



Antenna Performance Description

Applicant: Xiaomi Communications Co., Ltd

Product description: Mobile Phone

Model Name: 23078PND5G

FCC ID: 2AFZZND5G

Antenne model name: RayZone 2800

Test date: 2023/04/06

Test Engineer	Hu Xiongmin
Signature	<i>Hu Xiongmin</i>



1. Antenna information

Antenna	Pattern	Antenna Type	Manufacturer	Manufacturer Address	Test party of Antenna gain
ANT0	Metal Frame	Fixed Internal Antenna	XIAOMI	Floor 9th, Tower 1, Novel Park, No.4078 Dongbin Road, Nanshan District, Shenzhen.	Shenzhen Xiaomi Communications Co., Ltd.
ANT1	Metal Frame	Fixed Internal Antenna	XIAOMI	Floor 9th, Tower 1, Novel Park, No.4078 Dongbin Road, Nanshan District, Shenzhen.	Shenzhen Xiaomi Communications Co., Ltd.
ANT2	Metal Frame	Fixed Internal Antenna	XIAOMI	Floor 9th, Tower 1, Novel Park, No.4078 Dongbin Road, Nanshan District, Shenzhen.	Shenzhen Xiaomi Communications Co., Ltd.
ANT3	Metal Frame	Fixed Internal Antenna	XIAOMI	Floor 9th, Tower 1, Novel Park, No.4078 Dongbin Road, Nanshan District, Shenzhen.	Shenzhen Xiaomi Communications Co., Ltd.
ANT4	Metal Frame	Fixed Internal Antenna	XIAOMI	Floor 9th, Tower 1, Novel Park, No.4078 Dongbin Road, Nanshan District, Shenzhen.	Shenzhen Xiaomi Communications Co., Ltd.



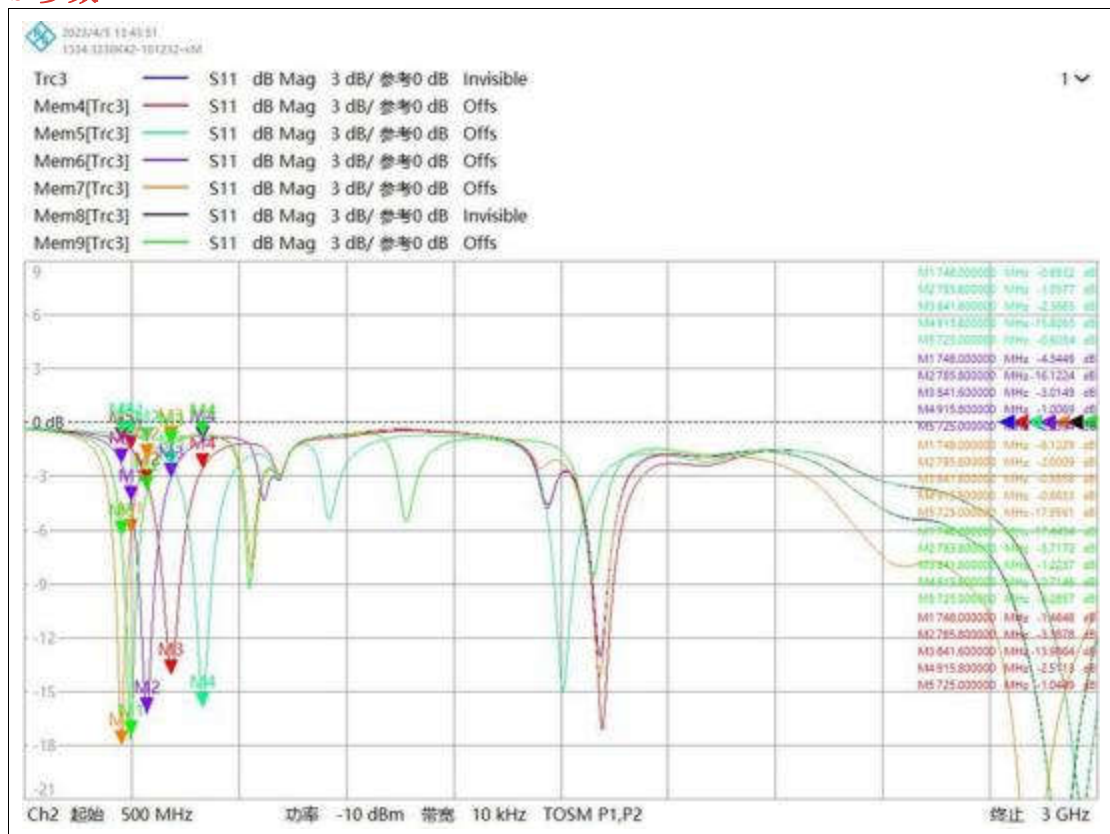
ANT5	Metal Frame	Fixed Internal Antenna	XIAOMI	Floor 9th, Tower 1, Novel Park, No.4078 Dongbin Road, Nanshan District, Shenzhen.	Shenzhen Xiaomi Communications Co., Ltd.
ANT6	Metal Frame	Fixed Internal Antenna	XIAOMI	Floor 9th, Tower 1, Novel Park, No.4078 Dongbin Road, Nanshan District, Shenzhen.	Shenzhen Xiaomi Communications Co., Ltd.
ANT7	FPC	Fixed Internal Antenna	AAC Kai Tai (Shenzhen) Technology Development Co., Ltd.	Block A Nanjing University Research Center Shenzhen Branch, No 6 YueXing 3rd Road.	Shenzhen Xiaomi Communications Co., Ltd.
ANT17	Metal Frame	Fixed Internal Antenna	XIAOMI	Floor 9th, Tower 1, Novel Park, No.4078 Dongbin Road, Nanshan District, Shenzhen.	Shenzhen Xiaomi Communications Co., Ltd.
ANT18	Metal Frame	Fixed Internal Antenna	XIAOMI	Floor 9th, Tower 1, Novel Park, No.4078 Dongbin Road, Nanshan District, Shenzhen.	Shenzhen Xiaomi Communications Co., Ltd.
NFC	FPC	FPC Antenna	Kunshan Innowave Communication Technology Co., Ltd.	Building 4, Zone A, Hong Xin Tai Industrial Park, No.28 Yinying Road, Gaoying Village, Dongguan City	



2. Test data

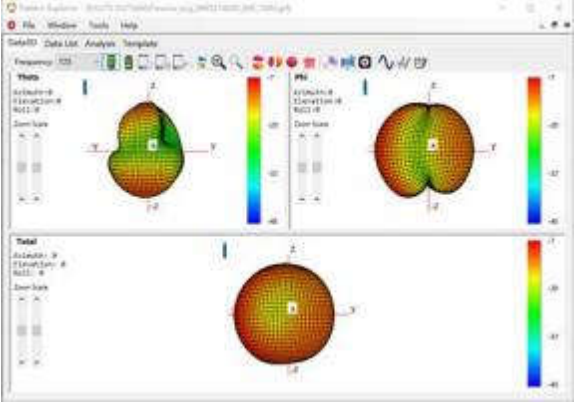
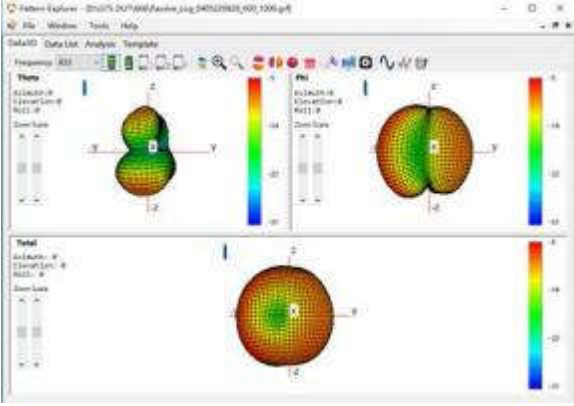
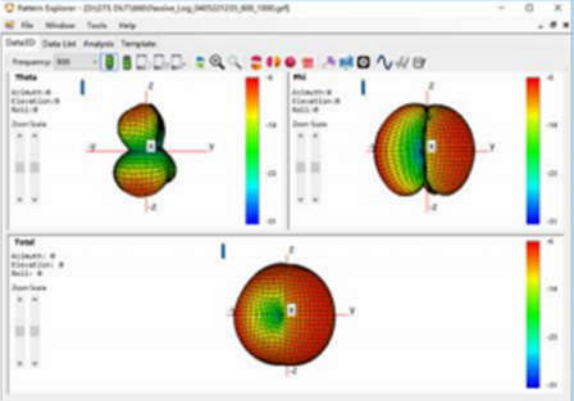
Bands for Antenna 0	LB ANT	
	Avg.Effi.(dB)	Peak gain(dBi)
B28/B12/B13/B17/N28	-10.5	-6.39
B20/N20	-9.4	-5.48
B5/B18/B19/B26/WB5/WB6/WB19/G5/N5	-9.98	-5.48
B8/WB8/G8/N8	-8.56	-5.38
NFC		

S 参数





方向图

Frequency	723MHz
 The image shows a software interface for antenna simulation at 723MHz. It displays three radiation pattern plots: a 3D view of the antenna, a 2D plot of the radiation pattern in the XZ plane, and a 2D plot of the radiation pattern in the YZ plane. The 3D plot shows a spherical antenna with a color-coded radiation pattern. The 2D plots show the radiation pattern in the XZ and YZ planes, with color bars indicating the magnitude of the radiation. The XZ plane plot shows a main lobe pointing along the positive X-axis. The YZ plane plot shows a main lobe pointing along the positive Y-axis. The 3D plot shows a main lobe pointing along the positive X-axis.	
Frequency	835MHz
 The image shows a software interface for antenna simulation at 835MHz. It displays three radiation pattern plots: a 3D view of the antenna, a 2D plot of the radiation pattern in the XZ plane, and a 2D plot of the radiation pattern in the YZ plane. The 3D plot shows a spherical antenna with a color-coded radiation pattern. The 2D plots show the radiation pattern in the XZ and YZ planes, with color bars indicating the magnitude of the radiation. The XZ plane plot shows a main lobe pointing along the positive X-axis. The YZ plane plot shows a main lobe pointing along the positive Y-axis. The 3D plot shows a main lobe pointing along the positive X-axis.	
Frequency	900MHz
 The image shows a software interface for antenna simulation at 900MHz. It displays three radiation pattern plots: a 3D view of the antenna, a 2D plot of the radiation pattern in the XZ plane, and a 2D plot of the radiation pattern in the YZ plane. The 3D plot shows a spherical antenna with a color-coded radiation pattern. The 2D plots show the radiation pattern in the XZ and YZ planes, with color bars indicating the magnitude of the radiation. The XZ plane plot shows a main lobe pointing along the positive X-axis. The YZ plane plot shows a main lobe pointing along the positive Y-axis. The 3D plot shows a main lobe pointing along the positive X-axis.	



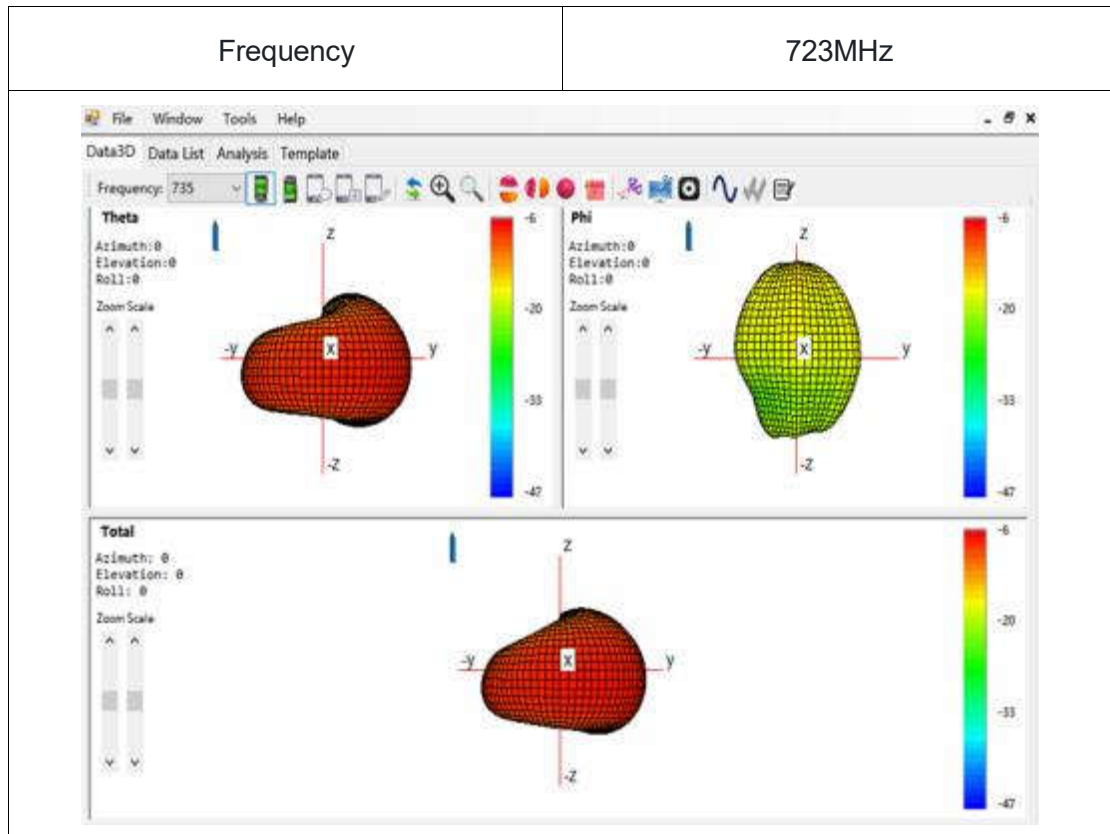
Bands for Antenna 1	LMHB+NR ANT	
	Avg.Effi.(dB)	Peak gain(dBi)
B5/N5/B19/B26/WB5/WB6/WB19/G5	-8.62	-8
B8/N8/WB8/G8	-8	-8.4
B20/N20	-9	-8.6
B28/N28/B12/B13/B17/B18	-8.4	-7.8
B3/N3/G3	-8.8	-5.3
B1/N1/WB1	-8.6	-5
B40/N40	-9	-6.2
B7/N7/B38/N38/B41/N41	-7.8	-4.5
G2/WB2/	-5.8	-6
B4/WB4/B66/N66	-5.3	-6
B42	-5	-7.5
B48	-6.6	-7.5
NR77: (3450~3550MHz) (3700~3980MHz)	-6.2	-7
NR78: (3450~3550MHz) (3700~3800MHz)	-6.2	-7



