Antenna Performance Description

Applicant: Xiaomi Communications Co., Ltd

Product description: Mobile Phone

Model Name: 23088PND5R

FCC ID: 2AFZZND5R

Test date: 2023/05/18

Test Engineer	Hu Xiongmin
Signature	Hu Xiongmin

1. Antenna information

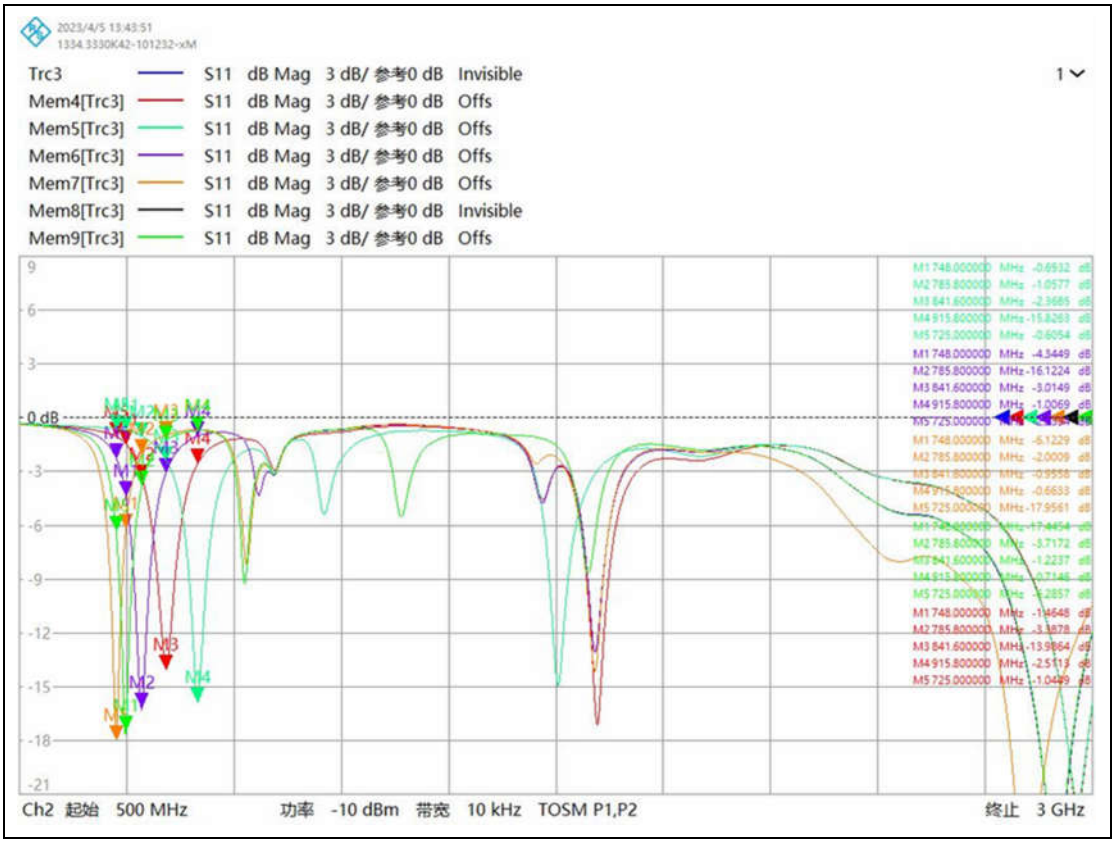
Antenna	Pattern	Antenna Type	Manufacturer	Manufacturer Address	Test party of Antenna gain
ANT0	Metal Frame	Fixed Internal Antenna	XIAOMI	Floor 9th, Tower 1, Novel Park, No.4078 Dongbin Road, Nanshan District, Shenzhen.	Shenzhen Xiaomi Communications Co., Ltd.
ANT1	Metal Frame	Fixed Internal Antenna	XIAOMI	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	Fixed Internal 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	-9.4	-5.48
B5/B18/B19/B26/WB5/WB6/WB19/G5	-9.98	-5.48
B8/WB8/G8	-8.56	-5.38

S 参数



方向图

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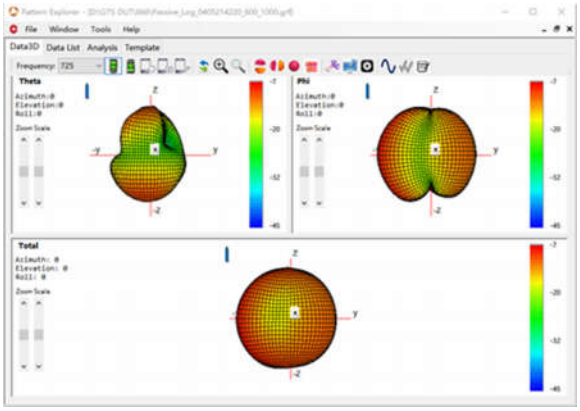	
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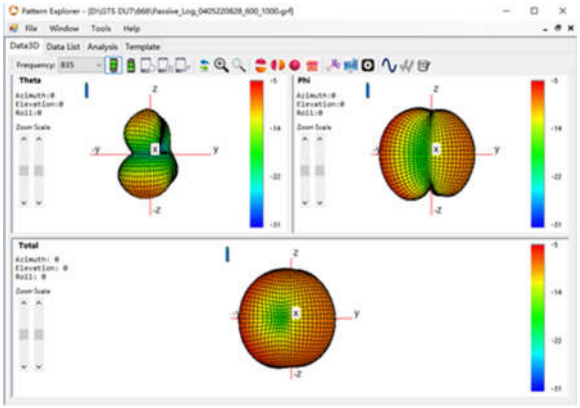	
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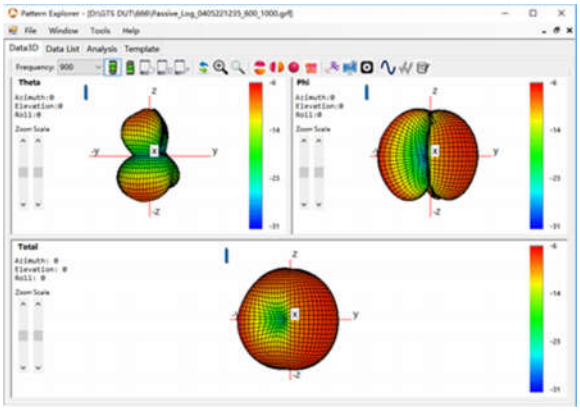
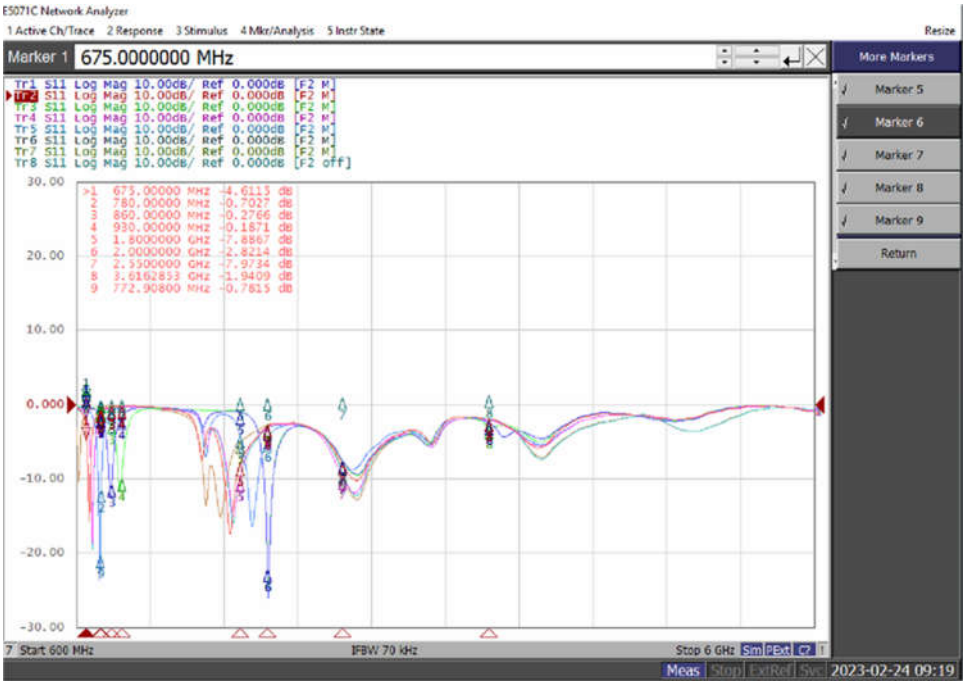
	

Bands for Antenna 1	LMHB+NR ANT	
	Avg.Effi.(dB)	Peak gain(dBi)
B5/B19/B26/WB5/WB6/WB19/G5	-8.62	-8
B8/WB8/G8	-8	-8.4
B20	-9	-8.6
B28/N28/B12/B13/B17/B18	-8.4	-7.8
B3/N3/G3/WB4	-8.8	-5.3
WB1	-8.6	-5
B41/N41	-7.8	-4.5
G2/WB2	-5.8	-6
B42	-5	-7.5
NR77: (3450~3550MHz) (3700~3980MHz)	-6.2	-7
NR78: (3450~3550MHz)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

S 参数



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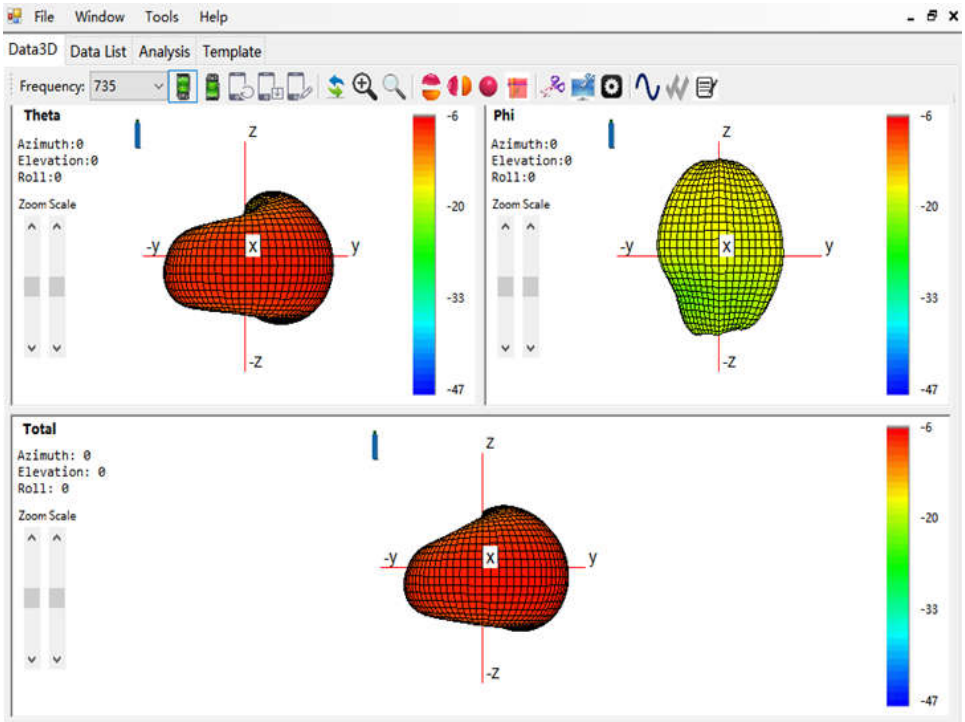

