PXD730x
High Resolution Waveform Digitizer Family

VXI Instruments
the test solutions provider

TECHNICAL DATA SHEET

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232 485
external PCIe

Features

- Available input voltage range with up to 120 V_{pp}
- 100 MS/s with 16 Bit resolution
- Fully isolated design with up to two independent channels
- Multiple instrument and channel synchronization possibilities
- Built-in timer/counter engine for high speed timer/counter
- Built-in DVM function for high precision measurement

Product Information

High voltage, high resolution waveform digitizer
The PXD730x High Resolution Waveform Digitizer family features up to two 100 MS/s simultaneously sampled input channels with 16 Bit resolution, input voltages up to ±60 V and a bandwidth up to 50 MHz.
Every digitizer channel has its own 2 MB memory which allows up to 1 million samples. Data can be acquired before and after the trigger event with a programmable sample counter, that controls the number of data points.

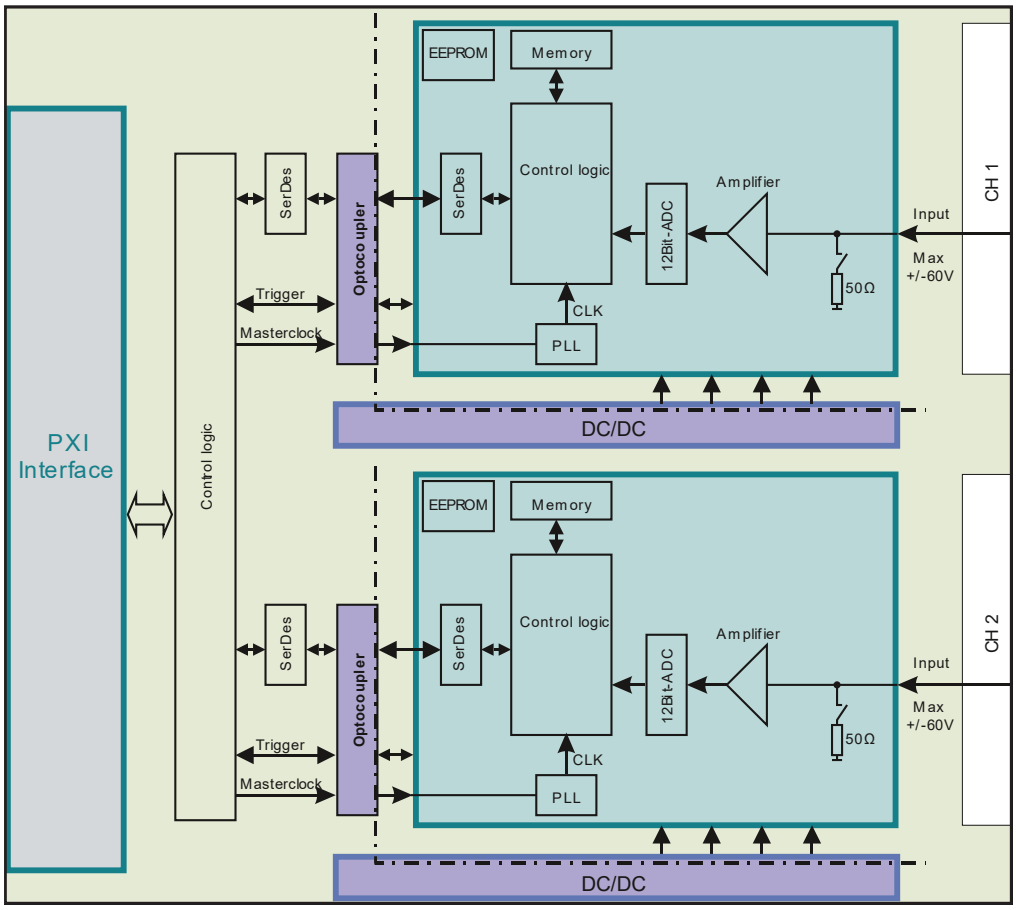
All PXD730x High Resolution Waveform Digitizer family devices have a high common mode rejection ratio (CMRR).

A great amount of trigger capabilities results in multiple instrument and channel synchronization possibilities.

Highest input voltage range allows easy measurement
The maximum voltage for each signal input is ±60 V. This allows high voltage signals to be measured without additional signal conditioning.

High throughput design for many applications
The digitizers of the PXD730x family are designed for high throughput testing.
This design guarantees highest quality measurements and is ideal for a wide range of application areas including automotive, communications, scientific applications, military/aerospace and consumer electronics.

