DV8949-OTT Ant Passive Test Report

SDMC-GJRD-SOP-006

Record for version modification

Date	Revision	Modify Content	Author
2023-3-21	V1.0	1st Version	Leon_Wu

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1 Test Summary

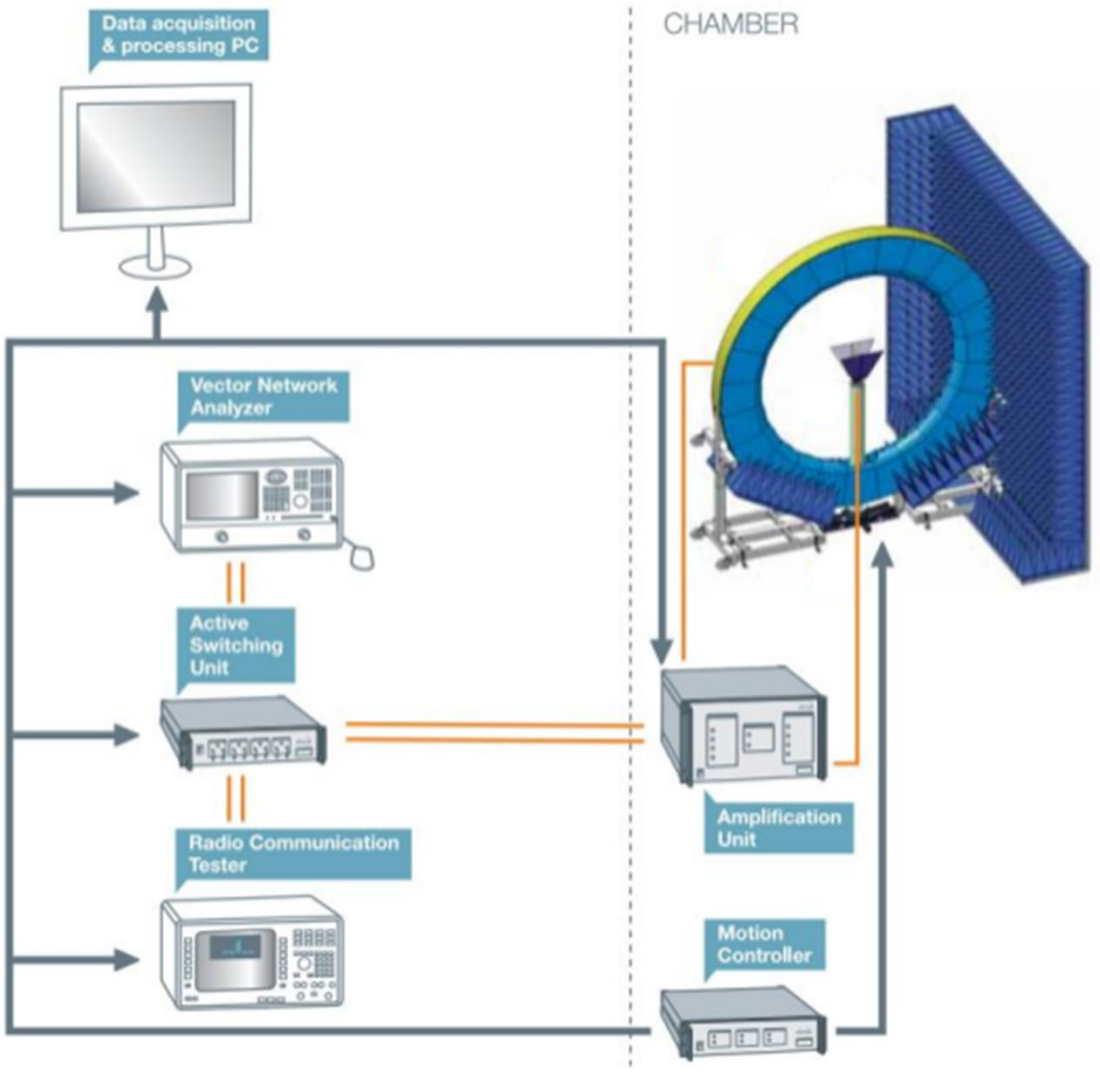
No.	Sample Name	Test item	Conclusion
1	DV8949-OTT	VSWR	Pass
2		Isolation	Pass
3		Efficiency & Gain	Pass
4		2D & 3D Radiation Pattern	Pass

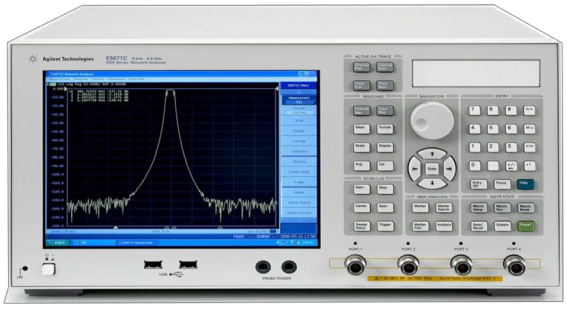
2 Test Information

Model No.	DV8949-OTT
HW Version	MB.XXX.X
SW Version	BaseLine-v11.1.1.1
CPU	Amlogic XXXX
DDR	XXXXXXXXX
Wi-Fi Module	XXXX/Manufacturer
Tester	XXX
Reviewer	XXX
Approver	XXX
Date	2023.XX.XX

