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## Antenna Performance Description

Applicant:                    Xiaomi Communications Co., Ltd

Product description:    Mobile Phone

Model Name:2312DRAABG

FCC ID: 2AFZZAABG



## 1. Antenna information

<b>Antenna</b>	<b>Model Name</b>	<b>Antenna Pattern</b>	<b>Antenna Type</b>	<b>Manufacturer</b>	<b>Test party of Antenna gain</b>
ANT1	AN6752A	MDA	IFA Antenna	Kun Shan Innowave Communication Technology Co., Ltd.	Kun Shan Innowave Communication Technology Co., Ltd.
ANT4	AN6752A	MDA	IFA Antenna	AAC Technologies	AAC Technologies
ANT2	AN6752A	MDA	IFA Antenna	AAC Technologies	AAC Technologies
ANT6	AN6752A	MDA	IFA Antenna	Kun Shan Innowave Communication Technology Co., Ltd.	Kun Shan Innowave Communication Technology Co., Ltd.
ANT3	AN6752A	MDA	IFA Antenna	AAC Technologies	AAC Technologies



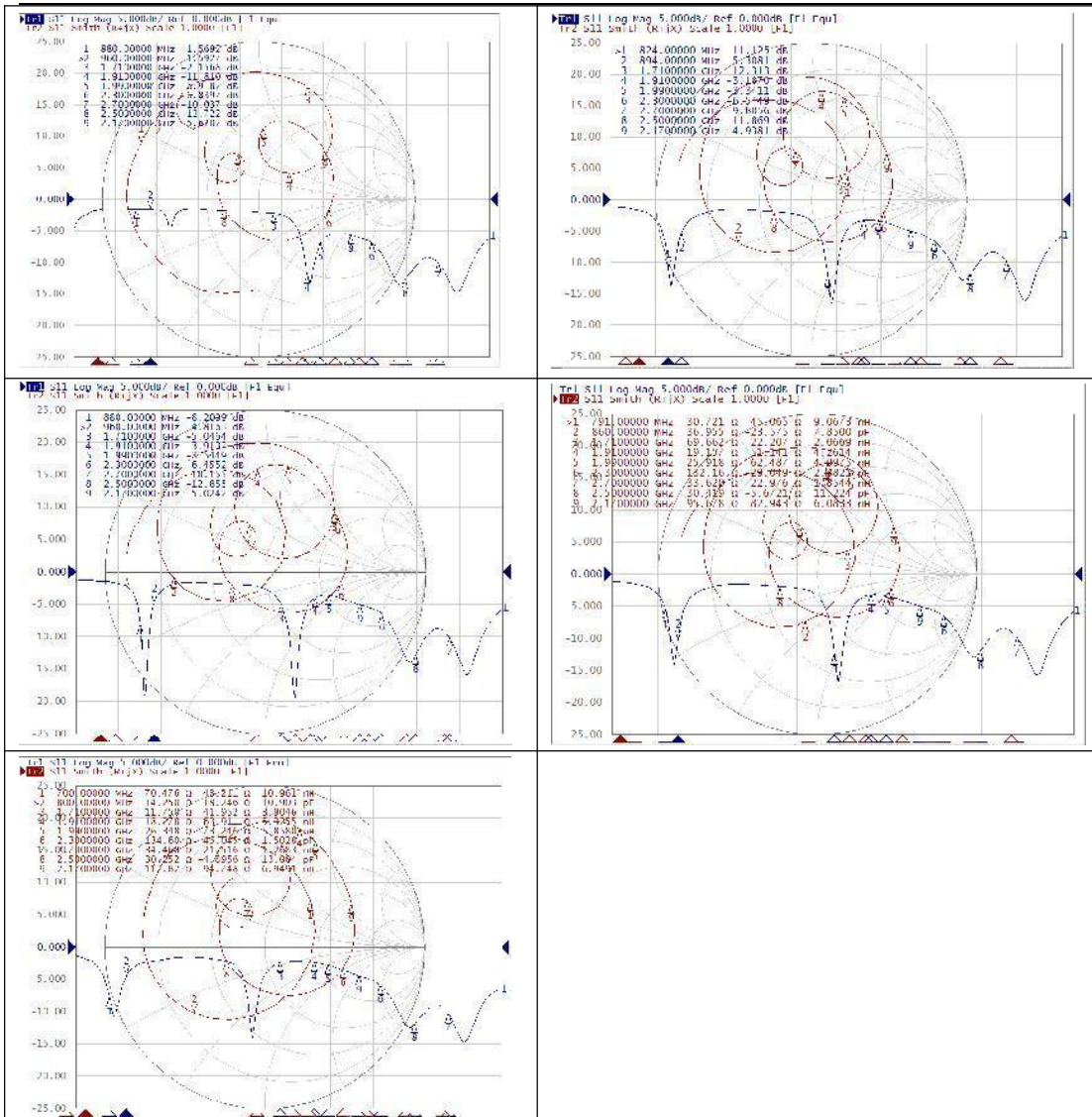
ANT5	AN6752A	MDA+FPC	IFA Antenna	Kun Shan Innowave Communication Technology Co., Ltd.	Kun Shan Innowave Communication Technology Co., Ltd.
ANT7	AN6752A	MDA+FPC	IFA Antenna	AAC Technologies	AAC Technologies

## 2、Test data

(ANT1)	Band	Efficient	Gain
<b>2G</b>	GSM850 (824-849, 869-894)	-9	-5.1
	GSM900 (880-915, 925-960)	-8.9	-4.2
	GSM1800 (1710-1785, 1905-1880)	-7.1	0.5
	GSM1900 (1850-1910, 1930-1990)	-7	-1.4
<b>3G</b>	WCDMA B1 (1920-1980, 2110-2170)	-6.3	-1.4
	WCDMA B2 (1850-1910, 1930-1990)	-7	-1.4
	WCDMA B4 (1710-1785, 2110-2155)	-6.5	0.5
	WCDMA B5 (824-849, 869-894)	-9	-5.1
	WCDMA B8 (880-915, 925-960)	-8.9	-4.2
<b>4G</b>	TTE FDD 1: (1920-1980, 2110-2170)	-6.3	-1.4
	TTE FDD 2: (1850-1910, 1930-1990)	-7	-1.4



