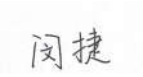
Antenna Performance Description

Applicant:	Xiaomi Communications Co., Ltd
Product description:	Mobile Phone
Model Name:	N11A
Test date:	2023/09/06
Tester:	

1. Antenna information

Antenna	Pattern	Antenna Type	Serial Number	Manufacturer	Manufacturer Address	Test party of Antenna gain
ANT0	Metal Frame	PIFA Antenna	N11A	Huizhou Winone Precision Technology Co.,Ltd. Tongda xiamentechnology Co.,Ltd	Building 19,Sunwoda Industrial Park, Yuanzhou Town, Boluo County, Huizhou City, Guangdong 88Ding Shan Zhong Lu, Dongfu,Haicang District, Xiamen, Fujian Province	Shenzhen Xiaomi Communications Co., Ltd.
ANT1	Metal Frame	PIFA Antenna	N11A	Huizhou Winone Precision Technology Co.,Ltd. Tongda xiamentechnology Co.,Ltd	Building 19,Sunwoda Industrial Park, Yuanzhou Town, Boluo County, Huizhou City, Guangdong 88Ding Shan Zhong Lu, Dongfu,Haicang District, Xiamen, Fujian Province	Shenzhen Xiaomi Communications Co., Ltd.
ANT2	Metal Frame	PIFA Antenna	N11A	Huizhou Winone Precision Technology Co.,Ltd. Tongda xiamentechnology Co.,Ltd	Building 19,Sunwoda Industrial Park, Yuanzhou Town, Boluo County, Huizhou City, Guangdong 88Ding Shan Zhong Lu, Dongfu,Haicang District, Xiamen, Fujian Province	Shenzhen Xiaomi Communications Co., Ltd.

ANT3	Metal Frame	PIFA Antenna	N11A	Huizhou Winone Precision Technology Co.,Ltd. Tongda xiamentechnology Co.,Ltd	Building 19,Sunwoda Industrial Park, Yuanzhou Town, Boluo County, Huizhou City, Guangdong 88Ding Shan Zhong Lu, Dongfu,Haicang District, Xiamen, Fujian Province	Shenzhen Xiaomi Communications Co., Ltd.
ANT4	Metal Frame	PIFA Antenna	N11A	Huizhou Winone Precision Technology Co.,Ltd. Tongda xiamentechnology Co.,Ltd	Building 19,Sunwoda Industrial Park, Yuanzhou Town, Boluo County, Huizhou City, Guangdong 88Ding Shan Zhong Lu, Dongfu,Haicang District, Xiamen, Fujian Province	Shenzhen Xiaomi Communications Co., Ltd.
ANT5	Metal Frame	PIFA Antenna	N11A	Huizhou Winone Precision Technology Co.,Ltd. Tongda xiamentechnology Co.,Ltd	Building 19,Sunwoda Industrial Park, Yuanzhou Town, Boluo County, Huizhou City, Guangdong 88Ding Shan Zhong Lu, Dongfu,Haicang District, Xiamen, Fujian Province	Shenzhen Xiaomi Communications Co., Ltd.

ANT6	Metal Frame	PIFA Antenna	N11A	Huizhou Winone Precision Technology Co.,Ltd. Tongda xiamentechnology Co.,Ltd	Building 19,Sunwoda Industrial Park, Yuanzhou Town, Boluo County, Huizhou City, Guangdong 88Ding Shan Zhong Lu, Dongfu,Haicang District, Xiamen, Fujian Province	Shenzhen Xiaomi Communications Co., Ltd.
ANT7	FPC	PIFA Antenna	N11A	AAC Kai Tai (Shenzhen) Technology Development Co., Ltd Kunshan Innowave Communication Technology Co.， Ltd	Block A Nanjing University Research Center Shenzhen Branch, No.6 YueXing 3rd Road. South Hi-Tech Industrial Park, Nanshan District Shenzhen, China 518057 Building H, Jindi Zhizaoyuan, Shengchuang Road, Yushan Town, Kunshan City, Suzhou City, Jiangsu Province	Shenzhen Xiaomi Communications Co., Ltd.

ANT8	FPC	PIFA Antenna	N11A	AAC Kai Tai (Shenzhen) Technology Development Co., Ltd Kunshan Innowave Communication Technology Co.， Ltd	Block A Nanjing University Research Center Shenzhen Branch, No.6 YueXing 3rd Road. South Hi-Tech Industrial Park, Nanshan District Shenzhen, China 518057 Building H, Jindi Zhizaoyuan, Shengchuang Road, Yushan Town, Kunshan City, Suzhou City, Jiangsu Province	Shenzhen Xiaomi Communications Co., Ltd.
ANT17	Metal Frame	PIFA Antenna	N11A	Huizhou Winone Precision Technology Co.,Ltd. Tongda xiamentechnology Co.,Ltd	Building 19,Sunwoda Industrial Park, Yuanzhou Town, Boluo County, Huizhou City, Guangdong 88Ding Shan Zhong Lu, Dongfu,Haicang District, Xiamen, Fujian Province	Shenzhen Xiaomi Communications Co., Ltd.

ANT18	Metal Frame	PIFA Antenna	N11A	Huizhou Winone Precision Technology Co.,Ltd. Tongda xiamentechnology Co.,Ltd	Building 19,Sunwoda Industrial Park, Yuanzhou Town, Boluo County, Huizhou City, Guangdong 88Ding Shan Zhong Lu, Dongfu,Haicang District, Xiamen, Fujian Province	Shenzhen Xiaomi Communications Co., Ltd.
NFC	Metal Frame	FPC + PIFA Antenna 40.1*10.2mm	N11A	Huizhou Winone Precision Technology Co.,Ltd. Tongda xiamentechnology Co.,Ltd	Building 19,Sunwoda Industrial Park, Yuanzhou Town, Boluo County, Huizhou City, Guangdong 88Ding Shan Zhong Lu, Dongfu,Haicang District, Xiamen, Fujian Province	Shenzhen Xiaomi Communications Co., Ltd.

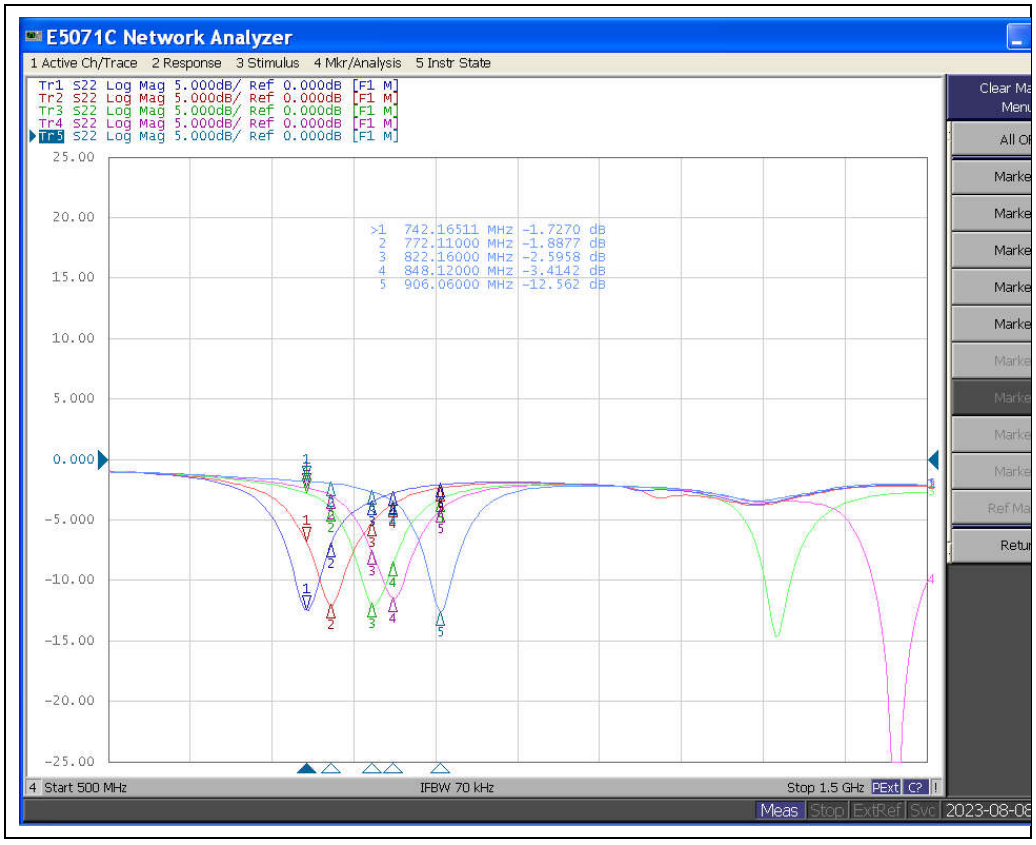
Test instrument:GTS2800

Software version

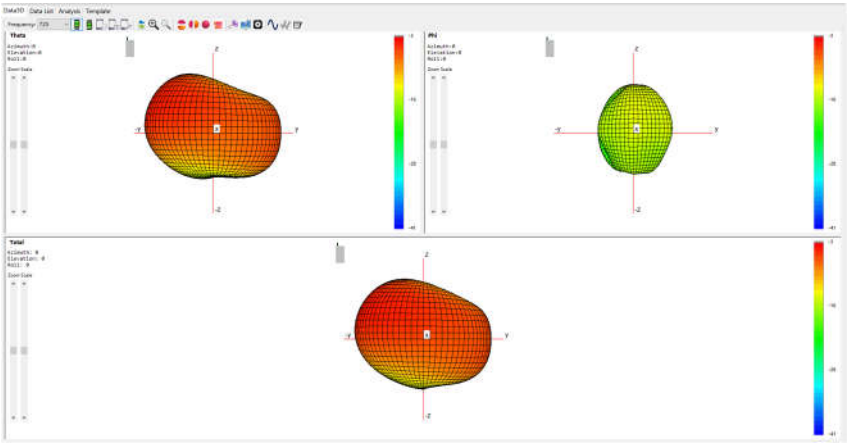
2. Test data

Bands for Antenna 0	LB ANT	
	Avg.Effi.(dB)	Peak gain(dBi)
B28/N28	-8.3	-4
B20/N20	-9	-4.1
B5/B18/B19/WB5 /WB6/WB19/G5/N5	-8.6	-3.6
B8/WB8/G8/N8	-8.5	-2.7

S Parameters



Radiation pattern

Frequency	723MHz
	
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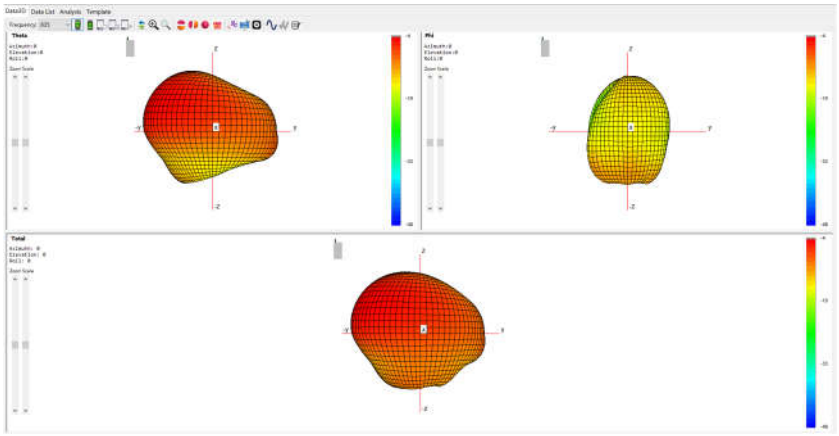	
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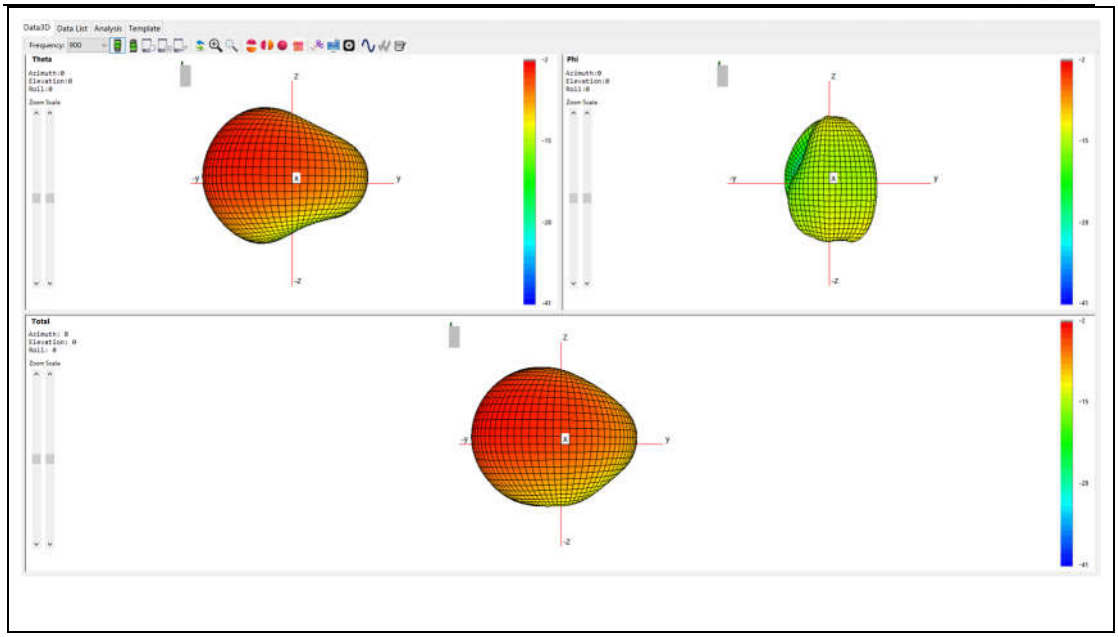
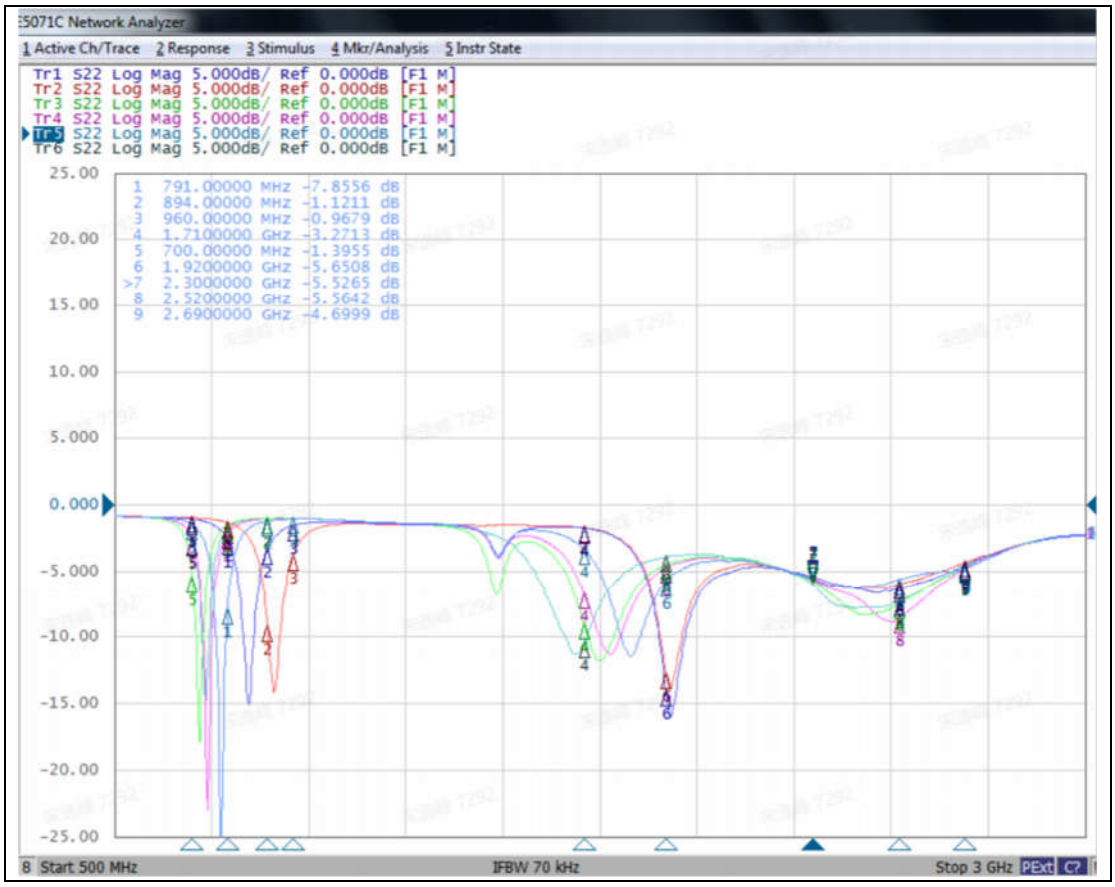

