Cellphone Antenna Adjustment Report

Heyuan Xunwei Microwave Communication Technolory Co. Ltd.

RF Engineer: Wang Xinfeng

Test Date: 2018.02.05

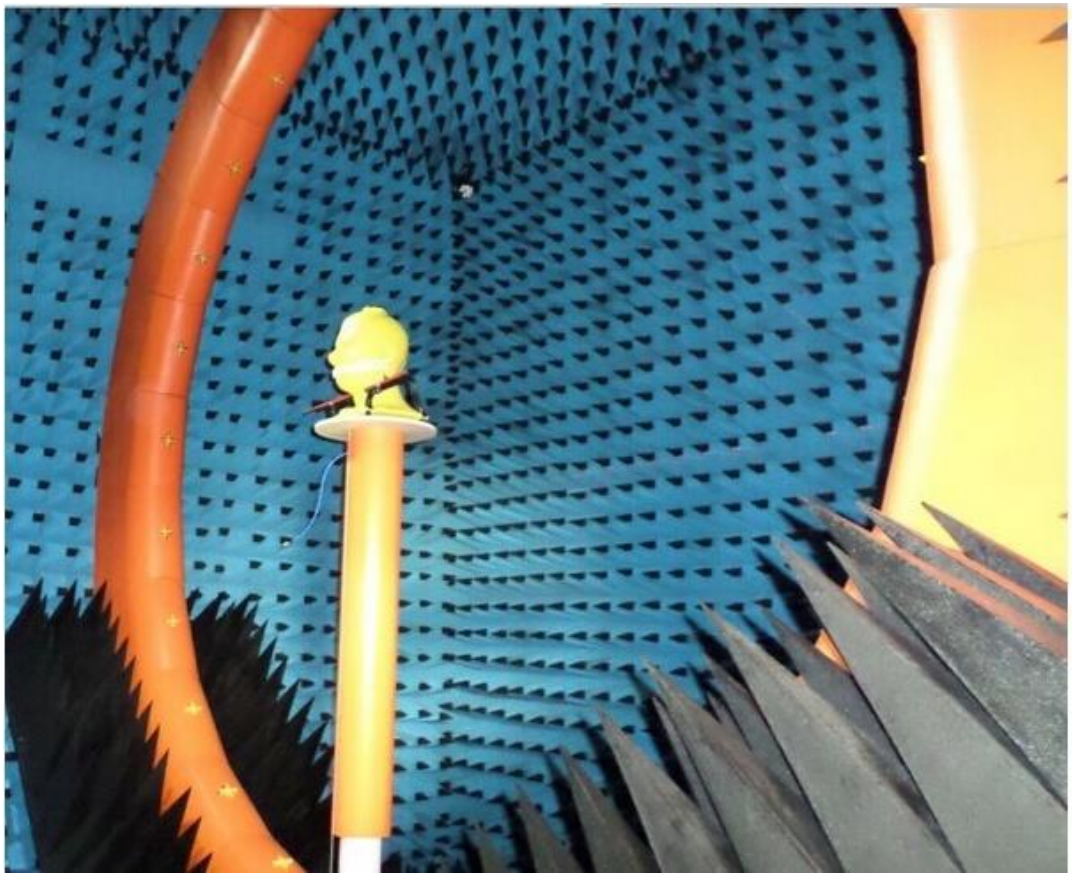
Catalog：

Test equipments:

integrated test instrument: CMW500

network analyzer: Agilent 5071B

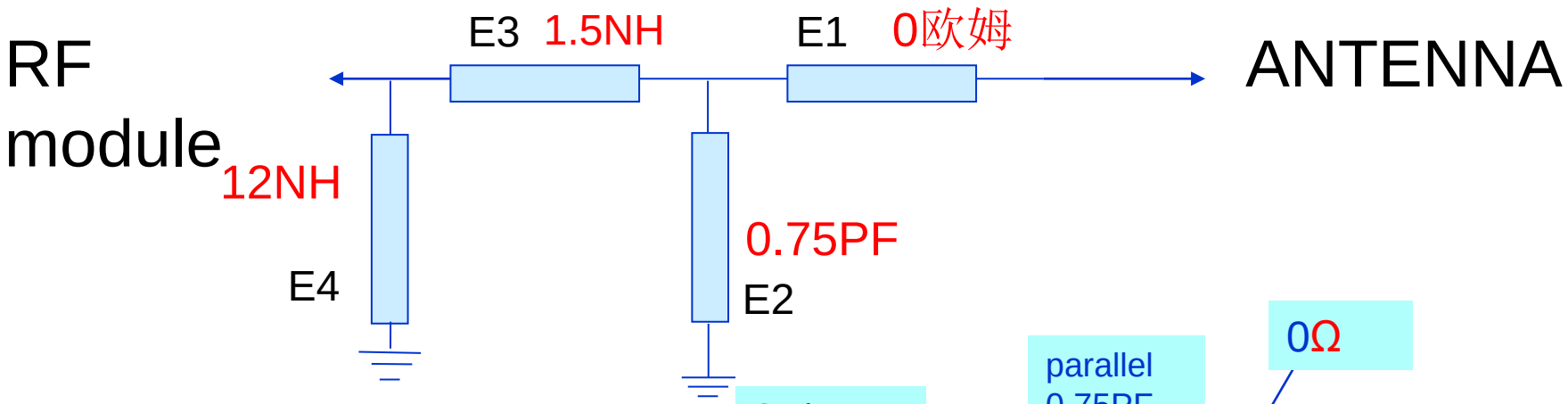
3D dark room: SATIMO SG24



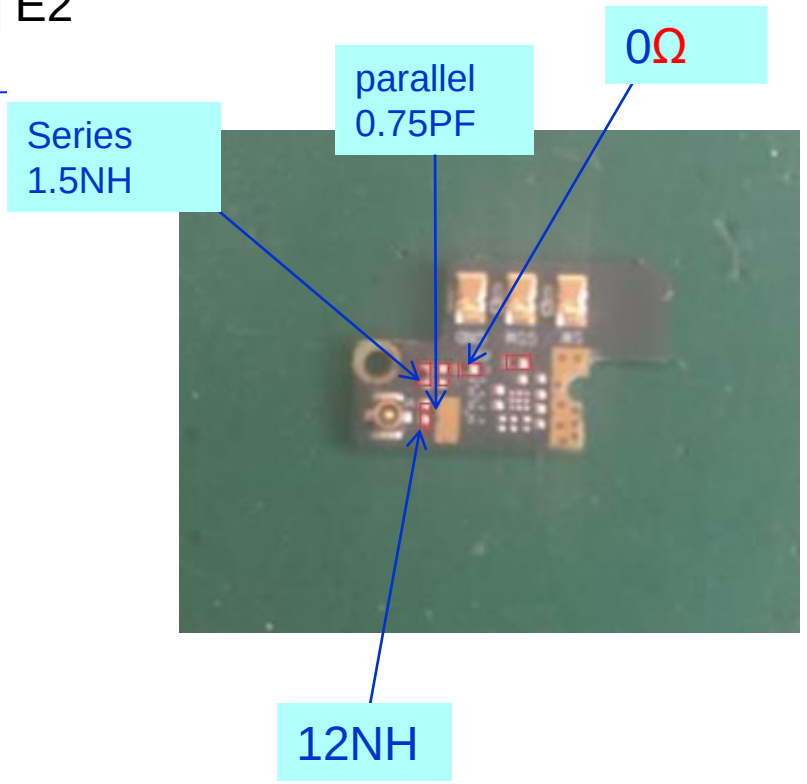
Project basic information

Customer name	**Fortuneship**
Project Name	KS907A
Cellphone type	bar
Main board Model	
Sub board Model	
Version	V5.0

