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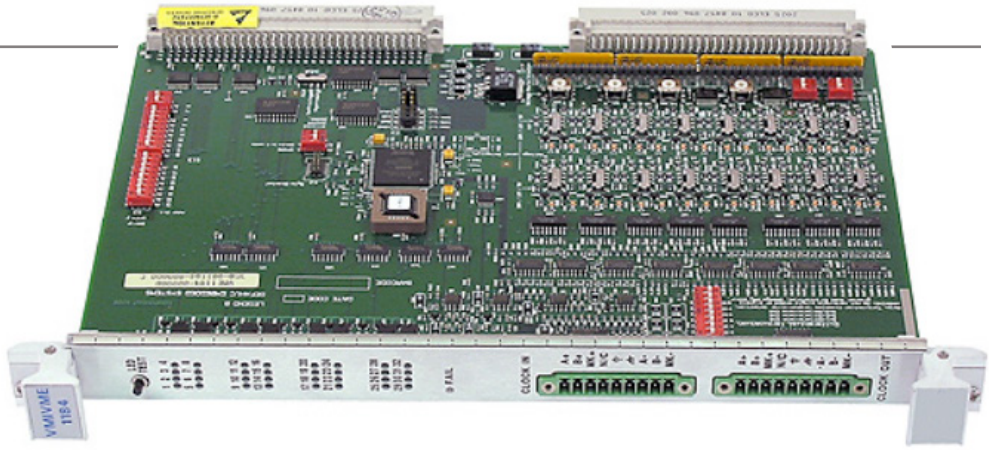
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VMIVME-1184* Specifications

32-bit Optically Isolated Change-of-State (COS) Input Board with Sequence-of-Events (SOE)

Features:

- 32 channels of optically isolated digital Change-of-State (COS) Inputs connected through the VME P2, rows A and C
- Input voltage range is field configurable on a channel-by-channel basis (5V, 12V or 24-28V)
- Front panel LED status indicator for each input
- COS detection is programmable on an individual channel basis
- Contact debounce is software selectable
- COS data is captured in 512 states deep FIFO
- Programmable interrupt vector
- Sequence-of-Event (SOE) monitoring
- Front panel inputs for configurable counter/quardrature input with daisy chaining capability
- Available with either a standard VME front panel or the IEEE 1101.10 front panel (see ordering options)

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Ordering Options							
August 12, 2010 800-001184-000 B		A	B	C	D	E	F
VMIVME-1184	–	0	0	0	0	0	

A = 0 (Option reserved for future use)
B = 0 (Option reserved for future use)
C = 0 (Option reserved for future use)
D = 0 (Option reserved for future use)
E = 0 (Option reserved for future use)
F = Special Sales Order
0 = VME Standard
1 = 1101.10 Front Panel

Connector Data
Connector Phoenix Contact 1847194 Header Phoenix Contact 183868

For Ordering Information, Call:
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Email: support@abaco.com
Web Address: www.abaco.com
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Functional Characteristics

Introduction: The VMIVME-1184* is an optically isolated 32-channel input board with Change-of-State (COS) interrupt capabilities. The interrupt control logic can be programmed to issue an interrupt upon specific state changes. The user selects the state change to use by programming the Control and Status Register (CSR) for the desired activity. The VMIVME-1184 board will store up to 512 state changes when COS logic is enabled, preventing the board from losing a state change during interrupt servicing.

Sequence of event data may be correlated to an internal counter register. This counter may be clocked from an external pulse input through the front panel connection. Alternatively, this counter may be configured for quadrature input signal from two pulse inputs. The pulse input may be connected to additional VMIVME-1184s in daisy chain fashion such that the counters are synchronized to the same count rate and value. The board supports byte, word and longword data transfers.

Input Organization: The input data is arranged in the FPGA as four input ports, 8 bits wide. The data ports are accessible on 8-, 16-, or 32-bit boundaries.

