

DV8910 Ant Passive Test Report

Record for version modification

Date	Revision	Modify Content	Author
2023-03-21	V1.0	1 st Version	Leon_Wu

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SDMC

1 Test Summary

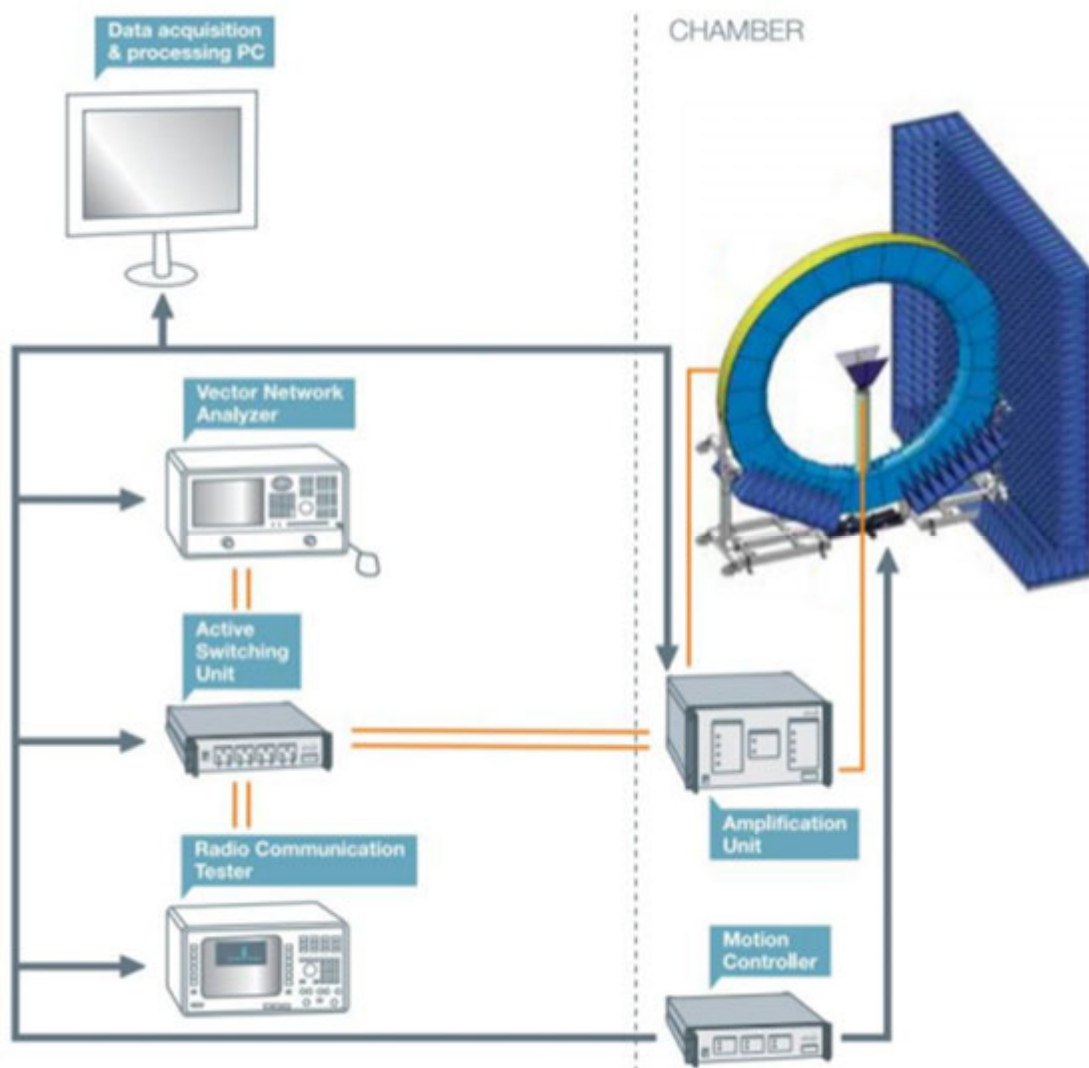
No.	Sample Name	Test item	Conclusion
1	DV8910	VSWR	Pass
2		Isolation	Pass
3		Efficiency & Gain	Pass
4		2D & 3D Radiation Pattern	Pass

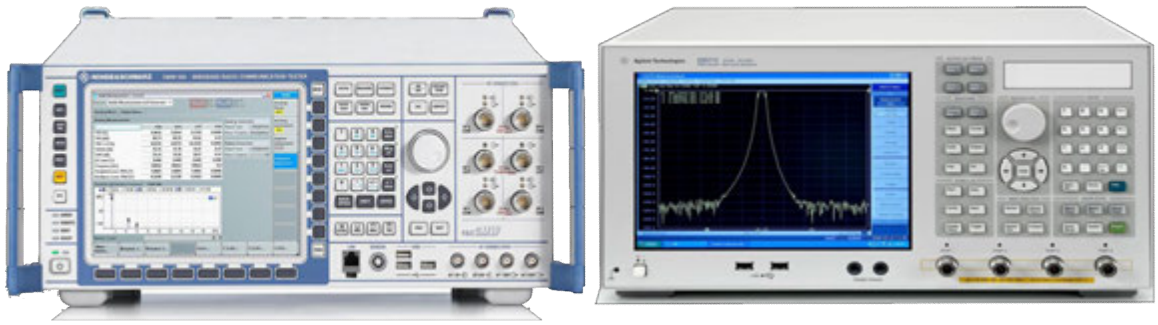
2 Test Information

Model No.	DV8910
HW Version	DV8919X-GEI-LPDDR4-V3
SW Version	BaseLine-v11.1.1.1
CPU	Amlogic S905X4-J
DDR	FLXC4004G-N2
Wi-Fi Module	AP6275PR3
Tester	FANGJINXI
Reviewer	Yurnero He
Approver	Zoau
Date	2023.08.11

3 Testing Environment

Chamber	XH Chamber
Wireless Communication Tester	R&S CMW500
Vector Network Analyzer	KEYSIGHT E5071C
Temperature	25±2°C
Humidity	50±20%Rh