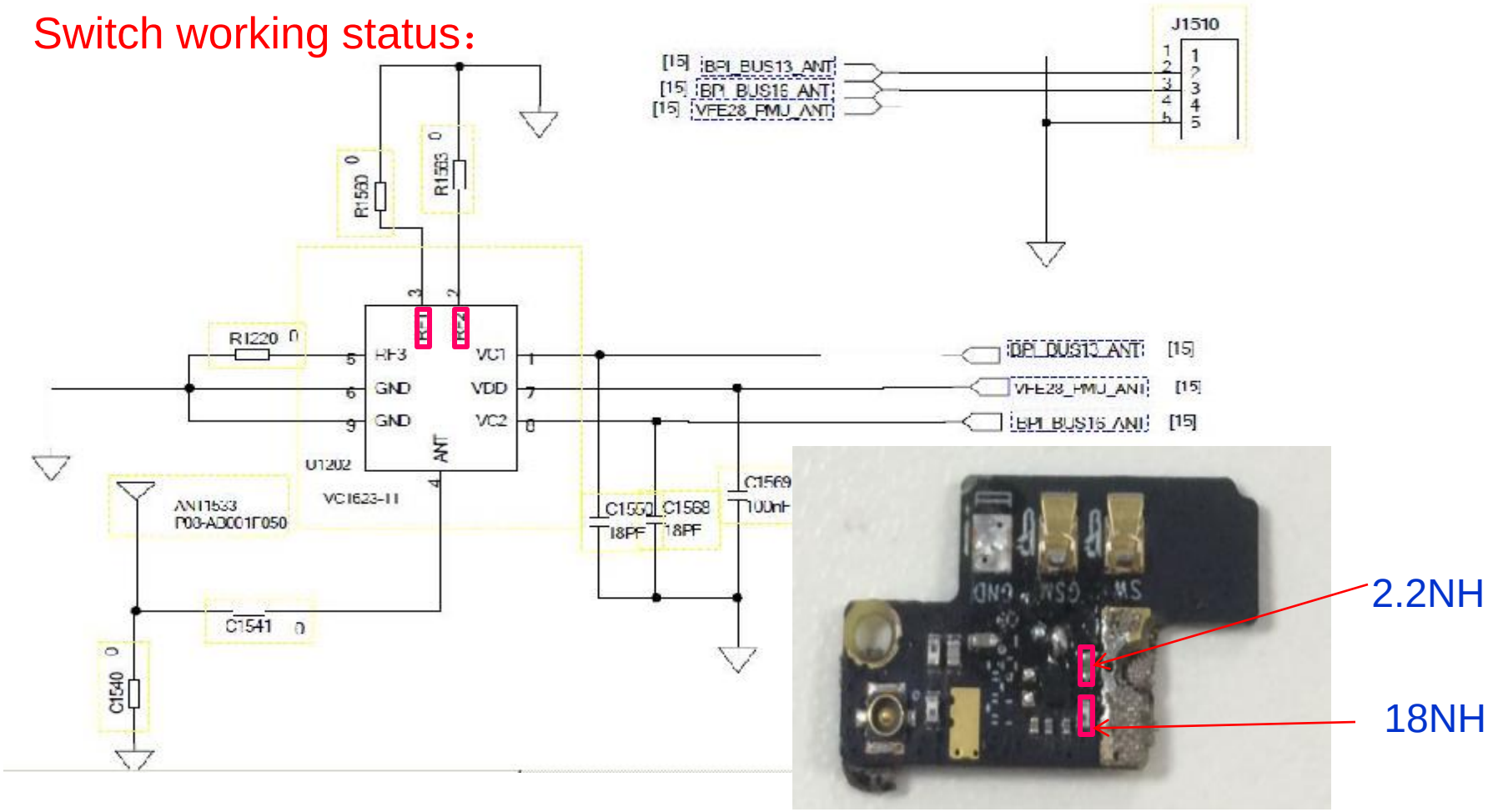
Antenna matching circuit



bit NO.	value
E1	0Ω
E2	0.75PF
E3	1.5NH
E4	12NH

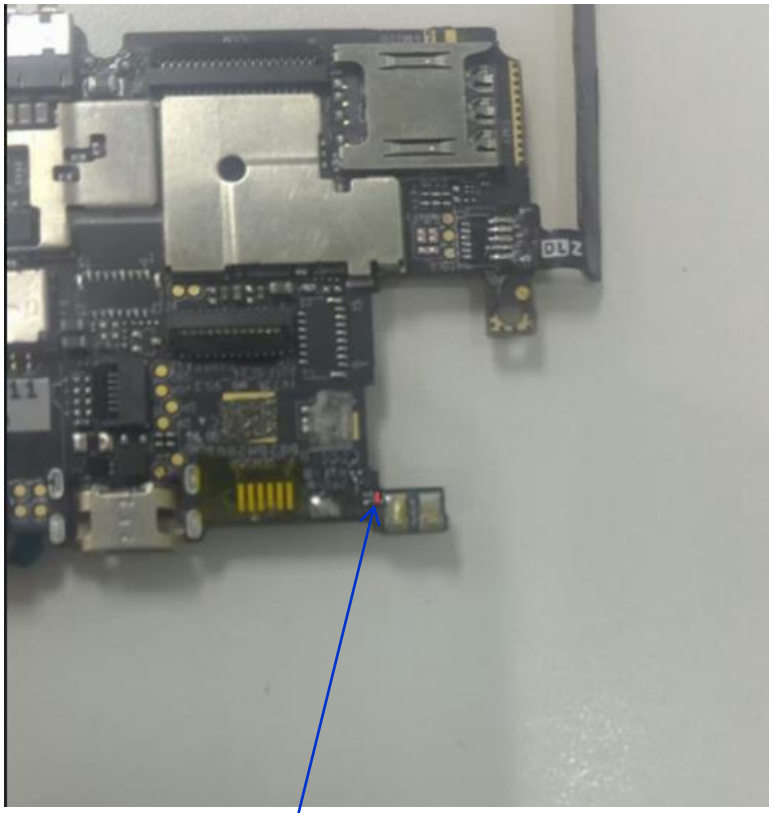


Switch working status：



Turning switch RF1 under the status of 2.2NH, switch to GSM900/850/WCMDA850/LTE-B5 and middle and high Frequency.
Turning switch RF2 under the status of 2.2NH， switch to B12.

Three in one antenna matching circuit



GPS matching，start from the antenna feed point paralle connect 2.7NH, then series connect 1.2NH.

Active testing data

GSM 3D testing data (free zone)

Band	Channel	TRP	TIS（dark screen）
EGSM900	1	26.45	
	62	26.70	
	124	26.47	-102.51
GSM850	128	26.78	
	192	27.06	
	251	26.84	-102.64
DCS1800	512	24.59	
	699	24.85	
	885	24.92	-104.39
PCS1900	512	24.60	
	661	24.83	
	810	25.33	-104.24

WCDMA 3D testing data（free zone）

Band	Channel	TRP	Channel	TIS（dark screen）
WCDMA850	4132	17.63	4357	
	4183	18.38	4408	
	4233	18.55	4458	-103.79
