

# 承認書

## SPECIFICATION FOR APPROVAL

樣品承認  新品承認  規格/材質變更承認

客戶名稱(Customer):	東荃科技股份有限公司		
客戶料號(Customer P/N):	5061-A227CN+001		
產品料號(Product No.):	A8-A003-00178		
產品品名(Product Name) :	DIP 11a/b/g/n 5dBi/4dBi OD13 L197 BLACK SMA-RP		
文件編號(Approved No) :			
日期(Issued Date) :	2021 年 9 月 16 日		
客戶承認簽章 Customer Approval Signature	In Charge	Checked	Approval

**TSKY™** 天凱科技股份有限公司 **TSKY CO., LTD.**

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21F-2, No.8, Ziqiang S.Rd., Jhubei City, Hsinchu County 30264, Taiwan (R.O.C.)



業務	核准	審核	主辦員

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# Specification

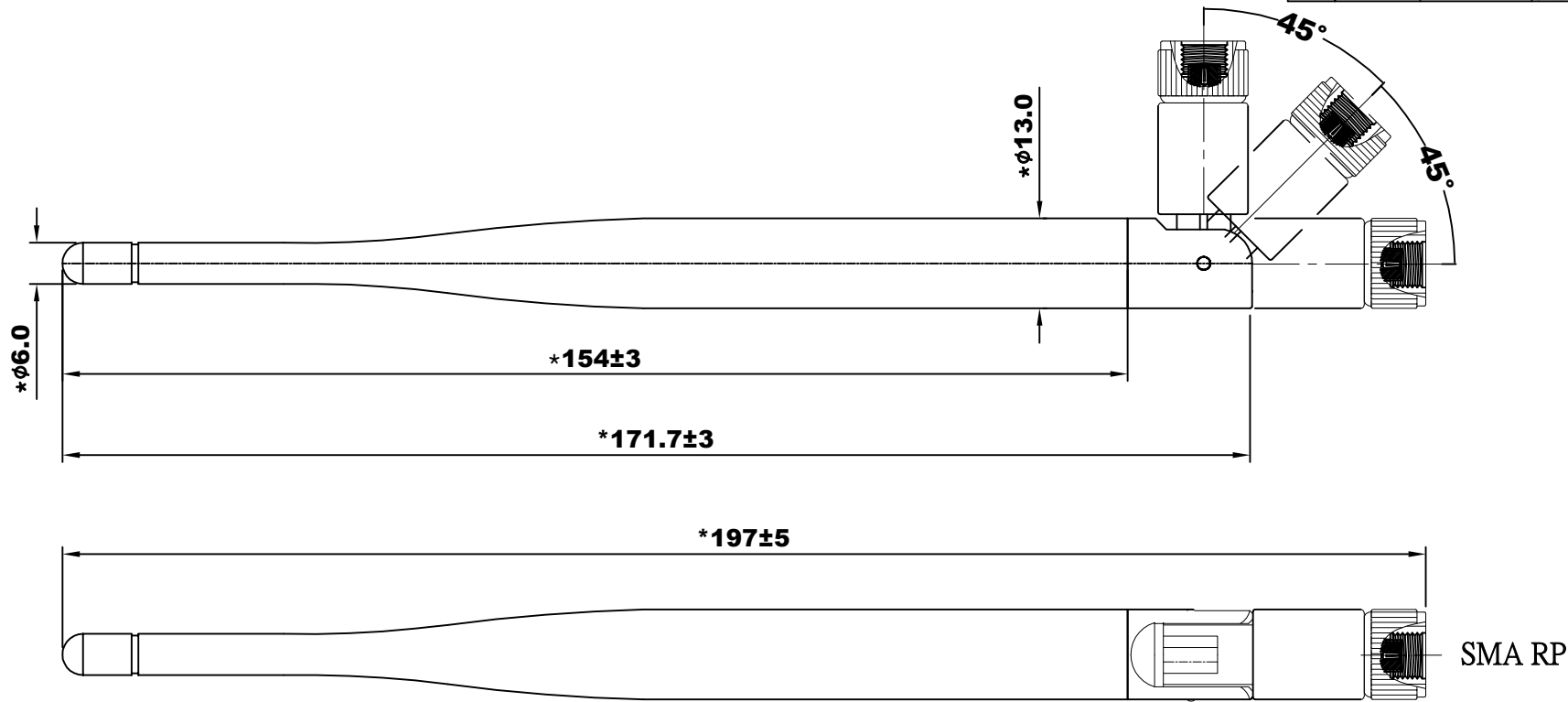
- **Electrical Properties :**

1. Frequency : 2.4GHz~2.5GHz/5.15GHz~5.85GHz
2. Impedance : 50Ω
3. Return Loss :  $\leq$  -10dB
4. Peak Gain : 5dBi/4dBi

