承　　认　　书
SPECIFICATION FOR APPROVAL

客户名称 Customer Name	索麦		
客户项目名 Customer Project Name	M10-WF	顺达成项目名 SDC Project Name	M10-WF
客户编码 Customer P/N		顺达成料号 SDC P/N	WF4275B-A
频段 Band	WIFI2.4G/5.8G/BT		
版本号 Version	A0		
设计人信息/Designer Information			
射频工程师 RF Engineer	符学荣	研发主管 R&D Diretor	夏承磊
结构工程师 ME Engineer	黄宗宝		

审批/ Approval				客户批准/Customer Approval	
	制作 Prepared By	审核 Checked By	批准 Approval By	审核 Checked By	批准 Approval By
签章 Signature	李瑶娜	夏承磊	陈华明		
日期 Date	2023.09.07	2023.09.07	2023.09.07		

修订履历/Change Log				
版本 Version	修订内容 Change Description	责任人 Person in Charge	核准 Approval By	日期 Date

目录/Catalogue

序号 No.	项目 Item	页码 Page No.
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3	射频性能测试报告 RF Performance Test Report	6-9
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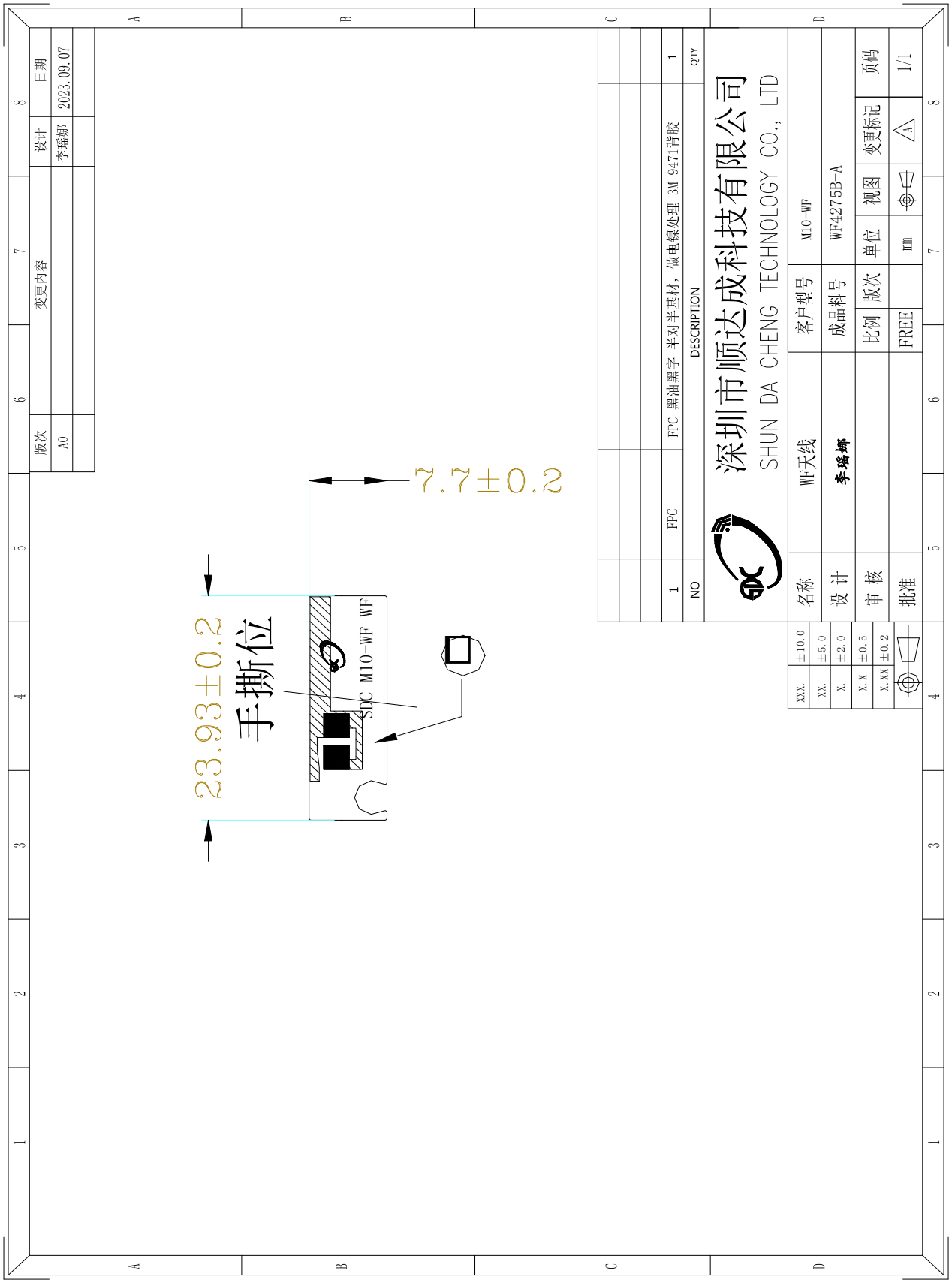
6	环境有害物质管控一览表 RoHS Control list for Sample	12
7	安装事宜或其它 Install Wizard or Other	12

