NuWaves engineering

Trusted RF Solutions™

HILNA G2V1

Low Noise Amplifier

50 - 1000 MHz
40 dB Gain



P/N: HILNA-G2V1

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

NuWaves' HILNA G2V1™ is a broadband low noise amplifier designed to achieve high gain while maintaining low noise and a high third-order intercept point from VHF to microwave frequencies.

This high-performance module delivers 40 dB of gain over the frequency range of 50 MHz to 1000 MHz, with an OIP3 of +32 dBm and less than 1 dB of noise figure. The HILNA G2V1 is also usable up to 2000 MHz with 28 dB of gain (typ).

The HILNA G2V1'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 G2V1 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	70	℃

Export Classification
EAR99

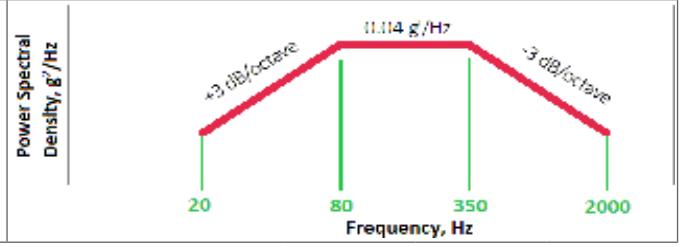
Electrical Specifications @ 12 VDC, 25 ℃, Z_S=Z_L=50 Ω

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Operating Frequency	BW	50		1000	MHz	
RF Gain	G	37	40	45	dB	From 50 MHz to 1000 MHz
			28		dB	Up to 2000 MHz
Reverse Isolation		45	53	56	dB	
VSWR	VSWR		1.4:1			Input
			1.5:1			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		18		dBm	
Operating Voltage	VDC	+5	+12	+20	V	
Operating Current	I_{DD}	130	140	150	mA	@ 12 VDC (typ)
Operating Current	I		140		mA	

Mechanical Specifications

Parameter	Value	Unit	Limits
Dimensions	3.15 x 3.92 x 1.18	in	Max
Weight	5	oz	Max
RF Connectors, Input/Output	SMA Female		
DC Power Connector	2 mm Circular		

