

# Antenna specification

客户 Customer	OUKITEL	规格型号 Specs	P05
安威料号 Part Number	AW006-P05-021-A0 AW006-P05-022-A0 AW006-P05-023-A0	频段 Frequency Band	BT&2.4G WIFI:2400~2483.5MHZ 5G WIFI:5100~5825MHZ GSM850/900/1800/1900 WCDMA: BAND II、BAND IV、BAND V LTE: band 2 、 band 4 、 band 5 、 band 7 、 band 12: 、 band 17、band 66
颜色 Color	Black	版本 Edition	REV:A1
销售 Salesperson	Mr.Xie	设计 Design	ZHONG ZHI HUI
结构 Structure	QIN YUN LIN	确认 Confirm	WANG YU LIANG
日期 Date	2022/07/10	签字日期 Signing Date	2022/07/12

客户确认 Customer confirmation:

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# 目录

1. 产品规格 Product specification	3
2. 电器性能(Electrical performance)	6
2.1 规格标准(Specification standard)	6
2.2 匹配电路(Matching circuit)	6
3. 参数的测试(Parameter test)	8
3.1 测试的设置(Test settings)	8
3.2 测试治具 Test Fixture	8
3.3 蜂窝天线主天线参数 Cellular Antenna Parameter	8
3.4 射频天线参数 Radio frequency Parameter	25
4. 最大增益 Maximum gain	34

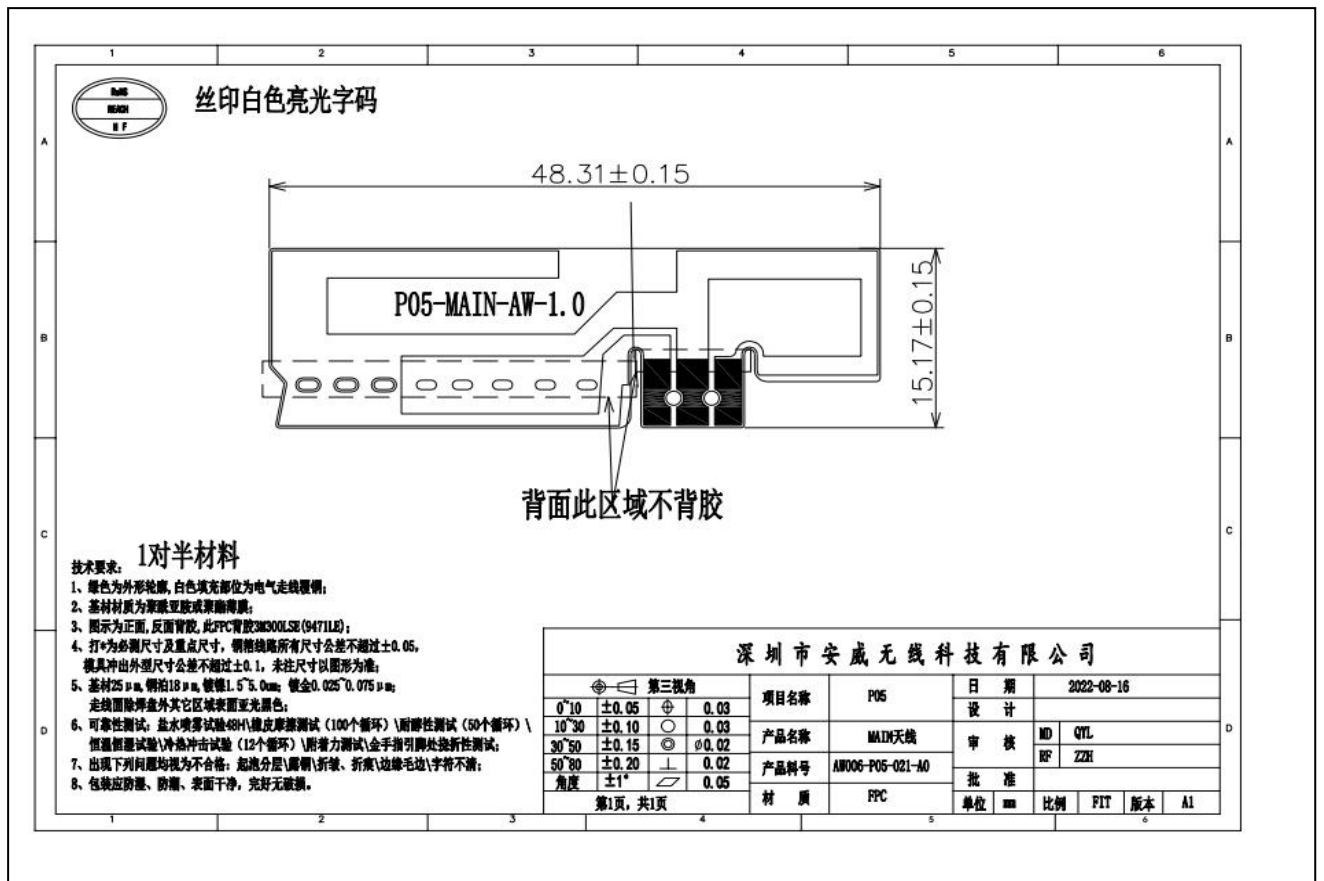
# 1、Product specifications 产品规格

## 1.1 蜂窝天线 Cellular mobile antenna

报告主要提供 RT2 蜂窝天线性能的参数测试。P05 天线为 4G&3G&2G 天线。（如下图 1 所示）

The report mainly provides the parameter test of RT2 Cellular mobile antenna performance. The P05 antenna is a 4G&3G&2G antenna. (see Figure 1 below)

### 1) 主集天线 Master antenna

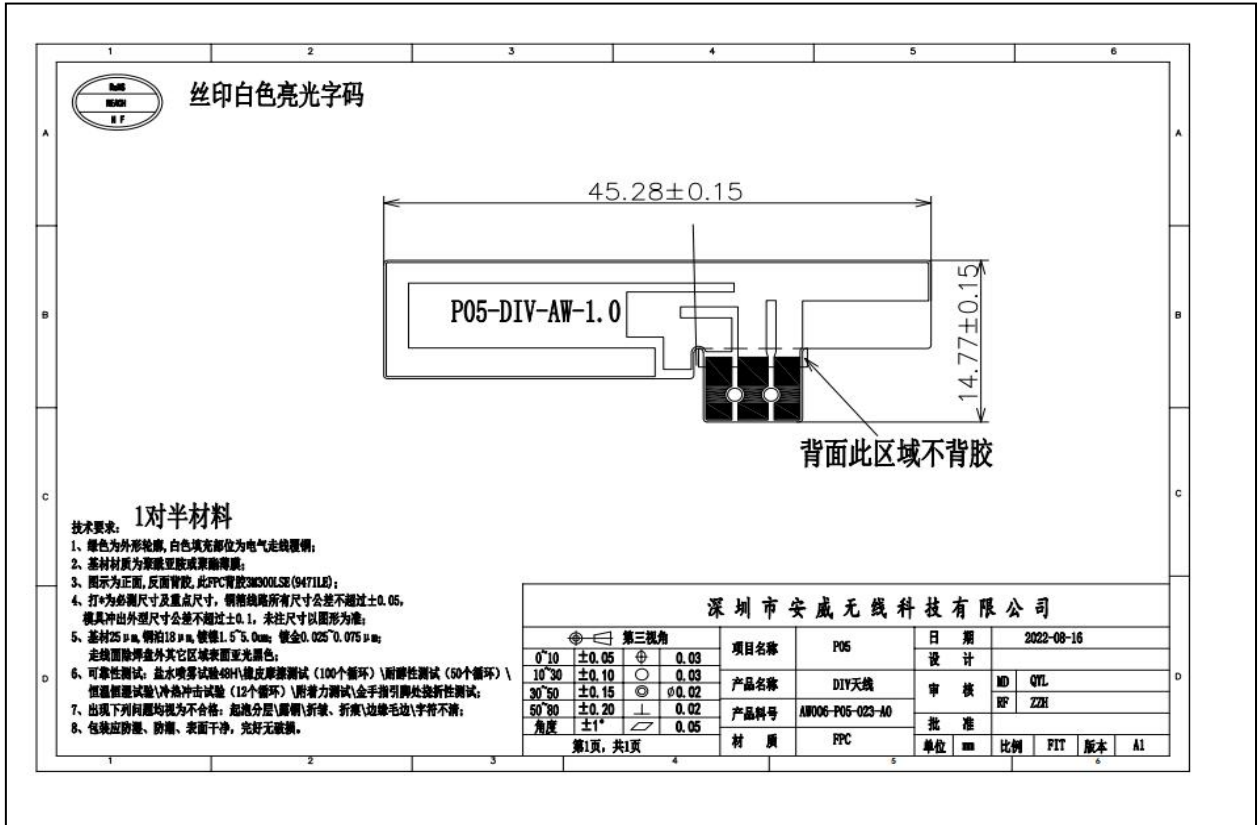


4G Frequency band: band 2 、 band 4 、 band 5 、 band 7 、 band 12: 、 band 17、 band 66

WCDMA: BAND II、BAND IV、BAND V,

GSM850/900/1800/1900

## 2) 分集天线 Auxiliary Antenna



4G Frequency band: band 2 、 band 4 、 band 5 、 band 7 、 band 12: 、 band 17、 band 66

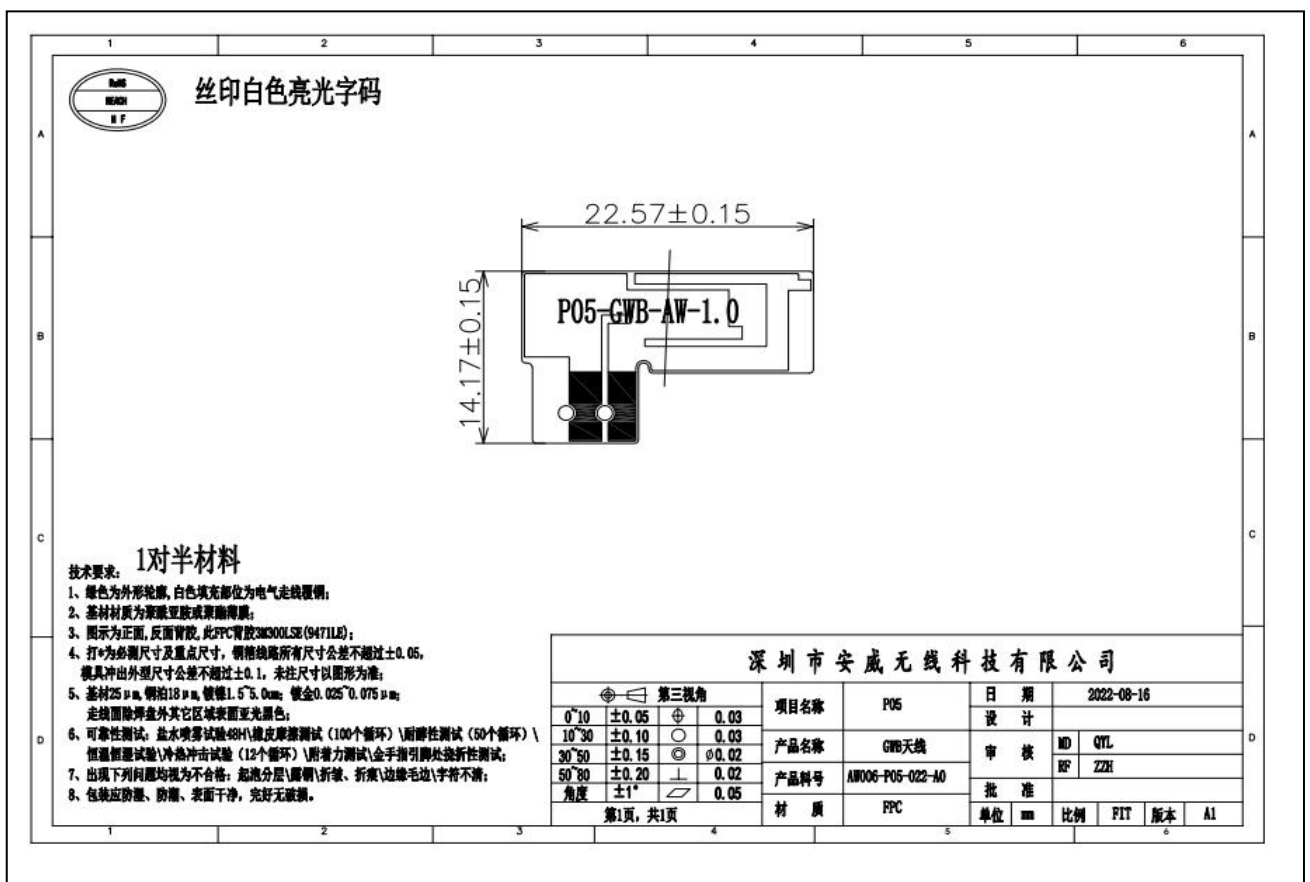
WCDMA: BAND II、BAND IV、BAND V、

GSM850/900/1800/1900

1.2 三合一天线 Three-in-one antenna

报告主要提供 RT2 射频功能天线性能的参数测试。P05 天线为 BT&WIFI&GPS 天线。（如下图 1 所示）

The report mainly provides the parameter test of RT2 Radio frequency antenna performance. The P05 antenna is a BT&WIFI&GPS antenna. (see Figure 1 below)



BT&2.4G WIFI:2400~2483.5MHZ  
5G WIFI:5100~8525MHZ

## 2. 电器性能 Electrical performance

### 2.1.规格 Specification

P05 天线工作频段在 700~960MHZ,1710~2700MHZ，在此频段产生谐振。

P05 antenna works in the frequency range of 700 ~ 960 MHz, 1710 ~ 2700 MHz, and produces resonance in this frequency range

### 2.2 匹配电路 Matching circuit

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天线开关匹配：  
 RF1:C2404 0欧电阻  
 RF2:C2405 6.8NH电感  
 RF3:C2407 27NH电感  
 RF4:C2406 NC不贴片  
 R2401:0欧电阻  
 C2401:NC不贴片

主路匹配：  
 C2402:18NH电感  
 R2402,R2404:0欧电阻  
 C2403:NC不贴片  
 T2401:NC不贴片

天线开关逻辑协议：  
 RF1:GSM900/DCS1800/PCS1900,WCDMA-B1/2/4/8,  
 LTE-B1/2/3/4/7/8/25/38/39/40/41/66  
 RF2:GSM850,WCDMA-B5,LTE-B5/18/19/20/26  
 RF3:LTE-B12/17/28A/28B  
 RF4:NC

### 主天线匹配电路

Element	Value
E1	18NH原匹配
E2	0欧原匹配
E3	N/A
E4	0欧原匹配
E5	N/A

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### 分集天线匹配电路

#### GPS/WIFI/BT天线匹配电路

Element	Value
E1	N/A
E2	0欧原匹配
E3	N/A
E4	0欧原匹配

### 3.参数的测试 Parameter test

#### 3.1 测试的设置 Test Setup

3.1.1 VSWR 测试装置依次连接为:

The VSWR test device is sequentially connected to:

E5071B 网络分析仪 → 50 欧姆的同轴 Cable → 110mm 长的铜管 → 测试治具

E5071B Network analyzer → 50 Cable → 110mm → Long copper pipes → Test Fixture

#### 3.2 测试治具 Test Fixture

Test the treatment of fixture:

从手机 PCB 上天线 50 欧姆测试点处用一根硬质电缆引出 SMA-J 接头，与套有扼流圈的铜管连接，再依次连接其他装置。

Use a hard cable to draw out the SMA-J connector from the 50 ohm test point of the antenna on the cell phone PCB, Connect with copper tube with choke ring, Connect the other devices in turn.

