深圳市尚远科技有限公司

Shenzhenshi Sunnyway Technology Co.Ltd.

Antenna SPEC

Customer: WANLIDA		Project Name:
Working Band: BT2.4G		
Mainboard Version:		
Sunnyway BOM		
SPEC-Type	Model Name	Antenna Type
BT Antenna	SZ24168IB77-1	FPC

Change history			
Preparation/change date	change content	Changed by	version
2024.07.18	**First edition**	**Xu Wei**	**A**

Sunnyway Countersign Column				
R&D	ME:	Audit:	Quality Engineer:	Approval:
	RF:	Audit:		

Customer Countersign Column			
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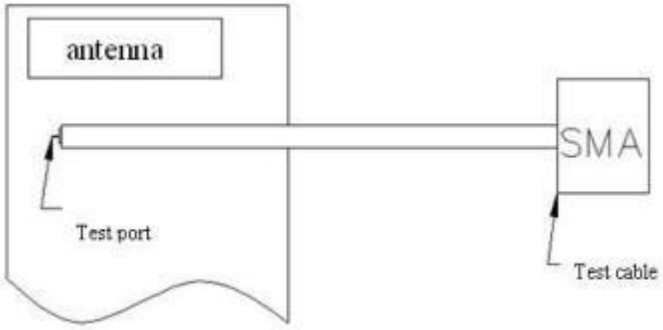
1. TEST FIXTURE

Purpose： To test antenna passive parameters as accurately as possible。

methods： the fixture is to use a 50 ohm coaxial cable, one end is connected to the pad after the antenna 's matching circuit (the front of the antenna switch) , and the other end is connected to the SMA connector.



2. MATCHING CIRCUIT

Antenna matching did not modify

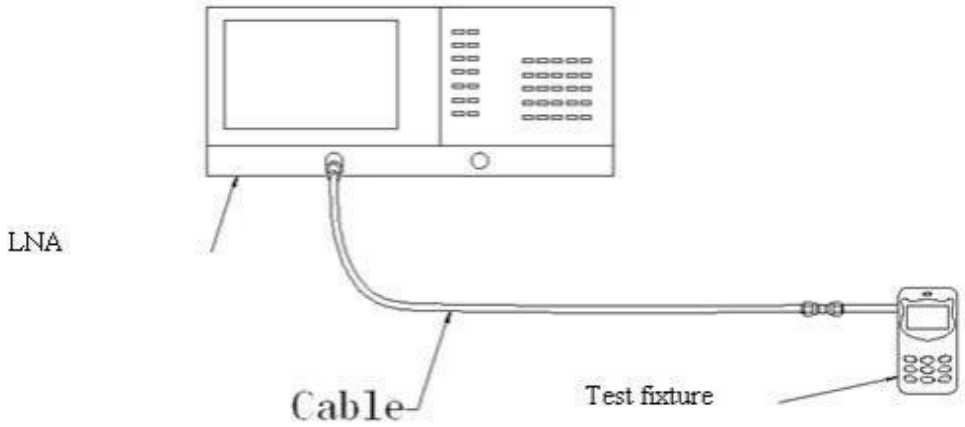
3. S11 test

3.0 S11 test method instructions

Test equipment：LNA(Agilent E5071B)

Test method： With a 50 ohm CABLE ,CABLE export from instrument testing port ， After the calibration with calibration Key, connected to the SMA connector， Records the return loss and VSWR of the related frequency points.

Test schematic diagram is as follows：



Test schematic diagram

3.1 S11 parameter

WIFI ANT VSWR

频率（Freq.）MHz	2400	2450	2500
驻波比 VSWR	1.7	1.2	1.7

4 CHAMBER TEST DATA

4.0Test equipment

Test system: chamber

Test environment: the temperature of22 ℃ + 3 ℃, humidity of 50% plus or minus 15%

