

GPS Active Antenna

DESCRIPTION

The L1AW is a high performance L1 Band 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. It includes high frequency selectivity to avoid interference with other nearby transmitters.

Built to support the wireless market, the precise L1 Band Active antenna features low noise and high gain to provide optimum signal quality.

FEATURES

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

OPTIONS

The L1AW comes with many available options to meet specific needs. Please contact GPS Source via phone, email, or visit the website for further information on product options and specifications.



1 L1AW Specifications

Table 1-1. Electrical Specifications

Operating Temperature -40°C to 85°C

Parameter		Conditions	Min	Typ	Max	Units
Frequency Range (Passband)		Ant: Output, VDC = 3V to 16V, Output = 50Ω	1560	1575	1590	MHz
Out Impedance				50		Ω
Gain	Element	Ant Element		3	3.5	dBiC
	LNA	LNA, VDC = 3V to 16V, Output = 50Ω	32	33	35	dB
Output SWR		VDC = 3V to 16V, Output = 50Ω			2.5:1	—
Noise Figure		VDC = 3V to 16V, Output = 50Ω		0.8	1	dB
Required DC Input Voltage		DC Input on RF Output Center Conductor	3		16	VDC
LNA Current		Output = 50Ω, 5V		17	20	mA
Rejection	+/-50MHz > 24dB	Ant: Output, VDC = 3V to 16V, Output = 50Ω	-22	-24	-25	dB
	+/-100MHz > 35dB		-34	-35	-37	
Polarization		Right Hand Circular				

2 Performance Data

2.1 Far Field Patterns — 1575MHz

Figure 2-1. Far Field Plots Rotating Linear

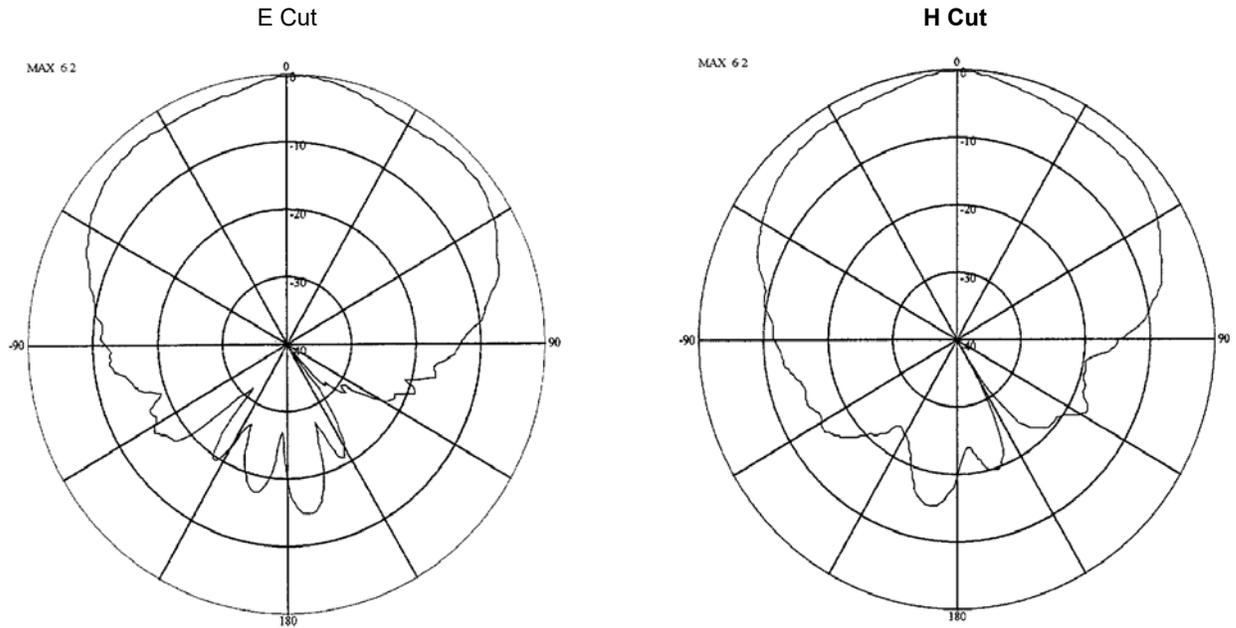
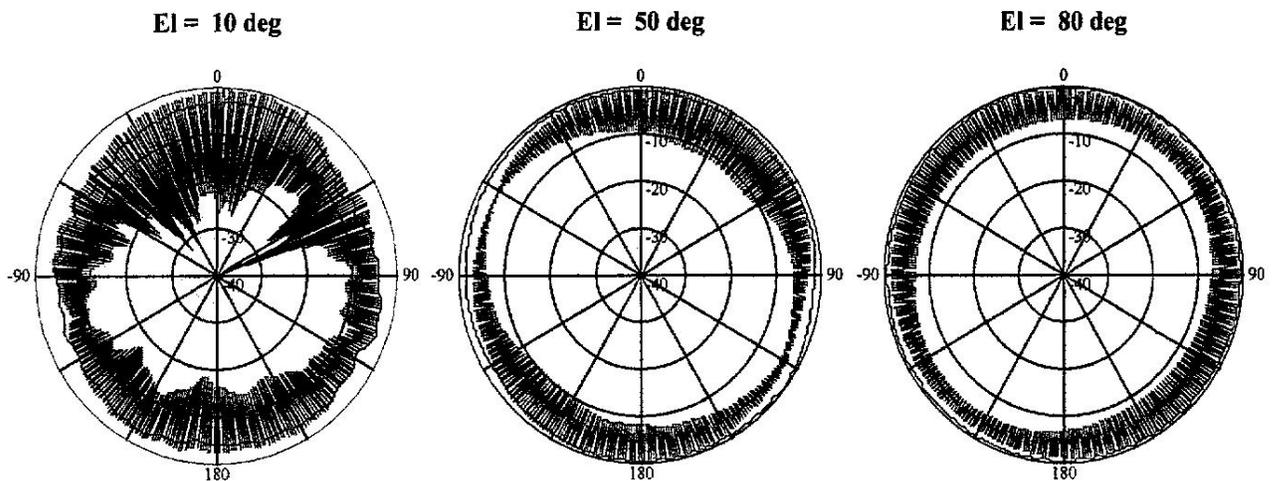


