



LTE Full Band & GNSS External Antenna
Model: HB70D
External Antenna
Product Number: H2MA000D100100

Preliminary Engineering Specification

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1 Introduction

The HB70D External antenna combines 2 of high performance cellular LTE antenna and GNSS navigation antenna, covering LTE full band 698 to 2700MHz & 3400 to 3800 MHz and GPS-GLONASS-GALILLO-Beidou navigations.

The HB70D is ideal for use on non-metal surface.

Features

- *GPS-GLONASS-GALILLO High gain LNA up to 30 dB
- *Covering cellular LTE 698 to 960 & 1710 to 2700 & 3400 to 3800MHz
- *DC power input 3V to 24V
- *RoHS compliant.

Applications

- * Automotive telematics
- * Fleet management.
- * Teleportation.

2 Electrical Specifications

CELLULAR/4G LTE ANTENNA					
Frequency (MHz)	698~960	1710~2170	2300~2400	2500~2700	3400~3800
Efficiency (%)	60	60	43.2	40	40
Average Gain(dB)	-2.2	-2.2	-3.7	-4	-4
Peak Gain(dBi)	2.4	2.2	1.6	2.6	3
Impedance(Ω)	50				
Polarization	Linear				
VSWR	<3				
Cable	2M KSR200 low loss cable				
Connector	SMA(M) ST				

Introduction	Electrical Specifications	Cellular/LTE Antenna Characteristics	GNSS Navigation Antenna Characteristics	Antenna Dimensions (Unit: mm)
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GNSS NAVIGATION ANTENNA			
Navigation	BeiDou	GPS/QZSS/GALILEO	GLONASS
Center Frequency(MHz)	1561	1575.42	1602
Gain(dBiC)	0.5 Typ.		
VSWR	< 2.0		
Impedance(Ω)	50		
Polarization	RHCP		
Cable	2M RG174		
Connector	SMA(M) ST		
LNA ELECTRICAL PROPERTIES			
Gain(dB)	30 Typ.		
Noise Figure(dB)	1.8 Typ.		
Output VSWR	< 2.0		
DC Input Voltage(V)	3~24		
Current Consumption	9 mA Typ. @ 3V		

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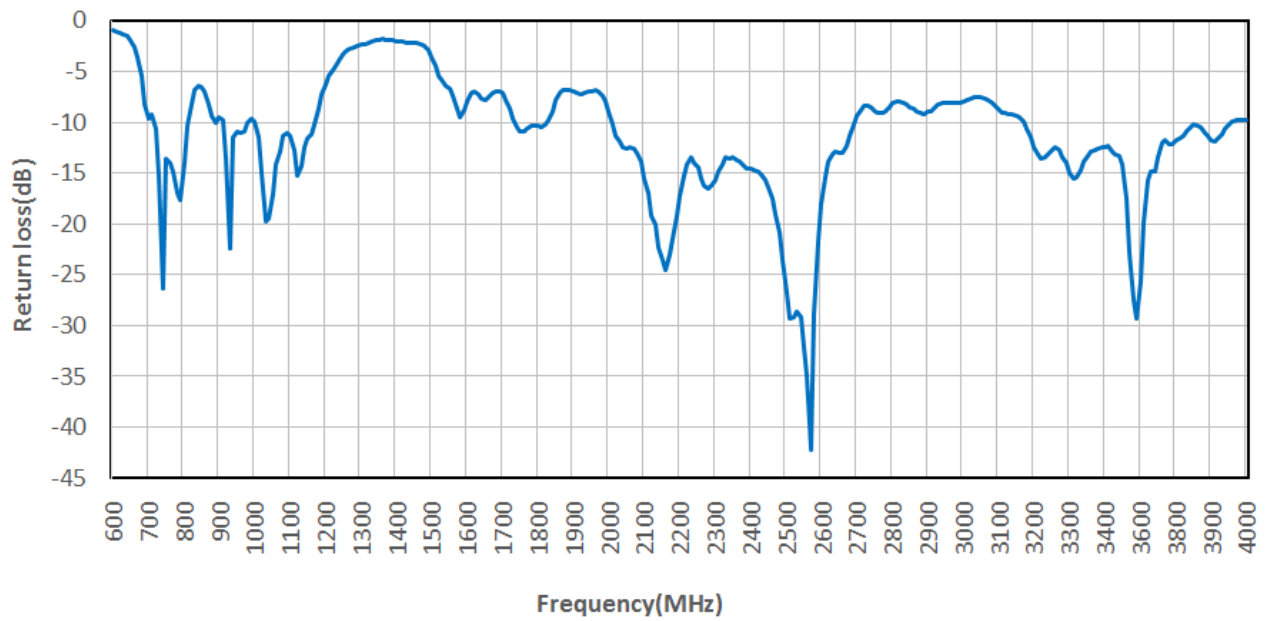
MECHANICAL	
Antenna Dimensions	70 * 70 * 17 mm
Waterproof	IP67
Cable type*	LTE : KSR-200 GNSS NAVIGATION : RG-174
Cable Length*	2M
Connector*	SMA(M) ST
Mounting Type	Adhesive mount

*The connector, cable length, and cable type can be tailor made upon request.