产品图纸或实物图片

Drawing or Product Image



深圳市顺达成科技有限公司
SHUN DA CHENG TECHNOLOGY CO., LTD

样品尺寸测量报告
Sample Dimensions Test Report

测试日期 Test Date	2023.09.07	样品数量 Sample Qty.	3	测试人 Inspector	许燕芳
尺寸编号 Dimension No.	标准 Standard	样品 1 Sample 1	样品 2 Sample 2	样品 3 Sample 3	Pass/NG
①长度	23.93±0.2mm	23.93	24.03	23.93	Pass
②宽度	7.7±0.2mm	7.7	7.8	7.7	Pass
③厚度	0.1±0.05mm	0.1	0.1	0.1	Pass
④					
⑤					
⑥					
⑦					
最终结论 Conclusion					PASS
测试人&日期 Inspector & Date	许燕芳 2023.09.07		批准&日期 Approval &D ate		

公司地址：深圳市宝安区福永镇重庆路新福工业园 B5 栋 4 楼　　电话:0755-27211658　　传真:0755-29485750

射频性能测量报告

RF Performance Test Report

天线测试设备简介

Antenna Test Equipment Introduction

测试天线输入特性使用 **Agilent E5071C and Agilent 5062A** 矢量网络分析仪；辐射特性利用广屏三维近场暗室进行测试，并分别使用 8960 E5515 和 Agilent E4438C 进行了分析。暗房的测试坐标如下:

Test of antenna input characteristics using **Agilent E5071C and Agilent 5062A** vector network analyzer; The radiation pattern of the antenna are tested using the guangping 3D near field Anechoic Chamber, and the instrument is used to agilent8960 E5515 and Agilent E4438C. The test coordinates of the darkroom are as follows:

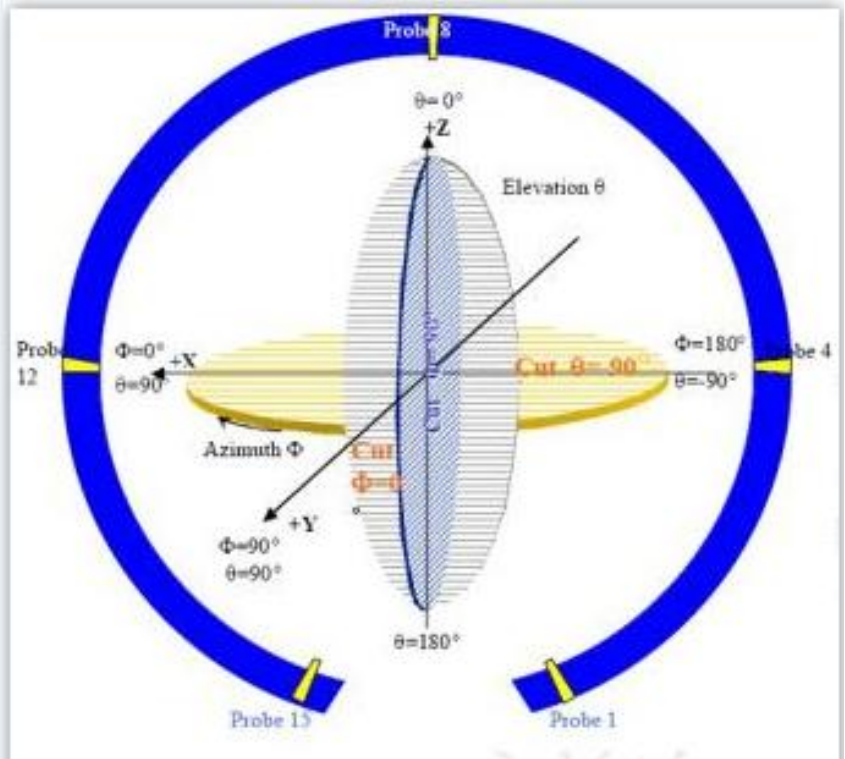


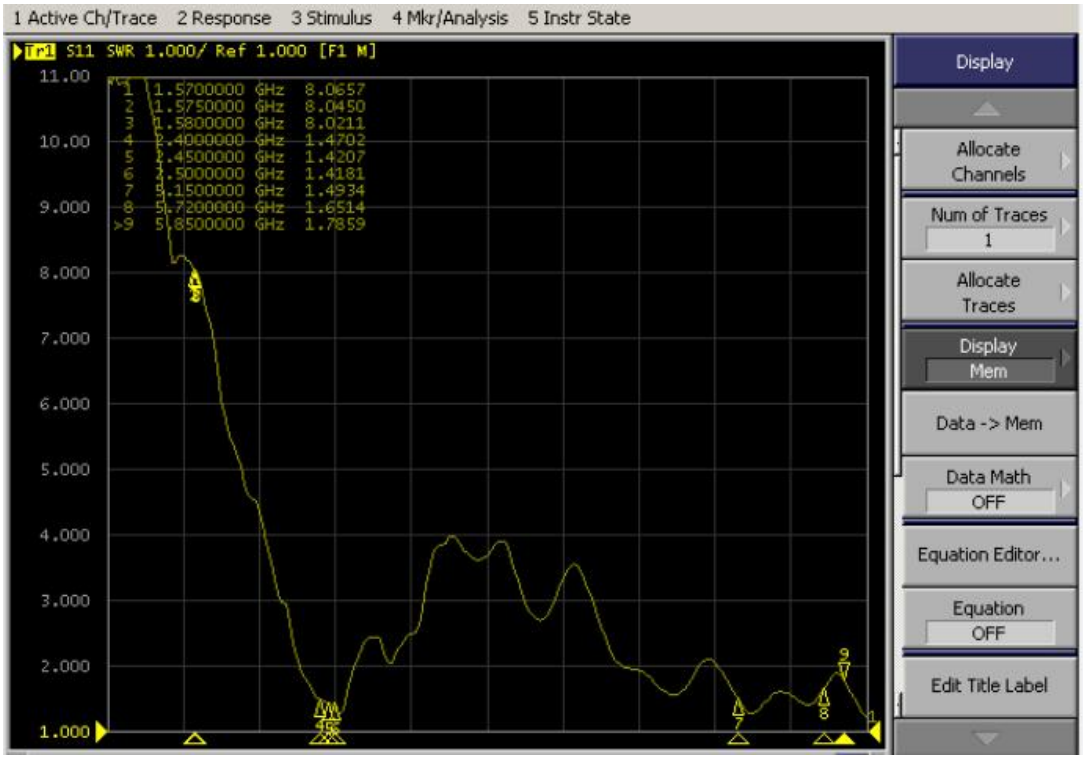
图 4 3D 微波暗室测试坐标系(back view)

1. S11 参数测量/*S11 Parameter-VSWR*

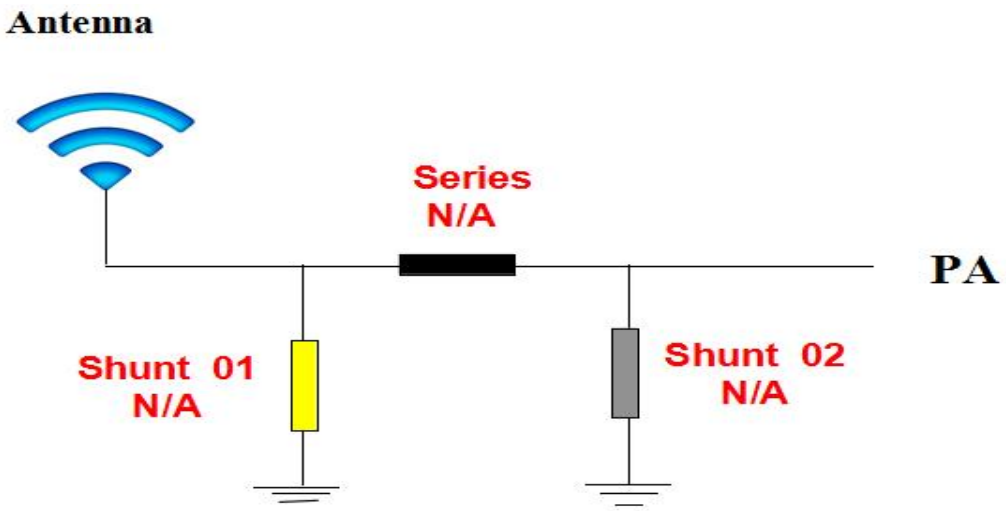
使用一根 50Ω同轴电缆连接到天线，然后该电缆连接到网络分析仪测量 S11 参数，被测量产品远离金属至少 20 厘米。

Measuring Method is a 50Ω coaxial cable is connected to the antenna. Then this cable is connected to a network analyzer to measure the S11 parameter, Keeping this fixture away from metal at least 20cm.

