

# ANWEI commnuication Equipment Co.,Ltd

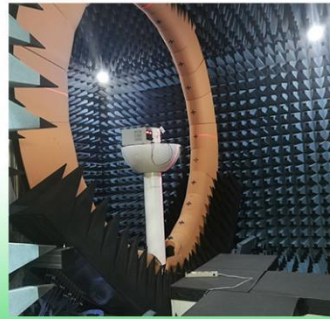
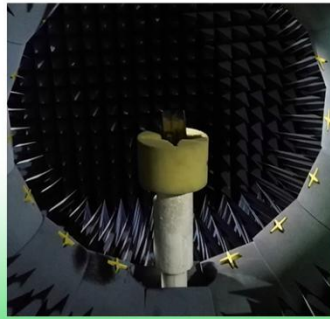
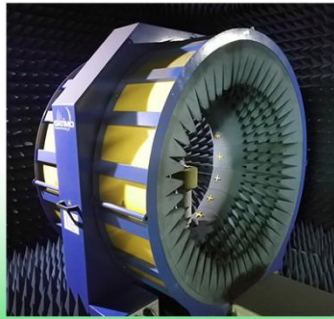
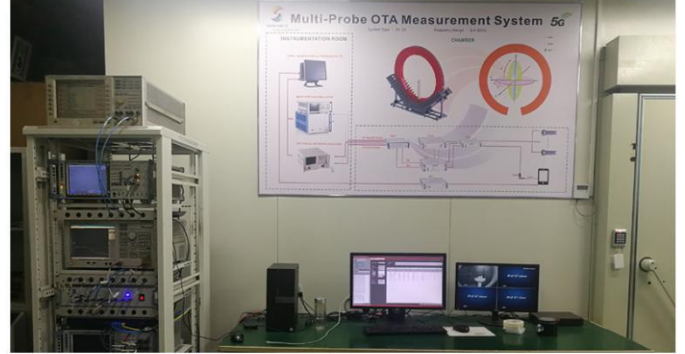
## APPROVAL SHEET

Customer	Youmi	Specs	Active Tab T1
Part Number	AW006-Active TAB T1-021-A0 AW006-Active TAB T1-022-A0 AW006-Active TAB T1-023-A0 AW006-Active TAB T1-024-A0	Frequency Band	2G:GSM850/900/1800/1900 3G:WCDMA-B1/2/5/8 4G:LTE-B1/2/3/5/7/8/12/20/28A/28B/38/40/41
Color	Black	Edition	REV:A0
Salesperson	Mr.Xie	Design	ZHONG ZHI HUI
Structure	QIN YUN LIN	Confirm	
Date	2023/7/06	Signing Date	

Customer confirmation:

ANT Manufacturers: ANWEI commnuication Equipment Co.,Ltd  
 Address:2nd Floor, East Block, Building 5, Yifenghua Innovation Industrial Park, Huaning Road, Dalang Street, Longhua District, Shenzhen City, Guangdong Province

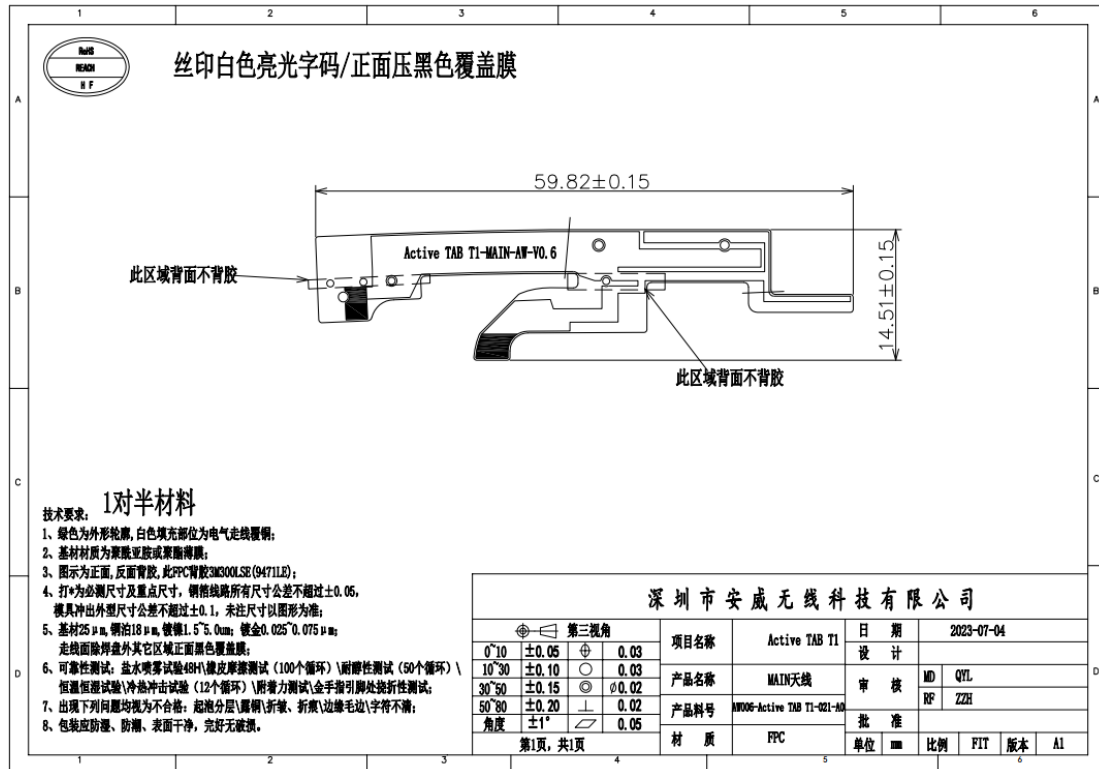
## Project development environment



安威无线一直都是您值得信赖且优秀的合作伙伴，我们为您提供全方位一站式的的产品以及技术服务！

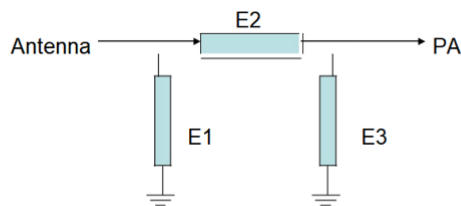
“质量第一，服务至上”是安威一直以来的发展宗旨

(MAIN ANT)



(Working frequency band): 700MHZ~960MHZ 1710~2690MHZ  
 2G:GSM850/900/1800/1900  
 3G:WCDMA-B1/2/5/8  
 4G:LTE-B1/2/3/5/7/8/12/20/28A/28B/38/40/41

(Matcheing network):



Element	Value
E1	18NH
E2	2.2NH
E3	NC
E4	0 Ω

(DIV ANT)

123456

丝印白色亮光字码/正面压黑色覆盖膜

Active TAB TI-DIV-AW-V0.6  
此区域背面不背胶

**技术要求:**

1、绿色为外形轮廓,白色填充部位为电气走线覆铜;

2、基材材质为聚酰亚胺或聚酰亚胺薄膜;

3、图示为正面,反面背胶,此FPC背胶为3M3000SE(9471LE);

4、打\*为必测尺寸及重点尺寸,铜箔线路所有尺寸公差不得超过±0.05,模具冲出外型尺寸公差不得超过±0.1,未注尺寸以图形为准;

5、基材25μm,铜箔18μm,镀镍1.5±0.0um;镀金0.025±0.075μm;走线面除焊盘外其它区域正面黑色覆盖膜;

6、可靠性测试:盐水喷雾试验48H\橡皮摩擦测试(100个循环)\耐弯折测试(50个循环)\恒温恒湿试验\冷热冲击试验(12个循环)\附着力测试\金手指引脚处耐折性测试;

7、出现下列问题均视为不合格:起翘分层\腐蚀\折痕\折痕\边缘毛边\字符不清;

8、包装应防潮、防漏、表面干净,完好无破损。

深圳市安威无线科技有限公司

	第三视角		项目名称	Active TAB TI	日期	2023-07-04	
0°/10	±0.05	⊕	设计		设计		
10°/30	±0.10	○	产品名称	DIY天线	审核	MD	QYL
30°/50	±0.15	⊙	产品料号	AW09-Active TAB TI-023-A0	RF	ZZH	
50°/80	±0.20	⊚	材质	FPC	批准		
角度	±1°	∠	单位	mm	比例	FIT	版本
第1页,共1页							A1

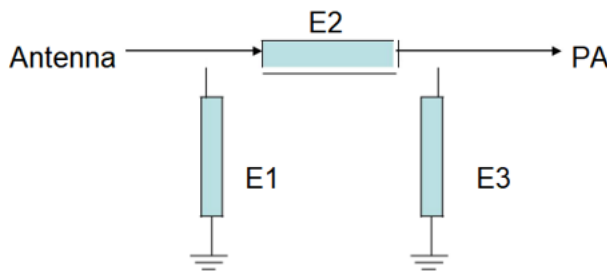
(Working frequency band):1710~2690MHZ

2G:GSM1800/1900

3G:WCDMA-B1/2

4G:LTE-B1/3/7/38/40/41

(Matcheing network)



Element	Value
E1	N/A
E2	0 Ω
E3	N/A

(GPS antenna) + (2.4G/5G WIFI/BT antenna)

123456

丝印白色亮光字码/正面压黑色覆盖膜

ABCD

**1对半材料**

技术要求:

- 绿色为外形轮廓,白色填充部位为电气走线覆铜;
- 基材材质为聚酰亚胺或聚酰亚胺薄膜;
- 图示为正面,反面背胶,此PPC背胶3M300LSE (9471LE);
- 打\*为必测尺寸及重点尺寸,铜箔线路所有尺寸公差不得超过±0.05,模具冲出外型尺寸公差不得超过±0.1,未注尺寸以图形为准;
- 基材25 μm,铜箔18 μm,铜厚1.5 μm,镀金0.025~0.075 μm;走线面除焊盘外其它区域正面黑色覆盖膜;
- 可靠性测试: 盐水喷雾试验48H\橡皮摩擦测试(100个循环)\耐磨性测试(50个循环)\恒重恒湿试验\冷热冲击试验(12个循环)\附着力测试\金手指引脚处折弯测试;
- 出现下列问题均视为不合格: 起泡分层\露铜\折痕\折痕\边缘毛边\字符不清;
- 包装应防潮、防潮、表面干净,完好无破损。

**深圳市安威无线科技有限公司**

第三视角		项目名称	Active TAB TI	日期	2023-07-04		
0°10	±0.05	设计		设计	MD	QYL	
10°30	±0.10	产品名称	2.4G/WIFI/GPS/5G/WIFI天线	审核	RF	ZZH	
30°50	±0.15	产品料号	AW006-Active TAB TI-022-M	批准			
50°80	±0.20	材质	PPC	单位	mm	比例	FIT 版本 A1
角度	±1°						

