1. Record Nr. UNINA9910830356403321

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Titolo	RF and microwave transistor oscillator design [[electronic resource] /] / Andrei Grebennikov
Pubbl/distr/stampa	Chichester ; ; Hoboken, N.J., : John Wiley, c2007
ISBN	1-280-85601-7 9786610856015 0-470-51209-1 1-60119-522-2 0-470-51208-3
Descrizione fisica	1 online resource (457 p.)
Disciplina	621.38133 621.38412
Soggetti	Microwave transistors Radio frequency oscillators Oscillators, Transistor
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Contents; About the Author; Preface; Acknowledgements; 1 Nonlinear circuit design methods; 1.1 SPECTRAL-DOMAIN ANALYSIS; 1.1.1 Trigonometric identities; 1.1.2 Piecewise-linear approximation; 1.1.3 Bessel functions; 1.2 TIME-DOMAIN ANALYSIS; 1.3 NEWTON-RAPHSON ALGORITHM; 1.4 QUASILINEAR METHOD; 1.5 VAN DER POL METHOD; 1.6 COMPUTER-AIDED ANALYSIS AND DESIGN; REFERENCES; 2 Oscillator operation and design principles; 2.1 STEADY-STATE OPERATION MODE; 2.2 START-UP CONDITIONS; 2.3 OSCILLATOR CONFIGURATIONS AND HISTORICAL ASPECTS; 2.4 SELF-BIAS CONDITION 2.5 OSCILLATOR ANALYSIS USING MATRIX TECHNIQUES2.5.1 Parallel feedback oscillator; 2.5.2 Series feedback oscillator; 2.6 DUAL TRANSISTOR OSCILLATORS; 2.7 TRANSMISSION-LINE OSCILLATOR; 2.8 PUSH-PUSH OSCILLATOR; 2.9 TRIPLE-PUSH OSCILLATOR; 2.10 OSCILLATOR WITH DELAY LINE; REFERENCES; 3 Stability of self-oscillations; 3.1 NEGATIVE-RESISTANCE OSCILLATOR CIRCUITS; 3.2 GENERAL SINGLE-FREQUENCY STABILITY CONDITION; 3.3 SINGLE-

Sommario/riassunto

The increase of consumer electronics and communications applications using Radio Frequency (RF) and microwave circuits has implications for oscillator design. Applications working at higher frequencies and using novel technologies have led to a demand for more robust circuits with higher performance and functionality, but decreased costs, size and power consumption. As a result, there is also a need for more efficient oscillators. This book presents up to date information on all aspects of oscillator design, enabling a selection of the best oscillator topologies with optimized noise reductio