

## DESCRIPTION

The L1A is a high performance L1 GPS active antenna suited for applications requiring low noise and excellent gain. The product functions to specifications over the entire operational voltage and temperature range at a minimal current draw. The product includes high frequency selectivity to avoid interference with other nearby transmitters.

## FEATURES

- Outstanding Noise Figure < 1dB
- Excellent Typical Gain of 33dB
- Wide Voltage Range of 3VDC to 16VDC
- Tiny Current Draw < 20mA
- Bottom or Pole Mount
- Multiple Connector Options

## OPTIONS

The L1A comes with many available options to meet specific needs. Please contact GPS Source via phone, fax, email, or visit the website for further information on product options and specifications.



# 1 L1A Specifications

**Table 1-1. Electrical Specifications**

Operating Temperature -40°C to 85°C

Parameter		Conditions	Min	Typ	Max	Units
<b>Frequency Range (Passband)</b>		Ant: Output, VDC = 3V to 16V, Output = 50Ω	1570	1575	1580	MHz
<b>Out Impedance</b>				50		Ω
<b>Gain</b>	Element	Ant Element		3	3.5	dBiC
	LNA	LNA, VDC = 3V to 16V, Output = 50Ω	32	33	35	dB
<b>Output SWR</b>		VDC = 3V to 16V, Output = 50Ω			2.5:1	—
<b>Noise Figure</b>		VDC = 3V to 16V, Output = 50Ω		0.8	1	dB
<b>Required DC Input Voltage</b>		DC Input on RF Output Center Conductor	3		16	VDC
<b>LNA Current</b>		Output = 50Ω, 5V		17	20	mA
<b>Rejection</b>	+/-50MHz > 24dB	Ant: Output, VDC = 3V to 16V, Output = 50Ω	-22	-24	-25	dB
	+/-100MHz > 35dB		-34	-35	-37	
<b>Polarization</b>		Right Hand Circular				

