



NuWaves engineering

Trusted RF Solutions™

HILNA LS Low Noise Amplifier

1000 - 3000 MHz
50 dB Gain

P/N: HILNA-LS

(includes NW-LN-ACC-CB4MUA interface cable)



NuWaves' HILNA LS™ 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 2 dB and OIP3 of +33 dBm. The HILNA LS is also usable from 500 MHz to 3.75 GHz with 40 dB of gain (typical).

The HILNA LS's small form factor (3.3 in³) makes it ideal for small communication system installations, co-located to the antenna. The HILNA LS also offers a factory configurable Bias-T option, eliminating the need for a separate power cable run.

HILNA LS'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.

For powering the HILNA-LS via Bias-T, please inquire about our HILNA™ LS-BT (NW-HILNA-LS-BT).

Features

- Broadband Operation
- Small Form Factor
- Low Noise and Extremely High Gain
- High Intercept Point
- Rugged Chassis
- Over-Voltage Protection
- Reverse-Voltage Protection
- 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

HILNA LS Low Noise Amplifier

Specifications

Absolute Maximums

Parameter	Rating	Unit
Max Device Voltage	15	V
Max Device Current	300	mA
Max RF Input Power, $Z_L = 50 \Omega$	+20	dBm
Max Operating Temperature	60	°C
Max Storage Temperature	85	°C

Export Classification
5A991.B

Electrical Specifications @ 12VDC, 25 °C, $Z_S=Z_L=50 \Omega$

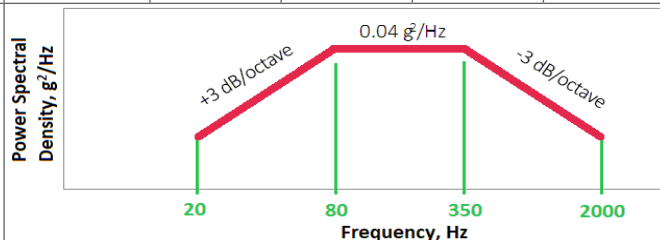
Parameter	Symbol	Min	Typ	Max	Unit	Condition
Operating Frequency	BW	1000		3000	MHz	
RF Gain	G		50		dB	
Reverse Isolation			53		dB	
VSWR	VSWR		1.4:1			Input
			1.5:1			Output
Noise Figure	NF		1.7		dB	
Third Order Intercept Point	OIP3		33		dBm	
Output Power @ 1dB Compression	P1dB		17		dBm	
Operating Voltage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

Mechanical Specifications

Parameter	Value	Unit	Limits
Dimensions	2.50 x 1.75 x 0.75	in	Max
Weight	3.0	oz	Max
RF Bulkhead Connector	SMA Female		
RF Input and Output Mating Connector	SMA Male		
Interface Connector	Mini-USB, 4-pin		

Environmental Specifications

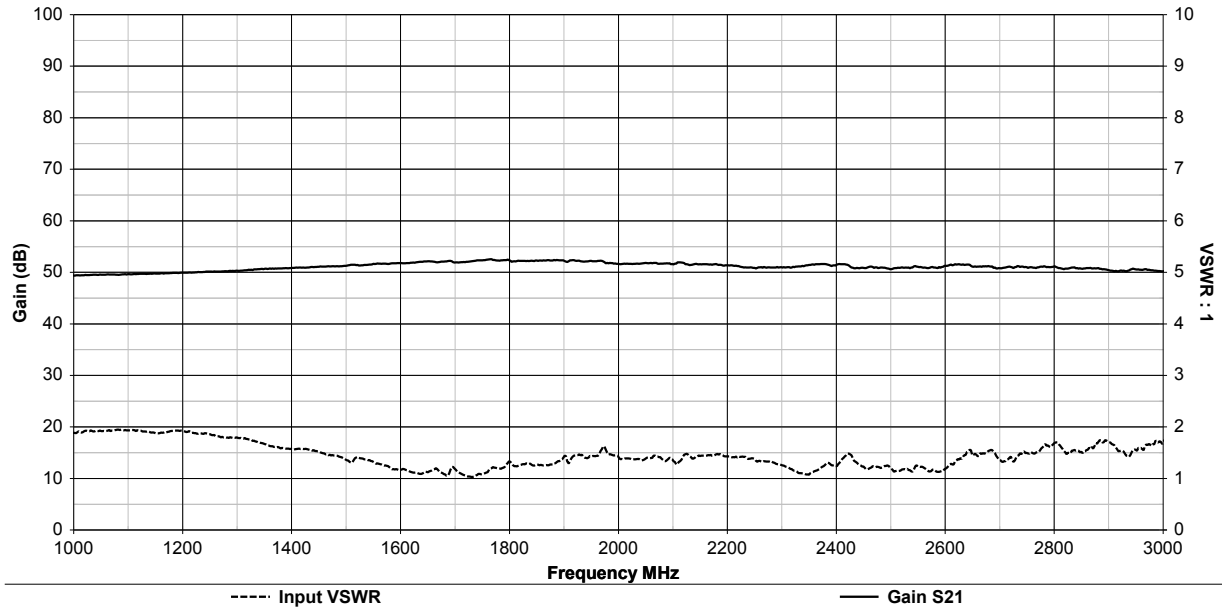
Parameter	Symbol	Min	Typ	Max	Unit
Operating Temperature	T_C	-20		+60	°C
Storage Temperature	T_{STG}	-40		+85	°C
Relative Humidity (non-condensing)	RH			95	%
Altitude MIL-STD-810F - Method 500.4	ALT			30,000	ft
Vibration / Shock Profile (Random profile in x,y, z axis, as per Figure for 15 minute duration in each axis)					



