APPROVAL SHEET
(RoHS)

CUSTOMER	:	海華科技股份有限公司
CUSTOMER'S PART NO.	:	
DESCRIPTION	:	METAL STAMPING ANTENNA ASSEMBLY
PART NO.	:	MSA-4008-25GC1-A2
DATE	:	
AUTHORIZED BY	:	*Jason Chang*

	FULLY APPROVED	PARTIALLY APPROVED	REJECTED
SIGN			
SUGGESTION			

美磊科技股份有限公司
MAG. LAYERS SCIENTIFIC-TECHNICS CO., LTD
No.270, Nanfeng Rd., Pingzhen Dist., Taoyuan City 324, Taiwan (R.O.C.)
TEL: +886-3-4159111 FAX: +886-3-4192255
http://www.maglayers.com.tw
E-mail：info@maglayers.com.tw

Revisions

REV.	Description	Date	Prepared by	Approved by
V01	New Release	2022/12/14	*Alex*	*Jason*

PRODUCT IDENTIFICATION

MSA – 4008 – ###xx – A2 – □ □
① ② ③ ④ ⑤

① Product Code
② Dimension Code
③ Series Type (### represents center frequency and xx represents material type)
④ Design Code
⑤ Inner Control Code

Contents

Mechanical Specification

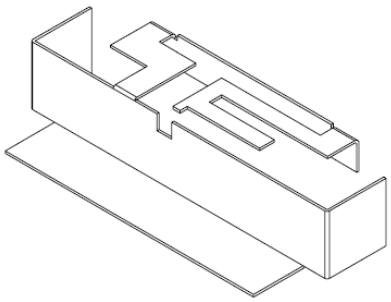
RoHS COMPLIANT

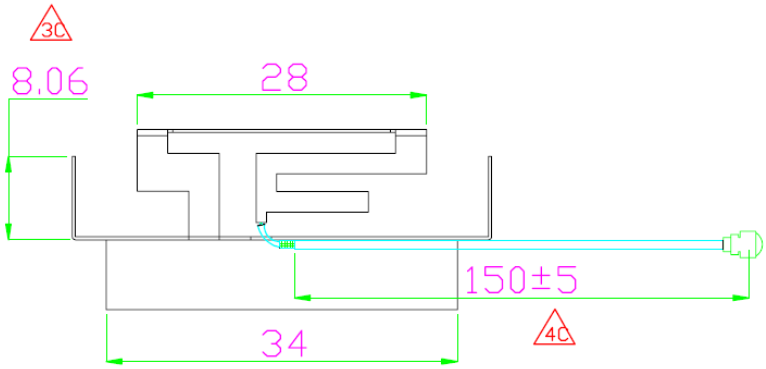
MECHANICAL

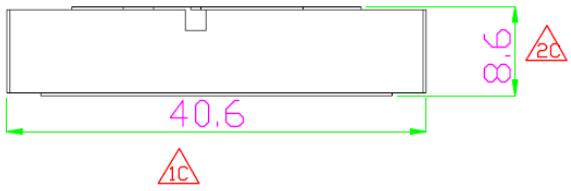
Body : SUS 430(鍍鎳) T=0.3mm
Cable : Coaxial Cable ϕ 1.13(Black)
Connector : IPEX-4 Compatible

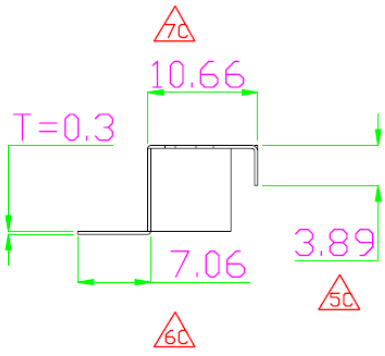
ELECTRICAL

Frequency : 2.4/5GHz









※凡標記Ⓒ記號者，為品管檢驗之尺寸

設計 DR. Seric 2018/08/16	核准 APPD. Frank 2018/08/16	容許公差 TOLERANCE .XXX ±0.1 .XX ±0.5 .X ±1.0 X ±3.0 ANG ±5	品名 ARTICLE MSA-4008-25GC1-A2	
版本說明 REVISION NOTE				
MAGLAYERS			單位 UNIT mm	比例 SCALE ****
			張數 SHEET 1	版本 REV. A

