

# VME650 - VME Bus Analyzer / Exerciser

## VME 650

### **VME64 Analyzer/Exerciser**

- Single 6U VME board
- Supports SCT, BLT, MBLT protocols

### **Analyze Bus Activity**

- State Analysis up to 100 Mhz
- Timing Analysis up to 100 Mhz
- Complex Triggering and Filtering
- Time Stamping
- Performance Analysis of Bus Utilization, Transfer Rates, Statistics

### **Exercise Bus Activity**

- Master Transfers
- Stimulus Generation
- Fault Injection and Timing Modification
- CR/CSR Scan and Decode
- Backplane Short Test

### **Protocol and Timing Violation Checker**

- Detects over 100 timing and protocol violations
- Displayed and Used as Trigger in State/Timing Analysis

### **Communication**

- USB
- RS232

### **Other Features**

- External Power Connection
- External Trigger Inputs and Output
- Extensive Self Test
- Front Panel Reset and LED Indicators

### **Software User Interface Packages**

- Analyzelt! PC GUI Software
- API Library provides User Program Control



## VME Bus Analyzer

**The VME650 Analyzer / Exerciser supports the latest VME bus specifications and protocols. From standard VME transfers to MBLT protocol.**

**State and timing analysis feature large high speed trace buffers and sophisticated triggering. Transaction and waveform displays provide a clear view of captured bus activity.**

**Measurements of system performance include Bus Utilization, Transfer Rates and Statistics. As data is acquired the Min, Max and Average values are updated and displayed in graphical form.**

**Exerciser functions include reading, writing, testing and comparing memory. Stimulus generation provides the ability to simulate hardware, inject faults and modify timing as well as drive any bus signal directly. A built-in backplane test checks for shorts and the ability to drive every signal.**

**Anomaly detection of protocol and timing violations automatically screen for violations to the bus specification. Anomalies are included in the state display and trigger specifications.**

**Our Analyzelt software package provides an easy to use and intuitive GUI interface that operates under Windows 9x, ME, NT, XP and 2000. For custom application our API software enables users to control the analyzer directly through C library calls. For non-Windows users, a built in terminal interface is available.**

Silicon Control introduces a low cost analyzer and exerciser for VME systems. This 4th generation VME 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.

If you need to debug, integrate or test any VME system or component, the VME650 quickly and accurately pinpoints problems, identifies performance issues and tests for compliance. For more information or training contact our outstanding technical support, application and sales engineers.



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**THE LEADERS IN BUS ANALYSIS**

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# VME 650 SPECIFICATIONS

## *State/Waveform/Performance Analysis*

- Trace Buffer Sizes
  - 128K, 256K, 512K, 1M, 2M samples
  - 144 bits wide
- Trace Sampling Speeds
  - 100 Mhz max synchronous
  - 100 Mhz max asynchronous
- Protocols Sampled
  - SCT, BLT, MBLT
- Signals Sampled
  - P1/P2 (112 signals)
    - A[31:0], D[31:0], DS[1:0]\*, AM[5:0], AS\*, WRITE\*, LWORD\*
    - IRQ[7:1]\*, IACK\*, IACKI/O\*, BR[3:0]\*, BG[3:0]\*
    - BBSY\*, BCLR\*, BERR\*, DTACK\*, RETRY\*, RESP\*
    - SYSRESET\*, SYSFAIL\*, ACFAIL\*, SYSCLK
    - GA[4:0]\*, GAP\*, MPR, MCLK, MSD, MMD, MCTL
  - P2 user defined (110 signals)
    - Rows A, C, D and Z
  - P0 user defined (95 signals)
    - Rows A, B, C, D, E
- Other Information Sampled
  - Time Tag (range 2.5 ns to 60 sec)
  - Trigger Level
  - External Front Panel Inputs (x8)
- Trigger Conditions
  - 8 bus events
  - Address and Data Ranges
  - 8 External Front Panel Inputs
- Trigger Types
  - Single Event
  - Logical Event Combination (AND, OR, XOR, NOT)
  - 8 Level Sequencer
- Trigger Occurrence Counting
  - 8 – 16 bit hardware counters
- Trigger Positions
  - 0%, 25%, 50%, 75%, 100%
- Filter Conditions
  - 8 bus events
  - Address and Data Ranges
  - 8 External Front Panel Inputs
- Performance Analysis Measurements
  - Bus Utilization, Transfer Rates, Statistics
- Performance Event Counters
  - 8 - 20 bit hardware counters

## *Anomaly Detection*

- Detects Unstable Signals
- Checks Out of Sequence Signals
- Saved in Trace Buffer
- Specified in Event Triggers

## *Exerciser Specifications*

- Master
  - Protocols Supported
    - SCT, BLT, MBLT
  - Addressing Modes
    - A16, A24, A32, A40, A64
  - Data Widths
    - 8, 16, 32, 64 bit data
  - Master Commands
    - Read, Write, Test, Compare
  - User Parameters
    - Address Modifiers, BR level, protocol
- Stimulus
  - Pattern Generation on P1/P2 and P0
  - 15 Stimulus Conditions
  - 15 Level Stimulus Sequencer
- CR/CSR Scan and Decode
  - Scans CR/CSR space for devices
  - Identifies and decodes data
- Backplane Short Test
  - Checks for ability to drive signals
  - Checks for shorts between signals

## *Front Panel Interfaces*

- RS232 Port: DB9 (110 to 115K Baud)
- USB Port: Series B connector (12 MB/s)
- Indicators: GO and User LED
- Pushbutton: Reset Analyzer, System
- External Power: 2 Conductor front panel
- Trigger: 10 pin socket, 8 in, 1 out, 1 ground
- Fuses: Main and External power

## *Environmental*

- Operating Temperature 0 to 55 deg C
- Storage Temperature -40 to 85 deg C
- Humidity Up to 95% Non-Condensing

## *Power Requirements*

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

## *Dimensions*

- VME 6U Eurocard

## *Ordering Information*

### *VME Analyzers*

<b>VME650-1</b>	128K Trace Buffer
<b>VME650-2</b>	256K Trace Buffer
<b>VME650-3</b>	512K Trace Buffer
<b>VME650-4</b>	1M Trace Buffer
<b>VME650-5</b>	2M Trace Buffer

### *Included with every VME650:*

VME650 Analyzer, AnalyzeIt PC software, API software, USB driver software, terminal interface, USB cable, RS232 cable, trigger cable, documentation, quick start guide and carrying case.