

KEYSIGHT TECHNOLOGIES (AGILENT HP)

8593A

The Keysight (formerly Agilent / HP) 8593A is a portable microwave spectrum analyzer operating from 9 kHz to 22 GHz (extendable to 26.5 GHz with Option 026). Part of the legacy HP 8590 Series, it features an internal preselector, a frequency accuracy of 7.5 ppm, and 32 KB of user memory, offering robust RF and microwave measurement capabilities in a portable form factor.

SPECIFICATIONS

General

Interfaces	HP-IB (Option 021) / RS-232 (Option 023) / HP-IL (Option 024)
Display	Monochrome CRT (raster-scan)
Warm-up Time	30 minutes

Physical

Power Supply	86 to 127 V AC / 195 to 253 V AC, 47 to 66 Hz, < 150 VA
Operating Temperature	0 to +55 °C °C
Dimensions (W×H×D)	325 mm × 163 mm × 427 mm (without handle and cover) mm
Weight	16.4 kg kg

Frequency Specifications

Frequency Range	9 kHz to 22 GHz (9 kHz to 26.5 GHz with Option 026)
Frequency Span Range	10 kHz to 19.25 GHz, Zero Span
Preselector	Internal preselector (2.75 GHz to 22/26.5 GHz)

Bandwidth (RBW/VBW)

Resolution Bandwidth (RBW) Range	1 kHz to 3 MHz (in 1, 3, 10 sequence); 30 Hz to 300 Hz (with Option 130)
Video Bandwidth (VBW) Range	30 Hz to 1 MHz (1 Hz to 1 MHz with Option 130)

Amplitude & Measurement Range

Amplitude Range	-114 dBm to +30 dBm
Maximum Safe Input RF Power	+30 dBm (1 Watt) continuous
Maximum DC Input Voltage	0 V
Input Attenuator Range	0 to 70 dB
Input Attenuator Steps	10 dB

Dynamic Range & Noise

SSB Phase Noise	< -95 dBc/Hz at 30 kHz offset
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Sweep & Trigger Specifications

Sweep Time Range (Span > 0 Hz)	20 ms to 100 s
Sweep Time Range (Zero Span)	20 μ s to 100 s
Trace Detectors	Peak, Sample, Negative Peak
Trace Functions	Clear Write, Max Hold, Min Hold, View, Blank
Number of Measurement Points	401 points

Inputs, Outputs & Connectivity

RF Input Connector Type	Type-N female (standard) / APC-3.5 male (Option 026)
RF Input Impedance	50 Ω
Calibration Output	300 MHz, -20 dBm

Physical & Environmental Specifications

Storage Temperature Range	-40 to +75 °C
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Performance

Third-Order Intermodulation Distortion	<-70 dBc for two -30 dBm tones at mixer (10 MHz to 22 GHz)
1 dB Gain Compression	>-10 dBm (10 MHz to 22 GHz, at mixer)
Second Harmonic Distortion	<-70 dBc for -40 dBm tone at mixer (10 MHz to 2.9 GHz)
Residual Responses	<-90 dBm (150 kHz to 6.4 GHz, no signal at input, 0 dB attenuation)
LO Emission at RF Input	<-80 dBm with 10 dB input attenuation
Display Scale Fidelity	± 1 dB (over 0 to -80 dB range)
Resolution Bandwidth Switching Uncertainty	± 0.25 dB (referred to 3 kHz RBW)

Sweep & Triggering

Trigger Sources	Free Run, Line, Video, External
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Frequency Reference

Standard Frequency Reference Aging Rate	± 2 ppm/year
Standard Frequency Reference Temperature Stability	± 5 ppm
Option 004 Frequency Reference Aging Rate	± 0.1 ppm/year
Option 004 Frequency Reference Temperature Stability	± 0.1 ppm

Amplitude

Amplitude Log Scale Display Range	1, 2, 5, 10 dB/div
Amplitude Linear Scale Display Range	8 divisions

Sweep

Sweep Trigger Modes	Free Run, Single, Line, Video, External
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Environmental

Operating Altitude Limit	4,570 m (15,000 ft)
Non-operating Altitude Limit	15,240 m (50,000 ft)
Environmental Compliance	Meets MIL-T-28800D, Class 5 requirements

Options

Option 021 HP-IB Interface	Provides GPIB / IEEE-488 interface for remote control and printing
Option 023 RS-232 Interface	Provides RS-232 serial interface for remote control and printing
Option 301 TV Sync Trigger	Adds TV trigger capability for NTSC, PAL, and SECAM systems

TECHNOLOGY

Superheterodyne Spectrum Analysis

APPLICATIONS

RF and Microwave Spectrum Analysis

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.