

Antenna Test Report

Customer Model No. : M3520A

Date: 2022/02/16

Test Engineer: Mr.Liu

Test Enviornment

- Antenna characteristics were tested using the ETS test system in a microwave anechoic chamber. , Chamber size is 7m x 4m x 3m , test frequency 700MHz---6GHz.
- S11 test use with Agilent E5071B Spectrum Analyzer



Microwave Chamber



Agilent E5071B Spectrum Analyzer

TEST ITEM

- Customer Model No. : **M3520A**
- Antenna frequency band : **WIFI-2.4G-5.8G-BT**

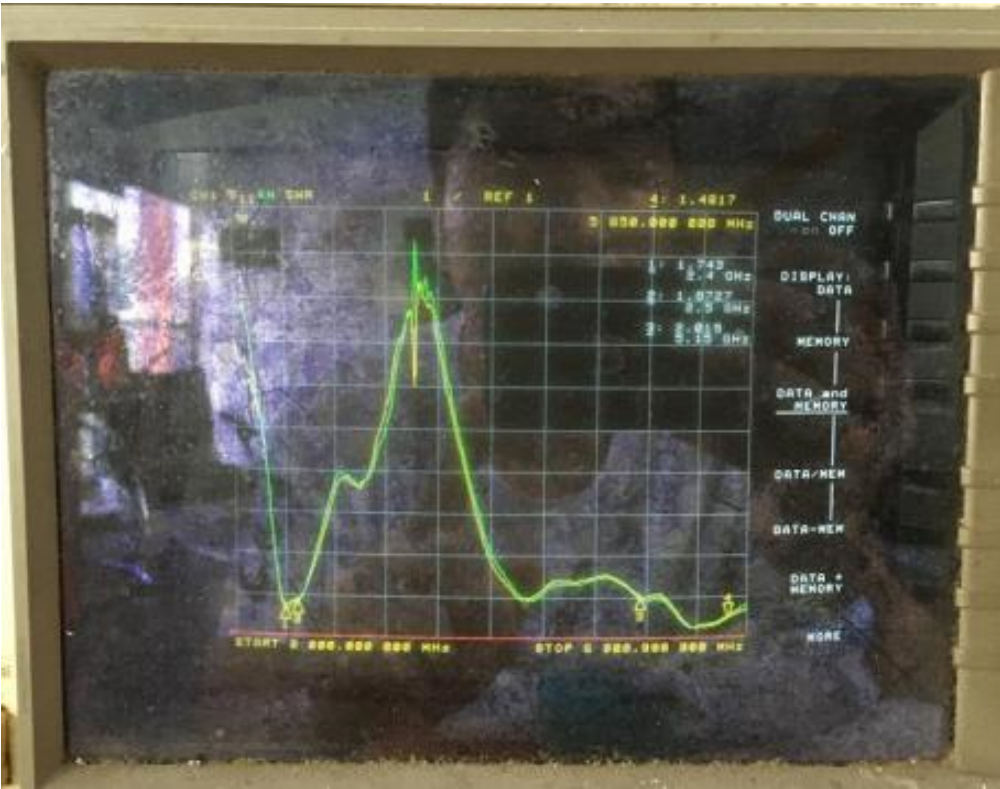
Version Record

Rev	Date	Remark
V1	2022/02/16	Test report
V2		
V3		
V4		
V5		
V6		

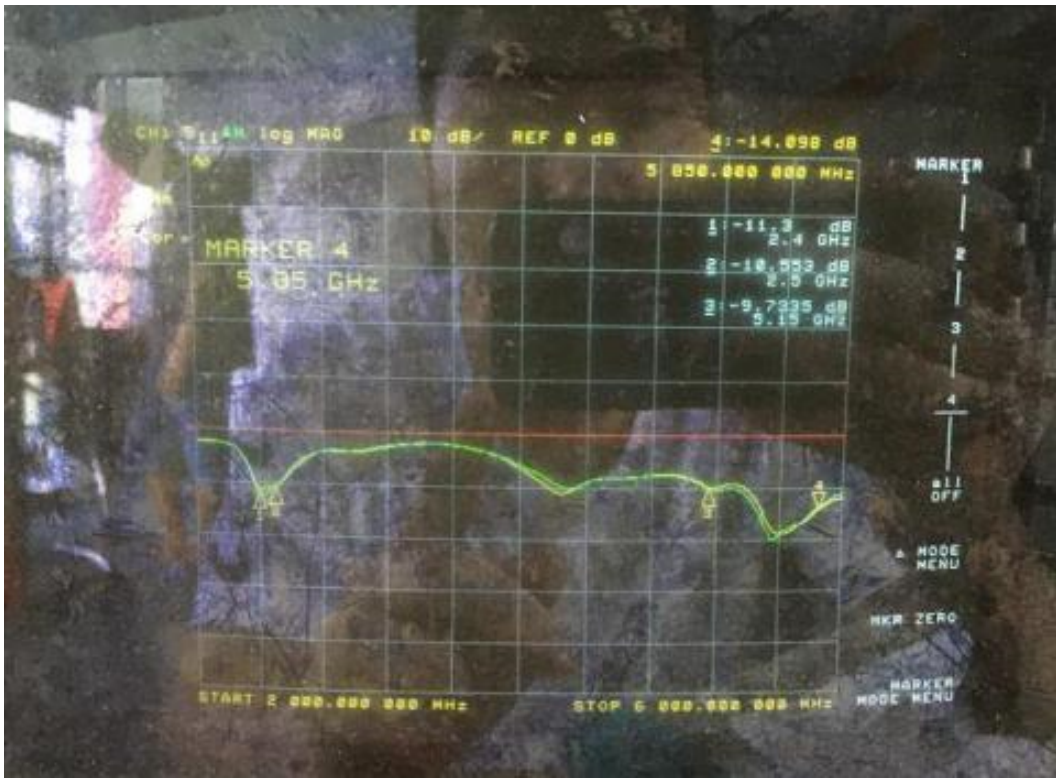


Passive Antenna

standing wave



Return Loss



Test Condition:		Conduction with mainboard			
WIFI-2.4G	2.4G 802.11b	Channel	1	6	13
		TRP	16.6	16.7	16.7

Test Condition:		Conduction with mainboard			
WIFI-2.4G	2.4G 802.11g	Channel	1	6	13
		TRP	16.3	16.3	16.4

Test Condition:		Conduction with mainboard			
WIFI-5G	5.8G 802.11A	Channel	149	157	165
		TRP	12.5	12.4	12.4



Chamber 3D test report

Test Condition:		自由空间			
WIFI-2.4G	2.4G 802.11b	Channel	1	6	13
		TRP	12.77	12.78	12.87
		TIS	-80.6	-80.7	-81.1

Test Condition:		自由空间			
WIFI-2.4G	2.4G 802.11g	Channel	1	6	13
		TRP	12.07	12.34	12.44
		TIS	-80.2	-80.3	-80.8

Test Condition:		自由空间			
WIFI-5G	5.8G 802.11A	Channel	36	149	161
		TRP	8.37	8.64	8.57
		TIS	-70	-70.37	-70.21



Efficiency **WIFI 2.4G**

Passive Test For WII2.4			
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
2400	54.23	-2.66	3.37
2410	53.8	-2.69	3.35
2420	53.09	-2.75	3.43
2430	52.64	-2.79	3.51
2440	52.26	-2.82	3.56
2450	53.91	-2.68	3.79
2460	52.89	-2.77	3.72
2470	52.82	-2.77	3.67
2480	54.31	-2.65	3.7
2490	53.93	-2.68	3.5
2500	50.84	-2.94	3.07



