

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

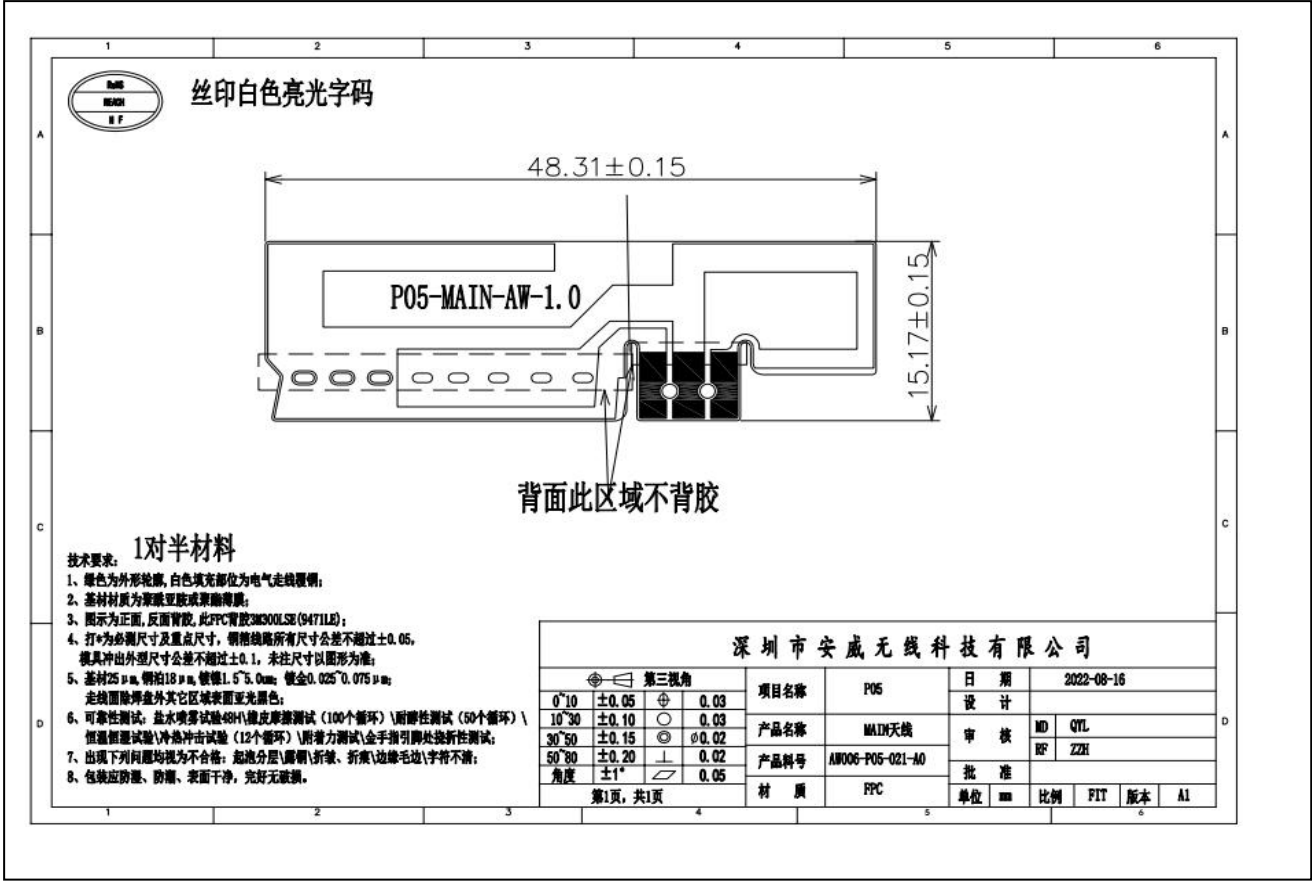
1、Product specifications 产品规格

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）

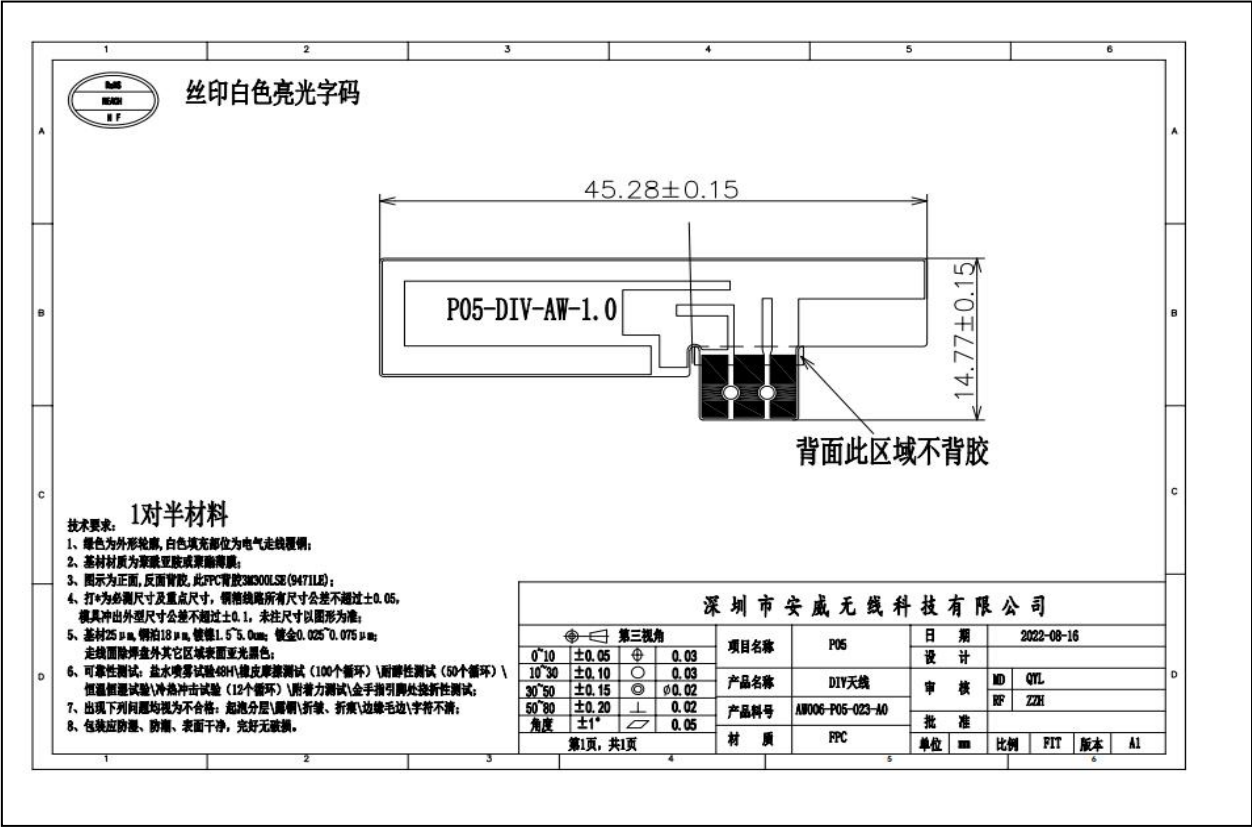
The report mainly provides the parameter test of RT2 Cellular mobile antenna performance. The P05 antenna is a 4G&3G&2G antenna. (see Figure 1 below)

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

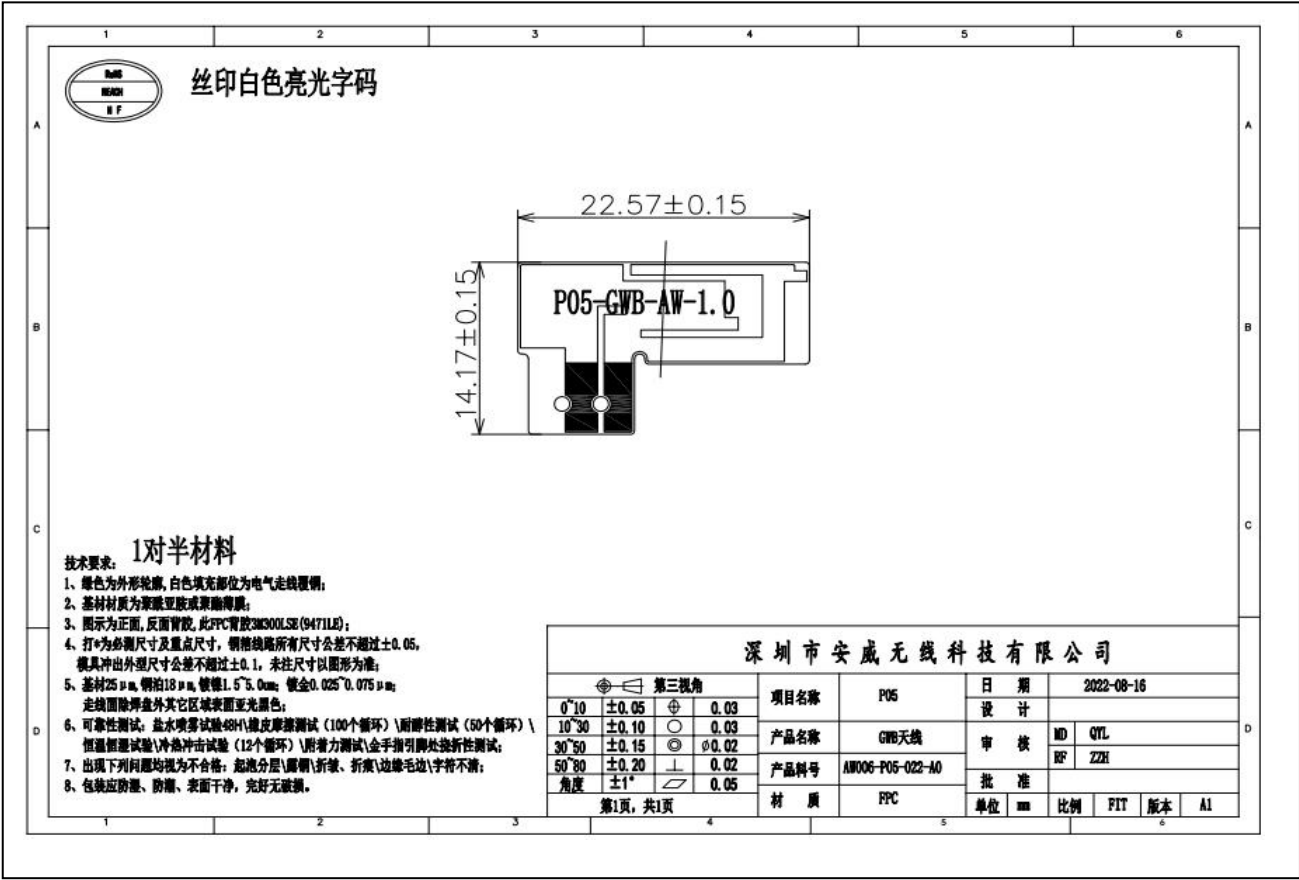
WCDMA: BAND II、 BAND IV、 BAND V,

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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主天线匹配电路

