

MRPA-3SA

Horizon-Nulling GNSS Active Antenna, Side Mount

Description

The MRPA-3SA is a professional grade, active Horizon-Nulling GNSS antenna designed for long term reliability. Based on the acclaimed GNSS antenna base model, the MRPA is designed to null terrestrial interferences arriving at low elevation angles.

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 MRPA-3SA is available with a side mount connector and multiple colors (per FEDSTD-595B).

Features

- Military and Civilian Applications
- GNSS Bands:
 - GPS L1, L2, L5
 - GLONASS L1, L2, and L3
 - GALILEO E1, E5, E6
- Waterproof
- Improved gain at zenith over standard FRPA
- Minimum 20 dB of rejection at 10 to 20 degree elevation angles

Options

The MRPA-3SA comes with many available options to meet specific needs. Available product options are listed on Page 3.



MRPA-3SA-SF

1 MRPA-3SA 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: 50 Ω	1559	1575.42	1610	MHz
	GNSS Lower Band		1189	1227.60	1254	
Out Impedance				50		Ω
Element Gain	GPS L1	Output = 50 Ω	>+5.5			dBIC
	GPS L2		>+2			
	GPS L5		>+0			
	GNSS L1		>+5.5			
	GNSS L2		>+2			
	GNSS L3		>+1.5			
	Galileo E1		>+4.5			
	Galileo E5		>+0			
	Galileo E6		>+1			
Element Gain	GPS L1	Output = 50 Ω	>+30			dB
	GPS L2		>+30			
	GPS L5		>+30			
	GNSS L1		>+30			
	GNSS L2		>+30			
	GNSS L3		>+30			
	Galileo E1		>+30			
	Galileo E5		>+30			
	Galileo E6		>+30			
Output SWR	Output = 50 Ω			2:1	-	
Required DC Input Voltage		3.3		12	VDC	
LNA Current	Output = 50 Ω			50	mA	
LNA OP1dB Compression			10		dBm	
LNA OIP3			15		dBm	
Noise Figure				3.0	dB	
Polarization	Right Hand Circular					
Axial Ratio at Peak	< 2.0 dB Max					
Beam Width	60 ° ± 5 ° at 3 dB					
Altitude	50,000 ft					
Lightning Protection	DC to Ground on the Antenna Element					

2 Performance Data

2.1.1 L1 Center Frequency

Figure 2.1.1. Far Field Plots No Ground Plane

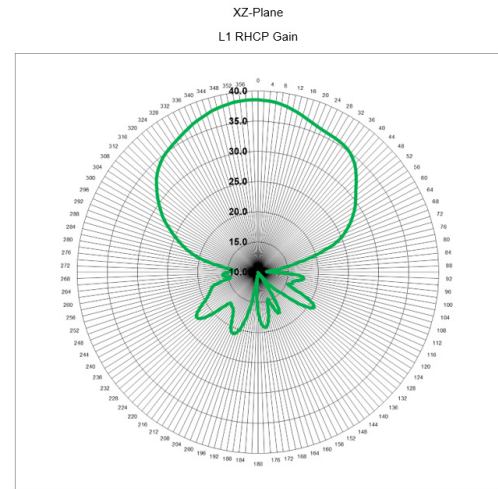
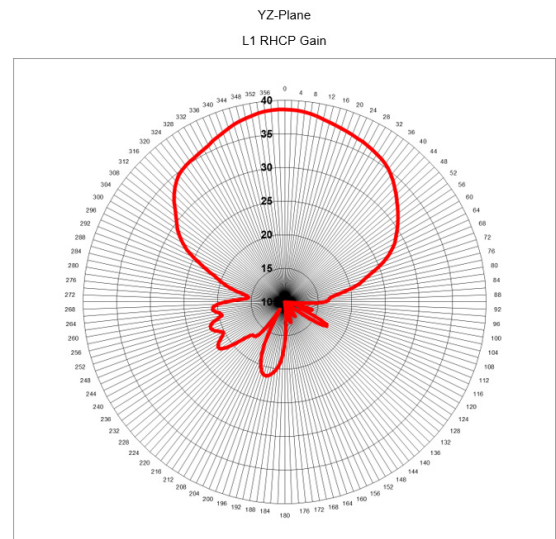


Figure 2.1.1.2. Far Field Plots No Ground Plane



3 Environmental and EMI/EMC Requirements

The MRPA-3SA has been designed to meet the following requirements.

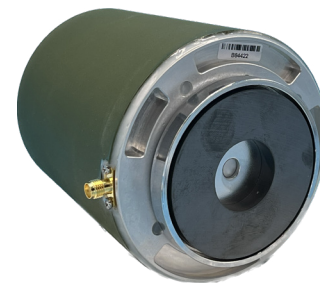
Table 3-1. MIL-STD-810 & 461F Requirements

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

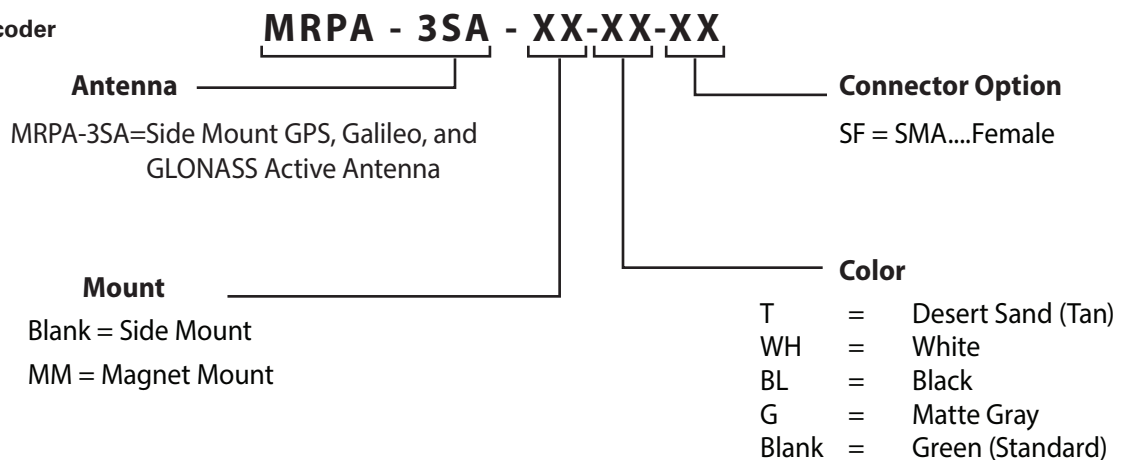
Table 4-1. MRPA-3SA Available Options

Type	Options	
Connector	SMA	Female
Mount	Side	
	Magnet	
Color (Fed-STD-595)	White	Gloss
	Black	Matte
	Green (Standard)	Matte
	Desert Sand	Matte
	Gray	Semi-gloss
Antenna Mounting Plate	AP-3A-RA2	



MRPA-3SA-MM-SF

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

MRPA-3A GPS, Galileo, GLONASS Active Antenna, Side Mount