#### 3.3 蜂窝天线主天线参数 Cellular Antenna Parameter

3.3.1 工作频段(Working frequency band):

**4G Frequency band:**

band 2(1850-1910MHz、 1930-1990MHz) ,

band 4(1710-1755MHz, 2110-2155MHz) ,

band5(824-849MHz,869-894MHz),

band7(2500-2570MHz, 2620-2690MHz),

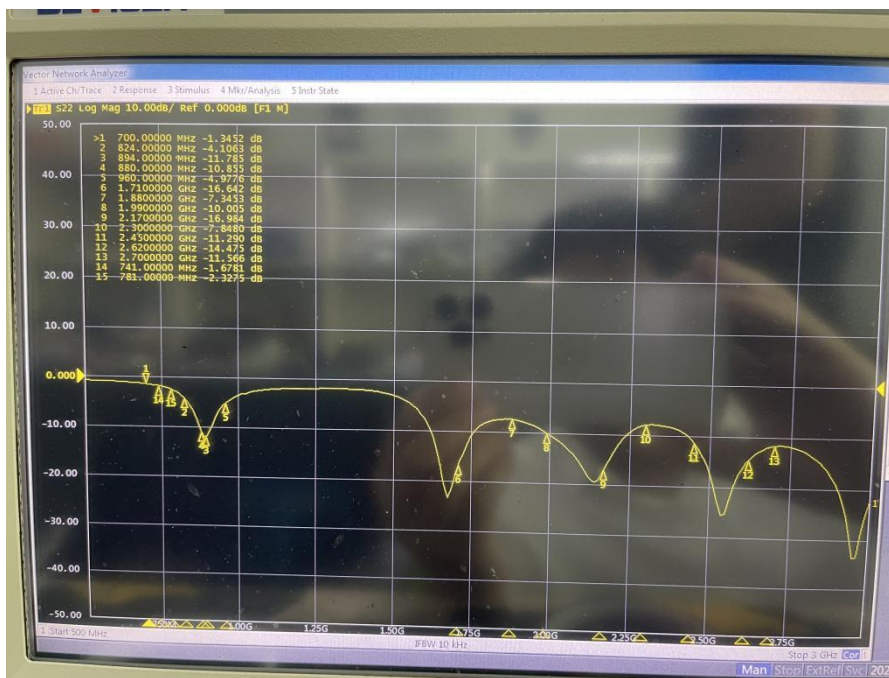
band 12(699-716MHz, 729-746MHz),

band 17(704-716MHz、 734-746MHz),

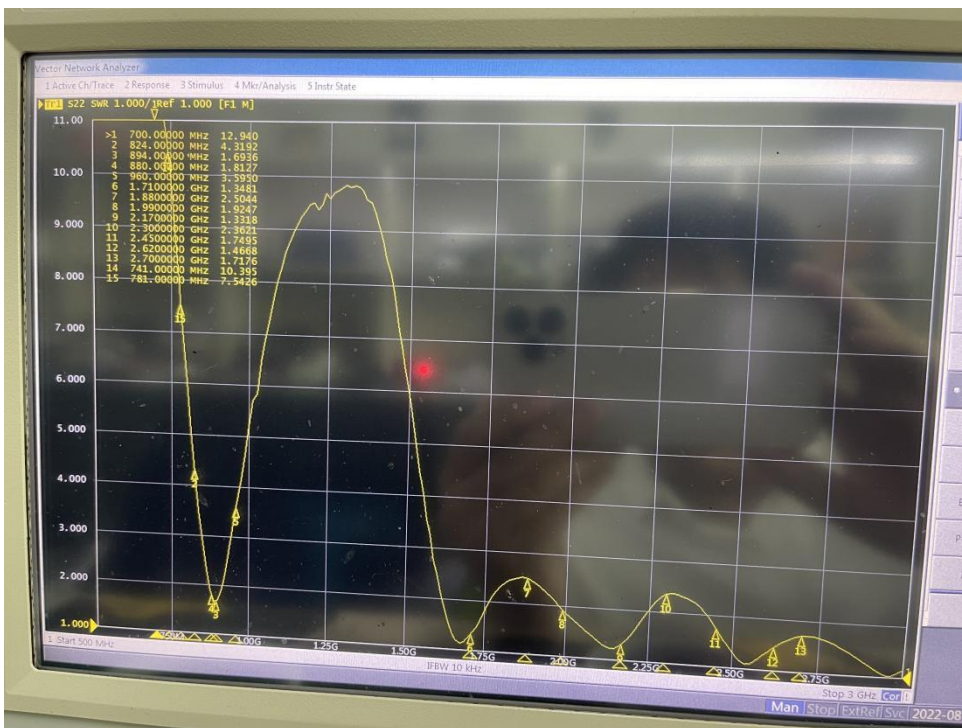
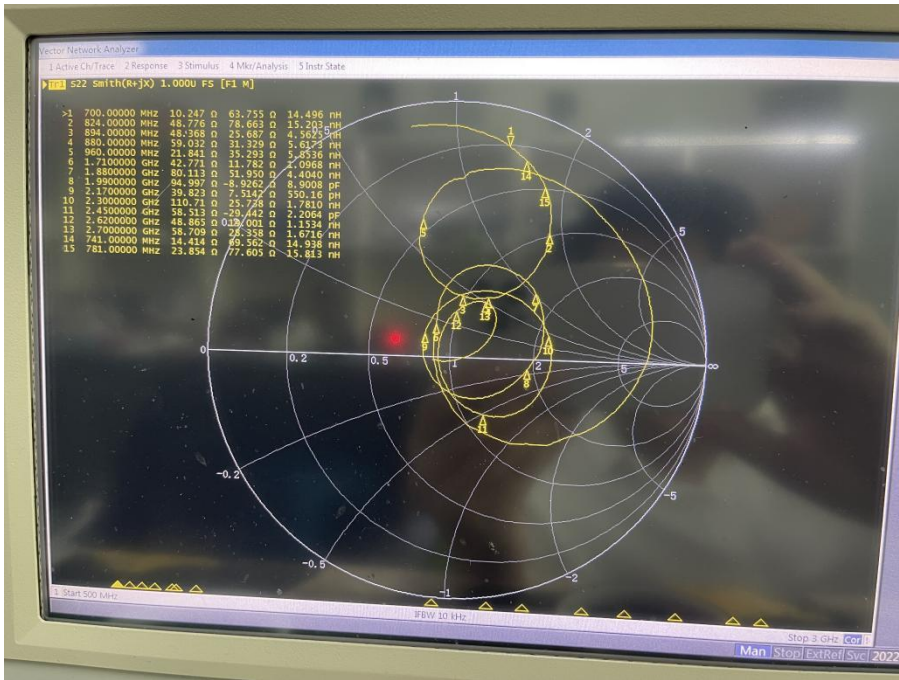
band 66(1710-1780MHz, 2110-2200MHz)

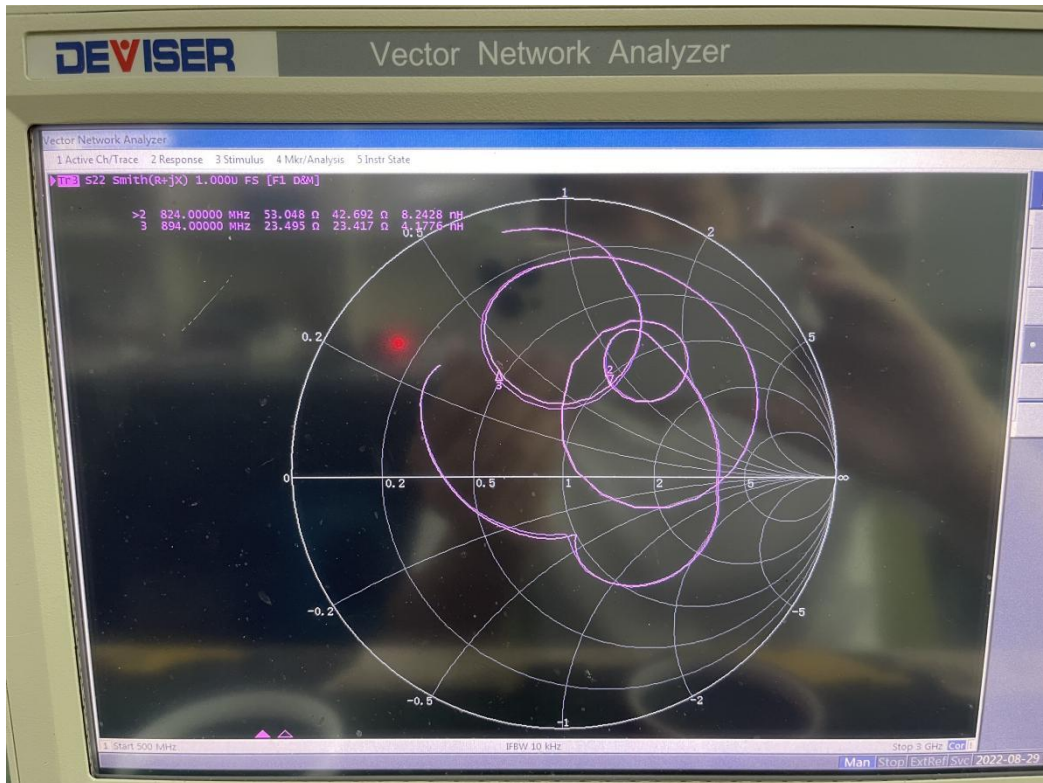
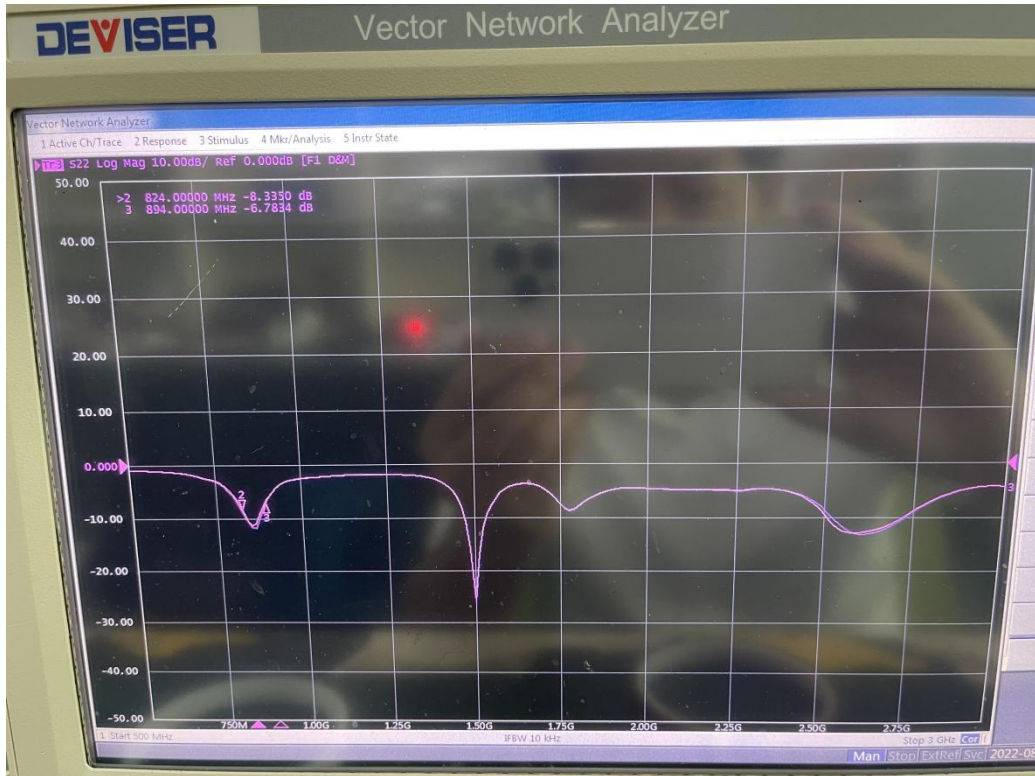
**WCDMA:** BAND II (1852.4-1907.6MHz) 、 BAND IV(1712.4-1752.6MHz)、 BAND V(826.4-846.6MHz),

