Shanghai Sunnyway Communication Technology Limited Company

Temporary antenna specification

Customer: Xiangcheng	The project: S0361
Operating frequency band: 2400-2500MHz,5150-5850MHz	
Motherboard version:	

Shangyuan material specifications		
Specifications and models	Shangyuan material number	Customer part number
WIFI	SH23348IB75	

The record of project changes			
Date of preparation/change	Changes	Change of person	version

Sunnyway counter-signature bar				
Research and development	ME:	Auditor:	QE:	Approver:
	RF:	Auditor:		

Client Counter-signature bar			
EE	PM	RF	QE

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Shenzhen R & D Center Address: Shenzhen Guangming District South Taiyun Chuanggu Center 5 Building 6 floor
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contents

1. Project information

Machine information

Antenna information

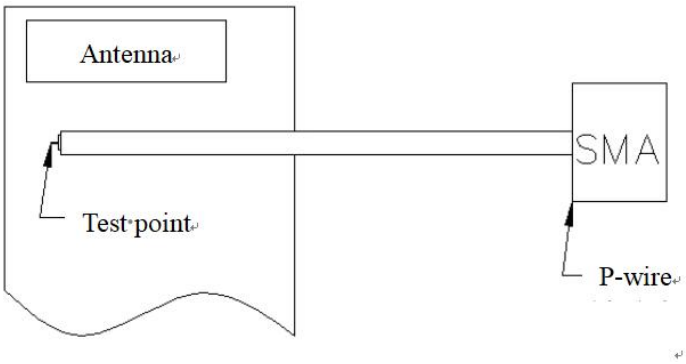
	Version
WIFI Antenna	SY-超嗨S0361 WIFI-V0.5
Antenna form	PIFA antenna

Note: The customer finally verified that the antenna performance prototype was retained in our company for at least one year, which is convenient for analysis and solution to abnormal situations in antenna mass production.
Ensure antenna shipment quality.

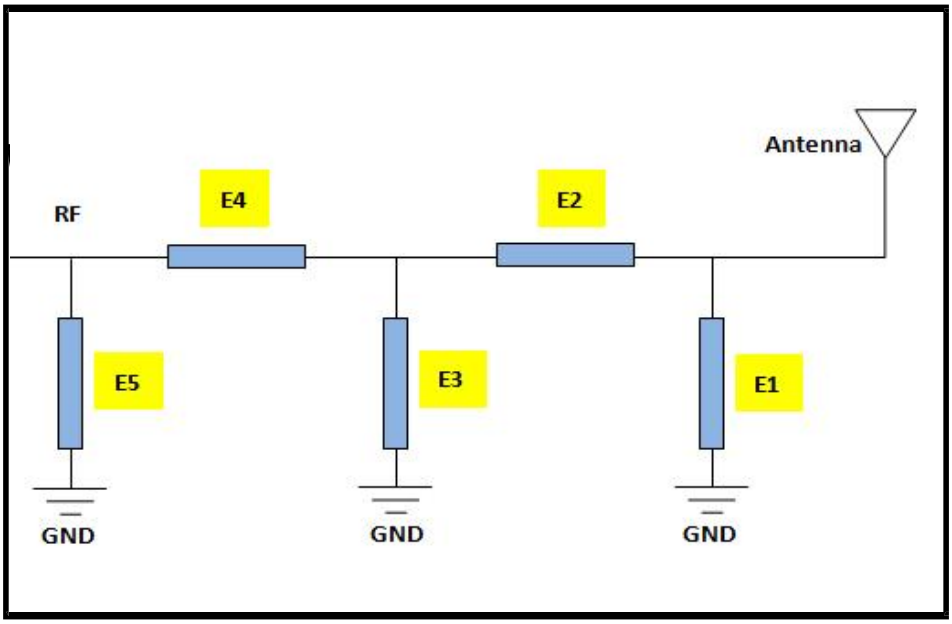
2. Test fixtures

Purpose: To test the passive parameters of the antenna as accurately as possible.

How to make: The prototyping mechanism is made of a 50 ohm coaxial cable, one end is connected to the test point at the back of the matching circuit of the prototype motherboard (the front of the RF test hole), and the other end is connected to the SMA connector. The schematic diagram is as follows:



3. Matching circuits



Element	Value	tags	specification
WiFi antennas			
E1	N/A		
E2	0Ω		
E3	N/A		
E4	0Ω		
E5	N/A		

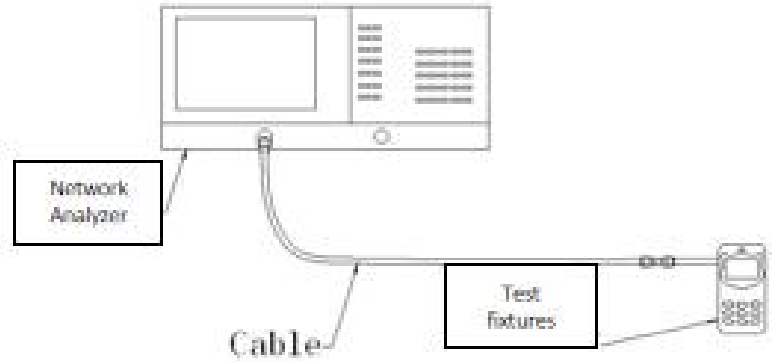
4. S11 test

4. 1 S11 Test Method Description

Test Equipment: Network Analyzer (E5071C)

Test method: A 50 ohm CABLE cable is derived from the instrument test port, and the SMA connector of the prototype is connected after calibration using the calibrator to record the return loss and standing wave ratio corresponding to the relevant frequency point.

