

KEYSIGHT TECHNOLOGIES (AGILENT HP)

DSO6012A

The Keysight DSO6012A is a 100 MHz, 2-channel digital storage oscilloscope from the InfiniiVision 6000 Series, featuring MegaZoom III deep memory technology, standard LAN, USB, GPIB, and XGA connectivity, and advanced triggering options.

SPECIFICATIONS

General

Display	6.3-inch color TFT active matrix VGA (640 x 480) display with 256 intensity levels
Standard Warranty	3 years

Physical

Power Supply	100 - 240 VAC $\pm 10\%$ auto-ranging, 47 - 440 Hz, 120 W maximum power consumption
Operating Temperature	0 to +55 °C °C
Dimensions (W×H×D)	354 mm x 188 mm x 174 mm mm
Weight	4.9 kg kg

Key Specifications

Bandwidth	100 MHz
Number of Analog Channels	2
Maximum Real-Time Sample Rate	2 GSa/s (interleaved), 1 GSa/s (per channel)
Maximum Memory Depth	8 Mpts (interleaved), 4 Mpts (per channel)
Waveform Update Rate	Up to 100,000 waveforms/sec

Vertical System - Analog Channels

Input Coupling	AC, DC
Input Impedance	1 M Ω $\pm 1\%$ 14 pF, or 50 Ω $\pm 1.5\%$ (selectable)
Input Sensitivity Range	2 mV/div to 5 V/div (1 M Ω), 2 mV/div to 1 V/div (50 Ω)
Vertical Resolution	8 bits
Hardware Bandwidth Limits	20 MHz (selectable)
Maximum Input Voltage	CAT I 300 Vrms, 400 Vpk (1 M Ω); 5 Vrms (50 Ω)
DC Vertical Gain Accuracy	$\pm 2.0\%$ of full scale
DC Vertical Offset Accuracy	$\pm (1.5\% \text{ of setting} + 0.5\% \text{ of full scale} + 1 \text{ mV})$
Channel-to-Channel Isolation	$\geq 40 \text{ dB}$ from DC to 100 MHz
Probe Attenuation Factor Settings	0.1:1 to 1000:1 (manual/auto-sensing)

Horizontal System

Timebase Range	5 ns/div to 50 s/div
Timebase Accuracy	± 15 ppm ± 0.4 ppm/year aging
Channel Deskew Range	± 100 ns
Horizontal Modes	Main, Zoom, Roll, XY
Horizontal Zoom	Dual display window (main and zoom simultaneously)

Acquisition System

Acquisition Modes	Normal, Peak Detect, Averaging, High Resolution
Peak Detect Glitch Capture	6 ns
Averaging Factor	2 to 65,536 (selectable in powers of 2)
High Resolution Mode	Up to 12 bits of resolution (bandwidth filtered)
Segmented Memory Capacity	Up to 1000 segments

Trigger System

Trigger Sources	Channel 1, Channel 2, Line, External
Trigger Modes	Auto, Normal, Single
Trigger Coupling	AC, DC, LF Reject, HF Reject, Noise Reject
Trigger Holdoff Range	60 ns to 10 s
Trigger Level Range	± 6 divisions from screen center (Ch 1, 2)
Edge Triggering	Rising, falling, alternating, or either edge on any source
Pulse Width Triggering	Positive or negative pulse width from 2 ns to 10 s
Video and TV Triggering	NTSC, PAL, SECAM, HDTV (480p, 576p, 720p, 1080i, 1080p)
Serial Protocol Triggering Options	I2C, SPI, CAN, LIN, USB
External Trigger Input Impedance	1 M Ω $\pm 1\%$ 14 pF, or 50 Ω $\pm 1\%$ (selectable)
External Trigger Maximum Input Voltage	CAT I 300 Vrms, 400 Vpk (1 M Ω); 5 Vrms (50 Ω)
Internal Trigger Sensitivity	1.0 div or 5 mV (whichever is greater) for < 10 mV/div; 0.6 div for $\geq$ 10 mV/div
External Trigger Sensitivity	DC to 100 MHz: 100 mV
Minimum Trigger Pulse Width	5 ns
Pulse Width Trigger Range	5 ns to 10 s
Supported Video Standards	NTSC, PAL, SECAM, 480i, 480p, 576i, 576p, 720p, 1080i, 1080p

