Shanghai Shangyuan Communication Technology Co., LTD

Antenna admission book

Customer name: Franklin	Project name: RT410S
Working frequency band: WIFI2.4G/5.8G	
Hardware version: RT410S P2 2024.09.12	
Shangyuan material specifications	

specifications and models	Shang Yuan material number	Customer material number
WIFI ant	SZ24561IB97	

Change the resume			
Preparation / change date	Change the content	Change the person	edition
2025.01.13	A new release	Daheng Yao	A

Shang Yuan will sign the column				
research and development	structure:	examine and verify:	Quality Engineer:	ratify:
	radio frequency:	examine and verify:		

The customer will sign the column			
electronic engineer	project manager	construction engineer	Quality engineer

catalogue

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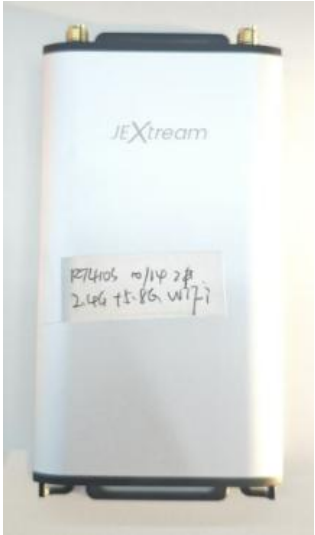
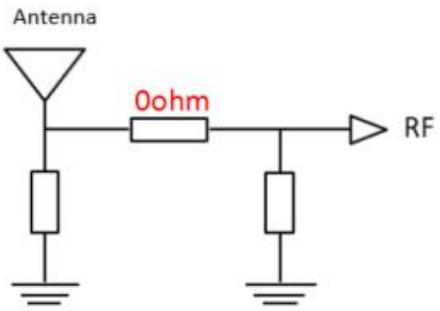
一、 item information

.11 Schematic diagram



二、 Antenna matching circuit



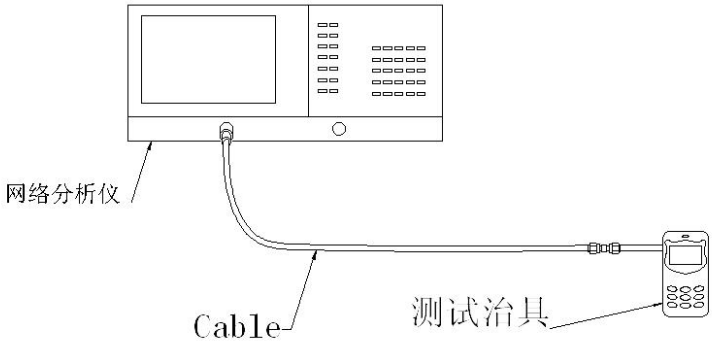
三、 Complete machine test data

3.1 S11 Description of the test method

Test Equipment: Network Analyzer (Agilent E5071C)

Test method: Export a 50 Ohm CABLE cable from the instrument test port, connect the SMA connector of the test device after the calibrator, and record the echo loss and standing wave ratio corresponding to the relevant frequency point.

The test schematic diagram is as follows:



Schematic diagram of the test

3.2 Test environment

Test System: MPS 6450 Multi-sensor OTA Measurement System (XH-IoT)

Test environment: temperature 22℃± 3℃, humidity 50% ± 15%

Test equipment: Use the network analyzer R & S ZND / Agilent E5071C when testing the passive data