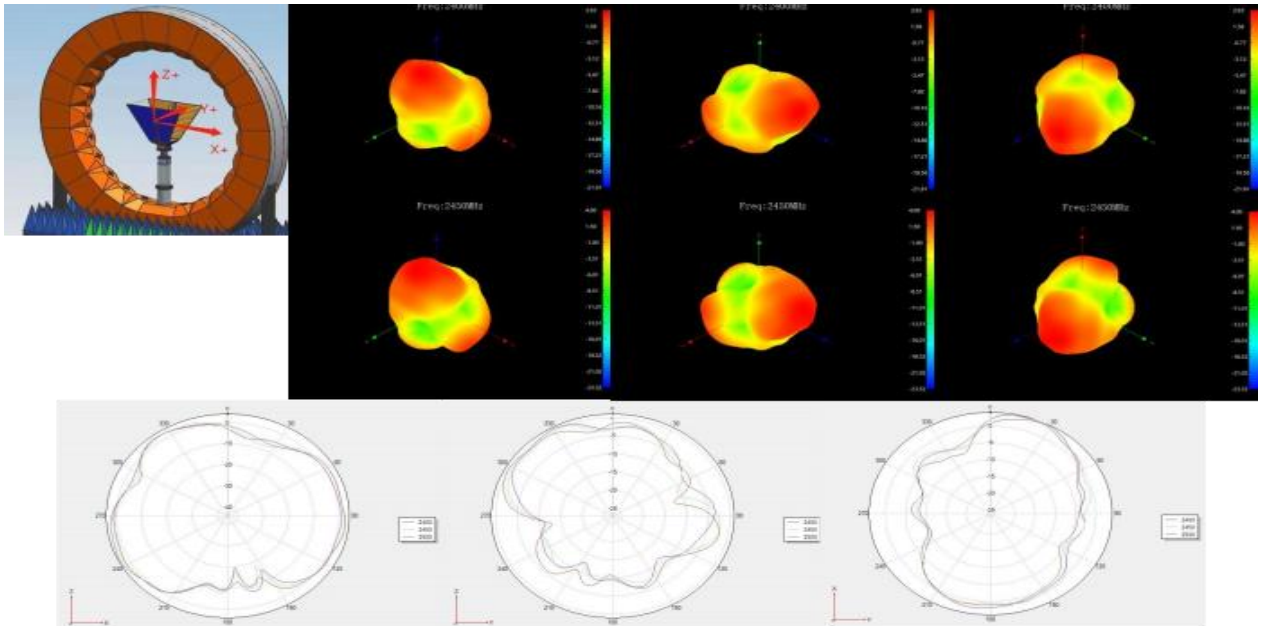
Test equipment: to test passive status , use Agilent 8960 Agilent E5071B to

test active status, use CMW500

更换前面位置		
Frequency/Mhz	Efficiency / %	MaxGain/dBi
2400	51.25	3.93
2410	49.98	4.04
2420	49.98	3.95
2430	49.62	3.94
2440	51.07	3.94
2450	51.8	4
2460	53.1	3.98
2470	51.8	4.22
2480	52.72	4.05
2490	51.8	4.42
2500	49.45	3.98

Test data

Field diagram



5. Ground handling

Measurement	Band	Channel	更换前面位置
TRP	BLUETOOTH	0	2.32
TRP	BLUETOOTH	39	2.54
TRP	BLUETOOTH	78	2.3
TIS(EIRP)	BLUETOOTH	0	-86.48
TIS(EIRP)	BLUETOOTH	39	-85.36
TIS(EIRP)	BLUETOOTH	78	-85.59

