

# BT262 Antenna test report

on board ANT(板载天线)

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## Revision History

Released Date	Version	Record	Tester
Sept.13th,2023	V1.0	Frist Turning	赖锡烈

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# Requirements of Antenna Design and Measuremen

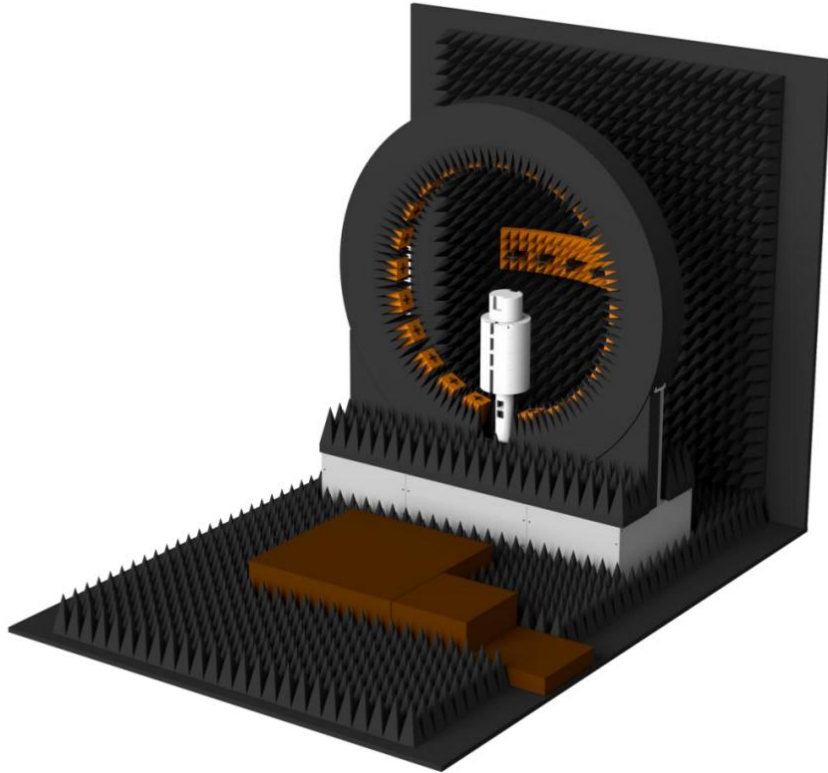
Requirements of Antenna Design(From Customer Demand)

RF Function	Number of ANT	Frequency Band	Remark
ANT	1	Bluetooth	2402-2482MHz

Requirements of Measurement

Test Item	Specification (Free Space)	Remark
VSWR	VSWR<2.0	
Directional patten	/	
Antenna efficiency	efficiency>45%	on board ANT
Antenna Isolation	/	
Over the air Performance	TRP>3dBm	

# Test Setup for Radiation Pattern Measurement



QUIPMENT	BRAND	MODULE TYPE
Network Analyzer	KEYSIGHT	E5071C 9k~8.5G
Signal Generator	R&S	CMW 500
Microwave anechoic chamber	XH-IOE	ATS-300

