

产品规格书

SPECIFICATION

客户：深圳康冠科技集团
CUSTOMER: Shenzhen KTC Technology Group

KTC产品名称: 168mm 黑色 2.4-2.5GHz/5.15-5.85GHz/5.95-7.123GHz 机外Wifi天线
DESCRIPTION: 168mm black 2.4-2.5GHz/5.15-5.85GHz/5.95-7.123GHz external WiFi antenna

KTC产品编码: 6150-016800-86000011
MATERIAL CODE:

供应商产品名称: WIFI6天线
SUPPLIER PRODUCT NAME: WiFi 6E antenna

供应商物料编码: 0127-2100-00168
SUPPLIER MATERIAL CODE:

送样日期: 2022.12.2
RECEIVED DATE:

深圳市兆赫通信技术有限公司 Shenzhen Zhaohe Communication Technology Co., Ltd		
拟制 PREPARED BY	审核 CHECKED BY	批准 APPROVE BY
林伟栋	蒋新平	何超

深圳康冠科技集团 Shenzhen KTC Technology Group		
承认 ACCEPT	审核 CHECKED BY	批准 APPROVE BY

备注: 承认盖章后请回复一份承认书(或复印件)给我司, 其余由贵公司存档。
REMARK: Please send us one (or copy) of this approval with stamp after accepting, other copies filed by the customer.

地址: 深圳市龙岗区龙西社区五联路25号6栋2楼
ADD: 2nd Floor, Building 6, No. 25 Wulian Road, Longxi Community, Longgang District, Shenzhen
邮编 Postal code:
电话 Tel: 075528715836 传真 Fax:

修订履历 REVISION HISTORY

[illegible]

目录
CONTENT

一、 cover.....	1
二、 revision	2
三、 Content.....	3
四、 prodution spec.....	4
五、 test.....	6

四：产品参数 Product spec

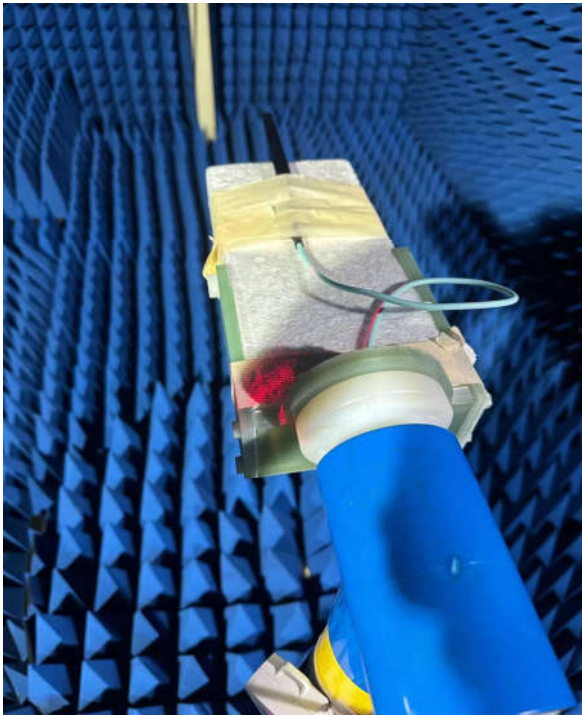
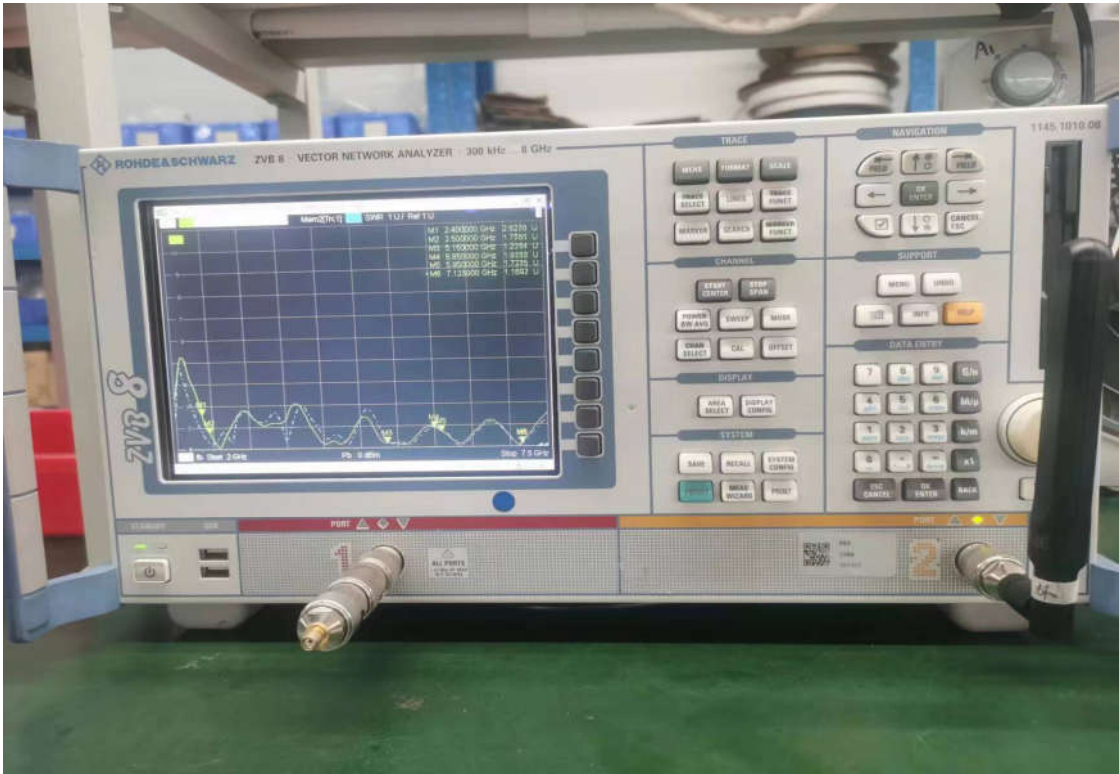
No.	Item	character	allowed tolerance
1	Receiving Frequency Range	2.4G/5.15-5.85G/5.95-7.135G	
2	VSWR	Comparing Waveforms	
3	Polarization mode	linear polarization	
4	Characteristic impedance	50Ω	±5
5	Weight	16.2g	±0.5
6	Directivity	Omnidirectional	

测试方法及测试标准 Test method

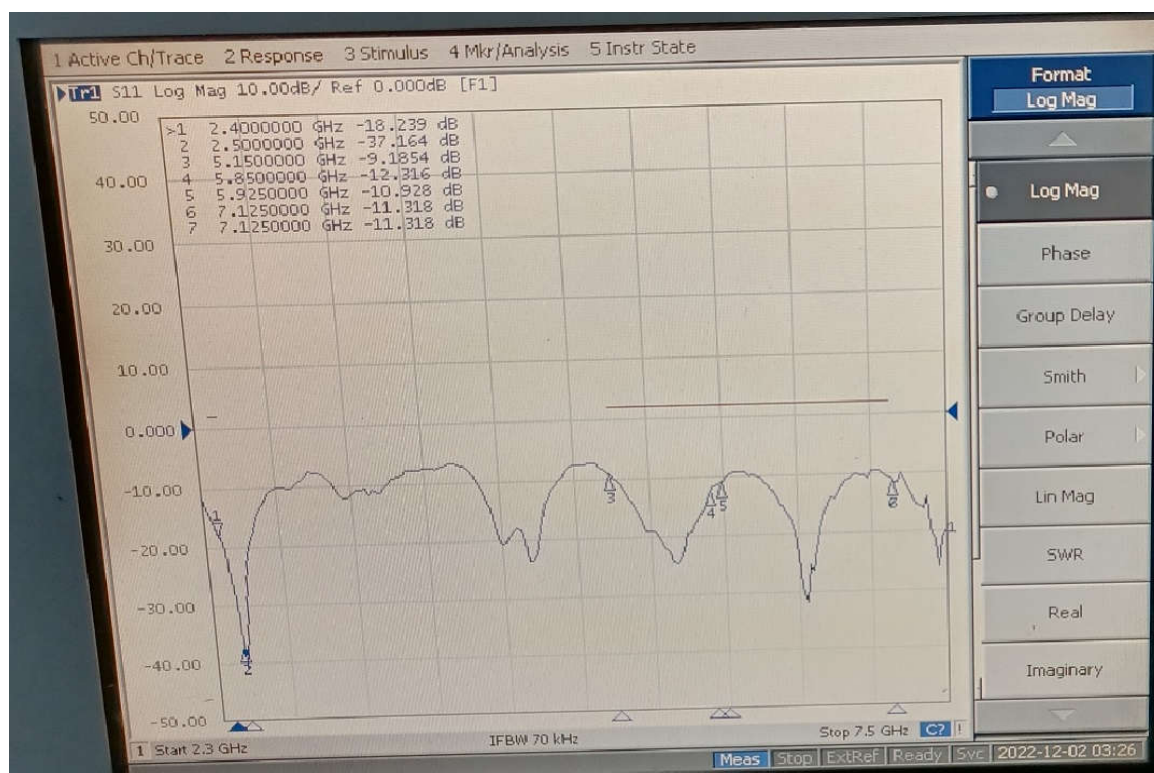
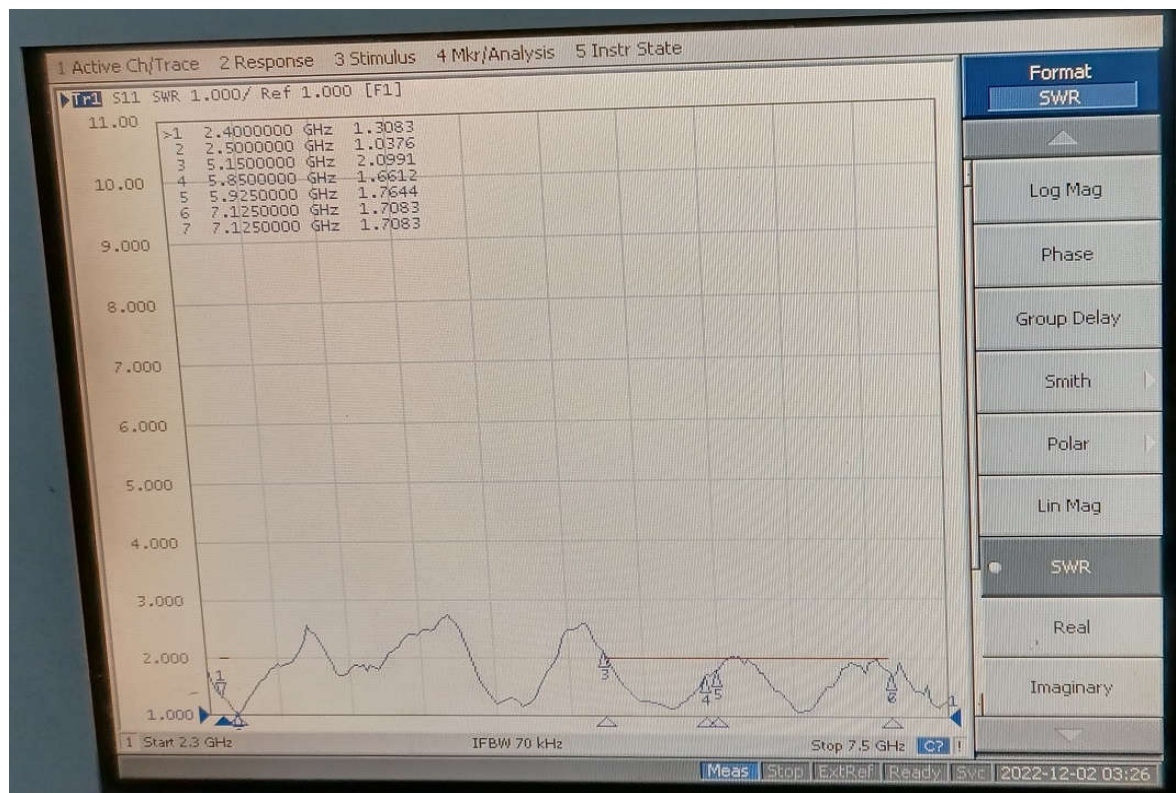
Name	Parameter	Method	Standard no.
Antenna performance	Radiation efficiency	IEEE Standard Test Procedures for Antenna	ANSIIEEE Std 149-2021

仪器列表及校准日期equipment calibration date

Equipment	Manufacturer	Model No.	Seral No.	Last Cal.	Due Date
Network Analyzer	ROHDE&SCHWARZ	ZVB8	101322	2023. 4. 27	2024. 4. 26



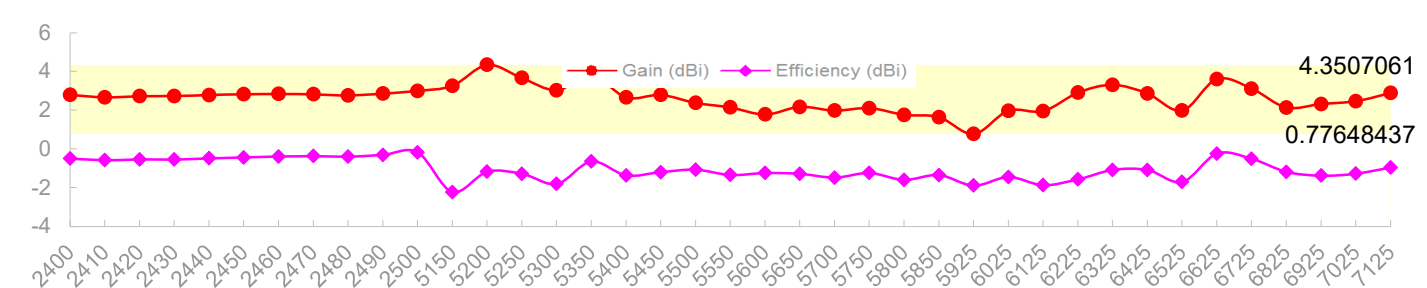
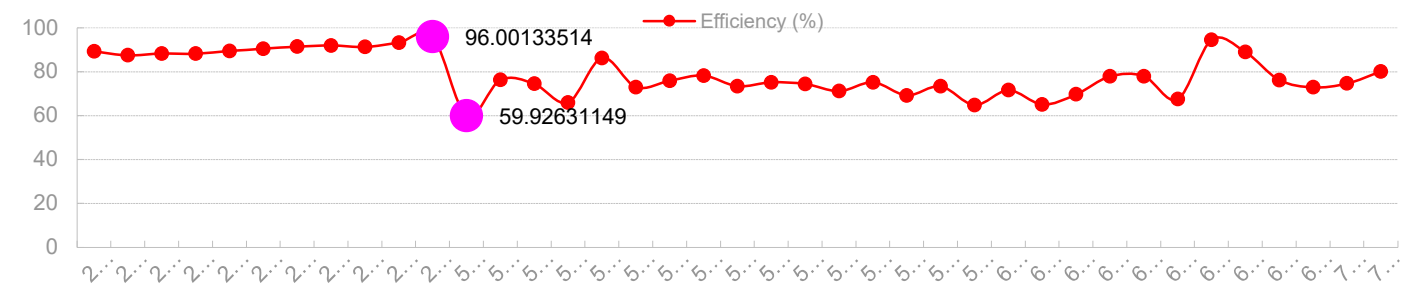
五、Testing



Frequency ID	1	2	3	4	5	6	7	8	9	10	11
Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0
Point Values											
Ant. Port Input Pwr.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot. Rad. Pwr. (dBm)	-0.48	-0.57	-0.53	-0.53	-0.47	-0.42	-0.38	-0.35	-0.38	-0.29	-0.17
Peak EIRP (dBm)	2.80	2.67	2.73	2.73	2.79	2.83	2.85	2.83	2.77	2.86	3.00
Gain (dBi)	3.28	3.24	3.26	3.27	3.26	3.25	3.22	3.18	3.16	3.15	3.17
Efficiency (dB)	-0.48	-0.57	-0.53	-0.53	-0.47	-0.42	-0.38	-0.35	-0.38	-0.29	-0.17
Efficiency (%)	89.50	87.70	88.50	88.50	89.70	90.70	91.70	92.20	91.50	93.50	96.30
NHPRP ±Pi/4 (dBm)	-0.95	-1.04	-0.99	-0.99	-0.93	-0.90	-0.86	-0.85	-0.88	-0.79	-0.66
NHPRP ±Pi/6 (dBm)	-1.90	-1.98	-1.93	-1.93	-1.88	-1.84	-1.82	-1.81	-1.85	-1.75	-1.62
NHPRP ±Pi/8 (dBm)	-2.70	-2.77	-2.72	-2.72	-2.67	-2.64	-2.62	-2.62	-2.66	-2.56	-2.43
Upper Hem. PRP (dBm)	-3.29	-3.41	-3.36	-3.35	-3.28	-3.23	-3.21	-3.24	-3.34	-3.27	-3.14
Lower Hem. PRP (dBm)	-3.70	-3.76	-3.73	-3.75	-3.70	-3.64	-3.57	-3.48	-3.45	-3.33	-3.21
Upper Hem. PRP (%)	46.86	45.62	46.10	46.25	47.03	47.52	47.72	47.37	46.39	47.09	48.55
Lower Hem. PRP (%)	42.66	42.08	42.41	42.21	42.68	43.20	43.97	44.83	45.14	46.46	47.70

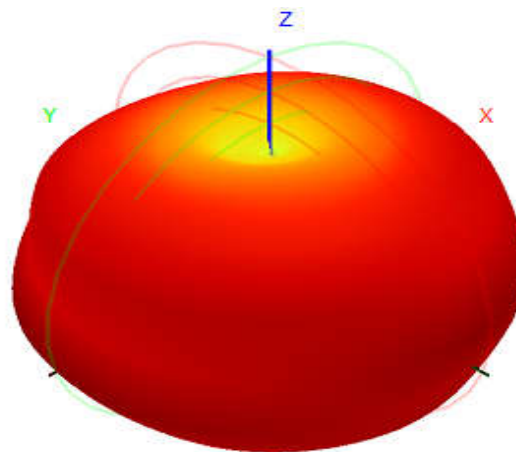
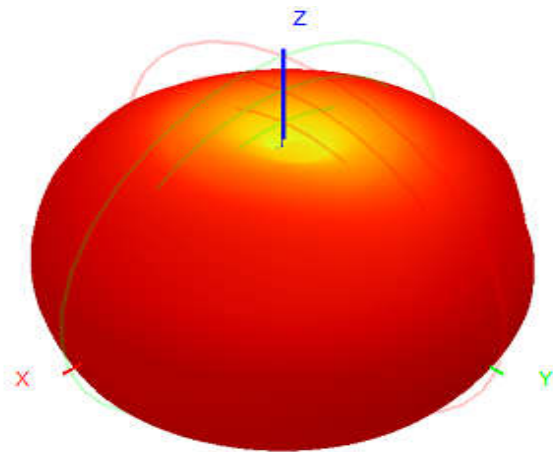
Frequency ID	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Frequency (MHz)	5150.0	5200.0	5250.0	5300.0	5350.0	5400.0	5450.0	5500.0	5550.0	5600.0	5650.0	5700.0	5750.0	5800.0	5850.0
Point Values															
Ant. Port Input Pwr.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot. Rad. Pwr. (dBm)	-2.21	-1.17	-1.27	-1.79	-0.63	-1.35	-1.18	-1.05	-1.33	-1.23	-1.27	-1.46	-1.23	-1.58	-1.33
Peak EIRP (dBm)	3.26	4.35	3.67	3.03	3.82	2.67	2.79	2.38	2.15	1.78	2.18	1.99	2.11	1.77	1.65
Gain (dBi)	5.48	5.52	4.94	4.83	4.45	4.02	3.98	3.44	3.48	3.01	3.45	3.45	3.34	3.35	2.98
Efficiency (dB)	-2.21	-1.17	-1.27	-1.79	-0.63	-1.35	-1.18	-1.05	-1.33	-1.23	-1.27	-1.46	-1.23	-1.58	-1.33
Efficiency (%)	60.10	76.40	74.70	66.10	86.50	73.20	76.10	78.40	73.60	75.40	74.60	71.40	75.40	69.40	73.60
NHPRP ±Pi/4 (dBm)	-2.97	-1.93	-2.16	-2.75	-1.50	-2.32	-2.10	-1.93	-2.28	-2.09	-2.14	-2.34	-2.03	-2.44	-2.19
NHPRP ±Pi/6 (dBm)	-4.18	-3.19	-3.63	-4.27	-2.96	-3.84	-3.53	-3.34	-3.72	-3.46	-3.55	-3.78	-3.46	-3.94	-3.68
NHPRP ±Pi/8 (dBm)	-5.12	-4.15	-4.69	-5.38	-4.05	-4.94	-4.58	-4.39	-4.79	-4.54	-4.70	-4.97	-4.67	-5.22	-4.93
Upper Hem. PRP (dBm)	-9.49	-8.65	-8.35	-8.02	-6.00	-6.08	-5.41	-5.07	-5.01	-4.83	-4.84	-4.91	-4.68	-4.71	-4.36
Lower Hem. PRP (dBm)	-3.11	-2.02	-2.21	-2.98	-2.12	-3.14	-3.25	-3.25	-3.76	-3.71	-3.79	-4.08	-3.83	-4.49	-4.33
Upper Hem. PRP (%)	11.25	13.66	14.62	15.77	25.14	24.66	28.77	31.09	31.54	32.85	32.81	32.26	34.02	33.85	36.66
Lower Hem. PRP (%)	48.81	62.77	60.07	50.37	61.32	48.56	47.36	47.35	42.07	42.53	41.82	39.13	41.37	35.58	36.92

