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Find the *Teradyne / LitePoint / ZTEC Instruments ZT500PXI* at our website: *Click HERE*

ZT500PXI Datasheet

300 MS/s, 14-Bit Arbitrary Waveform Generator

Overview

Features

- 1 channel, 14-bit resolution
- 300 MS/s, 200 MHz analog bandwidth
- 2 MS record length
- Programmable range (between 0.2 Vpp and 7 Vpp), TTL synchronization outputs, and analog reconstruction filtering
- Powerful sequencing and segmentation
- Standard LabVIEW™ waveform library
- Multi-module synchronization with optional ZT1000PXI



The ZT500PXI provides a high-performance arbitrary waveform generator in a 3U PXI/CompactPCI instrument. The module's excellent analog signal dynamic range and very low noise enable the creation of high-quality video, IF, RF and fast digital signals.

The ZT500PXI delivers precise waveforms with 14 bits of vertical resolution. Two digital TTL outputs provide additional time markers and sync outputs. Extensive segmenting, sequencing, and triggering options, along with a standard waveform library, provide a flexible and powerful method to generate a wide variety of user-definable waveforms.

The ZT500PXI comes with Plug and Play style drivers that can be used with National Instruments LabVIEW™ and LabWindows™. Instrument control can also be achieved through the command interface or register-level access.

High-Quality Signal Generation

The ZT500PXI is the first 300 MSample/s 14-Bit Arbitrary Waveform Generator for PXI. The combination of high speed and large dynamic range make the ZT500PXI a very high-quality signal generator with the added flexibility of an arbitrary waveform generator. Four selectable analog reconstruction filters allow the user to optimize signal quality and bandwidth.

Flexible Segmentation and Sequencing

The deep memory on the ZT500PXI can be segmented into multiple smaller waveforms that can be pieced together and repeated in a user-defined sequence. Multiple waveforms can be loaded once into the instrument and recalled as needed.

External/Multiple Module Synchronization

Powerful triggering and gating functions allow the ZT500PXI to be synchronized to external events and generate waveforms in predefined time intervals. Multiple modules can be easily synchronized using the PXI backplane clock and trigger lines.

TTL Synchronization Outputs

Two digital TTL outputs provide additional outputs for time markers and sync signals for synchronizing external equipment. These signals may be used independently as programmable pulse generator signals for logic stimulus.

Powerful Triggering and Sequencing Modes

The ZT500PXI provides numerous triggering and sequencing modes that enable advanced signal generation capabilities.

Waveform generation can be started upon a trigger event or delayed for specified time from the trigger event. A trigger input can be used to gate the output waveform generation sequence. Waveforms can be generated once or looped continuously.

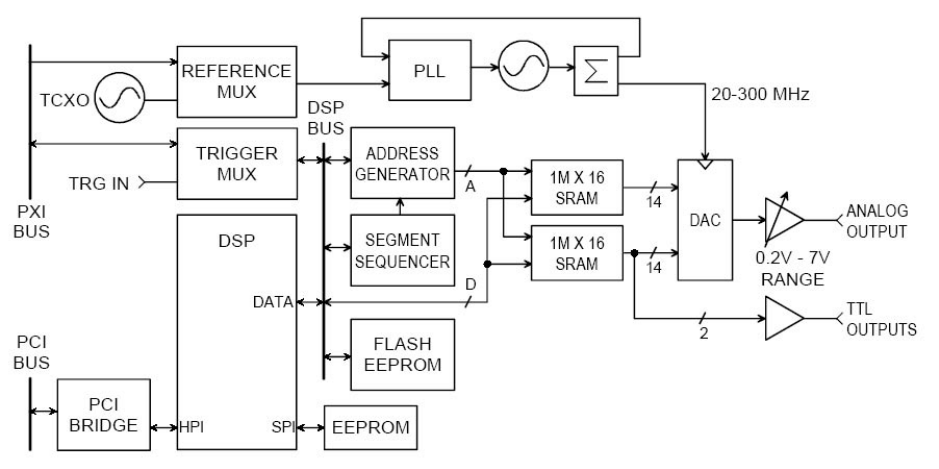
Waveform segment sequencing can be synchronized to a trigger event or allowed to advance automatically. Waveform segments can be played back seamlessly in any order, and may be repeated up to 65536 times before advancing to the next segment.

