

LYNwave Technology

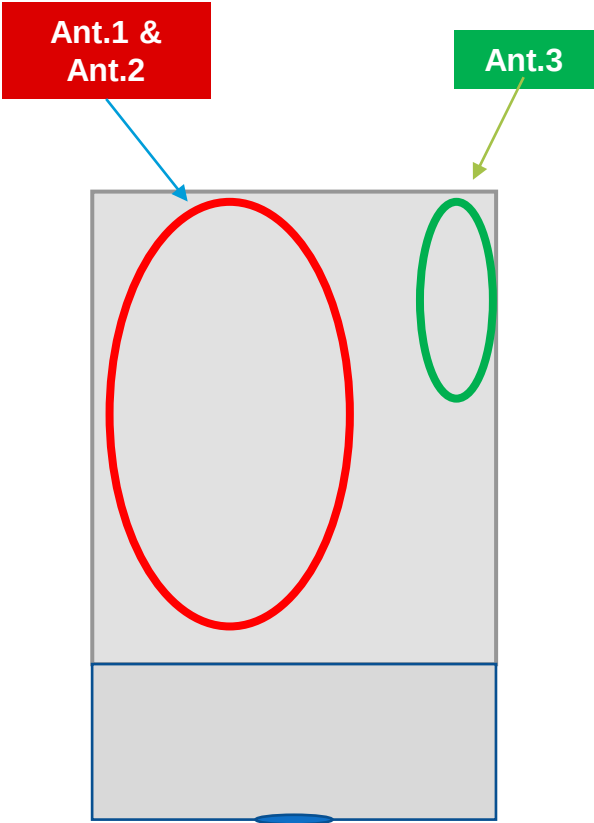
Antenna & Thermal solution provider

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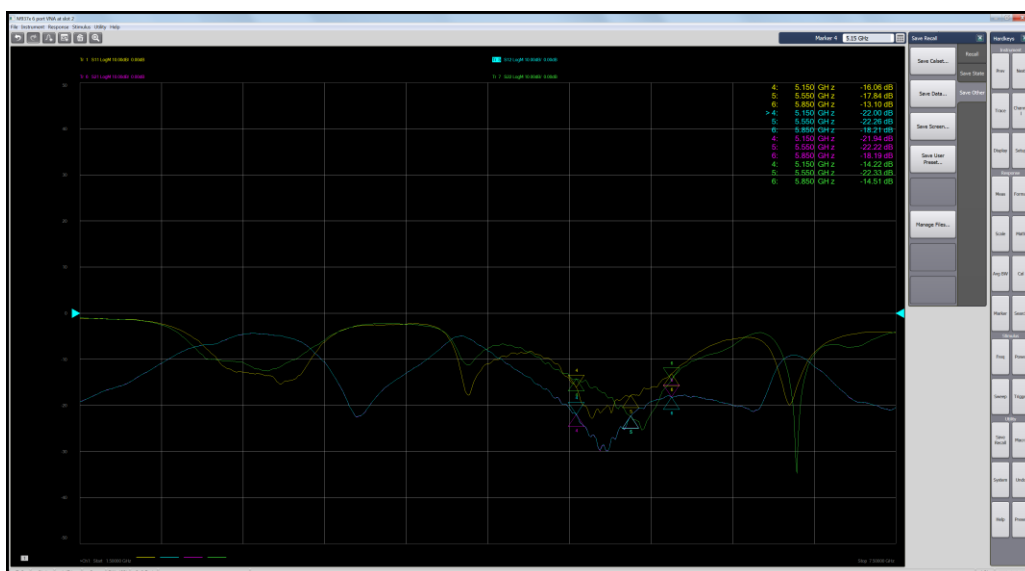
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Antenna Placement

