

Antenna Specification

For

Project S20

Version:

Customer	晨韵	Project	S20
Band	BT	Color	
Issued by	LH	Checked by	
Confirmed by		Date	2024.10.22

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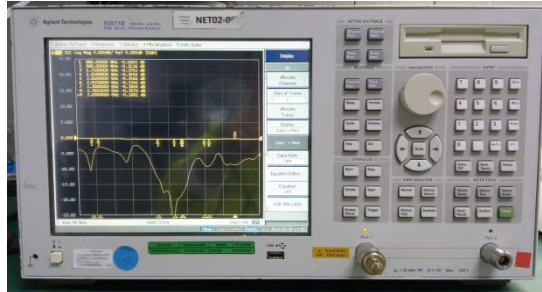


一. Test Instrumentation and item(测试设备及项目)

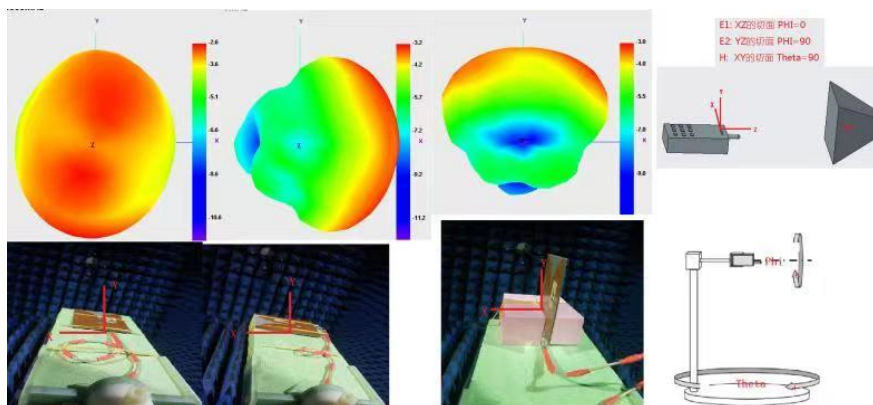
类别 (Class)	测试项目 (Test item)	设备 (Equipment)
1. S parameter	1. 回波损耗(RL) 2. 驻波比 (VSWR) 3.斯密斯原图(Smith chart)	网分 (VNA) : Agilent E5071B R&S ZVB8 Protek A333
2. 耦合测试 (Coupling testing)	1. 发射功率 (MAX Power) 2. 接收灵敏度 (MIN Sens)	1.2G/3G Tester: Agilent 8960 2.The coupling box: TESCOM TC-5060A 3. 3D Chamber: ETS 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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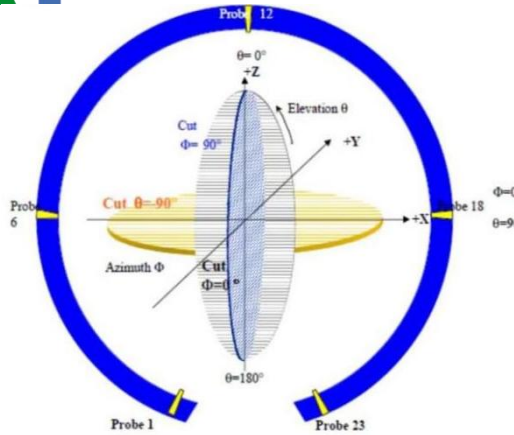
二. Chamber coordinate axis (暗室坐标)



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三. Definitions (定义)

