

Appendix 5: Antenna test report

Version 1.0.

Zhong Tianxun			
Radio frequency	Zhao Beacon178 7542 6686	Organization	
Check	Han Zhenyu158 1473 5757	Business	Ni Jieyou186 8245 1445
Company address	Shilong Avenue, Shiyang Street, Bao'an District, Shenzhen 34Howl		
Project information			
Project name	W4F.	Model version	
Antenna type		Scheme Company	
Antenna system	2.4 G	Date	April 30, 2019
Remarks:			

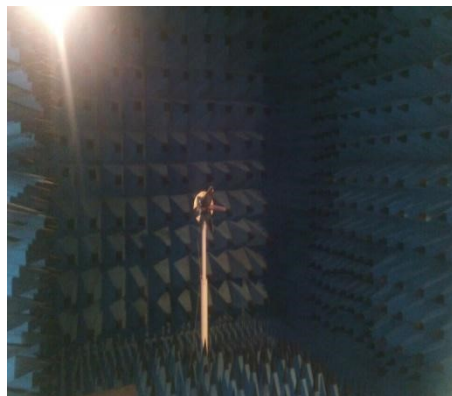
Add:Shilong Avenue, Shiyang Street, Bao'an District, Shenzhen34Howl

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Catal

- ◇ Research
- ◇ Explanation
- ◇ Assembly
- ◇ Test data
- ◇ Project



The company owns France, the most advanced in the communication industry..Satimo SG24 OTA. Test system1Set,ETS OTA. Standard test system 2Set,Bluetest. Reverberation dark room1Set, MicroPross NFC.Test system1Set, can provide customers with accurate test reports quickly and stably, fully in line withCTIA.Standard, support GSM/CDMA/WCDMA/TD/LTE/WIFI/BT/GPS/MIMOActive and passive testing of various systems.

MicroPross NFC The system can meet the needs of each operating business test. Try the requirements, yesNFC.The equipment conducts rapid performance tests and outputs a formal certification test report.



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Explanation of nouns

DBi Decibel relative isotropic antenna

Tx. Transmission frequency

Rx. Receive frequency

TRP. Total Radiated Power

TIS. Total isotropic sensitivity

VSWR. Voltage Standing Wave Ratio

Global System for Mobile Communications Global Service for Mobile Communication

DCS. Digital Communication System.

PCS. Personal Communication System

Personal Handy-phone System Personal Handly-phone System

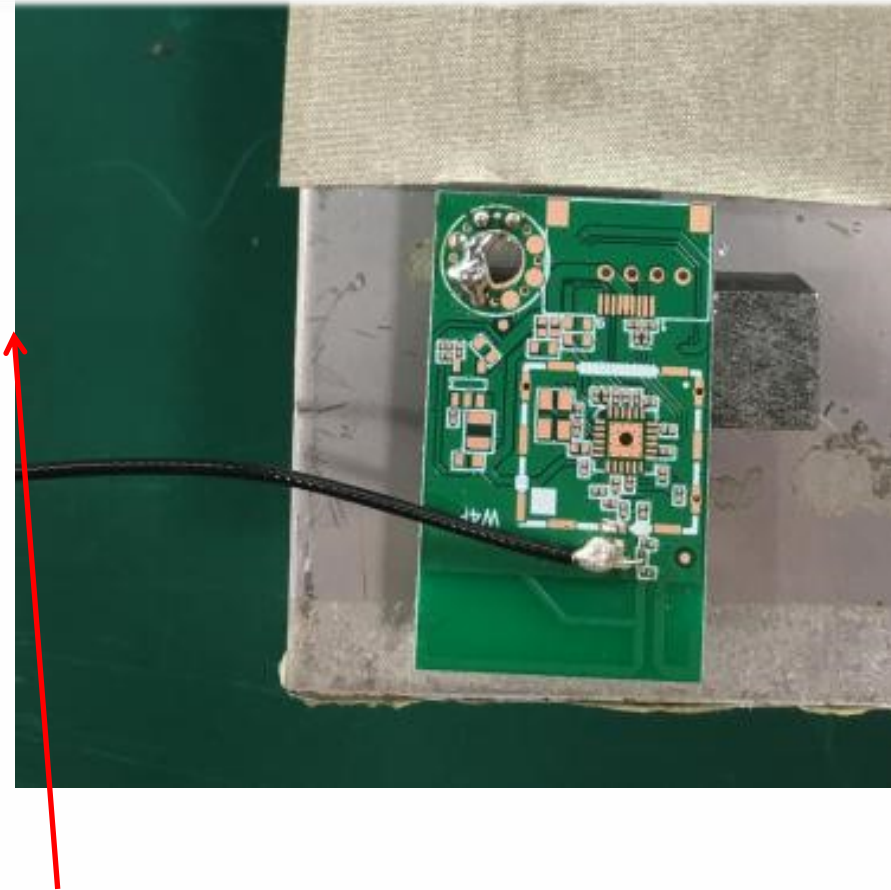
Special Administrative Region Specific Absorption Rate

PCB. Printed Circuit Board.

Code division multiple access Code Division Multiple Access

WCDMA. Wideband Code Division Multiple Access

LTE. Long Term Evolution



The screw hole is hanging, the height **10 mm**



天线测试数据(螺丝孔悬空)

VSWR.