S11 Parameter-VSWR



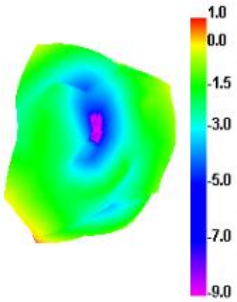
2. 天线匹配网络/**Antenna Matching Network**



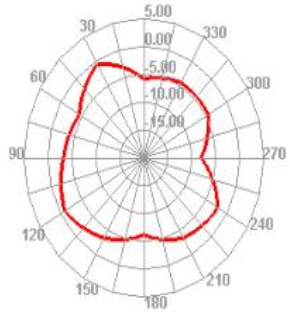
3.Gain & Efficiency

Passive Test For 2.4G										
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHIS (%)	DHIS (%)	Max (dB)	Min (dB)	irectivit (dBi)	Beamwi (3dB
2400	43.54	-3.61	1.03	-1.12	20.581	22.962	1.03	-15.9	4.64	
2425	45.48	-2.97	1.96	-0.19	23.926	26.555	1.96	-16.48	4.93	
2450	36.53	-4.37	0.87	-1.28	17.136	19.397	0.87	-19.74	5.24	
2475	35.97	-4.44	0.52	-1.63	17.205	18.763	0.52	-23.22	4.96	
2500	36.94	-4.32	0.32	-1.83	17.676	19.267	0.32	-18.36	4.64	

