

PSA

佳邦科技股份有限公司

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歌乐 I CAR05_WIFI Antenna_Test Report

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INPAQ Technology Co., Ltd.

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Revision History

Released Date	Version	Record
Apr.11 th ,2025	V0.0	天线测试报告
Apr.15 th ,2025	V0.1	天线测试报告
May.16 th ,2025	V0.2	天线测试报告
May.21 th ,2025	V0.3	更新天线OTA测试报告

Requirements of Antenna Design and Measurement

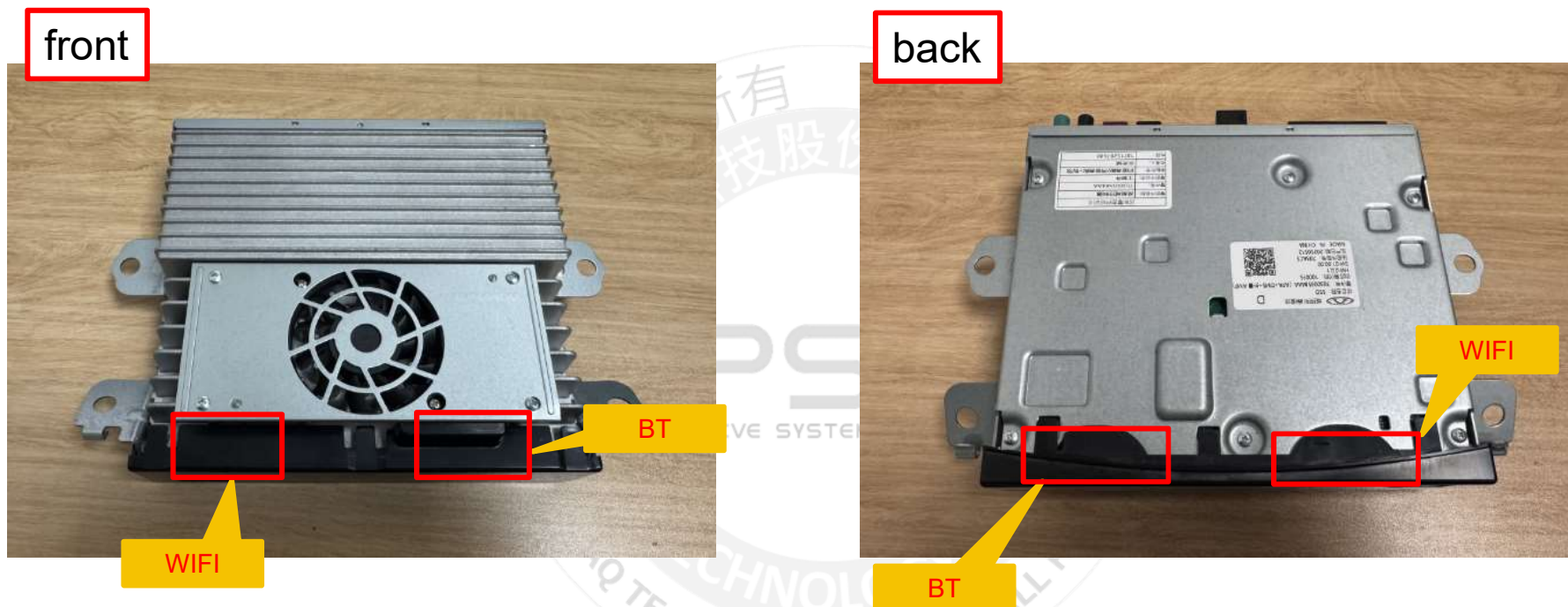
Requirements of Antenna Design

RF Function	Number of ANT	Frequency Band	Remark
WiFi	2	2400-2500MHz , 5150-5850MHz	WIFI , BT