Frequency ID	27	28	29	30	31	32	33	34	35	36	37	38	39
Frequency (MHz)	5925.0	6025.0	6125.0	6225.0	6325.0	6425.0	6525.0	6625.0	6725.0	6825.0	6925.0	7025.0	7125.0
Point Values													
Ant. Port													
Input Pwr.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot. Rad. Pwr. (dBm)	-1.87	-1.44	-1.85	-1.56	-1.07	-1.07	-1.69	-0.23	-0.50	-1.17	-1.36	-1.26	-0.95
Peak EIRP (dBm)	0.78	1.98	1.96	2.91	3.32	2.87	1.99	3.61	3.12	2.15	2.33	2.47	2.90
Gain (dBi)	2.65	3.42	3.81	4.46	4.39	3.94	3.68	3.84	3.61	3.31	3.69	3.73	3.85
Efficiency (dB)	-1.87	-1.44	-1.85	-1.56	-1.07	-1.07	-1.69	-0.23	-0.50	-1.17	-1.36	-1.26	-0.95
Efficiency (%)	65.00	71.80	65.30	69.90	78.10	78.10	67.70	94.80	89.20	76.40	73.10	74.80	80.30
NHPRP ±Pi/4 (dBm)	-2.72	-2.32	-2.79	-2.42	-1.80	-1.73	-2.38	-0.95	-1.23	-1.94	-2.18	-2.12	-1.89
NHPRP ±Pi/6 (dBm)	-4.16	-3.68	-4.12	-3.61	-2.96	-2.91	-3.60	-2.18	-2.48	-3.19	-3.53	-3.54	-3.42
NHPRP ±Pi/8 (dBm)	-5.34	-4.70	-5.08	-4.46	-3.82	-3.79	-4.49	-3.06	-3.37	-4.09	-4.53	-4.61	-4.54
Upper Hem. PRP (dBm)	-4.81	-4.02	-4.45	-4.26	-4.44	-4.18	-4.50	-2.83	-2.98	-3.54	-3.67	-3.61	-3.22
Lower Hem. PRP (dBm)	-4.96	-4.92	-5.32	-4.90	-3.76	-3.99	-4.91	-3.70	-4.10	-4.92	-5.21	-5.04	-4.86
Upper Hem. PRP (%)	33.05	39.61	35.85	37.53	36.02	38.23	35.44	52.10	50.35	44.23	42.97	43.50	47.67
Lower Hem. PRP (%)	31.93	32.20	29.40	32.35	42.09	39.91	32.25	42.70	38.88	32.19	30.13	31.33	32.64



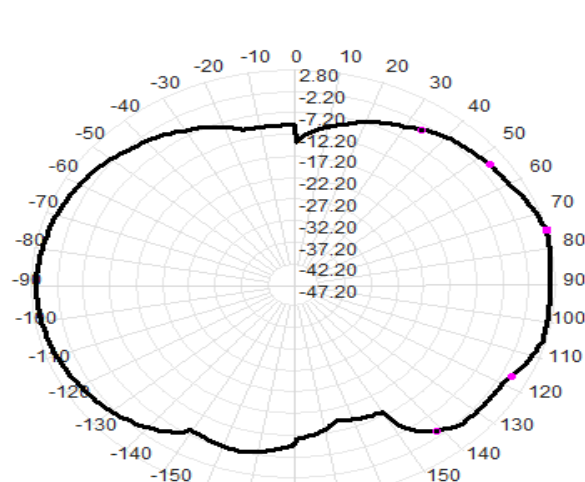
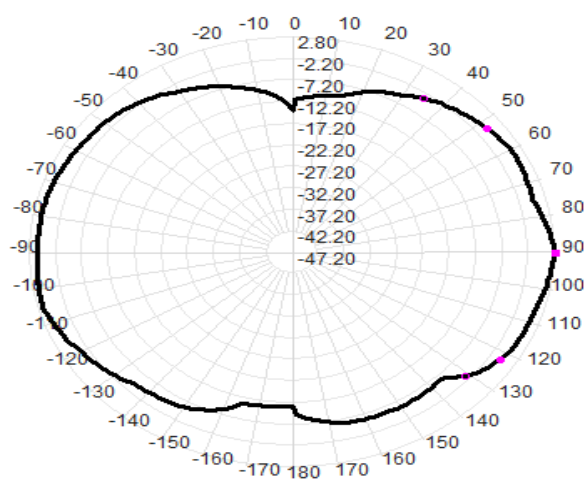
2400.0MHz H+V,
Eff: 89.3%

Back View

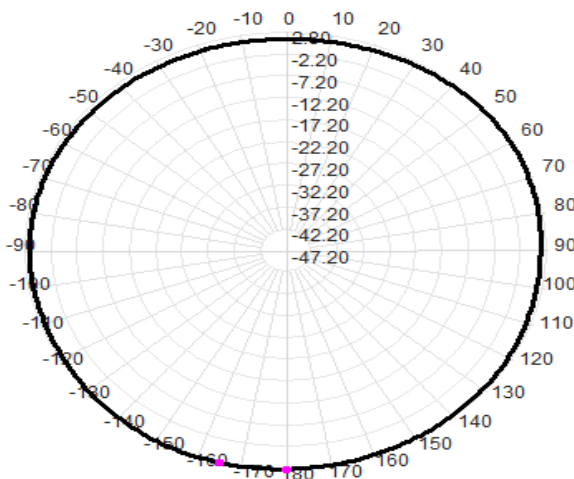


2400.0MHz Total(E1-XZ), Max= 2.60dBi

2400.0MHz Total(E2-YZ), Max= 2.44dBi

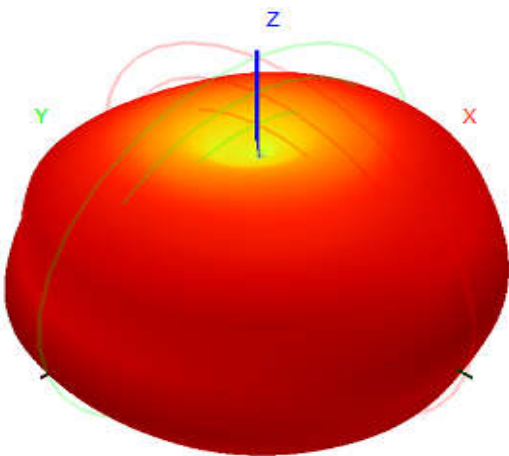
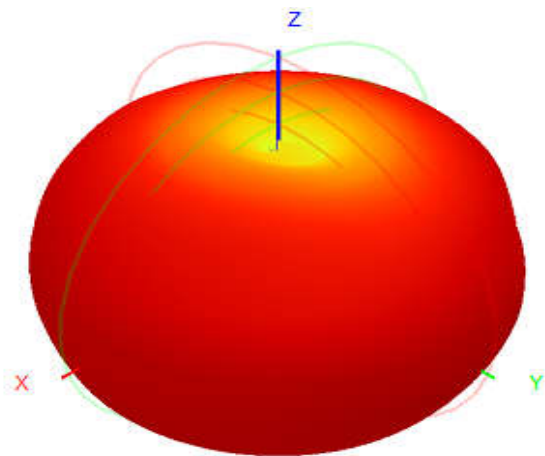


Total(H-XY), Max= 2.80dBi, CirD=1.66



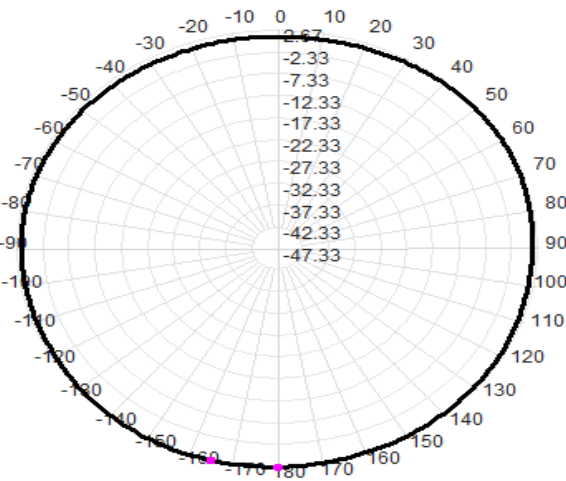
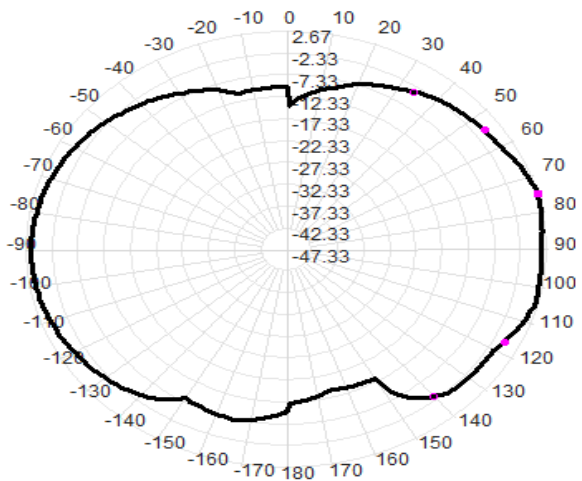
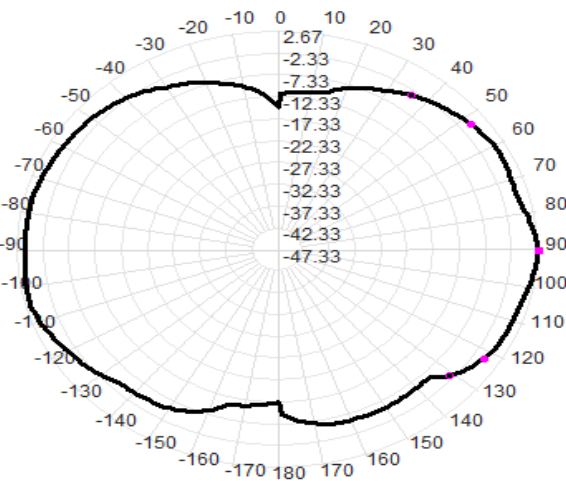
2410.0MHz H+V, Eff: 87.5%

Back View



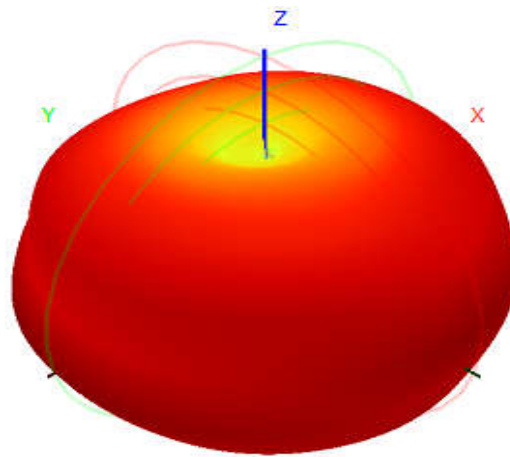
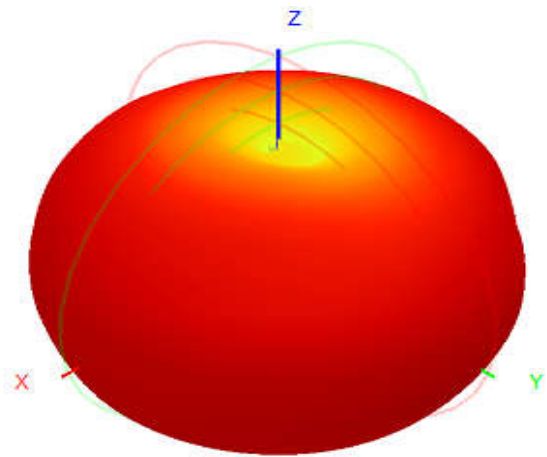
2410.0MHz Total(E1-XZ), Max= 2.50dBi

2410.0MHz Total(E2-YZ), Max= 2.38dBi



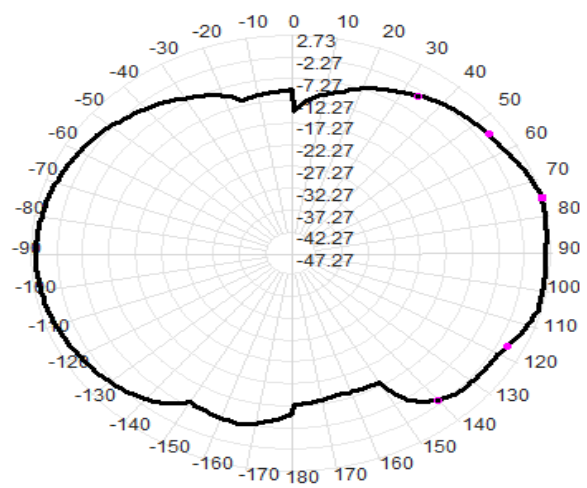
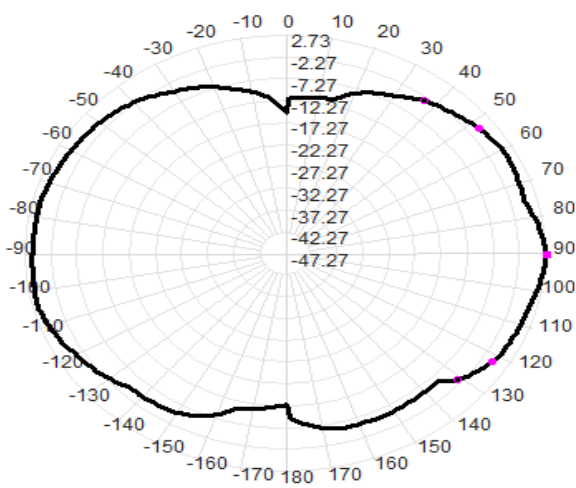
2420.0MHz H+V, Eff: 88.3%

