Product Description

The PCM-MIO-G-DA-1 is a versatile PC/104-based, analog output and digital I/O board designed for high-channel count D/A and digital I/O. The board is based upon precision D/A converters and voltage references which require no external calibration. The digital I/O utilizes WinSystems’ versatile WS16C48 implementation, also available on many of our SBCs and other I/O products.

Analog Output - The PCM-MIO-G-DA-1 uses two Linear Technologies SoftSpan™ quad Digital-to-Analog converters (DACs). These eight independent, 12-bit D/A channels have six output voltage ranges of 0-5V, 0-10V, ±2.5V ±5V, ±10V, and -2.5V to 7.5V. They are software programmable for either unipolar or bipolar mode plus specific voltage range on a per channel basis. Each channel is asynchronously cleared to 0V for all ranges when reset.

Onboard DC/DC Power Supplies - The PCM-MIO-G-AD-1 contains an ultra low-noise power supply, which is designed to reduce both conducted and radiated EMI. A separate regulator is used for the converters to minimize digital switching noise. The result is a stable low-noise voltage on all supply rails.
Digital Input/Output - The PCM-MIO-G-DA-1 implements WinSystems' highly-versatile WS16C48, 48-line digital I/O controller. There are 48 bits of TTL-compatible digital I/O. Each I/O line is individually programmable for input, output, or output with readback operation. Each output channel is latched and has an open collector driver with a pull-up resistor capable of sinking 12mA of current. This allows direct control of up to 48 opto-isolated signal conditioning modules to a single card for high density digital I/O support.

A key feature of the WS16C48 controller is its ability to monitor all twenty-four lines of Port 0, 1, and 2 for either rising or falling digital edge transitions, latch them and then interrupt the host processor notifying it that a change-of-input status has occurred. Transition polarity is programmable and enabled on a bit-by-bit basis. Each line's transition is latched by the event so that even short duration pulses will be recognized.

Interrupts - Each interrupt source can be selected and enabled or disabled by the user under software control. This increases flexibility and reduces the need for on board jumpers.

PC/104 Interface - The PCM-MIO-G-DA-1 is I/O mapped, requiring 32 sequential port addresses. The addresses are jumper selectable on any even 32-port boundary. The control, data, and power signals are wired to a 16-bit stackthrough PC/104 connector.

I/O Connectors - The analog channels are wired to a 34-pin connector that uses standard 0.100-inch pin spacing. The digital I/O lines are connected to two, 50-pin connectors. A ±5 volt source can be jumper enabled on pin 49 of each connector to supply logic power for the I/O module racks or other interface electronics. The pinout is compatible with industry-standard I/O module mounting racks and WinSystems' termination cards.

Custom OEM Configurations - WinSystems can change the functionality and number of analog input or output channels. Please contact an Applications Engineer with your requirements.

Software - Software drivers are available for DOS, Windows®, and Linux. Contact an Applications Engineer or visit our website for details.

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