Data3D
Data List
Analysis
Template
Frequency: 900
Theta
Phi
Total

Bands for Antenna 1	LMHB ANT	
	Avg.Effi.(dB)	Peak gain(dBi)
B5/N5/B19/B26/WB5/WB6 /WB19/G5	-8.65	-4.96
B8/N8/WB8/G8	-9.27	-5.16
B20/N20	-10.3	-5.91
B28/N28/B18	-11.6	-6.62
B3/N3/G3	-6.55	-2.57
B1/N1/WB1	-6.7	-0.45
B40/N40	-6.58	-2.75
B7/N7/B38/N38/B41/N41	-6	-0.39
G2/B2/WB2	-5.89	-2.43
B4/WB4/B66	-6.4	-2.57

S Parameters



Radiation pattern

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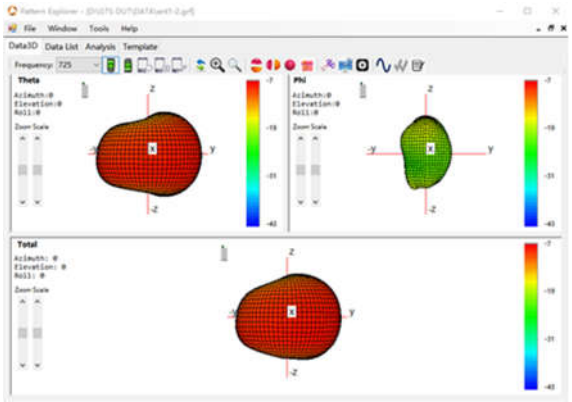	
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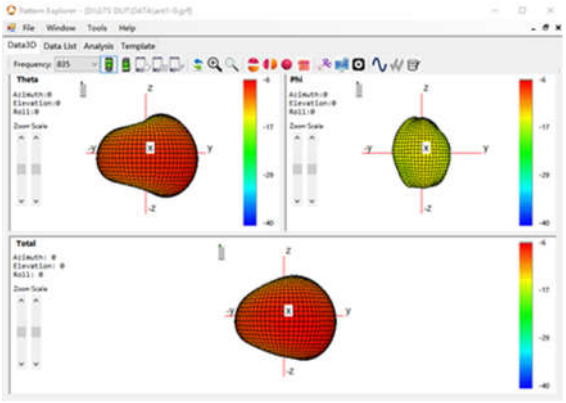	
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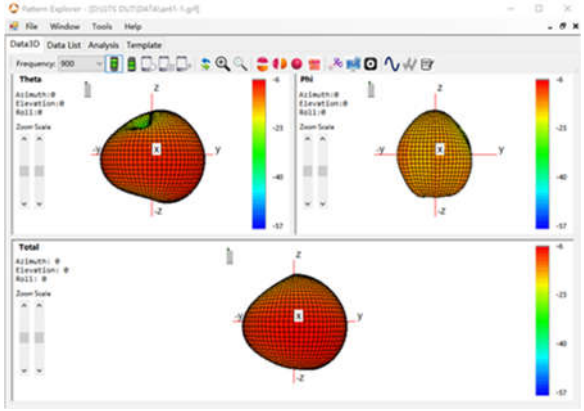	
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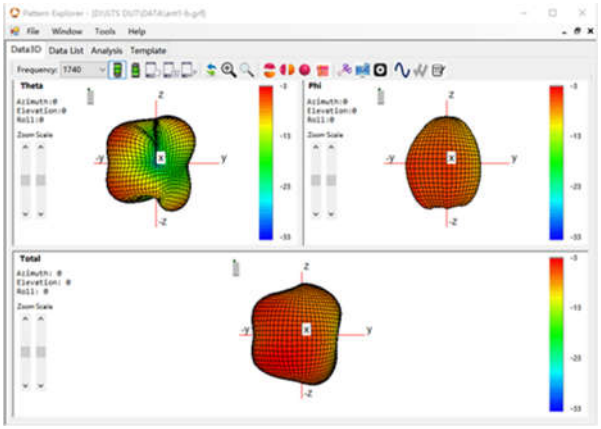	
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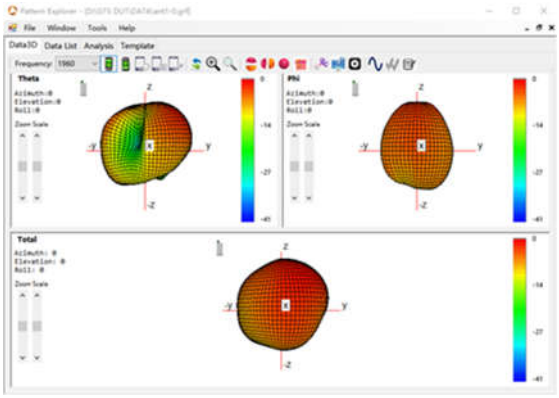	
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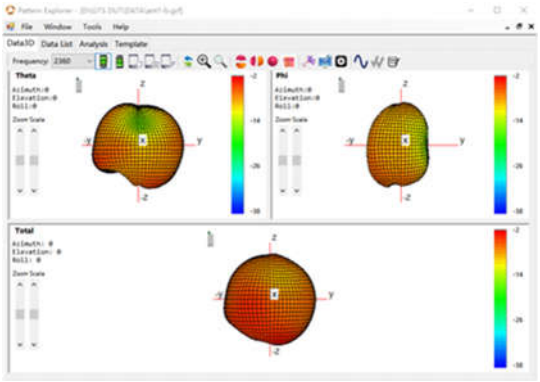	
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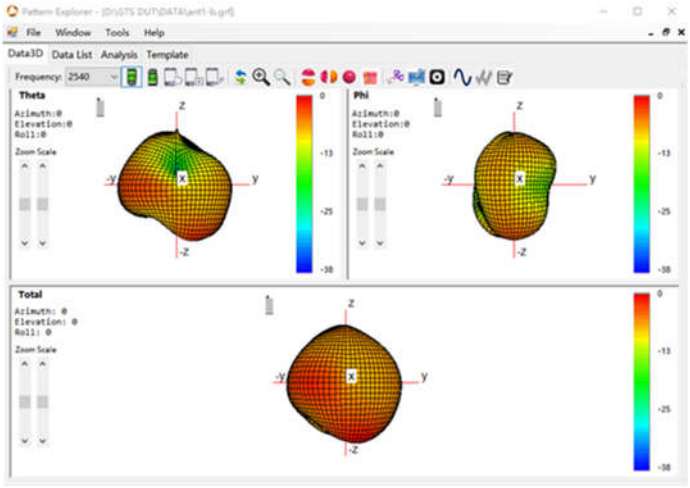	
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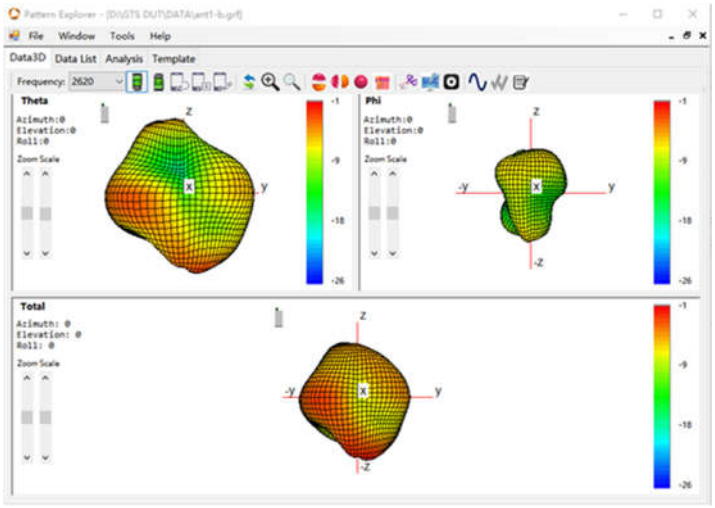
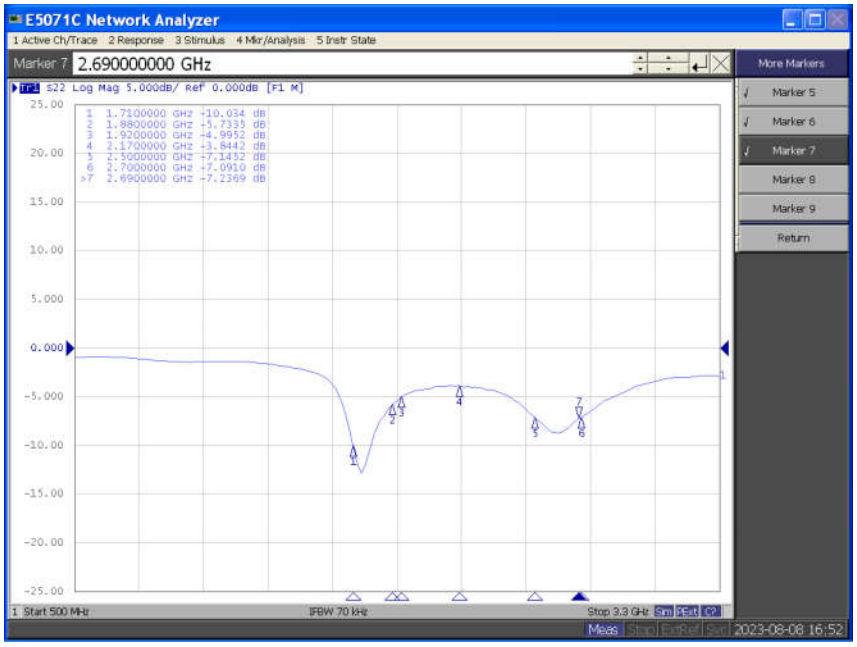
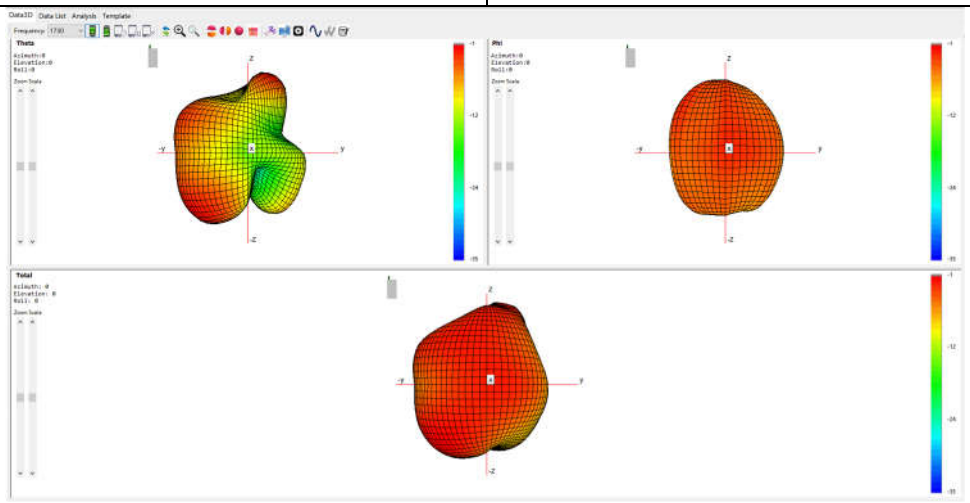
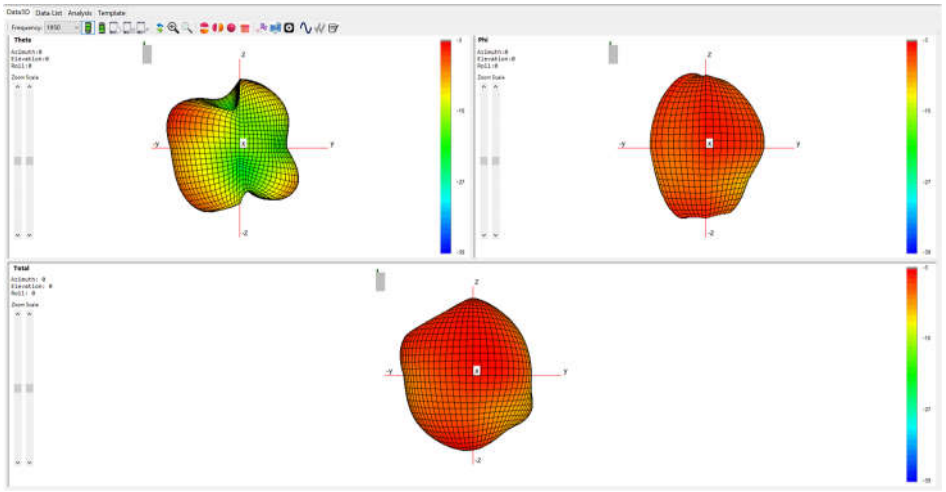

