



東莞市亨松電子科技有限公司

Hengxin Technology Inc.

Manufacturer: Beaver Technology (Shenzhen) Co., Ltd.

Address: Room 204-210, Building 3, F518 Idea Land,
No. 1065, Baoyuan Road, Laodong, Xixiang, Bao'an
District, Shenzhen, Guang Dong, China

樣品承認書

客 戶:

品 名:

WIFI内置天线

料 號:

HX-P257-2.4G/5.8G

客戶料號:

送樣日期:

2024-03-27

客戶確認			供應廠商	
工程部	品保部	採購部	核准	送樣人
			趙 2023.03.27 守 剛	陈凯玲

地址: 東莞市沙田鎮楊公洲楊和路75號

TEL : 0769-81663533 FAX: 0769-89361945

E-mail: nogps@qq.com

Http://www.nogps.cn

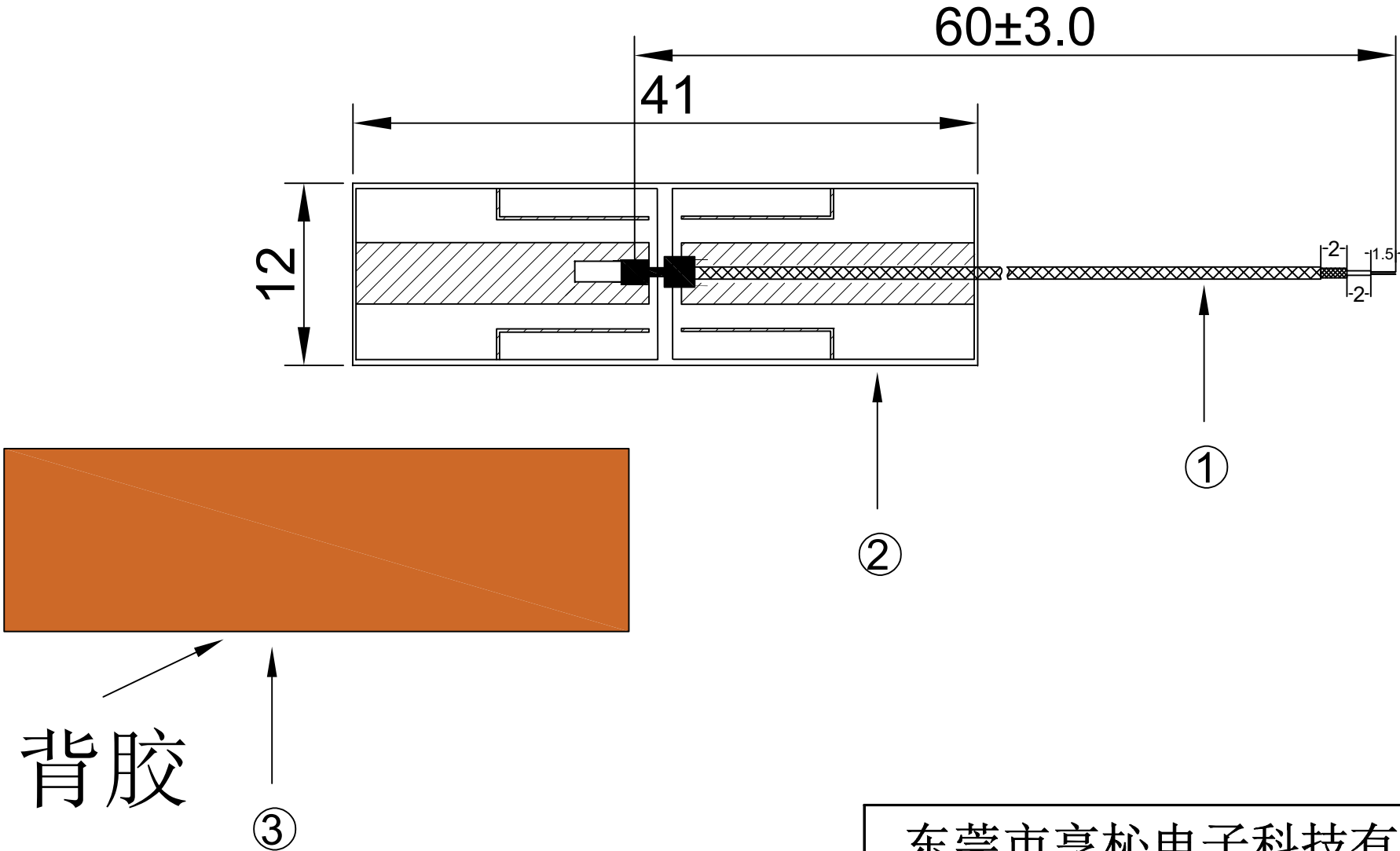
http://hxnogps.1688.com

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RoHS
Compatible

序号	日期	原因	确认人
B			
C			
D			



3	HX-G9000-3	G9000	41*12mm	1
2	HX-P411	FPC	41*12*0.2mm	1
1	HX-CB-RG0.81	Coaxial Cable	SHOWA-O.D. 0.81mm Black	1
No.	Part Number	Name	Material	Q'ty

东莞市亨松电子科技有限公司			
PART NAME: WIFI Antenna			
PART NO.: HX-P257 .W01			DATE: 2024-03-27
APPROVED BY	CHECKED BY	DESIGNED BY	
		张雅军	Tolerance
			UNITS: mm
			SCALE: 1/1
			REVISION:A

