Dedicated Digital Processors: Methods in Hardware/Software Co-Design

By F. Mayer-Lindenberg

Dedicated Digital Processors: Methods in Hardware/Software Co-Design By F. Mayer-Lindenberg

The recent evolution of digital technology has resulted in the design of digital processors with increasingly complex capabilities. The implementation of hardware/software co-design methodologies provides new opportunities for the development of low power, high speed DSPs and processor networks. Dedicated digital processors are digital processors with an application specific computational task.

Dedicated Digital Processors presents an integrated and accessible approach to digital processor design principles, processes, and implementations based upon the author's considerable experience in teaching digital systems design and digital signal processing. Emphasis is placed on presentation of hardware/software co-design methods, with examples and illustrations provided throughout the text. System-on-a-chip and embedded systems are described and examples of high speed real-time processing are given. Coverage of standard and emerging DSP architectures enable the reader to make an informed selection when undertaking their own designs.

- Presents readers with the elementary building blocks for the design of digital hardware systems and processor networks
- Provides a unique evaluation of standard DSP architectures whilst providing up-to-date information on the latest architectures, including the TI 55x and TigerSharc chip families and the Virtex FPGA (field-programmable gate array)
- Introduces the concepts and methodologies for describing and designing hardware
- VHDL is presented and used to illustrate the design of a simple processor
- A practical overview of hardware/software codesign with design techniques and considerations illustrated with examples of real-world designs

Fundamental reading for graduate and senior undergraduate students of computer and electronic engineering, and Practicing engineers developing DSP applications.

Dedicated Digital Processors: Methods in Hardware/Software Co-Design

By F. Mayer-Lindenberg

Dedicated Digital Processors: Methods in Hardware/Software Co-Design By F. Mayer-Lindenberg

The recent evolution of digital technology has resulted in the design of digital processors with increasingly complex capabilities. The implementation of hardware/software co-design methodologies provides new opportunities for the development of low power, high speed DSPs and processor networks. Dedicated digital processors are digital processors with an application specific computational task.
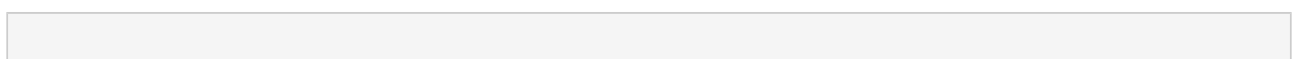
Dedicated Digital Processors presents an integrated and accessible approach to digital processor design principles, processes, and implementations based upon the author's considerable experience in teaching digital systems design and digital signal processing. Emphasis is placed on presentation of hardware/software co-design methods, with examples and illustrations provided throughout the text. System-on-a-chip and embedded systems are described and examples of high speed real-time processing are given. Coverage of standard and emerging DSP architectures enable the reader to make an informed selection when undertaking their own designs.

- Presents readers with the elementary building blocks for the design of digital hardware systems and processor networks
- Provides a unique evaluation of standard DSP architectures whilst providing up-to-date information on the latest architectures, including the TI 55x and TigerSharc chip families and the Virtex FPGA (field-programmable gate array)
- Introduces the concepts and methodologies for describing and designing hardware
- VHDL is presented and used to illustrate the design of a simple processor
- A practical overview of hardware/software codesign with design techniques and considerations illustrated with examples of real-world designs

Fundamental reading for graduate and senior undergraduate students of computer and electronic engineering, and Practicing engineers developing DSP applications.

Dedicated Digital Processors: Methods in Hardware/Software Co-Design By F. Mayer-Lindenberg Bibliography

- Sales Rank: #3652024 in Books
- Published on: 2004-02-13
- Original language: English
- Number of items: 1
- Dimensions: 9.90" h x .90" w x 6.80" l, 1.65 pounds
- Binding: Hardcover
- 314 pages

Download and Read Free Online Dedicated Digital Processors: Methods in Hardware/Software Co-Design By F. Mayer-Lindenberg

Editorial Review

Review
"…the comprehensive coverage and accessible presentation…make this book an attractive resource for engineers working in the field." (*Computing Reviews.com*, September 20, 2004)

From the Back Cover
The evolution of digital technology has resulted in the design of digital processors with increasingly complex capabilities. Intended as an introduction to the subject, this book presents an integrated and accessible approach to the design and implementation of digital processors. *Dedicated Digital Processors* emphasizes the common aspects of hardware and software structures, explaining the opportunities provided for developing low-power, high-speed processors and processor networks.