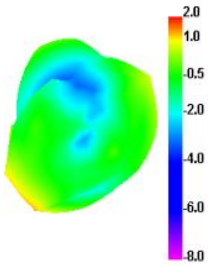
2400.000MHz



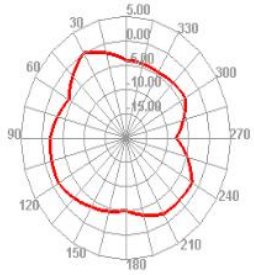
2400.000MHz H



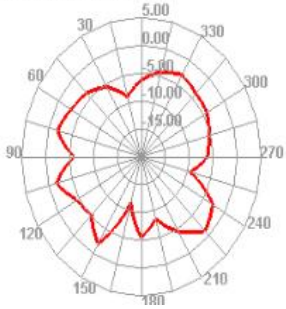
2425.000MHz



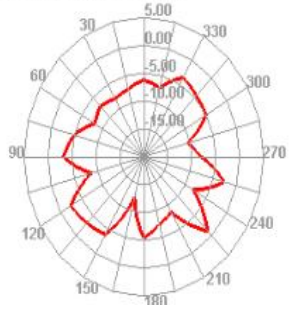
2425.000MHz H



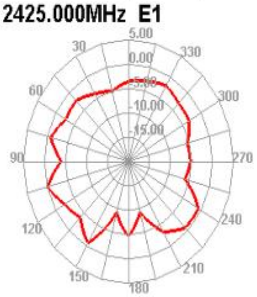
2400.000MHz E1



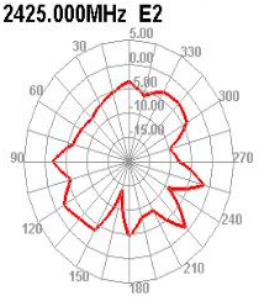
2400.000MHz E2

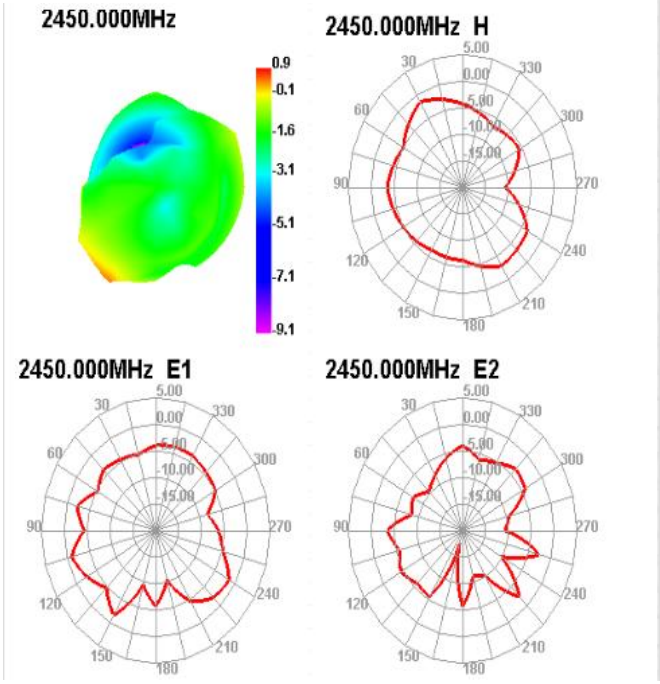


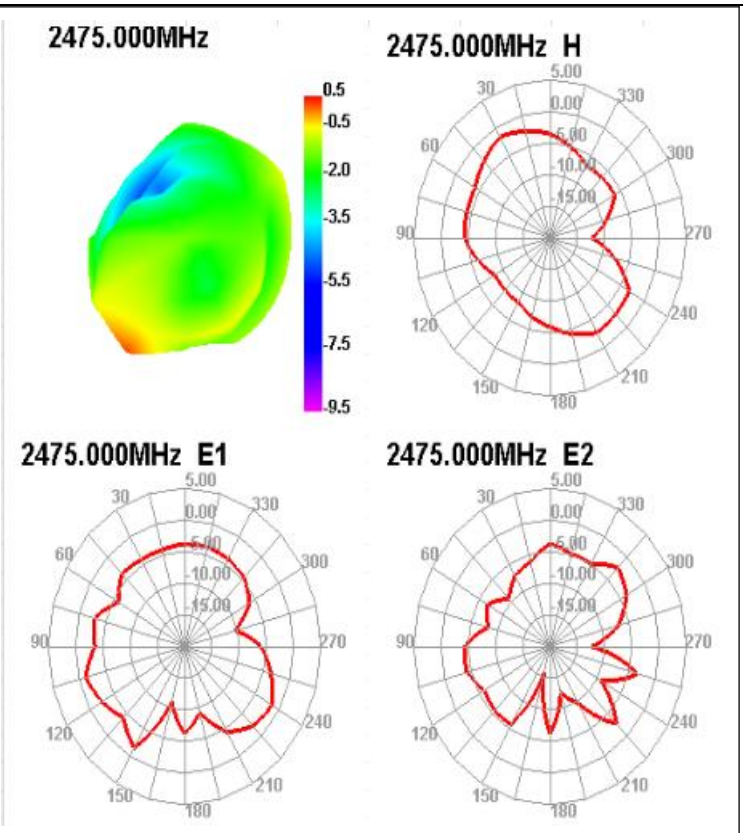
2425.000MHz E1

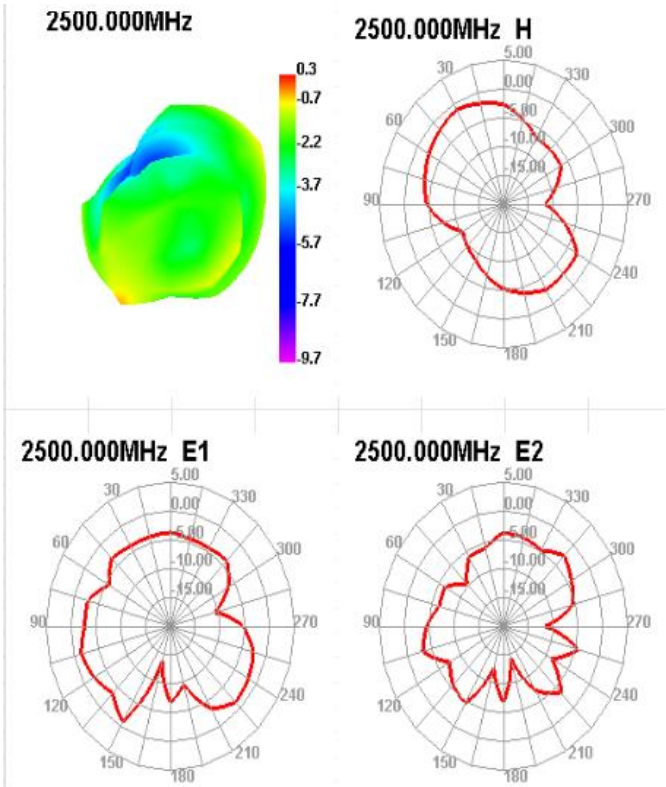


2425.000MHz E2



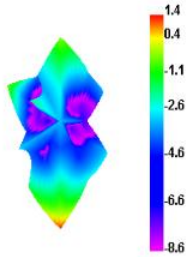

2450.000MHz
0.9
-0.1
-1.6
-3.1
-5.1
-7.1
-9.1
2450.000MHz H
2450.000MHz E1
2450.000MHz E2


2475.000MHz
0.5
-0.5
-2.0
-3.5
-5.5
-7.5
-9.5
2475.000MHz H
2475.000MHz E1
2475.000MHz E2