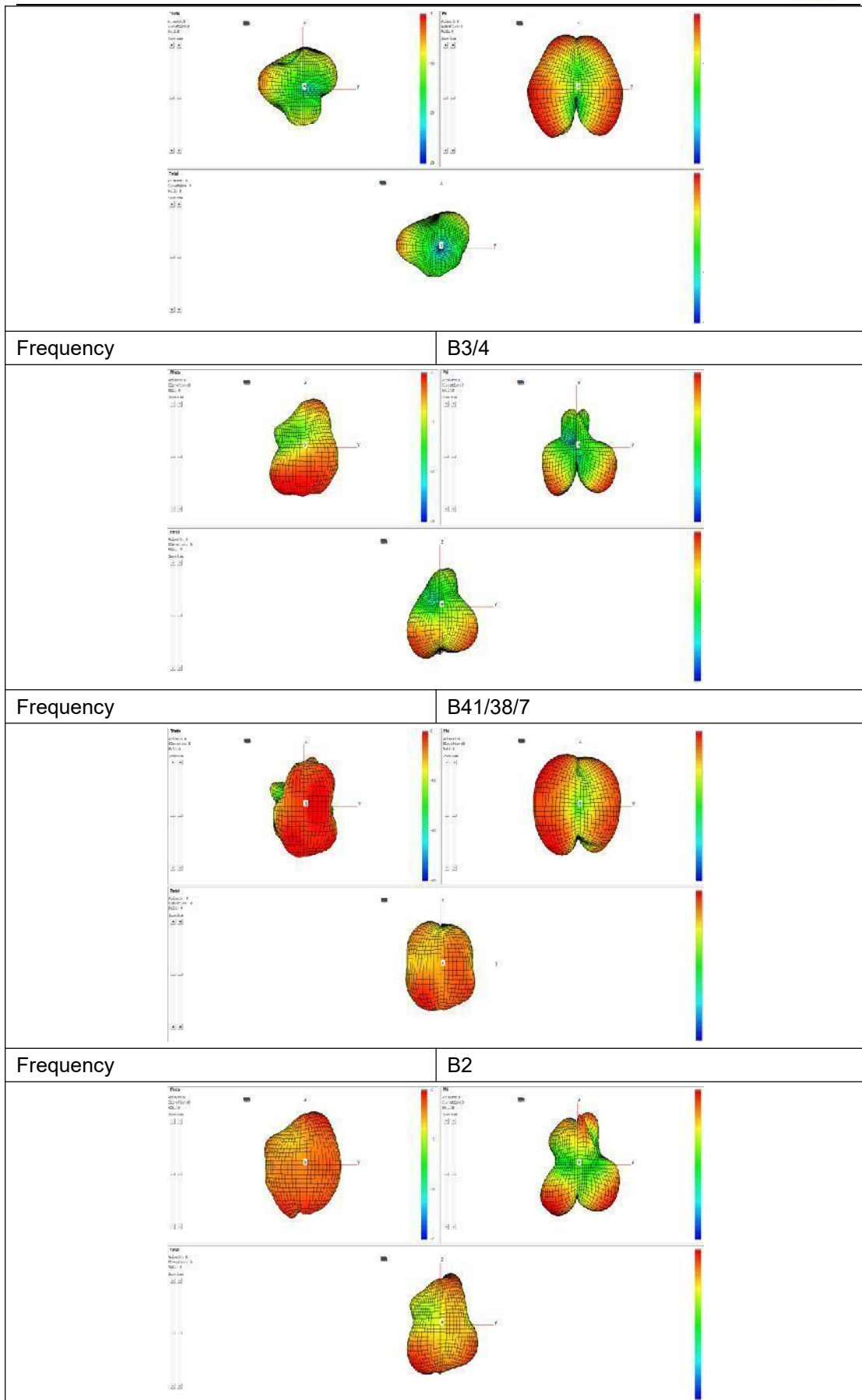
	TTE FDD 3: (1710-1785, 1905-1880)	-7.1	0.5
	TTE FDD 4: (1710-1785, 2110-2155)	-6.5	0.5
	TTE FDD 5: (824-849, 869-894)	-9	-5.1
	TTE FDD 7: (2500-2570, 2620-2690)	-3.8	1.4
	TTE FDD 8: (880-915, 925-960)	-8.9	-4.2
	TTE FDD 20: (832-862, 791-821)	-9.2	-4.8
	TTE FDD 28: (703-748,758-803)	-9	-5.5
	TTE TDD 38: (2570-2620)	-4.1	1.3
	TTE TDD 40: (2300-2400)	-5.7	-0.8
	TTE TDD 41: (2496-2690)	-4	1.4
<b>5G</b>	N1 (1920-1980, 2110-2170)	-6.3	-1.4
	N3 (1710-1785, 1905-1880)	-7.1	0.5
	N5 (824-849, 869-894)	-9	-5.1
	N7 (2500-2570, 2620-2690)	-3.8	1.4
	N8 (880-915, 925-960)	-8.9	-4.2
	N20 (832-862, 791-821)	-9.2	-4.8
	N28 (703-748,758-803)	-9	-5.5
	N38 (2570-2620)	-4.1	1.3
	N40 (2300-2400)	-5.7	-0.8
	N41 (2496-2690)	-4	1.4

