

Logitech

Antenna Under Test (AUT)

Report

Antenna P/N: 420-006520 - Antenna 0 ; 420-006521- Antenna 1

Equipment Type: Antenna

Manufacturer: Novocomms (Suzhou) Limited

Test Location: Novocomms (Suzhou) Limited

No.5 Zhonghong road, SND, Suzhou city, Jiangsu Province, China

Tested by: Duke Huang

Test Date: June, 30, 2023

Report Release History

Report version	Description	Date Issued
V1	Original release	
V2	Updated antenna test site info, added antenna part numbers	
V3	Updated antenna chamber test software asterisk note. Replaced "Model Name" with antenna part number. Added antenna manufacturer address.	12/13/2023

Table of Contents

1. EUT Antenna Information	3
2. 3D Radiation Pattern Measurement	3
2.1 Test Location	3
2.2 Description of the anechoic chamber	3
2.3 Test Instruments	4
2.4 Test Procedure	5
2.6 Test Setup photos	6
2.7 Antenna Gain	9

1. EUT Antenna Information

- 1) Antenna Material : FPC
- 2) Antenna Type : Printed F (connector : IPEX MHF I)
- 3) Antenna Dimension:
- 4) Operating Frequency : 2.4 GHz - 2.4835 GHz; 5.1GHz – 7.125GHz
- 5) Input Impedance : 50 Ω
- 6) Standing-Wave Ratio : < 2.6

2. 3D Radiation Pattern Measurement

2.1 Test Location

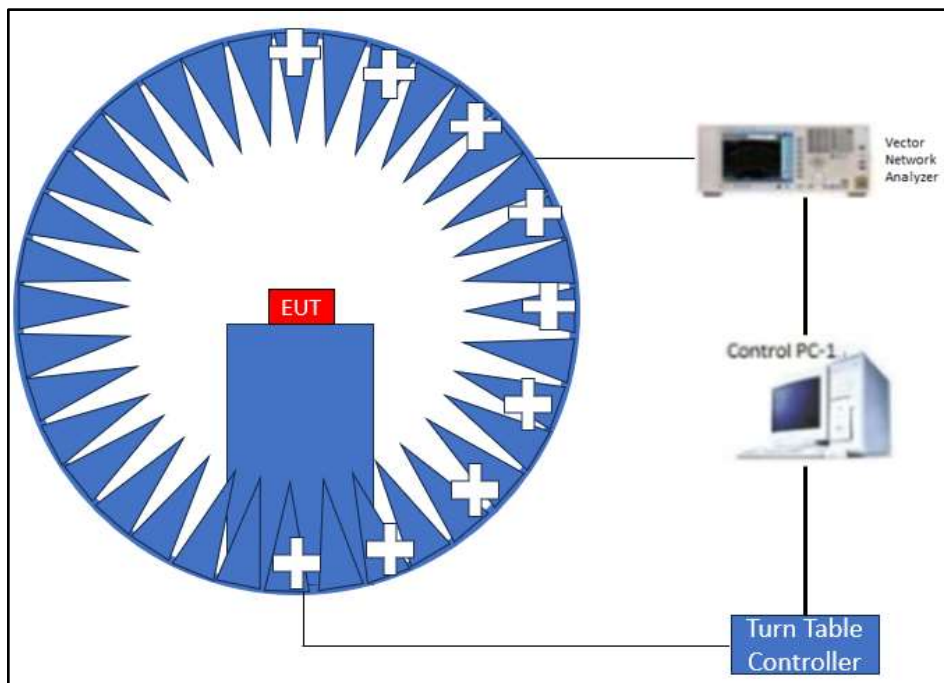
3D radiation pattern measurement in the anechoic chamber

2.2 Description of the anechoic chamber

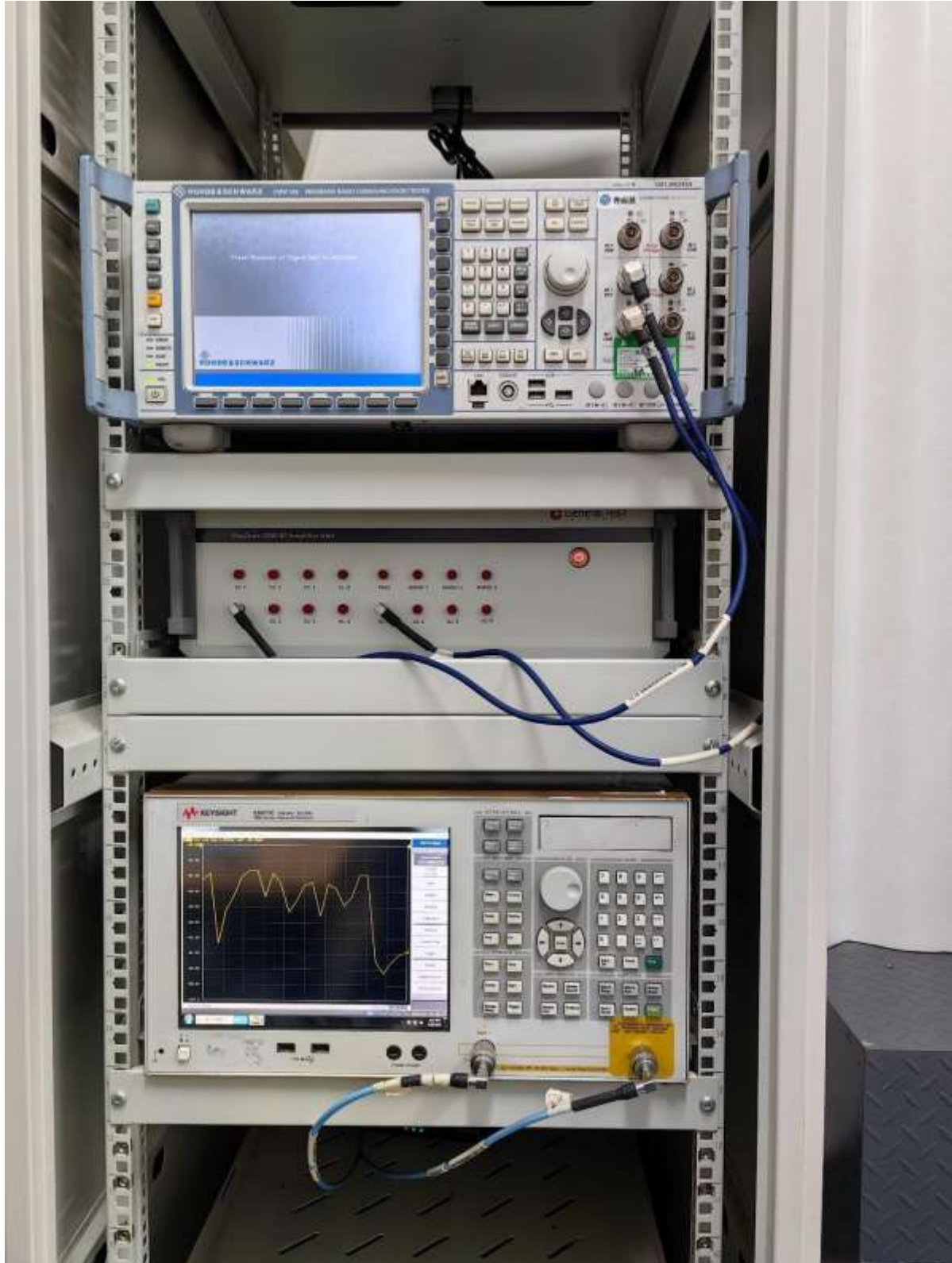
Length: 3.062m

Width: 3.120m

Height: 2.932m



2.3 Test Instruments



Description	Model No.	Last Calibration [^]
Vector Network Analyzer Keysight	E5071C	Feb/2023
Chamber	GTS Rayzone 2800 [*]	March/2023

Notes: [^]The calibration interval of the above test instruments is 12 months

^{*} Test software used is GTS MaxSign Libra version 1.1.8

2.4 Test Procedure

- i. Measure loss of the RF test cable.
- ii. Solder the test RF cable to the Antenna.
- iii. Mount the DUT on the mast of the chamber, record the coordinates and take pictures.
- iv. Calibrate the chamber where the connection to source from the VNA Port 1.
- v. Compensate for the loss from the test cable from item 2.4.i.
- vi. Read the channel power level on the Network analyzer and record in the following positions.
 1. The mast is then stepped between 0 to 360 degrees along the horizontal plane in 15-degree increments.
 2. Data is recorded using the VNA for both theta (Port2) and phi (Port3) polarizations at each position.

2.7 Antenna Gain

Ant0			
Frequency	Efficiency (dB)	Efficiency%	Gain
2412	-3.64	43.29	4.18
2437	-3.44	45.32	4.49
2462	-2.71	53.64	4.50
5180	-2.41	57.39	5.92
5210	-2.18	60.58	6.08
5240	-1.97	63.49	6.4
5260	-2.09	61.87	6.31
5290	-1.86	65.19	6.40
5320	-1.74	66.99	6.3
5500	-2.70	53.7	6.91

5600	-3.12	48.75	6.93
5720	-3.89	40.81	6.43
5745	-3.8	41.67	6.53
5775	-3.97	40.05	6.25
5825	-3.73	42.40	6.15
6115	-3.72	42.43	4.33
6275	-3.83	41.40	2.80
6415	-1.89	64.75	5.31
6435	-1.54	70.11	5.64
6475	-1.98	63.35	5.47
6515	-1.46	71.52	6.38
6535	-0.85	82.16	7.03
6695	-1.49	70.88	6.03
6855	-3.47	44.98	4.55
6895	-5.24	29.91	2.81
7015	-3.92	40.56	2.89
7095	-3.90	40.79	2.83

ANT1			
Frequency	Efficiency (dB)	Efficiency%	Gain
2412	-3.77	41.99	2.88
2437	-3.81	41.64	3.41
2462	-3.82	41.50	3.36
5180	-2.2	60.28	4.93
5210	-1.79	66.29	5.10
5240	-1.33	73.64	5.65
5260	-1.33	73.59	5.72
5290	-0.70	85.15	6.43
5320	-0.31	93.17	6.69
5500	-0.81	83.06	6.44
5600	-1.19	76.08	6.09
5720	-3.39	45.83	3.81
5745	-3.64	43.29	3.69
5775	-4.30	37.19	3.11