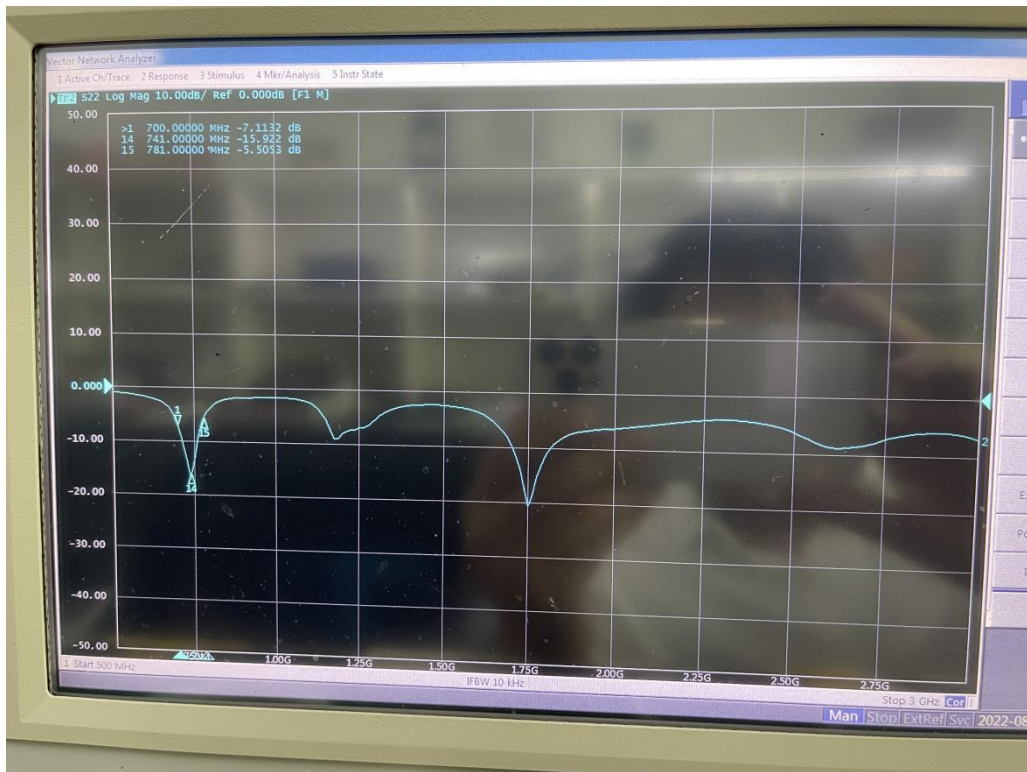
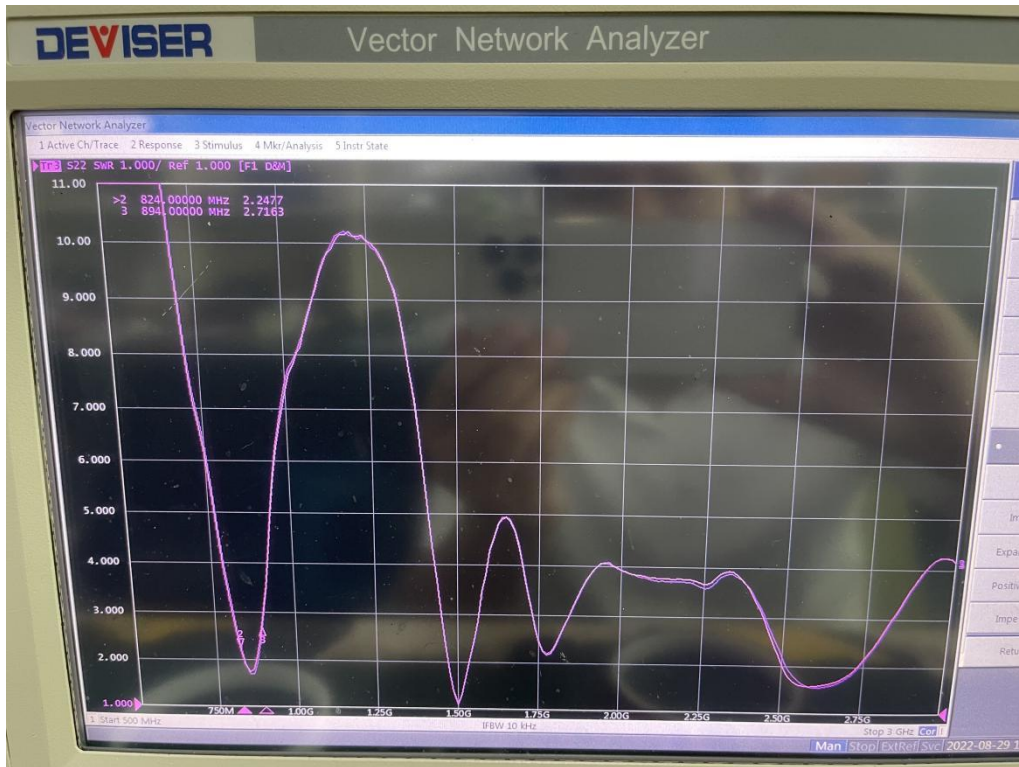
**GSM:** 850 (824.2-848MHz) 1900(1850.2-1909.8MHz)

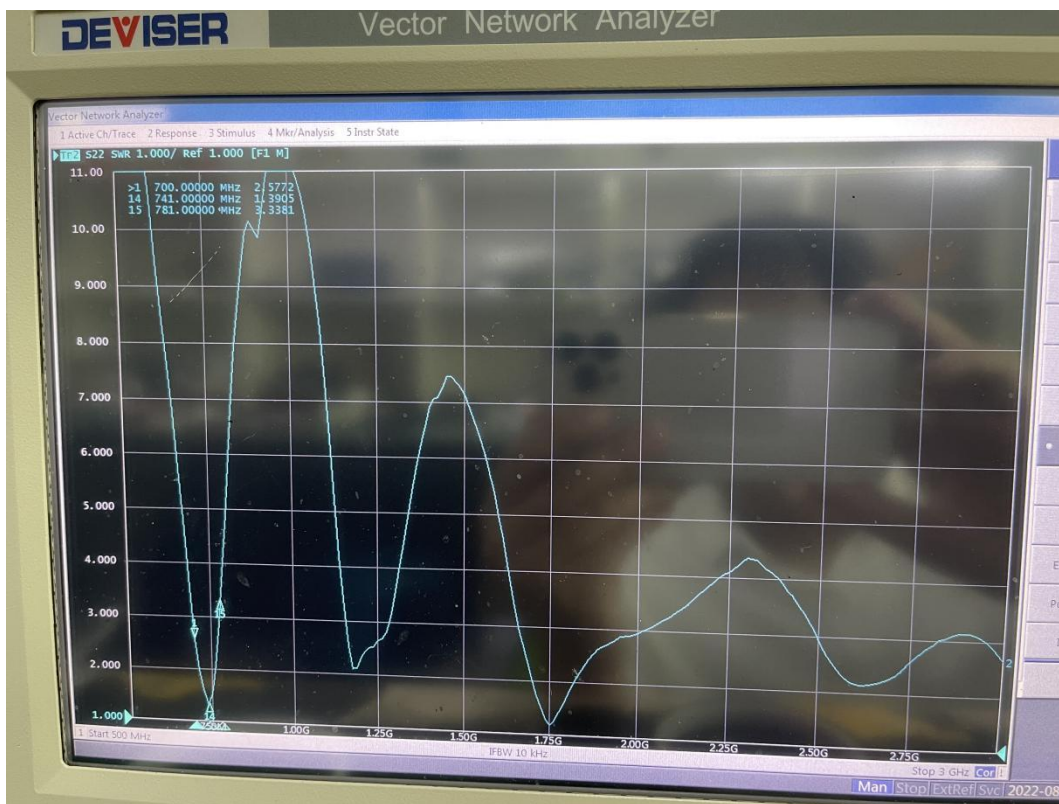




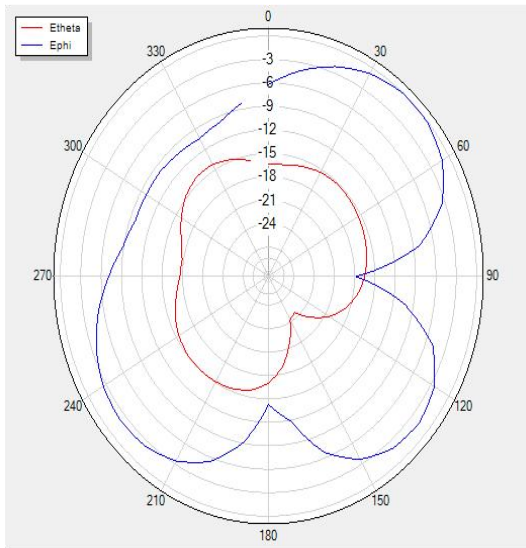




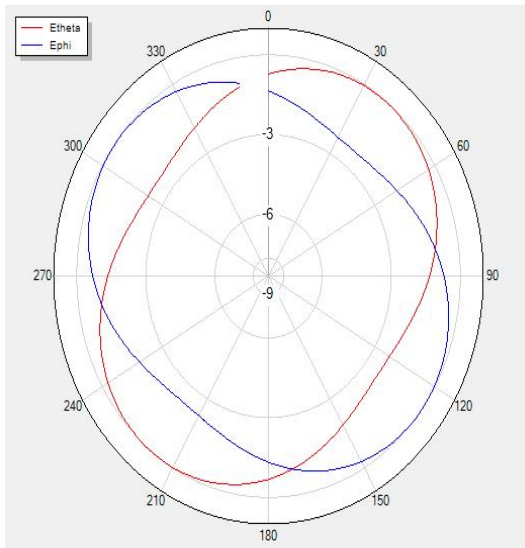




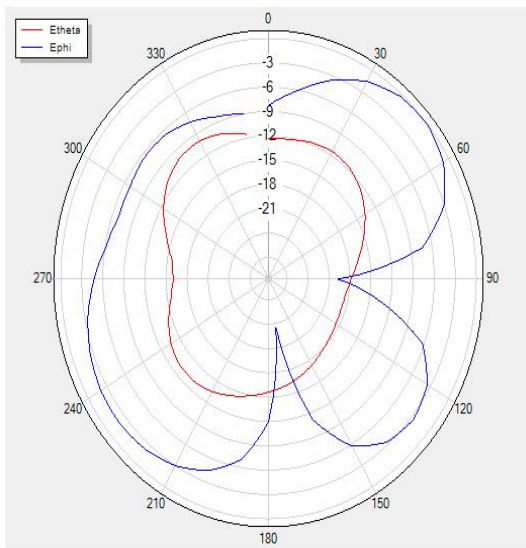
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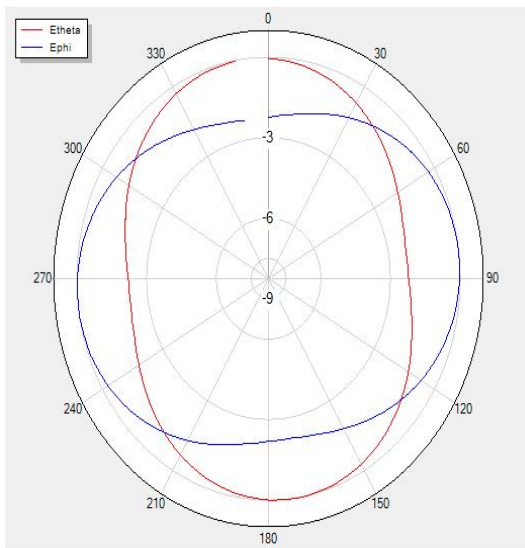
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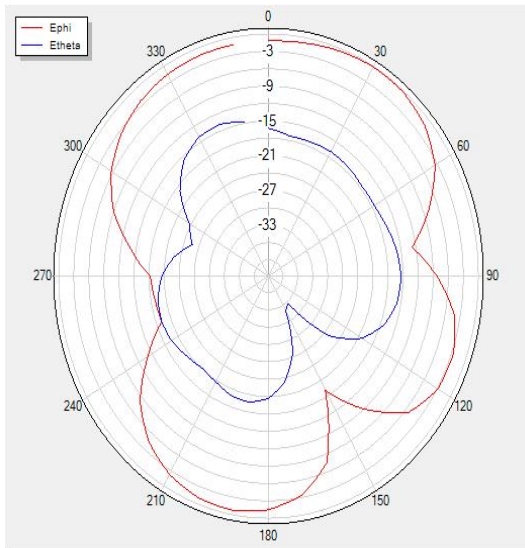
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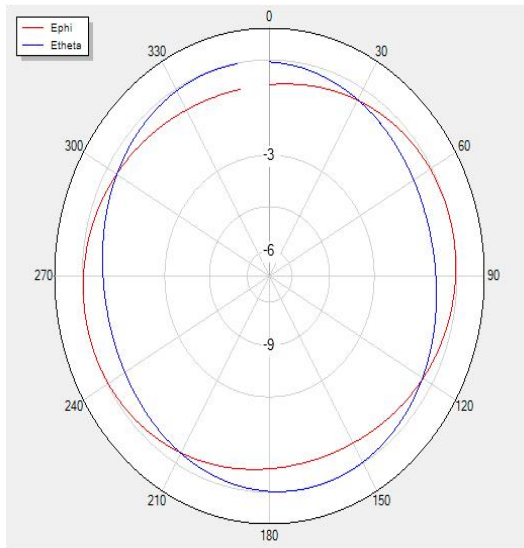
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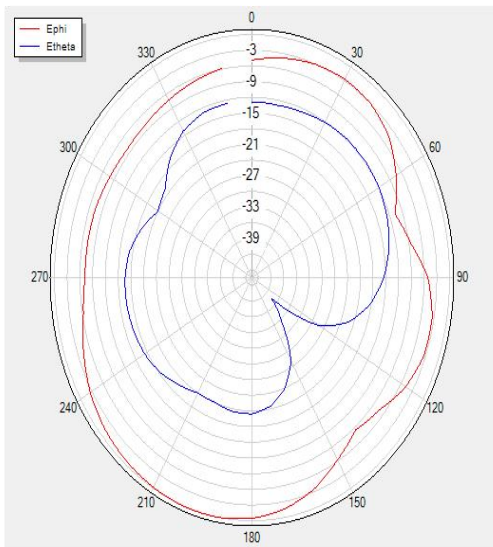
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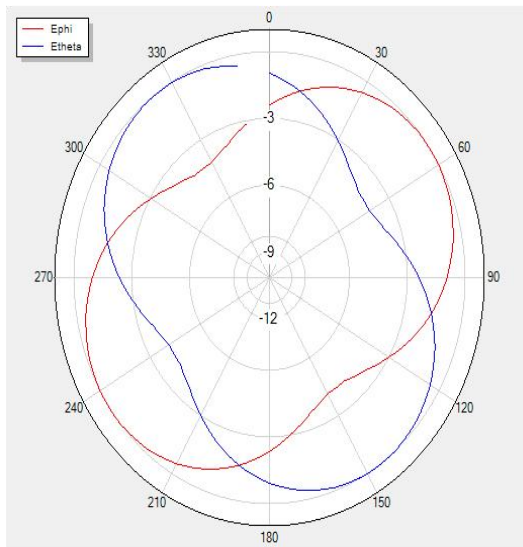
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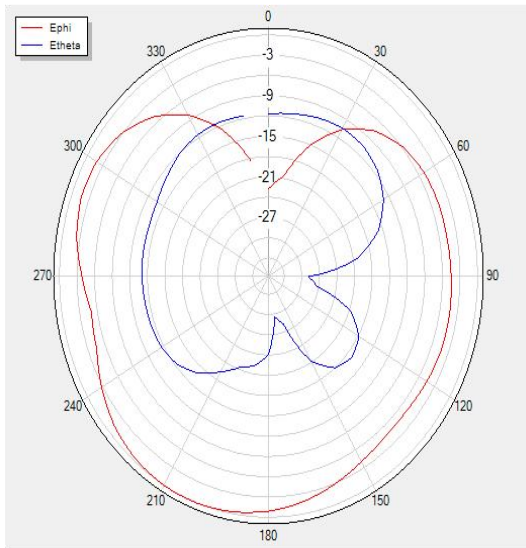
H Theta=90 freq=880MHz



