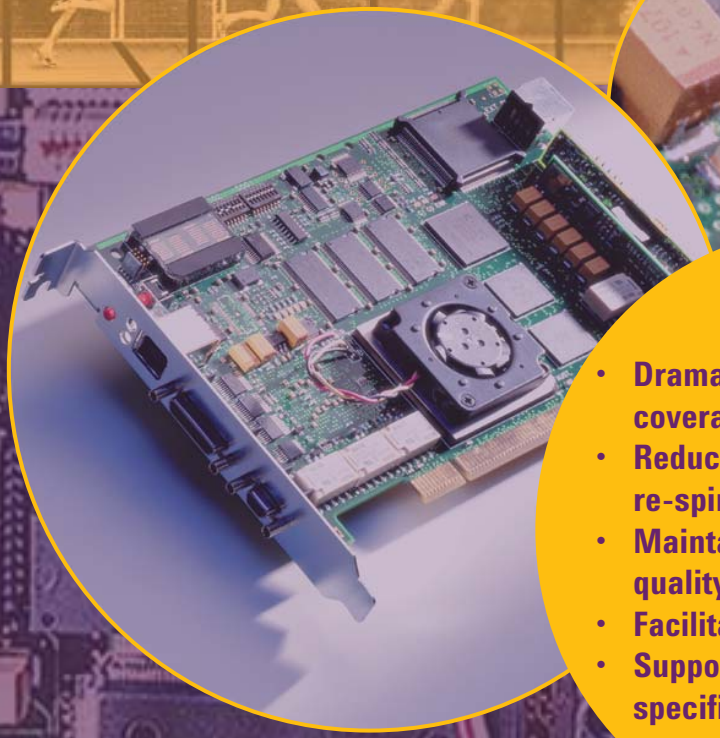
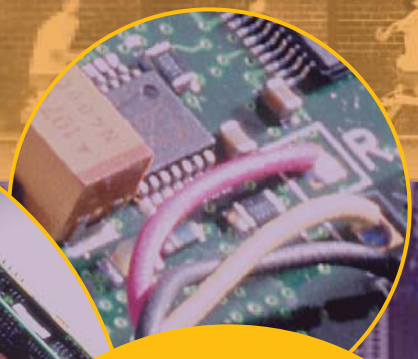
Agilent Technologies' E2930B
Exerciser and Protocol Analyzer for PCI-X 2.0 DDR

Validate Optimize Evaluate





Benefits

- Dramatically increases test coverage
- Reduces the risk of recalls and re-spins
- Maintains and enhances the quality and reliability of products
- Facilitates faster test cycles
- Supports compliance to the specification

Agilent Technologies

The Agilent exerciser and protocol analyzer for PCI-X 2.0 is a PCI-X DDR I/O protocol test card for R&D and QA engineers in the computer industry. This card is used to debug, test effectively and validate designs including chips, cards, systems and servers. The product is a short PCI-X card, which can simply be plugged into the system under test. An interactive Graphical User Interface, a customized C-Application Programming interface or a TCL interface can be used to control the card. The software can either be installed on the system under test itself to control the Exerciser and Analyzer through the PCI-X system bus, or on an external host controlling the card by USB 2.0.

Exerciser concept

The exerciser is a key tool for validation and compliance testing of intelligent I/O buses by sending and responding to specific traffic patterns. The E2930B Exerciser for PCI-X 2.0 provides a fully programmable requester and completer, enabling BIOS testing as well as the ability to stress all data paths in a system, test corner cases and test the error recovery system. The test tool is able to access and communicate with configuration, memory and I/O space of devices on the bus.

General capabilities

- Root cause analysis
- Compliance testing
- System and chipset validation
- Stress/corner case testing
- Device emulation and ability to insert errors
- Performance analysis

Protocol analyzer

The protocol analyzer is a typical bring-up and debug test tool for root cause analysis, troubleshooting and performance optimization. It comes with a built-in protocol checker that simultaneously tests for more than 60 protocol rules in real-time. The analyzer is able to display bus transfers graphically with trigger, filter and search functions. The protocol analyzer is either an embedded analyzer for the exerciser or a protocol analyzer.

Debug and bring up of PCI-X designs

With its capabilities in generating PCI-X 2.0 traffic with the Exerciser and simultaneously analyzing the generated traffic, the E2930B is perfectly suited for bring up and debug of PCI-X 2.0 systems. The analyzer displays, on several levels of complexity, the captured trace and helps the engineer to debug and understand what is happening in the system. The graphical user interface supports the user in setting up various types of transactions and programming the analyzer.

Key features

- PCI-X 1.0 133 MHz and PCI-X 2.0 DDR 266 MT/S
- Supports Mode 1 and Mode 2
- PCI-X state logic analyzer with 4 M State Trace Memory
- Exerciser for sending and responding to traffic patterns
- C (programming) API to enable the user to write his own programs and have full control over the card
- Protocol checker for over 60 rules
- System Validation Package software including compliance test examples
- Performance counters (freely programmable)
- USB 2.0 to ensure quick trace memory upload

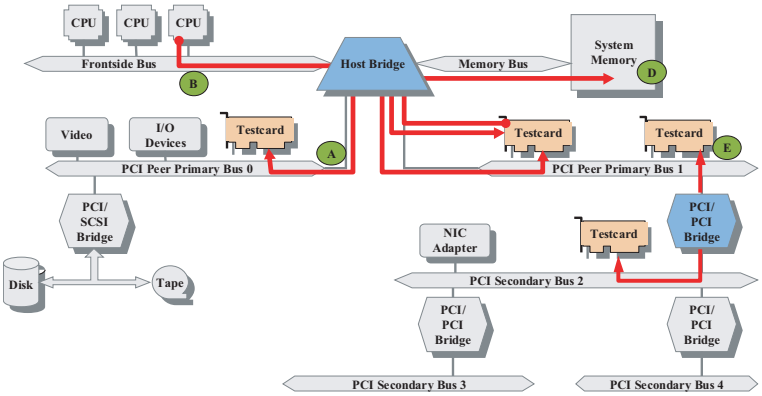
Validation of PCI-X systems and chipsets

Validation of computer systems and subsystems is becoming increasingly complex as input/output (I/O) systems and peripherals become more intelligent. Firstly, it is necessary to verify that all the different subsystems work individually. Then it must be verified that the sub-sytems cooperate when integrated into the system. In this demanding environment the required tools are, for example, the exerciser, that can generate peak-load conditions, show system behavior, stress the system, and validate that the system meets all required standards.

Compliance testing

Agilent offers with the System Validation Package software, a push button interface, which is able to execute existing examples or self-programmed test scenarios. The test examples include a series of compliance tests based on key areas of the specification.

Related Literature	Pub number
• E2930B Exerciser & Protocol Analyzer	5989-0387EN
• I/O Systems & Chip Validation in PCI and PCI-X Sysytems	5988-4795EN



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