The Hcs12 9s12 An Introduction To Software And Hardware Interfacing

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Data Communication and Networking - Massoud Moussavi 2012
Data Communication and Networking, International Edition provides a solid, thorough overview of data communications and networking for Engineering Technology programs. This text covers information for one or more courses spanning digital communication systems, computer communication and networks, and data communications. It is specifically written and designed for engineering and engineering technology learners by using a systematic and visual approach with abundant tables, illustrations, and practical examples making it easy for students to comprehend concepts.Content begins with data communication, signal conversion and issues in data transmission. Each chapter includes an introduction, summary of key information, as well as practice questions and problems with answers. The text also includes coverage of network and network standards, Ethernet, network components and Transmission Control and Internets Protocols (TCP/IP). The integration of applications and laboratory experiments are found throughout the text, making Data Communication and Networking, First Edition a one-of-a-kind and practical text.

Sensors for Mobile Robots - H.R. Everett 1995-07-15
The author compiles everything a student or experienced developmental engineer needs to know about the supporting technologies associated with the rapidly evolving field of robotics. From the table of contents: Design Considerations * Dead Reckoning * Odometry Sensors * Doppler and Inertial Navigation * Typical Mobility Configurations * Tactile and Proximity Sensing * Triangulation Ranging * Stereo Disparity * Active Triangulation * Active Stereoscopic * Hermies * Structured Light * Known Target Size * Time of Flight * Phase-Shift Measurement * Frequency Modulation * Interferometry * Range from Focus * Return Signal Intensity * Acoustical Energy * Electromagnetic Energy * Optical Energy * Microwave Radar * Collision Avoidance * Guidepath Following * Position-Location Systems * Ultrasonic and Optical Position-Location Systems * Wall, Doorway, andCeiling Referencing * Application-Specific Mission Sensors

Electronics - D. Joseph Stadtmiller 2004
Designed to better prepare individuals for a career in electronics, this book contains critically important concepts and the preliminary tools needed for a productive first week on the job. KEY TOPICS Its coverage of foundation strategies reviews: the operation of a company, teamwork and the role of the electronics professional, methods of project management, an engineering problem-solving process, and the practical aspects of an electronic project. Young professionals will benefit from this guide by becoming aware of—and therefore avoiding—many of the learning mistakes that often occur in the field. For electronic engineers, project engineers, electronic design engineers, chief engineers, and engineering managers with

0-5 years of experience.

The HCS12 / 9S12: An Introduction to Software and Hardware Interfacing - Han-Way Huang 2009-03-25

This new book provides a total solution for learning and teaching embedded system design based on the Freescale HCS12/9S12 microcontroller. Readers will learn step-by-step how to program the HCS12 using both assembly and C languages, as well as how to use such development tools as CodeWarrior, ImageCraft ICC12, MiniIDE, GNU C, and EGNU IDE. Supportive examples clearly illustrate all applications of the HCS12 peripheral functions, including parallel port, timer functions, PWM, UART port, SPI, I2C, CAN, on-chip flash and EEPROM programming, external memory expansion, and more. New sections on C programming style, software development methodology, and software reuse have been added in theis revision. A back-of-book CD contains the source code for all examples in the book, several groups of reusable utility functions, and complimentary freeware development tools for improved learning. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Starting FORTH - Leo Brodie 1987

Software -- Programming Languages.

Beginning C - Ivor Horton 2007-12-22

C is the programming language of choice when speed and reliability are required. It is used for many low-level tasks, such as device drivers and operating-system programming. For example, much of Windows and Linux is based on C programming. The updated 4th edition of Beginning C builds on the strengths of its predecessors to offer an essential guide for anyone who wants to learn C or desires a 'brush-up' in this compact, fundamental language. This classic from author, lecturer and respected academic Ivor Horton is the essential guide for anyone looking to learn the C language from the ground up.

The HCS12/9S12 - Han-Way Huang 2006

Accompanying CD-ROM contains ... "datasheets, programs, software, utilities."--CED-ROM label.