2.4 G

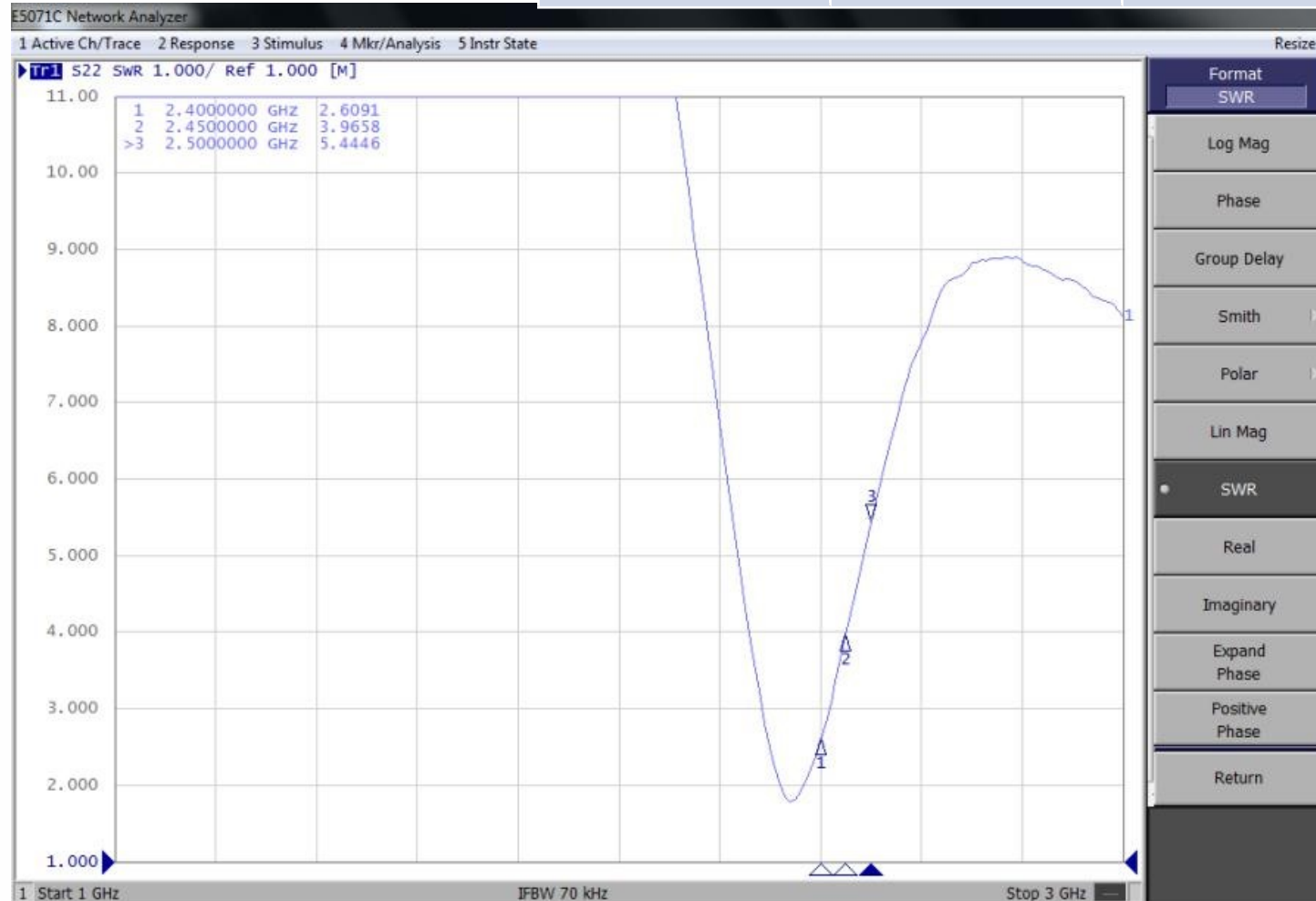
.2.45 G

2.5 G

2.6091

3.9658

5.4446

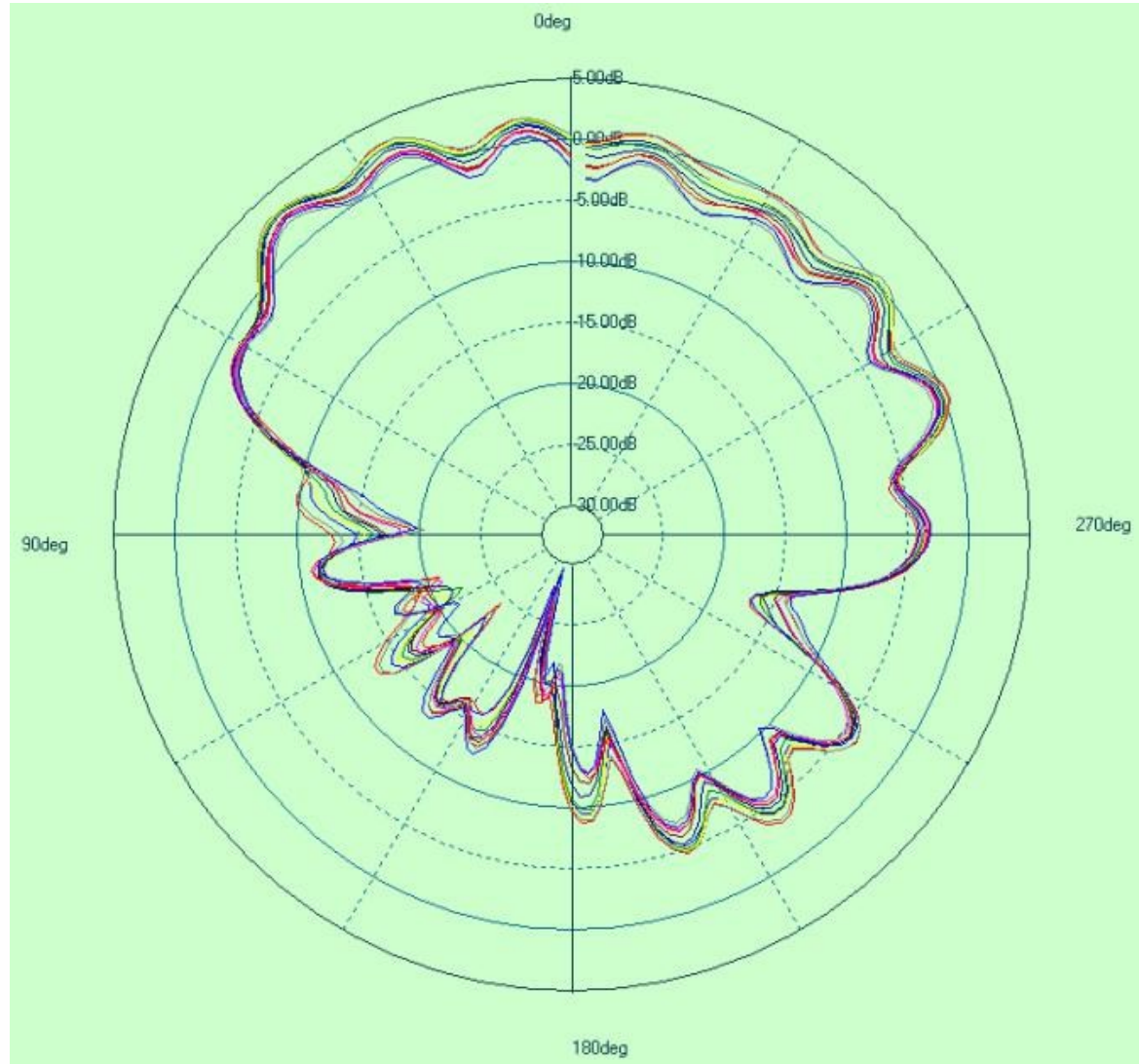


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2.4 G-Efficiency and gain

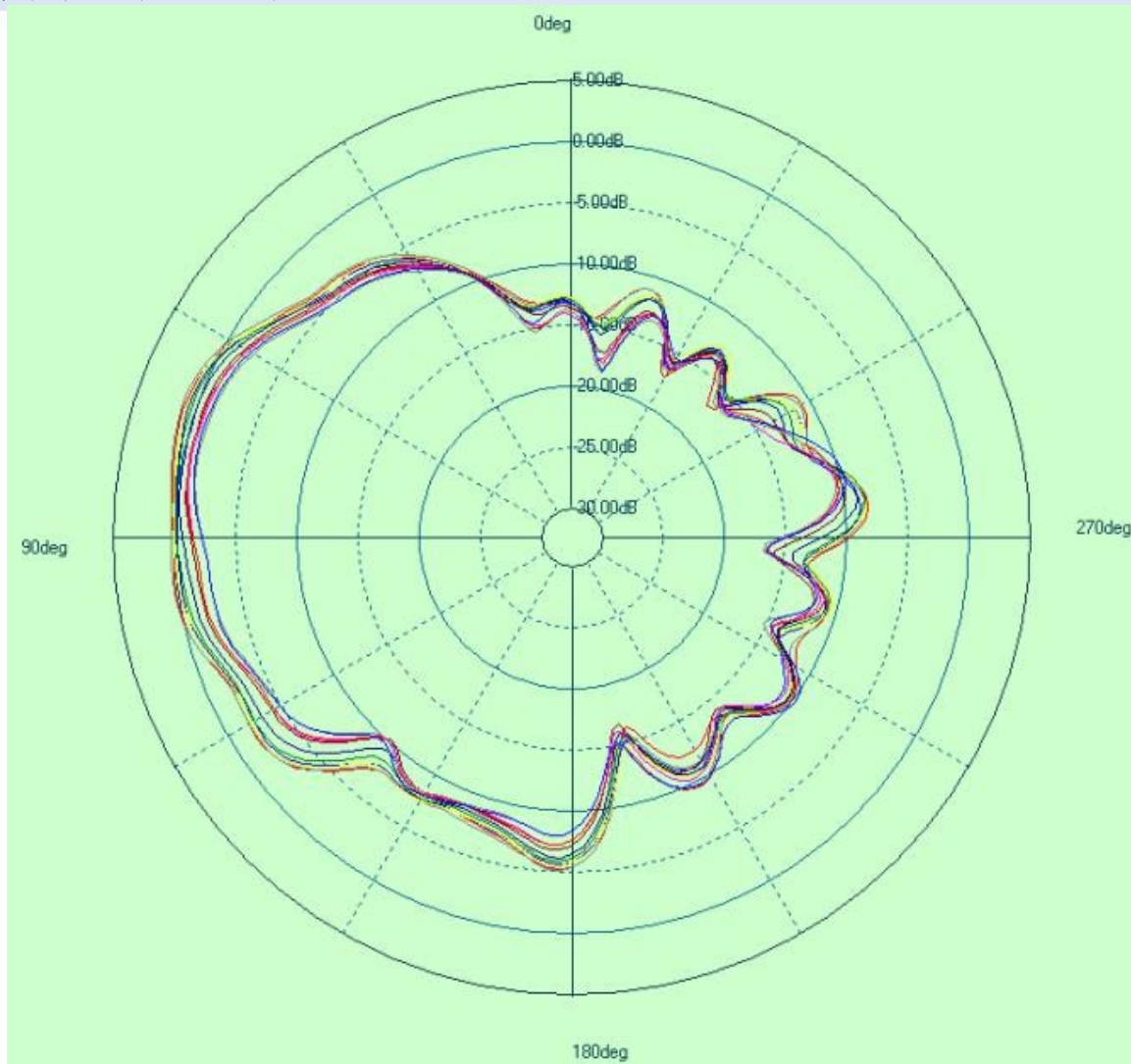
Frequency	Efficiency	Efficiency . dB	Frequency	Gain dBi
2.4E+09	35%	-4.50318	2.4E+09	4.875911
2.41E+09	36%	-4.43977	2.41E+09	4.836384
2.42E+09	32%	-4.93256	2.42E+09	4.367545
2.43E+09	34%	-4.72373	2.43E+09	4.678475
2.44E+09	32%	-5.00055	2.44E+09	4.470123
2.45E+09	30%	-5.29599	2.45E+09	4.20257
2.46E+09	27%	-5.66248	2.46E+09	3.752107
2.47E+09	26%	-5.83784	2.47E+09	3.574628
2.48E+09	27%	-5.70258	2.48E+09	3.735054
2.49E+09	24%	-6.27995	2.49E+09	3.148746
2.5E+09	25%	-6.08726	2.5E+09	3.386077

