PXD(e)721x
High Resolution Waveform Digitizer Family

VX Instruments
the test solutions provider

TECHNICAL DATA SHEET

PXI
VXI
LAN
cPCI
PXIe
GPIB
USB
RS232 485
external PCIe

Features

- Based on VX Instruments FlexCPeP
- Input voltage up to 120 V_{pp}
- 100 MS/s with 16 Bit resolution
- Available as isolated and non-isolated version
- Up to 100 MHz bandwidth
- Available with PXI or PXI Express interface
- Multiple instrument and channel synchronization possibilities
- Built-in DVM function for high precision measurement (option DVM)
- Built-in timer/counter engine for high speed timer/counter (option T/C)

Product Information

Flexible Configurable PXIe Platform

This family of Waveform Digitizers is based on the "Flexible Configurable PXIe Platform" (FlexCPeP). This platform allows many variations of customer configured digitizers.

High speed, high resolution Waveform Digitizer

The PXD(e)721x High Resolution 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 of 50 MHz (100 MHz with option DBW).
Every digitizer channel has its own 2 MB memory which allows up to 1 million samples. Depending on the amount of channels and the isolated option, the digitizers are built into a compact 3U PXI device for 1 or 2 slots.
All isolated devices have a high common mode rejection ratio (CMRR).
A great number of trigger capabilities results in multiple instrument and channel synchronization possibilities.

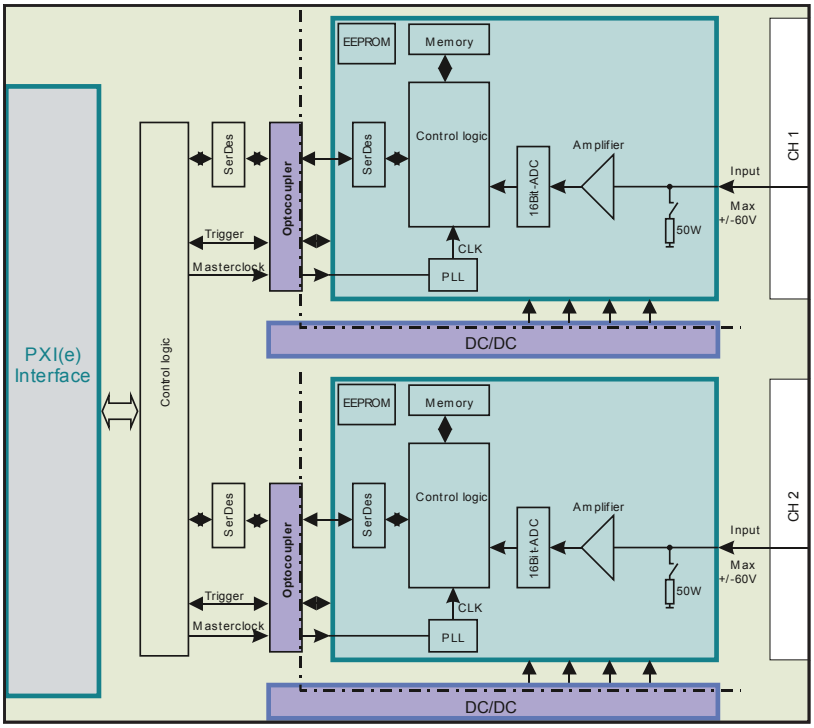
Data can be acquired before and after the trigger event with a programmable sample counter, that controls the number of data points.

High 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 troughput design for many applications

The PXD(e)721x Digitizer Family is designed for high throughput testing. Multiple measurements in combination with the memory segmenting feature (option MEMSEG) results in additional test time improvement.
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.



Ordering Option	Comment
PXDe721x	PXIExpress interface
PXD721x	PXI interface
Option DVM	Digital Voltmeter
Option T/C	Timer/counter
Option DBW	Double bandwidth
Option MEMSEG	Memory segmenting

General	Specification	Comment
Module size	1 slot, 3U 2 slots, 3U	PXD(e)7211, PXD(e)7212, PXD(e)7213 PXD(e)7214
Module weight	<0.4 kg <0.6 kg	PXD(e)7211, PXD(e)7212, PXD(e)7213 PXD(e)7214
Front connector type	SMA	
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	60 V CAT I, Pollution Degree 2	

Acquisition	Specification	Comment
Maximum sample rate	100 MS/s	
Bandwidth	50 MHz, 100 MHz with option DBW	2 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	
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	

Time Base	Specification	Comment
Accuracy	50 ppm	In operating temperature range
Aging per year	5 ppm	

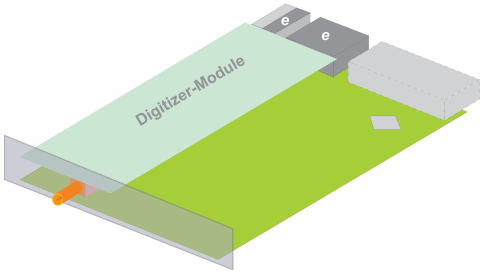
DVM and Timer/Counter	Specification	Comment
DVM Averaging	500 ms	
T/C counter width	40 Bit	Rise/fall time and frequency measurement

[1] DC accuracy specified for an average value of 100 samples with a sample rate of 5 kS/s.

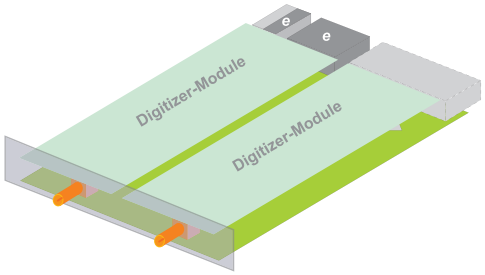
Notes: All product data are specified for 1 year at an ambient temperature of 23°C ±5°C (after 1 hour warm-up time).
Product specification and description in this document are subject to change without notice.

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

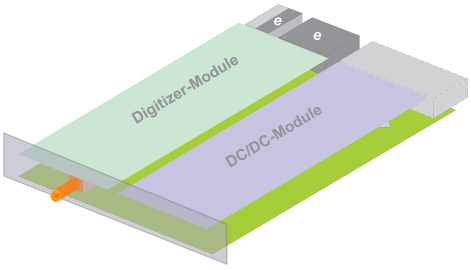
PXI Capabilities	Specification	Comment
PXI 10 MHz usage	On request	Then time base accuracy depends on PXI rack
PXI trigger usage	Possible	PXI trigger 0 ... 7; input and output
PXI star trigger usage	Possible	Input only



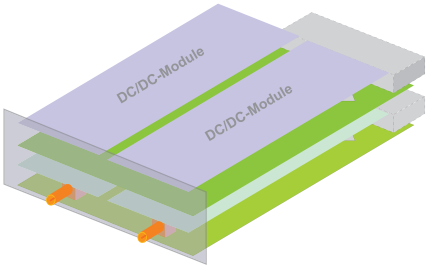
PXD(e)7211
1 channel non-isolated digitizer in 1 slot



PXD(e)7212
2 channel non-isolated digitizer in 1 slot



PXD(e)7213
1 channel isolated digitizer in 1 slot



PXD(e)7214
2 channel isolated digitizer in 2 slots

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