



Shenzhenshi chisheng Technology Co., Ltd.

Antenna Acknowledgement

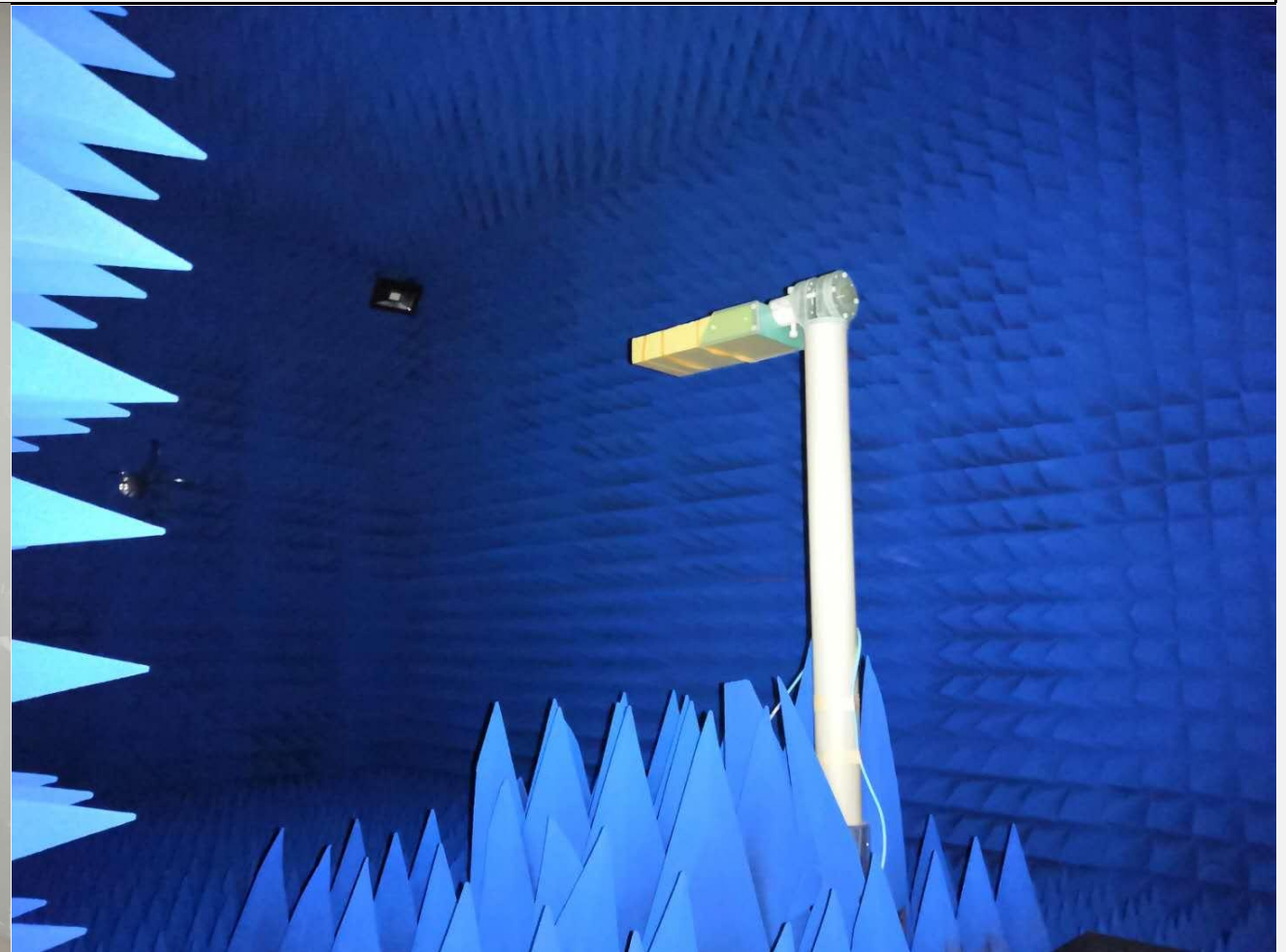
Customer Name: Shenzhen Xinhuaafeng Technology Co., Ltd.