Using the MCS-51 Microcontroller - Han-Way Huang 2000

An ideal text for the first course in microprocessors or microcontrollers, Using the MCS-51 Microcontroller also includes extensive program and interfacing examples and is a helpful reference for practicing engineers."--BOOK JACKET.

The HCS12 / 9S12: An Introduction to Software and Hardware Interfacing (Book Only) - Han-Way Huang 2009-03-25

Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Embedded System Design - Frank Vahid 2001-10-17

This book introduces a modern approach to embedded system design, presenting software design and hardware design in a unified manner. It covers trends and challenges, introduces the design and use of single-purpose processors ("hardware") and general-purpose processors ("software"), describes memories and buses, illustrates hardware/software tradeoffs using a digital camera example, and discusses advanced computation models, controls systems, chip technologies, and modern design tools. For courses found in EE, CS and other engineering departments.

Embedded SoPC Design with Nios II Processor and Verilog Examples - Pong P. Chu 2012-05-14

Explores the unique hardware programmability of FPGA-based embedded systems, using a learn-by-doing approach to introduce the concepts and techniques for embedded SoPC design with Verilog An SoPC (system on a programmable chip) integrates a processor, memory modules, I/O peripherals, and custom hardware accelerators into a single FPGA (field-programmable gate array) device. In addition to the customized software, customized hardware can be developed and incorporated into the embedded system as well—allowing us to configure the soft-core processor, create tailored I/O interfaces, and develop specialized hardware accelerators for computation-intensive tasks. Utilizing an Altera FPGA prototyping board and its Nios II soft-core processor, Embedded SoPC Design with Nios II Processor and Verilog Examples takes a "learn by doing" approach to illustrate the hardware and software design and development process by including realistic projects that can be implemented and tested on the board. Emphasizing hardware design and integration throughout, the book is divided into

four major parts: Part I covers HDL and synthesis of custom hardware Part II introduces the Nios II processor and provides an overview of embedded software development Part III demonstrates the design and development of hardware and software of several complex I/O peripherals, including a PS2 keyboard and mouse, a graphic video controller, an audio codec, and an SD (secure digital) card Part IV provides several case studies of the integration of hardware accelerators, including a custom GCD (greatest common divisor) circuit, a Mandelbrot set fractal circuit, and an audio synthesizer based on DDFS (direct digital frequency synthesis) methodology While designing and developing an embedded SoPC can be rewarding, the learning can be a long and winding journey. This book shows the trail ahead and guides readers through the initial steps to exploit the full potential of this emerging methodology.

Head First C - David Griffiths 2012-04-03

Learn key topics such as language basics, pointers and pointer arithmetic, dynamic memory management, multithreading, and network programming. Learn how to use the compiler, the make tool, and the archiver.

Microcontrollers Fundamentals for Engineers and Scientists - Steven F. Barrett 2022-06-01

This book provides practicing scientists and engineers a tutorial on the fundamental concepts and use of microcontrollers. Today, microcontrollers, or single integrated circuit (chip) computers, play critical roles in almost all instrumentation and control systems. Most existing books arewritten for undergraduate and graduate students taking an electrical and/or computer engineering course. Furthermore, these texts have beenwritten with a particular model of microcontroller as the target discussion. These textbooks also require a requisite knowledge of digital design fundamentals. This textbook presents the fundamental concepts common to all microcontrollers. Our goals are to present the over–arching theory of microcontroller operation and to provide a detailed discussion on constituent subsystems available in most microcontrollers. With such goals, we envision that the theory discussed in this book can be readily applied to a wide variety of microcontroller technologies, allowing practicing scientists and engineers to become acquainted with basic concepts prior to beginning a design involving a specific microcontroller. We have found that the fundamental principles of a given microcontroller are easily transferred to other controllers. Although this is a relatively small book, it is packed with useful information for quickly coming up to speed on microcontroller concepts.