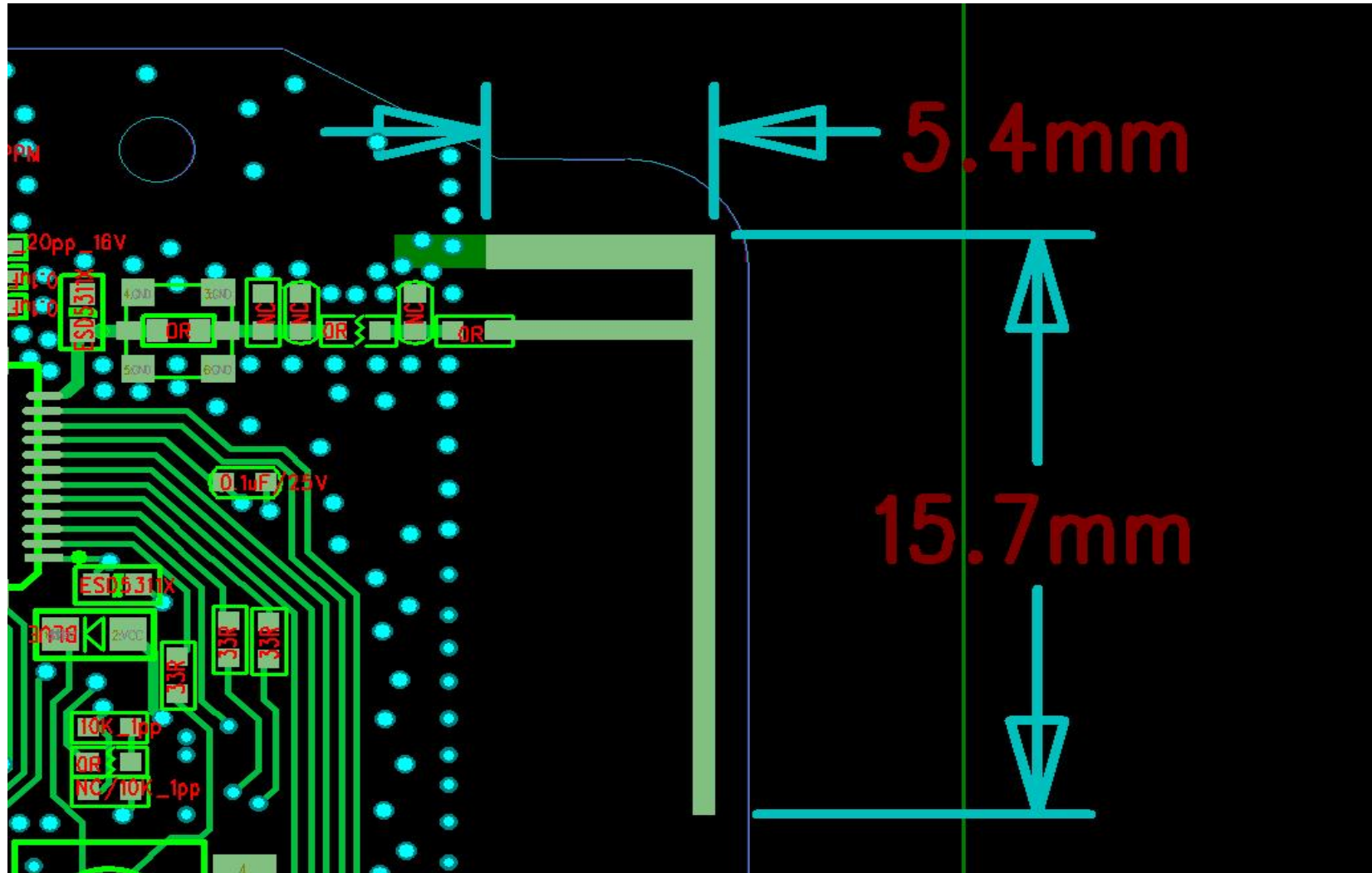
# Antenna Placement & Solution (天线位置&接地处理)

