

Antenna Testing Report

Customer: apical Technology

Project Name: CJ4519

Report Number: SZ25001IB75/SZ250011IA57

Manufacturer: Sunnyway Technology(CHINA)

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

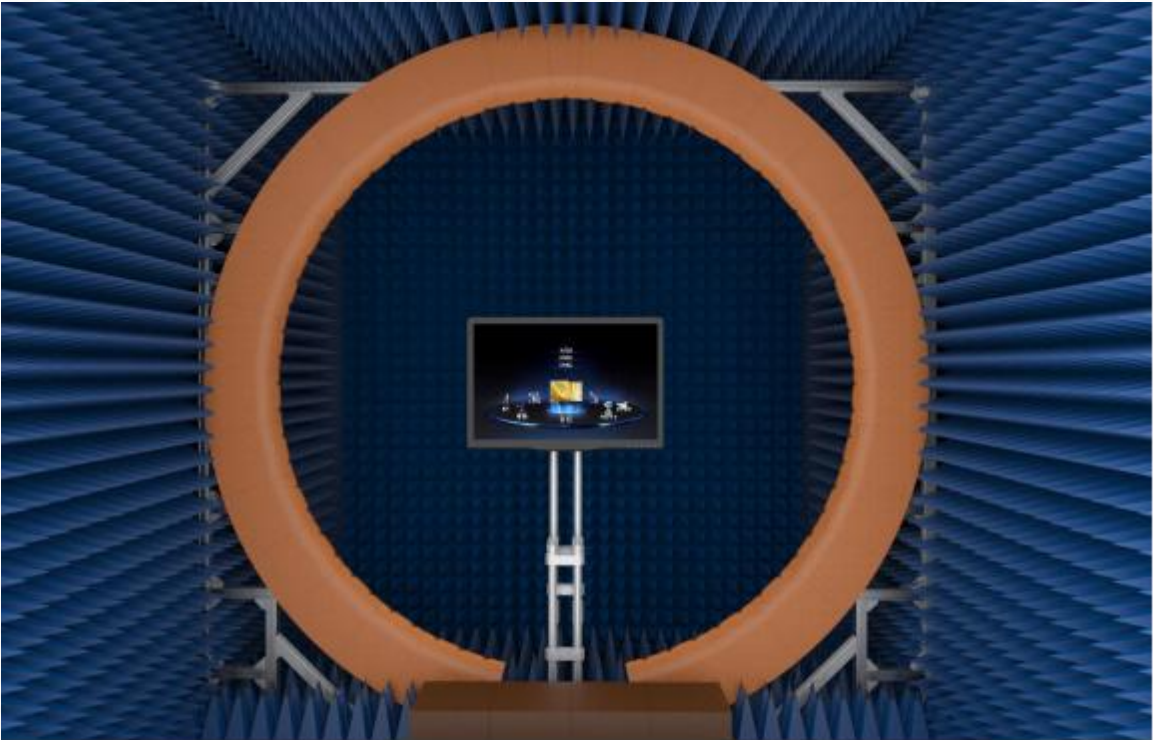
Report version: 04.17, 2024

Author: Yang Jie

Version	Report date	Remark
A0	2025.04.17	Latest test data
A1		
A2		
A3		
A4		
A5		
A6		
A7		
A8		
A9		

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Prototype status	Debugging machine
Device type	car recorder
Number of antennas	WIFI GPS antenna
Frequency band	WiFi2.4G,BD、GPS
Structural style	FPC+Ceramic
Environment adjustment	No change
Matching modification	No change



