

# PXD7113 FlexRay Digitizer



## TECHNICAL DATA SHEET

PXI

### Features

VXI

LAN

cPCI

PXIe

GPIB

USB

RS232  
485

external  
PCIe

- Designed for FlexRay measurements
- 100 MS/s with 16 Bit resolution
- Fully isolated design with two selectable inputs in differential or single ended mode
- 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 resolution FlexRay Digitizer

The PXD7113 FlexRay Digitizer features a 100 MS/s input with 16Bit resolution, input voltages up to  $\pm 10V$  and a bandwidth up to 10 MHz.

The PXD7113 FlexRay Digitizer has a 2 MB memory which allows up to 1 million samples. The device has a high common mode rejection ratio (CMRR).

### Two multiplexed inputs – selectable as differential or single ended inputs

The PXD7113 FlexRay Digitizer can be configured in differential or single ended mode. In both modes, an optional 95 Ohm termination resistor can be activated. This allows a FlexRay signal measurement without additional signal conditioning.

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

### Multiple instrument synchronization possibilities

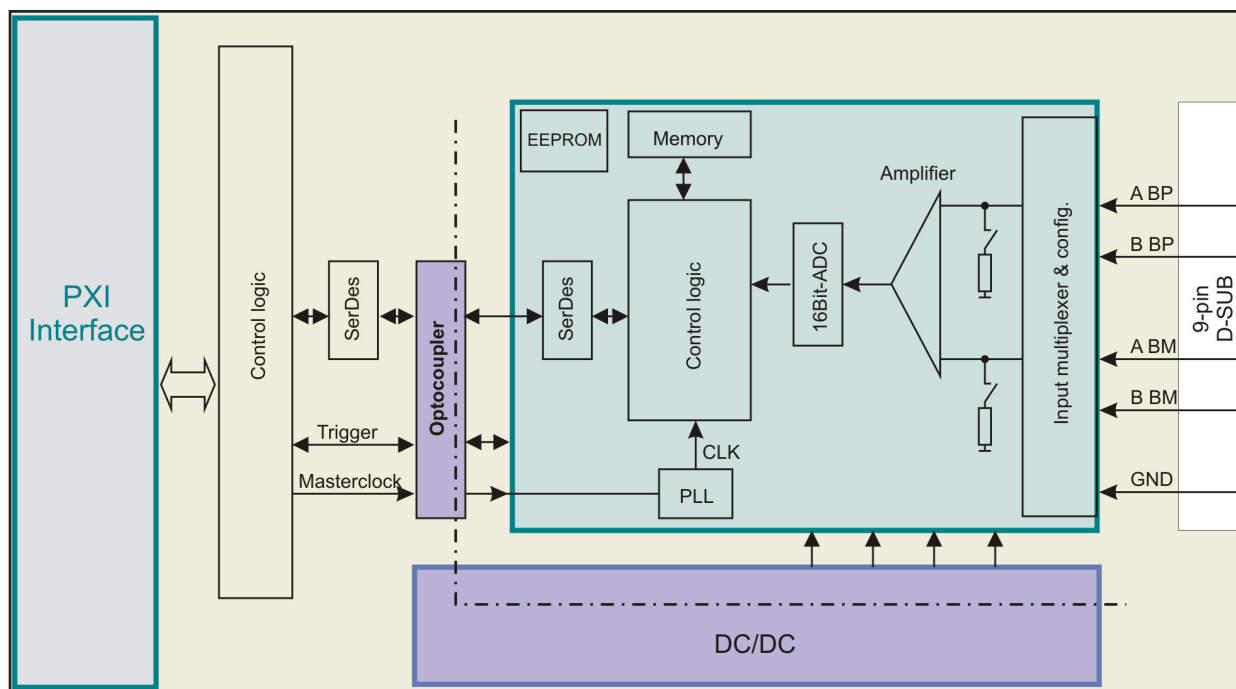
A great amount of trigger capabilities results in multiple instrument synchronization possibilities.

Furthermore the PXD7113 FlexRay Digitizer has a built-in timer/counter and voltage measurement engine.

### High throughput design for many applications

The PXD7113 FlexRay Digitizer is designed for high throughput testing.

This design guarantees highest quality measurements and is perfect for a wide range of application areas including automotive, communications, scientific applications, military/aerospace and consumer electronics.



General	Specification	Comment
Module size	1 slot, 3U	
Module weight	<0.7 kg	
Front connector type	9-pin D-SUB male	
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	250V CAT I, Pollution Degree 2	

Acquisition	Specification	Comment
Maximum sample rate	100 MS/s	
Bandwidth	>10 MHz	2 V <sub>pp</sub> 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.	Software selectable
Input impedance	1 MΩ // <20 pF, 95 Ω	Software selectable
Input coupling	DC	
Maximum input voltage	1 MΩ: 10 V <sub>p</sub> 95 Ω: 5 V <sub>p</sub>	
Input range	10 V	
DC accuracy <sup>1</sup>	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	1 ppm	In operating temperature range
Aging per year	1 ppm	

DVM	Specification	Comment
DC accuracy <sup>2</sup>	0.2% of input + 0.05% of full scale	With auto offset correction
Measurement time	1...500 ms	Software programmable

<sup>1</sup> DC accuracy specified for an average value of 100 samples with a sample rate of 5 kS/s and active 30 kHz filter.

<sup>2</sup> 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.

PXI Capabilities	Specification	Comment
PXI trigger usage	Possible	PXI trigger 0...7; input and output
PXI star trigger usage	Possible	Input only

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

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

<sup>1</sup> Square wave signal with  $T_{\text{Rise}} < 1 \text{ ns}$  and  $T_{\text{Fall}} < 1 \text{ ns}$ .

<sup>2</sup> Trigger comparator error not included.