TAOGLAS



Datasheet

Apex

Part No:
TG.66.A113

Description

Wideband Terminal Mount Monopole Antenna

With 90° Hinged Right Angle SMA (M) Connector

Features:

600-6000MHz Wideband 5G/4G Cellular Antenna
Fantastic Efficiency Across all Bands
Super Small Form Factor with Rotatable Hinged Design for Flexible Positioning
Monopole Antenna Design Suitable for Small Ground Plane
Omnidirectional Gain Patterns for Optimum Coverage
Connector: 90° Hinged Right Angle SMA (M)
Dimensions: 70.3 x Ø9.7 mm
RoHS and REACH Compliant

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1. Introduction



The Taoglas TG.66 is a hinged monopole antenna designed to cover all global 5G/4G frequencies between 600MHz and 6GHz. Despite its miniature size, just 70.3 x Ø9.7mm, the TG.66 has omnidirectional radiation patterns and provides stable gain across the hemisphere. The TG.66 is supplied with a rotatable 90° hinged SMA connector meaning can be covertly installed on all types of gateways and routers at straight or bent angles. The TG.66 performs excellently at 5G bands with efficiencies above 45% across the entire 5G/4G spectrum when positioned on the edge of a small ground plane of just 120 x 45mm in size.

The TG.66 utilizes a sleek, robust PC enclosure, and its' small size allows is to be mounted where space is at a premium. The SMA (M) connector's hinge mechanism allows the antenna to be rotated into the preferred orientation which helps to avoid other antennas or objects. This also helps with isolation by pointing the antennas in different directions when used in MIMO systems or when other antennas are present on the same device. The TG.66 has been evolved from the highly successful TG.09 and is part of the ever-growing portfolio of 5G antennas offered by Taoglas.

Typical Applications include:

- Gateways and Routers
- IoT Sensors
- Public Safety and Security
- Point of Sales Terminals
- Smart Home Automation
- Robotics / Autonomous

The TG.66 comes with a rotatable 90° hinged SMA connector as standard and this can be customized subject to MOQ and NRE, contact your regional Taoglas customer support team for more information.

2. Specification

Electrical									
Band	Frequency (MHz)	Measurement	Efficiency (%)	Average Gain (dB)	Peak Gain (dBi)	Impedance	Polarization	Radiation Pattern	Max. input power
5GNR/4G Band71	617-698	Bent	65.1	-1.87	2.64	50 Ω	Linear	Omni directional	10W
		Straight	78.4	-1.06	3.11				
4G/3G Band 12,13,14,17,28,29	698-824	Bent	76.7	-1.15	2.87				
		Straight	75.9	-1.20	3.56				
4G/3G/NB-IoT/Cat M Band 5,8,18,19,20,26,27	824-960	Bent	74.5	-1.28	2.79				
		Straight	78.3	-1.06	3.43				
5GNR/4G Band 21,32,74,75,76	1427-1518	Bent	68.9	-1.62	3.35				
		Straight	64.5	-1.91	2.72				
4G/3G Band 1,2,3,4,9,23,25,35, 39,66	1710-2200	Bent	63.9	-1.95	4.68				
		Straight	55.8	-2.54	3.51				
4G/3G Band 7,30,38,40,41	2300-2690	Bent	51.3	-2.90	4.05				
		Straight	43.0	-3.67	2.64				
5GNR/4G Band 22,42,48,77,78,79	3300-5000	Bent	52.6	-2.79	4.58				
		Straight	44.6	-3.51	6.12				
LTE5200/Wi-Fi 5800	5150-5925	Bent	35.9	-4.45	2.65				
		Straight	25.8	-5.89	0.15				
Tested on 9x15cm Ground Plane									

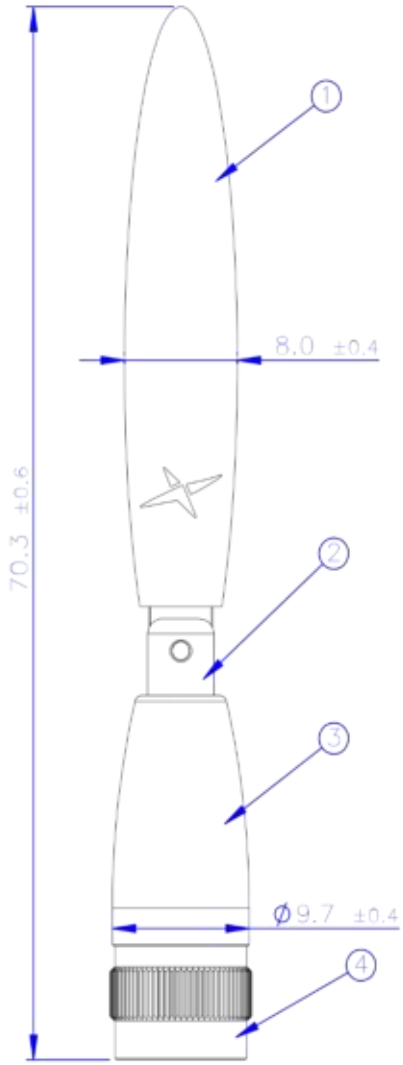
Mechanical	
Dimensions	Ø9.7 x 70.3 mm
Weight	9g
Plastic Material	PC345
Connector	SMA (M)

Environmental	
Operation Temperature	-40°C to 85°C
Storage Temperature	-40°C to 85°C

5G/4G Bands				
Band Number	5GNR / FR1 / LTE / LTE-Advanced / WCDMA / HSPA / HSPA+ / TD-SCDMA / NTN			
	Uplink	Downlink	Bent	Straight
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*	1749.9 to 1784.9	1844.9 to 1879.9	✓	✓
B11	1427.9 to 1447.9	1475.9 to 1495.9	✓	✓
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	1447.9 to 1462.9	1495.9 to 1510.9	✓	✓
B22*	3410 to 3490	3510 to 3590	✓	✓
B23 / n23	2000 to 2020	2180 to 2200	✓	✓
B24 / n255	1626.5 to 1660.5	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	452.5 to 457.5	462.5 to 467.5	✗	✗
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	2483.5 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	✗	✗
n256	1980 to 2010	2170 to 2200	✓	✓

3. Mechanical Drawing

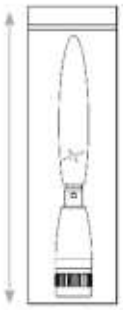




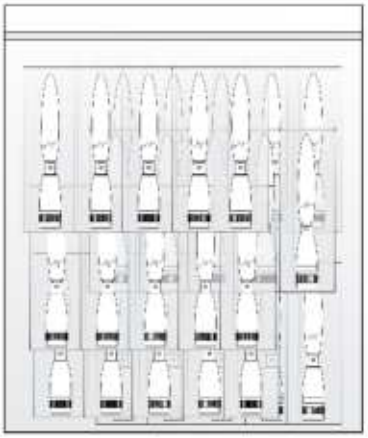
	Name	Material	Finish	QTY
1	TG.66 Top Housing	PC	Black	1
2	TG.66 Hinge	NA	NA	1
3	TG.66 Bottom Housing	PC	Black	1
4	TG.66 Copper joint housing	Brass	Ni Plated	1