Antenna Specification

ELECTRICAL PROPERTIES

1.1 Frequency Range……..... 2.4~2.5GHz /4.9~5.9GHz

1.2 Antenna Type……..... PIFA

1.3 Impedance…….. 50 Ohm Nominal

1.4 Return Loss…… -10dB (Max)

1.5 Radiation……. Directional

1.6 3D Peak Gain……..... 2.98dBi(2.4~2.5GHz)
5.16dBi(4.9~5.9GHz)

1.7 Polarization……..… Linear Vertical

1.8 Admitted Power…….. 1W

PHYSICAL PROPERTIES

2.1 Antenna Material……. SUS430 (鍍鎳)

2.2 Cable…….. Coaxial Cable ϕ1.13(Black)

2.3 Connector……. IPEX-4 Compatible

2.4 Operating Temp..... -20℃ ~ +65℃

2.5 Storage Temp..... -30℃ ~ +75℃

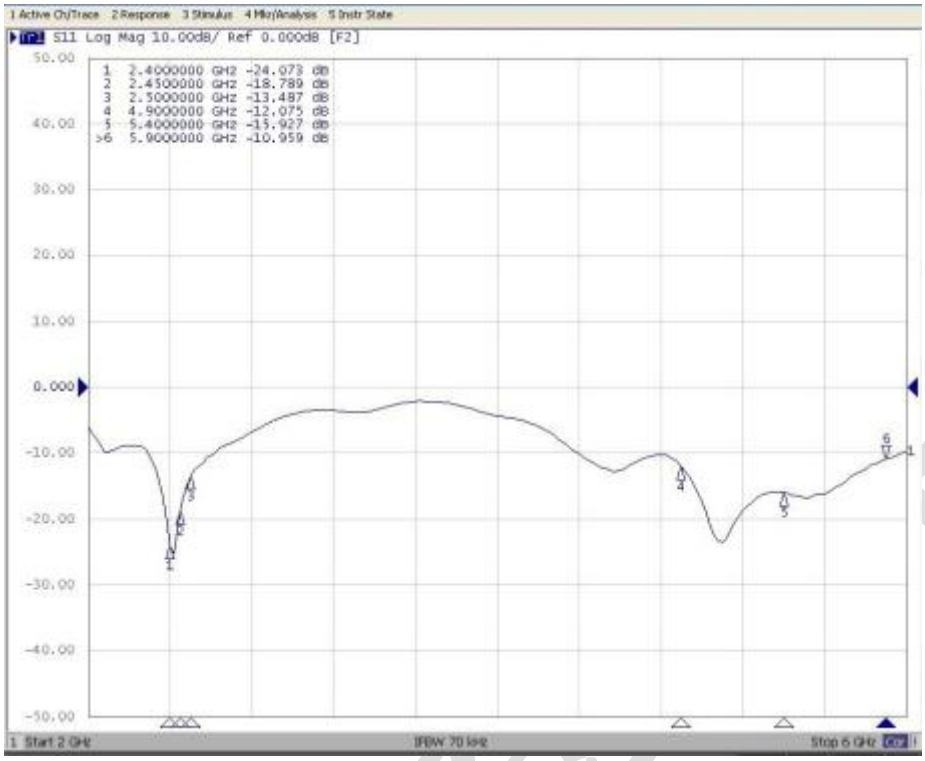
Test Report

ELECTRICAL CHARACTERISTICS

P/NO: MSA-4008-25GC1-A2

Spec: 2.4~2.5GHz /4.9~5.9GHz

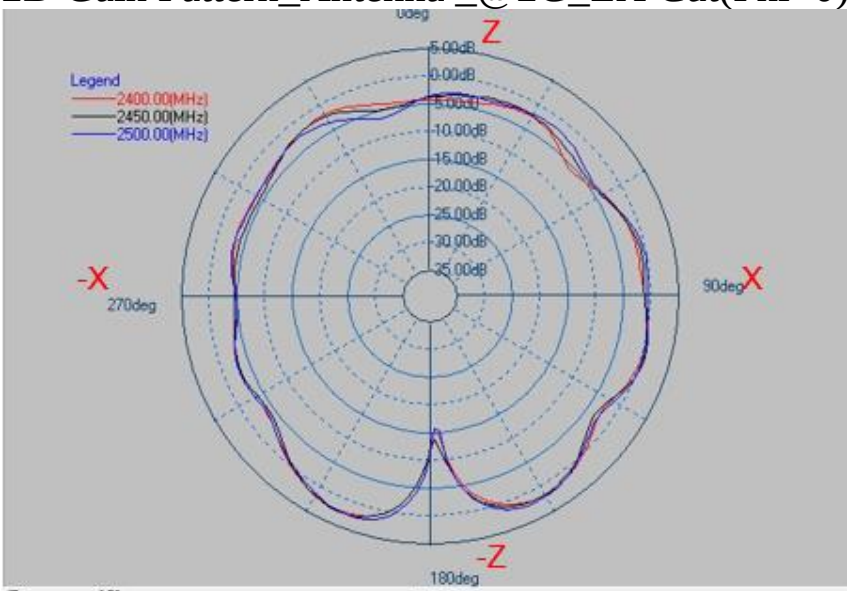
S11



Peak Gain & Efficiency List Table

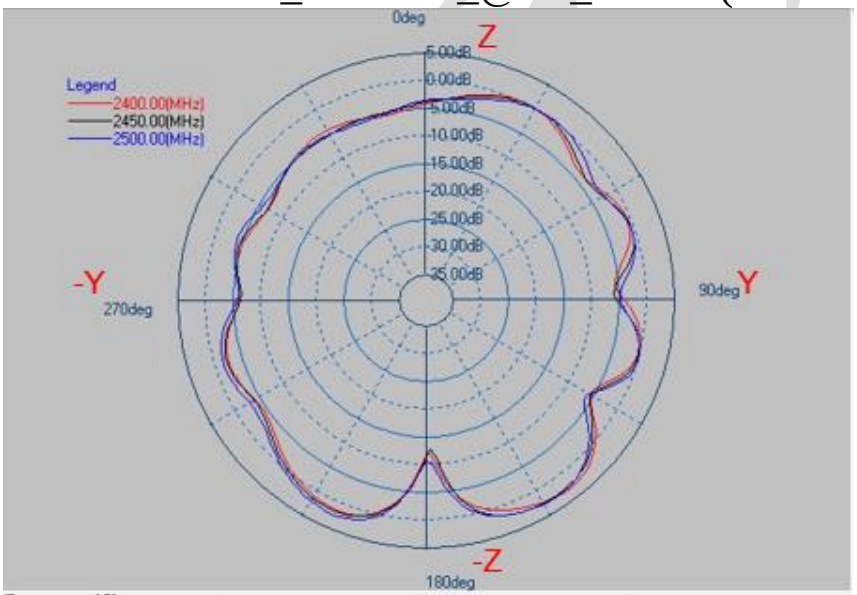
Frequency (MHz)	Efficiency (%)	Peak Gain (dBi)
2400	60%	2.98
2450	61%	2.87
2500	66%	2.88
5150	66%	4.61
5250	61%	4.56
5350	57%	4.32
5470	65%	4.30
5500	66%	4.29
5600	73%	5.16
5725	79%	4.99
5750	77%	4.89
5785	73%	4.63
5850	67%	4.11
5925	57%	3.05

2D Gain Pattern_Antenna _@2G_ZX Cut(Phi=0)