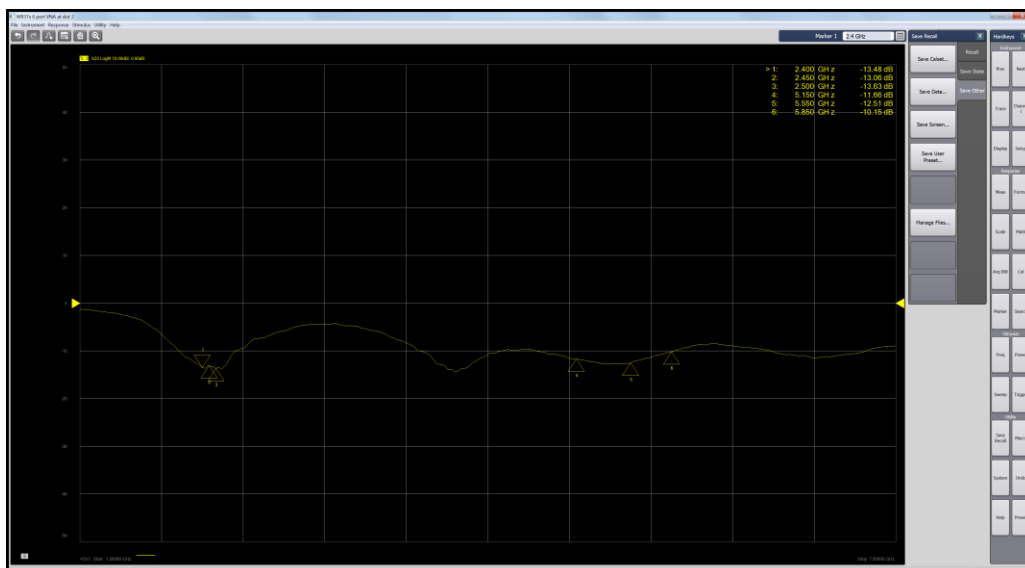
No.	Function	Material	Dimension(mm)	Frequency(MHz)	
Ant.1	Wi-Fi	metal	Refer to 3D	5150-5850	
Ant.2	Wi-Fi	metal	Refer to 3D	5150-5850	
Ant.3	Wi-Fi	metal	Refer to 3D	2400-2500 5150-5850	



