

Antenna Testing Report

Customer: apical Technology

Project Name: 4513

Report Number: SZ24252IB77

Manufacturer: Sunnyway Technology(CHINA)

Address: Floor 6, Building 5, Nam Tai Inno Park, Guangming District, Shenzhen

Report version: July. 15, 2024

Author: LIU Xinhao

Version	Report date	Remark
A0	2024.7.15	Latest test data
A1		
A2		
A3		
A4		
A5		
A6		
A7		
A8		
A9		

1. Record..... 2

2. Project Overview 4

3. Equipment List..... 5

4. Project pictures and Passive fixturs..... 6

5. Version Information 7

6. Matching Circuit 7

7. Passive parameters 1 2

8. Passive efficiency 1 6

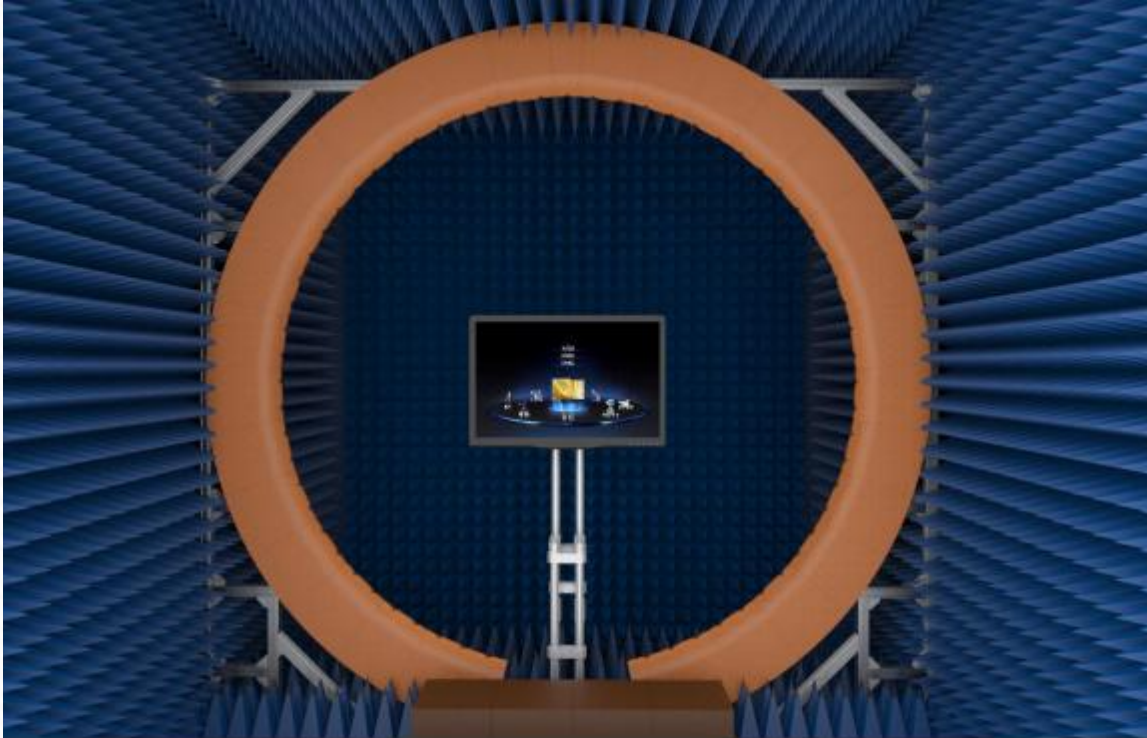
9. Active data 1 9

10.Environment Specification..... 2 3

11. Directional pattern 2 4

12. Summary 2 8

Prototype status	Debugging machine
Device type	car recorder
Number of antennas	WIFI antenna
Frequency band	2.4WIFI
Structural style	FPC
Environment adjustment	No change
Matching modification	No change