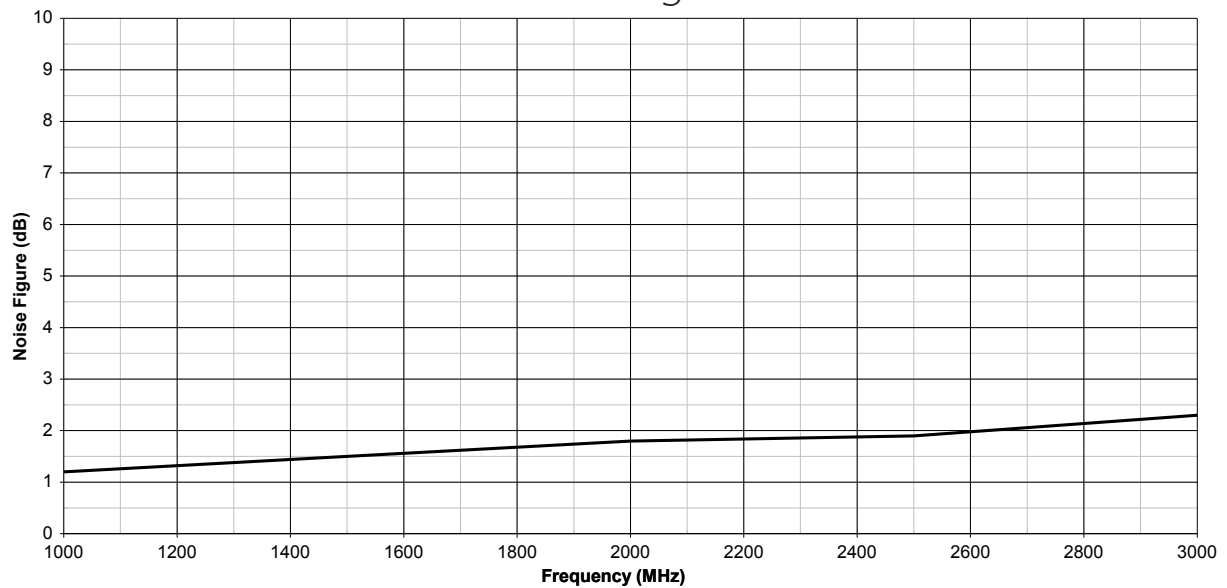
HILNA LS Low Noise Amplifier

Performance Plots

Gain & Input VSWR



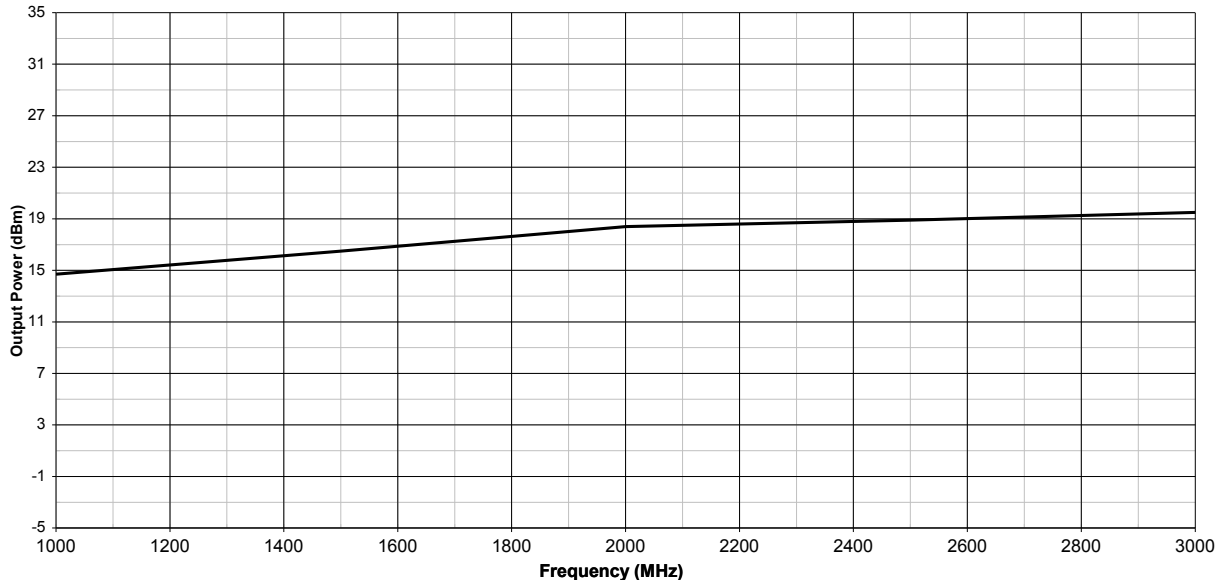