R&S CMW500

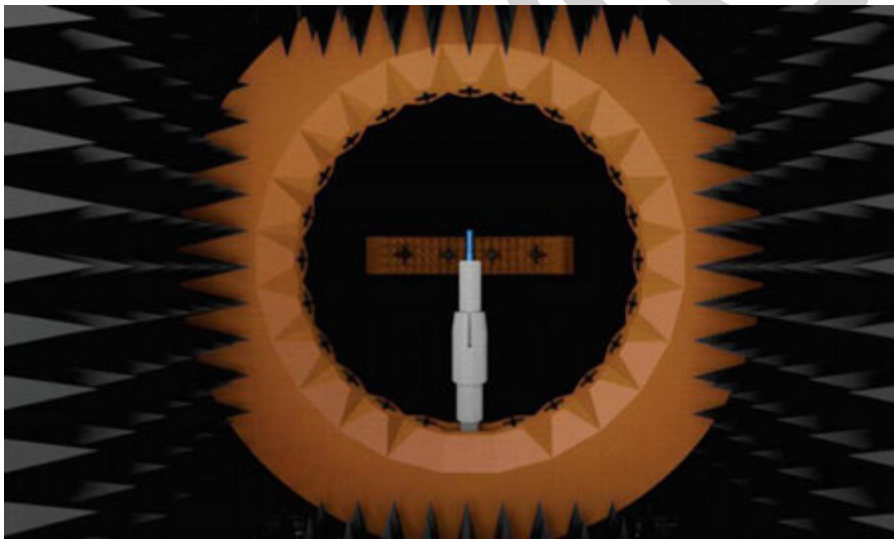
Wireless Communication Tester

- GSM/3G/4G
- Wi-Fi/ BT
- NB-IoT

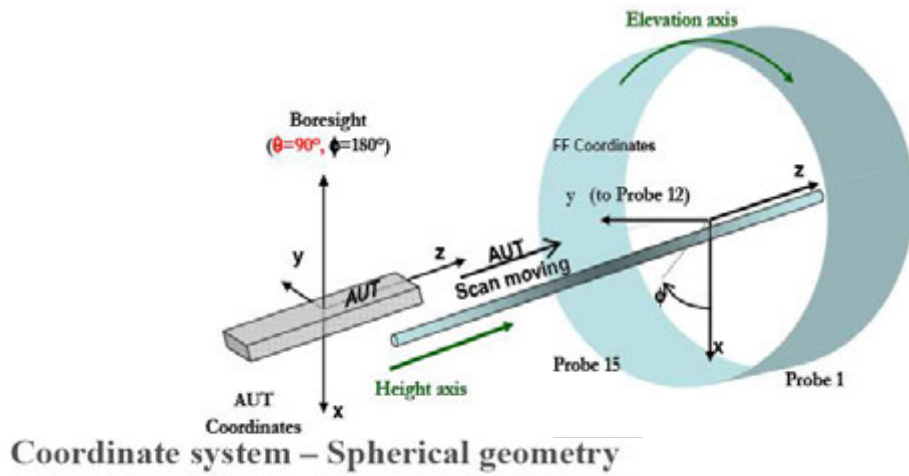
KEYSIGHT E5071C

Vector Network Analyzer

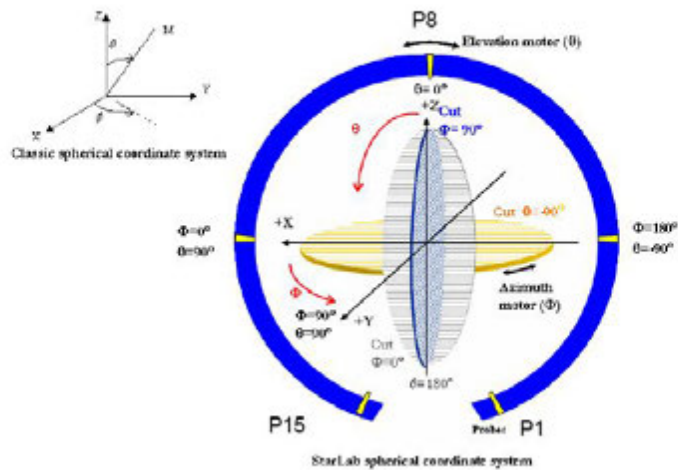
- Frequency: 100 kHz~8.5GHz



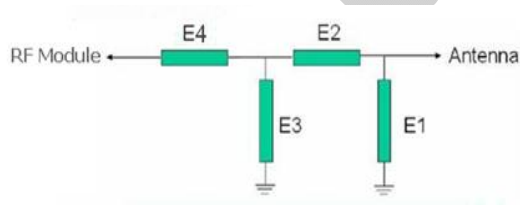
Coordinate system – Cylindrical geometry



Coordinate system – Spherical geometry



4 Matching Circuit Description



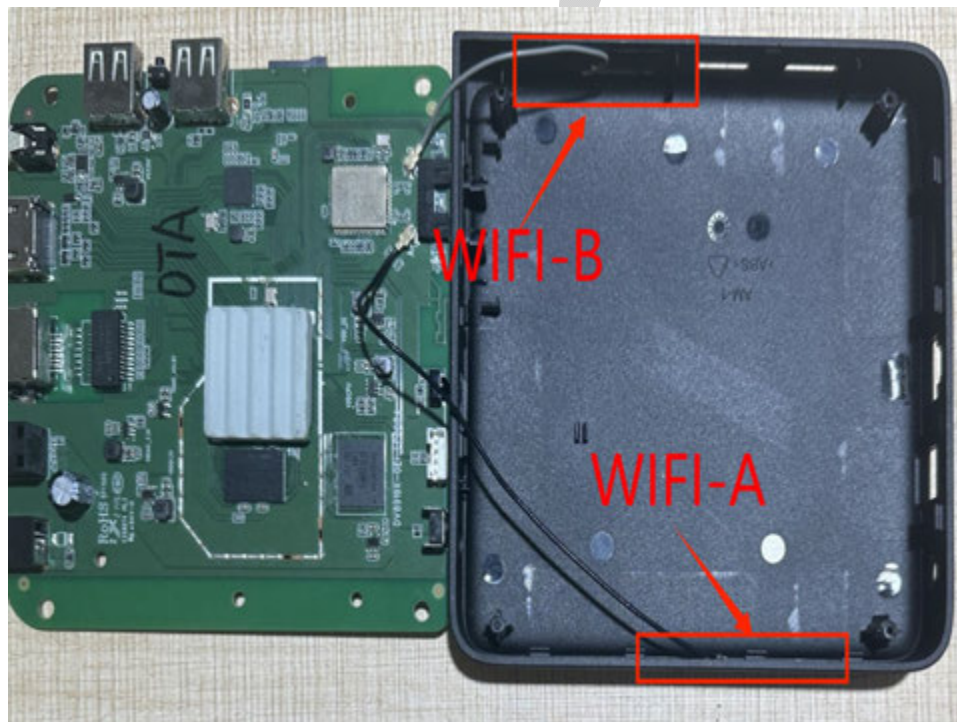
Element	Value
E1	N/A
E2	N/A
E3	N/A
E4	N/A

