KEYSIGHT TECHNOLOGIES (AGILENT HP)

E4404B

The Keysight (formerly Agilent / HP) E4404B is a mid-performance spectrum analyzer from the ESA-E Series, offering a frequency range of 9 kHz to 6.7 GHz (expandable down to 100 Hz via option). It is designed for general-purpose RF and microwave measurements, providing an excellent balance of performance, speed, and accuracy in a rugged, portable form factor. It features a 5-minute warm-up to guaranteed measurement accuracy, an overall amplitude accuracy of ±0.4 dB, and high dynamic range.

SPECIFICATIONS

General

Interfaces	GPIB (IEEE-488), RS-232, Parallel printer port
Display	16.5 cm (6.5 in) VGA color LCD

Physical

Power Supply	90 - 132 V AC (47-440 Hz) / 195 - 250 V AC (47-66 Hz); < 300 W
Operating Temperature	0 to 55 °C
Dimensions (W×H×D)	373 × 222 × 409 mm
Weight	17.1 kg

Frequency Specifications

Frequency Range	9 kHz to 6.7 GHz (100 Hz optional)
Video Bandwidth (VBW) Range	30 Hz to 3 MHz
Phase Noise (SSB) at 10 kHz Offset	≤ -90 dBc/Hz (@ 1 GHz)
Span Range	0 Hz (zero span), 100 Hz to 6.7 GHz
Frequency Reference Aging Rate	± 2 × 10^-6 / year (Standard), ± 1 × 10^-7 / year (Option 1D5)
Calibration Signal Frequency	50 MHz

Amplitude Specifications

Absolute Amplitude Accuracy	±0.4 dB
Maximum Safe Input Level (Average Continuous Power)	+30 dBm (1 W)
Maximum DC Input Voltage	0 Vdc
Input Attenuation Range	0 to 65 dB
Input Attenuation Step Size	5 dB
1 dB Gain Compression	0 dBm (≥ 50 MHz)
Logarithmic Scale Range	0.1, 0.2, 0.5 dB/div and 1 to 20 dB/div in 1 dB steps
Linear Scale	10 divisions

Sweep and Trigger Specifications

Sweep Time Range	1 ms to 4000 s (span > 0 Hz), 50 µs to 4000 s (zero span)

Inputs and Outputs

RF Input Connector Type	Type-N (female)
RF Input Impedance	50 Ω
Reference Timebase Output Frequency	10 MHz

Physical, Environmental and Power Specifications

Display Resolution	VGA (640 × 480)
Recommended Warm-up Time	5 minutes

Dynamic Range & Spurious

Residual Responses	< -90 dBm (≥ 150 kHz, input terminated, 0 dB attenuation)

Sweep & Trigger

Sweep Time Accuracy	± 1%

General Specifications

Detectors	Normal, Positive Peak, Sample, Negative Peak, Average

Options & Features

Tracking Generator (Option 1DN)	9 kHz to 3.0 GHz

Frequency

Frequency Counter Resolution	Selectable from 1 Hz to 100 kHz

Data Processing

Trace Points	401

Amplitude

Measurement Range	Displayed Average Noise Level (DANL) to +30 dBm
Input VSWR	< 1.5:1 (≥ 10 dB attenuation, 10 MHz to 3 GHz)

Inputs & Outputs

External Reference Input Frequency	10 MHz

Power

Power Consumption	< 300 W maximum

TECHNOLOGY

Superheterodyne Spectrum Analyzer

APPLICATIONS

General-purpose RF and microwave measurements, component testing, spectrum monitoring