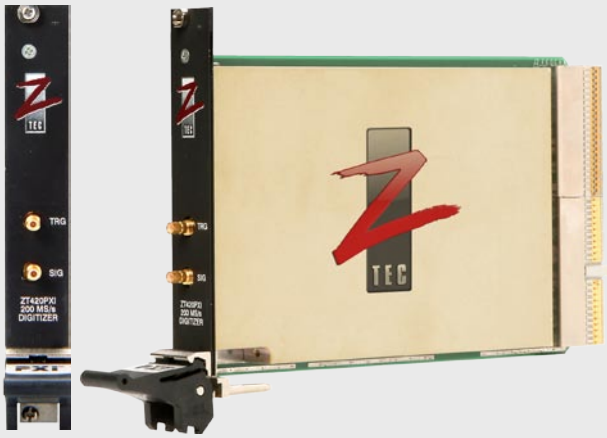
ZT420PXI Datasheet

200 MS/s, 8-Bit Digital Storage Oscilloscope

Overview

Features

- 1 channel simultaneous, 8-bit resolution
- 200 MS/s, 100 MHz analog bandwidth
- 4 MS record length per channel
- Programmable range, coupling, impedance, and sampling rate
- Real-time signal processing, waveform math, and measurement
- Powerful triggering and multiple waveform capture
- Multi-module synchronization with optional ZT1000PXI



The ZT420PXI and ZT422VXI are complete high-performance digital storage oscilloscopes (DSO). The ZT420PXI is a 3U PXI/Compact PCI instrument. The ZT422VXI is a single-wide C-size VXIbus instrument.

The wide analog signal dynamic range and low noise enable the ZT420PXI and ZT422VXI to acquire video, IF, and other analog signals where fine amplitude resolution is necessary. The instrument offers superior value and performance for mixed-signal test and high-speed signal acquisition.

Programmable analog signal range, DC offset, coupling, impedance, and sample rate cover a wide variety of input signal configurations. The instrument provides precise waveform acquisition and measurement with 8 true bits of vertical resolution and a low phase noise sampling clock. Extensive memory segmenting, sequencing, and triggering options, along with a very deep memory provide flexible and powerful signal acquisition modes.

The instrument comes with a complete LabVIEW™ software interface that allows the user to begin acquiring and measuring waveforms immediately.

Measurement Functions

Extensive processing and analysis capability provide complete measurement solutions for mixed signal test applications. The on-board 100 MHz DSP provides signal processing functions in hardware such as waveform math, measurement, and signal transforms.

Low Noise Analog Input

The instrument's large dynamic range analog input provides only one code's worth of digitizer noise, providing true 8-bit resolution.

Deep Memory, Multiple Capture

The instrument offers enhanced DSO features such as deep memory and register-based data access. The deep memory on the instrument can be segmented into multiple smaller records to enable a user to capture many waveforms before downloading. The deep memory, multiple capture, DSO allows designers to capture entire event sequences at high sample rates in one record or to capture multiple records in very rapid succession.

Flexible Trigger and Arm Control

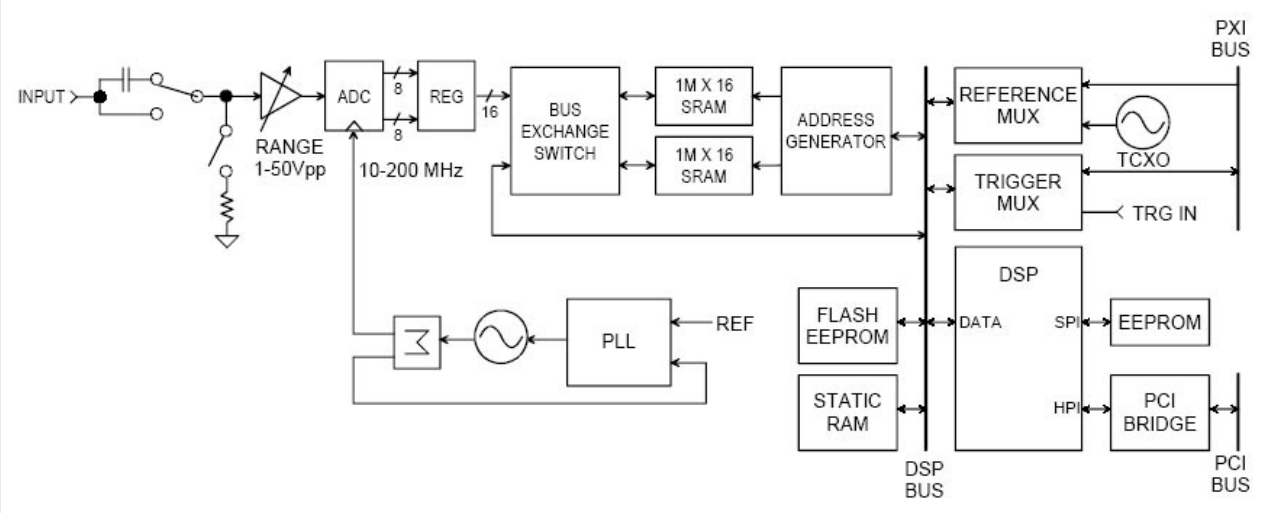
Powerful triggering and gating functions allow the Instrument to be synchronized to external events and acquire waveforms at predefined time intervals. Multiple modules can be easily synchronized using the backplane clock and trigger lines. Powerful operational modes include pre-trigger and post-trigger acquisition.

