

SUNNYWAY TECHNOLOGY(CHINA)

ANTENNA SPEC

Customer name: 三旗		Entry name: SI9811
Working band: GPS+WIFI (2. 4/5. 8)		
Motherboard version: A9811M1A2-1		
Sunnyway Material specification		
Specification type	Sunnyway number	Customer number
DIV/GWB FPC Antenna	SZ242471B80	

Revision history			
Date of preparation/change	Change content	Altered person	Edition
2024.10.26	New issue	XUWEI	A

Sunnyway Countersign column				
R&D	ME:	To examine:	QE:	Approval:
	RF:	To examine:		

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1. Project information

1.1 Mockup picture



2. Matching circuit



The red box needs to be connected in series with 0 ohms, and other positions do not require welding matching

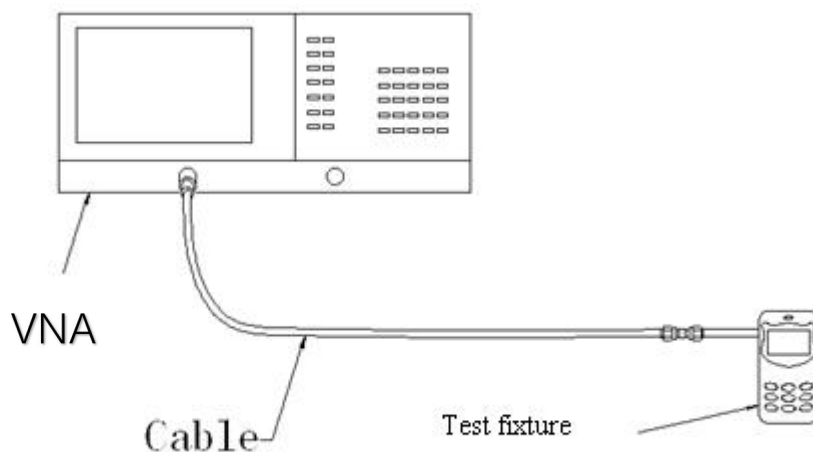
3. Antenna passive testing data

3.1 S11 Description of the test method

Test the equipment: Vector network analyzer (Agilent E5071C)

Test methodology: Use a 50 ohm CABLE cable to export from the instrument test port, use the calibration piece to calibrate and connect the SMA connector of the test fixture, and record the return loss and standing wave ratio corresponding to the relevant frequency point.

Below is a schematic picture of the test:



Test schematic diagram

3.2 Test the environment

Test the system: Multi-probe OTA measurement system (XH-IoT)

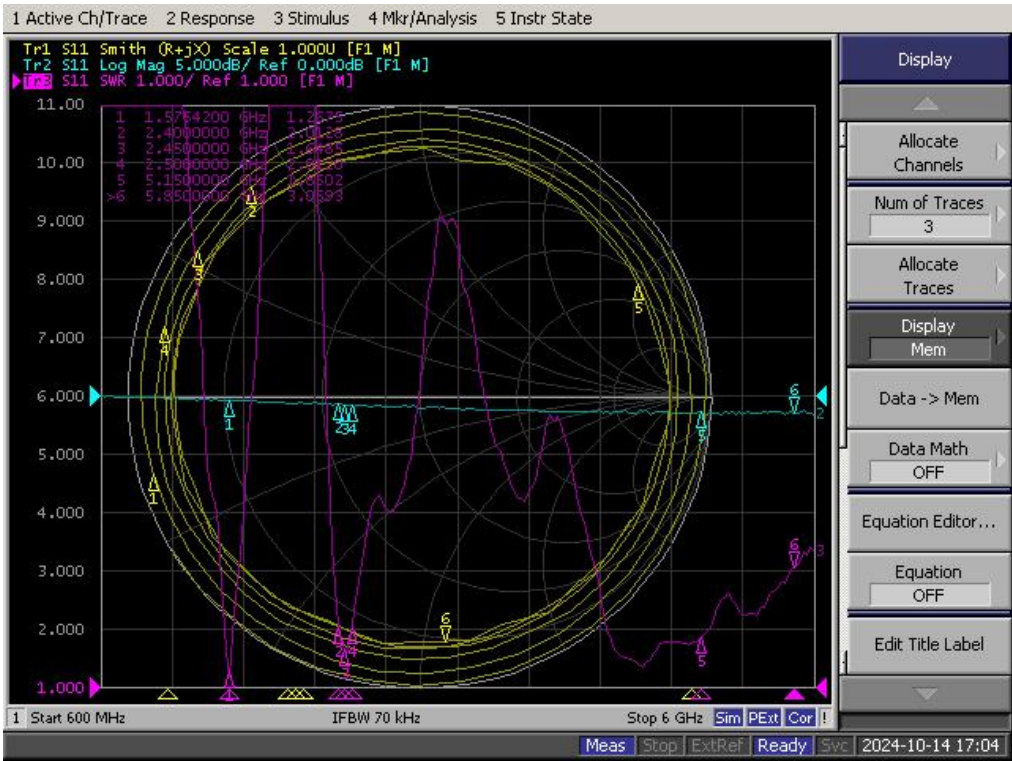
Test the environment: Temperature $22^{\circ}\text{C} \pm 3^{\circ}\text{C}$, humidity $50\% \pm 15\%$

