TAOGLAS

Datasheet

Apex Right Angle TG.30

Part No:
TG.30.8112

Features:

600-6000MHz

Covers 5G/4G Bands

Typical 50%+ Efficiency and 3dBi+ Peak Gain

Dipole Terminal Antenna

90° termination with SMA(M) Connector

RoHS and REACH Compliant

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1. Introduction

The Apex TG.30 is a Wideband Dipole 5G/4G Antenna – is primarily designed for use with 5G/4G modules, routers and devices that require the highest possible efficiency and peak gain to deliver best in class throughput on all major cellular bands worldwide between 600MHz and 6GHz.

This fixed 90 degree, connector mount, dipole antenna is primarily designed for use with 5G/4G modules and devices that require the highest possible efficiency and peak gain in order to deliver best-in-class throughput.

Typical Applications include:

- Routers and Gateways
- Access Points
- Remote Monitoring

With very high efficiency on every cellular band globally it is an ideal solution for any device requiring high, reliable performance. It is also guaranteed to meet any type approval or carrier certification requirements from a RF standpoint.

This patented antenna is available in White and Black versions. It is also available with with swivel 90 degrees and straight connectors.

For further information please contact your regional Taoglas customer support team.

2. Specifications

5G/4G Elecrical								
Band	**Frequency (MHz)**		**Efficiency (%)**	**Average Gain (dB)**	**Peak Gain (dBi)**	**VSWR**	**Impedance**	**Polarization**
5GNR/4G Band 5,8,12,13,14,17,18,20, 26,27,28, 29,71	617~960	Freespace	57	-2.8	2.6	3 Max	50Ω	Linear
		Edge_30X30cm_GP	53	-3.1	2.8			
		Centre_30X30cm_GP	19	-7.7	1.4			
5GNR/4G Band 21,32,74,75,76	1427~1518	Freespace	50	-3.3	5.6			
		Edge_30X30cm_GP	66	-2.0	2.5			
		Centre_30X30cm_GP	67	-2.0	7.2			
4G/3G Band 1,2,3,4,9,23,25,35,39,66	1710~2200	Freespace	80	-1.0	4.3			
		30X30cm_GP	66	-1.8	3.0			
		Centre_30X30cm_GP	64	-1.9	7.8			
Wi-Fi 2400	2400~2500	Freespace	68	-1.7	4.2			
		Edge_30X30cm_GP	62	-2.1	3.9			
		Centre_30X30cm_GP	31	-5.1	3.1			
4G/3G Band 7,38,41	2490~2690	Freespace	69	-1.6	4.4			
		Edge_30X30cm_GP	50	-2.9	4.6			
		Centre_30X30cm_GP	56	-2.7	7.1			
5GNR/4G Band 22,42,43,48,77,78	3300~3800	Freespace	63	-2.2	6.5			
		Edge_30X30cm_GP	48	-3.7	5.5			
		Centre_30X30cm_GP	43	-4.2	6.8			
LTE5200/ Wi-Fi 5800	5150~5925	Freespace	66	-1.9	5.7			
		Edge_30X30cm_GP	42	-3.9	4.7			
		Centre_30X30cm_GP	35	-4.9	7.1			

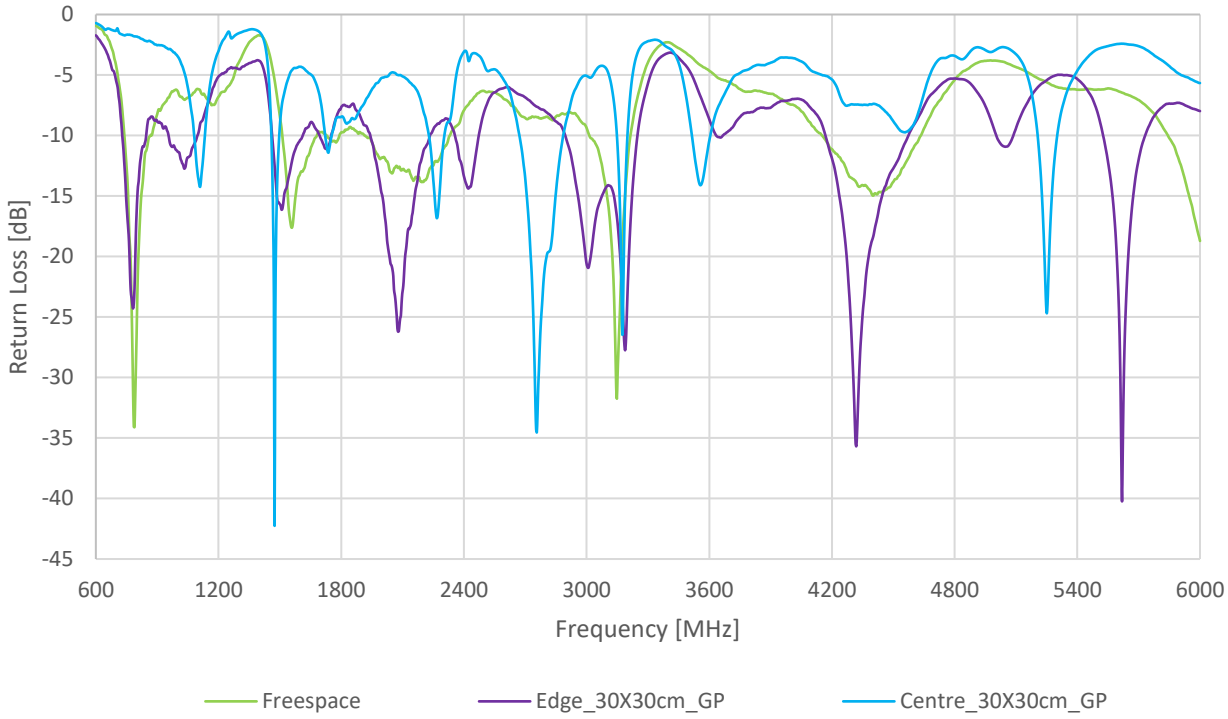
Mechanical	
Casing	UV Resistant PC/ABS
Flammability Rating	UL-94
Connector	SMA Male

Environmental	
Temperature Range	-40°C to 85°C
Humidity	Non-condensing 65°C 95% RH

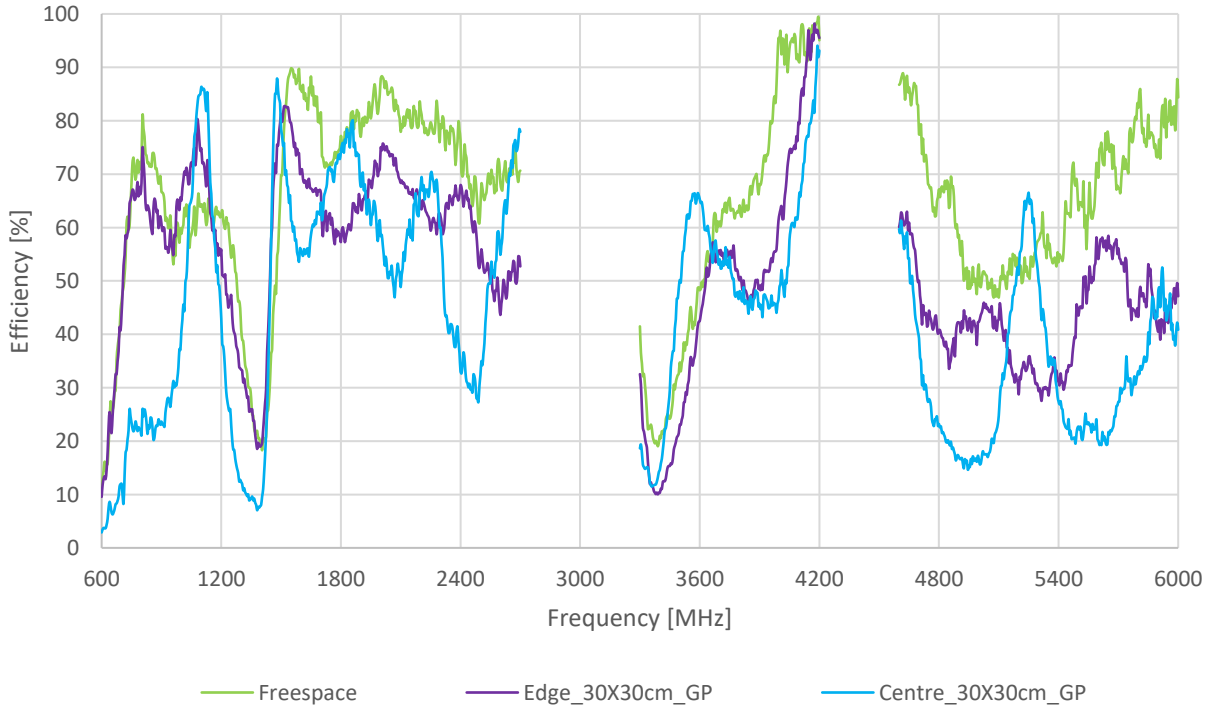
5G/4G Bands			
Band Number	5GNR / FR1 / LTE / LTE-Advanced / WCDMA / HSPA / HSPA+ / TD-SCDMA		
	Uplink	**Downlink**	**Covered**
1	UL: 1920 to 1980	DL: 2110 to 2170	✓
2	UL: 1850 to 1910	DL: 1930 to 1990	✓
3	UL: 1710 to 1785	DL: 1805 to 1880	✓
4	UL: 1710 to 1755	DL: 2110 to 2155	✓
5	UL: 824 to 849	DL: 869 to 894	✓
7	UL: 2500 to 2570	DL:2620 to 2690	✓
8	UL: 880 to 915	DL: 925 to 960	✓
9	UL: 1749.9 to 1784.9	DL: 1844.9 to 1879.9	✓
11	UL: 1427.9 to 1447.9	DL: 1475.9 to 1495.9	✓
12	UL: 699 to 716	DL: 729 to 746	✓
13	UL: 777 to 787	DL: 746 to 756	✓
14	UL: 788 to 798	DL: 758 to 768	✓
17	UL: 704 to 716	DL: 734 to 746	✓
18	UL: 815 to 830	DL: 860 to 875	✓
19	UL: 830 to 845	DL: 875 to 890	✓
20	UL: 832 to 862	DL: 791 to 821	✓
21	UL: 1447.9 to 1462.9	DL: 1495.9 to 1510.9	✓
22	UL: 3410 to 3490	DL: 3510 to 3590	✓
23	UL:2000 to 2020	DL: 2180 to 2200	✓
24	UL:1625.5 to 1660.5	DL: 1525 to 1559	✓
25	UL: 1850 to 1915	DL: 1930 to 1995	✓
26	UL: 814 to 849	DL: 859 to 894	✓
27	UL: 807 to 824	DL: 852 to 869	✓
28	UL: 703 to 748	DL: 758 to 803	✓
29	UL: -	DL: 717 to 728	✓
30	UL: 2305 to 2315	DL: 2350 to 2360	✓
31	UL: 452.5 to 457.5	DL: 462.5 to 467.5	✗
32	UL: -	DL: 1452 - 1496	✓
35	1850 to 1910		✓
38	2570 to 2620		✓
39	1880 to 1920		✓
40	2300 to 2400		✓
41	2496 to 2690		✓
42	3400 to 3600		✓
43	3600 to 3800		✓
48	3550 to 3700		✓
66	UL: 1710-1780	DL: 2110-2200	✓
71	617 to 698		✓
74/75/76	1427 to 1518		✓
78	3300 to 3800		✓
79	4400 to 5000		✗
85	698-716	728-746	✓

