

Shanghai Sunnyway Communication Technology Limited Company

Temporary antenna specification

Customer: SHANGMI	The project: SD03	
Operating frequency band: 2400-2500MHz, 5150-5850MHz		
Motherboard version:		
Shangyuan material specifications		
Specifications and models	Shangyuan material number	Customer part number

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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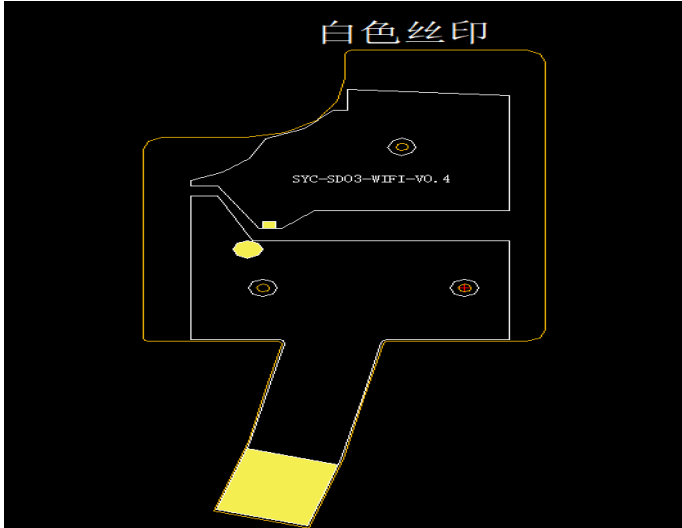
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1. Project information

Antenna information



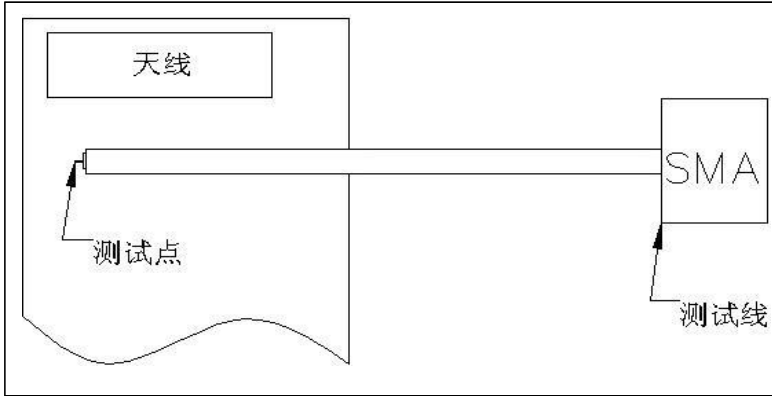
	版本
WIFI天线	SYC-SD03-WIFI-V0.4

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.

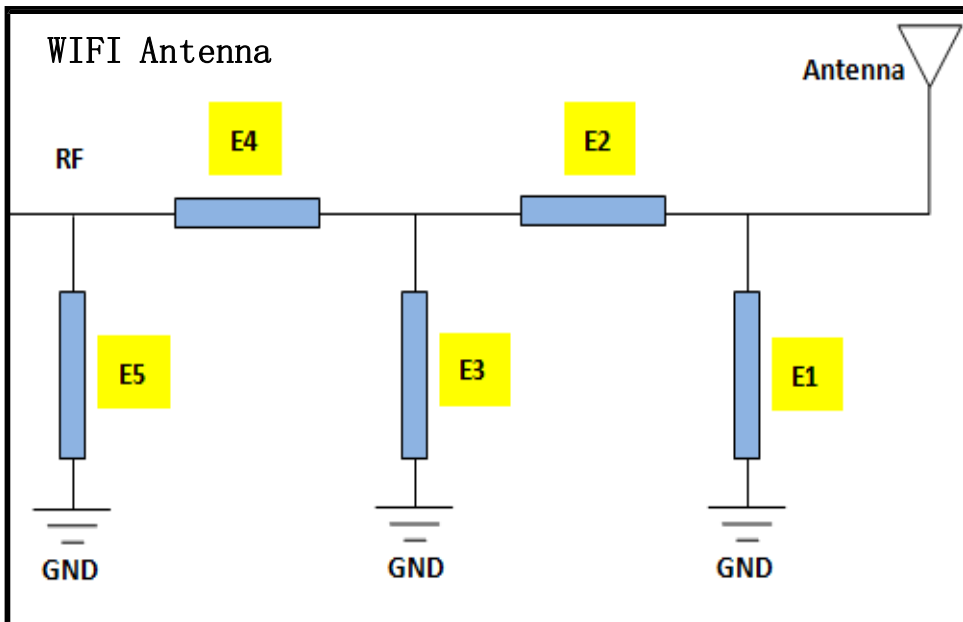
2. Test fixtures

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	Specification
E1	NC	
E2	0 Ω	
E3	NC	
E4	0 Ω	
E5	NC	

