BT Ant Passive Test Report

Record for version modification

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

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1 Test Summary

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

2 Test Information

Model No.	DVXXXX
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

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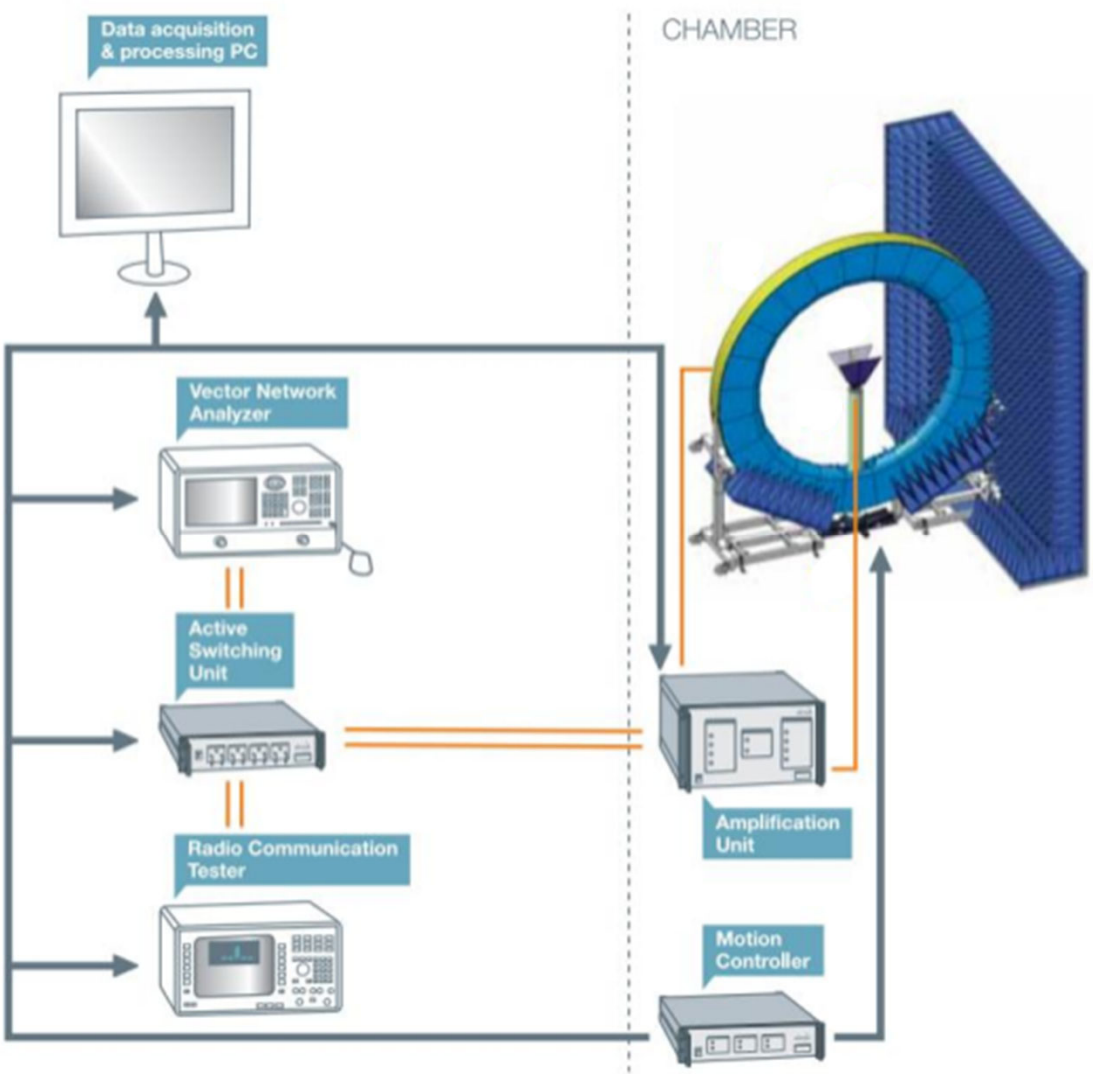
3 Testing Environment