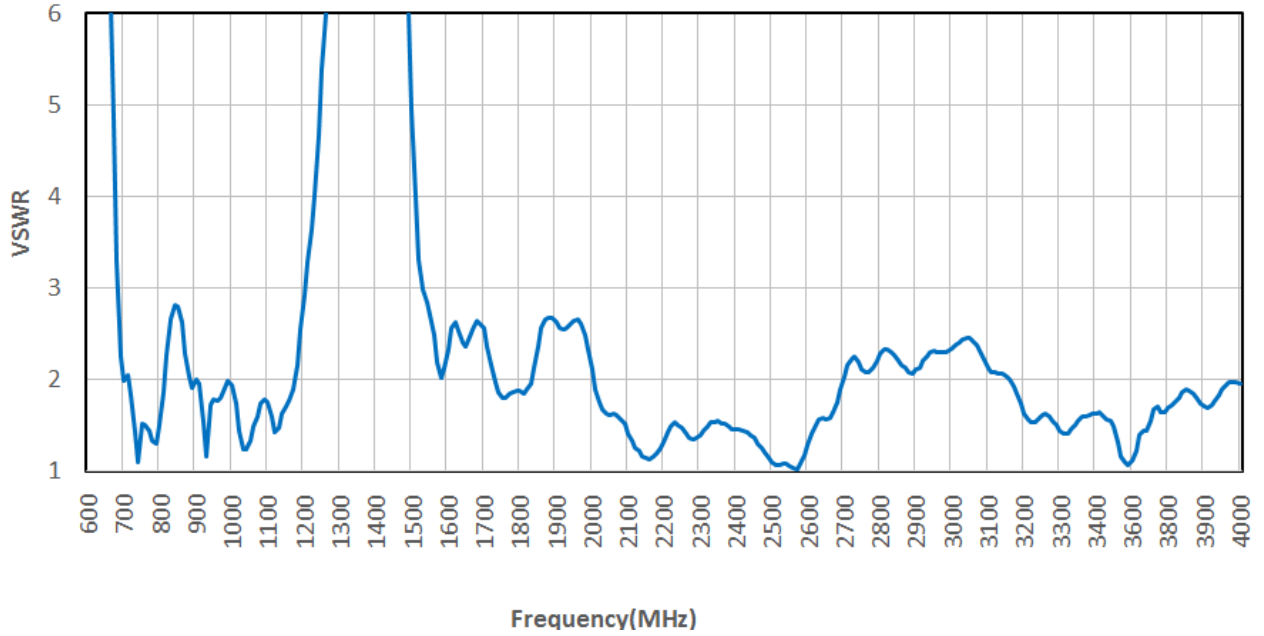
ENVIRONMENTAL	
Operation Temperature	-40~+85 °C
Storage Temperature	-40~+85 °C