## 2 Performance Data

### 2.1 Far Field Patterns — 1575MHz

Figure 2-1. Far Field Plots Rotating Linear

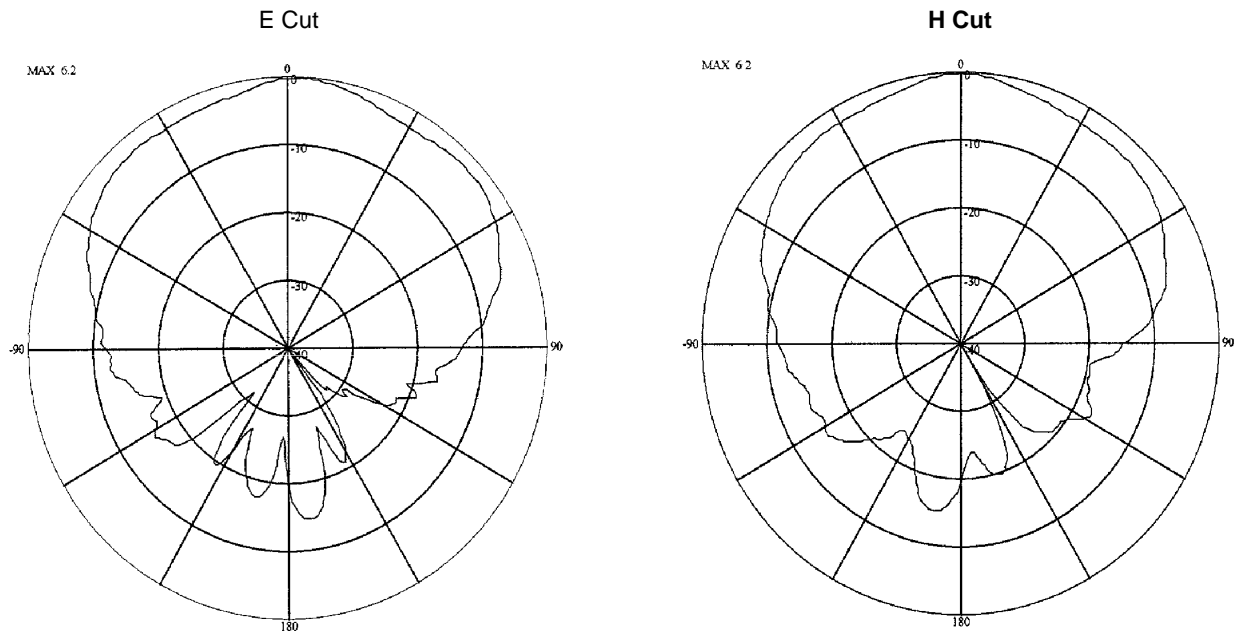
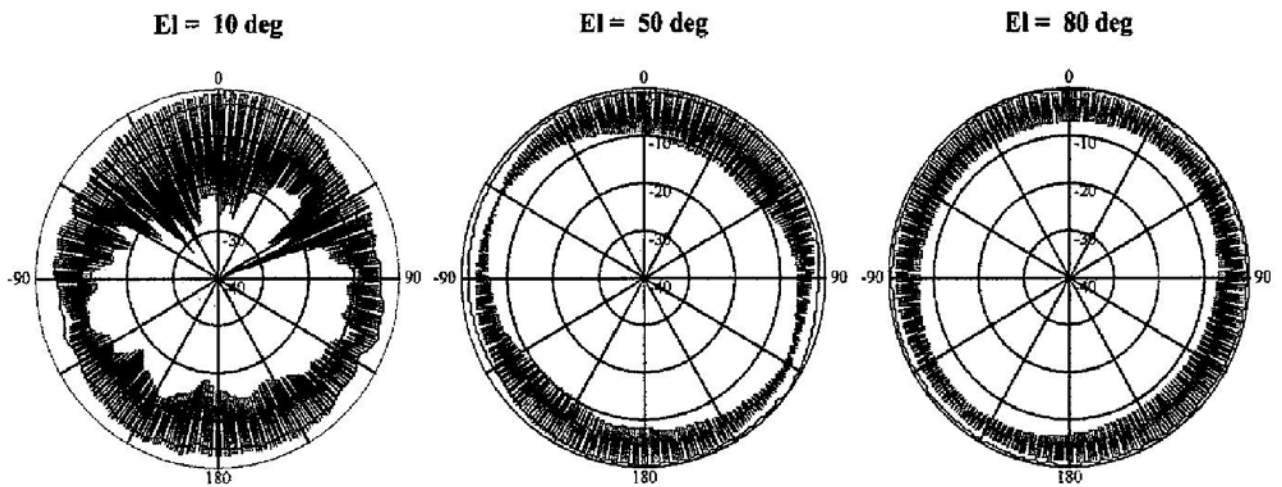
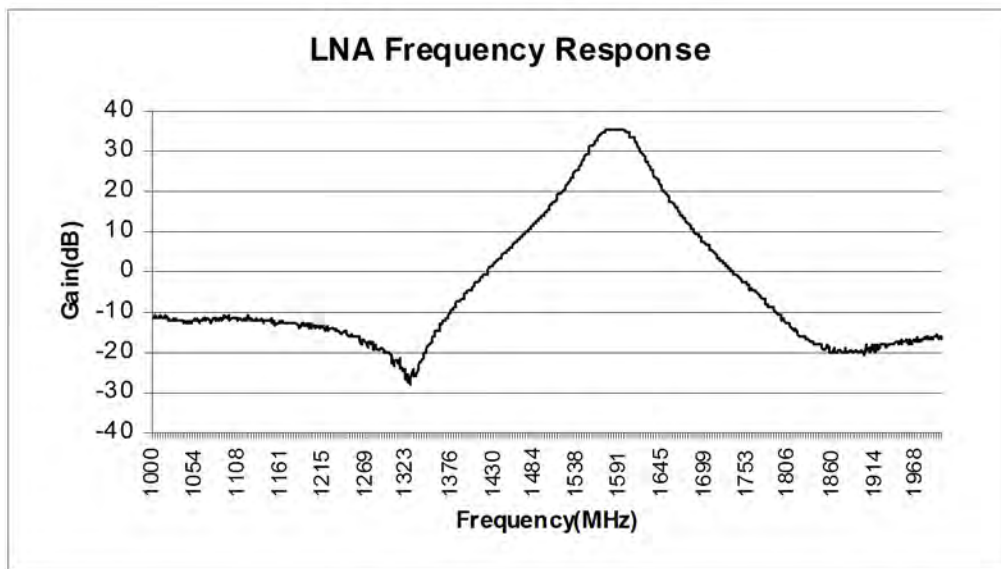


