

1. Record Nr.	UNINA9910815718803321
Autore	Markovic Dejan
Titolo	DSP architecture design essentials // Dejan Markovic, Robert W. Brodersen
Pubbl/distr/stampa	New York, : Springer, 2012
ISBN	1-283-62185-1 9786613934307 1-4419-9660-5
Edizione	[1st ed. 2012.]
Descrizione fisica	1 online resource (353 p.)
Collana	Electrical engineering essentials
Altri autori (Persone)	BrodersenRobert W. <1945->
Disciplina	621.3822
Soggetti	Signal processing - Digital techniques Microprocessors - Programming
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di contenuto	Energy and Delay Models -- Circuit Optimization -- Architectural Techniques -- Architecture Flexibility -- Arithmetic for DSP -- CORDIC, Divider, Square Root -- Digital Filters -- Time-Frequency Analysis -- Data-Flow Graph Model -- Wordlength Optimization -- Architectural Optimization -- Simulink-Hardware Flow -- Multi-GHz Radio DSP -- Dedicated MHz-rate Decoders -- Flexible MHz-rate Decoder -- kHz-rate Neural Processors -- Brief Outlook.
Sommario/riassunto	In DSP Architecture Design Essentials, authors Dejan Markovi and Robert W. Brodersen cover a key subject for the successful realization of DSP algorithms for communications, multimedia, and healthcare applications. The book addresses the need for DSP architecture design that maps advanced DSP algorithms to hardware in the most power- and area-efficient way. The key feature of this text is a design methodology based on a high-level design model that leads to hardware implementation with minimum power and area. The methodology includes algorithm-level considerations such as automated word-length reduction and intrinsic data properties that can be leveraged to reduce hardware complexity. From a high-level data-flow graph model, an architecture exploration methodology based on linear programming is used to create an array of architectural solutions

tailored to the underlying hardware technology. The book is supplemented with online material: bibliography, design examples, CAD tutorials and custom software.

---