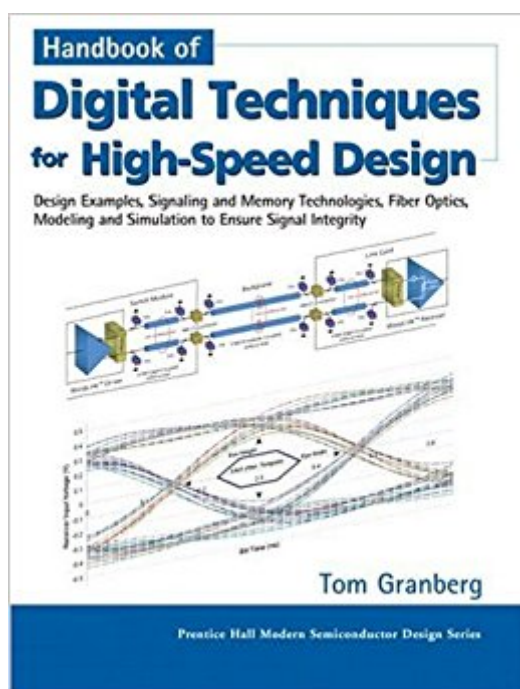The book was found

Handbook Of Digital Techniques For High-Speed Design: Design Examples, Signaling And Memory Technologies, Fiber Optics, Modeling, And Simulation To Ensure Signal Integrity

Synopsis

This practical handbook fills in gaps that other textbooks on high-speed design don't discuss, covering every aspect of high-speed board-level digital design. Several design examples at high Gigabit per second data rates are presented. Discusses highest-speed logic and interface families of devices, relevant applications, and device speeds versus how far signals transmit with good signal integrity. A quick-reference overview of each device family is also provided. High-speed design rules are presented for both engineering design and printed circuit board layout. Emphasizes designing high-speed backplanes, driving cabling, bus architecture and topology. Discusses IBIS and SPICE modeling, simulations, design processes, and over 30 design automation tools. Quantifies signal integrity using jitter and bit error rate measurements, eye diagrams, time-domain reflectometry and transmission. Details high-speed transmission line and parasitic effects, cabling, connectors, single-ended/differential terminations, lab test equipment, and intellectual property. Dedicated chapter on fiber optics and when to use.

Book Information

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Customer Reviews

Circuits, Devices andSystems Digital Techniques for High-SpeedDesign TOM GRANBERG High-speed digitaldesignâ ”Complete, current, and practical   Practicing engineers whowork with high-speed digital designknow that a thorough, fully up-to-date resource is crucial for keeping pacewith rapidly changing technologies. Senior and graduate-level engineeringstudents need a

similar resource, but with added introductory material andplenty of exercises. Only one book fills the need of both audiencesâ "Handbookof Digital Techniques for High-Speed Design, by electronics expert TomGranberg. This practical handbookcovers every aspect of board-level design, starting with the basics of designtrends, SerDes and bus technologies, and signal integrity. In-depth topics includememory technologies, fiber optics, modeling and simulation, design tools andthe design process, CML controlled-impedance drivers, differential andmixed-mode S-parameters, and the emerging protocols and technologies of RapidIOand PCI-Express. Tom Granberg also features major, detailed high-speed designexamplesâ "including a BLVDS SerDes design and a design with highgigabit-per-second serial links using WarpLink devices. This book   Provides detailed technical information on CML, SSTL, GTL/GTL+/GTLP, LVDS, Bus LVDS, M-LVDS, LVDM, ECL, PECL, LVPECL, HSTL, and moreâ "plus applications best suited for each   Discusses IBIS and SPICE modeling and simulation, plus a full range of electronic design automation (EDA) tools   Emphasizes backplane and bus design with detailed guidelines and design rules   Covers fiber optics in detailâ "and when it makes sense to use them, and much more!   This book was written withtwo audiences in mindâ "practicing engineers who work with high-speeddigital electronics, and graduate and undergraduate-level students in collegesand universities who need to learn the concepts and techniques of high-speeddigital design before going to work in industry.

TOM GRANBERG has earned several technical degrees-a B.S. in Physics from Washington State University and an M.S. and Ph.D. in Electrical Engineering from the University of Missouri-Columbia. He also holds an M.B.A. from the University of Colorado at Denver. Tom has worked for dominant networking companies Cisco Systems and SkyStream Networks and in ASIC design emulation at Quickturn Design Systems (a Cadence Company). He has also worked in digital signal processing, digital imaging systems, and flat panel sensors, and at companies including Condor Systems, Martin Marietta (now Lockheed Martin), Storage Technology, and Honeywell Test Instruments. He lives in Santa Clara, California-the heart of the Silicon Valley-and enjoys access to many of the world 's newest technologies.

