



# NuWaves engineering

Trusted RF Solutions™

## HILNA GPS C034 Low Noise Amplifier

1200 - 1600 MHz  
32 dB Gain

P/N: HILNA-GPS-C034

(includes NW-LN-ACC-CB09MG interface cable)



**NuWaves' HILNA GPS C034 is a ruggedized, broadband low noise amplifier designed to achieve high gain while maintaining low noise and a high third order intercept point specifically for L1 (1575.43 MHz) and L2 (1227.6 MHz) GPS signals.**

This high-performance module delivers 32 dB of gain across the frequency range of 1200 MHz to 1600 MHz with an OIP3 of +30 dBm and less than 1 dB of noise figure. The HILNA GPS is also usable up to 2000 MHz with 28 dB of gain (typical).

The HILNA GPS'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 Extremely High Gain
- High Intercept Point
- Ruggedized Chassis
- Over-Voltage Protection
- Reverse-Voltage Protection
- Wide Input Voltage Range
- Internal Regulator/Active Bias Devices for Stability

### 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
- University Research and Instruction
- Multi-Signal Environment Amplifier

# HILNA GPS C034 Low Noise Amplifier

## Specifications

### Absolute Maximums

Parameter	Rating	Unit
Max Device Voltage	36	V
Max Device Current	120	mA
Max RF Input Power, $Z_L = 50 \Omega$	15	dBm
Max Operating Temperature	70	°C
Max Storage Temperature	85	°C

Export Classification
EAR99

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

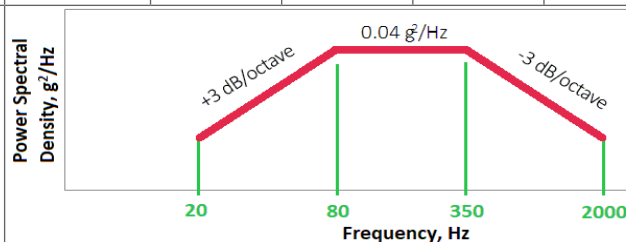
Parameter	Symbol	Min	Typ	Max	Unit	Condition
Operating Frequency	BW	1200		1600	MHz	
RF Gain	G	29	33	35	dB	1200 MHz to 1600 MHz
Reverse Isolation		45	53	56	dB	
VSWR	VSWR		1.5:1			Input
			2.0:1			Output
Noise Figure	NF	0.7	0.8	1.6	dB	
Third Order Intercept Point	OIP3	28	30	32	dBm	
Output Power @ 1dB Compression	P1dB	16	18	19	dBm	
Operating Voltage	VDC	22	28	34	V	
Operating Current	$I_{DD}$	40	60	80	mA	@ 28 VDC (typ)

### Mechanical Specifications

Parameter	Value	Unit	Limits
Dimensions	3.27 x 3.76 x 0.95	in	Max
Weight	6.9	oz	Max
RF Connectors, Input/Output	SMA Female		
DC Power Connector	Micro-D, 9-pin socket		

