



深圳市凯普深通讯科技有限公司
Shenzhen cape deep communication technology co., LTD

天线测试报告

test report

客 户：福诺格
项 目：S69KCF
射 频：江长兴
日 期：2025.9.10
版 本：02



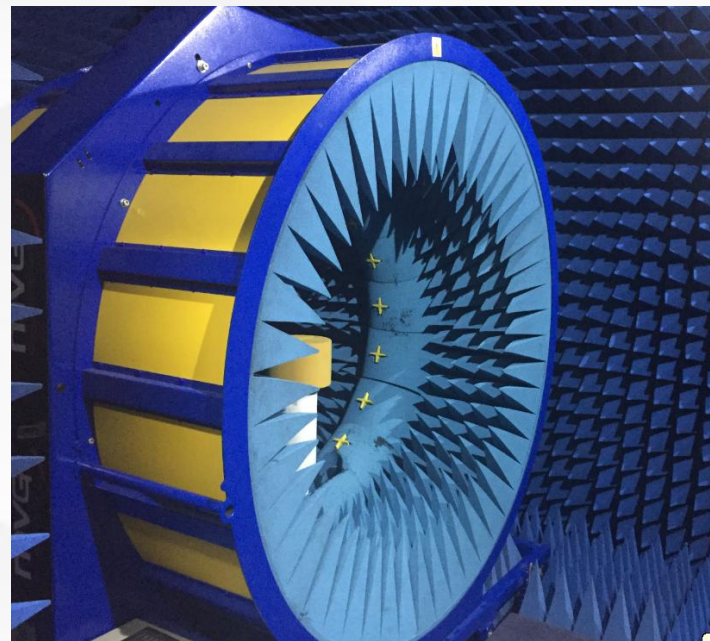
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实验室测试环境及设备



测试项目	测试设备
S11、S12、VSWR、LOSS	网络分析仪E5071B、E5062A
Efficiency、Gain 3D Radiation Pattern	Satimo SG16暗室、GP7*4*3暗室、E5071B
TRP、TIS	Satimo SG16暗室、GP7*4*3暗室、8960、 CMW500、MT8820C、E4438C、



变更记录说明

时间	版本说明
2024. 5. 30	初步调试
2024. 6. 21	新主板新壳料
2025. 6. 12	增加主板频段
2025. 8. 2	模拟改框
2025. 8. 18	改模框验证
2025. 8. 20	方案逻辑软件验证
2025. 9. 10	试产机器验证



