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| Descrizione fisica      | 1 online resource (376 p.)  |
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| Soggetti                | Microwave filters<br>Electric filters   |
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| Livello bibliografico   | Monografia  |
| Note generali           | Description based upon print version of record.   |
| Nota di bibliografia    | Includes bibliographical references and index.  |
| Nota di contenuto       | Foreword -- Preface -- Part I: Microwave Filter Fundamentals -- 1. Scattering Parameters and ABCD Matrices -- 2. Approximations and Synthesis -- 3. Waveguides and Transmission Lines -- 4. Categorization of Microwave Filters -- Part II: Minimum-Phase Filters -- 5. Capacitive-Gap Filters for Millimeter Waves -- 6. Evanescent-Mode Waveguide Filters with Dielectric Inserts -- 7. Interdigital Filters -- 8. Combine Filters Implemented In SSS -- Part III: Non-Minimum-Phase Symmetrical Response Filters -- 9. Generalized Interdigital Filters with Conditions on Amplitude and Phase -- 10. Temperature-Stable Narrowband Monomode TE <sub>011</sub> Linear-Phase Filters -- Part IV: Non-Minimum-Phase Asymmetrical Response Filters -- 11. Asymmetrical Capacitive-Gap Coupled Line Filters -- 12. Asymmetrical Dual-Mode TE <sub>102</sub> / TE <sub>301</sub> Thick Iris Rectangular In-Line Waveguide Filters with Transmission Zeros -- 13. Asymmetrical Cylindrical Dual-Mode Waveguide Filters with Transmission Zeros -- 14. Asymmetrical |

Multimode Rectangular Building Block Filters Using Genetic Optimization -- Appendix 1: Lossless Systems -- Appendix 2: Redundant Elements -- Appendix 3: Modal Analysis of Waveguide Step Discontinuities -- Appendix 4: Trisections with Unity Inverters on the Inside or on the Outside -- Appendix 5: Reference Fields and Scattering Matrices for Multimodal Rectangular Waveguide Filters -- Index.

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## Sommario/riassunto

The fundamentals needed to design and realize microwave and RF filters. Microwave and RF filters play an important role in communication systems and, owing to the proliferation of radar, satellite, and mobile wireless systems, there is a need for design methods that can satisfy the ever-increasing demand for accuracy, reliability, and shorter development times. Beginning with a brief review of scattering and chain matrices, filter approximations and synthesis, waveguides and transmission lines, and fundamental electromagnetic equations, the book then covers design techniques for microwave and RF filters operating across a frequency range from 1 GHz to 35 GHz. Each design chapter: . Is dedicated to only one filter and is organized by the type of filter response. Provides several design examples, including the analysis and modeling of the structures discussed and the methodologies employed. Offers practical information on the actual performance of the filters and common difficulties encountered during construction. Concludes with the construction technique, pictures of the inside and outside of the filter, and the measured performances

Advanced Design Techniques and Realizations of Microwave and RF Filters is an essential resource for wireless and telecommunication engineers, as well as for researchers interested in current microwave and RF filter design practices. It is also appropriate as a supplementary textbook for advanced undergraduate courses in filter design.

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