

Questasim user manual (Download Only)

MBMV 2014 Reconfigurable Embedded Control Systems: Applications for Flexibility and Agility VoIP Technologies Digital Circuit Design Laboratory Manual, 4th edition (Global) Nanoscale VLSI Lehrbuch Digitaltechnik Effective Coding with VHDL Embedded SoPC Design with Nios II Processor and VHDL Examples Extreme Environment Electronics VHDL-Simulation und -Synthese Functional Verification of Dynamically Reconfigurable FPGA-based Systems Information Security and Cryptology - ICISC 2009 Architecture of Computing Systems - ARCS 2007 Verilog Computer-Based Training Course Embedded SoPC Design with Nios II Processor and Verilog Examples Virtual Components Design and Reuse A Practical Approach to VLSI System on Chip (SoC) Design FPGAs 101 Quality, Reliability, Security and Robustness in Heterogeneous Networks Advanced Research on Engineering Materials, Energy, Management and Control Low-Power Processors and Systems on Chips A Route to Chaos Using FPGAs System-on-Chip Methodologies & Design Languages Synthesizable VHDL Design for FPGAs Software Defined Radio Proceedings of International Conference on Advances in Computing Learning from VLSI Design Experience Dependable Computing - EDCC 2005 Advances in Internet, Data and Web Technologies Fieldbus Systems and Their Applications 2003 Computer Technology and Computer Programming EDN Digital Design and Computer Architecture Reuse Methodology Manual Low-Power Electronics Design Reuse Methodology Manual for System-On-A-Chip Designs GLSVLSI '04 Proceedings of the ... ACM Great Lakes Symposium on VLSI. The Verilog PLI Handbook Building Embedded Systems

MBMV 2014

2014-02-18

das vorliegende buch ist eine sammlung von papieren der workshops methoden und beschreibungssprachen zur modellierung und verifikation von schaltungen und systemen mbmv der workshop ist bereits der siebzehnte gemeinsame workshop der fachgruppen 3 und 4 der kooperationsgemeinschaft rechnergestützter schaltungs und systementwurf rss der gesellschaft für informatik gi der informationstechnischen gesellschaft im vde itg und der gesellschaft für mikroelektronik mikro und feinmechanik gmm in diesem jahr findet der workshop erstmals im ibm forschungs und entwicklungslabor in böblingen statt die mbmv ist ein forum um trends neuste ergebnisse und aktuelle probleme auf d em gebiet der methoden zur modellierun und verifikation sowie der beschreibungssprachen digitaler analoger und mixed signal schaltungen zu diskutieren auch aspekte des entwurfs und tests von hardwarenaher eingebetteter software werden im rahmen dieses workshops beleuchtet

Reconfigurable Embedded Control Systems: Applications for Flexibility

and Agility

2010-11-30

this book addresses the development of reconfigurable embedded control systems and describes various problems in this important research area which include static and dynamic manual or automatic reconfigurations multi agent architectures modeling and verification component based approaches architecture description languages distributed reconfigurable architectures real time and low power scheduling execution models and the implementation of such systems

VoIP Technologies

2011-02-14

this book provides a collection of 15 excellent studies of voice over ip voip technologies while voip is undoubtedly a powerful and innovative communication tool for everyone voice communication over the internet is inherently less reliable than the public switched telephone network because the internet functions as a best effort network without quality of service guarantee and voice data cannot be retransmitted this book introduces research strategies that address various issues with the aim of enhancing voip quality we hope that you will enjoy reading these diverse studies and that the book will provide you with a lot of useful information about current voip technology research

Digital Circuit Design Laboratory Manual, 4th edition (Global)

2020-10-03

this book describes methodologies in the design of vlsi devices circuits and their applications at nanoscale levels the book begins with the discussion on the dominant role of power dissipation in highly scaled devices the 15 chapters of the book are classified under four sections that cover design modeling and simulation of electronic magnetic and compound semiconductors for their applications in vlsi devices circuits and systems this comprehensive volume eloquently presents the design methodologies for ultra low power vlsi design potential post cmos devices and their applications from the architectural and system perspectives the book shall serve as an invaluable reference book for the graduate students ph d m s m tech scholars researchers and practicing engineers working in the frontier areas of nanoscale vlsi design

