

# Antenna\_Performance\_

## Description 20230710\_N16

### Antenna Performance Description

Applicant: Xiaomi Communications Co., Ltd

Product description: Mobile Phone

**Model Name:2312DRA50G**

FCC ID: 2AFZZRA50G

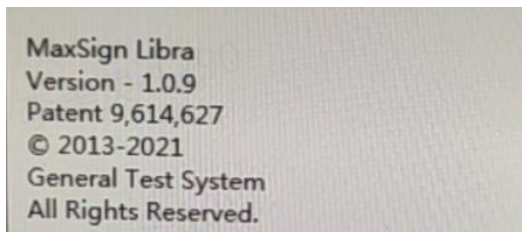
Test date: 2023/07/10

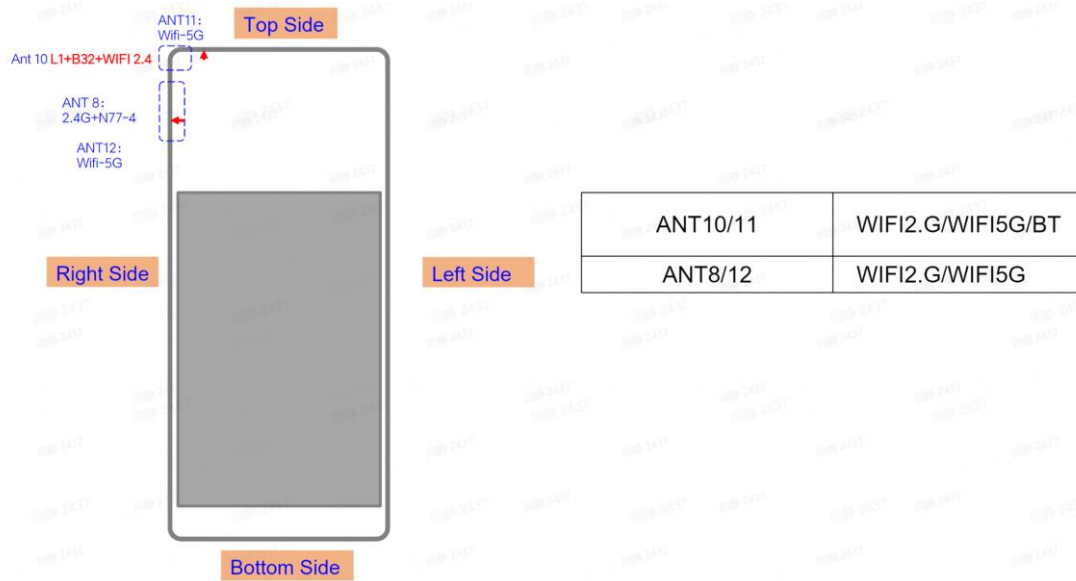
Antenna	Model Name	Antenna Pattern	Antenna Type	Manufacturer	Test party of Antenna gain
ANT10/11	AL HZH5.9	Metal Frame	IFA Antenna	<p>Huizhou Winone Precision Technology Co.,Ltd. (Address: xinwanda Industrial Park, Dongpo Avenue, Yuanzhou Town, BOLUO County)</p> <p>Guilin Lingyi Manufacturing Co., Ltd. Yangshiba Road, Yangtang Industrial (Address: Park, Guilin Economic Development Zone, Guilin City, Guangxi Zhuang Autonomous Region, China)</p>	<p>BeiJing Innowave Communication Technology Co.,Ltd</p> <p>Luxshare Precision Industry Co., Ltd</p>
ANT8/12	AL HZH5.9	Metal Frame	IFA Antenna	<p>Huizhou Winone Precision Technology Co.,Ltd. (Address: xinwanda Industrial Park, Dongpo Avenue, Yuanzhou Town, BOLUO County)</p> <p>Guilin Lingyi Manufacturing Co., Ltd. Yangshiba Road, Yangtang Industrial</p>	<p>BeiJing Innowave Communication Technology Co.,Ltd</p> <p>Luxshare Precision Industry Co., Ltd</p>

				(Address:Park,Guilin Economic Development Zone,Guilin City,Guangxi Zhuang Autonomous Region,China)	
NFC (38.5mm×24mm×0.2mm)	FPC antenna	N/A	Coil Antenna	Kunshan Innowave Communication Technology Co., Ltd. (Building H, Jintudi Manufacturing Park, No. 55 Shengchuang Road, Yushan Town, Kunshan City, Suzhou City, Jiangsu Province)  Shanghai Deman Electronic Technology Co., Ltd. (Plant 3, No. 1259, Pingan Road, Zhuanqiao Town, Minhang District, Shanghai)	N/A

Test instrument:GTS2800

Software version





## ANT10/11:

Band	ant10&ant11	
	Effi.(dBi)	peak gain(dBi)
2.4G	-6.6	-3.1
5G (5.15-5.25GHZ)	-5.8	-2
5G (5.25-5.35GHZ)	-5.7	-1.4
5G (5.47-5.725GHZ)	-5.5	-1.5
5G (5.725-5.85GHZ)	-5.8	-1.6

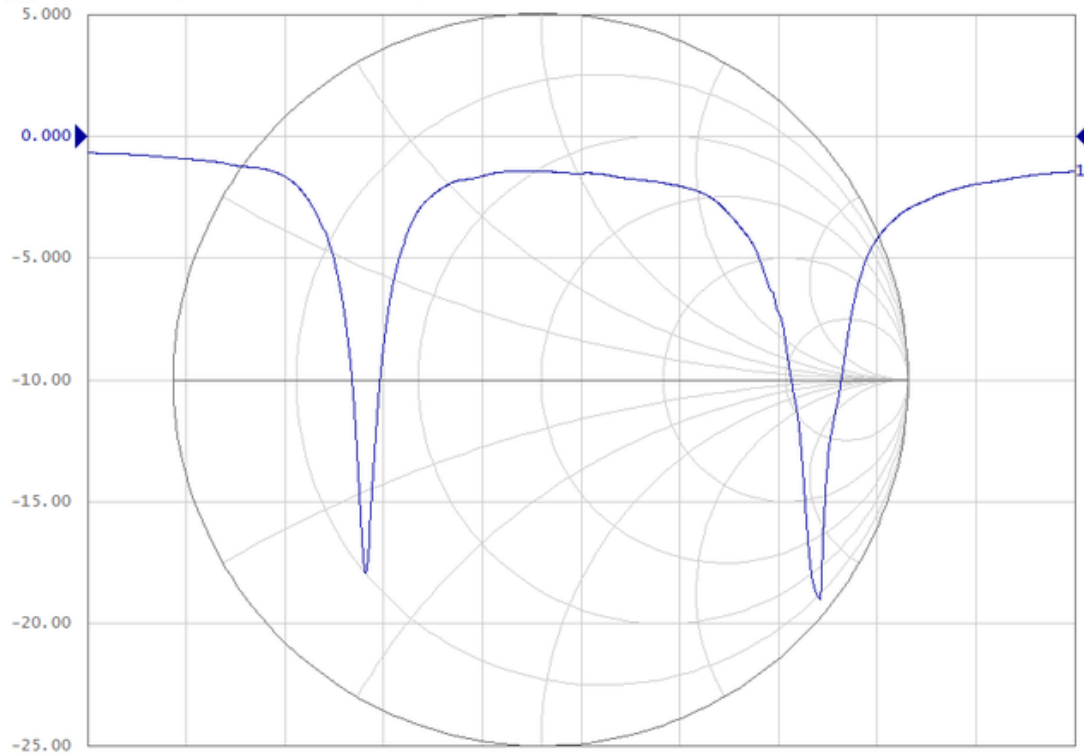
## S11:

2.4G

E5071C Network Analyzer

1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State

Tr1 S11 Log Mag 5.000dB/ Ref 0.000dB [F2]  
▶ Tr2 S11 Smith (R+jX) Scale 1.000U [F2 off]



1 Start 1 GHz

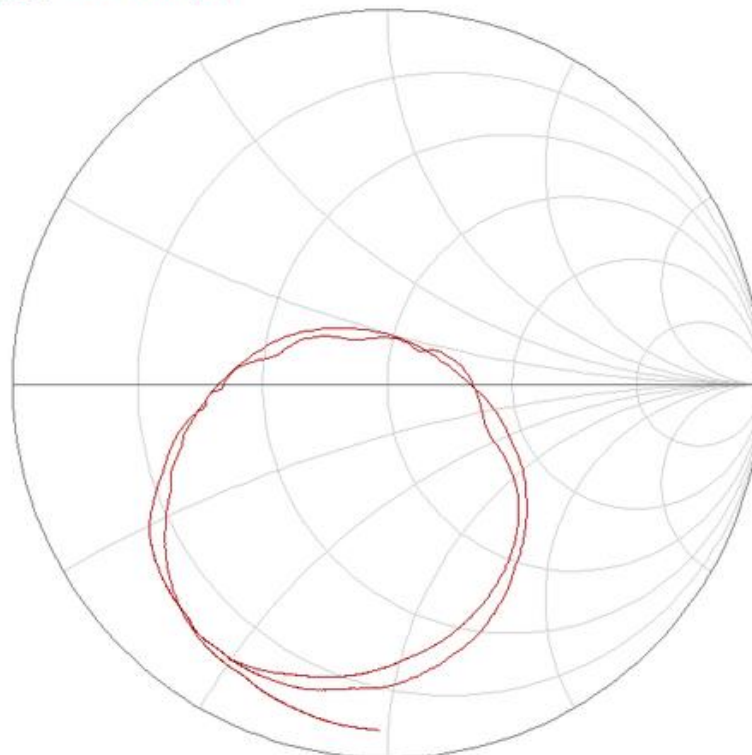
IFBW 70 kHz

Stop 3 GHz PEExt C7 I

E5071C Network Analyzer

1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State

▶ Tr2 S11 Smith (R+jX) scale 1.000U [F2]