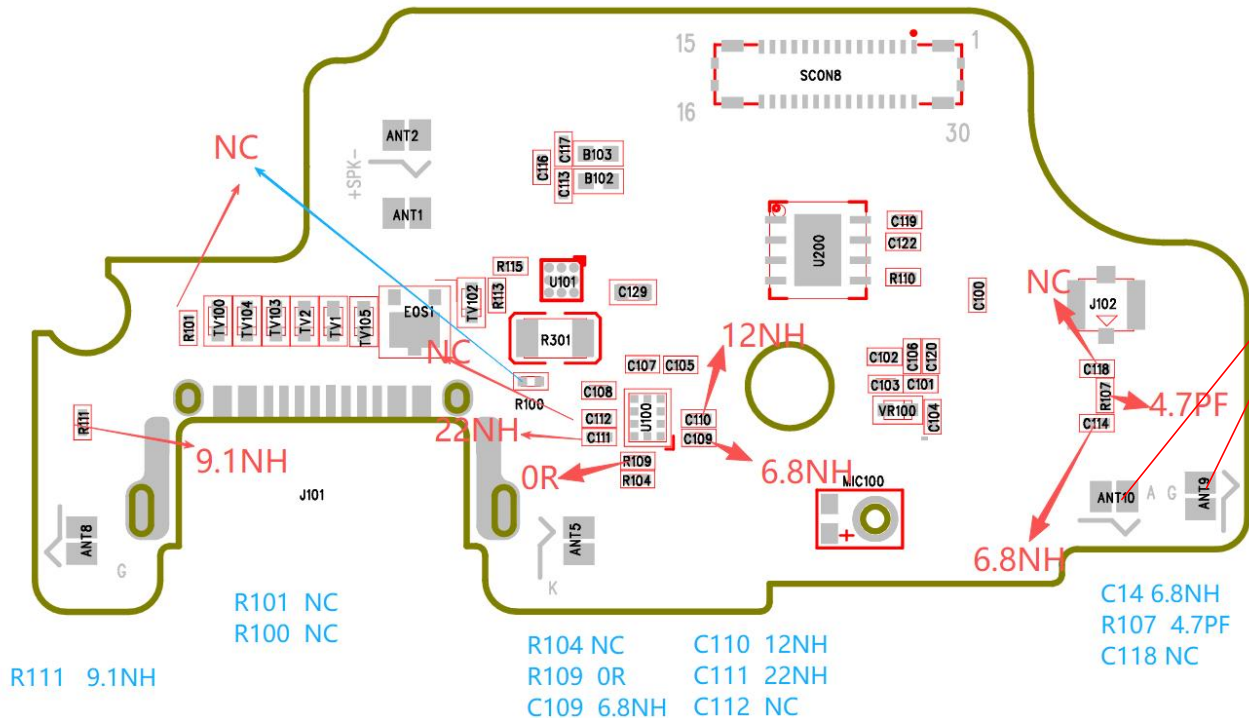
项目调试简介

整机类型	4G智能机		
		频段信息	天线形式
天线种类及频段信息	主天线	GSM: B2/3/5/8/WCDMA: B1/2/4/5/6/8/LTE: FDD: B1/2/3/4/5/7/8/12/13/18/19/20/26/28AB/66/TD D: B38/B40/41F	PIFA
	副天线	WIFI+BT+GPS	PIFA
	分集天线	600MHZ-2710MHZ	PIFA
天线材质	主天线, 副天线, 分集金属框		



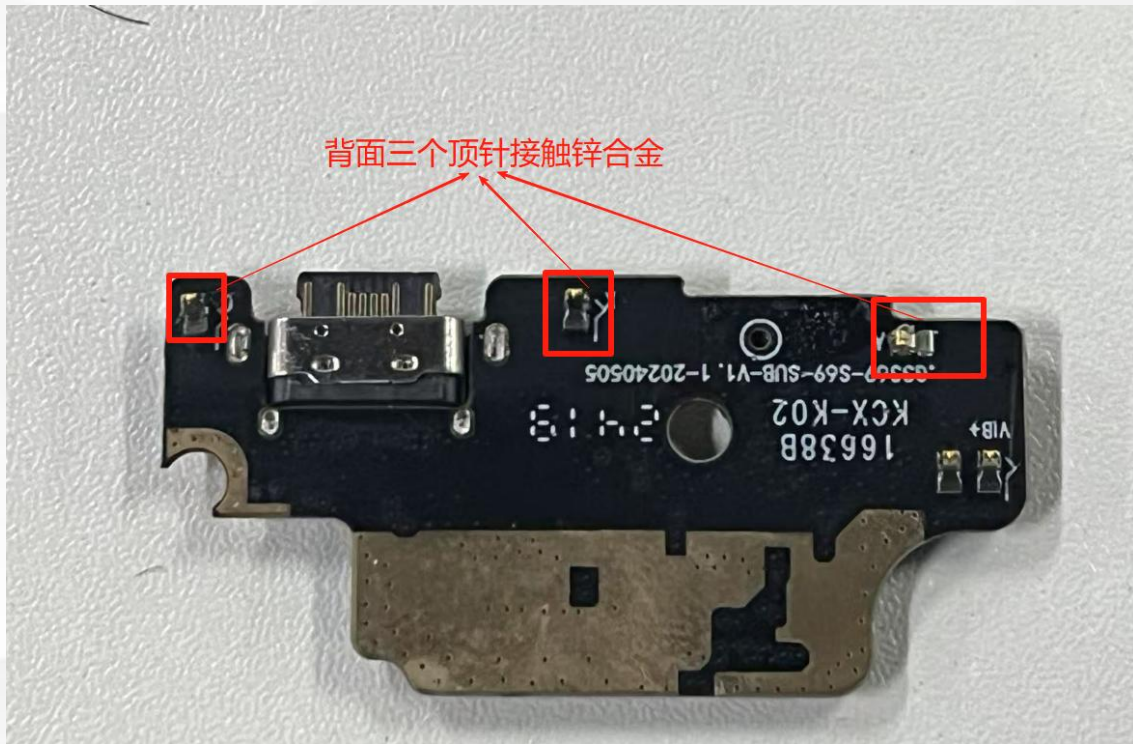
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下天线匹配电路