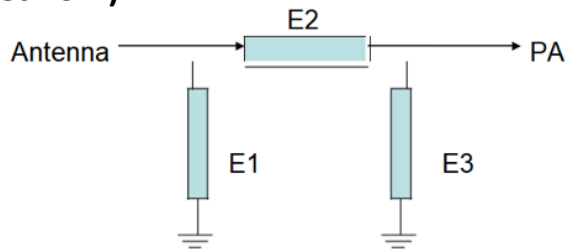
第1页,共1页

日期	2023-07-04		
设计	MD	QYL	
审核	RF	ZZH	
批准			
单位	mm	比例	FIT 版本 A1

(Working frequency band of GPS antenna) : 1575.42MHZ

(Working frequency band of 5GWIFI antenna) : 2400~2500,5150MHZ~5850MHZ

**(Matcheing network)**



Element	Value
E1	N/A
E2	0 Ω
E3	N/A

FM ANT

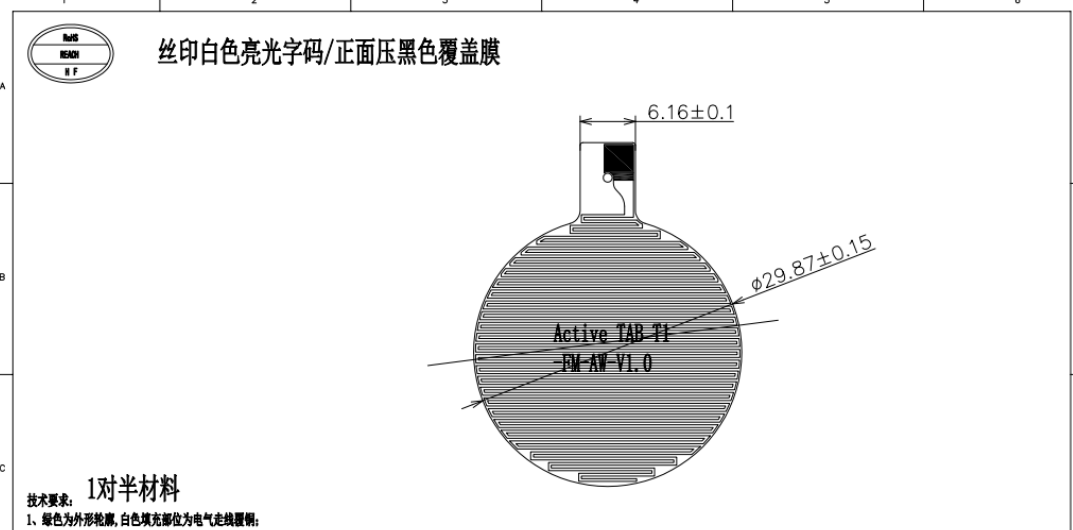
1 2 3 4 5 6

A

B

C

D



丝印白色亮光字码/正面压黑色覆盖膜

**1对半材料**

技术要求:

- 1、绿色为外形轮廓,白色填充部位为电气走线覆铜;
- 2、基材材质为聚酰亚胺或聚酰亚胺薄膜;
- 3、图示为正面,反面背胶,此FPC背胶3MSOOLSE (9471LE);
- 4、打\*为必测尺寸及重点尺寸,铜箔线路所有尺寸公差不得超过±0.05,模具冲出外型尺寸公差不得超过±0.1,未注尺寸以图形为准;
- 5、基材25  $\mu$ m,铜箔18  $\mu$ m,微蚀1.5 $\pm$ 0.0mm;镀金0.025 $\pm$ 0.075  $\mu$ m;走线面除焊盘外其它区域正面黑色覆盖膜;
- 6、可靠性测试:盐水喷雾试验(48H)\橡皮摩擦测试(100个循环)\耐磨性测试(50个循环)\恒温恒湿试验\冷热冲击试验(12个循环)\附着力测试\金手指引脚绝缘折性测试;
- 7、出现下列问题均视为不合格:起泡分层\露铜\折痕\折痕\边缘毛边\字符不清;
- 8、包装应防潮、防潮、表面干净,完好无破损。

第三视角				项目名称		日期	2023-07-04	
0°/10	±0.05	Φ	0.03	Active TAB T1	设计			
10°/30	±0.10	○	0.03	产品名称	FM天线	审核	MD QYL	
30°/50	±0.15	◎	φ0.02	产品料号	AW006-Active TAB T1-024-M	批准	RF ZZH	
50°/80	±0.20	⊥	0.02	材质	FPC	单位	mm	
角度	±1°	∠	0.05			比例	FIT	
						版本	A1	

第1页, 共1页

(Working frequency band):87~108MHZ

**ANWEI ANT TRP&TIS parameter Summary of Active Tab T1**

BAND	Channel	TRP (dBm)	TIS (dBm)
FDD B1	L	14.97	
	M	14.79	
	H	15.42	-91.98
FDD B3	L	16.14	
	M	15.89	
	H	15.25	-89.56
FDD B5	L	17.51	
	M	18.06	
	H	18.69	-92.27
FDD B7	L	16.69	
	M	16.56	
	H	16.58	-91.72
FDD B8	L	17.91	
	M	18.17	
	H	18.50	-91.61
FDD B20	L	17.09	
	M	17.92	
	H	18.52	-90.11
FDD B28A	L	16.65	
	M	16.69	
	H	17.71	-92.49
FDD B28B	L	17.12	
	M	17.74	
	H	17.91	-92.99
TDD B38	L	16.09	
	M	16.46	
	H	16.07	-90.21

TDD B40	L	17.90	
	M	17.85	
	H	17.46	-90.23
TDD B41	L	16.24	
	M	15.10	
	H	16.59	-89.92
WCDMA-B1	L	15.70	
	M	14.73	
	H	15.20	-104.21
WCDMA-B2	L	16.11	
	M	15.71	
	H	15.70	-104.70
WCDMA-B5	L	17.05	
	M	17.53	
	H	18.38	-105.23

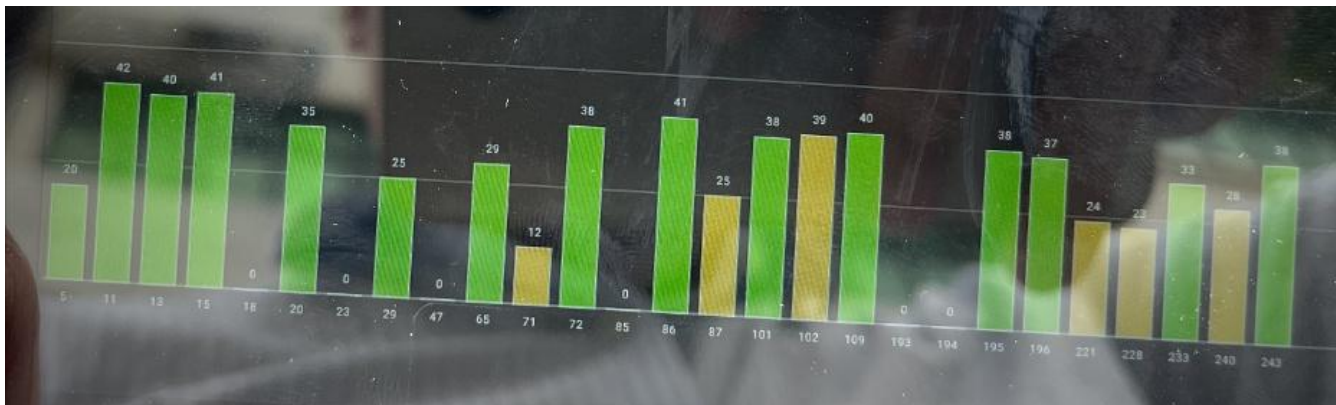
WCDMA-B8	L	17.90	
	M	18.28	
	H	18.80	-104.28

	Channel	TRP (dBm)	TIS (dBm)
GSM850	L	26.34	
	M	27.06	
	H	27.78	-104.69
GSM900	L	27.53	
	M	28.02	
	H	28.58	-103.05



DCS1800	L	23.08	
	M	22.26	
	H	22.00	-102.11
PCS1900	L	22.55	
	M	22.29	
	H	22.26	-102.68
2.4G WIFI B mode 11M	L	13.21	-81.84
	M	14.66	-82.63
	H	14.38	-82.01
5 G WIFI A mode 54M	L	12.69	-72.24
	M	11.06	-72.48
	H	11.85	-73.70

(GPS Test)

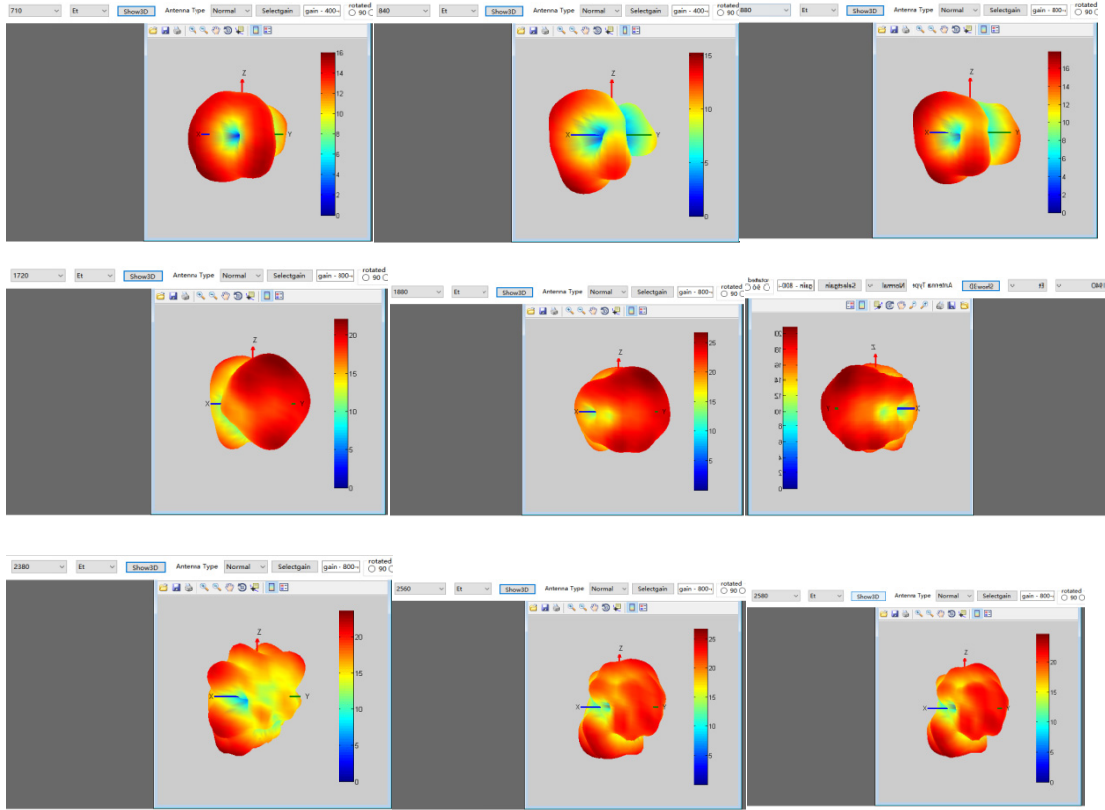


(Efficiency of GPS antenna): 34.08%

## 天线增益(Antenna gain)

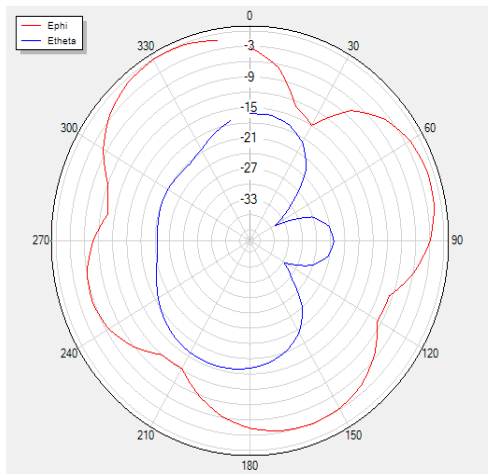
Standard	Band	Frequency	Gain(dbi)
TDD_LTE	TDD_B38	2580	0.37
TDD_LTE	TDD_B40	2380	1.40
TDD_LTE	TDD_B41	2580	0.37
FDD_LTE	FDD_B1	1940	-0.71
FDD_LTE	FDD_B2	1880	1.28
FDD_LTE	FDD_B3	1720	-0.47
FDD_LTE	FDD_B5	840	1.66
FDD_LTE	FDD_B7	2560	0.56
FDD_LTE	FDD_B8	880	1.14
FDD_LTE	FDD_B12	710	-0.69
FDD_LTE	FDD_B20	840	1.66
FDD_LTE	FDD_B28	710	-0.69
WCDMA	WCDMA_B1	1940	-0.71
WCDMA	WCDMA_B2	1880	1.28
WCDMA	WCDMA_B5	840	1.66
WCDMA	WCDMA_B8	880	1.14
GSM	GSM850	840	1.66
GSM	GSM900	880	1.14
GSM	DCS1800	1720	-0.47
GSM	PCS1900	1880	1.28
5GWIFI		5100	2.79
5GWIFI		5800	4.41
2.4GWIFI		2450	2.12
BT		2450	2.12
GPS		1575	2.63
FM		108	1.20