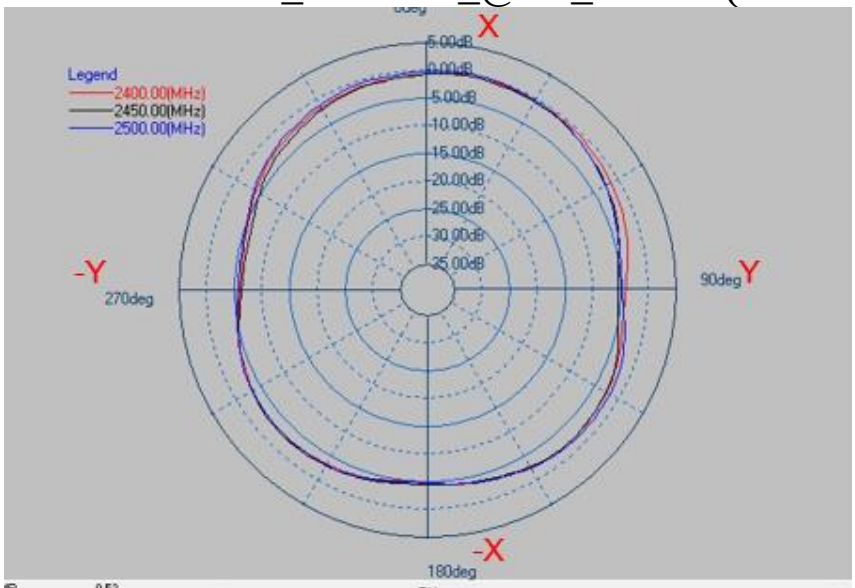
Layer	Max value	Min value	Average
2400(MHz)	2.15 dB	-15.23 dB	-1.99 dB
2450(MHz)	2.37 dB	-13.80 dB	-1.95 dB
2500(MHz)	2.42 dB	-15.95 dB	-1.74 dB

2D Gain Pattern_Antenna _@2G_ZY Cut(Phi=90)



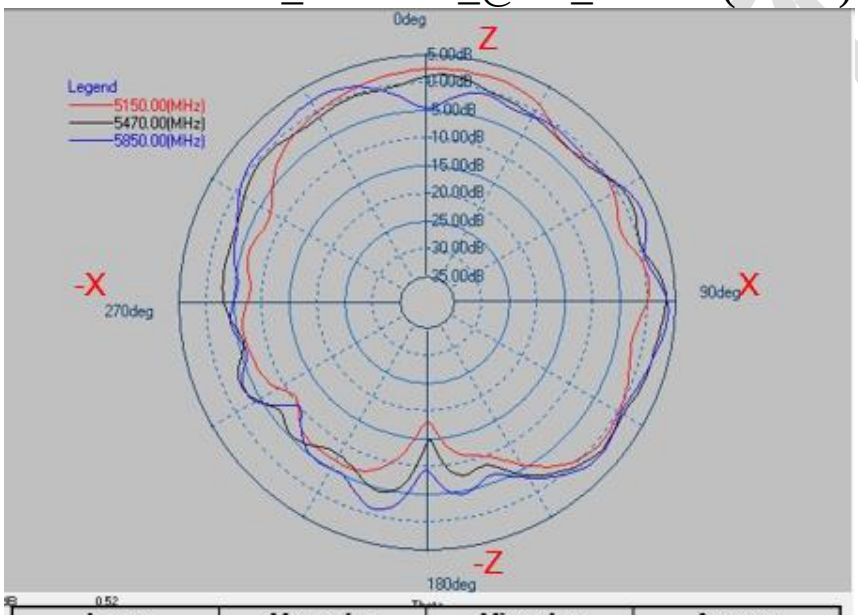
Layer	Max value	Min value	Average
2400(MHz)	2.97 dB	-12.03 dB	-2.03 dB
2450(MHz)	2.65 dB	-12.88 dB	-1.93 dB
2500(MHz)	2.82 dB	-10.67 dB	-1.64 dB

2D Gain Pattern_Antenna _@2G_XY Cut(Theta=90)