Nanoscale VLSI

2011-11-14

die entwurfsmethoden zur digitaltechnik erleben seit einigen jahren einen wesentlichen paradigmenwechsel bisherige methoden und kenntnisse zum digitaltechnikentwurf sind nicht mehr ausreichend industrie und wissenschaft verlangen darüber hinaus die fähigkeit zur modellierung mit der hardwarebeschreibungssprache vhdl das konzept dieses lehrbuchs erfüllt diese anforderungen indem die wesentlichen sprachelemente von vhdl schritt für schritt parallel zu den grundkenntnissen zum digitalen schaltungsentwurf eingeführt werden der leser ist nach dem studium dieses lehrbuchs in der lage einfache digitale systeme zu verstehen und zu entwerfen weil er zu allen komponenten funktion zeitverhalten sowie ein geeignetes vhdl entwurfsmuster zuordnen kann der ausgezeichnete didaktische aufbau unterstützt dabei jedem kapitel sind lernziele vorangestellt immer wieder werden grafische und tabellarische Übersichten sowie vertiefende beispiele verwendet eine vielzahl von Übungsaufgaben mit musterlösungen dient zur lernkontrolle

Lehrbuch Digitaltechnik

2016-05-27

a guide to applying software design principles and coding practices to vhdl to improve the readability maintainability and quality of vhdl code this book addresses an often neglected aspect of the creation of vhdl designs a vhdl description is also source code and vhdl designers can use the best practices of software development to write high quality code and to organize it in a design this book presents this unique set of skills teaching vhdl designers of all experience levels how to apply the best design principles and coding practices from the software world to the world of hardware the concepts introduced here will help readers write code that is easier to understand and more likely to be correct with improved readability maintainability and overall quality after a brief review of vhdl the book presents fundamental design principles for writing code discussing such topics as design quality architecture modularity abstraction and hierarchy building on these concepts the book then introduces and provides recommendations for each basic element of vhdl code including statements design units types data objects and subprograms the book covers naming data objects and functions commenting the source code and visually presenting the code on the screen all recommendations are supported by detailed rationales finally the book explores two uses of vhdl synthesis and testbenches it examines the key characteristics of code intended for synthesis distinguishing it from code meant for simulation and then demonstrates the design and implementation of testbenches with a series of examples that verify different kinds of models including combinational sequential and fsm code examples from the book are also available on a companion website enabling the reader to experiment with the complete source code

Effective Coding with VHDL

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 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 socp 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

Embedded SoPC Design with Nios II Processor and VHDL Examples

2017-12-19

unfriendly to conventional electronic devices circuits and systems extreme environments represent a serious challenge to designers and mission architects the first truly comprehensive guide to this specialized field extreme environment electronics explains the essential aspects of designing and using devices circuits and electronic systems intended to operate in extreme environments including across wide temperature ranges and in radiation intense scenarios such as space the definitive guide to extreme environment electronics featuring contributions by some of the world s foremost experts in extreme environment electronics the book provides in depth information on a wide array of topics it begins by describing the extreme conditions and then delves into a description of suitable semiconductor technologies and the modeling of devices within those technologies it also discusses reliability issues and failure mechanisms that readers need to be aware of as well as best practices for the design of these electronics continuing beyond just the paper design of building blocks the book rounds out coverage of the design realization process with verification techniques and chapters on electronic packaging for extreme environments the final set of chapters describes actual chip level designs for applications in energy and space exploration requiring only a basic background in electronics the book combines theoretical and practical aspects in each self contained chapter appendices supply additional background material with its broad coverage and depth and the expertise of the contributing authors this is an invaluable reference for engineers scientists and technical managers as well as researchers and graduate students a hands on resource it explores what is required to successfully operate electronics in the most demanding conditions

Extreme Environment Electronics

2020-10-26

die erweiterte 8 auflage dieses standardwerks ergänzt die bisherige darstellung der vhdl simulation des buches durch konkrete benutzeranleitungen für den vhdl simulator modelsim auch wird die verwendung des simulations und synthesewerkzeugs vivado vorgestellt erforderlich um vhdl code in neueren fpgas der fa xilinx zu implementieren mit ausgewählten beispielen werden implementierungen für artix fpgas vorgestellt und diskutiert

