

# HLX 20125025 A03

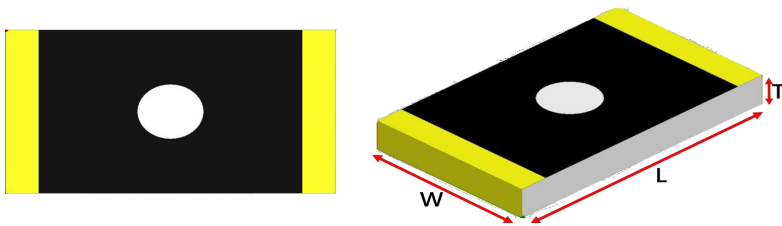
## Features

1. Surface Mounted Devices with a small dimension of 2.0 x 1.25 x 0.25 mm<sup>3</sup> meet future miniaturization trend.
2. Embedded and (Low Temperature Co-fired Ceramic) technology is able to future integrate with system design as well as beautifying the housing of final product.
3. High Stability in Temperature / Humidity Change

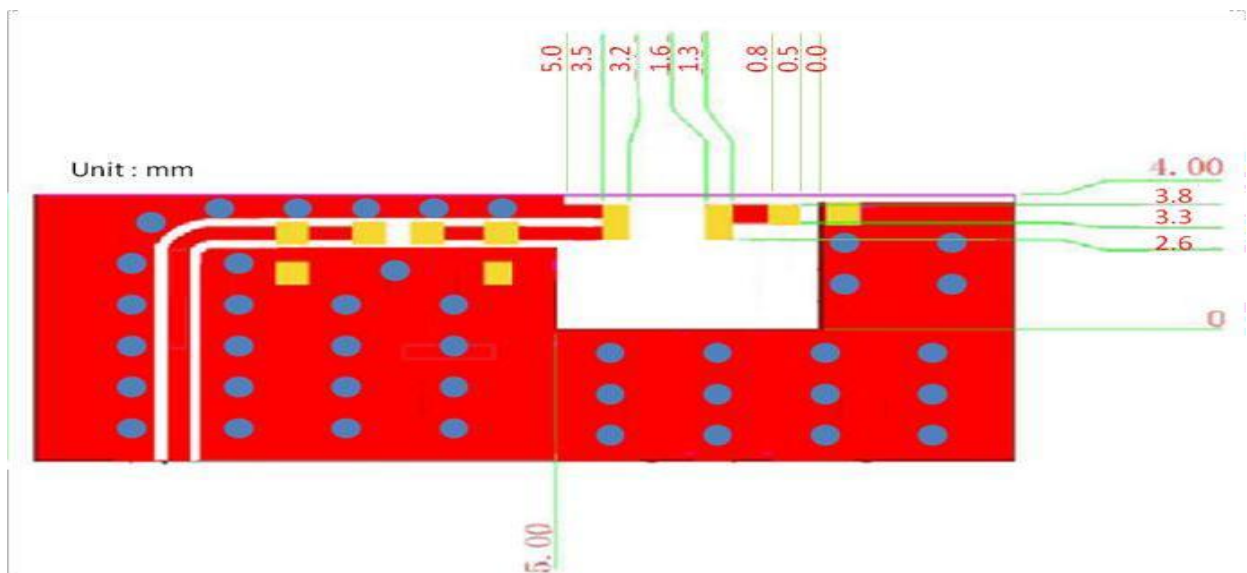
## Applications

1. Bluetooth
2. Wireless LAN
3. HornRF
4. ISM band 2.4GHz wireless applications

## Dimensions (Unit: mm)



	Dimension (mm)
<b>L</b>	2.0 ± 0.20
<b>W</b>	1.2 ± 0.20
<b>T</b>	0.25 ± 0.05



# Antenna Test Report



Customer	深羽
Project	ES22-7006F
Antenna Revision	A0
Prepared by	15993920520
Checked by	15993920520
Date:	2024. 05. 10

## ***Purpose***

This report is to measure the performance of antenna for **ES22-7006F** The antenna operating frequency at 2400-2500MHz, All test data are showed as below.

## ***Content***

1. est system
- 2.Product Overview & Dimension
- 3.Test Result VSWR&Log Mag&Smith( $\Omega$ )
- 4.Test Result
  - 4.1 2D Pattern——BT ANT
- 5.OTA Data
  - 5.1.TestResult

