

承 认 书

SPECIFICATION APPROVAL SHEET

客 户 :
CUSTOMER

客 户 料 号 :
CUS PART NO

版次:
REV X1

品 名 / 规格 : 2.4-2.5/5.15~5.85GHz
SPECIFICATION WIFI Antenna L=255mm(Ø0.81+MHF)

单重:
weight

供 方 料 号 :
SUP PART NO SLEingB240300255

日 期 :
DATE 2023.02.17

厂 商 核 准 :
SUP APPROVED

核准 APPROVED	审核 CHECKED	品保审核 QA CHECKED	承办 DESIGNED
Joufmy	H2H	LSY	XICU

客 户 核 准 :
CUS APPROVED

核准 APPROVED	审核 CHECKED	品保审核 QA CHECKED	承办 DESIGNED

东莞市森岭智能科技有限公司
DONGGUAN CITY SLEing INTEL-TECH CO.,LTD

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正本由承办单位保存



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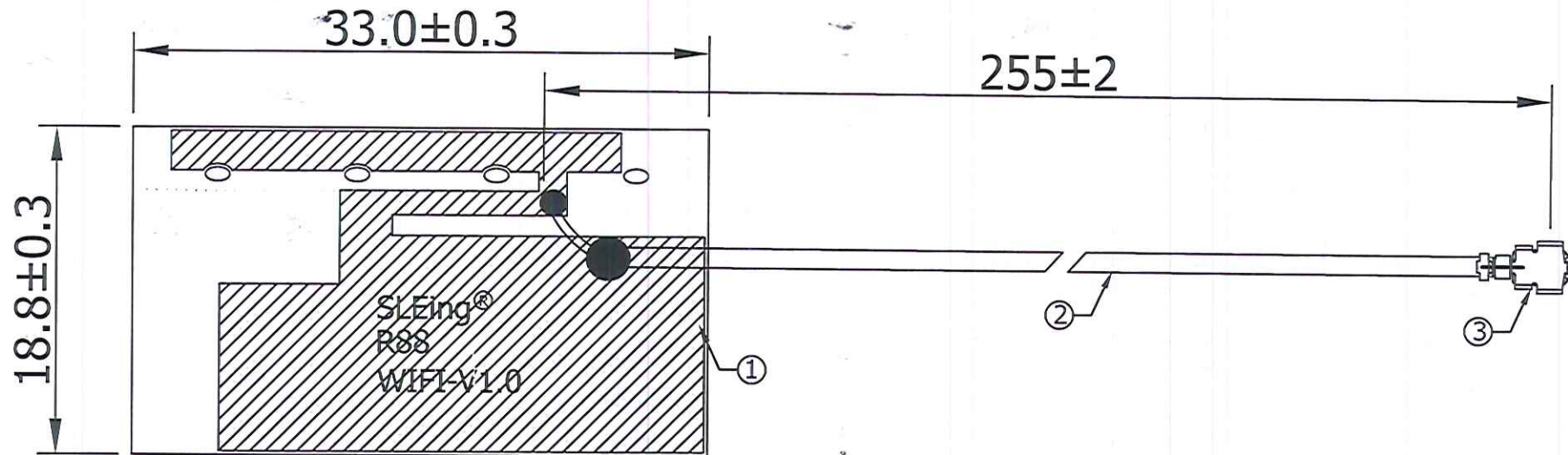
承认书项目表

序号	项目	附件资料		备注
		有	无	
1	承认书封面 (Spec Cover)	☐	☐	1. 封面需注明产品料号、品名规格 2. 经主管核准后加盖公司印章
	客户满意度 (Customer satisfaction)	☐	☐	请客户对我司给予真诚的评价
2	承认书项目表 (Spec Item)	☐	☐	
3	工程成品图 (Drawing)	☐	☐	
4	电性测试报告 (Test Reports)	☐	☐	
5	S参数测试 (S Parameter)	☐	☐	与产品一致
6	方向图(Patten)/测试效率 (Test Efficiency)	☐	☐	与产品一致
7	样品检验记录 (Sample inspection)	☐	☐	
8	SGS报告 (SGS Report)	☐	☐	1. 需依产品材质类别及颜色分别提供 2. 报告有效期为一年
9	其它	☐	☐	依贵司具体要求另行说明
10		☐	☐	
11		☐	☐	