3. Antenna Characteristics

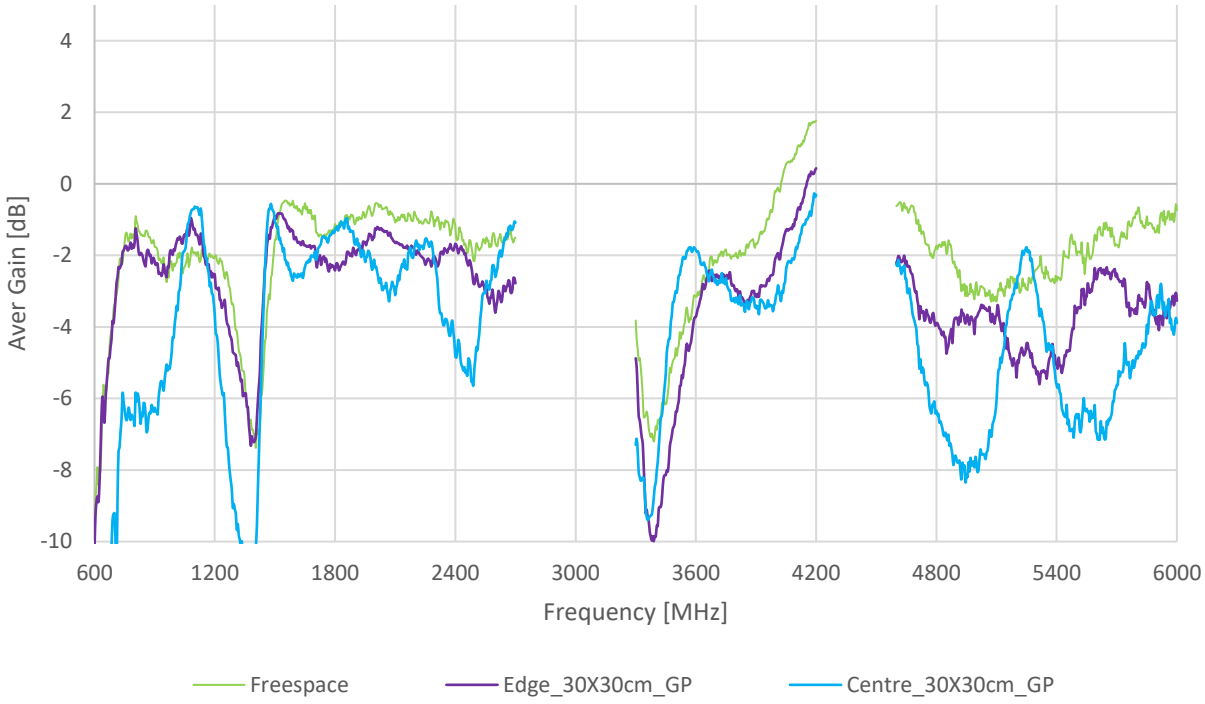
3.1 Return Loss



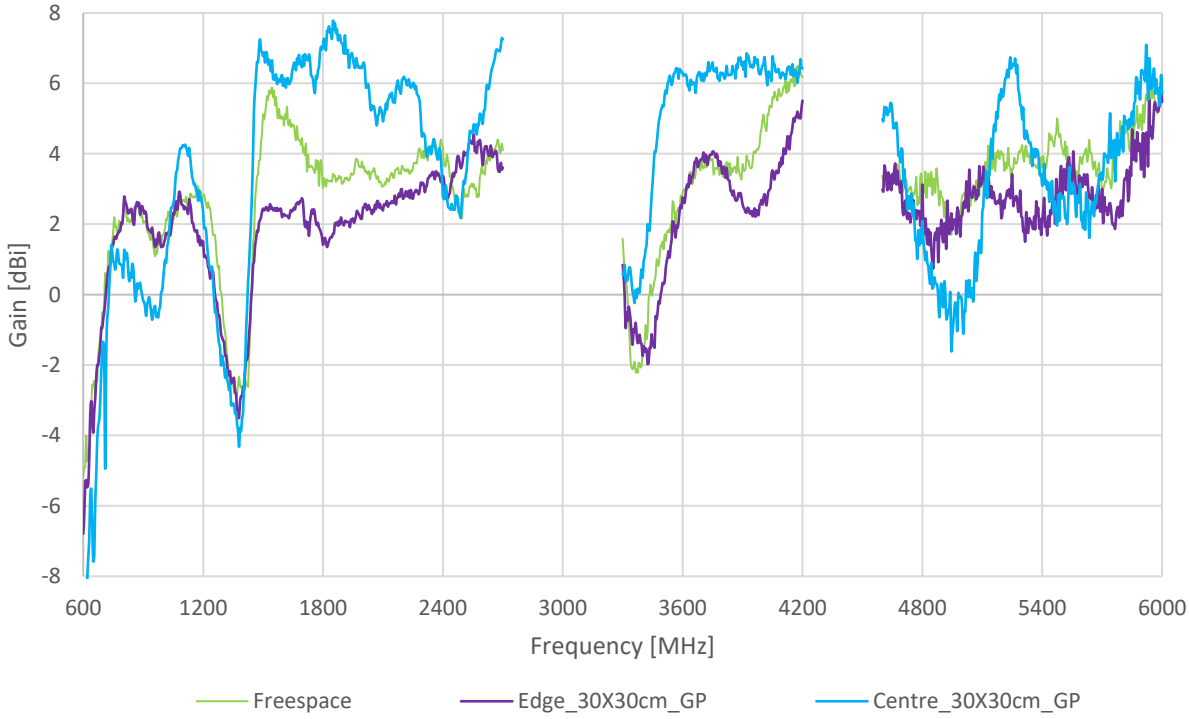
3.2 Efficiency



3.3 Average Gain

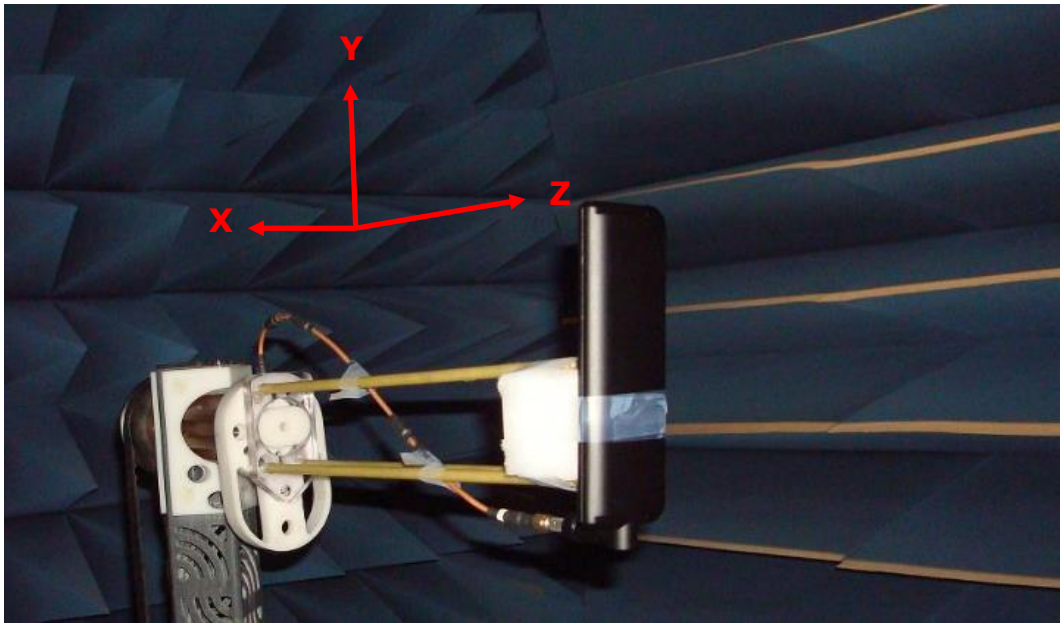


3.4 Peak Gain

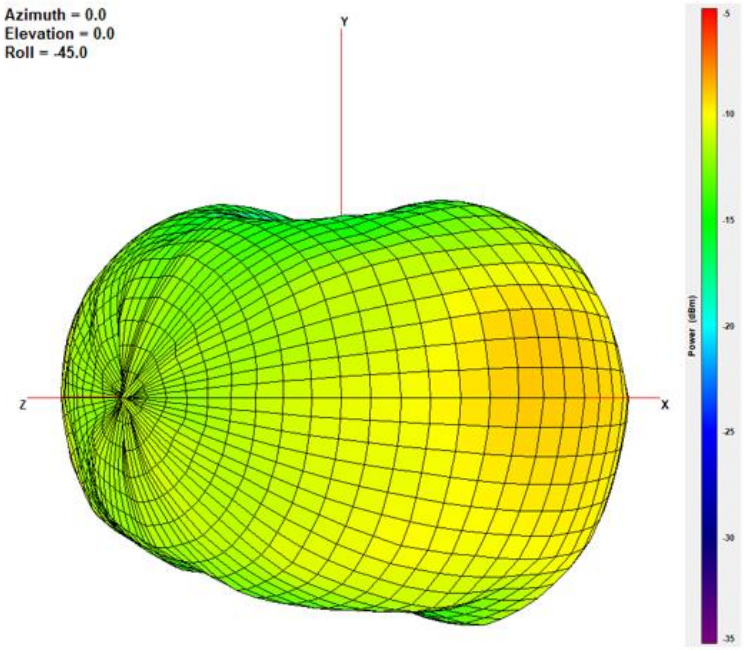


4. Radiation Patterns

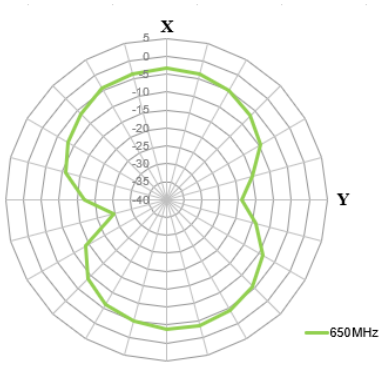
4.1 Test Setup – Freespace

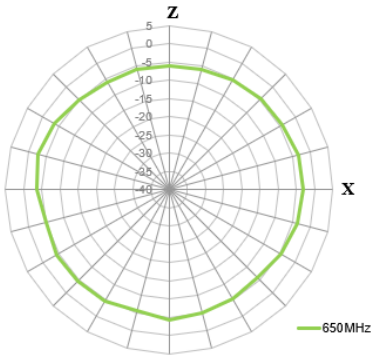


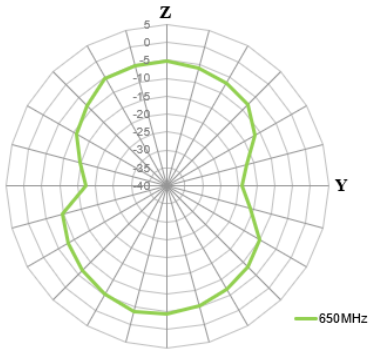
4.2 650MHz _Freespace 2D & 3D Radiation Patterns