 Features include:

- An introduction to the technological basics of digital computers, including transistor circuits and the properties of current integrated chips.
- Discussions on complexity issues such as minimization, the timing and synchronization of computations and techniques used to boost performance in modern high-speed processors.
- The presentation of a programmable processor design, including the handling of input and output, interru pt processing and DMA.
- A detailed evaluation of standard DSP architectures including up-to-date information on TI 67xx, Analog Devices, Sharc processors and Virtex FPGA (field programmable gate arrays).
- VHDL examples and exercises that can be simulated and synthesized with free design tools provided by FPGA companies.

Based on the author's considerable experience in teaching digital systems design and digital signal processing, this book is an excellent reference for graduate and senior undergraduate students in electronic and computer engineering. Practising engineers and professionals developing DSP applications will appreciate the guidance to designing digital systems.

Users Review

From reader reviews:

Nathan Ware:

Why don't make it to be your habit? Right now, try to ready your time to do the important action, like looking for your favorite book and reading a e-book. Beside you can solve your problem; you can add your knowledge by the publication entitled Dedicated Digital Processors: Methods in Hardware/Software Co-Design. Try to face the book Dedicated Digital Processors: Methods in Hardware/Software Co-Design as your good friend. It means that it can being your friend when you experience alone and beside that course make you smarter than ever before. Yeah, it is very fortuned to suit your needs. The book makes you considerably more confidence because you can know almost everything by the book. So , let's make new experience in addition to knowledge with this book.

Robert Riggio:

Have you spare time for the day? What do you do when you have considerably more or little spare time? Yep, you can choose the suitable activity with regard to spend your time. Any person spent their very own spare time to take a move, shopping, or went to typically the Mall. How about open or maybe read a book titled Dedicated Digital Processors: Methods in Hardware/Software Co-Design? Maybe it is to be best activity for you. You know beside you can spend your time using your favorite's book, you can more intelligent than before. Do you agree with it is opinion or you have various other opinion?

James Donofrio:

Hey guys, do you wants to finds a new book to read? May be the book with the headline Dedicated Digital Processors: Methods in Hardware/Software Co-Design suitable to you? The book was written by well-known writer in this era. The book untitled Dedicated Digital Processors: Methods in Hardware/Software Co-Designis the main of several books that will everyone read now. This book was inspired a number of people in the world. When you read this guide you will enter the new age that you ever know ahead of. The author explained their strategy in the simple way, and so all of people can easily to understand the core of this reserve. This book will give you a wide range of information about this world now. To help you to see the represented of the world in this particular book.

Elaine Harvey:

The reason? Because this Dedicated Digital Processors: Methods in Hardware/Software Co-Design is an unordinary book that the inside of the reserve waiting for you to snap this but latter it will jolt you with the secret this inside. Reading this book beside it was fantastic author who have write the book in such awesome way makes the content inside of easier to understand, entertaining means but still convey the meaning totally. So , it is good for you because of not hesitating having this anymore or you going to regret it. This unique book will give you a lot of positive aspects than the other book include such as help improving your ability and your critical thinking way. So , still want to hold up having that book? If I were being you I will go to the e-book store hurriedly.

Download and Read Online Dedicated Digital Processors: Methods in Hardware/Software Co-Design By F. Mayer-Lindenberg #OTC5PU9JZLI

Read Dedicated Digital Processors: Methods in Hardware/Software Co-Design By F. Mayer-Lindenberg for online ebook

Dedicated Digital Processors: Methods in Hardware/Software Co-Design By F. Mayer-Lindenberg Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Dedicated Digital Processors: Methods in Hardware/Software Co-Design By F. Mayer-Lindenberg books to read online.

Online Dedicated Digital Processors: Methods in Hardware/Software Co-Design By F. Mayer-Lindenberg ebook PDF download

Dedicated Digital Processors: Methods in Hardware/Software Co-Design By F. Mayer-Lindenberg Doc

Dedicated Digital Processors: Methods in Hardware/Software Co-Design By F. Mayer-Lindenberg Mobipocket

Dedicated Digital Processors: Methods in Hardware/Software Co-Design By F. Mayer-Lindenberg EPub

OTC5PU9JZLI: Dedicated Digital Processors: Methods in Hardware/Software Co-Design By F. Mayer-Lindenberg