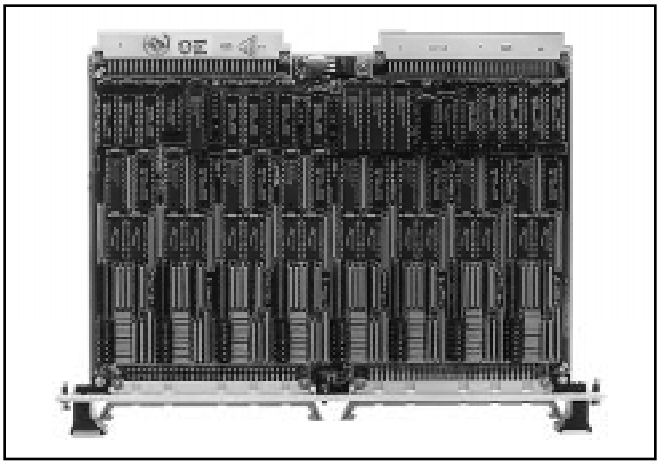
VMIVME-1111
64-bit High-Voltage Digital Input Board with Built-in-Test

- 64 bits of differential or high-voltage digital inputs
- Each group of 32 inputs are jumper-selectable to monitor: contact closure, voltage source, current sinking, or differential signals
- Open circuit provides logic *zero* or (jumper-selectable) logic *one*
- Input filter option
- On-board Built-in-Test logic for fault detection and isolation
- Front panel with fail LED
- User-selectable input voltage thresholds (1.25 to 66 V)
- RS-422/RS-485-compatible differential line receivers provide ± 7 V noise immunity
- 8-, 16-, or 32-bit data transfers
- Double Eurocard form factor
- High reliability DIN-type I/O connectors
- Compatible with VMIC's family of Intelligent I/O Controllers (901x and 906x series)
- Powerup replacement option
- Software compatible with the VMIVME-1110
- Optical isolation is available with companion suppression panel; for example, VMIVME-3451, which complies with ANSI/IEEE STD C37.90.1-1982 surge protection requirements



FUNCTIONAL CHARACTERISTICS

Compatibility: VMEbus specification compatible. Double height form factor.

Input Connector Type: Dual 64-pin connectors - DIN 41612.

I/O Organization: Eight input ports; eight bits wide. Addressable to any address within short supervisory and/or short nonprivileged I/O map. Control and Status Register (CSR) address is independently selectable.

Addressing Scheme: Eight ports individually addressable on 8-, 16-, or 32-bit boundaries. One CSR addressable on an 8-bit boundary. Thirteen jumpers provide unlimited short data I/O address map selection.

Differential Signal Input Characteristics: Common-Mode Input Voltage Range: -30 to +66 V. Input sensitivity of ±100 mV over common-mode range of -7 to +12 V. High input impedance (33 kΩ).

Single-Ended Signal Input Characteristics: High input impedance (33 kΩ). Threshold accuracy of 1 percent over entire 66 V range (typical). Refer to Figure 3 for typical single-ended signal conditioning electronics.

Signal Conditioning Input Filter Terminator Option: The board may be ordered with an input signal filter circuit. For differential inputs, this circuit consists of a series resistor and capacitor connected across the signal input (see Figure 2). For single-ended inputs, this circuit provides an input debounce filter whose time constant is user selected (see the Ordering Options).

Built-in-Test: This board is designed with internal self-test logic that exercises all active components. Special output registers are provided to generate a 16-bit data word such that worst-case bit patterns may be used as a *health test* during real-time or off-line operation. A special test mode bit that enables the output test registers to drive the differential receivers is provided in the CSR. A front panel Fail LED is illuminated at powerup and can be extinguished under program control upon successful completion of user-defined diagnostics.