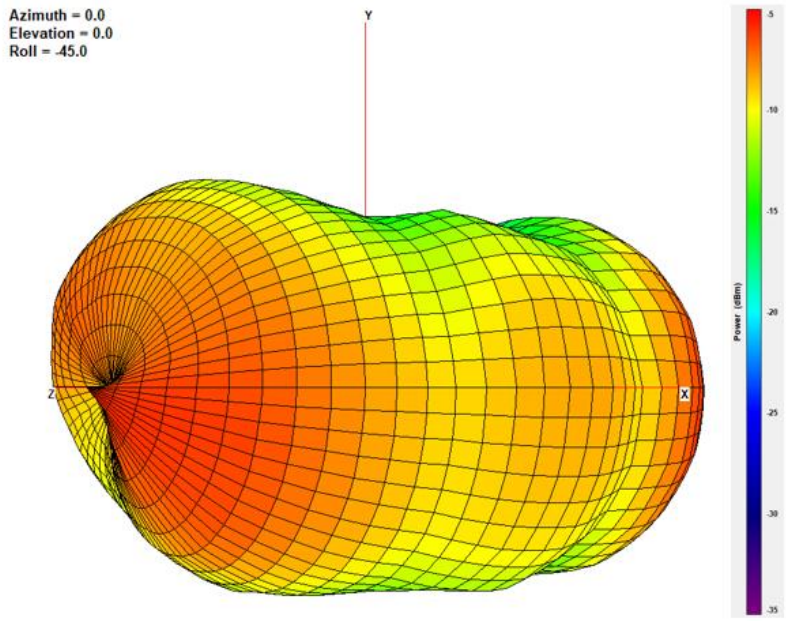
XY Plane	XZ Plane	YZ Plane



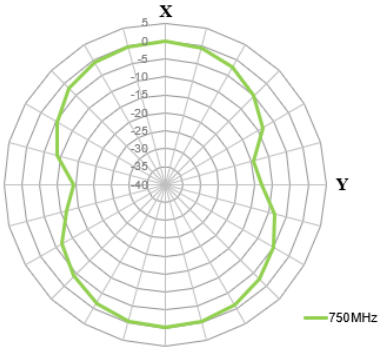


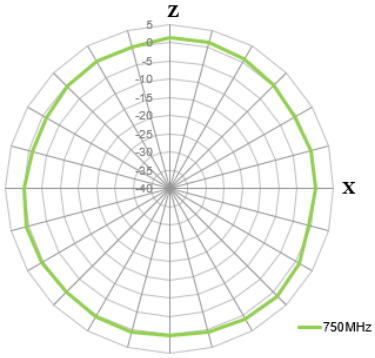


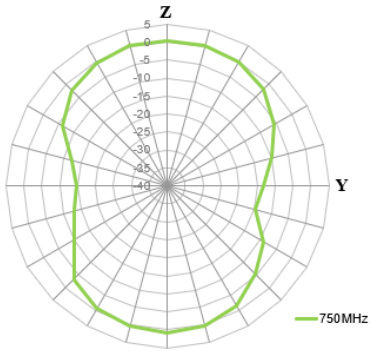
750MHz



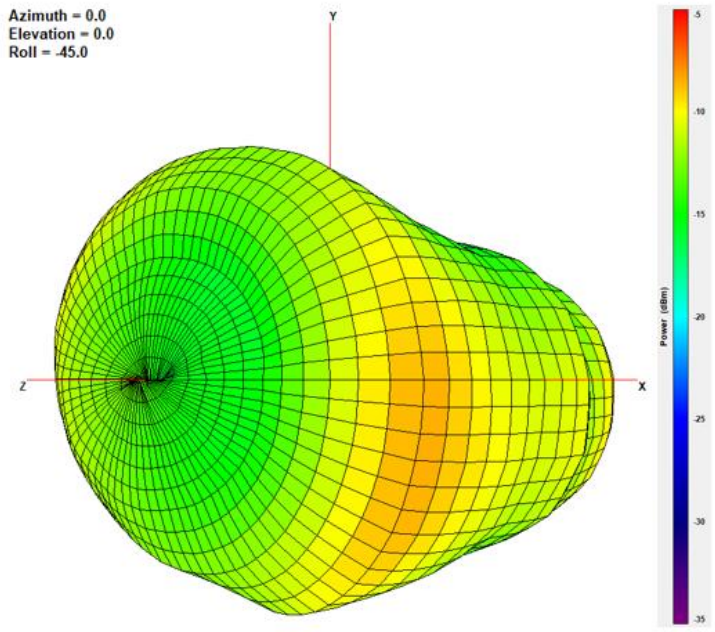
XY Plane	XZ Plane	YZ Plane



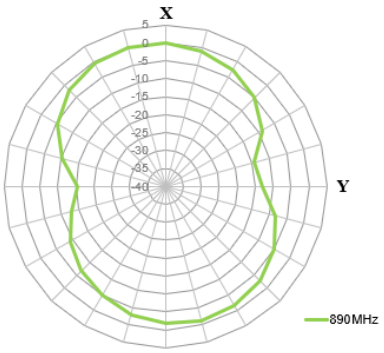


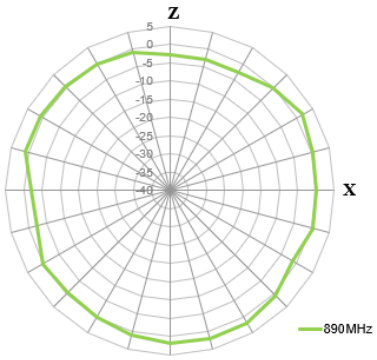


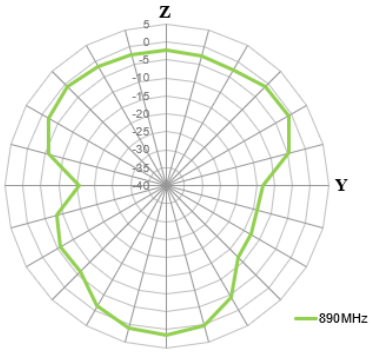
890MHz



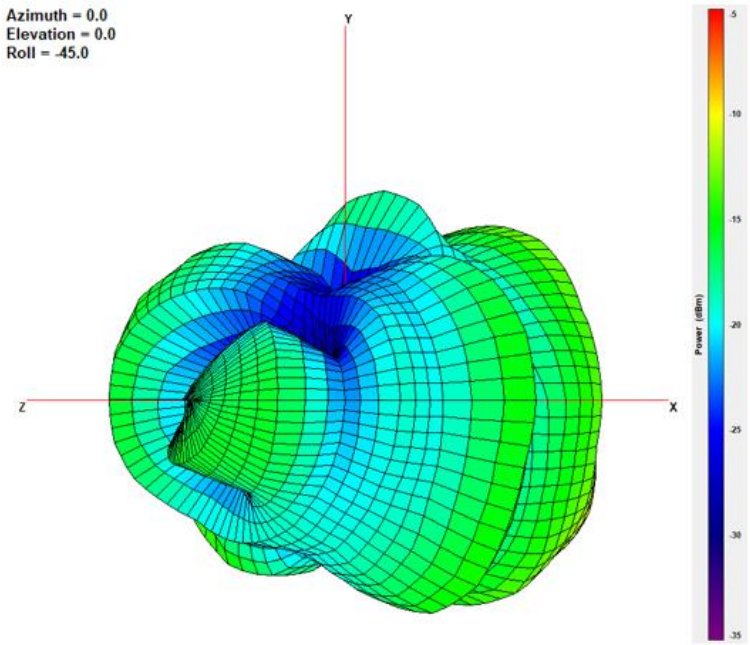
XY Plane	XZ Plane	YZ Plane



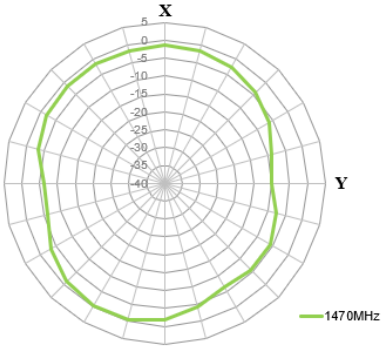


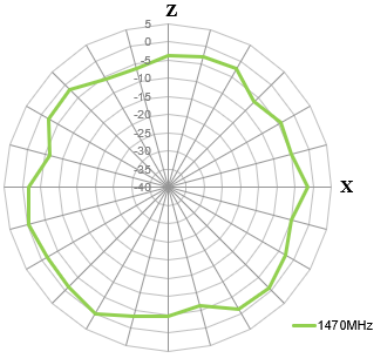


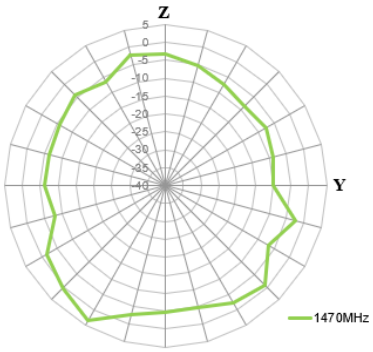
1470MHz



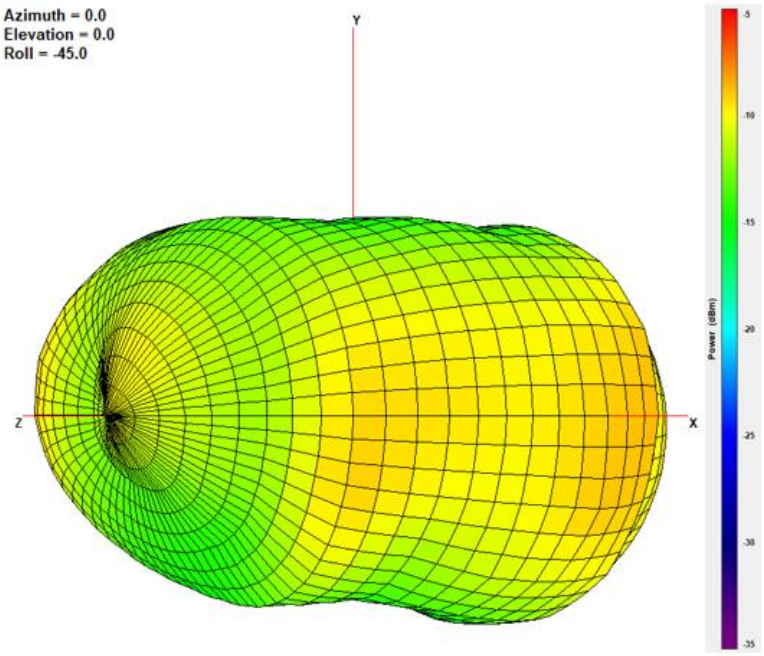
XY Plane	XZ Plane	YZ Plane



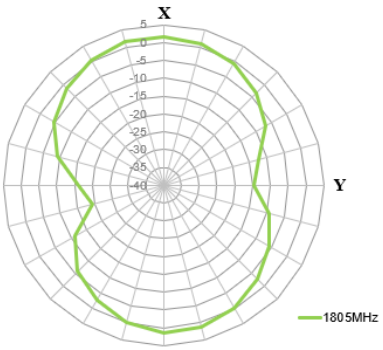


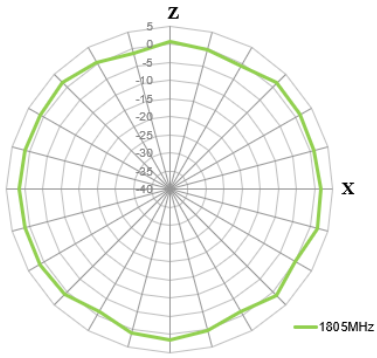


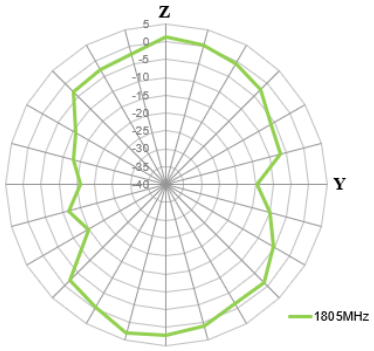
1805MHz



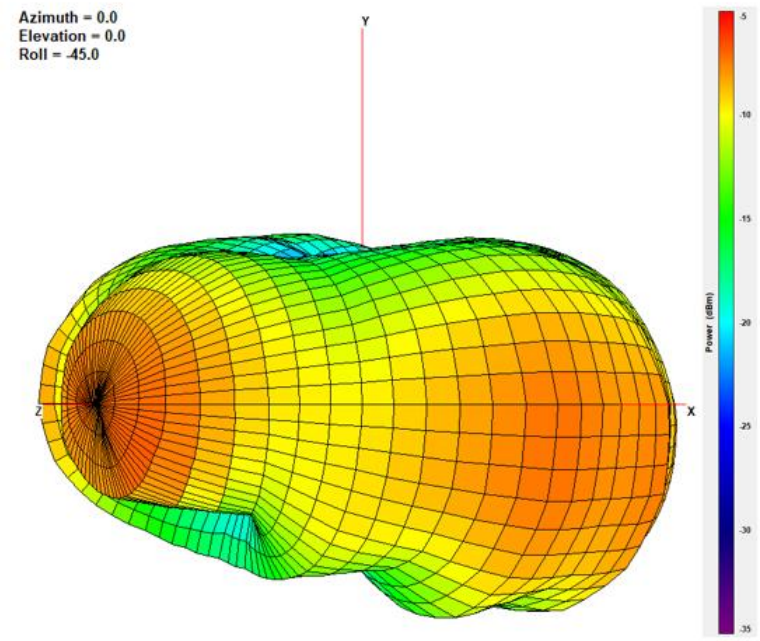
XY Plane	XZ Plane	YZ Plane



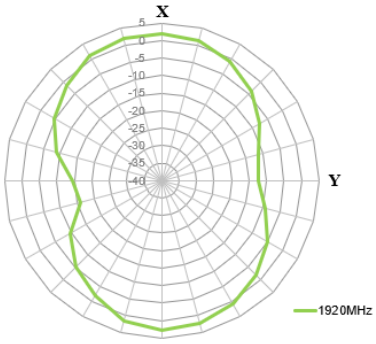


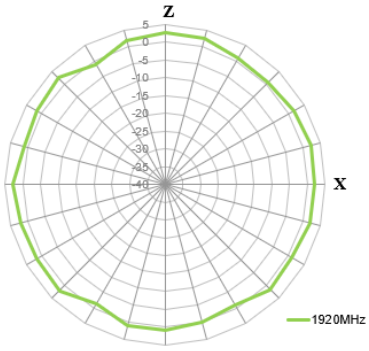


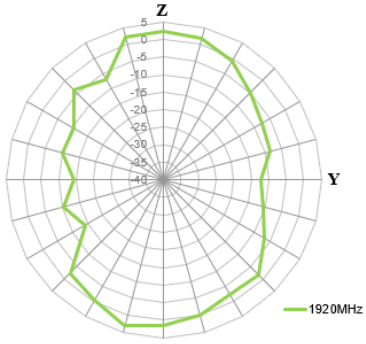
1920MHz



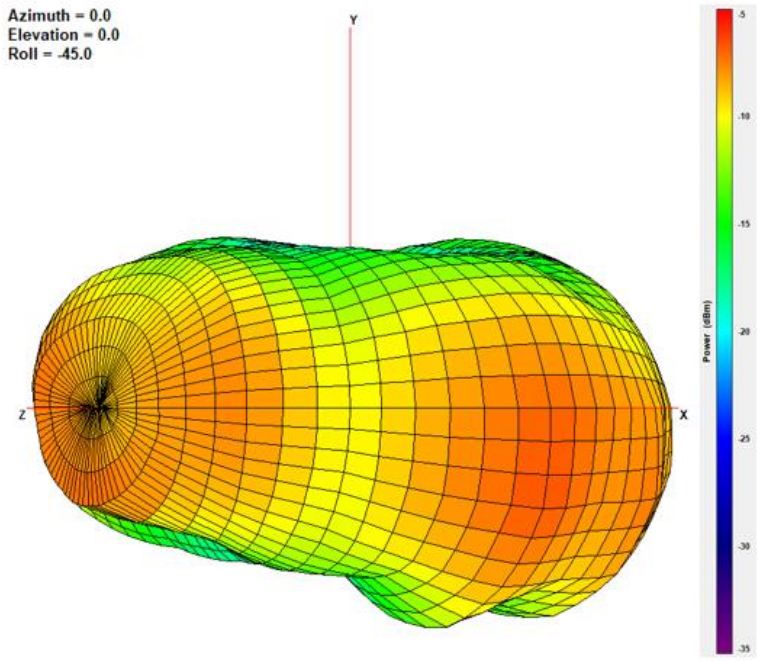
XY Plane	XZ Plane	YZ Plane



