

深圳市云顶通讯电子有限公司

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E-mail:wht0809@163.com

承認書 APPROVAL SHEET

客 户 : 巨诺电子

品 名 规 格 : ANT(金属),ANT00118-AA,2.4G/5G,不锈钢镀
DESCRIPTION: 镍,20x6.8x8.5x0.3mm,DV9187

料 号 :
PART NO.:

客 户 料 号 :
CUS PART NO.:

日 期 : 2024.7.31
D A T E:

云顶呈样签章

工 程 ENGINEERING DEPARTMENT	品 保 Q C DEPARTMENT	业 务 SALES DEPARTMENT

客户承认签章

工 程 ENGINEERING DEPARTMENT	品 保 Q C DEPARTMENT	采 购 PURCHASING DEPARTMENT

联系电话: 0755 23073599

※ 承认书一式三份, 惠蒙贵司承认签章

※ Approval in duplicate, please signed by your company.

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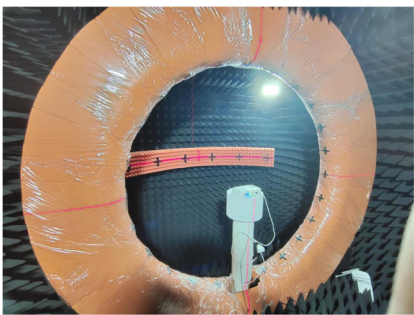
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1. 测试项目与设备

	测试项目	设备
1. S11 参数 (S-parameter)	1. 回波损耗 (Return Loss) 2. 电压驻波比 (VSWR)	网络分析仪: Agilent E5071B HP 8753D
2. 有源测试 (Active)	1. 发射功率 (TRP) 2. 接收灵敏度 (TIS)	1. 暗室: ETS 7x4x3 m (3D) Chamber ETS 5x3x3 m (3D) Chamber 2. 综合测试仪: Agilent 8960 E5515B ×2 StarPoint SP6011 Cmw500
3. 无源测试 (Passive)	1. 天线增益 (Gain) 2. 天线效率 (Efficiency)	1. 暗室: ETS 7x4x3 m (3D) Chamber ETS 5x3x3 m (3D) Chamber 2. 网络分析仪: Agilent E5071B HP 8753D



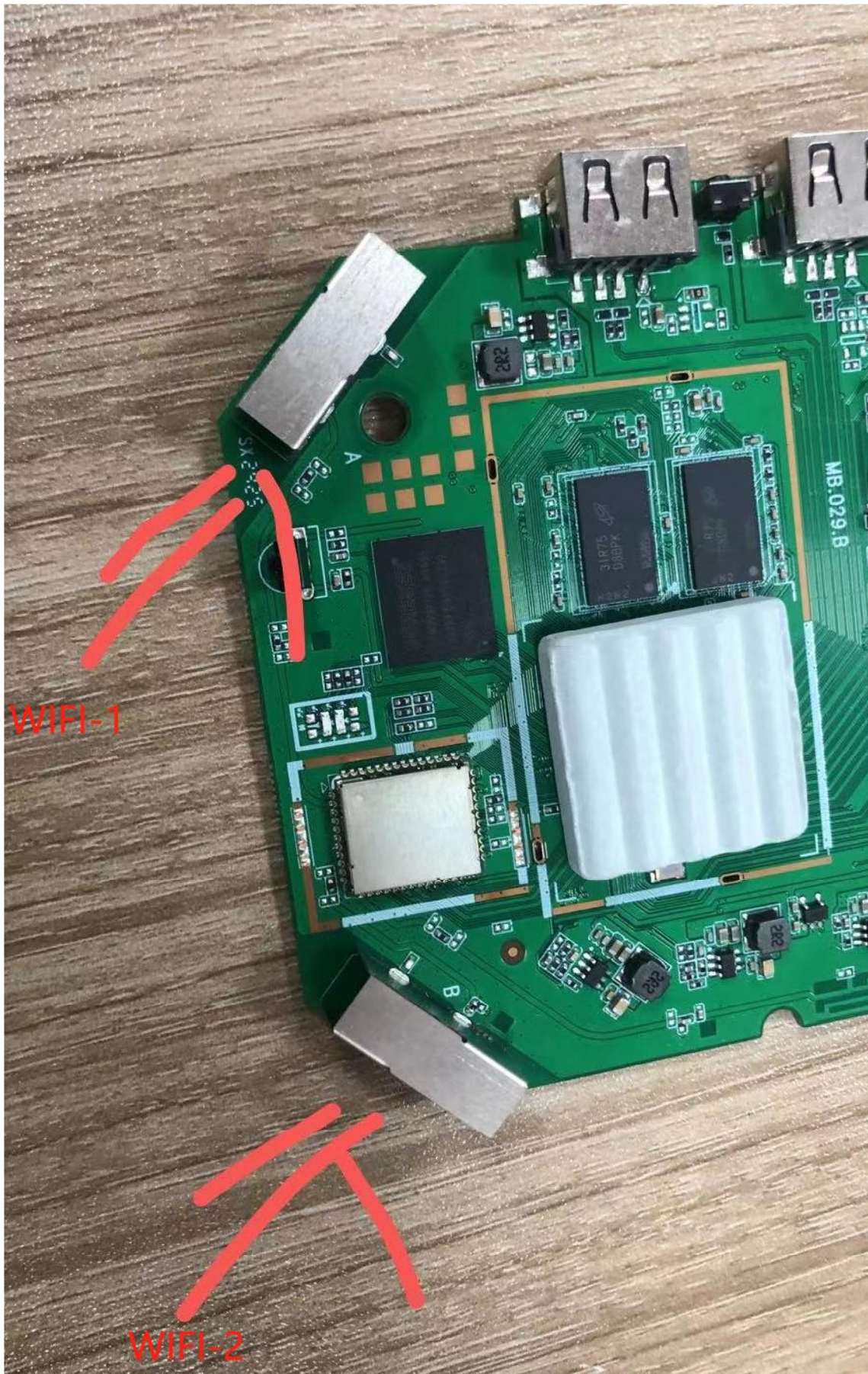
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2. 天线装配图