Ordering Options

June 7, 1999 800-001111-000 F		A	B	C	–	D	E	F
VMIVME-1111	–	0		0	–			

A = 0 (Option reserved for future use)

B = Input Filter/Terminator
- 0 = With Input Filter/Terminator*
- 1 = Without Input Filter/Terminator
- 2 = 2 µs Filter
- 3 = 10 µs Filter
- 4 = 5 ms Filter
- 5 = 1 ms Filter

C = 0 (Option reserved for future use)

Note

*The input filter/terminator circuit can be jumper selected to provide a series RC terminator (as shown in Figure 2) or as an input filter (with a time period constant of 0.14 ms). This product can be manufactured with filter options as shown, contact the factory for other time constants. Use this option for RS-422/RS-485-compatible receivers.

Connector Data

Compatible Cable Connector	Panduit No. 120-964-435
Strain Relief	Panduit No. 100-000-072
PC Board Header Connector	Panduit No. 120-964-033A

Note

Panduit is also known as ITW/Pancon.

For Ordering Information, Call:
1-800-322-3616 or 1-256-880-0444 • FAX (256) 882-0859
E-mail: info@vmic.com Web Address: www.vmic.com

PHYSICAL/ENVIRONMENTAL

Temperature Range: 0 to 55 °C, operating, -20 to 85 °C, storage

Relative Humidity: 20 to 80 percent, noncondensing

Cooling: Forced-air convection

Power Requirements: +5 V at 1.4 A typical, 2.0 A maximum

MTBF: 186,600 hours (217F)

RELATED PRODUCTS AND APPLICATIONS

For channel-to-channel optical isolation and surge suppression in compliance with ANSI/IEEE STD C37.90.1-1982 (IEEE-472), refer to the VMIVME-3451 specification.