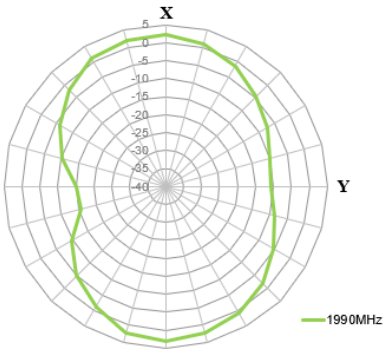


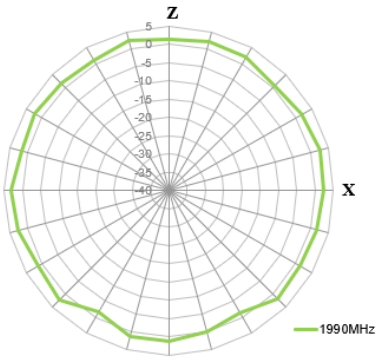


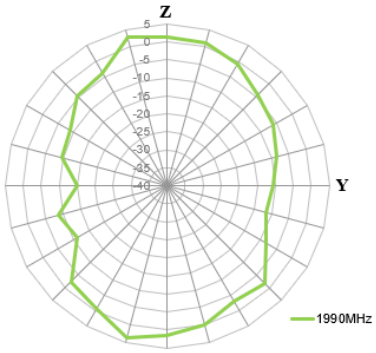
1990MHz



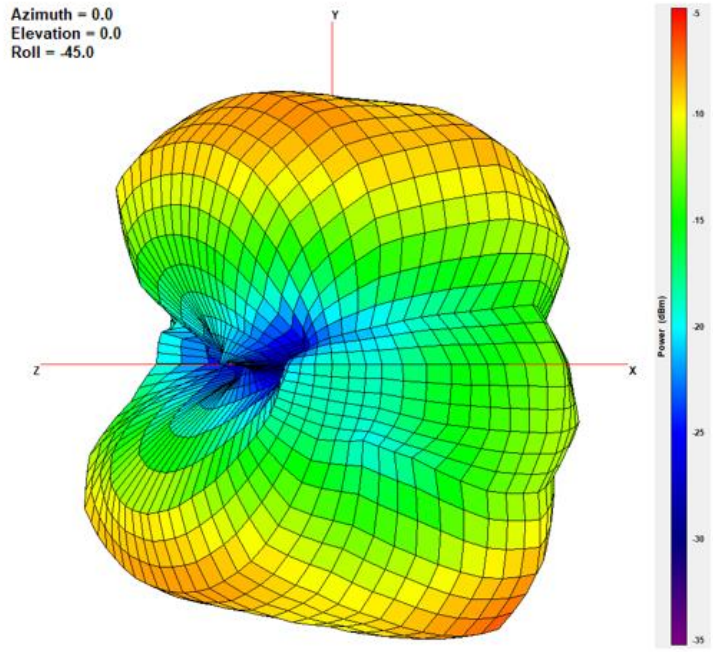
XY Plane	XZ Plane	YZ Plane



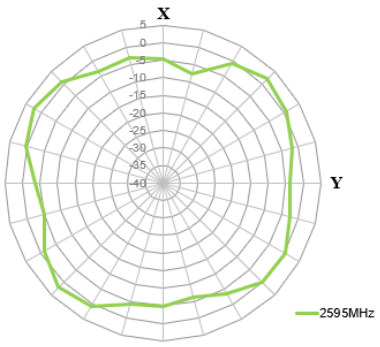


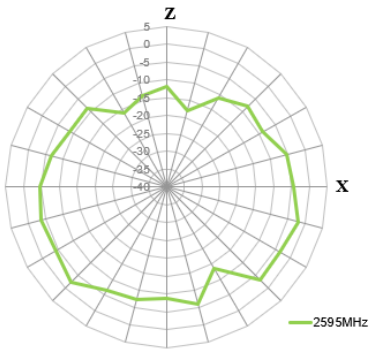


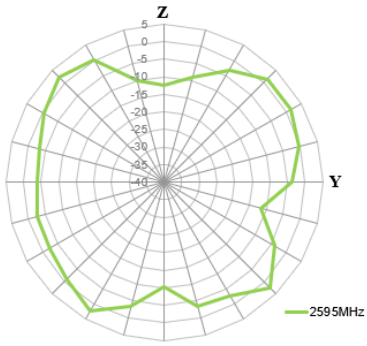
2595MHz



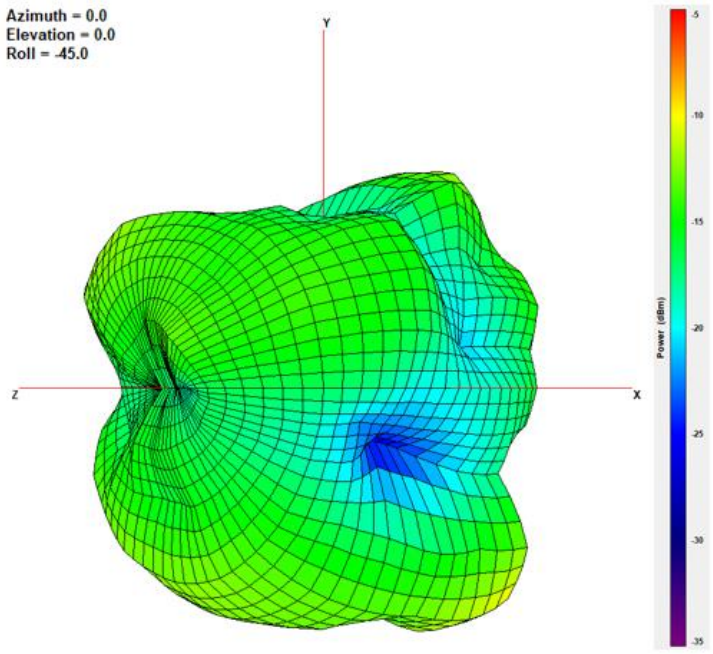
XY Plane	XZ Plane	YZ Plane



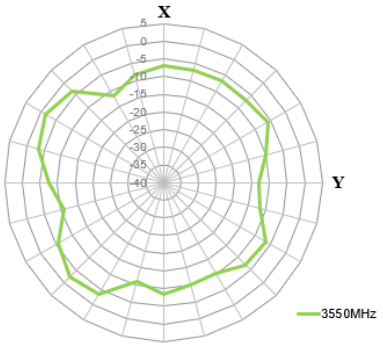


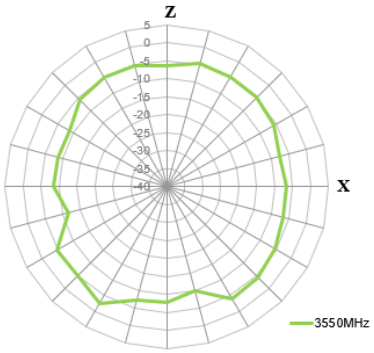


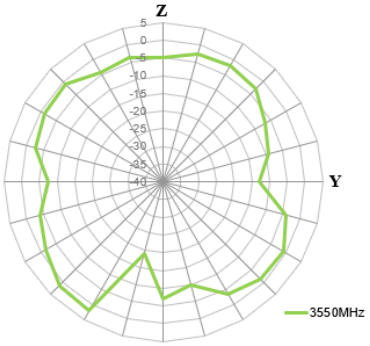
3550MHz



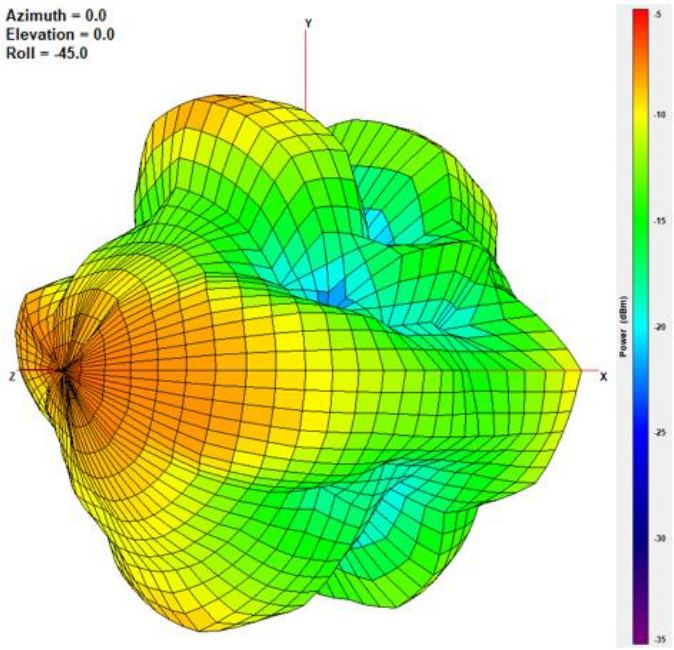
XY Plane	XZ Plane	YZ Plane



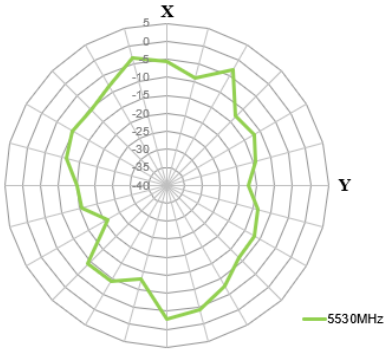


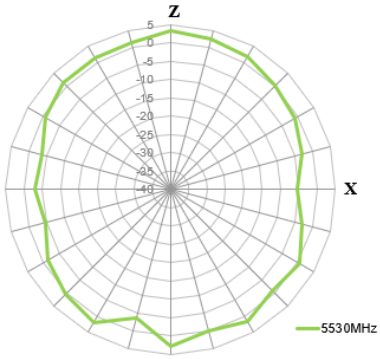


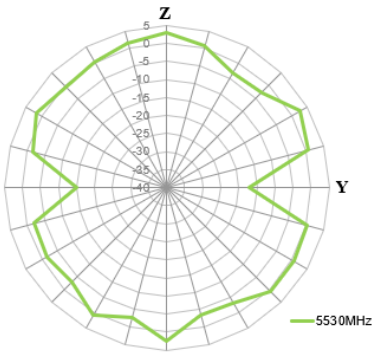
5530MHz



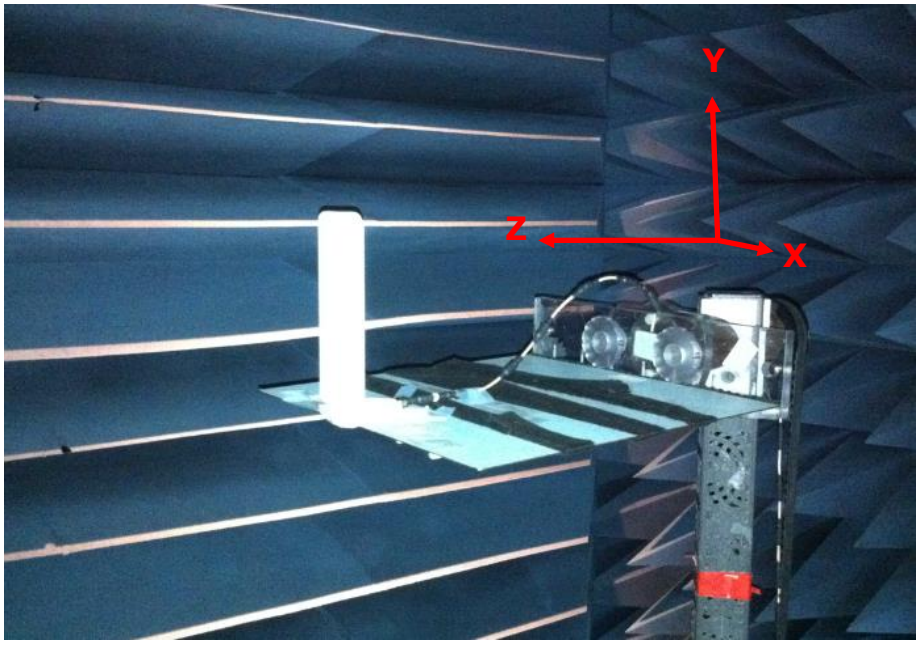
XY Plane	XZ Plane	YZ Plane



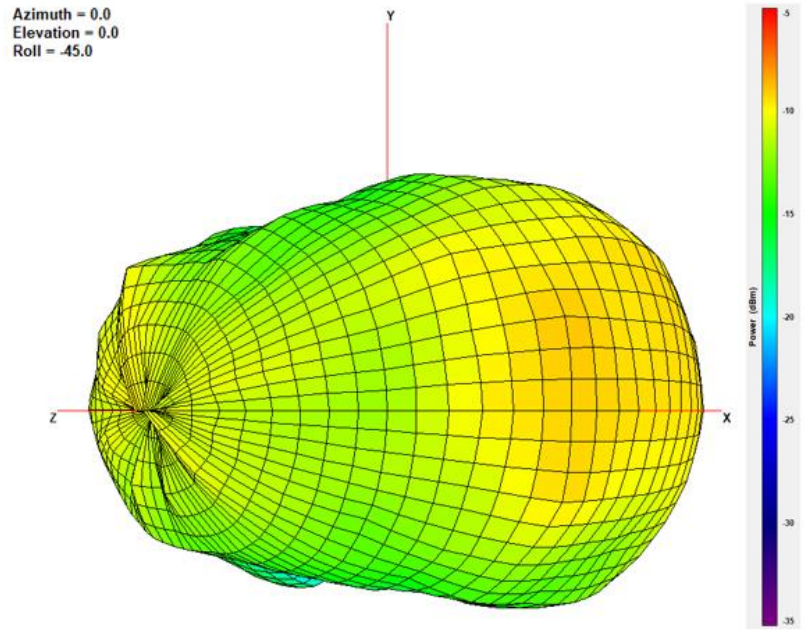




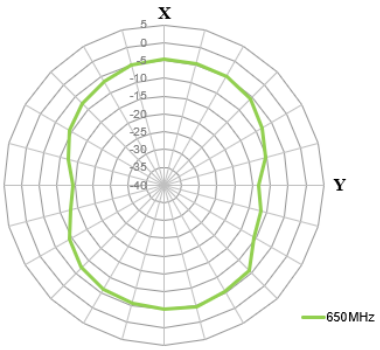
4.3 Test Setup –Edge_30X30cm_Ground plane

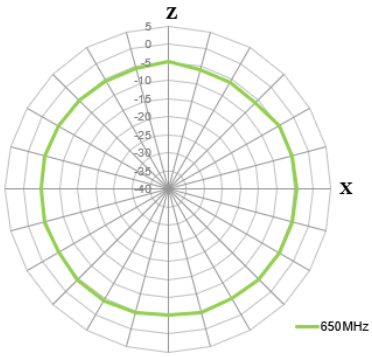


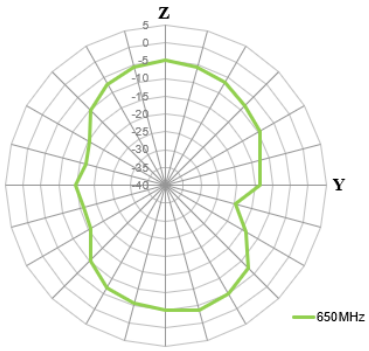
4.4 650MHz - Edge_30X30cm_Ground plane 2D & 3D Radiation Patterns