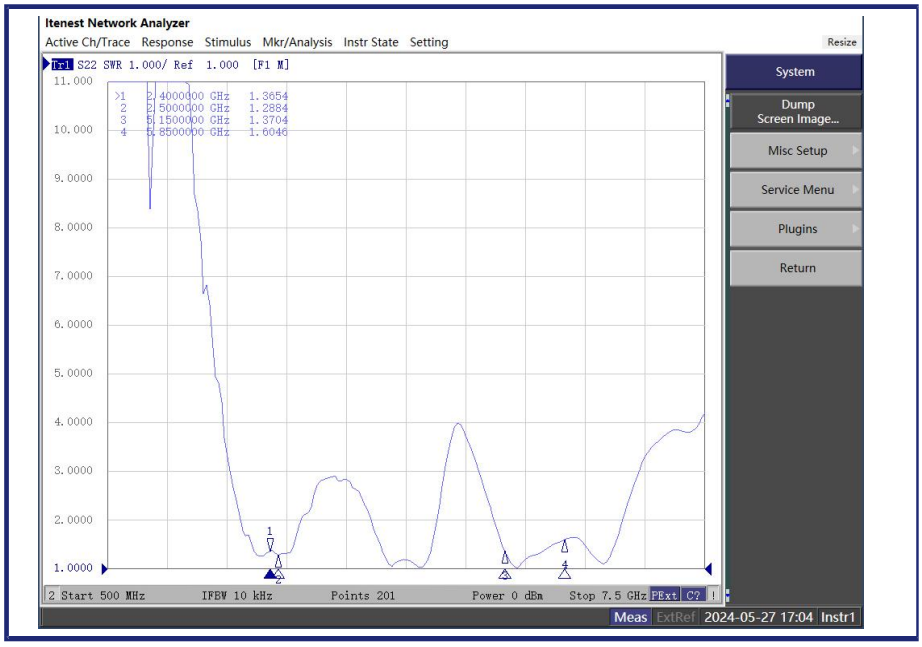
The test diagram is as follows:



Test the schematic

4.2 S11 parameter

WIFI Antenna



	wifi
frequency（MHz）	SWR
2400	1.36
2500	1.28
5150	1.37
5850	1.60

5 Darkroom test data

Test system: Shielded darkroom

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

Test equipment: When testing passive data, use the Network Analyzer Agilent E5062C When testing active data, the Comprehensive Tester Agilent 8960 /CMW500/E4438C is used

5.1 Passive test data

WIFI antenna efficiency

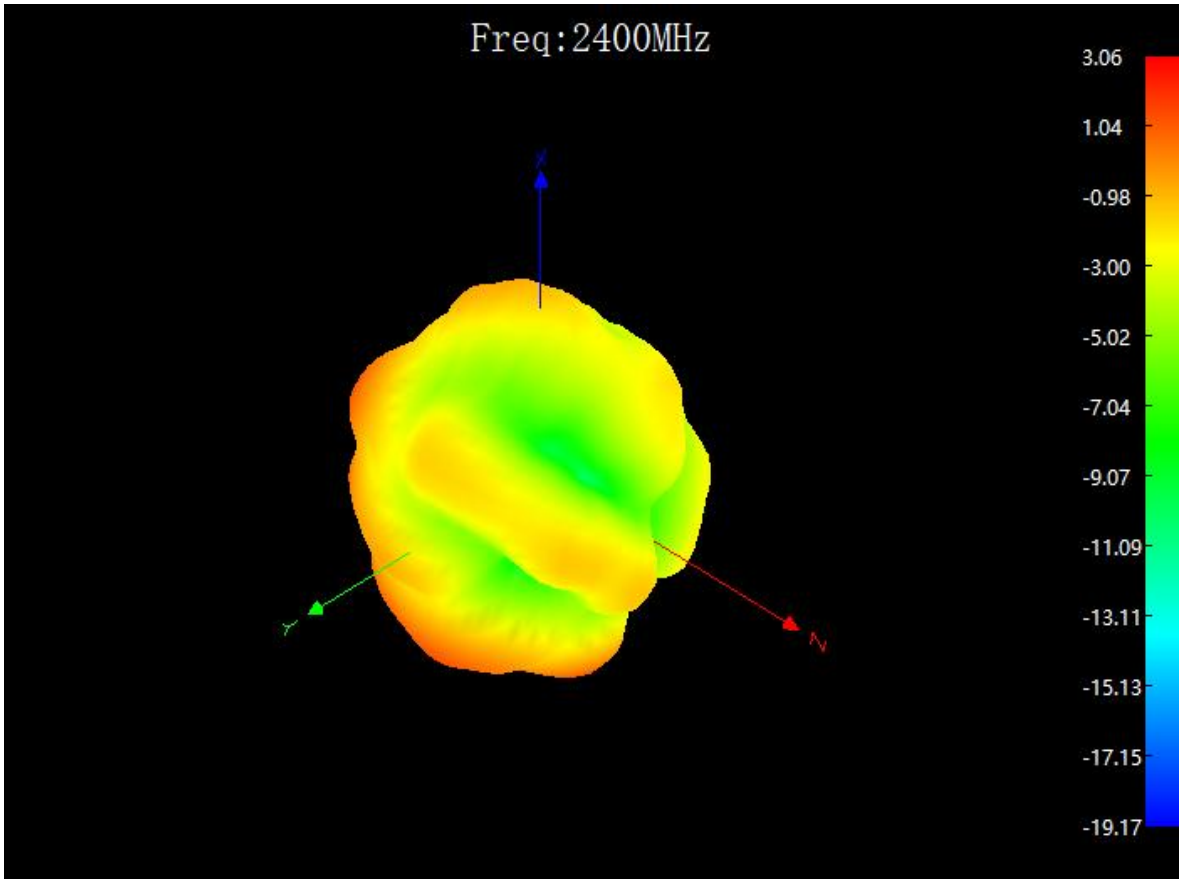
Freq. (MHz)	Effi (dB)	Effi (%)	Max Gain (dBi)	Freq. (MHz)	Effi (dB)	Effi (%)	Max Gain (dBi)
2400	-2.91	51.17	3.06	5150	-2.77	52.84	4.34
2410	-3.00	50.12	2.72	5200	-2.56	55.46	4.55
2420	-2.70	53.70	3.51	5250	-2.75	53.09	3.87
2430	-2.86	51.76	3.81	5300	-2.80	52.48	3.44
2440	-2.87	51.64	2.75	5350	-2.91	51.17	2.73
2450	-2.68	53.95	3.46	5400	-2.97	50.47	3.07
2460	-2.99	50.23	3.47	5450	-3.01	50.00	2.29
2470	-2.91	51.17	2.87	5500	-2.79	52.60	1.52
2480	-2.84	52.00	3.77	5550	-2.99	50.23	0.96
2490	-2.80	52.48	3.52	5600	-2.93	50.93	1.57
2500	-2.49	56.36	3.72	5650	-2.70	53.70	1.46
				5700	-2.99	50.23	0.85
				5750	-2.86	51.76	1.20
				5800	-2.90	51.29	1.34
				5850	-2.89	51.40	1.61

