NuWaves
RF Solutions

HILNA GPS

Low Noise Amplifier

1200 - 1600 MHz
32 dB Gain

P/N: HILNA-GPS

(includes NW-LN-ACC-CB02CA interface cable)

NuWaves' HILNA GPS™ is a 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
- Rugged 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

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HILNA GPS Low Noise Amplifier

Specifications

Absolute Maximums

Parameter	Rating	Unit
Max Device Voltage	20	V
Max Device Current	150	mA
Max RF Input Power, $Z_L = 50\ \Omega$	15	dBm
Max Operating Temperature	70	℃
Max Storage Temperature	85	℃

Export Classification
EAR99

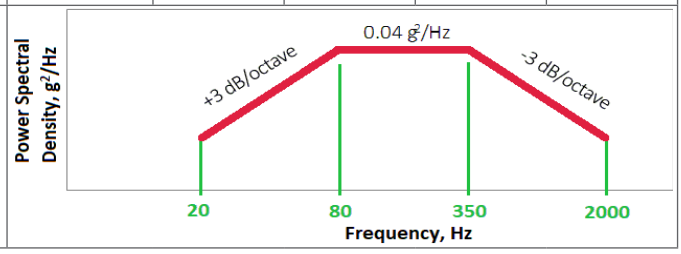
Electrical Specifications @ 12 VDC, 25 ℃, Z_S=Z_L=50 Ω

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Operating Frequency	BW	1200		1600	MHz	
RF Gain	G	30	33	35	dB	1200 MHz to 1600 MHz
			28		dB	Up to 2000 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 Order Intercept Point	OIP3	28	30	32	dBm	
Output Power @ 1dB Compression	P1dB	16	18	19	dBm	
Operating Voltage	VDC	5	12	20	V	
Operating Current	I_{DD}	130	140	150	mA	@ 12 VDC (typ)

Mechanical Specifications

Parameter	Value	Unit	Limits
Dimensions	3.15 x 2.50 x 1.18	in	Max
Weight	5.0	oz	Max
RF Connectors, Input/Output	SMA Female		
DC Power Connector	2 mm Circular		

Environmental Specifications

Parameter	Symbol	Min	Typ	Max	Unit
Operating Temperature	T_C	-30		+70	℃
Storage Temperature	T_{STG}	-40		+85	℃
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)					

