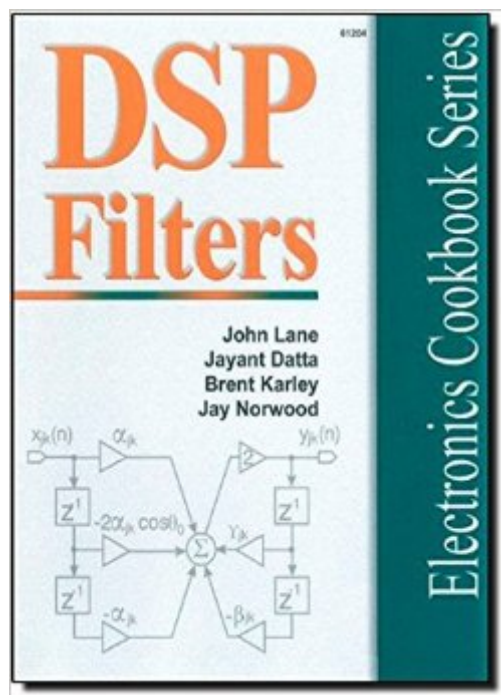


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# DSP Filter Cookbook (Electronics Cookbook Series)



## Synopsis

Digital filters and real-time processing of digital signals have traditionally been beyond the reach of most, due partially to hardware cost as well as complexity of design. In recent years, low-cost digital signal processor (DSP) development boards have put this within reach. This book will break down this design complexity barrier by means of simplified tutorials, step-by-step instructions, along with a collection of audio projects. Design formulas are presented to build the digital equivalent of standard audio filters: lowpass, highpass, and bandpass.

## Book Information

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## Customer Reviews

The title for this book may be misleading. Unlike most books on this subject, "DSP Filters" deals with a very specific class of digital filters, the infinite impulse response (IIR) filter. In addition, the IIR filters described are of the "maximally flat" gender. DSP books in general dedicate no more than a chapter or less to this particular subject. There are two reasons that an entire book on this subject might be a worthwhile read. First, these types of digital filters closely resemble filters which traditionally have been the backbone of audio electronics since the beginning of audio engineering. This is not to say that the maximally flat IIR filter is useful only in audio - there exists a wide range of applications for these filters, from instrumentation to business economics since, after all, an IIR filter is nothing more than a moving recursive average. The second purpose of this book is to fill the void of information on the subject. The details of this particular field of DSP seem to have fallen through

the cracks of the university curriculum, DSP textbooks, as well as semiconductor industry support. There are many reasons for this lack of detailed treatment on the subject. Even though the DSP industry strongly supported digital audio over a decade ago, the present focus is moving rapidly in the direction of wireless products. There may be a return to industry support of digital audio, since high quality audio will very likely become an important part of the future wireless market. A final conjecture as to why there exists a lack of treatment on this subject in other books is the prevailing DSP philosophy that analog filters are inferior due to their non-linear phase characteristics, therefore, there would be no reason to model analog filters in the digital domain.

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