Available with 1 and 2 channels
The single channel device PXD7303 High Resolution Waveform Digitizer uses only 1 PXI slot (3U). The dual channel device PXD7304 High Resolution Waveform Digitizer needs 2 PXI slots (3U).



General	Specification	Comment
Module size	1 slot, 3U 2 slots, 3U	PXD7303 PXD7304
Module weight	<0.4 kg <0.6 kg	PXD7303 PXD7304
Front connector type	BNC (isolated)	
Operating temperature	0 ... 40°C	
Operating altitude	<2 000 m	
Relative humidity	Up to 85% at 35°C	
Storage temperature range	-25 ... 70°C	
Electrical safety	According EN61010-1	
Isolation input to PE	250 V CAT I, Pollution Degree 2	

Acquisition	Specification	Comment
Maximum sample rate	100 MS/s	
Bandwidth Range 250mV, 500mV Range 1V, 2V, 4V All other ranges	 >30 MHz >50 MHz >15 MHz	 0.5 V_{pp} input signal; no filter 2 V_{pp} input signal; no filter 20 V_{pp} input signal; no filter
Vertical resolution	16 Bit	
Sampling times	10ns, 20ns, 50ns, 100ns, 200ns, 500ns, 1µs, 2µs, 5µs, 10µs, 20µs, 50µs, 100µs, 200µs, 500µs, 1ms, 2ms, 5ms, 10ms, 20ms, 50ms, 100ms, 200ms, 500ms, 1s, 2s, 5s, 10s	Software selectable
Input impedance	1 MΩ // <20 pF, 50 Ω	Software selectable
Input coupling	DC	
Maximum input voltage	1 MΩ: f < 160 kHz: 60 V_p 160 kHz < f < 1 MHz: $10^7 V_p$ / f 1 MHz < f < 50 MHz: 10 V_p 50 Ω: 5 V_p	Input voltage may not exceed selected input voltage range
Input ranges	50 Ω: 250 mV, 500 mV, 1 V, 2 V, 4 V 1 MΩ: 250 mV, 500 mV, 1 V, 2 V, 4 V, 8 V, 16 V, 32 V, 60 V	
DC accuracy[1]	250 mV, 500 mV: 0.3% of input +2 mV others: 0.2% of input + 0.1% of full scale	
Filter	30 kHz, 100 kHz, 300 kHz, 1 MHz, 20 MHz	Software selectable
Waveform memory	2 MB, 1 MS	

DVM	Specification	Comment
DC accuracy[2]	250mV, 500mV: 0.3% of input +0.5mV others: 0.2% of input + 0.025% of full scale	With auto offset correction
Measurement time	1 ... 500 ms	Software programmable

[1] DC accuracy specified for an average value of 100 samples with a sample rate of 5 kS/s and active 30 kHz filter.
[2] DC accuracy specified with measurement time of 100 ms.

Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

Time Base	Specification	Comment
Accuracy	1 ppm	In operating temperature range
Aging per year	1 ppm	

Trigger System	Specification	Comment
Input from		
Internal function module	One function module can trigger itself and the other module	
Software	Via software command	
PXI trigger	Trigger 0 ... 7 and star trigger	From the PXI backplane
Output to		
Internal function module	Output to the other module	For example marker-bit
PXI trigger	Output each channels trigger to PXI trigger 0 ... 7	
Level resolution	16 Bit	
Level accuracy	0.6% + 0.3%	±(of programmed value + of full range)
Trigger delay	0 ... 10 s	Programmable delay, 10 ns resolution
Trigger slope	Positive or negative	
Trigger hysteresis	0 ... 100% of signal range	Programmable via software
Pre-Trigger	0 ... 100% of full record length	Trigger is armed after all pre-samples are captured; post-samples are captured after trigger
Post-Trigger	0 ... 100% of full record length	Number of samples captured after trigger event

Timer/Counter

T/C Measurement Modes	Specification
Frequency	
Counter width	40 Bit
Range	0.1 Hz ... 10 MHz
Minimum pulse width	50 ns
Period	
Resolution	10 ns
Accuracy[1,2]	±10 ns
Range	50 ns ... 10 s
Time interval and pulse width	
Resolution	10 ns
Accuracy[1,2]	±10 ns
Range	50 ns ... 10 s
Rise and fall time	
Resolution	10 ns
Accuracy[2]	±10 ns
Range	50 ns ... 10 s
Totalize (edge count)	
Minimum pulse width	50 ns
Range	0 ... 2^{40}-1

1 Square wave signal with T_{Rise} <1 ns and T_{Fall} <1 ns.
2 Trigger comparator error not included.

PXD7303
1 channel floating digitizer in 1 slot

PXD7304
2 channel floating digitizer in 2 slots

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