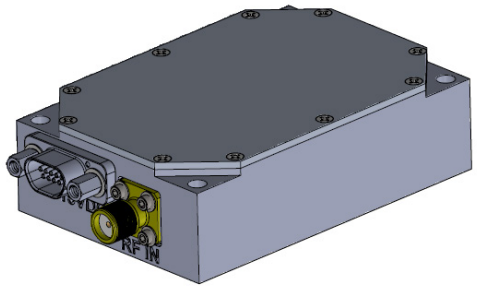
NuWaves
RF Solutions

HILNA-LS-11

Low Noise Amplifier

1000 - 3000 MHz
50 dB Gain

P/N: HILNA-LS-11



NuWaves' HILNA-LS-11™ is a broadband low noise amplifier covering L- & S-bands, and designed to achieve extremely high gain while maintaining low noise and a high third-order intercept point.

This high-performance module delivers 50 dB of gain over the broad range of 1 GHz to 3 GHz with a noise figure of less than 3 dB and OIP3 of +33 dBm. The HILNA-LS-11 is also usable from 500 MHz to 3.75 GHz with 40 dB of gain (typical).

The HILNA-LS-11's small form factor (3.3 in^3) makes it ideal for small communication system installations, co-located to the antenna. The HILNA-LS-11 also offers a factory configurable Bias-T option, eliminating the need for a separate power cable run.

HILNA-LS-11's robust power supply also operates over a very broad range, easily allowing the unit to be integrated into systems without regard to power supply precision.

Extend your operational communication range with NuPower™ amplifiers from NuWaves RF Solutions.

Features

- Broadband Operation
- Small Form Factor
- Low Noise and Extremely High Gain
- High Intercept Point
- Rugged Chassis
- Wide Input Voltage Range
- Internal Regulator/Active Bias Devices for Stability
- Optional Bias-T Compatibility

Benefits

- Low Level Signal Amplification
- Improved Link Margin
- Ruggedized Chassis for Harsh Environments

Applications

- Wideband RF Front Ends
- High Performance Receivers
- Broadband High Gain Block
- Low Noise Transmit Driver
- RF Preamplifier
- RF Repeater
- Base Station LNA

132 Edison Drive, Middletown, OH 45044 | 513.360.0800 | sales@nuwaves.com | www.nuwaves.com

HILNA-LS-11 Low Noise Amplifier

Specifications

Absolute Maximums

Parameter	Rating	Unit
Max Device Voltage	15	V
Max Device Current	300	mA
Max RF Input Power, $Z_L = 50\ \Omega$	0	dBm
Max Operating Temperature (Baseplate)	85	°C
Max Storage Temperature	85	°C

Export Classification
EAR 99

Electrical Specifications

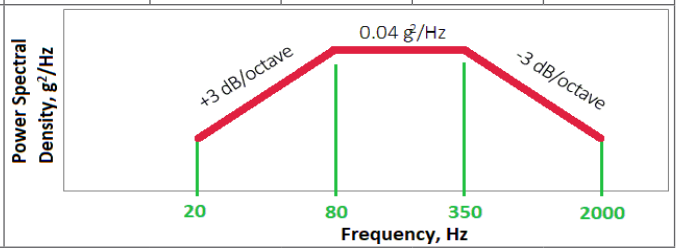
@ 12 VDC, 25 °C, Z_S=Z_L=50 Ω, CW, unless otherwise stated

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Operating Frequency	BW	1000		3000	MHz	
RF Gain	G		50		dB	
Reverse Isolation			53		dB	
VSWR	VSWR		1.4:1			Input
			1.5:1			Output
Noise Figure	NF		1.7		dB	1-3 GHz
			2.3			2.2-2.3 GHz
Third Order Order Intercept Point	OIP3		33		dBm	
Output Power @ 1dB Compression	P1dB		17		dBm	
Operating Voltage	VDC	+5	+12	+15	V	
Operating Current	I_{DD}		300		mA	@ 12 VDC (typ)