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

Antenna

E1

E2

E3

PA

21 ANT 22 23

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

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

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分集天线匹配电路

GPS/WIFI/BT天线匹配电路

Antenna

E1

E2

E3

PA

24 25 26 GPS

DUMP TX RX

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

C2412:0欧原匹配

R2403:0欧原匹配

R2407:0欧原匹配

C2410:NC

C2411:NC

C2409:0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),

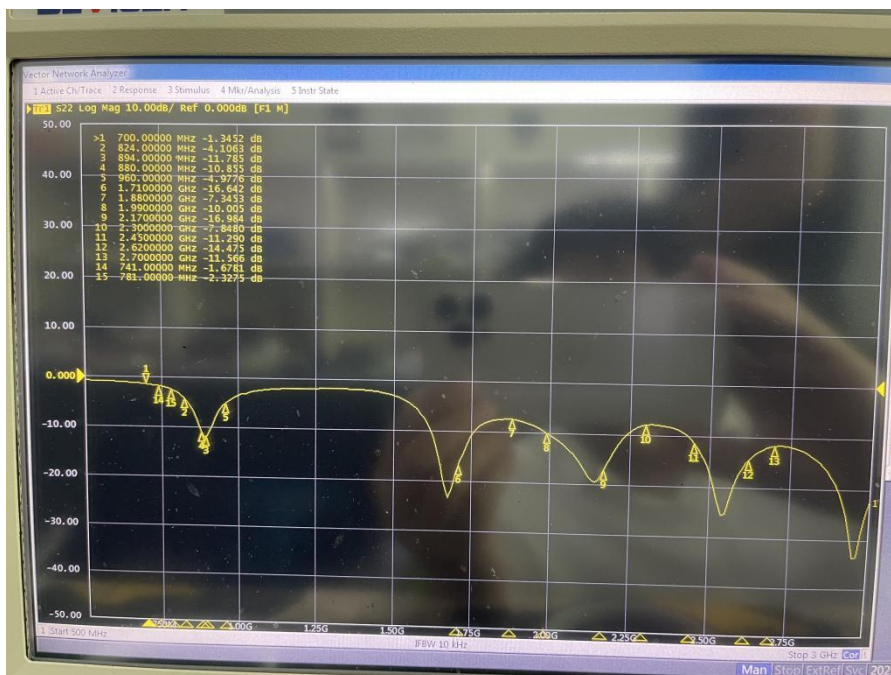
band 12(699-716MHz, 729-746MHz),

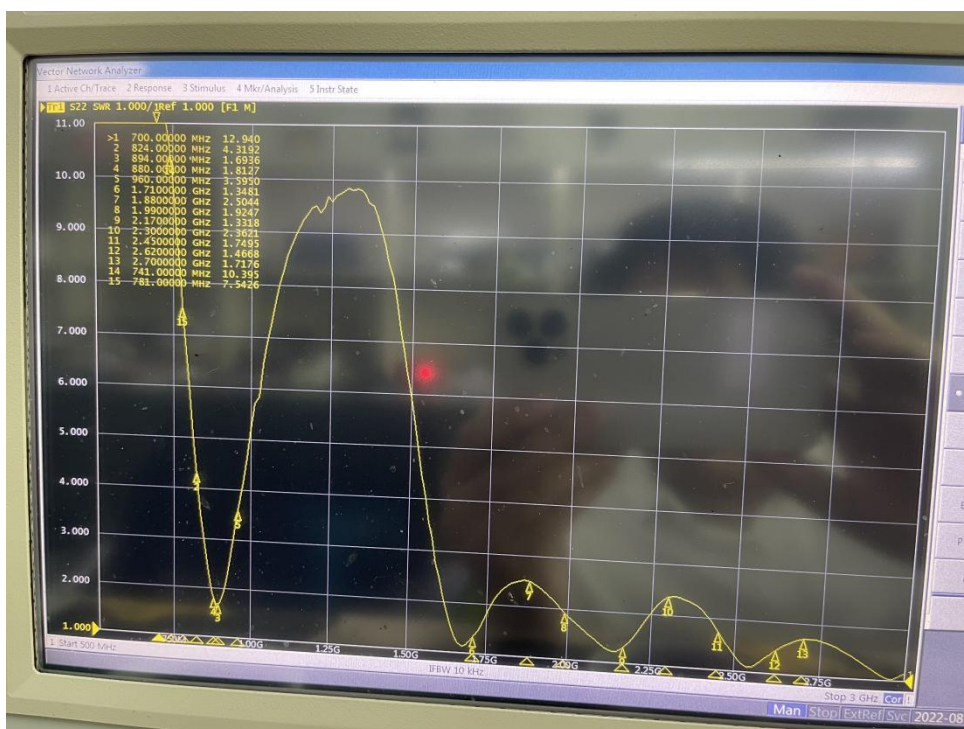
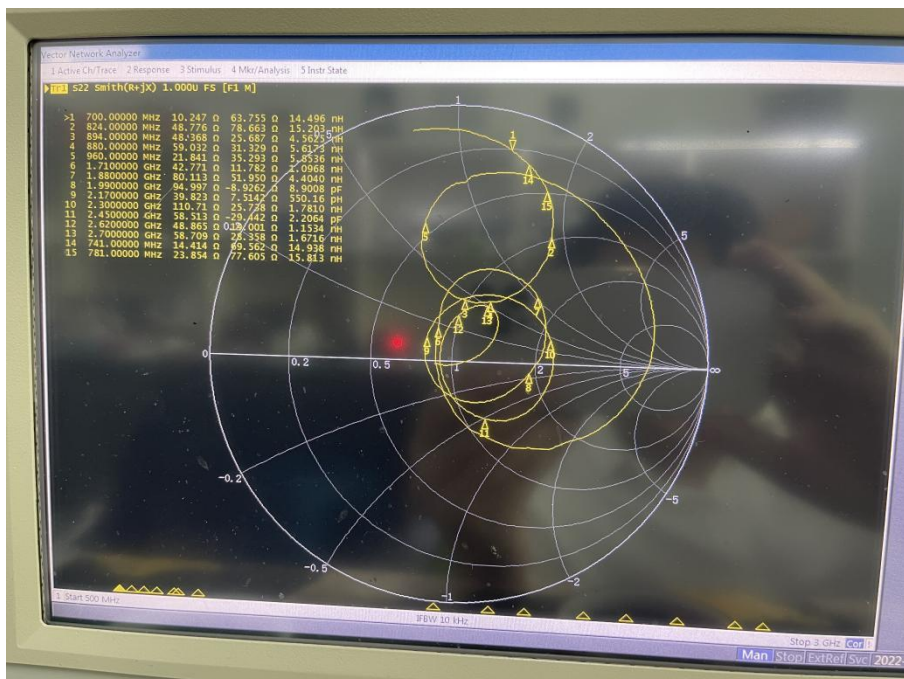
band 17(704-716MHz、734-746MHz),

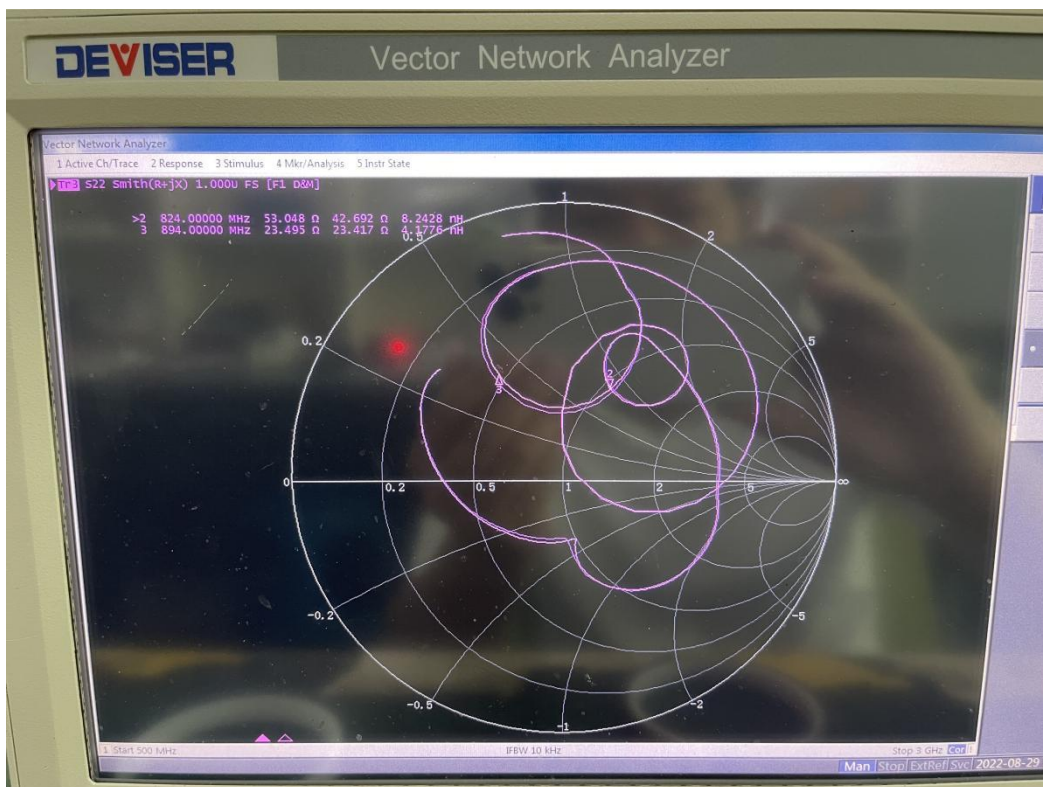
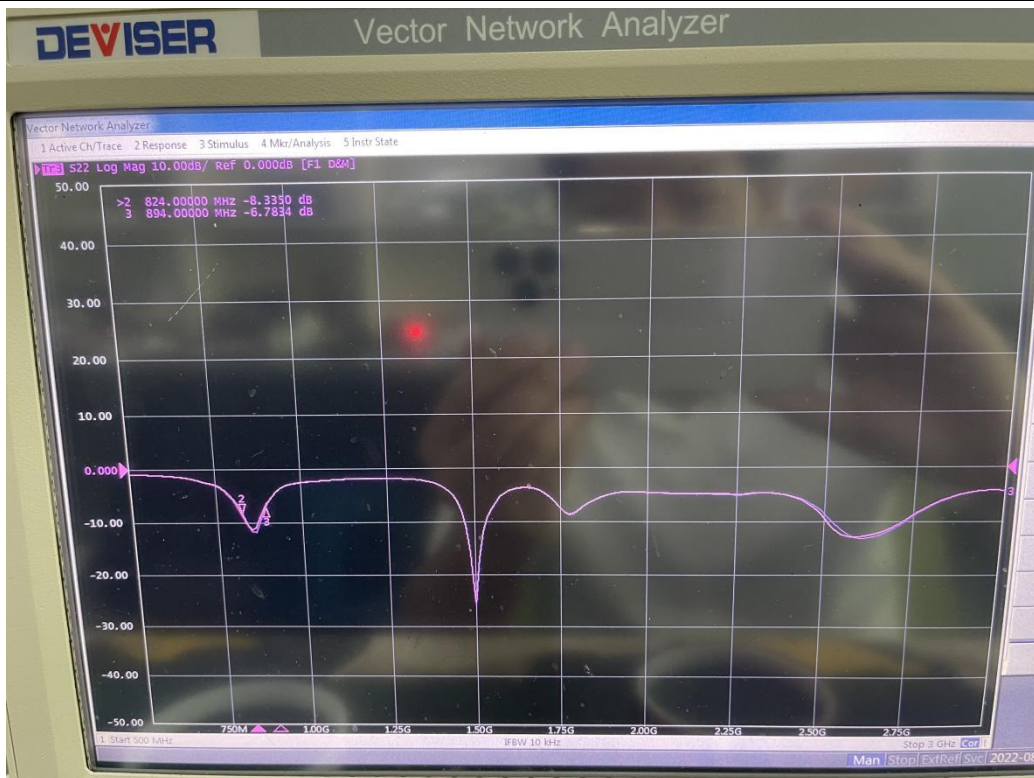
band 66(1710-1780MHz, 2110-2200MHz)

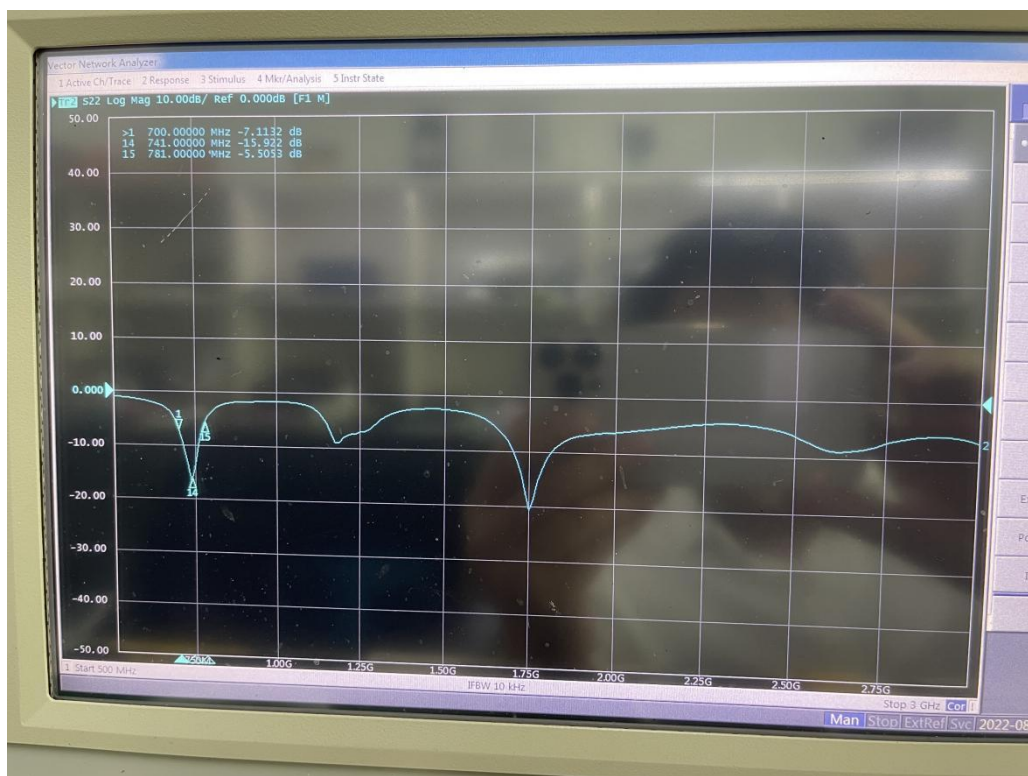
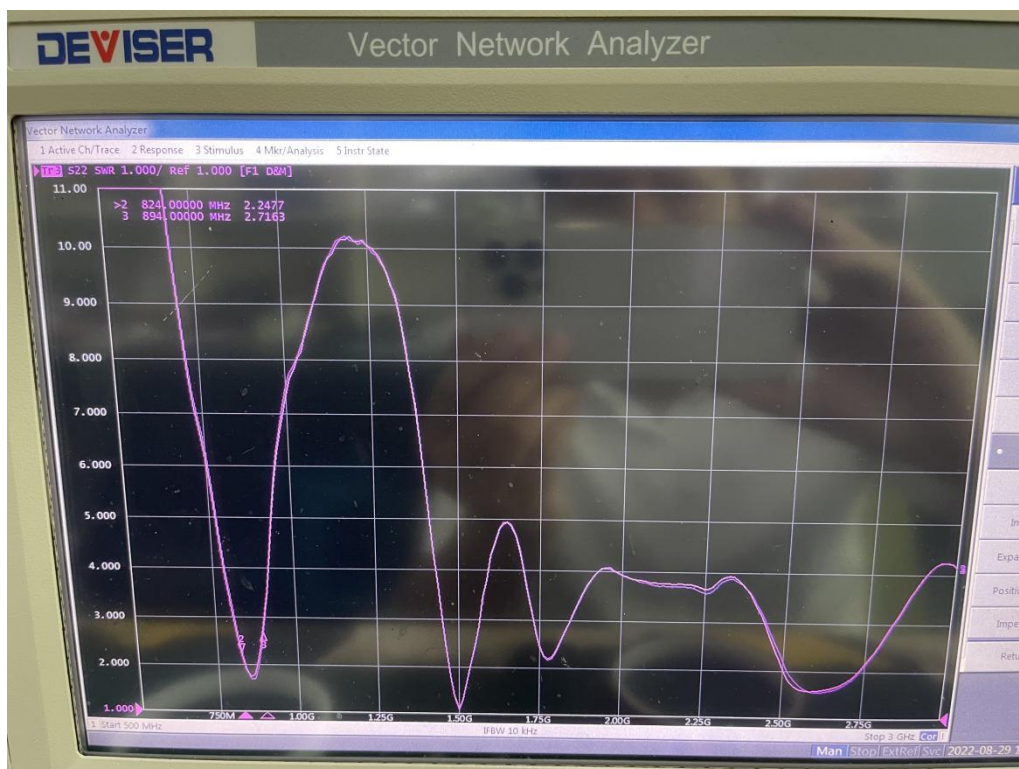
WCDMA: BAND II (1852.4-1907.6MHz) 、BAND IV(1712.4-1752.6MHz)、BAND V(826.4-846.6MHz),

