PXI-2502

8 CHANNEL, 1 MS/S, PXI-H WAVEFORM GENERATOR WITH INTEGRATED DIGITIZER, DIGITAL I/O AND COUNTER

FEATURES

8-CH, 12-bit, 1 MSa/s simultaneous sampling analog outputs

Programmable bipolar or unipolar analog output ranges on a per channel basis

Programmable internal or external reference source on per channel basis

On-board 16 kSa FIFO

4-CH, 400 kS/s, 14-bit single ended analog inputs

24-CH TTL Digital I/O

2-CH 16-bit general purpose timer/counter

Analog and digital triggering

Auto-calibration

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

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RELIABLE DATA   FIRST TIME   EVERY TIME

OVERVIEW

The PXI -2502 is a high-speed and high-performance analog output multi-function DAQ card able to update up to 8-CH, 12-bit analog outputs simultaneously while sustaining a 1 MS/s rate. The reference sources and the output polarities are programmable on a per channel basis. Combined with a multiplying DAC architecture, the PXI-2502 can generate complex modulated analog signals.

The hardware-based arbitrary waveform generation reduces CPU loading even when all analog outputs are updating at full speed, and the lengths of waveforms are only limited by the system memory.

The PXI -2502 integrates 4 Channels, 400 kS/s, 14-bit single-ended analog inputs with programmable polarity, 24 Channels programmable digital I/O lines, and a 2 Channels 16-bit general-purpose timer/counter. The auto-calibration functions adjust the gain and offset to within specified accuracies such that you do not have to adjust trimpots to calibrate the boards.

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 OUTPUT

CHANNELS	8 voltage outputs
RESOLUTION	12 bits
OUTPUT RANGE	0-10 V, ±10 V, 0-AOEXTREF, ±AOEXTREG
MAXIMUM UPDATE RATE	1 MS/s
SLEW RATE	20 V/µs
SETTLING TIME	3 µs t0 ±0.5 LSB accuracy
OFFSET ERROR	± 8 mV
GAIN ERROR	±0.04% of max output
DRIVING CAPACITY	±5 mA
STABILITY	Any passive load, up to 1500 pF
TRIGGER SOURCES	Software, external digital/analog
TRIGGER MODES	Post-trigger, delay-trigger and repeated trigger
FIFO BUFFER SIZE	16 kSa
DATA TRANSFERS	Programmed I/O, scatter-gather DMA

ANALOG INPUT

CHANNELS	4 single-ended
RESOLUTION	14 bits, no missing codes
MAX SAMPLING RATE	400 kS/s
PROGRAMMABLE GAIN	1
BIPOLAR INPUT RANGES	±10 V
UNIPOLAR INPUT RANGES	0-10 V
OFFSET ERROR	± 4 mV
GAIN ERROR	0.1% of FSR
INPUT COUPLING	DC
-3 DB SMALL SIGNAL BANDWIDTH (GAIN = 1)	600 kHz
OVERVOLTAGE PROTECTION	Power on: Continuous ±30 V, Power off: Continuous ±15V
INPUT IMPEDANCE	1 GΩ / 6 pF
DATA TRANSFERS	Polling, scatter-gather DMA

DIGITAL I/O

NUMBER OF CHANNELS	24-CH, 8255 programmable input/output
COMPATIBILITY	5 V/TTL
DATA TRANSFERS	Programmed I/O

TIMER/COUNTER

NUMBER OF CHANNELS	2
RESOLUTION	16 bits
COMPATIBILITY	5 V/TTL
BASE CLOCK AVAILABILITY	40 MHz, external clock up to 10 MHz

Detailed Specifications

AUTO CALIBRATION

ONBOARD REFERENCE	+5 V
TEMPERATURE DRIFT	±2 PPM/°C
STABILITY	6 PPM/1000 HRS

GENERAL SPECIFICATIONS

PXI BUS TYPE	PXI Hybrid Compatible
MAXIMUM THROUGHPUT	132 MB/s
CONNECTOR	68-pin VHDCI female
OPERATING TEMPERATURE	0 to 55°C
STORAGE TEMPERATURE	-20 to 70°C
HUMIDITY 5 to 90% non-condensing	
POWER REQUIREMENTS	+5 V 2.12 A
	+3.3 V 0.89 A
	+12 V 0.76 A

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.

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 and manufactured and supported by other leading vendors.

Ordering Information

PXI-2502	Multifunction, 8-CH 1 MS/s Analog Output, PXI Hybrid Module
RELATED PRODUCTS	
EMX-4350	4-Channel, 625k Sa/s Smart Dynamic Signal Analyzer
EMX-4250	16-Channel, 200k Sa/s Smart Dynamic Signal Analyzer
CMX09	9-slot, 3U PXI Express Chassis
CMX18	18-slot 3U PXI Express Chassis

Specifications contained within this document are subject to change without notice

R E L I A B L E   D A T A   F I R S T   T I M E   E V E R Y   T I M E