Efficiency 5G

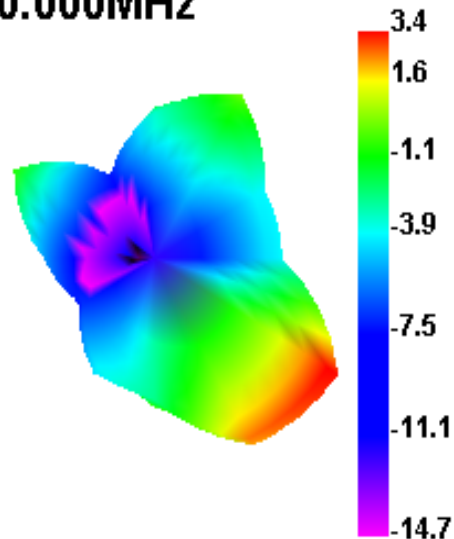
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
5150	36.01	-4.44	0.5
5160	38.02	-4.2	0.78
5170	38.13	-4.19	0.83
5180	38.73	-4.12	1.09
5190	34.32	-4.64	0.64
5200	35.86	-4.45	0.64
5210	37.9	-4.21	0.96
5220	38.66	-4.13	1.05
5230	43.78	-3.59	1.66
5240	38.68	-4.13	1.1
5250	38.56	-4.14	1.12
5260	40.73	-3.9	1.34
5270	38.38	-4.16	1.1
5280	43.62	-3.6	1.7
5290	43.34	-3.63	1.84
5300	40.75	-3.9	1.66
5310	42.56	-3.71	1.9
5320	41.8	-3.79	1.79
5330	44.91	-3.48	2.27
5340	48.56	-3.14	2.61
5350	48.26	-3.16	2.77
5360	49.69	-3.04	2.81
5370	46.69	-3.31	2.59

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
5380	47.67	-3.22	2.73
5390	47.51	-3.23	2.75
5400	56.88	-2.45	3.56
5410	58.37	-2.34	3.64
5420	55.69	-2.54	3.46
5430	53.36	-2.73	3.25
5440	53.88	-2.69	3.21
5450	52.51	-2.8	3.06
5460	56.65	-2.47	3.27
5470	56.4	-2.49	3.19
5480	55.09	-2.59	3.06
5490	54.66	-2.62	2.97
5500	50.53	-2.96	2.62
5510	52.92	-2.76	2.79
5520	54.56	-2.63	2.73
5530	54.22	-2.66	2.74
5540	55.1	-2.59	2.69
5550	49.91	-3.02	2.34
5560	51.43	-2.89	2.44
5570	51.31	-2.9	2.16
5580	52.05	-2.84	2.33
5590	52.24	-2.82	2.35
5600	49.16	-3.08	1.93
5610	48.37	-3.15	1.96

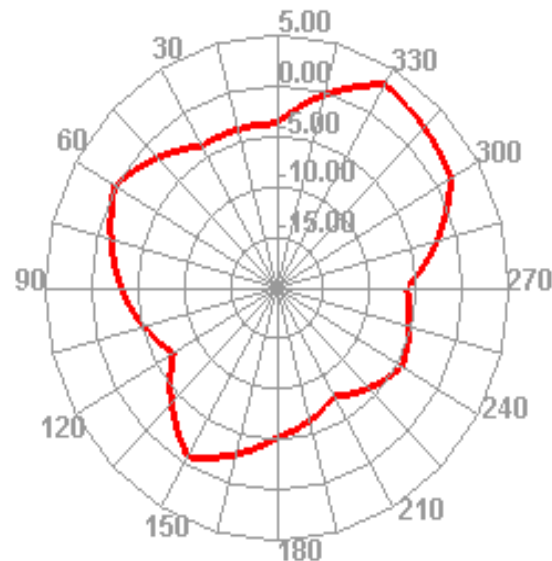
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)
5620	45.98	-3.37	1.57
5630	47.69	-3.22	1.62
5640	50.54	-2.96	1.82
5650	49.11	-3.09	1.47
5660	51.07	-2.92	1.77
5670	48.12	-3.18	1.22
5680	47.61	-3.22	0.92
5690	51.58	-2.88	1.25
5700	50.67	-2.95	1.12
5710	54.21	-2.66	1.27
5720	53.73	-2.7	1.31
5730	53.4	-2.72	1.41
5740	54.57	-2.63	1.63
5750	54.63	-2.63	1.69
5760	57.58	-2.4	1.97
5770	57.02	-2.44	1.98
5780	55.84	-2.53	1.9
5790	54.22	-2.66	1.92
5800	53.97	-2.68	1.95
5810	57.28	-2.42	2.25
5820	58.52	-2.33	2.51
5830	58.62	-2.32	2.52
5840	58.34	-2.34	2.55
5850	54.79	-2.61	2.38



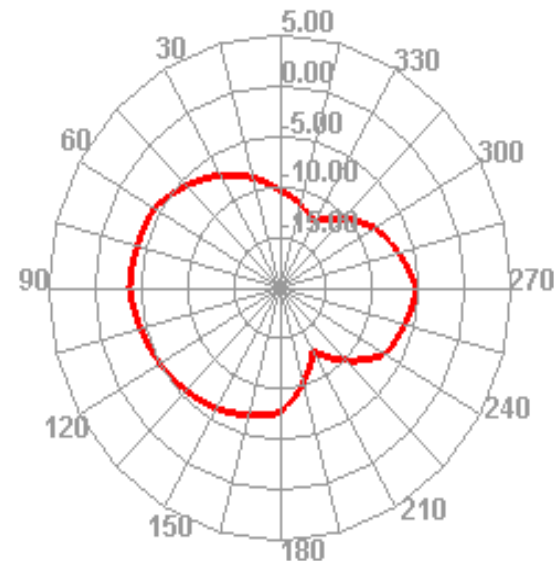
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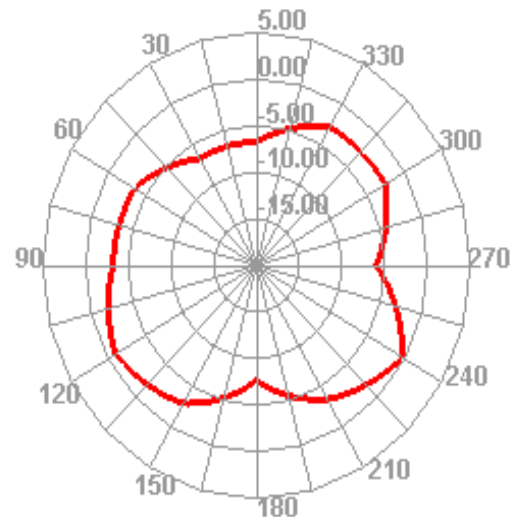
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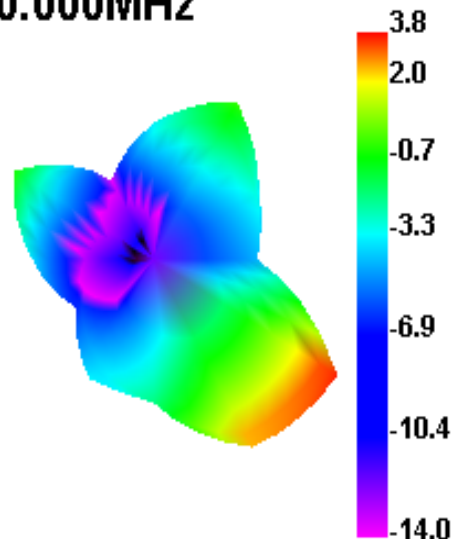
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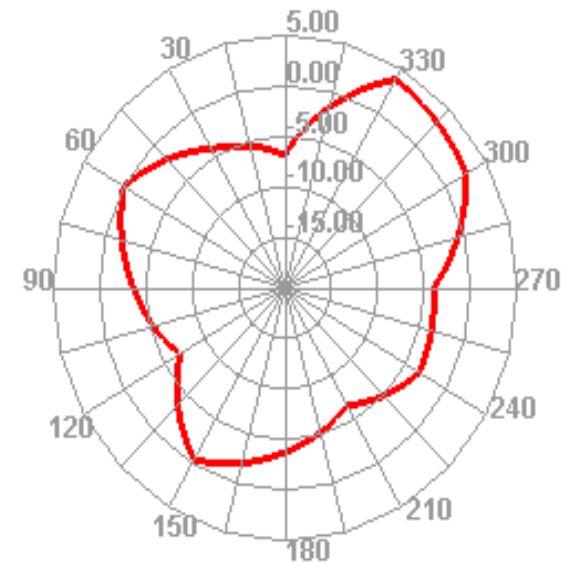
2400.000MHz E2



