TAOGLAS

Datasheet

Part No:
G30.B.108111

Description

Olympian Direct Mount Ultra Wide-Band
4G/3G/2G
LTE / Cellular / Wi-Fi Antenna
For 2G/3G/4G Applications

Features:

698 to 960MHz, 2.4GHz and 1710 to 2700MHz
Heavy duty screw mount
UV and Features vandal resistant ABS housing and thread
L-Shaped bracket
IP67 compliant
Standard is 1M RG-316 SMA(M)
Cables and Connectors Customizable
CE Certified
RoHS & REACH Compliant

1. Introduction

This G30.wm, wall mounted G30 Olympian antenna is a high performance screw mount wide-band cellular antenna with stainless steel L-bracket to allow it to be mounted on a wall or panel. Omni-directional high gain and high efficiency across all bands ensures constant reception and transmission. This is vital for today's high data bandwidth applications in video and mobile broadband.

Durable UV resistant ABS housing is resistant to vandalism and direct attack. At only 48mm in height it is small enough to mount unobtrusively in most locations. This antenna is mounted on metal and plastic structures and is locked from the inside of the structure by a nut. Adhesive foam at the base provides a watertight seal to the mounting structure. High quality waterproof and corrosion resistant Teflon jacket RG316 is used for the cable.

Two of these G30 separated at distance from each other are ideal for the latest LTE MIMO spatial diversity applications.

Customized cable length and connectors are available. Taoglas recommend a minimum cable length of 70mm when used on a ground plane to achieve an efficiency of greater than 40% in the 900MHz band and greater than 60% in the 1800MHz band. For longer cable lengths and if 700MHz band is required, it is necessary to use the MA740 Pantheon for 4G/3G/2G or the MA741 4G/3G/2G MIMO Pantheon.

2. Specification

LTE Electrical									
Band	Frequency (MHz)	Measurement	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Impedance	Polarization	Radiation Pattern	Max. input power
5GNR/4G Band 5,8,12,13,14,17,18, 20,26,27,28,29,71	617-960	Free Space	46.2	-3.36	3.38	50 Ω	Linear	Omni	2W
		Ground Plane	47.6	-3.22	4.54				
5GNR/4G Band 21,32,74,75, 76	1427-1518	Free Space	31.9	-4.96	2.90				
		Ground Plane	23.8	-6.24	0.92				
4G/3G Band 1,2,3,4,9,23,25,35, 39,66	1710-2200	Free Space	52.7	-2.78	6.21				
		Ground Plane	59.3	-2.27	4.39				
4G/3G Band 40	2300-2400	Free Space	52.3	-2.81	4.39				
		Ground Plane	52.0	-2.84	2.76				
Wi-Fi 2400	2400-2500	Free Space	50.2	-2.99	4.30				
		Ground Plane	48.6	-3.14	2.28				
4G/3G Band 7,38,41	2490-2690	Free Space	50.2	-2.99	3.29				
		Ground Plane	48.2	-3.17	1.92				

* The G30 antenna performance was measured with 30X30 cm metal ground plane.

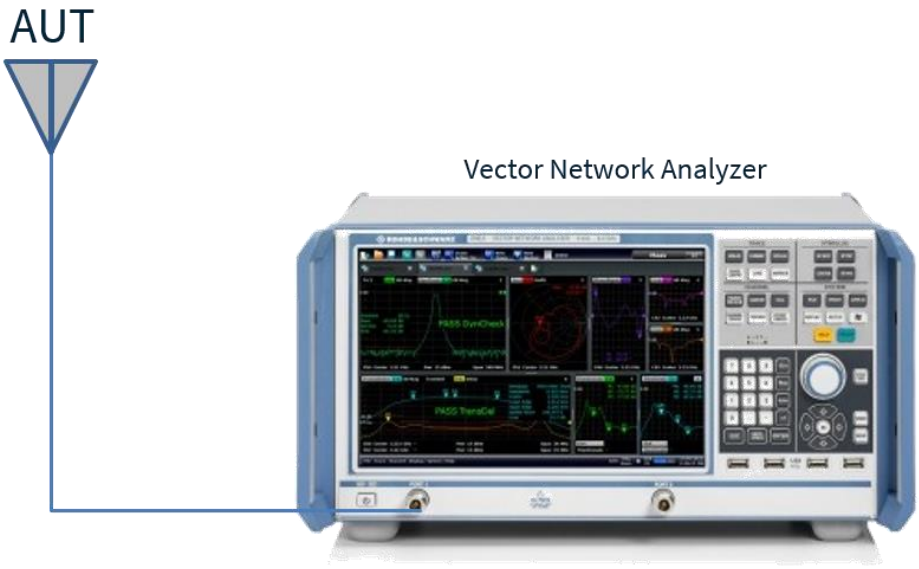
Mechanical	
Dimensions (mm)	Height=48mm and Diameter=50mm
Weight	66g
Material	UV Resistant ABS
Connector	SMA(M) Fully Customizable
Cable	1m of RG316
Base and Thread	Nickel plated steel
Weather proof gasket	CR4305 foam with 3M9448B double-side adhesive
Nut	M12
Sealant	Rubber Stopper

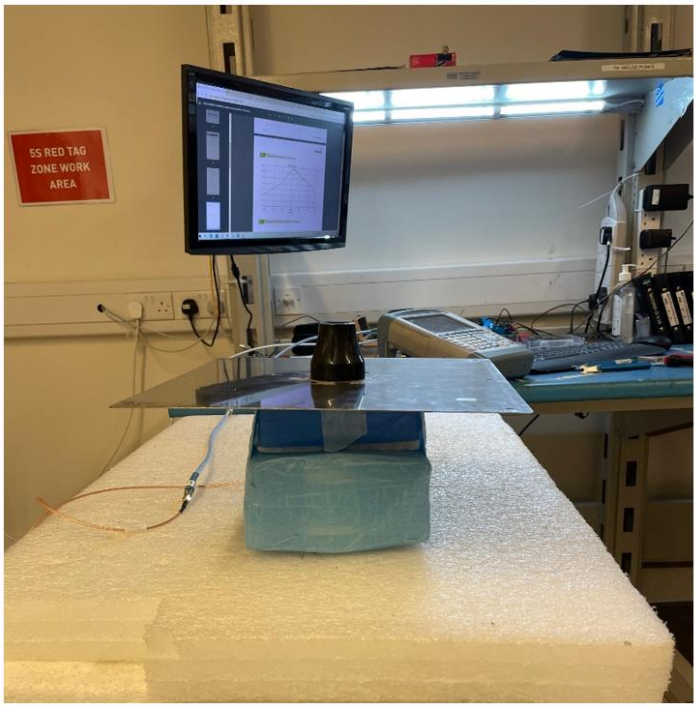
Environmental	
Temperature Range	-40ºC to +85ºC
Protection	IP67
Corrosion	5% NACI for 96hrs- Nickel plated steel base and thread
Thermal Shock	100 cycles -40ºC to +85ºC
Humidity	Non-condensing 65 C 95% RH
Shock (Drop Test)	1m drop on concrete 6 axes
Cable Pull	8Kgf

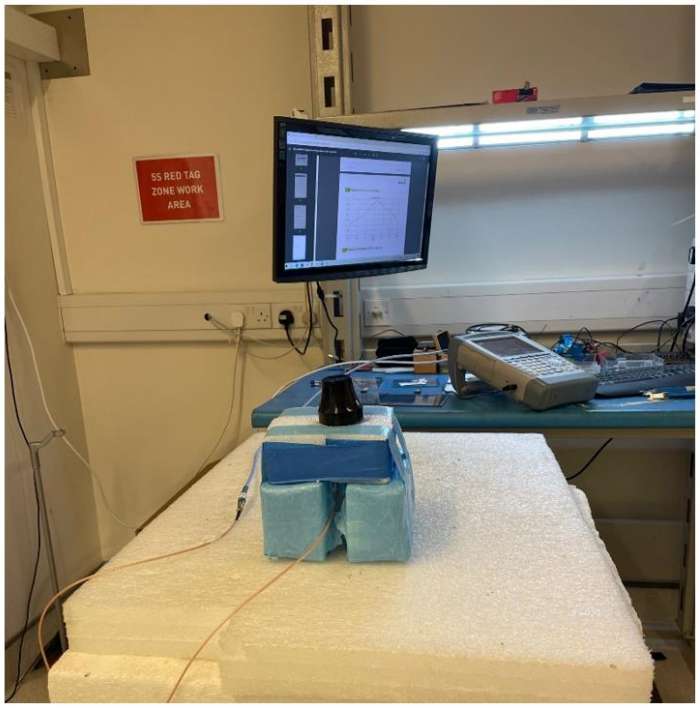
5G/4G Bands				
Band Number	5GNR / FR1 / LTE / LTE-Advanced / WCDMA / HSPA / HSPA+ / TD-SCDMA			
	Uplink	Downlink	Free Space	Ground Plane
B1	1920 to 1980	2110 to 2170	✓	✓
B2	1850 to 1910	1930 to 1990	✓	✓
B3	1710 to 1785	1805 to 1880	✓	✓
B4	1710 to 1755	2110 to 2155	✓	✓
B5	824 to 849	869 to 894	✓	✓
B7	2500 to 2570	2620 to 2690	✓	✓
B8	880 to 915	925 to 960	✓	✓
B9*	17499 to 17849	18449 to 18799	✓	✓
B11	14279 to 14479	14759 to 14959	✓	✓
B12	699 to 716	729 to 746	✓	✓
B13	777 to 787	746 to 756	✓	✓
B14	788 to 798	758 to 768	✓	✓
B17	704 to 716	734 to 746	✓	✓
B18	815 to 830	860 to 875	✓	✓
B19	830 to 845	875 to 890	✓	✓
B20	832 to 862	791 to 821	✓	✓
B21	14479 to 14629	14959 to 15109	✓	✓
B22*	3410 to 3490	3510 to 3590	✓	✓
B23*	2000 to 2020	2180 to 2200	✓	✓
B24	16265 to 16605	1525 to 1559	✓	✓
B25	1850 to 1915	1930 to 1995	✓	✓
B26	814 to 849	859 to 894	✓	✓
B27*	807 to 824	852 to 869	✓	✓
B28	703 to 748	758 to 803	✓	✓
B29	717 to 728		✓	✓
B30	2305 to 2315	2350 to 2360	✓	✓
B31	4525 to 4575	4625 to 4675	✗	✗
B32	1452 to 1496		✓	✓
B34	2010 to 2025		✓	✓
B35	1850 to 1910		✓	✓
B36	1930 to 1990		✓	✓
B37	1910 to 1930		✓	✓
B38	2570 to 2620		✓	✓
B39	1880 to 1920		✓	✓
B40	2300 to 2400		✓	✓
B41	2496 to 2690		✓	✓
B42	3400 to 3600		✓	✓
B43	3600 to 3800		✓	✓
B45	1447 to 1467		✓	✓
B46	5150 to 5925		✓	✓
B47	5855 to 5925		✓	✓
B48	3550 to 3700		✓	✓
B49	3550 to 3700		✓	✓
B50	1432 to 1517		✓	✓
B51	1427 to 1432		✓	✓
B52	3300 to 3400		✓	✓
B53	24835 to 2495		✓	✓
B65	1920 to 2010	2110 to 2200	✓	✓
B66	1710 to 1780	2110 to 2200	✓	✓
B68	698 to 728	753 to 783	✓	✓
B69	2570 to 2620		✓	✓
B70	1695 to 1710	1995 to 2020	✓	✓
B71	663 to 698	617 to 652	✓	✓
B72	451 to 456	461 to 466	✗	✗
B73	450 to 455	460 to 465	✗	✗
B74	1427 to 1470	1475 to 1518	✓	✓
B75	1432 to 1517		✓	✓
B76	1427 to 1432		✓	✓
B77	3300 to 4200		✓	✓
B78	3300 to 3800		✓	✓
B79	4400 to 5000		✓	✓
B85	698 to 716	728 to 746	✓	✓
B87	410 to 415	420 to 425	✗	✗
B88	412 to 417	422 to 427	✗	✗

