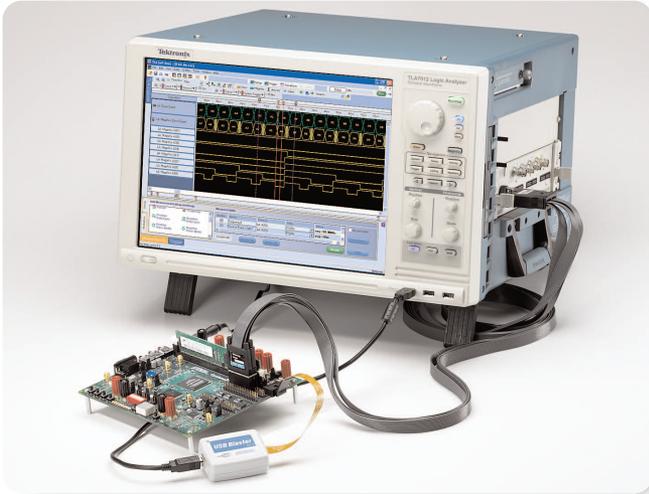


Tektronix and FS2 Answer Debug Challenges for Altera FPGAs



Real-Time Logic Debug of Altera FPGAs

The FS2 FPGAView software, when used with a Tektronix TLA Series logic analyzer, provides a complete solution for debugging your Altera FPGA and surrounding hardware. This combination enables you to gain complete visibility and allows you to:

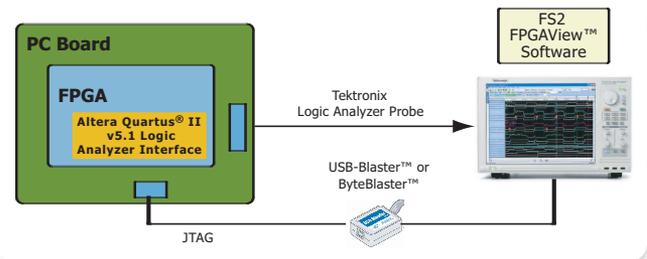
- View internal activity and external activity
- Quickly change your probe points without recompiling your design
- Monitor multiple internal signals per pin

Debug Your Altera® FPGA Design At Full Speed

Advances in design tools and electronic design automation (EDA) software allow design teams to tackle more complex designs while maintaining, or shrinking, the required design time.

With gate counts over 1 million, effective design tools, and time-to-market advantages, FPGAs are used in many of today's systems to implement much of the functionality. Advances in design tools allow designs to be done at higher levels of abstraction, synthesize complex designs quicker, and complete place and route cycles in less time. As FPGA designs grow in sophistication and complexity, similar advances need to occur in debugging FPGAs. To keep pace with the increased debug needs of FPGAs, new tools are needed to optimize real-time FPGA debug.

The First Silicon Solutions (FS2®) FPGAView™ software is a PC Windows-based program designed for use with Tektronix® TLA Series Logic Analyzers to enable real-time debugging of Altera FPGAs. Using FPGAView, design engineers can quickly and easily measure signals inside their Altera FPGA design and select different internal signals to probe without having to recompile their design. FPGAView also simplifies logic analyzer use by automatically updating channel names with the internal signal names selected.



Solutions	
Multiplexer	Altera Quartus® II v5.1
Control Software	FS2 FPGAView™
Logic Analyzer	Tektronix TLA Series Logic Analyzer, running v4.3 or later
JTAG Cable	Altera USB-Blaster™ or ByteBlaster™

FS2 FPGAView Simplifies Altera FPGA Debug

- Step 1. Configure and insert the appropriate test core into your design
- Use Altera Quartus II Logic Analyzer Interface Editor to define and insert Logic Analyzer Interface
 - Specify number of debug pins
 - Specify number of banks
 - Specify mode
 - Specify clock
 - Power-up mode
- Step 2. Configure FPGAView for your debug environment
- Specify JTAG interface
 - Specify TLA interface
- Step 3. Establish the mapping of FPGA pins to TLA logic analyzer channels
- Use FPGAView to “connect” FPGA pins to logic analyzer
 - Enables automatic channel name updating with simple drag & drop operation
 - Supports multiple LAIs / FPGAs / TLA modules
- Step 4. Make your measurement
- Use Bank pull-down list to select Bank to measure, then FPGAView sets up LAI via JTAG and programs the TLA with the proper signal names
 - Easily switch internal probe points by selecting a different Bank, thus eliminating the need to recompile your design
 - Correlate FPGA signals with other signals in your system

Supported Altera® Quartus® II FPGA Families

- Stratix® II
- Stratix
- Stratix II GX
- Stratix GX
- Cyclone™ II
- Cyclone
- MAX® II
- APEX™ 20K
- APEX II
- Excalibur™

www.tektronix.com/fpga

Contact Tektronix:

ASEAN / Australasia (65) 6356 3900
Austria +41 52 675 3777
Balkan, Israel, South Africa and other ISE Countries +41 52 675 3777
Belgium 07 81 60166
Brazil & South America 55 (11) 3741-8360
Canada 1 (800) 661-5625
Central East Europe, Ukraine and Baltics +41 52 675 3777
Central Europe & Greece +41 52 675 3777
Denmark +45 80 88 1401
Finland +41 52 675 3777
France & North Africa +33 (0) 1 69 86 81 81
Germany +49 (221) 94 77 400
Hong Kong (852) 2585-6688
India (91) 80-22275577
Italy +39 (02) 25086 1
Japan 81 (3) 6714-3010
Luxembourg +44 (0) 1344 392400
Mexico, Central America & Caribbean 52 (55) 56666-333
Middle East, Asia and North Africa +41 52 675 3777
The Netherlands 090 02 021797
Norway 800 16098
People's Republic of China 86 (10) 6235 1230
Poland +41 52 675 3777
Portugal 80 08 12370
Republic of Korea 82 (2) 528-5299
Russia & CIS +7 (495) 7484900
South Africa +27 11 254 8360
Spain (+34) 901 988 054
Sweden 020 08 80371
Switzerland +41 52 675 3777
Taiwan 886 (2) 2722-9622
United Kingdom & Eire +44 (0) 1344 392400
USA 1 (800) 426-2200

For other areas contact Tektronix, Inc. at: 1 (503) 627-7111

Last Updated February 23 2006

Our most up-to-date product information is available at: www.tektronix.com



Copyright © 2006, Tektronix. All rights reserved. Tektronix products are covered by U.S. and foreign patents, issued and pending. Information in this publication supersedes that in all previously published material. Specification and price change privileges reserved. TEKTRONIX and TEK are registered trademarks of Tektronix, Inc. All other trade names referenced are the service marks, trademarks or registered trademarks of their respective companies.

4/06 FLG/WOW

52W-19639-0

Tektronix
Enabling Innovation