

Draft Specification

- Part No. : **A.90.A.10451111**
- Product Name : Bolt – High Gain GPS/GLONASS/GALILEO Permanent Mount Antenna with High Out of Band Rejection
- Features : 28.5dB GPS Gain, 27dB GLONASS Gain
Rejection: >85dB@850/900MHz,
>65dB@1800/1900MHz
Lightning Induced Surge Protection
IEC 61000-4-5 (Class 4) 4kV
Wide band input voltage
Cable: 1045mm RG174
Connector: Hirose GT5 RG.174 Grey
Dims: 94.3*32.7*14.6mm
RoHS Compliant





1. Introduction

The A.90 is a high gain GPS/GLONASS antenna that features very high out of band rejection and can handle large bursts of power from nearby transmitters. These characteristics make the A.90 ideal for applications where the antenna will be placed near high-power transmitters, such as cellular base stations or radar systems.

The A.90 features excellent rejection across all non-GNSS frequencies to prevent overdriving or damaging your GPS receiver. At the 850/900MHz cellular bands, for example, the A.90 exhibits greater than 85dB of rejection. At the 1800/1900MHz cellular bands, it exhibits >65dB, making it best in class when out of band interference is a concern. Even with this excellent out of band attenuation, the A.90 maintains a low noise figure of 2.7dB for GPS and 3.2dB for GLONASS, making it an ideal solution for applications with longer cable runs.

The A.90 also features protection against lightning induced surges that are common in tower equipment, according to IEC 61000-4-5 (Class 4) 4kV.

Cable lengths and connector types are customizable. Contact your regional Taoglas sales office for support.

2. Specifications

Ceramic Patch Specification		
Antenna Dimension	25x25x4mm	
Ground Size	25x25mm	
Centre Frequency	1575.42±3MHz	1602MHz
Bandwidth	10MHz	
Return loss	<- 10	
Efficiency (%)	78.77	78.97
Average gain(dBi)	-1.04	-1.03
Peak gain(dBi)	5.03	5.2
VSWR	1.92 Max.	
Axial ratio	3dB Typ.	
Gain @ Zenith	2dBi Typ.	
Impedance	50Ω	
Polarization	RHCP	

Not with cable loss

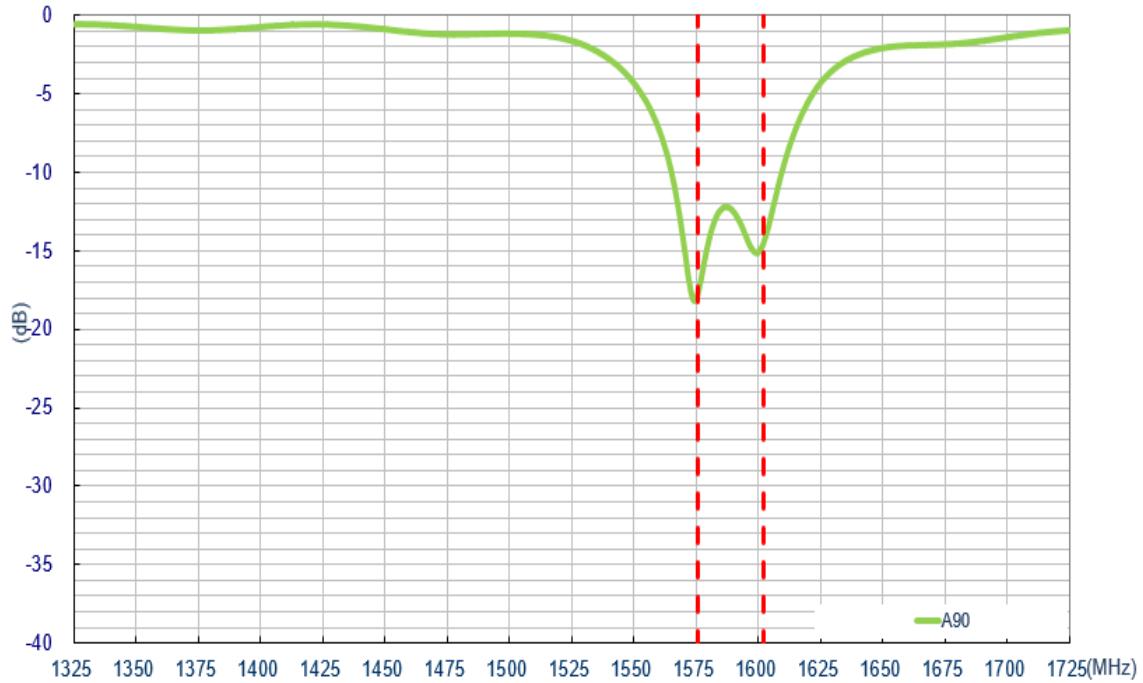
LNA Specification		
Frequency	1575.42MHz	1602MHz
Impedance	50Ω	
VSWR	1.92 Max.	
Return Loss	< -10	
Gain @3.3V	28.63dB Min	27.84dB Min
DC Power Input	+2.3 to +12V	
Noise Figure	2.69dB Typ.	3.17dB Typ.
Power Consumption	TBC	
Operating Temp	-30°C ~ +80°C	
Storage Temp	-30°C ~ +80°C	