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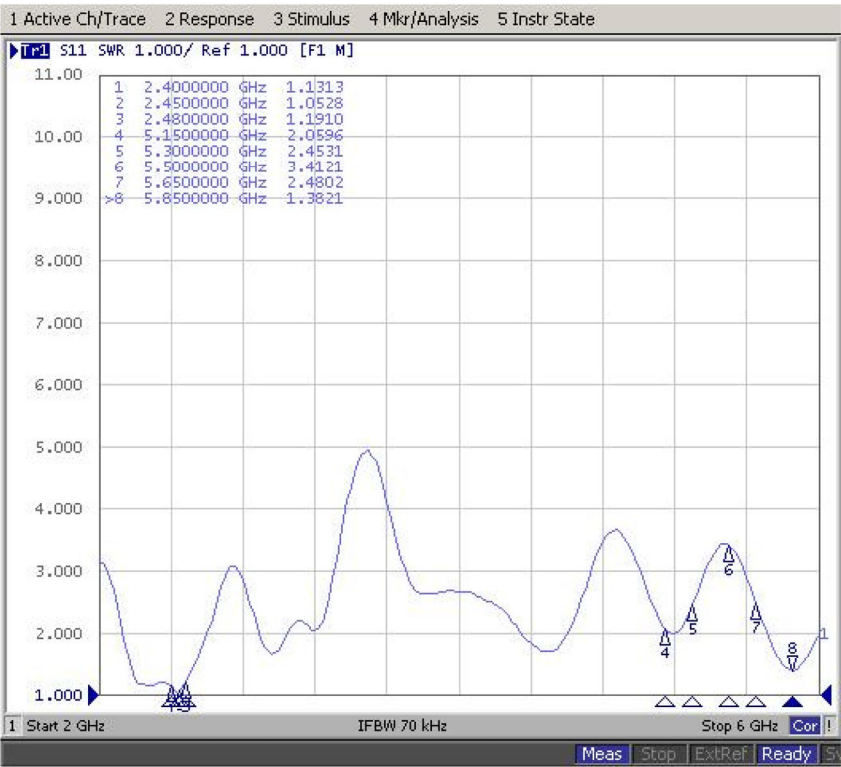
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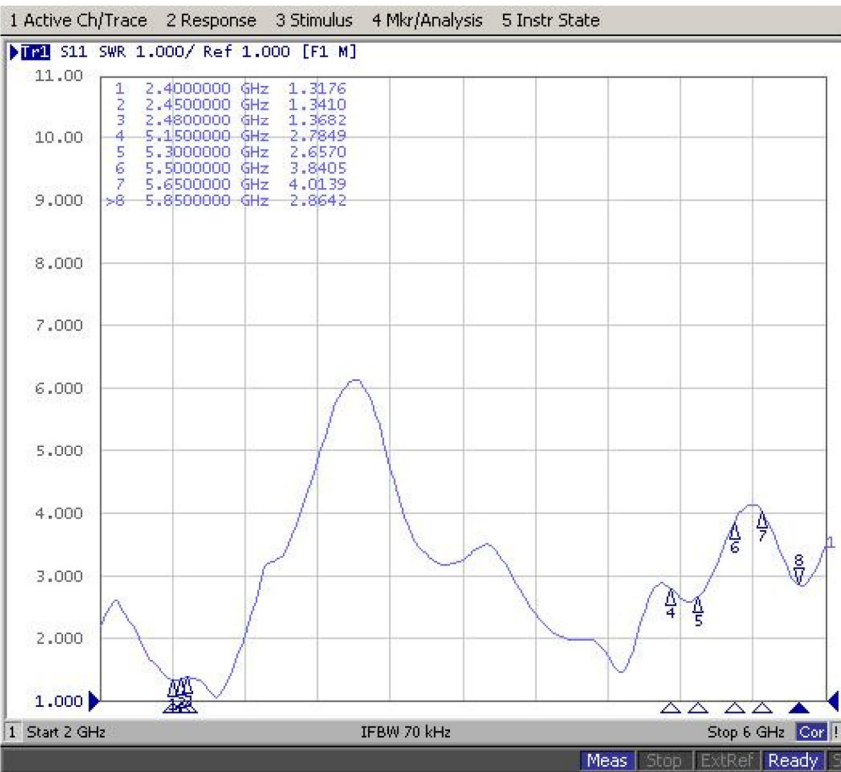
3. 天线性能

