

SUNNYWAY TECHNOLOGY(CHINA)

Antenna Testing Report

Customer : Shenzhen Apical Technology CO.Ltd.

Project Name : 20702

Model Name: 20702

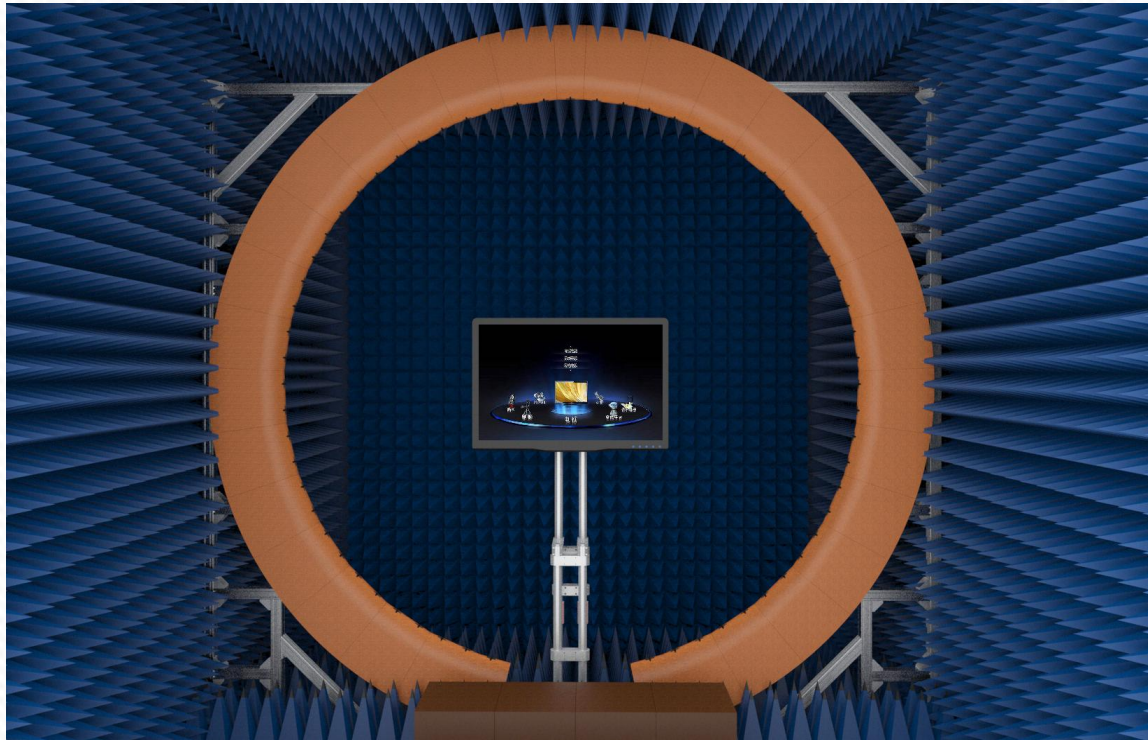
Report version: May 11, 2023 A0

Author: Wenbo Huang

Version	Report date	Remark
A0	2023.05.11	Antenna test report
A1		
A2		
A3		
A4		
A5		
A6		
A7		
A8		
A9		

- 1. Record·····
- 2. Project Overview ·····
- 3. Equipment List·····
- 4. Project pictures and Passive fixturs·····
- 5. Matching Circuit ·····
- 6. Passive efficiency and gain ·····
- 7. Radiation Pattern·····
- 8. OTA test data ·····
- 9. Environment Specification·····

Prototype status	Debugging machine
Device type	
Number of antennas	WIFI antenna、GPS antenna
Frequency band	2G: N/A
	3G: N/A
	4G-LTE: N/A
	5G-NR: N/A
	GPS + WIFI 802.11 a/b/g/n
Structural style	FPC+Cable
Environment adjustment	No change
Matching modification	No change



