

Continuous Time Active Analog Filters

Filter circuits play a vital role in diverse applications such as audio/video signal processing, biomedical devices, instrumentation and control. The replacement of many analog circuits by digital filters and modules gave the impetus for further advancements in continuous-time as well as discrete-time analog filters. Today there are important applications such as analog simulation for retransmission, power quality modulation, and prevention of signal-noise-ratation problems in multistage amplifiers where analog filters are either essential or preferred over digital filters.

This book is conceived as base material for a first course on active network synthesis at the advanced undergraduate level. It presumes that the reader has already studied basic network theory and analog electronics. After studying this book the student should be able to select an appropriate design technique for a specific application and also be equipped for advanced studies on continuous-time, switched capacitor or current mode filters.

Focusing mainly on continuous-time domain techniques, this text discusses a wide spectrum of topics. It discusses active filter circuits and their analysis in both frequency and time domains. It includes practical application-based examples and case studies on topics including medical instrumentation, audio/video signal processing, anti-aliasing and signal conditioning modules. More than 130 solved examples and 370 design problems are interspersed throughout the book. Graphs are plotted throughout the text using the computer simulation tool PSpice.

Muzaffer Ahmad Siddiqi retired as Professor and Chairman from the Department of Electronics Engineering at Aligarh Muslim University, India. His research includes linear analog integrated circuits, digital integrated circuits, VLSI design, active network synthesis, microelectronics, and analog signal processing. He has over 43 years of teaching experience and is the author of the book *Dynamic RAM: Technology Advancements*.

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CAMBRIDGE
UNIVERSITY PRESS

University Printing House, Cambridge CB2 8BS, United Kingdom

One Liberty Plaza, 20th Floor, New York, NY 10006, USA

477 Williamstown Road, Port Melbourne, VIC 3207, Australia

314–321, 3rd Floor, Plot 3, Splendor Forum, Jasola District Centre, New Delhi – 110025, India

79 Anson Road, #06–04/06, Singapore 079906

Cambridge University Press is part of the University of Cambridge.

It furthers the University's mission by disseminating knowledge in the pursuit of education, learning and research at the highest international levels of excellence.

www.cambridge.org

Information on this title: www.cambridge.org/9781108486835

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First published in 2020

Printed in India

A catalogue record for this publication is available from the British Library

ISBN 978-1-108-48683-5 Hardback

Additional resources for this publication at www.cambridge.org/9781108486835

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