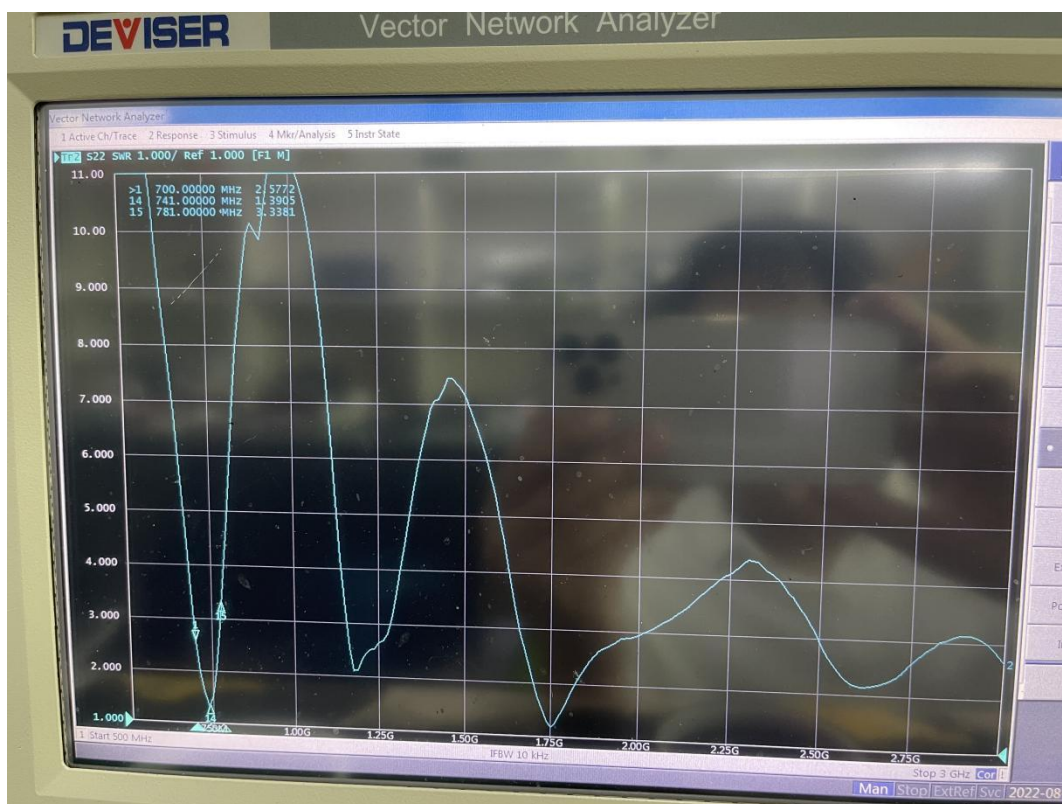
GSM: 850 (824.2-848MHz) 1900(1850.2-1909.8MHz)



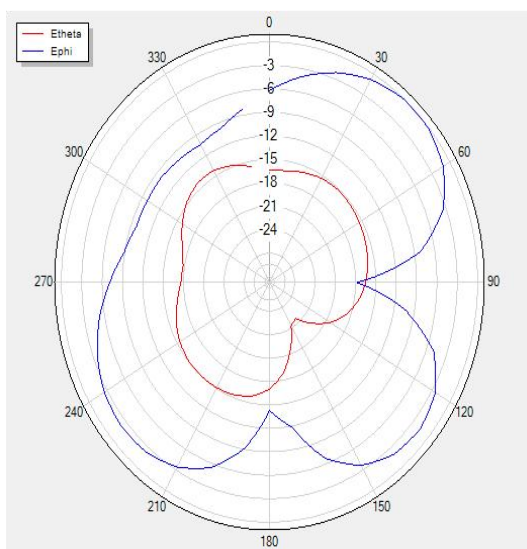




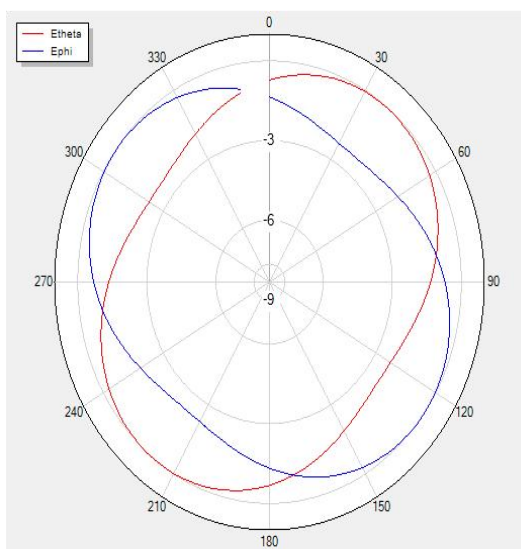




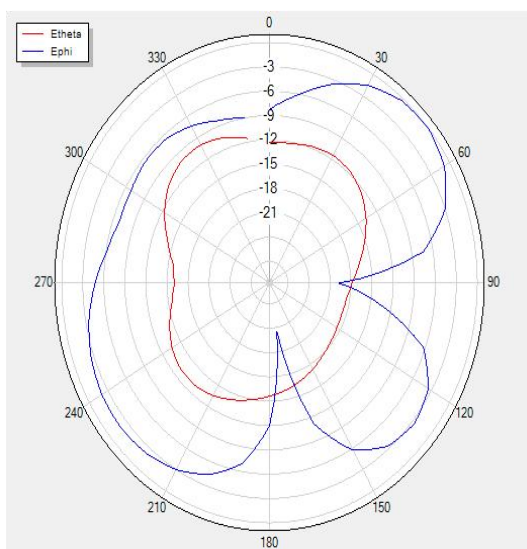
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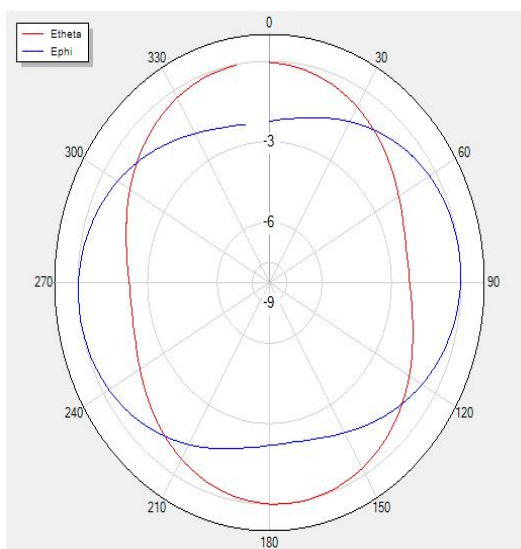
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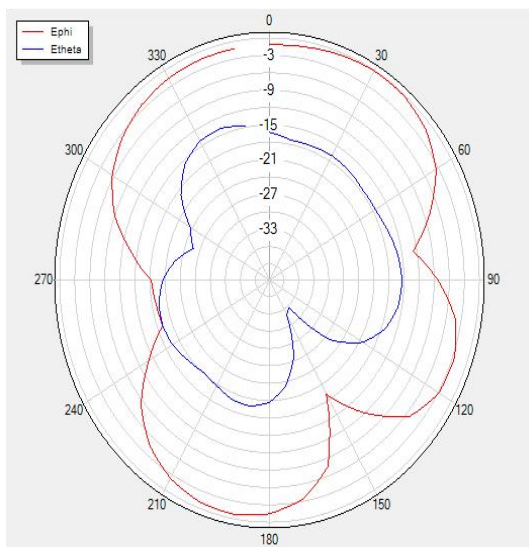
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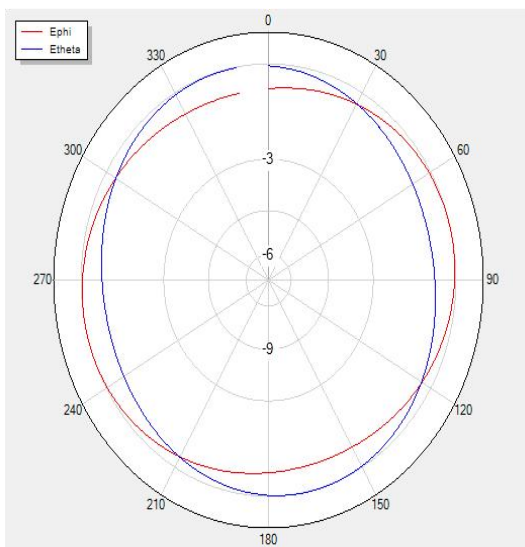
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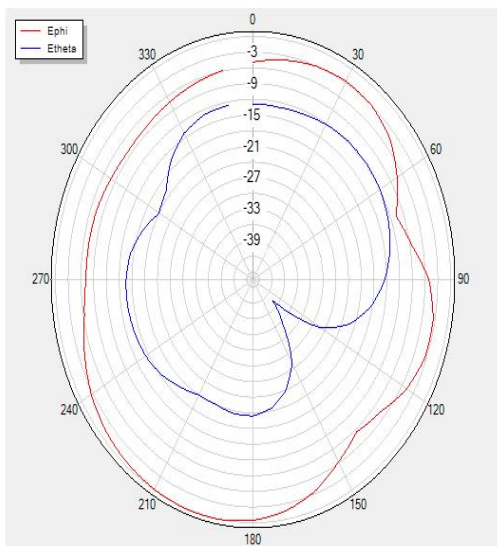
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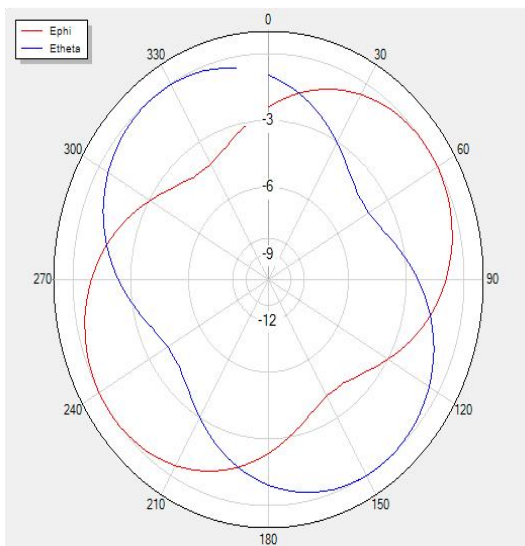
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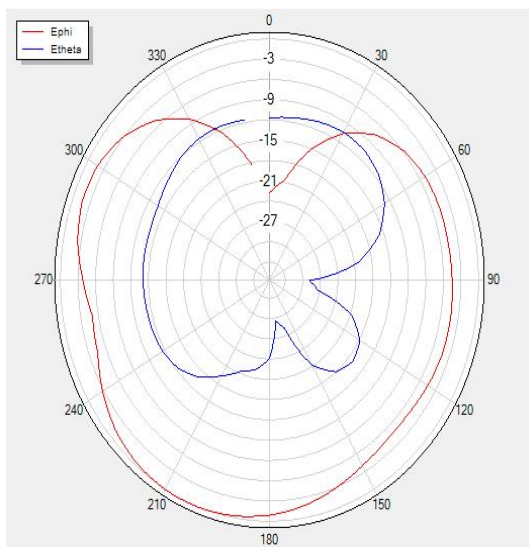
H Theta=90 freq=880MHz