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



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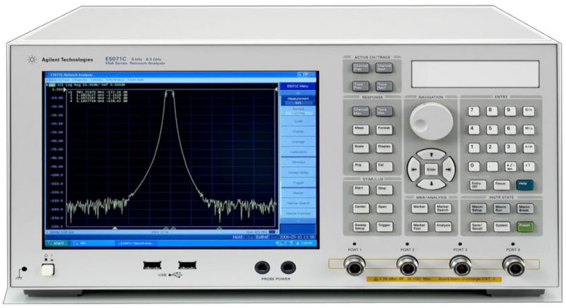


R&S CMW500

Wireless Communication Tester

●GSM/3G/4G

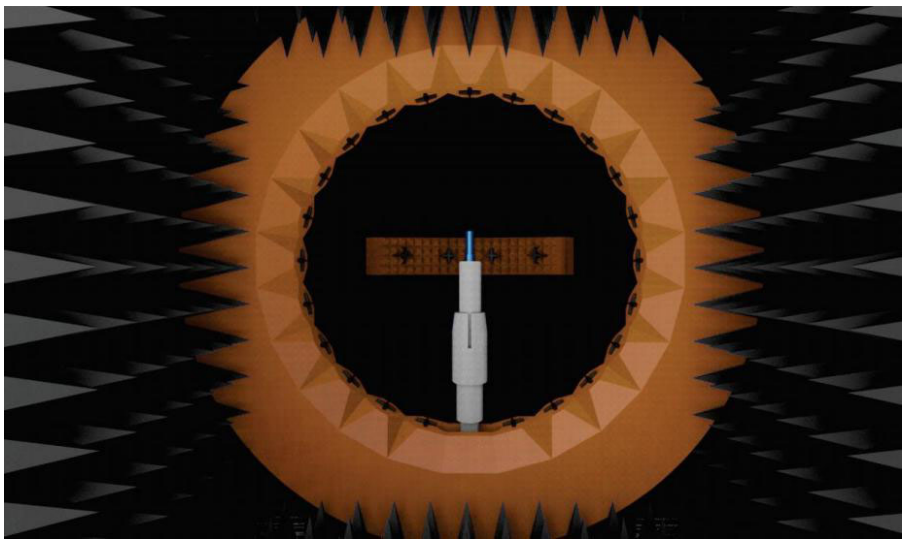
●Wi-Fi/ BT

●NB-IoT

KEYSIGHT E5071C

Vector Network Analyzer

●Frequency:100 kHz~8.5GHz



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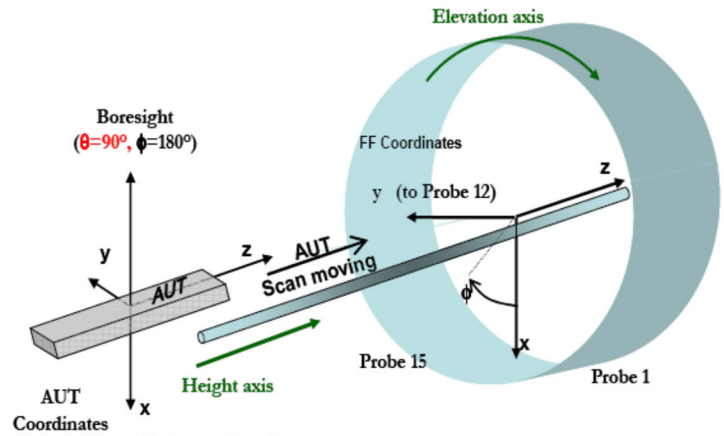
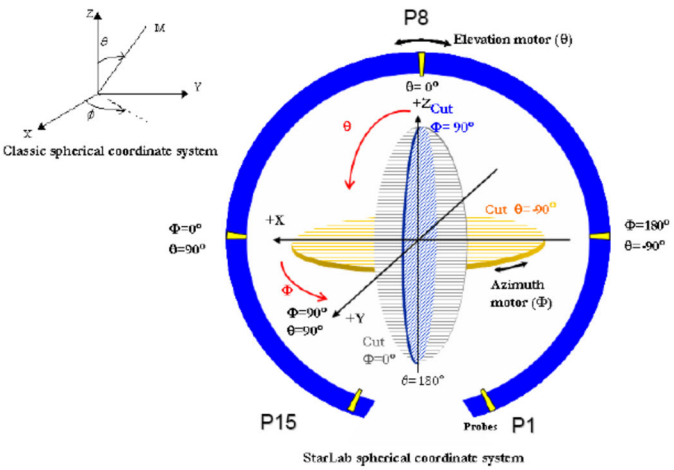
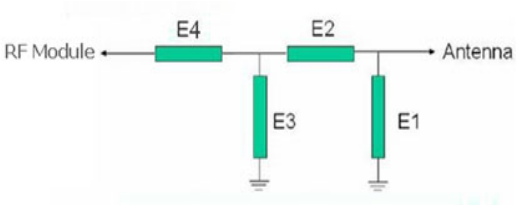
Coordinate system – Cylindrical geometry