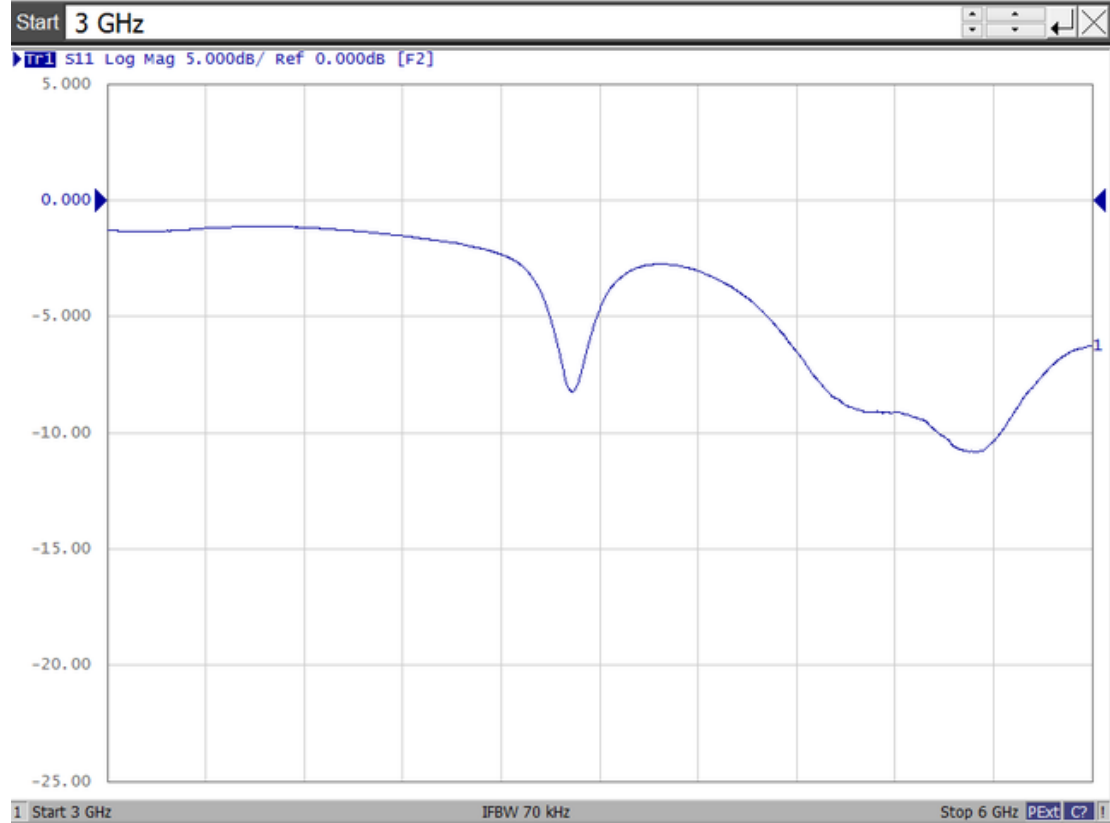
IFBW 70 kHz

Stop 3 GHz PEExt C7 I

# 5G

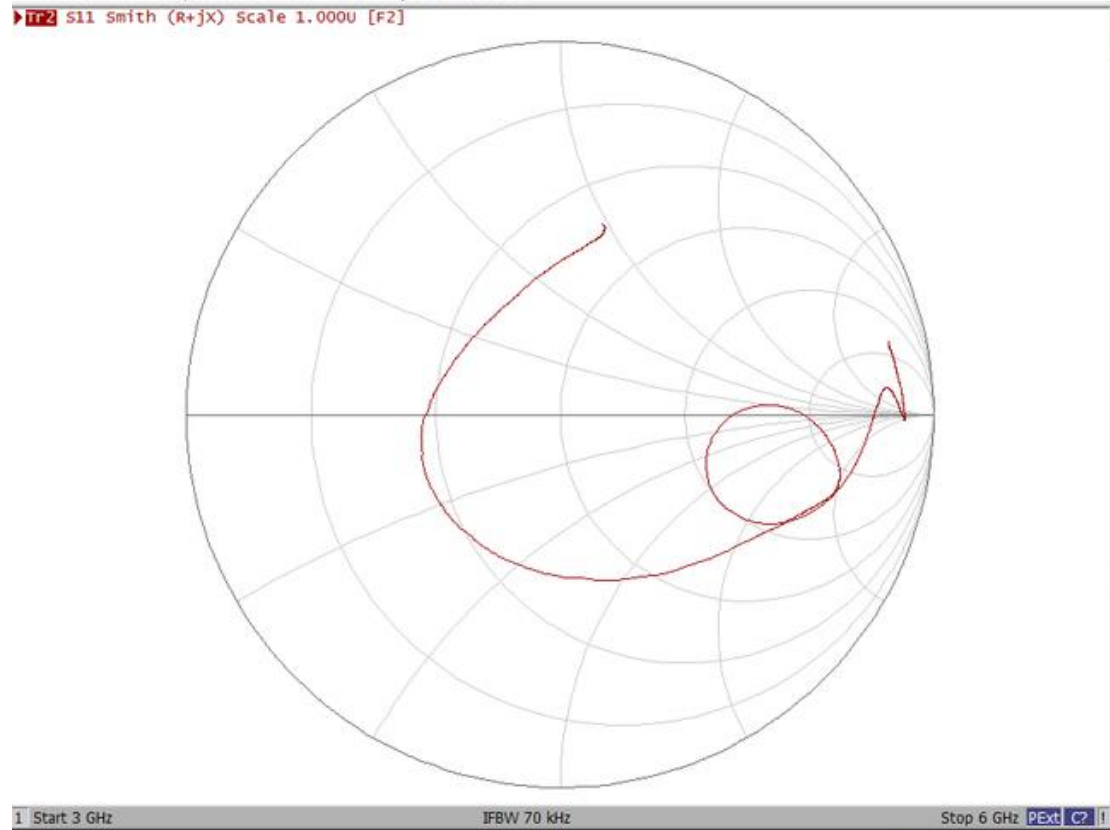
E5071C Network Analyzer

1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State



E5071C Network Analyzer

1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State

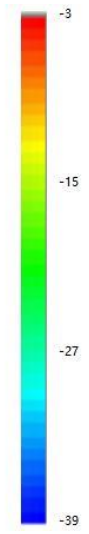
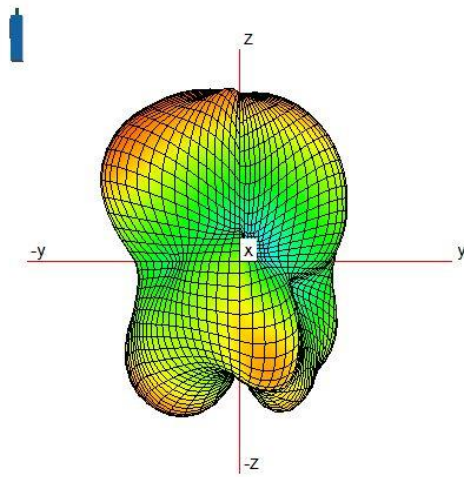
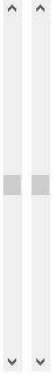


2460:

**Theta**

Azimuth:0  
Elevation:0  
Roll:0

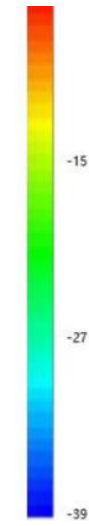
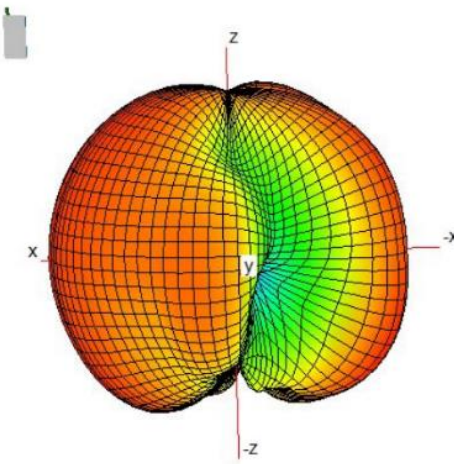
Zoom Scale



**Phi**

Azimuth:87  
Elevation:5  
Roll:1

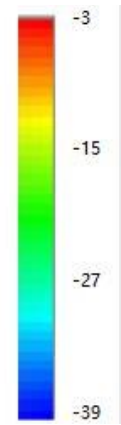
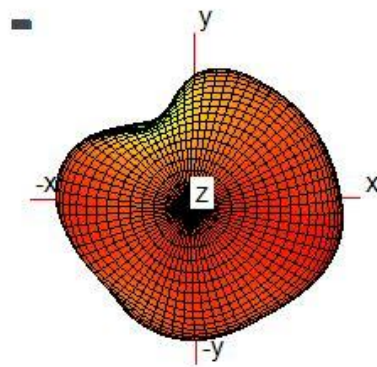
Zoom Scale