The industry's top 64 sensors OTA chamber

Frequency range: 400MHz-11GHz

Device Llimitation: 2M

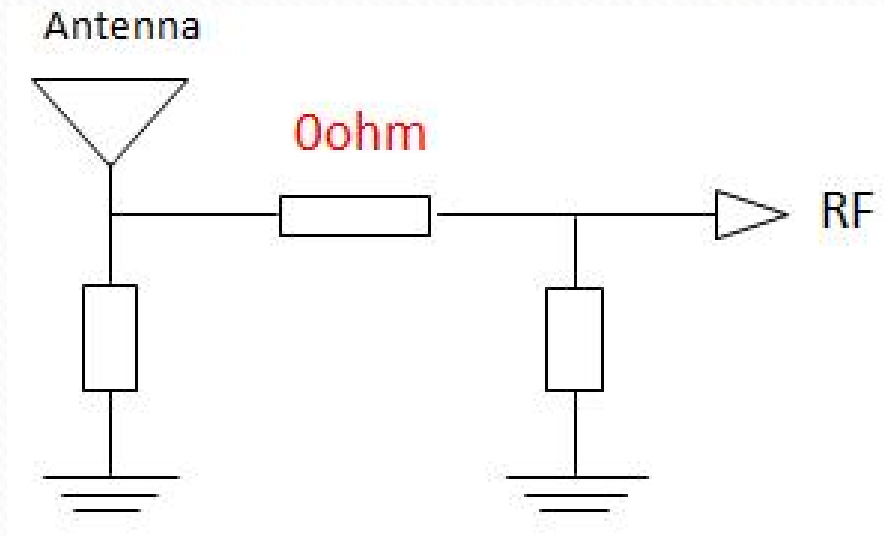
Load-bearing limitation:100KG

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

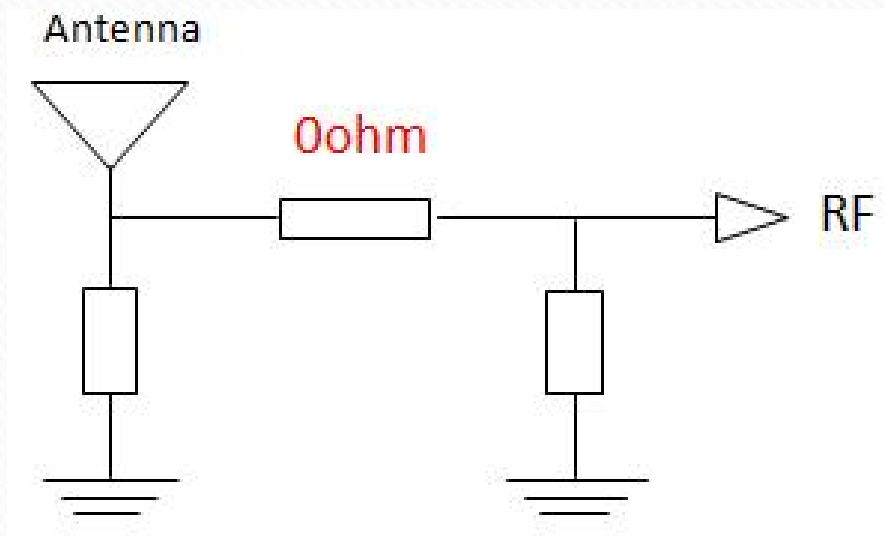


