TEST REPORT

Applicant:	Shenzhen Zhixu Technology Co., LTD
Address:	1101, Building A, Guoren Building, Keji Zhongsan Road, Gaoxin Park, Nanshan District, Shenzhen City, China.
Equipment Type:	FPC Antenna
Model Name:	ZXD1888
Brand Name:	Kashimura
Test Standard:	ANSI/IEEE Std 149-1979
Test Date:	Sep. 23, 2022
Date of Issue:	Sep. 27, 2022

ISSUED BY:

Shenzhen BALUN Technology Co., Ltd.

Tested by: Mai Jintian **Checked by:** Tolan Tu **Approved by:** Wei Yanquan (Chief Engineer)

Revision History

Version	Issue Date	Revisions
Rev. 01	Sep. 27, 2022	Initial Issue

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1 GENERAL INFORMATION

1.1 Test Laboratory

Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
Phone Number	+86 755 6685 0100

1.2 Test Location

Name	Shenzhen BALUN Technology Co., Ltd.
Location	☑ Block B, 1/F, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China
	☐ 1/F, Building B, Ganghongji High-tech Intelligent Industrial Park, No. 1008, Songbai Road, Yangguang Community, Xili Sub-district, Nanshan District, Shenzhen, Guangdong Province, P. R. China

2 PRODUCT INFORMATION

2.1 Applicant Information

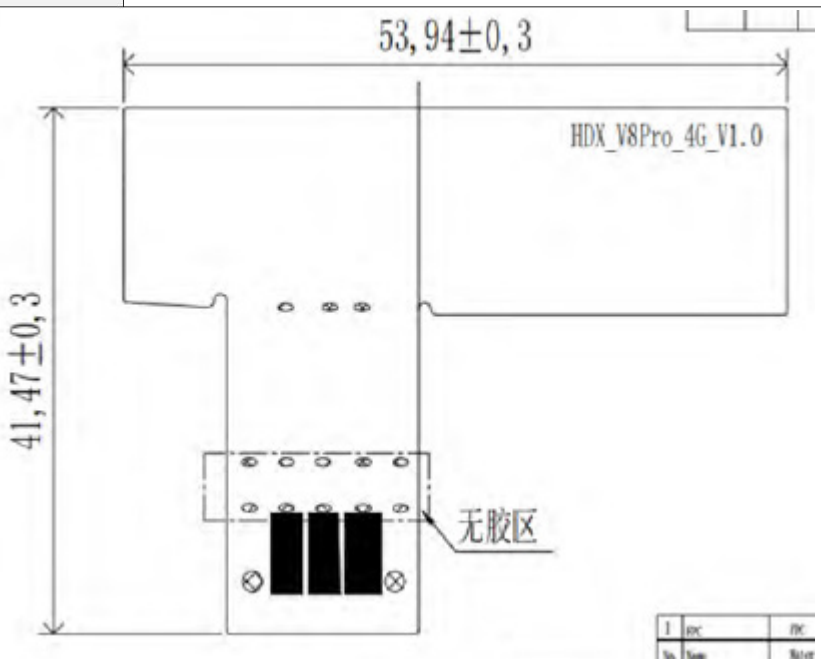
Applicant	Shenzhen Zhixu Technology Co., LTD
Address	1101, Building A, Guoren Building, Keji Zhongsan Road, Gaoxin Park, Nanshan District, Shenzhen City, China.

2.2 Manufacturer Information

Manufacturer	Shenzhen Zhixu Technology Co., LTD
Address	1101, Building A, Guoren Building, Keji Zhongsan Road, Gaoxin Park, Nanshan District, Shenzhen City, China.

2.3 General Description for Equipment under Test (EUT)

EUT Name	FPC Antenna
Model Name Under Test	ZXD1888
Antenna Type	FPC Antenna
Dimensions	41.47*53.94 mm



2.4 Ancillary Equipment

Note: Not applicable.

2.5 Technical Information

Test Frequencies	See the ANNEX A

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	ANSI/IEEE Std 149-1979	IEEE Standard Test Procedures for Antennas

3.2 Test Verdict

Report Section	Description	Remark
ANNEX A.1	Gain and Efficiency	--
ANNEX B	Radiation Pattern	--

3.3 Test Uncertainty

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in Measurement" (GUM) published by ISO.

Item	Uncertainty
Gain	±1.92dB

4 GENERAL TEST CONFIGURATIONS

4.1 Test Condition

Environment Parameter	Selected Values During Tests			
	Ambient Pressure(KPa)	Temperature(℃)	Voltage	Relative Humidity (%)
Normal Temperature, Normal Voltage (NTNV)	101	25	N/A	50

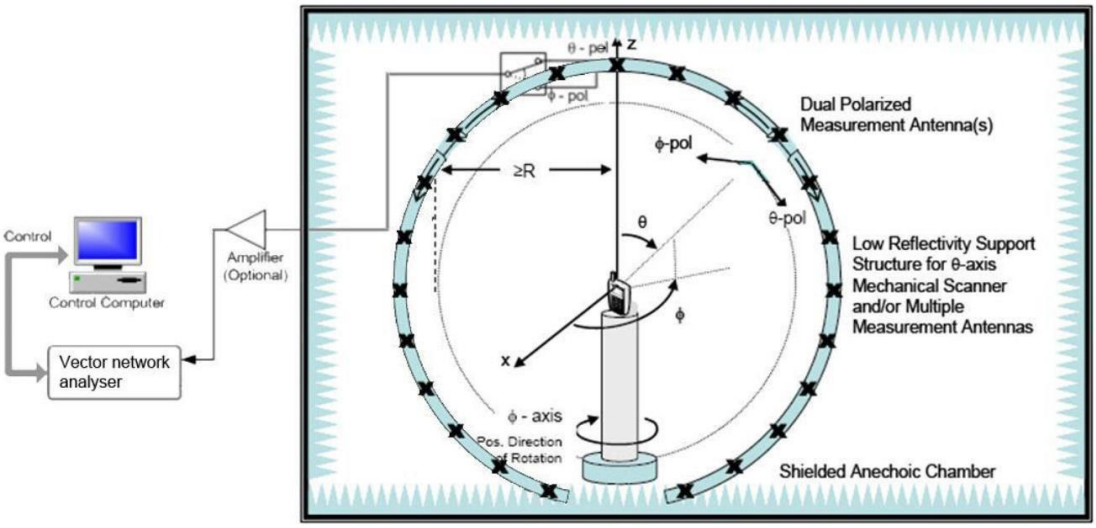
4.2 Test Equipment List

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
SG24 Multi-probe Antenna Measurement System	SATIMO	SG24-L	1101855-0001	2021.11.12	2024.11.11
Vector Network Analyzer	Agilent	E5071B	MY42404001	2022.04.02	2023.04.01

Description	Manufacturer	Name	Version
Test Software	MVG	SPM	V 1.8

4.3 Test Setup

4.3.1 Antenna gain, efficiency and radiation pattern test setup



ANNEX A TEST RESULTS

A.1 Gain and Efficiency

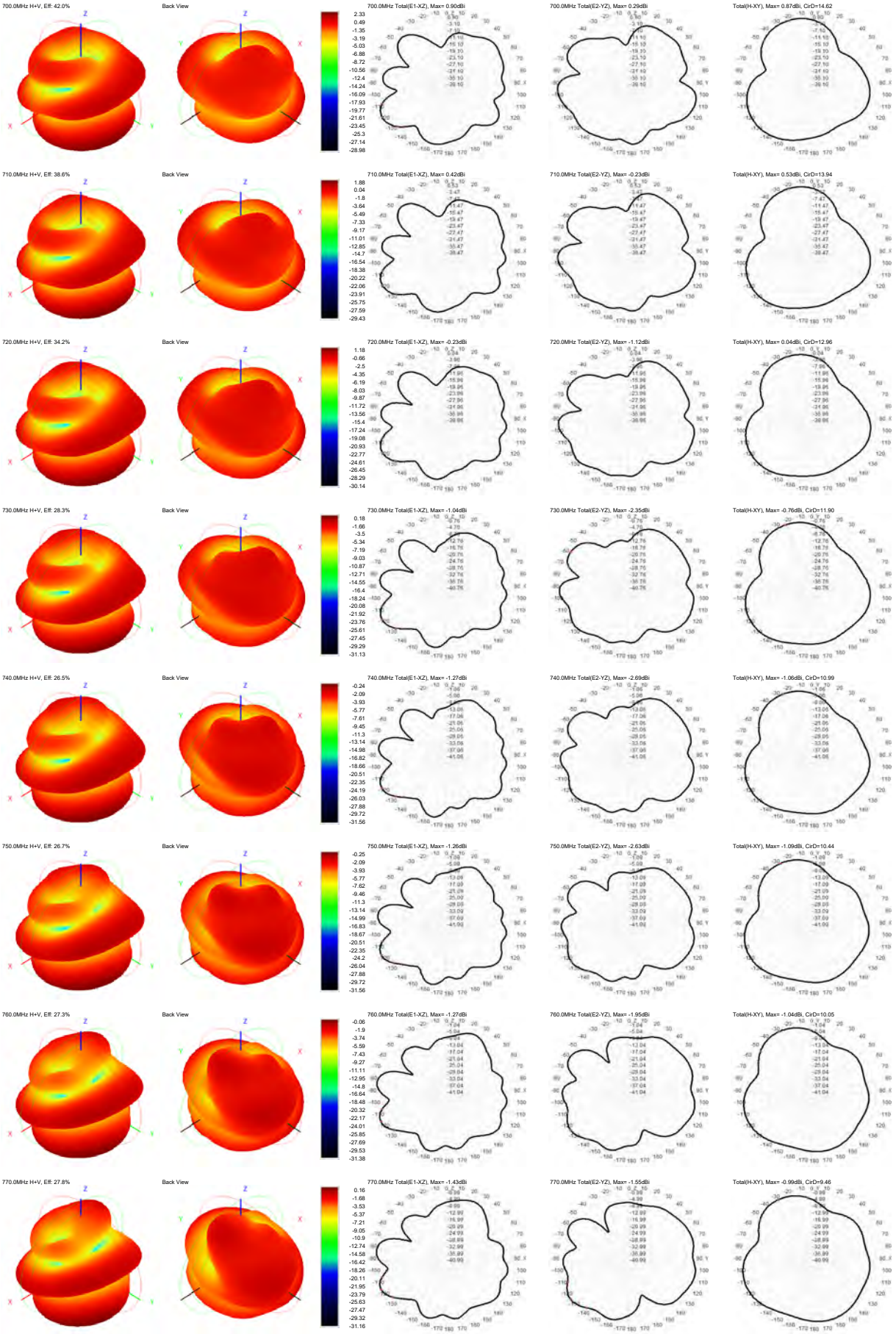
Frequency ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Frequency (MHz)	700.0	710.0	720.0	730.0	740.0	750.0	760.0	770.0	780.0	790.0	800.0	810.0	820.0	830.0	840.0	850.0	860.0	870.0	880.0	890.0	900.0	910.0	920.0	930.0	940.0	950.0	960.0	970.0	980.0	990.0	1000.0	1700.0	1720.0	1740.0	1760.0
Efficiency (dBi)	-3.77	-4.13	-4.66	-5.48	-5.76	-5.74	-5.64	-5.57	-5.66	-5.77	-5.74	-5.24	-4.74	-4.23	-4.16	-4.13	-4.20	-3.93	-3.61	-3.41	-3.32	-3.39	-3.59	-3.90	-4.00	-4.04	-3.80	-3.61	-3.63	-3.94	-4.50	-4.68	-4.68	-4.67	-5.55
Gain (dBi)	2.33	1.88	1.18	0.18	-0.24	-0.25	-0.06	0.16	0.19	0.18	0.25	0.79	1.30	1.82	1.92	1.95	1.83	2.44	3.03	3.34	3.39	3.09	2.43	1.73	1.69	1.80	2.13	2.29	2.10	1.65	1.12	2.58	2.48	2.29	1.14
Efficiency (%)	42.00	38.62	34.16	28.31	26.54	26.67	27.30	27.75	27.15	26.50	26.67	29.94	33.55	37.73	38.34	38.67	38.01	40.49	43.56	45.58	46.53	45.79	43.75	40.73	39.82	39.45	41.67	43.53	43.37	40.41	35.51	34.01	34.08	34.11	27.87
Directivity (dB)	6.10	6.01	5.84	5.66	5.52	5.49	5.58	5.72	5.85	5.95	5.99	6.03	6.05	6.05	6.08	6.08	6.03	6.36	6.64	6.75	6.72	6.48	6.02	5.63	5.69	5.84	5.94	5.90	5.73	5.59	5.62	7.26	7.16	6.96	6.69
Peak Gain Position (Theta)	100.00	99.00	98.00	97.00	96.00	97.00	98.00	99.00	99.00	99.00	98.00	98.00	98.00	99.00	99.00	100.00	100.00	91.00	91.00	91.00	92.00	91.00	91.00	83.00	87.00	89.00	91.00	92.00	93.00	88.00	89.00	38.00	38.00	38.00	38.00
Peak Gain Position (Phi)	60.00	61.00	60.00	59.00	59.00	56.00	54.00	51.00	49.00	48.00	49.00	49.00	49.00	48.00	49.00	49.00	50.00	352.00	354.00	355.00	355.00	357.00	359.00	293.00	285.00	280.00	279.00	279.00	279.00	20.00	18.00	318.00	322.00	326.00	332.00
Efficiency ThetaPol (%)	30.89	29.18	26.14	21.60	19.79	19.13	18.78	18.52	17.85	17.35	17.52	19.88	22.73	26.21	27.26	28.02	28.07	30.41	33.13	34.75	35.04	33.47	30.64	27.48	26.53	26.77	29.47	32.34	33.82	32.92	30.08	31.35	31.12	31.14	25.64
Efficiency PhiPol (%)	11.12	9.44	8.02	6.71	6.75	7.54	8.52	9.24	9.30	9.14	9.15	10.06	10.81	11.52	11.09	10.65	9.94	10.08	10.43	10.83	11.49	12.32	13.11	13.25	13.28	12.68	12.20	11.19	9.55	7.48	5.43	2.66	2.96	2.97	2.23
Upper Hem. Efficiency (%)	18.58	17.40	15.62	12.94	11.93	11.73	11.86	12.06	11.92	11.82	12.12	13.74	15.33	16.96	16.89	16.69	16.09	17.03	18.64	20.29	21.74	22.37	22.05	20.90	20.50	20.23	21.13	21.67	21.10	19.14	16.42	24.78	23.44	22.56	18.33
Lower Hem. Efficiency (%)	23.42	21.22	18.54	15.37	14.61	14.94	15.44	15.70	15.23	14.68	14.55	16.20	18.22	20.77	21.45	21.99	21.92	23.46	24.92	25.29	24.79	23.42	21.70	19.84	19.32	19.22	20.54	21.86	22.27	21.27	19.08	9.22	10.64	11.56	9.54
T90(H)圆度	14.62	13.94	12.96	11.90	10.99	10.44	10.05	9.46	8.52	8.21	7.93	7.89	7.96	8.12	8.83	9.91	10.56	10.60	10.30	10.48	10.94	11.71	11.55	9.31	8.45	8.38	7.60	6.38	5.04	4.20	3.80	9.40	10.61	14.26	10.12
Gain 15deg (dBi)																																			
E1(XZ)波束宽度	25.00	25.00	24.00	24.00	23.00	22.00	22.00	21.00	22.00	23.00	23.00	22.00	22.00	22.00	23.00	22.00	21.00	21.00	20.00	21.00	21.00	22.00	22.00	23.00	25.00	26.00	26.00	26.00	25.00	25.00	25.00	26.00	25.00	24.00	20.00
E1(XZ)前后比	4.17	4.45	4.49	3.94	3.59	3.61	3.90	4.16	3.73	3.50	3.86	4.35	4.80	5.13	5.41	5.88	6.57	7.19	7.19	6.84	6.37	5.79	4.99	4.04	3.48	3.46	4.30	5.54	6.78	7.92	8.99	4.79	3.99	4.49	6.28
E2(YZ)波束宽度	29.00	25.00	24.00	29.00	28.00	33.00	31.00	30.00	29.00	30.00	30.00	32.00	73.00	62.00	56.00	53.00	51.00	51.00	52.00	26.00	25.00	26.00	27.00	28.00	28.00	27.00	27.00	27.00	27.00	27.00	26.00	32.00	33.00	32.00	36.00
E2(YZ)前后比	3.94	4.67	4.82	4.51	4.08	3.42	3.31	3.20	3.14	3.14	3.04	2.62	2.78	3.41	3.82	3.44	2.73	2.28	2.32	2.55	2.01	1.56	1.30	1.40	2.00	2.88	3.87	4.77	5.62	6.22	6.66	5.65	4.63	4.59	5.03
最大增益处轴比(P)	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
得角10度最差(大)轴比(P)	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Hc(XY)波束宽度	53.00	53.00	53.00	52.00	52.00	50.00	48.00	47.00	47.00	49.00	50.00	51.00	51.00	49.00	47.00	45.00	43.00	41.00	40.00	39.00	39.00	40.00	41.00	45.00	73.00	78.00	88.00	117.00	129.00	175.00	177.00	74.00	130.00	113.00	98.00
Hc(XY)前后比	3.22	3.32	3.46	3.74	4.10	4.45	4.34	3.22	2.30	1.71	1.46	1.49	1.54	1.67	1.89	2.30	2.94	3.74	4.53	4.84	4.11	3.13	1.91	0.44	0.00	0.00	0.00	0.00	0.00	0.32	0.61	1.71	5.08	6.86	4.37
Empty																																			

