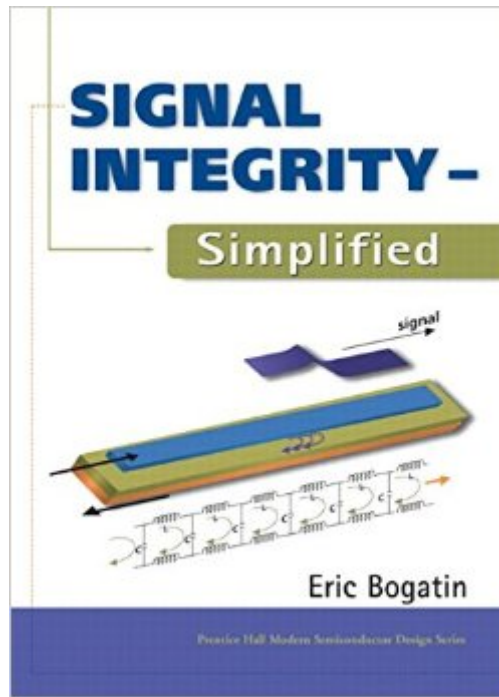


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# Signal Integrity - Simplified



## Synopsis

This book describes in the simplest possible terms, the signal integrity problems and the fundamental principles needed to understand how the physical design influences signal integrity. Most easily defined, signal integrity is all about how the physical design of the interconnects -- printed circuit board traces, connectors, IC packages and cables -- corrupt the perfect, pristine signals coming off the chips. The electrical properties of the interconnects play a key role in all electronic products operating above 50 MHz clock frequency, such as computers, wireless, rf and telecommunications products. Interconnects can degrade the electrical performance of a system in four ways: ringing, cross talk, noise in the power and ground distribution network and electromagnetic interference (EMI). These signal integrity problems can be reduced to acceptable levels by careful design of the circuit board layout, materials selection and component design and selection. Any product designer that touches the product can have an impact on signal integrity. The key differentiator between our book and all the others written on signal integrity, is the starting level for the material. Most books either present a lot of mathematical derivation or present formulas as facts, merely describing what they are. Bogatin's book offers explanations that will feed the intuition of the engineers, without hiding behind the equations.

## Book Information

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## Customer Reviews

I work in test and measurement as an Application Engineer and assist with Signal Integrity issues/solutions often. "Signal Integrity - Simplified", by Eric Bogatin, is one of the best fundamental

overview books on Signal Integrity I have seen. SI is a growing and vastly misunderstood segment of measurement and Dr. Bogatin does an excellent job at covering the fundamentals in a clear, concise and easy to understand fashion. His coverage of the core of SI is very thorough with entire chapters dedicated to Time and Frequency Domains, Impedance, Transmission Lines, Cross Talk as well as Differential Signals. Unlike most engineering texts, "Signal Integrity - Simplified" covers key topics with a style that is more intuitive than mathematical. This is refreshing since, for complex topics, mathematical equations do not always speak to every engineer to clarify the issue. Dr. Bogatin uses a variety of word pictures as well as easily understandable diagrams to make his points. This is not to say the book is not technical, it is very technical (he introduces Maxwell's Equations) yet easier to understand than most for complex topics. Each chapter provides a "Bottom Line" rather than a summary. These are numbered points of one or two sentences reinforcing the key concepts of the chapter. This makes for convenient and easy referral after reading the text. Throughout each chapter, Dr. Bogatin also provides "tips" to drive home a basic point and supply help or insight for the designer. These tips are easy to spot in the book as they are separated from the main text and labeled "tips". The tips alone are worth the price of the book.

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