3. Antenna Characteristics

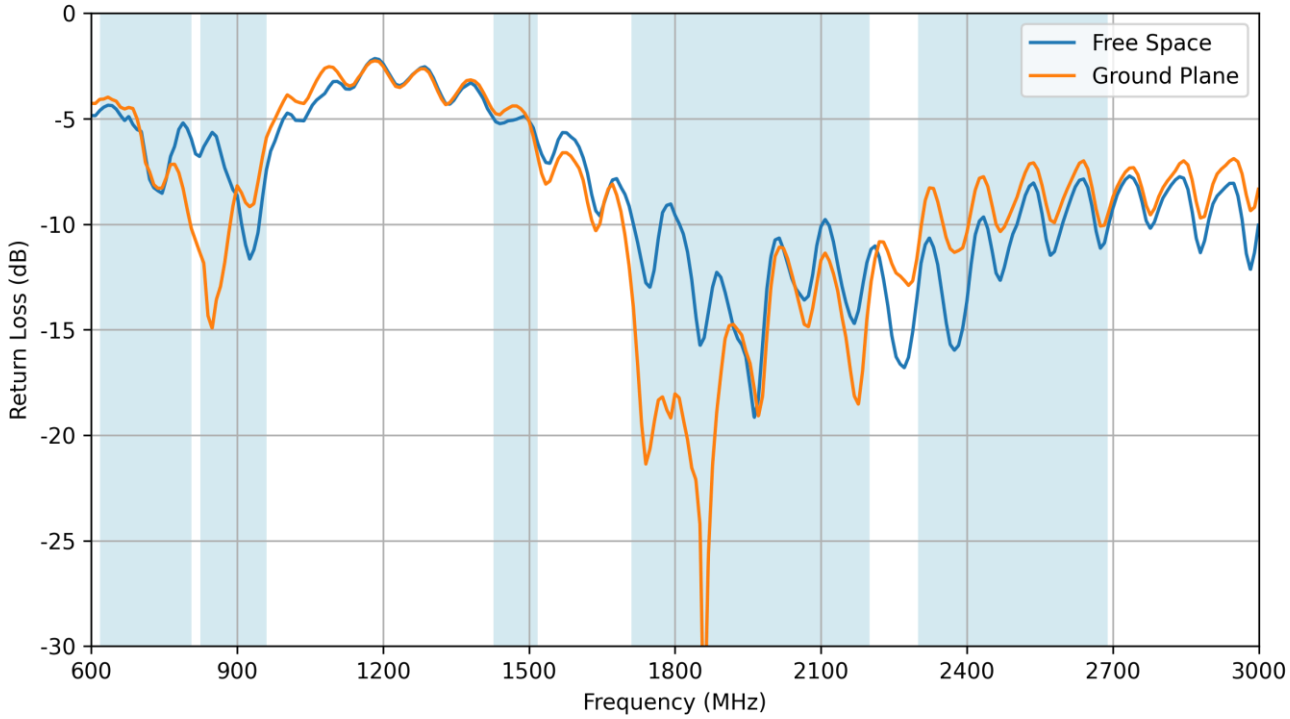
3.1 Test Setup







3.2 Return Loss



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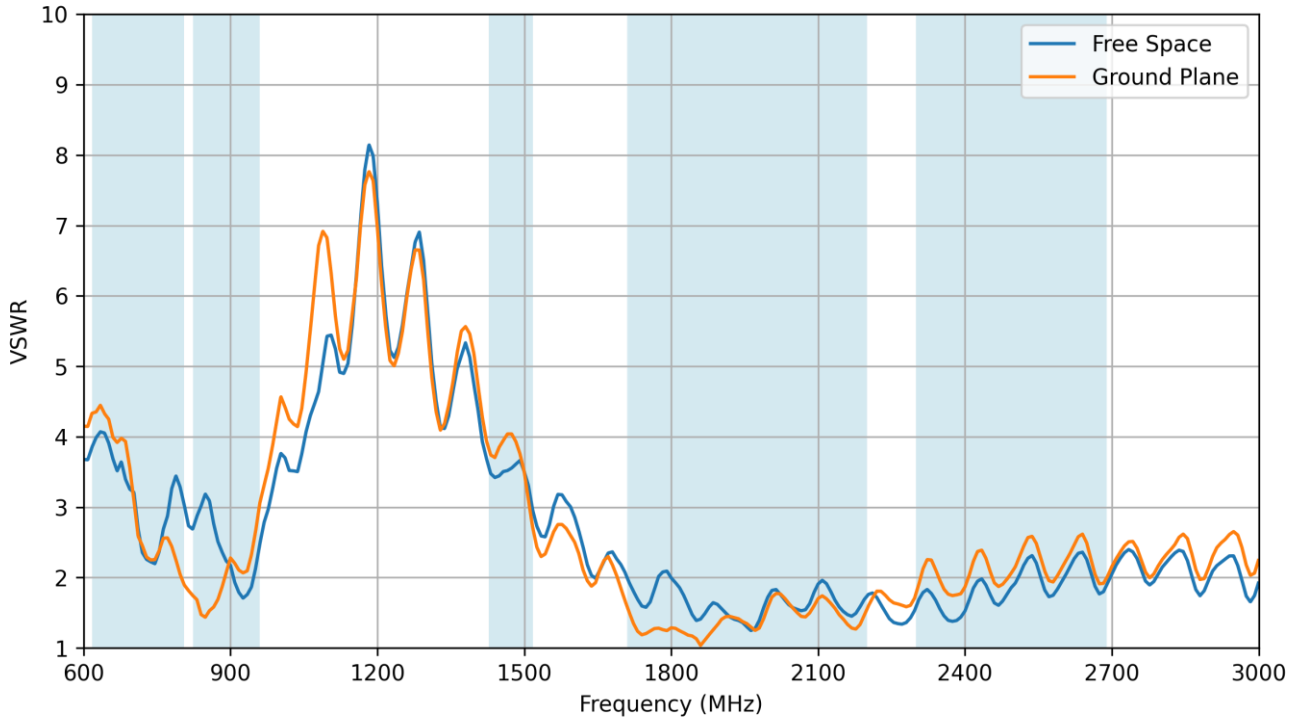
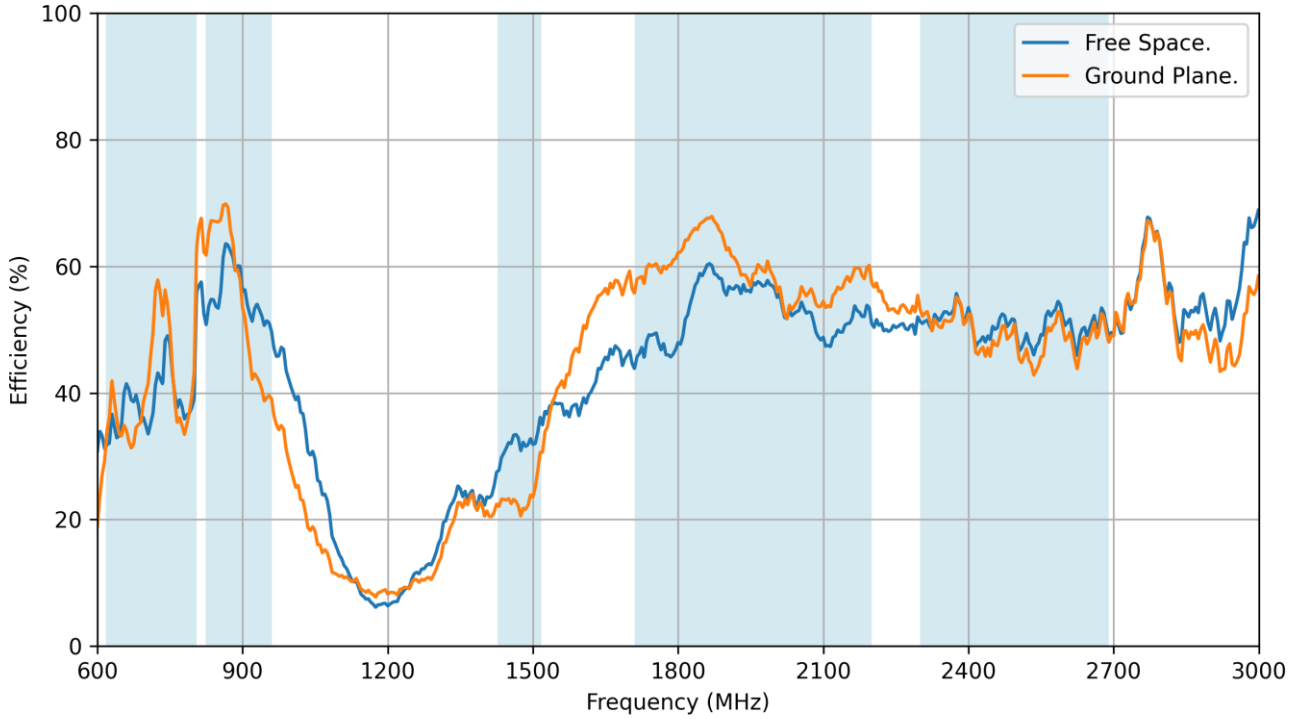
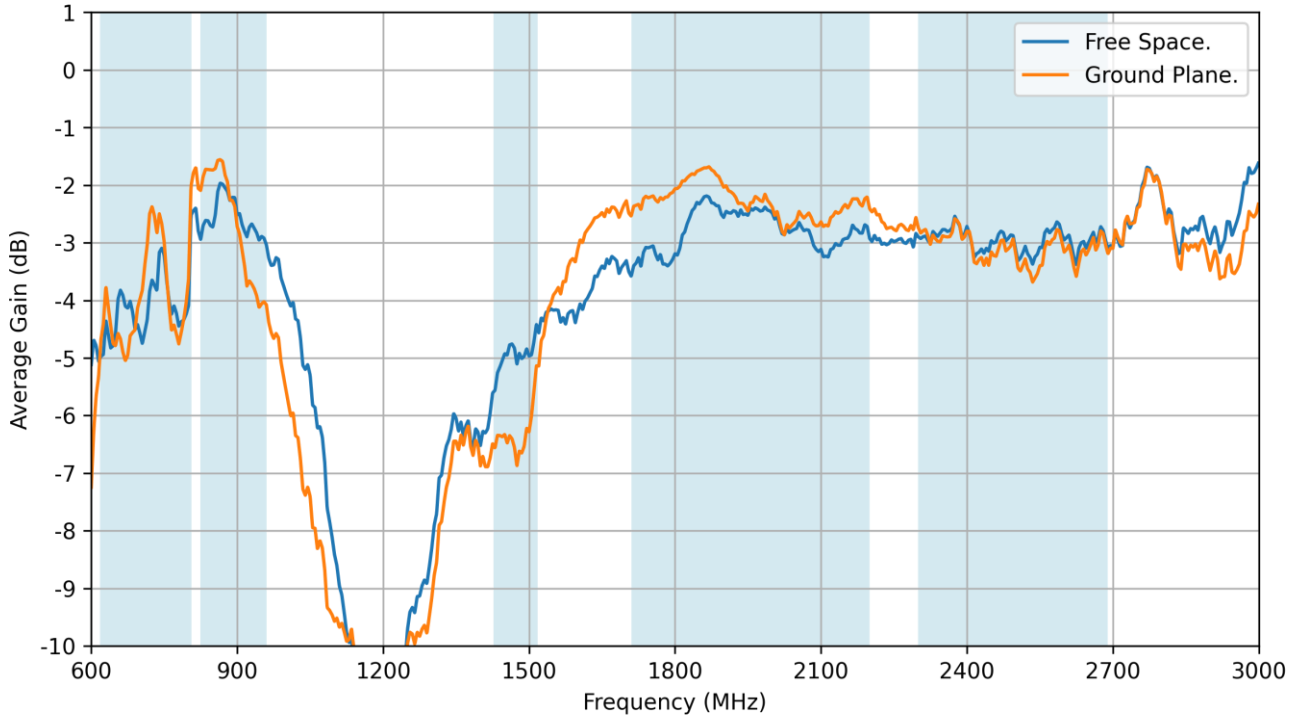


