

KEYSIGHT TECHNOLOGIES (AGILENT HP)

8712ET

The Keysight (formerly Agilent / HP) 8712ET is a high-performance RF transmission/reflection network analyzer designed for fast, accurate, and cost-effective testing of RF components. Operating over a frequency range of 300 kHz to 1.3 GHz, it features a built-in T/R test set, a synthesized source, dual measurement channels, and both narrowband and broadband receivers. With vector error correction and power/frequency sweep capabilities, it is widely utilized for characterization of filters, amplifiers, antennas, cables, and mixers.

SPECIFICATIONS

General

Interfaces	GPIB, LAN (RJ-45), RS-232 Serial, Parallel (Centronics), VGA Video Out, External Trigger Input (BNC), 10 MHz Reference Input (BNC)
Display	9-inch color CRT

Physical

Power Supply	90 to 264 VAC (auto-ranging), 47 to 63 Hz
Operating Temperature	0 to 55 °C °C
Dimensions (W×H×D)	425 mm × 178 mm × 512 mm mm
Weight	20.5 kg kg

Stimulus (Source)

Frequency Range	300 kHz to 1.3 GHz
Frequency Resolution	1 Hz
Frequency Accuracy	±5 ppm
Power Range (50 Ω Standard)	-5 to +16 dBm
Power Range (50 Ω with Option 1E1)	-60 to +16 dBm
Power Range (75 Ω Standard)	-5 to +13 dBm
Power Range (75 Ω with Option 1E1)	-60 to +13 dBm
Power Resolution	0.01 dB
Power Level Accuracy	±1.0 dB
Harmonics	<-30 dBc (at +10 dBm)

Receiver

Narrowband Frequency Range	300 kHz to 1.3 GHz
Broadband Frequency Range	10 MHz to 1.3 GHz
System Dynamic Range (Narrowband)	>100 dB
System Dynamic Range (Broadband)	>66 dB
Narrowband Average Noise Floor	-102 dBm
Broadband Average Noise Floor	-50 dBm
Input Damage Level	+20 dBm (RF), ± 30 VDC
Number of Receivers	2
Maximum Input Level (Broadband)	+16 dBm
Narrowband IF Bandwidths	250 Hz, 3.75 kHz, 24 kHz

Measurement Performance

System Directivity (typical)	40 dB
------------------------------	-------

Sweep & Display Functions

Number of Channels	2 independent channels
Sweep Types	Linear frequency, Log frequency, List frequency, Power sweep
Number of Measurement Points	3, 11, 26, 51, 101, 201, 401, 801, 1601
Marker Functions	8 markers per channel, marker search, tracking, delta markers
Limit Lines	Up to 18 segments per channel (for pass/fail testing)

Calibration & Error Correction

Built-in Calibration Types	Transmission/Reflection (T/R) calibration, Response (reflection/transmission) calibration
Error Correction	Scalar-error correction

Interfaces & Storage

Test Port Impedance	50 Ω (standard) or 75 Ω (Option 1EC)
Test Port Connector	Type-N female
Internal Disk Drive	3.5-inch floppy disk drive (FDD)
Disk Formats	MS-DOS, LIF
Save/Recall States	Instrument states, calibration data, trace data, and IBASIC programs
Programming Language	Instrument BASIC (IBASIC), SCPI

Environmental

Storage Temperature	-40 °C to +75 °C
Operating Humidity	5% to 95% relative humidity (non-condensing)
Operating Altitude	Up to 4,500 meters (15,000 feet)
Non-Operating Altitude	Up to 15,240 meters (50,000 feet)

Rear Panel Connectivity

GPIB Interface	IEEE 488.2 compatible, 24-pin D-shell
Parallel Port	25-pin D-shell, Centronics compatible for printers
External Video Output	VGA compatible, 15-pin D-sub, 640 x 480
External Reference Input Frequency	10 MHz ± 100 Hz
External Reference Input Level	-2 dBm to +10 dBm (typical)
Auxiliary Input Voltage Range	±10 V (100 kΩ input impedance)
Limit Test Output Level	TTL compatible (Pass: high, Fail: low, open-collector)
External Trigger Input	BNC female, TTL compatible
Keyboard Connector	5-pin DIN

Options

Option 1D5	High-stability frequency reference
Option 1E1	70 dB step attenuator (extends minimum source power to -85 dBm)
Option 1EC	75 Ω system impedance (replaces standard 50 Ω)

System Specifications

Internal Memory	512 KB
-----------------	--------

Sweep

Minimum Sweep Time	50 ms
--------------------	-------

Hardware Options

Option 100	Fault Location
Option 101	Structural Return Loss
Option 1F7	LAN Interface

Power Requirements

Line Voltage	90 to 132 VAC / 198 to 264 VAC
Line Frequency	47 to 63 Hz
Maximum Power Consumption	230 VA

Interfaces

User TTL I/O Connector	25-pin D-sub female
------------------------	---------------------

Hardware Features

Number of Test Ports	2
----------------------	---

TECHNOLOGY

Vector Network Analysis

APPLICATIONS

RF Component Testing & Characterization

