



# RG-AP180-I Antenna Test Report

Date : Sep. 6, 2022  
Prepared by : Stella Sun

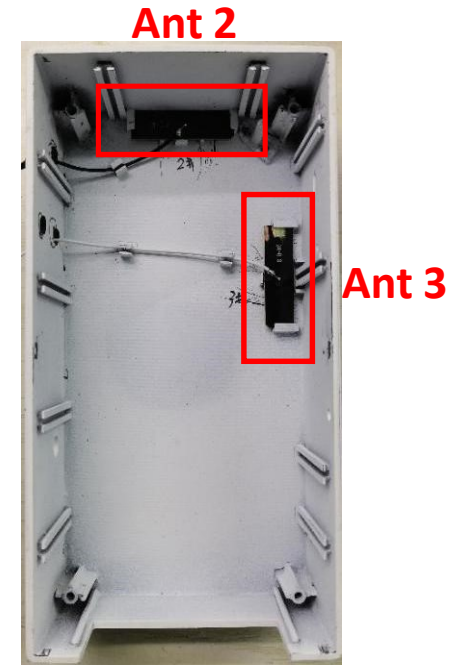
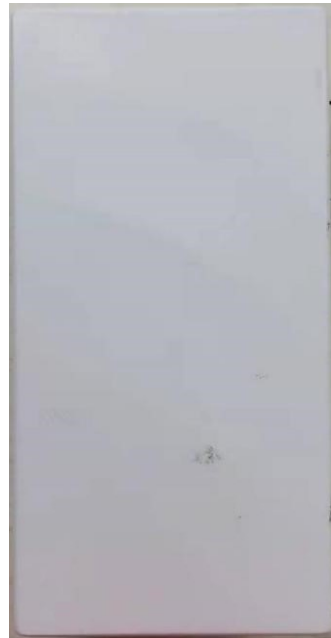
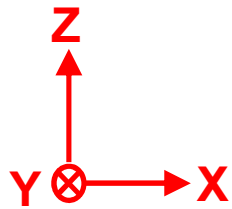


# Outline

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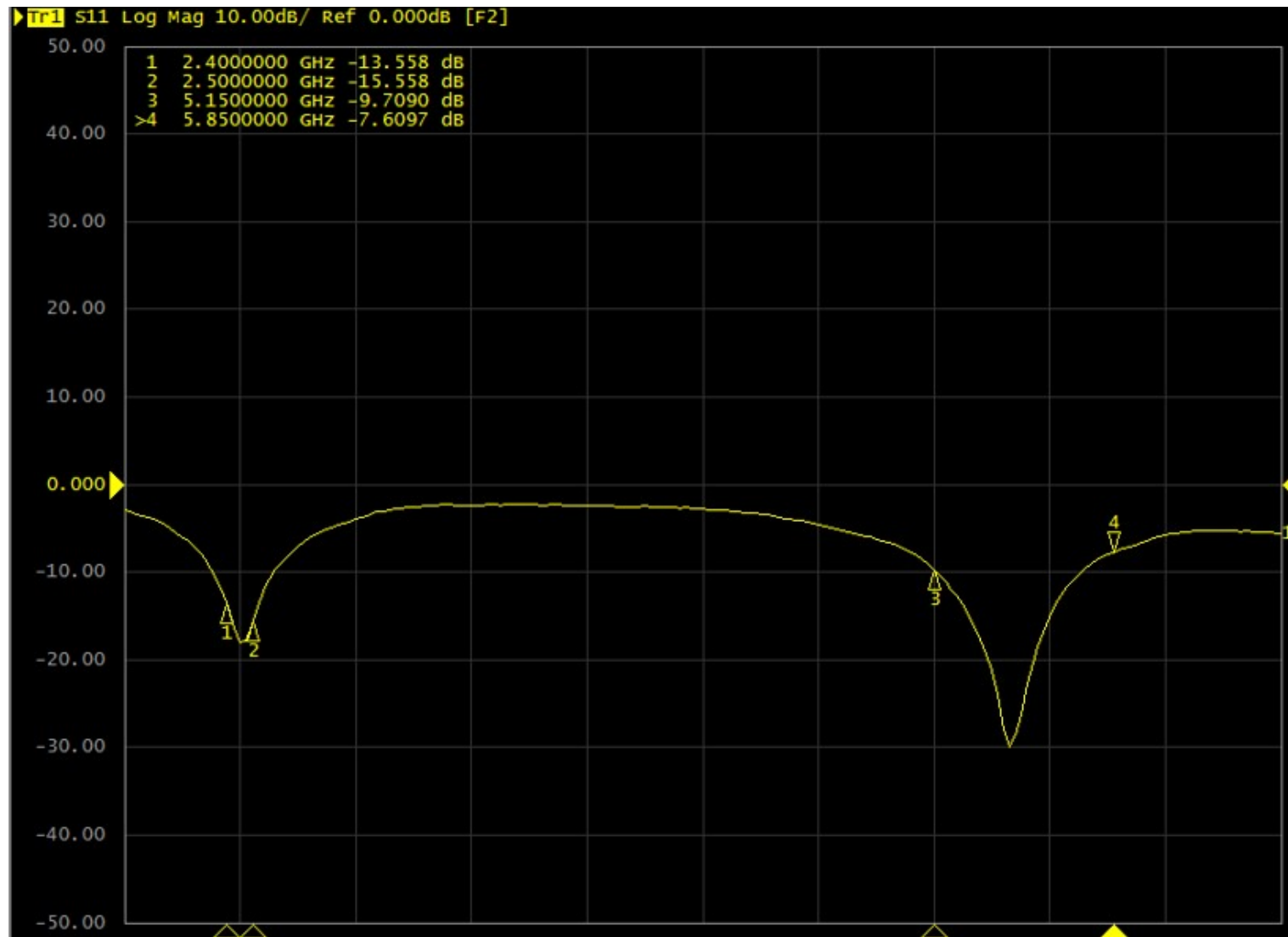
- Antenna Structure & Placement
- Return Loss & Isolation
- Radiation Pattern
- Peak Gain & Efficiency

