How to Design Xilinx Embedded Systems in 1 Day

Embedded 2

EMBD13000-ILT (v1.0)

Course Specification

Course Description

The workshop introduces you to fundamental embedded design concepts and techniques for implementation in Xilinx FPGAs. The focus is on fundamental aspects of Xilinx embedded tools, IP, and the Embedded Targeted Reference Design (TRD). Design examples and labs are drawn from the Embedded TRD.

Only essential theory is introduced in order to lay a foundation for the material and topics covered in this workshop, which complements more detailed training found in subsequent Xilinx courses.

Level – Embedded 2
Course Duration – 1 day
Price – $700 or 7 training credits
Course Part Number – EMBD13000-ILT
Who Should Attend? – FPGA designers and logic designers
Prerequisites

- FPGA design experience
- Completion of the *Essentials of FPGA Design* course or equivalent knowledge of Xilinx ISE® software implementation tools
- Basic microprocessor experience and understanding of PowerPC®-processor and MicroBlaze™-processor systems

Software Tools

- Xilinx ISE® Design Suite: Embedded or System Edition 13.1

Hardware

- Architecture: Spartan®-6 and Virte®x-6 FPGAs*
- Demo board: Spartan-6 FPGA SP605 or Virtex-6 FPGA ML605 board*

* This workshop focuses on the Spartan-6 and Virtex-6 architectures. Check with your local Authorized Training Provider for the specifics of the in-class lab board or other customizations.

After completing this comprehensive training, you will have the necessary skills to:

- Describe the various tools that encompass the Xilinx Embedded Development Kit (EDK)
- Identify the IP that comprise components in an embedded processor system
- Rapidly architect an embedded system containing a MicroBlaze processor and Xilinx-supplied component IP by using the Base System Builder (BSB)
- Utilize the Eclipse-based Software Development Kit (SDK) to develop software applications and debug software
- Explore the Xilinx Embedded Processor Technical Reference Design (TRD)

Course Outline

- Xilinx Embedded Processing Overview
- Building an Embedded Processor System in XPS
- **Lab 1:** Hardware Construction with the Base System Builder
- Software Development in SDK
- Embedded Processor IP Component Features
- **Lab 2:** Adding and Downloading Software
- AXI Overview
- Embedded Targeted Reference Design Overview
- **Lab 3:** Embedded Targeted Reference Design
- Summary

Lab Descriptions

The MicroBlaze processor labs are based on the AXI interconnect.

- **Lab 1:** Hardware Construction with the Base System Builder – Create an XPS project by using the Base System Builder to develop a basic hardware system and generate an embedded processor system component as part of a larger ISE software design.
- **Lab 2:** Adding and Downloading Software – Complete the processes begun in Lab 1 using the SDK tools to create a software BSP and sample application. Configure the FPGA and download the application.
- **Lab 3:** Targeted Reference Design – Utilize the Embedded Targeted Reference Design. Identify how you can use it as a starting point for your own design.

Register Today

VAI Logic, the Authorized Training Provider (ATP) for Indiana, Michigan, Ohio, Kentucky, and western Pennsylvania offers public and private training.

Please visit www.vaitechnology.com for more information, to view the current training schedule, or to register.

Please send inquiries to info@vaitechnology.com, or contact the registrar at (440) 832-7637.