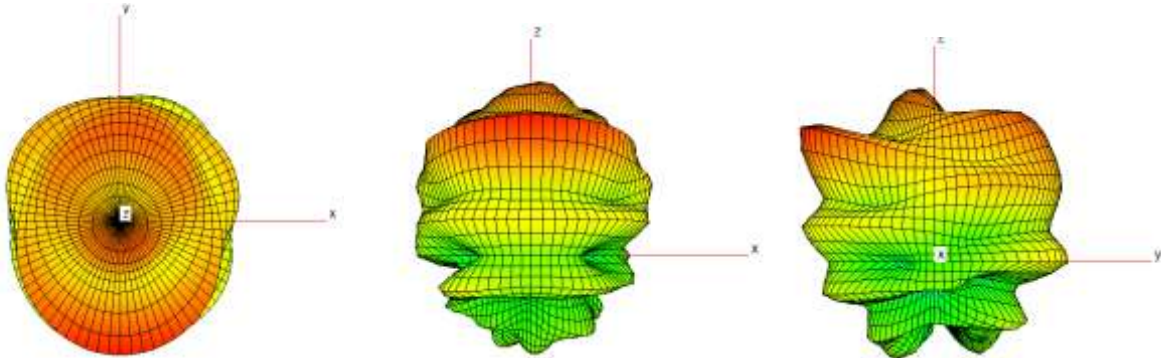
5825	-4.97	31.84	2.61
6115	-3.18	48.12	4.69
6275	-2.79	52.61	5.44
6415	-2.04	62.54	5.75
6435	-1.85	65.29	5.78
6475	-2.53	55.88	4.78
6515	-1.99	63.31	5.44
6535	-1.38	72.76	6.00
6695	-1.38	72.86	6.81
6855	-4.49	35.59	3.46
6895	-6.72	21.28	1.09
7015	-7.24	18.87	0.51
7095	-8.59	13.83	-1.11

3D Pattern Test Plot Antenna 0

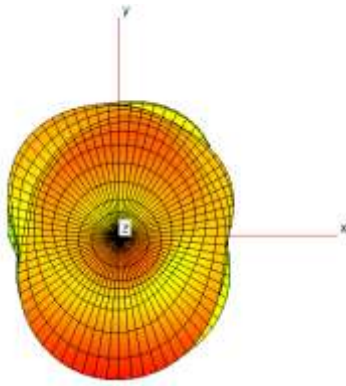
Scale:



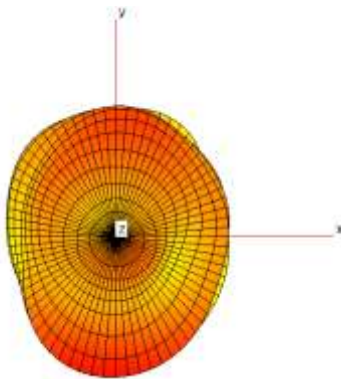
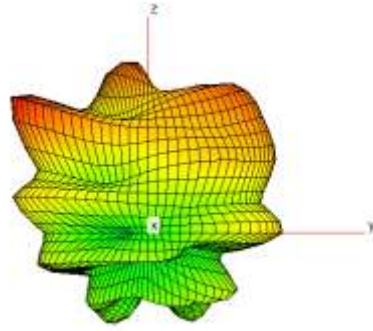
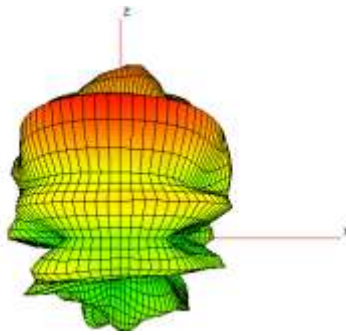
2412



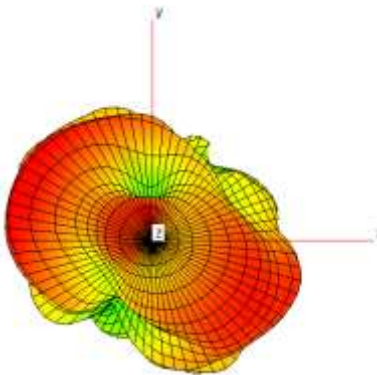
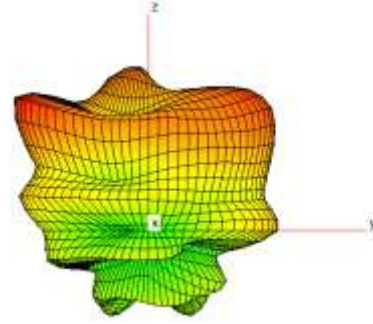
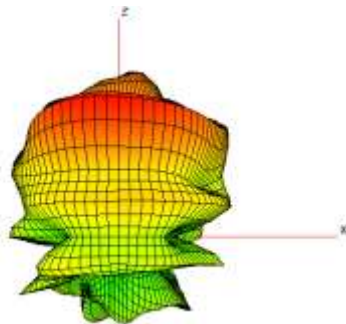
2437



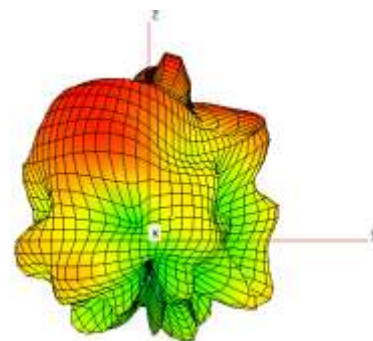
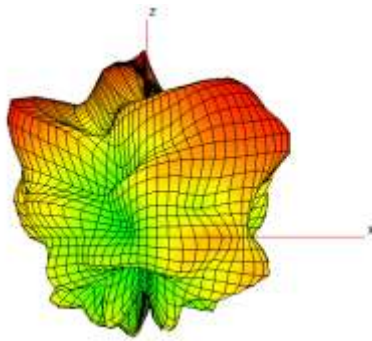
2462