# Antenna Structure & Placement

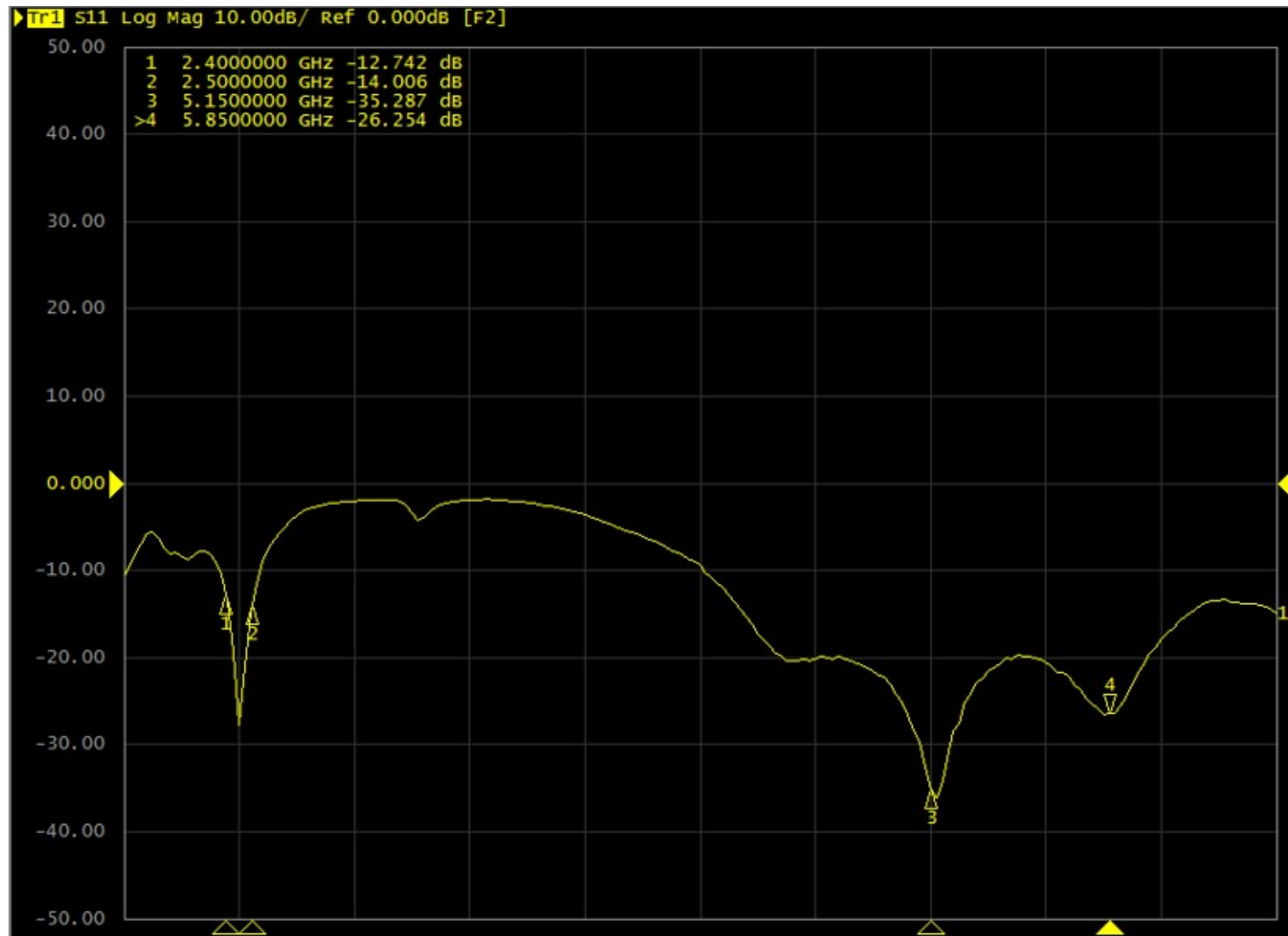


Antenna No.	Operating Frequency	Type	Material	Feeding	Size
Ant 1	BT	PIFA	Metal	Trace	22.8(L) x 5.1(W) x 4.8(H) mm <sup>3</sup>
Ant 2	WiFi 2G/5G	Dipole	PCB	Cable	35(L) x 10(W) x 0.8(T) mm <sup>3</sup>
Ant 3	WiFi 2G/5G	Dipole	PCB	Cable	35(L) x 10(W) x 0.8(T) mm <sup>3</sup>