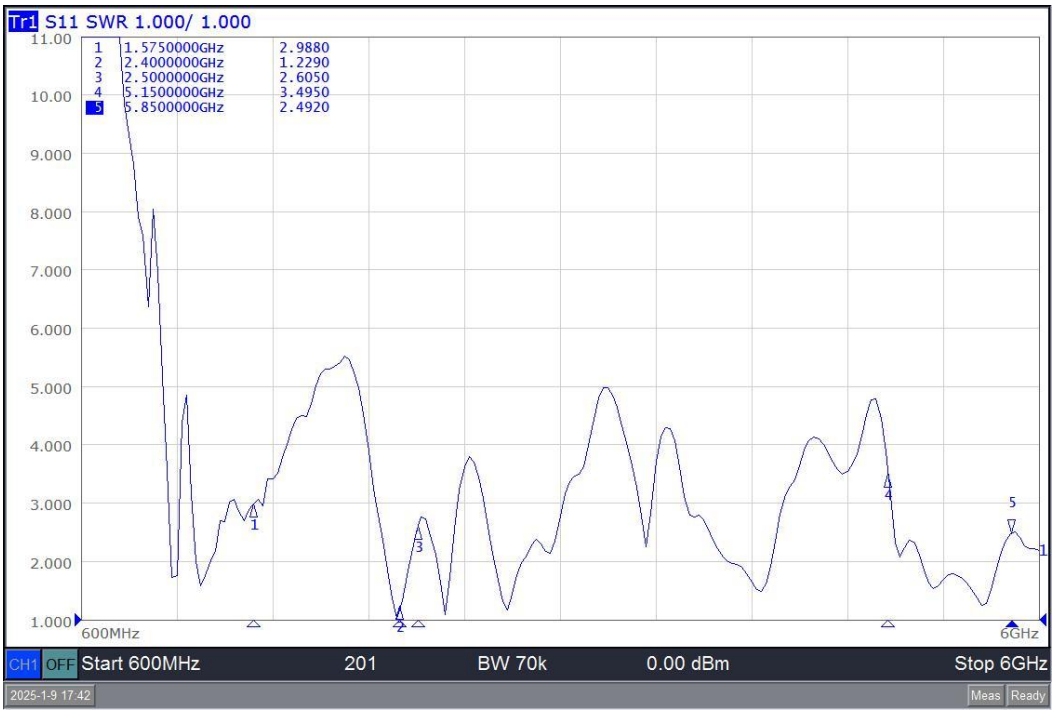
When testing active data, use the comprehensive meter Agilent 8960 / CMW500 / S P9500E / SP 8315

