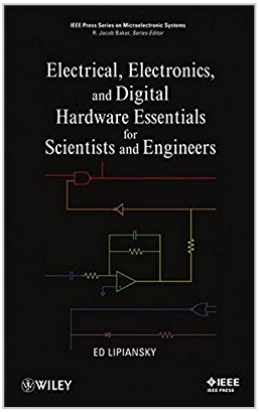

Electrical, Electronics, and Digital Hardware Essentials for Scientists and Engineers

By Ed Lipiansky

Electrical, Electronics, and Digital Hardware Essentials for Scientists and Engineers By Ed Lipiansky

A practical guide for solving real-world circuit board problems

Electrical, Electronics, and Digital Hardware Essentials for Scientists and Engineers arms engineers with the tools they need to test, evaluate, and solve circuit board problems. It explores a wide range of circuit analysis topics, supplementing the material with detailed circuit examples and extensive illustrations. The pros and cons of various methods of analysis, fundamental applications of electronic hardware, and issues in logic design are also thoroughly examined.

The author draws on more than twenty-five years of experience in Silicon Valley to present a plethora of troubleshooting techniques readers can use in real-life situations. Plus, he devotes an entire chapter to the design of a small CPU, including all critical elements—the complete machine instruction set, from its execution path to logic implementation and timing analysis, along with power decoupling, resets, and clock considerations. *Electrical, Electronics, and Digital Hardware Essentials for Scientists and Engineers* covers:

- Resistors, inductors, and capacitors as well as a variety of analytical methods
- The elements of magnetism—an often overlooked topic in similar books
- Time domain and frequency analyses of circuit behavior
- Numerous electronics, from operational amplifiers to MOSFET transistors
- Both basic and advanced logic design principles and techniques

This remarkable, highly practical book is a must-have resource for solid state circuit engineers, semiconductor designers and engineers, electric circuit testing engineers, and anyone dealing with everyday circuit analysis problems. A solutions manual is available to instructors. Please email ieeeproposals@wiley.com to request the solutions manual. An errata sheet is available.

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Editorial Review

From the Back Cover

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About the Author

ED LIPIANSKY has worked for Varian Associates, Tandem Computers, Sun Microsystems, Google, and Cisco Systems in Silicon Valley. He is the author or coauthor of six patents and has taught at the University of California, Berkeley and Santa Cruz Extensions. He lives with his family in the San Francisco Bay Area in northern California.

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