Frequency ID	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70
Frequency (MHz)	1780.0	1800.0	1820.0	1840.0	1860.0	1880.0	1900.0	1920.0	1940.0	1960.0	1980.0	2000.0	2020.0	2040.0	2060.0	2080.0	2100.0	2120.0	2140.0	2160.0	2180.0	2200.0	2220.0	2240.0	2260.0	2280.0	2300.0	2320.0	2340.0	2360.0	2380.0	2400.0	2420.0	2440.0	2460.0
Efficiency (dBi)	-6.03	-5.62	-5.55	-5.15	-4.55	-4.78	-4.81	-4.73	-4.79	-4.72	-5.36	-5.78	-6.24	-7.44	-7.63	-7.28	-7.23	-6.80	-6.24	-6.14	-6.08	-5.59	-5.40	-5.81	-5.76	-5.75	-6.19	-5.84	-5.24	-5.38	-5.79	-6.18	-6.58	-7.25	-7.49
Gain (dBi)	-0.03	0.00	0.26	0.60	1.08	0.76	0.83	1.19	0.99	1.38	1.23	0.60	-0.28	-1.37	-1.08	-0.47	-0.74	-0.73	-0.16	0.00	0.47	1.13	0.80	-0.07	-0.28	0.18	0.29	0.98	1.71	1.85	1.48	0.80	-0.04	-1.04	-1.42
Efficiency (%)	24.97	27.41	27.87	30.54	35.10	33.28	33.01	33.65	33.19	33.74	29.13	26.44	23.76	18.02	17.27	18.71	18.91	20.90	23.77	24.33	24.64	27.59	28.85	26.23	26.54	26.63	24.03	26.05	29.89	28.99	26.36	24.11	21.99	18.67	17.83
Directivity (dB)	6.00	5.62	5.81	5.75	5.61	5.54	5.65	5.92	5.78	6.10	6.59	6.38	5.96	6.07	6.55	6.81	6.49	6.07	6.08	6.14	6.55	6.72	6.20	5.74	5.48	5.93	6.48	6.74	6.95	7.23	7.27	6.98	6.54	6.25	6.07
Peak Gain Position (Theta)	38.00	76.00	76.00	75.00	75.00	74.00	74.00	73.00	74.00	61.00	60.00	60.00	60.00	60.00	60.00	60.00	60.00	61.00	61.00	62.00	63.00	63.00	63.00	45.00	45.00	45.00	45.00	45.00	46.00	46.00	47.00	47.00	48.00	48.00	49.00
Peak Gain Position (Phi)	336.00	8.00	13.00	16.00	17.00	20.00	20.00	22.00	22.00	292.00	290.00	335.00	338.00	44.00	302.00	347.00	350.00	50.00	52.00	3.00	39.00	41.00	44.00	205.00	345.00	344.00	343.00	345.00	350.00	351.00	348.00	346.00	343.00	21.00	59.00
Efficiency ThetaPol (%)	23.29	25.88	26.56	29.34	33.87	32.18	31.93	32.49	31.81	32.09	27.59	24.96	22.34	16.84	16.10	17.51	17.82	19.88	22.82	23.51	23.90	26.80	28.01	25.41	25.64	25.76	23.36	25.46	29.34	28.52	25.94	23.69	21.57	18.28	17.42
Efficiency PhiPol (%)	1.67	1.53	1.31	1.20	1.23	1.10	1.07	1.15	1.38	1.65	1.54	1.49	1.43	1.18	1.17	1.21	1.09	1.01	0.95	0.82	0.74	0.79	0.84	0.82	0.89	0.87	0.67	0.59	0.55	0.47	0.43	0.42	0.42	0.39	0.41
Upper Hem. Efficiency (%)	16.68	18.31	18.48	20.47	24.19	23.85	24.44	25.70	25.85	25.99	21.62	18.71	16.20	11.96	11.19	12.07	12.31	13.90	16.54	17.85	18.88	21.57	22.60	20.28	20.08	20.02	18.66	21.31	25.66	25.74	23.68	21.20	18.28	14.56	13.20
Lower Hem. Efficiency (%)	8.28	9.10	9.39	10.07	10.91	9.43	8.57	7.94	7.34	7.75	7.51	7.73	7.57	6.06	6.08	6.64	6.60	6.99	7.23	6.47	5.76	6.02	6.25	5.95	6.46	6.60	5.37	4.74	4.24	3.25	2.68	2.91	3.71	4.11	4.63
T90(H)圆度	7.90	4.39	4.75	6.02	5.56	5.92	7.33	8.54	8.30	7.26	9.95	12.55	10.23	7.52	6.14	4.92	4.12	3.25	3.14	3.18	3.39	5.01	6.94	7.90	9.58	12.82	9.55	14.24	10.89	9.73	7.42	8.05	6.15	3.59	3.17
Gain 15deg (dBi)																																			
E1(XZ)波束宽度	16.00	18.00	18.00	19.00	19.00	22.00	28.00	30.00	32.00	32.00	28.00	26.00	15.00	15.00	14.00	14.00	15.00	15.00	16.00	17.00	19.00	21.00	16.00	16.00	40.00	40.00	19.00	18.00	19.00	19.00	21.00	24.00	34.00	38.00	38.00
E1(XZ)前后比	7.81	8.53	9.35	10.42	11.44	10.49	8.42	6.43	4.77	3.13	2.66	2.32	2.01	1.82	1.54	2.24	2.70	2.87	2.82	3.59	4.67	4.77	5.13	6.05	6.79	8.49	11.09	13.88	13.22	11.69	9.87	7.85	6.10	4.97	4.47
E2(YZ)波束宽度	39.00	18.00	19.00	20.00	19.00	19.00	20.00	24.00	25.00	19.00	18.00	16.00	16.00	16.00	16.00	17.00	14.00	14.00	17.00	18.00	18.00	19.00	19.00	42.00	42.00	23.00	22.00	24.00	25.00	25.00	18.00	19.00	32.00	27.00	24.00
E2(YZ)前后比	5.10	6.25	8.13	10.08	11.20	11.45	10.97	9.86	9.43	8.94	8.46	7.34	6.13	5.28	5.11	4.70	3.94	2.81	3.45	4.05	5.01	6.22	7.45	8.23	8.83	10.51	13.22	13.41	12.57	11.50	10.45	8.46	5.74	4.79	4.89
最大增益处轴比(P)	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
得角10度最差(大)轴比(P)	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Hc(XY)波束宽度	65.00	171.00	249.00	188.00	176.00	161.00	157.00	160.00	167.00	163.00	107.00	113.00	119.00	185.00	188.00	195.00	63.00	349.00	350.00	348.00	264.00	252.00	134.00	103.00	103.00	92.00	53.00	81.00	126.00	130.00	148.00	170.00	258.00	344.00	353.00
Hc(XY)前后比	2.29	1.31	1.98	1.78	0.49	0.00	0.03	0.13	0.42	0.49	0.00	0.00	0.00	0.19	0.40	0.74	1.17	1.41	1.88	2.05	2.27	2.95	3.68	4.27	5.35	6.98	3.00	0.00	0.00	0.00	0.00	0.11	0.43	0.62	0.54
Empty																																			

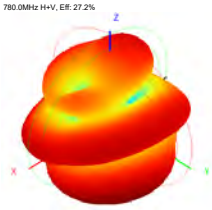
Frequency ID	71	72	73	74	75	76	77	78	79	80	81	82
Frequency (MHz)	2480.0	2500.0	2520.0	2540.0	2560.0	2580.0	2600.0	2620.0	2640.0	2660.0	2680.0	2700.0
Efficiency (dBi)	-7.22	-7.44	-7.34	-6.82	-6.82	-6.85	-6.39	-6.06	-5.99	-5.52	-4.95	-4.88
Gain (dBi)	-1.50	-2.38	-2.98	-2.89	-2.75	-2.76	-2.16	-1.78	-1.37	-0.39	0.27	0.87
Efficiency (%)	18.95	18.05	18.45	20.80	20.81	20.65	22.94	24.76	25.20	28.07	31.99	32.51
Directivity (dB)	5.72	5.06	4.36	3.93	4.07	4.09	4.23	4.28	4.62	5.12	5.22	5.75
Peak Gain Position (Theta)	50.00	51.00	52.00	53.00	34.00	49.00	50.00	31.00	31.00	31.00	31.00	29.00
Peak Gain Position (Phi)	60.00	62.00	64.00	343.00	346.00	349.00	31.00	231.00	346.00	359.00	8.00	261.00
Efficiency ThetaPol (%)	18.46	17.54	17.91	20.20	20.25	20.10	22.32	24.10	24.56	27.41	31.28	31.81
Efficiency PhiPol (%)	0.49	0.51	0.54	0.59	0.57	0.56	0.62	0.66	0.65	0.65	0.71	0.70
Upper Hem. Efficiency (%)	13.39	12.08	11.60	12.37	12.13	12.17	13.75	15.18	15.77	17.80	20.51	22.05
Lower Hem. Efficiency (%)	5.56	5.97	6.85	8.43	8.68	8.48	9.18	9.59	9.43	10.26	11.48	10.46
T90(H)圆度	3.42	4.55	5.59	4.75	3.90	4.20	5.65	5.46	4.99	5.37	5.37	5.84
Gain 15deg (dBi)												
E1(XZ)波束宽度	38.00	40.00	44.00	47.00	47.00	48.00	47.00	49.00	46.00	44.00	46.00	46.00
E1(XZ)前后比	4.38	3.92	3.64	3.87	4.48	4.88	4.91	4.74	5.81	7.09	7.66	8.64
E2(YZ)波束宽度	26.00	46.00	48.00	50.00	47.00	47.00	50.00	51.00	50.00	49.00	29.00	23.00
E2(YZ)前后比	4.79	4.38	4.33	3.49	3.47	3.16	3.10	3.99	5.50	6.73	6.53	7.13
最大增益处轴比(P)	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
得角10度最差(大)轴比(P)	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
Hc(XY)波束宽度	350.00	339.00	197.00	219.00	224.00	112.00	97.00	76.00	180.00	118.00	159.00	34.00
Hc(XY)前后比	0.55	0.95	0.93	0.41	0.91	1.82	2.27	1.35	0.72	1.59	1.98	1.69
Empty												