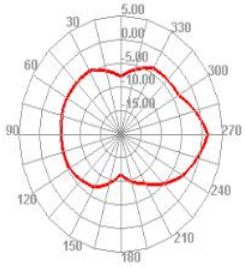

2500.000MHz
0.3
-0.7
-2.2
-3.7
-5.7
-7.7
-9.7
2500.000MHz H
2500.000MHz E1
2500.000MHz E2

Passive Test For 5.8G										
Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)	UHIS (%)	DHIS (%)	Max (dB)	Min (dB)	irectivit (dBi)	Beamwi (3dB
5150	42.13	-3.75	2.36	0.21	16.688	25.441	2.36	-12.69	6.11	
5250	36.5	-4.38	1.37	-0.78	16.245	20.256	1.37	-11.52	5.75	
5350	33.61	-4.73	1.07	-1.08	14.487	19.127	1.07	-15.18	5.81	
5450	38.75	-4.12	2.03	-0.12	14.442	24.308	2.03	-15.14	6.15	
5550	43.16	-3.65	2.14	-0.01	15.599	27.564	2.14	-19.43	5.79	
5650	45.41	-3.43	2.1	-0.05	16.711	28.699	2.1	-20.47	5.53	
5750	46.58	-3.32	2.17	0.02	17.996	28.581	2.17	-18	5.49	
5850	44.83	-3.48	2.78	0.63	18.496	26.336	2.78	-23.77	6.27	