正面弹片保留

下天线匹配电路





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上天线 DPDT TRX

		上天线 TRX		:4G:B1/2/3/4/7/66/38/40/41				66		
				3G:W1/2/4/						
				2G: DCS1800 PCS1900						

DRX 时 下天线RF4路

后续换一下



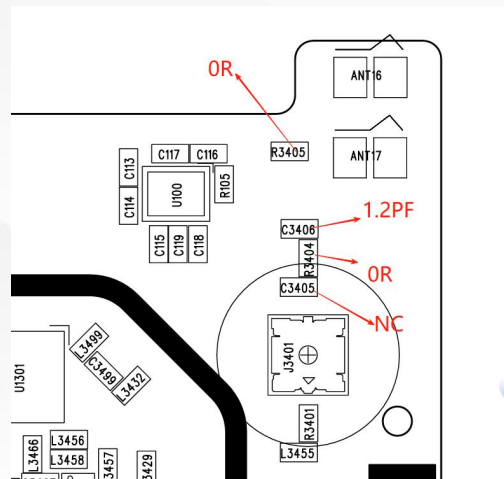
下天线开关逻辑

下天线	RF1	4G: B8	3G:B8	2G:EGSM900				
	RF2	4G:B5/18/19/20/26/			3G:W5/6	2G:GSM850		
	RF3	4G:B13						
	RF4	4G:b12/17/28ab						

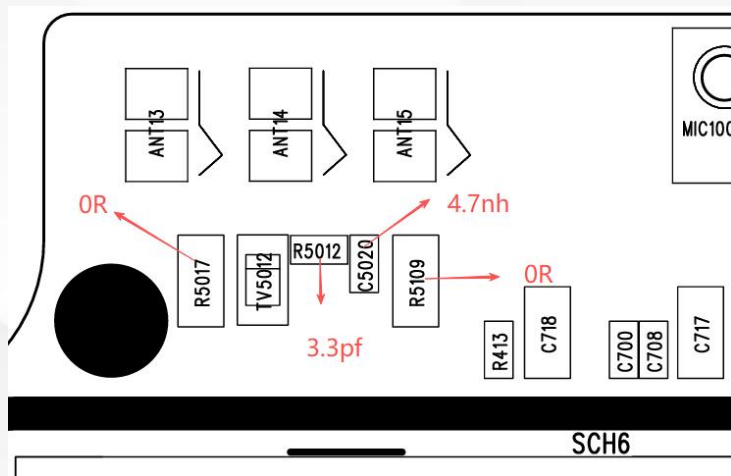
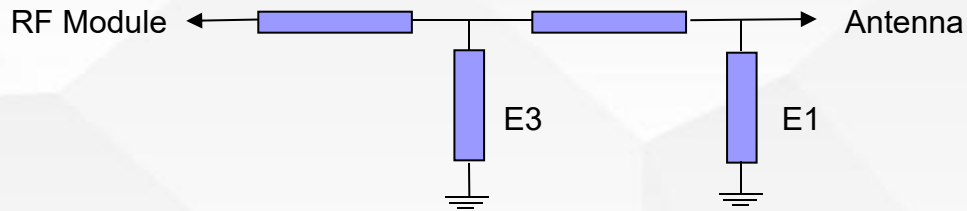


The diagram shows a horizontal transmission line. On the left, it is labeled "RF Module" with an arrow pointing left. On the right, it is labeled "Antenna" with an arrow pointing right. Two vertical components, represented by blue rectangles, are connected in shunt to the transmission line. The first component, labeled "E3", is connected to the line between the RF Module and the Antenna. The second component, labeled "E1", is connected to the line just before the Antenna. Both components are connected to ground, which is represented by a horizontal line with three short vertical lines below it.

Element	Value
E1(0201)	1.2PF
E2(0201)	OR
E3(0201)	NC



三合一天线 匹配电路





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增益

7. 天线增益 GAIN

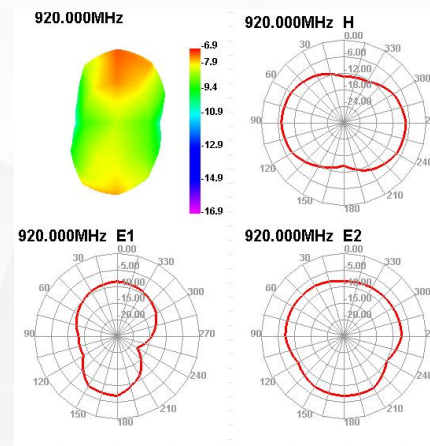
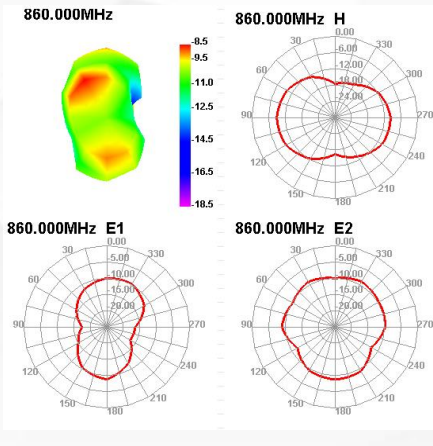
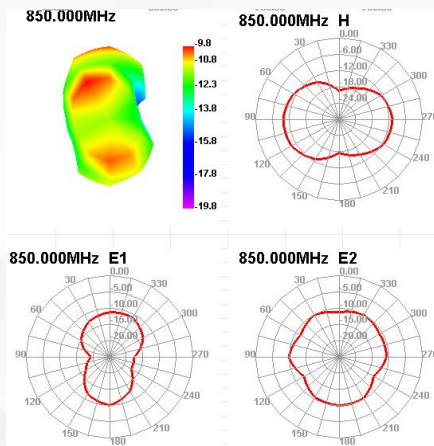
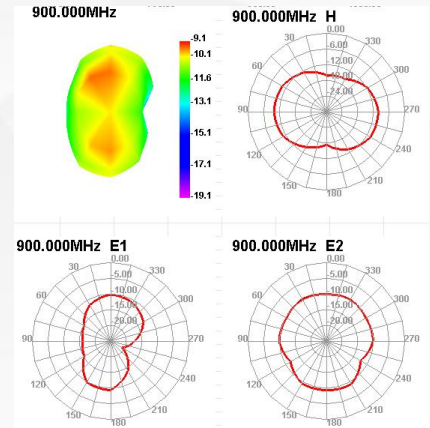
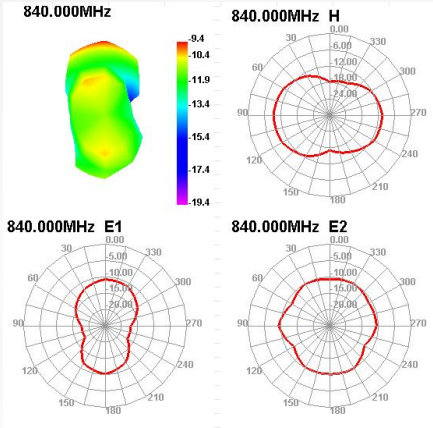
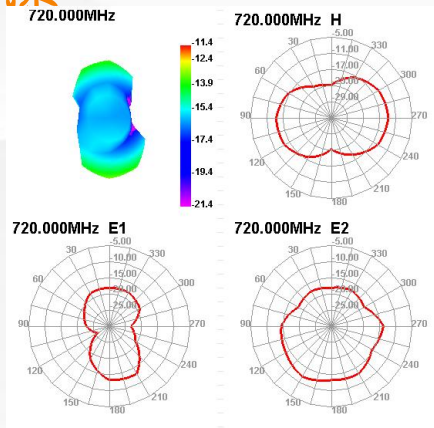
band	Gain(dBi)	band	Gain(dBi)
B1	-2.89	B26	-3.94
B2	-2.56	B28	-4.18
B3	-2.75	B38	-2.08
B4	-2.75	B40	-2.17
B5	-3.96	B41	-2.08
B7	-1.98	B66	-2.75
B8	-4.21	W1	-2.89
B12	-4.35	W2	-2.56
B13	-4.10	W4	-2.75
B17	-4.35	W5	-3.96
B18	-3.96	W8	-4.21
B19	-3.89	GSM850	-3.96
B20	-3.94	EGSM900	-4.21
		DCS1800	-2.75
GPS	-2.69	PCS1900	-2.56
2.4G WIFI	-2.84		
5.8G WIFI	-1.96		
BT	-2.84		