Noise Figure



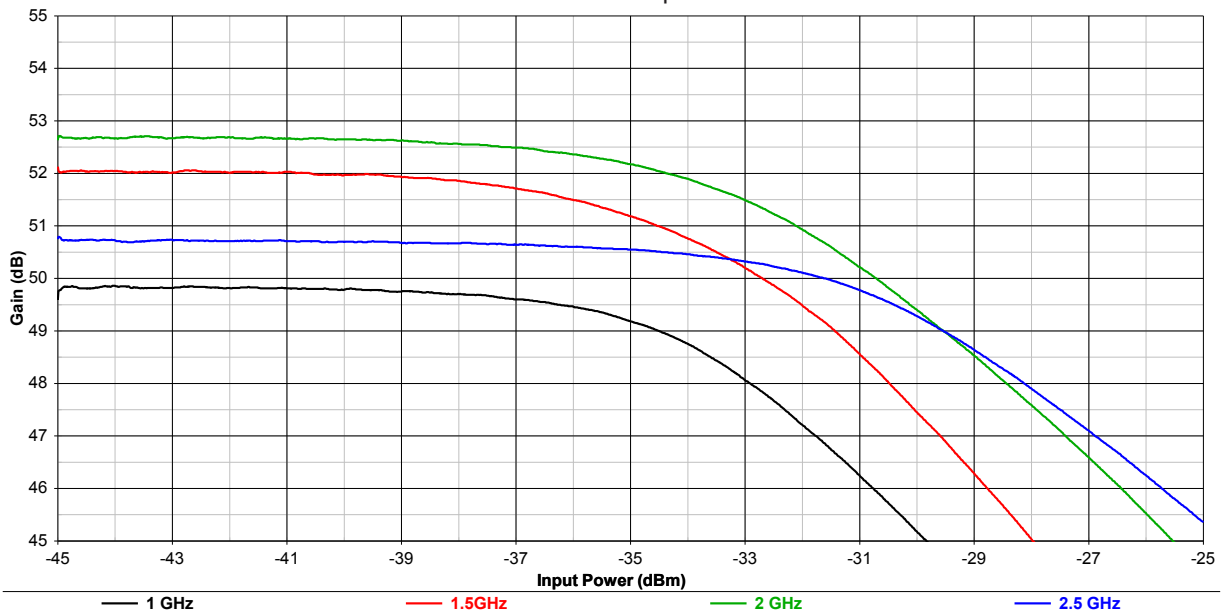
HILNA LS Low Noise Amplifier

Performance Plots (cont.)

