

Shanghai Sunnyway Communication Technology Limited Company

Temporary antenna specification

Customer: Sungard		The project: DS3-11		
Operating frequency band: WiFi B/G/N/A				
Motherboard version: DS3_11_MB_V1.2 2025_10_27				
Shangyuan material specifications				
Specifications and models	Shangyuan material number	Customer part number		
antenna	SH25275IB77			
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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1. Project information

Machine information



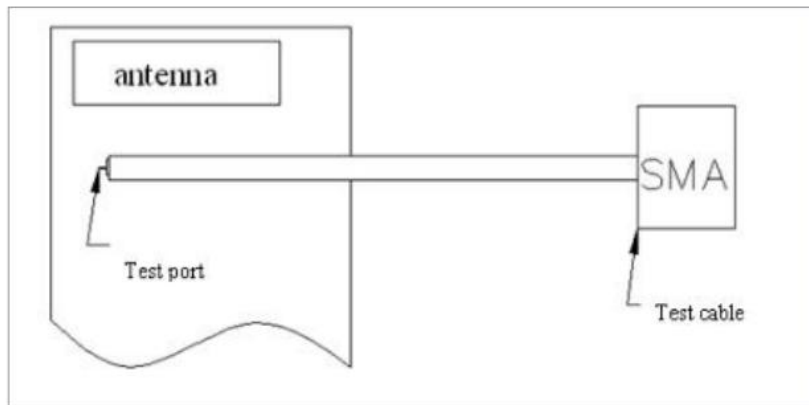
Motherboard version	H2031_MAIN_PCB_V1.0
Antenna version	SY-DS3-11-V0.2

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.

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:



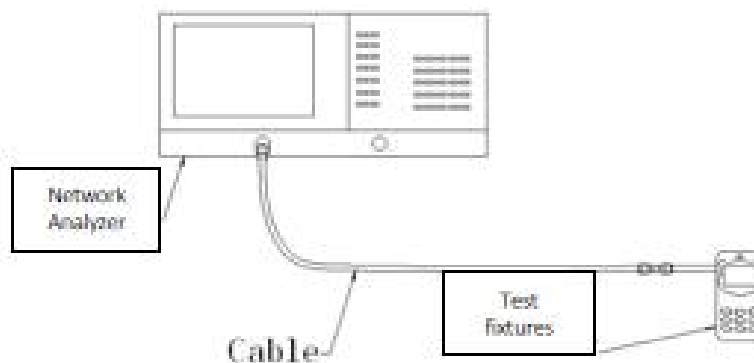
3. S11 test

3.1 S11 Test Method Description

Test Equipment: Network Analyzer (E5071C)

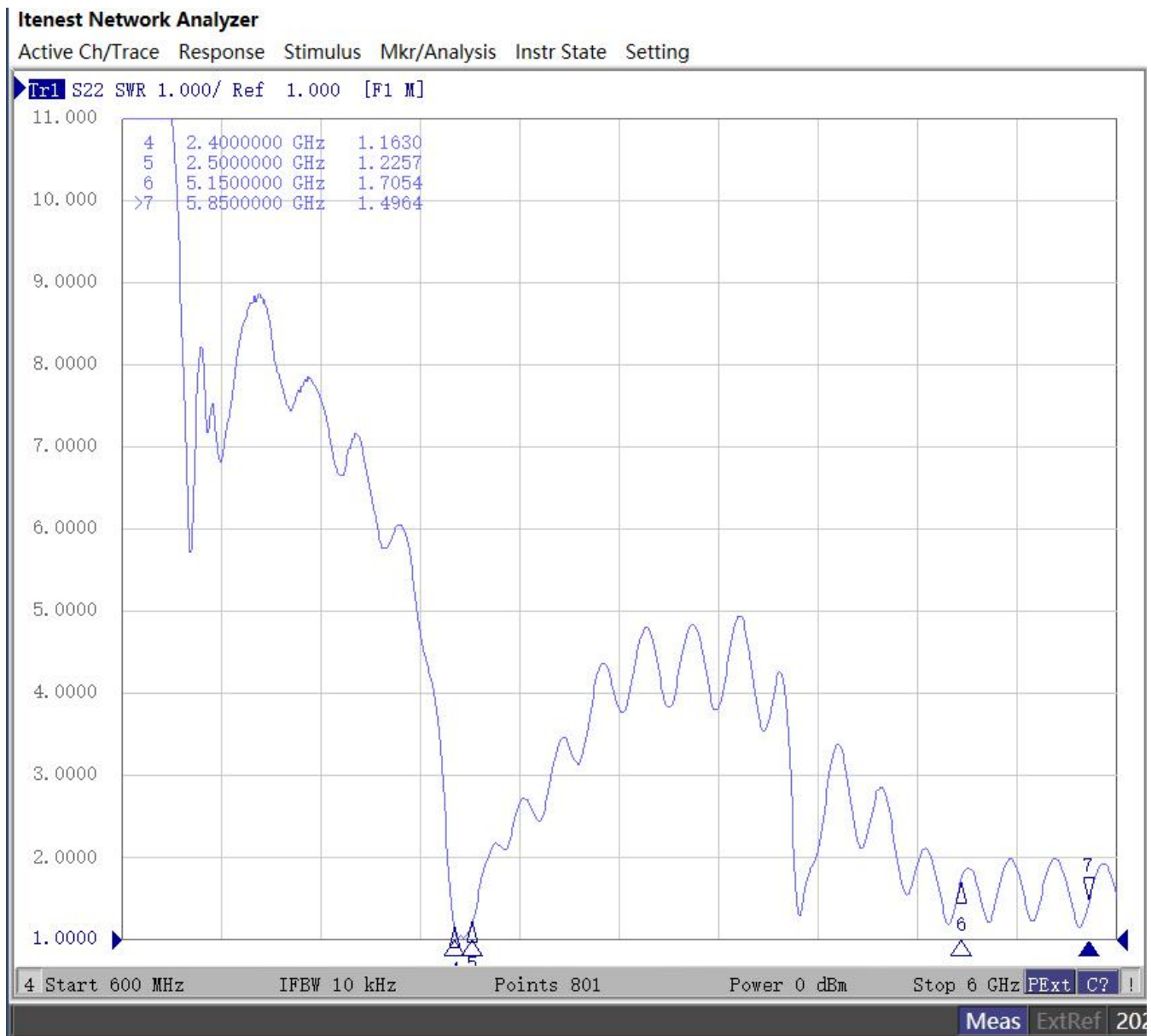
Test method: A 50 ohm CABLE cable is derived from the instrument test port, and the SMA connector of the prototype is connected after calibration using the calibrator to record the return loss and standing wave ratio corresponding to the relevant frequency point.