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GSM天线3D方向图

低频

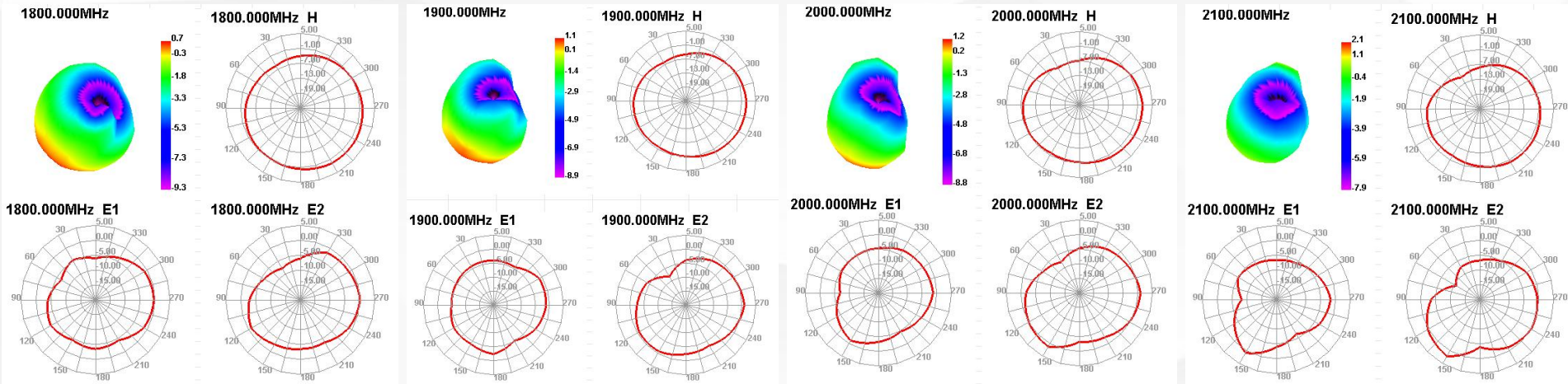




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GSM天线3D方向图

中频



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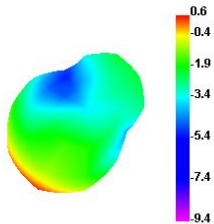


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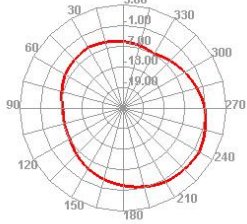
GSM天线3D方向图