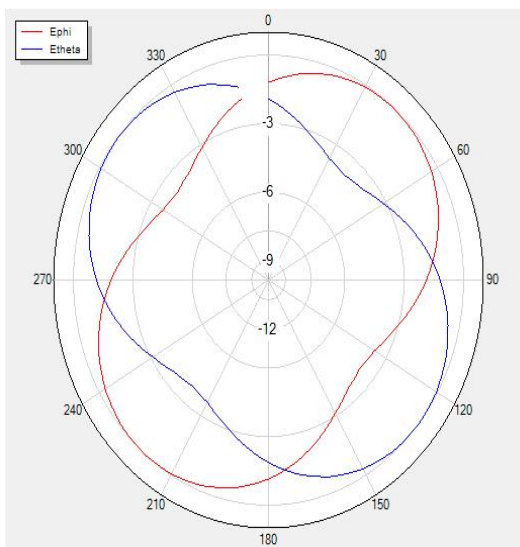
H Theta=0 freq=880MHz



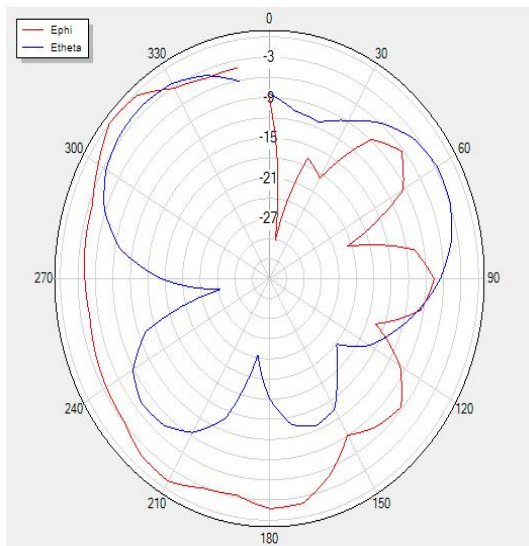
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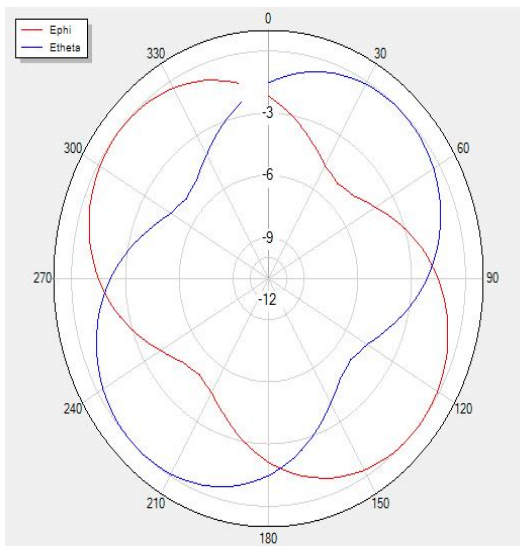
H Theta=0 freq=960MHz



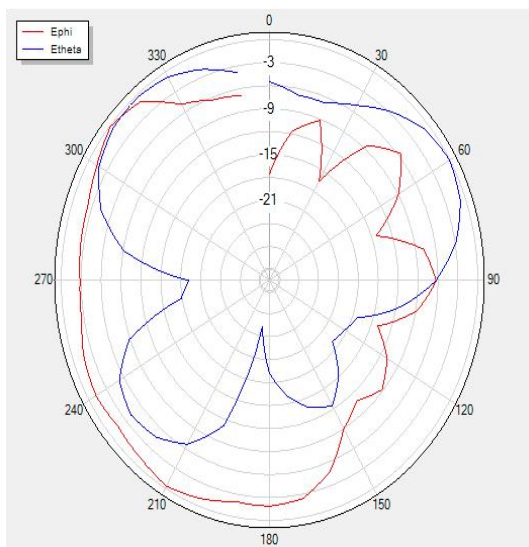
H Theta=90 freq=1720MHz



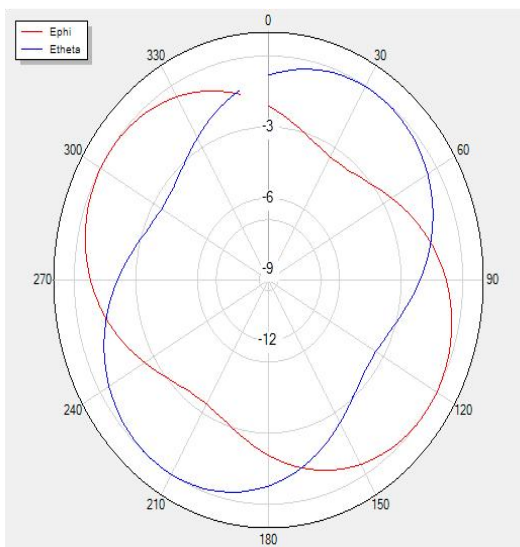
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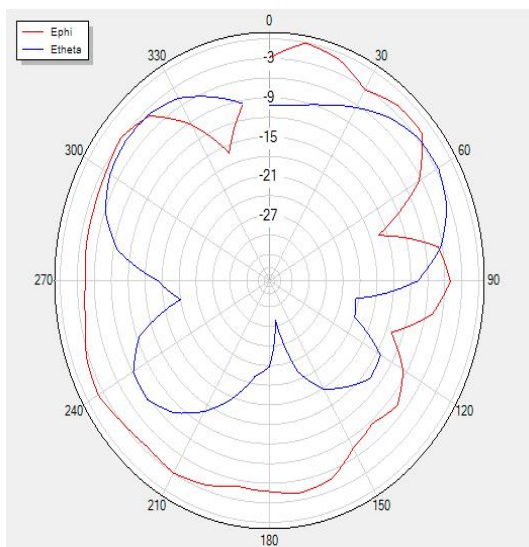
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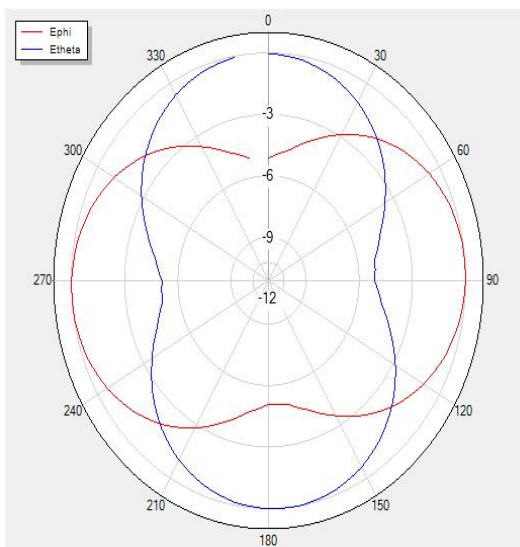
H Theta=0 freq=1760MHz



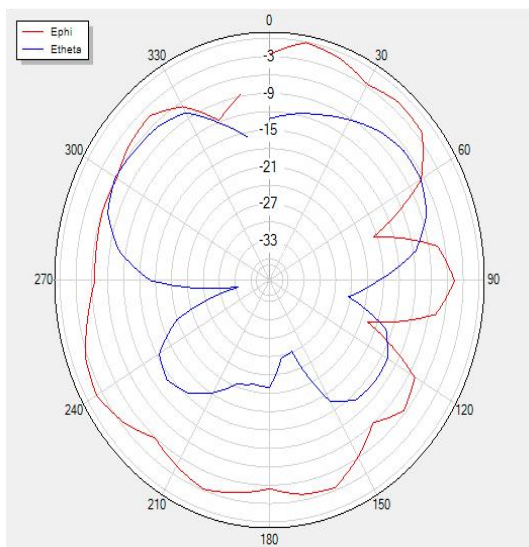
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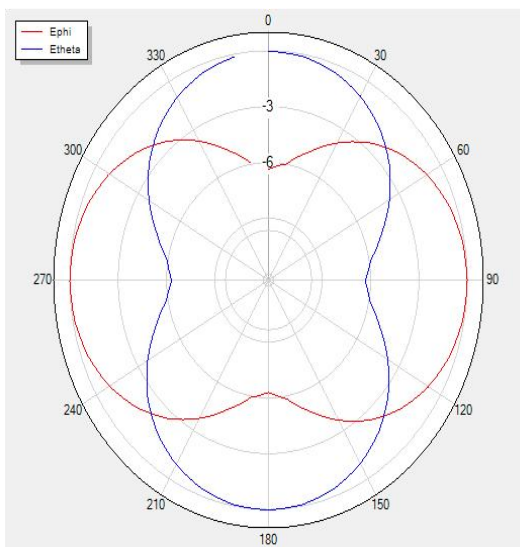
H Theta=0 freq=1880MHz