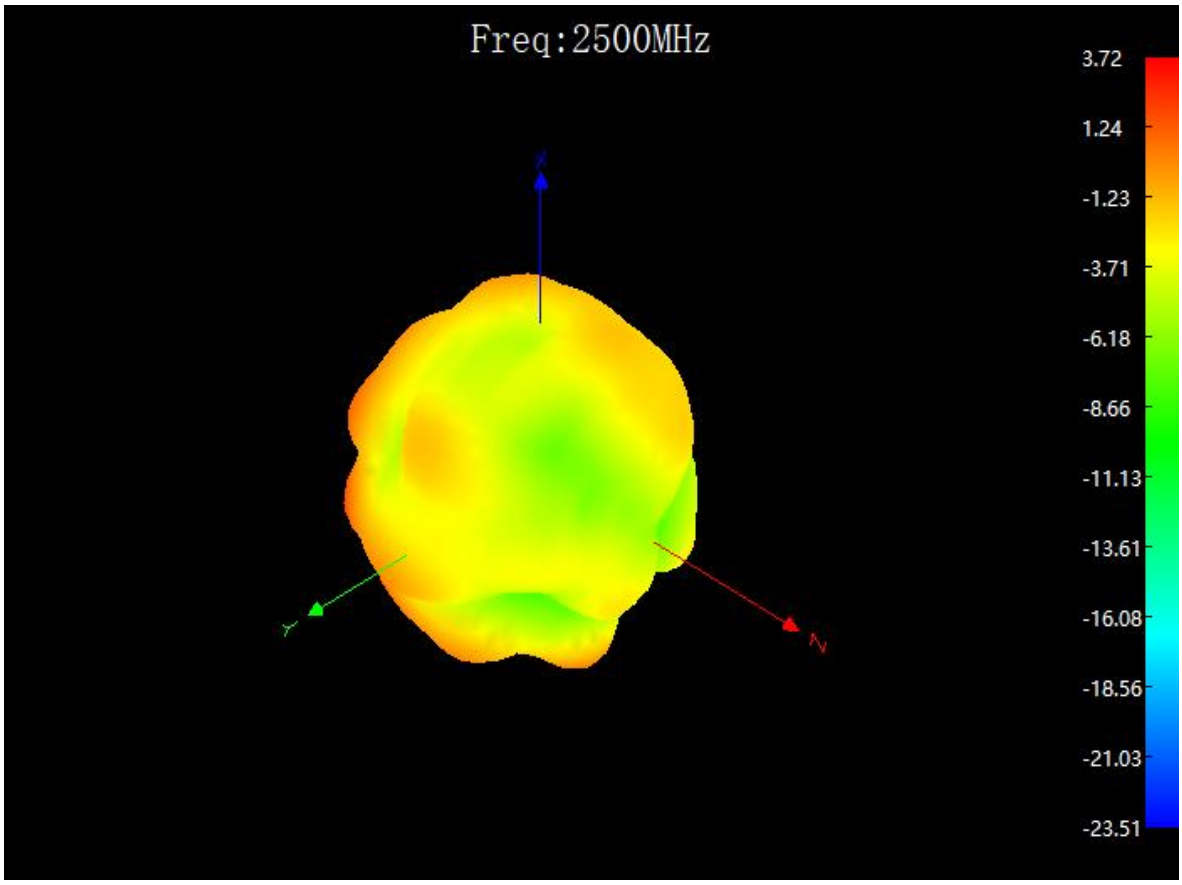
5.2 Active test data

Band	Test Item	Channel	OTA (dBm)		
			SPEC	TRP/TIS	GAP
2.4G 802.11B-11Mbps	TRP	1	15.00	15.25	0.25
		6		16.43	1.43
		11		15.77	0.77
	TIS	1	-84.00		
		6			
		11		-84.51	-0.51
2.4G 802.11G-54Mbps	TRP	1	14.00	14.57	0.57
		6		14.80	0.80
		11		14.40	0.40
	TIS	1	-71.00		
		6			
		11		-71.29	-0.29
2.4G 802.11N-MCS7	TRP	1	13.00	13.47	0.47
		6		13.58	0.58
		11		13.53	0.53
	TIS	1	-69.00		
		6			
		11		-69.63	-0.63