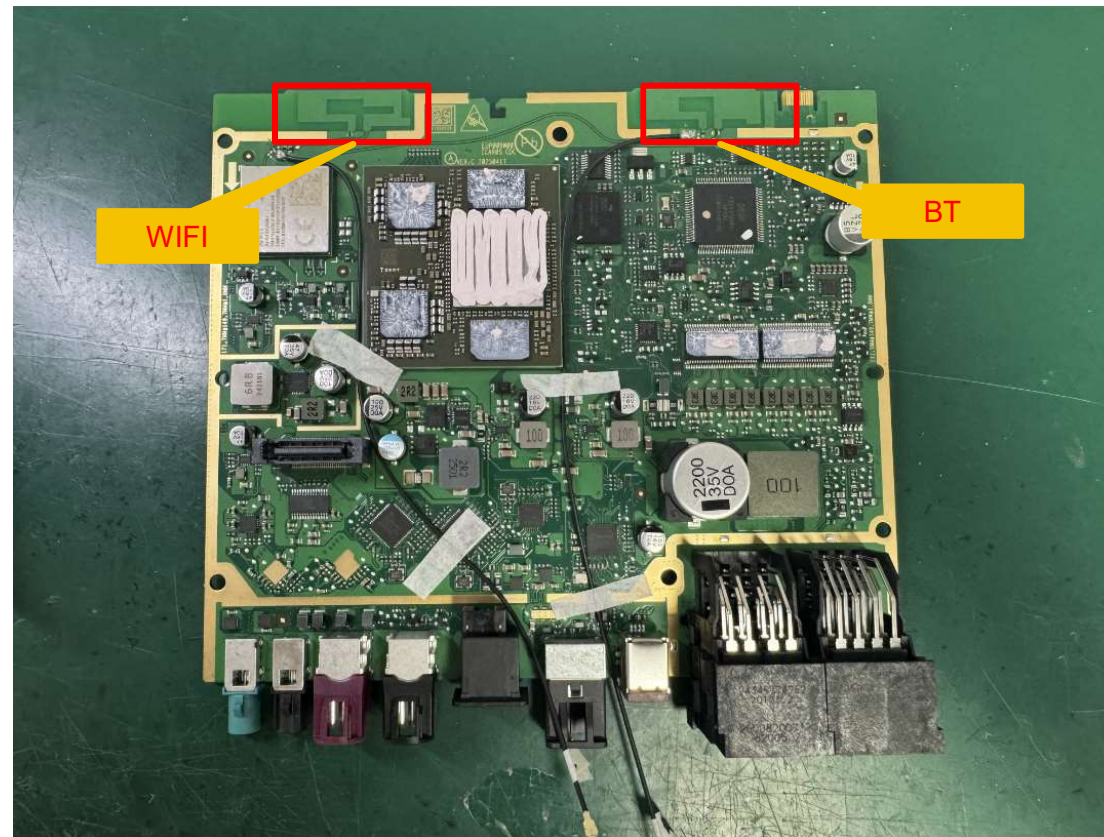
Requirements of Measurement

Test Item	Specification	Remark
VSWR	N/A	
Peak gain	N/A	
Efficiency	N/A	

Antenna Placement & Solution