WIFI天线尺寸: 22.2*7mm/背胶3M9495LE

WiFi: unchanged



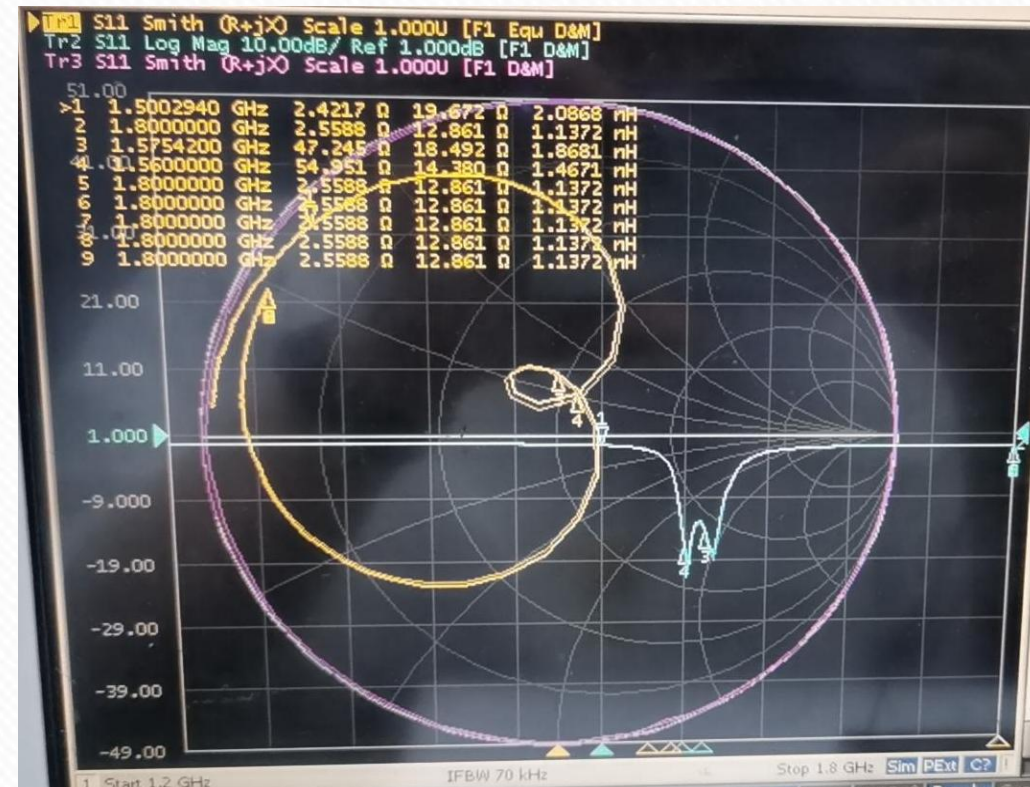
GPS: unchanged



VSWR

WiFi

GPS

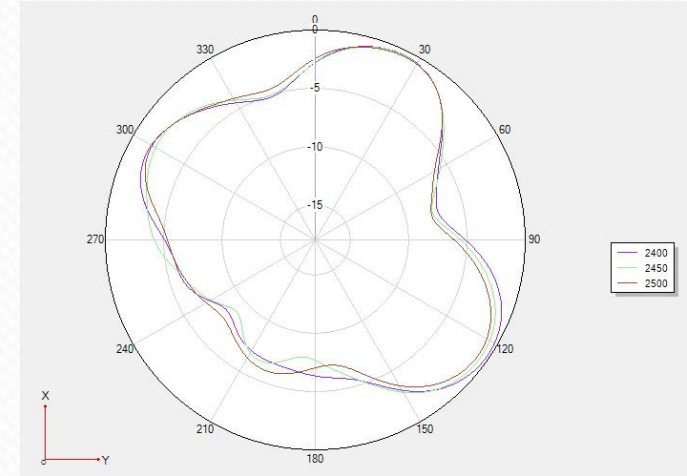
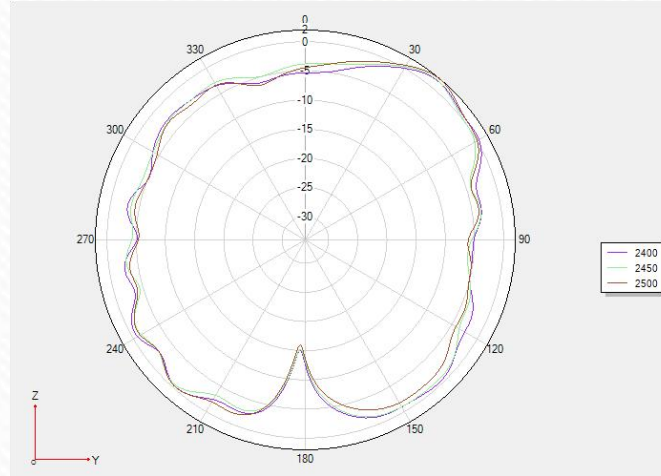
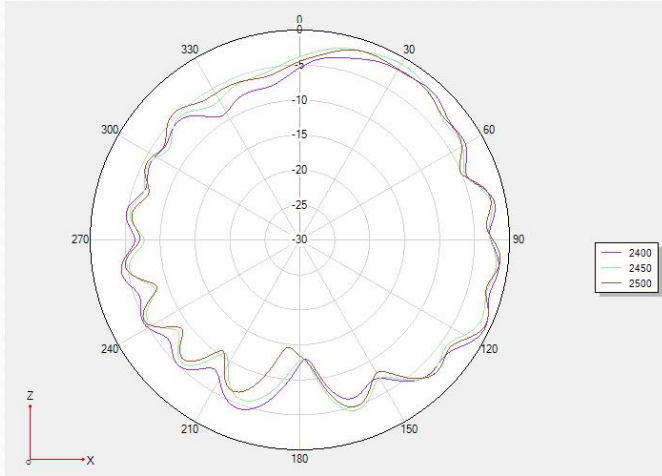