VMEbus Compliance: Complies with the VMEbus Specification, ANSI/IEEE STD 1014-1987 IEC 821 and 297.

Board Type: Slave

Board Size: 6U (166 x 233.4mm)

Addressing Scheme: A bank of switches is used to select the base address of the board. This address may be supervisory or non-privileged. For detailed information about these registers and their relationship to the base address of the board, see “Programming” in the VMIVME-1184 Product Manual.

Addressing:

Mode	Responding Modifiers
A24	0x39, 0x3D
A16	0x29, 0x2D

Data Transfers Available: D32, D16, D08 (EO)

COS Data Transfers: D32

Bus Interrupter:
Interrupt Levels: I (1) to I (7)
Interrupt Release: ROAK, ROFE*
Interrupt Vector: D08 (O)

NOTE: *Release-On-FIFO-Empty

Input Characteristics

Inputs: The VMIVME-1184 inputs are optically isolated and can be configured for Voltage Sensing or Contact Sensing. For applications requiring sensing contacts, external or onboard power source can be used to provide excitation current for the optical device. The front panel inputs for the counter are not optically isolated and can be provided as either differential or single ended signals.

Each bank of eight channels of the VMIVME-1184 can be field configured for either Voltage Sensing or Contact Sensing inputs. The input configurations for each of these is shown in Figure 2 and Figure 3. Contact Sensing is enabled by installing pull-up SIP resistor packs. This allows a single board to support Contact or Voltage Sensing on a bank of eight channels basis, using either of two external voltages or the VMEbus +5 or +12 voltages. The Voltage Sensing mode does not utilize onboard pull-ups.

There are two wetting voltage input pins that can be applied on byte boundaries. The inputs are provided on the P2 connector. Through the use of switches, channel 31 or 32 can be sacrificed and the HIGH inputs used to supply a wetting voltage to any bank of channels. The LOW side of these two channels can be switched to provide logic ground from the VMIVME-1184 back to the switch.

Field configurable switches are used to select the input voltage range for each channel. This allows each channel to be individually configured for input voltage threshold. See Table 1 for the Electrical Input Specification.

Isolation: VMEbus P2 pin-to-pin = 70V max

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Input Connector Type: P2 User Inputs (rows A and C).

Built-in-Test (BIT): BIT is provided in the board's Control Register. A front panel Fail LED is illuminated at power up and can be extinguished under program control upon successful completion of diagnostics.

Type: VMEbus slave/interrupter

Levels: Any of the seven available interrupt levels

Table 1. Electrical Input Specifications

Input Voltage	Threshold Low (V)	Threshold High (V)	Contact Sensing*	Voltage Sensing (mA)
			Current (mA) ±15%	Source Current @V Input ±15%
5VDC Max 7VDC	1.7	3.4	20	1.0
12VDC Max 15VDC	3.3	8.2	45	.9
24VDC Max 34VDC	6.0	17	90	.8
28VDC Max 34VDC	6.0	17	104	.9

Note: Maximum input voltages should not be exceeded.
* Purely dependent upon the value of SIP resistor placed in the socket. Factory provided and installed SIP resistor is 270 ohms.

Interrupt Event: The COS FIFO is assigned an interrupt level and an interrupt vector. Any Change-of-State causes an interrupt to be generated at the assigned level.

Interrupt Enable: An interrupt enable bit is provided for each channel.

COS Selection: Two control bits per input channel are provided in the CSR to control the type of Change-of-State interrupts desired. These types are:

(1) no interrupts (input data only), (2) falling edge only, (3) rising edge only, and (4) any transition.

COS Select State

SEL B	SEL A	COS Mode
0	0	No Interrupts
0	1	Rising Edge Only
1	0	Falling Edge Only
1	1	Any Transition

COS Data and SOE: The COS data is stored in a FIFO 512 bytes deep. This data is available at the addresses listed in the "Programming" section of the VMIVME-1184 Product Manual. Sequence-of-Events stores the state of a channel before and after each event for comparison.