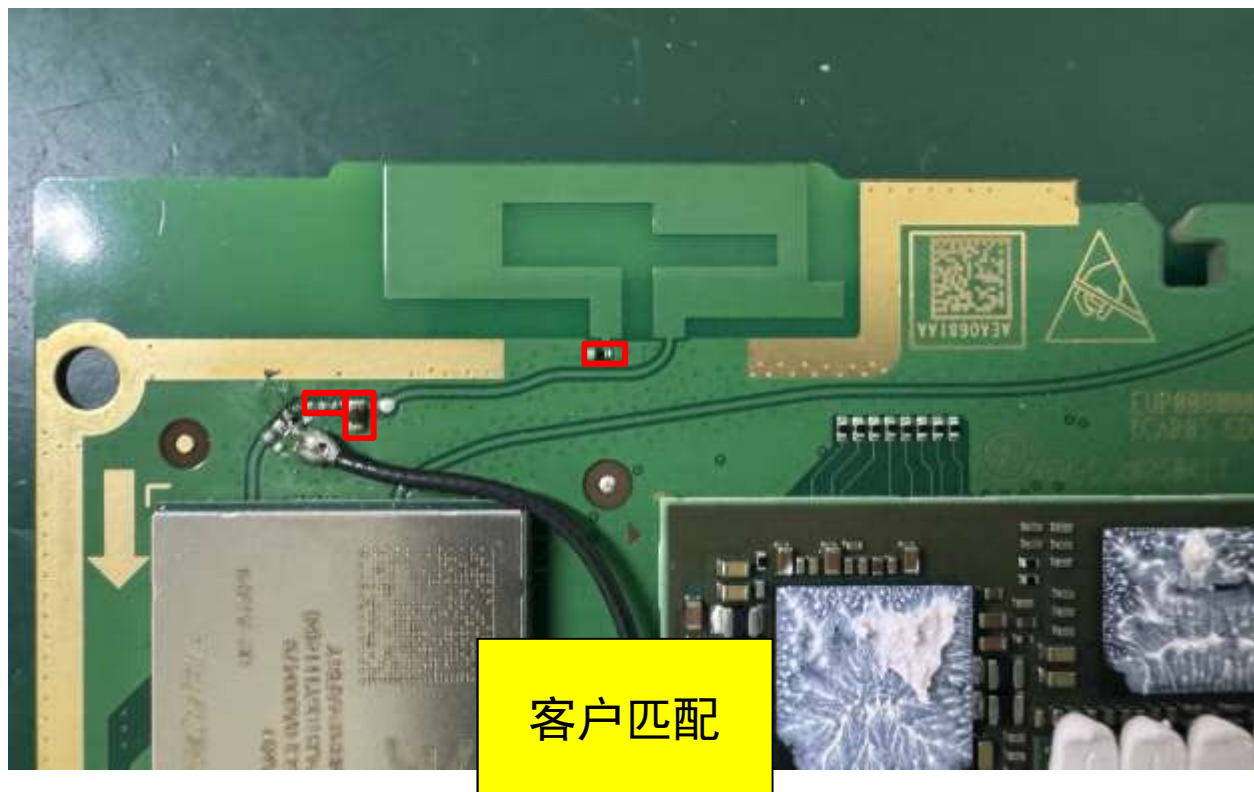


Antenna Placement & Solution



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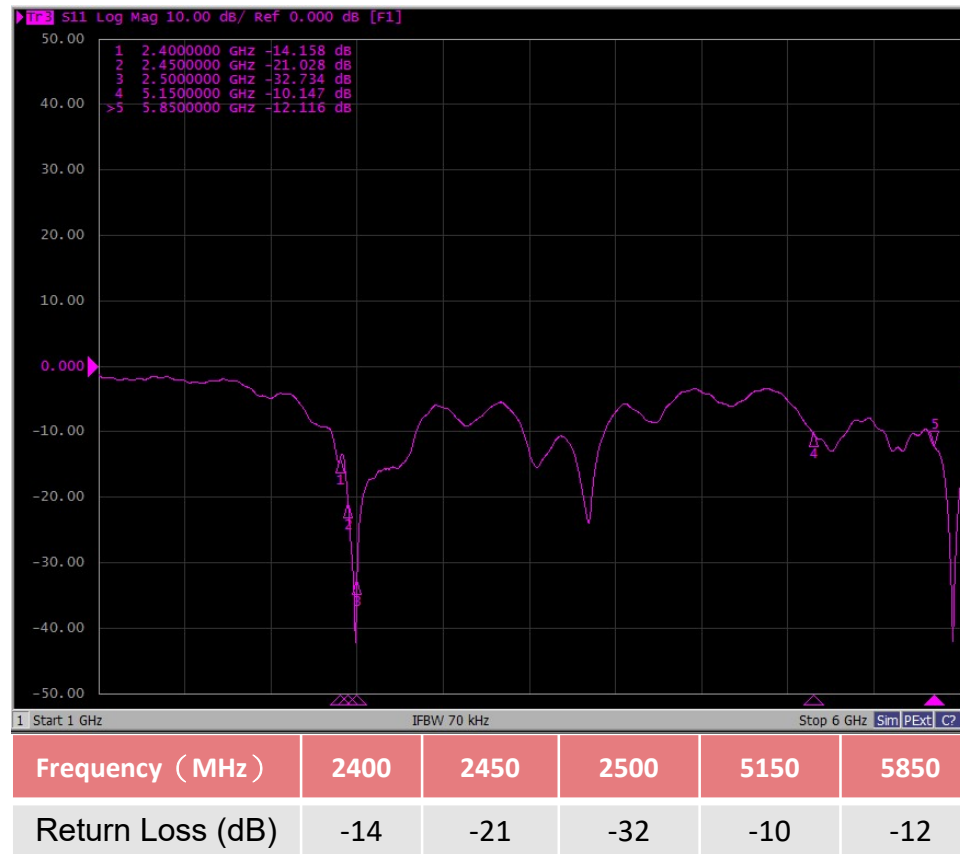
Antenna Matching Network-WIFI