2450.000MHz



2450.000MHz H



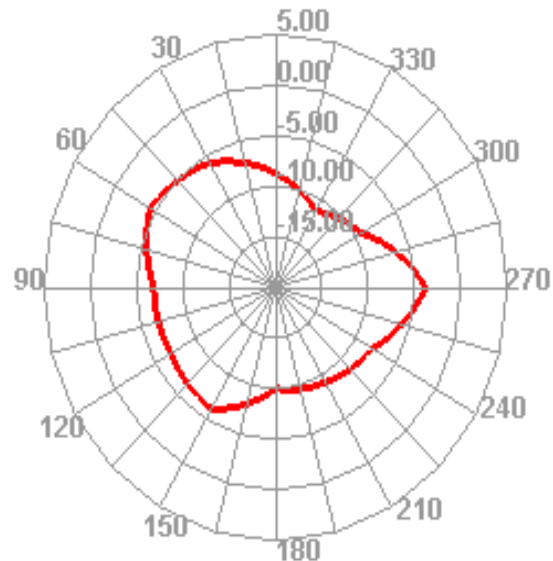
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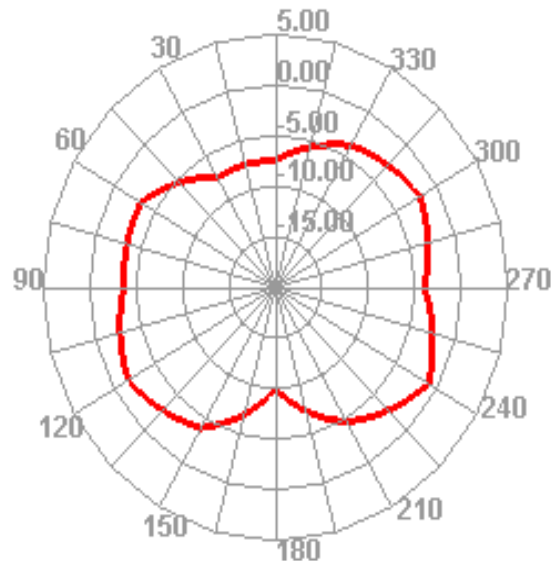
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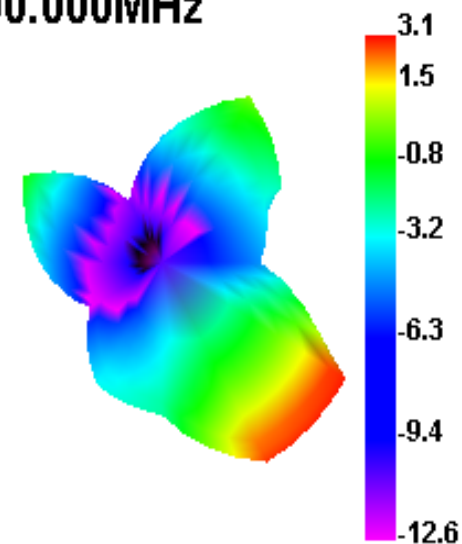
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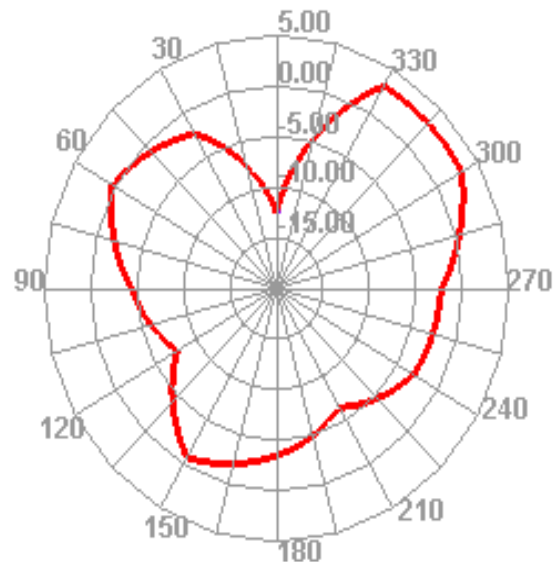
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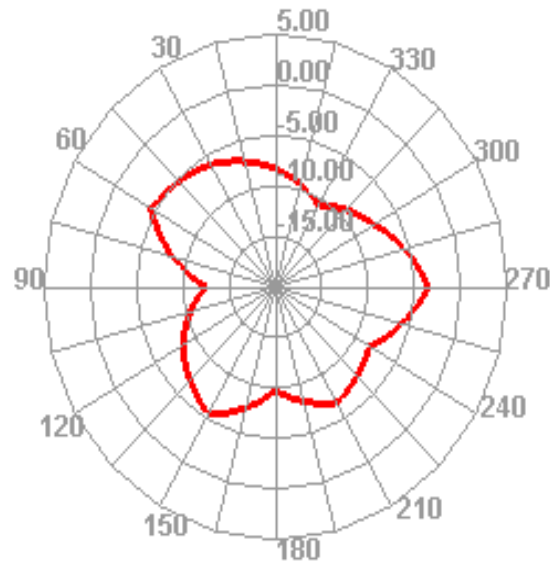
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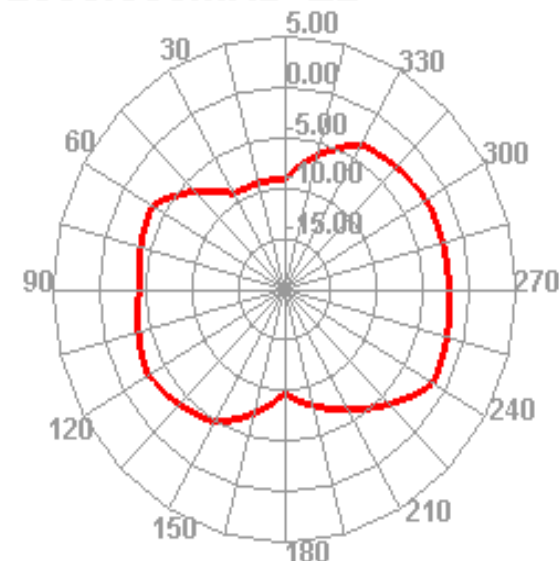
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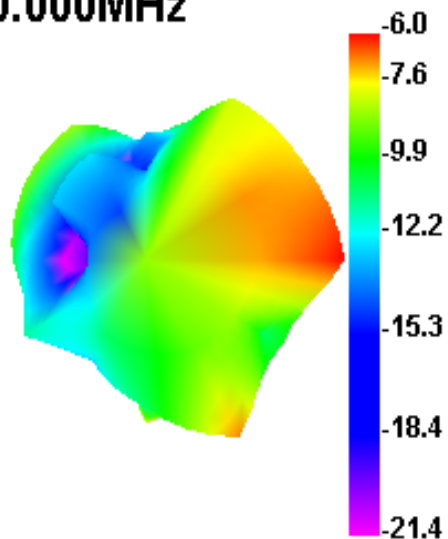
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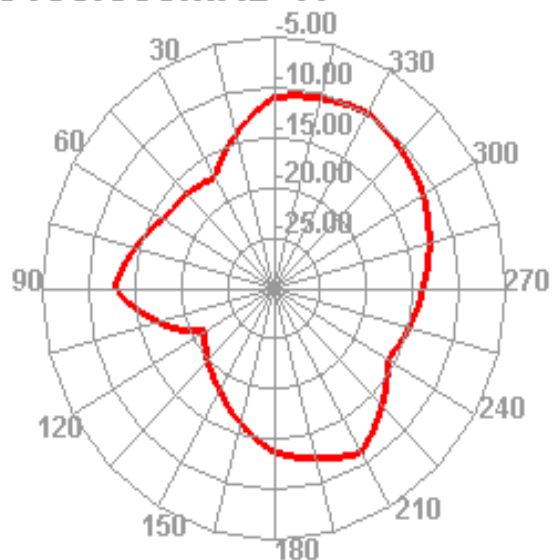