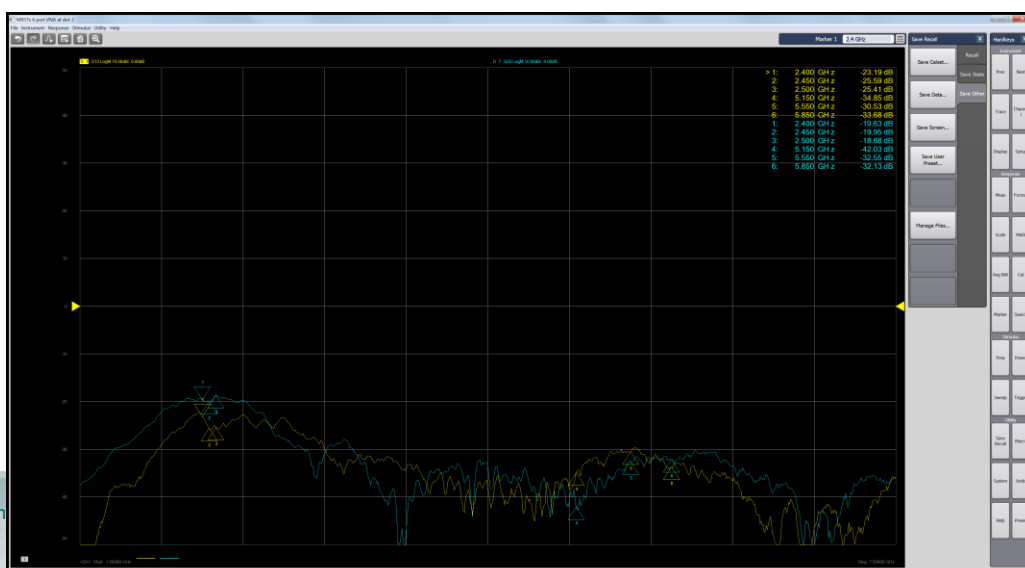
Return loss & Isolation – Ant.1&2



Return loss– Ant.3



Cross Isolation – Ant.1&2 to Ant.3



Coordinate Definition
Equipment: Satimo

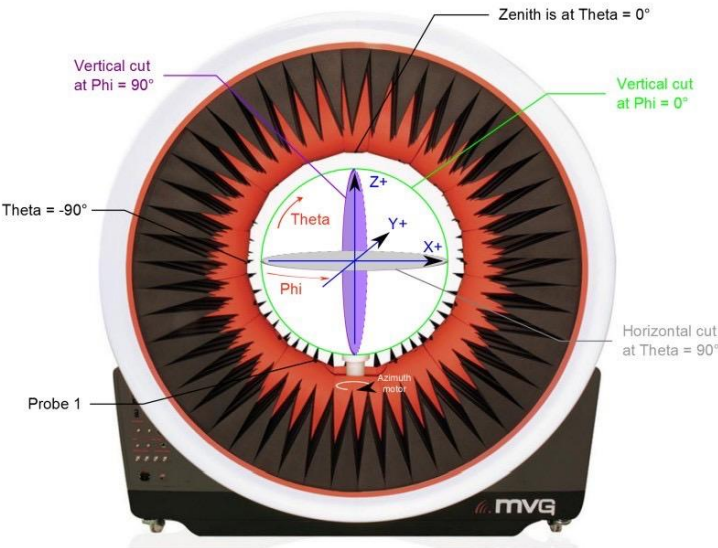
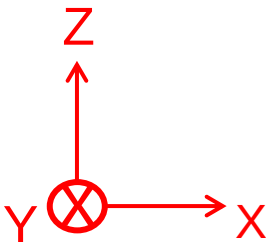
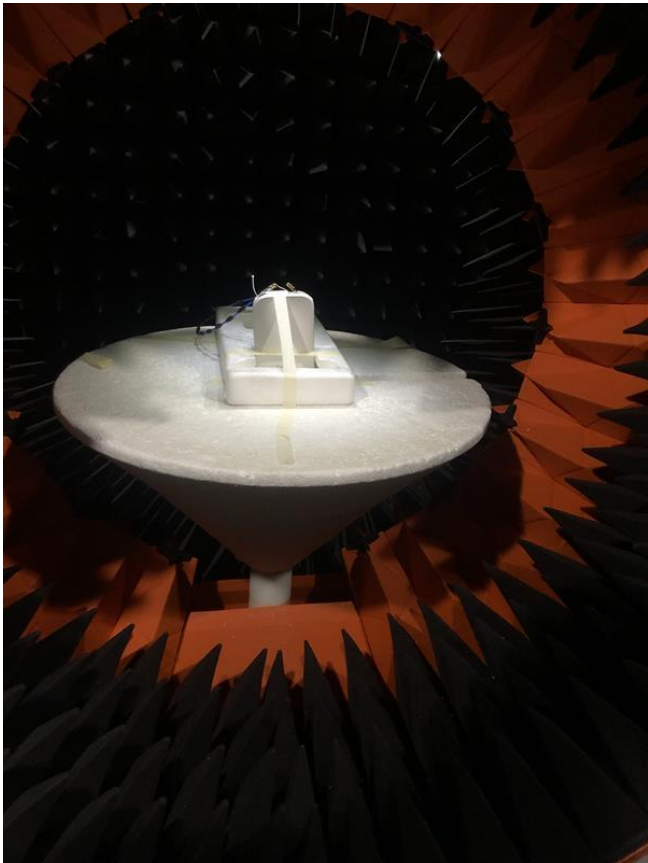


Figure 3.12: StarLab spherical coordinate system



Gain Table

	Frequency(MHz)	5150	5250	5550	5850
Ant.1	Horizontal polarization Gain(dBi)	6.23	5.74	4.91	6.1
	Vertical polarization Gain (dBi)	7.43	7.83	8.08	7.01
	Efficiency(%)	85	86	84	81
	HPBW(H)	73	75	76	69
	HPBW(V)	25	27	24	22
Ant.2	Horizontal polarization Gain(dBi)	6.73	6.99	7.77	5.64
	Vertical polarization Gain (dBi)	6.48	6.3	5.59	6.88
	Efficiency(%)	80	82	86	81
	HPBW(H)	70	67	72	75
	HPBW(V)	27	30	28	25