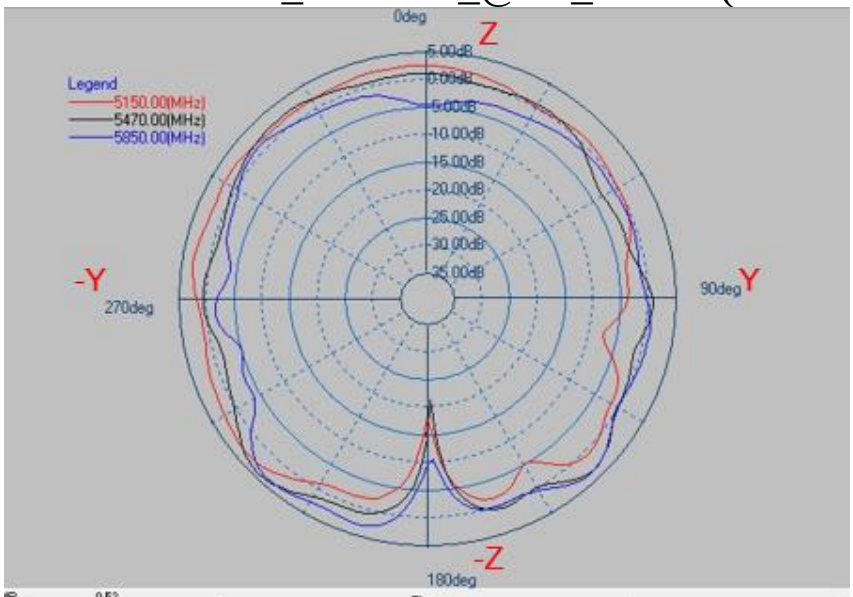
Layer	Max value	Min value	Average
2400(MHz)	-0.62 dB	-6.15 dB	-2.75 dB
2450(MHz)	-0.64 dB	-6.62 dB	-3.02 dB
2500(MHz)	-0.20 dB	-5.84 dB	-2.65 dB

2D Gain Pattern_Antenna _@5G_ZX Cut(Phi=0)



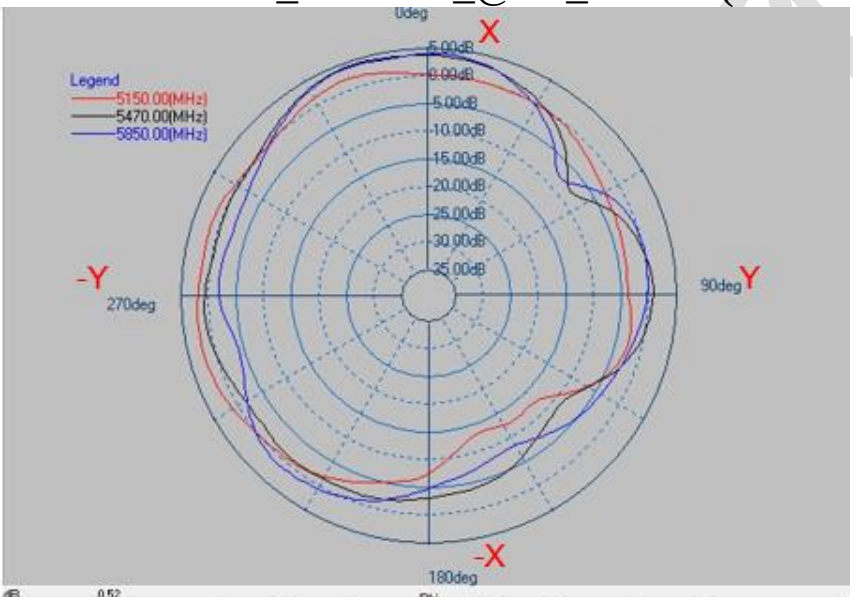
Layer	Max value	Min value	Average
5150(MHz)	2.28 dB	-18.26 dB	-2.07 dB
5470(MHz)	3.38 dB	-14.75 dB	-1.21 dB
5850(MHz)	3.89 dB	-10.05 dB	-0.84 dB

