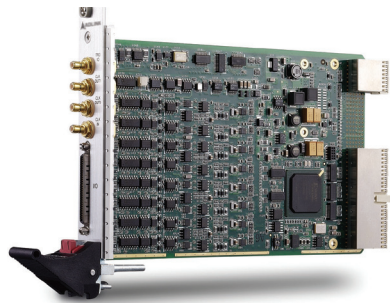


DATA SHEET



# PXI-2022

16 CHANNEL, 250 KSA/S, PXI-H DIGITIZER WITH  
INTEGRATED DIGITAL I/O AND COUNTER

## FEATURES

16-CH differential, 16-bit analog inputs

Simultaneous sampling on every channel, up to 250 kS/s

Programmable gains of x1, x4

Bipolar Analog Input

4-CH TTL Digital I/O

2-CH 32-bit general purpose timer/counter

Digital triggering

Auto-calibration

Driver and SDK support for Windows and Linux, and for  
third-party applications including Visual Studio, LabVIEW  
and MATLAB.



[www.vtiinstruments.com](http://www.vtiinstruments.com)

RELIABLE DATA FIRST TIME EVERY TIME

# OVERVIEW

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PXI-2022 is a simultaneous-sampling multi-function DAQ cards to meet a wide range of application requirements. The device can simultaneously sample 16 Analog input channels with differential input configurations in order to achieve maximum noise elimination.

The PXI-2022 features digital triggering, 4-CH programmable digital I/O lines, and 2-CH 32-bit general-purpose timer/counters. The auto-calibration functions adjust the gain and offset to within specified accuracies such that you do not have to adjust trim pots to calibrate the cards.

Software drivers and SDK support are provided for Windows and Linux environments. Wide range of application development environments including Visual Studio, Labview, Matlab and VEE are supported.

## Detailed Specifications

### ANALOG INPUT

CHANNELS	16 Channel simultaneous-sampling with differential inputs
RESOLUTION	16-bit
MAX SAMPLING RATE	250 kS/s
PROGRAMMABLE GAIN	1, 4
BIPOLAR INPUT RANGES	$\pm 10$ V, $\pm 2.5$ V
OFFSET ERROR	0.6 mV (typical)
GAIN ERROR	0.05% of input
OFFSET TEMPERATURE DRIFT	0.1 mV/ $^{\circ}$ C (typical)
INPUT COUPLING	DC
OVERVOLTAGE PROTECTION	Power on: Continuous $\pm 30$ V, Power off: Continuous $\pm 30$ V
INPUT IMPEDANCE	1 $\text{G}\Omega$ / 100 pF
-3 DB SMALL SIGNAL BANDWIDTH (GAIN = 1)	Gain = 1: 1 MHz Gain = 4: 700 kHz
FIFO BUFFER SIZE	8 kSa (16 kB)
DNL (GAIN = 1)	$\pm 0.8$ LSB
INL (GAIN = 1)	$\pm 1.5$ LSB (typical), $\pm 3.0$ LSB (MAX)
SYSTEM NOISE	Gain = 1: 0.5 mVRMS Gain = 4: 0.2 mVRMS
CMRR	80 dB (all ranges)
SPURIOUS-FREE DYNAMIC RANGE (SFDR)	87 dB
SIGNAL-TO-NOISE DISTORTION RATIO(SINAD)	82 dB
TOTAL HARMONIC DISTORTION (THD)	-85 dB
SIGNAL-TO-NOISE RATION (SNR)	84 dB
DATA TRANSFERS	Polling, scatter-gather DMA

### DIGITAL I/O

NUMBER OF CHANNELS	4 input/output
COMPATIBILITY	TTL/CMOS
INPUT LOGIC LEVELS	Input low voltage: 0.8 V (max) Input high voltage: 2.0 V (min)
OUTPUT LOGIC LEVELS	Output low voltage: 0.4 V (max) Output high voltage: 2.8 V (min)
OUTPUT DRIVING CAPACITY	$\pm 24$ mA
POWER-ON STATE	Input, pull-low with 10 k $\Omega$ resistor
DATA TRANSFERS	Polling mode

### TIMER/COUNTER

NUMBER OF CHANNELS	2
RESOLUTION	32-bit

Specifications contained within this document are subject to change without notice

## Detailed Specifications

### AUTO CALIBRATION

ONBOARD REFERENCE	+5.000 V
RECOMMENDED WARM-UP TIME	15 minutes
TEMPERATURE DRIFT	±3 ppm/°C
STABILITY	50 ppm/1000 Hrs

### GENERAL SPECIFICATIONS

PXI BUS TYPE	PXI Hybrid Compatible
MAXIMUM THROUGHPUT	132 MB/s
CONNECTOR	ACL-10568-1, 68-pin VHDCI-type female
OPERATING ENVIRONMENT	0 to 55°C 10 to 90% non-condensing
STORAGE ENVIRONMENT	-20 to 80°C 5 to 95% non-condensing

#### Notes:

- 1) All specifications are typical unless otherwise stated as a minimum or maximum.
- 2) For current detailed specification please refer to the on-line manual at [www.vtiinstruments.com](http://www.vtiinstruments.com).
- 3) All specifications subject to change without notice.
- 4) All specifications assume within 24 hours and 5°C of self-calibration temperature unless otherwise specified
- 5) Distributed product. These products are manufactured and supported by other leading vendors.

## Ordering Information

<b>PXI-2022</b>	<b>16 AI, 4 DIO, 2 Counter, Multifunction, PXI-H Module</b>
<b>RELATED PRODUCTS</b>	
<b>EMX-4350</b>	<b>4-Channel, 625k Sa/s Smart Dynamic Signal Analyzer</b>
<b>EMX-4250</b>	<b>16-Channel, 200k Sa/s Smart Dynamic Signal Analyzer</b>
<b>CMX09</b>	<b>9-slot, 3U PXI Express Chassis</b>
<b>CMX18</b>	<b>18-slot 3U PXI Express Chassis</b>

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