Product picture

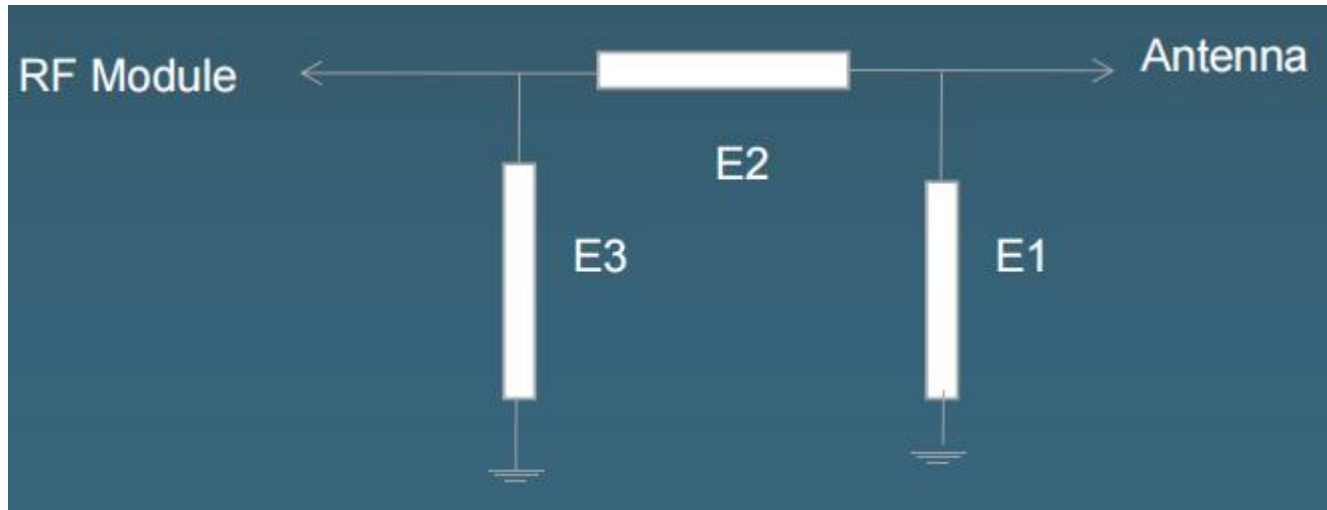
Product internal picture

Antenna close-up