Manufacturer:Beijing Netac Innovation Technology Development Co.Ltd

Address:138-1-3 NO.20 YONG AN ROAD MEN TOU GOU DISTRICT BEIJING CHINA

## 1. Test System

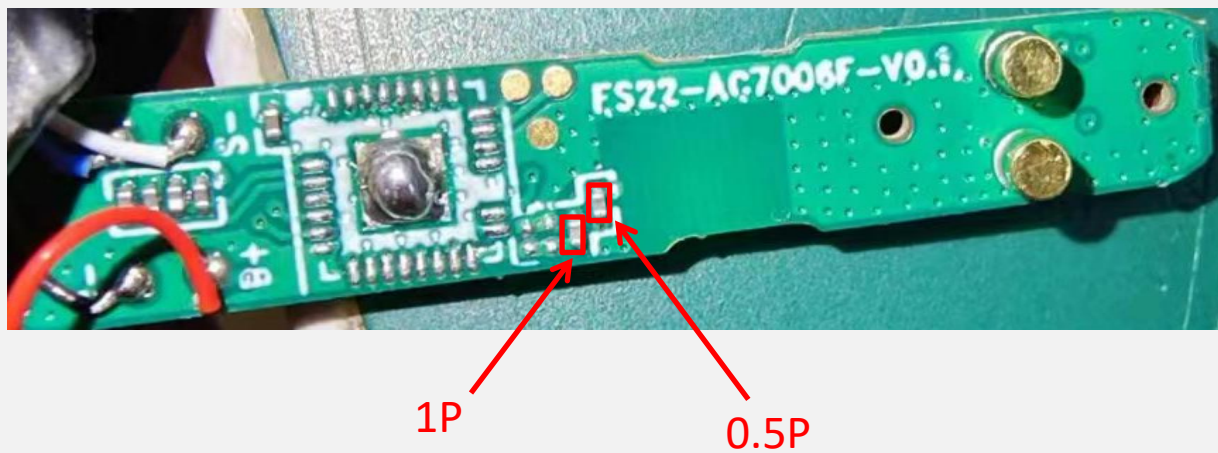
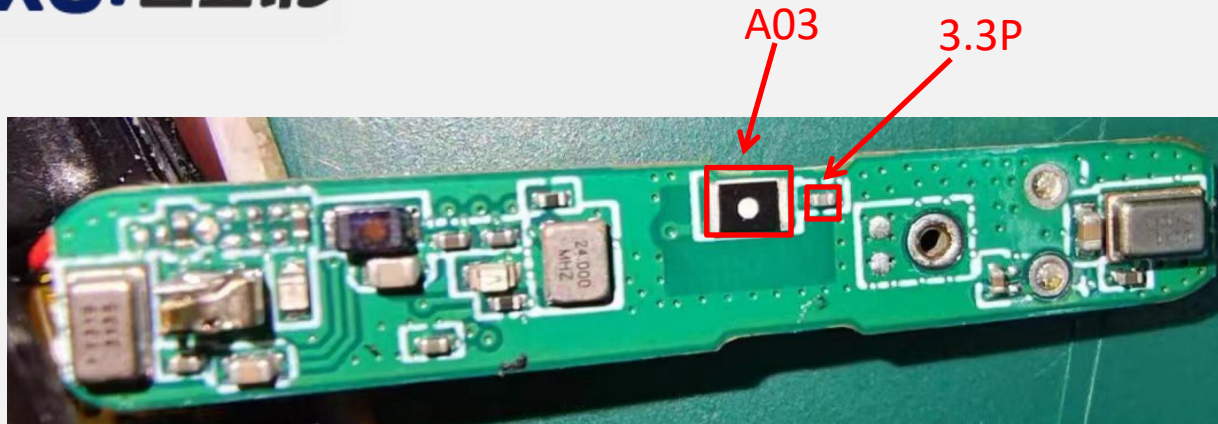
Sequence Number	Test Item	equipment
S parameter	VSWR	Agilent 5071C & Agilent 5071B
OTA Test	TRP&TIS	Agilent 8960 & CMW500 STIMO
Gain & Efficiency	Gain & Efficiency	SATIMO Agilent 5071C



## *2.Product Overview & Dimension*

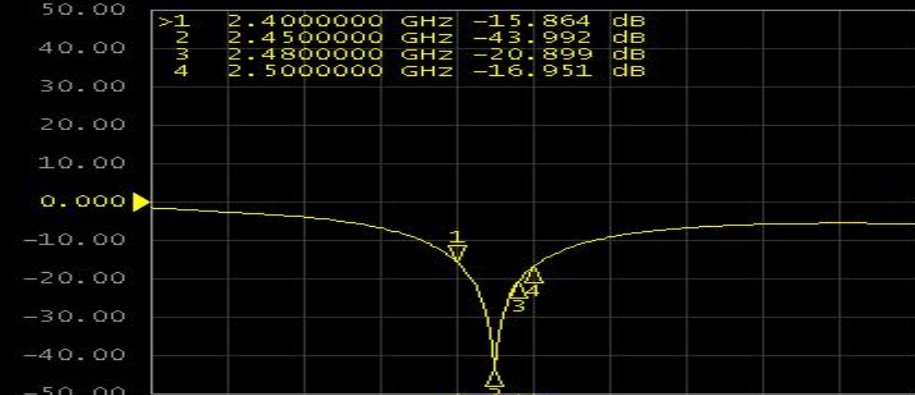




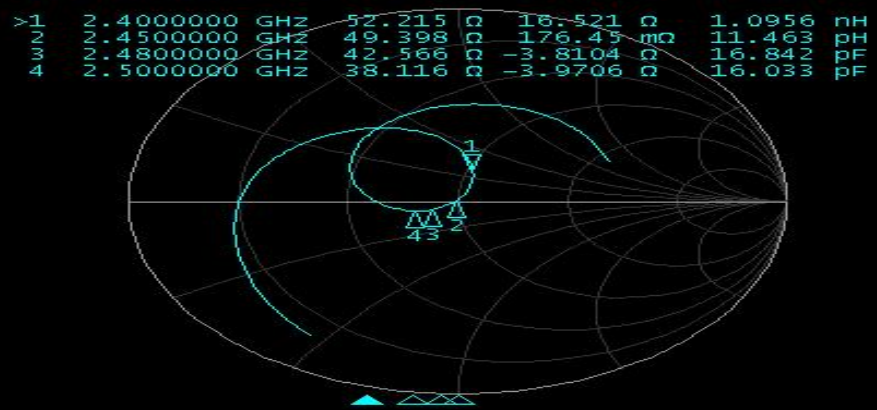


## 3. Test Result VSWR&Log Mag&Smith( $\Omega$ )

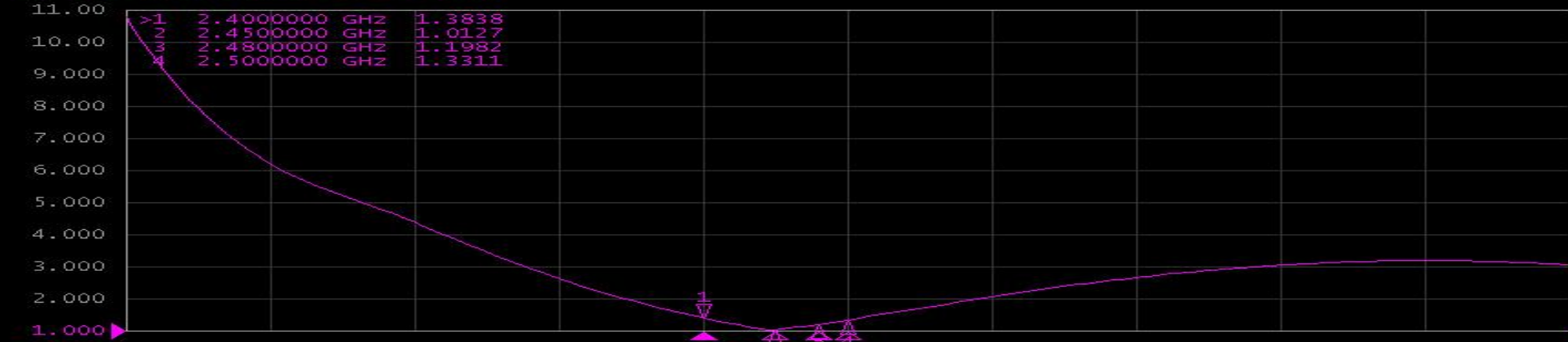
Tr1 S11 Log Mag 10.00dB/ Ref 0.000dB [F1]



