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Titolo	Analog-to-Digital Conversion [[electronic resource] /] / by Marcel J.M. Pelgrom
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Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction -- Components and Definitions -- Sampling -- Sample and Hold -- Quantization -- Reference Circuits -- Digital-to-Analog Conversion -- Analog-to-Digital Conversion.- Sigma-Delta Modulation -- Characterization and Specification -- Technology -- System Aspects of Conversion.
Sommario/riassunto	This textbook is appropriate for use in graduate-level curricula in analog to digital conversion, as well as for practicing engineers in need of a state-of-the-art reference on data converters. It discusses various analog-to-digital conversion principles, including sampling, quantization, reference generation, nyquist architectures and sigma-delta modulation. This book presents an overview of the state-of-the-art in this field and focuses on issues of optimizing accuracy and speed, while reducing the power level. This new, second edition emphasizes novel calibration concepts, the specific requirements of new systems, the consequences of 45-nm technology and the need for

a more statistical approach to accuracy. Pedagogical enhancements to this edition include more than twice the exercises available in the first edition, solved examples to introduce all key, new concepts and warnings, remarks and hints, from a practitioner's perspective, wherever appropriate. Considerable background information and practical tips, from designing a PCB, to lay-out aspects, to trade-offs on system level, complement the discussion of basic principles, making this book a valuable reference for the experienced engineer. Covers the most relevant developments in analog-to-digital conversion, in a pedagogical framework suited for both graduate-level courses and professionals; Updates the first edition of this book to include novel calibration concepts, the specific requirements of new systems, the consequences of 45-nm CMOS technology and some first results with metal-gate 28-nm technologies; Emphasizes the need for a more statistical approach to accuracy, not only as a theoretical exercise, but also to calculate circuit (mal)function and design yield; Provides insight on how to choose parameters for designing circuits, using extended examples of how to make that choice for an amplifier, a track-and-hold circuit, a full-flash converter, a conversion stage or a filter for sigma-delta modulator; Includes more than twice the exercises of the first edition, as well as solved examples to help introduce each new concept.