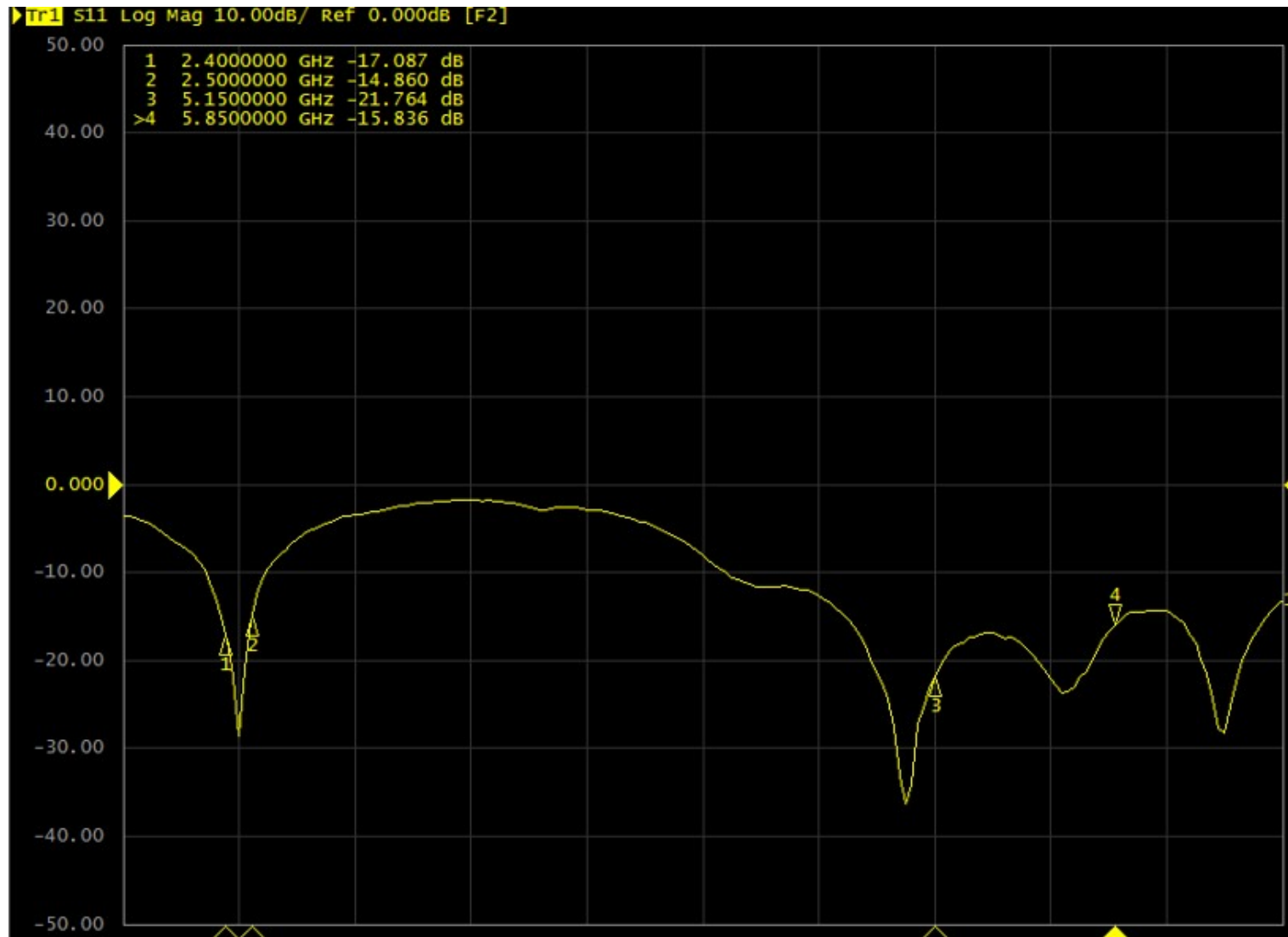
# Return Loss – Ant 1



# Return Loss – Ant 2

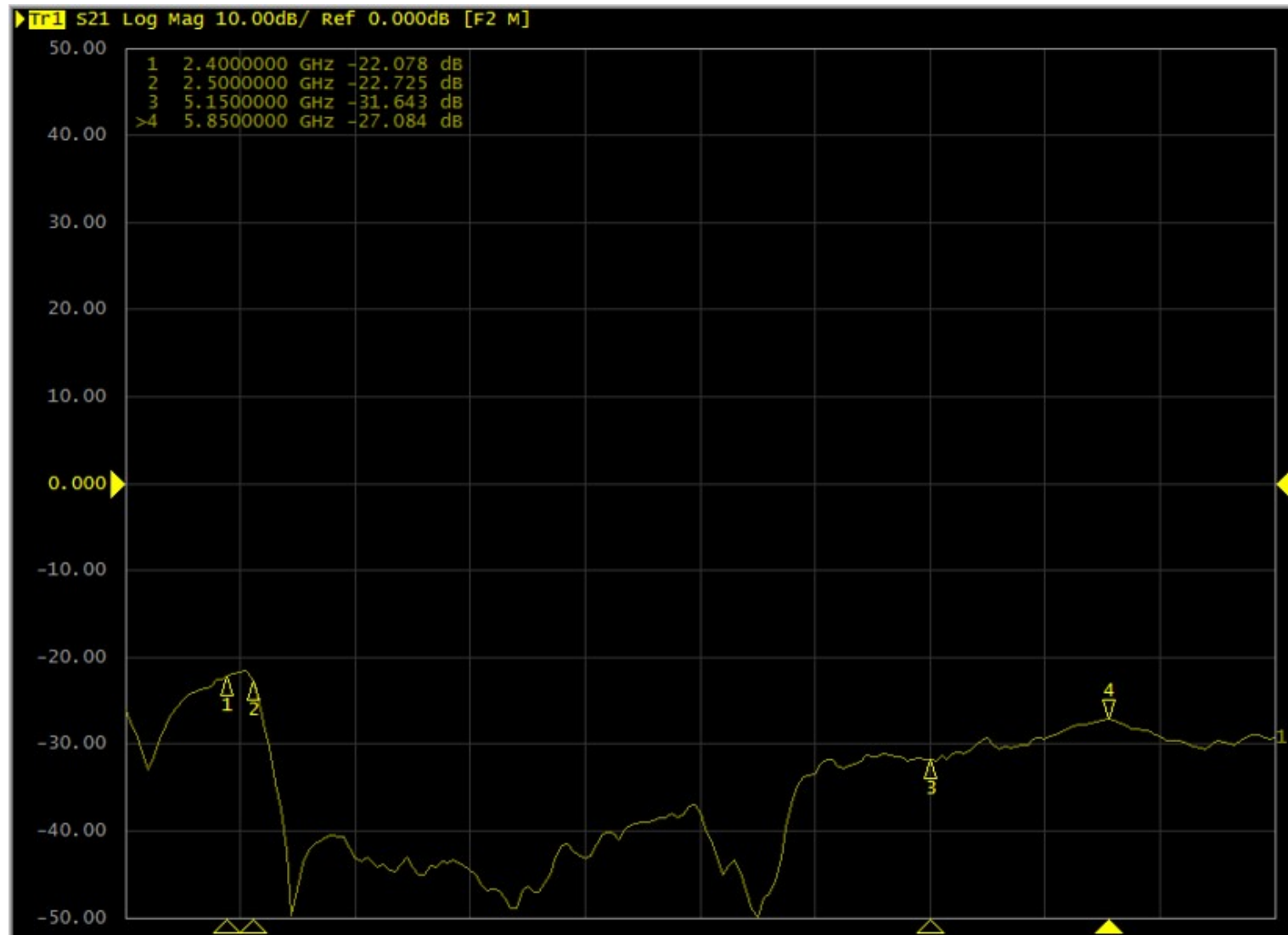


# Return Loss – Ant 3

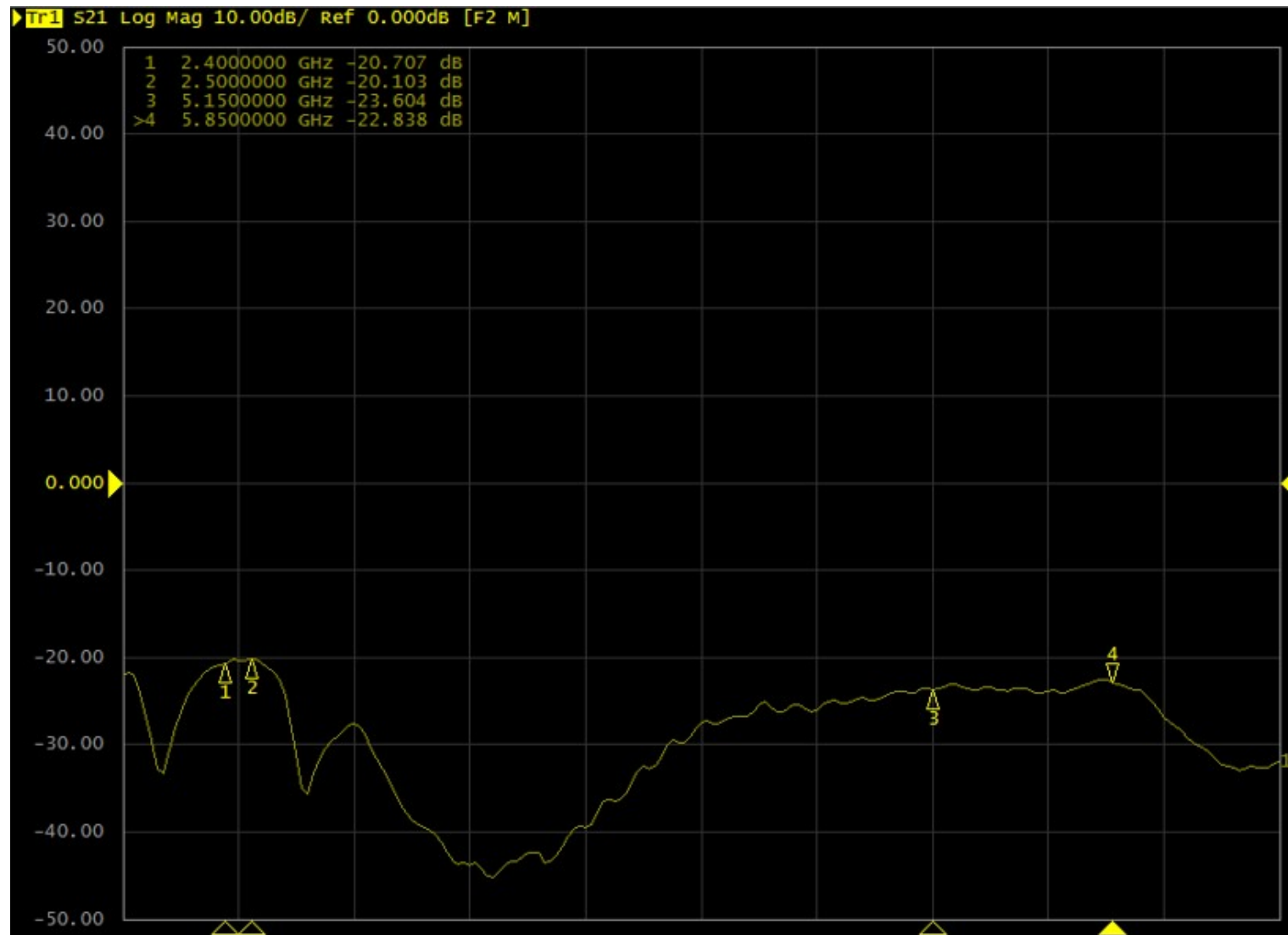




# Isolation – Ant 1 & Ant 2

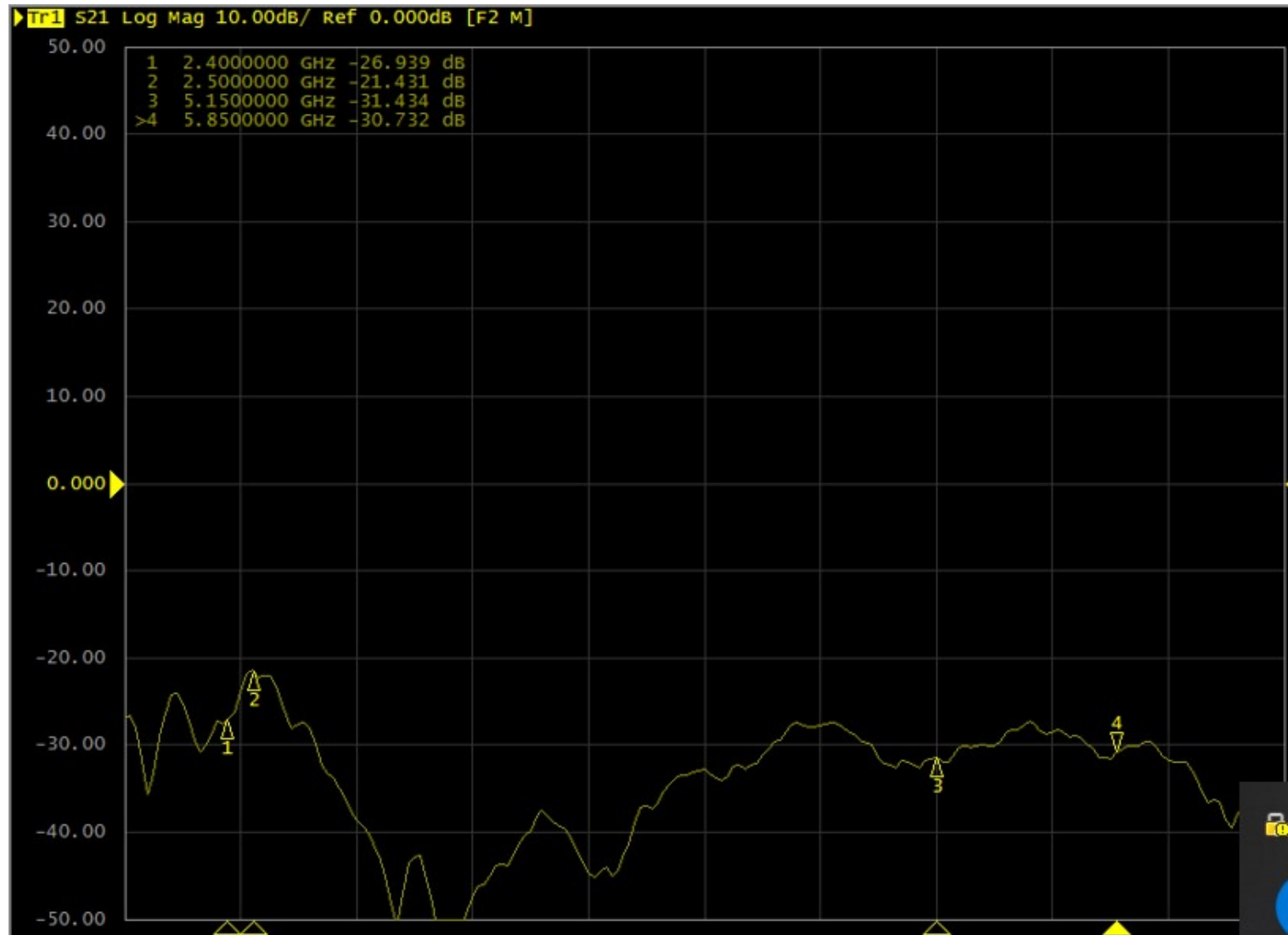


# Isolation – Ant 1 & Ant 3

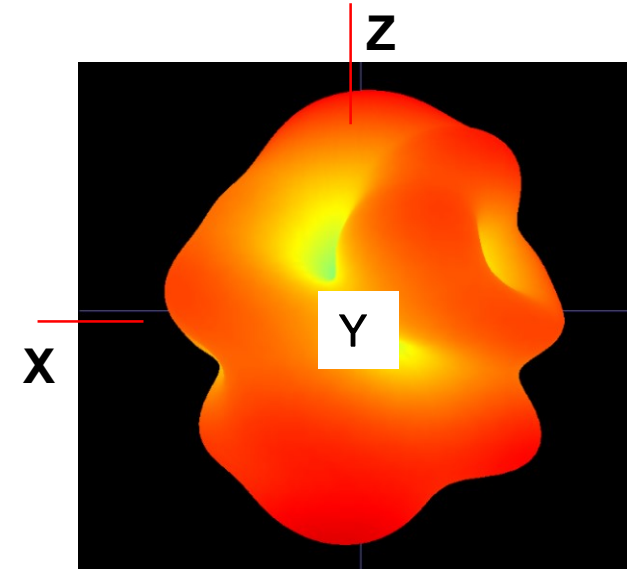
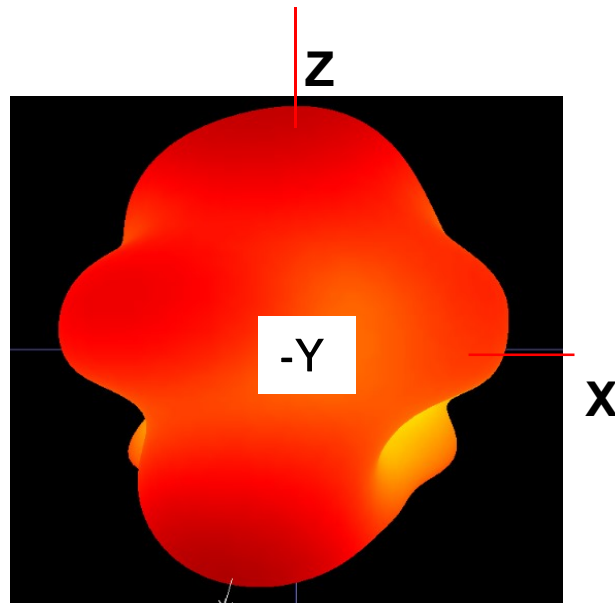
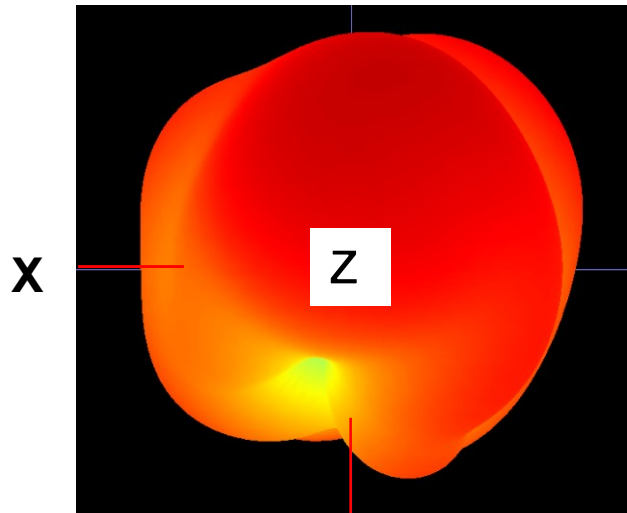