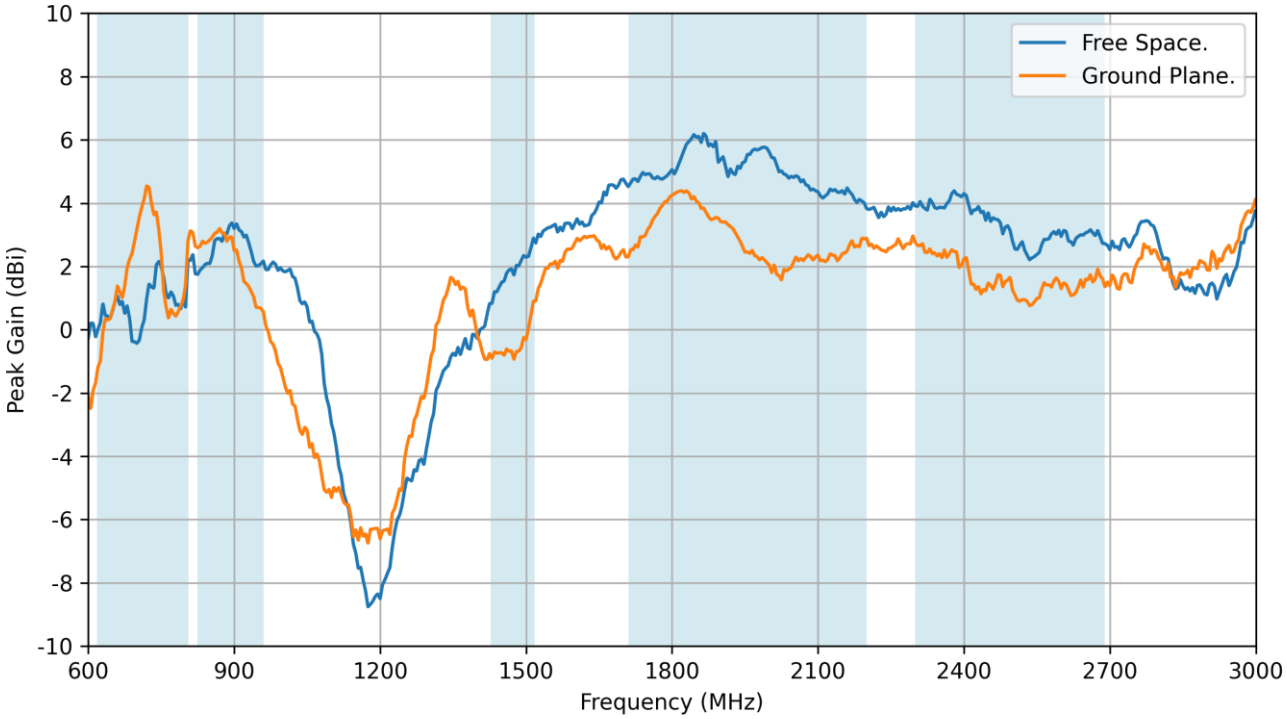
3.4 Efficiency



3.5 Average Gain

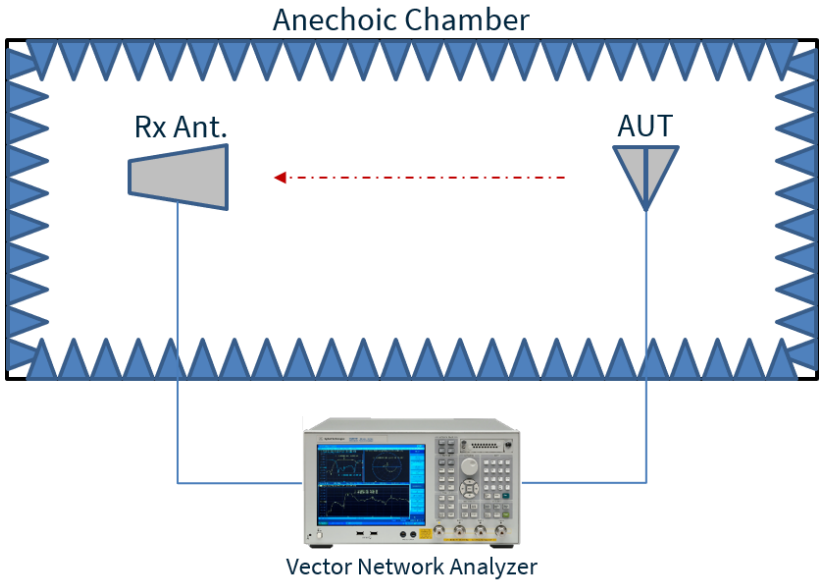


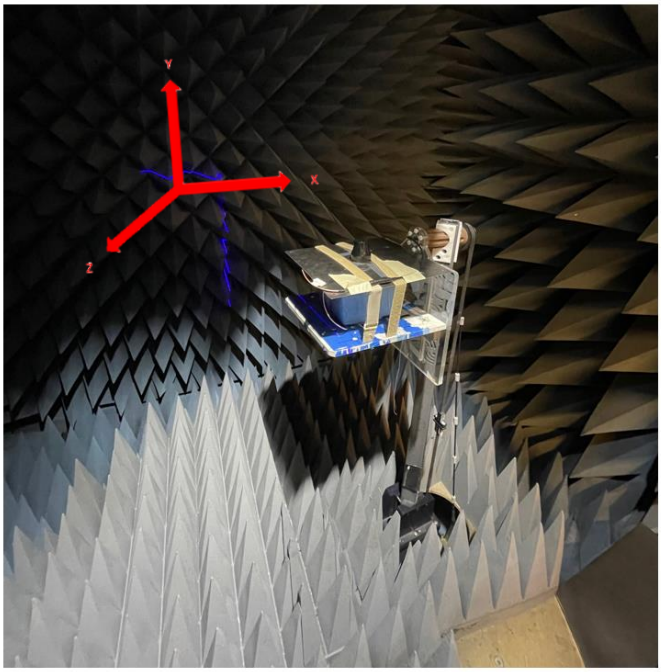
3.6 Peak Gain

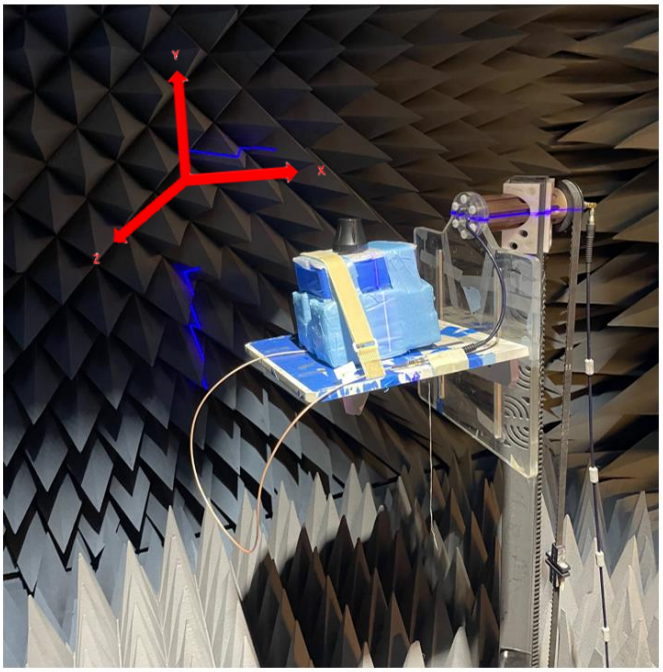

Free Space.
Ground Plane.
Peak Gain (dBi)
Frequency (MHz)
10
8
6
4
2
0
-2
-4
-6
-8
-10
600
900
1200
1500
1800
2100
2400
2700
3000

4. Radiation Patterns

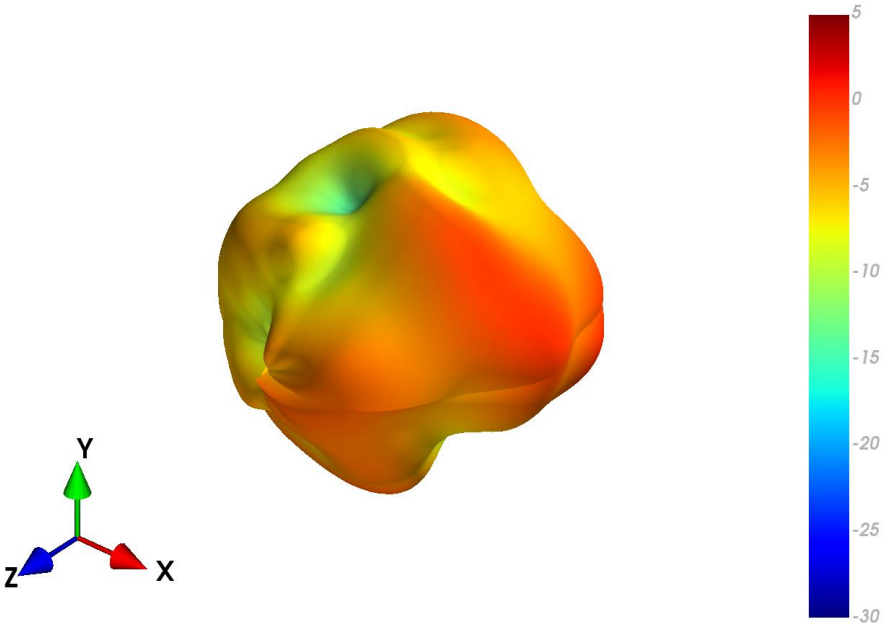
4.1 Test Setup



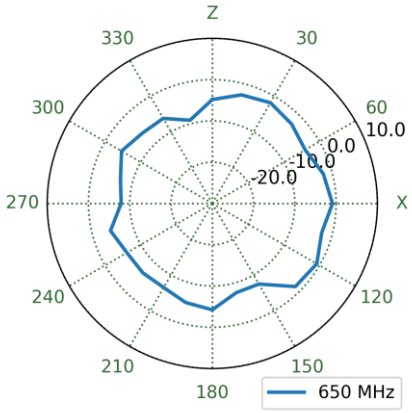


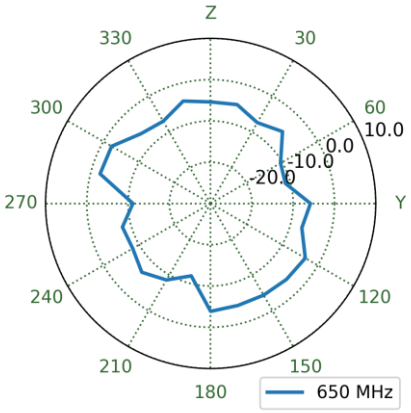


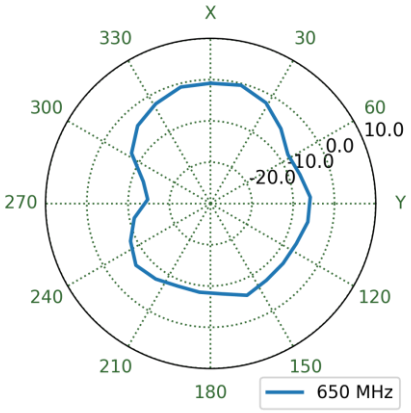
4.2 Free Space Patterns at 650 MHz



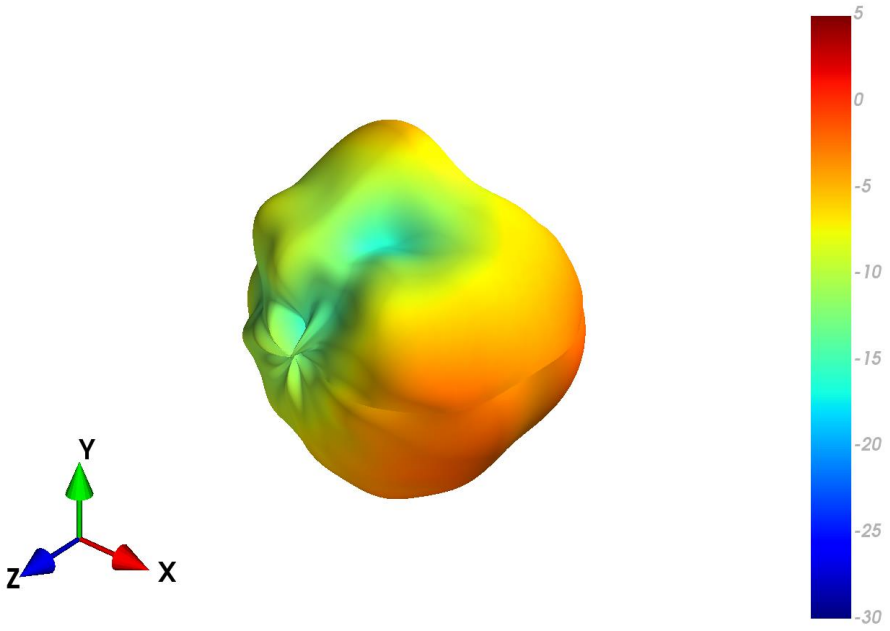
XZ Plane	YZ Plane	XY Plane

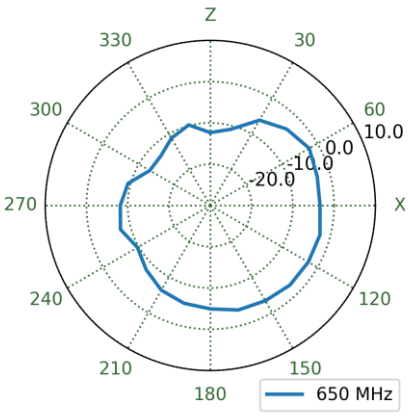
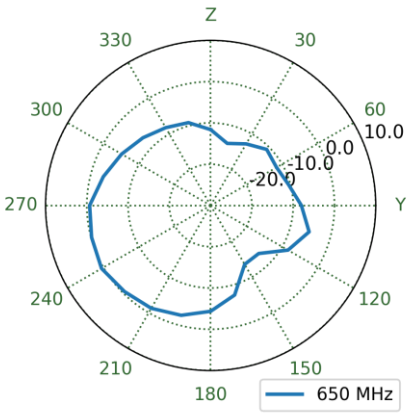
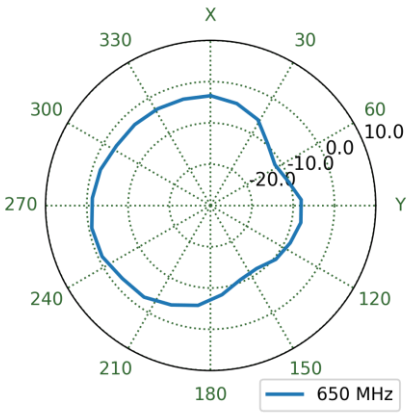