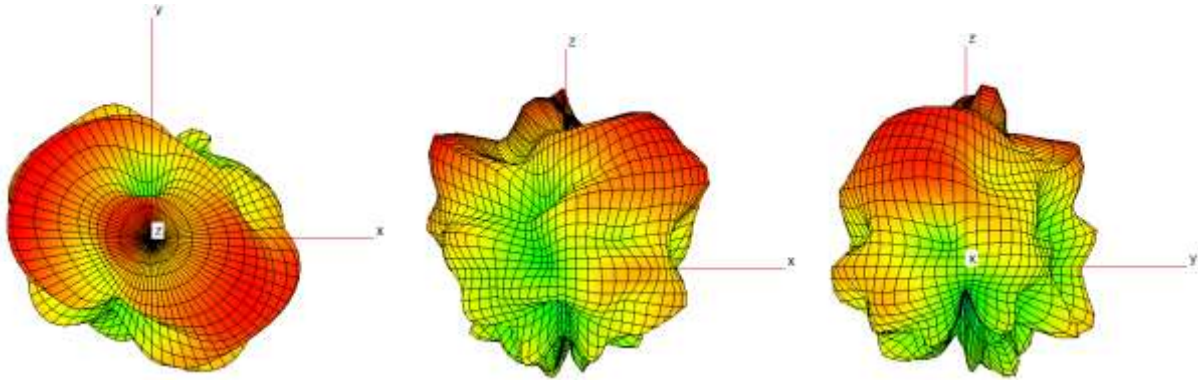


5180

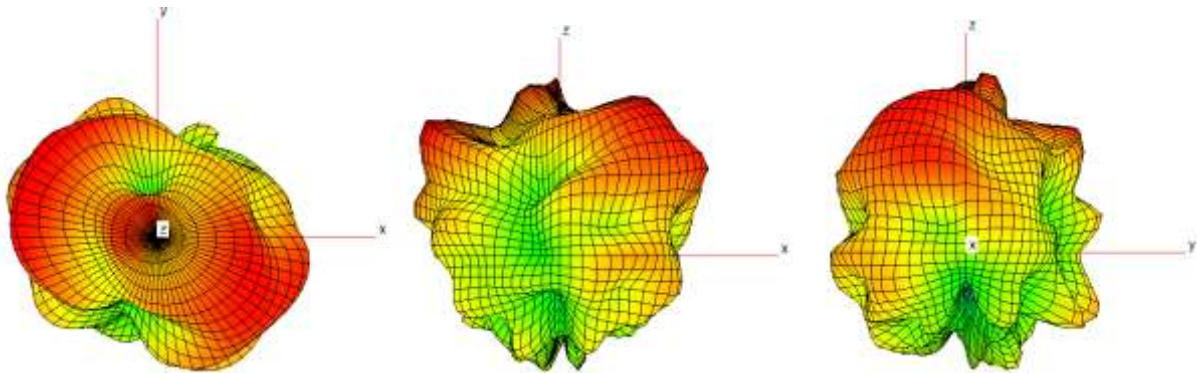


5210

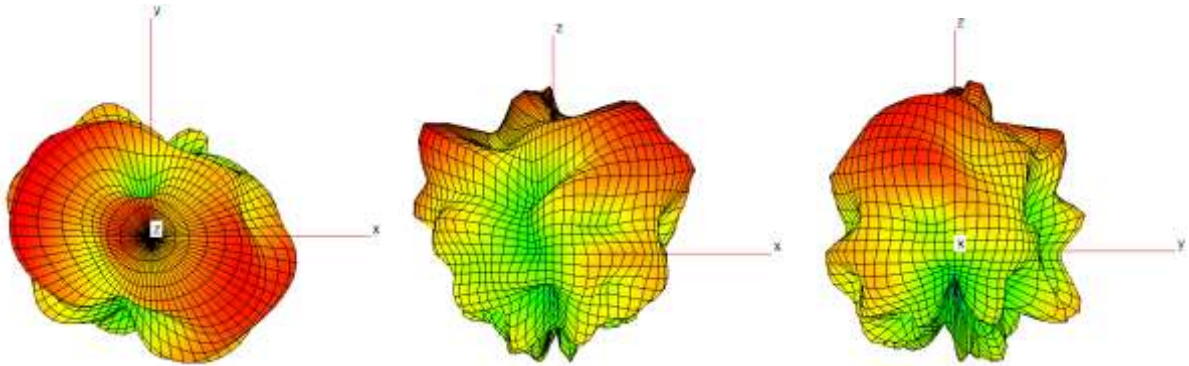




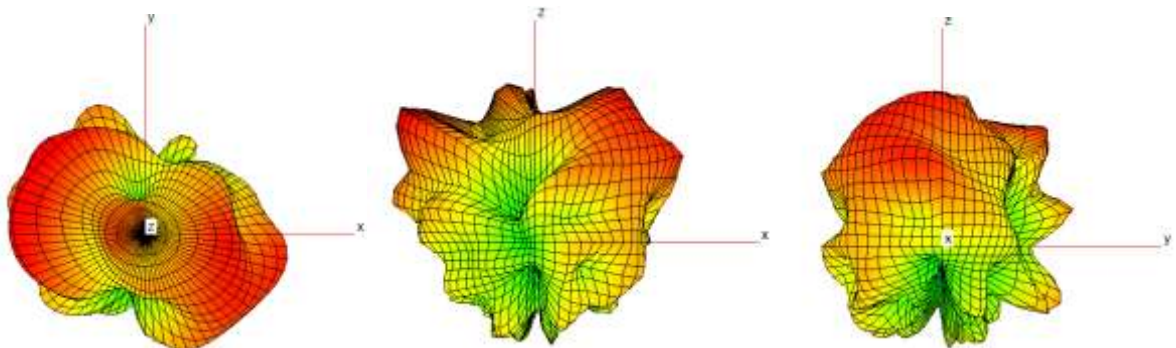
5240



5250

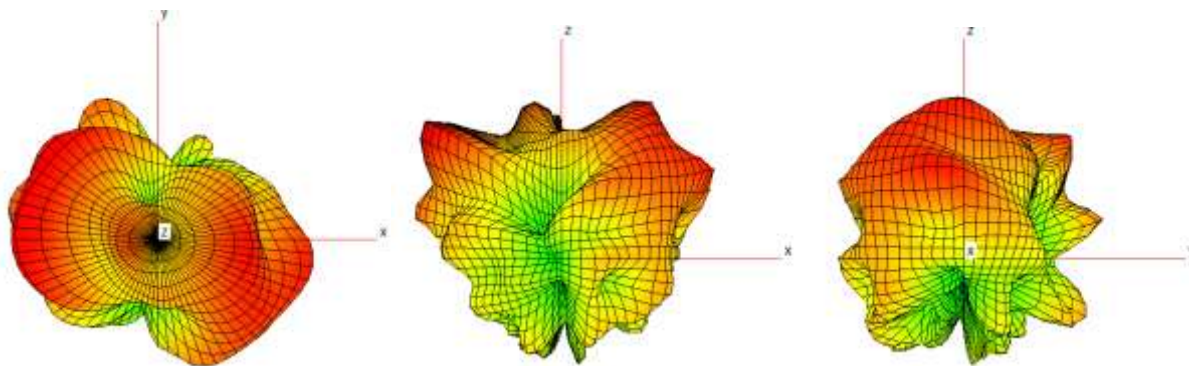


5290

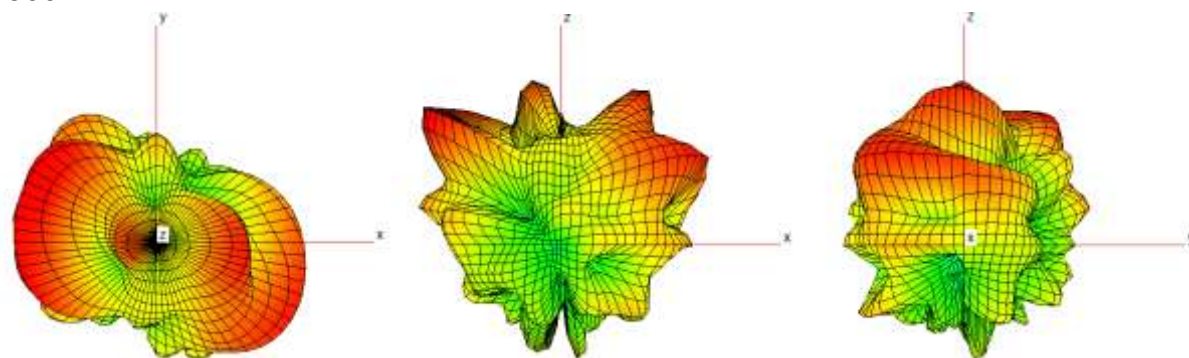


5320

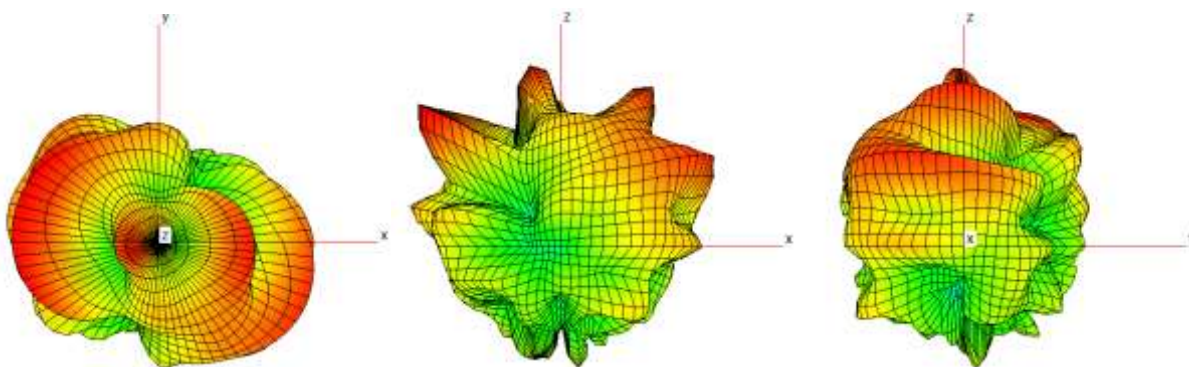
Report No: AGY-700-032073



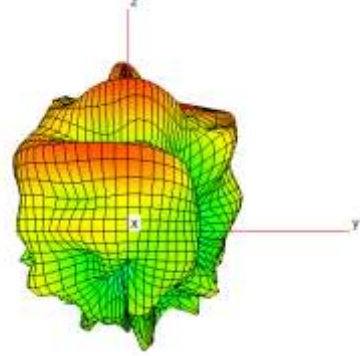
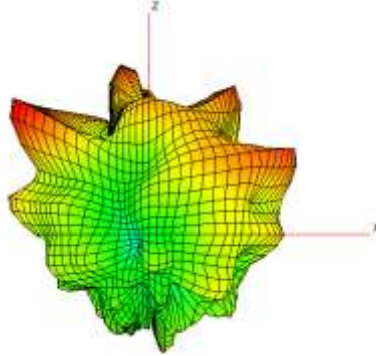
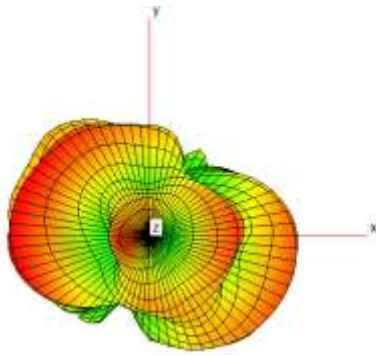
5500



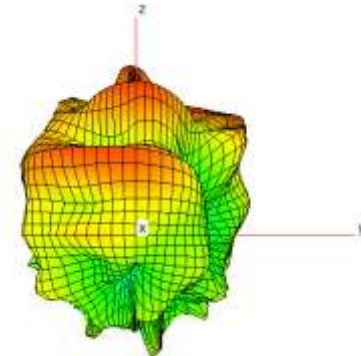
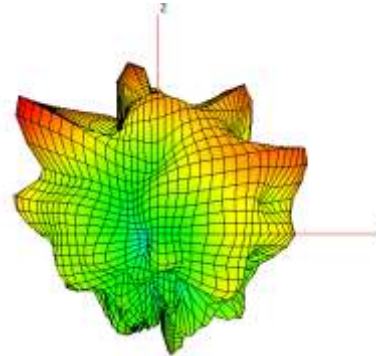
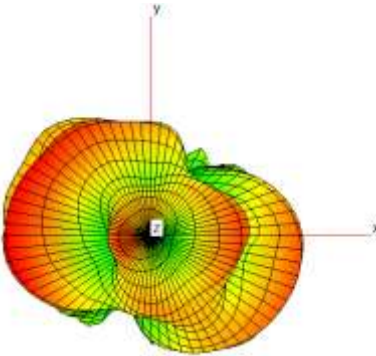
5600



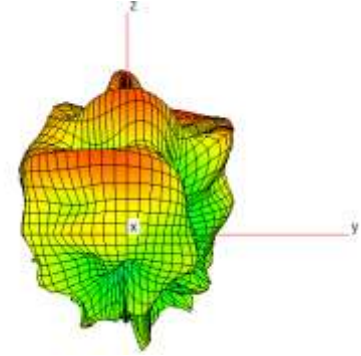
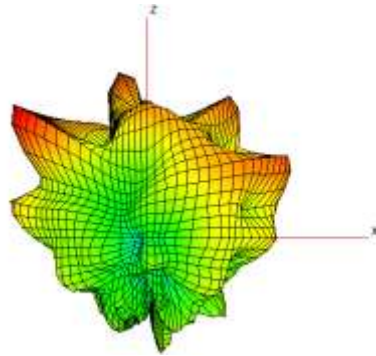
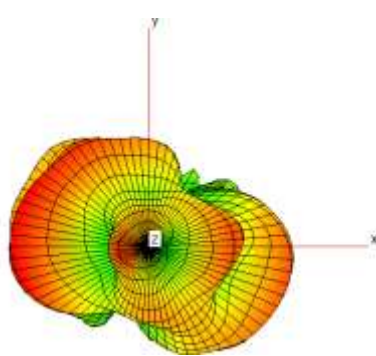
5720



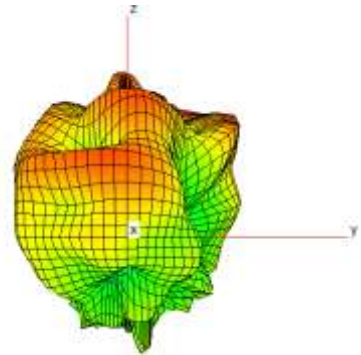
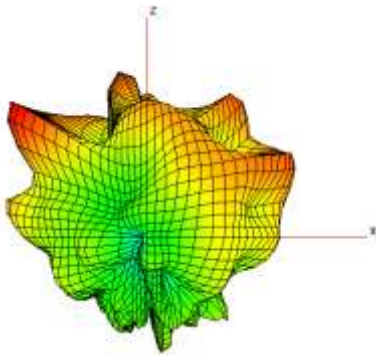
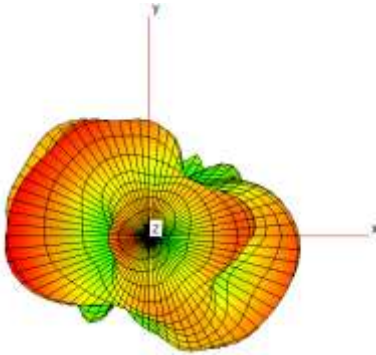
5745