2.4G-XOYFace (Theta=90deg) Direction chart



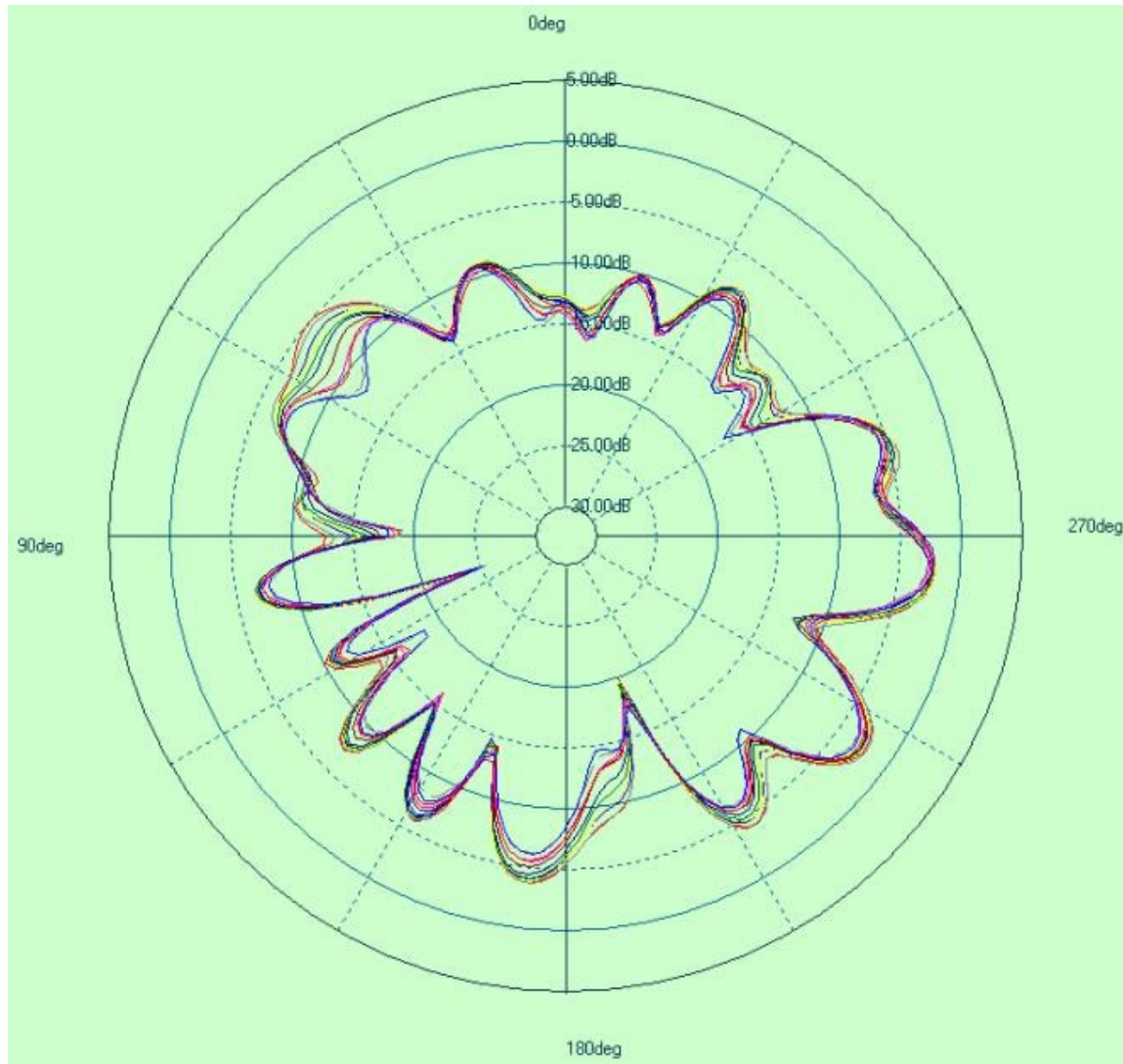
2.4G-XOZFace (Phi=0deg) Direction chart

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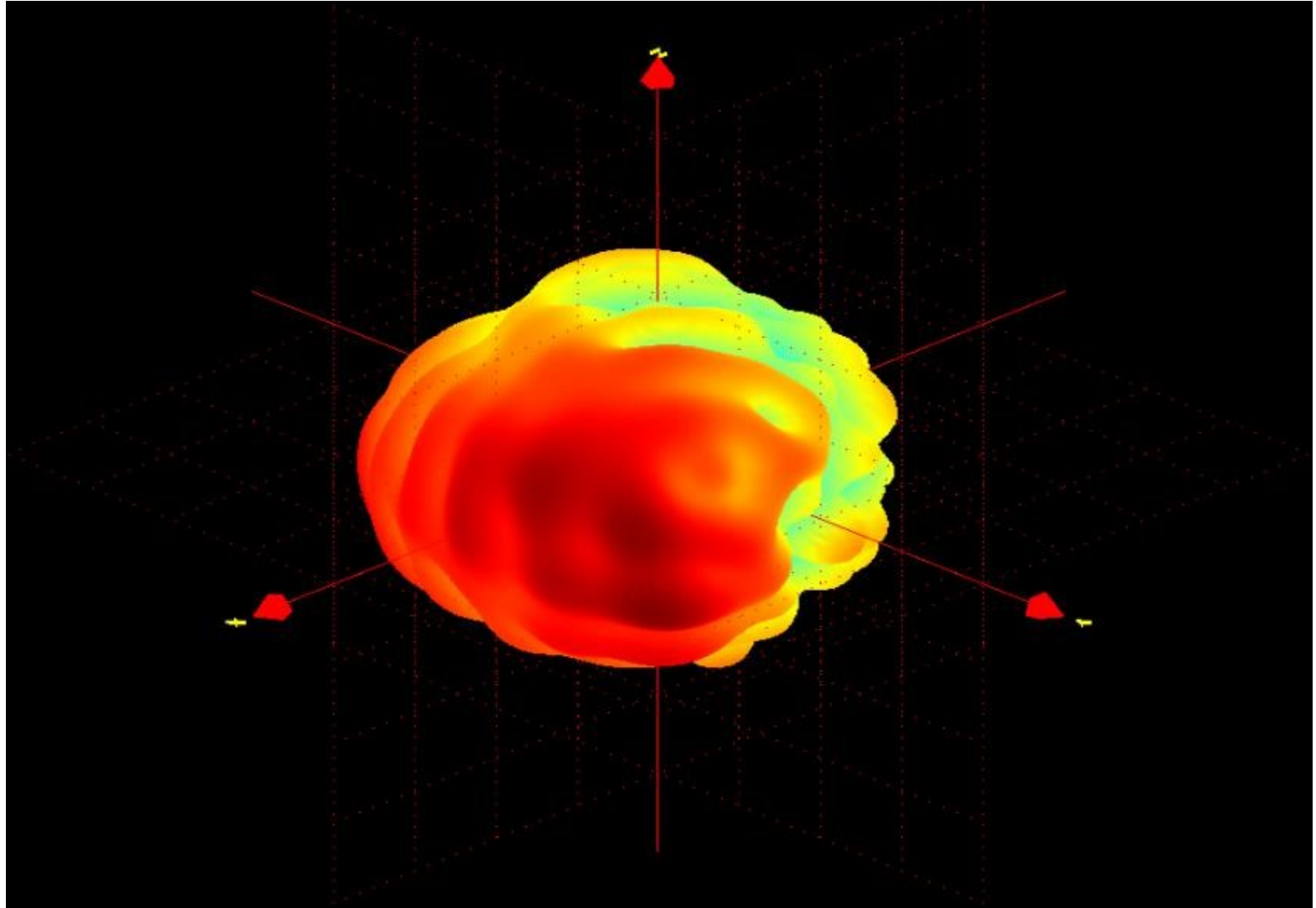
2.4G-YOZFace (Phi=90deg) Direction chart