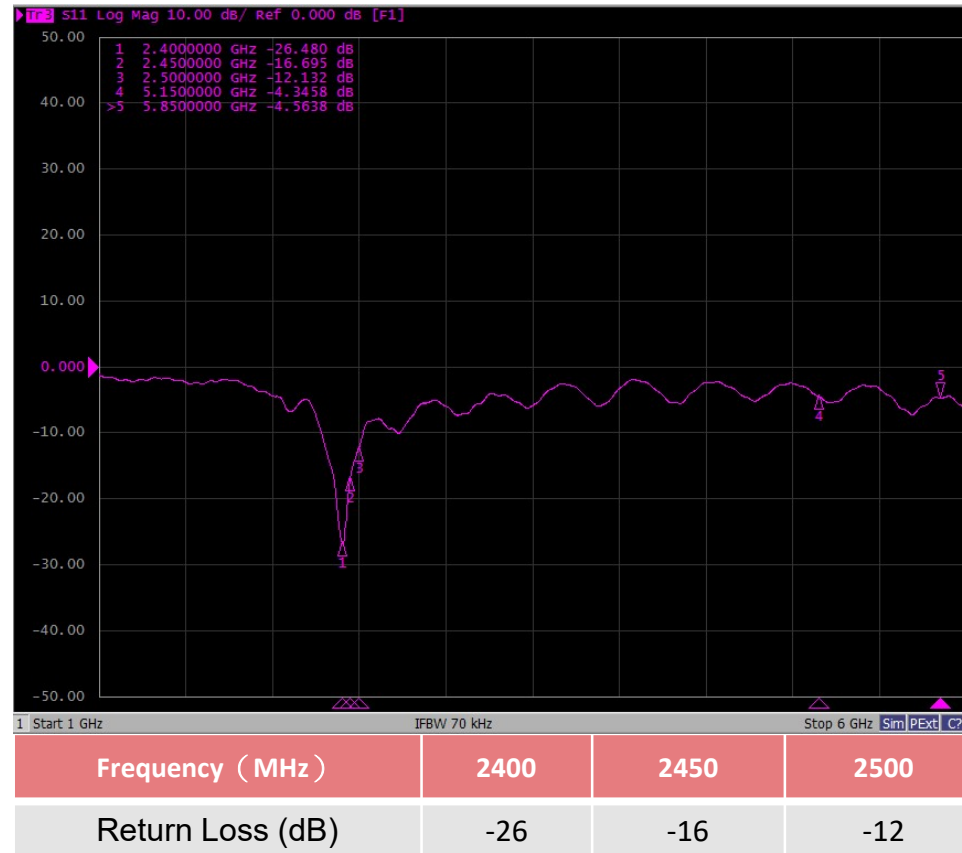
Antenna Matching Network-BT



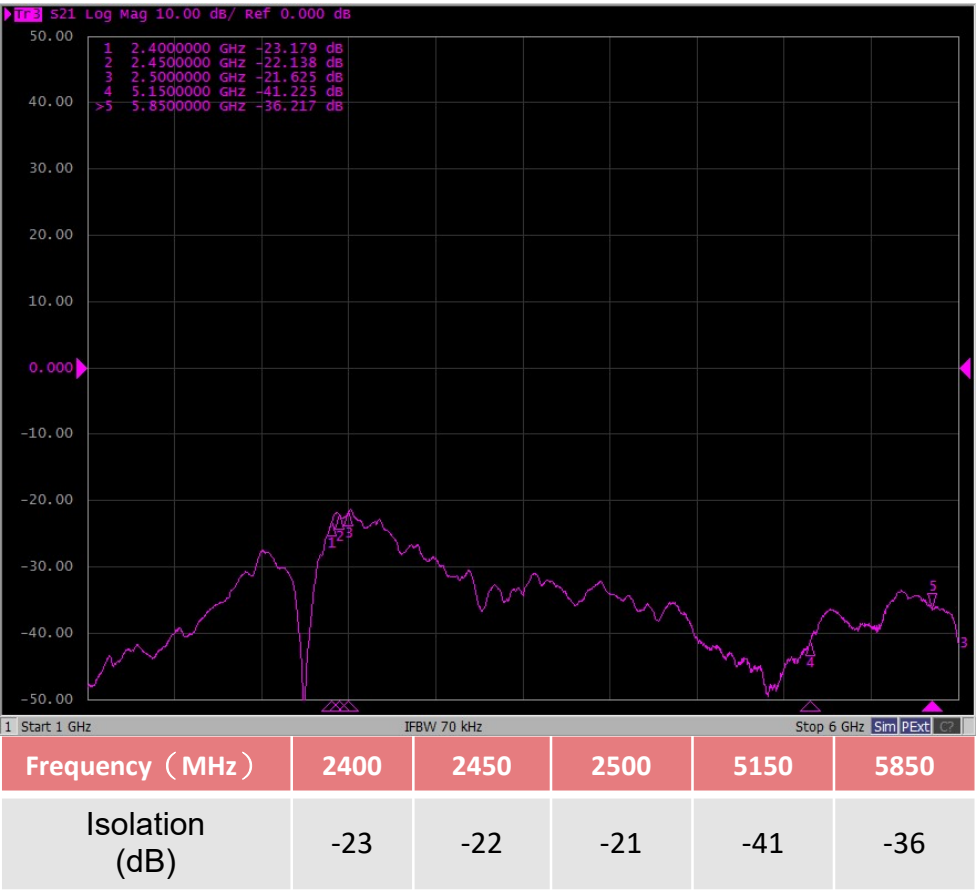
Return Loss Results-WIFI



Return Loss Results-BT



Isolation Results WIFI & BT