4. Packaging

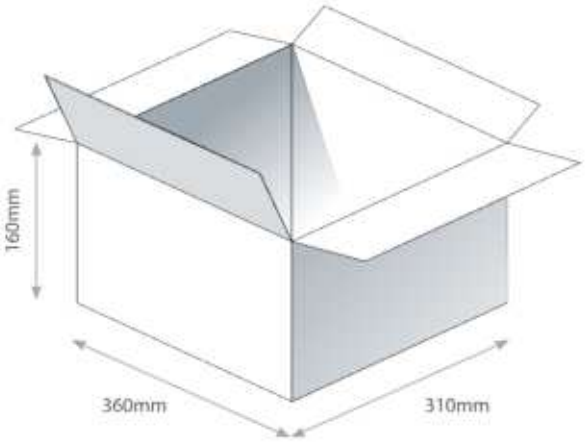
1 pcs TG.66
per PE Bag
Weight - 9g



100 pcs TG.66
per Large PE Bag
Weight - 900g

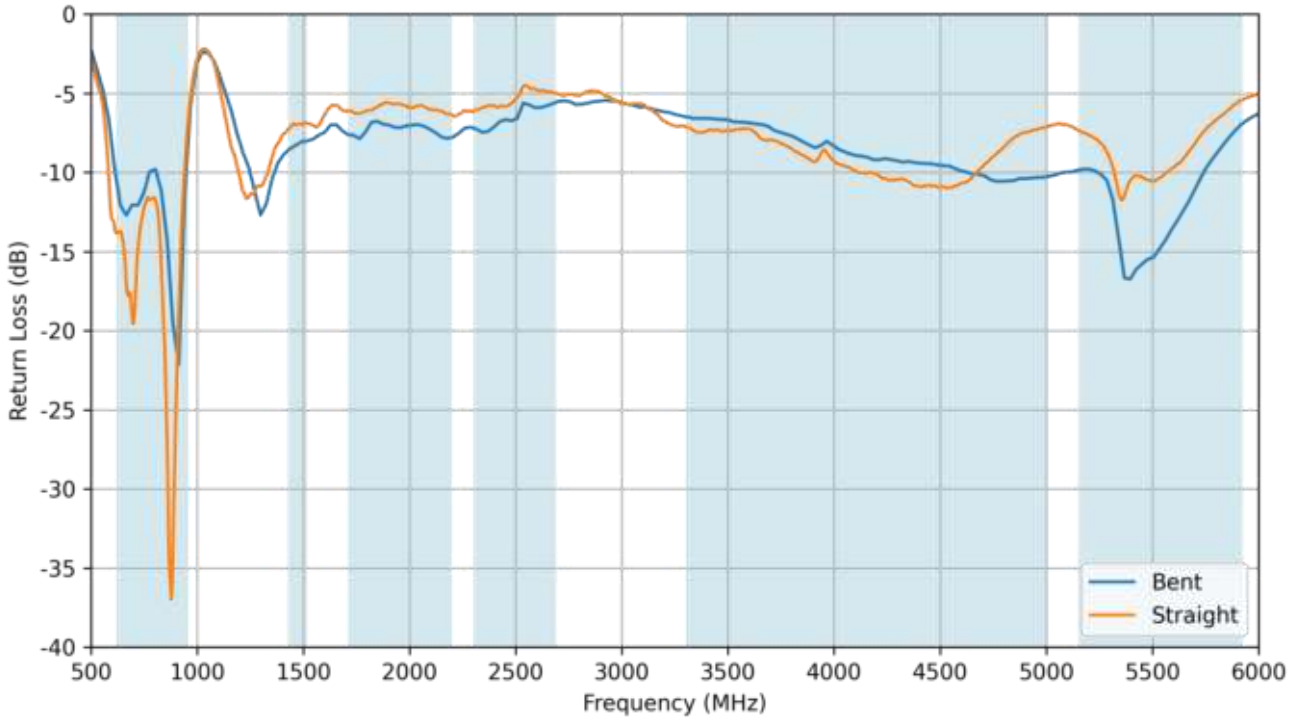


1500 pcs TG.66
per Carton
Dimensions - 360 x 310 x 160mm
Weight - 13.5Kg

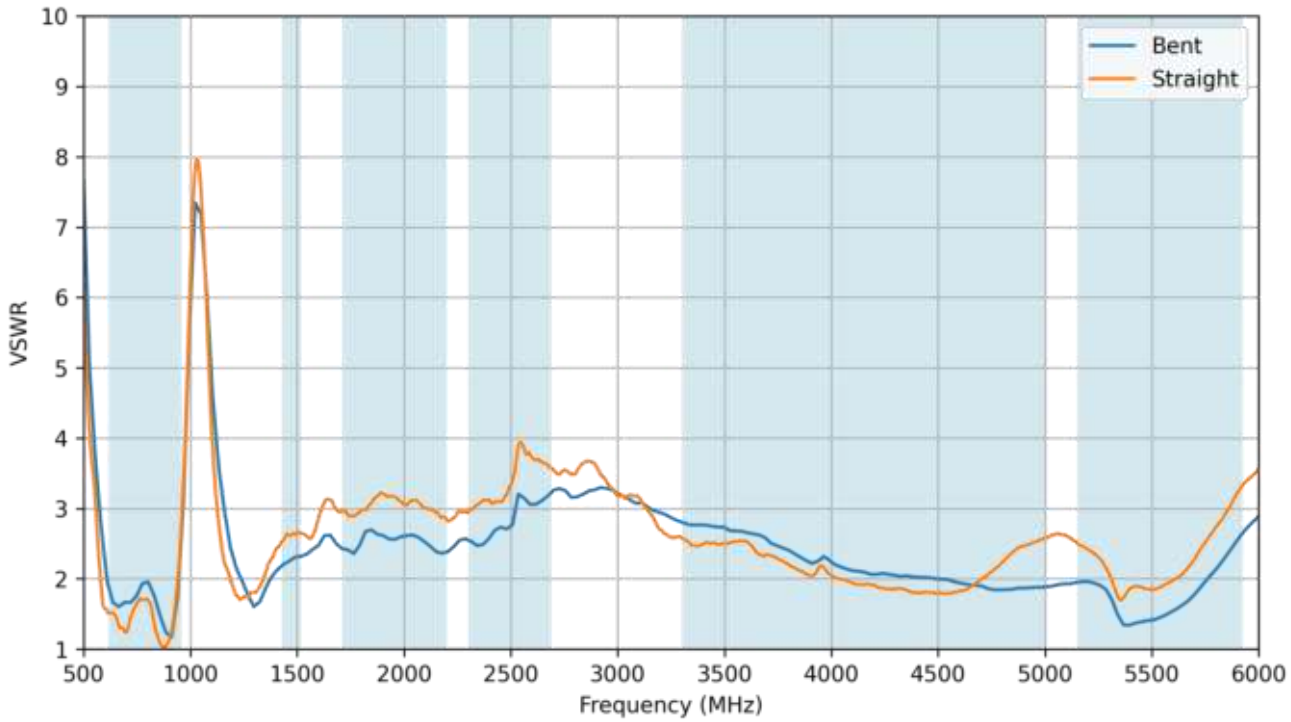


5. Antenna Characteristics

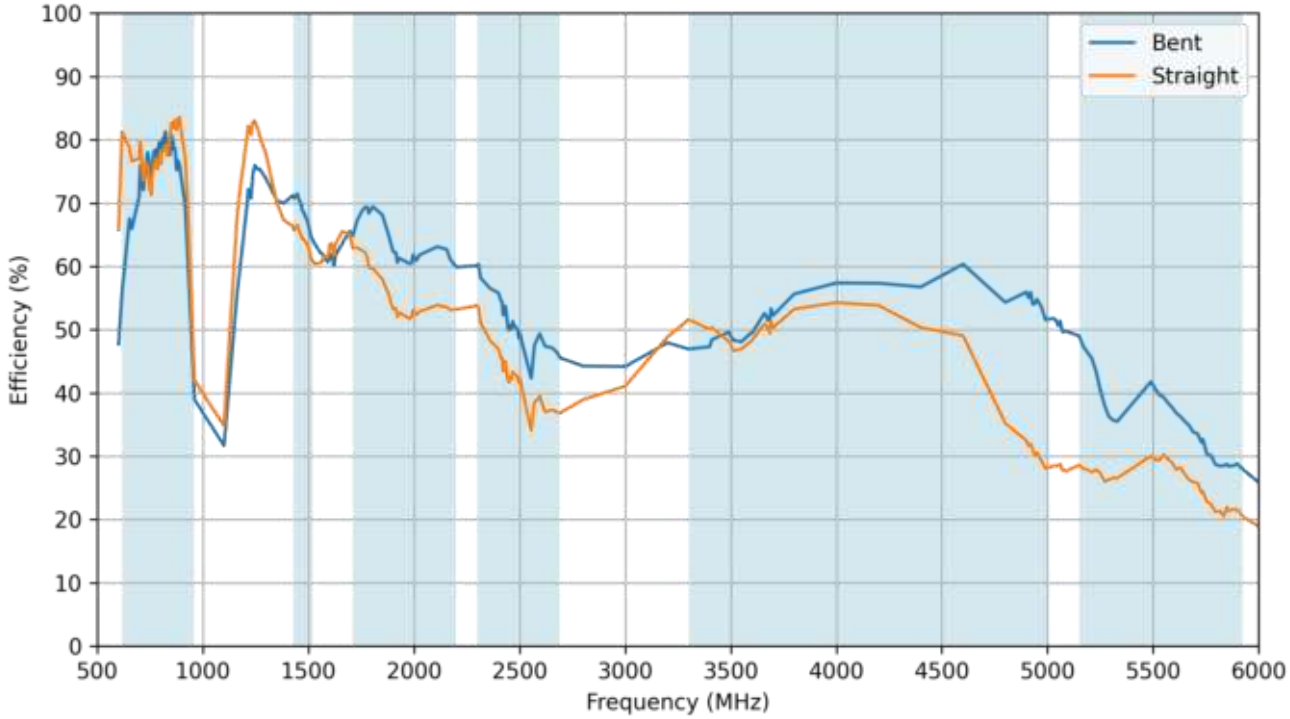
5.1 Return Loss



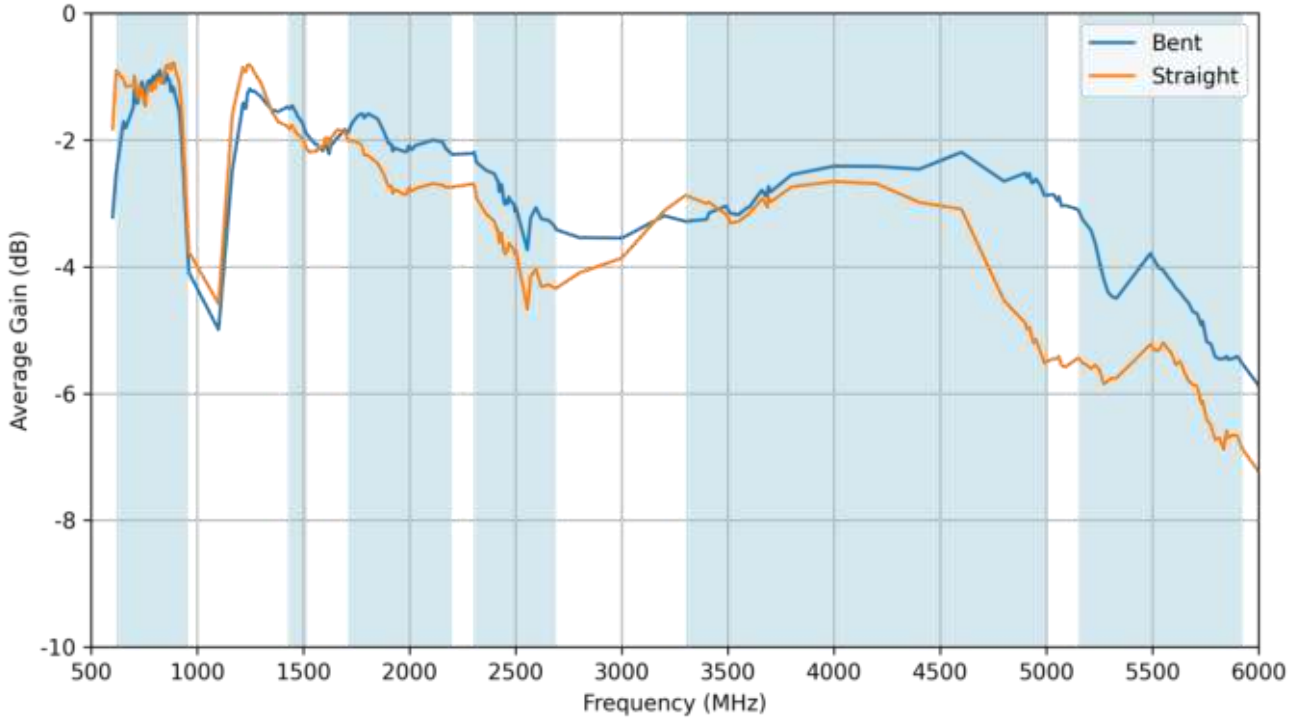
5.2 VSWR



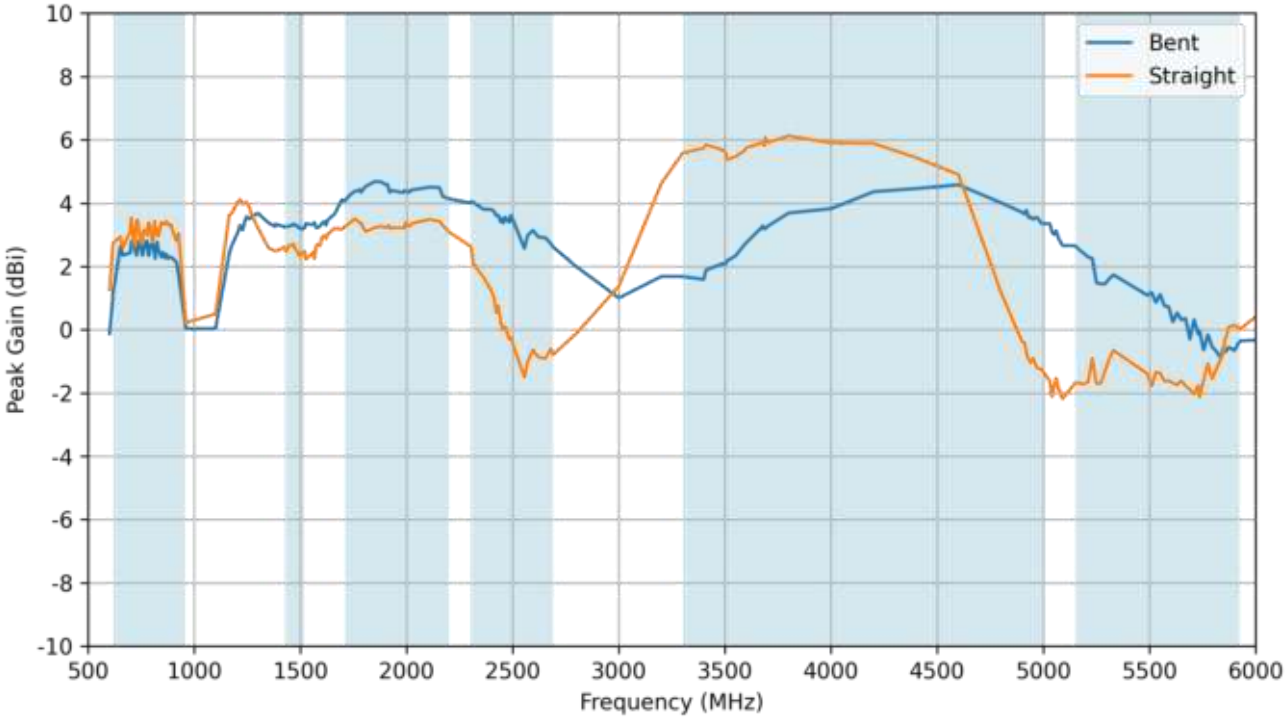
5.3 Efficiency



5.4 Average Gain

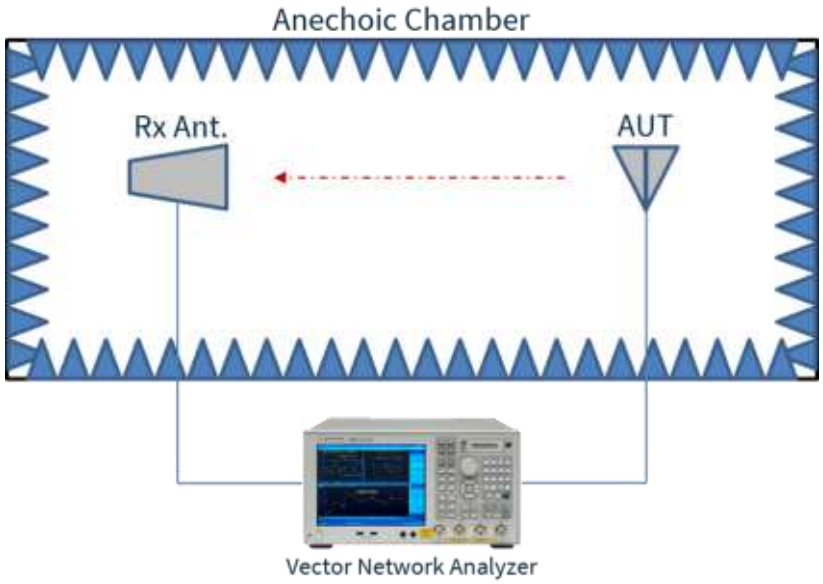


5.5 Peak Gain


Bent
Straight
Peak Gain (dBi)
Frequency (MHz)
10
8
6
4
2
0
-2
-4
-6
-8
-10
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000