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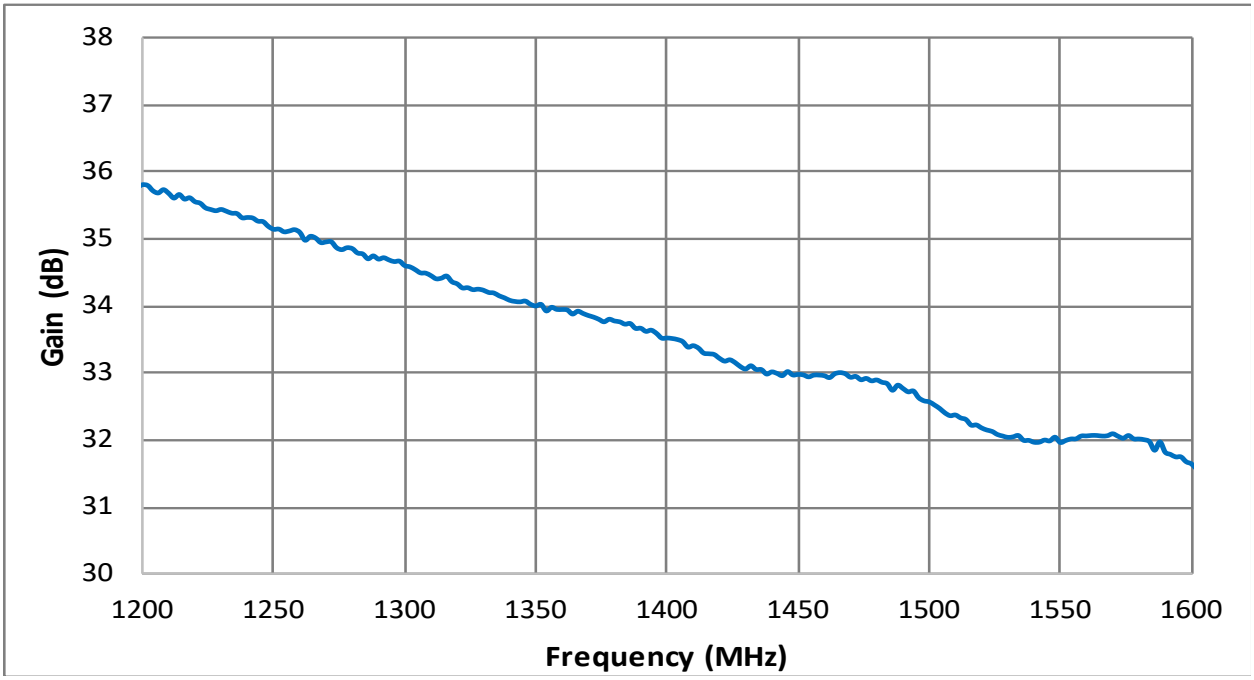
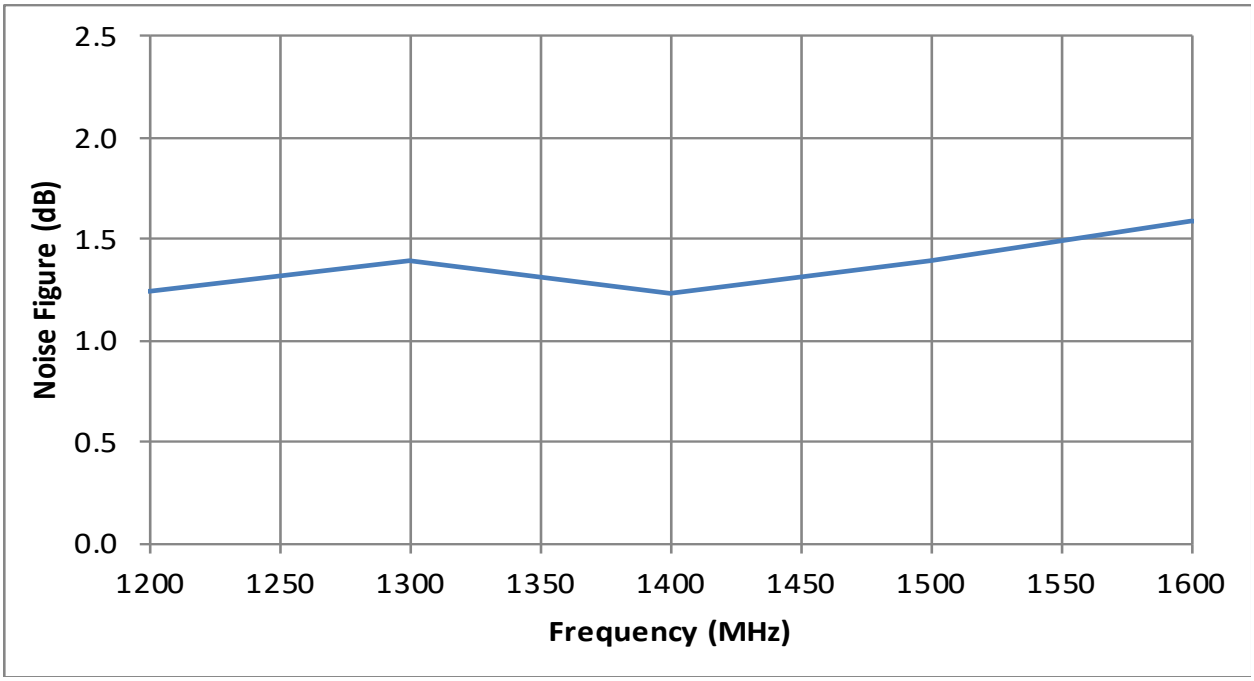
Performance Plots

