



Heyuan City Xunwei
communication technology Co., LTD

WS666A

Mobile antenna test report

RF: Chenchuanming

Test Date: 2023.11.07

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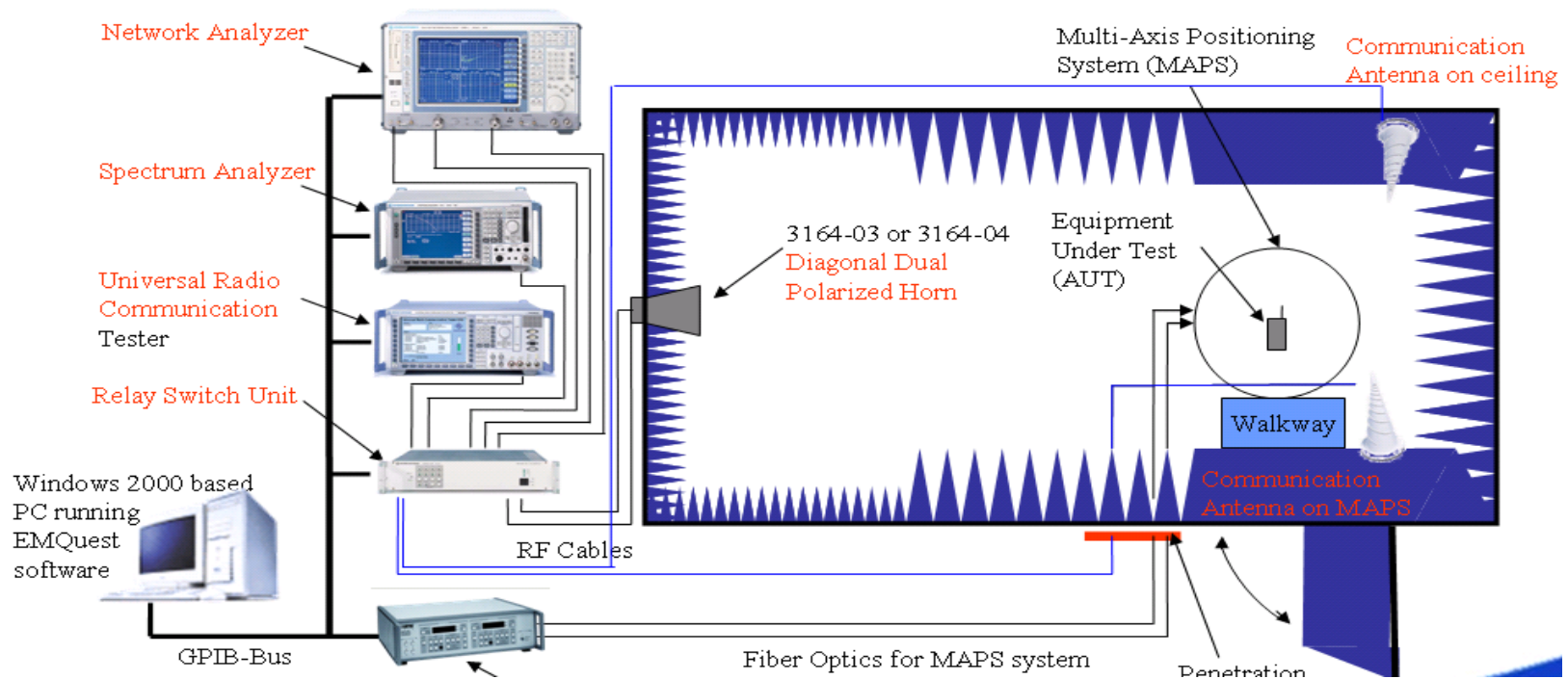
1. Test equipment
2. Basic information of the project
3. Project change record form
- 4, antenna matching circuit
5. Passive test data
6. Environmental treatment
7. Contact us

Integrated measuring instrument: Agilent 8960

Network analyzer: Agilent 8753ES

3D darkroom: 7x4x3m

7. Contact us



Integrated measuring instrument: CMW500
Network analyzer: Agilent 5071B
3D darkroom: SATIMO SG24



2、 Basic project information

Customer name	Waterward
Project name	WS666A-MTK
Mobile phone type	Mobile phone
Motherboard type	YK583
Small plate type	NA
versions	V1.3

3、Project change

[illegible]

4、 Antenna matching circuit

Antenna name	s the match changed	Remarks
Main antenna	yes	4.1~4.3
Diversity antenna	yes	4.4
Three in one antenna	NO	

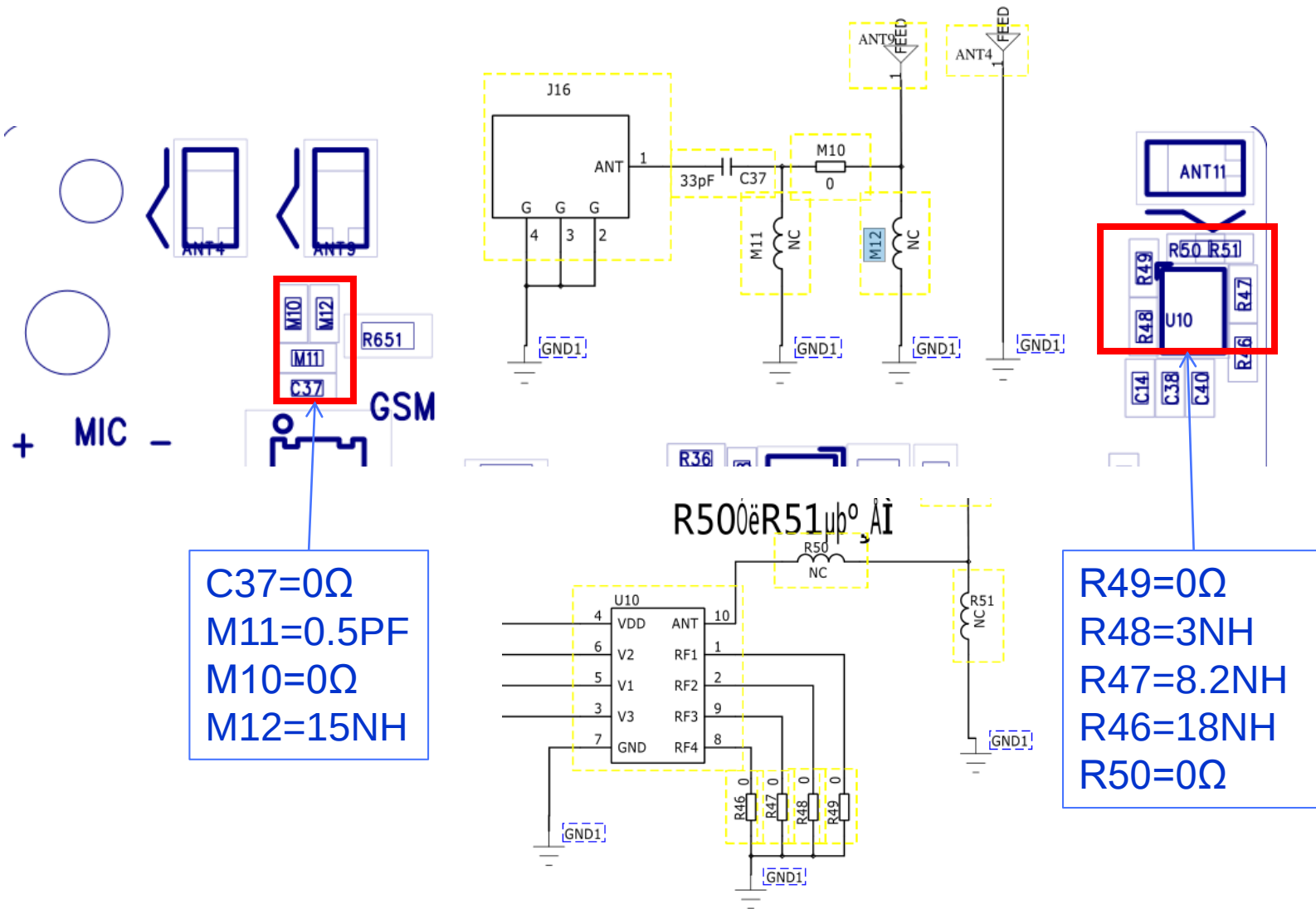
4.1、 Lower antenna tuning switch circuit configuration (WS666-NV-MTK)

