

KEYSIGHT TECHNOLOGIES (AGILENT HP)

4396B

The Agilent/Keysight 4396B is a highly versatile combination analyzer that integrates high-performance vector network, spectrum, and optional impedance analysis into a single instrument. Designed for both laboratory research and production environments, it covers a frequency range of 100 kHz to 1.8 GHz for network and impedance measurements, and 2 Hz to 1.8 GHz for spectrum analysis. Its fully synthesized local oscillator and direct A/D conversion yield outstanding measurement accuracy, very fast sweep speeds, and wide dynamic range. With features like dual-channel split-screen viewing, a color TFT display, and built-in IBASIC automation, the 4396B excels in evaluating components, circuits, and systems where multiple types of RF characterizations are essential.

SPECIFICATIONS

General

Interfaces	GPIB
Display	Color TFT LCD

Physical

Power Supply	90 - 132 V / 198 - 264 V, 47 - 63 Hz, 300 VA max
Operating Temperature	0 to 40 °C
Dimensions (W×H×D)	425 × 235 × 553 mm
Weight	21.5 kg

General Characteristics

Measurement Modes	Vector Network, Spectrum, Impedance (Configuration dependent)
System Impedance	50 Ω
Internal Data Storage	Built-in disk drive and RAM disk

Network Analysis: Source Characteristics

Frequency Range	100 kHz - 1.8 GHz
Frequency Resolution	1 mHz
Output Power Range	-60 to +20 dBm
Output Power Resolution	0.1 dB

Spectrum Analysis: Frequency Characteristics

Resolution Bandwidth (RBW) Range	1 Hz - 3 MHz (1-3-10 sequence)
Phase Noise (SSB)	<-105 dBc/Hz @ 10 kHz offset (fc < 1 GHz)

Data Processing and Analysis

Time-Gated Spectrum Analysis	Supported (Option dependent)
Automation Environment	Built-in IBASIC

Network Analyzer Performance

Transmission Dynamic Range	> 120 dB (Network Analyzer mode, 10 Hz IF BW)
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Inputs & Outputs

External Reference Input	10 MHz (BNC female)
Internal Reference Output	10 MHz (BNC female)
Probe Power Output	+15 V (150 mA max), -12.6 V (150 mA max)
External Trigger Input	BNC(f), TTL level

Impedance Analyzer (Option 010)

Impedance Measurement Parameters	$ Z $, $ Y $, θ , R, X, G, B, L, C, D, Q (Requires Option 010)
Impedance Frequency Range	100 kHz to 1.8 GHz (Requires Option 010)

Network Analyzer Specifications

IF Bandwidth (IFBW)	10 Hz to 40 kHz (1, 3, 10 steps)
Measurement Formats	Log magnitude, linear magnitude, phase, expanded phase, group delay, Smith chart, polar, SWR, real, imaginary
Calibration Types	Response, response & isolation, 1-port, full 2-port (with optional S-parameter test set)
Supported S-Parameter Test Sets	Keysight 85046A/B, 87512A/B (requires 50 or 75 ohm configuration)

Spectrum Analyzer Specifications

Input Attenuator Range	0 to 50 dB in 10 dB steps
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Source Specifications

Sweep Types	Linear frequency, log frequency, list frequency, CW time, power sweep
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Frequency Specifications

Reference Frequency Accuracy	± 5.5 ppm standard; ± 0.13 ppm with Option 1D5 (High Stability Frequency Reference)
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General Specifications

Display Channels	2 independent measurement channels
Maximum Power Consumption	300 VA max
Warm-Up Time	30 minutes

TECHNOLOGY

Combination Vector Network & Spectrum Analyzer

APPLICATIONS

RF component evaluation, circuit design, production test, gain and phase measurement, signal distortion and noise analysis

