Microstrip Filters for RF/Microwave Applications. 2nd Edition. Wiley Series in Microwave and Optical Engineering

Description: The first edition of “Microstrip Filters for RF/Microwave Applications” was published in 2001. Over the years the book has been well received and is used extensively in both academia and industry by microwave researchers and engineers. From its inception as a manuscript the book is almost 8 years old. While the fundamentals of filter circuits have not changed, further innovations in filter realizations and other applications have occurred with changes in the technology and use of new fabrication processes, such as the recent advances in RF MEMS and ferroelectric films for tunable filters; the use of liquid crystal polymer (LCP) substrates for multilayer circuits, as well as the new filters for dual-band, multi-band and ultra wideband (UWB) applications.

Although the microstrip filter remains as the main transmission line medium for these new developments, there has been a new trend of using combined planar transmission line structures such as co-planar waveguide (CPW) and slotted ground structures for novel physical implementations beyond the single layer in order to achieve filter miniaturization and better performance.

Also, over the years, practitioners have suggested topics that should be added for completeness, or deleted in some cases, as they were not very useful in practice.

In view of the above, the authors are proposing a revised version of the "Microstrip Filters for RF/Microwave Applications" text and a slightly changed book title of “Planar Filters for RF/Microwave Applications” to reflect the aforementioned trends in the revised book.

Contents:


1 Introduction.

2 Network Analysis.

2.1 Network Variables.

2.2 Scattering Parameters.

2.3 Short-Circuit Admittance Parameters.

2.4 Open-Circuit Impedance Parameters.

2.5 ABCD Parameters.

2.6 Transmission-Line Networks.

2.7 Network Connections.

2.8 Network Parameter Conversions.

2.9 Symmetrical Network Analysis.

2.10 Multiport Networks.

2.11 Equivalent and Dual Network.

2.12 Multimode Networks.
3 Basic Concepts and Theories of Filters.
3.1 Transfer Functions.
3.2 Lowpass Prototype Filters and Elements.
3.3 Frequency and Element Transformations.
3.4 Immittance Inverters.
3.5 Richards' Transformation and Kuroda Identities.
3.6 Dissipation and Unloaded Quality Factor.
4 Transmission Lines and Components.
4.1 Microstrip Lines.
4.2 Coupled Lines.
4.3 Discontinuities and Components.
4.4 Other Types of Microstrip Lines.
4.5 Coplanar Waveguide (CPW).
4.6 Slotlines.
5 Lowpass and Bandpass Filters.
5.1 Lowpass Filters.
5.2 Bandpass Filters.
6 Highpass and Bandstop Filters.
6.1 Highpass Filters.
6.2 Bandstop Filters.
7 Coupled-Resonator Circuits.
7.1 General Coupling Matrix for Coupled-Resonator Filters.
7.2 General Theory of Couplings.
7.3 General Formulation for Extracting Coupling Coefficient k.
7.4 Formulation for Extracting External Quality Factor Qe.
7.5 Numerical Examples.
7.6 General Coupling Matrix Including Source and Load.
8 CAD for Low-Cost and High-Volume Production.
8.2 Computer-Aided Analysis (CAA).
8.3 Filter Synthesis by Optimization.
8.4 CAD Examples.
9 Advanced RF/Microwave Filters.
9.1 Selective Filters with a Single Pair of Transmission Zeros.
9.2 Cascaded Quadruplet (CQ) Filters.
9.3 Trisection and Cascaded Trisection (CT) Filters.
9.4 Advanced Filters with Transmission-Line Inserted Inverters.
9.5 Linear-Phase Filters.
9.6 Extracted Pole Filters.
9.7 Canonical Filters.
9.8 Multiband Filters.
10 Compact Filters and Filter Miniaturization.
10.1 Miniature Open-Loop and Hairpin Resonator Filters.
10.2 Slow-Wave Resonator Filters.
10.3 Miniature Dual-Mode Resonator Filters.
10.4 Lumped-Element Filters.
10.5 Miniature Filters Using High Dielectric-Constant Substrates.
10.6 Multilayer Filters.
11 Superconducting Filters.
11.1 High-Temperature Superconducting (HTS) Materials.
11.2 HTS Filters for Mobile Communications.
11.3 HTS Filters for Satellite Communications.
11.4 HTS Filters for Radio Astronomy and Radar.
11.5 High-Power HTS Filters.
11.6 Cryogenic Package.
12 Ultra-Wideband (UWB) Filters.
12.1 UWB Filters with Short-Circuited Stubs.
12.2 UWB-Coupled Resonator Filters.
12.3 Quasilumped Element UWB Filters.
12.4 UWB Filters Using Cascaded Miniature High- And Lowpass Filters.
12.5 UWB Filters with Notch Band(s).
13 Tunable and Reconfigurable Filters.
13.1 Tunable Combline Filters.
13.2 Tunable Open-Loop Filters without Via-Hole Grounding.
13.3 Reconfigurable Dual-Mode Bandpass Filters.
13.4 Wideband Filters with Reconfigurable Bandwidth.
13.5 Reconfigurable UWB Filters.
13.6 RF MEMS Reconfigurable Filters.
13.7 Piezoelectric Transducer Tunable Filters.
13.8 Ferroelectric Tunable Filters.
Appendix: Useful Constants and Data.
A.1 Physical Constants.
A.2 Conductivity of Metals at 25 °C (298K).
A.3 Electrical Resistivity $\rho$ in $10^{-8}$ m of Metals.
A.4 Properties of Dielectric Substrates.
Index.