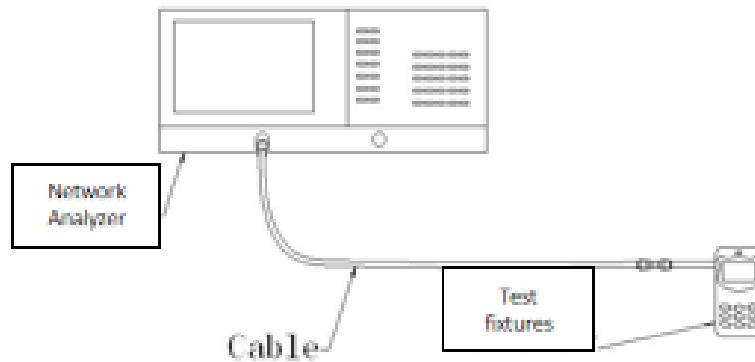
4. S11 test

5. 4. 1 S11 Test Method Description

6. Test Equipment: Network Analyzer (E5071C)

7. 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.

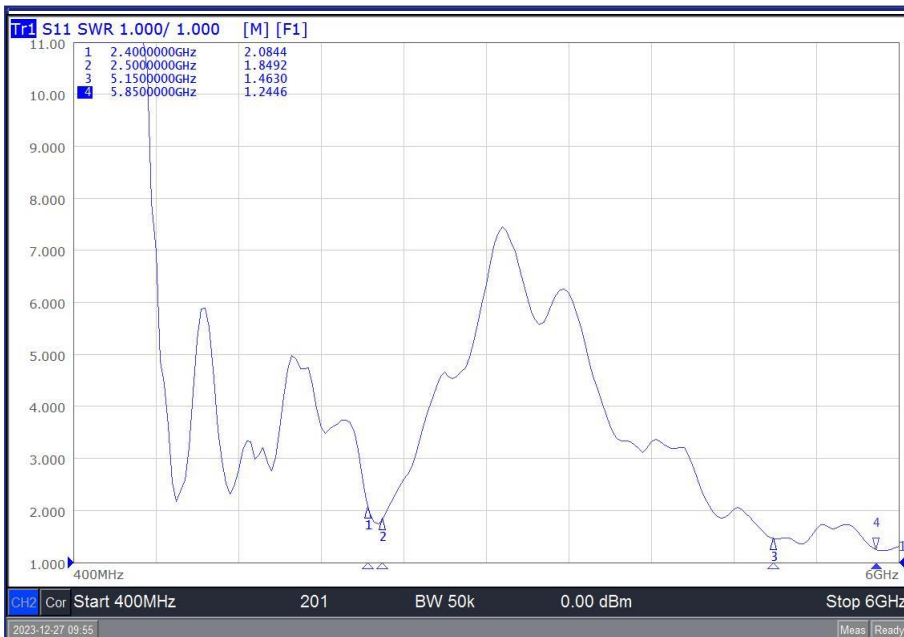
The test diagram is as follows:



Test the schematic

4.2 S11 parameter

WIFI Antenna



frequency (MHz)	SWR
2400	2.08
2500	1.84
5150	1.46
5850	1.24

5 Darkroom test data

Test system: Shielded darkroom

Test environment: temperature $22^{\circ}\text{C}\pm 3^{\circ}\text{C}$, humidity
 $50\%\pm 15\%$