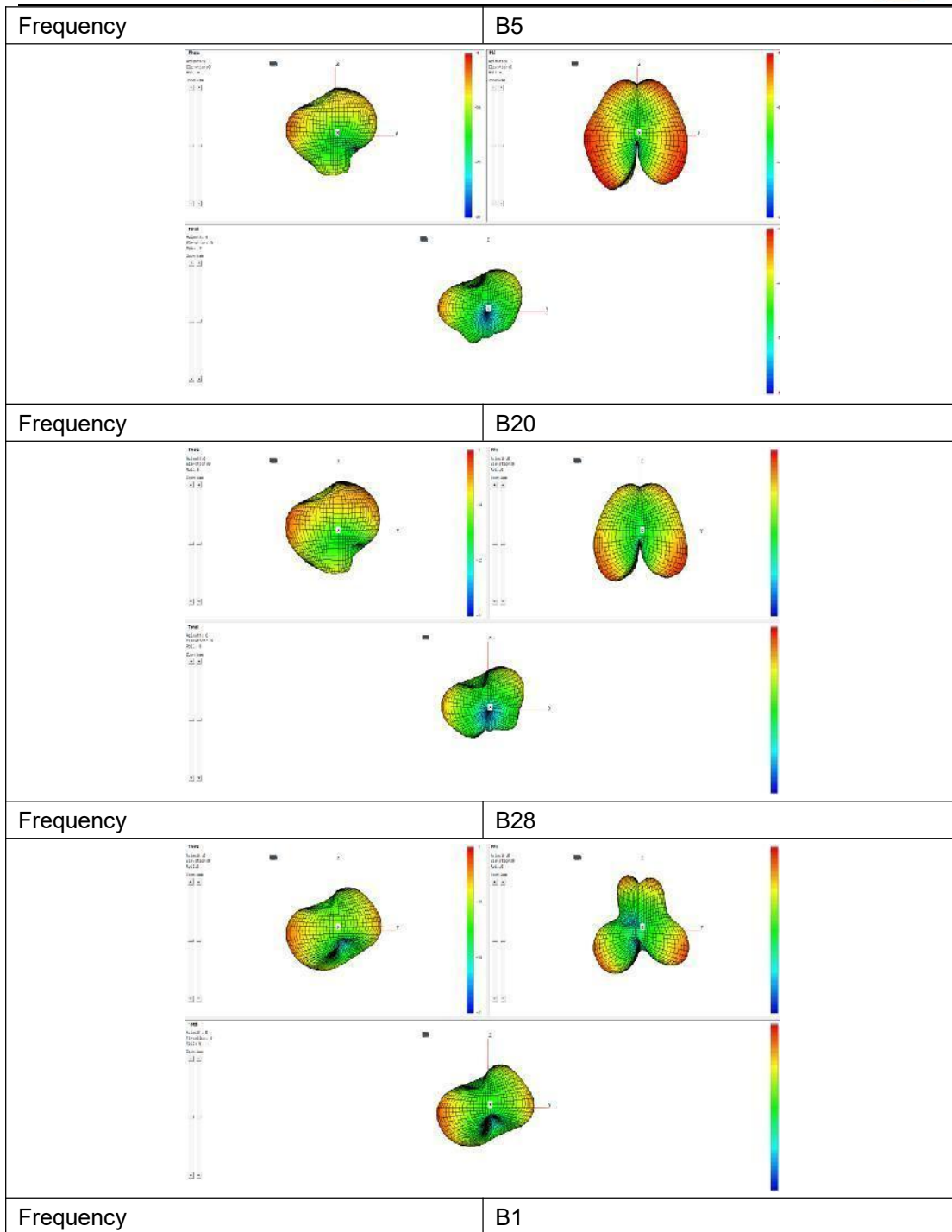


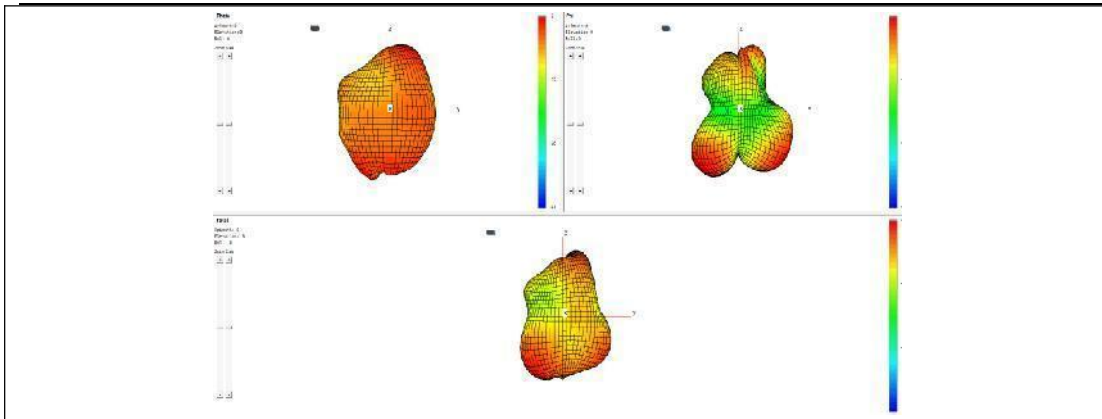
ANT1

Frequency

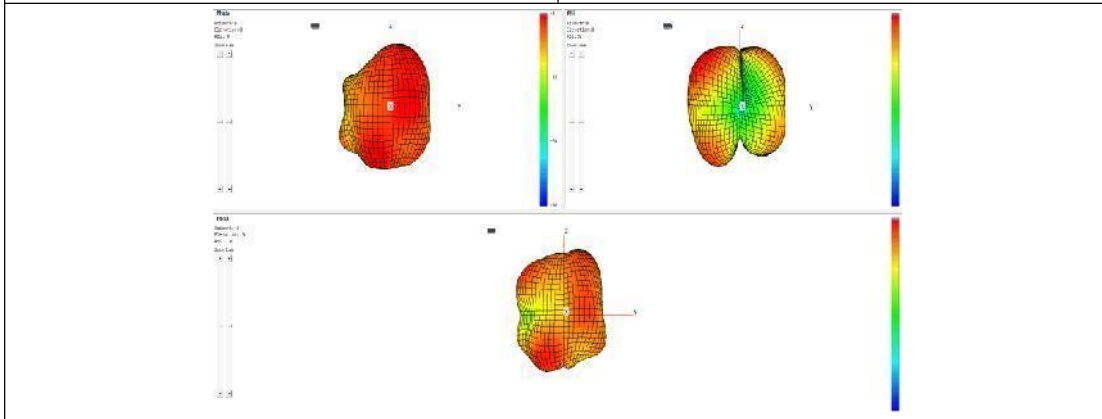
B8







Frequency B40



ANT4	Band	Efficient	Gain
<b>2G</b>	GSM850 (824-849, 869-894)	-10.5	-5.5
	GSM900 (880-915, 925-960)	-11.1	-5.6
	GSM1800 (1710-1785, 1905-1880)	-5.3	-0.11
	GSM1900 (1850-1910, 1930-1990)	-5.3	-1.6
<b>3G</b>	WCDMA B1 (1920-1980, 2110-2170)	-5.5	-2.8
	WCDMA B2 (1850-1910, 1930-1990)	-5.3	-1.6
	WCDMA B4 (1710-1785, 2110-2155)	-5.3	-0.1
	WCDMA B5 (824-849, 869-894)	-10.5	-5.5
	WCDMA B8 (880-915, 925-960)	-11.1	-5.6