3. Antenna Test Setup

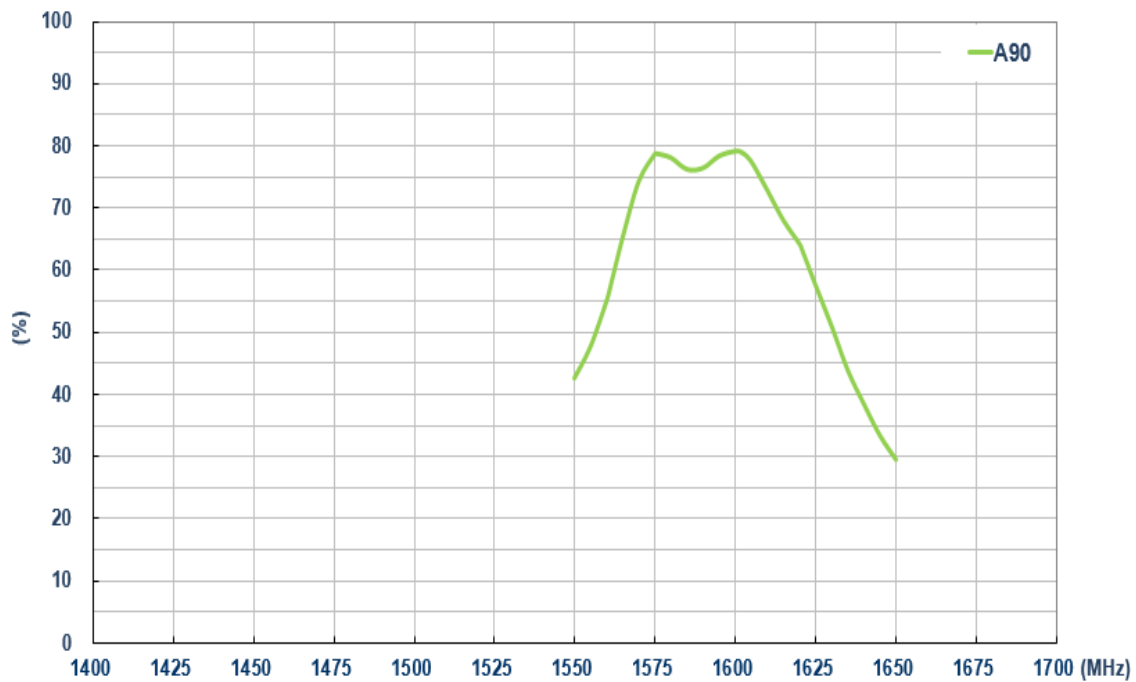


4. Antenna Characteristics

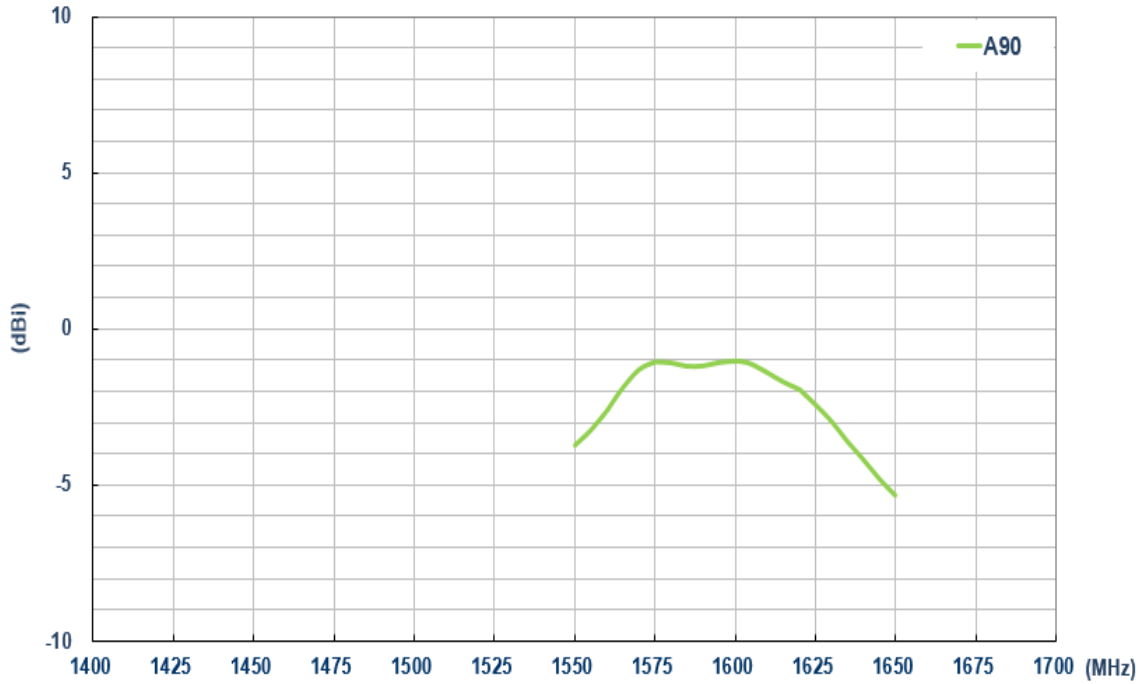