Coordinate system – Spherical geometry



4 Matching Circuit Description



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

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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			
	BT⩾-1dBi			
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%			

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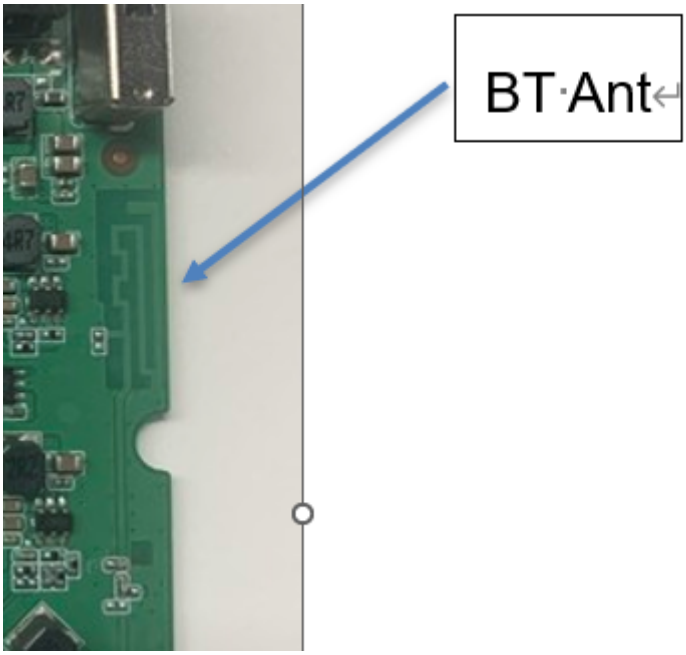
6 Assembly Description

Antenna Attachment Position



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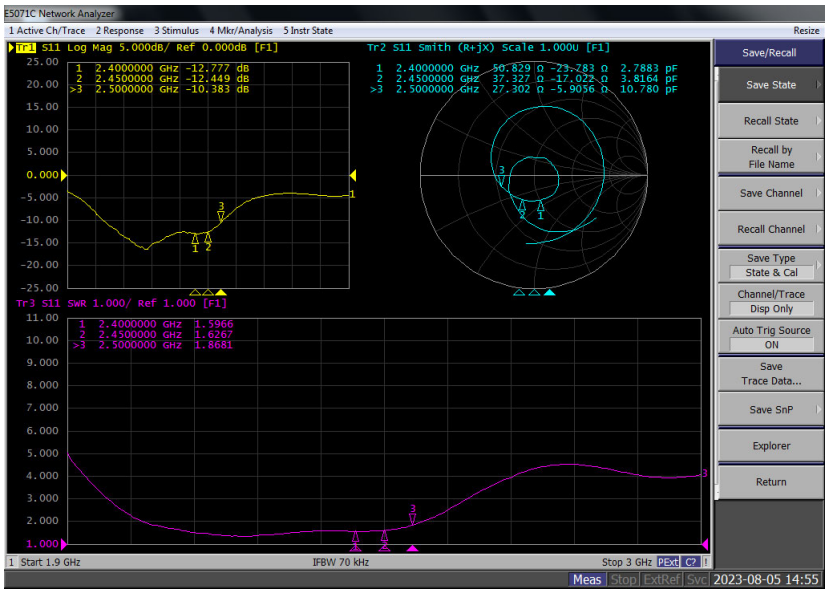
7 Passive Parameter Test