Antenna frequency band: 2.4G-5.8G

Machine Model: GM67, Part Number: CS0929, Cable
Length: 50mm (4th Generation IPEX), Manufacturer:
Shenzhen Chisheng Technology Co., Ltd.
Issuance Date:2024-12-16

1. Testing Tools

Vector Network Analyzer & Comprehensive Tester	Agilent Technologies E5071B & R&S CMW500
darkroom	Atenlab M3
Test Engineer	Wu Shibiao
temperature	25℃
humidity	65% (RH)





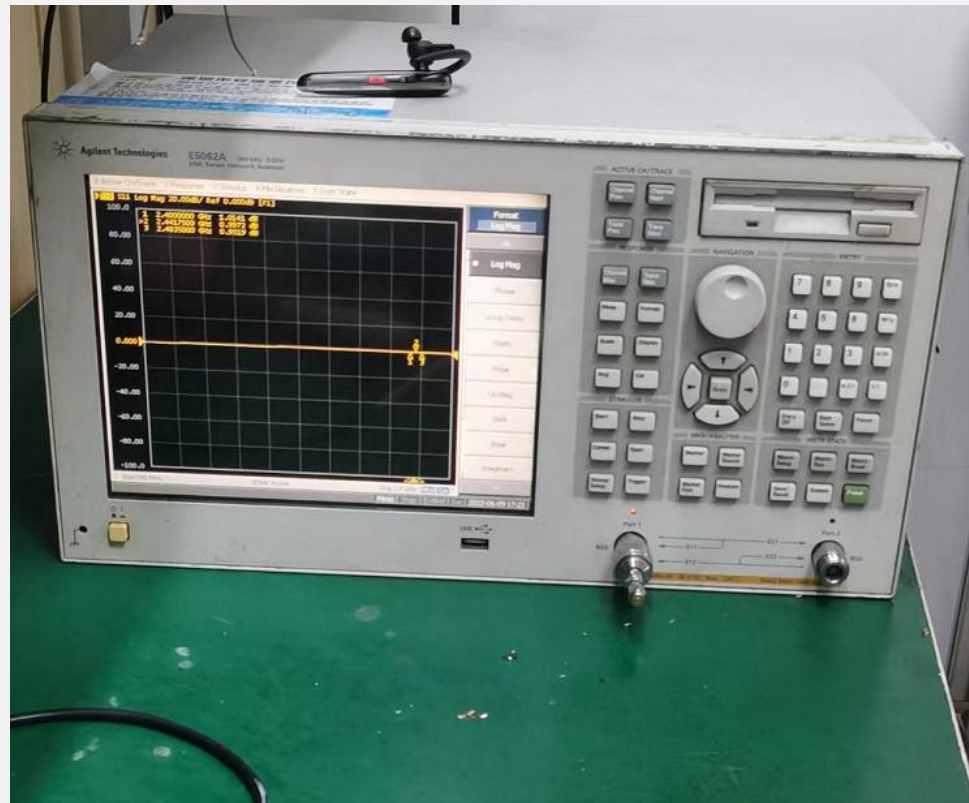
1. Test system description---S Parameter
2. Test system description--- Anechoic Chamber Test Setup
3. Test system description--- Test Instruments
4. Antenna
5. Test Result---Return Loss and Efficiency
6. Gain efficiency
7. schedule drawing