3 Testing Environment

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





R&S CMW500

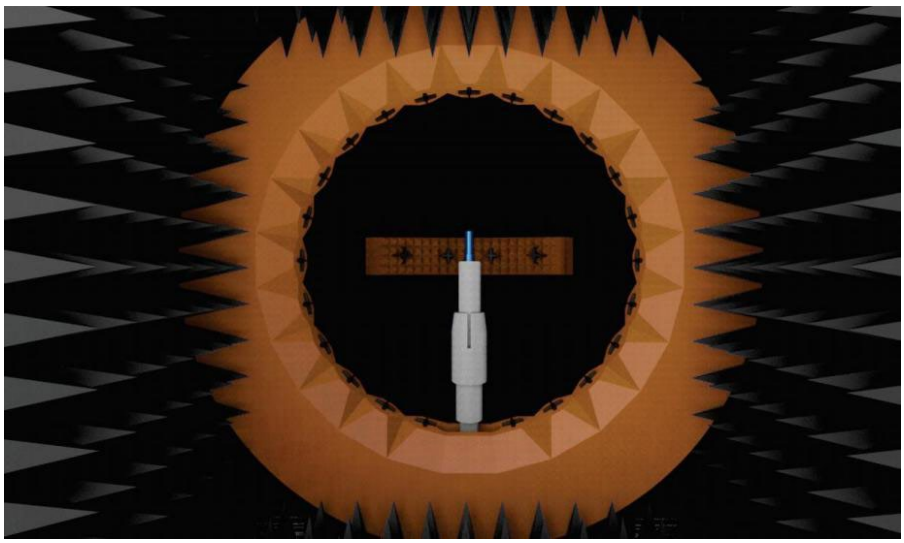
Wireless Communication Tester

- ●GSM/3G/4G
- ●Wi-Fi/ BT
- ●NB-IoT

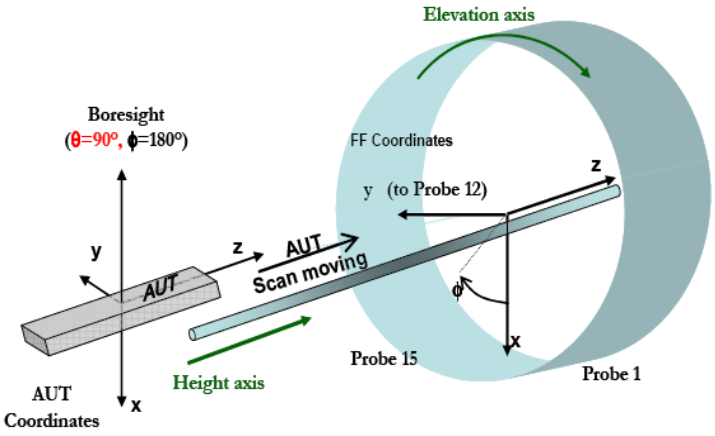
KEYSIGHT E5071C

Vector Network Analyzer

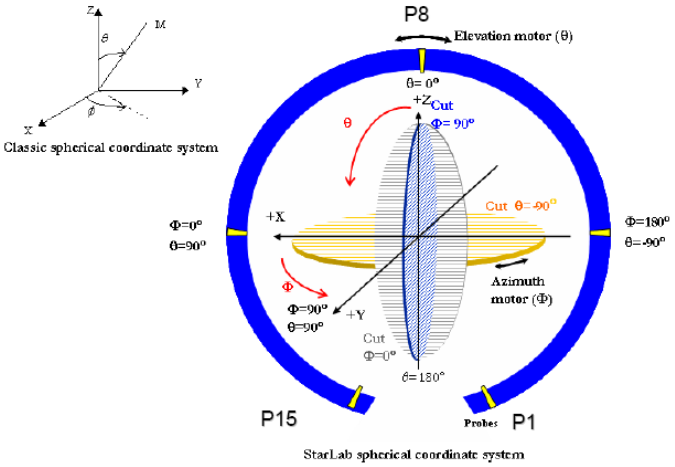
- ●Frequency:100 kHz~8.5GHz



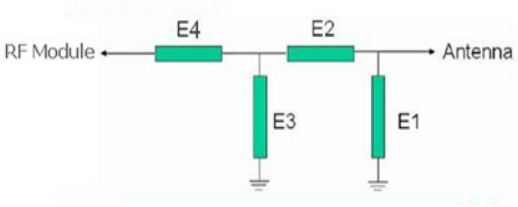
Coordinate system – Cylindrical geometry