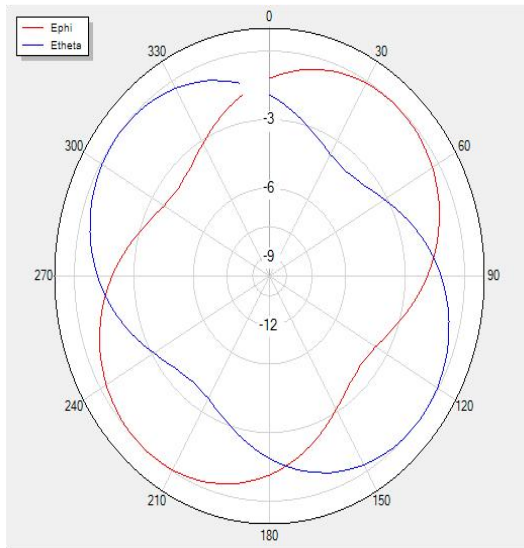
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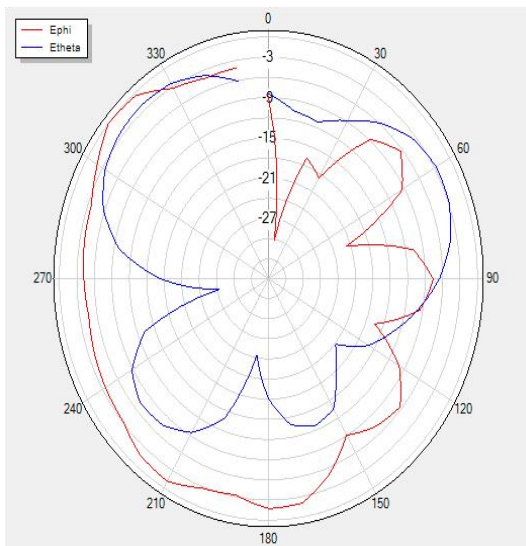
H Theta=90 freq=960MHz



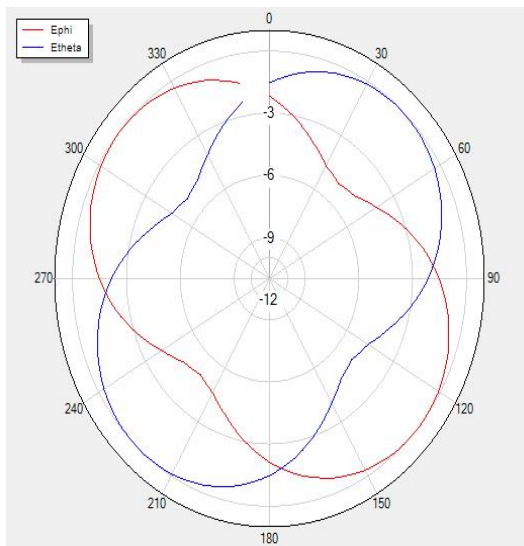
H Theta=0 freq=960MHz



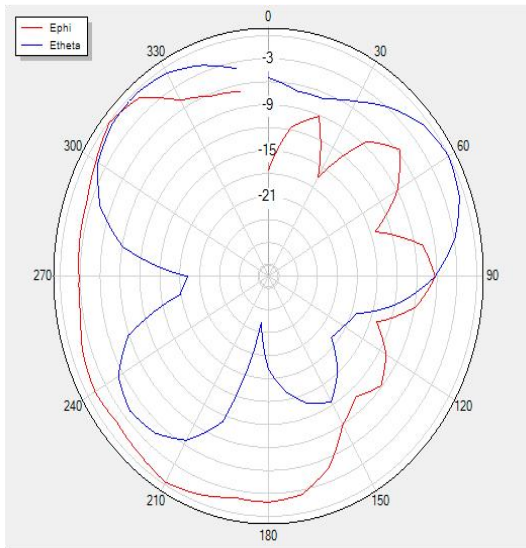
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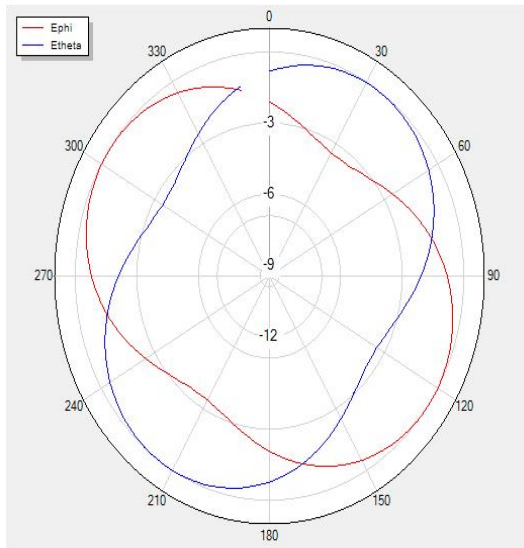
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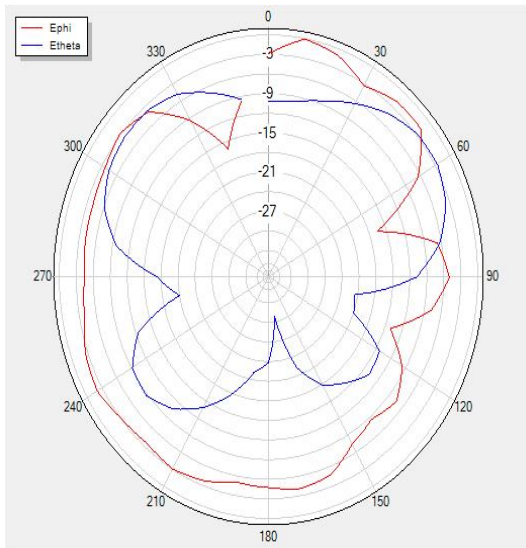
H Theta=90 freq=1760MHz



