

KEYSIGHT TECHNOLOGIES (AGILENT HP)

DSOX3054A

The Keysight (formerly Agilent) InfiniiVision DSOX3054A is a 500 MHz, 4-channel digital storage oscilloscope featuring an 8.5-inch WVGA display and an industry-leading update rate of 1,000,000 waveforms per second.

SPECIFICATIONS

General

Interfaces	USB 2.0 host (1 front, 1 rear), USB 2.0 device, LAN (optional), VGA video out (optional), GPIB (optional)
Display	8.5-inch WVGA with 64 levels of intensity grading
Standard Calibration Cycle	2 years

Physical

Power Supply	100 to 120 V (50/60/400 Hz), 100 to 240 V (50/60 Hz), 100 W max
Operating Temperature	0 to +55 °C °C
Dimensions (W×H×D)	381 mm × 204 mm × 142 mm mm
Weight	3.85 kg kg

Vertical System

Analog Bandwidth (-3 dB)	500 MHz
Analog Input Channels	4
Calculated Rise Time (10% to 90%)	≤ 700 ps
Input Coupling	AC, DC
Input Impedance	Selectable 1 MΩ ± 1% or 50 Ω ± 1.5%
Input Sensitivity Range	1 mV/div to 5 V/div (1 MΩ), 1 mV/div to 1 V/div (50 Ω)
Vertical Resolution (A/D Converter)	8 bits (up to 12 bits in High Resolution mode)
Channel-to-Channel Isolation	> 100:1 from DC to 500 MHz
Offset Range	±2 V (1 mV/div to 200 mV/div), ±50 V (> 200 mV/div to 5 V/div)
Hardware Bandwidth Limiters	20 MHz selectable
DC Vertical Gain Accuracy	±2.0% of full scale
Maximum Input Voltage	300 Vrms, 400 Vpk (1 MΩ); 5 Vrms (50 Ω)

Horizontal System & Acquisition

Maximum Real-time Sample Rate (Single-Channel)	4 GSa/s (half-channel interleaved)
Maximum Real-time Sample Rate (Multi-Channel)	2 GSa/s per channel
Standard Record Length (Memory Depth)	1 Mpt per channel, 2 Mpts half-channel interleaved
Optional Record Length (Memory Depth)	2 Mpts per channel, 4 Mpts half-channel interleaved
Time Base Range	1 ns/div to 50 s/div
Pre-trigger Delay Range	Greater of 1 screen width or 250 μ s
Post-trigger Delay Range	1 s to 500 s
Channel-to-Channel Deskew Range	$\pm$ 100 ns
Maximum Capture Duration at Max Sample Rate	1 ms

Trigger System

Trigger Modes	Normal, Auto, Single, Force
Trigger Level Range (Any Channel)	$\pm$ 6 div from center screen
Trigger Level Range (External)	N/A (no external trigger input on 4-channel models)
Waveform Update Rate	Up to 1,000,000 waveforms/s
Trigger Jitter	< 100 ps (peak-to-peak)
Trigger Sensitivity (Internal)	< 10 mV/div: greater of 1 div or 5 mV; $\geq$ 10 mV/div: 0.3 div
Trigger Holdoff Range	40 ns to 10 s
Trigger Coupling Modes	AC, DC, LF Reject, HF Reject, Noise Reject

Acquisition Modes & Signal Processing

Acquisition Modes	Normal, Peak detect, Averaging, High resolution, Segmented
Peak Detect Glitch Capture	As narrow as 250 ps
Averaging Settings	Selectable 2, 4, 8, 16, 32, 64, up to 65,536
High Resolution Mode Resolution	12 bits (when $\geq$ 10 μ s/div at 4 GSa/s or $\geq$ 20 μ s/div at 2 GSa/s)
Segmented Memory Re-arm Time	1 μ s minimum

Measurements & Analysis

Automated Measurements	33 automated measurements
Voltage Measurements	Peak-to-peak, maximum, minimum, amplitude, top, base, overshoot, pre-shoot, average-N cycles, average-full screen, DC RMS-N cycles, DC RMS-full screen, AC RMS-N cycles, AC RMS-full screen, ratio (RMS1/RMS2)
Time Measurements	Period, frequency, counter, + width, - width, burst width, duty cycle, rise time, fall time, delay, phase, X at min Y, X at Max Y
Count Measurements	Positive pulse count, negative pulse count, rising edge count, falling edge count
Mixed Measurements	Area-N cycles, area-full screen
Hardware-Based Mask Testing	Up to 280,000 tests per second (optional)
Reference Waveforms Memory	Up to 2 reference waveforms (non-volatile)

Display & User Interface

Display Type and Size	8.5-inch WVGA
Display Intensity Grading	64 levels

Input/Output Interfaces

USB Host Ports	Two USB 2.0 hi-speed host ports (1 front, 1 rear)
USB Device Ports	One USB 2.0 hi-speed device port (rear)
LAN Port	10/100Base-T (requires DSOXLAN module)
External Video Display Output	Connect external monitor or projector (requires DSOXLAN module)
GPIO Interface Port	IEEE-488 interface (requires DSOXGPIO module)
Probe Compensator Output	Amplitude ~1.2 Vpp, Frequency ~1.2 kHz
Kensington Lock Slot	Rear-panel security slot
WaveGen Output	Front-panel BNC connector

Accessories & Ordering Options

Built-in Function Generator Option	20-MHz WaveGen (optional, upgradable)
Logic Analyzer Upgrade (MSO)	Upgradable with DSOX3MSO option
Optional Serial Protocol Analysis Apps	I ² C, SPI, RS232, UART, CAN, LIN, and I ² S

Environmental

Storage Temperature Range	-40 to +70 °C
Operating Humidity	Up to 95% RH at +40 °C (non-condensing)
Operating Altitude	Up to 3,000 m
Environmental Shock and Vibration	Meets MIL-PRF-28800F Class 3 limits

Horizontal System

Timebase Accuracy	±25 ppm
Timebase Aging	±5 ppm per year

WaveGen (Option)

WaveGen Waveform Types	Sine, Square, Ramp, Pulse, DC, Noise, Sine Cardinal (Sinc), Exponential Rise, Exponential Fall, Cardiac, Gaussian Pulse
WaveGen Sine Frequency Range	0.1 Hz to 20 MHz
WaveGen Square / Pulse Frequency Range	0.1 Hz to 10 MHz
WaveGen Ramp / Triangle Frequency Range	0.1 Hz to 100 kHz
WaveGen Amplitude Range	20 mVpp to 5 Vpp (into open circuit); 10 mVpp to 2.5 Vpp (into 50 Ω)

Math Operations

FFT Window Types	Hanning, Flat Top, Rectangular, Blackman-Harris
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Integrated Digital Voltmeter

Integrated Digital Voltmeter (DVM)	3-digit AC RMS, DC, and DC RMS; 5-digit frequency counter
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Accessories

Standard Passive Probes Included	Four N2890A 500 MHz passive probes (10:1)
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Standards and Compliance

Safety Compliance	UL61010-1 3rd edition, CAN/CSA-C22.2 No. 61010-1-12, EN61010-1:2010
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TECHNOLOGY

Digital Storage Oscilloscope

APPLICATIONS

Electronic design, testing, troubleshooting, and protocol analysis

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