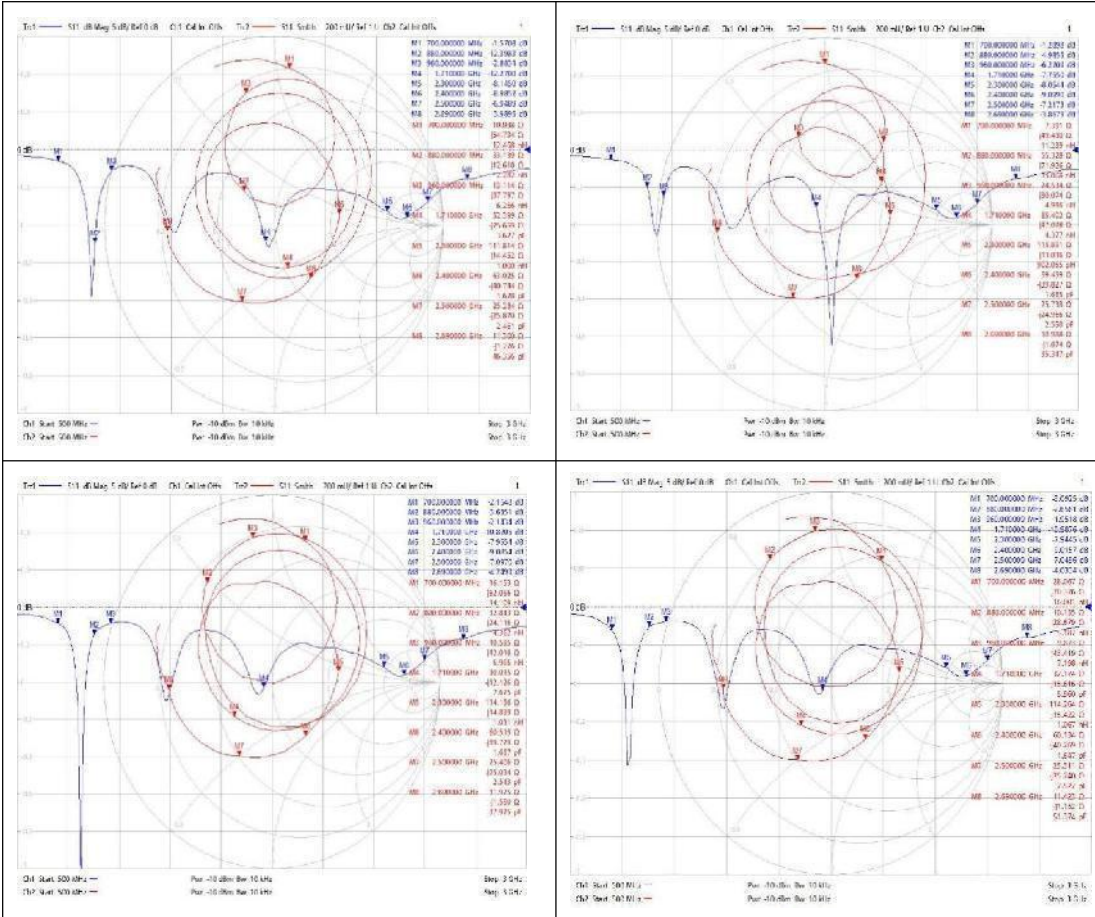


<b>4G</b>	TTE FDD 1: (1920-1980, 2110-2170)	-5.5	-2.8
	TTE FDD 2: (1850-1910, 1930-1990)	-5.3	-1.6
	TTE FDD 3: (1710-1785, 1905-1880)	-5.3	-0.1
	TTE FDD 4: (1710-1785, 2110-2155)	-5.3	-0.1
	TTE FDD 5: (824-849, 869-894)	-10.5	-5.5
	TTE FDD 7: (2500-2570, 2620-2690)	-6.5	-1.6
	TTE FDD 8: (880-915, 925-960)	-11.1	-5.6
	TTE FDD 20: (832-862, 791-821)	-10.2	-5.5
	TTE FDD 28: (703-748,758-803)	-11.5	-5.3
	TTE TDD 38: (2570-2620)	-6.8	-1.9
	TTE TDD 40: (2300-2400)	-5.3	-1.5
TTE TDD 41: (2496-2690)	-7.4	-1.5	
<b>5G</b>	N1 (1920-1980, 2110-2170)	-5.5	-2.8
	N3 (1710-1785, 1905-1880)	-5.3	-0.1
	N5 (824-849, 869-894)	-10.5	-5.5
	N7 (2500-2570, 2620-2690)	-6.5	-1.6
	N8 (880-915, 925-960)	-11.1	-5.6
	N20 (832-862, 791-821)	-10.2	-5.5
	N28 (703-748,758-803)	-11.5	-5.3
	N38 (2570-2620)	-7.5	-1.9
	N40 (2300-2400)	-5.3	-1.1

