

**Precision Additive
White Gaussian Noise
Generator**

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The WGN series instruments generate Additive White Gaussian Noise at levels that can be very accurately set in terms of noise power in a specified bandwidth. A 'smart' temperature stabilized attenuator with resolution better than 0.016dB provides extremely accurate and repeatable programming of output noise power.

The instrument offers as standard a signal combiner (10dB total signal path attenuation) with low amplitude and phase ripple to allow the user to easily inject a signal and add it to the internally generated noise. Thus different carrier/noise ratios can easily be set. Once a C/N ratio is established, the WGN's precision noise attenuator can be used to vary the noise power to set new C/N ratios without having to recalibrate.

A touch sensitive color panel display and intuitive soft keys allows the instrument to be controlled from the front panel. The display indicates the center frequency, noise power, noise density, bandwidth, signal attenuation, signal step size and noise step size. Up to ten instrument "states" can be stored in onboard non-volatile memory and recalled at a later time, thus allowing canned tests to be simply and efficiently implemented. An ethernet LAN interface and IEEE 488.2 interface are also provided for remote operation.

To solve the problem of attenuator accuracy and reliability, dBm has designed self-compensating all solid state attenuators that correct for frequency and power setting variations.



Applications

Typical applications for the **WGN** include:

- ◆ Bit error rate (BER) and SINAD testing
- ◆ Component and subsystem linearity characterization
- ◆ Wireless link emulation

Features

- ◆ Calibrated noise density over entire operating frequency
- ◆ Noise power/bandwidth and noise density control
- ◆ Solid state noise attenuator with 0.016 dB resolution
- ◆ Non-volatile memory for storage/recall of instrument settings
- ◆ TCP/IP LAN and IEEE-488.2 are standard

Specifications

Output type	Calibrated White Gaussian Noise
Crest factor	15 dB minimum, 18dB typical
Attenuation range	0 to 60 dB
Attenuation resolution	0.016 dB
Attenuation accuracy	0.2 dB relative
Power Spectral Density	
Density uncertainty:	< 0.5 dBm/Hz
Impedance:	50 ohms
VSWR:	< 1.5 : 1
Connectors:	Type N (female)

Model	Nominal full scale noise density	Passband flatness	Application
WGN - 20/300	-92 dBm/Hz	0.5 dB p-p	SATCOM
WGN - 100/3000	-102 dBm/Hz	2.0 dB p-p	L&C band SATCOM

Control and interface

Local interface:	Color touch sensitive, front panel display & softkeys
Remote interface:	Ethernet & IEEE-488.2
Save/Recall:	10 states

Primary power

Voltage:	90-264 VAC autoranging
Frequency:	48-66 Hz
Consumption:	100 VA, maximum
Fuse:	2A, slow-blow

Ambient operating temp	0° to 50° C
Dimensions	10.1" W x 4" H x 10.5" D

Ordering Information

Model No.	Description
WGN - 20/300	20MHz to 300MHz noise band
WGN - 100/3000	100MHz to 3000MHz noise band

Distributor



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