L1 Low Noise Amplifier

Features

- High Rejection Pre-selection Filter
- Excellent Gain
  - G = 40dB
- Low Noise Figure
  - F < 2.0dB

Description

Designed for use with a passive L1 antenna, or for applications in a dense RF signal environment requiring high gain, the L1 LNA 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 L1 LNA 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 L1 LNA 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 85 ^{0}C

Parameter		Conditions	Min	Typ	Max	Units
Freq. Range: 1575.4MHz		IN – OUT, IN/OUT-50Ω	 1.550		 1.635	 GHz
In/Out Imped.		IN, OUT		50		Ω
Gain		IN – OUT, IN/OUT-50Ω	38	40	41	dB
Rejection 1575MHz		IN – OUT, IN/OUT-50Ω; +/- 75MHz +/- 150MHz	 -12 -38			 dB
Passband Ripple		IN – OUT, IN/OUT-50Ω			2	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
Reverse Isolation		OUT -IN	40			dB
AC IN	110	Wall Mount Transformer[2]		110		VAC
	220/240	Wall Mount Transformer (Various Intl. plug types available)[2]		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	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 Tinned Leads			Note 2	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 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:

$$Iout \leq 1.4 / (V_{DC\,IN} - V_{DC\,OUT}) - 0.007 \quad Amps$$

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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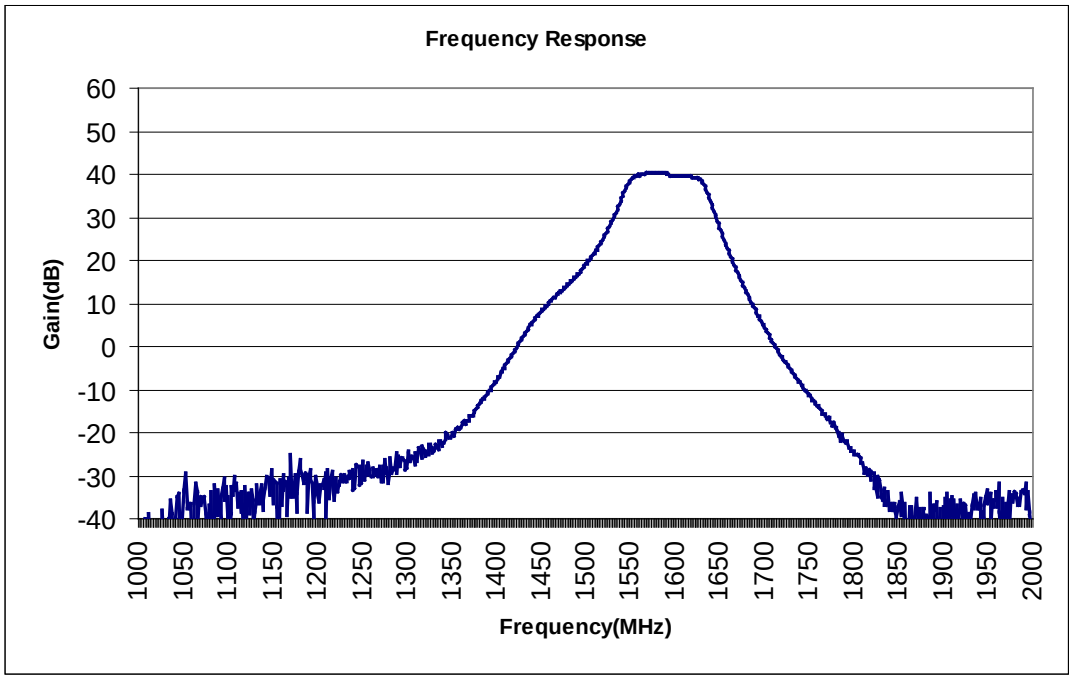

