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PXI Digitizers

PXD series

PXI Digitizers

Arbitrary Waveforms Generator



- 1ch, 2ch, 4ch 入力デジタイザ
- 周波数帯域：150MHz～1GHz
- 最高サンプリング・レート：2.5GS/s
- 1ch 任意波形発生モジュール
- PXIバスにより、データの高速転送が可能
- Plug & Play機能で、セットアップから作業まで簡単操作
- Lab VIEW, CVI, Visual C++, Visual Basicに対応

レクロイのPXIデジタイザは、デジタル・オシロスコープで培った技術を生かした低ノイズ、高速A／Dモジュールです。
研究開発部門はもちろんの事、検査、生産工程においてもご使用いただけます。
任意波形発生モジュールPXA125は、ファンクション・ジェネレータ、任意波形発生の機能があります。
デジタイザと組み合わせる事により捕捉した信号にノイズを付加したり、加工したりする事が可能です。

PXI

PXIは、計測・オートメーションのためのCompactPCI拡張規格であり、CompactPCIとの相互運用性を確立しています。またプラグ・アンド・プレイにより簡単にセット・アップできます。



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●宇宙開発
●医療機器 など

多チャンネル入力システムやCompactPCIモジュールとの混在による計測システム構築に最適

LeCroy

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PXD114/212/214/512/514/522/1021/1022

Acquisition System

Model	PXD114	PXD212	PXD214	PXD512	PXD514	PXD522	PXD1021	PXD1022
Bandwidth	150 MHz	250MHz	250MHz	500 MHz	500 MHz	500 MHz	1GHz	1GHz
Maximum Single Shot Sample Rate	1 GS/s	1 GS/s	1 GS/s	1 GS/s	1 GS/s	2GS/s	2GS/s	2GS/s
Maximum Repetitive Sample Rate	50 GS/s	50 GS/s	50 GS/s	50 GS/s	50 GS/s	50 GS/s	50 GS/s	50 GS/s
Channels	4	2	4	2	4	2	1	2
3U PXI Slots	3	2	3	2	3	3	2	3
Acquisition Memory Standard	256 k	256 k	256 k	256 k	256 k	256 k	256 k	256 k
Acquisition Memory Option 1	4 M	4 M	4 M	4 M	4 M	4 M	4 M	4 M
Acquisition Memory Option 2	NA	NA	NA	NA	NA	8M	8M	8M
Single Shot Capture Window	110 ns–10,000 s	110 ns–10,000 s	110 ns–10,000 s	10 ns–10,000 s	10 ns–10,000 s	10 ns–10,000 s	10 ns–10,000 s	110 ns–10,000 s
Repetitive Capture Window	5 ns–10 us	5 ns–10 us	5 ns–10 us	5 ns–10 us	5 ns–10 us	2 ns–10 us	2 ns–10 us	2 ns–10 us
Sequential Mode Max Segments	4096	4096	4096	4096	4096	8000	8000	8000
Power Consumption	70 W	41 W	70 W	41 W	70 W	-	-	-

Bandwidth Limiter	20 MHz and 200 MHz	
Sensitivity	40 mV to 8 V full scale range	
Scale Factors (calibrated)	0.04, 0.08, 0.16, 0.4, 0.8, 1.6, 4, 8 Volts FSR	
Full Scale Range	8 major divisions	
Offset Range	±1 V (40 mV - 792 mV FSR, 50 Ωonly)	±10 V (800 mV - 8 V FSR, 50 Ωonly)
	±1 V (40 mV - 800 mV FSR, 1 MΩonly)	±20 V (816 mV - 8 V FSR, 1 MΩonly)
Variable Gain Range	0.1 to 1.0 of full scale	
Variable Gain Resolution	0.1% of full scale	
Input Coupling	Z in = 50 Ω DC, GND Z in = 1 MΩ AC, DC, GND	
AC Coupled Lower Cutoff	< 10 Hz, frequency -3 dB	
Input Impedance	Z in = 50 Ω 50 Ω± 1.5% Z in = 1 MΩ 1 MΩ± 1.5% || 16 ± 2 pF	
DC Accuracy:	±(2% full scale + 1.6% offset setting	+1 mV @ gain ≥ 80 mV FSR
Vertical Resolution	8 bits	
Maximum Input Voltage	Z in = 50 Ω 5 V (RMS, including DC)	Z in = 1 MΩ 100 V (DC + pk AC,frequency ≤ 5k Hz)
Input Connector(s)	BNC (grounded)	