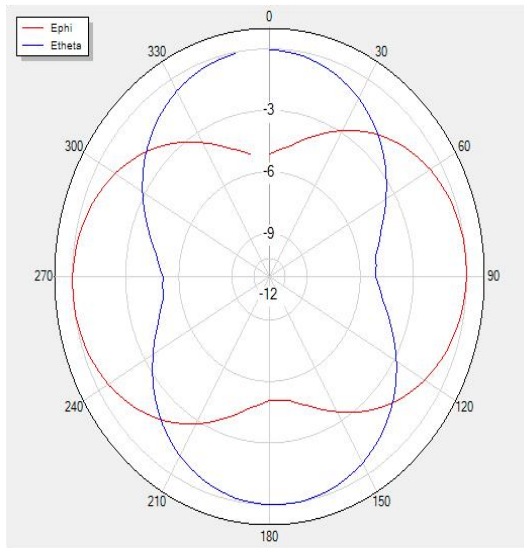
H Theta=0 freq=1760MHz



H Theta=90 freq=1880MHz

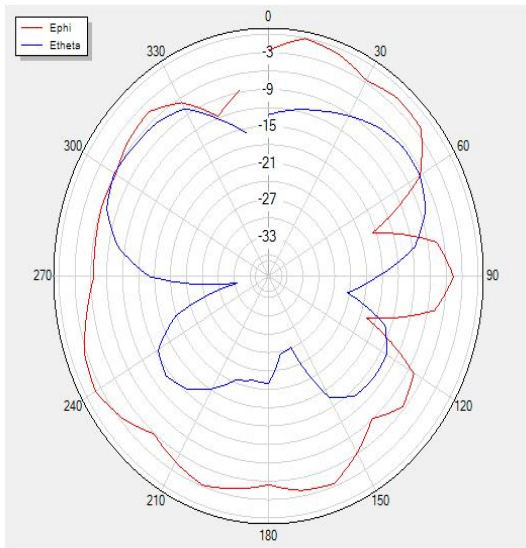


H Theta=0 freq=1880MHz

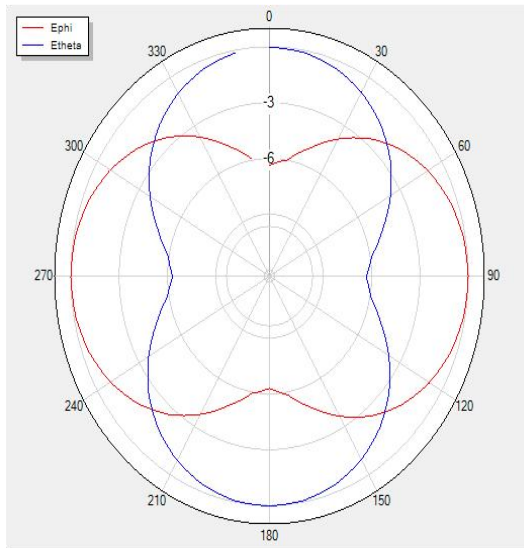




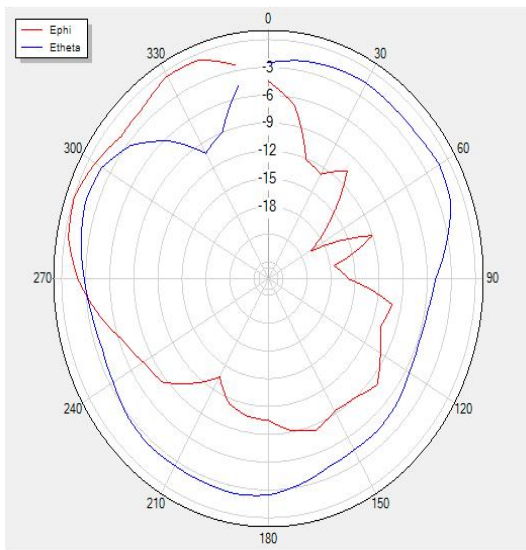
H Theta=90 freq=1960MHz



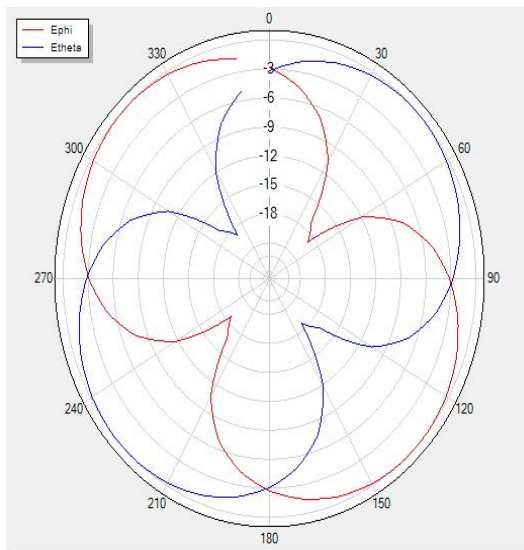
H Theta=0 freq=1960MHz



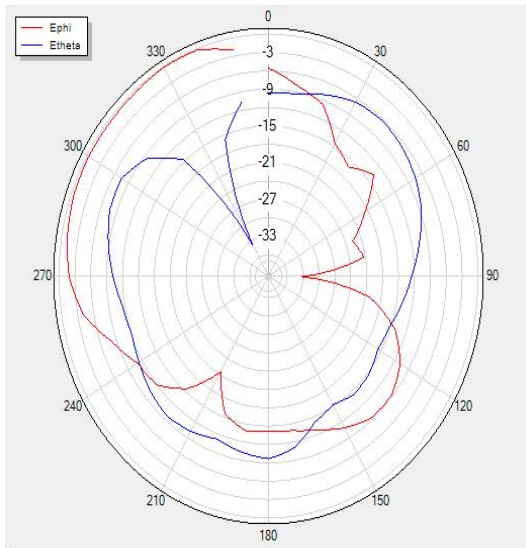
H Theta=90 freq=2360MHz



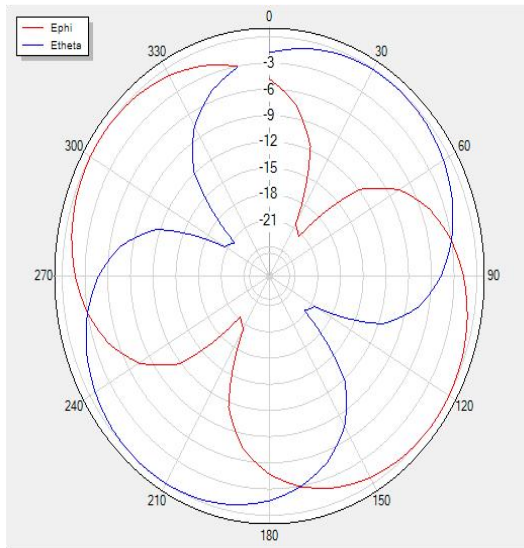
H Theta=0 freq=2360MHz



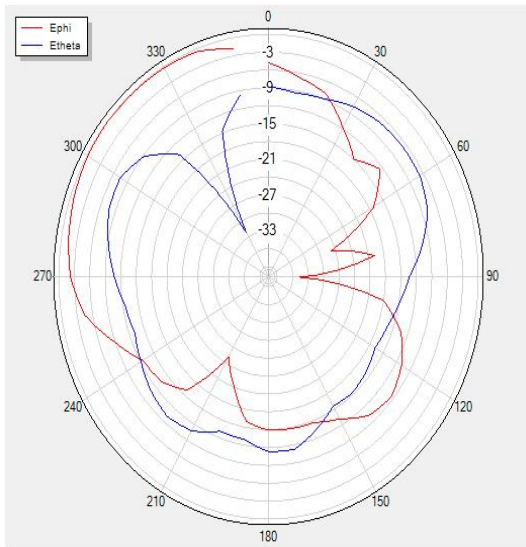
H Theta=90 freq=2540MHz



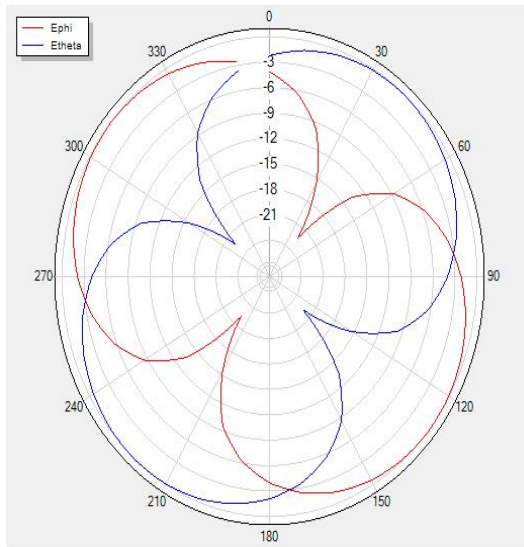
H Theta=0 freq=2540MHz



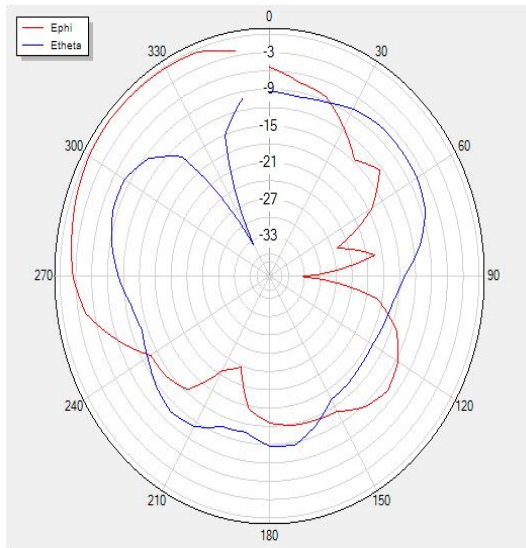
H Theta=90 freq=2580MHz



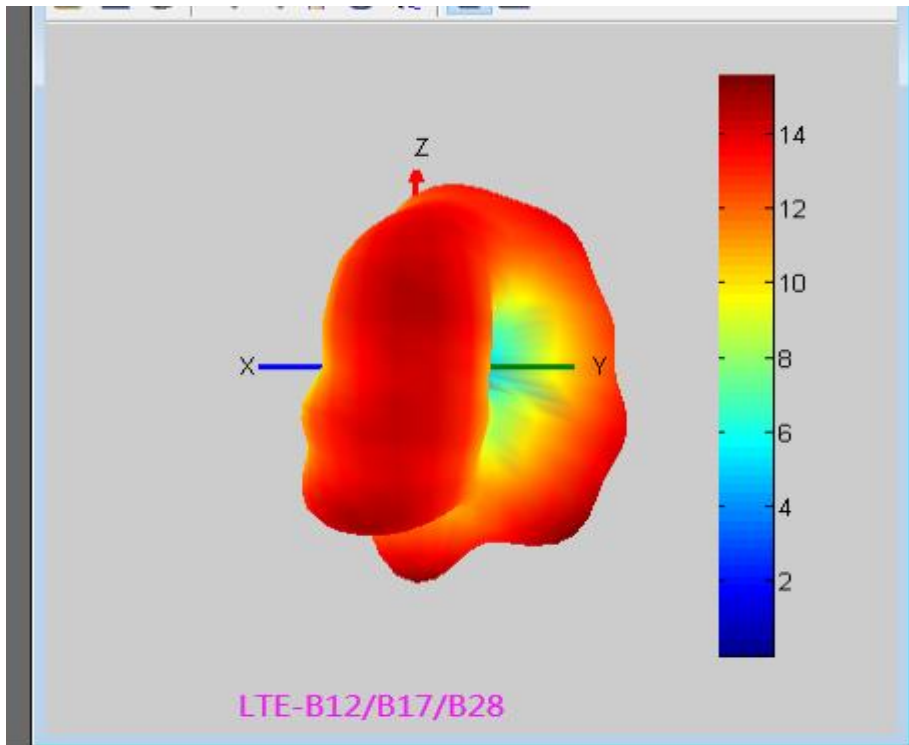
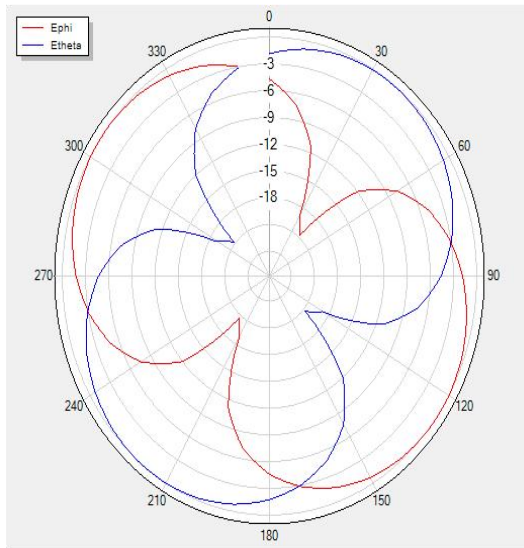
H Theta=0 freq=2580MHz

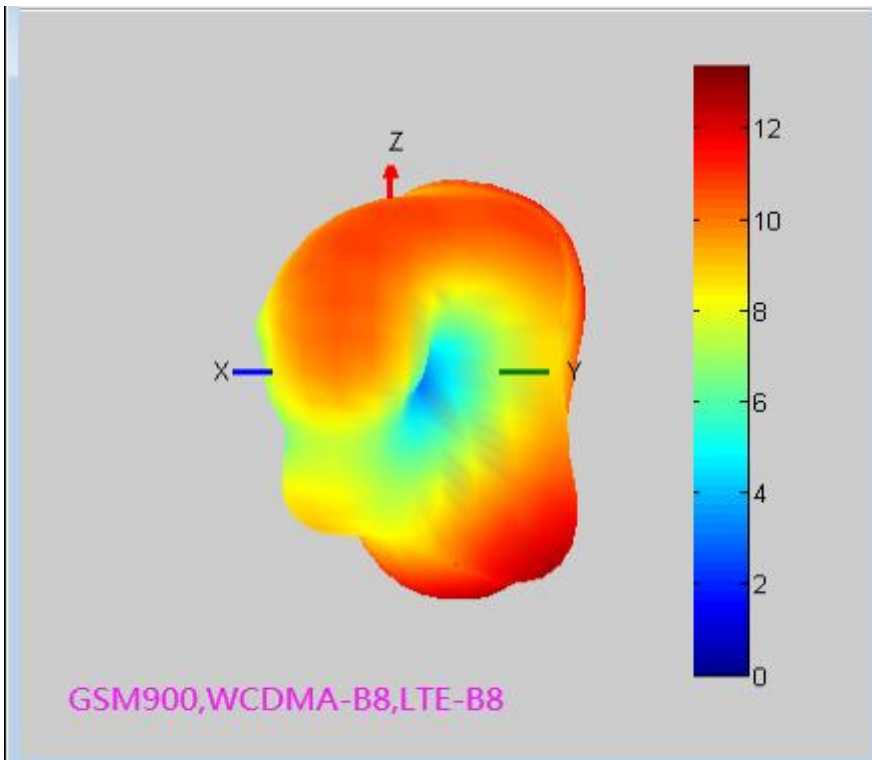
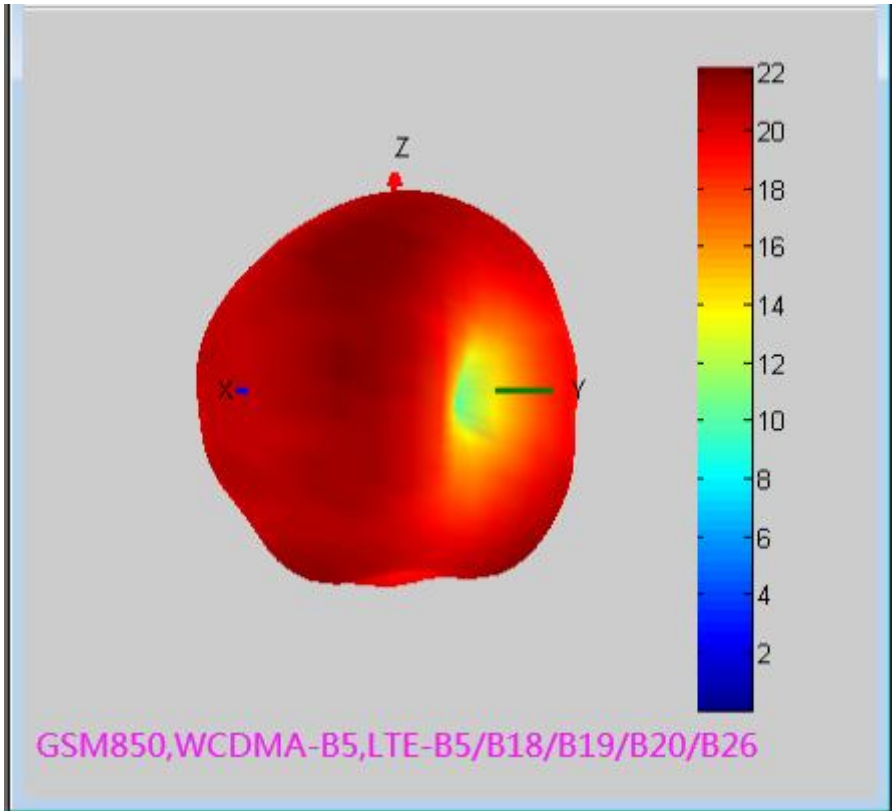


