

KEYSIGHT TECHNOLOGIES (AGILENT HP)

DSO8104A

The Keysight (Agilent) DSO8104A is a 1 GHz, 4-channel digital storage oscilloscope from the Infiniium 8000 Series. Featuring next-generation MegaZoom technology, it offers up to 128 Mpts of deep memory, a 4 GSa/s real-time sample rate, and a 10.4-inch color XGA touchscreen display, providing exceptional acquisition and waveform analysis performance.

SPECIFICATIONS

General

Interfaces	10/100Base-T LAN, GPIB, USB 2.0 (host and device), RS-232, VGA out
Display	10.4-inch color XGA TFT-LCD touchscreen, 1024 x 768 resolution

Physical

Power Supply	100 - 240 VAC ($\pm 10\%$), 47 - 63 Hz, 440 W max
Operating Temperature	0 to +50 °C °C
Dimensions (W×H×D)	425 mm × 216 mm × 437 mm mm
Weight	13.9 kg kg

Vertical System

Analog Bandwidth	1 GHz
Calculated Rise Time (10% to 90%)	350 ps
Input Channels	4
Input Coupling	1 MOhm: AC, DC; 50 Ohm: DC
Input Impedance	1 MOhm $\pm 1\%$ (13 pF), 50 Ohm $\pm 1\%$
Input Sensitivity Range (1 MOhm)	1 mV/div to 10 V/div
Input Sensitivity Range (50 Ohm)	1 mV/div to 1 V/div
Vertical Resolution	8 bits (>12 bits with averaging)
Maximum Input Voltage (1 MOhm)	150 V CAT II, 300 V CAT I
Maximum Input Voltage (50 Ohm)	5 Vrms
DC Gain Accuracy	$\pm 1.25\%$ of full scale
Channel-to-Channel Isolation	≥ 40 dB (DC to 1 GHz)
Hardware Bandwidth Limits	20 MHz and 250 MHz (selectable)
Input Capacitance	13 pF (typical)
Hardware Offset Range (1 MOhm)	± 2 V (1 mV/div to 100 mV/div), ± 20 V (102 mV/div to 1 V/div), ± 200 V (1.02 V/div to 10 V/div)
Hardware Offset Range (50 Ohm)	± 2 V (1 mV/div to 100 mV/div), ± 12 V (102 mV/div to 1 V/div)
Vertical Sensitivity Resolution	1 mV/div to 10 V/div (1 MOhm), 1 mV/div to 1 V/div (50 Ohm)
Probe Interface	Agilent AutoProbe interface

Horizontal System

Real-time Sample Rate	4 GSa/s (2 channels interleaved), 2 GSa/s (4 channels)
Standard Memory Depth	1 Mpts (2 channels interleaved), 512 kpts (4 channels)
Maximum Memory Depth Option	128 Mpts (2 channels interleaved), 64 Mpts (4 channels)
Time Base Range	5 ps/div to 20 s/div
Time Base Accuracy	± 1 ppm
Channel Deskew Range	± 25 μ s
Trigger Jitter	4 ps RMS
Equivalent-Time Sample Rate (Max)	250 GSa/s

Trigger System

Trigger Sources	Channel 1, Channel 2, Channel 3, Channel 4, Line, External
Trigger Modes	Auto, Triggered, Single
Trigger Coupling	DC, AC, LF Reject, HF Reject, Noise Reject
Trigger Holdoff Range	100 ns to 10 s
Trigger Sensitivity	0.5 div (DC to 1 GHz)
Edge Triggering	Rising, falling, or alternating on any source
Pulse Width Triggering	Trigger on positive or negative pulses from 2 ns to 10 s
Setup and Hold Triggering	Trigger on setup/hold violations
Pattern Triggering	Trigger on logical combination of 4 channels
Trigger Level Range (Internal)	± 8 divisions from center screen
Trigger Level Range (Auxiliary)	± 5 V
Auxiliary Trigger Input Impedance	50 Ohm or 1 MOhm (selectable)
Maximum Auxiliary Trigger Input Voltage (1 MOhm)	150 Vrms (DC + peak AC < 10 kHz)
Maximum Auxiliary Trigger Input Voltage (50 Ohm)	5 Vrms