Mechanical Specifications

Parameter	Value	Unit	Limits
Dimensions (Vented Chassis Bottom)	2.50 x 1.70 x 0.75	in	Max
Weight	3.0	oz	Max
RF Bulkhead Connector	SMA Female		
Interface Connector (Nickel Finish)	Micro-D, 9-pin Socket		

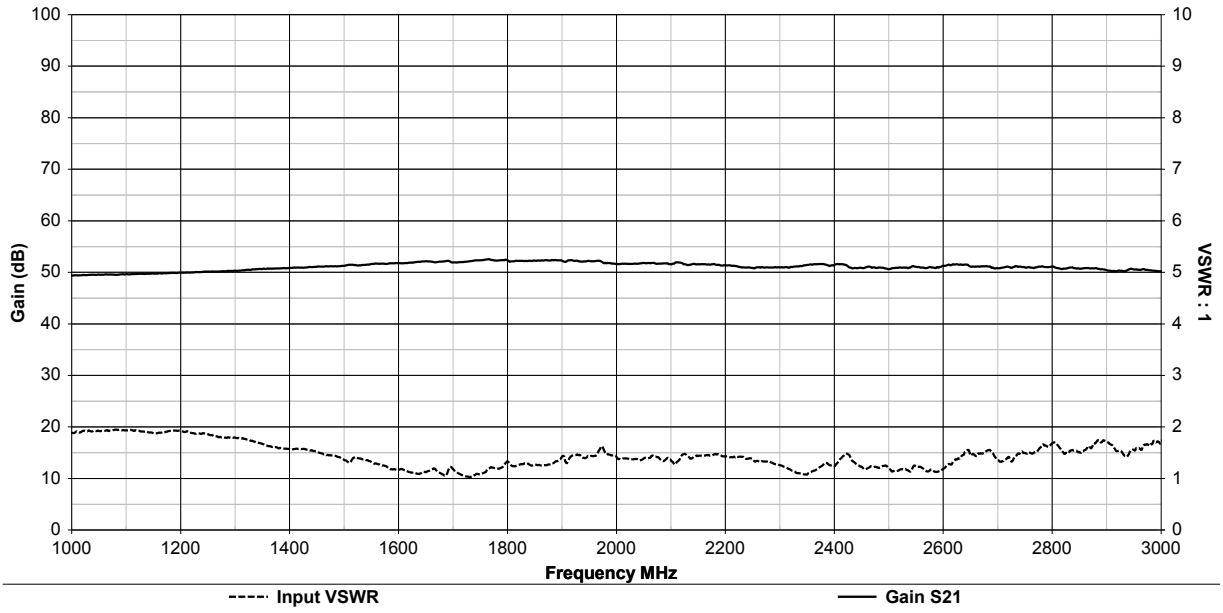
Environmental Specifications

Parameter	Symbol	Min	Typ	Max	Unit
Operating Temperature (Baseplate)	T_C	-40		+85	°C
Storage Temperature	T_{STG}	-40		+85	°C
Relative Humidity (non-condensing)	RH			95	%
Altitude MIL-STD-810F - Method 500.4	ALT			30,000	ft
Vibration / Shock Profile (Random profile in x,y, z axis, as per Figure for 15 minute duration in each axis)					