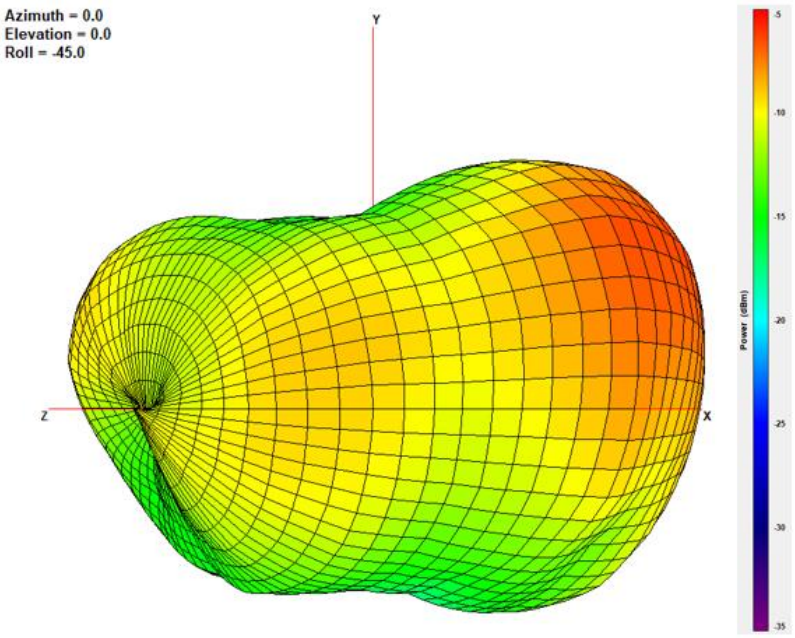
XY Plane	XZ Plane	YZ Plane



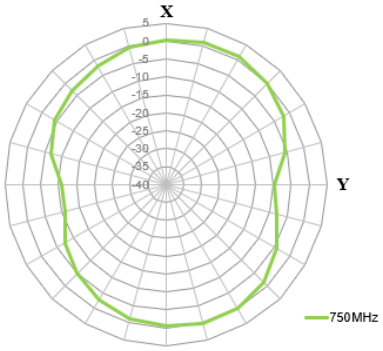


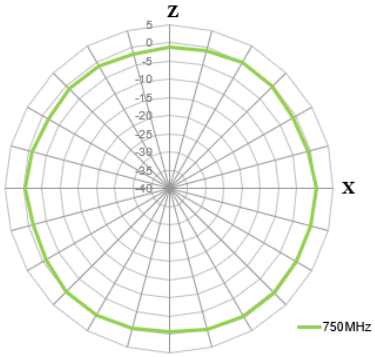


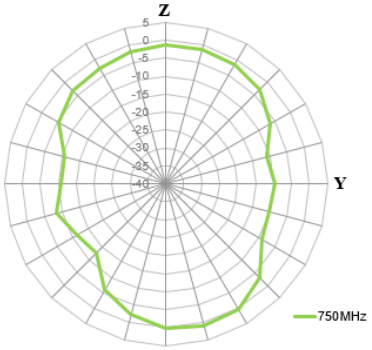
750MHz



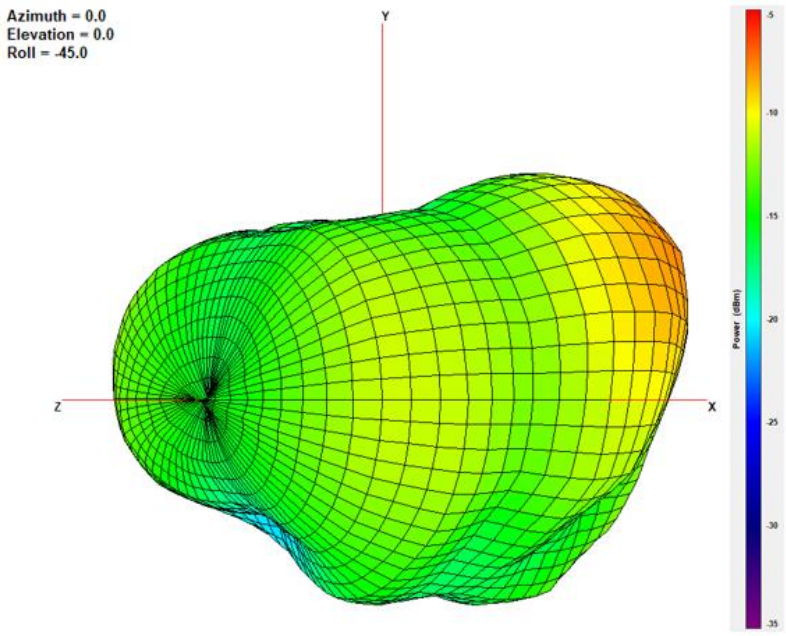
XY Plane	XZ Plane	YZ Plane



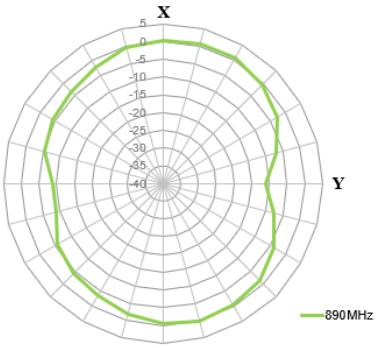


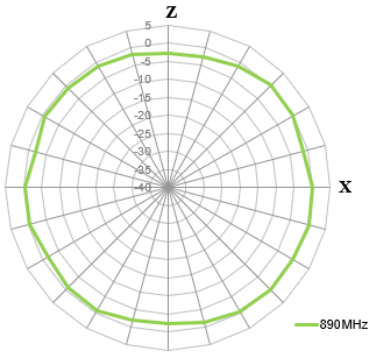


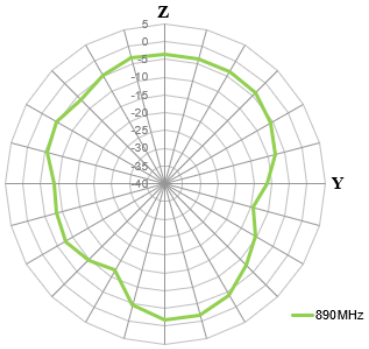
890MHz



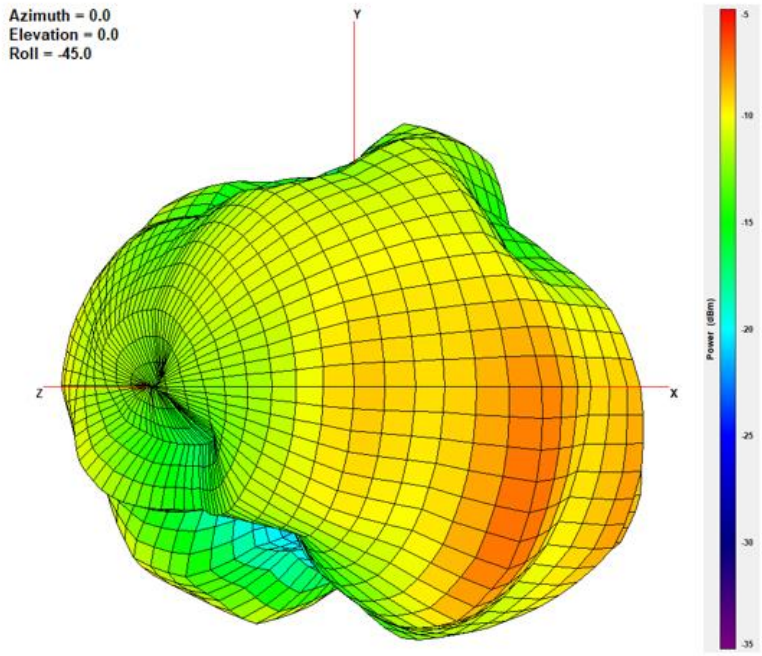
XY Plane	XZ Plane	YZ Plane



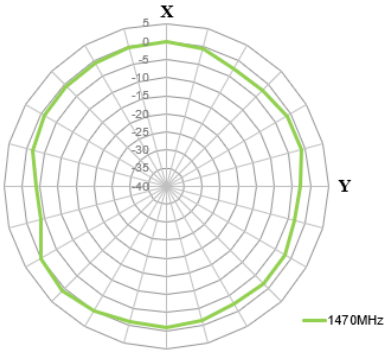


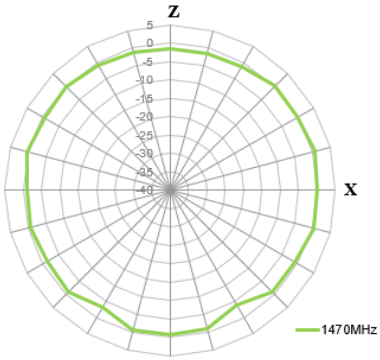


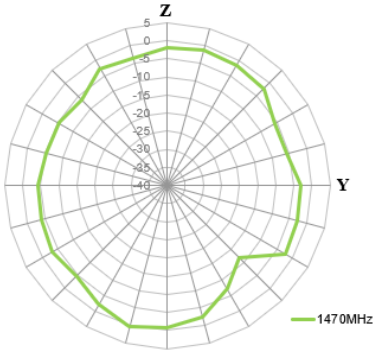
1470MHz



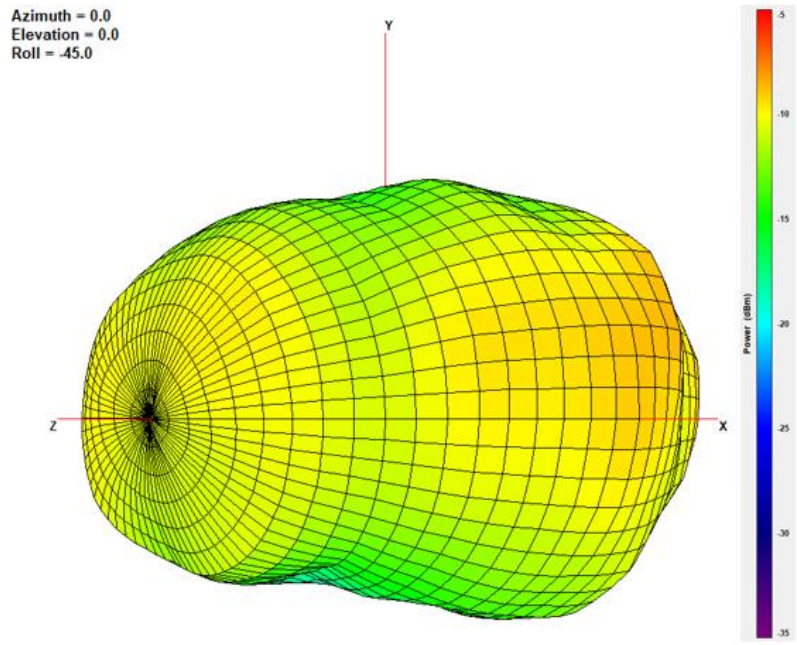
XY Plane	XZ Plane	YZ Plane



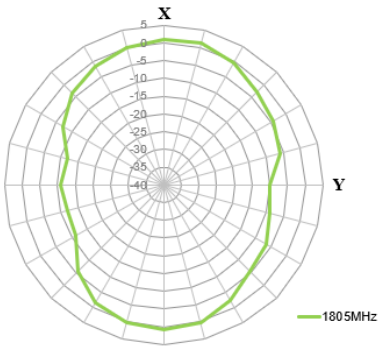


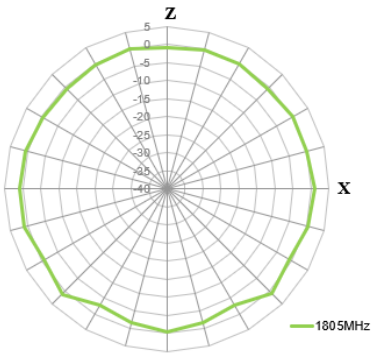


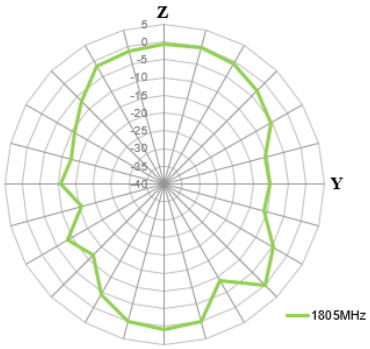
1805MHz



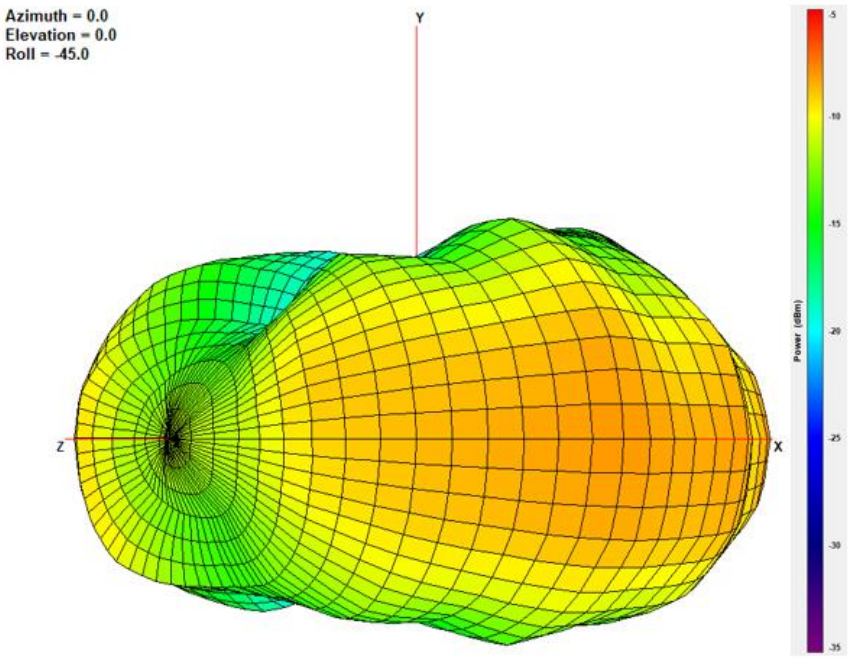
XY Plane	XZ Plane	YZ Plane



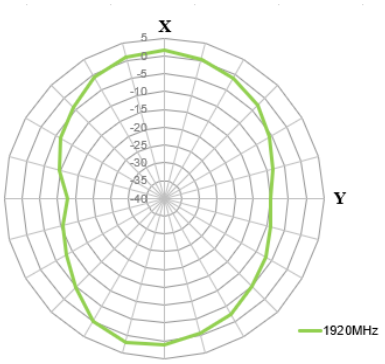


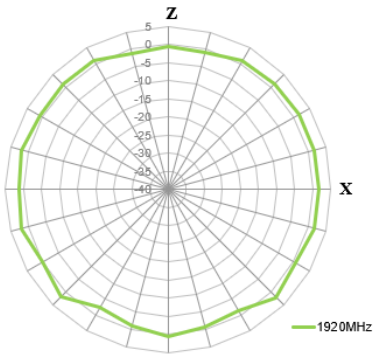


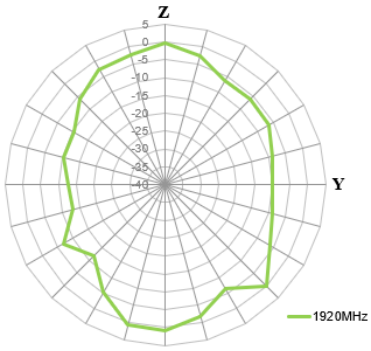
1920MHz



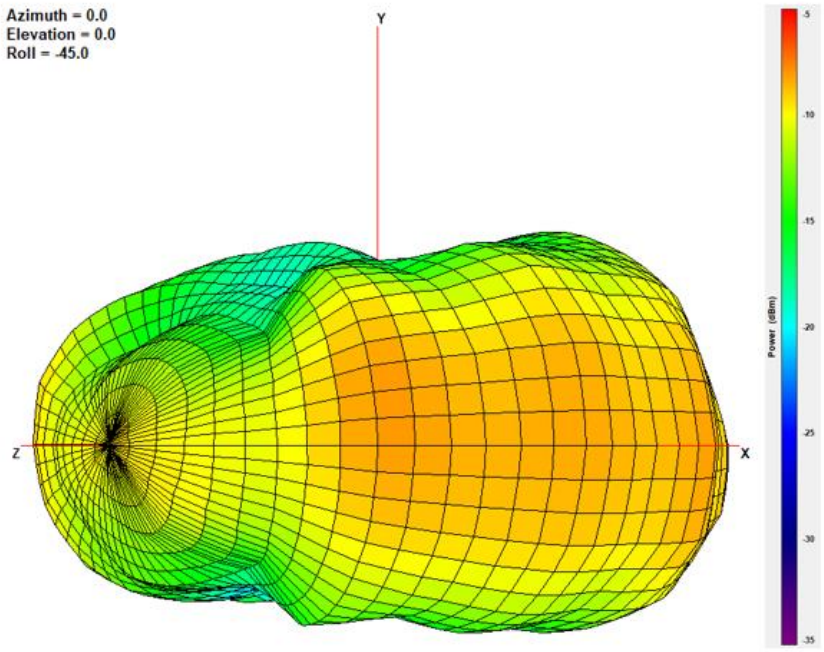
XY Plane	XZ Plane	YZ Plane