1. Test system description---S Parameter

1.1. Test Setup

1.1.1 VNA Test Setup

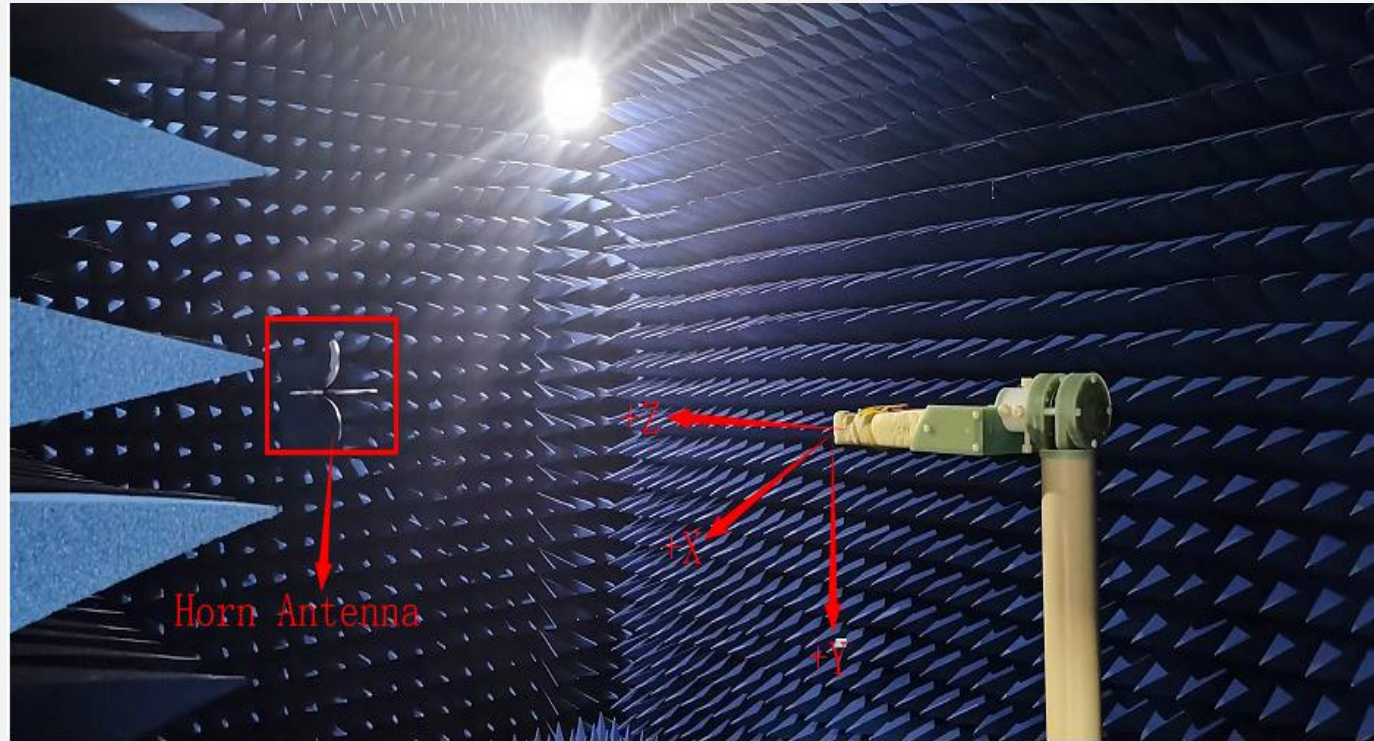
S parameter measurements (S_{11}) were performed using an Keysight 5071B Network Analyzer and previously described tests fixtures. The isolation between antennas is also tested. The testing was performed with apparatus in free space.