RF port	Tag number	value	Application frequency band
RF1	R49	0Ω	G900
RF2	R48	3NH	G850+W-B5+LTE-B5
RF3	R47	8.2NH	LTE-B12/B13/B17
RF4	R46	18NH	LTE-B71

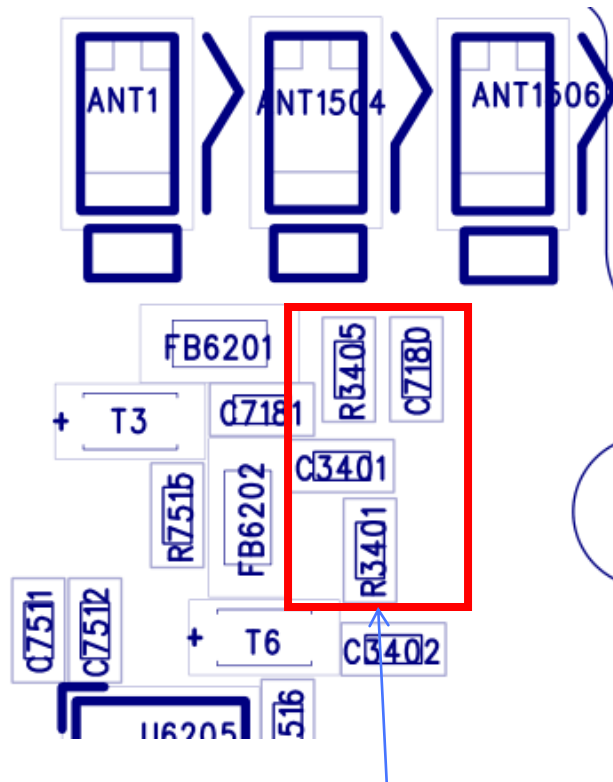
4.2、 Primary set and diversity path configuration

Primary	diversity	Application frequency band
Lower antenna	Upper antenna	G850/900+W-B5+LTE-B5/B12/B13/B17/B71
Upper antenna	Lower antenna	G1800/1900+W-B2/4+LTE-B2/B4/B66/B41

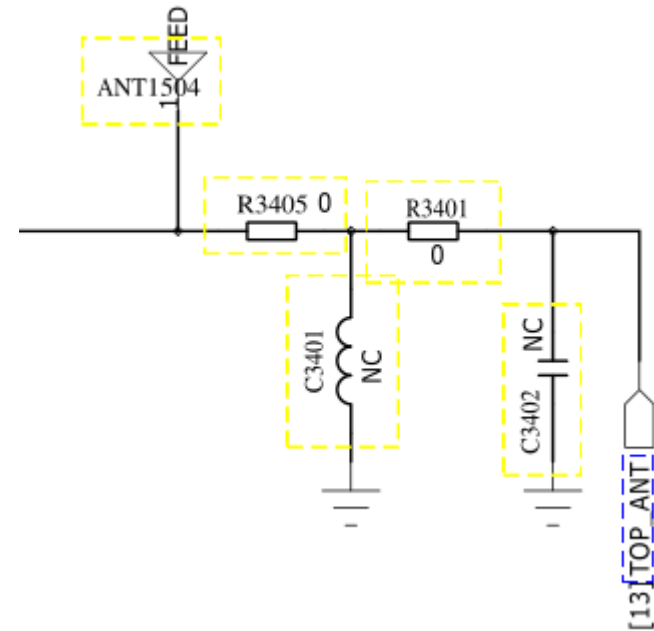
4.3、Small board RF matching



4.4、 Diversity RF matching



R3405/R3401:0Ω
C3401:0.5PF
C7180:1.2NH



5、Active test data

GSM 3D Test Data

Band	Ch	Free space	
		TRP	TIS
G850	128	25.3	
	190	25.4	-102.7
	251	25.6	
G900	975	25.8	
	38	26.0	-102.4
	124	26.2	
G1800	512	25.3	
	699	25.3	-103.5
	885	25.2	
G1900	512	25.1	
	661	25.3	-104.1
	810	25.4	

WCDMA 3D Test Data

Band	Ch	Free space	
		TRP	TIS
W-B2	9662	18.7	
	9800	18.7	-104.8
	9938	18.8	
W-B4	1312	18.7	
	1412	18.8	-104.5
	1513	18.6	
W-B5	4357	16.6	
	4408	16.7	-103.6
	4458	16.8	

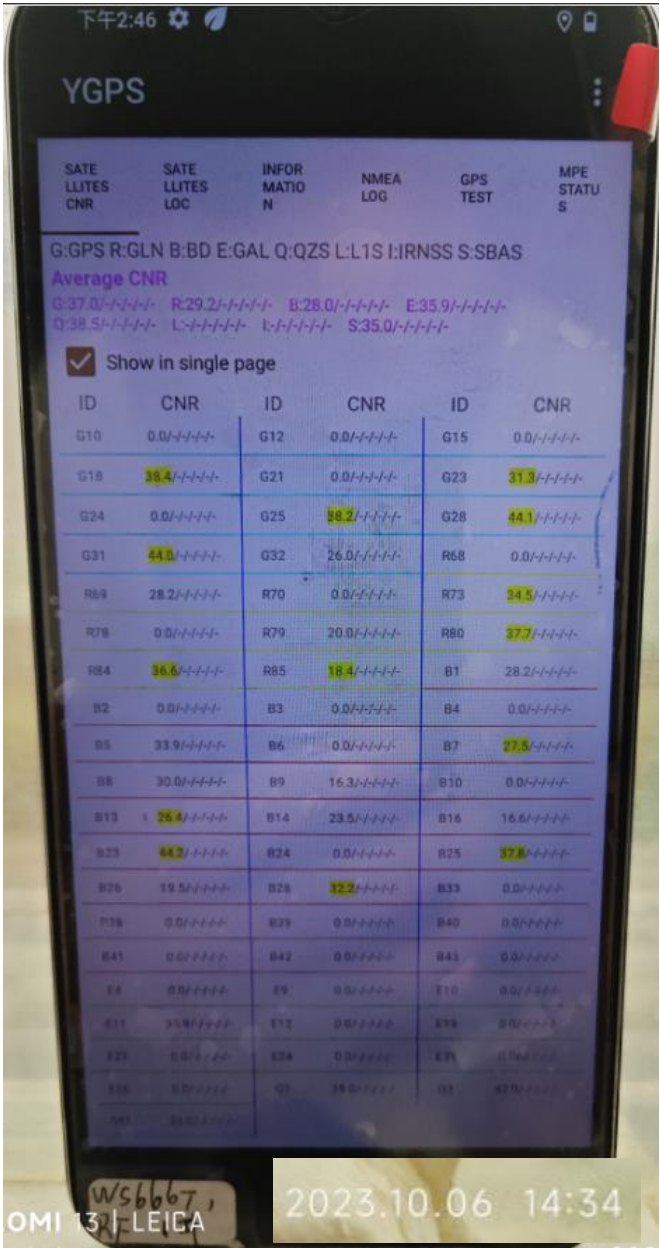
LTE 3D Test data

Band	Ch	Free space	
		TRP	TIS
LTE-2 (10M)	18650	18.6	
	18900	18.7	-93.8
	19150	18.6	
LTE-4 (10M)	20000	18.8	
	20175	18.8	-93.4
	20350	18.7	
LTE-5 (10M)	20450	16.7	
	20525	16.7	-91.5
	20600	16.8	
LTE-12 (5M)	23035	16.3	
	23095	16.6	-95.2
	23155	16.9	