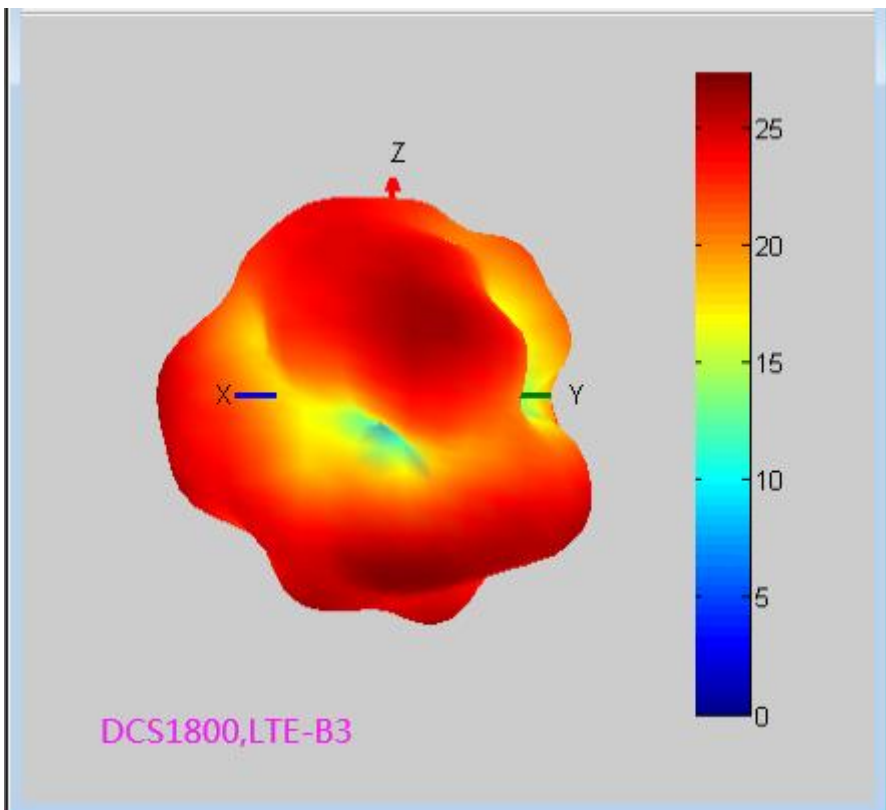
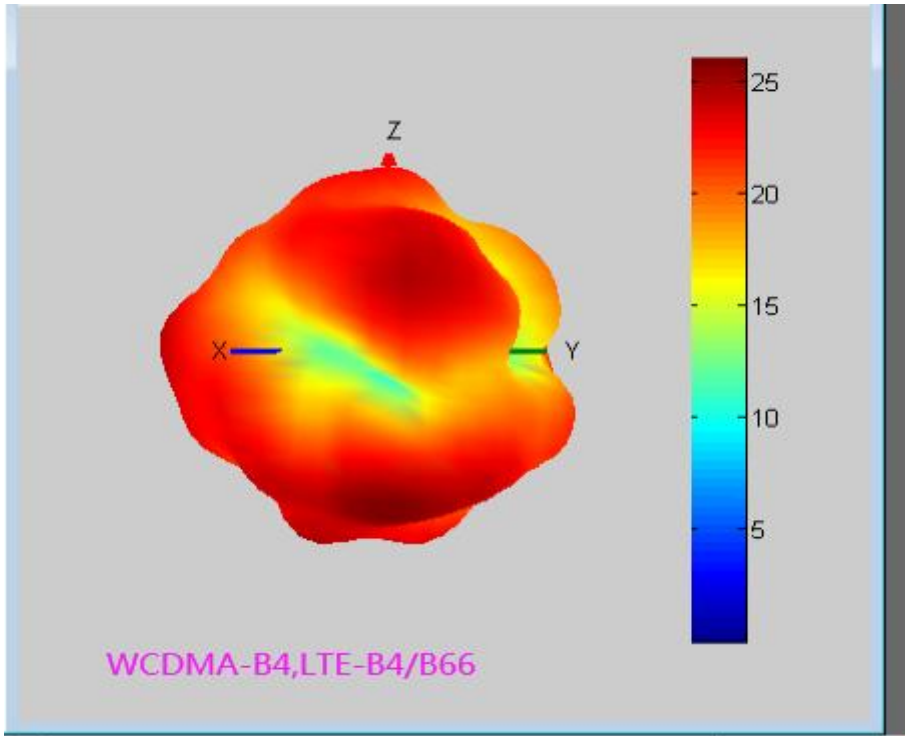
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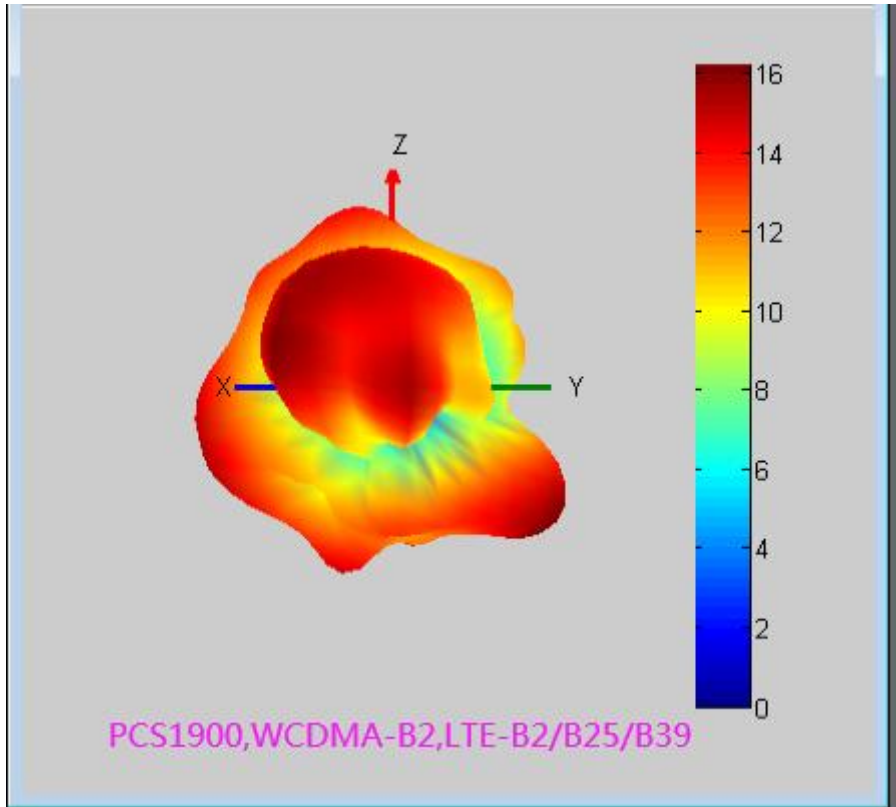


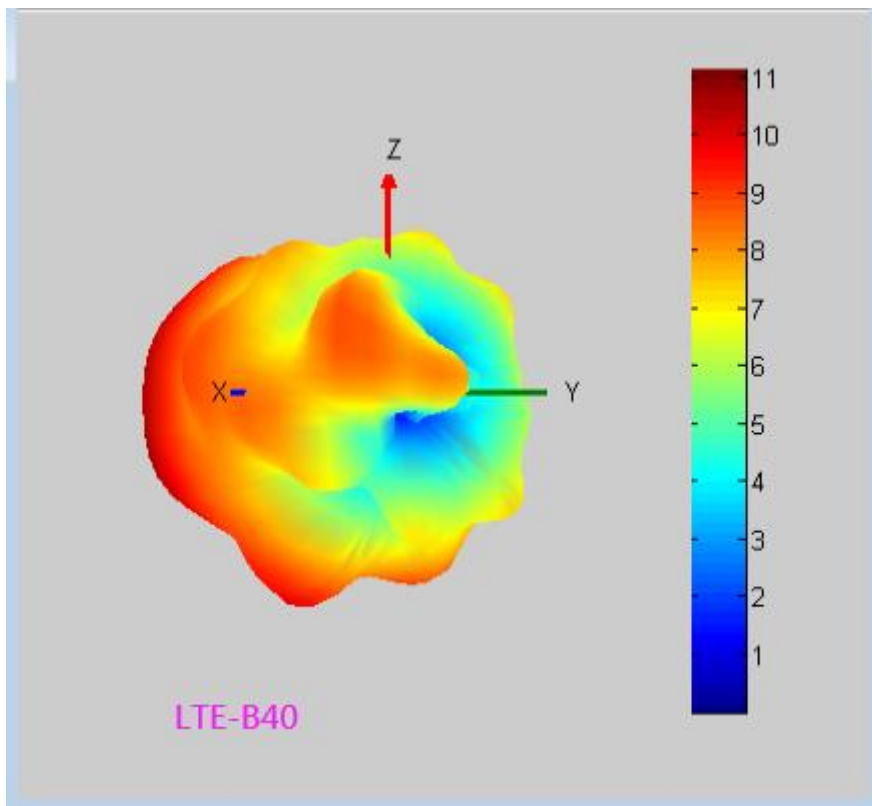
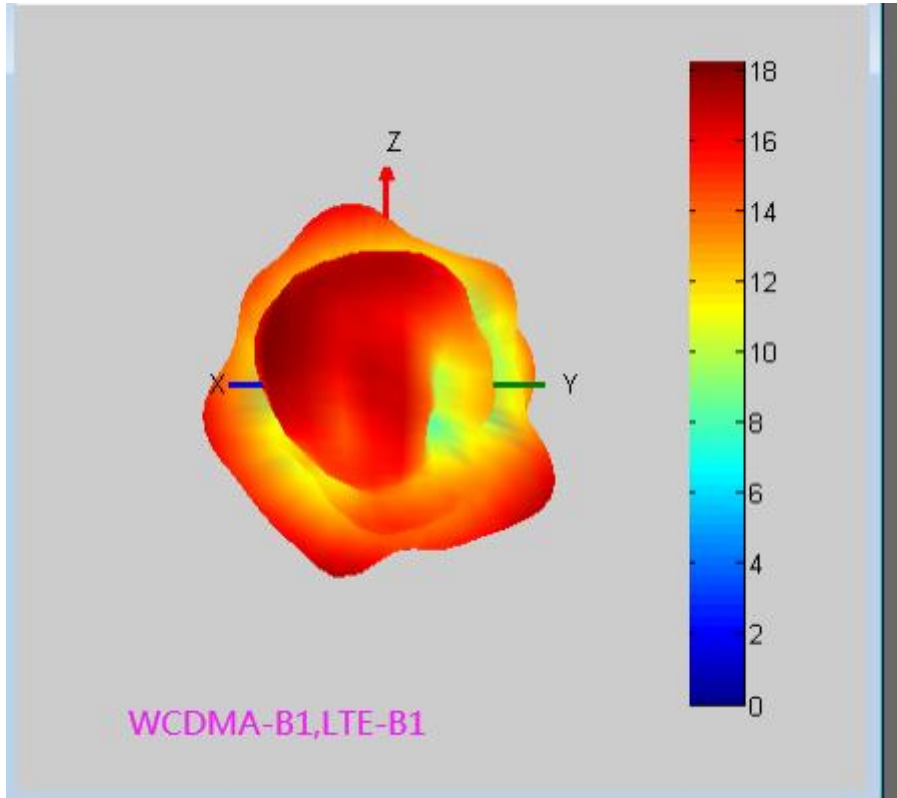
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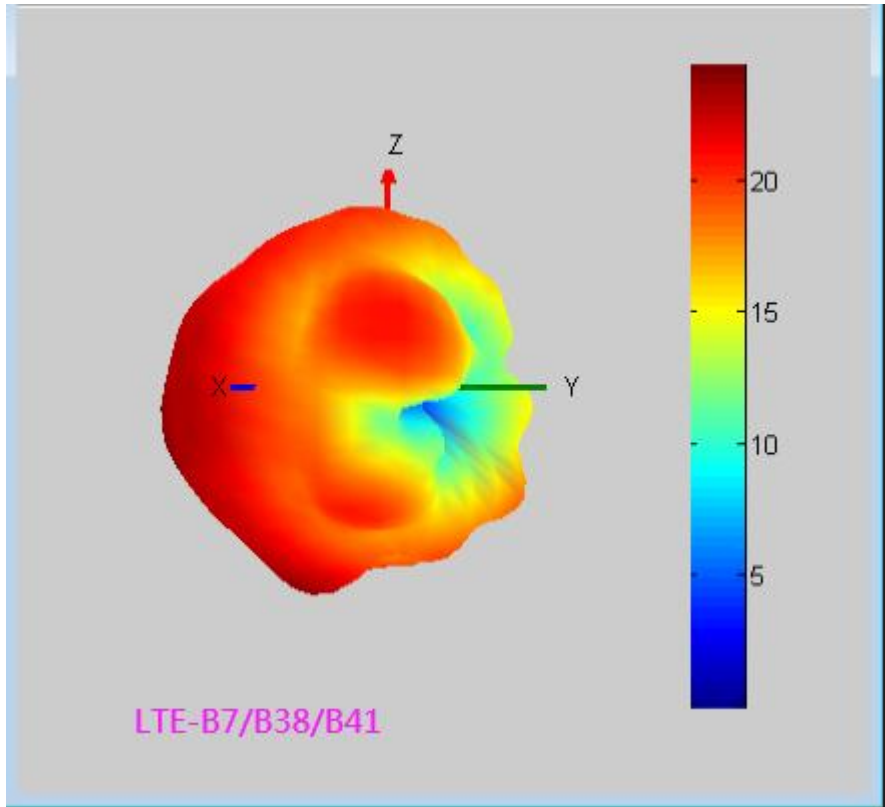