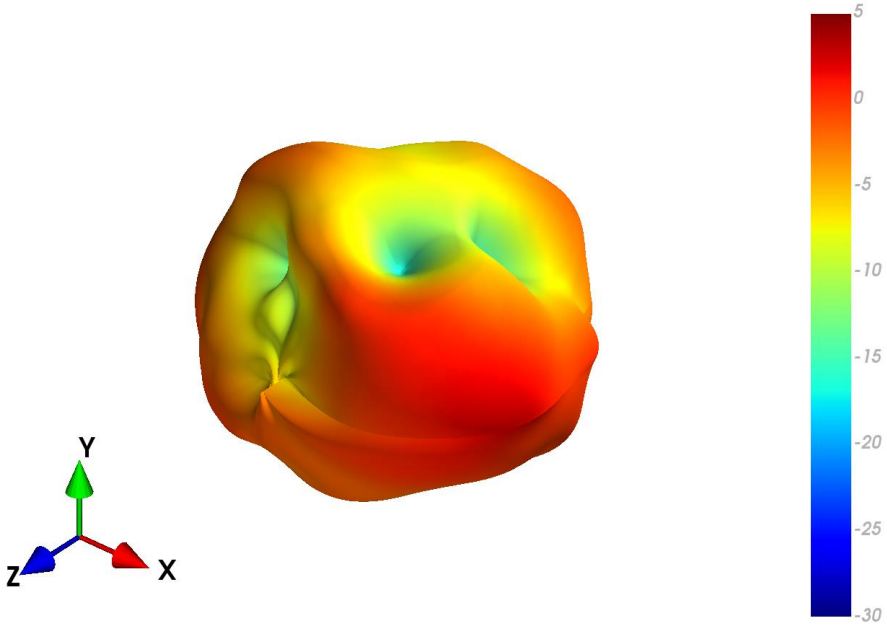


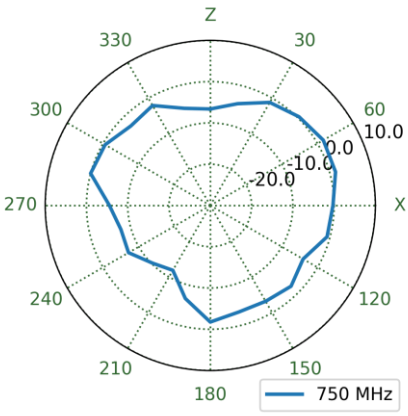
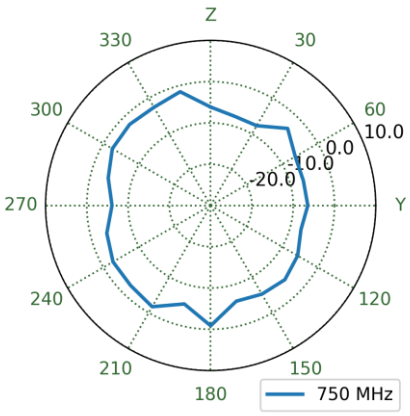
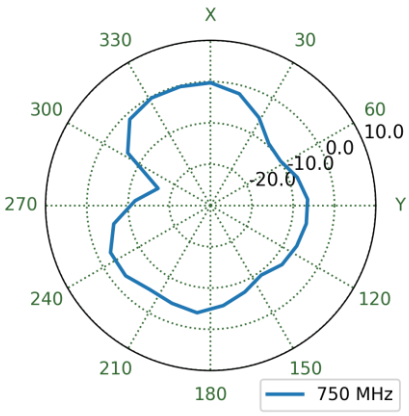
4.3 Ground Plane Patterns at 650 MHz



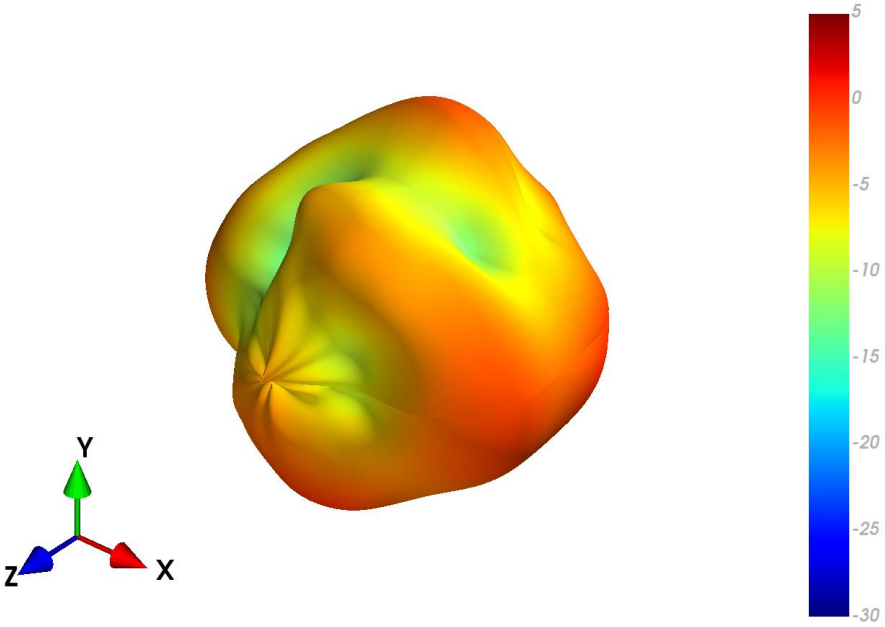
XZ Plane	YZ Plane	XY Plane
		

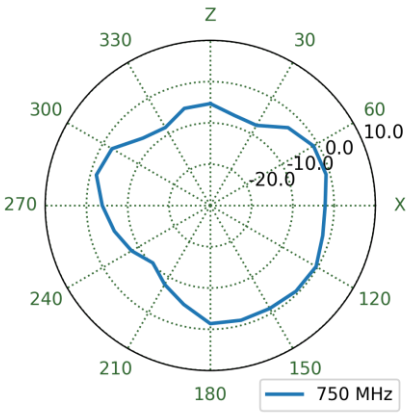
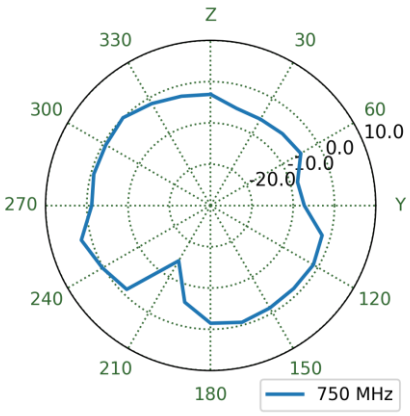
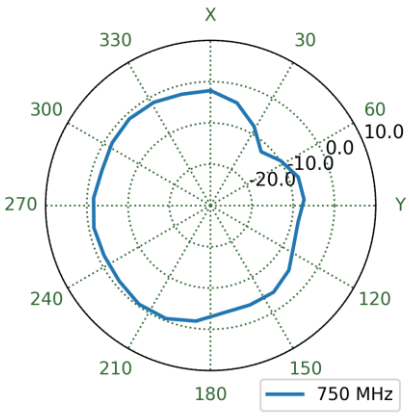
4.4 Free Space Patterns at 750 MHz



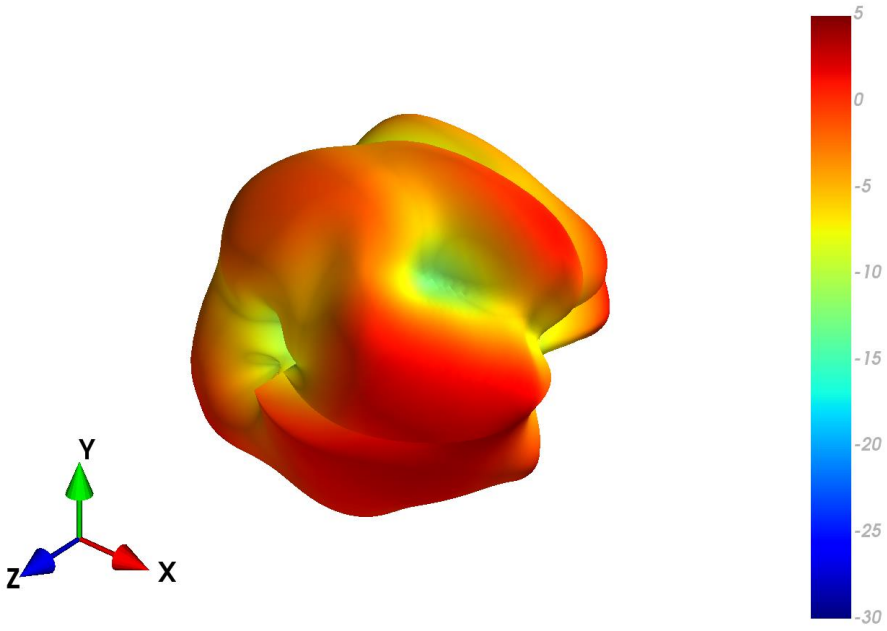
XZ Plane	YZ Plane	XY Plane
		

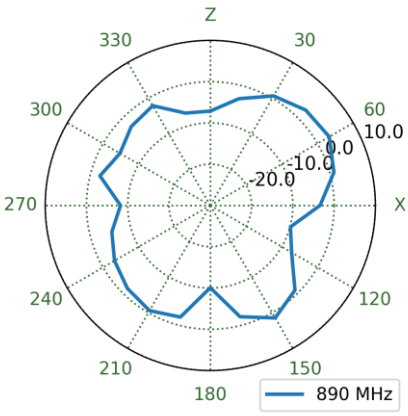
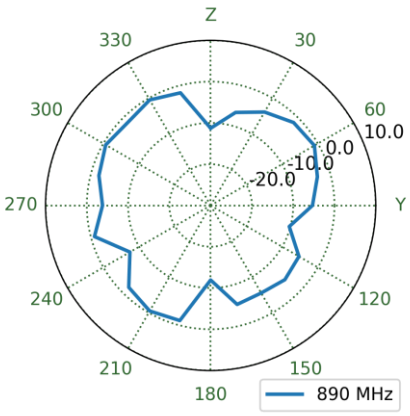
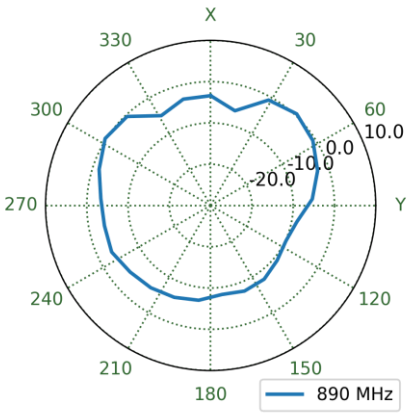
4.5 Ground Plane Patterns at 750 MHz