The Atmel AVR Microcontroller - Han-Way Huang 2014

Offering comprehensive, cutting-edge coverage, THE ATMEL AVR MICROCONTROLLER: MEGA AND XMEGA IN ASSEMBLY AND C delivers a systematic introduction to the popular Atmel 8-bit AVR microcontroller with an emphasis on the MEGA and XMEGA subfamilies. It begins with a concise and complete introduction to the assembly language programming before progressing to a review of C language syntax that helps with programming the AVR microcontroller. Emphasis is placed on a wide variety of peripheral functions useful in embedded system design. Vivid examples demonstrate the applications of each peripheral function, which are programmed using both the assembly and C languages.

Engineers' Practical Databook - Jay Smith 2018-08-02

This databook is an essential handbook for every engineering student or professional.Engineers' Practical Databook provides a concise and useful source of up-to-date essential formula, charts, and data for the student or practising engineer, technologist, applied mathematician or undergraduate scientist. Unlike almost all other engineering handbooks out there, this one doesn't package itself as a heavy, expensive or cumbersome textbook, and doesn't contain any preamble or lengthy chapters of 'filler' material. You will find value cover-to-cover with all the essential formula, charts, and materials data. This handbook is suitable for use in support of Higher Education programmes, including Higher National Diplomas and accredited engineering degrees. Topics include the essentials of aerospace, civil, electrical and electronic, mechanical and general engineering. Chapters include Mathematics, Materials, Mechanics, Structures, Machines and Mechanisms, Electrical and Electronics, Thermodynamics, Fluid

Mechanics, Systems, and Project Management. First Edition is in SI Units. - Easy to use - Chapters organised by module/discipline topic - Physical, geometric, thermal, chemical and electrical properties - All variables and units clearly defined - Essential technical data

MC68HC11, an Introduction - Han-Way Huang 2000

"Master the basics of interface programming, step-by-step, using assembly language and C language."--Back cover.

Introduction to Data Acquisition with LabVIEW - Robert H. King 2013

King's Introduction to Data Acquisition teaches students how to measure physical properties with a computer based instrumentation system. It uses numerous examples and the National Instruments LabVIEW graphical programming environment to lower the barriers to learning and reduce the time required to successfully perform automated measurements. LabVIEW is a powerful graphical programming environment that abstracts tedious low-level interface, syntax, and formatting tasks allowing users to focus on higher level goals and accomplish more.

E-Commerce 2015, Global Edition - Kenneth C. Laudon 2015-01-23

"E-Commerce 2015"" is intended for use in undergraduate and graduate e-commerce courses in any business discipline. "" ""The market-leading text for e-commerce "This comprehensive, market-leading text emphasizes the three major driving forces behind e-commerce--technology change, business development, and social issues--to provide a coherent conceptual framework for understanding the field. Teaching and Learning ExperienceThis program will provide a better teaching and learning experience--for both instructors and students.Comprehensive Coverage Facilitates Understanding of the E-Commerce Field: In-depth coverage of technology change, business development, and social issues gives readers a solid framework for understanding e-commerce.Pedagogical Aids Help Readers See Concepts in Action: Infographics, projects, and real-world case studies help readers see how the topics covered in the book work in practice.

PIC Microcontroller - Department of Electrical Engineering and Electronic Engineering Technology Han-Way Huang 2004-07

This book presents a thorough introduction to the Microchip PIC microcontroller family, including all of the PIC programming and interfacing for all the peripheral functions. A step-by-step approach to PIC assembly language programming is presented, with tutorials that demonstrate how to use such inherent development tools such as the Integrated Development Environment MPLAB, PIC18 C compiler, the ICD2 in-circuit debugger, and several demo boards. Comprehensive coverage spans the topics of interrupts, timer functions, parallel I/O ports, various serial communications such as USART, SPI, I2C, CAN, A/D converters, and external memory expansion.

Visible Light Communications - Zabih Ghassemlooy 2017-06-26

Visible Light Communications, written by leading researchers, provides a comprehensive overview of theory, stimulation, design, implementation, and applications. The book is divided into two parts – the first devoted to the underlying theoretical concepts of the VLC and the second part covers VLC applications. Visible Light Communications is an emerging topic with multiple functionalities including data communication, indoor localization, 5G wireless communication networks, security, and small cell optimization. This concise book will be of valuable interest from beginners to researchers in the field.

