PRELIMINARY TECHNICAL PRODUCT DATA SHEET

GNSS-3A

GNSS Active Antenna

DESCRIPTION

The GNSS-3A is a professional grade, active GNSS antenna designed for long term reliability. It is small and lightweight, with exceptional protection against the elements.

Designed to support the Warfighter, the portable, yet precise GNSS antenna is built for tough applications. The radome is made of a high-grade polymer, with a design to protect from UV, rain, lightning, chemical and jet fuels The GNSS-3A is available with a bottom mount connector and multiple colors (per FED-STD-595B).

FEATURES

- Military and Civilian Applications
- GNSS Bands:
  - GPS L1, L2
  - GLONASS L1, L2 and L3
  - GALILEO E1, E5b
- Waterproof
- Excellent gain
- Small Form Factor
- Integrated Resistor for Antenna/Coaxial Cable BIT
- Bottom Mount

OPTIONS

The GNSS-3A 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 GNSS-3A Specifications

Table 1-1. Electrical Specifications

Operating Temperature -54°C to 71°C

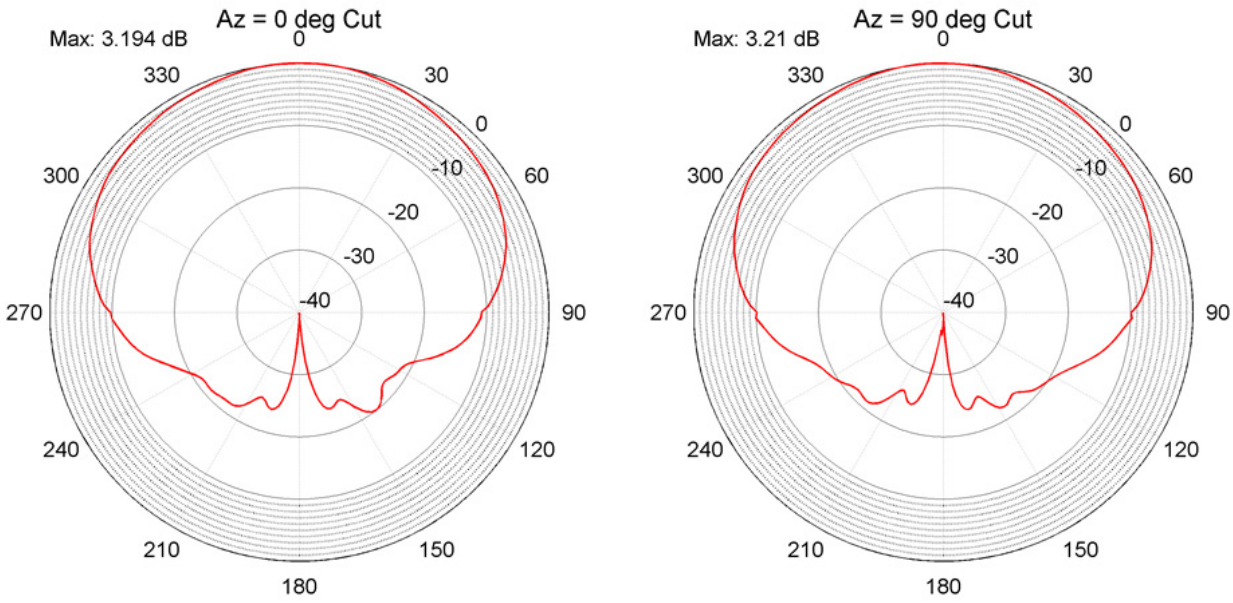
Parameter		Conditions	Min	Typ	Max	Units
Frequency Range (Passband)	GNSS Upper Band	Ant: Output = 50Ω	1559	1575.42	1610	MHz
	GNSS Lower Band		1189	1227.60	1254	
Out Impedance				50		Ω
Element Gain	GPS L1	Output = 50Ω, 4 ft G.P.	> +3			dBiC
	GPS L2		>+0			
	GLONASS L1		>+3			
	GLONASS L2		> -3			
	GLONASS L3		> -5			
	Galileo E1		> +3			
	Galileo E5		> -3			
	Galileo E5b		> +5			
LNA Gain	GPS L1	Output = 50Ω	> +30			dB
	GPS L2		> +30			
	GLONASS L1		> +30			
	GLONASS L2		> +30			
	GLONASS L3		> +30			
	Galileo E1		> +30			
	Galileo E5		>+30			
	Galileo E5b		> +30			
Output SWR		Output = 50Ω			2:1	—
Required DC Input Voltage			3		12	VDC
LNA Current		Output = 50Ω			50	mA
LNA OPIdb Compression				10		dBm
LNA OIP3				15		dBm
Noise Figure					3.0	dB
Polarization		Right Hand Circular				
Axial Ratio at Peak		< 2.8 dB Max				
Beam Width		110 +/-5° at -3dB from Peak (Free Space)				
Altitude		50,000 ft				
Lightning Protection		DC to Ground on the Antenna Element				