### Environmental Specifications

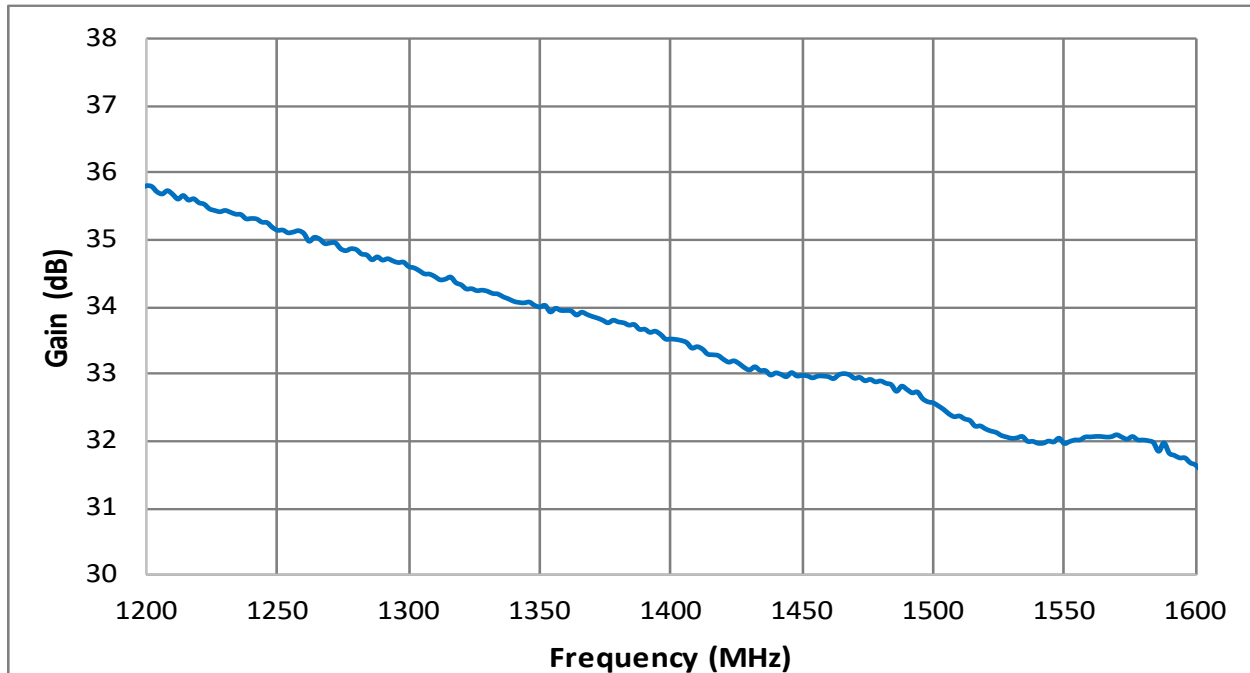
Parameter	Symbol	Min	Typ	Max	Unit
Operating Temperature	$T_C$	-30		+70	°C
Storage Temperature	$T_{STG}$	-40		+85	°C
Relative Humidity (non-condensing)	RH			95	%
Altitude MIL-STD-810F - Method 500.4	ALT			30,000	ft
Vibration / Shock Profile (Random profile in x,y, z axis, as per Figure for 15 minute duration in each axis)					