The industry's top 64 sensors OTA chamber

Frequency range: 400MHz-11GHz

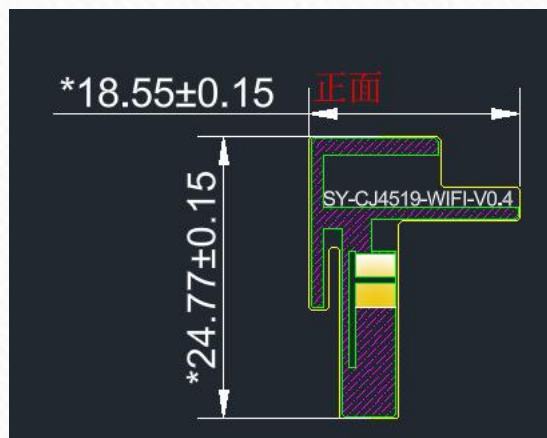
Device Llimitation: 2M

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

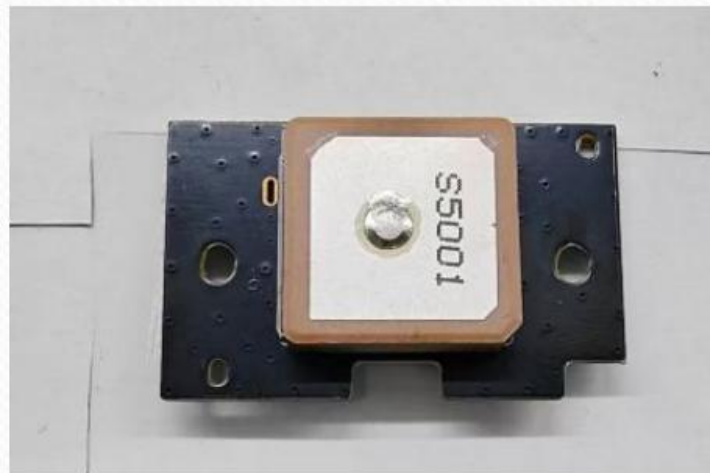


WiFi antenna/Antenna size

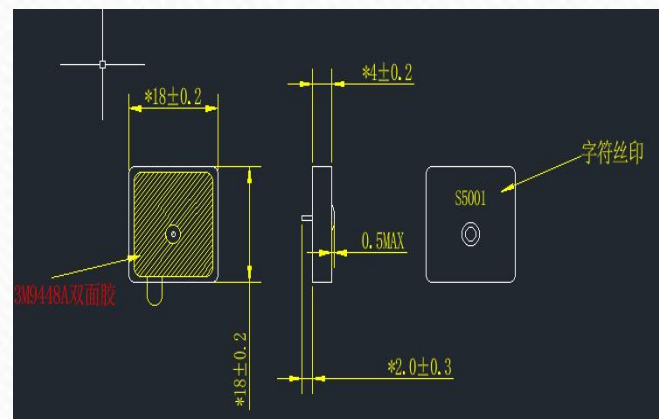


WiFi Antenna type: FPC antenna