3 Cellular/LTE Antenna Characteristics

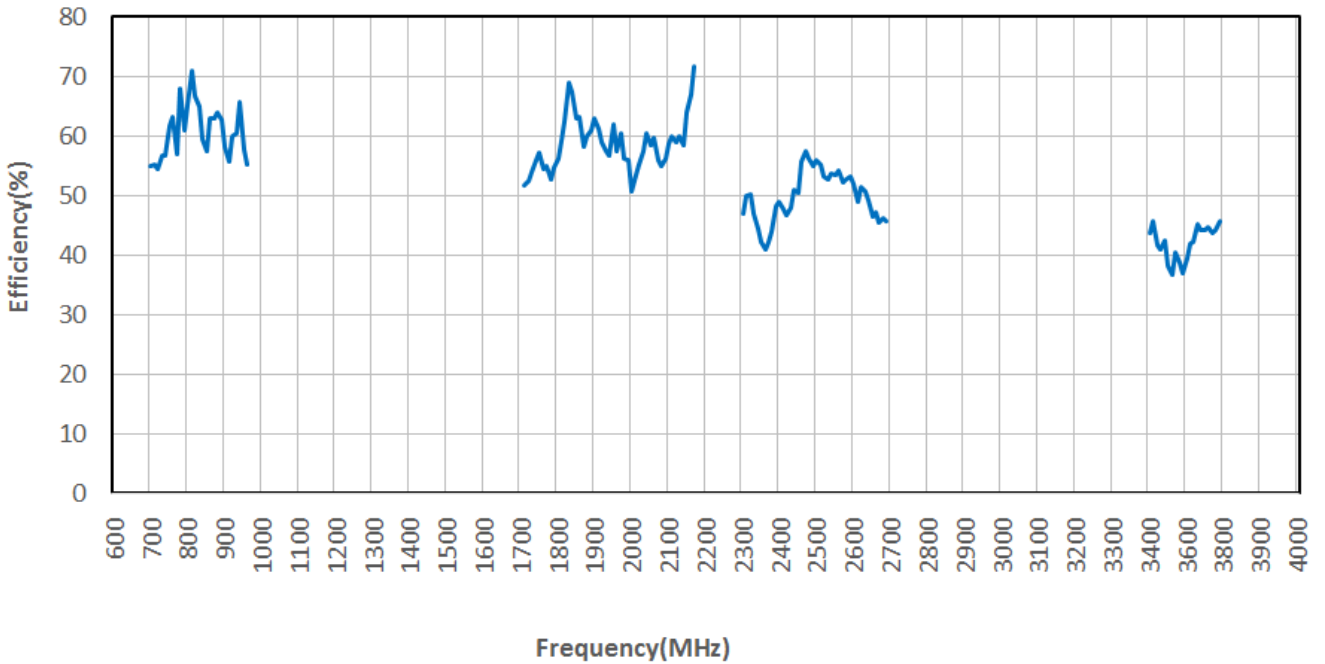
3.1 Return Loss



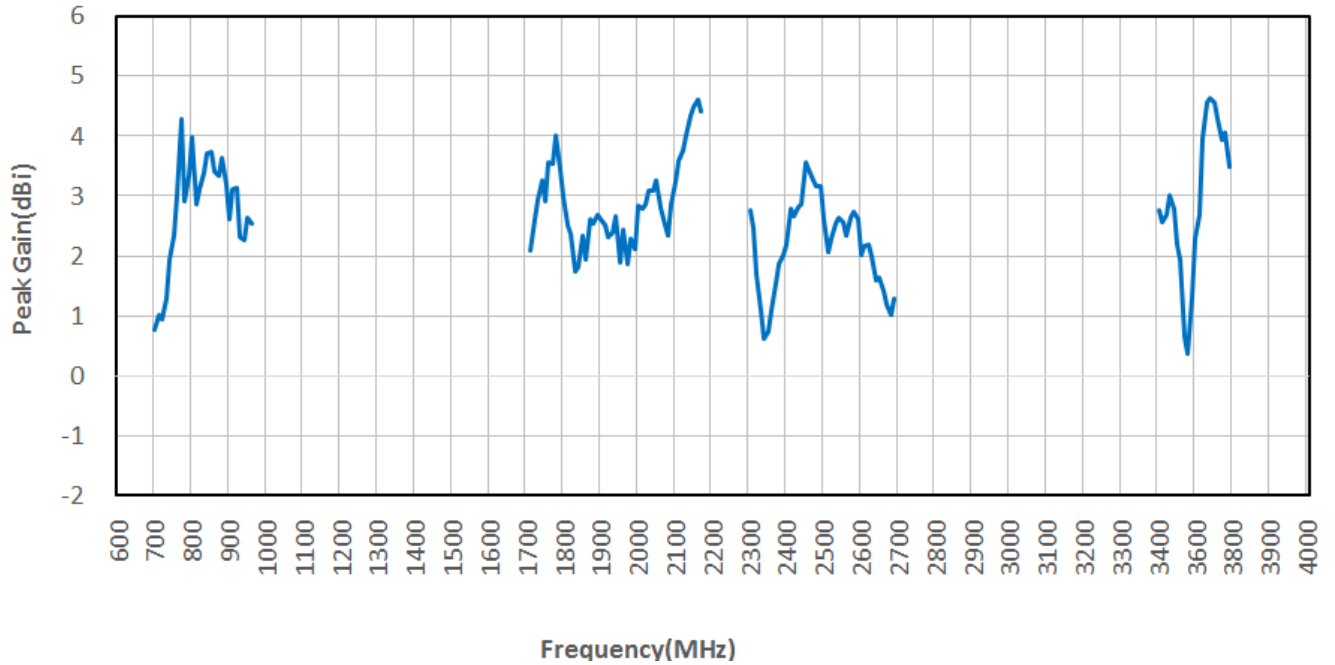
3.2 VSWR



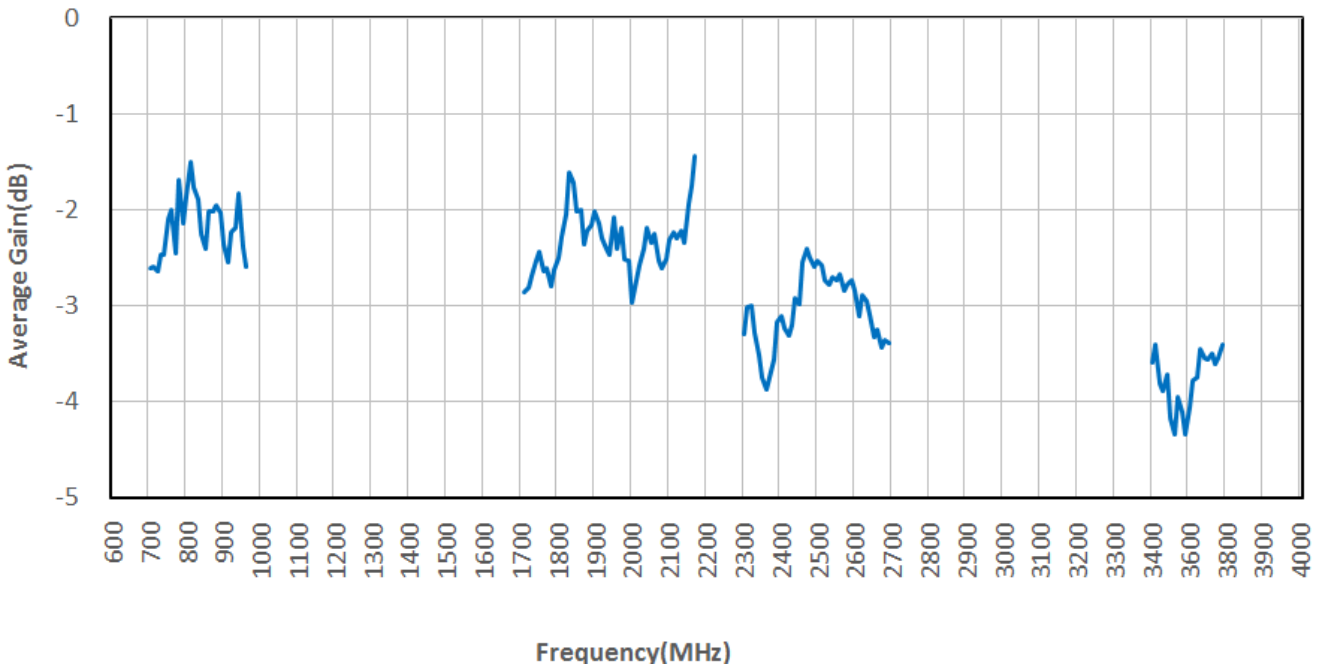
3.3 Efficiency



3.4 Peak Gain