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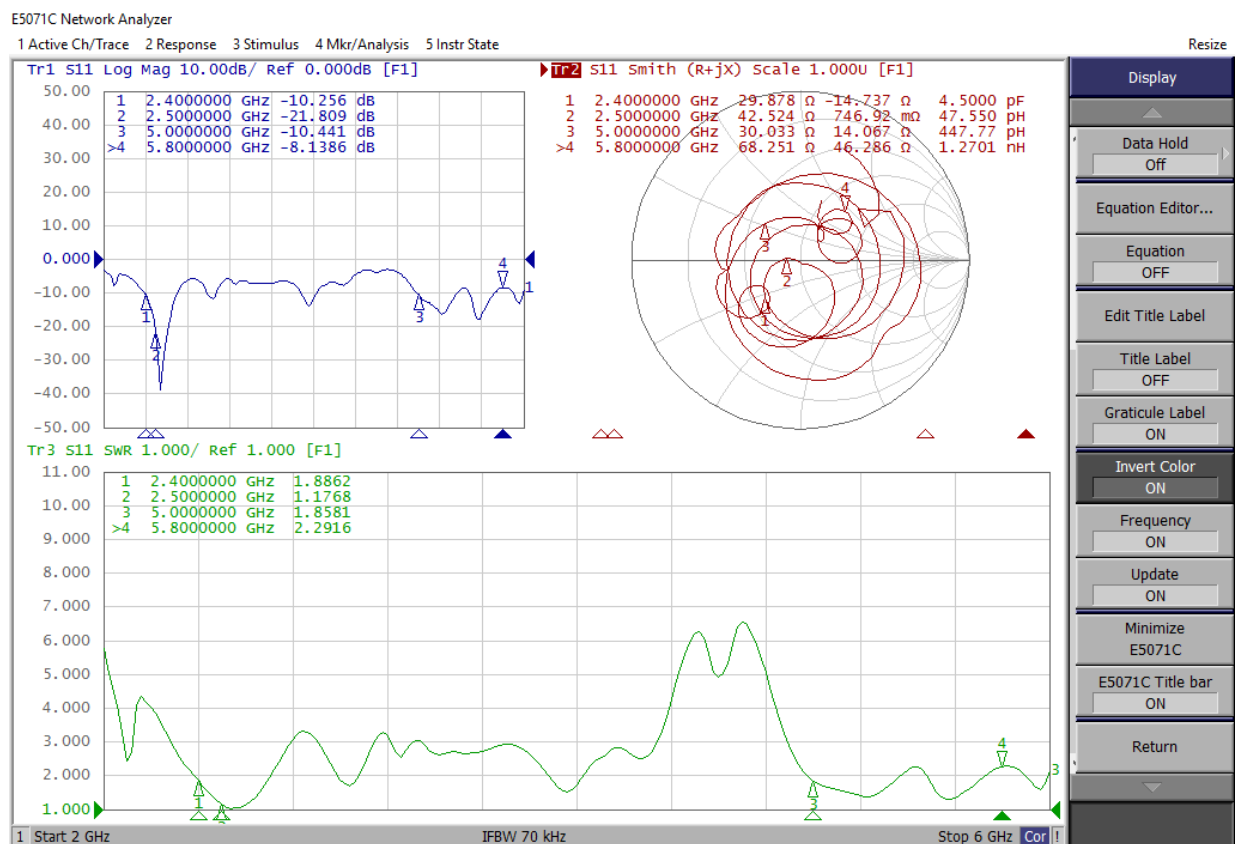
1. Reliability Testing

Test Item	Procedure	Requirement
1. Visual inspection and Dimension Check	Applicable methods using x5 magnification	follow specification
2. Rapid Changing of Temperature	-40°C (30minutes) to 90°C (30minutes); 24 cycles	After 2 hours recovery: 1. no visible damage 2. Freq. Tol.: < ±5%
3. Damp Heat	24 hours at 60°C; 90 ~ 95% RH	After 2 hours recovery: 1. no visible damage 2. Freq. Tol. : < ±5%
4. Endurance	24 hours at 90°C	After 2 hours recovery: 1. no visible damage 2. Freq Tol.: < ±5%

2. Specification

A. Electrical Characteristics	
S.W.R.(Tested in PC)	≤ 2.0 @ 2400~5800 MHz
Typical Antenna Gain	+2.0 $\pm$ 0.7dBi @ WIFI
Impedance	50 Ohm
B. Material	
Material of Radiator	FPC
Cable Length	50mm
Connector Type	剥线镀锡
C. Environmental	
Operation Temperature	- 40 °C ~ + 85 °C
Storage Temperature	- 40 °C ~ + 85 °C

3. S.W.R. Testing Result



4. Antenna Radiation Pattern

Testing Equipment Specification:

Antenna Anechoic Chamber Dimension: 8 x 4 x 4 m

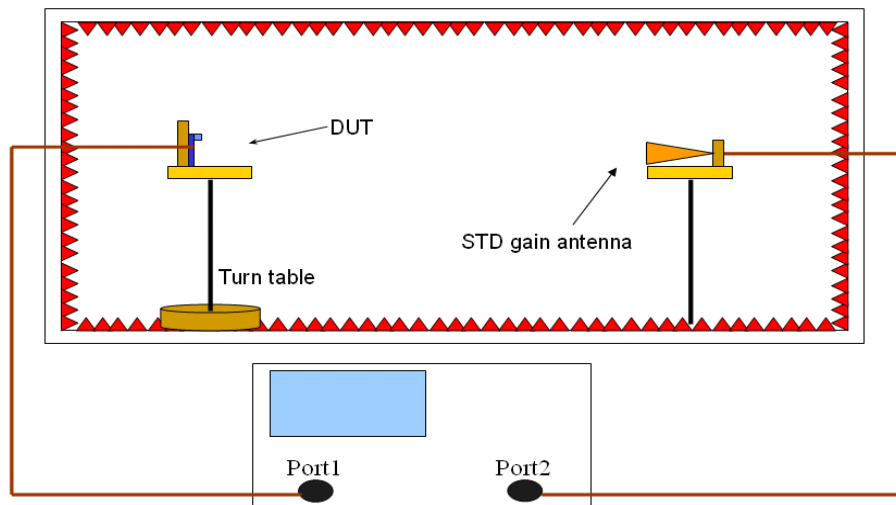
Quiet Zone: 600mm @1 GHz

Isolation: >100dB @ 1 MHz ~ 10 GHz

Testing Equipment: Agilent 5071B

Received Antenna: 0.7 ~ 6.0 GHz for Gain Calibration

Double Ridged Horn Antenna

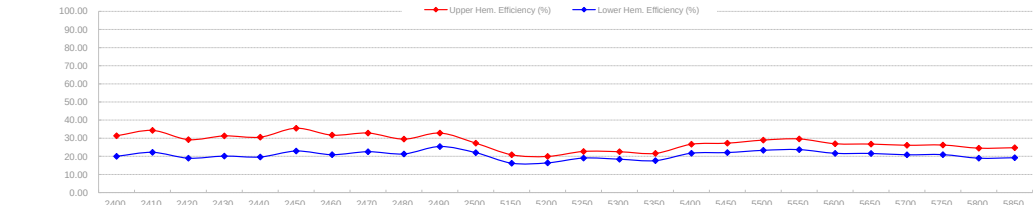
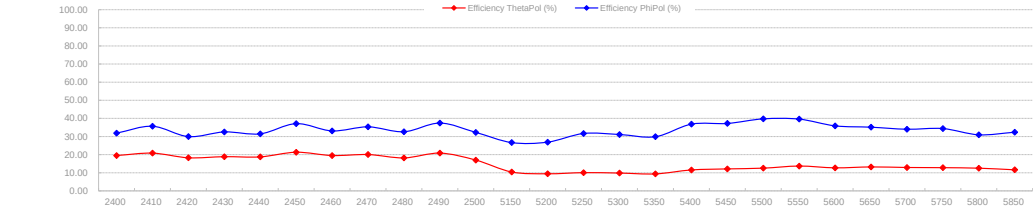
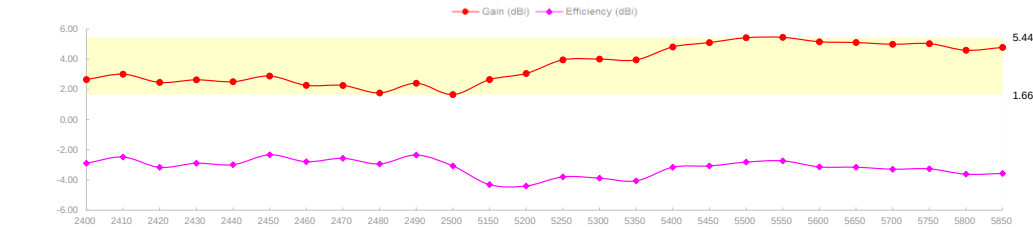
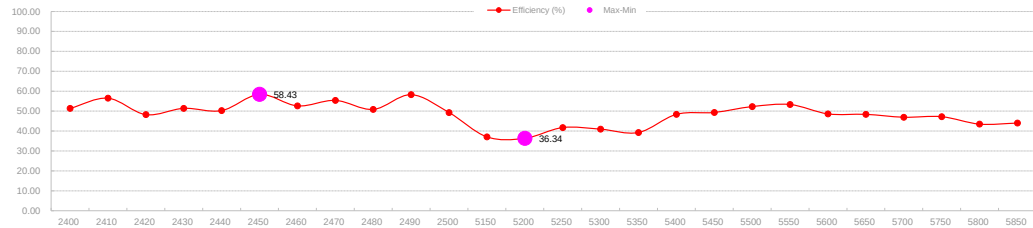