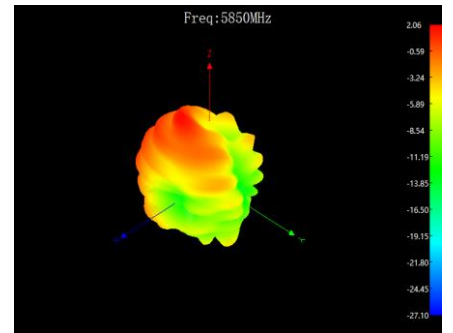
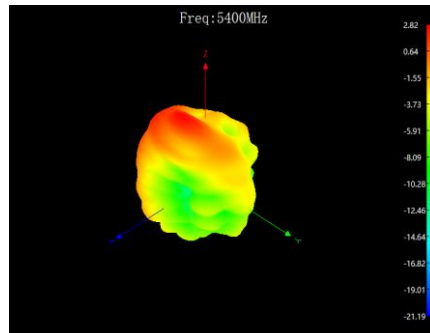
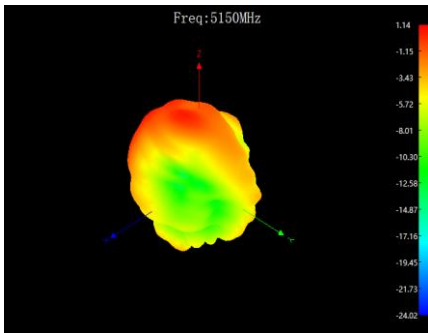
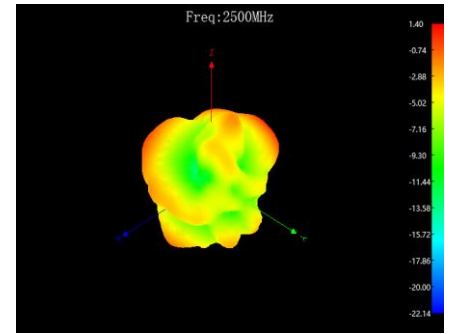
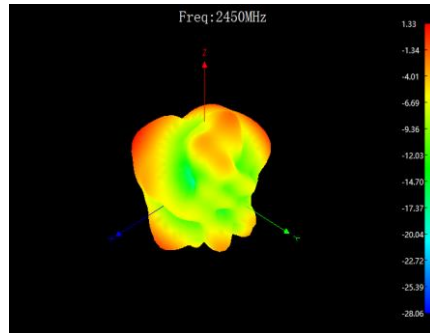
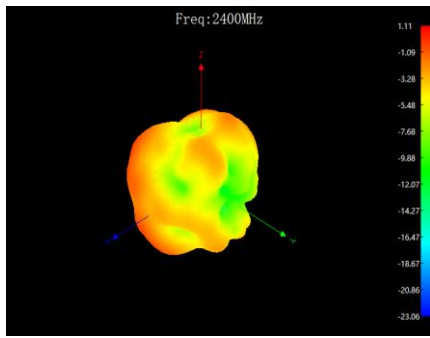
Test equipment: When testing passive data, use the
Network Analyzer Agilent E5062C When testing
active data, the Comprehensive Tester Agilent 8960
/CMW500/E4438C is used

5.1 Passive test data

WIFI antenna efficiency

frequency (MHz)	Gain(dB)	Efficiency (dB)	Efficiency (%)
2400	1.11	-3.60	43.70
2410	0.46	-3.37	45.98
2420	1.57	-3.35	46.24
2430	1.17	-3.29	46.88
2440	0.87	-3.21	47.75
2450	1.33	-3.17	48.23
2460	1.70	-3.19	47.94
2470	0.58	-3.18	48.08
2480	1.29	-3.04	49.70
2490	1.14	-3.07	49.29
2500	1.40	-3.11	48.81
5150	1.14	-3.31	46.62
5200	0.84	-3.11	48.88
5250	1.63	-3.13	48.60
5300	2.30	-3.27	47.10
5350	2.37	-3.33	46.46
5400	2.82	-3.29	46.83
5450	2.47	-3.50	44.63
5500	2.33	-3.55	44.18
5550	2.71	-3.58	43.81
5600	2.61	-3.61	43.55
5650	2.75	-3.54	44.26
5700	2.58	-3.51	44.57
5750	2.66	-3.30	46.75
5800	2.80	-3.24	47.47
5850	2.06	-3.21	47.70

Wifi antenna 3D diagram



5.2 Active test data

Transmission frequency (MHz)	Receiving frequency (MHz)	Band	channel	TRP	TIS(Screen on)
2400~2500	2400~2500	WiFi 2.4G 11b 11M	1	15.39	-87.53
			7	15.64	-87.28
			13	15.58	-86.75
2400~2500	2400~2500	WiFi 2.4G 11g 54M	1	14.64	-73.15
			7	15.22	-72.76
			13	15.36	-72.28
2400~2500	2400~2500	WiFi 2.4G 11n 65M	1	14.71	-71.11
			7	15.28	-70.63
			13	15.14	-70.42
5150~5850	5150~5850	WiFi 5G 11a 54M	36	14.36	-73.16
			149	14.55	-72.69
			165	14.17	-72.35

6. 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)	量产标准
2400-2500; 5150--5850MHz	VSWR (Mass production performance) <VSWR(Acknowledge performance)+1

7 Drawings

	2	3	5	6	7
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			version		date

TOP

BOTTOM

Technical requirements:

- 1: Focus on testing dimensions with "*" ;
- 2: Accessories should not be skewed;
- 3: The appearance requirements shall comply with the antenna inspection standards, and the coaxial line FPC welding shall have no defects, and the terminal direction shall not be welded incorrectly;
- 4: Full solder joints;
- 5: Refer to the general tolerance table for unmarked tolerances;
- 6: ♦ Dimensions are for reference, subject to specifications

Number	Part Name	P/N	material	colour	quantity
①	FPC	SH232031B03-1	FPC	black	1
②	cable	SH232031B21-1	4th generation	black	1

Sunnyway Technology (China) Co., Ltd	
PART NAME: WIFI S003 PART NO: SH232031B77-1 RF: 贺浪 PM: 田亚 MATERIAL: FPC FINISHING: COLOUR: black	DATE: 2024.2.5 DRAWN: 张远方 TEL: 18665329591 TEL: 17821484910 CHECKED: 于姜 APPROVED: SCALE: 1:1 REV: 1.S05

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