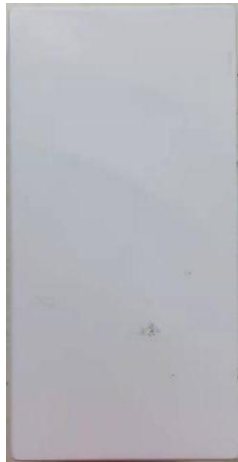
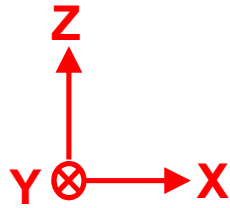
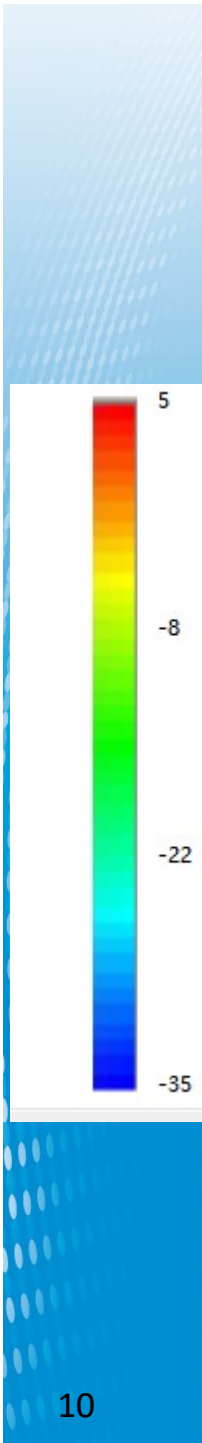




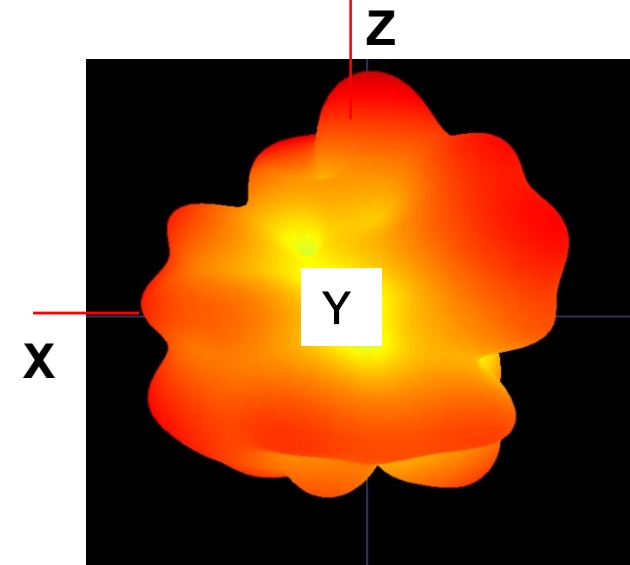
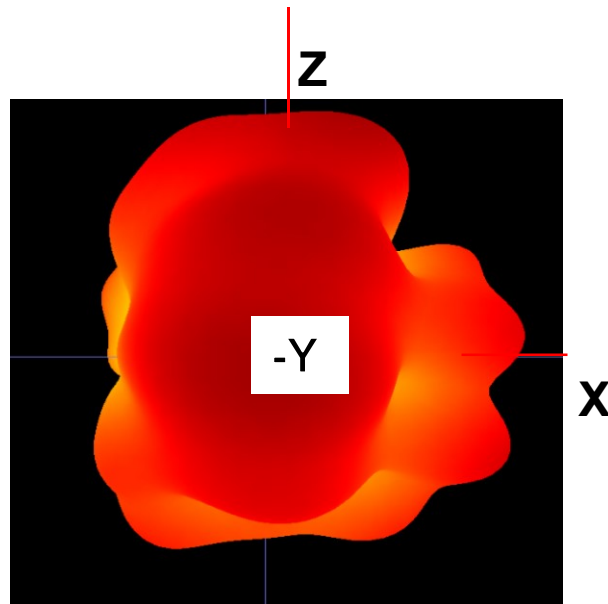
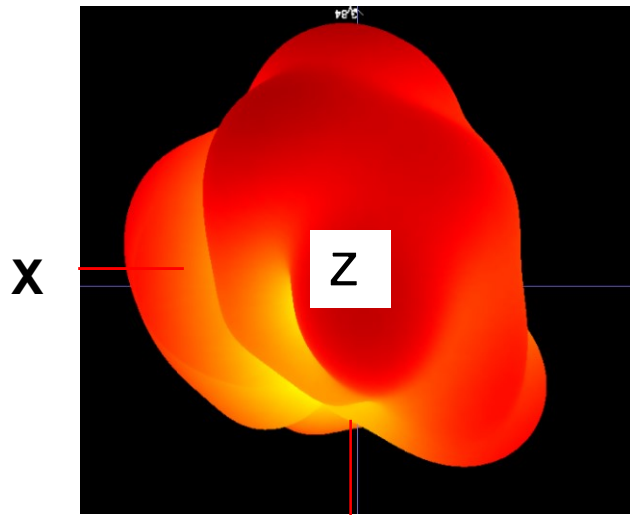
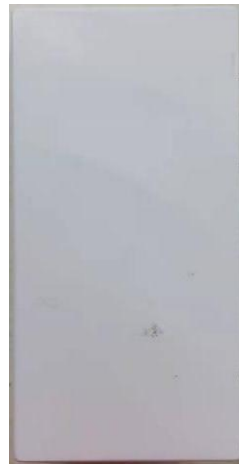
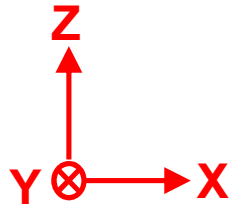
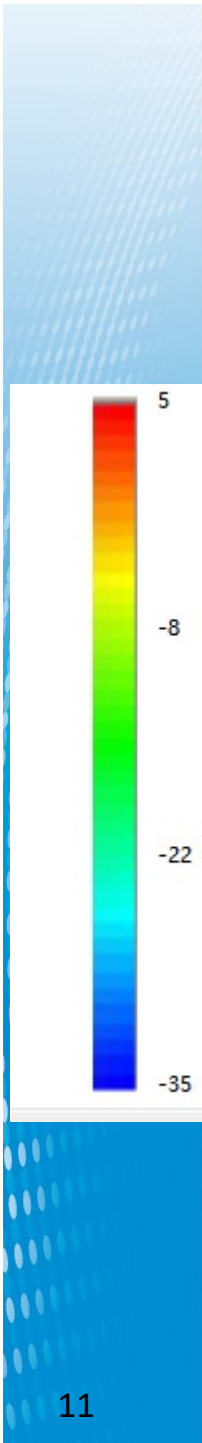
# Isolation – Ant 2 & Ant 3



