

**Precision Additive  
White Gaussian Noise  
Generator**

Precision White Gaussian Noise Generator

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

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

<b>Model</b>	<b>Nominal full scale noise density</b>	<b>Passband flatness</b>	<b>Application</b>
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

<b>Ambient operating temp</b>	0° to 50° C
<b>Dimensions</b>	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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