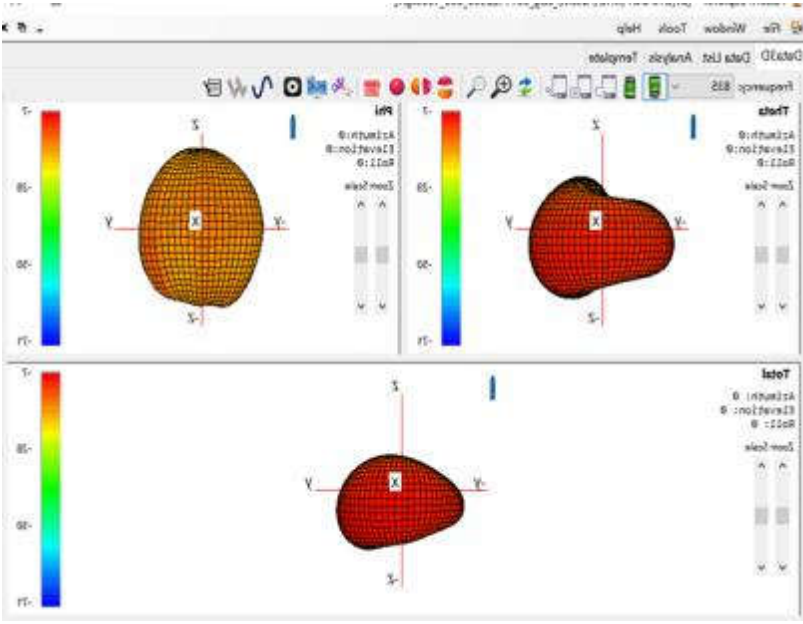
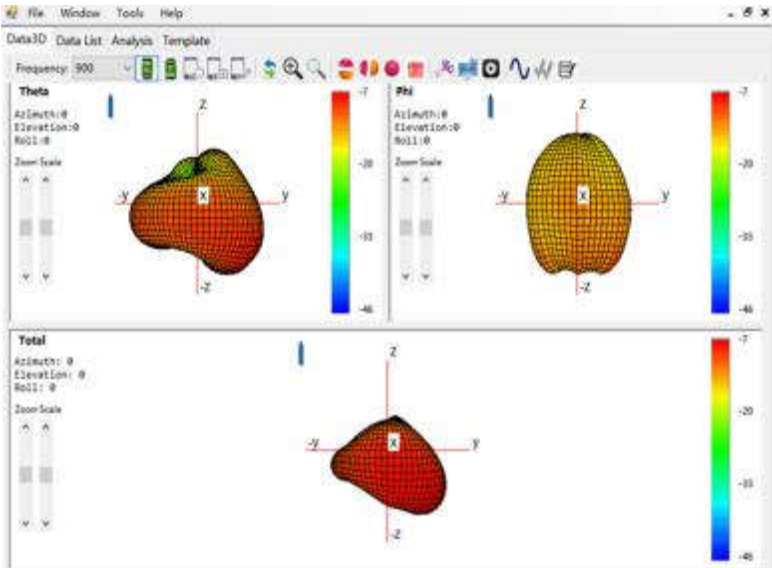
S 参数