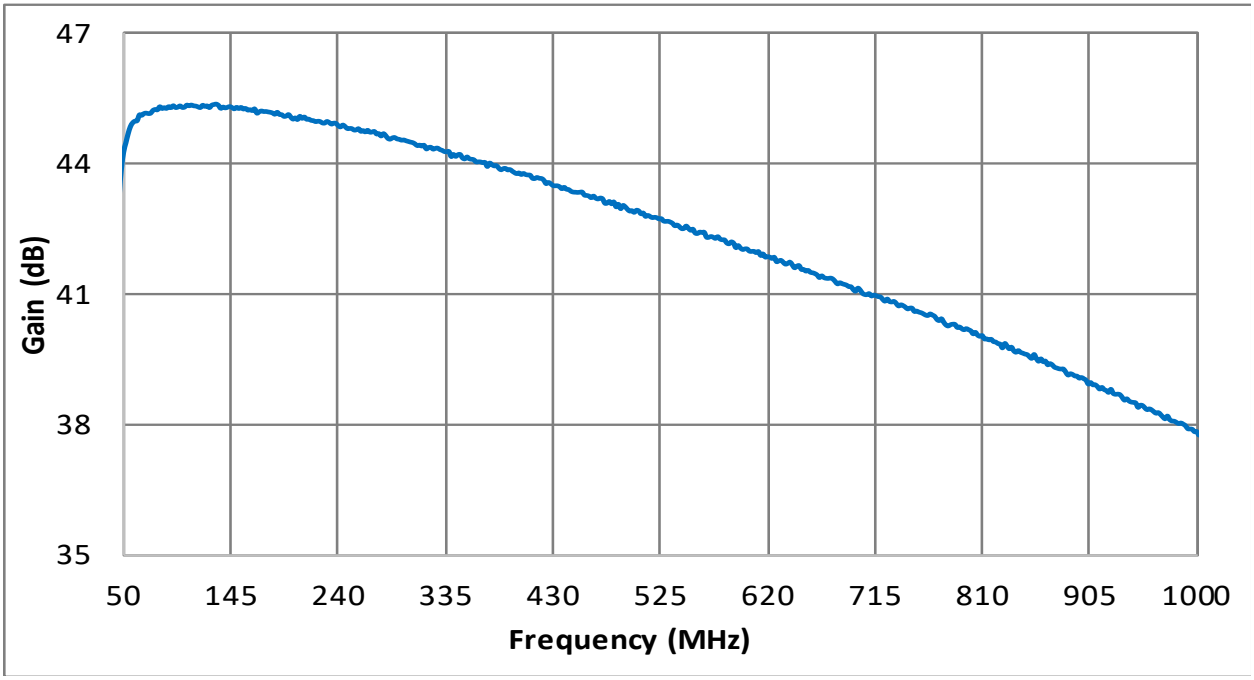
Environmental Specifications

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)					

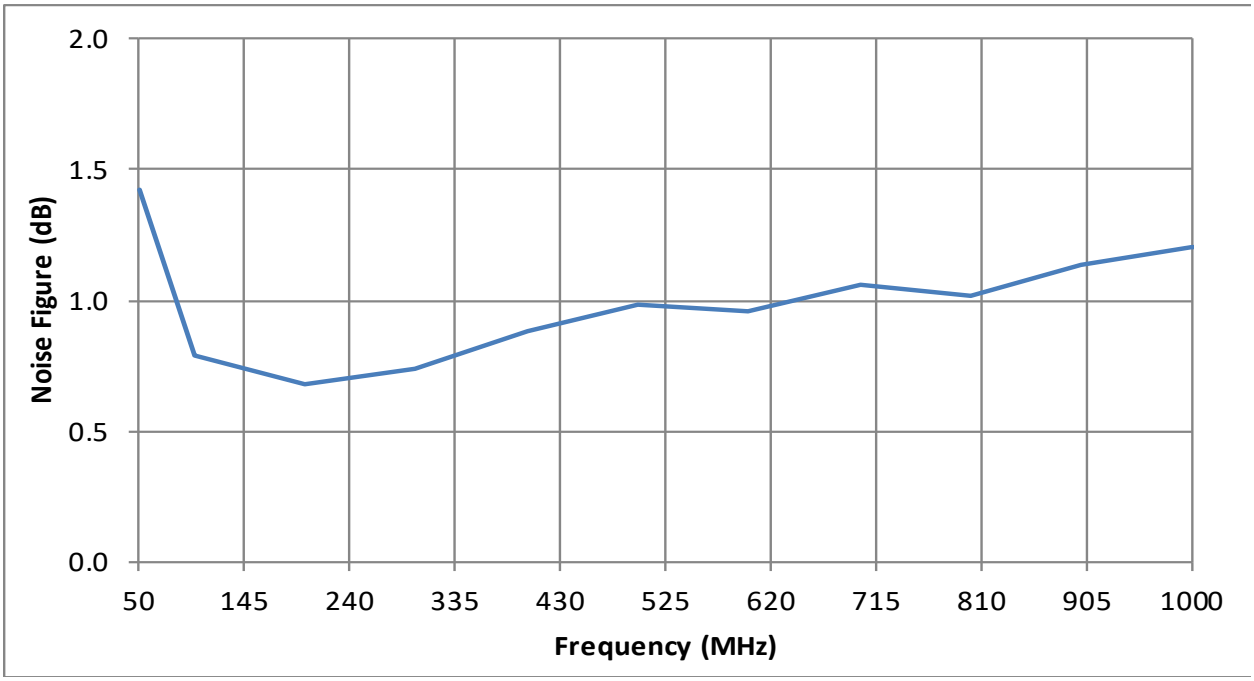
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Performance Plots

Gain (S21)