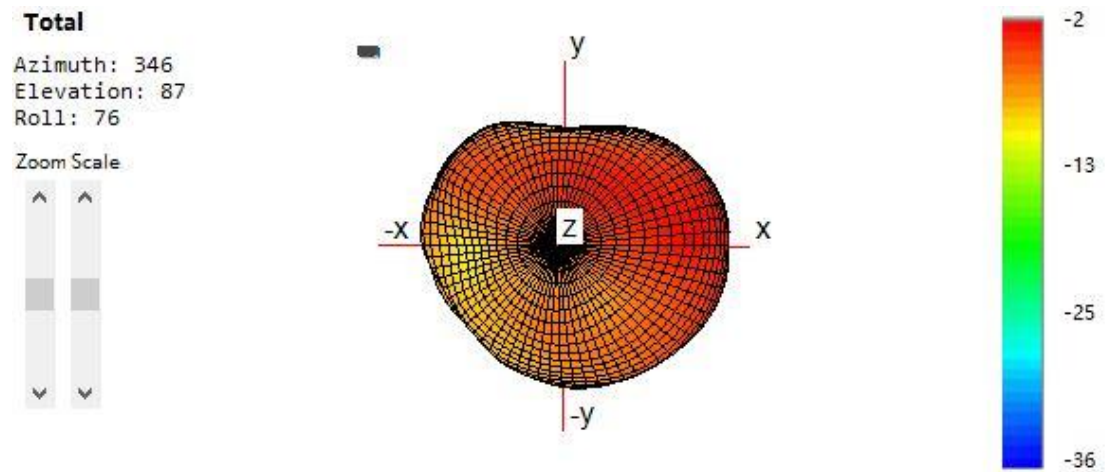
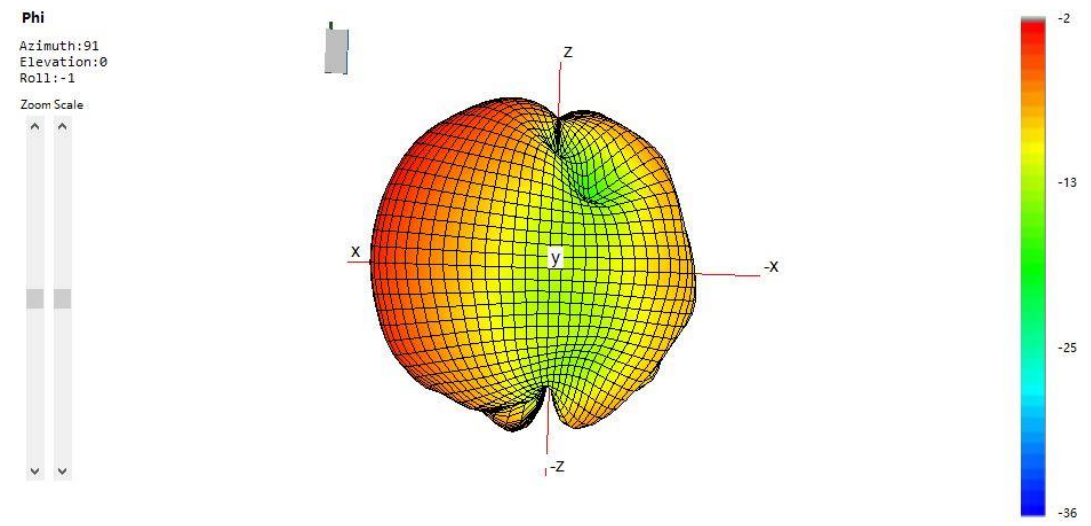
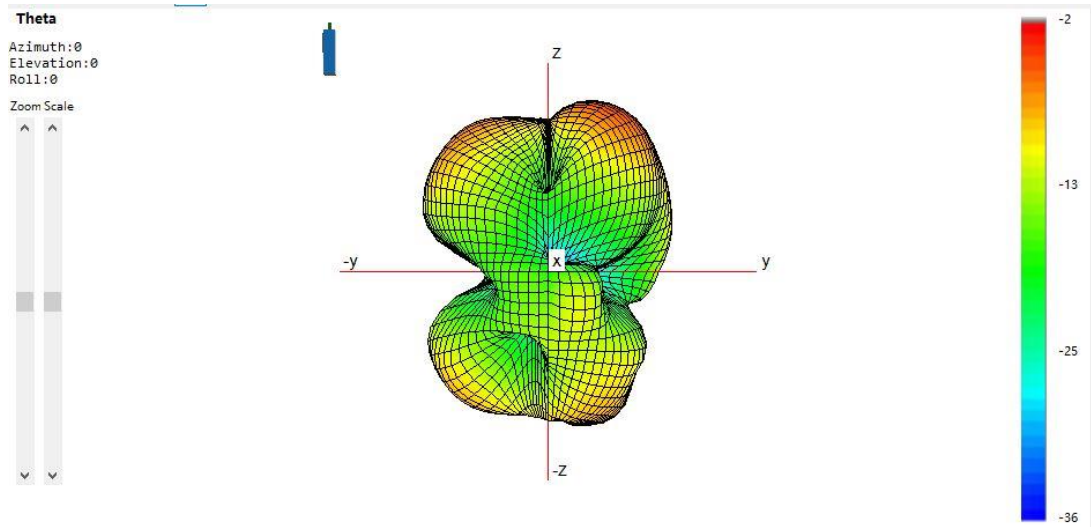
**Total**

Azimuth: 66  
Elevation: 86  
Roll: 156

Zoom Scale



5240:



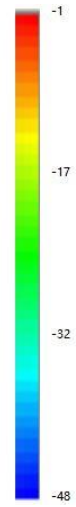
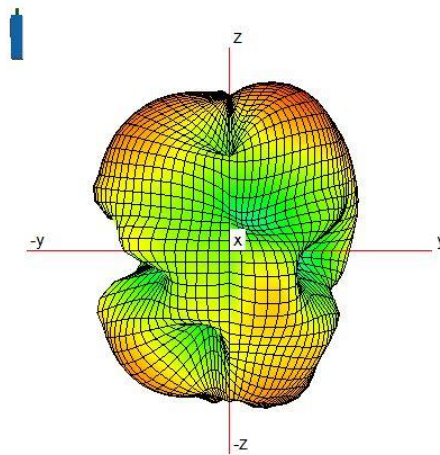


5340:

**Theta**

Azimuth: 0  
Elevation: 0  
Roll: 0

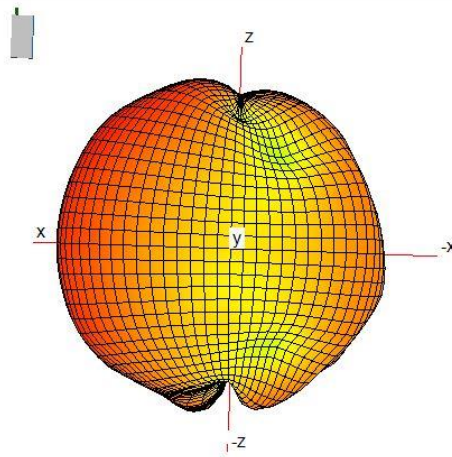
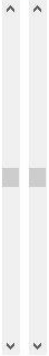
Zoom Scale



