

制造商:Shenzhen Lianchuang Circuit Co., LTD

地址: 2F, Building E5, Yanchuan North Industrial Park, Songgang, Shenzhen

Antenna Test Report

For

Project MB661

Version: V1

Customer	博陆科	Project	MB661
Band	BT	Color	
Issued by	马工	Checked by	
Confirmed by		Date	2023.11.15

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一. Test Instrumentation and item(测试设备及项目)

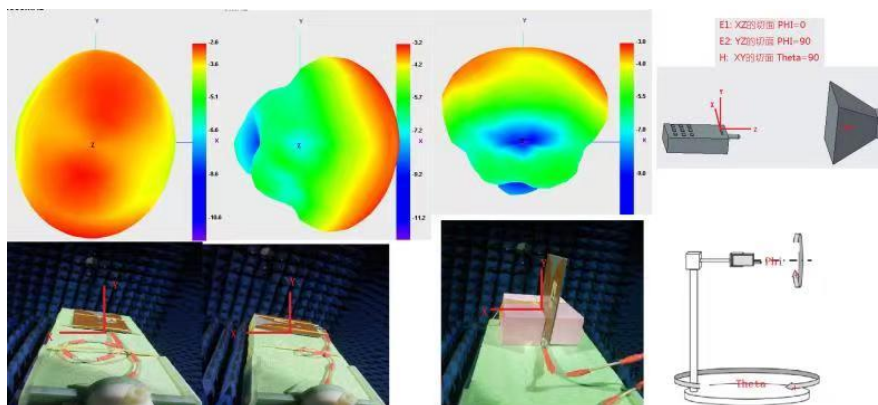
类别 (Class)	测试项目 (Test item)	设备 (Equipment)
1. S parameter	1. 回波损耗(RL) 2. 驻波比 (VSWR) 3.斯密斯原图(Smith chart)	网分 (VNA) : Agilent E5071B R&S ZVB8 Protek A333
2. 耦合测试 (Coupling testing)	1. 发射功率 (MAX Power) 2. 接收灵敏度 (MIN Sens)	1.2G/3G Tester: Agilent 8960 2.The coupling box: TESCOM TC-5060A 3. 3D Chamber: ETS 3D Chamber (5x3x3)
3. 3D 无源测试 (Passive Test)	1. 效率 (Effeciency) 2. 增益 (Gain) 3.辐射方向图 (radiation pattern)	1. 3D Chamber: TEM24 3D Chamber (5x5x5) ETS 3D Chamber (5x3x3) 2. 网分 (VNA) : Agilent E5071B R&S ZVB8
4.3D 有源测试 (Active Test)	1. 3D 功率 (TRP) 2. 3D 灵敏度 (TIS) 3.吞吐率 (Throughput rate)	1. 3D Chamber: TEM24 3D Chamber (5x5x5) ETS 3D Chamber (5x3x3) 2.2G/3G Tester: Agilent 8960 3.4G Tester: MT8820C/CMW500 4.WIFI/BT/NB-iot Tester: CMW500 5. 5G Tester: SP9500-CTS 6.Head: HEAD-P10 (FACE-P10)



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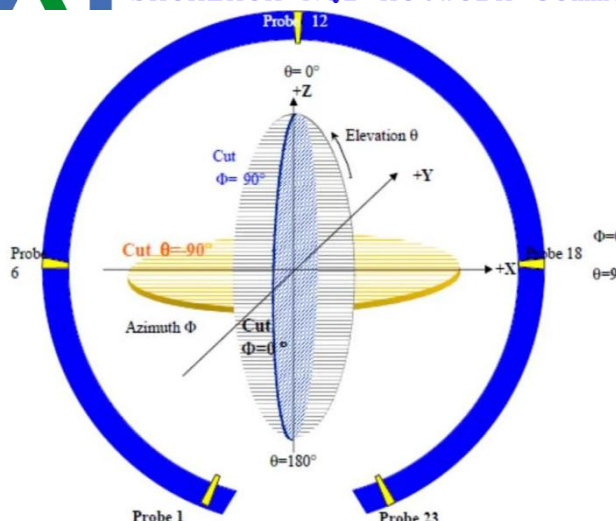
二. Chamber coordinate axis (暗室坐标)



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三. Definitions (定义)

VSWR: Voltage Standing Wave Rate

RL: Return loss

TRP: total radiated power

TIS: total isotropic sensitivity

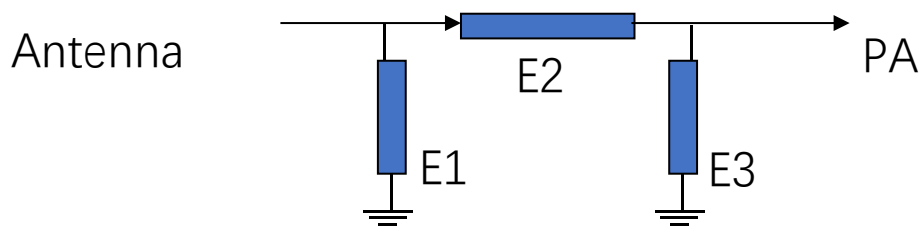
四. Cell-Phone Photo and Dealing Method (手机图片及环境处理)