5 Antenna Technical Parameter

Electrical Technical Parameter				
Electrical Spec				
Frequency Range	2400 ~2500/5150~5850MHz			
VSWR	≤2.0			
	Remark: VSWR of ceramic & on-board layout Antenna≤3.0			
Input Impedance	50 Ω			
Direction	Omnidirectional			
Efficiency	≥50%			
	Remark: Efficiency of ceramic & on-board layout Antenna≥30%			
Gain	Wi-Fi≥0dBi			
Isolation	≤-15			
	Remark: Isolation of Dongle & Sticker similar products≤-10			
Mechanical Specifications				
Material Type	Metal ☐	FPC ☒	PCB ☐	Layout ☐
Working Temperature	-20℃~+70℃			
Working Humidity	20%~80%			

6 Assembly Description

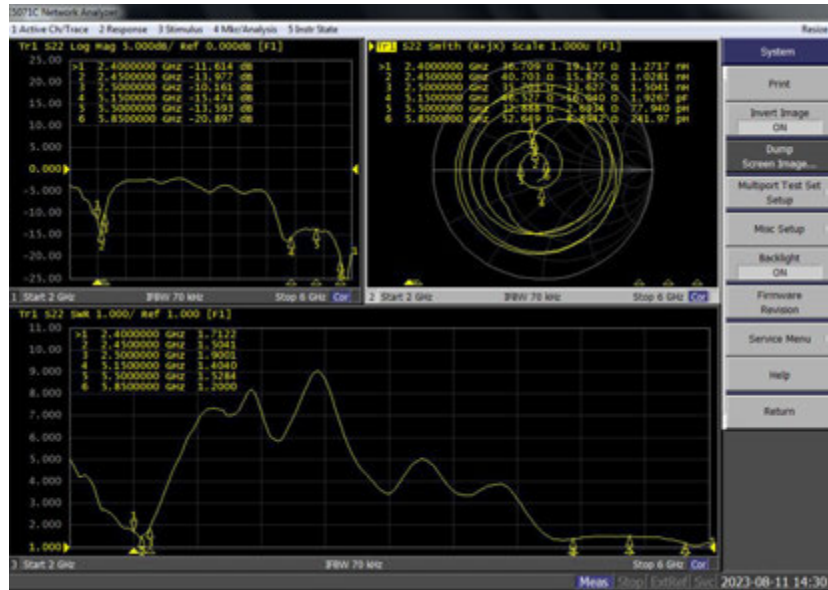
Antenna Attachment Position



7 Passive Parameter Test

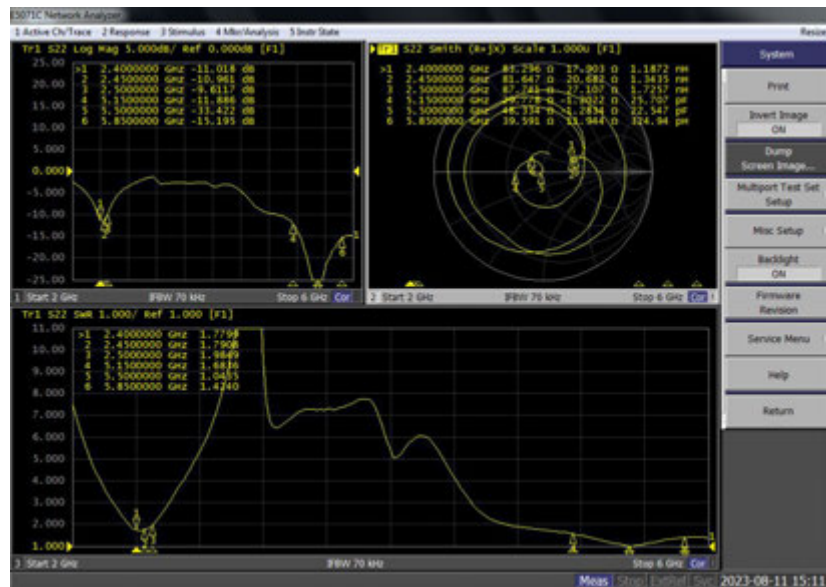
7.1 VSWR

7.1.1 Wi-Fi Ant-A



Freq/GHz	2.4	2.45	2.5	5.15	5.5	5.85
VSWR	1.7	1.5	1.9	1.4	1.5	1.2

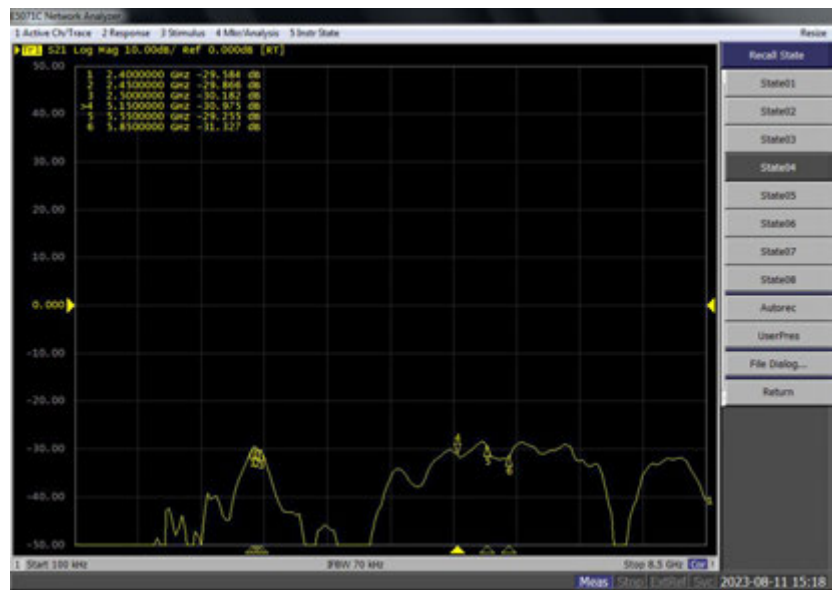
7.1.2 Wi-Fi Ant-B



Freq/GHz	2.4	2.45	2.5	5.15	5.5	5.85
VSWR	1.7	1.7	1.9	1.6	1.0	1.4

7.2 Isolation

7.2.1 Wi-Fi Ant-A & Wi-Fi Ant-B Isolation



Freq/GHz	2.4	2.45	2.5	5.15	5.5	5.85
S21/ dB	-29	-29	-30	-30	-29	-31

7.3 Efficiency & Gain

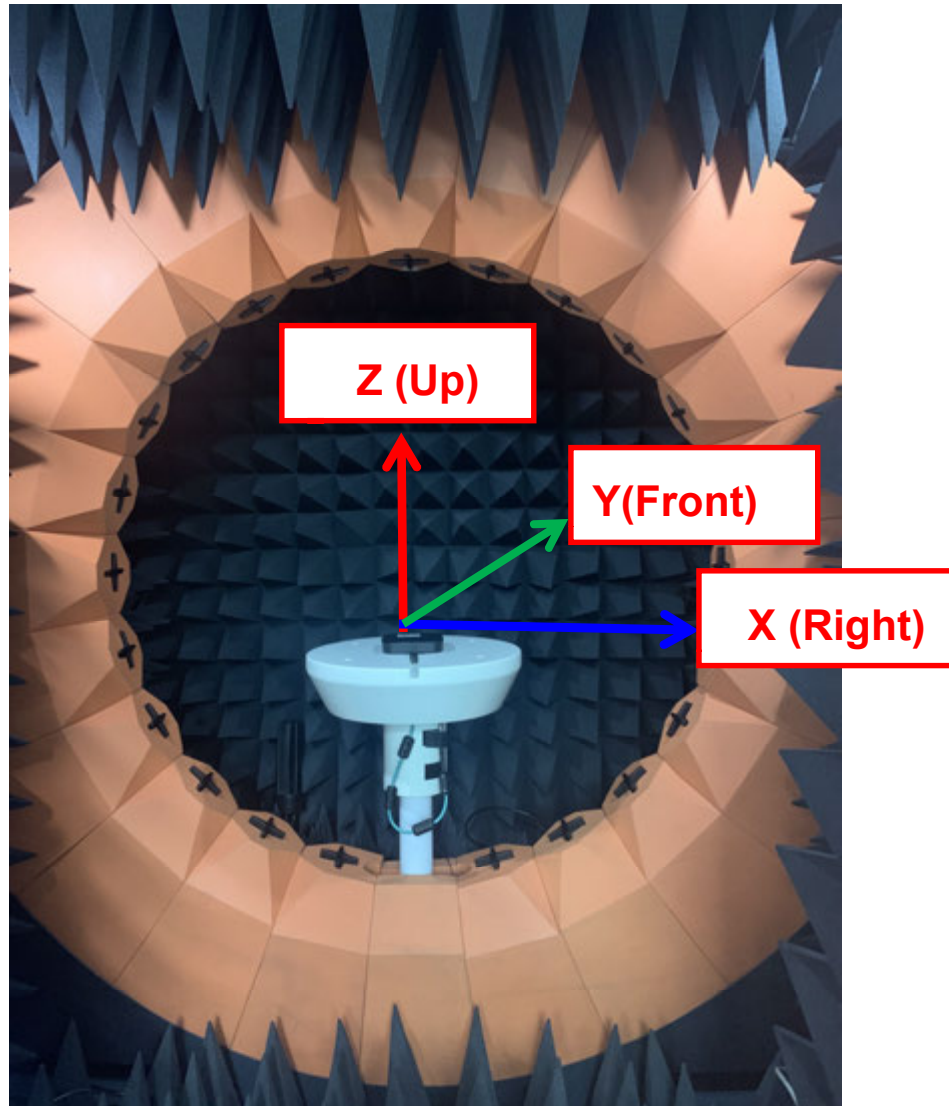