4.1. Return Loss (Passive Antenna)



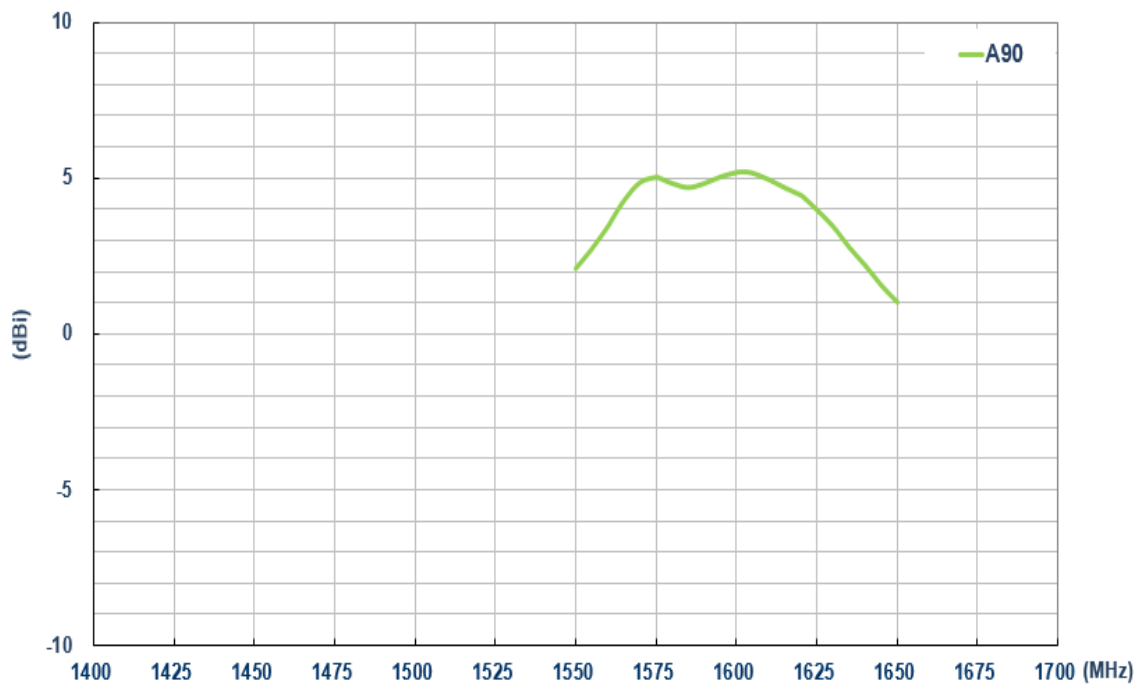
4.2. Efficiency (Passive Antenna)