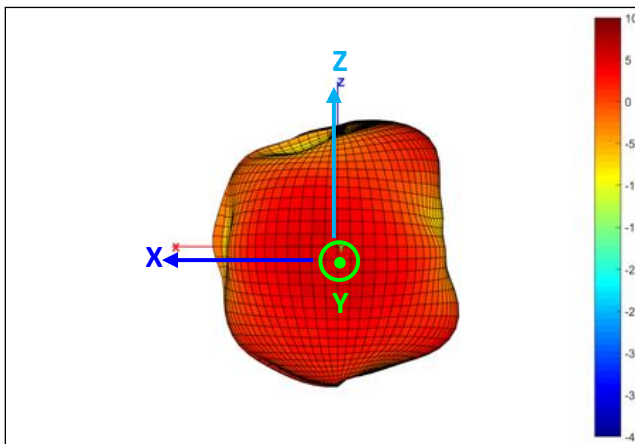
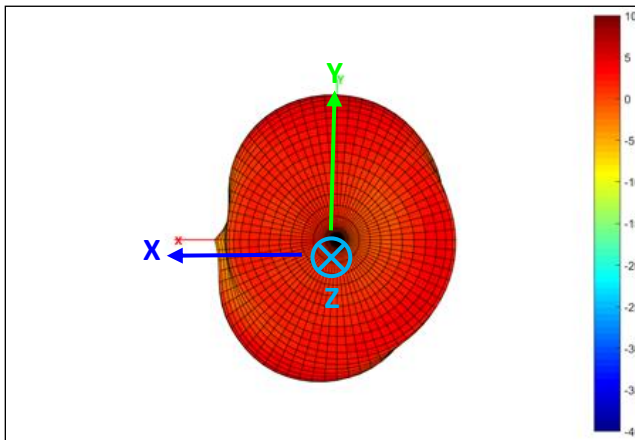
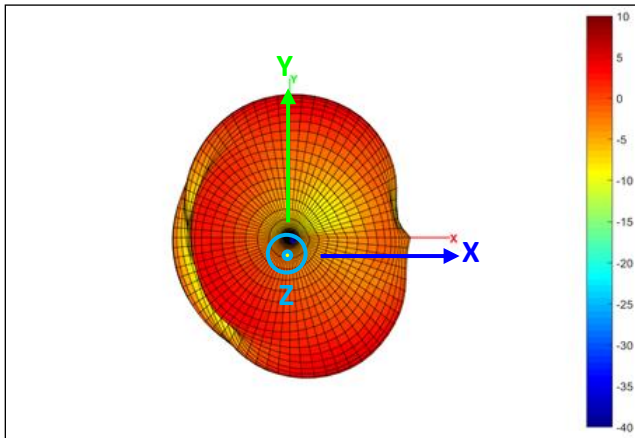


3.5 Average Gain

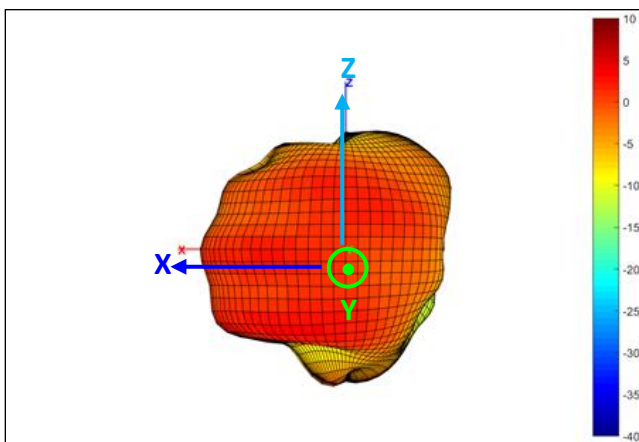
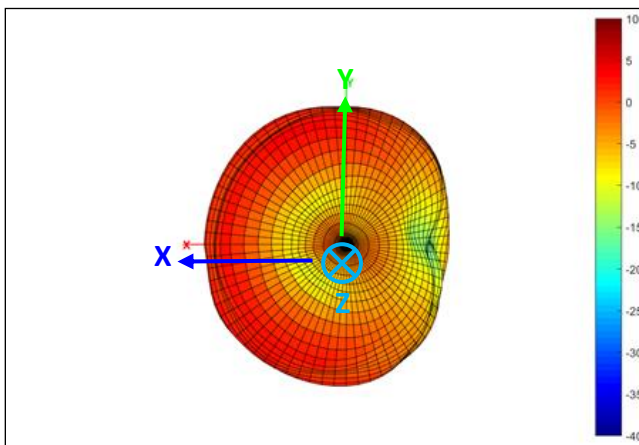
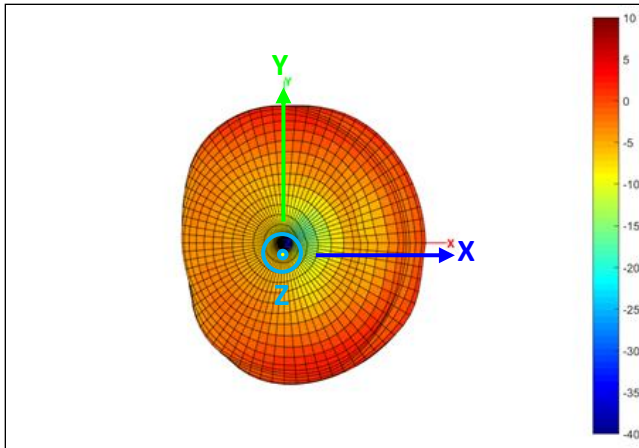