6. Radiation Patterns

6.1 Test Setup



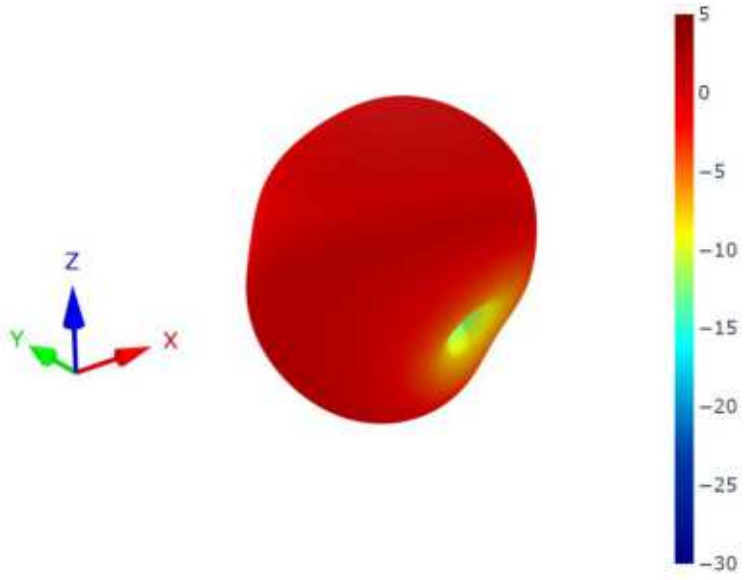


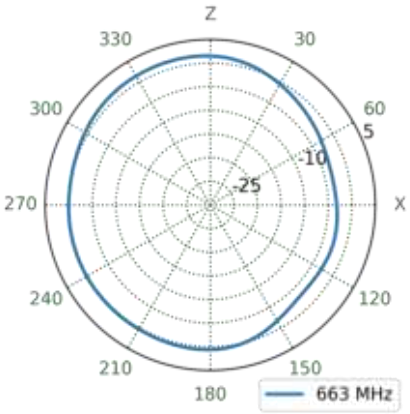
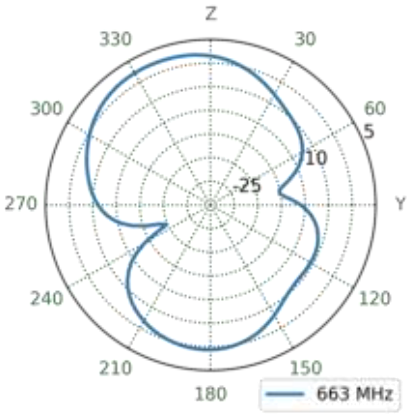
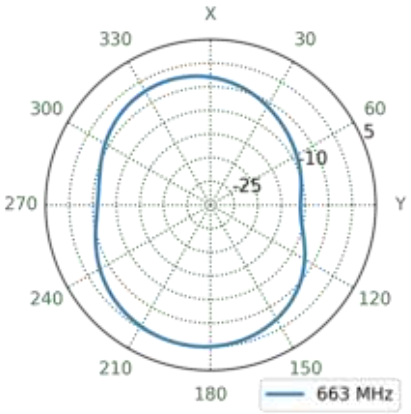
Straight on a 9x15cm Ground Plane



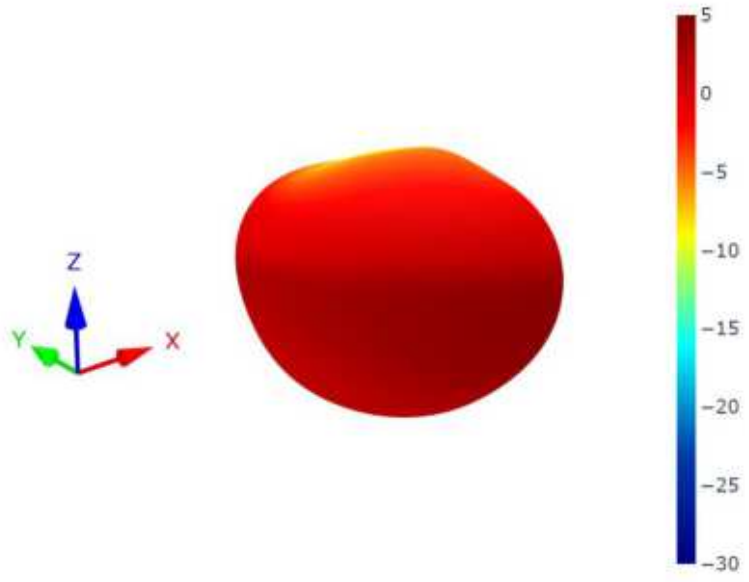
Bent on a 9x15cm Ground Plane

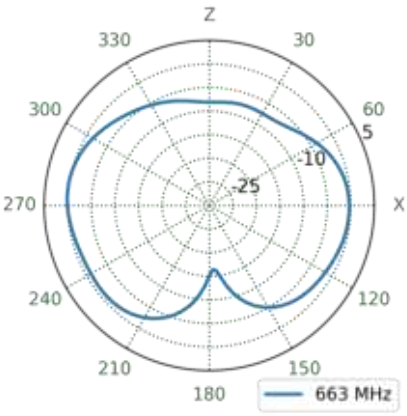
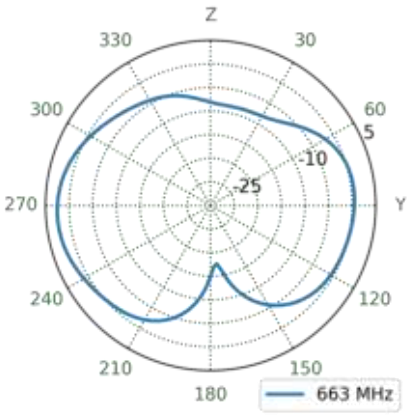
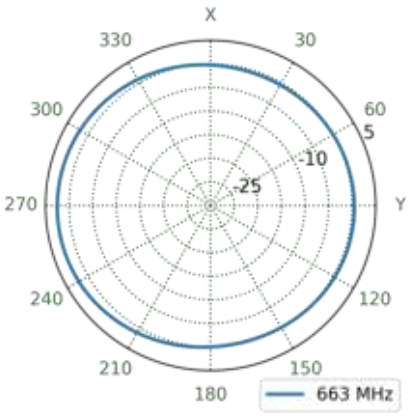
6.2 Bent - Patterns at 663 MHz



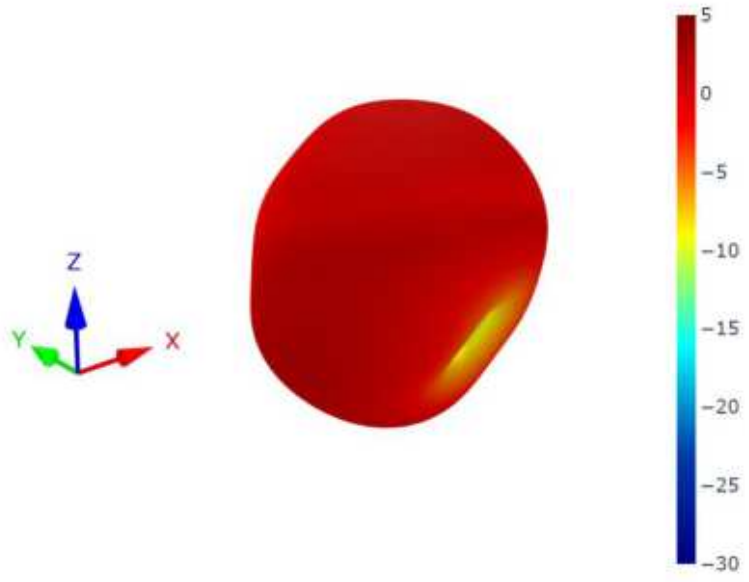
XZ Plane	YZ Plane	XY Plane
		

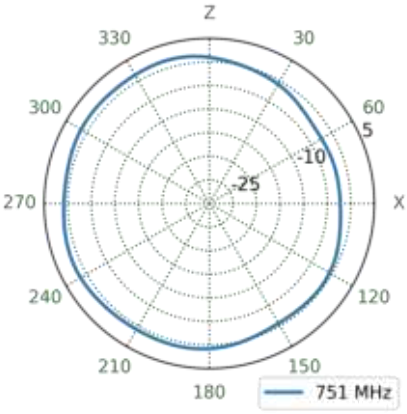
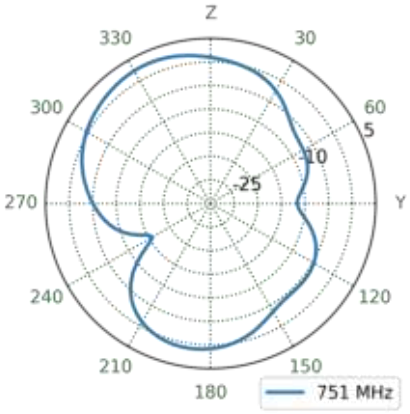
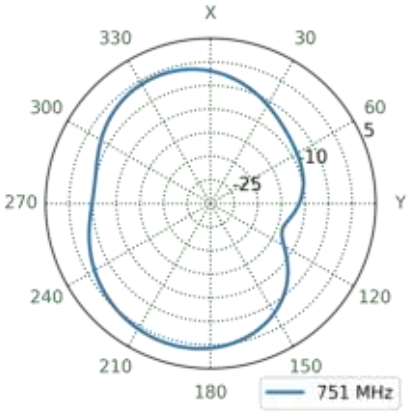
6.3 Straight - Patterns at 663 MHz