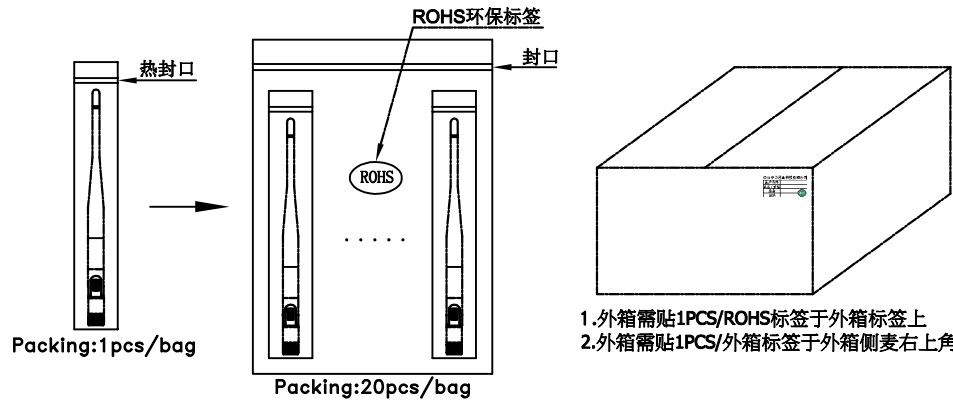
- **Physical Properties :**

1. Material :  
HOUSING :TPEE(BLACK)  
UP BASE : PC(BLACK)  
DOWN BASE: PBT+PC(BLACK)
2. Connector : SMA PLUG REVERSE
3. Operation temperature : -20°C ~ +65°C
4. Storage temperature : -30°C ~ +75°C

REV	ECN NO.	DRAWING	DESCRIPTION	APPROVED	DATE
A		JANE	初版發行	Gary	2021/9/16



SMA RP



**ELECTRICAL:**

Frequency: 2.4GHz~2.5GHz/5.15GHz~5.85GHz  
 Impedance: 50Ω  
 Return Loss:  $\leq -10$ dB  
 Peak Gain: 5dBi/ 4dBi

**MECHANICAL:**

Antenna Cover: TPEE  
 Antenna Base: PBT+PC  
 Color: BLACK  
 Operating Temperature:  $-20^{\circ}\text{C} \sim +65^{\circ}\text{C}$   
 Storage Temperature:  $-30^{\circ}\text{C} \sim +75^{\circ}\text{C}$   
 Connector: SMA PLUG-RP

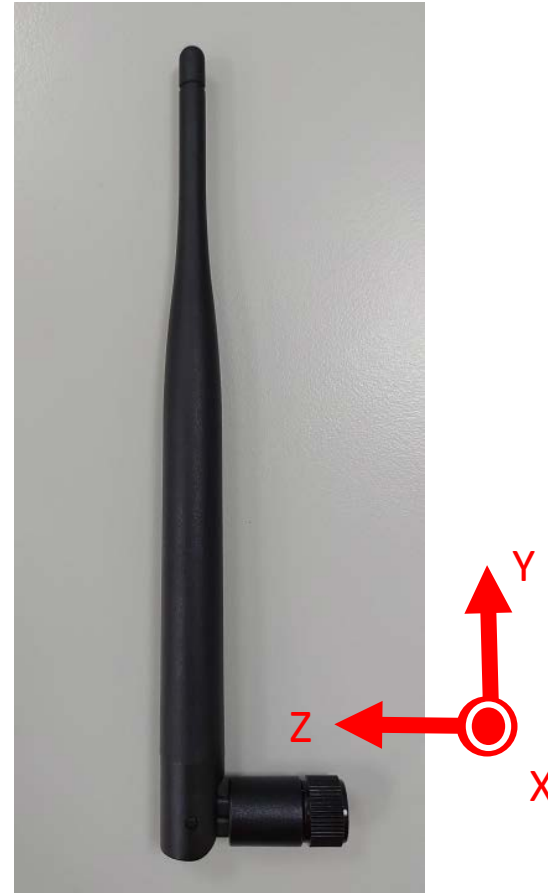
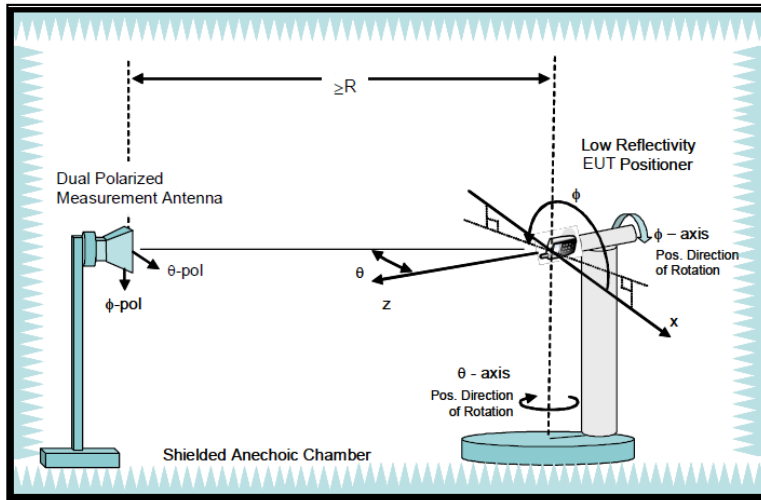
**NOTE:** \*為重點量測尺寸