Embedded Microcomputer Systems: Real Time Interfacing - Jonathan W. Valvano 2011-01-01

Embedded Microcomputer Systems: Real Time Interfacing provides an in-depth discussion of the design of real-time embedded systems using 9S12 microcontrollers. This book covers the hardware aspects of interfacing, advanced software topics (including interrupts), and a systems approach to typical embedded applications. This text stands out from other microcomputer systems books because of its balanced, in-depth treatment of both hardware and software issues important in real time embedded systems design. It features a wealth of detailed case studies that demonstrate basic concepts in the context of actual working examples of systems. It also features a unique simulation software package on the bound-in CD-ROM (called Test Execute and Simulate, or TExaS, for short) that provides a self-contained

software environment for designing, writing, implementing, and testing both the hardware and software components of embedded systems. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Embedded Systems Design and Applications with the 68HC12 and HCS12 - Steven Frank Barrett 2005

For a second microprocessor course for students enrolled in Electrical/Computer Engineering Microcontroller courses. Designed for a senior- or graduate-level embedded systems design course, Embedded Systems Design and Applications with the 68HC12 introduces readers to unique issues associated with designing, testing, integrating, and implementing microcontroller/microprocessor-based embedded systems.

Embedded C Programming and the Atmel AVR (Book Only) - Richard H. Barnett 2012-07-24

Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Electronics Fundamentals - Thomas L. Floyd 2014

For courses in Electronics and Electricity Technology Electronics Fundamentals: A Systems Approach takes a broader view of fundamental circuits than most standard texts, providing relevance to basic theory by stressing applications of dc/ac circuits and basic solid state circuits in actual systems.

Arduino: A Technical Reference - J. M. Hughes 2016-05-16

Rather than yet another project-based workbook, Arduino: A Technical Reference is a reference and handbook that thoroughly describes the electrical and performance aspects of an Arduino board and its software. This book brings together in one place all the information you need to get something done with Arduino. It will save you from endless web searches and digging through translations of datasheets or notes in project-based texts to find the information that corresponds to your own particular setup and question. Reference features include pinout diagrams, a discussion of the AVR microcontrollers used with Arduino boards, a look under the hood at the firmware and run-time libraries that make the Arduino unique, and extensive coverage of the various shields and add-on sensors that can be used with an Arduino. One chapter is devoted to creating a new shield from scratch. The book wraps up with detailed descriptions of three different projects: a programmable signal generator, a "smart" thermostat, and a programmable launch sequencer for model rockets. Each project highlights one or more topics that can be applied to other applications.

Prelude to Greatness - Jay Smith 2003

"An insider's story of ... University of Oklahoma Sooners from 1994 to 1999 ... [by] the only NCAA Division 1 football player to have played under four head coaches during his tenure ..."--Jacket flap.

An Introduction to GCC - Brian Gough 2004

Provides an introduction to the GNU C and C++ compilers, gcc and g++. This manual includes: compiling C and C++ programs using header files and libraries, warning options, use of the preprocessor, static and dynamic linking, optimization, platform-specific options, profiling and coverage testing, paths and environment variables, and more.

Microprocessor Interfacing and Applications -

Electrical Engineering - Allan R. Hambley 2005

CD-ROMs contains: 2 CDs, "one contains the Student Edition of LabView 7 Express, and the other contains OrCAD Lite 9.2."

