

1. Record Nr.	UNINA9910731474503321
Titolo	Fundamentals of RF and Microwave Techniques and Technologies // edited by Hans L. Hartnagel, Rüdiger Quay, Ulrich L. Rohde, Matthias Rudolph
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2023
ISBN	3-030-94100-0
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (1554 pages)
Disciplina	929.374 621.3815
Soggetti	Electrodynamics Telecommunication Electronic circuits Classical Electrodynamics Microwaves, RF Engineering and Optical Communications Electronic Circuits and Systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Chapter 1 Resonant circuits, one-portnet works, coupling filters made of lumped, passive components -- Chapter 2 Wave propagation on transmission lines and cables -- Chapter 3: Impedance transformers and balanced-to-unbalanced transformers -- Chapter 4 Properties of coaxial cables and transmission lines, directional couplers and RF filters -- Chapter 5 Field-based description of propagation on waveguides -- Chapter 6 Antennas -- Chapter 7 Semiconductor sand semiconductor devices and circuits -- Chapter 8 Interference and noise -- Chapter 9 Amplifiers -- Chapter 10 Oscillators and Frequency Synthesis -- Chapter 11 Frequency synthesizer -- Chapter 12 Software Defined Radio, Receiver and Transmitter analysis -- Chapter 13 Mixing and frequency multiplication -- Chapter 14 Modulation Methods.
Sommario/riassunto	The increase of consumer, medical and sensors electronics using radio frequency (RF) and microwave (MW) circuits has implications on overall performances if design is not robust and optimized for a given

applications. The current and later generation communication systems and Internet of Thing (IoT) demand for robust electronic circuits with optimized performance and functionality, but low cost, size, and power consumption. As a result, there is a need for a textbook that provides a comprehensive treatment of the subject. This book provides state-of-the-art coverage of RF and Microwave Techniques and Technologies, covers important topics: transmission-line theory, passive and semiconductor devices, active and passive microwave circuits and receiver systems, as well as antennas, noise and digital signal modulation schemes. With an emphasis on theory, design, and applications, this book is targeted to students, teachers, scientists, and practicing design engineers who are interested in broadening their knowledge of RF and microwave electronic circuit design. Readers will also benefit from a unique integration of theory and practice, provides the readers a solid understanding of the RF and microwave concepts, active and passive components, antenna, and modulation schemes. Readers will learn to solve common design problems ranging from selection of components, matching networks to biasing and stability, and digital modulation techniques. More importantly, it provides basic understanding in the analysis and design of RF and microwave circuits in a manner that is practiced in industry. This make sure that the know-how learned in this book can be effortlessly and straightway put into practice without any obstacles.