Back View

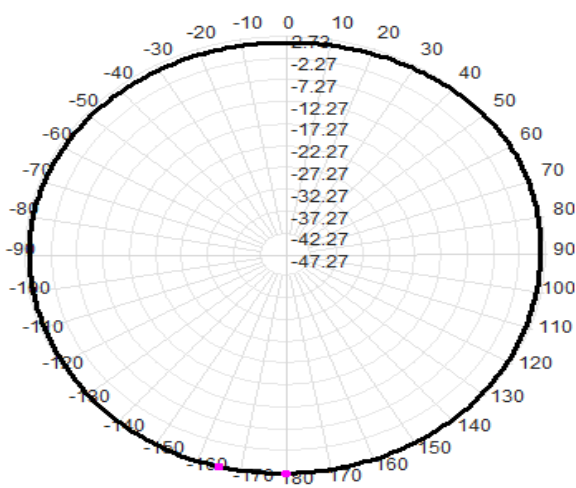


2420.0MHz Total(E1-XZ), Max= 2.59dBi

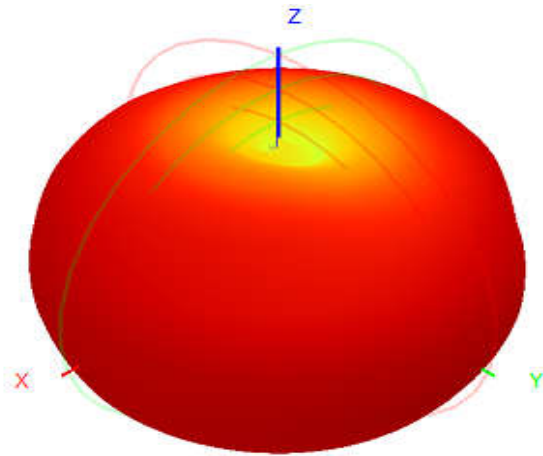
2420.0MHz Total(E2-YZ), Max= 2.44dBi



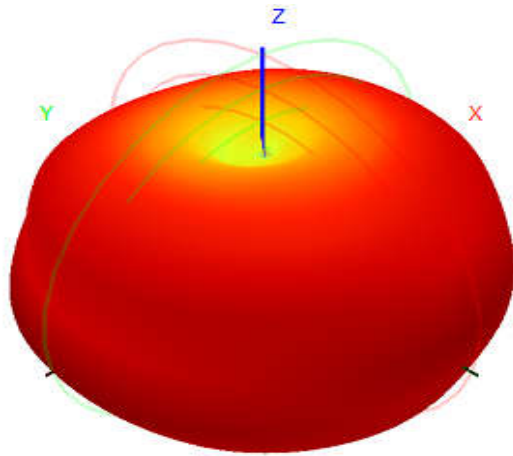
Total(H-XY), Max= 2.73dBi, CirD=1.51



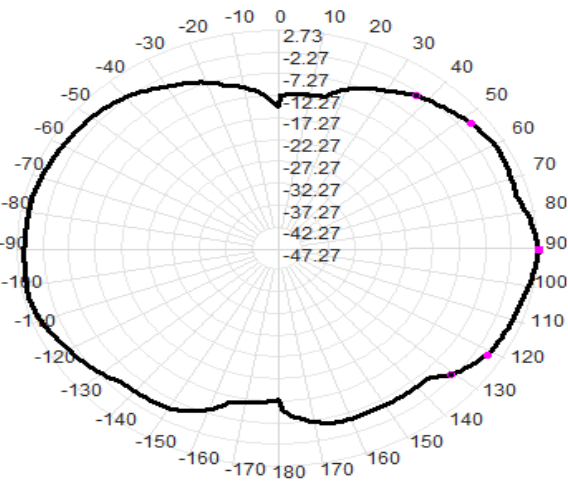
2430.0MHz H+V, Eff: 88.2%



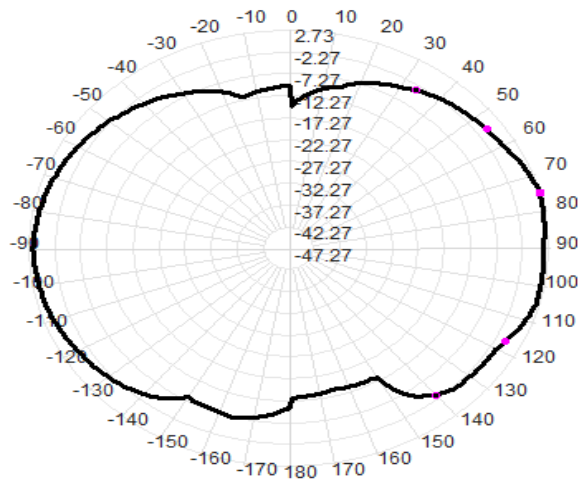
Back View



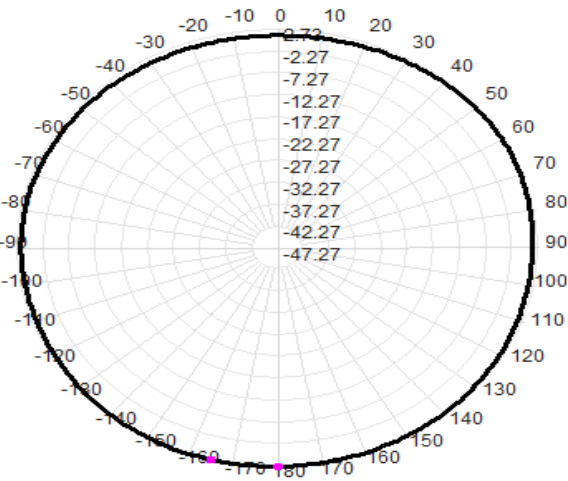
2430.0MHz Total(E1-XZ), Max= 2.61dBi



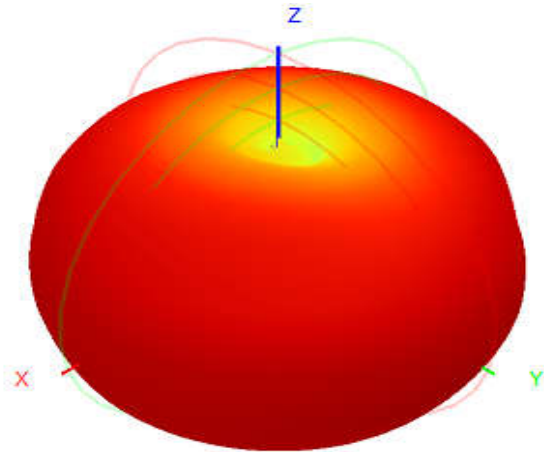
2430.0MHz Total(E2-YZ), Max= 2.44dBi



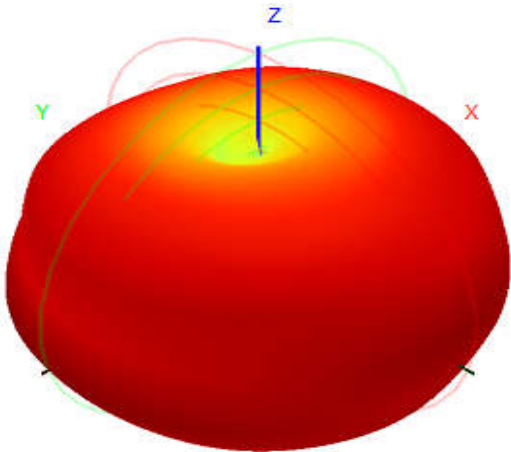
Total(H-XY), Max= 2.73dBi, CirD=1.49



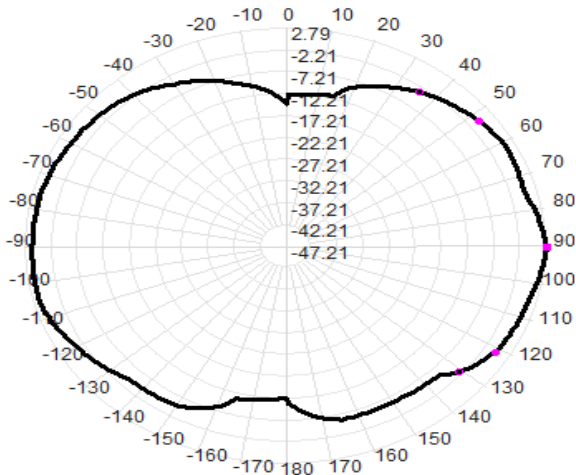
2440.0MHz H+V, Eff: 89.5%



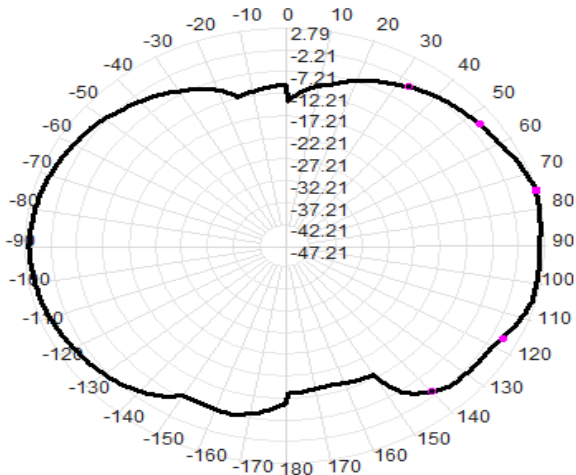
Back View



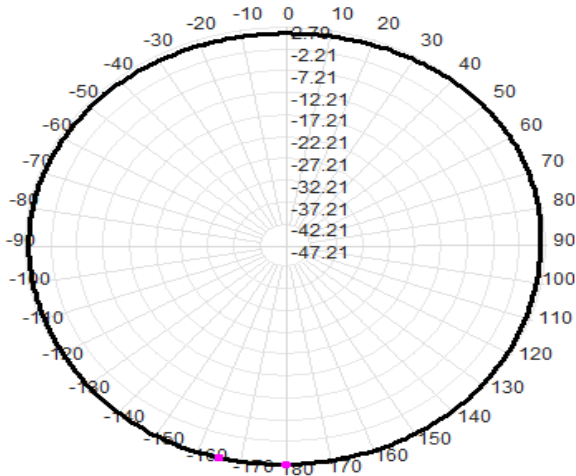
2440.0MHz Total(E1-XZ), Max= 2.67dBi



2440.0MHz Total(E2-YZ), Max= 2.47dBi

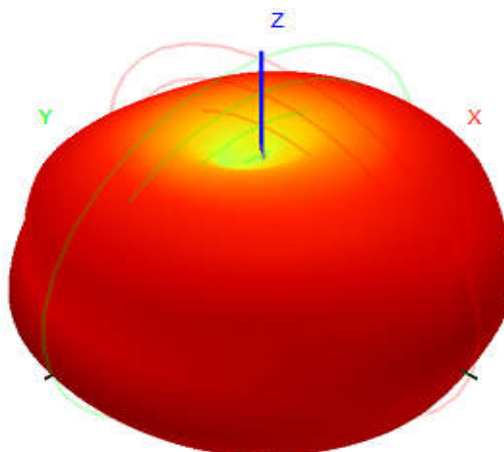
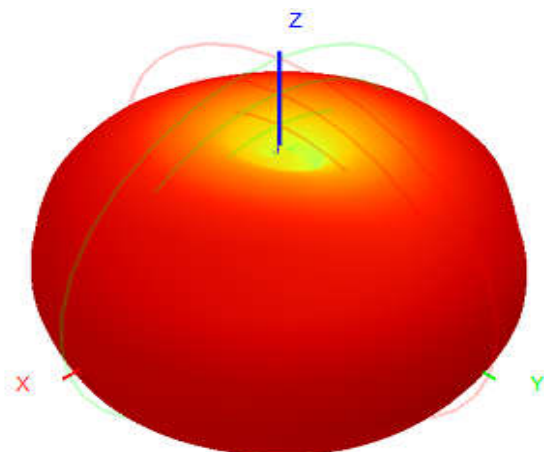


Total(H-XY), Max= 2.79dBi, CirD=1.49



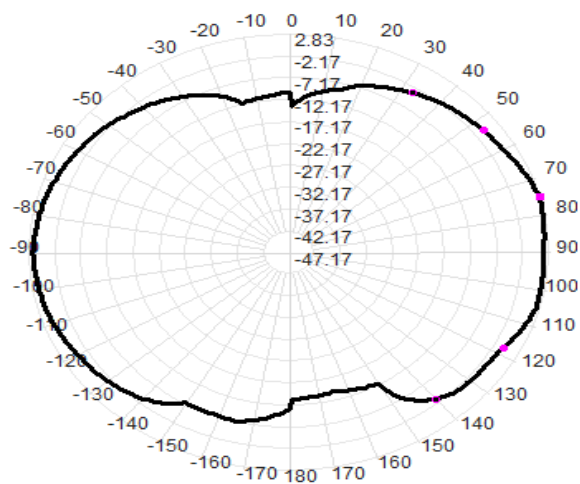
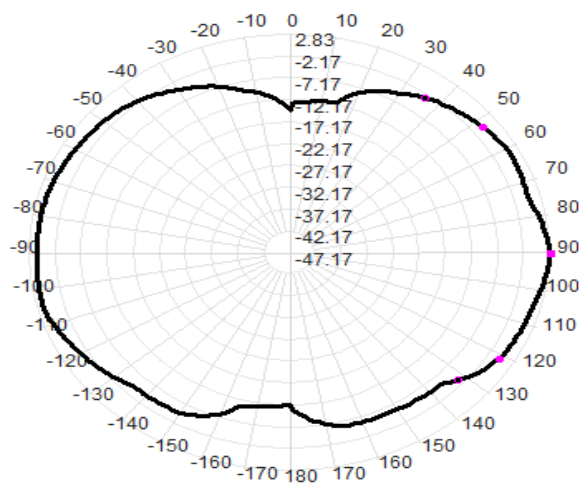
2450.0MHz H+V, Eff: 90.5%

Back View

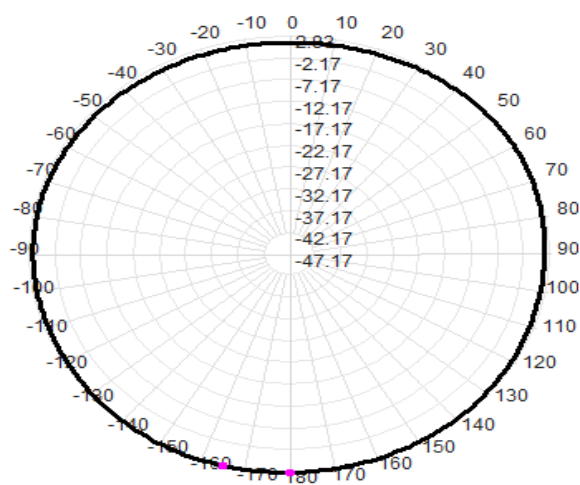


2450.0MHz Total(E1-XZ), Max= 2.70dBi

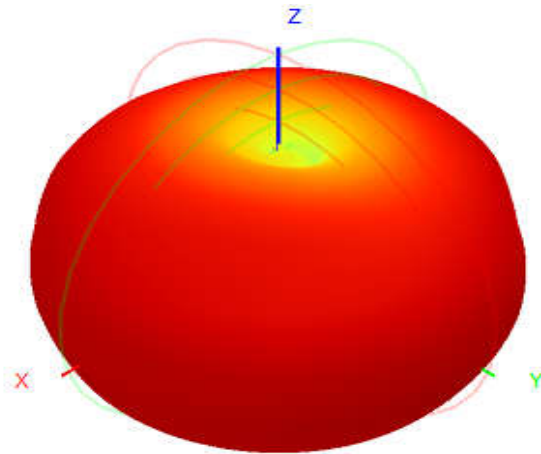
2450.0MHz Total(E2-YZ), Max= 2.45dBi



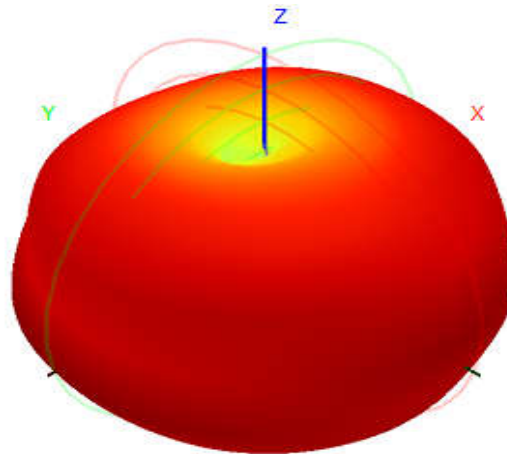
Total(H-XY), Max= 2.83dBi, CirD=1.53



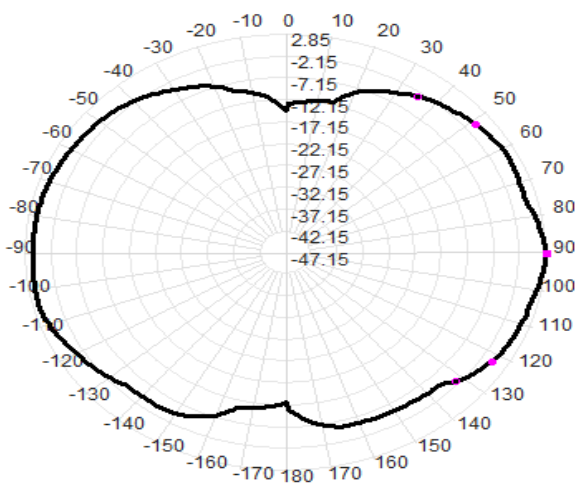
2460.0MHz H+V, Eff: 91.5%



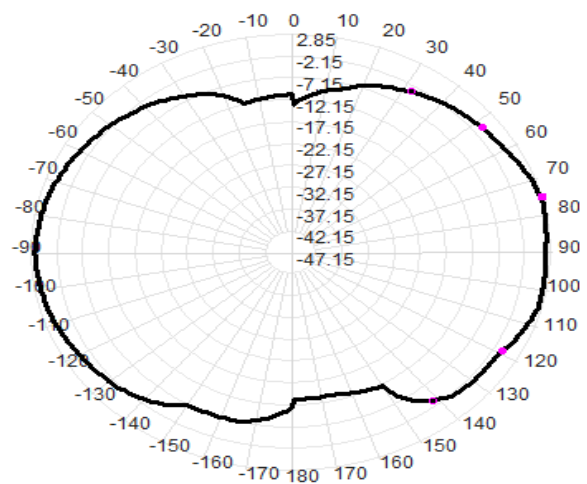
Back View



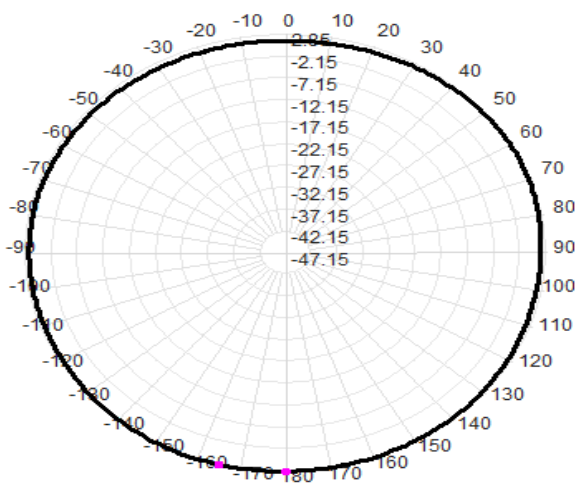
2460.0MHz Total(E1-XZ), Max= 2.70dBi



2460.0MHz Total(E2-YZ), Max= 2.41dBi

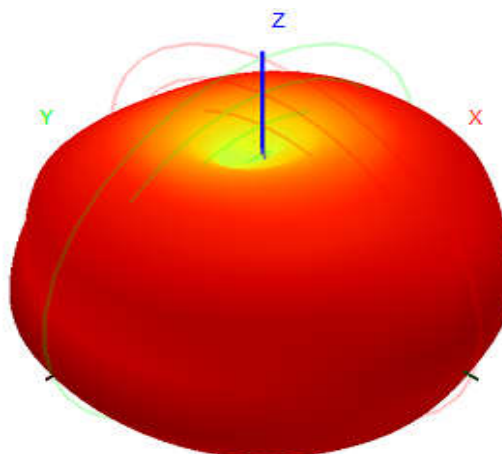
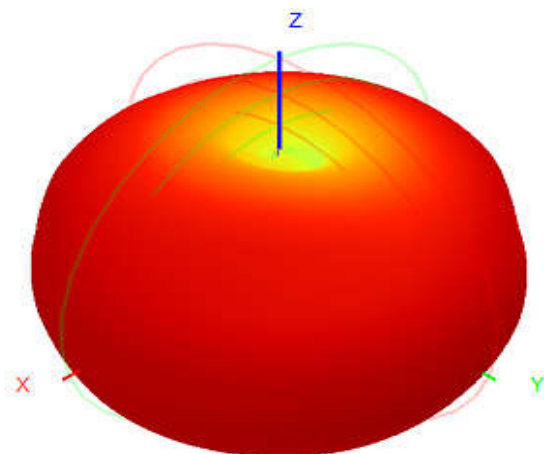


Total(H-XY), Max= 2.85dBi, CirD=1.54



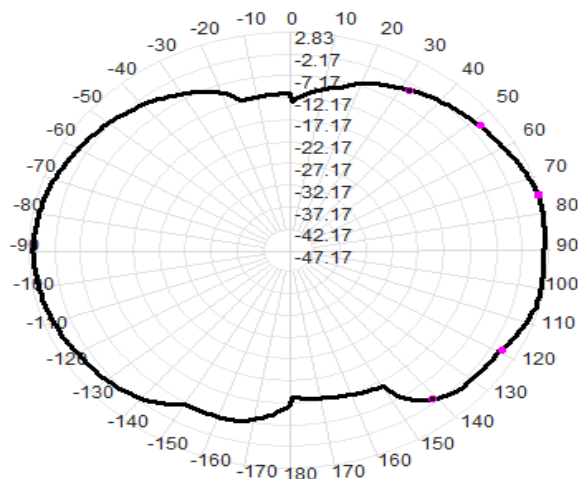
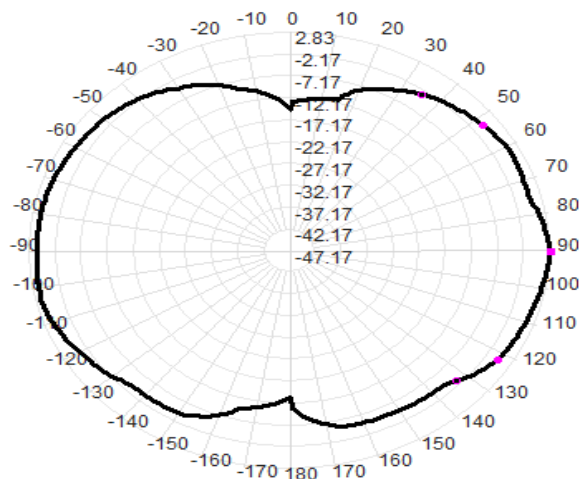
2470.0MHz H+V, Eff: 92.0%

Back View

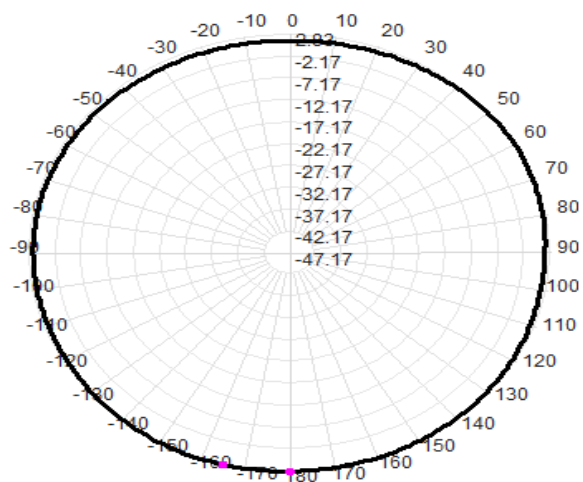


2470.0MHz Total(E1-XZ), Max= 2.69dBi

2470.0MHz Total(E2-YZ), Max= 2.36dBi

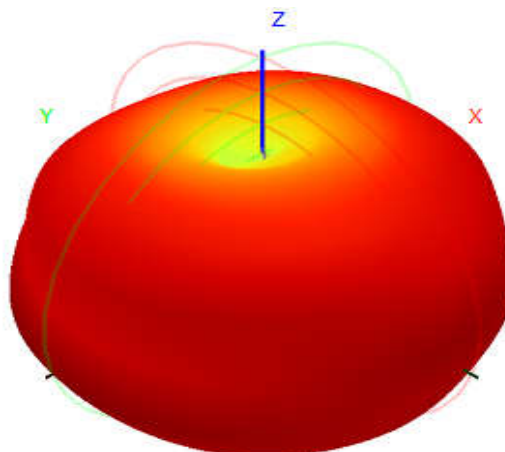
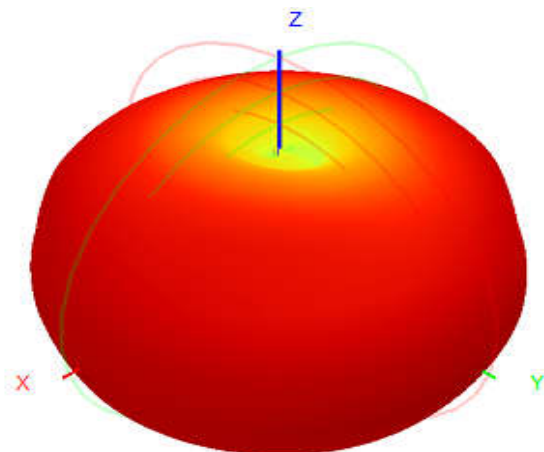


Total(H-XY), Max= 2.83dBi, CirD=1.52



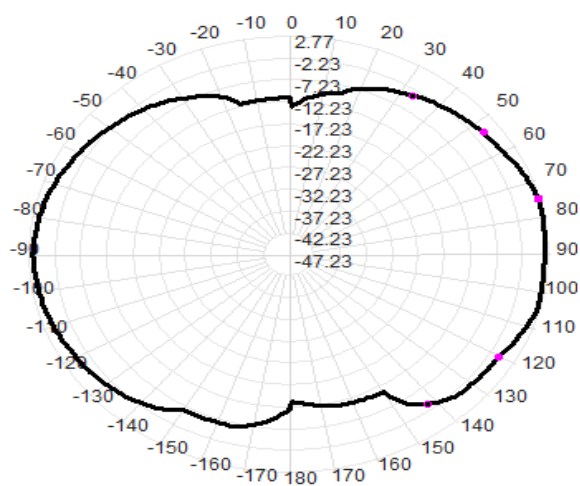
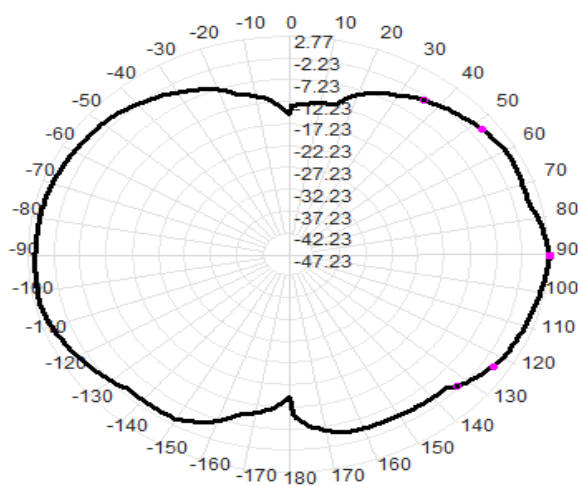
2480.0MHz H+V, Eff: 91.3%