# MIMO antenna apple map

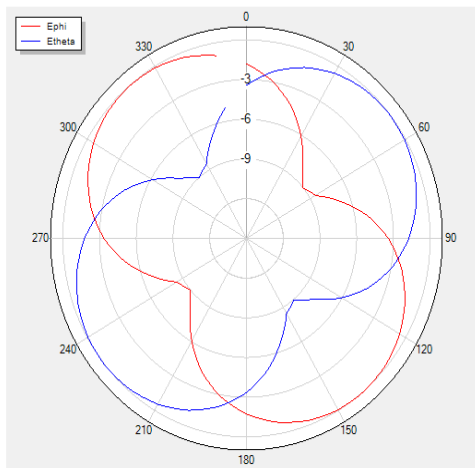


## (MIMO antenna) PolarGraphs/EtotalGraphs

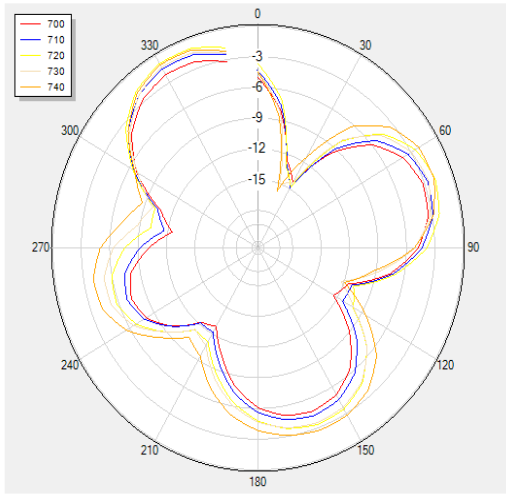
H Theta=90 freq=710MHz



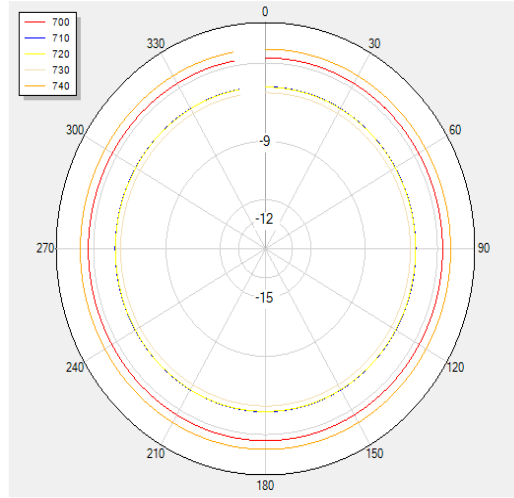
H Theta=0 freq=710MHz



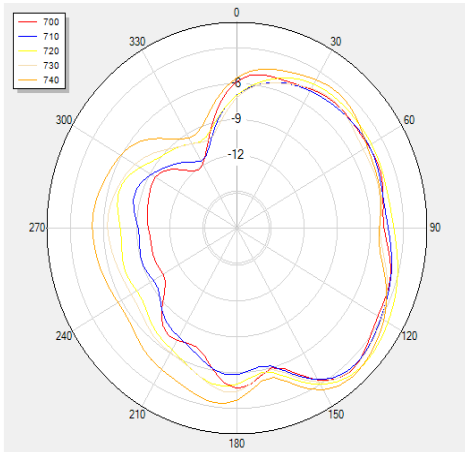
H Theta=90



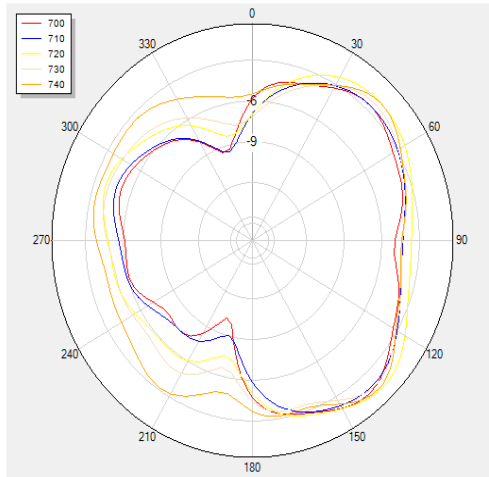
H Theta=0



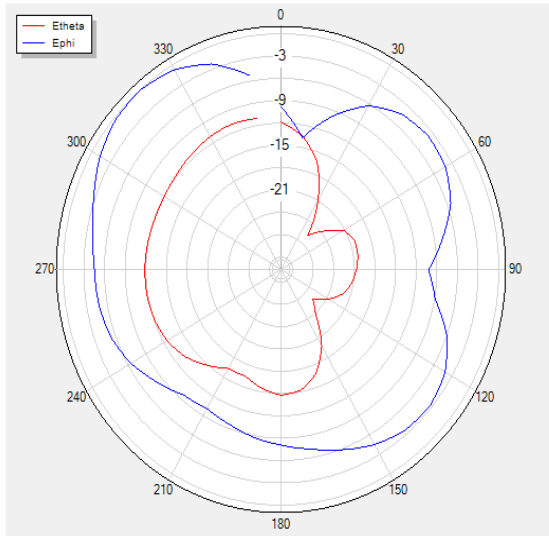
V Phi=90



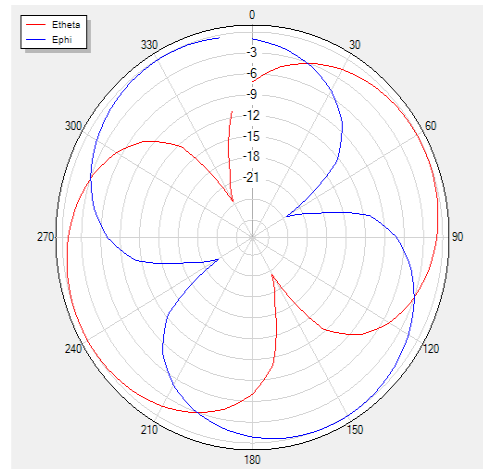
V Phi=0



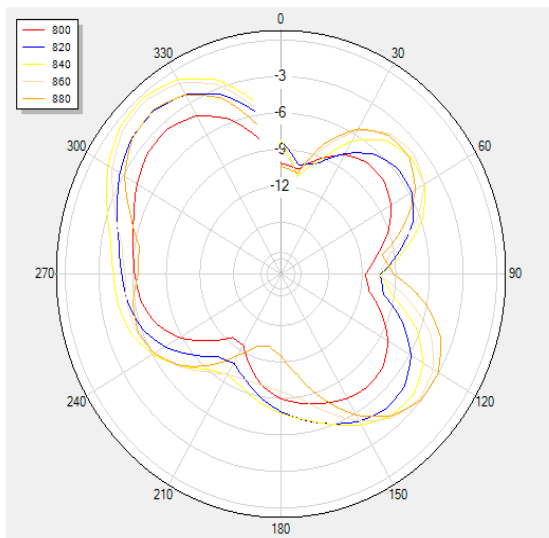
H Theta=90 freq=840MHz



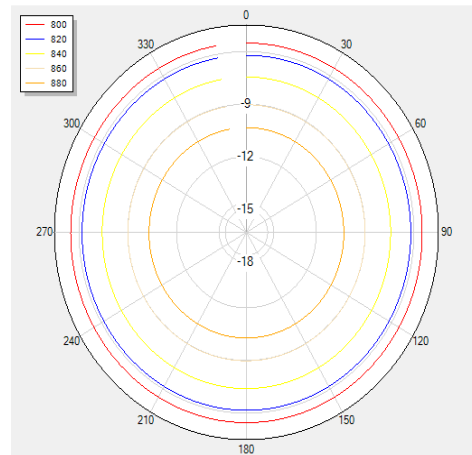
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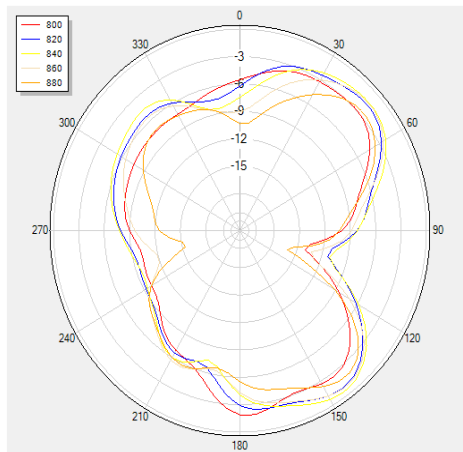
H Theta=90



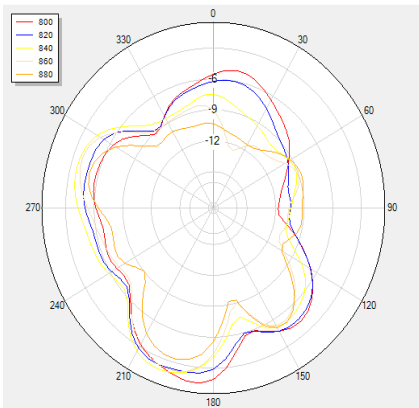
H Theta=0



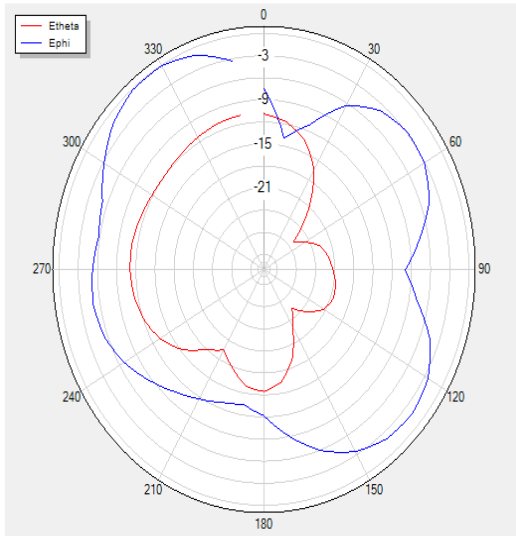
V Phi=0



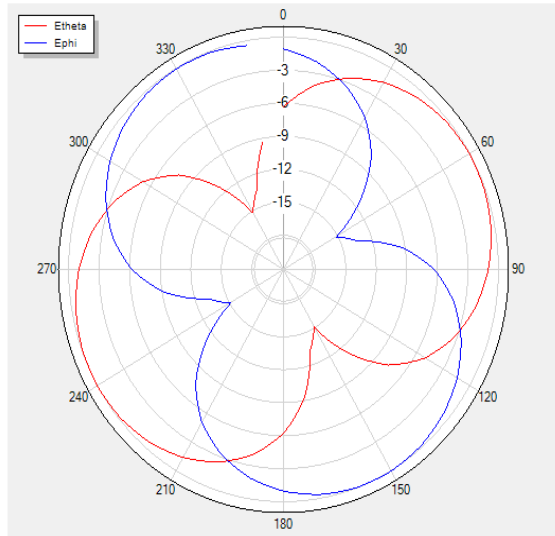
V Phi=90



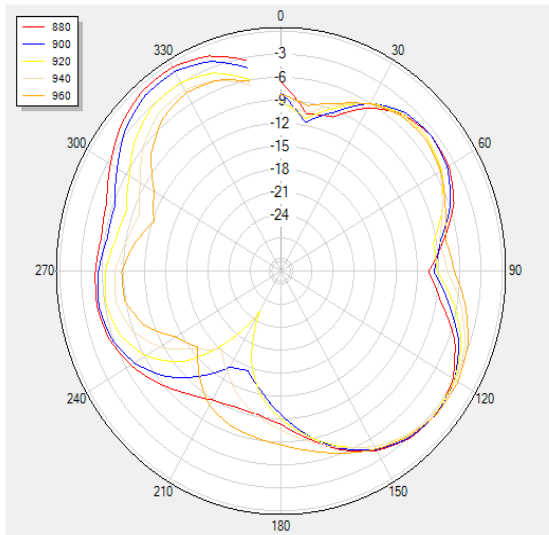
H Theta=90 freq=880MHz



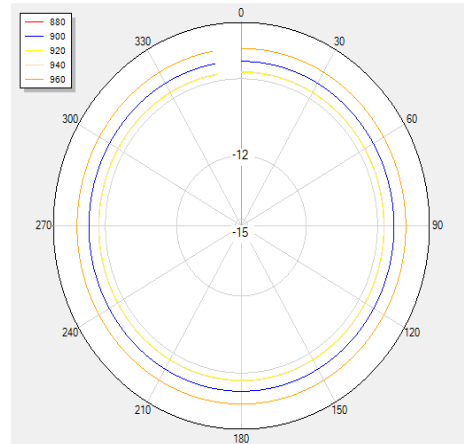
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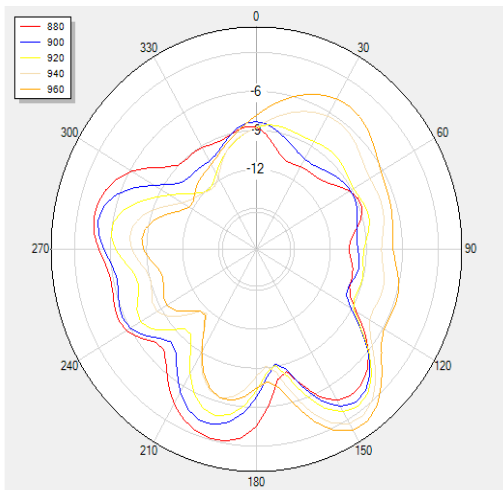
H Theta=90