VSWR: Voltage Standing Wave Rate

RL: Return loss

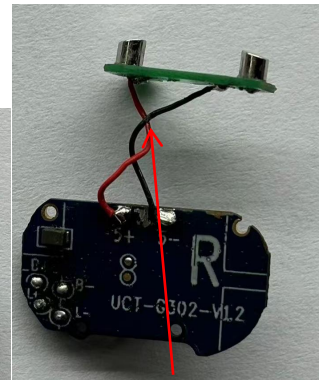
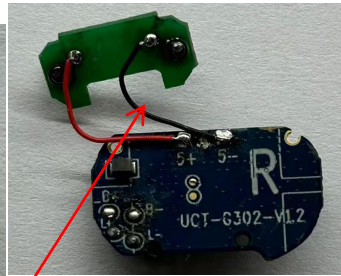
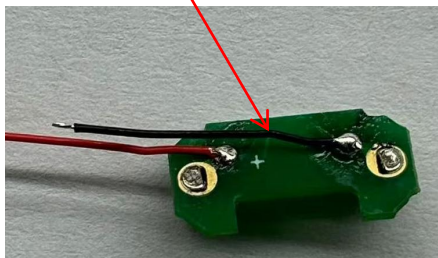
TRP: total radiated power

TIS: total isotropic sensitivity

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

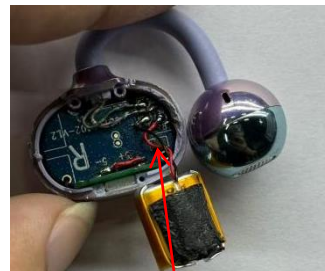
如图所示两根电子线朝小板上标注正
极的方向焊接在充电小板上，线长各
15mm。

右耳



如图所示充电小板上两根电子线朝主板上标
注正极的方向焊接在主板上。

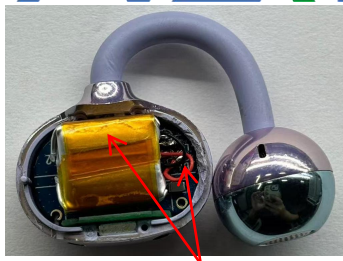
如图所示两根电子线
逆时针方向绞线 1 圈



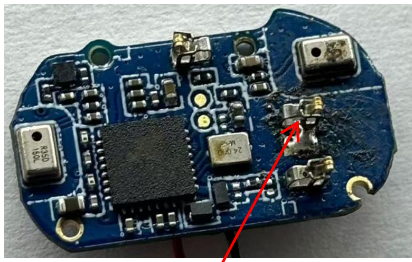
注意两根电子线如图所示摆放，
电子线不要压在主板上。

如图所示电池线逆时针方向绞线 2 圈，
电池线长 20mm；喇叭线不绞线。

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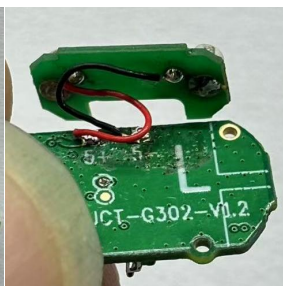
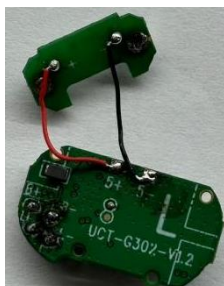


如图所示电池摆放在主板中间，多余电
池线不压在电池下方，摆放在电池右侧。



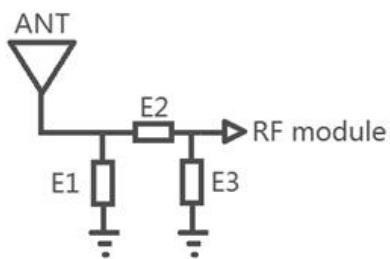
如图所示注意弹片的焊接方向
及位置

左耳

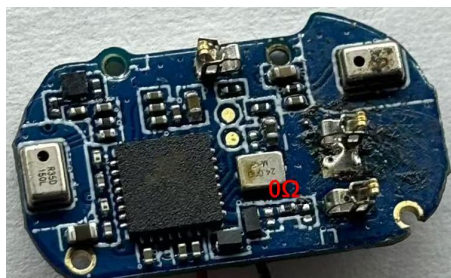
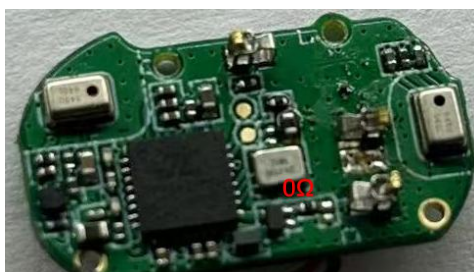