7.3.1 Efficiency & Gain of Wi-Fi Ant-A

Gain&Efficiency of Wi-Fi Ant-A					
2.4G			5G		
Frequency (MHz)	Gain (dBi)	Efficiency (%)	Frequency (MHz)	Gain (dBi)	Efficiency (%)
2400	1.07	50.41	5150	2.13	58.5
2410	1.23	51.54	5200	2.15	58.27
2420	1.3	52.64	5250	2.23	58.68
2430	1.36	53.74	5300	2.3	59.37
2440	1.45	54.46	5350	2.53	61.4
2450	1.63	55.76	5400	2.63	62.44
2460	1.76	56.68	5450	2.63	62.58
2470	1.82	56.79	5500	2.74	63.61
2480	1.83	56.26	5550	2.73	63.6
2490	1.73	55.3	5600	2.66	63.22
2500	1.42	52.31	5650	2.66	63.14
			5700	2.69	63.85
			5750	2.63	62.71
			5800	2.67	62.38
			5850	2.58	58.14

7.3.2 Efficiency & Gain of Wi-Fi Ant-B

Efficiency & Gain of Wi-Fi Ant-B					
2.4G			5G		
Frequency (MHz)	Gain (dBi)	Efficiency (%)	Frequency (MHz)	Gain (dBi)	Efficiency (%)
2400	1.09	52.21	5150	5.3	59.52
2410	1.15	52.72	5200	5.36	60.53
2420	1.36	53.59	5250	5.43	60.03
2430	1.59	54.34	5300	5.52	60.16
2440	1.84	55.53	5350	5.68	60.86
2450	2.11	56.83	5400	5.62	60
2460	2.33	58.18	5450	5.42	58.47
2470	2.54	59.26	5500	5.28	57.94
2480	2.55	59.8	5550	5.03	56.55
2490	2.6	60.15	5600	4.79	54.93
2500	2.3	58.55	5650	4.68	54.1
			5700	4.78	54.23
			5750	4.72	52.68
			5800	4.83	52.14
			5850	4.32	51.47