ANNEX B RADIATION PATTERN

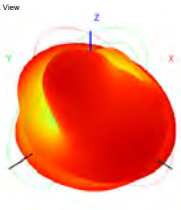
B.1 3D Pattern

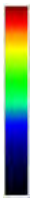


780.0MHz H+V, Eff: 27.2%

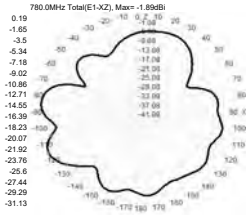


Back View

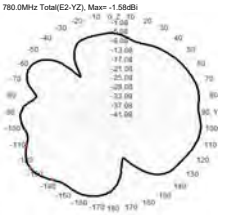




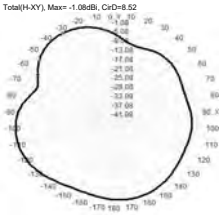
780.0MHz Total(E1-XZ), Max= -1.89dBi



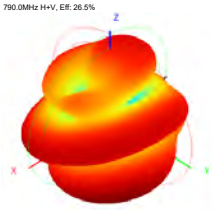
780.0MHz Total(E2-YZ), Max= -1.58dBi



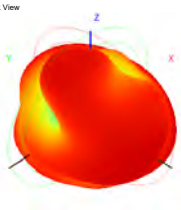
Total(H-XY), Max= -1.08dBi, CirD=8.52

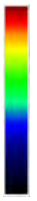


790.0MHz H+V, Eff: 26.5%

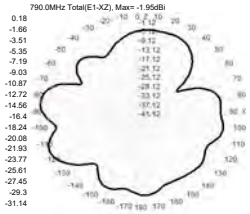


Back View

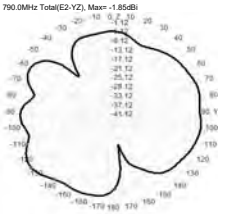




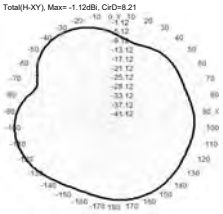
790.0MHz Total(E1-XZ), Max= -1.95dBi



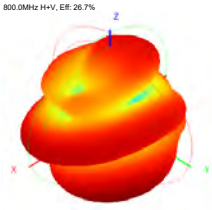
790.0MHz Total(E2-YZ), Max= -1.85dBi



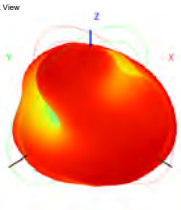
Total(H-XY), Max= -1.12dBi, CirD=8.21

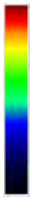


800.0MHz H+V, Eff: 26.7%

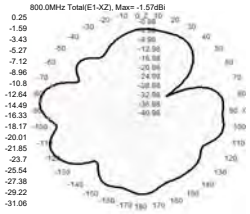


Back View

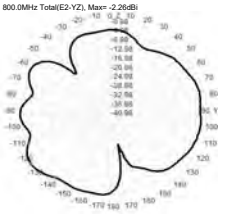




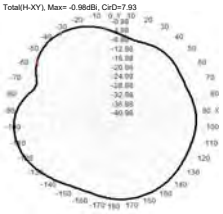
800.0MHz Total(E1-XZ), Max= -1.57dBi



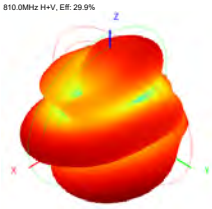
800.0MHz Total(E2-YZ), Max= -2.26dBi



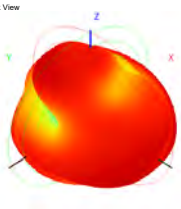
Total(H-XY), Max= -0.98dBi, CirD=7.93

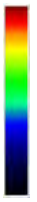


810.0MHz H+V, Eff: 29.9%

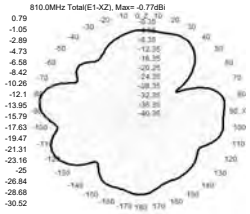


Back View

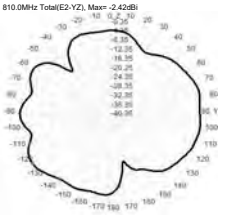




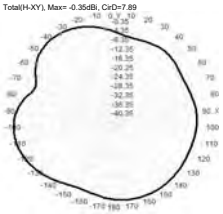
810.0MHz Total(E1-XZ), Max= -0.77dBi



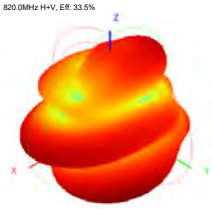
810.0MHz Total(E2-YZ), Max= -2.42dBi



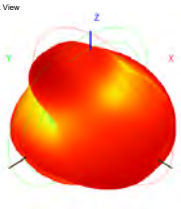
Total(H-XY), Max= -0.35dBi, CirD=7.89

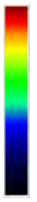


820.0MHz H+V, Eff: 33.5%

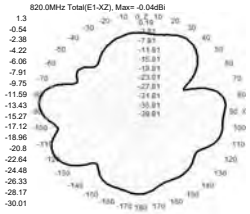


Back View

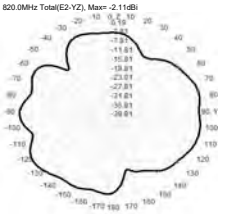




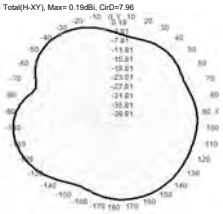
820.0MHz Total(E1-XZ), Max= -0.04dBi



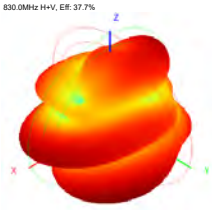
820.0MHz Total(E2-YZ), Max= -2.11dBi



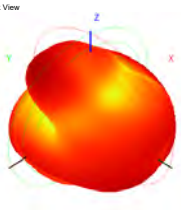
Total(H-XY), Max= 0.19dBi, CirD=7.96

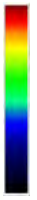


830.0MHz H+V, Eff: 37.7%

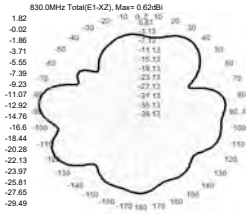


Back View

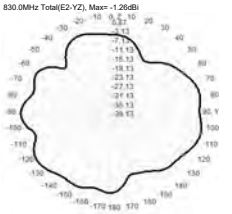




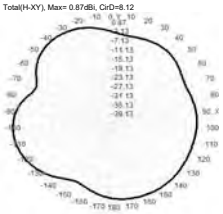
830.0MHz Total(E1-XZ), Max= 0.62dBi



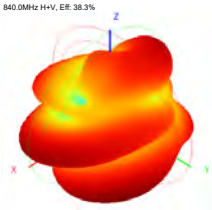
830.0MHz Total(E2-YZ), Max= -1.26dBi



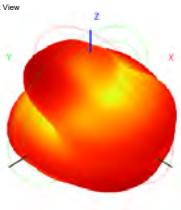
Total(H-XY), Max= 0.87dBi, CirD=8.12

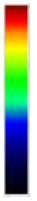


840.0MHz H+V, Eff: 38.3%

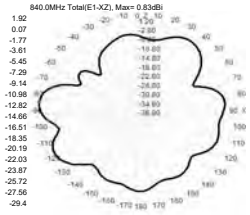


Back View

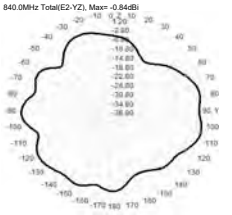




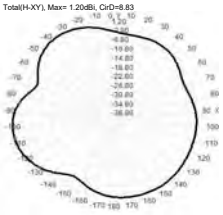
840.0MHz Total(E1-XZ), Max= 0.83dBi



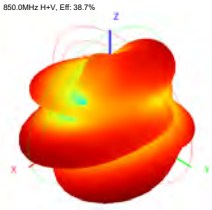
840.0MHz Total(E2-YZ), Max= -0.84dBi



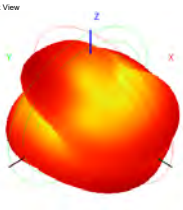
Total(H-XY), Max= 1.20dBi, CirD=8.83

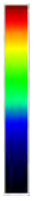


850.0MHz H+V, Eff: 38.7%

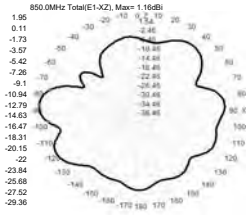


Back View

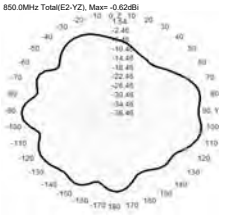




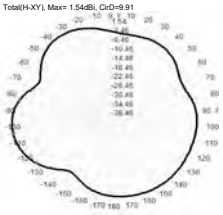
850.0MHz Total(E1-XZ), Max= 1.16dBi



850.0MHz Total(E2-YZ), Max= -0.62dBi



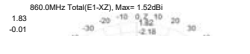
Total(H-XY), Max= 1.54dBi, CirD=9.91



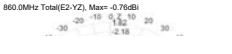
860.0MHz H+V, Eff: 38.0%

Back View

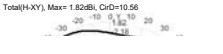