# Antenna size (Outline drawing)



# Microphone antenna matching circuit



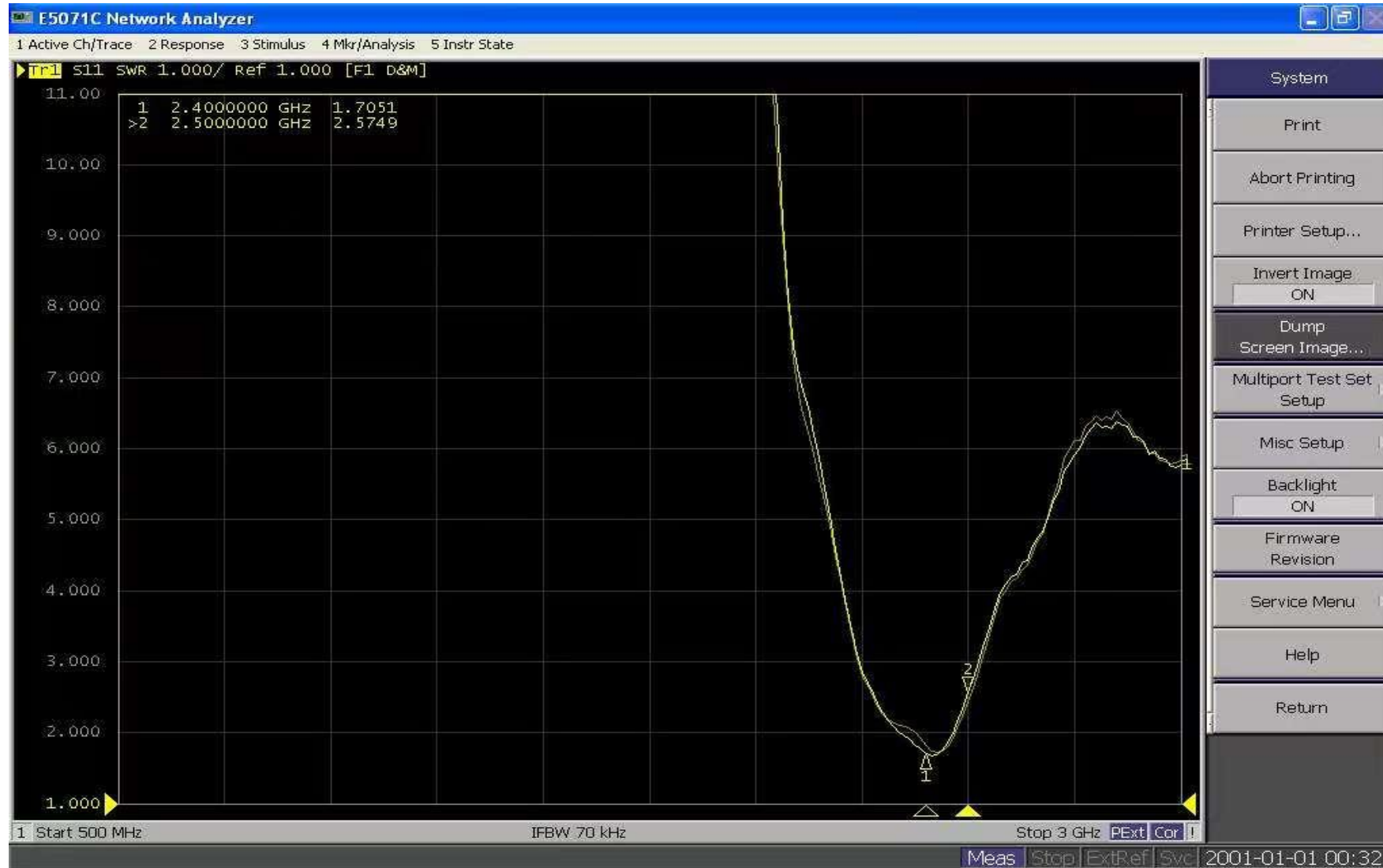
Any changes: No change  