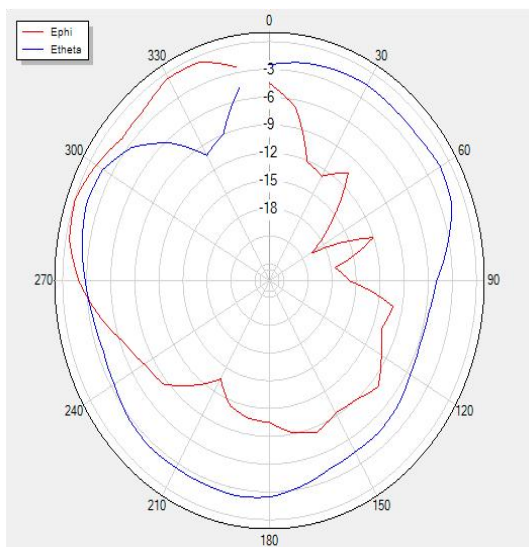
H Theta=90 freq=1960MHz



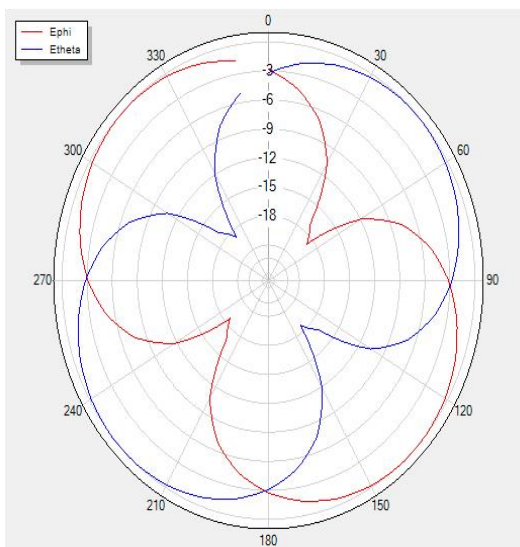
H Theta=0 freq=1960MHz



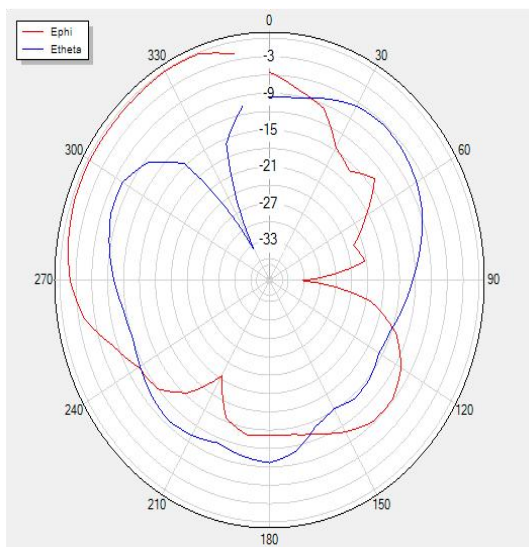
H Theta=90 freq=2360MHz



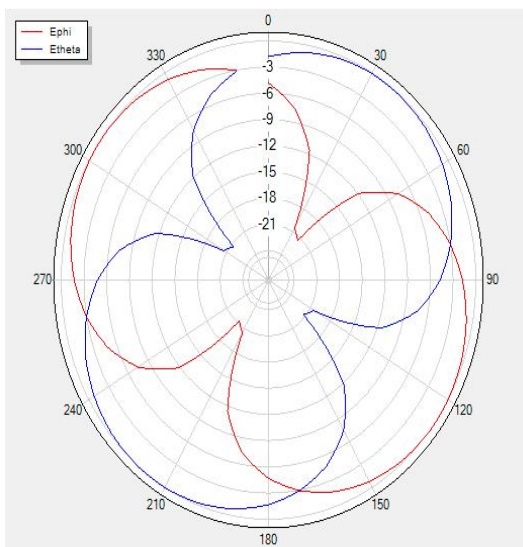
H Theta=0 freq=2360MHz



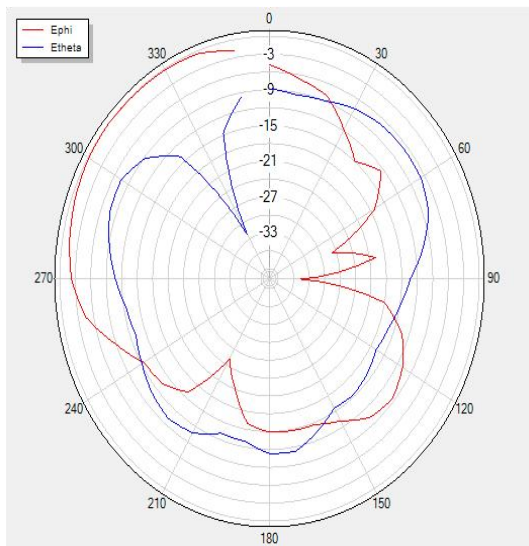
H Theta=90 freq=2540MHz



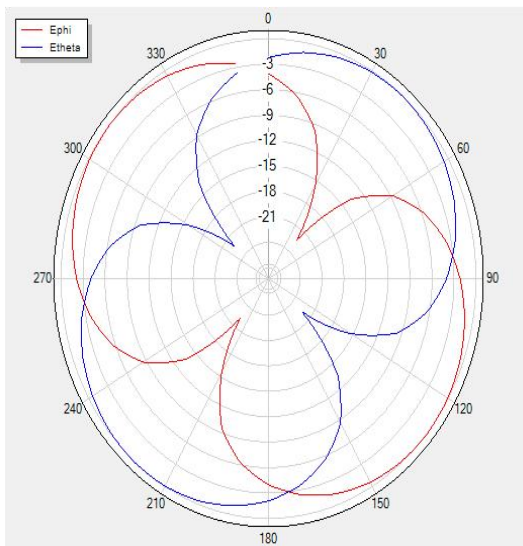
H Theta=0 freq=2540MHz



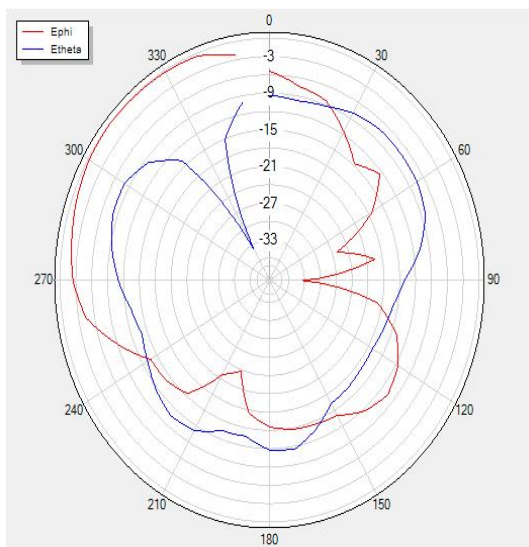
H Theta=90 freq=2580MHz



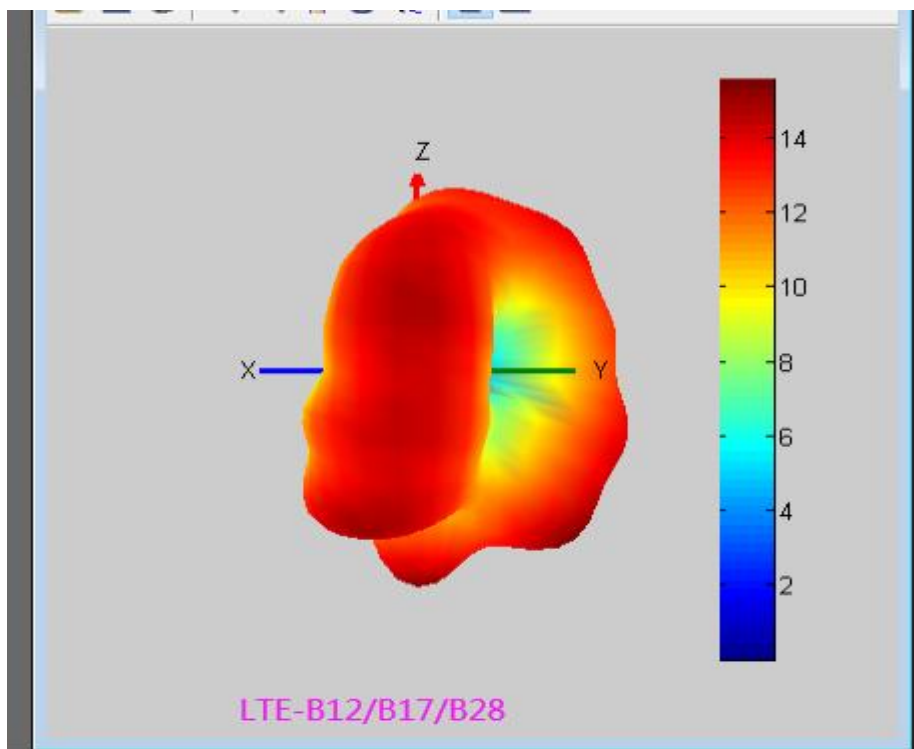
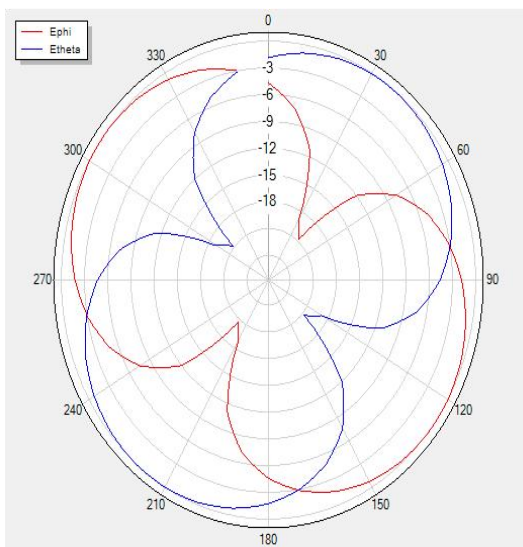
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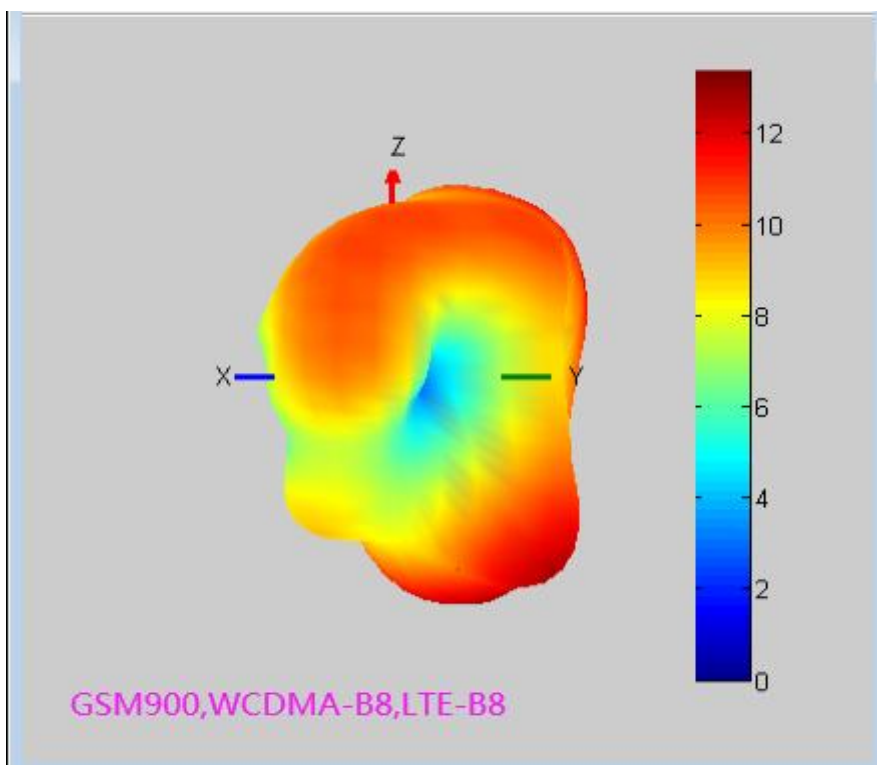
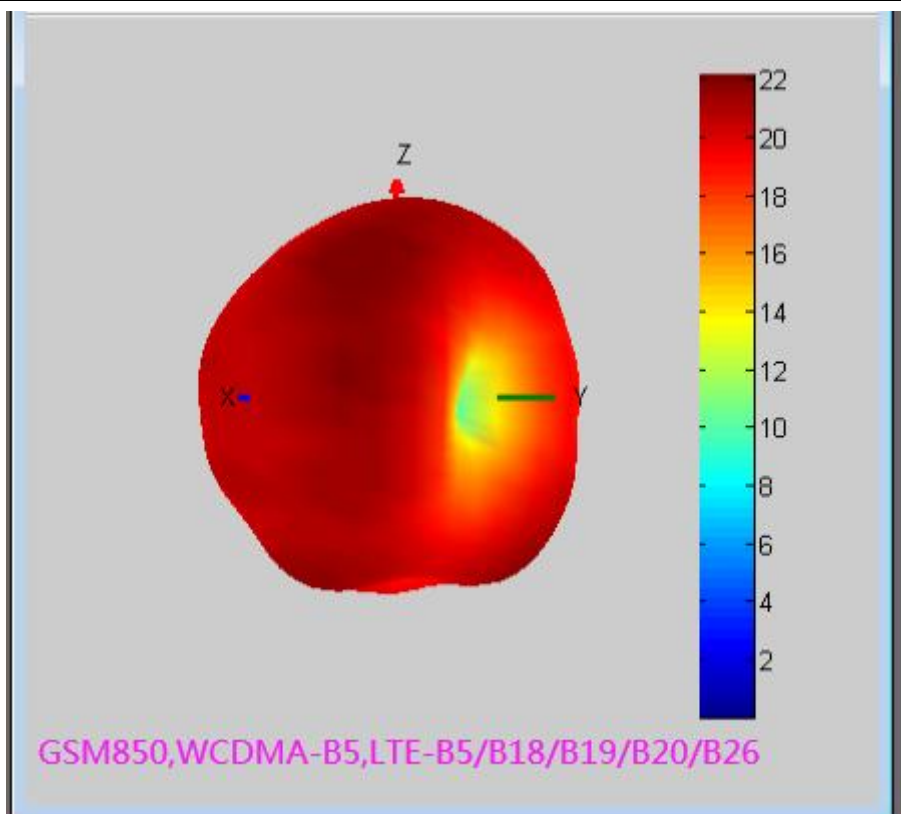


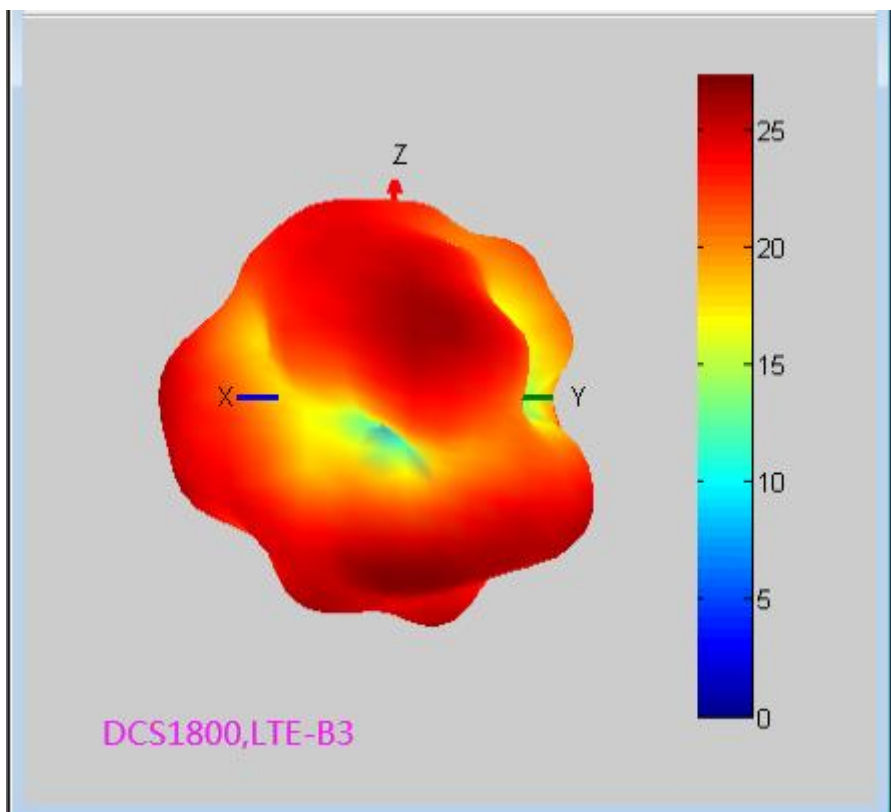
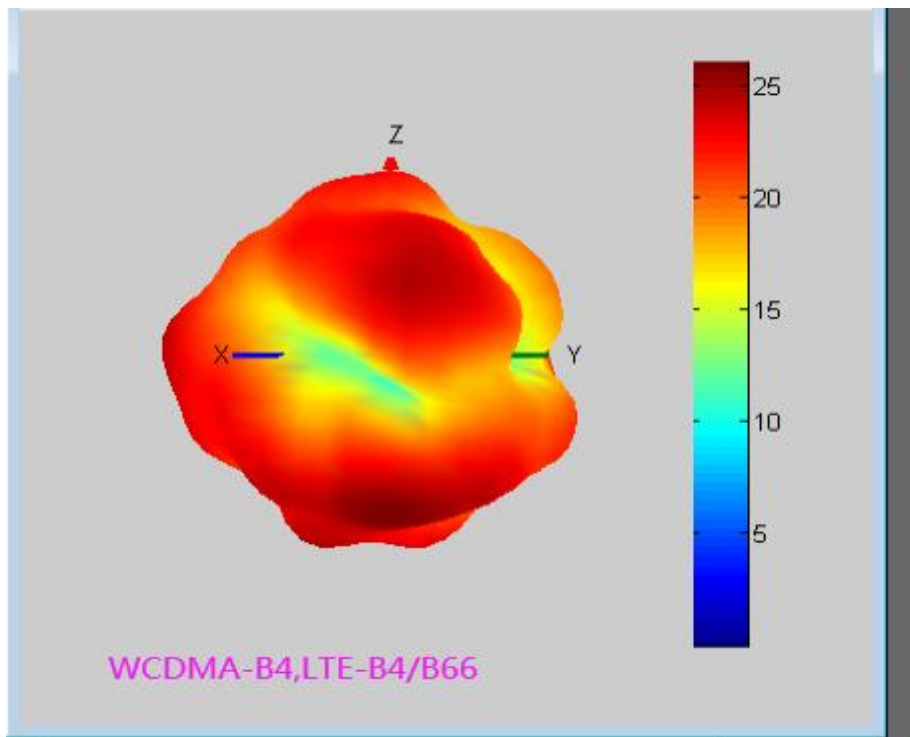
H Theta=90 freq=2600MHz

