

AMY S BT天线调试测试报告

(AMY S BT Antenna Specification)



**South
Star**

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一、天线要求 (Antenna Requirements)

•Antenna Performance

Description	Specification
Antenna VSWR	Typical : 1.5 Limit : 2
Nominal Impedance	50 ohm Typical
Antenna Radiation Efficiency	$\geq 40\%$
Return loss free space	Typical $< -14\text{dB}$ Limit: -12dB



二、概要 (Summary)

AMY S Project Antenna R&D Resume		
Report Time	version	Description
2023. 10. 27	V1. 0	Debugging test (copper sample)
2023. 11. 06	V2. 0	Debugging test (FPC sample)
2023. 11. 29	V3. 0	Design parallel output lines for solder pads

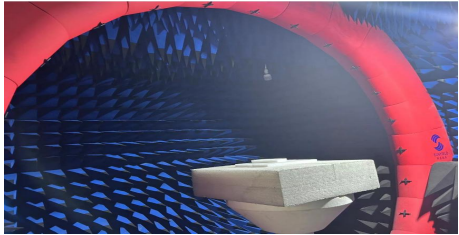
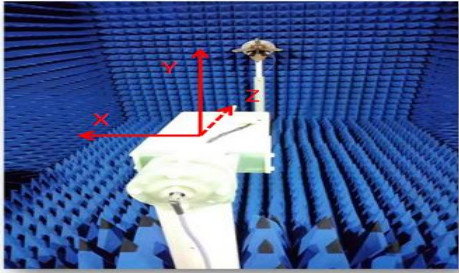
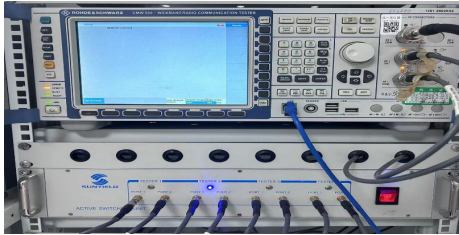
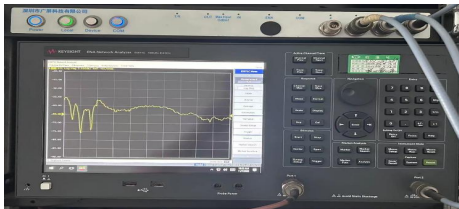


三、項目信息 (Project information)

custom	project	Antenna implementation method	
Eastch	AMY S	Φ1.13mm Cable	FPC
Parameter requirements			
BT	2400-2500MHz		