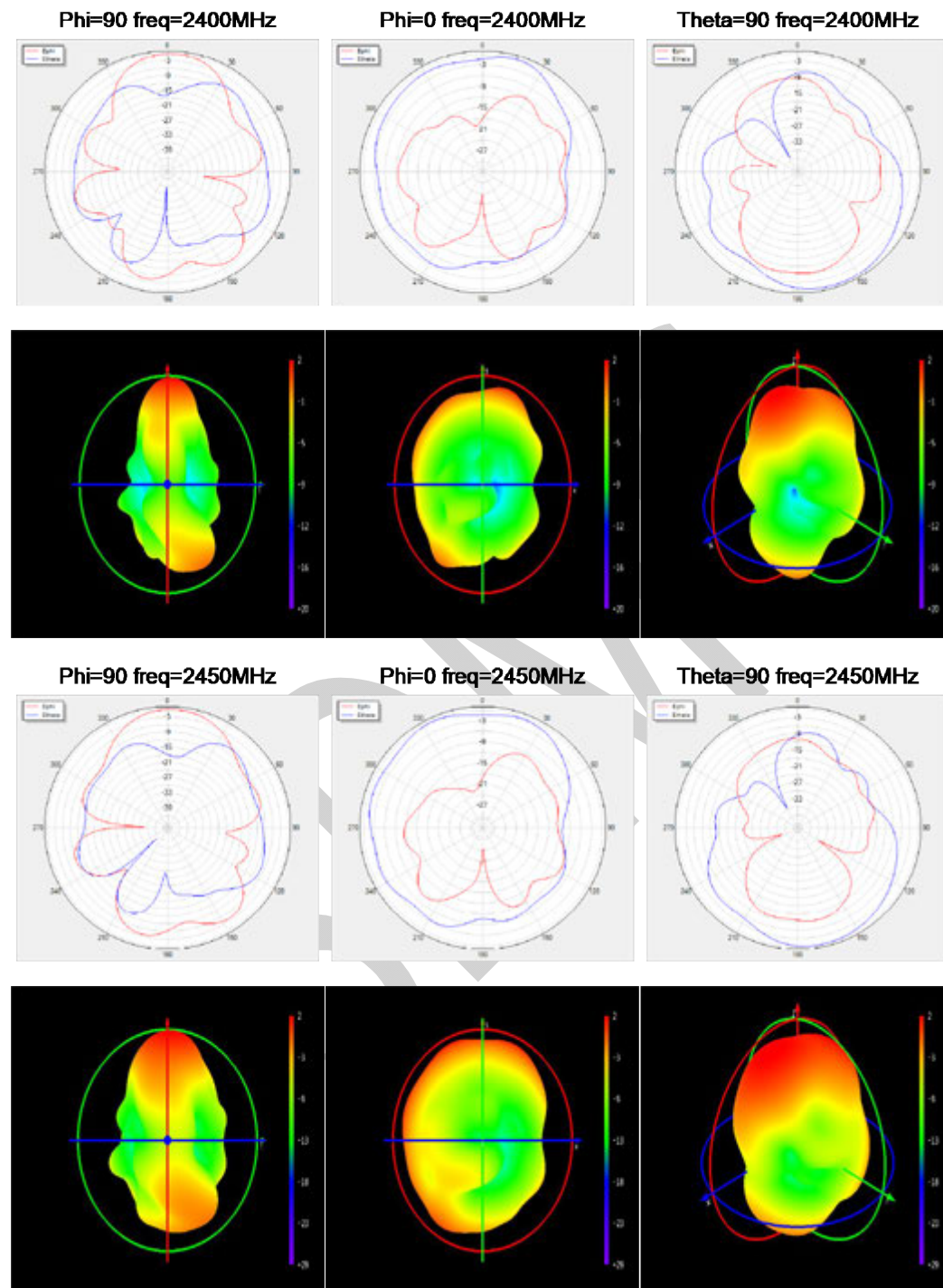
7.4 Reference Coordinate System



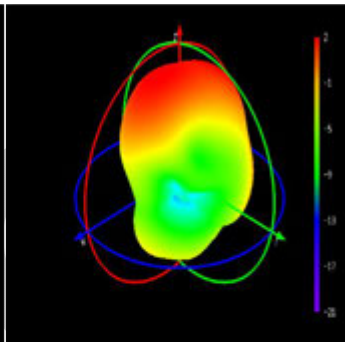
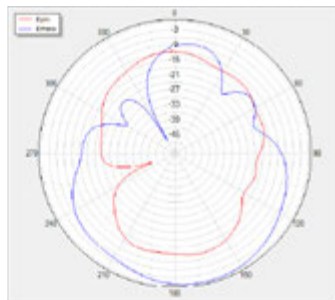
	XY	XZ	YZ
0°	Right	Up	Up
90°	Front	Right	Front
180°	Left	Down	Down
270°	Back	Left	Back

7.5 2D & 3D Radiation Pattern

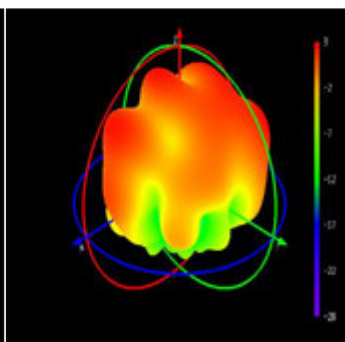
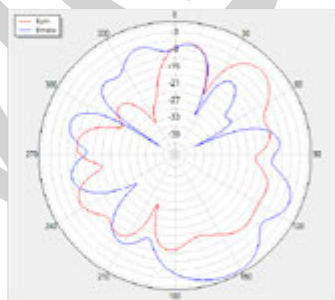
7.5.1 Wi-Fi Ant-A