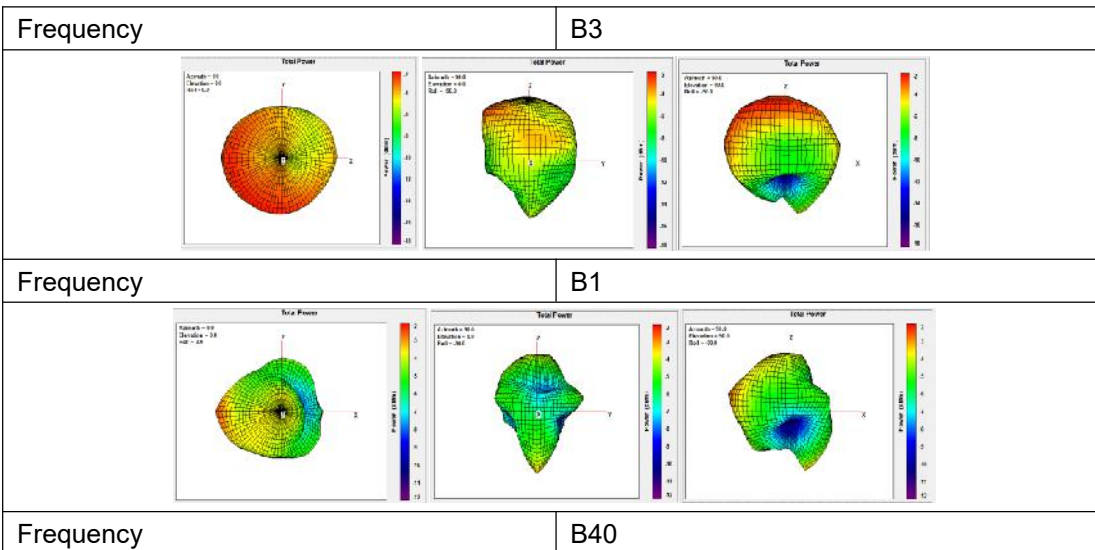


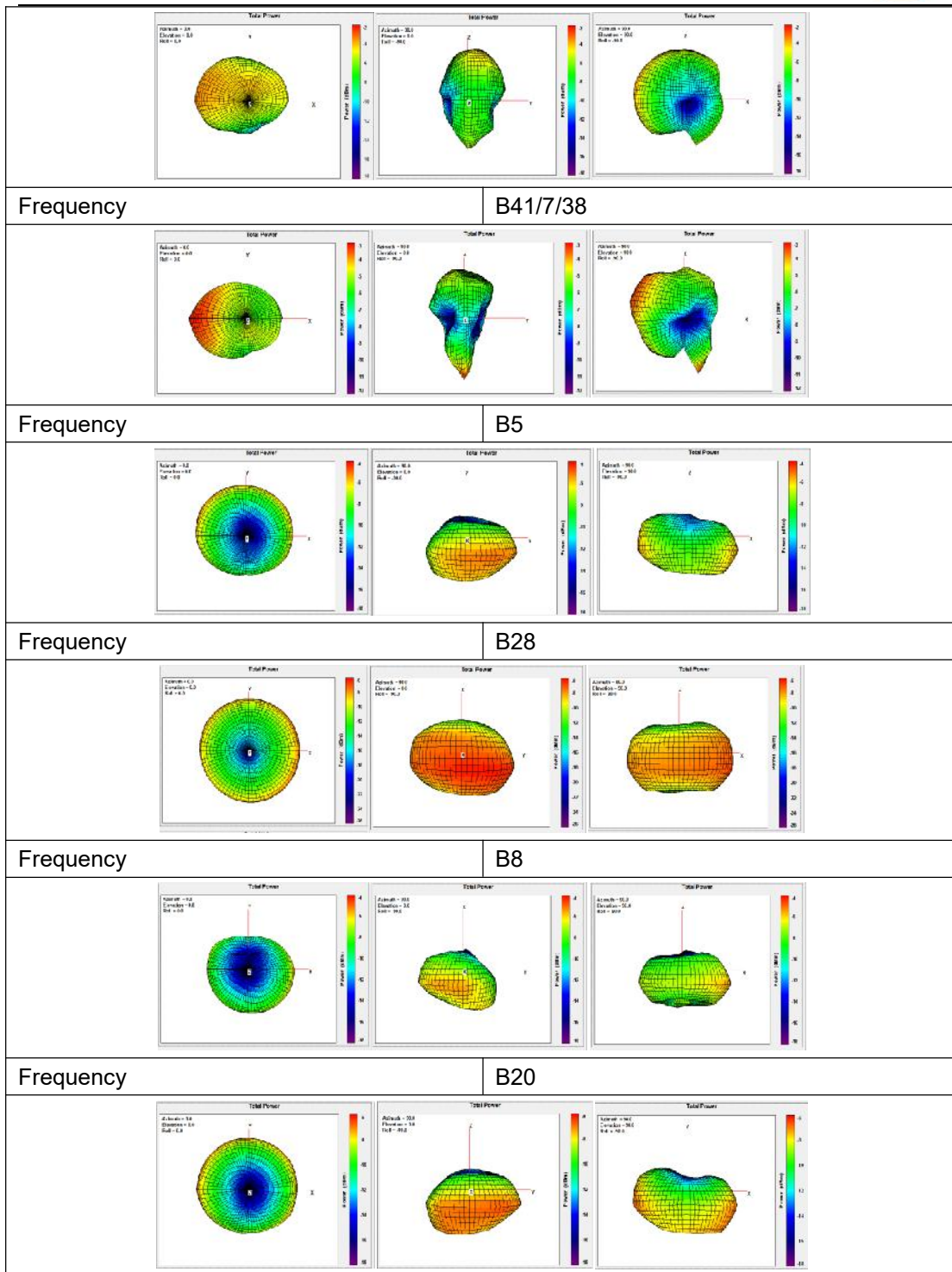
N41 (2496-2690)	-7.4	-1.5
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ANT4 S11&SMTH