Gain (S21)

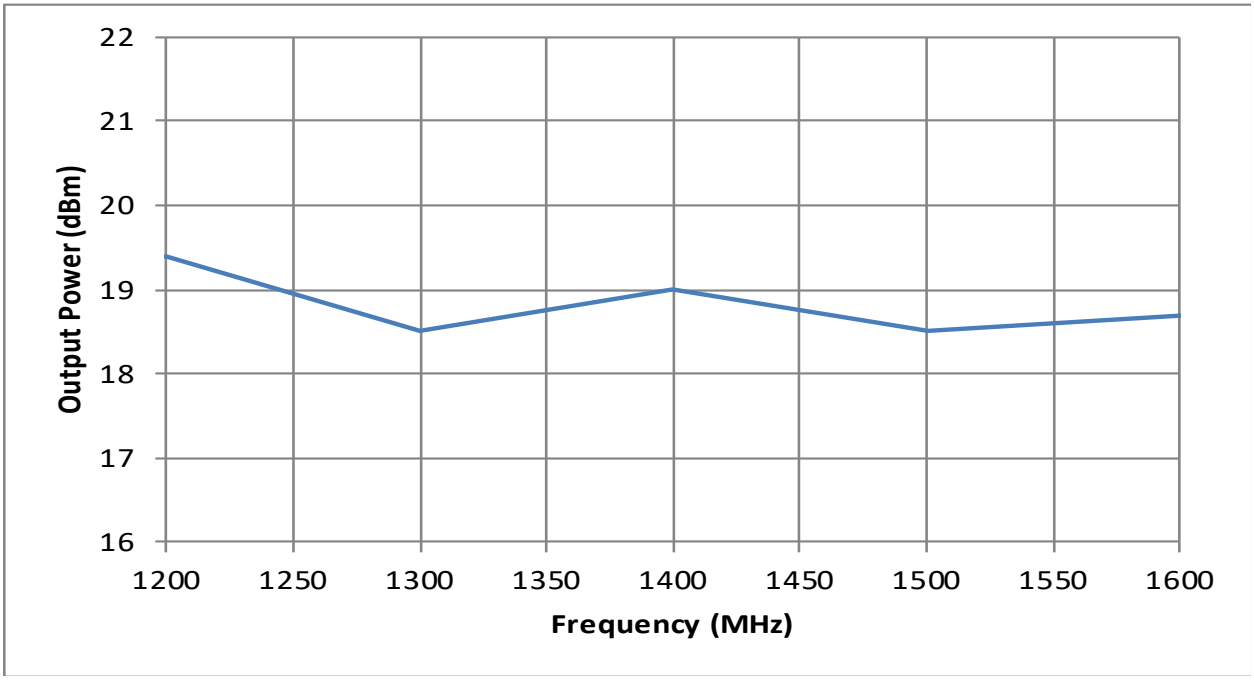


Noise Figure

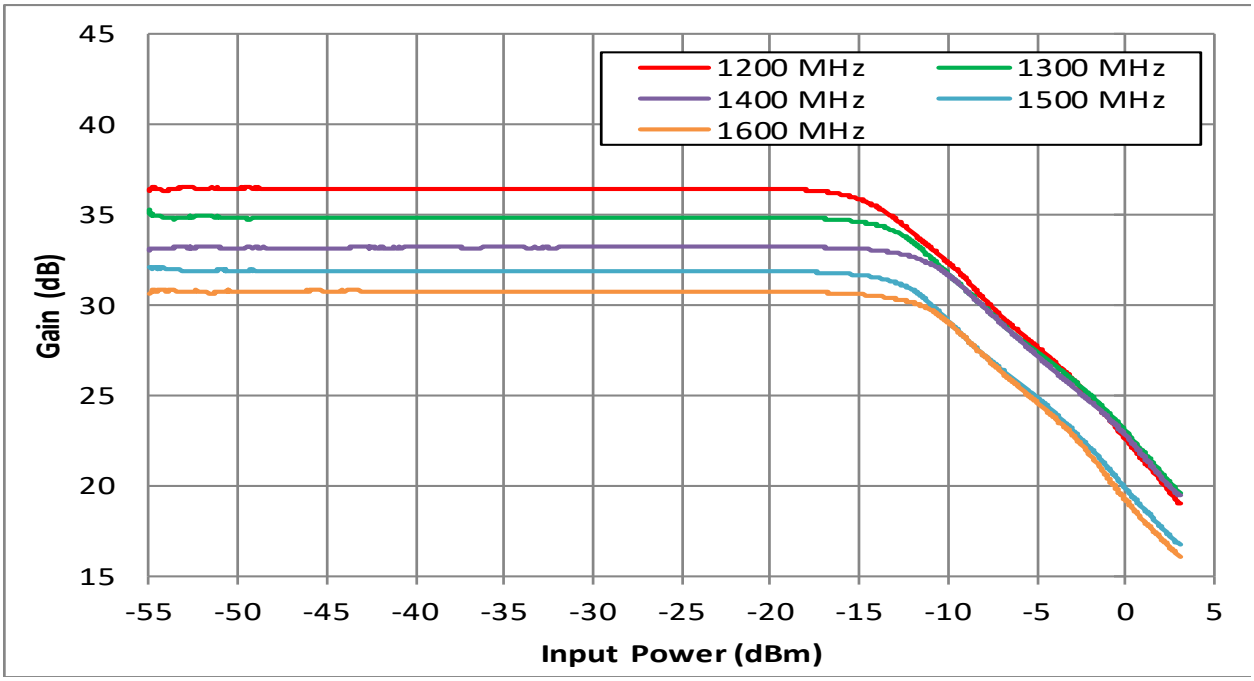


Performance Plots (cont.)