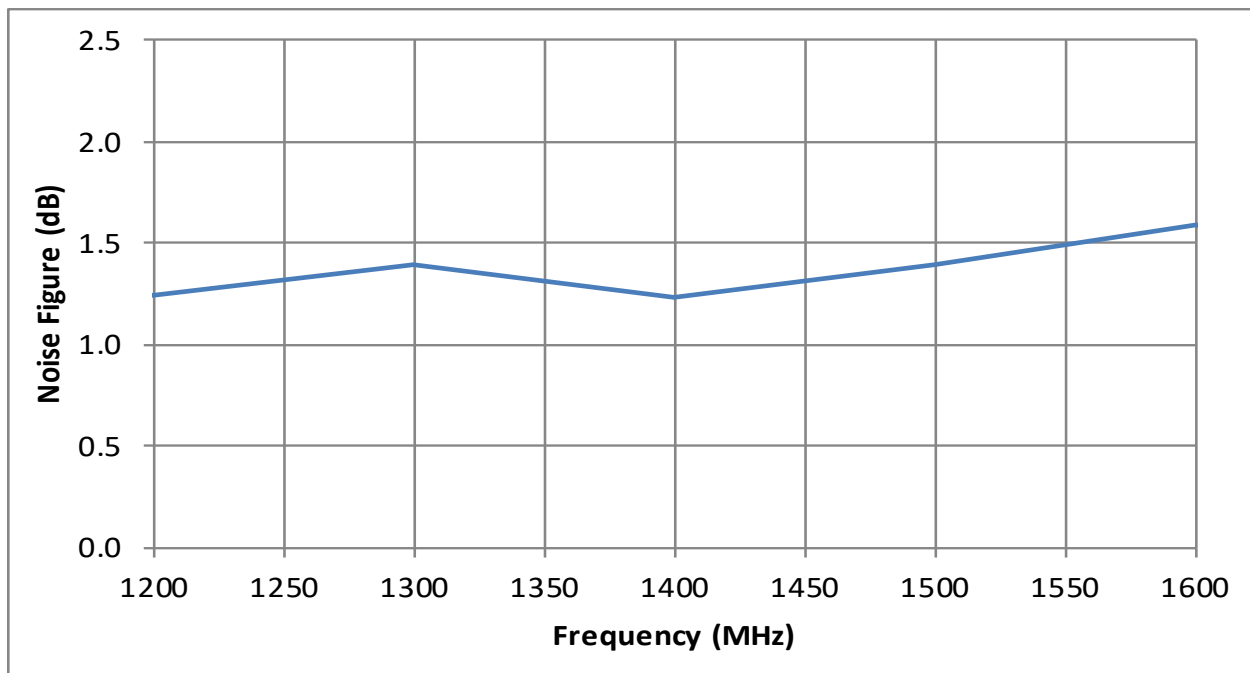
# HILNA GPS C034 Low Noise Amplifier

## Performance Plots

### Gain (S21)



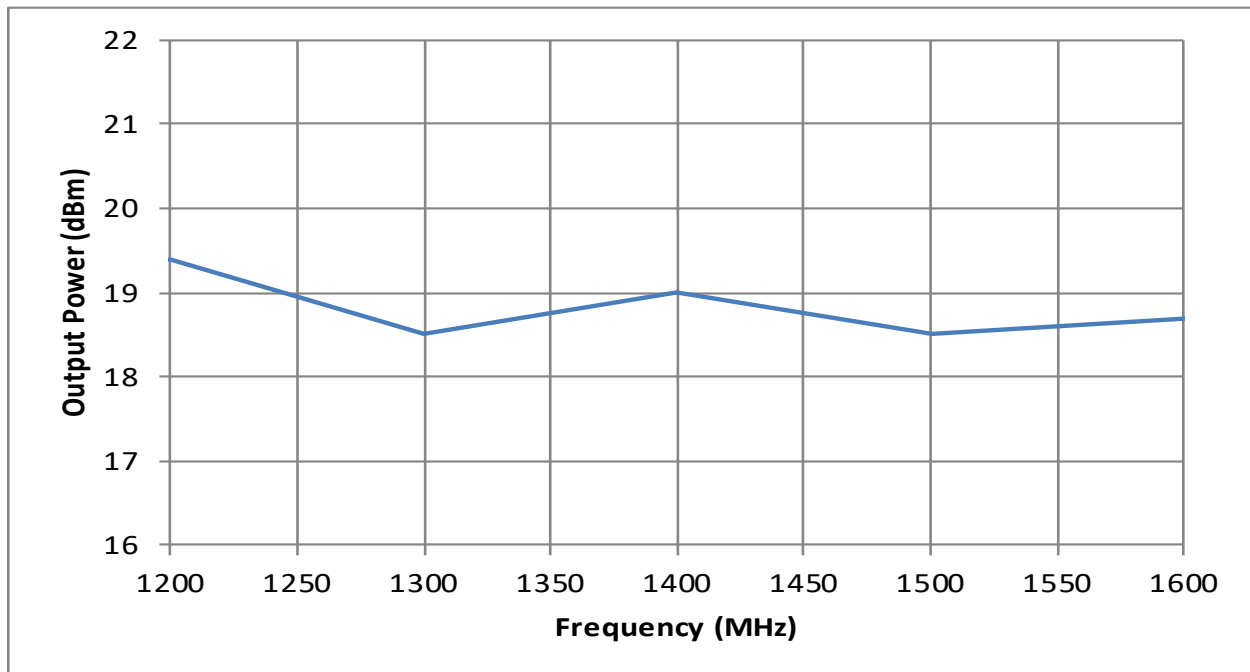
### Noise Figure



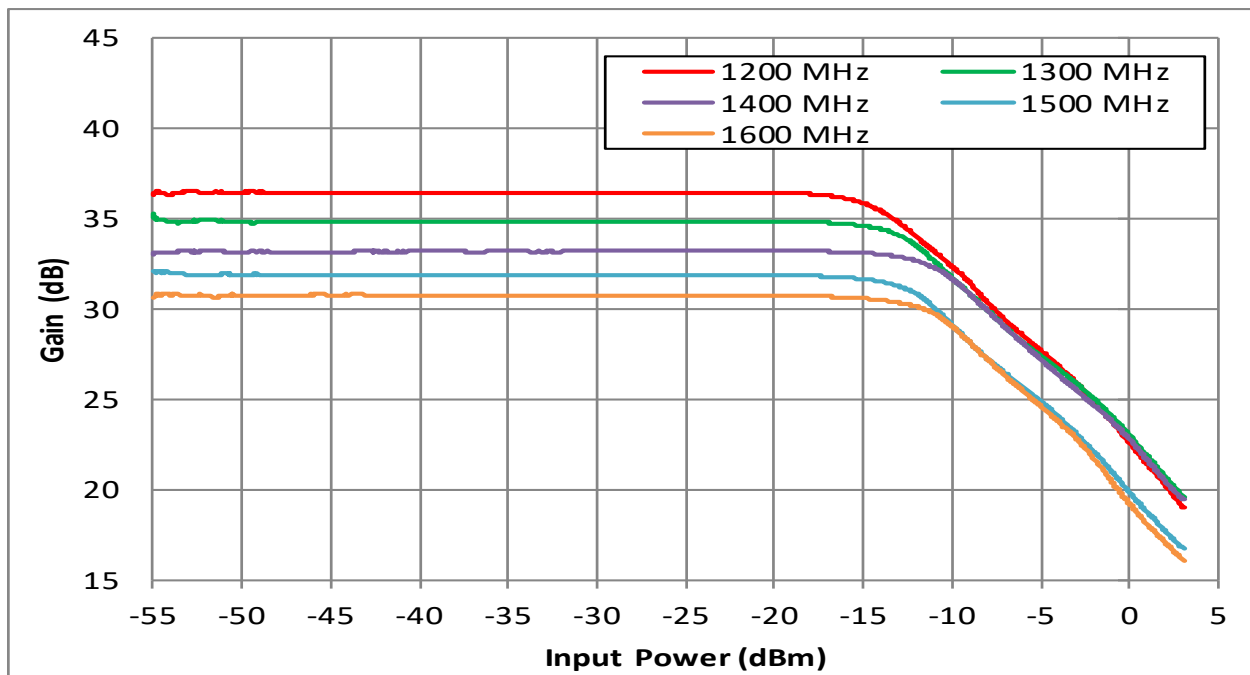