File Window Tools Help
Data3D Data List Analysis Template
Frequency: 2620
Theta
Azimuth:0
Elevation:0
Roll:0
Zoom Scale
Phi
Azimuth:0
Elevation:0
Roll:0
Zoom Scale
Total
Azimuth: 0
Elevation: 0
Roll: 0
Zoom Scale

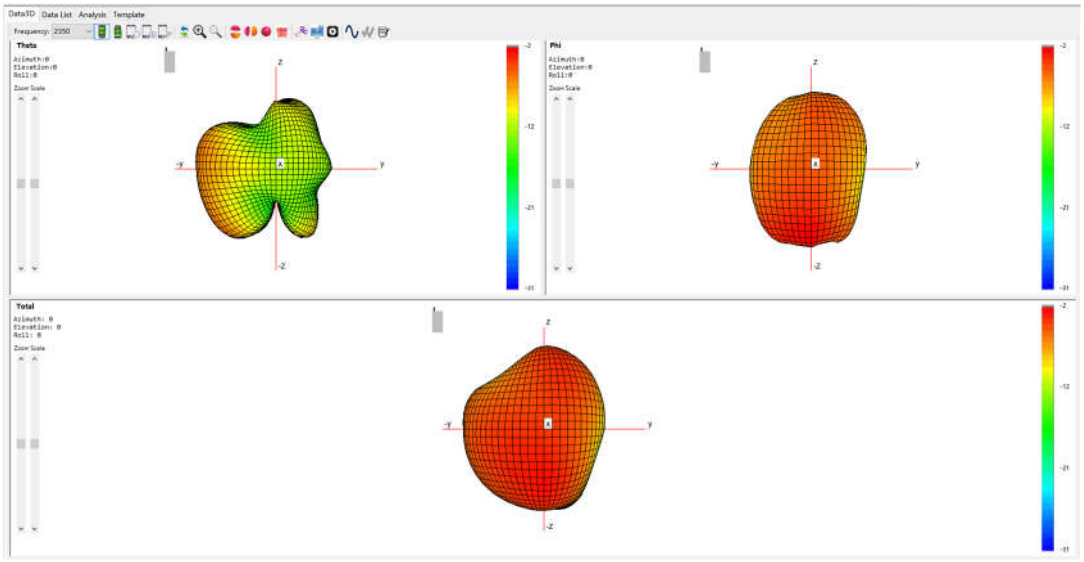
Bands for Antenna 2	MHB ANT	
	Avg.Effi.(dB)	Peak gain(dBi)
B1/N1/WB1	-6.8	-3.3
G2/WB2	-6.1	-2
B3/N3/B4/G3/WB4/B66	-4.5	-1.2
B7/N7/B38/N38/B41/N41	-5.8	-1.5
B40/N40	-6	-1.6

S Parameters

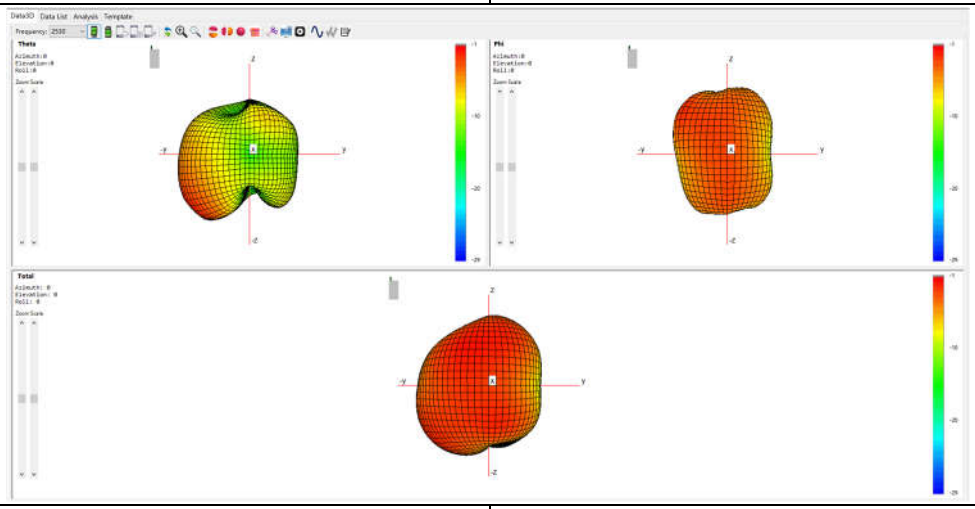


Radiation pattern

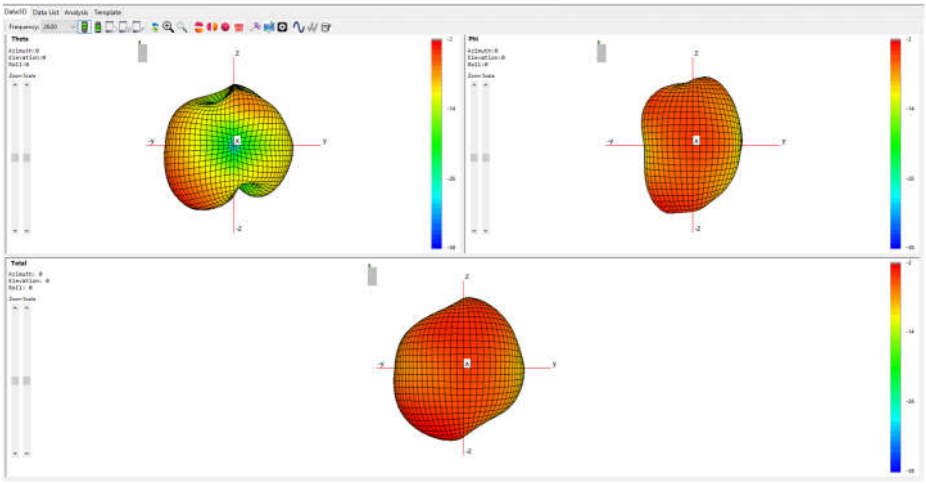
Frequency	1735MHz
	
Frequency	1950MHz
	
Frequency	2350MHz



Frequency	2535MHz

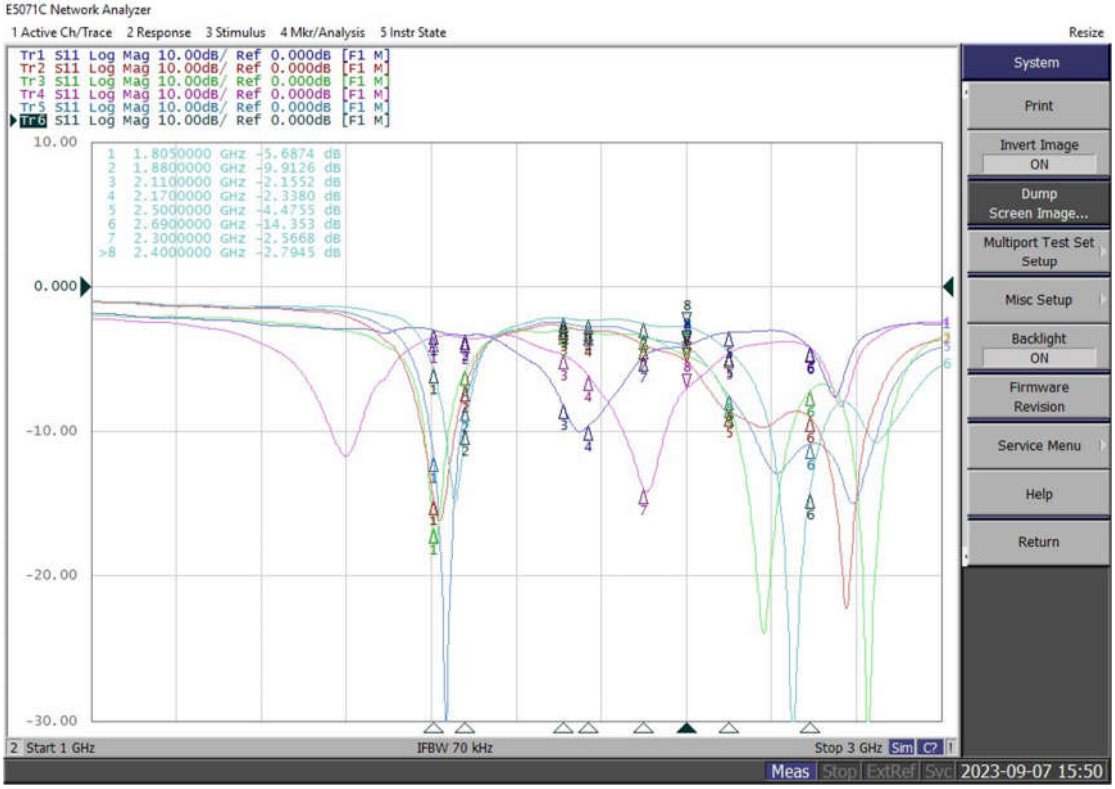


Frequency	2620MHz

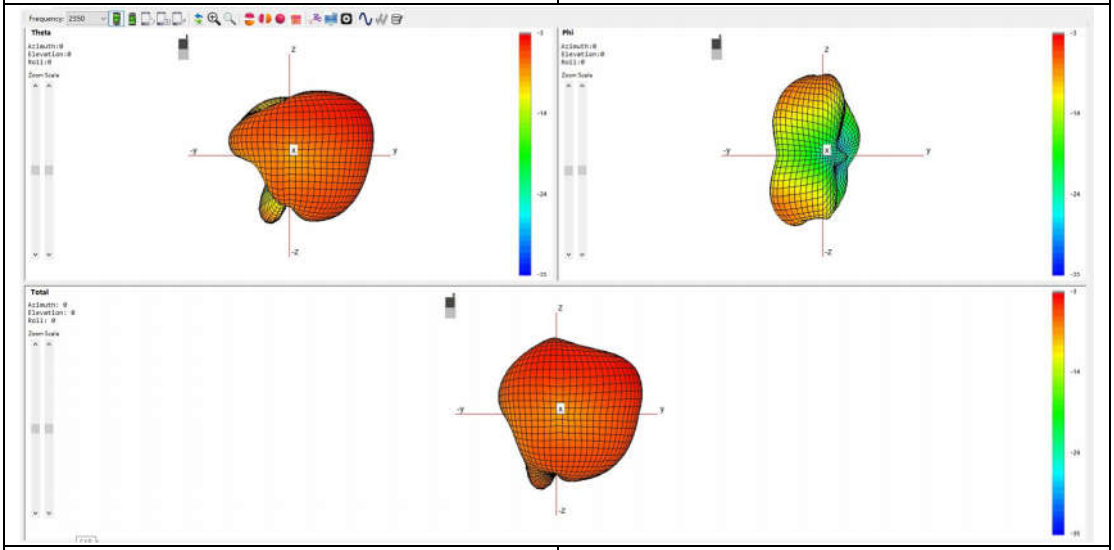


Band for Antenna 3	MHB ANT	
	Avg.Effi.(dB)	Peak gain(dBi)
B40/N40	-6.6	-2.7
B41/N41/B38/N38	-6.7	-1.3