2D Gain Pattern_Antenna _@5G_ZY Cut(Phi=90)



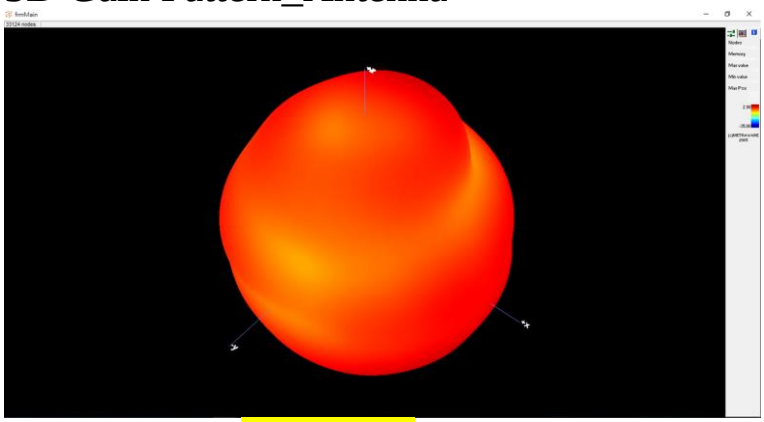
Layer	Max value	Min value	Average
5150(MHz)	3.03 dB	-18.26 dB	0.32 dB
5470(MHz)	4.04 dB	-21.57 dB	0.36 dB
5850(MHz)	3.65 dB	-10.63 dB	-0.32 dB

2D Gain Pattern_Antenna _@5G_XY Cut(Theta=90)

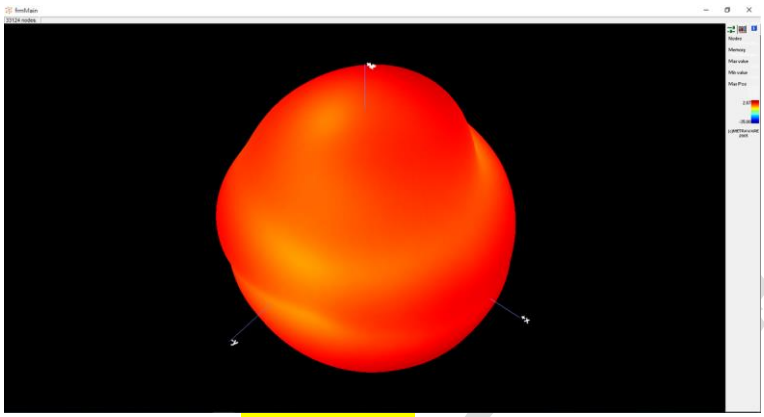


Layer	Max value	Min value	Average
5150(MHz)	2.20 dB	-13.33 dB	-1.13 dB
5470(MHz)	3.83 dB	-8.81 dB	-0.31 dB
5850(MHz)	3.76 dB	-8.52 dB	-0.64 dB