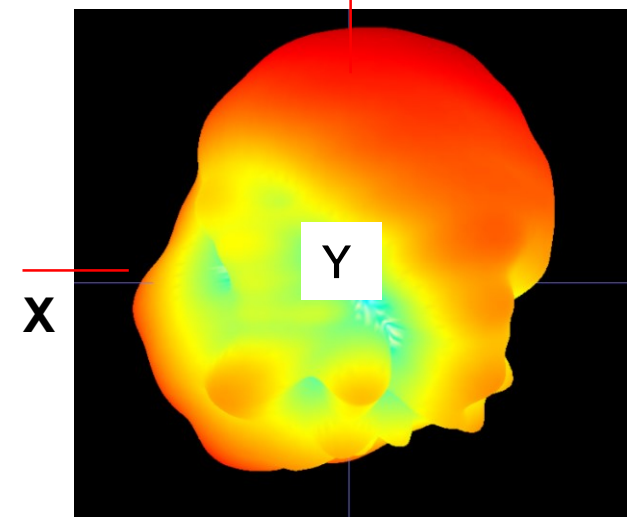
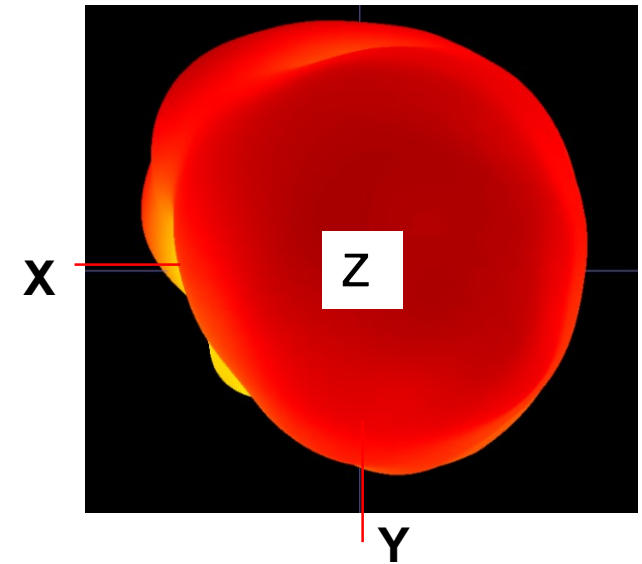
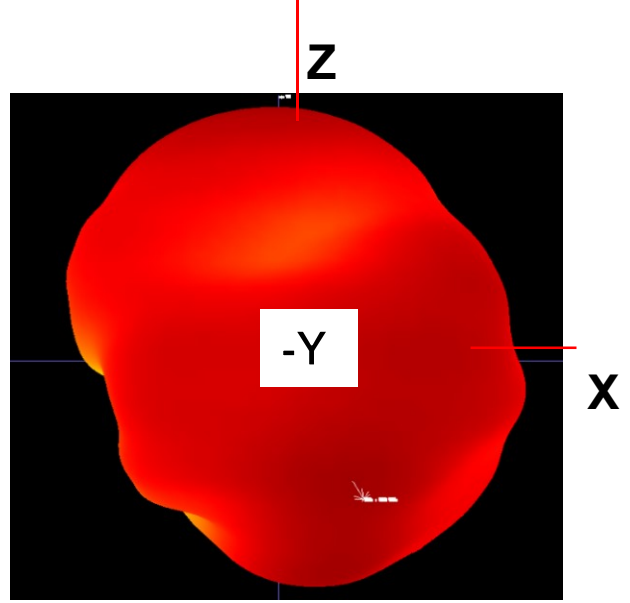
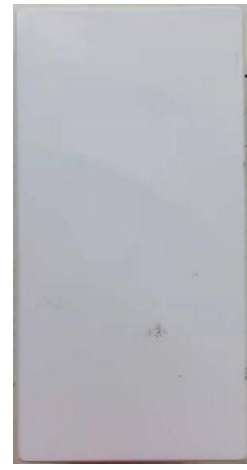
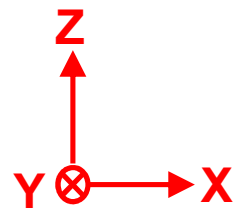
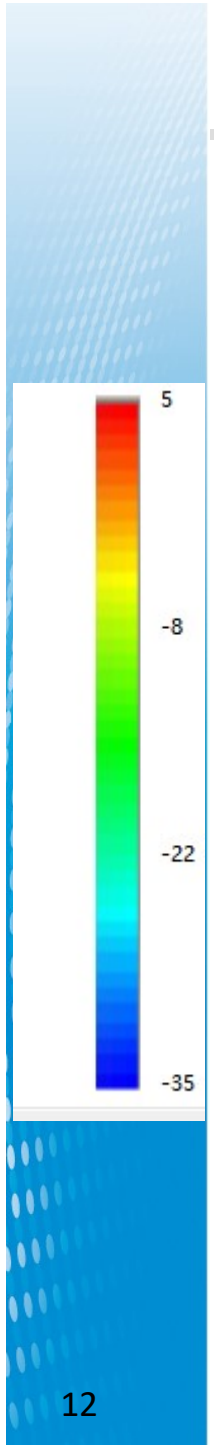
# 3D Pattern – Ant 1 @ 2.45GHz



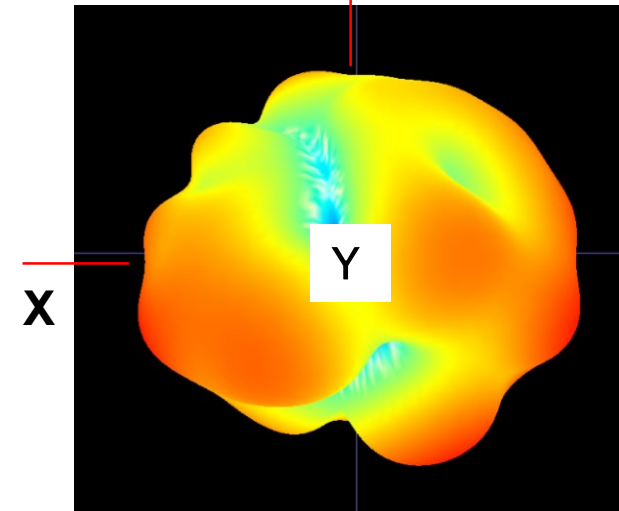
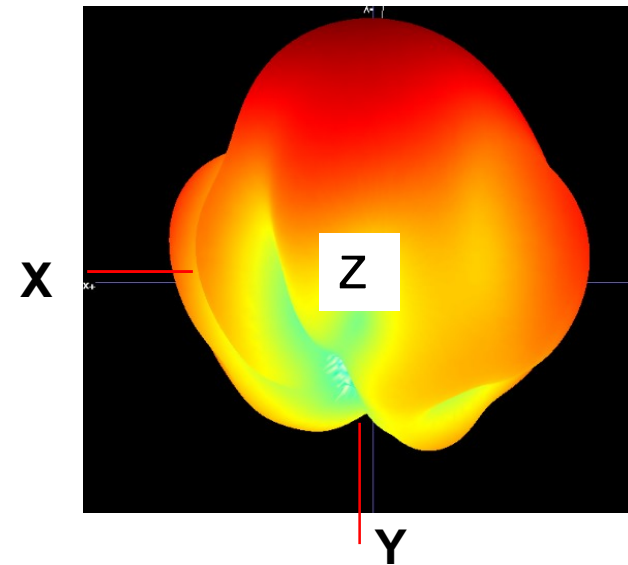
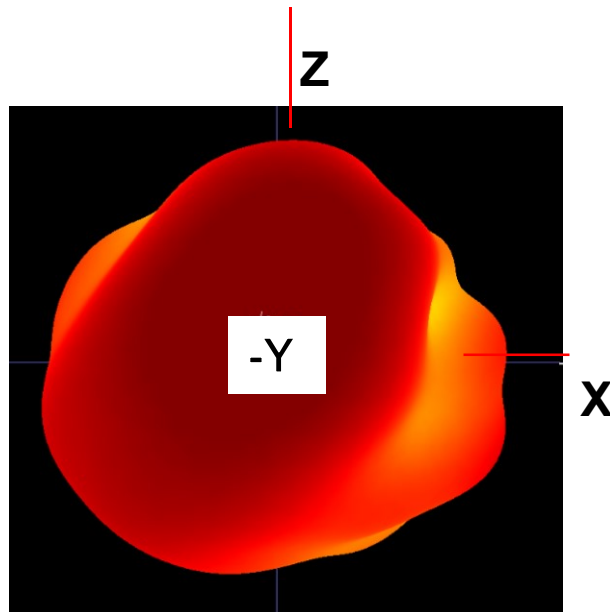
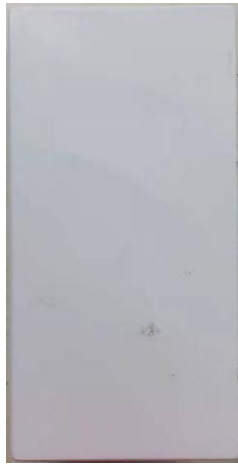
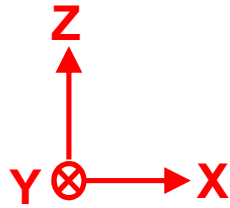
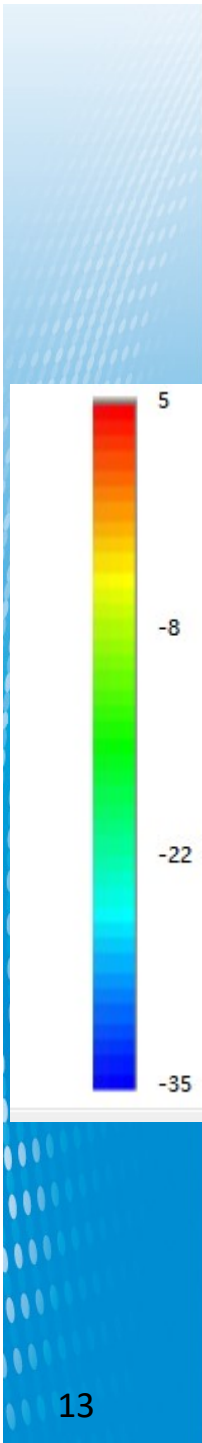
# 3D Pattern – Ant 2 @ 2.45GHz