SWR

WIFI-1



WIFI-2



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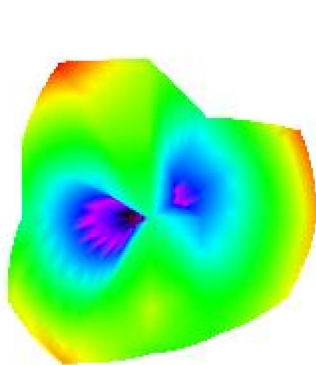
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4. 天线效率与增益

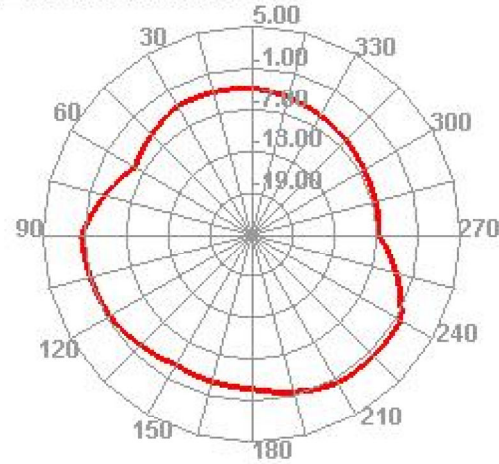
WIFI-1

Passive Test For WIFI2.4		
Freq (MHz)	Effi (%)	Gain (dBi)
2400	54.6	2.04
2410	52.96	1.85
2420	50.93	1.6
2430	50.4	1.42
2440	52.18	1.72
2450	54.29	1.93
2460	54.92	2.02
2470	54.7	1.91
2480	55.17	1.92
2490	55.9	1.93
2500	54.36	1.9