Back View

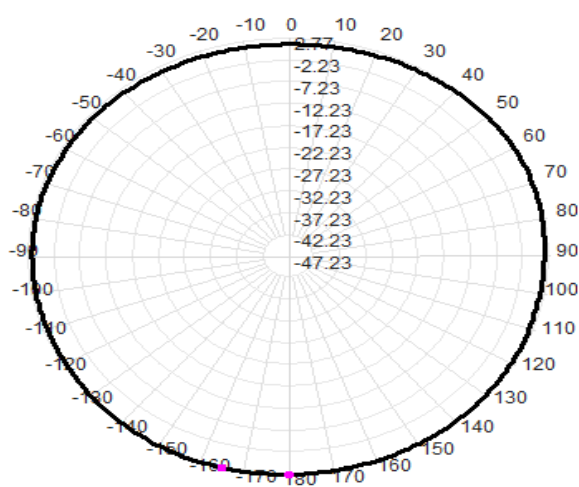


2480.0MHz Total(E1-XZ), Max= 2.64dBi

2480.0MHz Total(E2-YZ), Max= 2.30dBi

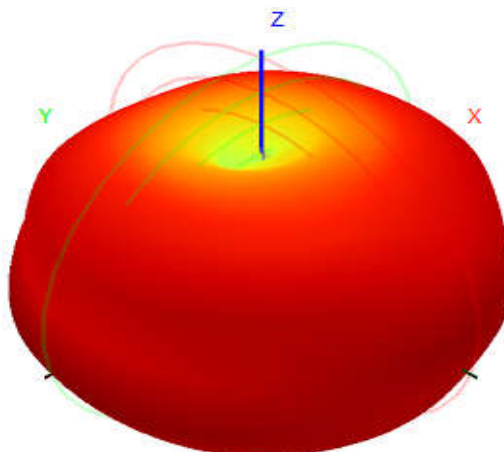
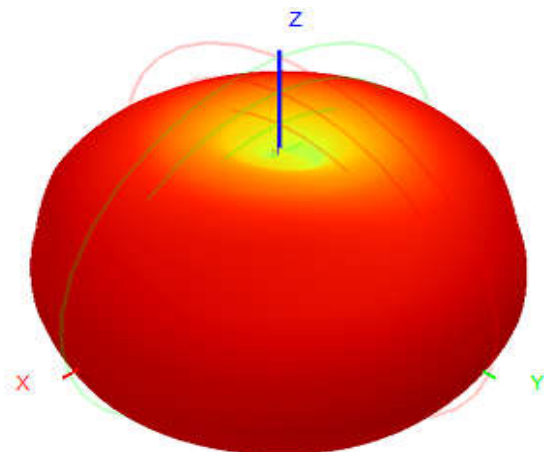


Total(H-XY), Max= 2.77dBi, CirD=1.48



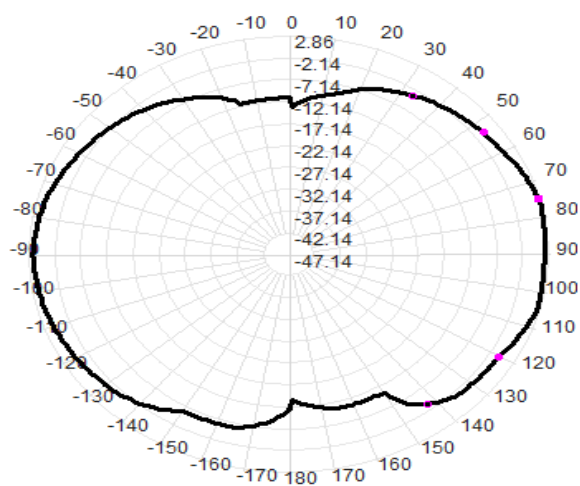
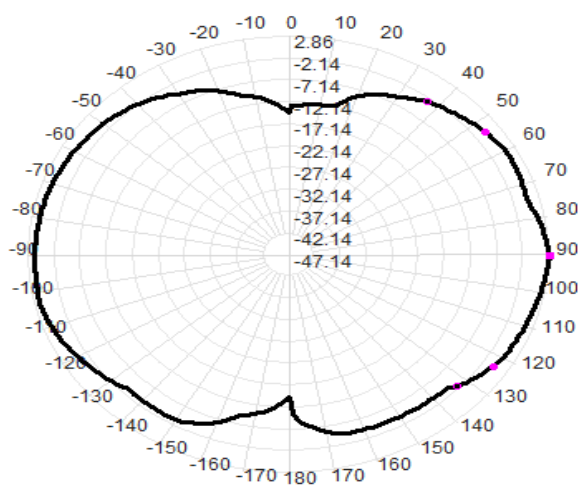
2490.0MHz H+V, Eff: 93.3%

Back View

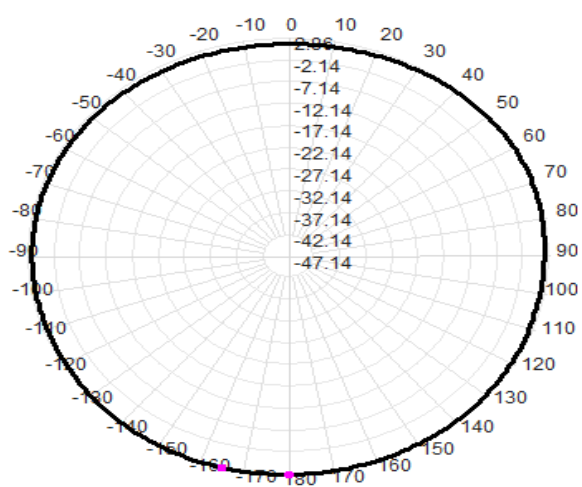


2490.0MHz Total(E1-XZ), Max= 2.76dBi

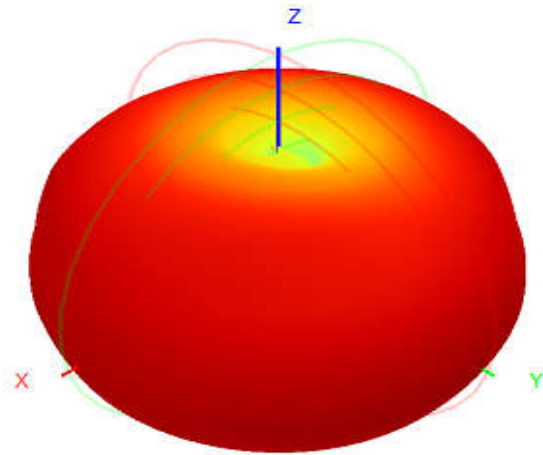
2490.0MHz Total(E2-YZ), Max= 2.42dBi



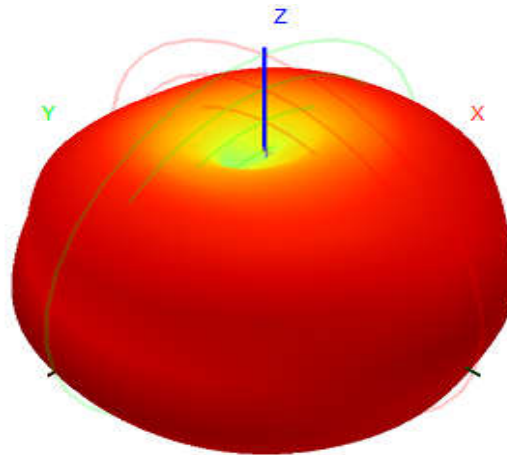
Total(H-XY), Max= 2.86dBi, CirD=1.43



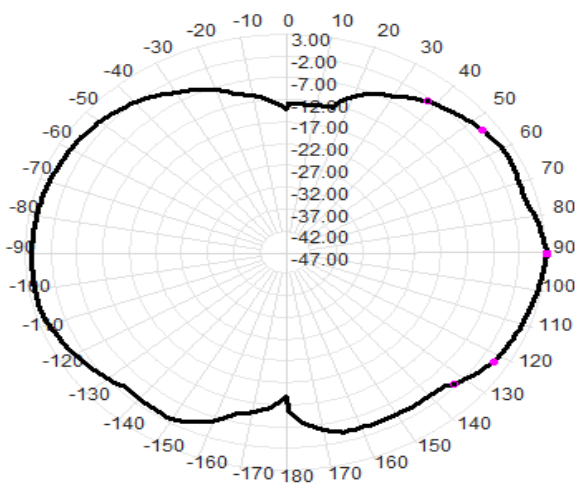
2500.0MHz H+V, Eff: 96.0%



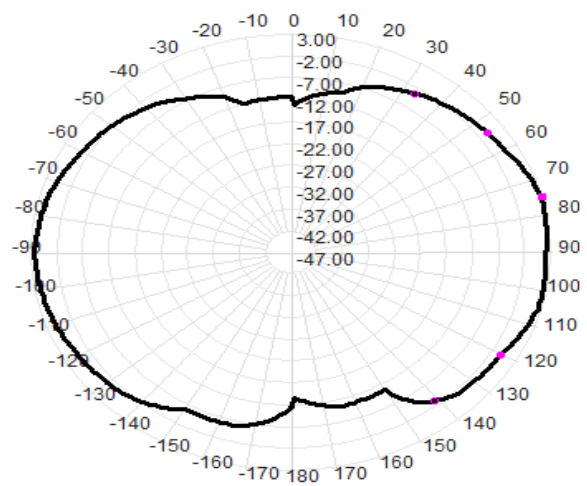
Back View



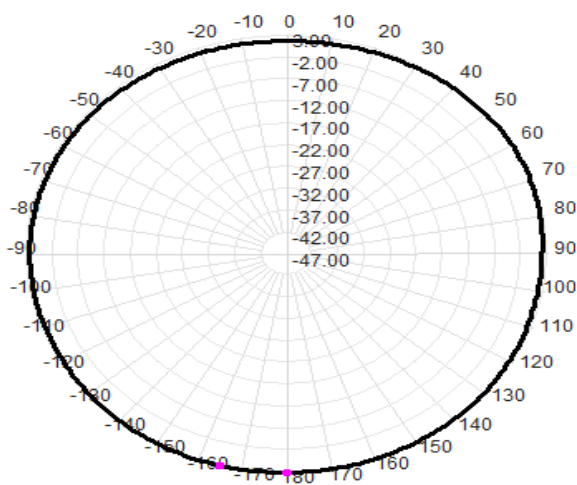
2500.0MHz Total(E1-XZ), Max= 2.92dBi



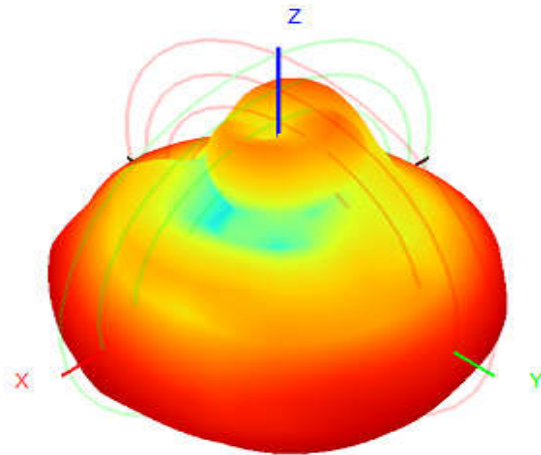
2500.0MHz Total(E2-YZ), Max= 2.58dBi



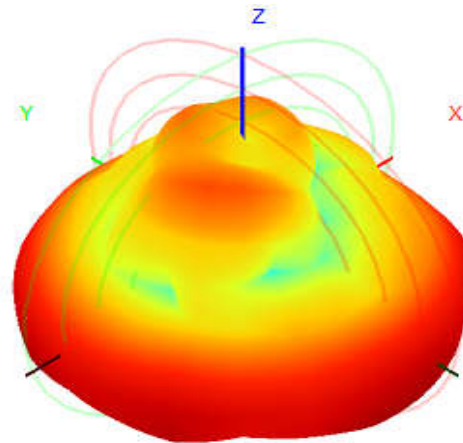
Total(H-XY), Max= 3.00dBi, CirD=1.40



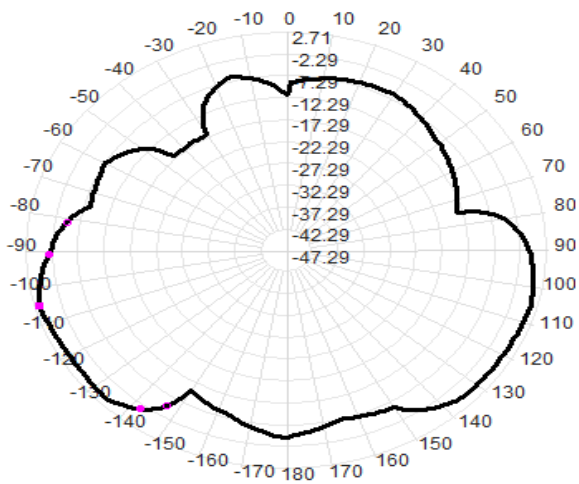
5150.0MHz H+V, Eff: 59.9%



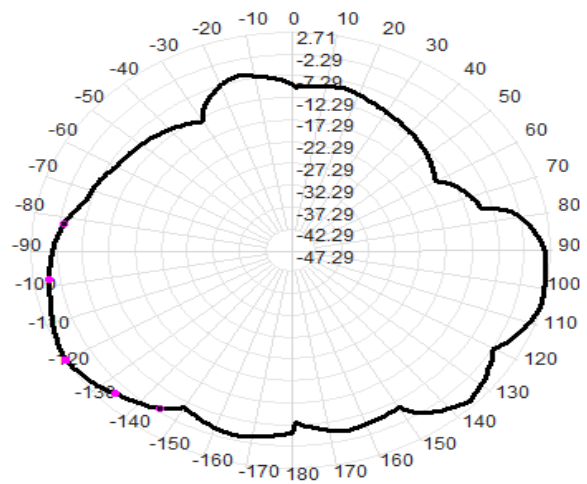
Back View



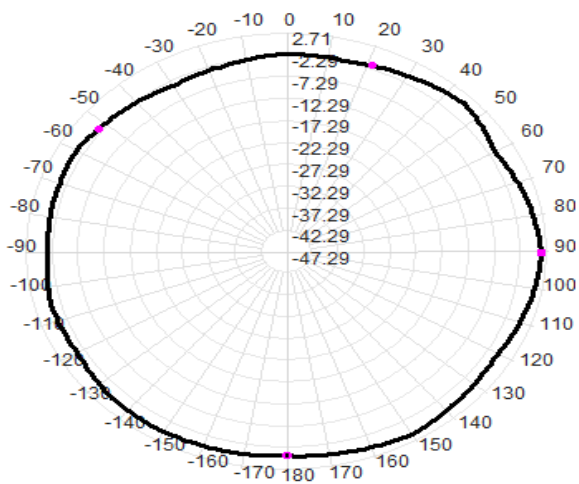
5150.0MHz Total(E1-XZ), Max= 1.61dBi



5150.0MHz Total(E2-YZ), Max= 2.71dBi

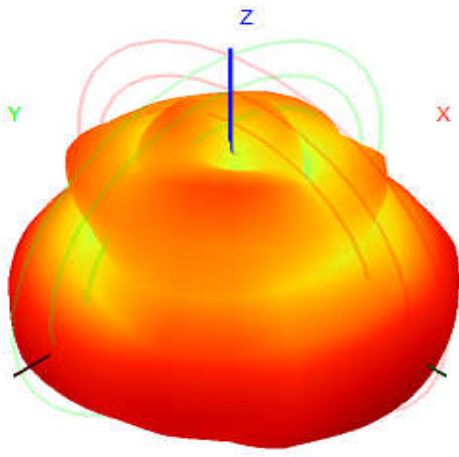
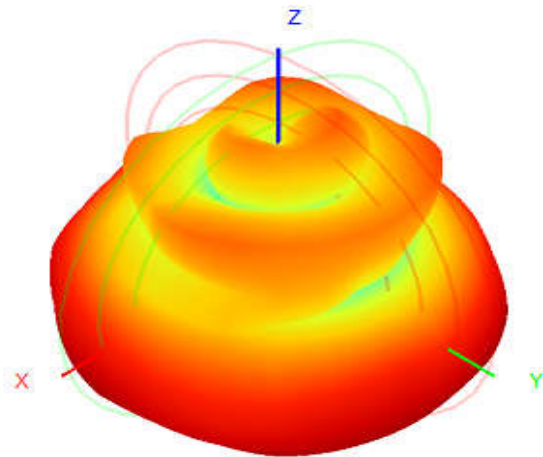


Total(H-XY), Max= 1.36dBi, CirD=4.96



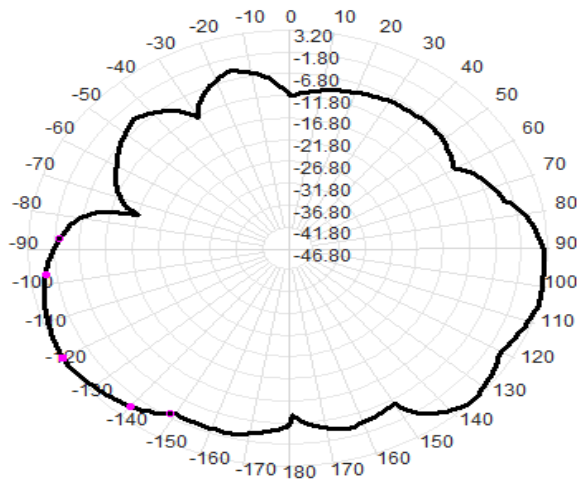
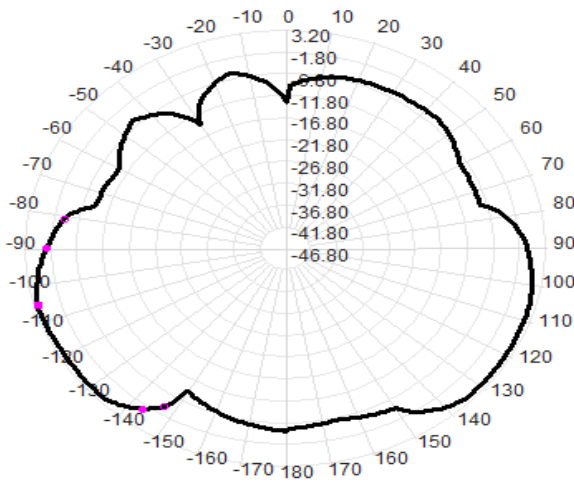
5250.0MHz H+V, Eff: 74.5%

