

L1L2 Low Noise Amplifier

Features

- ❖ High Rejection Pre-selection Filter
- ❖ Excellent Gain
 - $G = 40\text{dB}$
- ❖ Low Noise Figure
 - $F < 2.2\text{dB}$



Description

Designed for use with a passive L1/L2 antenna, or for applications in a dense RF signal environment requiring high gain, the L1L2LNA features high pre-selection filtering, low noise and 40dB of gain. In order to ensure adequate protection against intermodulation products from out of band signals, the pre-selection filtering precedes the initial amplification stages.

The product may be powered externally with an AC input voltage option, a DC input option, or it may be powered by the GPS receiver's antenna voltage output. Regardless of the input power configuration, the L1L2LNA can provide a DC voltage output to power an active GPS antenna. In the case of operation with a passive antenna, the input may be DC blocked.

The L1L2LNA amplifier comes with many available options to meet your specific needs. Please call, fax, email (sales@gpssource.com), or visit our website (www.gpssource.com) for further information on product options, specifications, or to receive an easy to use order sheet.

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Electrical Specifications, Operating Temperature -40 to 85⁰ C

Parameter	Conditions	Min	Typ	Max	Units	
Freq. Range: 1227.6MHz 1575.4MHz	IN – OUT, IN/OUT-50Ω	1.200 1.540		1.250 1.600	GHz	
In/Out Imped.	IN, OUT		50		Ω	
Gain 1227MHz 1575MHz	IN – OUT, IN/OUT-50Ω	38 38	40 40	41 41	dB	
Rejection 1227MHz 1575MHz	IN – OUT, IN/OUT-50Ω; +/- 50MHz +/- 100MHz +/- 50MHz +/- 100MHz	-12 -32 -7 -35				dB
Input SWR	OUT Port - 50Ω			2.0:1	-	
Output SWR	IN Port - 50Ω			2.0:1	-	
Noise Figure	IN – OUT, IN/OUT-50Ω			2.2	dB	
Gain Flatness	L1 - L2 , IN – OUT, IN/OUT-50Ω			2	dB	
Delay (nsec.) L1 L2	+25°C +85°C -40°C +25°C +85°C -40°C		17.3 17.6 17 16.3 16.3 16.4			
Reverse Isolation	OUT -IN	40			dB	
AC IN	110	Wall Mount Transformer ⁽³⁾		110	VAC	
	220/240	Wall Mount Transformer (Various Intl. plug types available) ⁽³⁾		230	VAC	
DC IN	Pass DC	Non-Powered Configuration, DC Input on OUT port	3		16	VDC
	Powered	Powered, Mil. Conn. or Quick Connect Option	3 ⁽¹⁾		28 ⁽²⁾	VDC
Device Current	Current Consumption of device, excludes Ant. Cur.			38	mA	
Ant/Thru Current	Pass DC	Non-Powered Configuration, DC Input on OUT port			250	mA
	Powered	Powered, Mil. Conn. or Quick Connect Option			Note 3	mA
Max RF Input	Max RF input without damage			10	dBm	

Notes:

- DC IN for powered option must be 2V greater than desired DC Voltage Out
- Maximum DC IN is 35V when 1275B Powered option is included
- Maximum combined DC current draw out all ports of the device is a function of the DC input voltage and desired DC output voltage , according to the following:

$$I_{out} \leq 1.4 / (V_{DC IN} - V_{DC OUT}) - 0.007 \text{ Amps}$$

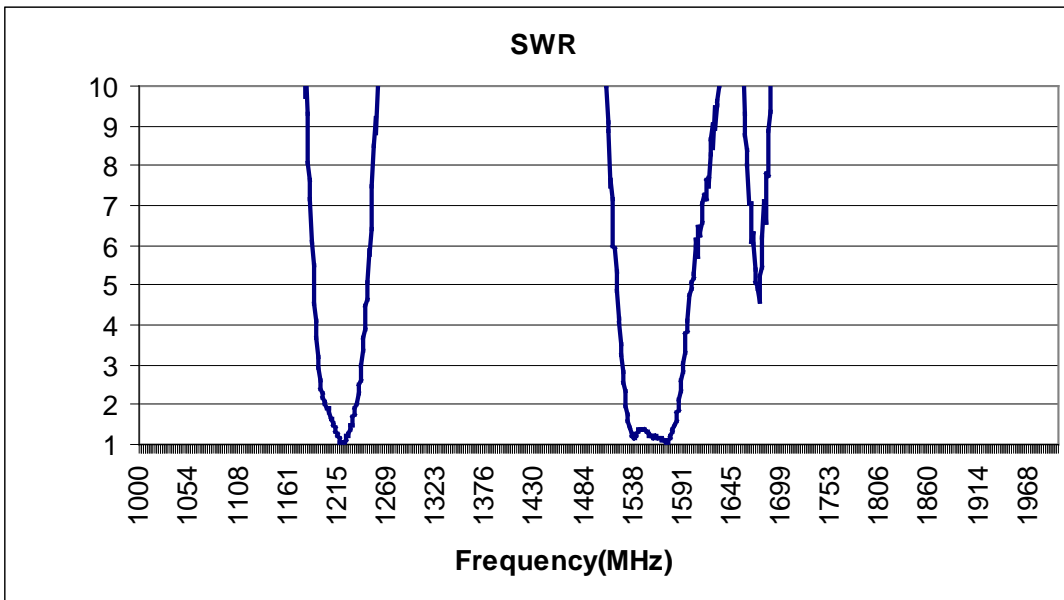
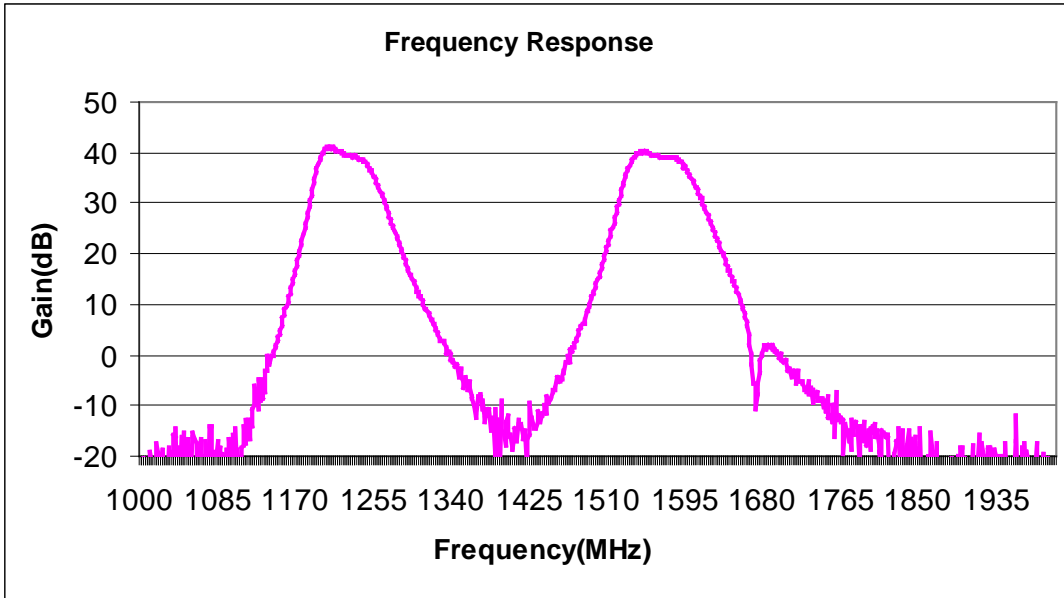
For powered option with a wall mount transformer (Voltage Input = 110/220/240 VAC), V_{DC IN} is 9V.