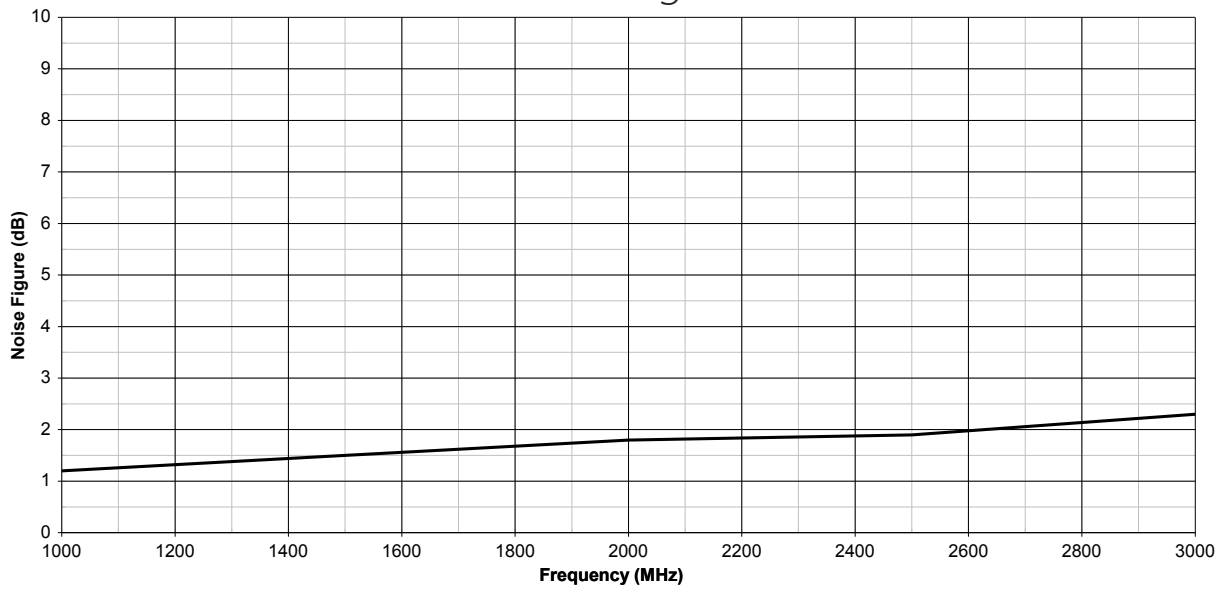
HILNA-LS-11 Low Noise Amplifier

Performance Plots

Gain & Input VSWR