Modified

✓

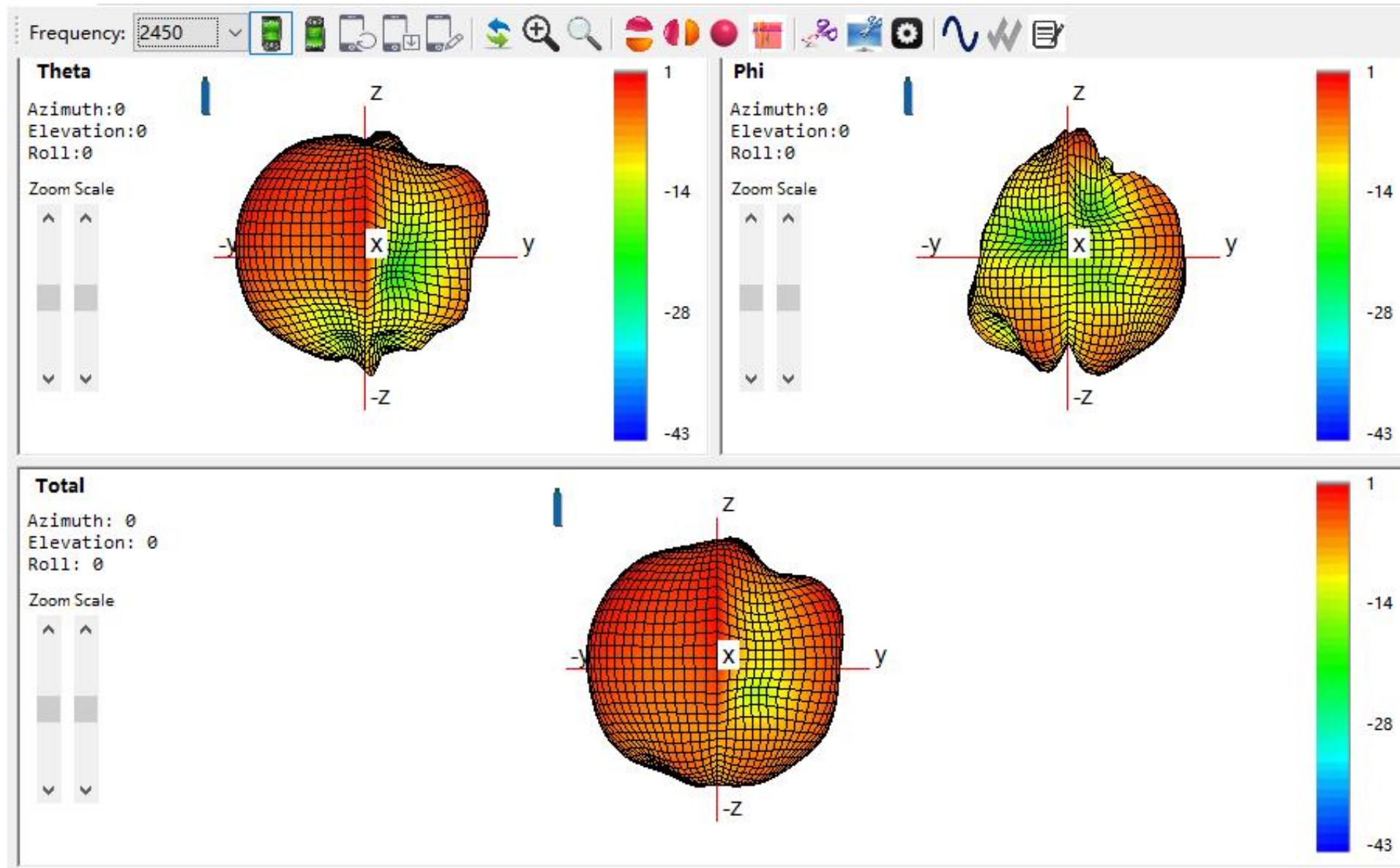
Element	Value
E1(0402)	NC
E2(0402)	0R
E3(0402)	NC