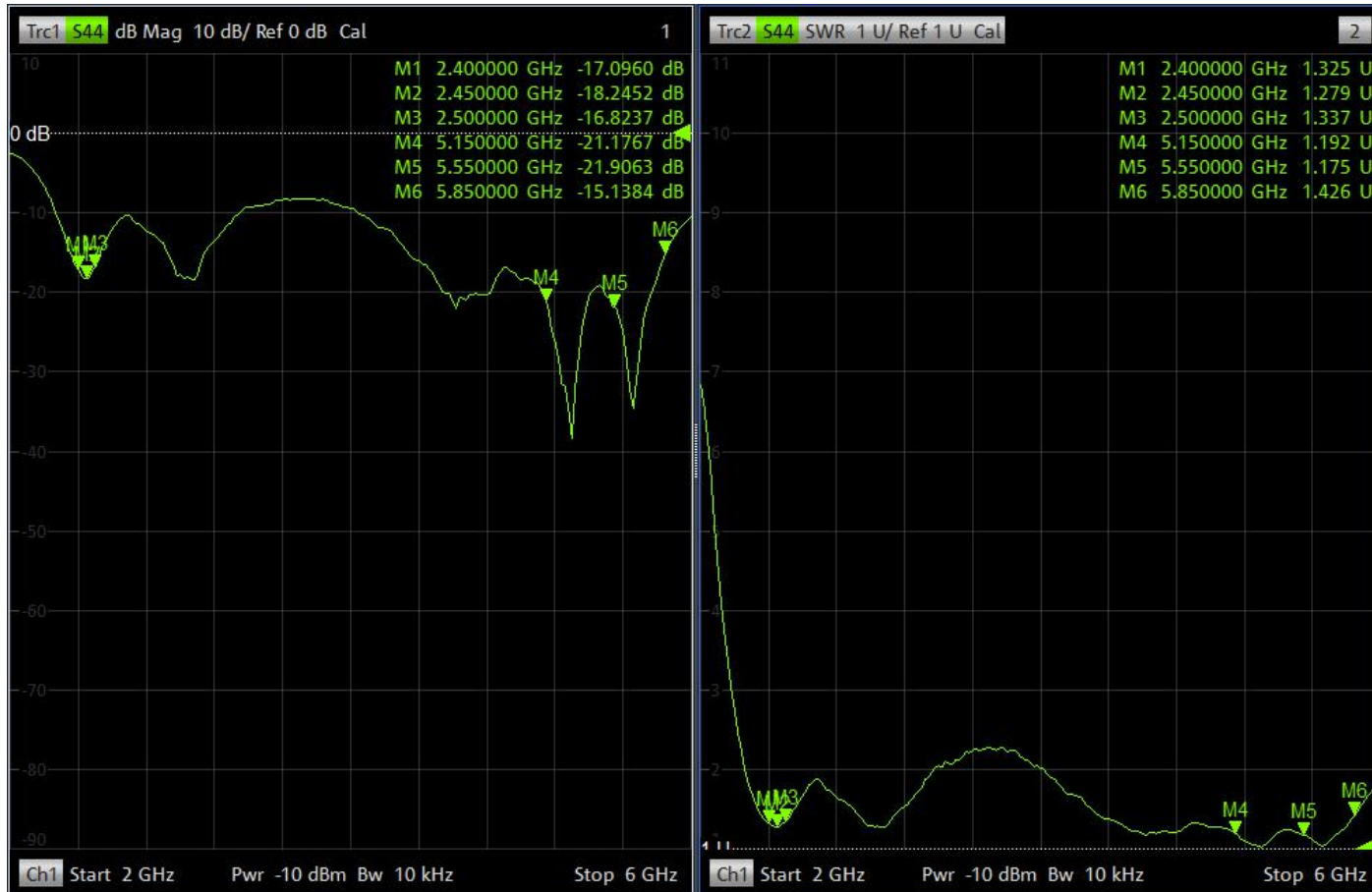
NO	DESCRIPTION	Q'TY	REMARK
6	Cable	RG-178 Cable, Transparency Brown, 50Ω	1
5	Connector	SMA Straight Plug Reverse for RG-178	1
4	Rivet	PBT+PC, Color: Black	2
3	Bottom Base	PBT+PC, Color: Black	1
2	Upper Base	PBT+PC, Color: Black	1
1	Antenna Cap	TPEE, Color: Black	1

TOLERANCE UNLESS OTHERWISE SPECIFIED				TSKY CO., LTD.				INITIAL MODEL:	
DIMENSION		ANGLES		CONFIDENTIAL	FINISH:	UNIT:	SCALE:	PART NAME	
.X±	0.2	X.°±	0.5	SIZE:	A4	mm	1:1	DIP11a/b/g/n 5dBi/4dBi OD13	
.XX±	0.1			DRAWING	DESIGNED	CONCURRED	APPROVED	L197 BLACK SMA-RP	
.XXX±	0.05			Jane			Gary	PART NO.	REV. SHT.
								A8-A003-00178	A 1/1

