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Power Integrity For I/O Interfaces: With Signal Integrity/ Power Integrity Co-Design (Prentice Hall Modern Semiconductor Design)





Synopsis

Foreword by Joungho Kim The Hands-On Guide to Power Integrity in Advanced Applications, from Three Industry Experts In this book, three industry experts introduce state-of-the-art power integrity design techniques for todayâ [™]s most advanced digital systems, with real-life, system-level examples. They introduce a powerful approach to unifying power and signal integrity design that can identify signal impediments earlier, reducing cost and improving reliability. A After introducing high-speed, single-ended and differential I/O interfaces, the authors describe on-chip, package, and PCB power distribution networks (PDNs) and signal networks, carefully reviewing their interactions. Next, they walk through end-to-end PDN and signal network design in frequency domain, addressing crucial parameters such as self and transfer impedance. They thoroughly address modeling and characterization of on-chip components of PDNs and signal networks, evaluation of power-to-signal coupling coefficients, analysis of Simultaneous Switching Output (SSO) noise, and many other topics. A Coverage includes a ¢ The exponentially growing challenge of I/O power integrity in high-speed digital systems â ¢ PDN noise analysis and its timing impact for single-ended and differential interfaces â ¢ Concurrent design and co-simulation techniques for evaluating all power integrity effects on signal integrity â ¢ Time domain gauges for designing and optimizing components and systems â ¢ Power/signal integrity interaction mechanisms, including power noise coupling onto signal trace and noise amplification through signal resonance â ¢ Performance impact due to Inter Symbol Interference (ISI), crosstalk, and SSO noise, as well as their interactions â ¢ Validation techniques, including low impedance VNA measurements, power noise measurements, and characterization of power-to-signal coupling effects Power Integrity for I/O Interfaces will be an indispensable resource for everyone concerned with power integrity in cutting-edge digital designs, including system design and hardware engineers, signal and power integrity engineers, graduate students, and researchers.

Book Information

Series: Prentice Hall Modern Semiconductor Design Hardcover: 416 pages Publisher: Prentice Hall; 1 edition (October 23, 2010) Language: English ISBN-10: 0137011199 ISBN-13: 978-0137011193 Product Dimensions: 7.3 x 1 x 9.4 inches Shipping Weight: 1.7 pounds (View shipping rates and policies)

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Customer Reviews

It's actually an awesome technical book... very detailed and specific book to describe power/signal integrity co-design for I/O interfaces... covered from theory to application...

Good product

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