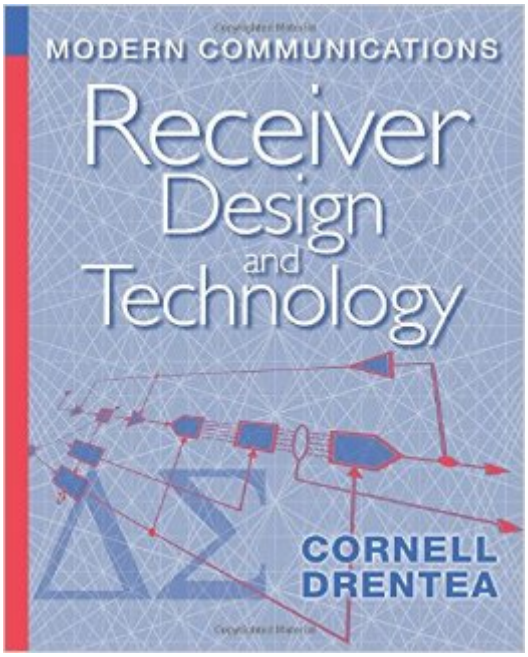
Modern Communications Receiver Design And Technology (Artech House Intelligence And Information Operations)



Synopsis

This comprehensive 462 pages textbook and reference on the subject of radio frequency (RF) receiver design presents the concepts, mathematics and design forÂ such systems. Chapters include discussions on superheterodyne receivers, dynamic range, mixers, complex coherent frequency synthesizers, automatic gain control and beat frequency oscillators and additional sections cover advanced topics like digital signal processing (DSP) and software defined radios (SDR) as well as electronic warfare (EW) receivers. Intended for electrical engineering students and engineers, thisÂ comprehensive volume contains 360 illustrations including complex block diagrams, photographs and schematics. Drentea is an electrical engineer with fifty years of experience in the field of RF engineering and has worked for the Military Avionics and Corporate divisions of Honeywell and Hughes/Raytheon Systems.

Book Information

Series: Artech House Intelligence and Information Operations
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Average Customer Review: 4.6 out of 5 starsÂ Â See all reviewsÂ (15 customer reviews)
Best Sellers Rank: #1,416,463 in Books (See Top 100 in Books) #41 inÂ Books > Crafts, Hobbies & Home > Antiques & Collectibles > Radios & Televisions #171 inÂ Books > Engineering & Transportation > Engineering > Telecommunications & Sensors > Microwaves #207 inÂ Books > Engineering & Transportation > Engineering > Industrial, Manufacturing & Operational Systems > Production, Operation & Management

Customer Reviews

This book encompasses the technology and art that go into modern receiver design. It starts out with a history of radio receivers that helps the reader understand how receiver design has progressed over the past 100 years. It then covers all of the facets of receiver design with plenty of examples that contain both theory and real world examples of successful designs. The chapters on dynamic range are especially relevant to todayâ ™s modern receiver design because the airwaves

are filled with a lot of RF signals that need to be discriminated against by a combination of linear front-ends, proper mathematical selection of LO and IF frequencies, as well as RF and IF filtering. Digital signal processing (DSP) is an important part of todayâ ™s modern receivers, and the book informs the reader that the linearity and noise characteristics of the circuitry in front of the A/D converter has a critical effect on the overall performance of digital receivers. Digital signal processing has dynamic range limitations as a function of the analog convertersâ ™ bit depth, linearity, sample-to-sample jitter, and conversion frequency. The author covers analog and digital demodulation as well as how receiver dynamic range and phase noise characteristics play into the overall link margin of modern digital communication systems. Other topics that the book covers include brute-force synthesizers, simple and complex multiple loop phase-locked loops, as well as Direct Digital Synthesizers (DDS) and DDS-Driven phase-locked loop synthesizers, filter design, filter characteristics, overall link margin calculations, audio circuits, and power supply considerations.

Any book that aims to cover this complex field in a single volume ofsuch relatively modest size would necessarily have to be a compromise,or at least assume a great deal of prior knowledge - or so I expected when Iordered Drentea's book, expecting to receive a usable reference book, but notmuch more.I was pleasantly surprised: This book is much more than a reference;it is thorough, honest, well researched, educational and eminently readable.Drentea's style in fact makes a good bedtime reading, something I could not say withmost other technology books on my bookshelves.Drentea writes in an easy-to-read no-nonsense style of someone who isconfident of his expertise and does not need to hide behind pretentiousverbiage to make himself look knowledgeable. He knows his stuff. He writesnot to be admired, but to share.I did not expect - but greatly appreciated! - the historical chaptersat the beginning. This is not just a quick lip service to the old giantswhose pioneering work made radio possible (an iPhone is also a radio!),but interesting, entertaining material - an appetizer that introducesone to Drentea's informal, friendly writing style and sets the stage foryet more pleasant surprises.Yes, there is mathematics, of course - lots of it! - but even that isprovided in a most intelligible form. When Drentea explains, he neverintimidates.

Library) (Artech House Radar Library (Hardcover)) Laser Space Communications (Artech House Space Technology and Applications) Satellite Communications Fundamentals (Artech House space technology & applications library) Baseband Receiver Design for Wireless MIMO-OFDM Communications Understanding GPS: Principles and Applications, Second Edition (Artech House Mobile Communications) RF Bulk Acoustic Wave Filters for Communications (Artech House Microwave Library (Hardcover)) RF Power Amplifiers for Wireless Communications, Second Edition (Artech House Microwave Library) Tiny Houses: Tiny House Plans & Interior Design Ideas For Living Small But Feeling Big: 22 FREE TINY HOUSE PLANS (Tiny Houses, Tiny House Living, Tiny House, Small Home) Communicating With Intelligence: Writing and Briefing in the Intelligence and National Security Communities (Security and Professional Intelligence Education Series) Modern Methods of Reflector Antenna Analysis and Design (Artech House Antenna Library) Electronic Warfare in the Information Age (Artech House Radar Library (Hardcover)) Mathematical Techniques in Multisensor Data Fusion (Artech House Information Warfare Library) Configuring Cisco Unified Communications Manager and Unity Connection: A Step-by-Step Guide (Networking Technology: IP Communications) Microwave Mixer Technology and Applications (Artech House Microwave Library (Hardcover)) Computer Speech Technology (Artech House Signal Processing Library) Radar Equations for Modern Radar (Artech House Radar) RF Design Guide Systems, Circuits and Equations (Artech House Antennas and Propagation Library) Microstrip Antenna Design Handbook (Artech House Antennas and Propagation Library)