DESCRIPTION

A new approach to the study of arithmetic circuits

In Synthesis of Arithmetic Circuits: FPGA, ASIC and Embedded Systems, the authors take a novel approach of presenting methods and examples for the synthesis of arithmetic circuits that better reflects the needs of today's computer system designers and engineers. Unlike other publications that limit discussion to arithmetic units for general-purpose computers, this text features a practical focus on embedded systems.

Following an introductory chapter, the publication is divided into two parts. The first part, Mathematical Aspects and Algorithms, includes mathematical background, number representation, addition and subtraction, multiplication, division, other arithmetic operations, and operations in finite fields. The second part, Synthesis of Arithmetic Circuits, includes hardware platforms, general principles of synthesis, adders and subtractors, multipliers, dividers, and other arithmetic primitives. In addition, the publication distinguishes itself with:

* A separate treatment of algorithms and circuits—a more useful presentation for both software and hardware implementations
* Complete executable and synthesizable VHDL models available on the book’s companion Web site, allowing readers to generate synthesizable descriptions
* Proposed FPGA implementation examples, namely synthesizable low-level VHDL models for the Spartan II and Virtex families
* Two chapters dedicated to finite field operations

This publication is a must-have resource for students in computer science and embedded system designers, engineers, and researchers in the field of hardware and software computer system design and development.

An Instructor Support FTP site is available from the Wiley editorial department.

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**ABOUT THE AUTHOR**

JEAN-PIERRE DESCHAMPS, PhD, is Professor, University Rovira, Tarragona, Spain. He is the author of six books and over 100 research papers. His research interests include FPGA and ASIC design, digital arithmetic, and cryptography.

GERY Jean Antoine BIOUL, MSc, is Professor, National University of the Center of the Province of Buenos Aires, Argentina. His research interests include logic design and computer arithmetic algorithms, and implementations.

GUSTAVO D. SUTTER, PhD, is Professor, University Autonoma of Madrid, Spain. His research interests include FPGA and ASIC design, digital arithmetic, and development of embedded systems.

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