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Nota di contenuto	Contributors -- Preface -- I TRANSCEIVER CONCEPTS AND DESIGN -- 1 Software-Defined Radio Front Ends (Jan Craninckx) -- 1.1 Introduction -- 1.2 System-Level Considerations -- 1.3 Wideband LO Synthesis -- 1.4 Receiver Building Blocks -- 1.5 Transmitter Building Blocks -- 1.6 Calibration Techniques -- 1.7 Full SDR Implementation -- 1.8 Conclusions -- 2 Software-Defined Transceivers (Gio Cafaro and Bob Stengel) -- 2.1 Introduction -- 2.2 Radio Architectures -- 2.3 SDR Building Blocks -- 2.4 Example of an SDR Transceiver -- 3 Adaptive Multi-Mode RF Front-End Circuits (Aleksandar Tasic) -- 3.1 Introduction -- 3.2 Adaptive Multi-Mode Low-Power Wireless RF IC Design -- 3.3 Multi-Mode Receiver Concept -- 3.4 Design of a Multi-Mode Adaptive RF Front End -- 3.5 Experimental Results for the Image-

Reject Down-Converter -- 3.6 Conclusions -- 4 Precise Delay Alignment Between Amplitude and Phase/Frequency Modulation Paths in a Digital Polar Transmitter (Khurram Waheed and Robert Bogdan Staszewski) -- 4.1 Introduction -- 4.2 RF Polar Transmitter in Nanoscale CMOS -- 4.3 Amplitude and Phase Modulation -- 4.4 Mechanisms to Achieve Subnanosecond Amplitude and Phase Modulation Path Alignments -- 4.5 Precise Alignment of Multi-Rate Direct and Reference Point Data -- 5 Overview of Front-End RF Passive Integration into SoCs (Hooman Darabi) -- 5.1 Introduction -- 5.2 The Concept of a Receiver Translational Loop -- 5.3 Feedforward Loop Nonideal Effects -- 5.4 Feedforward Receiver Circuit Implementations -- 5.5 Feedforward Receiver Experimental Results -- 5.6 Feedback Notch Filtering for a WCDMA Transmitter -- 5.7 Feedback-Based Transmitter Stability Analysis -- 5.8 Impacts of Nonidealities in Feedback-Based Transmission -- 5.9 Transmitter Building Blocks -- 5.10 Feedback-Based Transmitter Measurement Results -- 5.11 Conclusions and Discussion -- 6 ADCs and DACs for Software-Defined Radio (Michiel Steyaert, Pieter Palmers, and Koen Cornelissens) -- 6.1 Introduction -- 6.2 ADC and DAC Requirements in Wireless Systems. 6.3 Multi-Standard Transceiver Architectures -- 6.4 Evaluating Reconfigurability -- 6.5 ADCs for Software-Defined Radio -- 6.6 DACs for Software-Defined Radio -- 6.7 Conclusions -- II RECEIVER DESIGN -- 7 OFDM Transform-Domain Receivers for Multi-Standard Communications (Sebastian Hoyos) -- 7.1 Introduction -- 7.2 Transform-Domain Receiver Background -- 7.3 Transform-Domain Sampling Receiver -- 7.4 Digital Baseband Design for the TD Receiver -- 7.5 A Comparative Study -- 7.6 Simulations -- 7.7 Gain-Bandwidth Product Requirement for an Op-Amp in a Charge-Sampling Circuit -- 7.8 Sparsity of (GHG)-1 -- 7.9 Applications -- 7.10 Conclusions -- 8 Discrete-Time Processing of RF Signals (Renaldi Winoto and Borivoje Nikolic) -- 8.1 Introduction -- 8.2 Scaling of an MOS Switch -- 8.3 Sampling Mixer -- 8.4 Filter Synthesis -- 8.5 Noise in Switched-Capacitor Filters -- 8.6 Circuit-Design Considerations -- 8.7 Perspective and Outlook -- 9 Oversampled ADC Using VCO-Based Quantizers (Matthew Z. Straayer and Michael H. Perrott) -- 9.1 Introduction -- 9.2 VCO-Quantizer Background -- 9.3 SNDR Limitations for VCO-Based Quantization -- 9.4 VCO Quantizer -ADC Architecture -- 9.5 Prototype -ADC Example with a VCO Quantizer -- 9.6 Conclusions -- References -- 10 Reduced External Hardware and Reconfigurable RF Receiver Front Ends for Wireless Mobile Terminals (Naveen K. Yanduru) -- 10.1 Introduction -- 10.2 Mobile Terminal Challenges -- 10.3 Research Directions Toward a Multi-Band Receiver -- 10.4 Multi-Mode Receiver Principles and RF System Analysis for a W-CDMA Receiver -- 10.5 W-CDMA, GSM/GPRS/EDGE Receiver Front End Without an Interstage SAW Filter -- 10.6 Highly Integrated GPS Front End for Cellular Applications in 90-nm CMOS -- 10.7 RX Front-End Performance Comparison -- 11 Digitally Enhanced Alternate Path Linearization of RF Receivers (Edward A. Keehr and Ali Hajimiri) -- 11.1 Introduction -- 11.2 Adaptive Feedforward Error Cancellation -- 11.3 Architectural Concepts -- 11.4 Alternate Feedforward Path Block Design Considerations. 11.5 Experimental Design of an Adaptively Linearized UMTS Receiver -- 11.6 Experimental Results of an Adaptively Linearized UMTS Receiver -- 11.7 Conclusions -- III TRANSMITTER TECHNIQUES -- 12 Linearity and Efficiency Strategies for Next-Generation Wireless Communications (Lawrence Larson, Peter Asbeck, and Donald Kimball) -- 12.1 Introduction -- 12.2 Power Amplifier Function -- 12.3 Power Amplifier Efficiency Enhancement -- 12.4 Techniques for Linearity Enhancement

