PW2020-202

S-Band TT&C LNA+Filter

Features

- ✓ High gain
- ✓ Interference resistant
- ✓ Radiation tolerant
- ✓ Wide operating temperature range
- ✓ Designed to NASA GEVS (GSFC-STD-7000)
- ✓ TRL 9

Benefits

- ✓ Commercial off-the-shelf (COTS)
- ✓ Acceptance Tests available
- ✓ Qualified for space applications
- ✓ Consultation services available (link budget, architecture and system design)

Product Overview

PW2020-202 is a radiation tolerant LNA for space TT&C applications—specifically LEO, MEO, GEO and deep space missions.

The integrated high rejection preselector filter makes this LNA a perfect choice for applications where interference is a concern. The input power compression point (IP1dB) is as high as 36 dBm at out-of-band frequencies. The DC power can be configured to be either fed through a pin or over the RF OUT connector.

Related Products

Part Number	Description
PW2222-200	S-Band Power Amplifier, 20 W
PW2022-101	S-Band RHCP Wideband Omni Antenna
PW2022-102	S-Band RHCP Dual-Port (TX+RX) Omni Antenna
PW2022-002	Active S-Band RHCP Dual-Port (TX+RX) Omni Antenna
PW1115-002	Active GNSS L1/E1/L2/L5/E5 Antenna

Electrical Specifications

Parameter / Condition	Min	Typ	Max	Unit
Operating Frequency	2025		2120	MHz
VSWR			2:1	
Gain (Notes 1 and 2)	28	30	34	dB
Noise Figure (Note 2)		2.5	3.5	dB
Rejection @ 2200 MHz	60			dBc
Input P1dB In Band Out of Band		 -10 +36		 dBm dBm
Voltage	4.5	5	12	V
Current		50	60	mA

Note 1: LNA gain is customizable upon request
Note 2: Measured over the full operating temperature range

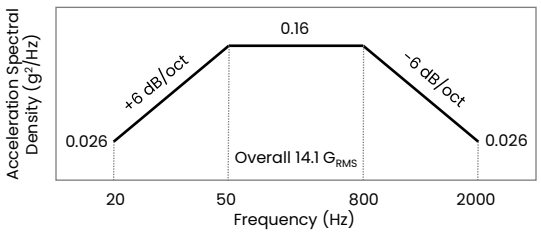
Mechanical Specifications

Parameter / Condition	Value	Unit	Limits
RF Connectors	SMA Female		
DC Connector	DC Feedthrough		
Mass	90	g	Max

Environmental Specifications

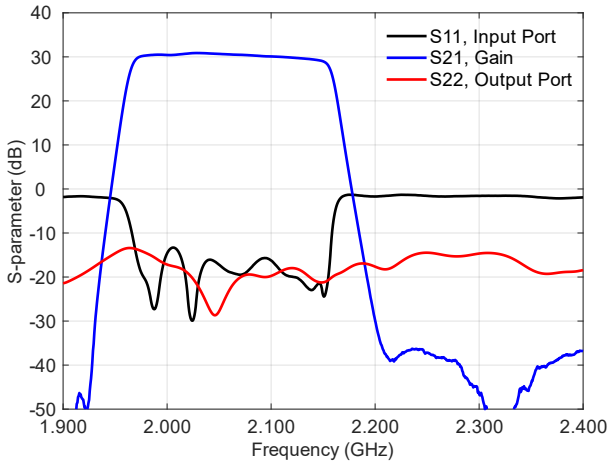
Parameter / Condition	Min	Typ	Max	Unit
LEO Mission Life	5			years
Operating Temperature	-70		100	°C
Humidity (MIL-STD-810 Method 507.6)	65%			
Sealing	Sealed + Venting Mechanism			
Radiation Hardness (TID)	500			krad(Si)
Destructive Single Event Effects (Note 1)	37			MeV-cm^2/mg
Vibration	14.1			G_{RMS}

Random Vibration Test Levels
(GSFC-STD-7000)

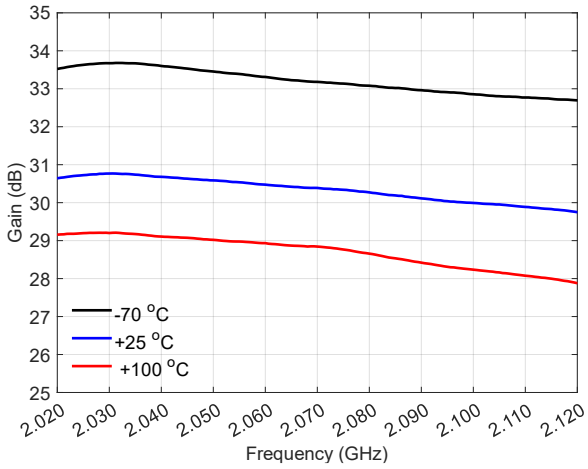


Note 1: No destructive SEE was observed when tested with heavy ions up to the above LET