Tr2 S11 Smith (R+ jX) scale 1.0000 [F1]



Tr3 S11 SWR 1.000/ Ref 1.000 [F1]



Frequency (MHz)	2400	2450	2480	2500
Log Mag	-15.86	-43.99	-20.89	-16.95
Smith( $\Omega$ )	52.21	49.39	42.56	38.11
VSWR	1.38	1.01	1.19	1.33

## 4. Test Result

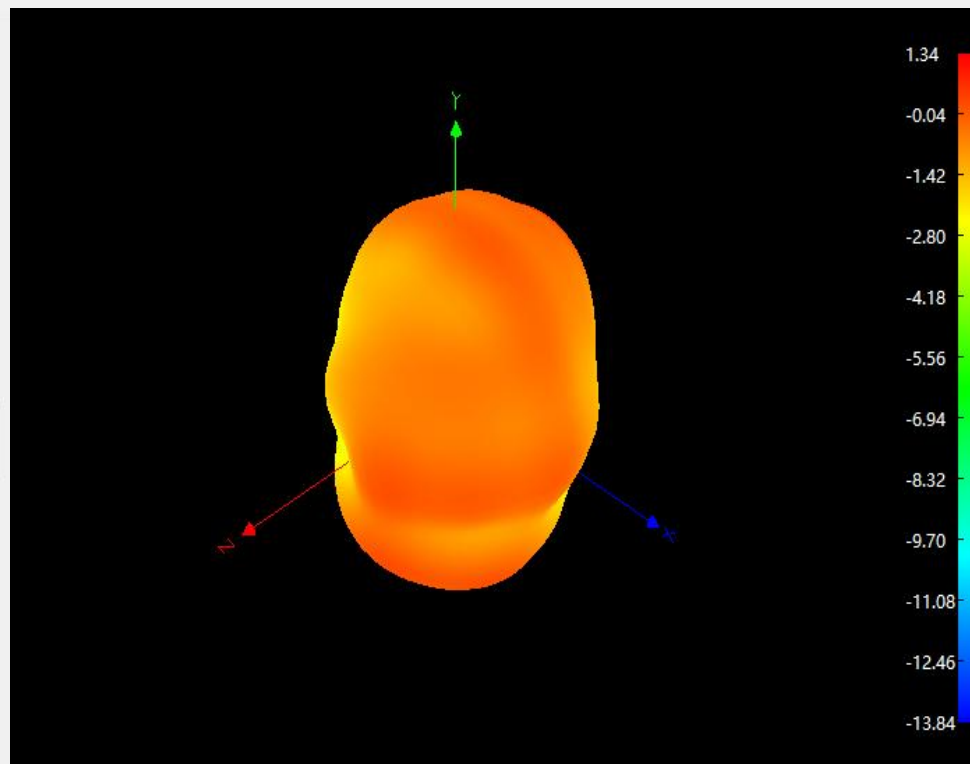
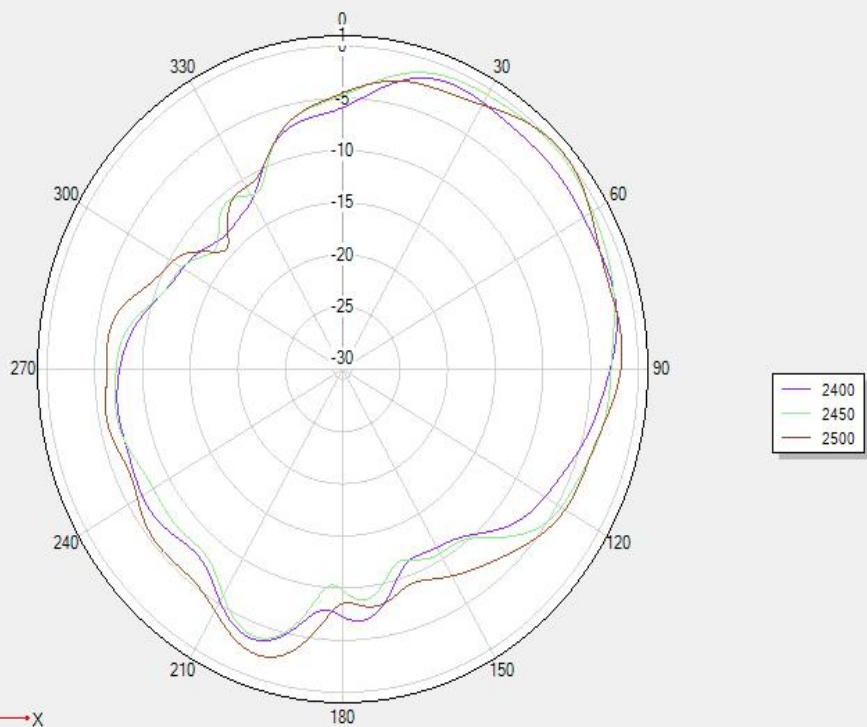
### 4.1 Gain & Efficiency——ANT

Frequency (MHz)	Efficiency (%)	Max GAIN (dBi)
2400	36.55	1.34
2410	39.81	0.8
2420	41.78	1.05
2430	41.78	0.95
2440	43.26	1.23
2450	47.42	1.59
2460	45.19	2.43
2470	45.61	1.56
2480	43.55	2.39
2490	41.64	1.74
2500	40.87	1.98