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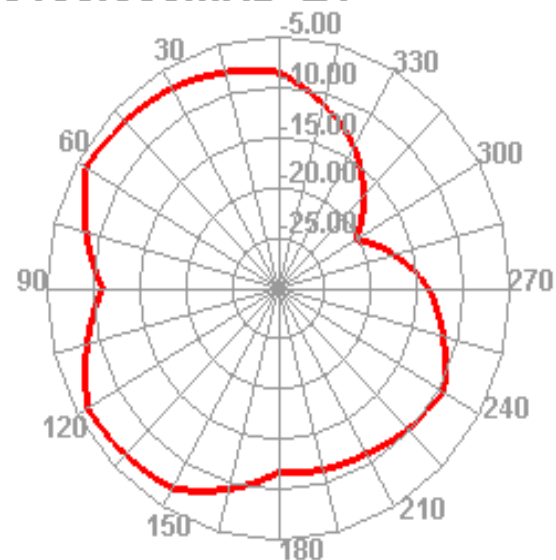
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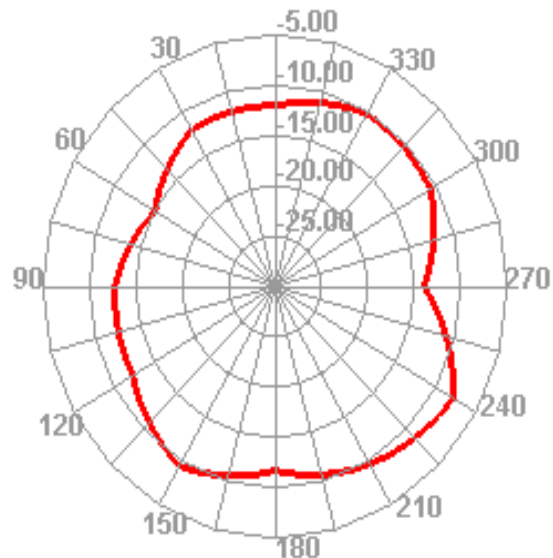
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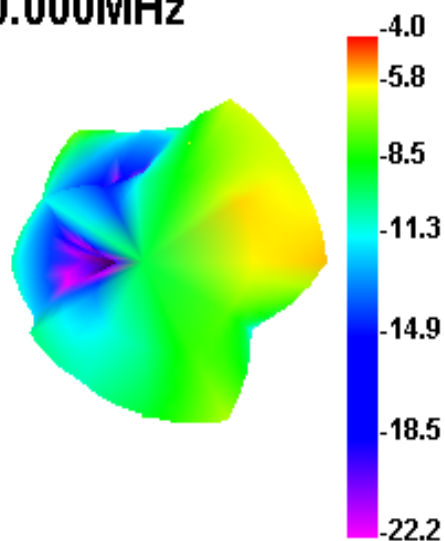
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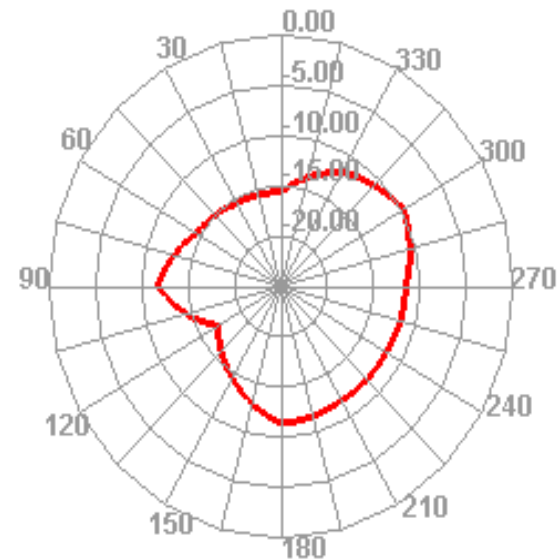
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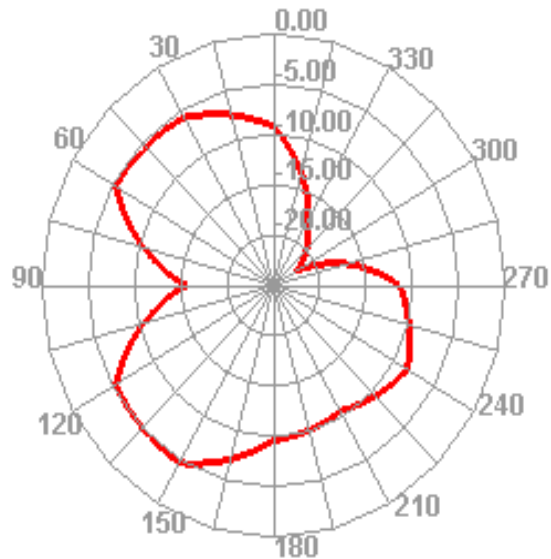
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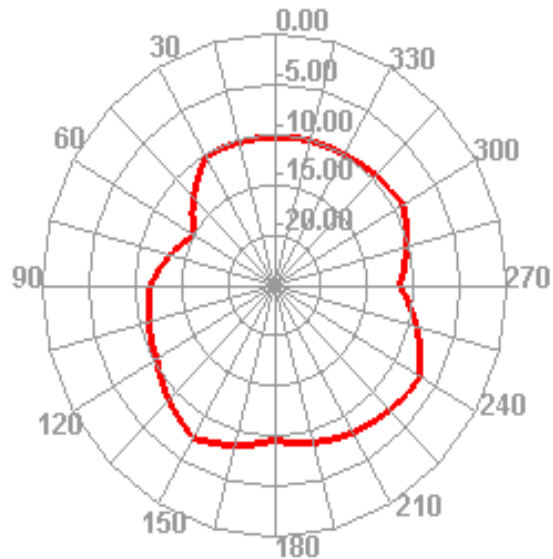
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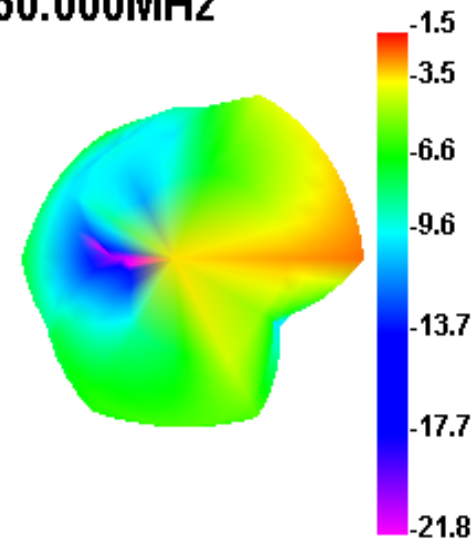
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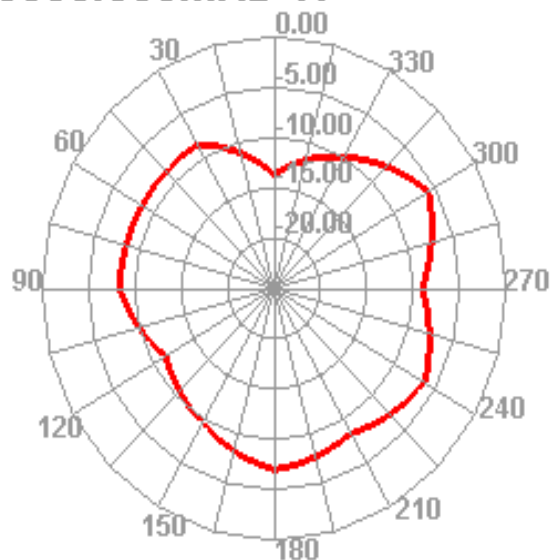
