



Trusted RF Solutions™

## HILNA HF

Low Noise Amplifier

2 - 50 MHz  
30 dB Gain



P/N: HILNA-HF  
HILNA-HF-M/F (with mounting flanges)

[Includes NW-LN-ACC-CB09MD interface cable]

**NuWaves' HILNA HF™ is a broadband low noise amplifier designed to achieve high gain while maintaining low noise and a high third-order intercept point in the High Frequency (HF) bands.**

This high-performance module delivers 30 dB of gain across the entire broad range of 2 to 50 MHz with an OIP3 of +30 dBm and a P1dB of +18 dBm. The HILNA HF is also available with optional Automatic Gain Control (AGC); see the HILNA HF AGC for details.

The HILNA HF'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.

### Features

- 2 to 50 MHz
- Broadband Operation
- Low Noise and 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 Programmable AGC

### Benefits

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

### Applications

- Wideband RF Front Ends
- General Purpose Amplification
- High Performance Receivers
- Broadband High Gain Block
- Low Noise Transmit Driver
- RF Preamplifier
- RF Repeater
- Base Station LNA
- University Research and Instruction
- Multi-Signal Environment Amplifier

# HILNA HF Low Noise Amplifier

## Specifications

### Absolute Maximums

Parameter	Rating	Unit
Max Device Voltage	30	V
Max Device Current	300	mA
Max RF Input Power, $Z_L = 50 \Omega$	12	dBm
Max Operating Temperature	70	°C
Max Storage Temperature	85	°C

Export Classification
EAR99

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

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Operating Frequency	BW	2		50	MHz	
RF Gain	G		30		dB	
Reverse Isolation			53		dB	
VSWR	VSWR		1.5:1			Input
			1.5:1			Output
Noise Figure	NF			5	dB	
Third Order Order Intercept Point	OIP3		+30		dBm	
Output Power @ 1dB Compression	P1dB		+18		dBm	
Operating Voltage	VDC	12	12	30	V	
Operating Current	$I_{DD}$		150	300	mA	@ 12VDC (typ)

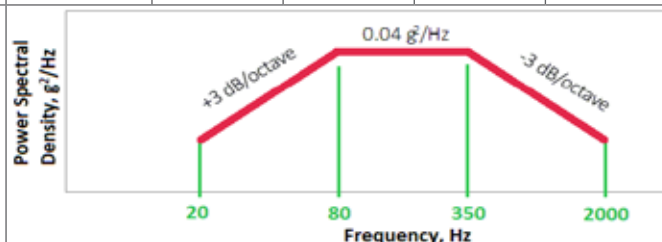
### Mechanical Specifications

Parameter	Value	Unit	Limits
Dimensions	3.15 x 2.50 x 1.18	in	Max
Weight	5.0	oz	Max
RF Bulkhead Connector	SMA Female		
RF Input and Output Mating Connector	SMA Male		
DC Power Connector	Micro-DB9		

### Environmental Specifications

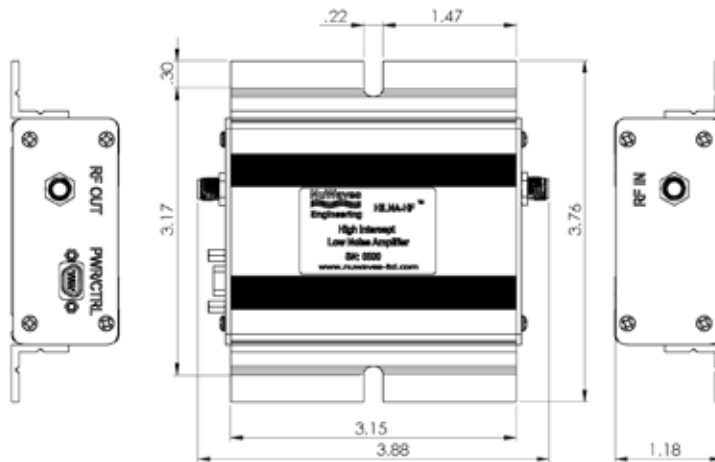
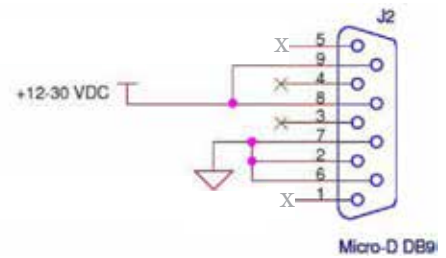
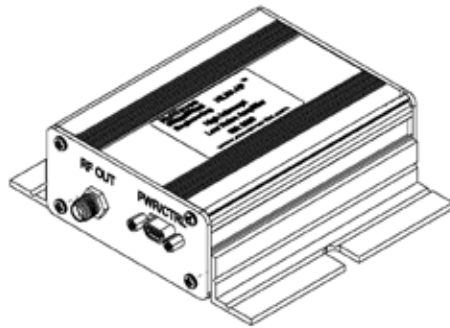
Parameter	Symbol	Min	Typ	Max	Unit
Operating Temperature	$T_C$	-20		+60	°C
Storage Temperature	$T_{STG}$	-40		+85	°C
Relative Humidity (non-condensing)	RH			95	%
Altitude MIL-STD-810F - Method 500.4	ALT			30,000	ft

Vibration / Shock Profile  
(Random profile in x,y, z axis, as per Figure for 15 minute duration in each axis)



# HILNA HF Low Noise Amplifier

## Mechanical Outline



## Accessory Part Numbers

Part Number	Description
NW-LN-ACC-CB09MD	Standard Interface Cable Assembly - Flying Leads (included w/ module)
NW-LN-ACC-CT09MD	Upgraded Interface Cable Assembly - Banana Plug Termination

## Pinout

Function	I/O	Pin
No Connect	-	1, 3, 4, 5
Ground	I	2, 6, 7
DC Power (+12 to +30 VDC)	I	8, 9

## Contact NuWaves



NuWaves Engineering  
132 Edison Drive  
Middletown, OH 45044

[www.nuwaves.com](http://www.nuwaves.com)  
[product.sales@nuwaves.com](mailto:product.sales@nuwaves.com)  
513.360.0800