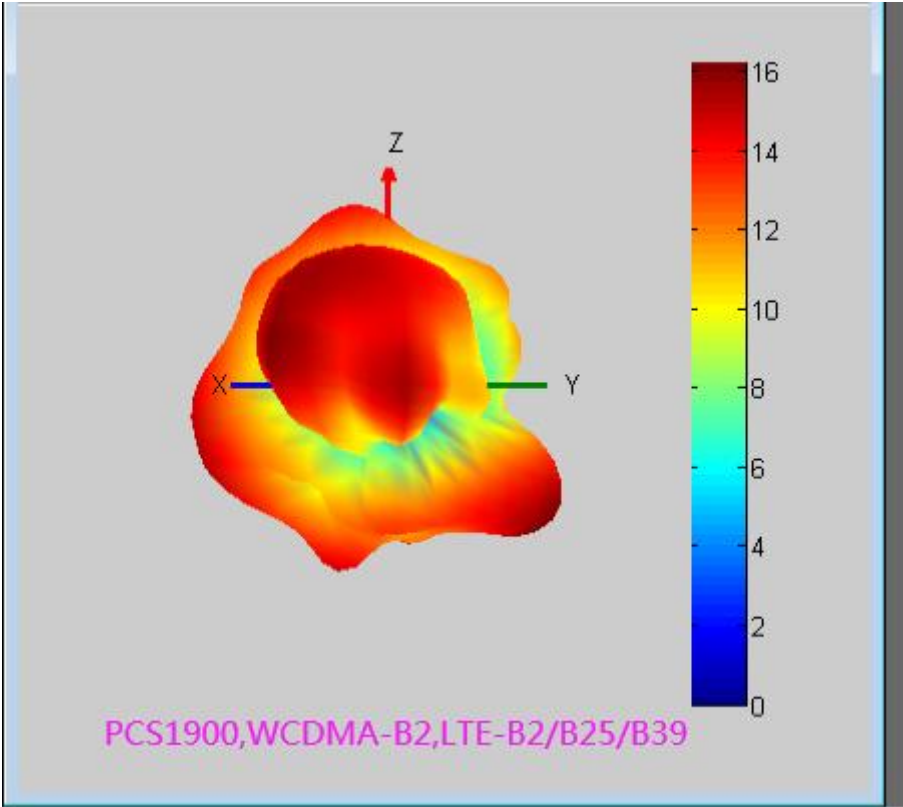


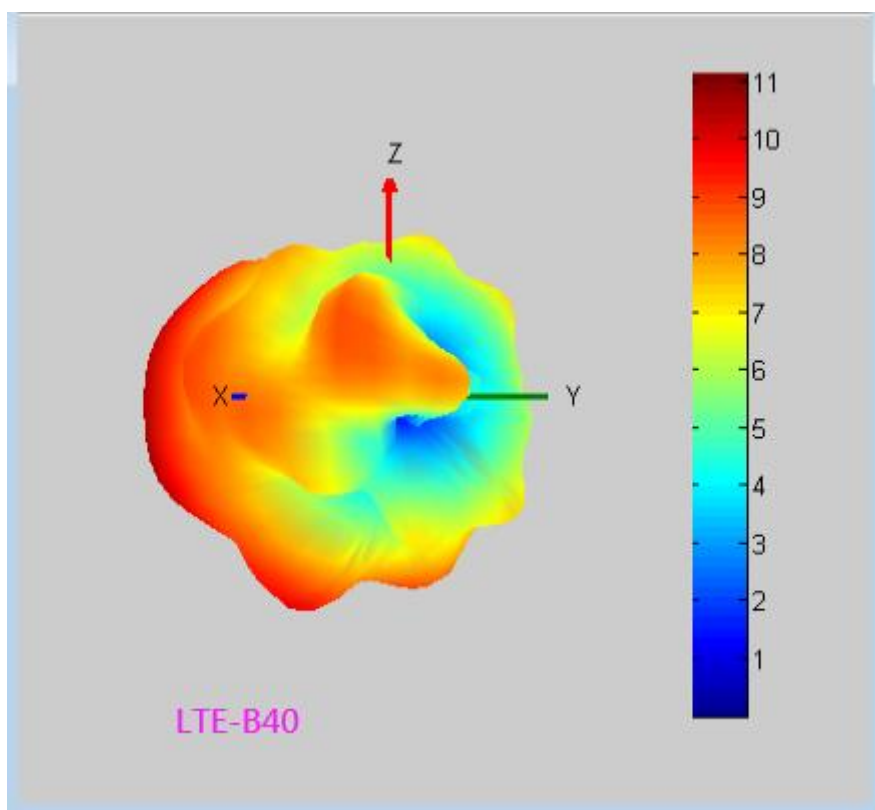
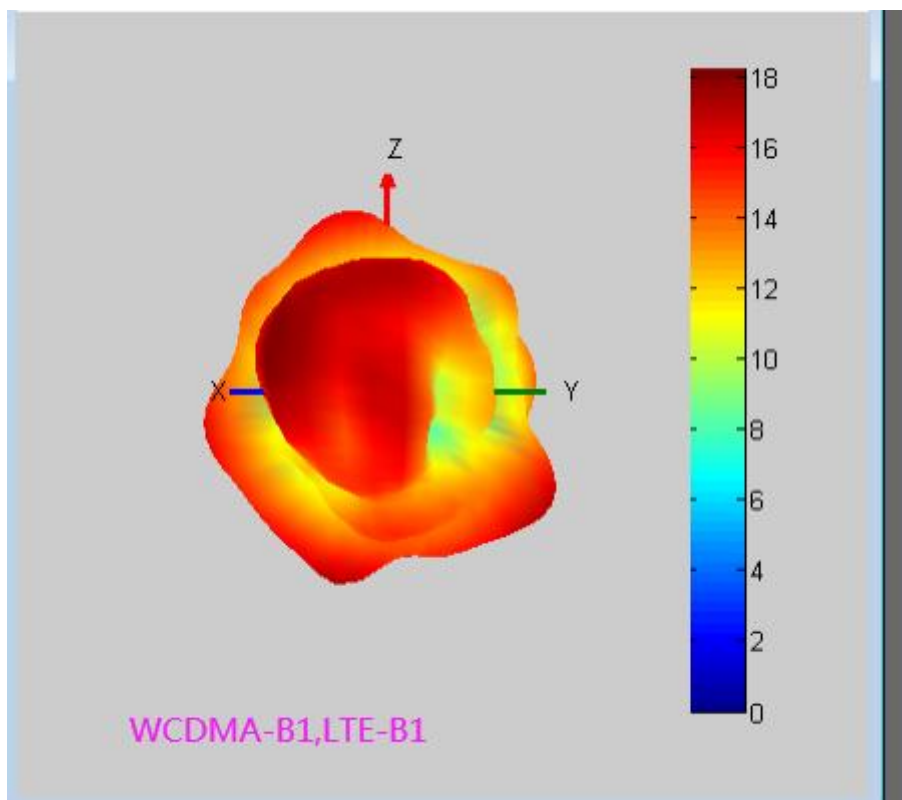
H Theta=0 freq=2600MHz

