

PXD SERIES DIGITIZER SPECIFICATIONS

NOTE: Specifications are subject to change without notice.

ACQUISITION SYSTEM

Table 1. One and Two Channel Models

Model	PXD512	PXD212	PXD522	PXD1022	PXD1021
Bandwidth	500 MHz	250 MHz	500 MHz	1 GHz	1 GHz
Maximum Single Shot Sample Rate	1 GS/s	1 GS/s	2 GS/s	2 GS/s	2 GS/s
Maximum Repetitive Sample Rate	50 GS/s	50 GS/s	50 GS/s	50 GS/s	50 GS/s
Channels	2	2	2	2	1
3U PXI Slots	2	2	3	3	2
Acquisition Memory Standard	256k	256k	256k	256k	256k
Acquisition Memory Option 1	4M	4M	4M	4M	4M
Acquisition Memory Option 2	N/A	N/A	8M	8M	8M
Single Shot Capture Window	10 ns – 10,000 s	10 ns – 10,000 s	10 ns – 10,000 s	10 ns – 10,000 s	10 ns – 10,000 s
Repetitive Capture Window	5 ns – 10 μs	5 ns – 10 μs	5 ns – 10 μs	2 ns – 10 μs	2 ns – 10 μs
Sequential Mode Max. Segments	4096	4096	8192	8192	8192
Power Consumption	41 W	41 W	57 W	57 W	35 W

PXD Series Digitizer

Table 2. Four Channel Models

Model	PDX514	PDX214	PDX114
Bandwidth	500 MHz	250 MHz	150 MHz
Maximum Single Shot Sample Rate	1 GS/s	1 GS/s	1 GS/s
Maximum Repetitive Sample Rate	50 GS/s	50 GS/s	50 GS/s
Channels	4	4	4
3U PXI Slots	3	3	3
Acquisition Memory Standard	256k	256k	256k
Acquisition Memory Option 1	4M	4M	4M
Single Shot Capture Window	10 ns – 10,000 s	10 ns – 10,000 s	10 ns – 10,000 s
Repetitive Capture Window	5 ns – 10 μs	5 ns – 10 μs	5 ns – 10 μs
Sequential Mode Max Segments	4096	4096	4096
Power Consumption Maximum	70 W	70 W	70 W

Table 3. Typical Input Current (Amps) for Different Modules

PXI Chassis Voltage (V)	PXD114/214/514 (A)	PXD522/1022 (A)	PXD212/512 (A)	PXD1021 (A)
5	7.3	6.6	4.2	3.86
3.3	5.8	4.4	3.7	3.0
12	0.28	0.14	0.11	0.08
-12	0.35	0.25	0.22	0.17

Bandwidth Limiter: 20 MHz and 200 MHz

Sensitivity: 40 mV to 8 V full scale range

Scale Factors – volts (calibrated): 0.04, 0.08, 0.16, 0.4, 0.8, 1.6, 4, 8 FSR

Full Scale Range: 8 major divisions


Offset Range:

± 1 V (40 mV to 792 mV FSR, 50 ohms only)

± 10 V (800 mV to 8 V FSR, 50 ohms only)

± 1 V (40 mV to 800 mV FSR, 1 Mohms only)

± 20 V (816 mV to 8 V FSR, 1 Mohms only)

Variable Gain Range: 0.1 to 1.0 of full scale

Variable Gain Resolution: 0.1% of full scale

Input Coupling:

Z_{in} = 50 ohms DC, GND

Z_{in} = 1 Mohms AC, DC, GND

AC Coupled Lower Cutoff:

< 10 Hz, frequency -3 dB

Input Impedance:

Z_{in} = 50 ohms $\pm 1.5\%$

Z_{in} = 1 Mohms $\pm 1.5\%$ || 16 ± 2 pF

DC Accuracy: $\pm(2\%$ full scale + 1.6% offset setting + 1 mV) @ gain ≥ 80 mV FSR

Vertical Resolution: 8 bits

**Maximum Input Voltage:**

Z_{in} = 50 ohms, 5 V_{rms} (including DC)

Z_{in} = 1 Mohms, 100 V (DC + pk AC, frequency ≤ 5 kHz)

Input Connector(s): BNC (grounded)

ACQUISITION MODES

Single Shot: For transient and repetitive signals: 1 GS/s for models 114, 214, 514, 212, 512; 2 GS/s for models 1021, 1022, 522

Sampling period settable in 1-2-4 sequence. (e.g., PXD512 period: 1 ns/pt, 2 ns/pt, 4 ns/pt, etc.)