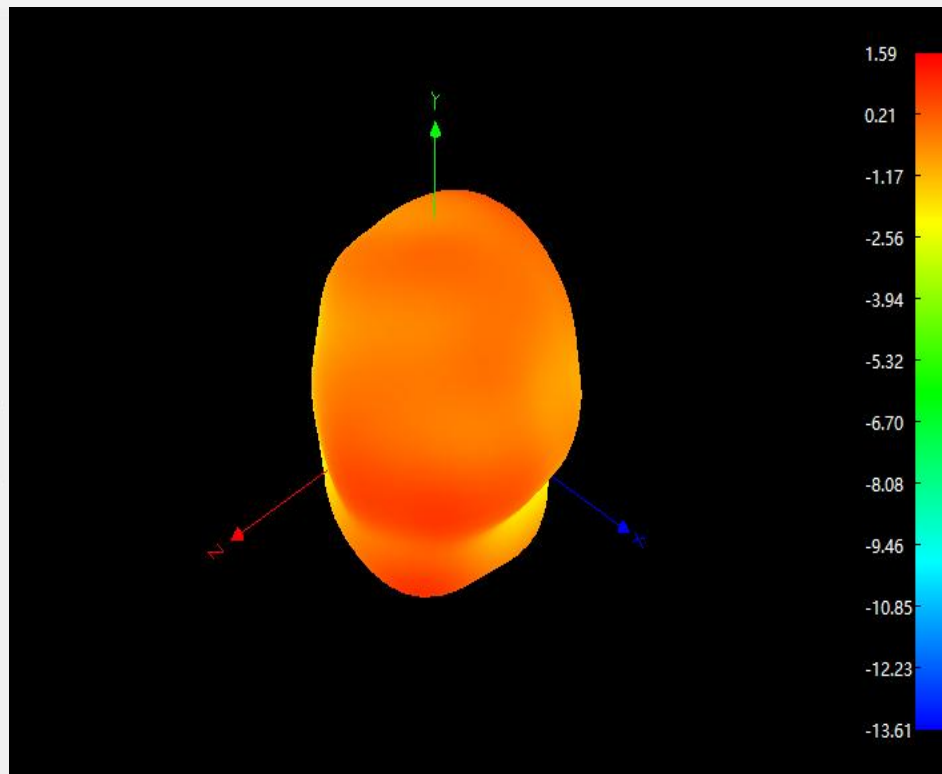
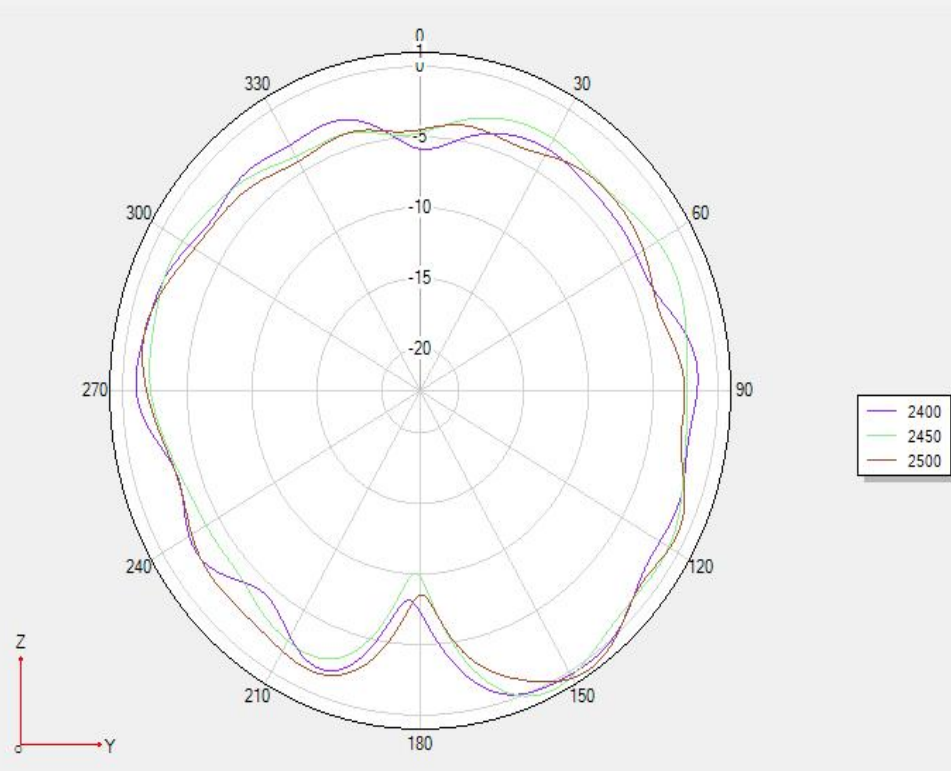
## 4. Test Result

