

勤新科技有限公司

QIN XIN technology CO.,LTD

承认书

Acknowledgement

客户名称	速魔 Shenzhen Simagic Technology Co., Ltd.	项目频段	2400-2500 MHZ 5150-5850 MHZ 天线 antenna
项目名称		制表日期	2026/04/11
机种编号	X-BOW GT	修改日期	
客户料号		版 次	1.0
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项目经理/PM			
客户确认			

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一 . 天线特性说明/Antenna profil

此报告主要为 2400-2500 / 5150-5850 mhz 天线物理特性和电性能各种测试状况说明。/This report mainly describes the physical characteristics and electrical performance test conditions of the antenna operating in the frequency bands of 2400-2500 /5150–5850 MHz.

1.1 天线示意图/Antenna Schematic Diagram:



1.2 物理特性说明/Physical Specifications

天线丝印/Antenna Silkscreen	X-BOW GT-WIFI
功能 /Function	2.4-2.5G/5.1G-5.8G 天线
天线外观尺寸/ Antenna Dimensions	37.4±0.2mm*10.1±0.2mm
天线材质/Antenna Material	FPC/Flexible Printed Circuit
天线颜色/Antenna Color	黑色/Black

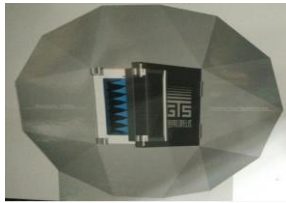
电缆类型 /Cable Type	线径 1.13mm 同轴线, 黑色, 线总长 160MM 一代 IPEX 头 /Coaxial cable, black, with IPEX connector; diameter: 1.13 ± 0.1mm, length: 160+1/-1mm
工作温度/Operating Temperature	-40℃-65℃
存储温度/Storage Temperature	-40℃-80℃

1.3 电气特性说明/Electrical Characteristics Specification

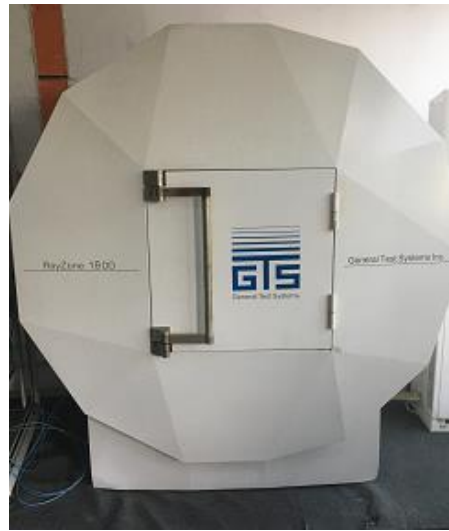
功能/Function	2. 4G-5. 8G 天线/Antenna
频率范围 (GHZ) /Frequency Range (GHz)	2. 4GHz-2. 5GHz 5. 15GHz-5. 85GHz
电压驻波比 (VSWR) /Voltage Standing Wave Ratio (VSWR)	≤ 2
增益/Peak Gain	$\leq 4. 91\text{dBi}$
输入阻抗 (Ω)/Input Impedance (Ω)	50
极化方式/Polarization Mode	垂直, 线性/Vertical, Linear
天线形式/Antenna Type	PIFA

二. 天线测试/Antenna Testing

2.1 测试设备/Test Equipment:

序号	设备名称 Equipment Name	设备图片 Equipment Picture	测量指标 Measured Parameters	操作环境 Operating Environment
1	微波暗室 Microwave Anechoic Chamber		无源性能 Passive Performance	周围无较大金属物 常温常湿
2	HP8753D 网络分析仪 HP8753D Network Analyzer			No large metal objects nearby Normal temperature and humidity

2.2 测试环境/Test Environment:

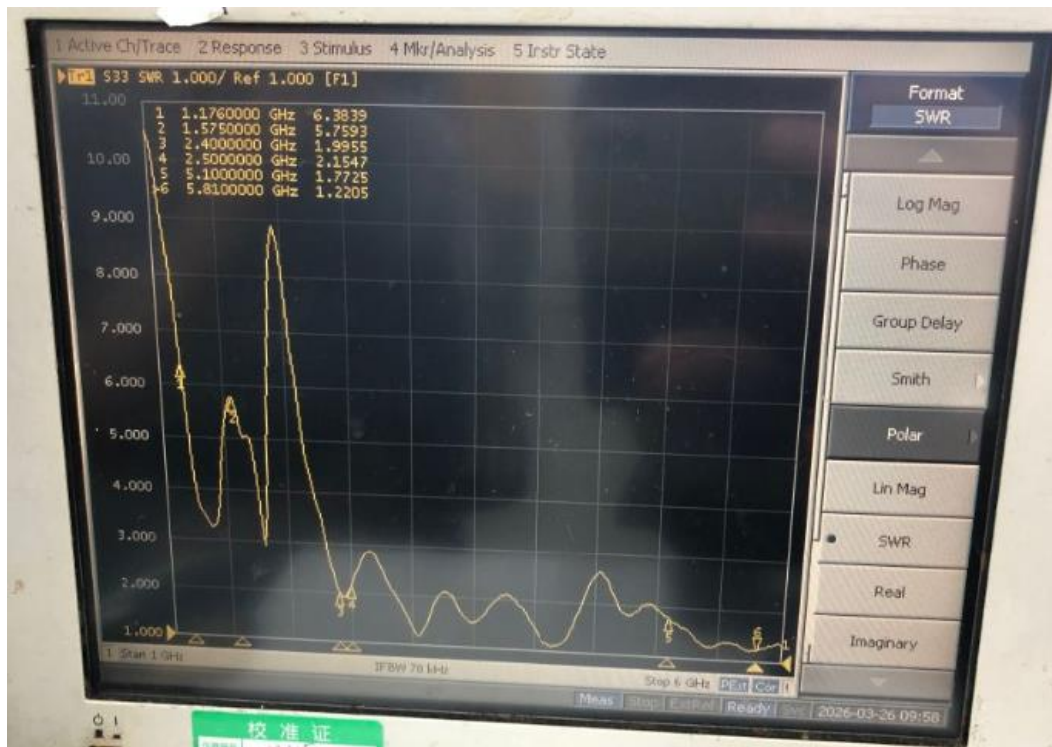


2.3 测试结果/Test Results:

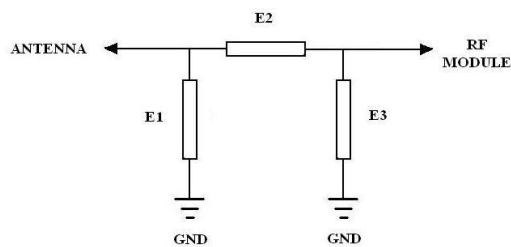
回波损耗图/Return Loss Plot:



天线驻波比图/Antenna VSWR Plot:



2.4 匹配电路/Matching Circuit:



Element	Value
E1	无改动
E2	无改动/Test Item
E3	无改动

注: 匹配电路由客户提供, 我司负责调试/Note: The matching circuit is provided by the customer, and our company is responsible for commissioning.

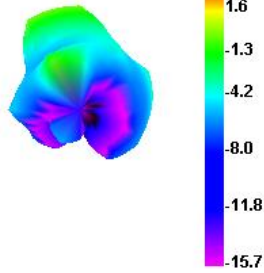
2.5 无源效率 /Antenna Efficiency:

Passive Test For 2.4G			
Freq	Effi	Effi	Gain
(MHz)	(%)	(dB)	(dBi)
2400	32.23	-4.92	3.49
2410	35.92	-4.45	3.82
2420	37.94	-4.21	4.03
2430	34.45	-4.63	3.39
2440	37.25	-4.29	3.46
2450	41.02	-3.87	3.73
2460	35.51	-4.5	2.98
2470	40.99	-3.87	3.34
2480	44.75	-3.49	3.56
2490	44.46	-3.52	3.37
2500	38.2	-4.18	2.55