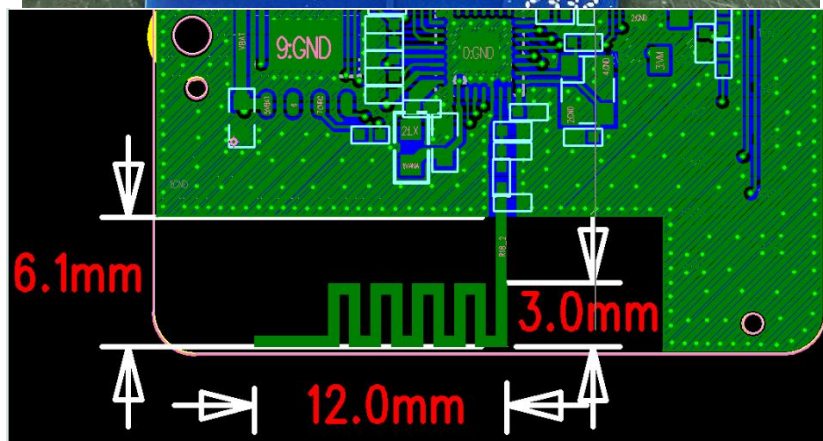
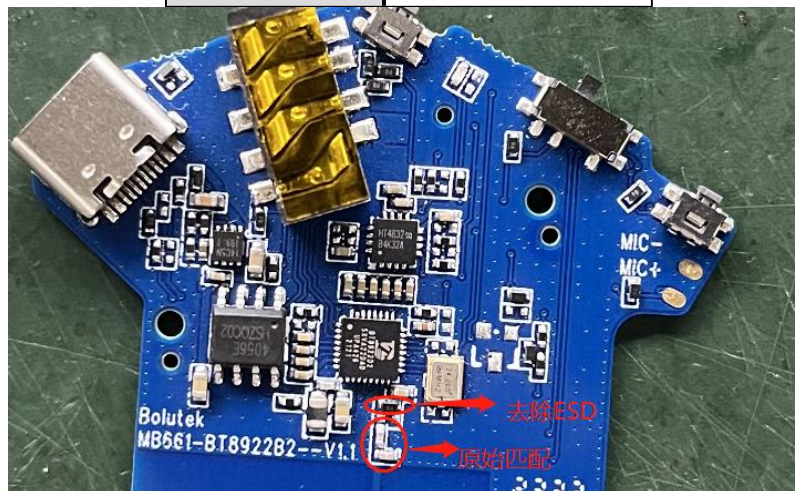
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五. Matching Circuit Description (匹配描述)

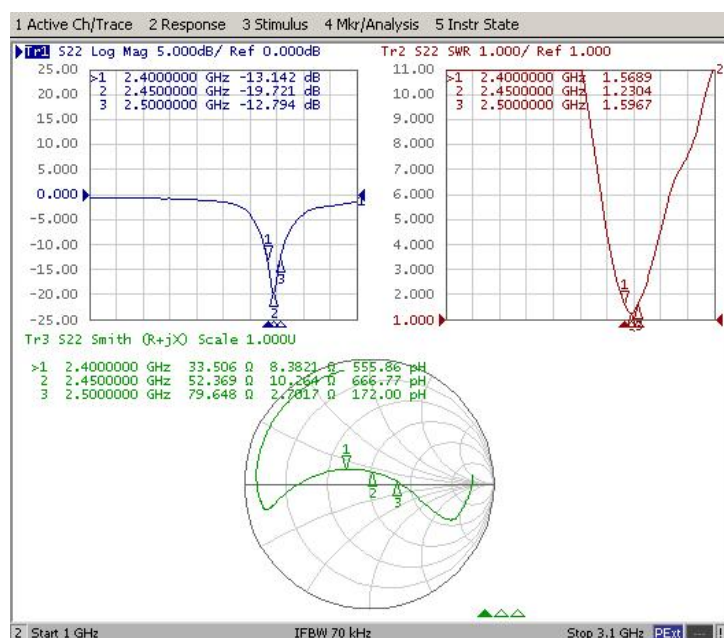


位号	参数
E1	原始匹配
E2	原始匹配
E3	NC



六. Passive Test (无源测试)