# Antenna Coordinate System Definition



# Antenna Return Loss and VSWR

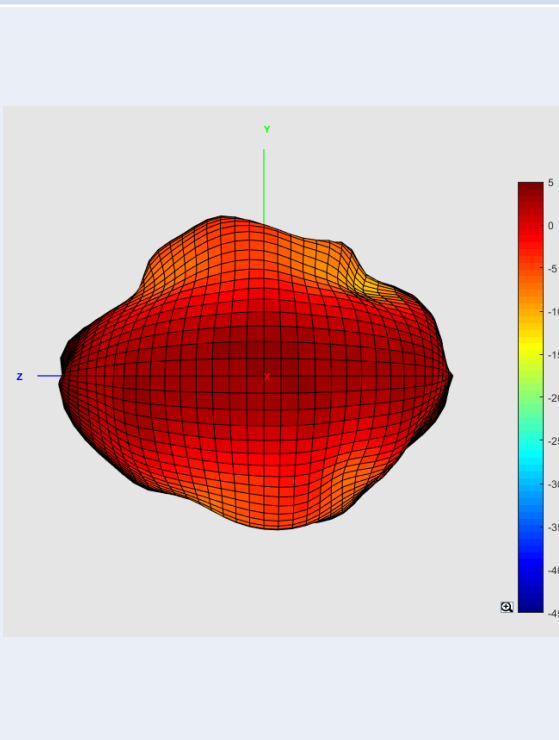


# Antenna 1

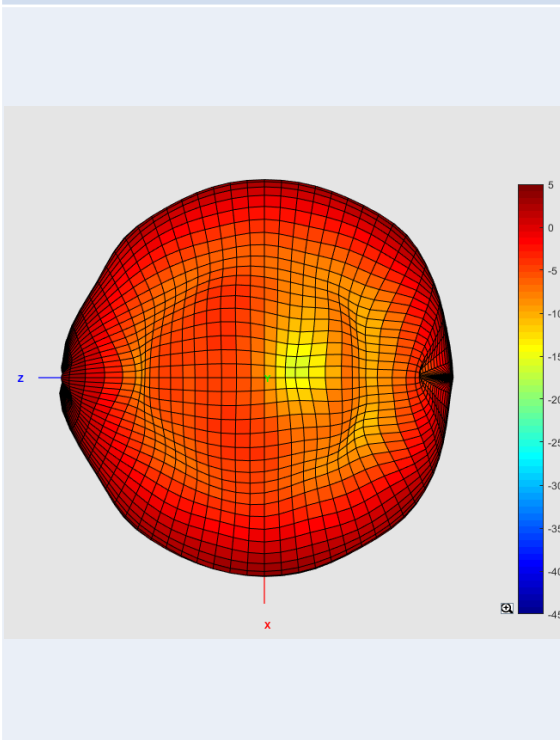
## 3D Radiation Pattern

2.4GHz

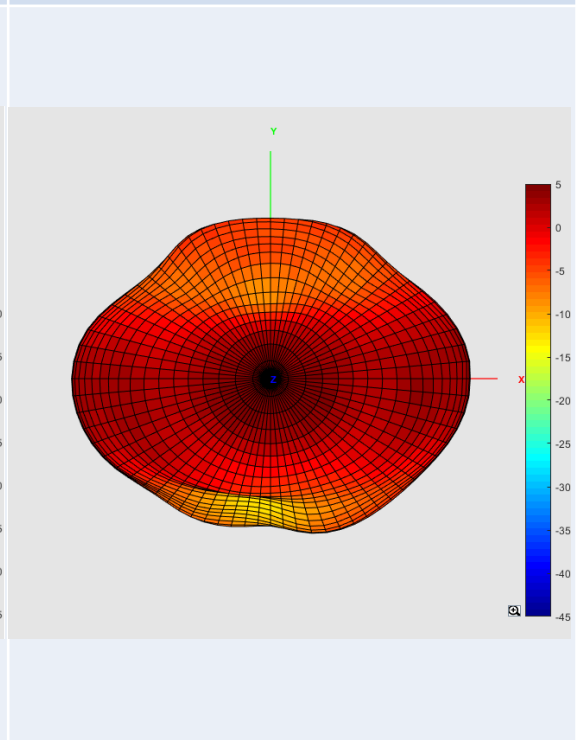
X-axis View



Y-axis View



Z-axis View

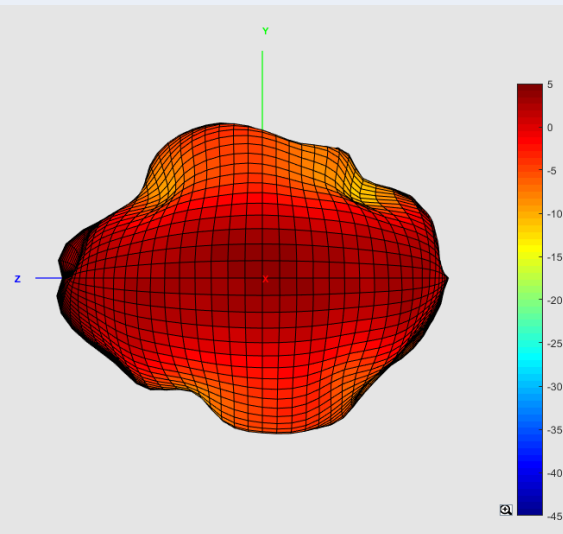


# Antenna 1

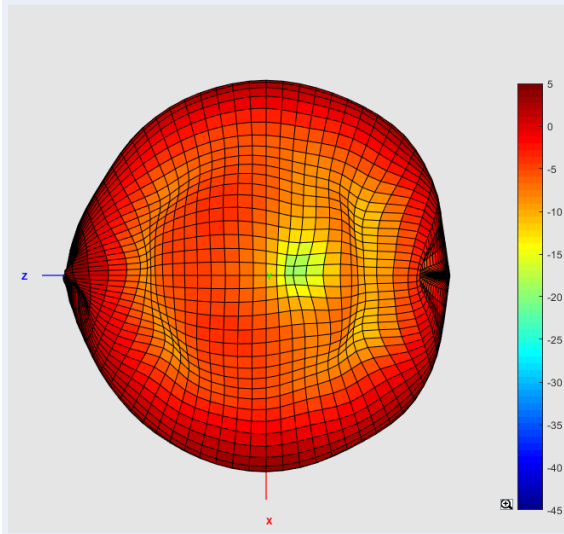