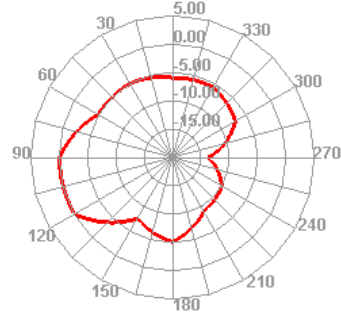
5G 天线效率效 Passive Test For 5.8G											
Freq	Effi	Effi	Gain	Freq	Effi	Effi	Gain	Freq	Effi	Effi	Gain
(MHz)	(%)	(dB)	(dBi)	(MHz)	(%)	(dB)	(dBi)	(MHz)	(%)	(dB)	(dBi)
5150	30.74	-5.12	3.53	5390	47.42	-3.24	3.74	5630	53.5	-2.72	4.91
5160	33.82	-4.71	3.93	5400	54.17	-2.66	4.6	5640	49.5	-3.05	4.45
5170	33.13	-4.8	3.79	5410	55.83	-2.53	4.81	5650	47.37	-3.25	4.39
5180	34.12	-4.67	3.96	5420	51.54	-2.88	4.42	5660	48.72	-3.12	4.43
5190	32.88	-4.83	3.69	5430	50.33	-2.98	4.37	5670	49.62	-3.04	4.55
5200	31.78	-4.98	3.65	5440	52.91	-2.76	4.47	5680	42.92	-3.67	3.87
5210	39.1	-4.08	4.44	5450	53.37	-2.73	4.58	5690	43.14	-3.65	3.8
5220	42.77	-3.69	4.7	5460	48.61	-3.13	4.35	5700	40.9	-3.88	3.33
5230	45.39	-3.43	4.78	5470	53.73	-2.7	4.51	5710	38.67	-4.13	3.09
5240	37.53	-4.26	4.01	5480	53.84	-2.69	4.43	5720	35.45	-4.5	2.66
5250	41.4	-3.83	4.29	5490	53.34	-2.73	4.33	5730	28.07	-5.52	1.54
5260	42.21	-3.75	4.3	5500	46.43	-3.33	3.93	5740	27.45	-5.62	1.51
5270	44.99	-3.47	4.37	5510	49.59	-3.05	3.99	5750	25.53	-5.93	1.35
5280	45.83	-3.39	4.13	5520	48.78	-3.12	3.82	5760	19.6	-7.08	0.6
5290	47.15	-3.27	4.23	5530	50.78	-2.94	4.05	5770	20.05	-6.98	1.59
5300	42.04	-3.76	3.9	5540	49.85	-3.02	4.04	5780	20.87	-6.81	1.7
5310	43	-3.66	3.88	5550	48.64	-3.13	4.15	5790	23.26	-6.33	1.22
5320	45.62	-3.41	4.04	5560	47.49	-3.23	4.01	5800	25.84	-5.88	2
5330	53.48	-2.72	4.51	5570	50.78	-2.94	4.39	5810	30	-5.23	2.71
5340	49.34	-3.07	4.19	5580	46.4	-3.34	4.07	5820	33.51	-4.75	3.52
5350	52.24	-2.82	4.37	5590	47.97	-3.19	4.3	5830	32	-4.95	4.66
5360	45.3	-3.44	3.82	5600	53.41	-2.72	4.75	5840	35.45	-4.5	3.7
5370	50.97	-2.93	4.19	5610	47.55	-3.23	4.2	5850	36.62	-4.36	3.84
5380	48.86	-3.11	3.69	5620	48.77	-3.12	4.42				

2.6 辐射方向图/radiation pattern :

