

SUNNYWAY TECHNOLOGY(CHINA)

ANTENNA SPEC

Customer name: 三旗		Entry name: SI9811		
Working band: WIFI (2. 4/5. 8)				
Motherboard version: A9811M1A2-1				
Sunnyway Material specification				
Specification type	Sunnyway number	Customer number		
Revision history				
Date of preparation/change	Change content	Altered person	Edition	
2022.12.22	New issue	Yang XIN	A	
Sunnyway Countersign column				
R&D	ME:	To examine:	QE:	Approval:
	RF:	To examine:		
Customer will sign the column				
Electronic Engineer	Project manager	Structural Engineer	Quality Engineer	

Sunnyway Technology(CHINA)

Add: 1F, Building 4, No.215-99, GaoGuang Road, QingPu District, Shanghai, China

Tel: +86-021-6083 5368 Fax: +86-021-6484 2328

Email: sales@sunnyway-iot.com Web: www.sunnyway-iot.com

Directory

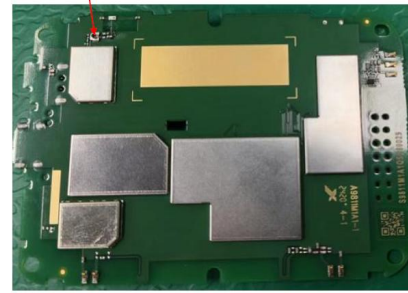
ANTENNA SPEC	1
Customer name: 三旗	1
1. Project information	2
1.1 Mockup picture	2
2. Matching circuit	3
3. Antenna passive testing data	3
3.1 S11 Description of the test method	3
3.3 S11 Test parameters	4
4. Environmental treatment methods	6
5. Standard for mass production antennas	6
6. Antenna size	7

1. Project information

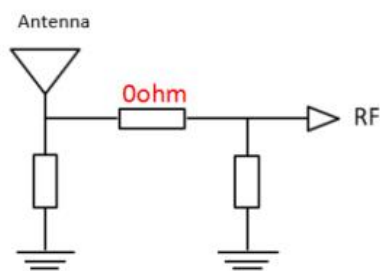
1.1 Mockup picture



Measurement Point



2. Matching circuit



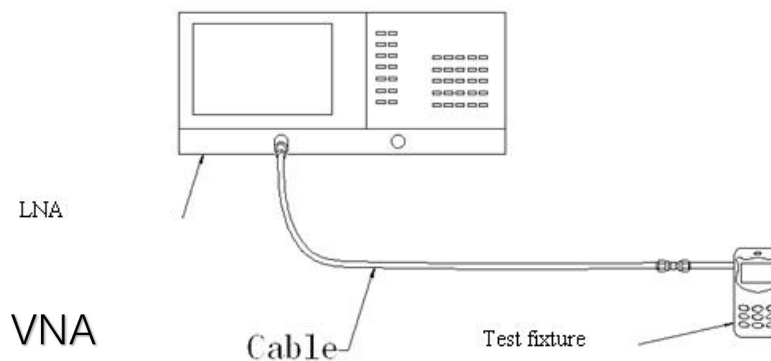
3. Antenna passive testing data

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 $50\% \pm 15\%$

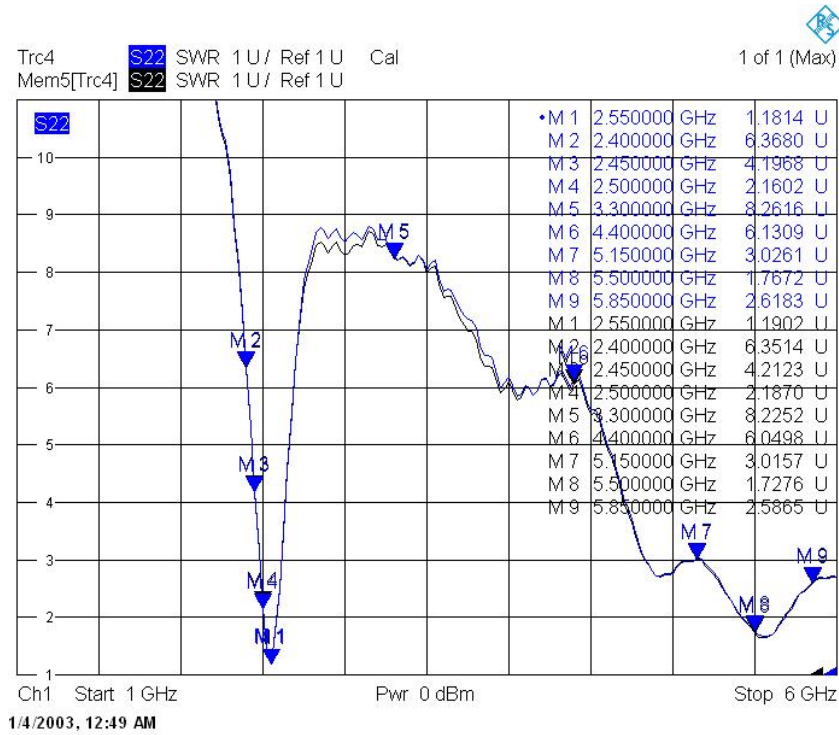
Test the equipment: When testing passive data, use the network analyzer R&S ZND/ Agilent E5071C