2. Test system description--- Anechoic Chamber Test Setup

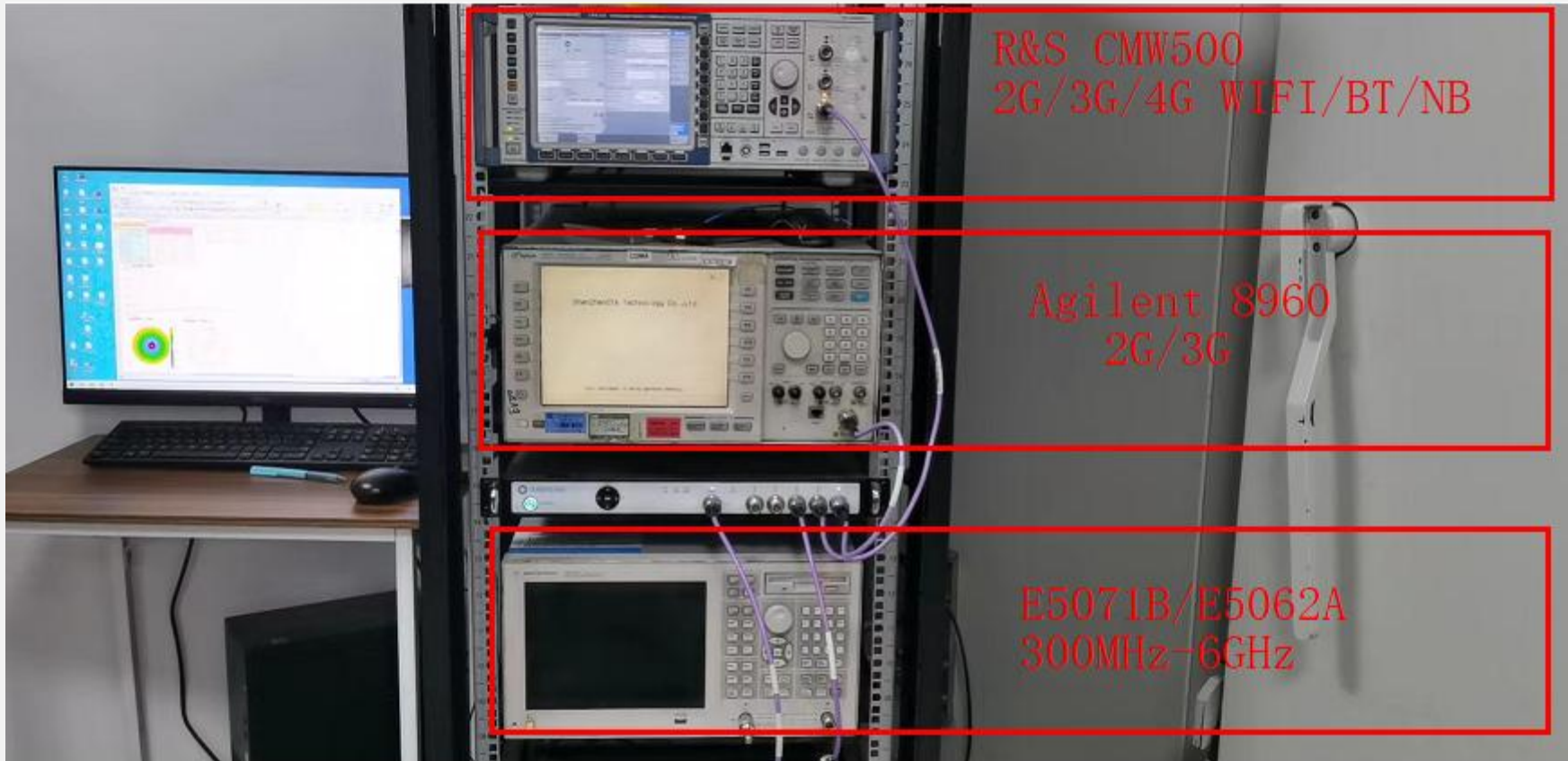
1.1.1 Anechoic Chamber Test Setup

The gain of the antenna was measured in the anechoic chamber(ETS-3D). The chamber provides less than -30 dB reflectivity from 400 MHz through 9 GHz. The chamber size is: 7m*4m*3m. The measurement results are calibrated using a leaky wave horn standard. We can measure the antenna gain and efficiency accurately.