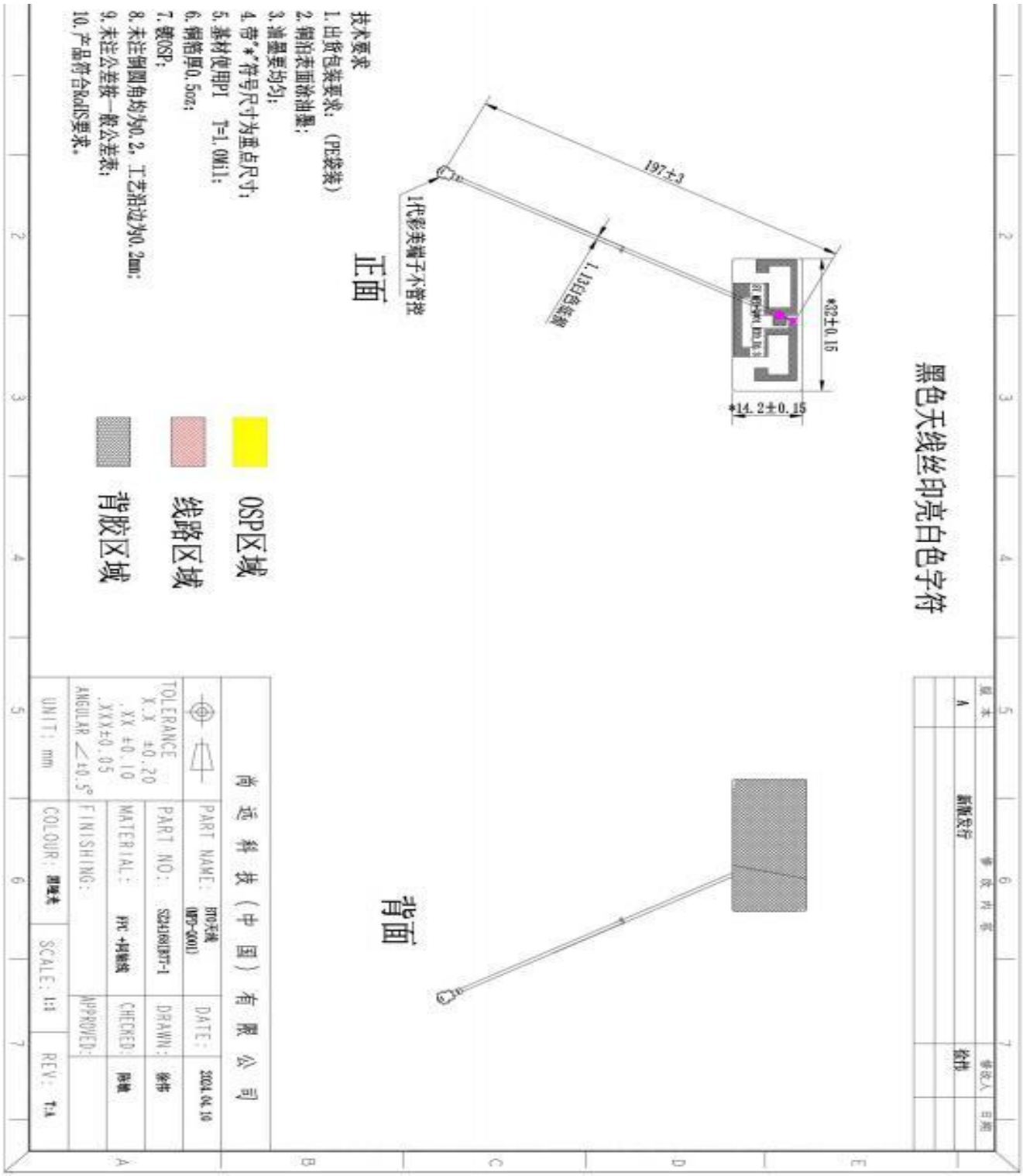
6. Mass production antenna Spec

During Mass production, to test VSWR as production test standard

According to the difference of the project itself, the following specification:

Frequency	SPEC , Mass Production
2400-2500MHz	VSWR（MP performance）<VSWR(Verify performance)±0.5

7. Structuraldrawings



8. Environmental testing report

SUNNYWAY

Sunnyway Technology (China) Co., Ltd.

Antenna Environment Test Report

Customer Name: WANLIDA **entry name: MPD-Q001** **sunnyway NO: SZ241681B77-1**

Number of samples: 5PCS **Test time: 2024/7/18**

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					
2023.10.10 - 2023.10.11	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
2023.10.10 - 2023.10.11	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
2023.10.11 - 2023.10.12	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
2023.10.13 - 2023.10.14	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**