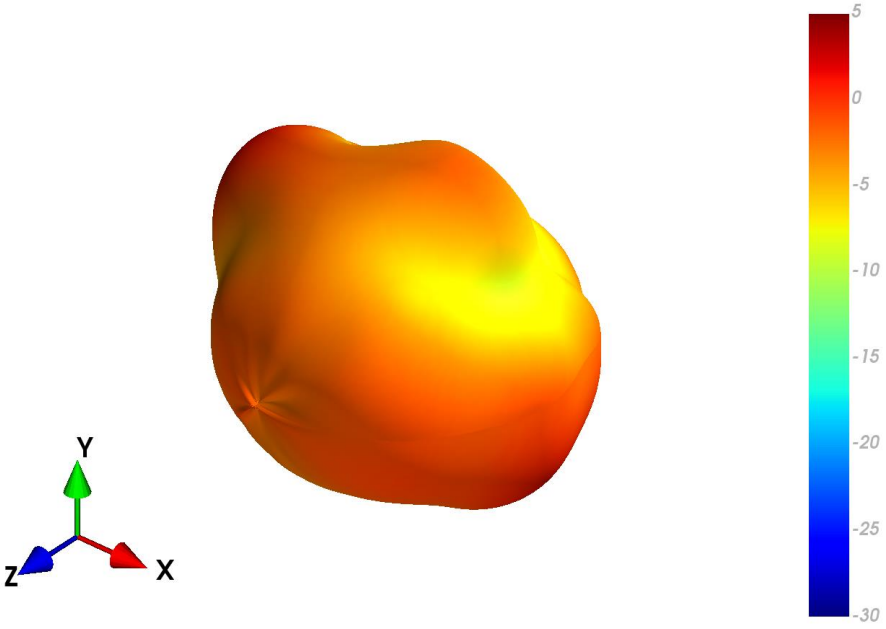
XZ Plane	YZ Plane	XY Plane
		

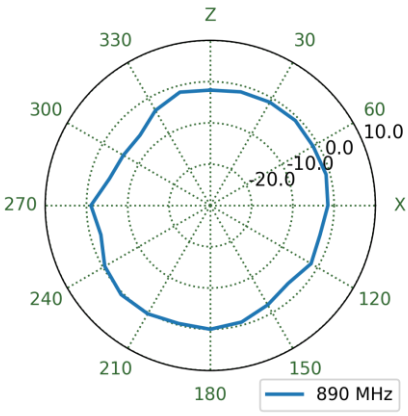
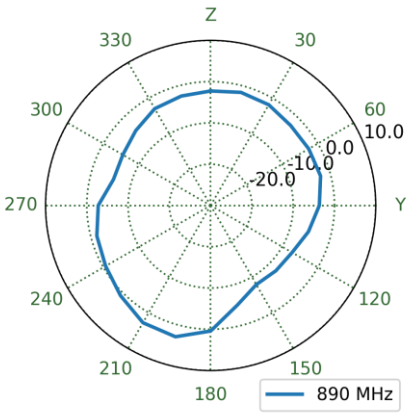
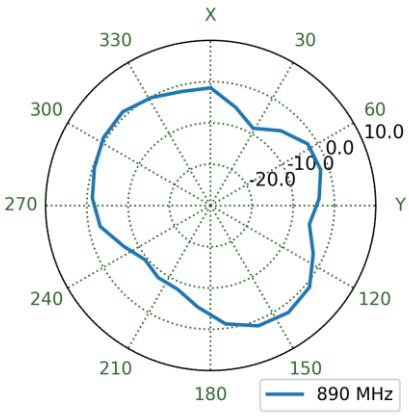
4.6 Free Space Patterns at 890 MHz



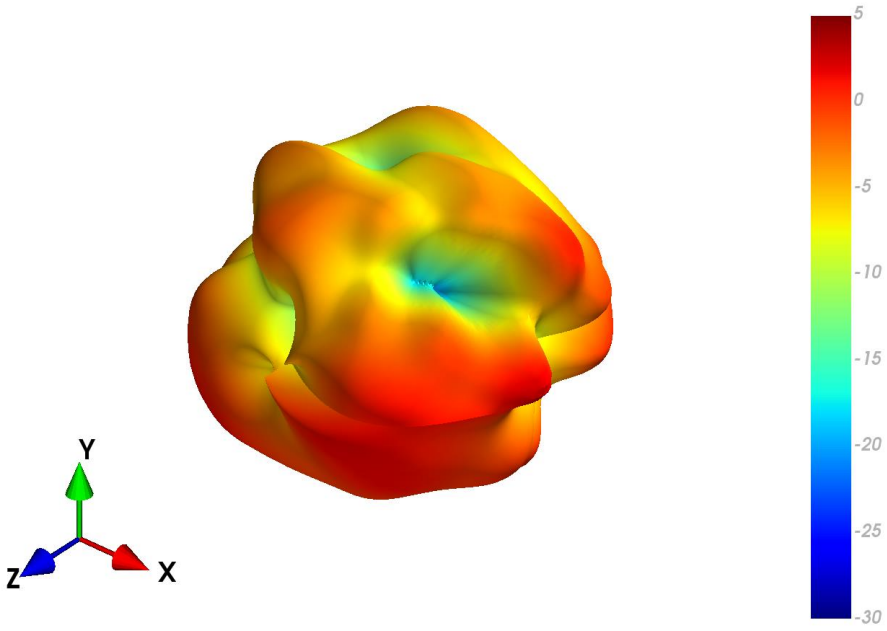
XZ Plane	YZ Plane	XY Plane
		

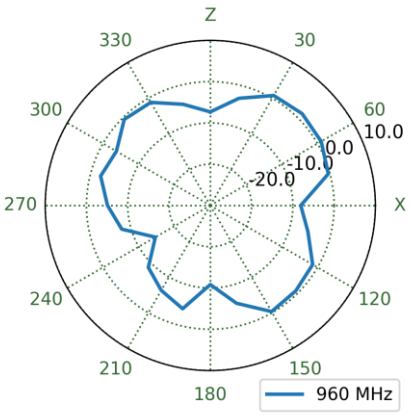
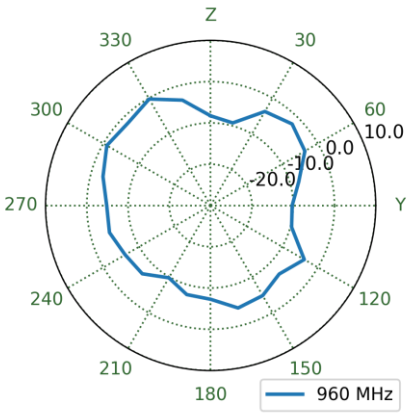
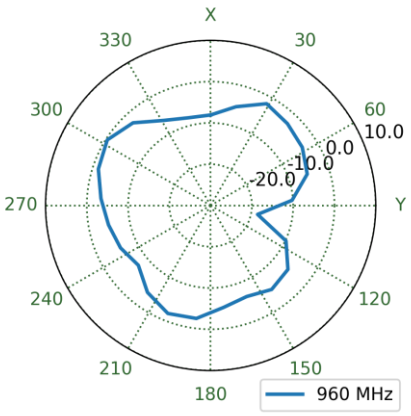
4.7 Ground Plane Patterns at 890 MHz



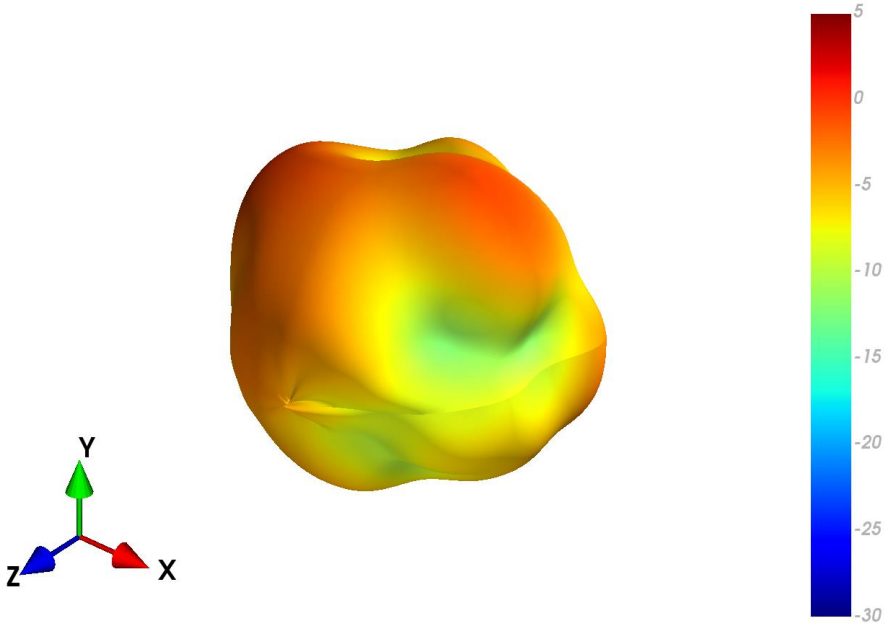
XZ Plane	YZ Plane	XY Plane
		

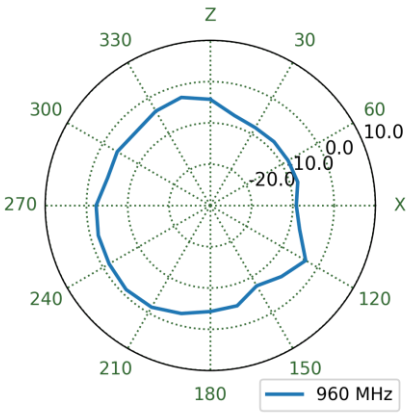
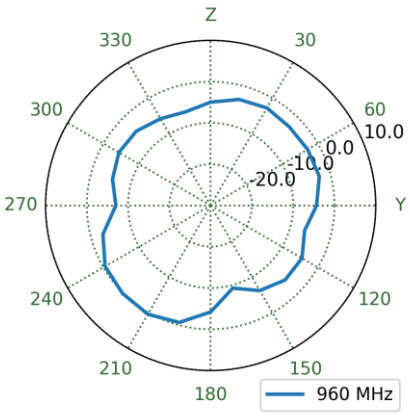
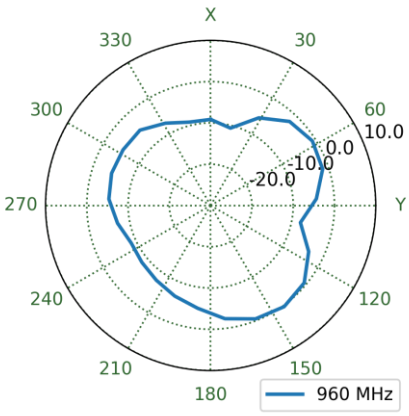
4.8 Free Space Patterns at 960 MHz



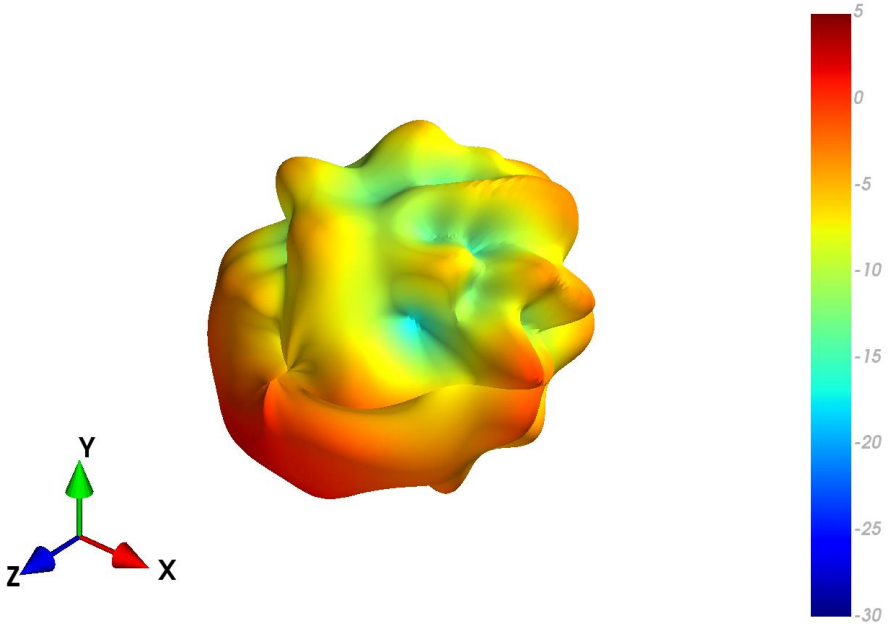
XZ Plane	YZ Plane	XY Plane
		

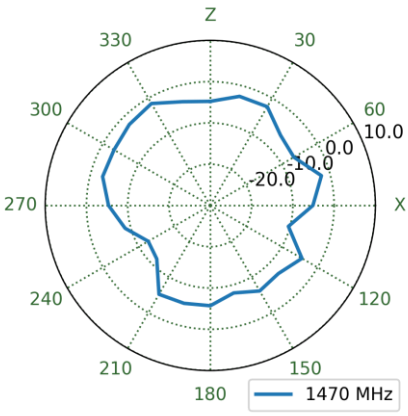
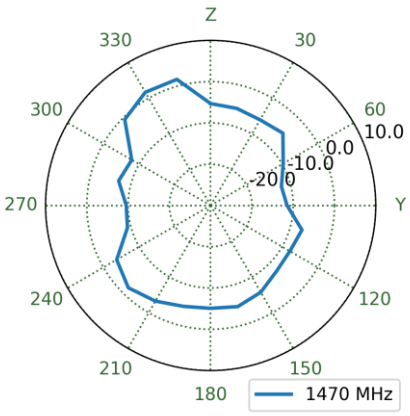
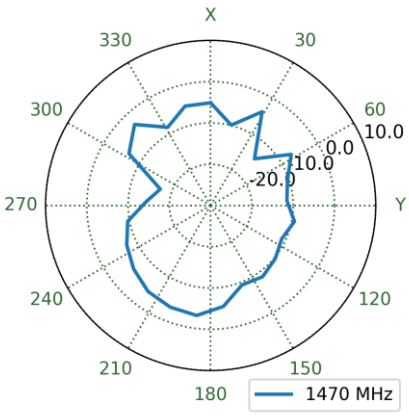
4.9 Ground Plane Patterns at 960 MHz