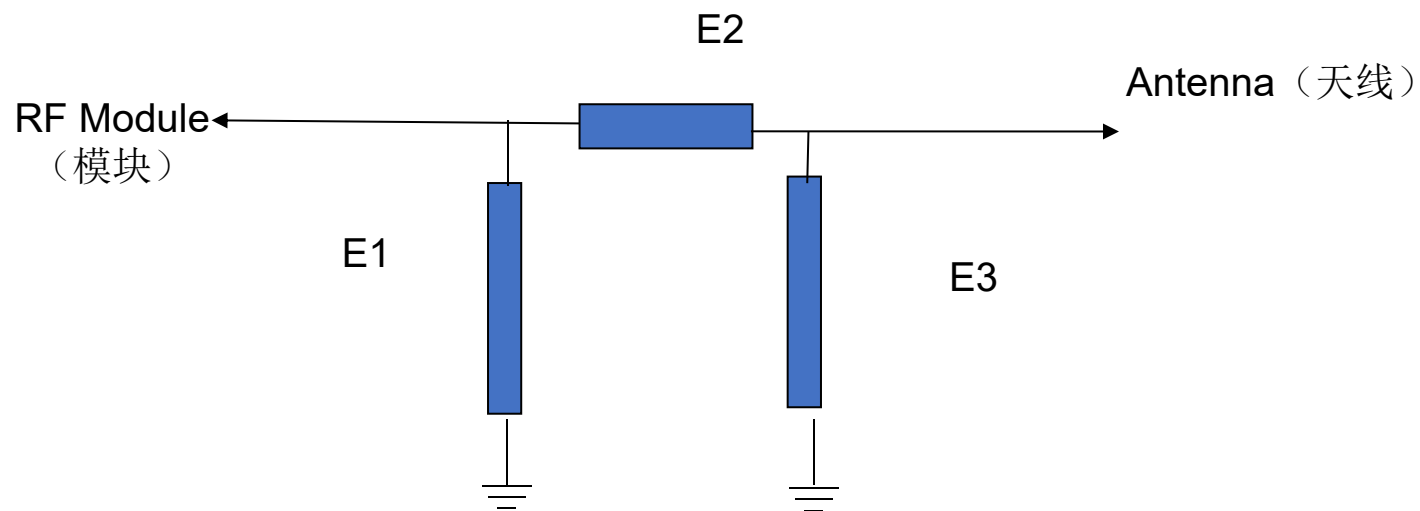


四、测试设备 (Test Equipment)

设备 (Equipment)	型号 (Type)	照片 (Photo)
微波暗室 (Microwave anechoic chamber)	SATAM: 4M*4M*4M	
微波暗室 (Microwave anechoic chamber)	ETS: 4M*3M*3M	