3.3 The passive test parameters

S11 parameter

频率（GHZ）	2400	2500	5150	5850
驻波比	1.22	2.65	3.49	2.49

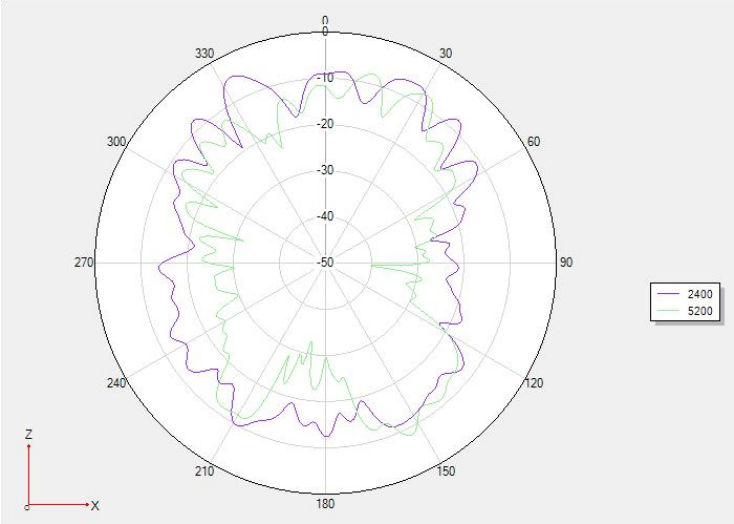
standing-wave ratio VSWR

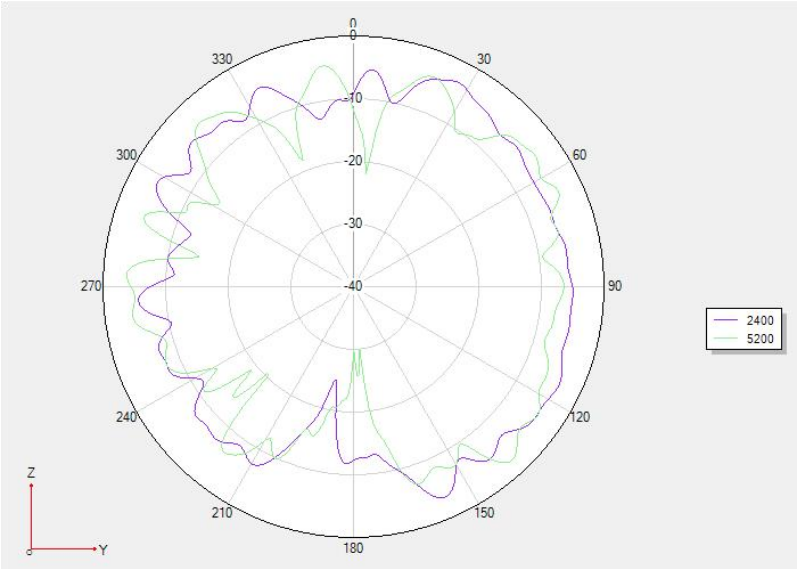


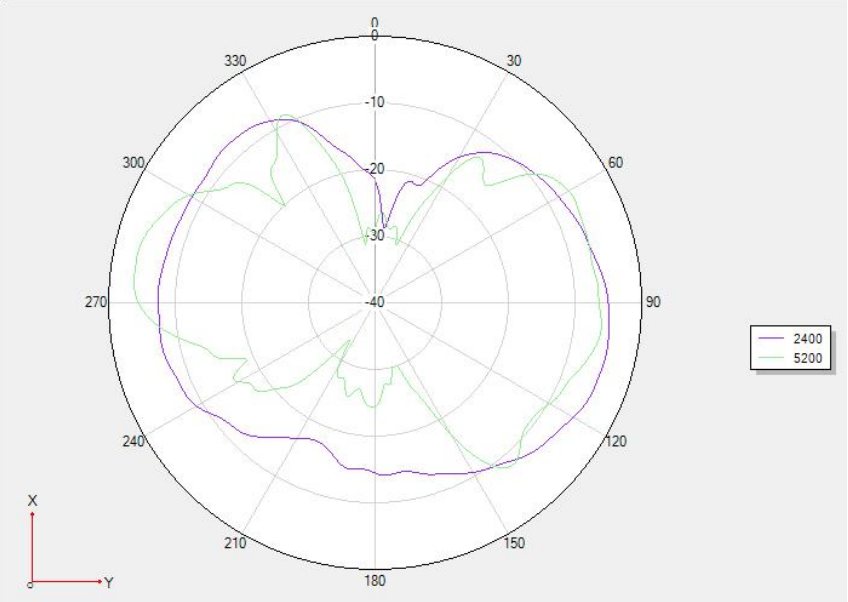
Passive test data

Frequency/Mhz	MaxGain/dBi	Efficiency / %
2400	-3.16	33.11
2410	-2.85	32.21
2420	-2.15	33.5
2430	-2.64	31.62
2440	-2.35	32.21
2450	-2.36	32.06
2460	-2.45	29.99
2470	-2.22	30.2
2480	-2.24	30.29
2490	-1.88	29.92
2500	-1.62	30.48
5150	-3.75	29.23
5200	-2.02	29.32
5250	-3.71	30.25
5300	-3.4	30.66
5350	-4.35	29.25
5400	-4.78	28.65
5450	-5.28	28.01
5500	-5.08	27.11
5550	-4.28	26.12
5600	-4.58	25.13
5650	-4.06	25.01
5700	-3.5	24.12
5750	-3.26	22.12
5800	-2.31	20.12
5850	-2.46	20.58