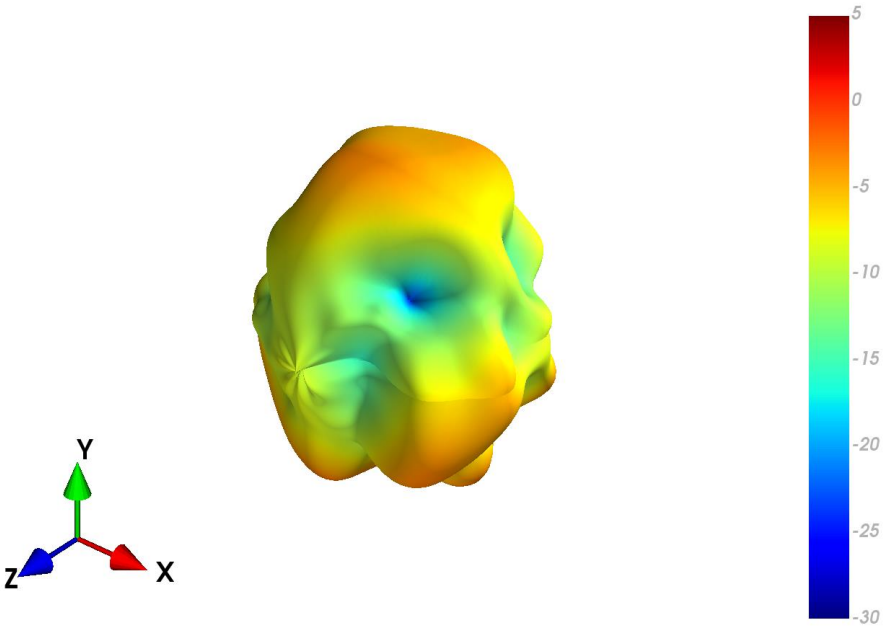
XZ Plane	YZ Plane	XY Plane
		

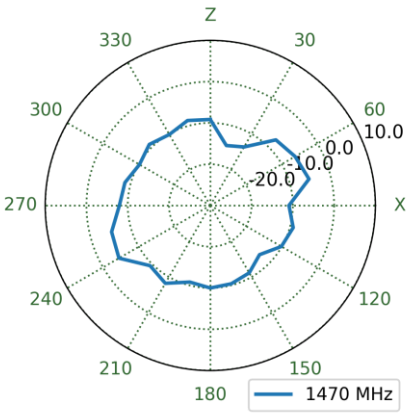
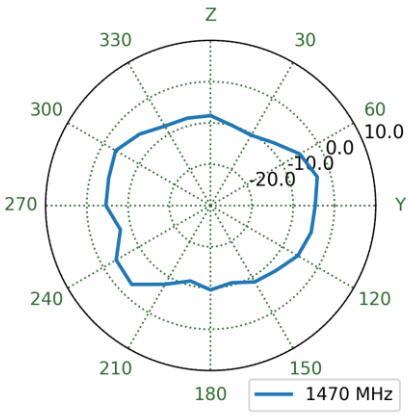
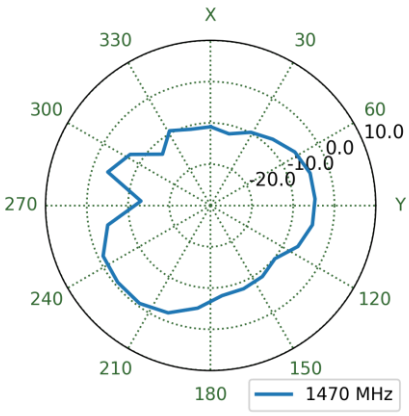
4.10 Free Space Patterns at 1470 MHz



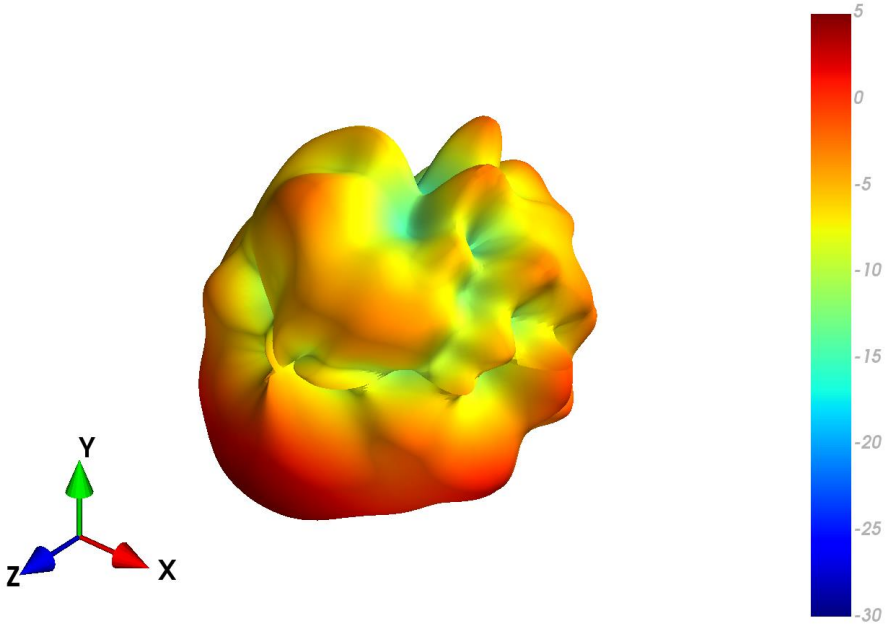
XZ Plane	YZ Plane	XY Plane
		

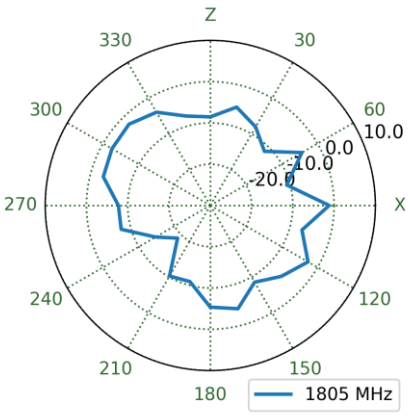
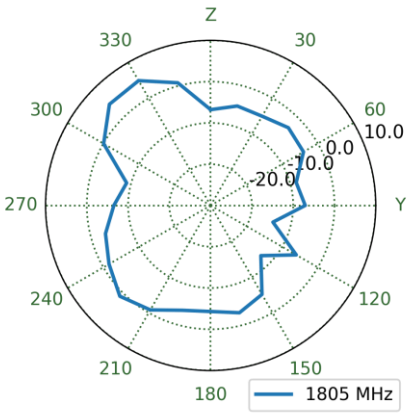
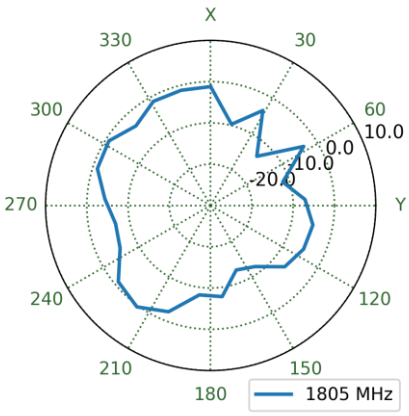
4.11 Ground Plane Patterns at 1470 MHz



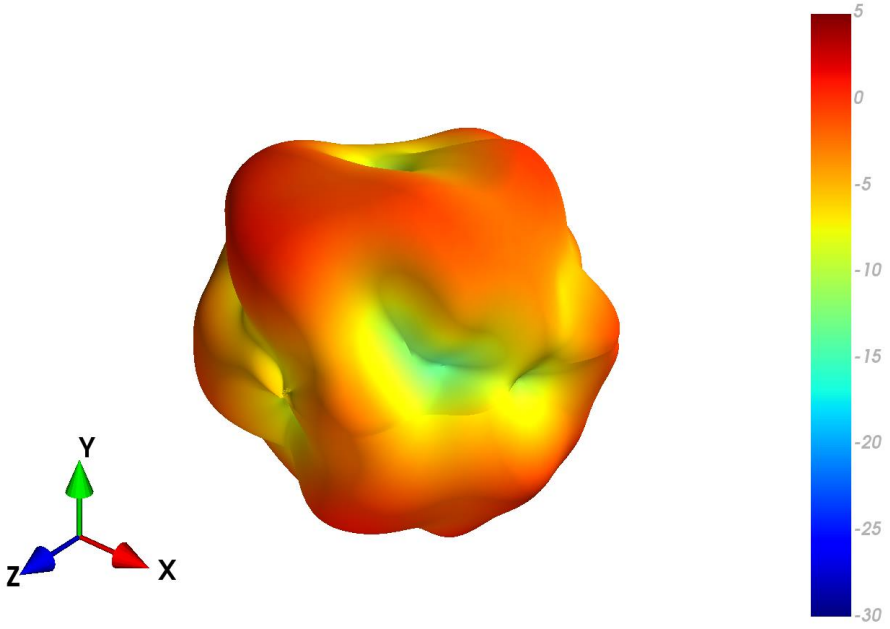
XZ Plane	YZ Plane	XY Plane
		

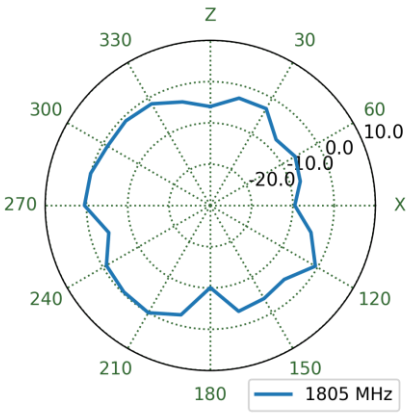
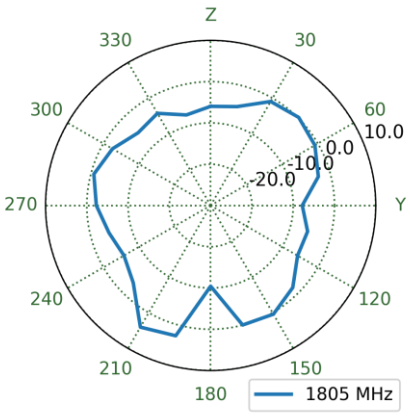
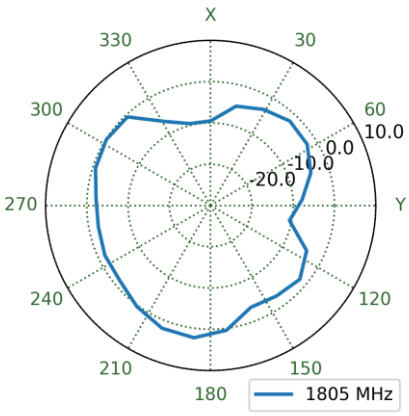
4.12 Free Space Patterns at 1805 MHz