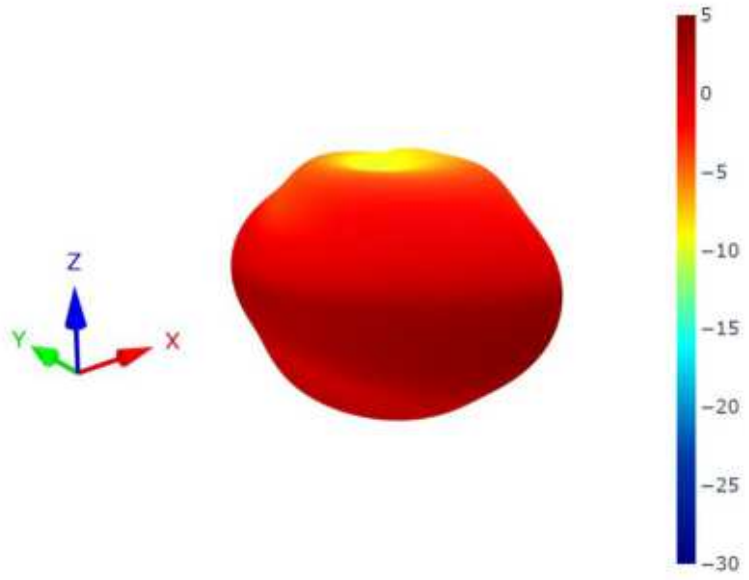
XZ Plane	YZ Plane	XY Plane
		

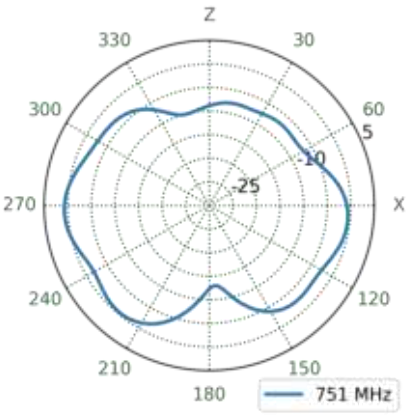
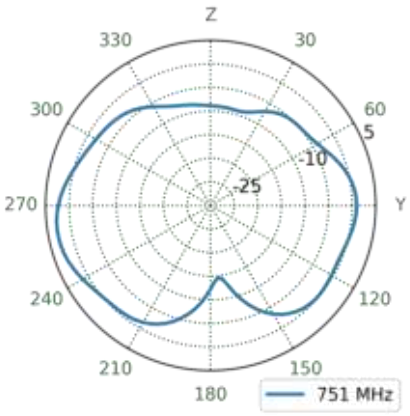
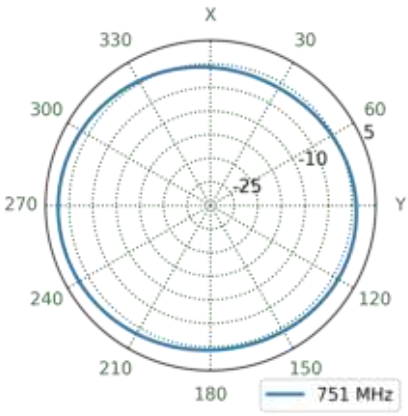
6.4 Bent - Patterns at 751 MHz



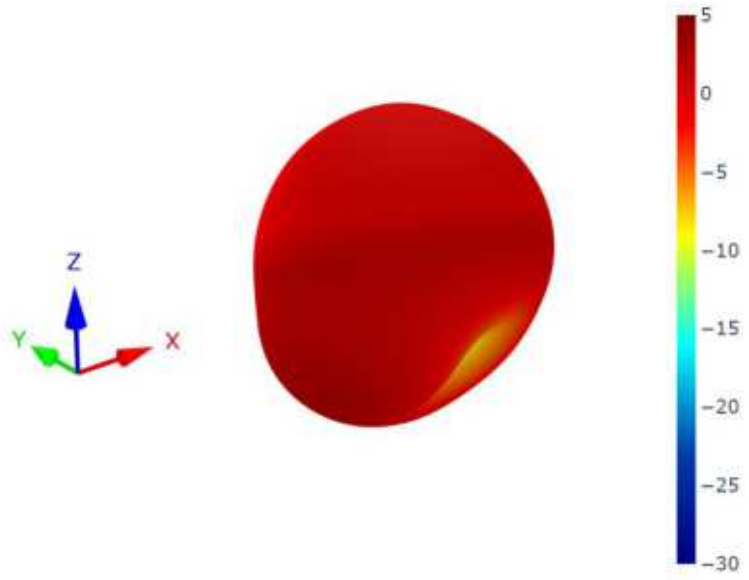
XZ Plane	YZ Plane	XY Plane
		

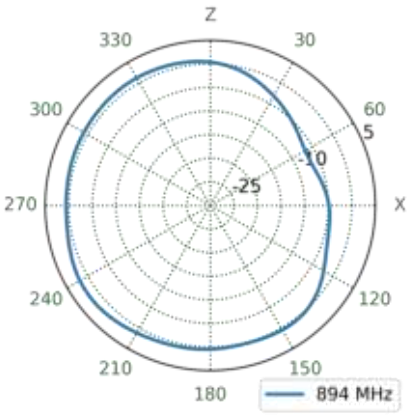
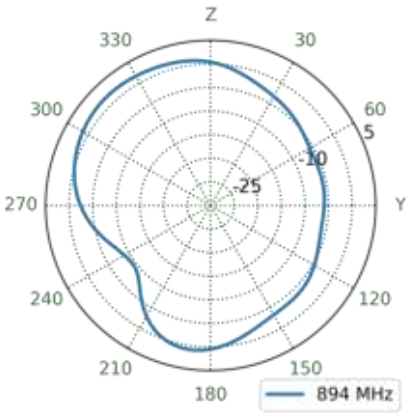
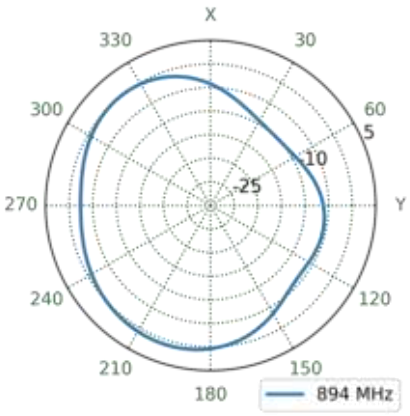
6.5 Straight - Patterns at 751 MHz



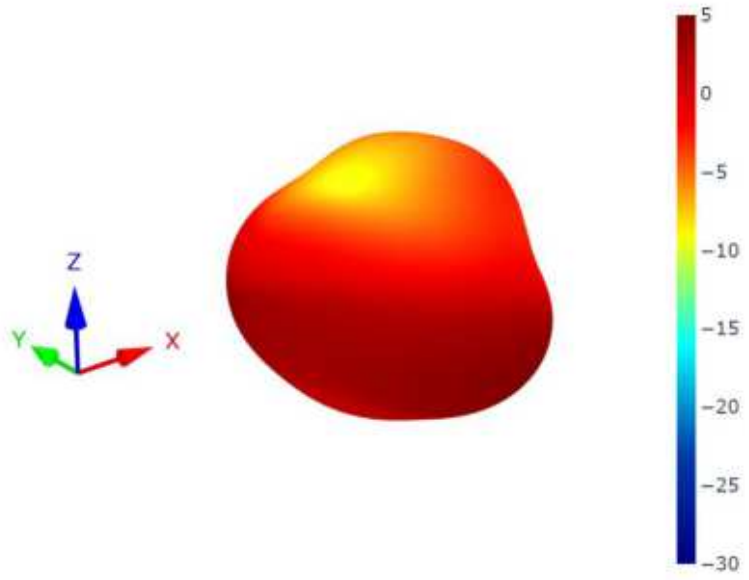
XZ Plane	YZ Plane	XY Plane
		

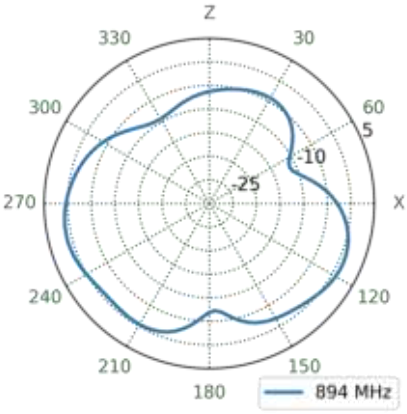
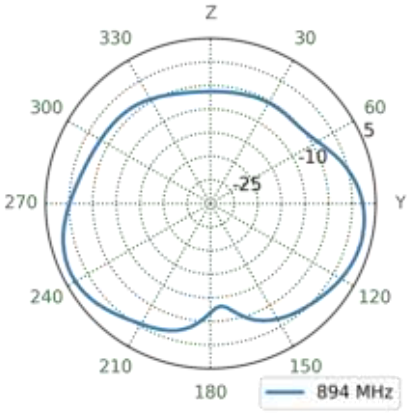
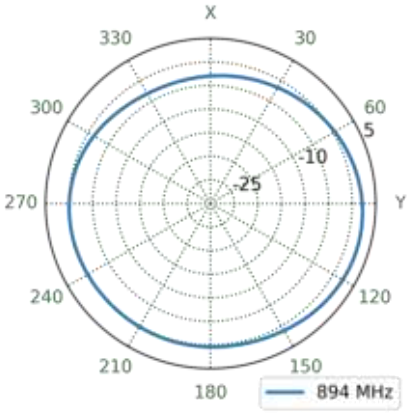
6.6 Bent - Patterns at 894 MHz