ANT4

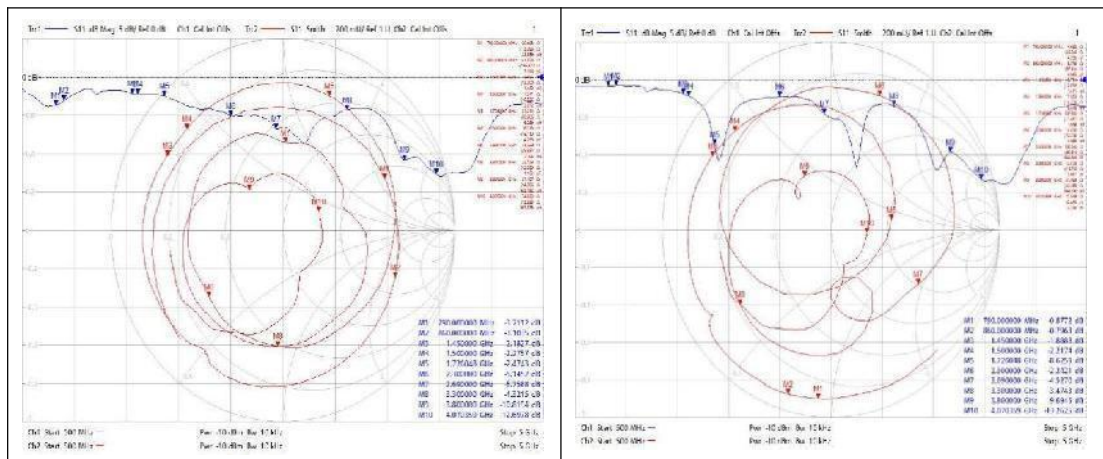




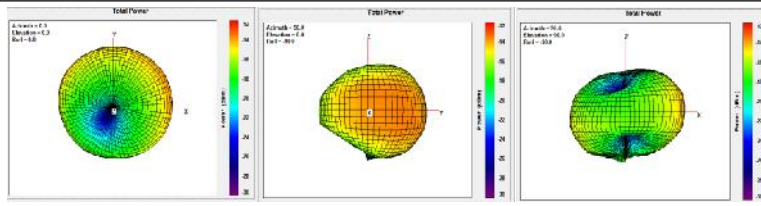


ANT2	Band	Efficient	Gain
4G	TTE FDD 1: (1920-1980, 2110-2170)	-7.5	-3
	TTE FDD 2: (1850-1910, 1930-1990)	-4.3	1.6
	TTE FDD 3: (1710-1785, 1905-1880)	-4	1.3
	TTE FDD 7: (2500-2570, 2620-2690)	-8.4	-3.4
	TTE FDD 20: (832-862, 791-821)	-14	-10.3
	TTE TDD 38: (2570-2620)	-8.6	-3.4
	TTE TDD 40: (2300-2400)	-7.5	-2
	TTE TDD 41: (2496-2690)	-8.5	-3.4
5G	N38 (2570-2620)	-8.6	-3.4
	N41 (2496-2690)	-8.5	-3.4
	N77 (3300-4200)	-7	0.5
	N78 (3300-3800)	-6.8	-1.4