Back View

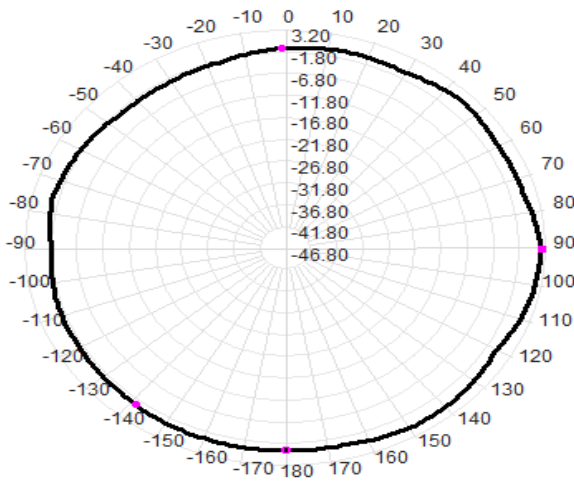


5250.0MHz Total(E1-XZ), Max= 2.38dBi

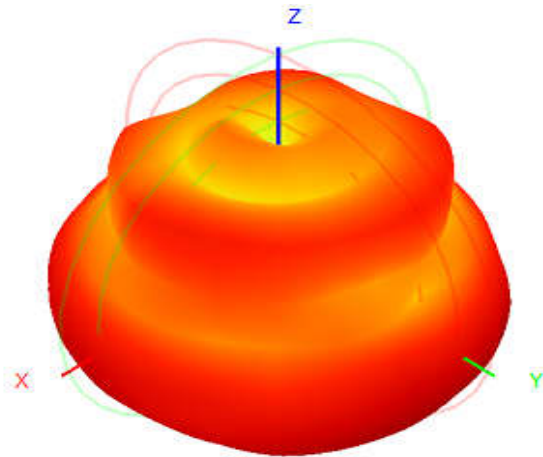
5250.0MHz Total(E2-YZ), Max= 3.20dBi



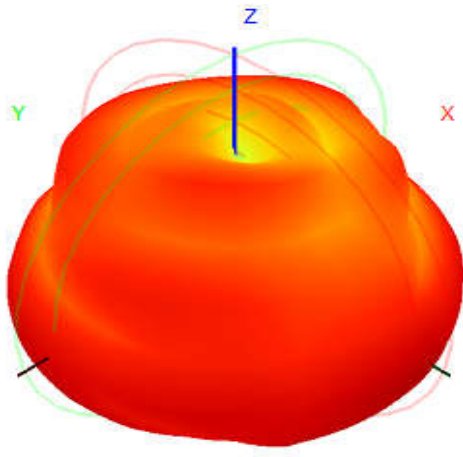
Total(H-XY), Max= 2.02dBi, CirD=4.87



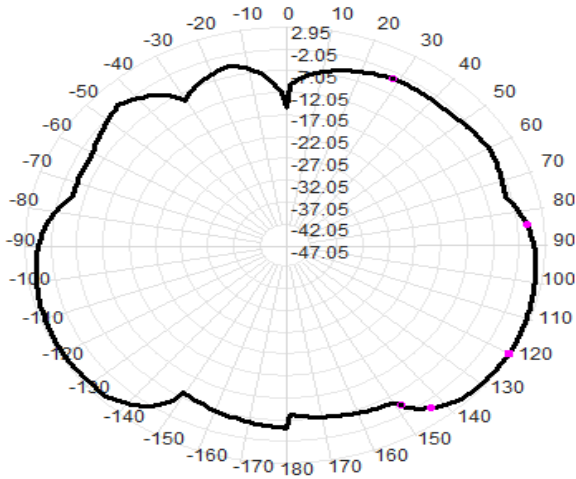
5350.0MHz H+V, Eff: 86.3%



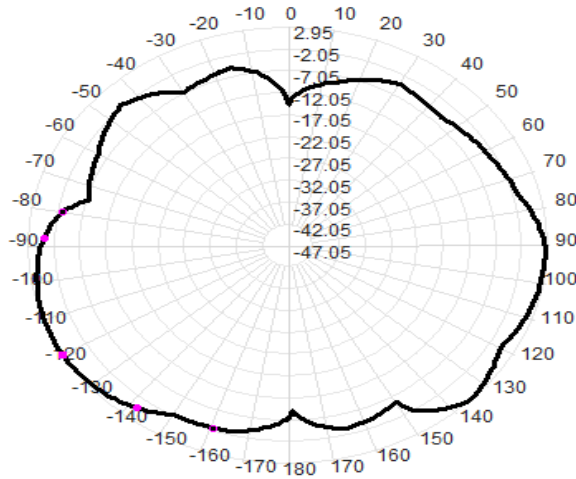
Back View



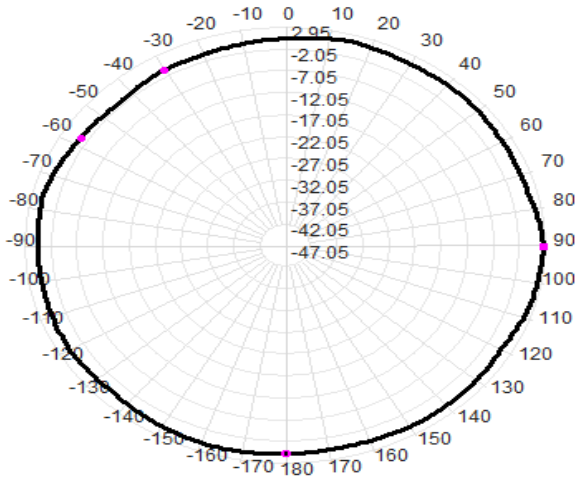
5350.0MHz Total(E1-XZ), Max= 2.33dBi



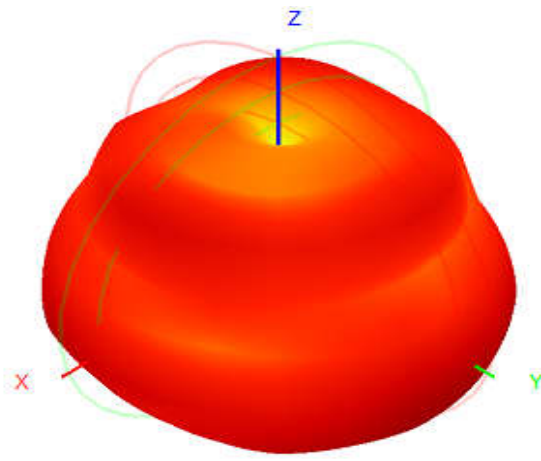
5350.0MHz Total(E2-YZ), Max= 2.95dBi



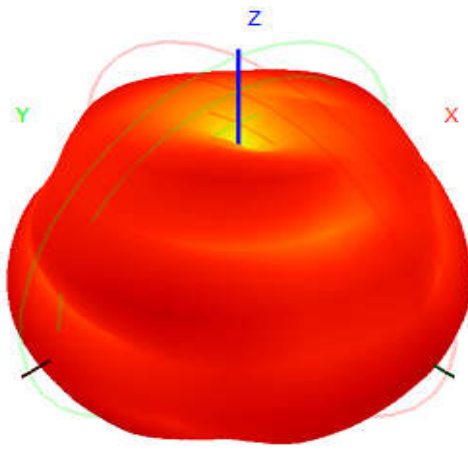
Total(H-XY), Max= 2.25dBi, CirD=3.85



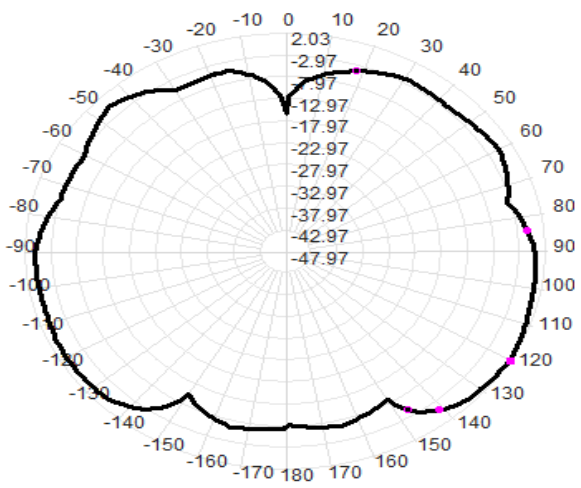
5450.0MHz H+V, Eff: 75.9%



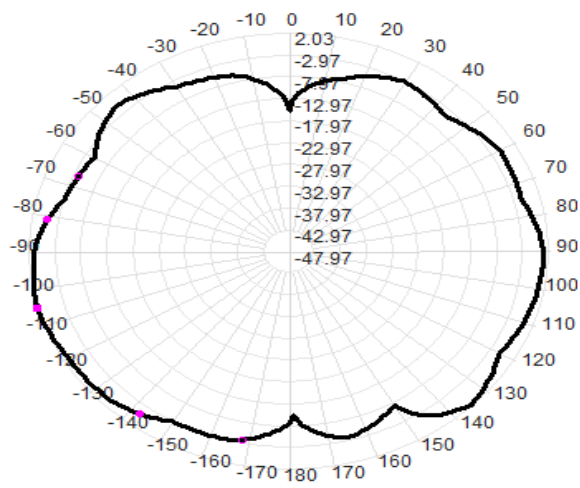
Back View



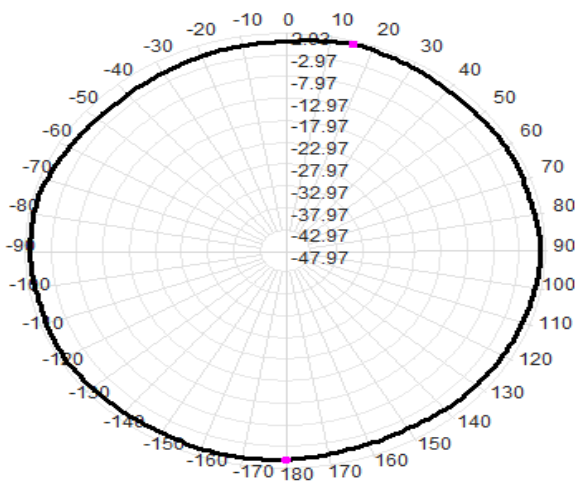
5450.0MHz Total(E1-XZ), Max= 1.59dBi



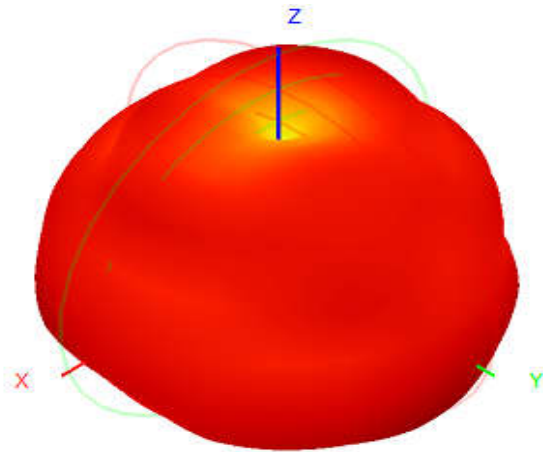
5450.0MHz Total(E2-YZ), Max= 2.03dBi



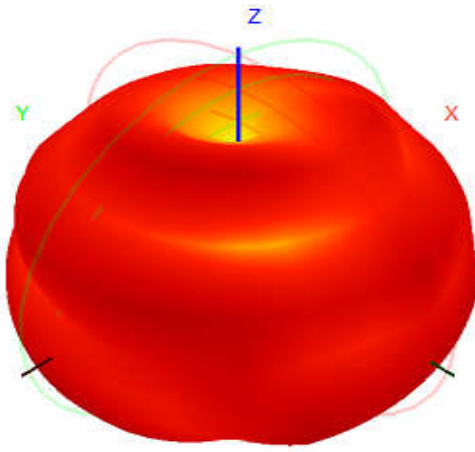
Total(H-XY), Max= 1.17dBi, CirD=2.38



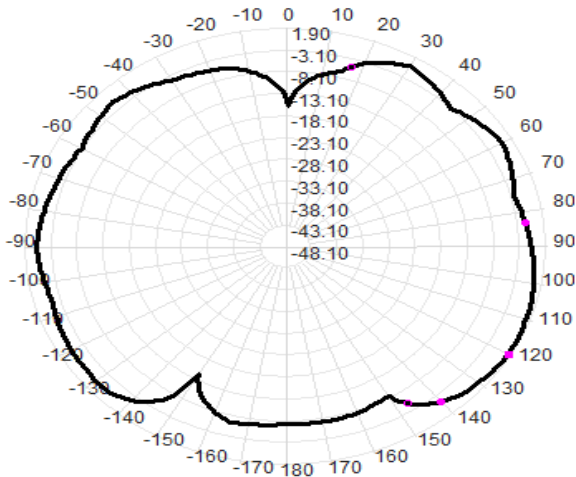
5550.0MHz H+V, Eff: 73.4%



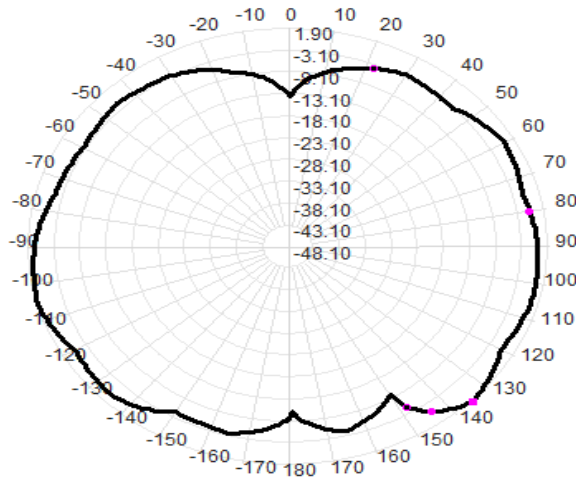
Back View



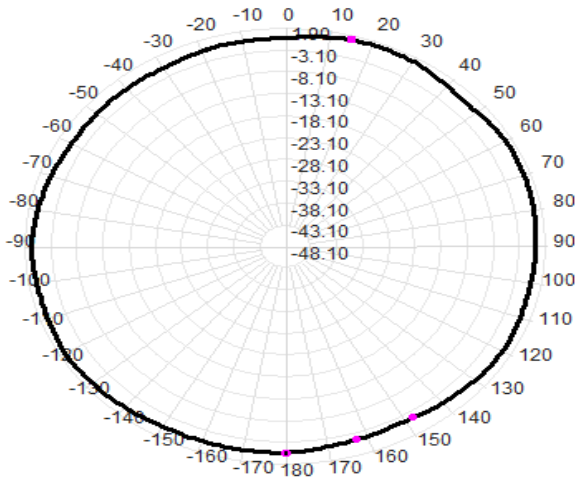
5550.0MHz Total(E1-XZ), Max= 1.10dBi



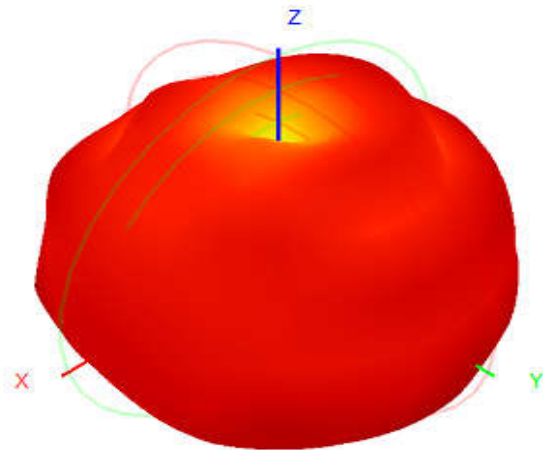
5550.0MHz Total(E2-YZ), Max= 1.90dBi



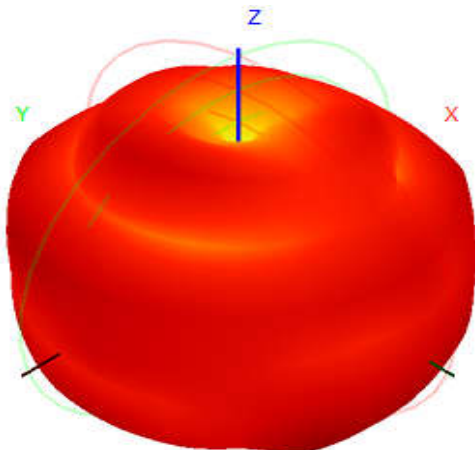
Total(H-XY), Max= 0.87dBi, CirD=3.21



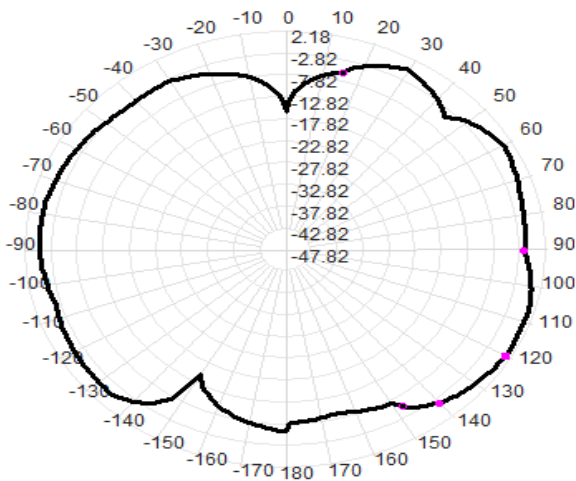
5650.0MHz H+V, Eff: 74.4%



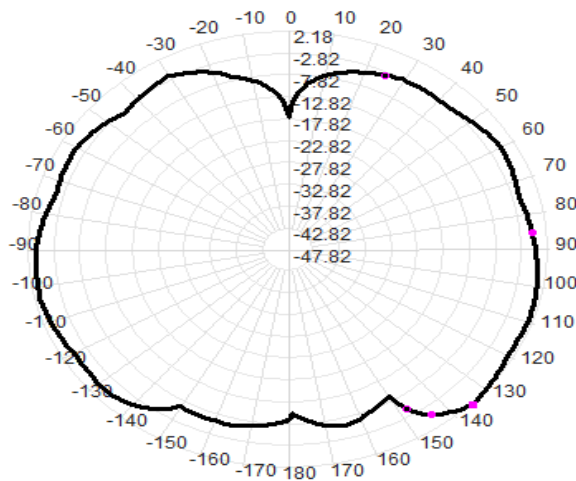
Back View



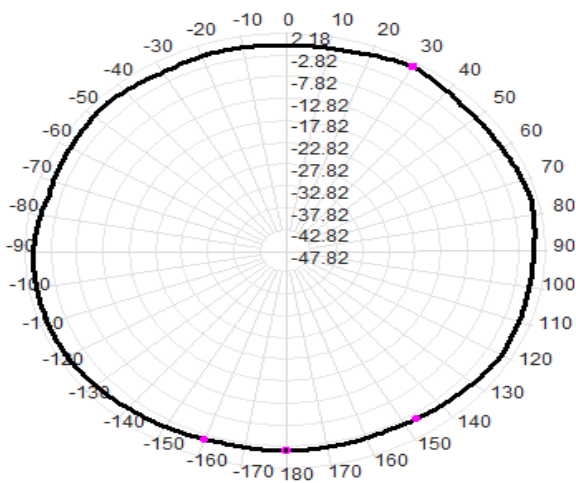
5650.0MHz Total(E1-XZ), Max= 0.78dBi



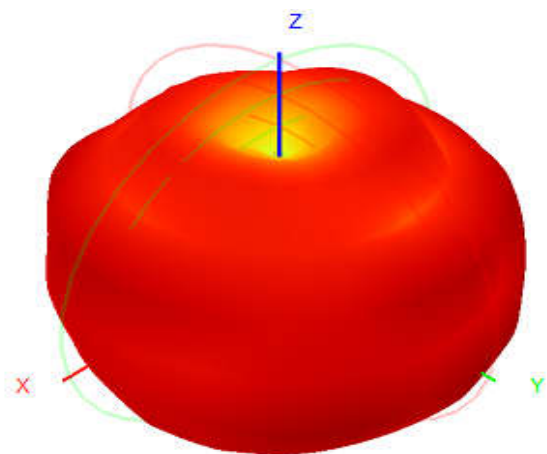
5650.0MHz Total(E2-YZ), Max= 2.18dBi



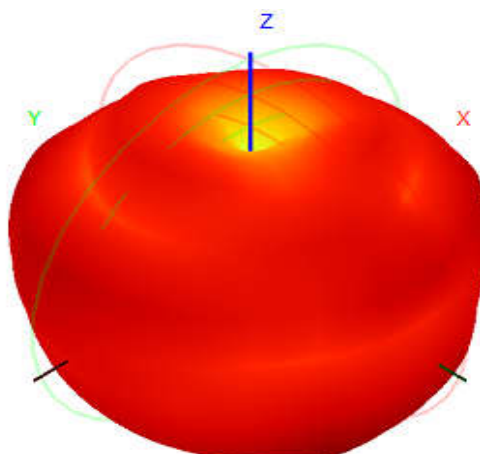
Total(H-XY), Max= 0.93dBi, CirD=3.35



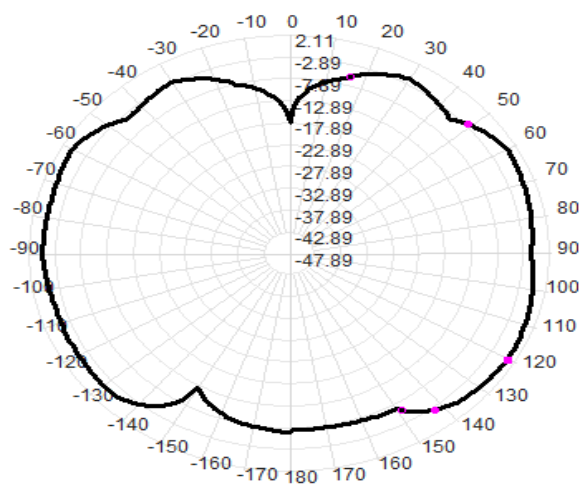
5750.0MHz H+V, Eff: 75.2%



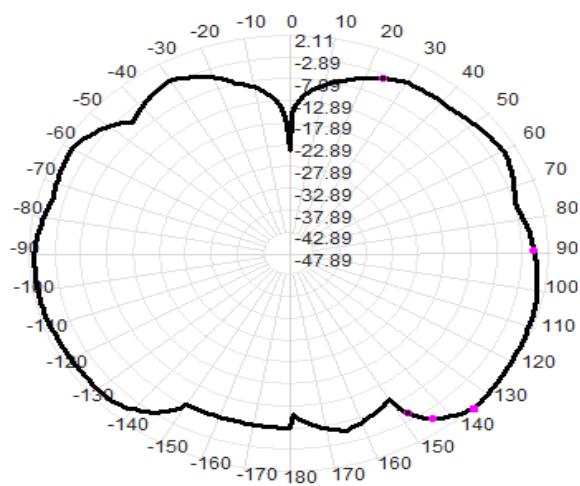
Back View



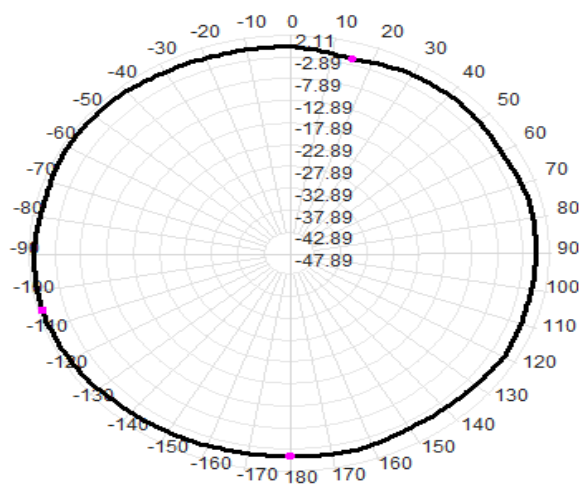
5750.0MHz Total(E1-XZ), Max= 0.30dBi



5750.0MHz Total(E2-YZ), Max= 2.11dBi

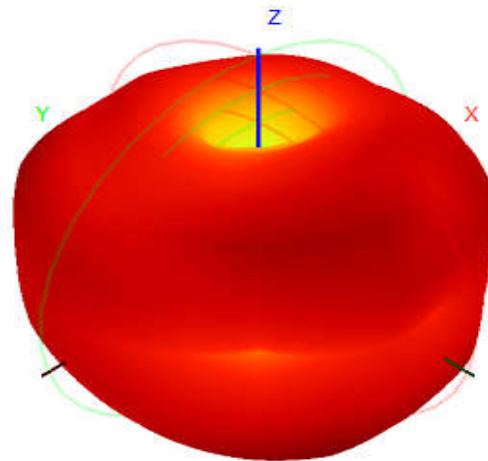
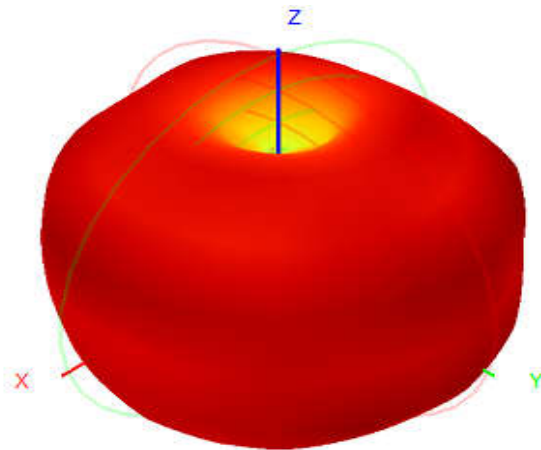