VHDL-Simulation und -Synthese

2014-10-08

this book analyzes the challenges in verifying dynamically reconfigurable systems drs with respect to the user design and the physical implementation of such systems the authors describe the use of a simulation only layer to emulate the behavior of target fpgas and accurately model the characteristic features of reconfiguration readers are enabled with this simulation only layer to maintain verification productivity by abstracting away the physical details of the fpga fabric two implementations of the simulation only layer are included extended re channel is a system c library that can be used to check drs designs at a high level resim is a library to support rtl simulation of a drs reconfiguring both its logic and state through a number of case studies the authors demonstrate how their approach integrates seamlessly with existing mainstream drs design flows and with well established verification methodologies such as top down modeling and coverage driven verification

Functional Verification of Dynamically Reconfigurable FPGA-based Systems

2010-07-12

this book constitutes the proceedings of the 12th international conference on information security and cryptology held in seoul korea in december 2009

Information Security and Cryptology - ICISC 2009

2007-05-21

this book constitutes the refereed proceedings of the 20th international conference on architecture of computing systems arcs 2007 held in zurich switzerland in march 2007 coverage details a broad range of research topics related to basic technology architecture and application of computing systems with a strong focus on system aspects of pervasive computing and self organization techniques in both organic and autonomic computing

Architecture of Computing Systems - ARCS 2007

2002-04

explores the unique hardware programmability of fpga based embedded systems using a learn by doing approach to introduce the concepts and techniques for embedded soc design with verilog an soc 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 soc 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 soc 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

Verilog Computer-Based Training Course

2012-05-14

design reuse is not just a topic of research but a real industrial necessity in the microelectronic domain and thus driving the competitiveness of relevant areas like for example telecommunication or automotive most companies have already dedicated a department or a central unit that transfer design reuse into reality all main eda conferences include a track to the topic and even specific conferences have been established in this area both in the usa and in europe virtual components design and reuse presents a selection of articles giving a mature and consolidated perspective to design reuse from different points of view the authors stem from all relevant areas research and academia ip providers eda vendors and industry some classical topics in design reuse like specification and generation of components ip retrieval and cataloging or interface customisation are revisited and discussed in depth moreover new hot topics are presented among them ip quality platform based reuse software ip ip security business models for design reuse and major initiatives like the medea eda roadmap

Embedded SoPC Design with Nios II Processor and Verilog Examples

2013-06-29

now in a thoroughly revised second edition this practical practitioner guide provides a comprehensive overview of the soc design process it explains end to end system on chip soc design processes and includes updated coverage of design methodology the design environment eda tool flow design decisions choice of design intellectual property ip cores sign off procedures and design infrastructure requirements the second edition provides new information on soc trends and updated design cases coverage also includes critical advanced guidance on the latest upf based low power design flow challenges of deep submicron technologies and 3d design fundamentals which will prepare the readers for the challenges of working at the nanotechnology scale a practical approach to vlsi system on chip soc design a comprehensive guide second edition provides engineers who aspire to become vlsi designers with all the necessary information and details of eda tools it will be a valuable professional reference for those working on vlsi design and verification portfolios in complex soc designs

Virtual Components Design and Reuse

2022-12-13

fpgas field programmable gate arrays can be found in applications such as smart phones mp3 players medical imaging devices and for aerospace and defense technology fpgas consist of logic blocks and programmable interconnects this allows an engineer to start with a blank slate and program the fpga for a specific task for instance digital signal processing or a specific device for example a software defined radio due to the short time to market and ability to reprogram to fix bugs without having to respin fpgas are in increasingly high demand this book is for the engineer that has not yet had any experience with this electrifying and growing field the complex issue of fpga design is broken down into four distinct phases design synthesis simulation place route numerous step by step examples along with source code accompany the discussion a brief primer of one of the popular fpga and hardware languages vhdl is incorporated for a simple yet comprehensive learning tool while a general technology background is assumed no direct hardware development understanding is needed also included are details on tool set up verification techniques and test benches reference material consists of a quick reference guide reserved words and common vhdl fpga terms learn how to design and develop fpgas no prior experience necessary breaks down the complex design and development of fpgas into easy to learn building blocks contains examples helpful tips and step by step tutorials for synthesis implementation simulation and programming phases