5.8G 802.11A-54Mbps	TRP	36	12.00	13.62	1.62
		149		13.07	1.07
		165		13.76	1.76
	TIS	36	-71.00		
		149			
		165		-71.53	-0.53
5.8G WFI_N	TRP	36	11.50	12.22	0.72
		149		12.47	0.97
		165		12.16	0.66
	TIS	36	-69.00		
		149			
		165		-70.39	-1.39
5.8G WFI_AC	TRP	36	10.50	11.90	1.40
		149		11.49	0.99
		165		11.11	0.61
	TIS	36	-68.00		
		149			
		165		-67.58	0.42

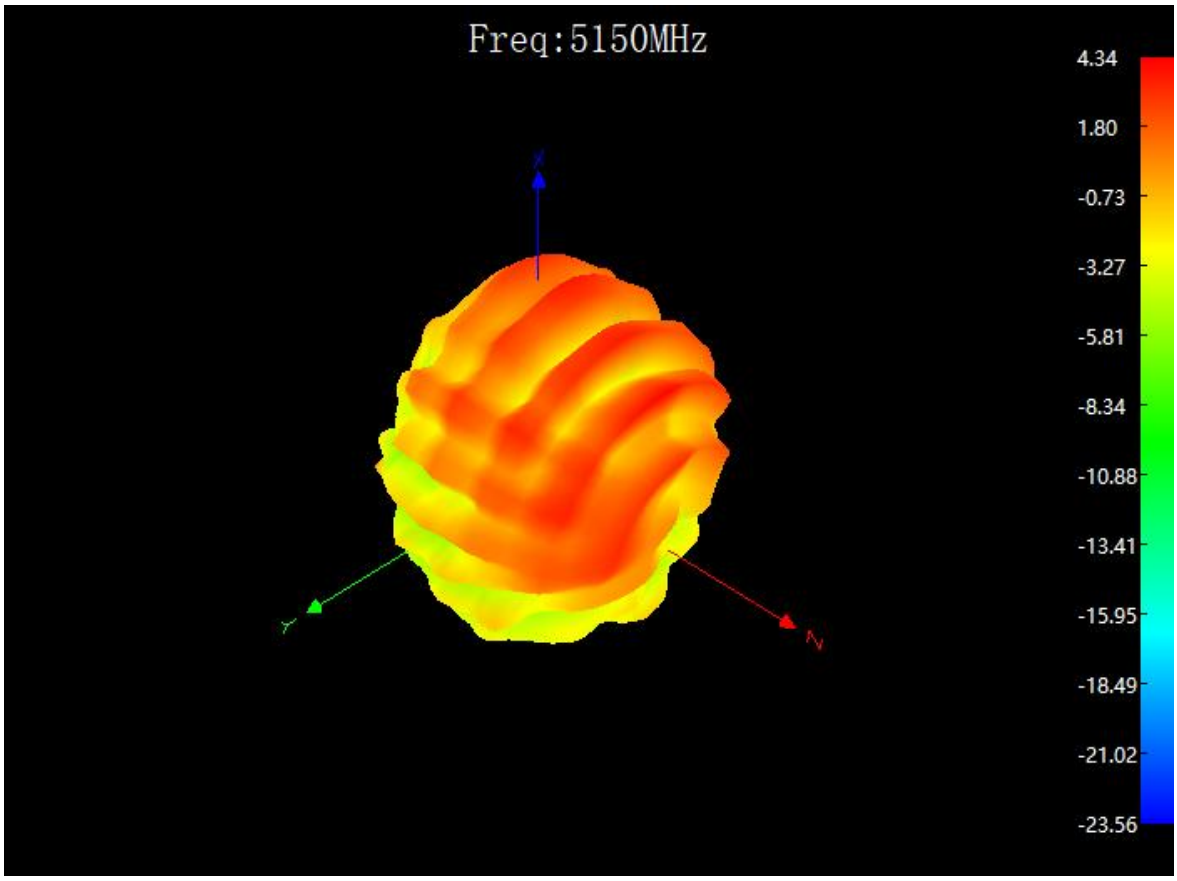
Shanghai Shangyuan Communication Technology Co., Ltd. antenna recognition

