

KEYSIGHT TECHNOLOGIES (AGILENT HP)

8753ES

The Agilent 8753ES is a high-performance vector network analyzer designed for complete characterization of RF components, offering precise S-parameter measurements from 30 kHz up to 6 GHz. It features a built-in S-parameter test set and advanced calibration capabilities including full two-port, adapter-removal, and TRL/LRM methods.

SPECIFICATIONS

General

Interfaces	GPIB (IEEE-488), VGA output, External Reference Input/Output (BNC), Trigger Input/Output (BNC)
Display	8.4-inch Color LCD (640 x 480 pixels)

Physical

Power Supply	90-264 VAC, 47-66 Hz, 350 VA max
Operating Temperature	0 to 55 °C °C
Dimensions (W×H×D)	425 mm × 222 mm × 550 mm mm
Weight	23 kg kg

Frequency Characteristics

Frequency Range	30 kHz to 3 GHz / 6 GHz (frequency-option dependent)
Frequency Resolution	1 Hz
Frequency Accuracy	±5 ppm
Frequency Stability	±0.1 ppm/°C
Frequency Range (by option)	30 kHz to 3 GHz (standard); 30 kHz to 6 / 10 / 11 / 13.5 / 20 GHz (option dependent)

Output Power Specifications (Source)

Output Power Range	-5 to +10 dBm (standard, typical)
Power Level Resolution	0.01 dB
Power Level Accuracy	±1.0 dB (typical)
Harmonics	<-25 dBc (typical)
Non-Harmonic Spurious	<-30 dBc (typical)
Output Impedance	50 Ohm / 75 Ohm (configuration dependent)
Power Sweep Range	15 dB (typical)

Receiver Characteristics

Input Power Range (Damage Level)	+20 dBm max
Noise Floor	<-100 dBm (at 10 Hz IFBW, 30 kHz - 3 GHz)
1 dB Compression Point	+5 dBm (typical)

System Performance (Calibrated)

Dynamic Range	Up to 100 dB (at 10 Hz IFBW)
Directivity	>40 dB (calibrated, typical)
Source Match	>30 dB (calibrated, typical)
Load Match	>30 dB (calibrated, typical)
Transmission Tracking	±0.2 dB (typical)
Reflection Tracking	±0.3 dB (typical)
Trace Noise (Magnitude)	<0.01 dB RMS (at 10 Hz IFBW)
Trace Noise (Phase)	<0.1 degree RMS (at 10 Hz IFBW)
Stability (Magnitude)	<0.02 dB/°C (typical)
Stability (Phase)	<0.2 °/°C (typical)
Port Impedance	50 Ohm / 75 Ohm (option dependent)

Measurement Capabilities

Measurement Parameters	S11, S21, S12, S22 (S-parameters)
Number of Ports	2
Sweep Types	Linear Frequency, Log Frequency, Power, CW (Zero Span), Time Domain (optional)
Number of Measurement Points	3 to 1601 (configurable)
IF Bandwidth Range	10 Hz to 280 kHz
Sweep Speed	~100 ms (201 points, 10 kHz IFBW)
Calibration Methods Supported	Full 2-port, 1-port, Response, Enhanced Response, Adapter-removal, TRL/LRM
Averaging Types	Point, Sweep
Time Domain Analysis	Available with Option 010

Display Features

Display Type	Color LCD
Display Size	8.4-inch (diagonal)
Resolution	640 x 480 pixels (VGA)
Number of Traces	Up to 4
Number of Channels	1
Marker Functions	Standard (readout, delta, bandwidth, search)

Interfaces and Connectivity

GPIO (IEEE-488)	Yes
VGA Output	Yes
External Reference Input	10 MHz (BNC)
Reference Output	10 MHz (BNC)
Trigger Input	Yes (BNC)
Trigger Output	Yes (BNC)

General Specifications

Storage Temperature Range	-40 to 70 °C
Humidity Range	5% to 95% RH (non-condensing)
Altitude	Up to 4600 m
Power Requirements (Voltage)	90 to 264 VAC
Power Requirements (Frequency)	47 to 66 Hz
Power Consumption	350 VA max
Regulatory Compliance (CE)	Yes
Safety Compliance	IEC 1010-1 / EN 61010-1

Software and Automation

Programming Language Support	SCPI
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Options and Accessories

Available Options	Option 006 (6 GHz Frequency Extension), Option 075 (75 Ohm Test Port Impedance), Option 010 (Time Domain Analysis), Option 002 (Harmonics Measurement), Option ECal (Electronic Calibration Module)
Rack Mount Kit	Available

Connectivity

Test Port Connector Type	N-type, female
External Keyboard Interface	PS/2
External Mouse Interface	PS/2
Printer Interface	Parallel (Centronics compatible)
Auxiliary I/O Interface	15-pin D-sub
External Reference Input (Nominal)	10 MHz, 0 dBm, 50 Ohm BNC
Reference Output (Nominal)	10 MHz, 0 dBm, 50 Ohm BNC
Serial Port	RS-232, 9-pin D-sub
Parallel Port	25-pin D-sub

Performance

Number of Measurement Receivers	3 (R, A, B)
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Measurement Display

Trace Display Formats	Log Magnitude, Linear Magnitude, Phase, Group Delay, Smith Chart (Impedance/Admittance), Polar, VSWR, Real, Imaginary
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Storage

Internal Storage	Hard drive, 3.5-inch floppy drive
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Software

System Firmware	Embedded proprietary operating system
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Measurement Characteristics

Measurement Speed (per point)	100 µs/point (typ.)
IF Bandwidth Resolution	1 Hz

Source Characteristics

Source Attenuator Range	0 to 70 dB
Source Attenuator Step Size	10 dB
Phase Noise (1 GHz carrier, 1 kHz offset)	-90 dBc/Hz (typ.)

System Characteristics

Internal Storage Type	3.5-inch Floppy Disk Drive
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Power

Power Consumption (Max VA)	500 VA
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Environmental

Non-Operating Altitude	0 to 15,300 m
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Display

Number of Markers	9 independent markers
Limit Lines	2 independent limit lines
Trace Math Functions	A-B, B-A, R/A, B/A

TECHNOLOGY

Vector Network Analysis

APPLICATIONS

RF 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.