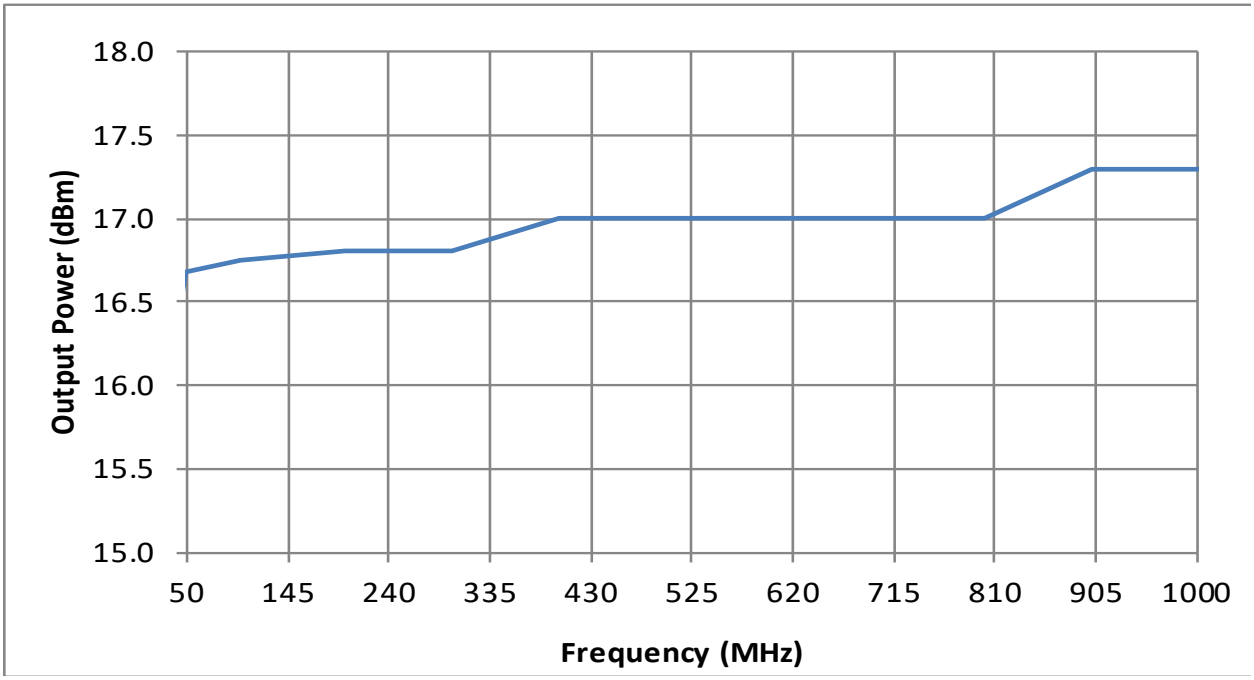


Noise Figure

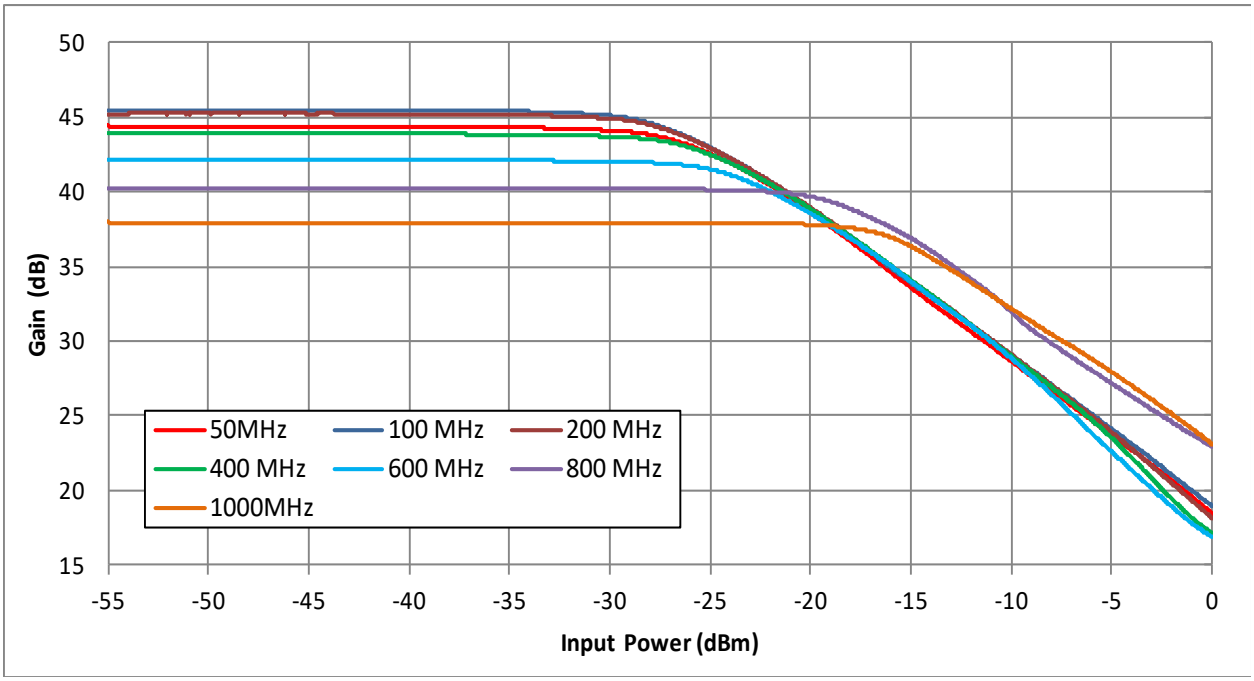


Performance Plots (cont.)