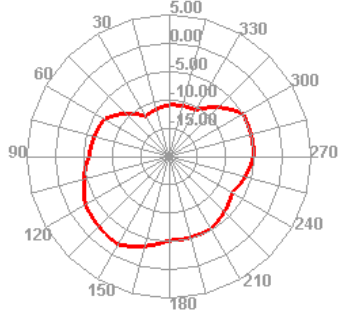
2400.000MHz



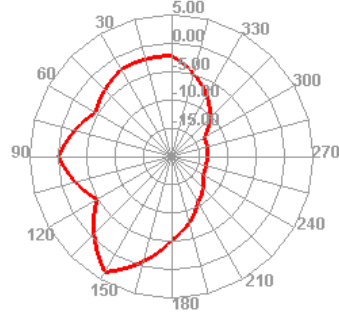
2400.000MHz H



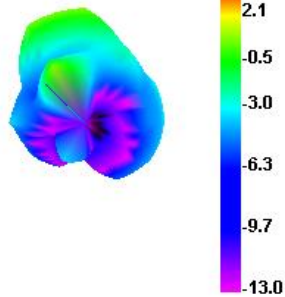
2400.000MHz E1



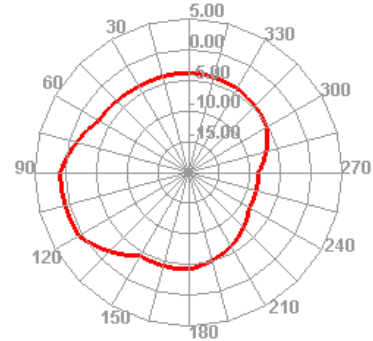
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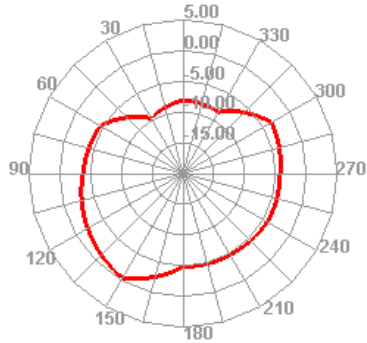
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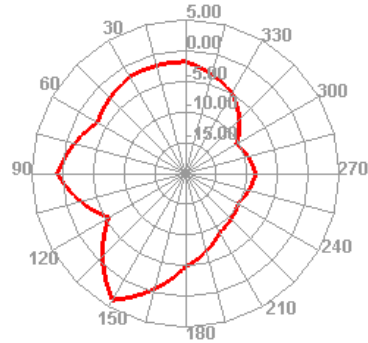
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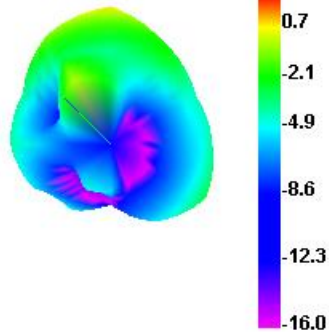
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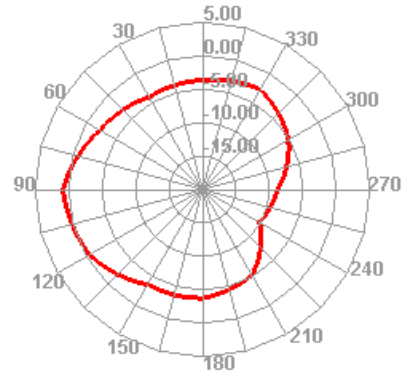
2450.000MHz E2



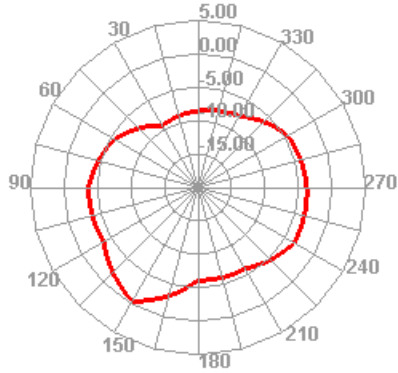
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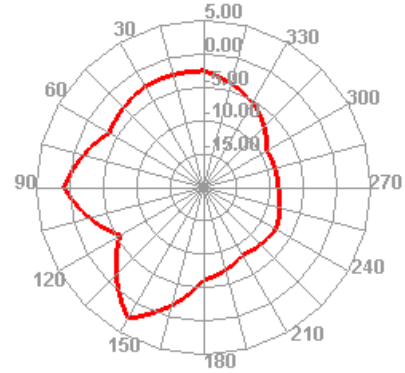
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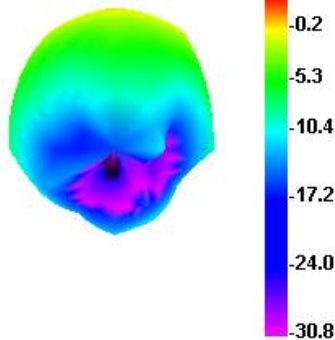
2500.000MHz E1



