

Join the wireless revolution

The RF and Microwave Handbook

Second Edition, Three-Volume Set

Edited by
Mike Golio
HVM Semiconductors, Inc., Phoenix, Arizona, USA

A volume in the *Electrical Engineering Handbook* series
Edited by Richard C. Dorf, University of California, Davis, USA

Explore the full sweep of RF and Microwave Engineering

By 1990 the wireless revolution had begun. In late 2000, Mike Golio gave the world a significant tool to use in this revolution: **The RF and Microwave Handbook**. Since then, wireless technology spread across the globe with unprecedented speed, fueled by 3G and 4G mobile technology and the proliferation of wireless LANs. Updated to reflect this tremendous growth, the second edition of this widely embraced, best-selling handbook divides its coverage conveniently into a set of three books, each focused on a particular aspect of the technology.

Balance fundamental issues with important business and marketing constraints

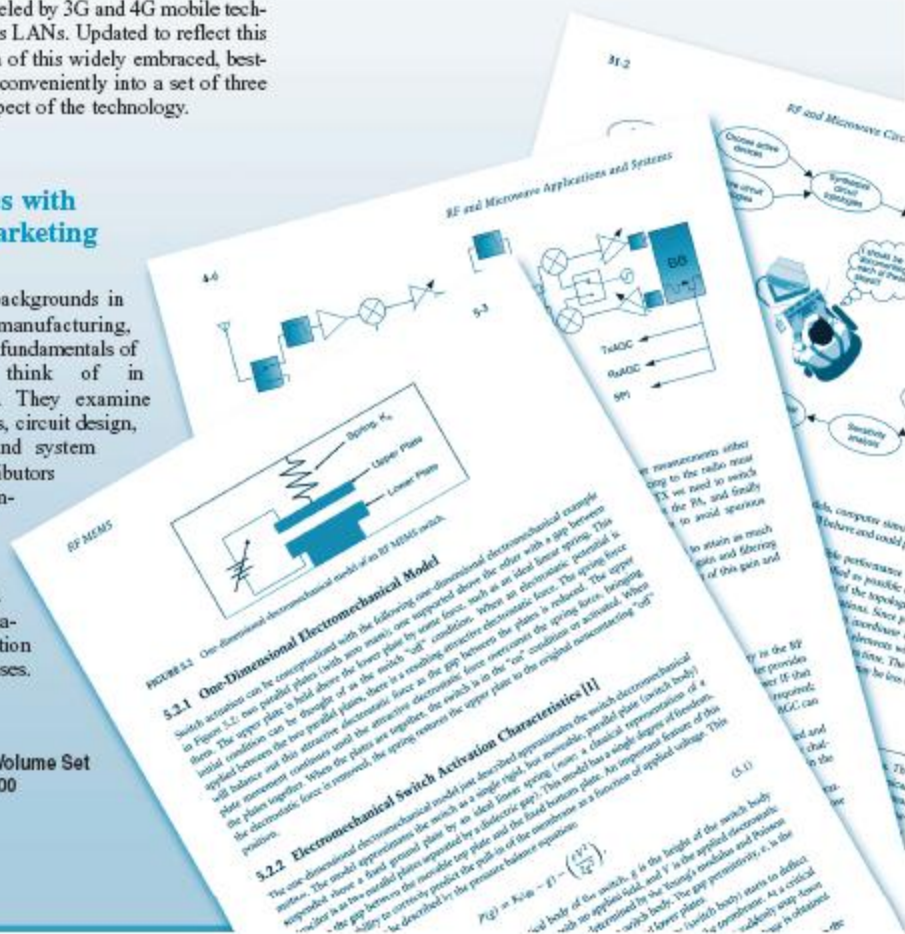
Over 100 contributors, with diverse backgrounds in academic, industrial, government, manufacturing, design, and research. They provide the fundamentals of almost any topic you can think of in RF/microwave/wireless engineering. They examine material properties, circuit components, circuit design, component and device modeling, and system applications. This eclectic mix of contributors ensures that the coverage balances fundamental technical issues with the important business and marketing constraints that define commercial RF and microwave engineering. Copious formulas, charts, graphs, diagrams, and tables make the information easy to locate and apply to practical cases.

Catalog no. 7217, October 2007, Three-Volume Set
ISBN: 978-0-8493-7217-9, \$179.95 / £99.00

CRC Press
Taylor & Francis Group

FEATURES

- Discusses the fundamentals, technologies, and applications at the heart of modern wireless communications
- Covers applications and systems, passive and active technologies, and circuits, measurements, and modeling
- Discusses electromagnetic propagation at RF and microwave frequencies



Contains 304 illustrations, 93 tables, and 372 equations

RF AND MICROWAVE APPLICATIONS AND SYSTEMS

Delve into the heart of modern wireless communications

Includes new chapters on WiMAX and broadband cable, nearly every existing chapter features extensive updates and several were completely rewritten to reflect the massive changes areas such as radio navigation and electronic warfare.

FEATURES

- Provides an overview of commercial communications systems including avionic, medical, and military applications
- Explores past, current, and emerging cellular systems, navigation systems, satellite-based systems as well as voice and data systems
- Discusses systems considerations including thermal, mechanical, reliability, power management, and safety
- Includes coverage of corporate initiatives, cost modeling, and design reviews
- Delineates the underlying physics of electromagnetic propagation and interference
- Covers FR/microwave energy used for therapeutic medicine

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RF AND MICROWAVE PASSIVE AND ACTIVE TECHNOLOGIES

Details a wide range of component technologies used in modern RF and microwave systems

Updated chapters include new material on MEMS, device packaging, surface acoustic wave (SAW) filters, bipolar junction and heterojunction transistors, and high mobility electron transistors (HMETs).

FEATURES

- Examines the challenges of integrated circuits for microwave and RF applications (MMCs and RFICs) present for design, layout, characterization, and test
- Covers device technologies such as transit time devices, HEMTs and certain vacuum tubes used almost exclusively for high frequency applications
- Explores the potential of Widebandgap Nitride transistors and their properties characteristic to high frequency applications
- Includes discussions of microwave packaging and antenna considerations

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Includes 532 illustrations, 71 tables, and 573 equations

RF AND MICROWAVE CIRCUITS, MEASUREMENTS, AND MODELING

Explore the technologies and applications at the heart of modern wireless communications

New chapters discuss high-power PAs, bit error rate testing, and nonlinear modeling of hetero-junction bipolar transistors, updates chapters material reflect recent progress in areas such as high-volume testing, transmitters and receivers, and CAD tools.

FEATURES

- Details small-signal, phase, pulsed, waveform and noise measurements and calibration procedures for these measurements
- Explores RF and microwave circuit designs in terms of performance and critical design specifications
- Discusses transmitters and receivers first in terms of functional circuit block, then examines each block individually
- Examines fundamental amplifier issues, low noise amplifiers, power amplifiers for handset applications and high power, power amplifiers
- Covers other circuit functions including oscillators, mixers, modulators, phase locked loops, filters and multiplexers

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