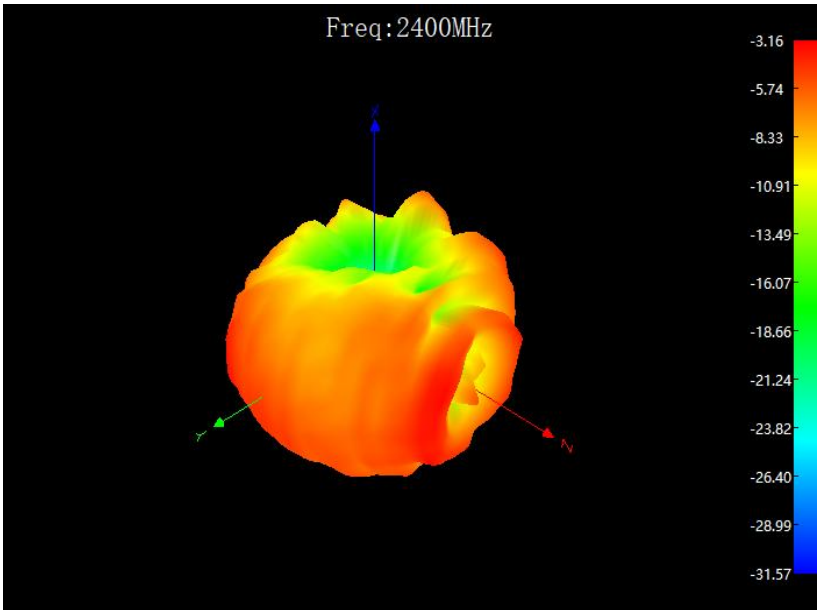
Passive direction diagram

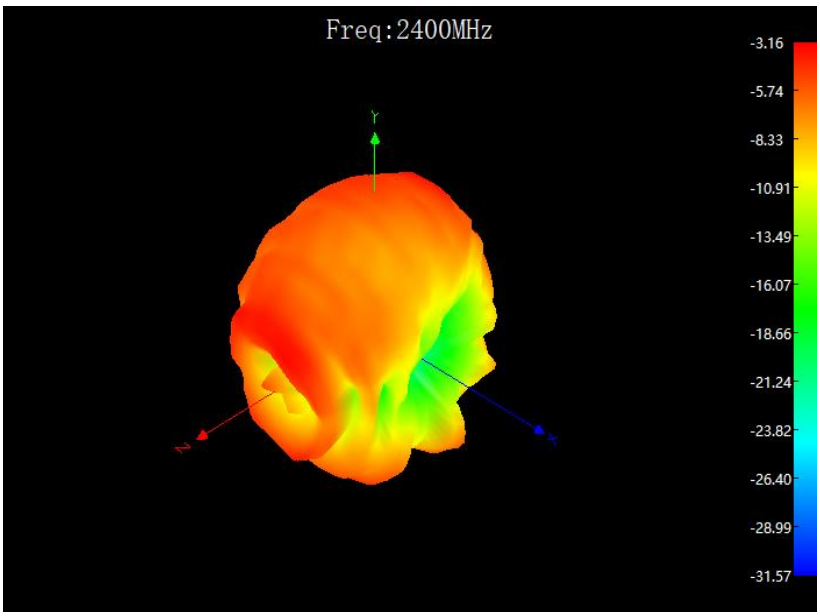


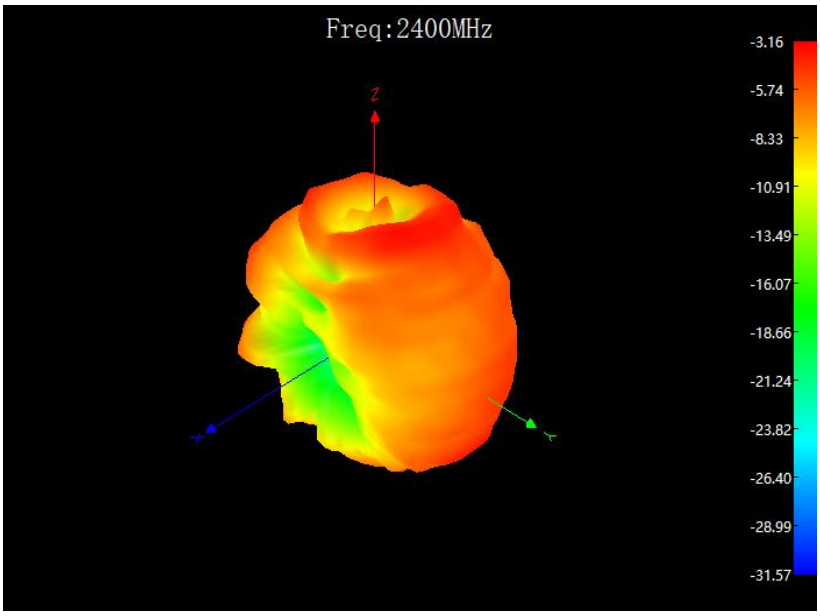


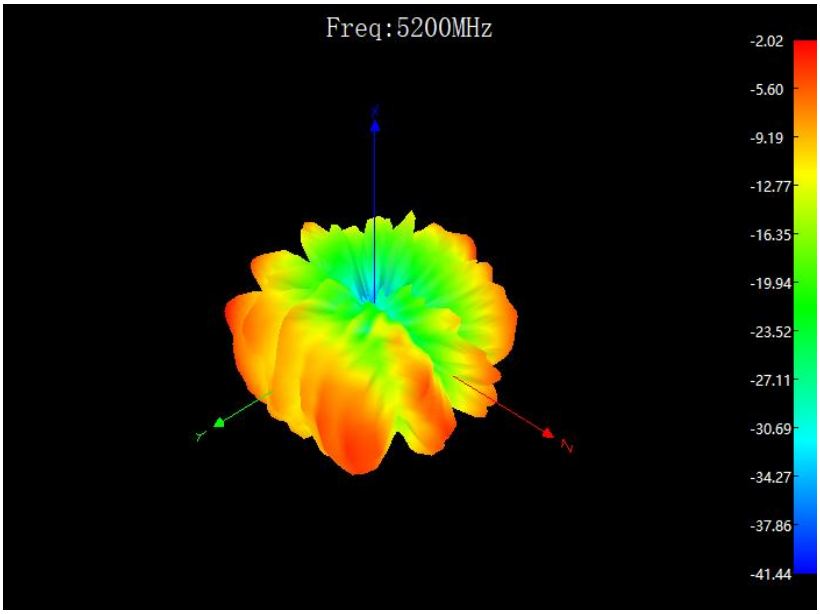


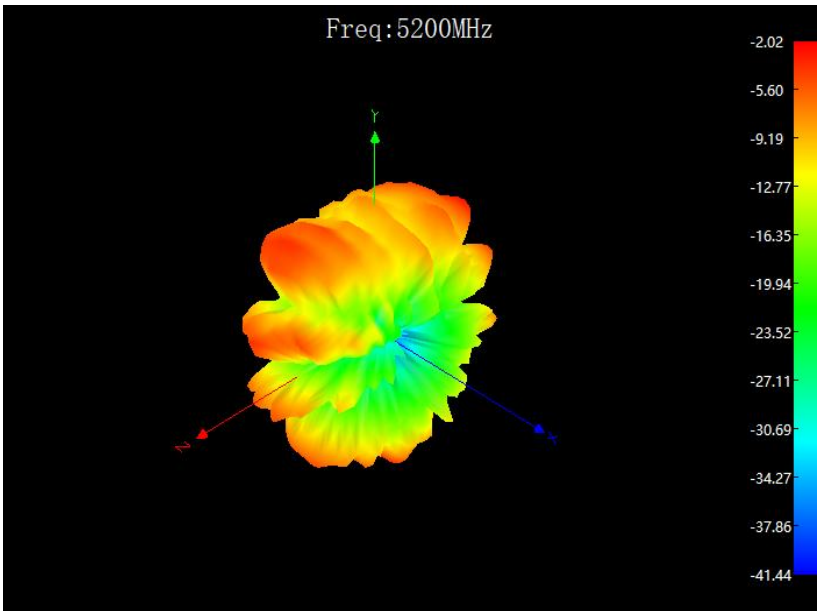
Radiation Apple Figure








Freq:5200MHz
-2.02