**Phi**

Azimuth: 91  
Elevation: 0  
Roll: -1

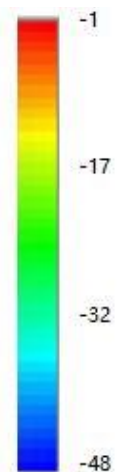
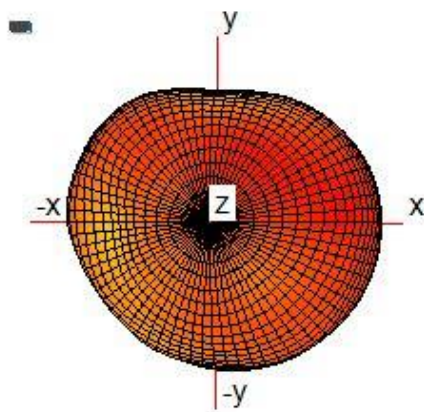
Zoom Scale



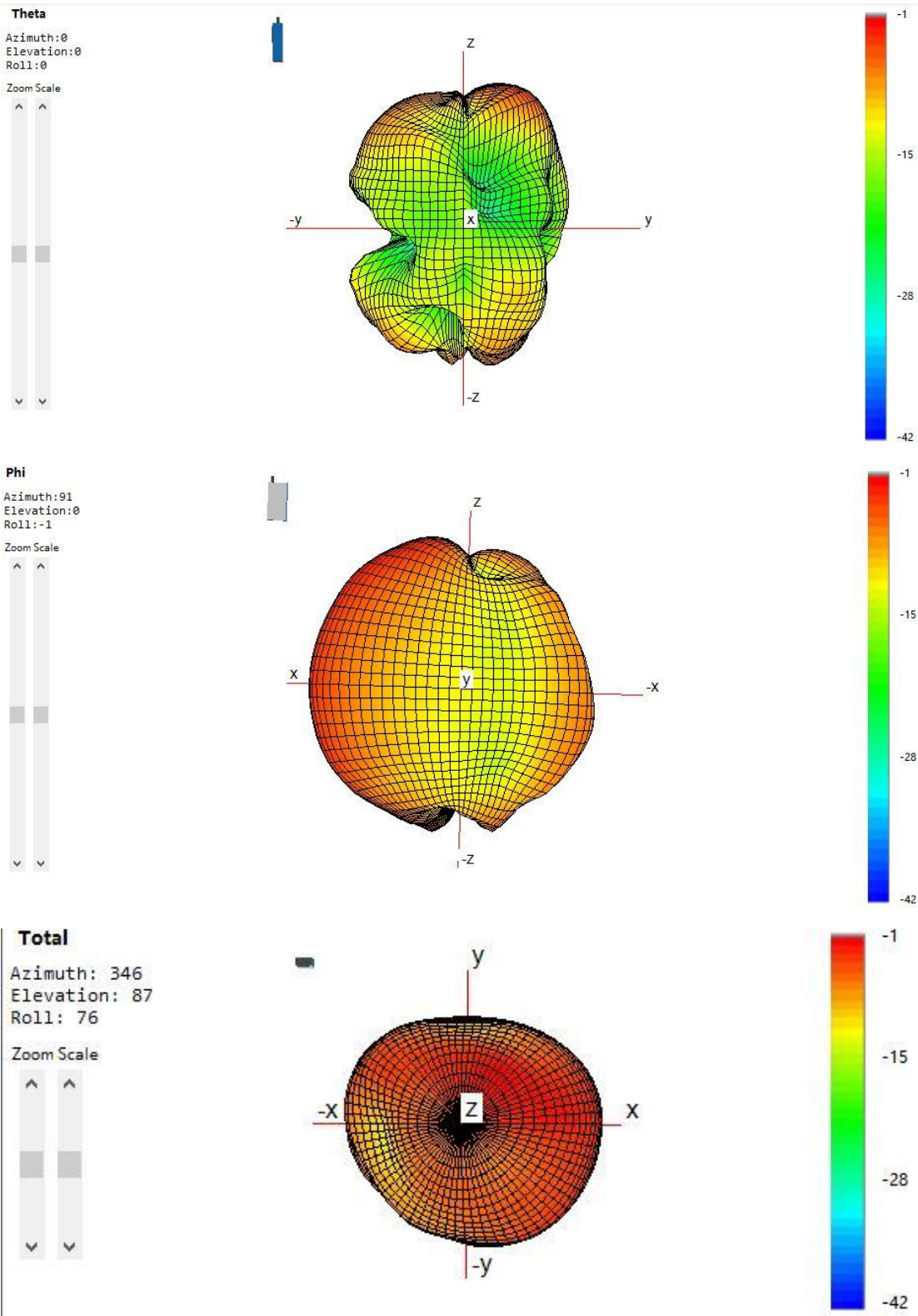
**Total**

Azimuth: 346  
Elevation: 87  
Roll: 76

Zoom Scale



5580:

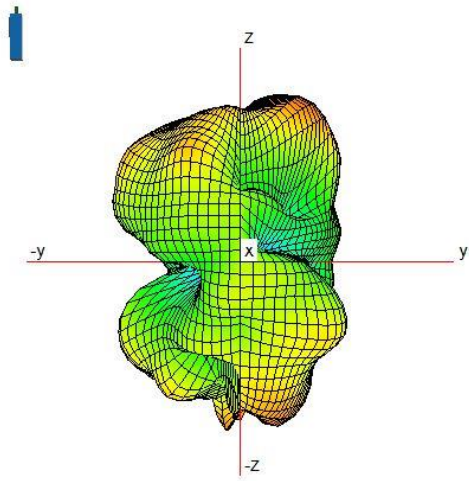


5840:

**Theta**

Azimuth: 0  
Elevation: 0  
Roll: 0

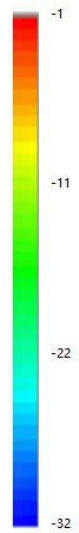
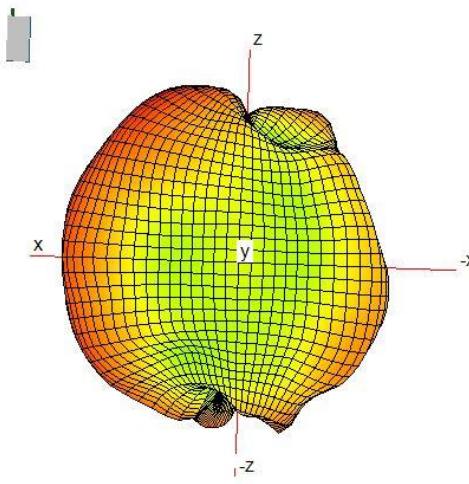
Zoom Scale