高频

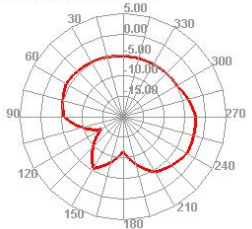
2350.000MHz



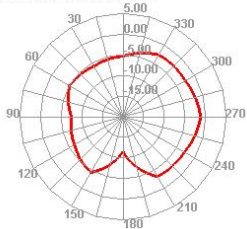
2350.000MHz H



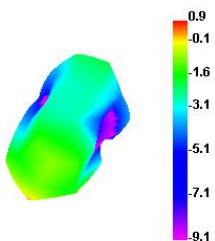
2350.000MHz E1



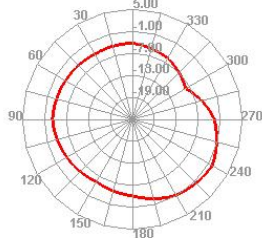
2350.000MHz E2



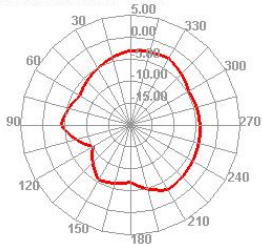
2500.000MHz



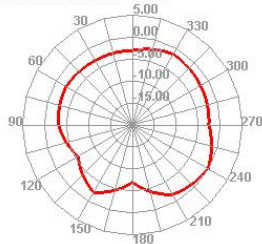
2500.000MHz H



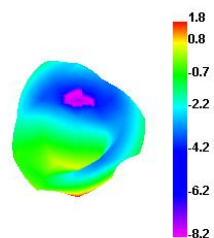
2500.000MHz E1



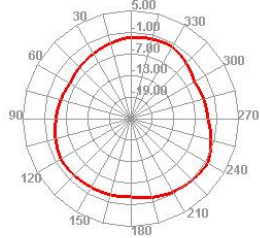
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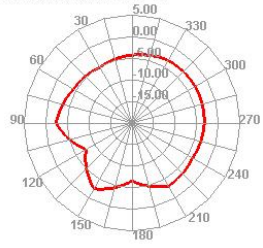
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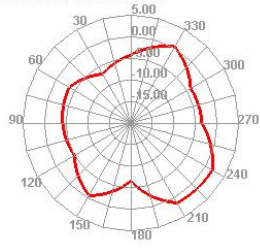
2600.000MHz H



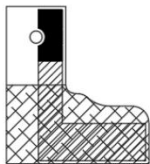
2600.000MHz E1



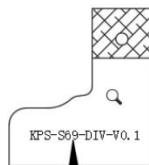
2600.000MHz E2



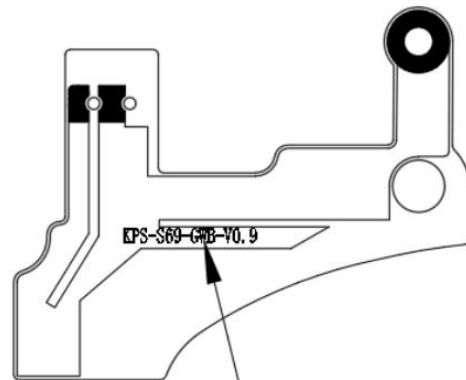
天线尺寸



双面背胶

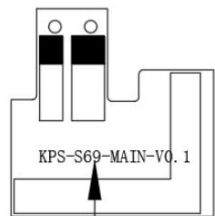


KPS-S69-DIV-V0.1

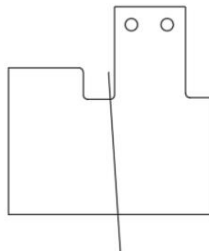


KPS-S69-GWB-V0.9

天线尺寸



KPS-S69-MAIN-V0.1





天线测试数据

FS	Chann el	TRP	TIS	TIS亮
LTE-1	L	17.3		
	M	17.5		
	H	17.7	-93	
LTE-2	L	17.5		
	M	17.5		
	H	17.8	-94	
LTE-3	L	17.2		
	M	17.8		
	H	17.3	-92.8	
LTE-4	L	17.8		
	M	17.8		
	H	17.6	-93.8	

	Chann el	TRP	TIS	TIS亮
LTE-5	L	14.5		
	M	15.1		
	H	15.8	-89.9	
LTE-7	L	18.5		
	M	18.6		
	H	17.5	-90.7	
LTE-8	L	15.2		
	M	15.2		
	H	14.8	-89	
LTE-12	L	14.3		
	M	14.5		
	H	14.5	-88.6	



天线测试数据

FS	Chann el	TRP	TIS	TIS亮
LTE-13	L			
	M	15.9	-89.4	
	H			
LTE-17	L	14.8		
	M	14.7		
	H	14.7	-90.5	
LTE-18	L	14.7		
	M	14.7		
	H	15.2	-89.9	
LTE-19	L	14.7		
	M	15		
	H	15.2	-88.6	

	Chann el	TRP	TIS	TIS亮
LTE-20	L	14.8		
	M	15.3		
	H	15.2	-88.2	
LTE-26	L	14.7		
	M	14.8		
	H	15.2	-87.1	
LTE-28	L	14.5		
	M	15.		
	H	15.5	-92.4	
LTE-38	L	17.7		
	M	18.2		
	H	17.6	-89.6	