### 4.1 2D Pattern——BT ANT



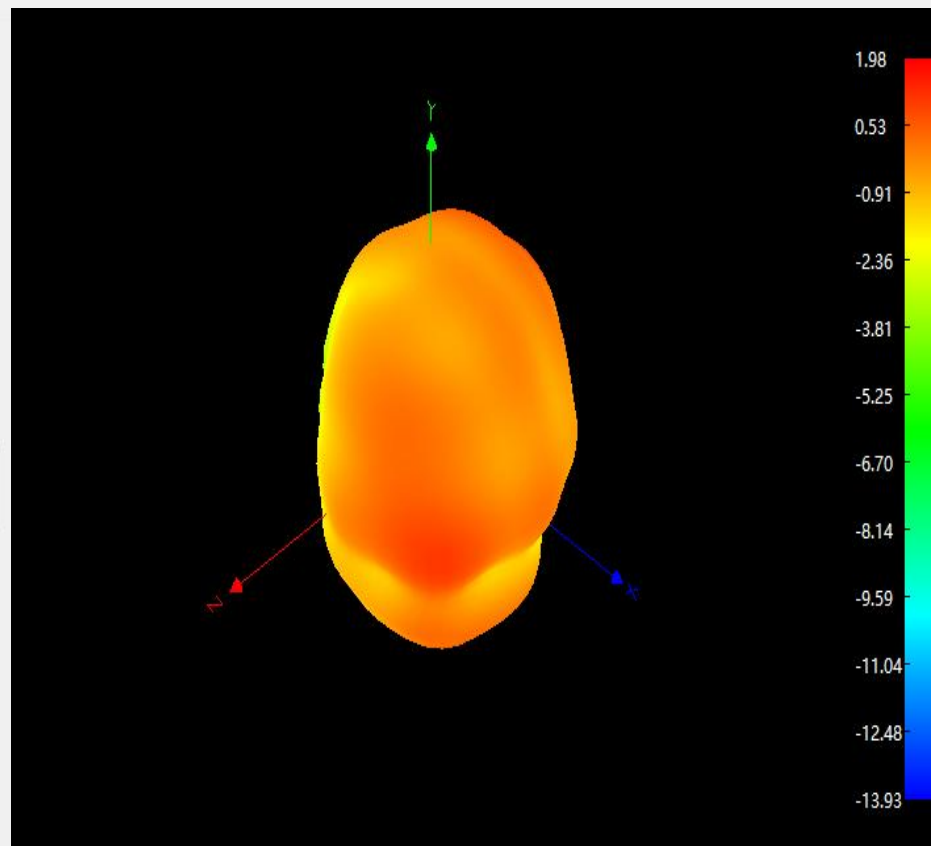
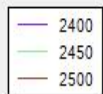
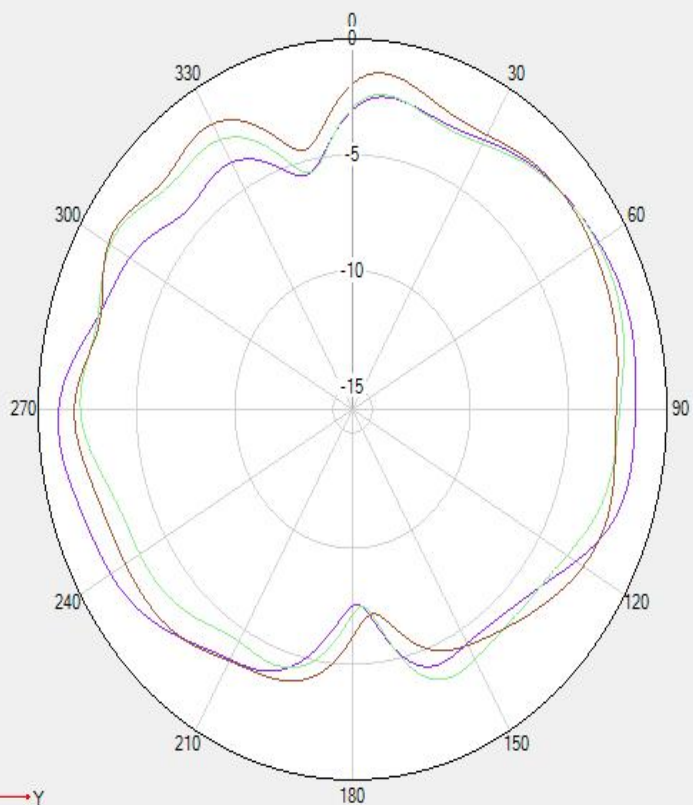
## 4. Test Result

### 4.1 2D Pattern — BT ANT



## 4. Test Result

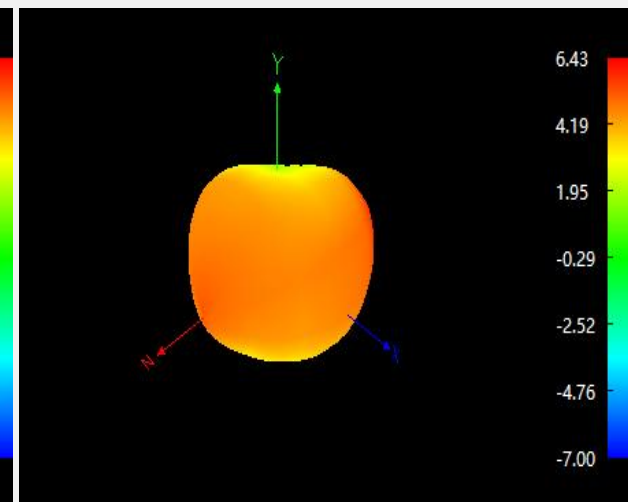
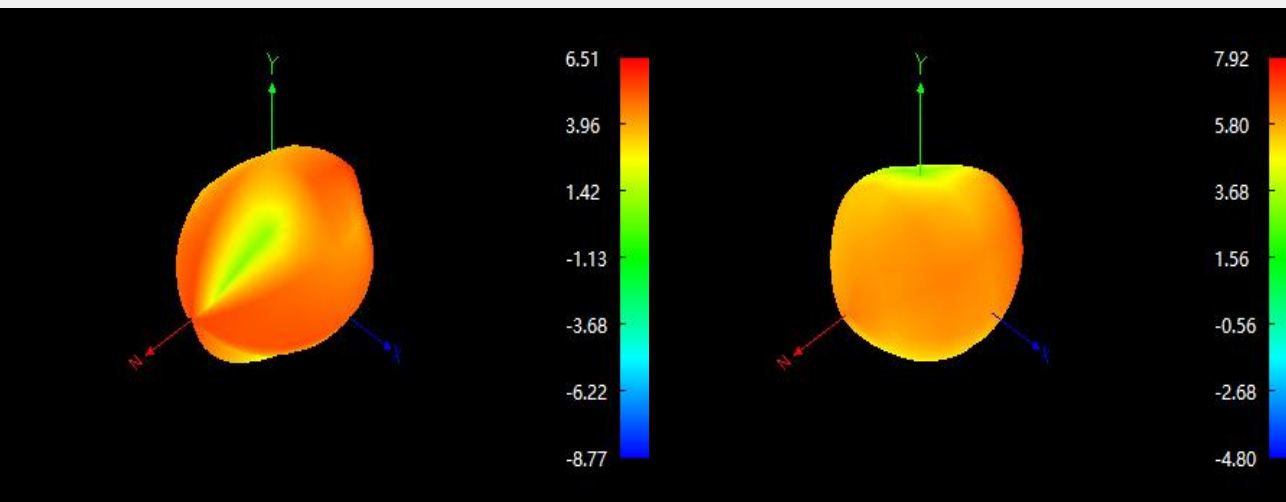
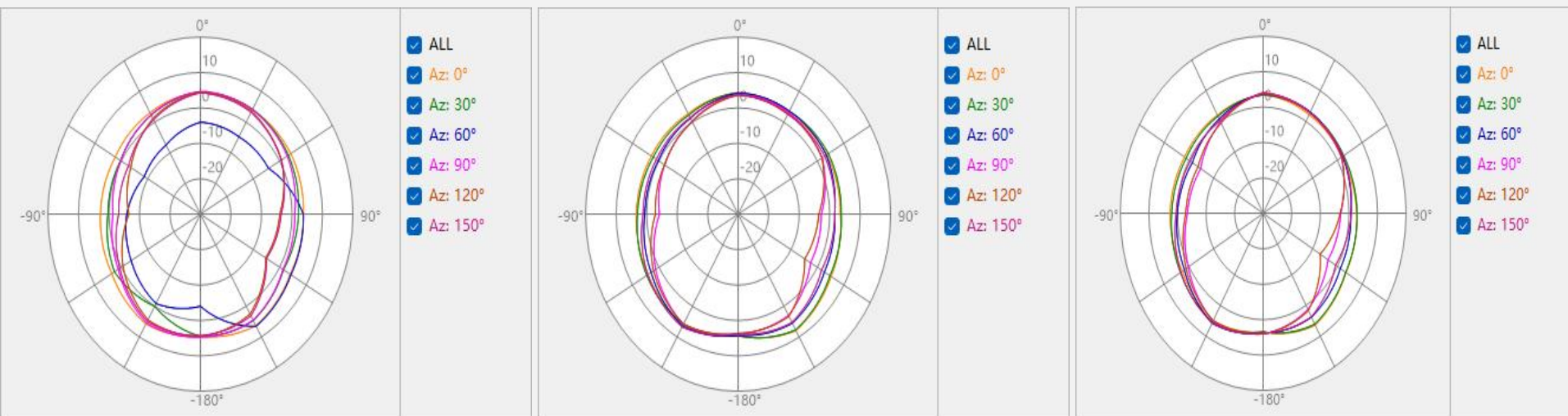
### 4.1 2D Pattern——BT ANT