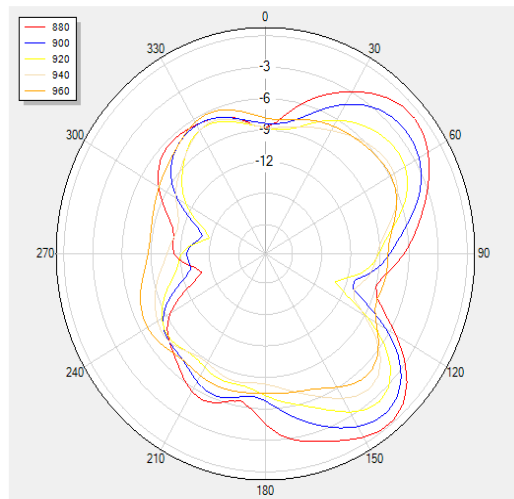
H Theta=0



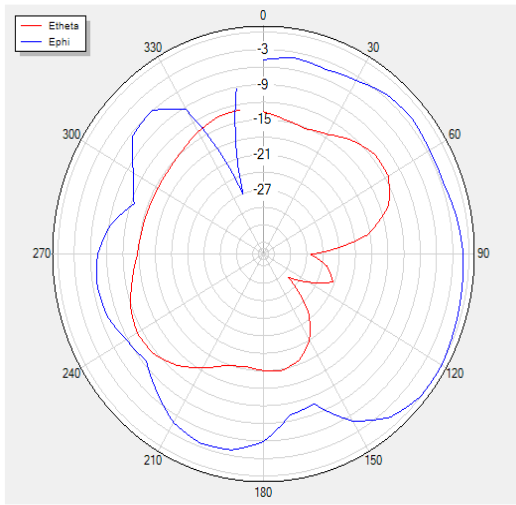
V Phi=90



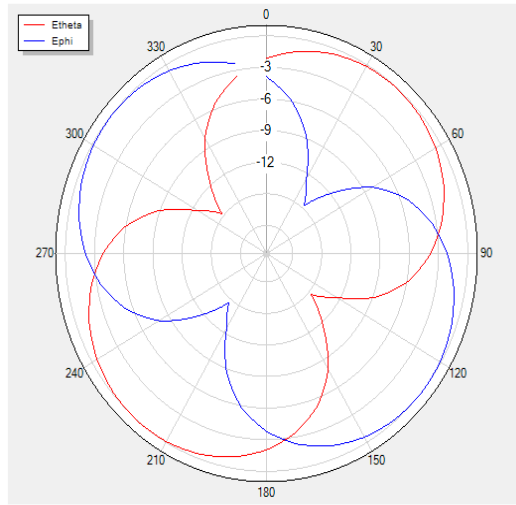
V Phi=0



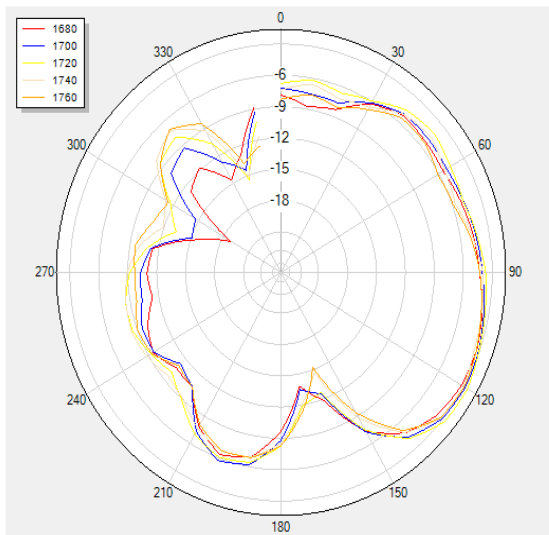
H Theta=90 freq=1720MHz



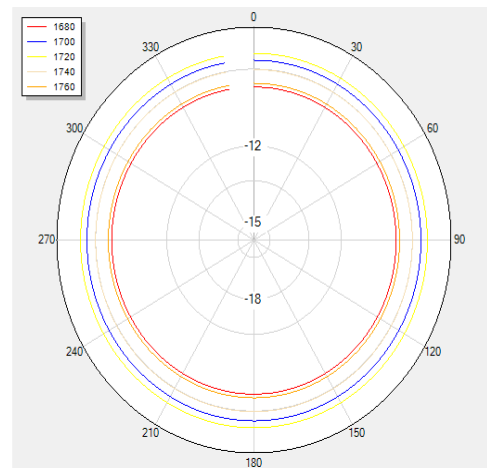
H Theta=0 freq=1720MHz



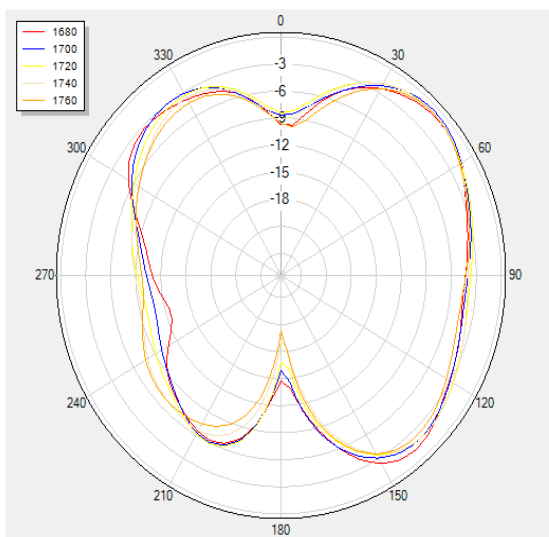
H Theta=90



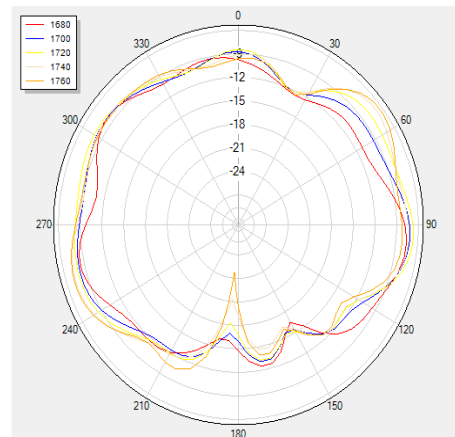
H Theta=0



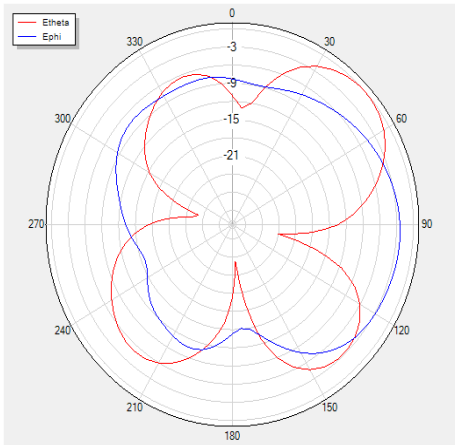
V Phi=90



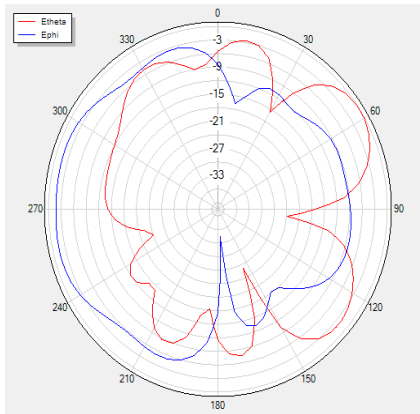
V Phi=0



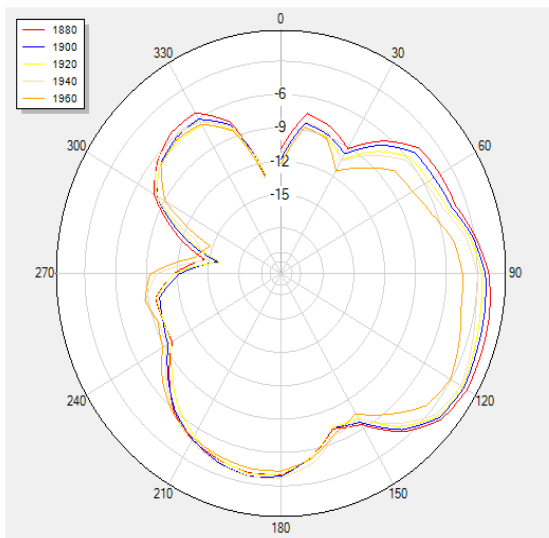
V Phi=90 freq=1880MHz



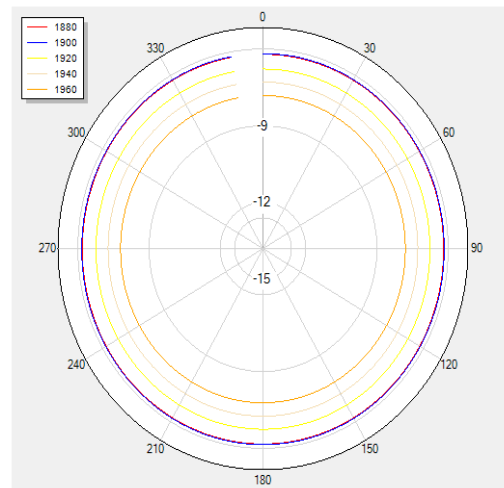
V Phi=0 freq=1880MHz



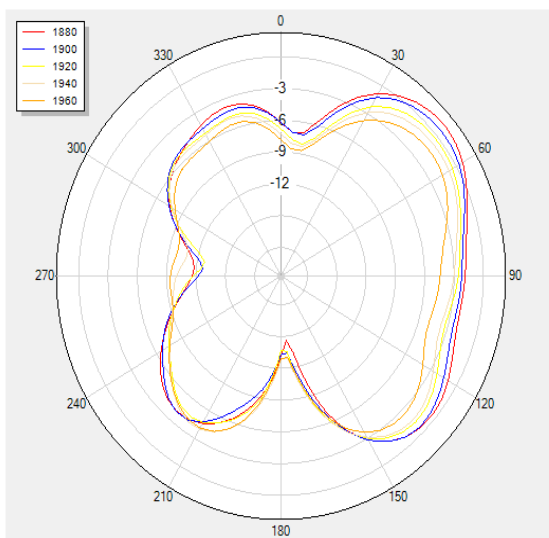
H Theta=90