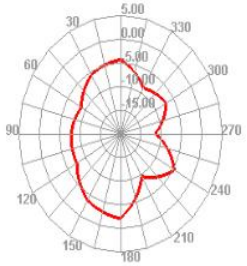
5250.000MHz



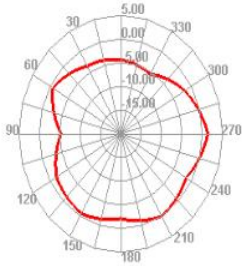
5250.000MHz H



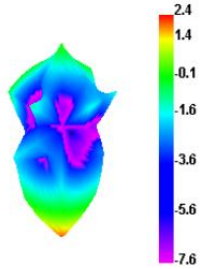
5250.000MHz E1



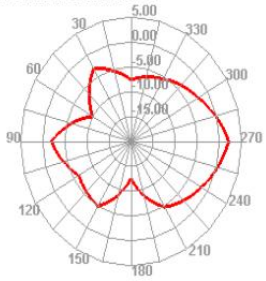
5250.000MHz E2



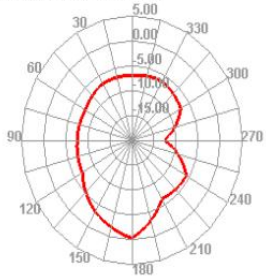
5150.000MHz



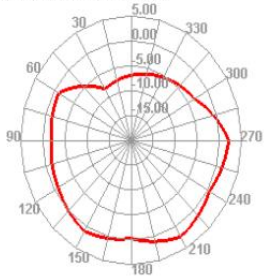
5150.000MHz H



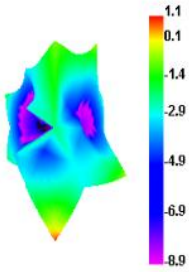
5150.000MHz E1



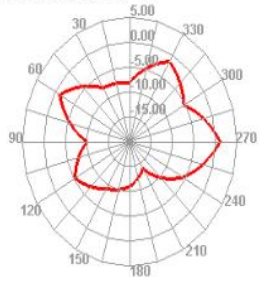
5150.000MHz E2



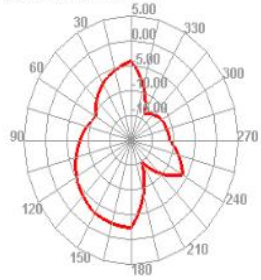
5350.000MHz



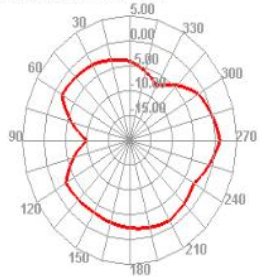
5350.000MHz H



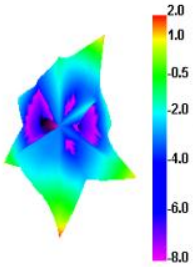
5350.000MHz E1



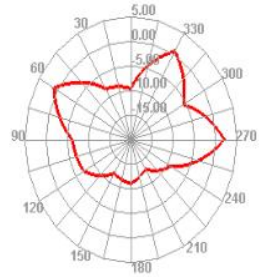
5350.000MHz E2



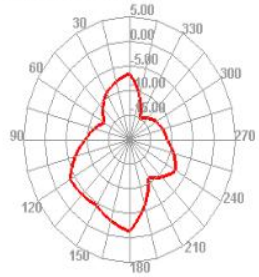
5450.000MHz



5450.000MHz H



5450.000MHz E1



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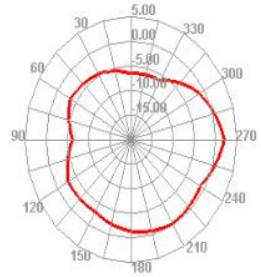
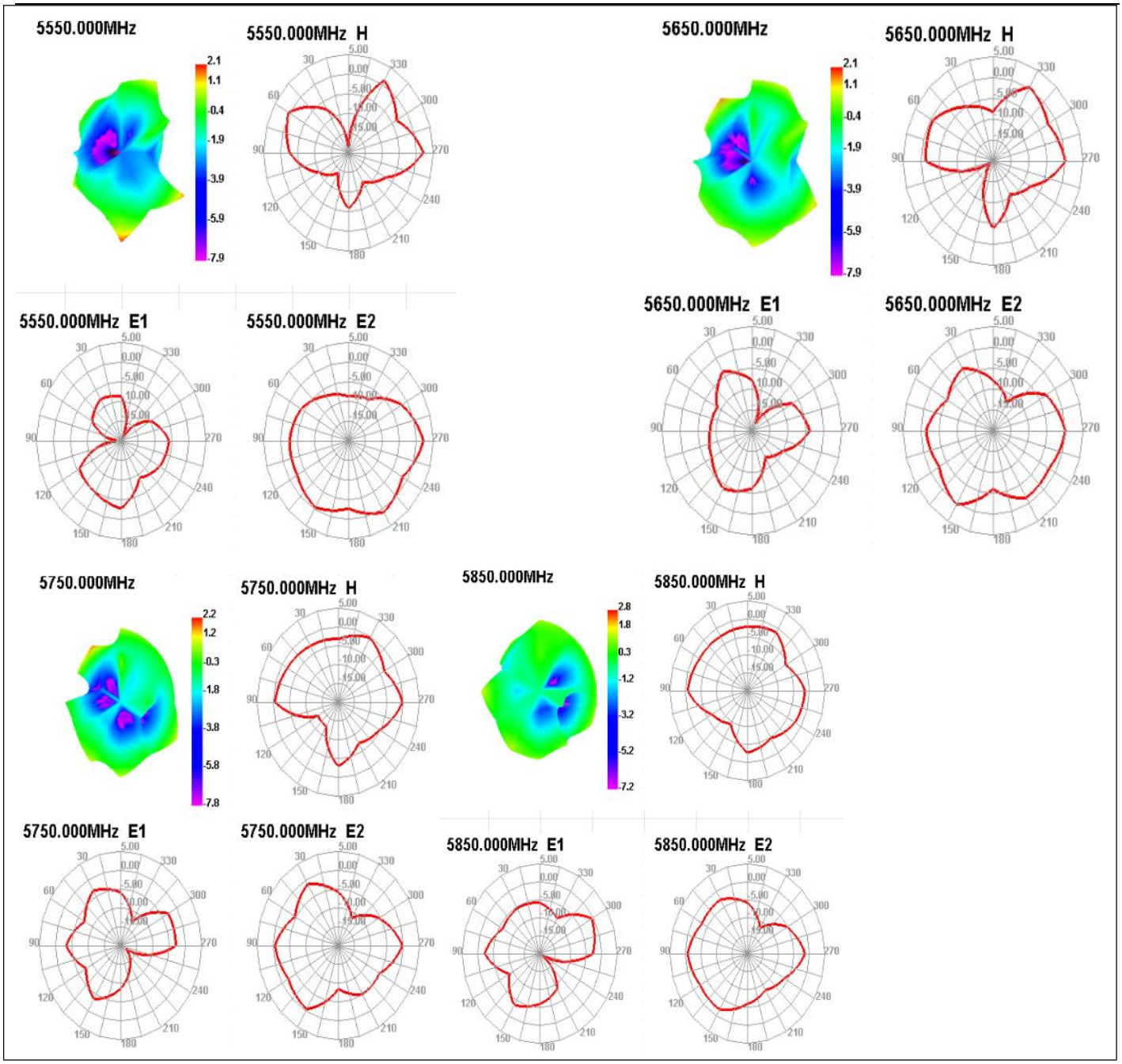




4. WIFI OTA Data

2.4G WIFI	TRP			TIS		
Channel	CH1	CH6	CH12	CH1	CH6	CH12
802.11b，11M	14.68	14.95	14.72	-80.59	-80.82	-80.07
802.11g,54M	12.7	12.37	12.66	-69.13	-69.24	-69.8
802.11n，MCS7(65M)	12.06	12.42	12.18	-67.22	-67.46	-67.28
5G WIFI	TRP			TIS		
Channel	CH36	CH60	CH161	CH36	CH60	CH161
802.11a，54M	13.65	13.25	13.89	-70.63	-70.4	-70.86

