

KEYSIGHT TECHNOLOGIES (AGILENT HP)

DSO80804B

The Keysight Technologies (formerly Agilent) DSO80804B is a high-performance 8 GHz digital storage oscilloscope belonging to the Infiniium 80000B Series. Designed for high-speed digital designs, it features up to 40 GSa/s real-time sample rate, exceptionally low noise floor, and ultra-low jitter, working in tandem with the InfiniiMax II active probing system to provide industry-leading signal integrity.

SPECIFICATIONS

General

Interfaces	LAN (10/100/1000Base-T), GPIB, USB 2.0, XGA Video Out, Reference Clock I/O
Display	8.4-inch XGA color active-matrix TFT-LCD touch screen, 1024 x 768 resolution, with 256-level intensity grading
Supported User Interface Languages	English, French, German, Japanese, Korean, Portuguese, Russian, Simplified Chinese, Spanish, Traditional Chinese

Physical

Power Supply	100 - 240 VAC ($\pm 10\%$), 47 - 63 Hz, 550 W maximum
Operating Temperature	5 °C to +40 °C °C
Dimensions (W×H×D)	437 mm × 216 mm × 520 mm mm
Weight	13.9 kg kg

Key Performance Specifications

Analog Bandwidth	8 GHz
Analog Channels	4
Real-Time Sample Rate (2 Channels)	40 GSa/s
Real-Time Sample Rate (4 Channels)	20 GSa/s
Standard Memory Depth	1 Mpts (at 40 GSa/s), 512 kpts (at 20 GSa/s)
Maximum Memory Depth (Optional)	Up to 64 Mpts (at 40 GSa/s), 32 Mpts (at 20 GSa/s)
Vertical Resolution	8 bits (up to 12 bits with averaging)
Trigger Jitter	< 500 fs RMS
Noise Floor at 5 mV/div	171 μ V RMS
Jitter Measurement Floor	150 fs RMS

Vertical System

Input Impedance	50 Ω ($\pm 1.5\%$)
Input Sensitivity Range	5 mV/div to 1 V/div
Maximum Input Voltage	5 V RMS
DC Gain Accuracy	$\pm 2\%$ of full scale
Offset Range	± 0.5 V (5 to 100 mV/div), ± 4 V (101 mV to 1 V/div)
Input Coupling	DC
Channel-to-Channel Isolation	40 dB (DC to 2 GHz), 30 dB (2 GHz to 8 GHz)
Probe Attenuation Range	0.0001:1 to 100000:1 (continuous)
DC Offset Resolution	4 digits or 100 μ V, whichever is greater

Horizontal System

Time Base Range	5 ps/div to 20 s/div
Time Base Resolution	50 fs
Time Base Accuracy	± 0.1 ppm (initial), ± 0.1 ppm/year (aging)
Channel-to-Channel Deskew Range	± 25 μ s
External Reference Input Frequency	10 MHz (± 5 ppm)
External Reference Input Level	200 mV p-p to 5 V p-p
External Reference Output Level	1.25 V p-p (nominal) into 50 Ω
Channel-to-Channel Deskew Resolution	1 ps

Acquisition System

Acquisition Modes	Real-time, Equivalent-time, Segmented Memory, Average
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Trigger System

Trigger Sources	Channels 1-4, Auxiliary, Line
Trigger Coupling	DC
Trigger Holdoff Range	100 ns to 10 s
Trigger Sensitivity (DC to 2 GHz)	0.5 div
Trigger Sensitivity (2 GHz to 8 GHz)	1.0 div
Hardware Trigger Types	Edge, Glitch, Width, Transition, Runt, Timeout, Pattern, State, Window, Setup/Hold

Measurements & Analysis

Automatic Measurements	Voltage, Time, Frequency, Jitter, Eye Diagrams, Histograms
Waveform Math Operators	Add, Subtract, Multiply, Divide, FFT, Integrate, Differentiate, Magnify, Min, Max
FFT Window Types	Hanning, Hamming, Rectangular, Blackman-Harris, Flat Top

Display & User Interface

Display Size & Type	8.4-inch XGA color active-matrix TFT-LCD
Display Resolution	1024 x 768 pixels
Display Modes	256-level intensity graded, infinite persistence, color graded

Connectivity & Interfaces

USB Host Ports	6 x USB 2.0 (2 front, 4 rear)
LAN Port	RJ-45, 10/100/1000Base-T Ethernet
GPIO Interface	IEEE-488.2 interface
Reference Clock Input	10 MHz (BNC, 0 to 3.6 Vpp)
Reference Clock Output	10 MHz (BNC, 50 Ω)
Auxiliary Output	Trigger out, calibration out

Computer System & Storage

Operating System	Windows XP Professional
Processor	Intel Pentium 4 (3.0 GHz)
System Memory (RAM)	2 GB
Storage Drive Type	Removable Hard Disk Drive
Storage Capacity	$\geq$ 40 GB

Power & Environmental

Line Voltage Range	100 - 240 VAC ($\pm$ 10%)
Line Frequency Range	47 - 63 Hz
Power Consumption	550 W maximum
Operating Temperature Range	+5 °C to +40 °C
Non-Operating Temperature Range	-40 °C to +70 °C
Operating Humidity	Up to 95% relative humidity (non-condensing) at +40 °C
Operating Altitude	Up to 4,600 m (15,000 ft)

Physical Characteristics

Net Weight	13.9 kg (30.6 lbs)
Dimensions (W x H x D)	425 mm x 216 mm x 515 mm

Standards & Compliance

Calibration Interval	1 year
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Performance

Rise Time (10% to 90%)	54 ps
Rise Time (20% to 80%)	38 ps
Dynamic Range	$\pm$ 4 divisions from center screen

Inputs & Outputs

Input Connector Type	3.5 mm female
Probe Support	Agilent AutoProbe interface
External Video Output	15-pin XGA D-sub

Control & Connectivity

LXI Compliance	LXI Class C
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Compliance

Safety Standards	IEC 61010-1, CAN/CSA-C22.2 No. 61010-1, UL 61010-1
EMC Standards	IEC 61326-1, EN 61326-1, ICES-001, AS/NZS CISPR 11
Overvoltage Category	CAT I
Pollution Degree	Pollution Degree 2

Triggering

Auxiliary Trigger Input Impedance	50 Ω
Auxiliary Trigger Input Connector	BNC
Auxiliary Trigger Maximum Input Voltage	5 Vrms
Auxiliary Trigger Level Range	± 1 V
InfiniiScan Trigger Types	Zone Finder, Measurement Limit, Non-monotonic Edge, Runt, Setup/Hold, Slew Rate (with N5415A software)

Probing

Recommended Active Probes	InfiniiMax II 1168A (10 GHz) / 1169A (12 GHz)
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Measurements

Cursor Types	Manual, Track Waveform, Auto Measurements
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Environmental

Vibration (Operating)	0.3 g (rms), 5 Hz to 500 Hz
Vibration (Non-operating)	2.41 g (rms), 5 Hz to 500 Hz
Shock (Non-operating)	30 g, half-sine, 11 ms duration
Maximum Storage Altitude	15,300 m (50,000 ft)

TECHNOLOGY

Digital Storage Oscilloscope (DSO)

APPLICATIONS

High-speed digital design, serial bus characterization, and signal integrity testing

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