VMICPCI-4320
8-Channel CompactPCI Analog Voltage Output Board

- Eight analog output channels, with a 12-bit DAC for output
- Jumper-selectable voltage range outputs
- Voltage output option ranges: unipolar 0 to 5 V, 0 to 10 V or bipolar ±2.5 V, ±5 V, ±10 V
- 12-bit resolution
- On-board DC-to-DC converter
- Supports memory test
- Program-controlled field wiring disconnect
- Low impedance 0.8 Ω voltage output
- Discrete wire or mass-terminated cables
- Outputs are short-circuit and transient protected
- Complies with PCI local bus specification
- Fail LED
- Single CompactPCI® (CPCI) slot
- 0 V output preset on power reset
- I/O addressing or memory addressing
- Jumper-selectable ranges
- VxWorks and Windows NT® drivers available

INTRODUCTION — The VMICPCI-4320 Analog Output Board provides eight high-quality analog output channels. These channels are jumper-selectable for several voltage output ranges. A block diagram of the board is shown in Figure 1.

FUNCTIONAL CHARACTERISTICS

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

Compliance: PCI Local Bus Specification Revision 2.1, for active PCI clock frequencies from 10 to 33 MHz

Board Address: Per PCI specification, the board address is assigned by system BIOS.

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

Memory Test: This product is designed with dual-port on-board memory that may be tested by executing a memory diagnostic for operational verification. A program-controlled output disconnect can be used to disconnect outputs during testing.

System Reset: Application of the system reset signal by way of the CompactPCI bus initializes the board into a state with all voltage outputs disconnected from the output connector (P1).

Fail LED: The Fail LED is located at the top edge of the board and is useful during installation and initial verification. The LED is under software control and is illuminated or extinguished by user application program. The LED is illuminated at powerup and by system reset.

Voltage Disconnect Switches: A low resistance, solid state switch network follows each of the sample-and-hold output buffers. These switches disconnect the buffers from the output connector. All eight disconnect switches are controlled by a single, software-programmable bit in the Control and Status Register (CSR). Upon any board reset, these switches assume the open state and can be enabled by setting the appropriate bit in the CSR to a logical 1.

VOLTAGE ANALOG OUTPUTS

Number of Output Channels: Eight, one Sample-and-Hold per channel

Full-Scale Analog Output (Jumper-Selectable):

Unipolar:	Bipolar:
0 to +10 V	±2.5 V
0 to + 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 or two's complement code.

Ordering Options

Dec. 31, 1998 800-654320-000 A	A	B	C	–	D	E	F
VMICPCI-4320 –	0	0		–			

AB = 00 (Options reserved for future use)
C = Front Panel Size
0 = 3U
1 = 6U

P1 Connector Data

Compatible Cable Connector: DB-37 Plug AMP No. 205210-3 or equivalent.

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

Output Load Current: 10 mA, maximum at full accuracy

Resolution: 12 bits

Output Impedance: 0.8 Ω maximum

Total Error: ±0.05 percent of full-scale range plus (±2 mV)

Maximum Settling Time to 1 LSB: 792 µs

Refresh Update Rate: 1,262.6 Hz (default) (The 1,262.6 Hz rate provides settling to 0.01 percent for stepped outputs at each update.)

Output Short Circuit Protection: Indefinite short to common; momentary short to ±25 V

Monotonicity: Monotonic over the full temperature range

Reset: All outputs are disconnected from the output connector at powerup or reset

Drivers: VxWorks and Windows NT drivers are available (see VMISFT-9450)

PHYSICAL/ENVIRONMENTAL

Temperature:
Operating: 0 to +65 ˚C
Storage: -40 to +80 ˚C

Humidity: 20 to 80 percent relative, noncondensing

Altitude: Operation to 10,000 feet (3,048 m)

Cooling: 50 LFM, minimum

Dimensions: 3U CompactPCI board, 100 mm x 160 mm

Output Connector: P1 (37-pin subminiature) front panel connector (refer to the connector data in the Ordering Options)

Power Requirements: 2.0 A (typical)
2.5 A (maximum)

TRADEMARKS

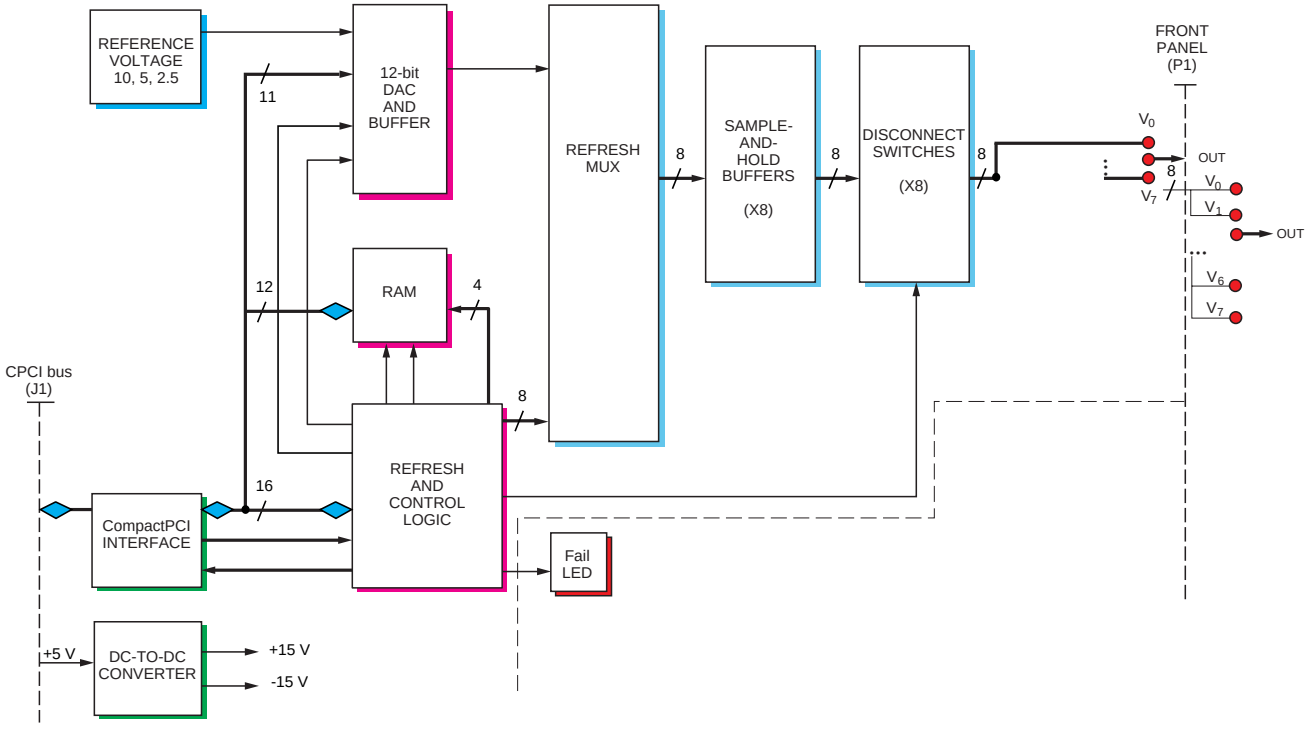

Figure 1. VMICPCI-4320 Functional Block Diagram