S Parameters



Radiation pattern

Frequency	2350MHz
	
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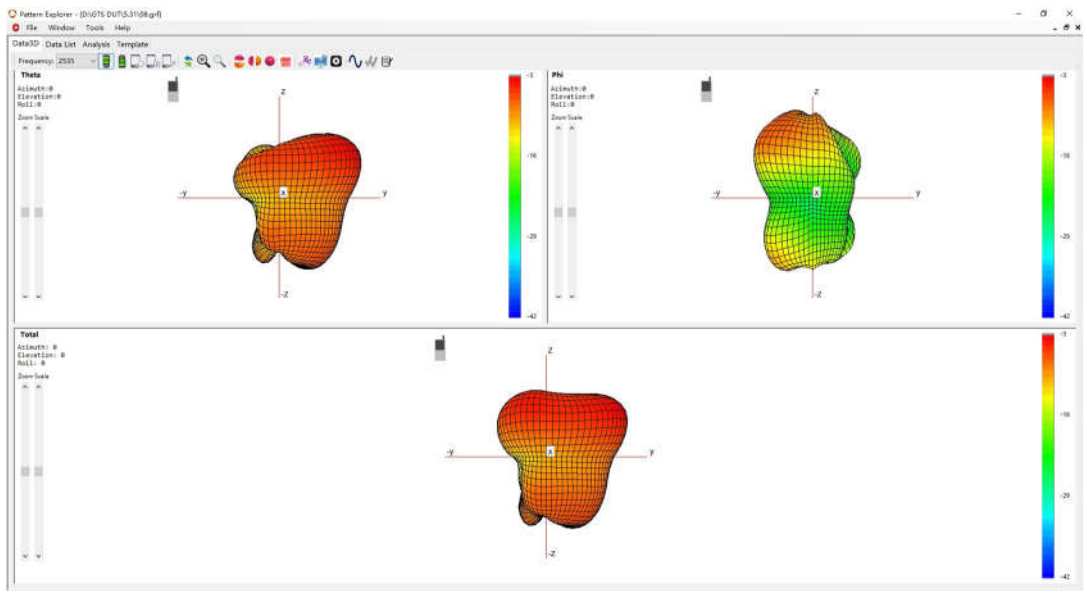
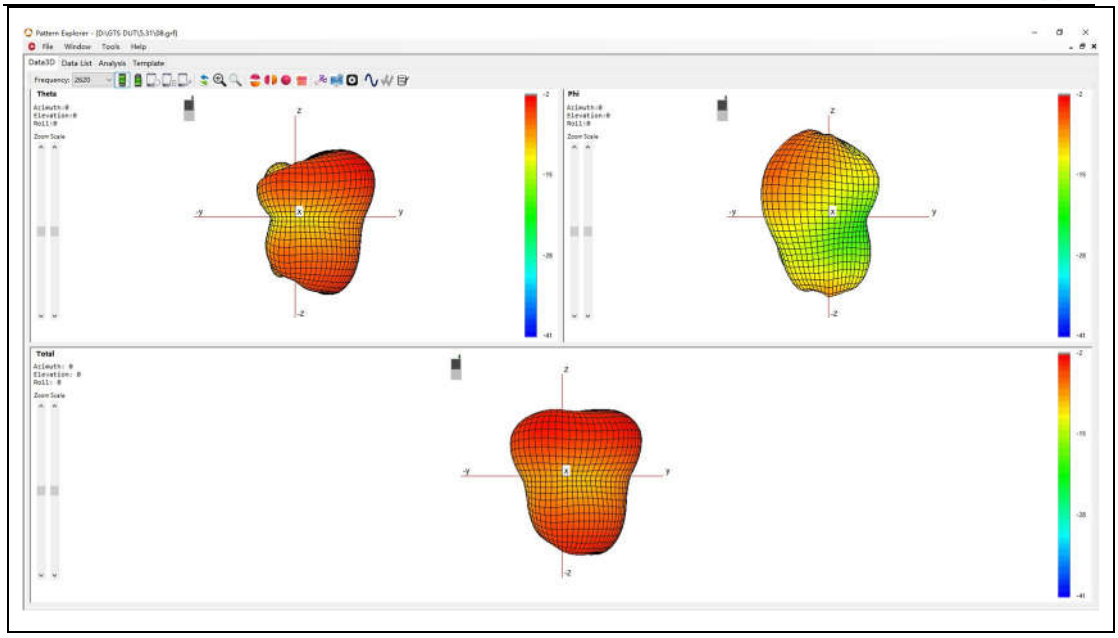
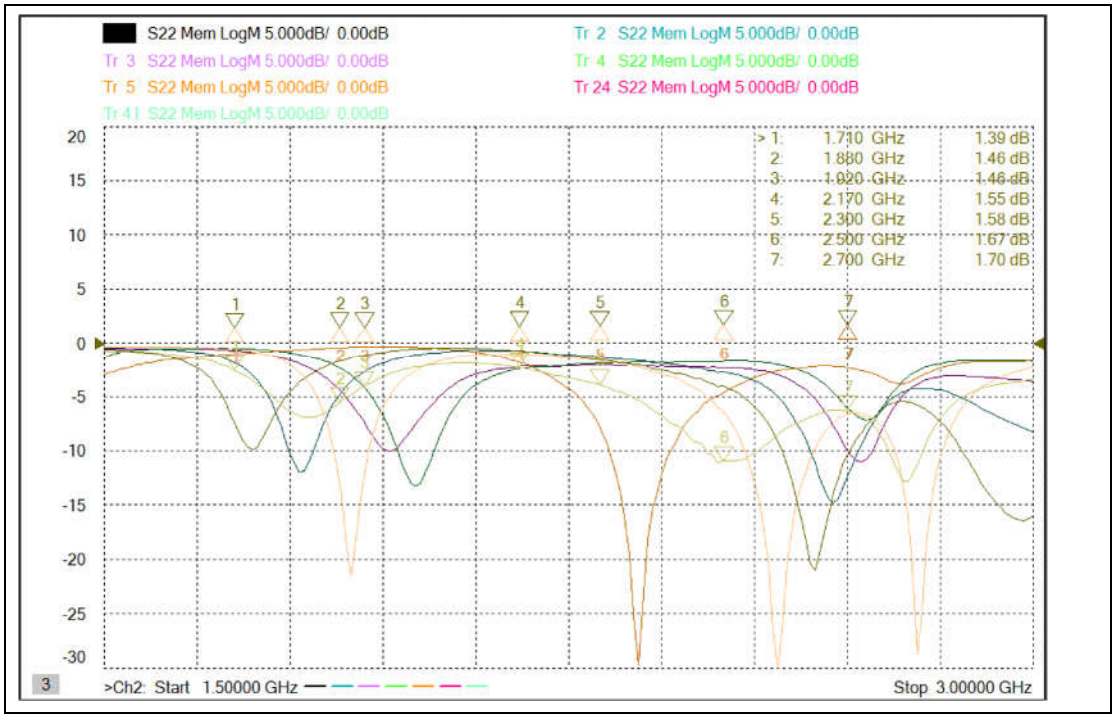
	
Frequency	2620MHz


Pattern Explorer
File
Window
Tools
Help
Data3D
Data List
Analysis
Template
Frequency:
Theta
Phi
Total

Band for Antenna 4	MHB ANT	
	Avg.Effi.(dB)	Peak gain(dBi)
B1/N1	-6.2	-3.6
B2	-6.8	-4.2
B3/N3/B4/B66	-6.8	-6.7
B7/N7/B38/N38/B41/N41	-6.6	-6
B40/N40	-6.1	-5.7

S Parameters



Radiation pattern

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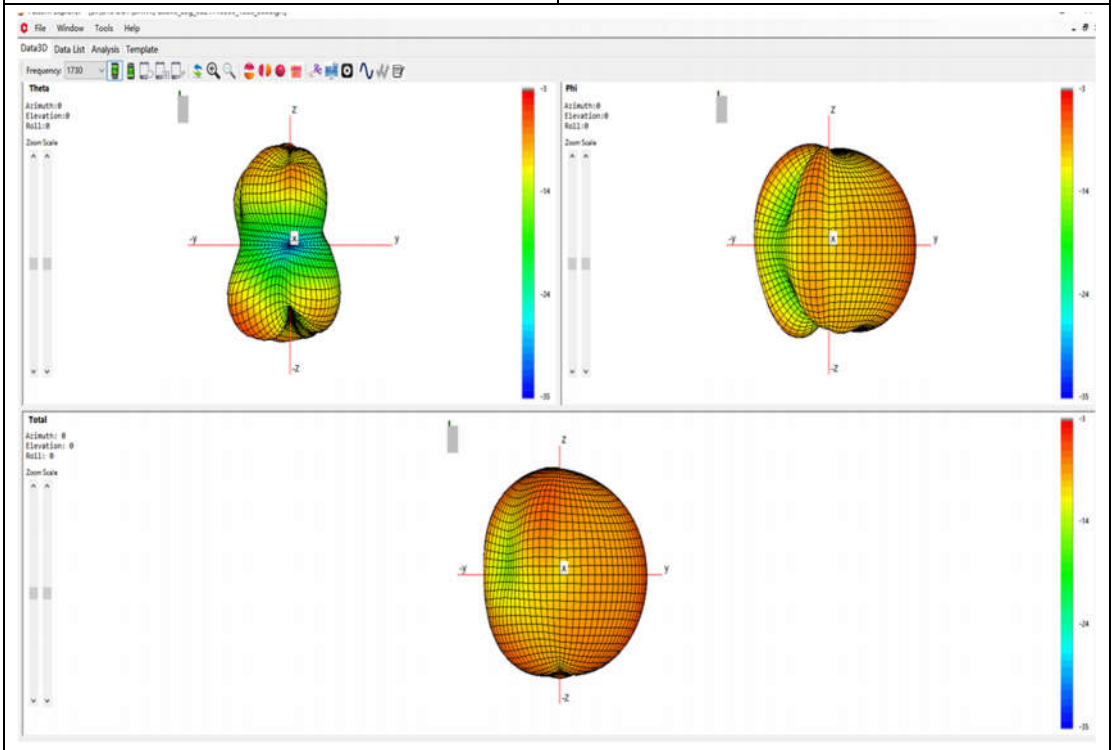	
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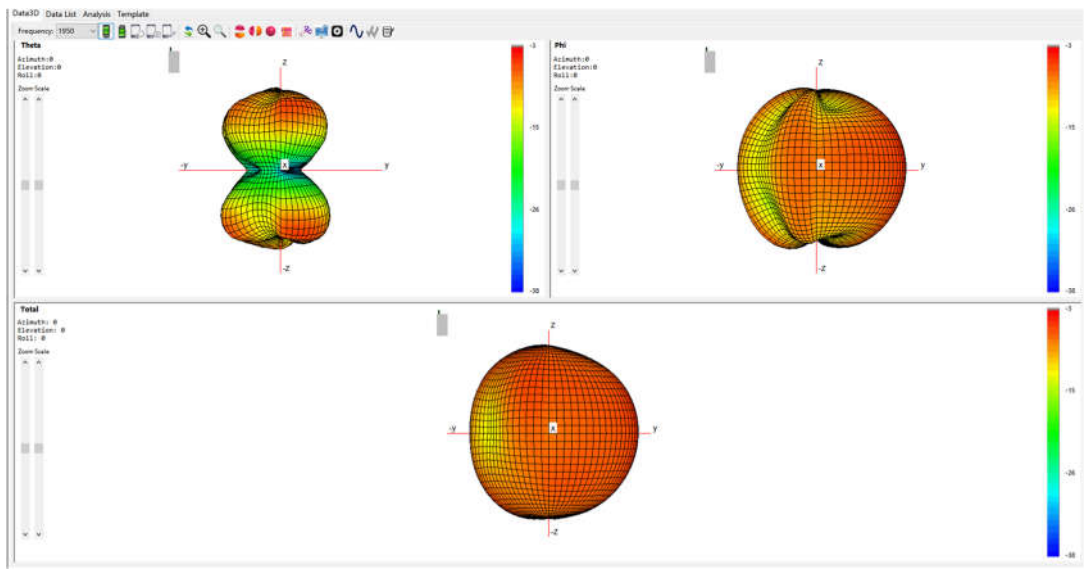	
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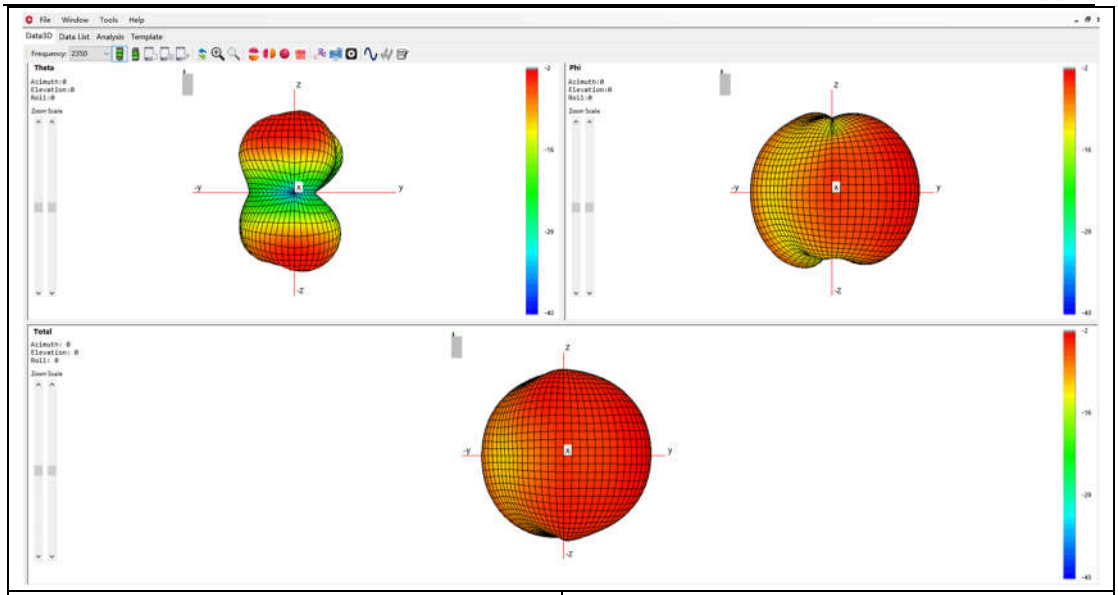
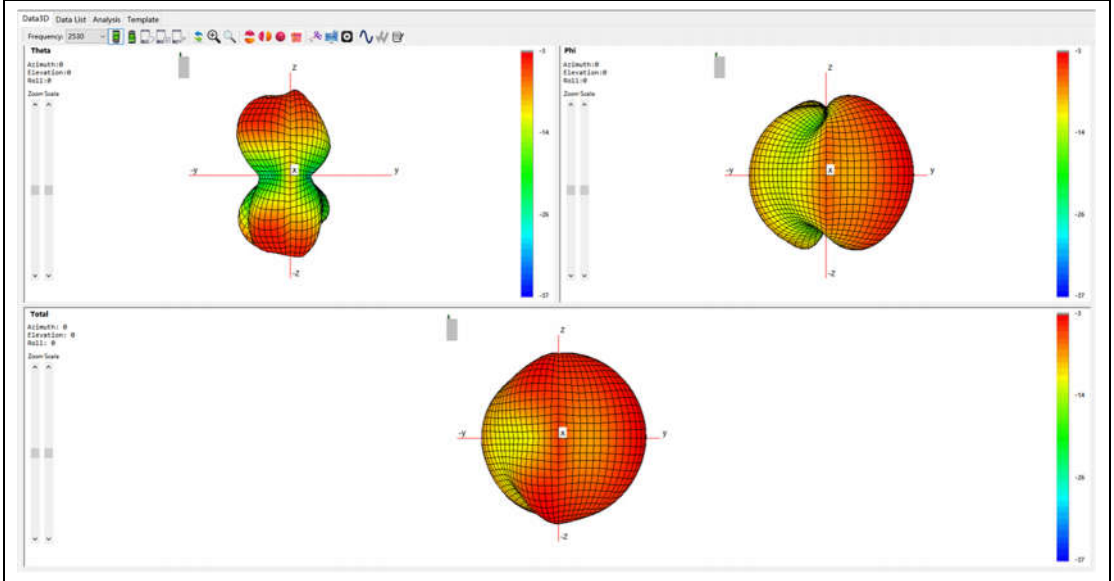
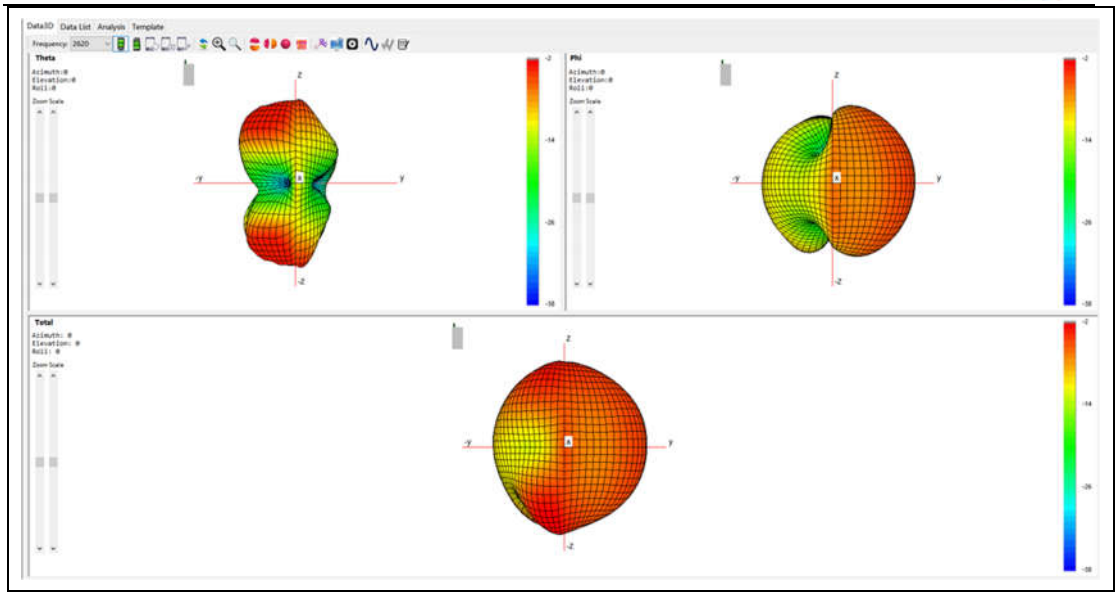


