

# L1L2 Low Noise Amplifier

## Technical Product Data

### Features

- High Rejection Preselection Filter
- Excellent Gain  
G = 40dB
- Low Noise Figure  
F < 2.2dB



### 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 preselection filtering, low noise and 40dB of gain. In order to ensure adequate protection against intermodulation products from out of band signals, the preselection 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](mailto:sales@gpssource.com)), or visit our website ([www.gpssource.com](http://www.gpssource.com)) for further information on product options, specifications, or to receive an easy to use order sheet.

**Electrical Specifications, Operating Temperature -40 to 85<sup>o</sup>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			
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
Reverse Isolation	OUT -IN	40			dB
AC IN	110	Wall Mount Transformer <sup>(3)</sup>		110	VAC
	220/240	Wall Mount Transformer (Various Intl. plug types available) <sup>(3)</sup>		230	VAC
DC IN	Pass DC	Non-Powered Configuration, DC Input on OUT port		3	VDC
	Powered	Powered, Mil. Conn. or Quick Connect Option		3 <sup>(1)</sup>	28 <sup>(2)</sup> 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:**

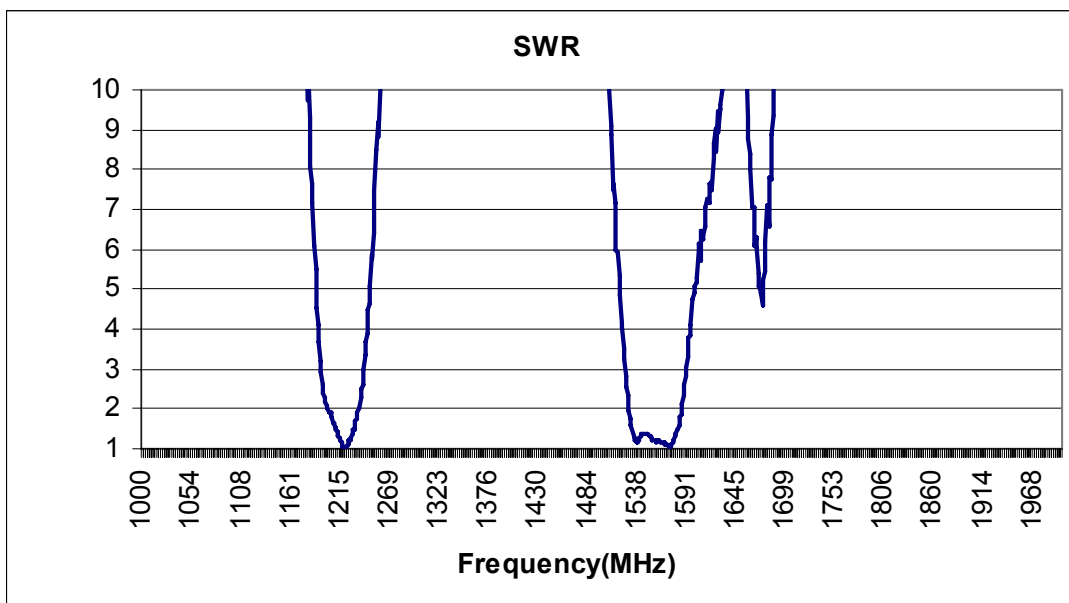
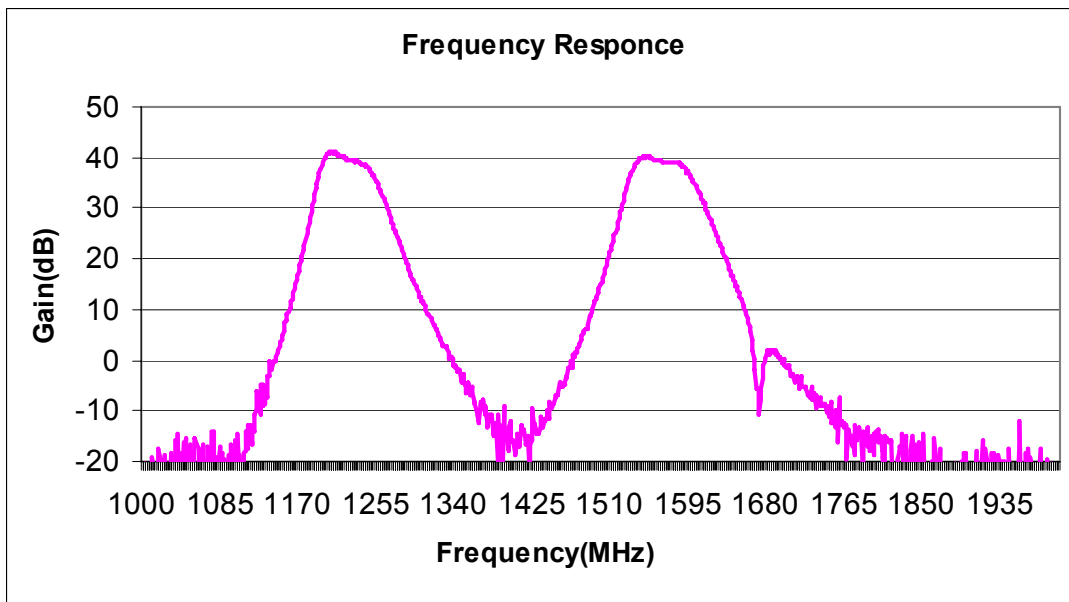
1. DC IN for powered option must be 2V greater than desired DC Voltage Out
2. Maximum DC IN is 35V when 1275B Powered option is included
3. Maximum combined DC current draw out all ports of the device is a function of the DC input voltage and desired DC output voltage , according to the following:

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

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

**Performance Data:**

**L1L2 Low Noise Amplifier**



**Available Options:**

<b>Power Supply Options:</b>		
<b>Source Voltage Options</b>	<b>Voltage Input</b>	<b>Type</b>
	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 w/Quick Connects
<b>Output Voltage Options<sup>(1)</sup></b>	<b>DC Voltage Out<sup>(2)</sup></b>	
	3.3	
	5	
	7.5	
	9	
	12	
	Variable (3-12V)	
Custom		
<b>RF Connector Options:</b>		
<b>Connector Options</b>	<b>Connector Type</b>	<b>Limitations</b>
	N (Male & Female)	
	SMA (Male & Female)	
	TNC (Male & Female)	
	SMB (Female)	
	SMC (Female)	
	MCX (Female)	
	BNC (Male & Female)	Performance Not Guaranteed
<b>Housing Options:</b>		
<b>Housings</b>	<b>Housing Type</b>	<b>Limitations</b>
	Standard XL Housing Only	None
<b>Port Options:</b>		
Pass DC <sup>(1)</sup>	IN Port Passes DC	
DC Blocked <sup>(1)</sup>	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.



**Part Number:**

**L1L2LNA – P110 / 5 – SF**

Product:

Standard 1x2 Splitter  
(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)

Output Voltage:

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

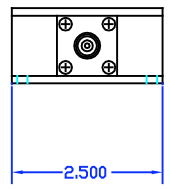
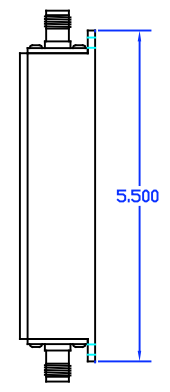
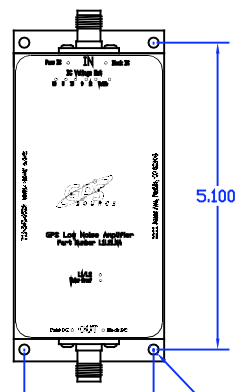
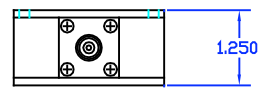
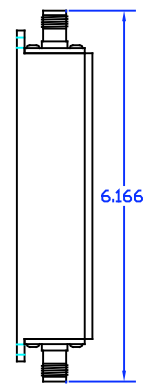
Connector Options:

**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  
**MX** – MCX Jack, Female

For help in creating the part number to meet your exact needs, contact us at [Sales@gpssource.com](mailto:Sales@gpssource.com) or visit our website at [www.gpssource.com](http://www.gpssource.com).

"THIS DOCUMENT CONTAINS INFORMATION PROPRIETARY TO GPS SOURCE INC. ANY REPRODUCTION, DISCLOSURE OR USE OF THIS DOCUMENT IS EXPRESSLY PROHIBITED WITHOUT THE PRIOR APPROVAL IN WRITING OF GPS SOURCE INC."

REVISIONS		ORIGIN-		
REV	DESCRIPTION	ECD	DATE	APPROVED



4X .172

<b>DO NOT SCALE DRAWING</b> UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES	DRAWN Phillip Colner	DATE 14 MAR 06	GPS SOURCE, Inc. 2211 Jones Avenue Pueblo Colorado, 81004 USA	
	MFG. APPROVED	DATE	TITLE L1L2 Low Noise Amplifier	REV. 01
TOLERANCES ARE: DEC. XXX ± .01      FRAC ± XXXX ± .005      ANGULAR ± SURF √	EDD MRP MATERIAL		SIZE C	DWG NO. L1L2 LNA
		SCALE: 1/1	CAD FILE	SHEET 1 OF 1