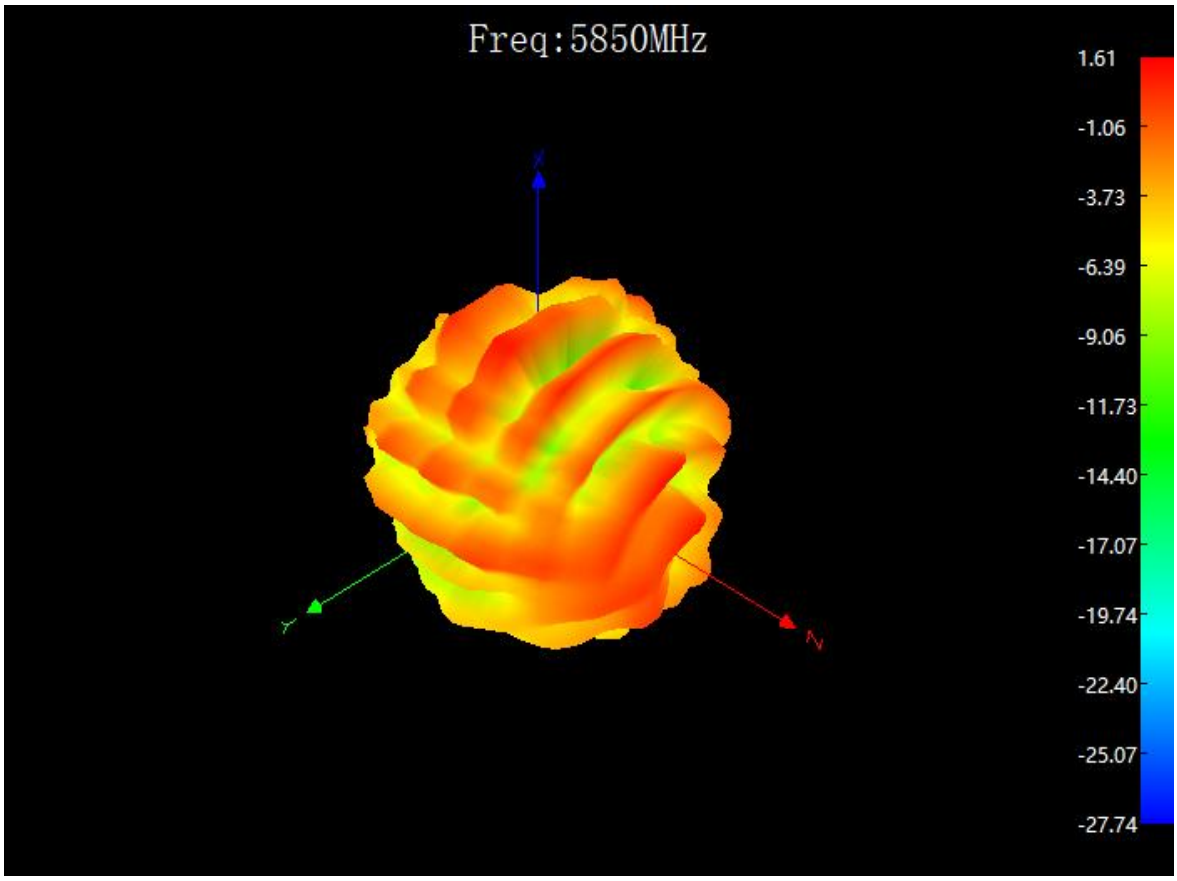
Wifi antenna 3D diagram





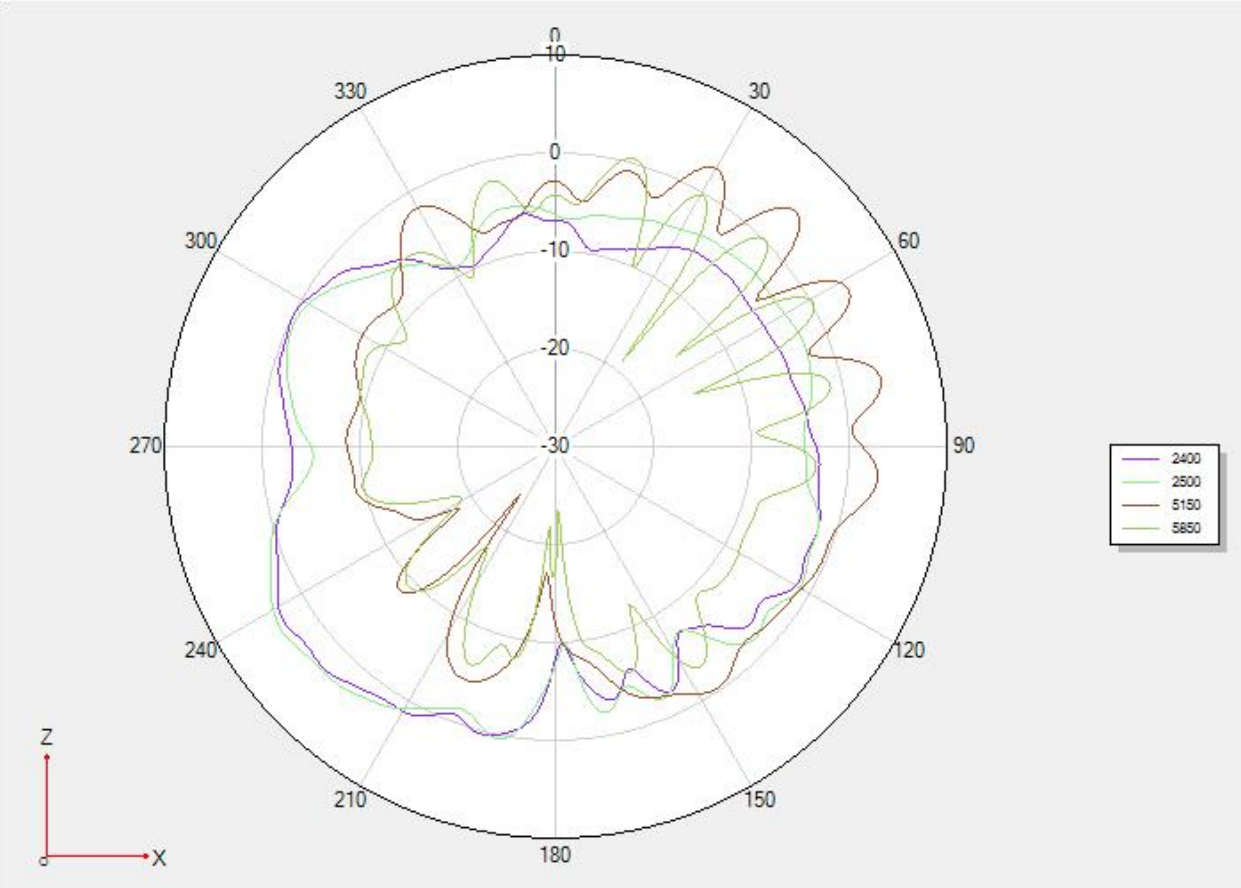
Wifi antenna 3D diagram

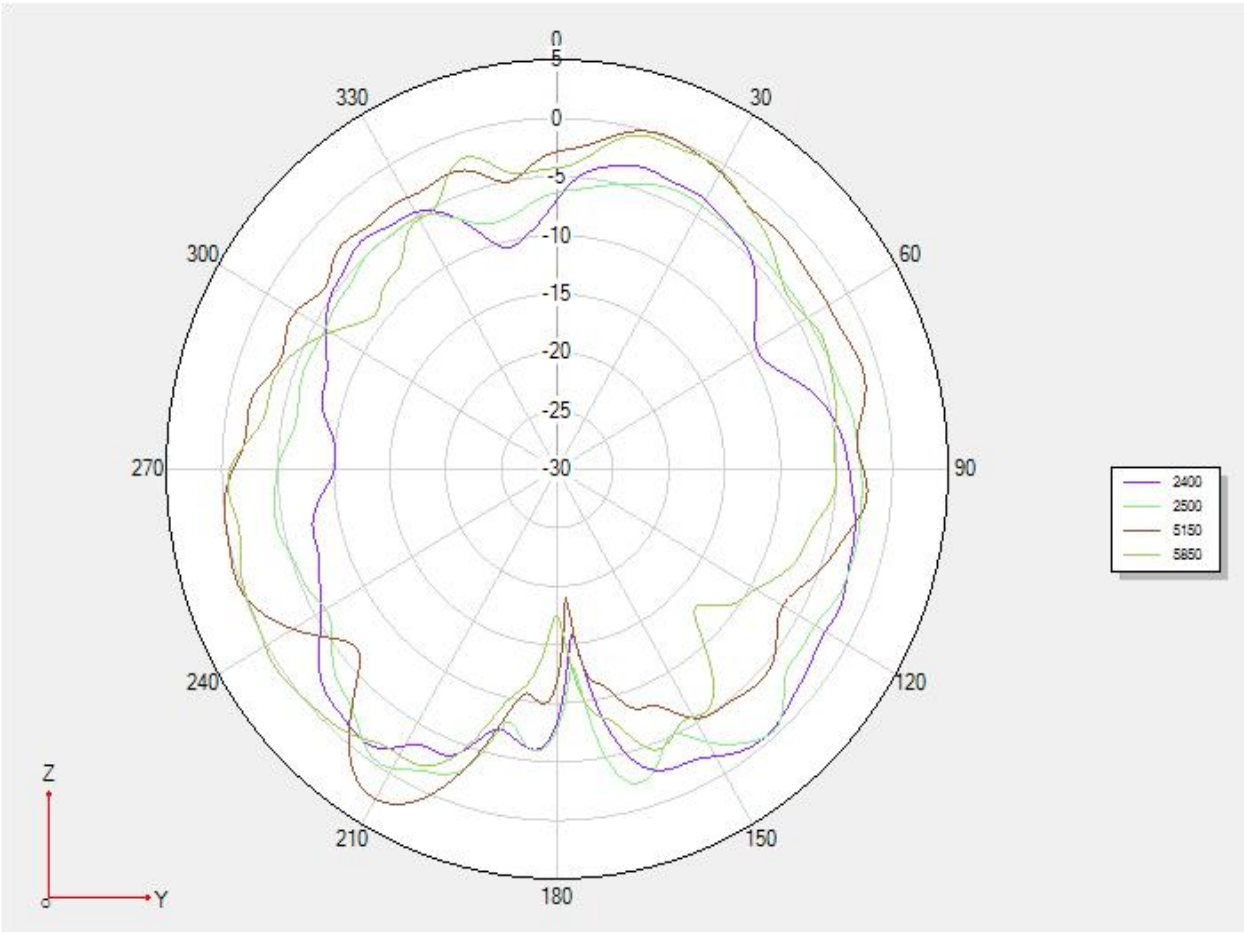


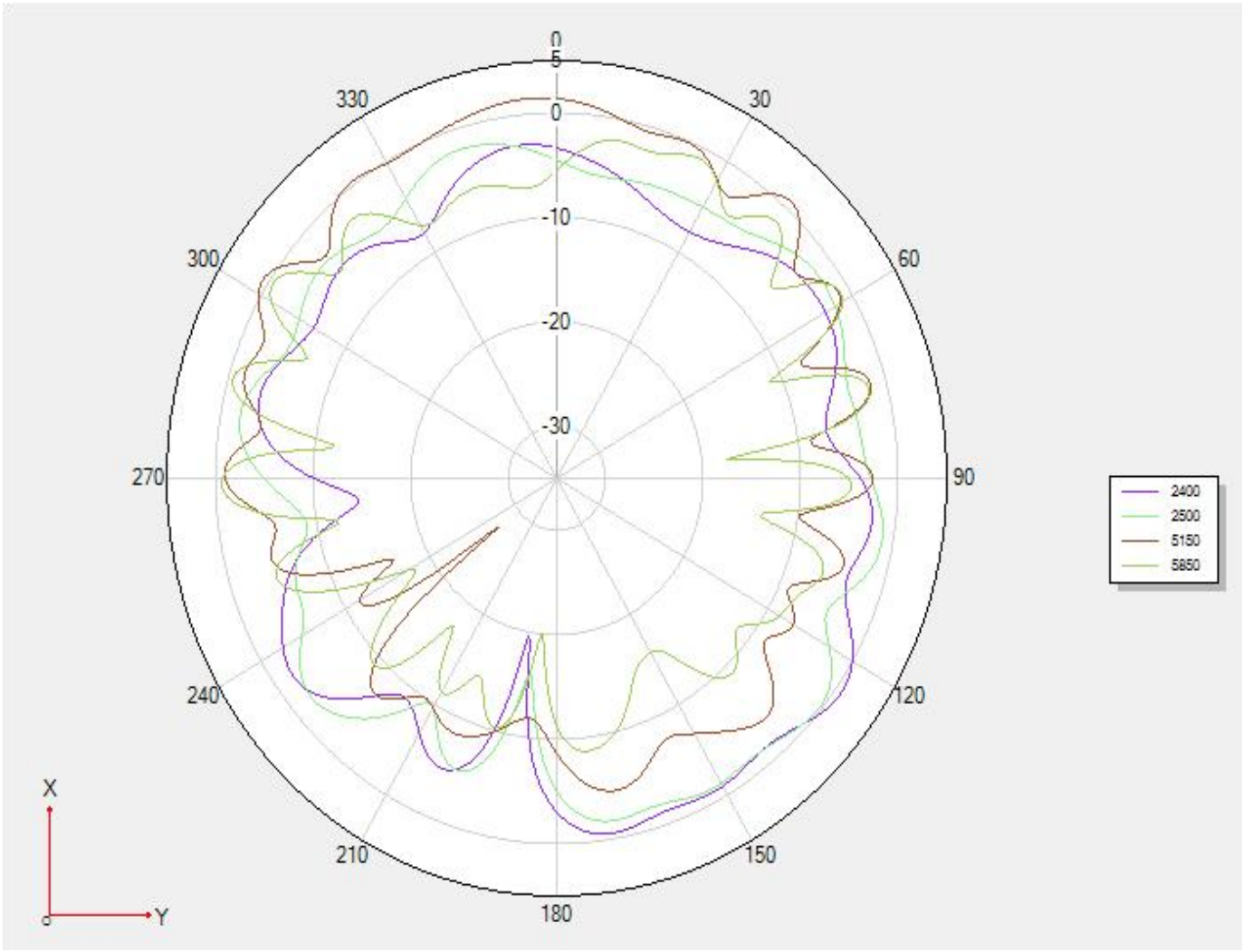


Shanghai Shangyuan Communication Technology Co., Ltd. antenna recognition

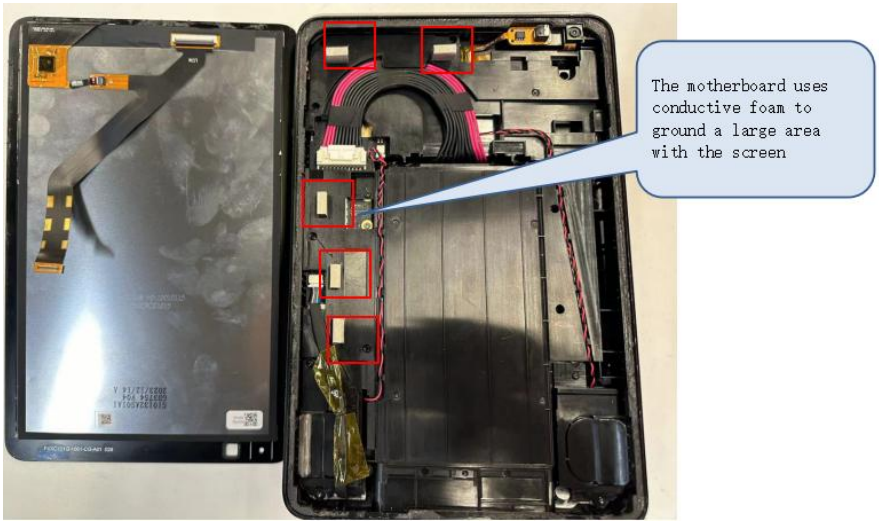
Wifi antenna 2D diagram

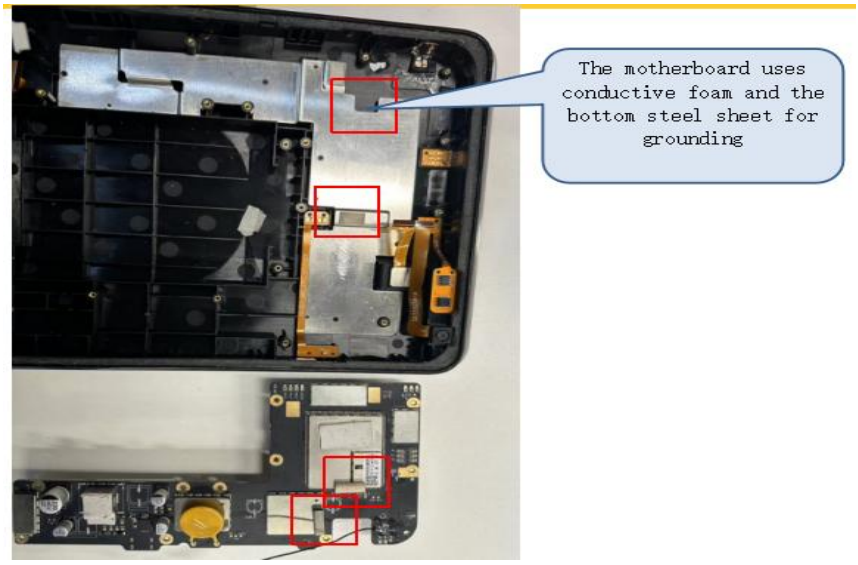





0
5
0
-10
-20
-30
30
60
90
120
150
180
210
240
270
300
330
2400
2500
5150
5850
X
Y