3. Test system description--- Test Instruments

1.1.3 Instruments



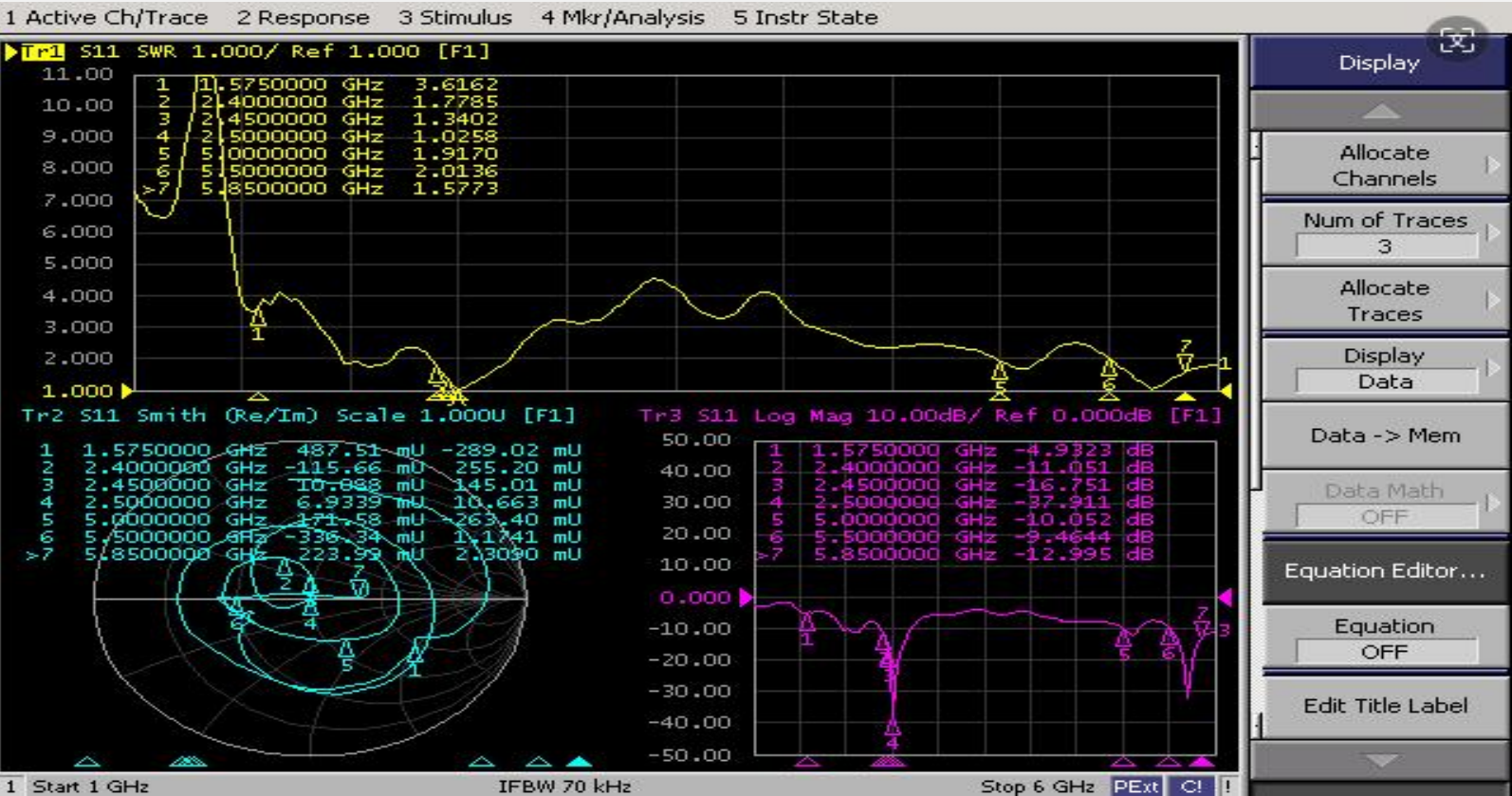
4. Antenna

2.1 Antenna 装配示意图



5.Test Result---Return Loss and Efficiency

S11 (WIFI) :