Test Setup for Radiation Pattern Measurement

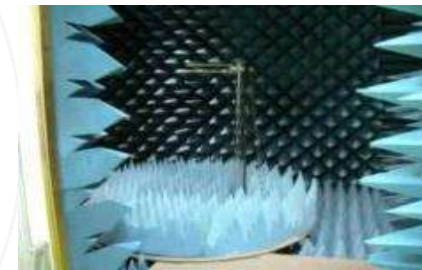
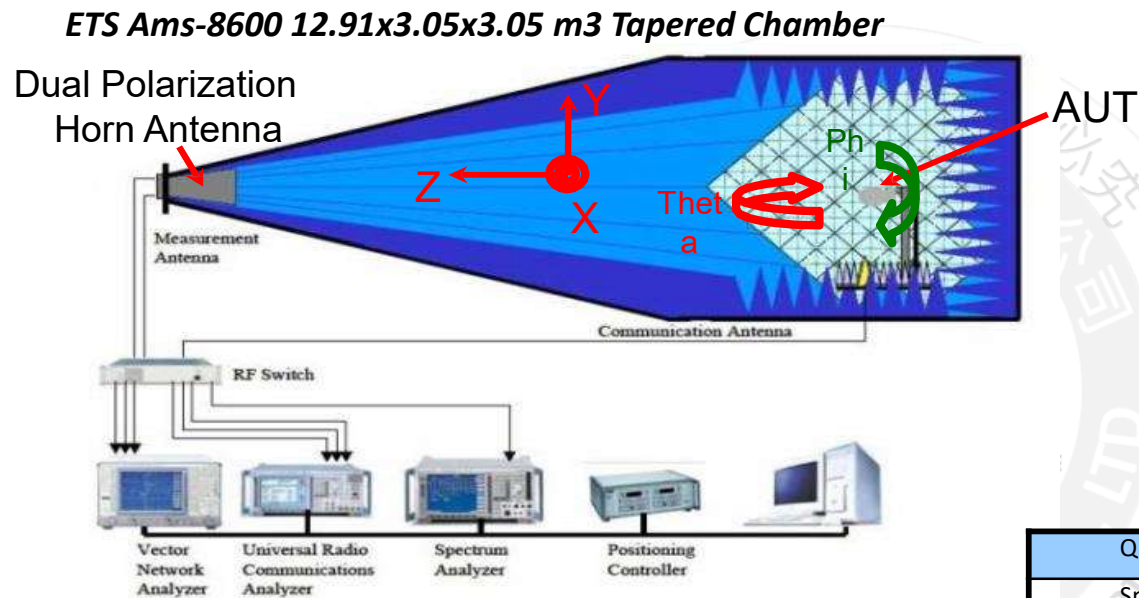
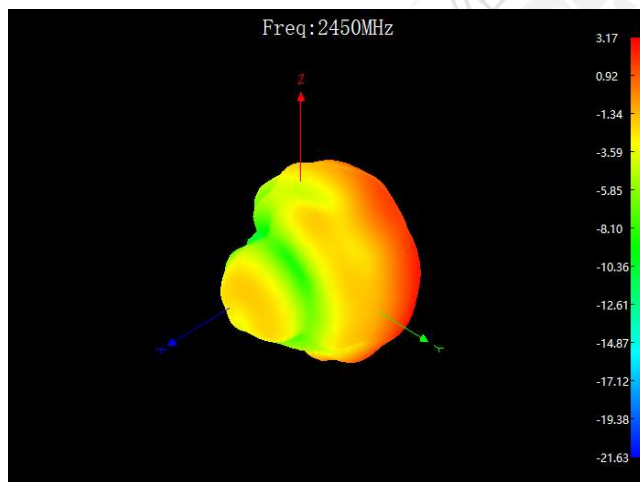