-5.60
-9.19
-12.77
-16.35
-19.94
-23.52
-27.11
-30.69
-34.27
-37.86
-41.44


Freq:5200MHz
-2.02
-5.60
-9.19
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-23.52
-27.11
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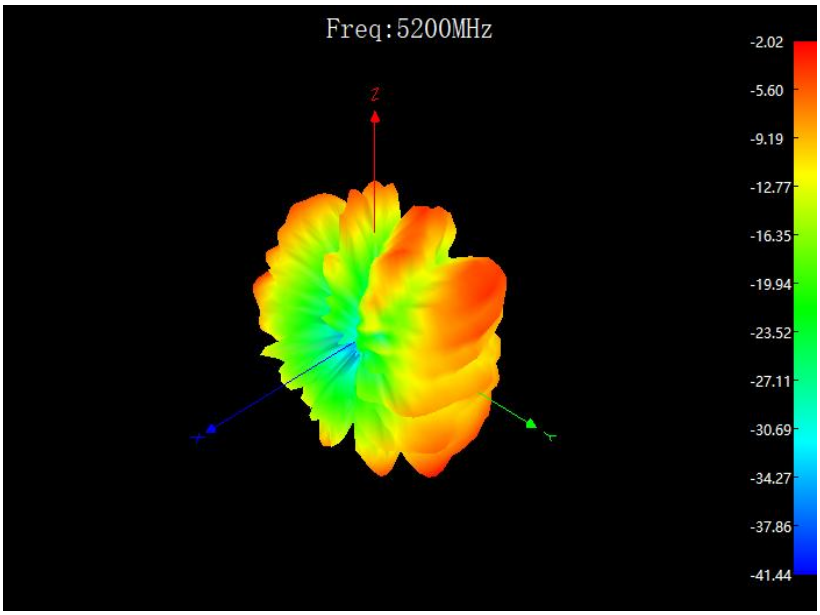
-34.27
-37.86
-41.44