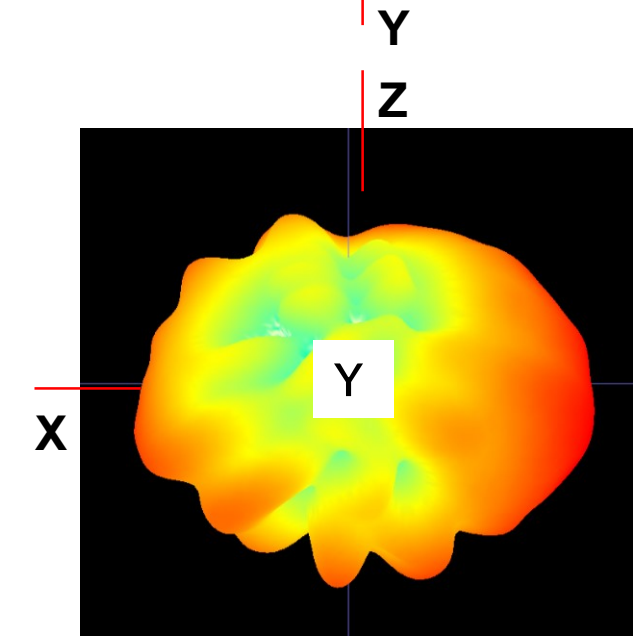
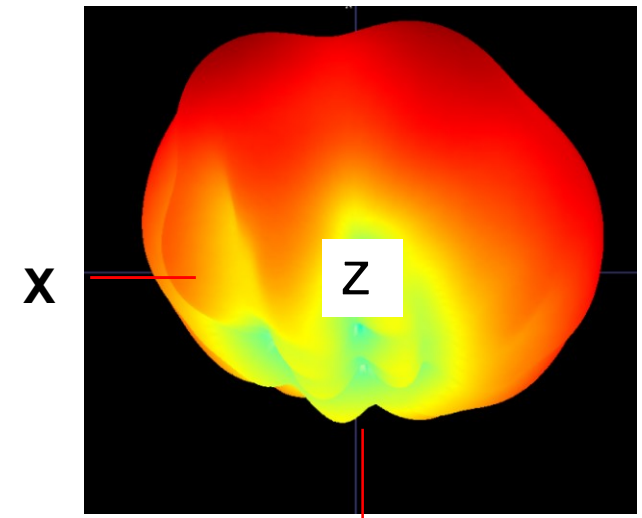
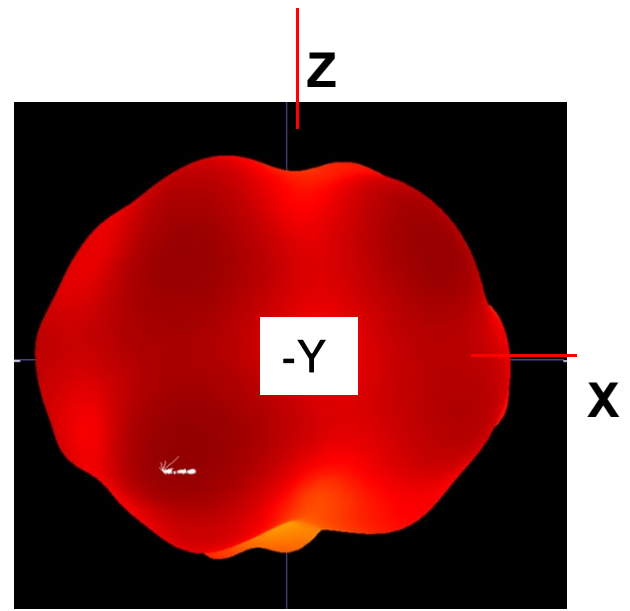
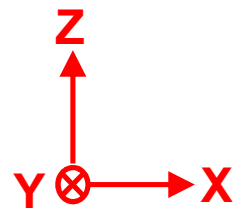
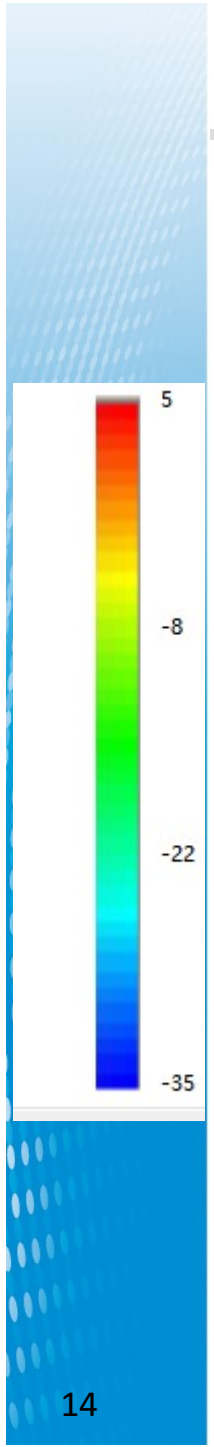
# 3D Pattern – Ant 2 @ 5.5GHz



# 3D Pattern – Ant 3 @ 2.45GHz

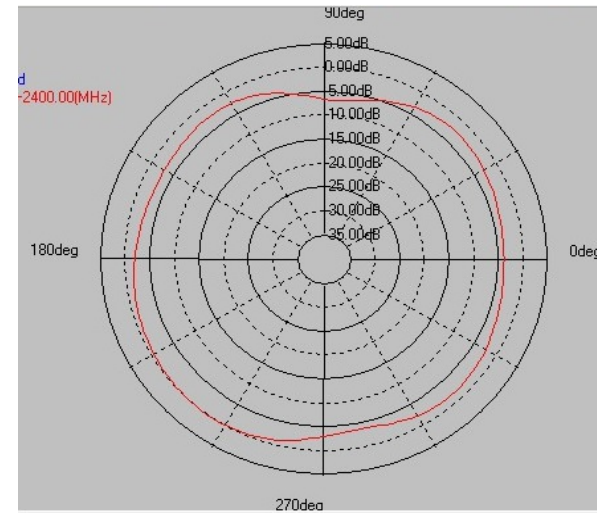
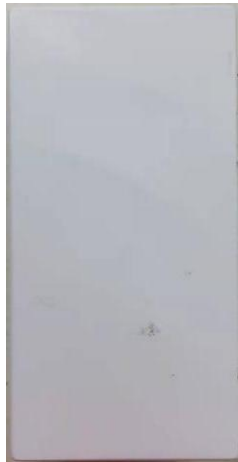
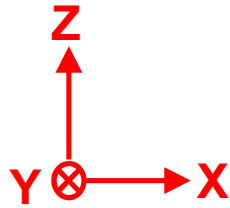