Coordinate system – Spherical geometry



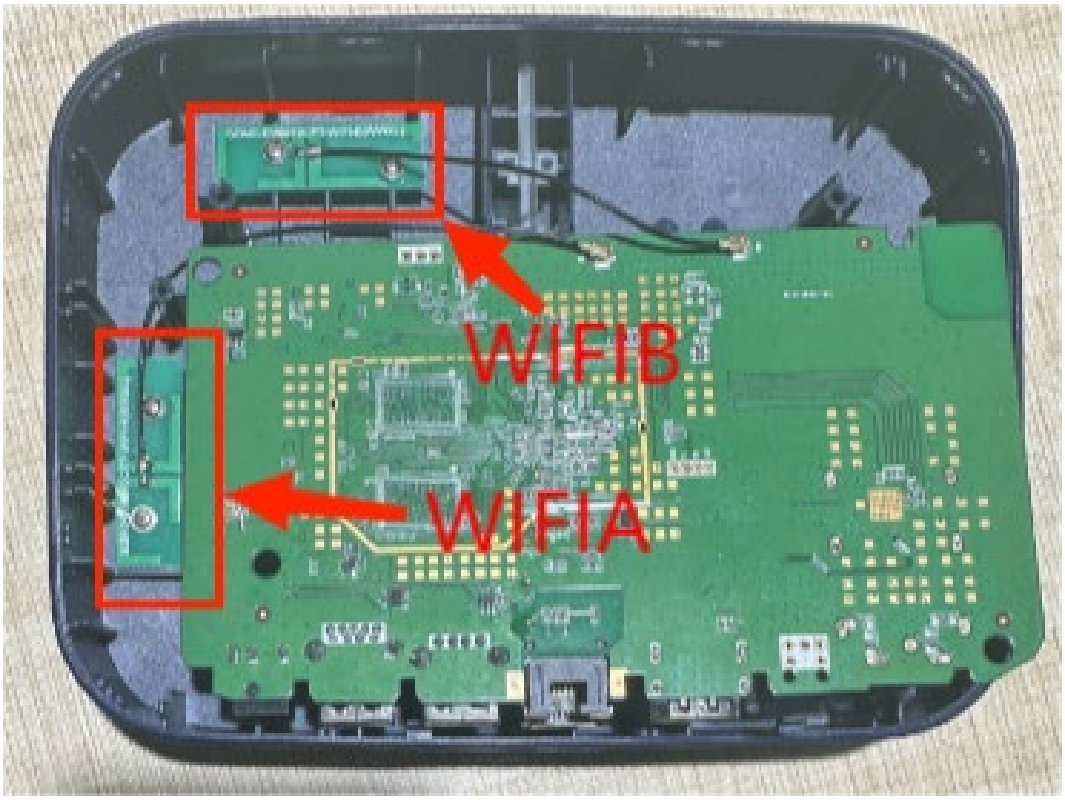
4 Matching Circuit Description



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

5 Assembly Description

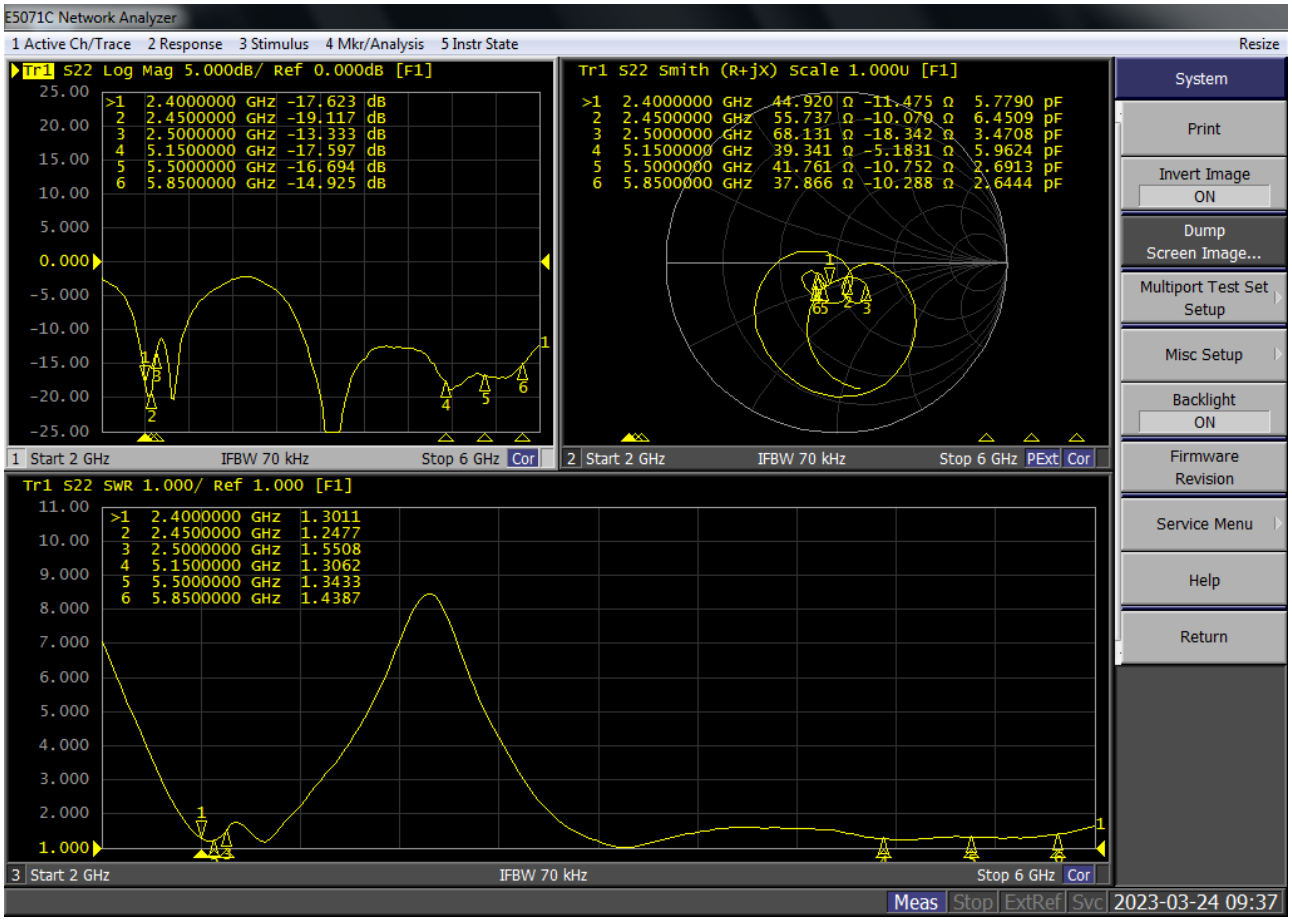
Antenna Attachment Position



6 Passive Parameter Test

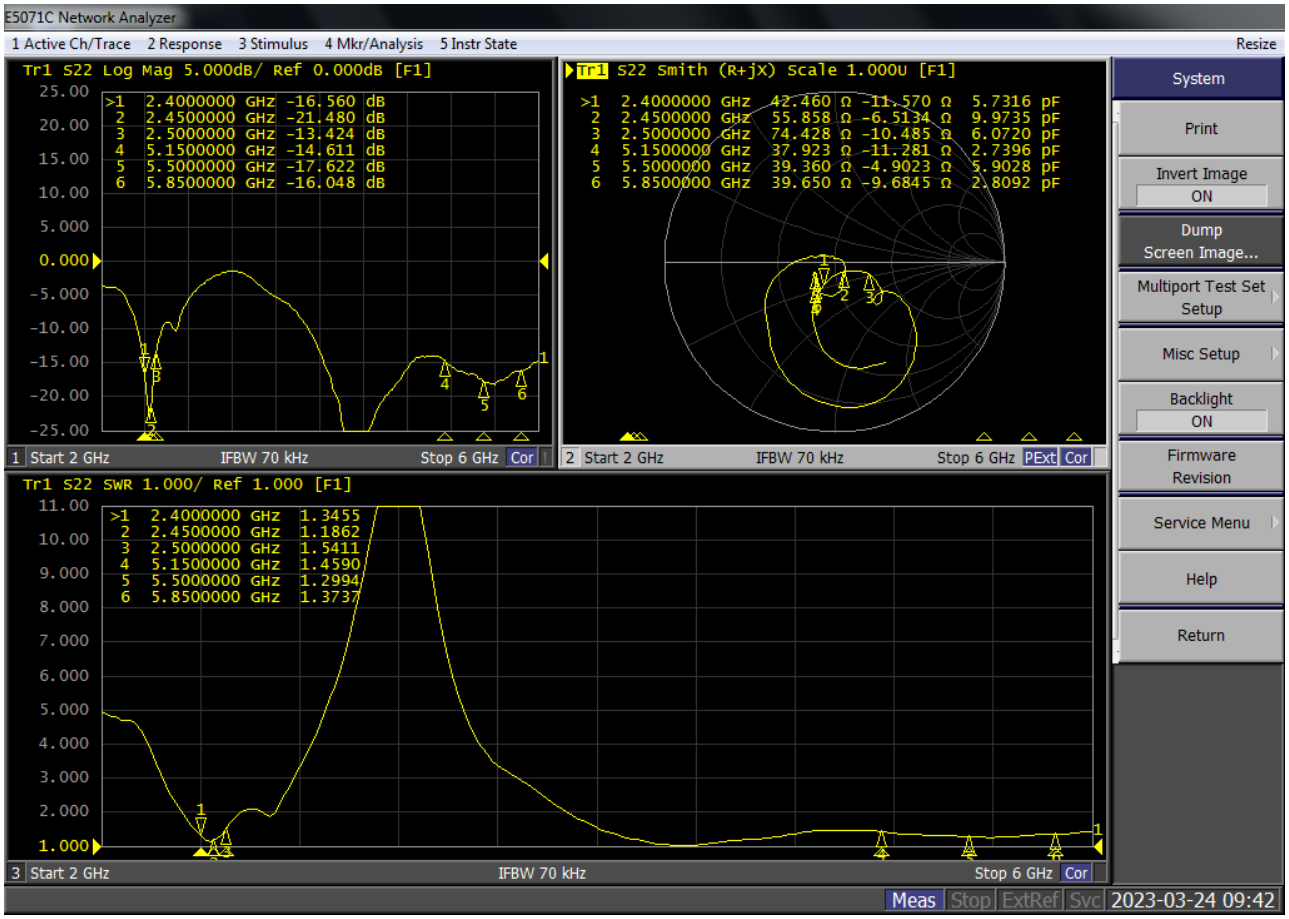
6.1 VSWR

6.1.1 Wi-Fi Ant-A



Freq/GHz	2.4	2.45	2.5	5.15	5.5	5.85
VSWR	1.3	1.2	1.5	1.3	1.3	1.4

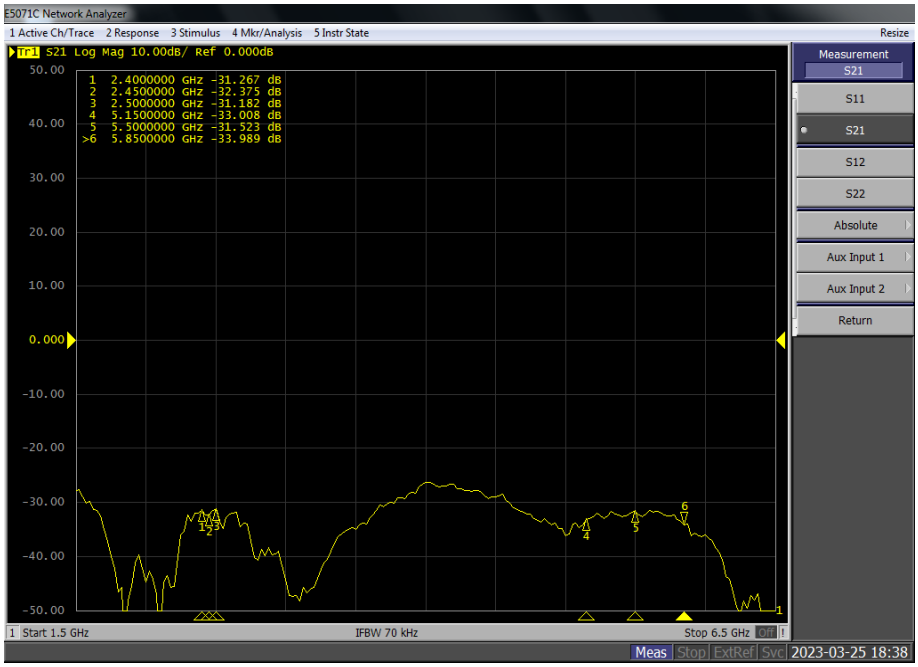
6.1.2 Wi-Fi Ant-B



Freq/GHz	2.4	2.45	2.5	5.15	5.5	5.85
VSWR	1.3	1.1	1.5	1.4	1.2	1.3

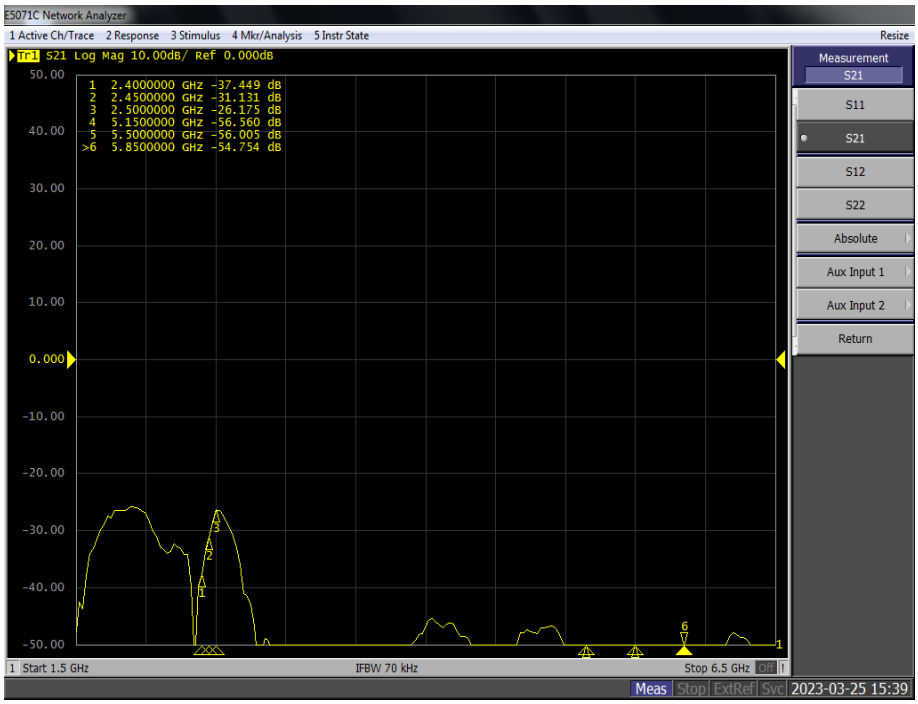
6.2 Isolation

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



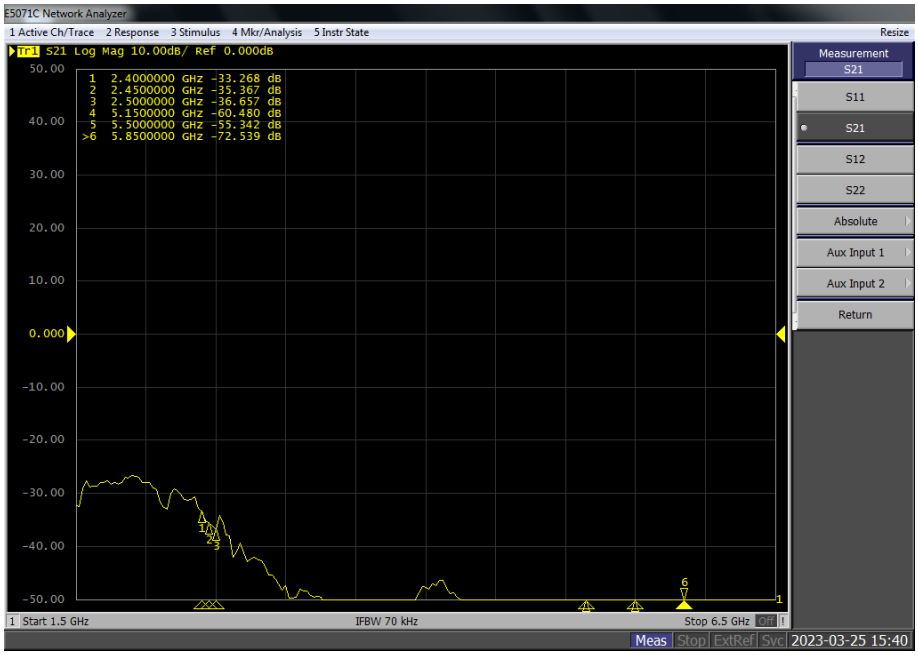
Freq/GHz	2.4	2.45	2.5	5.15	5.5	5.85
S21/ dB	-31	-32	-31	-33	-31	-33

6.2.2 Wi-Fi Ant-A & BT Ant Isolation



Freq/GHz	2.4	2.45	2.5	5.15	5.5	5.85
S21/ dB	-37	-31	-26	-56	-56	-54