**Phi**

Azimuth: 91  
Elevation: 0  
Roll: -1

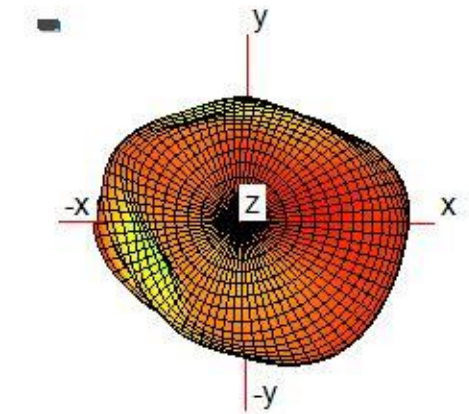
Zoom Scale



**Total**

Azimuth: 346  
Elevation: 87  
Roll: 76

Zoom Scale

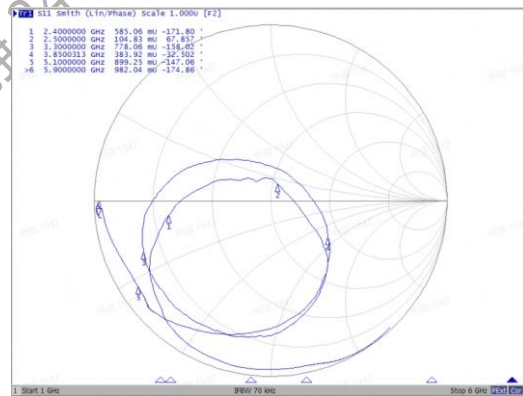
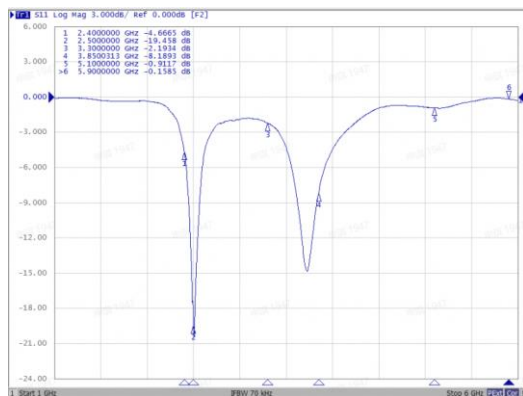


# ANT8/12:

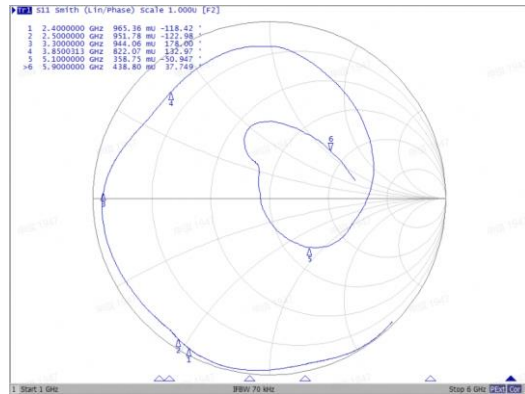
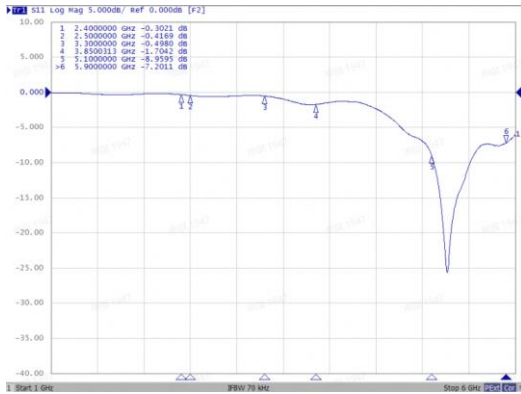
Band	ant 8/12	
	Effi.(dBi)	peak gain(dBi)
2.4G	-4	1.53
5G (5.15-5.25GHZ)	-6.5	-2.2
5G (5.25-5.35GHZ)	-6.4	-1.3
5G (5.47-5.725GHZ)	-5	-0.6
5G (5.725-5.85GHZ)	-5.6	-0.2

S11

2.4G



5G

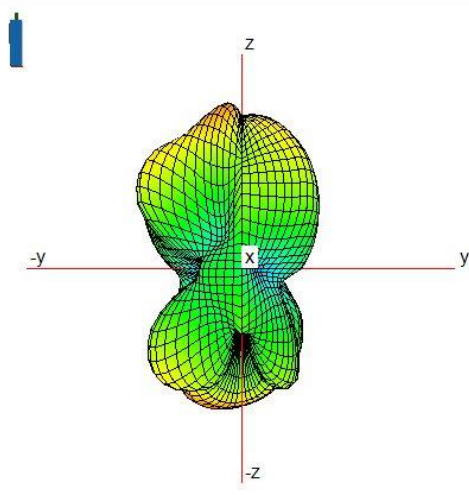
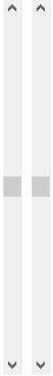


2460:

Theta

Azimuth:0  
Elevation:0  
Roll:0

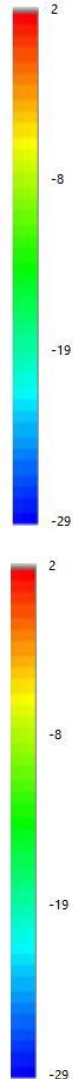
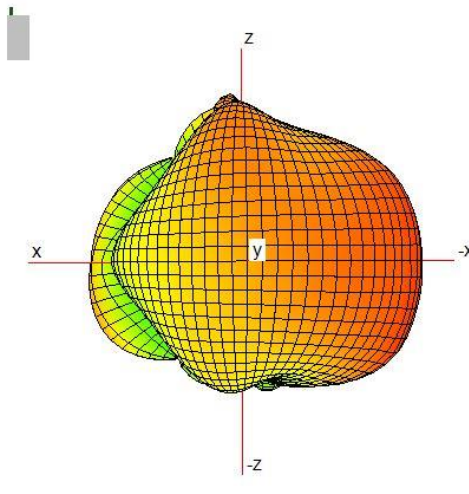
Zoom Scale