7.1 BT Ant



Freq/GHz	2.4	2.45	2.5
VSWR	1.5	1.6	1.8

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7.2 Efficiency & Gain

Efficiency & Gain of BT Ant		
Frequency (MHz)	**Gain (dBi)**	**Efficiency (%)**
2400	-0.16	36.64
2410	-0.07	36.22
2420	-0.09	35.65
2430	-0.6	34.43
2440	-0.03	34.51
2450	-0.51	33.88
2460	-0.41	33.04
2470	-0.75	31.92
2480	-0.21	31.41
2490	-0.64	30.2
2500	-1.24	30.11

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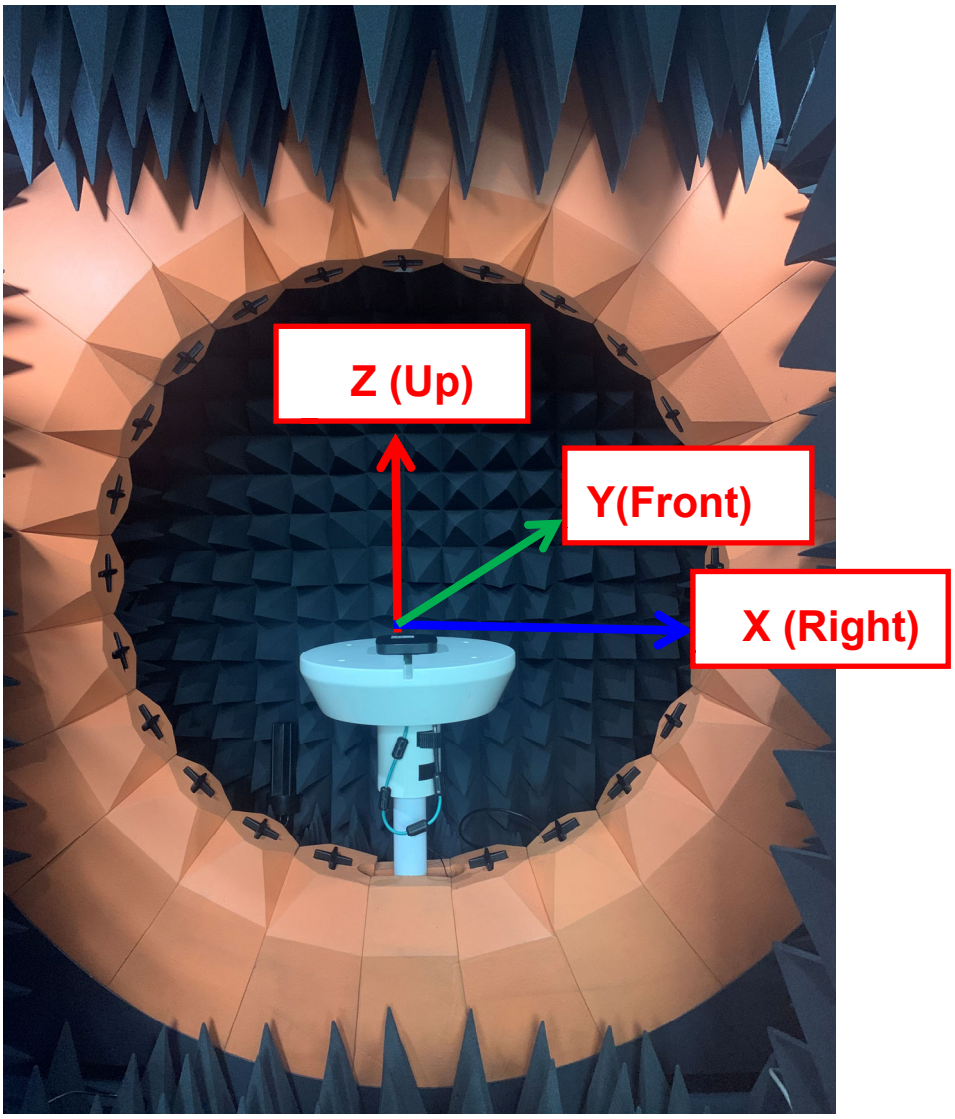
7.3 Reference Coordinate System