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Performance Data

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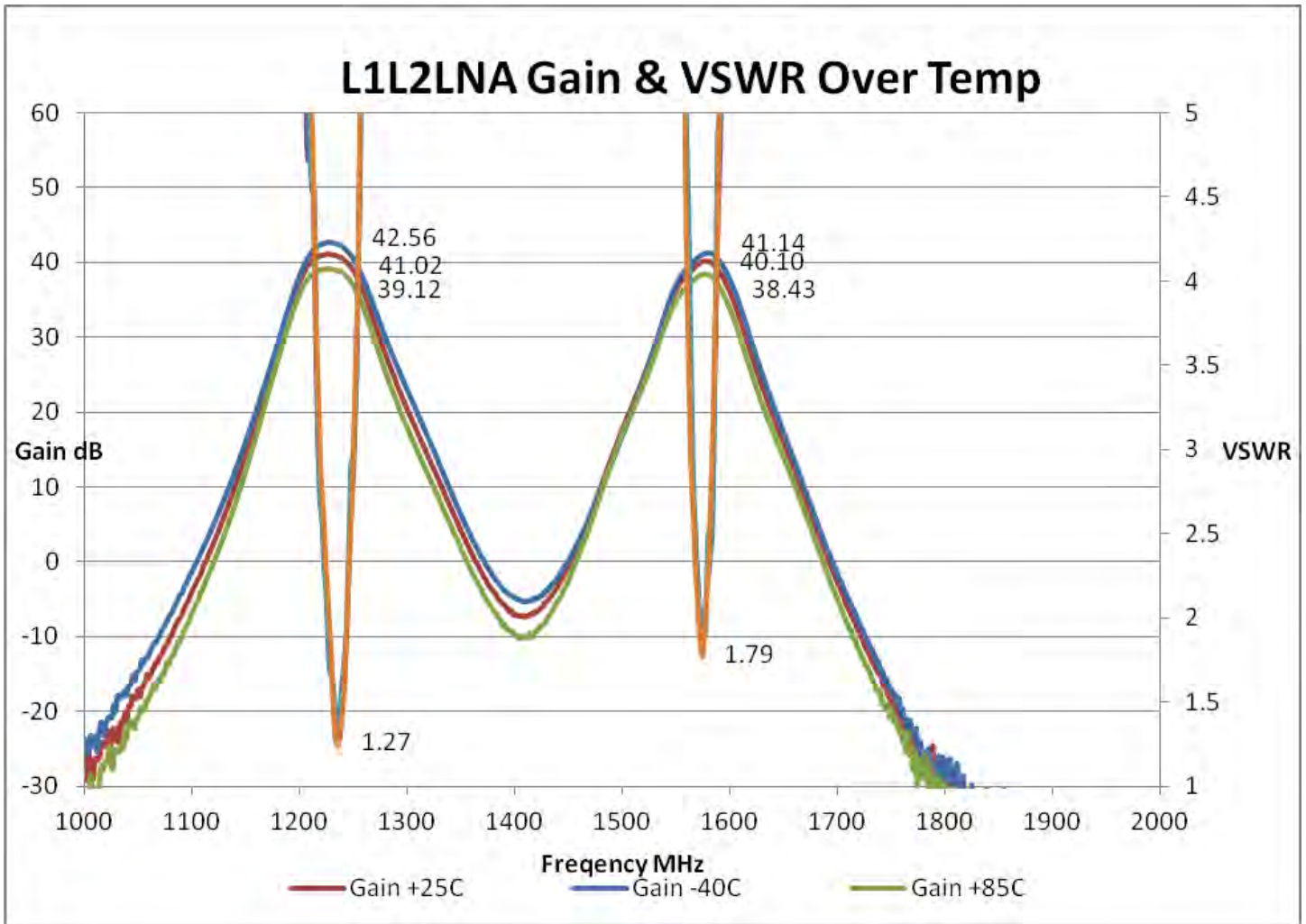


Figure 2. Antenna Mechanical Data

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Available Options:

Power Supply Options:		
Source Voltage Options	Voltage Input	Type
	110 VAC	Wall Mount Transformer
	220 VAC	Wall Mount Transformer
	240 VAC (U.K.)	Wall Mount Transformer
	DC 5-28 VDC	Military Style Connector or Tinned Leads
Output Voltage Options ⁽¹⁾	DC Voltage Out ⁽²⁾	
	3.3	
	5	
	7.5	
	9	
	12	
	Variable (3-12V)	
Custom		
RF Connector Options:		
Connector Options	Connector Type	Limitations
	N (Male & Female)	
	SMA (Male & Female)	
	TNC (Male & Female)	
	SMB (Female)	
	SMC (Female)	
BNC (Male & Female)	Performance Not Guaranteed	
Housing Options:		
Housings	Housing Type	Limitations
	Standard XL Housing Only	None
Port Options:		
Pass DC ⁽¹⁾	IN Port Passes DC	
DC Blocked ⁽¹⁾	IN Port Blocks DC	

Notes:

1. With Powered Option, any or all RF ports (input or output) can be DC Blocked or can pass the powered DC voltage
2. Maximum combined DC current draw out all ports of the device is a function of the DC input voltage and desired DC output voltage , according to the following:

$$I_{out} \leq 1.4 / (V_{DC\ IN} - V_{DC\ OUT}) - 0.007 \quad \text{Amps (or 250mA max)}$$

For powered option with a wall mount transformer (Voltage Input = 110/220/240 VAC), $V_{DC\ IN}$ is 9V.



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Part Number

L1L2LNA – P110 / 5 – SF

Product:

Standard 1x1 Amplifier
(Pass DC J1-Ant, J2 Blk.)

Source Voltage:

P110 – Transformer,
P220 – Transformer,
P240 – Transformer,
PDC – DC w/Quick Connects
PM – Military Connector (User supplies DC)
PMS – Military Connector (User supplies DC)

Output Voltage:

3.3, 5, 7.5, 9, 12, XX, V – Denotes Output Voltage
(XX – custom output voltage, V – variable)

Connector Options:

NM – N, Male
NF – N, Female
SM – SMA, Male
SF – SMA, Female
TM – TNC, Male
TF – TNC, Female
BM – BNC, Male
BF – BNC, Female
SB – SMB Jack, Female
SC – SMC Jack, Female

For help in creating the part number to meet your exact needs, contact us at Sales@gpssource.com or visit our website at www.gpssource.com.