左右耳的装配方式相同。

五. Matching Circuit Description (匹配描述)



Element	L (Value)	R (Value)
E1(0201)	NC	NC
E2(0201)	0 Ω	0 Ω
E3(0201)	NC	NC



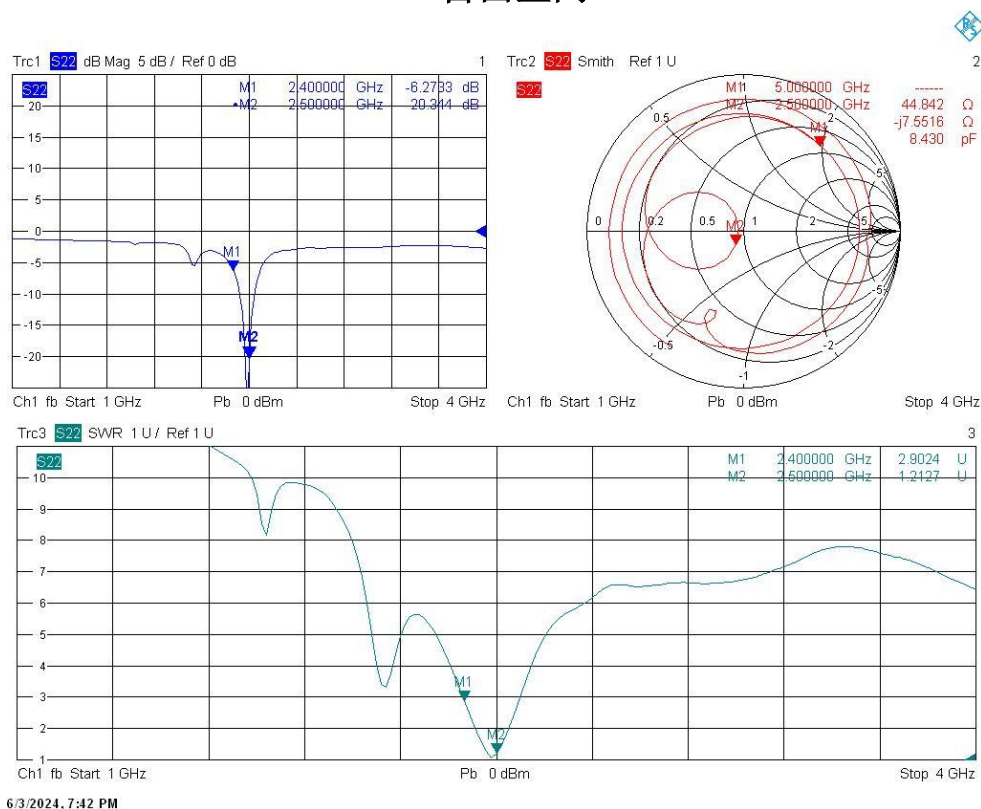
六. Passive Test (无源测试)