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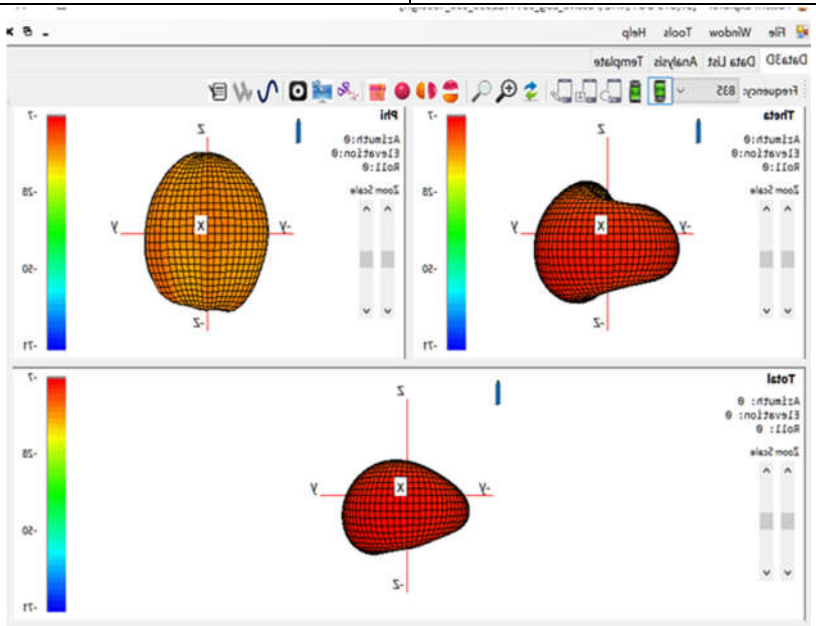	
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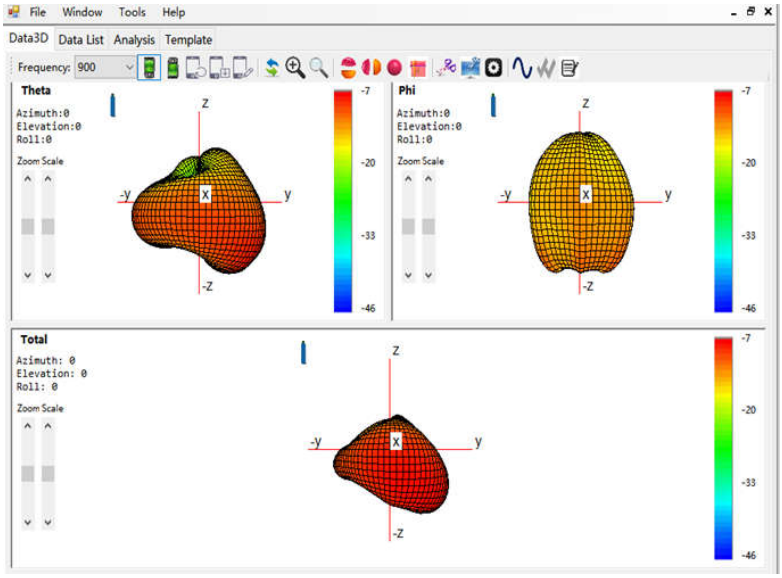	
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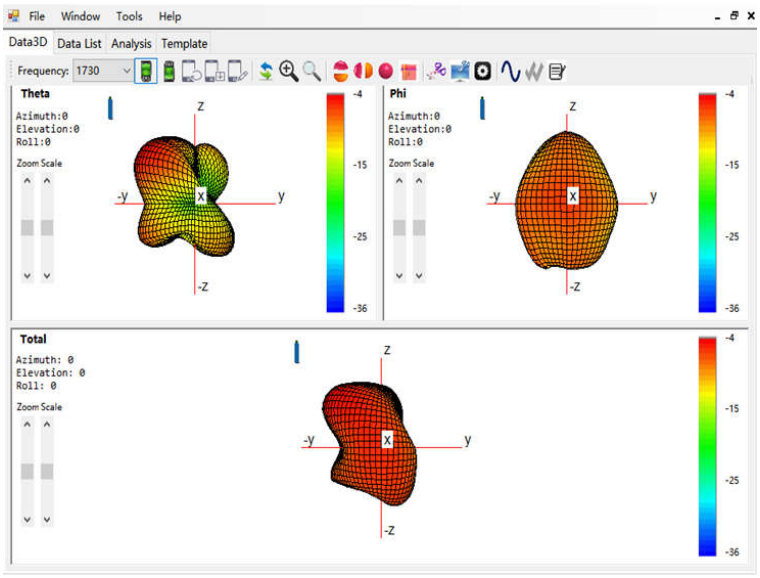

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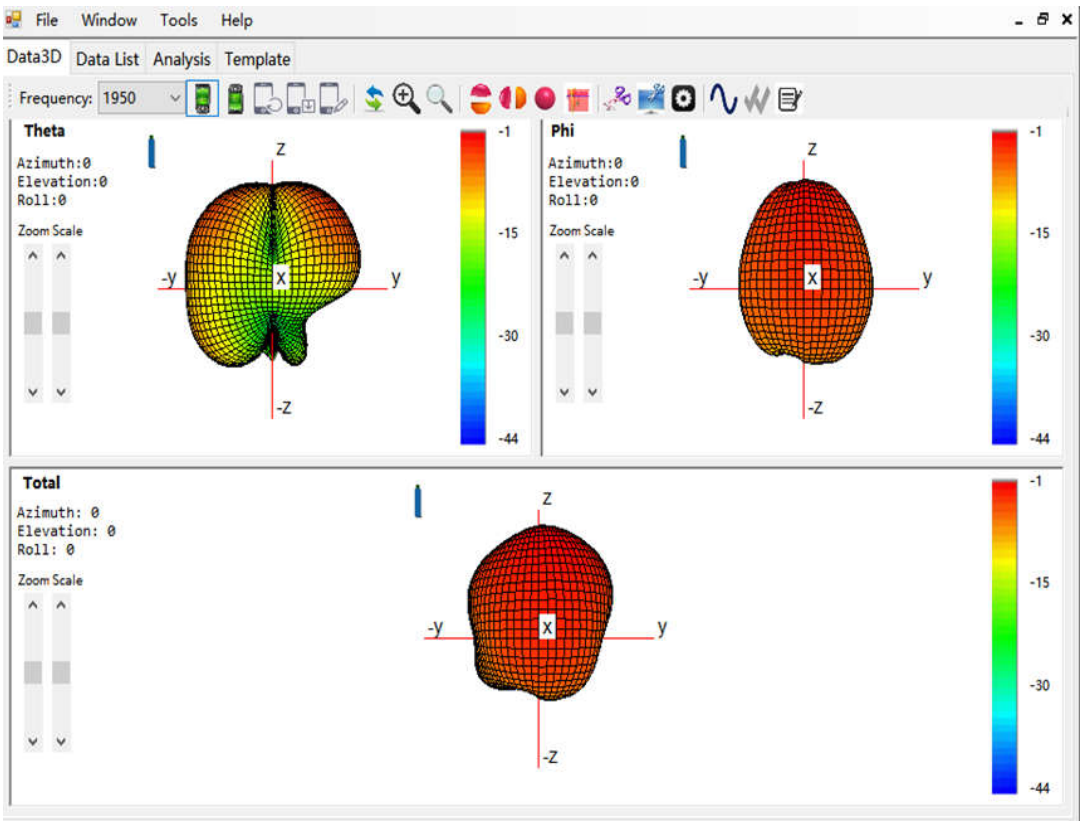

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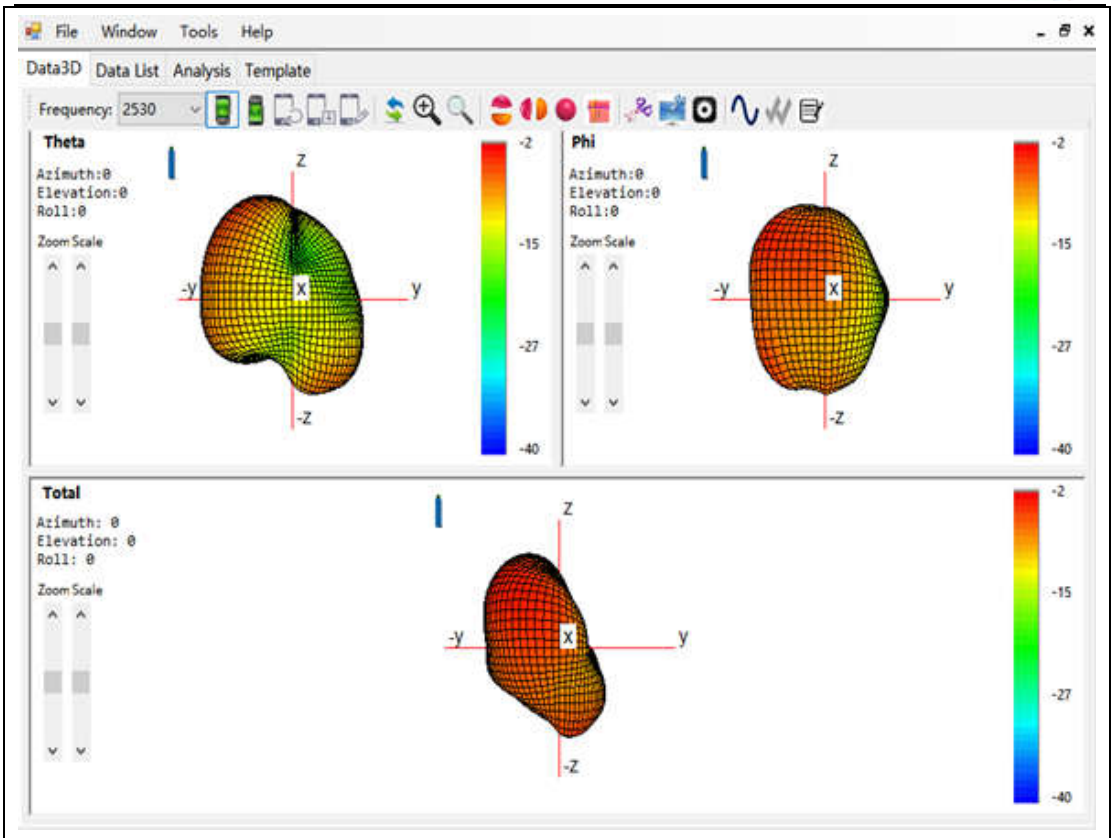

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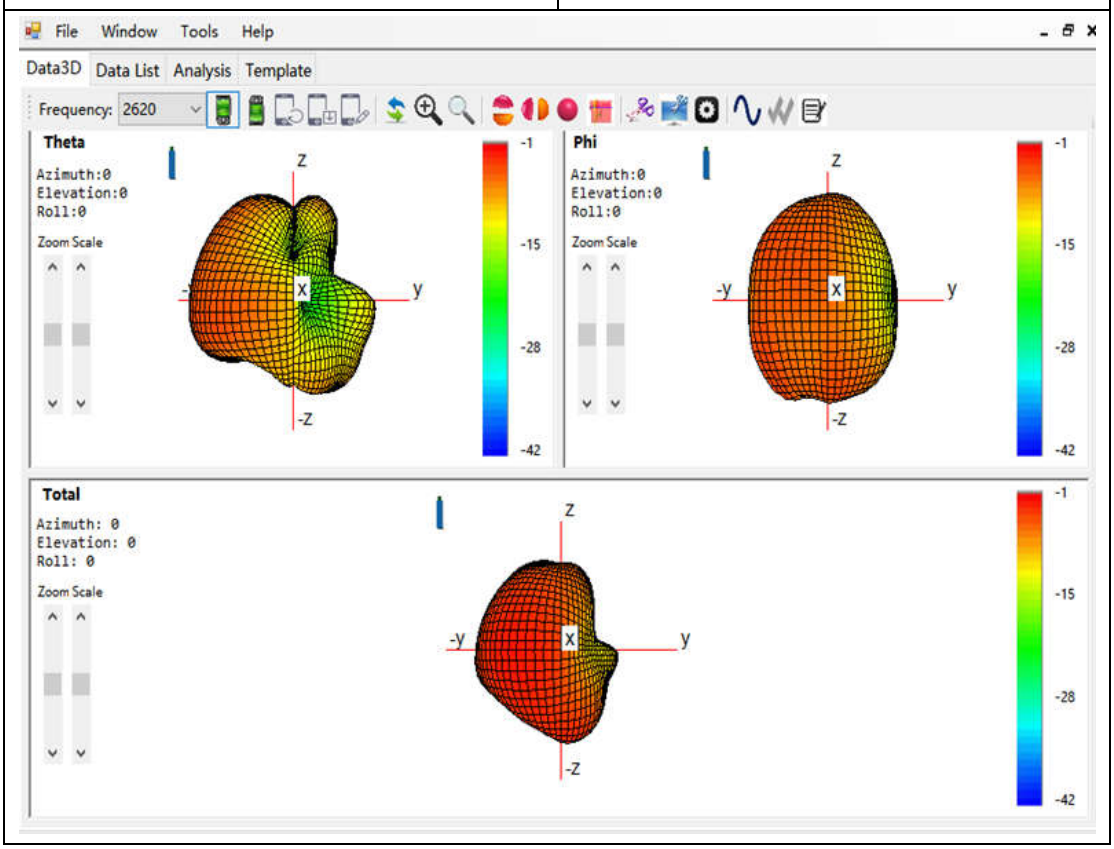