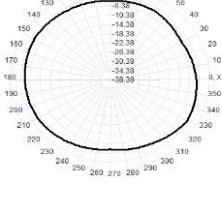
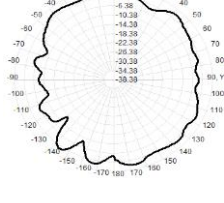
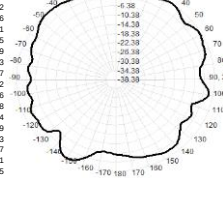
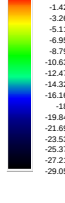
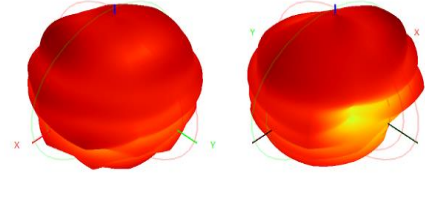
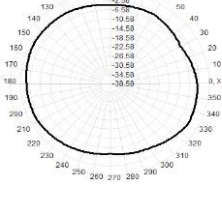
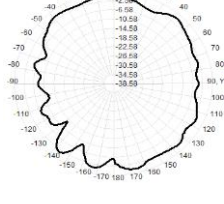
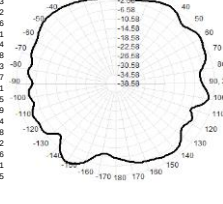
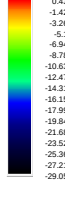
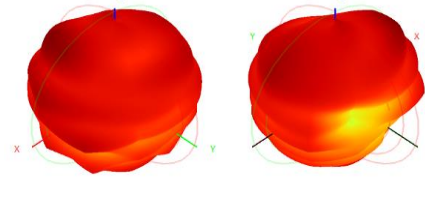
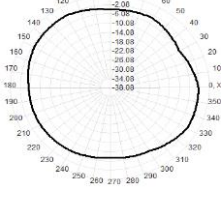
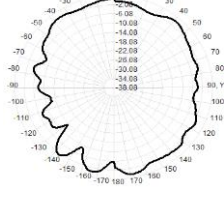
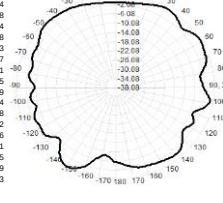
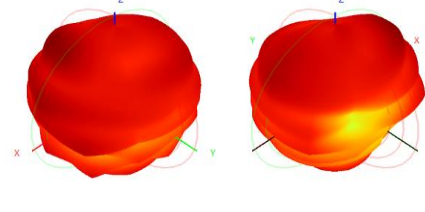
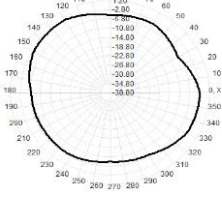
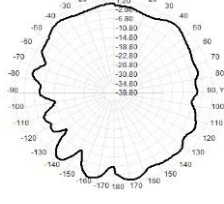
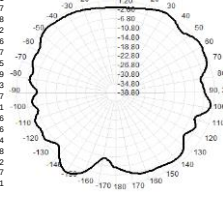
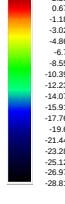
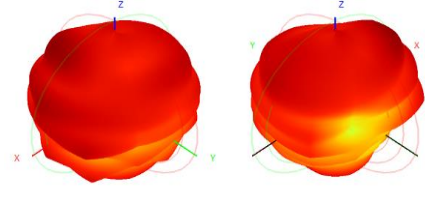
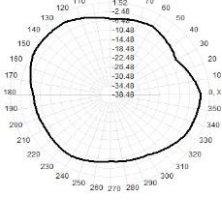
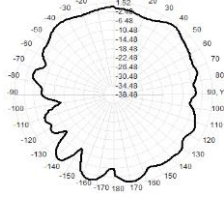
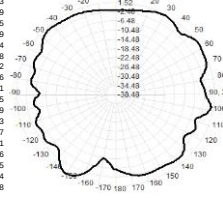
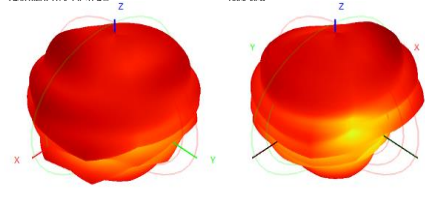
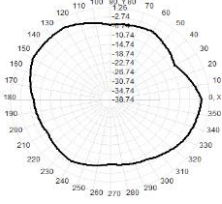
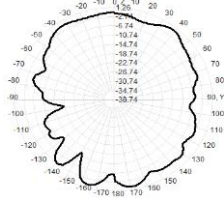
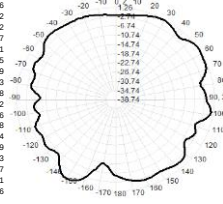
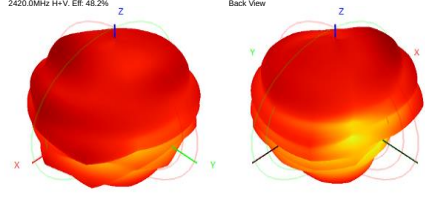
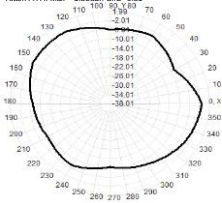
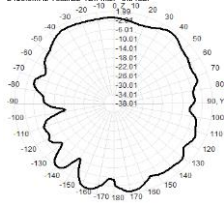
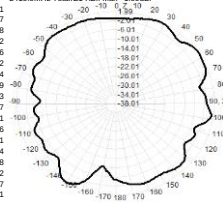
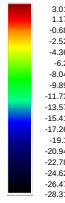
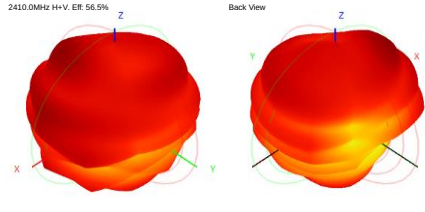
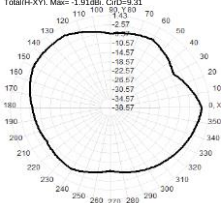
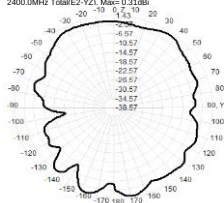
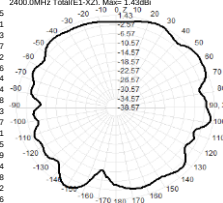
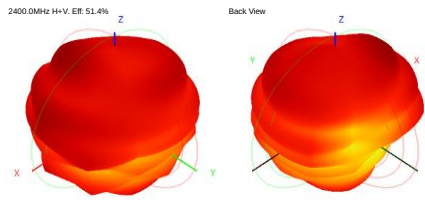