ACQUISITION MODES	
Single Shot	For transient and repetitive signals. Maximum 2GS/s(PXD1022/1021/522) or 1GS/s(PXD514/512/214/212/114)
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

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PXD114/212/214/512/514/522/1021/1022

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 Ω ±1.5%, 1 MΩ (± 2.5 V for ext/5) ±3% // 20 pF ±10%
Maximum Input		Z in = 50 Ω 5 V (RMS, including DC) Z in = 1 MΩ 100 V (DC + pk AC, f ≤ 5 kHz)
Input Connector		BNC
External Trigger		
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 1. External clock input for module synchronization to the 10 MHz TTL clock provided by the PXI backplane (PXI_CLK10). 2. Trigger inputs to support an asynchronous low skew (1–5 ns) trigger source broadcast on the PXI star trigger bus. 3. 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 a 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
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), 15 cfm – (114, 214, 514, 522, 1022)
	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
Altitude	Operating	Up to 3,048 m (10,000 ft) at or below 25 °C
	Storage (Non-op)	Up to12,192 m (40,000 ft)
Vibration	Operating	Random vibration, 0.31 gRMS, 5 to 500 Hz, 15 min. in each of 3 orthogonal axes
	Non-operating	Random vibration, 2.4 gRMS, 5 to 500 Hz, 15 min. in each of 3 orthogonal axes
Functional Shock		30 g peak, half sine, 11msec, 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
Mechanical Dimensions		PXD1021, PXD512 and PXD212 occupy 2 3U PXI slots. PXD1022, PXD222, PXD514, PXD214 and PXD114 occupy 3 3U PXI slots.
Warranty		1 year