6.1.1.RL/VSWR/Smith chart



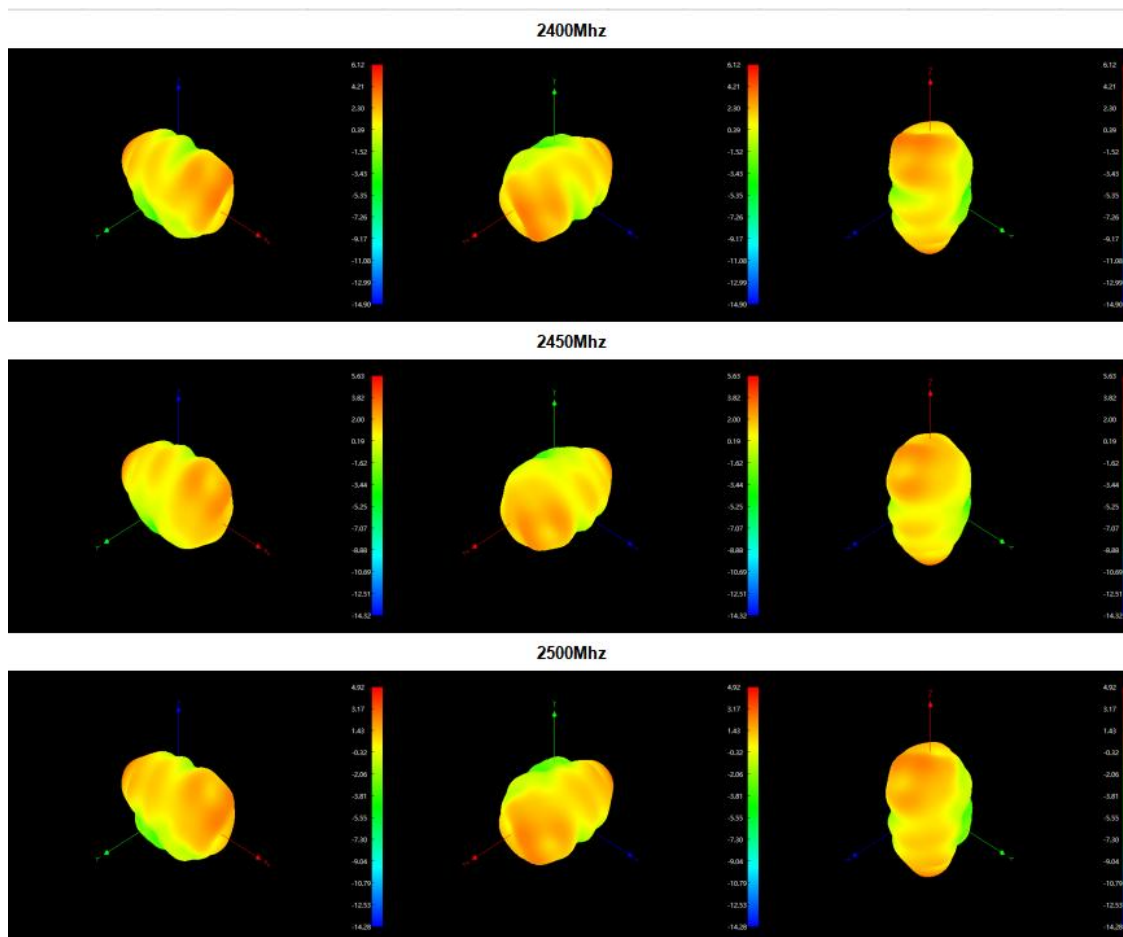
6.1.2.天线效率/增益/方向图

Frequency/Mhz	Efficiency / %	Gain/dBi
2400	63.62	4.12
2410	62.78	3.74
2420	66.03	3.98
2430	61.61	3.54
2440	65.16	3.85

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2450	62.44	3.63
2460	60.14	3.6
2470	61.3	3.72
2480	62.14	3.68
2490	62.11	3.79
2500	60.99	2.92



七. TRP&TIS

NQI ANT TRP&TIS parameter Summary of MB661					
Free space (自由状态) Head and ear (二代人头耳)		Test	Bluetooth TRP&TIS		
		Result	0	39	78
	R	TRP (dBm)	5.02	5.19	4.53
		TIS (dBm)	-89.03	-88.91	-87.84
	R	TRP (dBm)	3.1	3.88	3.53
		TIS (dBm)	-87.25	-87.47	-87.1

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八. Field testing (场测或实测)

Headphone field test result (耳机场测结果)		
Test site (测试场地): Vacant lot outside the company gate (国质信门口空地)		
Cell-phone (测试手机): 苹果 6		
The teser (测试员): 马工		
Height of mobile phone stand (手机支架高度): 1.2m		
Test methods and criteria (测试方法及判定标准): The headset is tested with its back to the phone, Up and down, left and right 180° rotation without stuck. (耳机背向手机, 上下, 左右 180° 旋转无卡顿)		
测试结果		
	L/R	Actual test distance (实测测试距离)
	The left ear (左耳)	/
	The right ear (右耳)	25m
备注:		

PCB 天线制造商及地址:

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