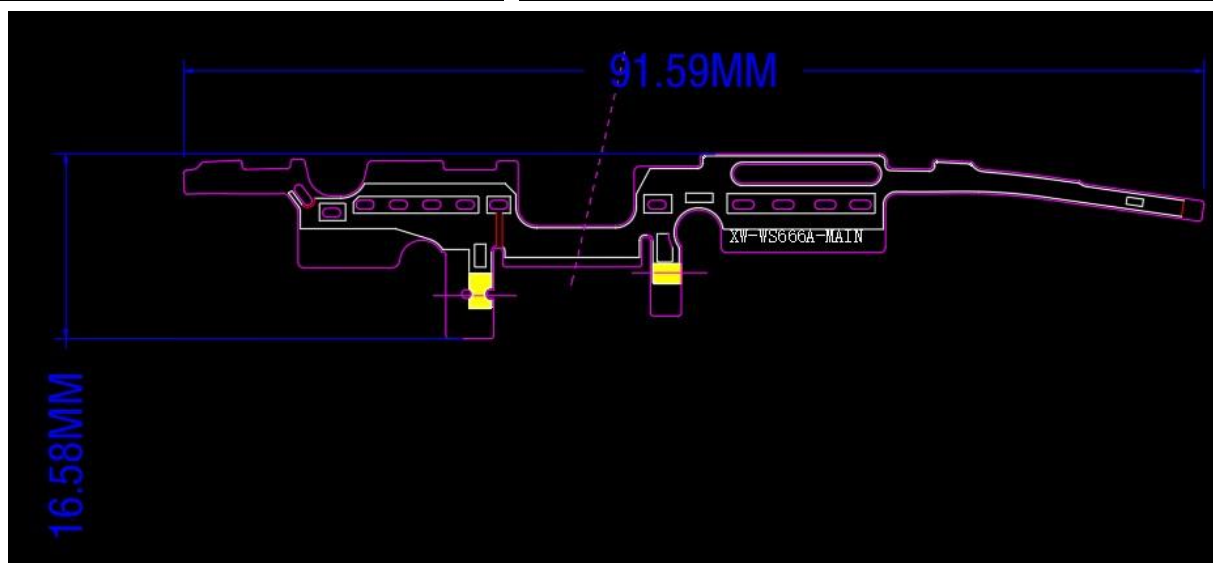
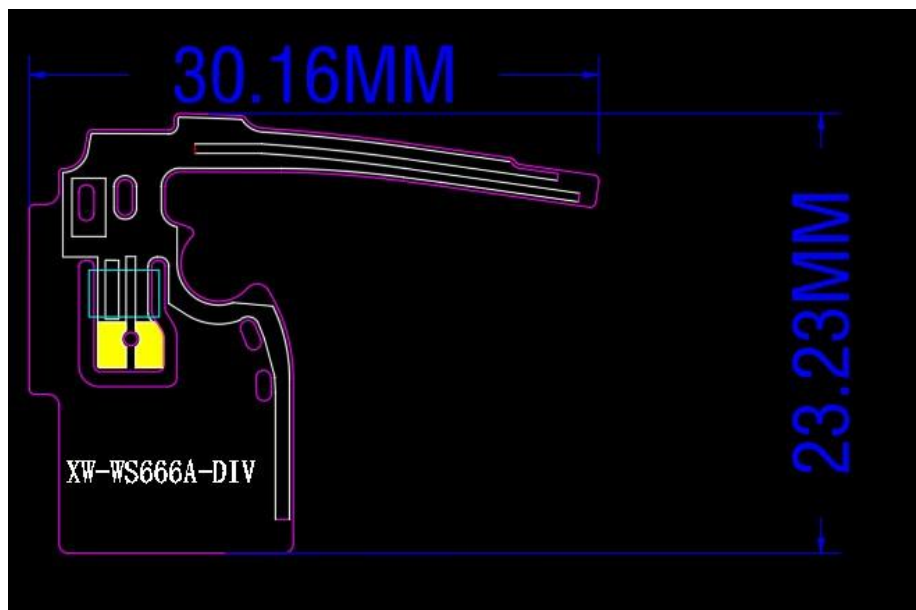
Band	Ch	Free space	
		TRP	TIS
LTE-13 (10M)	23180	16.4	
	23230	16.3	-92.1
	23279	16.0	
LTE-17 (10M)	23730	16.2	
	23790	16.6	-92.1
	23849	16.8	
LTE-66 (10M)	132022	18.6	
	132322	18.7	-93.8
	132622	18.8	
LTE-41 (20M)	39750	18.6	
	40620	19.3	-89.1
	41490	19.0	
LTE-71 (10M)	133172	16.1	
	133296	16.5	-91.6
	133421	16.9	

LTE 3D Test Data

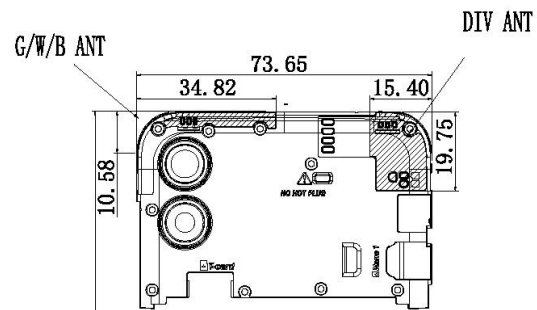
WIFI-B	1	11.0	-80.5
	7	11.2	-80.3
	13	11.3	-80.4
WIFI-B	36	10.2	-70.2
	68	10.4	-70.4
	165	10.6	70.4
BT	0	1.5	-83.8
	36	1.6	-84.1
	78	1.9	-84.3
CN	39.1		



Antenna dimension drawing



TOP

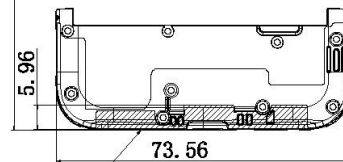


Left

Back

Right

162.44



WWAN Main ANT

WWAN Main ANT: G850/900+W-B5+LTE-LTE-B5/B12/B13/B17/B71, Tx/Rx

DIV ANT: G1800/1900+W-B2/4+LTE-B2/B4/B66/B41, Tx/Rx

Bottom

WS666A

LTE Antenna gain

All of Implementation antenna

Main antenna(Antenna Label:A):

LTE B5/B12/B13/B17/B71 RX&TX

WCDMA B5 RX&TX

GSM B5/B8 RX&TX

DIV antenna(Antenna Label:B):

LTE B2/B4/B41/B66 RX&TX

WCDMA B2/B4 RX&TX

GSM B2/B3 RX&TX

WiFi/BT

2.4~2.5G/5.1~5.8G/2412MHz~2472MHz&/5100MHz~5800MHz

GPS: 1575.42 MHz

Antenna Max. Peak Gain:

GSM900: -1.8dBi

GSM850: -1.4dBi

DCS1800: -1.5dBi

PCS1900: -1.9dBi

W2: -1.9dBi

W4: -1.6dBi

W5: -1.4dBi

LTE-B2: -1.9dBi

LTE-B4: -1.5dBi

LTE-B5: -1.4dBi

LTE-B12: -1.8dBi

LTE-B13: -1.8dBi

LTE-B17: -1.8dBi

LTE-B66: -1.6dBi

LTE-B71: -2.2dBi

LTE-B41: -1.2dBi

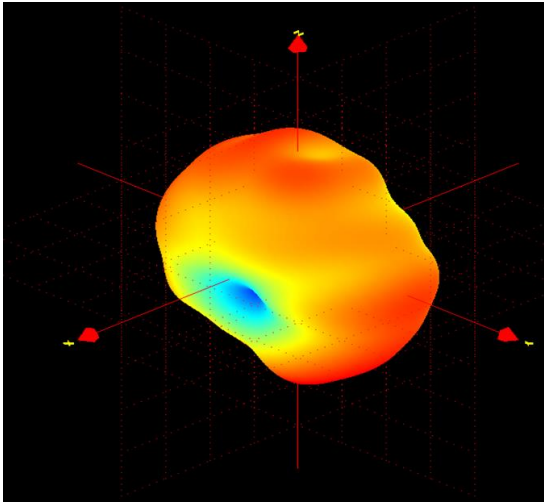
WIFI (5G): -2.1dBi

WIFI (2.4G): -1.3dBi

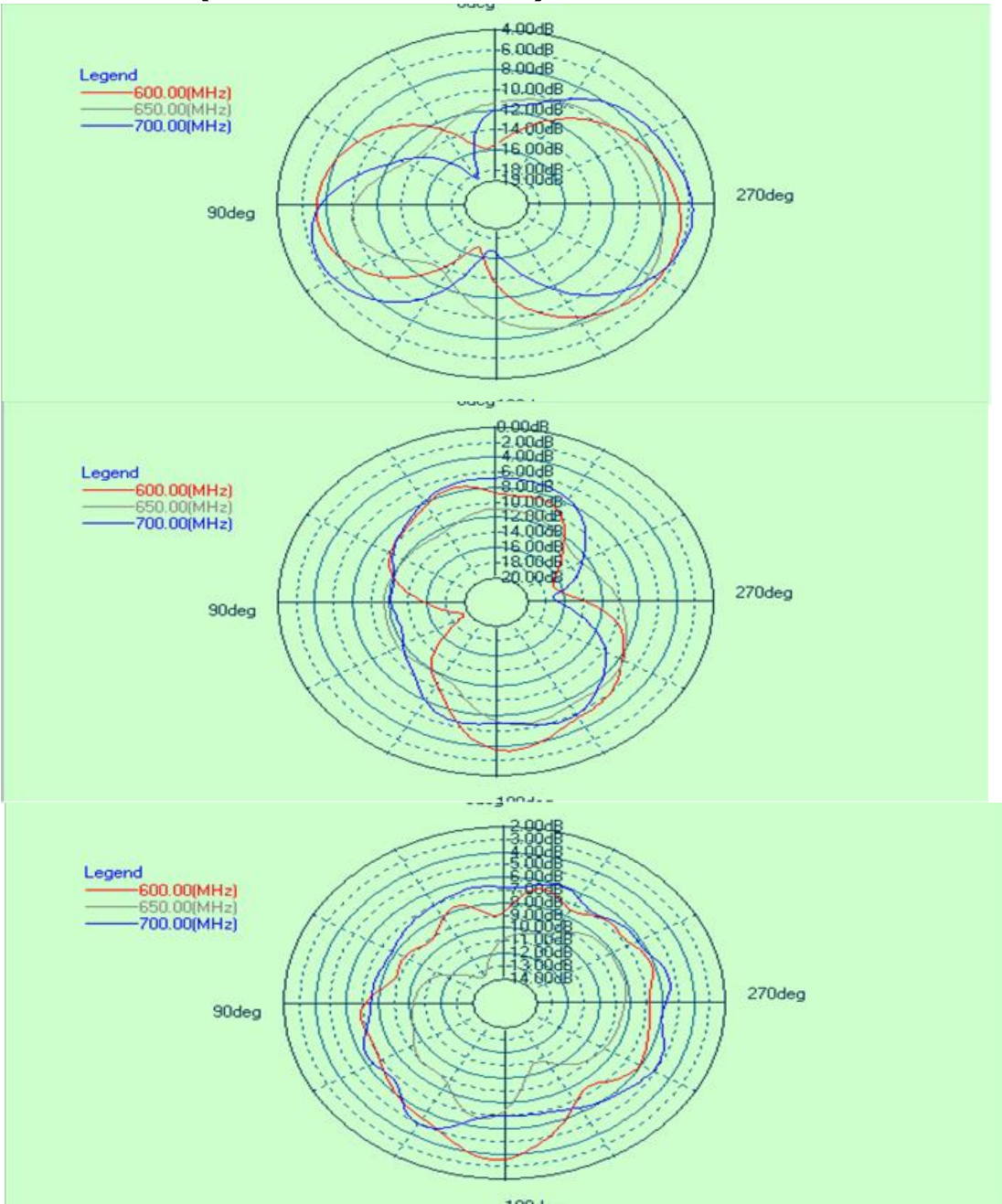
BT: -1.3dBi

GPS: -1.4dBi

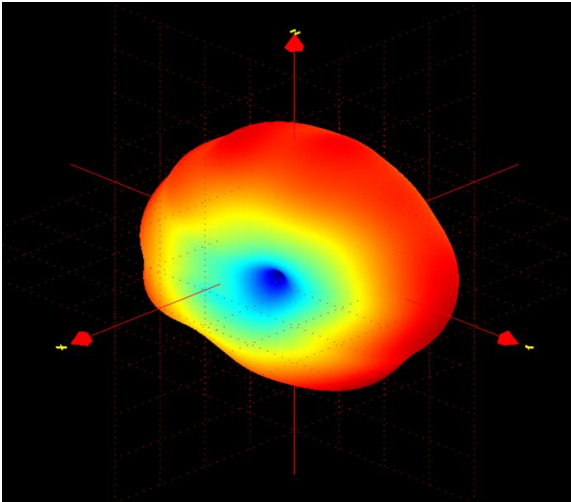
2.3 Main antenna Peak Gain(603~700M)



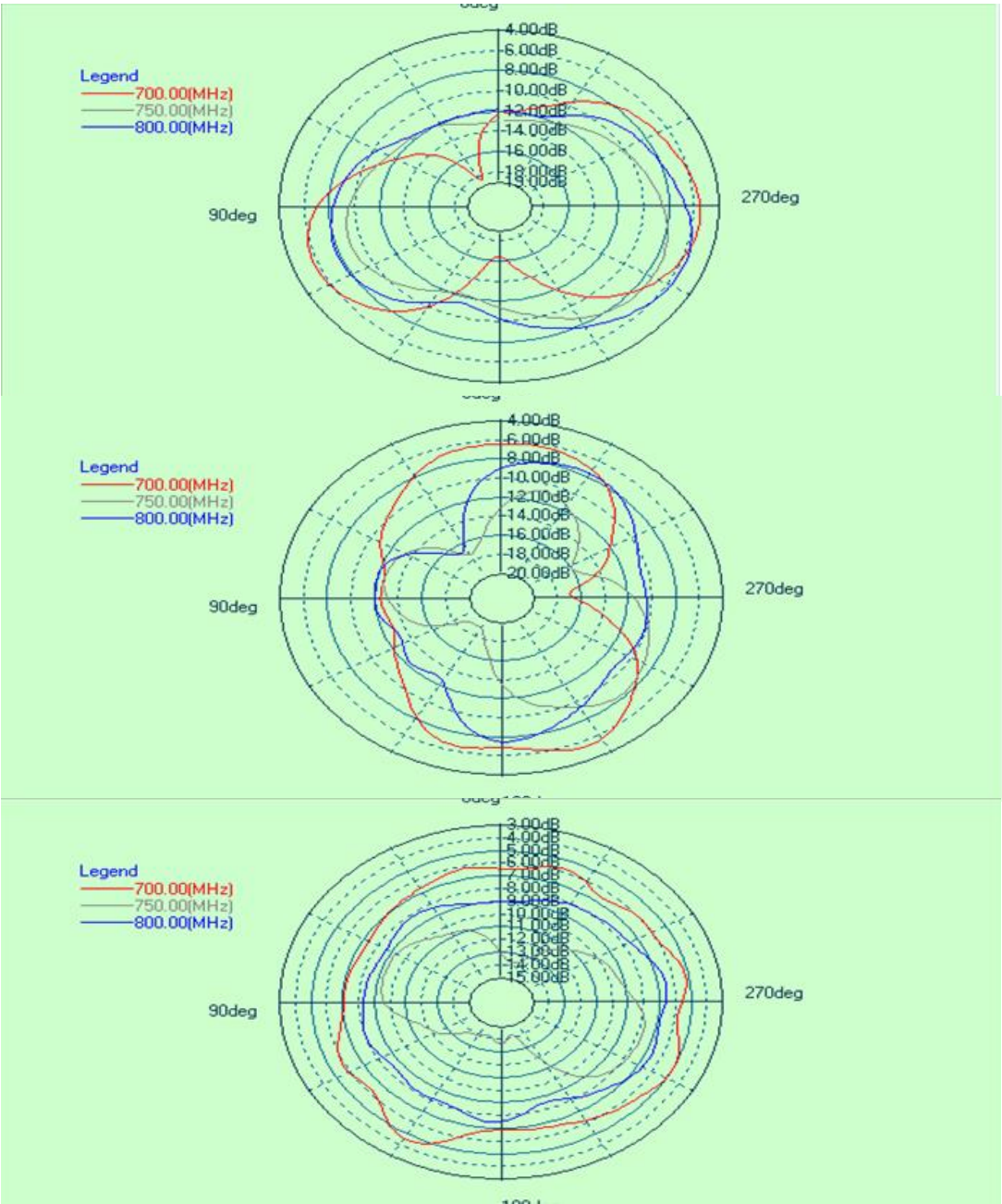
Freq.(MHZ)	Peak .Gain	Effi.(%)
603	-2.2	21