860.0MHz Total(E1-XZ), Max= 1.52dBi

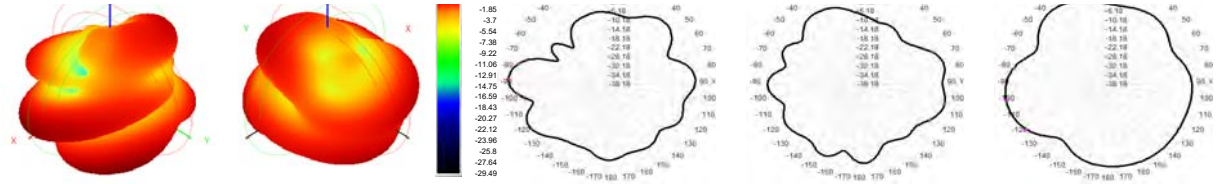


860.0MHz Total(E2-YZ), Max= -0.76dBi

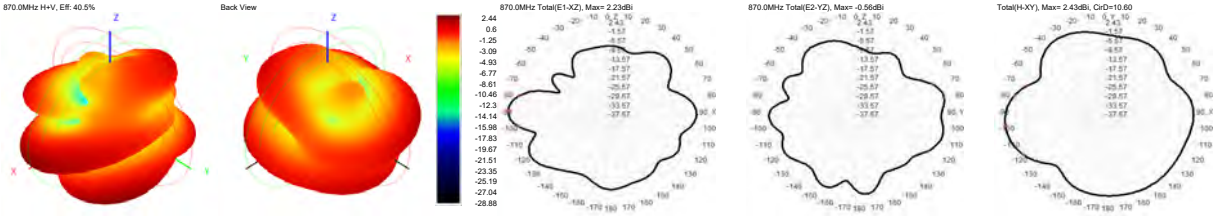


Total(H-XY), Max= 1.82dBi, CirD=10.56





870.0MHz H+V, Eff: 40.5%



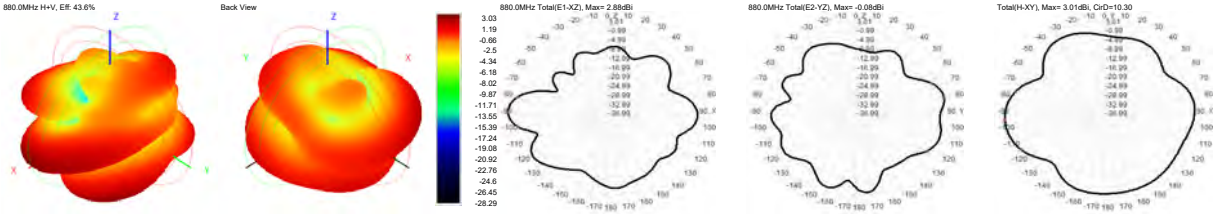
Back View

870.0MHz Total(E1-XZ), Max= 2.23dBi

870.0MHz Total(E2-YZ), Max= -0.56dBi

Total(H-XY), Max= 2.43dBi, CirD=10.60

880.0MHz H+V, Eff: 43.6%



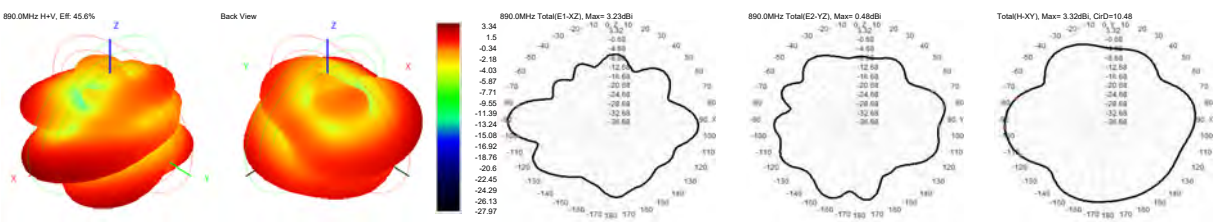
Back View

880.0MHz Total(E1-XZ), Max= 2.88dBi

880.0MHz Total(E2-YZ), Max= -0.08dBi

Total(H-XY), Max= 3.01dBi, CirD=10.30

890.0MHz H+V, Eff: 45.6%



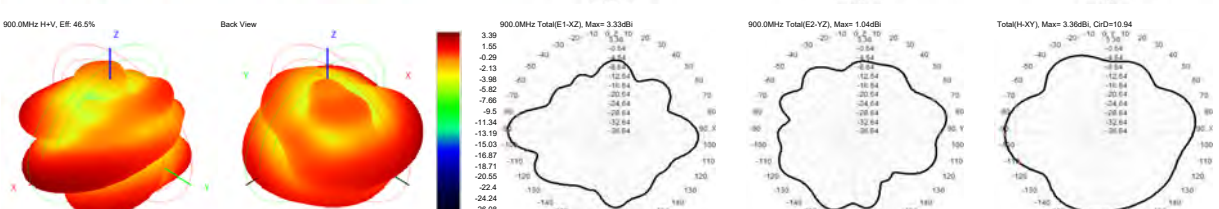
Back View

890.0MHz Total(E1-XZ), Max= 3.23dBi

890.0MHz Total(E2-YZ), Max= 0.48dBi

Total(H-XY), Max= 3.32dBi, CirD=10.48

900.0MHz H+V, Eff: 46.5%



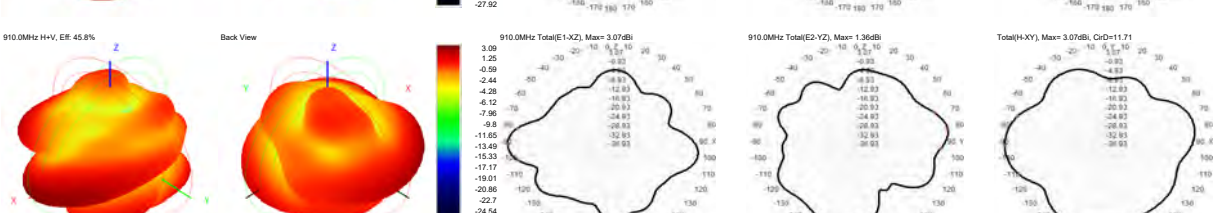
Back View

900.0MHz Total(E1-XZ), Max= 3.33dBi

900.0MHz Total(E2-YZ), Max= 1.04dBi

Total(H-XY), Max= 3.36dBi, CirD=10.94

910.0MHz H+V, Eff: 45.8%



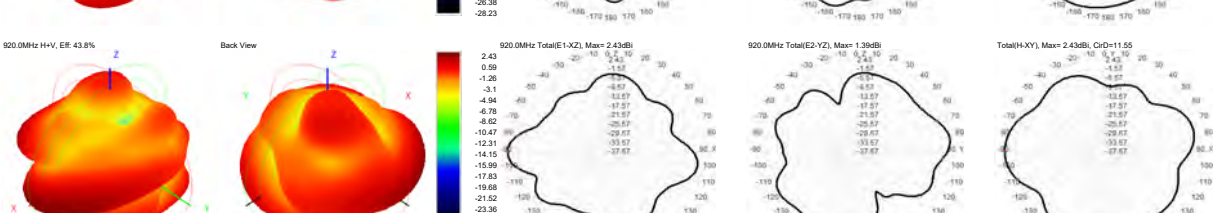
Back View

910.0MHz Total(E1-XZ), Max= 3.07dBi

910.0MHz Total(E2-YZ), Max= 1.36dBi

Total(H-XY), Max= 3.07dBi, CirD=11.71

920.0MHz H+V, Eff: 43.8%



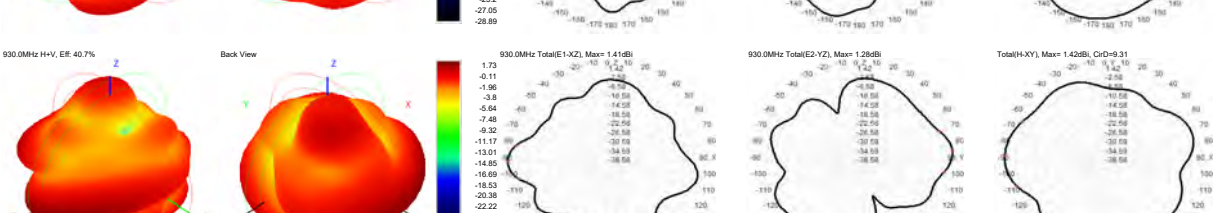
Back View

920.0MHz Total(E1-XZ), Max= 2.43dBi

920.0MHz Total(E2-YZ), Max= 1.39dBi

Total(H-XY), Max= 2.43dBi, CirD=11.55

930.0MHz H+V, Eff: 40.7%



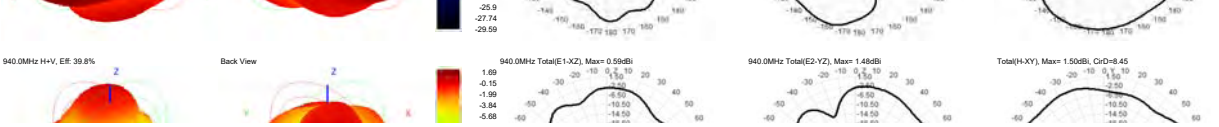
Back View

930.0MHz Total(E1-XZ), Max= 1.41dBi

930.0MHz Total(E2-YZ), Max= 1.28dBi

Total(H-XY), Max= 1.42dBi, CirD=9.31

940.0MHz H+V, Eff: 39.8%

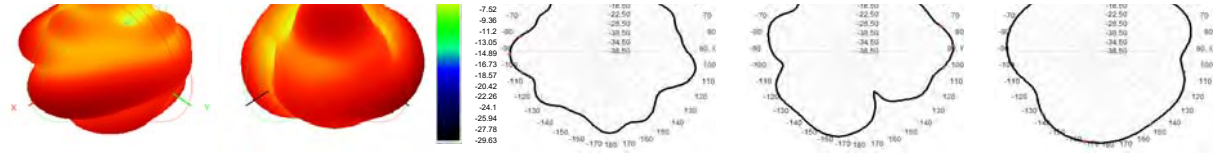


Back View

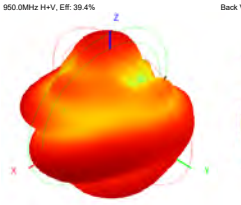
940.0MHz Total(E1-XZ), Max= 0.59dBi

940.0MHz Total(E2-YZ), Max= 1.48dBi

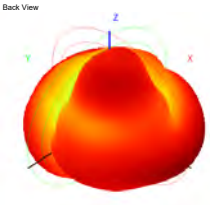
Total(H-XY), Max= 1.50dBi, CirD=8.45

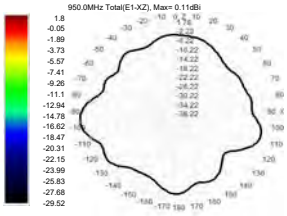


950.0MHz H+V, Eff: 39.4%



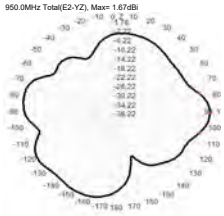
Back View



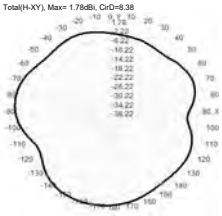


950.0MHz Total(E1-XZ), Max= 0.11dBi

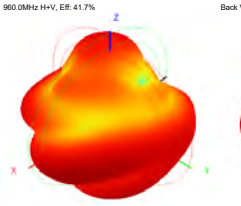
950.0MHz Total(E2-YZ), Max= 1.67dBi



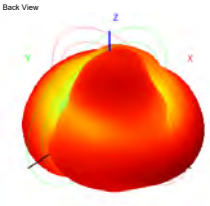
Total(H-XY), Max= 1.78dBi, CirD=8.38

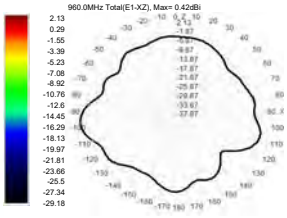


960.0MHz H+V, Eff: 41.7%



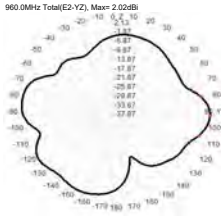
Back View



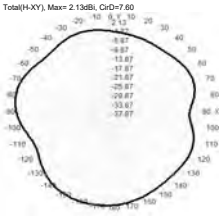


960.0MHz Total(E1-XZ), Max= 0.42dBi

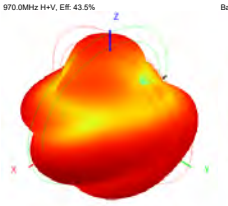
960.0MHz Total(E2-YZ), Max= 2.02dBi



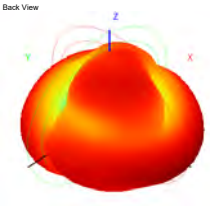
Total(H-XY), Max= 2.13dBi, CirD=7.60

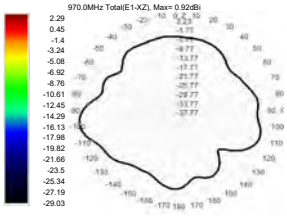


970.0MHz H+V, Eff: 43.5%



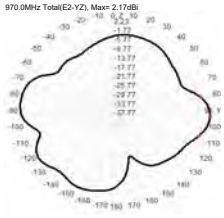
Back View



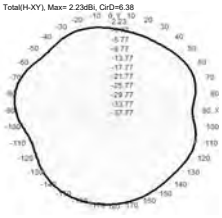


970.0MHz Total(E1-XZ), Max= 0.92dBi

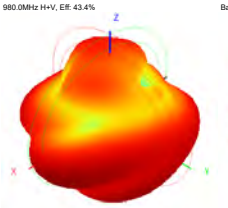
970.0MHz Total(E2-YZ), Max= 2.17dBi



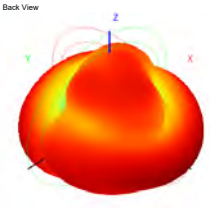
Total(H-XY), Max= 2.23dBi, CirD=6.38

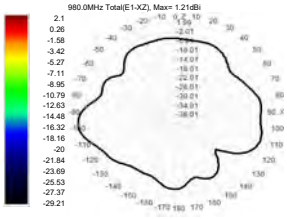


980.0MHz H+V, Eff: 43.4%



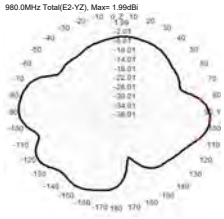
Back View



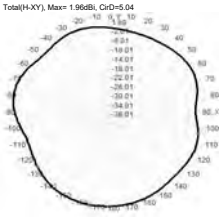


980.0MHz Total(E1-XZ), Max= 1.21dBi

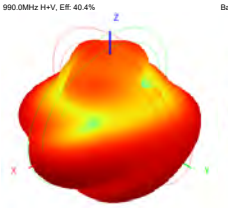
980.0MHz Total(E2-YZ), Max= 1.99dBi



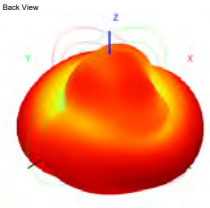
Total(H-XY), Max= 1.96dBi, CirD=5.04

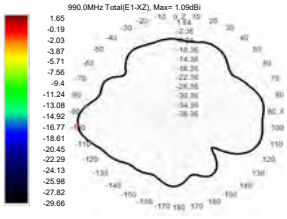


990.0MHz H+V, Eff: 40.4%



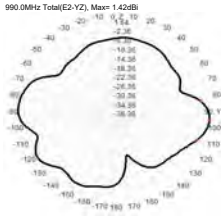
Back View