WiFi Antenna model: **SZ25001IB75**

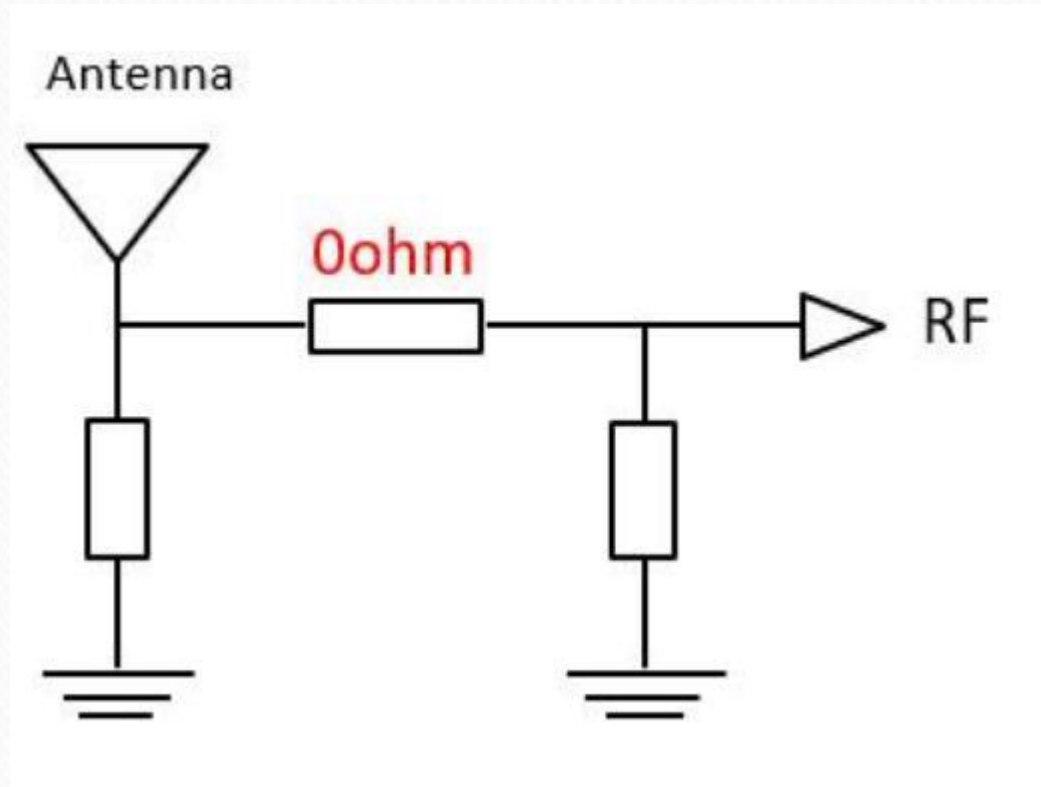


GPS antenna/Antenna size



GPS Antenna type: Ceramic antenna

GPS Antenna model: **SZ25001IA57**



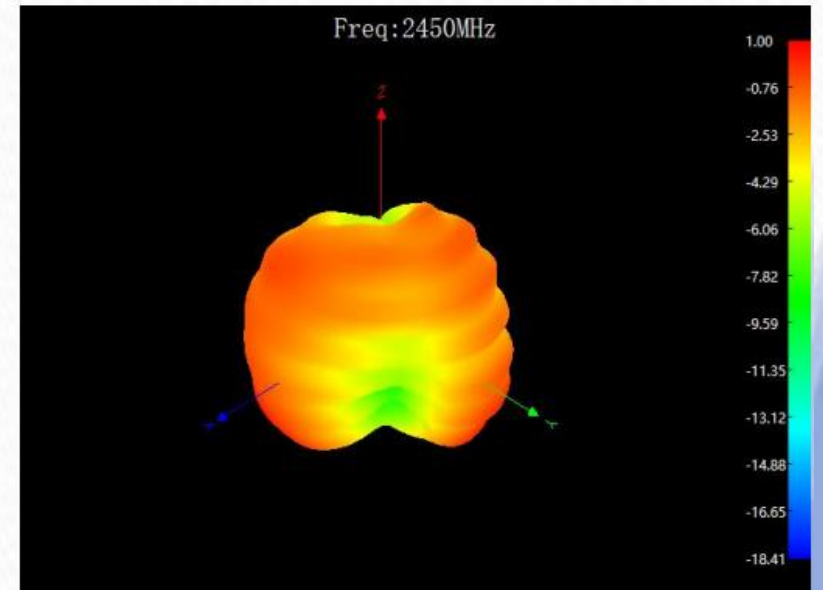
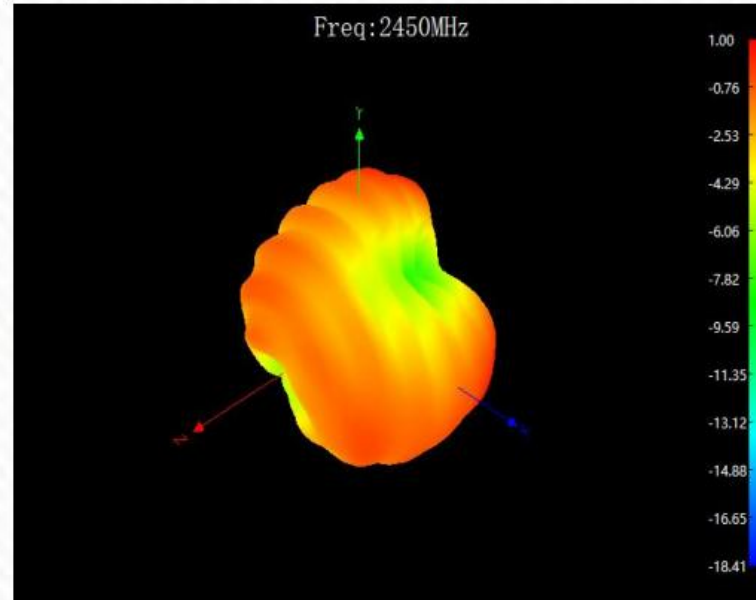
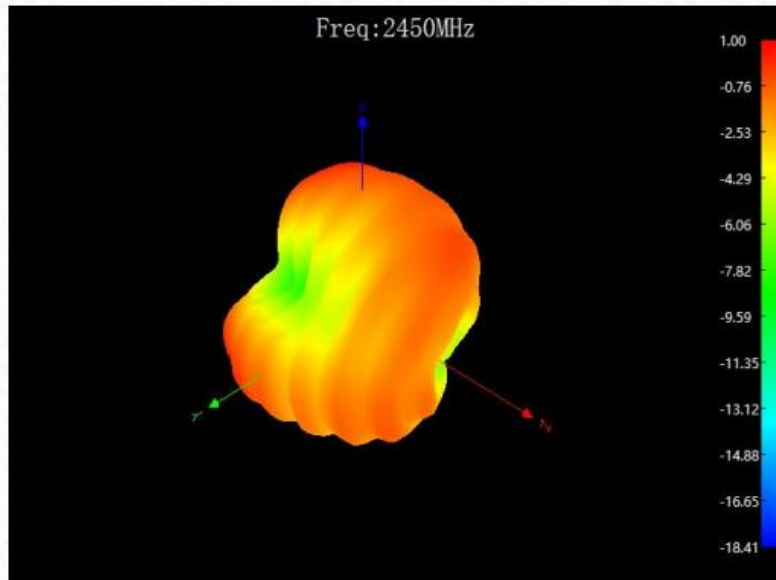
S11-VSWR