Freq:5200MHz
-2.02
-5.60
-9.19
-12.77
-16.35
-19.94
-23.52
-27.11
-30.69
-34.27
-37.86
-41.44

Measurement	Band	Channel	Total
TRP	WIFI_B (1M)	1	14.15
TRP	WIFI_B (1M)	6	13.34
TRP	WIFI_B (1M)	11	13.47
TIS(EIRP)	WIFI_B (11M)	1	-78.31
TIS(EIRP)	WIFI_B (11M)	6	-79.83
TIS(EIRP)	WIFI_B (11M)	11	-81.21
TRP	WIFI_A (6M)	40	13.28
TRP	WIFI_A (6M)	157	11.32
TIS(EIRP)	WIFI_A (6M)	40	-83.76
TIS(EIRP)	WIFI_A (6M)	157	-85.82

四、 The prototype environment processing mode

No enviromental treatmentadded

五、 Antenna loading position

The antenna is assembled in the following figure

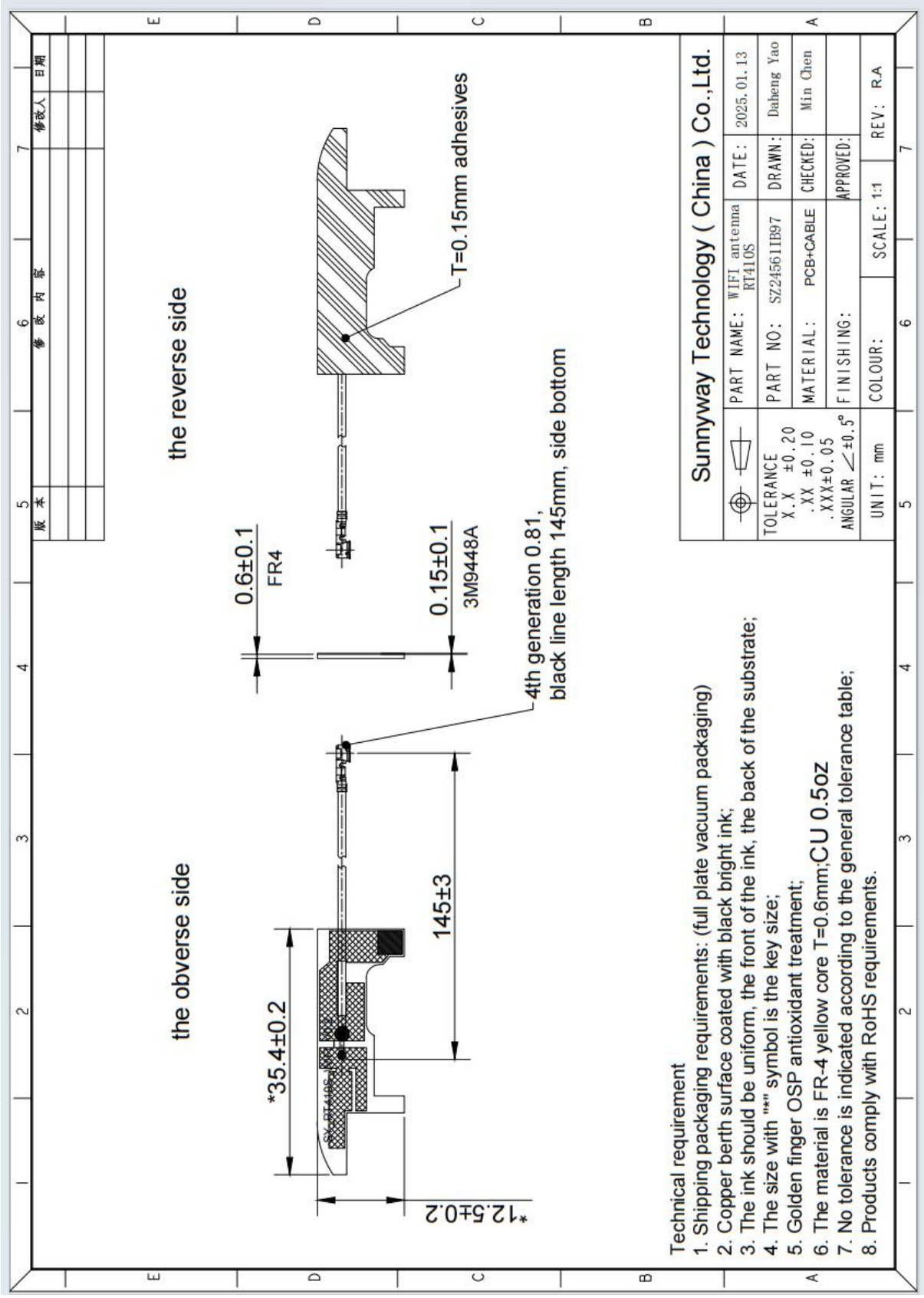
六、 Mass production antenna index

When the antenna is in mass production, the standing wave ratio is used as the test standard for mass production.

Based on the differences of the project itself, the following criteria are given:

Frequency (MHz)	Mass production standards
2400-2500MHZ 5150-5850MHZ	VSWR (mass production performance) <VSWR (recognized performance) ± 0.5

七、 schedule drawing



八、 ROHS restricted substance composition questionnaire

RoHS List of RoHS restricted substances

SALEABLE PART			
零件料号/Part number	零件名称/型号/Part name / model	供应商料号 /Supplier item number	制造商名称/Name of manufacturer
	RT410S	SZ24561IB97	深圳市尚远科技有限公司

SUB-PART

序号 Serial number	名称/name		料号 /Item No	单件产品使用量/Usage of single product(g)	供应商/supplier	检测报告 /Test report	限用物质含量PPM/Content of restricted substances ppm						控制方法 /Control method	SGS Report			备注 /remarks
	单体 /Monomer	成分 /component				有/无 Yes / no	铅 /Pb	镉/Cd	汞/Hg	六价铬 /Cr6+	PBB	PBDE		编号/number	生效日期 /effective date	查询网址/Query website	
