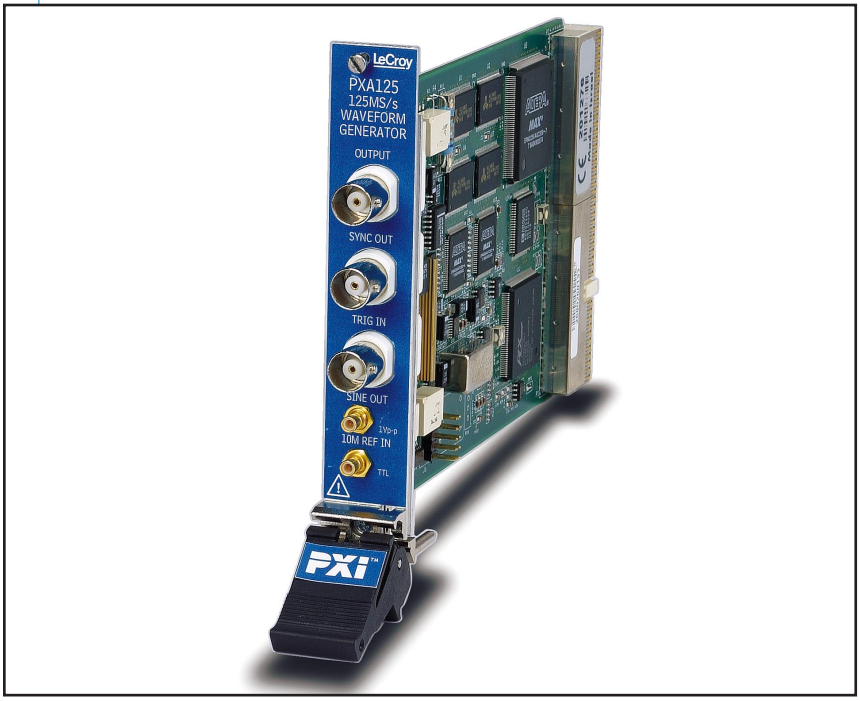
Arbitrary Waveform Generator

PXA125

Leading Features

- *125 MS/s clock*
- *14-bit vertical resolution*
- *2M memory depth*
- *1 ppm clock stability*
- *10-digit sample clock frequency*
- *PXI form factor, single slot*
- *Multiple instrument synchronization*
- *Ultra-fast waveform downloads using DMA*
- *Extremely low phase-noise carrier*
- *Free-running asynchronous internal trigger generator*
- *Frequency agility: FSK, ramped FSK, sweep, FM*
- *Sequence generator controls 128k segments and 4096 links*
- *"ArbConnection" software for easy waveform creation & control*



One-channel PXI Arbitrary Waveform Generator (PXA125) with 2-Mword memory

The PXA125 is a 125-MS/s Arbitrary Waveform Generator that features a combination of arbitrary generator and synthesizer in a 1-slot 3U PXI form factor. Combined with its versatility, high resolution and wide frequency range, the PXA125 offers the best timing arbitrary waveform generator within the compact, sturdy, modular architecture of PXI.

The PXA125 Arbitrary Waveform Generator is fully PXI compliant and based on the desktop computer industry standard PCI bus. The plug-and-play functionality of the PXA125 provides ease of setup and use. It seamlessly integrates with the LeCroy PXD family of digitizers from 150 MHz to 500 MHz and other PXI modules. Fast data transfer rates and improvements in test times are realized, compared to traditional GPIB instruments.

The PXA125 includes "ArbConnection", a software package that combines three powerful tools: instrument control panel, waveform composer, and FM signal composer. The detailed front panel offers full control of the instrument while the waveform composer allows you to generate, edit, and download complex waveforms. Finally, the FM signal composer allows you to generate and download complex modulating signals.

The LeCroy PXA125 provides a cost efficient, space efficient, high performance waveform generating solution for production test applications including:

- Communications Test Systems
- Aerospace and Defense
- Automotive
- Analytical Instruments
- Disk Drive Testing

LeCroy

PXA125 Technical Specifications

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 and

45% RH above 40 °C

Certifications CE Marked

EMC Conforms to EN 61326-1:1998

Safety Conforms to EN 61010-1:2001

Warranty: 1 year

Ordering Information

Single Channel, 125 MS/s, 14 Bit, 2 Mpts Arbitrary Waveform Generator	PXA125

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