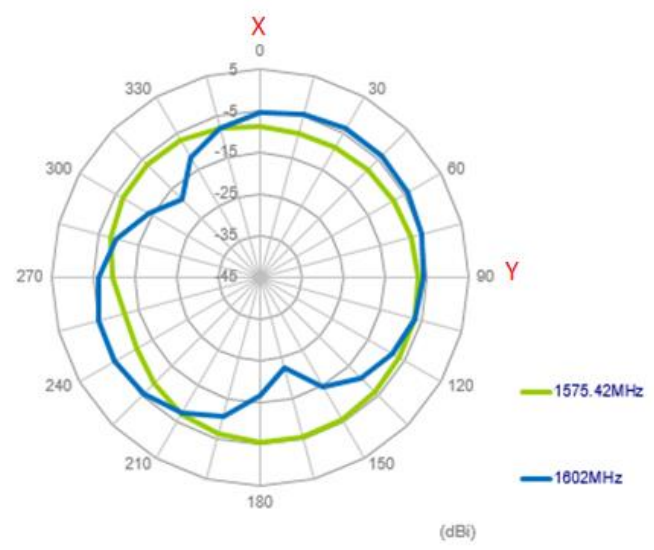
4.3. Average Gain (Passive Antenna)



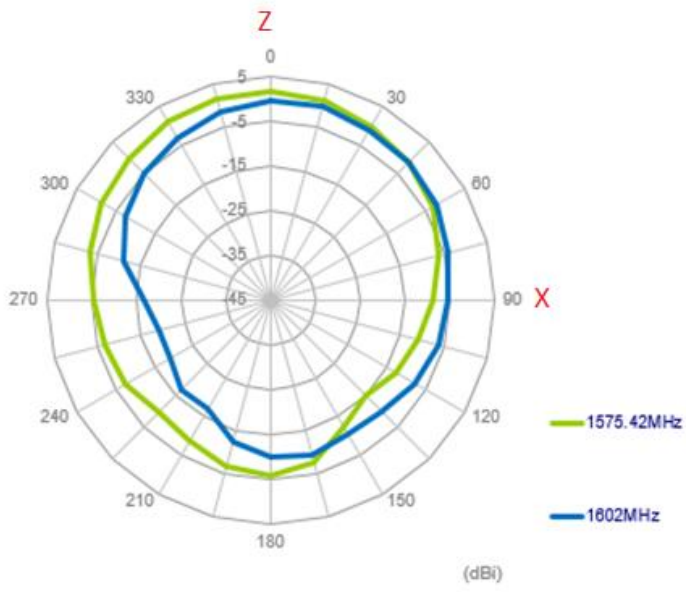
4.4. Peak Gain (Passive Antenna)