6. Prototype grounding treatment



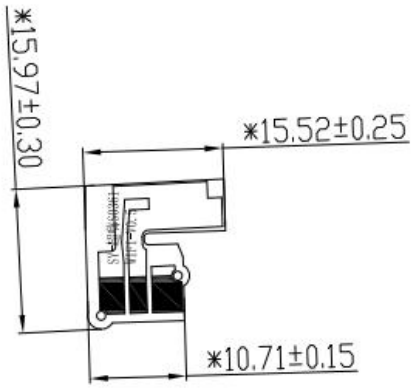


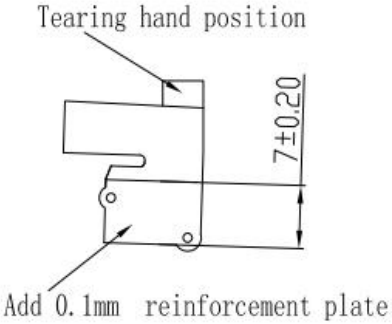
7. Mass production antenna indicators

When the antenna is mass-produced, the standing wave ratio is used as the mass production test standard. According to the differences in the project itself, the following criteria are given:

frequency (MHz)	Mass production standards
2400-2500; 5150--5850MHz	VSWR (Mass production performance) <VSWR(Acknowledge performance)+1