6.2.3 Wi-Fi Ant-B & BT Ant Isolation



Freq/GHz	2.4	2.45	2.5	5.15	5.5	5.85
S21/ dB	-33	-35	-36	-60	-55	-72

6.3 Efficiency & Gain

6.3.1 Efficiency & Gain of Wi-Fi Ant-A

Gain&Efficiency of Wi-Fi Ant-A

2.4G		
Frequency (MHz)	Gain (dBi)	Efficiency (%)
2400	5.24	64.57
2410	5.25	65.46
2420	5.22	65.31
2430	5.19	64.86
2440	5.19	65.31
2450	5.15	64.86
2460	5.16	65.16
2470	5.10	64.57
2480	5.10	64.42
2490	5.18	64.57
2500	5.13	63.1

5G		
Frequency (MHz)	Gain (dBi)	Efficiency (%)
5150	4.71	71.45
5200	5.11	70.63
5250	5.14	71.94
5300	5.33	70.31
5350	5.36	72.11
5400	5.65	71.61
5450	5.52	70.31
5500	5.43	67.61
5550	5.11	70.15
5600	5.22	71.29
5650	5.34	69.18
5700	5.59	68.87
5750	5.78	68.55
5800	5.77	69.02
5850	5.84	71.45

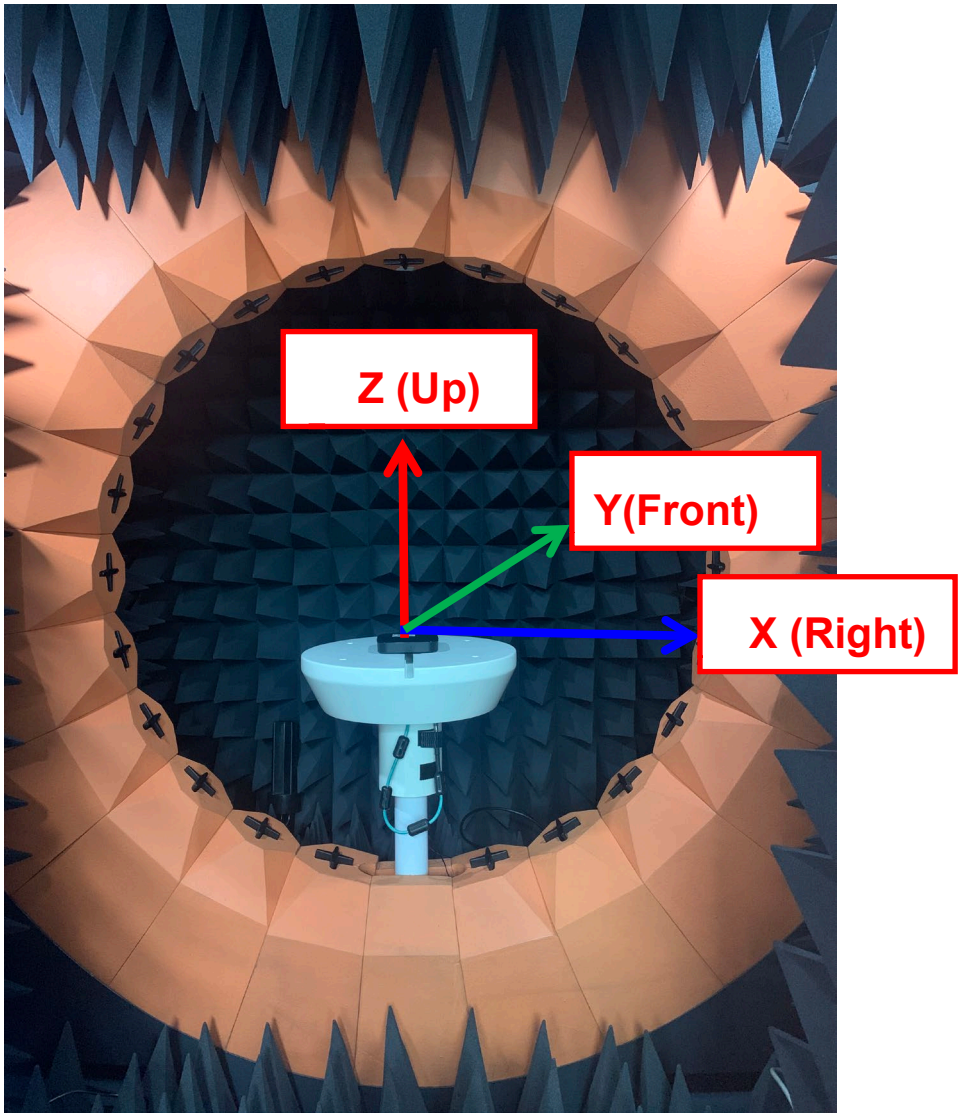
6.3.2 Efficiency & Gain of Wi-Fi Ant-B

Efficiency & Gain of Wi-Fi Ant-B					
2.4G			5G		
Frequency (MHz)	Gain	Efficiency	Frequency (MHz)	Gain	Efficiency

