



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, L5
 - GLONASS L1, L2 and L3
 - GALILEO E1, E5b, E6
- Waterproof
- Excellent gain
- Small Form Factor
- Bottom Mount

OPTIONS

The GNSS-3A 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.

GNSS-3A Data Sheet

059-FAN-AHD-EEY-RYZ-005
12/23/2019

AS9100 and ISO 9001 Compliant Company

1 GNSS-3A Specifications

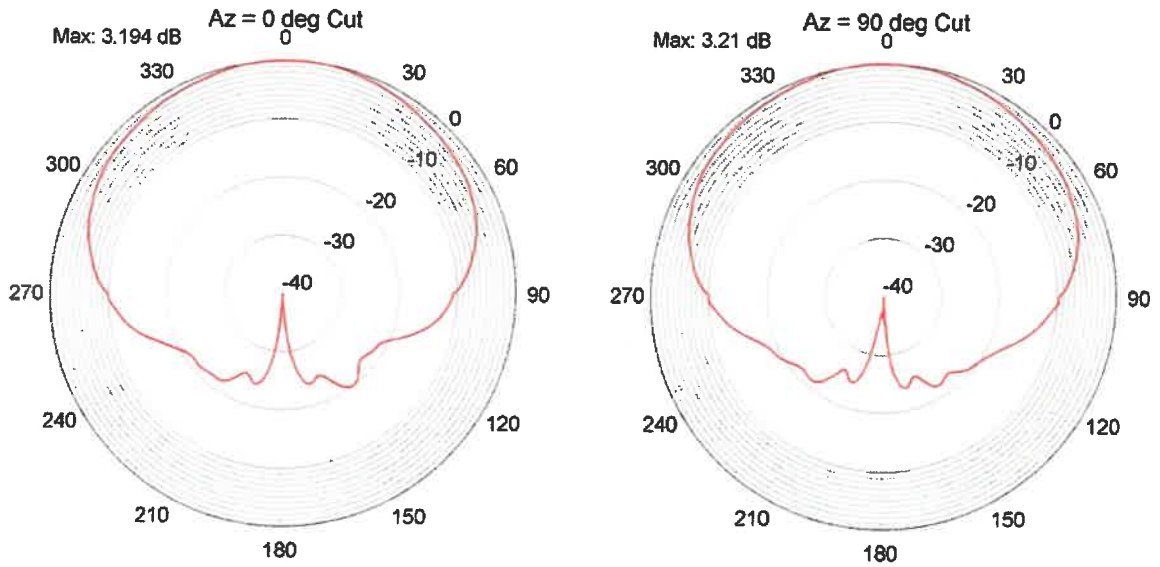
Table 1-1. Electrical Specifications
Operating Temperature -54°C to 71°C

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			
	GPS L5		> -5			
	GLONASS L1		> +3			
	GLONASS L2		> -3			
	GLONASS L3		> -5			
	Galileo E1		> +3			
	Galileo E5		> -3			
	Galileo E5b		> +5			
	Galileo E6		> -3			
LNA Gain	GPS L1	Output = 50Ω	> +30			dB
	GPS L2		> +30			
	GPS L5		> +30			
	GLONASS L1		> +30			
	GLONASS L2		> +30			
	GLONASS L3		> +30			
	Galileo E1		> +30			
	Galileo E5		> +30			
	Galileo E5b		> +30			
	Galileo E6		> +30			
Output SWR	Output = 50Ω			2:1	—	
Required DC Input Voltage		3		12	VDC	
LNA Current	Output = 50Ω			50	mA	
LNA OP1dB 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					