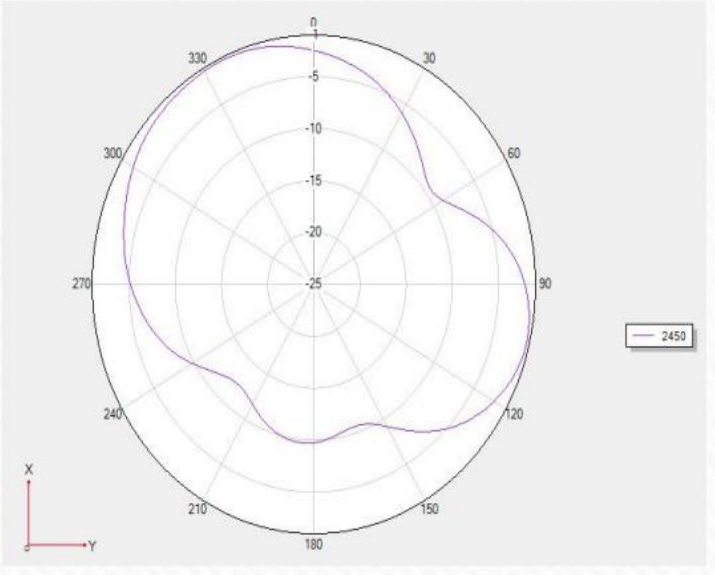
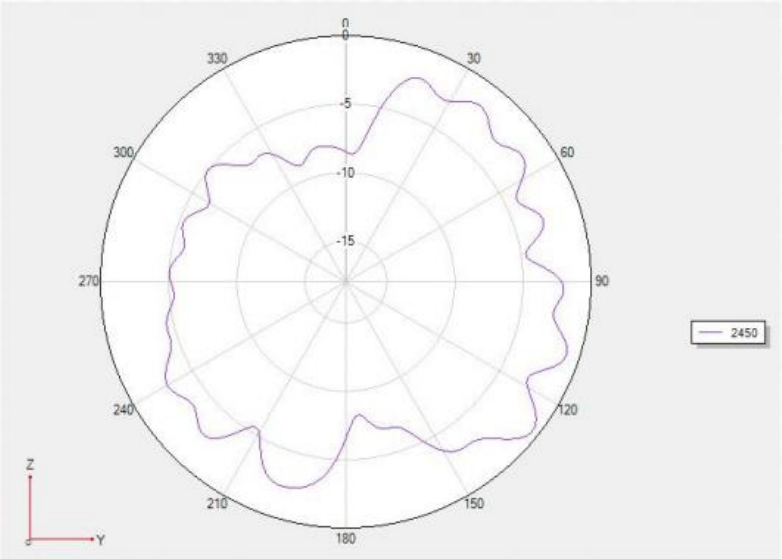
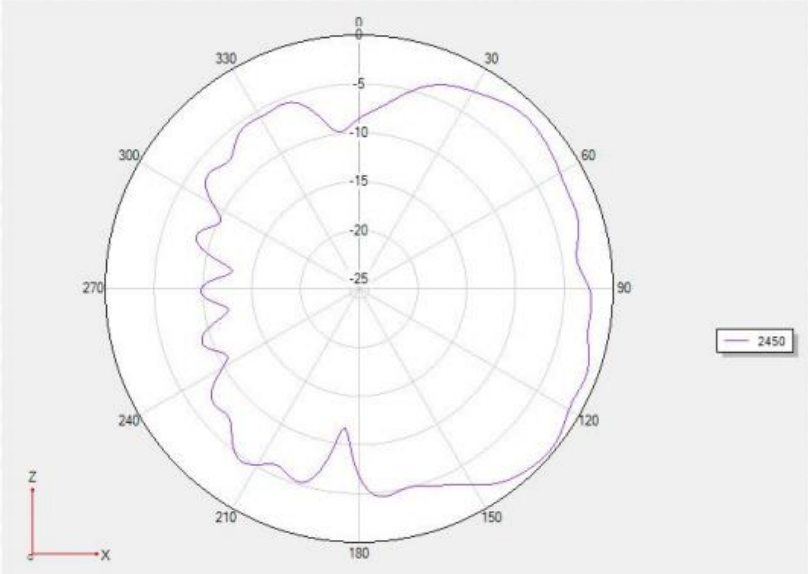
Frequency/Mhz	MaxGain/dBi	Efficiency / %
2400	0.02	47.53
2410	0.94	45.84
2420	-0.42	45.15
2430	-0.1	46.98
2440	-0.2	45.87
2450	1	47.4
2460	0.41	48.08
2470	0.69	45.71
2480	0.61	48.53
2490	1.38	45.05
2500	1.05	45.98