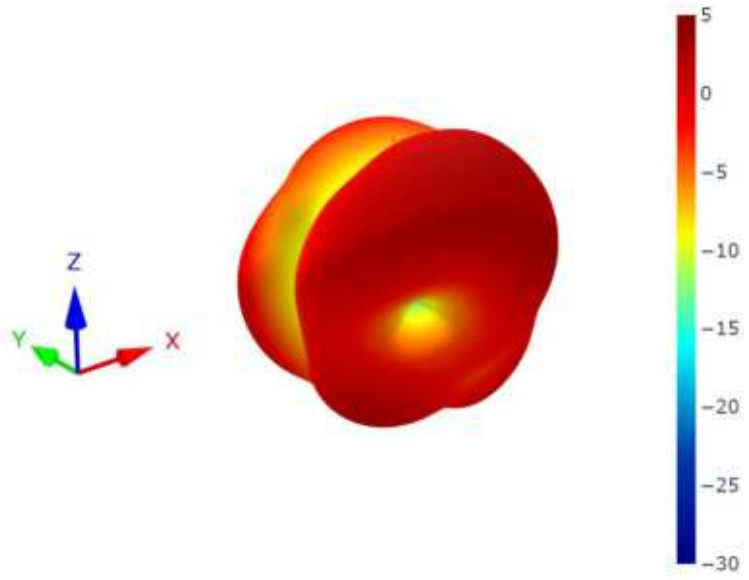
XZ Plane	YZ Plane	XY Plane
		

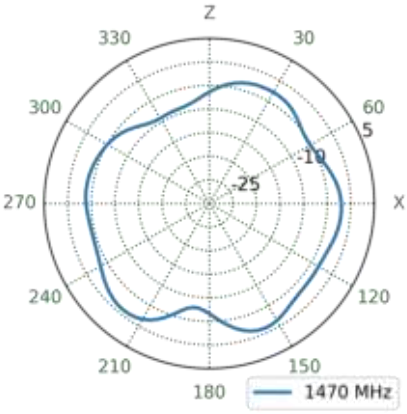
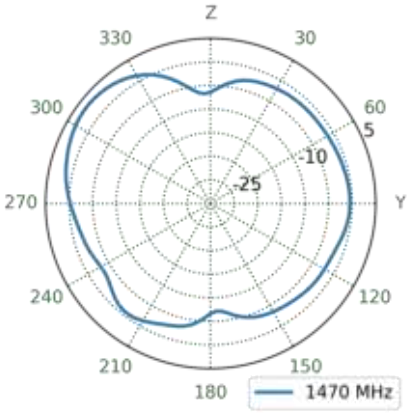
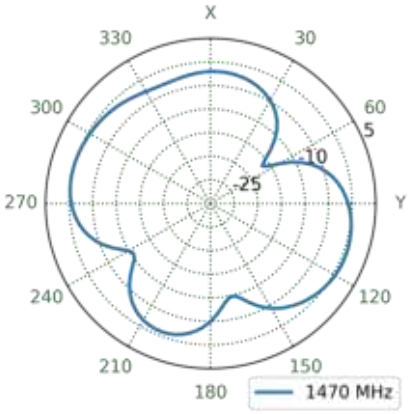
6.7 Straight - Patterns at 894 MHz



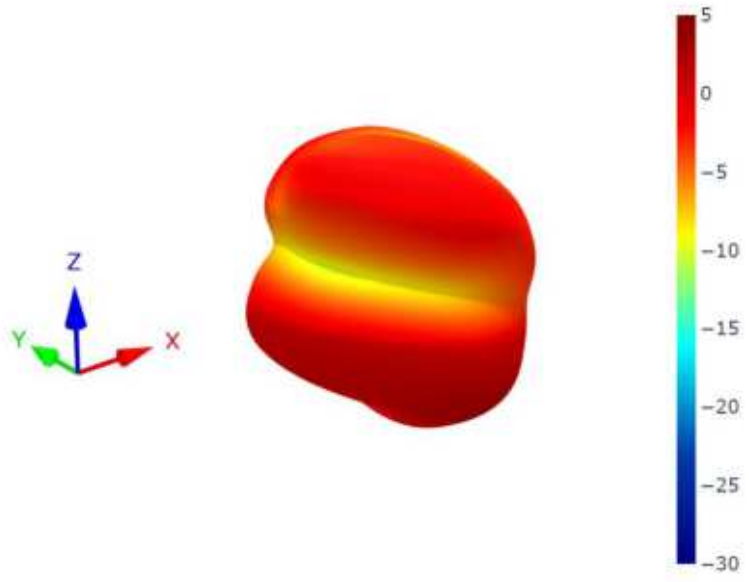
XZ Plane	YZ Plane	XY Plane
		

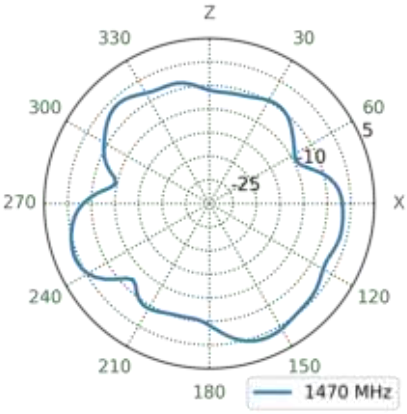
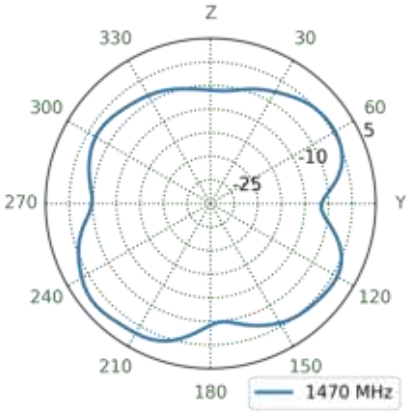
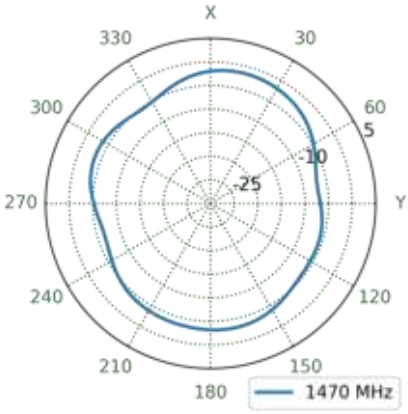
6.8 Bent - Patterns at 1470 MHz



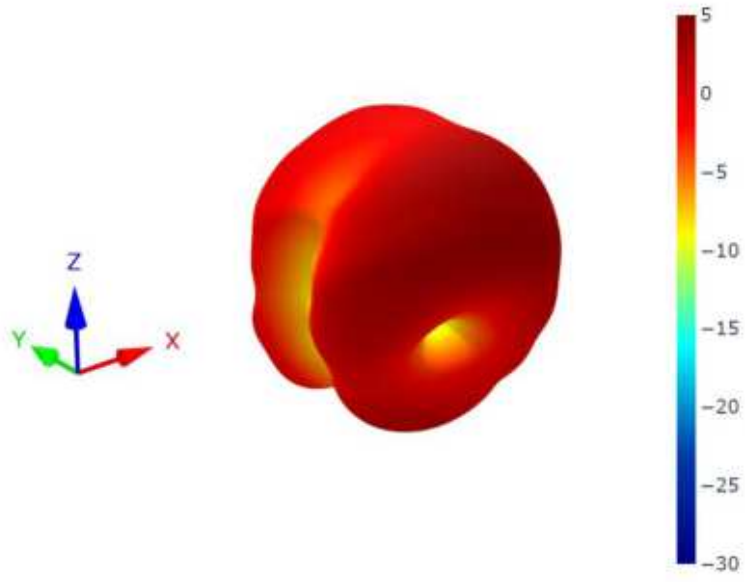
XZ Plane	YZ Plane	XY Plane
		

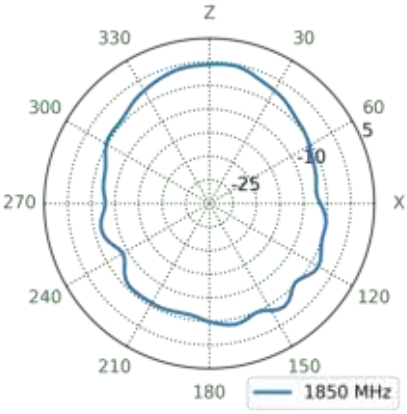
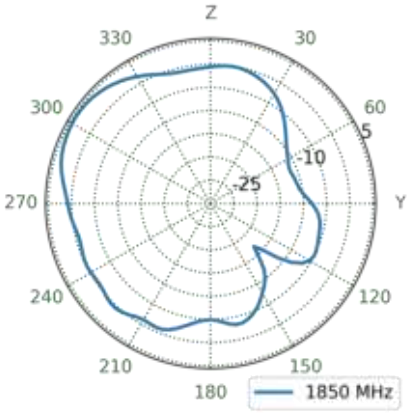
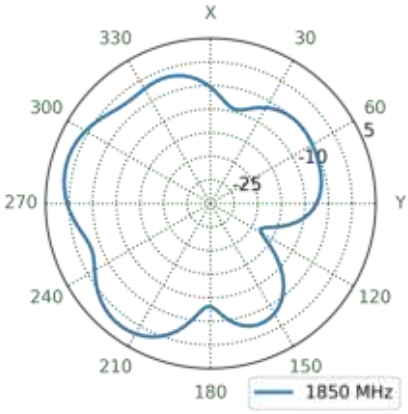
6.9 Straight - Patterns at 1470 MHz



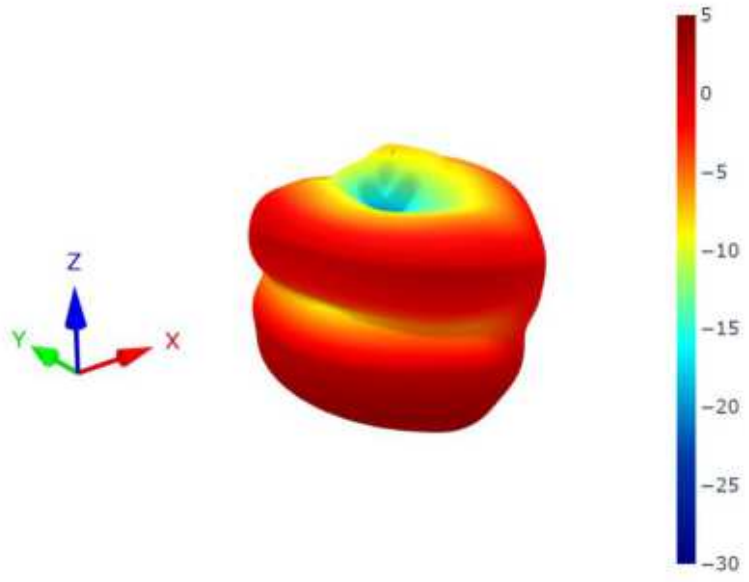
XZ Plane	YZ Plane	XY Plane
		

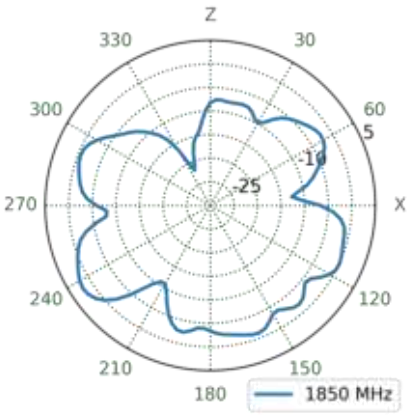
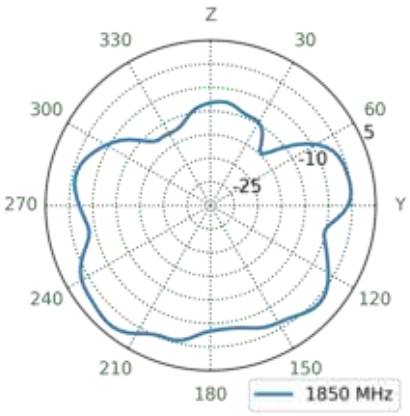
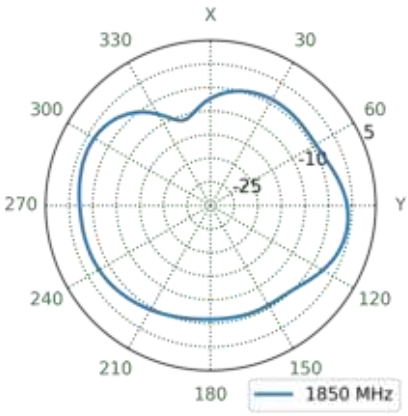
6.10 Bent - Patterns at 1850 MHz



