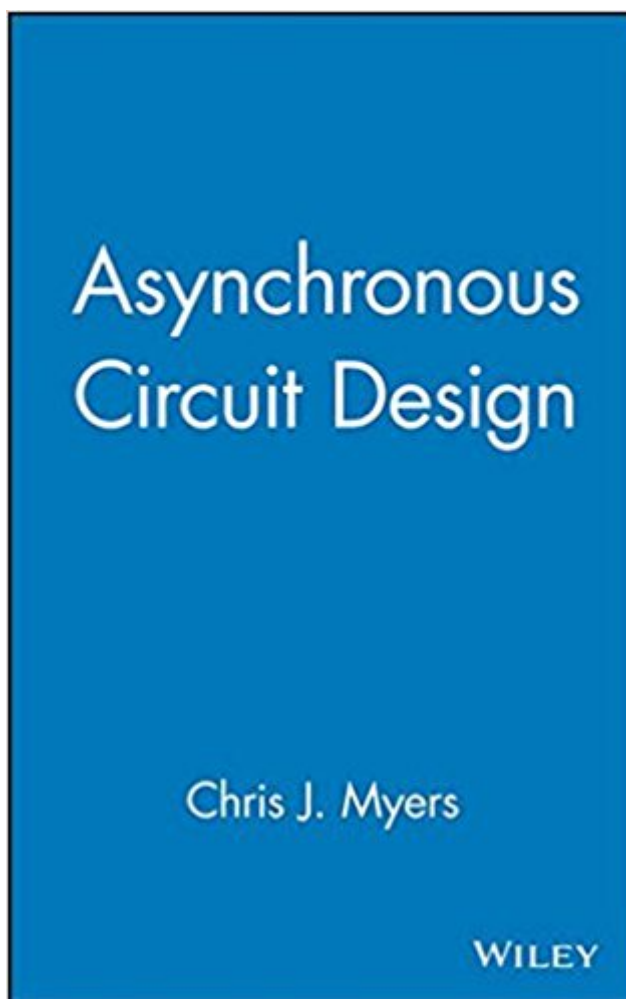


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# Asynchronous Circuit Design



## Synopsis

With asynchronous circuit design becoming a powerful tool in the development of new digital systems, circuit designers are expected to have asynchronous design skills and be able to leverage them to reduce power consumption and increase system speed. This book walks readers through all of the different methodologies of asynchronous circuit design, emphasizing practical techniques and real-world applications instead of theoretical simulation. The only guide of its kind, it also features an ftp site complete with support materials. Market: Electrical Engineers, Computer Scientists, Device Designers, and Developers in industry. An Instructor Support FTP site is available from the Wiley editorial department.

## Book Information

Hardcover: 422 pages

Publisher: Wiley-Interscience; 1 edition (July 6, 2001)

Language: English

ISBN-10: 047141543X

ISBN-13: 978-0471415435

Product Dimensions: 6.4 x 1 x 9.5 inches

Shipping Weight: 1.7 pounds (View shipping rates and policies)

Average Customer Review: 3.8 out of 5 stars 3 customer reviews

Best Sellers Rank: #1,968,093 in Books (See Top 100 in Books) #74 in [Books > Engineering & Transportation > Engineering > Electrical & Electronics > Circuits > VLSI & ULSI](#) #579 in [Books > Engineering & Transportation > Engineering > Electrical & Electronics > Circuits > Design](#) #5721 in [Books > Engineering & Transportation > Engineering > Telecommunications & Sensors](#)

## Customer Reviews

"...first new textbook on this topic since Stephen Unger's 1969 classic...Meyers introduces the design challenges till inhibiting such circuit usage..." (SciTech Book News, Vol. 25, No. 4, December 2001)

Specialized coverage of asynchronous circuit design for students and practitioners The field of asynchronous circuit design is growing rapidly in commercial importance as practitioners take advantage of its benefits in terms of power consumption and speed. Whereas existing books on the subject tend to concentrate on modeling, this volume provides balanced coverage of all modern asynchronous design methods. No other available book offers such specialized and much-needed

information. The author begins with a straightforward overview of the subject before introducing the concept of asynchronous communication and describing a methodology for specifying asynchronous designs using VHDL. Asynchronous Circuit Design also features: Asynchronous protocols Graphical representations used for asynchronous design Huffman style synthesis/fundamental-mode design Muller style synthesis/speed-independent design Techniques for timing analysis and optimization Methods for verification of asynchronous circuits Asynchronous applications Further support material available for download from the Wiley ftp site References to further self-study material and exercises that test student knowledge are included. Appendixes cover basic set theory and logic and provide VHDL packages for standard simulators. Accessible for both advanced undergraduate and graduate students in electrical engineering courses, practicing designers, and developers in the industry, Asynchronous Circuit Design is the most up-to-date and focused resource in the field.

this book is very interesting for researchers , post-graduate students and for those who make their step in the Asynchronous world.The book has much to do with theory.. I agree, but this is very important to have a solid ground.a better introduction would have made the book much better. the auther had to introduce his style and methodology of designing Asynchronous ciucuits. Channel --> handshaking --> ??chapters are some how not leading to each other.first chapter gives a fast introduction to the book. it could be better if it didn't include all those different cases of Asynchronous circuits and concepts.chapter two speaks about communication channels. it is nice chapter but the auther had to mention that the VHDL codes are only for simulation and not for Synthesis. I mean every VHDL designer knows this, but it is still missing for book perfection. the explanation of the packages is not enough.chapter three, discusses communication protocols and handshaking, it is fine.chapter four discusses Graphical representation, I am not satisfied with this chapter and i recommend other books which deal with petri-nets, BFSM or BXM.chapter five discusses briefly huffman circuits. it is like a gathering of different theories. I found difficulties in following the outline of this chapter. it could be much better if a clear outline were provided. I found that reading the whole book of Unger was much informative and helpful than reading this chapter.the rest chapters are fine.in general the book is nice guide to the theory of Asynchronous design.

I'm actually pretty disappointed in the book. I was hoping for asynchronous circuits. A better title for the book would be "Asynchronous Circuit Theory". The book is more of an Ivory Tower book that

describes theory, with not as much practical information as would be hoped. The VHDL examples in the back are so completely removed from what could ever be synthesized, that they're useless from an HDL standpoint. It would even be helpful if he gave us an idea of what simulator could actually simulate his VHDL, because none of mine could. And without any comments or descriptions of the code, I couldn't even figure out what he was trying to do to make it work. However, if you want to be caught up in the latest asynchronous theory, this book is excellent. It uses a very simple "wine shop" paradigm throughout the book to help the reader understand each new principle.

This book is good to start the asynchronous circuit and to verify linear time temporal logic (LTL). This book shows the circuit by the VHDL. The title should be "Asynchronous Circuit Design Concept, Description with VHDL and Verification with LTL."

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