## 5.OTA Data

Test Equipment:	R&S CMW500			
Test Condition:	3D chamber			
Band		Channel	TRP(dBm)	TIS(dBm)
BT	L	0	2.44	-88.72
		39	3.58	-88.11
		78	2.56	-85.9
	R	0	2.27	-87.83
		39	2.99	-88.62
		78	2.87	-86.59

## 5.1.Test Result L-TRP

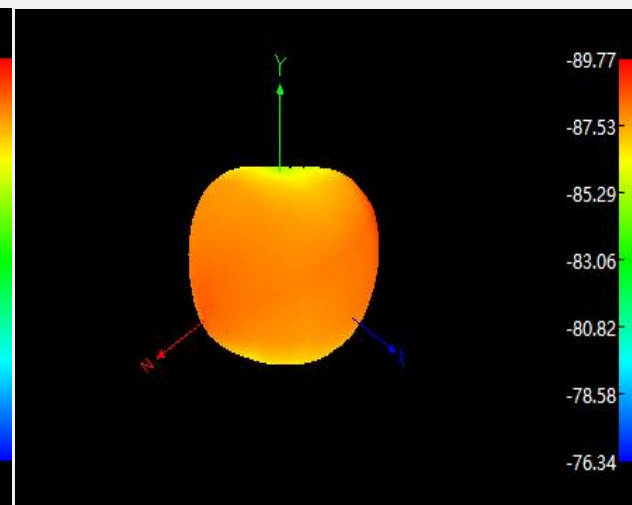
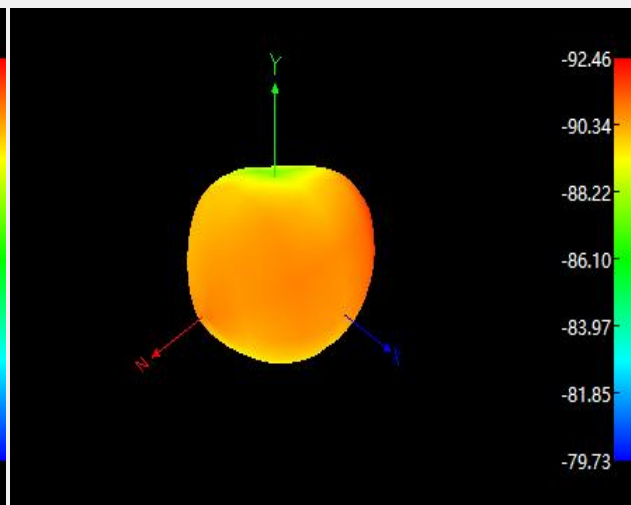
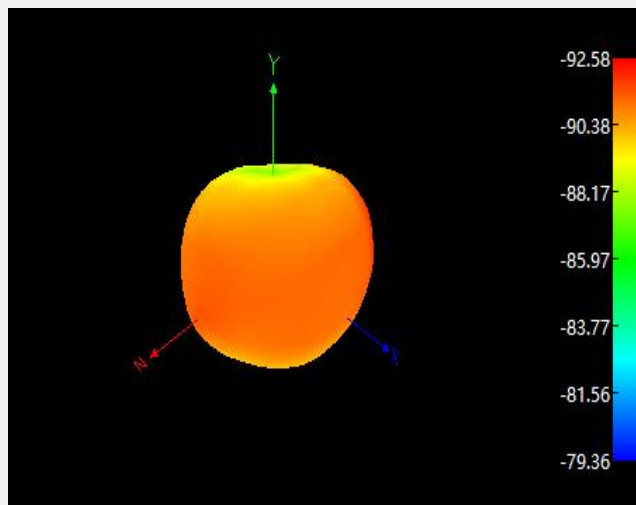
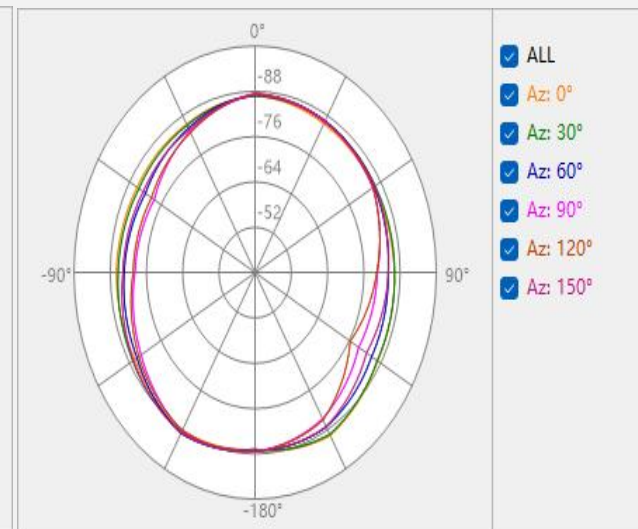
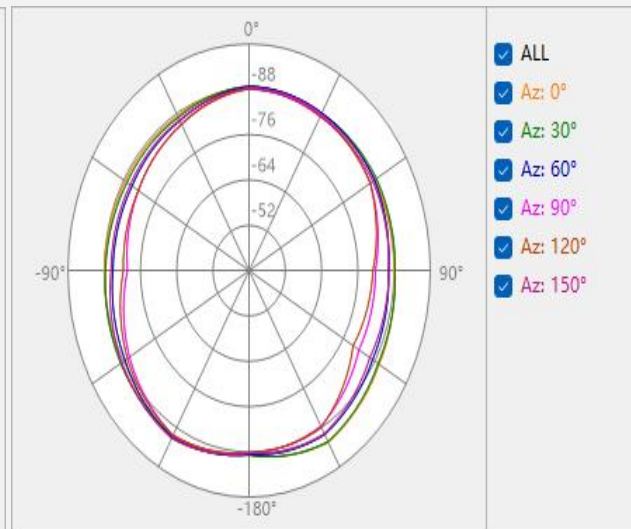
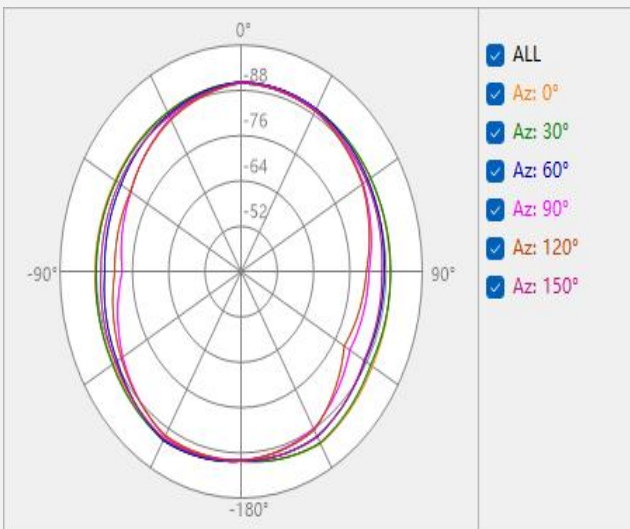