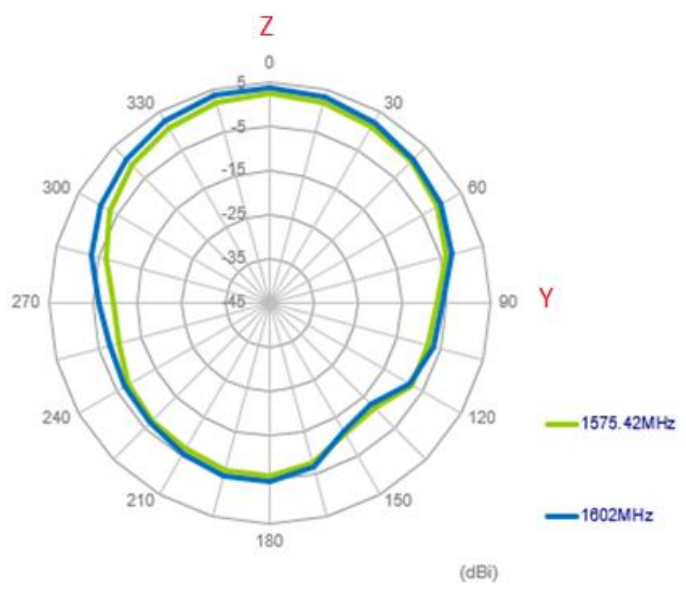
4.5. 2D Radiation Pattern XY Plane