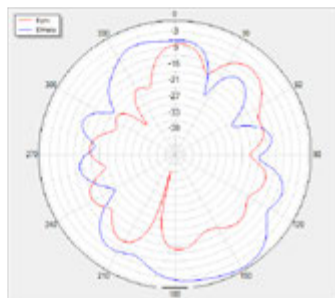
Theta=90 freq=2500MHz

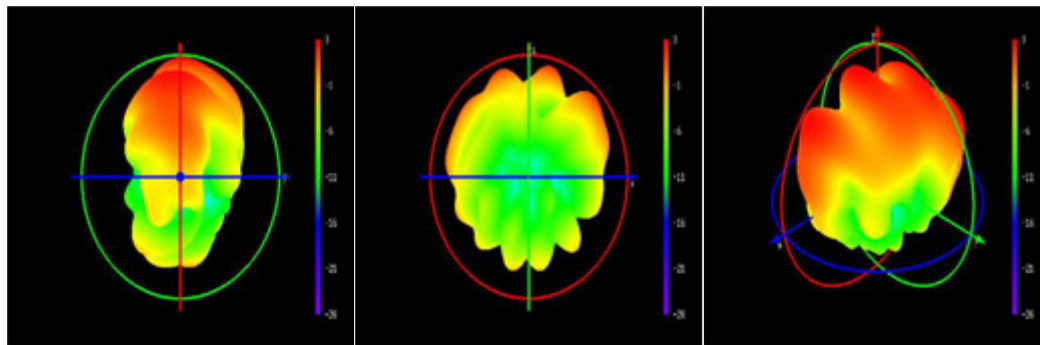


Theta=90 freq=5150MHz



Theta=90 freq=5350MHz

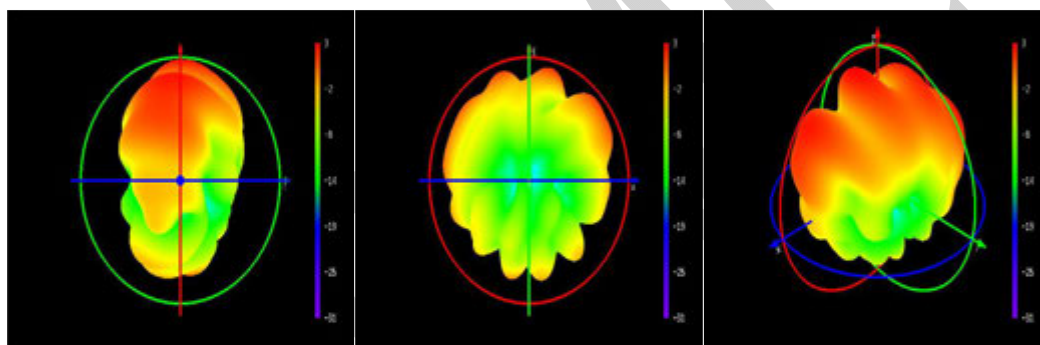
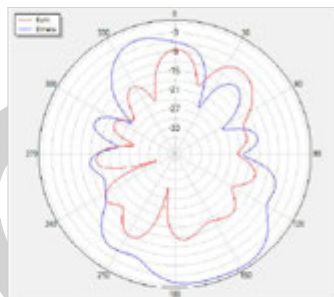
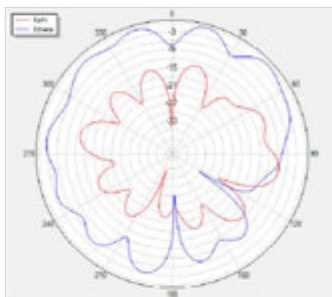
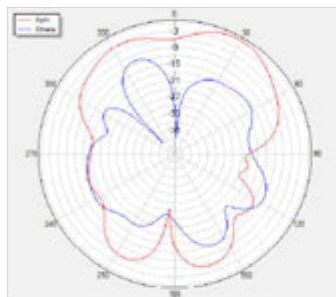




Phi=90 freq=5500MHz

Phi=0 freq=5500MHz

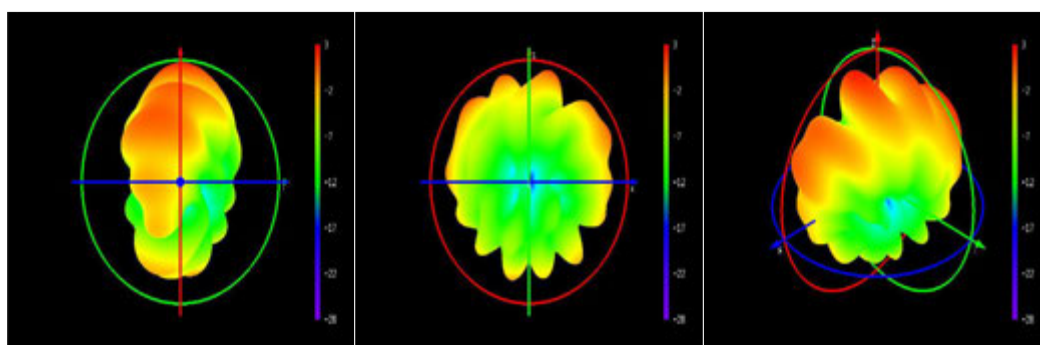
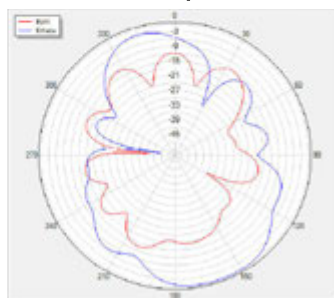
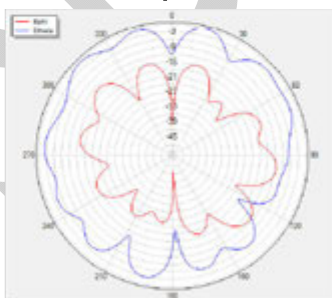
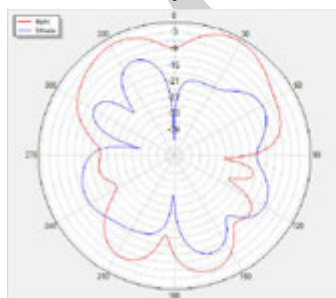
Theta=90 freq=5500MHz