综合测试仪 (Comprehensive tester)	R&S CMW500	
网络分析仪 (Network Analyzer)	KEYSIGHT E5071C	



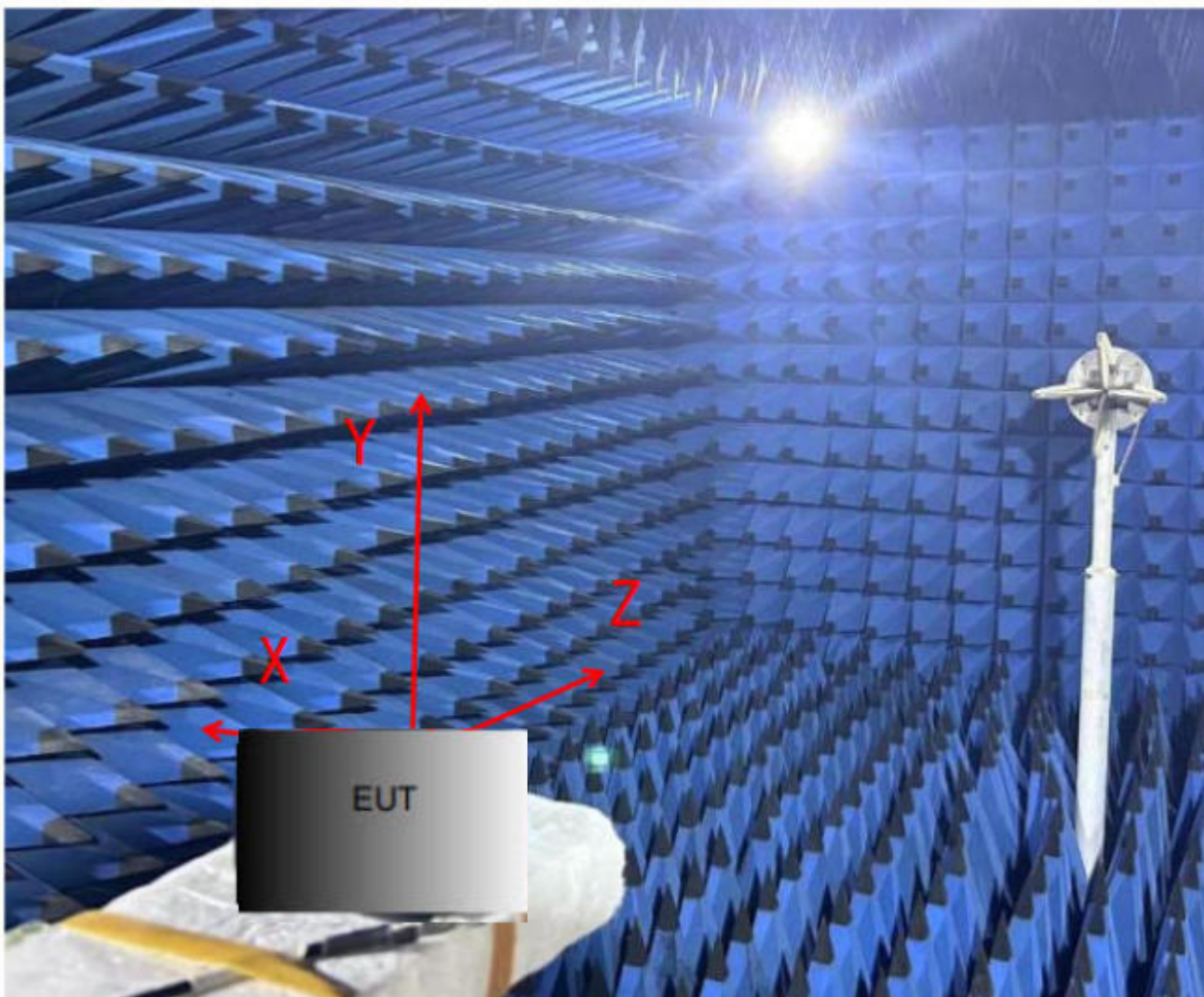
五、匹配电路 (Matching circuit)