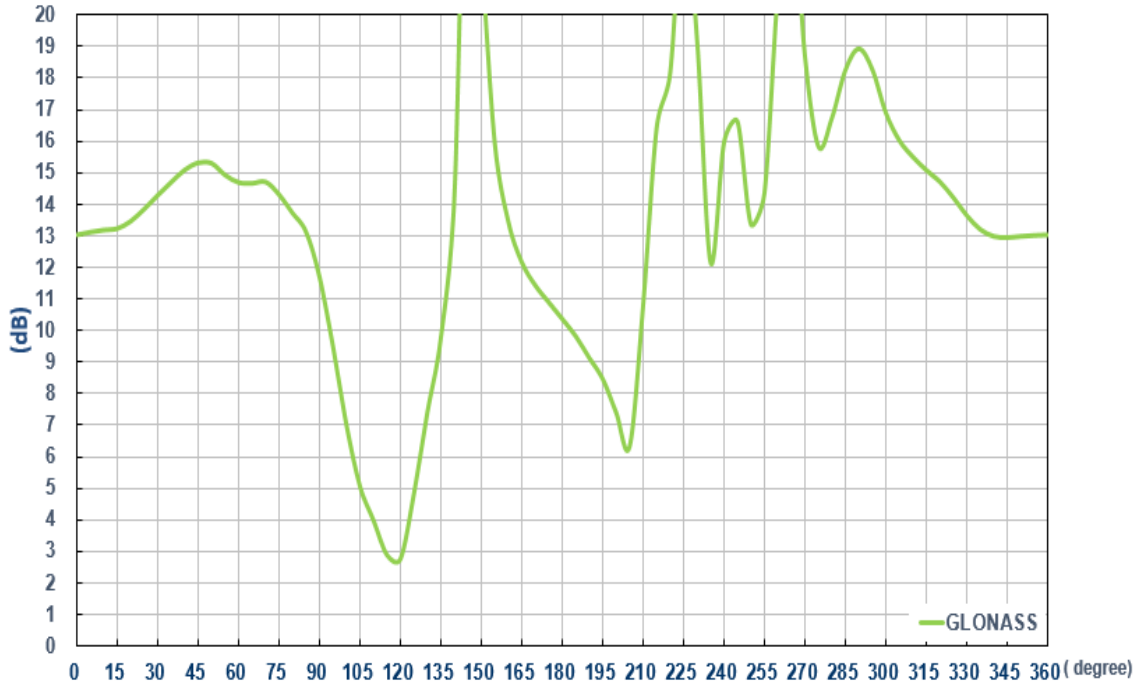
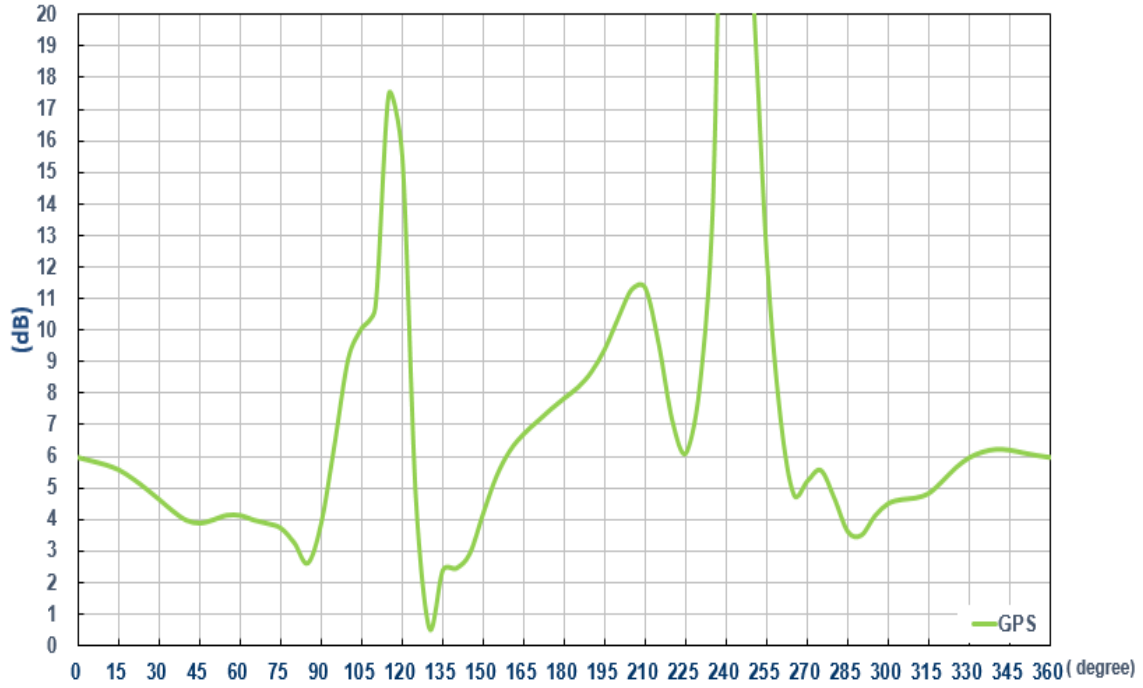
XZ Plane