3.6 Radiation Gain Pattern

3.6.1. 3D Radiation Gain Pattern @ 830 MHz (Unit: dBi)

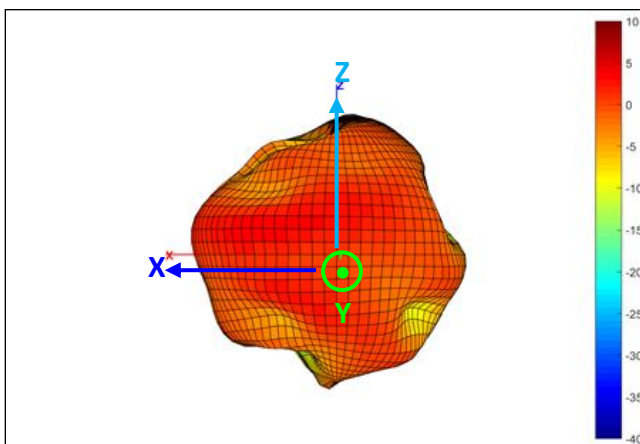
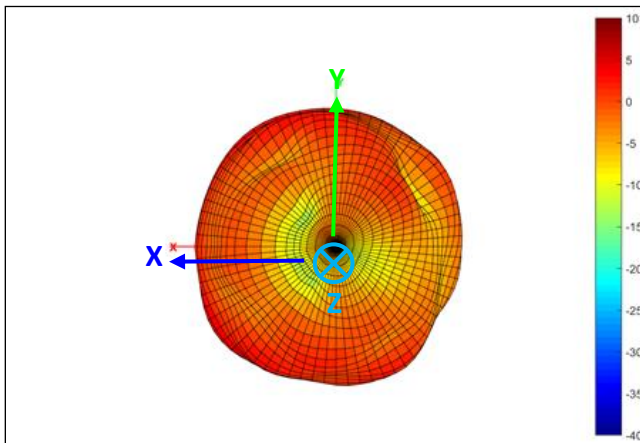
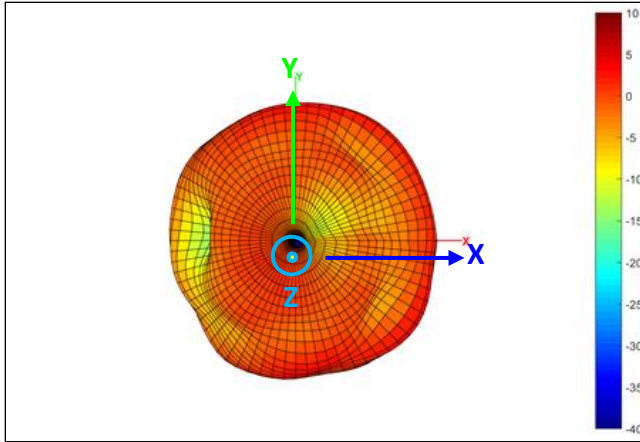


3.6.2. 3D Radiation Gain Pattern @ 1940 MHz (Unit: dBi)

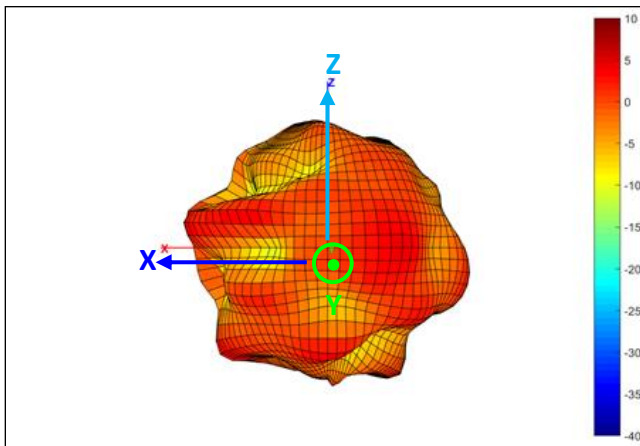
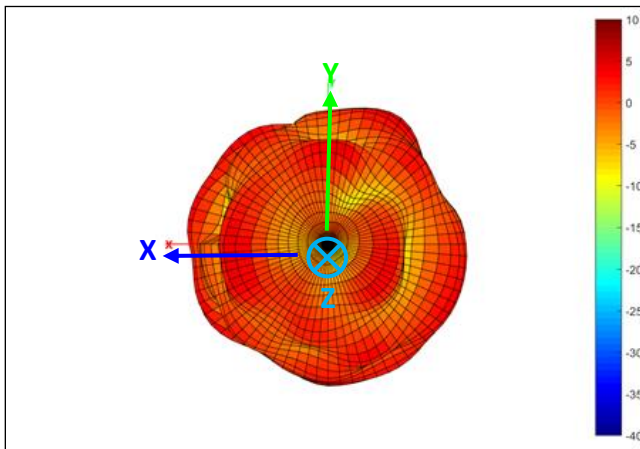
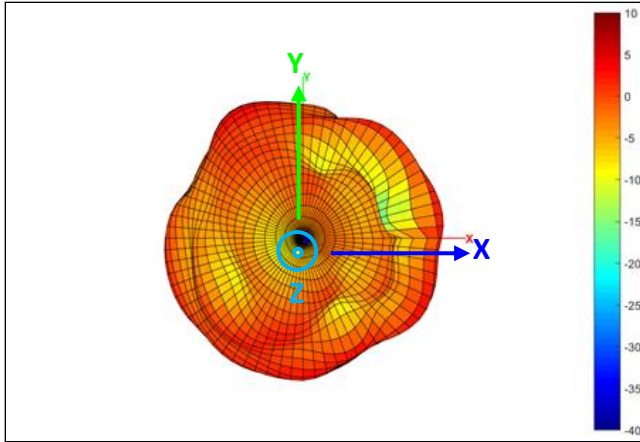