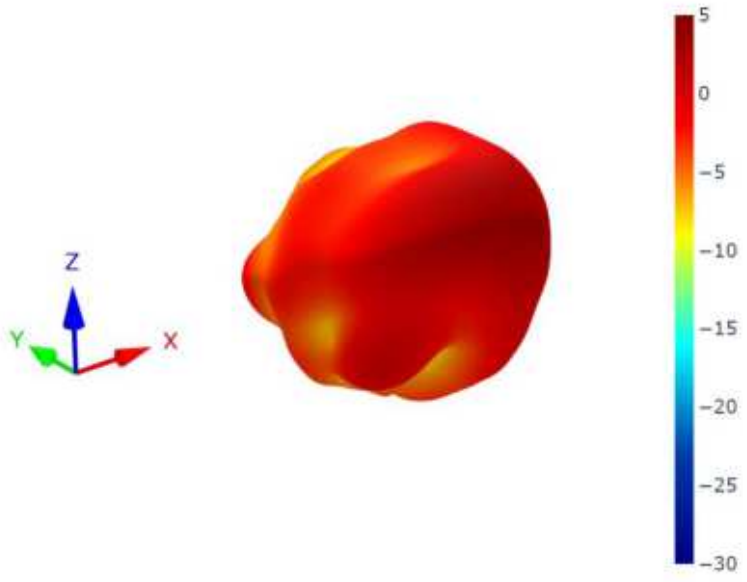
XZ Plane	YZ Plane	XY Plane
		

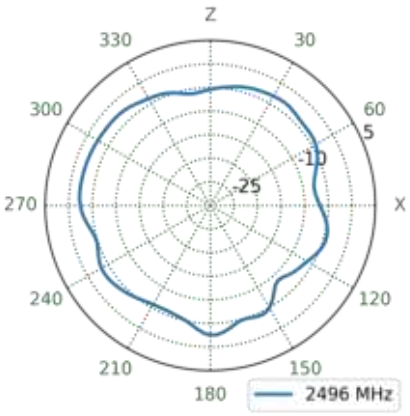
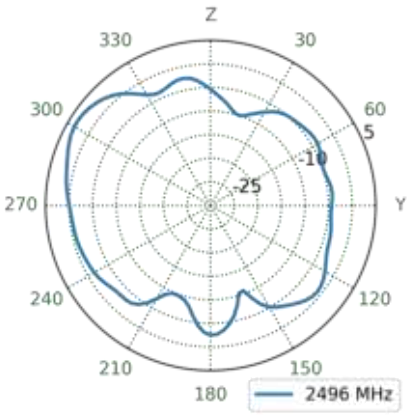
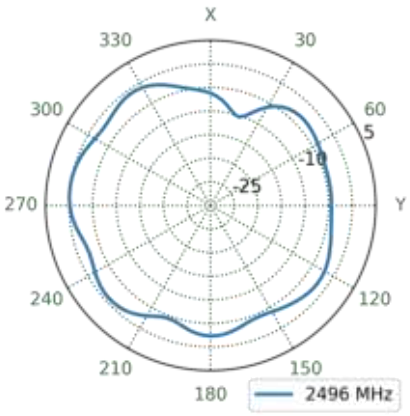
6.11 Straight - Patterns at 1850 MHz



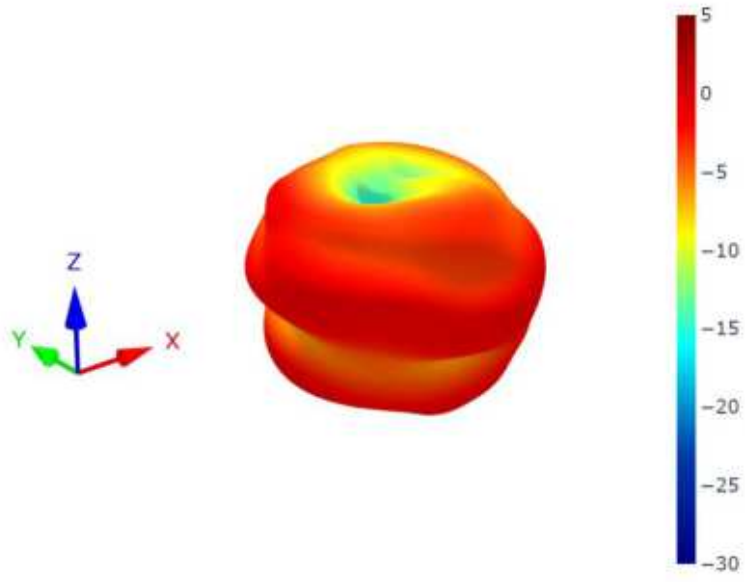
XZ Plane	YZ Plane	XY Plane
		

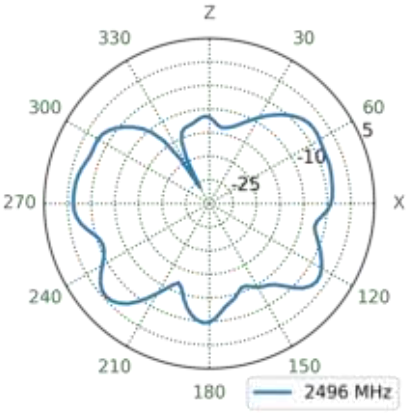
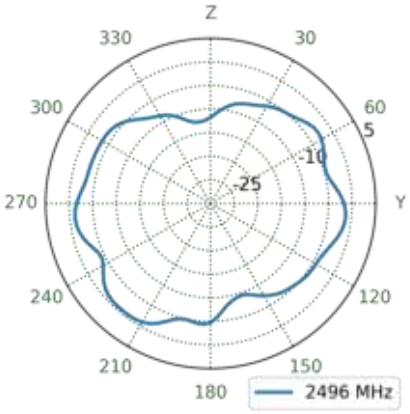
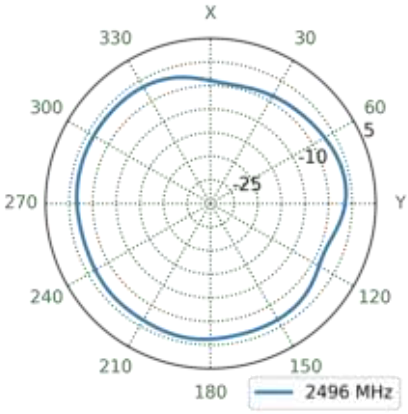
6.12 Bent - Patterns at 2496 MHz



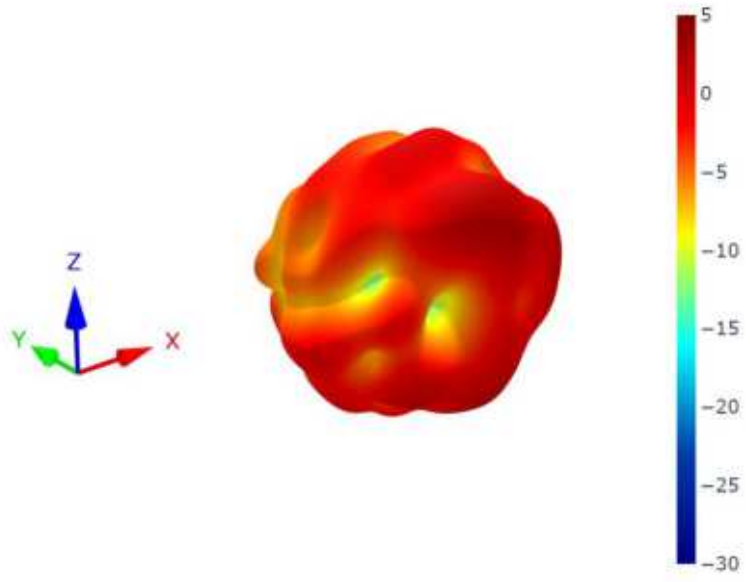
XZ Plane	YZ Plane	XY Plane
		

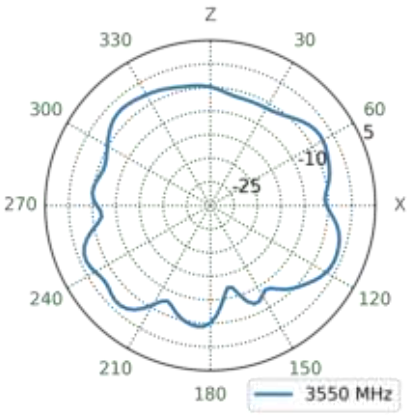
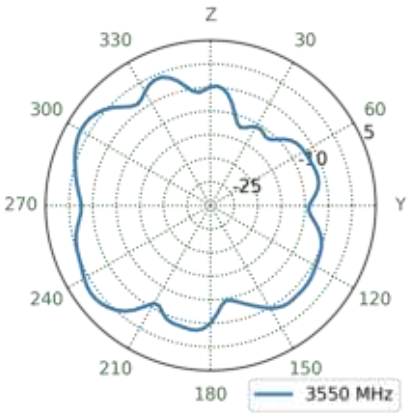
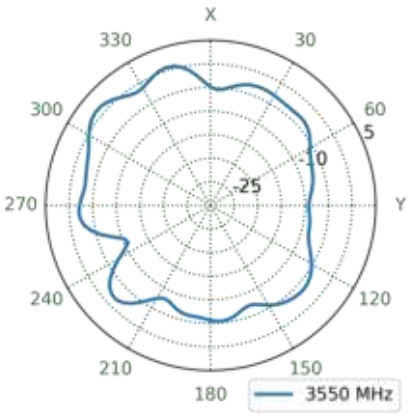
6.13 Straight - Patterns at 2496 MHz