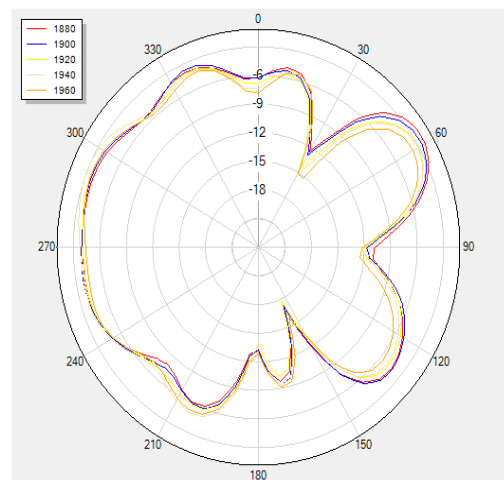
H Theta=0



V Phi=90

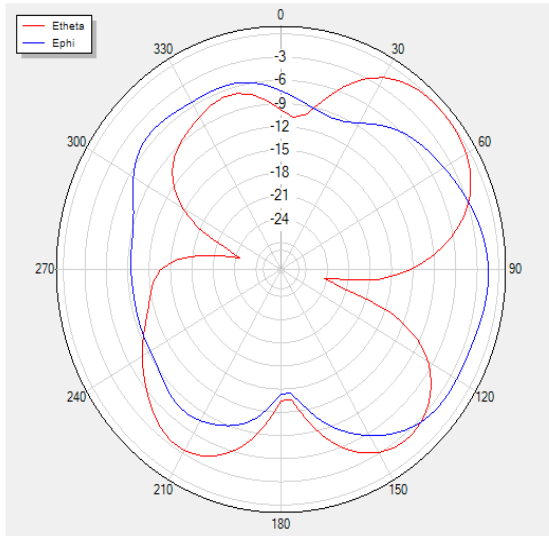


V Phi=0

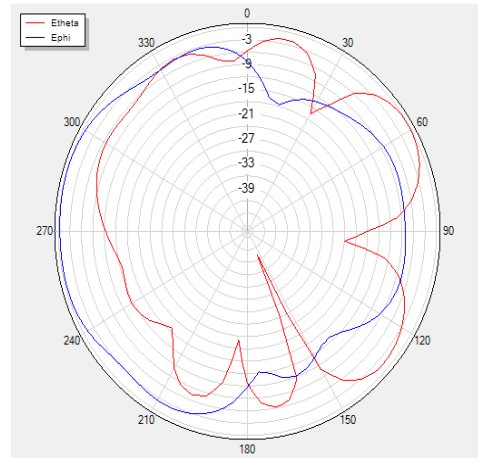




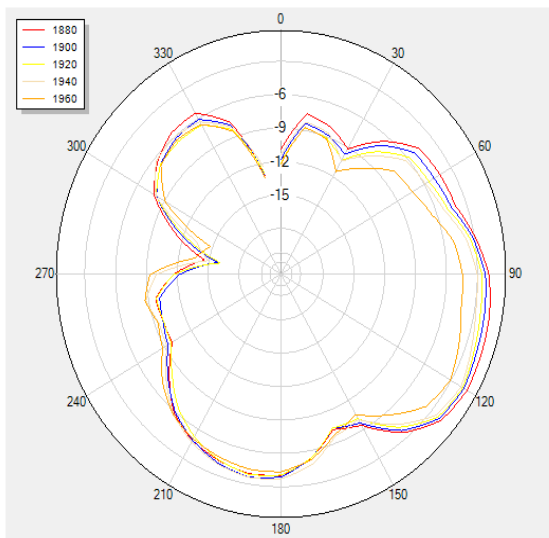
V Phi=90 freq=1940MHz



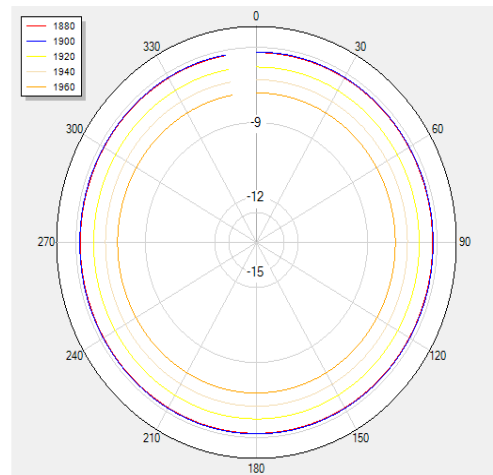
V Phi=0 freq=1940MHz



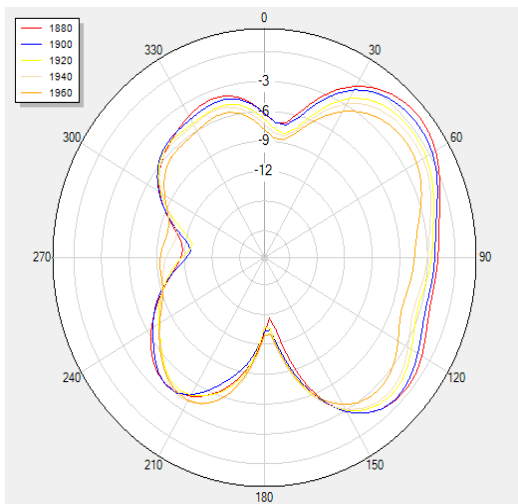
H Theta=90



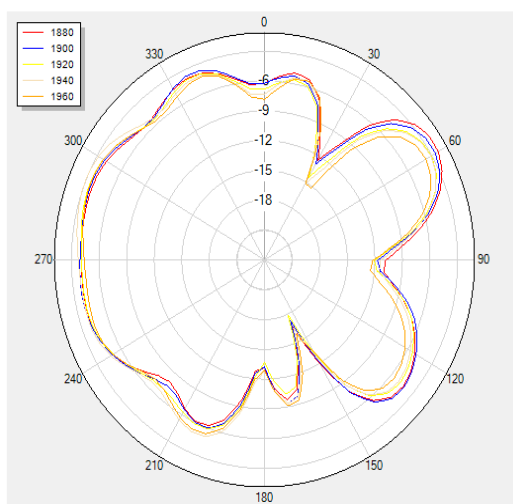
H Theta=0



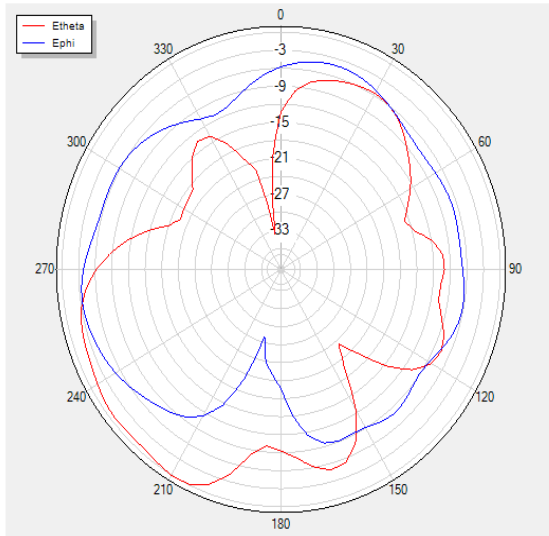
V Phi=90



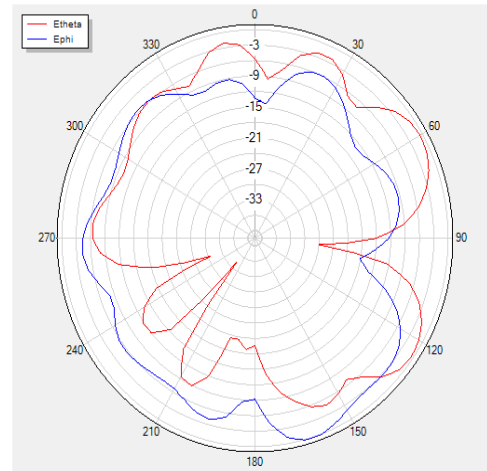
V Phi=0



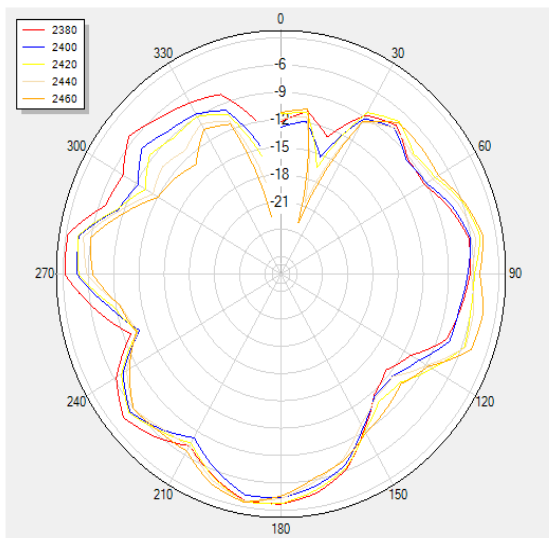
V Phi=90 freq=2380MHz



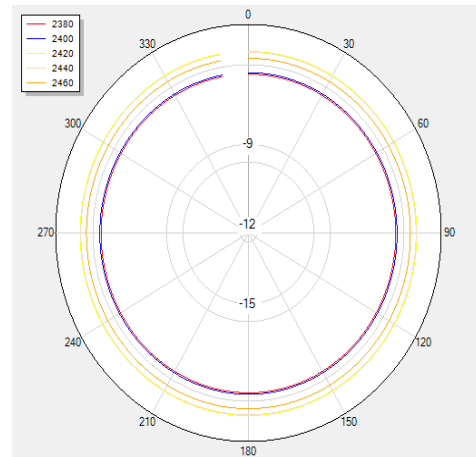
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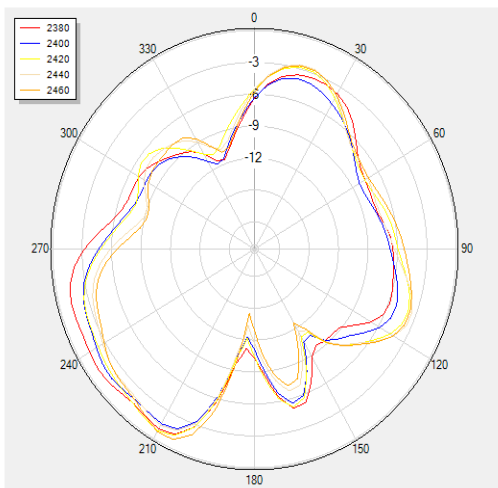
H Theta=90