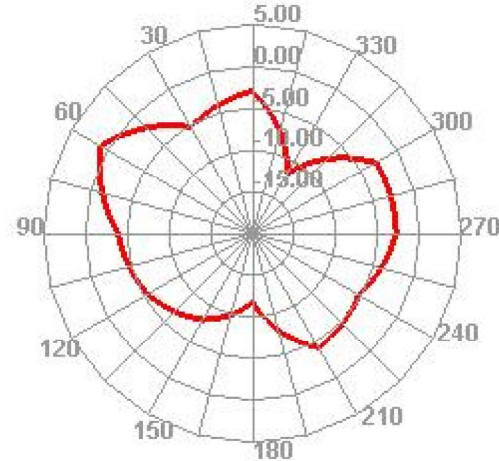
2400.000MHz



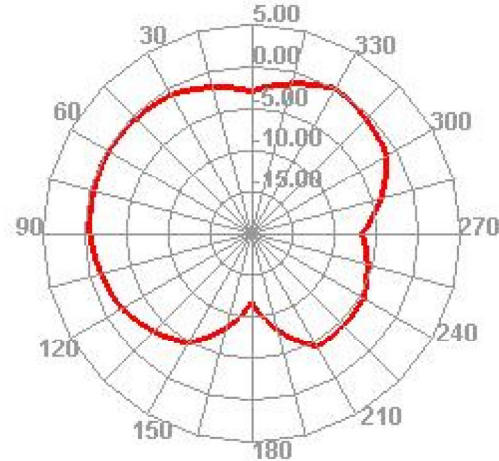
2400.000MHz H



2400.000MHz E1



2400.000MHz E2



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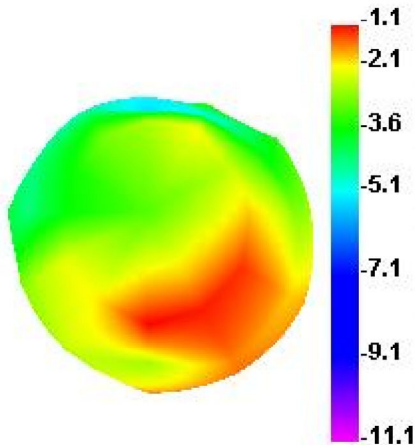
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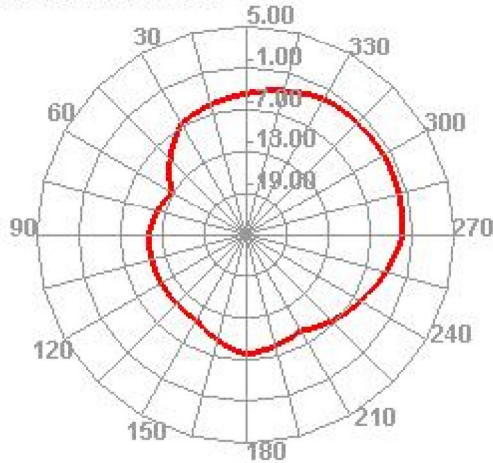
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Passive Test For WIFI5.8		
Freq (MHz)	Effi (%)	Gain (dBi)
5150	24.82	-1.12
5250	24.52	-1.02
5350	21.25	-2.13
5450	26.84	-0.8
5550	25.5	-0.9
5650	34.11	0.19
5750	33.9	1.17
5850	35.5	1.18