Directional diagram

3D



Directional diagram
2D



Measurement	Band	Channel	Total
TRP	WIFI_B (11M)	1	15.7
TRP	WIFI_B (11M)	7	15.83
TRP	WIFI_B (11M)	13	15.39
TIS(EIRP)	WIFI_B (11M)	13	-86.76
TRP	WIFI_G (54M)	1	14.92
TRP	WIFI_G (54M)	7	14.68
TRP	WIFI_G (54M)	13	14.43
TIS(EIRP)	WIFI_G (54M)	13	-72.17
TRP	WIFI_N_ISM (65M)	1	14.19
TRP	WIFI_N_ISM (65M)	7	14.81
TRP	WIFI_N_ISM (65M)	13	14.86
TIS(EIRP)	WIFI_N_ISM (65M)	13	-71.42

GPS Passive data

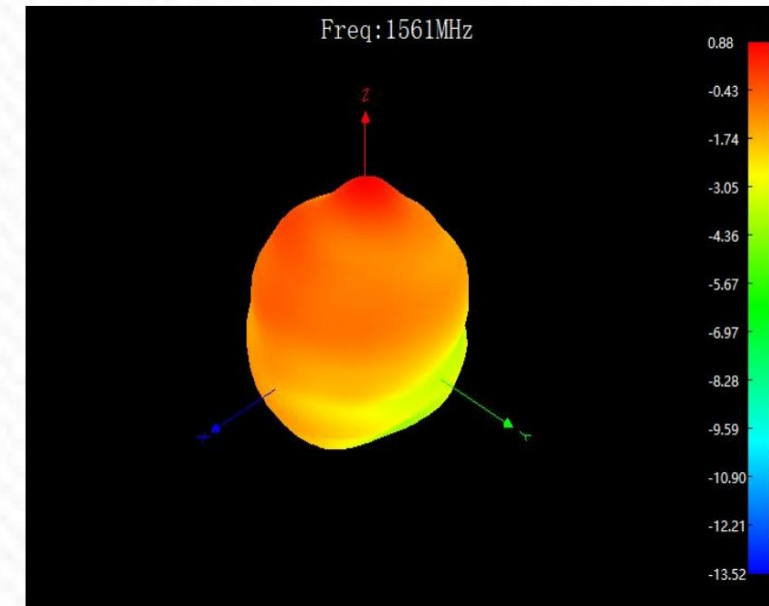
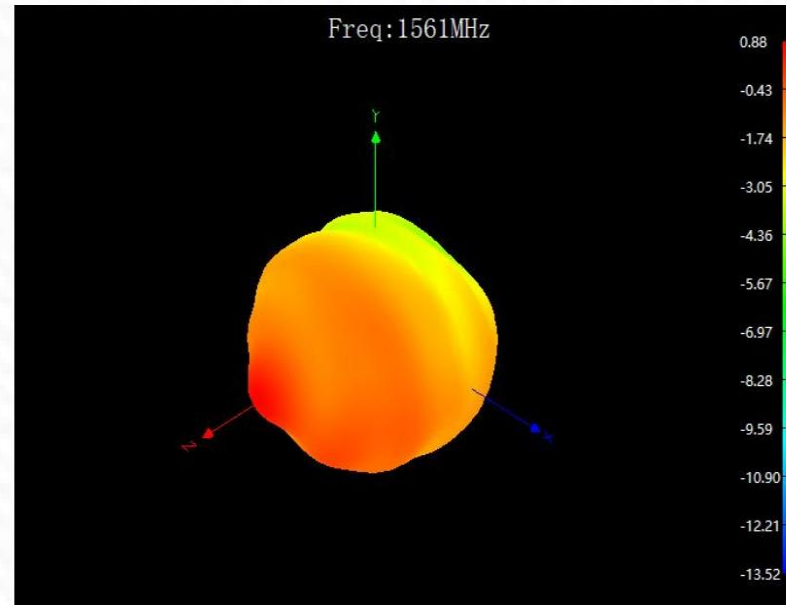
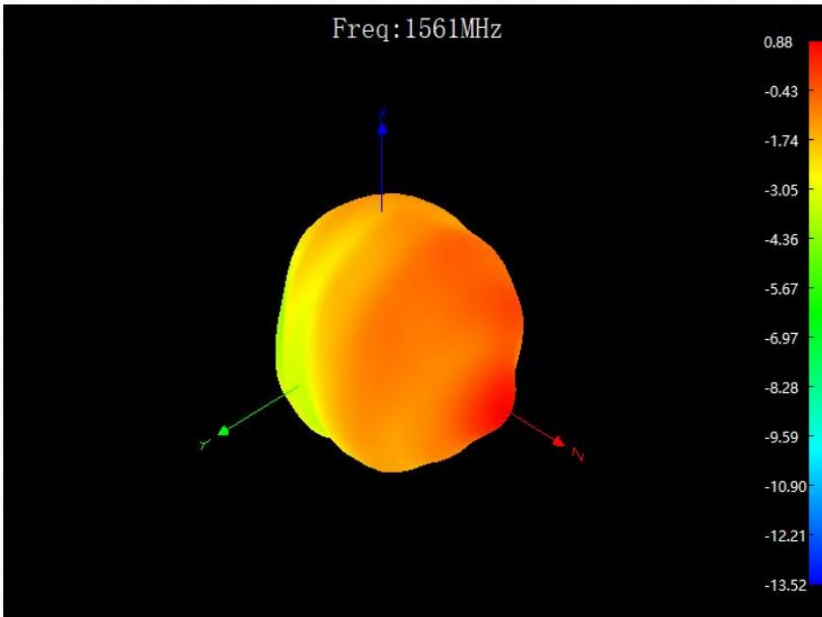
S11-VSWR



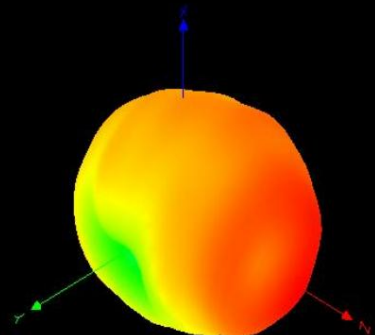
Frequency/Mhz	MaxGain/dBi	Efficiency / %
1560	0.51	43.15
1561	0.88	44.81
1562	0.98	45.81
1563	0.77	44.43
1564	0.37	43.11
1565	-0.02	42.43
1566	-0.29	42.58
1567	-0.39	43.57
1568	-0.31	45.08
1569	-0.05	46.48
1570	0.28	47.15
1571	0.53	46.48
1572	0.5	44.67
1573	0.16	42.14
1574	-0.38	44.51
1575	-0.96	45.23