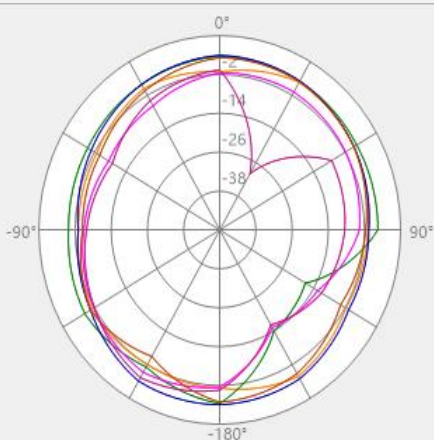
## 5.1.Test

## Result

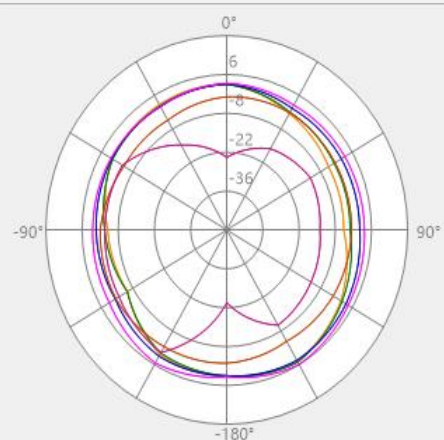
### L-TIS



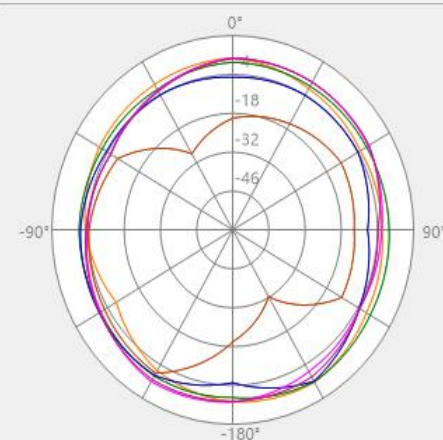
## 5.1.Test Result R-TRP



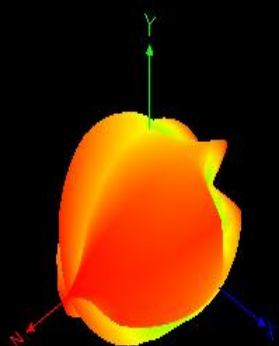
- ALL
- Az: 0°
- Az: 30°
- Az: 60°
- Az: 90°
- Az: 120°
- Az: 150°



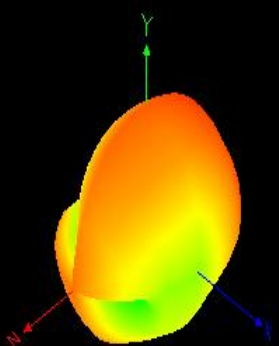
- ALL
- Az: 0°
- Az: 30°
- Az: 60°
- Az: 90°
- Az: 120°
- Az: 150°



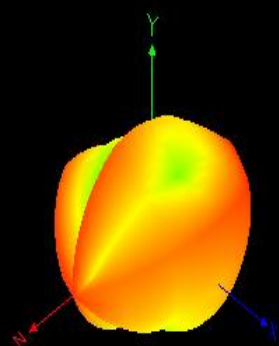
- ALL
- Az: 0°
- Az: 30°
- Az: 60°
- Az: 90°
- Az: 120°
- Az: 150°



