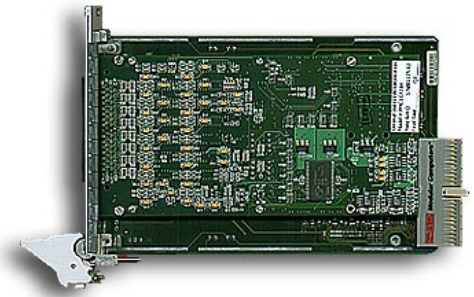


# GX3216 SERIES



## 16-BIT MULTI-FUNCTION CPCI CARD WITH A/D, D/A AND DIGITAL I/O CHANNELS

- 16 differential, 16-bit, analog inputs
- 1 MS/s simultaneous sampling inputs
- 2 analog outputs, simultaneous 1 MSPS 16-bit DACs
- $\pm 10$  V,  $\pm 5$  V,  $\pm 2.5$  V input/output ranges
- 256K sample input and output FIFO data buffers
- 3U Compact PCI form factor



## DESCRIPTION

The GX3216 is a multi-channel analog input and output cPCI module, supporting 16 differential input channels and two analog output channels. Dedicated 1 MS/s D to As and A to Ds allow simultaneous acquisition and generation of analog signals. Input ranges are software-selectable as  $\pm 10$  V,  $\pm 5$  V or  $\pm 2.5$  V. The inputs are divided into two channel groups, with an independent software-controlled range assignable to each group. Two analog output channels provide software-selected output ranges of  $\pm 2.5$  V,  $\pm 5$  V or  $\pm 10$  V and independent of the input range assignments. Output data is provided via two dedicated control registers, or through a 256 K-Sample FIFO buffer for waveform generation. Six bidirectional digital I/O lines are also available and can be programmed as inputs or outputs.

## FEATURES

The GX3216's input channels are sampled simultaneously. Each channel's sampled data is accessed via the PCI bus and a 256 K-Sample FIFO buffer. Sampling can be controlled in groups of 1 through 16 channels, and the sample clock can be generated either from an internal rate generator, software or an external source. Both burst and continuous sampling modes are supported. The two output channels can also be clocked at rates up to 1 MS/s and like the input channels, offer programmable ranges. Output clocking can be synchronized to analog input sampling.

The module supports an auto-calibration routine which applies any required offset and gain correction values for all input and output channels. Additionally, a self-test input switching network routes output channels or calibration reference signals to the analog inputs – verifying module integrity and functionality.

## SOFTWARE

The GX3216 is supplied with a virtual instrument panel, which includes a 32-bit DLL driver library and documentation. The virtual panel can be used to interactively adjust and control the instrument from a window that displays the instrument's current settings and measurements.

## APPLICATIONS

- Automotive testing
- High-performance baseband testing
- Medical device and module test
- ATE systems

# GX3216 SERIES



## SPECIFICATIONS

ANALOG INPUTS	
Input Channels	16 differential
Input Voltage Ranges	Independently assignable between two groups; $\pm 10$ V, $\pm 5$ V, $\pm 2.5$ V FS
Input Impedance	2 M, differential
Bias Current	300 nA (typ), all ranges
Full Scale DC Accuracy	$\pm 5$ mV, 10 V range $\pm 3$ mV, 5 V range $\pm 2$ mV, 2.5 V range
Small Signal Bandwidth	1.3 MHz (-3 dB)
A TO D CONVERTER	
Resolution	16 bits
Sampling Rate	0 to 1 MS/s (each channel)
Clock Source	Internal (programmable), software, external I/O
Internal Clock	3 to 1 MHz sample rate, 24 bit divider from master clock frequency
Sampling Modes	Continuous, triggered burst
Reference Clock	45 MHz
Memory	256 K sample FIFO
ANALOG OUTPUT CHANNELS	
Configuration	Two, single ended
Output Range	Independent, $\pm 10$ V, $\pm 5$ V, $\pm 2.5$ V FS
Output Impedance	1 (max)
Output Current	$\pm 3$ mA (max)
Full Scale DC Accuracy	$\pm 8$ mV, 10 V range $\pm 6$ mV, 5 V range $\pm 4$ mV, 2.5 V range (no load)
Settling Time	3 $\mu$ s to 0.1%, half-scale step, no load
D TO A CONVERTER	
Resolution	16 bits
Sampling Rate	0 to 1 MS/s (each channel)
Clock Source	Internal (programmable), software, external I/O
Internal Clock	3 to 1 MHz sample rate, 24 bit divider from master clock frequency

Clocking Modes	Continuous, periodic clocking, triggered burst
Reference Clock	45 MHz
Memory	256 K sample FIFO
DIGITAL INPUTS / OUTPUTS	
Configuration	Six, TTL I/O lines, individually configurable as inputs or outputs
Input Loading	0.2 mA (max)
Output Drive	4 mA (max)
Control	Register read / write
GENERAL	
Mating I/O Connector	80 pin, dual ribbon socket Robinson Nugent P50E-080S-TG or equivalent
Current Consumption	+5 V @ 1.3 A (typ); 1.5 A (max)
Size	3U, single slot
Operating Temperature	0 °C to +65 °C
Storage Temperature	-40 °C to +85 °C
Humidity (Non-Condensing)	0% to 80% (operating)

Note: Specifications are subject to change without notice

## ORDERING INFORMATION

<b>GX3216</b>	16-Bit Multi-Function Card: 16 Diff A/D Channels (1MS/Sec), 2 D/A Channels, 6 Digital I/O Channels
---------------	--