## 3D Radiation Pattern

2.45GHz

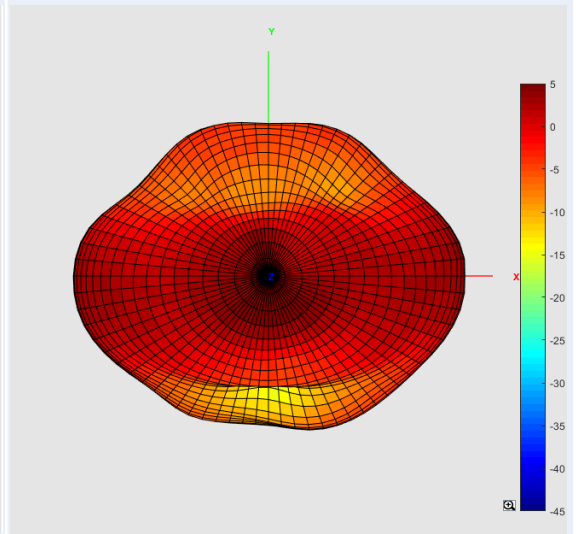
X-axis View



Y-axis View



Z-axis View



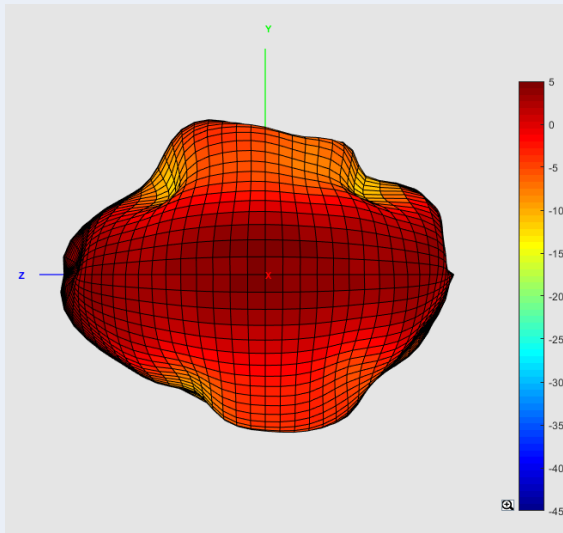


# Antenna 1

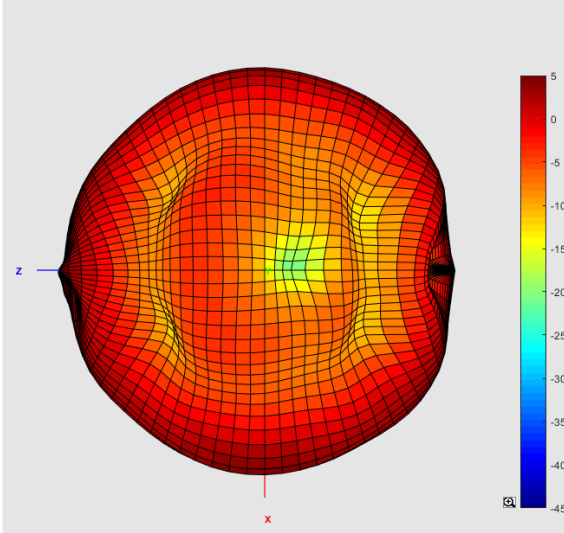
## 3D Radiation Pattern

2.5GHz

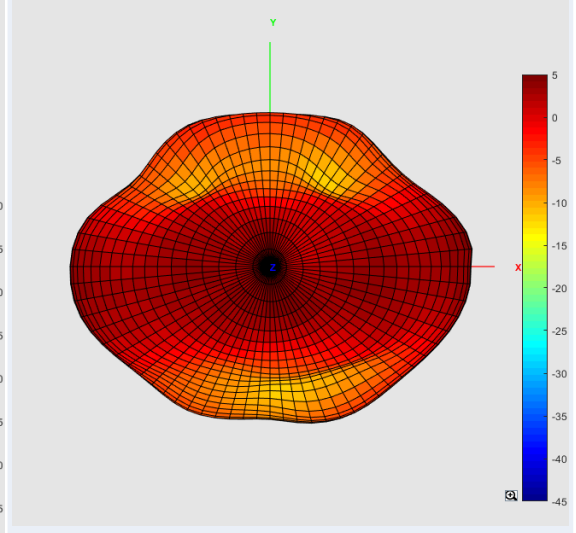
X-axis View



Y-axis View



Z-axis View

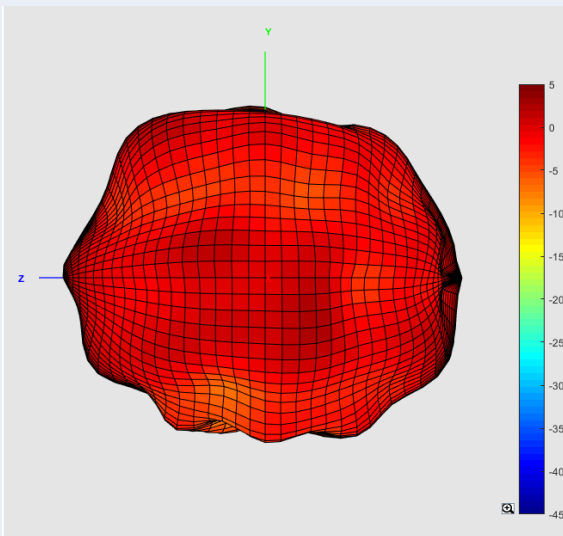