### ANT2S11&SMITH

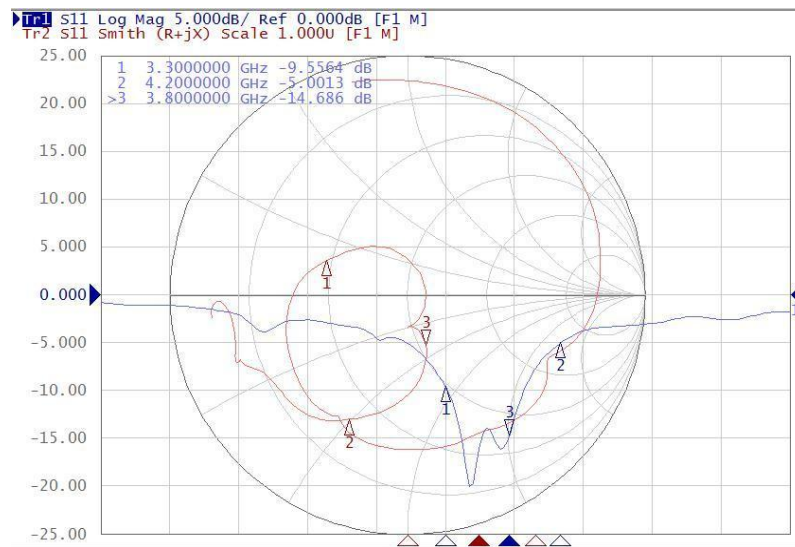




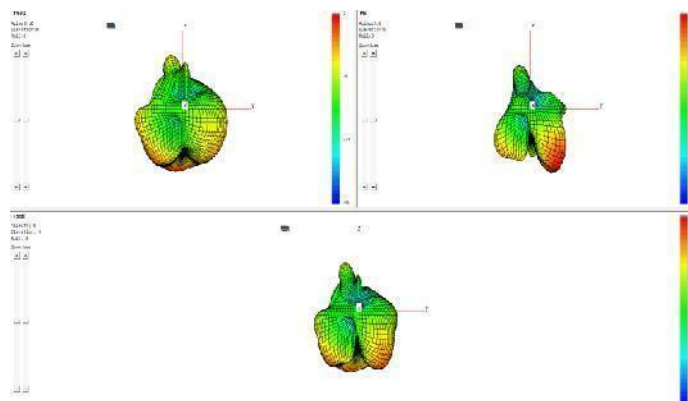


ANT6	Band	Efficient	Gain
	N77 (3300-4200)	-5.3	2.1
	N78 (3300-3800)	-6	2.1

### ANT6S11&SMITH



### ANT6 方向图

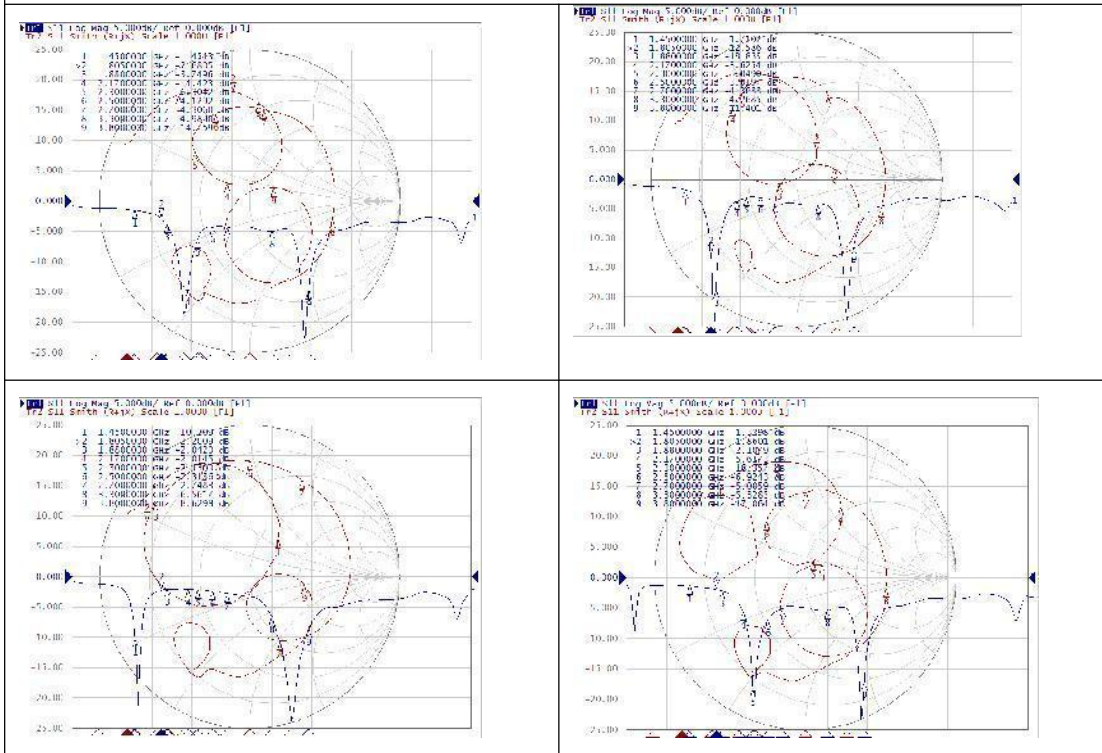


ANT5	Band	Efficient	Gain
5G	N38 (2570-2620)	-7.8	-6.4
	N41 (2496-2690)	-8.5	-5.6

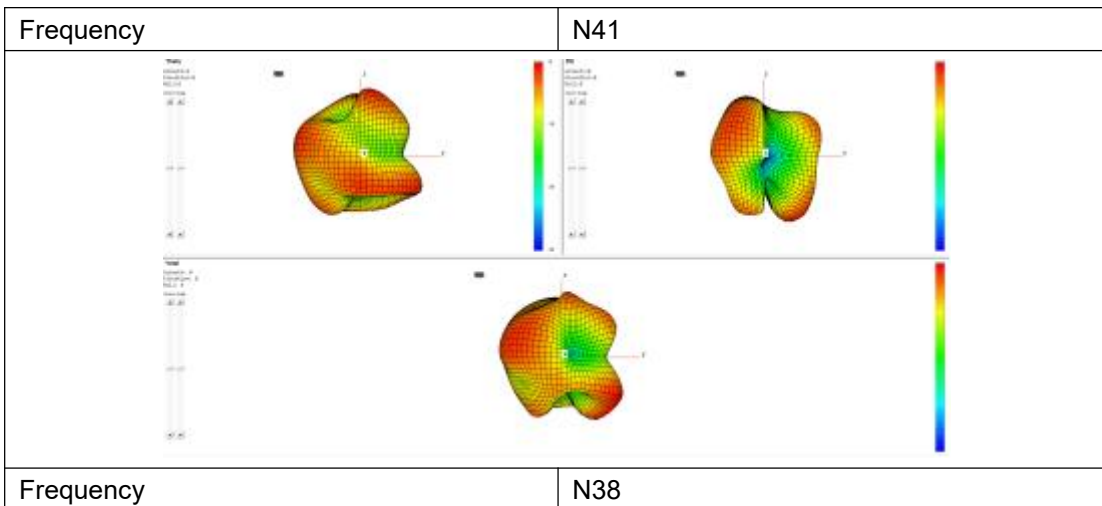


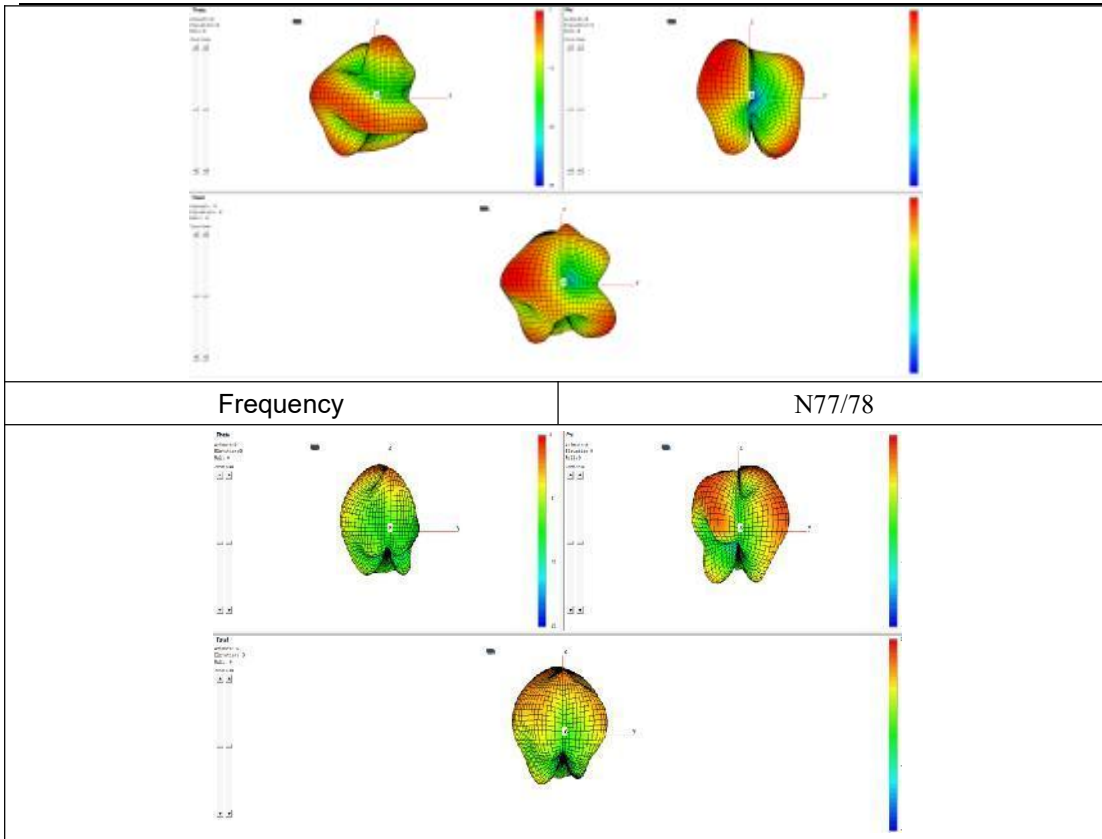
N77 (3300-4200)	-6.6	-0.8
N78 (3300-3800)	-7	-0.8

