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Titolo	Digital Signal Processing : Theory and Practice / / by K. Deergha Rao, M.N.S. Swamy
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ISBN	9789811080814 981108081X
Edizione	[1st ed. 2018.]
Descrizione fisica	1 online resource (XXIV, 789 p. 432 illus.)
Disciplina	621.3822
Soggetti	Fourier analysis Information theory Signal processing Image processing Speech processing systems Electrical engineering Computer networks Fourier Analysis Information and Communication, Circuits Signal, Image and Speech Processing Communications Engineering, Networks Computer Communication Networks
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Discrete-Time Signals and Systems -- The z-Transforms and Analysis of LTI Systems in Transform Domain -- The Discrete Fourier Transform -- IIR Digital Filter Design -- FIR Digital Filter Design -- Structures for Digital Filters Realization and Finite Word length Effects Analysis -- Basics of Multirate Digital Signal Processing -- Multirate Filter Banks -- Discrete Wavelet Transforms -- Adaptive Digital Filters -- Spectral Analysis of Signals -- DSP Processors.
Sommario/riassunto	The book provides a comprehensive exposition of all major topics in digital signal processing (DSP). With numerous illustrative examples for easy understanding of the topics, it also includes MATLAB-based

examples with codes in order to encourage the readers to become more confident of the fundamentals and to gain insights into DSP. Further, it presents real-world signal processing design problems using MATLAB and programmable DSP processors. In addition to problems that require analytical solutions, it discusses problems that require solutions using MATLAB at the end of each chapter. Divided into 13 chapters, it addresses many emerging topics, which are not typically found in advanced texts on DSP. It includes a chapter on adaptive digital filters used in the signal processing problems for faster acceptable results in the presence of changing environments and changing system requirements. Moreover, it offers an overview of wavelets, enabling readers to easily understand the basics and applications of this powerful mathematical tool for signal and image processing. The final chapter explores DSP processors, which is an area of growing interest for researchers. A valuable resource for undergraduate and graduate students, it can also be used for self-study by researchers, practicing engineers and scientists in electronics, communications, and computer engineering as well as for teaching one- to two-semester courses.