Ordering:
Order Online - http://www.researchandmarkets.com/reports/2170808/
Order by Fax - using the form below
Order by Post - print the order form below and send to
Research and Markets,
Guinness Centre,
Taylors Lane,
Dublin 8,
Ireland.
Fax Order Form
To place an order via fax simply print this form, fill in the information below and fax the completed form to 646-607-1907 (from USA) or +353-1-481-1716 (from Rest of World). If you have any questions please visit http://www.researchandmarkets.com/contact/

Order Information
Please verify that the product information is correct.

Product Name: Microstrip Filters for RF/Microwave Applications. 2nd Edition. Wiley Series in Microwave and Optical Engineering
Web Address: http://www.researchandmarkets.com/reports/2170808/
Office Code: SCAV6PEB

Product Format
Please select the product format and quantity you require:

Quantity
Hard Copy (Hard Back):
USD 169 + USD 28 Shipping/Handling

* Shipping/Handling is only charged once per order.

Contact Information
Please enter all the information below in BLOCK CAPITALS

Title: Mr [ ] Mrs [ ] Dr [ ] Miss [ ] Ms [ ] Prof [ ]
First Name: ___________________________ Last Name: ___________________________
Email Address: * ___________________________
Job Title: ___________________________
Organisation: ___________________________
Address: ___________________________
City: ___________________________
Postal / Zip Code: ___________________________
Country: ___________________________
Phone Number: ___________________________
Fax Number: ___________________________

* Please refrain from using free email accounts when ordering (e.g. Yahoo, Hotmail, AOL)
Payment Information

Please indicate the payment method you would like to use by selecting the appropriate box.

☐ Pay by credit card: You will receive an email with a link to a secure webpage to enter your credit card details.

☐ Pay by check: Please post the check, accompanied by this form, to:
Research and Markets,
Guinness Center,
Taylors Lane,
Dublin 8,
Ireland.

☐ Pay by wire transfer: Please transfer funds to:
Account number 833 130 83
Sort code 98-53-30
Swift code ULSBIE2D
IBAN number IE78ULSB98533083313083
Bank Address Ulster Bank,
27-35 Main Street,
Blackrock,
Co. Dublin,
Ireland.

If you have a Marketing Code please enter it below:

Marketing Code: ____________________________

Please note that by ordering from Research and Markets you are agreeing to our Terms and Conditions at http://www.researchandmarkets.com/info/terms.asp

Please fax this form to:
(646) 607-1907 or (646) 964-6609 - From USA
+353-1-481-1716 or +353-1-653-1571 - From Rest of World