# HILNA GPS C034 Low Noise Amplifier

## Performance Plots (cont.)

### Output Power at 1 dB Compression Point



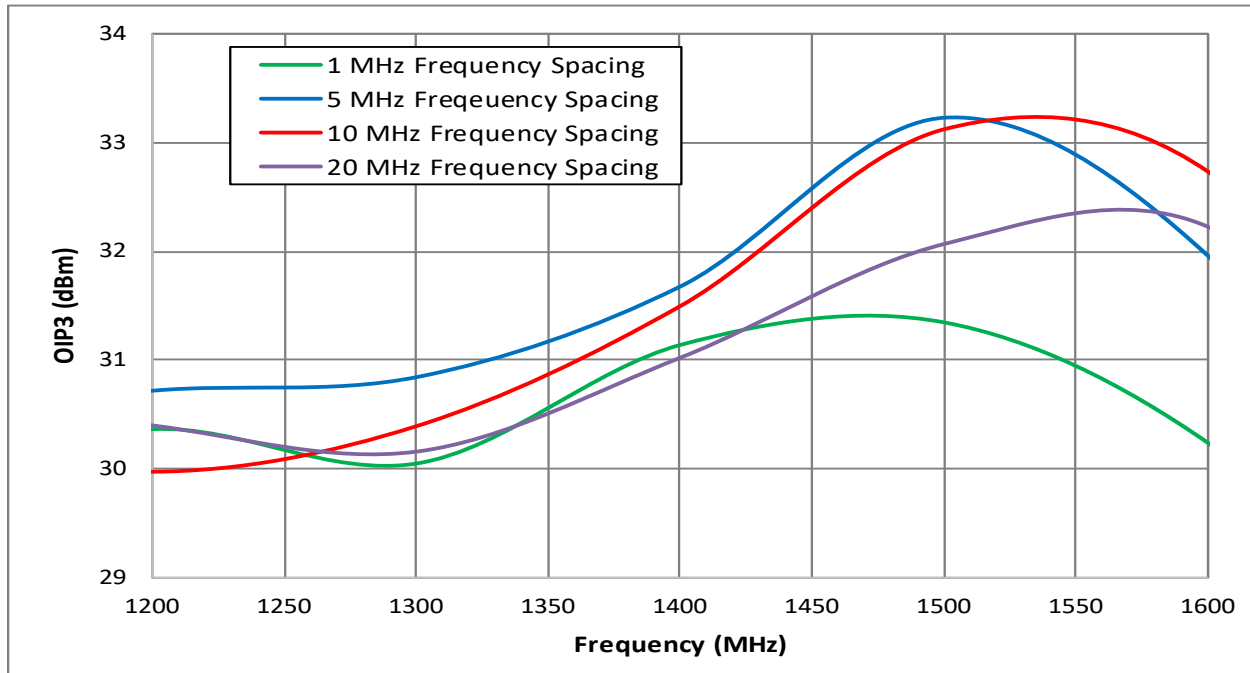
### Power Compression



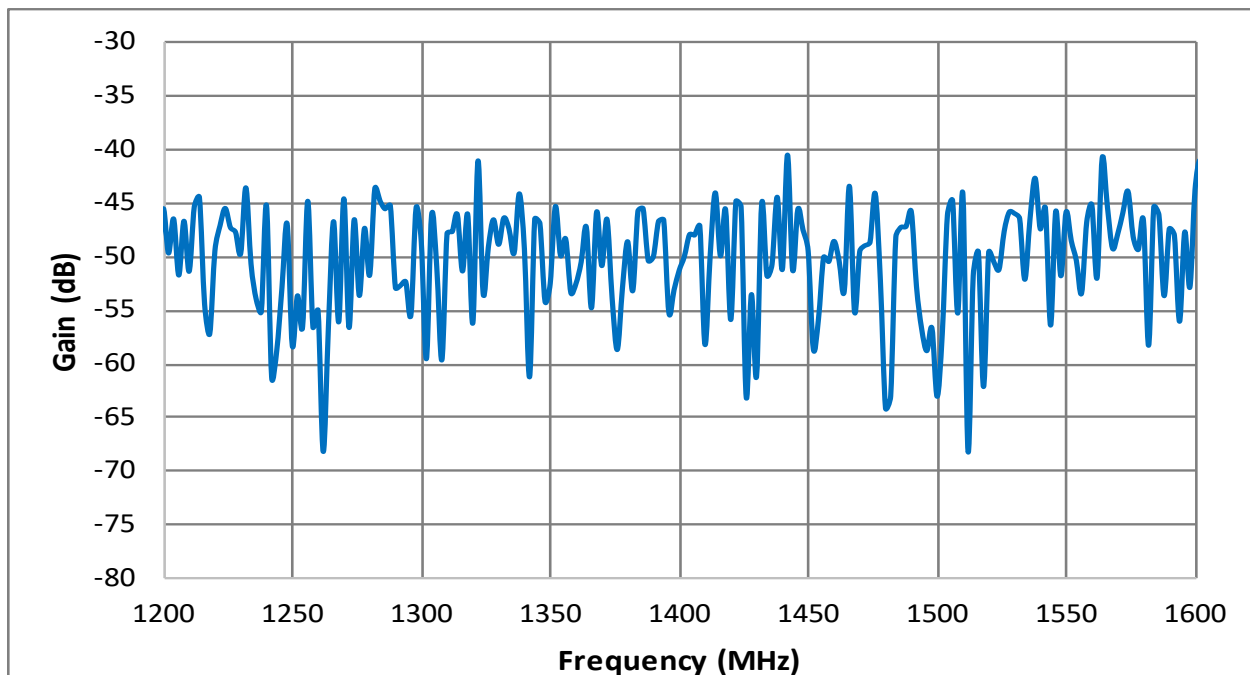
# HILNA GPS C034 Low Noise Amplifier

## Performance Plots (cont.)

