

KEYSIGHT TECHNOLOGIES (AGILENT HP)

8593E

The Agilent / HP 8593E is a versatile, portable microwave spectrum analyzer offering a frequency range of 9 kHz to 22 GHz (expandable to 26.5 GHz with optional capability). Designed to provide a wide range of performance and features for both field and bench applications, it incorporates a split-screen CRT display, one-button measurement routines, and a four-slot cardcage that accepts downloadable measurement personalities. These personalities allow the analyzer to be tailored for complex, application-specific tests in cable TV/broadcast, component testing, electromagnetic compatibility (EMC), lightwave, and wireless communications.

SPECIFICATIONS

General

Interfaces	GPIB, RS-232, or Parallel (configuration/option dependent)
Display	CRT (Split screen capability)
Internal Storage	Up to 50 traces and 50 states

Physical

Power Supply	90-132 V / 195-250 V, 47-66 Hz; 103-126 V, 400 Hz
Operating Temperature	0 to +55 °C
Dimensions (W×H×D)	325 × 163 × 427 mm
Weight	16.4 kg

Frequency Specifications

Frequency Range	9 kHz to 22 GHz (up to 26.5 GHz with Option 026)
Frequency Reference Aging Rate	$\pm 2 \times 10^{-6}$ / year (standard); $\pm 1 \times 10^{-7}$ / year (Option 004)
Resolution Bandwidth (RBW) Range	1 kHz to 3 MHz (30 Hz to 3 MHz with Option 130)
Phase Noise (SSB) at 30 kHz Offset	≤ -105 dBc/Hz at 1 GHz

Amplitude Specifications

Amplitude Measurement Range	Displayed average noise level (DANL) to +30 dBm
Maximum Safe Input Level (Average Continuous Power)	+30 dBm (1 W)
Maximum DC Input Voltage	0 Vdc
Input Attenuator Range	0 to 70 dB
Input Attenuator Step Size	10 dB

Sweep and Trigger Specifications

Sweep Time Range	20 ms to 100 s
Trigger Source	Free Run, Single, Line, Video, External

Inputs and Outputs

RF Input Connector Type	Type-N female (standard); APC-3.5 mm male (Option 026)
RF Input Impedance	50 Ω

General and Environmental Specifications

Expansion Architecture	Four slot cardcage
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Frequency

Tuning Band 0	9 kHz to 2.9 GHz
Tuning Band 1	2.75 GHz to 6.46 GHz
Tuning Band 2	6.0 GHz to 12.8 GHz
Tuning Band 3	12.4 GHz to 19.4 GHz
Tuning Band 4	19.1 GHz to 22.0 GHz (up to 26.5 GHz with Option 026/027)
Residual FM	≤ 250 Hz peak-to-peak in 100 ms
Marker Frequency Counter Resolution	Selectable from 10 Hz to 100 kHz

Performance

Resolution Bandwidth Selectivity (60 dB:3 dB)	< 15:1
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Amplitude

Reference Level Range (Log)	-119 to +30 dBm
Amplitude Units	dBm, dBmV, dB μ V, V, W

Inputs & Outputs

Calibrator Output Frequency	300 MHz
Calibrator Output Amplitude	-20 dBm
External Reference Input	10 MHz (-2 to +10 dBm)
Probe Power	+15 V, -12.6 V, 150 mA max

Power

AC Power Requirements	90 to 132 V (47 to 440 Hz), 195 to 250 V (47 to 66 Hz)
Power Consumption	< 500 VA

Environmental

Storage Temperature	-40 $^{\circ}$ C to +75 $^{\circ}$ C
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Features

Demodulation	AM and FM demodulation with built-in speaker
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Options

Option 004 (Precision Frequency Reference)	Oven-controlled crystal oscillator (OCXO)
Option 105 (Time-Gated Analysis)	Adds time-gated spectrum analysis capability
Option 130 (Narrow Resolution Bandwidth)	Adds 30 Hz, 100 Hz, and 300 Hz resolution bandwidth filters

TECHNOLOGY

Superheterodyne Spectrum Analyzer

APPLICATIONS

RF and Microwave Testing, Component Test, Electromagnetic Compatibility (EMC), Wireless Communications, Cable TV/Broadcast

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