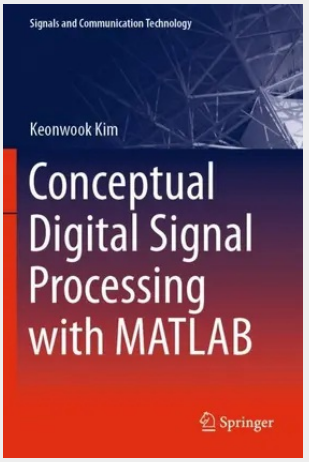
Kim

Conceptual Digital Signal Processing with MATLAB



This textbook provides an introduction to the study of digital signal processing, employing a top-to-bottom structure to motivate the reader, a graphical approach to the solution of the signal processing mathematics, and extensive use of MATLAB.

In contrast to the conventional teaching approach, the book offers a top-down approach which first introduces students to digital filter design, provoking questions about the mathematical tools required. The following chapters provide answers to these questions, introducing signals in the discrete domain, Fourier analysis, filters in the time domain and the Z-transform. The author introduces the mathematics in a conceptual manner with figures to illustrate the physical meaning of the equations involved.

Chapter six builds on these concepts and discusses advanced filter design, and chapter seven discusses matters of practical implementation. This book introduces the corresponding MATLAB functions and programs in everychapter with examples, and the final chapter introduces the actual real-time filter from MATLAB.

Aimed primarily at undergraduate students in electrical and electronic engineering, this book enables the reader to implement a digital filter using MATLAB.

Deliver the conceptual knowledge of digital signal processing with extensive use of the illustrations from practical viewpoint. Also, the digital signal processing is initiated from the digital not from the continuous domain.

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53,49 €
49,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9789811525865
Medium: Buch
ISBN: 978-981-15-2586-5
Verlag: Springer
Erscheinungstermin: 04.11.2021
Sprache(n): Englisch
Auflage: 1. Auflage 2021
Serie: Signals and Communication Technology
Produktform: Kartoniert
Gewicht: 1031 g
Seiten: 677
Format (B x H): 155 x 235 mm

Kundenservice Verlag Dr. Otto Schmidt KG
Neumannstraße 10, 40235 Düsseldorf | kundenservice@otto-schmidt.de | 0221-93738-997 (Inland)