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Descrizione fisica	1 online resource (205 pages) : illustrations
Disciplina	21.31
Soggetti	Very high speed integrated circuits - Design and construction Logic design
Lingua di pubblicazione	Inglese
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Note generali	Includes index.
Nota di contenuto	Electric and magnetic fields -- Transmission lines I -- Transmission lines cont. -- Interference -- Radiation.
Sommario/riassunto	An essential guide to modern circuit board design based on simple physics and practical applications. The fundamentals taught in circuit theory were never intended to work above a few megahertz, let alone at a gigahertz. While electronics is grounded in physics, most engineers' education in this area is too general and mathematical to be easily applied to the problem of high speed circuits. Left to their own devices, many engineers produce layouts that require expensive revisions in order to finally meet specifications. Fast Circuit Boards fills the gap in knowledge by providing clear, down-to-earth guidance on designing digital circuit boards that function at high clock rates. By making the direct connection between physics and fast circuits, this book instills the fundamental universal principles of information transfer to give engineers a solid basis for hardware design. Using simple tools, simple physics, and simple language, this invaluable resource walks through basic electrostatics, magnetism, wave mechanics, and more to bring the right technology down to the working level. Designed to be directly relevant and immediately useful to circuit board designers, this book: Properly explains the problems of fast logic and the appropriate tools

Applies basic principles of physics to the art of laying out circuit boards
Simplifies essential concepts scaled up to the gigahertz level, saving time, money, and the need for revisions
Goes beyond circuit theory to provide a deep, intuitive understanding of the mechanisms at work
Demonstrates energy management's role in board design through step function-focused transmission line techniques
Engineers and technicians seeking a more systematic approach to board design and a deeper understanding of the fundamental principles at work will find tremendous value in this highly practical, long-awaited text.
