

# PCF850 - Advanced PC/104+ 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

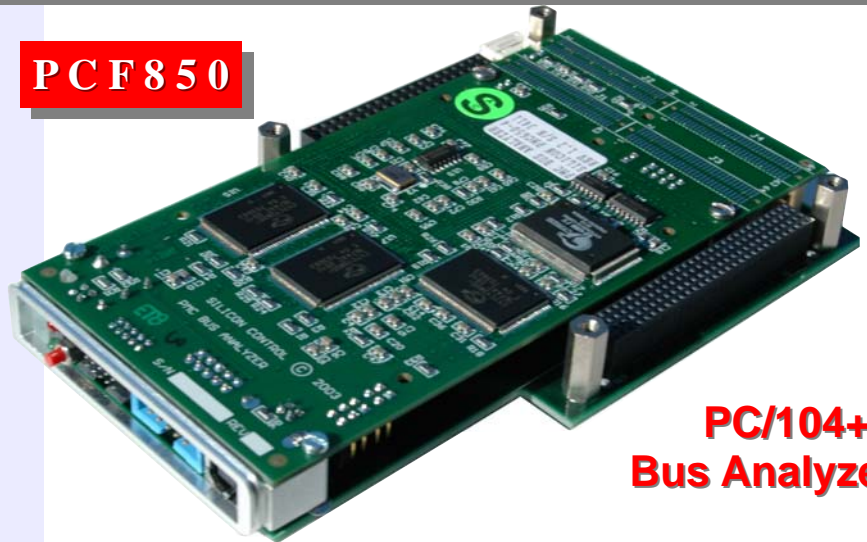
- PCISIG Checklist

## Windows and API Interface

- Analyzelt Windows Software
- User programmable API

## Expansion Connector

PCF850



PC/104+  
Bus Analyzer

The PCF850 analyzes and exercises the 32 bit PCI bus in PC/104+ 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

SAMPLE	COMMAND	ADDRESS32	DATA32	TIME(17:0)	DELTA	BUS DOCTOR
-3	I/O Wr	00000061	33	40ns		FRAME assert...
-2			227ns			
-1			20	10ns		
0	I/O Rd	00000064		462ns		
1			1C	53ns		
2	I/O Wr	00000064		120ns		
3			AE	94ns		
4	Int Ack	00000000		2.751us		FRAME not de...
5			08	11ns		
6	I/O Rd	00000078		643ns		
7			80	53ns		
8	I/O Wr	00000020		351ns	60.25us	
9			20	10ns		
10	Int Ack	00000000		59.17us		
11			08	51ns		
12	I/O Rd	00000064		981ns		
13			1D	53ns		

Silicon Control introduces the ultimate analyzer and exerciser for PC/104+ systems. This 3rd generation PC/104+ 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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# PCF 850 SPECIFICATIONS

## General Specifications

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

## Trace Specifications

Trace Memory:	
PCF850-1	128K by 144 bits
PCF850-2	256K by 144 bits
PCF850-3	512K by 144 bits
PCF850-4	1M by 144 bits
PCF850-5	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[31:0], 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.
<b>Exerciser Specifications</b>	
Initiator Bandwidth:	1056 MB/s rate
Initiator Bus Width:	64 or 32 bit
Initiator Transfers:	Memory, I/O, Configuration

## Target Specifications

Target Memory:	
PCF850-1	1 MB
PCF850-2	2 MB
PCF850-3	4 MB
PCF850-4	8 MB
PCF850-5	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

(Exceeds standard depth by 2.32 in, to allow a PMC850 product to be adapted)	Single PC/104+ Card Height: 23.3 mm (0.92 in) Width: 96.0 mm (3.78 in) Depth: 149.0 mm (5.87 in)
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## Ordering Information\*

PC/104+ Bus Analyzer/Exerciser	
PCF850-1	128K Trace Buffer 1 MB Target Memory
PCF850-2	256K Trace Buffer 2 MB Target Memory
PCF850-3	512K Trace Buffer 4 MB Target Memory
PCF850-4	1M Trace Buffer 8 MB Target Memory
PCF850-5	2M Trace Buffer 16 MB Target Memory

\* Includes AnalyzeIt and API software, USB, RS232, trigger and external power cables, documentation, carrying case and 2 year warranty