TRADEMARKS

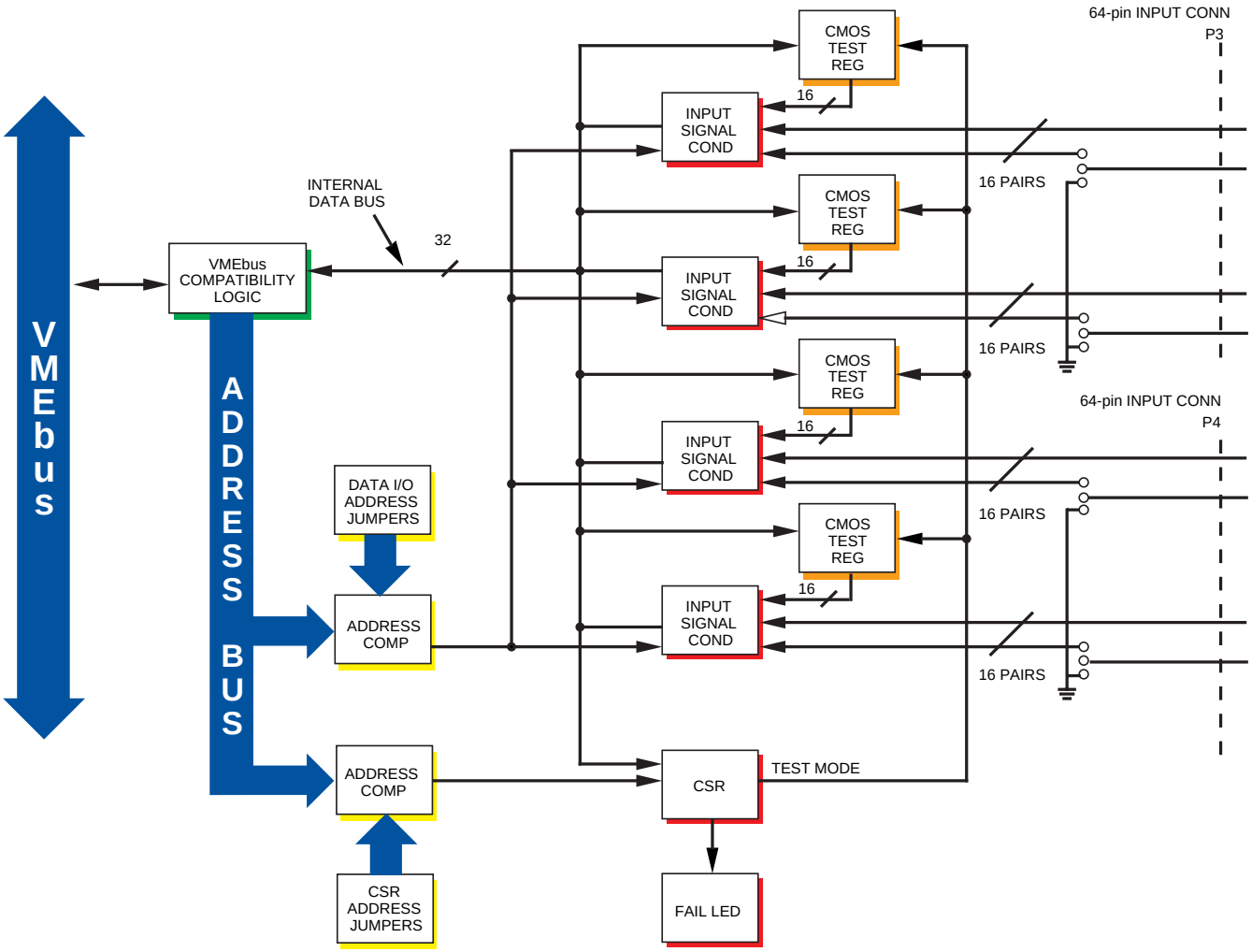
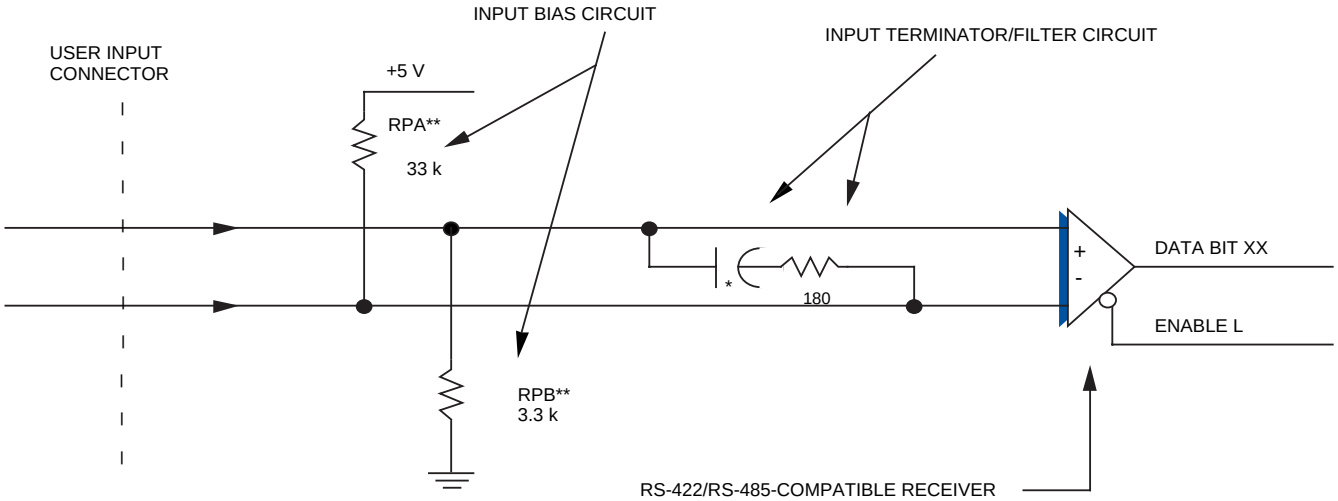
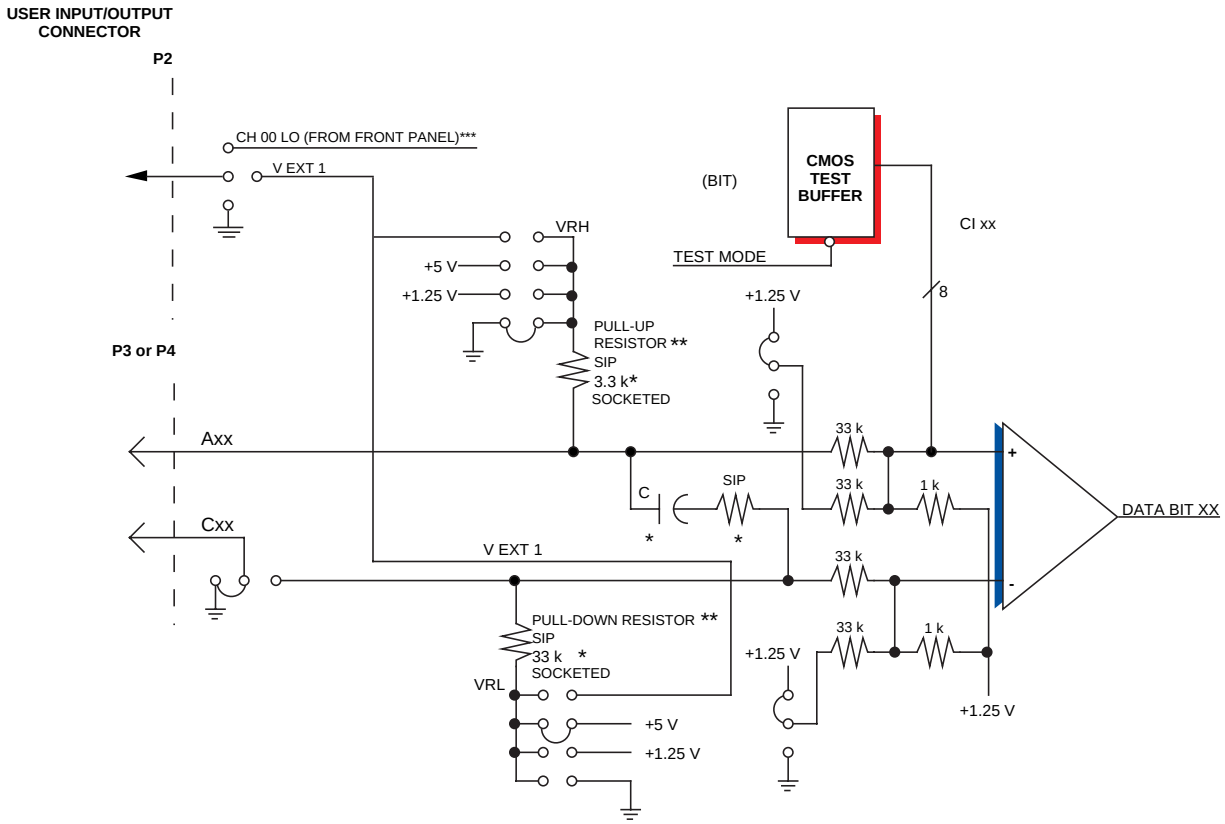


Figure 1. Block Diagram of the VMIVME-1111



*Manufacturing option.
**RPA and RPB are socketed and may be swapped by the user to build other input configurations.

Figure 2. Differential Discrete Input Termination



*Manufacturing options.
**These resistors are socketed and interchangeable.
***Each group of channels (32 channels per group) has a separate jumper field for external voltage signals.

Figure 3. Typical Input Signal Conditioning

Table 1. Threshold Voltages for R = 3.3 kΩ Vt = [(V - 1.25) (.91)] + 1.25

V	Vt
1.25 V	1.25 V
5 V	4.7 V
12 V	11 V
24 V	22 V
28 V	25.6 V
48 V	43.8 V
66 V	60.2 V

Table 2. Threshold Voltages for R = 33 kΩ Vt = [(V - 1.25) (.51)] + 1.25

V	Vt
1.25 V	1.25 V
5 V	3.2 V
12 V	6.7 V
24 V	12.9 V
28 V	14.8 V
48 V	25.1 V
66 V	34.3 V