Phi=90 freq=5850MHz

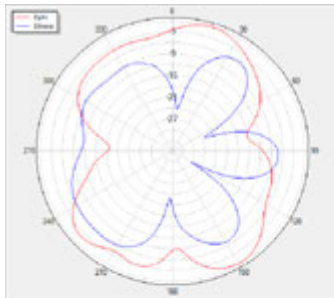
Phi=0 freq=5850MHz

Theta=90 freq=5850MHz

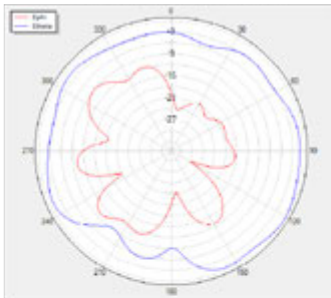


7.5.2 Wi-Fi Ant-B

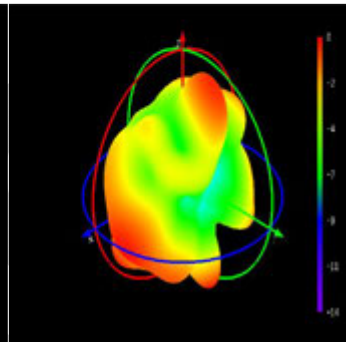
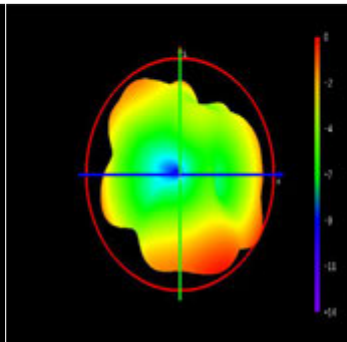
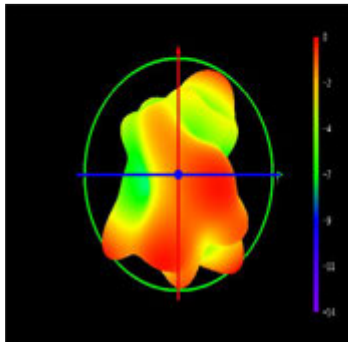
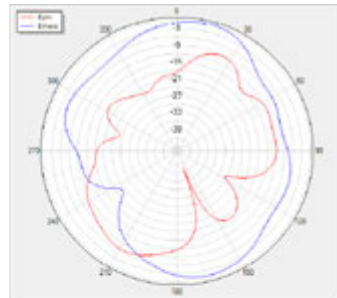
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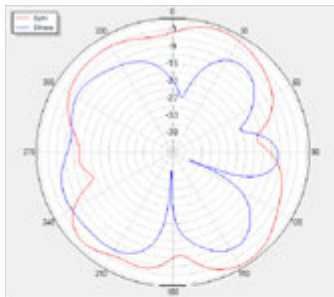
Phi=0 freq=2400MHz



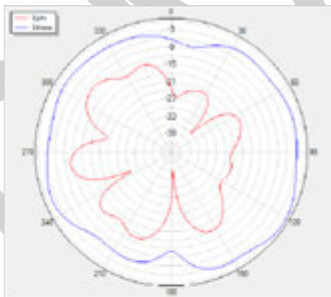
Theta=90 freq=2400MHz



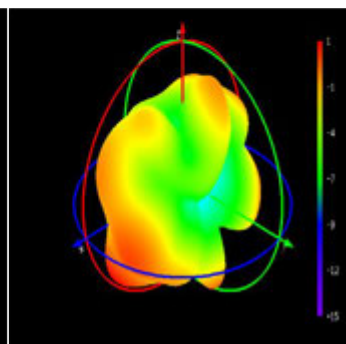
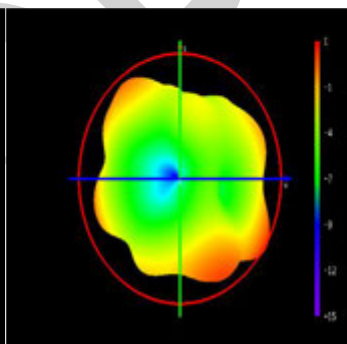
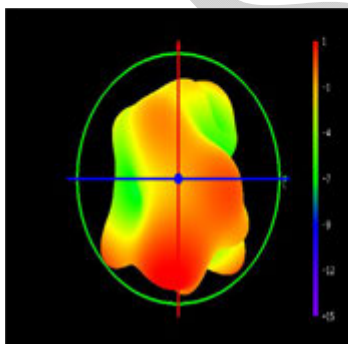
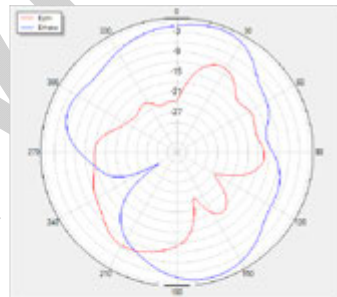
Phi=90 freq=2450MHz



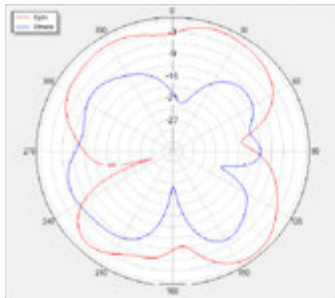
Phi=0 freq=2450MHz



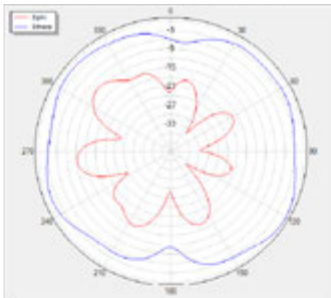
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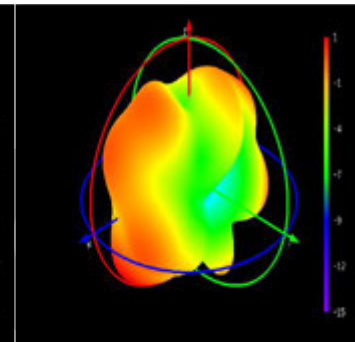
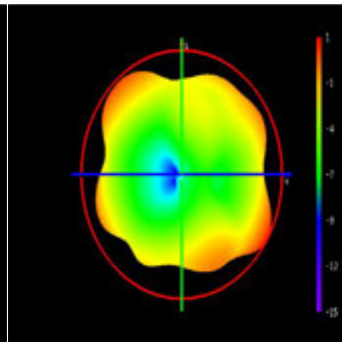
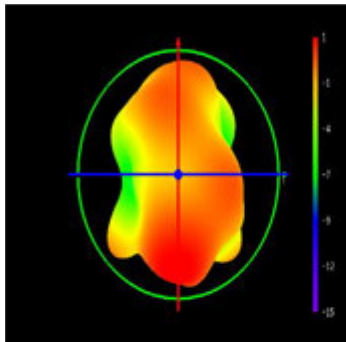
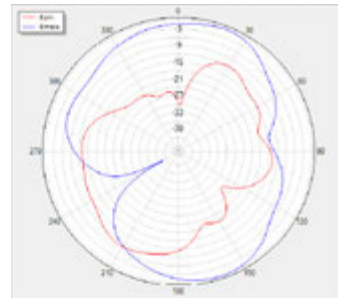
Phi=90 freq=2500MHz