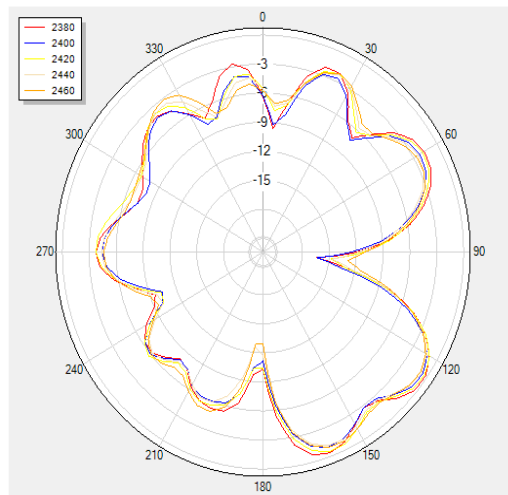
H Theta=0



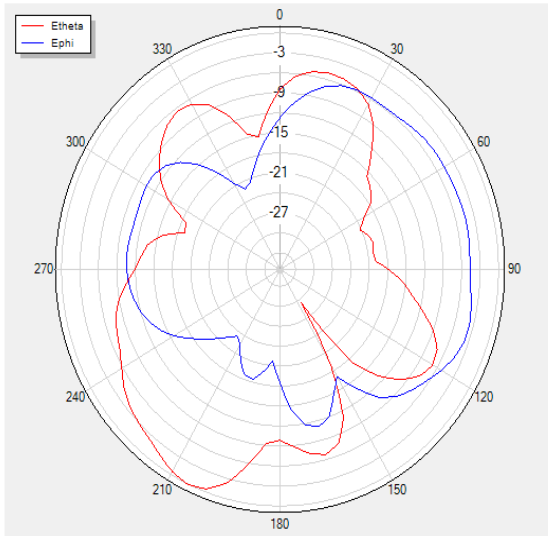
V Phi=90



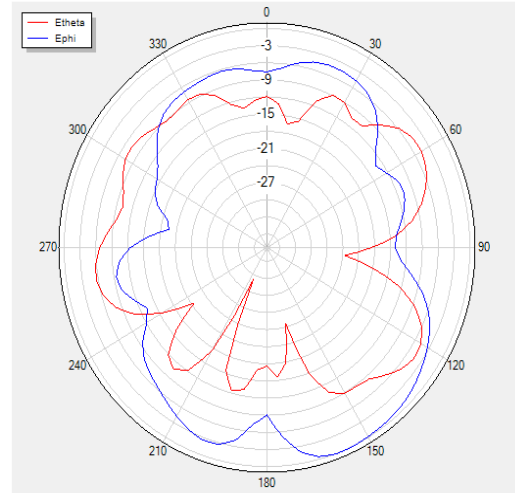
V Phi=0



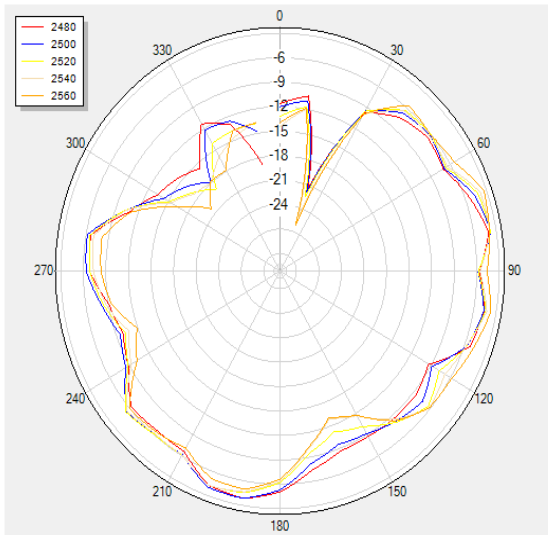
V Phi=90 freq=2560MHz



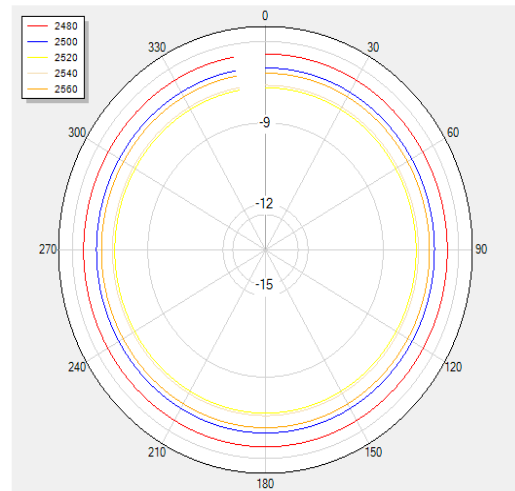
V Phi=0 freq=2560MHz



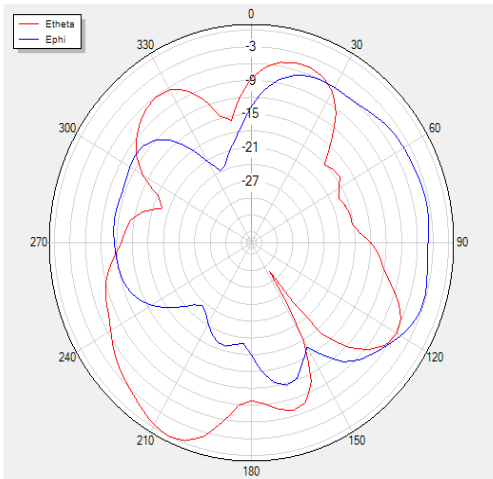
H Theta=90



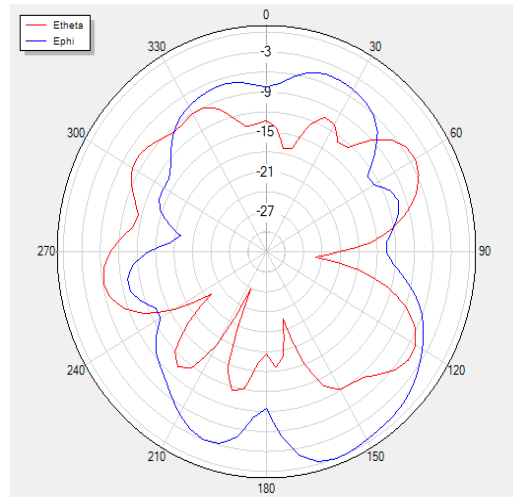
H Theta=0



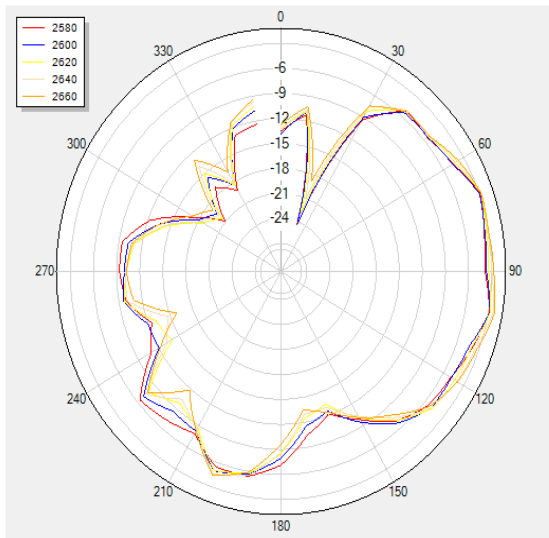
V Phi=90 freq=2580MHz



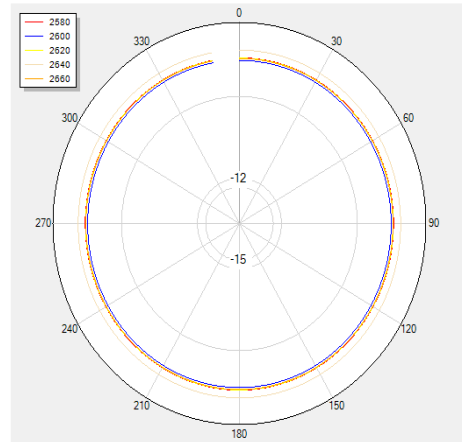
V Phi=0 freq=2580MHz



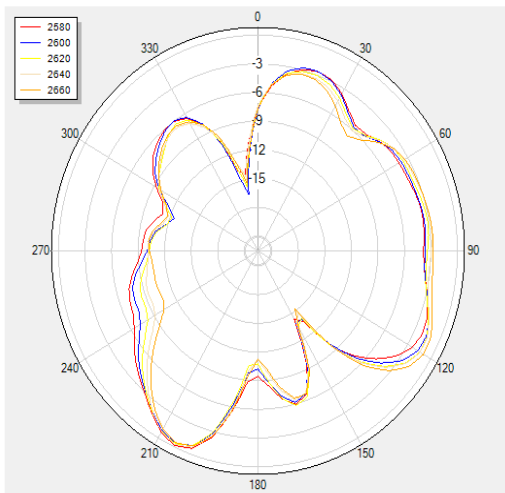
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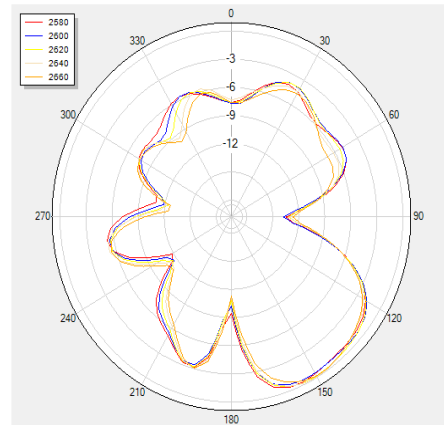
H Theta=0



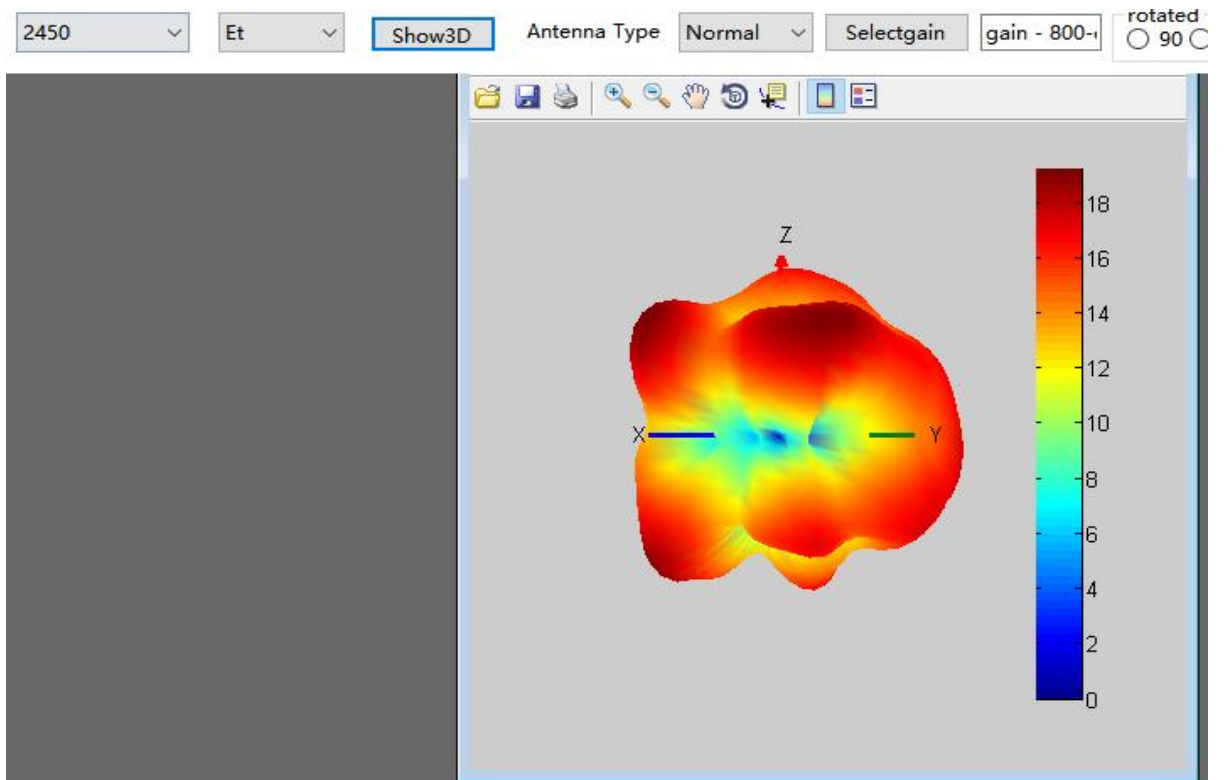
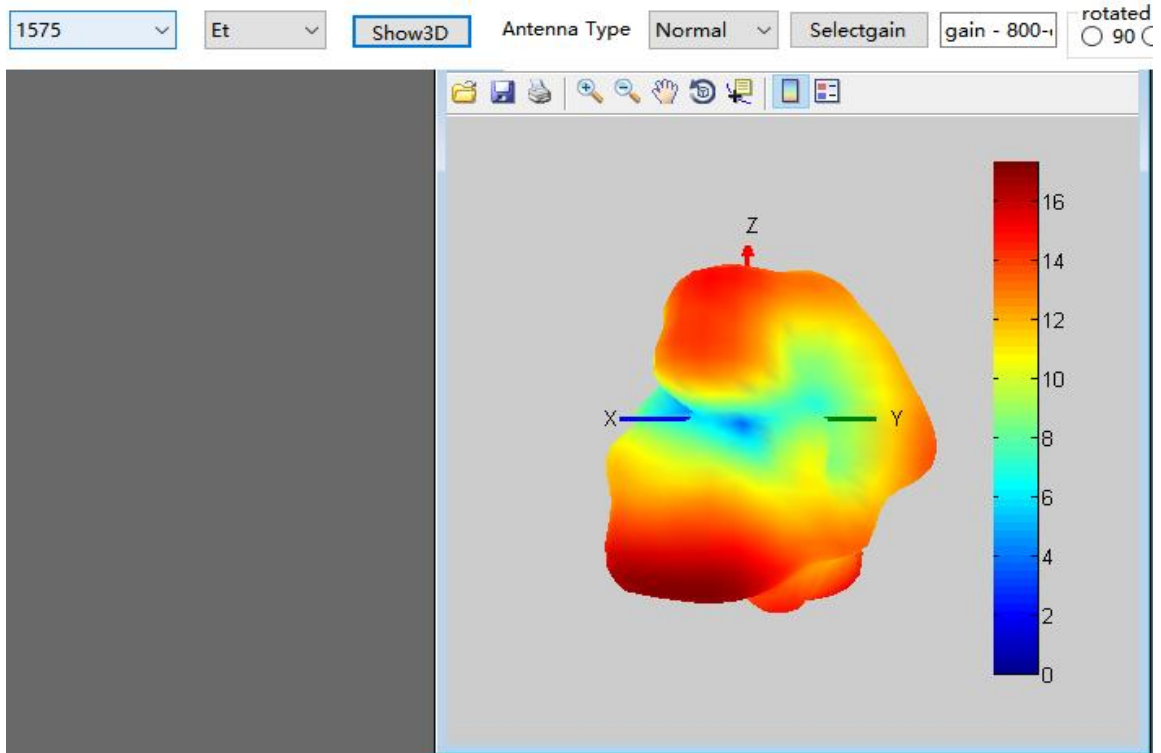
V Phi=90