When testing active data, use the Agilent 8960/CMW500/SP9500E/SP8315



3.3 S11 Test parameters

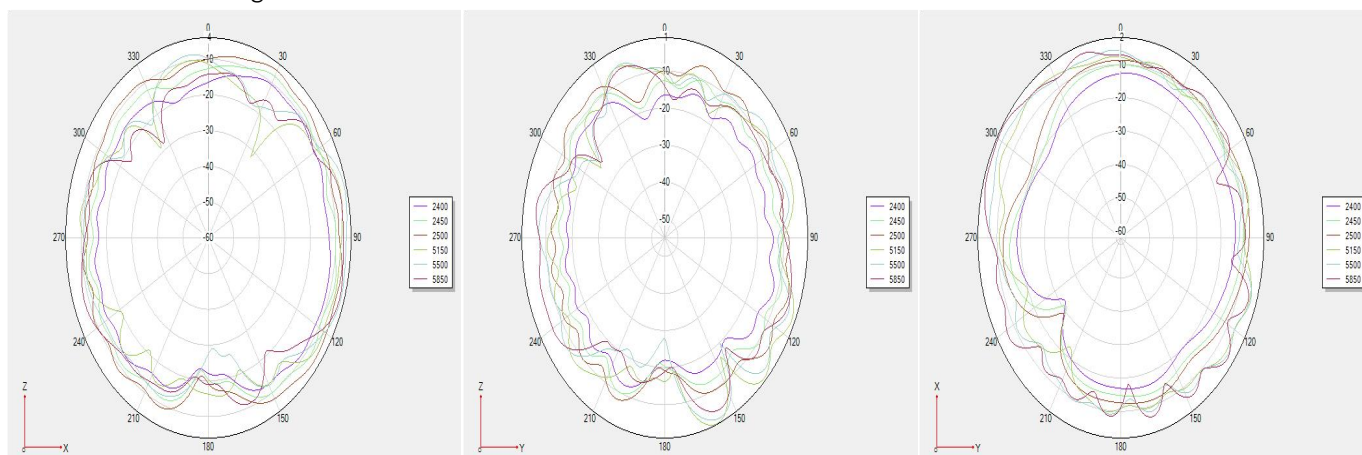
驻波比 VSWR



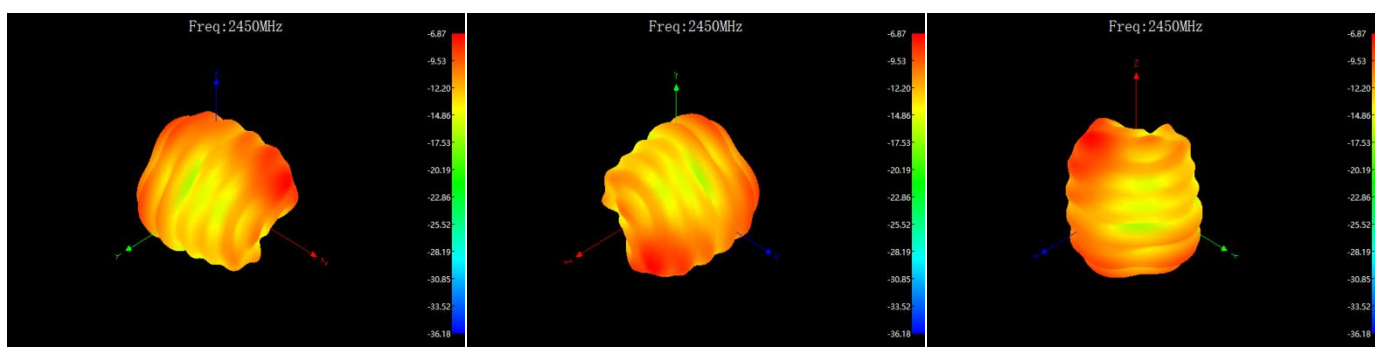
Antenna efficiency and gain

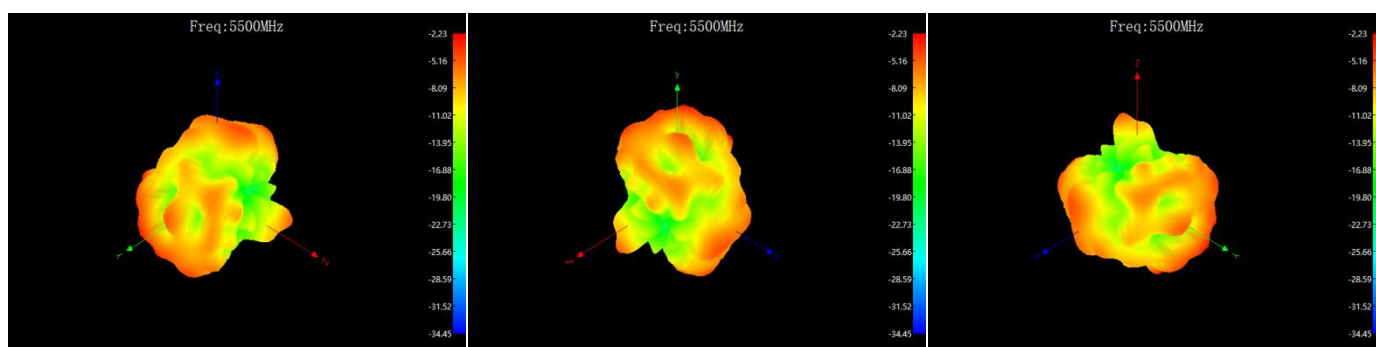
Freq (MHz)	Effi (%)	Gain (dB)	Freq (MHz)	Effi (%)	Gain (dB)
2400	23.08	0.19	5100	22.27	0.74
2410	23.25	0.18	5150	21.83	0.78
2420	23.94	0.19	5200	21.94	0.18
2430	24.31	0.27	5250	22.05	0.68
2440	24.73	0.64	5300	21.09	0.39
2450	24.62	0.9	5350	22.11	0.89
2460	25.21	0.66	5400	22.82	0.18
2470	25.08	0.5	5450	22.65	0.38
2480	25.53	0.23	5500	24	0.52