Acquisition Modes

Real-Time Acquisition	Yes
Peak Detect Mode	Capture glitches as narrow as 250 ps at all sample rates
Averaging Mode	Selectable from 1 to 4096
High Resolution Mode	Up to 12 bits real-time resolution
Roll Mode	Yes

Waveform Measurements & Analysis

Waveform Math Operations	Add, subtract, multiply, divide, FFT, differentiate, integrate, square root
FFT Window Types	Hanning, Hamming, Rectangular, Blackman-Harris, Flattop

Display and User Interface

Display Type	10.4-inch color active-matrix TFT-LCD
Display Resolution	1024 x 768 (XGA)
Intensity Grayscale Levels	256 color intensity levels
Touchscreen Operation	Standard

Connectivity & External Interfaces

GPIO Interface	IEEE 488.2
Video Output Port	15-pin D-Sub (VGA)
External Trigger Input	1 MOhm or 50 Ohm input, BNC
Reference Clock Input	10 MHz (BNC)
Reference Clock Output	10 MHz (BNC)
LXI Compliance Class	Class C

Built-In Computer System

Operating System	Windows XP Pro
Processor	Intel Celeron 2.0 GHz
Storage Drive Type & Capacity	≥ 40 GB Hard Disk Drive

Power Requirements

Line Voltage Range	100 to 240 VAC
Power Consumption (Maximum)	440 W

Physical Characteristics

Weight (Net)	13.9 kg
Weight (Shipping)	20.4 kg

Environmental and Safety

Operating Temperature Range	5 °C to +40 °C
Non-Operating Temperature Range	-40 °C to +70 °C
Operating Humidity Range	Up to 95% relative humidity at +40 °C
Operating Altitude Limit	Up to 4,600 m (15,000 ft)
Non-Operating Altitude Limit	Up to 15,300 m (50,000 ft)

Calibration

Recommended Calibration Cycle	1 year
-------------------------------	--------

Accessories

Standard Probes Included	Four 1165A 10:1 passive probes (600 MHz)
Included Accessories	Optical USB mouse, compact keyboard, stylus, power cord, protective front cover

Interfaces

Legacy Rear I/O Ports	PS/2 keyboard port, PS/2 mouse port, parallel port, serial port
-----------------------	---

Display

Display Size	12.1 in (307 mm) diagonal
--------------	---------------------------

Environmental

Vibration (Operating)	Random vibration 5-500 Hz, 10 minutes per axis, 0.3 g(rms)
Vibration (Non-Operating)	Random vibration 5-500 Hz, 10 minutes per axis, 2.41 g(rms)
Shock (Operating)	15 g, 11 ms half-sine pulse
Shock (Non-Operating)	30 g, 11 ms half-sine pulse

Compliance

EMC Compliance	Meets EN 61326-1, IEC 61326-1, CISPR 11/EN 55011 Group 1 Class A
----------------	--

Triggering

Glitch Triggering	Triggers on glitches down to 1 ns
Transition Triggering	Triggers on rising or falling edges that are faster or slower than a specified time (1 ns to 10 s)
Window Triggering	Triggers when entering or exiting a user-specified voltage window
State Triggering	Triggers on pattern of 1s, 0s, and Xs aligned with a clock edge
Video Triggering	Triggers on NTSC, PAL, SECAM, and Generic video formats

Measurement & Analysis

Waveform Histograms	Supports vertical and horizontal histograms with statistical measurements
---------------------	---

Software Options

EZJit Jitter Analysis Option	Provides RJ, DJ, TJ, and PJ measurements (E2681A)
InfiniiScan Event Identification Option	Enables search and trigger on physical layer events (N5415A)

TECHNOLOGY

Digital Storage Oscilloscope (DSO)

APPLICATIONS

Signal Integrity, High-speed Digital Design, General-purpose Debugging

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