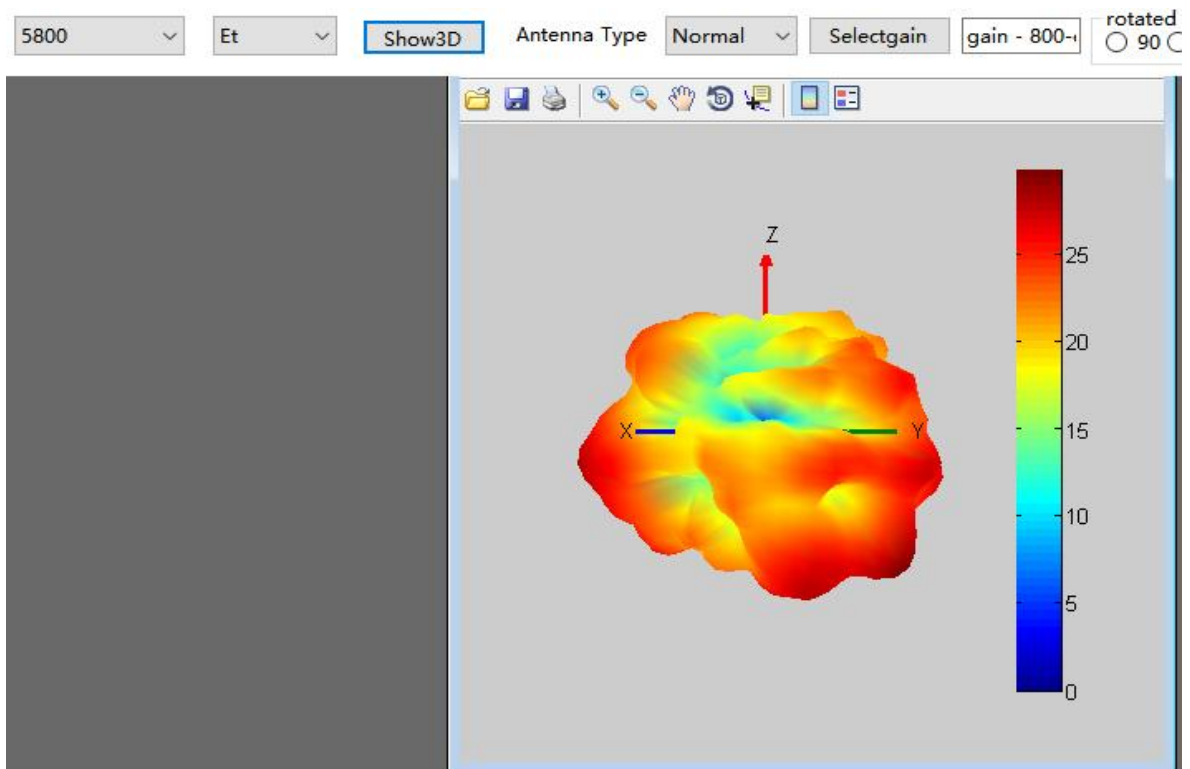
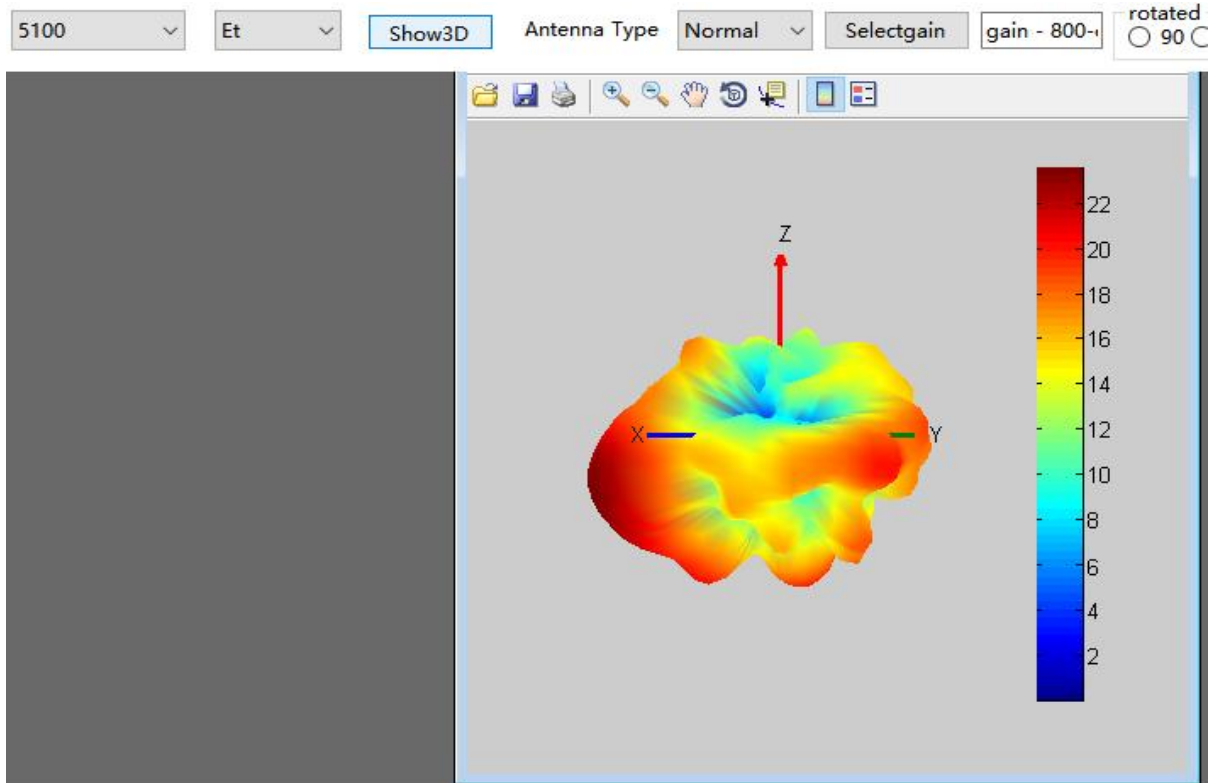


V Phi=0



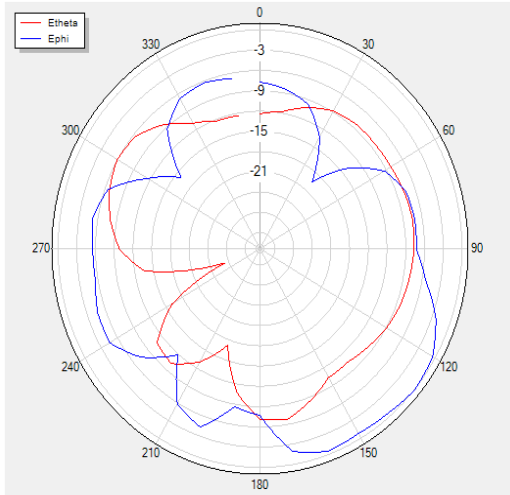
(GPS antenna) + (2.4G/5G WIFI/BT antenna) **apple**  
Map



