

# NuWaves

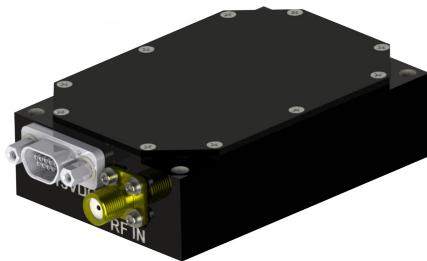
## RF Solutions

### HILNA LS-C021-D

#### Low Noise Amplifier

1000 - 3000 MHz

15 dB Gain



P/N: HILNA-LS-C021-D

**NuWaves' HILNA LS™ C021-D is a broadband low noise amplifier covering L- & S-bands, and designed to achieve high gain while maintaining low noise and a high third-order intercept point.**

This high-performance module delivers 15 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's small form factor (3.3 in<sup>3</sup>) makes it ideal for small communication system installations, co-located to the antenna. In addition, the HILNA LS-C021-D is also available with a bias T compatible option that eliminates 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.

#### Features

- Broadband Operation
- Small Form Factor
- 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
- Bias T Compatible (optional)

#### Benefits

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

#### Applications

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

# HILNA LS-C021-D Low Noise Amplifier

## Specifications

### Absolute Maximums

Parameter	Rating	Unit	Export Classification
Max Device Voltage	15	V	5A991.B
Max Device Current	150	mA	
Max RF Input Power, $Z_L = 50 \Omega$	+20	dBm	
Max Operating Temperature	60	°C	
Max Storage Temperature	85	°C	

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

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Operating Frequency	BW	1000		3000	MHz	
RF Gain	G		15		dB	
Reverse Isolation			20		dB	
VSWR	VSWR		1.4:1			Input
			1.5:1			Output
Noise Figure	NF		1.7	2	dB	
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 <sub>DD</sub>		130		mA	@ 12 VDC (typ)

### Mechanical Specifications

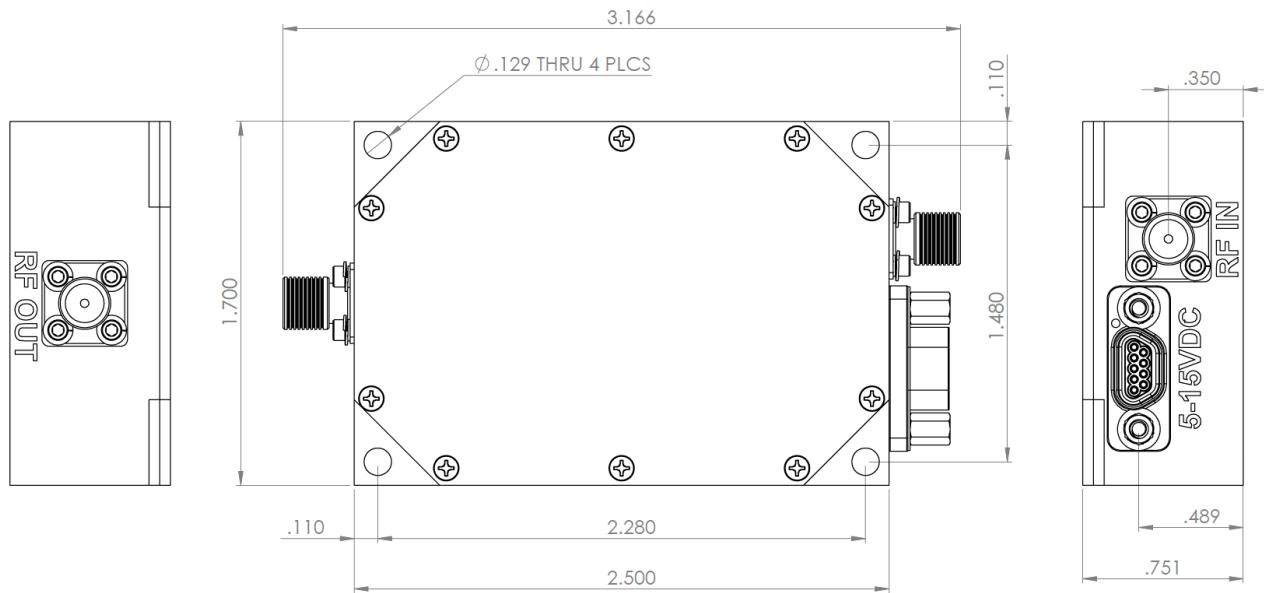
Parameter	Value	Unit	Limits
Dimensions	2.50 x 1.75 x 0.75	in	Max
Weight	3.0	oz	Max
RF Bulkhead Connector	SMA Female		
RF Input and Output Mating Connector	SMA Male		
Interface Connector	Micro-D, 9-pin socket		

### Environmental Specifications

Parameter	Symbol	Min	Typ	Max	Unit
Operating Temperature	T <sub>C</sub>	-20		+60	°C
Storage Temperature	T <sub>STG</sub>	-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)	Power Spectral Density, g <sup>2</sup> /Hz	20	0.04 g <sup>2</sup> /Hz	2000	Frequency, Hz

# HILNA LS-C021-D Low Noise Amplifier

## Mechanical Outline



## Accessory Part Number - Sold Separately

Part Number	Description
NW-LN-ACC-CB09ML	Standard Interface Cable Assembly - Flying Leads
NW-LN-ACC-CT09ML	Upgraded Interface Cable Assembly - Banana Plug Termination

## Pinout

Function	I/O	Pin
Ground	I	1, 2
DC Power (+5 to +15 VDC)	I	3
No Connect	-	4, 5, 6, 7, 8, 9

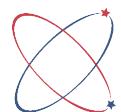
For information on product disposal (end-of-life), please refer to this document:  
<https://nuwaves.com/wp-content/uploads/Product-Disposal-End-of-Life.pdf>

## Contact NuWaves



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