

Sunnyway Technology(Shenzhen)Co.,LTD.

ANTENNA SPEC

Customer name: PAX		Entry name: A99LA	
Workingband : WIFI 2.4Ghz GPS 1575.42MHZ			
Motherboard version:			
Sunnyway Material specification			
Specification type	Sunnyway number	Customer number	
GWB Antenna	SZ24048IB75-3		

Revision history			
Date of preparation/change	Change content	Altered person	Edition
2024.06.05	New issue	XU	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

目录 Directory

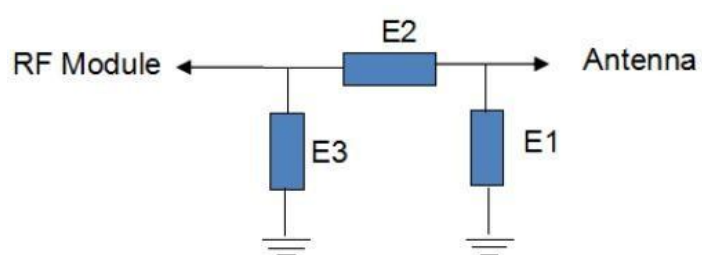
ANTENNA SPEC	1
1. Project information	3
1.1 Mockup picture	3
1.2 Antenna product picture	3
2. Matching circuit	3
3. Antenna passive testing data	3
3.1 S11 Description of the test method	3
3.2 S11 Test parameters	4
3.3 Antenna efficiency and gain	5
3.4 Directional diagram	5
4. Antenna active testing data	6
4.1 Test the environment	6
4.2 OTA Active test data	6
5. Environmental treatment methods	7
6. Standard for mass production antennas	7
7. Engineering drawings	8

1. Project information

1.1 Mockup picture

2. Matching circuit

Element	Value
E1	N/A
E2	0 欧姆
E3	N/A



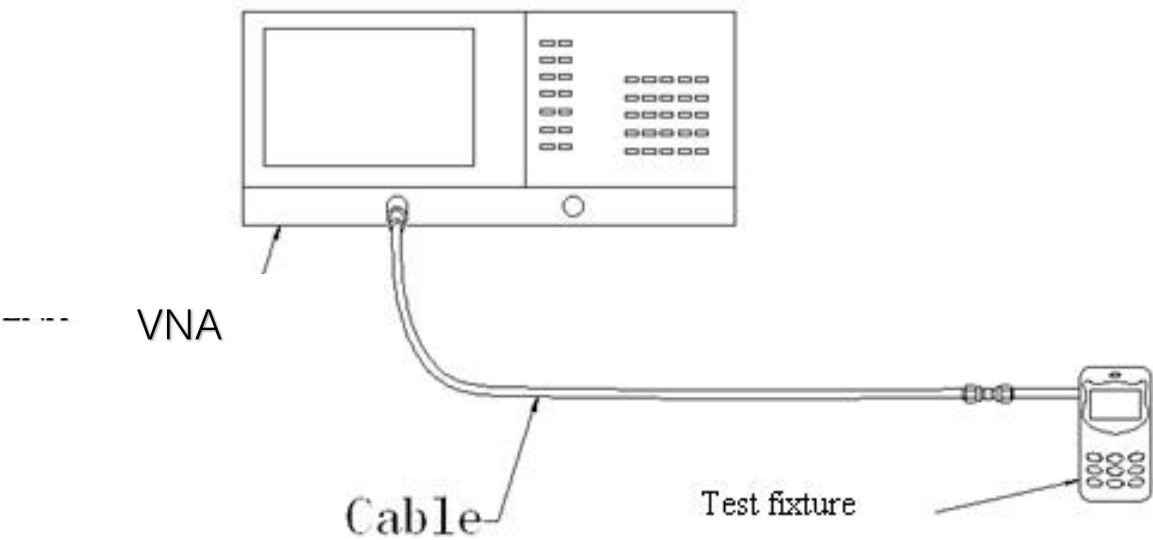
3. Antenna passive testing data

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:

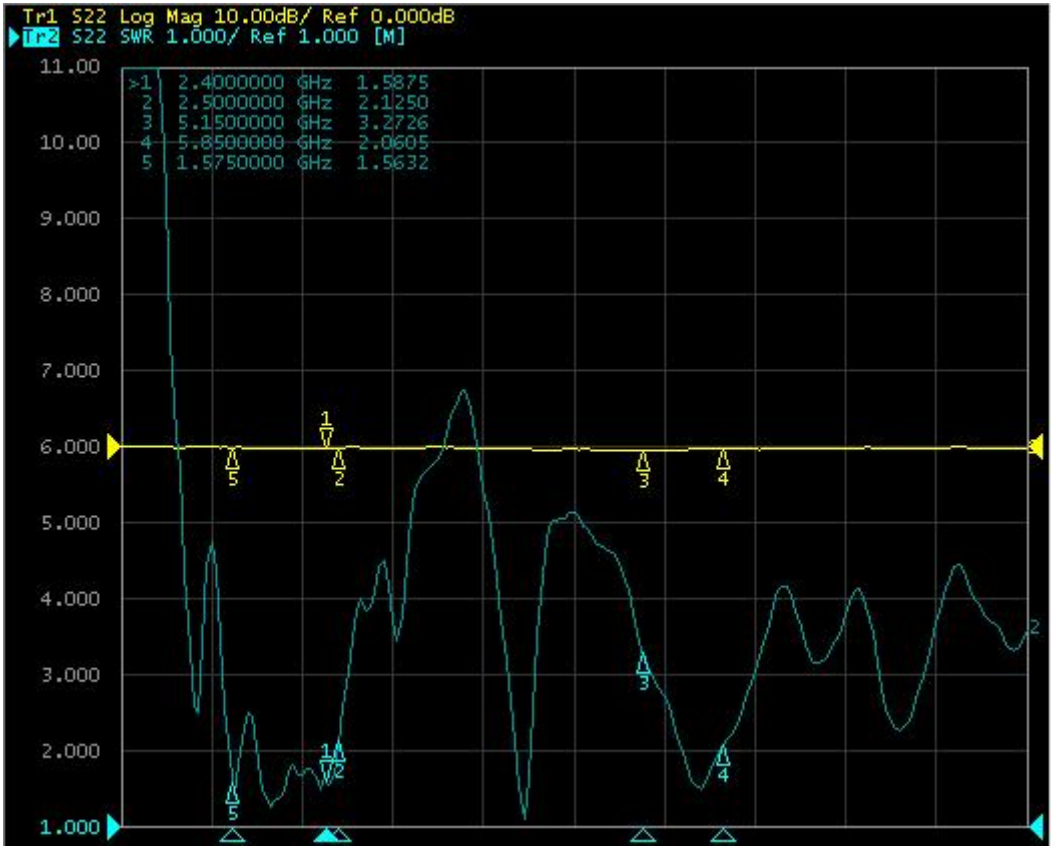


Test schematic diagram

3.2 S11 Test parameters

(Freq.) MHz	2400	2500	5150	5850	1575
VSWR	1.59	2.12	3.27	2.06	1.56

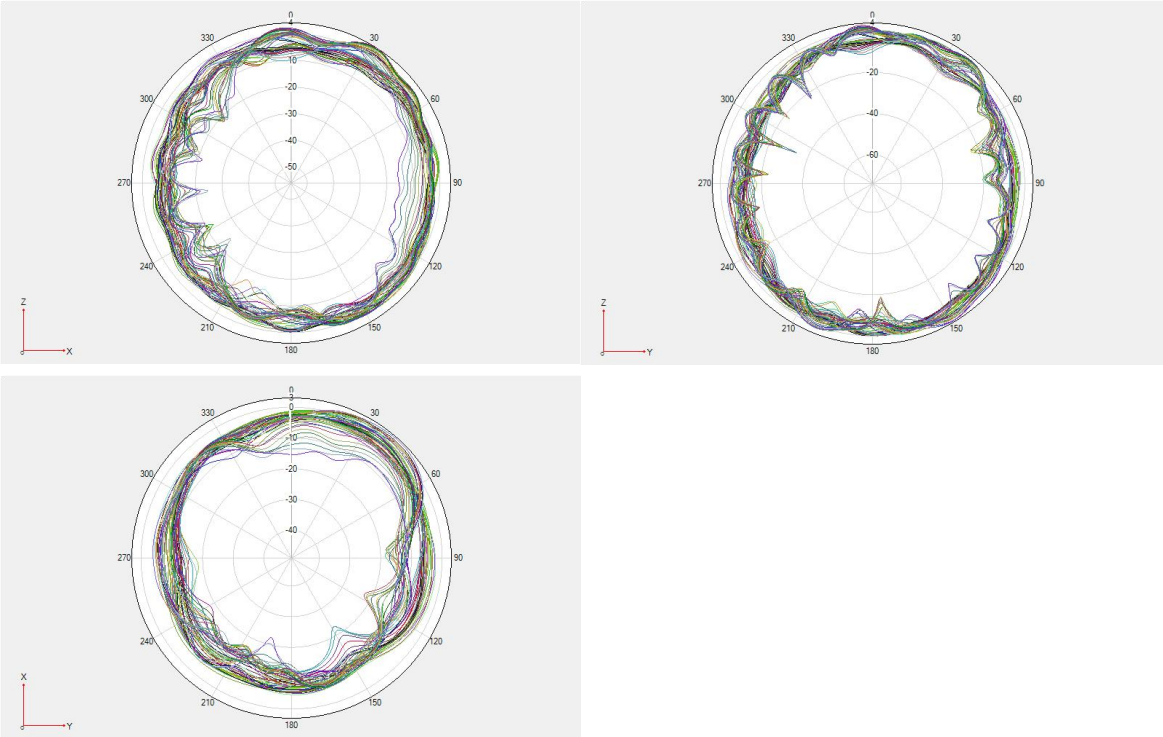
VSWR



3.3 Antenna efficiency and gain

Frequency/Mhz	Efficiency / %	MaxGain/dBi		Frequency/Mhz	Efficiency / %	MaxGain/dBi		Frequency/Mhz	Efficiency / %	MaxGain/dBi
1560	38.36	2.73		2400	30.73	1.44		5390	23.35	-0.12
1561	38.36	2.74		2410	29.98	1.34		5410	23.14	-0.31
1562	38.57	2.75		2420	30.29	1.29		5430	23.56	-0.27
1563	38.98	2.77		2430	31.31	1.53		5450	23.53	-0.51
1564	39.39	2.8		2440	32.44	1.63		5470	23.75	-0.53
1565	39.81	2.83		2450	32.85	1.84		5490	23.94	-0.54
1566	40.67	2.89		2460	32.51	1.82		5510	23.8	-0.82
1567	41.32	2.93		2470	33.2	2.14		5530	23.86	-1.08
1568	41.64	2.95		2480	34.41	2.29		5550	23.48	-1.82
1569	41.53	2.95		2490	33.76	2.25		5570	23.27	-2.13
1570	41.1	2.92		2500	33.55	2.1		5590	22.76	-2.29
1571	40.99	2.91						5610	23.51	-2.17
1572	40.77	2.91		5150	21.86	-1.37		5630	23.07	-2.39
1573	40.77	2.91		5170	21.86	-1.38		5650	22.57	-2.44
1574	41.1	2.94		5190	22.19	-1.05		5670	22.52	-2.33
1575	41.64	2.98		5210	22.23	-0.82		5690	22.42	-2.25
