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metamaterial loading and applications References 5. Reconfigurable, Tunable and Nonlinear Artificial Transmission Lines 5.1 Introduction 5.2 Materials, components and technologies to implement tunable devices 5.3 Tunable and reconfigurable metamaterial transmission lines and applications 5.4 Nonlinear transmission lines (NLTLs) References 6. Other Advanced Transmission Lines 6.1 Introduction 6.2 Magnetoinductive-wave (MIW) and electroinductive-wave (EIW) delay lines 6.3 Balanced transmission lines with common-mode suppression 6.4 Wideband artificial transmission lines 6.5 Substrate integrated waveguides (SIW) and their application to metamaterial transmission lines References Appendixes Appendix A. Equivalence between plane wave propagation in source-free, linear, isotropic and homogeneous media, TEM wave propagation in transmission lines and wave propagation in transmission lines described by its distributed circuit model Appendix B. The Smith Chart Appendix C. The scattering matrix Appendix D. Current density distribution in a conductor Appendix E. Derivation of the simplified coupled mode equations and coupling coefficient from the distributed circuit model of a transmission line Appendix F. Averaging the effective dielectric constant in EBG-based transmission lines Appendix G. Parameter extraction G.1 Parameter extraction in CSRR-loaded lines G.2 Parameter extraction in SRR-loaded lines G.3 Parameter extraction in OSRR-loaded lines G.4 Parameter extraction in OCSRR-loaded lines Appendix H. Synthesis of resonant type metamaterial transmission lines by means of Aggressive Space Mapping (ASM) H.1 General formulation of ASM H.2 Determination of the convergence region in the coarse model space H.3 Determination of the initial layout H.4 The core ASM algorithm H.5 Illustrative examples and convergence speed Appendix I. Conditions to obtain all-pass X-type and bridged-T networks Index .

Sommario/riassunto

"This book presents and discusses alternatives to ordinary transmission lines for the design and implementation of advanced RF/microwave components in planar technology"--