6.1. RL/VSWR (回波损耗/驻波比)

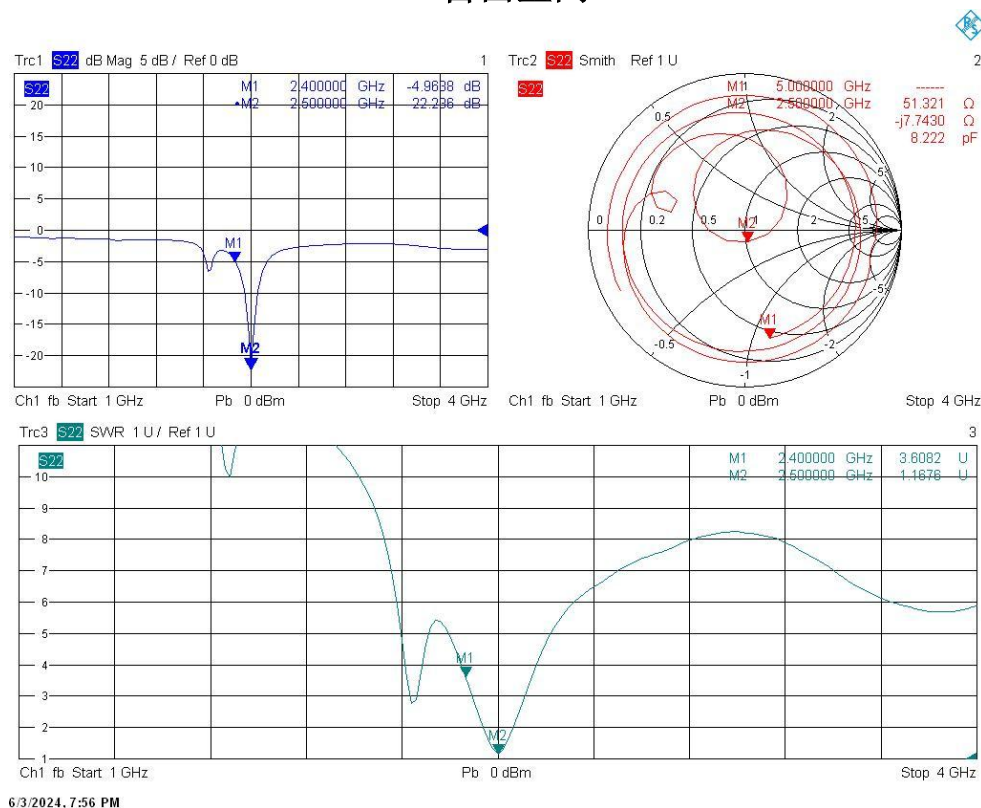
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L 自由空间



R 自由空间



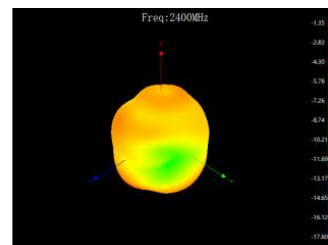
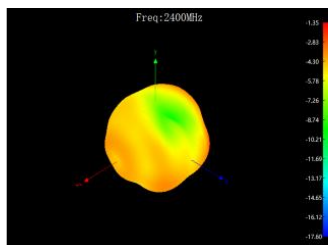
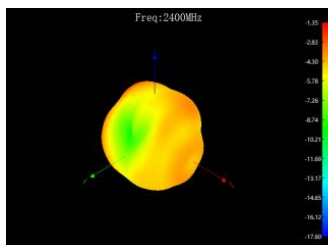
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6.2.Efficiency、Gain、 Radiation pattern

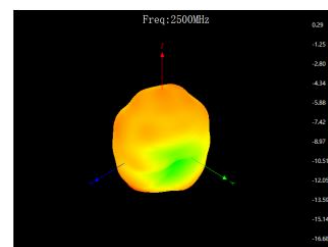
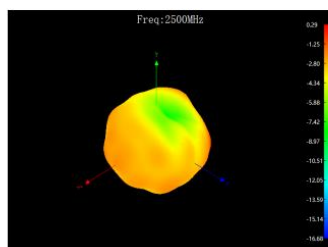
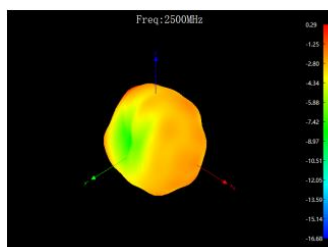
L 自由空间