Figure 1: System diagram for test system including compact-size tapered anechoic chamber and optional test instrumentation

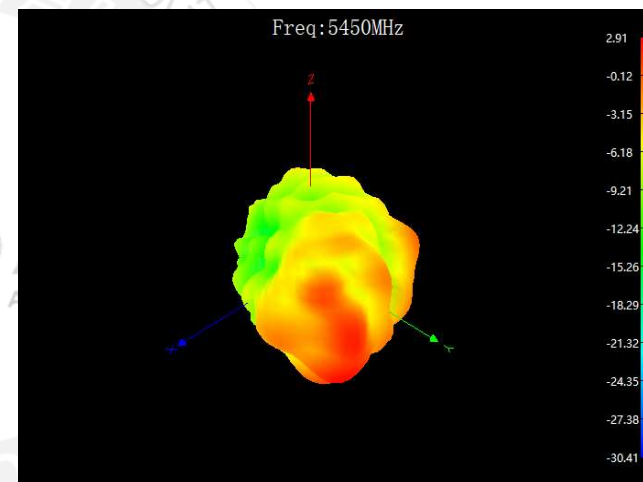
QUIPMENT	BRAND	MODULE TYPE
Spectrum	Agilent	E4402B
Signal Generator	Agilent	8960
Switch	Agilent	3499A
Switch	ETS	2090
Network Analyzer	Agilent	N5230A