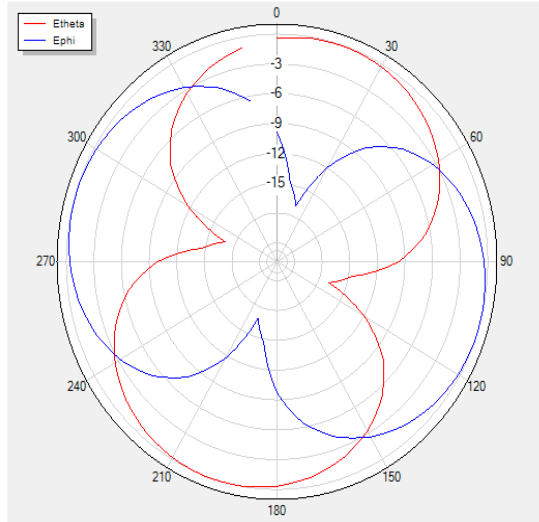


( GPS antenna ) + ( 2.4G/5G WIFI/BT antenna )  
PolarGraphs/EtotalGraphs

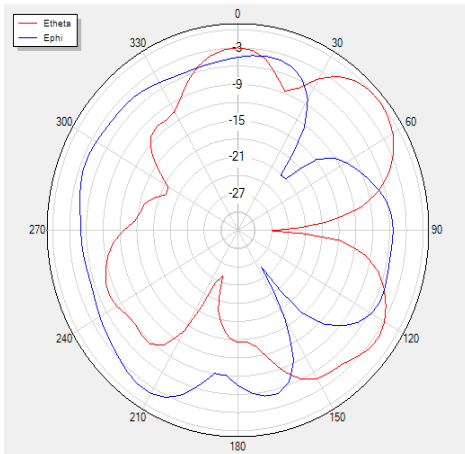
H Theta=90 freq=1575MHz



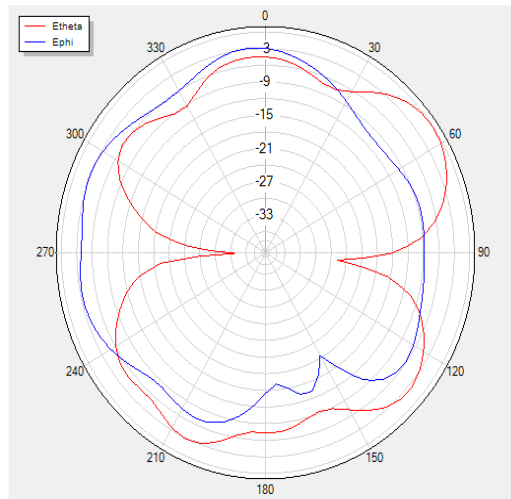
H Theta=0 freq=1575MHz



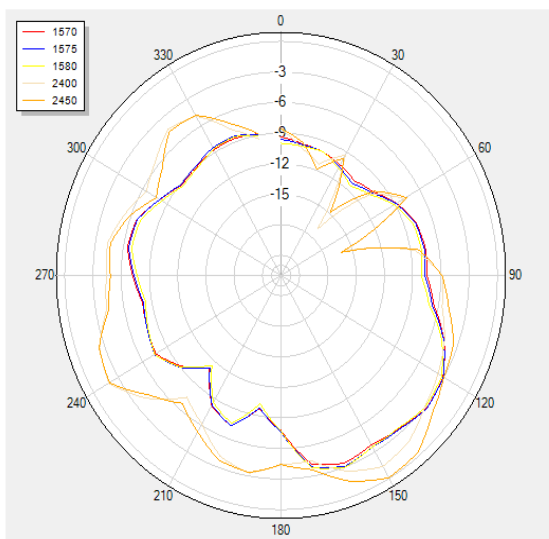
V Phi=90 freq=2450MHz



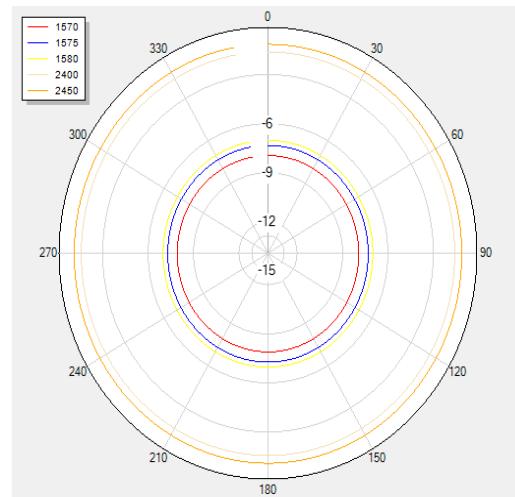
V Phi=0 freq=2450MHz



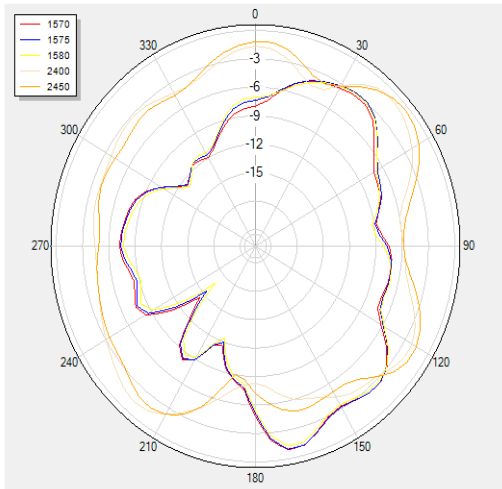
H Theta=90



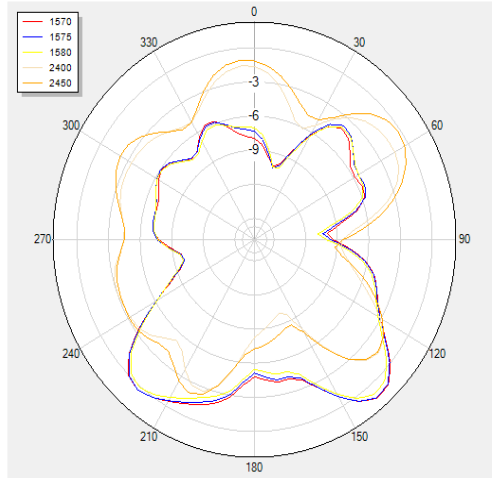
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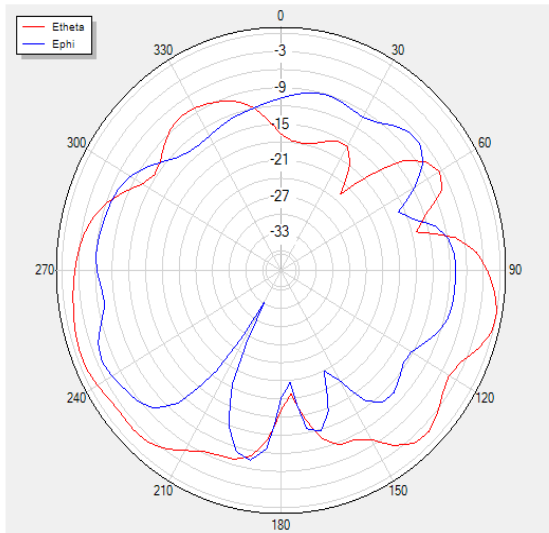
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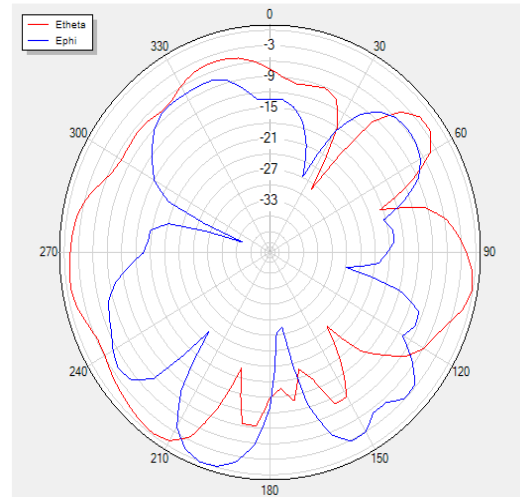
V Phi=0



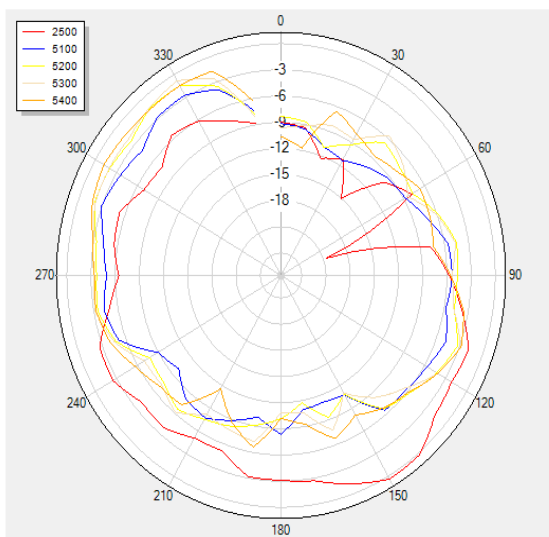
V Phi=90 freq=5100MHz



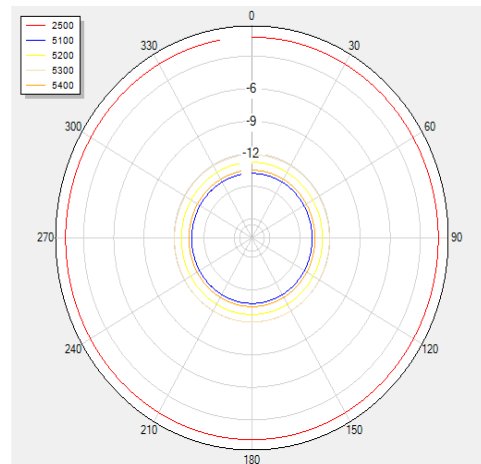
V Phi=0 freq=5100MHz



H Theta=90

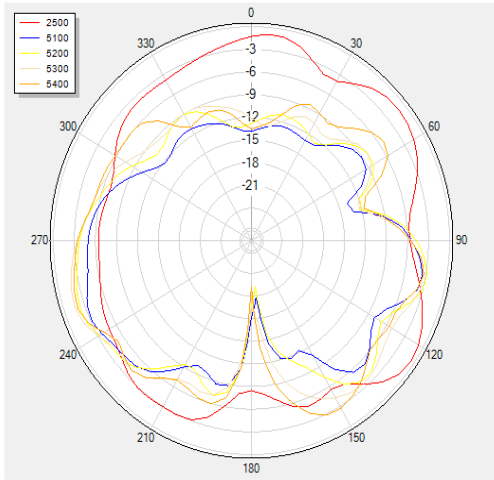


H Theta=0

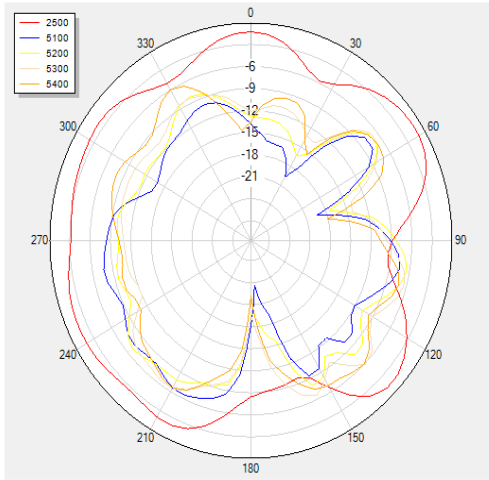




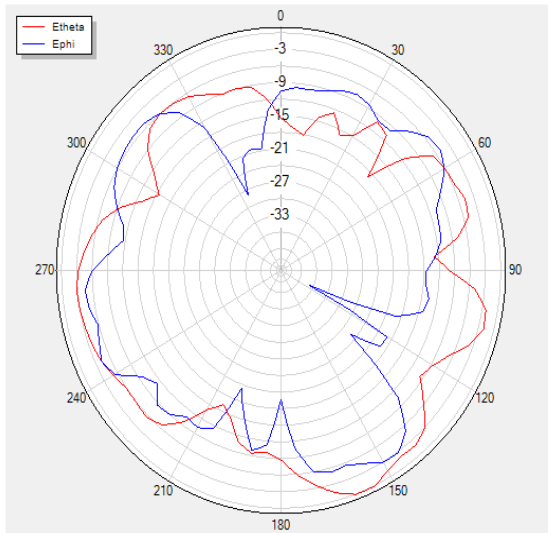
V Phi=90



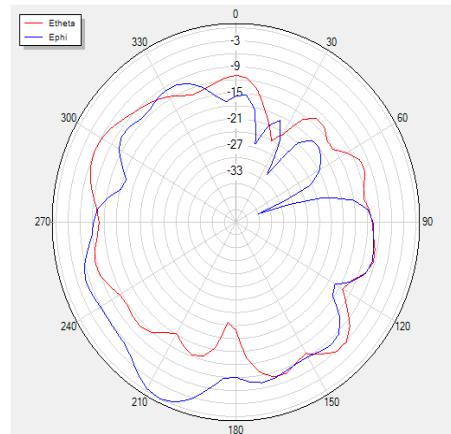
V Phi=0



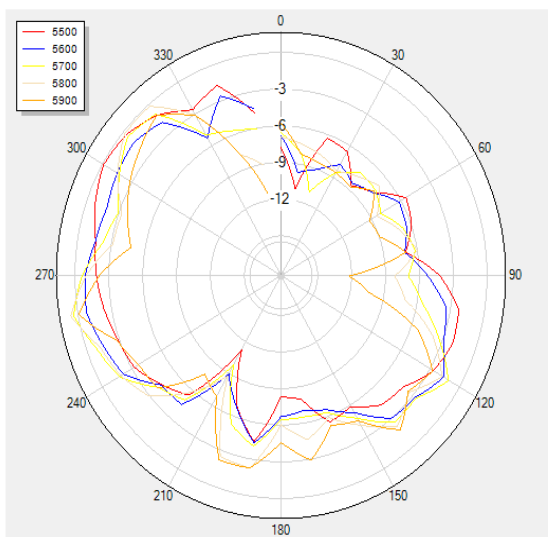
V Phi=90 freq=5800MHz



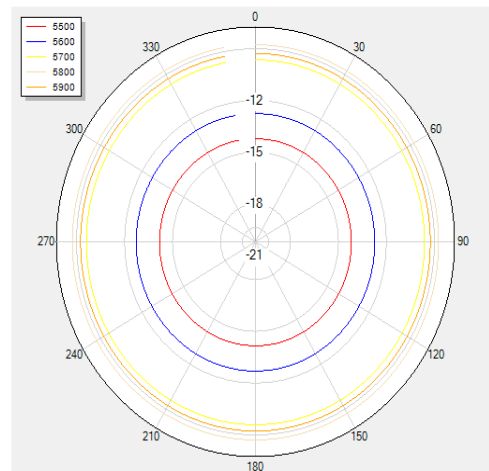
V Phi=0 freq=5800MHz



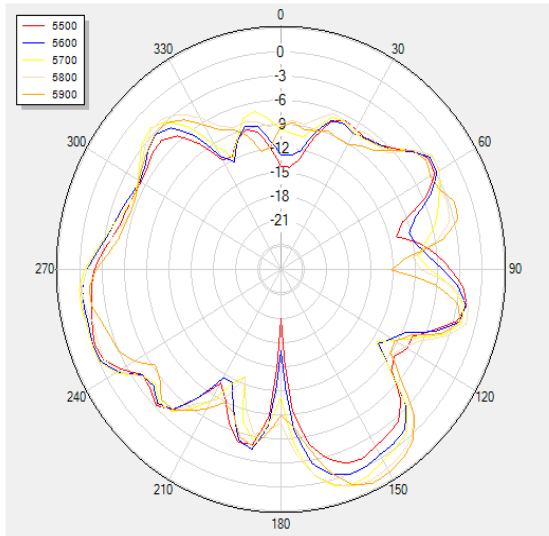
H Theta=90



H Theta=0



V Phi=90



V Phi=0