Directional diagram

3D

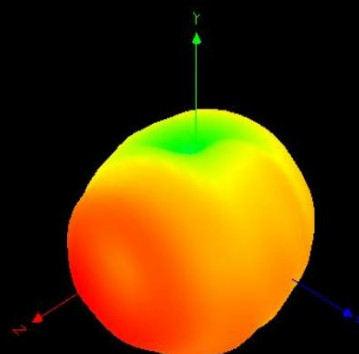


Freq:1575MHz



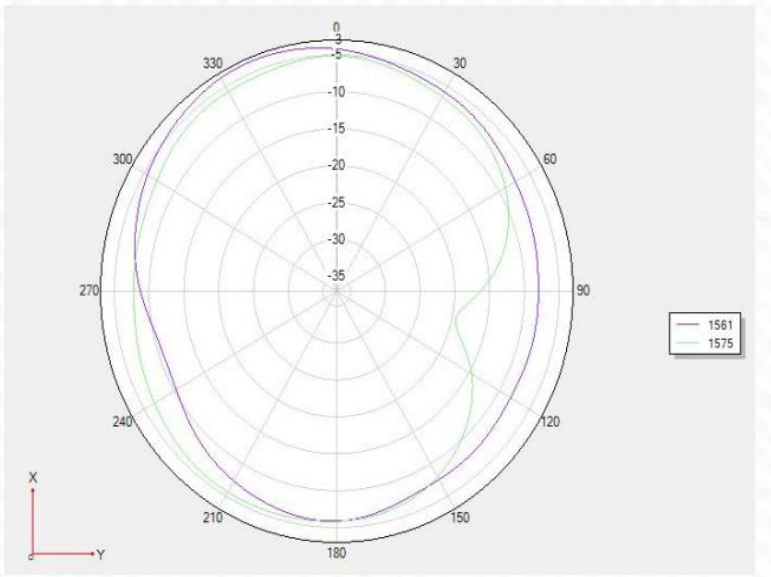
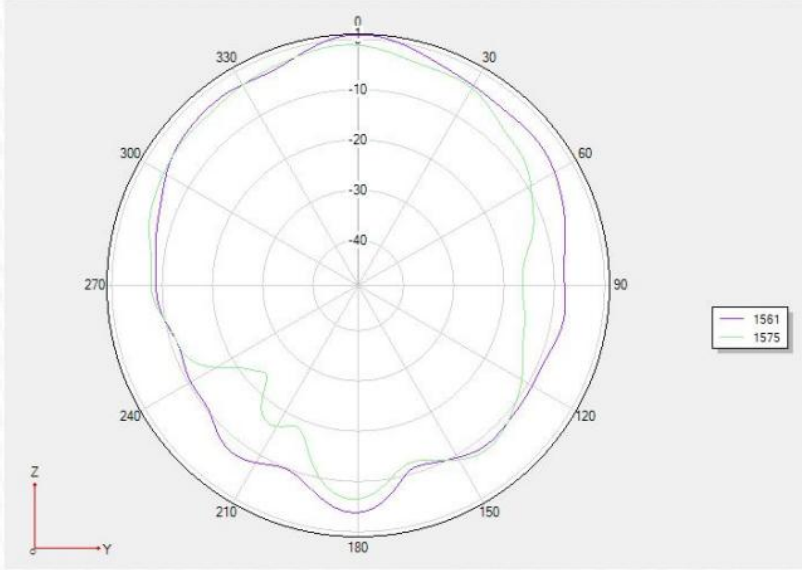
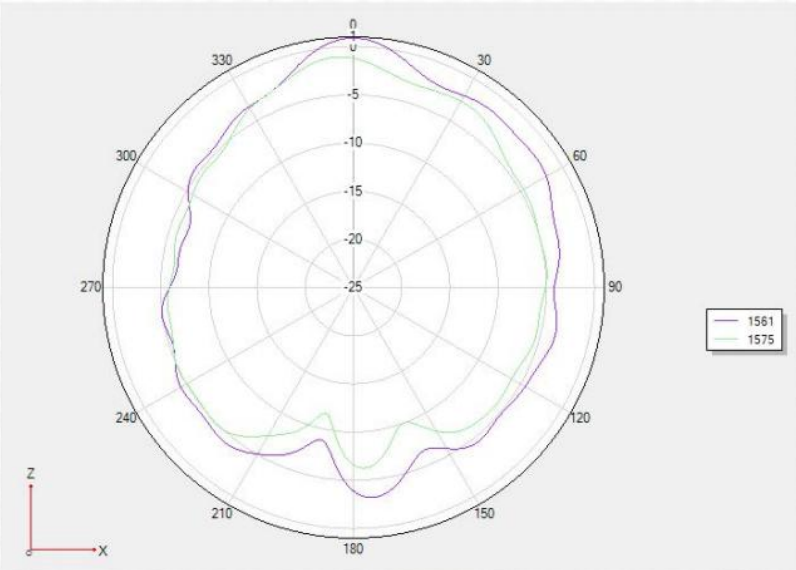
-0.96
-3.18
-5.39
-7.61
-9.82
-12.04
-14.25
-16.47
-18.68
-20.90
-23.11
-25.33