说明:

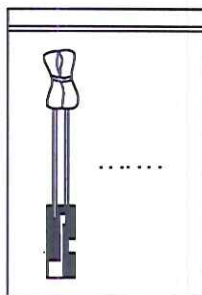
1. 承认书内容需依查核表项目依顺序排列。
2. 承认书依客户要求打印份数, SGS报告需加盖工程章。
3. 所有材料一律经过客户确认后, 任何材料/制程/可能影响产品品质及环境品质的变更, 都必需重新送样给客户确认后方可导入。
4. SGS报告有效期为一年。
5. 依实际承认书所附件内容在查核表中勾选: “有” 为已提供, “无” 根据客户要求提供。

REV.	CONTENT	DATE
X1	First Sample	2022.02.17

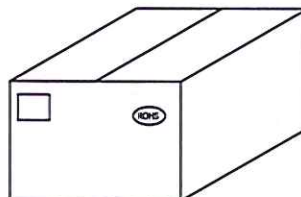


背胶: 3M 300LSE

Specification:
Frequency Rang:2.4~2.5/5.15~5.85GHz(带机测试)
Return Loss:-10dB or less
VSWR:1.92 Max



50pcs/Bundle
Packing:100pcs/bag



外箱须贴ROHS标签与物料标签各1PCS

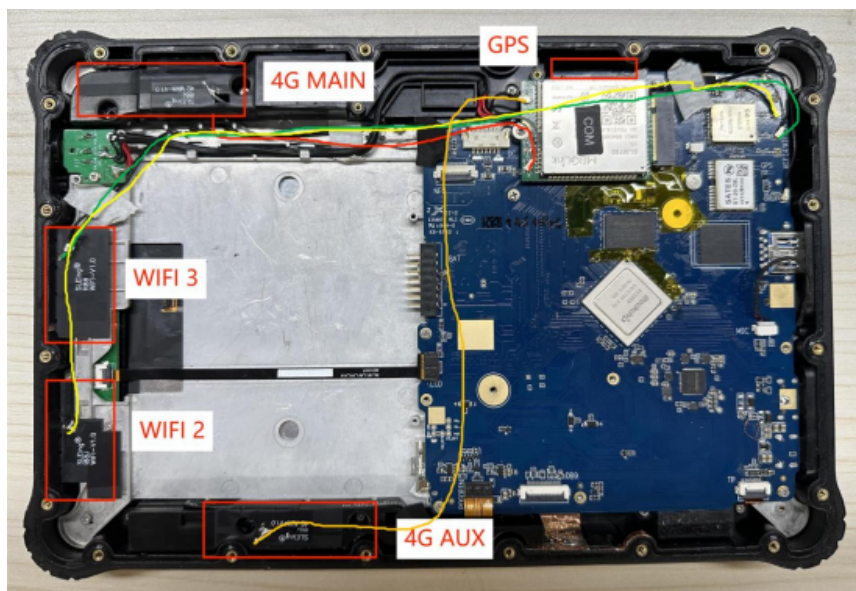
SLEing®森岭			CUSTOMER		
东莞市森岭智能科技有限公司			PART NO		
DONGGUAN SLEing INTEL-TECH CO.,LTD			TITLE		WIFI ANTENNA
			S.L P/NO		SLEingB240300255
		TOLERANCE UNLESS OTHERWISE SPECIFIED		SIZE	DRAWN
UNIT:mm		ANGLES ±0.5°	X. ±0.3	A4	CHECKED
SHEET: 1/1		0.XX ±0.05	XX. ±0.5		
SCALE: 1/1			XXX. ±2.0		
				APPROVED	

NO	PART NAME	DESCRIPTION	REMARK	Q'TY
3	Connector	MHF Plug for Φ0.81 Cable	第四代端子	1
2	Cable	Φ0.81mm Coaxial Cable Black,50Ω		1
1	FPCB	FPC,L33.0*W18.8*T0.4mm,Color:Black	300LSE Adhesive	1