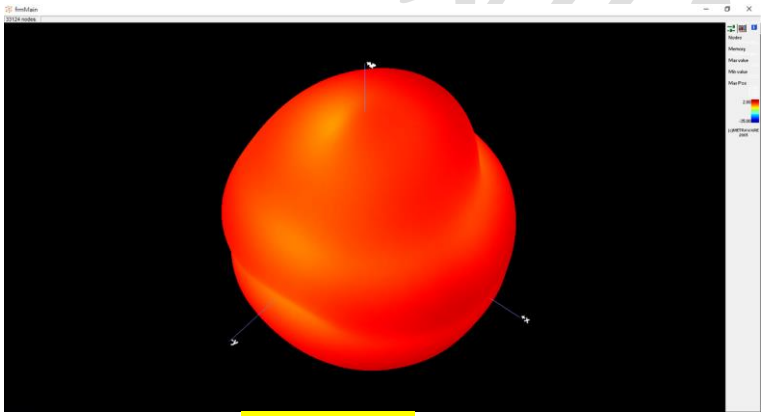
3D Gain Pattern_Antenna



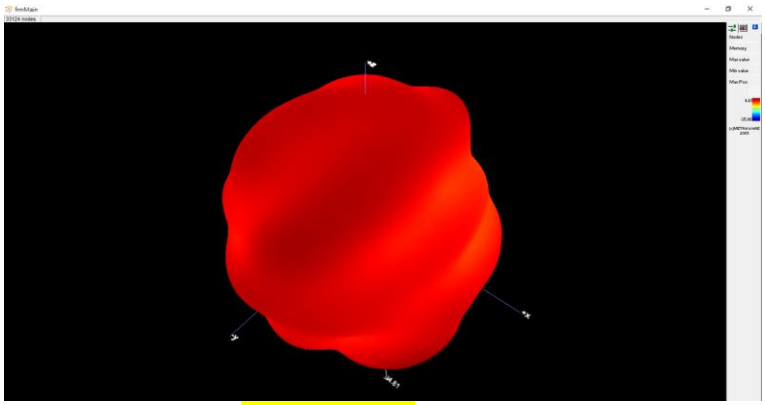
Peak Gain @ 2400MHz : 2.98dBi



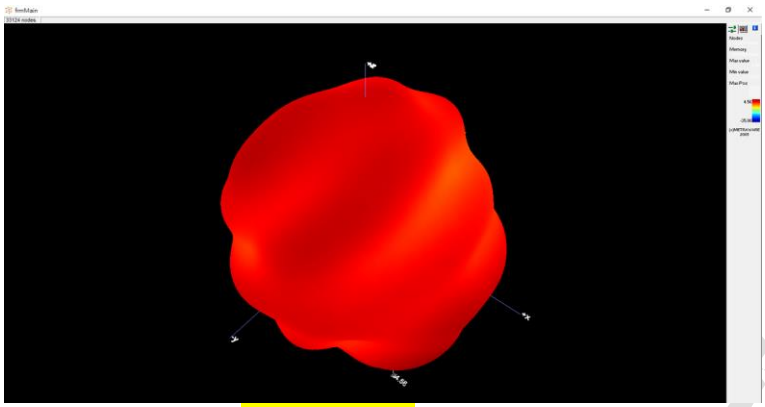
Peak Gain @ 2450MHz : 2.87dBi



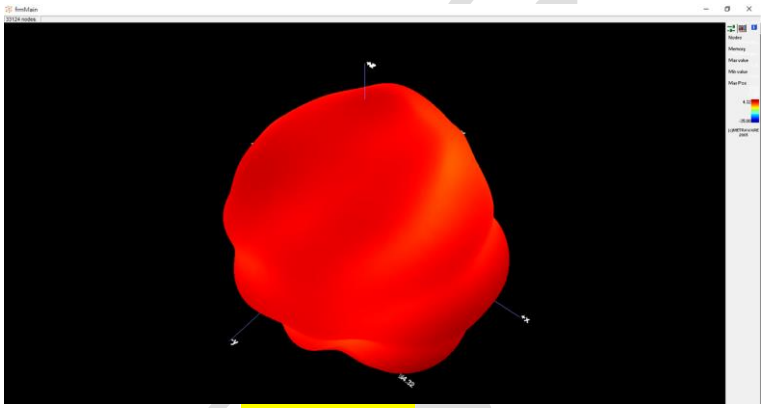
Peak Gain @ 2500MHz : 2.88dBi



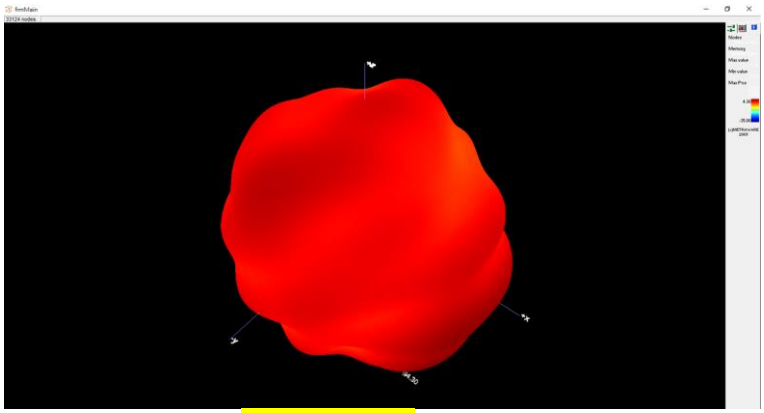
