

# GX2475

PRELIMINARY  
DATASHEET

## HIGH VOLTAGE DUAL CHANNEL DIGITIZER PXI CARD

- Two Channel, 14 Bit Digitizer
- Differential or Single Ended Inputs
- DC to > 30 MHz Analog Bandwidth
- 150 V



## DESCRIPTION

The GX2475 is a high performance, dual differential channel, 14-bit digitizer offering high dynamic range. The module's differential inputs, coupled with 14 bits of resolution makes it an ideal instrument for acquiring and analyzing high voltage signals. Each channel offers 3 selectable low pass filters, a 14 bit, 70 MS/s ADC, and 512 K of memory. A 50 MHz or 70 MHz clock with a divider provides a common acquisition clock source for both channels.

## FEATURES

The GX2475 provides two differential inputs providing the ability to make low level measurements in the presence of common mode or noisy signals. The inputs can also be configured for single-ended operation. Each channel supports AC or DC coupling. Each channel can also add an offset to the input signal, providing the ability to maximize the A to D's dynamic range.

Both channels offer three, 3-pole, low pass, butterworth filters offering the ability to band limit signal noise and minimize aliasing effects. The filters and also be bypassed to take advantage of the input amplifier's full bandwidth.

Clocking of the digitizer is provided by an external input or an internal 10 MHz, 50 MHz or 70 MHz clock which can be divided by 1 to 256. Each channel can be independently triggered to start a measurement from an external or internal source.

## PROGRAMMING AND SOFTWARE

The GX2475 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 current instrument's current settings and measurements.

## APPLICATIONS

- Automotive testing
- Data Acquisition
- Medical device and module test
- ATE systems

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## SPECIFICATIONS

| HARDWARE   |   |
|--|---|
| Input Channels                                       | 4 analog (A+, A-, B+, B-)<br>1 external clock, 1 external trigger                                 |
| Input Connectors                                     | SMB   |
| Format   | PXI, 3U single slot   |
| A/D CONVERTER  |   |
| Resolution   | 14 bits   |
| Sampling Rate  | 500 KS/s to 70 MS/s   |
| Clock Source   | External or Internal  |
| Internal Clock                                       | 70 MS/s, or 50 MS/s, $\pm 100$ ppm  |
| Clock Divider  | 1 to 256  |
| Memory   | 512K samples per channel  |
| ANALOG INPUT CHANNELS                                |   |
| Input Configuration                                  | Differential or single-ended  |
| Input Range  | 150 V <sub>pp</sub> , 300 V <sub>pp</sub> , 600 V <sub>pp</sub>                                   |
| Maximum Input  | $\pm 350$ V <sub>p</sub> , (input + common mode)  |
| Common Mode Range                                    | $\pm 350$ V for 75 V <sub>p</sub> , 150 V <sub>p</sub> , 300 V <sub>p</sub> ranges                |
| DC Offset  | $\pm 347$ V for 75 V <sub>p</sub> , 150 V <sub>p</sub> , 300 V <sub>p</sub>                       |
| Input Impedance                                      | 1 M $\Omega$  |
| Coupling   | AC or DC  |
| Accuracy   | $\pm (50$ mV + 0.2% of range) for 150 V <sub>pp</sub> , 300 V <sub>pp</sub> , 600 V <sub>pp</sub> |
| Relative Accuracy                                    | $\pm 0.025\%$ of range  |
| Bandwidth  | > 30 MHz  |
| Frequency Response (no filter) Referenced to 500 kHz | $\pm 0.5$ dB, DC to 10 MHz<br>$\pm 2$ dB, 10 MHz to 30 MHz  |
| Low Pass Filters                                     | 3-pole Butterworth, selectable:<br>None, 6 MHz, 15 MHz, 30 MHz                                    |
| Channel Crosstalk                                    | <80 dB at 1 MHz   |
| SFDR   | 80 dB, 1 MHz input<br>72 dB, 10 MHz input<br>(50 MS/s, 2 V <sub>pp</sub> signal)                  |
| SINAD  | 68 dB, 1 MHz input<br>64 dB, 10 MHz input<br>(50 MS/s, 2 V <sub>pp</sub> signal)                  |

| EXTERNAL CLOCK                |   |
|-------------------------------|---|
| Connector                     | Front panel SMB   |
| Input Impedance               | 50 $\Omega$ nominal   |
| Maximum Frequency             | 100 MHz, divisible by 1 to 256  |
| Threshold Level               | TTL   |
| Output Impedance              | 50 $\Omega$   |
| Output Level                  | V <sub>Lo</sub> < 0.5 volts, V <sub>Hi</sub> > 4.5 volts,<br>no load                |
| TRIGGERING                    |   |
| Connector                     | Front panel SMB   |
| Impedance                     | 10 K $\Omega$ nominal   |
| Threshold Level               | TTL   |
| Sources                       | Front panel, PXI trigger 0 - 5, PXI Star trigger,<br>software trigger, input signal |
| Modes                         | Positive / negative level or edge,<br>Positive / negative edge continuous           |
| GENERAL                       |   |
| Calibration Cycle             | 6 months  |
| Current Consumption (Maximum) | +5 V @ 650 mA<br>+12 V @ 40 mA<br>-12 V @ 40 mA<br>+3.3 V @ 300 mA                  |
| Weight                        | Approx. 210 g   |
| Size                          | 3U, single slot   |
| Operating Temperature         | 0 °C to +50 °C  |
| Storage Temperature           | 0 °C to +70 °C  |
| Humidity (Non-Condensing)     | 10% to 80%  |

Note: Specifications are subject to change without notice

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## ORDERING INFORMATION

|                     |  |
|---------------------|--|
| <b>GX2475</b>       | 3U High Voltage, Dual Differential Channel, 14-bit digitizer   |
| <b>ACCESSORY</b>    |  |
| <b>GX92104</b>      | SMB Plug to BNC-M Cable, 36 inches (RG188 Cable)   |
| <b>GX2472-CAL</b>   | GX2472 Calibration/Verification Service. Includes pre-verification data (post calibration data provided if applicable)           |
| <b>GX2472-CAL-3</b> | GX2472 Calibration/Verification Service - 3 Years. Includes pre-verification data (post calibration data provided if applicable) |
| <b>GX2472-CAL-5</b> | GX2472 Calibration/Verification Service - 5 Years. Includes pre-verification data (post calibration data provided if applicable) |
| <b>GX2475-CAL</b>   | GX2475 Calibration/Verification Service. Includes pre-verification data (post calibration data provided if applicable)           |
| <b>GX2475-CAL-3</b> | GX2475 Calibration/Verification Service - 3 Years. Includes pre-verification data (post calibration data provided if applicable) |
| <b>GX2475-CAL-5</b> | GX2475 Calibration/Verification Service - 5 Years. Includes pre-verification data (post calibration data provided if applicable) |

Note: The GX2475 is supplied by a 3rd party and resold by Marvin Test Solutions.

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Preliminary

MEASUREMENT