# VSWR Results/Smith chart



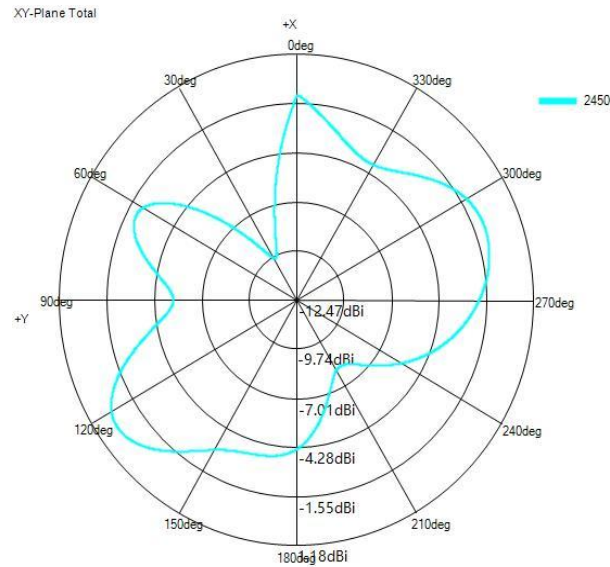
# 3D Radiation Pattern Results



# 2D Radiation Pattern Results

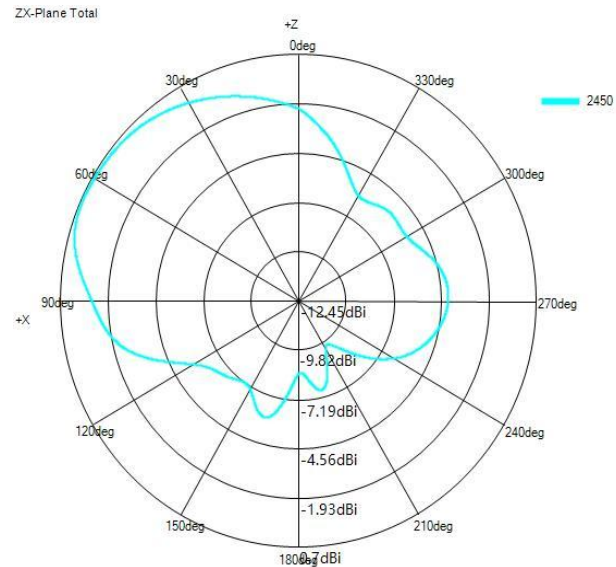
theta 90

2450MHz



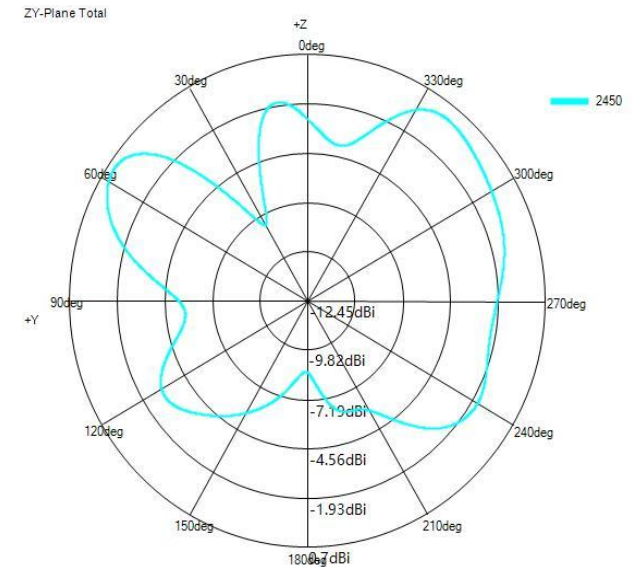
phi 0

2450MHz



phi 90

2450MHz



# Results Summary-Peak Gain & Efficiency

Frequency	Gain	Efficiency
2400	1.11	45.47
2410	0.93	46.04
2420	0.64	45.25
2430	0.48	46.84
2440	0.3	47.05
2450	0.67	47.9
2460	0.79	47.06
2470	1.01	47.85
2480	1.1	46.57
2490	0.98	45.24
2500	1.07	45.42

# TRP&TIS (OTA Test Data) :

Software version: CGBT2562\_2833\_230423\_eq2a\_SDK3.1\_Tribit\_BQB

DUT NO.	Channel	Test data(dBm); 1DH5	
		TRP	TIS
1#	1 (2402MHz)	3.4	-86.54
	39 (2441MHz)	3.25	-87.12
	78 (2480MHz)	3.29	-87.26

# Conclusion (结论)

- 天线效率45%，在板载天线里属于性能良好；
- 天线增益最高1.1，说明天线辐射方向比较均匀，近乎全向发射。
- 天线TRP 3.3dBm左右，TIS在 -86.54~ -87.26之间，说明天线没有受干扰，性能良好。
- Antenna efficiency 45%, in the onboard antenna belongs to good performance;
- The antenna gain is the highest 1.1, indicating that the antenna radiation direction is relatively uniform and almost omnidirectional.
  - Antenna TRP about 3.3dBm, TIS between -86.54~ -87.26, indicating that the antenna is not disturbed, good performance.

# 重要说明 NOTICE



1

请贵司注意报告中的匹配是否更改、环境处理是否可行；这直接影响天线性能，若有异议请及时与本司联系；

Please pay attention to whether the matching in the report has changed and whether the environmental treatment is feasible; This will directly affect the antenna performance, if you have any objections, please contact us in time;

2

若贵司机器有更换物料、更新软件、环处理变更等，须及时提供最新状态机器来我司验证；

If your driver has replacement materials, updated software, environmental processing changes, etc., you must provide the latest status machine to our company for verification in time

3

若贵公司机器需送第三方验证或送检，请最好提供送测机器来我司测试验证OK后方可送测（因为主板、环境处理、天线组装等一致性会影响天线性偏差）

If your company's machine needs to be sent to a third party for verification or inspection, it is best to provide the test machine to our company to test and verify OK before sending it for testing (because the consistency of the motherboard, environmental treatment, antenna assembly and so on will affect the antenna deviation)