waveforms multisim simulations of digital circuit applications
computer generated boolean logic reductions section on event counting
with optical switches and hall effect switches section on connecting
multiple i o to cplds stepper motors and controller ics section on
implementing state machines using vhdl and adc and dac simulations for
design engineers

Analogue and Digital Electronics for Engineers

1986

the text of the first edition has been extensively revised and
supplemented to bring it up to date

Principles and Applications of Digital Electronics

2018-09-25

this book deals with key aspects of design of digital electronic circuits for
different families of elementary electronic devices implementation of both
simple and complex logic circuits are considered in detail with special
attention paid to the design of digital systems based on complementary
metal oxide semiconductor cmos and pass transistor logic ptl technologies
acceptable for use in planar microelectronics technology it is written for

students in electronics and microelectronics with exercises and solutions provided

Digital Electronic Circuits – The Comprehensive View

1972

this new edition of digital electronics is up to date with current devices and includes many practical exercises whilst continuing to provide a comprehensive introduction to the principles of modern digital electronics

Digital Electronics: Principles & Practice

1999

basic digital electronics will teach you the difference between analog and digital systems the functions required to design digital systems circuits used to make decisions code conversions and data selections are discussed

Digital Electronics

1996

this book presents the fundamentals of digital electronics in a focused and comprehensive manner with many illustrations for understanding of the subject with high clarity digital signal processing dsp application information is provided for many topics of the subject to appreciate the practical significance of learning to summarize this book lays a foundation for students to become dsp engineers

Basic Digital Electronics

2020-03-25

this text covers updated contents such as optoisolators stepper motors electronic simulation software digital capacitance meters optical encoding leds logic probes and arithmetic logic units

Fundamentals of Digital Electronics

2021

this book focuses on the basic principles of digital electronics and logic design it is designed as a textbook for undergraduate students of electronics electrical engineering computer science physics and information technology the text covers the syllabi of several indian and foreign universities it depicts the comprehensive resources on the recent ideas in the area of digital electronics explored by leading experts from

both industry and academia a good number of diagrams are provided to illustrate the concepts related to digital electronics so that students can easily comprehend the subject solved examples within the text explain the concepts discussed and exercises are provided at the end of each chapter

Digital Electronics

1999

a great way for technicians to learn about digital techniques and computers description as computer technology has evolved there have been two groups of people the hardware group that understands the machine and the software group that codes in high level programming languages this book puts the two together by providing an understanding of the nuts and bolts of digital devices and implementing hardware operations by coding a microcontroller we use the arduino microcontroller which is embraced by the world wide maker community of well over 300 000 people of all ages and technical backgrounds the projects start at ground level and scaffold upward to fun challenges Ë we begin with a background on digital circuitry and cover the operation of the arduino microcontroller from there we examine digital logic gates which are the building blocks of computer hardware and see how they make decisions next we explore how digital devices work with numbers and do arithmetic

along with how they count binary numbers we also see how data moves between points in serial or parallel form as we build and test the circuitry to do the work the topic of random number generation is explained and we design a few simple computer games to see how this all works and have some fun the book leads up to the reader producing a final capstone project the format of the book is perfect for a digital electronics high school or college course but easy enough to follow so that anyone with a basic background in dc circuits will have an enjoyable time with the many projects

key features

- 1 work with gates the building blocks of computers
- 2 discover logic circuits that can make decisions
- 3 see how computers work with ones and zeros
- 4 understand how computers count and keep track of numbers
- 5 build and test memory circuits
- 6 implement hardware using code
- 7 have fun while learning about the arduino

what will you learn

you will learn that there is nothing mysterious about the digital devices that make up a computer or the code that programs a computer to function we cover the basic hardware as it is constructed into functional sections of a modern computer you will learn about gates flip flops registers counters and data i o

who this book is for

anyone with a background in electricity and electronics with the knowledge of constructing circuits on a breadboard should have no problem using this book it is designed for people with inquisitive minds in the hope that both the hardware projects and code samples are modified by the reader to gain additional information

table of contents

- 1 a bit about arduino
- 2 digital function

implementation 3 designing functional computer circuits 4 memory devices
5 registers and numbers 6 counters 7 multiplexing and demultiplexing 8
addresses specialized counters and serial monitor interaction 9 random
numbers 10 interactive i o 11 capstone project

