

NAL3000 SERIES

Gaussian Noise Calibration

The NAL3000 Series Gaussian Noise Calibration standards provide accurate, reliable and traceable AM and PM noise measurements to be achieved. The NAL3000 Series product uses very accurately calibrated plug-in filters to allow noise calibration to be accomplished over a 10% bandwidth relative to the chosen center frequency of the filter. The calibration accuracy for the product is better than ± 1.5 dB for both AM and PM noise. AM and PM tone modules are available as an option. An external carrier signal input is required. See the white paper "AM and PM Noise Calibration and Measurement Using a Gaussian Noise Artifact and Carrier Signature Source" for additional information.



Model No.	Frequency Range
NAL3010A	500 MHz to 2 GHz
NAL3020A	1 GHz to 18 GHz
NAL3030A	18 GHz to 26 GHz

Calibration Noise Level:	-110 dBm, ± 5 dB
Gaussian Calibration Noise Accuracy:	± 1.5 dB
Noise Bandwidth:	$\pm 5\%$ of carrier frequency
Noise Flatness:	± 0.75 dB
Maximum Carrier Input Level:	+30 dBm
Phase Adjustment Range:	NAL3010A External NAL3020A 60°/GHz NAL3030A 60°/GHz
Insertion Loss:	4 dB (Reference Channel) 7 dB (Noise Channel)
Isolation (Ref. to Noise Channel):	30 dB min.
Connectors:	SMA (F)
Supply:	120/220 VAC 57-63 Hz
Size:	12" x 8" x 4½" LWH

One Filter is supplied with the product. If other frequencies are required, the additional Filters can be purchased. To maintain the calibration accuracy of ± 1.5 dB, each Filter must be matched to a particular NAL3000 Series serial number. The Filters are therefore not interchangeable from unit to unit.

Techtrol Cyclonetics Inc.

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The NAL3000 Series of Gaussian Noise Standards provides greatly improved accuracies for AM and PM noise measurement when used in conjunction with any Noise Measurement System. The instrument also provides a method to achieve AM and PM noise measurement traceability to NIST (National Institute of Standards and Technology) and can provide for noise measurement accuracies of ± 1.5 dB or better for any AM or PM noise measurement. The NAL3000 Series can be used to achieve accurate calibration for both single source (frequency discriminator), or two source (phase detector), measurement methods. In addition, two coherent, correlated source channels are provided to allow measurement of the noise floor of a two source Noise Measurement System or residual noise of active or passive devices, such as amplifiers and mixers.

Simplified Block Diagram for the NAL3000 Series Noise Standard

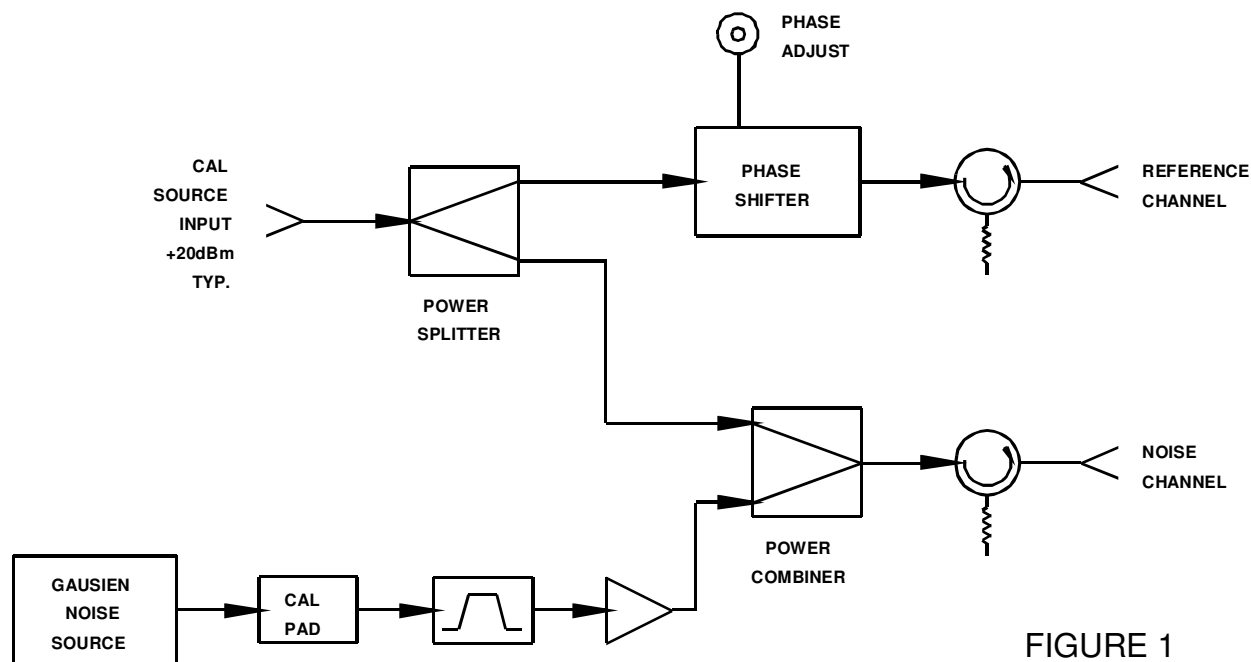


FIGURE 1

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