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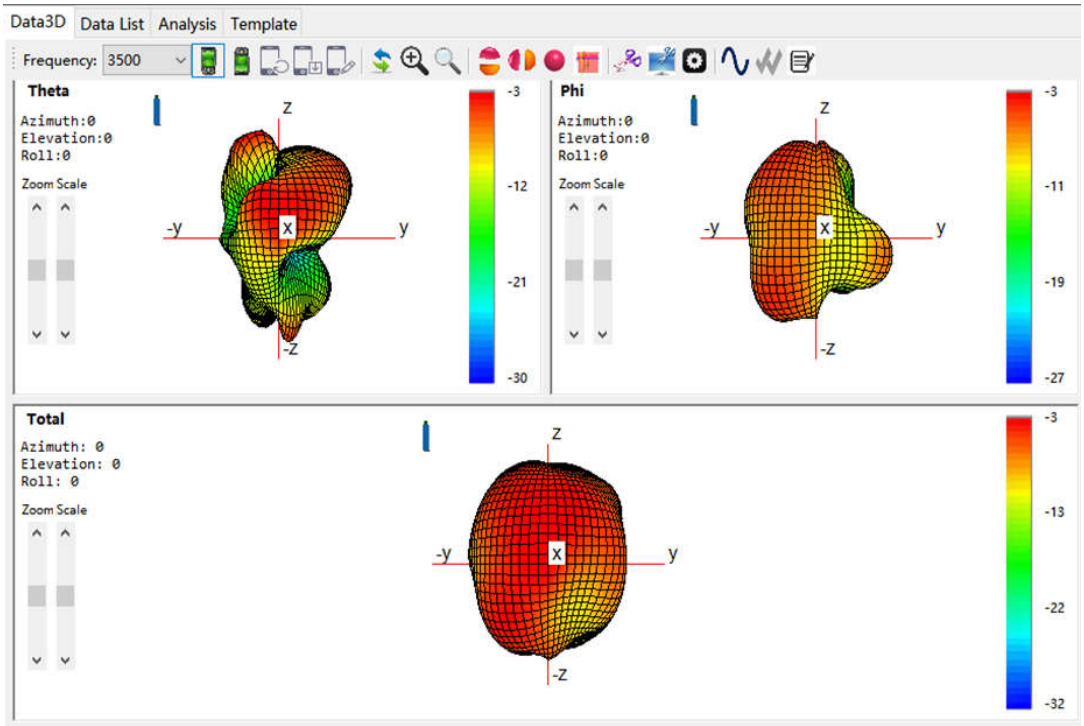

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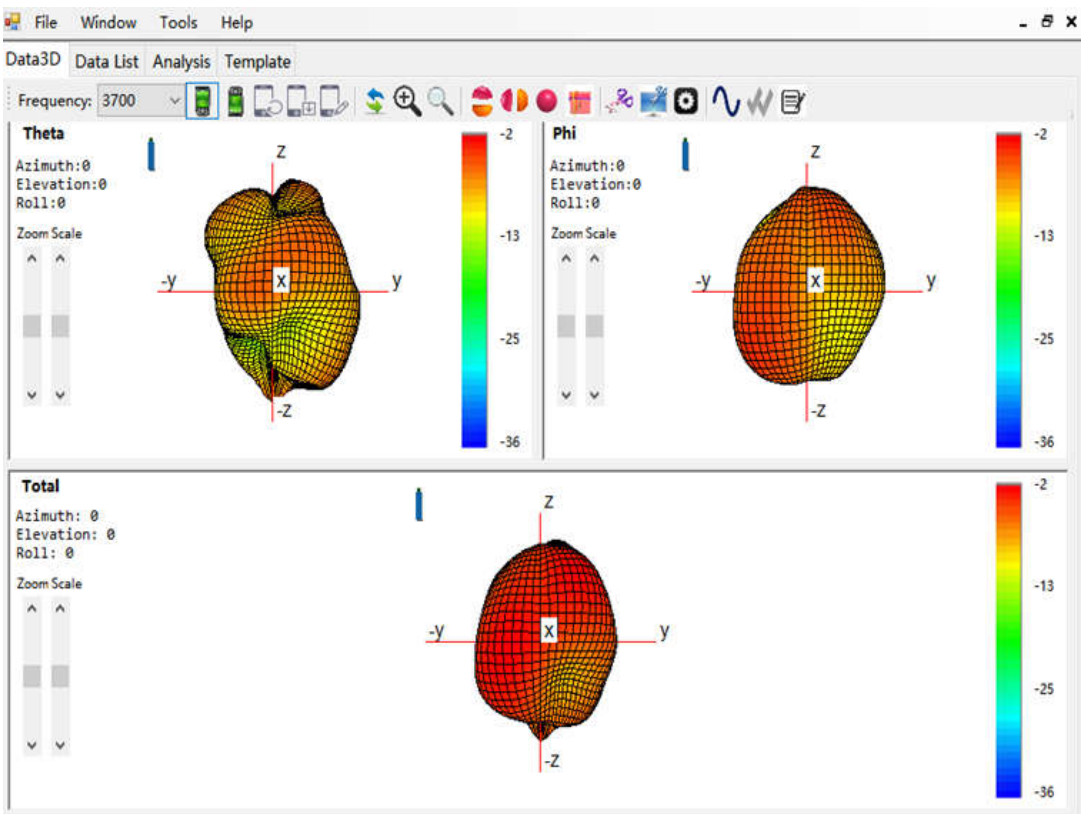

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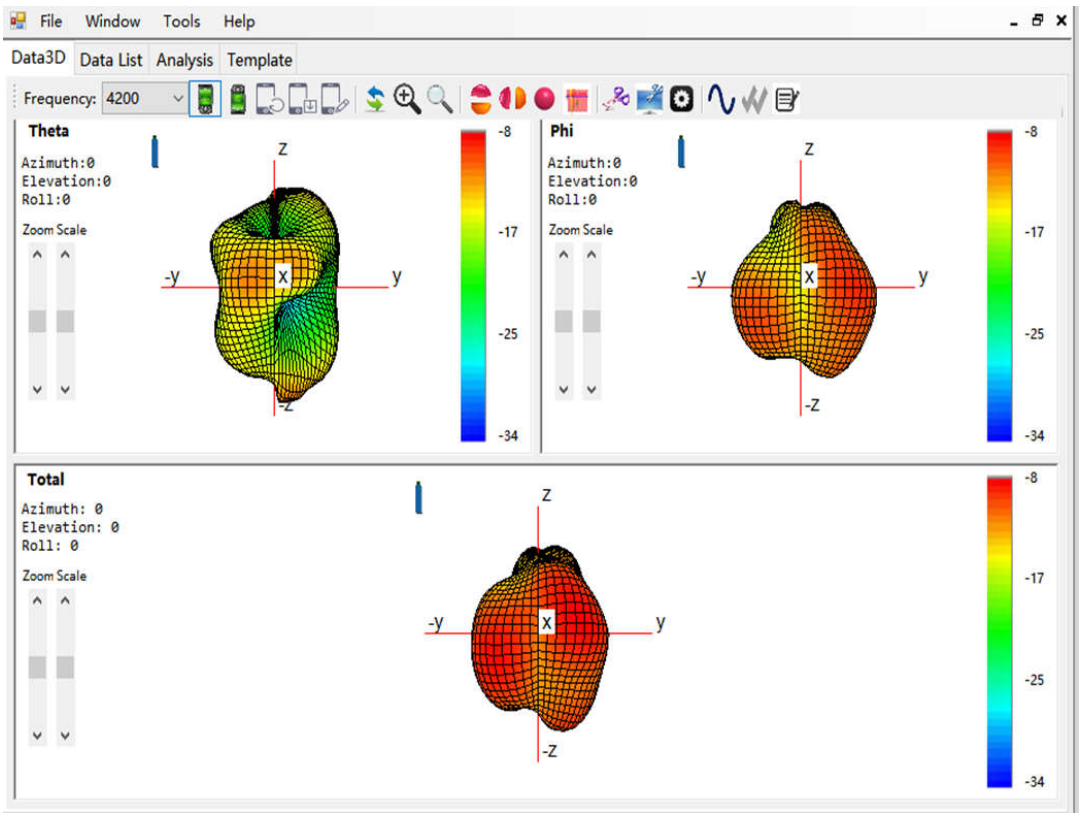
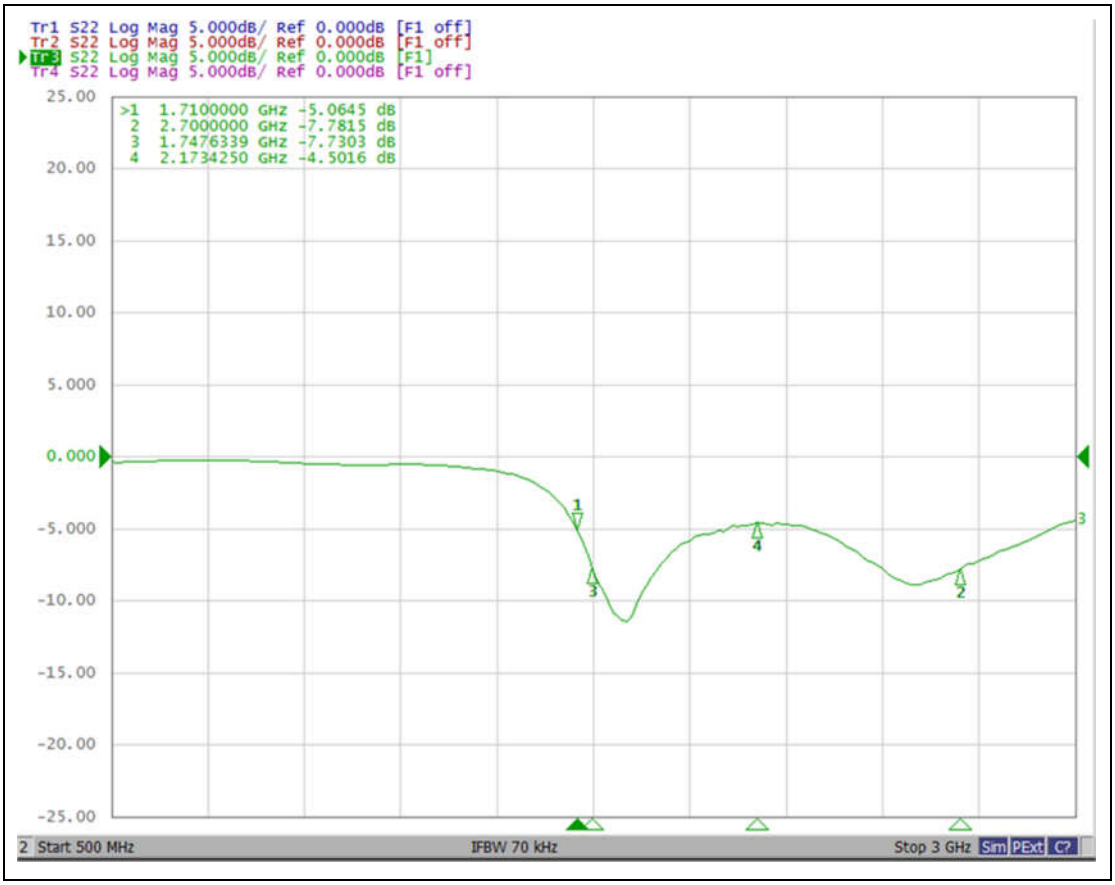