APPROVED	CHECKED	DRAWN	SIZE

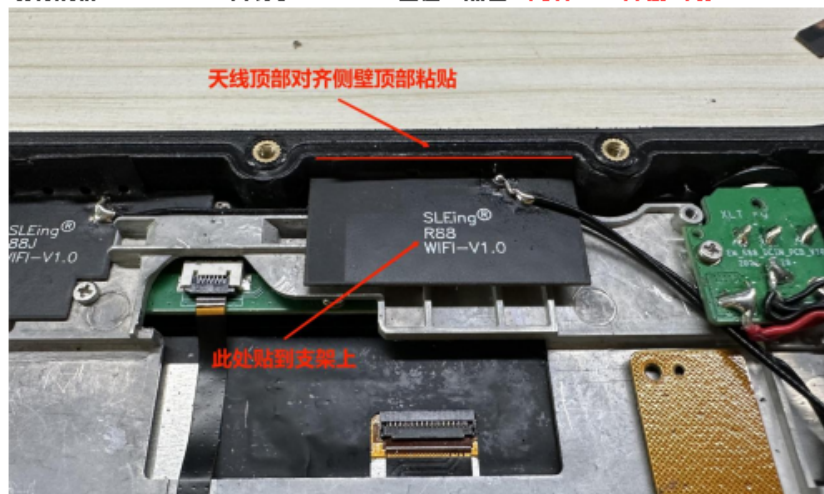
Test Reports

Electrical Properties	
Frequency	2.4~2.5/5.15~5.85GHz(带机测试)
Impedance	50 Ohm Nominal
V.S.W.R	≤1.92
Return Loss	-10 dB Max
Radiation	Omni-directional
Gain (Peak)	2±0.5 dBi
Polarization	Linear, Vertical
Admitted Power	2 W
Connector	MHF
Physical Properties	
Antenna Material	FPCB
Cable Type	Φ0.81mm Black
Operating Temp.	-25~+75 °C
Storage Temp.	-25~+75 °C