The industry's top 64 sensors OTA chamber

Frequency range: 400MHz-11GHz

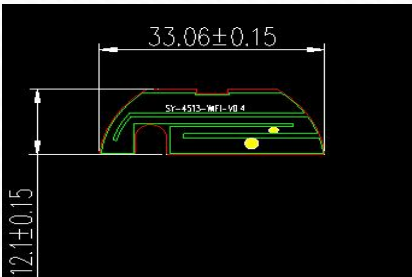
Device Llimitation: 2M

Load-bearing limitation:100KG

Equipments Items	Total Quantity	Quantity for Shanghai R&D	Quantity for Shenzhen R&D	Quantity for ChongQing R&D
OTA chamber	10	4	5	1
5G Tester (SP9500-CTS)	3	1	1	1
R&S Tester (high configuration CMW500)	6	3	2	1
Japan Anritsu Tester (Dual Channel 8820)	4	2	2	--
NB-IoT Tester (SP8315)	3	1	1	1
Agilent Tester (8960)	9	4	4	--
Agilent Network Analyzer (E5062A)	7	3	3	1
Agilent Network Analyzer (E5071C 8.5GHZ)	11	5	5	1
Agilent Network Analyzer (E5071B 8.5GHZ)	7	3	3	1
R&S Network Analyzer (ZND)	9	4	4	1
R&S Network Analyzer (ZVB)	3	1	1	1
OTA head hand / ear hand / arm hand	5	2	2	1
GPS/WIFI active test equipment	5	2	2	1

