

ZT432VXI Specifications

Digital Storage Oscilloscope

12-bit, 200 MS/s, 90 MHz, 4 Ch



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Input Channel Specifications

Channels	2 @ Full Sample Rate 4 @ Half Sample Rate
Bandwidth (3dB)	DC to 90 MHz
Full Scale Input Range	100 mVpp to 10 Vpp in 8 steps, 50 Ω 500 mVpp to 50 Vpp in 8 steps, 1 M Ω
DC offset accuracy	50 Ω \pm (1mV + 0.25%) 1M Ω \pm (5mV + 0.25%)
DC gain accuracy	50 Ω \pm (1mV + 0.25%) 1M Ω \pm (5mV + 0.5%)
Impedance	software selectable to 1 M Ω 12 pF or 50 Ω
Input VSWR (50 Ω)	< 1.3:1 DC to 100 MHz < 1.5:1 100 MHz to 250 MHz
Connectors	BNC Female
Coupling	DC or AC AC Coupling Bandwidth: >1 MHz, 50 Ω AC Coupling Bandwidth: >50 Hz, 1 M Ω

Digitizer Specifications

Sample Rate	50 kS/s to 200 MS/s (2 channels), up to 2 GS/s with interpolation 25 kS/s to 100 MS/s (4 channels) , up to 1 GS/s with interpolation
Resolution	12 bit resolution
RMS Noise	\leq (100 μ V + 0.1% range)
Number of Records	1 to 1024, depending on record size
Record Size	256 samples to 2 MSamples 256 samples to 4 MSamples (Option 1)

Signal Processing Specifications

Reference Waveforms	REF1-4 saved in non-volatile memory (up to 32,752 Samples) REF5-6 saved in volatile SDRAM memory (up to 4 MSamples)
Measurement	Min, Max, Low, High, Average, Amplitude, Peak-to-Peak, Rise Time, Fall Time, Overshoot, Preshoot, +Width, -Width, Period, Frequency, +Duty,

–Duty, Delay, DC RMS, AC RMS, Nth Edge Crossing Time, Time at Maximum Voltage, Time at Minimum Voltage, Time at Voltage, Voltage at Time, Cursor Measurements

Waveform Math CALC1-2: Add, Subtract, Multiply, Invert, Integrate, Differentiate

Digital Smoothing Filter Input Smoothing Filter @ 10% of Sample Rate

Trigger Specifications

Arm Sources external arm input, immediate (bypass), software
VXI TTLTRG(0-7) VXI ECLTRG(1-0)

Trigger Sources external trigger, input channels 1 to 4, external arm input
VXI TTLTRG(0-7) VXI ECLTRG(1-0), pattern software

Trigger Level Range ± full scale, channel 1-4 input
±1V, external trigger input

External Trigger Input ±5V maximum, 50Ω input impedance, BNC connector

Analog Trigger Sources trigger signal for analog channel sources are taken after the associated channel input
signal conditioning, including: input coupling, gain, impedance, and bandlimiting

Trigger Detect Modes edge
pulse width < limit
pulse width > limit
pulse in window
pulse not in window

Pulse Width Detect minimum setting larger of 1 sample or 5 nanoseconds
maximum setting 327 microseconds

Trigger Polarity rising or falling

Trigger Event Counting multiple trigger event detection: 1-65536 events

Trigger B Functionality second trigger event source

Trigger Delay 0 ns to 656 seconds

Detection Delay < 20 nanoseconds

Trigger Holdoff 0 to 656 microseconds

Auto-Triggering Mode normal or auto trigger

Capture Modes single stop after 1 waveforms
multiple stop after N waveforms

Trigger Event Time Stamp	100 ns resolution, 1 second rollover
Multiple Capture Mode	1 to 1024 records, depending on record size re-arm time approximately 35 microseconds trig accuracy $\pm 5\%$ + offset accuracy

Front Panel

REFERENCE OUTPUT	BNC
ARM INPUT	BNC
CLOCK INPUT	BNC
EXTERNAL TRIGGER INPUT	BNC
CHANNEL 1-4	BNC

LED Status Indicators

RDY	indicates that unit has passed power-up self-diagnostics and is ready for use, indicator flashes when error status is pending
VXI	indicates that a VXI access is occurring or that the VXIbus MODID line is asserted
BUSY	indicates that the unit is busy with one of the following operations: auto-scale, calibration, self-test, data capture, or data storage
TRG	indicates that a trigger event was recognized

Reference Output

Modes	reference voltage, ground, 10 MHz reference clock, 500 Hz probe compensation, or 10 ns pulse @ 1ms rate
Reference Voltage	+8 V $\pm 1\%$ into 10 k Ω load
Ref Clock, Comp, Pulse	TTL output level

Arm Input

Level	TTL compatible, 0 to 5 V maximum
Termination	1 k Ω pullup to +5 V
Logic	logic 1 = hold off trigger detection, logic 0 = enable trigger detection

External Trigger Input

Level	± 1 V trigger level, ± 5 V maximum range
Coupling	DC coupled
Impedance	50 Ω

External Sampling Clock Input

Level	Square or Sine, 500 mV _{pp} to 1 V _{pp}
Frequency	1 MHz to 200 MHz 1X sample rate (2 channels) 2X sample rate (4 channels)
Coupling	AC coupled
Impedance	50 Ω

VXI Interface

Backplane Connection	standard P1 and P2 interface
Command Interface	A16 message based, SCPI compatible
Interrupt Operation	programmable interrupter, level 1 to 7
VXI Trigger Sourcing	ECLTRG(1-0) and TTLTRG(7-0) may be sourced from arm signal, main trigger occurred signal, OPC (op pending complete) signal, positive or negative polarity
Data Interface	128 Mbytes of VXI accessible DRAM in A32 register-based address space

Other Specifications

Timebase	software selectable 10 MHz timebase, internal 2.5 ppm TCXO or VXI CLK10		
Configuration Save	48 instrument configurations, saved in non-volatile memory		
Power Consumption	+24 V	0.0 A	
	+12 V	0.1 A,	0.1 A dynamic
	+5 V	7.0 A,	0.5 A dynamic
	-24 V	0.0 A	
	-12 V	0.1 A,	0.1 A dynamic
	-5.2 V	0.7 A,	0.1 A dynamic
	-2 V	0.1 A,	0.1 A dynamic
	42.5 W typical total power		