Ant.3	Frequency(MHz)	2400	2450	2500
	Peak Gain(dBi)	1.77	1.67	1.86
	Efficiency(%)	68	69	70
	Frequency(MHz)	5150	5550	5850
	Peak Gain(dBi)	3.71	3.84	3.19
	Efficiency(%)	80	78	73

Isolation Table

Item	Worst mutual isolation(dB) 5 GHz Band		
Antenna	Ant.1	Ant.2	Ant.3
Ant.1			
Ant.2	-18.21		
Ant.3	-30.53	-32.13	

The antenna characteristics

	Ant.1	Ant.2	Ant.3
Return Loss – 2.4 GHz (dB)			< -10
Return Loss – 5 GHz (dB)	< -10	< -10	< -10
Efficiency – 2.4 GHz (%)			> 65
Efficiency – 5 GHz (%)	> 75	> 75	> 70
Peak Gain – 2.4 GHz (dBi)			1.67 – 1.86
Peak Gain – 5 GHz (dBi)	9.39 – 9.87	9.17 – 9.70	3.19 – 3.84

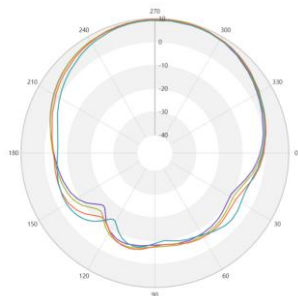
2D Radiation Pattern

Ant.1 (WIFI)

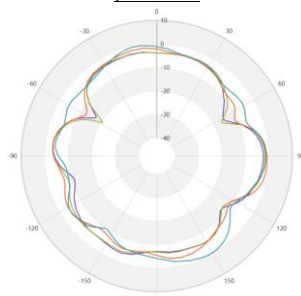
Frequency(MHz) : 5150-5850

Radiation Pattern :

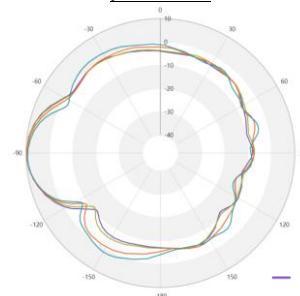
Azimuth Plane



Elevation Plane
phi = 0



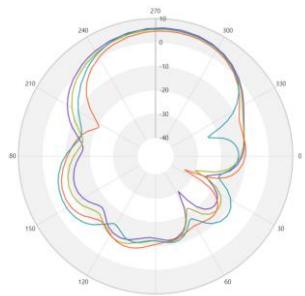
Elevation Plane
phi = 90



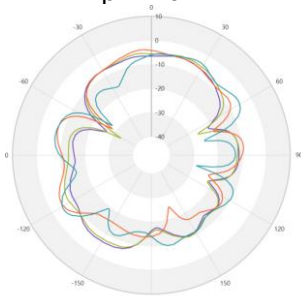
5150.00 MHz
5250.00 MHz
5550.00 MHz
5850.00 MHz

Horizontal polarization Pattern :

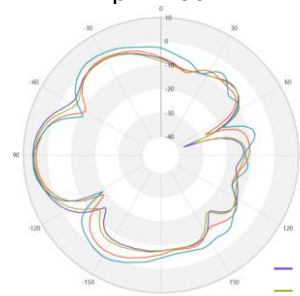
Azimuth Plane



Elevation Plane
phi = 0



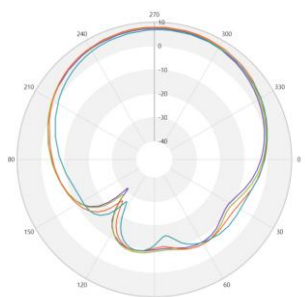
Elevation Plane
phi = 90



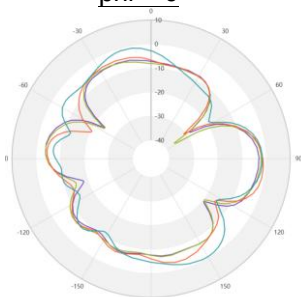
5150.00 MHz
5250.00 MHz
5550.00 MHz
5850.00 MHz

Vertical polarization Pattern :