### OIP3 vs Frequency



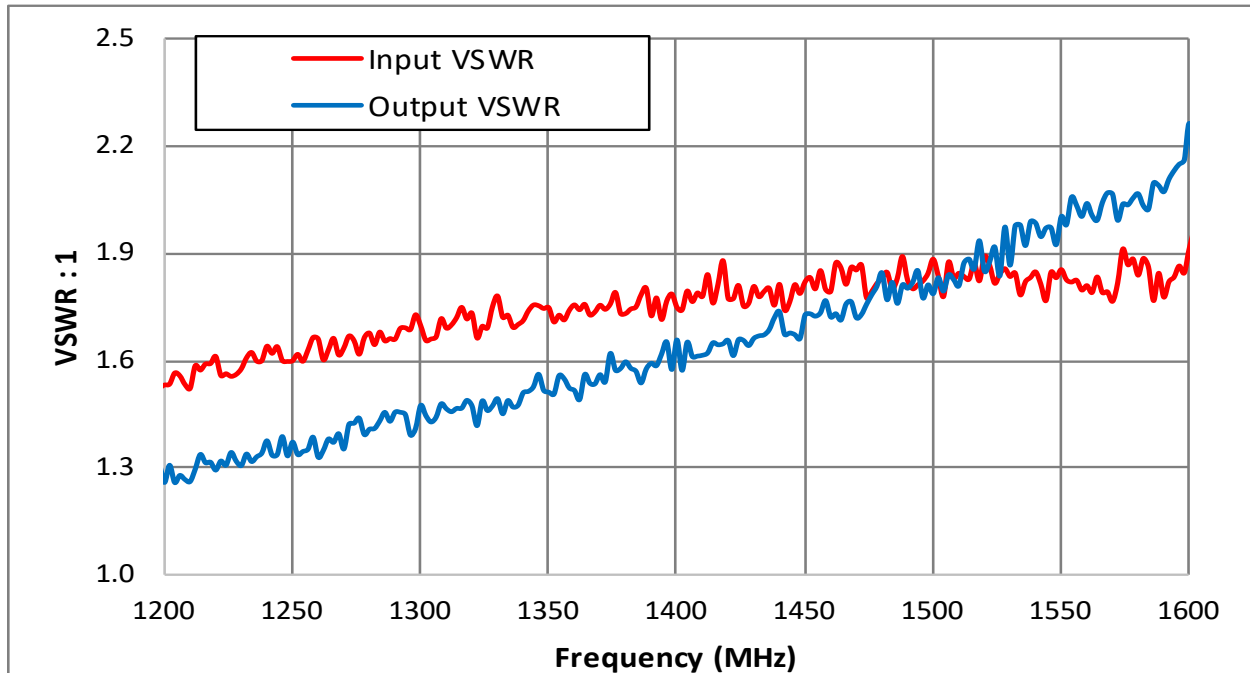
### Reverse Isolation



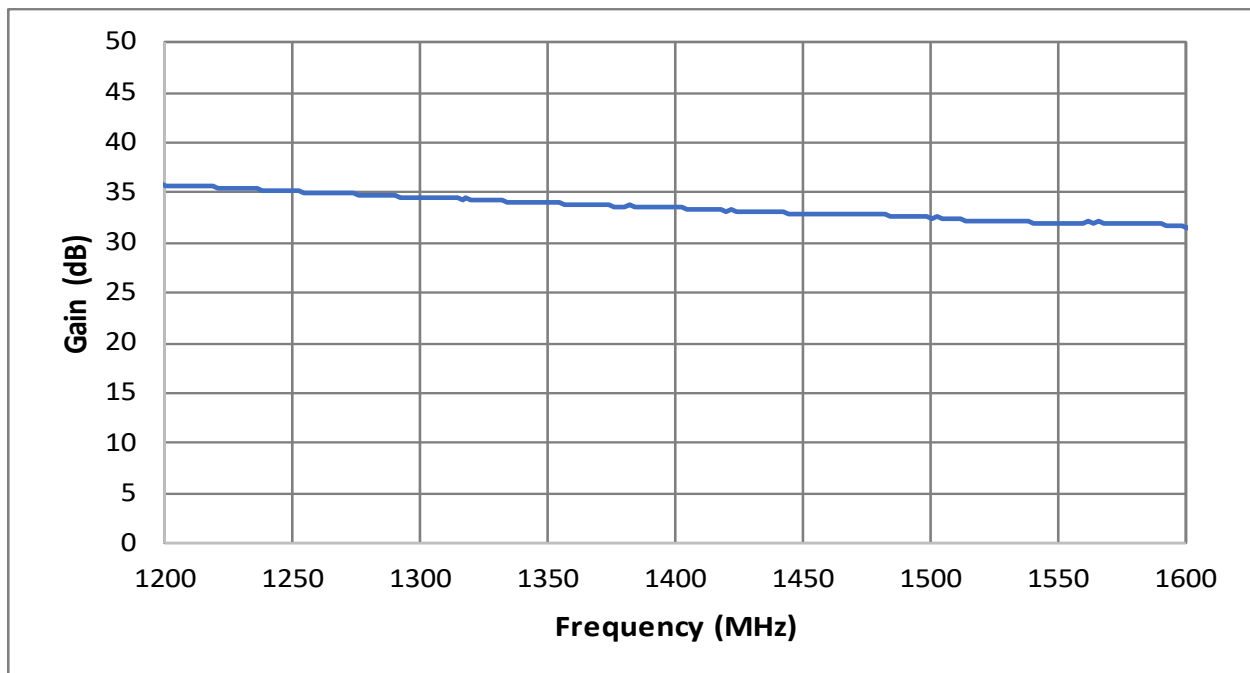
# HILNA GPS C034 Low Noise Amplifier

## Performance Plots (cont.)

### Input and Output VSWR

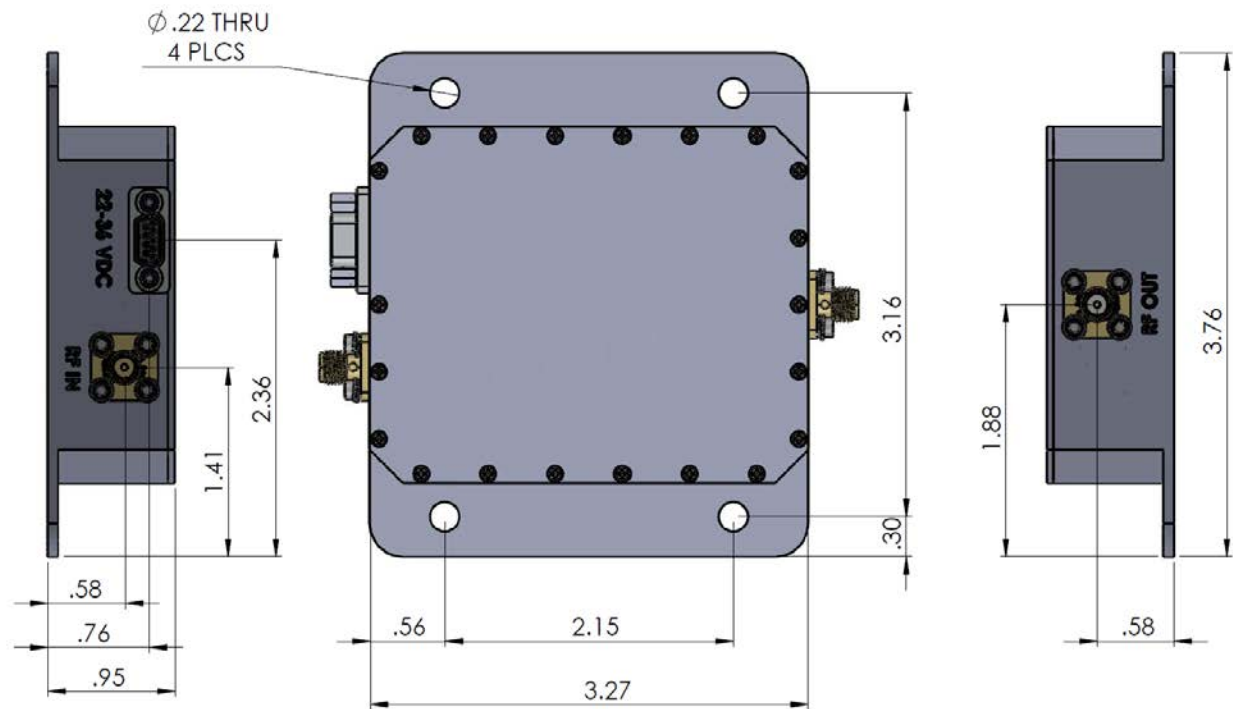


### Gain vs Temperature



# HILNA GPS C034 Low Noise Amplifier

## Mechanical Outline



## Accessory Part Numbers

Part Number	Description
NW-LN-ACC-CB09MG	Standard Interface Cable Assembly - Flying Leads (included w/ module)
NW-LN-ACC-CT09MG	Upgraded Interface Cable Assembly - Banana Plug Termination

## Pinout

Function	I/O	Pin
Ground	I	1, 2
DC Power (+22 to +34 VDC)	I	3, 4
No Connect	-	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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