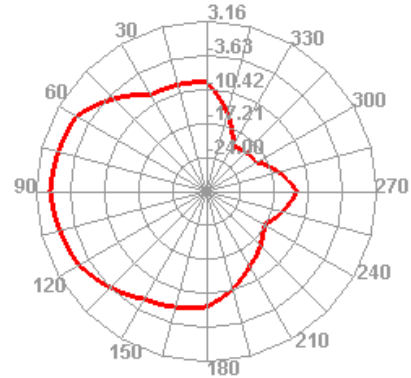
2500.000MHz E2



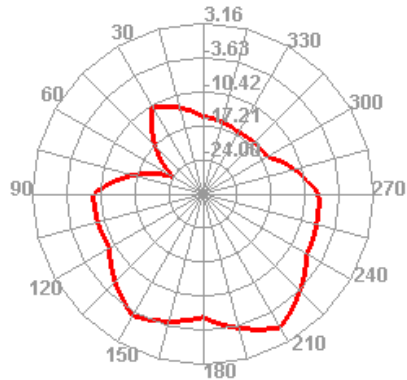
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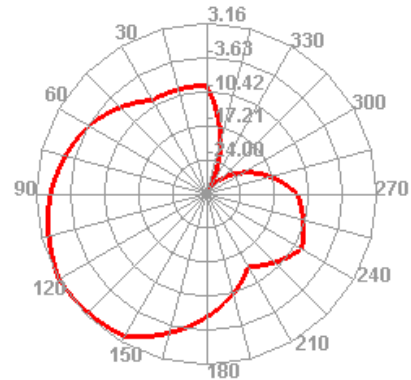
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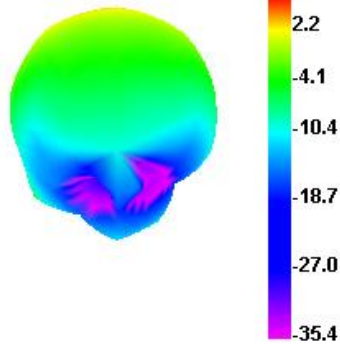
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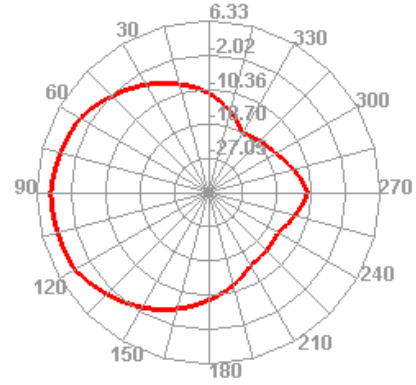
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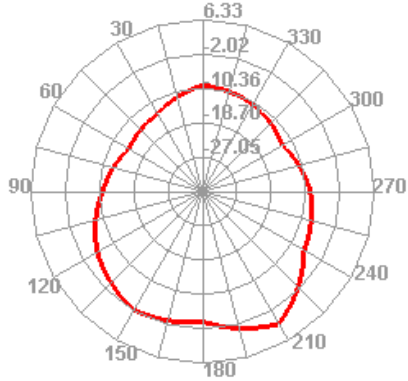
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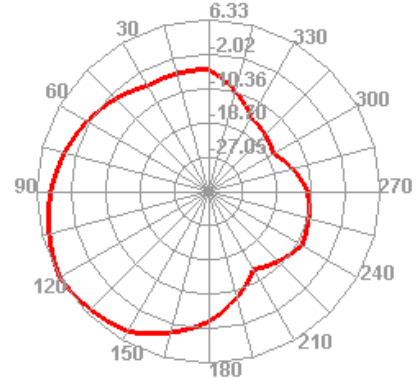
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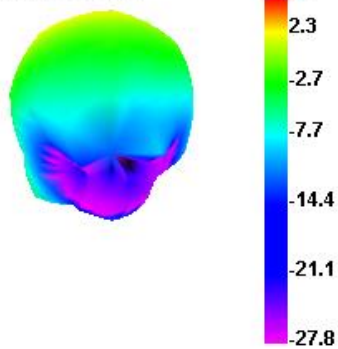
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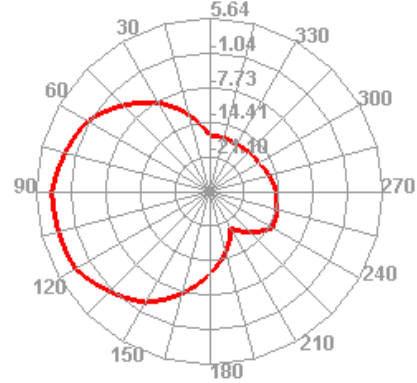
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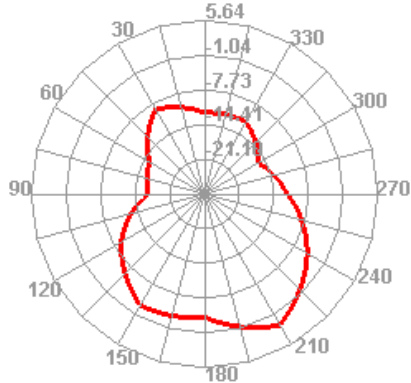
5500.000MHz