An external clock signal applied to the front panel input may be used to assign a sequence number to events. This signal may be used to synchronize multiple VMIVME-1184 boards for applications requiring correlation of more than 32 signals.

Physical/Environmental Specifications

Dimensions: 6U dual slot Eurocard form factor
Height 9.2 in. (233.4mm)
Depth 6.3 in. (160mm)

Temperature:
Operating: -5 to +70° C
Storage: -20 to +85° C

Humidity: 20% to 80% relative, noncondensing

Cooling: Forced air convection of 200 LFM or more

Power Requirements: +5VDC (±5 percent), 1.0A (typical)

External Voltage and Current requirements are determined by the value of the user-installed pull-up SIP and the number of active banks and channels using that reference (refer to Figures 2 and 3).

MTBF: Contact factory.

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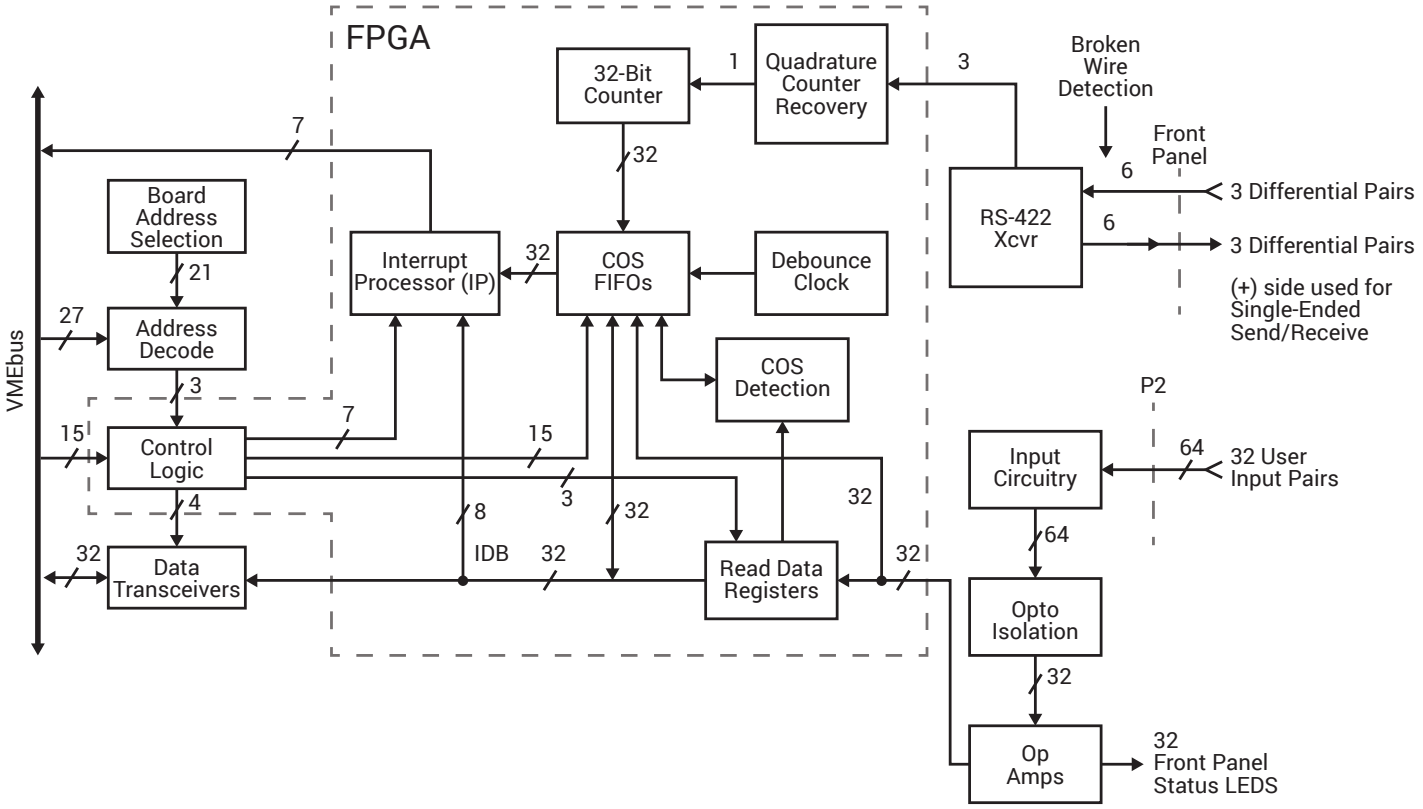
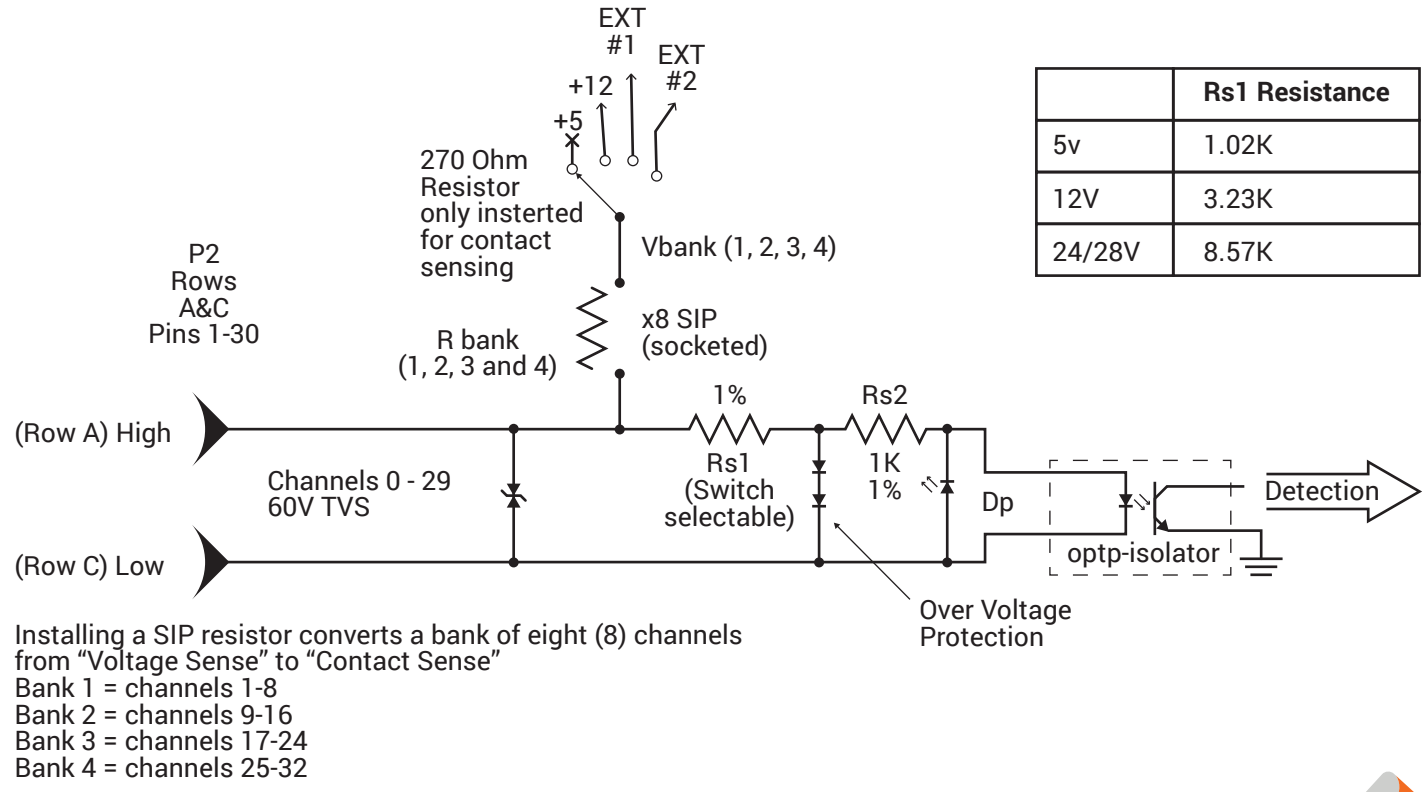