Output Power at 1 dB Compression Point

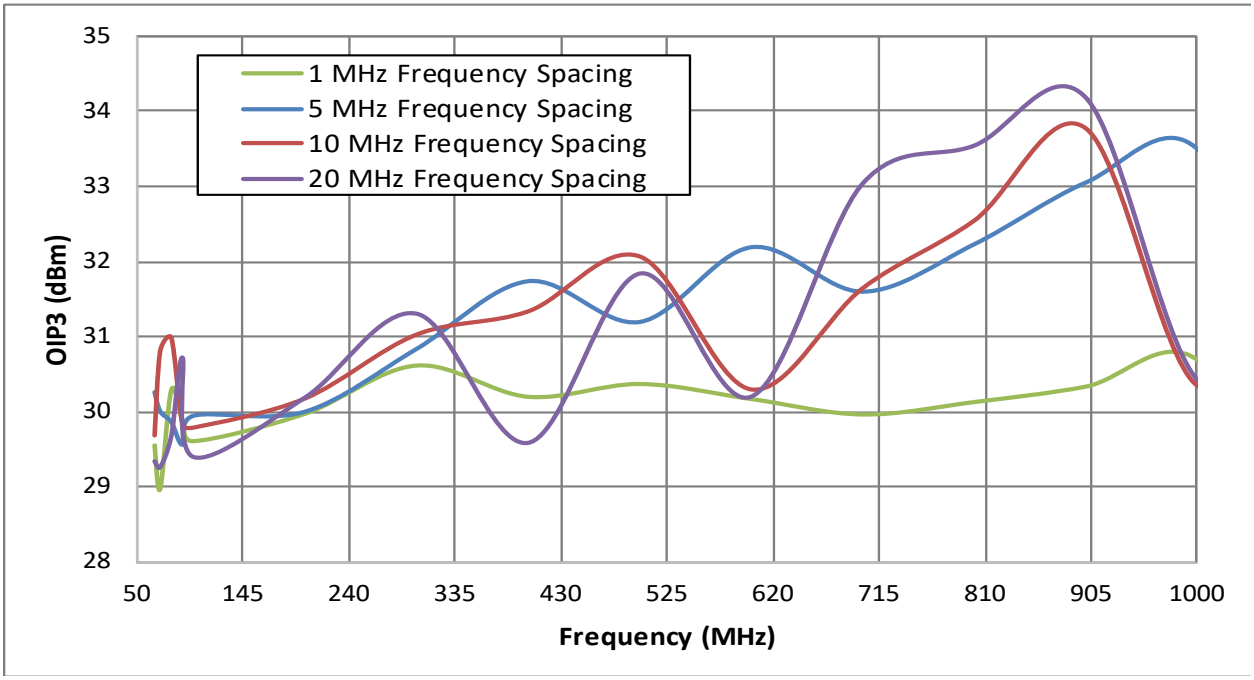