Freq (MHz)	Effi (%)	MAXGain (dBi)	Freq (MHz)	Effi (%)	MAXGain (dBi)
2400	17.26	-1.35	2460	28.44	0.36
2410	17.46	-1.73	2470	29.58	0.8
2420	19.86	-0.75	2480	28.18	0.3
2430	21.04	-0.65	2490	28.18	0.65
2440	24.32	-0.18	2500	27.16	0.29
2450	26.24	0.21			

2400



2500

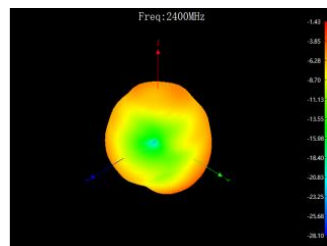
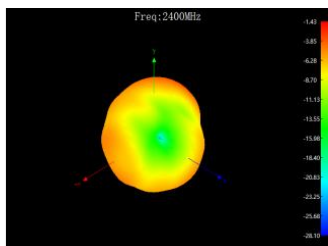
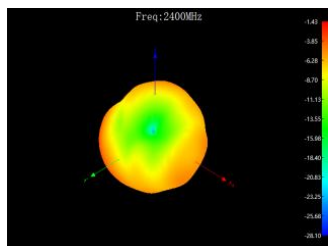


R 自由空间

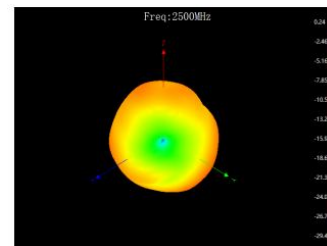
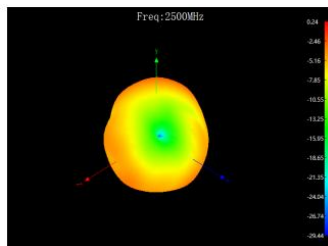
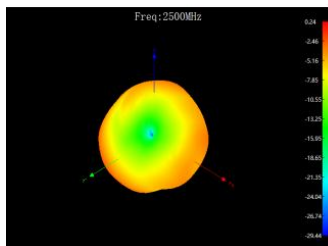
Freq (MHz)	Effi (%)	MAXGain (dBi)	Freq (MHz)	Effi (%)	MAXGain (dBi)
2400	21.58	-1.43	2460	33.57	0.01
2410	22.34	-1.18	2470	34.75	0.1
2420	25.41	-0.28	2480	33.34	0.21
2430	26.49	-0.4	2490	33.73	0.56
2440	29.72	-0.19	2500	33.04	0.24
2450	31.33	-0.2			



2400



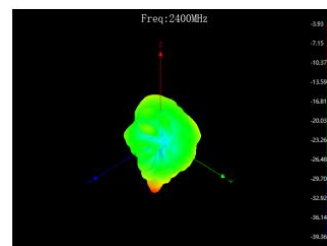
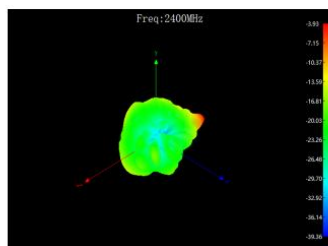
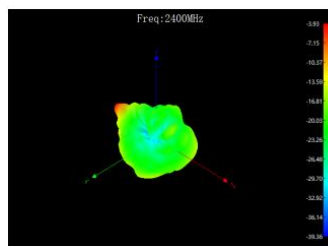
2500



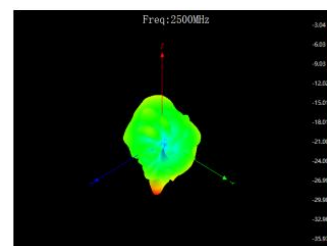
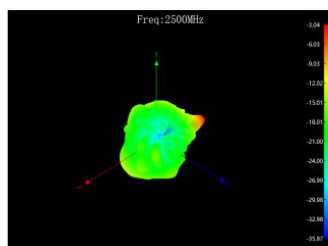
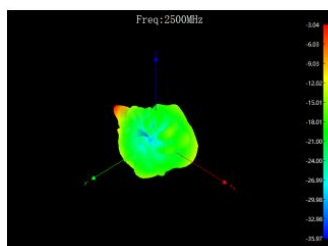
L 头模

