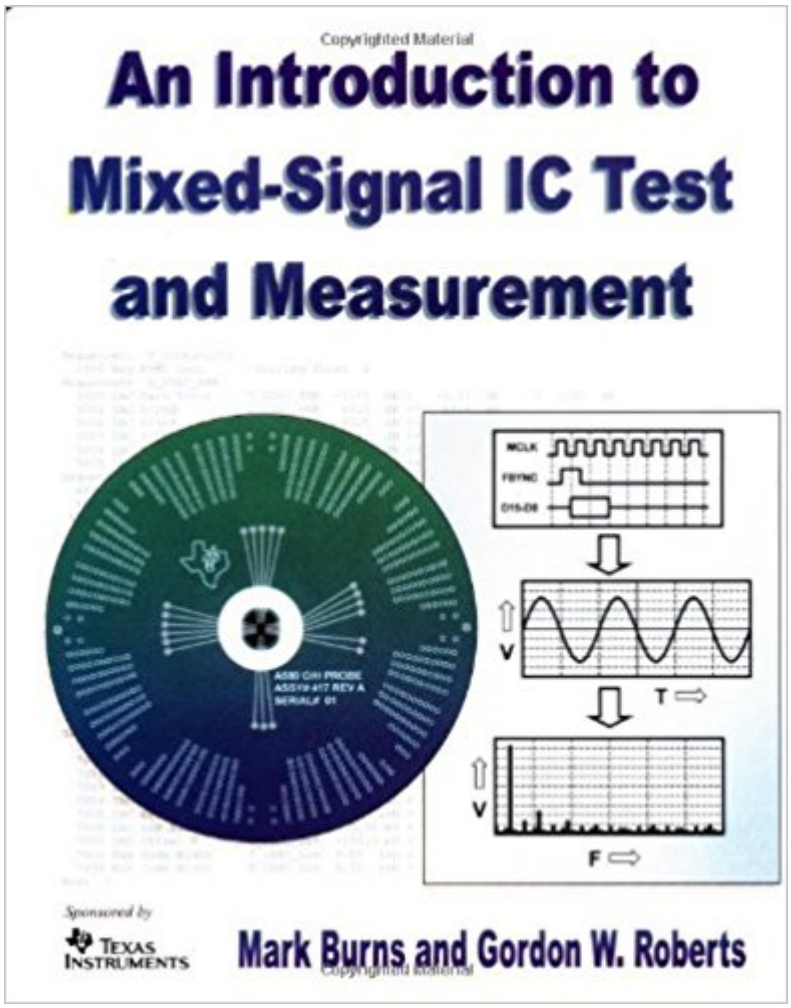
An Introduction To Mixed-Signal IC Test And Measurement (The Oxford Series In Electrical And Computer Engineering)



Synopsis

Integrated circuits incorporating both digital and analog functions have become increasingly prevalent in the semiconductor industry. Mixed-signal IC test and measurement has grown into a highly specialized field of electrical engineering. However, test engineering is still a relatively unknown profession compared to IC design engineering. It has become harder to hire and train new engineers to become skilled mixed-signal test engineers. The slow learning curve for mixed-signal test engineers is largely due to the shortage of written materials and university-level courses on the subject of mixed-signal testing. While many textbooks have been devoted to the subject of digital test and testability, the same cannot be said for analog and mixed-signal automated test and measurement. An Introduction to Mixed-Signal IC Test and Measurement is a textbook for advanced undergraduate and graduate-level students as well as engineering professionals. It was written in response to the shortage of basic course material for mixed-signal test and measurement. The book assumes a solid background in analog and digital circuits as well as a working knowledge of computers and computer programming. A background in digital signal processing and statistical analysis is also helpful, though not absolutely necessary. This text encompasses the testing of both analog and mixed-signal circuits including many borderline examples. Digital testing is covered, but not as extensively because of the wealth of information on this topic already available. Examples and illustrations using state-of-the-art industrial technology enrich and enliven the presentation throughout. In considering the applications of this technology, the testing of large-scale mixed-signal circuits and individual circuits is introduced. The value-added benefits of mixed-signal IC testing to a manufacturer’s product are clearly discussed, and the role of the test engineer is clearly defined.

Book Information

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Customer Reviews

"Burns and Roberts have written an excellent book fulfilling the need for a good textbook on the subject of mixed-signal test measurement." Engineering Science & Education, 2002

Mark Burns is at Texas Instruments. Gordon Roberts is at McGill University.

I am a practicing characterization engineer new to ATE side of production testing. I wanted a reference book for an introduction to test engineering terms and practices. I got more than expected with chapters on DSP, Analog and Mixed-signal concepts as well. A one-stop reference book that will be on my shelf.

All is good! Fast shipping and was as advertised!

Great book for refernce

This is probably one of the best books in the market today for test engineers and product engineers. Most of the discussions are oriented towards catching some of the common mistakes made during the development of a test methodology for a circuit. It teaches test/product engineers what to look for when they encounter test problems(which keep popping up very regularly!). I would have appreciated a more detailed chapter on the statistical analysis of test data and analysis of datalogs to determine test issues but I guess that would take up much more space. I would also have preferred reading about some case studies where test issues were investigated and the solution found, but that too would have taken up some space. In all, this is THE book for test/product engineers who deal with a myriad of testers in the market today. A Quick solution of test related issues is key to huge savings in production costs and reading this book end-to-end will definitely aid in the debug of test related issues.

Most texts on testing seem to be written for the design engineer. They talk a lot about the fault model, the doping process, how the pattern generation algorithms are not perfect...It’s like teaching

Chemistry at a cooking class.But don’t get me wrong, this is not a cookbook. It does teach a fair amount of "Chemistry". But it’s able to show the reader why the theories are relevant and how to apply them. The solutions are presented in the context of the problems, not the other way around, like most text books.

This is the most complete and authoritative text on the subject of Mixed Signal Testing that I have come across. It is unmatched in terms of the sheer number and variety of practical problems that it addresses. The solutions that the book proposes can be readily applied to many situations and that makes this truly remarkable book a must for every test or product engineer.

I looked for a book which covers all the important issues formixed signal test. This book delivers all the nesessery information for a mixed signal test Eng. It explains allissues very simple and because of so many example it isvery useful even for not-experienced people.

I’ve been a Test Engineer for 13 years and take it from me, this book is so close to real life situation. It obviously written by people who practice the art of Test Engineering. I wish that I had this book in my very 1st year. This is the bible for every TE.

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