Bands for Antenna 2	MHB ANT	
	Avg.Effi.(dB)	Peak gain(dBi)
B1/WB1	-4.0	-3.4
B2/G2/WB2/B39	-3.5	-3.4
B3/N3/B4/G3/WB4	-4.2	-3.5
B7/B38/B41/N41	-5.0	-4.7
B40	-5.1	-5.0

S 参数



方向图

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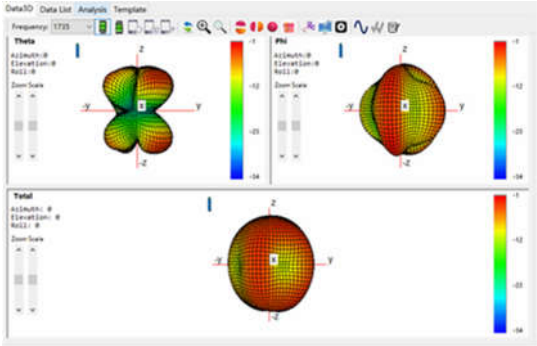	
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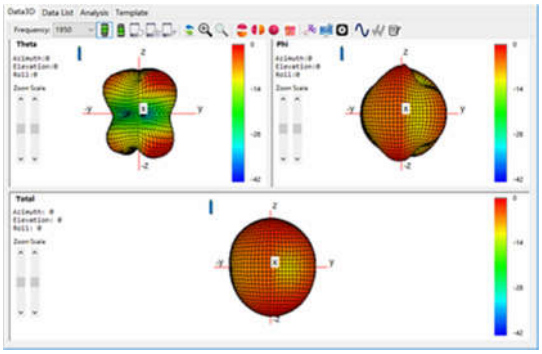	
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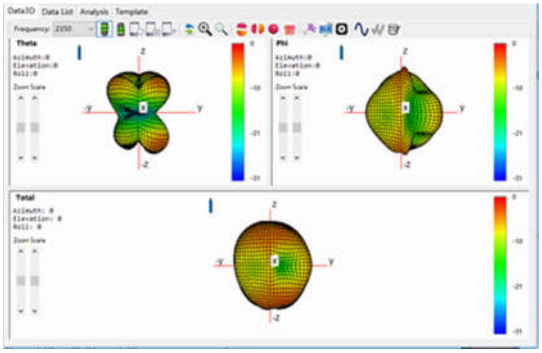	
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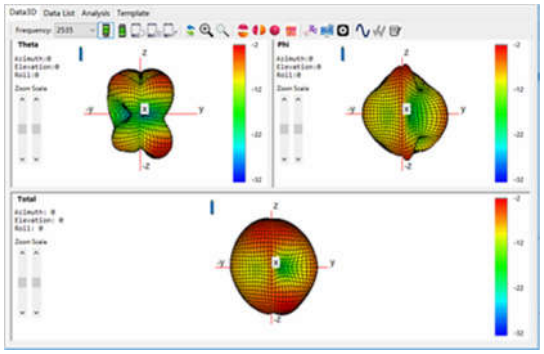	
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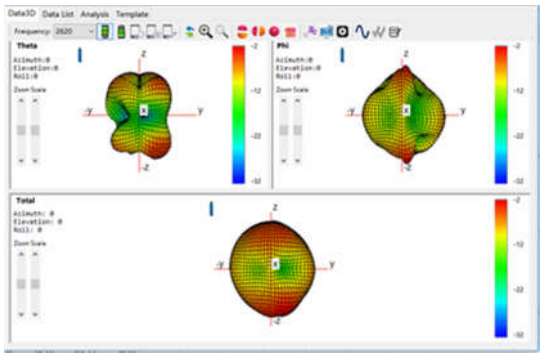
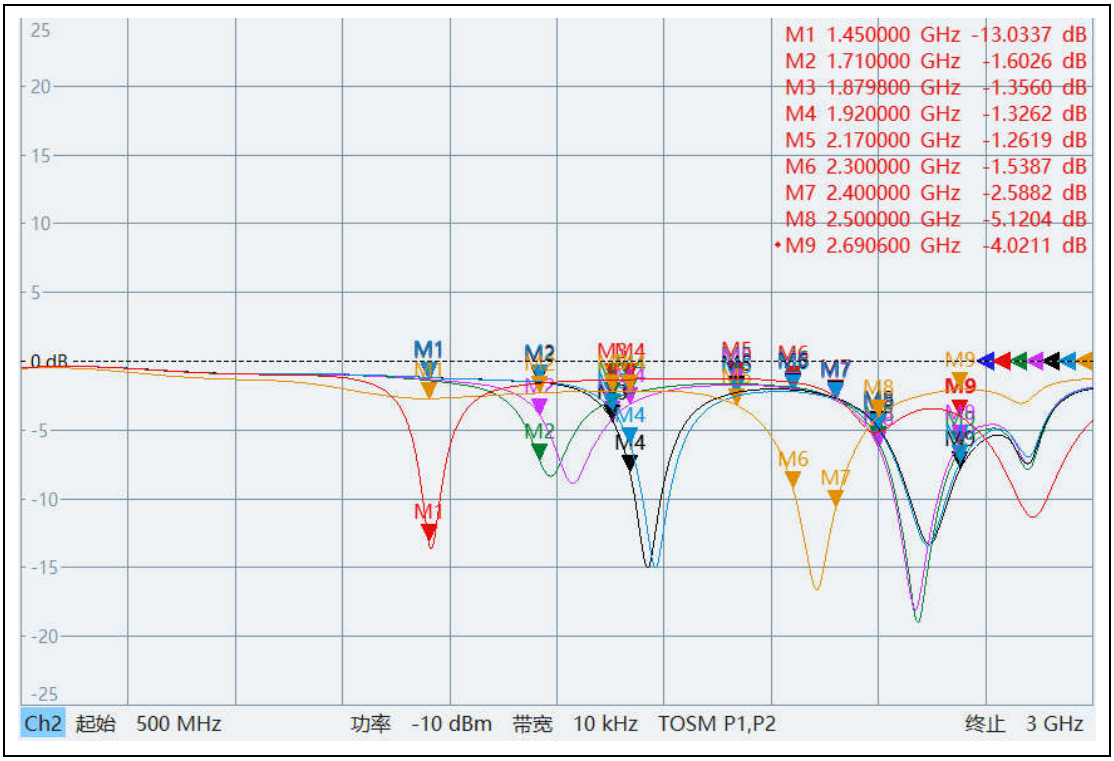
	

Band for Antenna 3	MHB ANT	
	Avg.Effi.(dB)	Peak gain(dBi)
B3/N3	-7.1	-6.3
B41/N41	-7	-6.2

S 参数



方向图

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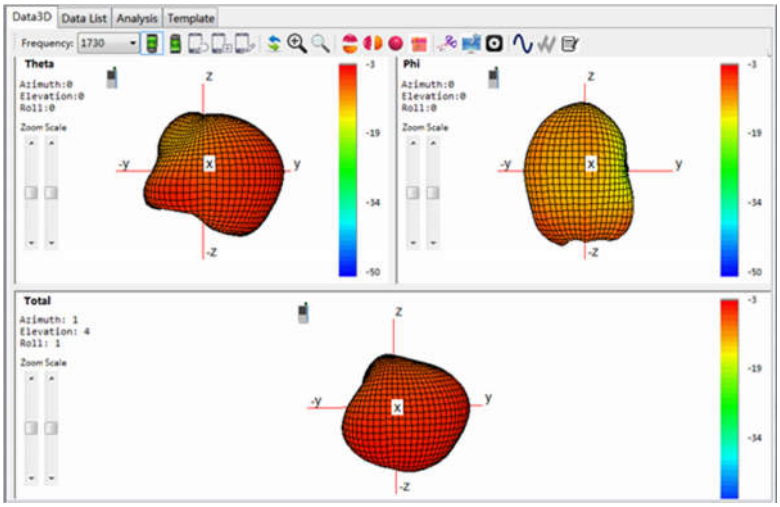	
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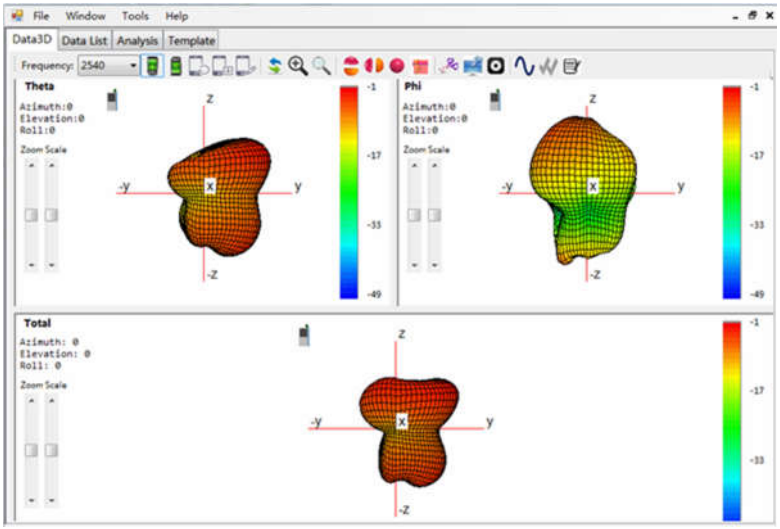	
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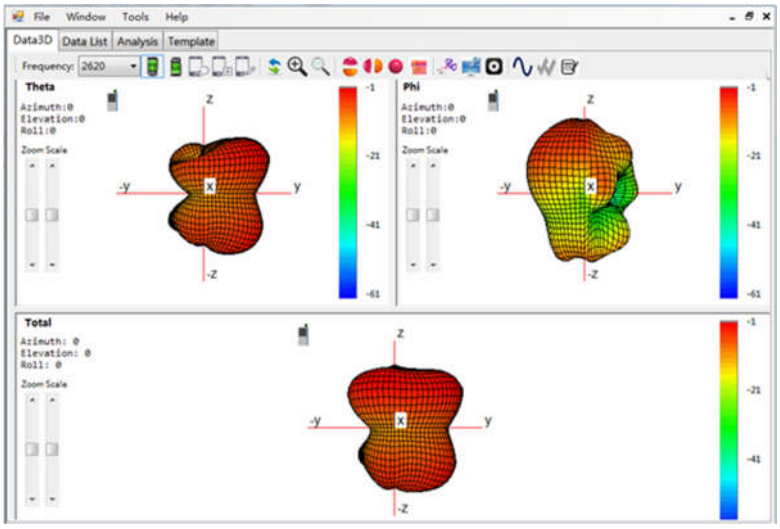
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Zoom Scale
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-z
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x
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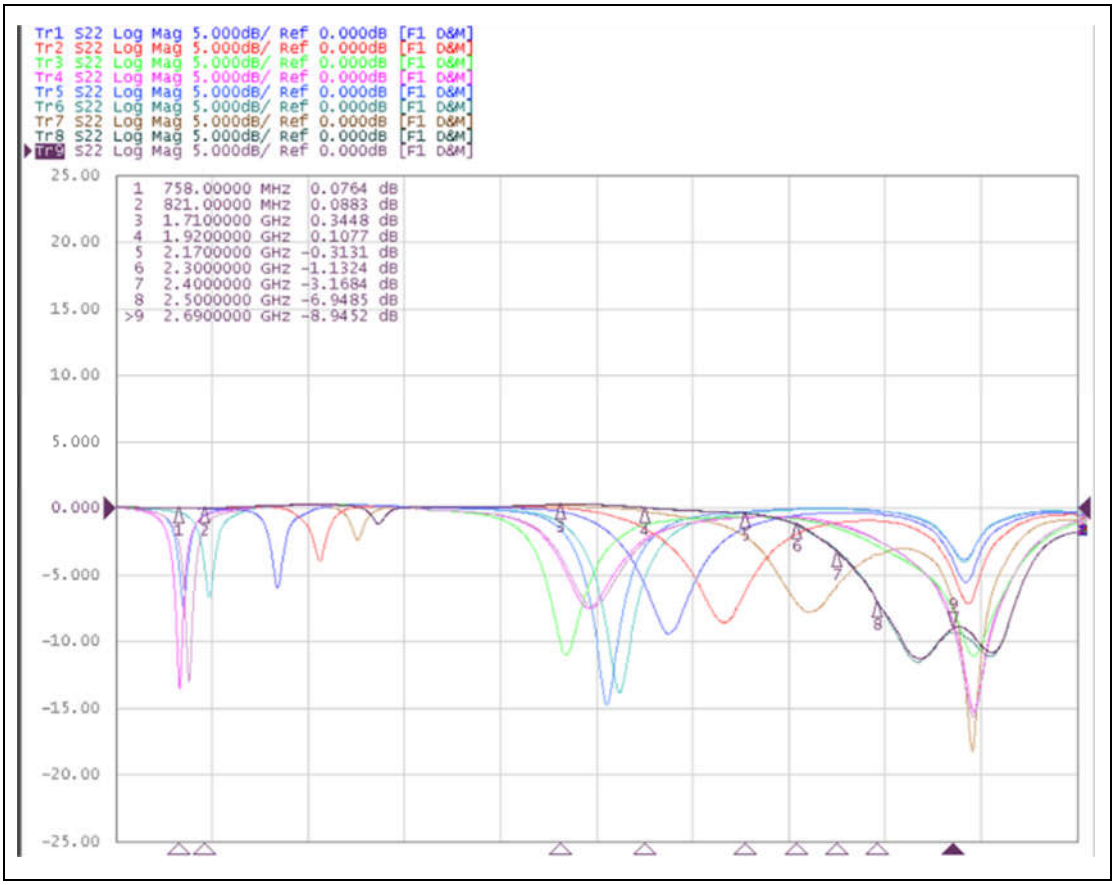
-21
-41
-61

