KEYSIGHT TECHNOLOGIES (AGILENT HP)

54835A

The Keysight/Agilent 54835A is a high-performance 4-channel digital oscilloscope from the Infiniium 54800 Series. Offering a 1 GHz bandwidth and real-time sampling rates up to 4 GSa/s, it is designed for demanding high-speed applications. It combines an analog-like front panel with a Windows-based graphical user interface, featuring advanced connectivity options, web-based remote control, and optional capabilities like voice control and communication mask testing.

SPECIFICATIONS

General

Interfaces	LAN, GPIB, RS-232, Centronics Parallel, VGA Out, PS/2 Keyboard/Mouse
Display	8.4-inch active-matrix color TFT-LCD, 640 × 480 resolution

Physical

Power Supply	100 - 240 VAC (±10%), 47 - 440 Hz, 390 W maximum power consumption
Operating Temperature	0 to +50 °C °C
Dimensions (W×H×D)	437 mm × 216 mm × 440 mm mm
Weight	11.8 kg kg

Vertical System

Analog Bandwidth (-3 dB)	1 GHz
Number of Input Channels	4
Calculated Rise Time (10% to 90%)	350 ps
Input Impedance	Selectable 1 MΩ (8 pF) or 50 Ω
Input Coupling	AC, DC
Vertical Resolution (ADC)	8-bit (up to 12-bit with averaging)
Input Sensitivity Range (1 MΩ)	2 mV/div to 5 V/div
Input Sensitivity Range (50 Ω)	2 mV/div to 1 V/div
DC Gain Accuracy	±1.25% of full scale
Maximum Input Voltage (1 MΩ)	150 V CAT I, 100 V CAT II
Maximum Input Voltage (50 Ω)	5 Vrms
Hardware Bandwidth Limits	Selectable 20 MHz limit
Offset Range	±1.2 V (2 to 50 mV/div), ±2.4 V (50.5 to 99 mV/div), ±12 V (100 to 500 mV/div), ±24 V (505 mV to 1 V/div for 50 Ω), ±100 V (505 mV to 5 V/div for 1 MΩ)
Channel-to-Channel Isolation	≥ 40 dB (DC to 500 MHz), ≥ 30 dB (500 MHz to 1 GHz)
Input Capacitance	8 pF (at 1 MΩ input)

Horizontal System

Maximum Real-Time Sampling Rate	4 GSa/s (2 channels interleaving), 2 GSa/s (all 4 channels)
Standard Record Length	32 kpts/channel (64 kpts interleaving)
Time Base Range	100 ps/div to 20 s/div
Time Base Accuracy	±15 ppm (0.0015%)

Trigger System

Trigger Sources	Channel 1, Channel 2, Channel 3, Channel 4, Auxiliary, Line
Trigger Modes	Auto, Triggered, Single
Trigger Types	Edge, Glitch, Pattern, State, Setup/Hold
Trigger Sensitivity	Internal: 0.5 div or 5 mV (DC to 100 MHz), 1.0 div or 10 mV (100 MHz to 1 GHz); Auxiliary: 150 mV (DC to 500 MHz)
Trigger Level Range	Internal: ±8 divisions from screen center; Auxiliary: ±5 V
Trigger Level Resolution	0.1 division or 2 mV (whichever is greater)
Trigger Holdoff Range	40 ns to 320 ms

Acquisition System

Acquisition Modes	Real-time, Equivalent-time, Average, Peak Detect

Processor and Storage

Internal Operating System	Windows-based graphical user interface
Removable Storage Options	3.5-inch 1.44 MB floppy drive

Environmental Specifications

Storage Temperature Range	-40 °C to +70 °C
Operating Humidity Range	Up to 95% relative humidity (non-condensing) at +40 °C

Product Features

Logic Analyzer Time Correlation	Time correlation support with Agilent 16700 logic analyzers
Voice Control Option	Supported for hands-free operation
Web Remote Control	Web-enabled remote browser control
Communications Mask Testing	Optional kit available

Measurements and Analysis

Waveform Math Functions	Add, subtract, multiply, average, differentiate, integrate, FFT
Automatic Measurements	Voltage (peak-to-peak, maximum, minimum, average, amplitude, top, base, overshoot, preshoot, RMS, cycle RMS), Time (period, frequency, positive width, negative width, duty cycle, rise time, fall time, delay, phase)

Environmental

Maximum Operating Altitude	4,600 m (15,000 ft)
Operating Vibration	0.3 g(rms) (5-500 Hz, random, 10 minutes per axis)
Non-operating Vibration	2.41 g(rms) (5-500 Hz, random, 10 minutes per axis)
Operating Shock	15 g (11 ms, half-sine)
Non-operating Shock	30 g (11 ms, half-sine)

Performance

Maximum Equivalent-Time Sampling Rate	250 GSa/s
Peak Detect Pulse Width	1.0 ns minimum
Channel-to-Channel Deskew Range	±100 ns
Horizontal Resolution	1 ps

Auxiliary Inputs & Outputs

Calibrator Output Voltage	5.0 V ±0.1 V (into high impedance), 2.5 V ±0.05 V (into 50 Ω)
Calibrator Output Frequency	500 Hz ±0.012%
Probe Power Outputs	±15 V, +5 V, -5.2 V (400 mA maximum total)
Probe Interface	Agilent AutoProbe interface
Auxiliary Trigger Input Impedance	1 MΩ ±3%

Safety & EMC Compliance

Safety Standards	CSA C22.2 No. 1010.1, EN 61010-1 / IEC 1010-1
Electromagnetic Compatibility	CISPR 11/EN 55011 Class A, IEC 1000-3-2, IEC 1000-4-2/3/4/5/6/11

TECHNOLOGY

Digital Storage Oscilloscope (DSO)

APPLICATIONS

High-speed digital design, telecommunications testing, general-purpose electronic debugging, and logic analyzer time correlation