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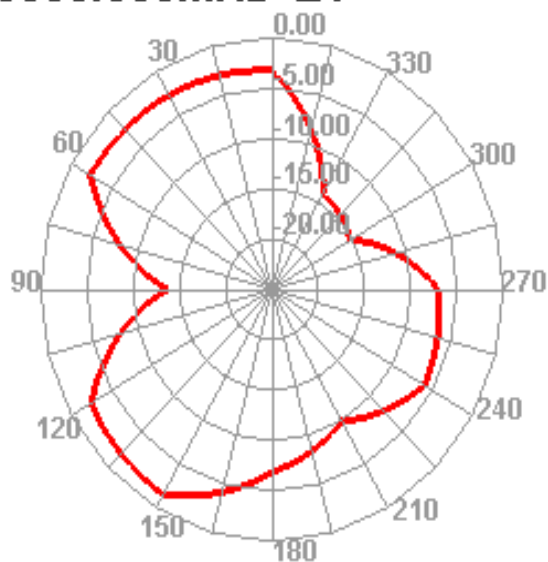
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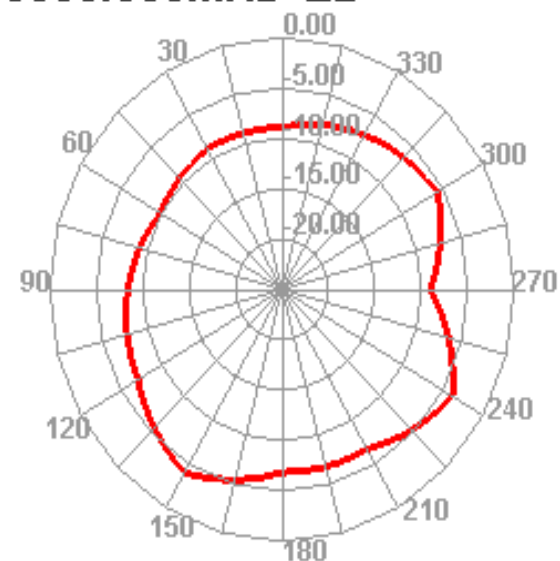
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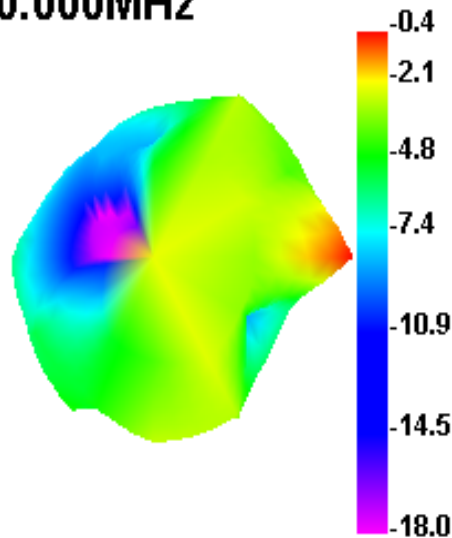
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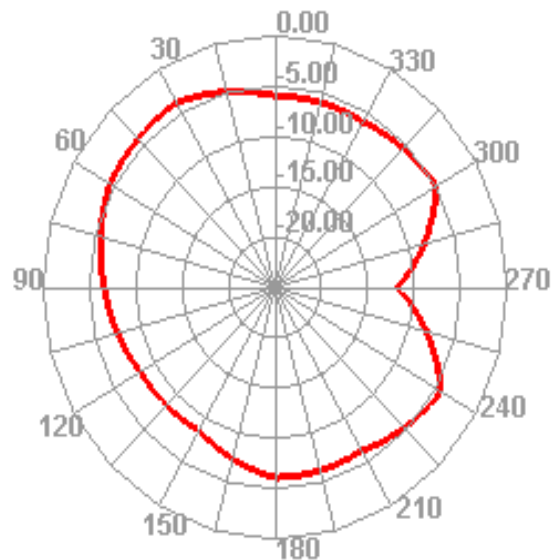
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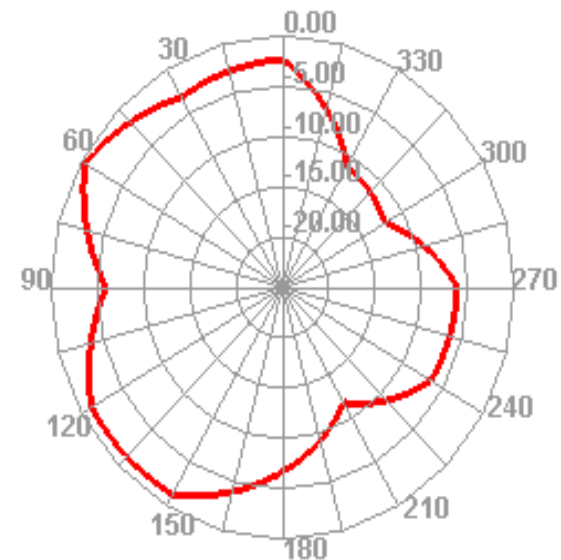
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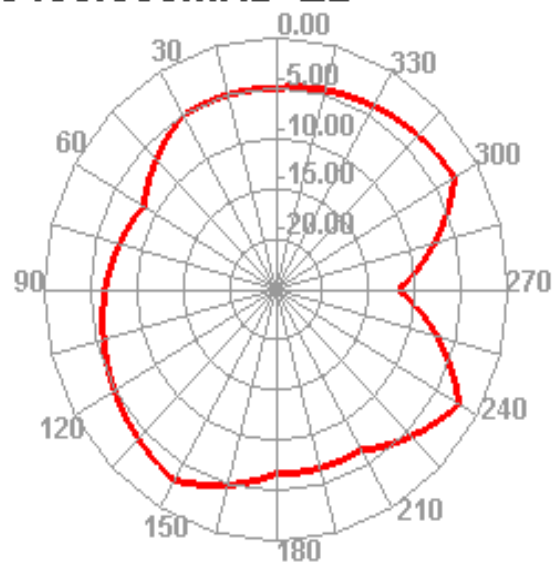
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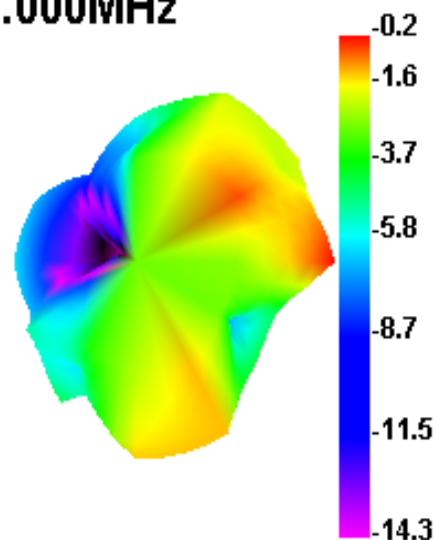
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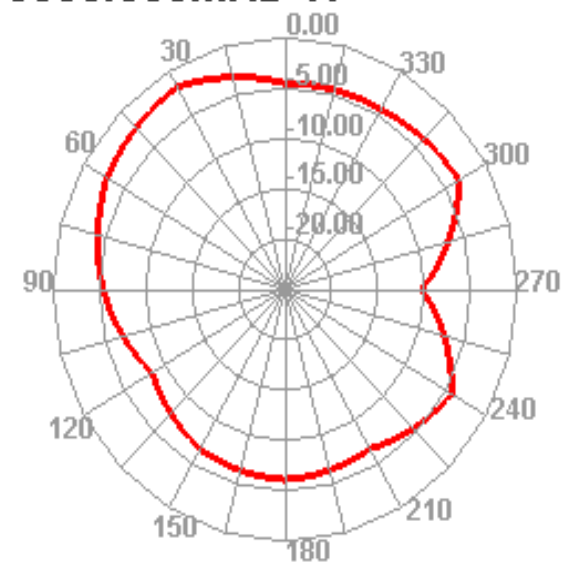
5480.000MHz E2