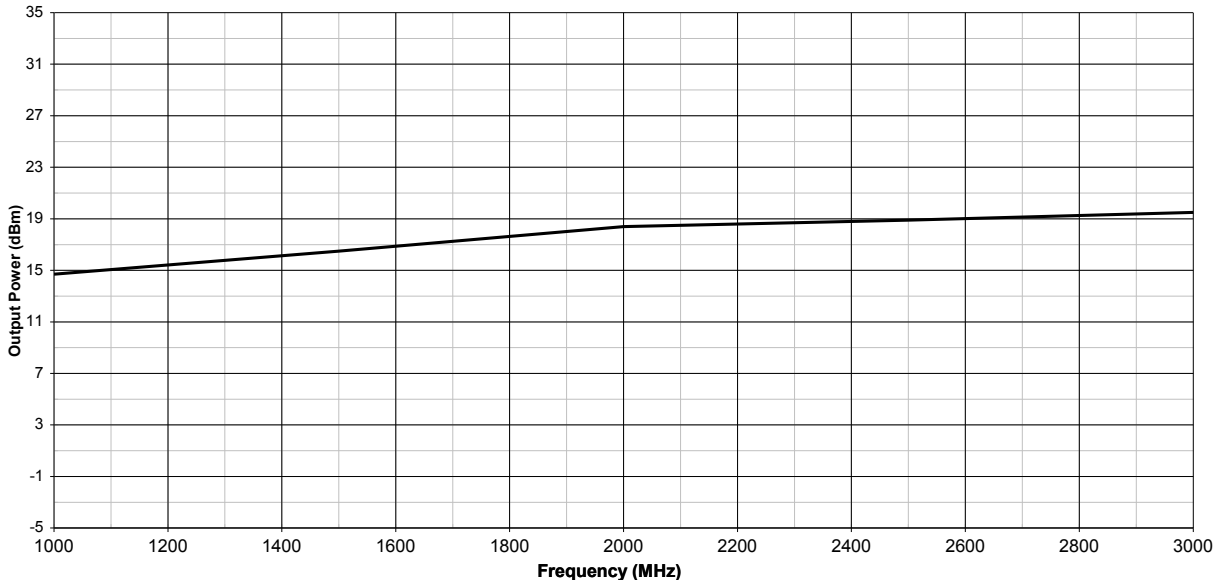


Noise Figure

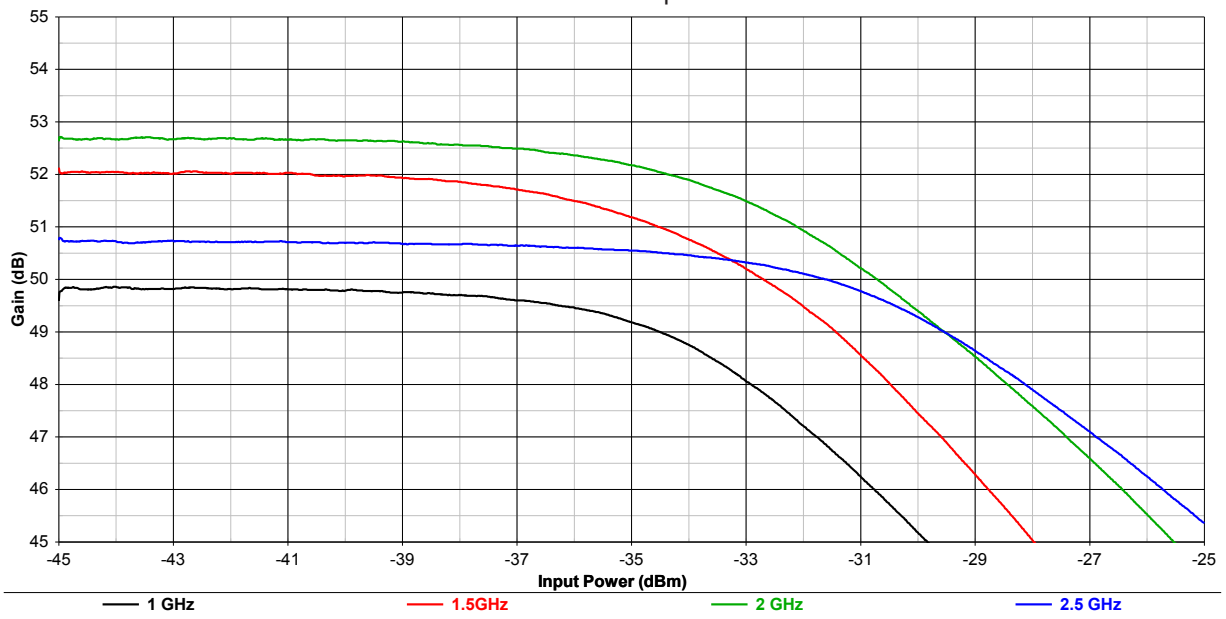


Performance Plots (cont.)