Power Compression

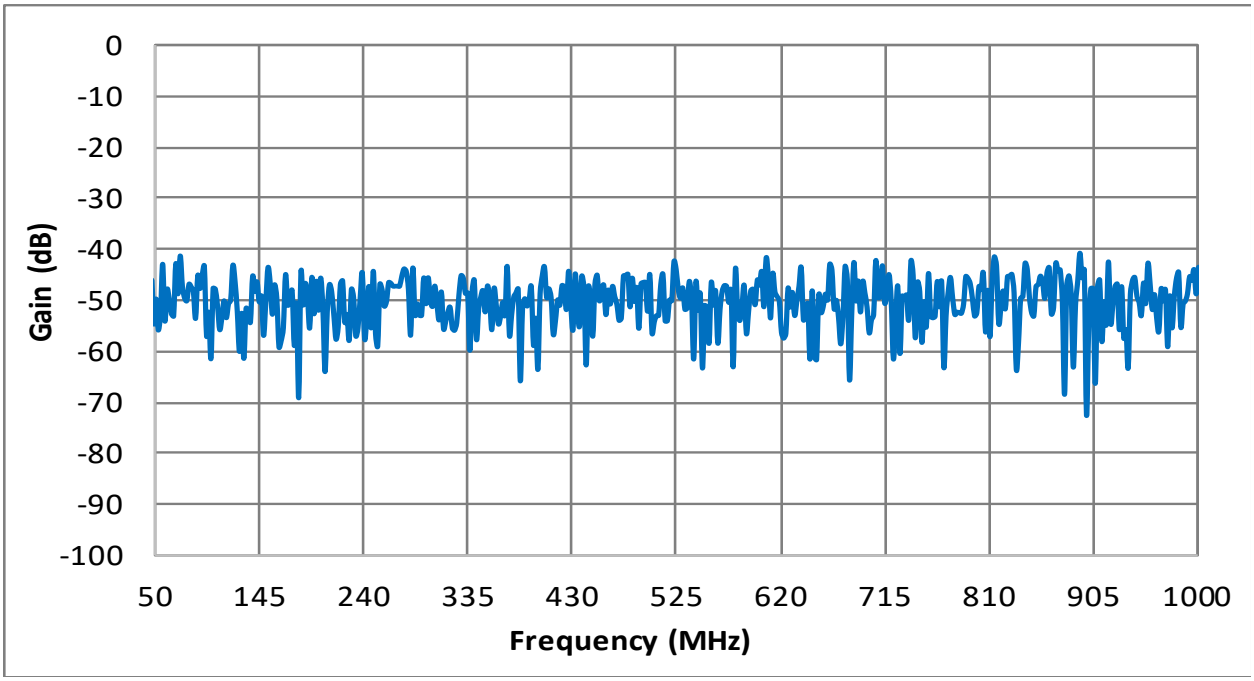


Performance Plots (cont.)