Frequency	2530MHz

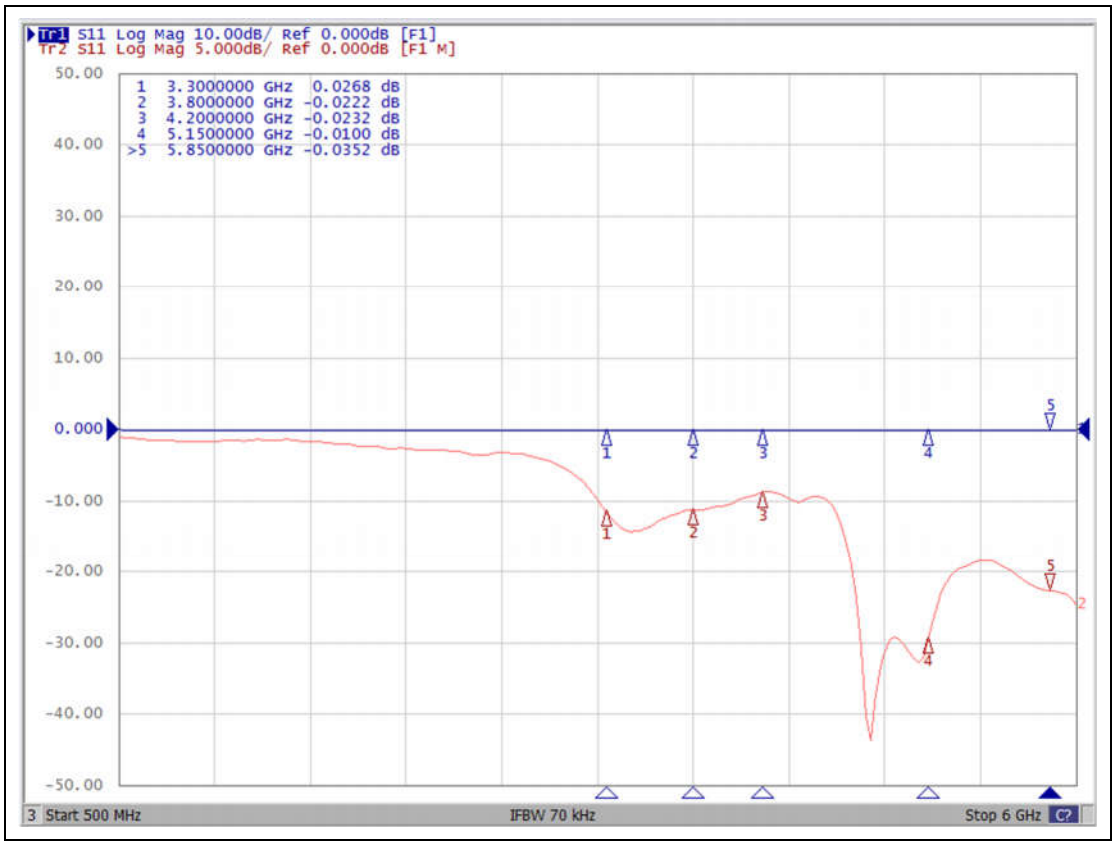


Frequency	2620MHz

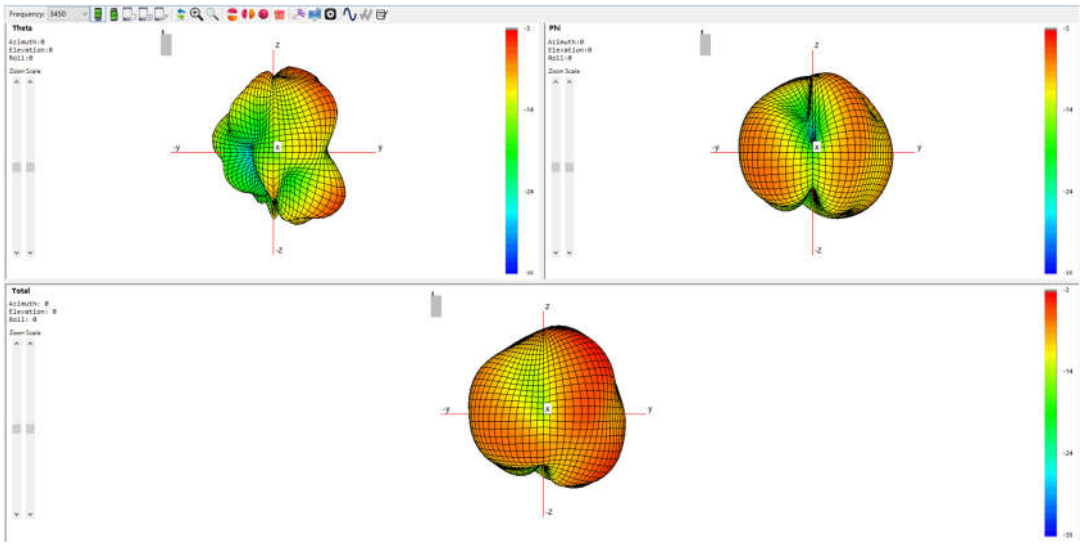

Data3D
Data List
Analysis
Template
Frequency: 2620
Theta
Phi
Total

Band for Antenna 5	NR+WIFI_5G ANT	
	Avg.Effi.(dB)	Peak gain(dBi)
NR(3300~3450MHz)	-7.2	-3
NR(3450~3550MHz)	-6.5	-1.8
NR(3550~3700MHz)	-6.3	-1.8
NR(3700~3980MHz)	-6.6	-1.8
NR(3980~4200MHz)	-7	-2.8
5G (5150~5250MHz)	-5.5	-1.4
5G (5250~5350MHz)	-5	-0.7
5G (5470~5725MHz)	-5.3	-0.6
5G (5725~5850MHz)	-5.5	-0.6

S Parameters



Radiation pattern

Frequency	3450MHz
	
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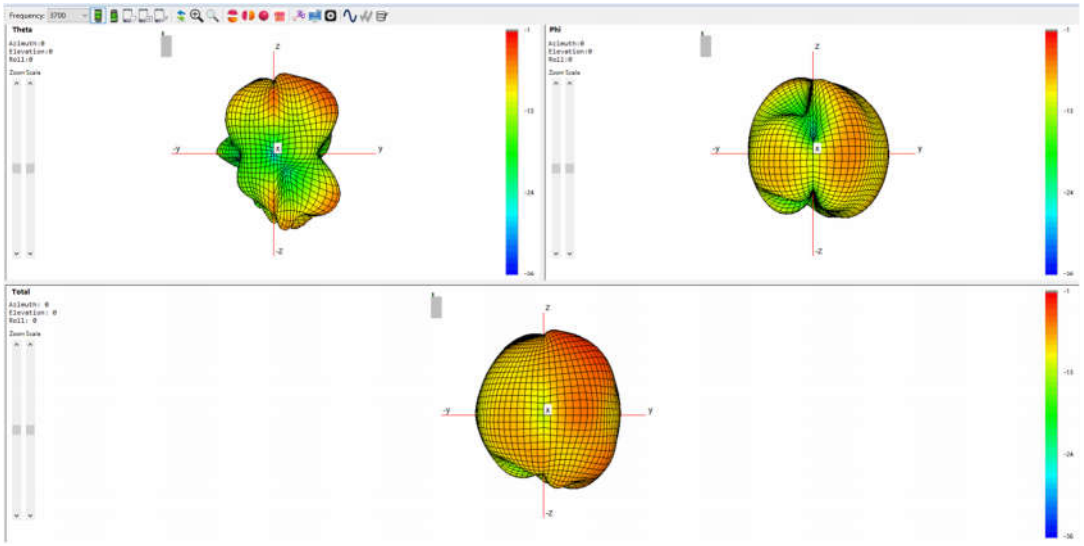
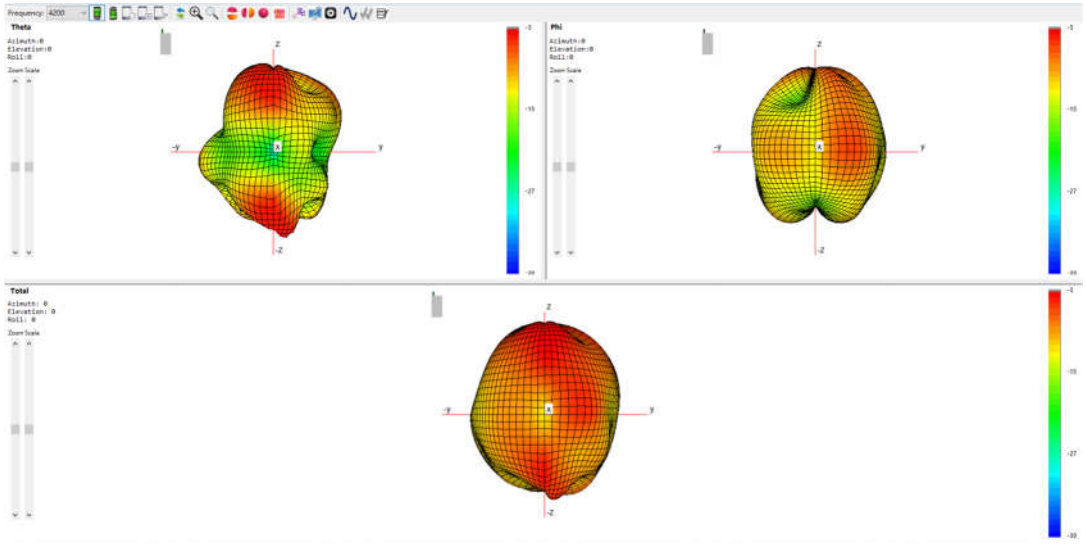
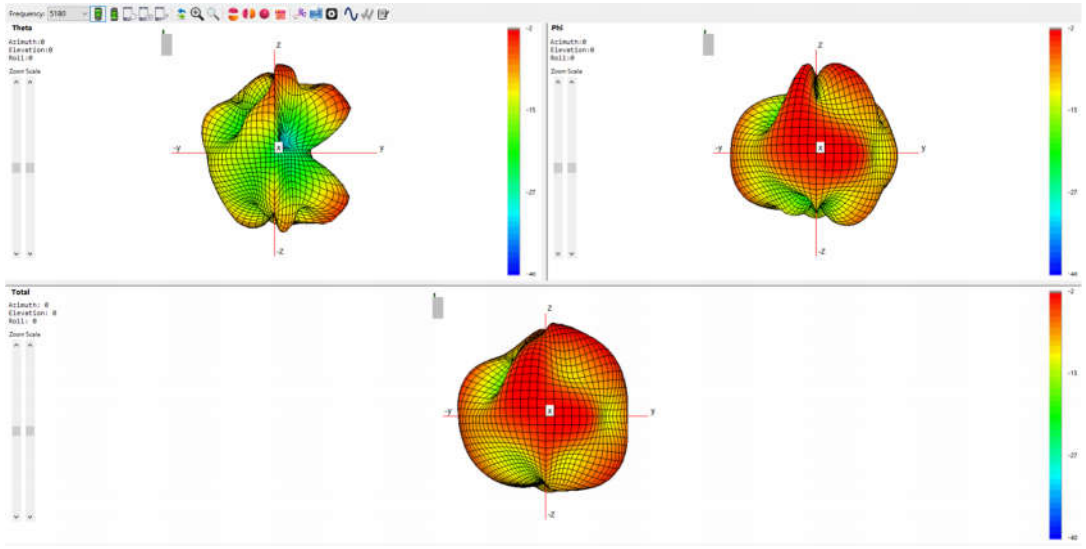
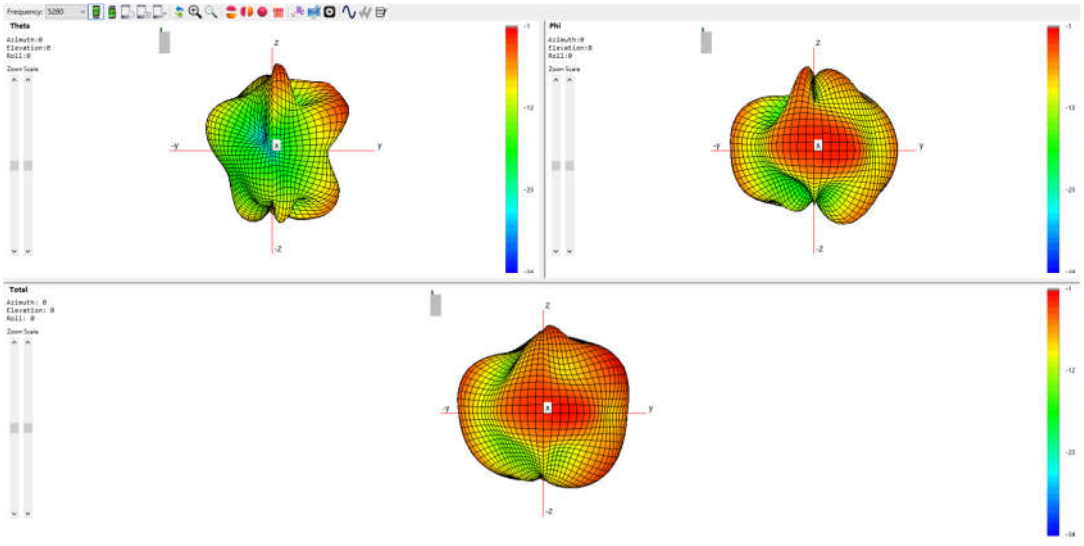
	