Peak Gain @ 5150MHz : 4.61dBi



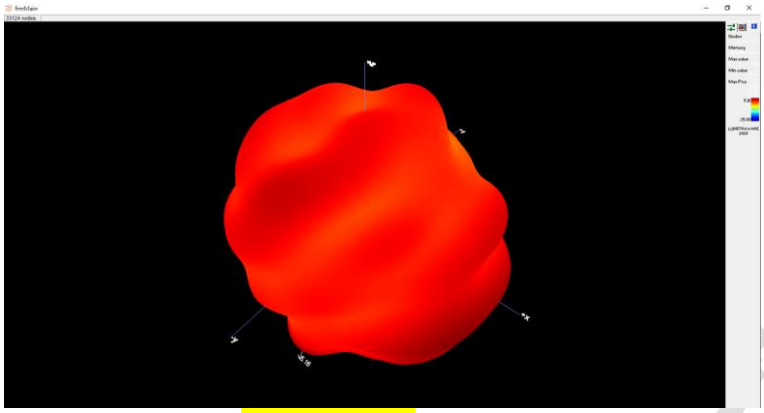
Peak Gain @ 5250MHz : 4.56dBi



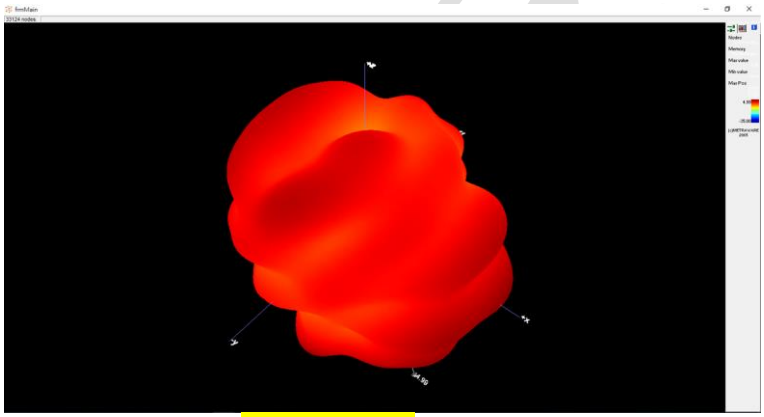
Peak Gain @ 5350MHz : 4.32dBi



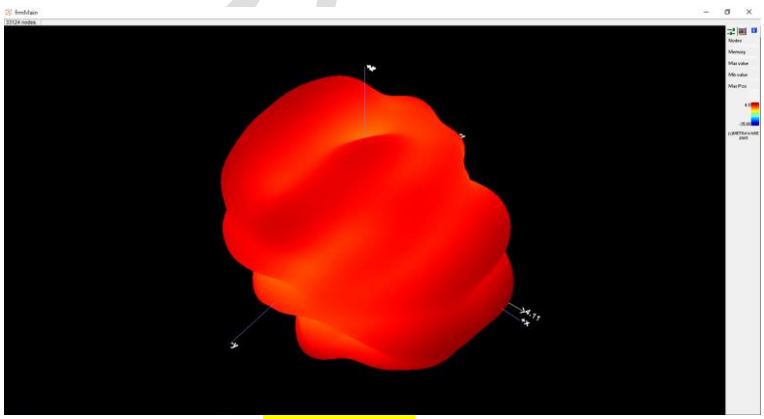
Peak Gain @ 5470MHz : 4.30dBi



Peak Gain @ 5600MHz : 5.16dBi



Peak Gain @ 5725MHz : 4.99dBi



Peak Gain @ 5850MHz : 4.11dBi