

KEYSIGHT TECHNOLOGIES (AGILENT HP)

8719ES

The Keysight (formerly Agilent) 8719ES is a high-performance vector network analyzer (VNA) with an integrated synthesized source, test set, and tuned receiver. Operating from 50 MHz to 13.5 GHz, it provides comprehensive S-parameter characterization of RF and microwave components with 100 dB of dynamic range, excellent accuracy, and options for time-domain analysis, frequency-offset mixer measurements, and TRL calibration.

SPECIFICATIONS

General

Interfaces	GPIB (IEEE-488), RS-232, Parallel (Centronics), VGA video output, Keyboard (DIN), Optional LAN (Option 1F7)
Display	7.5-inch Color LCD

Physical

Power Supply	90 to 132 VAC / 198 to 264 VAC (auto-sensing), 47 to 66 Hz, 280 VA maximum
Operating Temperature	0 to 55 °C °C
Dimensions (W×H×D)	425 mm x 244 mm x 528 mm mm
Weight	25 kg kg

Frequency & Stimulus

Frequency Range	50 MHz to 13.5 GHz
Frequency Resolution	1 Hz
Frequency Accuracy	±10 ppm (at 23 °C ±3 °C, standard)
High-Stability Frequency Accuracy	±0.05 ppm (with Option 1D5)
Frequency Temperature Stability	±7.5 ppm (0 to 55 °C, standard)
High-Stability Temperature Stability	±0.05 ppm (with Option 1D5)
Frequency Aging Rate	<3 ppm/year (standard)
High-Stability Aging Rate	<0.5 ppm/year (with Option 1D5)
Number of Test Ports	2
Test Port Impedance	50 Ω nominal
Standard Output Power Range	-85 to +10 dBm
Attenuated Output Power Range	-85 to +10 dBm (standard)
Power Flatness	±2.0 dB
Power Resolution	0.05 dB
Power Level Accuracy	±1.0 dB (at -5 dBm)
Power Linearity	±0.5 dB
Power Sweep Range	20 dB
Second Harmonic Spurious	<-15 dBc (at maximum output power, typical)
Non-Harmonic Spurious	<-30 dBc (at maximum output power, typical)

Receiver & Dynamic Range

System Dynamic Range	100 dB (10 Hz IF BW)
Receiver Noise Floor	-95 dBm (10 Hz IF BW)
Maximum Input Level	+10 dBm (at 1 dB compression)
Maximum Damage Level	+26 dBm RF, 30 VDC
Port-to-Port Isolation	100 dB
Trace Noise Magnitude	<0.006 dB rms (3 kHz IF BW)
Trace Noise Phase	<0.038° rms (3 kHz IF BW)

Measurement Speed & Settings

Number of Measurement Points	3, 11, 21, 51, 101, 201, 401, 801, 1601
IF Bandwidth Range	10 Hz to 6 kHz (in 1-3-10 sequence)
Averaging Factors	1 to 999
Sweep Types	Linear, Logarithmic, Segmented (List), Power Sweep

Measurement Capabilities & Calibration

S-Parameters	S11, S21, S12, S22
Display Formats	Log magnitude, Phase, Group delay, SWR, Smith chart, Polar, Linear magnitude, Real, Imaginary
Display Channels	4 channels
Measurement Channels	2 channels
Group Delay Range	1 / (2 × aperture frequency)
Group Delay Aperture	Selectable from 0.25% to 20% of frequency span
Standard Calibration Types	SOLT, One-port, Response, Adapter-removal
Optional Calibration Types	TRL* (standard), TRL/LRM (with Option 400)
Error Correction Levels	Full 2-Port, 1-Port, Response
Time Domain Analysis	Optional (Option 010)
Frequency Offset Mode	Optional (Option 089)

Hardware Interfaces & Connections

Test Port Connector Type	3.5 mm male
External Reference Input Frequency	1, 2, 5, or 10 MHz
Internal Reference Output Frequency	10 MHz
Auxiliary Analog Input Range	-10 V to +10 V
Video Output Type	VGA (15-pin D-sub)
Keyboard Connector	PS/2 style (DIN)
External Trigger Input	BNC female

System, Controller & Storage

Internal Storage Media	3.5-inch Floppy Disk Drive (1.44 MB)
Remote Control Command Language	HP-IB
Code Emulation	8753 / 8720 code compatibility
Internal Operating System	Real-time proprietary OS

Physical, Environmental & Power

Safety and EMC Compliance	Conforms to IEC 1010-1 / EN 61010-1
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Display & Markers

Number of Display Markers	4 per channel
Marker Resolution (Magnitude)	0.001 dB
Marker Resolution (Phase)	0.01°
Display Magnitude Resolution	0.001 dB/division
Display Phase Resolution	0.01°/division
Reference Level Range (Magnitude)	±500 dB
Reference Level Range (Phase)	±500°

Storage

Internal Memory State Storage Capacity	Up to 31 instrument states
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Options

Option 007 (Mechanical Transfer Switch)	Replaces solid-state switch to increase output power and dynamic range by typically 5 dB
Option 010 (Time Domain)	Adds time domain transform capability
Option 1D5 (High-Stability Frequency Reference)	Improves frequency accuracy and temperature stability
Option 012 (Direct Receiver Access)	Provides direct access to the receiver inputs (A, B, R) via front-panel jumpers
Option 085 (High-Power S-Parameter Test Set)	Modifies internal RF paths to allow external high-power amplifiers and attenuators, supporting up to +43 dBm (20 W) RF power input

Triggering & Sweep

Trigger Modes	Continuous, Single, Group, Hold, External
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TECHNOLOGY

Vector Network Analysis

APPLICATIONS

RF and Microwave Component Characterization

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