天线组装图
Antenna Profile*Device**Antenna*

6. WIFI 3 天线安装

线材规格: 255mm; 4 代端子; 0.81mm 直径; 黑色; 向右 90° 焊接出线。



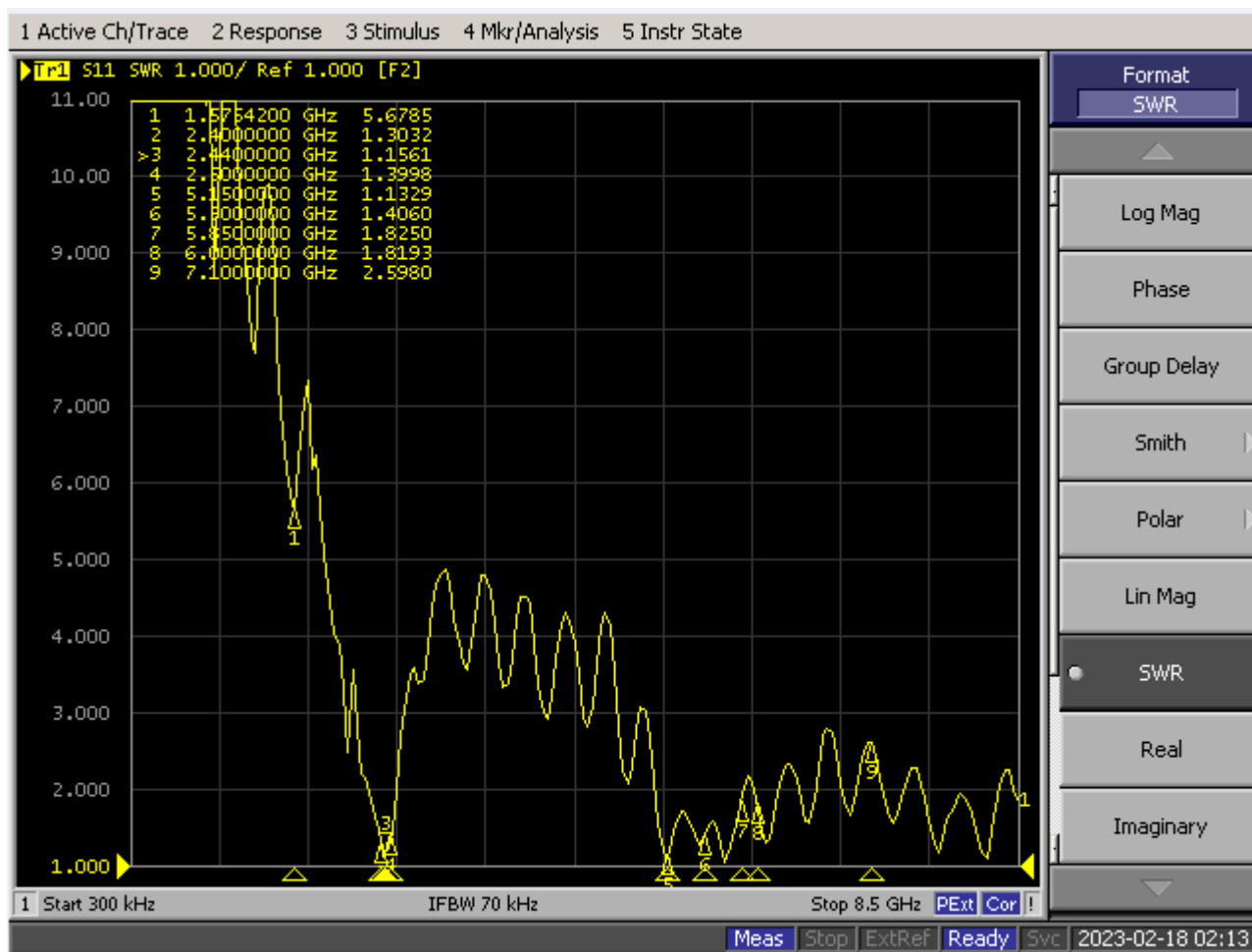
S 参数测试

S ParameterTest

Agilent E5071C Network Analyzer



WiFi 驻波 Antenna (NO.1)