Frequency	4200MHz



Frequency	5180MHz



Frequency	5280MHz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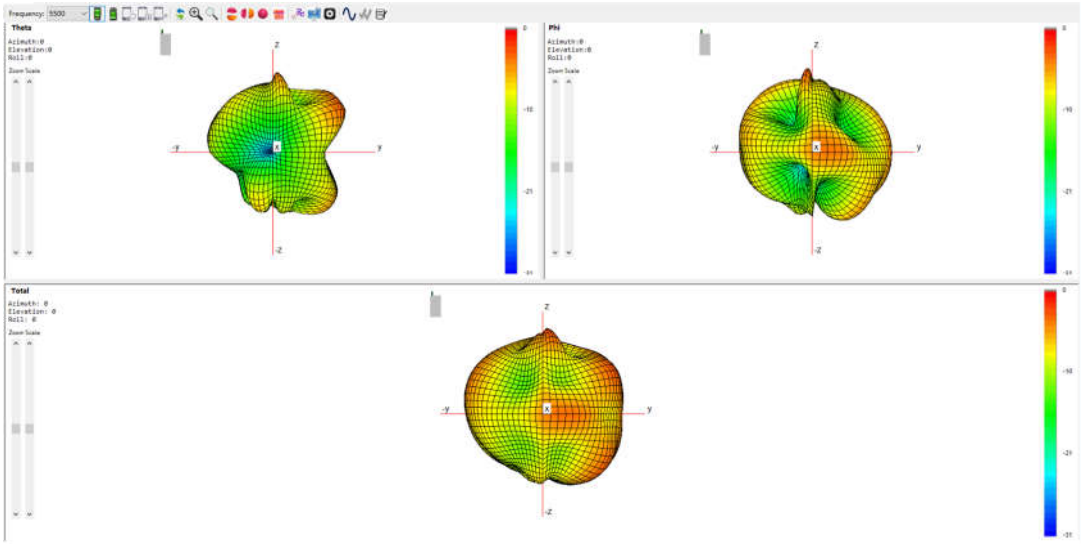	
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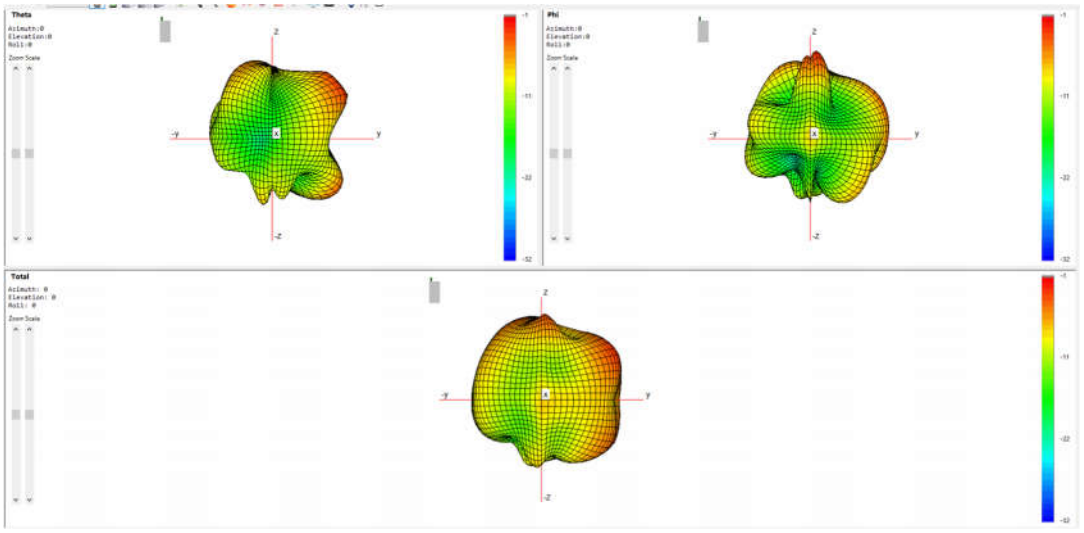
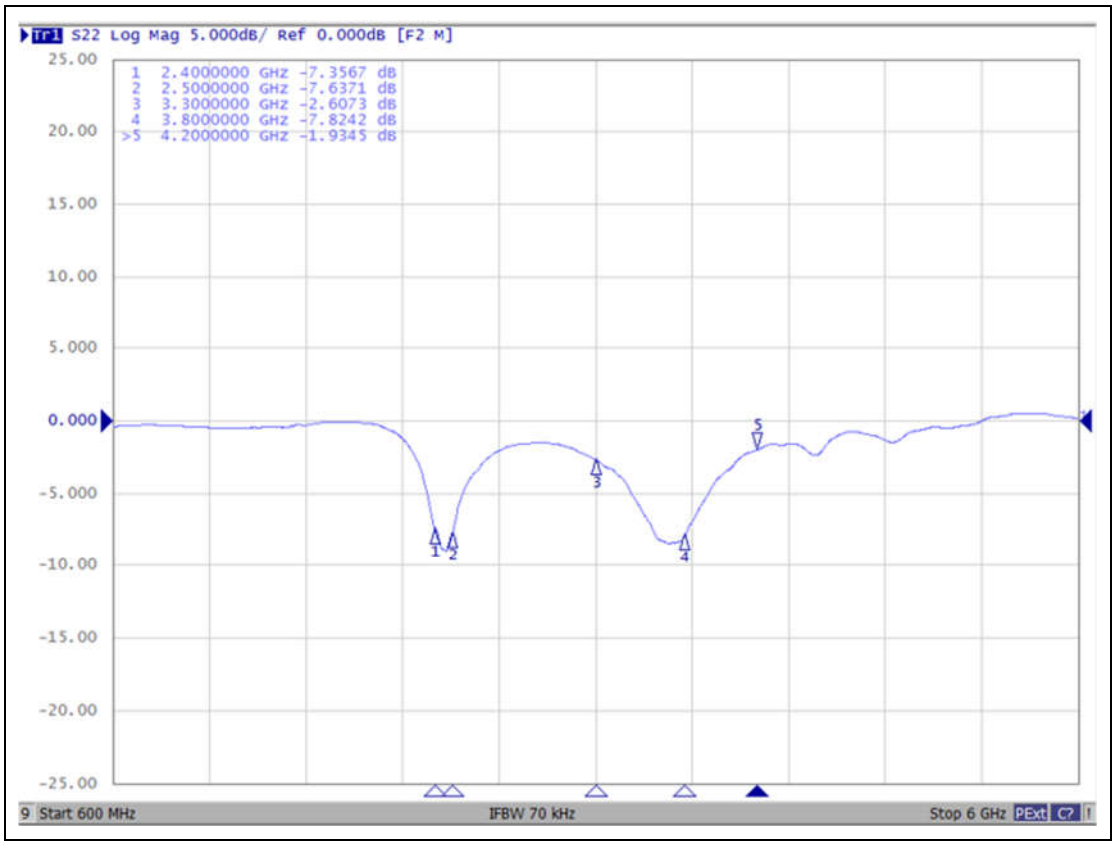
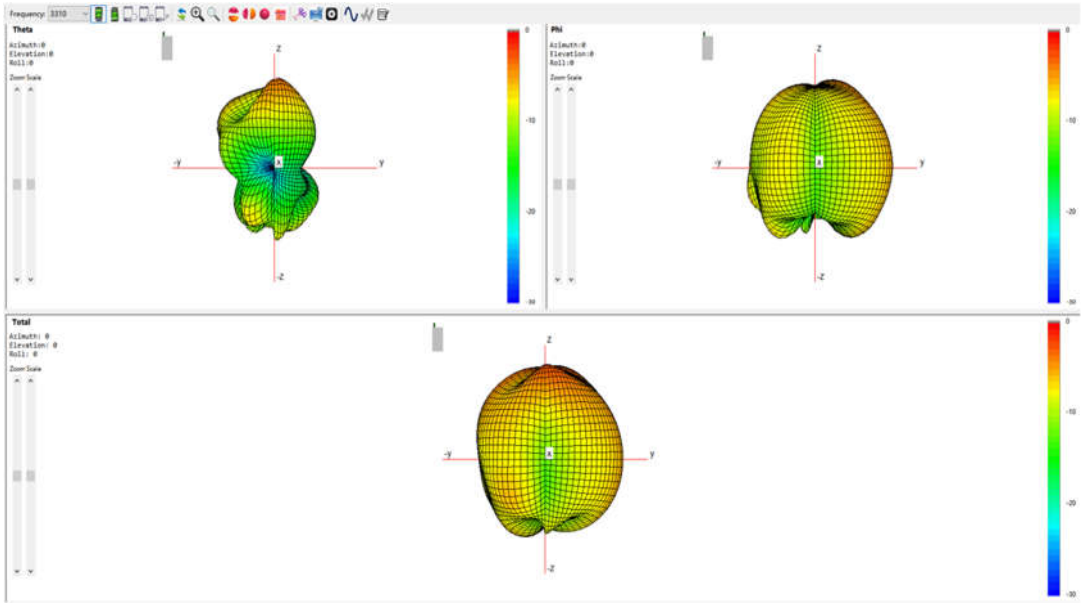
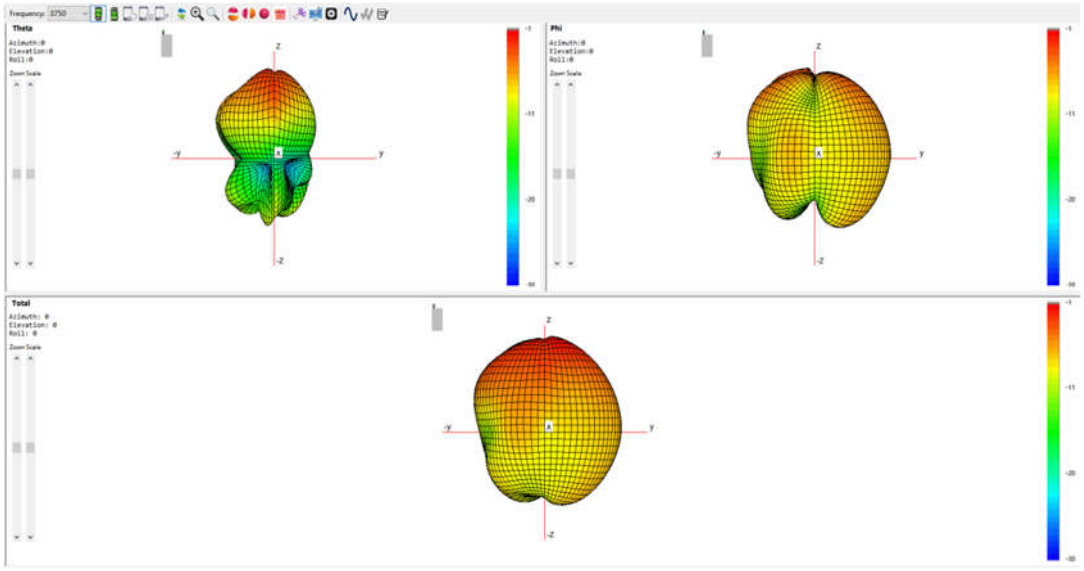

Theta
Phi
Total

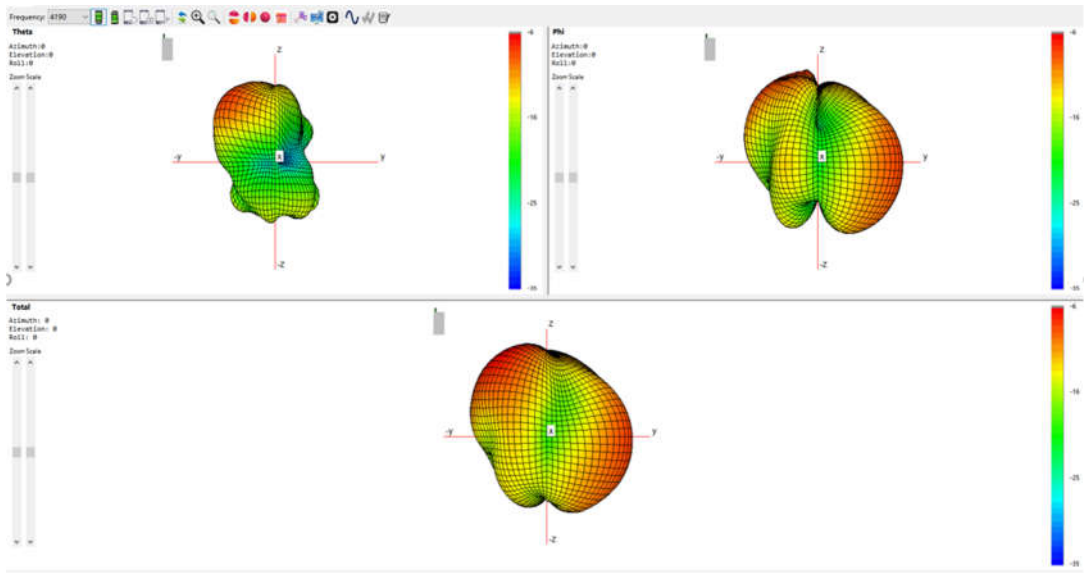
Band for Antenna 6	NR+WIFI_2.4G ANT	
	Avg.Effi.(dB)	Peak gain(dBi)
NR(3300~3450MHz)	-5.6	0
NR(3450~3550MHz)	-5	0
NR(3550~3700MHz)	-4.8	-1.8
NR(3700~3980MHz)	-6.9	0
NR(3980~4200MHz)	-9.7	-3.5
2.4G(2400~2485MHz)	-5.6	-1.5