A Practical Approach to VLSI System on Chip (SoC) Design

2010-01-16

this book constitutes the thoroughly refereed post conference proceedings of the 9th international conference on heterogeneous networking for quality reliability security and robustness qshine 2013 which was held in national capital region ncr of india during january 2013 the 87 revised full papers were carefully selected from 169 submissions and present the recent technological developments in broadband high speed networks peer to peer networks and wireless and mobile networks

FPGAs 101

2013-07-04

volume is indexed by thomson reuters cpci s was in these proceedings are to be found original ideas and new angles on aspects of engineering materials energy management and control they are the result of a forum where researchers could exchange their innovative ideas from new viewpoints these proceedings will provide valuable guidance to scientists physicists chemists teachers and others world wide

Quality, Reliability, Security and Robustness in Heterogeneous Networks

2012-01-03

the power consumption of microprocessors is one of the most important challenges of high performance chips and portable devices in chapters drawn from piguet s recently published low power electronics design this volume addresses the design of low power microprocessors in deep submicron technologies it provides a focused reference for specialists involved in systems on chips from low power microprocessors to dsp cores reconfigurable processors memories ad hoc networks and embedded software low power processors and systems on chips is organized into three broad sections for convenient access the first section examines the design of digital signal processors for embedded applications and techniques for reducing dynamic and static power at the electrical and system levels the second part describes several aspects of low power systems on chips including hardware and embedded software aspects efficient data storage networks on chips and applications such as routing strategies in wireless rf sensing and actuating devices the final section discusses embedded software issues including details on compilers retargetable compilers and coverification tools providing detailed examinations contributed by leading experts low power processors and systems on chips supplies authoritative information on how to maintain high performance while lowering power consumption in modern processors and socs it is a must read for anyone designing modern computers or embedded systems

Advanced Research on Engineering Materials, Energy, Management and Control

2018-10-03

the purpose of this introductory book is to couple the teaching of chaotic circuit and systems theory with the use of field programmable gate arrays fpgas as such it differs from other texts on chaos first it puts emphasis on combining theoretical methods simulation tools and physical realization to help the reader gain an intuitive understanding of the properties of chaotic systems second the medium used for physical realization is the fpga these devices are massively parallel architectures that can be configured to realize a variety of logic functions hence fpgas can be configured to emulate systems of differential equations nevertheless maximizing the capabilities of an fpga requires the user to understand the underlying hardware and also fpga design software this is achieved by the third distinctive feature of this book a lab component in each chapter here readers are asked to experiment with computer simulations and fpga designs to further their understanding of concepts covered in the book this text is intended for graduate students in science and engineering interested in exploring implementation of nonlinear dynamical chaotic systems on fpgas

Low-Power Processors and Systems on Chips

2015-06-18

system on chip methodologies design languages brings together a selection of the best papers from three international electronic design language conferences in 2000 the conferences are the hardware description language conference and exhibition hdlcon held in the silicon valley area of usa the forum on design languages fdl held in europe and the asia pacific chip design language apchdl conference the papers cover a range of topics including design methods specification and modeling languages tool issues formal verification simulation and synthesis the results presented in these papers will help researchers and practicing engineers keep abreast of developments in this rapidly evolving field

A Route to Chaos Using FPGAs

2013-03-14

the methodology described in this book is the result of many years of research experience in the field of synthesizable vhdl design targeting fpga based platforms vhdl was first conceived as a documentation language for asic designs afterwards the language was used for the behavioral simulation of asics and also as a design input for synthesis tools vhdl is a rich language but just a small subset of it can be used to write synthesizable code from which a physical circuit can be obtained usually vhdl books describe both synthesis and simulation aspects of the language but in this book the reader is conducted just through the features acceptable by synthesis tools the book introduces the subjects in a gradual and concise way providing just enough information for the reader to develop their synthesizable digital systems in vhdl the examples in the book were planned targeting an fpga platform widely used around the world