Shanghai Shangyuan Communication Technology Co., Ltd. antenna recognition





technical requirement

1. Shipping packaging requirements: (whole board packaging)
2. Apply black matte ink on the surface of the copper pool;
3. The ink should be uniform;
4. Dimensions with the "*" symbol are the key dimensions;
5. Use 3m9471se for backing adhesive;
6. The substrate uses PI T=1Mil;
7. Copper foil thickness of 0.5oz;
8. The thickness of the gold-plated yellow color in the gold-plated area is 0.5u ", and it has been tested by salt spray for 48 hours;
9. Undeclared rounded corners are all 0.2, and the process edge is 0.2mm;
10. For unmarked tolerances, follow the general tolerance table;
11. The product complies with RoHS2.0&REACH requirements.

Sunnyway Technology Co.,Ltd			
	PART NAME: 超薄S0361	DATE:	2024.6.21
	PART NO: SH23348IB75	DRAWN:	Yujiang
TOLERANCE X.X ±0.25 .XX ±0.20 .XXX±0.05 ANGULAR ∠ ±0.5°	RF:	Tel:	
	PM:	Tel:	
	MATERIAL:	CHECKED:	
	FINISHING:	APPROVED:	
UNIT:mm	COLOUR:	SCALE:1:1	REV:TEST:ALS05