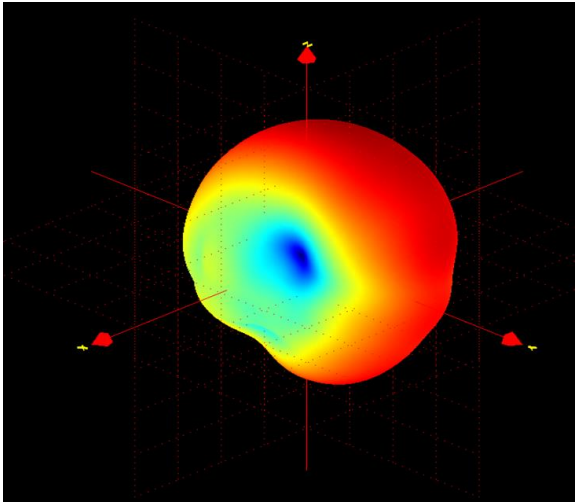
2.3 Main antenna Peak Gain(700~800M)



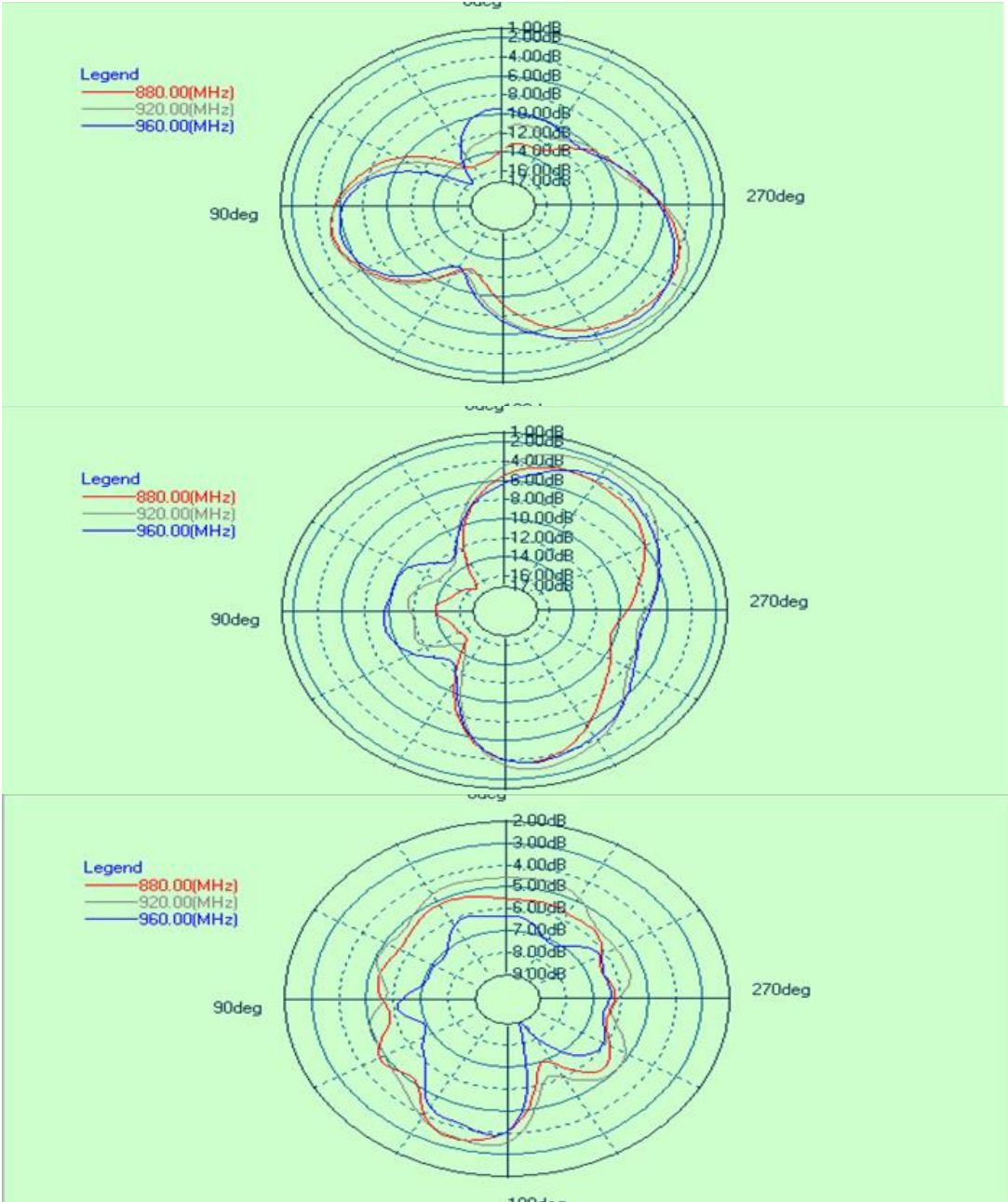
Freq.(MHZ)	Peak .Gain	Effi.(%)
703	-1.8	20



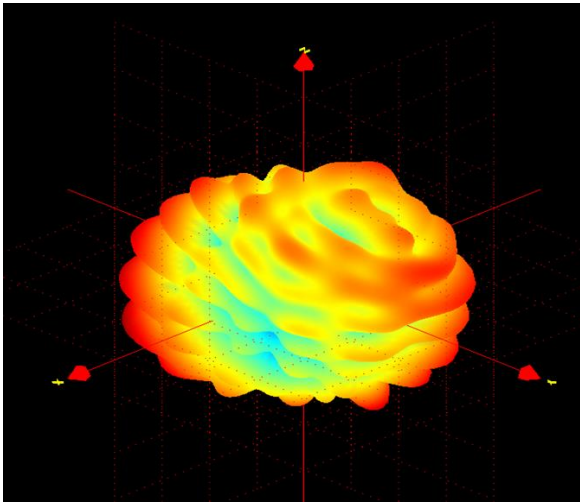
2.3 Main antenna Peak Gain(880~960M)