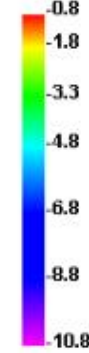
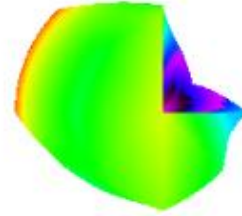
MARKERS: 2400 MHz 1.77 dB 24417 MHz 1.34dB 24835MHz 1.02dB E5071B-MP.S1P - S11-VSWR	MARKERS:5000 MHz 1.91 dB 5500 MHz 2.01dB 5850MHz 1.57dB E5071B-MP.S1P - S11-VSWR	MARKERS: 2400 MHz -11.05 dB 24417 MHz -16.75dB 24835MHz -37.91dB E5071B-MP.S1P - S11-Log	MARKERS:5000 MHz -10.05 dB 5500 MHz -9.46dB 5850MHz -12.99dB E5071B-MP.S1P - S11-Log
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6. Gain efficiency

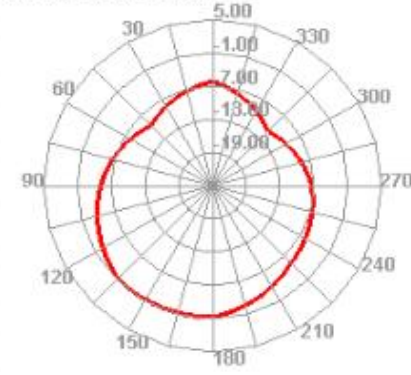
Data (wifi-2.4G) :

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)
2400	32.76	-4.85	-0.82	-2.97
2410	34.55	-4.62	-0.73	-2.88
2420	37.68	-4.24	-0.29	-2.44
2430	35.93	-4.45	-0.46	-2.61
2440	41.46	-3.82	0.01	-2.14
2450	43.95	-3.57	0.32	-1.83
2460	40.32	-3.94	-0.03	-2.18
2470	41.97	-3.77	0.24	-1.91
2480	46.1	-3.36	0.68	-1.47
2490	50.87	-2.94	1.02	-1.13
2500	48.9	-3.11	0.68	-1.47

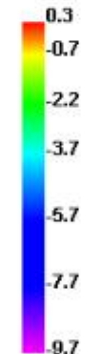
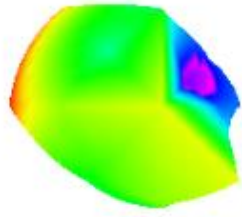
2400.000MHz



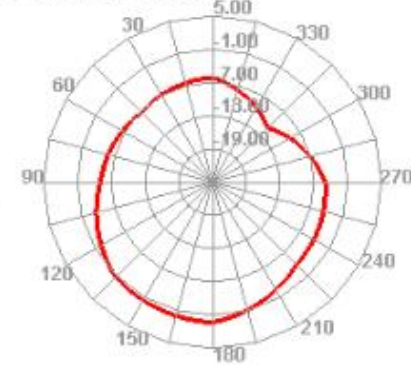
2400.000MHz H



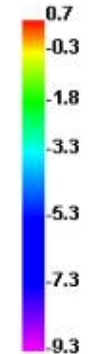
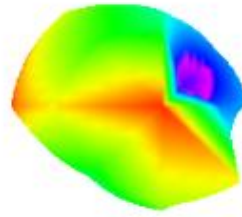
2450.000MHz



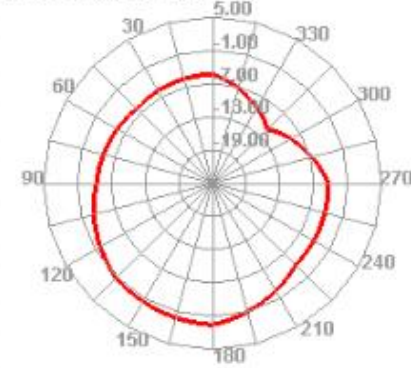
2450.000MHz H



2500.000MHz



2500.000MHz H

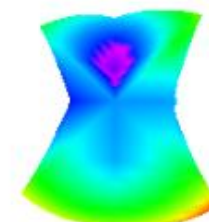


6. Gain efficiency

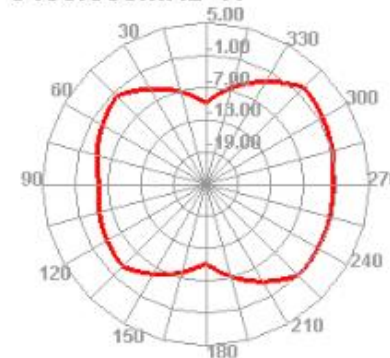
Data (wifi-5G) :