天线测试数据

FS	Chann el	TRP	TIS	TIS亮
LTE-40	L	18.9		
	M	18.5		
	H	18.6	-90.5	
LTE-41	L	18.2		
	M	17.8		
	H	17.7	-88.7	
LTE-66	L	17.5		
	M	17.4		
	H	16.8	-93.6	

FS	Chann el	TRP	TIS	TIS亮
GSM850	L	23.2		
	M	23.8		
	H	23.2	-101	
EGSM900	L	24.4		
	M	25.2		
	H	24.8	-101.6	
DCS1800	L	23.7		
	M	23.8		
	H	23.4	-103.3	
PCS1900	L	23.6		
	M	23.7		
	H	23.8	-102.5	



天线测试数据

FS	Channel	TRP	TIS	TIS亮
W-1	L	15.6		
	M	15.7		
	H	15.2	-103.6	
W-2	L	15.6		
	M	15.7		
	H	15.8	-105.1	
W-4	L	15.3		
	M	15.2		
	H	15.3	-103.8	
W-5	L	13.4		
	M	13.8		
	H	14.2	-101.8	

	Channel	TRP	TIS	TIS亮
W-8	L	15.2		
	M	15.5		
	H	15.2	-102.1	
	L			
	M			
	H			



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GPS实测

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ID	CNR	ID	CNR	ID	CNR
G4	25.0/-/-/-/-	G8	40.5/-/-/-/-	G9	18.5/-/-/-/-
G16	30.0/-/-/-/-	G18	0.0/-/-/-/-	G26	27.9/-/-/-/-
G27	23.7/-/-/-/-	G31	30.2/-/-/-/-	R65	31.8/-/-/-/-
R66	0.0/-/-/-/-	R72	26.7/-/-/-/-	R74	0.0/-/-/-/-
R75	27.5/-/-/-/-	R76	19.8/-/-/-/-	R85	21.3/-/-/-/-
R86	33.4/-/-/-/-	B1	23.0/-/-/-/-	B2	0.0/-/-/-/-
B3	28.2/-/-/-/-	B4	0.0/-/-/-/-	B6	23.4/-/-/-/-
B7	29.6/-/-/-/-	B10	30.0/-/-/-/-	B16	27.9/-/-/-/-
B19	28.2/-/-/-/-	B20	0.0/-/-/-/-	B22	36.0/-/-/-/-
B27	25.0/-/-/-/-	B30	34.6/-/-/-/-	Q2	31.6/-/-/-/-
Q3	33.7/-/-/-/-	Q7	0.0/-/-/-/-	S43	0.0/-/-/-/-

FS	Channel	TRP	TIS	TIS亮
WiFi B 模	L	8.5		
	M	8.5		
	H	8.4	-79.2	
WiFi 5.8G A模	L	6.3		
	M	5.8		
	H	4.7	-67.2	



NFC实测

TYPE 1卡: 3.5cm

TYPE 2卡: 2.5cm

TYPE 3卡: 3cm

TYPE 4卡: 1.5cm

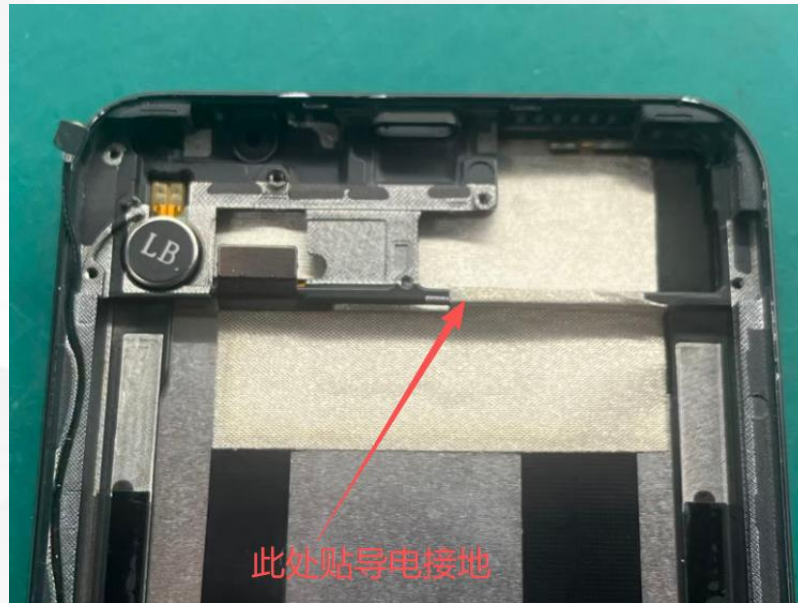
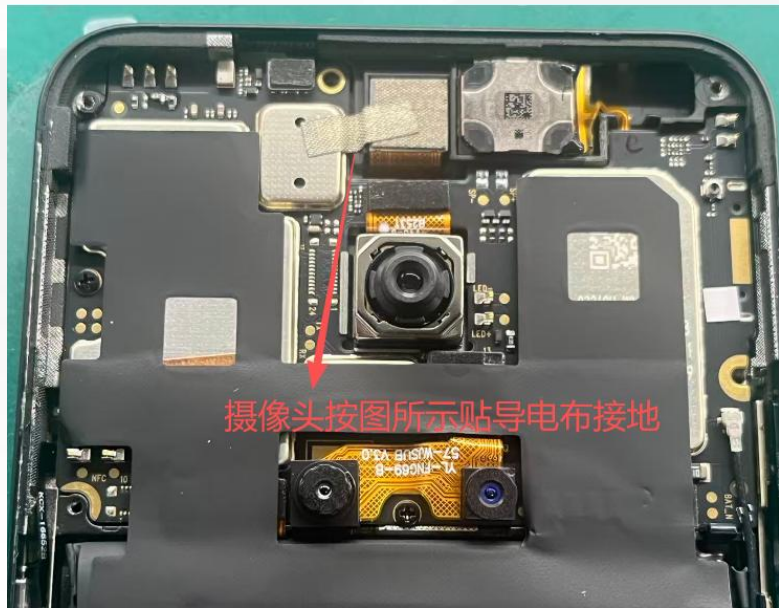
TYPE 5卡: 5cm