Phi

Azimuth:88  
Elevation:0  
Roll:0

Zoom Scale

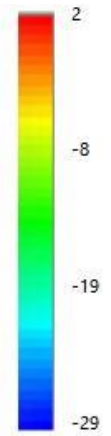
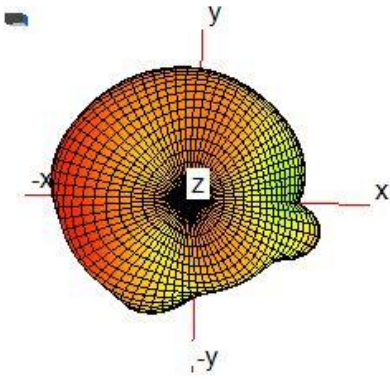




**Total**

Azimuth: 354  
Elevation: 86  
Roll: 83

Zoom Scale

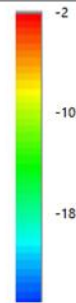
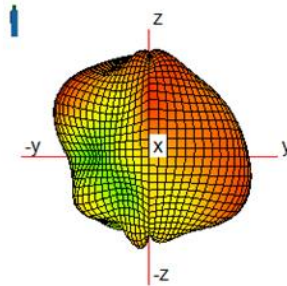


**5200**

**Total**

Azimuth: 0  
Elevation: 0  
Roll: 0

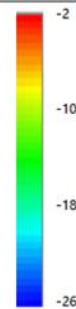
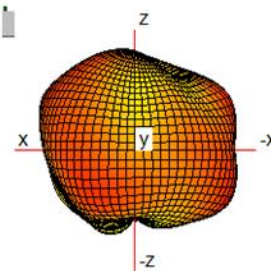
Zoom Scale



**Total**

Azimuth: 90  
Elevation: 0  
Roll: 0

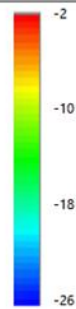
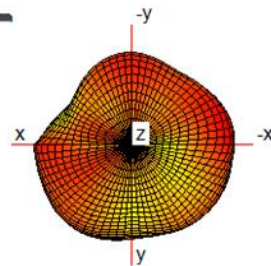
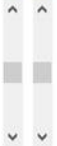
Zoom Scale



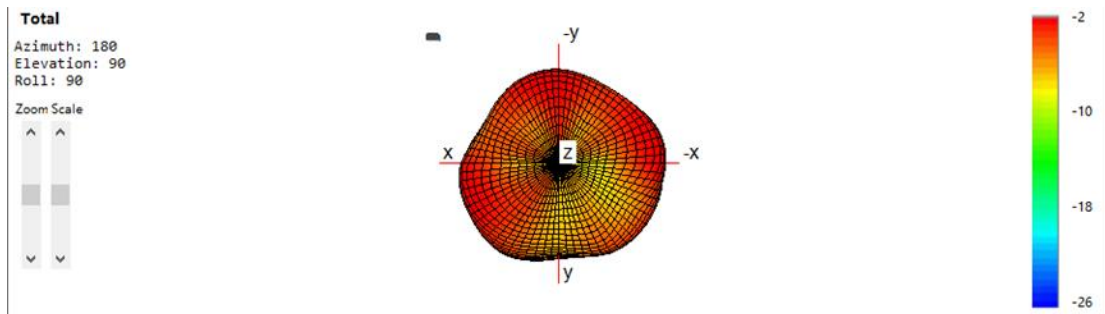
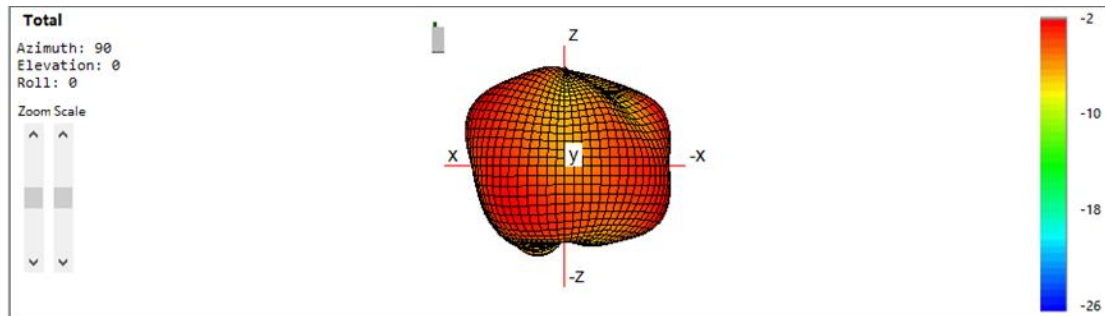
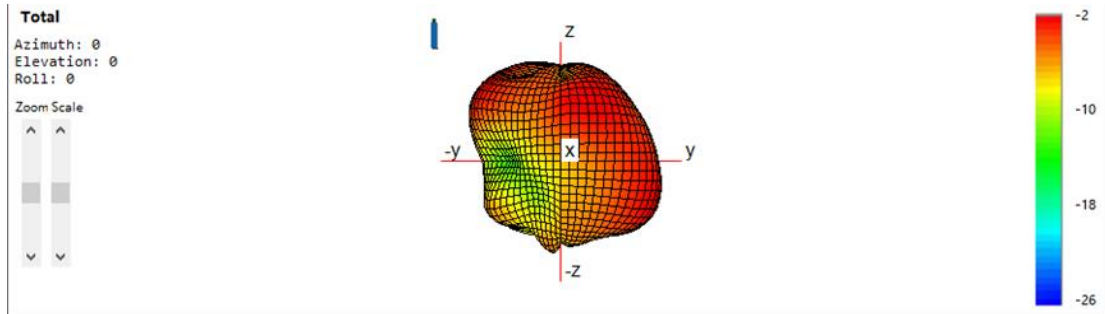
**Total**