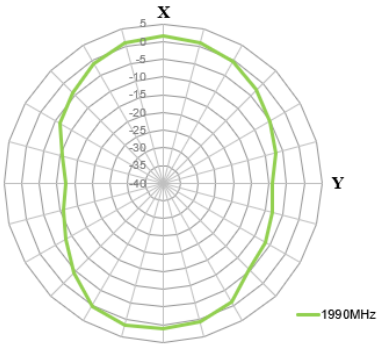


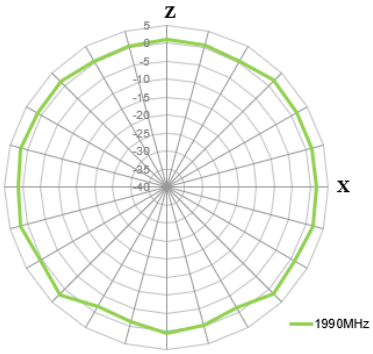


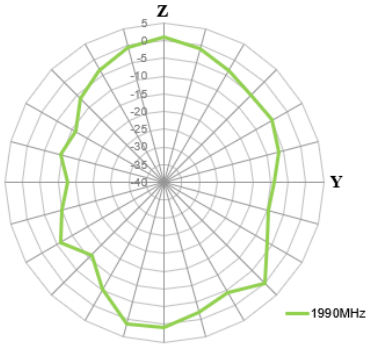
1990MHz



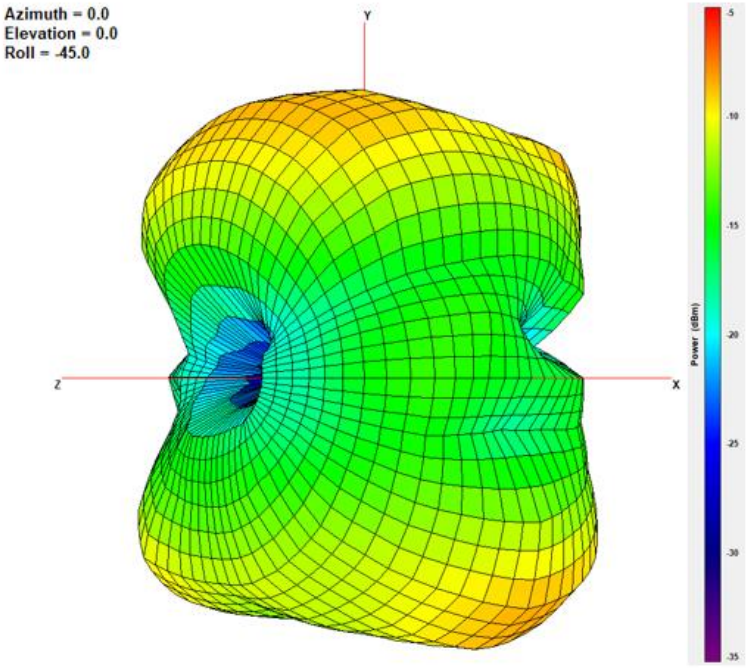
XY Plane	XZ Plane	YZ Plane



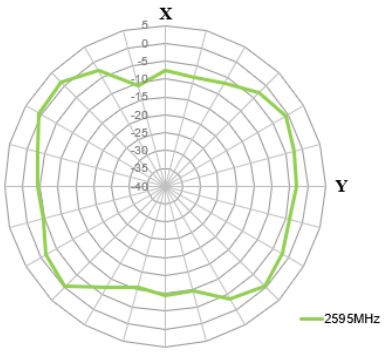


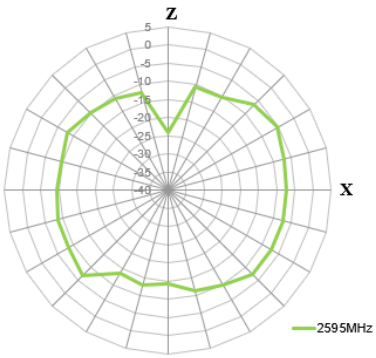


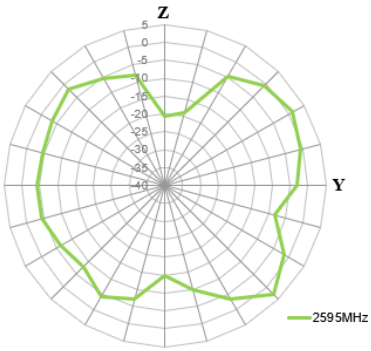
2595MHz



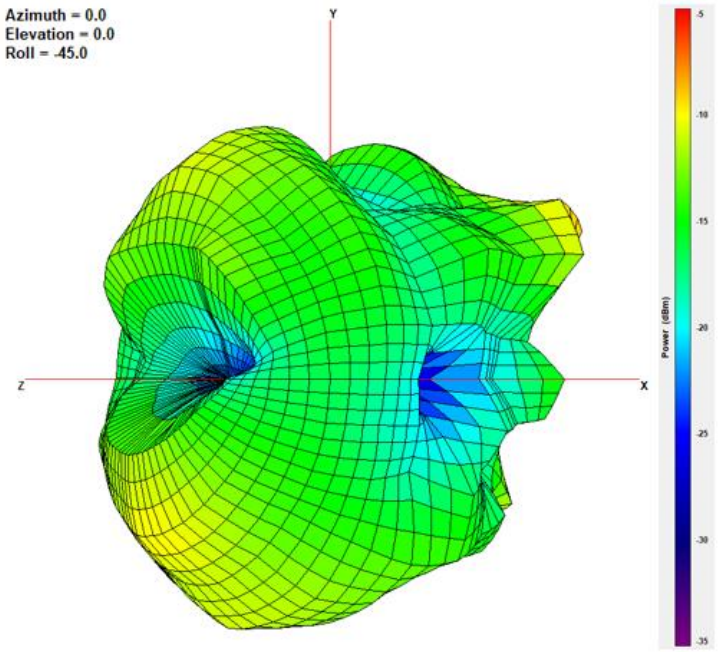
XY Plane	XZ Plane	YZ Plane



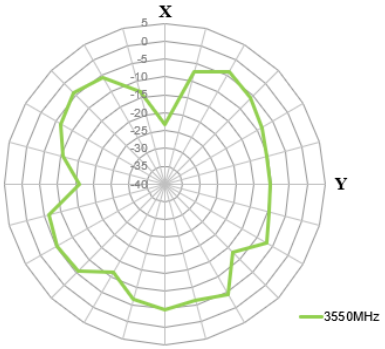


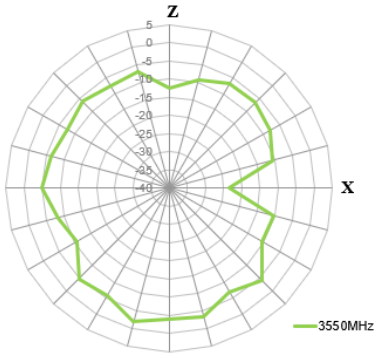


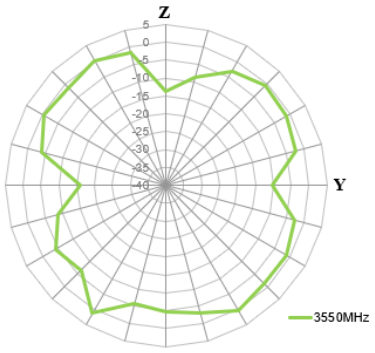
3550MHz



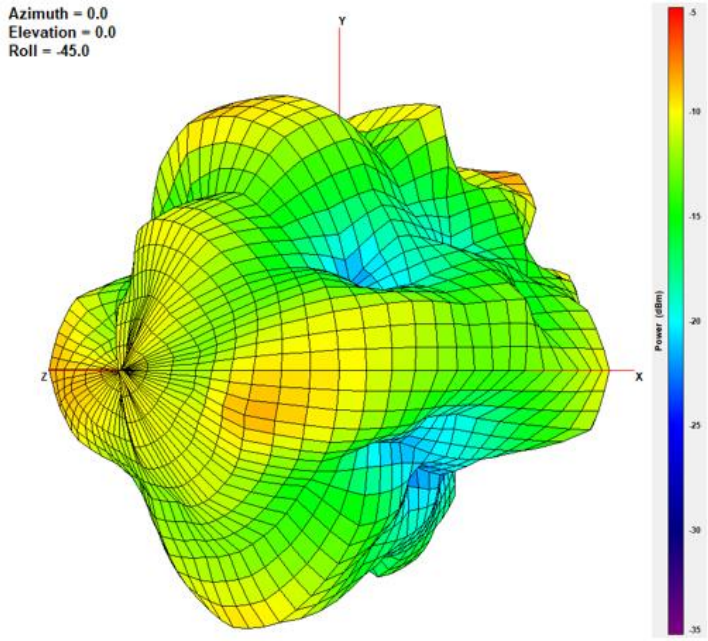
XY Plane	XZ Plane	YZ Plane



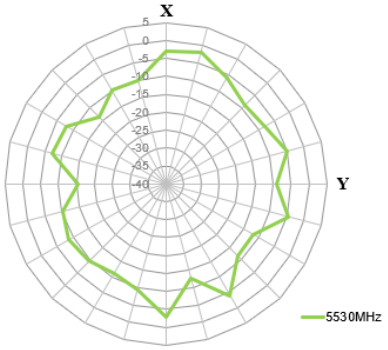


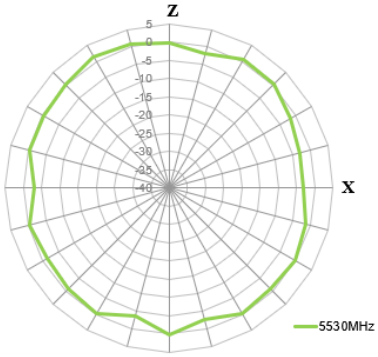


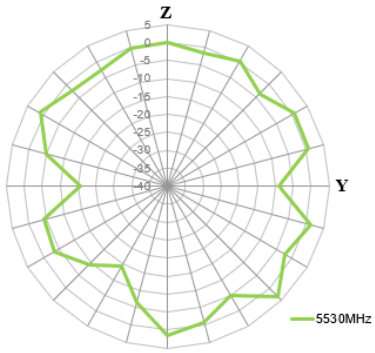
5530MHz



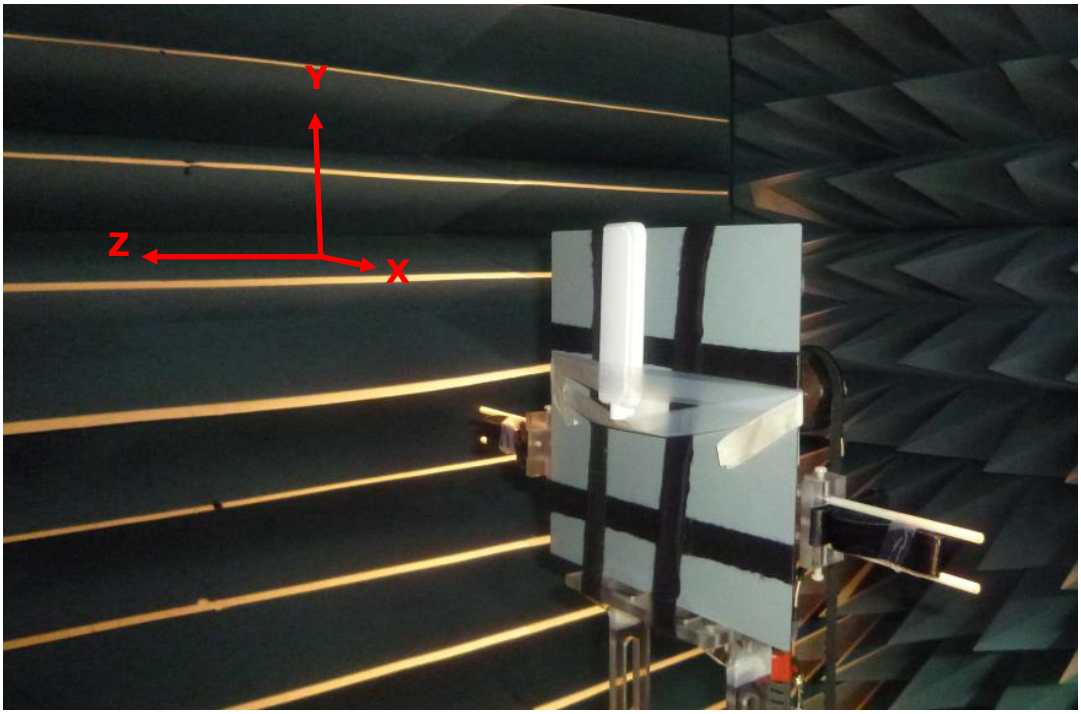
XY Plane	XZ Plane	YZ Plane



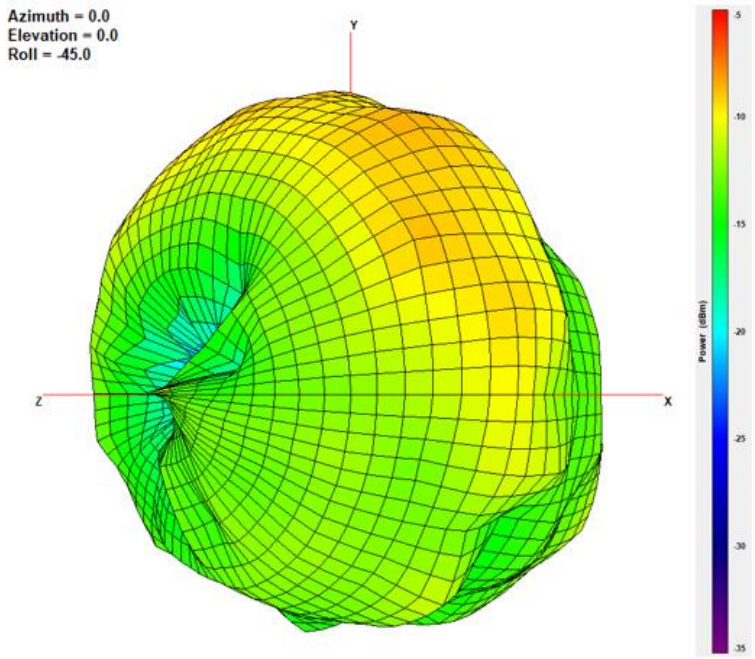




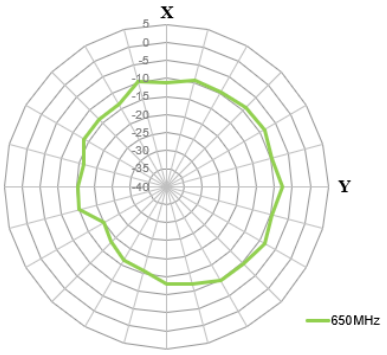
4.5 Test Setup – Centre_30X30cm_Ground plane

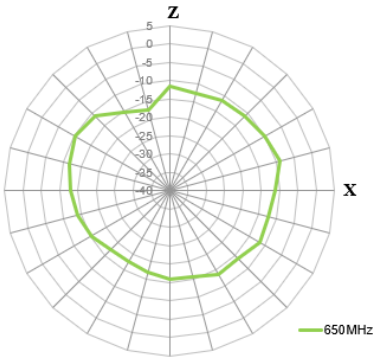


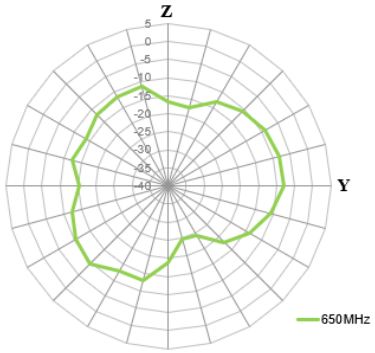
4.6 650MHz – Centre_30X30cm_Ground plane 2D & 3D Radiation Patterns