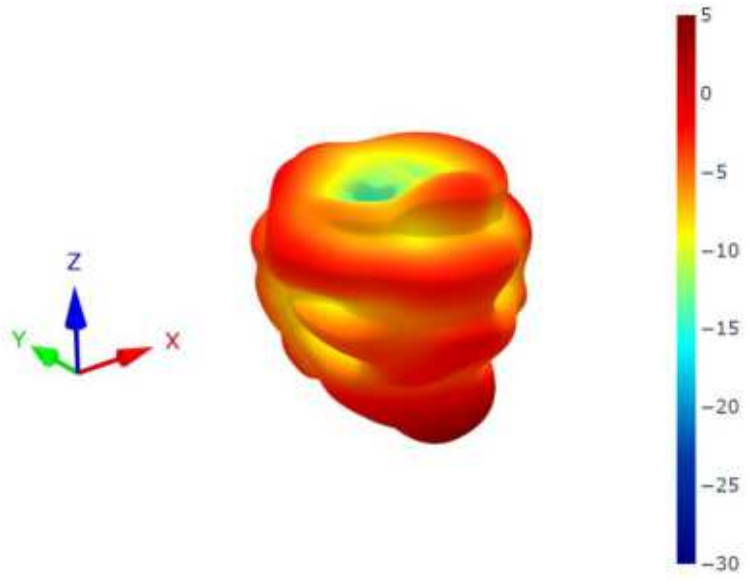
XZ Plane	YZ Plane	XY Plane
		

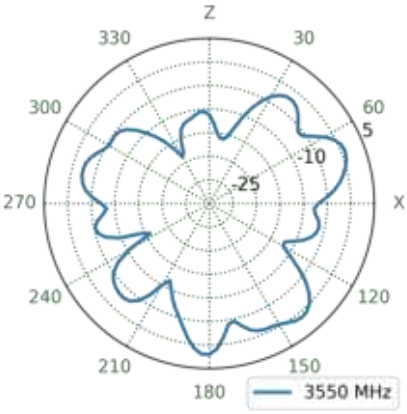
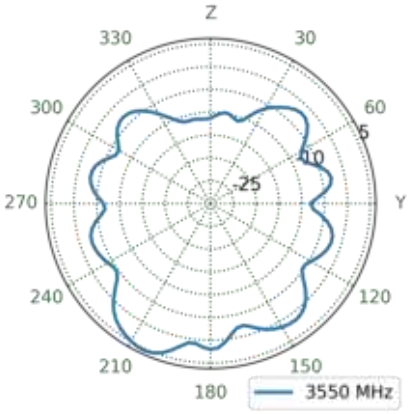
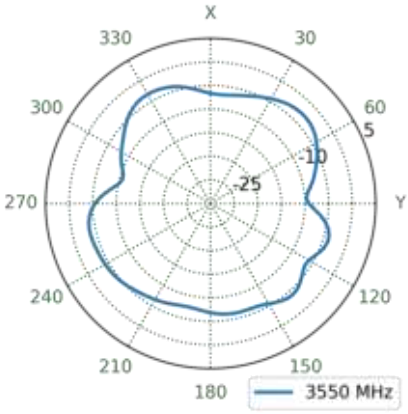
6.14 Bent - Patterns at 3550 MHz



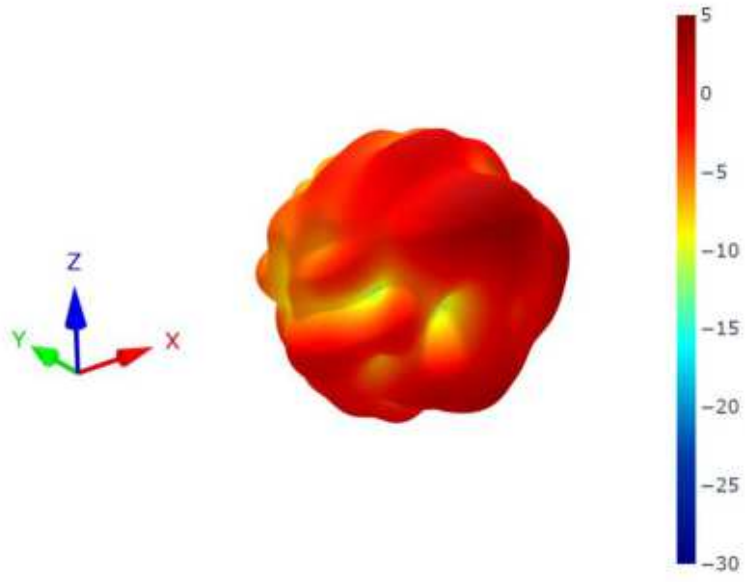
XZ Plane	YZ Plane	XY Plane
		

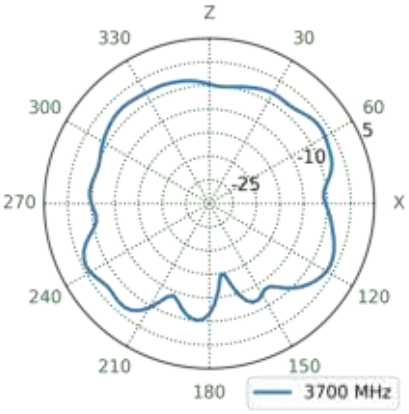
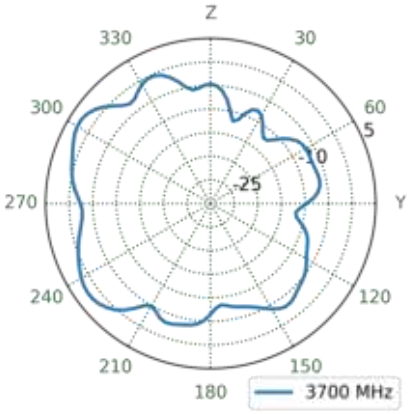
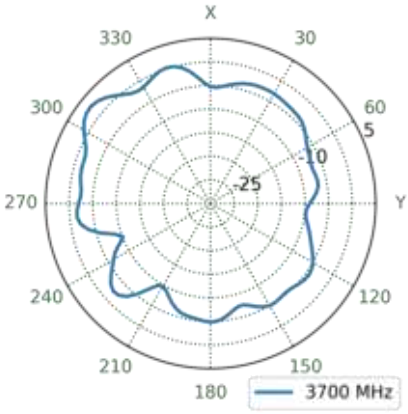
6.15 Straight - Patterns at 3550 MHz



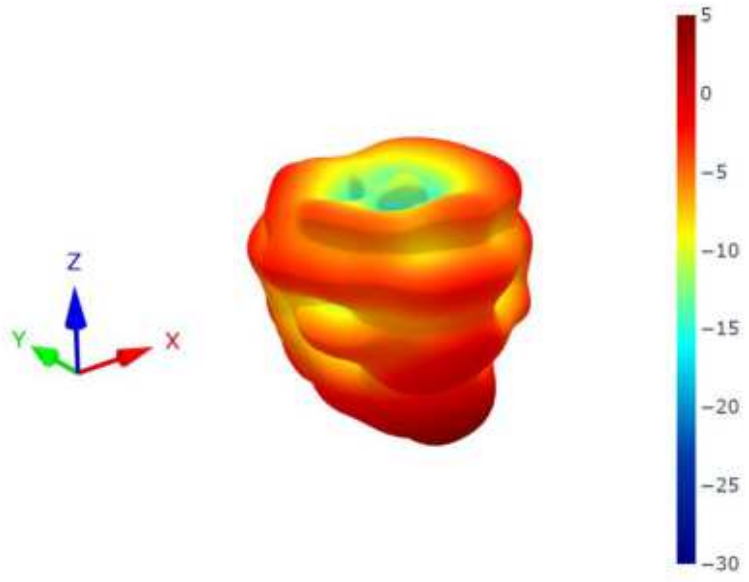
XZ Plane	YZ Plane	XY Plane
		

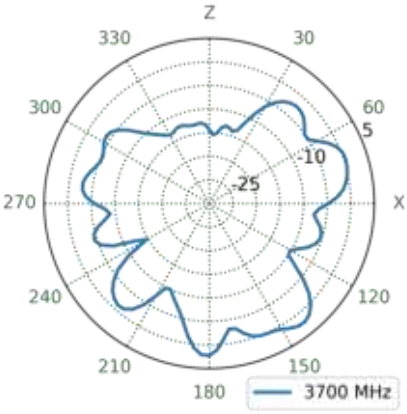
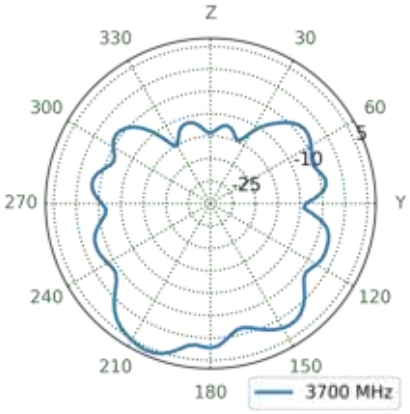
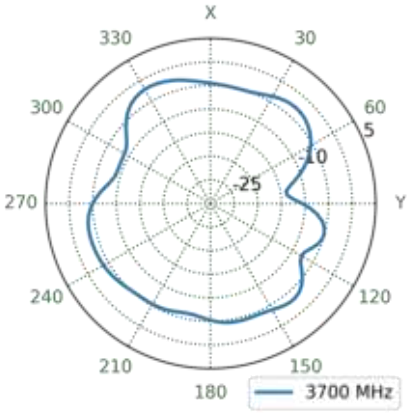
6.16 Bent - Patterns at 3700 MHz



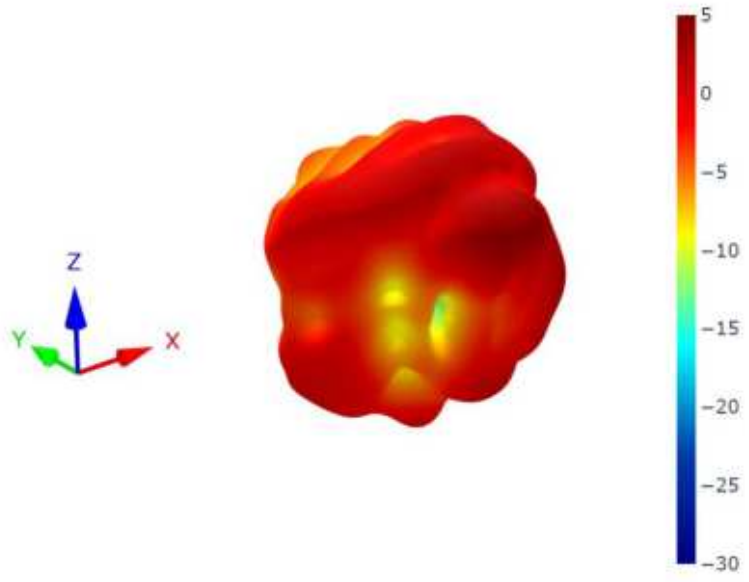
XZ Plane	YZ Plane	XY Plane
		

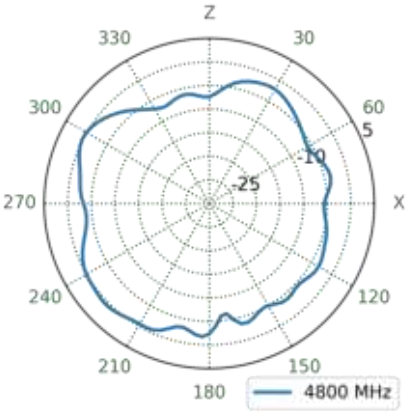
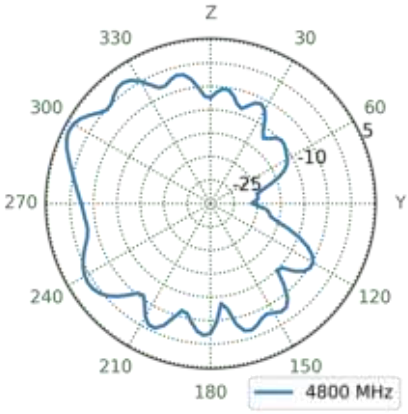
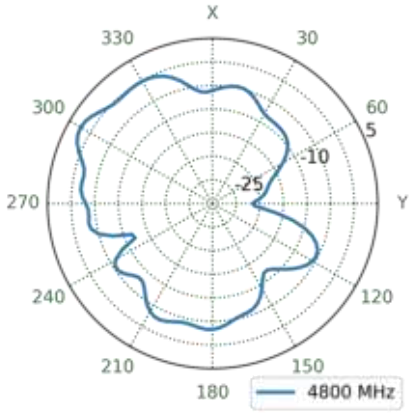
6.17 Straight - Patterns at 3700 MHz