Introduction	Electrical Specifications	Cellular/LTE Antenna Characteristics	GNSS Navigation Antenna Characteristics	Antenna Dimensions (Unit: mm)
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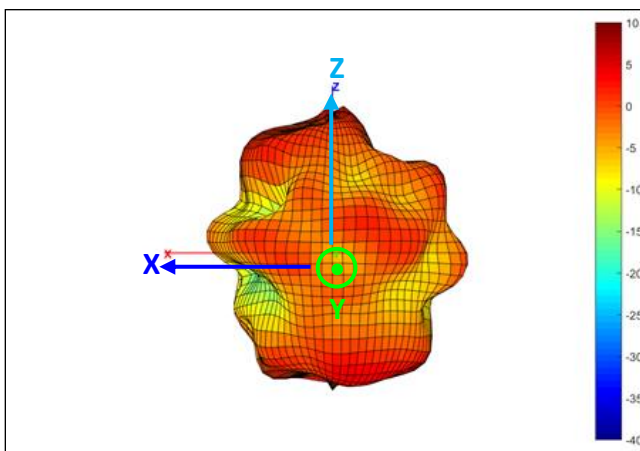
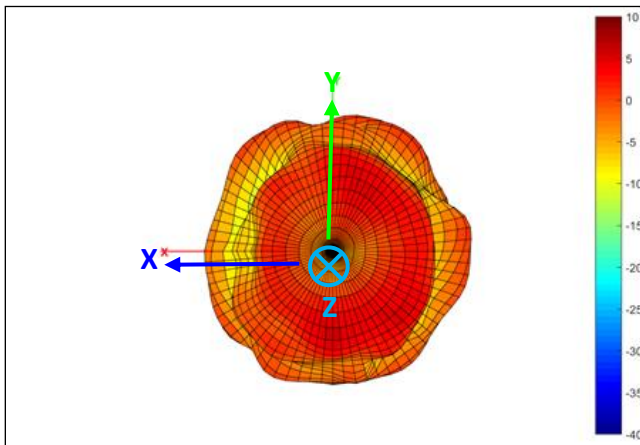
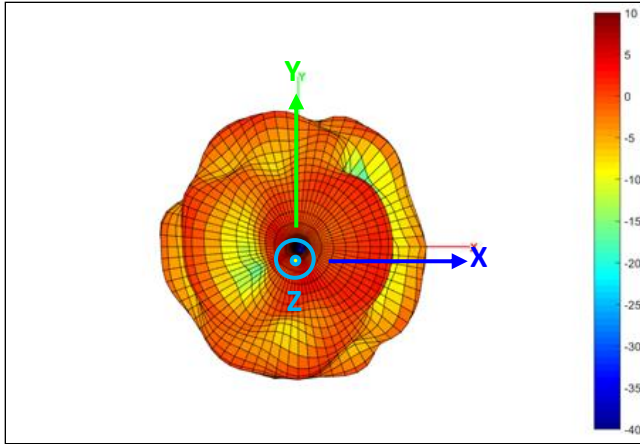
3.6.3. 3D Radiation Gain Pattern @ 2350 MHz (Unit: dBi)



3.6.4. 3D Radiation Gain Pattern @ 2590 MHz (Unit: dBi)

