

KEYSIGHT TECHNOLOGIES (AGILENT HP)

8563A

The Keysight Technologies (formerly Agilent HP) 8563A is a high-performance, synthesized portable microwave spectrum analyzer, covering a frequency range from 9 kHz to 22 GHz (extendable to 26.5 GHz with Option 026). Engineered for demanding field and bench environments, the 8563A meets MIL-T-28800C requirements for ruggedness, including a 30g shock tolerance, and offers up to 128 dB dynamic range.

SPECIFICATIONS

General

Interfaces	HP-IB (GPIB)
Display	Monochrome CRT
Internal Memory	10 states, 8 traces
Option 001	Provides 310.7 MHz IF output
Option 006	Extends frequency range down to 30 Hz
Storage Temperature	-62 °C to +85 °C

Physical

Operating Temperature	-10 to +55 °C °C
Weight	20 kg kg

Frequency Specifications

Frequency Range	9 kHz to 22 GHz (9 kHz to 26.5 GHz with Option 026)
Frequency Span Range	0 Hz (zero span), 100 Hz to 22 GHz (26.5 GHz with Option 026)
Phase Noise at 10 kHz Offset	<-100 dBc/Hz (at 1 GHz)
Resolution Bandwidth (RBW) Range	10 Hz to 2 MHz (in 1, 3, 10 sequence)
Video Bandwidth (VBW) Range	1 Hz to 3 MHz
System Sweep Time Range (Span > 0 Hz)	50 ms to 100 s
System Sweep Time Range (Zero Span)	50 μs to 6000 s
Sweep Trigger Sources	Free Run, Line, Single, Video, External

Amplitude Specifications

Measurement Range	DANL to +30 dBm
Dynamic Range	Up to 128 dB
Maximum Safe Input Power	+30 dBm (1 W) with ≥ 10 dB RF attenuation
Maximum DC Input Voltage	0 V DC (DC coupled)
Displayed Average Noise Level (DANL) at 1 GHz	< -134 dBm (10 Hz RBW)
Displayed Average Noise Level (DANL) at 22 GHz	< -115 dBm (10 Hz RBW)
1 dB Gain Compression Point	-3 dBm (at input mixer)
Input Attenuator Range	0 to 70 dB in 10 dB steps

Inputs and Outputs

RF Input Connector Type	Precision 3.5 mm (female)
RF Input Impedance	50 ohms (nominal)
Calibrator Output (Cal Out)	300 MHz, -20 dBm
10 MHz Reference Input	10 MHz, -2 to +10 dBm

Environmental & Calibration

Environmental Compliance	MIL-T-28800C Class 3
Shock Resistance	30 g (pulse shock)

Performance

RBW Shape Factor (60 dB/3 dB)	<15:1 (10 Hz to 2 MHz)
Log Scale Fidelity	±0.4 dB per 4 dB, max ±1.0 dB over 0 - 90 dB range
Linear Scale Fidelity	±3% of reference level
Residual Responses	<-90 dBm (150 kHz - 6.46 GHz), <-75 dBm (6.46 GHz - 22 GHz) with 0 dB attenuation
Image and Multiple Responses	<-70 dBc (10 MHz - 18 GHz), <-60 dBc (18 GHz - 22 GHz)
Reference Level Range (Log)	-120 dBm to +30 dBm (0.1 dB resolution)
Reference Level Range (Linear)	2.2 µV to 7.07 V
Input Attenuator Step Size	10 dB
Resolution Bandwidth (RBW) Step Size	1, 3, 10 sequence
Video Bandwidth (VBW) Step Size	1, 3, 10 sequence
Phase Noise at 30 kHz Offset	<-100 dBc/Hz
Phase Noise at 100 kHz Offset	<-110 dBc/Hz
Phase Noise at 1 MHz Offset	<-125 dBc/Hz
Frequency Response (9 kHz to 2.9 GHz)	±1.0 dB
Frequency Response (2.75 GHz to 6.46 GHz)	±1.5 dB
Frequency Response (5.86 GHz to 13.0 GHz)	±2.2 dB
Frequency Response (12.4 GHz to 22.0 GHz)	±2.5 dB
Resolution Bandwidth Switching Uncertainty	< ±0.5 dB
Demodulation Modes	AM, FM (standard, built-in speaker and phone jack)
Marker Amplitude Resolution	0.01 dB
Marker Frequency Counter Resolution	1 Hz to 1 kHz (selectable)
Internal Reference Temperature Stability	±1 x 10 ⁻⁸ (-10 °C to +55 °C, referenced to 25 °C)

Inputs & Outputs

First LO Output	SMA female, +13 to +18 dBm (3.0 - 6.81 GHz)
IF Input	BNC, 310.7 MHz, -10 to -30 dBm
IF Output	BNC, 310.7 MHz, -35 dBm (nominal)
Video Output	BNC, 0 to 1 V (detector output)
Sweep Output	BNC, 0 to +10 V ramp
Blanking/Gate Output	BNC, TTL level
Probe Power Output	+15 VDC, -12.6 VDC (150 mA max)
External Trigger Input Connector	BNC female, impedance > 10 kΩ

Environmental

Operating Humidity	95% relative humidity at 40 °C for 5 days
Maximum Operating Altitude	4,600 meters (15,000 feet)
Maximum Non-Operating Altitude	15,240 meters (50,000 feet)

Power

Power Consumption	< 180 VA (115 Watts nominal)
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Options

Option 103	Deletes precision frequency reference, replaces with standard TCXO
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TECHNOLOGY

Synthesized Spectrum Analysis

APPLICATIONS

RF and Microwave Signal 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.