techsales@gpssource.com
www.gpssource.com

2 Performance Data

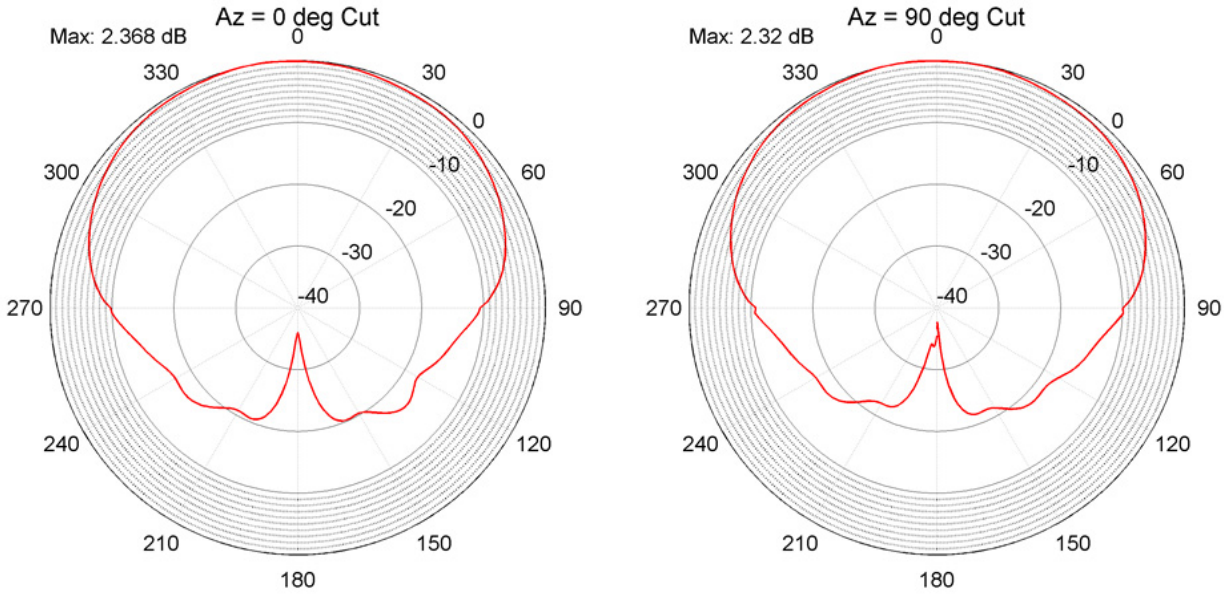
2.1 L1 Center Frequency

Figure 2-1. Far Field Plots No Ground Plane



2.2 L2 Center Frequency

Figure 2-2. Far Field Plots No Ground Plane



3 Environmental and EMI/EMC Requirements

The GNSS-3A has been designed to meet the following requirements.

Table 3-1. MIL-STD-810 & 461F Requirements

Environment	MIL-STD-Requirements	
Mechanical Vibration	810G	Mtd 514.6, Proc. I
Functional Shock	810G	Mtd 516.6, Proc. I
Crash Hazard Shock	810G	Mtd 516.6, Proc. V
High Temperature	810G	Mtd 501.5, Proc. I & II
Low Temperature	810G	Mtd 502.5, Proc. I & II
Temperature Shock	810G	Mtd 503.5, Proc. I-C
Altitude	810G	Mtd. 500.5, Proc. II & III
Humidity	810G	Mtd 507.5, Proc. II
Salt Fog	810G	Mtd 509.5
Fungus	810G	Mtd 508.6
Sand and Dust:	810G	Mtd 510.5, Proc. I & II
Conducted Emissions	461F	CE106
Radiated Emissions	461F	RE102
Radiated Susceptibility	461F	RS103

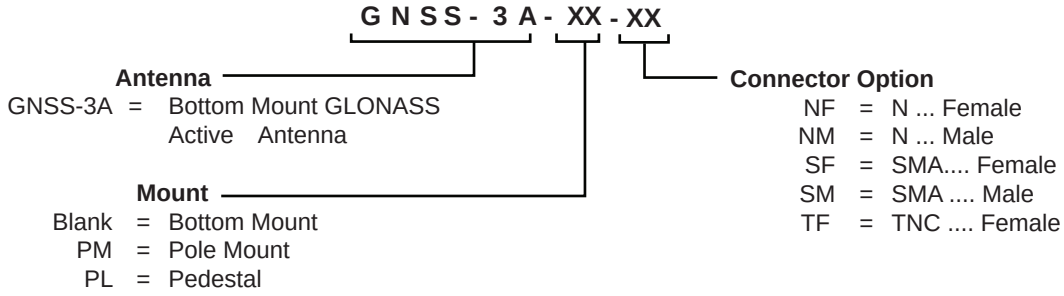
techsales@gpssource.com
www.gpssource.com

