

KEYSIGHT TECHNOLOGIES (AGILENT HP)

E4411A

The Keysight Agilent E4411A (ESA-L Series) is a rugged, portable, and economical 1.5 GHz spectrum analyzer designed for general-purpose RF measurements. It features a high-resolution 15.8 cm LCD display, automatic continuous background environment alignment, and a frequency range of 9 kHz to 1.5 GHz.

SPECIFICATIONS

General

Interfaces	GPIB, RS-232, Parallel (Centronics) (configuration dependent)
Display	15.8 cm, high-resolution LCD display
Warm-up Time	5 minutes (standard); 15 minutes (Option 1D5)

Physical

Power Supply	90 to 132 V rms (47 to 440 Hz), 195 to 250 V rms (47 to 66 Hz); Power consumption < 300 W (< 5 W in standby)
Operating Temperature	0 to 55 °C
Dimensions (W×H×D)	373 mm × 222 mm × 409 mm mm
Weight	12.0 kg

Frequency Specifications

Frequency Range	9 kHz to 1.5 GHz
Residual FM	≤ 100 Hz P-P

Bandwidth (RBW/VBW)

Resolution Bandwidth (RBW) Range	1 kHz to 3 MHz
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Amplitude & Measurement Range

Measurement Range	-120 dBm to +30 dBm
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Dynamic Range & Noise

Phase Noise	≤ -90 dBc/Hz (at 10 kHz offset)
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Display & User Interface

Display Alignment	Continuous background environment alignment
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Inputs, Outputs & Connectivity

RF Input Impedance	50 Ω (standard) / 75 Ω (Option 1DP)
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Inputs & Outputs

RF Input Connector	Type-N female (50 Ω standard) or BNC female (75 Ω Option 1DP)
Calibration Output	50 MHz, -20 dBm (BNC female)
External Reference Input	10 MHz, -15 to +10 dBm (BNC female)
Reference Output	10 MHz, > 0 dBm (BNC female)
RF Input Option (Option 1DP)	75 Ω impedance, BNC (f) connector

Performance

Maximum Safe Input Level	+30 dBm (1 W) average continuous power, 0 V DC (100 V DC with Option 1DP)
Input Attenuator Range	0 to 60 dB, in 5 dB steps
Video Bandwidth (VBW) Range	30 Hz to 1 MHz (1 Hz to 1 MHz with Option 1DR)
Reference Level Range	-149.9 dBm to +30 dBm, in 0.1 dB steps
Sweep Trigger Modes	Free Run, Single, Line, Video, External

Options

Tracking Generator Option (Option 1DN)	9 kHz to 1.5 GHz
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Environmental

Storage Temperature	-40 °C to +75 °C
Operating Altitude	Up to 4,572 meters (15,000 feet)
Relative Humidity	Up to 95% (non-condensing)

Frequency

Frequency Span Range	0 Hz (zero span), 100 Hz to 1.5 GHz
Frequency Reference Aging Rate	$\pm 2 \times 10^{-6}$ /year (standard); $\pm 1 \times 10^{-7}$ /year (Option 1D5)
Frequency Reference Temperature Stability	$\pm 5 \times 10^{-6}$ (standard); $\pm 1.4 \times 10^{-8}$ (Option 1D5)

Sweep

Sweep Points	401
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Amplitude

Displayed Average Noise Level (DANL)	<-112 dBm (standard, 10 MHz to 1.5 GHz, 1 kHz RBW); <-132 dBm (with Option 1DR, 10 Hz RBW)
Absolute Amplitude Accuracy	± 0.4 dB (at 50 MHz, 10 dB attenuation)
Frequency Response	± 0.5 dB (9 kHz to 1.5 GHz, 10 dB attenuation)

Tracking Generator (Option 1DN)

Tracking Generator Frequency Range	9 kHz to 1.5 GHz (with Option 1DN)
Tracking Generator Output Power Range	-2 to -66 dBm (with Option 1DN)

TECHNOLOGY

Superheterodyne Spectrum Analysis

APPLICATIONS

General-purpose RF measurement, wireless communications testing, and EMC pre-compliance

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