3D Radiation pattern Results-WIFI

◆ 2450MHz

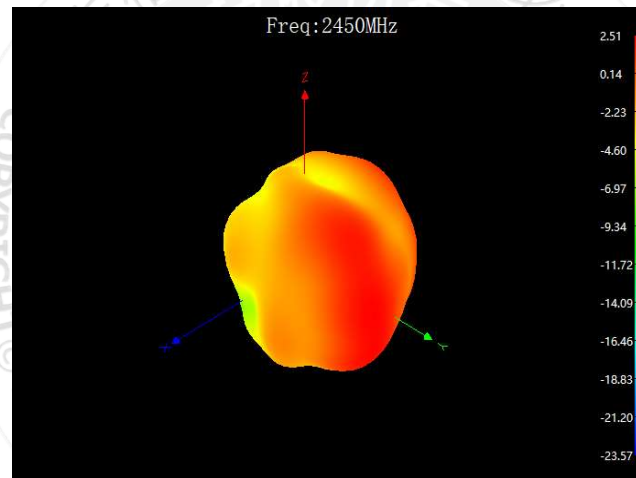


◆ 5450MHz

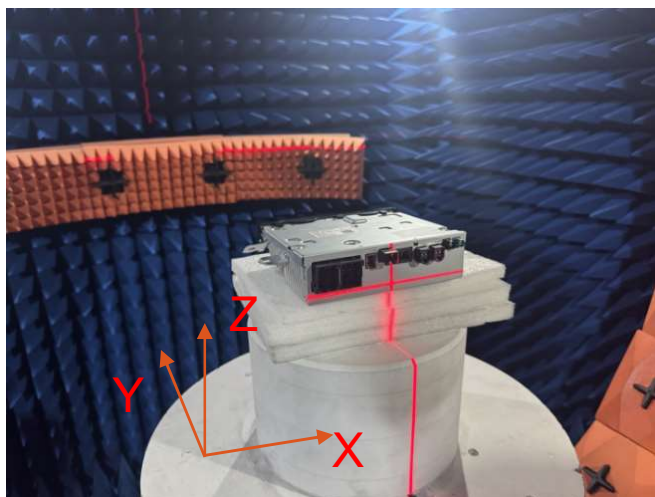


3D Radiation pattern Results-BT

◆ 2450MHz



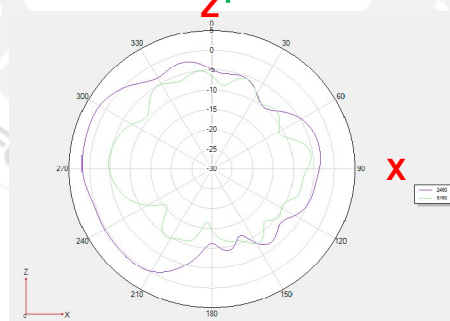
2D Radiation pattern Results-WiFi



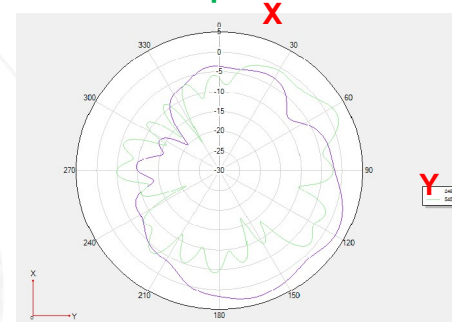
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2450MHz
5450MHz