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PXD222

Vertical	
Bandwidth, DC Coupled	200 MHz (-3 dB)
Bandwidth Limiters	20 MHz and 10 kHz
Input Coupling	AC, DC
Full Scale Ranges	direct (4-8-16 sequence) begining at 40 mV to 800 V
Positioning	Offset adjustable to 100% of full scale
Input Impedance on BNC	DC Coupled 1 MΩ (±1 %)//15 pF (±2 pF)
Max. Input Voltage	direct (1:1) 300 V CAT II with 10:1 probe 1000V
Vertical Accuracy	±2% of full range
Digitizer Resolution	8 bits
HORIZONTAL	
General	
Maximum Sample Rate	
Single Shot	2.5 GS/s
Digitizers	2
Time Base Accuracy	±100 ppm
Acquisition Modes	Real Time, Single Sweep
Normal Acqisition Mode	
Record Size	up to1000 samples/ch
Recorded Time Span	100ns to 10s
Glitch Capture Mode	
Record Size	250 points (Min and Max data arrays returned)
Recorded Time Span	50us to 10s detect glitches as fast as 50ns by oversampling waveform
Sample Rate	up to 2.5 GS/s
Scope Record Mode	
Record Size	27K points (Min and Max data arrays returned)
Recorded Time Span	11 s to 36 hours
Sample Rate	up to 20 MS/s
Trigger and Delay	
Trigger Modes	Automatic, Normal, Single Shot
Trigger Delay	up to 100 times the recorded time span
Pre Trigger View	90% of the recorded time span
Max. Delay	10 seconds
Edge Trigger	
Source	Ch1,Ch2,PXI_TRIG[n],PXI_STAR[n]
Slope	Positive, Negative
Trigger Level Control Range	100% of full range
Video Trigger	
Standards	PAL, PAL+, NTSC, SECAM
Modes	Lines, Line Select, Field 1 or Field 2
Source	Ch2
Polarity	Positive, Negative
Source	Ch2
Polarity	Positive or negative pulse
Glitch Trigger	Trigger Conditions <T, - min 300ns
Parameter Measurements	VDC, VAC rms, VAC+DC, Vpeak max, Vpeak min, Vpeak to peak, Frequency,Positive Pulse Width, Negative Pulse Width, Positive Duty Cycle, Negative Duty Cycle, Phase
Mechanical	
Size	3U height x 2 slots
Weight	1.7 lbs.
Power requirements	+5 VDC 1.6 A
Environment and Safety	
Temperature Operating	0°C to 50°C (32°F to 122°F) with specified cooling of PXI-rack
Nonoperating	-40°C to +71°C.
Humidity Operating	5% to 95% max RH (non-condensing) up to +30°C, Upper limit derates to 45% RH (non-condensing) at 50 degrees C.
Nonoperating	5% to 95% RH (non-condensing) up to 30°C; Upper limit derates to 45% RH (non-condensing) at 60°C
Altitude Operating Nonoperating	15,092 ft. (4,600 m). 39,377 ft. (12,000 m).
Shock & Vibration	Conforms to MIL-PRF-28800 Class 3
Electromagnetic Compatibility	Emissions and Immunity EN 61326-1:1997 +A1:1998
Safety	Safety specifications are only valid if the unit is properly installed.Designed for measurements on 300V Category II Installations per:EN 61010-1:1994 CAN/CSA-C22.2 No.1010.1-92 UL3111-1
Approvals	CE Approved UL and cUL approved
Warranty	1Year



●PXA125 ●PXD222

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PXA125

Multiple Instrument	
Synchronization	Multiple instruments can be connected together and synchronized to provide multi-channel synchronization with a phase offset of 0 to n points. Initial skew is < 20 ns to the first master; 20 ns cumulative to additional slaves.
Sample Clock	
Internal	50 S/s to 125 MS/s with 10-digit resolution limited to 1 µHz
Accuracy	Standard reference <= 100 ppm Other reference: 1 ppm clock (TCXO)
External 10 MHz Reference Input	10 MHz TTL, 50% ±2% duty cycle
Sample Clock Modulation	The sample clock can be frequency modulated by internal waveforms (sine, square, triangle, ramp) or by downloaded waveforms. FSK, ramped FSK, and sweep are also available.
Trigger Modes	Continuous Triggered Internal or External Gated Burst External
Trigger sources	External: TTL DC - 5 MHz, ±slope Internal: 100 mHz to 2 MHz with 7-digit resolution (.01% accuracy) Backplane: PXI STAR Trigger and trigger bus
Standard Waveforms	Waveforms: Sine, Triangle, Square, Pulse, Ramp, Sync, Gaussian Pulse, Exponential decay/ Rise Pulse, Noise, DC Frequency Range: Waveform dependent
Arbitrary Waveforms	2 Mpoints and 14-bit vertical resolution Waveform download rate: 5 Mpoints/s
Sequenced Arbitrary Waveforms	Segments linkable and repeatable to generate extremely long waveforms. Auto-advance, mixed advance, single advance, and stepped advance triggered externally, internally, or by soft trigger.
Outputs	
Waveform Outputs	Front panel BNC off or on, 50 Ω ±1% protected against temporary short circuit 80 mV to 8 V pk-pk into 50 Ω with 3.5-digit resolution, 16 V into open circuit Offset is attenuated with amplitude, in range 0 to ±3.6 V with resolution 22 mV accuracy ±1%. Accuracy ±4 V window ±(1% of reading +1% of amplitude + 2 mV) ±400 mV window ±(1% of reading +1% of amplitude + 200 µV) Filters 25 MHz and 50 MHz, 7-pole elliptic square wave and pulse rise-time < 10 ns, aberration < 5% ±10mV
Sync / Marker Output	In FM and sweep modes, this output generates a marker having properties similar to the sync pulse output. For all other functions and modes, this output generates sync pulse, which is synchronous with the output waveform. Front panel BNC provides > 2 V into 50 Ω, 4 V nominal into 10 k Ω, temporary short-circuit protected. Position and width programmable with 4-point resolution
Sine Output	Front panel output SMB provides sine wave up to 100 MHz, 1 V into 50 Ω, derived directly from the sample clock, even during FM, sweep FSK, and ramped FSK.
General	Power Requirements: 10 W maximum Dimensions: Single width, 3U high Environmental Operating temperature 0 °C - 50 °C Humidity (non-condensing) 5% to 95% RH at or below 30 °C Upper limit derates to:75% RH above 30 °C and45% RH above 40 °C Certifications CE Marked EMC Conforms to EN 61326-1:1998 Safety Conforms to EN 61010-1:2001 Warranty:1year