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2450 MHz-3D Direction map

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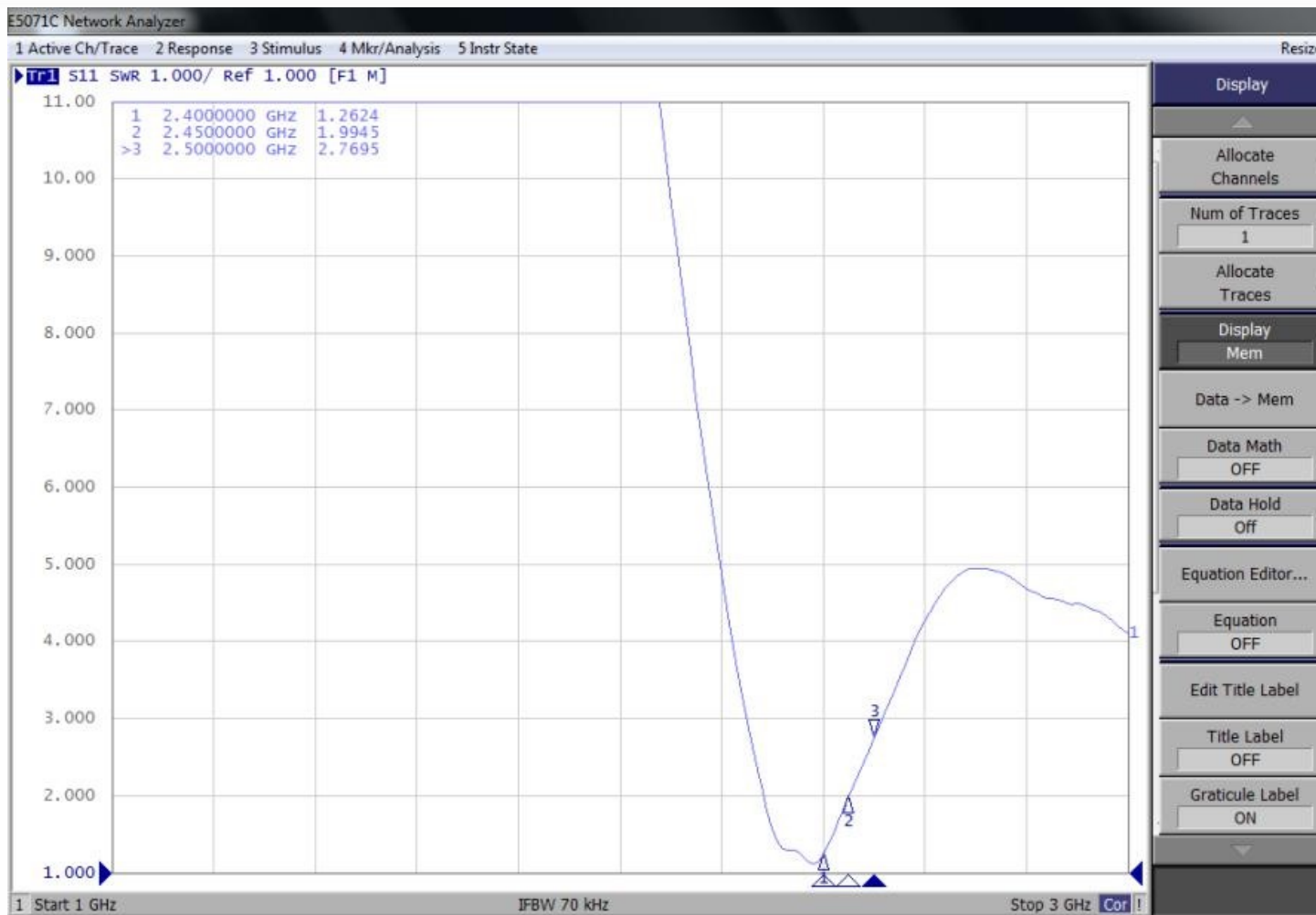




The
screw
hole is
hanging, the height
20 mm
VSWR.

2.4 G	.2.45 G	2.5 G
1.2624	1.9945	2.7695

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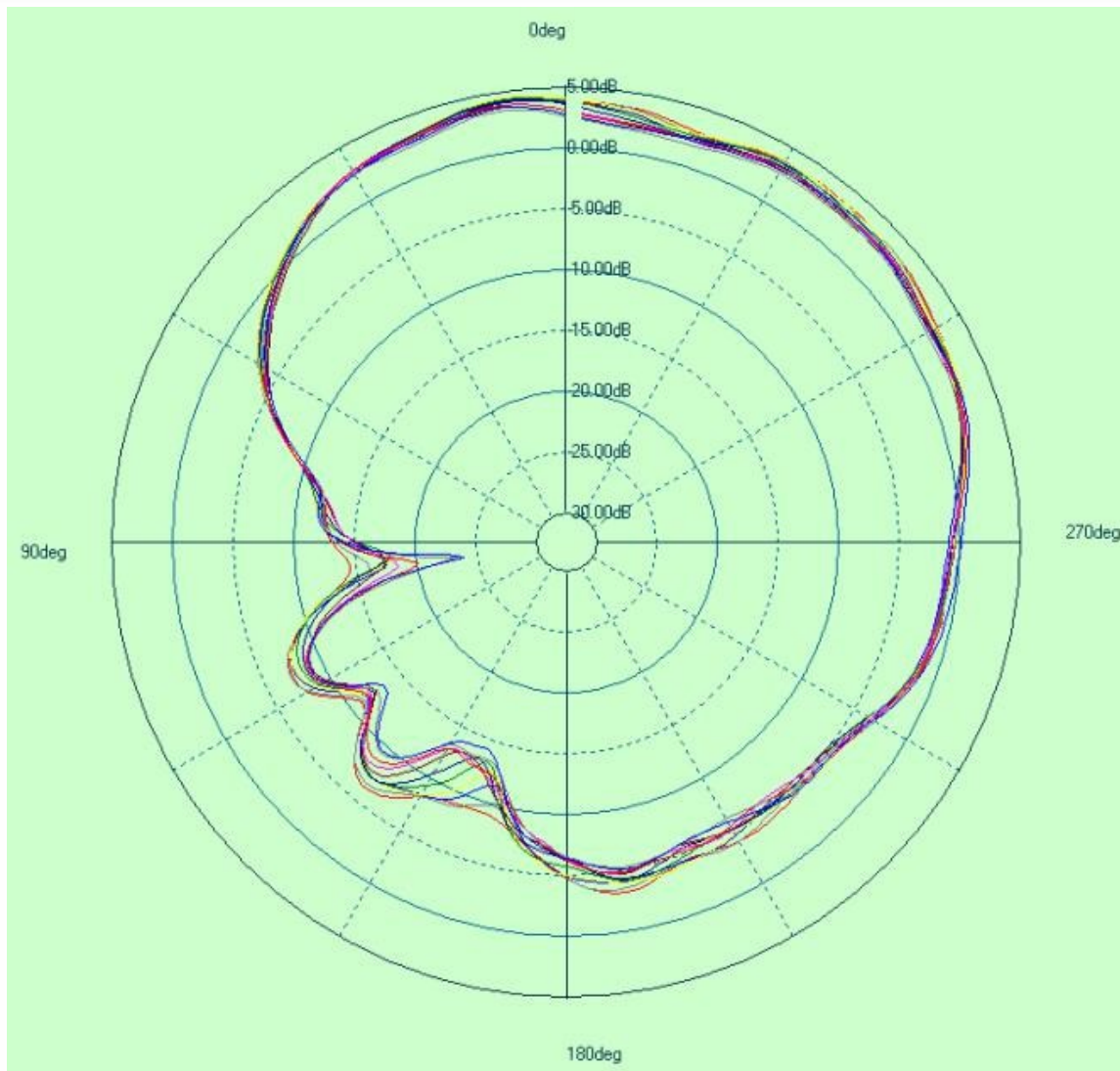