The test diagram is as follows:



Test the schematic

3.2 S11 parameter



4. Darkroom test data

Test system: Shielded darkroom.

Test environment: temperature $22^{\circ}\text{C}\pm 3^{\circ}\text{C}$, humidity $50\%\pm 5\%$.

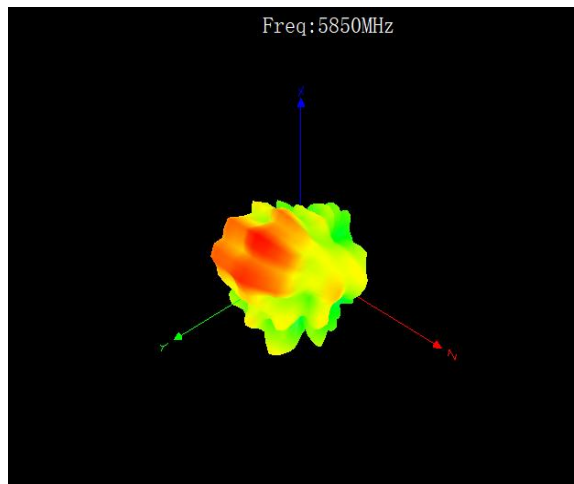
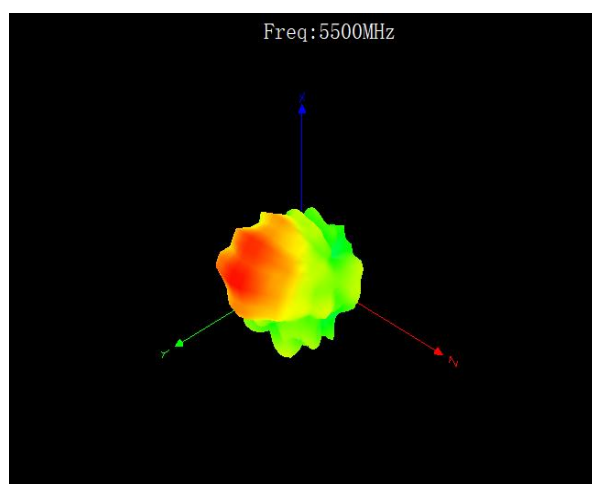
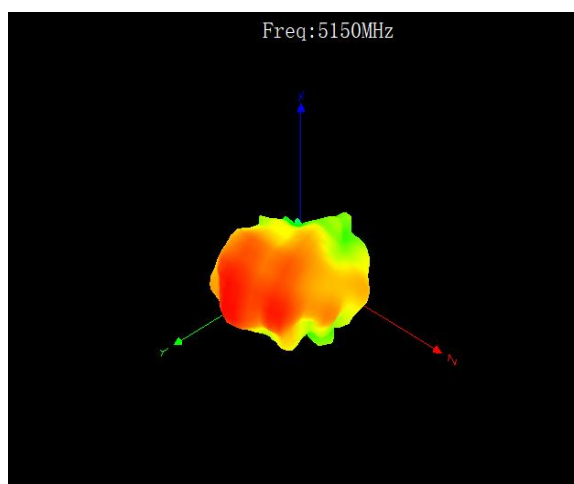
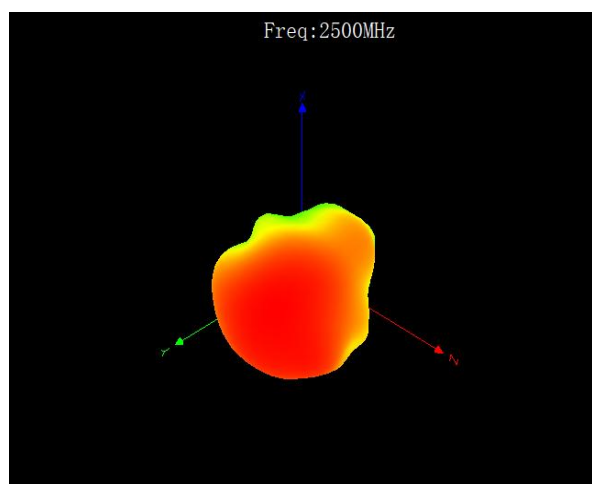
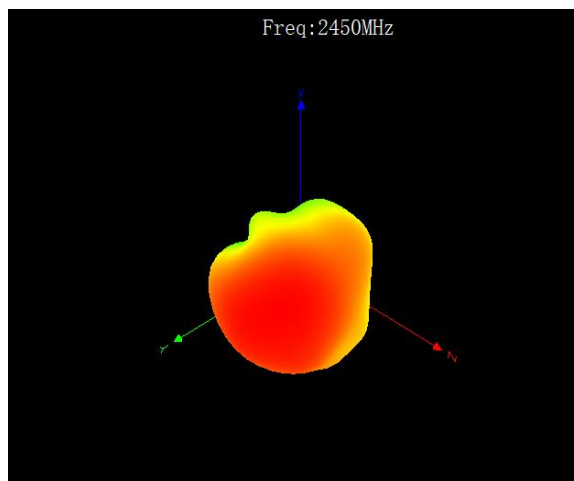
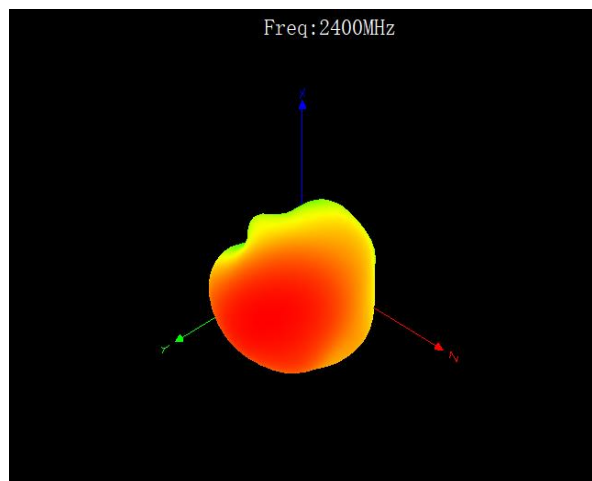
Test equipment: When testing passive data, use the Network Analyzer Agilent E5062C.

When testing active data, the Comprehensive Tester Agilent 8960/CMW500/E4438C is used.

4.1 Passive test data

Freq/Mhz	Effi / dB	Effi / %	Gain/dBi
2400	-3.43	45.39	1.59
2410	-3.2	47.86	1.25
2420	-3.21	47.75	1.69
2430	-3.35	46.24	1.52
2440	-3.42	45.5	1.27
2450	-3.73	42.36	1.78
