KEYSIGHT TECHNOLOGIES (AGILENT HP)

8753D

The Keysight (formerly Agilent/HP) 8753D is a highly regarded RF Vector Network Analyzer operating from 30 kHz to 3 GHz, with an option to extend its range to 6 GHz. It features a built-in S-parameter test set and provides up to 110 dB of dynamic range, enabling complete forward and reverse characterization of components with a single connection. Incorporating a suite of productivity features including test sequencing, pass/fail limit testing, and optional time domain and harmonic capabilities, the 8753D is a versatile workhorse for RF component testing and mixer characterization.

SPECIFICATIONS

General

Interfaces	Parallel, Serial, GPIB
Display	Color display with 2 independent measurement channels

Physical

Operating Temperature	0 to 55 °C
Dimensions (W×H×D)	425 × 222 × 508 mm

Frequency Characteristics

Frequency Range	30 kHz to 3 GHz (standard); 30 kHz to 6 GHz (with option)
Frequency Resolution	1 Hz
Frequency Offset Capability	Supported (for mixer testing)

Test Port Characteristics

Internal Test Set	Built-in S-parameter test set (forward and reverse measurements)
Nominal Impedance	50 Ω or 75 Ω configurations
Step Attenuator	Optional (for extended source output power range)

System Performance

System Dynamic Range	Up to 110 dB
Error Correction	Interpolative error correction; comprehensive vector accuracy enhancement

Measurement Capabilities

Measured Parameters	Magnitude, phase, group delay (S11, S21, S12, S22)
Number of Display Channels	2 independent channels (simultaneous reflection/transmission)
Swept Harmonic Measurements	Optional (gain, 1 dB compression, match, 2nd & 3rd harmonic distortion)
Mixer Testing	Supported (via frequency offset capability)
Pass/Fail Testing	Supported
Test Sequencing	Built-in
User-Defined Test Frequencies	Supported

Time Domain Characteristics

Time Domain Measurements	Optional

Sweep Characteristics

Number of Data Points	Up to 1601 points

Interfaces and Connectivity

Data Storage	Built-in 3.5-inch floppy disk drive
Printer / Plotter Ports	Parallel and Serial ports

Sweep Capabilities

Sweep Modes	Linear frequency, Logarithmic frequency, List frequency, CW, Power sweep
Trigger Modes	Continuous, Single, Hold, External

Receiver Specifications

Receiver IF Bandwidths	Selectable from 10 Hz to 3 kHz

Calibration

Calibration Types	Response, Response & Isolation, 1-Port, Full 2-Port, TRL*/LRM*

Test Ports

Test Port Connectors	7 mm (APC-7) standard; 75 Ω Type-N with Option 075

Options & Configurations

Option 011 Configuration	Deletes built-in test set (exposes separate RF Output, R, A, and B receiver inputs for use with external test sets)

Inputs & Outputs

External Reference Input	1, 2, 5, or 10 MHz

Performance

Amplitude Resolution	0.001 dB
Phase Resolution	0.01°
Group Delay Aperture	Selectable, maximum 20% of frequency span

Environmental

Storage Temperature	-40 °C to +70 °C

Options

Option 006	Extends maximum frequency from 3 GHz to 6 GHz
Option 1D5	High-stability frequency reference
Option 002	Harmonic measurement capability
Option 010	Time domain capability

TECHNOLOGY

Vector Network Analysis

APPLICATIONS

RF Component Test, Amplifier & Mixer Characterization