2.4 G-Efficiency and gain

Frequency	Efficiency	Efficiency . dB	Frequency	Gain dBi
2.4E+09	66%	-1.8146	2.4E+09	4.929059
2.41E+09	66%	-1.82863	2.41E+09	4.984383
2.42E+09	62%	-2.0702	2.42E+09	4.761325
2.43E+09	66%	-1.81923	2.43E+09	5.099043
2.44E+09	62%	-2.07025	2.44E+09	5.005863
2.45E+09	60%	-2.21362	2.45E+09	4.850523
2.46E+09	56%	-2.49575	2.46E+09	4.492653
2.47E+09	58%	-2.3957	2.47E+09	4.57682
2.48E+09	59%	-2.31706	2.48E+09	4.620025
2.49E+09	54%	-2.67947	2.49E+09	4.222291
2.5E+09	57%	-2.47129	2.5E+09	4.434236

2.4G-XOYFace (Theta=90deg)

Direction chart



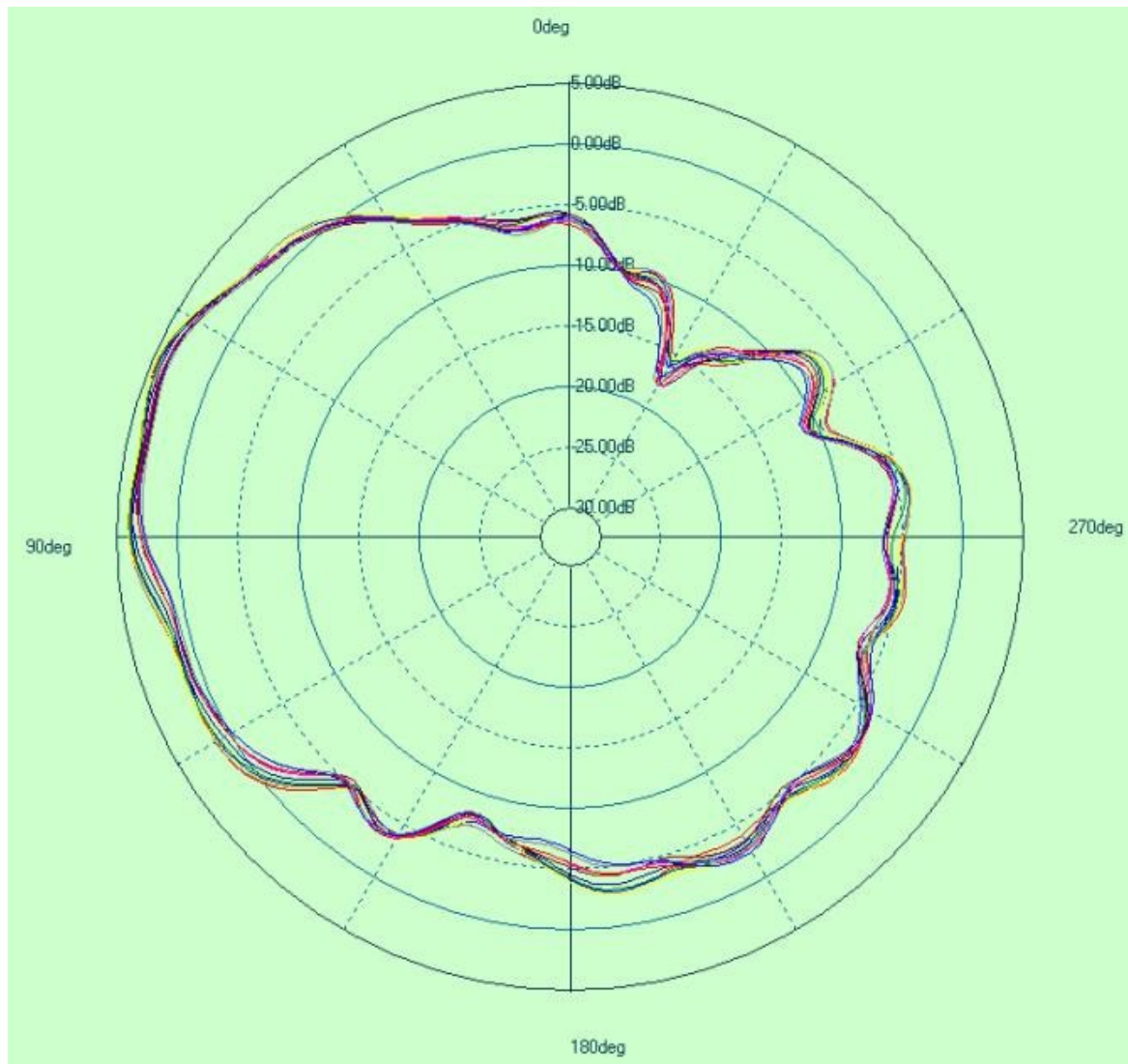
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天线测试数据(天线位置一：螺丝孔悬空)

2.4G-XOZFace (Phi=0deg)