# 3D Pattern – Ant 3 @ 5.5GHz

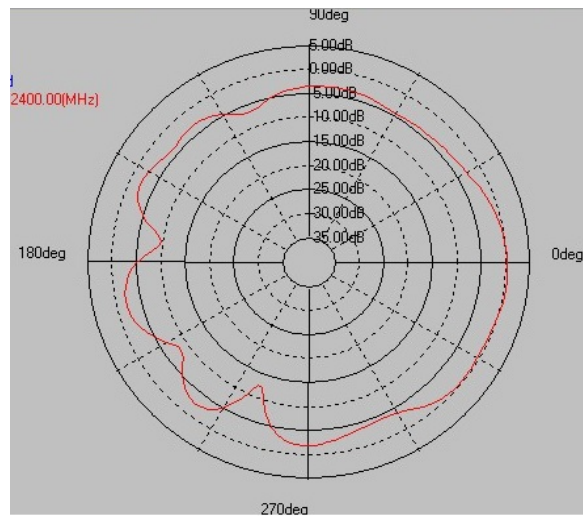




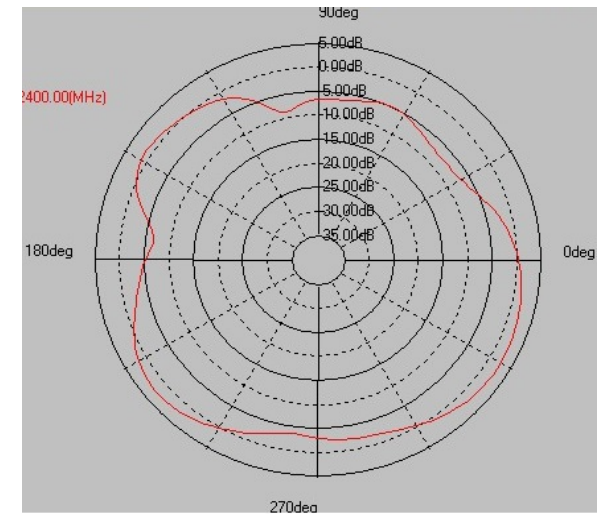
# 2D Pattern – Ant 1 @ 2.45GHz



**XY plane**

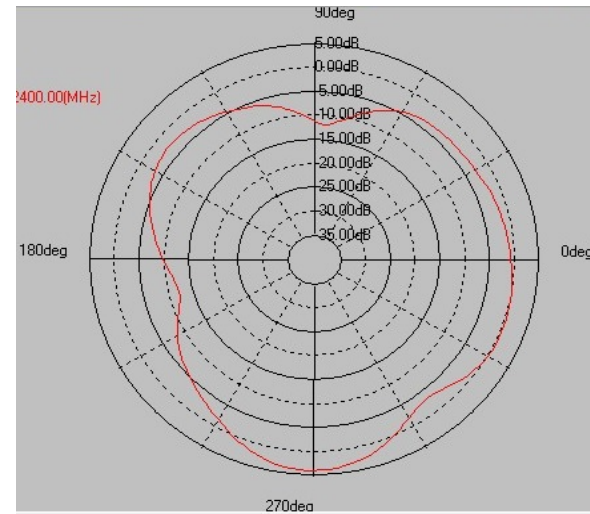
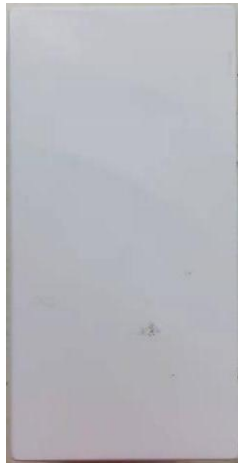
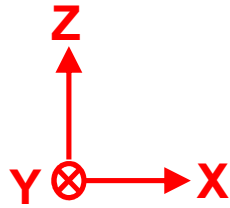


**XZ plane**

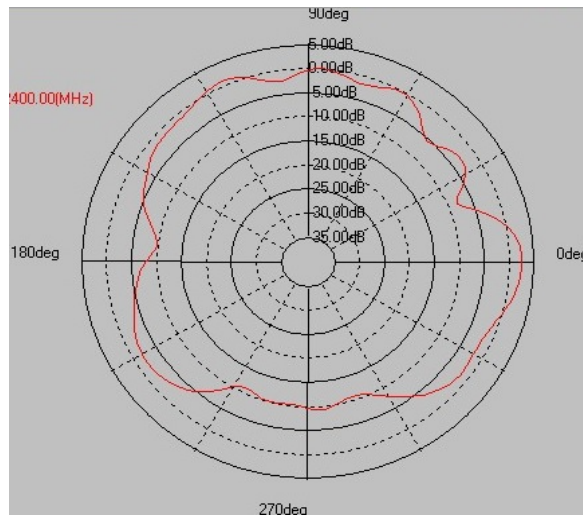


**YZ plane**

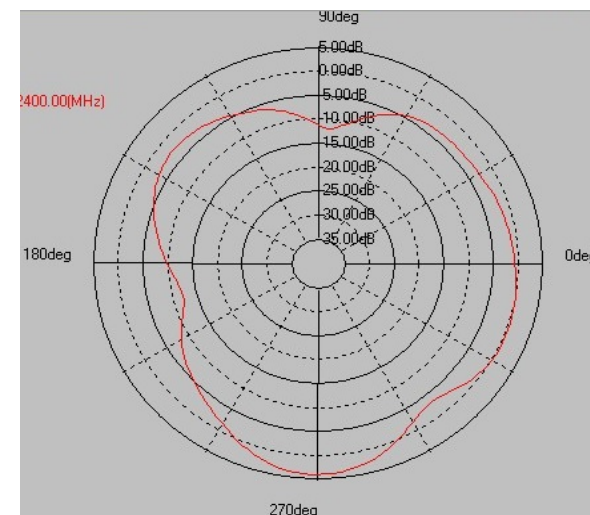
# 2D Pattern – Ant 2 @ 2.45GHz



**XY plane**

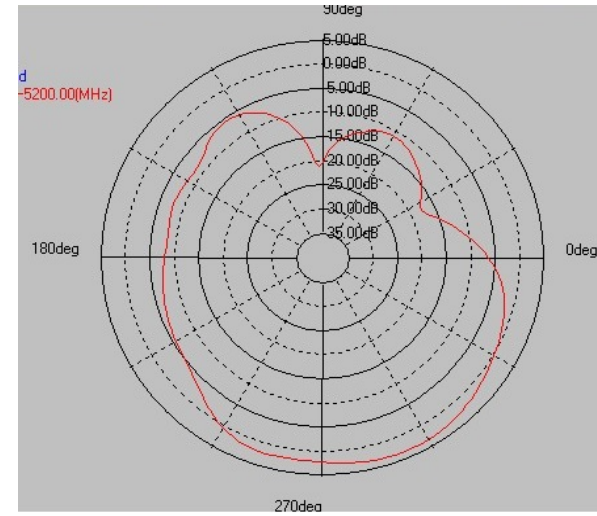
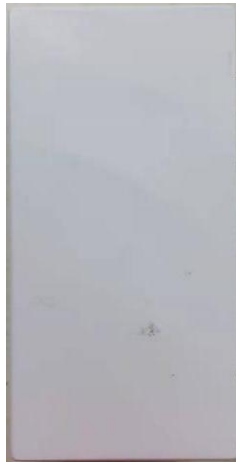
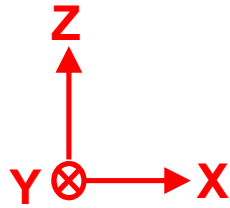