System-on-Chip Methodologies & Design Languages

2013-10-21

the impending advent of gsm in the early 1990s triggered massive investment that revolutionised the capability of dsp technology a decade later the vastly increased processing requirements and potential market of 3g has triggered a similar revolution with a host of start up companies claiming revolutionary technologies hoping to challenge and displace incumbent suppliers this book with contributions from today s major players and leading start ups comprehensively describes both the new approaches and the responses of the incumbents with detailed descriptions of the design philosophy architecture technology maturity and software support analysis of sdr baseband processing requirements of cellular handsets and basestations 3g handset baseband asic dsp parallel processing acm and customised programmable architectures 3g basestation baseband dsp including co processors fpga based approaches reconfigurable and parallel architectures architecture optimisation to match 3g air interface and application algorithms evolution of existing dsp asic fpga solutions assessment of the architectural approaches and the implications of the trends an essential resource for the 3g product designer who needs to understand immediate design options within a wider context of future product roadmaps the book will also benefit researchers and commercial managers who need to understand this rapid evolution of baseband signal processing and its industry impact

Synthesizable VHDL Design for FPGAs

2006-02-24

this is the first international conference on advances in computing icadc 2012 the scope of the conference includes all the areas of new theoretical computer science systems and software and intelligent systems conference proceedings is a culmination of research results papers and the theory related to all the three major areas of computing mentioned above helps budding researchers graduates in the areas of computer science information science electronics telecommunication instrumentation networking to take forward their research work based on the reviewed results in the paper by mutual interaction through e mail contacts in the proceedings

Software Defined Radio

2012-09-03

this book shares with readers practical design knowledge gained from the author s 24 years of ic design experience the author addresses issues and challenges faced commonly by ic designers along with solutions and workarounds guidelines are described for tackling issues such as clock domain crossing using lockup latch to cross clock domains during scan shift implementation of scan chains across power domain optimization methods to improve timing how standard cell libraries can aid in synthesis optimization bkm

best known method for rtl coding test compression memory bist usage of signed verilog for design requiring ve and ve calculations state machine code coverage and much more numerous figures and examples are provided to aid the reader in understanding the issues and their workarounds

Proceedings of International Conference on Advances in Computing

2018-12-14

it is always a special honor to chair the european dependable computing c fference edcc edcc has become one of the well established conferences in the eld of dependability in the european research area budapest was selected as the host of this conference due to its traditions in organizing international scienti c events and its traditional role of serving as a meeting point between east and west edcc 5 was the fth in the series of these high quality scienti c conf ences in addition to the overall signi cance of such a pan european event this year s conference was a special one due to historic reasons the roots of edcc date back to the moment when the iron curtain fell originally two groups of scientists from di erent european countries in western and eastern europe who were active in research and education related to dependability created a joint forum in order to merge their communities as early as in 1989 this trend has continued up to today this year s conference was the rst one where the overwhelming majority of the research groups belong to the family of european nations united in the european union during the past 16 years we observed that the same roots in all the professional cultural and scienti c senses led to a seamless integration of these research communities previously separated ar cially for a long time edcc has become one of the main european platforms to exchange new searchideasinthe eldofdependability

Learning from VLSI Design Experience

2005-03-31

this book presents original contributions on the theories and practices of emerging internet data and web technologies and their applicability in businesses engineering and academia the internet has become the most proliferative platform for emerging large scale computing paradigms among them data and web technologies are two most prominent paradigms and manifest in a variety of forms such as data centers cloud computing mobile cloud mobile web services and so on together these technologies form a digital ecosystem based on the data cycle from capturing to processing analysis and visualization the investigation of various research and development issues in this digital ecosystem is made all the more important by the ever increasing needs of real life applications which involve storing and processing large amounts of data as a key feature the book addresses advances in the life cycle exploitation of data generated from the digital ecosystem and data technologies that create value for businesses moving toward a collective intelligence approach given its scope the book offers a valuable reference guide for researchers software developers practitioners and students interested in the field of data and web technologies

Dependable Computing – EDCC 2005

2020-01-30

a proceedings volume from the 6th ifac international conference puebla mexico 14 25 november 2005