Figure 2-2. Far Field Plots Azimuth Cuts



## 2.2 LNA Frequency Response

Figure 2-3. LNA Frequency Response



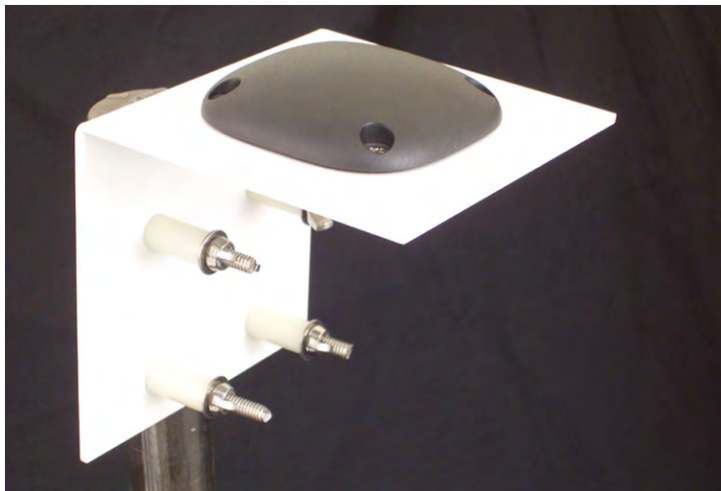
**Note:** Frequency selectivity of antenna element adds additional out of band rejection.

### 3 Product Options

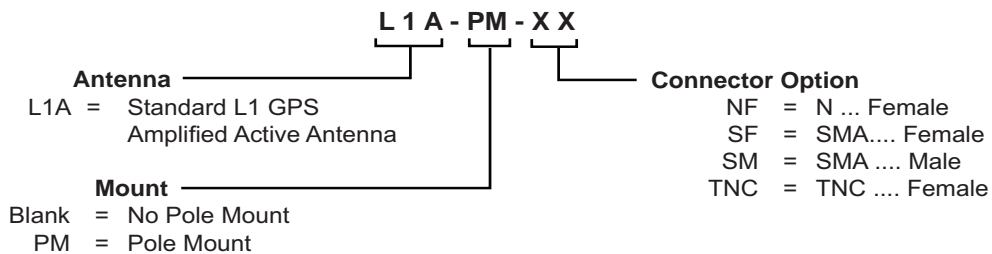
Table 3-1. L1A Available Options

Available Options		
Power Source Voltage	Voltage Input	
	DC 3VDC to 16VDC	
RF Connector	Type	
	N	Female
	SMA	Female Male
	TNC	Female
Limitations	N/A	
	N/A	
RF Mounting	L Bracket Pole Mount Hardware	See <a href="#">Figure 3-1</a> .