Output Power at 1 dB Compression Point

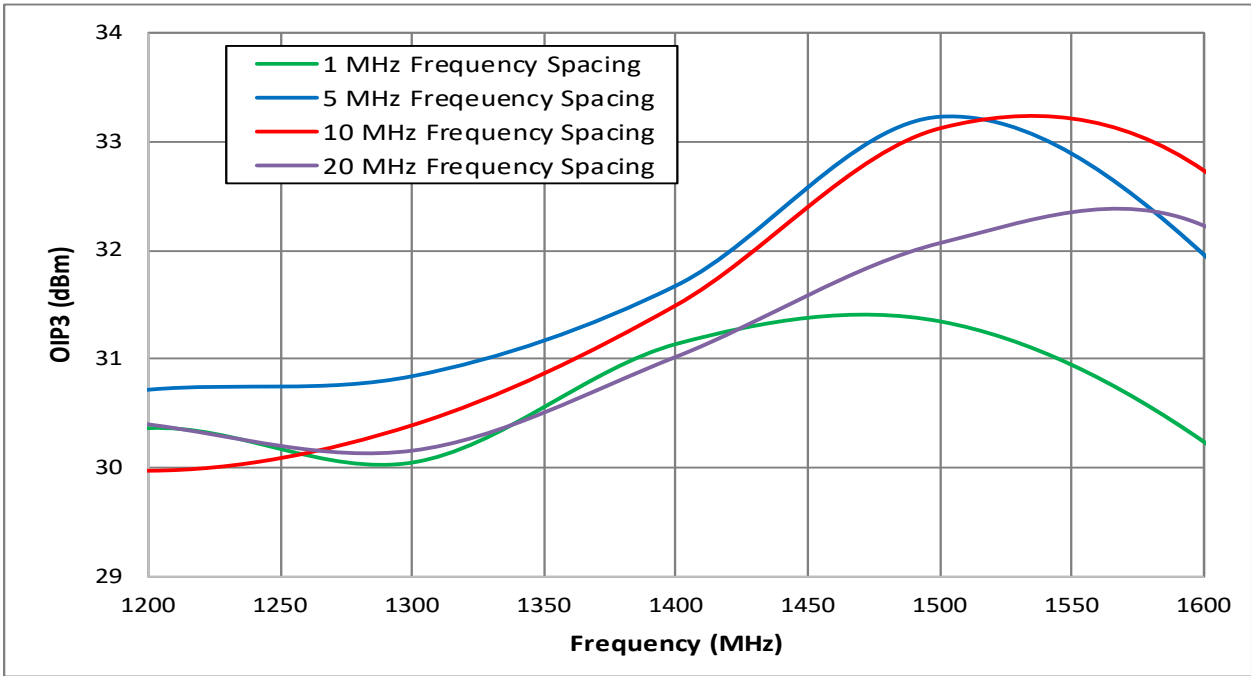