Freq (MHz)	Effi (%)	Effi (dB)	Gain (dBi)	Gain (dBd)
5200	24.86	-6.04	-0.6	-2.75
5220	26.96	-5.69	-0.26	-2.41
5240	27.95	-5.54	-0.45	-2.6
5260	27.22	-5.65	-0.78	-2.93
5280	25.42	-5.95	-0.94	-3.09
5300	27.17	-5.66	-0.59	-2.74
5320	29.6	-5.29	-0.42	-2.57
5340	28.09	-5.51	-0.4	-2.55
5360	26.99	-5.69	-0.66	-2.81
5380	28.77	-5.41	-0.11	-2.26
5400	34.48	-4.62	0.43	-1.72
5420	31.87	-4.97	0.35	-1.8
5440	29.29	-5.33	0.18	-1.97
5460	30.95	-5.09	0.64	-1.51
5480	34.53	-4.62	0.76	-1.39
5500	33.65	-4.73	0.84	-1.31
5520	31.54	-5.01	0.92	-1.23
5540	30.93	-5.1	0.83	-1.32
5560	32.76	-4.85	0.8	-1.35
5580	34.27	-4.65	1.03	-1.12
5600	28.81	-5.4	0.09	-2.06
5620	26.91	-5.7	-0.35	-2.5
5640	33.06	-4.81	0.46	-1.69
5660	34.1	-4.67	0.6	-1.55
5680	31.51	-5.01	0.43	-1.72
5700	31.68	-4.99	0.88	-1.27
5720	32.92	-4.82	0.93	-1.22
5740	35.53	-4.49	1.55	-0.6
5760	34.19	-4.66	1.34	-0.81
5780	30.79	-5.12	1.3	-0.85
5800	31.7	-4.99	1.41	-0.74

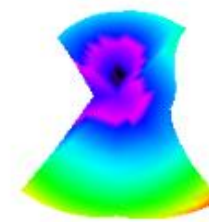
5400.000MHz



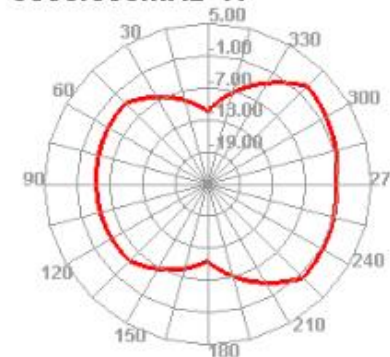
5400.000MHz H



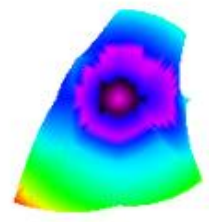
5500.000MHz



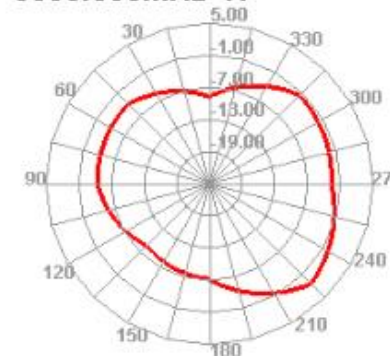
5500.000MHz H



5800.000MHz



5800.000MHz H



An aerial photograph of a city skyline, featuring numerous skyscrapers and a prominent bridge in the background. The image is partially covered by a large, semi-transparent yellow geometric shape that forms a triangle on the left side and a trapezoid on the right side.

感谢您的支持！
合作愉快