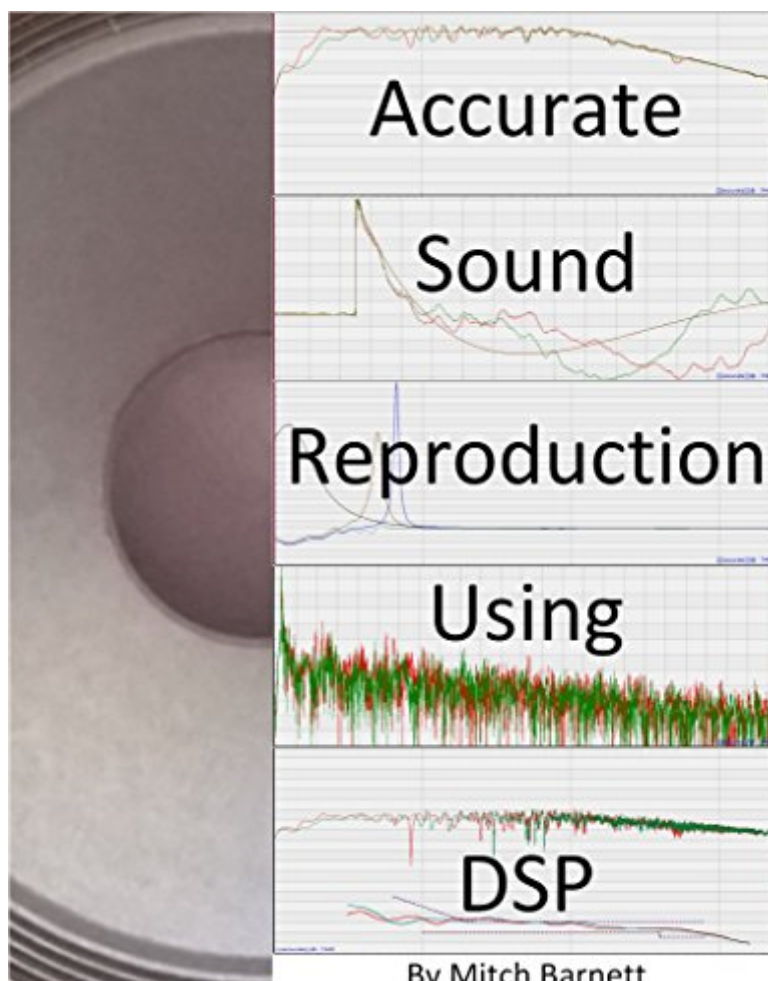


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# Accurate Sound Reproduction Using DSP



## Synopsis

This eBook provides the audio enthusiast with an easy-to-follow step-by-step guide for designing a custom digital filter that corrects the frequency and timing response of your loudspeakers in your listening environment so that the music arriving at your ears matches as closely as possible to the content on the recording. Industry guidelines, spanning over 40 years of evolution, are referenced throughout the eBook, providing the recommended target responses for accurate sound reproduction. Correcting the measured response to known target responses is, in effect, matching the acoustic output signal arriving at your ears to the digital audio stored in a media file. The target responses can also be tailored to your own preferences. The chapter on the acoustics and psychoacoustics of room correction explains why we hear what we hear in small-room acoustics and what our ears care about most when it comes to accurate sound reproduction. There are individual chapters on industry target responses for frequency and step response, group delay, energy time curve, reverb time, polar response and interaural coherence coefficient (i.e., imaging). Advanced sections of the eBook show you how to design and implement digital crossovers, driver linearization, and driver time alignment; how to compensate for brickwall antialiasing filters; and how to use the Beamforming quasi-anechoic measurement technique. All of these sections are designed to incrementally improve your sound reproduction system's accuracy. The last section of the eBook shows you how to perform loopback measurements to verify the design and operation of your digital correction filter, not only at the listening position, but across a wide listening area as well. Whether your sound reproduction system is a computer desktop speaker system, stereo audiophile system, home theater multi-channel system, mains and sub-woofer system, DIY audio system, or car sound system, the results are audible, measurable, and repeatable. To benefit the most from this step-by-step guide, you will require a computer, a calibrated measurement microphone, an Analog to Digital (ADC)/Digital to Analog (DAC) converter, and two commercial software packages: Acourate DSP Audio Toolbox and JRiver Media Center. This eBook contains several color-coded images, so viewing on a color screen is required. With over 260 color screen captures of the software in action, plus 200 links to industry reference material and knowledge, this eBook is the definitive guide to Accurate Sound Reproduction Using Digital Signal Processing (DSP).

## Book Information

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## Customer Reviews

Acourate by Audiovero is THE best DSP software available for audio playback. Because it's so powerful, Acourate can be a little overwhelming to the first timer. This book is the ultimate guide to using Acourate to get the best playback in your listening environment. The book integrates room acoustics, psychoacoustic research and modern DSP in a step-by-step way which anyone can understand. The author is one of the leading DSP evangelists. Mitch uses numerous examples taken from a standard reverberant home listening environment to demonstrate that state-of-the-art playback does not require a professional recording studio or mega dollar components.

This book is fantastic. It really explains the theory of active crossovers, and explains how to set it up in the simplest terms. Besides the step by step there is a lot of good theory explanation too, so it is educational. This is the only book I know of devoted exclusively to hobbyists setting up computer based active crossovers for residential stereo audio system. Mitch has written it clearly and easy to read.

This is a must for Acourate users. A gold mine of knowledge that covers each and every step needed to understand why room correction is needed and how to go about achieving it using Acourate. The author seems to be very knowledgeable on the subject and conveys the advanced knowledge to a user who I assume has some basic science background. This book made me

addicted to room correction and i now cannot live without running my speakers without it. Once you got over the basics of generating kernels, the next frontier is time alignment of drivers! :) Thank you Mitch Barnett.

An easy to follow guide on how to improve music playback. Not very on math. Mind you there are some requirements you have to consider if you want to follow this guide for example in terms of software (Acourate and JRiver) and hardware (Microphone and PC). By following this guide I have experienced a huge improvement in sound quality.

You consider yourself an Audiophile ? You need to read this book and use the Acourate Software by Audiovero. This software has been developed by Uli Brueggermann and his a fantastic software including all the functions you need to bring you closer to a TRUE music reproduction. Mitch Barnett wrote this book in a way that each aspects is treated STEP by STEP to make you achieve the BEST possible sound reproduction with the audio gear that you have, ie, either passive or active crossover. The book is well detailed and each step is has a lot of screen shot, to support you in the learning process. The result at the end worth the time effort, you will see that it is Day and Night if you compare your sound with and without the digital filters. If you go with "Active Xover" the impact will be tremendous, once you have linearized and time aligned your speakers. On top of improving the acuracy of your speakers, it will also adapt your speakers to your listening position in your room. A defenit "MUST HAVE" if you are really in the Audiophile World. Treat yourself and get Uli's Software from Audiovero and also Mitch Barnett's book, you won't regret it ! I implemented a 4Way active system and the soundstage is simply AMAZING.

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