5550.000MHz



5550.000MHz H



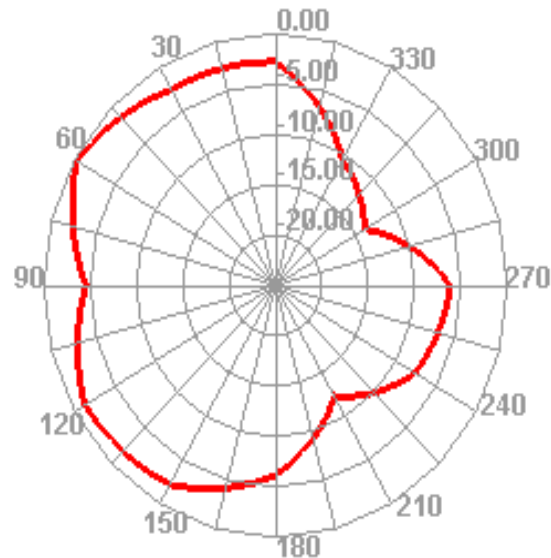
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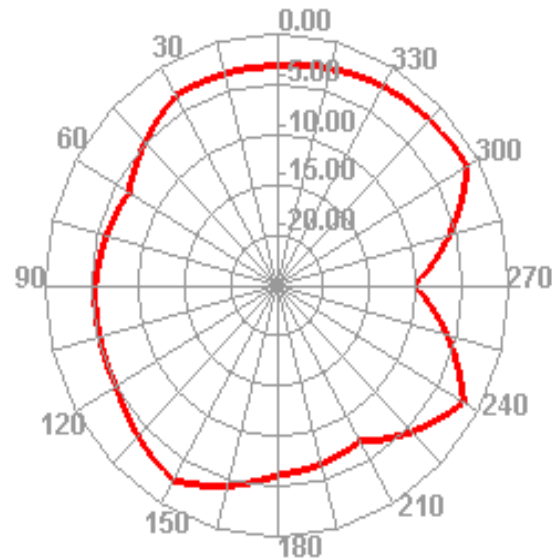
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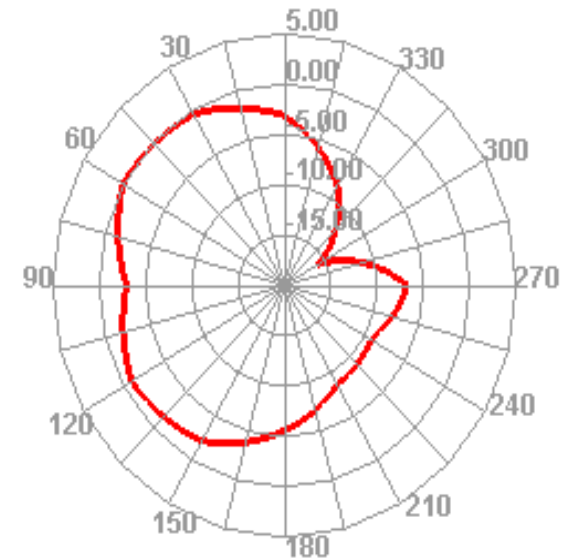
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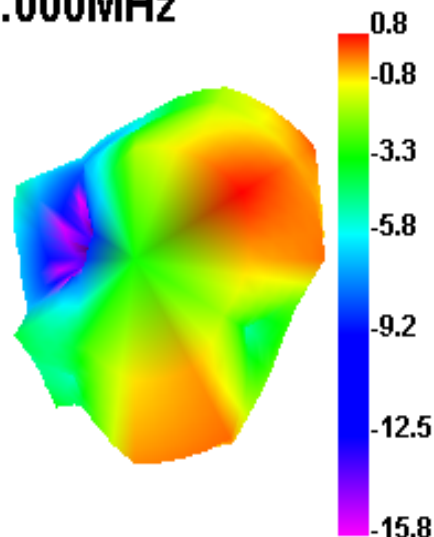
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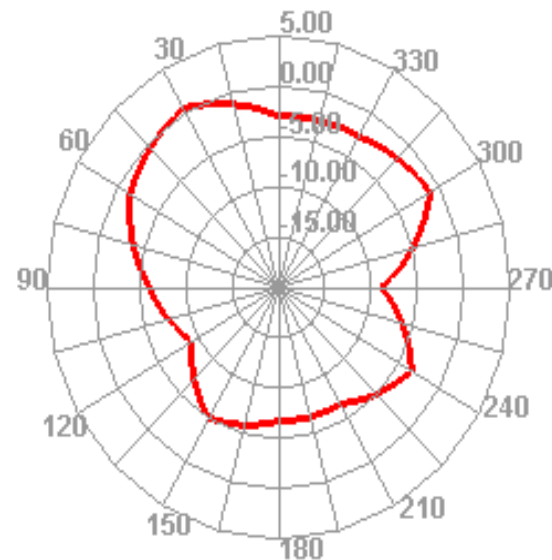
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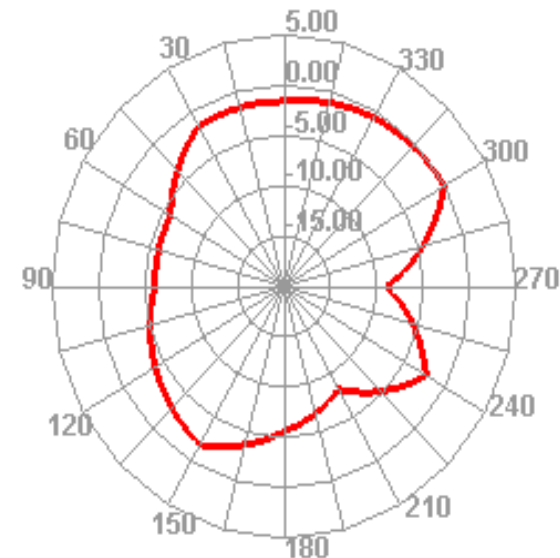