Total(H-XY), Max= 1.23dBi, CirD=3.23

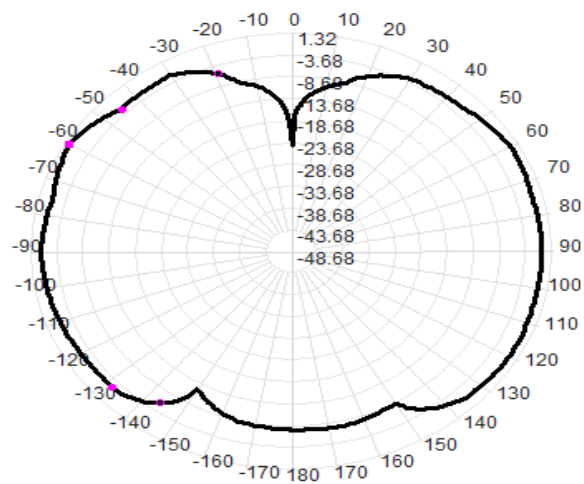


5850.0MHz H+V, Eff: 73.4%

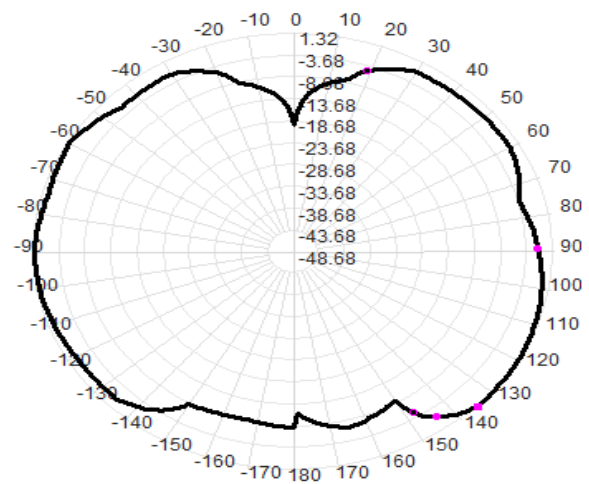
Back View



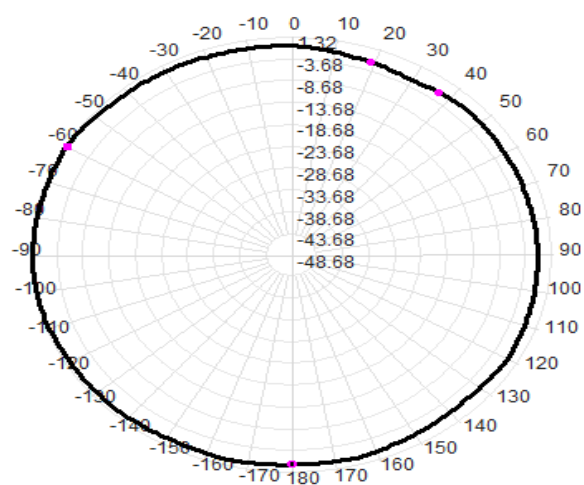
5850.0MHz Total(E1-XZ), Max= 0.42dBi



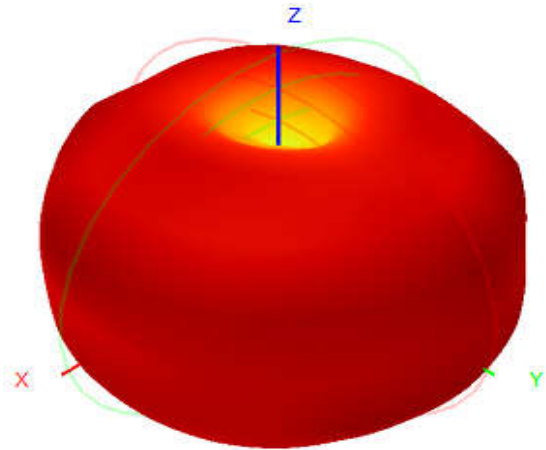
5850.0MHz Total(E2-YZ), Max= 1.32dBi



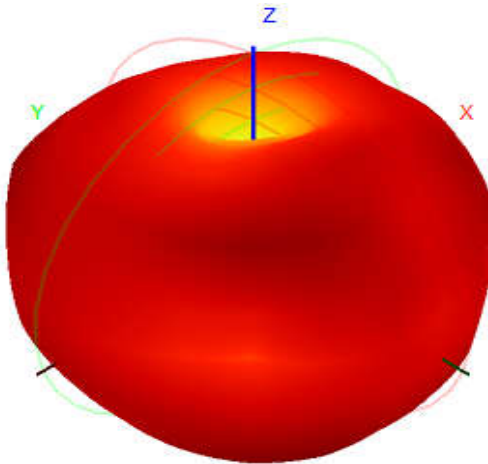
Total(H-XY), Max= 1.06dBi, CirD=3.58



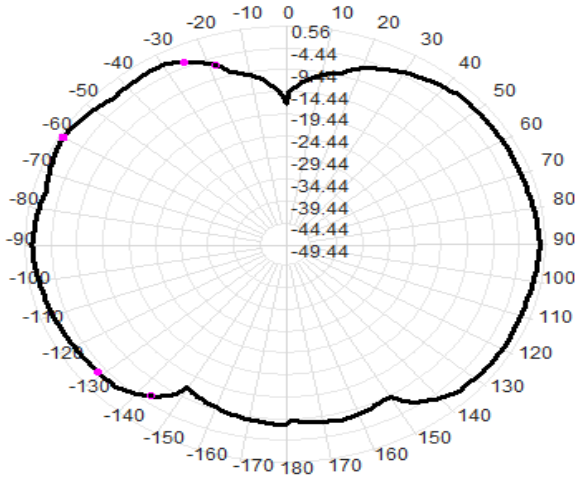
5925.0MHz H+V, Eff: 64.8%



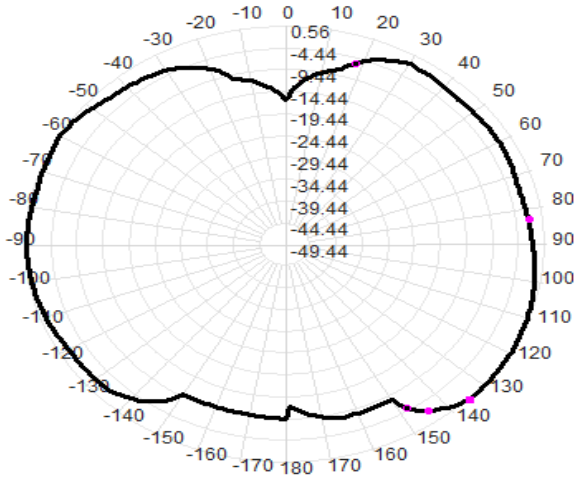
Back View



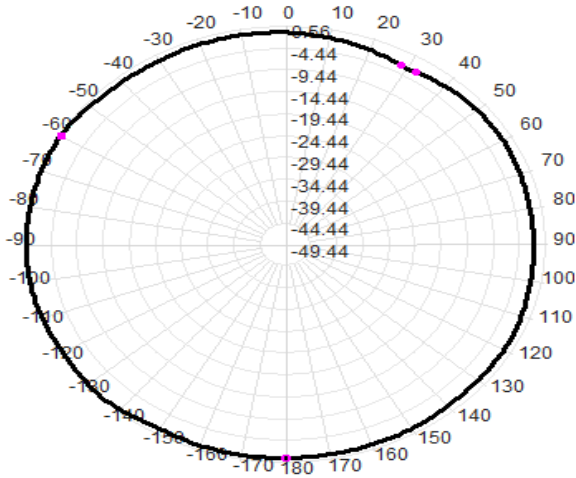
5925.0MHz Total(E1-XZ), Max= -0.23dBi



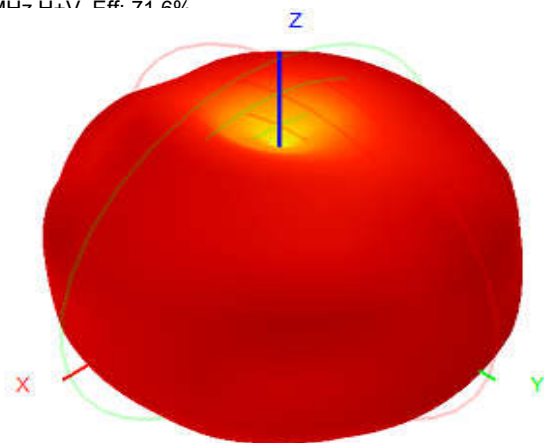
5925.0MHz Total(E2-YZ), Max= 0.56dBi



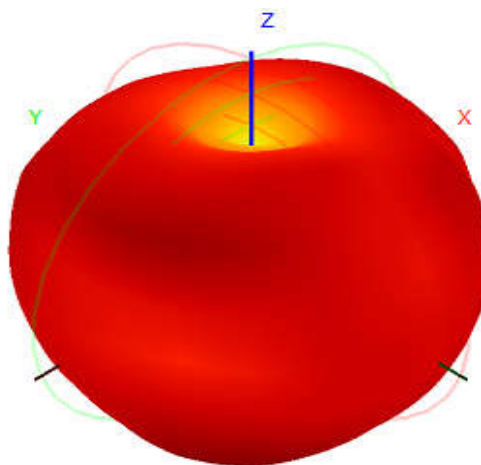
Total(H-XY), Max= 0.28dBi, CirD=3.26



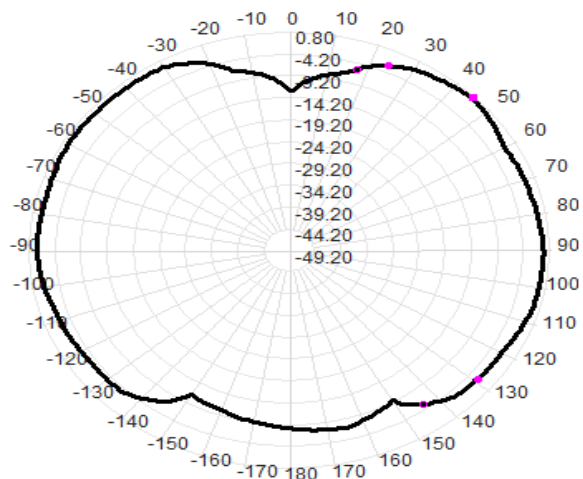
6025.0MHz Total(E1-XZ), Eff: 74.6%



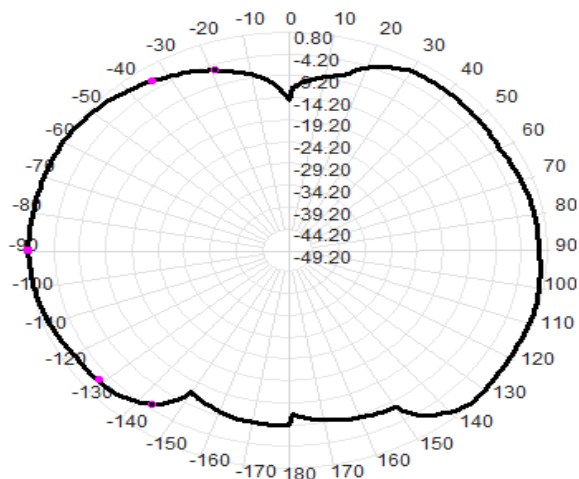
Back View



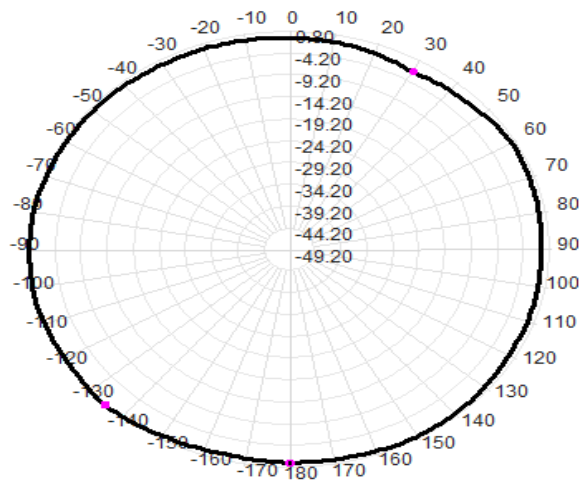
6025.0MHz Total(E1-XZ), Max= 0.21dBi



6025.0MHz Total(E2-YZ), Max= 0.65dBi

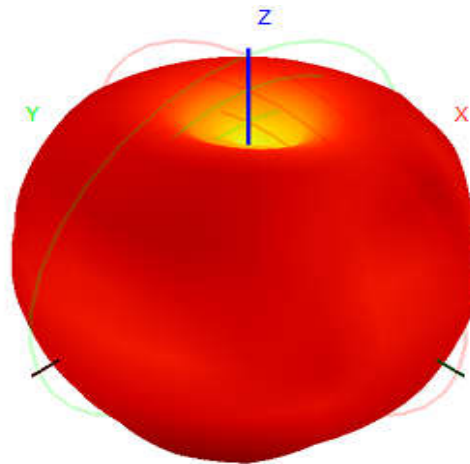
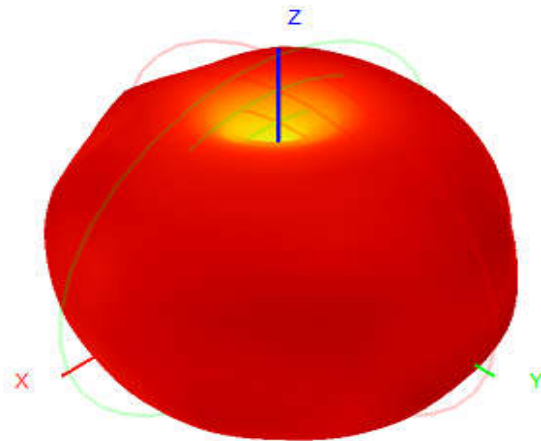


Total(H-XY), Max= 0.80dBi, CirD=3.06

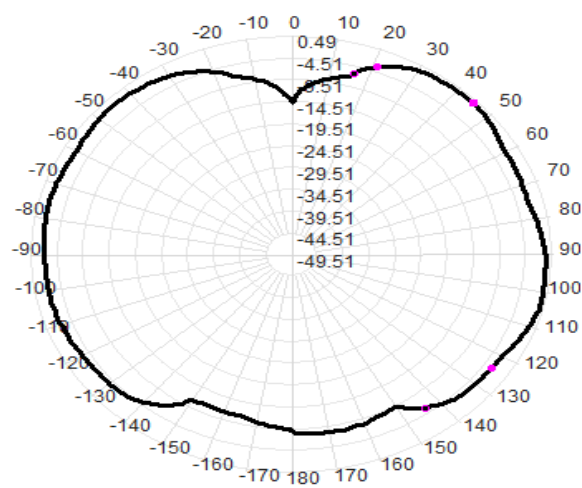


6125.0MHz H+V, Eff: 65.1%

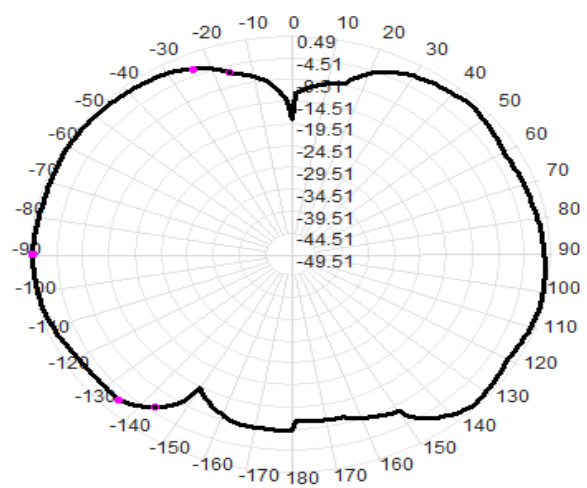
Back View



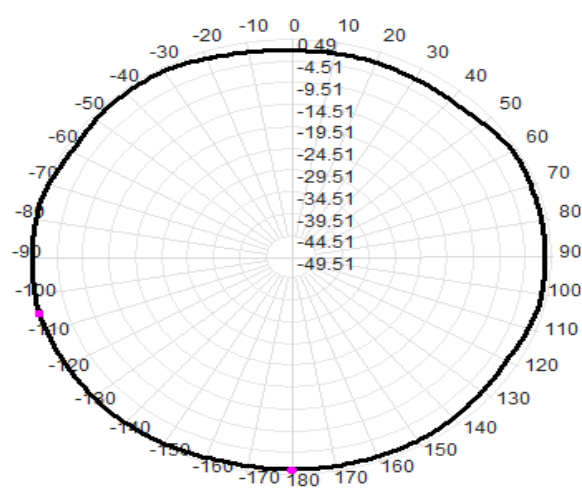
6125.0MHz Total(E1-XZ), Max= -0.31dBi



6125.0MHz Total(E2-YZ), Max= 0.14dBi

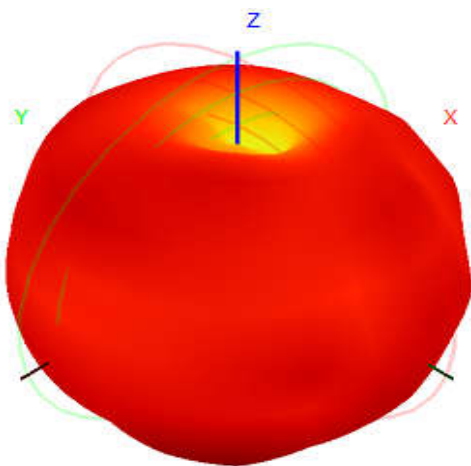
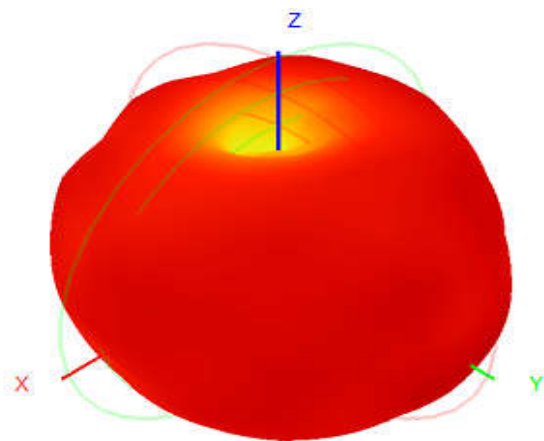


