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Nota di contenuto	Contents; Preface to the Second Edition; Acknowledgments; 1. Radio Frequency Basics; 1.1 Introduction; 1.2 Nomenclature; 1.3 Decibels; 1.4 Signal Standards; 1.5 Frequency, Wavelength, and Propagation Velocity; 1.6 Transmission Lines; 1.7 Descriptions of Impedance; 1.8 S-Parameters; 1.9 Matching and Maximum Power Transfer; 1.10 Introduction to Radio Frequency Components; 1.11 Bibliography; 1.12 Problems; 2. Signals, Noise, and Modulation; 2.1 Introduction; 2.2 A Real-Valued, Ideal Cosine Wave; 2.3 Single-Sided Spectra and Complex Basebanding; 2.4 Two Noiseless Sine Waves 2.5 Band-Limited Additive White Gaussian Noise2.6 An Ideal Sine Wave and Band-Limited AWGN; 2.7 The Quadrature Modulator; 2.8 Analog Modulation; 2.9 Digital Modulation; 2.10 Quadrature Modulators, Baseband Filtering, and Spectrum Control; 2.11 General Characteristics of Signals; 2.12 Summary; 2.13 Bibliography; 2.14 Problems; 3. Propagation; 3.1 Introduction; 3.2 Types of Propagation; 3.3 Propagation Through Free Space; 3.4 Propagation Through a Homogenous Medium; 3.5 Propagation Through a Nonhomogenous Medium; 3.6 Multipath Propagation; 3.7 Bibliography; 3.8 Problems; 4. Antennas 4.1 Introduction4.2 Antenna Equivalent Circuits; 4.3 Aperture; 4.4 The Isotropic Radiator; 4.5 Antenna Gain, Beamwidth, and Aperture; 4.6 Bibliography; 4.7 Problems; 5. Filters; 5.1 Introduction; 5.2 Linear Systems Review; 5.3 Filters and Systems; 5.4 Filter Types and

Terminology; 5.5 Generic Filter Responses; 5.6 Classes of Low-Pass Filters; 5.7 Low-Pass Filter Comparison; 5.8 Filter Input/Output Impedances; 5.9 Transient Response of Filters; 5.10 Band-Pass Filters; 5.11 Noise Bandwidth; 5.12 Butterworth Filters in Detail; 5.13 Miscellaneous Items; 5.14 Matched Filters; 5.15 Bibliography 5.16 Problems6. Noise; 6.1 Introduction; 6.2 Equivalent Model for a Radio Frequency Device; 6.3 Noise Fundamentals; 6.4 One Noisy Resistor; 6.5 System Model: Two Noisy Resistors; 6.6 Amplifier Noise Model; 6.7 Signal-to-Noise Ratio; 6.8 Noise Factor/Noise Figure; 6.9 Cascade Performance; 6.10 Examining the Cascade Equations; 6.11 Minimum Detectable Signal; 6.12 Noise Performance of Lossy Devices; 6.13 Bibliography; 6.14 Problems; 7. Linearity; 7.1 Introduction; 7.2 Linear and Nonlinear Systems; 7.3 Amplifier Transfer Curve; 7.4 Polynomial Approximations; 7.5 Single-Tone Analysis 7.6 Two-Tone Analysis7.7 Distortion Summary; 7.8 Preselection; 7.9 Second-Order Distortion; 7.10 Third-Order Distortion; 7.11 Narrowband and Wideband Systems; 7.12 Higher-Order Effects; 7.13 Second-Order Intercept Point; 7.14 Third-Order Intercept Point; 7.15 Measuring Amplifier Nonlinearity; 7.16 Gain Compression/Output Saturation; 7.17 Comparison of Nonlinear Specifications; 7.18 Nonlinearities in Cascade; 7.19 Compression Point; 7.20 Distortion Notes; 7.21 Nonlinearities and Modulated Signals; 7.22 Bibliography; 7.23 Problems; 8. Mixers; 8.1 Introduction 8.2 Frequency Translation Mechanisms

Sommario/riassunto

Practical lessons and approaches in radio receiver design for wireless communication systems are the hallmarks of *Wireless Receiver Design for Digital Communications*, 2nd Edition. Decades of experience "at the bench" are collected within and the book acts as a virtual replacement for a mentor who teaches basic concepts from a practical perspective and has the war stories that help their "apprentice" avoid the mistakes of the past.