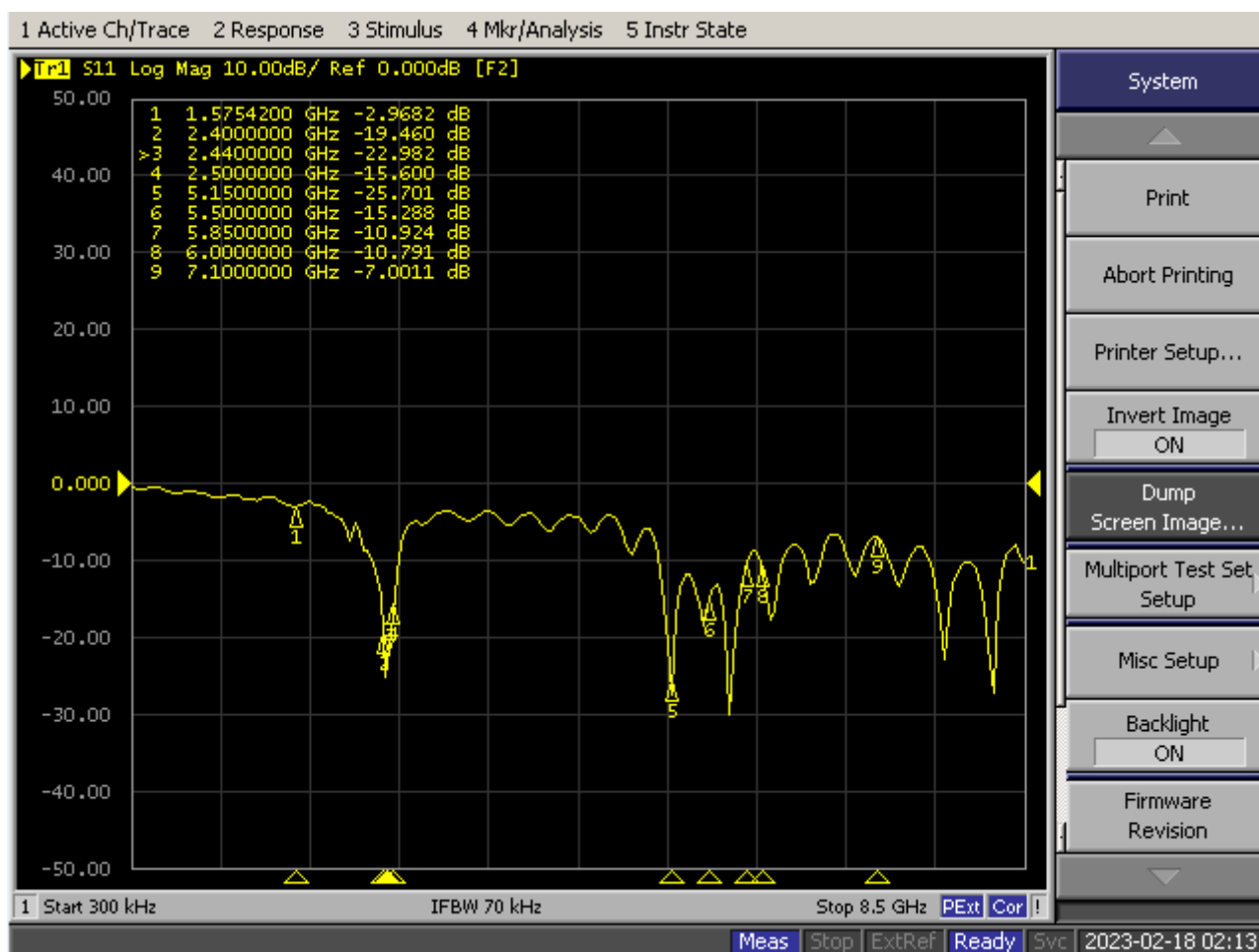
S 参数测试

S Parameter Test

Agilent E5071C Network Analyzer