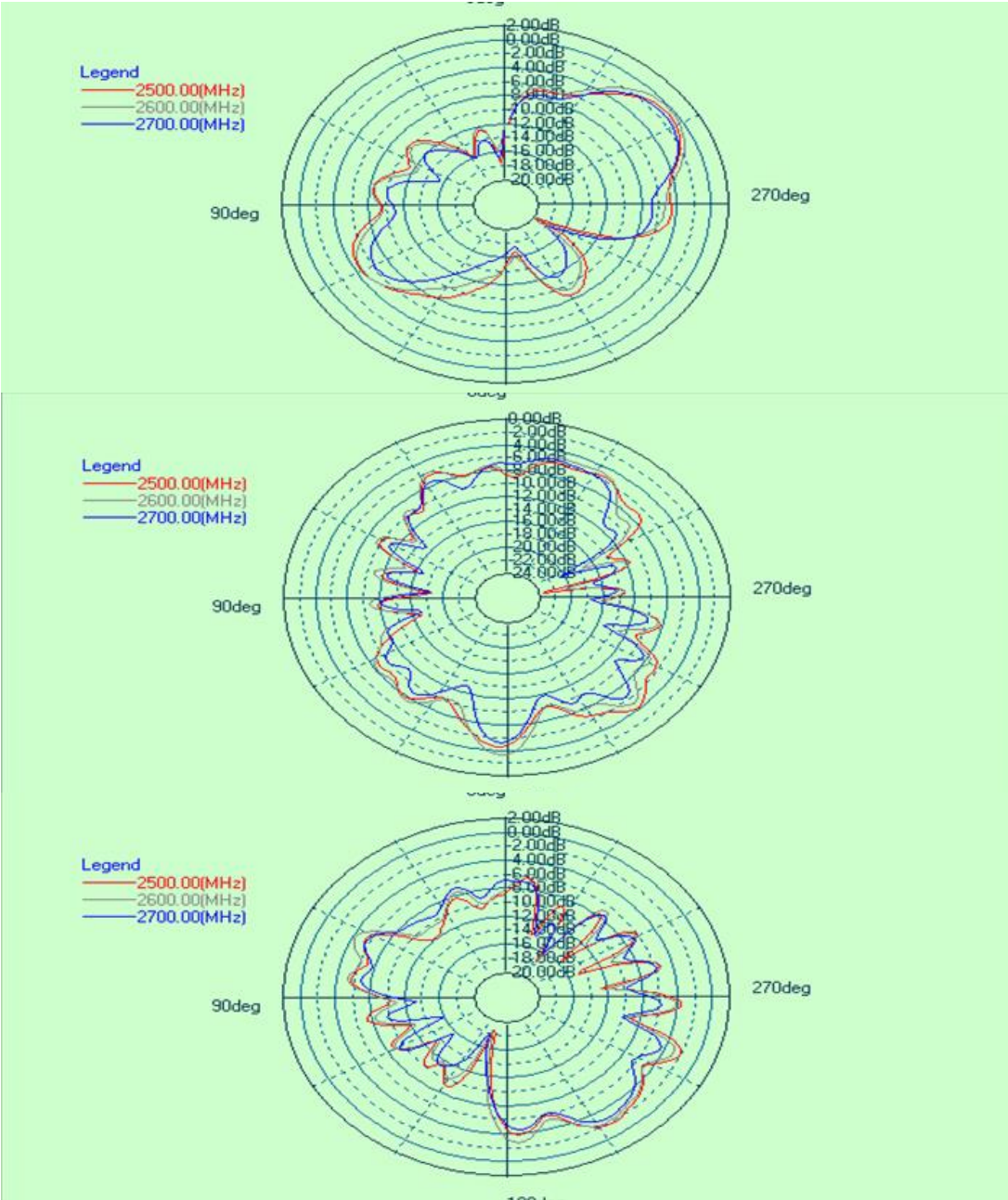
Freq.(MHZ)	Peak .Gain	Effi.(%)
920	-1.8	23



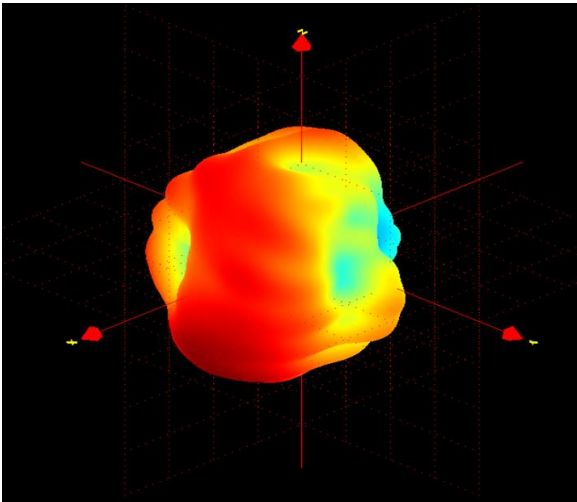
2.3 Main antenna Peak Gain(2500~2700M)



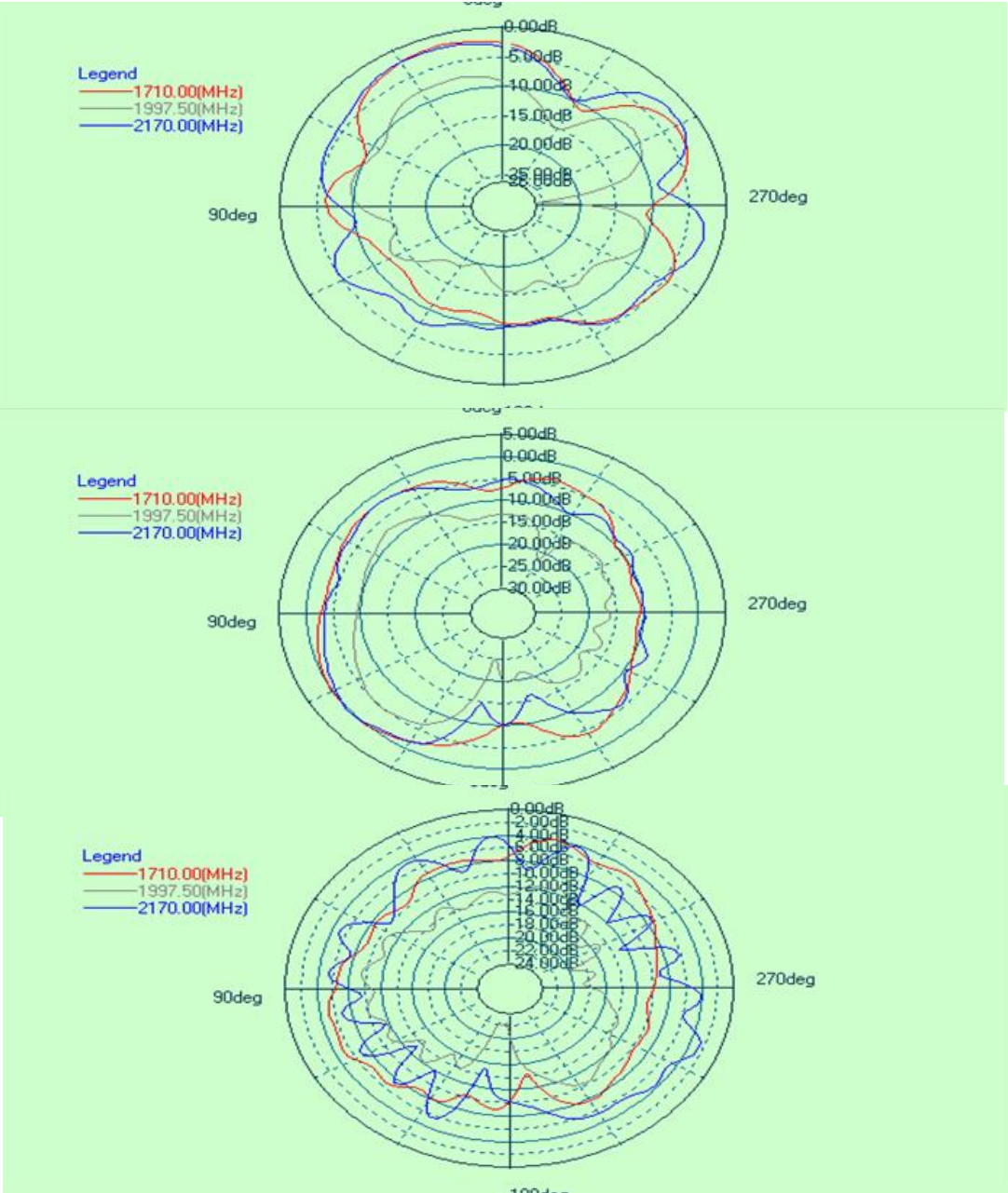
Freq.(MHZ)	Peak .Gain	Effi.(%)
2580	-1.2	24