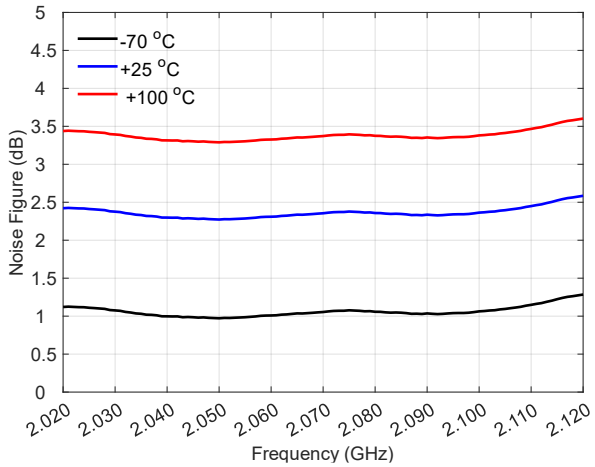
S-parameters



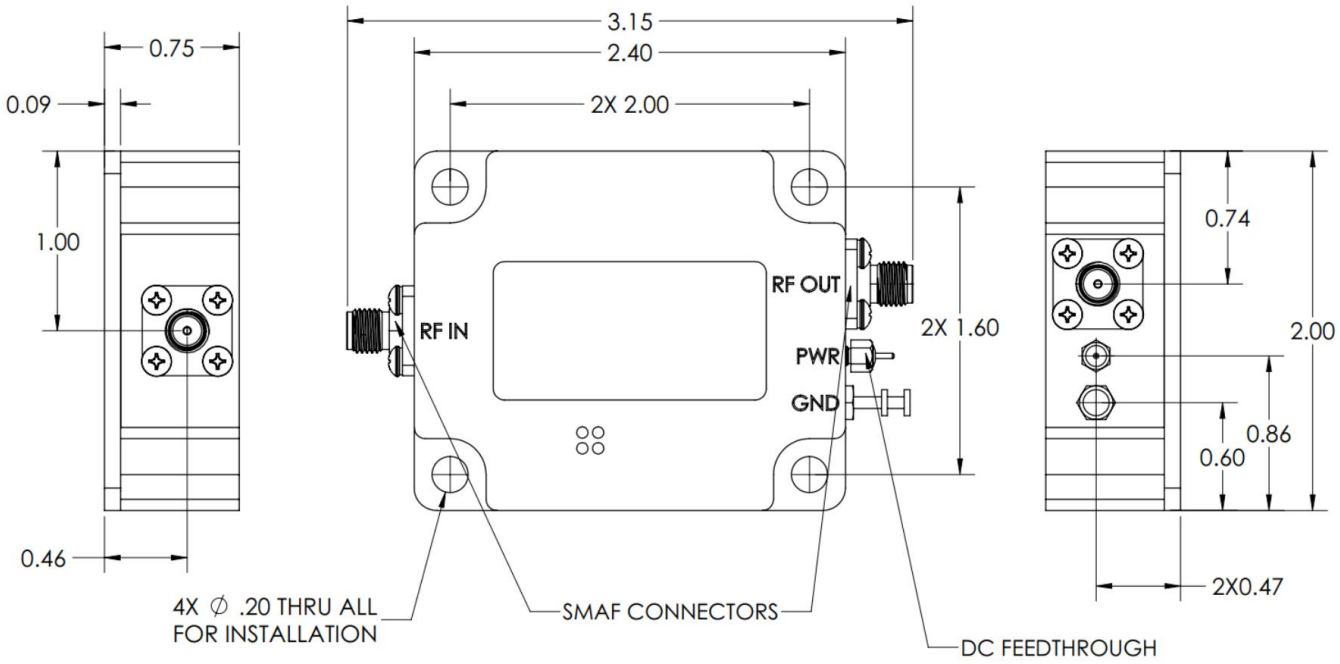
LNA Gain



Noise Figure



Mechanical Outline



Dimensions shown in inches.
Tolerances - Two Place Decimal: ±0.010, Three Place Decimal: ±0.005

Contact PlaneWave, Inc.

6925 Canby Ave, Ste 110
Reseda, CA 91335

www.planewaveinc.com
sales@planewaveinc.com