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

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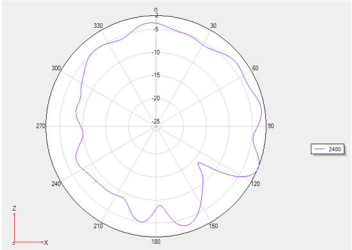
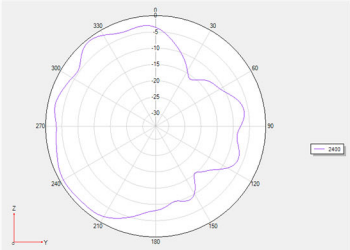
7.4 2D & 3D Radiation Pattern

7.4.1 BT Ant



Phi =0 freq=2400MHz



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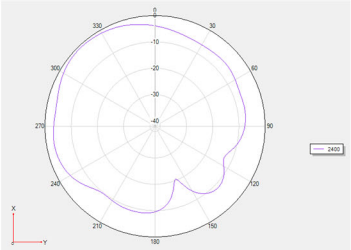

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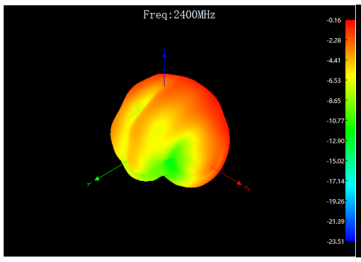
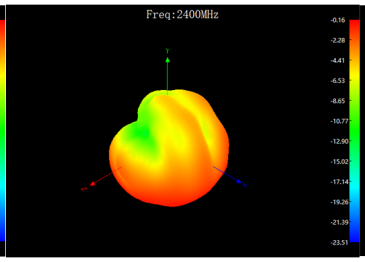
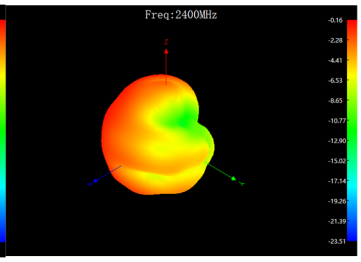


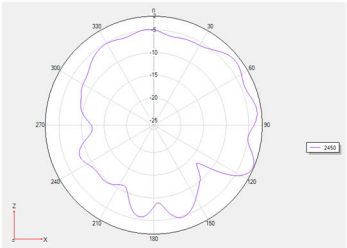
ZXY face @2400MHz



XYZ face @2400MHz



YZX face @2400MHz



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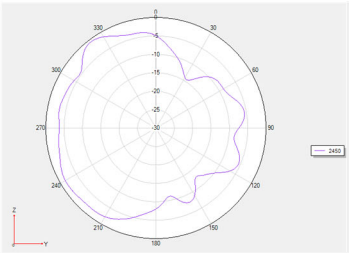
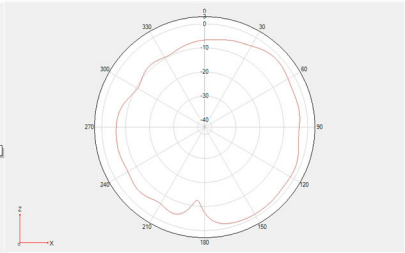
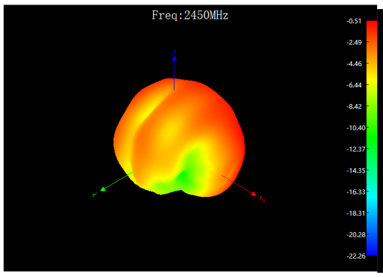