IMHO, this is an nice book that can guide the reader in the vast and confusing field of signaling standards, and not only that. The book does a decent job in exposing, contrasting and comparing dozens (hundreds?) of technologies that can make one dizzy just in enumerating them (GTL and variations, HSTL/SSTL, ECL and all its variations, CML, etc.).One thing I like about the book is that it attempts to group together (probably for the first time) information that can be traditionally found in

tons of very disparate application notes, standard descriptions, and even datasheets. Second, I like its exercises at the end of each chapter, which IMHO are necessary if you really want to remember something. Third, I like the combination of standard expositions, and practical presentations of a few concrete components (such as TLK2501)What I didn't like was the shameless copy&paste of large portions of text from the various sources (standards, etc). That aspect could really use some work. Some concepts are exposed insufficiently, some are exposed multiple times (even inconsistently). For example, the ac/dc distinction for HI/LO input is briefly (and confusingly) mentioned on SSTL_3 is briefly re-exposed on SSTL_2 and then properly re-exposed in SSTL_18. I think some serious compiling work is needed here, maybe in the next edition? Second, just copying from a standard leaves the reader confused about the stuff not covered in the standard. For example on HSTL, what is the exact meaning of differential inputs given that the standard does not specify any differential requirements for the output?To conclude, I really enjoyed reading the book but due to its shortcomings I gave it (reluctantly) four stars.[update] Forgot to mention an important thing - many of the quoted articles/white papers are around 2002-2004 so you should expect that a lot of the book's content is more or less out of date. For one thing, the SerDes transceiver technology has vastly improved meanwhile (speeds of 12.5 Gbps are pretty common, not the typical 3.125 Gbps which was top-of-the-line a decade ago when the book was shipped). Same can be said about the chapters on memory technologies, fibre, FPGA, etc. Still, I found the book pretty useful as many of these standards and components are still in use today.

The book is a must have for anyone interested in the latest technologies, and their implementations all wrapped up in one place. I have a lot of references on my desk, but this book is one of my favorites.I would recommend this book to anyone who is involved in high speed digital design.

The Book covers lot of the current and emerging technologiesfor most aspects of Board Design and this is the first book of this kind I have seen so far.

This is one of the first book that covers topics related to High Speed digital design so extensively. Well written and a good reference. A must have.

It provides a lot of detail. But the flow of the writing is very bad, so understanding is really hard

Handbook of Digital Techniques for High-Speed Design: Design Examples, Signaling and Memory

Technologies, Fiber Optics, Modeling, and Simulation to Ensure Signal Integrity High Fiber Recipes: 101 Quick and Easy High Fiber Recipes for Breakfast, Snacks, Side Dishes, Dinner and Dessert (high fiber cookbook, high fiber diet, high fiber recipes, high fiber cooking) Speed Training for Combat, Boxing, Martial Arts, and MMA: How to Maximize Your Hand Speed, Foot Speed, Punching Speed, Kicking Speed, Wrestling Speed, and Fighting Speed Handbook of Optics, Third Edition Volume V: Atmospheric Optics, Modulators, Fiber Optics, X-Ray and Neutron Optics Foods High in Fiber Cookbook: List of High Fiber Foods for a Healthy Lifestyle - Recipes for High Fiber Foods Memory Exercises: Memory Exercises Unleashed: Top 12 Memory Exercises To Remember Work And Life In 24 Hours With The Definitive Memory Exercises Guide! (memory exercises, memory, brain training) Photonics Rules of Thumb: Optics, Electro-Optics, Fiber Optics and Lasers Atmospheric and Space Flight Dynamics: Modeling and Simulation with MATLAB® and Simulink® (Modeling and Simulation in Science, Engineering and Technology) Memory Training: Train your brain to improve your memory (Unlimited Memory, Mental Health, Memory Techniques, Education & Reference, Study Skills, Memory Improvement Book 1) Handbook of Optics, Third Edition Volume IV: Optical Properties of Materials, Nonlinear Optics, Quantum Optics (set) Biomedical Signal Processing and Signal Modeling GMO Free: Exposing the Hazards of Biotechnology to Ensure the Integrity of Our Food Supply Molecular Simulation Studies on Thermophysical Properties: With Application to Working Fluids (Molecular Modeling and Simulation) Nonlinear Fiber Optics, Fifth Edition (Optics and Photonics) Multidimensional Digital Signal Processing (Prentice-Hall Signal Processing Series) Fiber to the Antenna: Fiber Optics Workshop Resistant Starch: The Resistant Starch Bible: Resistant Starch - Gut Health, Fiber, Gut Balance (Gut Balance, Glycemic, Natural Antibiotics, Dietary Fiber, SIBO, Soluble FIber, Healthy Gut Book 1) High Fiber Recipes: Whole and Healthy High Fiber Recipes For Breakfast, Lunch, Dinner and More (The Easy Recipe) Easy High FIBER Recipes: Stay fit and healthy: Use the power of high fiber diet to have the perfect body quick and easy High Fiber Foods For A High Fiber Diet