-- 12.5 Conclusions -- 13 CMOS RF Power Amplifiers for Mobile Communications (Patrick Reynaert) -- 13.1 Introduction -- 13.2 Challenges -- 13.3 Low Supply Voltage -- 13.4 Average Efficiency, Dynamic Range, and Linearity -- 13.5 Polar Modulation -- 13.6 Distortion in a Polar-Modulated Power Amplifier -- 13.7 Design and Implementation of a Polar-Modulated Power Amplifier -- 13.8 Conclusions -- 14 Digitally Assisted RF Architectures: Two Illustrative Designs (Joel L. Dawson) -- 14.1 Introduction -- 14.2 Cartesian Feedback: The Analog Problem -- 14.3 Digital Assistance for Cartesian Feedback -- 14.4 Multipliers, Squarers, Mixers, and VGAs: The Analog Problem -- 14.5 Digital Assistance for Analog Multipliers -- 14.6 Summary -- Appendix: Stability Analysis for Cartesian Feedback Systems -- IV DIGITAL SIGNAL PROCESSING FOR RF TRANSCEIVERS -- 15 RF Impairment Compensation for Future Radio Systems (Mikko Valkama) -- 15.1 Introduction and Motivation -- 15.2 Typical RF Impairments -- 15.3 Impairment Mitigation Principles -- 15.4 Case Studies in I/Q Imbalance Compensation -- 15.5 Conclusions -- 16 Techniques for the Analysis of Digital Bang-Bang PLLs (Nicola DaDalt) -- 16.1 Introduction -- 16.2 Digital Bang-Bang PLL Architecture -- 16.3 Analysis of the Nonlinear Dynamics of the BBPLL -- 16.4 Analysis of the BBPLL with Markov Chains -- 16.5 Linearization of the BBPLL -- 16.6 Comparison of Measurements and Models -- 17 Low-Power Spectrum Processors for Cognitive Radios (Joy Laskar and Kyutae Lim) -- 17.1 Introduction. 17.2 Paradigm Shift from SDR to CR -- 17.3 Challenge and Trends in RFIC/System -- 17.4 Analog Signal Processing -- 17.5 Spectrum Sensing -- 17.6 Multi-Resolution Spectrum Sensing -- 17.7 MRSS Performance -- 17.8 Conclusions -- References -- Index.

## Sommario/riassunto

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.

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