Test the equipment: When testing passive data, use the network analyzer R&S ZND/ Agilent E5071C
When testing active data, use the Agilent 8960/CMW500/SP9500E/SP8315



3.3 S11 Test parameters

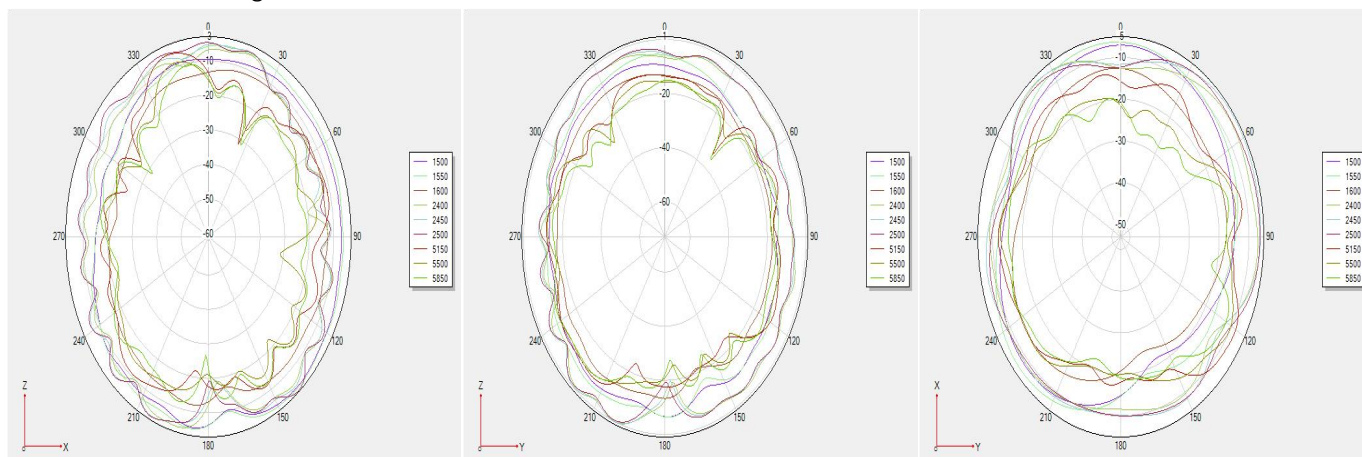
驻波比 VSWR



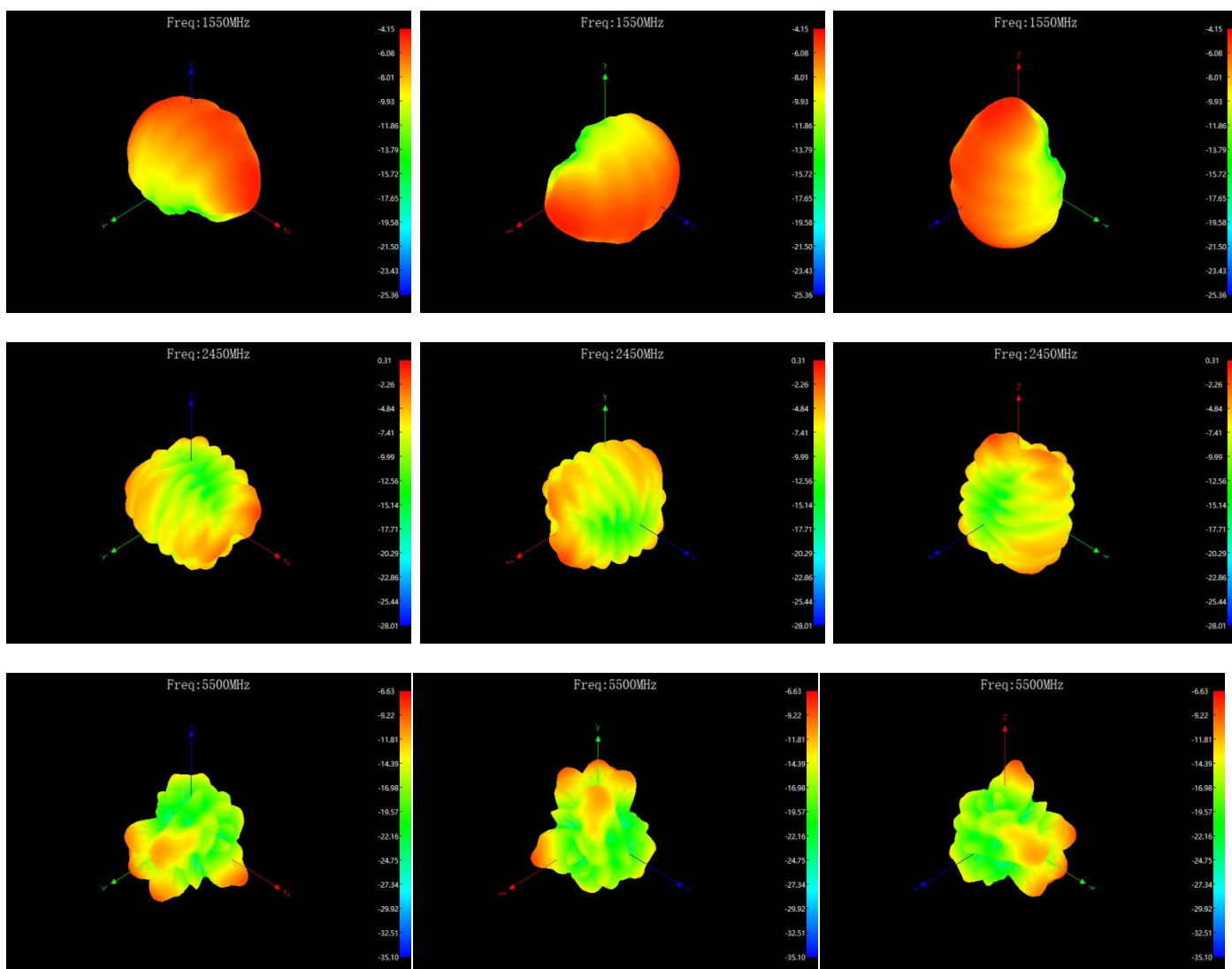
Antenna efficiency and gain

Freq	Effi	Gain	Freq	Effi	Gain	Freq	Effi	Gain
(MHz)	(%)	(dB)	(MHz)	(%)	(dB)	(MHz)	(%)	(dB)
1500	37.25	0.82	2400	37.47	0.73	5100	26.97	-0.58
1510	37.41	0.88	2410	37.63	0.79	5150	26.73	-0.53
1520	37.06	0.77	2420	37.28	0.68	5200	27.37	-0.41
1530	36.11	1.04	2430	36.33	0.95	5250	28.17	-0.05
1540	36.12	0.78	2440	36.34	0.69	5300	28.47	0.31
1550	35.93	0.73	2450	36.15	0.64	5350	29.06	0.29
1560	36.06	0.81	2460	36.28	0.72	5400	28.29	-0.13
1570	36.15	0.87	2470	36.37	0.78	5450	27.46	0.18
1580	37.57	0.74	2480	37.79	0.65	5500	28.34	-0.03
1590	35.03	0.48	2490	35.25	0.39	5550	27.18	0.15
1600	35.03	0.48	2500	35.25	0.39	5600	29.25	-0.21
						5650	30.41	0.21
						5700	30.59	-0.91
						5750	29.28	-0.43
						5800	28.64	-0.71
						5850	27.97	-0.58

Passive direction diagram



Radiation Apple Figure



4. Environmental treatment methods

No design

5. Standard for mass production antennas

When the antenna is mass-produced, the VSWR is used as the mass production test standard.

According to the differences in the project itself, the following criteria are given:

Freq. (MHz)	Mass production standards
1575.42	$VSWR(\text{Production performance}) < VSWR(\text{Confirmed performance}) \pm 0.5$
2400~2500/5100~5850	$VSWR(\text{Production performance}) < VSWR(\text{Confirmed performance}) \pm 0.5$

6. Engineering drawings