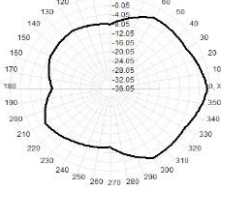
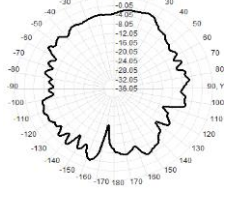
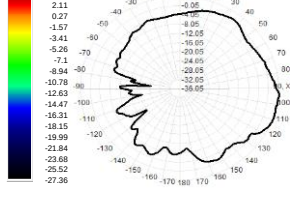
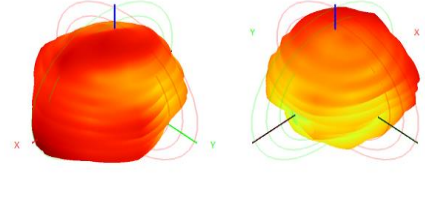
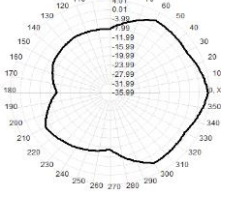
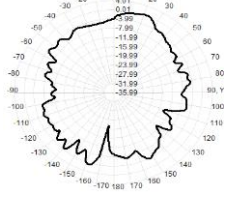
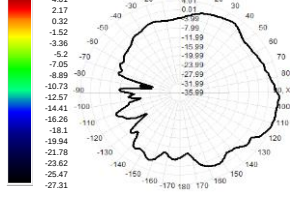
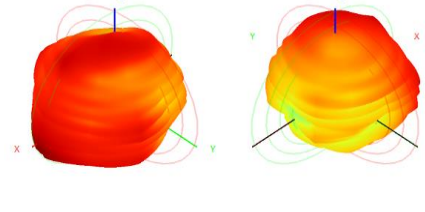
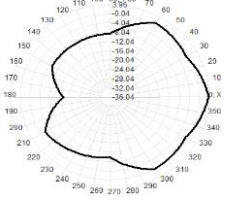
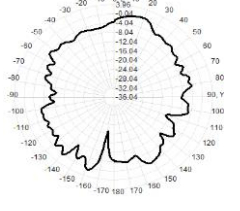
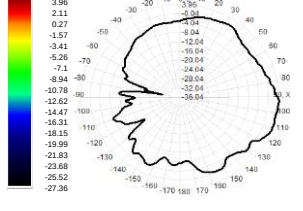
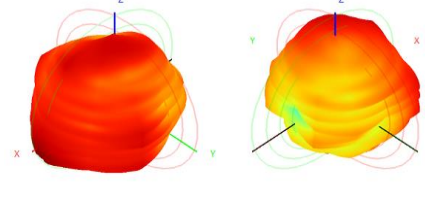
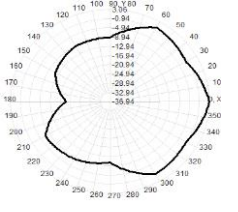
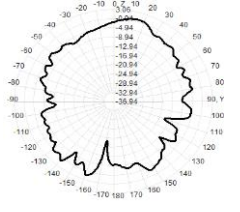
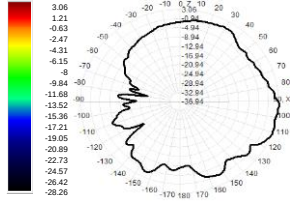
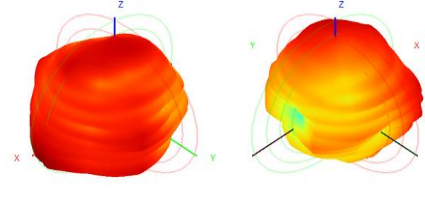
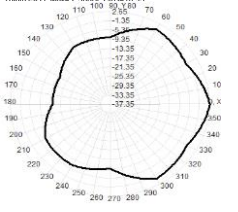
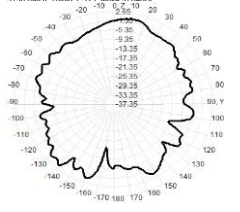
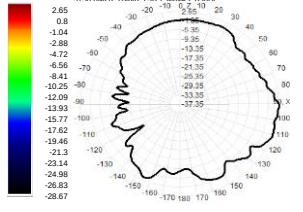
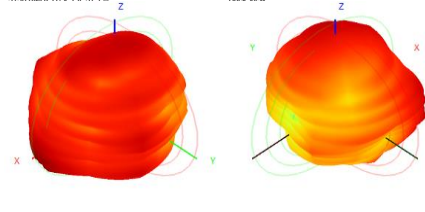
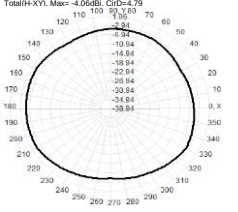
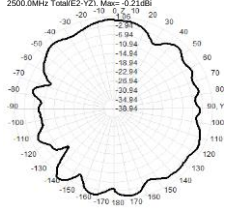
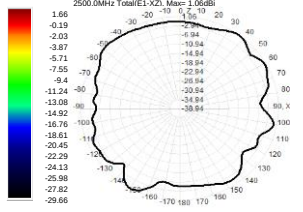
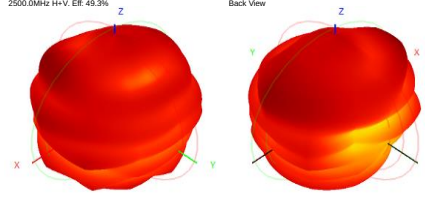
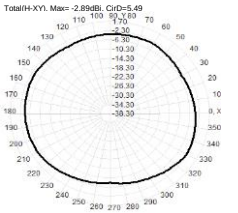
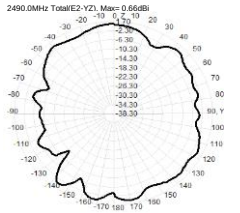
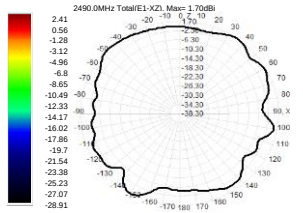
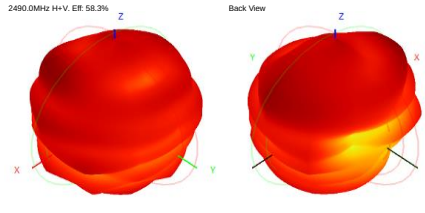
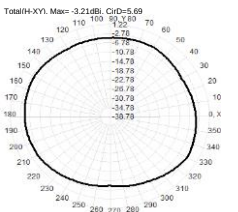
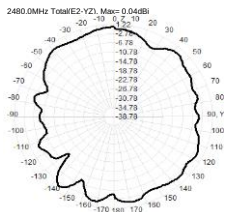
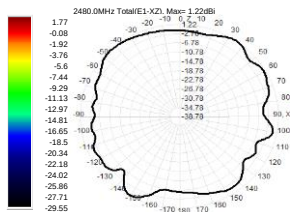
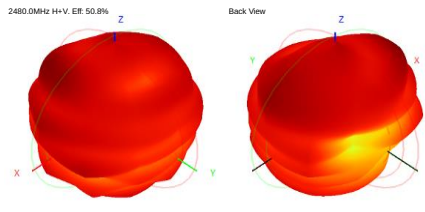
超威电子