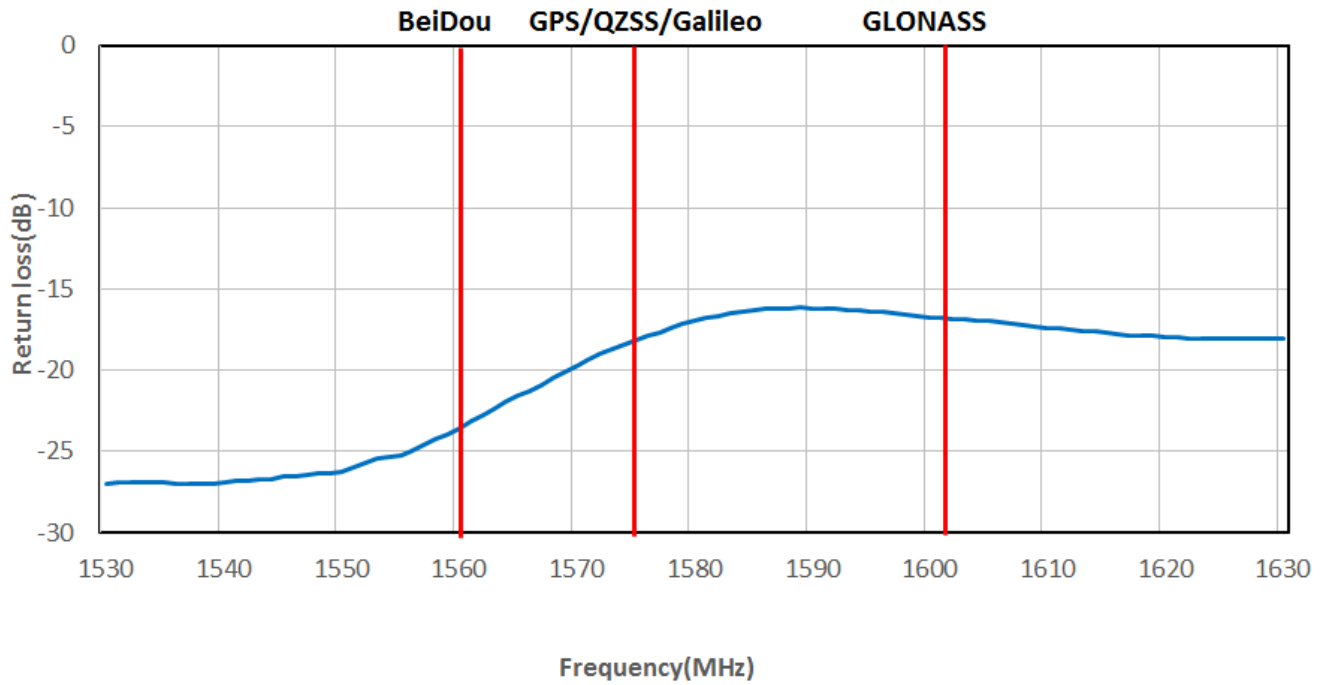


3.6.1. 3D Radiation Gain Pattern @ 3600 MHz (Unit: dBi)

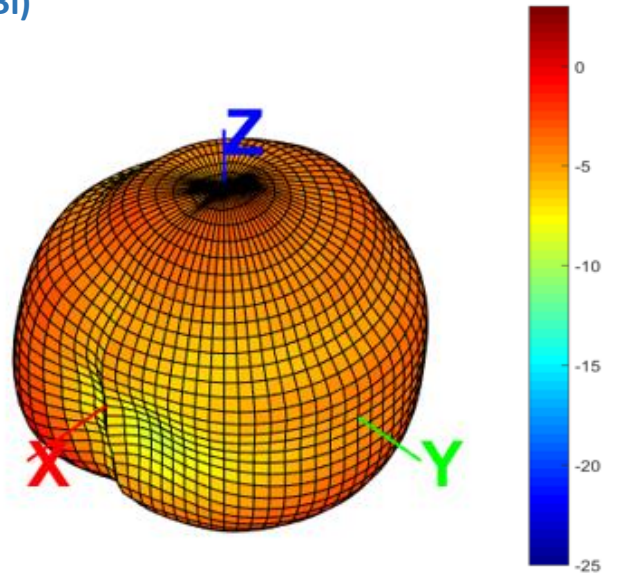
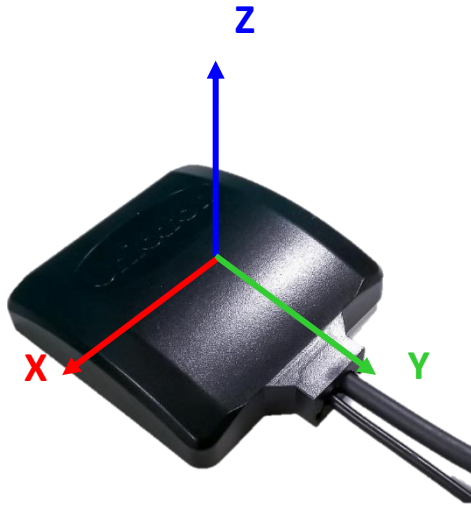


