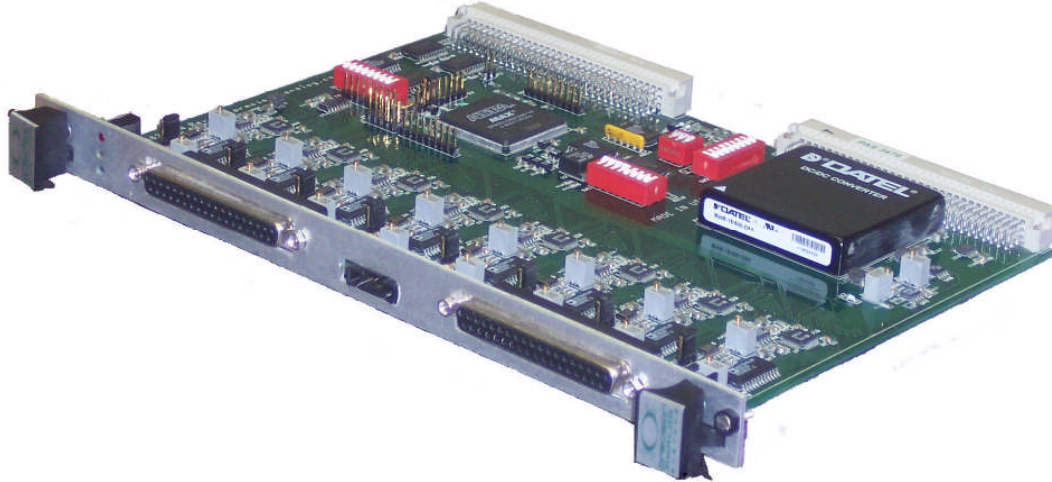


PAS 9883/GEN

8 Channel VME Waveform Generator Card



GENERAL DESCRIPTION

The **PAS 9883/GEN** provides eight waveform generator channels on a 6U VME bus card. Each channel contains a Direct Digital Synthesis (DDS) chip programmed to generate sine wave output signals. This DDS device is a Numerically Controlled Oscillator (NCO), employing a phase accumulator, sine look-up table and a 10 bit D/A converter. Input clock frequency to the DDS chips is 2 MHz. This input frequency combined with the chips thirty-two bit phase accumulator provides a frequency resolution of 0.000465 Hz. Maximum useable output frequency is approximately 50 KHz.

A Multiplying Digital-to-Analog Converter (MDAC) is provided on each channel, following the DDS. This allows the card's output voltage to be set from 0 to +/-10 volts in 5 mV steps. In addition to the sine wave output, a TTL output, and open drain FET output are provided on each channel.

VME systems with A16, A24, and A32 addressing are supported, and 16 bit data transfers are used. DIP switches configure the width of the address bus and the card's address.

Output signals terminate on a pair of DB37 female connectors mounted through the front panel.

Additional features include board identifier registers, control and status register, and DDS frequency and phase control registers.

Electrical Specifications

Number of Channels	8 Sine/Pulse Output Channels
DDS Component	Analog Devices P/N AD9831
DDS DAC Resolution	10 bits
Frequency Control Resolution	32 bits
Sine Output Voltage Ranges	0 to +/- 10 volts in 4.88 mV steps
Sine Output Current	+/- 15 mAmps (typ)
Low Pass Corner Frequency	50 KHZ
TTL Low Level Output	0.4 Volts (typ) @ 10 mAmp
TTL High Level Output	3.8 Volts (typ) @ -10 mAmps
FET Output Sink Current	100 mAmps (typ)
FET Pull-up Voltage	30 Volts (max)
Card Power Requirements	5 Volts @ 1.5 Amp (typ)

Additional Features

VME Interface: A32, A24, A16; D16 slave, no interrupts

Frequency Equation: $F(\text{out}) = F(\text{register}) \times 2^{\text{MHZ} \pm 2^{32}}$

Frequency Control Oscillator: On board 2 MHz quartz oscillator

Channel Synchronization: All channels can be synchronized with constant phase offset

Phase Offset Registers: Two, 12 bit registers per channel

Calibration: All DDS chips are calibrated individually with a precision on-board voltage reference

Status Indicators: Pass, Fail, and Board Access LED's on front panel

Board Identifier: VME ID PAS 9883/GEN A, programmed in EPLD

DAC Power Supply: On board +/- 15 volt DC to DC converter

Environmental Specifications

Operating Temperature Range	0 to 60 degrees C.
Storage Temperature Range	-20 to 85 degrees C.
Relative Humidity Range	20% to 80%, non-condensing

Physical Specifications

Dimensions	233mm x 160mm, 6U x 160 VME form factor
Weight	12 oz. (typ)
Connectors	2 ea. 96 position DIN, (VME bus connectors) 2 ea. DB37 female (Sine/Pulse outputs) 1 ea. 6 pin shrouded header (Reference and power supply voltages) Mating connector = Molex p/n 50-57-9406



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