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

S 参数



方向图

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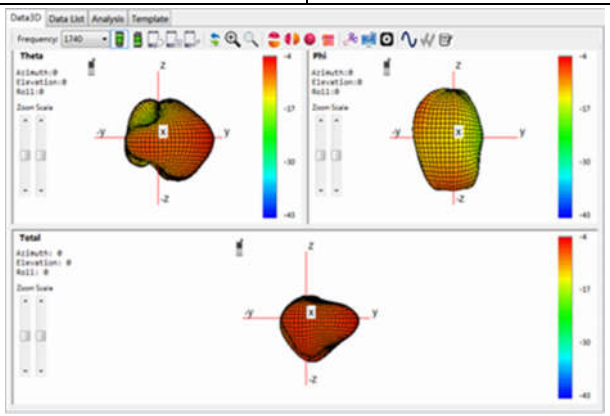	
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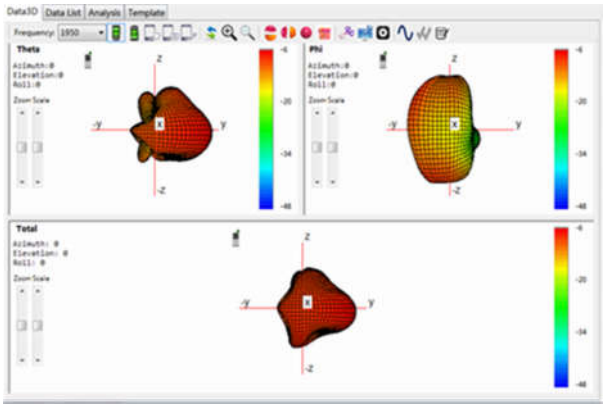	
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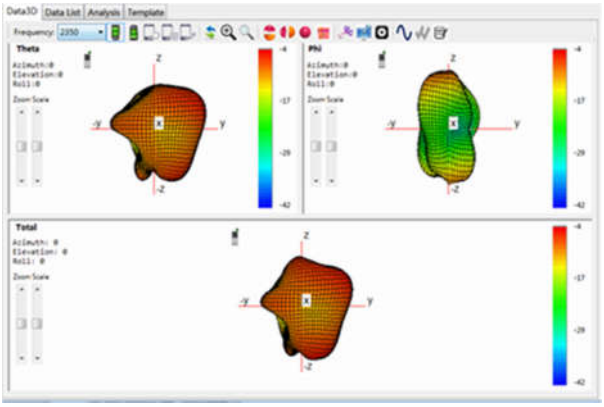	
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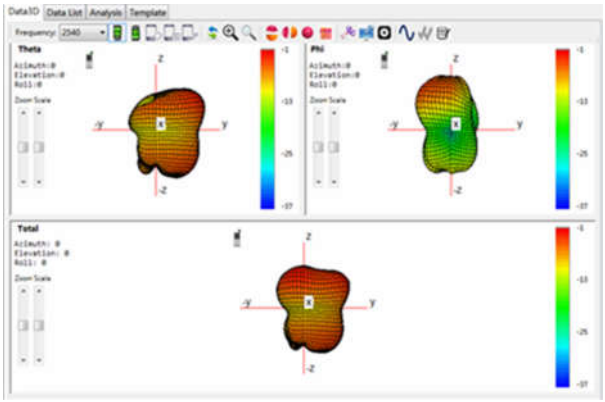
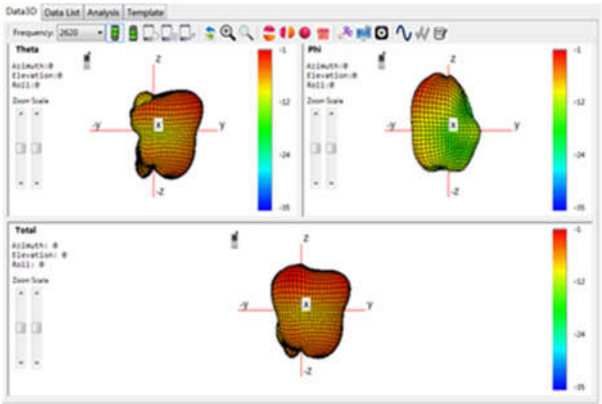
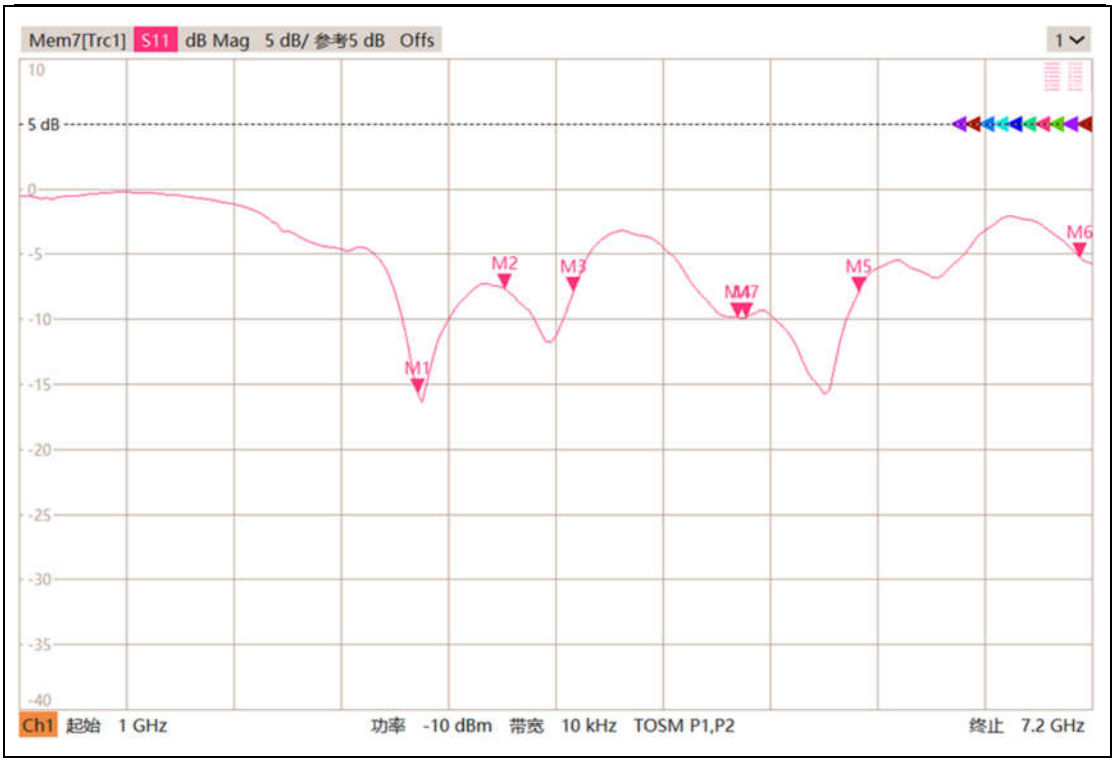


Frequency	2620MHz



Band for Antenna 5	NR+WIFI_5G ANT	
	Avg.Effi.(dB)	Peak gain(dBi)
B42	-4.9	-0.9
NR77: (3450~3550MHz) (3700~3980MHz)	-5.7	-0.26
NR78: (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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10
5 dB
0
-5
-10
-15
-20
-25
-30
-35
-40
M1
M2
M3
M7
M5
M6
Ch1 起始 1 GHz
功率 -10 dBm 带宽 10 kHz TOSM P1,P2
终止 7.2 GHz