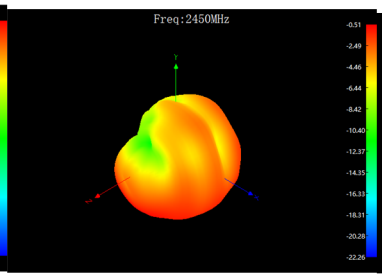
Phi =90 freq=2450MHz



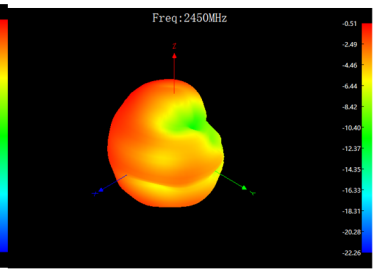
Theta =90 freq=2450MHz



ZXY face @2450MHz



XYZ face @2450MHz



YZX face @2450MHz

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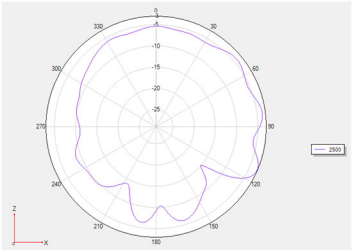
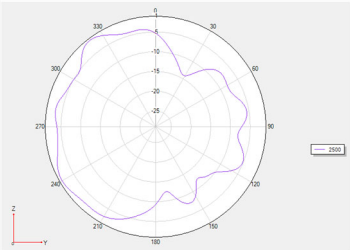
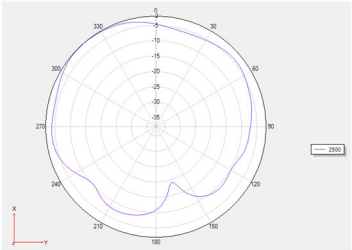


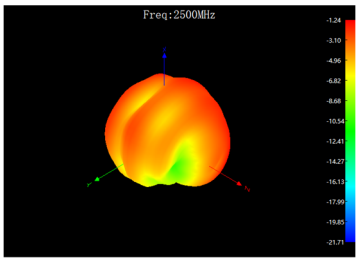
Phi =0 freq=2500MHz



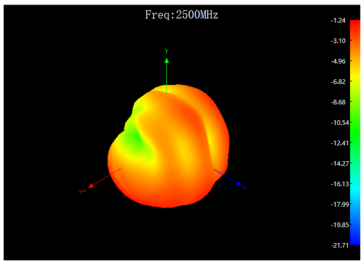
Phi =90 freq=2500MHz



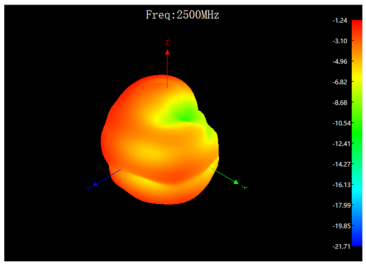
Theta =90 freq=2500MHz



ZXY face @2500MHz



XYZ face @2500MHz



YZX face @2500MHz

8 Wi-Fi TRP & TIS Test Result

Test mode：DH1					
Standard	TRP≥-0.5dbm				
	TIS≤-70dbm				
Test Item	BT TRP&TIS				
Channel	0	19	39	59	78
Frequency (MHz)	2402	2421	2441	2461	2480
TRP(dBm)	-0.43	-0.46	-0.46	-0.35	0.53
TIS(dBm)	-85.74	-85.36	-83	-84.27	-83.2
Remark					

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Test mode：DH3					
Standard	TRP≥-0.5dbm				
	TIS≤-70dbm				
Test Item	BT TRP&TIS				
Channel	0	19	39	59	78
Frequency (MHz)	2402	2421	2441	2461	2480
TRP(dBm)	-0.44	-0.34	-0.13	0.2	0.63
TIS(dBm)	-86.47	-84.91	-83.56	-84.68	-84.47
Remark					

Test mode：DH5					
Standard	TRP≥-0.5dbm				
	TIS≤-70dbm				
Test Item	BT TRP&TIS				
Channel	0	19	39	59	78
Frequency (MHz)	2402	2421	2441	2461	2480
TRP(dBm)	-0.46	-0.41	-0.19	0.15	0.59
TIS(dBm)	-85.78	-85.9	-83.48	-83.46	-84.21
Remark					

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