1. Record Nr. UNINA9910454851503321

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Titolo	CMOS data converters for communications [[electronic resource] /] / by Mikael Gustavsson, J. Jacob Wikner, and Nianxiong Nick Tan
Pubbl/distr/stampa	Boston, : Kluwer Academic, c2000
ISBN	1-280-20789-2 9786610207893 0-306-47305-4
Edizione	[1st ed. 2002.]
Descrizione fisica	1 online resource (401 p.)
Collana	The Kluwer international series in engineering and computer science ; ; 543. Analog circuits and signal processing
Altri autori (Persone)	WiknerJ. Jacob TanNianxiong <1966->
Disciplina	621.39/732
Soggetti	Analog-to-digital converters - Design and construction Digital-to-analog converters - Design and construction Metal oxide semiconductors, Complementary Electronic circuit design Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references.
Nota di contenuto	Characterization of Data Converters -- Data Converter Requirements for Communications -- Overview of High-Speed A/D Converter Architectures -- Overview of D/A Converter Architectures -- Overview of Circuit Techniques -- Analog Functional Blocks -- Basic Analog Circuit Design -- Low-Voltage Analog Techniques -- Pipelined A/D Converters -- Time-Interleaved A/D Converters -- Oversampling A/D Converters -- Modeling of Nyquist D/A Converters -- Implementation of CMOS Current-Steering D/A Converters.
Sommario/riassunto	CMOS Data Converters for Communications distinguishes itself from other data converter books by emphasizing system-related aspects of the design and frequency-domain measures. It explains in detail how to derive data converter requirements for a given communication system (baseband, passband, and multi-carrier systems). The authors also review CMOS data converter architectures and discuss their suitability for communications. The rest of the book is dedicated to

high-performance CMOS data converter architecture and circuit design. Pipelined ADCs, parallel ADCs with an improved passive sampling technique, and oversampling ADCs are the focus for ADC architectures, while current-steering DAC modeling and implementation are the focus for DAC architectures. The principles of the switched-current and the switched-capacitor techniques are reviewed and their applications to crucial functional blocks such as multiplying DACs and integrators are detailed. The book outlines the design of the basic building blocks such as operational amplifiers, comparators, and reference generators with emphasis on the practical aspects. To operate analog circuits at a reduced supply voltage, special circuit techniques are needed. Low-voltage techniques are also discussed in this book. CMOS Data Converters for Communications can be used as a reference book by analog circuit designers to understand the data converter requirements for communication applications. It can also be used by telecommunication system designers to understand the difficulties of certain performance requirements on data converters. It is also an excellent resource to prepare analog students for the new challenges ahead.