2490	26.55	0.52	5550	23.84	0.56
2500	26.14	0.65	5600	24.62	0.66
			5650	24.03	0.41
			5700	23.09	0.54
			5750	23.24	0.52
			5800	23.03	0.71
			5850	23.97	0.58

Passive direction diagram



Radiation Apple Figure





4. Environmental treatment methods

No design

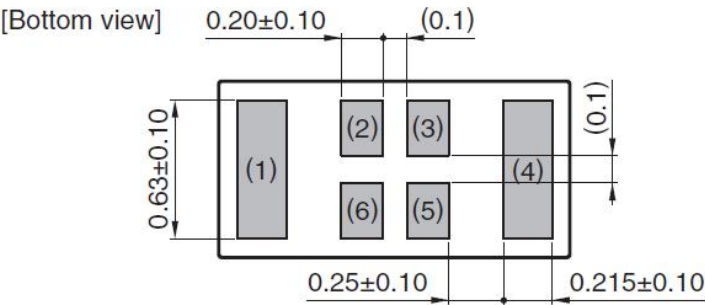
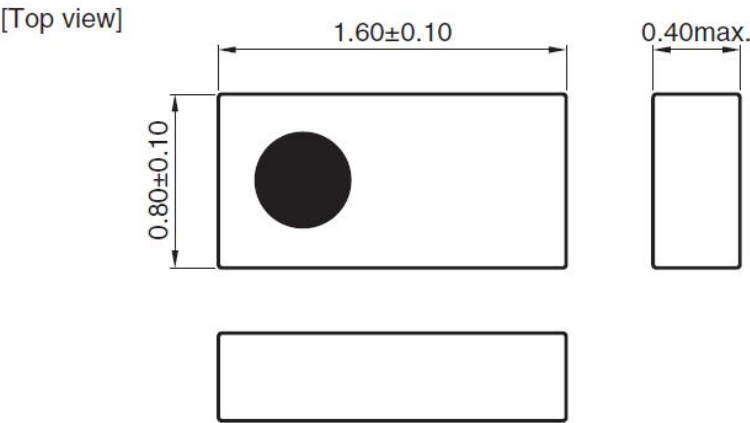
5. Standard for mass production antennas

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. Antenna size



Terminal functions

1	Radiator electrode for 2.4GHz ISM
2	Feed point
3	Feed point
4	Radiator electrode for 5.5GHz
5	Feed point
6	Feed point

Dimensions in mm