Passive Test For 2.4WIFI		
Freq (MHz)	Effi (%)	Gain (dBi)
2400	52.54	2.8
2410	45.08	1.93
2420	45.44	1.82
2430	40.81	1.22
2440	41.66	1.31
2450	43.24	1.49
2460	42.45	1.54
2470	45.77	1.9
2480	41.42	1.57
2490	50.05	2.45
2500	46	2.14

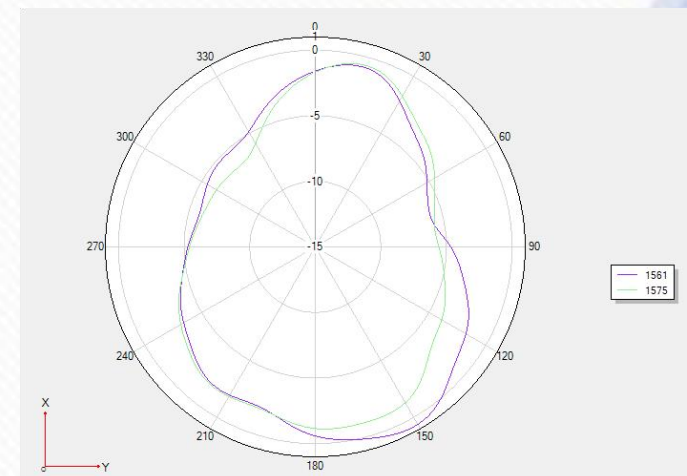
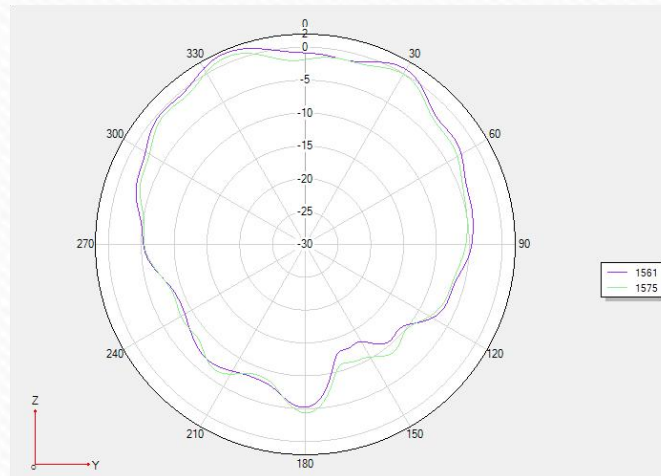
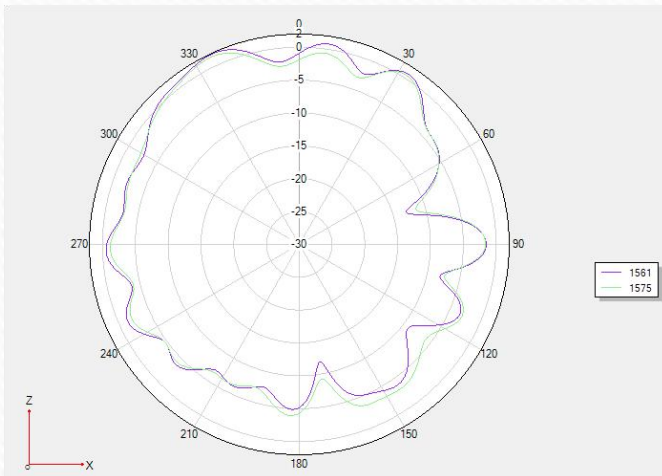
Passive Test For GPS		
Freq (MHz)	Effi (%)	Gain (dBi)
1561	47.46	0.46
1575	46.04	0.33