方向图

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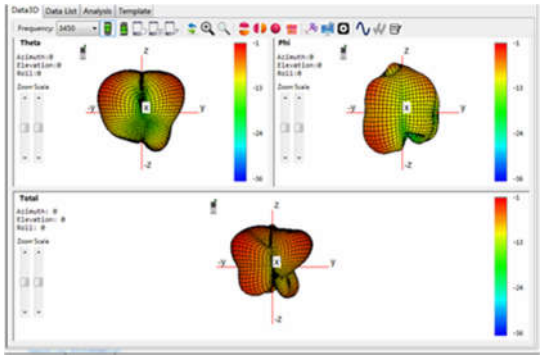	
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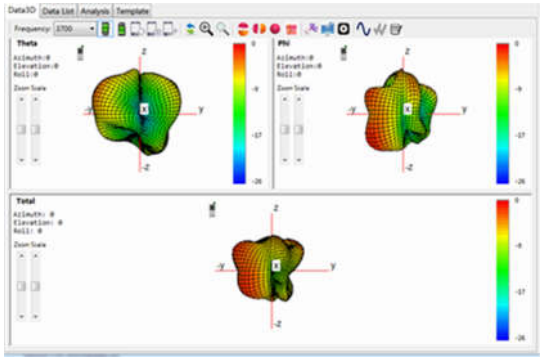	
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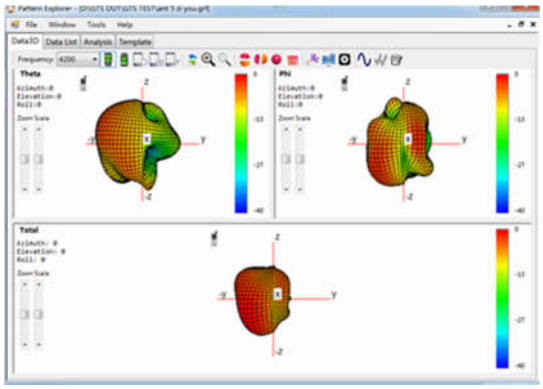	
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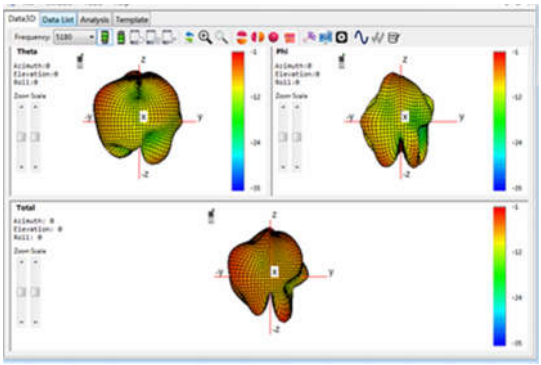	
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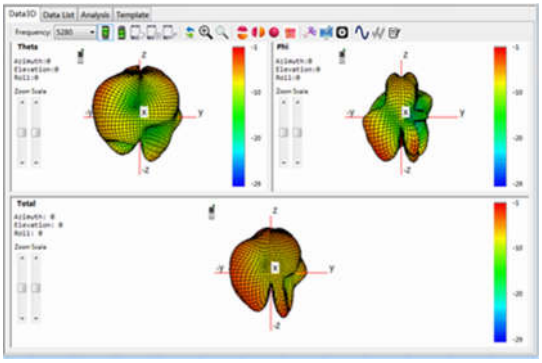	
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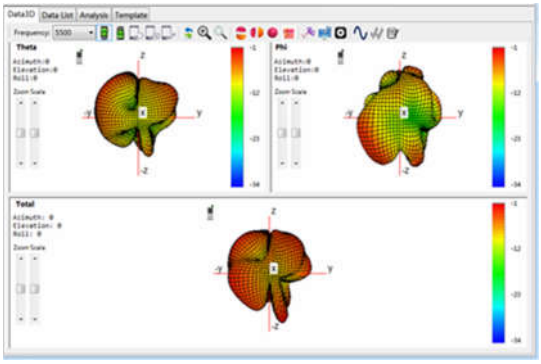	
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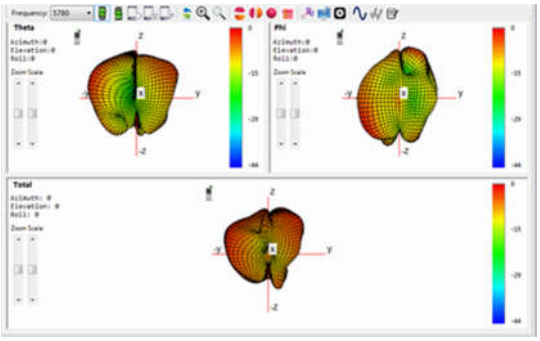	
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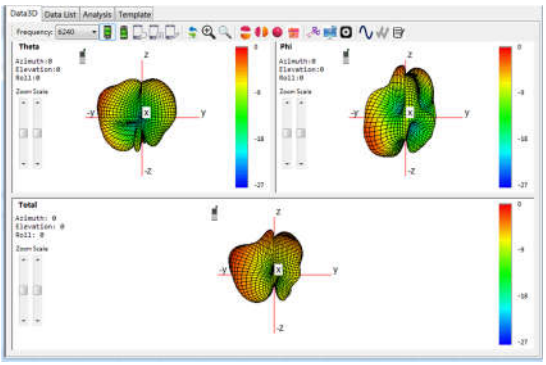	
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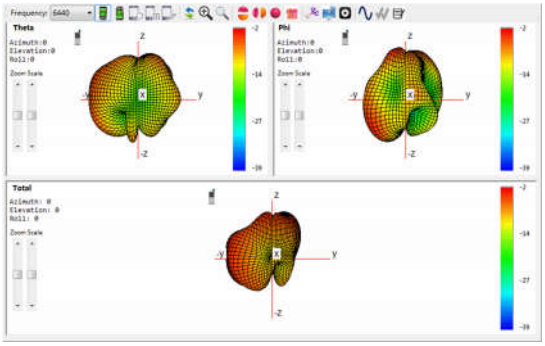	
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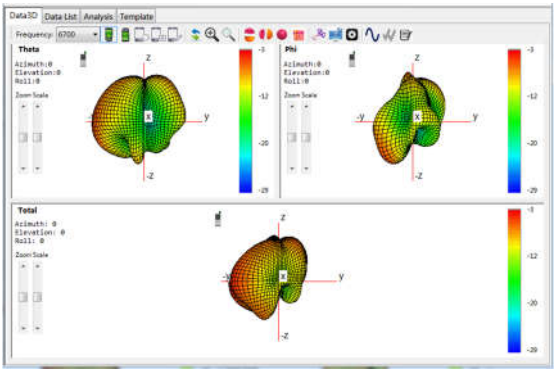
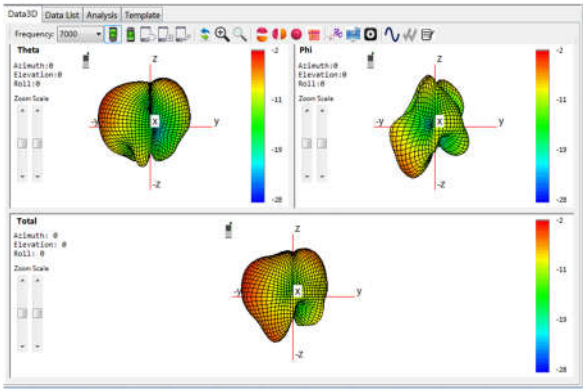
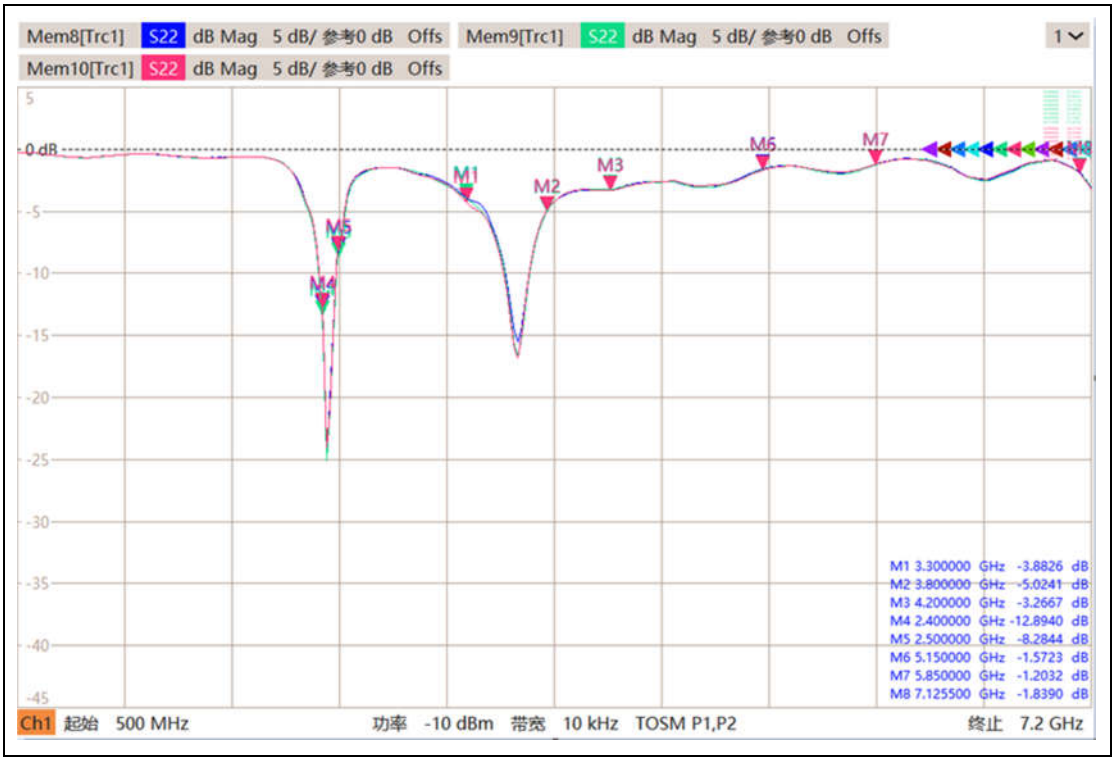
	

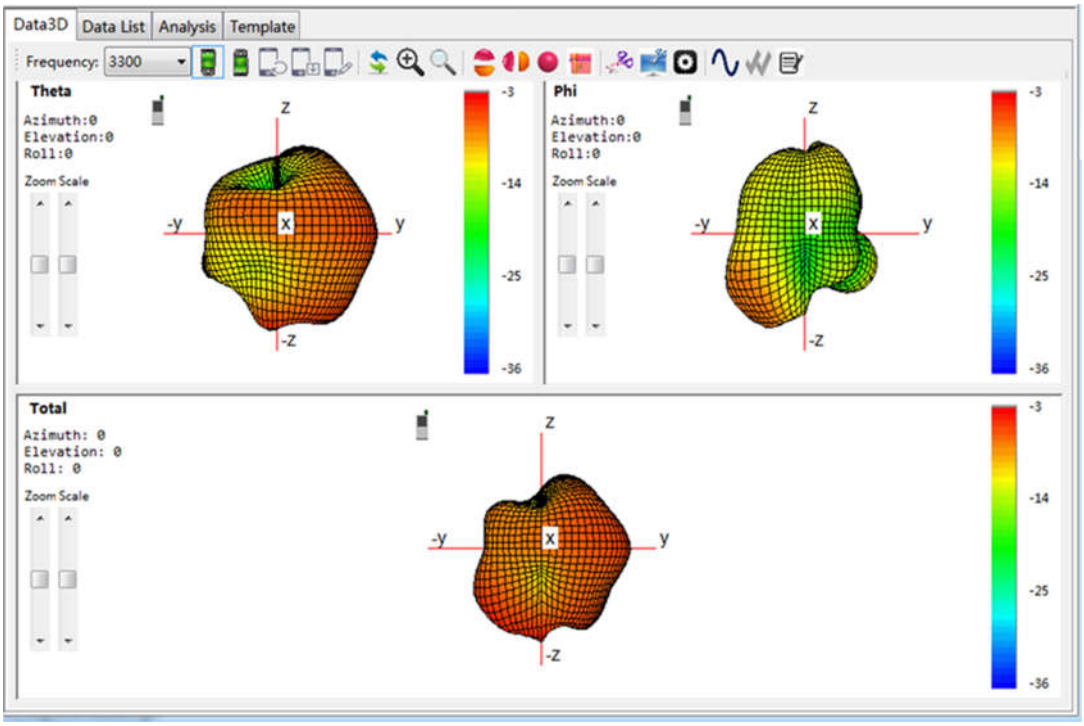
Frequency	7000MHz
	

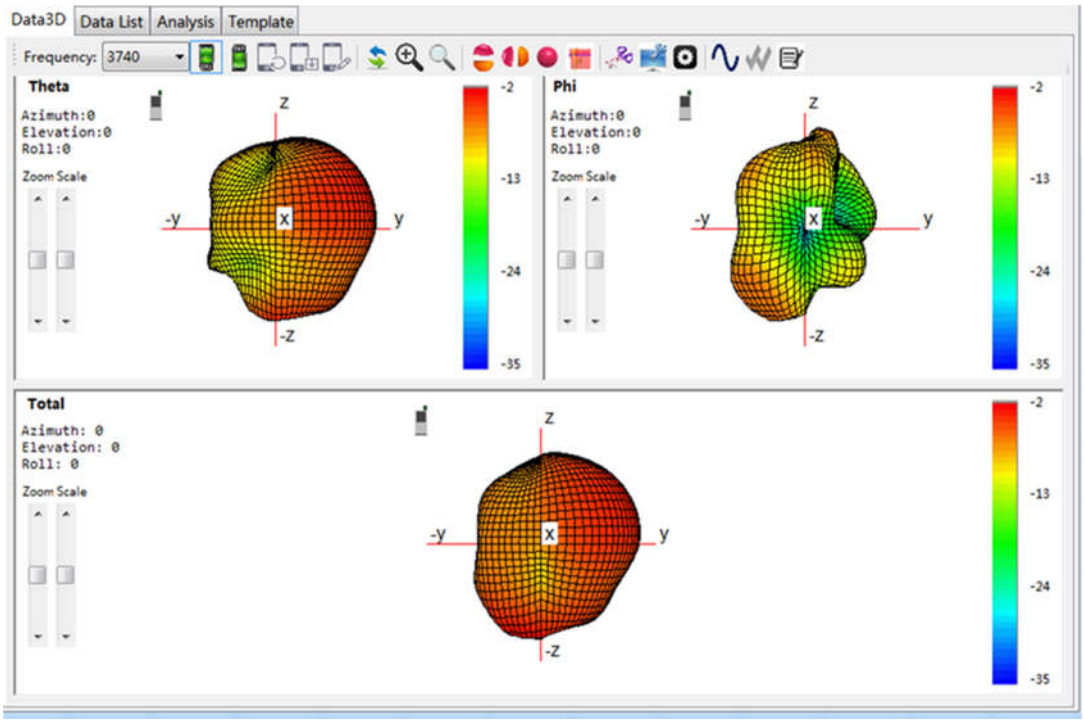
Band for Antenna 6	NR+WIFI_2.4G ANT	
	Avg.Effi.(dB)	Peak gain(dBi)
B42	-5.76	- 1.21
NR77: (3450~3550MHz) (3700~3980MHz)	-5.1	- 1
NR78: (3450~3550MHz) (3700~3800MHz)	-5.1	- 1
2.4G(2400~2485MHz)	-6.6	-1.72
Bluetooth	-6.6	-1.72