Power Compression

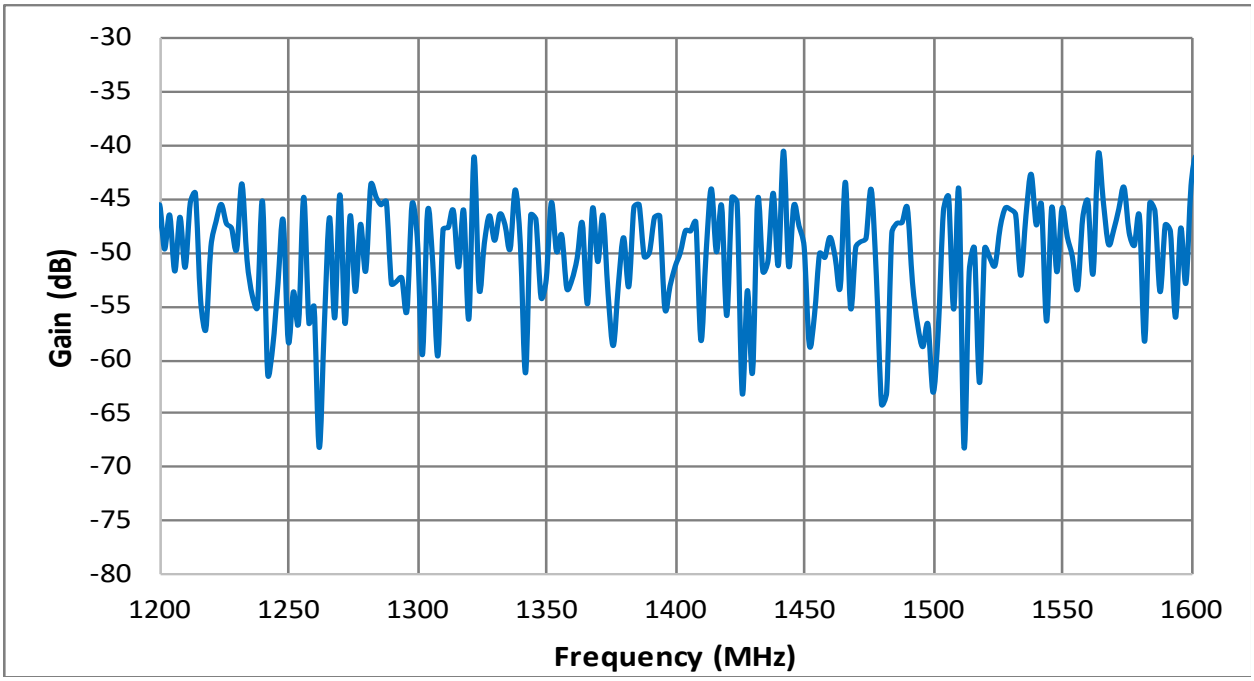


Performance Plots (cont.)