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Ordering Information

PXI デジタイザ・モジュール

PXD222	2ch差動入力	200MHz	2.5GS/s	1Kワード（20MS/s　27.5Kワード@レコード・モード）
PXD114	4ch入力	150MHz	1GS/s	256kワード/ch
PXD212	2ch入力	250MHz	1GS/s	256kワード/ch
PXD214	4ch入力	250MHz	1GS/s	256kワード/ch
PXD512	2ch入力	500MHz	1GS/s	256kワード/ch
PXD514	4ch入力	500MHz	1GS/s	256kワード/ch
PXD522	2ch入力	500MHz	2GS/s	256kワード/ch
PXD1021	1ch入力	1GHz	2GS/s	256kワード/ch
PXD1022	2ch入力	1GHz	2GS/s	256kワード/ch

オプション

PXD-L	4Mワード/ch (PXD222には搭載不可)
PXD-XL	8Mワード/ch（PXD522/1021/1022のみ搭載可能）

PXI任意波形発生モジュール

PXA125	1ch出力	125MS/s	2Mワード/ch 14ビット分解能

PXIシステムの構築

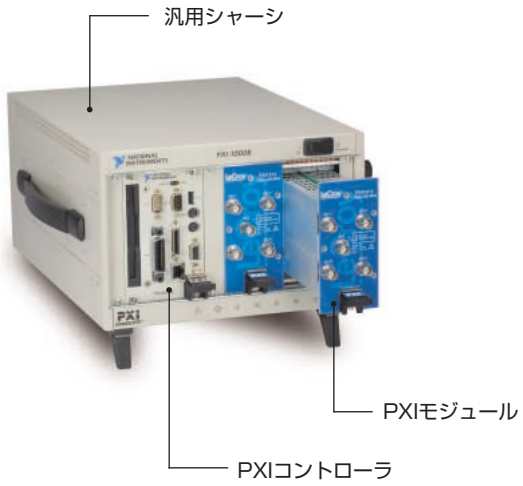
PXIシステムには、ソフトウェア（ドライバ）、シャーシ、コントローラ、モジュールなどが必要です。これらを正しく選択する事によりさまざまなアプリケーションに対応することが出来ます。

【ソフトウェアの選択】
LabVIEW、Visual C++、Visual BASIC、Lab Windows/CVIなど

【シャーシの選択】
汎用シャーシ、多スロット・シャーシ、モニタ付きシャーシ、ポータブル・シャーシなど

【コントローラの選択】
PXI組み込みコントローラ、リモート・コントローラなど
リモート・コントローラを利用し外部PCよりコントロール可能です。
より安価なシステム構築が可能です。

【モジュールの選択】
PXDシリーズ、PXAシリーズ、I/O、スイッチなど



●ユーザー各位のご要望、当社の品質管理の一層の高度化などにともなって、おことわりなしに仕様の一部を変更することがあります。

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御用命は…

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