Direction chart

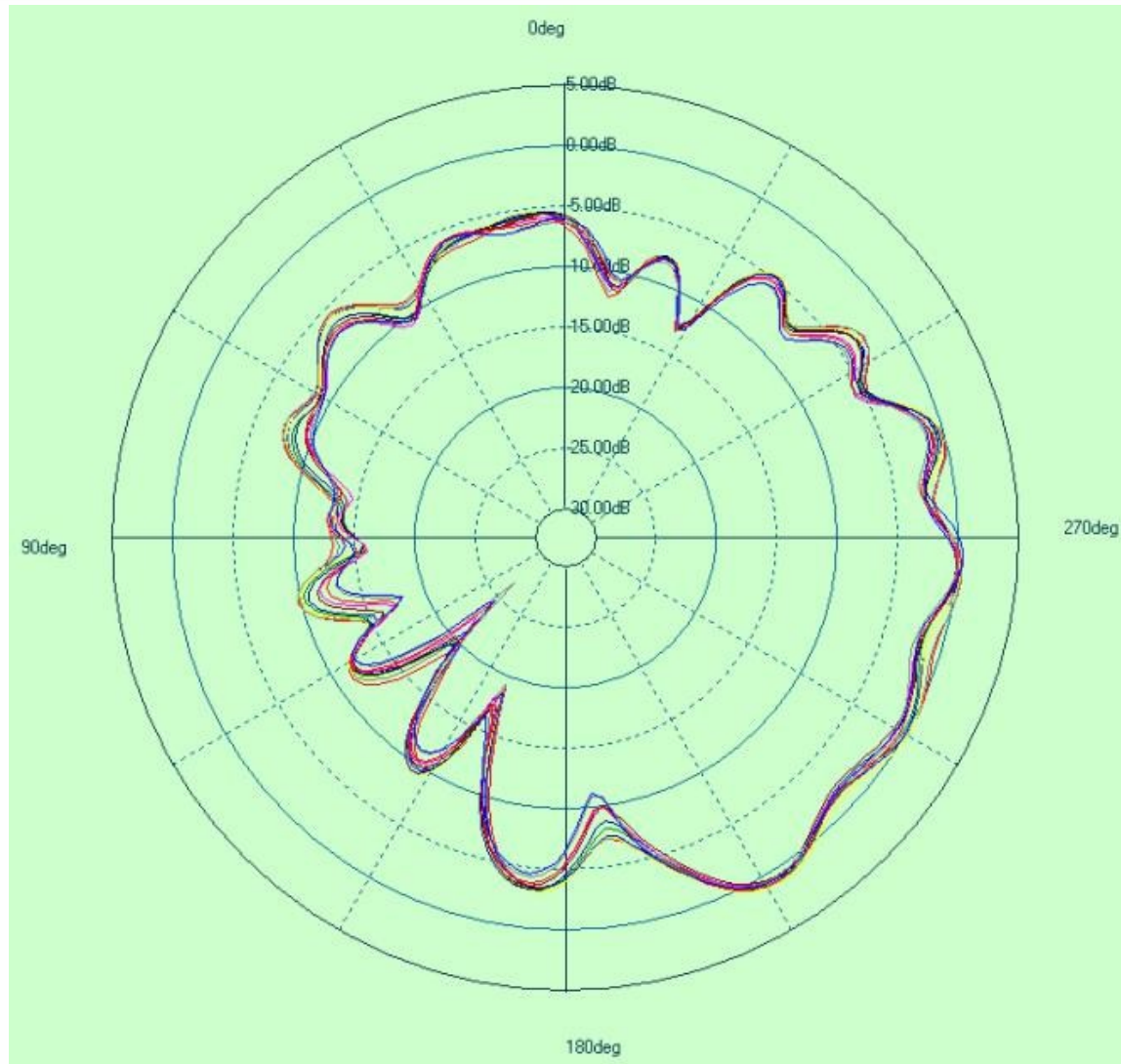




天线测试数据(天线位置一：螺丝孔悬空)

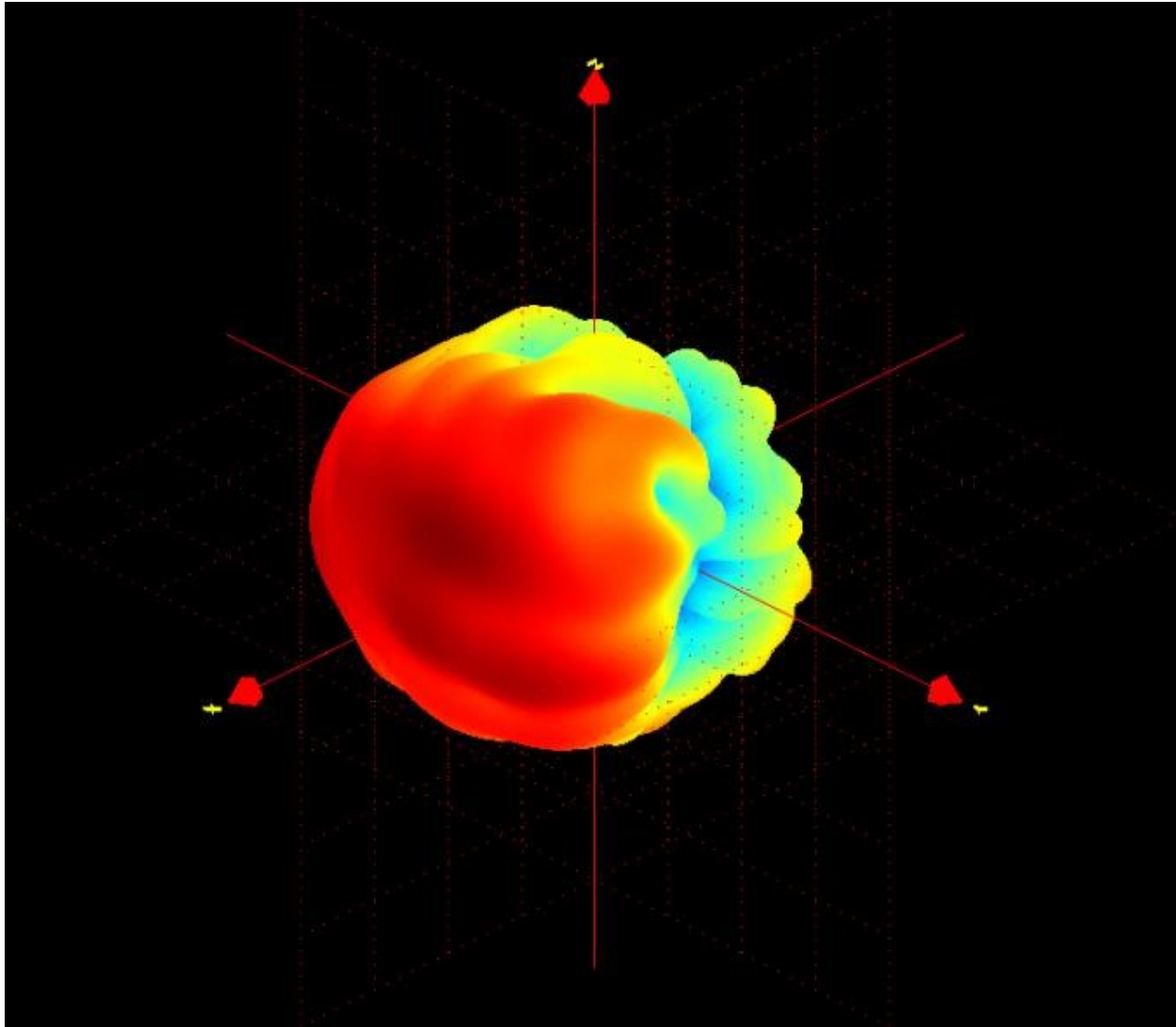
2.4G-YOZFace (Phi=90deg)

Direction chart

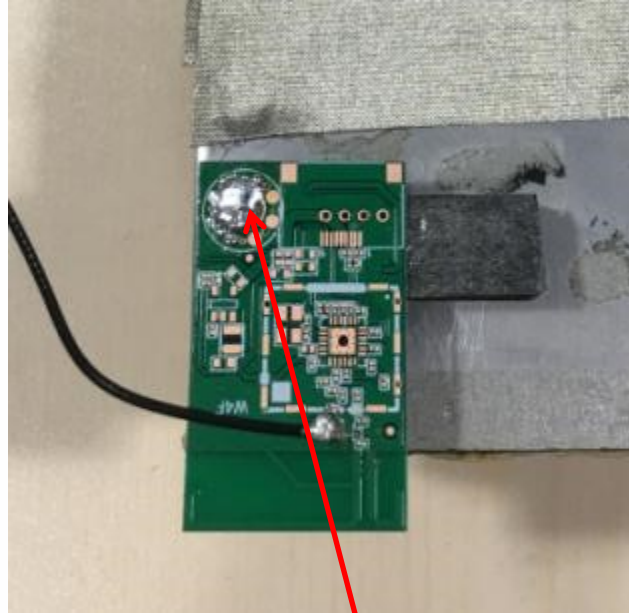


2450 MHz-3D Direction map

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The
screw
hole is

2.4 G	.2.45 G	2.5 G
1.5781	2.2159	3.3262

hanging, the height **10 mm**

VSWR.