可靠性测试报告

Reliability Test Report

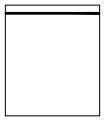
测试日期 Test Date	2023.09.07	样品数量 Sample Qty.	3	测试人 Inspector	许燕芳	
测试项目 Test Item	要求 Requirement	试验设备 testing equipment	样品 1 Sample 1	样品 2 Sample 2	样品 3 Sample 3	判定 PASS/NG
高温存储	在+85℃条件下暴露 24H，恢复 2H 后进行测试	恒温恒湿箱	OK	OK	OK	Pass
低温存储	在-40℃条件下暴露 24H，恢复 2H 后进行测试	恒温恒湿箱	OK	OK	OK	Pass
高温工作	在+60℃条件下通电工作 24H	恒温恒湿箱	OK	OK	OK	Pass

低温工作	在-20℃条件下通电工作 24H	恒温恒湿箱	OK	OK	OK	Pass
盐雾试验	(5 士 0. 5)%氯化钠、pH 值为 6.5～7.2，实验箱温度(35±2)℃ ☐24H ☑48H	盐雾试验机	OK	OK	OK	Pass
连接器铆压拉拔力	1.13 线径 ≥10N 0.81 线径 ≥8N RG174 ≥60N RG178 ≥50N	推拉力计	≥10N	≥10N	≥10N	Pass
最终结论 Conclusion						Pass
测试人&日期 Inspector & Date	许燕芳 2023.09.07		批准&日期 Approval &Date			

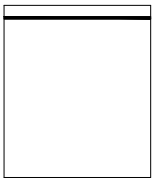
包 装 规 范

项目名：M10-WF	成品名称：FPC天线

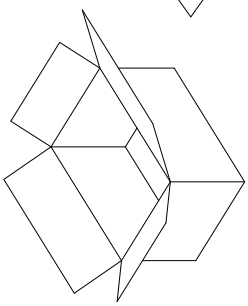
FPC成品天线 （一）



（二） 每PE袋装100pcs产品（以实际包装为准）



（三） 再将装好的天线小包装袋整齐放入（图三）装10小袋（以实际包装为准）



（四）包装好的天线放入纸箱，可装5大袋，每箱可装5000PCS（图四）。（以实际包装为准）

供应商	
采购单号	
物料编码	
规格型号	
数量	
日期	

（五）包装完成后需贴上出货标签（图五）.

安装事宜或其它

Install Wizard or Other

安装过程：

取 1PCS 产品，用手撕下 FPC 背面的离型纸，然后将 FPC 定位孔位置与外壳定位孔位置（定位筋位或定位线）对齐，平整的贴附与外壳上，具体位置如下图所示：

安装过程注意事项：

□粘贴天线后保证 FPC 完整贴附于外壳；

□定位孔与外壳定位柱位置对齐；

□FPC 边缘与外壳边缘对齐；

□带端子天线在将端子扣合到主板 PCBA 端时请首先对齐端子，然后垂直扣合；

□拆卸天线端子时需使用工具（如专用撬棍）垂直翘起端子，不可直接拽线拆卸。

产品 ROHS 证书

Certificate

Certificate Number: UNIB23083106HC-01

Certificate of Compliance

Product:	5G/4G/WIFI/GPS/BT antenna
Applicant:	ShenZhen ShunDaCheng Technology Co., Ltd. 4th Floor, Building B5, Xinfu Industrial Zone, Fuyong Chongqing Road, Baoan District, Shenzhen
Manufacturer:	N/A
Model No.:	N/A
Trade Name:	N/A
Test Methods:	IEC 62321-2:2021, IEC 62321-3-1:2013, IEC 62321-4:2013 +A1:2017, IEC 62321-5:2013, IEC 62321-6:2015, IEC 62321-7-1:2015 IEC 62321-7-2:2017, IEC 62321-8:2017

The laboratory tested the product provided by the applicant according to the above test methods. According to the test results, the product conforms to RoHS Directive [(2011/65/EU and Amendment (EU) 2015/863)] issued by the European Commission. It is possible to use CE marking to demonstrate the compliance with RoHS Directive.

The certificate applies to the tested sample above mentioned only and shall not imply an assessment of the whole production. It is only valid in connection with the test report number: UNIB23083106HR-01.

Note: According to the requirements of the applicant for testing, details are shown in the test report.

RoHS

Sep. 06, 2023
Issue Date

Hoffer Lau

CE

Shenzhen United Testing Technology Co., Ltd.

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