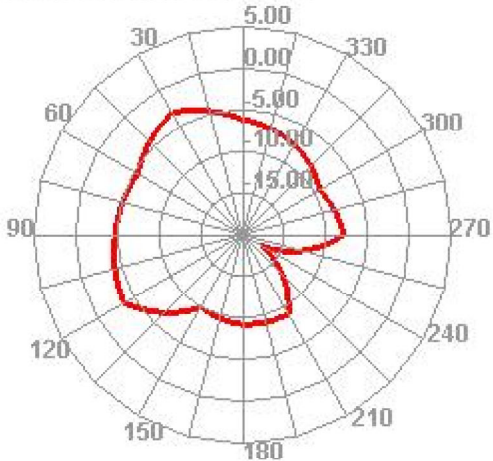
5150.000MHz



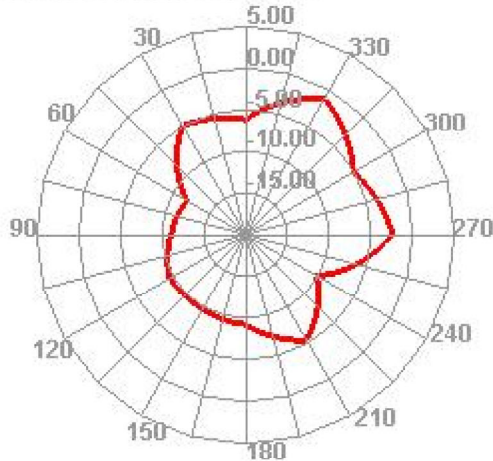
5150.000MHz H



5150.000MHz E1



5150.000MHz E2



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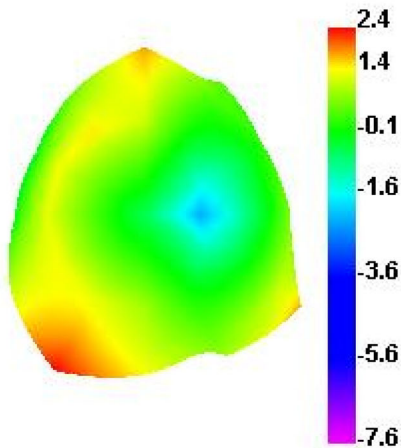
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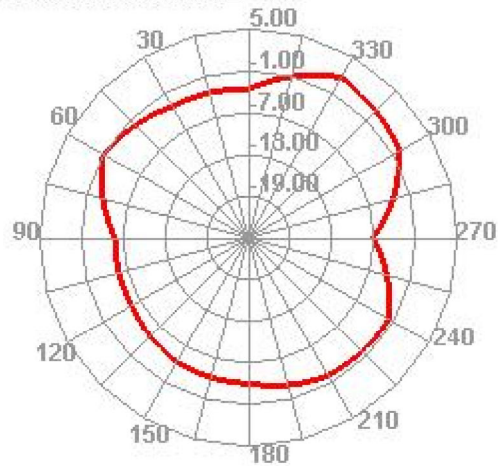
WIFI-2

Passive Test For WIFI2.4		
Freq (MHz)	Effi (%)	Gain (dBi)
2400	60.48	2.4
2410	58.29	2.23
2420	55.69	2.07
2430	55.08	2.04
2440	56.59	2.16
2450	58.73	2.41
2460	58.98	2.48
2470	59.07	2.56
2480	58.94	2.64
2490	60.04	2.71
2500	59.48	2.58

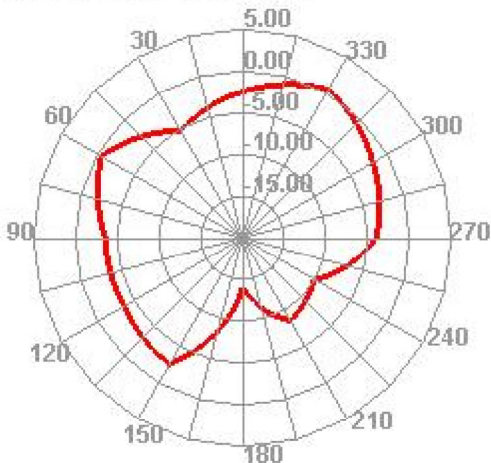
2400.000MHz



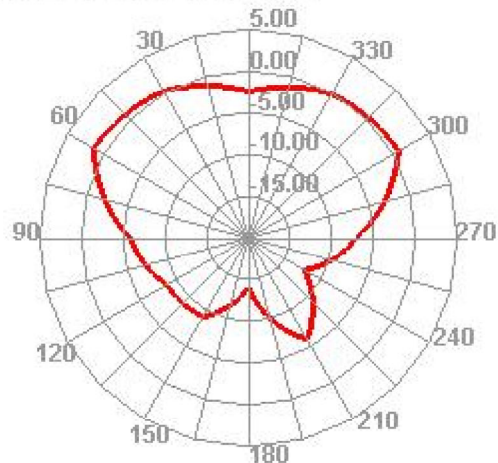
2400.000MHz H



2400.000MHz E1



2400.000MHz E2



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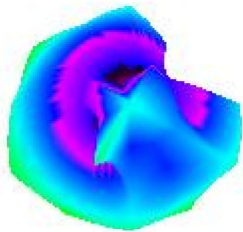
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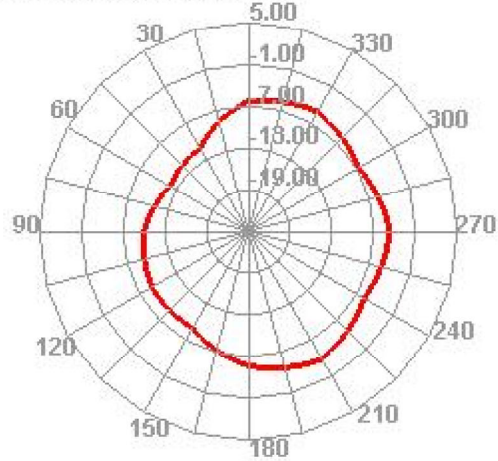
Passive Test For WIFI5.8

