

PCI850 - Advanced PCI-X Bus Analyzer / Exerciser

Analyzer

- Capture Bus Activity
- Event Recognition
- Complex Triggering and Filtering
- Time Stamping and Measurement
- State and Waveform Displays
- Power Zoom (533 Mhz)

Exerciser

- Memory, I/O, Config Transfers
- Generate Test Patterns
- Configuration Scanning
- Control Address / Data Width
- Read / Write to a File

Stimulus

- Fault Injection
- Control Bus Timing
- Hardware Simulation
- Pattern Generation
- Drive any Signal

Target Memory

- Windowed Bus Memory
- Split, Retry, Disconnect Response

Protocol Violation Checker

- Detects >50 Protocol Violations
- Listed in State/Waveform Display
- Used as Trigger / Filter

Timing Violation Checker

- Checks Unstable Signals
- Setup and Hold Verification
- Glitch Detection

Performance Analysis

- Bus Utilization
- Transfer Rate
- Latency
- Burst Distribution
- Statistics

Compliance Testing

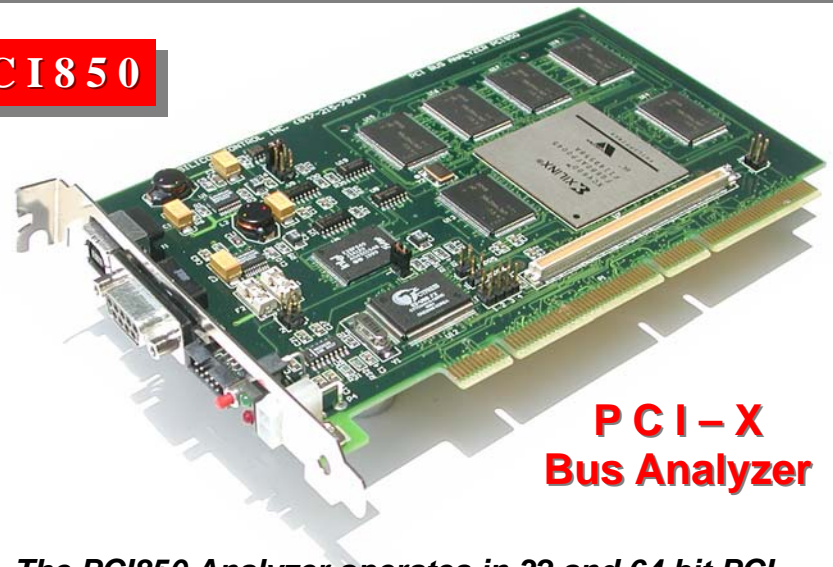
- PCISIG Checklist

Windows and API Interface

- Analyzelt Windows Software
- User programmable API

Expansion Connector

PCI850



PCI-X
Bus Analyzer

The PCI850 Analyzer operates in 32 and 64 bit PCI and PCI-X systems running at 0 to 133 Mhz. Over 100 protocol and timing violations are automatically checked and correlated with captured bus activity. System performance measurements include Bus Utilization, Transfer Rates, Latency, and Statistics.

Analyze It! Windows Software

CC	SAMPLE	COMMAND	ADDRESS32	DATA32	TIME(17:0)	DELTA	BUS DOCTOR	
AD	-3			33	40ns		FRAME assert...	0000
I	-2	I/O Wr	00000061		227ns			0000
F	-1			20	10ns			0000
C	0	I/O Rd	00000064		462ns			0000
S	1			1C	53ns			0000
S	2	I/O Wr	00000064		120ns			0000
S	3			AE	94ns			0000
S	4	Int Ack	00000000		2.751us		FRAME assert...	0000
S	5			08	11ns			0000
S	6	I/O Rd	00000078		643ns			0000
S	7			80	53ns			0000
S	8	I/O Wr	00000020		351ns	60.25us		0000
S	9			20	10ns			0000
S	10	Int Ack	00000000		59.17us			0000
S	11			08	51ns			0000
S	12	I/O Rd	00000064		981ns			0000
S	13			1D	53ns			0000

Silicon Control introduces the ultimate analyzer and exerciser for PCI and PCI-X systems. This 3rd generation PCI analyzer combines high performance hardware with a sophisticated and intuitive software interface. The result is a powerful diagnostic tool for bus analysis all on a single plug-in card.



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THE LEADERS IN BUS ANALYSIS

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PCI850 SPECIFICATIONS

General Specifications

PCI Compliance:	PCI 2.2 , PCI-X 1.0 Compliant
Bus Size:	64 or 32 bit
Bus Signal Levels:	5V or 3.3V

Trace Specifications

Trace Memory:	
PCI850-1	128K by 144 bits
PCI850-2	256K by 144 bits
PCI850-3	512K by 144 bits
PCI850-4	1M by 144 bits
PCI850-5	2M by 144 bits
Sampling Rate:	0 to 133 Mhz
High speed power zoom	533 Mhz
Sampling Modes:	System Clock System Clock w/ Address/Data System Clock w/ Transfers On board precision Oscillator (7.5ns to 15us)
Sampled Signals:	AD[63:0], C/BE[7:0], FRAME, DEVSEL, TRDY, IRDY, PAR, REQ, GNT, RST, LOCK, CLK, INTA, INTB, INTC, INTD, PAR64, PERR, SERR, REQ64, ACK64, TDO, TDI, TCK, TMS, TRST, SDONE, SBO, EXT[7:0]
External Inputs:	8 Front Panel Trace/Trigger
External Outputs:	1 Programmable Trigger Output
Triggers:	8 Trigger Conditions each Specifying 100 PCI Signals, 8 External Triggers and Anomaly
Trigger Types:	Single Condition Logical Combination 16 Level Sequencer
Trigger Positions:	0%, 25%, 50%, 75%, 100%
Occurrence Counters:	16 hardware counters 20 bits
Event Counters:	16 hardware counters 20 bits
Time Tag:	7.5 ns to 60 sec.
Exerciser Specifications	
Initiator Bandwidth:	1056 MB/s rate
Initiator Bus Width:	64 or 32 bit
Initiator Transfers:	Memory, I/O, Configuration

Target Specifications

Target Memory:	
PCI850-1	1 MB
PCI850-2	2 MB
PCI850-3	4 MB
PCI850-4	8 MB
PCI850-5	16 MB
Target Bandwidth:	1056 MB/s burst rate
Target Bus Width:	64 or 32 bit
Front Panel Interfaces	
RS232 Port:	DB9 connector, 110 to 115K Baud (cable included)
USB Port:	Series B connector, 12 MB/s (cable included)
Indicators:	GO LED, User LED
Pushbutton:	Reset Analyzer or System
External Power:	2 Conductor front panel (cable included)
Trigger:	10 pin socket (8 in, 1 out, 1 ground) (cable included)
Fuses:	Main power and External power

Power Requirements

Operating—5V at 3 Amps max
Standby—5V at 1 Amp max

Dimensions

PCI850—PCI Short Card

Ordering Information

PCI Analyzers

PCI850-1	128K Trace Buffer 1 MB Target Memory
PCI850-2	256K Trace Buffer 2 MB Target Memory
PCI850-3	512K Trace Buffer 4 MB Target Memory
PCI850-4	1M Trace Buffer 8 MB Target Memory
PCI850-5	2M Trace Buffer 16 MB Target Memory