

1.85mm Precision Calibrated Noise Source Module, Output ENR of 7 dB, +28 VDC, 100 MHz to 60 GHz, Calibration Standard

The FMNS1009 is a coaxial packaged calibrated precision Noise Source module which operates over a ultra wide frequency range from 0.1 GHz to 60 GHz. This design features very low VSWR < 1.5:1 typical that significantly increases measurement accuracy and is ideal for Noise Figure measurements and built-in applications. This model operates at +28 Vdc and features an output ENR level ranging from 7 to 21 dB with 10 MHz calibration points every GHz. Highly stable and accurate performance is specified over -55°C to +85°C with Noise Output Temperature Variation <0.009 dB/°C and Noise Output Variation < 0.002 dB/%V. Maximum Reverse Power is 1 Watt. The rugged industry standard profile package design supports an input Female BNC connector for DC bias and an output Male 1.85mm (V) connector. Additionally, the model is designed to meet a variety of demanding MIL-STD-202F environmental test conditions including Humidity, Thermal Shock, and Vibration for added confidence for highly reliable operation.

Electrical Specifications

Description	Min	Typ	Max	Units
Frequency Range	0.1		60	GHz
Impedance		50		Ohms
Output ENR	7		21	dB
Output Variation vs Input Voltage			0.002	dB/%V
Output Variation vs Temperature			0.009	dB/deg C
Bias Voltage 1	22	28 ±2	30	Volts
Input Current 1			30	mA
Reverse Power			1	Watt
Calibration Points	Every GHz			

Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	0.1 to 5	5 to 18	18 to 26	26 to 40		GHz
VSWR, Typ	1.15:1	1.25:1	1.35:1	1.5:1		

Mechanical Specifications

Size	
Length	3.86 in [98.04 mm]
Width/Dia.	1.18 in [29.97 mm]
Height	0.8 in [20.32 mm]
Weight	3 lbs [1.36 kg]
Package Type	Connectorized Module

Connectors

DC Connector	BNC Female
Output Connector	1.85mm Male

Environmental Specifications

Temperature

Operating Range	-55 to +85 deg C
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Features:

- 10 MHz to 6 GHz Bandwidth
- Excellent Stability
- Noise Output Temperature Variation: <0.01 dB/°C
- Noise Output Variation <0.1 dB/%V
- Rugged Package Design supports output Female SMA connector
- Designed to meet MIL-STD-202F environmental test conditions
- Calibrated Precision Noise Source
- VSWR < 1.35:1
- Output Noise ENR 14 dB typical
- Highly Stable and Accurate Performance
- Maximum Reverse Power 1 Watt
- Internal Voltage Regulation

Applications:

- Noise Figure Measurements
- Built-In Test equipment for signal strength calibrators and radar applications
- Automatic Test Equipment (ATE)
- Jamming
- Baseband Signal Simulation
- Additive White Gaussian Noise (AWGN) source for Error Rate Measurements
- Increase dynamic range of A/D Converters
- SATCOM for bit error rate (BER) and noise figure
- Can be used as a Jitter source.

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Storage Range

-65 to +125 deg C

Environment

Humidity

Shock

Vibration

Altitude

Temperature Cycle

Thermal Shock

ESD Sensitivity

MIL-STD-202F, Method 103, Cond B (96 hrs@95% R.H.)

MIL-STD-202F, Method 213, Cond B (100g, 6 msec)

MIL-STD-202F, Method 204, Cond B (0.6" 2x ampl or 15g)

MIL-STD-202F, Method 105, Condition B (50,000 ft)

MIL-STD-202F, Method 105C, Condition D (5 cycles)

MIL-STD-202F, Method 107, Condition A (5 cycles)

ESD Sensitive Material, Transport material in Approved ESD bags. Handle only in ESD Workstation.

