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Nota di contenuto	Cover; TOCTable of contents; List of Contributors; Preface; 1. A Survey of RF and Wireless Technology; A Short History of Wireless Communication; Where We Are; Where We Are Going; Conclusion; 2. Next Generation Wireless Networks: An Evolution of Architectures and Technologies; Why "Next" Generation?; First Generation Wireless Networks:Wireless Access; Second Generation Wireless Networks:Mobile Access; Third Generation Wireless Networks:Wireless and Mobile Access toHigh-Bandwidth Services; Fourth Generation Wireless Networks andBeyond: Universal Access in aMulti-Network Environment ConclusionReferences; 3. Mobile Ad Hoc Networks; Physical Layer and MAC; Routing in Ad Hoc Networks; Conclusion; References; 4. Direct-Sequence and Frequency-Hopping Spread Spectrum; Direct-Sequence Spread Spectrum; Frequency Hopping; Conclusion; References; 5. Software-Defined Radio; What Is Software-Defined Radio?; Aspects of Software-Defined Radio; History and Evolution of Software-Defined Radio; Applications and Need for SDR; Architectures; Implementation Issues; Case Study: A Close Look at a CDMA2000 andUMTS SDR Receiver; Conclusion; References; 6. RF Power Amplifiers Power Amplifier Class of OperationUses of Amplifier Classes; Conclusion; References; 7. Linear Amplification with Nonlinear Components; The Principle of LINC; Generating the Parent Signals;

Analysis and Compensation of Signal Processing Errors; The Combiner; Conclusion; References; 8. Pulse-Locked Loop Techniques in Modern Communications Systems; Phase-Locked Loop Techniques for Frequency Synthesizers; Sub-blocks in PLL; The Voltage Controlled Oscillator (VCO); Application: A Fully Integrated Dual-Mode Frequency Synthesizer for GSM and WCDMA Standards; References
9. RF Power Amplifier Linearization Techniques RF Amplifier Nonlinearity; Linearization Techniques; Digital Baseband Predistortion; Conclusion; 10. Orthogonal Frequency Division Multiplexing (OFDM); Fundamentals of OFDM; Effect of OFDM on Wireless Environment; Coding for OFDM Systems; Interleaving; The Peak-to-Mean Envelope Power Ratio Problem; Channel Estimation; Synchronization; Conclusion; References; 11. Wireless Sensor Networks; Applications; Plant Network Layouts; Plant Network Architecture; Sensor Subnet Selection; Functional Requirements; Technical Tradeoffs and Issues; Conclusion References
12. Turbo Codes; Channel Coding; The Dawn of Turbo Codes; Parallel Concatenated Encoding with Interleaving; Why Do Turbo Codes Work So Well?; Convolutional Codes; The UMTS Turbo Code; The cdma2000 Turbo Code; Turbo Decoding; The SISO Processor; Performance of 3G Turbo Codes; Practical Issues; References; 13. Reliable Wireless Networks for Industrial Applications; Benefits of Using Wireless; Issues in Deploying Wireless Systems; Wireless Formats; Wireless Mesh Networks; Industrial Applications of Wireless Mesh Networks; Case Study: Water Treatment; Conclusion
14. The Basics of Radio Frequency Identification (RFID) Technology

Sommario/riassunto

Expert contributors drawn from the ranks of academia and industry have authored chapters in such areas as third-generation wireless, wireless sensor networks, RF power amplifiers, spread spectrum modulation, signal propagation, antennas, and other key subjects that engineers working in RF and wireless need to be familiar with. This is far more than just a tutorial or reference guide-it is a "guided tour" through the world of cutting-edge RF and wireless design, combining theory, applications, and philosophies behind the RF/wireless design process. The multiple and sometimes overlap
