The EMCShop

A2LA ACCREDITED
Calibration Laboratory
Cert. 5518.01

MODEL NUMBER:
LNA6G

Broadband Preamplifier

The LNA6G is a general purpose broadband preamplifier with high gain and low noise.

SPECIFICATIONS

Frequency range (nominal)	10 MHz – 6 GHz
Noise figure	typ. < 2.7dB (1.0 GHz)
Gain	typ. +28 dB
Amplitude flatness	< +/- 3 dB
1 dB compression point at input	> - 18 dBm (89 dBµV)
Impedance	50 Ohm
VSWR input / output	< 2 : 1
Ambient temperature	-10° … +60°C
Power supply	+ 10-15 V 120 mA
DC-connector	5.5 mm / 2.5 mm
Current consumption	< 120 mA
Material of the housing	Aluminium
Housing dimensions	1.6 x 1.3 x 1 in
Overall dimensions	3.2 x 1.4 x 1 in
Weight	0.33 lb

The LNA6G is a general purpose broadband preamplifier with high gain and low internal noise. Because of the high gain and the good noise figure the system noise is nearly independent of the other components including cable and receiver. These features make the LNA6G very useful for the measurement of very low limits. In this case it will be connected directly to the antenna. The amplifier has 2 stages. The first stage uses an ESD – protected MMIC to prevent defects by unintentional electrostatic discharge.

Nevertheless preamplifiers are generally ESD-sensitive devices, therefore it is very important to discharge coaxial cables before being connected.

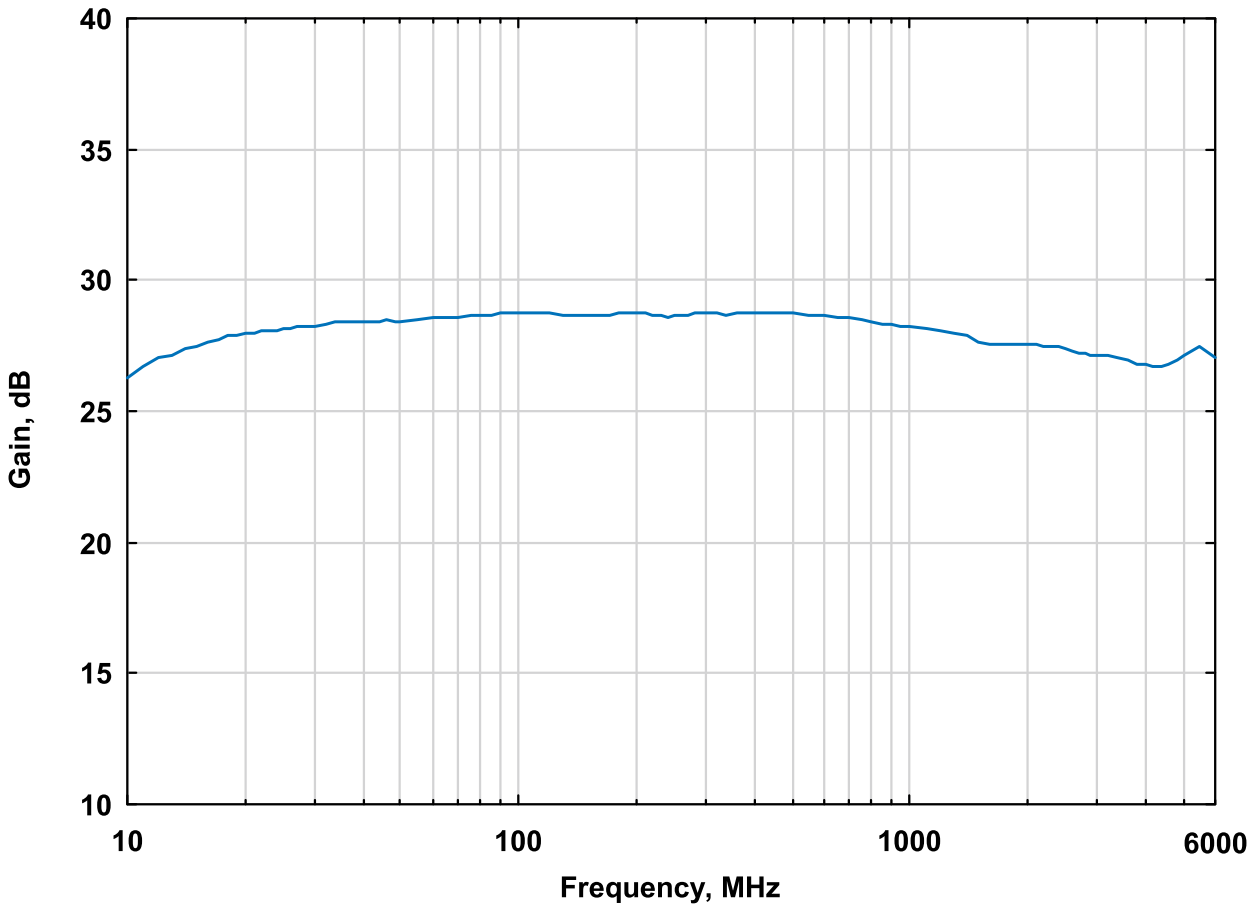
This is an essential precaution to protect the extremely small semiconductor structures operating in the microwave frequency range. It must be noted that the use of preamplifiers is generally not recommended for the measurement of impulsive signals. Such broadband noise is typical for many EMC measurements. This means that any broad-band preamplifier is not suitable for EMC-measurement of a broadband pulse spectrum. The LNA6G has an aluminium enclosure and uses N-Type flange connectors.

Power supply is very simple because of the built-in voltage regulator. A standard wall plug supply with +12 V DC can be used. An internal protection circuit slows down the rising and falling edge of the power supply voltage to prevent internal components and the receiver from being damaged by voltage spikes. 12-V-auxiliary supplies from receivers and analysers or batteries are also suitable if they can provide a cont. current of 0.12 A.

Self-noise display of FCLE 1535 with the LNA6G preamplifier, normalized at the preamplifier input

Frequency, MHz	Band	Detector	Bandwidth			
			0.2 kHz	9 kHz	120 kHz	1 MHz
10	B	Quasi-Peak	-	-21 dBµV	-	-
10 100	B C/D	Average	-	-25 dBµV	-	-
		Quasi-Peak	-	-20 dBµV	-8 dBµV	+2 dBµV
100 1000	C/D E	Average	-	-28 dBµV	-14 dBµV	-6 dBµV
		Quasi-Peak	-	-	-7 dBµV	+1 dBµV
1000	E	Average	-	-	-14 dBµV	-5 dBµV

GAIN S21



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INPUT MATCH S11, OUTPUT MATCH S22