



High-Performance Digital VLSI Circuit Design (Paperback)

By Richard X. Gu, Khalid M. Sharaf, Mohamed I. Elmasry

Springer-Verlag New York Inc., United States, 2012. Paperback. Condition: New. Language: English . Brand New Book ***** Print on Demand *****.High-Performance Digital VLSI Circuit Design is the first book devoted entirely to the design of digital high-performance VLSI circuits. CMOS, BiCMOS and bipolar circuits are covered in depth, including state-of-the-art circuit structures. Recent advances in both the computer and telecommunications industries demand high-performance VLSI digital circuits. Digital processing of signals demands high-speed circuit techniques for the GHz range. The design of such circuits represents a great challenge; one that is amplified when the power supply is scaled down to 3.3 V. Moreover, the requirements of low-power/high-performance circuits adds an extra dimension to the design of such circuits. High-Performance Digital VLSI Circuit Design is a self-contained text, introducing the subject of high-performance VLSI circuit design and explaining the speed/power tradeoffs. The first few chapters of the book discuss the necessary background material in the area of device design and device modeling, respectively. High-performance CMOS circuits are then covered, especially the new all-N-logic dynamic circuits. Propagation delay times of high-speed bipolar CML and ECL are developed analytically to give a thorough understanding of various interacting process, device and circuit parameters. High-current phenomena...



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