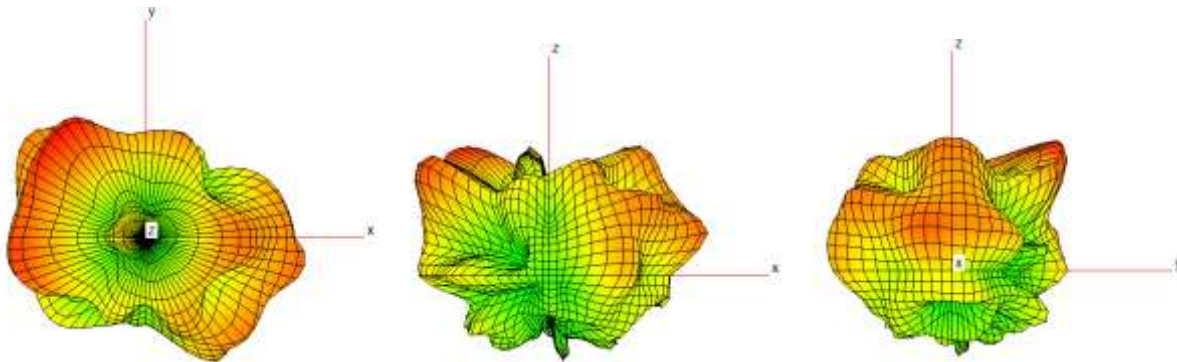
5775



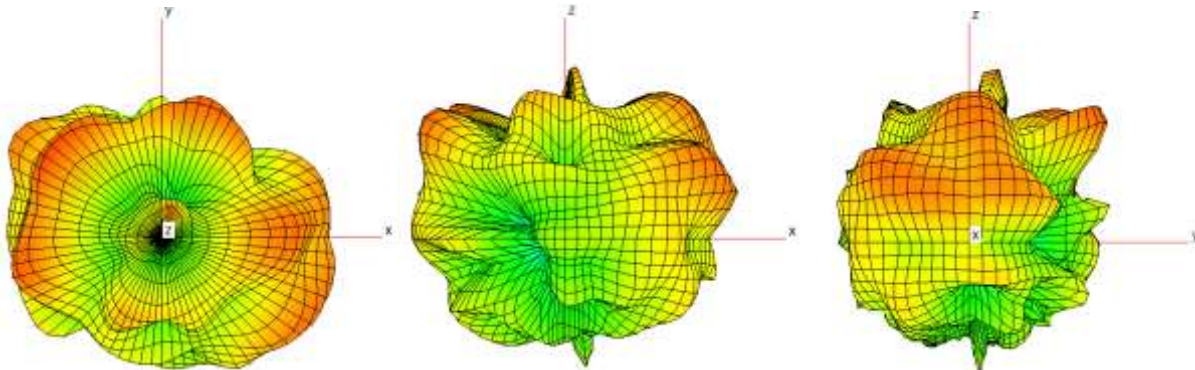
5825



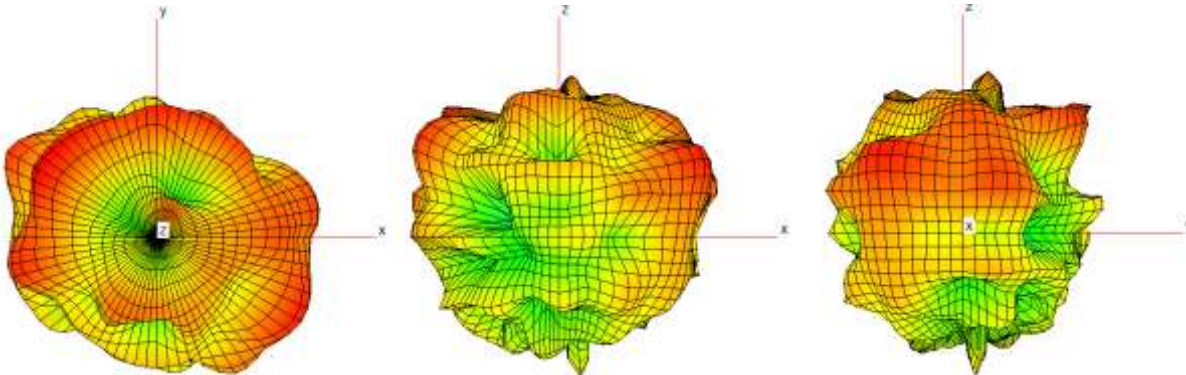
6115



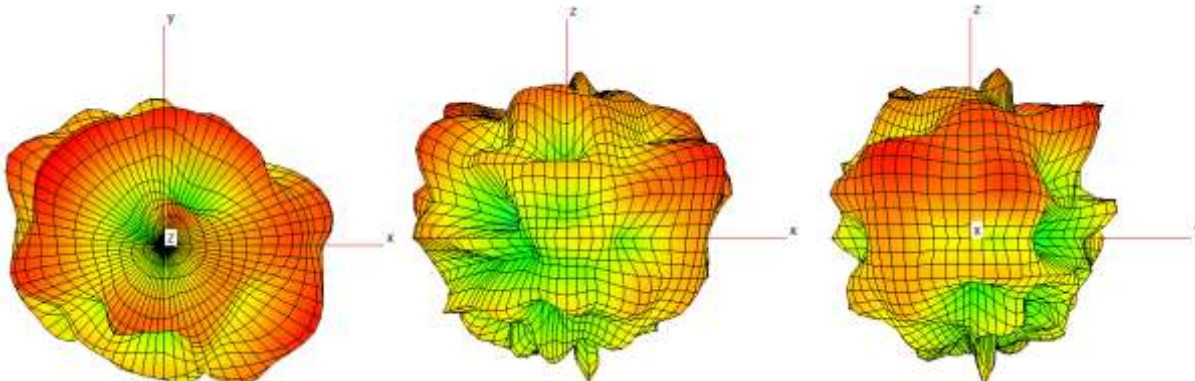
6275



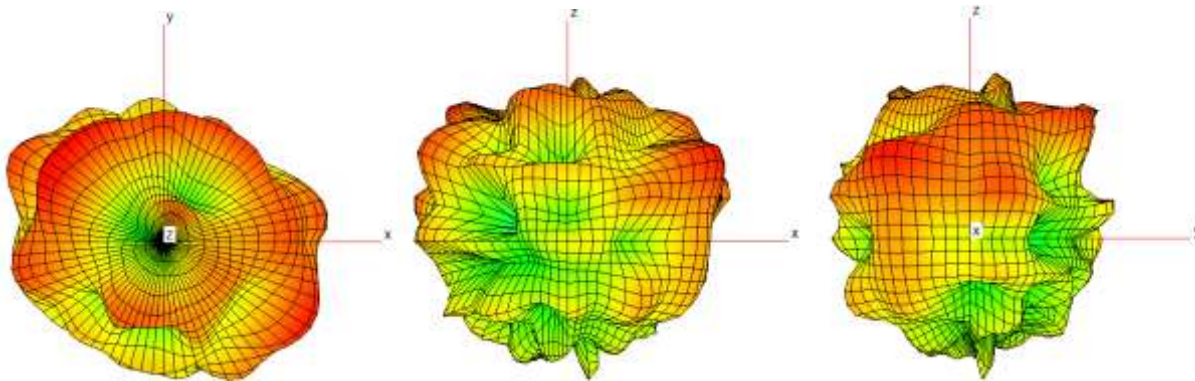
6415



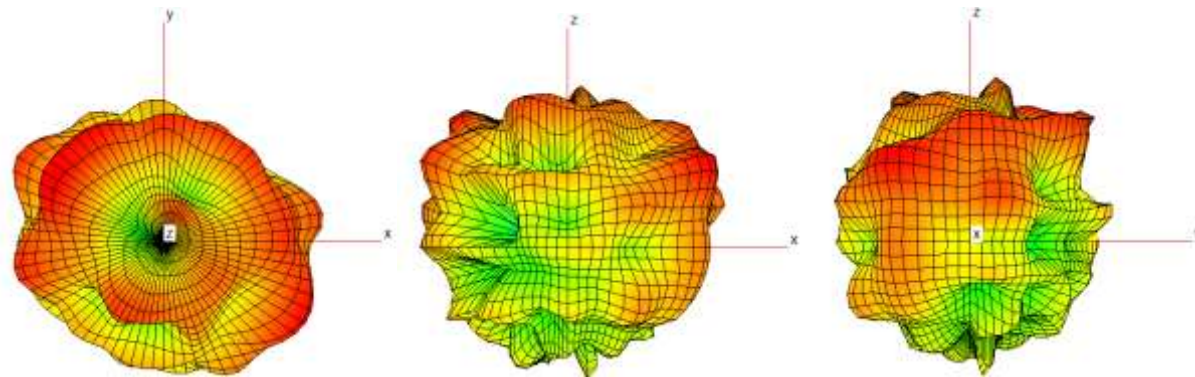
6435



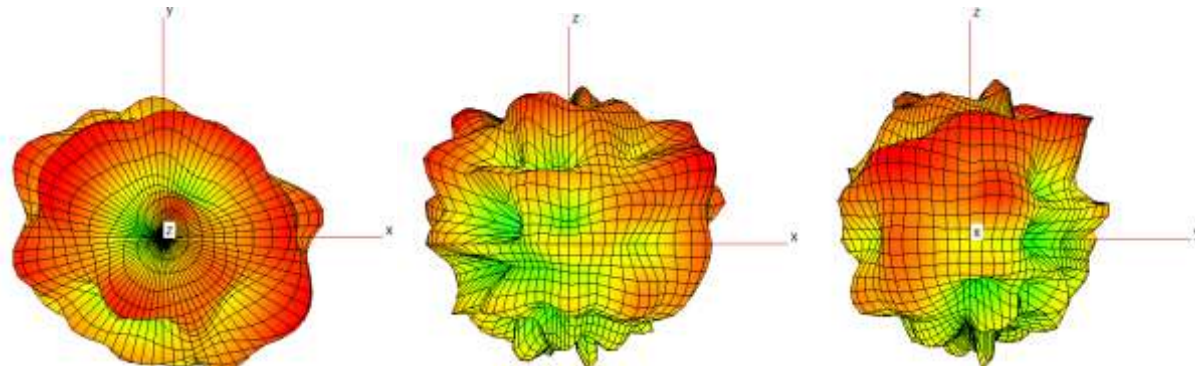
6475