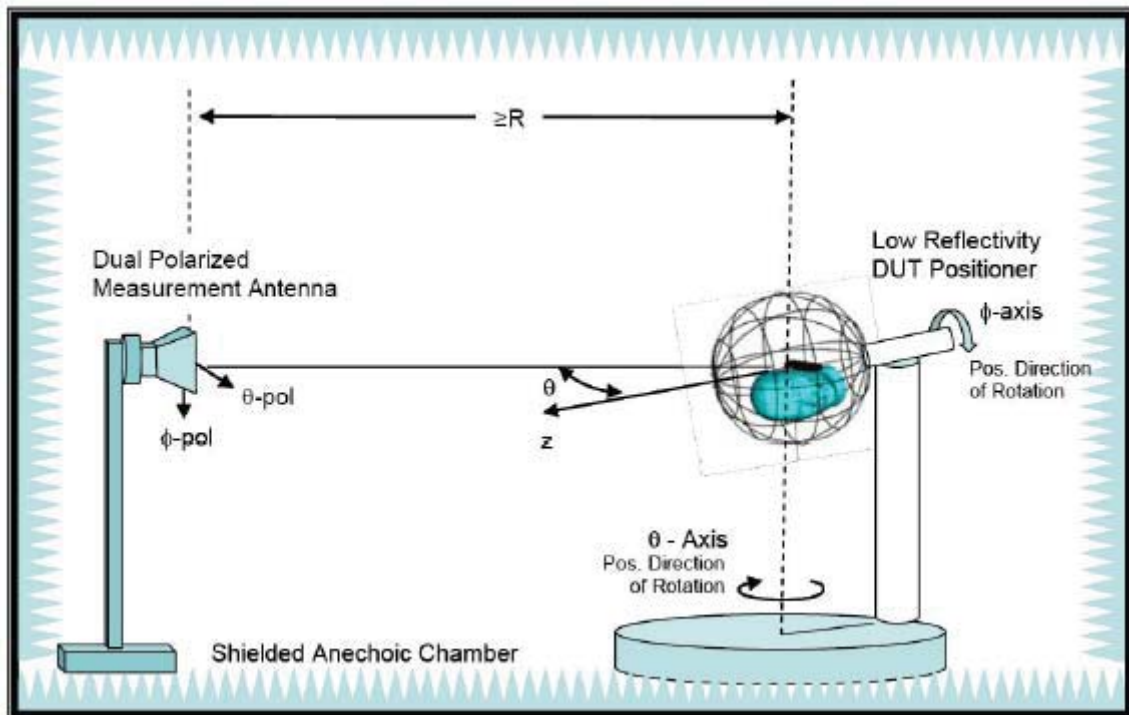
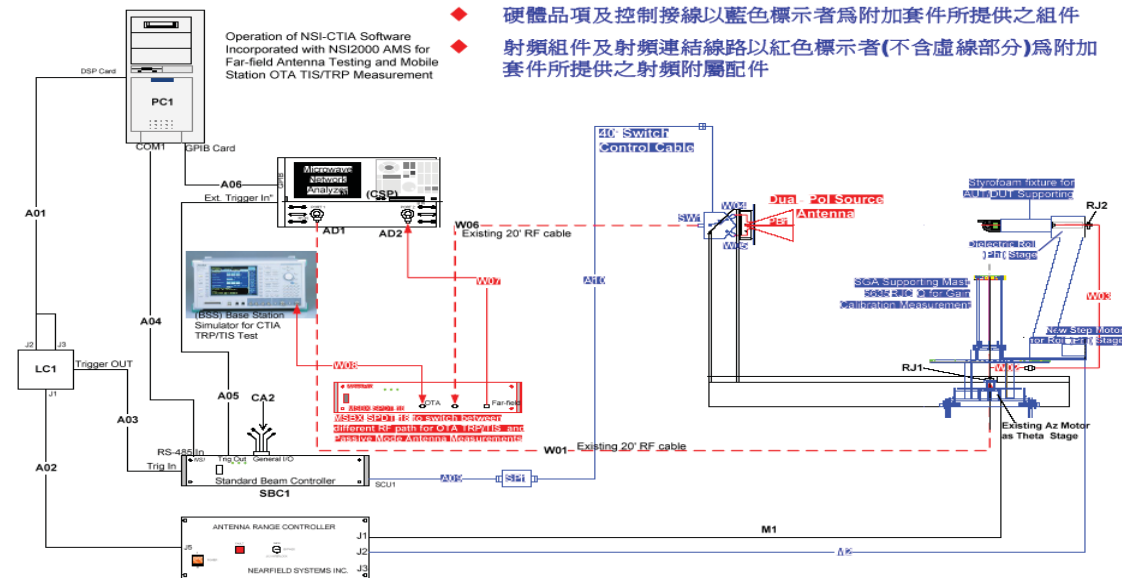


WiFi 回波损耗 Antenna (NO.1)