Freq (MHz)	Effi (%)	Gain (dBi)
5150	21.93	0.35
5250	22.38	-0.51
5350	20.28	-1.01
5450	19.32	-1.47
5550	16.54	-3.21
5650	19.98	-1.7
5750	19.48	-1.34
5850	19.61	-0.75

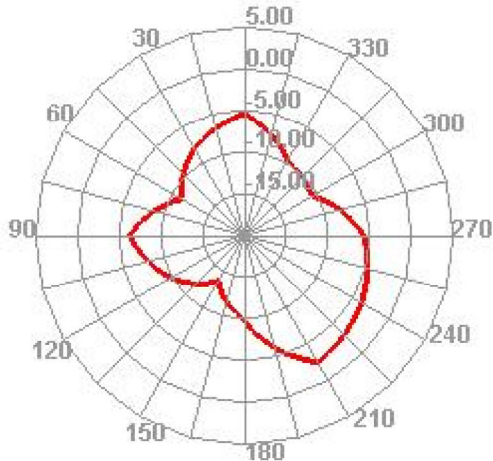
5150.000MHz



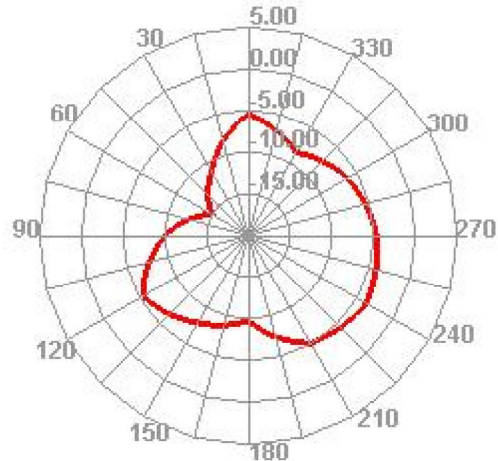
5150.000MHz H



5150.000MHz E1



5150.000MHz E2



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5. 天线 OTA 测试数据 发射功率 TRP/接收灵敏度 TIS

802.11b : 11Mbps							
Test	Wifi 2G TRP			Test	Wifi 2G TIS		
Result	1	6	11	Result	1	6	11
Frequency (MHz)	2412	2437	2462	Frequency (MHz)	2412	2437	2462
Txp Ave(dBm)	13.79	14.76	15.87	Sens Ave(dBm)	-80.56	-77.81	-80.03
802.11a : 54Mbps							
Test	Wifi 5G TRP			Test	Wifi 5G TIS		
Result	36	64	161	Result	36	64	161
Frequency (MHz)	5180	5320	5805	Frequency (MHz)	5180	5320	5805
Txp Ave(dBm)	17.24	17.34	14.09	Sens Ave(dBm)	-67.69	-74.14	-69.78

