Electromagnetics For High-speed Analog And Digital Communication Circuits

Describes the fundamental electromagnetics of passive and active circuit elements, highlighting the various effects and potential problems in circuit design.Modern communications technology demands smaller, faster and more efficient circuits. This book reviews the fundamentals of electromagnetism in passive and active circuit elements, highlighting various effects and potential problems in designing a new circuit. The author begins with a review of the basics - the origin of resistance, capacitance, and inductance - then progresses to more advanced topics such as passive device design and layout, resonant circuits, impedance matching, high-speed switching circuits, and parasitic coupling and isolation techniques. Using examples and applications in RF and microwave systems, the author describes transmission lines, transformers, and distributed circuits. State-of-the-art developments in Si based broadband analog, RF, microwave, and mm-wave circuits are reviewed. With up-to-date results, techniques, practical examples, illustrations and worked examples, this book will be valuable to advanced undergraduate and graduate students of electrical engineering, and practitioners in the IC design industry. Further resources for this title are available at cambridge.org/9780521853507. EAN/ISBN : 9780511267338 Publisher(s): Cambridge University Press Format: ePub/PDF Author(s): Niknejad, Ali M.

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