公交卡: 1.5cm



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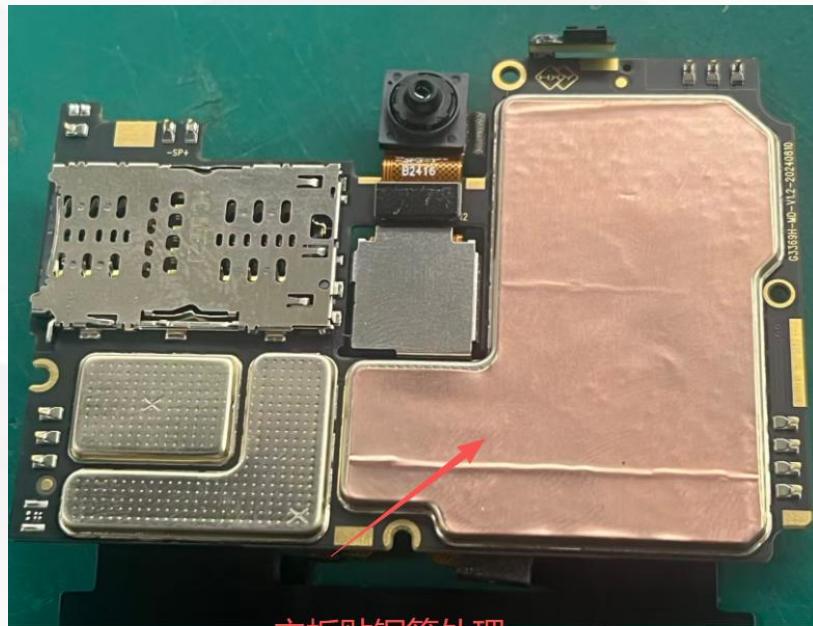
环境处理





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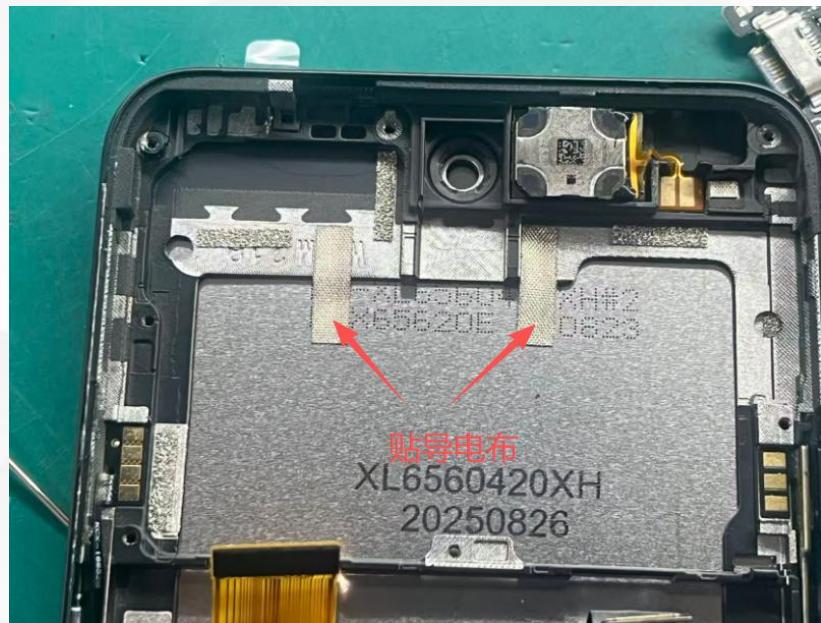
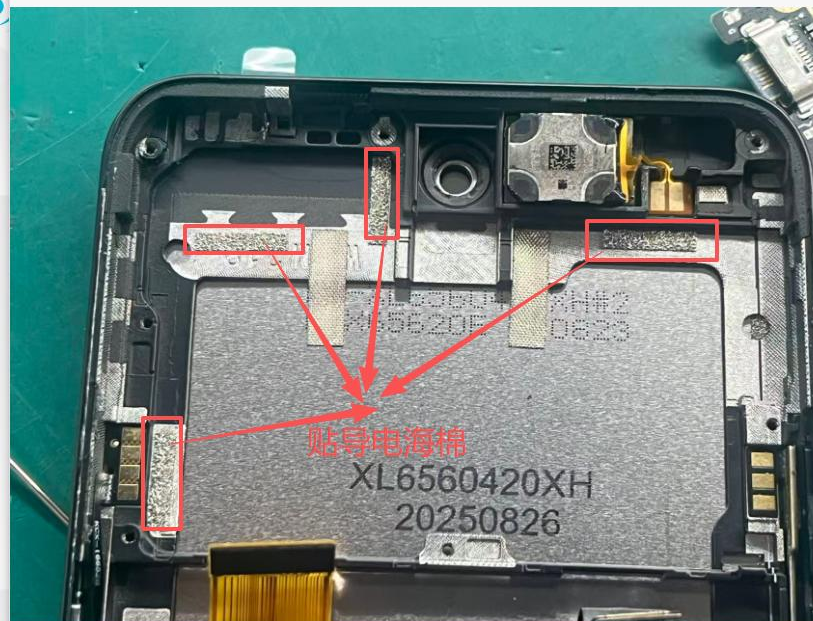
环境处理