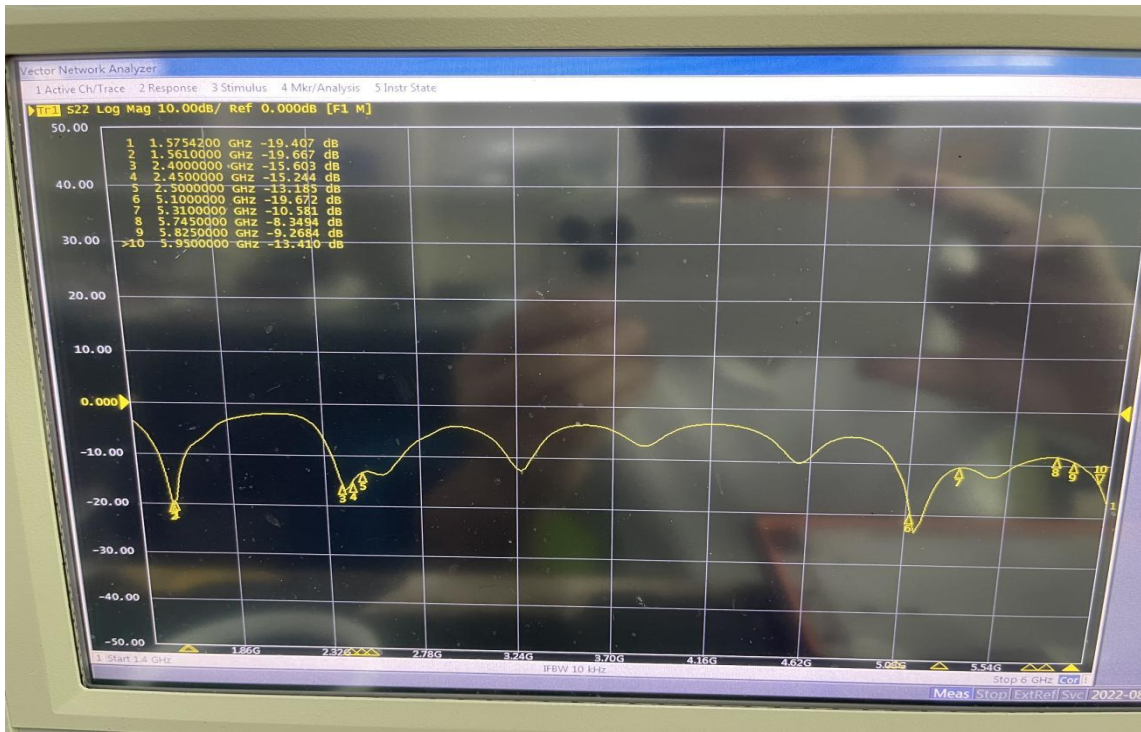


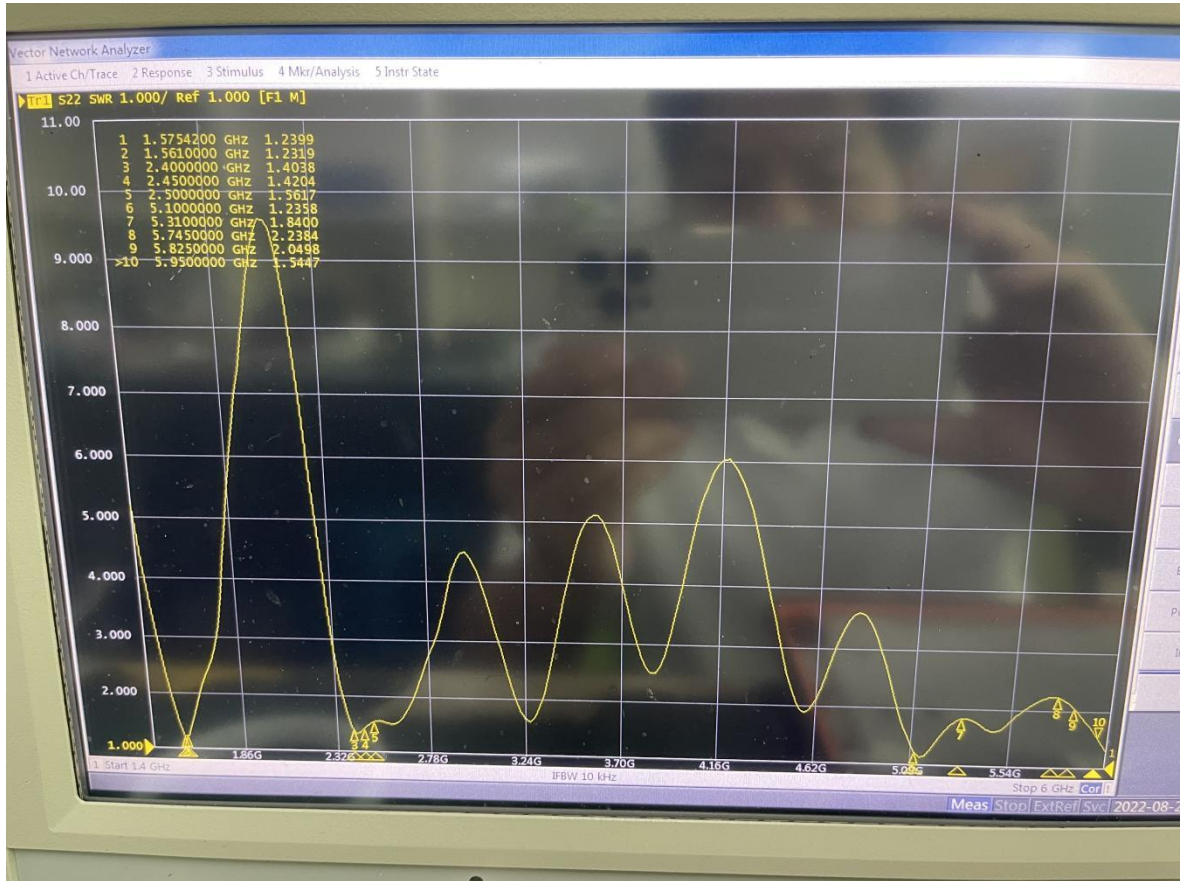


### 3.4 射频天线参数 Radio frequency Parameter

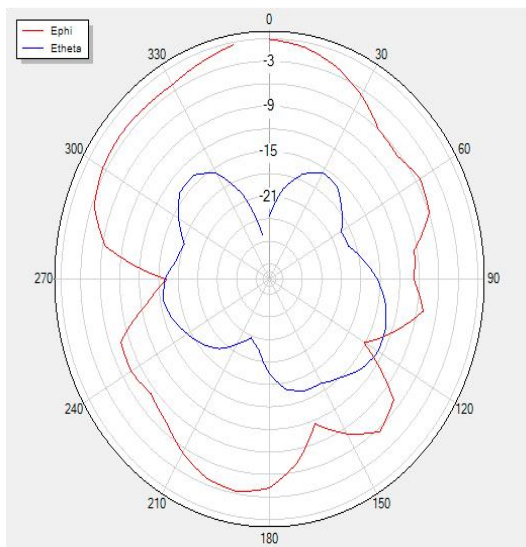
#### 3.4.1GPS/WIFI/BT 频段(Working frequency band):

GPS: 1560~1580MHZ, BT&2.4WIFI: 2400~2500MHZ, 5G WIFI: 5180~5825MHZ

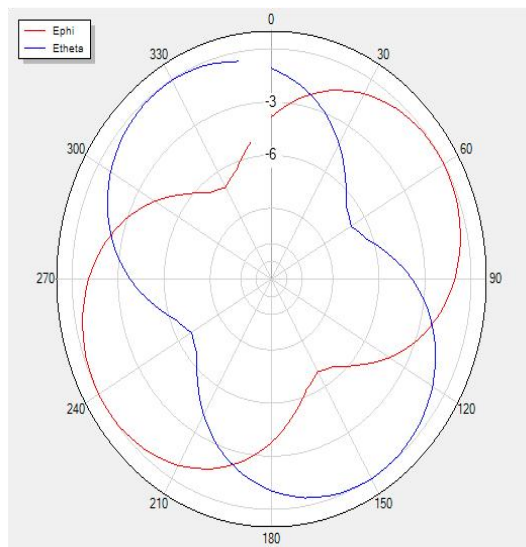




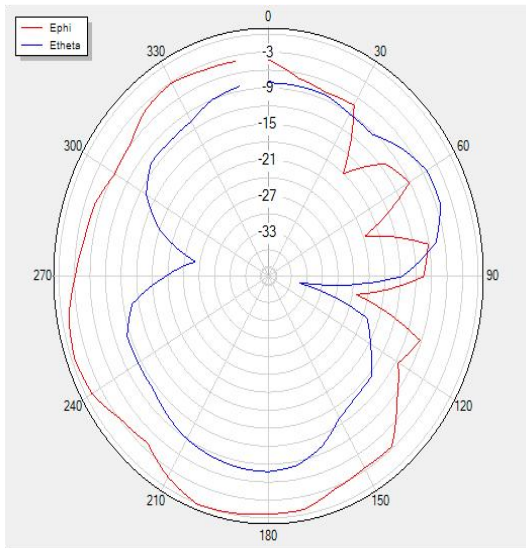
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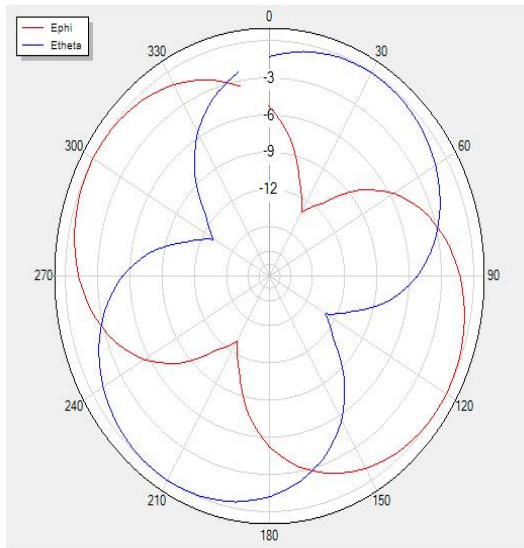
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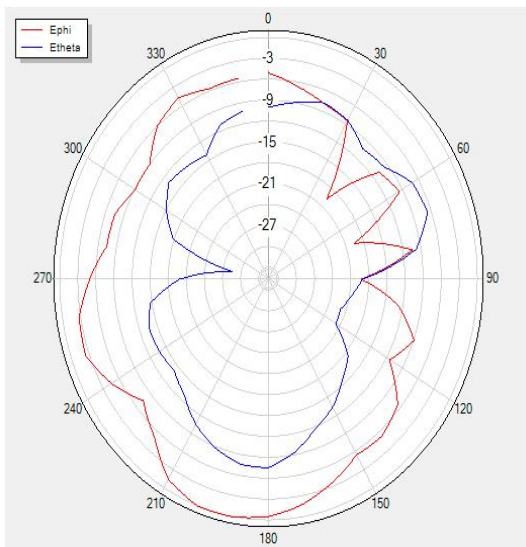
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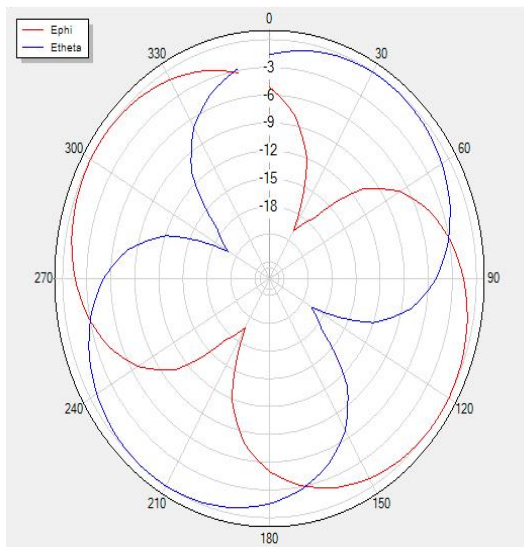
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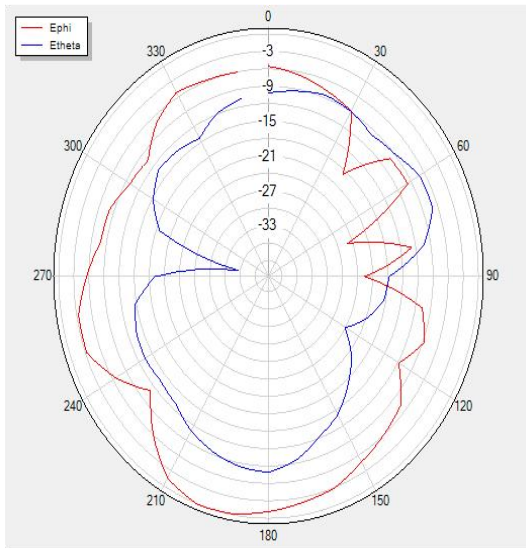
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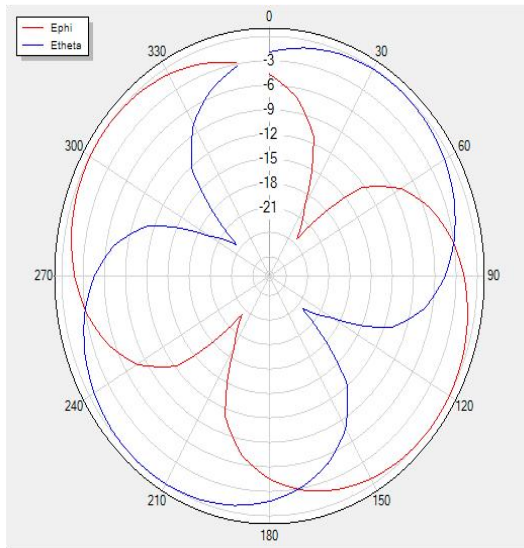
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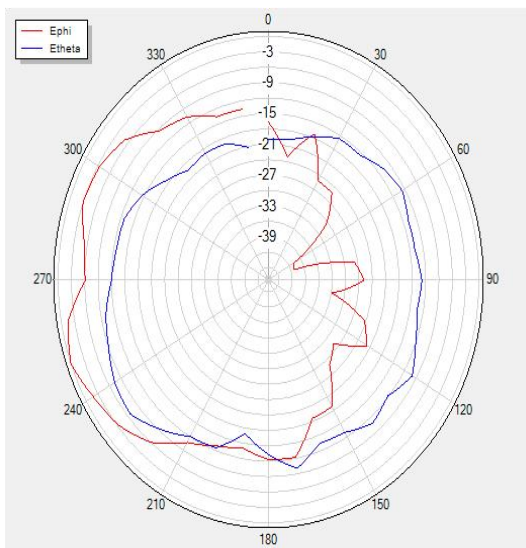
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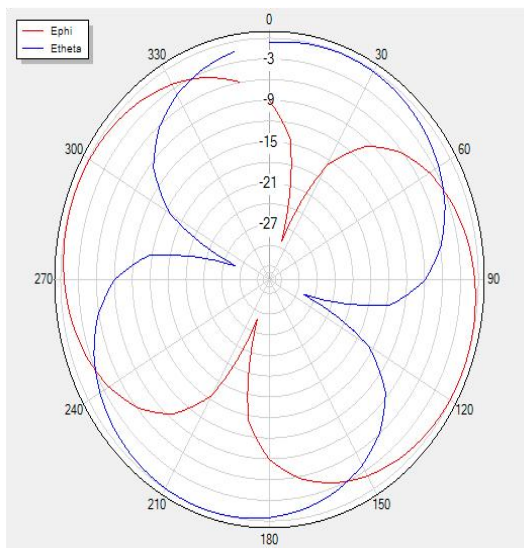
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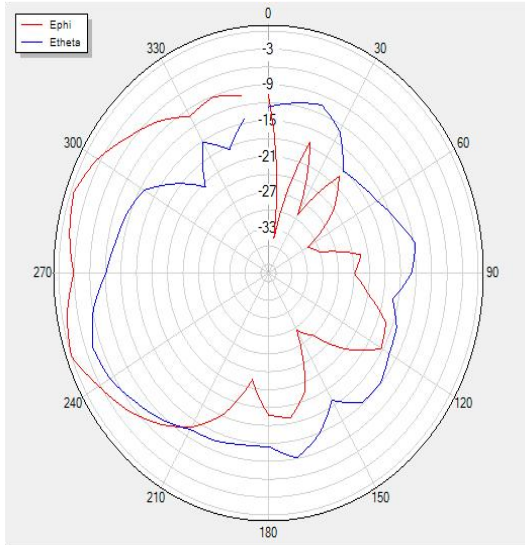
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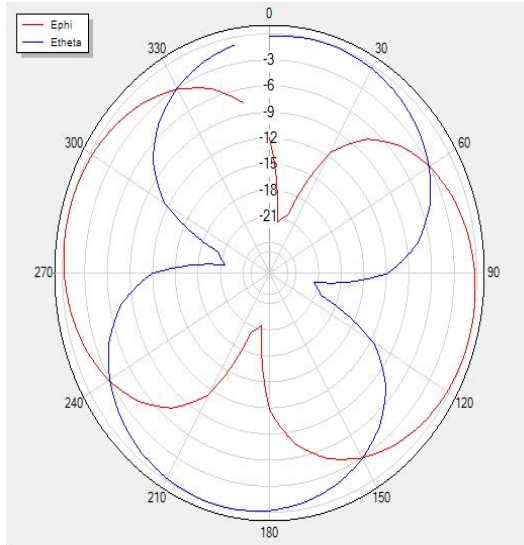
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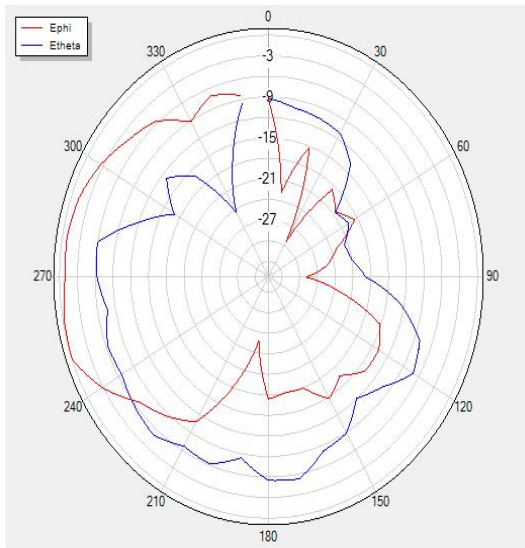
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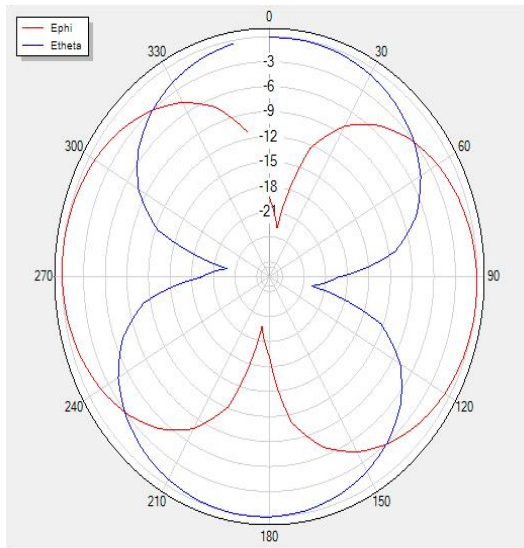
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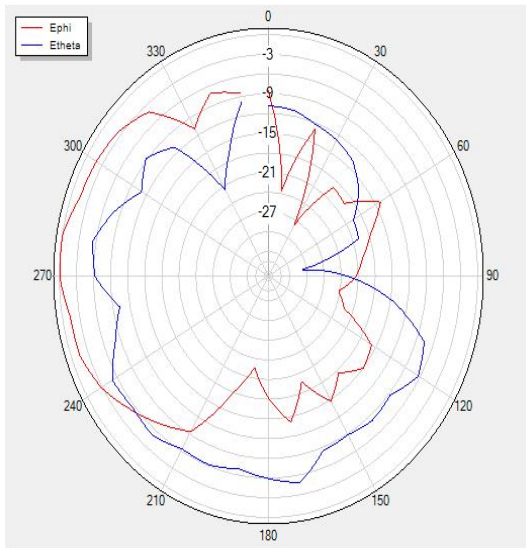
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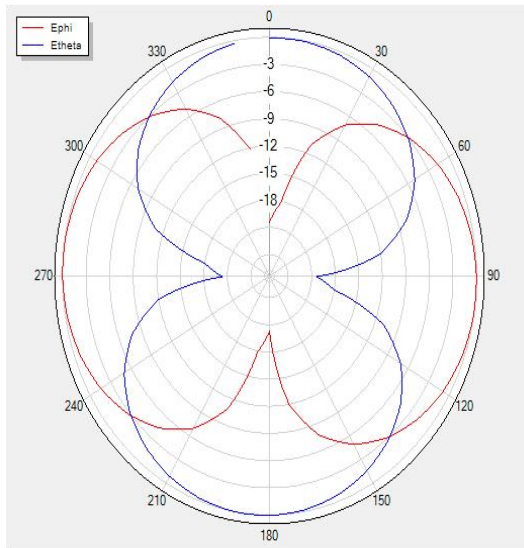
H Theta=0 freq=5600MHz