Output Power @ 1dB Compression Point

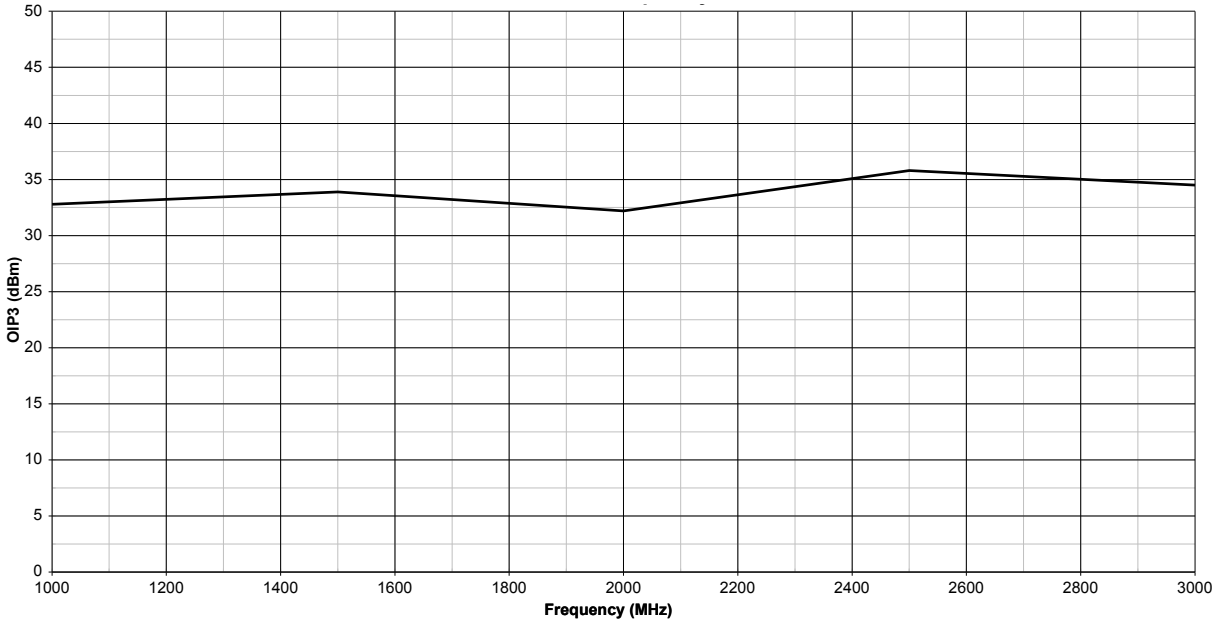


Power Compression

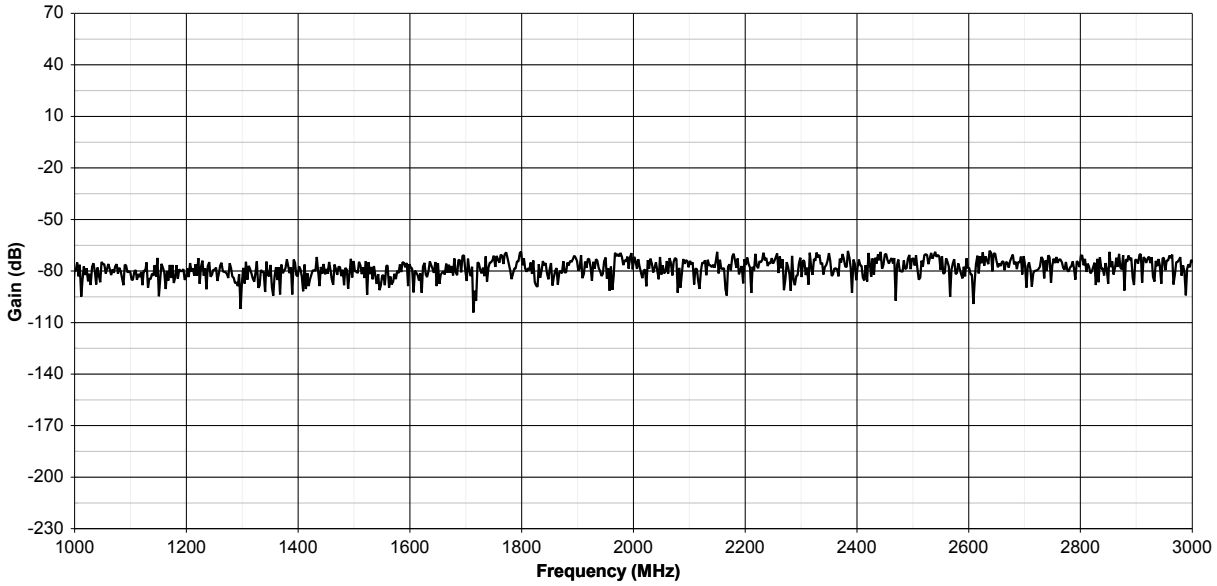


Performance Plots (cont.)