Advances in Internet, Data and Web Technologies

2003-12-18

covering a broad range of new topics in computer technology and programming this volume discusses encryption techniques sql generation 2 0 technologies and visual sensor networks it also examines reconfigurable computing video streaming animation techniques and more readers will learn about an educational tool and game to help students learn computer programming the book also explores a new medical technology paradigm centered on wireless technology and cloud computing designed to overcome the problems of increasing health technology costs

Fieldbus Systems and Their Applications 2003

2016-04-19

digital design and computer architecture second edition david money harris and sarah l harris harris and harris have taken the popular pedagogy from computer organization and design down to the next level of refinement showing in detail how to build a mips microprocessor in both verilog and vhdl given the exciting opportunity that students have to run large digital designs on modern fgpas the approach the authors take in this book is both informative and enlightening david a patterson university of california at berkeley co author of computer organization and design digital design and computer architecture takes a unique and modern approach to digital design beginning with digital logic gates and progressing to the design of combinational and sequential circuits harris and harris use these fundamental building blocks as the basis for what follows the design of an actual mips processor systemverilog and vhdl are integrated throughout the text in examples illustrating the methods and techniques for cad based circuit design by the end of this book readers will be able to build their own microprocessor and will have a top to bottom understanding of how it works harris and harris have combined an engaging and humorous writing style with an updated and hands on approach to digital design this second edition has been updated with new content on i o systems in the context of general purpose processors found in a pc as well as microcontrollers found almost everywhere the new edition provides practical examples of how to interface with peripherals using rs232 spi motor control interrupts wireless and analog to digital conversion high level descriptions of i o interfaces found in pcs include usb sdram wifi pci express and others in addition to expanded and updated material throughout systemverilog is now featured in the programming and code examples replacing verilog alongside vhdl this new edition also provides additional exercises and a new appendix on c programming to

strengthen the connection between programming and processor architecture second edition features covers the fundamentals of digital logic design and reinforces logic concepts through the design of a mips microprocessor features side by side examples of the two most prominent hardware description languages hdl systemverilog and vhdl which illustrate and compare the ways each can be used in the design of digital systems includes examples throughout the text that enhance the reader s understanding and retention of key concepts and techniques companion site includes links to cad tools for fpga design from altera and mentor graphics lecture slides laboratory projects and solutions to exercises david money harris professor of engineering harvey mudd college sarah l harris associate professor of engineering harvey mudd college

Computer Technology and Computer Programming

2009

silicon technology now allows us to build chips consisting of tens of millions of transistors this technology not only promises new levels of system integration onto a single chip but also presents significant challenges to the chip designer as a result many asic developers and silicon vendors are re examining their design methodologies searching for ways to make effective use of the huge numbers of gates now available these designers see current design tools and methodologies as inadequate for developing million gate asics from scratch there is considerable pressure to keep design team size and design schedules constant even as design complexities grow tools are not providing the productivity gains required to keep pace with the increasing gate counts available from deep submicron technology design reuse the use of pre designed and pre verified cores is the most promising opportunity to bridge the gap between available gate count and designer productivity reuse methodology manual for system on a chip designs second edition outlines an effective methodology for creating reusable designs for use in a system on a chip soc design methodology silicon and tool technologies move so quickly that no single methodology can provide a permanent solution to this highly dynamic problem instead this manual is an attempt to capture and incrementally improve on current best practices in the industry and to give a coherent integrated view of the design process reuse methodology manual for system on a chip designs second edition will be updated on a regular basis as a result of changing technology and improved insight into the problems of design reuse and its role in producing high quality soc designs

EDN

2012-07-24

the power consumption of integrated circuits is one of the most problematic considerations affecting the design of high performance chips and portable devices the study of power saving design methodologies now must also include subjects such as systems on chips embedded software and the future of microelectronics low power electronics design covers all major aspects of low power design of ics in deep submicron technologies and addresses emerging topics related to future design this volume explores in individual

chapters written by expert authors the many low power techniques born during the past decade it also discusses the many different domains and disciplines that impact power consumption including processors complex circuits software cad tools and energy sources and management the authors delve into what many specialists predict about the future by presenting techniques that are promising but are not yet reality they investigate nanotechnologies optical circuits ad hoc networks e textiles as well as human powered sources of energy low power electronics design delivers a complete picture of today s methods for reducing power and also illustrates the advances in chip design that may be commonplace 10 or 15 years from now