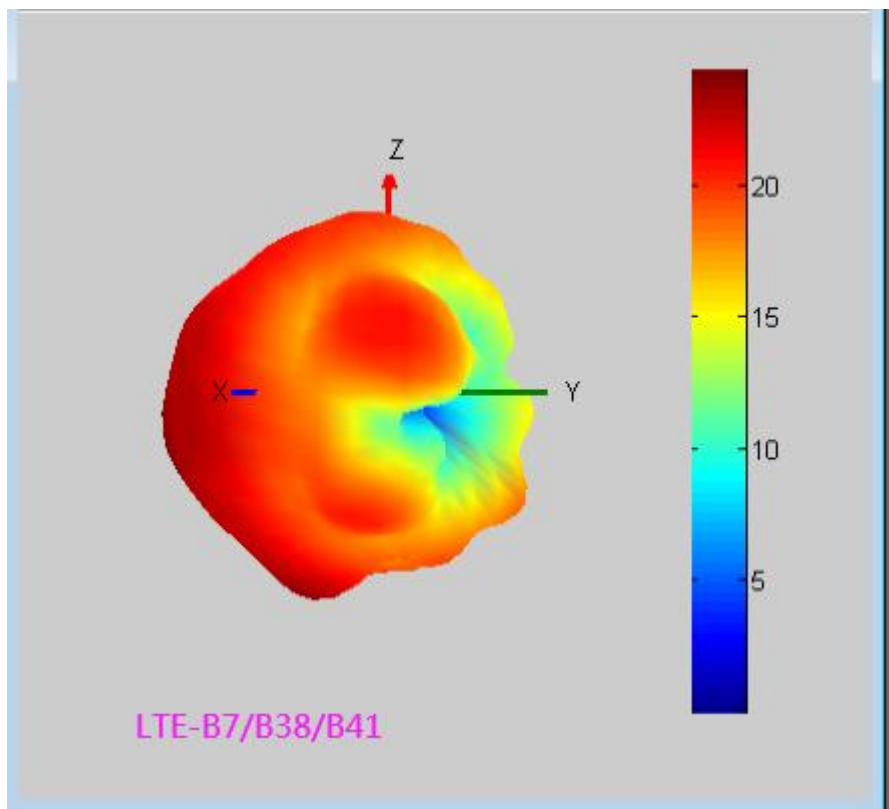








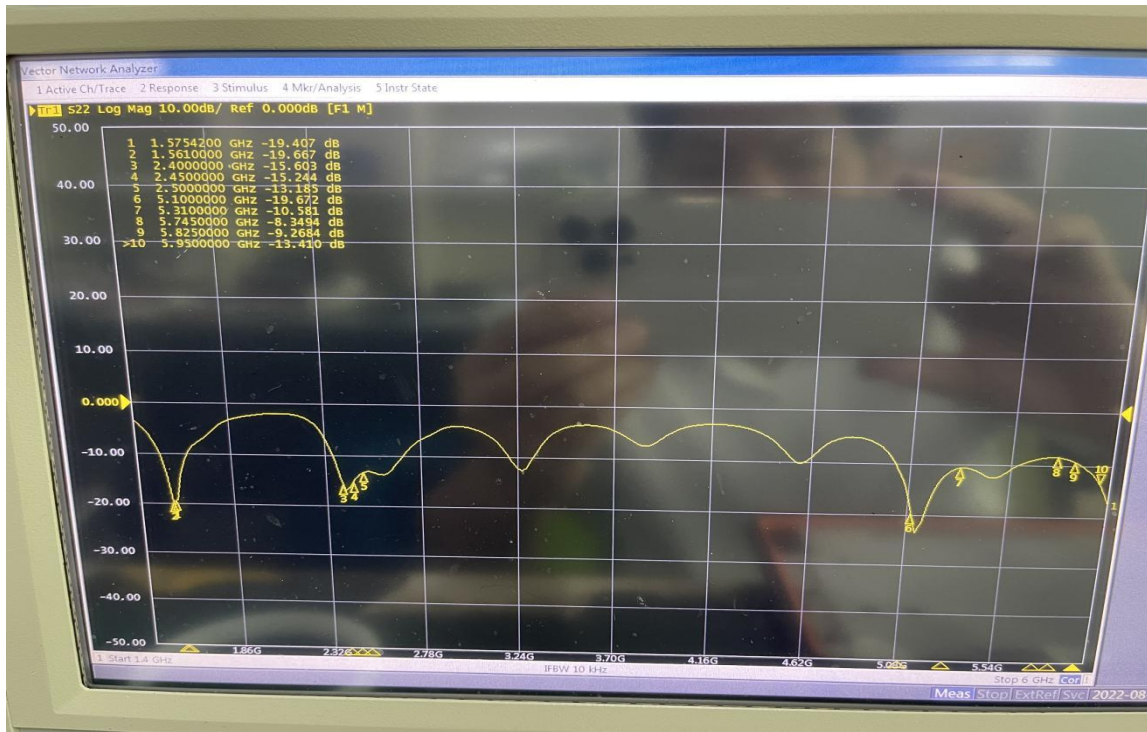


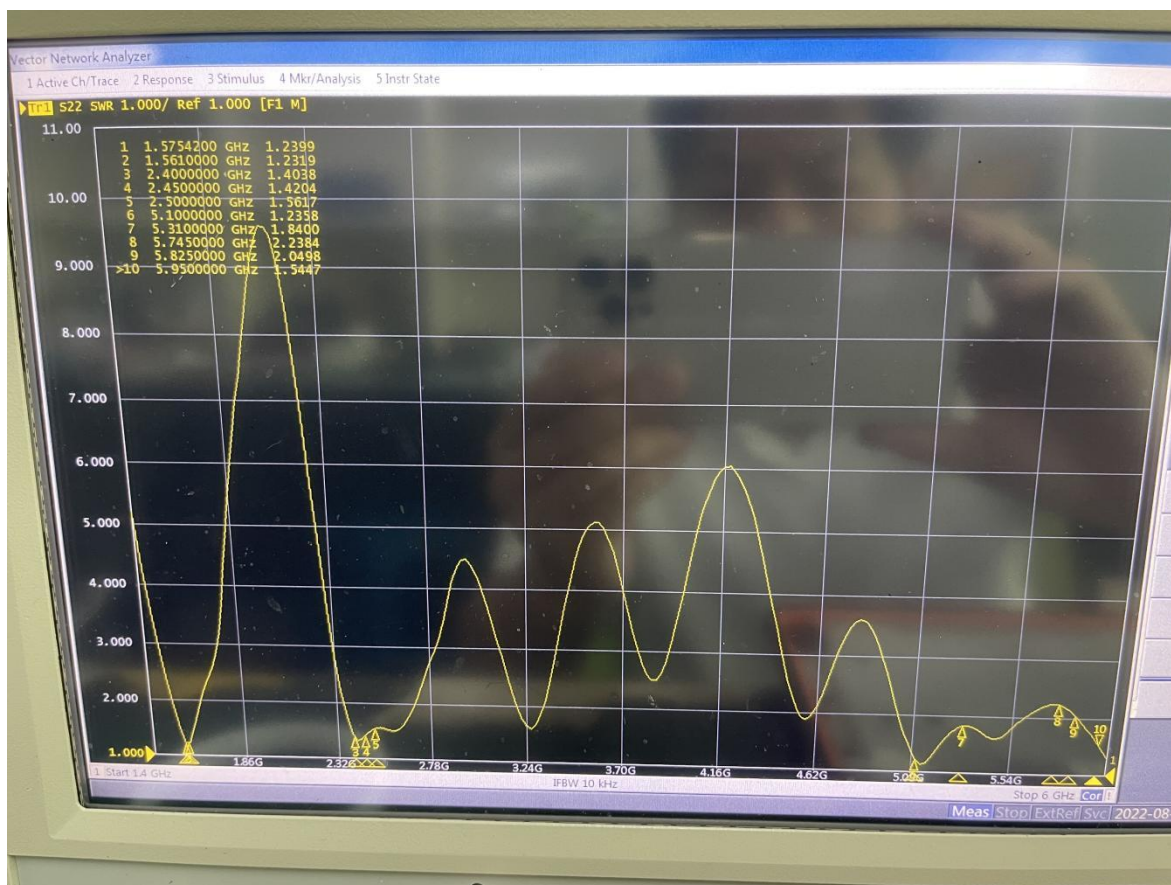


3.4 射频天线参数 Radio frequency Parameter

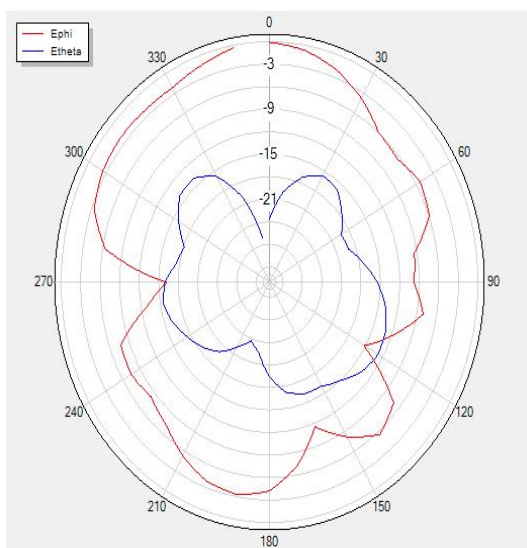
3.4.1GPS/WIFI/BT 频段(Working frequency band):

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

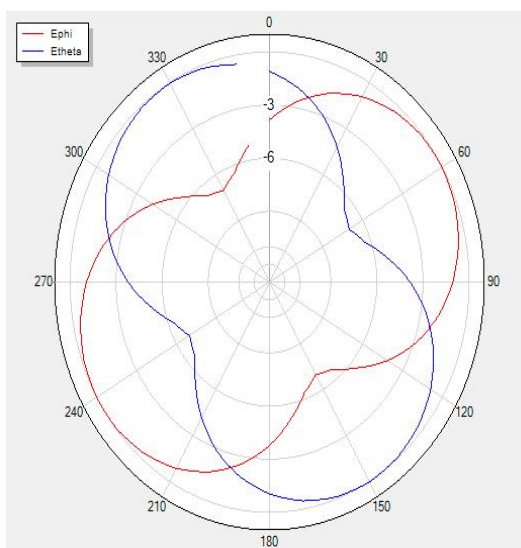




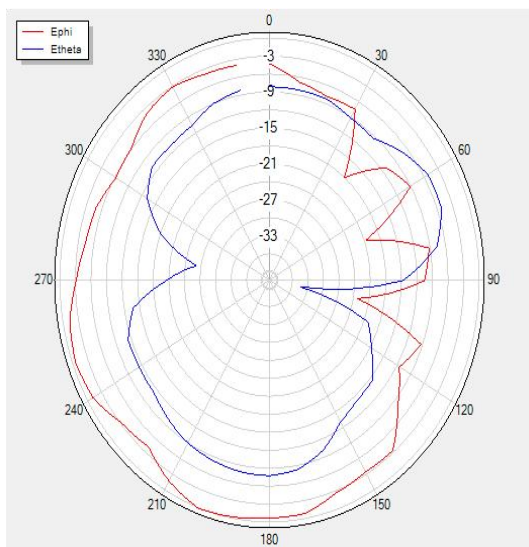
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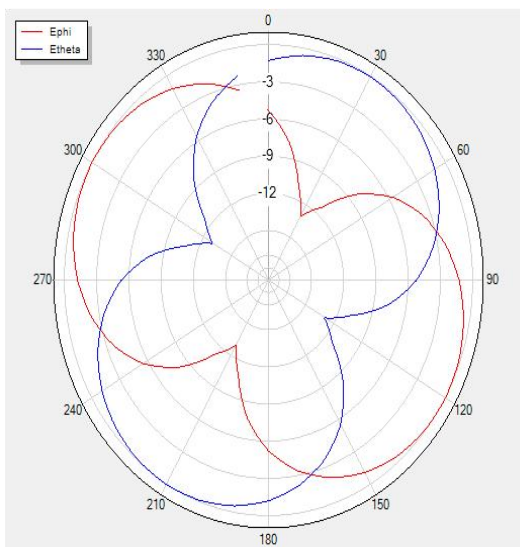
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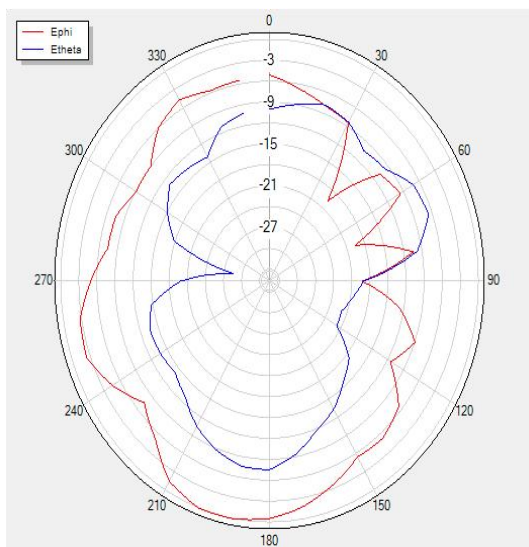
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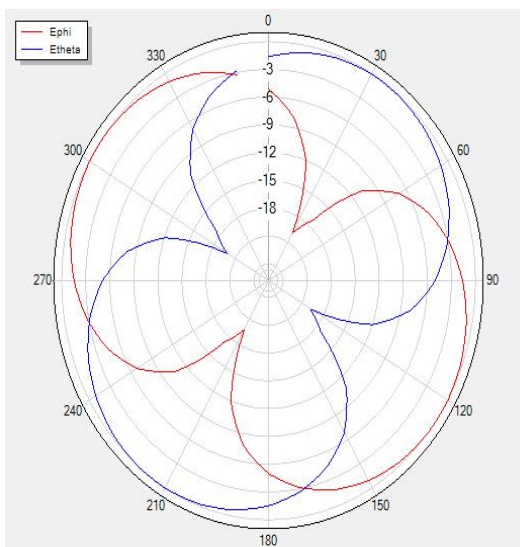
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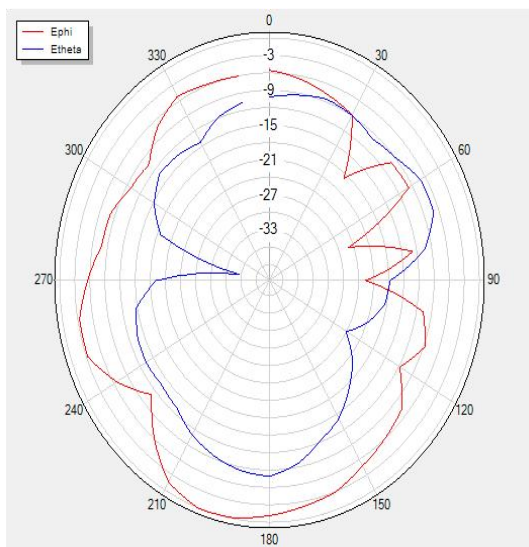
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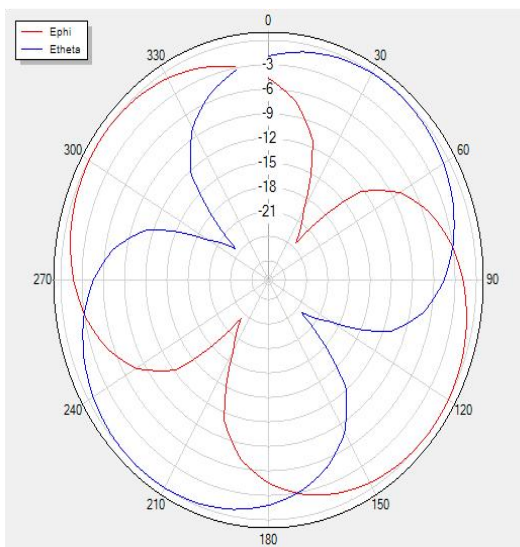
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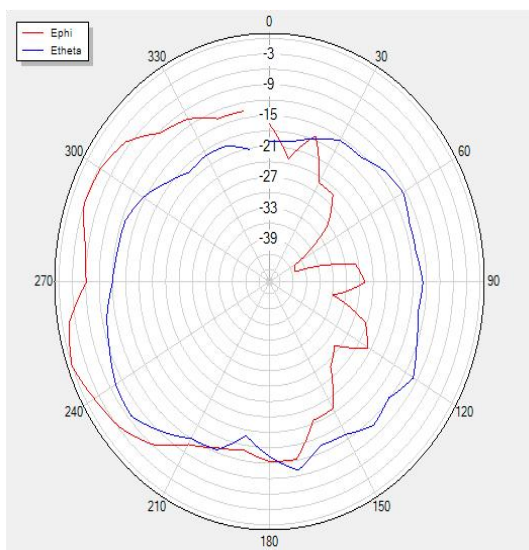
H Theta=90 freq=2480MHz