S Parameters

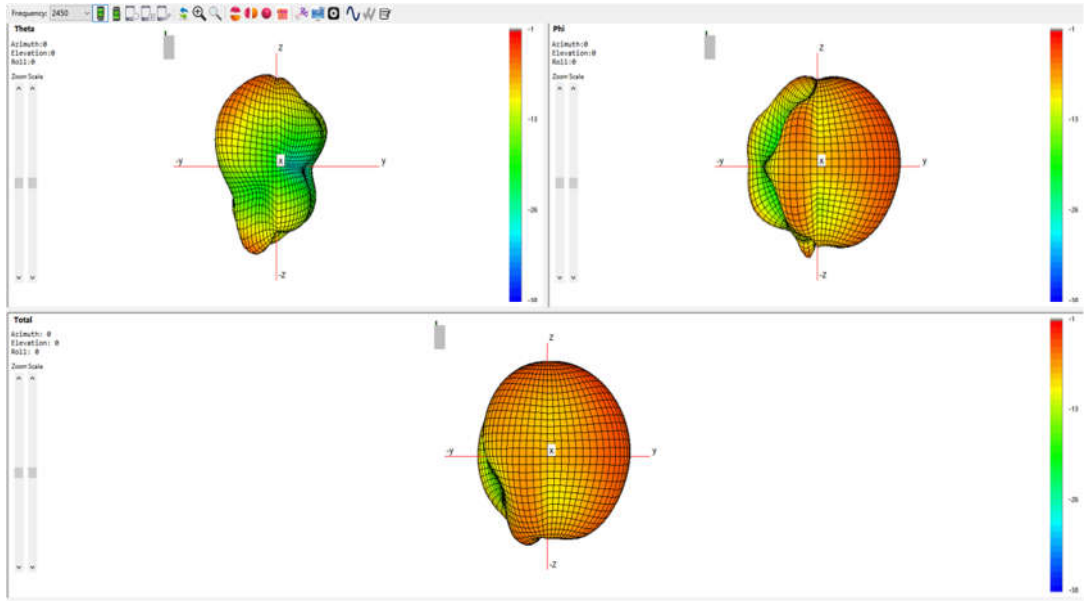


Radiation pattern

Frequency	3310MHz
	
Frequency	3750MHz
	
Frequency	4190MHz

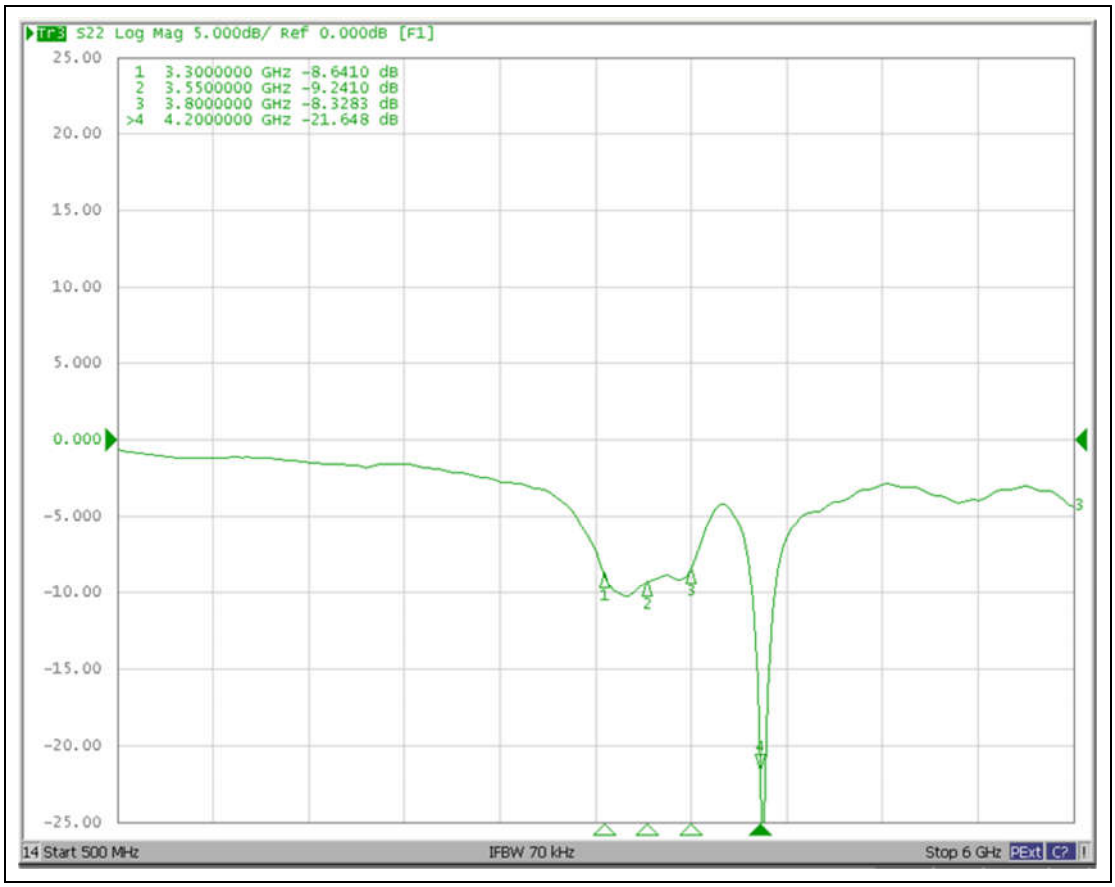


Frequency	2450MHz

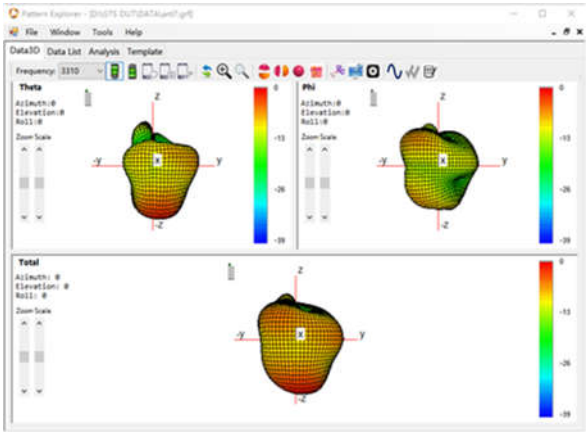
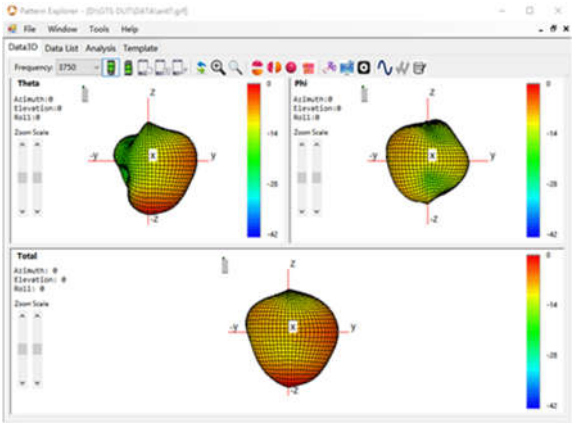


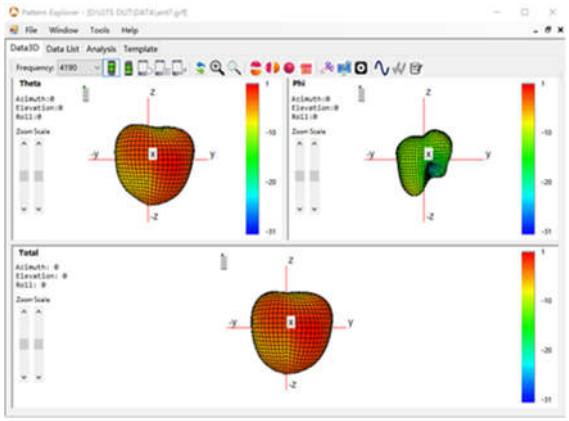
Band for Antenna 7	NR ANT	
	Avg.Effi.(dB)	Peak gain(dBi)
NR(3300~3450MHz)	-7.48	-0.87
NR(3450~3550MHz)	-6.77	-0.18
NR(3550~3700MHz)	-6.78	-0.35
NR(3700~3980MHz)	-8.14	-0.18
NR(3980~4200MHz)	-8.22	-0.47

S Parameters



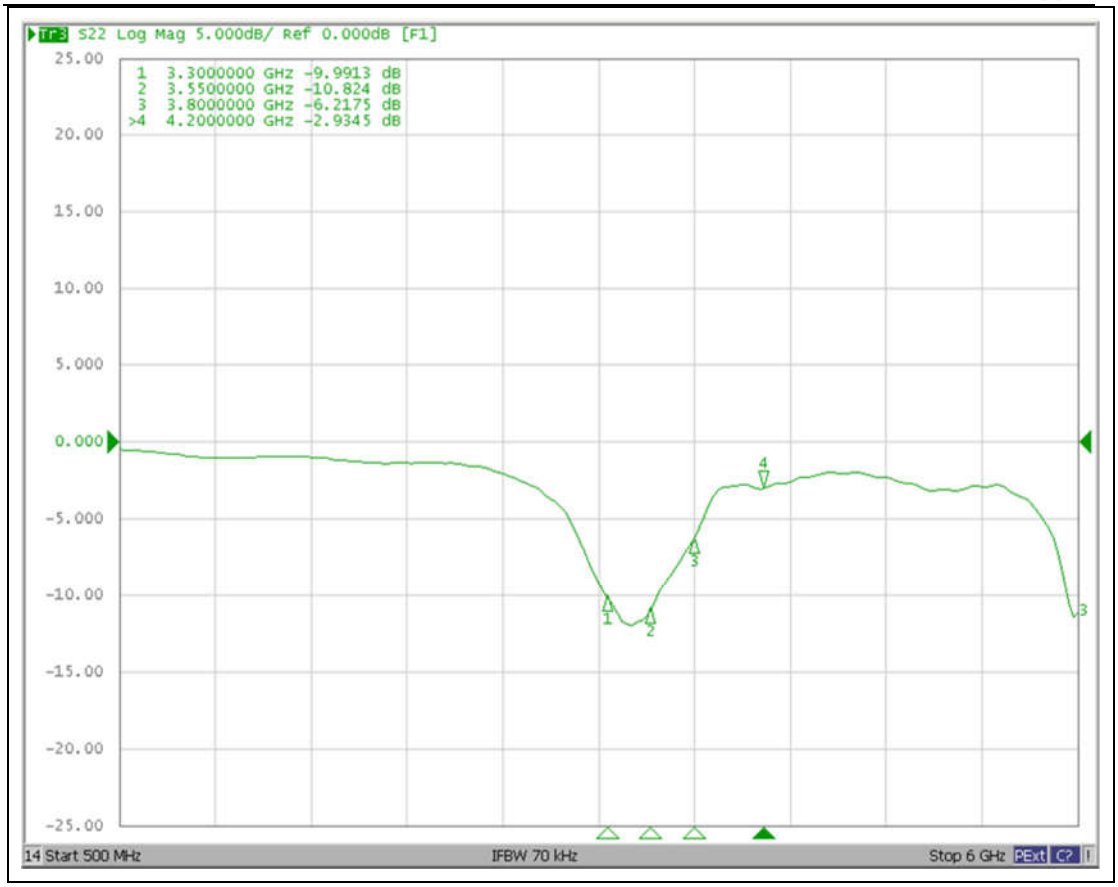
Radiation pattern

Frequency	3310MHz
	
Frequency	3750MHz
	
Frequency	4190MHz



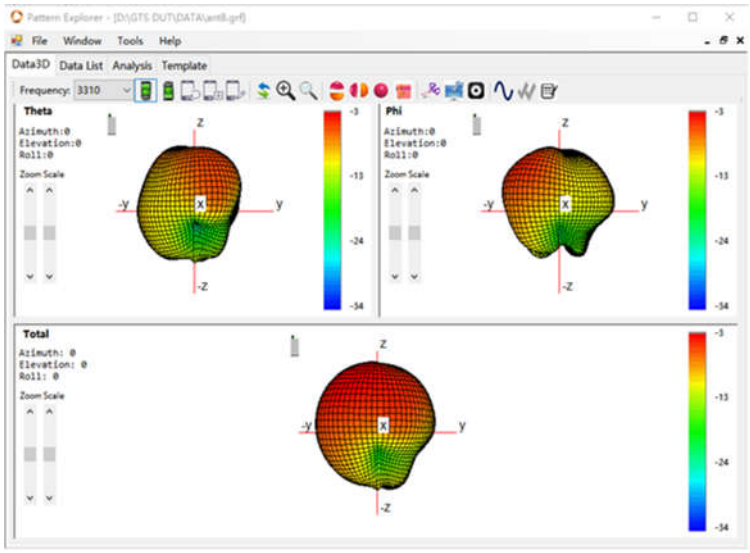
Band for Antenna 8	NR ANT	
	Avg.Effi.(dB)	Peak gain(dBi)
NR(3300~3450MHz)	-7.41	-1.89
NR(3450~3550MHz)	-6.88	-1.5
NR(3550~3700MHz)	-6.97	-1.5
NR(3700~3980MHz)	-8.43	-1.5
NR(3980~4200MHz)	-10.79	-5.62

