

Shanghai Sunnyway Communication Technology Co., Ltd

ANTENNA SPEC

Customer name: Orbbec Inc.		Entry name: OB2506
Working band: WiFi(2.4G/5G/6E)		
Motherboard version: /		
Sunnyway Material specification		
Specification type	Sunnyway number	Customer number
ANT1-WIFI Antenna	01. SZ25435IB98-2	340500128

Revision history			
Date of preparation/change	Change content	Altered person	Edition
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1. Project information

1.1 Mockup picture

2. Matching circuit

The antenna matching has not been modified

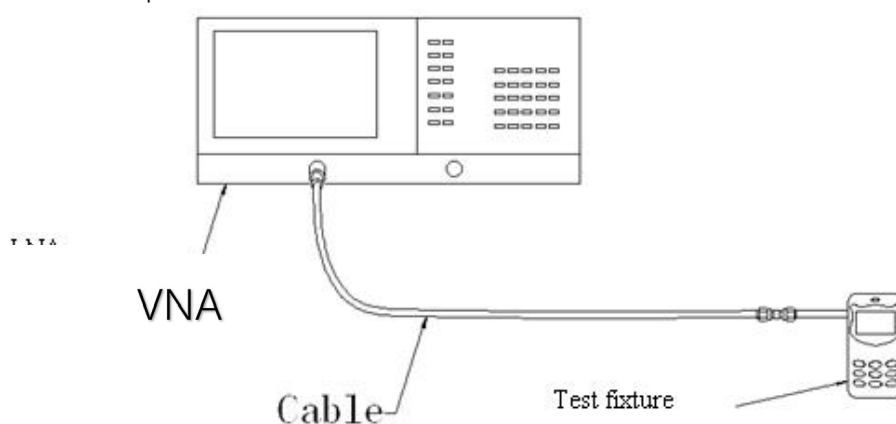
3. Antenna passive testing data

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:

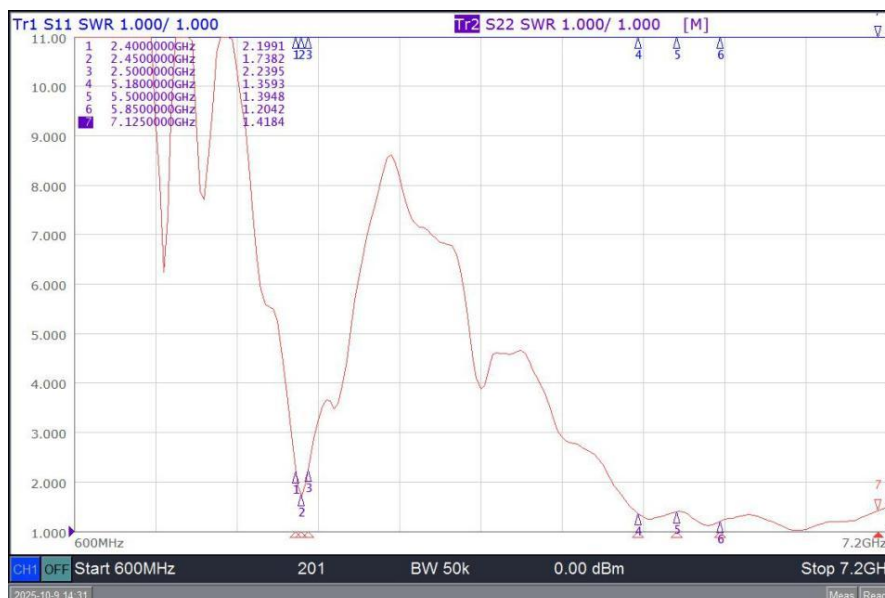


Test schematic diagram

3.2 S11 Test parameters

(Freq.) MHz	2400	2450	2500	5180	5500	5850
VSWR	2.19	1.73	2.23	1.35	1.39	1.2

VSWR



3.3 Antenna efficiency and gain

Frequency/Mhz	MaxGain/dBi	Efficiency / %
2400	2.06	54.2
2410	1.98	53.48
2420	1.44	50.47
2430	1.34	50.7
2440	1.73	53.83
2450	2.35	57.95
2460	2.27	56.75
2470	2.07	57.68
2480	2.22	57.98
2490	2.2	58.02
2490	2.2	58.02
2500	2.27	56.89
5150	4.58	53.21
5200	4.74	51.83
5250	5.1	53.08
5300	5.24	52.33
5350	5.15	51.09
5400	5.58	52.7
5450	5.37	52.33
5500	5.53	53.21
5550	4.86	54.1
5600	5.44	55.68
5650	5.14	55.43
5700	4.68	55.43
5750	4.51	55.84
5800	4.44	58.23
5850	4.41	56.53
5900	3.88	57.24
5950	4.2	54.88
6000	4.28	54.48
6050	4.33	55.16
6100	4.16	53.68
6150	4.13	53.94
6200	4.35	51.21
6250	4.37	53.34
6300	4.26	50.97
6350	4.69	50.24
6400	4.63	52.08
6450	4.82	50.36
6500	4.94	51.7