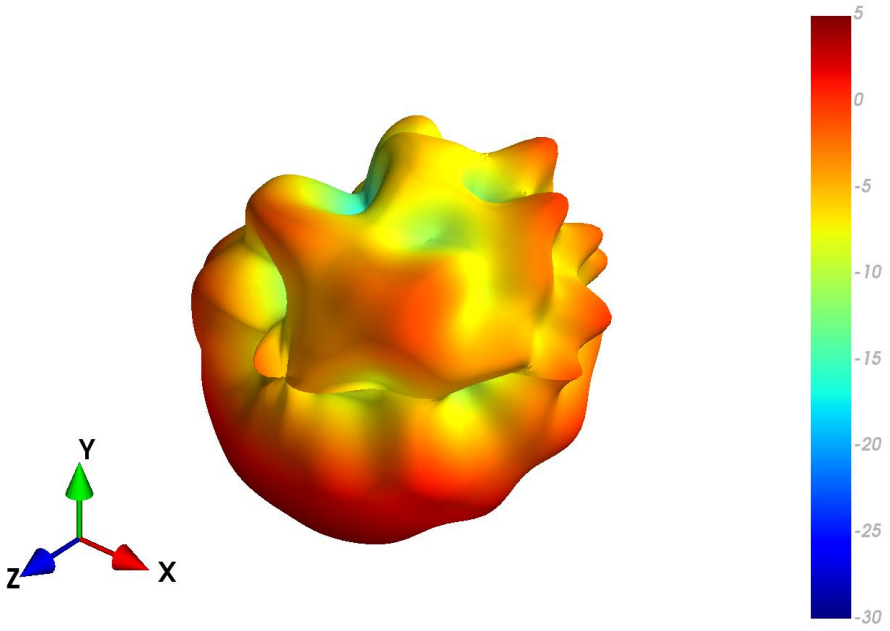
XZ Plane	YZ Plane	XY Plane
		

4.13 Ground Plane Patterns at 1805 MHz

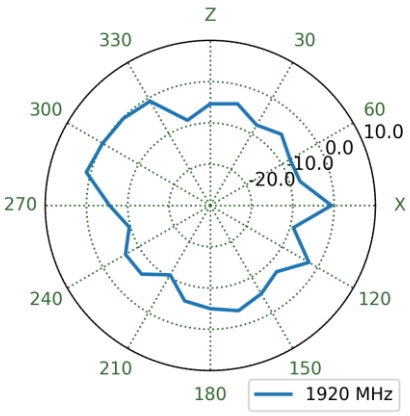


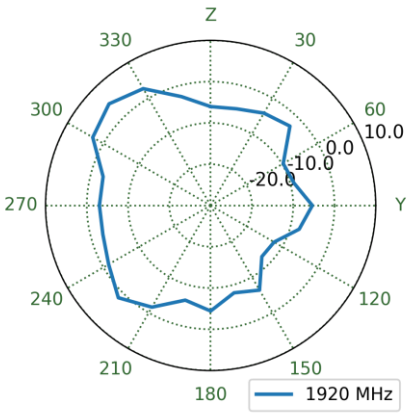
XZ Plane	YZ Plane	XY Plane
		

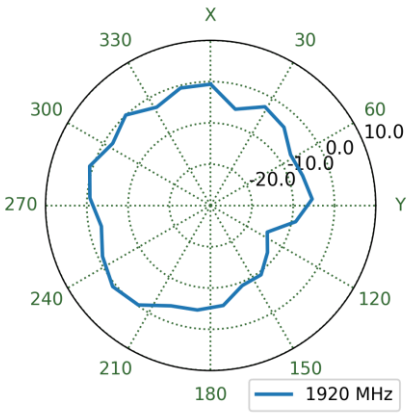
4.14 Free Space Patterns at 1920 MHz



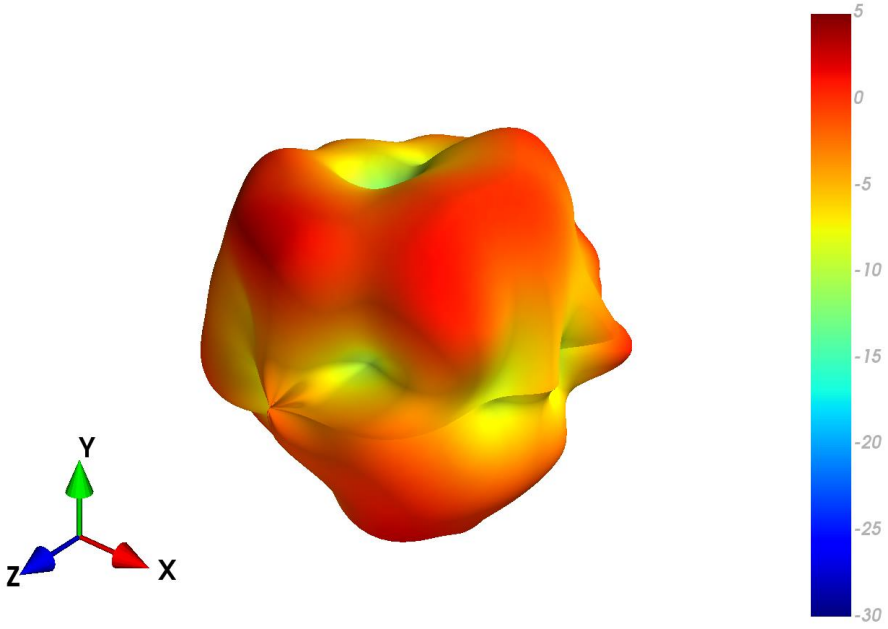
XZ Plane	YZ Plane	XY Plane

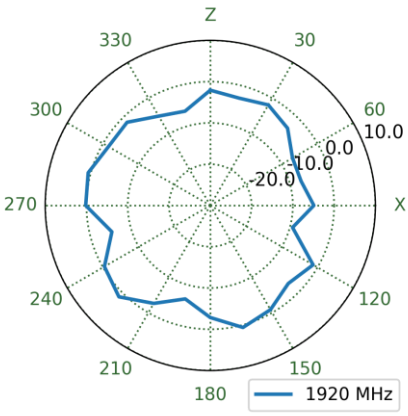
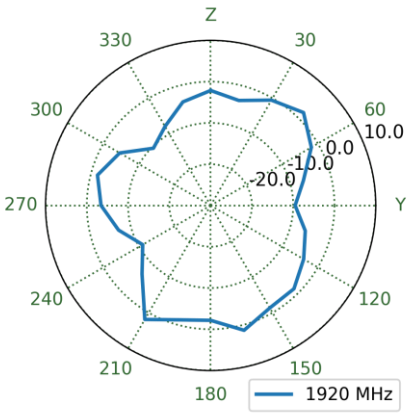
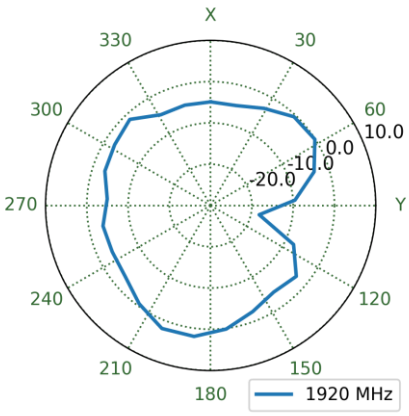




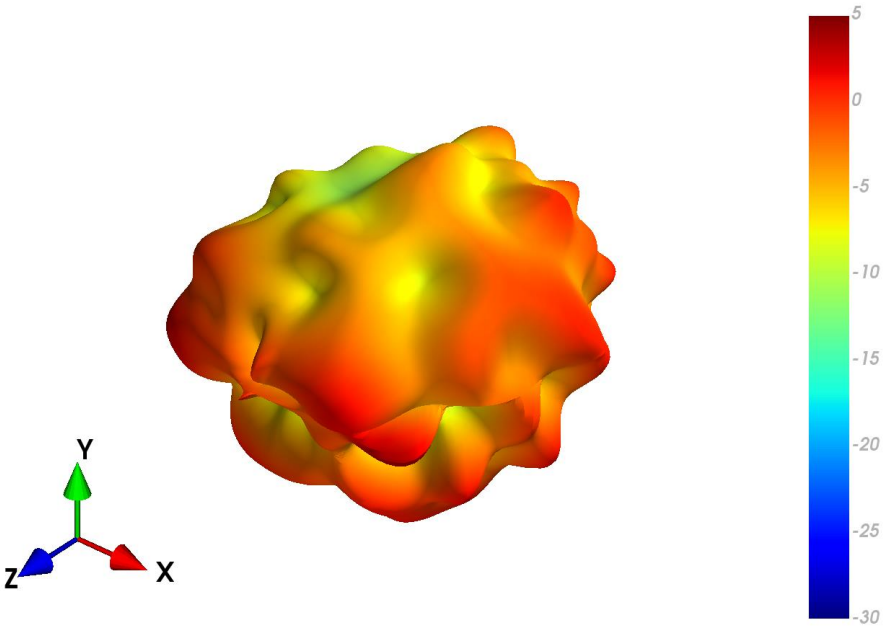


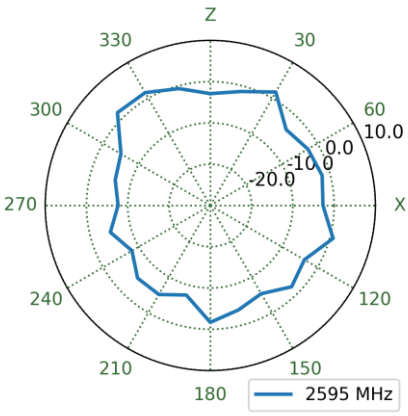
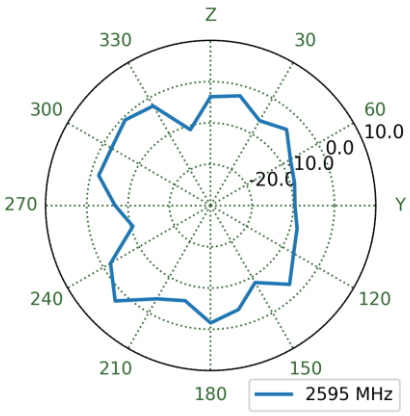
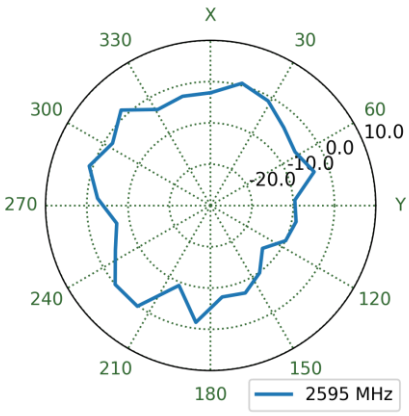
4.15 Ground Plane Patterns at 1920 MHz



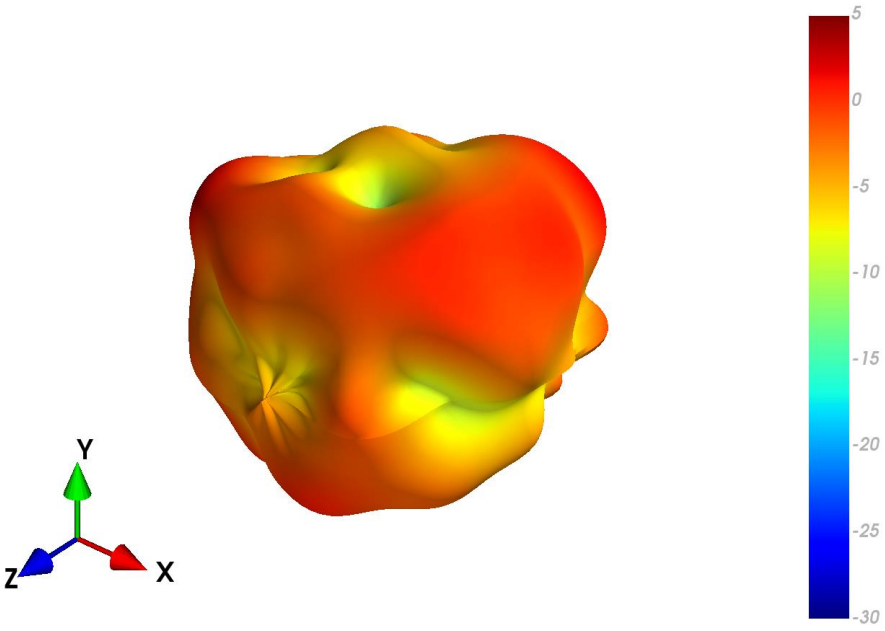
XZ Plane	YZ Plane	XY Plane
		

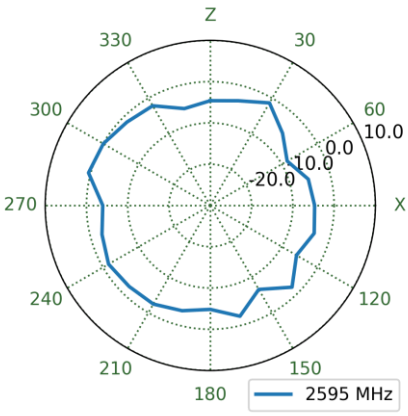
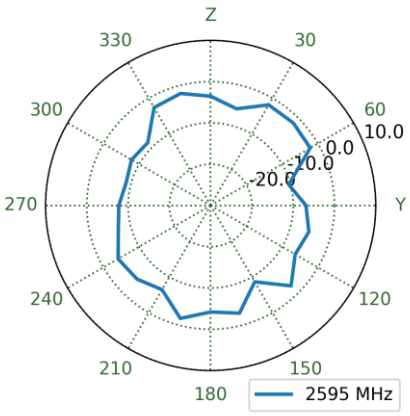
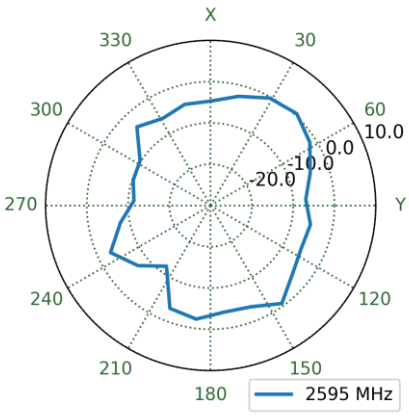
4.16 Free Space Patterns at 2595 MHz