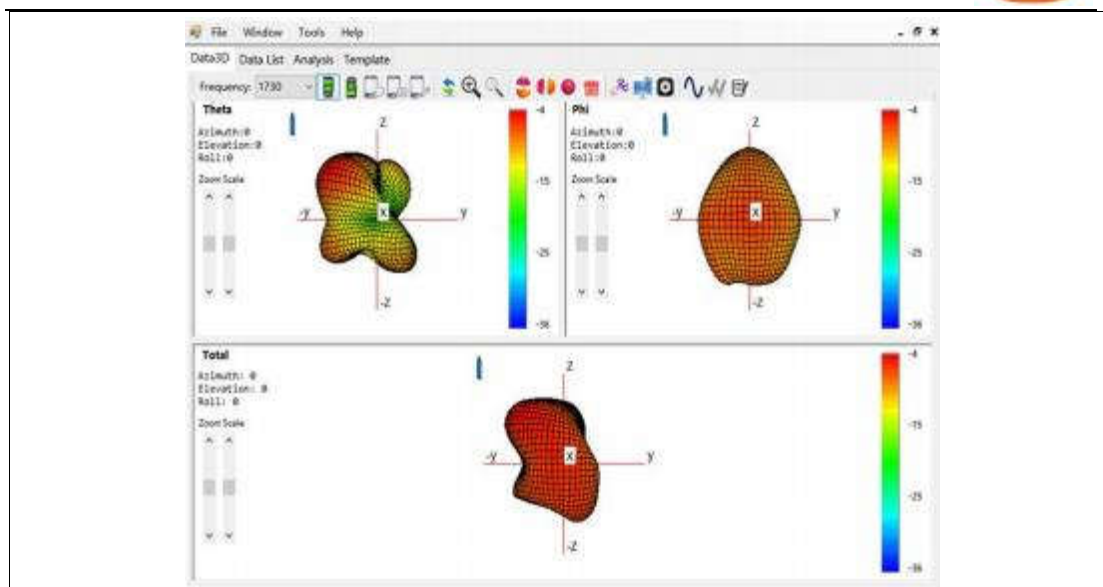


方向图



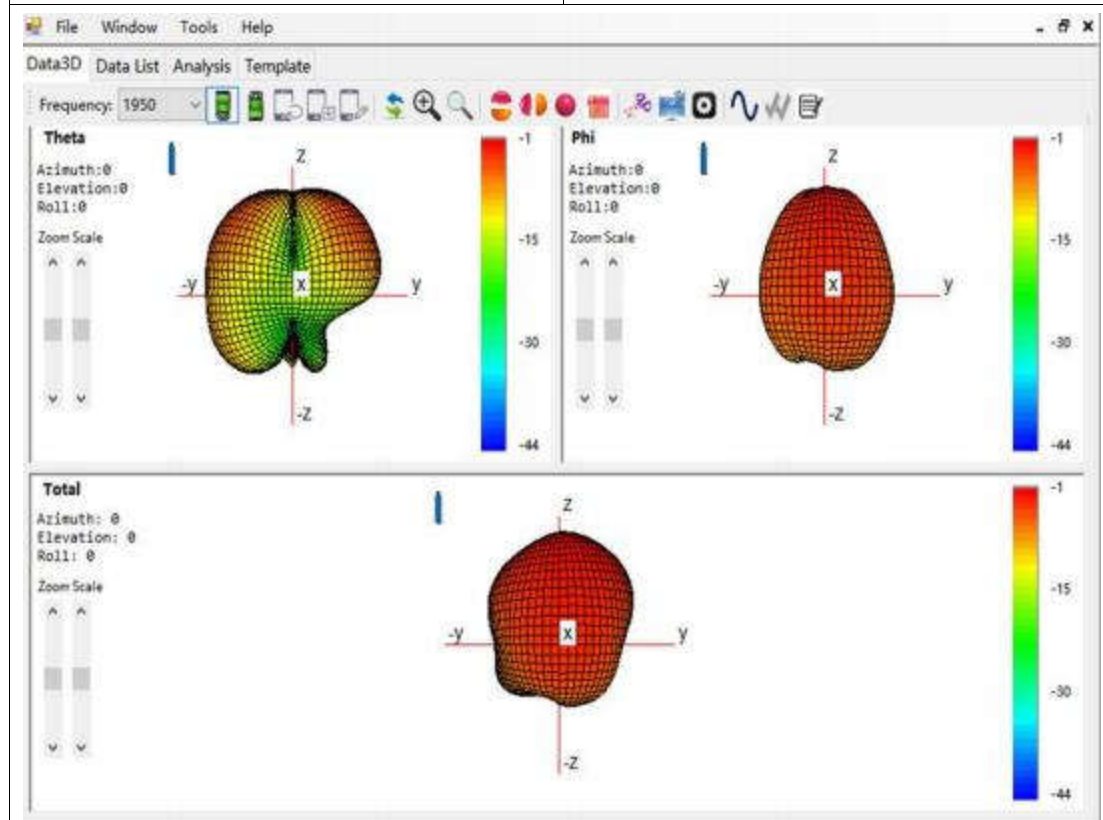


Frequency	835MHz
	
Frequency	900MHz
	
Frequency	1735MHz



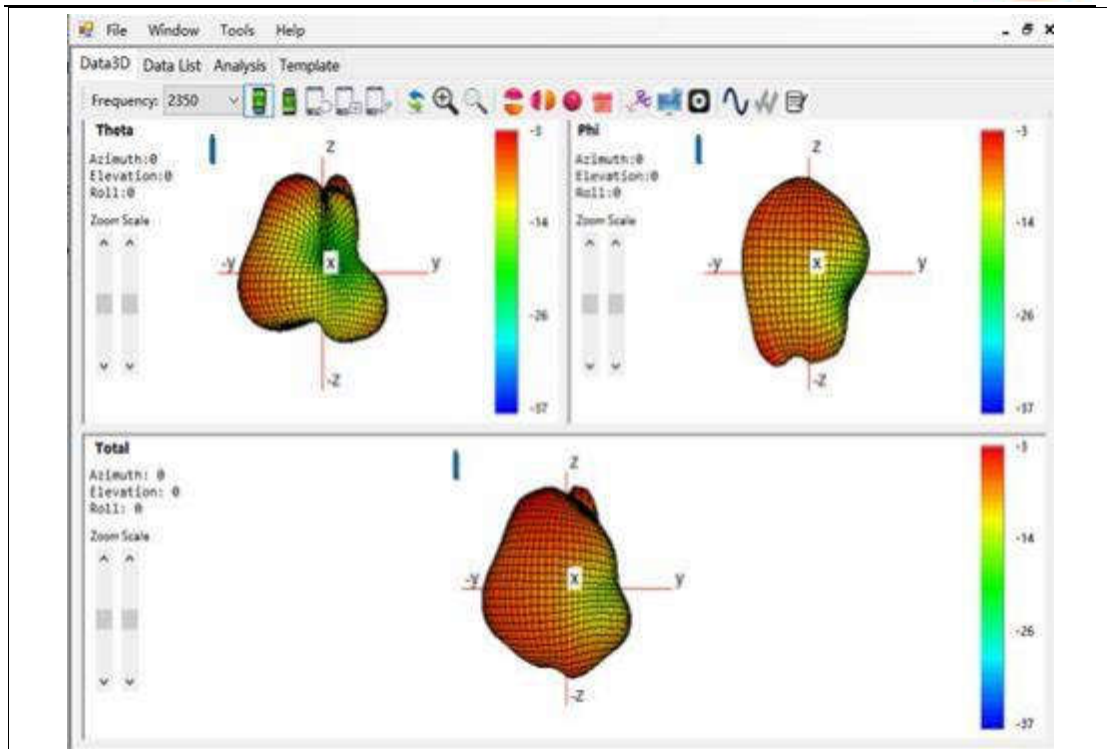
Frequency

1950MHz



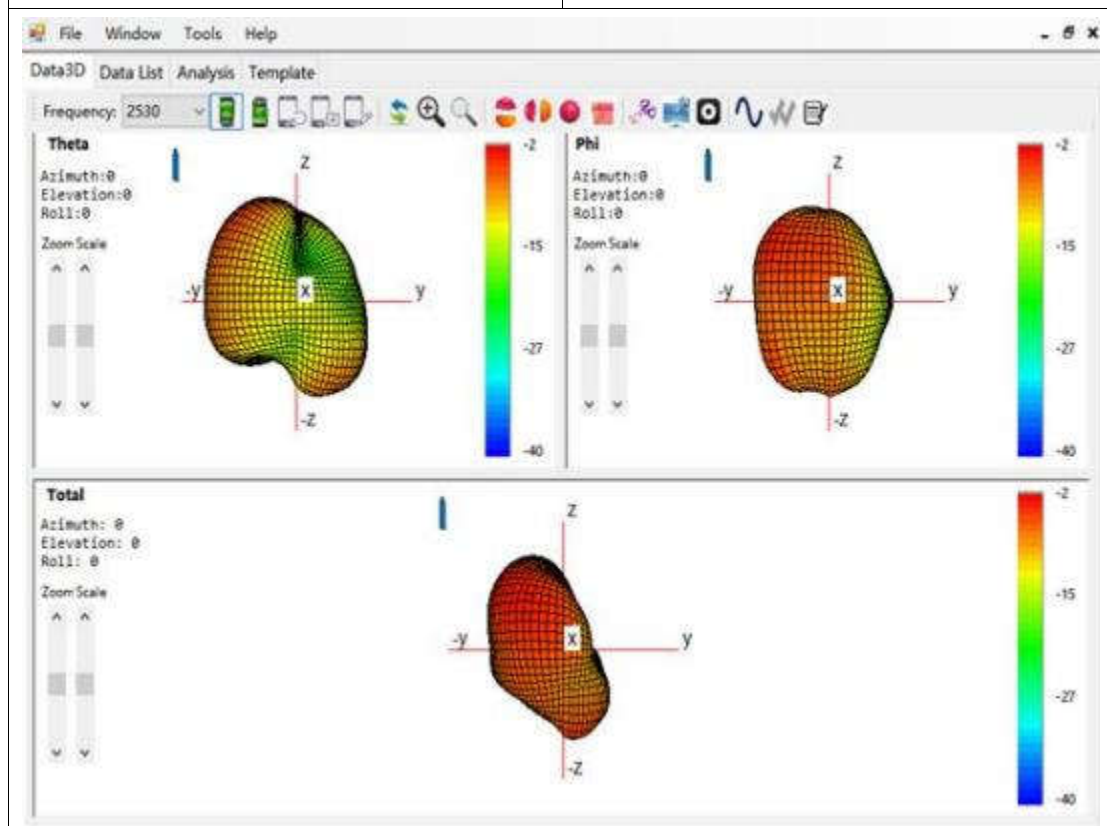
Frequency

2350MHz



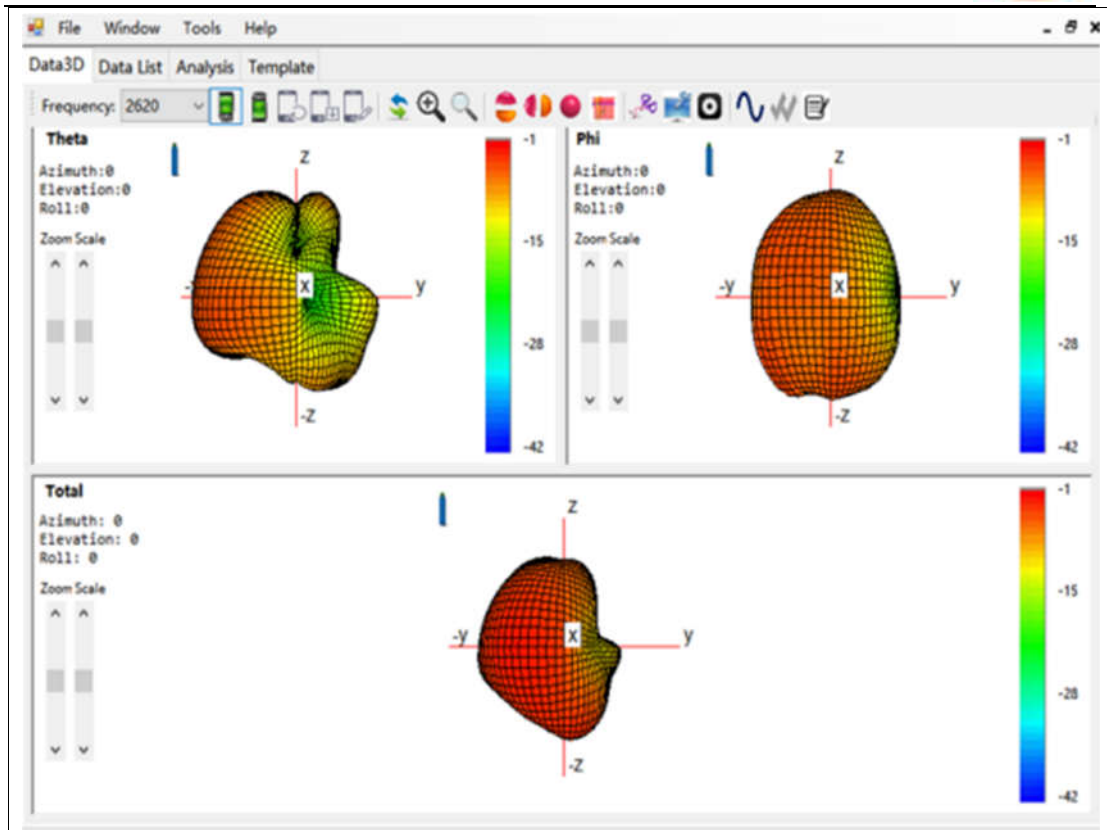
Frequency

2350MHz



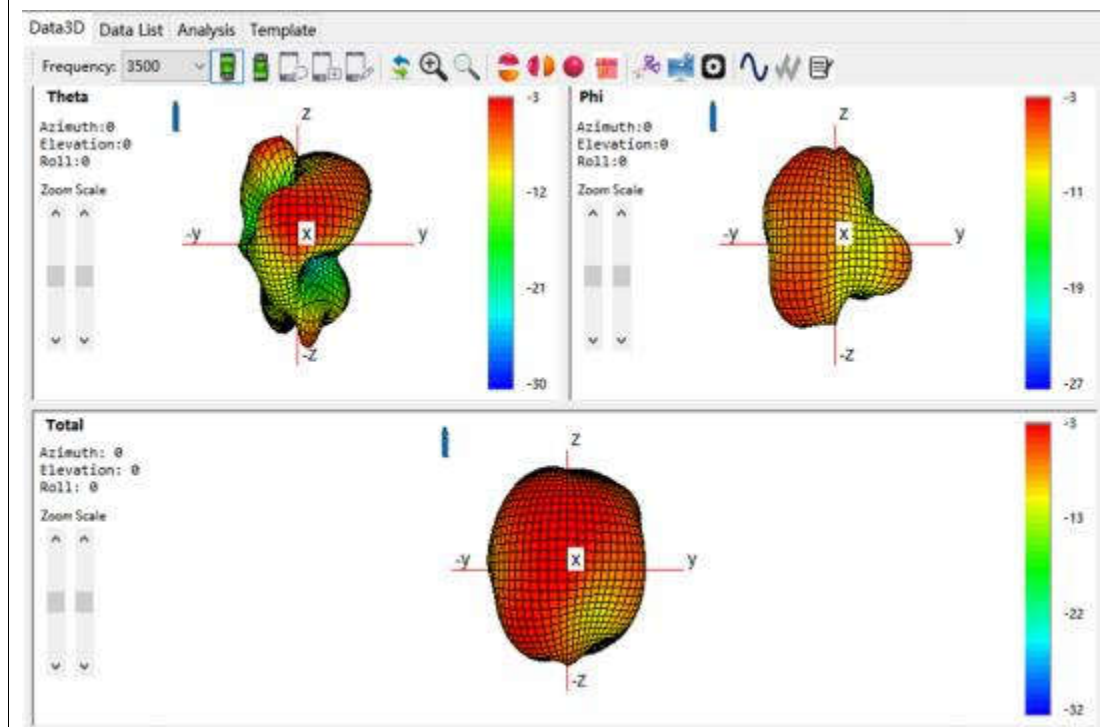
Frequency

2620MHz



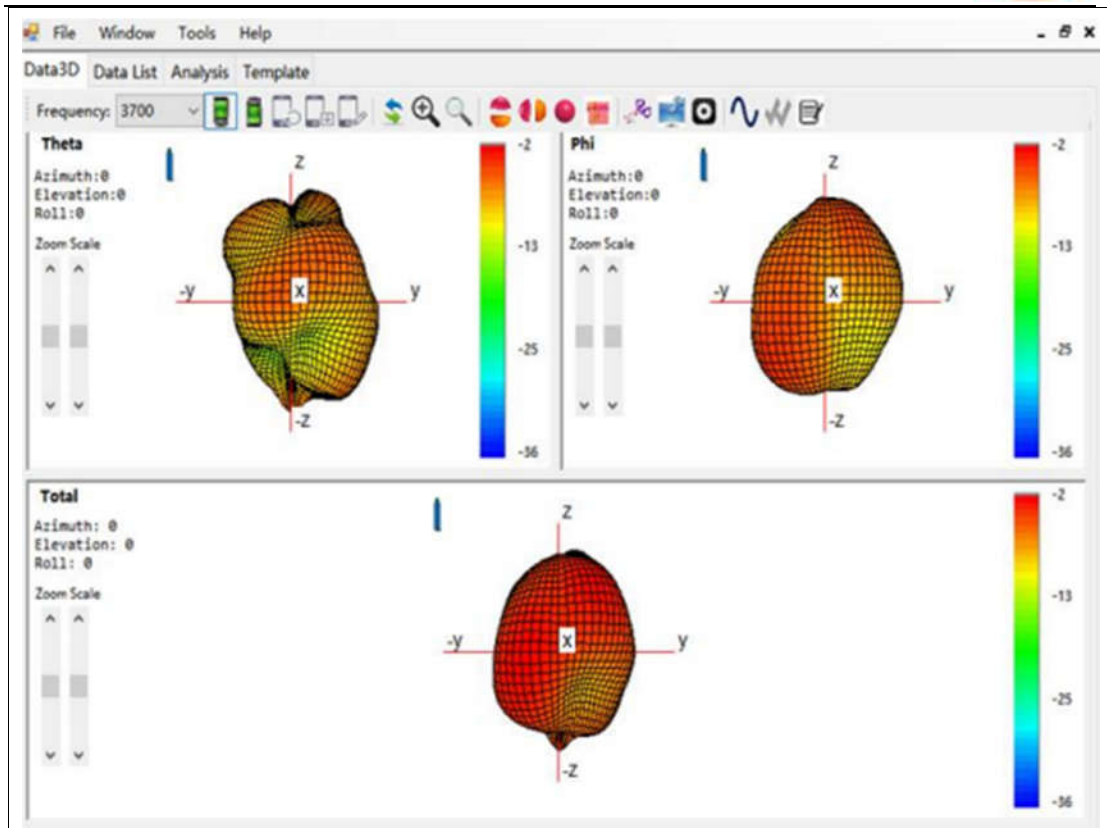
Frequency

3450MHz



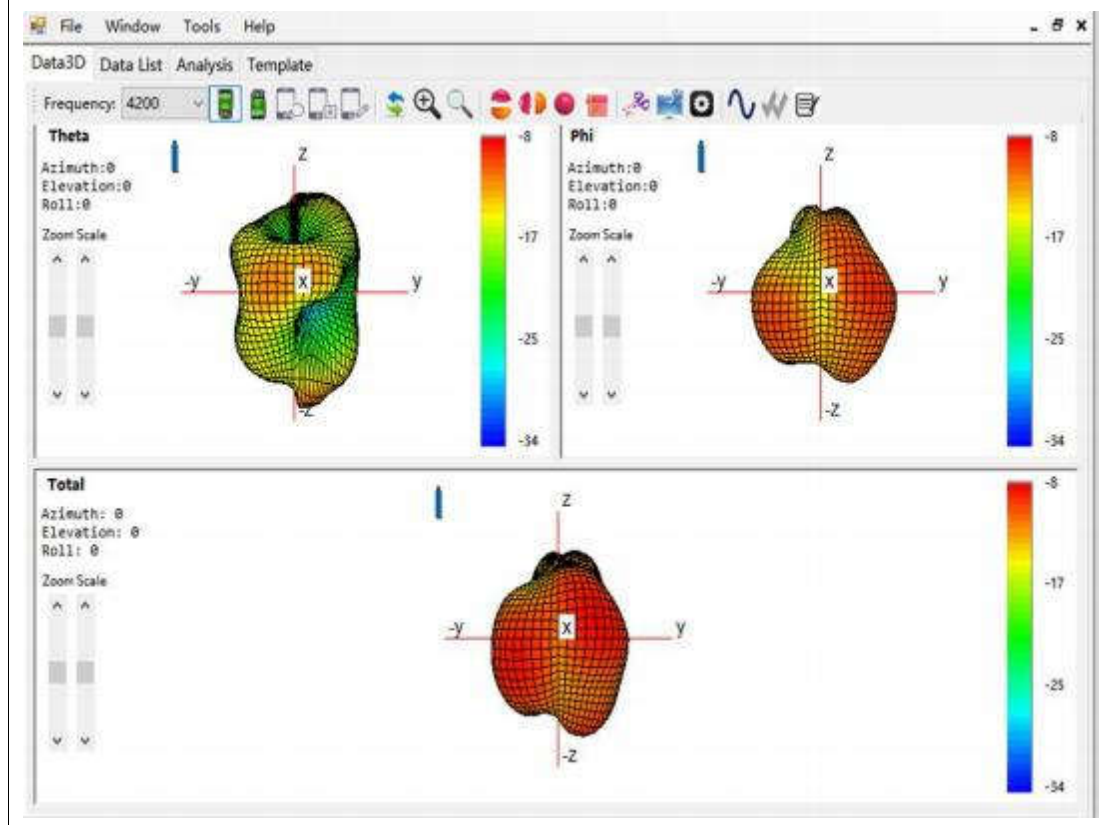
Frequency

3700MHz



Frequency

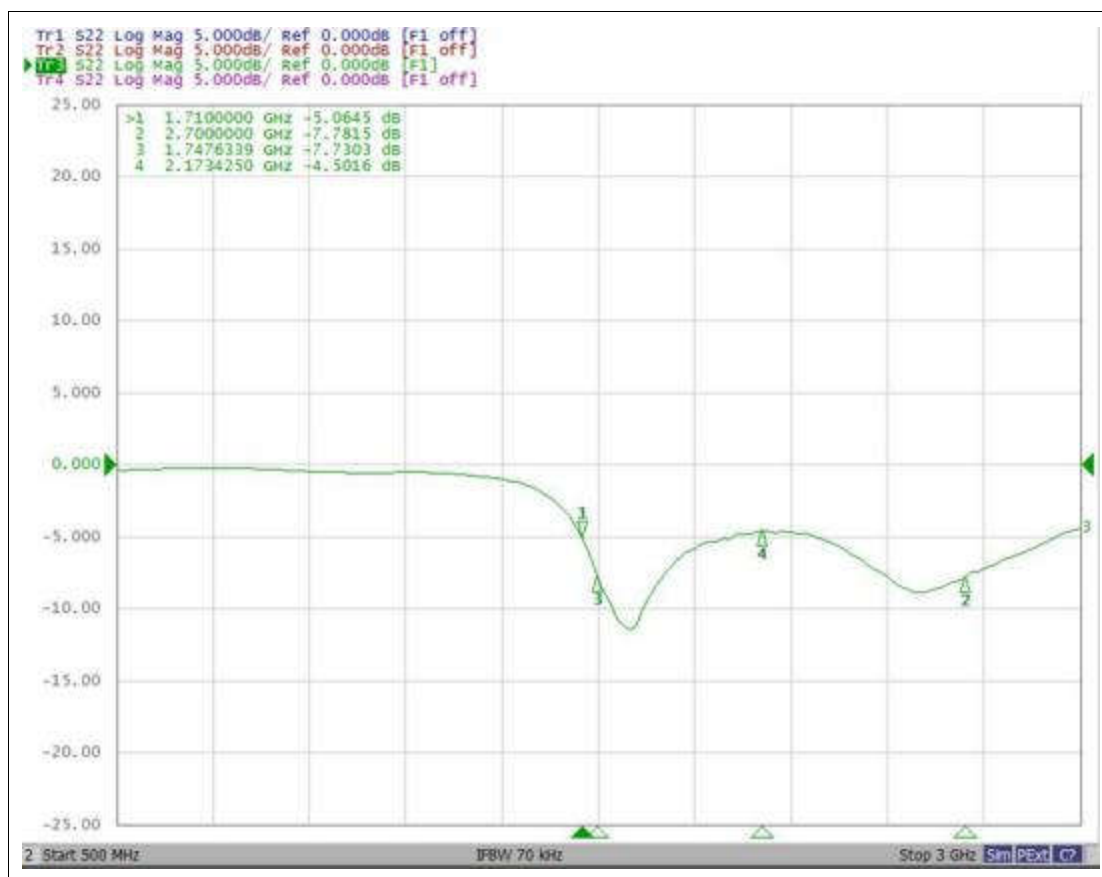
