

KEYSIGHT TECHNOLOGIES (AGILENT HP)

54622A

The Keysight (Agilent HP) 54622A is a 100 MHz, 2-channel analog digital storage oscilloscope from the 54600 Series. Featuring Agilent's patented MegaZoom deep memory technology, it offers 4 MB of memory mapped to a high-definition display with 32 levels of intensity and a vector update rate of 25 million vectors per second. Designed for demanding troubleshooting across serial protocols and complex analog designs, it provides robust triggering options, built-in floppy storage, and dual connectivity interfaces.

SPECIFICATIONS

General

Interfaces	Standard RS-232 and parallel printer ports; floppy disk drive; optional GPIB (via module)
Display	7-inch monochrome raster CRT with 32 levels of intensity
Real-Time Clock	Built-in (tracks time and date)
Standard Warranty	3 years

Physical

Power Supply	100 V to 240 V AC ($\pm 10\%$), auto-ranging, 47 Hz to 440 Hz, max 100 VA
Operating Temperature	0 to +55 °C °C
Dimensions (W×H×D)	322 mm × 172 mm × 317 mm mm
Weight	6.3 kg

Key Performance Specifications

Bandwidth	100 MHz
Analog Channels	2
Maximum Real-Time Sample Rate	200 MSa/s per channel
Memory Depth	2 MB per channel (4 MB maximum in single-channel mode)
Vector Update Rate	25 million vectors/sec
Vertical Resolution	8 bits
System Bandwidth Limiters	20 MHz

Vertical System (Analog Channels)

Input Coupling	AC, DC, Ground
Input Impedance	1 M Ω $\pm$ 1% ~14 pF
Input Sensitivity Range	1 mV/div to 5 V/div
Maximum Input Voltage	CAT I 300 Vrms, 400 Vpk; CAT II 100 Vrms, 400 Vpk
DC Vertical Gain Accuracy	$\pm$ 2.0% of full scale
Channel-to-Channel Isolation	$\geq$ 40 dB from DC to 100 MHz
Offset Range	$\pm$ 2 V (1 mV/div to 100 mV/div), $\pm$ 40 V (101 mV/div to 5 V/div)
Probe Attenuation Factors	1:1, 10:1, 100:1 (automatically sensed with compatible probes)

Horizontal System (Acquisition)

Time Base Range	5 ns/div to 50 s/div
Time Base Accuracy	$\pm$ 0.007% (70 ppm)
Horizontal Modes	Main, Delayed, Roll, XY
Roll Mode Range	500 ms/div to 50 s/div
Peak Detect Resolution	5 ns
Averaging	Selectable from 2 to 16,384

Trigger System

Trigger Modes	Auto, Normal, Single
Trigger Sources	Ch 1, Ch 2, Line, External
Trigger Coupling	AC, DC, LF Reject, HF Reject, Noise Reject
Trigger Sensitivity	0.3 div or 3.5 mV (DC to 20 MHz), 1.0 div or 10 mV (20 MHz to 100 MHz)
Trigger Level Range	Ch 1, Ch 2: $\pm$ 8 div from screen center; External: $\pm$ 10 V
Trigger Holdoff Range	60 ns to 10 s
Pulse Width Triggering	Trigger on positive or negative pulse width from 20 ns to 10 s
Pattern Triggering	Trigger on high, low, or don't care patterns across analog channels
Video Triggering Formats	NTSC, PAL, SECAM, generic video
Serial Bus Triggering	I ² C, SPI, CAN
External Trigger Input Impedance	1 M Ω $\pm$ 1% 14 pF
External Trigger Input Range	$\pm$ 10 V

Measurement and Analysis Functions

Automatic Measurements	19 automatic measurements with statistics
Voltage Measurements	Vp-p, Vmax, Vmin, Vtop, Vbase, Vamp, Vavg, Vrms, Overshoot, Preshoot
Time/Frequency Measurements	Frequency, Period, +Width, -Width, Duty Cycle, Rise Time, Fall Time, Delay, Phase
Cursor Measurements	Manually placed readout of voltage, time, and frequency (1/Δt)
Waveform Math Operations	Ch 1 + Ch 2, Ch 1 - Ch 2, FFT
FFT Window Types	Hanning, Flat Top, Rectangular
FFT Resolution	1024 points
Auto-Scale	Single-button setup of active channels, vertical, horizontal, and trigger

Display and User Interface

Graticule Options	8 × 10 grid (each grid is 1 div = 1 cm)
Waveform Display Modes	Vectors, Dots, Infinite Persistence
Local Language Support	Quick Help in 9 languages

Connectivity and Interfaces

Floppy Drive	3.5-inch, 1.44 MB, MS-DOS compatible
RS-232 Port	9-pin D-sub male, up to 115.2 kbps
Parallel Printer Port	25-pin D-sub female, Centronics
Optional Modules	N2727A (thermal printer), N2757A (GPIB), N2758A (CAN trigger module)
Probe Compensator Output	Approx. 5 Vpp, ~1.2 kHz

Environmental and Physical

Storage Temperature	-40 °C to +70 °C
Operating Humidity	Up to 95% RH at +40 °C
Operating Altitude	Up to 4,500 meters (15,000 feet)
Non-operating Altitude	Up to 15,240 meters (50,000 feet)

Standards and Certifications

Safety Certifications	CSA C22.2 No. 1010.1, EN 61010-1 / IEC 1010-1
Electromagnetic Compatibility	IEC 61326-1 / EN 61326-1, CISPR 11 Class A

Ordering Information and Accessories

Standard Included Probes	Two 10074C 10:1 passive probes (150 MHz)
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Vertical System

Calculated Rise Time	~3.5 ns
Input Capacitance	~14 pF

Frequency Counter

Built-in Frequency Counter Resolution	5 digits
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Storage & Connectivity

Setup Storage Capacity	3 non-volatile setup locations
Waveform Storage Capacity	4 non-volatile waveform locations
Supported Printer Formats	HP DeskJet, HP LaserJet, Epson, Seiko DPU-414

Power

Power Line Frequency Range	47 Hz to 440 Hz
Power Consumption	100 VA maximum

Environmental

Operating Vibration	MIL-T-28800, Class 3 random
Operating Shock	MIL-T-28800, Class 3 half-sine

Display Characteristics

Display Resolution	320 x 240 pixels
Display Type	5.7-inch monochrome liquid crystal display (LCD)
Display Intensity Levels	32 levels

I/O Interfaces

GPIO Interface Option	Supported via optional N2757A GPIO module
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Triggering System

CAN Triggering Conditions	Start of Frame, Frame ID, Data, Missing Ack, Error Frame
I2C Triggering Conditions	Start, Stop, Missing Ack, Address, Data, Restart
SPI Triggering Conditions	Clock, Data, Latch
Duration Trigger Time Range	Not supported
Glitch Trigger Min/Max Width	5 ns to 10 s

Horizontal System

Delay Jitter	10 ppm
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Waveform Math

Math Functions	Ch 1 + Ch 2, Ch 1 - Ch 2, Ch 1 * Ch 2, FFT
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TECHNOLOGY

Digital Storage Oscilloscope

APPLICATIONS

Electronic Design and Debugging, Education, Embedded Systems, Automotive Testing

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