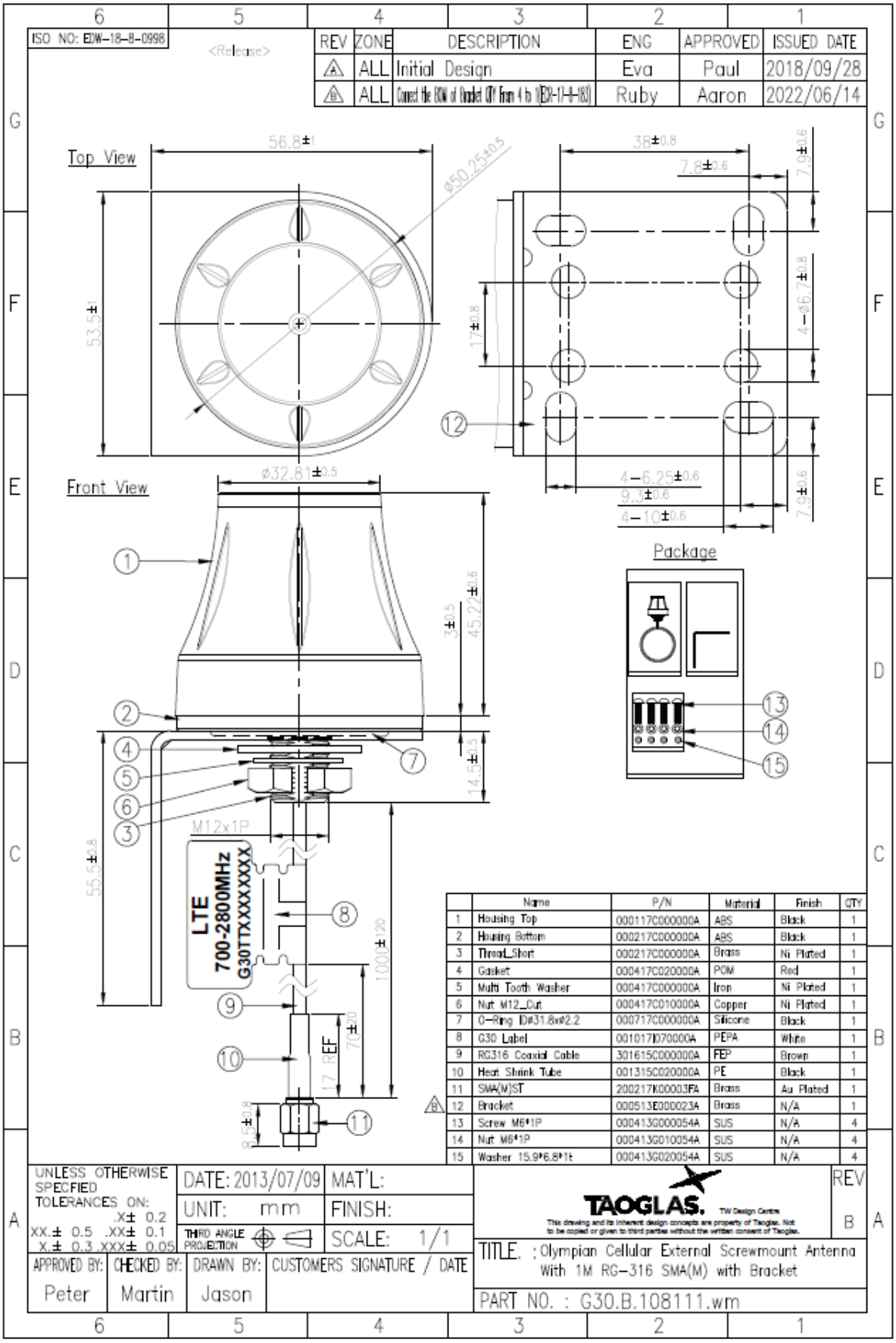
XZ Plane	YZ Plane	XY Plane
		

4.17 Ground Plane Patterns at 2595 MHz



XZ Plane	YZ Plane	XY Plane
		

5. Mechanical Drawing



REV	ZONE	DESCRIPTION	ENG	APPROVED	ISSUED DATE
A	ALL	Initial Design	Eva	Paul	2018/09/28
B	ALL	Correct the BOM of Gasket QTY from 4 to 1(EDW-17-H-163)	Ruby	Aaron	2022/06/14

	Name	P/N	Material	Finish	QTY
1	Housing Top	000117C000000A	ABS	Black	1
2	Housing Bottom	000217C000000A	ABS	Black	1
3	Thread_Short	000217C000000A	Brass	Ni Plated	1
4	Gasket	000417C020000A	POM	Red	1
5	Multi Tooth Washer	000417C000000A	Iron	Ni Plated	1
6	Nut M12_Out	000417C010000A	Copper	Ni Plated	1
7	O-Ring ID#31.8x#2.2	000717C000000A	Silicone	Black	1
8	G30 Label	001017D070000A	PEPA	White	1
9	RG316 Coaxial Cable	301615C000000A	FEP	Brown	1
10	Heat Shrink Tube	001315C020000A	PE	Black	1
11	SMA(M)ST	200217K00003FA	Brass	Au Plated	1
12	Bracket	000513E000023A	Brass	N/A	1
13	Screw M6*1P	000413G000054A	SUS	N/A	4
14	Nut M6*1P	000413G010054A	SUS	N/A	4
15	Washer 15.9*6.8*1t	000413G020054A	SUS	N/A	4

UNLESS OTHERWISE SPECIFIED TOLERANCES ON: .X± 0.2, XX.± 0.5, .XX± 0.1, X.± 0.3, .XXX± 0.05

DATE: 2013/07/09 | MAT'L: | UNIT: mm | FINISH: | THIRD ANGLE PROJECTION | SCALE: 1/1

APPROVED BY: Peter | CHECKED BY: Martin | DRAWN BY: Jason | CUSTOMERS SIGNATURE / DATE

TAOGLAS. TW Design Centre

REV B

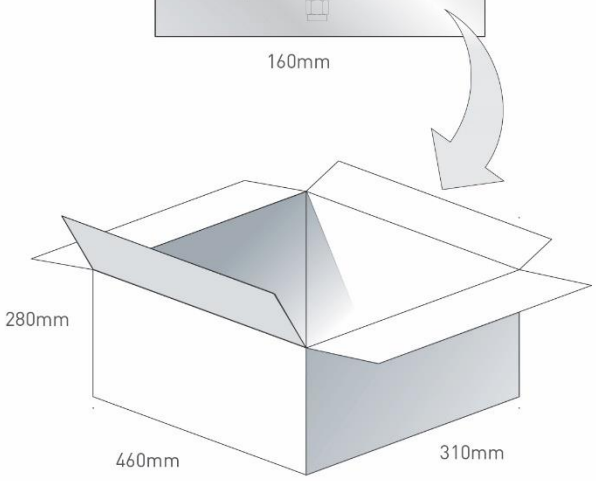
TITLE. : Olympian Cellular External Screwmount Antenna With 1M RG-316 SMA(M) with Bracket

PART NO. : G30.B.108111.wm

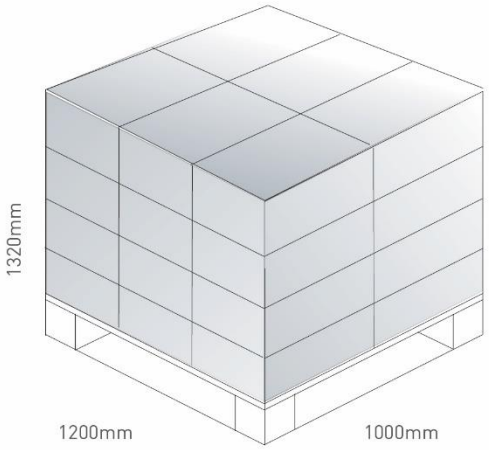
6. Packaging

1pc G30.B.108111.wm per PE bag
Bag Dimensions - 160*210 mm
Weight - 170g

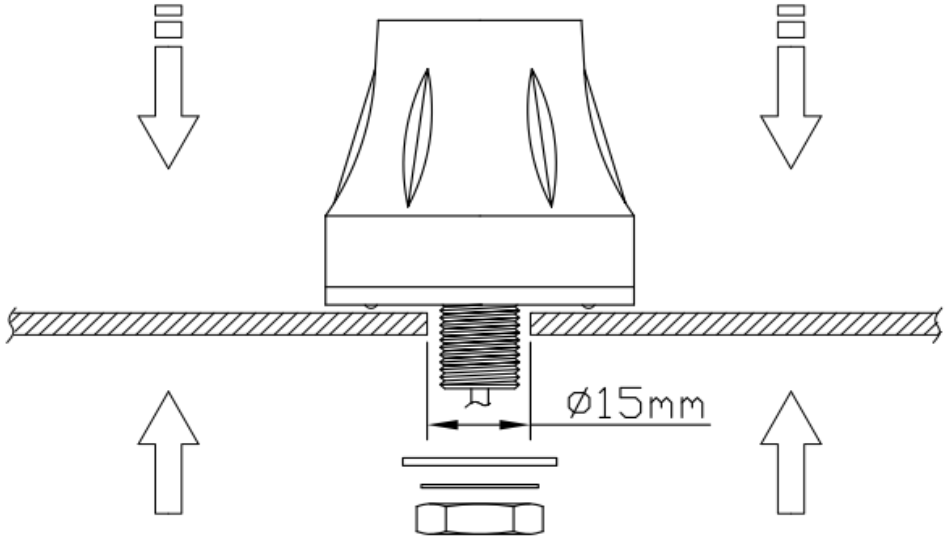
50pcs G30.B.108111.wm per carton
Carton Dimensions - 460*310*280mm
Weight - 9.5Kg



Pallet Dimensions 1200mm*1000mm*1320mm
24 Cartons per Pallet
6 Cartons per layer
4 Layers



7. Installation Guide



Recommended torque for mounting: 5-7Nm

(Torque value obtained with antenna mounted on 1mm thick SUS-316 bracket)

Changelog for the datasheet

SPE-14-8-102 - G30.B.108111wm

Revision: F (Current Version)	
Date:	2023-03-09
Changes:	Full datasheet update.
Changes Made by:	Gary West

Previous Revisions

Revision: E	
Date:	2018-03-14
Changes:	Drawing updated
Changes Made by:	Jack Conroy

Revision: D	
Date:	2017-04-04
Changes:	Added LTE band Table
Changes Made by:	Peter Monahan

Revision: C	
Date:	2015-02-05
Changes:	Removed ref to TL.01
Changes Made by:	Aine Doyle

Revision: B	
Date:	2015-09-29
Changes:	amended part #
Changes Made by:	Aine Doyle

Revision: A (Original First Release)	
Date:	2014-09-14
Notes:	
Author:	Unknown

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G30.B.108111.wm