

KEYSIGHT TECHNOLOGIES (AGILENT HP)

MSOX3054A

The Keysight Technologies MSOX3054A (formerly Agilent) is a 500 MHz, 4 analog channel, 16 digital channel Mixed Signal Oscilloscope (MSO) from the InfiniiVision 3000 X-Series. Boasting an industry-leading update rate of 1,000,000 waveforms per second and an 8.5-inch WVGA display, this highly upgradable oscilloscope integrates logic timing analysis, optional hardware-based serial protocol decoding, and an optional 20-MHz WaveGen function generator to deliver unmatched debugging versatility in its class.

SPECIFICATIONS

General

Interfaces	2 × USB 2.0 high-speed host ports (1 front, 1 rear), 1 × USB 2.0 high-speed device port (rear), 10/100Base-T LAN (via optional module), GPIB (via optional module)
Display	8.5-inch WVGA color display with 64 levels of intensity grading
Calibration Interval	2 years

Physical

Power Supply	100 to 120 V AC (50/60/400 Hz), 100 to 240 V AC (50/60 Hz); automatic selection; maximum power consumption 100 W
Operating Temperature	0 to +50 °C °C
Dimensions (W×H×D)	380.6 mm × 204.4 mm × 141.5 mm mm
Weight	3.85 kg kg

Key Performance Specifications (Analog)

Analog Bandwidth	500 MHz
Calculated Rise Time (10% to 90%)	≤ 700 ps
Input Channels (Analog)	4
Real-time Sampling Rate (Single-Channel)	4 GSa/s
Real-time Sampling Rate (Half-Channel interleaved)	4 GSa/s
Real-time Sampling Rate (All-Channel)	2 GSa/s
Record Length / Memory Depth (Standard)	1 Mpts per channel, 2 Mpts half-channel interleaved
Record Length / Memory Depth (Optional)	2 Mpts per channel, 4 Mpts half-channel interleaved
Waveform Update Rate	1,000,000 waveforms/s

Key Performance Specifications (Digital / MSO)

Input Channels (Digital)	16
Maximum Sample Rate (Digital)	1.25 GSa/s
Minimum Detectable Pulse Width	5 ns
Channel-to-Channel Skew (Digital)	2 ns (typical), 3 ns (maximum)
Input Impedance (Digital)	100 k Ω $\pm$ 2% at probe tip
Threshold Groupings	Threshold per set of 8 channels
Threshold Selections	TTL (+1.4 V), 5 V CMOS (+2.5 V), ECL (–1.3 V), User-definable
User-Defined Threshold Range	$\pm$ 8.0 V in 10 mV steps
Probe Loading (Digital)	~8 pF
Minimum Voltage Swing (Digital)	500 mVpp
Maximum Input Voltage (Digital)	$\pm$ 40 V peak CAT I; transient overvoltage 800 Vpk
Maximum Input Dynamic Range (Digital)	$\pm$ 10 V about threshold
Digital Vertical Resolution	1 bit

Vertical System (Analog Channels)

Hardware Bandwidth Limits	20 MHz selectable
Input Coupling	AC, DC
Input Impedance	Selectable 1 M Ω $\pm$ 1%, 50 Ω $\pm$ 1.5%
Vertical Resolution	8 bits
Channel-to-Channel Isolation	> 100:1 from DC to maximum specified bandwidth

Horizontal System

Timebase Range	1 ns/div to 50 s/div
Timebase Delay Range (Pre-trigger)	Greater of 1 screen width or 250 μ s
Timebase Delay Range (Post-trigger)	1 s to 500 s
Channel-to-Channel Deskew Range	$\pm$ 100 ns
Timebase Accuracy	$\pm$ 25 ppm
Timebase Aging	$\pm$ 5 ppm per year

Trigger System

Trigger Modes	Normal (triggered), Auto, Single, Force
Trigger Level Range (Internal)	$\pm$ 6 div from center screen
Trigger Level Range (External)	Not applicable (no external trigger input on 4-channel models)
Trigger Holdoff Range	40 ns to 10.00 s
Trigger Coupling Selections	AC, DC, LF Reject, HF Reject, Noise Reject
Trigger Sensitivity (External, 1.6 V Range)	Not applicable (no external trigger input on 4-channel models)

Waveform Acquisition Modes

Peak Detect Mode	Capture glitch as narrow as 250 ps at all timebase settings
High Resolution Mode	12 bits of resolution when $\geq 10 \mu\text{s}/\text{div}$ at 4 GSa/s or $\geq 20 \mu\text{s}/\text{div}$ at 2 GSa/s
Segmented Memory Re-arm Time	1 μs (minimum)

Integrated Instrument Options

Integrated Function / Arbitrary Waveform Generator (WaveGen)	Built-in 20-MHz WaveGen function generator (optional/upgradable)
WaveGen Out Connector	Front-Panel BNC Connector

Connectivity and Interfaces

Kensington Security Lock Slot	Supported on rear-panel
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Vertical System - Analog Channels

Maximum Input Voltage (Analog, 1 M Ω)	300 Vrms, 400 Vpk (CAT II 300 Vrms, CAT I 400 Vpk)
Maximum Input Voltage (Analog, 50 Ω)	5 Vrms

Standard Accessories

Included Passive Probes	N2843A 500 MHz passive probe (1 per channel)
Included Digital Probe	N2756A 16-channel digital probe kit

Connectivity

USB Connectivity	1 x USB 2.0 host (front panel), 1 x USB 2.0 host (rear panel), 1 x USB 2.0 device (rear panel)
Optional Interface Modules	DSOXLAN (LAN/VGA module), DSOXGPIB (GPIB module)

Power and Environmental

Power Consumption	100 W maximum
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Environmental

Storage Temperature	-40 to +71 °C
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Waveform Math

FFT Window Functions	Hanning, Flat Top, Rectangular, Blackman-Harris
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WaveGen Specs

WaveGen Sine Frequency Range	0.1 Hz to 20 MHz
WaveGen Square/Pulse Frequency Range	0.1 Hz to 10 MHz
WaveGen Triangle/Ramp Frequency Range	0.1 Hz to 100 kHz

TECHNOLOGY

Mixed Signal Oscilloscope

APPLICATIONS

Electronic hardware design, debugging, and troubleshooting

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.