

## KEYSIGHT TECHNOLOGIES (AGILENT HP)

# 54846A

The Agilent/Keysight 54846A is a high-performance 4-channel digital oscilloscope from the Infiniium 54800 Series. It features an analog bandwidth of 2.25 GHz and real-time sample rates of up to 8 GSa/s, designed to capture high-speed waveforms with precision. Equipped with a Windows-based graphical user interface, the 54846A combines the ease of use of an analog oscilloscope with the advanced analysis capabilities of a digital instrument, including options for voice control, USB test suites, and remote web control.

## SPECIFICATIONS

### General

|                                  |                                                                                           |
|----------------------------------|-------------------------------------------------------------------------------------------|
| Interfaces                       | GPIB, LAN (10/100Base-T), RS-232, Parallel (Centronics), VGA out, PS/2 mouse and keyboard |
| Display                          | 10.4-inch active-matrix color TFT LCD, 640 × 480 resolution                               |
| Internal Storage                 | Internal Hard Disk Drive (HDD) and 3.5-inch 1.44 MB floppy drive                          |
| Operating System                 | Windows 98 or Windows XP Professional (model/upgrade dependent)                           |
| System Processor                 | Intel Celeron or Pentium III (model/upgrade dependent)                                    |
| Chassis Cooling                  | Forced-air (fan)                                                                          |
| Recommended Calibration Interval | 1 year                                                                                    |

### Physical

|                       |                                                                            |
|-----------------------|----------------------------------------------------------------------------|
| Power Supply          | 100 V to 240 V AC (±10%), 47 Hz to 440 Hz, 390 W maximum power consumption |
| Operating Temperature | 5 to 40 °C                                                                 |
| Dimensions (W×H×D)    | 432 × 216 × 442 mm                                                         |
| Weight                | 14.1 kg                                                                    |

## Vertical System

|                                   |                                                                                               |
|-----------------------------------|-----------------------------------------------------------------------------------------------|
| Analog Bandwidth (-3 dB)          | 2.25 GHz                                                                                      |
| Calculated Rise Time (10% to 90%) | 156 ps                                                                                        |
| Number of Channels                | 4                                                                                             |
| Input Impedance                   | 50 $\Omega$                                                                                   |
| 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 <sub>rms</sub> (or $\pm 5$ V peak)                                                        |
| Offset Range                      | $\pm 1.2$ V (2 to 50 mV/div), $\pm 4$ V (51 to 250 mV/div), $\pm 5$ V (251 mV/div to 1 V/div) |
| DC Gain Accuracy                  | $\pm 1.25\%$ of full scale                                                                    |
| Channel-to-Channel Isolation      | $\geq 40$ dB (DC to 1 GHz), $\geq 30$ dB (1 GHz to 2 GHz), $\geq 20$ dB (2 GHz to 2.25 GHz)   |

## Horizontal System

|                   |                                                       |
|-------------------|-------------------------------------------------------|
| Timebase Range    | 50 ps/div to 20 s/div                                 |
| Timebase Accuracy | $\pm(0.15 \text{ ppm} + 0.15 \text{ ppm/year aging})$ |

## Acquisition System

|                                     |                                                   |
|-------------------------------------|---------------------------------------------------|
| Maximum Real-Time Sample Rate       | 8 GSa/s (on 2 channels), 4 GSa/s (on 4 channels)  |
| Standard Memory Depth               | 64 kpts/channel (128 kpts on 2 channels)          |
| Maximum Memory Depth                | 1 Mpts/channel (with Option 040)                  |
| Maximum Equivalent Time Sample Rate | 250 GSa/s                                         |
| Memory Upgrade Options              | Option 040: 1 Mpts/channel (2 Mpts on 2 channels) |

## Trigger System

|                              |                                                                   |
|------------------------------|-------------------------------------------------------------------|
| Trigger Sources              | Channel 1, Channel 2, Channel 3, Channel 4, Auxiliary, Line       |
| Trigger Modes                | Auto, Triggered, Single                                           |
| Trigger Coupling             | DC, AC, Low Frequency Reject, High Frequency Reject, Noise Reject |
| Trigger Holdoff Range        | 100 ns to 10 s                                                    |
| Internal Trigger Level Range | $\pm 8$ divisions from screen center                              |
| Auxiliary Trigger Bandwidth  | DC to 100 MHz                                                     |

## Waveform Measurements and Analysis

|                         |                                                                                                                      |
|-------------------------|----------------------------------------------------------------------------------------------------------------------|
| Automatic Measurements  | Voltage (Max, Min, P-P, Top, Base, Amp, Avg, RMS, Over/Preshoot), Time (Period, Freq, Width, Duty, Rise/Fall, Phase) |
| Waveform Math Operators | Add, Subtract, Multiply, Divide, FFT, Differentiate, Integrate                                                       |
| FFT Window Types        | Hanning, Hamming, Flat Top, Rectangular                                                                              |
| Limit / Mask Testing    | Optional (with Communications Mask Test Kit)                                                                         |

**Display and User Interface**

|                          |                                      |
|--------------------------|--------------------------------------|
| Waveform Display Formats | YT, XY                               |
| Voice Control Option     | Available (for hands-free operation) |

**Environmental and Compliance**

|                           |                                         |
|---------------------------|-----------------------------------------|
| Storage Temperature Range | -40 °C to +70 °C                        |
| Operating Humidity        | Up to 95% RH (non-condensing) at +40 °C |
| Operating Altitude        | Up to 4,600 m (15,000 ft)               |

**Connectivity and Interfaces**

|                              |                                                            |
|------------------------------|------------------------------------------------------------|
| Logic Analyzer Compatibility | Time correlation with Agilent 16700 series logic analyzers |
|------------------------------|------------------------------------------------------------|

**Display**

|                    |                                        |
|--------------------|----------------------------------------|
| Display Size       | 8.4 in (213 mm) diagonal               |
| Display Resolution | 640 x 480 pixels (VGA)                 |
| Display Type       | Color flat-panel TFT active-matrix LCD |

**Inputs & Outputs**

|                 |                                                                               |
|-----------------|-------------------------------------------------------------------------------|
| Probe Interface | AutoProbe interface (supports active probes with automatic scaling and power) |
|-----------------|-------------------------------------------------------------------------------|

**Compliance & Certifications**

|                  |                                                           |
|------------------|-----------------------------------------------------------|
| EMC Compliance   | CISPR 11 / EN 55011 Class A, IEC 61000-3-2, IEC 61000-3-3 |
| Safety Standards | IEC 61010-1 / EN 61010-1, CSA C22.2 No. 1010.1, UL 3111-1 |

**TECHNOLOGY**

Digital Phosphor / DSO

**APPLICATIONS**

High-Speed Signal Integrity, Communications Test, USB Compliance, Debugging

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