4 GNSS Navigation Antenna Characteristics

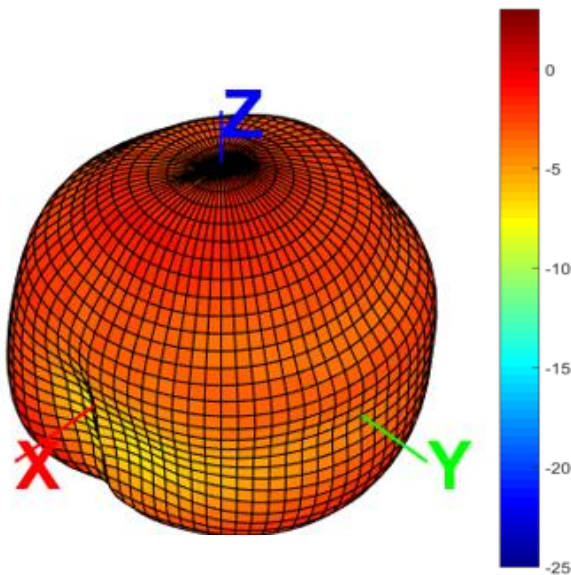
4.1 Return loss



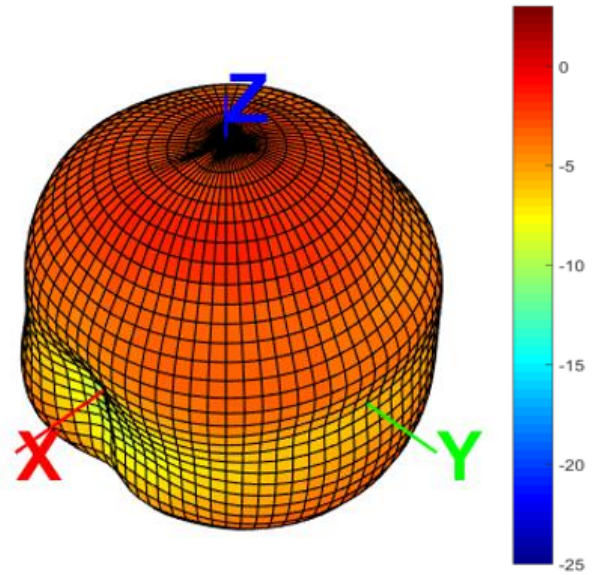
4.2 Radiation Gain Pattern (Unit: dBi)



1561MHz

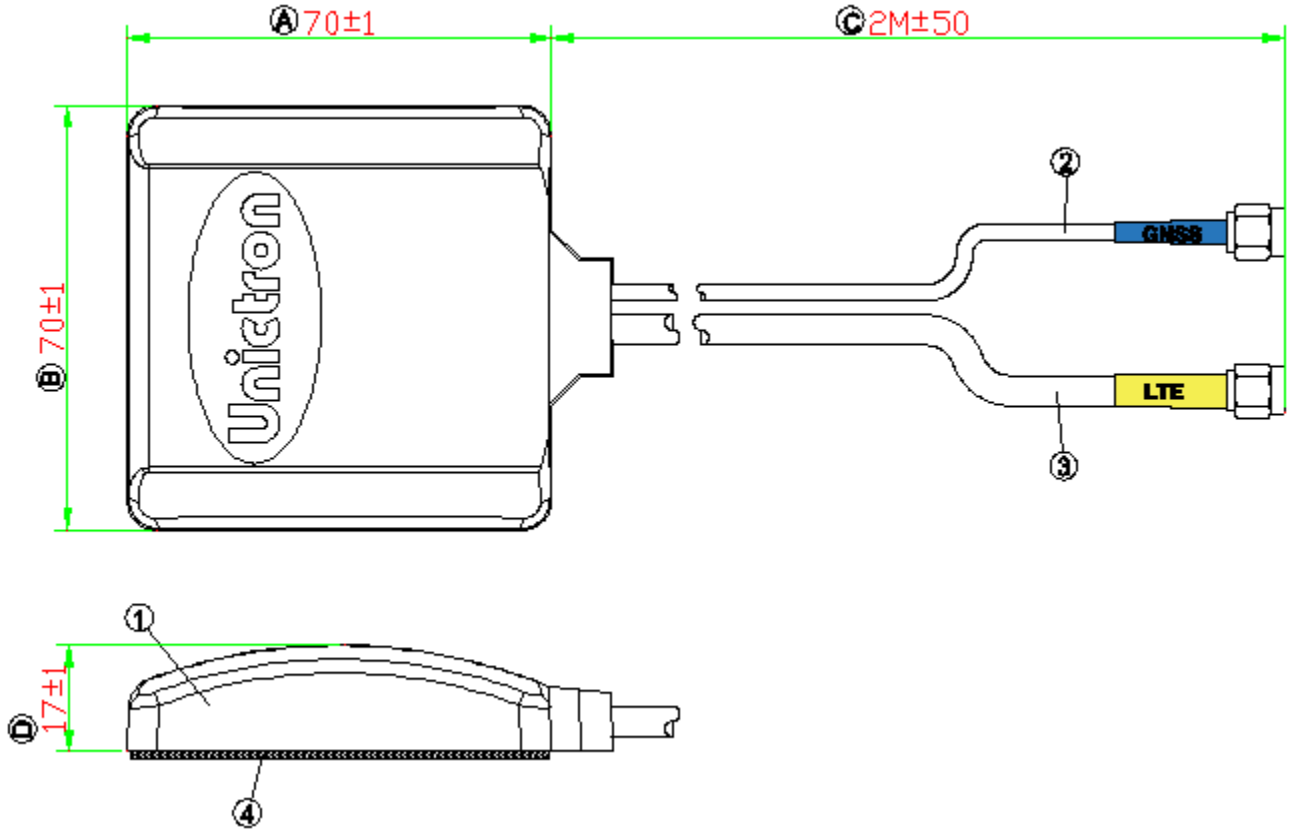


1575MHz



1602MHz

5 Antenna Dimensions(Unit: mm)



Item	Name	Material	Color	Q'ty
1	Plastic cover	PC	Black	1
2	Connector cable \varnothing 2.7mm	PVC	Black	1
3	Connector cable \varnothing 5mm	PVC	Black	1
4	Adhesive tape(3M_VHB5952_t:1.1mm)	-	Black	1