1	PCB	FR4/base material			建滔积层板	有/yes	N.D	N.D	N.D	N.D	N.D	N.D	审核SGS报告 /Review SGS report	CANEC23015607340	2023/12/14	www.sgsgroup.com.cn	/
2	PCB	油墨 /printing ink			江苏广信	有/yes	N.D	N.D	N.D	N.D	N.D	N.D	审核SGS报告 /Review SGS report	SHAEC24000703108	2024/1/17	www.sgsgroup.com.cn	/
3	PCB	osp			星扬	有/yes	N.D	N.D	N.D	N.D	N.D	N.D	审核SGS报告 /Review SGS report	A2240298689101002E	2023/12/27	www.sgsgroup.com.cn	/
5	CABLE	镀锡圆铜线			震雄铜业	N.D	N.D	N.D	N.D	N.D	N.D	N.D	审核SGS报告 /Review SGS report	A2240555311102001C	2024/5/24	www.sgsgroup.com.cn	/
6	CABLE	FEP			见龙	N.D	N.D	N.D	N.D	N.D	N.D	N.D	审核SGS报告 /Review SGS report	A2240269286101001C	2024/5/21	www.sgsgroup.com.cn	/
7	CABLE	线材色母			巨圣	N.D	N.D	N.D	N.D	N.D	N.D	N.D	审核SGS报告 /Review SGS report	NGBPC24000131242	2024/1/16	www.sgsgroup.com.cn	/
8	CABLE	C5191			紫金铜业	N.D	N.D	N.D	N.D	N.D	N.D	N.D	审核SGS报告 /Review SGS report	CANEC24000977304	2024/1/22	www.sgsgroup.com.cn	/
9	CABLE	C5210			紫金铜业	N.D	N.D	N.D	N.D	N.D	N.D	N.D	审核SGS报告 /Review SGS report	CANEC24000977302	2024/1/22	www.sgsgroup.com.cn	/
10	CABLE	胶芯			新港	ND	ND	ND	ND	ND	ND	ND	审核SGS报告 /Review SGS report	SHAHL24019391801	2024/8/29	www.sgsgroup.com.cn	
11	CABLE	镀金			翊腾电子	ND	ND	ND	ND	ND	ND	ND	审核SGS报告 /Review SGS report	A2240410234101001E	2024/7/16	www.sgsgroup.com.cn	
12	CABLE	镀镍			翊腾电子	ND	ND	ND	ND	ND	ND	ND	审核SGS报告 /Review SGS report	A2240410234101002E	2024/7/16	www.sgsgroup.com.cn	
13																	

制表/Tabulation：陈小平　　制表者部门/Tabulator Department:: 品质部/品保工程师 Quality Department　　日期/date：2025/1/13

九、 Reliability test report

SUNNYWAY

Sunnyway Technology (China) Co., Ltd.

