

KEYSIGHT TECHNOLOGIES (AGILENT HP)

DSO6032A

The Agilent/Keysight DSO6032A is a 300 MHz, 2-channel digital storage oscilloscope featuring MegaZoom III deep memory technology. It offers an ultra-fast real-time waveform update rate of up to 100,000 waveforms/second, a 6.3-inch XGA color display with 256 intensity levels, and versatile upgradeability, including the option to convert it into a Mixed Signal Oscilloscope (MSO) with 16 digital channels.

SPECIFICATIONS

General

Interfaces	Standard USB (2.0 high-speed host x2, device x1); optional LAN (10/100Base-T, LXI class C), GPIB, and XGA video output
Display	6.3-inch diagonal VGA (640 x 480) color active matrix LCD with 256 levels of intensity and 100,000 waveforms/sec update rate

Physical

Power Supply	100 - 240 VAC, 50/60/400 Hz, 120 W maximum; optional internal battery (Option BAT)
Operating Temperature	0 to +55 °C °C
Dimensions (W×H×D)	354 mm × 188 mm × 282 mm mm
Weight	4.9 kg kg

Key Performance Specifications

Analog Bandwidth (-3 dB)	300 MHz
Calculated Rise Time (10% to 90%)	1.17 ns
Number of Input Channels	2 analog channels (upgradable to 2+16 MSO)
Maximum Real-Time Sample Rate	4 GSa/s (interleaved), 2 GSa/s (per channel)
Maximum Memory Depth	8 Mpts (standard, interleaved), 4 Mpts (per channel)
Waveform Update Rate	Up to 100,000 waveforms/sec

Vertical System

Vertical Resolution	8 bits (up to 12 bits in High Resolution mode)
Vertical Sensitivity Range	2 mV/div to 5 V/div (1 M Ω), 2 mV/div to 1 V/div (50 Ω)
Maximum Input Voltage (1 M Ω)	CAT I 300 Vrms, 400 Vpk
Maximum Input Voltage (50 Ω)	5 Vrms
Input Impedance	1 M Ω $\pm$ 1% 14 pF or 50 Ω $\pm$ 1.5% (selectable)
Input Coupling	AC, DC
DC Gain Accuracy	$\pm$ 2.0% of full scale
Channel-to-Channel Isolation	$\geq$ 40 dB from DC to 300 MHz
Hardware Bandwidth Limiters	20 MHz (selectable)
Vertical Offset Range	1 M Ω : $\pm$ 2 V (2 mV to 200 mV/div), $\pm$ 50 V (206 mV to 5 V/div); 50 Ω : $\pm$ 2 V (2 mV to 200 mV/div), $\pm$ 12 V (206 mV to 1 V/div)
Channel-to-Channel Deskew Range	$\pm$ 100 ns

Horizontal System

Timebase Range	1 ns/div to 50 s/div
Timebase Accuracy	$\pm$ 25 ppm
Horizontal Modes	Main, Zoom, Roll, XY

Acquisition System

Acquisition Modes	Normal, Peak Detect, Averaging, High Resolution
Peak Detect Resolution	500 ps
High-Resolution Mode	Up to 12 bits of resolution (at $\geq$ 10 μ s/div)

Trigger System

Trigger Sources	Channel 1, Channel 2, Line, External, Ext/10
Trigger Modes	Auto, Normal, Single
Trigger Coupling	AC, DC, LF Reject, HF Reject, Noise Reject
Trigger Holdoff Range	60 ns to 10 s
Trigger Sensitivity	0.5 div or 5 mV (<100 MHz), 1.0 div or 10 mV (100 MHz to max bandwidth)
External Trigger Input Impedance	1 M Ω $\pm$ 1% 14 pF or 50 Ω
Edge Triggering	Rising, falling, or alternating edges on any channel or external trigger source
Pulse Width Triggering	Positive or negative pulse width; >, <, or within range (15 ns to 10 s)
Pattern Triggering	High, low, or don't care (H, L, X) on any input
TV/Video Triggering	NTSC, PAL, SECAM, HDTV (480i, 480p, 576i, 576p, 720p, 1080i, 1080p)
Reference Clock Input/Output	Built-in 10 MHz reference input/output (BNC)
Internal Trigger Level Range	$\pm$ 6 divisions from center of screen
External Trigger Level Range	$\pm$ 1 V, $\pm$ 8 V (software selectable)
Supported Video Standards	NTSC, PAL, SECAM, 480i, 480p, 576i, 720p, 1080i, 1080p
Glitch and Pulse Width Trigger Range	5 ns to 10 s
Duration Trigger Range	5 ns to 10 s
Sequence Triggering Settings	Find event A, then event B with delay (10 ns to 10 s) or count (1 to 9,999,999)
Nth Edge Burst Triggering Settings	Trigger on Nth edge (1 to 65,535) of a burst after idle time (10 ns to 10 s)