OIP3 vs Frequency

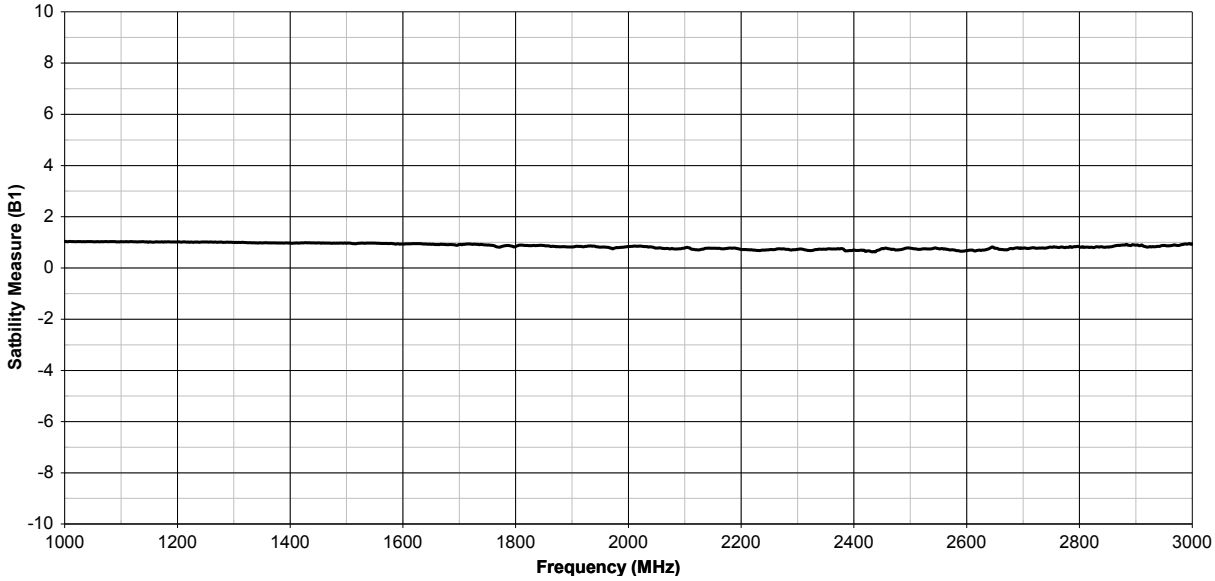


Reverse Isolation

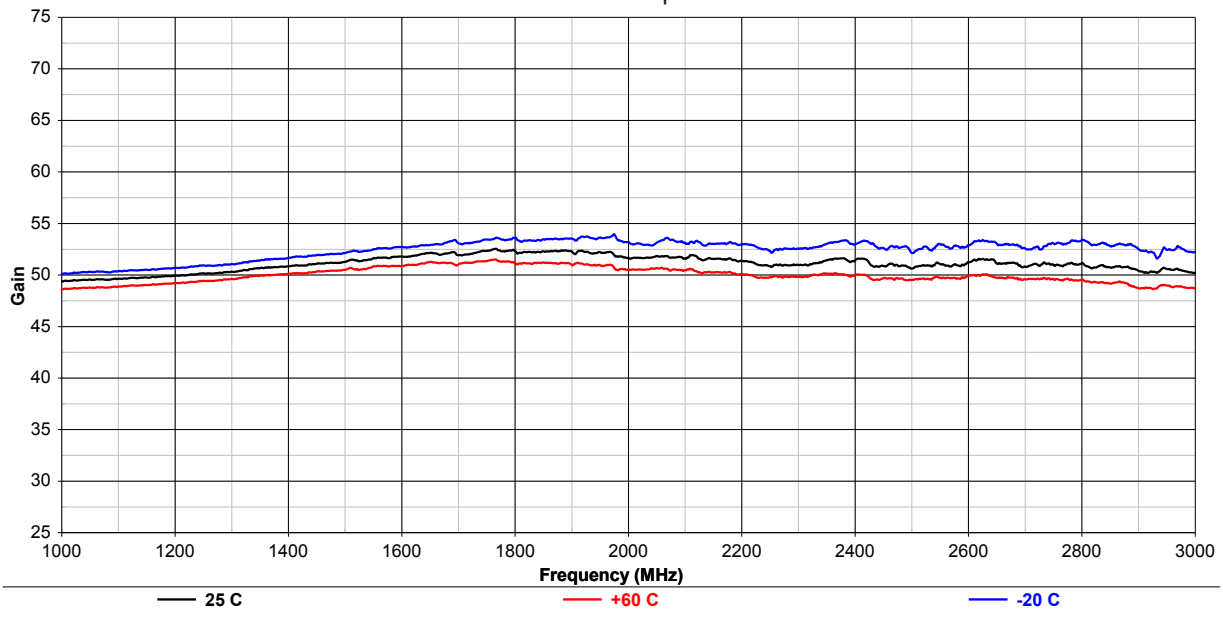


Performance Plots (cont.)