OIP3 vs Frequency

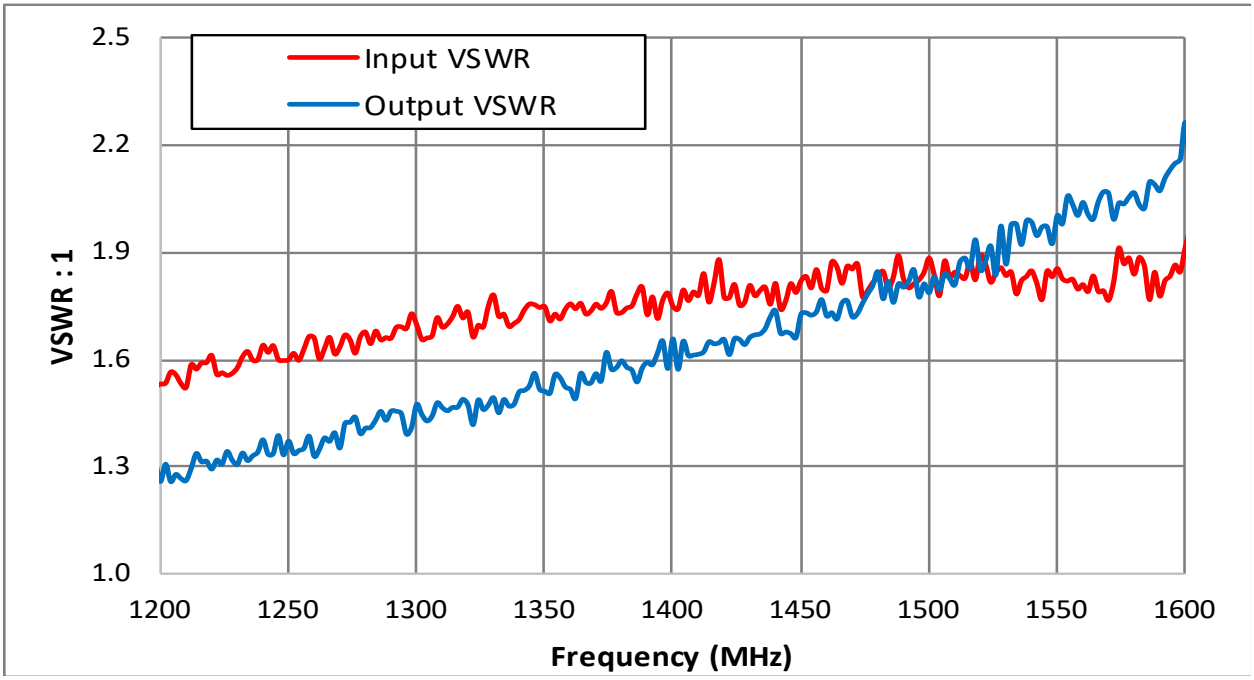


Reverse Isolation

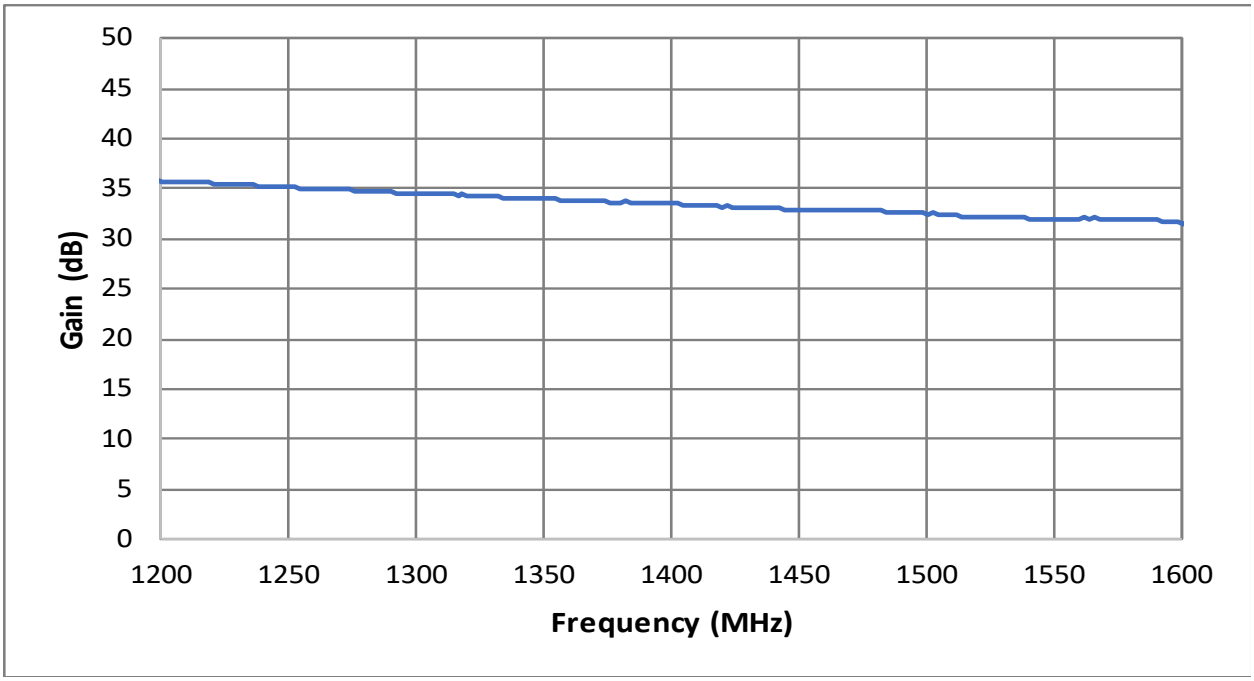


Performance Plots (cont.)

Input and Output VSWR



Gain vs Temperature



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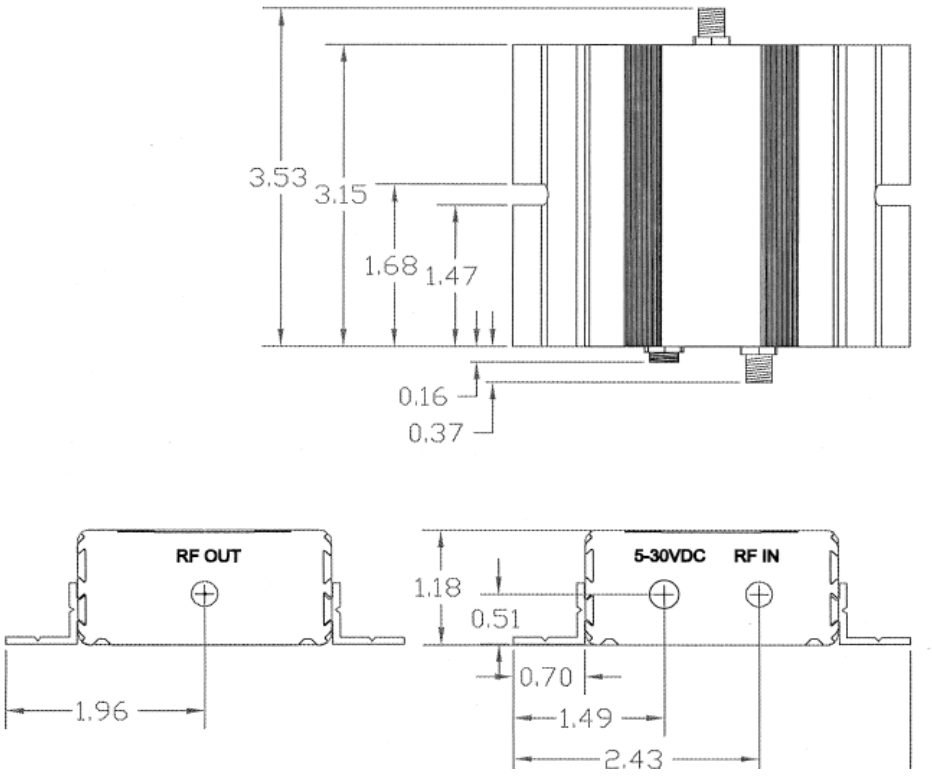
Mechanical Outline



Accessory Part Numbers

Part Number	Description
NW-LN-ACC-CB02CA	Standard Interface Cable Assembly - Flying Leads (included w/ module)
NW-LN-ACC-CT02CA	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

Contact NuWaves

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