Digital Electronics

2014-12-10

the textbook has been designed for the undergraduate students of
electrical and electronics electronics and communication computer
science electronics and instrumentation information technology and
electronics and control engineering this book provides an accessible and
practical treatment to many combinational and sequential circuits each
topic has been discussed in sufficient depth to expose the fundamental
principles concepts techniques which are necessary to understand the
subject thoroughly salient features of the book numerous worked out
examples highlight the need for intelligent approximation to achieve more
accuracy in lesser time short answer questions at the end of each chapter
help in easy understanding of the subject large number of review
questions and unsolved problems to develop a clear understanding of
basic principles previous gate paper solutions are the unique feature of
this book

Foundation of Digital Electronics and Logic

Design

1977

this educational text treats digital signals as active high or active low instead of as ones and zeroes the text includes examples applications and problems many diagrams drawn using the or cad schematic capture program and a chapter on programmable logic devices using the cupl compiler

Digital Electronics

2020-04-14

this book provides up to date coverage of all aspects of digital design incorporating computer based experimentation via electronic workbench and providing numerous practical applications a section in each chapter is devoted to troubleshooting digital circuitry systems a special icon highlights numerous tips throughout the book number systems binary arithmetic logic families basic logic gates combinational logic circuit design flip flops counters synchronous logic circuit design circuit design using programmable logic complex logic functions memories digital data transmission troubleshooting techniques for engineers or anyone else who

is interested in digital electronics

Digital Electronics with Arduino

1990

approaching the task of learning digital electronics operation from a developmental approach rather than relying on antiquated rote memorization this user friendly guide emphasizes the use of developmental techniques to derive the knowledge necessary to understand operational and design concepts employs many innovative ideas to simplify understanding of digital concepts enlightening readers with wisdom gained from over thirty years of author s electronics experience in government academia and industry takes a developmental approach to show how logic gates operate promoting a step by step assimilation of information needed to understand and or nand and not gate operations and enabling readers to complete truth tables and draw a gate s output with ease uses a logical approach in its analysis of boolean and demorgan s theorems and includes methods on how to read a boolean expression and develop alternate logic gate symbols

Understanding Digital Electronics

2008

the omnipresence of electronic devices in our everyday lives has been accompanied by the downscaling of chip feature sizes and the ever increasing complexity of digital circuits this book is devoted to the analysis and design of digital circuits where the signal can assume only two possible logic levels it deals with the basic principles and concepts of digital electronics it addresses all aspects of combinational logic and provides a detailed understanding of logic gates that are the basic components in the implementation of circuits used to perform functions and operations of boolean algebra combinational logic circuits are characterized by outputs that depend only on the actual input values efficient techniques to derive logic equations are proposed together with methods of analysis and synthesis of combinational logic circuits each chapter is well structured and is supplemented by a selection of solved exercises covering logic design practices

Basic Digital Electronics

1994

introduction to digital techniques second edition dan i porat and arpad barna an introduction to digital techniques that is oriented toward available integrated circuits and the way they are used the material offers thorough coverage of all principles and applications requiring only a rudimentary knowledge of transistor circuits and elementary algebra the

second edition covers the most up to date developments in logic circuits schottky diode clamped ttl cmos as well as advances in very large scale integration vlsi the book contains numerous self evaluation questions worked examples illustrations exercises and tables topics covered in the second edition include basic logic circuits number systems coding boolean algebra and simplification methods combinational logic circuits flip flops ffs counters shift registers and shift register counters lsi and vlsi arithmetic circuits code converters and displays computers and microcomputers digital to analog and analog to digital converters and systems considerations 1986 0 471 09187 1 480 pp

Digital Electronics

2000

digital electronics is the branch of physics that deals with electronic circuits that use digital signals in digital circuits signals can be transmitted without degradation a digital circuit is constructed using logic gates that are created from electrically controlled switches such as transistors an integrated circuit consists of multiple transistors on a single silicon chip and designed using electronic design automation software digital circuit complexity can be minimized using algorithms such as espresso heuristic logic minimizer algorithms for the optimization of large logic systems employ binary decision diagrams or algebraic manipulations this book is a

valuable compilation of topics ranging from the basic to the most complex theories and principles in the field of digital electronics the various aspects of digital electronics along with technological progress that have future implications have also been glanced at in this book constant effort has been made to make the understanding of the difficult concepts of digital electronics as easy and informative as possible for the readers

A Practical Approach to Digital Electronics

1986

Introduction to Digital Electronics

1985

Fundamentals of Digital Electronics

2001

Digital Electronics

1998-09

Digital Electronics

1981

Handbook of Digital Electronics

1979

Digital Electronics

2007

FCS Electronic Control & Digital Electronics L2

2016-06-17

Digital Electronics 1

1987-01-21

Integrated Circuits in Digital Electronics

2008

Digital Electronics

2019-06-18

Digital Electronics: Principles and Theories

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