4200MHz





Bands for Antenna 2	MHB ANT	
	Avg.Effi.(dB)	Peak gain(dBi)
B1/N1/WB1	-4.0	-3.4
B2/B25/B39/G2/WB2	-3.5	-3.4
B3/N3/B4/G3/B66/N66/ WB4	-4.2	-3.5
B7/N7/B38/N38/B41/N41	-5.0	-4.7
B40/N40	-5.1	-5.0

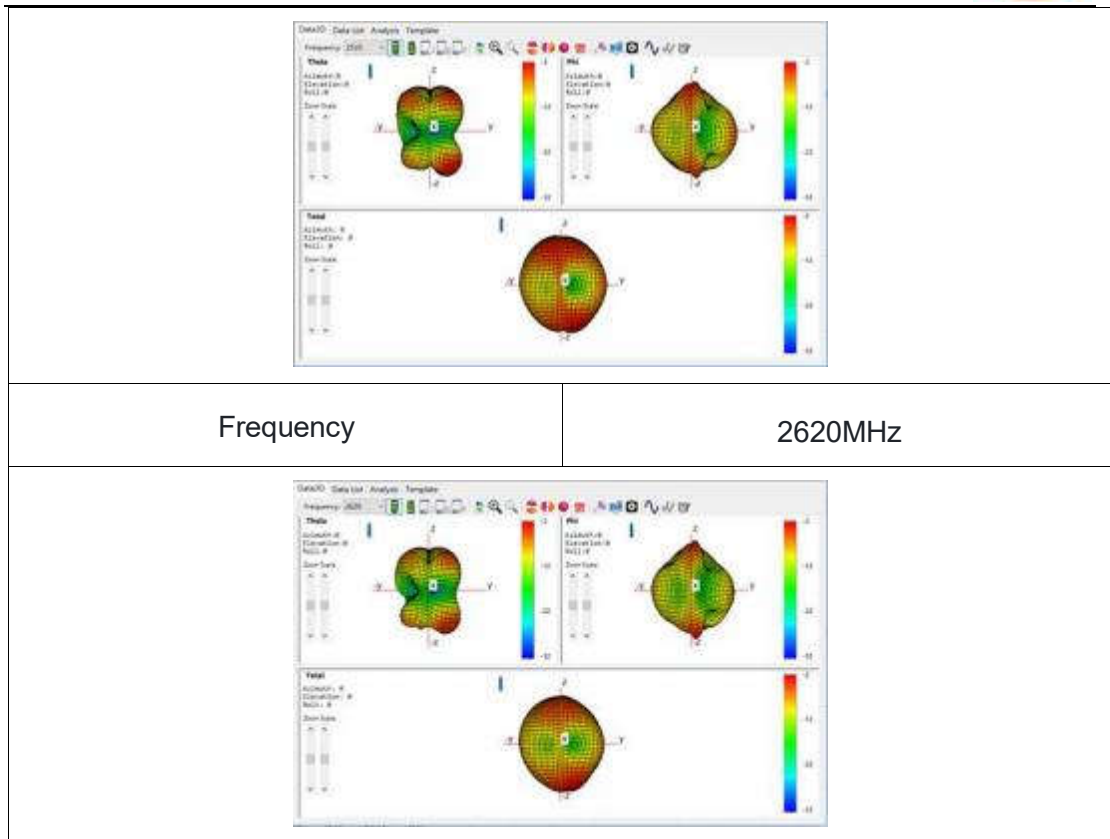
S 参数





方向图

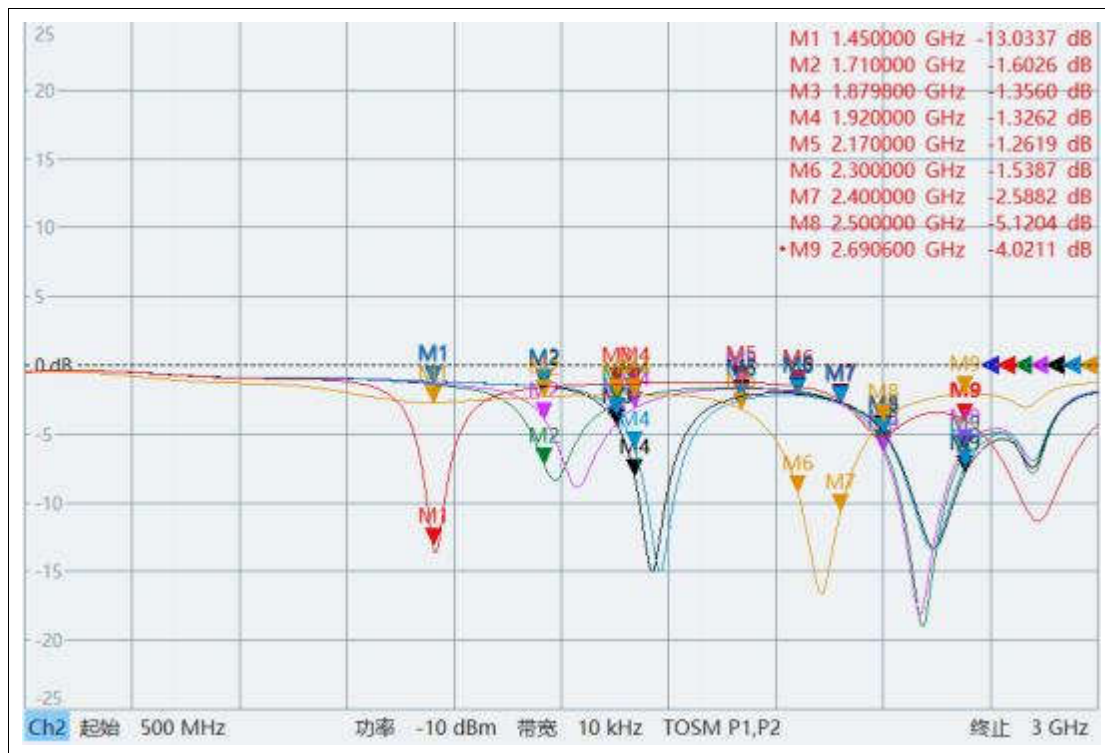
Frequency	1735MHz
Frequency	1950MHz
Frequency	2350MHz
Frequency	2535MHz





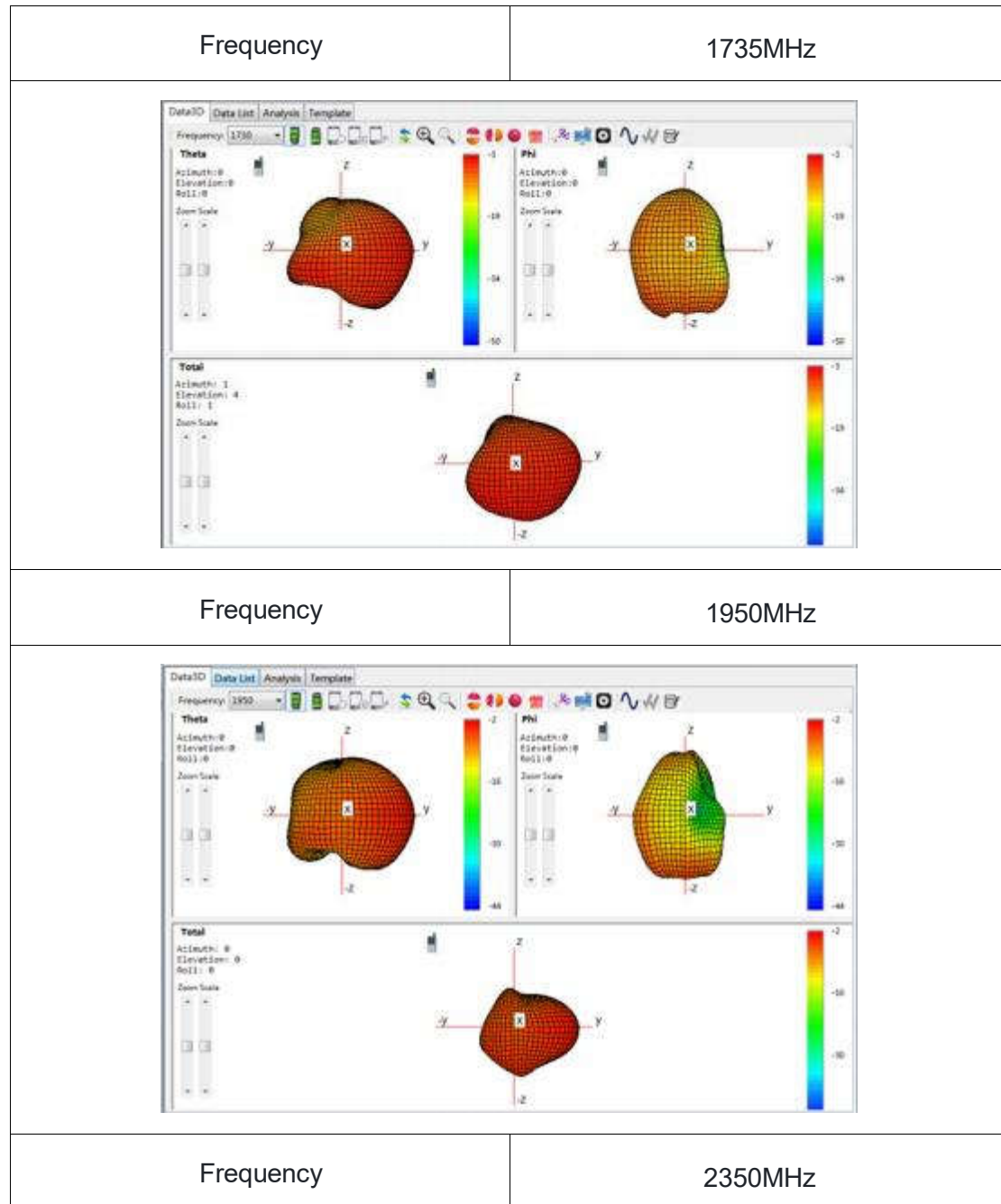
Band for Antenna 3	MHB ANT	
	Avg.Effi.(dB)	Peak gain(dBi)
WB1/B1/N1	-6.9	-6.2
B4/B66/N66	-10.3	-7
B3/N3	-7.1	-6.3
B40/N40	-6.2	-5.5
B7/N7/B41/N41/B38/N38	-7	-6.2