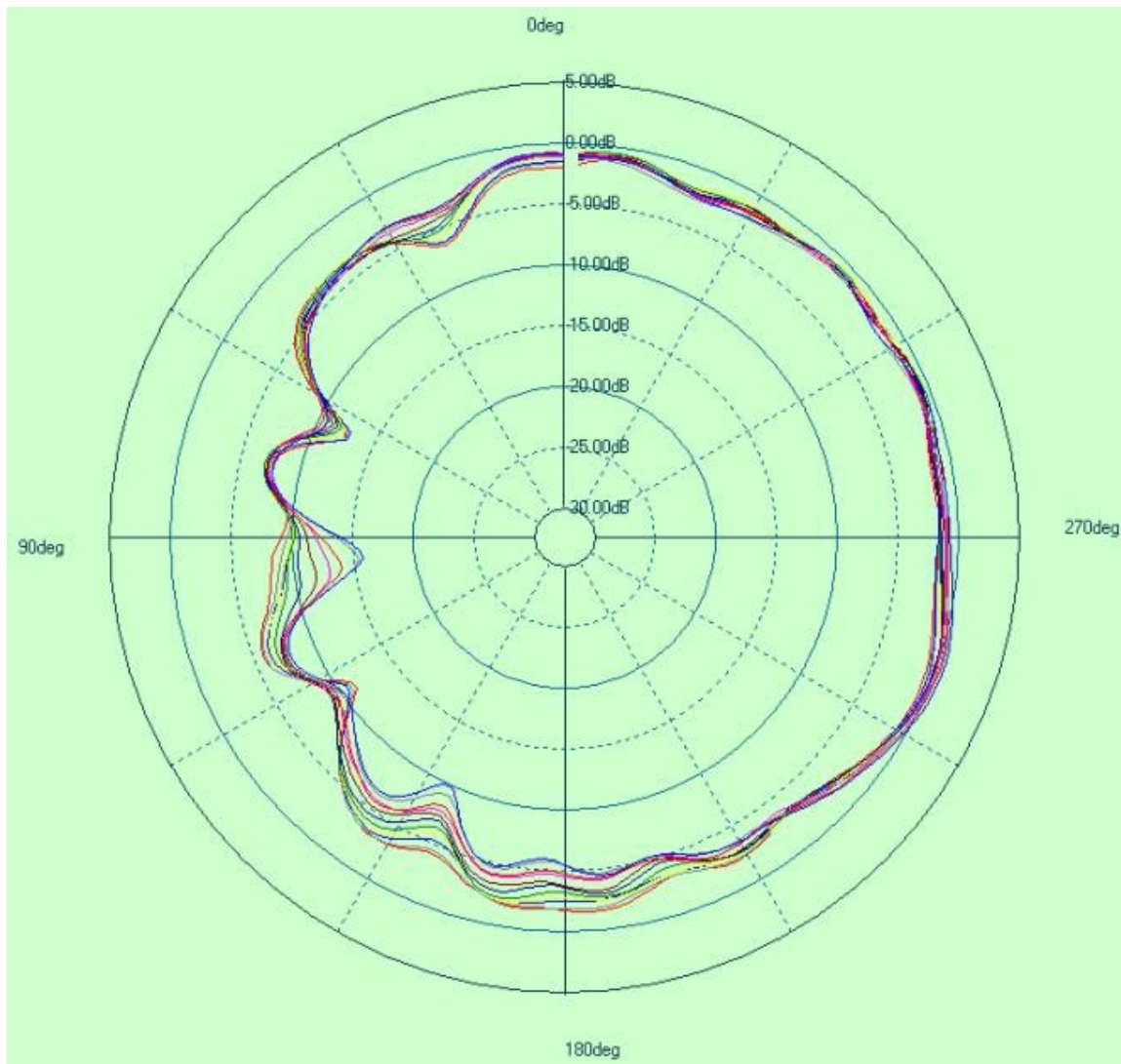
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2.4 G-Efficiency and gain

Frequency	Efficiency	Efficiency . dB	Frequency	Gain dBi
2.4E+09	51%	-2.9603	2.4E+09	3.191825
2.41E+09	52%	-2.83876	2.41E+09	3.014556
2.42E+09	51%	-2.94284	2.42E+09	3.172148
2.43E+09	53%	-2.79355	2.43E+09	3.46337
2.44E+09	51%	-2.90925	2.44E+09	3.502027
2.45E+09	49%	-3.06238	2.45E+09	3.47258
2.46E+09	48%	-3.20358	2.46E+09	3.312029
2.47E+09	47%	-3.30983	2.47E+09	3.286007
2.48E+09	48%	-3.153	2.48E+09	3.447952
2.49E+09	45%	-3.49127	2.49E+09	3.143881
2.5E+09	46%	-3.41574	2.5E+09	3.14445

2.4G-XOYFace (Theta=90deg)

Direction chart

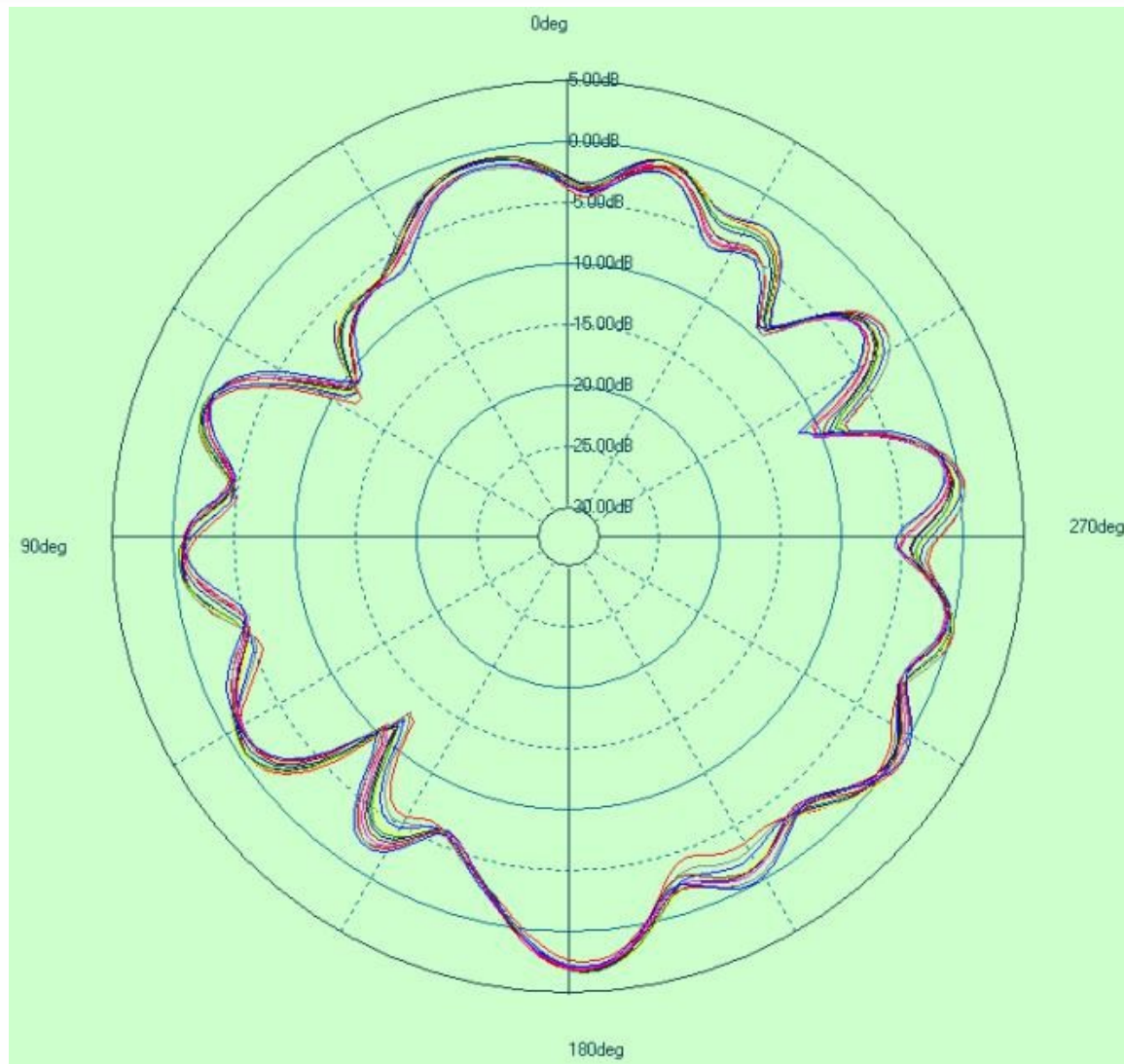


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2.4G-XOZFace (Phi=0deg)