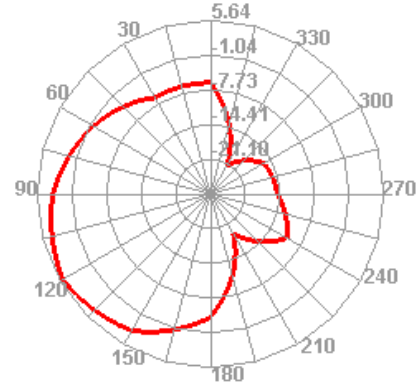
5500.000MHz H



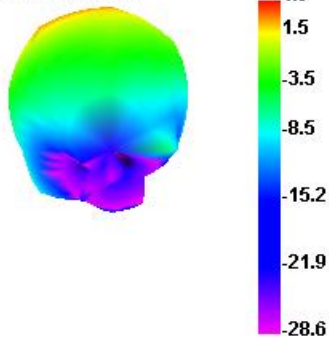
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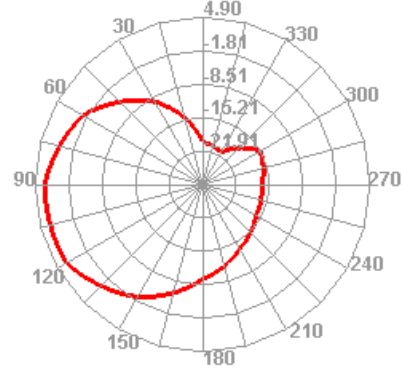
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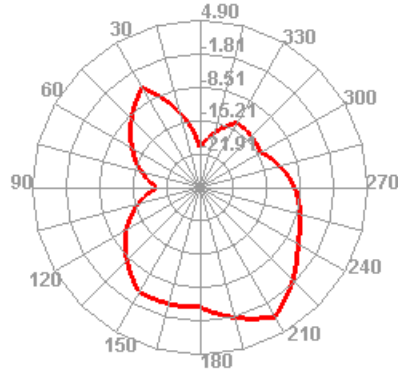
5650.000MHz