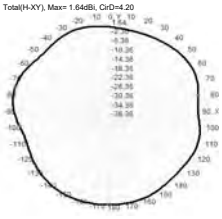


990.0MHz Total(E1-XZ), Max= 1.09dBi

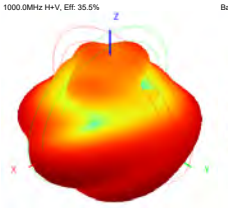
990.0MHz Total(E2-YZ), Max= 1.42dBi



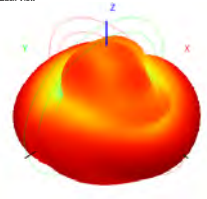
Total(H-XY), Max= 1.64dBi, CirD=4.20

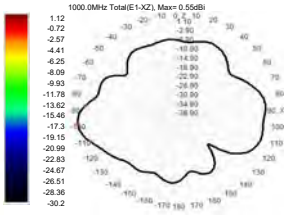


1000.0MHz H+V, Eff: 35.5%



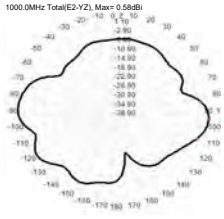
Back View



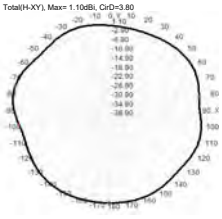


1000.0MHz Total(E1-XZ), Max= 0.55dBi

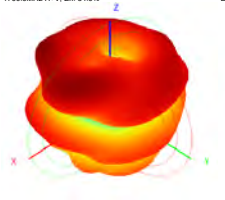
1000.0MHz Total(E2-YZ), Max= 0.58dBi



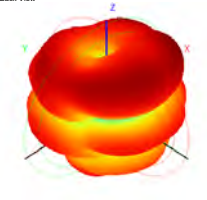
Total(H-XY), Max= 1.10dBi, CirD=3.80

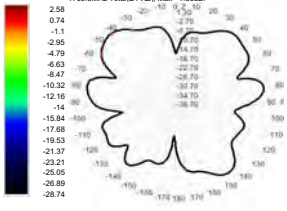


1700.0MHz H+V, Eff: 34.0%



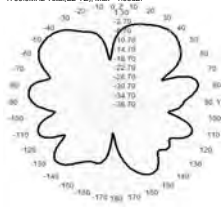
Back View



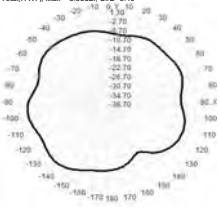


1700.0MHz Total(E1-XZ), Max= 1.30dBi

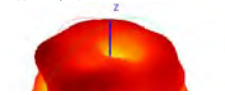
1700.0MHz Total(E2-YZ), Max= 1.08dBi



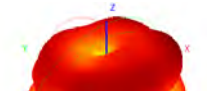
Total(H-XY), Max= -5.06dBi, CirD=9.40

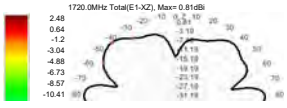


1720.0MHz H+V, Eff: 34.1%



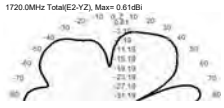
Back View



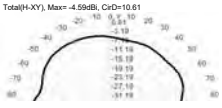


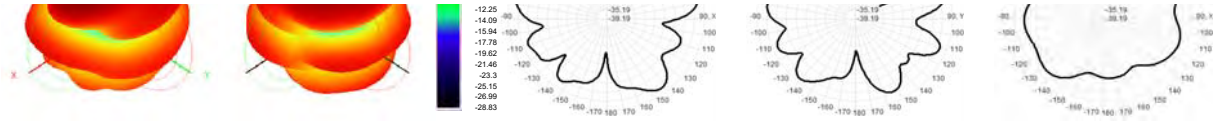
1720.0MHz Total(E1-XZ), Max= 0.81dBi

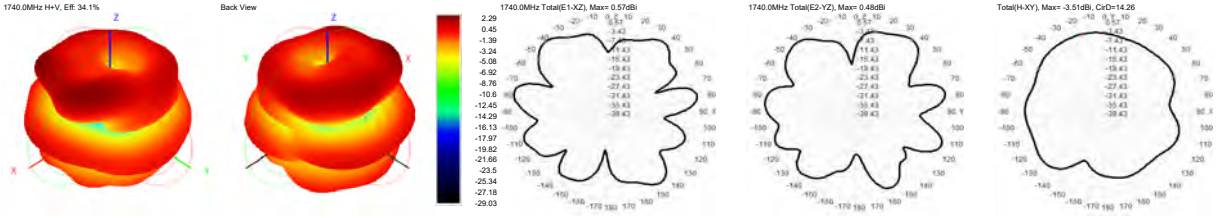
1720.0MHz Total(E2-YZ), Max= 0.61dBi

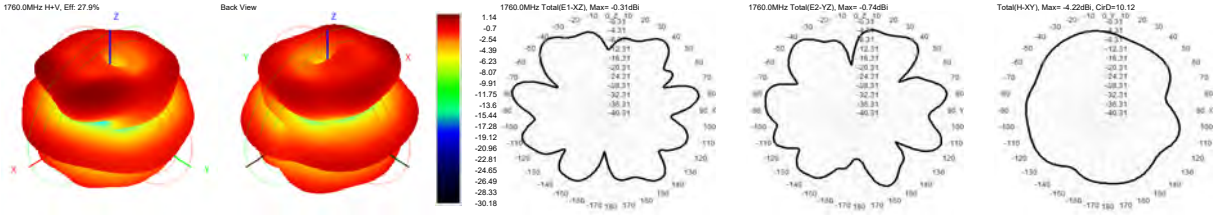


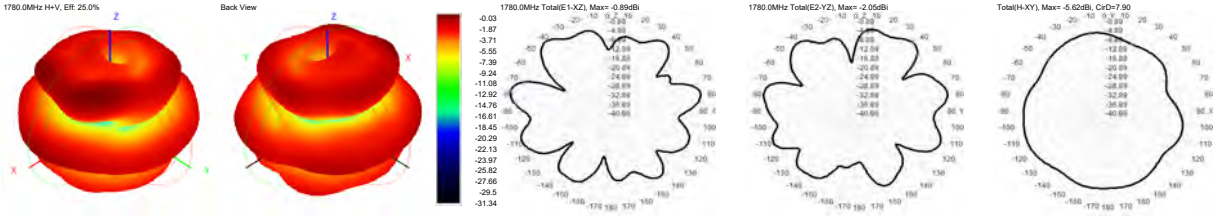
Total(H-XY), Max= -4.59dBi, CirD=10.61

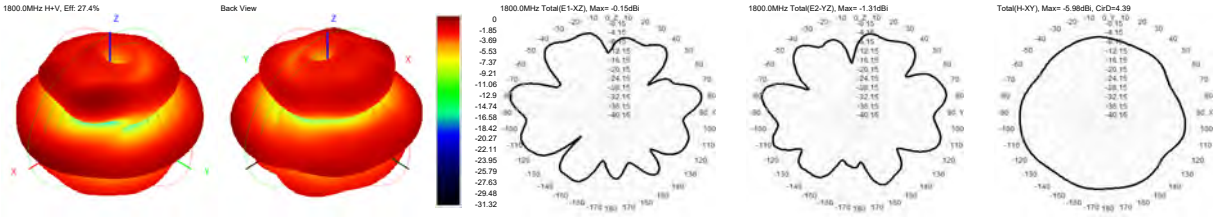


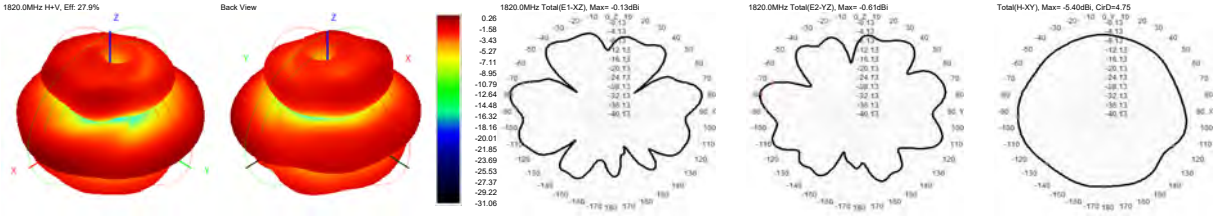


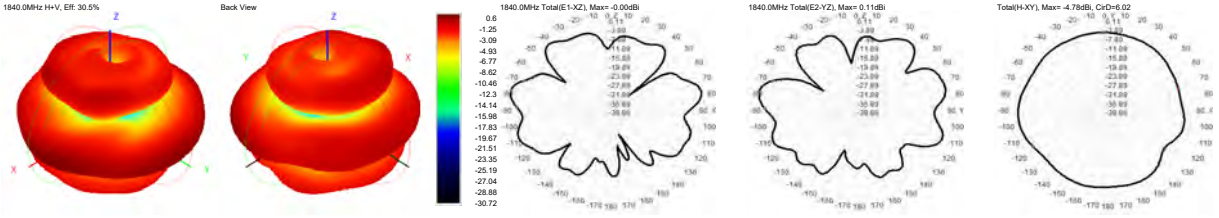

1740.0MHz H+V, Eff: 34.1%
Back View
1740.0MHz Total(E1-XZ), Max= 0.57dBi
1740.0MHz Total(E2-YZ), Max= 0.48dBi
Total(H-XY), Max= -3.51dBi, CrD=14.26

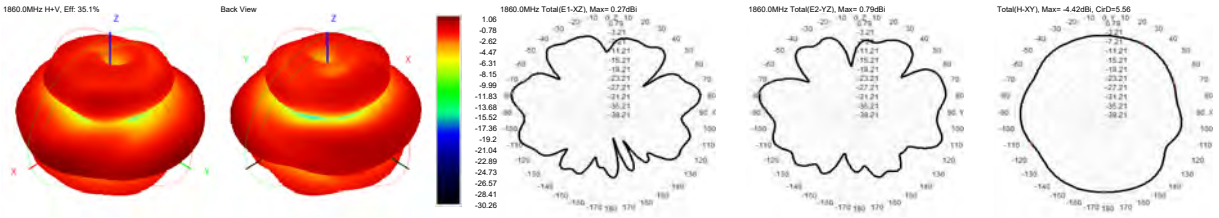

1760.0MHz H+V, Eff: 27.9%
Back View
1760.0MHz Total(E1-XZ), Max= -0.31dBi
1760.0MHz Total(E2-YZ), Max= -0.74dBi
Total(H-XY), Max= -4.22dBi, CrD=10.12

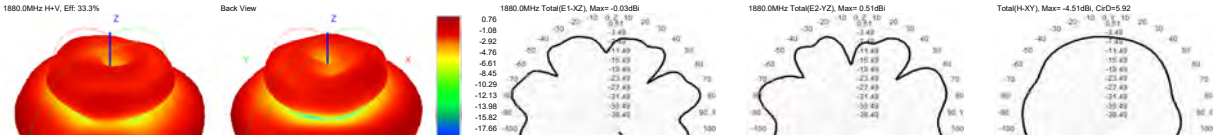

1780.0MHz H+V, Eff: 25.0%
Back View
1780.0MHz Total(E1-XZ), Max= -0.89dBi
1780.0MHz Total(E2-YZ), Max= -2.05dBi
Total(H-XY), Max= -5.62dBi, CrD=7.90

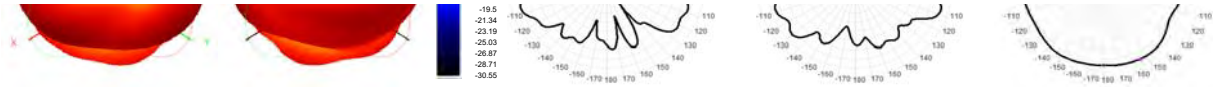

1800.0MHz H+V, Eff: 27.4%
Back View
1800.0MHz Total(E1-XZ), Max= -0.15dBi
1800.0MHz Total(E2-YZ), Max= -1.31dBi
Total(H-XY), Max= -5.98dBi, CrD=4.39

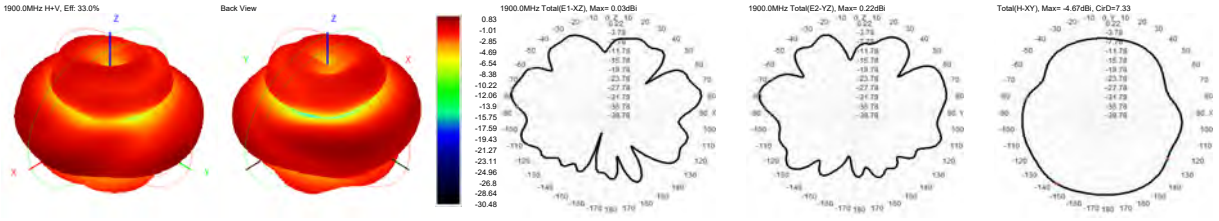

1820.0MHz H+V, Eff: 27.9%
Back View
1820.0MHz Total(E1-XZ), Max= -0.13dBi
1820.0MHz Total(E2-YZ), Max= -0.61dBi
Total(H-XY), Max= -5.40dBi, CrD=4.75

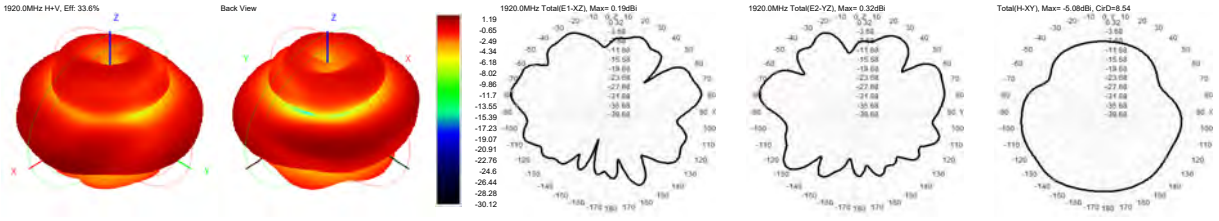

1840.0MHz H+V, Eff: 30.5%
Back View
1840.0MHz Total(E1-XZ), Max= -0.00dBi
1840.0MHz Total(E2-YZ), Max= 0.11dBi
Tcotal(H-XY), Max= -4.78dBi, CrD=6.02

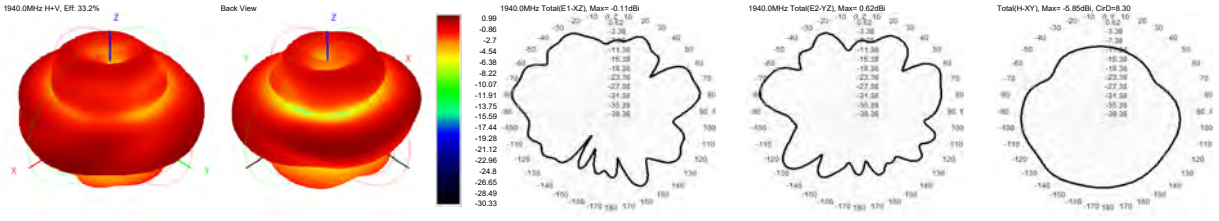

1860.0MHz H+V, Eff: 35.1%
Back View
1860.0MHz Total(E1-XZ), Max= 0.27dBi
1860.0MHz Total(E2-YZ), Max= 0.79dBi
Total(H-XY), Max= -4.42dBi, CrD=5.56

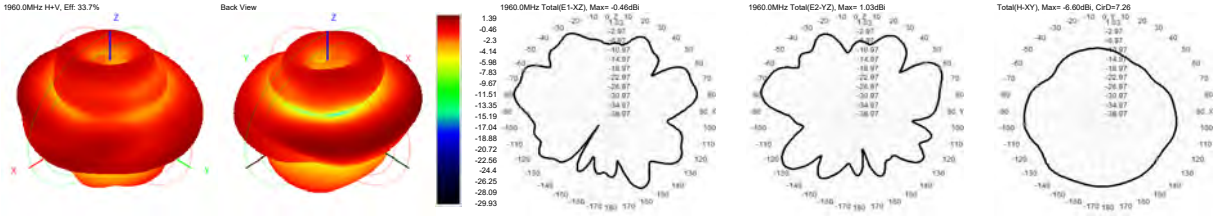

1880.0MHz H+V, Eff: 33.3%
Back View
1880.0MHz Total(E1-XZ), Max= -0.03dBi
1880.0MHz Total(E2-YZ), Max= 0.51dBi
Total(H-XY), Max= -4.51dBi, CrD=5.92

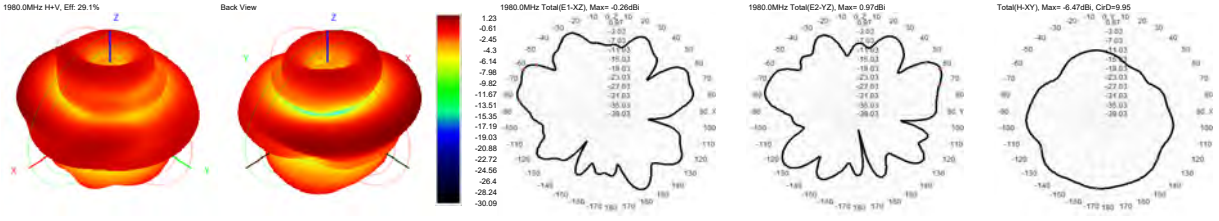

-19.5
-21.34
-23.19
-25.03
-26.87
-28.71
-30.55

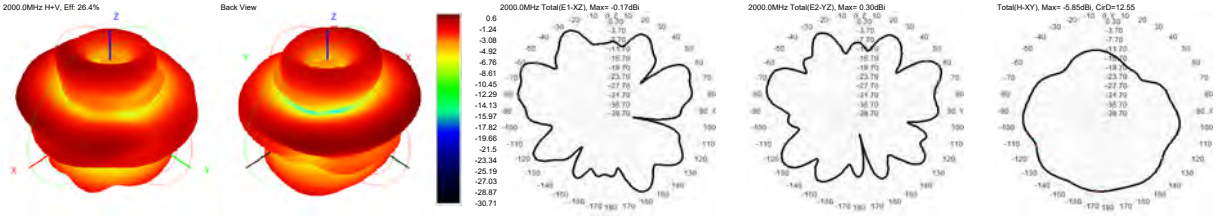

1900.0MHz H+V, Eff: 33.0%
Back View
0.83
-1.01
-2.85
-4.69
-6.54
-8.38
-10.22
-12.06
-13.9
-15.75
-17.59
-19.43
-21.27
-23.11
-24.96
-26.8
-28.64
-30.48
1900.0MHz Total(E1-XZ), Max= 0.03dBi
1900.0MHz Total(E2-YZ), Max= 0.22dBi
Total(H-XY), Max= -4.67dBi, CirD=7.33

