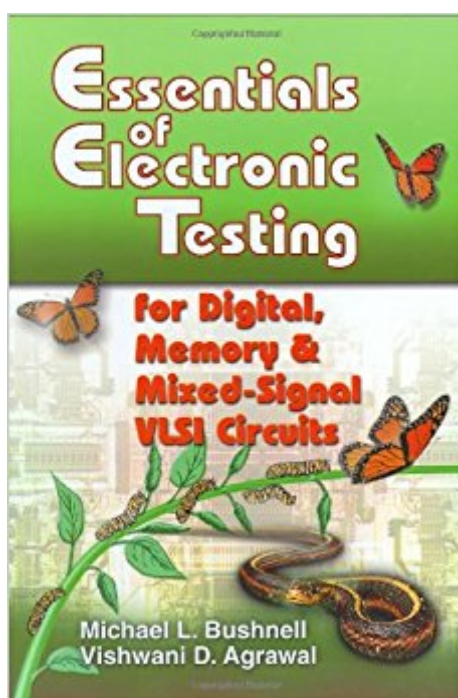


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# Essentials Of Electronic Testing For Digital, Memory And Mixed-Signal VLSI Circuits (Frontiers In Electronic Testing)



## Synopsis

The modern electronic testing has a forty year history. Test professionals hold some fairly large conferences and numerous workshops, have a journal, and there are over one hundred books on testing. Still, a full course on testing is offered only at a few universities, mostly by professors who have a research interest in this area. Apparently, most professors would not have taken a course on electronic testing when they were students. Other than the computer engineering curriculum being too crowded, the major reason cited for the absence of a course on electronic testing is the lack of a suitable textbook. For VLSI the foundation was provided by semiconductor device technology, circuit design, and electronic testing. In a computer engineering curriculum, therefore, it is necessary that foundations should be taught before applications. The field of VLSI has expanded to systems-on-a-chip, which include digital, memory, and mixed-signal subsystems. To our knowledge this is the first textbook to cover all three types of electronic circuits. We have written this textbook for an undergraduate "foundations" course on electronic testing. Obviously, it is too voluminous for a one-semester course and a teacher will have to select from the topics. We did not restrict such freedom because the selection may depend upon the individual expertise and interests. Besides, there is merit in having a larger book that will retain its usefulness for the owner even after the completion of the course. With equal tenacity, we address the needs of three other groups of readers.

## Book Information

Series: Frontiers in Electronic Testing (Book 17)

Hardcover: 690 pages

Publisher: Springer (December 15, 2004)

Language: English

ISBN-10: 0792379918

ISBN-13: 978-0792379911

Product Dimensions: 7 x 1.6 x 10 inches

Shipping Weight: 3.4 pounds (View shipping rates and policies)

Average Customer Review: 4.2 out of 5 stars 4 customer reviews

Best Sellers Rank: #445,543 in Books (See Top 100 in Books) #19 in Books > Engineering & Transportation > Engineering > Electrical & Electronics > Circuits > VLSI & ULSI #135

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## Customer Reviews

I loved the clarity of the book. It's very easy to follow. Agreed that it tries to cover a lot of topics and naturally will not go very deep into everything that you want. But definitely a great book to pick up and get all of your fundamentals and more strengthened. If you find anything wrong in the book, you can email the authors and they would promptly address it in the next version.

It seems to me it is just a summary of work done by others in the ATE field over the years. The explanations of how a device fault is detected are not clear in most of the cases presented in the book. The book emphasizes too much on fault modeling but not enough on test applications and techniques. Certainly not a good text book for students nor is it a good book for ATE engineers. However, if you are looking for some quick reference, this book is a good place to start because it contains brief summaries of other people's work.

"Essentials of Electronic Testing for Digital, Memory and Mixed-Signal VLSI Circuits", by M. L. Bushnell and V. D. Agrawal, is often thought of as the Bible for DFT. This voluminous book has a lot of details and caters to newbies and professionals alike. The authors do a good job of taking elementary combinational circuits and illustrate how to determine fault equivalence, fault collapsing etc. These basic topics are not covered sufficiently in other books. Also, the problem sets at the end of each chapter are well thought out and working out these problems by hand will help you understand better the functionality of EDA tools.

This book is, as far as I know, the most comprehensive textbook on VLSI testing available at the moment. It is based on current trends and techniques in the field. After all, the authors are pioneers in this area. A worthy successor to Abramovici's earlier textbook, which, I think is beginning to look increasingly archaic. As a guy who's taken a course in testing by the authors (we were the guinea pigs for the book, actually) and is currently working in the VLSI testing area, I strongly recommend it to anyone looking to build strong testing fundamentals.

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