S Parameters

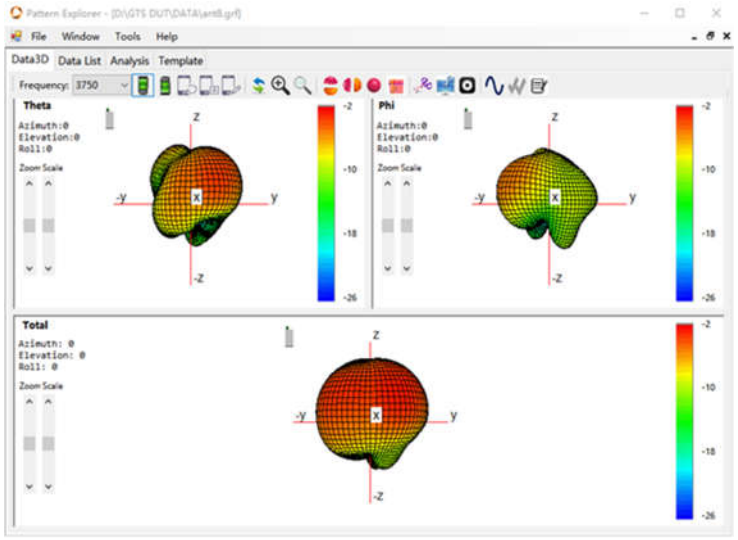


Radiation pattern

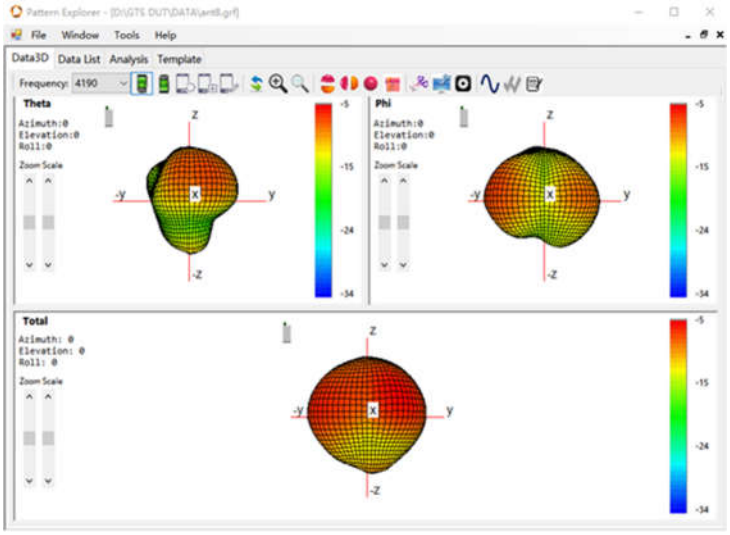
Frequency	3310MHz



Frequency	3750MHz

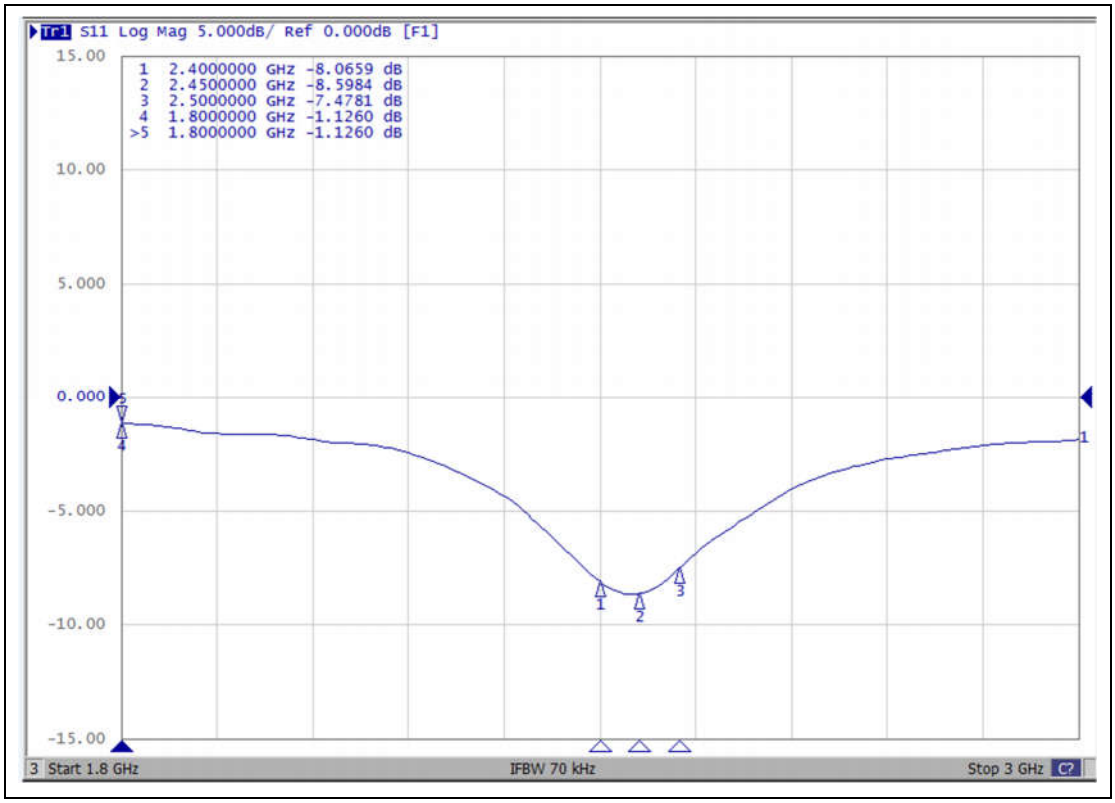


Frequency	4190MHz


Pattern Explorer - [D:\GTS DUT\DATA\ant8.grf]
File Window Tools Help
Data3D Data List Analysis Template
Frequency: 4190
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
-5
-15
-24
-34

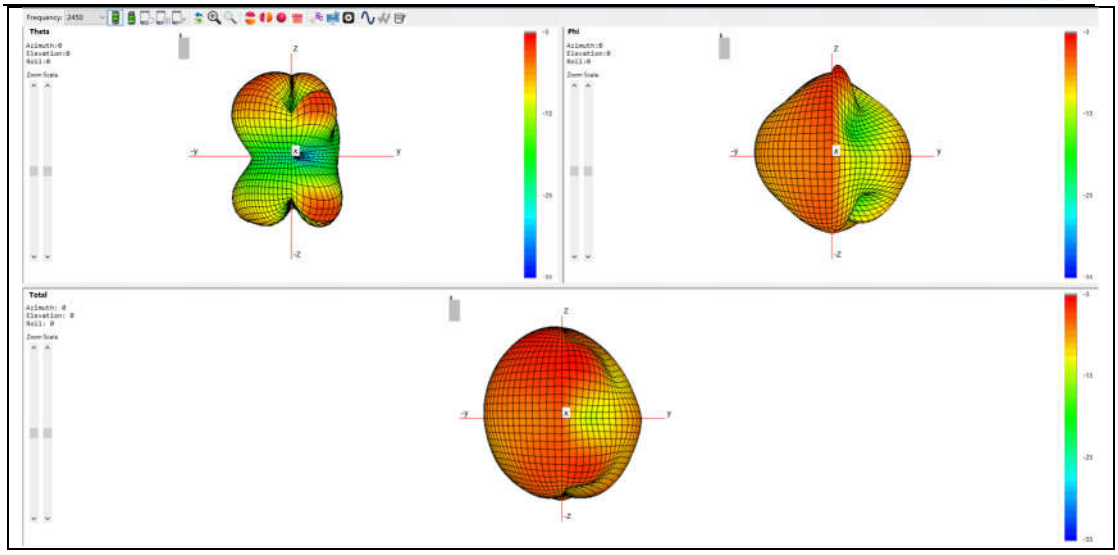
Band for Antenna 17	WIFI_2.4G ANT	
	Avg.Effi.(dB)	Peak gain(dBi)
2.4G(2400~2485MHz)	-6	-2.7
Bluetooth	-6	-2.7

S Parameters



Radiation pattern

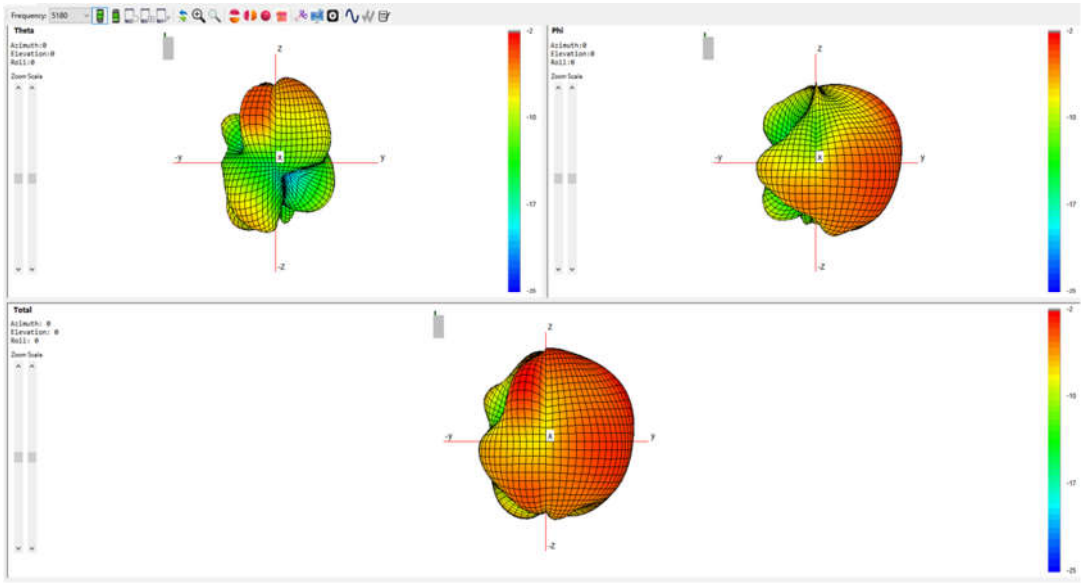
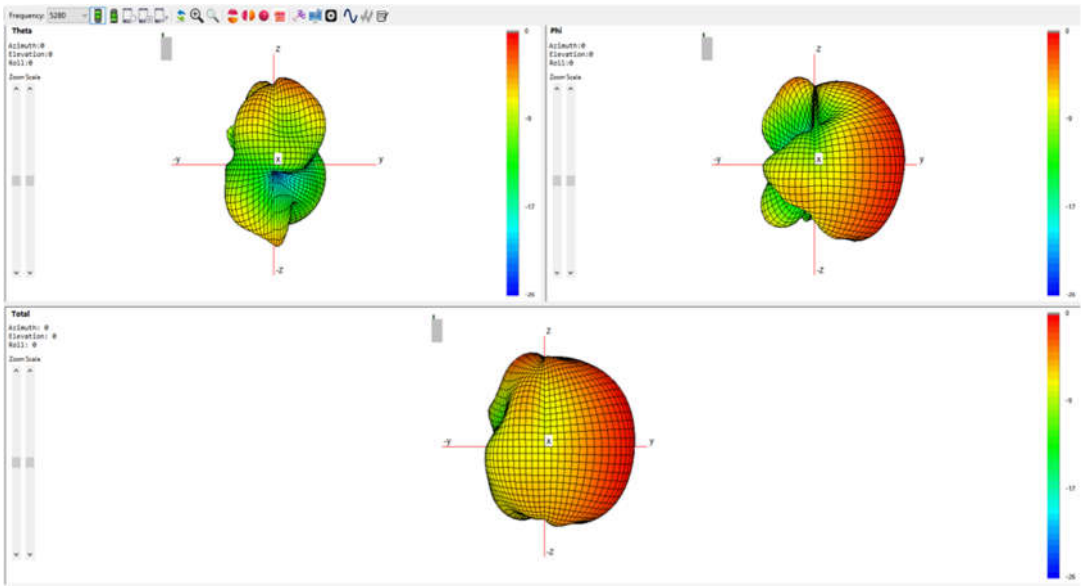
Frequency	2450MHz

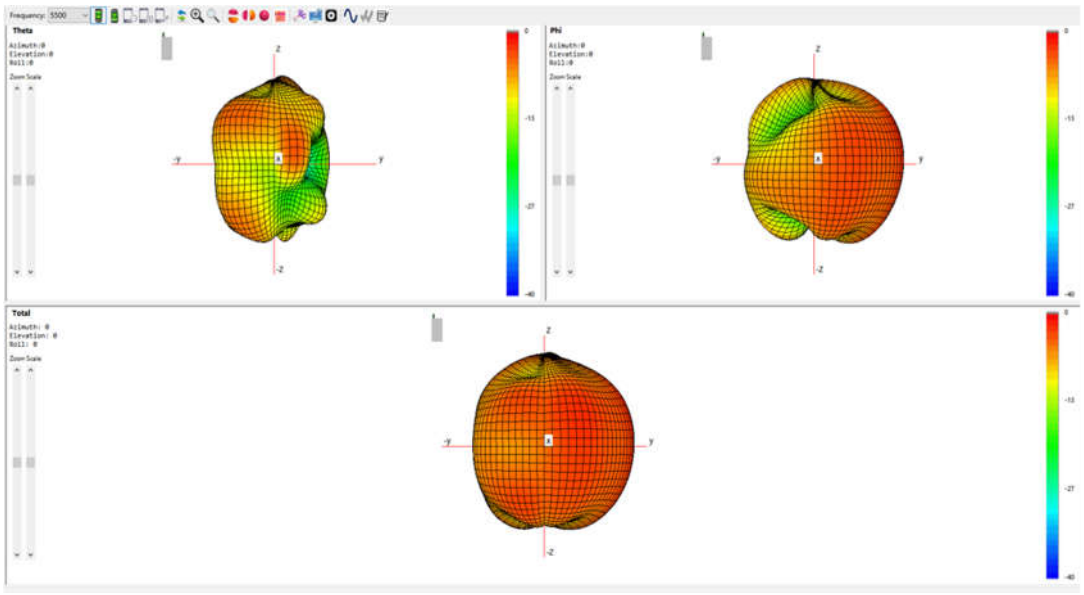

Frequency: 2450
Theta
Phi
Total

Band for Antenna 18	WIFI_5G ANT	
	Avg.Effi.(dB)	Peak gain(dBi)
5G (5150~5250MHz)	-5.2	-1.1
5G (5250~5350MHz)	-5.1	-0.2
5G (5470~5725MHz)	-4.3	0
5G (5725~5850MHz)	-4.2	0

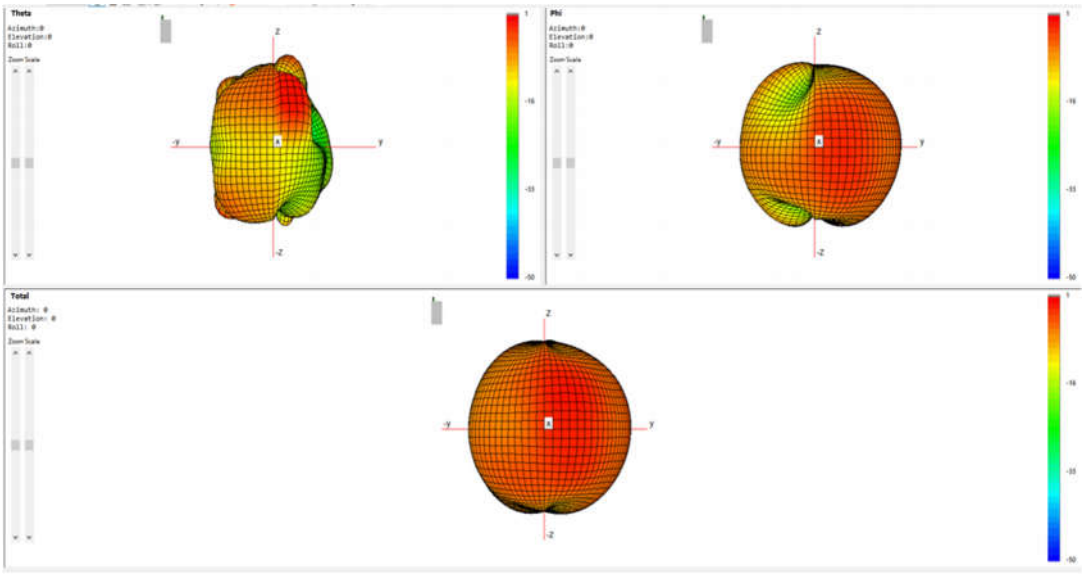
S Parameters

Radiation pattern

Frequency	5180MHz
	
Frequency	5280MHz
	
Frequency	5500MHz



Frequency	5785MHz



3. Main Test Instruments

Name	Manufacturer	Model name	Serial Number	Cal., Date	Exp., Date
2G/3G/4G Vector Network Analyzer	KEYSIGHT	E5071C	EQ80224	2023/09/06	2024/09/06
OTA TEST SYSTEM	GENERAL TEST	RayZone 2800	CT10122090B5103	2023/09/06	2024/09/06