2 Performance Data

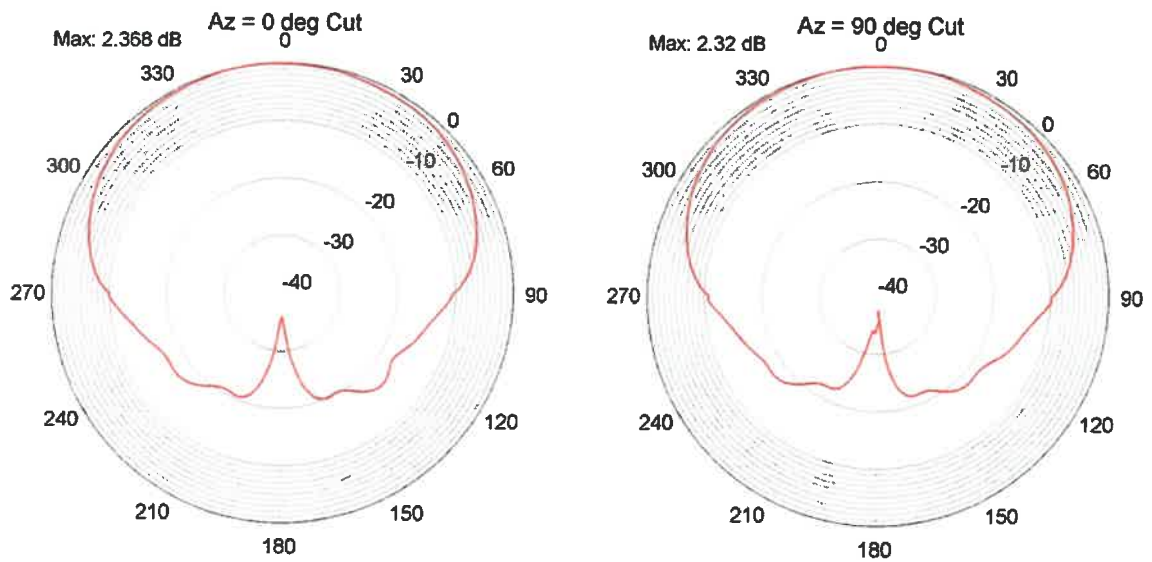
2.1 L1 Center Frequency

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

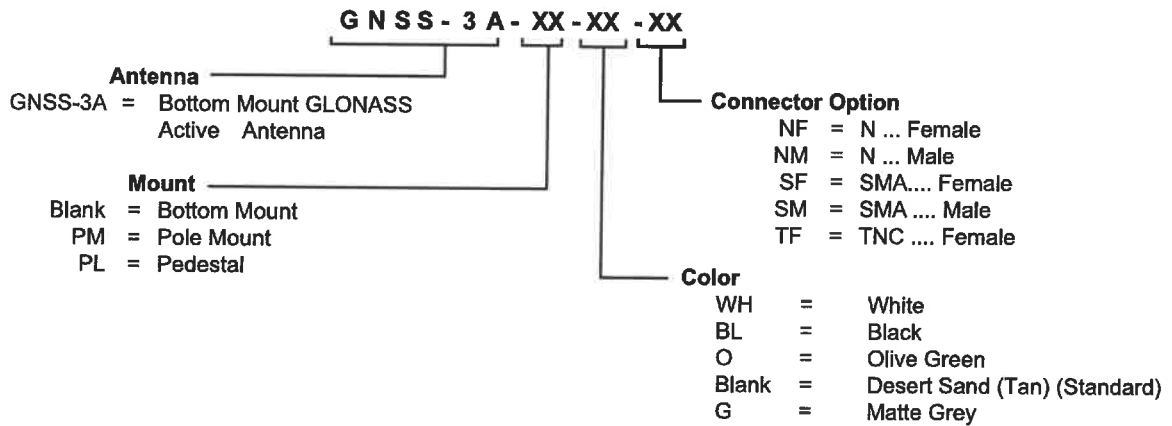
Environment	MIL-STD-Requirements	
Mechanical Vibration	810G	Mtd 514.6, Proc. I
Functional Shock	810G	Mtd 516.6, Proc. I
Crash Hazard Shock	810G	Mtd 516.6, Proc. V
High Temperature	810G	Mtd 501.5, Proc. I & II
Low Temperature	810G	Mtd 502.5, Proc. I & II
Temperature Shock	810G	Mtd 503.5, Proc. I-C
Altitude	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