1576	41.42	2.96		5230	22.59	-0.43		5710	21.95	-2.33
1577	41.42	2.95		5250	22.81	-0.24		5730	21.38	-2.43
1578	41.42	2.94		5270	22.47	-0.29		5750	21.84	-1.97
1579	41.53	2.93		5290	22.86	0.04		5770	21.79	-1.9
1580	41.53	2.91		5310	23.27	0.18		5790	20.71	-2.18
				5330	22.86	-0.08		5810	21.23	-1.89
				5350	23.09	0.09		5830	20.39	-2.03
				5370	23.07	-0.03		5850	20.87	-1.73

3.4 Directional diagram



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



4.2 OTA Active test data

Item	Measurement	Band	Channel	Total
1	TRP	WIFI_B (1M)	1	12.04
2	TRP	WIFI_B (1M)	6	12.81
3	TRP	WIFI_B (1M)	11	11.15
4	TIS(EIRP)	WIFI_B (11M)	11	-80.25
5	TRP	WIFI_G (6M)	1	12.53
6	TRP	WIFI_G (6M)	6	13.72
7	TRP	WIFI_G (6M)	11	13
8	TIS(EIRP)	WIFI_G (54M)	11	-68.85
9	TRP	WIFI_N_ISM (6.5M)	1	12.3
10	TRP	WIFI_N_ISM (6.5M)	6	14.97
11	TRP	WIFI_N_ISM (6.5M)	11	12.38
12	TIS(EIRP)	WIFI_N_ISM (65M)	11	-67.98

5. Environmental treatment methods

No design

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
824-960	$VSWR(\text{Production performance}) < VSWR(\text{Confirmed performance}) + 0.5$
1710-2690	$VSWR(\text{Production performance}) < VSWR(\text{Confirmed performance}) + 0.5$

7. Engineering drawings