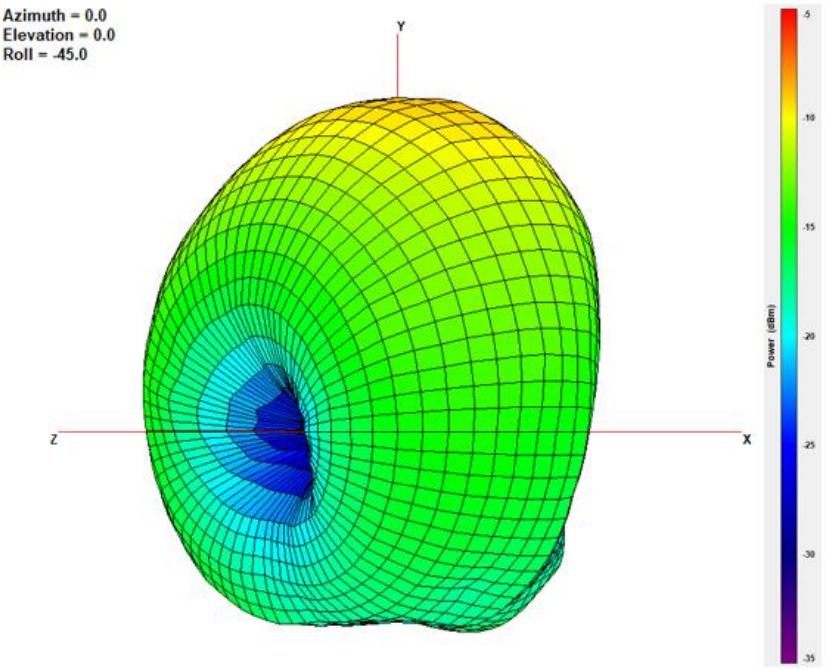
XY Plane	XZ Plane	YZ Plane



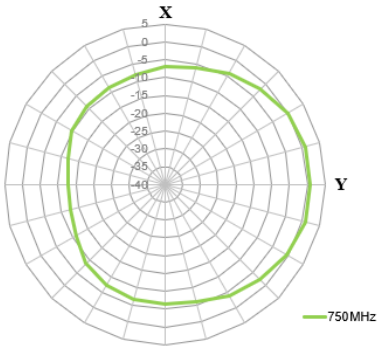


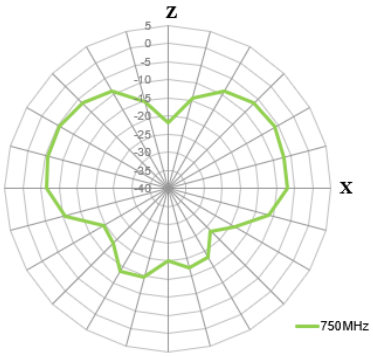


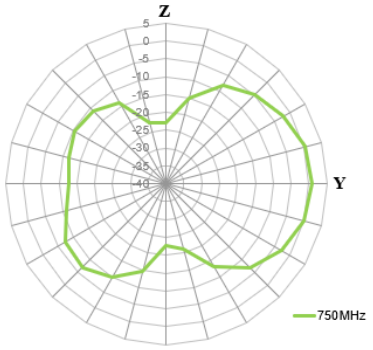
750MHz



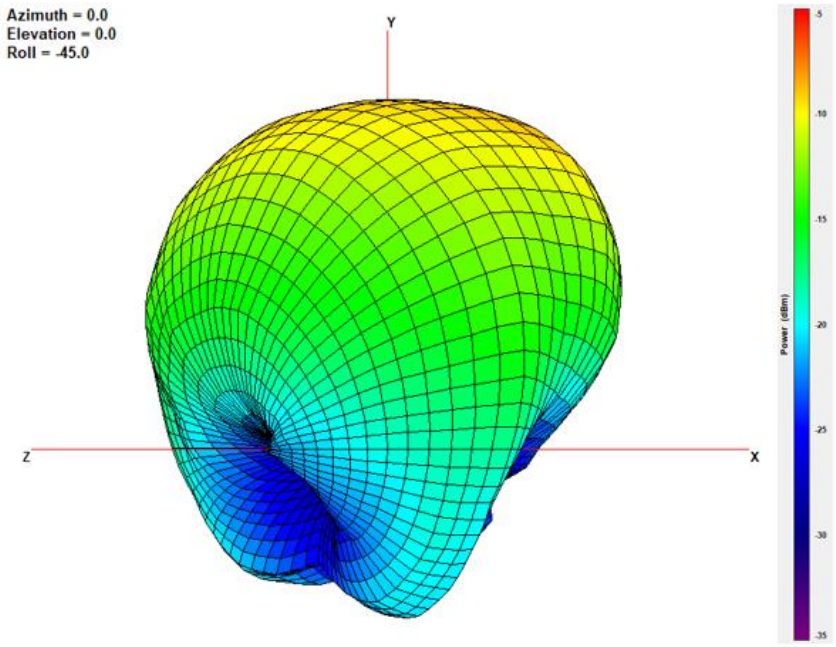
XY Plane	XZ Plane	YZ Plane



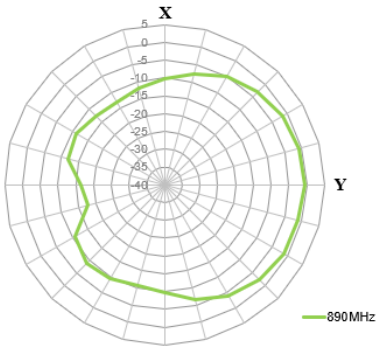


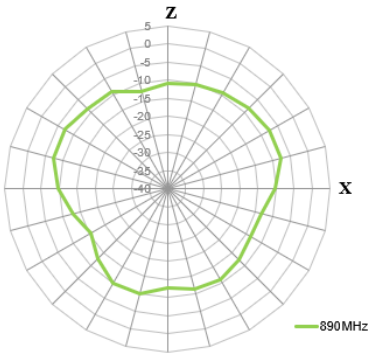


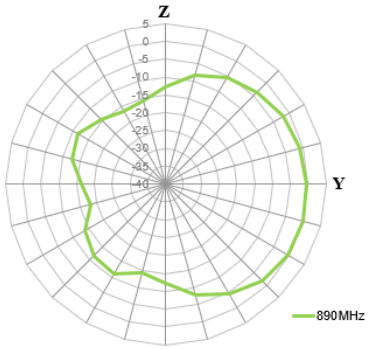
890MHz



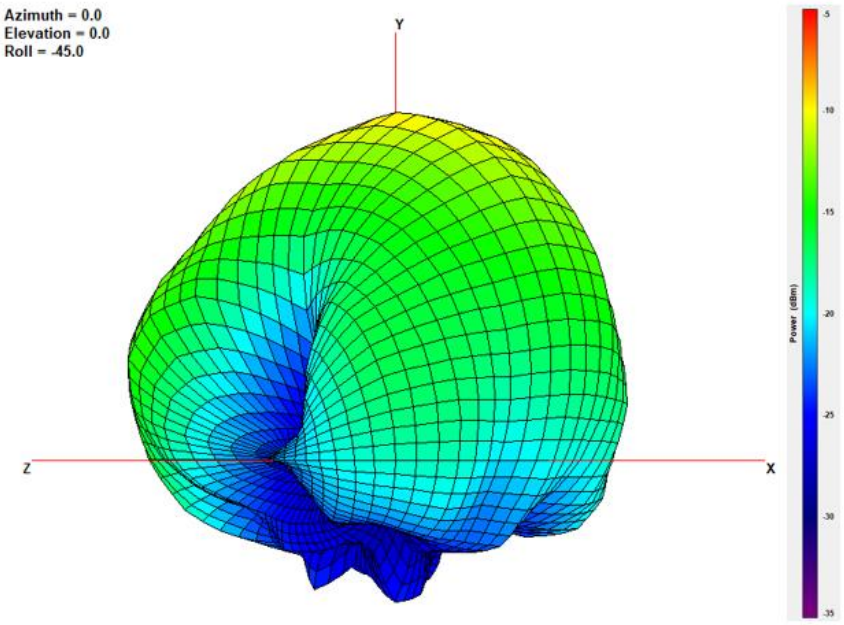
XY Plane	XZ Plane	YZ Plane



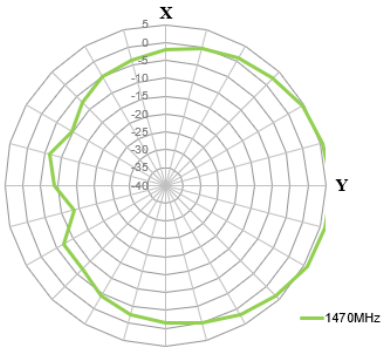


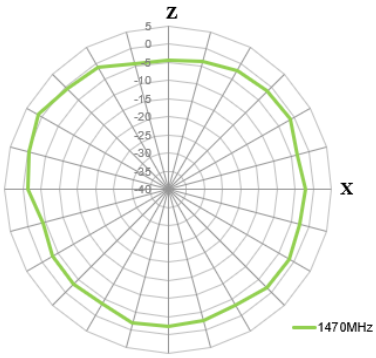


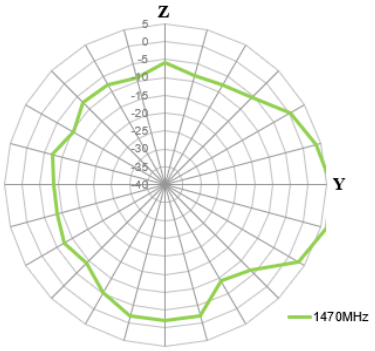
1470MHz



XY Plane	XZ Plane	YZ Plane







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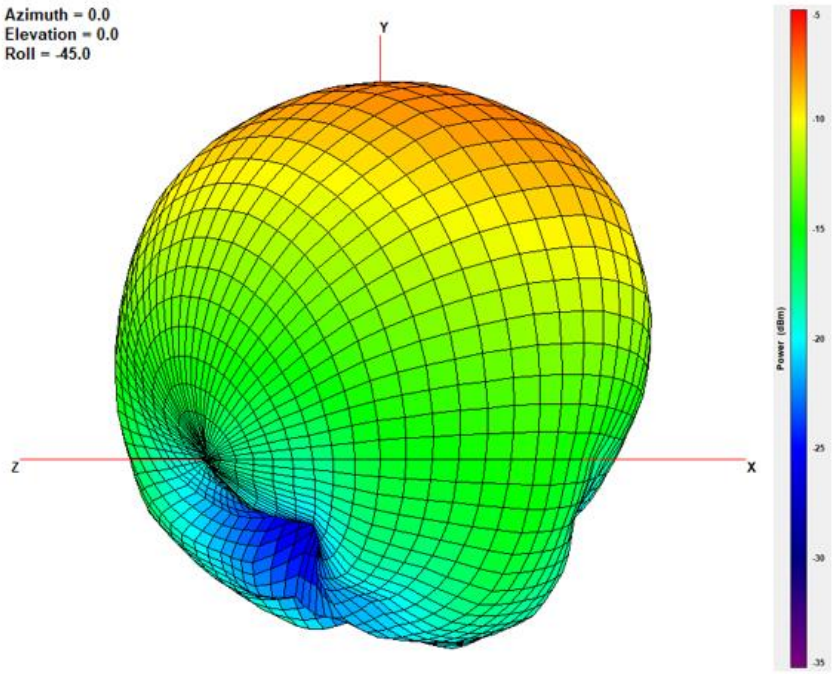
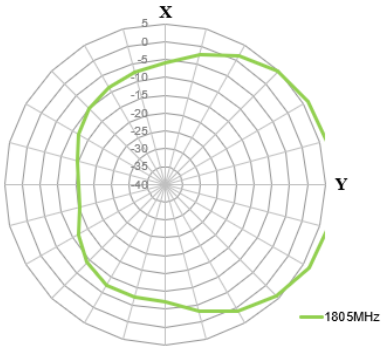
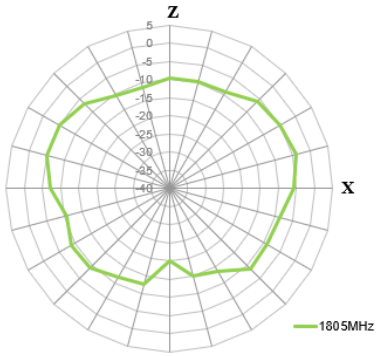
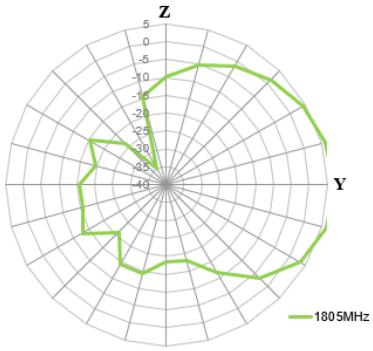


XY Plane	XZ Plane	YZ Plane







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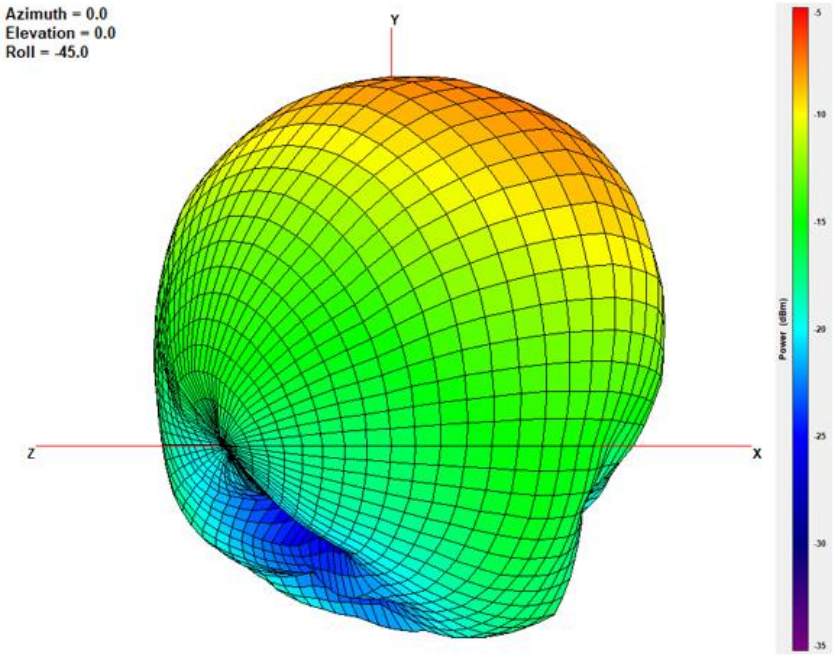
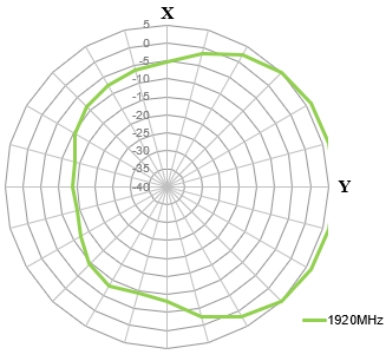
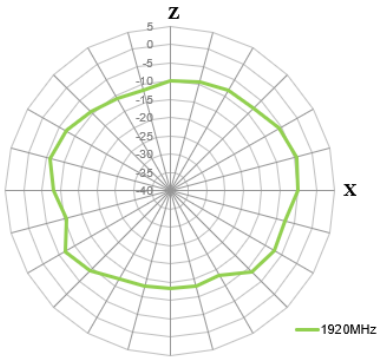
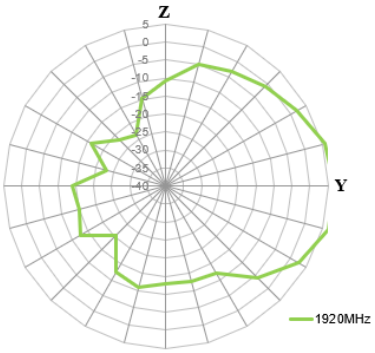


XY Plane	XZ Plane	YZ Plane







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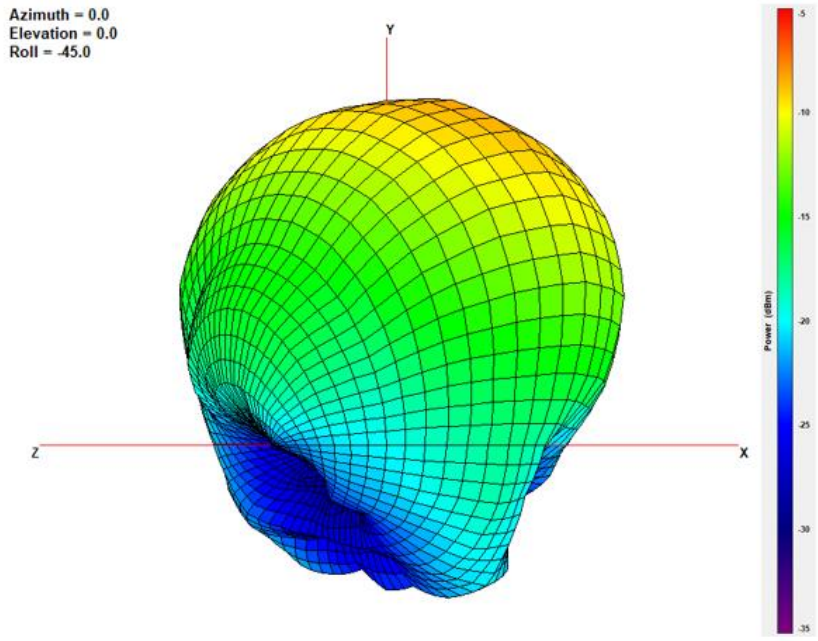
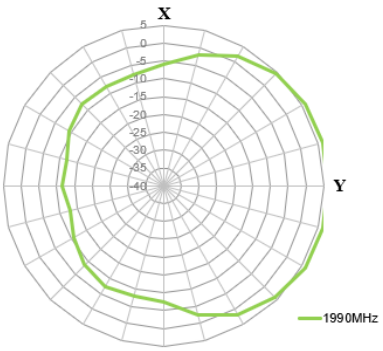
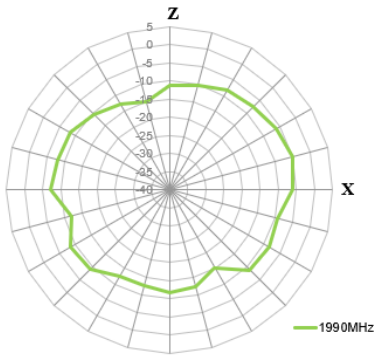
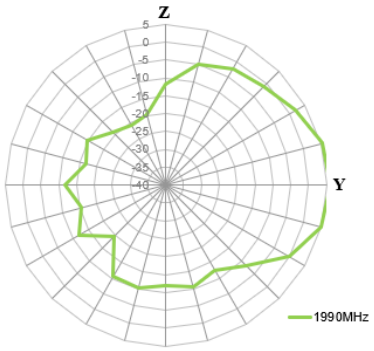