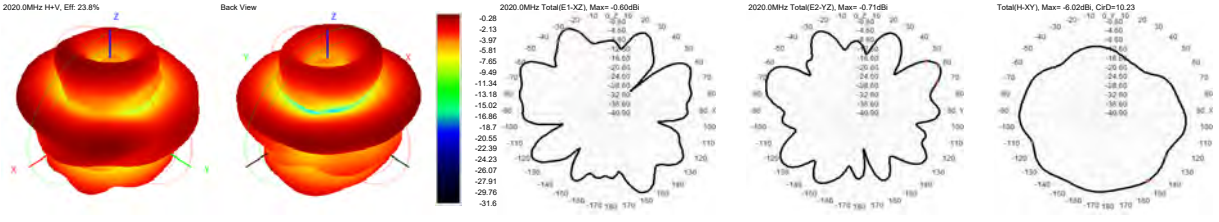

1920.0MHz H+V, Eff: 33.6%
Back View
1.19
-0.65
-2.49
-4.34
-6.18
-8.02
-9.86
-11.7
-13.55
-15.39
-17.23
-19.07
-20.91
-22.76
-24.6
-26.44
-28.28
-30.12
1920.0MHz Total(E1-XZ), Max= 0.19dBi
1920.0MHz Total(E2-YZ), Max= 0.32dBi
Total(H-XY), Max= -5.08dBi, CirD=8.54

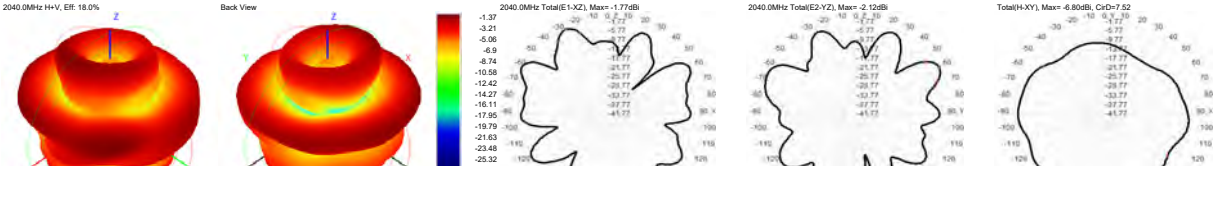

1940.0MHz H+V, Eff: 33.2%
Back View
0.99
-0.86
-2.7
-4.54
-6.38
-8.22
-10.07
-11.91
-13.75
-15.59
-17.44
-19.28
-21.12
-22.96
-24.8
-26.65
-28.49
-30.33
1940.0MHz Total(E1-XZ), Max= -0.11dBi
1940.0MHz Total(E2-YZ), Max= 0.62dBi
Total(H-XY), Max= -5.85dBi, CirD=8.30

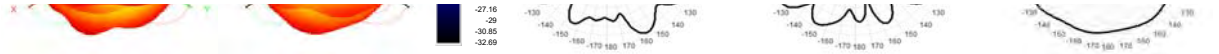

1960.0MHz H+V, Eff: 33.7%
Back View
1.39
-0.46
-2.3
-4.14
-5.98
-7.83
-9.67
-11.51
-13.35
-15.19
-17.04
-18.88
-20.72
-22.56
-24.4
-26.25
-28.09
-29.93
1960.0MHz Total(E1-XZ), Max= -0.46dBi
1960.0MHz Total(E2-YZ), Max= 1.03dBi
Total(H-XY), Max= -6.60dBi, CirD=7.26

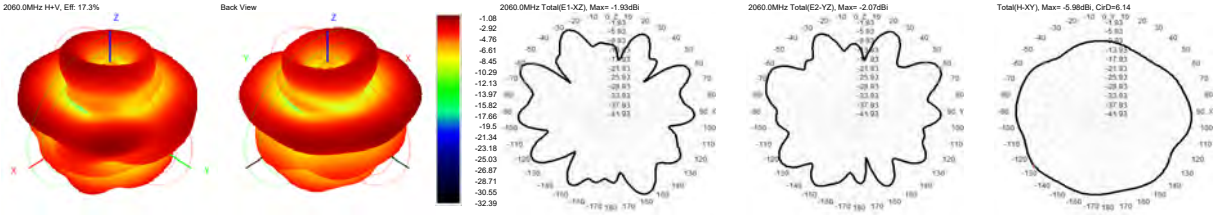

1980.0MHz H+V, Eff: 29.1%
Back View
1.23
-0.61
-2.45
-4.3
-6.14
-7.98
-9.82
-11.67
-13.51
-15.35
-17.19
-19.03
-20.88
-22.72
-24.56
-26.4
-28.24
-30.09
1980.0MHz Total(E1-XZ), Max= -0.26dBi
1980.0MHz Total(E2-YZ), Max= 0.97dBi
Total(H-XY), Max= -6.47dBi, CirD=9.95

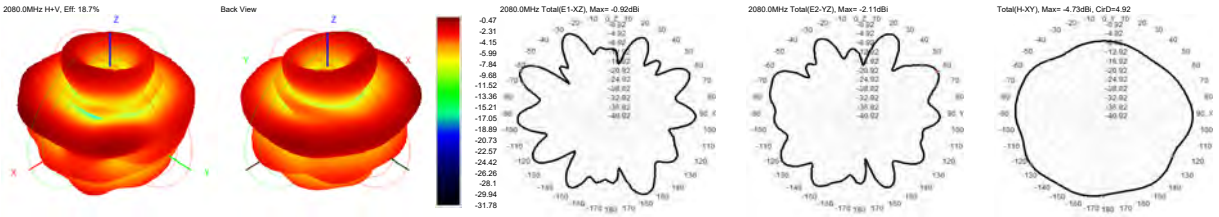

2000.0MHz H+V, Eff: 26.4%
Back View
0.6
-1.24
-3.08
-4.92
-6.76
-8.61
-10.45
-12.29
-14.13
-15.97
-17.82
-19.66
-21.5
-23.34
-25.19
-27.03
-28.87
-30.71
2000.0MHz Total(E1-XZ), Max= -0.17dBi
2000.0MHz Total(E2-YZ), Max= 0.30dBi
Total(H-XY), Max= -5.85dBi, CirD=12.55

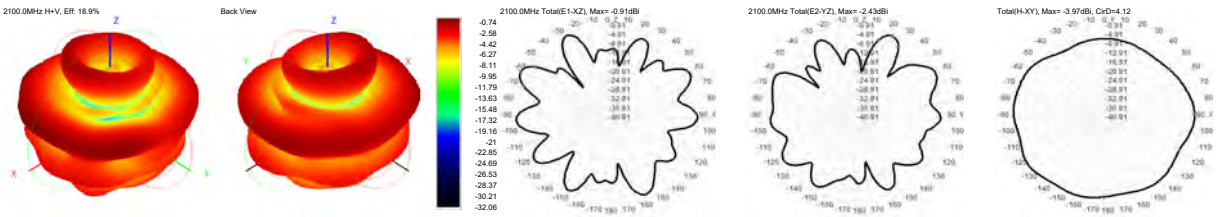

2020.0MHz H+V, Eff: 23.8%
Back View
-0.28
-2.13
-3.97
-5.81
-7.65
-9.49
-11.34
-13.18
-15.02
-16.86
-18.7
-20.55
-22.39
-24.23
-26.07
-27.91
-29.76
-31.6
2020.0MHz Total(E1-XZ), Max= -0.60dBi
2020.0MHz Total(E2-YZ), Max= -0.71dBi
Total(H-XY), Max= -6.02dBi, CirD=10.23

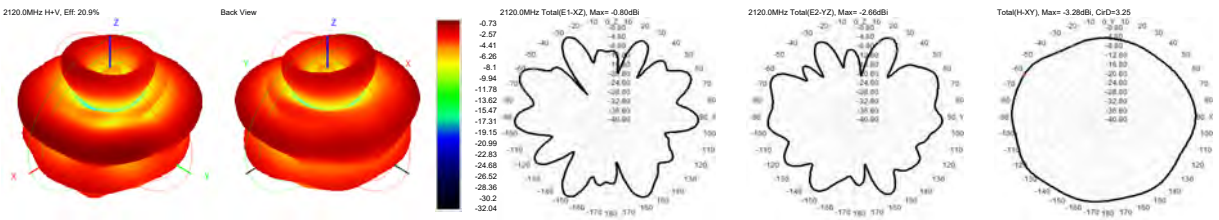

2040.0MHz H+V, Eff: 18.0%
Back View
-1.37
-3.21
-5.06
-6.9
-8.74
-10.58
-12.42
-14.27
-16.11
-17.95
-19.79
-21.63
-23.48
-25.32
2040.0MHz Total(E1-XZ), Max= -1.77dBi
2040.0MHz Total(E2-YZ), Max= -2.12dBi
Total(H-XY), Max= -6.80dBi, CirD=7.52

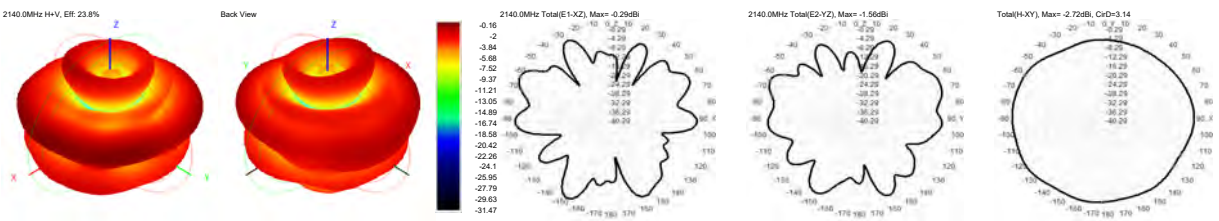

-27.16
-29
-30.85
-32.69

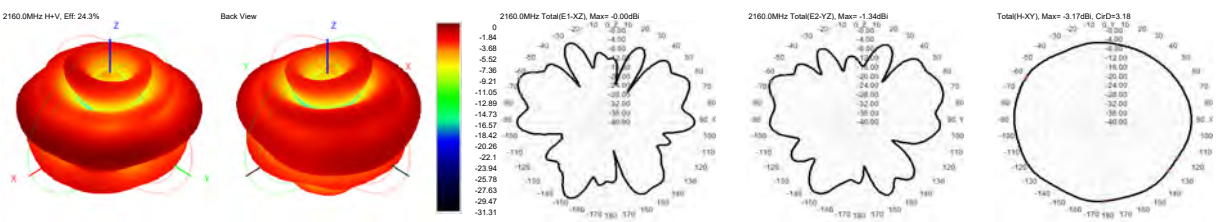

2060.0MHz H+V, Eff: 17.3%
Back View
-1.08
-2.92
-4.76
-6.61
-8.45
-10.29
-12.13
-13.97
-15.82
-17.66
-19.5
-21.34
-23.18
-25.03
-26.87
-28.71
-30.55
-32.39
2060.0MHz Total(E1-XZ), Max= -1.93dBi
2060.0MHz Total(E2-YZ), Max= -2.07dBi
Total(H-XY), Max= -5.98dBi, CrD=6.14

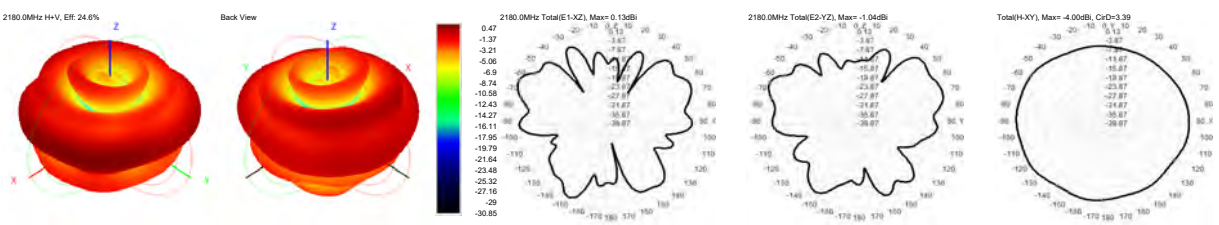

2080.0MHz H+V, Eff: 18.7%
Back View
-0.47
-2.31
-4.15
-5.99
-7.84
-9.68
-11.52
-13.36
-15.21
-17.05
-18.89
-20.73
-22.57
-24.42
-26.26
-28.1
-29.94
-31.78
2080.0MHz Total(E1-XZ), Max= -0.92dBi
2080.0MHz Total(E2-YZ), Max= -2.11dBi
Total(H-XY), Max= -4.73dBi, CrD=4.92

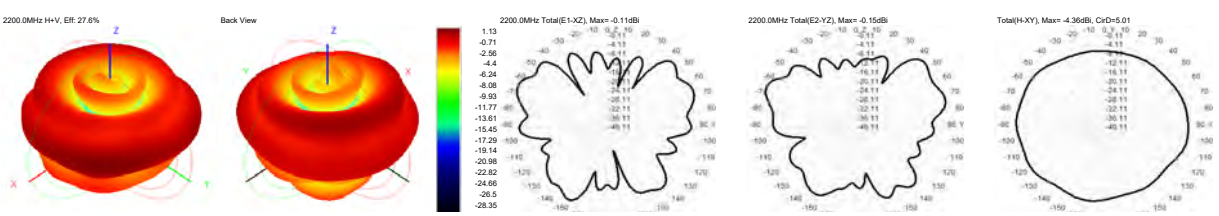

2100.0MHz H+V, Eff: 18.9%
Back View
-0.74
-2.58
-4.42
-6.27
-8.11
-9.95
-11.79
-13.63
-15.48
-17.32
-19.16
-21
-22.85
-24.69
-26.53
-28.37
-30.21
-32.06
2100.0MHz Total(E1-XZ), Max= -0.91dBi
2100.0MHz Total(E2-YZ), Max= -2.43dBi
Total(H-XY), Max= -3.97dBi, CrD=4.12