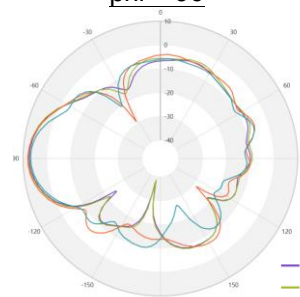
Azimuth Plane



Elevation Plane
phi = 0

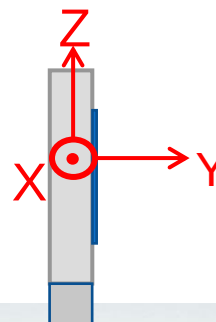
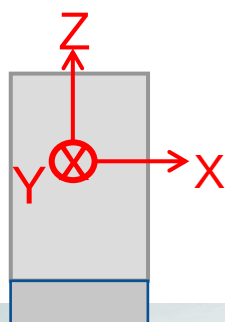
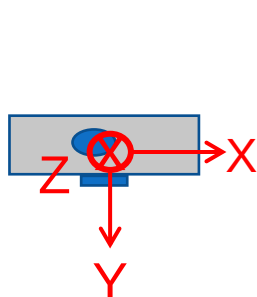


Elevation Plane
phi = 90



5150.00 MHz
5250.00 MHz
5550.00 MHz
5850.00 MHz

Setup :



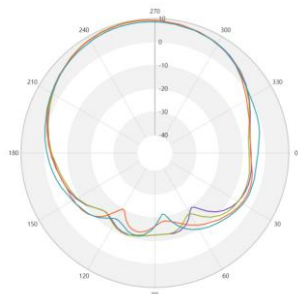
2D Radiation Pattern

Ant.2 (WIFI)

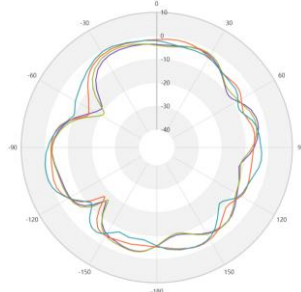
Frequency(MHz) : 5150-5850

Radiation Pattern :

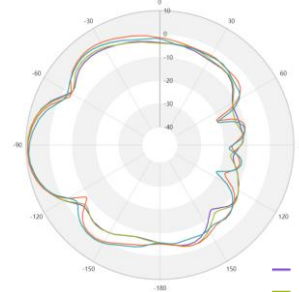
Azimuth Plane



Elevation Plane
phi = 0



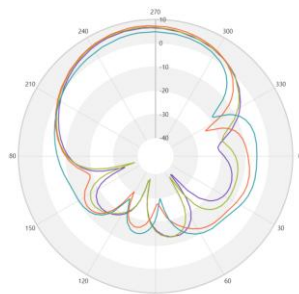
Elevation Plane
phi = 90



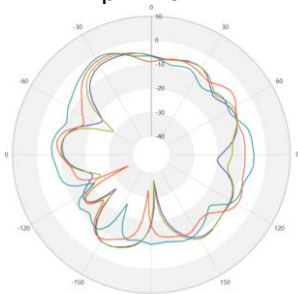
5150.00 MHz
5250.00 MHz
5550.00 MHz
5850.00 MHz

Horizontal polarization Pattern :

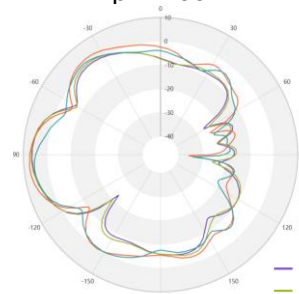
Azimuth Plane



Elevation Plane
phi = 0



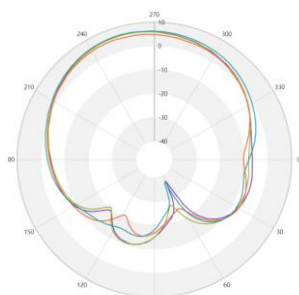
Elevation Plane
phi = 90



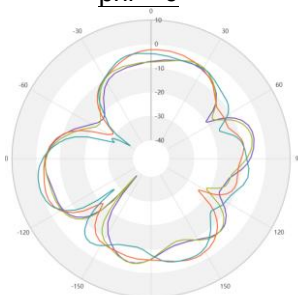
5150.00 MHz
5250.00 MHz
5550.00 MHz
5850.00 MHz