OIP3 vs Frequency

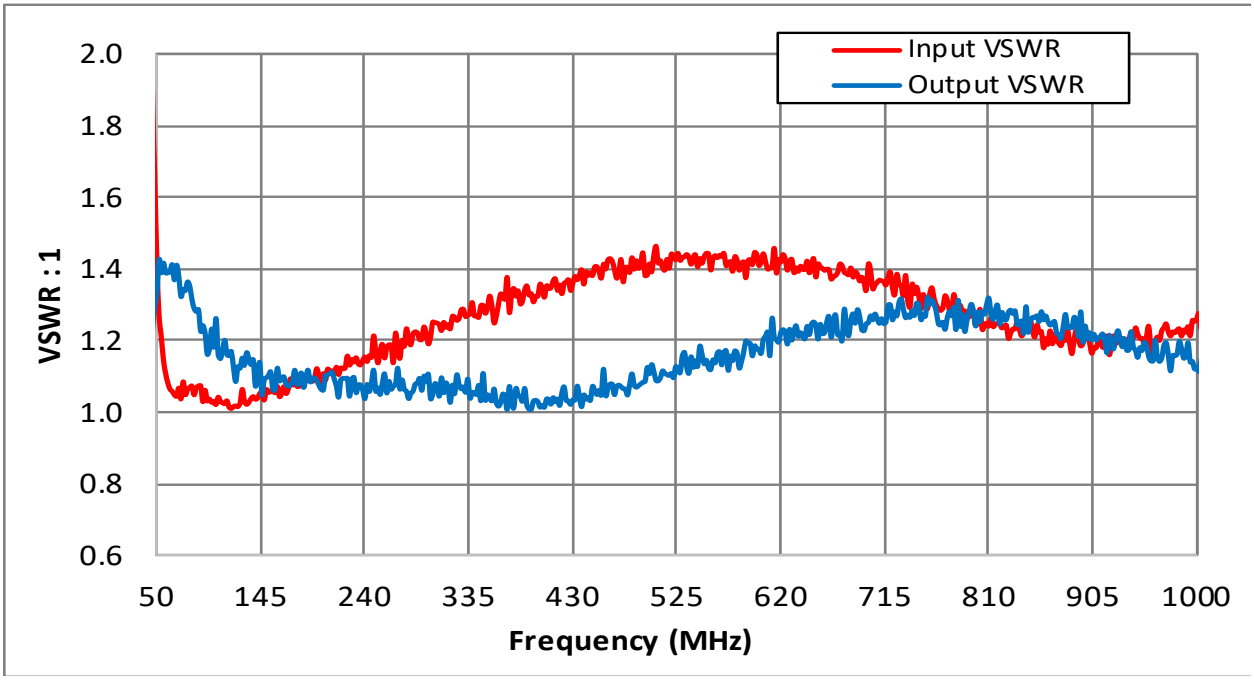


Reverse Isolation

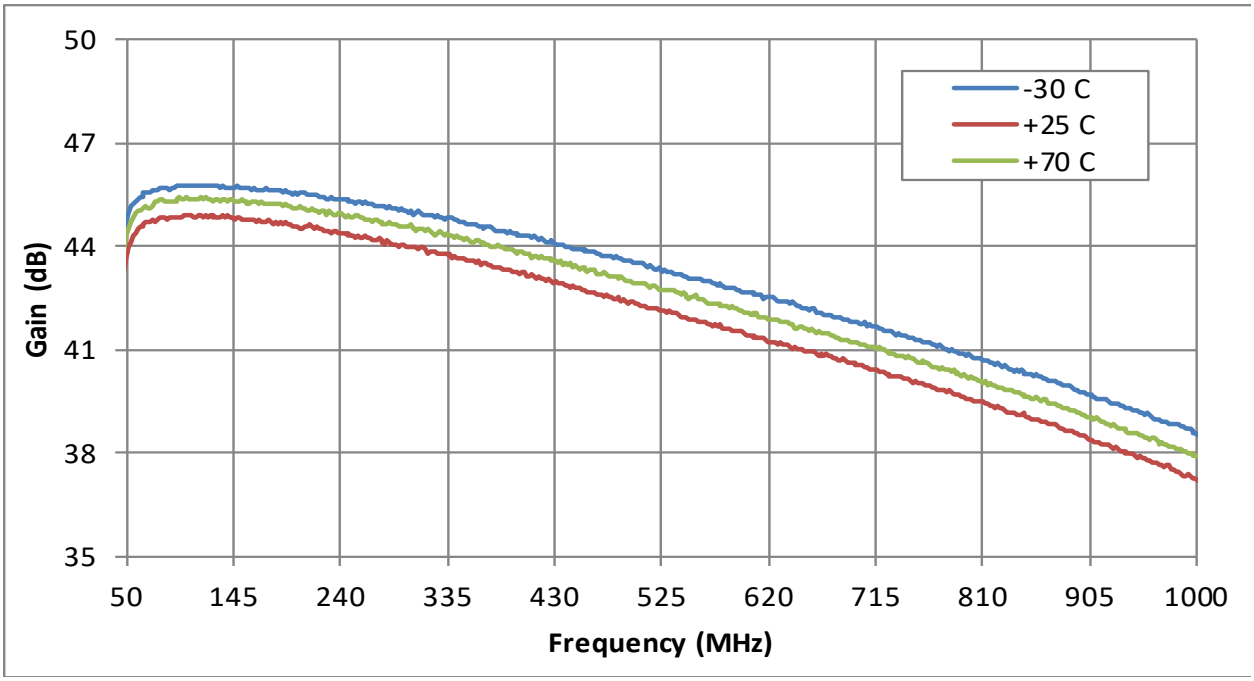


Performance Plots (cont.)

Input and Output VSWR

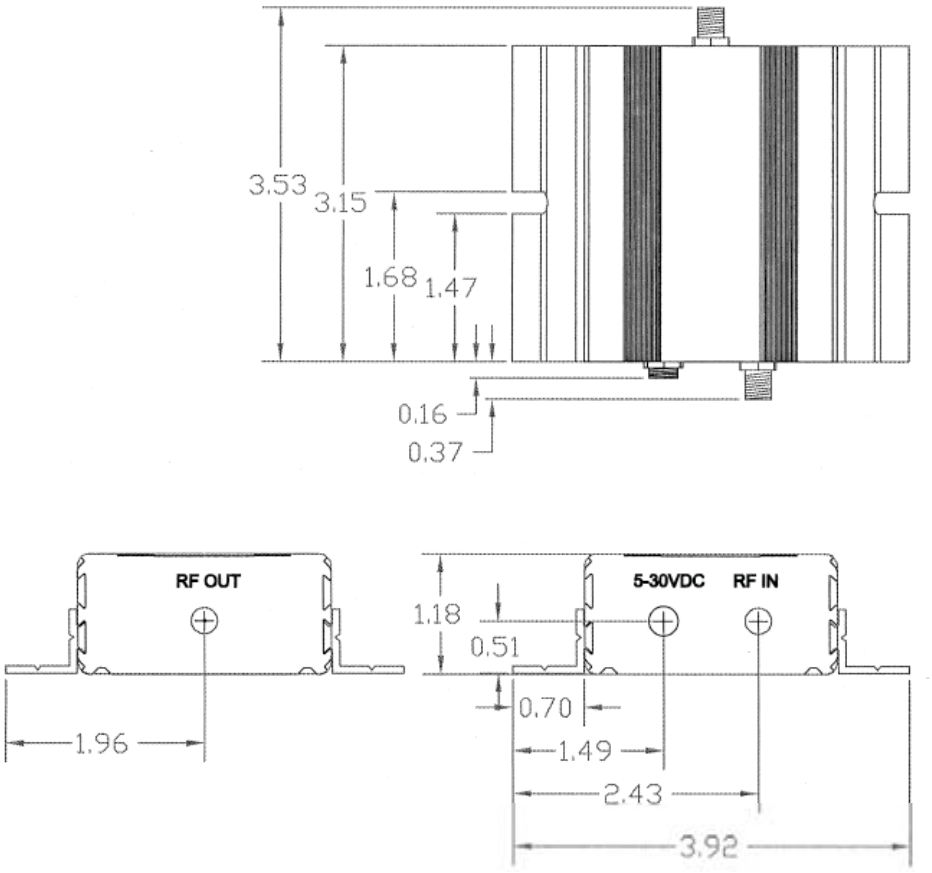


Gain vs Temperature



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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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