Freq:1575MHz

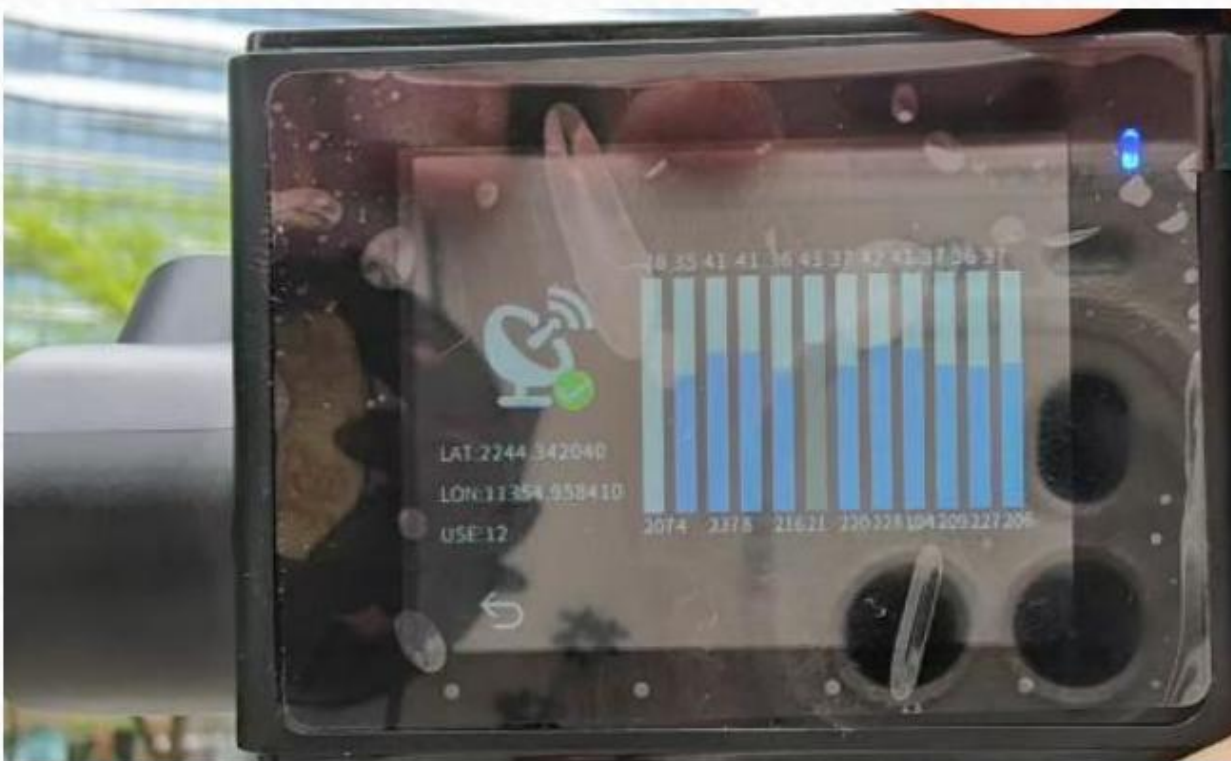


-0.96
-3.18
-5.39
-7.61
-9.82
-12.04
-14.25
-16.47
-18.68
-20.90
-23.11
-25.33

Directional diagram
2D



GPS Free Test



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