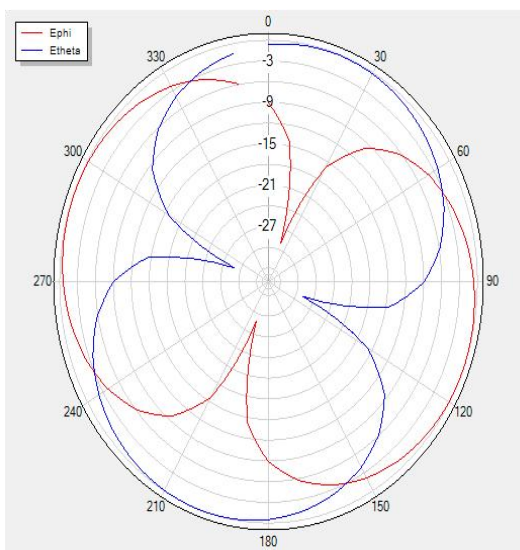
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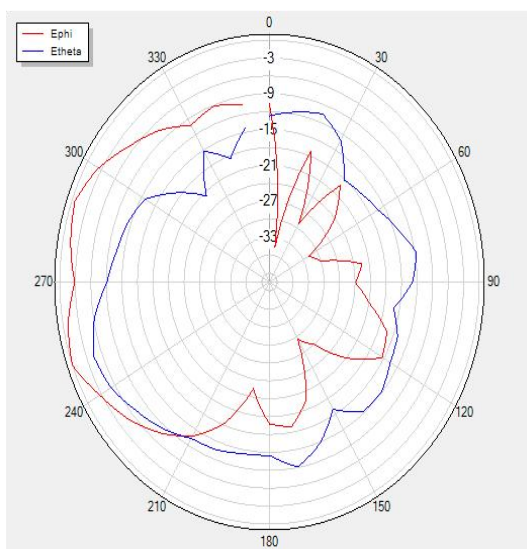
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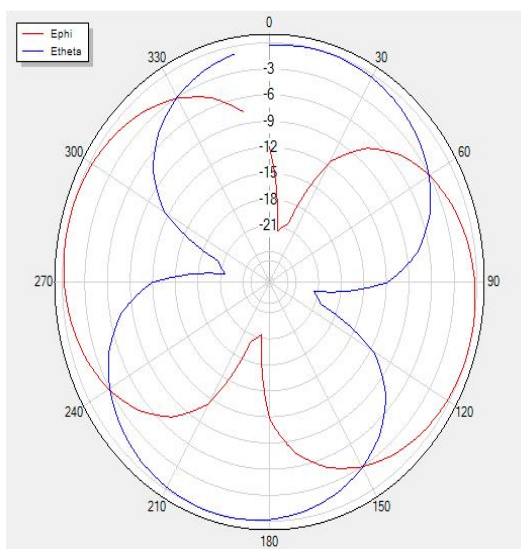
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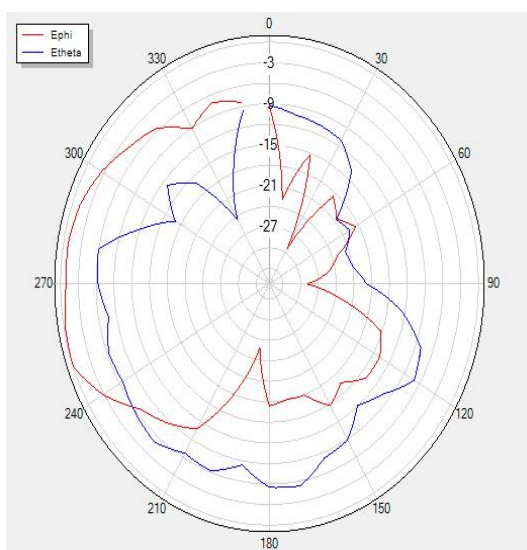
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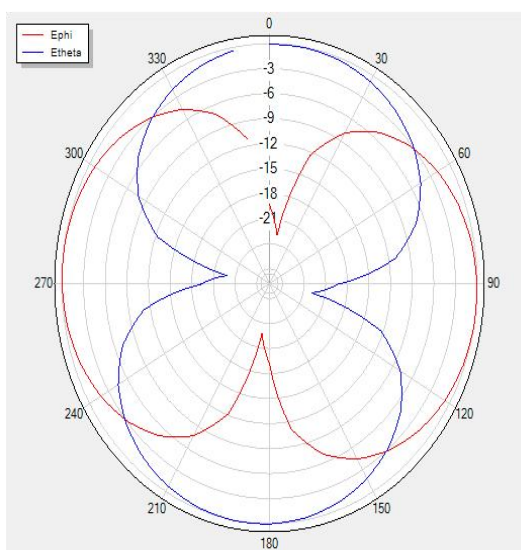
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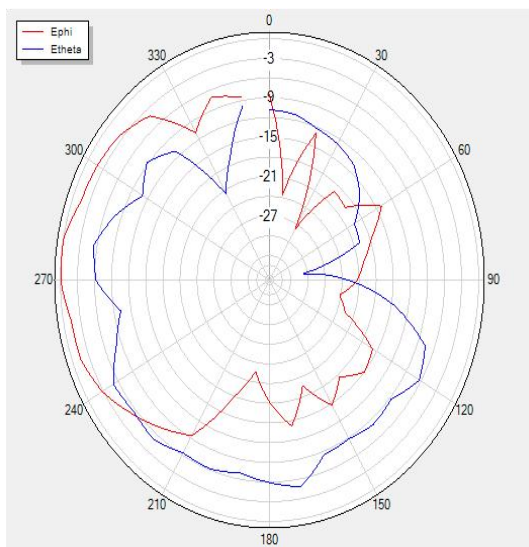
H Theta=90 freq=5600MHz



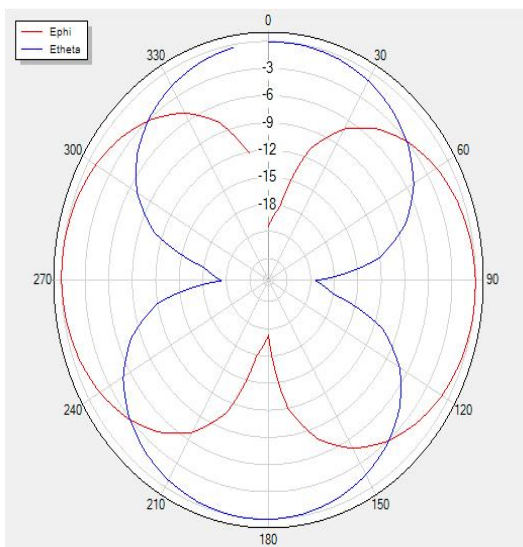
H Theta=0 freq=5600MHz

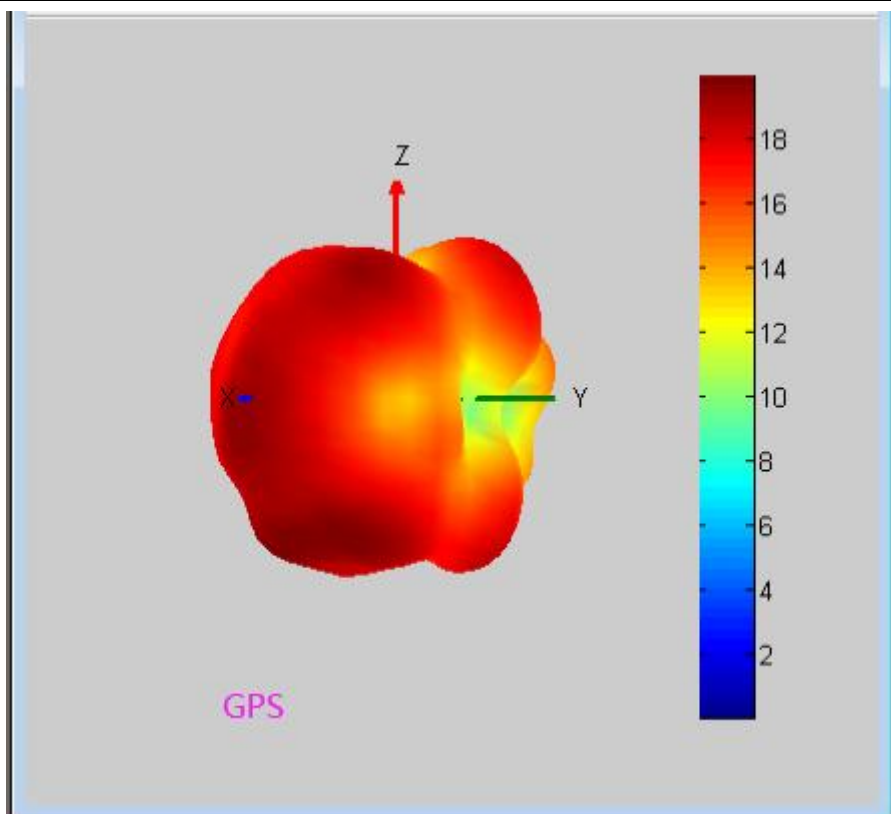


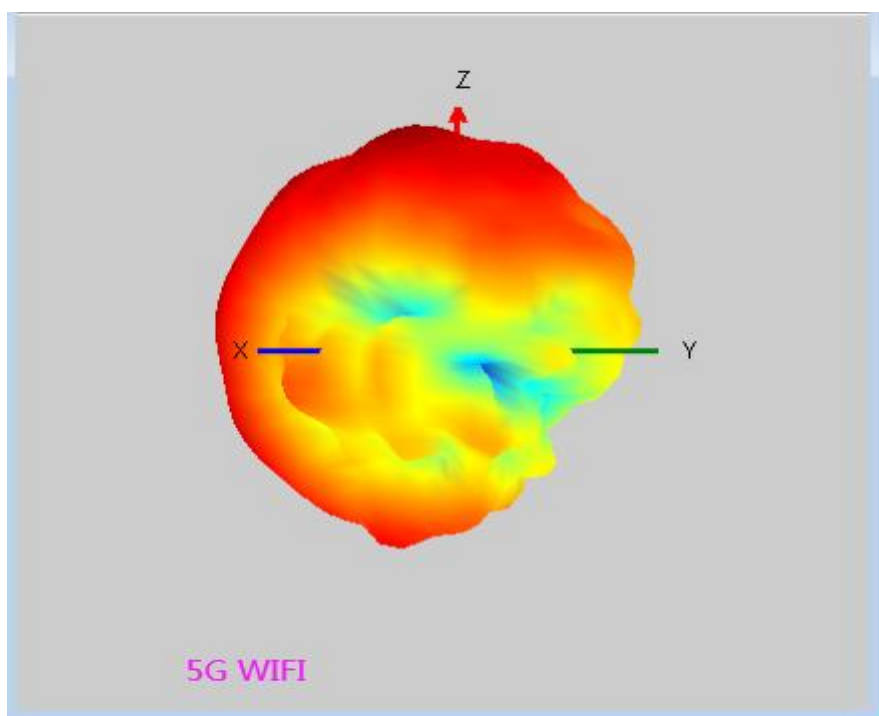
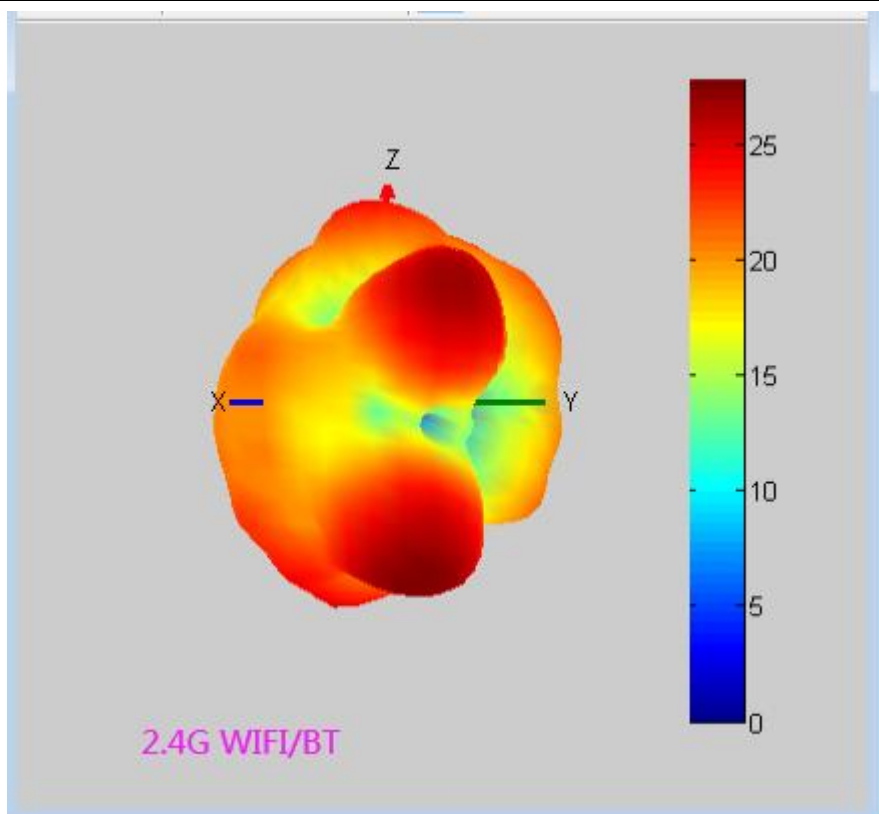
H Theta=90 freq=5800MHz



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