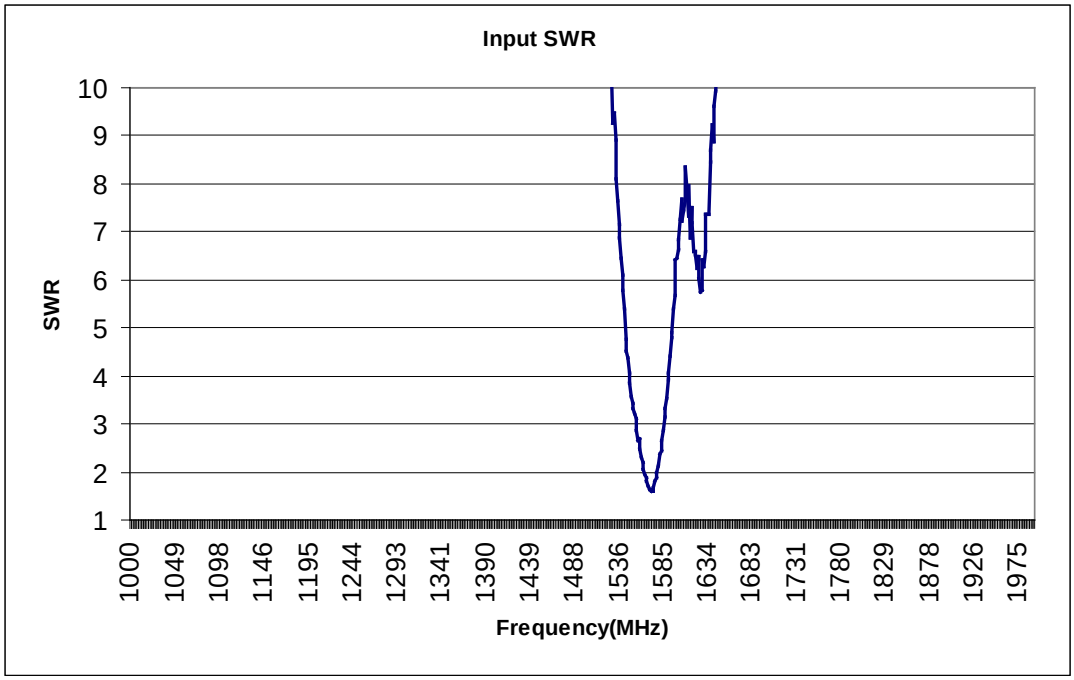

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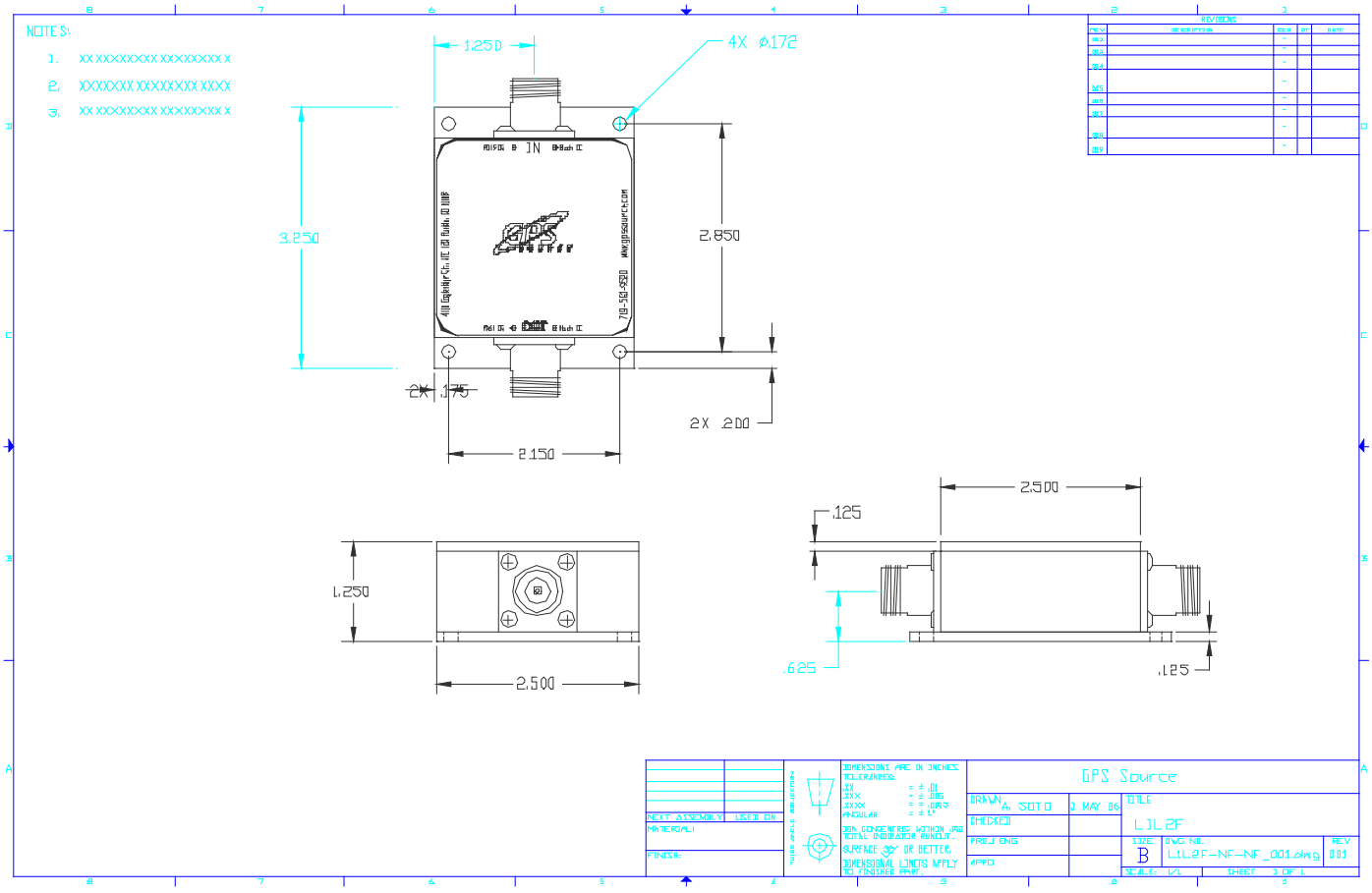
Mechanical Specifications



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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:

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

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

L1LNA – 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)
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.

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