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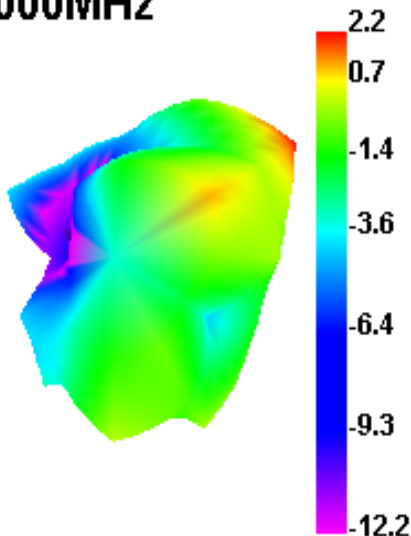
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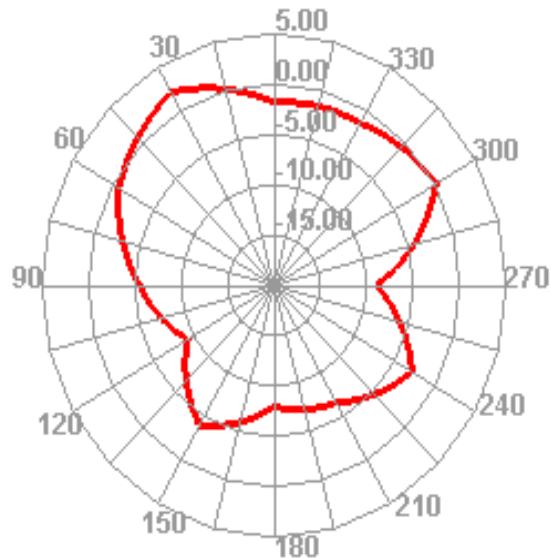
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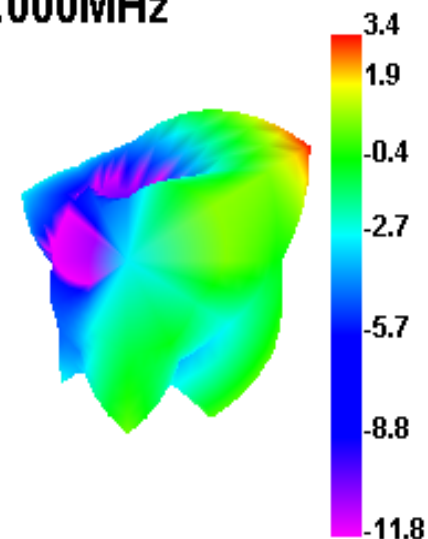
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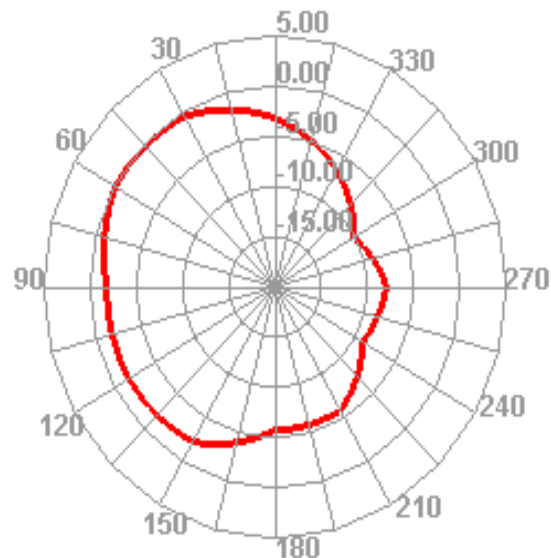
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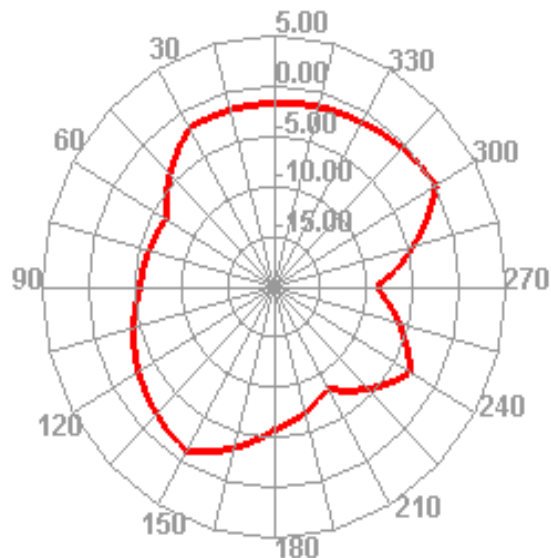
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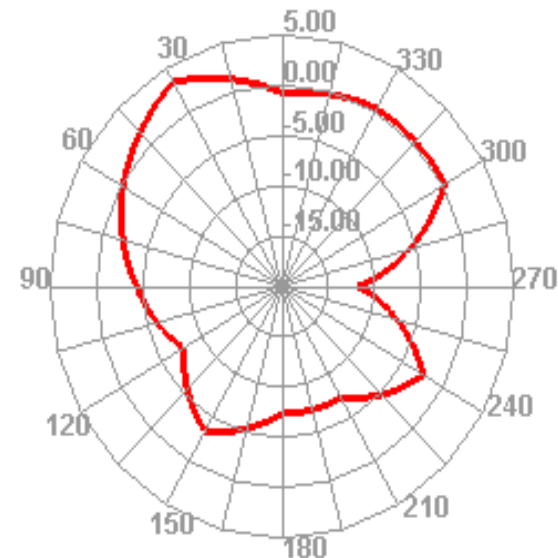
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5750.000MHz E2