6550	5.15	51.09
6600	5.26	52.2
6650	5.56	52.95
6700	5.83	52.08
6750	5.9	52.84
6800	5.73	52.36
6850	5.45	51.88
6900	5.17	52.12
6950	4.92	49.43
7000	4.92	50.12
7050	4.76	50.23
7100	4.57	48.03
7150	4.45	46.45

4. Antenna active testing data

4.1 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

OTA实验室



综测仪器



SP9500-CTS-5G



CMW500



SP8315 NB-IoT
/eMTC

其他设备



OTA head hand



OTA ear hand



OTA arm hand

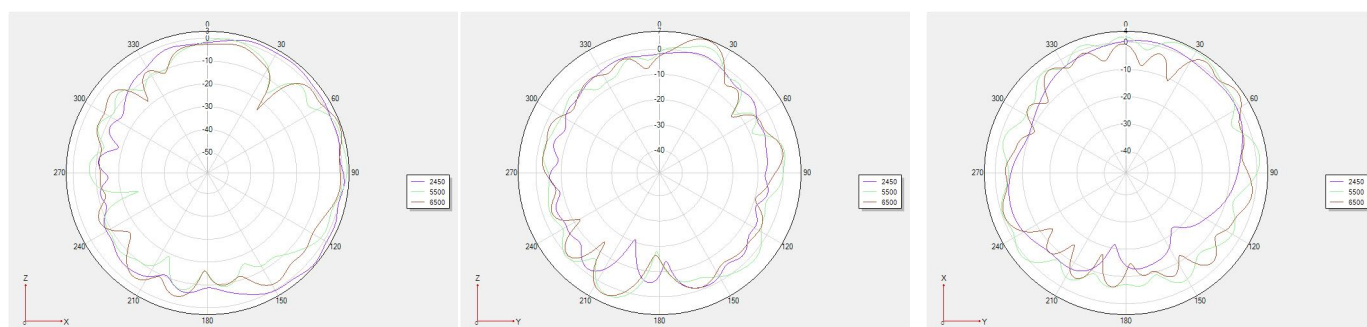
4.2 OTA Active testing data

4.2.1 WIFI Testing data

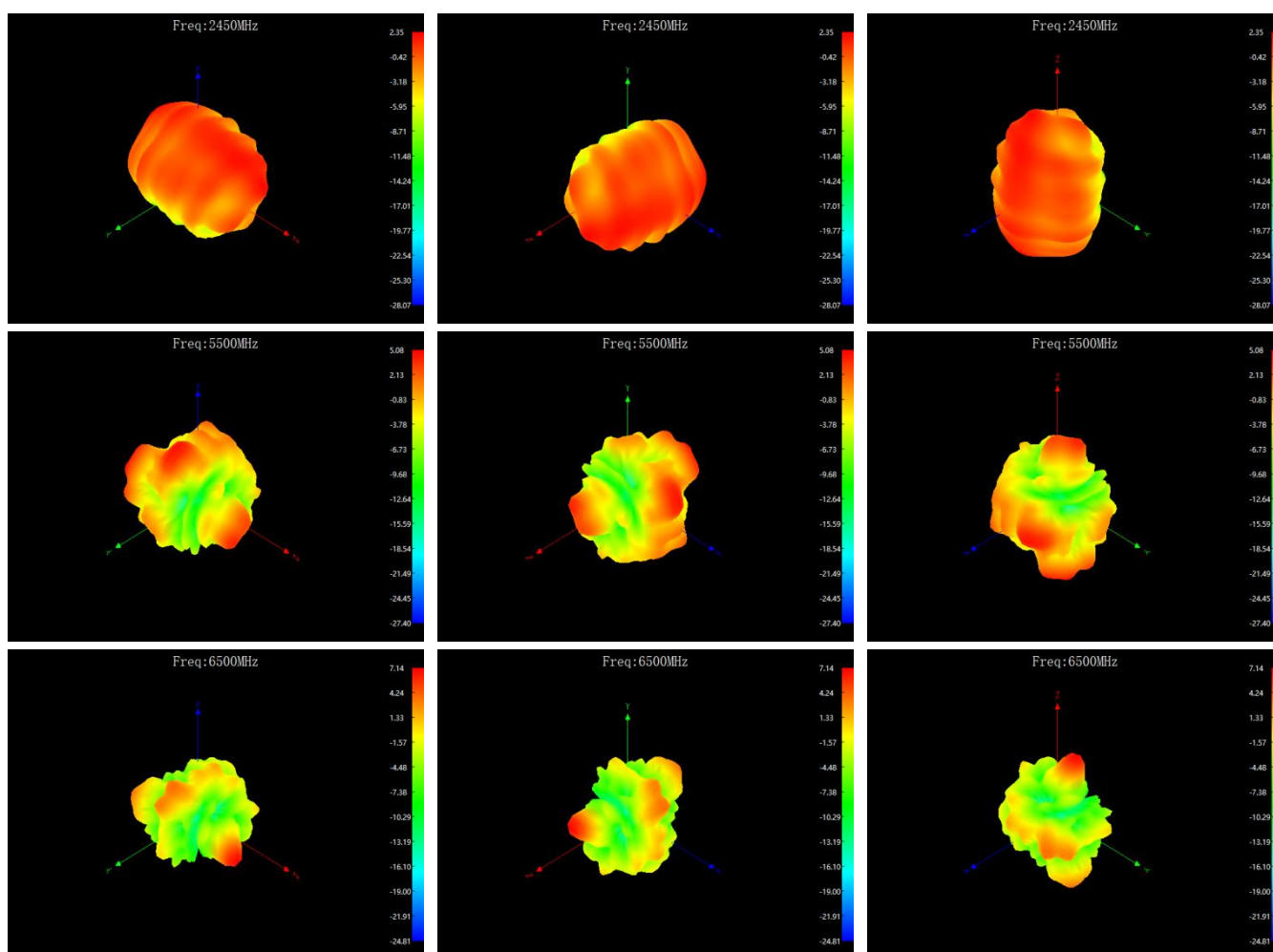
Measurement	Band	Channel	Total
TRP	WIFI_B (1M)	1	16.39
TRP	WIFI_B (1M)	6	16.08
TRP	WIFI_B (1M)	11	16.25
TIS(EIRP)	WIFI_B (11M)	1	-86.44
TIS(EIRP)	WIFI_B (11M)	6	-86.15
TIS(EIRP)	WIFI_B (11M)	11	-86.55
TRP	WIFI_G (6M)	1	15.8
TRP	WIFI_G (6M)	6	15.4
TRP	WIFI_G (6M)	11	15.25
TIS(EIRP)	WIFI_G (54M)	1	-74.84
TIS(EIRP)	WIFI_G (54M)	6	-75.24
TIS(EIRP)	WIFI_G (54M)	11	-75.39
TRP	WIFI_N_ISM (6.5M)	1	14.55
TRP	WIFI_N_ISM (6.5M)	6	14.32
TRP	WIFI_N_ISM (6.5M)	11	14.21
TIS(EIRP)	WIFI_N_ISM (65M)	1	-71.36
TIS(EIRP)	WIFI_N_ISM (65M)	6	-72.06
TIS(EIRP)	WIFI_N_ISM (65M)	11	-71.57