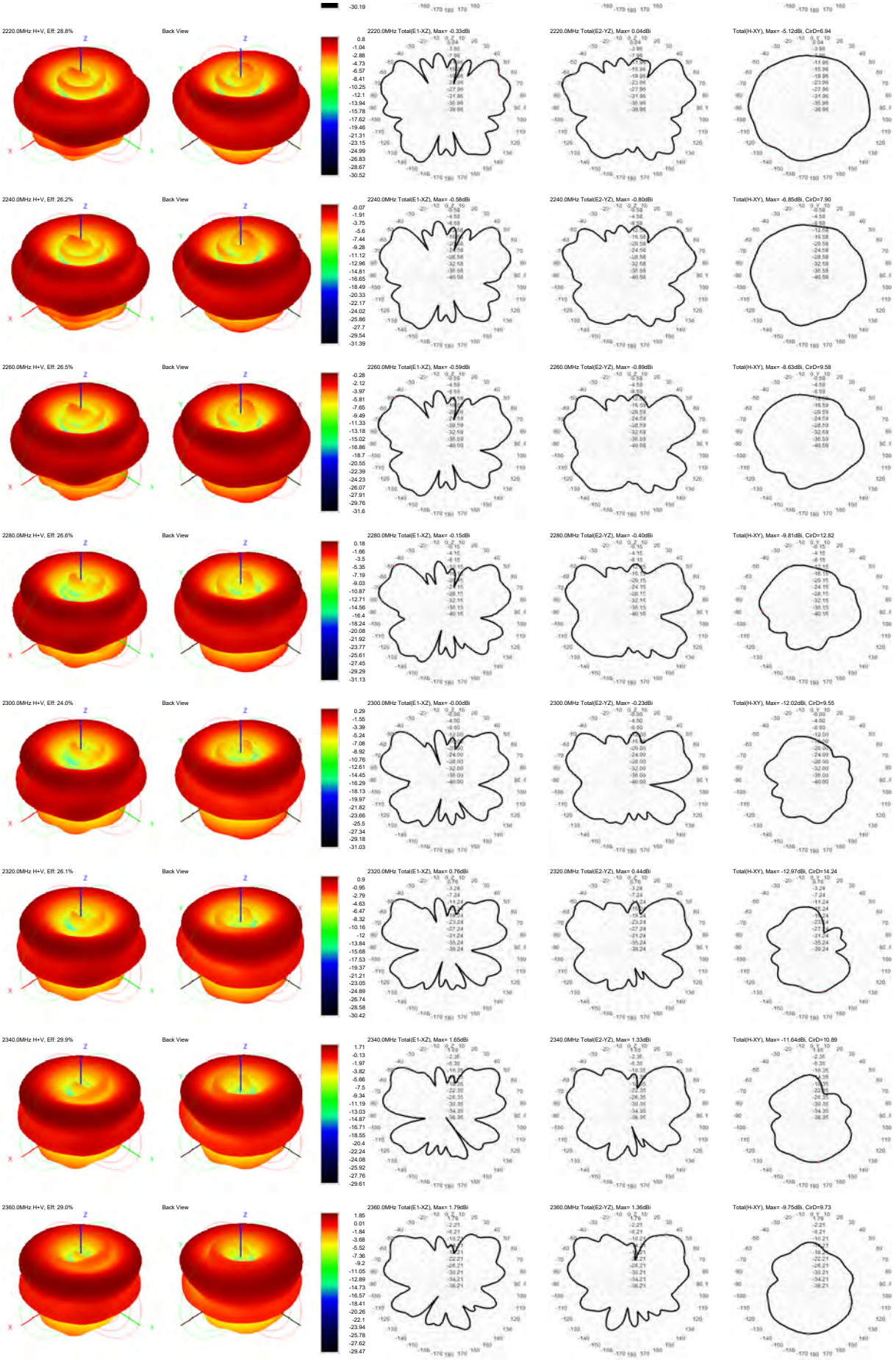

2120.0MHz H+V, Eff: 20.9%
Back View
-0.73
-2.57
-4.41
-6.26
-8.1
-9.94
-11.78
-13.62
-15.47
-17.31
-19.15
-20.99
-22.83
-24.68
-26.52
-28.36
-30.2
-32.04
2120.0MHz Total(E1-XZ), Max= -0.80dBi
2120.0MHz Total(E2-YZ), Max= -2.66dBi
Total(H-XY), Max= -3.28dBi, CrD=3.25


2140.0MHz H+V, Eff: 23.8%
Back View
-0.16
-2
-3.84
-5.68
-7.52
-9.37
-11.21
-13.05
-14.89
-16.74
-18.58
-20.42
-22.26
-24.1
-25.95
-27.79
-29.63
-31.47
2140.0MHz Total(E1-XZ), Max= -0.29dBi
2140.0MHz Total(E2-YZ), Max= -1.56dBi
Total(H-XY), Max= -2.72dBi, CrD=3.14

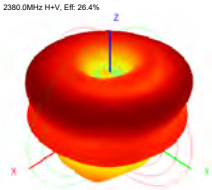

2160.0MHz H+V, Eff: 24.3%
Back View
0
-1.84
-3.68
-5.52
-7.36
-9.21
-11.05
-12.89
-14.73
-16.57
-18.42
-20.26
-22.1
-23.94
-25.78
-27.63
-29.47
-31.31
2160.0MHz Total(E1-XZ), Max= -0.00dBi
2160.0MHz Total(E2-YZ), Max= -1.34dBi
Total(H-XY), Max= -3.17dBi, CrD=3.18


2180.0MHz H+V, Eff: 24.6%
Back View
0.47
-1.37
-3.21
-5.06
-6.9
-8.74
-10.58
-12.43
-14.27
-16.11
-17.95
-19.79
-21.64
-23.48
-25.32
-27.16
-29
-30.85
2180.0MHz Total(E1-XZ), Max= 0.13dBi
2180.0MHz Total(E2-YZ), Max= -1.04dBi
Total(H-XY), Max= -4.00dBi, CrD=3.39

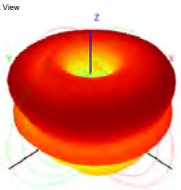

2200.0MHz H+V, Eff: 27.6%
Back View
1.13
-0.71
-2.56
-4.4
-6.24
-8.08
-9.93
-11.77
-13.61
-15.45
-17.29
-19.14
-20.98
-22.82
-24.66
-26.5
-28.35
2200.0MHz Total(E1-XZ), Max= -0.11dBi
2200.0MHz Total(E2-YZ), Max= -0.15dBi
Total(H-XY), Max= -4.36dBi, CrD=5.01

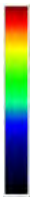

2220.0MHz H+V, Eff: 28.8%
Back View
2220.0MHz Total(E1-XZ), Max= -0.33dBi
2220.0MHz Total(E2-YZ), Max= 0.04dBi
Total(H-XY), Max= -5.12dBi, CirD=6.94
2240.0MHz H+V, Eff: 26.2%
Back View
2240.0MHz Total(E1-XZ), Max= -0.58dBi
2240.0MHz Total(E2-YZ), Max= -0.80dBi
Total(H-XY), Max= -6.85dBi, CirD=7.90
2260.0MHz H+V, Eff: 26.5%
Back View
2260.0MHz Total(E1-XZ), Max= -0.59dBi
2260.0MHz Total(E2-YZ), Max= -0.89dBi
Total(H-XY), Max= -8.63dBi, CirD=9.58
2280.0MHz H+V, Eff: 26.6%
Back View
2280.0MHz Total(E1-XZ), Max= -0.15dBi
2280.0MHz Total(E2-YZ), Max= -0.40dBi
Total(H-XY), Max= -9.81dBi, CirD=12.82
2300.0MHz H+V, Eff: 24.0%
Back View
2300.0MHz Total(E1-XZ), Max= -0.00dBi
2300.0MHz Total(E2-YZ), Max= -0.23dBi
Total(H-XY), Max= -12.02dBi, CirD=9.55
2320.0MHz H+V, Eff: 26.1%
Back View
2320.0MHz Total(E1-XZ), Max= 0.76dBi
2320.0MHz Total(E2-YZ), Max= 0.44dBi
Total(H-XY), Max= -12.97dBi, CirD=14.24
2340.0MHz H+V, Eff: 29.9%
Back View
2340.0MHz Total(E1-XZ), Max= 1.65dBi
2340.0MHz Total(E2-YZ), Max= 1.33dBi
Total(H-XY), Max= -11.64dBi, CirD=10.89
2360.0MHz H+V, Eff: 29.0%
Back View
2360.0MHz Total(E1-XZ), Max= 1.79dBi
2360.0MHz Total(E2-YZ), Max= 1.36dBi
Total(H-XY), Max= -9.75dBi, CirD=9.73