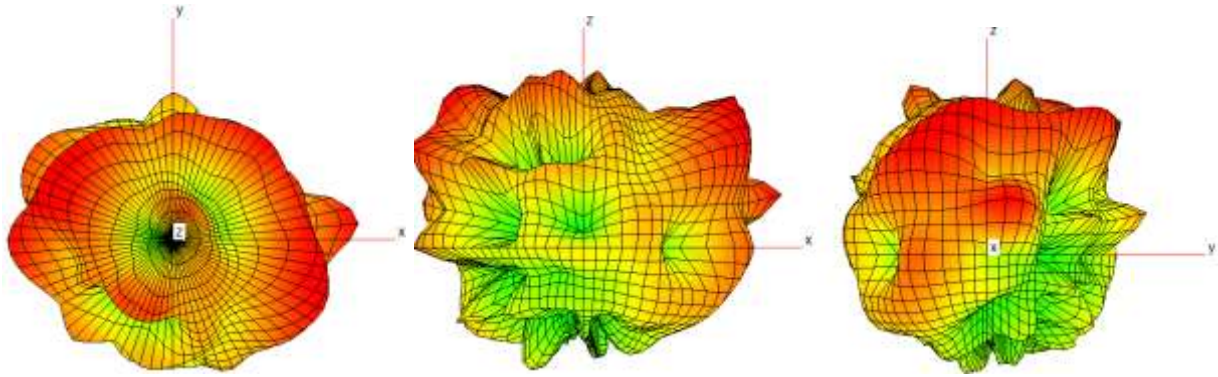
6515



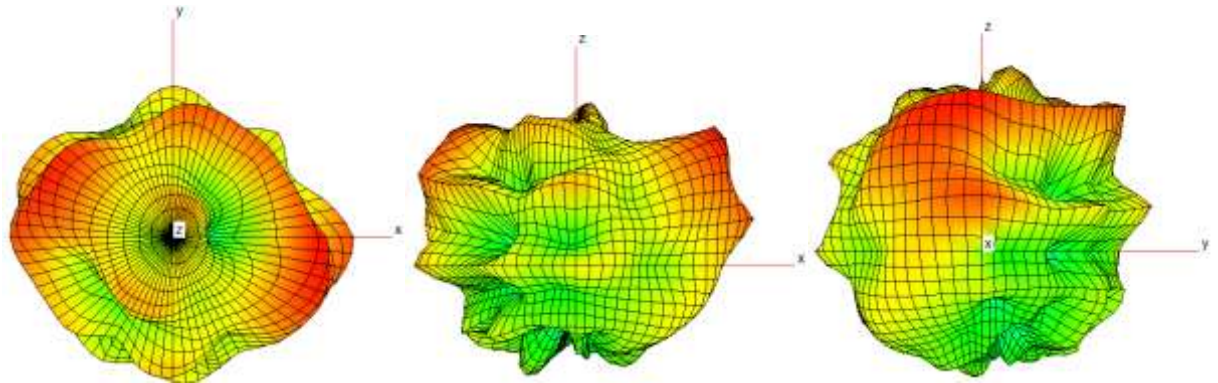
6535



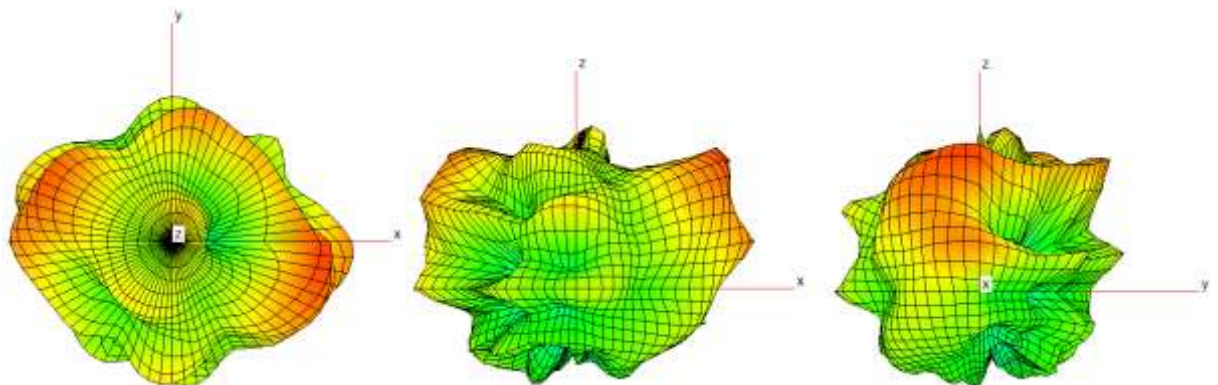
6695



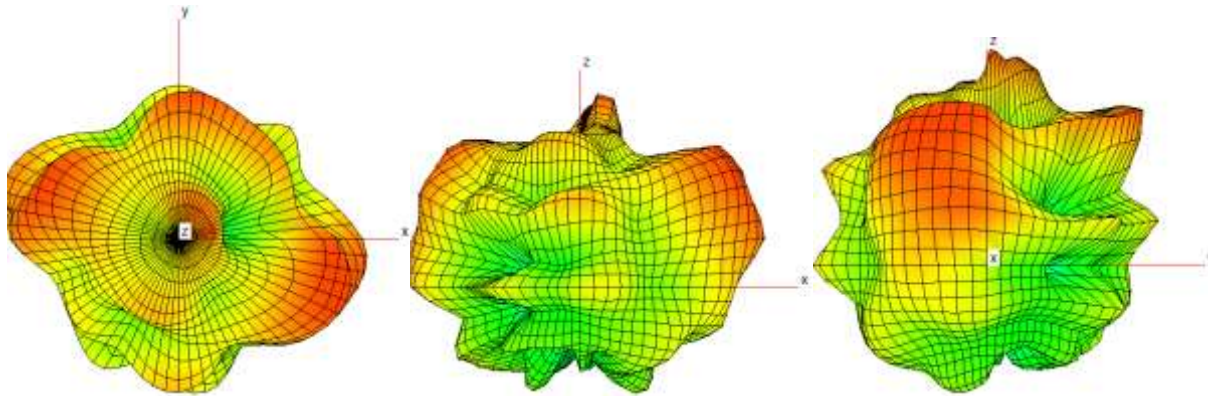
6855



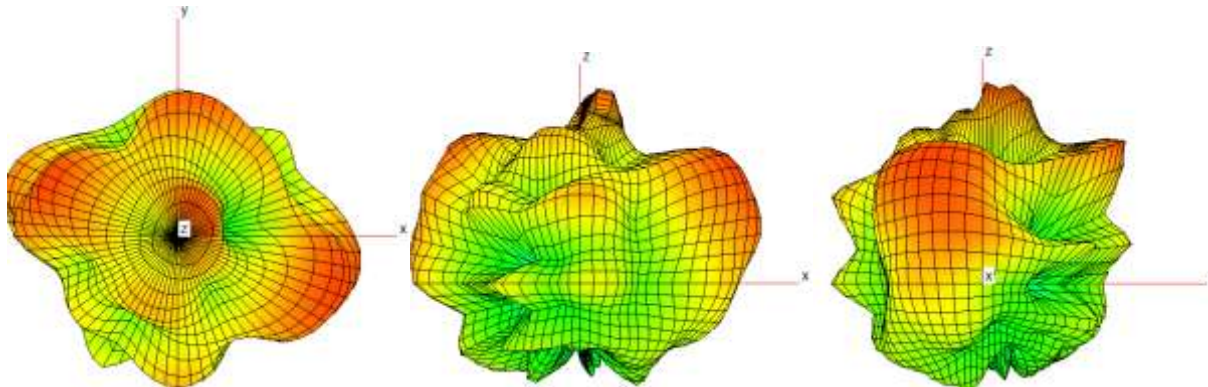
6895



7015



7095

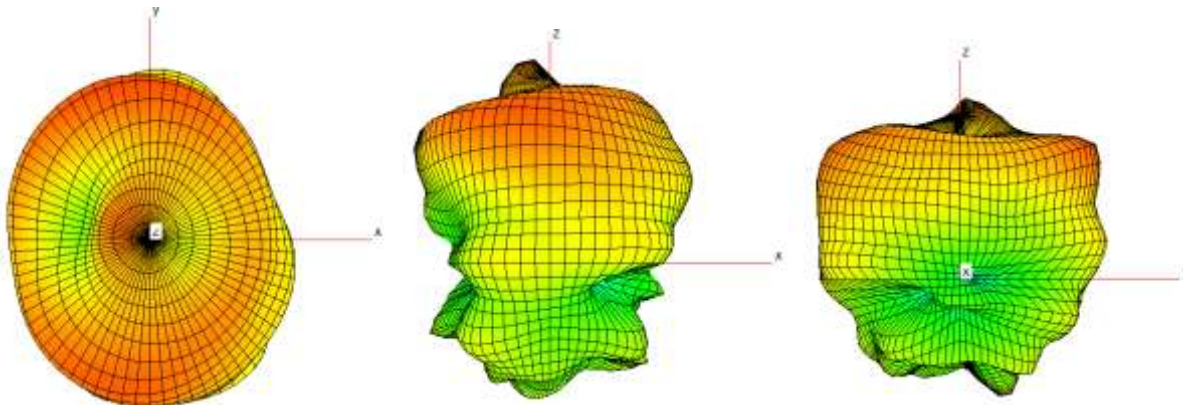


Antenna 1

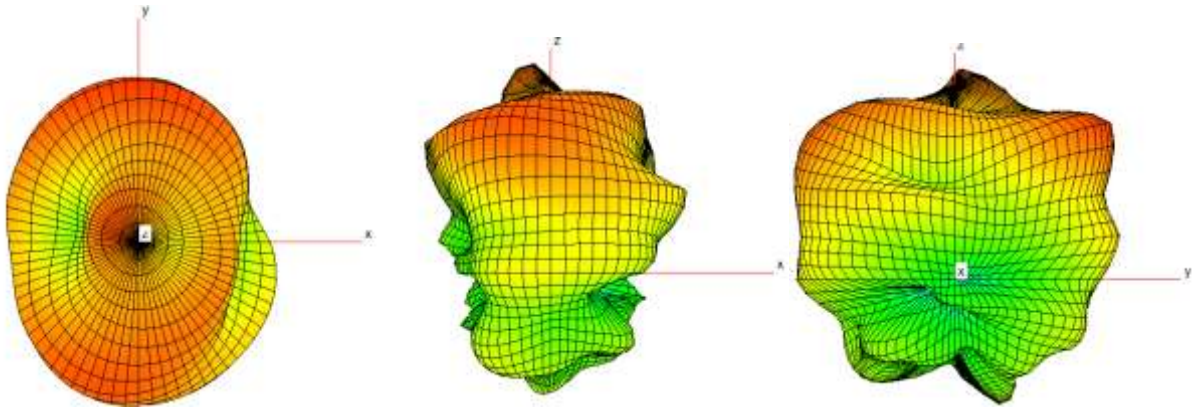
Scale:



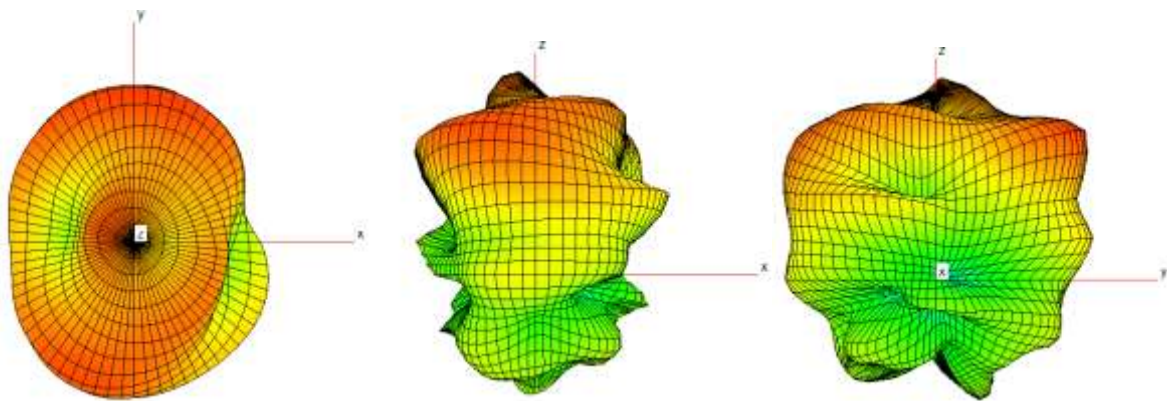
2412MHz: 1



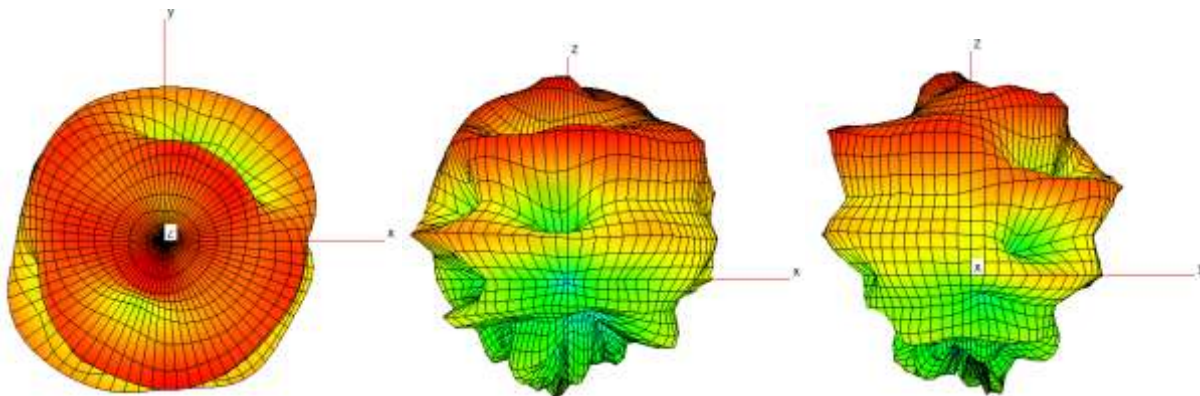
2437



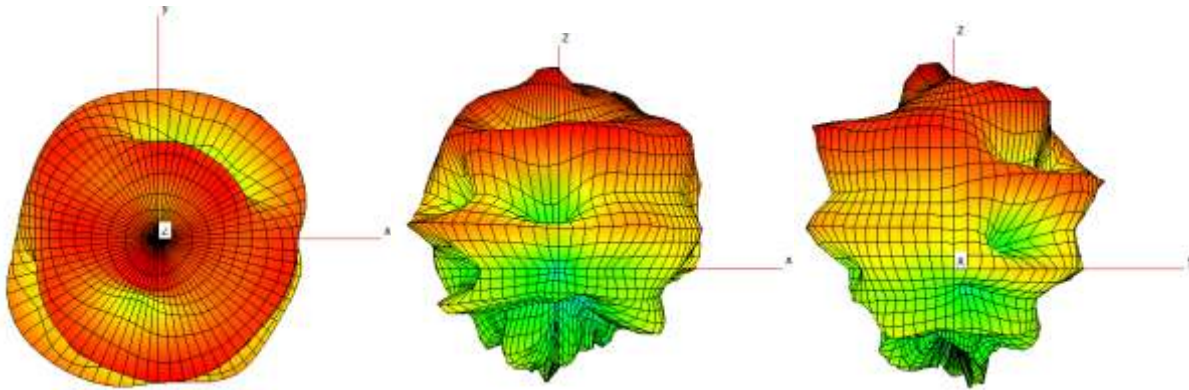
2462



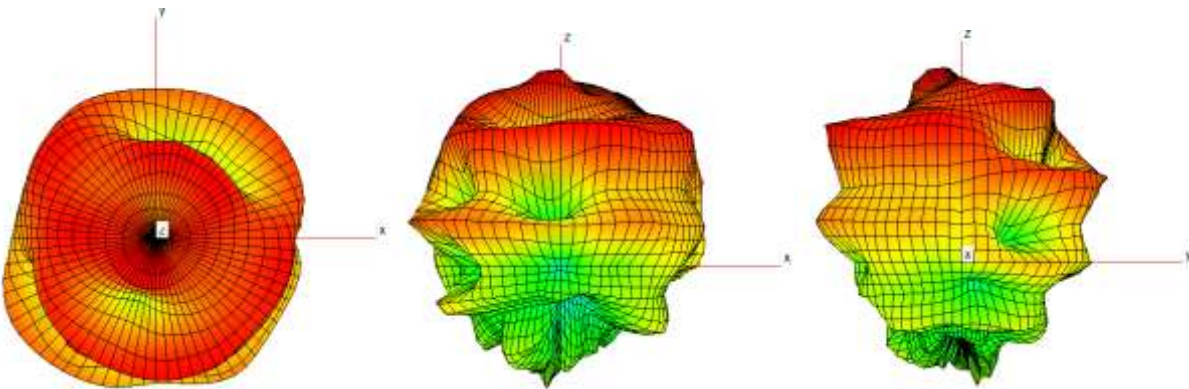
5180



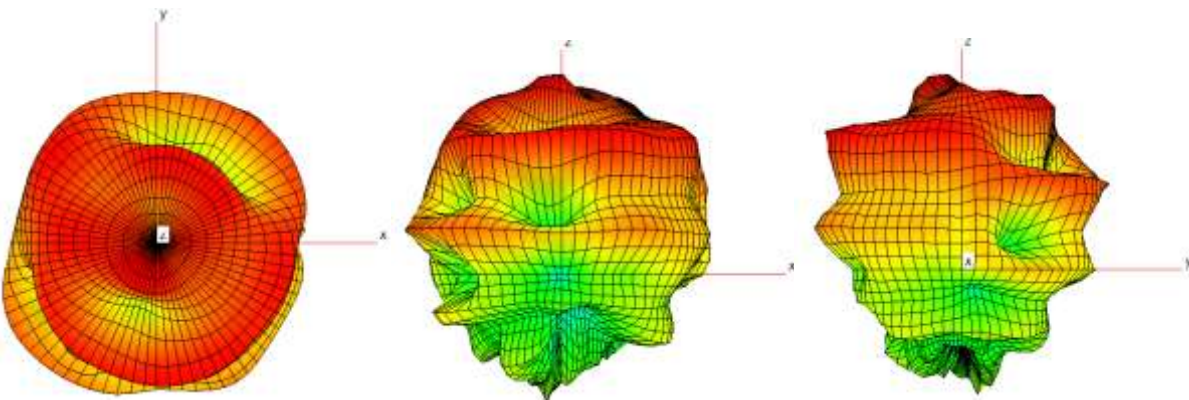
5210



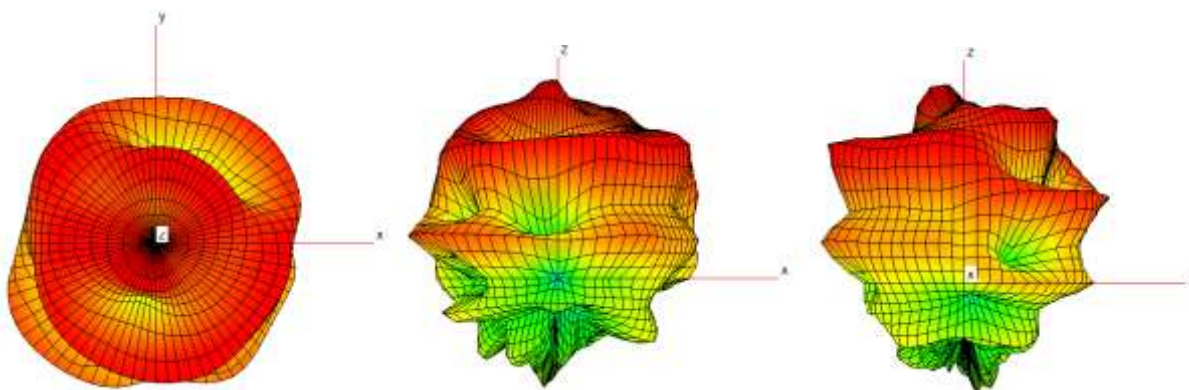
5240



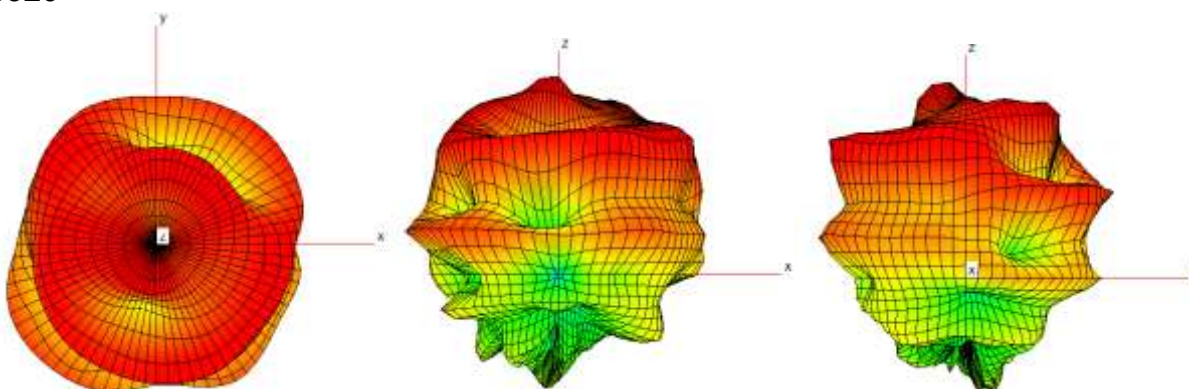
5250