# Antenna 1

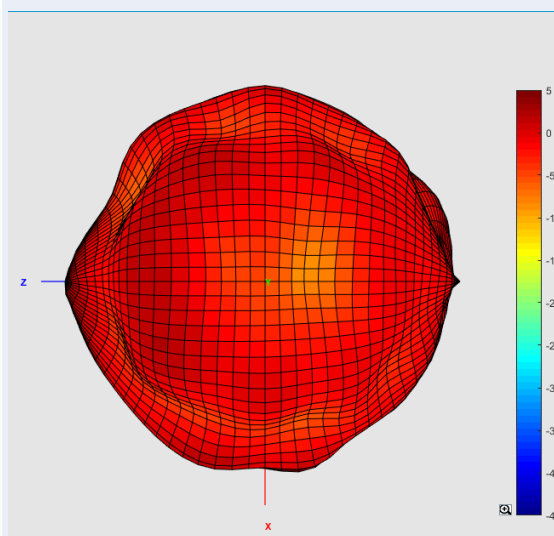
## 3D Radiation Pattern

5.15GHz

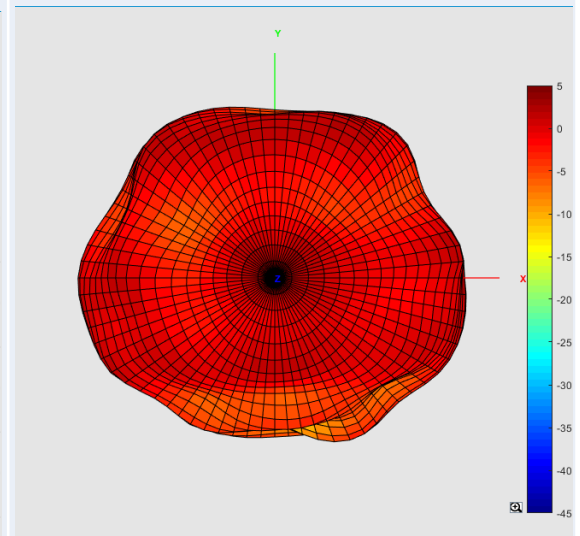
X-axis View



Y-axis View



Z-axis View

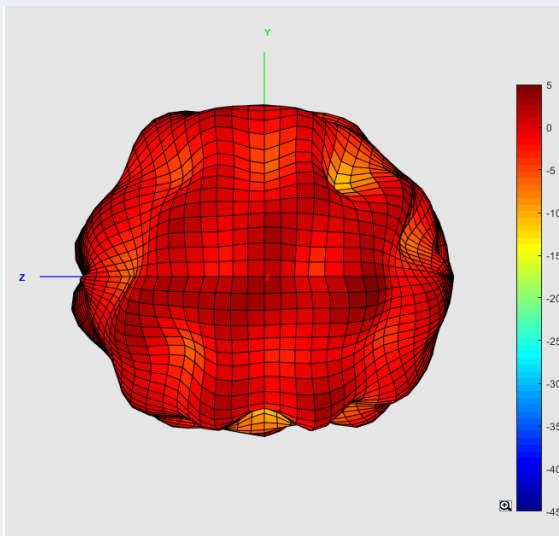


# Antenna 1

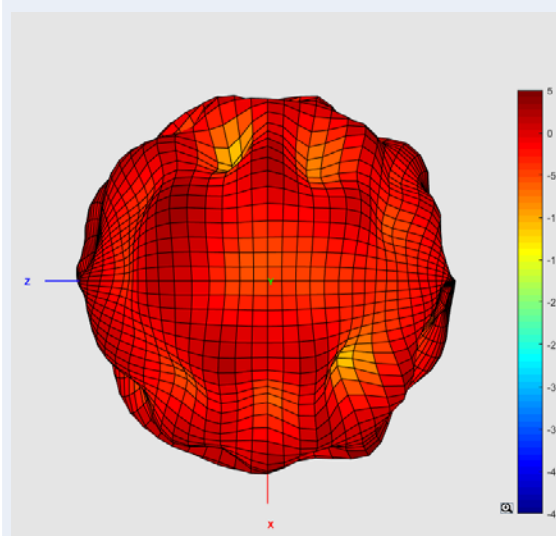
## 3D Radiation Pattern

5.55GHz

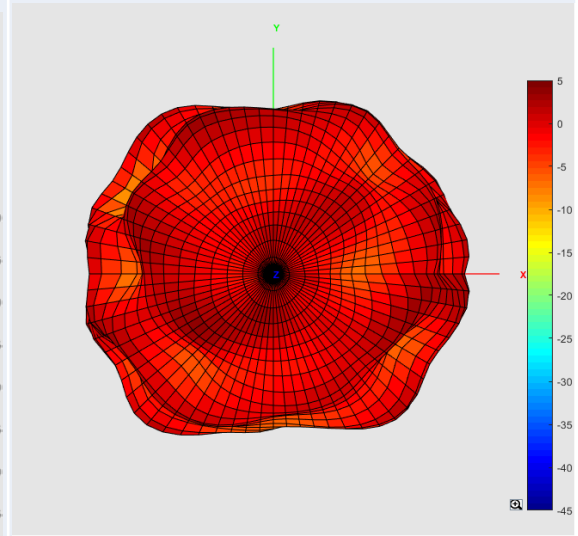
X-axis View



Y-axis View