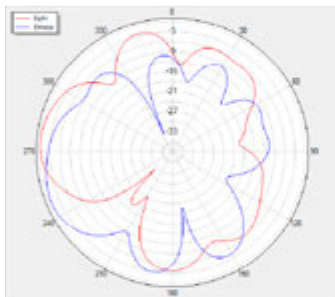
Phi=0 freq=2500MHz



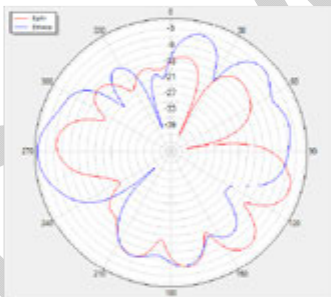
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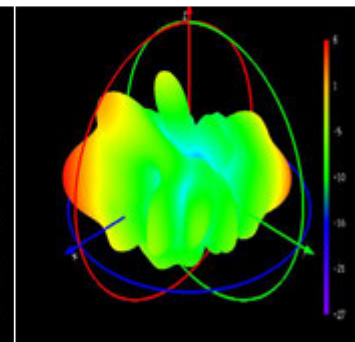
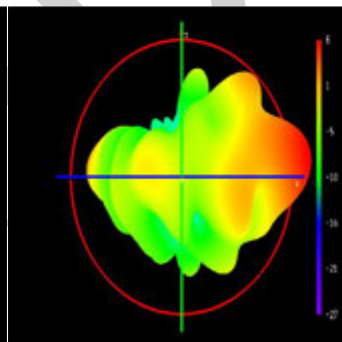
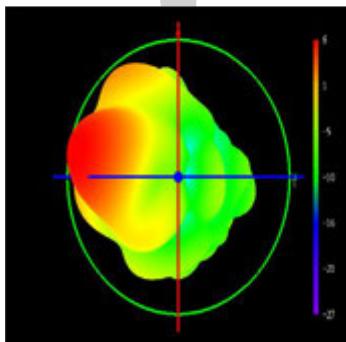
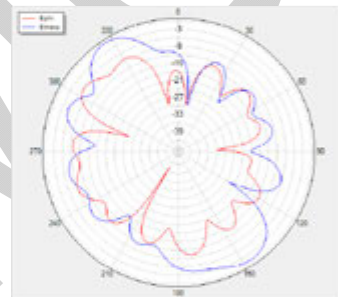
Phi=90 freq=5150MHz



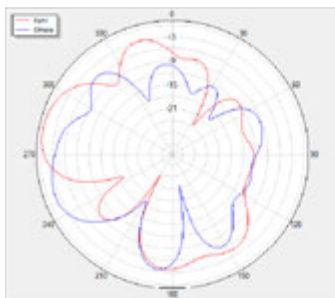
Phi=0 freq=5150MHz



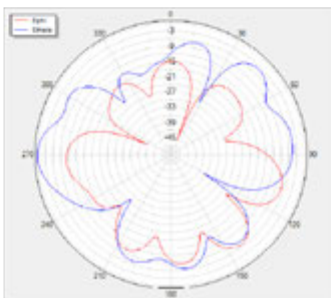
Theta=90 freq=5150MHz



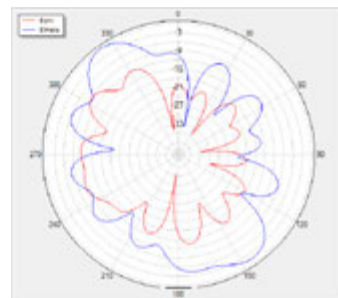
Phi=90 freq=5350MHz

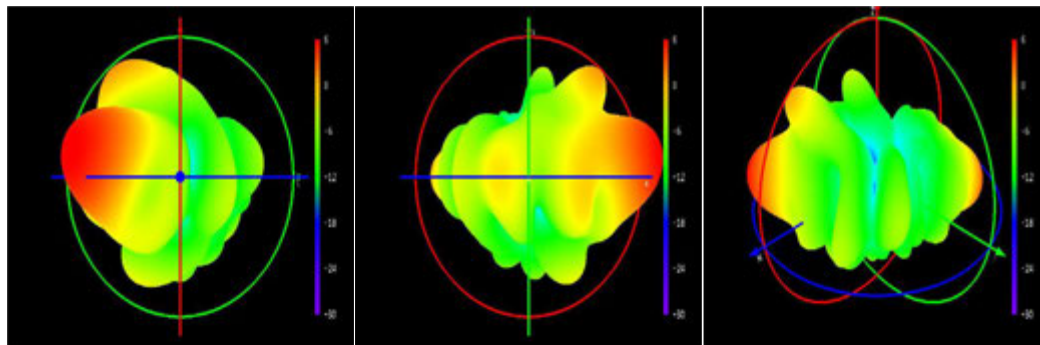


Phi=0 freq=5350MHz



Theta=90 freq=5350MHz

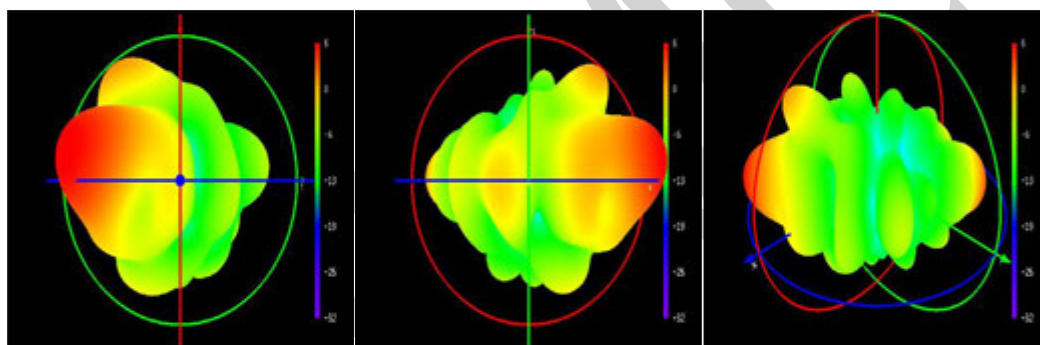
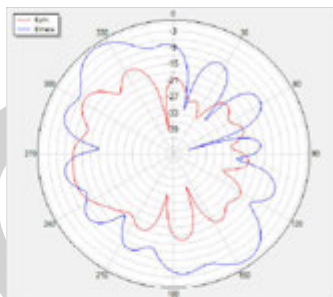
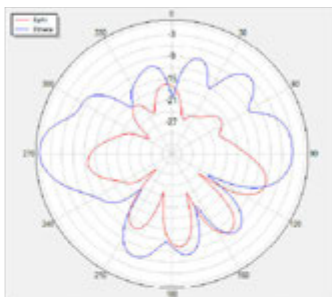
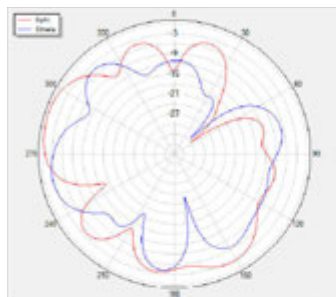




Phi=90 freq=5500MHz

Phi=0 freq=5500MHz

Theta=90 freq=5500MHz



Phi=90 freq=5850MHz

Phi=0 freq=5850MHz

Theta=90 freq=5850MHz