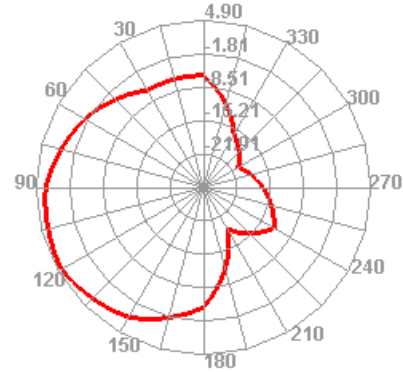
5650.000MHz H



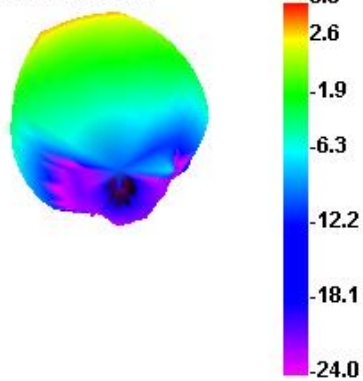
5650.000MHz E1



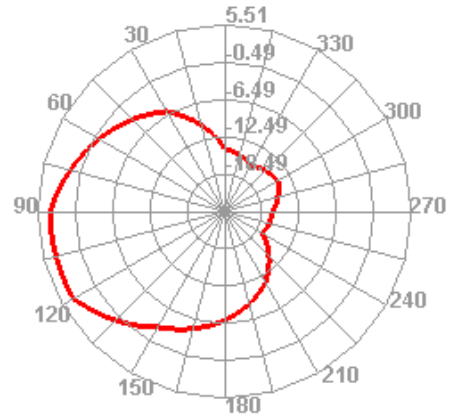
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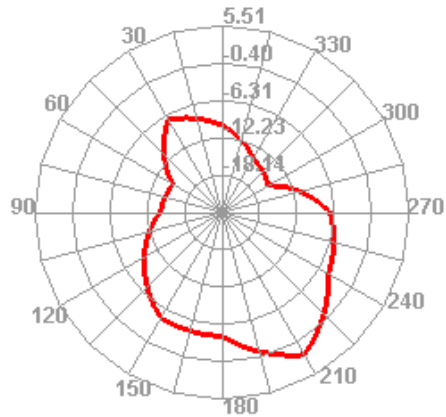
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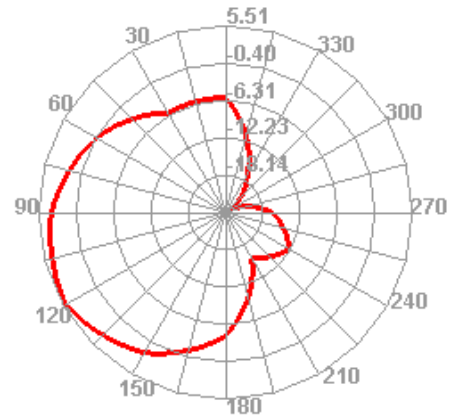
5850.000MHz H



5850.000MHz E1



5850.000MHz E2



2.6 天线暗室 3D 数据 /3D Antenna Anechoic Chamber Data::

2.4G 有源天线测试数据/2.4G Active Antenna Test Data			
802. b 测试 2.4G			
测试项目/Test item	CH1	CH7	CH13
TRP	14.2	14.3	14.1
TIS	-78.5	-80.8	-79.6
802. a 测试 5G			
测试项目/Test item	CH36	CH149	CH165
TRP	11.6	11.8	11.1
TIS	-71.1	-71.6	-71.03

三. 环境处理/Environmental Treatment:



注：屏和 TP 后面排线需贴导电布到屏，如图所示。环境处理与样机一样无改动。 The flexible cables behind the display and TP shall be attached with conductive tape to the display, as shown in the figure. Environmental treatment remains unchanged, consistent with the sample unit.

五.总结/Conclusion:

此天线是基于标准样品设计, 并且达到了电性能和结构性能标准, 请确认/This antenna is designed in accordance with relevant standards and meets the electrical and structural performance requirements. Please confirm.