KEYSIGHT TECHNOLOGIES (AGILENT HP)

8714B

The Keysight (Agilent HP) 8714B is a 300 kHz to 3 GHz RF Economy Network Analyzer featuring an integrated transmission/reflection test set, a synthesized source, and both narrowband and broadband detection capability. Built for fast, accurate sweeps, it is ideal for testing RF components on production lines or in laboratory environments.

SPECIFICATIONS

General

Interfaces	GPIB, RS-232, Parallel (Centronics), External Keyboard (DIN), VGA Out
Display	9-inch monochrome CRT

Physical

Power Supply	90 to 260 VAC, 47 to 66 Hz, 280 VA max
Operating Temperature	0 to 55 °C °C
Dimensions (W×H×D)	425 mm × 178 mm × 514 mm mm
Weight	20.5 kg

Frequency & Stimulus Specifications

Frequency Range	300 kHz to 3 GHz
Frequency Resolution	1 Hz
Frequency Accuracy	±5 ppm
Number of Test Ports	2 (Transmission/Reflection)
Test Port Impedance	50 Ω (standard), 75 Ω (Option 1EC)
Output Power Range	-5 to +10 dBm (standard), -60 to +10 dBm (with Option 1E1 step attenuator)
Power Resolution	0.01 dB
Power Level Accuracy	±1.0 dB (at 0 dBm)

Receiver & Dynamic Range Specifications

System Dynamic Range	100 dB (narrowband detection), 50 dB (broadband detection)

Measurement Speed & Settings

Sweep Time	50 ms (for 201 points)
Number of Measurement Points	3 to 1601 points
Measurement Detection Modes	Narrowband and Broadband

Measurement Capabilities & Calibration

Measurement Parameters	Transmission (Gain/Loss), Reflection (Return Loss/SWR)
Optional Capabilities	AM Delay (Option 1DA), Cable Test / Fault Location (Option 100)
Error Correction	1-port calibration (reflection), Response calibration (transmission)

Hardware Interfaces & Connections

Test Port Connectors	Type-N female
External Reference Input	10 MHz, -2 to +10 dBm
External Monitor Output	VGA compatible

System, Controller & Storage

Internal Storage	3.5-inch floppy disk drive (LIF/DOS formats)

Physical, Environmental & Power

Storage Temperature	-40 to +70 °C
Line Voltage Range	90 to 260 VAC
Line Frequency Range	47 to 66 Hz
Maximum Power Consumption	280 VA

Source

Harmonics	<-30 dBc (at +10 dBm)
Non-Harmonic Spurious	<-30 dBc
Phase Noise	<-75 dBc/Hz (at 10 kHz offset)

Receiver

Narrowband Noise Floor	-100 dBm (< 1000 MHz), -95 dBm (1000 to 3000 MHz)
Broadband Noise Floor	-50 dBm
Phase Resolution	0.01°
Magnitude Resolution	0.01 dB
Maximum Safe Input Level (RF)	+20 dBm
Maximum Safe Input Level (DC)	±30 VDC
Receiver Narrowband Noise Floor	-100 dBm
Receiver Broadband Noise Floor	-50 dBm

Sweep

Sweep Types	Linear frequency, Log frequency, List frequency
Sweep Trigger Modes	Continuous, Single, External, GPIB

Measurement Capabilities

Number of Channels	2 channels
Display Formats	Log magnitude, linear magnitude, SWR, phase, group delay, Smith chart, polar

Connectivity

Keyboard Interface	Mini-DIN (supports PC-AT compatible keyboards)
Parallel Interface	25-pin D-sub (Centronics compatible)

Reference Frequency

High Stability Timebase Aging Rate (Option 1D5)	< ±0.1 ppm/year
High Stability Timebase Temperature Stability (Option 1D5)	< ±0.05 ppm (0 to 55 °C)

TECHNOLOGY

RF Vector Network Analysis (Transmission/Reflection)

APPLICATIONS

RF component testing, filter measurement, amplifier testing, and cable testing