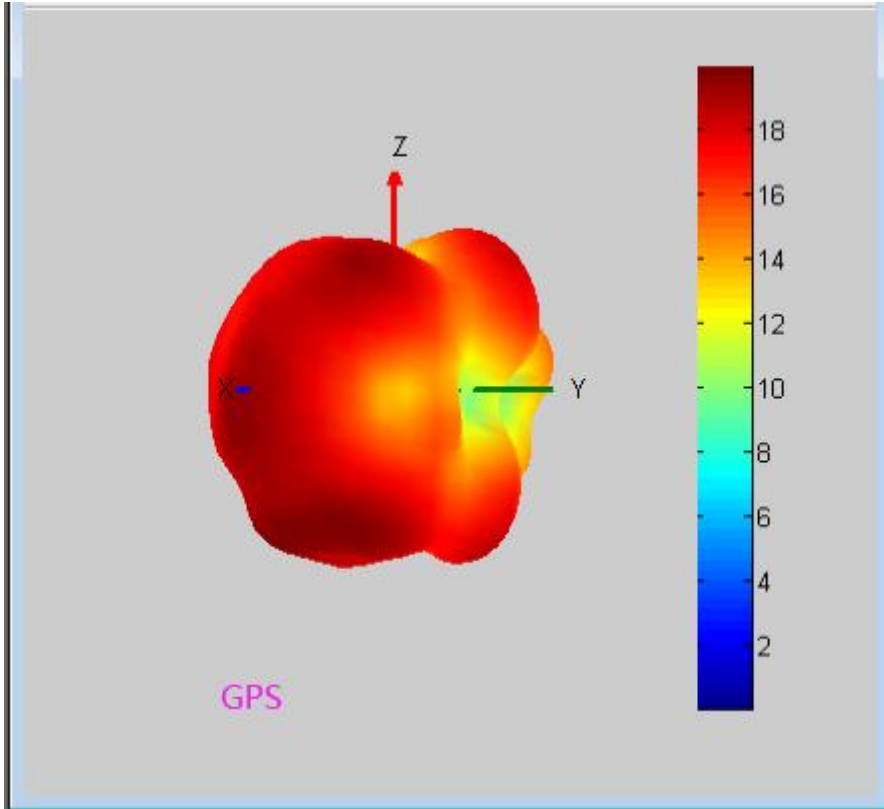


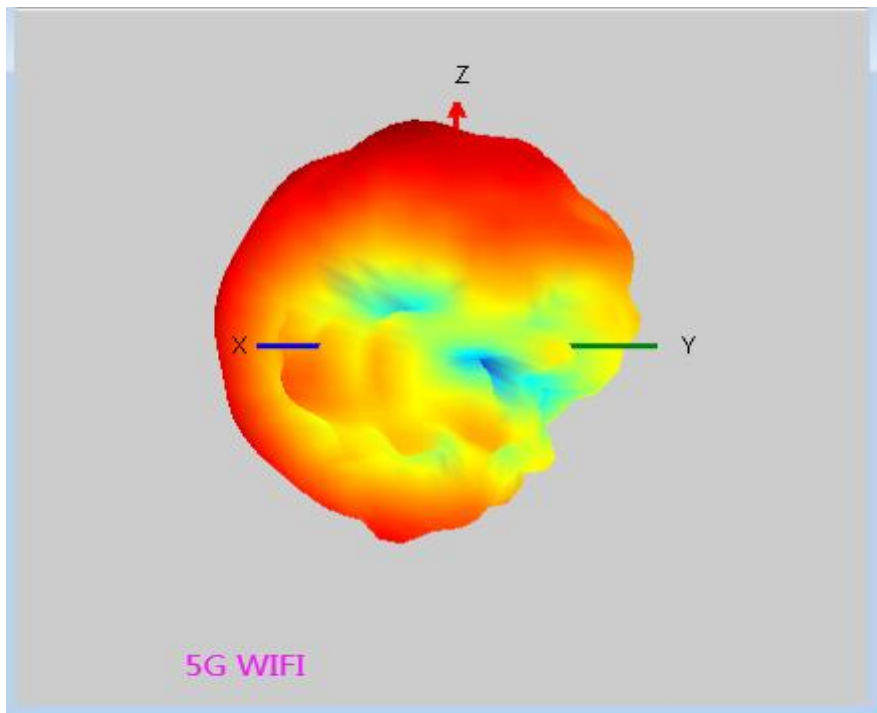
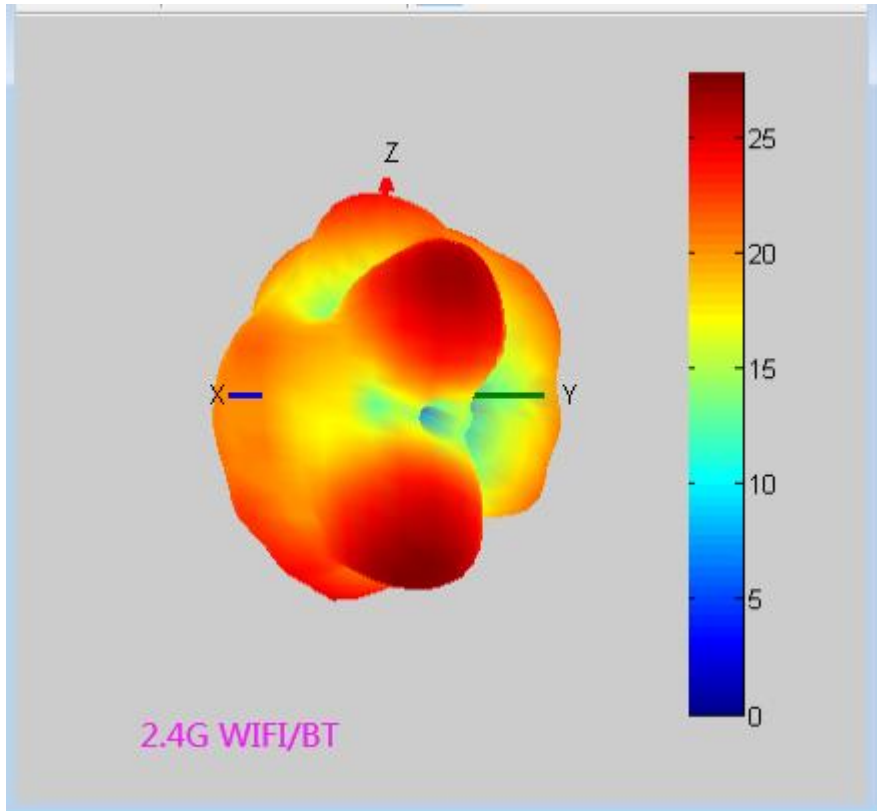
H Theta=90 freq=5800MHz



H Theta=0 freq=5800MHz









#### 4. 最大增益 Maximum gain

结合以上章节的数据统计，有关天线最大增益如下：

Combined with the data from the previous sections, the maximum gain of the antenna is as follows:

Gain&Efficiency		
频段Band	gain 增益 (dBi)	efficiency 效率 (%)
LTE-B12/B17/B28	-2.32	20.54
GSM850,WCDMA-B5,LTE-B5/B18/B19/B20/B26	-1.93	35.24
GSM900,WCDMA-B8,LTE-B8	-1.25	39.53
DCS1800,LTE-B3	1.44	35.92
PCS1900,WCDMA-B2,LTE-B2/B25/B39	0.43	32.29
WCDMA-B4,LTE-B4/B66	1.03	33.59
WCDMA-B1,LTE-B1	1.33	32.04
LTE-B7B38/B41	2.95	51.13
LTE-B40	-0.03	30.76
GPS	1.82	35.22
2.4G WIFI/BT	0.15	33.59
5G WIFI	1.2	32.81

结束 END