Total(H-XY), Max= 0.49dBi, CirD=2.84



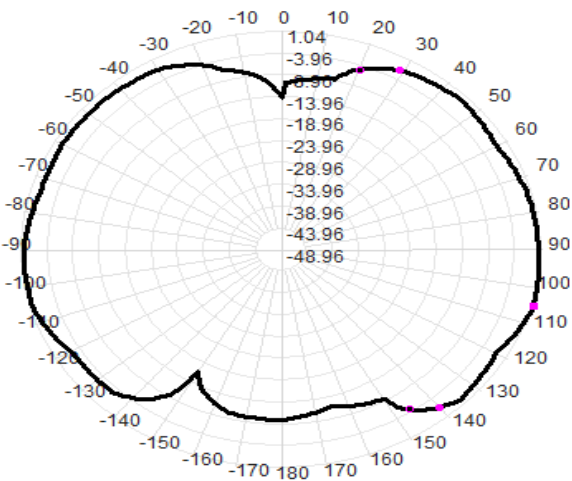
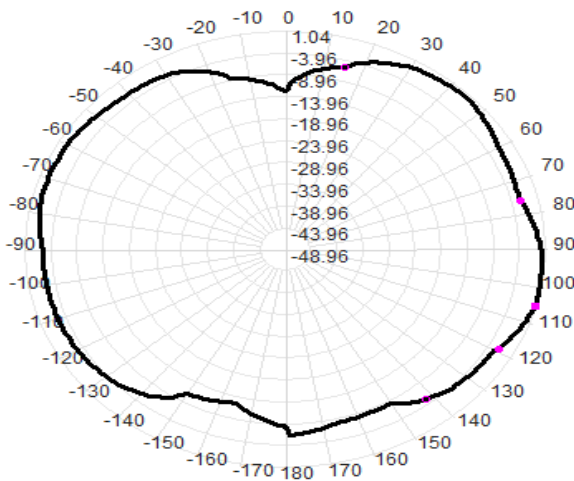
6225.0MHz H+V, Eff: 69.7%

Back View

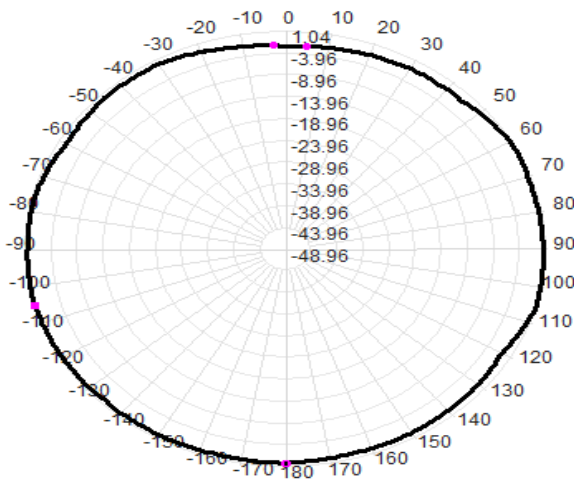


6225.0MHz Total(E1-XZ), Max= 0.51dBi

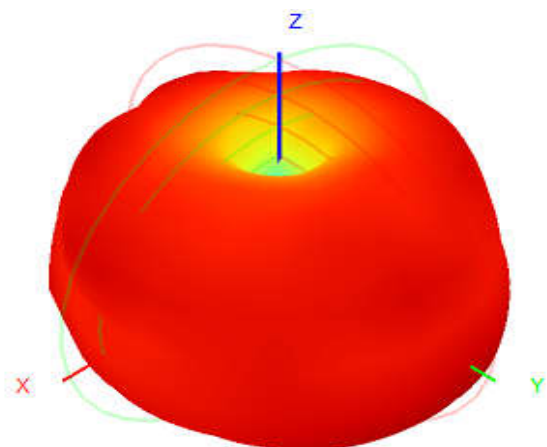
6225.0MHz Total(E2-YZ), Max= 1.04dBi



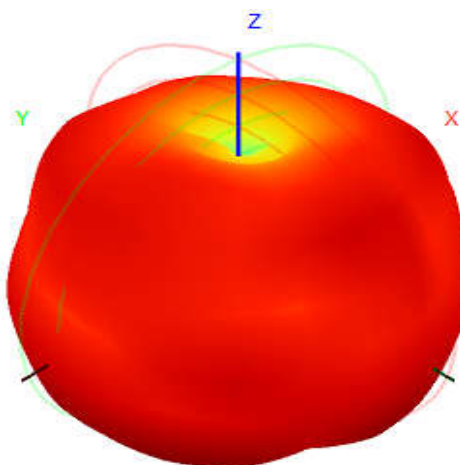
Total(H-XY), Max= 0.76dBi, CirD=3.21



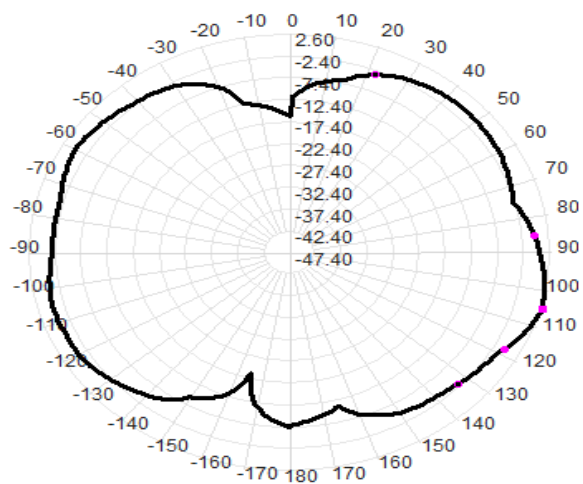
6325.0MHz H+V, Eff: 77.9%



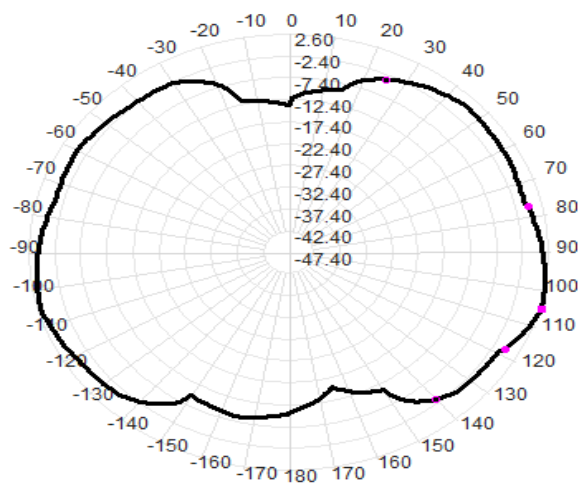
Back View



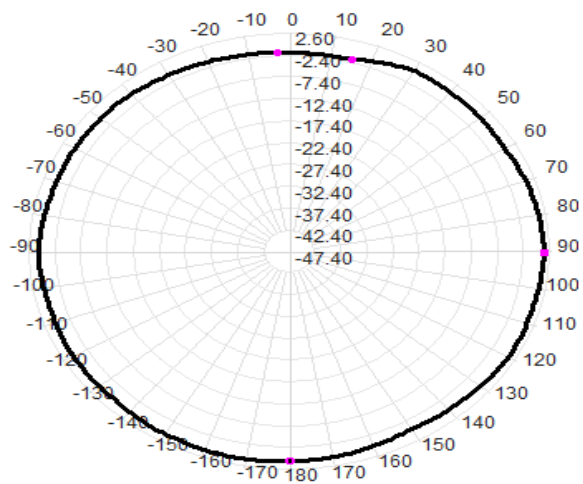
6325.0MHz Total(E1-XZ), Max= 2.60dBi



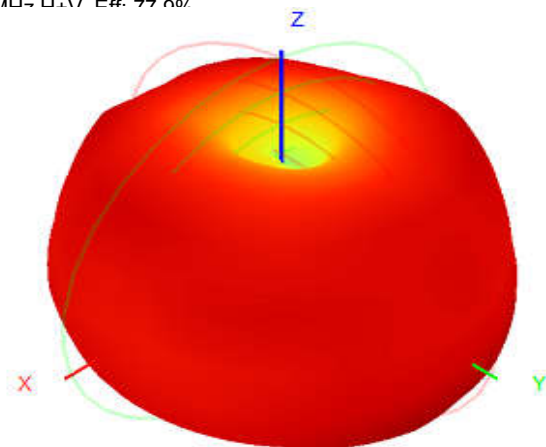
6325.0MHz Total(E2-YZ), Max= 2.59dBi



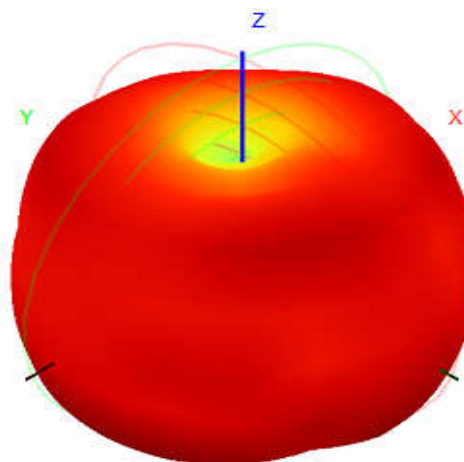
Total(H-XY), Max= 1.21dBi, CirD=3.16



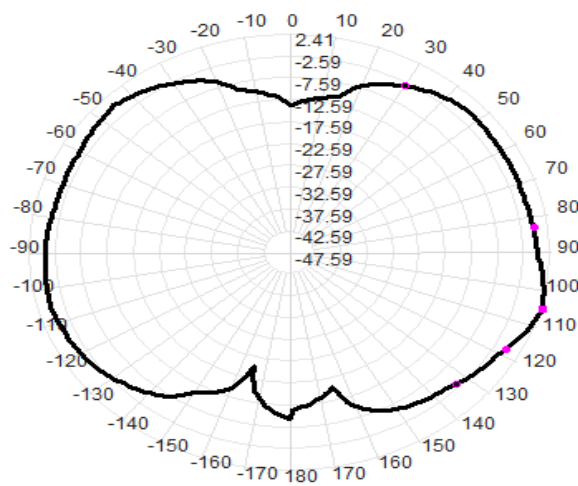
6425.0MHz Total(E1-XZ), Eff: 77.00%



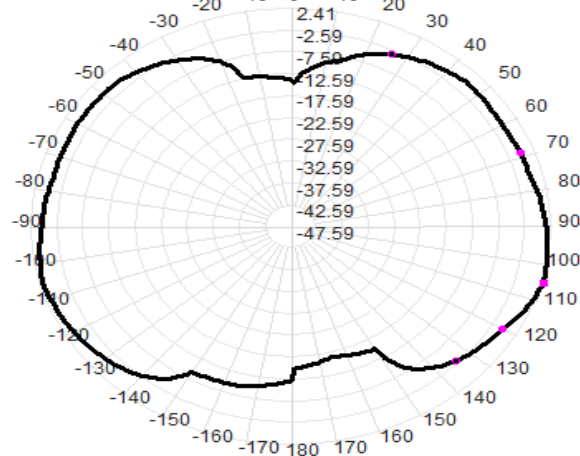
Back View



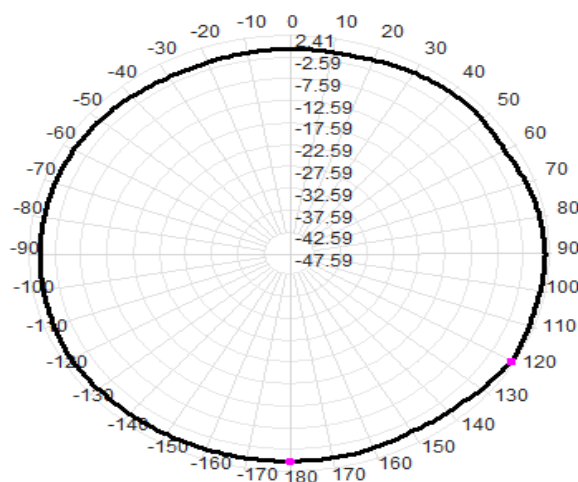
6425.0MHz Total(E1-XZ), Max= 2.41dBi



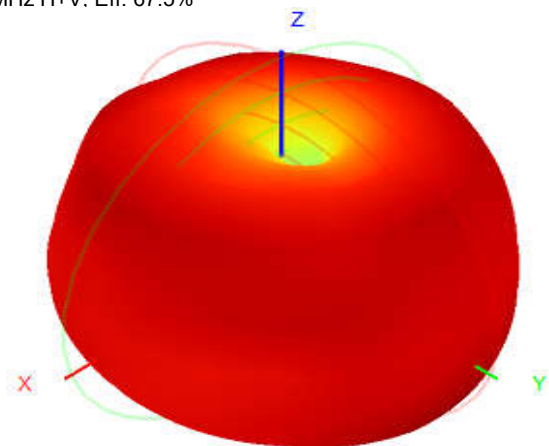
6425.0MHz Total(E1-YZ), Max= 2.30dBi



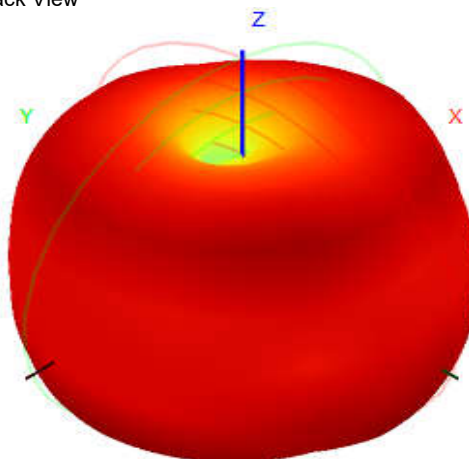
Total(H-XY), Max= 1.37dBi, CirD=2.52



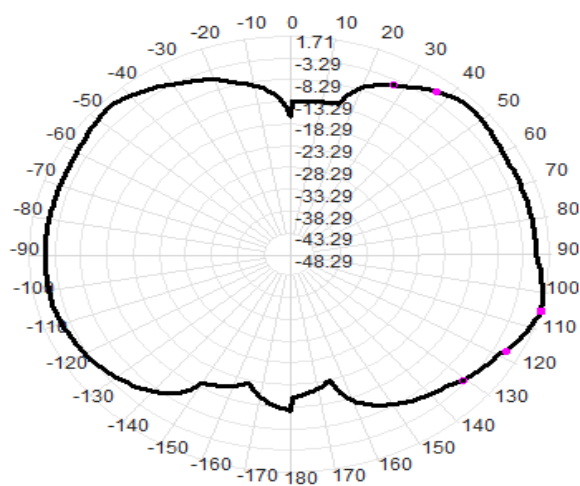
6525.0MHz H+V, Eff: 67.5%



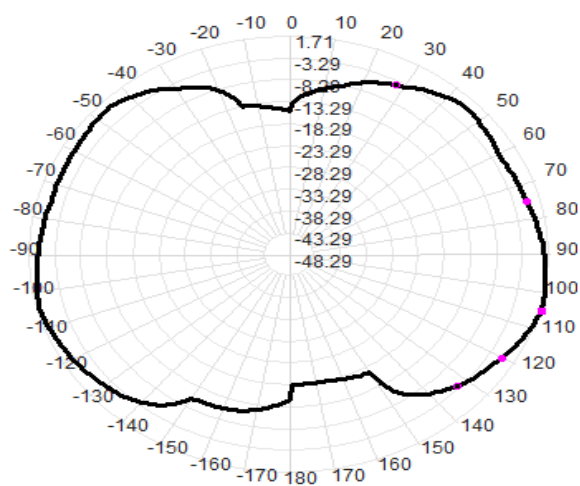
Back View



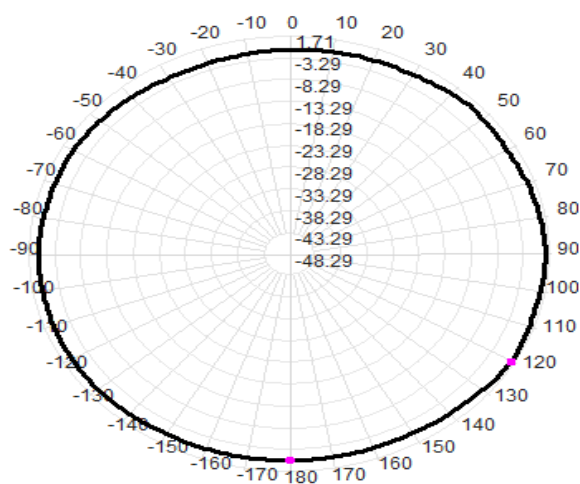
6525.0MHz Total(E1-XZ), Max= 1.45dBi



6525.0MHz Total(E2-YZ), Max= 1.71dBi

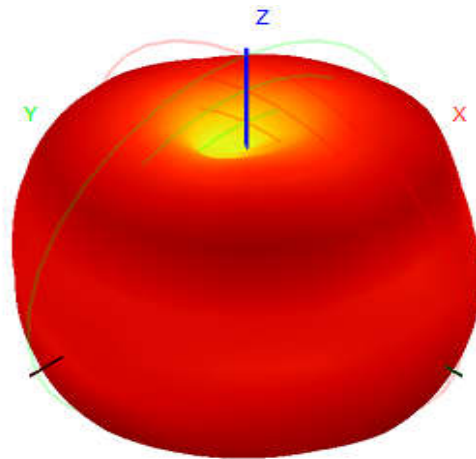
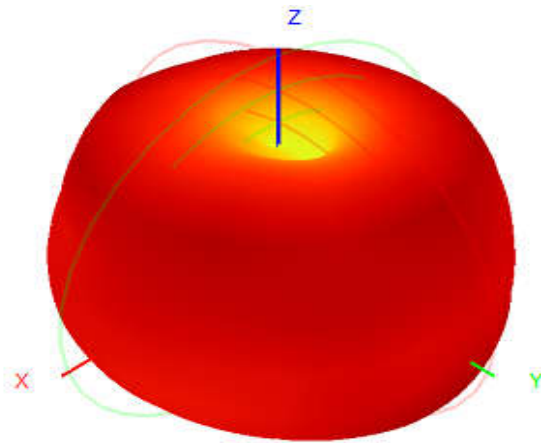