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ZT500PXI Block Diagram



Many other combinations of triggering and sequencing allow the user to generate very sophisticated waveforms and waveform sequences.

Programmable Full-Scale Range

Two digital TTL outputs provide additional outputs for time markers and sync signals for synchronizing external equipment. These signals may be used independently as programmable pulse generator signals for logic stimulus.

Software Integration

The ZT500PXI is delivered with plug-and-play drivers that can be used in most application programming environments, such as LabVIEW, LabWindows/CVI, Visual Basic, and C/C++. An extensive example library is provided to show various implementations of the driver using both LabVIEW and C.

Instrument control can also be achieved using an intuitive command interface. In addition, register-level access is also supported to provide high speed data transfers and flexible integration into non-standard operating environments.

Expect More from your Modular Instrument

Specifications such as frequency and resolution are obvious considerations when selecting a modular instrument. However, you must look beyond the obvious to ensure the overall success of your test and measurement project. You must consider functionality and expect not to make any sacrifices when moving to a modular form factor. You should expect your modular instruments to be built using the latest technology. You should expect a modular instrument to include the tools you need to integrate their products into your system, regardless of your application environment. You should also expect to receive the assistance you need, when you need it. In summary, you should expect more from your modular instrumentation company.



At ZTEC, we are committed to meeting your specification needs and providing the feature, integration, technology, and service you expect from a modular instrumentation company. Our unique products provide more functionality by including traditional bench-top instrument capabilities in modular instrument form factors. Using the latest commercially available digitization technology, we are able to rapidly deliver new and exciting products to the market. Our instrument software and communication interface allows for simplified integration into your system. And when you have a problem or question, our on-line and phone support is available to provide complete assistance.

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Technical Specifications

ZT500 Performance Characteristics

Analog Output

Channel	1
Bandwidth	DC to 200 MHz
Lowpass Filters	Bypass, 100 MHz, 50 MHz, 25 MHz
Maximum Range	7.0 VPP into High-Impedance 3.5 VPP into 50Ω
Range Adjust	3400 Ranges, 0.2 VPP to 7.0 VPP Adjustable in 2 mV increments
Range Accuracy	±0.1% of Full Scale ±1mV
Output Impedance	50Ω
Connector	SMB

Digital-to-Analog Converter

Sample Rate	20, 40, 80, 100, 160, 200, 300 MSamples/s
Resolution	14 Bits
Record Length	2 MSamples 4 MSamples (Option 1)
Max Record Time	0.105 seconds 0.21 seconds (Option 1)

Digital Outputs

Channels	2
Time Resolution	6.667 to 100 nanoseconds
Functions	Waveform Markers, Synch, Programmable Pulse Generator
Signal Range	TTL Compatible
Output Loading	±12 mA Drive Capability
Connector	SMB

Trigger

Trigger Source	Front Panel, PXI Backplane, Software
Trigger Edge	Rising or Falling
External Trigger	Trigger Input or Output
Trigger Input	TTL Compatible, 10 kΩ Input Impedance, SMB Connector
Trigger Output	TTL Compatible into 50Ω, SMB Connector
Trigger Delay	10 DAC clock periods + 50 ns

Waveform Sequencing Modes

Loop	Loop in Sequence Continuously
Single	Sequence Once

Waveform Sequencing Advance

Normal	Advance to Next Segment upon Segment Completion
N-Cycle	Advance to Next Segment upon N-Cycle Completion, N programmable from 1 to 65536.
Triggered	Advance to Next Segment upon Trigger Event

Acquisition Modes

Non-Triggered	Arm initiates output
Triggered	Trigger initiates output
Trigger Gated	Trigger gates output
Delay Triggered	Trigger initiates timed delay of output