2D cross-sectional view

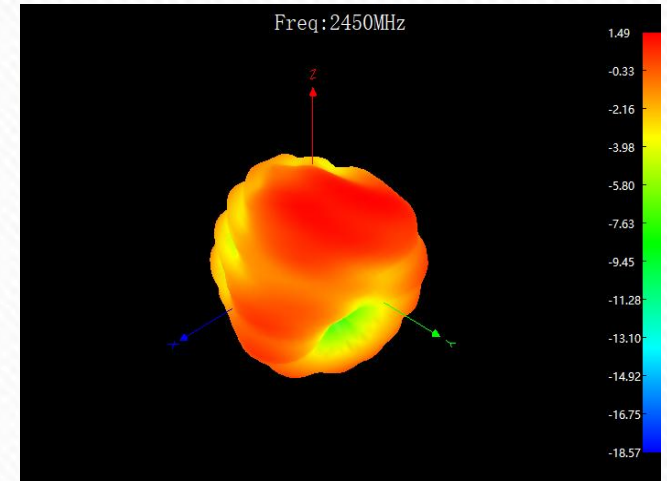
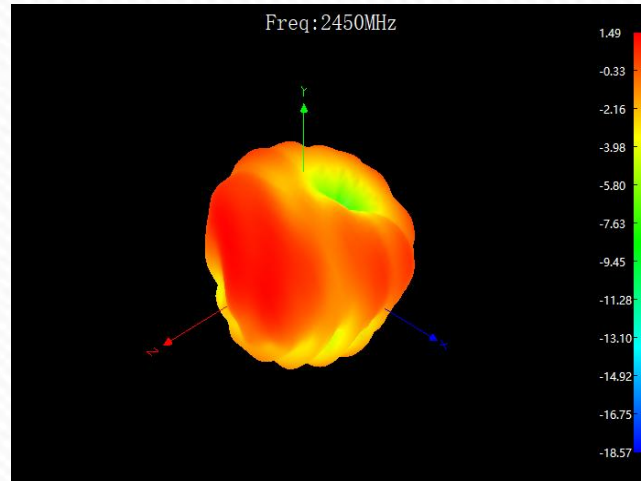
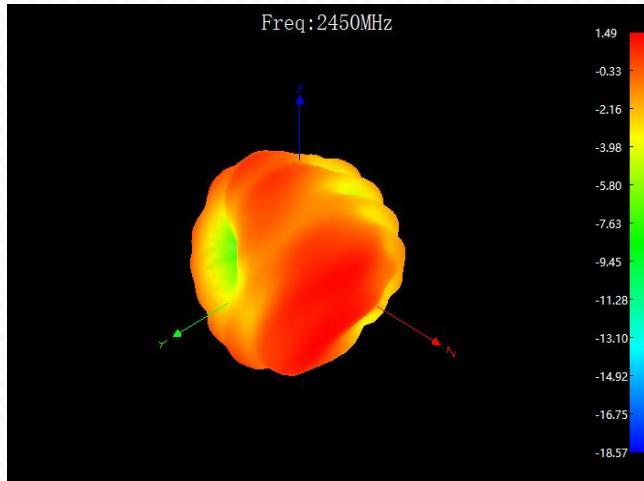
WiFi