	(dBi)	(%)
2400	3.16	68.08
2410	3.14	71.29
2420	3.06	72.44
2430	3.06	74.3
2440	3.07	75.86
2450	3.14	77.62
2460	3.19	78.7
2470	3.22	79.43
2480	3.21	79.25
2490	3.24	78.52
2500	3.29	76.74

	(dBi)	(%)
5150	4.81	77.62
5200	4.67	76.38
5250	4.93	75.86
5300	5.13	77.62
5350	5.4	78.7
5400	5.42	80.35
5450	5.44	78.7
5500	5.1	77.09
5550	5.37	76.74
5600	5.54	76.21
5650	5.55	74.47
5700	5.53	76.56
5750	5.44	73.79
5800	5.15	70.79
5850	5.14	71.12

6.4 Reference Coordinate System



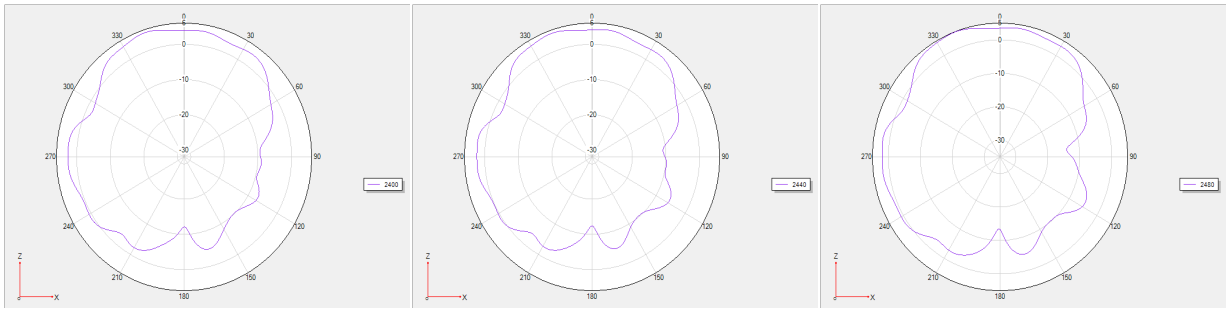
	XY	XZ	YZ
0°	Right	Up	Up
90°	Front	Right	Front
180°	Left	Down	Down
270°	Back	Left	Back

6.5 2D & 3D Radiation Pattern

6.5.1 Wi-Fi Ant-A

2.4G

Phi 0：



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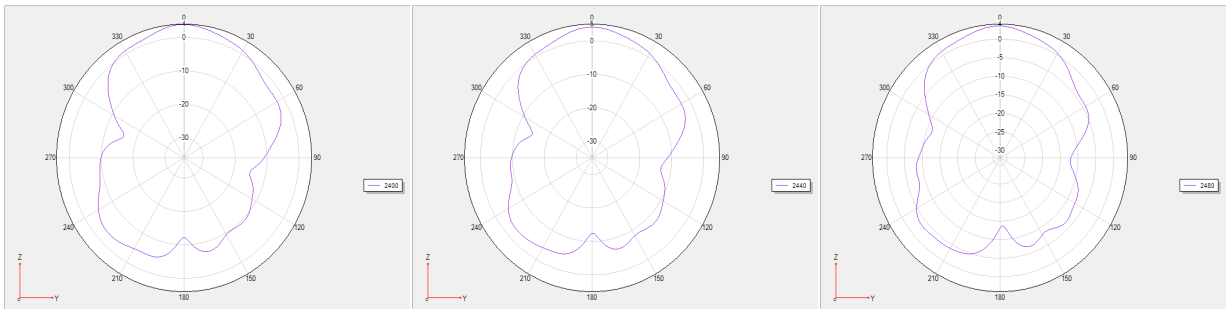
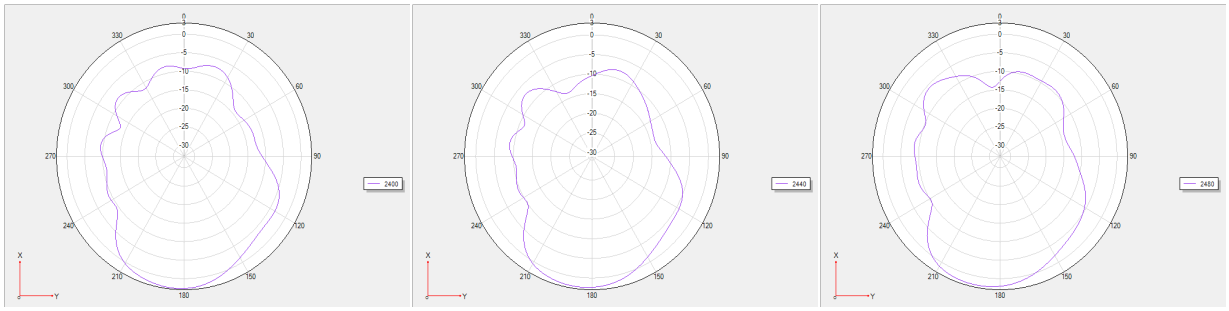
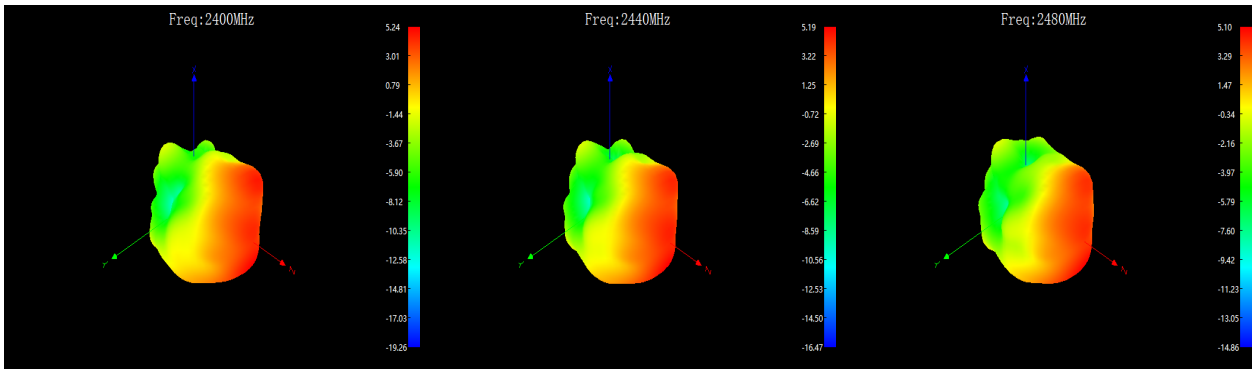