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

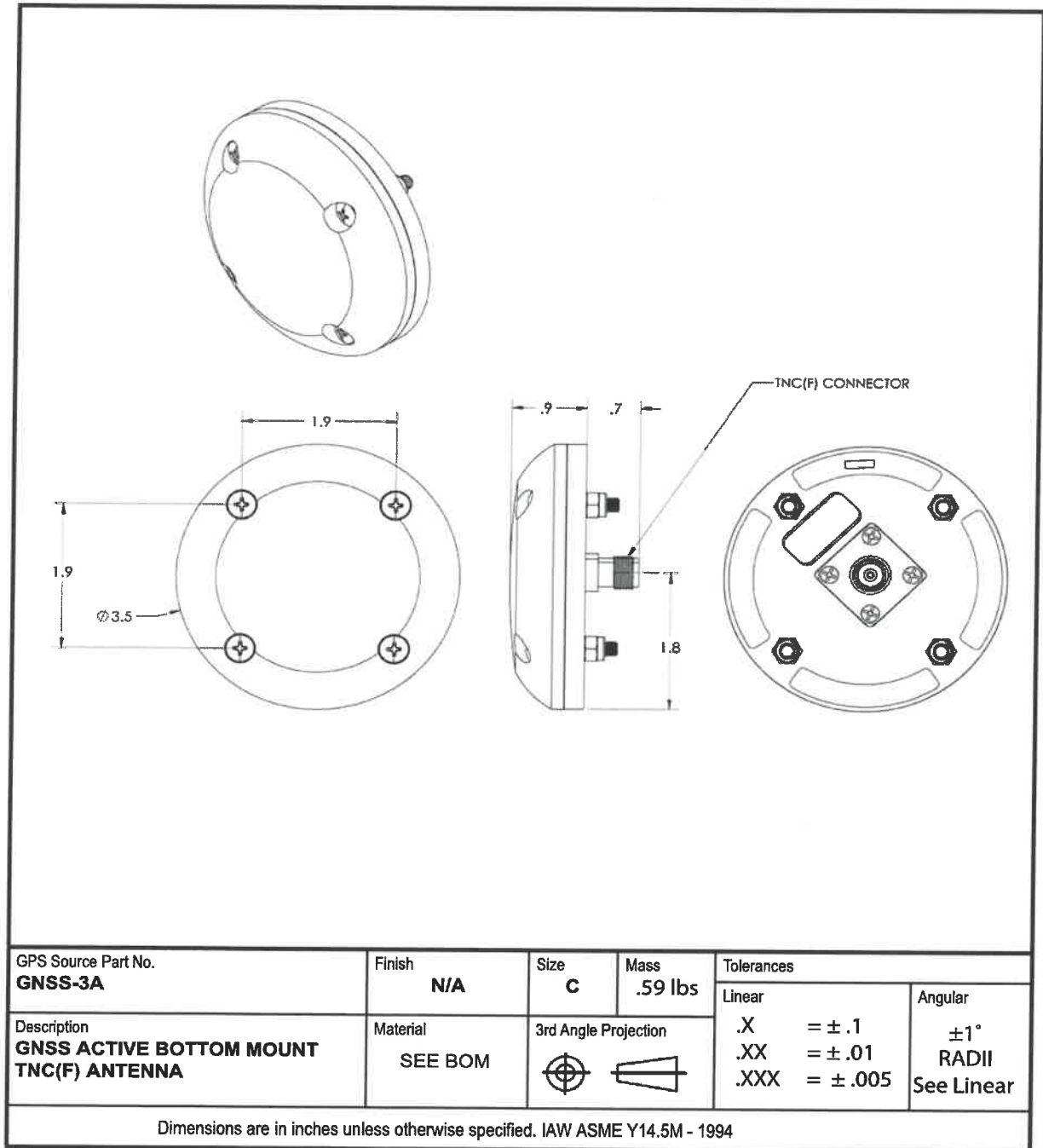
5 Product Code Decoder



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

6 Mechanical Drawing

6.1 GNSS-3A GNSS Active Antenna





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