RF板端匹配电路保持不变.
(The RF board end matching circuit remains unchanged)



六、实际暗室测试图片及转轴定义 (Actual darkroom test pictures and axis definition)



Definition of darkroom
coordinate axis:

H: XY axis

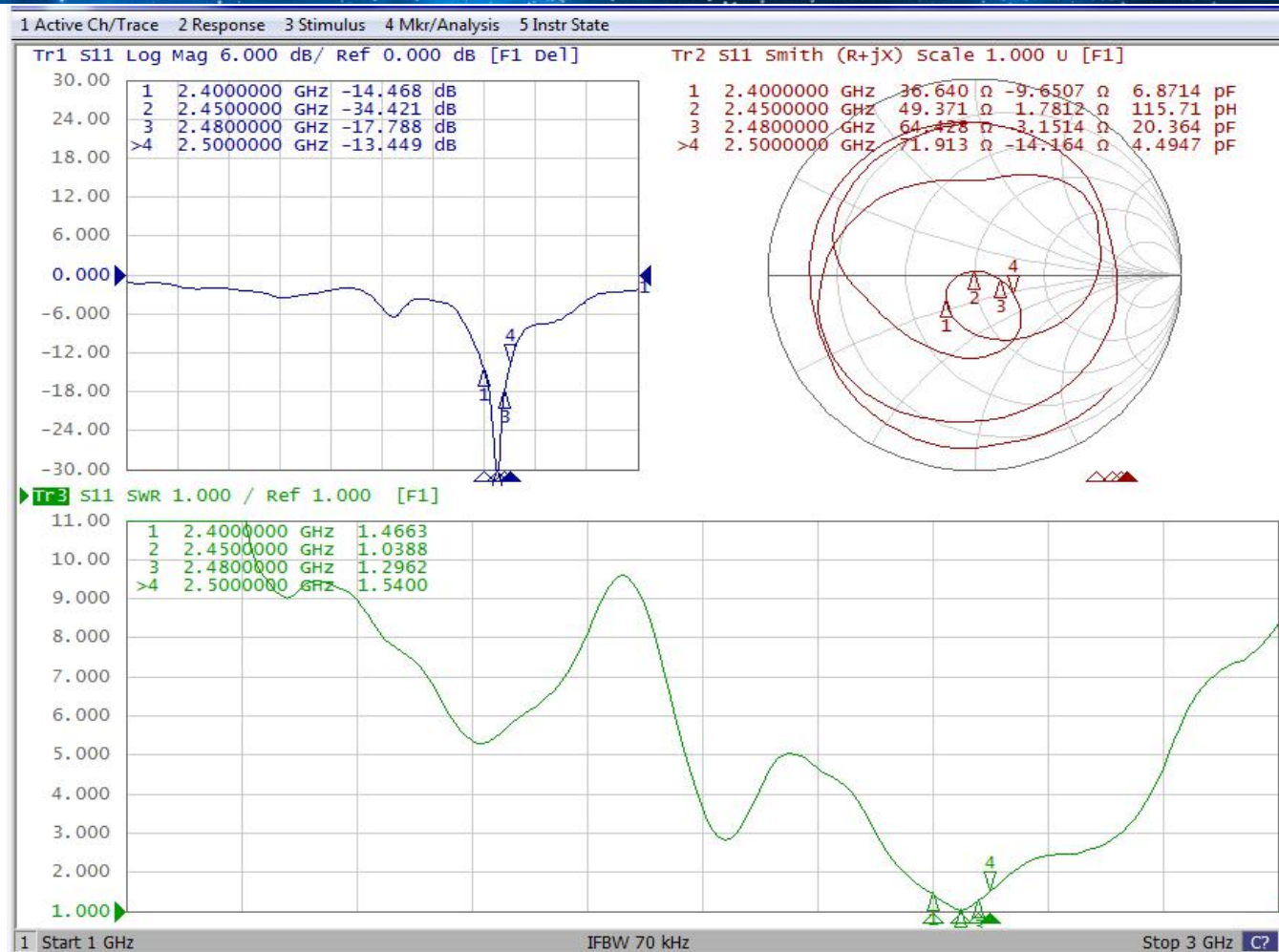
E1: XZ axis

E2: YZ axis



七、无源S11 (Passive S11)

BT antenna S11



Freq (MHz)	2400	2450	2480	2500	SPEC.
VSWR	1.46	1.03	1.29	1.54	<2
Return loss	-14	-34	-17	-13	<-12



八、无源效率、增益测试报告 (Passive efficiency and gain test report)

BT天线 效率&增益 (BT antenna efficiency & gain)

Freq (MHz)	Effi (%)	Gain (dBi)
2400	56.03	3.75
2410	56.49	3.64
2420	57.59	3.59
2430	58.04	3.53
2440	58.4	3.65
2450	57.16	3.84
2460	58.32	4.18
2470	59.68	4.15
2480	56.43	4.16
2490	57.68	3.87
2500	57.24	3.88

avg. 57.55

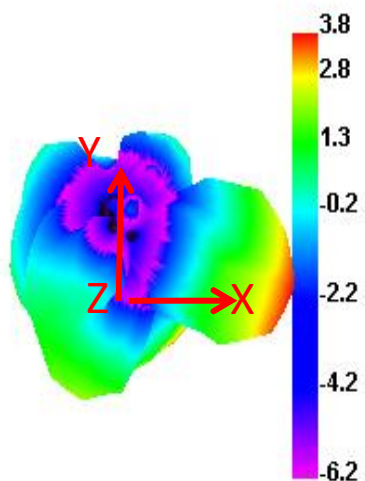
Peak Gain:4.18dBi



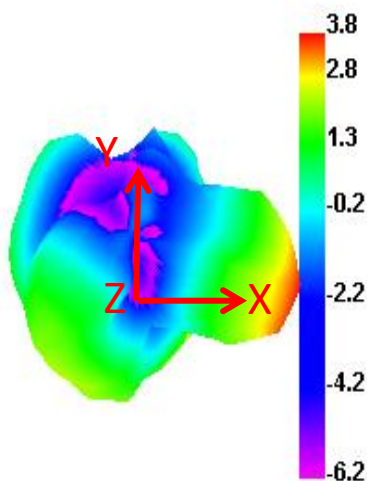
九、辐射方向图 (Radiation pattern)

BT天线3D方向图 (BT antenna 3D pattern)