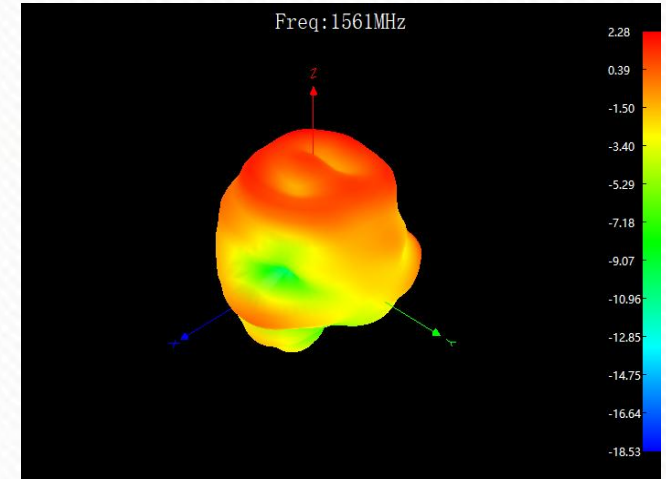
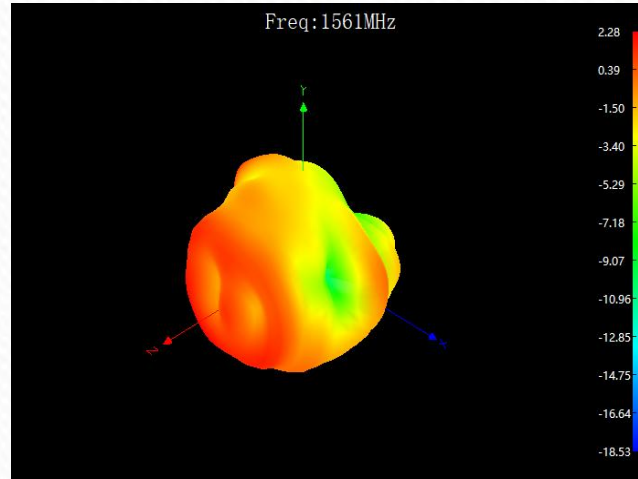
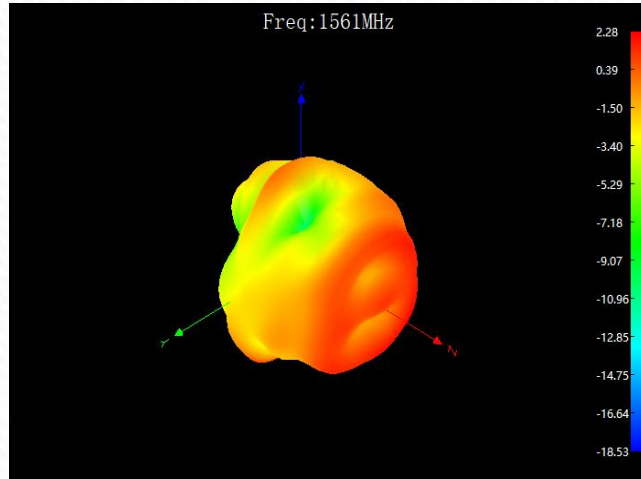
GPS