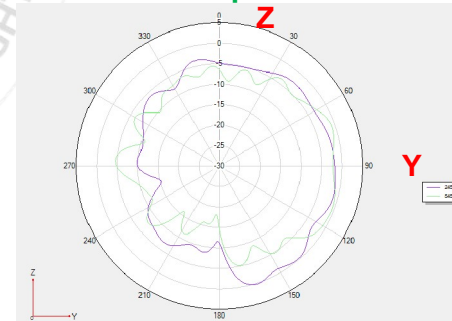
XZ-E1-plane



XY-H-plane

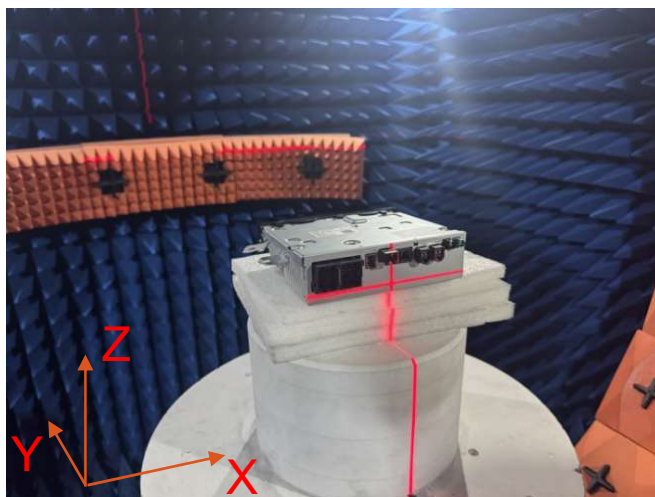


YZ-E2-plane



WE CONNECT WE PROTECT **PSA**

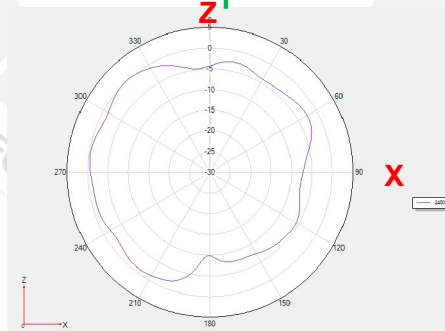
2D Radiation pattern Results-BT



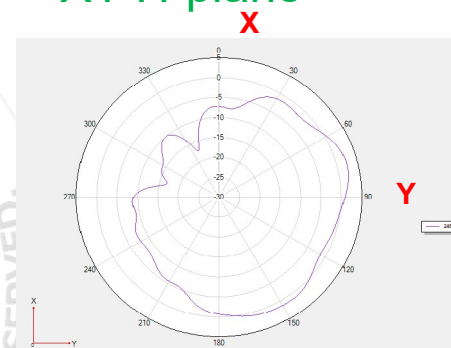
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2450MHz

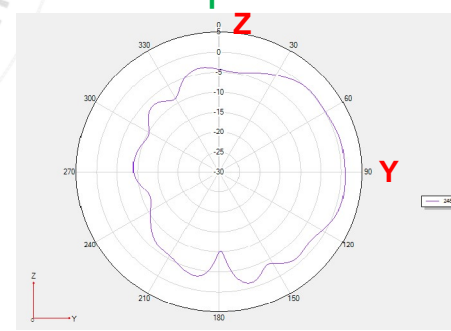
XZ-E1-plane



XY-H-plane



YZ-E2-plane



WE CONNECT WE PROTECT **PSA**

Results Summary–Peak Gain & Efficiency–WiFi

Frequency	Efficiency	Efficiency	Peak Gain
(MHz)	(dB)	(%)	(dBi)
2400	-3.65	43.15	3.19
2410	-3.72	42.46	2.91
2420	-3.53	44.36	3.32
2430	-3.48	44.87	3.11
2440	-3.45	45.18	3.22
2450	-3.4	45.7	3.17
2460	-3.41	45.6	3.07
2470	-3.35	46.23	3.16
2480	-3.43	45.39	2.82
2490	-3.35	46.23	3.11
2500	-3.42	45.49	2.78
AVG	-3.47	44.96	3.07

Frequency	Efficiency	Efficiency	Peak Gain
(MHz)	(dB)	(%)	(dBi)
5150	-6.2	23.98	3.16
5200	-5.59	27.61	4.55
5250	-5.02	31.47	3.87
5300	-5.05	31.26	3.42
5350	-4.59	34.75	4.19
5400	-4.86	32.66	3.84
5450	-5.17	30.41	2.91
5500	-4.93	32.14	2.14
5550	-4.99	31.69	2.23
5600	-4.84	32.81	2.72
5650	-4.78	33.26	2.54
5700	-4.79	33.18	2.82
5750	-4.43	36.05	3.23
5800	-4.84	32.81	2.98
5850	-4.95	31.98	2.73
AVG	-5.01	31.73	3.15

Results Summary–Peak Gain & Efficiency–BT

Frequency	Efficiency	Efficiency	Peak Gain
(MHz)	(dB)	(%)	(dBi)
2400	-3.29	46.88	2.9
2410	-3.29	46.88	2.36
2420	-3.19	47.97	2.71
2430	-3.26	47.21	2.41
2440	-3.3	46.77	2.5
2450	-3.36	46.13	2.51
2460	-3.4	45.71	2.46
2470	-3.44	45.29	2.59
2480	-3.56	44.05	2.19
2490	-3.58	43.85	2.28
2500	-3.7	42.65	1.67
AVG	-3.39	45.76	2.41

OTA

MODE	CHANNEL	TRP	TIS
WIFIB(11M/11M)	1	14.41	-85.68
	7	14.72	-84.59
	11	14.81	-84.31
WIFIA(6M/54M)	36	11.72	-66.16
	149	14.26	-71.09
	165	13.4	-71.49
BT(2-DH5)	0	-0.26	-86.06
	39	1.12	-86.85
	78	-0.11	-85.44

Conclusion

1. 以上为板载天线测试数据。

以上请悉知，谢谢!

Thank you

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