Z-axis View

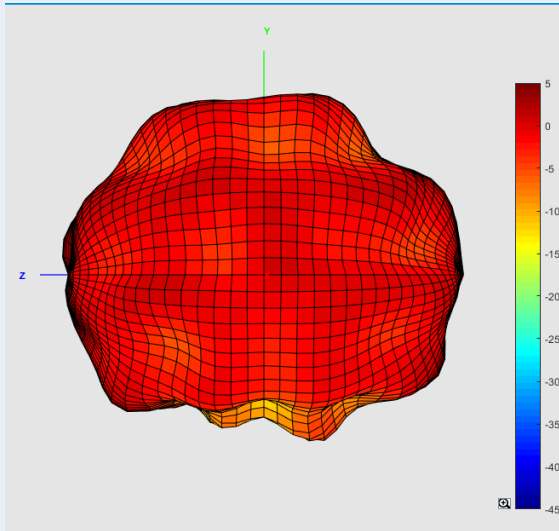


# Antenna 1

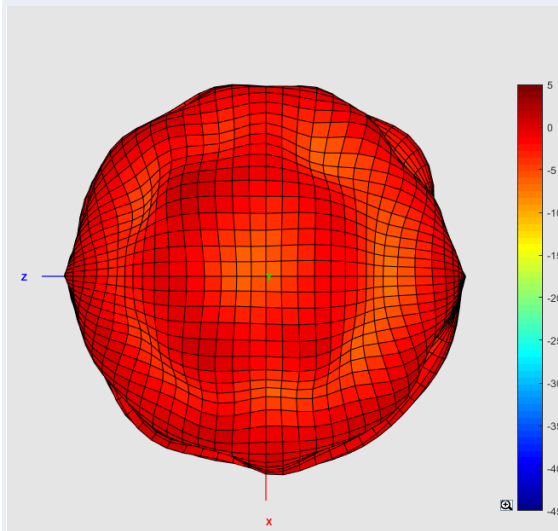
## 3D Radiation Pattern

5.85GHz

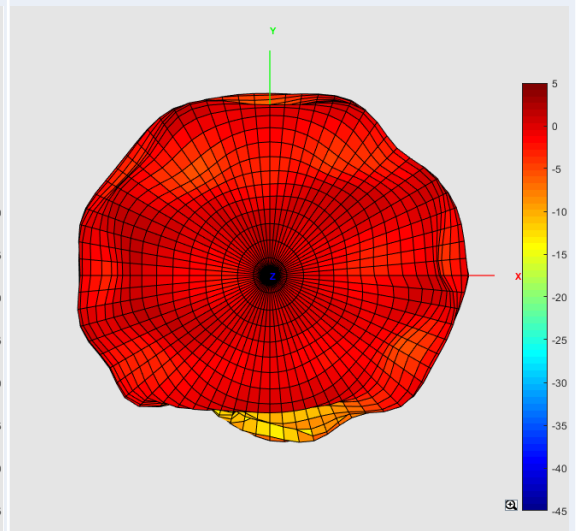
X-axis View



Y-axis View



Z-axis View



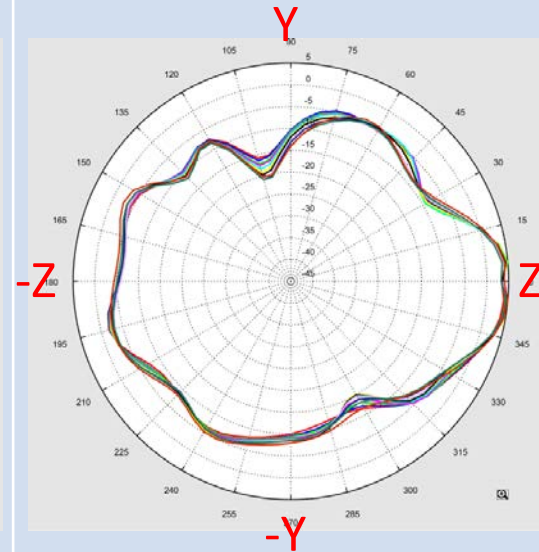
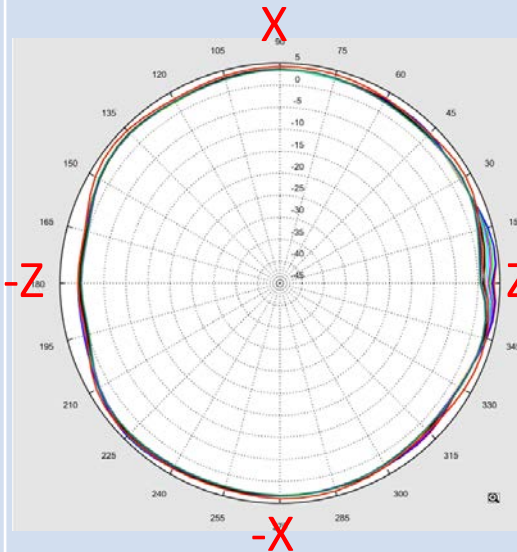
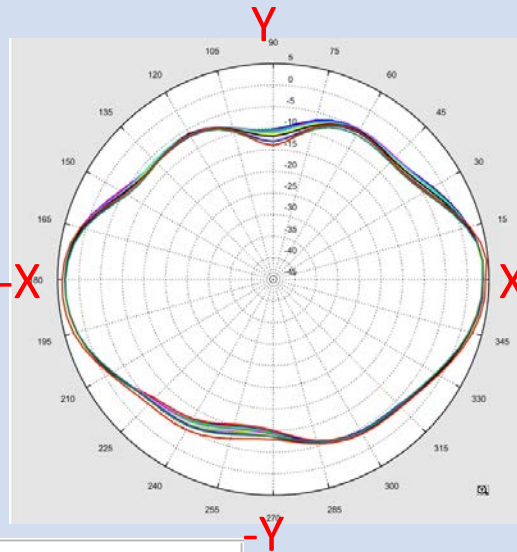
# 2D Radiation Pattern