Freq (MHz)	Effi (%)	MAXGain (dBi)	Freq (MHz)	Effi (%)	MAXGain (dBi)
2400	2.94	-3.93	2460	3.54	-3.28
2410	2.89	-4.06	2470	3.61	-2.79
2420	3.19	-3.23	2480	3.42	-3.02
2430	3.14	-3.52	2490	3.43	-2.65
2440	3.35	-3.53	2500	3.26	-3.04
2450	3.36	-3.47			

2400



2500

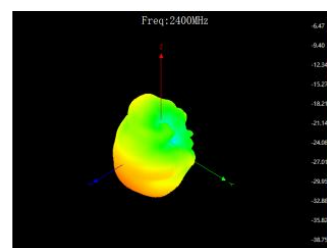
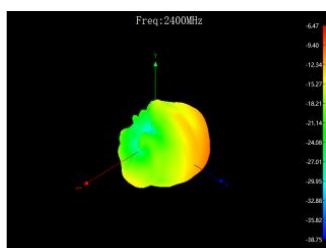
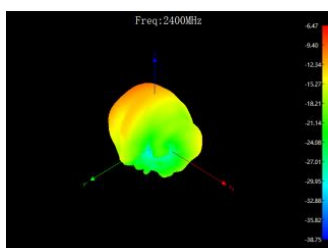


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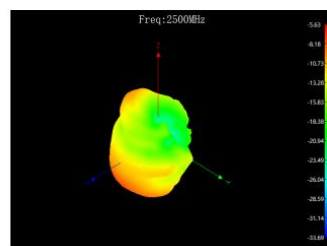
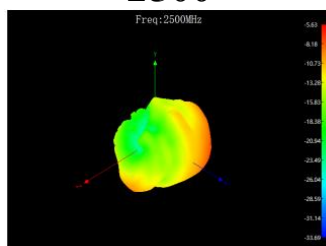
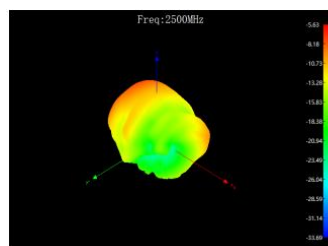
R 头模

Freq (MHz)	Effi (%)	MAXGain (dBi)	Freq (MHz)	Effi (%)	MAXGain (dBi)
2400	2.77	-6.47	2460	4.23	-6.14
2410	2.86	-6.72	2470	4.39	-5.39
2420	3.3	-6.27	2480	4.31	-5.4
2430	3.4	-6.97	2490	4.48	-5.09
2440	3.68	-7.15	2500	4.44	-5.63
2450	3.81	-6.8			