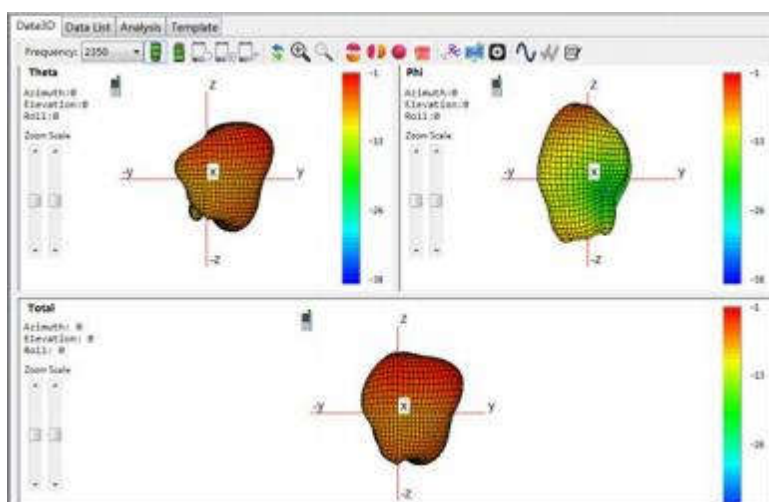
S 参数





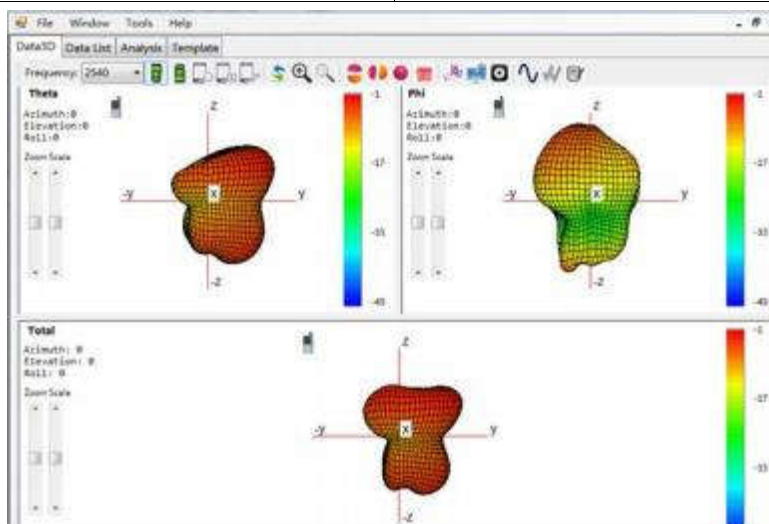
方向图





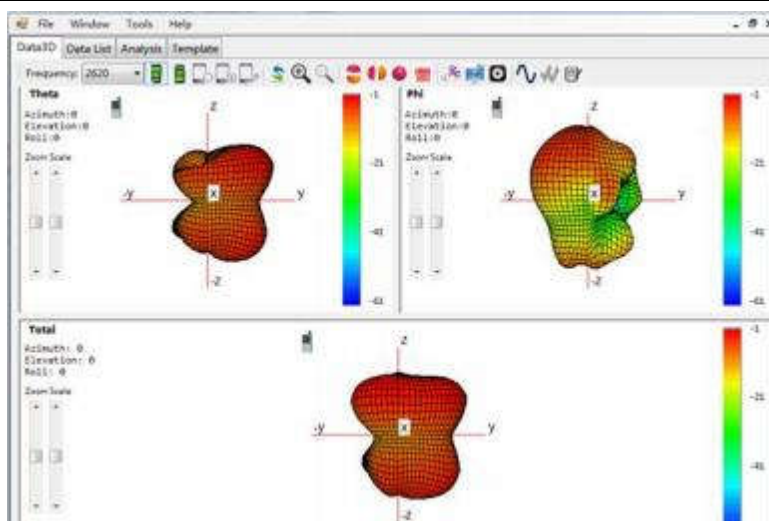
Frequency

2535MHz



Frequency

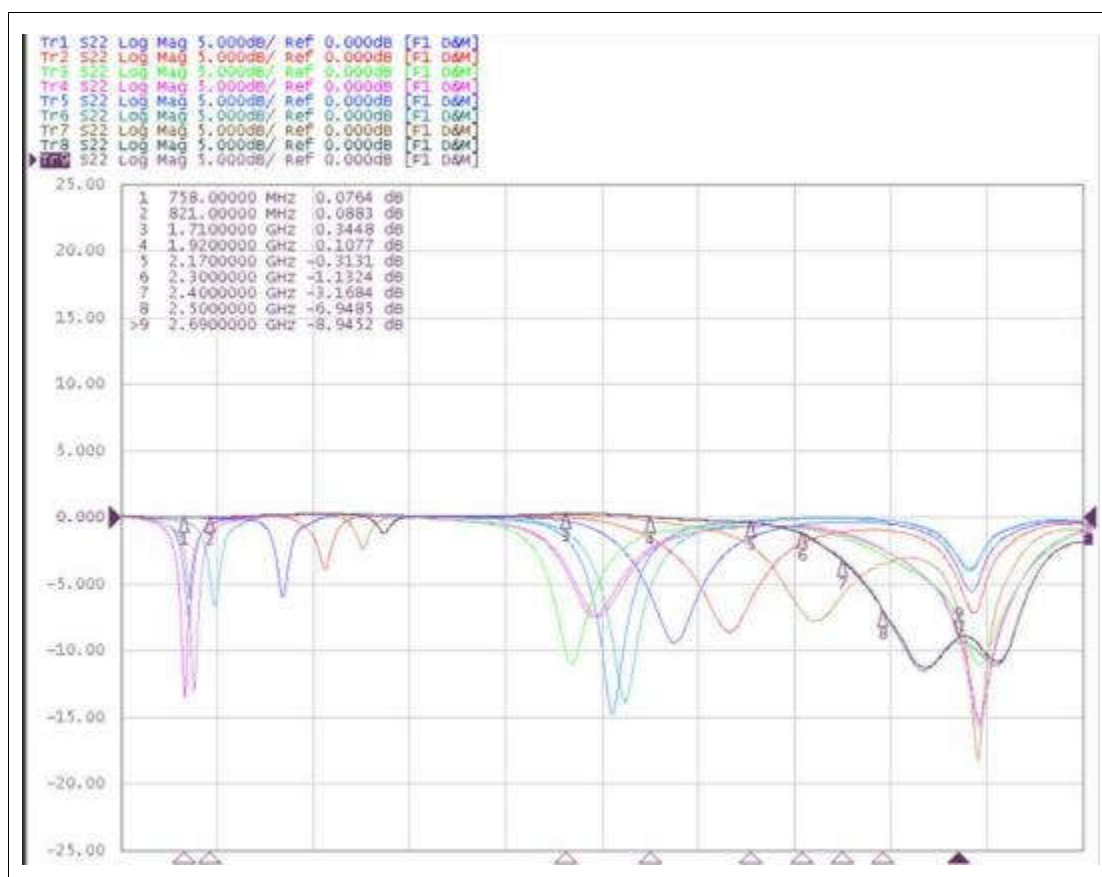
2620MHz





Band for Antenna 4	MHB ANT	
	Avg.Effi.(dB)	Peak gain(dBi)
B1/N1/WB1	-8.9	-6
B2/B25/B39	-6	-6.1
B3/N3/B4/B66/N66	-9	-5
B7/N7/B38/N38/B41/N41	-6.1	-1.5
B40/N40	-8.5	-4.2

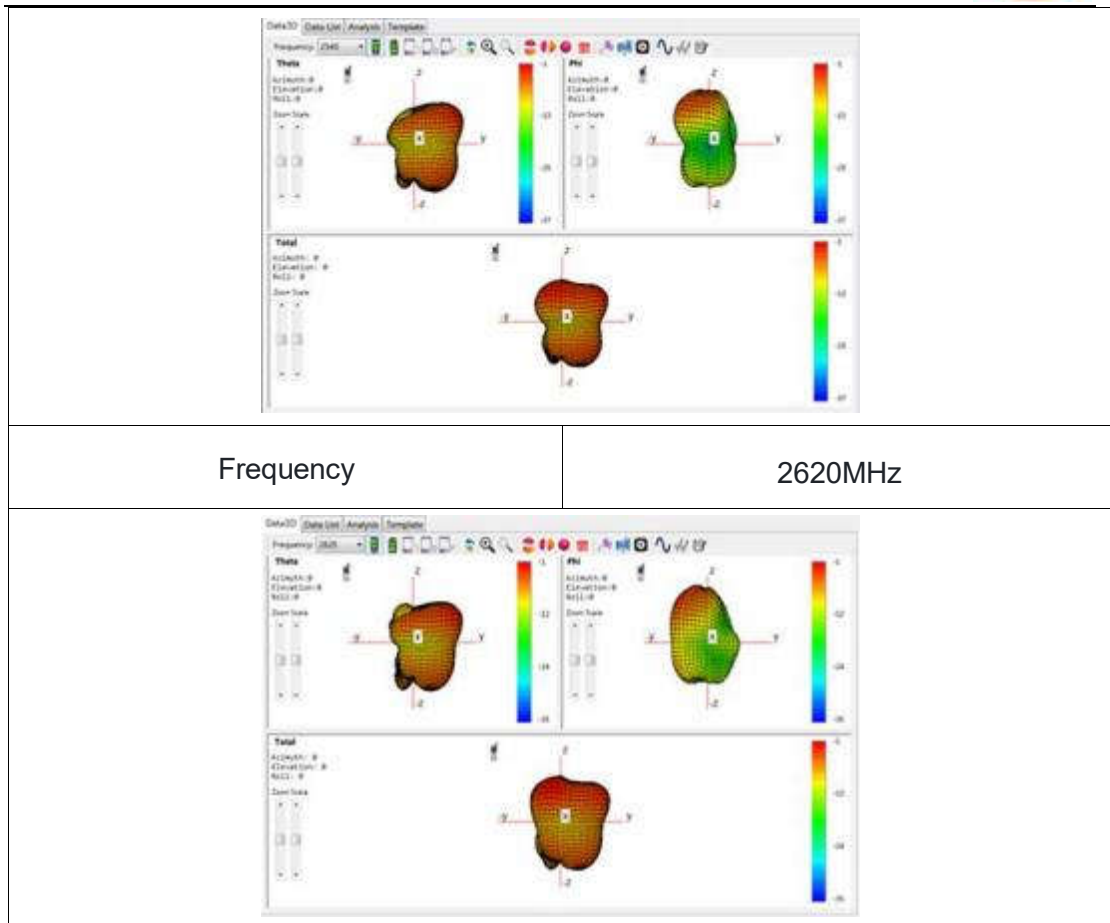
S 参数





方向图

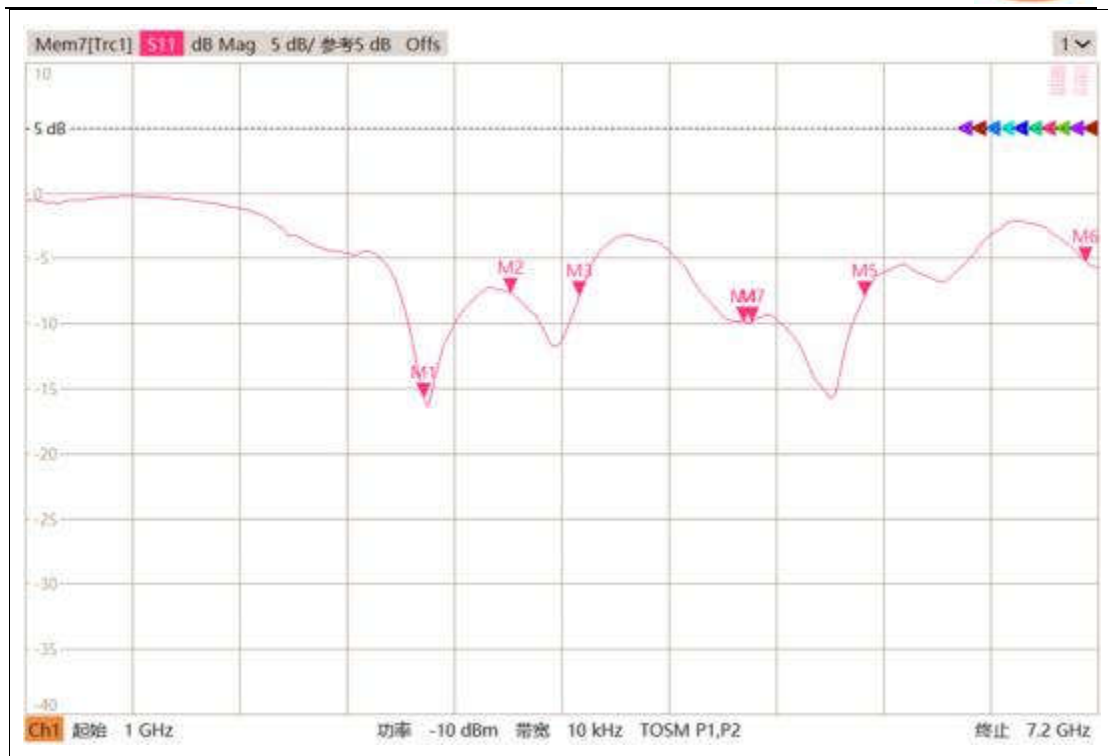
Frequency	1735MHz
Frequency	1950MHz
Frequency	2350MHz
Frequency	2535MHz





