

Real-Time Debugging for Virtex-5 FPGAs

Version 8.2 of the ChipScope Pro Analyzer delivers verification performance for Xilinx FPGAs.

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Xilinx® Virtex™-5 devices set a new benchmark in FPGA functionality, with as much as 12 times the logic capacity, 112 times more memory, 2 times the bandwidth, and 2.5 times the performance of the leading FPGA devices of just 8 years ago. Additional dedicated hardware functionality like DCM-based clock management tiles, embedded hard processors, high-speed MGTs, and DSP48E slices extend platform functionality to a broad spectrum of end applications. This extreme functionality places a huge demand on the design cycle and in particular the verification cycle, which tends to be the most time-consuming and time-critical phase of the design flow. The Xilinx ChipScope™ Pro software and analyzer deliver advanced real-time debugging functionality to complex Virtex-5-based designs, moving you through the verification cycle faster than ever before.

New Functionality

The functionality of the ChipScope Pro Analyzer version 8.2 has been enhanced with Virtex-5 performance in mind. All ChipScope Pro-optimized software debugging cores work with Virtex-5 devices when

using ChipScope Pro 8.2 Service Pack 2 or later versions. The debugging cores deliver new enhanced performance, supporting higher clock speeds as fast as 500 MHz. You can analyze signals with greater speed and agility through advanced features like wider data capture of up to 1,024 bits, deeper data capture of up to 128K storage samples, and higher density slice packing of trigger match unit and capture control logic.

The resource estimator introduced with ChipScope Pro version 8.1 lets you see how much memory and device space the debugging cores will take up on the chip, useful for project planning.

Another breakthrough feature is remote debugging, first introduced in version 7.1 of ChipScope Pro software. Remote debugging lets you run the ChipScope Pro Analyzer and capture system through a server/client Internet connection. Your board can be running remotely in the lab while you debug from an office on the other side of the building or the other side of the world. You can share a single board or system in the lab with other engineers on your team or allow helpdesk personnel to debug a problem remotely at a customer site, helping to lower field debugging and repair costs.

Optimized Real-Time Debugging

The ChipScope Pro system is available as a separately purchased option to Xilinx

ISE™ logic design software and allows you to debug Virtex-5 devices and other Xilinx FPGA-based projects in real time. You can quickly find and analyze design problems while the chip is running on the board, interacting with the rest of the system. Then, leveraging FPGA re-programmability, design changes can be quickly implemented and sent back to the device on board in a matter of minutes or hours through the programming cable. Such changes might take days or weeks using ASIC or competing FPGA offerings.

The ChipScope Pro system also links internal FPGA debugging to Agilent Technologies' bench-top logic analyzers using the included ChipScope Pro ATC2 core. This core synchronizes the ChipScope Pro system to Agilent's FPGA Dynamic Probe software, an optionally purchased plug-in to your Agilent 1680, 1690, or 16900 logic analyzer.

This unique partnership between Xilinx and Agilent delivers deeper trace memory, faster clock speeds, and more trigger options, all using even fewer pins on the FPGA. The advanced technology contained within the ATC2 core and FPGA Dynamic Probe is not available in other FPGA or ASIC real-time verification solutions.

For more information on the ChipScope Pro Analyzer, visit www.xilinx.com/chipscopepro or contact your local sales office for ordering information. 🌈