XY-Plane

XZ-Plane

YZ-Plane

- 2.4GHz
- 2.41GHz
- 2.42GHz
- 2.43GHz
- 2.44GHz
- 2.45GHz
- 2.46GHz
- 2.47GHz
- 2.48GHz
- 2.49GHz
- 2.5GHz

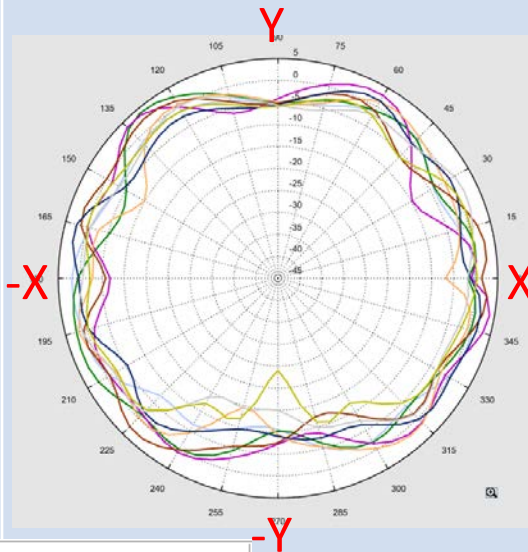


AXIS

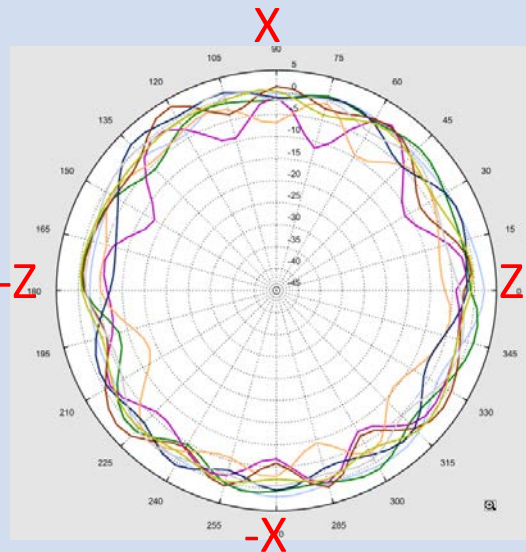
	Max	Step	Min
Y	5	5	-45

# 2D Radiation Pattern

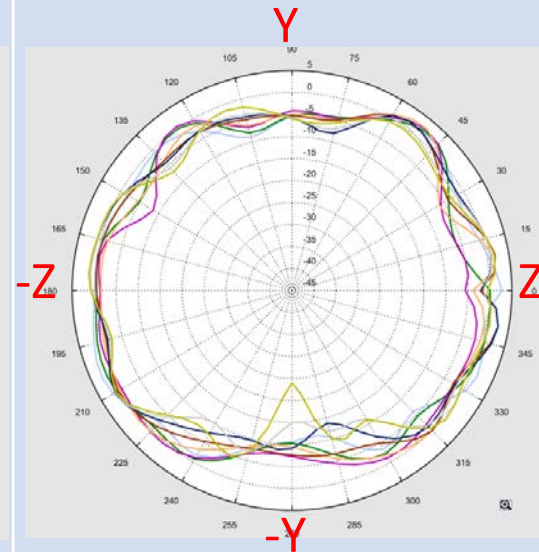
XY-Plane



XZ-Plane



YZ-Plane



- |                                     |         |     |
|-------------------------------------|---------|-----|
| <input checked="" type="checkbox"/> | 5.15GHz | □□□ |
| <input checked="" type="checkbox"/> | 5.25GHz | ■   |
| <input checked="" type="checkbox"/> | 5.35GHz | □□□ |
| <input checked="" type="checkbox"/> | 5.45GHz | □□□ |
| <input checked="" type="checkbox"/> | 5.55GHz | □□□ |
| <input checked="" type="checkbox"/> | 5.65GHz | □□□ |
| <input checked="" type="checkbox"/> | 5.75GHz | □□□ |
| <input checked="" type="checkbox"/> | 5.85GHz | □□□ |

Y-AXIS

	Max	Step	Min
Y	5	5	-45

# Antenna Gain and Efficiency

Frequency(MHz)	2400	2410	2420	2430	2440	2450	2460	2470	2480	2490	2500
Directivity(dBi)	5.36	5.32	5.35	5.21	5.2	5.21	5.09	5.12	5.17	5.15	5.11
Efficiency(dB)	-1.11	-1.1	-1.26	-1.24	-1.3	-1.38	-1.34	-1.6	-1.58	-1.62	-0.9
Efficiency(%)	77.45	77.62	74.82	75.16	74.13	72.78	73.45	69.18	69.5	68.87	81.28
Gain(dBi)	4.25	4.22	4.09	3.97	3.9	3.83	3.75	3.52	3.59	3.53	4.21

# Antenna Gain and Efficiency

Frequency(MHz)	5150	5250	5350	5450	5550	5650	5750	5850
Directivity(dBi)	4.92	4.04	4.6	3.93	4.51	4.37	3.71	3.42
Efficiency(dB)	-1.28	-0.83	-1.08	-1.7	-0.6	-1.26	-1.65	-1.81
Efficiency(%)	74.47	82.6	77.98	67.61	87.1	74.82	68.39	65.92
Gain(dBi)	3.64	3.21	3.52	2.23	3.91	3.11	2.06	1.61