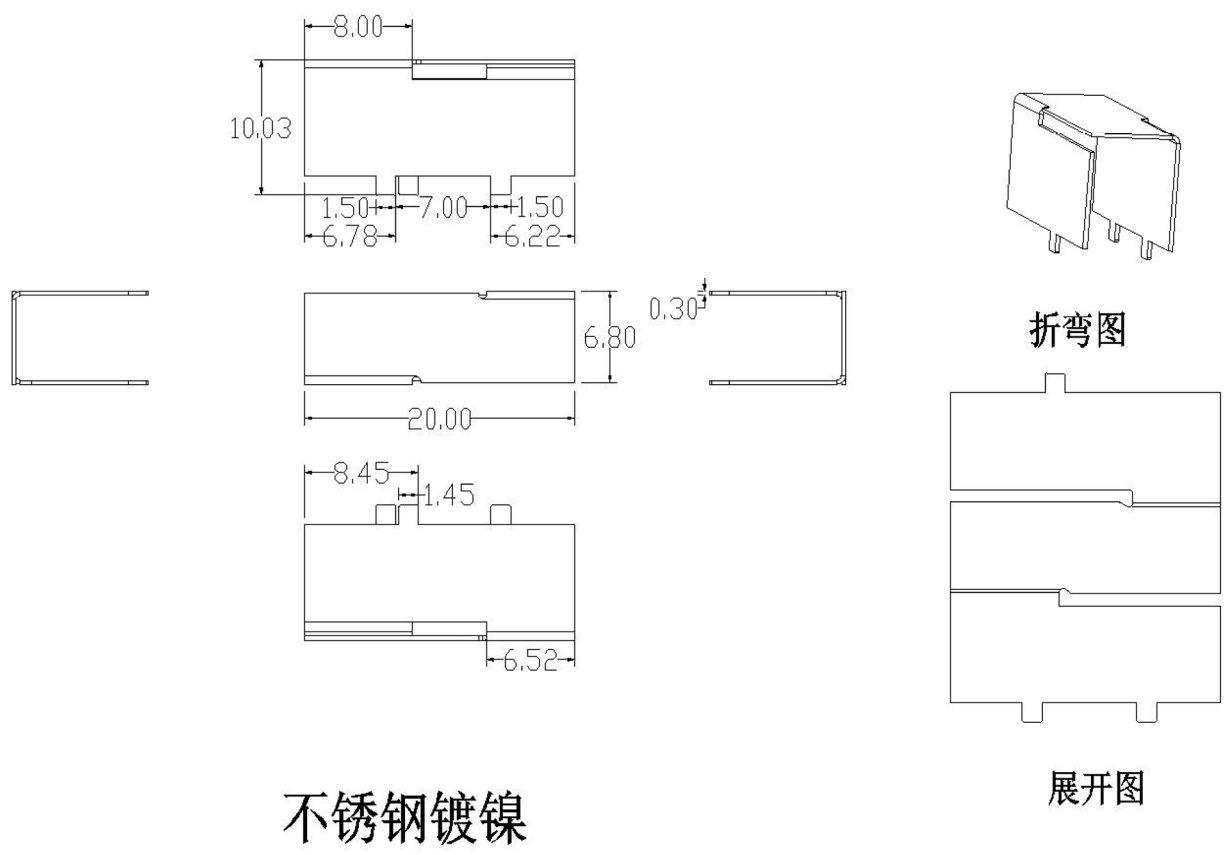
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6. 天线结构图:



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电器技术参数			
电 性 能 指 标		Electrical Specifications	
频率范围	2400~2500/5150~5850MHz	Frequency Range	2400~2500/5150~5850MHz
电压驻波比	≤2.0	VSWR	≤2.0
输入阻抗	50 Ω	Input Impedance	50 Ω
增益	2 DBI	Gain	2 DBI
机 械 指 标		Mechanical Specifications	
工作温度	-40℃~+85℃	Working Temperature	-40℃~+85℃
工作湿度	20~80%	Working Humidity	20~80%

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环境性能测试 (Environment performance test) :

项目	测试条件	测试结果
储存环境	在没有指定的情况下测试温度、湿度、气压如下： 1. 温度为-30℃~+80℃ 2. 相对湿度为45%-85% 3. 气压为86kpa-106kpa	电气机械性能正常
高低温试验	在70℃与-40℃之间进行5次循环，然后在正常条件下1-2H，检查外观质量。	尺寸应满足规定并应满足于机械、电气性能
耐恒定湿热试验	相对湿度95±3%，试验温度：40℃.持续2H作用后，试品取出后5min之内测定电气性能，试品在正常条件下1-2H，检查外观质量	尺寸应满足规定并应满足于机械、电气性能
振动试验	振频范围10-55HZ，位移幅值：0.35MM，加速度幅值：50.0M/S，扫频循环次数：30次	电气机械性能正常
跌落试验	1M高空按照互相垂直的轴方向自由跌落3次	电气机械性能正常

Project	Test condition	Test results
Storage environment	Test temperature, humidity, pressure without stated condition as follwings:1.Temperature: -30℃ ~ +80℃ ;2.Relative humidity: 45%-85%;3,Pressure: 86kpa-106kpa	Electrical and mechanical performance normal
High and low temperature test	Having 5 times cycle between -40℃ to 70℃,Then in common condition 1-2 hours test exterior quality.	Measurement satisfied with electrical and mechanical performance normal.
Resistance constant hot and humid test	Relative humidity:95±3%,Test temperature: 40℃,last 2 hours ,put it after 5 min test the electrical function .Test products during common condition 1-2 hours ,Then test exterior quality.	Measurement satisfied with electrical and mechanical performance normal.
Vibration test	Vibrate Frequency:10-55HZ; Distance :0.35mm;Acceleration :50.0m/s;Sweep frequency cycle:30 times	Electrical and mechanical performance normal
Fall test	From 1m height fall down 3 times freely (vertical direction)	Electrical and mechanical performance normal