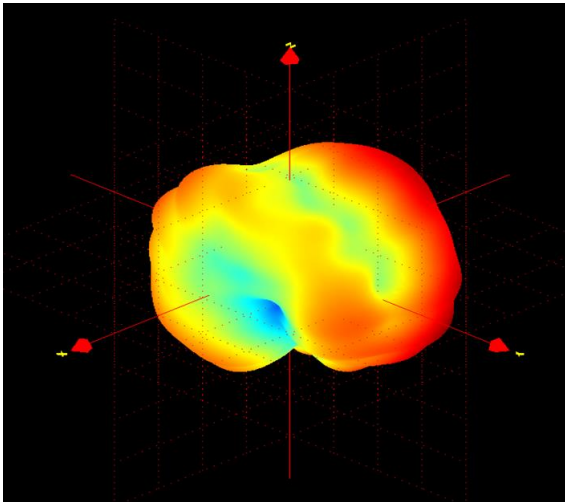
2.3 DIV antenna Peak Gain(1710~2170M)



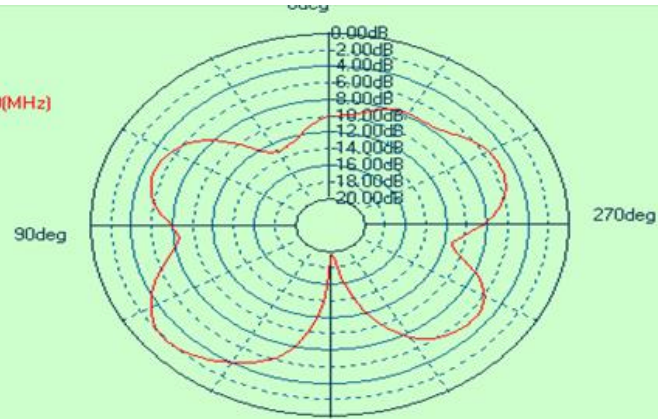
Freq.(MHZ)	Peak .Gain	Effi.(%)
1710	-1.5	29



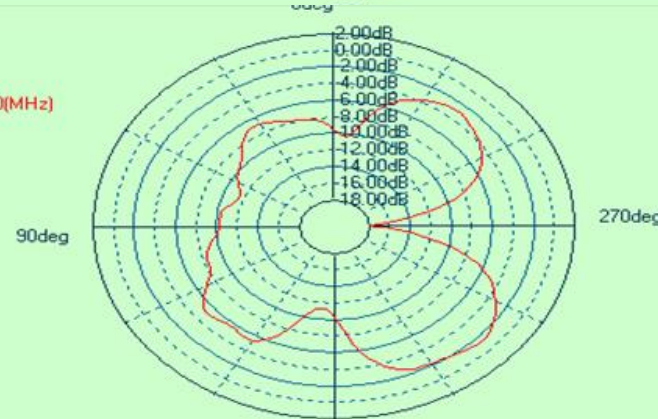
2.3 G/W/B antenna Peak Gain(1575M)



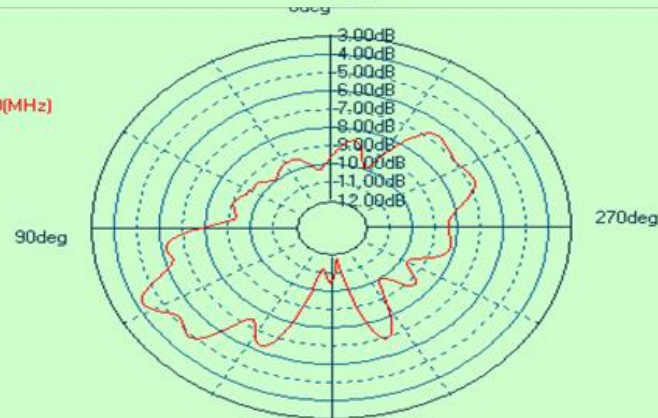
Legend
1575.00(MHz)



Legend
1575.00(MHz)

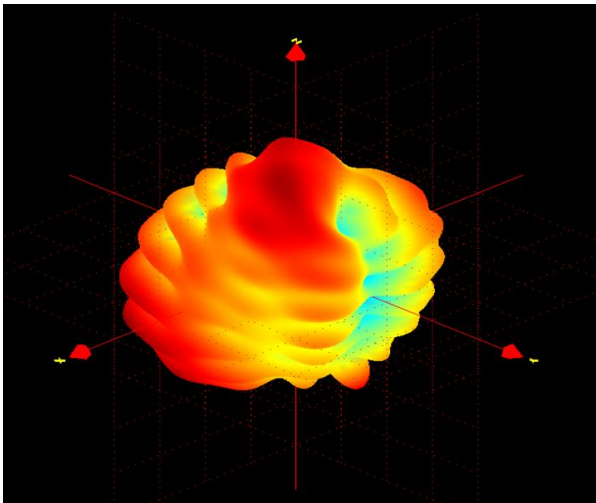


Legend
1575.00(MHz)