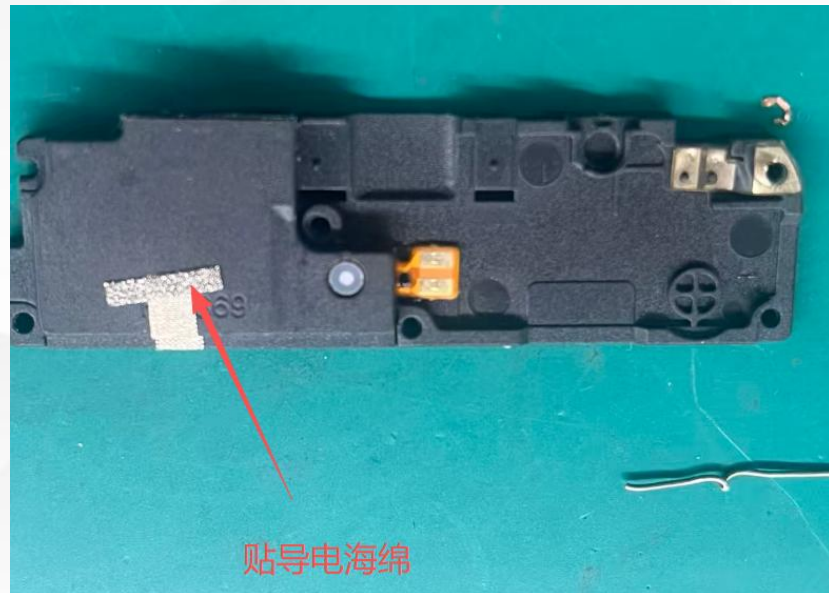
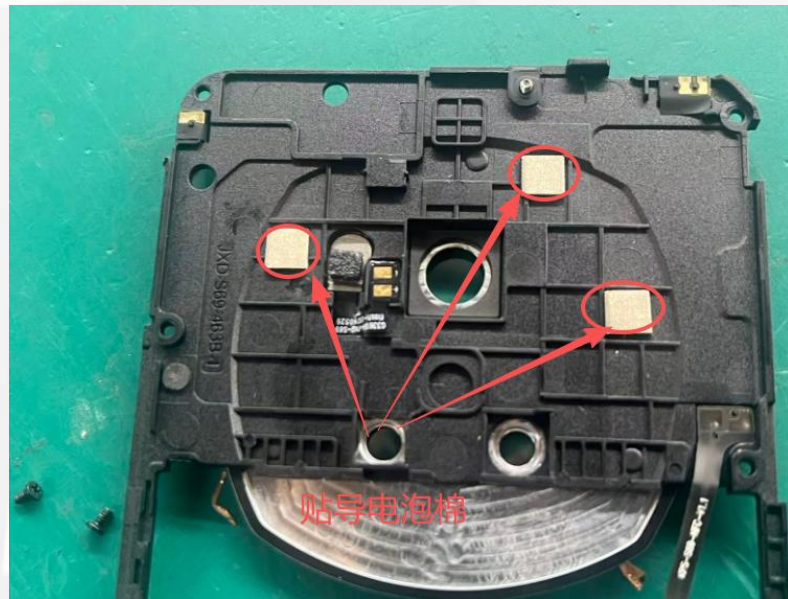


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环境处理



环境处理





环境处理

其他按照试产机器整机提供
原环境处理



联系方式

联系方式:

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电话：15014104367

邮箱：KPSyanfa1@szkpstx.com

地址：龙华区龙观大道440号龙城工业区御龙办公楼二楼



THE END

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