2460	-3.95	40.27	1.52
2470	-4.04	39.45	1.3
2480	-4.08	39.08	1.27
2490	-3.87	41.02	1.76
2500	-3.63	43.35	1.5
5150	-4.15	38.45	1.37
5200	-4.34	36.8	1.38
5250	-3.81	41.59	1.49
5300	-4	39.8	1.65
5350	-3.91	40.64	1.79
5400	-3.98	39.99	1.52
5450	-4.11	38.81	1.69
5500	-4.31	37.06	1.14
5550	-3.83	41.39	1.14
5600	-3.79	41.78	1.39
5650	-4.36	36.64	1.94
5700	-4.84	32.8	1.68
5750	-4.07	39.16	1.81
5800	-3.92	40.54	1.82
5850	-4	39.8	1.89

3D diagram



4.2 Active test data

Antenna OTA test data

frequency	Channel	1#	
		TRP	TIS
WIFI 11b (11M)	1	13.41	
	6	14.45	
	11	14.98	-85.25
WIFI 11g	1	13.27	
	6	14.74	
	11	14.69	-73.54
WIFI 11n	1	10.57	
	6	11.45	
	11	11.65	-68.3
WIFI 11a	36	14.33	
	149	14.72	
	165	14.79	-74.57

5. Prototype grounding treatment

No additional environmental treatment is added.

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