ANT5S11&SMITH



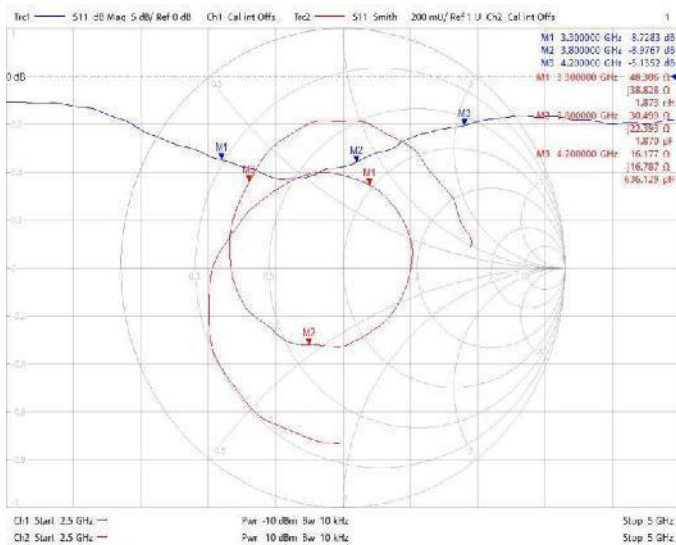
ANT5 方向图



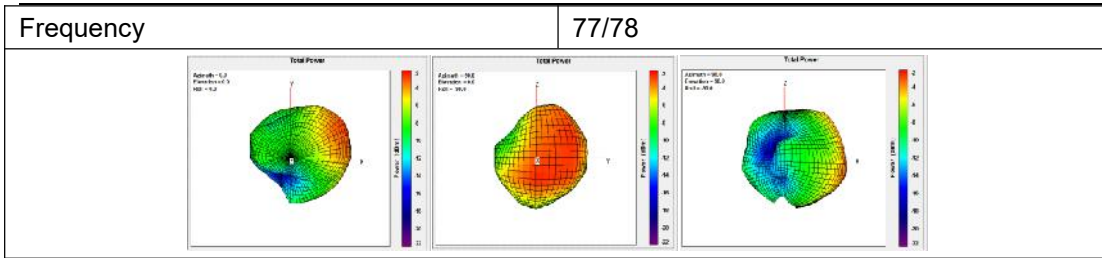


ANT3	Band	Efficient	Gain
5G	N77 (3300-4200)	-7.5	-1
	N78 (3300-3800)	-6.8	-1

ANT3 S11&SMITH

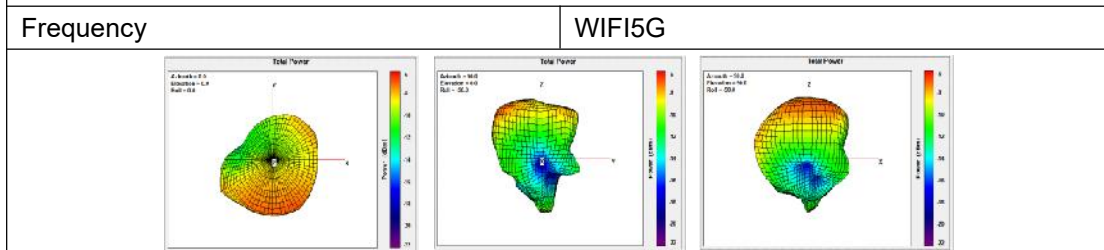
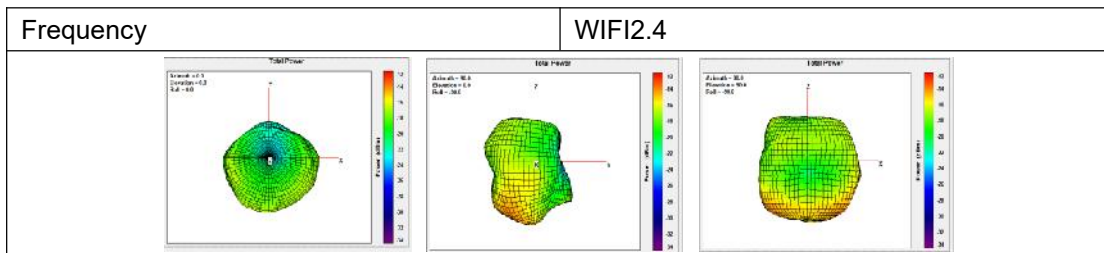
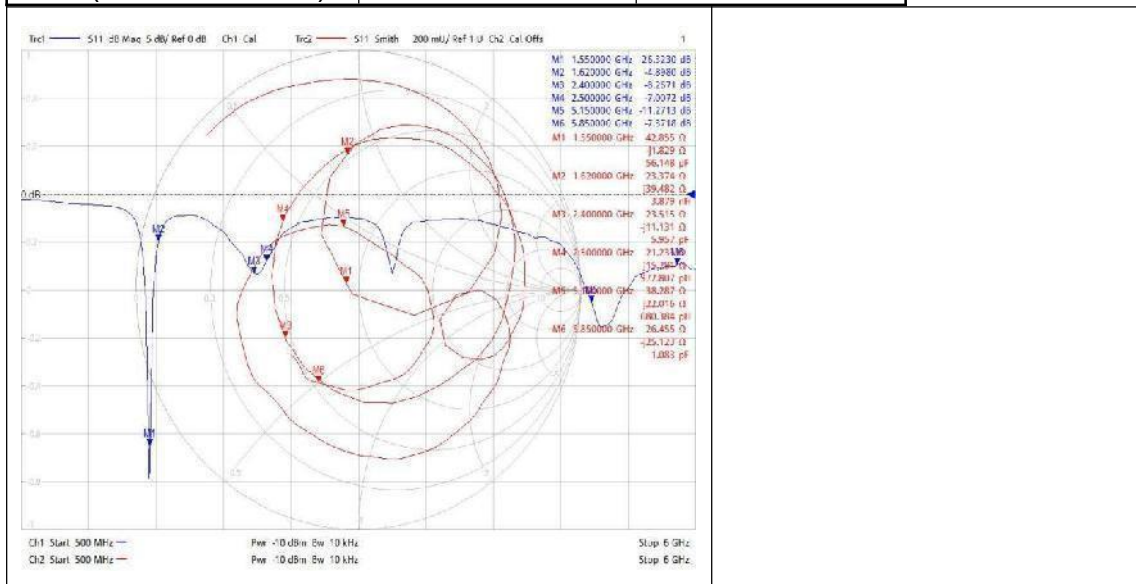






ANT7

Band	Efficient	Gain
2.4G(2.4-2.5GHZ)	-6.2	-0.1
5G (5.15-5.25GHZ)	-6.9	-3.22
5G (5.25-5.35GHZ)	-7	-2.98
5G (5.47-5.725GHZ)	-7.8	-3.37
5G (5.725-5.85GHZ)	-8.4	-3.47



### 3、 Main Test Instruments

Name	Manufacturer	Model name	Serial Number	Cal., Date	Exp., Date
E5071B	KEYSIGHT	E5071B	EQ60215	2022-4-21	2023-4-20

### 4、 Test Site

Shanghai



End of Test Report