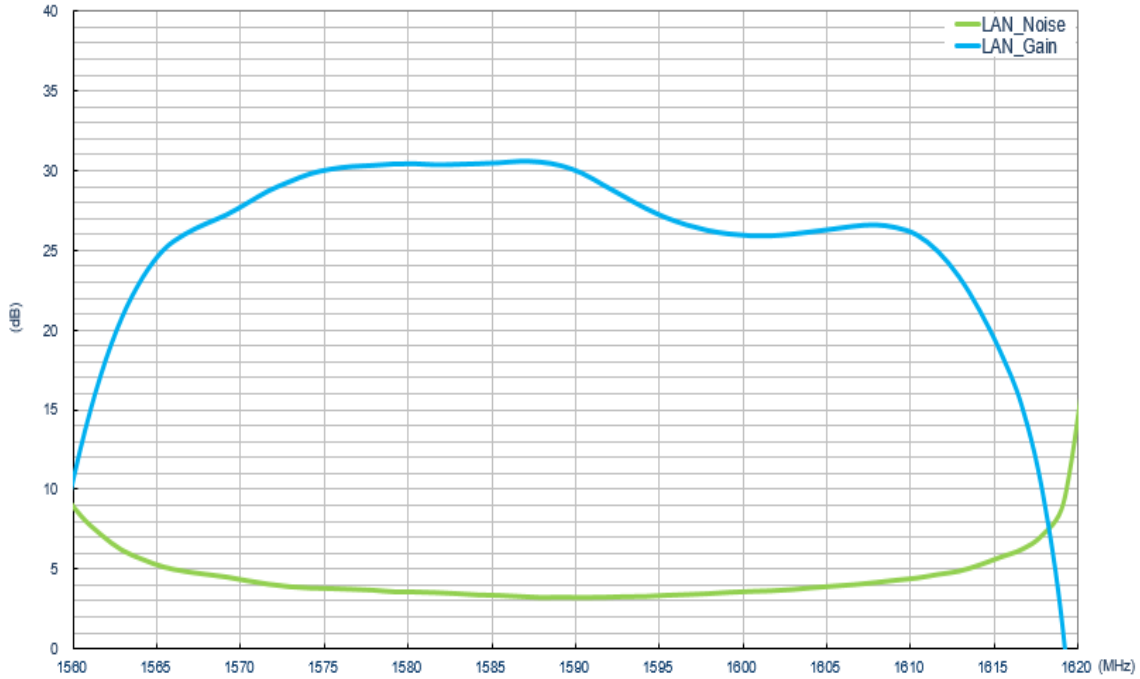
YZ Plane



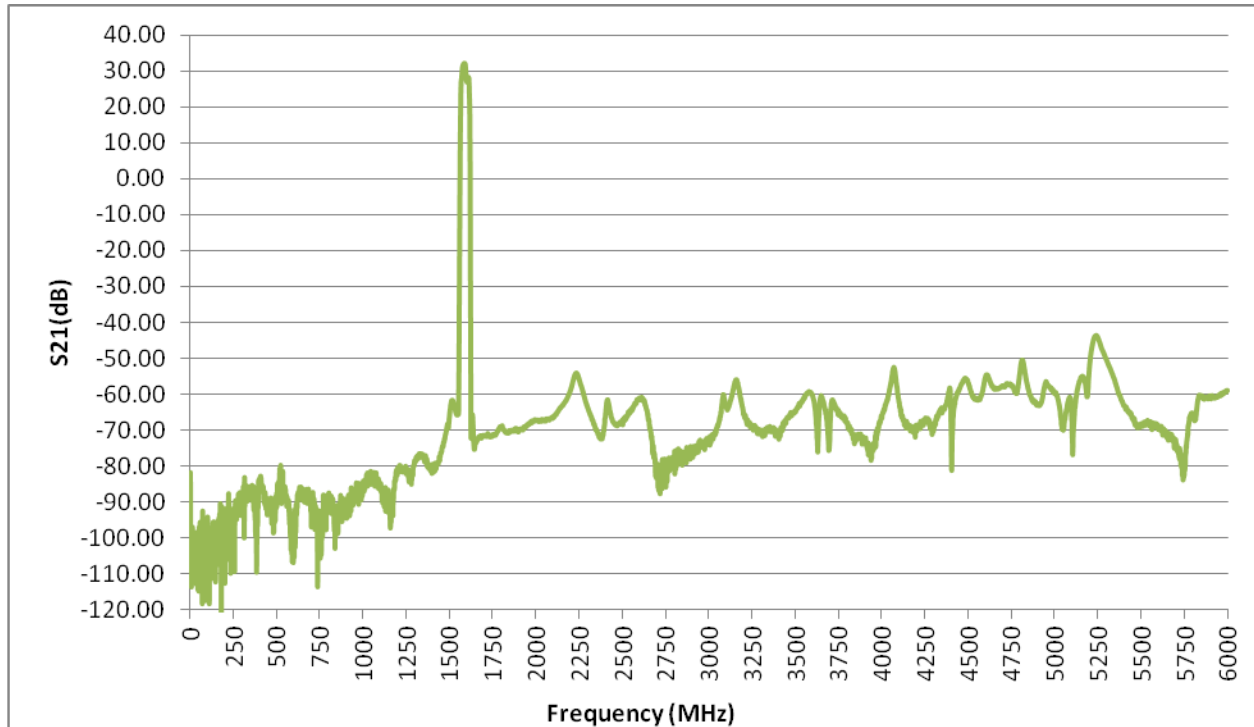
4.6. Axial Ratio



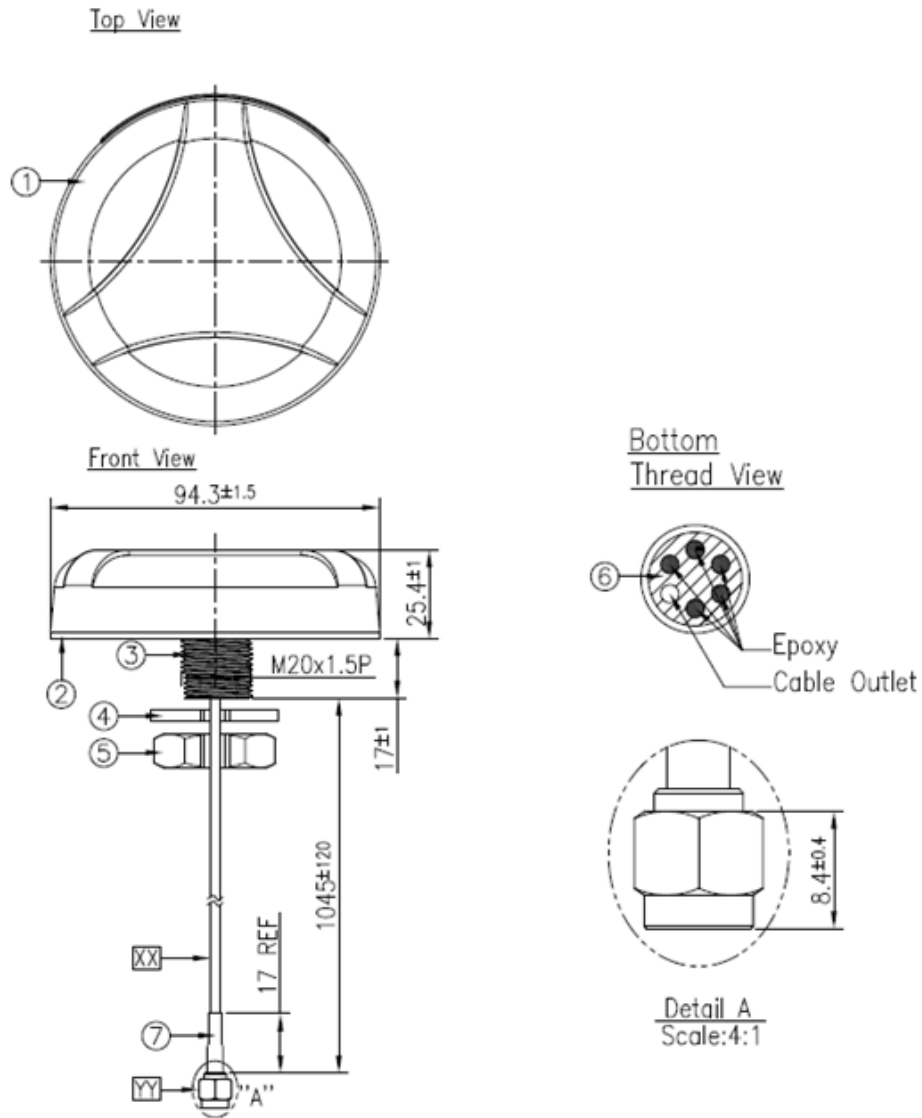
4.7. LNA Gain and Noise Figure @ 3.0V



4.8. Out-of-Band Rejection @ 3.0V



5. Mechanical Drawing (Unit: mm)



	Name	Material	Finish	QTY
1	A.90 Housing	ASA	Black	1
2	Double Sided Adhesive(Black Foam)	3M9448+CR4.305	White Liner	1
3	Mini ST Base	Zinc Alloy	Ni Plated	1
4	Nut_M20x1.5Px10H Cut	Steel	Zn-Ni Plated	1
5	Washer_Cut	Steel	Zn-Ni Plated	1
6	Cable Rubber_ST_6IN1	Silicone Rubber	Black	1
7	Heat Shrink Tube	PE	Black	1
	Name	Spec	Finish	QTY
XX	Cable Type	RG174	Black	1
YY	Connector Type	SMA(M)ST	Au Plated	1



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