Output Power @ 1dB Compression Point



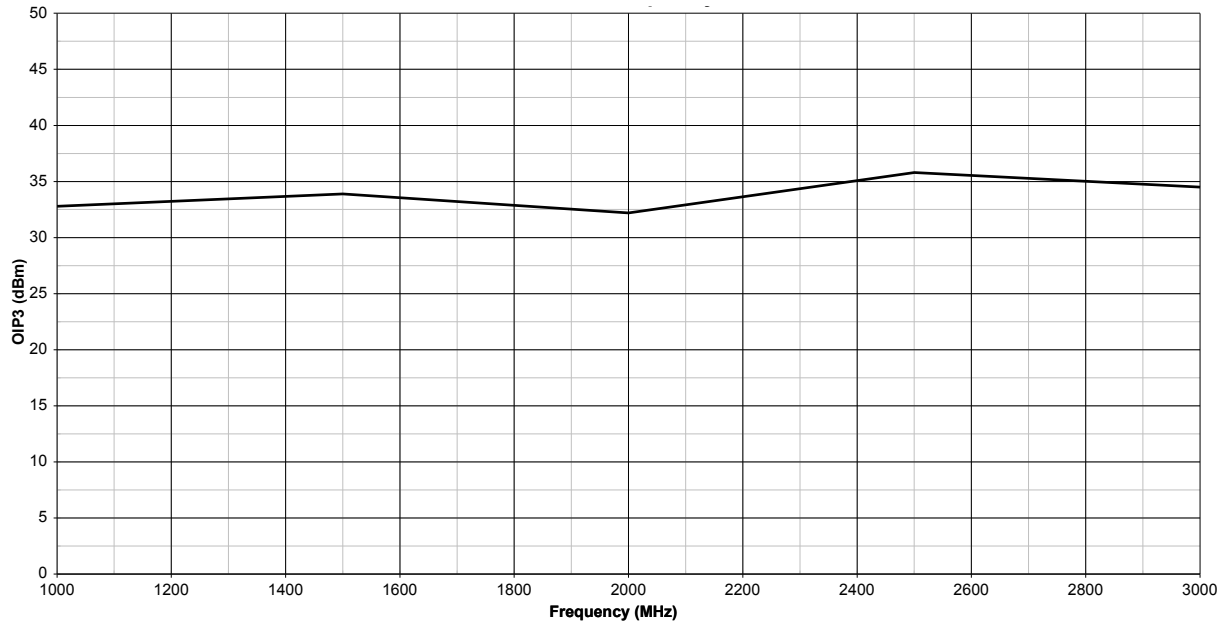
Power Compression



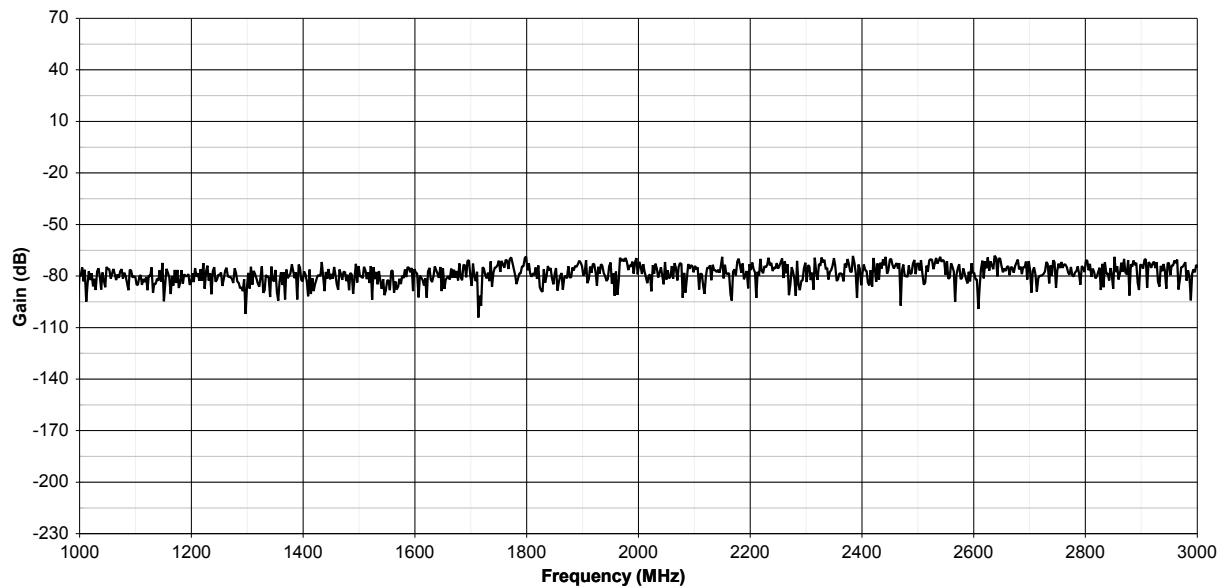
HILNA LS Low Noise Amplifier

Performance Plots (cont.)