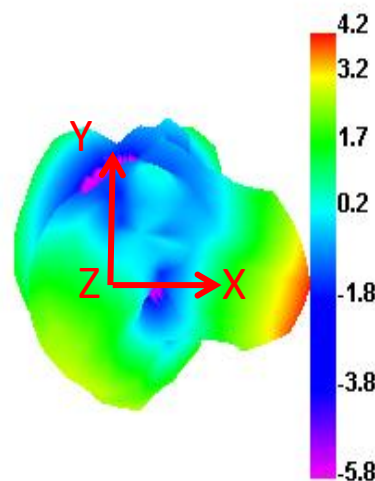
2400.000MHz



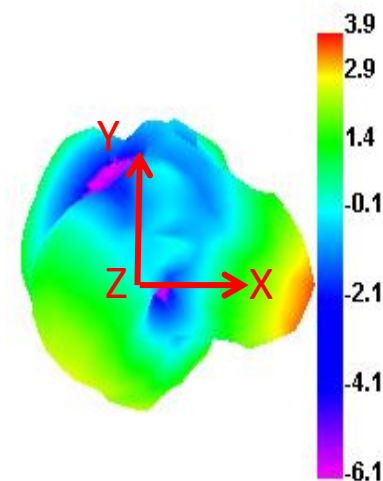
2450.000MHz



2480.000MHz



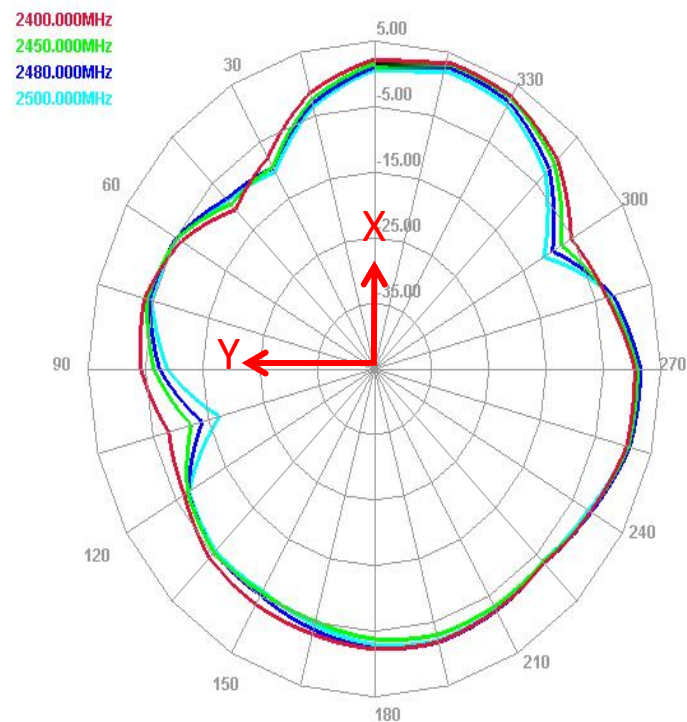
2500.000MHz



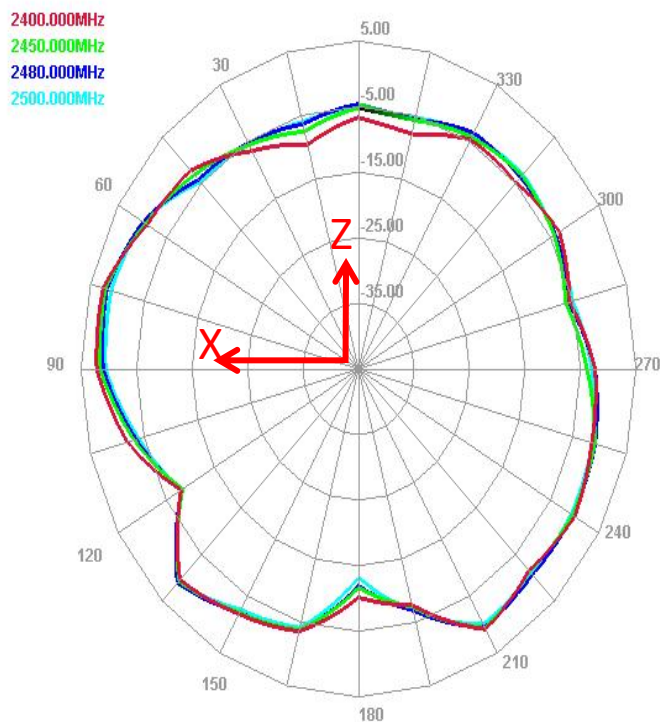


BT天线2D方向图 (BT antenna 2D pattern)