2380.0MHz H+V, Eff: 26.4%

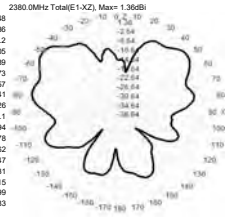


Back View

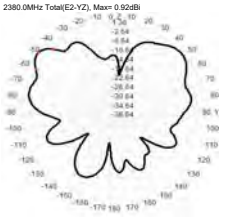




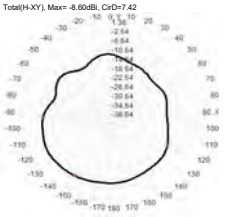
2380.0MHz Total(E1-XZ), Max= 1.36dBi



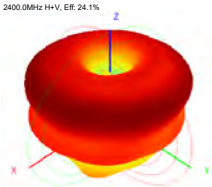
2380.0MHz Total(E2-YZ), Max= 0.92dBi



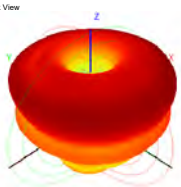
Total(H-XY), Max= -8.60dBi, CirD=7.42

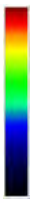


2400.0MHz H+V, Eff: 24.1%

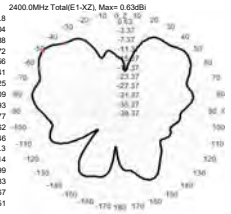


Back View

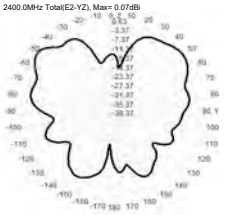




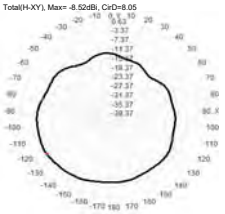
2400.0MHz Total(E1-XZ), Max= 0.63dBi



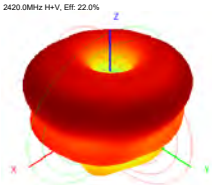
2400.0MHz Total(E2-YZ), Max= 0.07dBi



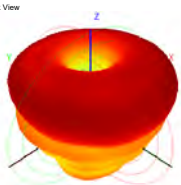
Total(H-XY), Max= -8.52dBi, CirD=8.05

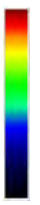


2420.0MHz H+V, Eff: 22.0%

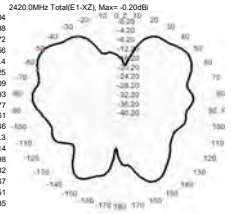


Back View

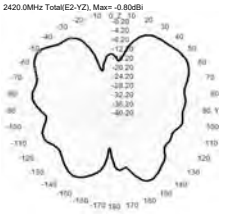




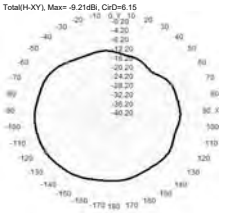
2420.0MHz Total(E1-XZ), Max= -0.20dBi



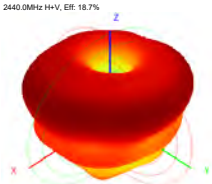
2420.0MHz Total(E2-YZ), Max= -0.80dBi



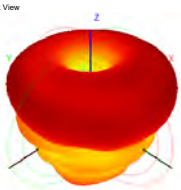
Total(H-XY), Max= -9.21dBi, CirD=6.15

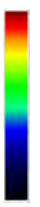


2440.0MHz H+V, Eff: 18.7%

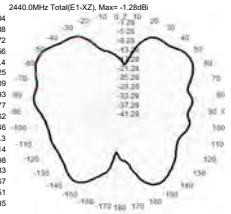


Back View

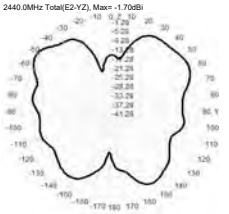




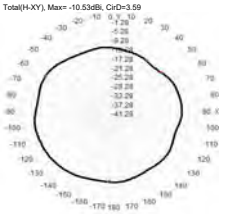
2440.0MHz Total(E1-XZ), Max= -1.28dBi



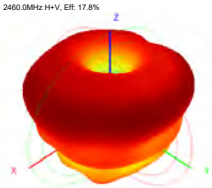
2440.0MHz Total(E2-YZ), Max= -1.70dBi



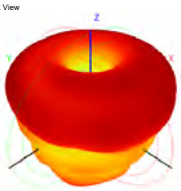
Total(H-XY), Max= -10.53dBi, CirD=3.59

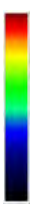


2460.0MHz H+V, Eff: 17.8%

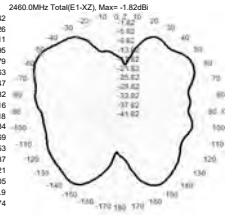


Back View

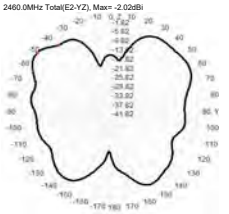




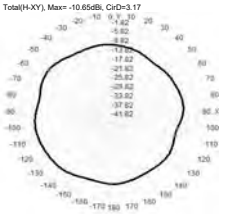
2460.0MHz Total(E1-XZ), Max= -1.82dBi



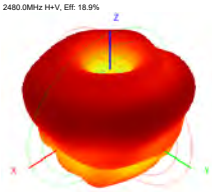
2460.0MHz Total(E2-YZ), Max= -2.02dBi



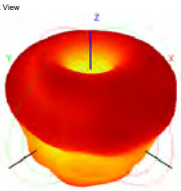
Total(H-XY), Max= -10.65dBi, CirD=3.17

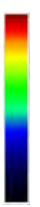


2480.0MHz H+V, Eff: 18.9%

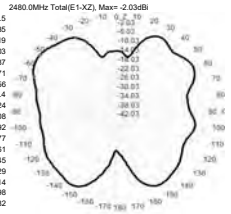


Back View

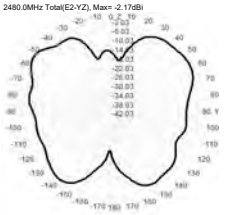




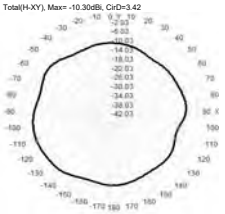
2480.0MHz Total(E1-XZ), Max= -2.03dBi



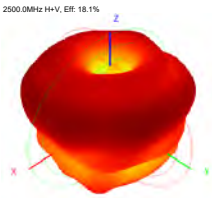
2480.0MHz Total(E2-YZ), Max= -2.17dBi



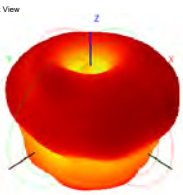
Total(H-XY), Max= -10.30dBi, CirD=3.42

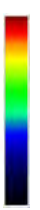


2500.0MHz H+V, Eff: 18.1%

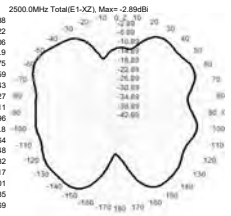


Back View

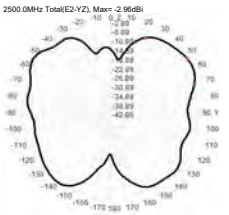




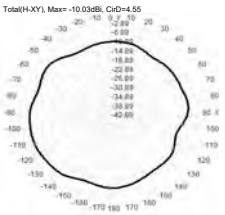
2500.0MHz Total(E1-XZ), Max= -2.89dBi



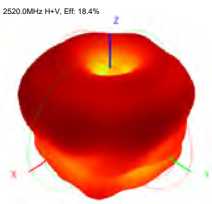
2500.0MHz Total(E2-YZ), Max= -2.96dBi



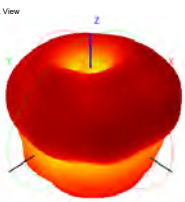
Total(H-XY), Max= -10.03dBi, CirD=4.55

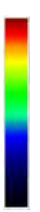


2520.0MHz H+V, Eff: 18.4%

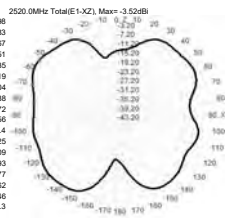


Back View

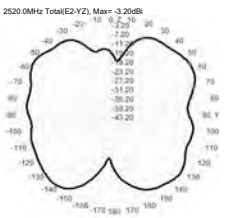




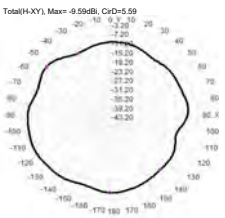
2520.0MHz Total(E1-XZ), Max= -3.52dBi



2520.0MHz Total(E2-YZ), Max= -3.20dBi



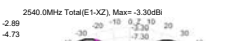
Total(H-XY), Max= -9.59dBi, CirD=5.59



2540.0MHz H+V, Eff: 20.8%

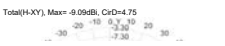
Back View

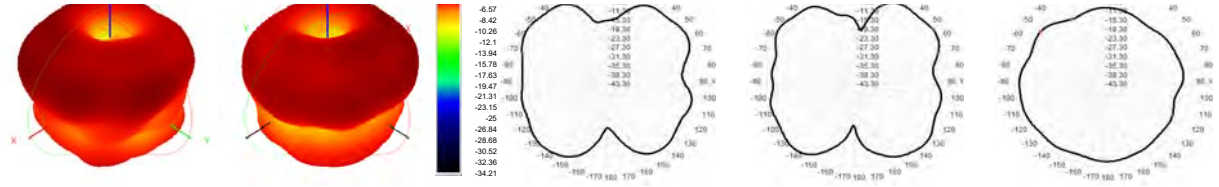
2540.0MHz Total(E1-XZ), Max= -3.30dBi



2540.0MHz Total(E2-YZ), Max= -3.55dBi

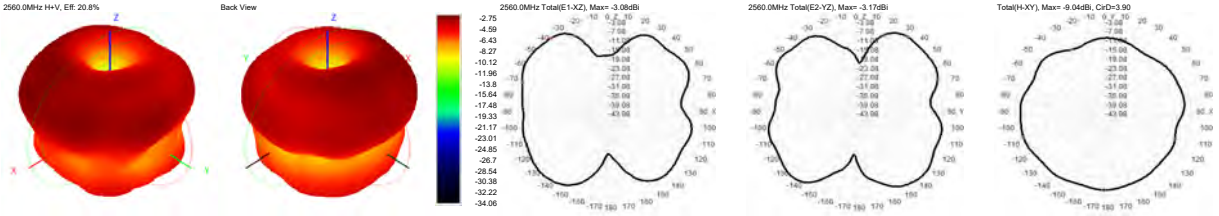
Total(H-XY), Max= -9.09dBi, CirD=4.75





2560.0MHz H+V, Eff: 20.8%

Back View



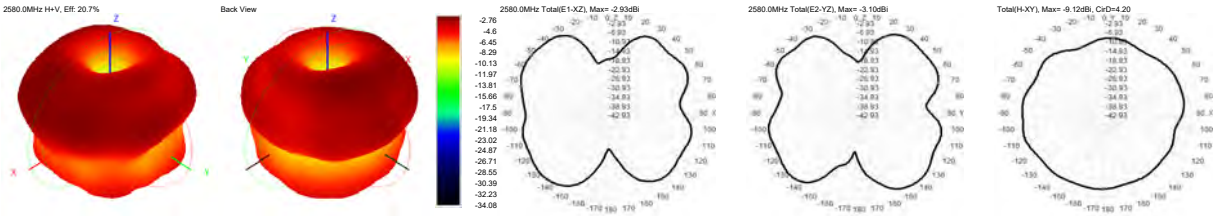
2560.0MHz Total(E1-XZ), Max= -3.08dBi

2560.0MHz Total(E2-YZ), Max= -3.17dBi

Total(H-XY), Max= -9.04dBi, CrD=3.90

2580.0MHz H+V, Eff: 20.7%

Back View



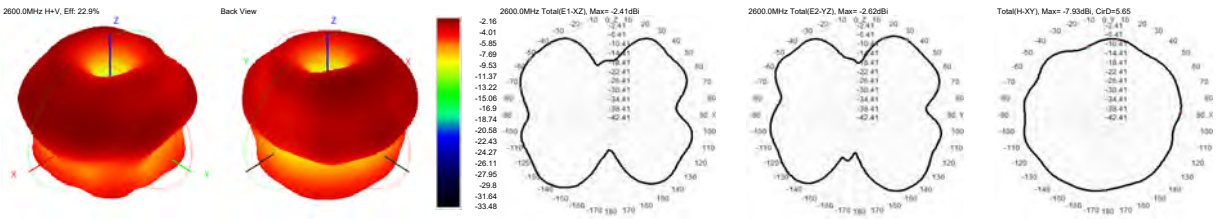
2580.0MHz Total(E1-XZ), Max= -2.93dBi

2580.0MHz Total(E2-YZ), Max= -3.10dBi

Total(H-XY), Max= -9.12dBi, CrD=4.20

2600.0MHz H+V, Eff: 22.9%

Back View



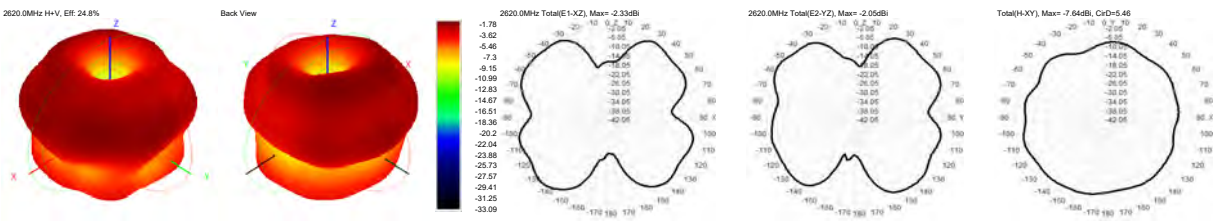
2600.0MHz Total(E1-XZ), Max= -2.41dBi

2600.0MHz Total(E2-YZ), Max= -2.62dBi

Total(H-XY), Max= -7.93dBi, CrD=5.65

2620.0MHz H+V, Eff: 24.8%

Back View



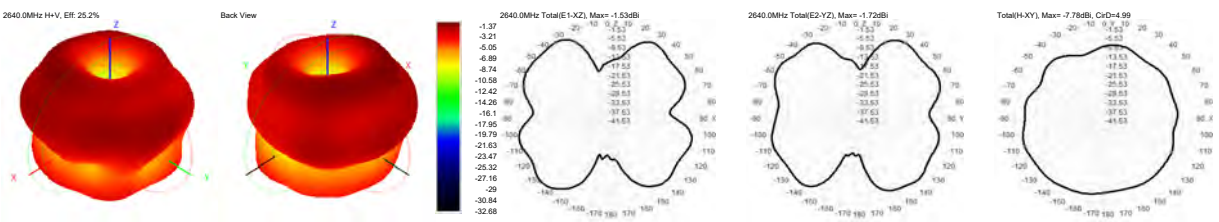
2620.0MHz Total(E1-XZ), Max= -2.33dBi

2620.0MHz Total(E2-YZ), Max= -2.05dBi

Total(H-XY), Max= -7.64dBi, CrD=5.46

2640.0MHz H+V, Eff: 25.2%

Back View



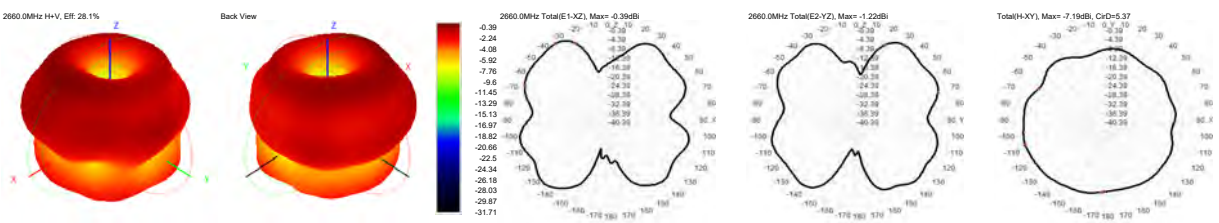
2640.0MHz Total(E1-XZ), Max= -1.53dBi

2640.0MHz Total(E2-YZ), Max= -1.72dBi

Total(H-XY), Max= -7.78dBi, CrD=4.99

2660.0MHz H+V, Eff: 28.1%

Back View



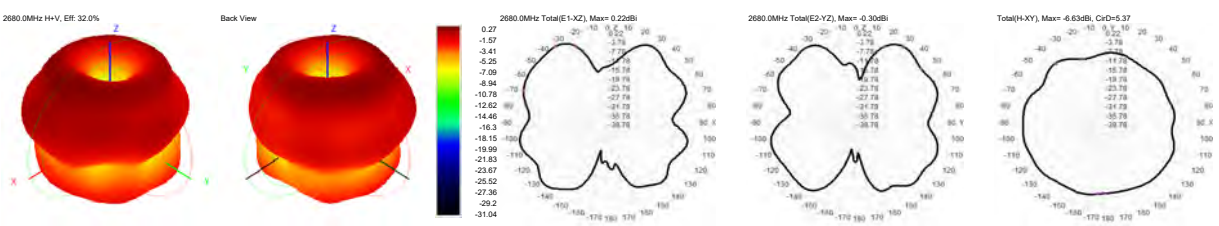
2660.0MHz Total(E1-XZ), Max= -0.39dBi

2660.0MHz Total(E2-YZ), Max= -1.22dBi

Total(H-XY), Max= -7.19dBi, CrD=5.37

2680.0MHz H+V, Eff: 32.0%

Back View



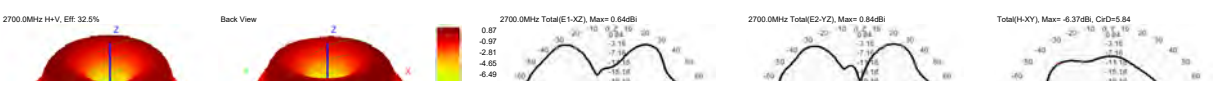
2680.0MHz Total(E1-XZ), Max= 0.22dBi

2680.0MHz Total(E2-YZ), Max= -0.30dBi

Total(H-XY), Max= -6.63dBi, CrD=5.37

2700.0MHz H+V, Eff: 32.5%

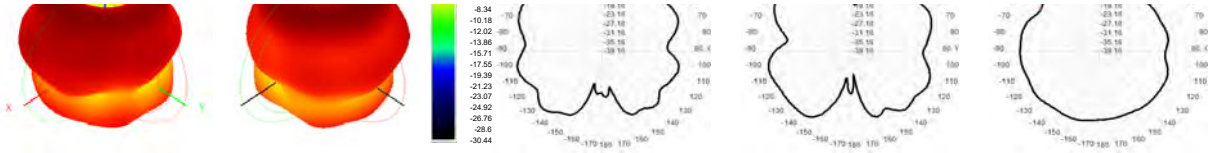
Back View



2700.0MHz Total(E1-XZ), Max= 0.64dBi

2700.0MHz Total(E2-YZ), Max= 0.84dBi

Total(H-XY), Max= -6.37dBi, CrD=5.84


X
Y
-8.34
-10.18
-12.02
-13.86
-15.71
-17.55
-19.39
-21.23
-23.07
-24.92
-26.76
-28.6
-30.44

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--END OF REPORT--