Total(H-XY), Max= 0.72dBi, CirD=2.59

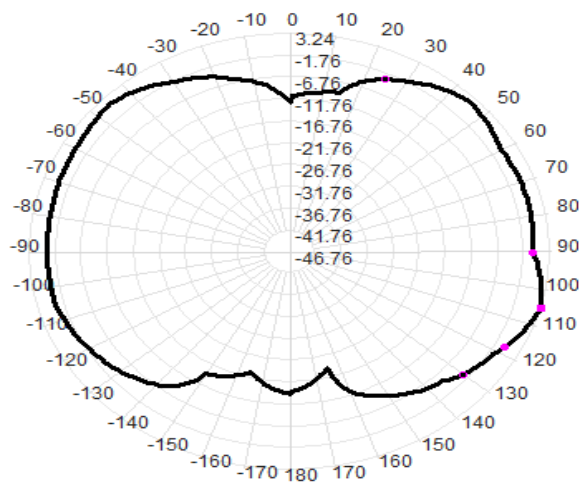


6625.0MHz H+V, Eff: 94.5%

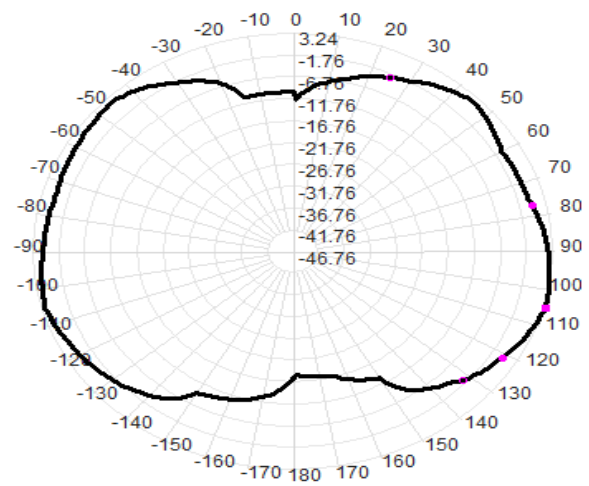
Back View



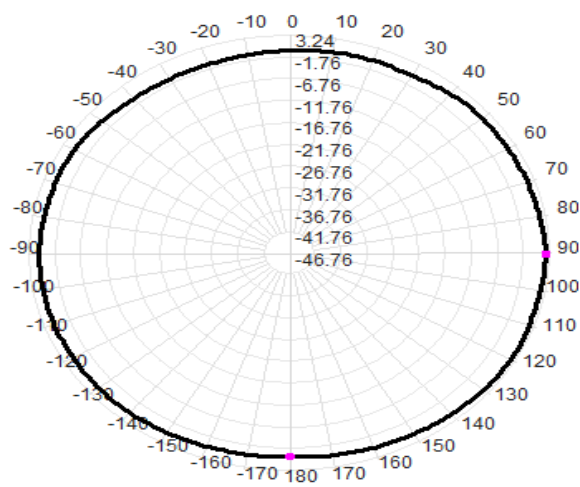
6625.0MHz Total(E1-XZ), Max= 2.93dBi



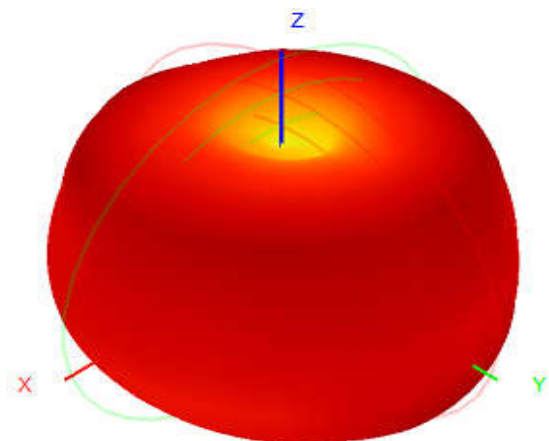
6625.0MHz Total(E2-YZ), Max= 3.24dBi



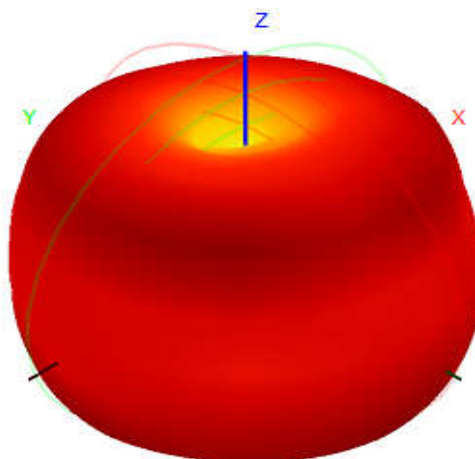
Total(H-XY), Max= 2.16dBi, CirD=2.97



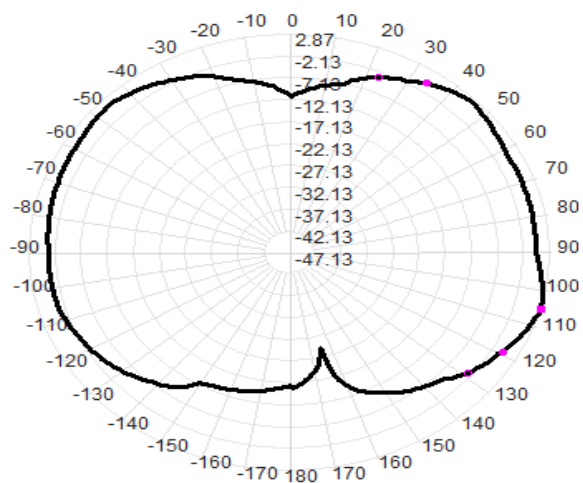
6725.0MHz H+V, Eff: 89.0%



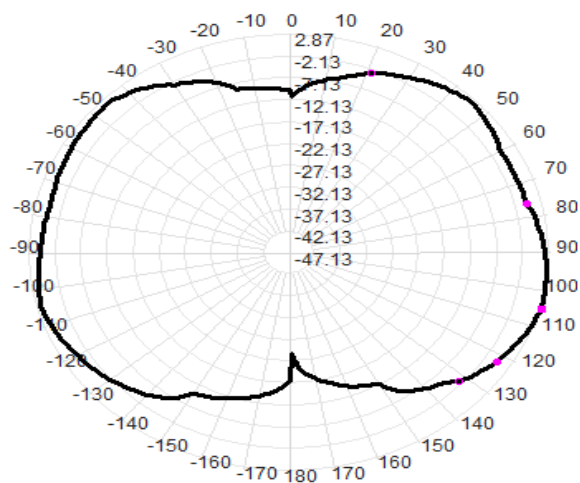
Back View



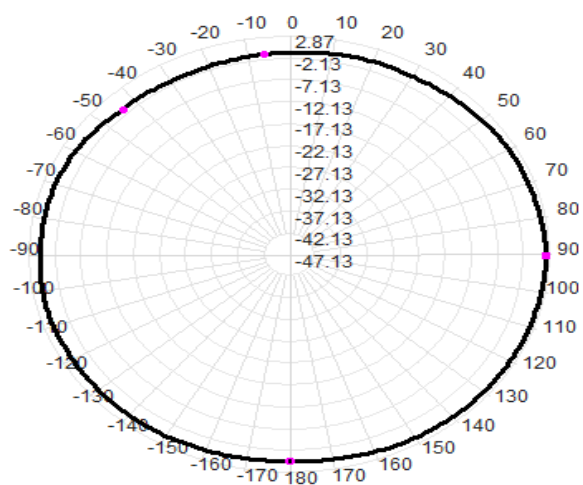
6725.0MHz Total(E1-XZ), Max= 2.61dBi



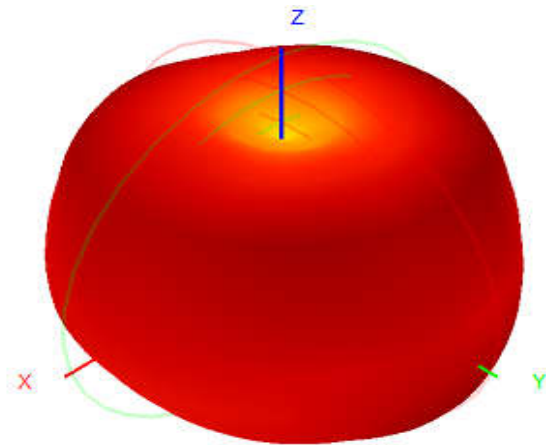
6725.0MHz Total(E2-YZ), Max= 2.87dBi



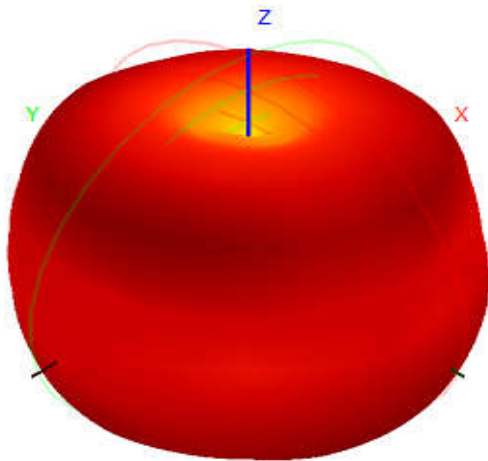
Total(H-XY), Max= 1.92dBi, CirD=3.31



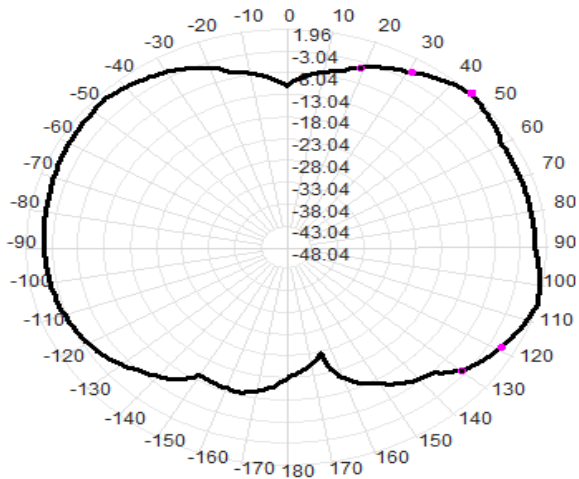
6825.0MHz H+V, Eff: 76.2%



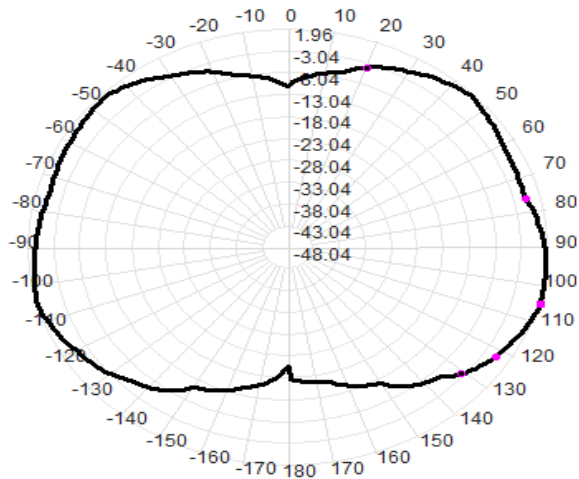
Back View



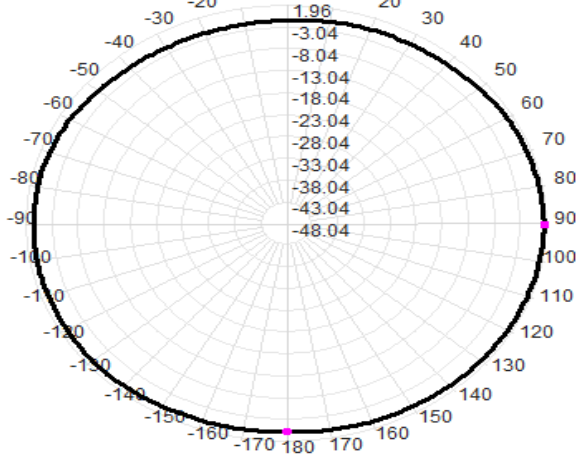
6825.0MHz Total(E1-XZ), Max= 1.85dBi



6825.0MHz Total(E2-YZ), Max= 1.96dBi

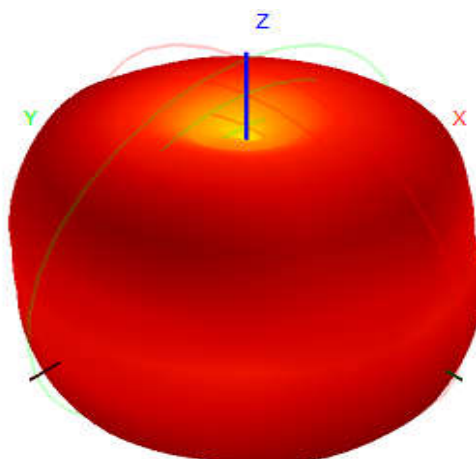
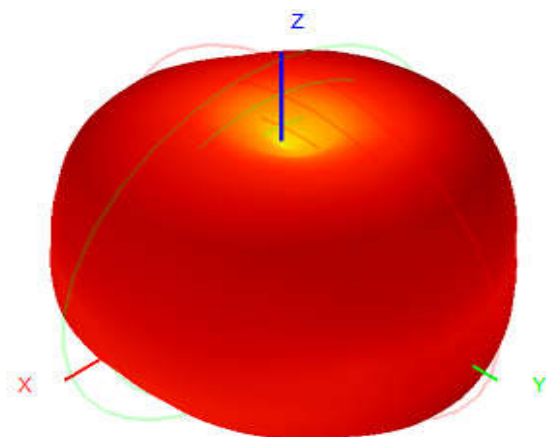


Total(P) YZ, Max= 1.96dBi, G1D=2.00

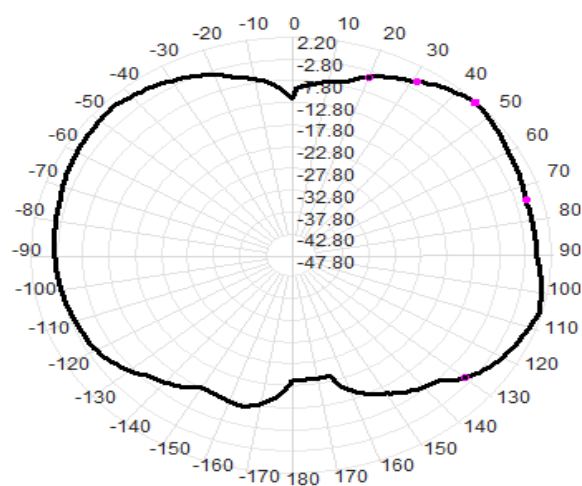


6925.0MHz H+V, Eff: 72.9%

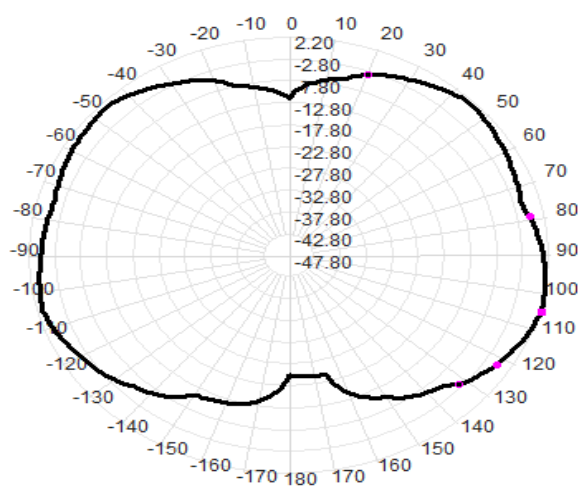
Back View



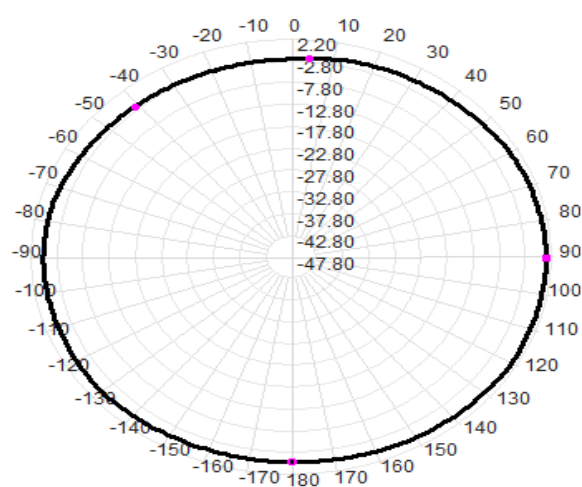
6925.0MHz Total(E1-XZ), Max= 1.89dBi



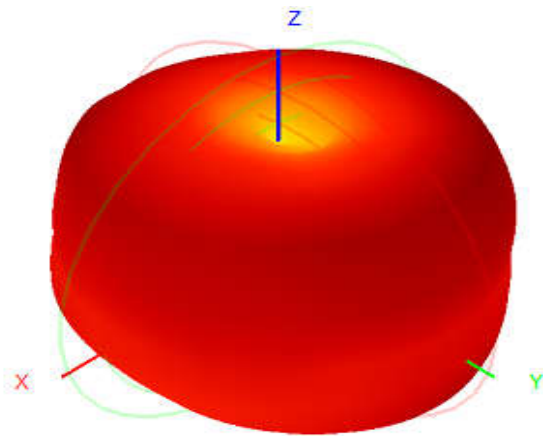
6925.0MHz Total(E2-YZ), Max= 2.20dBi



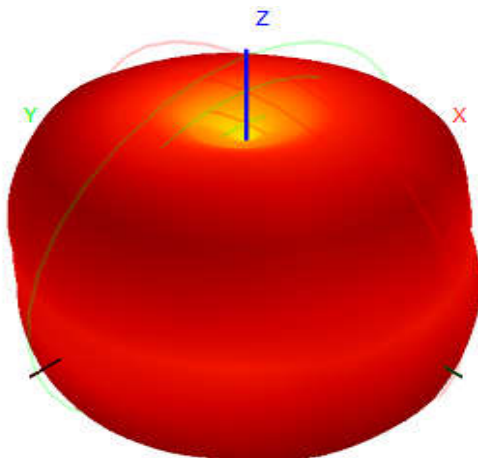
Total(H-XY), Max= 0.89dBi, CirD=3.48



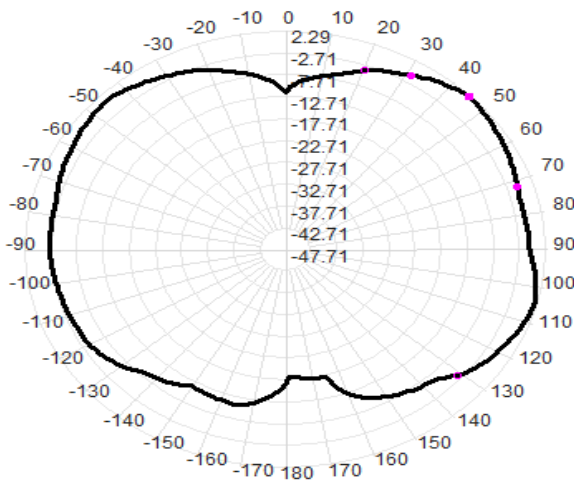
7025.0MHz H+V, Eff: 74.6%



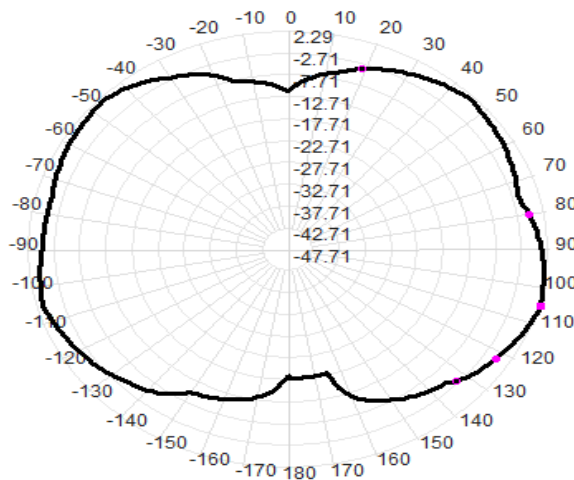
Back View



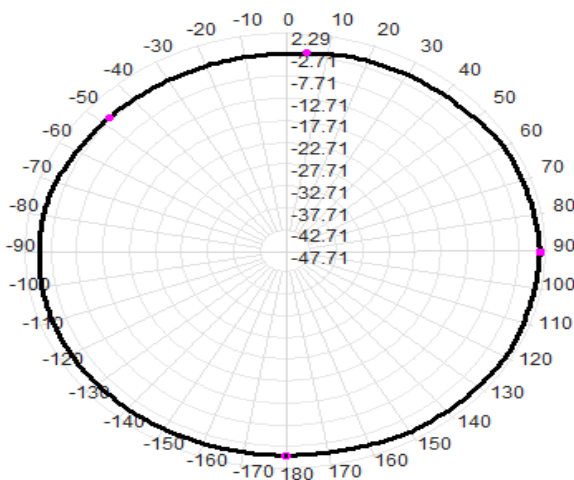
7025.0MHz Total(E1-XZ), Max= 1.91dBi



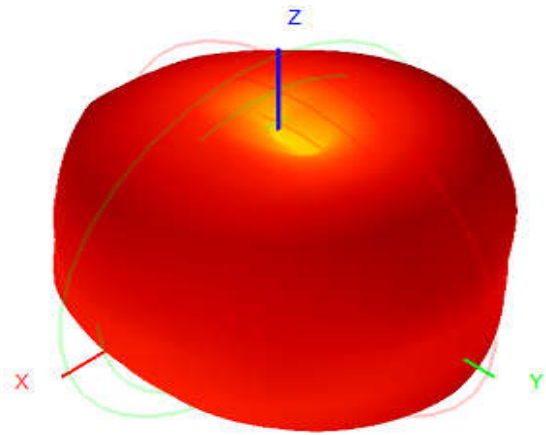
7025.0MHz Total(E2-YZ), Max= 2.29dBi



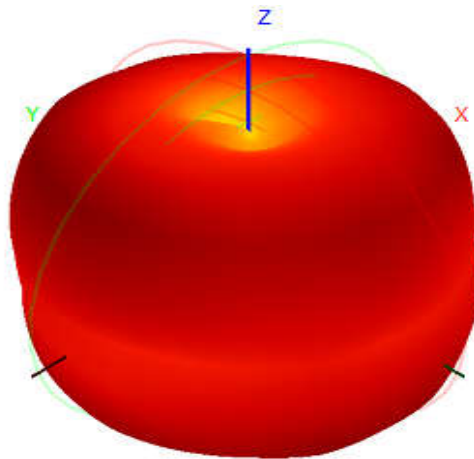
Total(H-XY), Max= 0.85dBi, CirD=3.51



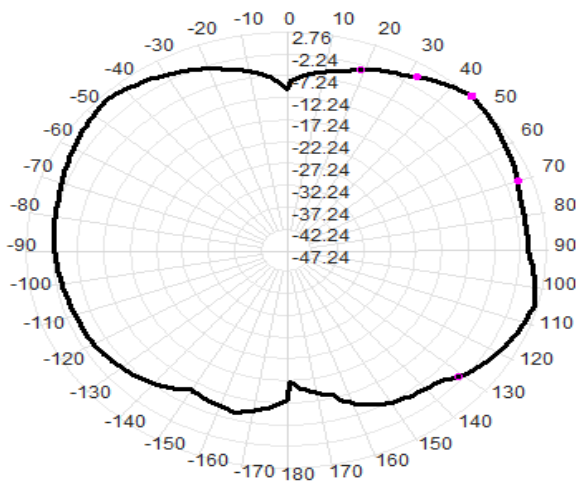
7125.0MHz H+V, Eff: 80.1%



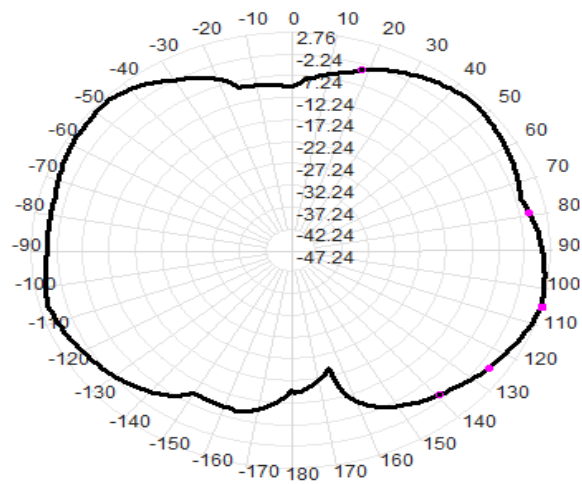
Back View



7125.0MHz Total(E1-XZ), Max= 2.76dBi



7125.0MHz Total(E2-YZ), Max= 2.34dBi



Total(H-XY), Max= 0.90dBi, CirD=3.69