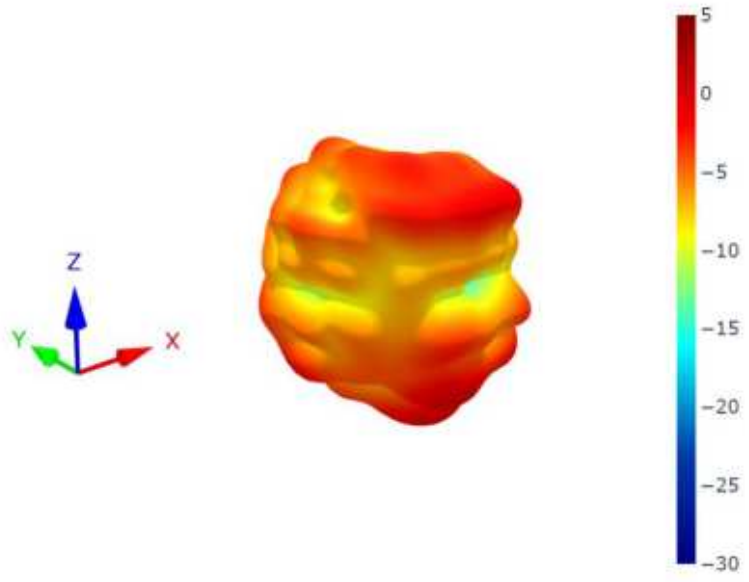
XZ Plane	YZ Plane	XY Plane
		

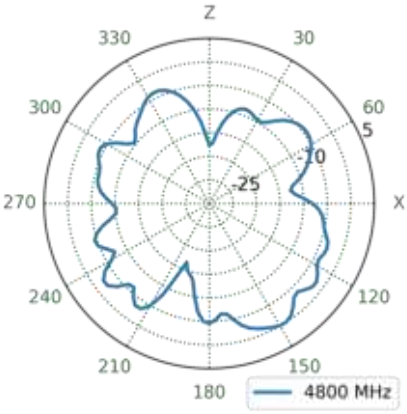
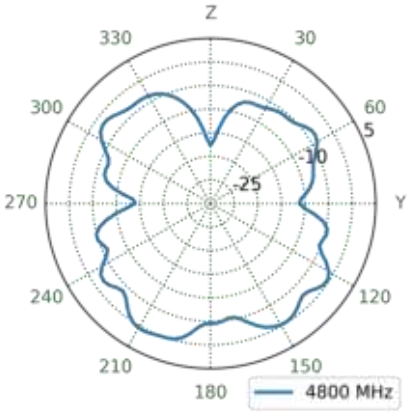
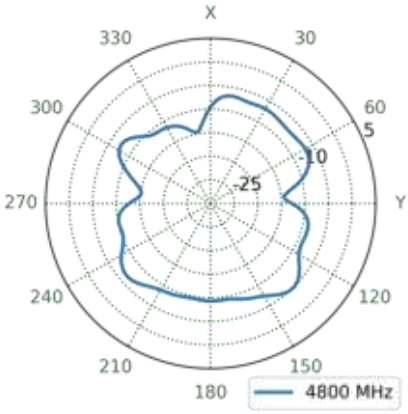
6.18 Bent - Patterns at 4800 MHz



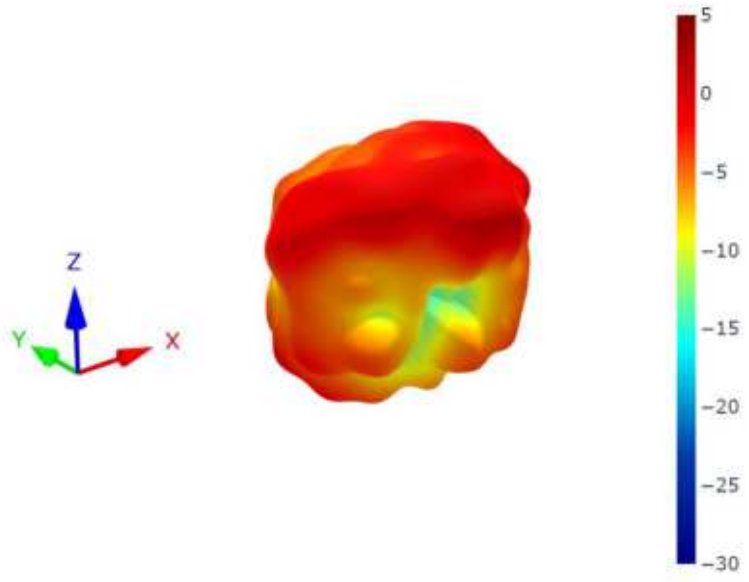
XZ Plane	YZ Plane	XY Plane
		

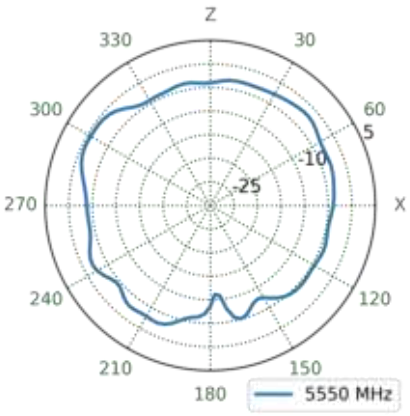
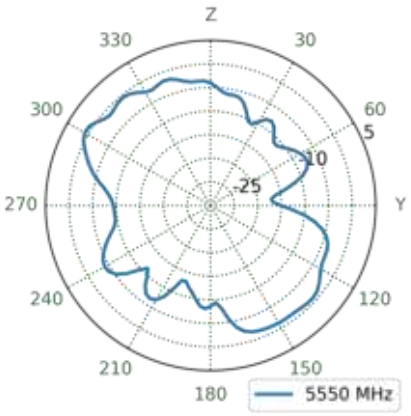
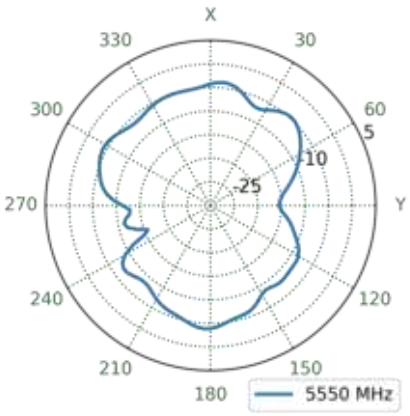
6.19 Straight - Patterns at 4800 MHz



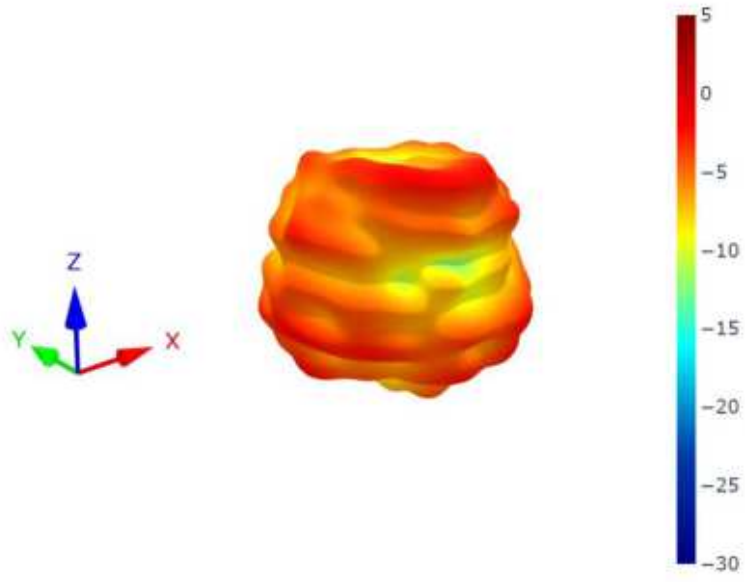
XZ Plane	YZ Plane	XY Plane
		

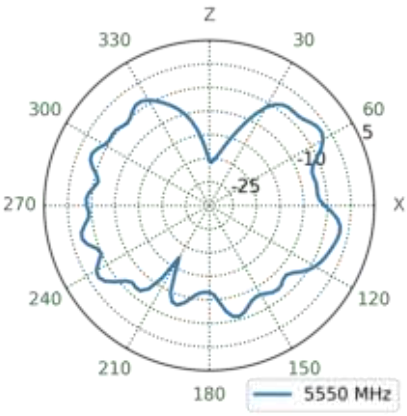
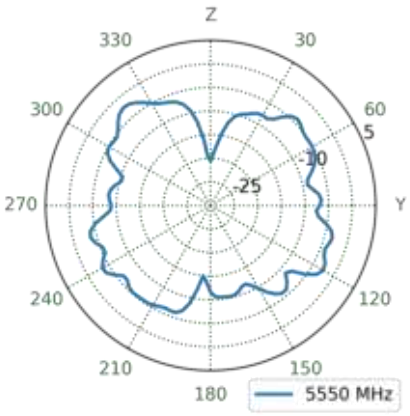
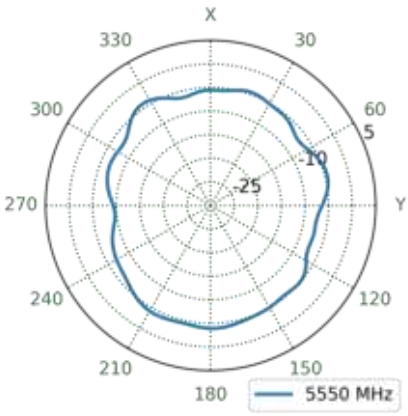
6.20 Bent - Patterns at 5550 MHz



XZ Plane	YZ Plane	XY Plane
		

6.21 Straight - Patterns at 5550 MHz



XZ Plane	YZ Plane	XY Plane
		

Changelog for the datasheet

SPE-21-8-047 – TG.66.A113

Revision: C (Current Version)	
Date:	2025-05-26
Notes:	Updated test data and ISO logo on page 2.
Author:	Gary West

Previous Revisions

Revision: B	
Date:	2023-12-04
Notes:	Updated drawing
Author:	Cesar Sousa

Revision: A (Original First Release)	
Date:	2021-07-07
Notes:	
Author:	Jack Conroy



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