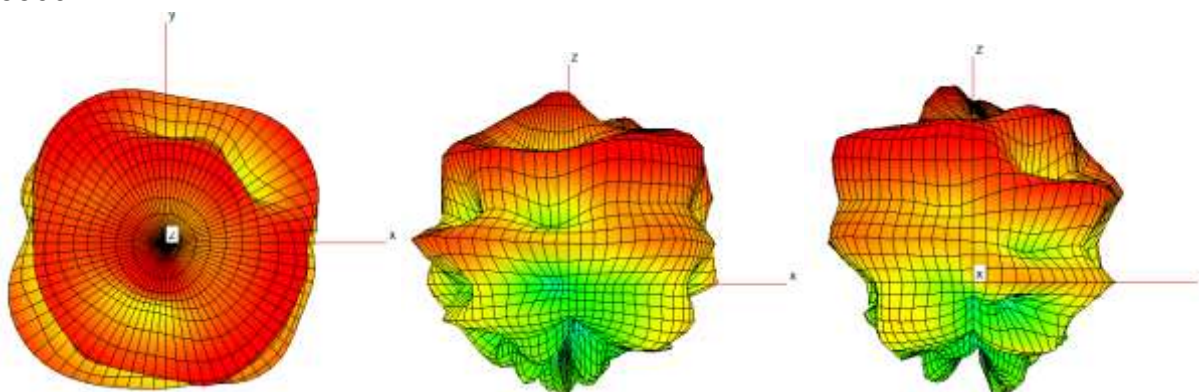
5290



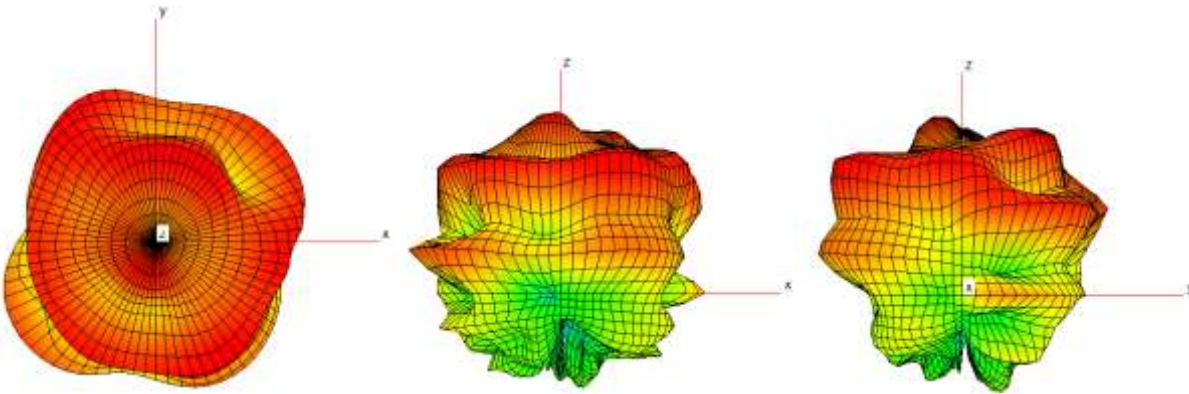
5320



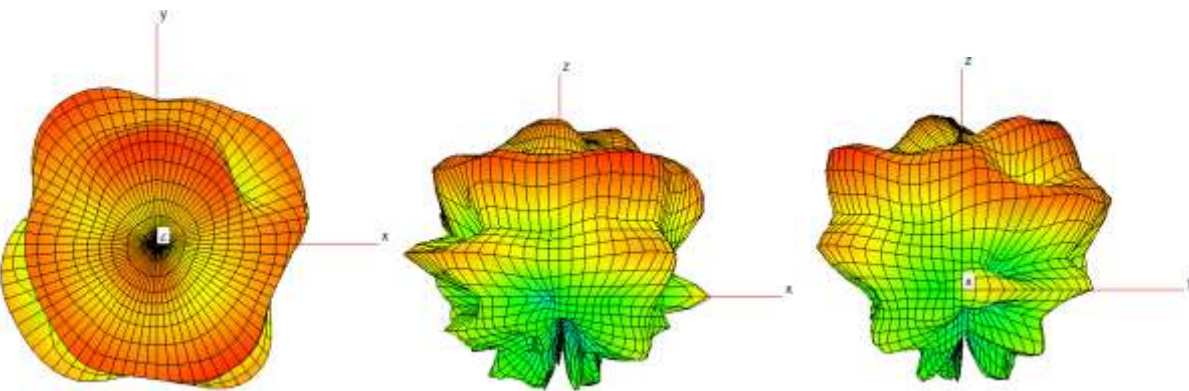
5500



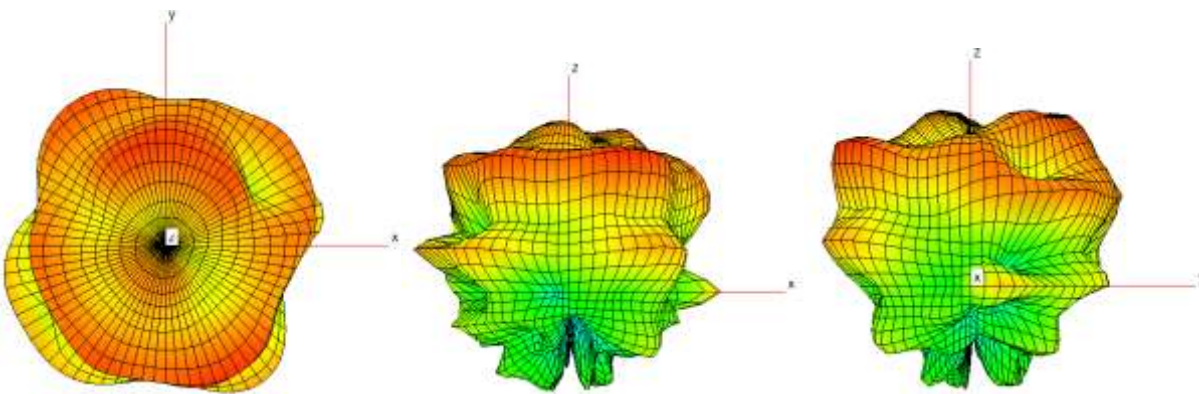
5600



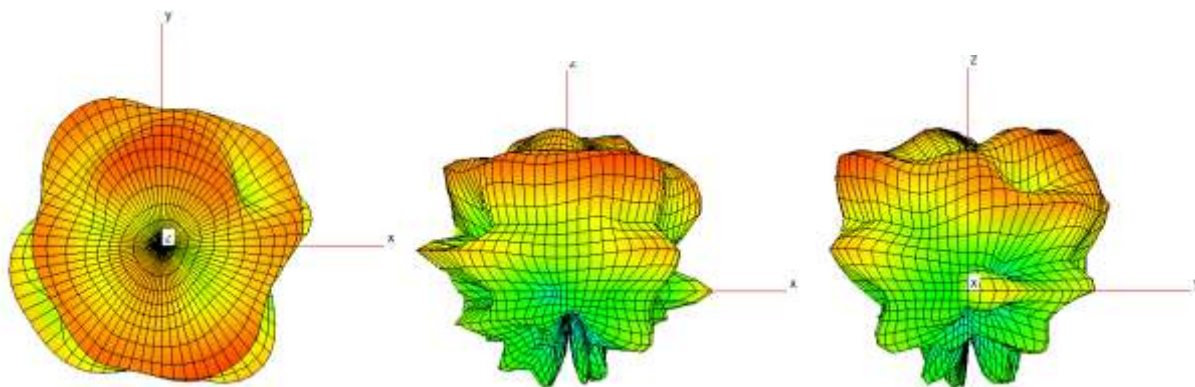
5720



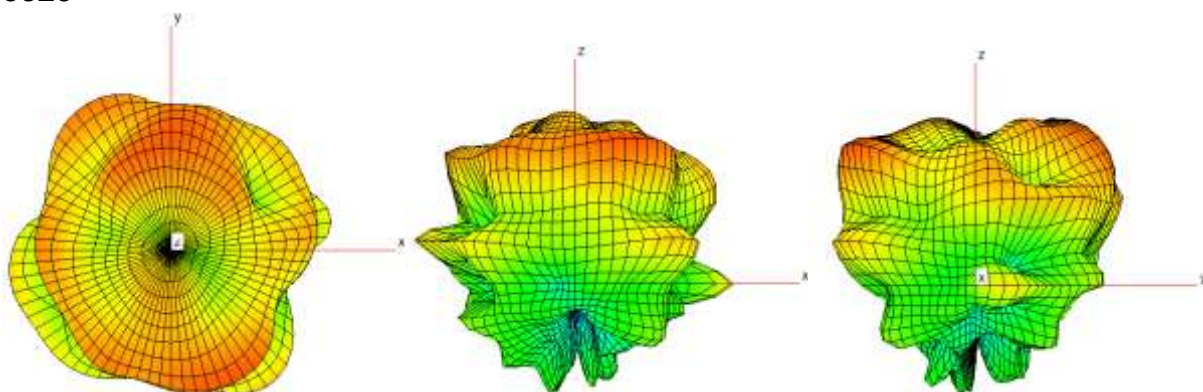
5745



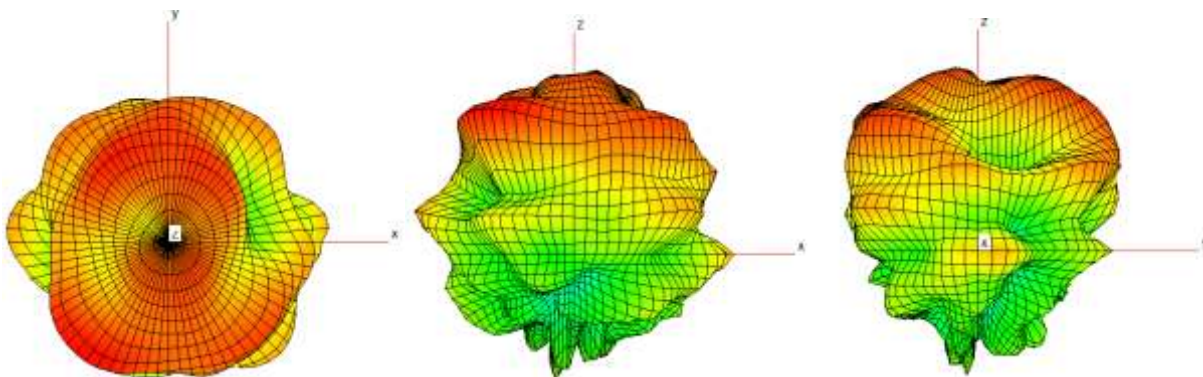
5775