Direction chart

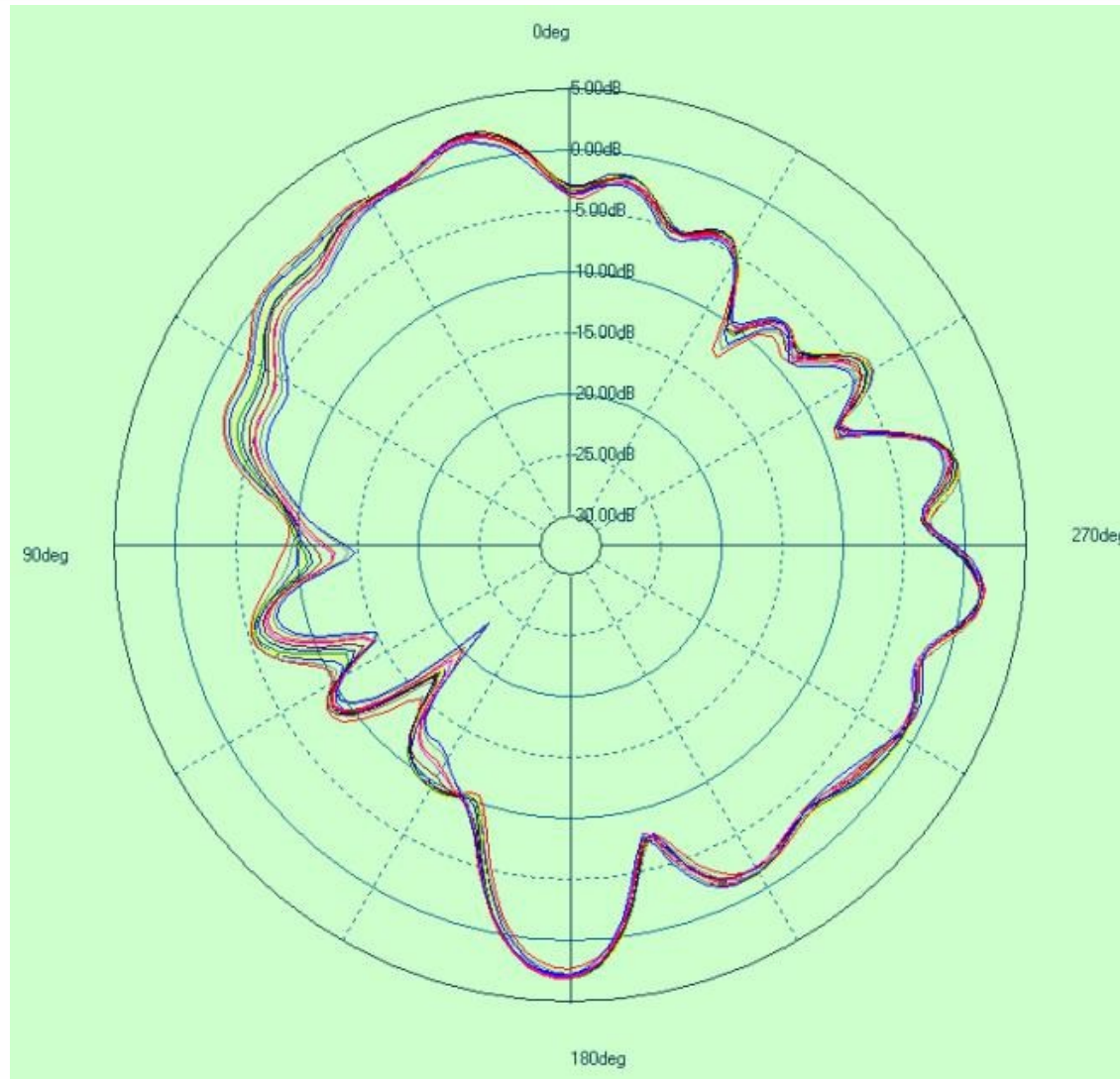


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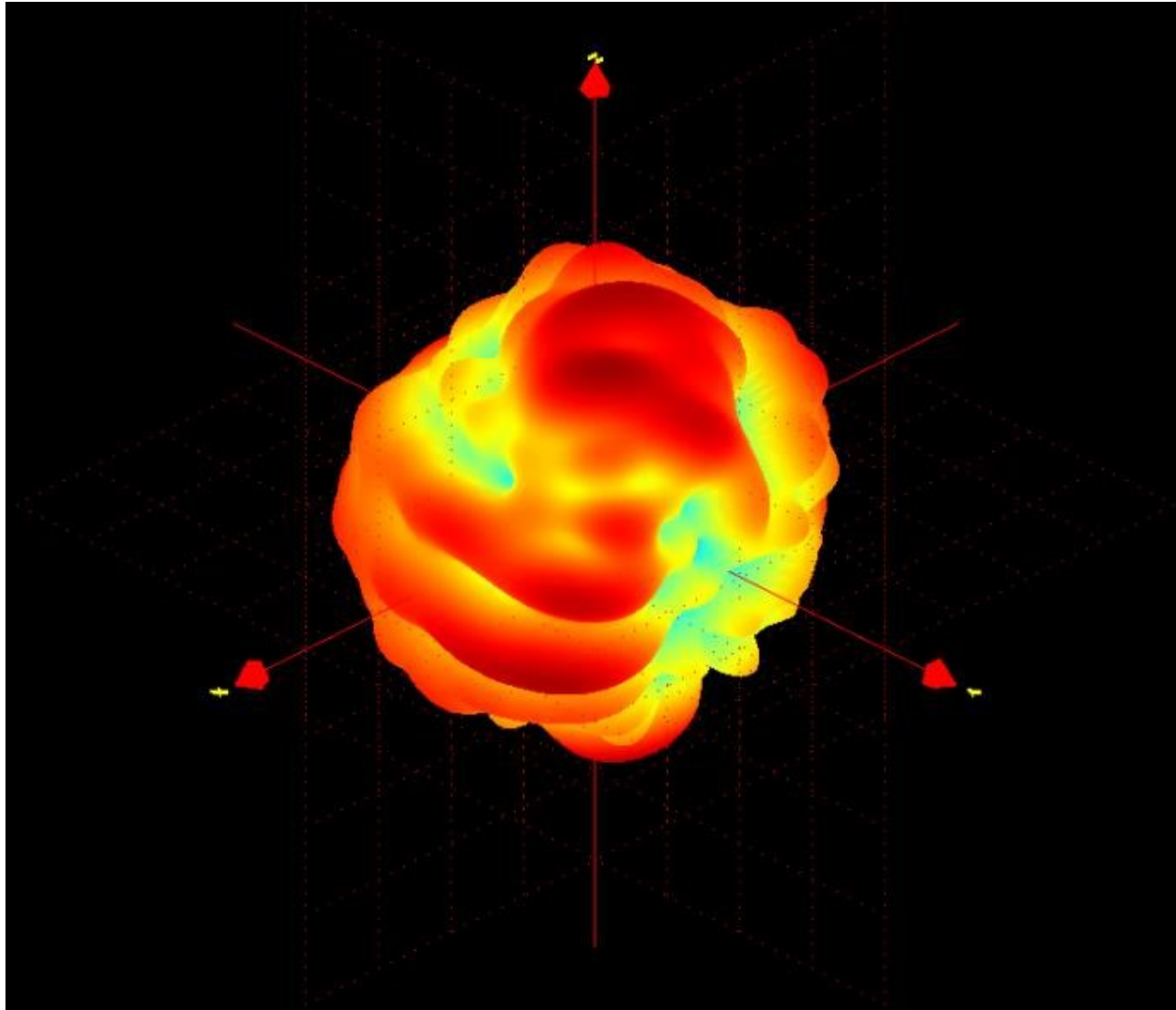
2.4G-YOZFace (Phi=90deg)

Direction chart



2450 MHz-3D Direction map

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