Silicon Explorer II
Logic Analysis System
Real-Time In-System Design Verification

Imagine an integrated desktop suite of diagnostic tools that enables 100% real-time observability into internal programmable logic nodes without affecting the timing, loading, or fanout of a design. Actel has made this kind of verification a reality with its Silicon Explorer II, a revolutionary diagnostic and verification tool kit for FPGA design verification.

Design Verification

Designers often choose field programmable gate arrays (FPGAs) because of their accelerated design advantages. But as gate counts and functionality requirements increase, the verification process lengthens and the FPGA's edge diminishes.

Existing verification techniques have a variety of drawbacks that slow the process or limit its effectiveness. For example, boundary scan techniques only provide a static snapshot of the design states. Design relayout techniques can dynamically access internal nodes, but each iteration requires design recompilation, which introduces changes in timing and fanout. Single-step internal probing procedures enable static testing of individual nodes, but the entire circuit cannot be tested in real time.

Actel's Solution

Actel has eliminated these limitations by developing a suite of tools that helps you explore an entire design in real time without requiring design relayout. Silicon Explorer II shortens the FPGA design verification process by providing a tightly integrated suite of tools and capabilities that enable rapid isolation of functional and timing problems – there's no need to relayout, recompile, or redo any part of your design to complete the verification process.

By removing the guesswork associated with trial and error methods of system verification, Silicon Explorer II saves you weeks of effort and gives you precise control over the verification process. And, with its portability, Silicon Explorer II allows designers the freedom to verify their designs without even leaving their desks.

Key Features

- Dynamic Access into Internal Nodes without Design Relayout

- User Friendly Graphical User Interface for Viewing and Analysis

- Supports 2.5V, 3.3V, and 5.0V Boards

- PC-Hosted, 18-Channel Logic Analyzer with up to 100 MHz Asynchronous Sampling Rate

- Four Levels of Triggering

- Serial Port Connection – No Plug-in Cards

Probe Setup

*Includes all Actel antifuse FPGAs prior to Axcelerator

Features

— Supports All Actel Antifuse Devices

— Connects to Parallel Port

— Portable
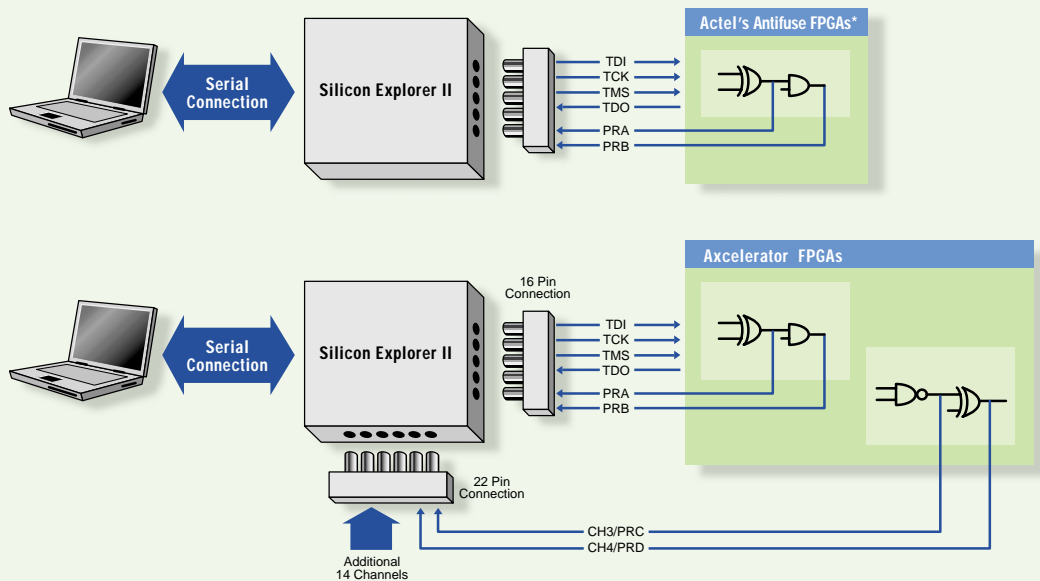
— 18 Channel Logic Analyzer

Software Features

— Graphical User Interface

— Free Software Updates

— Supports Win 95/98, Win 2000, Win NT

Kit Contents

— Silicon Explorer II or Silicon Explorer II Lite

— Silicon Explorer User's Guide

— Ribbon and Breakout Cables

— 10 Quick Pro Clips

— TCA Cable

— Power Supply

— CD Containing Silicon Explorer Software

Silicon Explorer II

Silicon Explorer II takes advantage of Actel's internal probe circuitry, a patented architectural feature built into all of Actel's antifuse devices that allows access to any internal node from selected external pins. To access the circuitry, a high-speed (up to 100 MHz) peripheral device (Silicon Explorer II or Silicon Explorer II Lite) interfaces between the Actel device, the board, and your PC. Silicon Explorer II connects via standard serial ports and features 18 probing channels.

Once your design has been placed and routed using Actel's Designer software FPGA development tools, you can connect Silicon Explorer II and launch the Explore software. The Explore software graphically displays the internal nets of your design, and by a simple point-and-click, allows you to simultaneously select and examine up to two internal nodes, except for Axcelerator where four can be selected. The software displays the logic activity in real time, essentially turning your PC into an 18-channel logic analyzer and allowing you to verify your design node-by-node. To test additional nodes, all you need to do is select them on the list displayed.

Silicon Explorer II Lite

If you have invested in a logic analysis system, why spend more money to get what you already own? Actel's Silicon Explorer II Lite offers you the ideal solution, with the convenience and time-to-market benefits of Silicon Explorer II but at a reduced cost. Silicon Explorer II Lite controls the internal probe circuitry in Actel's FPGAs, providing access to any of the internal nodes through the probe pins. By connecting your external logic analyzer or oscilloscope to the probe pins, you can observe the internal operation of your device.

For more information about **Actel's Silicon Explorer II Logic Analysis System**, call **1.888.99. ACTEL** or visit our website at **www.actel.com**

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