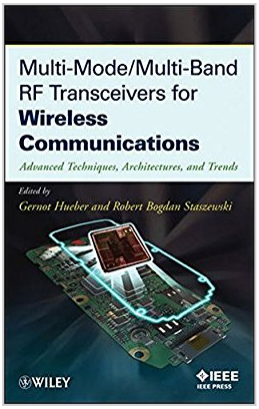

Multi-Mode / Multi-Band RF Transceivers for Wireless Communications: Advanced Techniques, Architectures, and Trends

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- Summarizes cutting-edge physical layer technologies for multi-mode wireless RF transceivers.
- Includes original contributions from distinguished researchers and professionals.
- Covers cutting-edge physical layer technologies for multi-mode wireless RF transceivers.
- Contributors are all leading researchers and professionals in this field.

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Editorial Review

From the Back Cover

State-of-the-art and beyond technologies to be used in future multi-mode wireless communication systems

Current and future mobile terminals become increasingly complex because they have to deal with a variety of frequency bands and communication standards. Achieving multiband/multimode functionality (3G and beyond) is especially challenging for the RF-transceiver section.

This volume presents cutting-edge physical layer technologies for multi-mode wireless RF transceivers, specifically RF, analog, and mixed-signal and digital circuits and architectures. Providing the most comprehensive treatment of this topic available, it features original contributions from distinguished researchers and professionals from both academia and industry, who anticipate the major trends and needs of future wireless system developments.

Divided into four sections, ***Multi-Mode/Multi-Band RF Transceivers for Wireless Communications*** covers:

- Transceiver concepts and design: software-defined radio front-ends/transceivers, adaptive multi-mode RF front-end circuits, delay alignment between amplitude and phase paths in a digital polar transmitter, and front-end RF passive integration, as well as versatile data converters
- Receiver design: OFDM transform-domain receivers for multi-standards, discrete-time processing of RF signals, oversampled ADC using VCO-based quantizers, RF receiver front-ends for mobile terminals, and digitally enhanced alternate path linearization of RF receivers
- Transmitter techniques: Linearity and efficiency strategies, CMOS RF power amplifiers for mobiles, and digitally assisted RF architectures
- Digital Signal Processing for RF transceivers: RF impairment compensation for future radio systems, techniques for the analysis of digital bang-bang PLLs, and low-power spectrum processors for cognitive radios

The remarkable insight into the essential transceiver building blocks to be used in future multi-mode wireless communication systems makes this an invaluable resource for engineers and researchers from academia and industry working on circuits and architectures of wireless transceivers, as well as for RF design engineers in semiconductor companies and graduate students taking advanced courses on wireless communication circuits.

About the Author

Gernot Hueber earned his PhD at the University of Linz, Austria, in 2006. His thesis was "Advanced Concept and Design of Multi-Mode/Multi-System Receivers for Cellular Terminal RFICs." Dr.Hueber is head of RF Innovations group at DICE GmbH & Co. KG in Linz, Austria, with main responsibility for the research in cellular transceivers.

Robert Bogdan Staszewski is a senior design engineer and researcher with over eighteen years of diverse industrial experience in microelectronics and communication systems. Dr. Staszewski earned his PhD in electrical engineering at the University of Texas at Dallas, in 2002, for his work on all-digital PLLs. He is currently Associate Professor at Delft University of Technology in the Netherlands. He is an IEEE Fellow.

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