Band for Antenna 5	NR+WIFI_5G ANT	
	Avg.Effi.(dB)	Peak gain(dBi)
B42	-4.9	-0.9
B48	-6	-0.67
NR77 (3450~3550MHz) (3700~3980MHz)	-5.7	-0.26
N78(3450~3550MHz) (3700~3800MHz)	-6.03	-0.67
5G (5150~5250MHz)	-5.1	- 1.29
5G (5250~5350MHz)	-5.1	- 1.36
5G (5470~5725MHz)	-4.6	0
5G (5725~5850MHz)	-4.8	0
6G (5925-6425GHz)	-5.8	-0.43
6G (6425-6525GHz)	-7.2	-2.05
6G (6525-6875GHz)	-7.8	-3.01
6G (6875-7125GHz)	-7.7	-2.04

S 参数

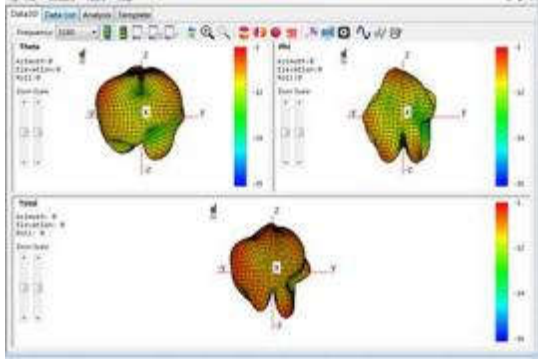
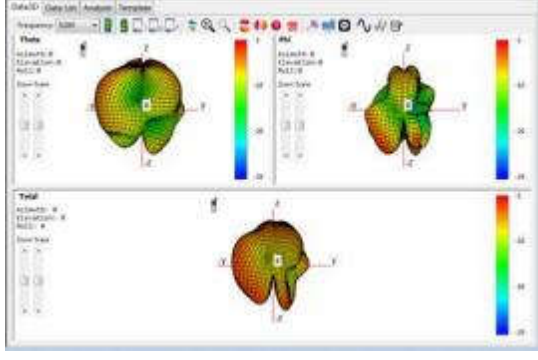
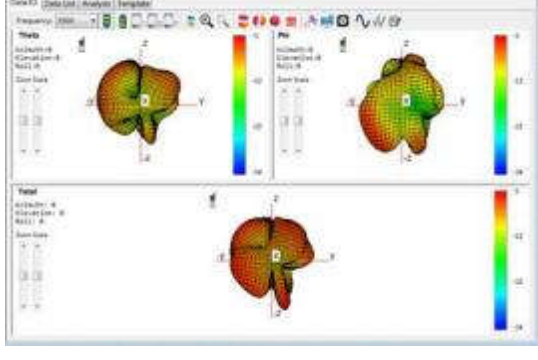




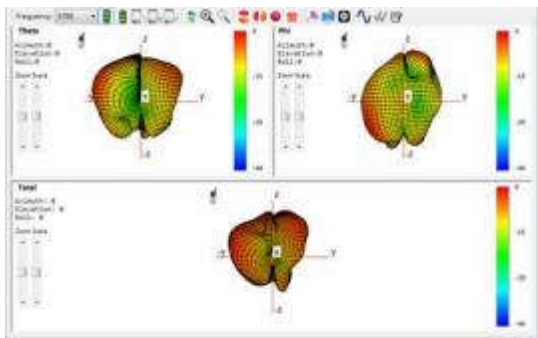
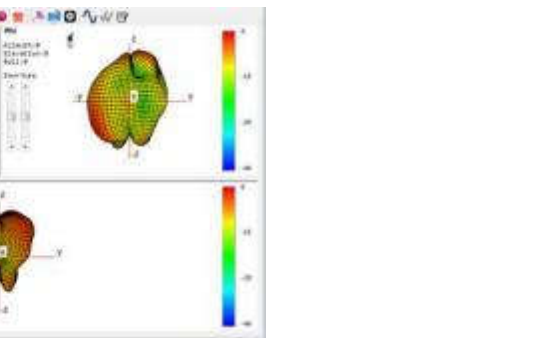
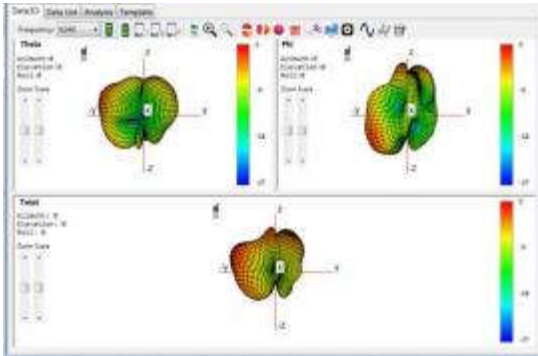
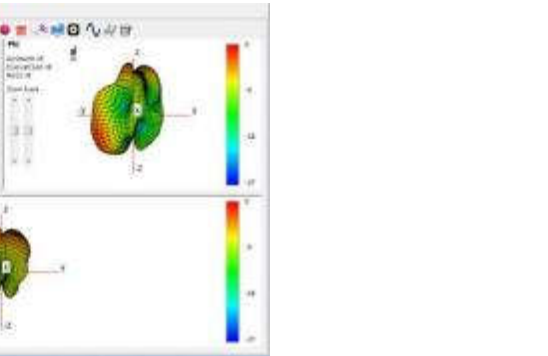
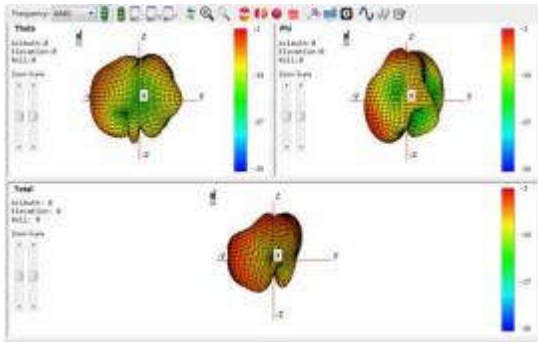
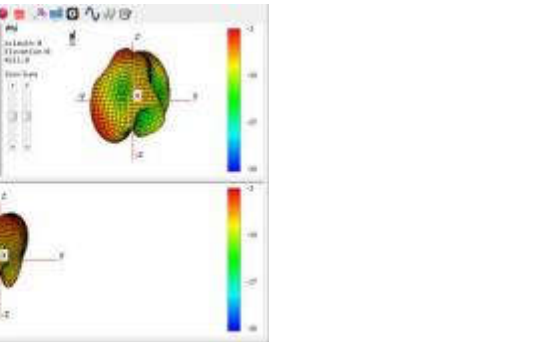
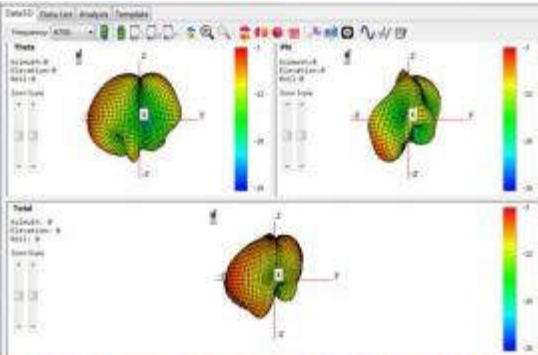
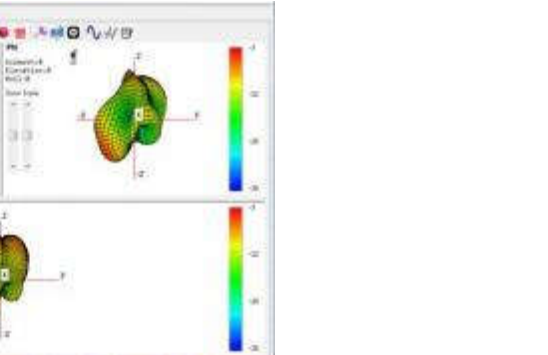
方向图