2400



2500

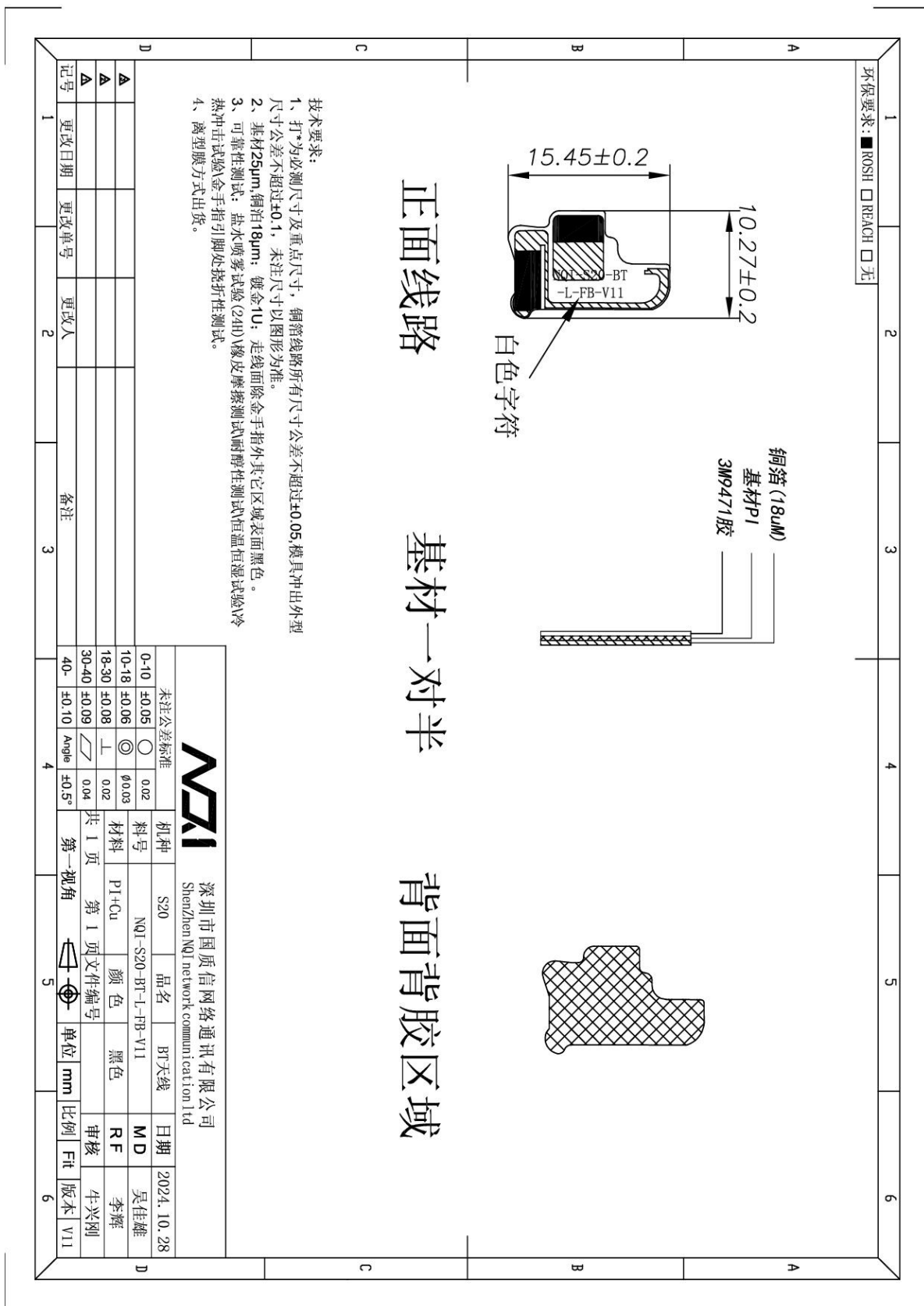


七. TRP&TIS

NQI ANT TRP&TIS parameter Summary of S20					
Free space (自由状态)		Test	Bluetooth TRP&TIS		
		Result	0	39	78
	L	TRP (dBm)	-4.04	-2.39	-0.43
		TIS (dBm)	-78.92	-82.64	-85.01
	R	TRP (dBm)	-5.89	-4.37	-1.9
		TIS (dBm)	-78.33	-82.22	-84.94
Head and ear (二代人头耳)		Test	Bluetooth TRP&TIS		
		Result	0	39	78
	L	TRP (dBm)	-4.28	-4.49	-6.04
		TIS (dBm)	-80.83	-81.34	-81.43
	R	TRP (dBm)	-6.53	-5.54	-5.09
		TIS (dBm)	-78.28	-81.07	-81.48

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六.天线结构图纸 (Antenna structure drawing) :





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