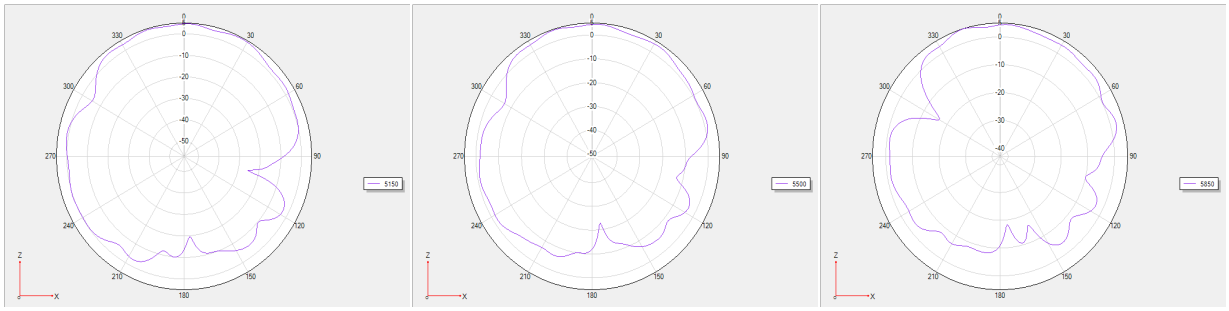
Theta 90：





5G

Phi 0：



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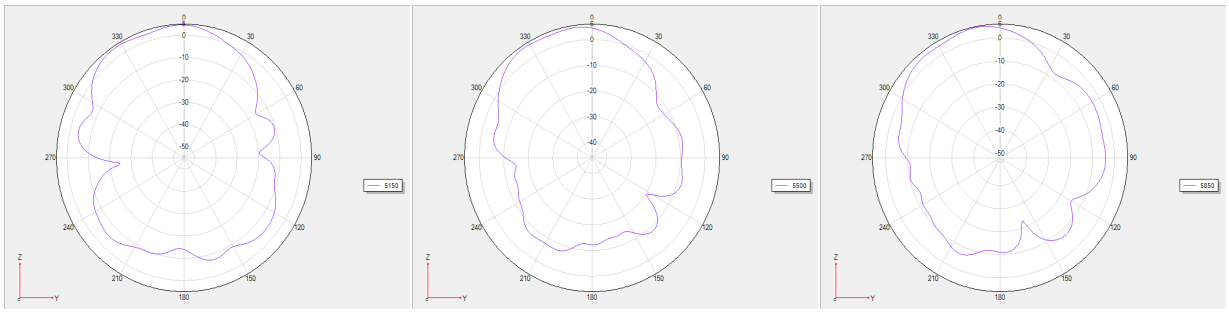
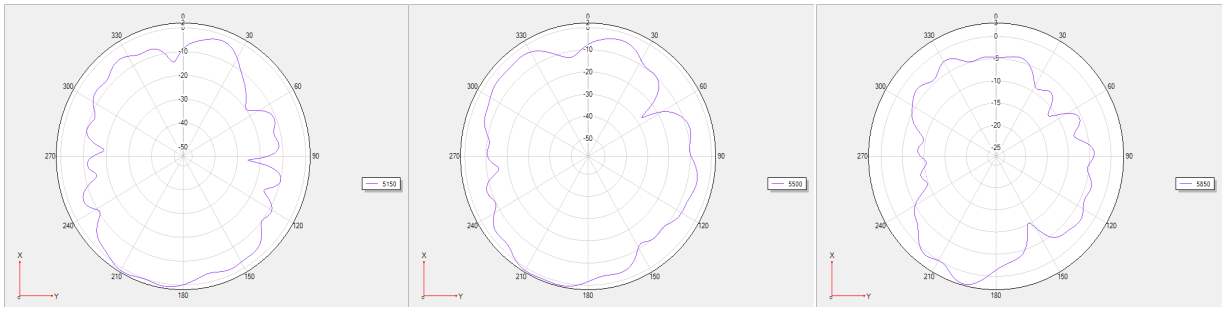
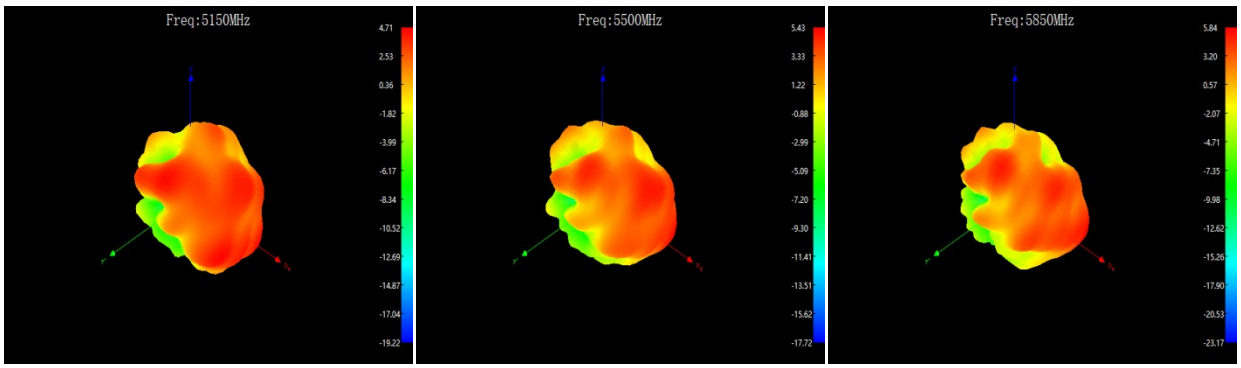


