

KEYSIGHT TECHNOLOGIES (AGILENT HP)

8971C

The Keysight Agilent HP 8971C is a high-performance Noise Figure Test Set designed specifically to extend the frequency range of the 8970B noise figure meter. Utilizing a stable YIG filter and an integrated low-noise preamplifier, it enables broad single-sideband measurements from 10 MHz to 26.5 GHz with simplified calibration and sweep routines.

SPECIFICATIONS

General

Interfaces	HP-IB (GPIB)
Display	None (front panel LED status indicators only, remote-controlled by host)
GPIB Interface Capabilities	SH1, AH1, T6, L4, SR1, RL1, PP0, DC1, DT1, C0, E1
Warm-up Time	1 hour
Shipping Weight	13.6 kg

Physical

Power Supply	100 / 120 / 220 / 240 V AC (+5%, -10%), 48 to 66 Hz, 150 VA maximum
Operating Temperature	0 to 55 °C °C
Dimensions (W×H×D)	425 mm × 146 mm × 476 mm mm
Weight	7.6 kg kg

Frequency and Signal Characteristics

RF Input Frequency Range	10 MHz to 26.5 GHz
Input VSWR (SSB)	1.5, 2.0, 2.25, 2.5, or 3.0 (frequency and option dependent)
Maximum Operating RF Noise Input Power	-29 / -26 / -20 dBm (depending on option and frequency)
Maximum Safe RF Input Power	-5 dBm or +20 dBm (depending on option)
LO Input Power Minimum	+1 dBm or +7 dBm (depending on option)
LO Input Power Maximum	+20 dBm

Noise Measurement Performance

SSB Noise Figure (Standard)	<=18 dB (at 10 MHz - 18 GHz)
SSB Noise Figure (Option 002)	<=11.5 dB (at 18 GHz - 26.5 GHz)
Image and Odd Harmonic Rejection SSB	20 dB typical

Control and Calibration Functions

Measurement Modes	Supports double down-conversion using the 8971C as the second downconverter
Host Compatibility	Compatible with HP 8970B and NFA series noise figure analyzers

Environmental and Compliance

Audible Noise Level	<5.5 bels at 1 meter
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Frequency Range

LO Input Frequency Range	2.4 GHz to 26.5 GHz
RF Output Frequency Range	10 MHz to 1600 MHz
SSB Band 1 Frequency Range	10 MHz to 1600 MHz
SSB Band 2 Frequency Range	1.6 GHz to 2.4 GHz
SSB Band 3 Frequency Range	2.4 GHz to 12.0 GHz
SSB Band 4 Frequency Range	12.0 GHz to 18.0 GHz
SSB Band 5 Frequency Range	18.0 GHz to 26.5 GHz

Connectors

RF Input Connector	Type-N female (Standard) / APC-3.5 female (Option 002)
LO Input Connector	Type-N female
RF Output Connector	Type-N female
System Interface Connector	25-pin D-sub (rear panel)

Performance

RF Output SWR	< 2.0:1
LO Input SWR	< 2.0:1
SSB Gain (Standard, Bands 1-4)	-2 dB to +4 dB (nominal)
SSB Gain (Standard, Band 5)	-6 dB to +2 dB (nominal)
SSB Gain (Option 002, Bands 1-4)	+16 dB to +26 dB (nominal)
SSB Gain (Option 002, Band 5)	+10 dB to +20 dB (nominal)

Environmental

Storage Temperature Range	-55 °C to +75 °C
Operating Altitude	Up to 4,600 m (15,000 ft)
Non-operating Altitude	Up to 15,300 m (50,000 ft)
Operating Humidity	Up to 95% RH @ 40 °C

Power & Electrical

Power Consumption	125 VA max
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Power

Mains Line Voltage	100 / 120 / 220 / 240 VAC (+10%, -15%)
Mains Line Frequency	48 to 66 Hz

TECHNOLOGY

YIG-tuned filtering & RF down-conversion

APPLICATIONS

Broadband Noise Figure Measurement

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