测试设备 Test Setup

NFC-500S 3D Chamber Coordinate System Definition



Configuration of 3D Chamber



测试效率 Test Efficiency

Frequency ID	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Frequency (MHz)	2400.0	2410.0	2420.0	2430.0	2440.0	2450.0	2460.0	2470.0	2480.0	2490.0	2500.0	5150.0	5200.0	5250.0	5300.0	5350.0	5400.0	5450.0	5500.0	5550.0	5600.0	5650.0	5700.0	5750.0	5800.0	5850.0
Efficiency (dB)	-5.03	-4.95	-4.76	-4.70	-4.56	-4.61	-4.69	-4.80	-4.69	-4.89	-4.67	-5.72	-5.44	-5.54	-5.93	-5.12	-4.90	-5.06	-5.18	-5.49	-5.57	-5.41	-5.28	-5.27	-5.61	-6.43
Gain (dB)	-0.14	-0.37	-0.02	0.28	0.59	0.57	0.47	0.06	0.39	0.23	0.65	1.41	1.68	1.12	-0.02	0.55	0.51	0.24	0.19	-0.49	-0.45	0.22	-0.06	-0.06	-0.50	-1.07
Efficiency (%)	31.44	32.01	33.43	33.89	35.02	34.59	34.00	33.14	33.95	32.45	34.10	29.81	31.58	30.92	28.52	33.78	35.36	34.20	33.33	31.24	30.70	31.78	32.68	32.72	30.47	25.74
Directivity (dB)	4.89	4.57	4.74	4.98	5.15	5.18	5.15	4.86	5.08	5.12	5.32	7.13	7.12	6.66	5.91	5.67	5.41	5.29	5.38	5.00	5.13	5.63	5.22	5.21	5.11	5.37
Peak Gain Position (Theta)	135.00	105.00	105.00	120.00	105.00	105.00	90.00	90.00	135.00	135.00	135.00	135.00	135.00	135.00	135.00	15.00	15.00	30.00	30.00	90.00	90.00	105.00	105.00	150.00	120.00	135.00
Peak Gain Position (Phi)	225.00	45.00	45.00	45.00	45.00	45.00	45.00	45.00	75.00	75.00	75.00	15.00	15.00	15.00	15.00	75.00	90.00	30.00	30.00	330.00	330.00	330.00	330.00	60.00	315.00	300.00
Efficiency ThetaPol (%)	14.31	14.37	14.89	15.02	15.21	15.00	14.81	14.57	15.25	14.84	15.47	10.31	10.77	11.29	10.51	11.80	12.93	12.79	11.68	11.89	12.13	11.82	12.59	12.54	11.68	9.76
Efficiency PhiPol (%)	17.13	17.64	18.54	18.87	19.81	19.59	19.20	18.56	18.70	17.61	18.63	16.51	17.81	16.63	15.01	18.98	19.43	18.42	18.65	16.35	15.57	16.96	17.09	17.17	15.79	12.99
Upper Hem. Efficiency (%)	13.39	13.44	13.71	13.83	13.75	13.84	13.71	13.63	13.94	14.18	14.43	12.32	12.80	12.53	12.50	15.50	16.75	17.06	16.21	14.44	14.58	15.15	15.25	15.32	13.65	10.68
Lower Hem. Efficiency (%)	18.05	18.57	19.72	20.07	21.28	20.75	20.29	19.51	20.01	18.27	19.67	14.49	15.78	15.39	13.03	15.28	15.62	14.14	14.12	13.80	13.12	13.63	14.42	14.40	13.82	12.06



WIFI天线OTA测试报告					
Test Data:	2023/2/17			天线厂：自调·森岭打样	
项目：主+副天线		Performance request (性能要求)	信道	结果	判定
2.4G WiFi_11b_CCK_11M	TRP	$\geq 11 \pm 1\text{dbm}$	1	14.36	PASS
			7	13.82	
			13	15.40	
	TIS	$\leq -80\text{dbm}$	1	-84.22	PASS
			7	-84.13	
			13	-84.76	
5G WiFi_11a_54M	TRP	$\geq 9\text{dbm}$	36	14.65	PASS
			64	15.4	
			157	15.33	
	TIS	$\leq -64\text{dbm}$	36	-65.01	PASS
			64	-68.00	
			157	-66.16	



吞吐量

WIFI吞吐量测试			主辅天线合路测试		
			模块型号: Intel 9461	测试时间: 2022/12/20	
2.4G WIFI (Mbps)					
WIFI距离模拟	模块	测试标准	上传速度 (BT OFF)	下载速度(BT OFF)	判定结果
0米	INTEL3165	>110	/	/	
	INTEL7265	>200	/	/	
	INTEL AX200	>200	/	/	
	INTEL9461	>100	/	/	
	MT6631	>55	/	/	
	WCN3991	>200	/	/	
	WCN3680B	>55	/	/	
5米	INTEL3165	>90	/	/	
	INTEL7265	>190	/	/	
	INTEL AX200	>190	/	/	
	INTEL9461	>90	/	/	
	MT6631	>50	/	/	
	WCN3991	>190	/	/	
	WCN3680B	>50	/	/	
10米	INTEL3165	>80	/	/	
	INTEL7265	>150	/	/	
	INTEL AX200	>150	/	/	
	INTEL9461	>80	/	/	
	MT6631	>45	/	/	
	WCN3991	>150	/	/	
	WCN3680B	>40	/	/	
20米	INTEL3165	>60	/	/	
	INTEL7265	>100	/	/	
	INTEL AX200	>100	/	/	
	INTEL9461	>60	/	/	
	MT6631	>40	/	/	
	WCN3991	>100	/	/	
	WCN3680B	>35	/	/	