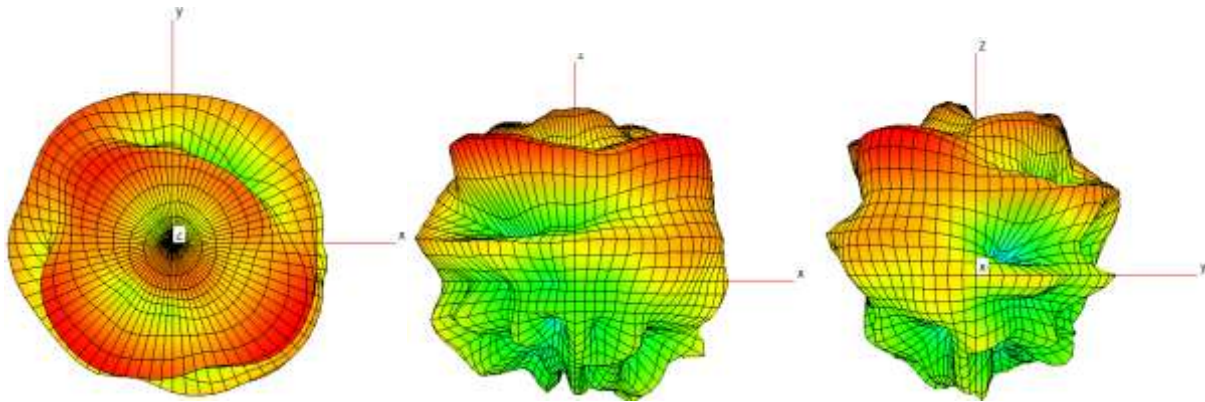
5825



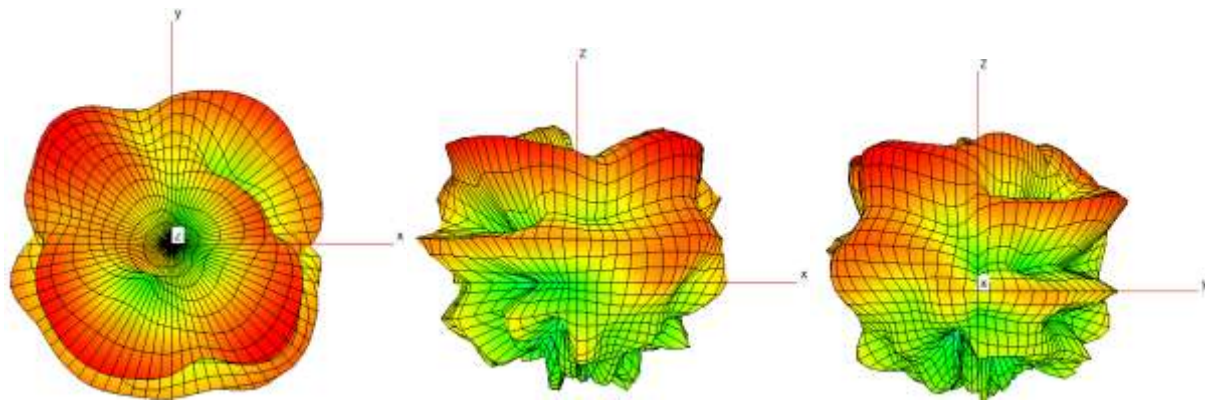
6115



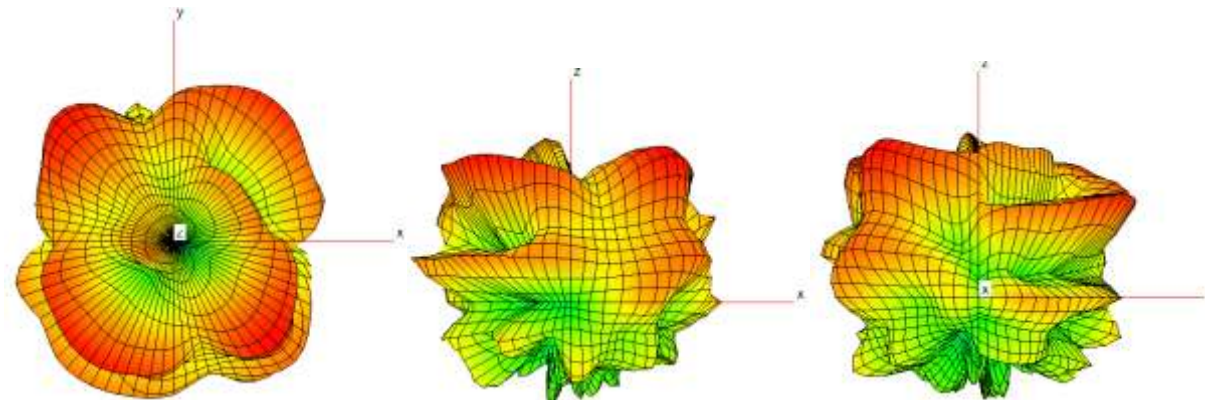
6275



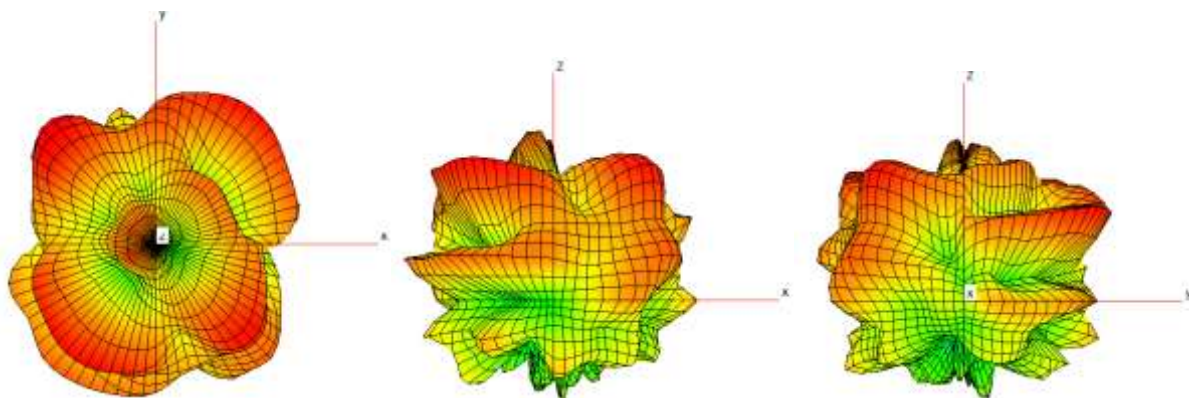
6415



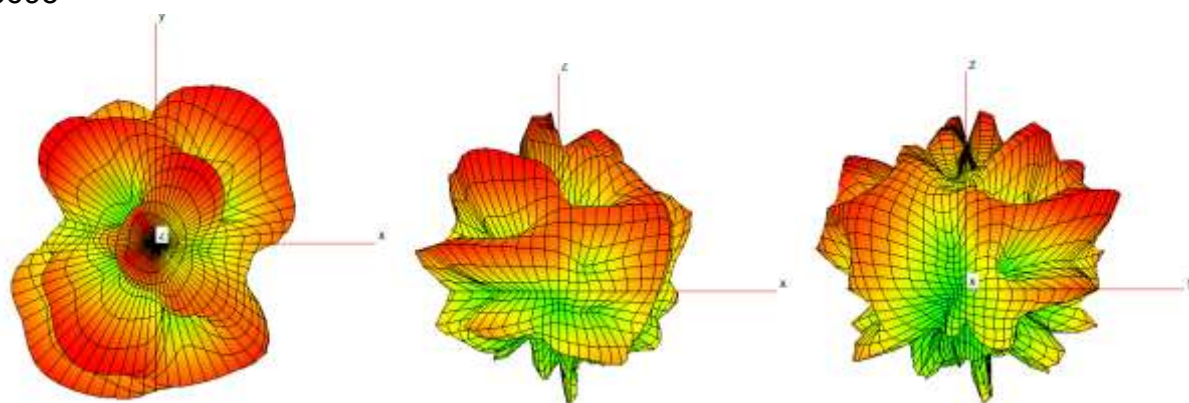
6475



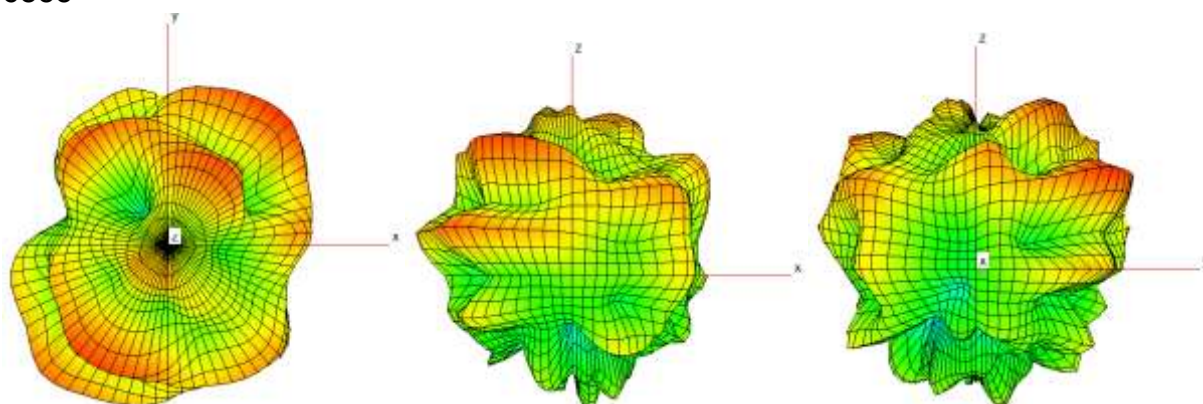
6515



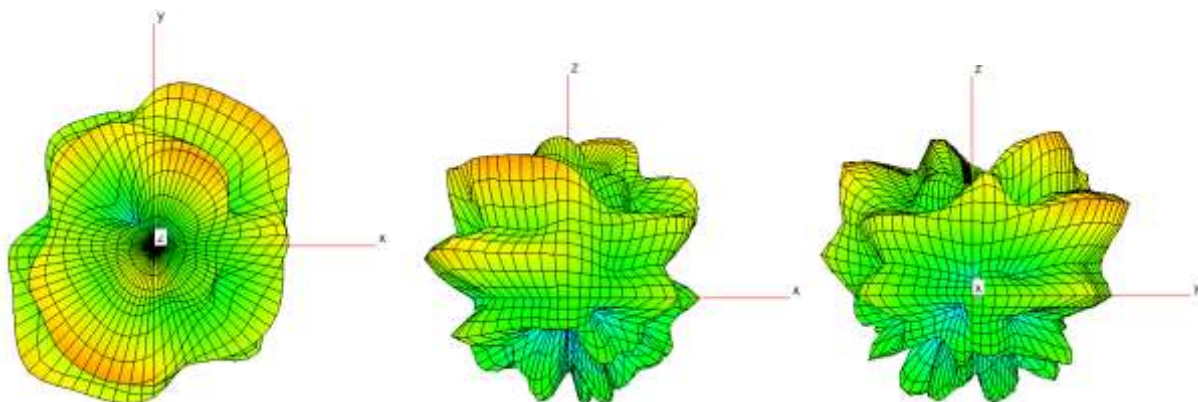
6695



6855



7015



7095