4 Product Options

Table 4-1. GNSS-3A Available Options

Type	Options	
Connector	N	Male and Female
	SMA	Male and Female
	TNC	Female
Mount	Bottom	
Color (FED-STD-595B)	White	Gloss
	Black	Matte
	Olive Green	Matte
	Desert Sand (Standard)	Matte
	Gray	Matte

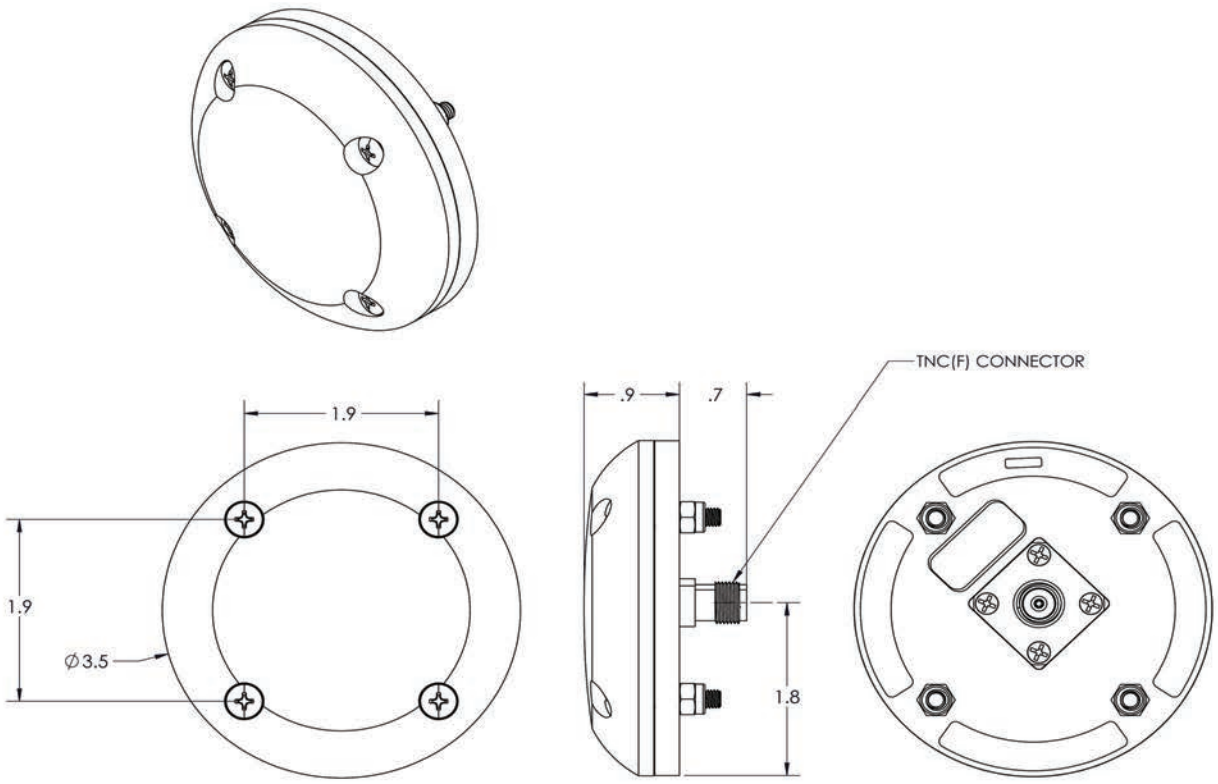
5 Product Code Decoder



Note: To have product/part codes customized to meet exact needs, contact GPS Source at techsales@gpssource.com or visit the website at www.gpssource.com.

6 Mechanical Drawing

6.1 GNSS-3A GNSS Active Antenna



GPS Source Part No.	Finish	Size	Mass	Tolerances	
GNSS-3A	**N/A**	**C**	.59 lbs	Linear .X = ± .1 .XX = ± .01 .XXX = ± .005	Angular ±1° RADII See Linear
Description **GNSS ACTIVE BOTTOM MOUNT TNC(F) ANTENNA**	Material SEE BOM	3rd Angle Projection			

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

techsales@gpssource.com
www.gpssource.com

GPS LIVE INSIDE

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

AS9100C:2009 and ISO 9001:2008 Compliant Company