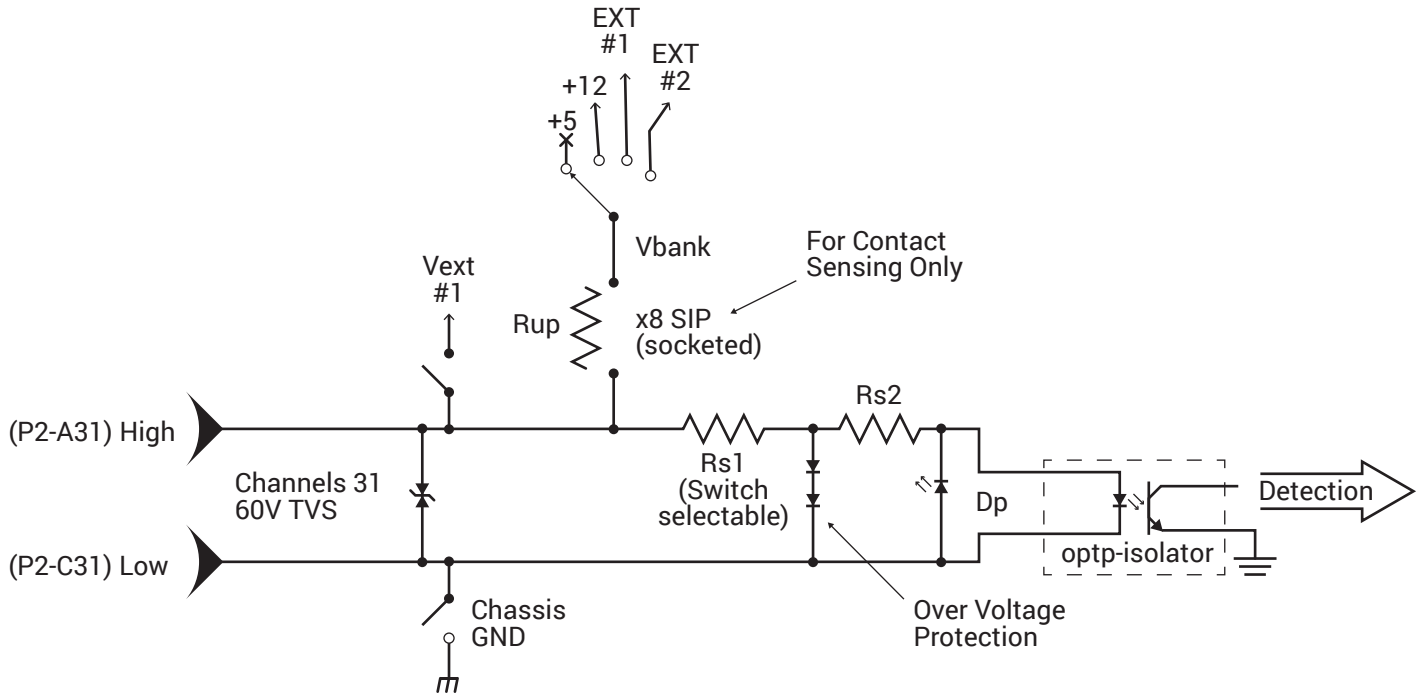
Figure 1. VMIVME-1184 Functional Block Diagram



	Rs1 Resistance
5v	1.02K
12V	3.23K
24/28V	8.57K

Figure 2. User Input Connection Circuit (Channels 0 through 29)

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NOTE: Channel 32 uses Vext #2

Figure 3. User Input Connection Circuit (Channel 31)

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