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Table 1-2. HP 8970B Noise Figure Meter Supplemental Characteristics (2 of 2)

<p>Rear Panel Outputs: X-Axis and Y-Axis from 0 to 6V. Z-Axis is TTL for pen lift (on an X-Y recorder) and blanking (on an oscilloscope).</p> <p>Plotter Capability: Noise figure and gain versus frequency plot with grid, title and noise figure, gain and frequency axis annotation.</p> <p>Compatible Digital Plotters: HP 7470A, 7475A, 7550A, 7440A and 9872B.</p>

Table 1-3. Noise Figure System Specifications (HP 8970B with HP 8971B and LO) (1 of 2)

Specifications for the Noise Figure Measurement System are the same as the Noise Figure Meter, with the following exceptions. These specifications are valid when any of the recommended system local oscillators (HP 8671B, HP 8672A, HP 8673B [standard], HP 8673C, HP 8340A/B or HP 8341A/B) is used in the Noise Figure Measurement System.

Characteristics	Performance Limits	Conditions
<p>NOISE FIGURE MEASUREMENT</p> <p>Range</p> <p>Instrumentation Uncertainty^{1,2}</p>	<p>0 to 30 dB</p> <p><±0.25 dB</p>	<p>All specifications certified for temperature range of +10 to +40° C</p> <p>For a noise source with an ENR of 14 to 16 dB.</p> <p>For NF1 + G1 >5 dB where NF1 is the noise figure of the device under test and G1 is the gain of the device under test.</p>
<p>GAIN MEASUREMENT</p> <p>Instrumentation Uncertainty^{1,2}</p>	<p><±0.45 dB</p>	<p>For NF1 + G1 >10 dB where NF1 is the noise figure of the device under test and G1 is the gain of the device under test.</p>
<p>INPUT</p> <p>Frequency Range</p> <p>Reducing System Noise Figure with Pre-amplification</p> <p>Noise Figure (maximum)</p> <p style="padding-left: 20px;">SSB1</p> <p style="padding-left: 20px;">SSB2</p> <p style="padding-left: 20px;">SSB3</p> <p>Input SWR</p> <p style="padding-left: 20px;">SSB1</p> <p style="padding-left: 20px;">SSB2</p> <p style="padding-left: 20px;">SSB3</p>	<p>Tunable from 10 to 18000 MHz</p> <p><2 dB + noise figure of the external system</p> <p>≤12 dB + 0.003 dB/MHz (+0.002 dB, opt 020)</p> <p>≤ 21 dB</p> <p>≤ 22 dB</p> <p>≤ 24 dB</p> <p>≤ 28 dB</p> <p>1.7:1 (1.5:1, opt 020)</p> <p>2:1</p> <p>2:1</p>	<p>Low noise external preamplification with net gain 30 dB</p> <p>10 MHz to 1.6 GHz</p> <p>1.6 to 2.4 GHz</p> <p>2.4 to 12 GHz</p> <p>12 to 15 GHz</p> <p>15 to 18 GHz</p> <p>10 MHz to 1.6 GHz</p> <p>1.6 to 2.4 GHz</p> <p>2.4 to 18 GHz</p>

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GENERAL Power, net weight and dimensions	Sum of HP 8970B, HP 8971B and local oscillator.	
¹ Noise figure accuracy and gain accuracy are dependent on the device under test. Refer to the Pre-amplifier Selection detailed operating instruction in Section III for more information on computing accuracy for your application. ² When making a measurement, the Noise Figure Measurement System must be tuned in the same direction and to the same frequency points used during calibration without skipping any frequency points.		

Table 1-4. Supplemental Characteristics (HP 8970B with HP 8971B)

Supplemental characteristics are intended to provide information useful in applying the instrument by giving typical, but non-warranted, performance parameters.	
Maximum Safe Input Level	+20 dBm (+16 dBm, opt 020), 0 Vdc
Maximum Operating Input Power	-20 dBm
Maximum Net External Gain	>60 dB
Sensitivity	-90 dB (no external gain required, but recommended to lower measurement uncertainty; able to measure its own noise figure with HP 346B/C).
Double Sideband (DSB) Noise Figure	18 dB, 2.4 – 26.5 GHz
SWR (DSB)	2.5:1
Measurement Speed	6 to 9 measurements per second with minimum smoothing.
Sweep Speed at Minimum Smoothing (for each Noise Figure Test Set Band)	
SSB1 140 ms per frequency point	10 to 1600 MHz
SSB2 150 ms per frequency point	1.6 to 2.4 GHz
SSB3 435 ms per frequency point	2.4 to 18 GHz
DSB 150 ms per frequency point	2.4 to 18 GHz
System Local Oscillator Control	The Noise Figure Meter will control the system local oscillator used in the Noise Figure Measurement System. The Noise Figure Meter will not control a local oscillator that is external to the Noise Figure Measurement System.
Displayed Measurement Frequency Range	10 to 99999 MHz