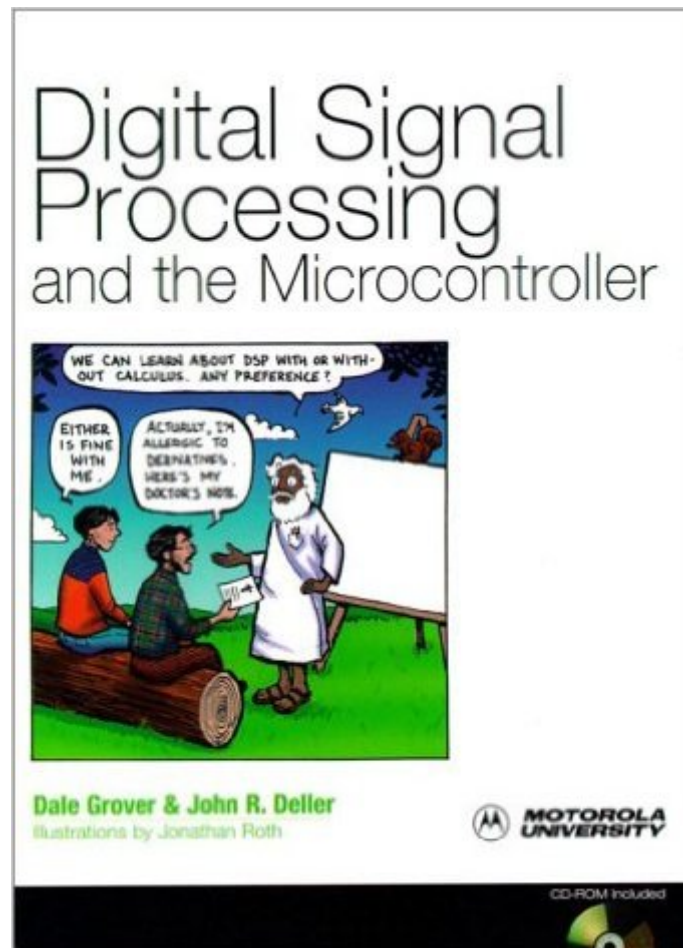# Digital Signal Processing And The Microcontroller

Synopsis

Digital signal processing (DSP) is often treated as a complicated, theoretical subject. This book takes a friendly, informal approach, stressing the practical information needed to not just understand, but use DSP on real hardware, including microcontrollers. It is aimed at readers who might not have an background in signal processing, and it does not assume mathematics beyond algebra and trigonometry. Topics include digital filters, the Fast Fourier Transform (FFT), and generating special signals and functions. Familiarity with programming microprocessors is assumed. The Motorola MC68HC16 is used as an example of a microcontroller with DSP-specific features, and complete assembly language programs show how DSP is implemented on a real processor. Numerous cartoon illustrations by Jonathan Roth.

Book Information

Paperback: 544 pages

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Customer Reviews

This book is an excellent book to learn the basics of DSP. The book covers all the necessary content (sampling, aliening, FIR/IIR filters, Analog filters, continuous and discrete signals in systems, and more) required to understand the basics of DSP. The authors have included material on often not covered topics such as undersamping and practical uses that make this well rounded reading. The content is not "stuffy" (e.g. "clearly", "therefore", etc.) that is on light-hearted side of humorous. A good coverage of practical DSP implementation on microcontrollers is included (notably the Motorola 68HC16 16-bit microcontroller). All first time students of DSP and aspiring DSP professionals should have this book along with Rick Lyons, "Understanding Digital Signal

Processing" in their library!

I've owned this book for 5 years now. With that perspective, I think it's greatest strength is its "readability"- not something you normally associate with DSP books! Deller and Grove do a terrific job of explaining BASIC dsp concepts from the ground-up while avoiding high-level math (for the most part).I rank it above Steven Smith's DSP book since it has more clarity and detail. Richard Lyon's "Understanding DSP" has more mathematical details, but it's not as user-friendly as this book-so I'd recommend this book first for newbies to DSP and then, Lyon's book.Oh yeah, the cartoons are great too!

This book, although dated, has some of the clearest explanations of communication systems and Digital signal processing that I've ever read. An unexpected bonus is that if you take the time to learn the material it can be applied to control systems also. The math is almost identical, only the frequencies used in control systems are typically lower. The book gives one of the best explanations of systems in the analog domain too.The author's must have felt that would prepare the readers for the digital concepts introduced later. This book is worth it's weight in gold.

It's readable, enjoyable, humorous, solid. Along with "DSP First" and Ken Steiglitz' book, this is as good as it gets. And the "DSP Guru" cartoons - what a crackup, excellent. Never mind the "microcontroller" part of the title - this is a book for anyone, on any platform, needing a good, fun intro to DSP.

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