Stability Measure

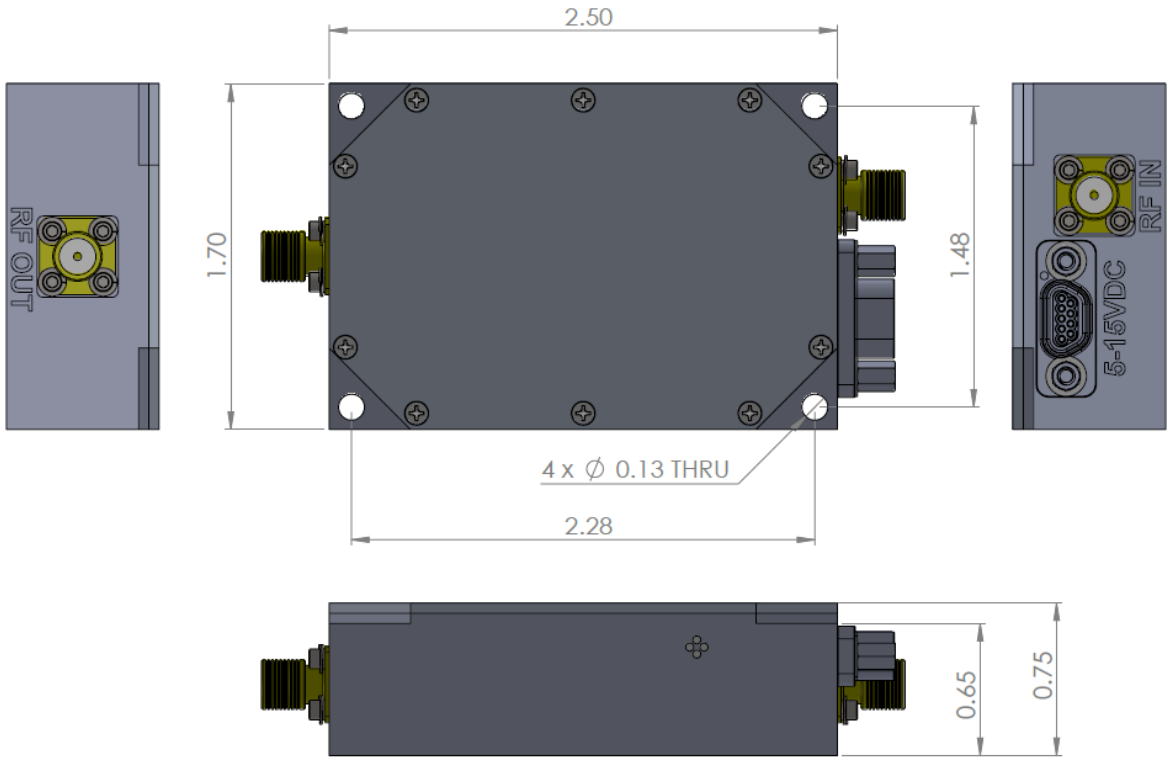


Gain vs Temperature



HILNA-LS-11 Low Noise Amplifier

Mechanical Outline



Accessory Part Numbers - Sold Separately

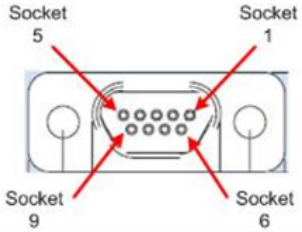
Part Number	Description
NW-LN-ACC-CB09MS	Standard Interface Cable Assembly - Flying Leads
NW-LN-ACC-CT09MS	Upgraded Interface Cable Assembly - Banana Plug Termination

For information on product disposal (end-of-life), please refer to this document:
https://nuwaves.com/wp-content/uploads/Product-Disposal-End-of-Life.pdf

Pinout

Function	Pin
DC Power	1, 2
Ground	3, 4
No Connect	5-9

9-Pin Micro D (Module View)



Contact NuWaves

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NuWaves RF Solutions

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