S 参数

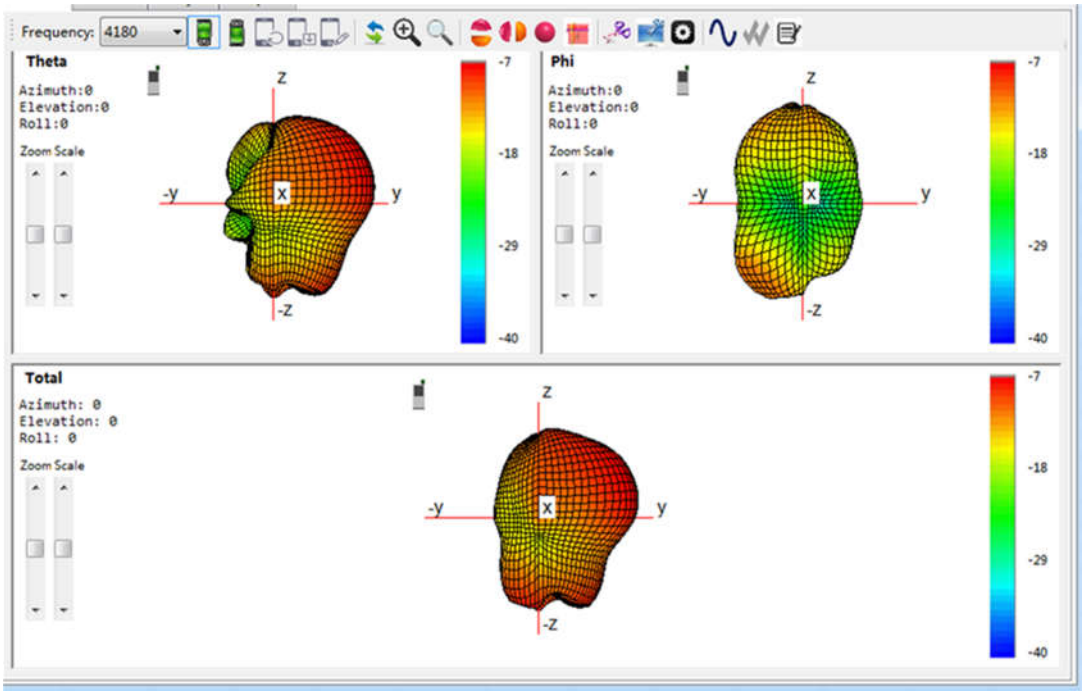


方向图

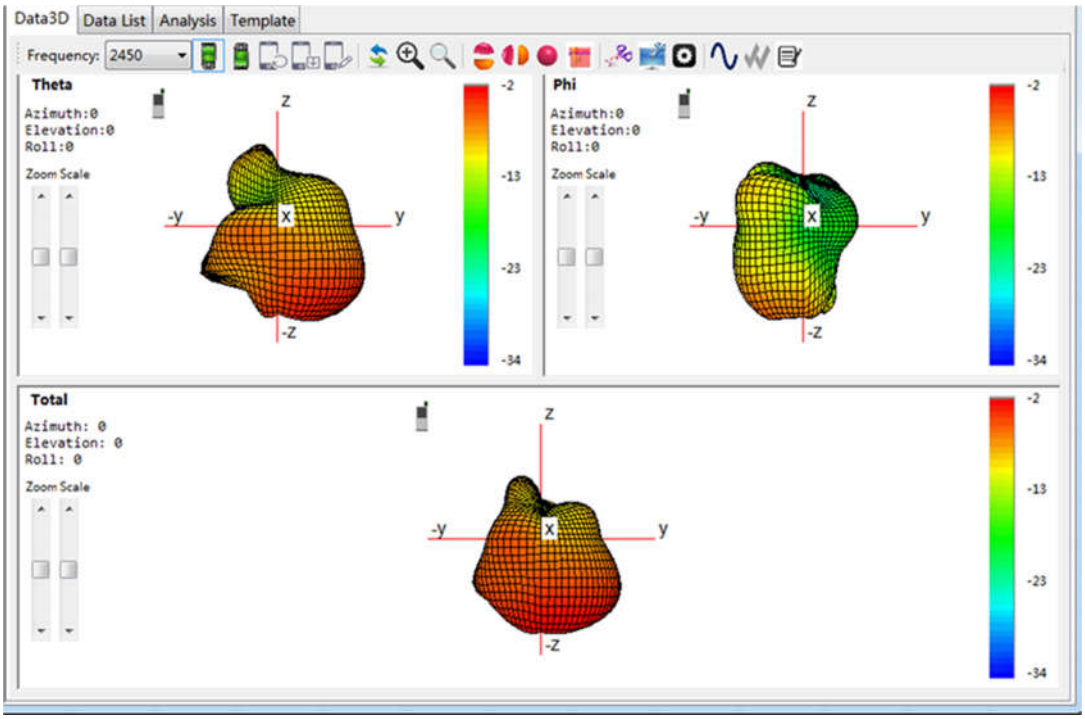
Frequency	3310MHz
	
Frequency	3750MHz



Frequency	4190MHz



Frequency	2450MHz


Data3D
Data List
Analysis
Template
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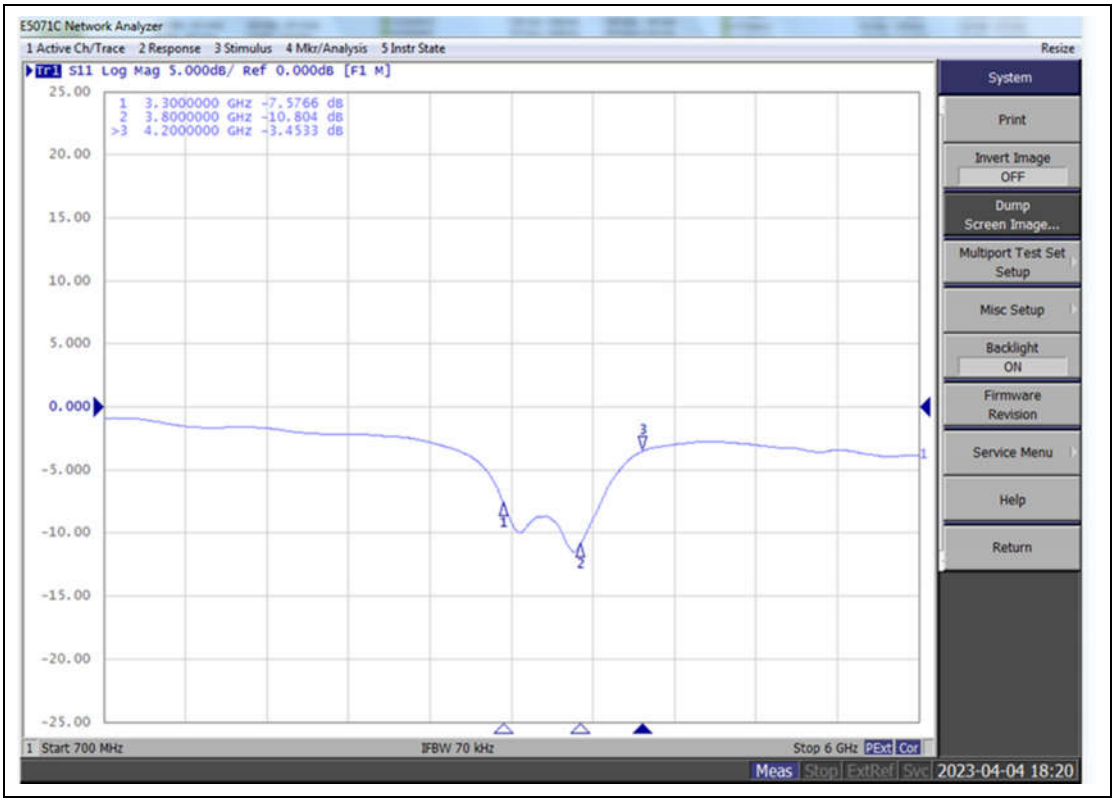
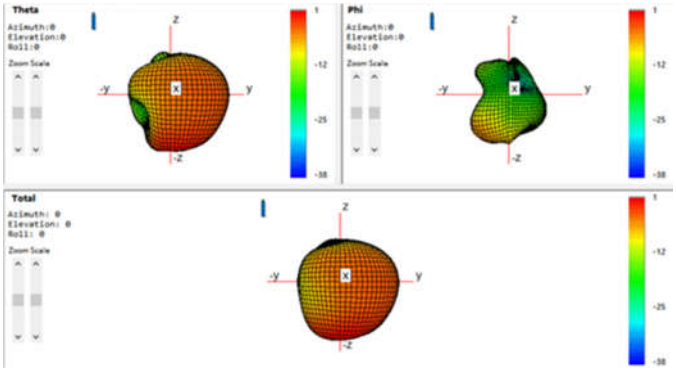
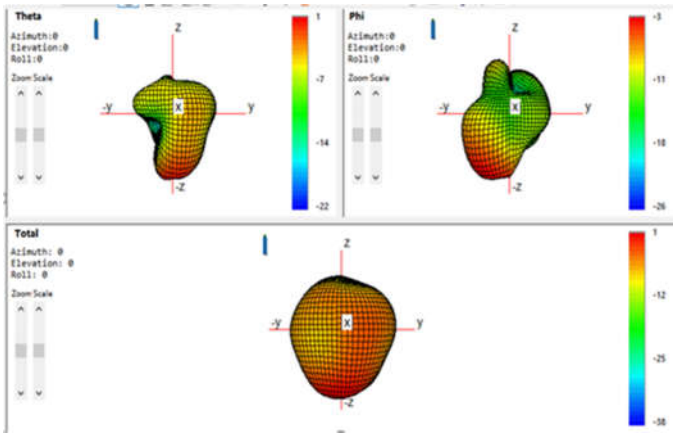
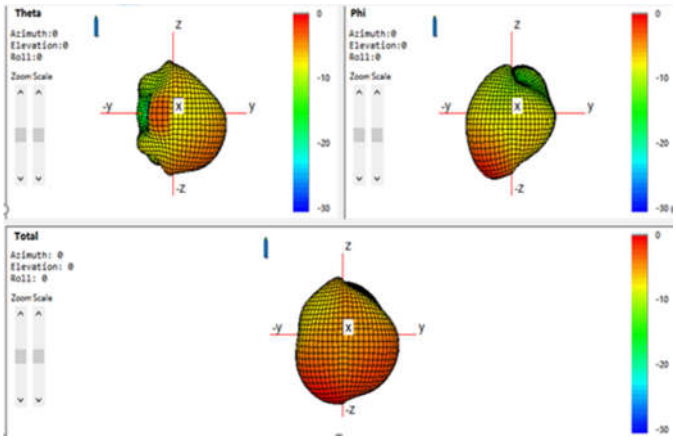
Theta
Azimuth:0
Elevation:0
Roll:0
Zoom Scale
Phi
Azimuth:0
Elevation:0
Roll:0
Zoom Scale
Total
Azimuth: 0
Elevation: 0
Roll: 0
Zoom Scale
z
-z
y
-y
x
-2
-13
-23
-34