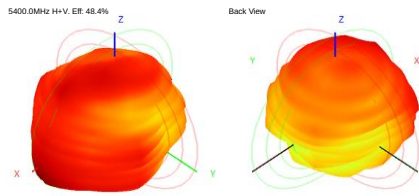
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Efficiency (dBi)	-2.89	-2.48	-3.17	-2.89	-2.99	-2.33	-2.79	-2.57	-2.94	-2.35	-3.07	-4.31	-4.40	-3.79	-3.88	-4.06	-3.15	-3.07	-2.82	-2.73	-3.13	-3.15	-3.29	-3.26	-3.62	-3.57
Gain (dBi)	2.65	3.01	2.46	2.63	2.51	2.88	2.27	2.26	1.77	2.41	1.66	2.65	3.06	3.96	4.01	3.95	4.81	5.10	5.42	5.44	5.16	5.10	4.99	5.03	4.59	4.78
Efficiency (%)	51.36	56.49	48.23	51.40	50.26	58.43	52.62	55.39	50.85	58.25	49.28	37.08	36.34	41.75	40.95	39.27	48.38	49.33	52.28	53.31	48.61	48.37	46.93	47.20	43.48	44.00
Directivity (dB)	5.55	5.49	5.63	5.42	5.50	5.22	5.06	4.83	4.70	4.75	4.73	6.96	7.45	7.75	7.89	8.01	7.97	8.17	8.24	8.18	8.29	8.26	8.27	8.29	8.21	8.35
Peak Gain Position (Theta)	160.00	160.00	160.00	160.00	160.00	160.00	159.00	159.00	159.00	160.00	160.00	91.00	92.00	93.00	93.00	94.00	95.00	108.00	109.00	109.00	110.00	110.00	116.00	117.00	118.00	119.00
Peak Gain Position (Phi)	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	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	0.00
Efficiency ThetaPol (%)	19.50	20.83	18.26	18.87	18.77	21.33	19.51	20.05	18.21	20.84	17.00	10.42	9.43	10.07	9.83	9.38	11.56	12.12	12.54	13.70	12.72	13.23	12.91	12.81	12.52	11.63
Efficiency PhiPol (%)	31.87	35.66	29.97	32.53	31.49	37.11	33.11	35.34	32.63	37.41	32.28	26.66	26.90	31.68	31.12	29.90	36.82	37.21	39.74	39.61	35.89	35.15	34.02	34.38	30.96	32.37
Upper Hem. Efficiency (%)	31.34	34.30	29.24	31.27	30.60	35.52	31.71	32.84	29.50	32.84	27.26	20.86	19.94	22.70	22.53	21.64	26.67	27.26	28.96	29.60	26.95	26.77	26.09	26.24	24.50	24.76
Lower Hem. Efficiency (%)	20.03	22.19	18.99	20.13	19.66	22.92	20.91	22.55	21.34	25.41	22.02	16.22	16.39	19.05	18.42	17.63	21.71	22.08	23.32	23.70	21.67	21.60	20.84	20.95	18.98	19.24

T90(H)角度	9.31	9.31	8.58	7.43	6.47	5.47	5.31	5.54	5.69	5.49	4.79	16.95	22.17	20.85	17.89	15.75	13.93	13.52	14.11	14.96	15.87	17.77	16.19	13.35	11.24	11.43
Gain 15deg (dBi)																										
E1(XZ)波瓣宽度	123.00	68.00	64.00	64.00	70.00	72.00	39.00	65.00	62.00	135.00	76.00	40.00	40.00	41.00	41.00	43.00	44.00	44.00	43.00	43.00	41.00	41.00	39.00	39.00	38.00	39.00
E1(XZ)前后比	0.64	0.73	0.58	0.59	0.43	0.73	0.90	0.77	0.56	0.18	0.19	4.41	4.61	4.77	5.35	5.72	5.80	6.40	6.42	6.18	6.28	6.12	6.15	6.30	6.23	6.62
E2(YZ)波瓣宽度	23.00	23.00	38.00	106.00	106.00	69.00	68.00	68.00	68.00	70.00	46.00	37.00	31.00	28.00	29.00	34.00	62.00	80.00	88.00	90.00	99.00	104.00	96.00	68.00	44.00	44.00
E2(YZ)前后比	0.00	0.00	0.24	0.05	0.26	0.42	0.81	1.00	1.11	0.91	0.39	3.34	3.29	3.40	3.43	3.22	3.04	2.96	2.87	3.26	3.37	3.07	3.67	4.80	5.37	5.41
最大增益处轴比(P)	5.20	4.82	5.45	5.17	4.78	3.80	3.04	2.11	1.26	0.89	0.67	36.80	28.95	17.97	24.27	20.68	18.35	25.30	25.70	38.49	31.96	33.62	21.00	19.22	18.95	18.14
顶点(Theta=0)处轴比(P)	44.57	35.59	31.61	22.00	17.77	13.63	10.61	8.31	6.81	5.52	5.23	23.17	36.42	15.20	13.88	9.51	7.52	8.64	9.96	11.62	11.56	15.28	16.62	16.19	16.39	15.40
仰角10度最小差(大)轴比(P)	50.83	69.88	51.54	82.30	61.46	57.40	81.38	50.60	46.53	53.41	52.21	54.89	52.06	57.38	67.10	55.19	50.99	61.31	62.63	71.22	62.71	71.89	54.56	54.37	56.99	77.49
Hc(XY)波瓣宽度	44.00	46.00	50.00	57.00	117.00	137.00	82.00	279.00	279.00	283.00	299.00	39.00	39.00	42.00	43.00	43.00	49.00	51.00	52.00	55.00	55.00	54.00	64.00	76.00	86.00	88.00
Hc(XY)前后比	6.01	5.95	5.72	5.46	5.02	4.19	3.67	3.53	3.58	3.36	2.94	2.86	3.43	3.61	4.03	4.32	4.85	5.63	6.65	6.99	7.14	7.16	6.94	6.67	6.20	6.42
左旋圆极化效率(%)	22.85	24.92	20.92	21.95	20.58	22.98	19.74	20.64	18.84	22.30	19.33	21.24	18.34	17.66	18.99	17.23	20.22	20.90	22.14	23.54	20.94	21.04	20.71	20.74	19.22	19.62
右旋圆极化效率(%)	28.51	31.57	27.31	29.45	29.68	35.45	32.88	34.75	32.01	35.95	29.95	15.84	18.00	24.09	21.95	22.05	28.16	28.44	30.15	29.77	27.67	27.33	26.23	26.45	24.26	24.37
最大增益处轴比(+/-45极化)	0.23	0.44	0.61	0.40	1.06	1.85	2.07	1.71	0.94	0.41	0.03	1.80	0.83	0.99	1.52	1.81	1.51	3.26	3.15	3.16	2.67	2.77	3.29	3.11	3.33	2.81
最大增益处轴比(水平垂直极化)	5.19	4.79	5.39	5.15	4.61	3.21	2.14	1.21	0.83	0.79	0.67	19.61	24.48	17.12	19.40	17.04	16.46	14.22	14.54	14.89	16.19	15.95	13.54	13.48	12.97	13.69
T60度Phi一圈最差轴比(水平)	0.00	0.01	0.03	0.04	0.04	0.02	0.05	0.01	0.01	0.05	0.05	0.13	0.04	0.01	0.09	0.01	0.02	0.01	0.01	0.03	0.02	0.03	0.01	0.02	0.02	0.04
T60度Phi一圈最差轴比(垂直)	0.21	0.02	0.02	0.05	0.02	0.13	0.36	0.00	0.01	0.04	0.00	0.04	0.06	0.03	0.02	0.00	0.05	0.00	0.02	0.04	0.00	0.20	0.07	0.08	0.05	0.23
T90度(H)Phi一圈最差轴比(+)	0.04	0.02	0.07	0.00	0.01	0.09	0.04	0.03	0.01	0.02	0.03	0.03	0.01	0.00	0.03	0.01	0.02	0.04	0.03	0.02	0.01	0.02	0.00	0.01	0.05	0.00
T90度(H)Phi一圈最差轴比(-)	0.02	0.04	0.03	0.03	0.03	0.07	0.00	0.04	0.03	0.04	0.02	0.08	0.02	0.00	0.15	0.09	0.12	0.17	0.12	0.12	0.14	0.01	0.01	0.17	0.07	0.00
绝对称天线主瓣下倾角度(平均值)	13.12	4.18	2.50	2.34	11.23	27.31	32.44	34.63	35.36	31.56	28.98	60.84	59.04	51.47	46.49	53.23	50.80	47.53	46.75	51.81	52.89	53.54	60.21	65.09	72.66	71.76
轴角(Z+水平垂直极化)周角度	12.64	10.55	8.53	6.96	5.66	4.64	3.82	3.71	3.64	3.61	4.01	14.41	25.67	15.15	13.88	9.06	6.57	6.29	6.80	6.29	6.70	7.48	8.08	9.71	9.88	10.34
Theta85.0一周最大增益	0.00	0.68	-0.01	0.26	-0.18	0.22	-0.63	-0.45	-0.78	-0.01	-0.59	2.65	3.06	3.96	4.01	3.95	4.81	5.10	5.42	5.44	5.16	5.10	4.98	4.97	4.40	4.59
Theta85.0一周圆度(为最大最小)	19.11	19.15	18.58	17.22	14.73	13.96	12.72	12.28	10.67	10.42	10.68	19.62	22.55	22.12	24.31	25.50	28.73	27.23	24.86	24.19	21.95	23.43	23.24	23.55	25.51	25.45

