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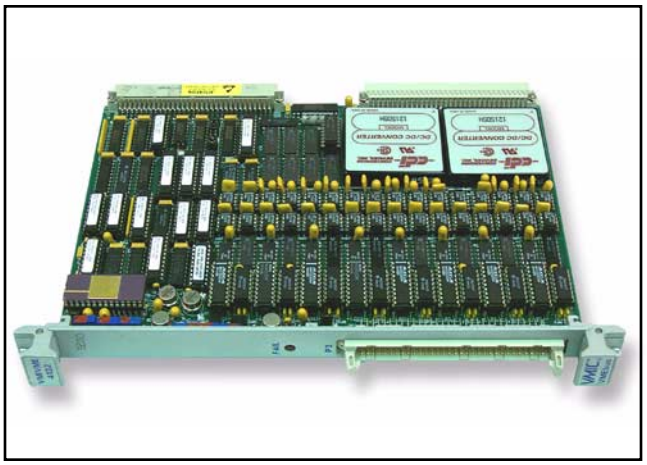
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Find the *Abaco Systems / VMIC VMIVME-4132-011 / VME-4132-011* at our website: *Click HERE*

VMIVME-4132
32-Channel Analog Output Board with Built-in-Test

- 32 analog output channels
  - 12-bit D/A converter
  - One S&H for output
  - Output short circuit and transient protected
  - Unipolar (0 to 10 V, 0 to +5 V) or bipolar (±2.5, ±5, ±10 V)
  - Program-selectable scan rates provide improved response for complex output functions
  - 10 mA outputs
  - Program-controlled online and offline operating modes
- Built-in-Test on-board
  - Tests 100 percent of active components
  - Effective in both online and offline modes
  - On-board self-test multiplexer and A/D converter
- Semiconductor output switches do not compromise accuracy
- 0.1 Ω output impedance
- On-board ±15 V DC-to-DC conversion
- Front panel activity LED



INTRODUCTION — The VMIVME-4132 analog output board provides 32 high-quality analog output channels, which can be programmed with on-board jumpers to operate in a variety of voltage ranges. All outputs have 12-bit resolution, and can source or sink 10 mA at ±10 V. For offline testing, the analog outputs can be disconnected from the external circuits.

FUNCTIONAL CHARACTERISTICS

VMEbus Compliance: The analog output board is a standard double height printed circuit board which is compatible with the VMEbus specification (Rev. C.1). VMEbus A16:D16

Board Address: The physical address for the board may be selected by on-board jumpers. VMEbus address lines A07 through A15 are decoded for board selection.

VMEbus Access: Address modifier bits are jumper-selected and decoded to support both nonprivileged short I/O, supervisory short I/O, or both. The board is factory-configured for supervisory short I/O.

Output Data Transfer: Data for each analog output channel is written directly into an on-board register location dedicated to a specific channel. The data is then periodically retrieved from the register, and converted to an analog voltage which is transferred to one of 32 output sample-and-hold buffers.

A/D Data Format (Built-in-Test Data): Analog inputs are first digitized, then the 12-bit digital values (D11 to D00) are read at a single memory word location. In two's complement mode, the upper four bits (D15, D14, D13, and D12) are read as the sign extension of the 12-bit digital value, otherwise they are read as logical *zeros*.

Built-in-Testing: Built-in-Test logic provides the user with the capability to test all of the active components on the board, including the output switches. This test scheme utilizes an on-board analog-to-digital converter (ADC) and multiplexers, as shown in Figure 1.

Memory Testing: This product is designed with dual-port on-board registers that may be tested by executing a user-defined memory test program for additional performance verification.

System Reset: Application of the system reset signal via the VMEbus initializes the board into a state with all analog outputs disconnected from the output.

Ordering Options

October 12, 2001 800-004132-000 G	A	B	C	–	D	E	F
VMIVME-4132 –	0	1		–			

AB = 01 (Options reserved for future use)
C = Output Connector Type
0 = Discrete Wire
1 = IDC (Mass Terminated)

IDC Output Connector Data

Mating Cable Connector	Panduit No. 120-964-435
Strain Relief	Panduit No. 100-000-072
PC Board I/O Connector	Panduit No. 120-964-033A

Note

Panduit is also known as ITW/Pancon.

Discrete Wire Output Connector

Mating Connector	AMP No. 925486-1
Connector Housing	Harting No. 09 03 096 0501
Female Crimp Contacts	AMP No. 530151-6*
Board I/O Connector	Panduit No. 100-964-033

* An AMP crimp tool part number is 90301-2.

For Ordering Information, Call:
1-800-322-3616 or 1-256-880-0444 • FAX (256) 882-0859
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Front Panel Fail LED: If an error condition occurs during diagnostics, a software-controlled LED can be used to visually indicate a failure. The LED is illuminated by system reset at power up and is extinguished under software control.

(Typical at +25 °C and rated power supplies unless otherwise stated.)