Frequency	3450MHz
Frequency	3700MHz
Frequency	4200MHz
Frequency	5180MHz



	
Frequency	5280MHz
	
Frequency	5500MHz
	
Frequency	5785MHz

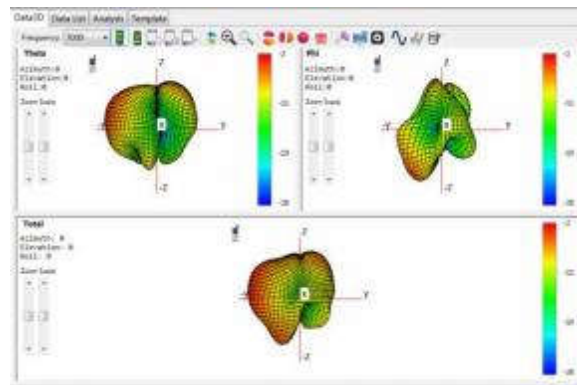


	
Frequency	6250MHz
	
Frequency	6450MHz
	
Frequency	6700MHz
	



Frequency

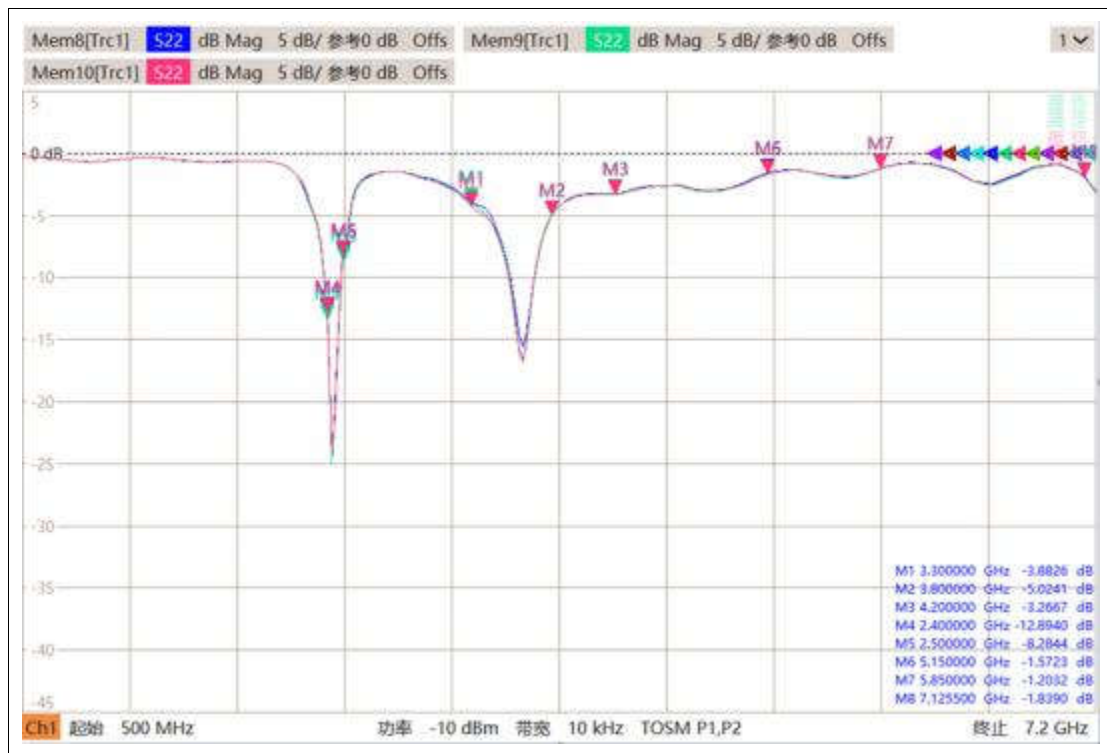
7000MHz





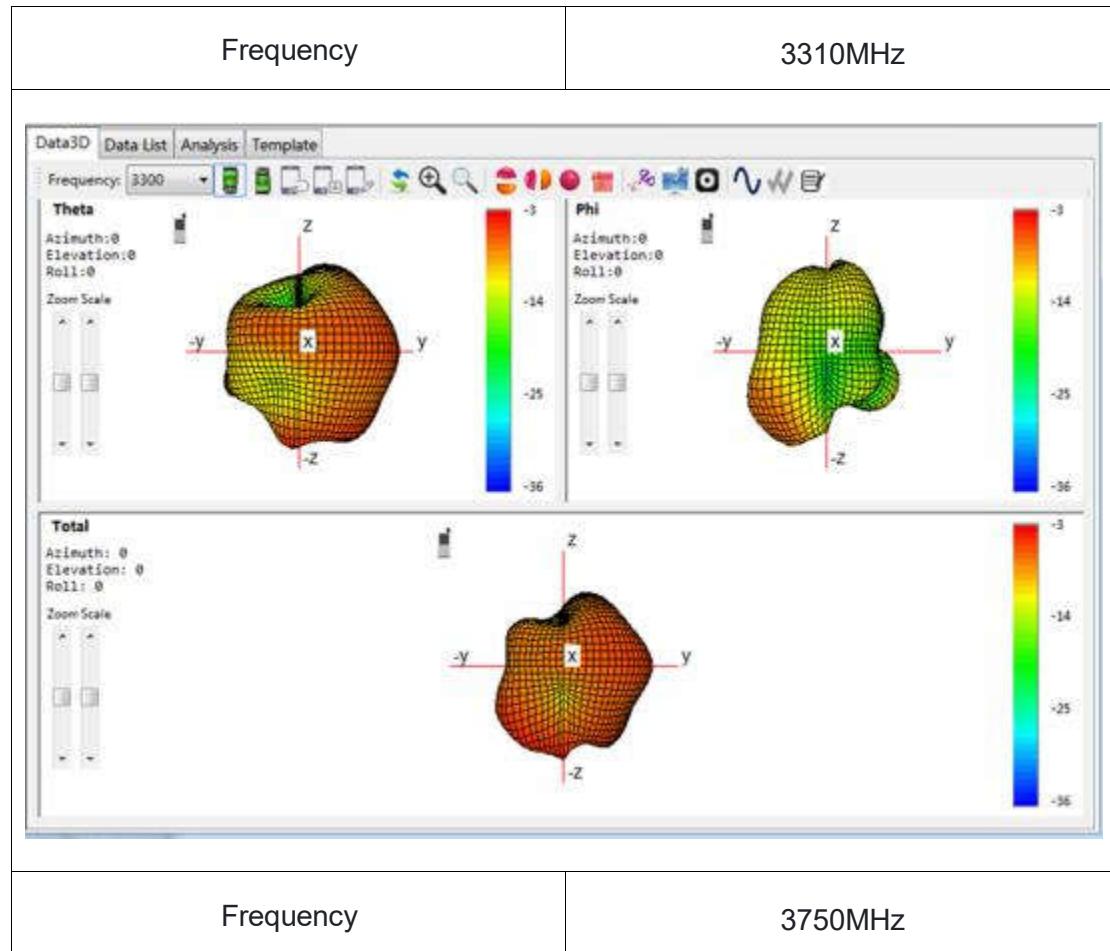
Band for Antenna 6	NR+WIFI_2.4G ANT	
	Avg.Effi.(dB)	Peak gain(dBi)
B42	-5.76	-1.21
B48	-5.1	-1
NR77(3450~3550MHz) (3700~3980MHz)	-5.1	-1
NR78(3450~3550MHz) (3700~3800MHz)	-5.1	-1
2.4G(2400~2485MHz)	-6.6	-1.72
Bluetooth	-6.6	-1.72

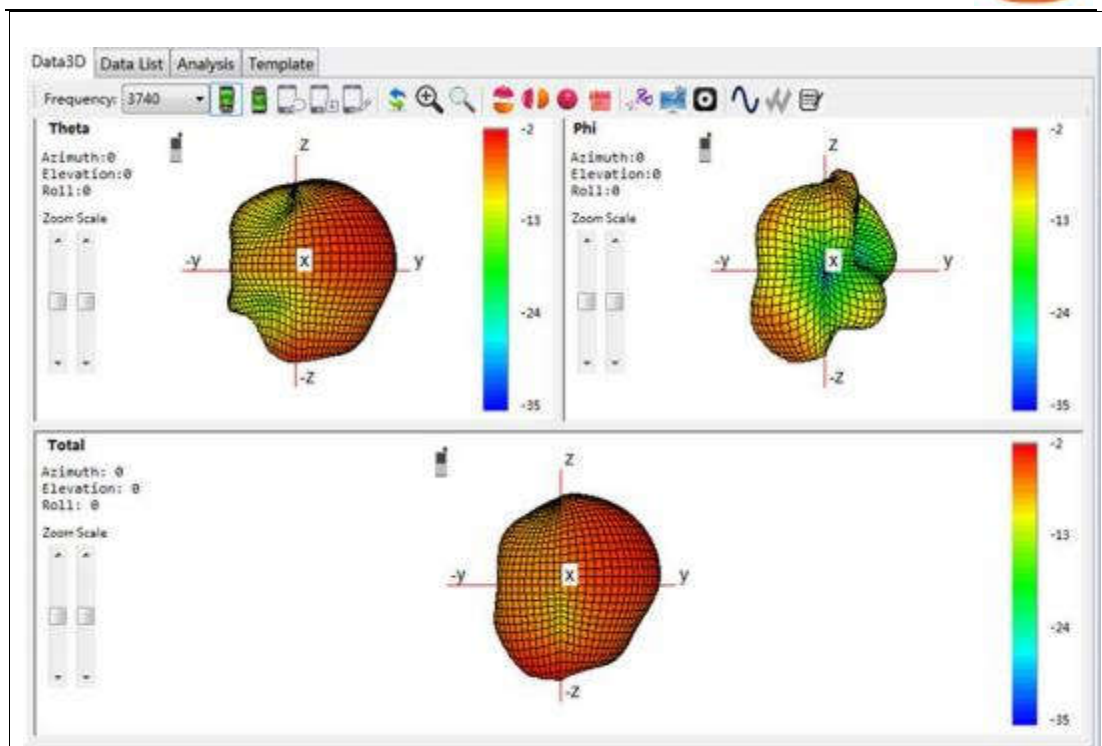
S 参数





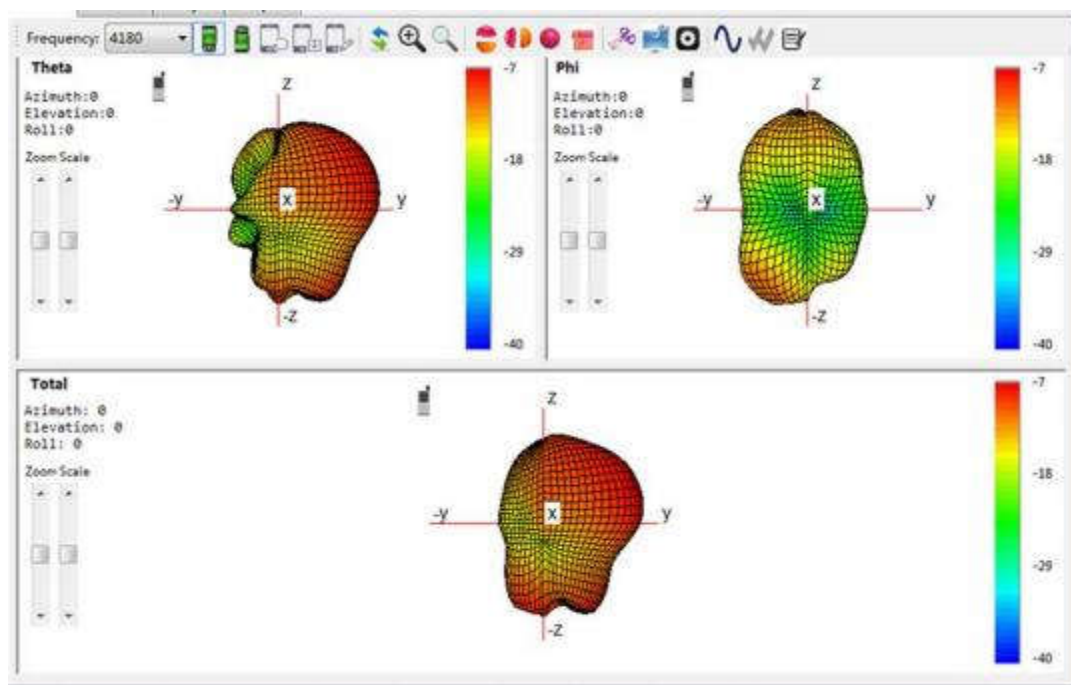
方向图





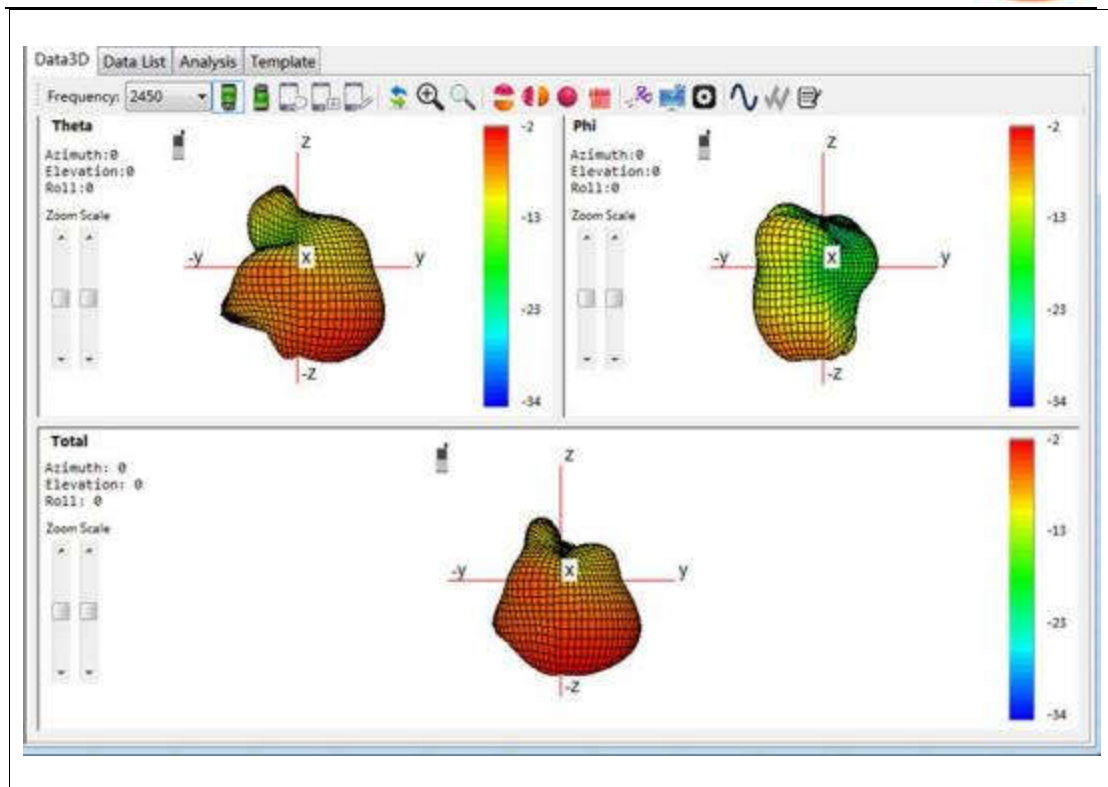
Frequency

4190MHz



Frequency

2450MHz





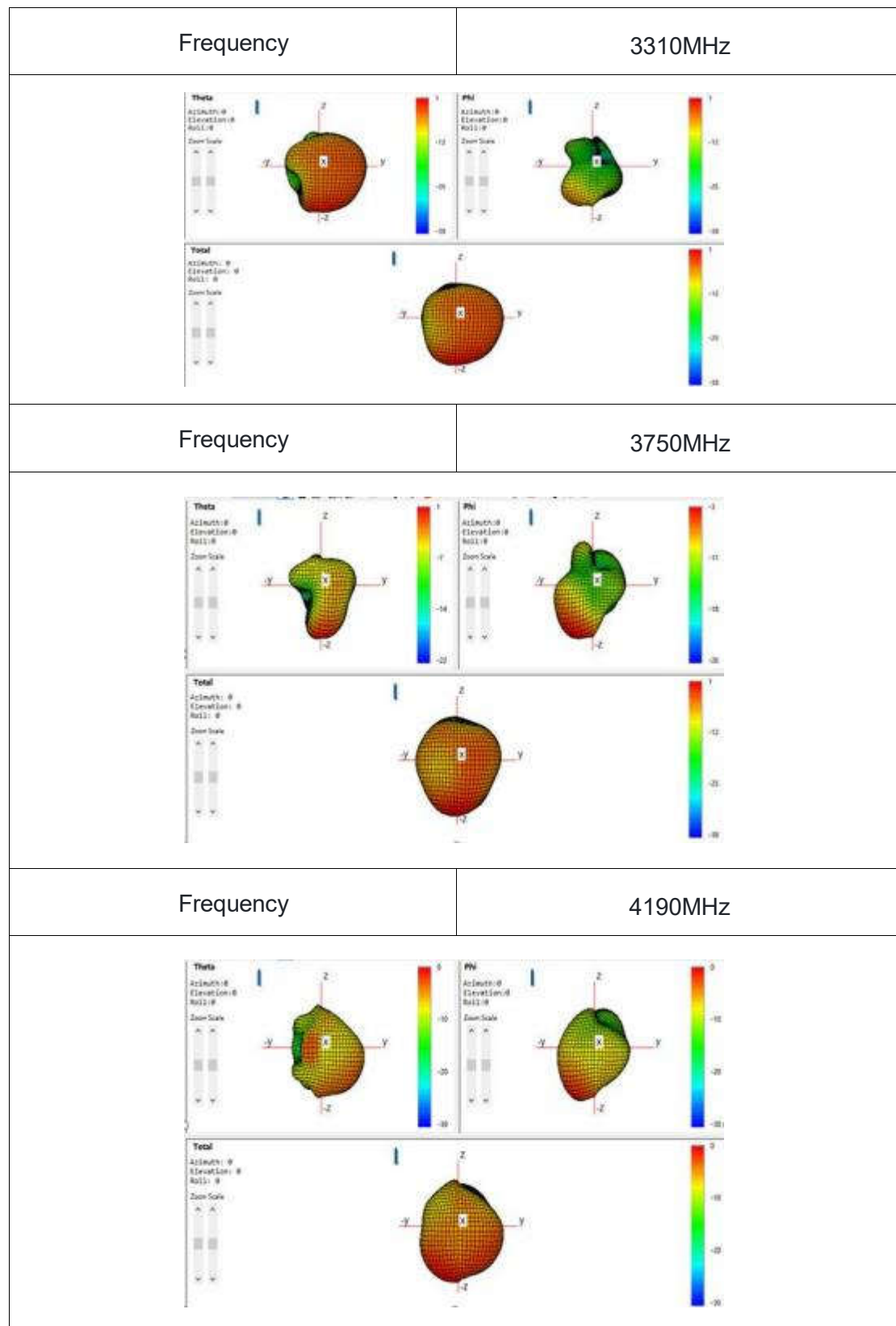
Band for Antenna 7	NR ANT	
	Avg.Effi.(dB)	Peak gain(dBi)
B42	-6.3	-6.1
B48	-7.2	-6.3
NR77(3450~3550MHz) (3700~3980MHz)	-6.9	-6.1
NR78 (3450~3550MHz) (3700~3800MHz)	-6.9	-6.1