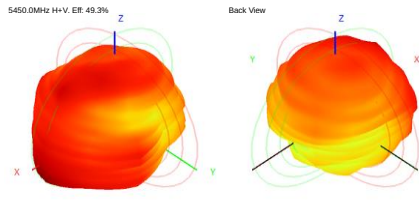
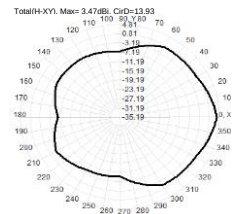
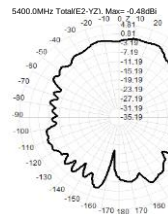
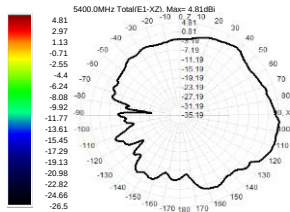
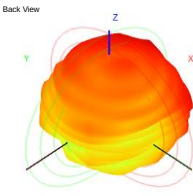




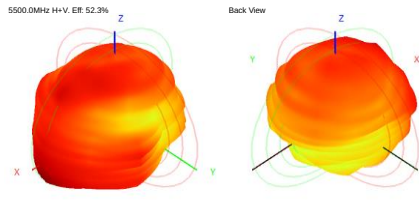
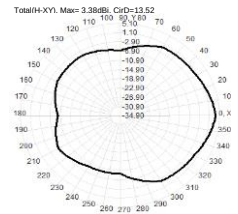
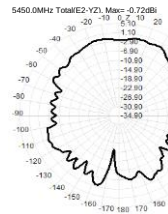
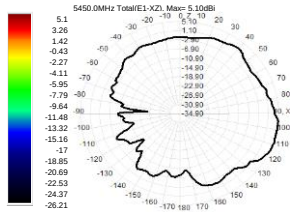
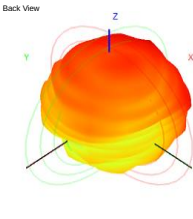




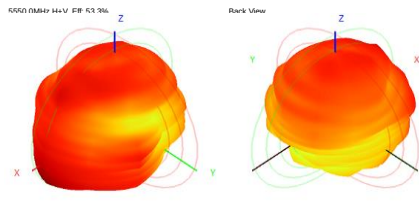
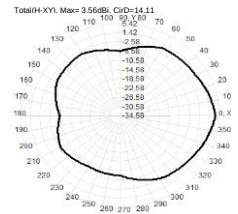
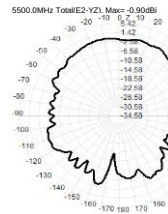
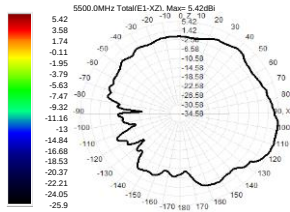
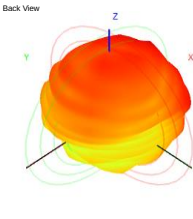
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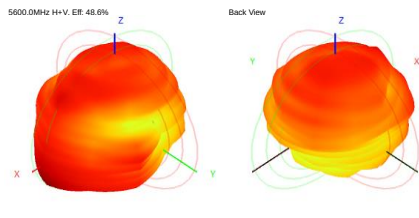
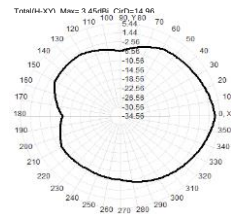
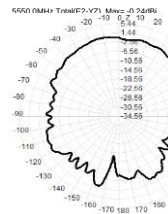
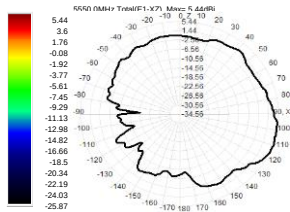
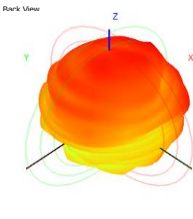
Back View



