A HANDS-ON INTRODUCTION TO VHDL SYNTHESIS AND FPGA PROTOTYPING

Hardware Descriptive Language (HDL) and Field Programmable Gate Array (FPGA) devices allow designers to quickly develop and simulate a sophisticated digital circuit, realize it on a prototyping device, and verify the operation of its physical implementation. As these technologies have matured, they have become accepted mainstream practice so that it is possible to use a PC and an inexpensive FPGA prototyping board to construct a complex digital system.

This book uses a "learn by doing" approach to introduce the concepts and techniques of VHDL and FPGA to designers through a series of hands-on experiments. *FPGA Prototyping by VHDL Examples* provides:

- A collection of clear, easy-to-follow templates for quick code development
- A large number of practical examples to illustrate and reinforce the concepts and design techniques
- Realistic projects that can be implemented and tested on a Xilinx prototyping board
- A thorough exploration of the Xilinx PicoBlaze soft-core microcontroller

Although the book is an introductory text, the examples are developed in a rigorous manner and the derivations follow strict design guidelines and coding practices used for large, complex systems. It lays a solid foundation for students and new engineers and prepares them for future development tasks. *FPGA Prototyping by VHDL Examples* is an indispensable companion text for introductory digital design courses and also serves as a valuable self-teaching guide for practicing engineers who wish to learn more about this emerging area of interest.

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