

1. Record Nr.	UNINA9910467832203321
Autore	Poisel Richard
Titolo	RF electronics for electronic warfare / / .Richard A. Poisel
Pubbl/distr/stampa	Boston, Massachusetts : , : Artech House, , [2019] [Piscataqay, New Jersey] : , : IEEE Xplore, , [2019]
ISBN	1-63081-706-6
Descrizione fisica	1 online resource (717 pages)
Collana	Artech House electronic warfare library
Disciplina	623.043
Soggetti	Electronics in military engineering Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index
Nota di contenuto	RF Electronics for Electronic Warfare; Table of Contents; Chapter 1 Electronic Warfare; 1.1 Introduction; 1.2 Overview of Electronic Warfare; 1.2.1 Electronic Support; 1.2.2 Electronic Attack; 1.2.3 Electronic Protect; 1.2.4 EW Effects; 1.3 Operational Scenarios; 1.4 EW Target Frequency Ranges; 1.4.1 High Frequency; 1.4.2 Very High Frequency; 1.4.3 Ultrahigh Frequency; 1.4.4 Superhigh Frequency (SHF); 1.4.5 Summary; 1.5 EW System Block Diagram; 1.5.1 RF Signal Generation; 1.6 Concluding Remarks; References; Chapter 2 Modulation and Modulators; 2.1 Introduction 2.1.1 Additive White Gaussian Noise Channel2.2 Modulations; 2.3 Analog Modulations; 2.3.1 Amplitude Modulation; 2.3.2 Phase and Frequency Analog Modulation; 2.3.3 PM Modulation; 2.3.4 FM and PM Modulators; 2.4 Digital Modulations; 2.4.1 Introduction; 2.4.2 Amplitude Shift Keying; 2.4.3 Pulse Amplitude Modulation: Frequency Shift Keying; 2.4.4 FSK; 2.4.5 PSK; 2.5 Polar Modulation; 2.6 Noise Generators; 2.7 Concluding Remarks; References; Chapter 3 EW Exciters; 3.1 Introduction; 3.2 Oscillator Basics; 3.3 Principles of Oscillator Operation; 3.3.1 LC Resonators in Oscillators 3.3.2 Crystal Resonators3.3.3 Microelectromechanical Resonators; 3.4 Phase Locked Loop Synthesisers; 3.4.1 Introduction; 3.4.2 PLL Basics; 3.4.3 Varactor Diode; 3.4.4 MEMS Varactors; 3.5 Direct Digital Synthesis; 3.5.1 Introduction; 3.5.2 DDS Architecture; 3.5.3 Polar Modulator; 3.5.4 Digital vs Analog Performance; 3.5.5 DDS Switching

Characteristics; 3.5.6 Modulation and Complex Waveform Generation; 3.6 Oscillator Phase Noise; 3.6.1 Introduction; 3.6.2 VCO Phase Noise Basics; 3.6.3 Analysis; 3.6.4 Equipartition Theorem; 3.7 Concluding Remarks; References

Chapter 4 Introduction to RF Amplifiers 4.1 Introduction; 4.2 Amplifier Classes; 4.2.1 Amplifier Topology; 4.2.2 Biasing for RF Devices; 4.2.3 Amplifier Bias Classes of Operation; 4.2.4 Amplifier Classes; 4.2.5 Miller's Theorem; 4.2.6 Frequency Response of Amplifiers; 4.2.7 Some High-Frequency Analysis Techniques; 4.3 Amplifier Parameters; 4.3.1 Determining the Lower 3-dB Frequency; 4.3.2 Selecting Values for the Coupling and Bypass Capacitors; 4.4 Amplifier Topologies; 4.4.1 Bipolar Transistor Configurations; 4.4.2 MOSFET Configurations; 4.4.3 Summary; 4.5 Active Loads; 4.6 Gain
4.7 Wideband Amplifiers 4.7.1 Distributed Amplifiers; 4.7.2 Balanced Amplifiers; 4.7.3 Resistive Feedback Amplifiers; 4.8 Switched-Mode RF Amplifiers; 4.8.1 Introduction; 4.8.2 Class D PA; 4.8.3 Class E PA; 4.8.3 Class F PA; 4.9 Concluding Remarks; Appendix 4A Wilkinson Power Divider/Combiner; References; Chapter 5 Semiconductor Technologies; 5.1 Introduction; 5.2 Semiconductor Devices; 5.3 Microwave Semiconductor Devices There; 5.3.1 Bipolar Transistors; 5.3.2 Field-Effect Transistors; 5.3.3 Molecular Beam Epitaxy Technique; 5.3.4 Bipolar Technology vs MOSFET Technology