Vertical polarization Pattern :

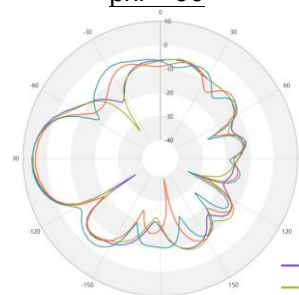
Azimuth Plane



Elevation Plane
phi = 0

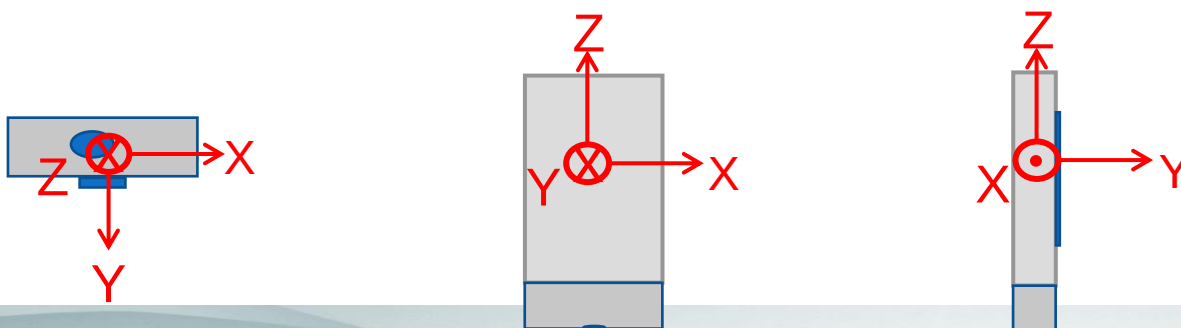


Elevation Plane
phi = 90



5150.00 MHz
5250.00 MHz
5550.00 MHz
5850.00 MHz

Setup :



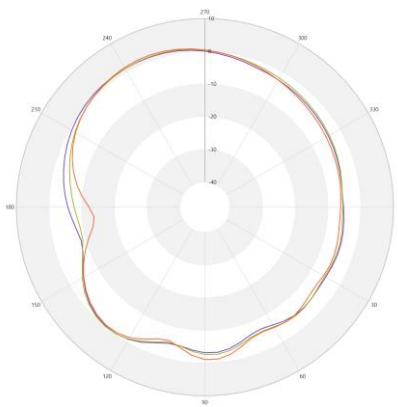
2D Radiation Pattern

Ant.3 (WIFI)

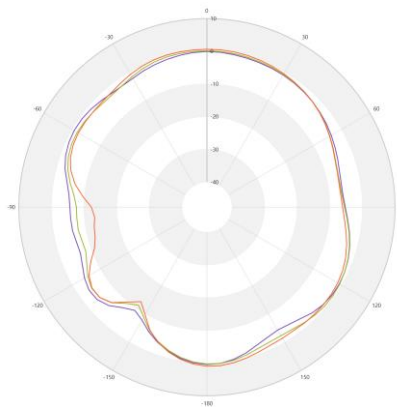
Frequency(MHz) : 2400-2500

Radiation Pattern :