Antenna Environment Test Report

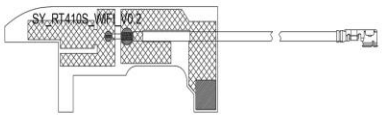
Customer Name: Franklin Mobile Co.,Limited **entry name:** RT410S **sunnyway NO:** SZ24561IB97

Number of samples: 5PCS **Test time:** 2025/01/08

Test time	测试项目Test items	测试条件和需求Test conditions and requirements	测试设备Test equipment	测试结果test result					
2025.01.08 - 2025.01.09	low temperature storage	Store in a incubator (-40 ℃ ± 5) for 24 hours, and then let it dry at room temperature for 2 hours before testing. The electrical performance (VSWR) and structural appearance	Standard temperature and humidity		1	2	3	4	5
					-40℃	-40℃	-40℃	-40℃	-40℃
				RF	OK	OK	OK	OK	OK
				外观	OK	OK	OK	OK	OK
2025.01.08 - 2025.01.09	高温存储 high temperature	Store in a temperature box (80 ℃ ± 5) for 24 hours, and then let it dry at room temperature for 2 hours before testing. The electrical performance (VSWR) and structural appearance	Standard temperature and humidity		1	2	3	4	5
					+85℃	+85℃	+85℃	+85℃	+85℃
				RF	OK	OK	OK	OK	OK
				外观	OK	OK	OK	OK	OK
2025.01.09 - 2025.01.10	Constant temperature and humidity	The temperature is 60 ℃ ± 5, the humidity is 90% -95% RH, and after 24 hours, it is required that the structure is undamaged and the electrical performance remains unchanged.	Standard temperature and humidity		1	2	3	4	5
					60℃/95%	60℃/95%	60℃/95%	60℃/95%	60℃/95%
				RF	OK	OK	OK	OK	OK
				外观	OK	OK	OK	OK	OK
2025.01.11 - 2025.01.12	耐盐雾实验Salt spray resistan	NaCl solution with salt spray concentration of 5%, spray the antenna for 24 hours continuously at 35 ℃, then remove it for cleaning and dry it. The surface of the antenna should be free	Salt mist machine		1	2	3	4	5
					35℃/5%	35℃/5%	35℃/5%	35℃/5%	35℃/5%
				RF	OK	OK	OK	OK	OK
				外观	OK	OK	OK	OK	OK

审核 to examine: 林长青 **确认confirm:** 陈小平 **测试 test:** 韦月丽

十、 Packaging method

Parts packing instructions report			
customer name	Franklin Mobile Co.,Limited	manufacturer	SUNNYWAY
entry name	SZ24561IB97	product name	WIFI_antenna_
Bale quantity	100 PCS *_1_ ☐bundle ☐ PE bag ◆disc ☐layer ☐other_____		
Moisture-proof & slow walking	☐desiccant ☐Vacuum bag ☐Bubble pack ☐foam ☐Paper wood ◆other_____		
内包装方式及标签	 客户名称：Franklin Mobile Co.,Limited 产品名称：WIFI antenna 订单号码： 厂商编码：SZ24561IB97 客户编码： 数　　量： 检验员 ： 发货日期： 注意事项:防潮，防震，防压，小心轻放. 100pcs / disc　　Cart...		
外包装方式示意图及标签	客户名称：Franklin Mobile Co.,Limited 产品名称：WIFI antenna 订单号码： 厂商编码：SZ24561IB97 客户编码： 数　　量： 检验员 ： 发货日期： 注意事项:防潮，防震，防压，小心轻放. Carton label Check packaging, paste product		
		manufacturer	
		Daheng Yao	
* The packaging picture is a schematic, does not mean that the picture is the actual product.			