

KEYSIGHT TECHNOLOGIES (AGILENT HP)

N9320A

The Keysight (formerly Agilent) N9320A is a professional RF spectrum analyzer operating in the 9 kHz to 3 GHz frequency range. It is designed to offer high-speed, cost-effective performance for mass production manufacturing, field maintenance, and service applications.

SPECIFICATIONS

General

Interfaces	USB Host (front and rear), USB Device (rear), LAN (RJ-45), GPIB (optional, Option G01)
Display	6.4-inch TFT color display, 640 x 480 resolution
State and Trace Storage Capacity	Up to 200 states or traces (internal)

Physical

Power Supply	100 to 240 VAC, 50 to 60 Hz; power consumption < 100 W
Operating Temperature	5 to 45 °C °C
Dimensions (W×H×D)	320 mm x 132.5 mm x 400 mm mm
Weight	8.4 kg kg

Frequency Specifications

Frequency Range	9 kHz to 3 GHz
Frequency Span Range	0 Hz (zero span), 100 Hz to 3 GHz
Internal Reference Aging Rate	< ±1 ppm/year
Internal Reference Temperature Stability	< ±1 ppm (0 to 50 °C)
Resolution Bandwidth (RBW) Range	10 Hz to 1 MHz (in 1-3-10 sequence)
Video Bandwidth (VBW) Range	1 Hz to 1 MHz (in 1-3-10 sequence)
Phase Noise	<-88 dBc/Hz (typical -90 dBc/Hz) @ 10 kHz offset (fc = 1 GHz)
RBW Accuracy	< ±15% (typical < ±10%)

Amplitude Specifications

Measurement Range	DANL to +20 dBm
Maximum Safe RF Input Level	+30 dBm (1 W)
Maximum DC Input Voltage	50 VDC
Input Attenuator Range	0 to 70 dB, in 10 dB steps
Displayed Average Noise Level (DANL) - Preamp Off	<-130 dBm (typical -133 dBm) @ 1 GHz, 10 Hz RBW
Displayed Average Noise Level (DANL) - Preamp On	-148 dBm @ 1 GHz, 10 Hz RBW (typical)
Third-Order Intercept (TOI)	+13 dBm (typical)
Absolute Amplitude Accuracy	±1.5 dB (typical ±0.5 dB)
Reference Level Range	-100 dBm to +30 dBm
Frequency Response	±0.8 dB (10 MHz to 3 GHz, attenuation 10 dB)

Sweep and Trigger Specifications

Sweep Time Range (Span >= 10 Hz)	10 ms to 1000 s (Span >= 100 Hz)
Sweep Time Range (Zero Span)	20 µs to 200 s
Sweep Trigger Source	Free run, Video, External
Sweep Modes	Continuous, Single
Trace Detectors	Normal, Positive Peak, Negative Peak, Sample, RMS
Number of Traces	4
Number of Markers	12

Tracking Generator (Optional)

TG Frequency Range	100 kHz to 3 GHz (Option TG3)
TG Output Power Level Range	-30 dBm to 0 dBm, in 1 dB steps
TG Output Flatness	±2.0 dB

Measurement & Analysis Functions

One-Button Power Measurements	Channel Power, ACP, OBW, SEM, TOI
Marker Functions	12 markers, marker table, peak search, next peak, marker delta
Limit Line Functions	Upper and lower limit lines with pass/fail testing
Auto Tune Function	One-button auto tune to find the highest signal and center it

Inputs and Outputs

RF Input Connector Type	Type-N female
RF Input Impedance	50 Ω
External Reference Input Frequency	10 MHz
External Reference Input Amplitude	-10 dBm to +10 dBm
Internal Reference Output Frequency	10 MHz
Internal Reference Output Amplitude	> 0 dBm
External Trigger Input Level	TTL compatible, BNC female
USB Host Connector Type	USB Type-A (front panel)
USB Device Connector Type	USB Type-B (rear panel)
VGA Output Resolution	640 x 480 pixels

Power and General Specifications

Display Type	6.5-inch TFT active matrix color LCD
Display Resolution	640 x 480 pixels
Display Size	6.5-inch (165 mm) diagonal
Power Supply Voltage Range	100 to 240 VAC
Power Supply Frequency Range	50 to 60 Hz
Power Consumption	< 100 W
Warm-up Time	45 minutes
Language Support	11 languages (Chinese-simplified, Chinese-traditional, English, French, German, Italian, Japanese, Korean, Portuguese, Russian, Spanish)

Environmental and Regulatory

Operating Temperature Range	5 °C to 45 °C
Storage Temperature Range	-20 °C to 70 °C
Relative Humidity Range	< 95% RH
Maximum Operating Altitude	3,000 meters (approx. 10,000 feet)
Electromagnetic Compatibility (EMC) Directive	Complies with EN61326-1, Class A
Safety Standards Compliance	Complies with EN61010-1

Physical Characteristics

Dimensions (Height x Width x Depth)	132.5 mm x 320 mm x 400 mm
Net Weight	8.4 kg (18.5 lbs)
Recommended Calibration Cycle	1 year

Sweep & Trigger

Sweep Points	461
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Frequency

Span Accuracy	±1% of span
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Amplitude

Amplitude Units	dBm, dBmV, dBμV, W, V, mW, μW, mV, μV
Preamplifier Gain	20 dB (nominal, 100 kHz to 3 GHz, Option PA3)

Tracking Generator

TG Output Power Level Step Size	1 dB
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Demodulation

AM/FM Demodulation	Audio output via speaker or headphone (Option AMA)
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Inputs & Outputs

Audio Output Connector	3.5 mm (1/8 in) mini jack (front panel)
Optional Connectivity Interfaces	GPIB interface (Option G01), LAN interface (Option 1LQ)
Tracking Generator Output Connector Type	N-type female, 50 ohm (Option TG3)

Performance

Residual Responses	< -90 dBm (typical < -98 dBm, input terminated, 0 dB attenuation)
Other Spurious Responses	< -60 dBc (typical < -70 dBc, fc = 10 MHz to 3 GHz, input level -30 dBm)
RBW Filter Shape Factor	< 5:1 (nominal, 60 dB/3 dB bandwidth ratio)
Preamplifier Frequency Range	100 kHz to 3 GHz (Option PA3)
ASK/FSK Demodulation Symbol Rate Range	1 to 100 kHz (Option DMA)
AM/FM Demodulation Frequency Range	100 kHz to 3 GHz (Option AMF)

Accessories & Options

GPIB Interface Option	Option G01
Hard Transit Case Option	Option 1TC
Handle and Bumpers Option	Option 1HB
Rackmount Kit Option	Option 1CM

TECHNOLOGY

RF Spectrum Analyzer

APPLICATIONS

Consumer electronics manufacturing test, service and repair, field maintenance, and education

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