



Minimizing Your Design Time with the ChipScope Pro Debug and Verification Tools

FPGA22000-92-ILT (v1.0)

Course Specification

Course Description

As FPGA designs become increasingly more complex, designers are searching to reduce design and debug time. The powerful, yet easy-to-use ChipScope™ Pro tool solution helps minimize the amount of time required for debug and verification, which can often consume a significant amount of total FPGA design time. This one-day course will show you effective ways to debug logic and high-speed designs—thereby decreasing your overall design time. This training will provide hands-on labs that demonstrate how the ChipScope Pro tools can address advanced debugging and verification challenges.

Level – Intermediate

Course Duration – 1 day

Price – AU\$700 + GST or 7 Training Credits

Course Part Number – FPGA22000-92-ILT

Who Should Attend? – Logic, high-speed and embedded designers looking to minimize debug and verification time

Prerequisites

- FPGA design experience or completion of the Xilinx *Fundamentals of FPGA Design* course
- ChipScope Pro Software REL strongly recommended

Software Tools

- ISE™ 9.2i SP4 software
- ChipScope Pro 9.2i SP4 tool
- ChipScope Pro Serial I/O Toolkit 9.2i

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

- Reduce impediments to slow-performing ChipScope Pro cores
- Minimize negative timing impacts on a design when using the ChipScope Pro cores
- Use techniques that enhance and extend the capabilities of the ChipScope Pro tools
- Enable and identify the advantages of remote debugging
- Analyze, set up, and debug high-speed serial I/O designs
- Use the Agilent solutions to overcome storage issues and perform a system-level debug

Course Outline

- Agenda and Introduction
- **Lab:** Adding the ILA Core to an Existing Design and Adding the ILA and VIO Cores for Remote Monitoring Control
- Timing Implications
- **Demo:** Minimizing Core Impact with the PlanAhead Software
- Tips and Tricks
- **Lab:** Tips and Tricks
- Remote Debug
- **Lab:** Enabling Remote Debug
- High-Speed Serial I/O Debug and Verification (Optional)
- **Lab:** High-Speed Serial I/O Debug and Verification (Optional)
- Agilent Solutions for Storage Qualification and System-Level Debug (Optional)
- **Lab:** Inserting the Agilent ATC2 Measurement Core and Viewing Internal Activity with the FPGA Dynamic Probe (Optional)
- **Lab:** Performing System-Level Debug with the Agilent FPGA Dynamic Probe (Optional)

Lab Descriptions

- **Adding the ILA Core to an Existing Design and Adding the ILA and VIO Cores for Remote Monitoring Control** – You will use the two primary flows for adding ChipScope Pro tool ILA cores into a design and rapidly locating and solving a logic problem. You will then add the ILA and VIO cores for monitoring and controlling a design.
- **Tips and Tricks** – This lab demonstrates the flexibility of the ChipScope Pro tool solution as you explore data qualification, cross-clock domain analysis, and oversampling techniques.
- **Enabling Remote Debug** – You will run the Xilinx ISE software on a client machine so that you can create and modify your design and add ChipScope Pro tool cores from a remote location.
- **High-Speed Serial I/O Debug and Verification** – You will use the Xilinx ChipScope Pro Serial I/O Toolkit for the RockettIO™ transceivers in the Virtex™-5 FPGA. You will generate ChipScope Pro tool IBERT designs for the Virtex-5 XC5VLX50T device on the ML505 board. You will then connect two MGTs on an ML505 board and use the ChipScope Pro Analyzer tool to interact with them.
- **Inserting the Agilent ATC2 Core and Viewing Internal Activity with the FPGA Dynamic Probe** – You will leverage external memory sources using the Agilent ATC2 Core, FPGA Dynamic Probe, and Logic Analyzer to address storage demands.
- **Performing System-Level Debug with the Agilent FPGA Dynamic Probe** – You will see how the Agilent solution is used to reduce the time required to validate and determine the root cause of problems in FPGA-based systems.

Register Today

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