KEYSIGHT TECHNOLOGIES (AGILENT HP)

54846B

The Agilent Keysight 54846B is a high-performance 4-channel digital storage oscilloscope from the Infiniium 54800 Series. Featuring a 2.25 GHz analog bandwidth and a real-time sample rate of up to 8 GSa/s, it is engineered to capture demanding high-speed signals with exceptional accuracy. The instrument combines a familiar analog-like front panel with an intuitive Windows-based graphical user interface, making advanced analysis, remote control, and optional features like voice control and USB 2.0 compliance testing easily accessible.

SPECIFICATIONS

General

Interfaces	LAN, GPIB, RS-232, Parallel, PS/2, VGA out
Display	10.4-inch color active-matrix TFT-LCD, 640 × 480 resolution

Physical

Power Supply	100-240 VAC (±10%), 47-440 Hz, 390 W maximum power consumption
Operating Temperature	5 °C to +40 °C °C
Dimensions (W×H×D)	426 mm × 216 mm × 437 mm mm
Weight	14.2 kg

Vertical System

Analog Bandwidth (-3 dB)	2.25 GHz
Calculated Rise Time (10% to 90%)	< 156 ps
Number of Input Channels	4
Input Impedance	50 Ω
Input Coupling	DC
Vertical Resolution	8 bits (up to 12 bits with averaging)
Input Sensitivity Range	2 mV/div to 1 V/div
Maximum Input Voltage	5 V rms
DC Gain Accuracy	±1.25% of full scale
Channel-to-Channel Isolation (DC to 1 GHz)	≥ 40 dB
Channel-to-Channel Isolation (1 GHz to 2.25 GHz)	≥ 30 dB
Vertical Offset Range (2 mV to 100 mV/div)	±1 V
Vertical Offset Range (101 mV to 1 V/div)	±10 V
Probe Interface Support	AutoProbe interface

Horizontal System

Timebase Range	50 ps/div to 20 s/div
Timebase Accuracy	±15 ppm (0.0015%)
Timebase Resolution	2 ps

Acquisition System

Maximum Real-Time Sample Rate	8 GSa/s (2 channels), 4 GSa/s (4 channels)
Maximum Record Length (Memory Depth)	64 kpts/channel (standard)
Acquisition Modes	Sample, Peak Detect, Averaging, High Resolution

Trigger System

Trigger Sources	Channel 1, Channel 2, Channel 3, Channel 4, Auxiliary, Line
Trigger Modes	Auto, Triggered, Single
Trigger Holdoff Range	50 ns to 10 s
Standard Trigger Types	Edge, Glitch, Pattern, State, Setup/Hold, Transition, Window, Video

Waveform Measurements and Analysis

Automatic Measurements	Peak-to-Peak, Amplitude, Max, Min, Top, Base, Mean, RMS, Overshoot, Preshoot, Rise Time, Fall Time, Period, Frequency, Positive Width, Negative Width, Duty Cycle
Waveform Math Operators	Add, Subtract, Multiply, Divide, FFT, Integrate, Differentiate
FFT Window Types	Hanning, Hamming, Flat Top, Rectangular

Display and User Interface

Display Size	10.4 inches
Display Resolution	640 × 480 pixels
Waveform Display Formats	YT, XY
Operating System	Windows

Connectivity and Interfaces

Video Output Port	VGA out
External Trigger Input	Yes
Reference Clock Input	Yes

Environmental and Compliance

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

Physical Characteristics

Form Factor	Benchtop

Features & Options

Logic Analyzer Time Correlation	Compatible with Agilent 16700 series logic analyzers
Voice Control Option	Supported (hands-free operation)
USB 2.0 Test Option	Supported (low/full/high speed compliance testing)
Web-Enabled Remote Control	Supported with e-mail on trigger
Communications Mask Test Kit	Optional

Triggering System

Internal Trigger Sensitivity (DC to 1 GHz)	0.5 div
Internal Trigger Sensitivity (1 GHz to 2.25 GHz)	1.0 div
Trigger Jitter	< 8 ps RMS

Environmental

Operating Humidity	Up to 95% relative humidity (non-condensing) at +40 °C

Compliance & Safety

Safety Certifications	UL 3111-1, CSA C22.2 No. 1010.1, EN 61010-1

Performance

Maximum Equivalent-Time Sample Rate	250 GSa/s
Rise Time (20% to 80%, typical)	110 ps
Channel-to-Channel Deskew Range	±100 ns
Sample Rate Range	5 Sa/s to 8 GSa/s real-time
Hardware Trigger Bandwidth	DC to 2.25 GHz

PC Hardware & Storage

Mainframe CPU	Intel Celeron 566 MHz
Standard System RAM	128 MB
Internal Hard Disk Capacity	≥20 GB
Internal Floppy Drive	3.5-inch 1.44 MB

Power Requirements

Power Consumption	390 W maximum
Line Frequency Range	47 Hz to 440 Hz
Input Voltage Range	100 V to 240 V AC (±10%)

Inputs & Outputs

Parallel Port Connector	25-pin D-sub
Serial Port Connector	9-pin D-sub
PS/2 Ports	Two 6-pin mini-DIN (mouse & keyboard)
USB Ports	Two USB 1.1 Type A

Environmental & Reliability

Operating Vibration (Random)	0.3 g (rms), 5 Hz to 500 Hz
Non-operating Vibration (Random)	2.0 g (rms), 5 Hz to 500 Hz
Operating Shock	15 g, 11 ms half-sine

TECHNOLOGY

Digital Storage Oscilloscope (DSO)

APPLICATIONS

High-speed digital design, communications testing, signal integrity analysis, and general-purpose lab debugging