Figure 3-1. L Bracket Pole Mount Hardware



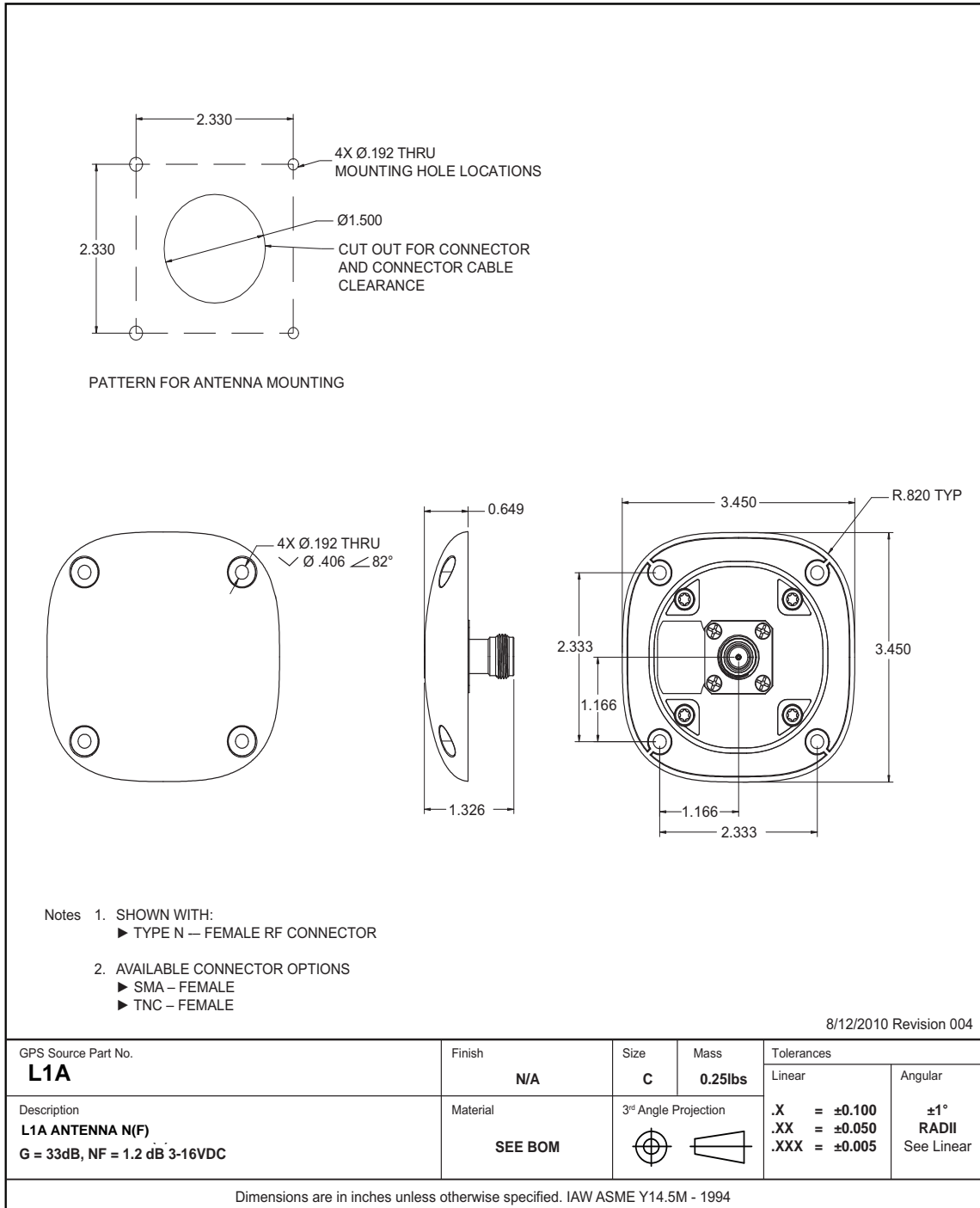
### 4 Product Code Decoder



- Notes:
- Contact GPS Source for additional connector options.
  - To have product/part codes customized to meet exact needs, contact GPS Source at [techsales@gpssource.com](mailto:techsales@gpssource.com) or visit the website at [www.gpssource.com](http://www.gpssource.com).

## 5 Mechanical Drawing

### 5.1 L1A GPS Active Antenna





**GPS LIVE INSIDE**

**L1A Data Sheet**

059-FAN-AAQ-XCX-RXZ-005

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64 N. Mission Drive  
Pueblo West, CO 81007  
Phone: (+1)(719) 561.9520  
Fax: (+1)(719) 565.0890  
[techsales@gpssource.com](mailto:techsales@gpssource.com)  
[www.gpssource.com](http://www.gpssource.com)

AS9100C:2009 and ISO 9001:2008 Compliant Company



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