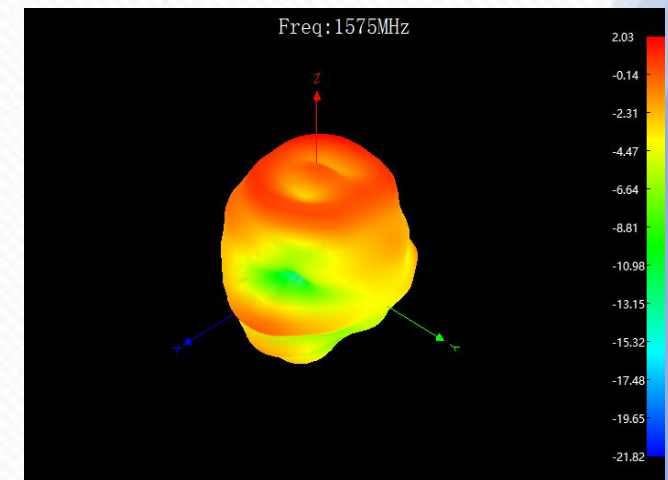
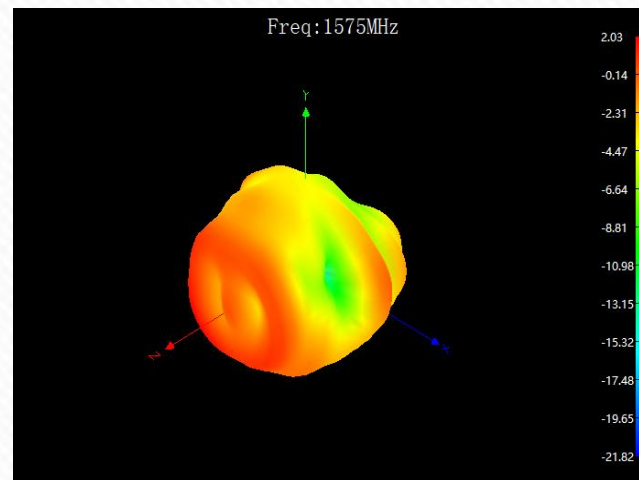
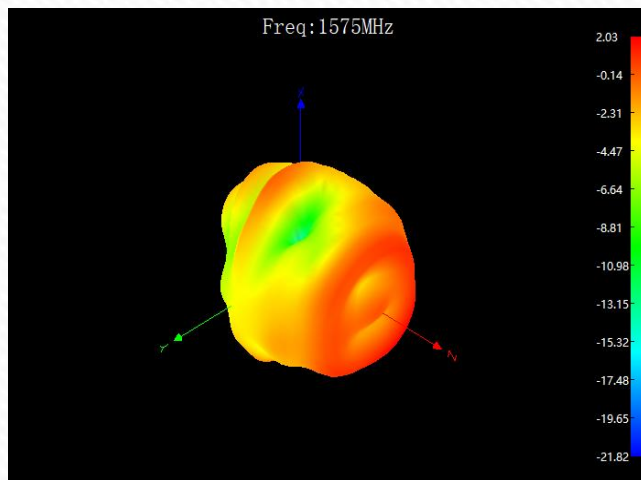
3D For 2450MHz



3D For 1561MHz



3D For 1575MHz



WIFI:

频段	CH	TRP	TIS
802.11b : 11Mbps	1	15.52	-81.77
	7	15.13	-81.21
	11	15.77	-82.47
802.11g : 54Mbps	1	14.73	-71.84
	7	15.85	-70.35
	11	15.29	-71.03
802.11n : MCS7	1	14.26	-66.41
	7	14.5	-67.33
	11	15.13	-66.46



Thank You

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

Shenzhen R&D Center: 6th Floor, Building 5, NantaiyunChuanggu Center, Guangming District, Shenzhen, 518107, PRC

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

Huizhou Factory: 4-5F, No.1, Central Village Road, Longhu Industrial Zone, Shuikou Town, Huicheng District, Huizhou, 516255, PRC

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

www.sunnyway-iot.com