XY Plane	XZ Plane	YZ Plane







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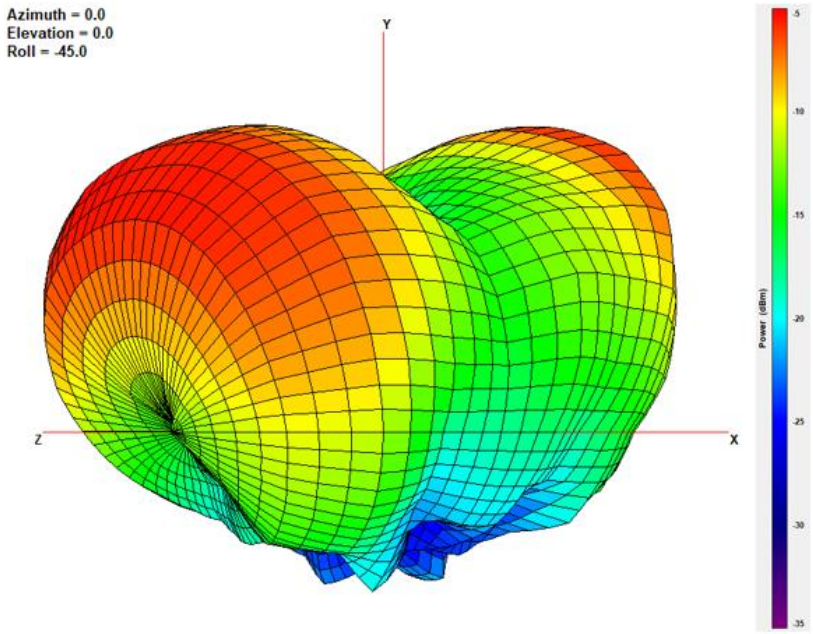
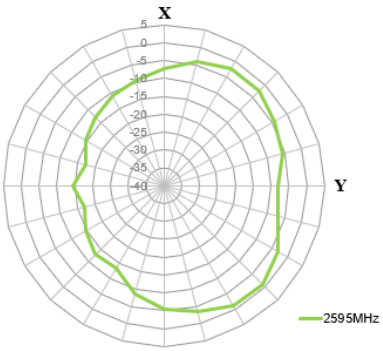
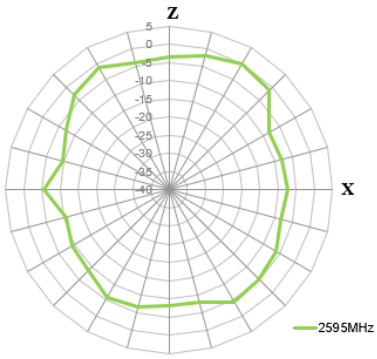
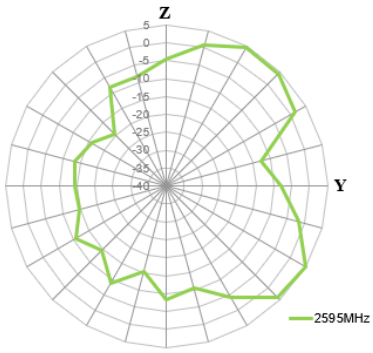


XY Plane	XZ Plane	YZ Plane







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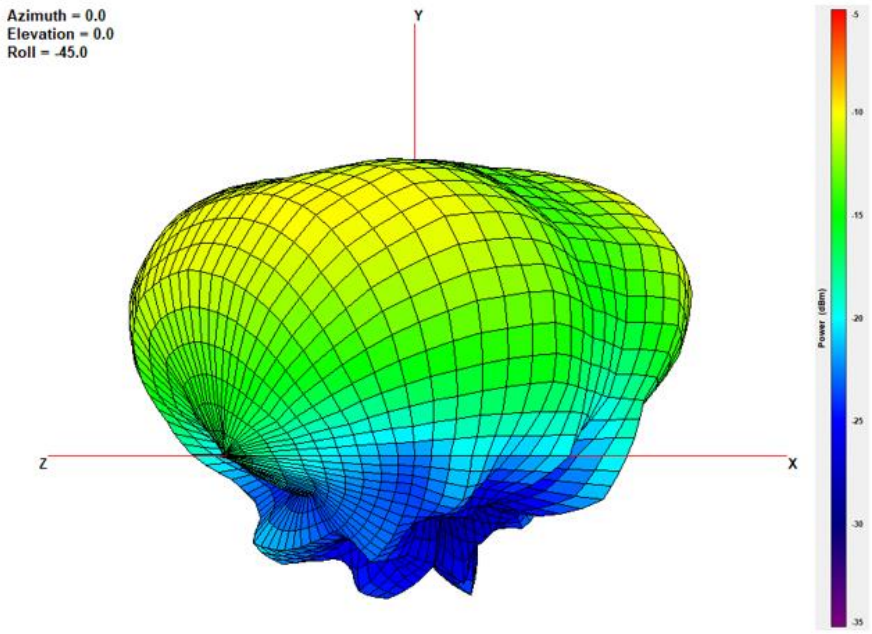
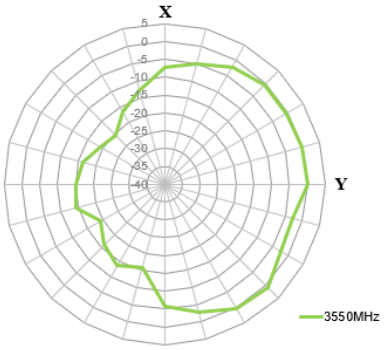
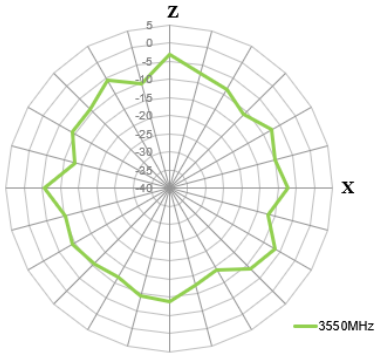
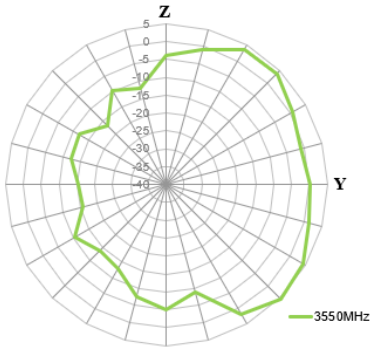


XY Plane	XZ Plane	YZ Plane







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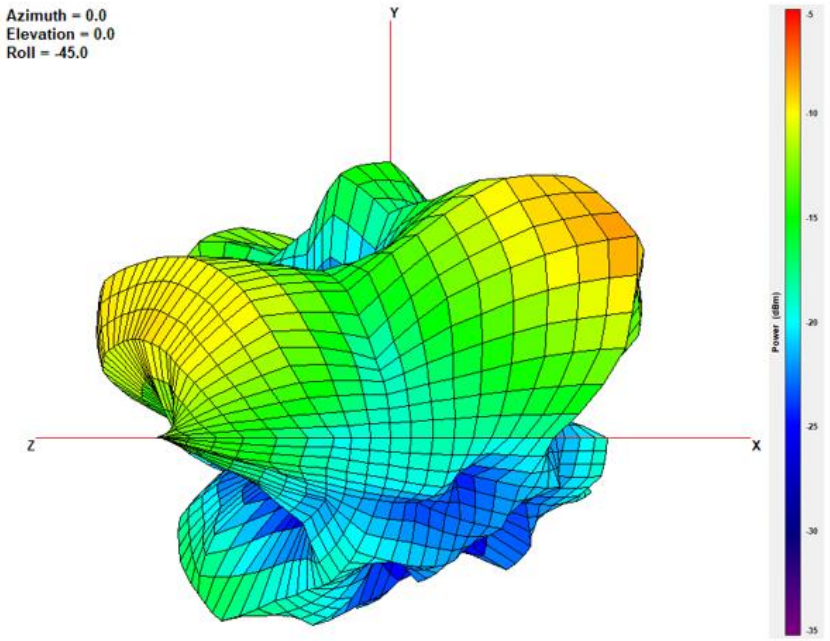
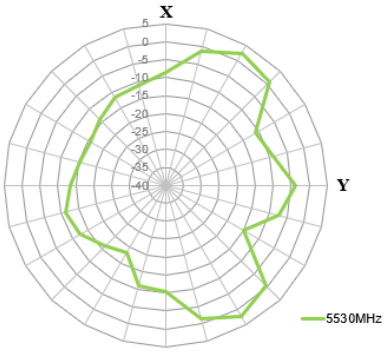
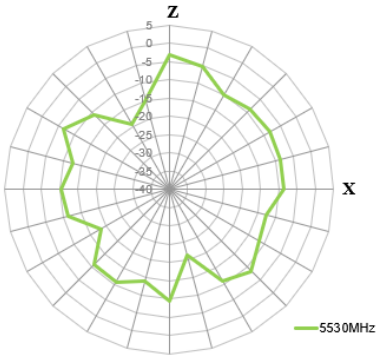
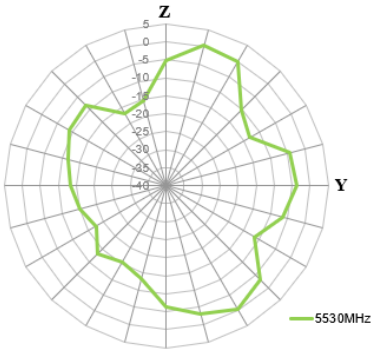


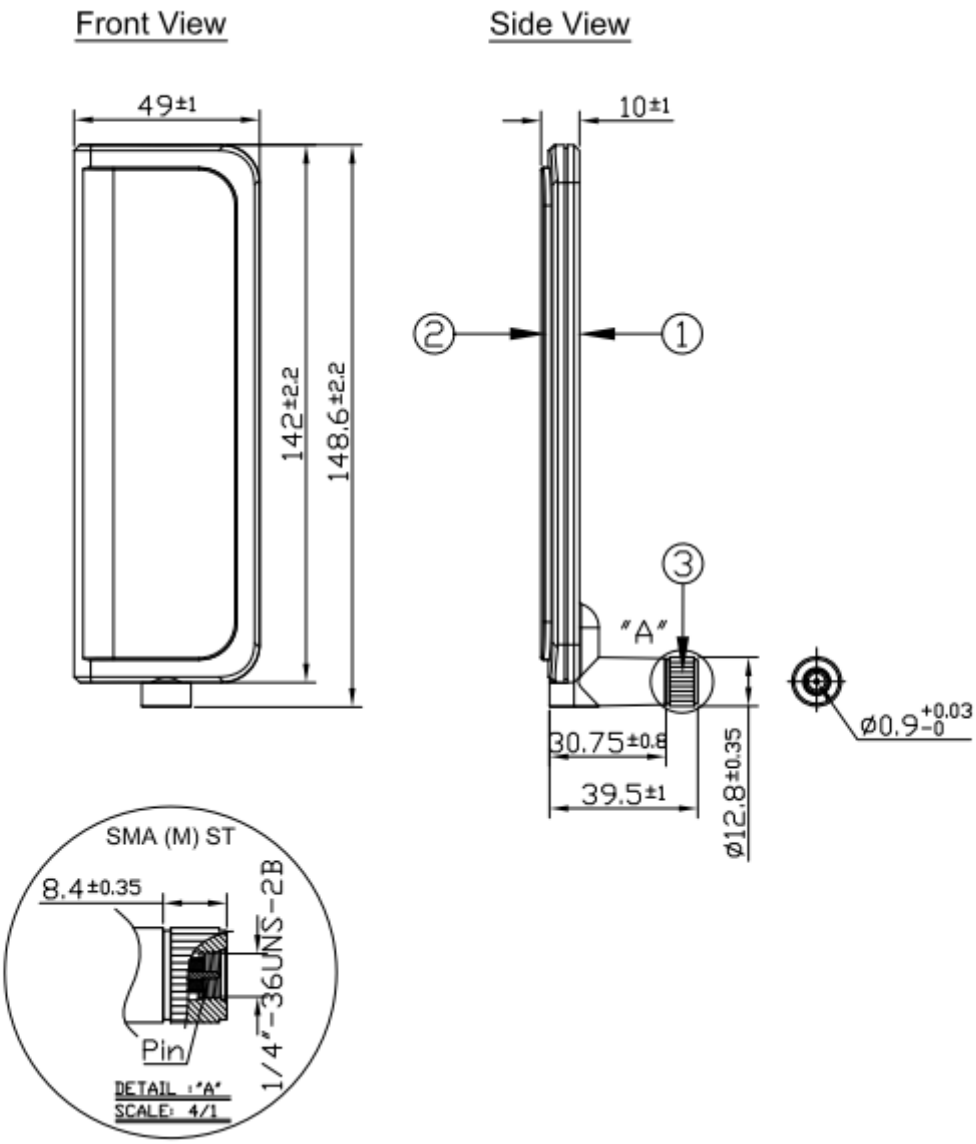
XY Plane	XZ Plane	YZ Plane



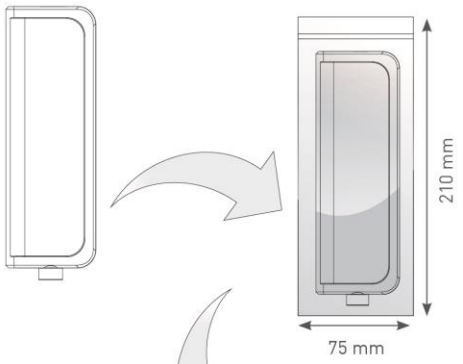




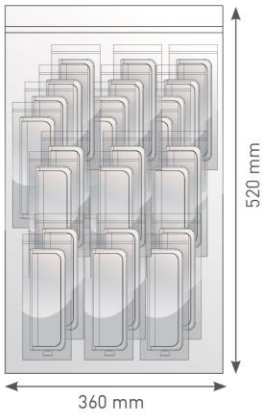
5. Mechanical Drawing (Units: mm)



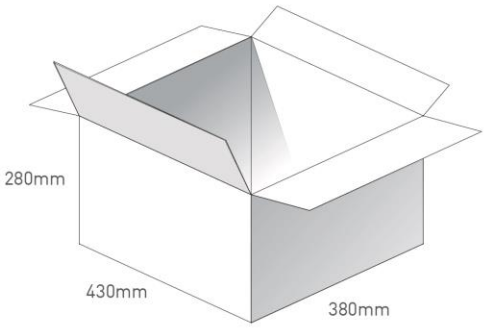
6. Packaging



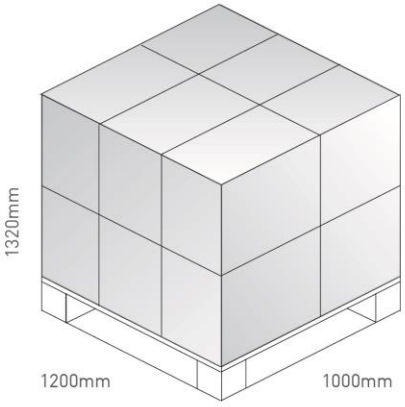
1 pcs TG.30.8112 per PE Bag
PE Bag Dimensions - 75*210mm
Weight - 48g



50 PE Bags per Large PE Bag
50 pcs TG.30.8112 per Large PE Bag
Large PE Dimensions - 360*520mm
Weight - 2.4kg



5 Large PE bags per carton
250 pcs TG.30.8112 per carton
Carton Dimensions - 430*380*280mm
Weight - 12.4kg



Pallet Dimensions 1200mm*1000mm*1320mm
12 Cartons per Pallet
6 Cartons per layer
2 Layers

Changelog for the datasheet

SPE-12-8-120 - TG.30.8112

Revision: I (Current Version)	
Date:	2022-09-26
Changes:	Updated specifications
Changes Made by:	Cesar Sousa

Previous Revisions

Revision: H	
Date:	2022-05-05
Changes:	Full datasheet template update and show data 600-6000.
Changes Made by:	Gary West

Revision: G	
Date:	2021-07-09
Changes:	Added IP Rating
Changes Made by:	Gary West

Revision: F	
Date:	2018-11-30
Changes:	Removed IP rating
Changes Made by:	Jack Conroy

Revision: E	
Date:	2015-03-30
Changes:	Updated Spec with LTE table
Changes Made by:	Andy Mahoney

Revision: D	
Date:	2017-01-13
Changes:	
Changes Made by:	Technical Writer

Revision: C	
Date:	2012-10-04
Changes:	
Changes Made by:	Technical Writer

Revision: B	
Date:	2012-09-27
Changes:	
Changes Made by:	Technical Writer

Revision: A (Original First Release)	
Date:	2012-09-19
Notes:	
Author:	Technical Writer

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