Theta 90：

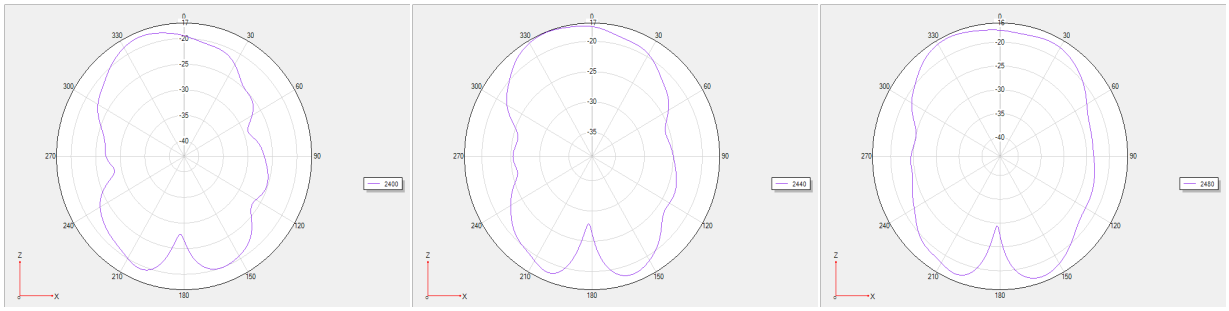




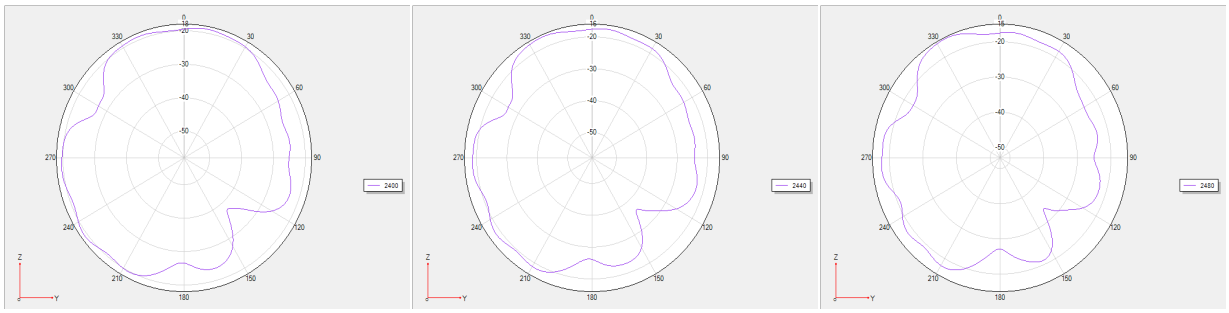
6.5.2 Wi-Fi Ant-B

2.4G

Phi 0：



Phi 90：



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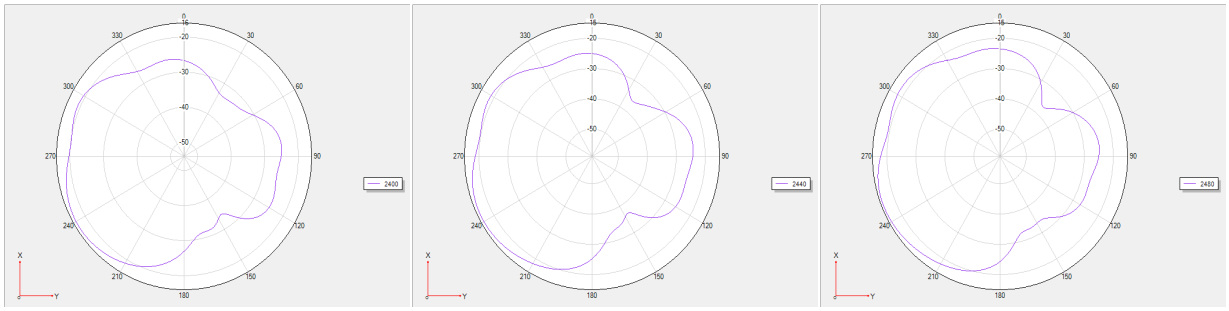
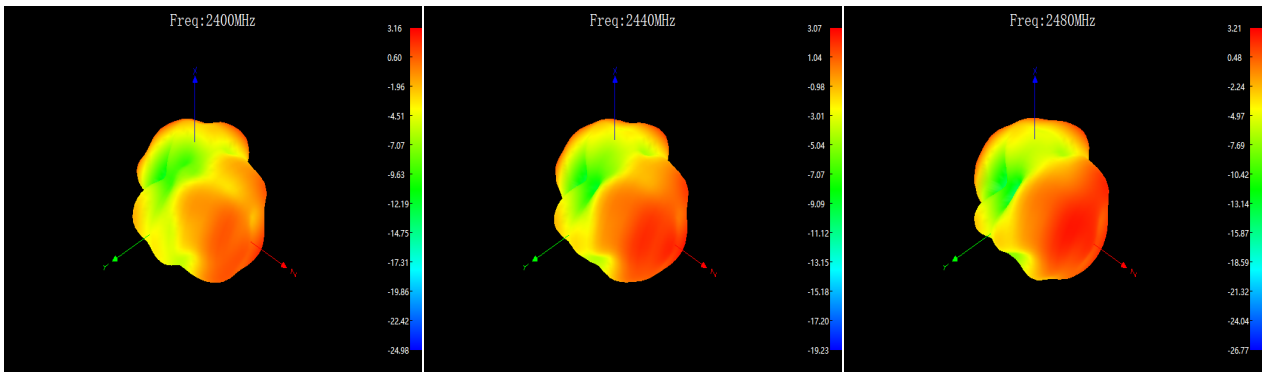
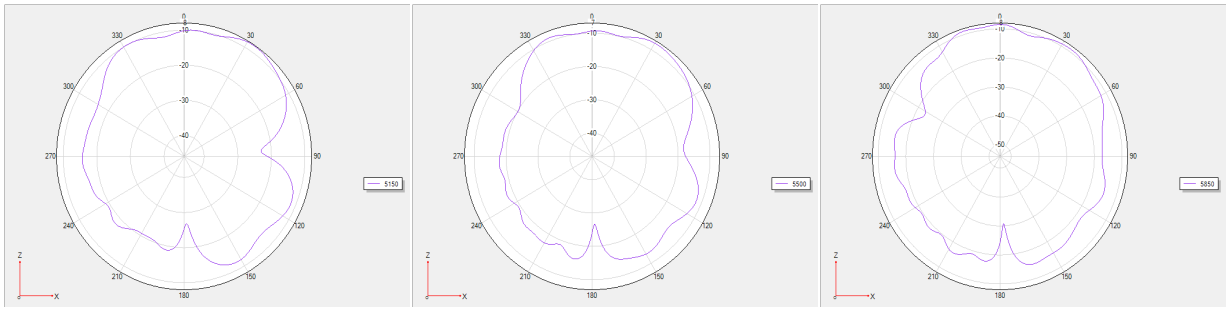




5G

Phi 0：



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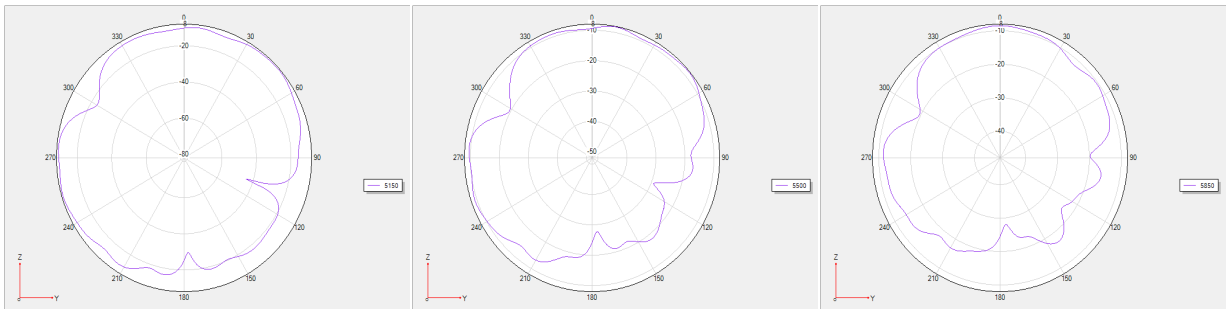
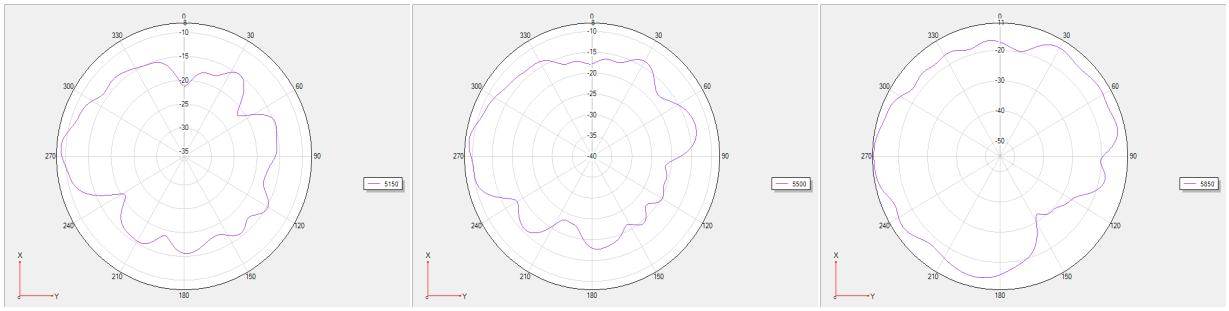
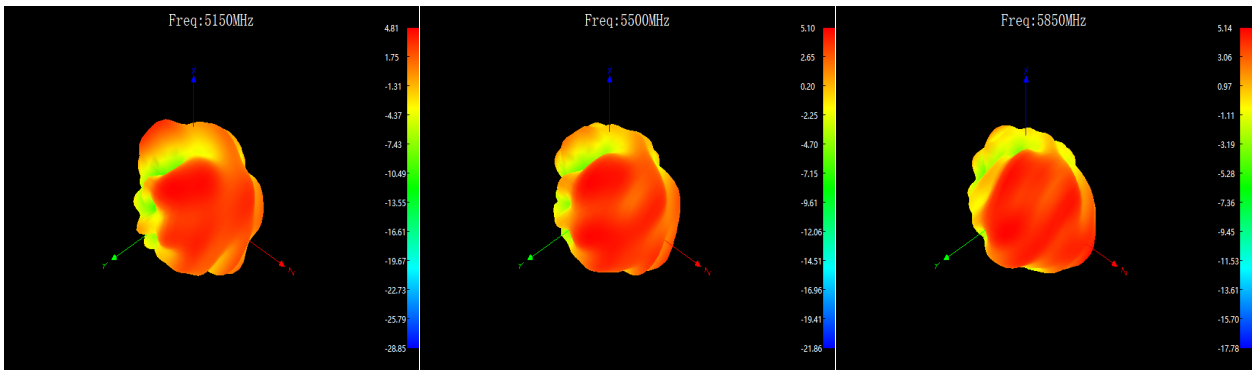
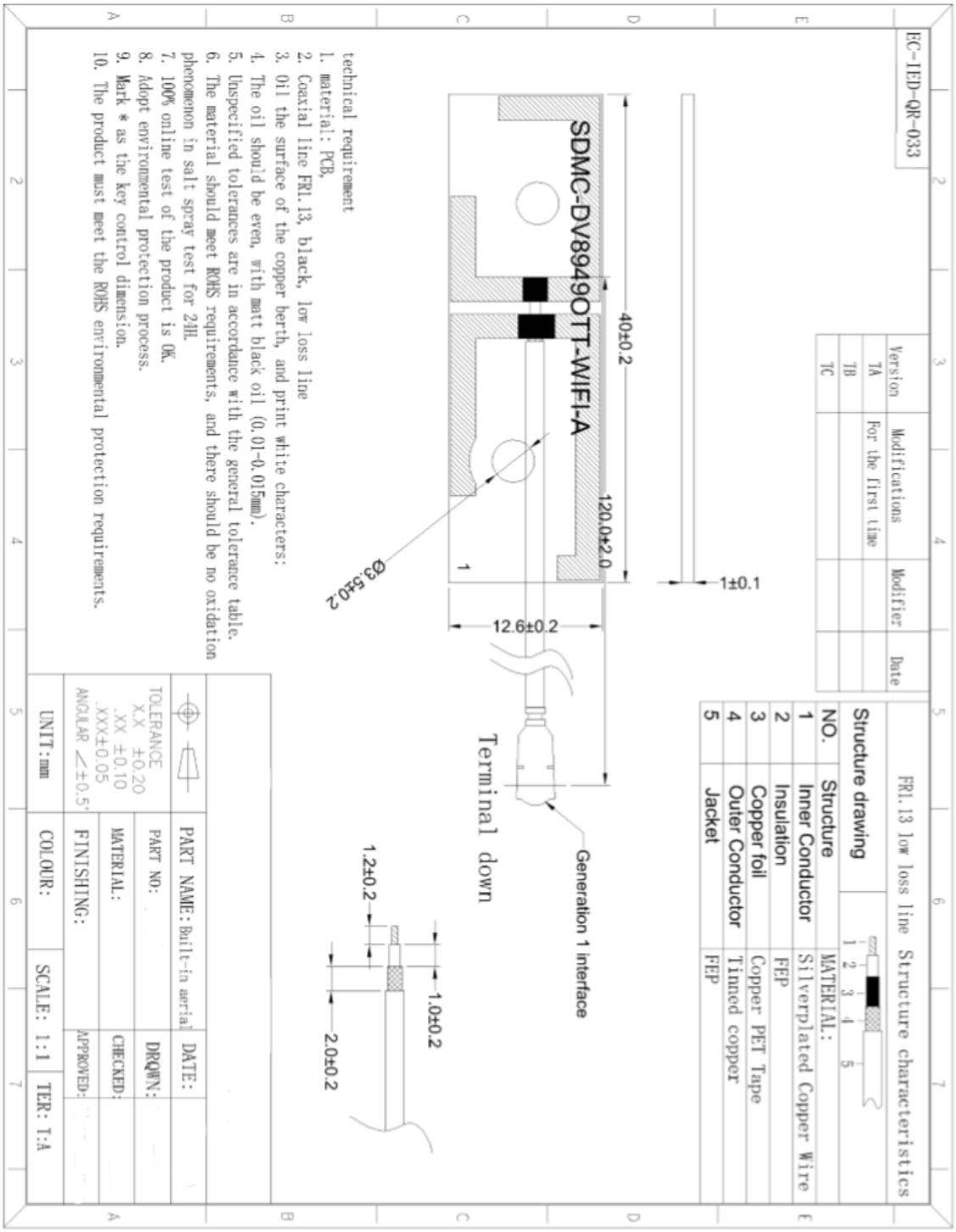