Random Interleaved Sampling (RIS): For repetitive signals: up to 50 GS/s

Sequence: Stores multiple events, each of them time stamped (1 ns resolution) in segmented acquisition memory.

Minimum Segment Length: 256 samples

Maximum Segment Length: 1 million samples

TIMEBASE SYSTEM

Capture Window at Maximum Sample Rate: up to 4 ms

Clock Accuracy: 10 ppm

PXD Series Digitizer

TRIGGER SYSTEM

Modes: Normal, Auto, Single, and Stop

Slope: Positive, Negative

Coupling: DC, AC, LFREJ, HFREJ

AC Cutoff (low freq.): 7.5 Hz (typical)

HFREJ, LFREJ Cutoff: 50 kHz typical (6 dB/octave)

TRIGGER DELAY

Pre-Trigger Recording: 0 –100% of horizontal full scale (adjustable in 1% increments)

Post-Trigger Delay: 0 –10,000 divisions (adjustable in 0.1 division increments)

Sources: All data channels, EXT (Slope, level, and coupling are unique for each source. PXI triggering capabilities are described below.)

EXTERNAL TRIGGER

Range: ± 0.5 V (± 2.5 V with Ext/5 selected)

Input Impedance: 50 ohms $\pm 1.5\%$, 1 Mohms $\pm 3\%$ || 20 pF $\pm 10\%$



Maximum Input:

$Z_{in} = 50$ ohms, 5 V_{rms} (including DC)

$Z_{in} = 1$ Mohms, 100 V (DC + pk AC, $f \leq 5$ kHz)

Input Connector: BNC

Trigger Outputs: PXI (see below)

MULTI-MODULE SYNCHRONIZATION

The PXD digitizers support PXI extensions to the PCI bus for the following backplane clock and trigger capabilities:

- External clock input for module synchronization to the 10 MHz TTL clock provided by the PXI backplane (PXI_CLK10).
- Trigger inputs to support an asynchronous low skew (1–5 ns) trigger source broadcast on the PXI star trigger bus.
- Asynchronous trigger I/O to support a single-line broadcast on the PXI trigger bus. The trigger input may come from an external source, or from a digitizer module. Digitizer modules provide a tri-stated output to support this mode, with high impedance guaranteed on power-up.

Software Compatibility:

The PXD hardware is compatible with the following software environments:

Operating Systems: Windows 2000/XP



Supported Drivers:

- IVI-Scope Driver
- LeCroy PXD Getting Started Application Program
- ActiveX Control
- LabView Driver

UPDATE RATE

Supports PCI Bus transfer rates up to 100 MB/s peak data rates.

GENERAL

Auto-Calibration: Ensures specified DC and timing accuracy.

Auto-Calibration Time: < 500 ms

Recommended Factory Calibration Interval: one year

Temperature

Operating: 0 to 40 °C when installed in a PXI chassis with a minimum airflow of 5 cfm (PXD 212, 512, 1021) or 15 cfm (PXD 114, 214, 514, 522, 1022) provided to the air inlet of the Digitizer

Storage (Non-Op): -40 to +71°C

Humidity

Operating: 5 to 80% RH (non-condensing). Upper limit derates to 50% RH above 30 °C.

Storage (Non-op): 5 to 95% RH (non-condensing). Upper limit derates to 75% RH above 30 °C and 45% RH above 40 °C.

Altitude

Operating: Up to 3,048 m (10,000 ft) at or below 25 °C

Storage (Non-op): Up to 12,192 m (40,000 ft)

Vibration

Operating: Random vibration, 0.31 g_{rms}, 5 to 500 Hz, 15 minutes in each of 3 orthogonal axes

Non-operating: Random vibration, 2.4 g_{rms}, 5 to 500 Hz, 15 minutes in each of 3 orthogonal axes

Functional Shock: 30 g_{peak}, half sine, 11 ms, 3 shocks (positive and negative) in each of 3 orthogonal axes, 18 shocks total

Electromagnetic Compatibility: Conforms to EN 61326-1:1998 (Emissions and Immunity)

Safety: Conforms to EN 61010-1:2001 (Installation Category I, Pollution Degree 2)

Certifications: CE Approved

PXD Series Digitizer

Mechanical Dimensions:

PXD512 and PXD212 occupy 2 3U PXI slots.

PXD514, PXD214 and PXD114 occupy 3 3U PXI slots.

Recommended Factory Calibration Interval: 1 year

Warranty: 1 year

SERVICE

LeCroy is committed to customer success, regardless of the number of LeCroy products owned. Call your local service representative to discuss specific requirements.

We offer:

- Extended warranty packages
- Annual calibration maintenance
- Prompt, personalized warranty and nonwarranty repair at service offices

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