Reference Input

Clock Source	Internal TCXO, PXI Backplane
Internal TCXO	±2.5 ppm accuracy

Waveform Synthesis

DSP Processing	Waveform Library, Custom, Algorithm-Based Processing
Segmentation	1 to 65536 Segments (32 Samples to 4 MSamples)
Sequencing	Continuous Waveform Switching (per Sequence Table)
Sequence Table	Sequence of 1 to 65536 Segment Numbers (with looping)
Looping	Infinite, Continuous Switching Sequence

Waveform Capabilities

Sine		
	Frequency	10 Hz to 150 MHz
	Initial Phase	0 to 360°
	SFDR	80 dBc @ fOUT = 1 MHz 67 dBc @ fOUT = 50 MHz
	THD	-73 dBc @ fOUT = 1 MHz
	Modulation	FM, QAM, Chirp, Multiple Tone
Triangle		
	Frequency	10 Hz to 30 MHz
	Initial Phase	0 to 360°
Square		
	Frequency	10 Hz to 150 MHz
	Duty Cycle	0.1% to 99.9%
	Rise/Fall Time	<4 nanoseconds
Pulse		
	Frequency	10 Hz to 150 MHz
	High/Low Time	0.1% to 99.9%
	Rise/Fall Time	0.1% to 99.9%
	Data Patterns	Programmable Binary Sequence
Noise		
	Bandwidth	150 MHz
	Noise Types	Gaussian White, Uniform White, Pink
DC		
	Amplitude	±100% of Maximum Range
Arbitrary Waveforms		
	Custom	Sample-by-Sample Synthesis

PXI Interface

PCI Interface	33 MHz, 32-bit Address, 16-bit Data
PCI Voltage	Universal, +3.3V or +5V
PCI Compatibility	Version 2.2
PXI Compatibility	PXI_TRIGn input/output selectable PXI_STAR input selectable 10 MHz reference input selectable Left and right side buses not used

Physical and Environmental

Physical size	Single-Wide 3U CompactPCI/PXI Instrument
DC Power	+3.3V @ 200mA, +5V @ 1.75A

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Ordering Information

Model Numbers

Standard Configuration

2 MSample Memory	ZT500PXI-00

Options

4 MSample Memory	ZT500PXI-01

Services

Extended warranty	ZTEXTPXI-00
Calibration	ZTCALPXI-00

Accessories

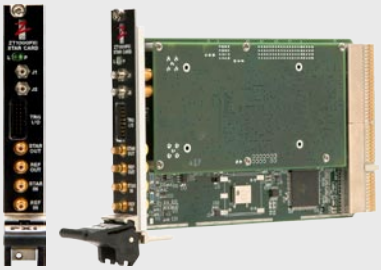


ZTPXIKIT-00
SMB to BNC cable kit
for PCI instruments

Improve the Accuracy of your PXI Instruments with the ZT1000PXI

The ZT1000PXI provides an improved frequency standard and control of the PXI star trigger (Slot 2) and the PXI triggers. The improved trigger capabilities allow PXI instruments to be synchronized together and for additional synchronized chassis to be added to the test system. When fitted with the GPS option, the frequency reference can synchronized to the GPS network. Trigger events can be tagged with information identifying to within 25 ns of when they occurred in universal time. The ZTX1000PXI is an ideal way of improving the accuracy of your PXI instruments, instrument synchronization and unambiguous event recording.

For more information please contact us or visit www.ztec-inc.com.



ZT1000PXI Model Numbers

Standard Configuration

PXI	ZT1000PXI-00

Options

GPS	ZT1000PXI-01

Accessories

SMB to BNC cable kit	ZTPXIKIT-00
GPS Patch Antenna	ZT2000ANT-00
GPS Rooftop Bullet Antenna	ZT2001ANT-00

Services

Extended warranty	ZTEXTPXI-00
Calibration	ZTCALPXI-00

Contact Information

ZTEC Instruments Inc.
7715 Tiburon St NE
Albuquerque, NM 87109
USA
Tel: +1 505.342.0132
Fax: +1 505.342.0222

www.ztec-inc.com

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