OIP3 vs Frequency



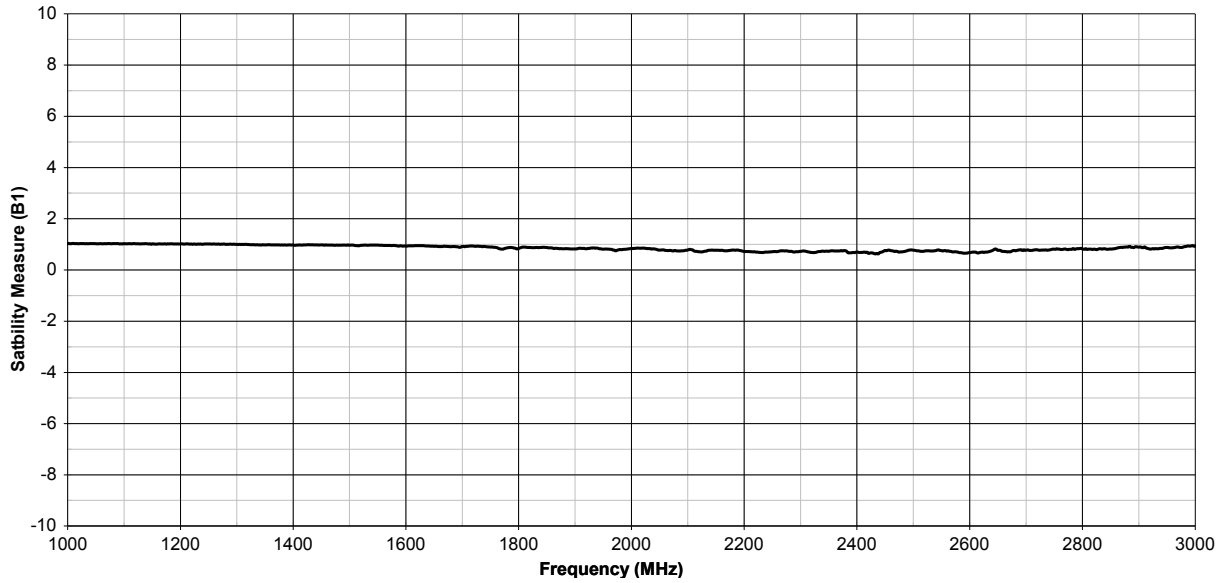
Reverse Isolation



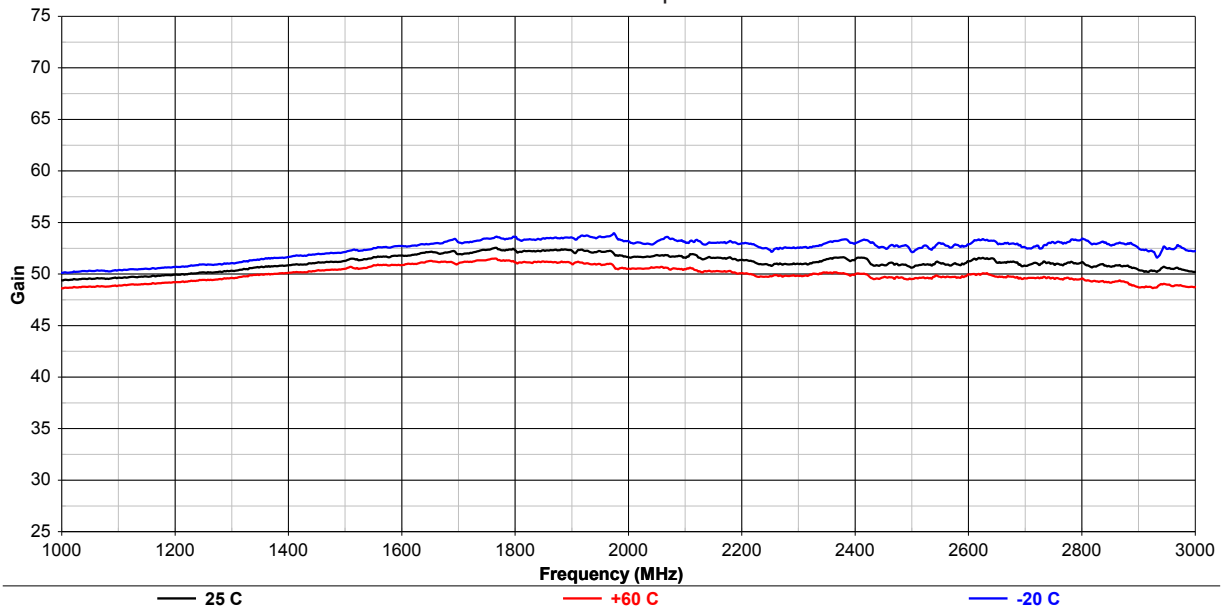
HILNA LS Low Noise Amplifier

Performance Plots (cont.)

Stability Measure

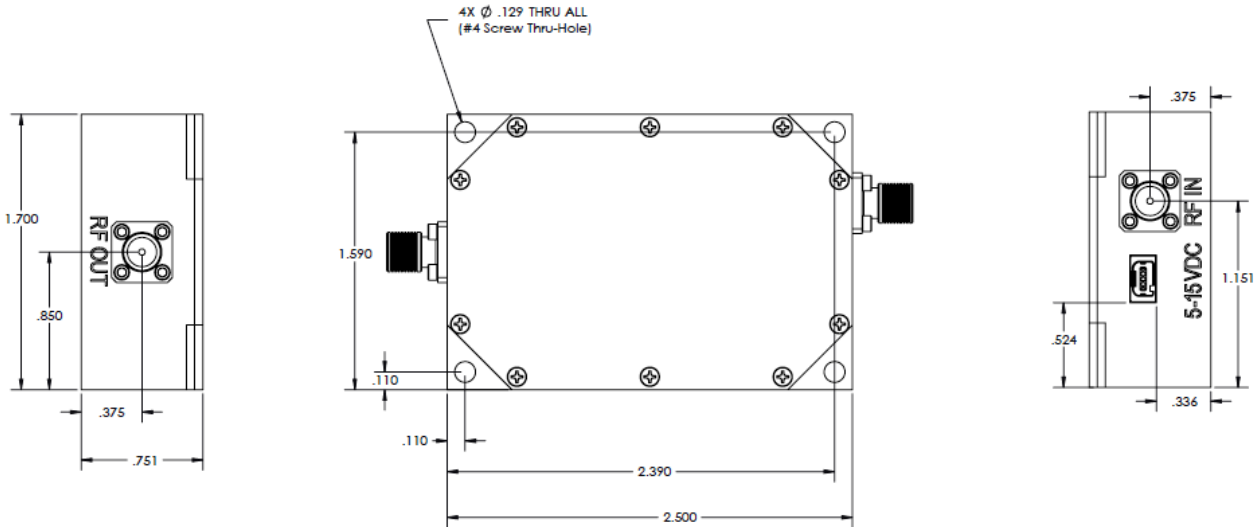


Gain vs Temperature



HILNA LS Low Noise Amplifier

Mechanical Outline

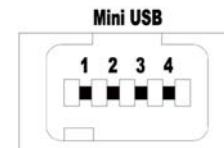


Accessory Part Numbers

Part Number	Description
NW-LN-ACC-CB4MUA	Standard Interface Cable Assembly - Flying Leads (included w/ module)
NW-LM-ACC-CB4MUA	Upgraded Interface Cable Assembly - Banana Plug Termination

Pinout

Function	Pin
DC Input	1
Ground	4
No Connect	2, 3



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>

Contact NuWaves



NuWaves Engineering
132 Edison Drive
Middletown, OH 45044

www.nuwaves.com
product.sales@nuwaves.com
513.360.0800

NuWaves
engineering

Trusted RF Solutions™