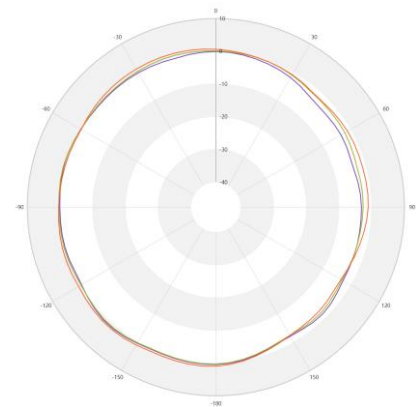
Azimuth Plane



Elevation Plane
 $\phi = 0$

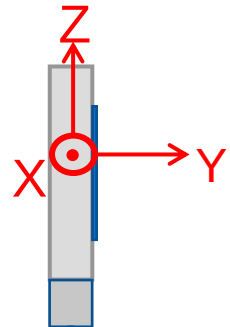
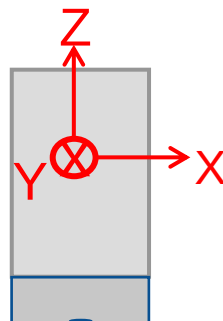
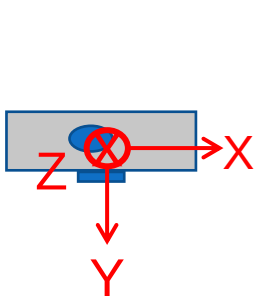


Elevation Plane
 $\phi = 90$



— 2400.00 MHz ETotal
— 2450.00 MHz ETotal
— 2500.00 MHz ETotal

Setup :



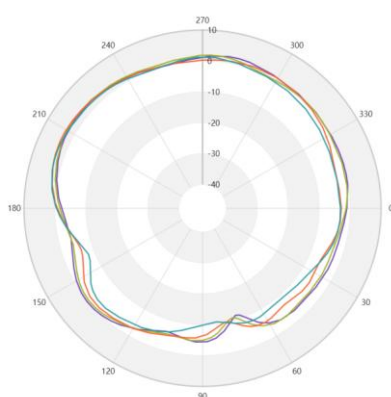
2D Radiation Pattern

Ant.3 (WIFI)

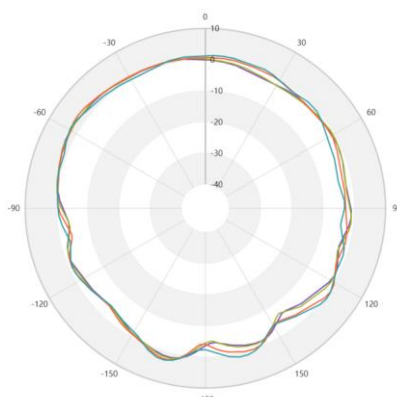
Frequency(MHz) : 5150-5850

Radiation Pattern :

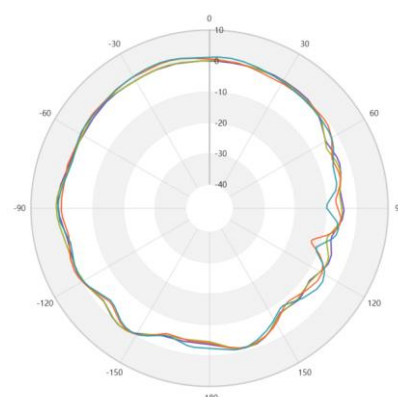
Azimuth Plane



Elevation Plane
phi = 0

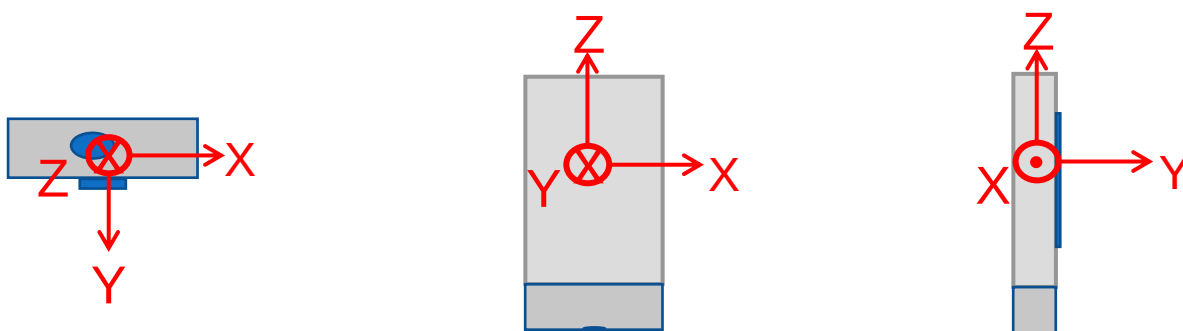


Elevation Plane
phi = 90



— 5150.00 MHz
— 5250.00 MHz
— 5550.00 MHz
— 5850.00 MHz

Setup :



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