



8419B

Noise figure measurement determines the quality factor and sensitivity of a receiver. The measurement is rapid and provides a direct numerical reading.

Noise Figure Meter



- Low-Cost
- General Purpose
- Portable
- Lightweight

General Description

The 8419B Noise Figure Meter is an accurate, rapid, portable unit capable of measuring receiver noise figure from 0 to 25 dB, between 10 kHz and 110 GHz, depending on the noise source selection.

The 8419B has a built-in synthesized pre-selector for suppression of spurious signals and phase-locked IF tuning accuracy. The unit also uses AGC to assure accurate test readings over a 65 dB IF input range. Operation is from the receiver IF output.

Applications

- Receiver system checkout
- On-line performance monitoring
- Satellite receivers
- Radar systems
- Rapid verification of large ESM and communications receiving systems
- Component testing

Advantages

- Small, rugged and lightweight (12.5 pounds)
- No operator judgement factor or need for signal generators
- Accurate, portable test set for rapidly measuring receiver sensitivity
- Built to MIL-T-28800E

■ Measures noise figure from 0 to 25 dB, between 10 kHz and 110 GHz ■

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Noise Figure Meter

Features

- Blanking input
- Synthesized IF input frequency, 10 to 300 MHz, 0.1 MHz steps
- IF input dynamic range of 65 dB
- Direct digital readout of noise figure in dB
- Variable Excess Noise Ratio (ENR) setting allows corrected readings
- LED indicator alerts operator validity of input
- Linear output for X-Y plotter
- Reads its own noise figure for confidence check (25 dB ENR)
- Simplified operation over other portable models
- Enhanced operator confidence
- Operates from receiver IF output

Specifications

Receiving System RF Range	10 kHz to 110 GHz, depending on noise source
Noise Source	+28V, 14 to 16 dB ENR, nominal ENR's to 70 dB available
ENR Setting	1.0 to 35 dB, 0.1 dB steps
Noise Figure	0 to 10 dB (ENR 4 to 6 dB)
Measuring Range	10 to 25 dB (ENR 14 to 16 dB)
Accuracy	+/- 0.2 dB, maximum +/- 0.1 dB, typical
Indicator	IF input level valid
X-Y Plotter Output	5 mA into 2000 ohms Built-in reference
X-Y Plotter Scale	0.1V/dB, noise figure (linear)
IF Input Requirements	
<i>Frequency Range</i>	10 to 300 MHz, 0.1 MHz steps
<i>Sensitivity</i>	-75 to -10 dBm, minimum -85 to +5 dBm, typical
<i>AGC Range</i>	65 dB, minimum 90 dB, typical

Blanking

Blanking Trigger

<i>Pulsewidth</i>	25 ns to 50 us
<i>PRF</i>	2 kHz, maximum
<i>Input Trigger Level</i>	4.2V, minimum 25V, maximum

Blanking Depth

40 dB, nominal

Power Requirements

115/230 VAC, +/- 10%
Externally selectable, 30W,
50 to 440 Hz

Size (Approximate)

5 in. H x 7 in. W x 11 in. D
With cover, 15 in. D

Weight

12 1/2 lbs.
(With cover and accessories)

NSN

6625-01-300-6148

Options

Option #	Description
Option 03*	10 MHz - 18 GHz Coaxial Noise Source
Option 04*	10 kHz - 1 GHz Coaxial Noise Source
Option 05*	18 - 26.5 GHz Waveguide Noise Source
Option 06*	26.5 - 40 GHz Waveguide Noise Source
Option 07*	10 MHz - 26.5 GHz Coaxial Noise Source
Option 08*	2.7 - 2.9 GHz with Isolator, Coaxial, Type N
Option 09**	2.7 - 2.9 GHz with Amplifier, Coaxial, SMA
Option 10*	32 - 50 GHz Waveguide Noise Source
Option 11*	50 - 75 GHz Waveguide Noise Source
Option 12*	75 - 110 GHz Waveguide Noise Source
Option 13*	30 MHz - 40 GHz Coaxial Noise Source
Option 14	Rack-Mount Kit, Full
Option 15	Rack-Mount Kit, Half

* Typical ENR 14 to 16 dB; ENRs available from 5 to 25 dB

** Typical ENR 67 dB

(Customer must specify desired ENR value with order.)

The 8419B Noise Figure Meter is supplied with two 5-foot RG-58 cables, line cord, and an Operation and Maintenance Manual (includes list of replaceable parts).

Specifications are subject to change without prior notice.

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February 2005

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