Waveform Measurements and Analysis

Automatic Measurements	Voltage (Vpp, Vmax, Vmin, Vtop, Vbase, Vamp, Vavg, Vrms, overshoot, undershoot) and Time (frequency, period, +width, -width, duty cycle, rise time, fall time, delay, phase)
Waveform Math Operations	Addition, subtraction, multiplication, FFT
FFT Window Functions	Hanning, Flat Top, Rectangular
Hardware Counter	Built-in 5-digit frequency counter
Autoscale	Single-button automatic setup for vertical, horizontal, and trigger systems

Display and User Interface

Display Resolution	QVGA (320 x 240) pixels
Display Size	6.3-inch diagonal color active matrix LCD
Waveform Graticules	8 x 10 divisions
Waveform Persistence	Off, Infinite, or variable
Front Panel Control Languages	English, French, German, Spanish, Japanese, Simplified Chinese, Traditional Chinese, Korean, Russian, Italian, Portuguese

Connectivity and Interfaces

USB Host Ports	2 x USB 2.0 host ports (1 front, 1 rear)
USB Device Port	1 x USB 2.0 device port (rear)
LAN Port	10/100Base-T, LXI Class C compliant
GPIO Interface	IEEE-488.2 GPIO interface
Video Output Port	Standard VGA (15-pin D-sub) video output
Trigger Output Connector	BNC on rear panel, output level 0 to 5 V (high impedance)
Probe Compensation Output	Frequency approx 1.2 kHz, amplitude approx 3 Vp-p
AutoProbe Interface	Supports active probes, differential probes, and current probes

Power and Physical Characteristics

Line Voltage Range	100 to 240 VAC
Line Frequency Range	50/60 Hz (100 to 240 V), 400 Hz (100 to 120 V)
Power Consumption	120 W maximum
Option BAT (Battery Option)	Supports internal rechargeable battery pack

Environmental and Safety Compliance

Storage Temperature	-40 °C to +70 °C
Operating Altitude	Up to 4,600 m (15,000 ft)

Ordering Information and Upgrades

Standard Included Probes	10073C 10:1 passive probes (one per channel)
MSO Upgrade Kit	N2914A MSO upgrade kit (adds 16 digital channels)
Secure Environment Mode Option	Supported (Option SEC)

Acquisition

Segmented Memory (Option SGM)	Up to 1000 segments
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Connectivity

LXI Compliance	LXI Class C compliant
Built-in Web Server	Virtual front panel remote control via web browser

Environmental

Operating Humidity	Up to 95% RH at +40 °C (non-condensing)
Storage Humidity	Up to 90% RH at +65 °C (non-condensing)
Environmental Vibration	Meets MIL-PRF-28800F, Class 3 random vibration
Environmental Shock	Meets MIL-PRF-28800F, Class 3 shock (operating 30 g, half-sine, 11 ms duration)

Compliance & Safety

Safety Standards	UL61010-1:2001, CAN/CSA-C22.2 No. 61010-1-04, EN61010-1:2001
EMC Standards	Meets EMC Directive (2004/108/EC), IEC 61326-1:2005 / EN 61326-1:2006 Class A

Measurements & Cursors

Cursor Measurement Types	dV, dt, 1/dt, voltage, time, channel tracking
Measurement Statistics Parameters	Mean, minimum, maximum, standard deviation, and count; up to 4 measurements simultaneously

Waveform Math & FFT

FFT Record Length	1024 points
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Save/Recall & Storage

Internal Setup Storage Capacity	10 non-volatile front panel setups
Internal Waveform Storage Capacity	10 non-volatile waveforms

General & Calibration

Calibration Interval	1 year
Warm-up Time	30 minutes

TECHNOLOGY

Digital Storage Oscilloscope (DSO)

APPLICATIONS

Electronic design, debug, and troubleshooting

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