Embedded SoPC Design with Nios II Processor and VHDL Examples - Pong P. Chu 2011-08-29

The book is divided into four major parts. Part I covers HDL constructs and synthesis of basic digital circuits. Part II provides an overview of embedded software development with the emphasis on low-level I/O access and drivers. Part III demonstrates the design and development of hardware and software for several complex I/O peripherals, including PS2 keyboard and mouse, a graphic video controller, an audio codec, and an SD (secure digital) card. Part IV provides three case studies of the integration of hardware accelerators, including a custom GCD (greatest common divisor) circuit, a Mandelbrot set fractal circuit, and an audio synthesizer based on DDFS (direct digital frequency synthesis) methodology. The book utilizes FPGA devices, Nios II soft-core processor, and development platform from Altera Co., which

is one of the two main FPGA manufactures. Altera has a generous university program that provides free software and discounted prototyping boards for educational institutions (details at http://www.altera.com/university). The two main educational prototyping boards are known as DE1 ($99) and DE2 ($269). All experiments can be implemented and tested with these boards. A board combined with this book becomes a “turn-key” solution for the SoPC design experiments and projects. Most HDL and C codes in the book are device independent and can be adapted by other prototyping boards as long as a board has similar I/O configuration.

PIC Microcontroller and Embedded Systems - Muhammad Ali Mazidi 2016-08-16

The PIC microcontroller from Microchip is one of the most widely used 8-bit microcontrollers in the world. In this book, the authors use a step-by-step and systematic approach to show the programming of the PIC18 chip. Examples in both Assembly language and C show how to program many of the PIC18 features such as timers, serial communication, ADC, and SPI.

Custom Raspberry Pi Interfaces - Warren Gay 2017-01-24

Design and build custom hardware interfaces for the Raspberry Pi and discover low cost display and sensor options for embedded system projects. With this book you'll master 12C communications using Raspbian Linux in C++ and perform ADC and DAC experiments. You'll experiment with debounce buttons and switches using hardware and software solutions. Develop flywheel rotary encoder effects for ease of tuning and construct a hardware interface to the Music Playing Daemon (MPD) with developed software. Discover how to add your own hardware keypad for remote combination lock applications. Custom Raspberry Pi Interfaces offers a thorough chapter on interfacing 5-volt systems to 3.3-volt Raspberry Pis designed to expand your choice of peripheral options. Ready to go C++ programs involving GPIO and I2C peripherals are provided. This book also explores ADC, DAC, rotary encoders, CMOS shift registers. I2C I/O extenders. What you'll learn: Build simple, low cost input/output interfaces including rotary encoders Interface with 5-volt devices from a 3-volt Raspberry Pi system Apply analog to digital and digital to analog conversions on the Pi Read potentiometers (volume control) from the Pi Determine step, directions, and velocity of a rotary encoder Perform remote interfacing using the I2 PCF8574 chip Work with external CMOS devices like the 74HC595 (in C++) Who this book is for: Students and hobbyists interested in building custom interfaces for their Raspberry Pis.

Fractional-Order Design - Ahmed G. Radwan 2021-10-22

Fractional-Order Design: Devices, Circuits, and Systems introduces applications from the design perspective so that the reader can learn about, and get ready to, design these applications. The book also includes the different techniques employed to comprehensively and straightforwardly design fractional-order systems/devices. Furthermore, a lot of mathematics is available in the literature for solving the fractional-order calculus for system application. However, a small portion is employed in the design of fractional-order systems. This book introduces the mathematics that has been employed explicitly for fractional-order systems. Students and scholars who wants to quickly understand the field of fractional-order systems and contribute to its different domains and applications will find this book a welcomed resource. Presents a simple and comprehensive understanding of the field of fractional-order systems Offers practical knowledge on the design of fractional-order systems for different applications Exposes users to the possible new areas of applications of fractional-order systems

The Atmel AVR Microcontroller: MEGA and XMEGA in Assembly and C - Han-Way Huang 2013-01-14

Offering comprehensive, cutting-edge coverage, THE ATMEL AVR MICROCONTROLLER: MEGA AND XMEGA IN ASSEMBLY AND C delivers a systematic introduction to the popular Atmel 8-bit AVR microcontroller with an emphasis on the MEGA and XMEGA subfamilies. It begins with a concise and complete introduction to the assembly language programming before progressing to a review of C language syntax that helps with programming the AVR microcontroller. Emphasis is placed on a wide variety of peripheral functions useful in embedded system design. Vivid examples demonstrate the applications of each peripheral

function, which are programmed using both the assembly and C languages. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Embedded System Design with C805 - Han-Way Huang 2008-12-05