5850.000MHz H



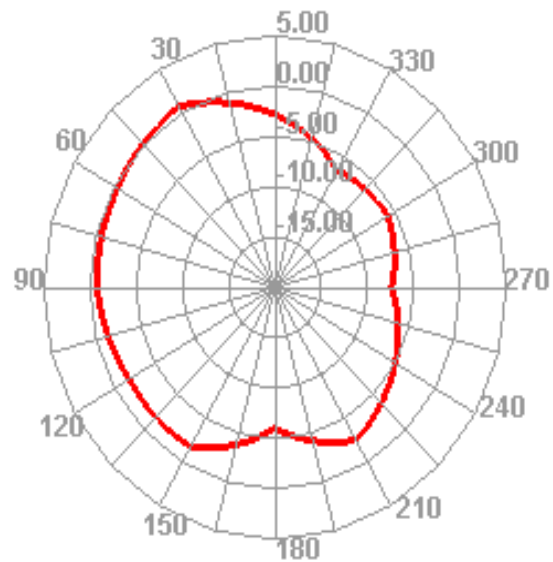
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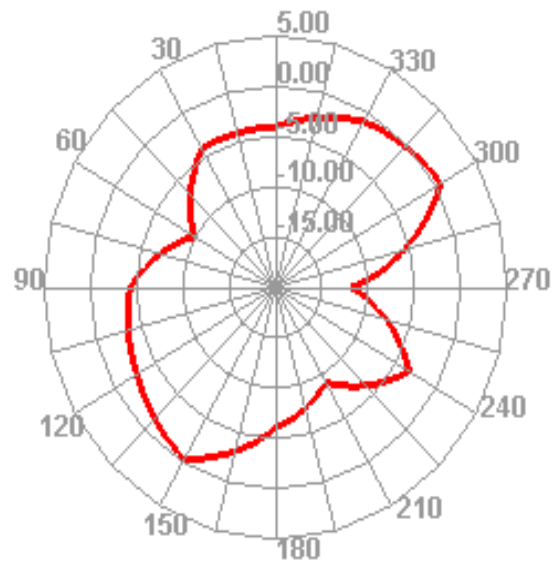
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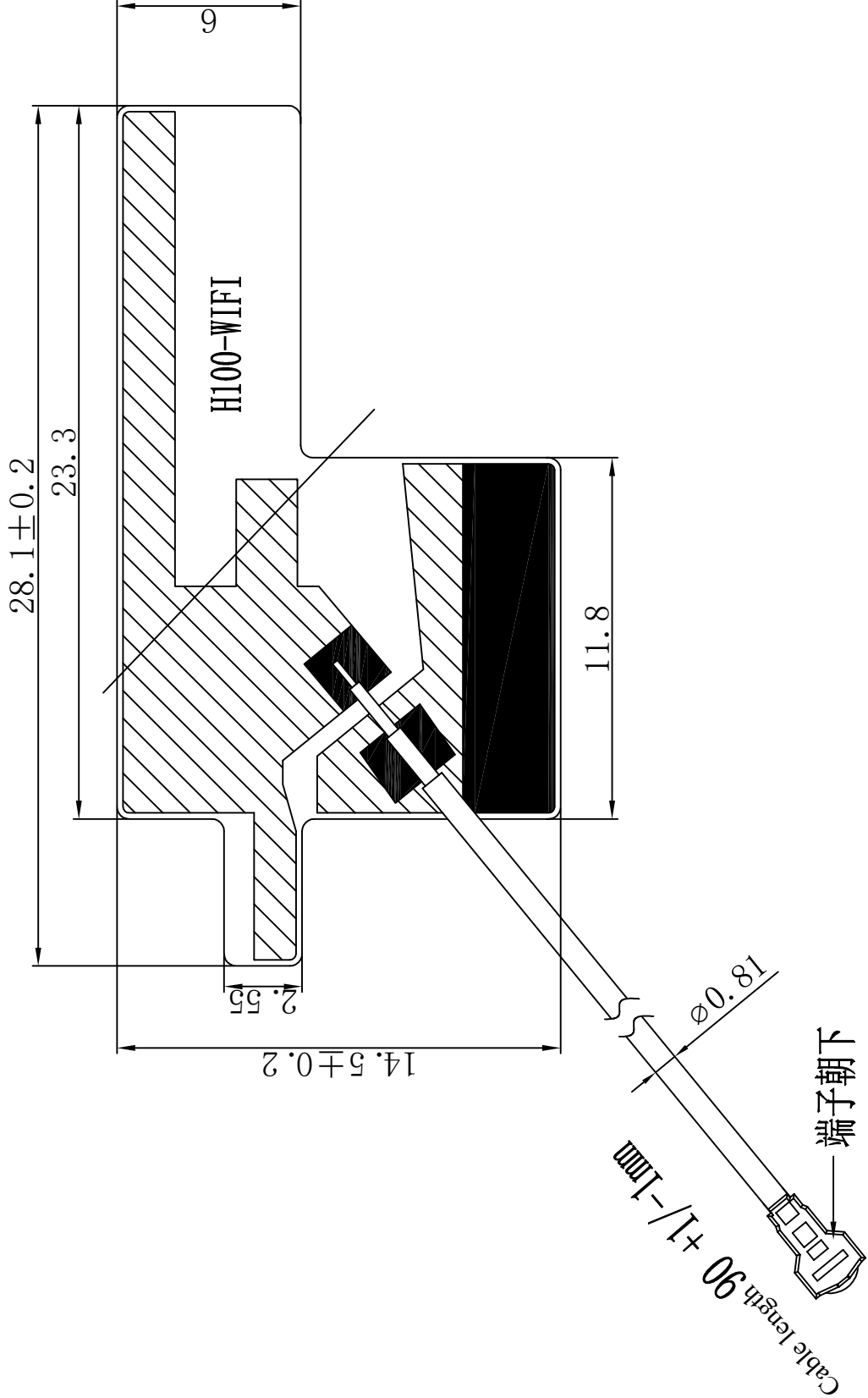


5850.000MHz E1



5850.000MHz E2





注：所有孔均为通孔，红色线为打断线。

1. Material : FPC. Substrate : 18/25 ; Surface color : Matt black
2. 反面整体背胶类型: 3M-9471LE, 总厚度 $\leq 0.15\text{mm}$ 。
3. 表面不可以有污染物、擦伤、黑点。
4. 镀镍厚度为 $2\sim 6\mu\text{m}$, 不可有镀镍后易断裂及脱落, 导通不良, 电路部分断裂等不良现象。
5. 背胶需要够热冲击实验; 实验条件: $-40\sim +85$ 摄氏度 16个周期 (一周期为30分钟)。
6. 该图尺寸为原尺寸比例图, *为重点管控尺寸

GENERAL TOLERANCE TABLE				深圳市勤新科技有限公司				
LINEAR(MM)		ANGULAR		THE MATERIAL	DATA	2021/12/24		
DIVISION	TOLERANCE	DIVISION	TOLERANCE					
0~10	±0.05	0~30度	±1°	COREDUCT NAME	DESIGN	叶晓平		
10~24	±0.07	30~90度	±2°	PRODUCT NO	VERIFY	刘涛		
24~50	±0.10			MATERIAL	APPROVE	郝若伟		
50~80	±0.13			SCALE	SIZE	SHEET		
OVER 80	±0.20			1:1	mm	1 of 1		