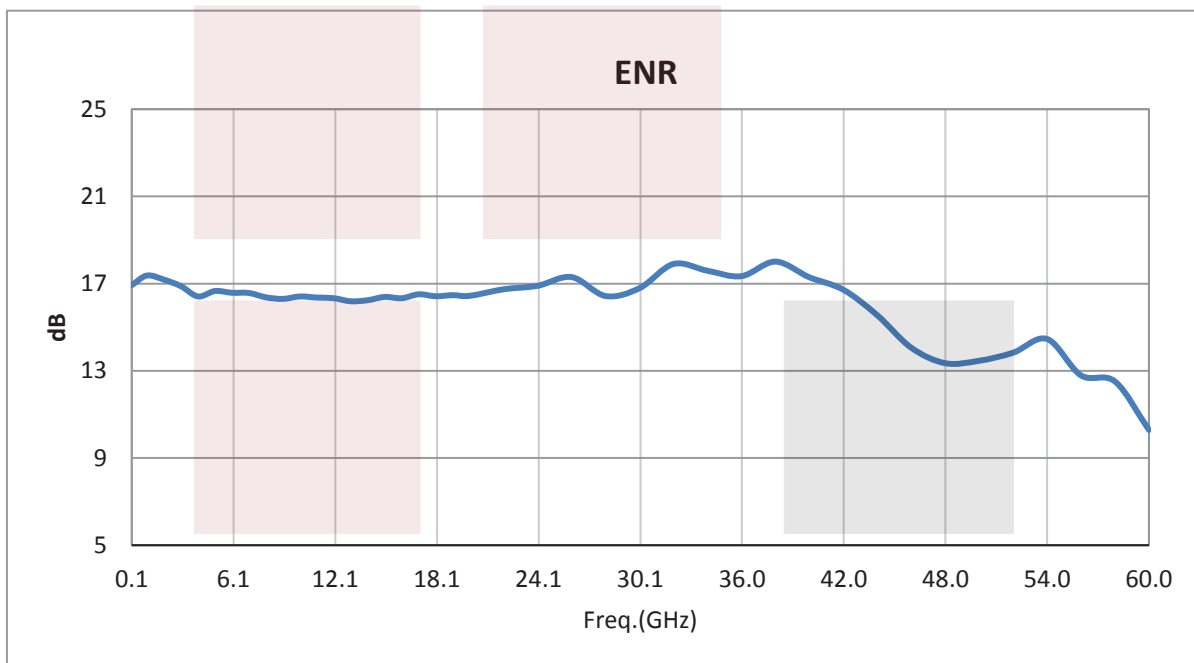


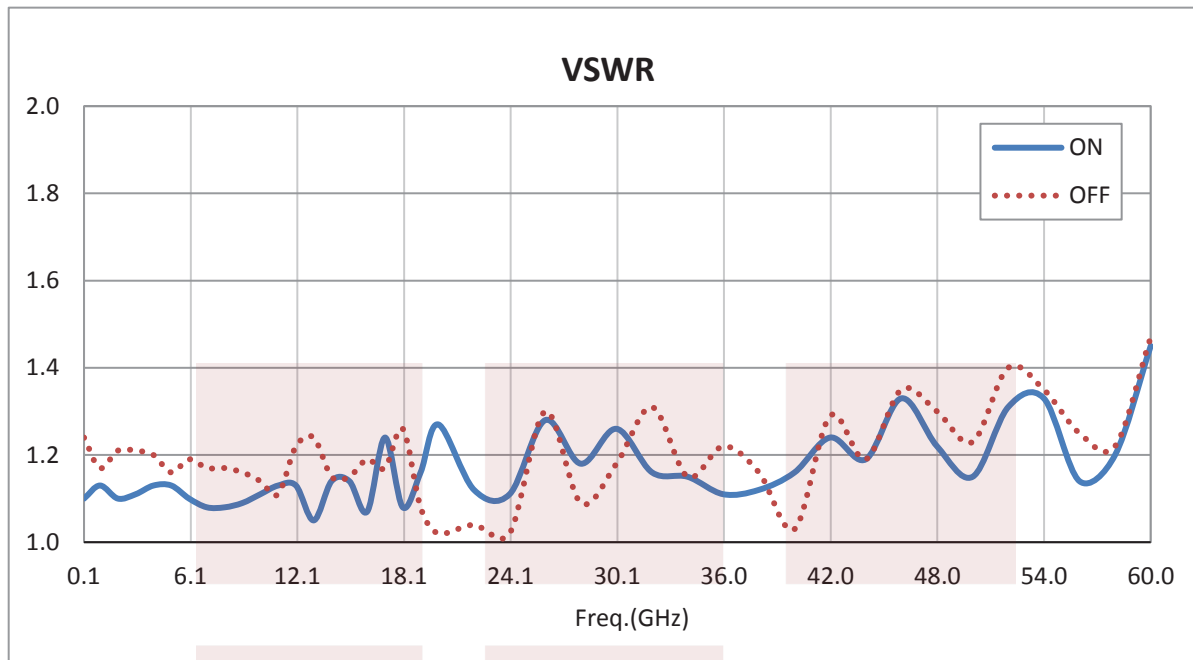
Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

Notes:

Typical Performance Data



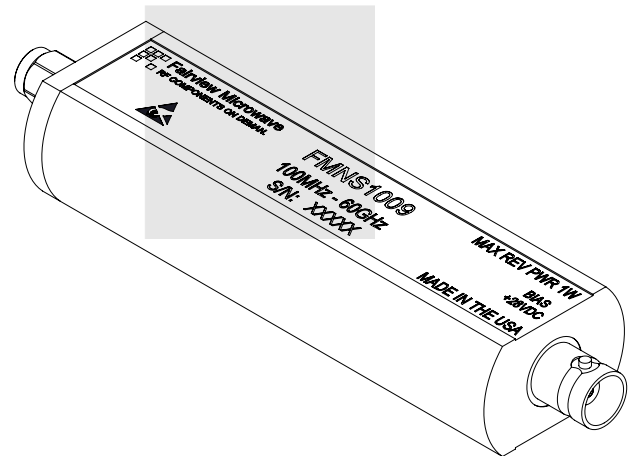
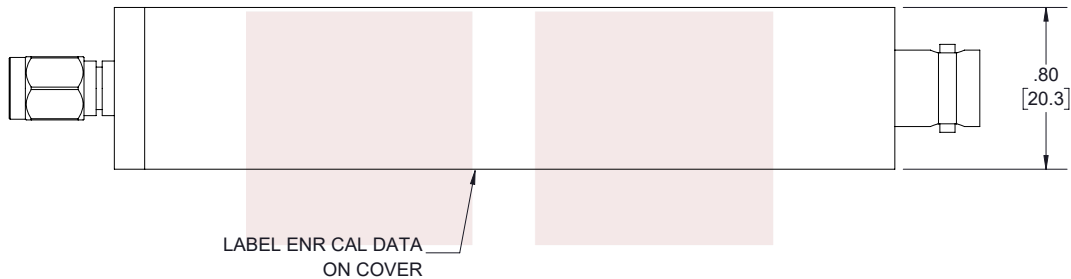
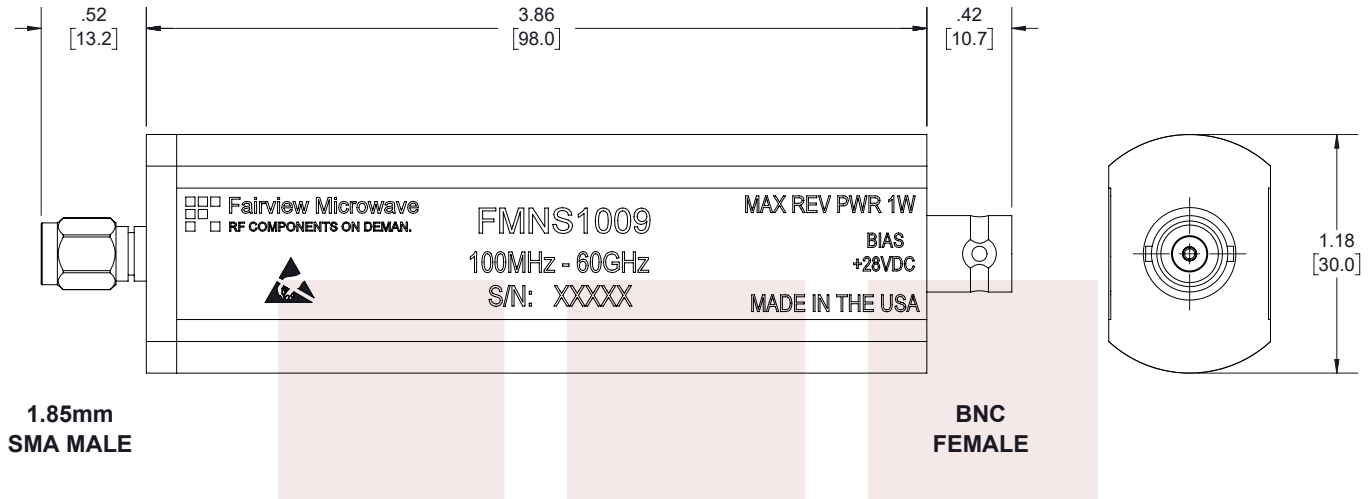


1.85mm Precision Calibrated Noise Source Module, Output ENR of 7 dB, +28 VDC, 100 MHz to 60 GHz, Calibration Standard from Fairview Microwave has same day shipment for domestic and International orders. Our RF, microwave and fiber optic products maintain a 99% availability and are part of the broadest selection in the industry.

Click the following link to obtain additional part information: [1.85mm Precision Calibrated Noise Source Module, Output ENR of 7 dB, +28 VDC, 100 MHz to 60 GHz, Calibration Standard FMNS1009](https://www.fairviewmicrowave.com/precision-calibrated-noise-source-enr-7-db-60-ghz-1.85mm-fmns1009-p.aspx)

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STANDARD TOLERANCES

.X	±0.2
.XX	±0.01
.XXX	±0.005

*STANDARD TOLERANCES APPLY ONLY TO DIMENSIONS IN INCHES

Fairview Microwave RF COMPONENTS ON DEMAND. <i>Done!</i>		NOTES: 1. UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE NOMINAL. 2. ALL SPECIFICATIONS ARE SUBJECT TO CHANGE WITHOUT NOTICE AT ANY TIME. 3. DIMENSIONS ARE IN INCHES [mm].					
TITLE		DWG NO		CAGE CODE			
1.85mm Precision Calibrated Noise Source Module, Output ENR of 7 dB, +28 VDC, 100 MHz to 60 GHz, Calibration Standard		FMNS1009		3FKR5			
CAD FILE	05/22/18	SHEET	1 OF 1	SCALE	N/A	SIZE	A 7361