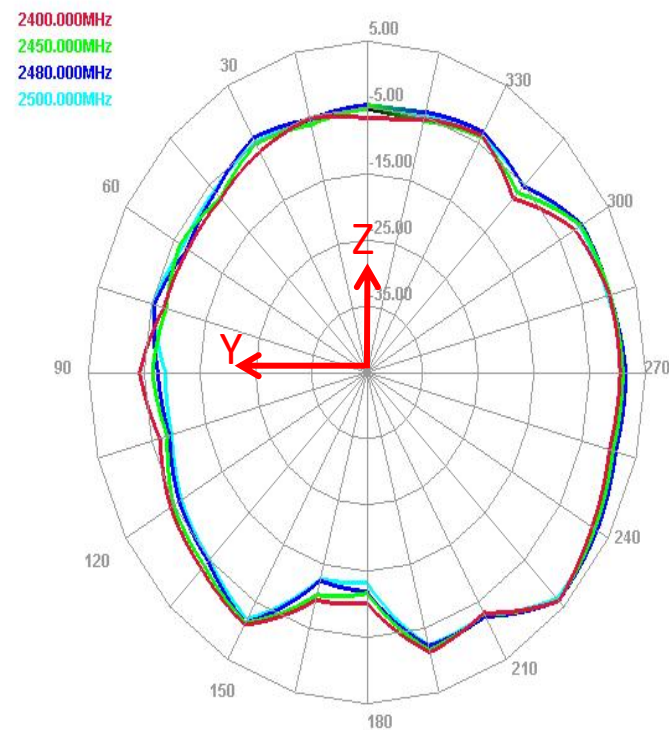
Horizontal



E1 Face

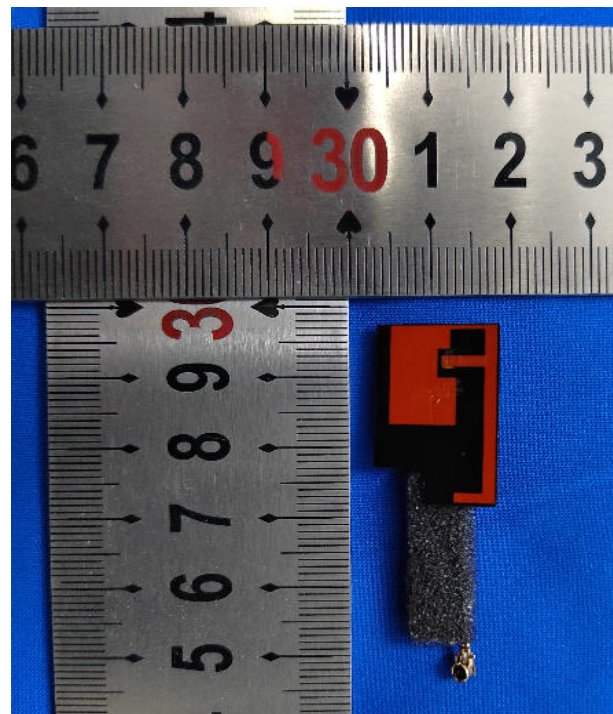
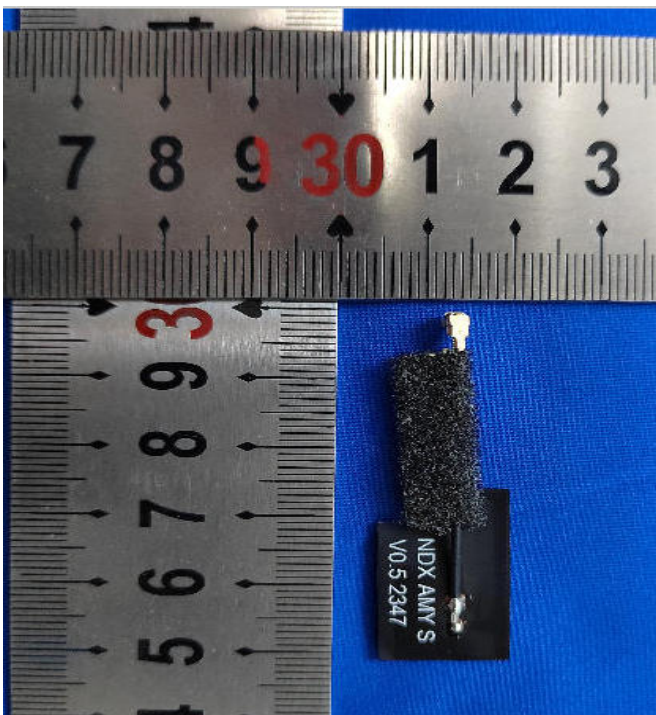


E2 Face





十、天线布局 (Antenna Design)





十一、总结 (Summarize)

天线无源参数性能可满足需求指标.

(The passive parameter performance of the antenna can meet the required indicators)

Antenna requirements	demand index	Debugging results
Working frequency (MHz)	2400~2500MHz	Pass
Nominal impedance(Ω)	50 Ω	Pass
Antenna VSWR	≤ 2.0	Pass
Antenna Radiation Efficiency(%)	$\geq 40\%$	Pass
Return loss free space	$\leq -12\text{dB}$	Pass



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Thank you

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