Waveform Measurements and Analysis

Automatic Voltage Measurements	Peak-to-Peak, Maximum, Minimum, Amplitude, Top, Base, Overshoot, Preshoot, Average, RMS
Automatic Time Measurements	Period, Frequency, Rise Time, Fall Time, +Width, -Width, Duty Cycle
Automatic Frequency and Phase Measurements	Phase, Delay
Waveform Math Operations	Addition, Subtraction, Multiplication, FFT
FFT Window Types	Hanning, Flat Top, Rectangular

Display and User Interface

Graticule Options	8 x 10 grid with grid/intensity control
Waveform Display Persistence Modes	Infinite, off, variable persistence

Connectivity and Interfaces

LXI Compliance Class	Class C
Web Browser Control and Virtual Front Panel	Yes (standard via built-in LAN port)

Power and Environmental

Storage Temperature Range	-40 °C to +70 °C
Operating Humidity	Up to 95% RH at 40 °C (non-condensing)
Operating Altitude	Up to 4,600 meters (15,000 feet)
Electromagnetic Compatibility Standards	IEC 61326-1, EN 61326-1
Safety Certifications	UL 61010-1, CSA 22.2 No. 61010-1, EN 61010-1

Physical Characteristics

Shipping Weight	9.2 kg
Security Lock Slot	Kensington style lock slot on rear panel

Ordering Information and Accessories

Standard Included Probes	Two 10074C 10:1 passive probes (150 MHz)
Passive Probe Options	10070C (1:1), 10074C (10:1), 1165A (10:1)
Battery Power Option	Option BAT (battery-powered operation)
Secure Environment Mode Option	Option SEC

Vertical System

Rise Time (calculated)	< 3.5 ns
Input Capacitance	~14 pF
Vertical Offset Range	±2 V (2 mV/div to 100 mV/div), ±40 V (102 mV/div to 5 V/div) for 1 MΩ; ±2 V (2 mV/div to 100 mV/div), ±12 V (102 mV/div to 1 V/div) for 50 Ω
Vertical Dynamic Range	±8 divisions from screen center

Connectivity

USB Host Ports	2 x USB 2.0 high-speed host ports (1 front, 1 rear)
USB Device Port	1 x USB 2.0 high-speed device port (rear panel)
LAN Interface	10/100Base-T RJ-45 (LXI Class C compliant)
GPIB Interface	IEEE-488.2 GPIB connector (rear panel)
VGA Output	15-pin D-sub (rear panel)
AutoProbe Interface	Supported on analog channels

Power Specifications

AC Input Voltage	100 - 240 V AC, $\pm 10\%$
AC Input Frequency	50/60 Hz (100 - 240 V), 400 Hz (100 - 132 V)
Maximum Power Consumption	120 VA

General Specifications

Calibration Interval	1 year
Built-in Help Languages	English, French, German, Italian, Japanese, Korean, Portuguese, Russian, Simplified Chinese, Spanish, Traditional Chinese
Real-Time Clock	Built-in, battery-backed
MSO Upgradeability	Upgradeable to MSO with N2914A upgrade kit

Measurements

Built-in Frequency Counter	6-digit, operates up to channel bandwidth
Measurement Gating	Full screen or cursor-bounded

Environmental

Non-Operating Altitude	15,300 m (50,000 ft)
Non-Operating Humidity	90% RH at +65 °C
Non-Operating Vibration	2.41 g rms (5 to 500 Hz, 10 min per axis)
Non-Operating Shock	30 g (half-sine, 11 ms duration, 18 shocks)

Power & Safety

Transient Overvoltage Category	CAT II (AC input)
Pollution Degree	Pollution Degree 2

Data Storage & Save/Recall

Internal Storage Capacity	10 setups and waveforms
Export File Formats	BMP, PNG, TIFF, CSV, ASCII XY, binary, trace, setup

TECHNOLOGY

Digital Storage Oscilloscope (DSO)

APPLICATIONS

Electronic design, embedded systems debugging, manufacturing, and education