Figure 2-2. Far Field Plots Azimuth Cuts



3 Product Options

Table 3-1. L1AW Available Options

Available Options		
Power Source Voltage	Voltage Input	
	DC 3VDC to 16VDC	
RF Connector	Type	
	N	Female
	SMA	Female
	TNC	Female
RF Mounting	Limitations	
	PM - L-Bracket Pole Mount Hardware <i>(Pole is not included.)</i>	
Lightning Protection	PCM - Pole Cap Mount Hardware <i>(Pole is not included.)</i>	
	DC to Ground on the Antenna Element	N/A

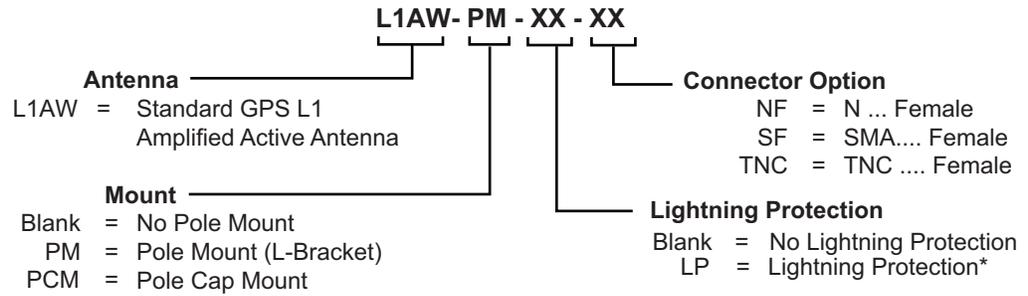
Figure 3-1. (PM) L-Bracket Pole Mount



Figure 3-2. (PCM) Pole Cap Mount



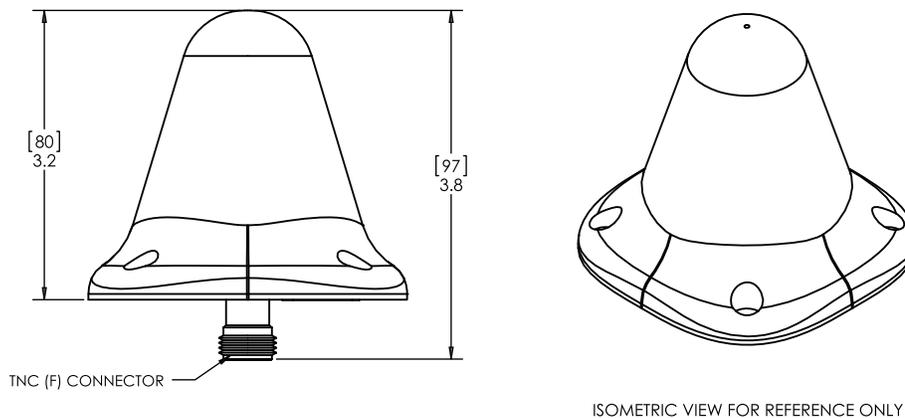
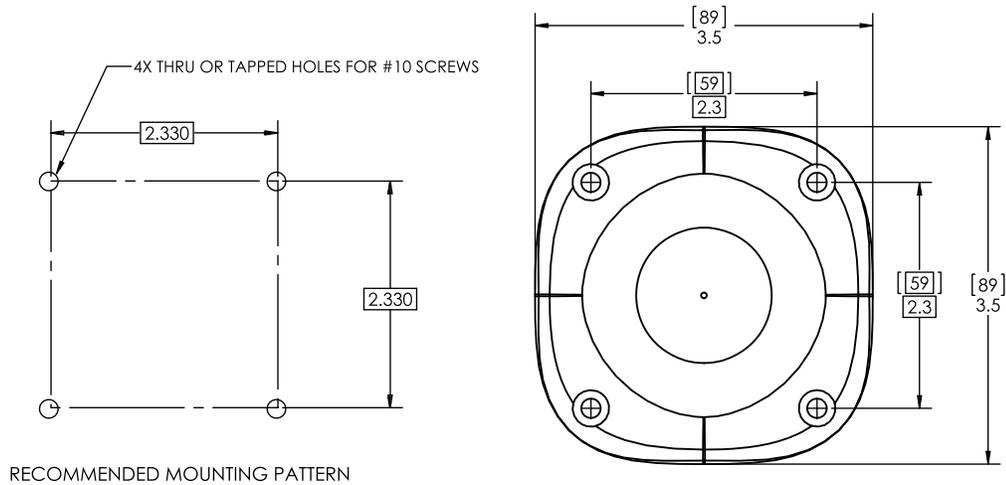
4 Product Code Decoder



- Notes:
1. Contact GPS Source for additional connector options.
 2. To have product/part codes customized to meet exact needs, contact GPS Source at GPSS-Sales@gd-ms.com or visit the website at www.gpssource.com.
 3. * Lightning Protection option not available when choosing the Pole Mount option.

5 Mechanical Drawing

5.1 L1AW GPS Active Antenna



- Notes
1. SHOWN WITH:
 - ▶ TYPE N -- FEMALE RF CONNECTOR
 2. AVAILABLE CONNECTOR OPTIONS
 - ▶ SMA -- FEMALE
 - ▶ TNC -- FEMALE

01/20/2016 Revision 001

GPS Source Part No.	Finish	Size	Mass	Tolerances	
				Linear	Angular
L1AW	N/A	C	0.25lbs		
Description	Material	3 rd Angle Projection		.X = ±0.100 .XX = ±0.050 .XXX = ±0.005	±1° RADII See Linear
L1A ANTENNA N(F) G = 33dB, NF = 1.2 dB 3-16VDC	SEE BOM				

Dimensions are in inches unless otherwise specified. IAW ASME Y14.5M - 1994

L1AW Data Sheet

059-FAN-AAQ-XWX-RXZ-004

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2121 Executive Cir., Ste 100
Colorado Springs, CO 80906
Phone: (+1)(719) 421.7300
Toll Free: (+1)(866) 289.4777
GPSS-Sales@gd-ms.com
www.gpssource.com

AS9100 and ISO 9001 Compliant Company



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