WIFI_A (6M)	36	14.38	WIFI_A (6M)
WIFI_A (6M)	149	14.47	WIFI_A (6M)

WIFI_A (6M)	165	15.45	WIFI_A (6M)
WIFI_A (54M)	36	-72.25	WIFI_A (54M)
WIFI_A (54M)	149	-71.88	WIFI_A (54M)
WIFI_A (54M)	165	-72.35	WIFI_A (54M)
WIFI_N_UNII (6.5M)	36	13.26	WIFI_N_UNII (6.5M)
WIFI_N_UNII (6.5M)	149	13.66	WIFI_N_UNII (6.5M)
WIFI_N_UNII (6.5M)	165	14.42	WIFI_N_UNII (6.5M)
WIFI_N_UNII (65M)	36	-68.33	WIFI_N_UNII (65M)
WIFI_N_UNII (65M)	149	-67.89	WIFI_N_UNII (65M)
WIFI_N_UNII (65M)	165	-68.49	WIFI_N_UNII (65M)
ax6e(mcs0)	5	13.32	ax6e(mcs0)
ax6e(mcs0)	117	13.44	ax6e(mcs0)
ax6e(mcs0)	181	13.63	ax6e(mcs0)
ax6e(mcs7)	5	-71.08	ax6e(mcs7)
ax6e(mcs7)	117	-71.27	ax6e(mcs7)
ax6e(mcs7)	181	-71.33	ax6e(mcs7)

4.3 2D directional diagram



4.4 3D directional diagram



5. Environmental treatment methods

No additional environmental treatment was added

6. 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
2400-2500	$VSWR(\text{Production performance}) < VSWR(\text{Confirmed performance}) \pm 0.5$
5150-5850	$VSWR(\text{Production performance}) < VSWR(\text{Confirmed performance}) \pm 0.5$

7. Engineering drawings