Azimuth: 180  
Elevation: 90  
Roll: 90

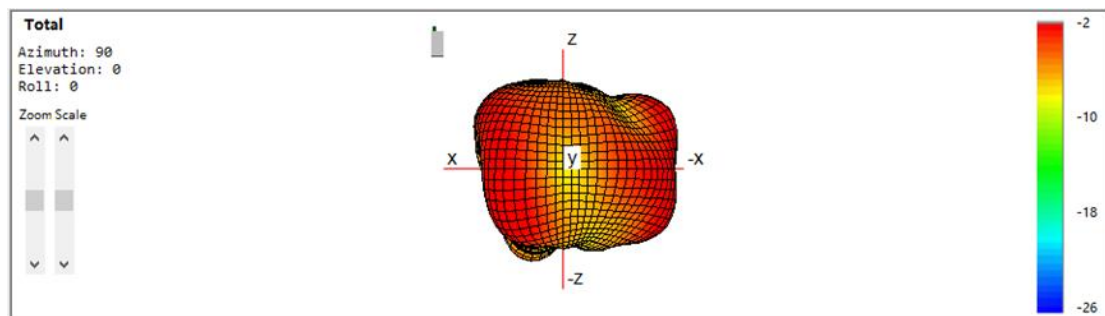
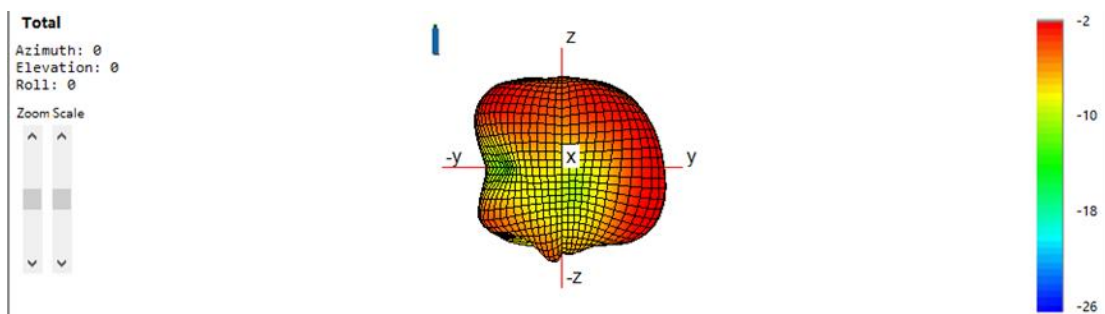
Zoom Scale

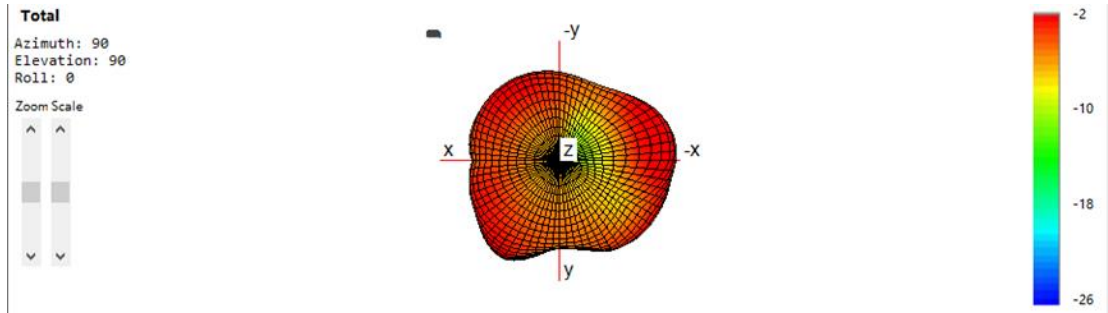


5340

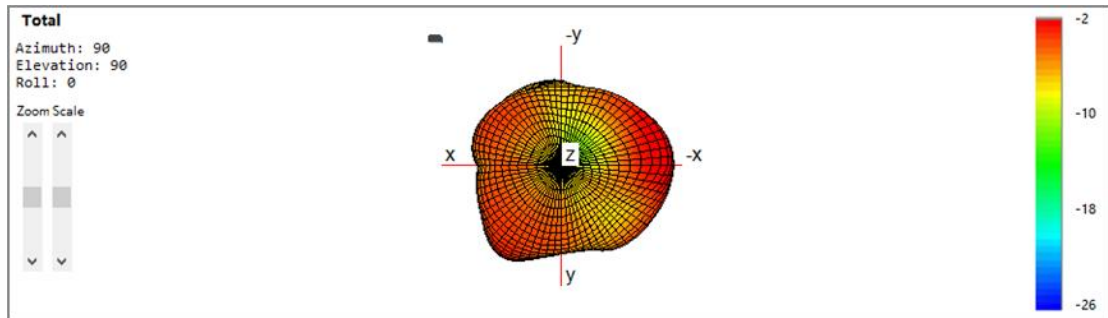
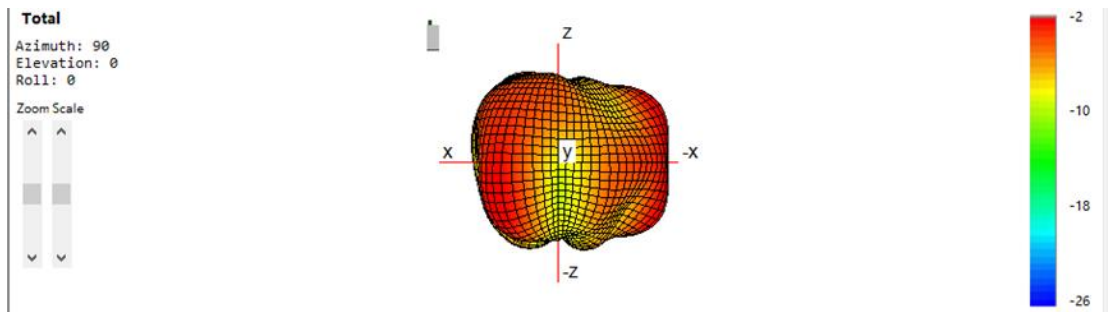
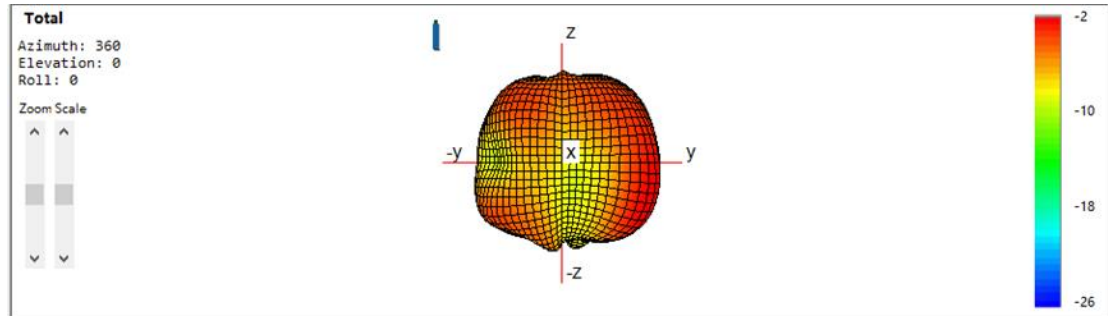


5600





5740





Antenna test environment



自静 2437