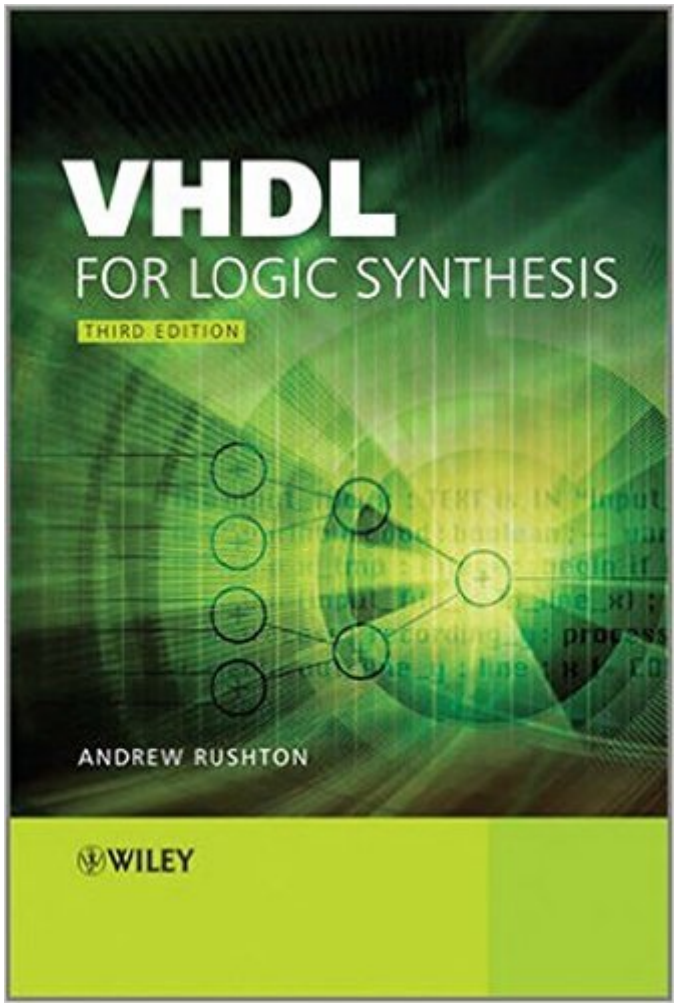
VHDL For Logic Synthesis



Synopsis

Making VHDL a simple and easy-to-use hardware description language Many engineers encountering VHDL (very high speed integrated circuits hardware description language) for the first time can feel overwhelmed by it. This book bridges the gap between the VHDL language and the hardware that results from logic synthesis with clear organisation, progressing from the basics of combinational logic, types, and operators; through special structures such as tristate buses, register banks and memories, to advanced themes such as developing your own packages, writing test benches and using the full range of synthesis types. This third edition has been substantially rewritten to include the new VHDL-2008 features that enable synthesis of fixed-point and floating-point hardware. Extensively updated throughout to reflect modern logic synthesis usage, it also contains a complete case study to demonstrate the updated features. Features to this edition include: a common VHDL subset which will work across a range of different synthesis systems, targeting a very wide range of technologies a design style that results in long design lifetimes, maximum design reuse and easy technology retargetingÂ a new chapter on a large scale design example based on a digital filter from design objective and design process, to testing strategy and test benches a chapter on writing test benches, with everything needed to implement a test-based design strategy extensive coverage of data path design, including integer, fixed-point and floating-point arithmetic, logic circuits, shifters, tristate buses, RAMs, ROMs, state machines, and decoders Focused specifically on logic synthesis, this book is for professional hardware engineers using VHDL for logic synthesis, and digital systems designers new to VHDL but familiar with digital systems. It offers all the knowledge and tools needed to use VHDL for logic synthesis. Organised in themed chapters and with a comprehensive index, this complete reference will also benefit postgraduate students following courses on microelectronics or VLSI/ semiconductors and digital design.

Book Information

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Customer Reviews

I am an EE but spent most of my career programming in C. This book is an excellent tutorial, beginning with the basics and gradually covering the more complex aspects of VHDL. It clearly explains the difference between sequential (traditional) programming and concurrent programming--both are used in VHDL. It also clearly defines the differences between the modelling stage (not covered in detail) and the design stage (Register Transfer Level - which is covered in great detail). Finally, he explains how to set up a test bench. Within 2 months of reading this book, other engineers were coming to me for advice. I literally wore out the binding!

+'s This is an excellent book for the one that has an inkling of what VHDL is about. There is a lot of detail of language definition and how the language came about. This author is very good at explaining a point.-`s There is very little in this reference concerning non- synthesisable code AND why can't folks index books? I would really like to buy a book that I didn't have to re-read to revisit a particular detail, L

An awesome book! Recommended for all Digital System beginners! Very clear and very understandable :) It clearly explains the structure of the VHDL code

This book is a comprehensive one full of usefull and practical technical details and applications. Nice and good work and Thanks!

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