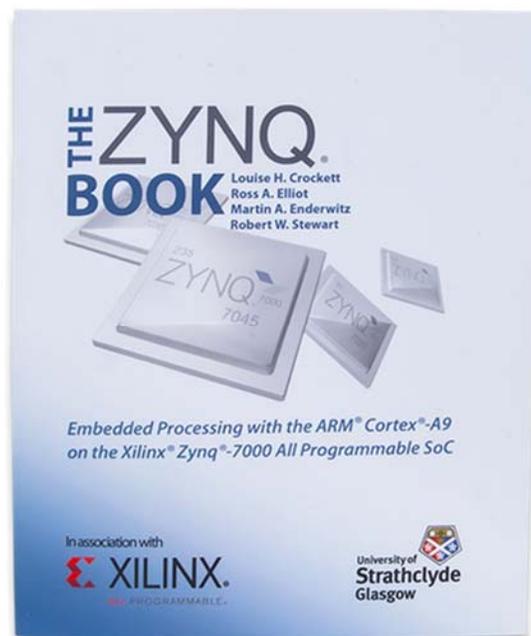


The Zynq Book

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Product Description

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By Louise H. Crockett, Ross A. Elliot, Martin A. Enderwitz & Robert W. Stewart

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This book is a collaboration between Xilinx University Program and a team of authors from the University of Strathclyde, Glasgow, UK.

Are programmable systems-on-chip (SoC) and hardware design part of your curriculum? Or are you simply looking to learn more about Zynq, embedded systems, and FPGAs? Do you want to learn Linux while learning how to design with Vivado HLS? Are you looking for a comparison of the Zynq FPGA device from Xilinx to other similar products in the marketplace? If you answered "yes" to any of these questions, then this graphic-rich, full-color, example-laden book could be just what you are seeking.

Utilizing the Zynq SoC design in conjunction with the Digilent Zybo or the ZedBoard, this book was written by and for educators. Designed to provide an informational insider's guide to the Zynq SoC family, "The Zynq Book" sets out to answer questions in simple detail. It uses clear examples and clean graphics for easier understanding in teaching operating systems and hardware design.

Catering to both new and experienced readers, this book covers fundamental issues in an accessible way, starting with a clear overview of the device architecture, and an introduction to the design tools and processes for developing a Zynq SoC. Later chapters progress to more advanced topics such as embedded systems development, IP block design and operating systems. The book also compares Zynq with other device alternatives, and considers end-user applications. The Zynq Book is accompanied by a set of practical tutorials hosted on a companion website. These tutorials will guide the reader through first steps with Zynq, following on to a complete, audio-based embedded systems design.

This book has a companion project book that has tutorials which target two popular Zynq development boards: the ZedBoard, and the lower cost, Zybo.

Working through, the reader will take first steps with the Vivado integrated development environment and Software Developers Kit (SDK), and be introduced to the methodology of developing embedded systems based on Zynq. Different methods of creating Intellectual Property (IP) cores are demonstrated, including the use of Vivado High Level Synthesis (HLS), and these IPs are later combined to form a complete audio-based embedded system. These tutorials are set at the introductory level, and are suitable for undergraduate / postgraduate teaching, as well as self-learning by researchers, professional engineers, and hobbyists.