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

S 参数

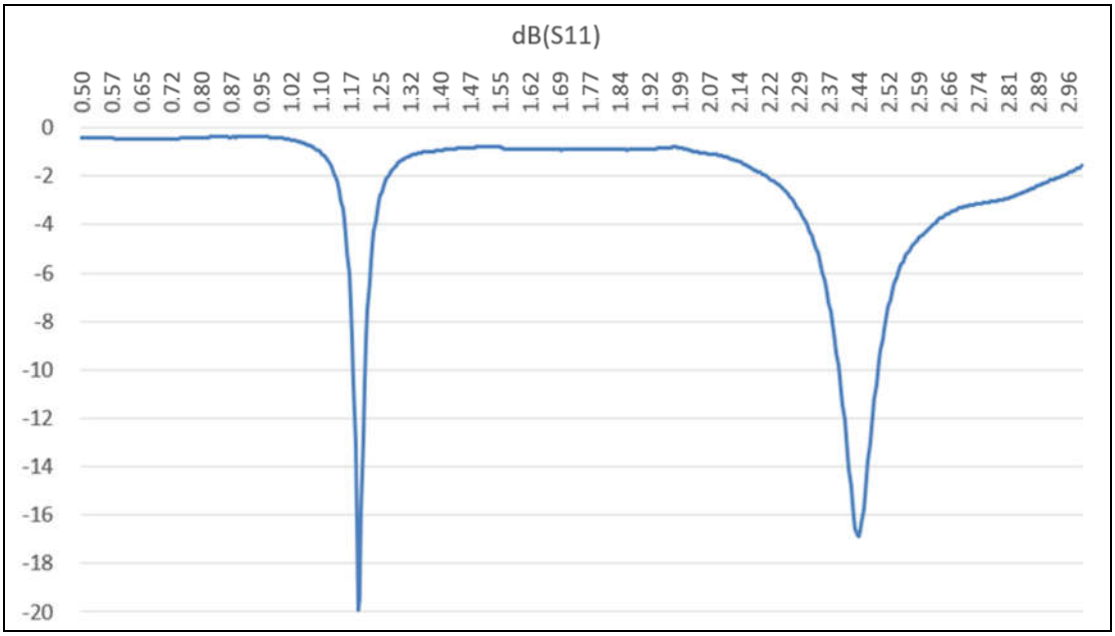


方向图

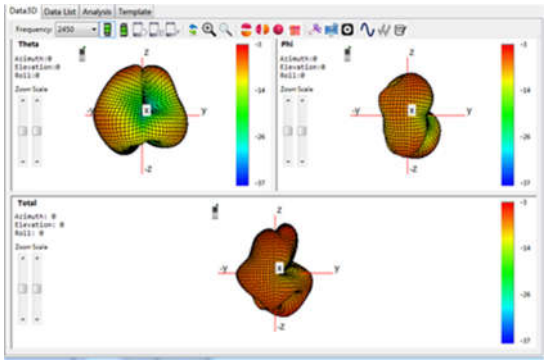
Frequency	3310MHz
	
Frequency	3750MHz
	
Frequency	4190MHz
	

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

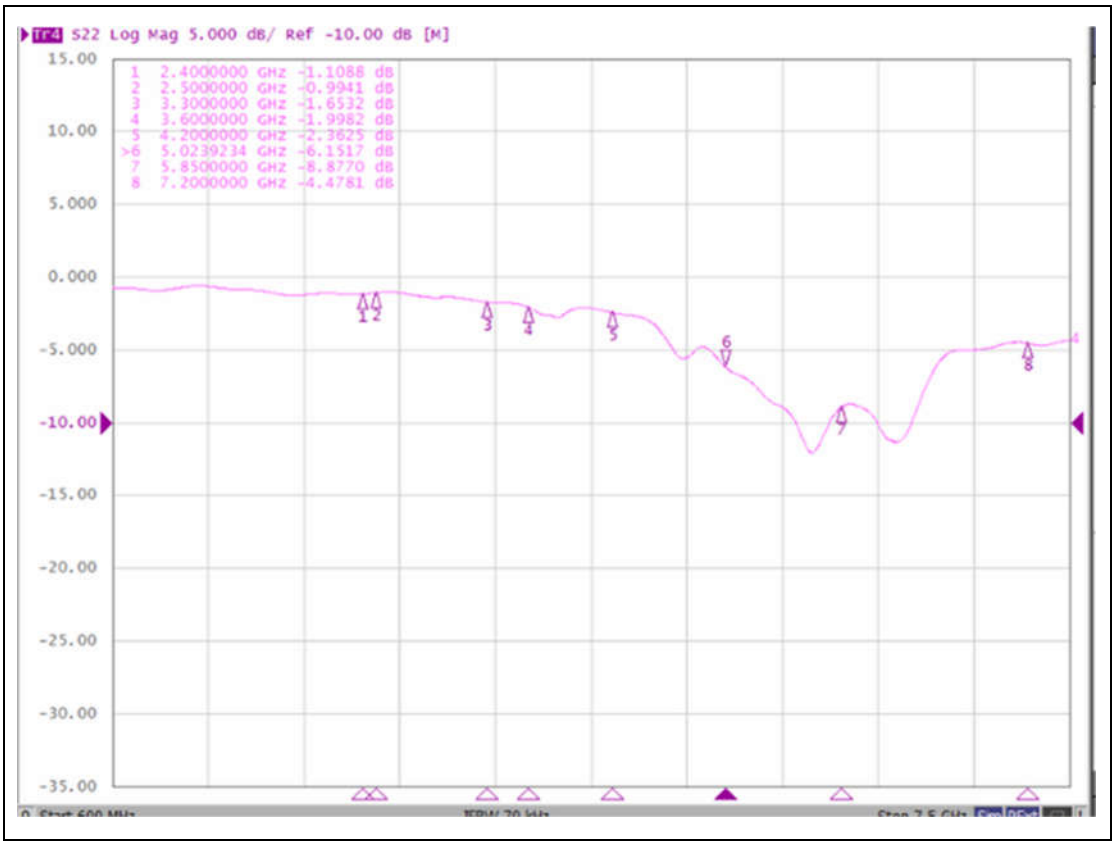


方向图

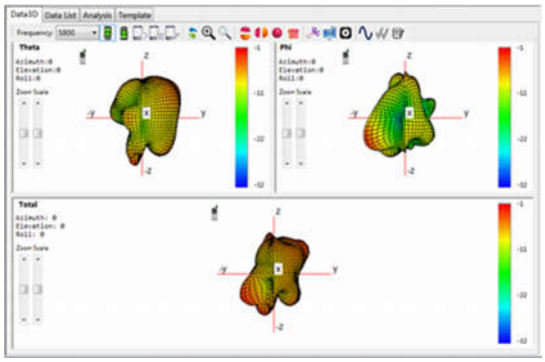
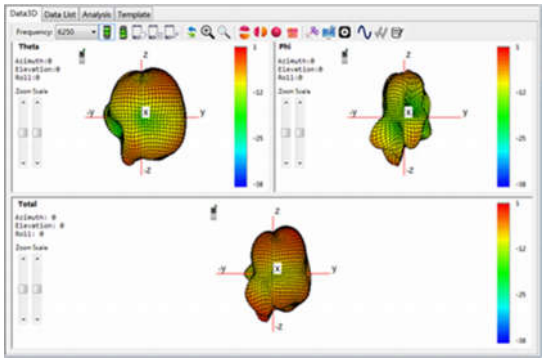
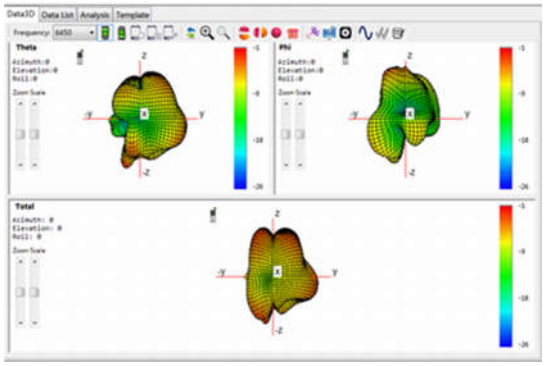
Frequency	2450MHz
	

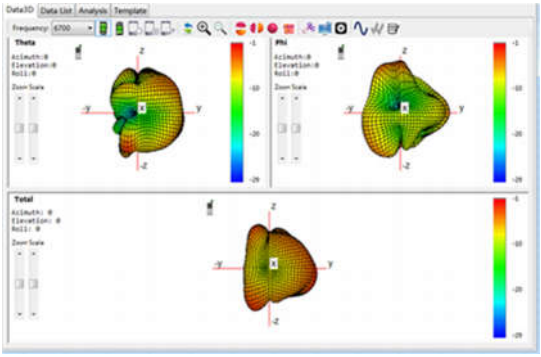
Band for Antenna 18	WIFI_5G ANT	
	Avg.Effi.(dB)	Peak gain(dBi)
5G (5150~5250MHz)	-6.3	-1.6
5G (5250~5350MHz)	-6.4	-1.58
5G (5470~5725MHz)	-6.5	-1.49
5G (5725~5850MHz)	-6.5	-1.29
6G (5925-6425GHz)	-5.2	0
6G (6425-6525GHz)	-6.3	-1.54
6G (6525-6875GHz)	-6.1	-1.33
6G (6875-7125GHz)	-7.8	-1.67

S 参数

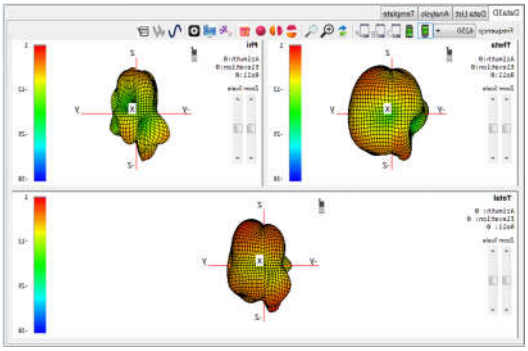


方向图

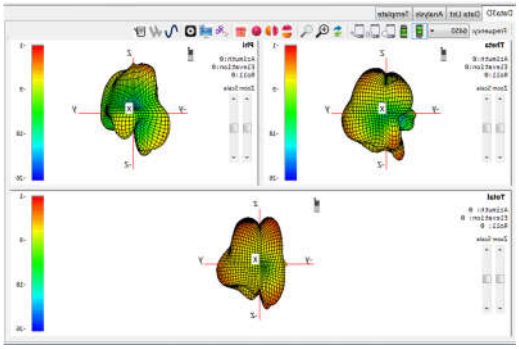
Frequency	5180MHz
	
Frequency	5280MHz
	
Frequency	5500MHz
	
Frequency	5785MHz



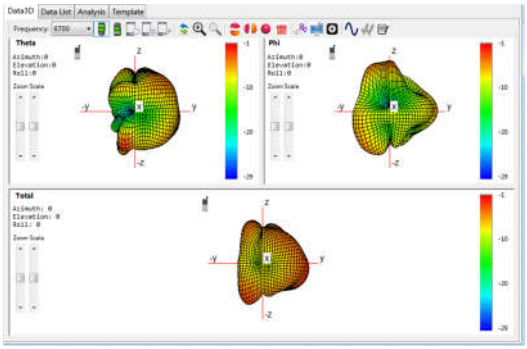
Frequency	6250MHz

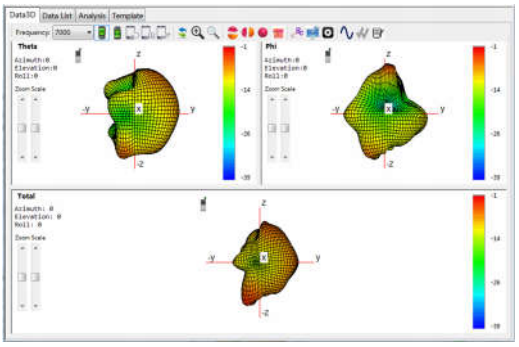


Frequency	6450MHz



Frequency	6700MHz



Frequency	7000MHz
	

3. Main Test Instruments

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	/	/	/	/

4. Antenna Model name：Rayzone2800

End of Test Report