This book provides a broad and systematic introduction to microcontrollers. Through focusing on the 8051 8-bit microcontroller and its variants, the text aims at helping students learn about modern microcontroller interfacing and applications. For use with design projects, this book also provides numerous more complicated examples to explore the functions and applications of the 8051. Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

HCS12 Microcontroller and Embedded Systems Using Assembly and C with CodeWarrior - Muhammad Ali Mazidi 2009

HCS12 Microcontroller and Embedded Systems: Using Assembly and C with CodeWarrior, 1e features a systematic, step-by-step approach to covering various aspects of HCS12 C and Assembly language programming and interfacing. The text features several examples and sample programs that provide students with opportunities to learn by doing. Review questions are provided at the end of each section to reinforce the main points of the section. Students not only develop a strong foundation of Assembly language programming, they develop a comprehensive understanding of HCS12 interfacing. In doing so, they develop the knowledge background they need to understand the design and interfacing of microcontroller-based embedded systems. This book can also be used by practicing technicians, hardware engineers, computer scientists, and hobbyists. It is an ideal source for those wanting to move away from 68HC11 to a more powerful chip.

Build Your Own Robot! - Karl Lunt 2000-03-15

This book, a compilation of articles from Karl Lunt's long-running column for Nuts & Volts magazine, is a must-read for all beginner and intermediate-level robotics enthusiasts. Written in a friendly, straightforward manner, it contains entertaining anecdotes as well as practical advice and instruction. The author's stories about his various robotics projects will inspire you to try them yourself; and he shares his tips and code to help you. Possible projects range from transforming a TV remote control into a robot controller to building a robot from a drink cooler. You'll want to build them all; the author's enthusiasm for robotics is contagious!

Microcontrollers Fundamentals for Engineers and Scientists - Steven Frank Barrett 2006

Microcontrollers Fundamentals for Engineers and Scientists provides practicing scientists and engineers a tutorial on the fundamental concepts and the use of microcontrollers. Today, microcontrollers, or single integrated circuit (chip) computers, play critical roles in almost all instrumentation and control systems. There are a number of books that explore the fascinating world of microcontroller theory and applications. However, most of these are geared toward undergraduate and graduate students taking an electrical and/or computer engineering course. Furthermore, these texts have been written with a particular model of microcontroller as the target discussion. These textbooks also require a requisite knowledge of digital design fundamentals.In this textbook, authors Steven Barrett and Daniel Pack present the fundamental concepts common to all microcontrollers. The book presents the over-arching theory of microcontroller operation and provides a detailed discussion on constituent subsystems available in most microcontrollers. The text can be readily applied to a wide variety of microcontroller technologies, allowing practicing scientists and engineers to become acquainted with basic concepts prior to beginning a design involving a specific microcontroller. Both authors have used a wide variety of microcontrollers from various manufacturers and have found that the fundamental principles of a given microcontroller are easily transferred to other controllers. Although this is a relatively small textbook, it is packed with useful information and allows students and professionals to quickly come up to speed on microcontroller concepts.

Software and Hardware Engineering - Fredrick M. Cady 2008

Software and Hardware Engineering: Assembly and C Programming for the Freescale HCS12 Microcontroller, Second Edition, provides a

general-purpose view of software and hardware engineering in microcontroller systems and a comprehensive technical reference for the Freescale HCS12 microcontroller. It is ideal for a first undergraduate course in microcontrollers, microprocessors, or microcomputers.

The 8088 and 8086 Microprocessors - Walter A. Triebel 1997

For one or two-semester courses in Microprocessors or Intel 16-32 Bit Chips. Future designers of microprocessor-based electronic equipment need a systems-level understanding of the 80x86 microcomputer. This text offers thorough, balanced, and practical coverage of both software and hardware topics. Basic concepts are developed using the 8088 and 8086 microprocessors, but the 32-bit versions of the 80x86 family are also discussed. The authors examine how to assemble, run, and debug programs, and how to build, test, and troubleshoot interface circuits.