**XZ plane**

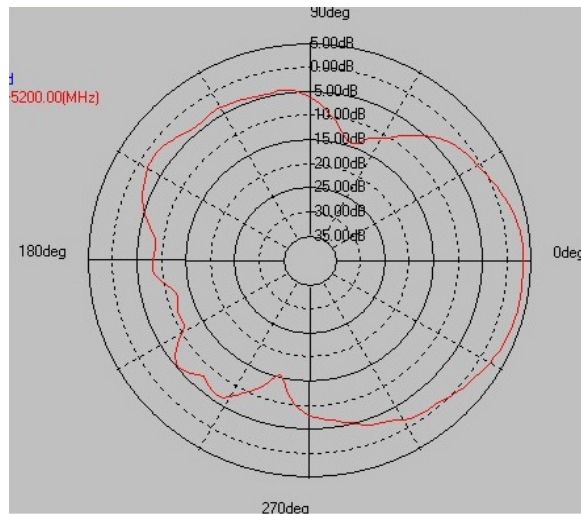


**YZ plane**

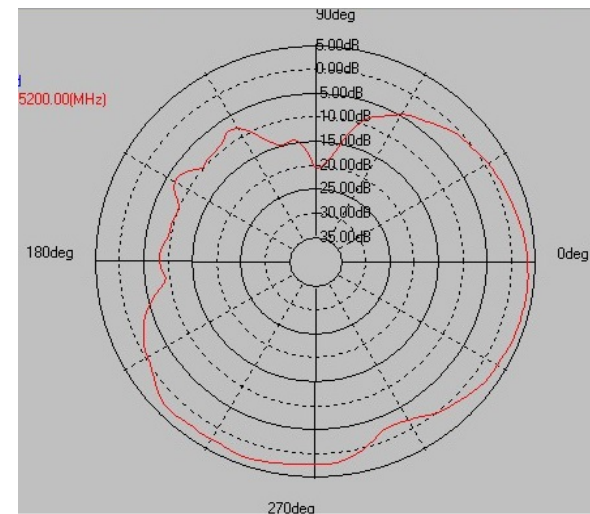
# 2D Pattern – Ant 2 @ 5.5GHz



**XY plane**



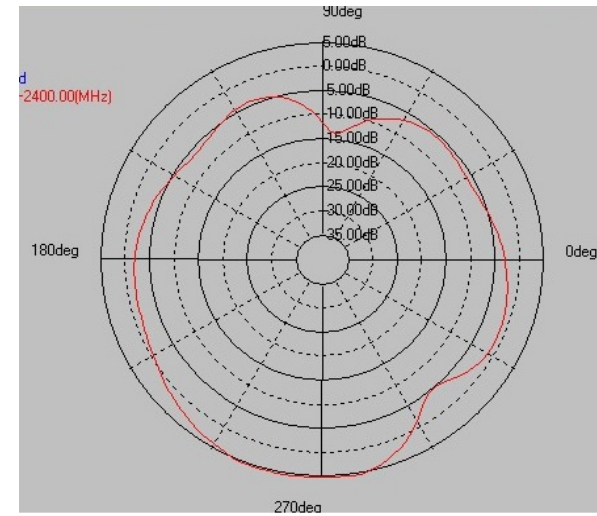
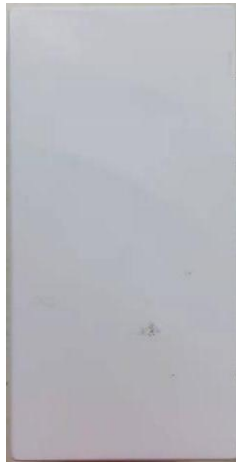
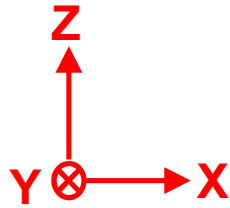
**XZ plane**



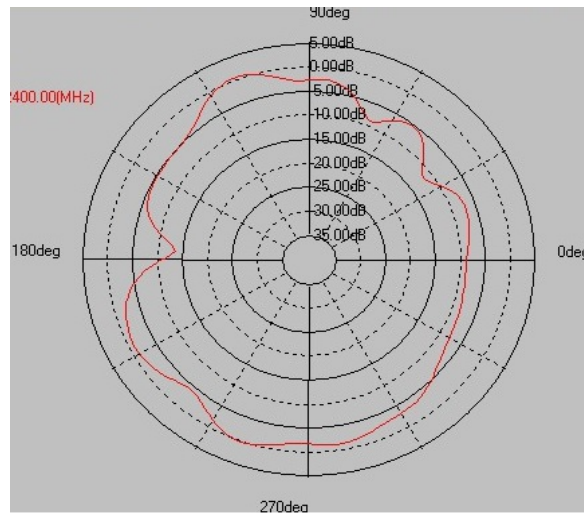
**YZ plane**



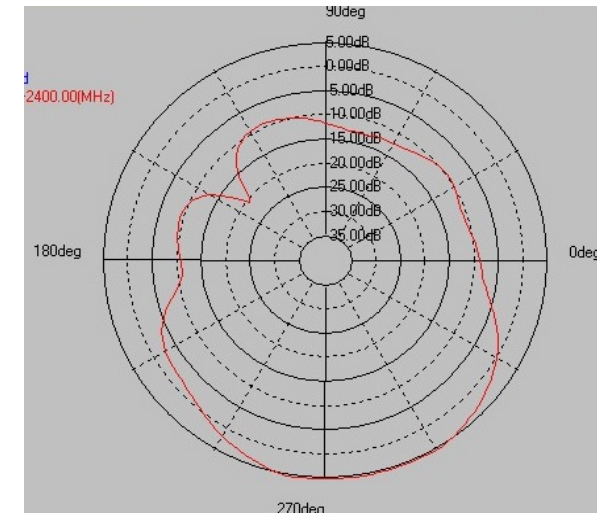
# 2D Pattern – Ant 3 @ 2.45GHz



**XY plane**

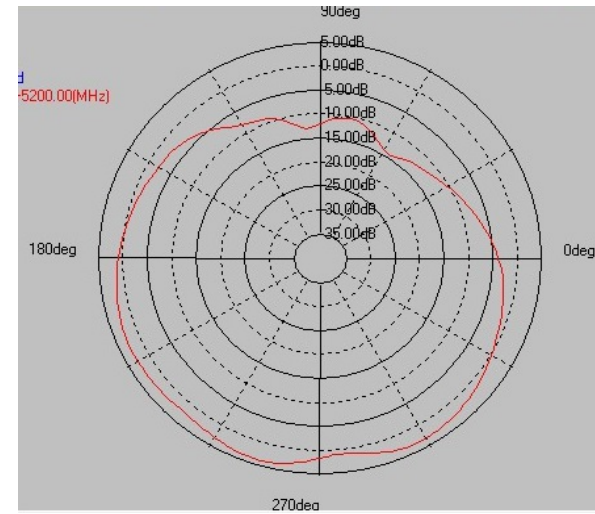
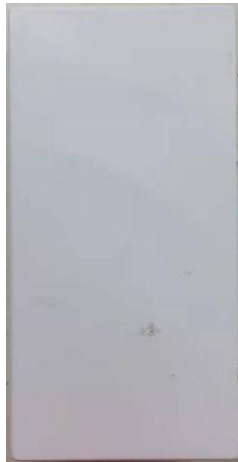
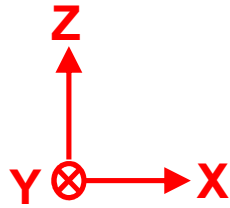


**XZ plane**

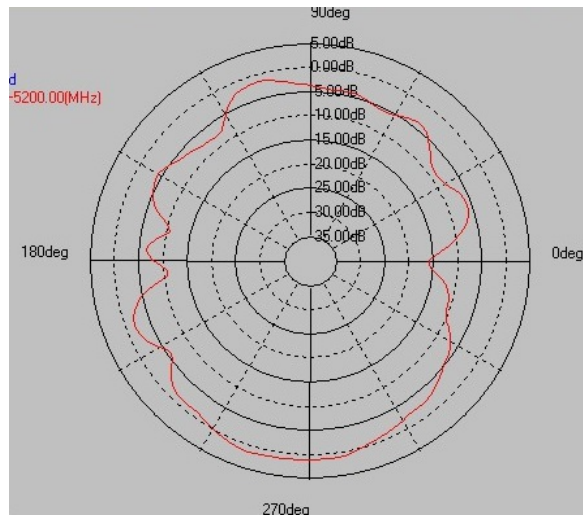


**YZ plane**

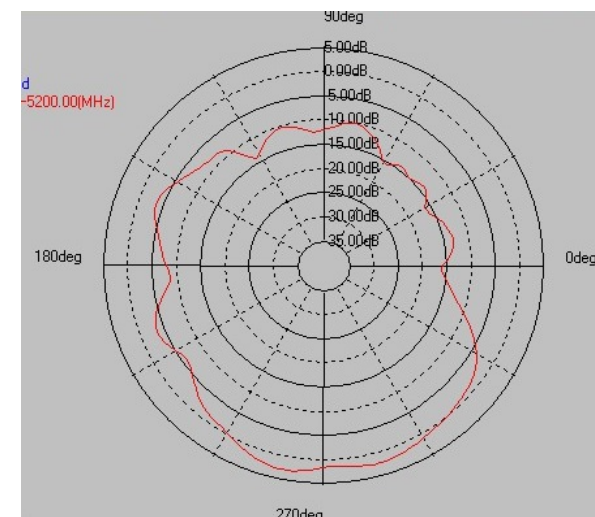
# 2D Pattern – Ant 3 @ 5.5GHz



**XY plane**



**XZ plane**



**YZ plane**

# Peak Gain & Efficiency

Ant 1		
Frequency (MHz)	Peak Gain (dBi)	Efficiency (%)
2400 MHz	2.5	53.2
2450 MHz	2.2	52.8
2500 MHz	2.1	51.9

Ant 2			Ant 3		
Frequency (MHz)	Peak Gain (dBi)	Efficiency (%)	Frequency (MHz)	Peak Gain (dBi)	Efficiency (%)
2400 MHz	3.4	53.4	2400 MHz	5.5	54.3
2450 MHz	3.7	55.3	2450 MHz	5.5	57.9
2500 MHz	3.6	53.6	2500 MHz	5.6	58.1
5150 MHz	4.1	65.5	5150 MHz	4.6	63.2
5250 MHz	4.3	65.7	5250 MHz	4.6	64.5
5350 MHz	4.4	66.3	5350 MHz	4.7	65.1
5550 MHz	4.6	72.9	5550 MHz	5.5	67.5
5850 MHz	4.3	73.3	5850 MHz	4.8	63.3



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