ZTEC Instruments Inc. • Tel: +1 505.342.0132 • Fax: +1 505.342.0222 • Web: www.ztec-inc.com

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ZT420PXI Block Diagram

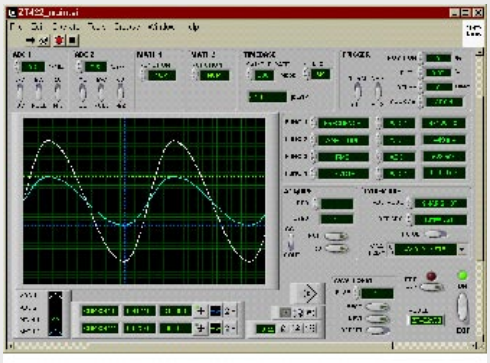


Driver and Example Software

The ZT422VXI uses a SCPI compatible VXIbus message-based interface. In addition, direct A32 register-based access is provided to enable rapid download of large waveform data. The ZT422VXI is also delivered with a plug-and-play driver that can be used in most application development environments, such as LabVIEW, LabWindows/CVI, Visual Basic, and C/C++

The instruments are delivered with LabVIEW application software to ease system integration with other instruments. The demonstration software enables waveforms to be captured, downloaded and displayed on the graphical user interface. The graphical user interface panel highlights oscilloscope-style operation with input channel(s), configurable waveform math channels, and selectable waveform parameter measurement displays.

ZT420PXI LabVIEW application software



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Technical Specifications

ZT420 Performance Characteristics

Analog Input

Channels	1
Bandwidth	DC to 100 MHz
Impedance	5 kΩ || 10 pF or 50Ω
Input VSWR (50Ω)	< 1.3:1 DC to 100 MHz < 1.5:1 100 MHz to 250 MHz
Signal Range	1 Vpp to 50 Vpp in 8 steps
Coupling	DC, AC, or Off
Connectors	SMB
DC Accuracy	±1% of full scale

Analog-to-Digital Converter

Sample Rate	10 MS/s to 200 MS/s (10 MS/s steps)
Resolution	8 bit
RMS Noise	< 0.5% range

Waveform Memory

Total Memory	4M samples/channel
Record Size	4k to 4M samples
Segmentation	Multiple Record Capture
Number Records	1 to 1024, depending on record size
Re-Arm Time	< 5 microseconds

Trigger

Trigger Source	Channel 1, Front Panel, Backplane, Software
Trigger Level (Ch)	±Full-Scale
Trigger Edge	Rising or Falling
External Trigger	Trigger Input or Output
Trigger Input	±5 V, 10 kΩ Input Impedance, SMB
Trigger Output	TTL Compatible into 50Ω, SMB
Detection Delay	< 20 ns
Trigger Holdoff	250 ns to 12s

Acquisition Gate

Acquisition	Pre-Trigger and Post-Trigger
Delay & Width	100 ns to 6.5536 seconds
Time Stamp	100 microsecond resolution

10 MHz Timebase Reference

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

PXI Interface

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

Data Processing

Measurement	Min, Max, Low, High, Mid, Mean, Amplitude, Peak-to-Peak, RMS, Rise Time, Fall Time, +Width, –Width, Period, Frequency, +Duty, –Duty
Waveform Math	Add, Subtract, Histogram, Absolute Value, Digital Filter
Digital Filter	Lowpass @ 10% of Sample Rate
Memory	32 MSample DSP Memory Storage for Reference & Math Waveforms

Physical & Environmental

Physical size	Single-Wide 3U CompactPCI/ PXI

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Ordering Information

Model Numbers

Standard Configuration

4 MSample Memory	ZT420PXI-00

Services

Extended warranty	ZTEXTPXI-00
Calibration	ZTCALPXI-00

Accessories



ZTPXIKIT-00
SMB to BNC cable kit
for PCI instruments



ZT250PRB-01
250 MHz probe for SMB

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.

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