ANALOG OUTPUTS

Number of Output Channels:
Thirty-Two: One S&H per channel

Full-Scale Analog Output (Jumper-Selectable):
Unipolar: 0 to +10 V, 0 to +5 V
Bipolar: ±2.5 V, ±5.0 V, ±10.0 V

Analog Output Code: The 12-bit digital-to-analog converter (DAC) accepts digital codes in straight binary, offset binary, or two's complement

Output Load Current: ±10 mA, over the entire output voltage range of ±10 V

Resolution: 12 bits

Output Impedance: <0.1 Ω, online
>10 MΩ, offline

Total Error: ±0.05 percent of full-scale range

Maximum Settling Time to 1 LSB: 3.4 ms

Refresh Update Rate: 294 Hz (default); 940 Hz (FAST REFRESH). The FAST REFRESH rate provides a filtered output for complex functions; whereas, the 294 Hz rate provides settling to 0.05 percent for stepped outputs at each update. The 940 Hz rate provides settling to 0.2 dB (2.3 percent). Both rates provide settling to 0.05 percent in 3.4 ms.

Output Short Circuit Protection: Indefinite short to common; transient overvoltage protected to ±25 V

Monotonicity: Monotonic over the full temperature range

BUILT-IN-TEST (BIT)

Configuration: On-board 32-channel multiplexer and 12-bit ADC

Output Monitor: Multiplexers monitor the board outputs at P3 in online mode, or the S&H buffer outputs in offline mode.

Scan Rate: 26,000 channels/s

PHYSICAL/ENVIRONMENTAL

Dimensions: Standard VME double height board 160 mm x 233.5 mm

Temperature: 0 to 55 °C, operating
-25 to + 85 °C, storage

Relative Humidity: 20 to 80 percent, noncondensing

Cooling: Convection

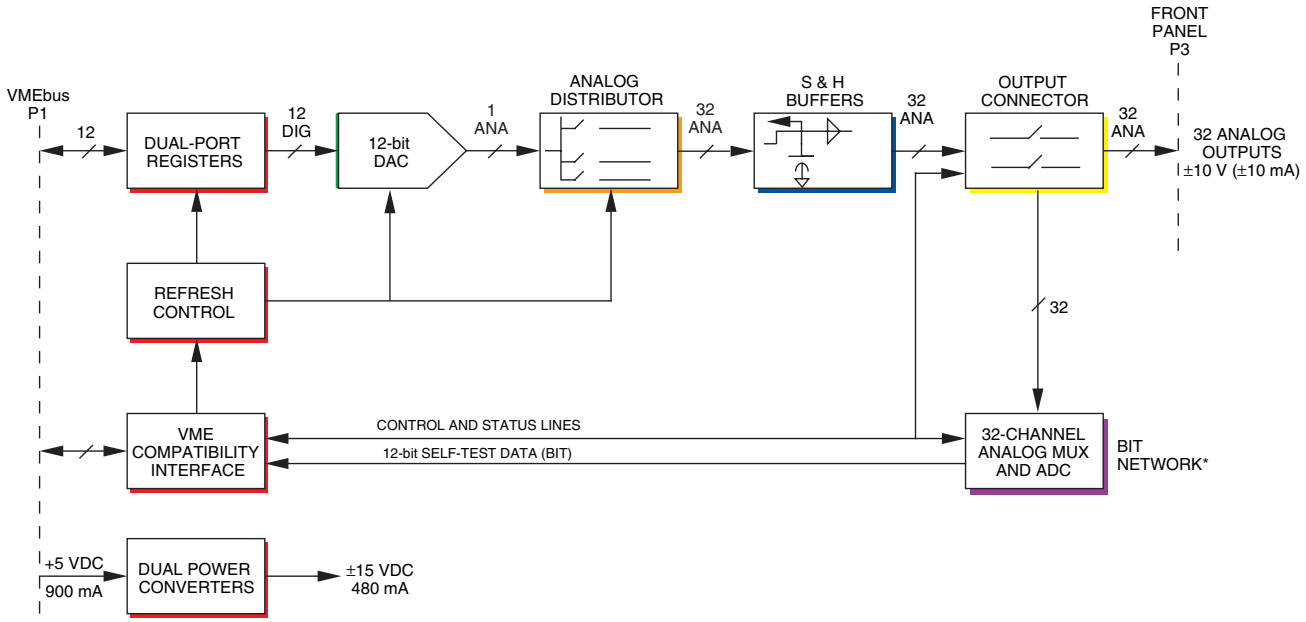
Power Requirements: +5 VDC (±5 percent) at 3.5 A maximum

MTBF: 86,770 hours (217F)

TRADEMARKS

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*Monitors the board outputs (P3) in online mode, buffer outputs in offline mode.

Figure 1. VMIVME-4132 Functional Block Diagram

APPLICATION AND CONFIGURATION GUIDES — The following Application and Configuration Guides are available from VMIC to assist the user in the selection, specification, and implementation of systems based on VMIC's products.

Title	Document No.
Digital Input Board Application Guide	825-000000-000
Change-of-State Board Application Guide	825-000000-002
Digital I/O (with Built-in-Test) Product Line Description	825-000000-003
Synchro/Resolver (Built-in-Test) Subsystem Configuration Guide	825-000000-004
Analog I/O Products (with Built-in-Test) Configuration Guide	825-000000-005
Connector and I/O Cable Application Guide	825-000000-006

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