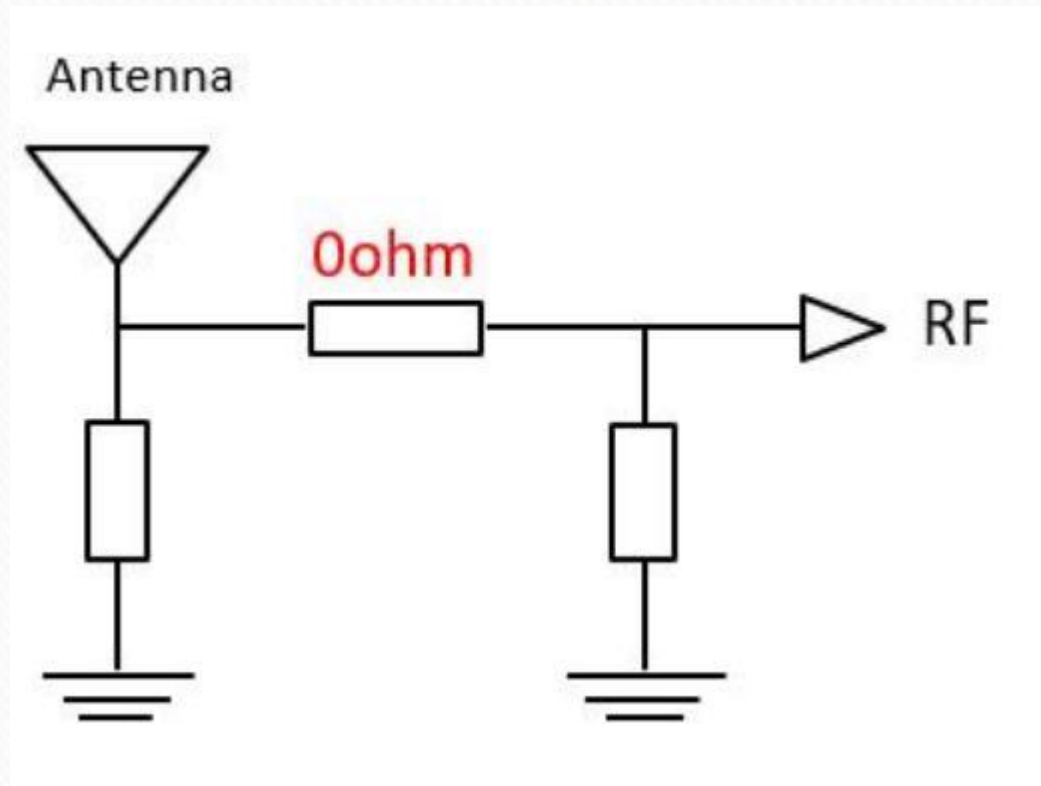


WiFi antenna/Antenna size

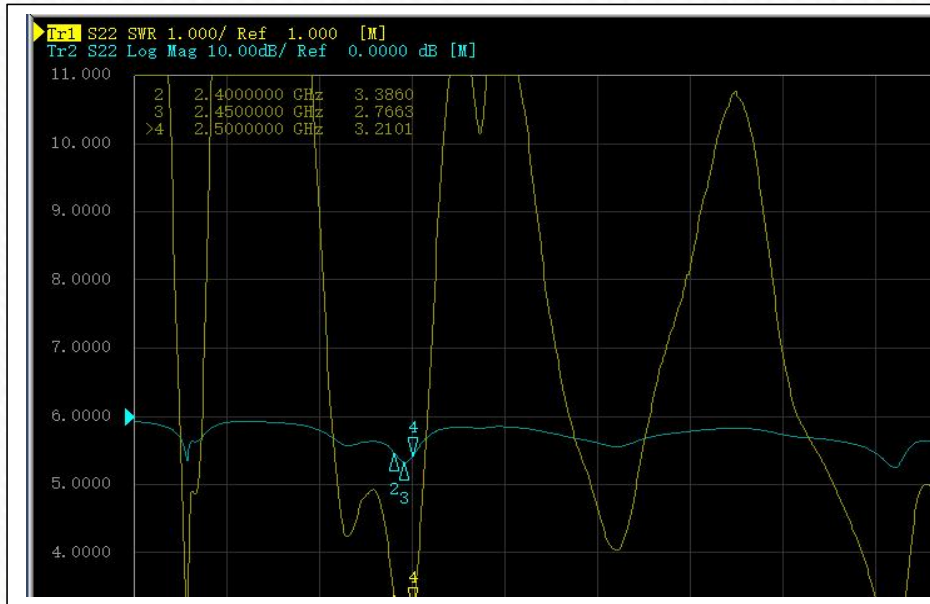


WiFi Antenna type: FPC antenna

WiFi Antenna model: SZ242521B77

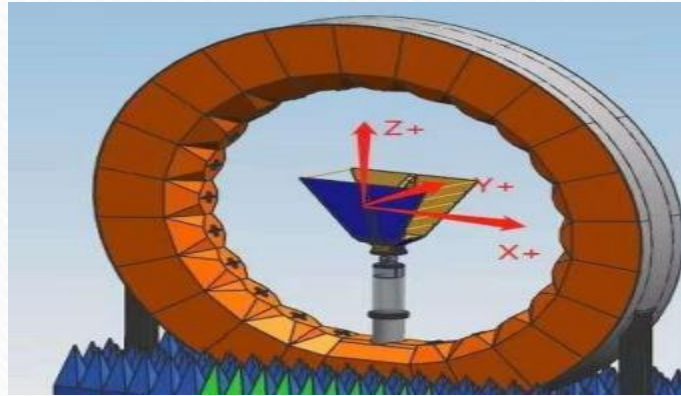


S11-VSWR

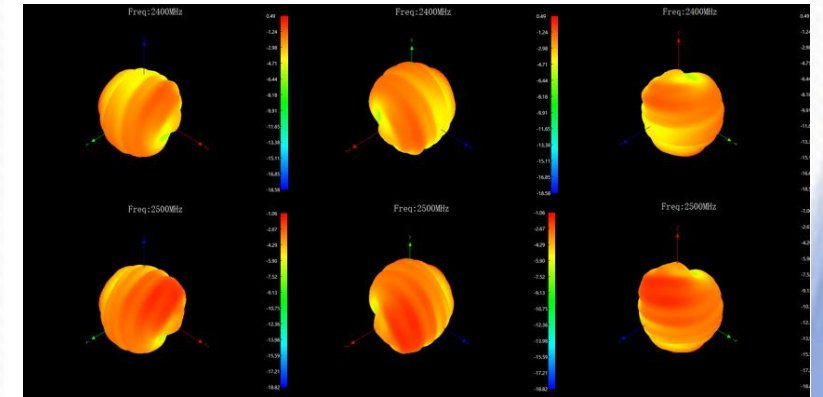


Frequency/Mhz	MaxGain/dBi	Efficiency/%
2400	0.49	36.48
2410	0.58	35.97
2420	0.21	34.59
2430	0.09	33.34
2440	-0.07	34.04
2450	-0.32	32.51
2460	-0.55	32.14
2470	-0.67	31.55
2480	-0.91	30.48
2490	-0.99	29.51
2500	-1.06	28.91

Machine placement picture

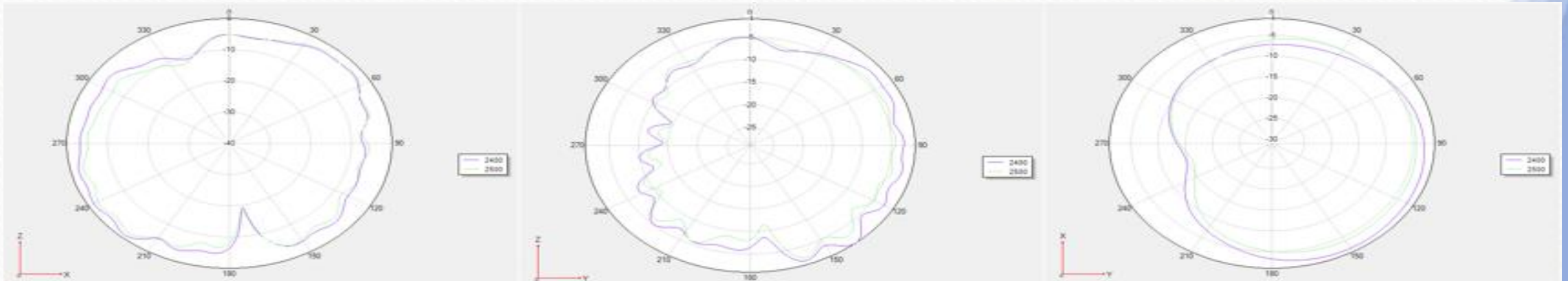


3D



Directional diagram

2D



Measurement	Band	Channel	Frequency	Total
TRP	WIFI_B (11M)	1	2412	13.12
TRP	WIFI_B (11M)	7	2442	13.45
TRP	WIFI_B (11M)	13	2472	14.45
TIS(EIRP)	WIFI_B (11M)	13	2472	-79.68
TRP	WIFI_G (54M)	1	2412	12.63
TRP	WIFI_G (54M)	7	2442	12.42
TRP	WIFI_G (54M)	13	2472	13.08
TIS(EIRP)	WIFI_G (54M)	13	2472	-66.4
TRP	WIFI_N_ISM (65M)	1	2412	11.63
TRP	WIFI_N_ISM (65M)	7	2442	10.42
TRP	WIFI_N_ISM (65M)	13	2472	12.47
TIS(EIRP)	WIFI_N_ISM (65M)	13	2472	-63.25

Summary

The above is the latest validation test data.

Thank You

Shanghai R&D Center: 1F, Building 4, No.99, Lane 215, Gaoguang Road, Qingpu District, Shanghai, 201799, PRC

Shenzhen R&D Center: Floor 6, Building 5, Nam Tai Inno Park, Guangming District, Shenzhen, 518057, PRC

ChongQing R&D Center: 1F, ARM Ecological Industrial Park, 19 East Datugu Road, Xiantao, Yubei District, Chongqing, 401120, PRC

Huizhou Factory: F4-6, Building 8, Xiongtao Tech Park, No.15, Qingli 2nd Rd, Huicheng Dist, Huizhou City, 516255, PRC

TEL: 021-60835368 E-mail: sales@sunnyway-iot.com

www.sunnyway-iot.com