Digital Design and Computer Architecture

2012-12-06

silicon technology now allows us to build chips consisting of tens of millions of transistors this technology promises new levels of system integration onto a single chip but also presents significant challenges to the chip designer as a result many asic developers and silicon vendors are re examining their design methodologies searching for ways to make effective use of the huge numbers of gates now available these designers see current design tools and methodologies as inadequate for developing million gate asics from scratch there is considerable pressure to keep design team size and design schedules constant while design complexities grow tools are not providing the productivity gains required to keep pace with the increasing gate counts available from deep submicron technology design reuse the use of pre designed and pre verified cores is the most promising opportunity to bridge the gap between available gate count and designer productivity reuse methodology manual for system on a chip designs outlines an effective methodology for creating reusable designs for use in a system on a chip soc design methodology silicon and tool technologies move so quickly that no single methodology can provide a permanent solution to this highly dynamic problem instead this manual is an attempt to capture and incrementally improve on current best practices in the industry and to give a coherent integrated view of the design process from the foreword synopsys and mentor graphics have joined forces to help make ip reuse a reality one of the goals of our design reuse partnership is to develop demonstrate and document a reuse based design methodology that works the reuse manual rmm is the result of this effort aart j de geus synopsys inc walden c rhines mentor graphics corporation

Reuse Methodology Manual

2018-10-03

the verilog programming language interface commonly called the verilog pu is one of the more powerful features of verilog the pu provides a means for both hardware designers and software engineers to interface their own programs to commercial verilog simulators through this interface a verilog simulator can be customized to perform virtually any engineering task desired just a few of the common uses of the pu include interfacing veri log simulations to c language models adding custom graphical tools to a simulator

reading and writing proprietary file formats from within a simulation performing test coverage analysis during simulation and so forth the applications possible with the verilog pli are endless intended audience this book is written for digital design engineers with a background in the verilog hardware description language and a fundamental knowledge of the c programming language it is expected that the reader has a basic knowledge of hardware engineering specifically digital design of asic and fpga technologies is familiar with the verilog hardware description language hdl and can write models of hardware circuits in verilog can write simulation test fixtures in verilog and can run at least one verilog logic simulator knows basic c language programming including the use of functions pointers structures and file i o explanations of the concepts and terminology of digital

Low-Power Electronics Design

2013-03-09

develop the software and hardware you never think about we re talking about the nitty gritty behind the buttons on your microwave inside your thermostat inside the keyboard used to type this description and even running the monitor on which you are reading it now such stuff is termed embedded systems and this book shows how to design and develop embedded systems at a professional level because yes many people quietly make a successful career doing just that building embedded systems can be both fun and intimidating putting together an embedded system requires skill sets from multiple engineering disciplines from software and hardware in particular building embedded systems is a book about helping you do things in the right way from the beginning of your first project programmers who know software will learn what they need to know about hardware engineers with hardware knowledge likewise will learn about the software side whatever your background is building embedded systems is the perfect book to fill in any knowledge gaps and get you started in a career programming for everyday devices author changyi gu brings more than fifteen years of experience in working his way up the ladder in the field of embedded systems he brings knowledge of numerous approaches to embedded systems design including the system on programmable chips soc approach that is currently growing to dominate the field his knowledge and experience make building embedded systems an excellent book for anyone wanting to enter the field or even just to do some embedded programming as a side project what you will learn program embedded systems at the hardware level learn current industry practices in firmware development develop practical knowledge of embedded hardware options create tight integration between software and hardware practice a work flow leading to successful outcomes build from transistor level to the system level make sound choices between performance and cost who this book is for embedded system engineers and intermediate electronics enthusiasts who are seeking tighter integration between software and hardware those who favor the system on a programmable chip soc approach will in particular benefit from this book students in both electrical engineering and computer science can also benefit from this book and the real life industry practice it provides

Reuse Methodology Manual for System-On-A-Chip Designs

2004

GLSVLSI '04

2004

Proceedings of the ... ACM Great Lakes Symposium on VLSI.

2013-04-18

The Verilog PLI Handbook

2016-05-26

Building Embedded Systems

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