Theta 90：

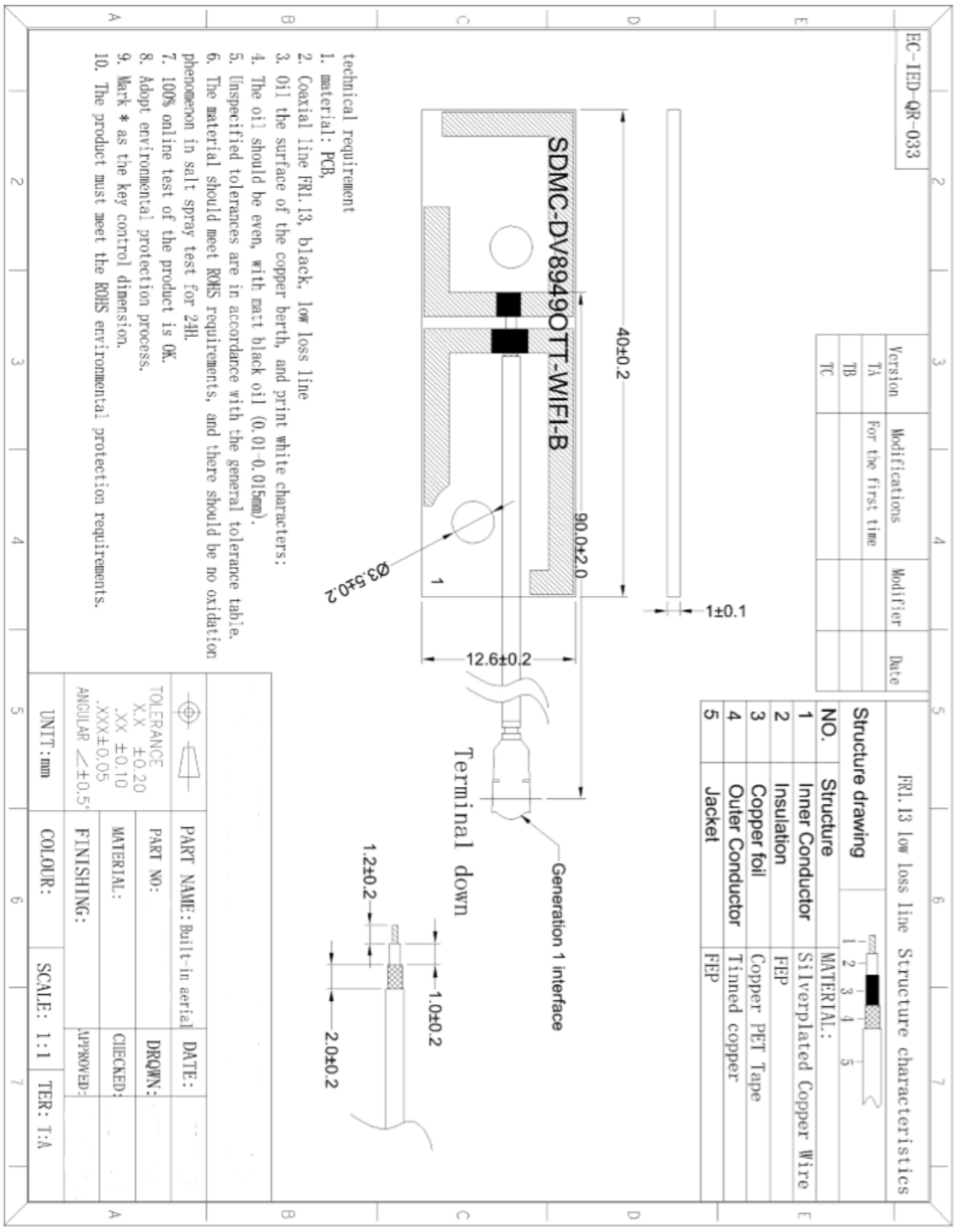




6 Drawing



Wi-Fi Ant-A



Wi-Fi Ant-B