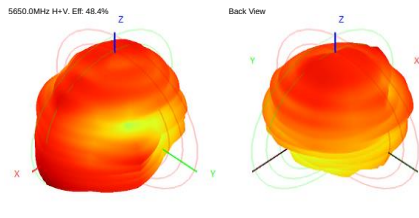
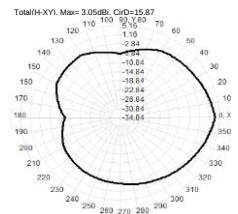
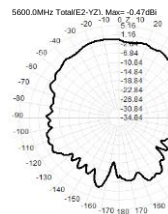
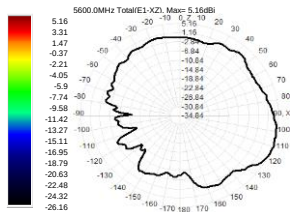
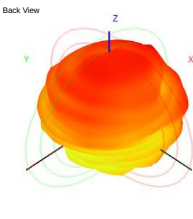
Back View



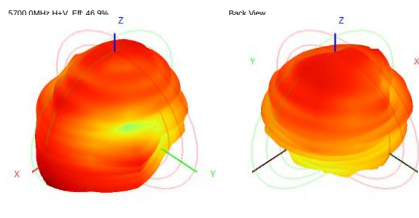
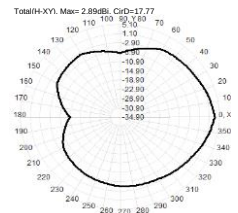
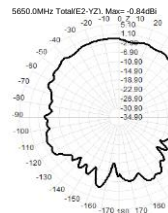
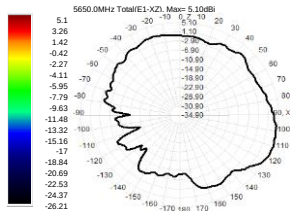
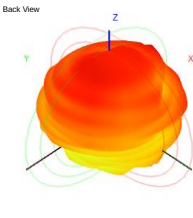
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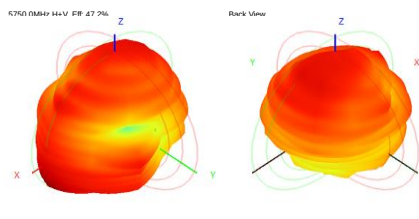
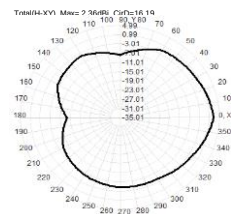
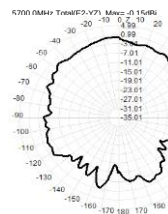
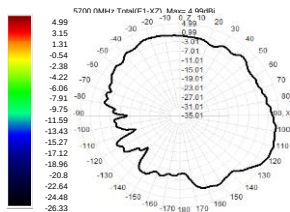
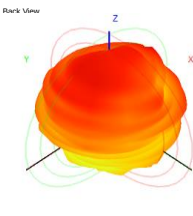
Back View



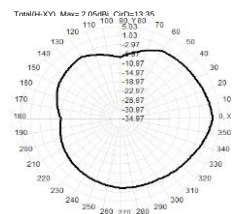
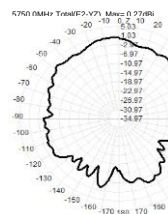
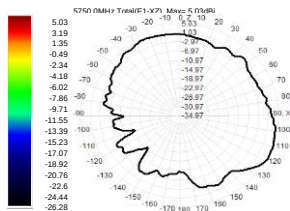
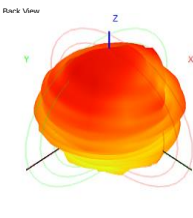
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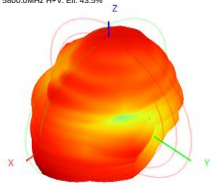
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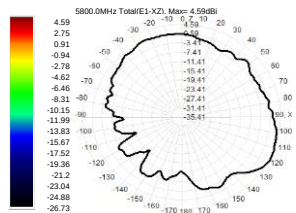
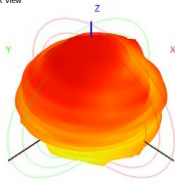
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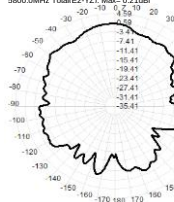
5800.0MHz H+V, ER: 43.5%



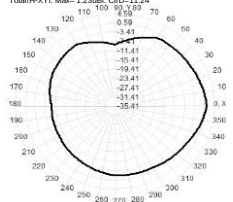
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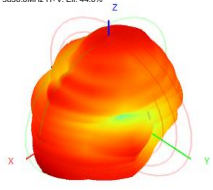
5800.0MHz Total(E2-YZ), Max= 0.21dB



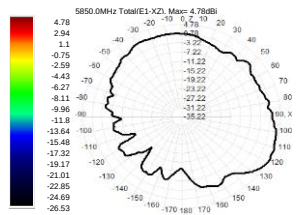
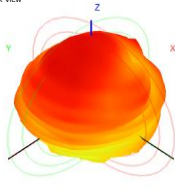
Total(H+V), Max= 1.23dB, Cx=11.24



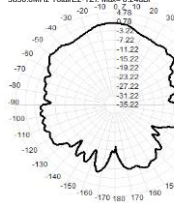
5850.0MHz H+V, ER: 44.0%



Back View



5850.0MHz Total(E2-YZ), Max= 0.24dB



Total(H+V), Max= 1.13dB, Cx=11.43