S 参数





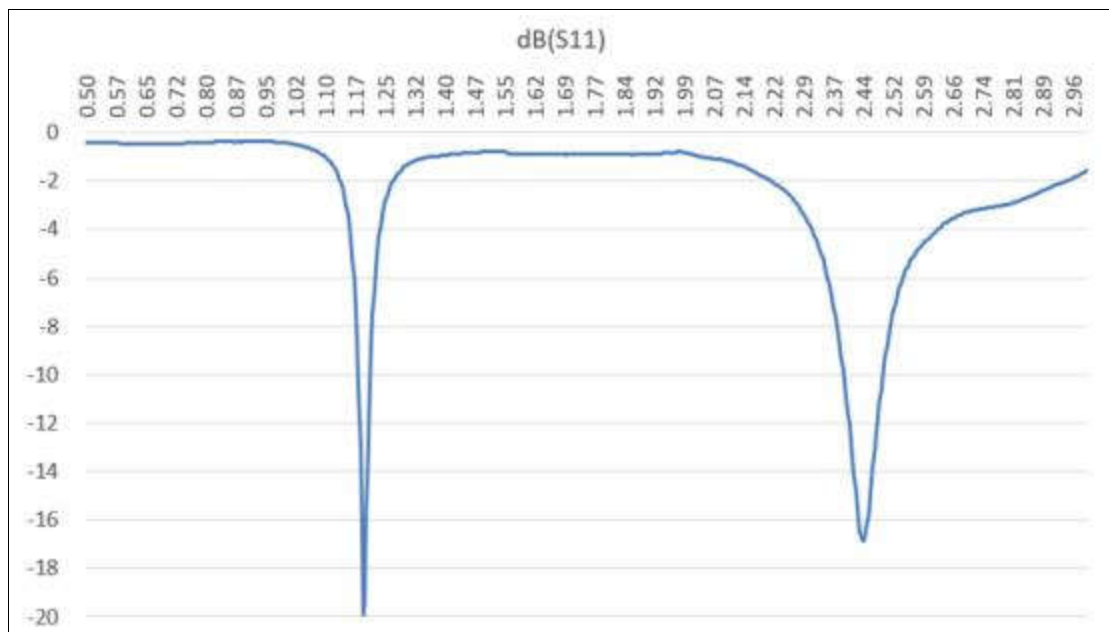
方向图



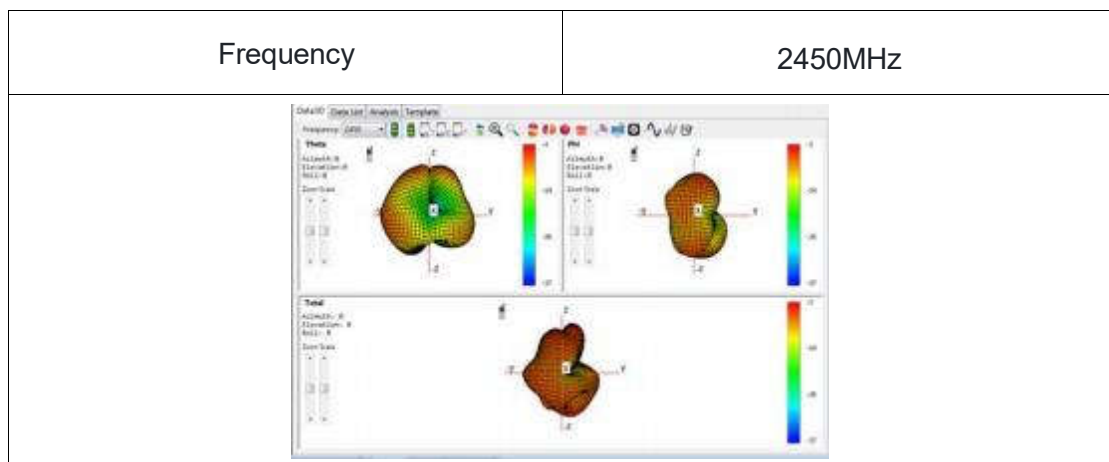


Band for Antenna 17	WIFI_2.4G ANT	
	Avg.Effi.(dB)	Peak gain(dBi)
2.4G(2400~2485MHz)	-6.6	-2.62
Bluetooth	-6.6	-2.62

S 参数



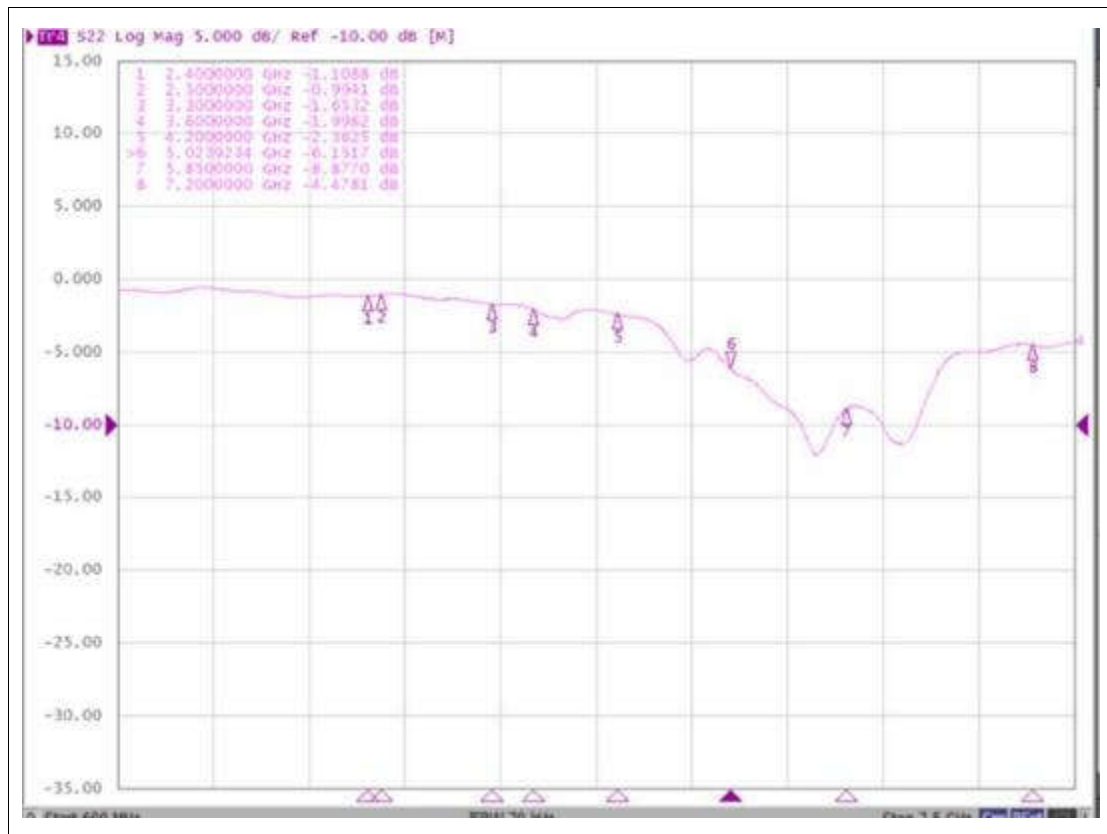
方向图





Band for Antenna 18	WIFI_5G ANT	
	Avg.Effi.(dB)	Peak gain(dBi)
5G (5150~5250MHz)	-6.3	- 1.6
5G (5250~5350MHz)	-6.4	- 1.58
5G (5470~5725MHz)	-6.5	- 1.49
5G (5725~5850MHz)	-6.5	- 1.29
6G (5925-6425GHz)	-5.2	0
6G (6425-6525GHz)	-6.3	- 1.54
6G (6525-6875GHz)	-6.1	- 1.33
6G (6875-7125GHz)	-7.8	- 1.67

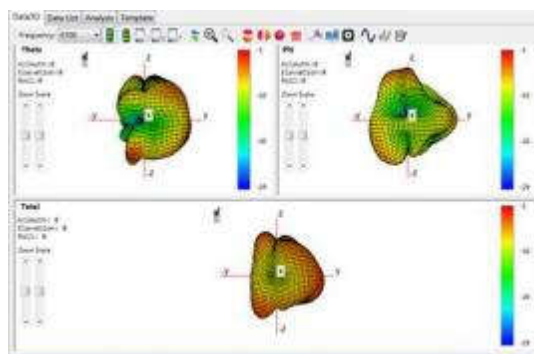
S 参数





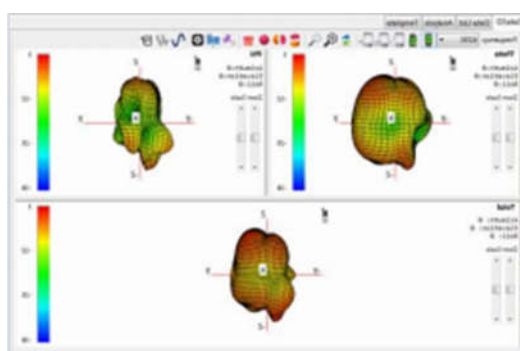
方向图

Frequency	5180MHz
Frequency	5280MHz
Frequency	5500MHz
Frequency	5785MHz



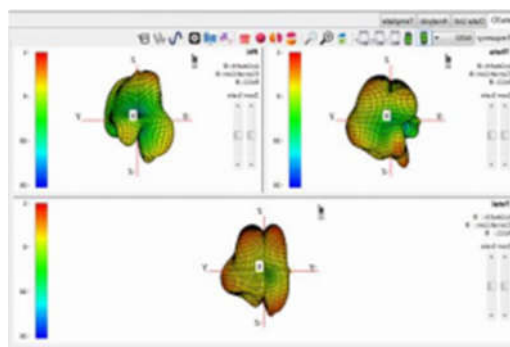
Frequency

6250MHz



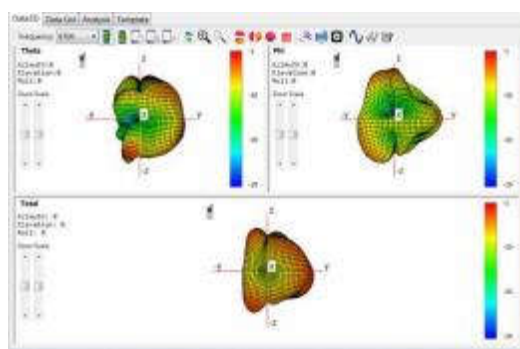
Frequency

6450MHz



Frequency

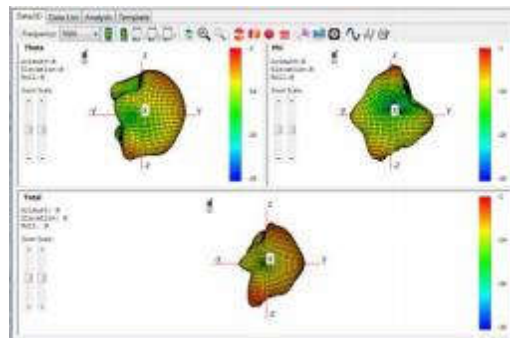
6700MHz





Frequency

7000MHz





3. Main Test Instruments & Antenna & Software

Name	Manufacturer	Model name	Serial Number	Antenna Type	Cal., Date	Exp., Date
E5071C	KEYSIGHT	E5071C	EQ80224	/	2023-4-6	2024-4-6
Testing software	KEYSIGHT	Maxsign100	/	/	/	/

End of Test Report