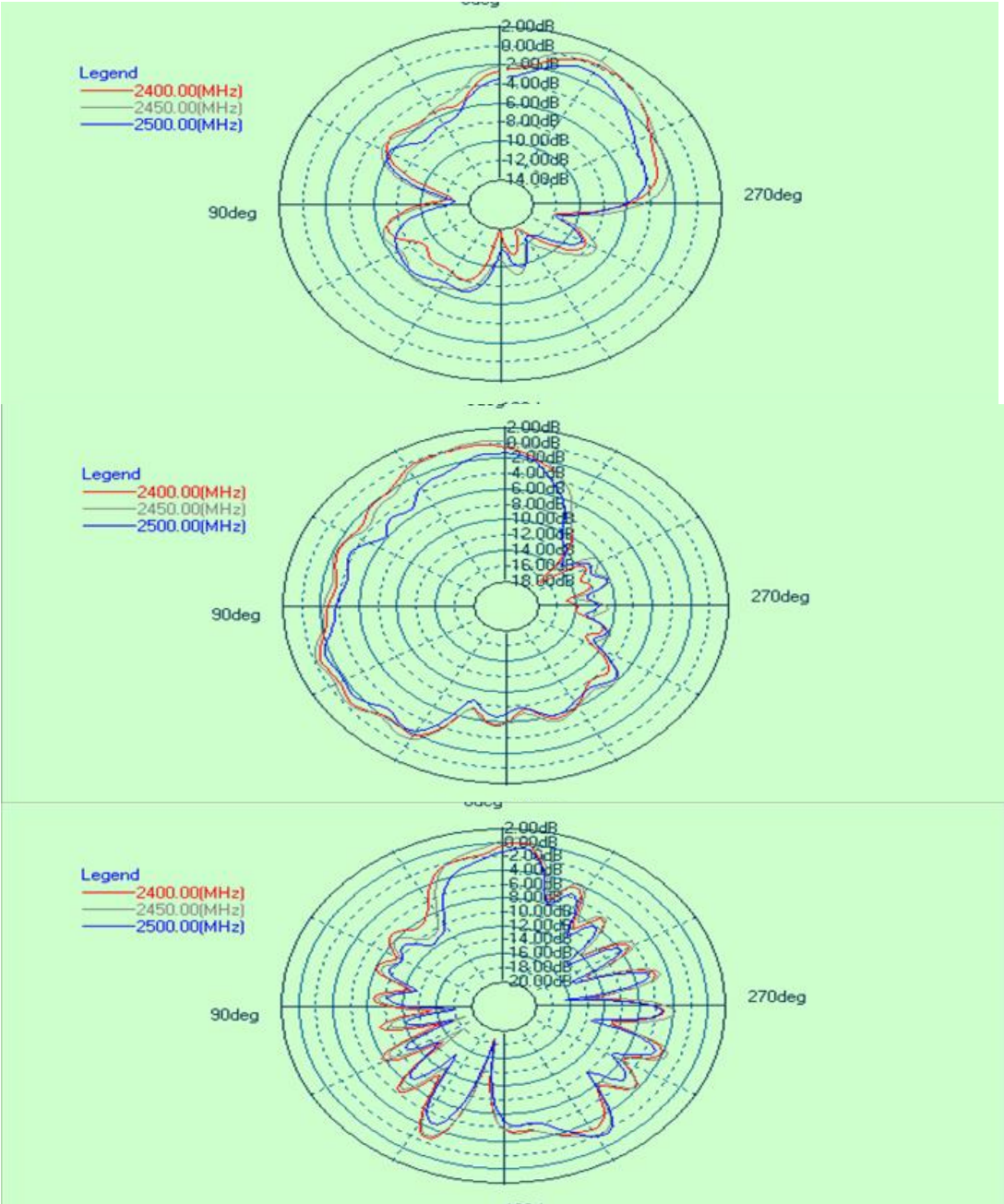


Freq.(MHZ)	Peak .Gain	Effi.(%)
1575	-1.4	32

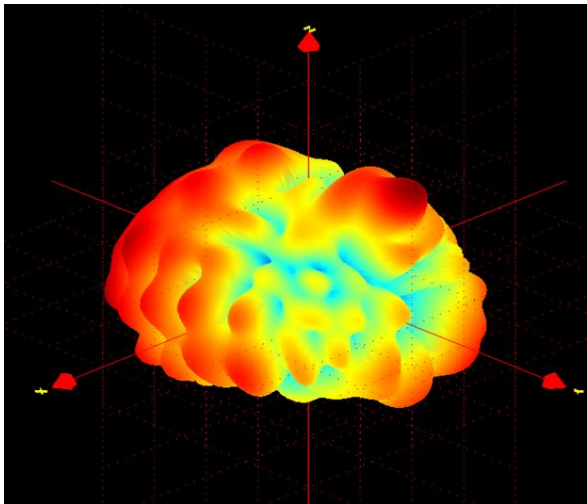
2.3 G/W/B antenna Peak Gain(2400-2500M)



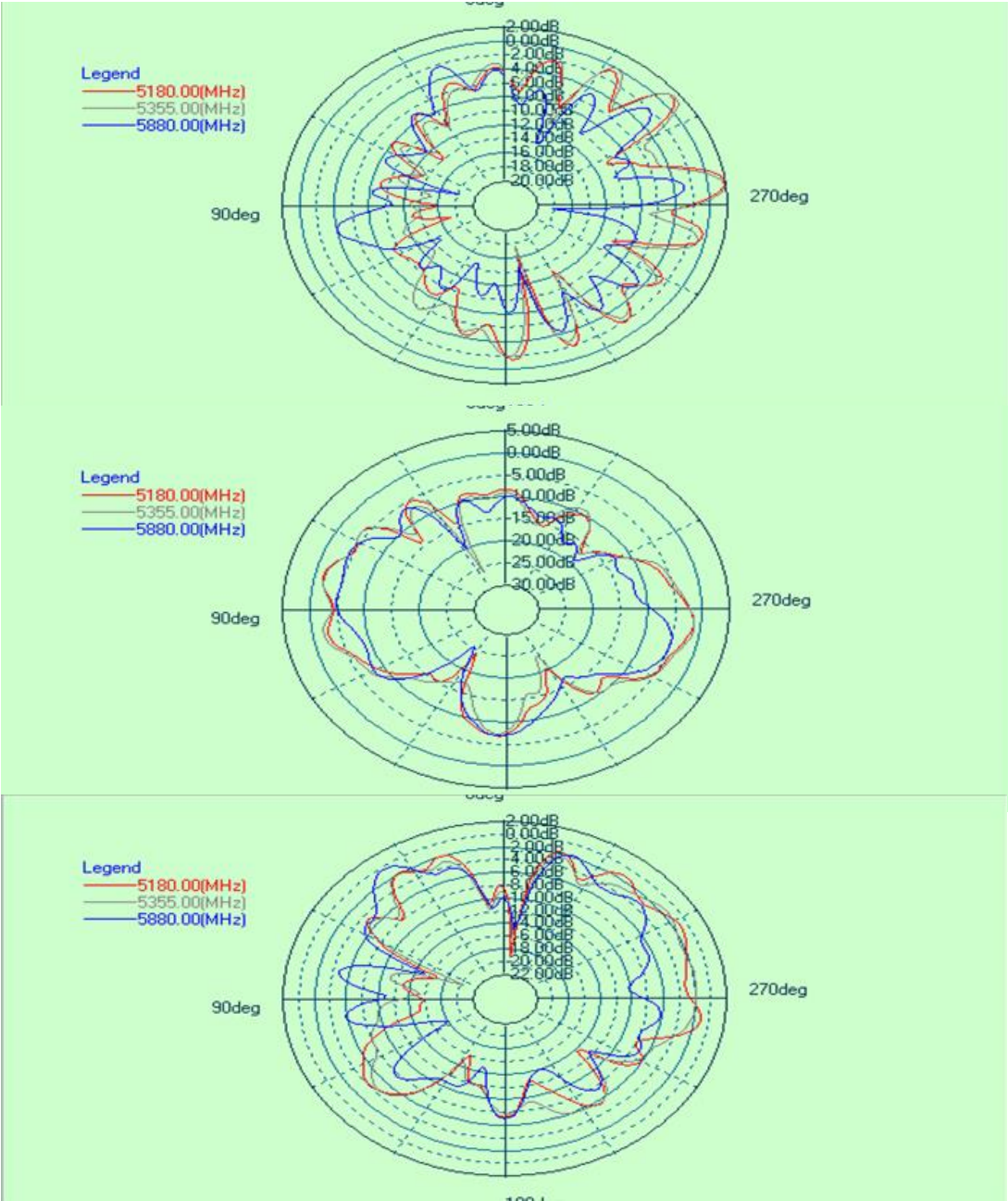
Freq.(MHZ)	Peak .Gain	Effi.(%)
2450	-1.3	34



2.3 G/W/B antenna Peak Gain(5100-5800M)



Freq.(MHZ)	Peak .Gain	Effi.(%)
5180	-2.1	24



7、Contact us

Business: Song Xianggui	telephone: 15818512709 Email: songxg@xunweitx.com
Radio frequency: Chen Chuanming	telephone: 18124513541 Email: chencm@xunweitx.com
Structure: Li Wenbo	telephone: 15919806329 Email: liwb@xunweitx.com



Thanks and best regards!

Office Address: 8 / F, Building 1, Baisha Xinxing Industrial Park, No.3011
Shahe West Road, Nanshan District, Shenzhen
Factory Address: South of Keji 10th Road, West of Xingye Avenue, Heyuan High-tech Zone (5 / F
West of Huahui Zhigu Factory Building C)