- 3.91
- 1.74
- 7.39
- 13.04
- 18.69
- 24.34
- 29.99



- 5.93
- 0.96
- 4.01
- 8.97
- 13.94
- 18.91
- 23.88

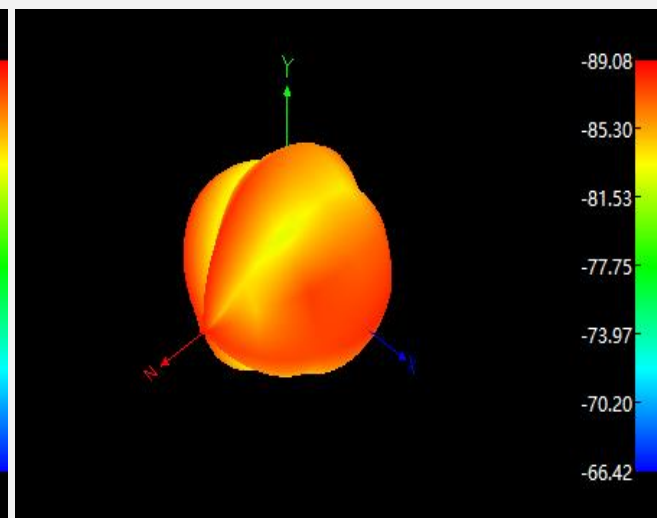
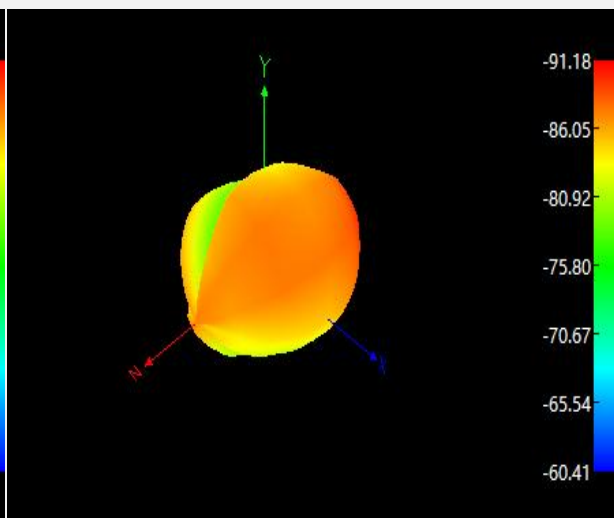
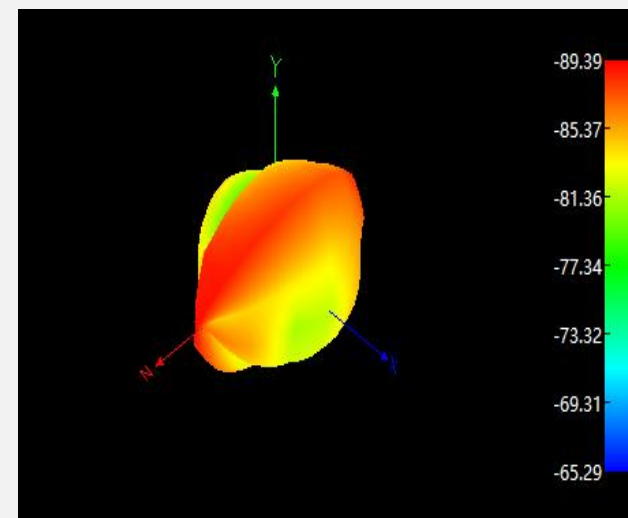
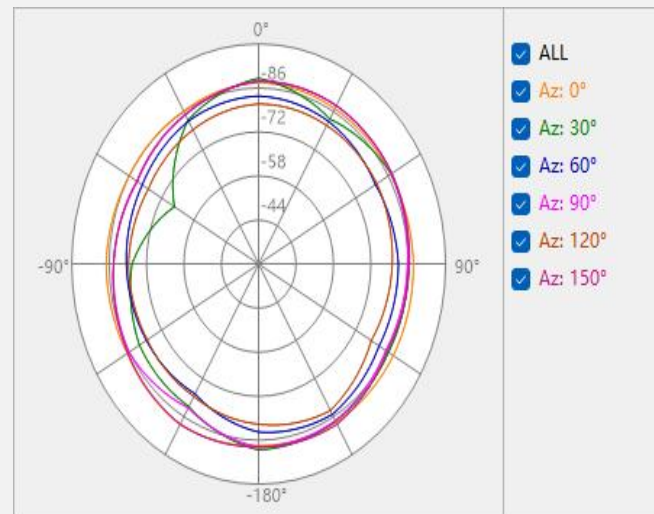
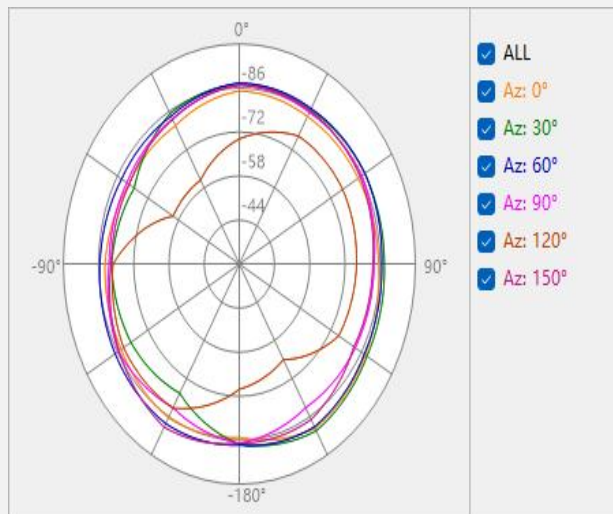
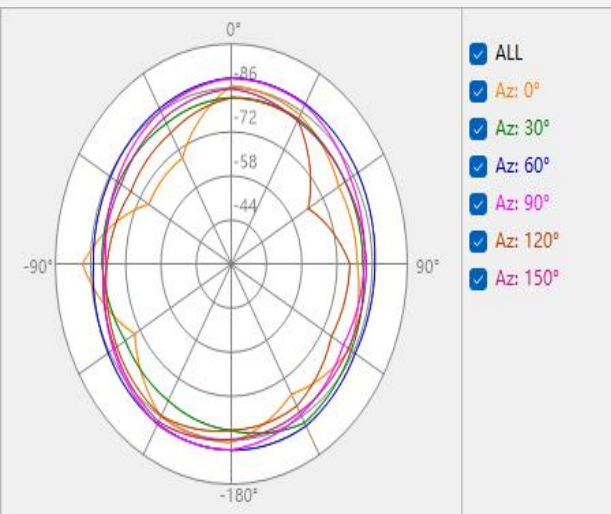


- 3.32
- 2.61
- 8.55
- 14.48
- 20.42
- 26.35
- 32.29

## 5.1.Test

## Result

## R-TIS



*Thank you!*