WCDMA1700	1312	17.21	1537	
	1413	17.07	1637	
	1513	17.50	1738	-104.80
WCDMA1900	9262	18.33	9662	
	9400	18.60	9800	
	9538	18.27	9938	-104.84

FDD 3D testing data(10M)（free zone）

Band	Channel	TRP	TIS（dark screen）	Ba	Channel	TRP	TIS（dark screen）
LTE-2	18650	18.10		LTE-3	19250	17.61	
	18900	18.13			19575	17.80	
	19150	18.05	-93.87		19900	18.31	-93.92
LTE-4	20000	17.60		LTE-5	20450	17.84	
	20175	17.77			20525	18.19	
	20350	17.95	-93.49		20600	18.25	-92.49
LTE-7	20800	17.79		LTE-12	20800	16.59	
	21100	18.91			21100	16.72	
	21400	18.12	-92.90		21400	16.85	-92.73

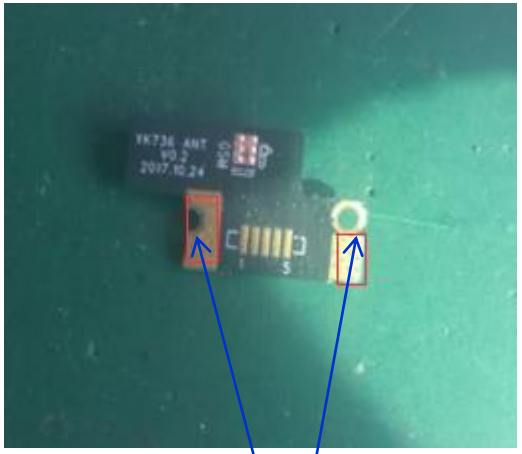
GPS/WIFI active testing data

GPS	Max signal strength	satellite searching number	average position time	weather status
	43（sometimes there were 4pcs over 40）	18	85	sunny
WIFI	strength of signal receiving while distance to WIFI router is 10M		strenth of signal receiving while can connect to network without any obstacle	
	45		30	

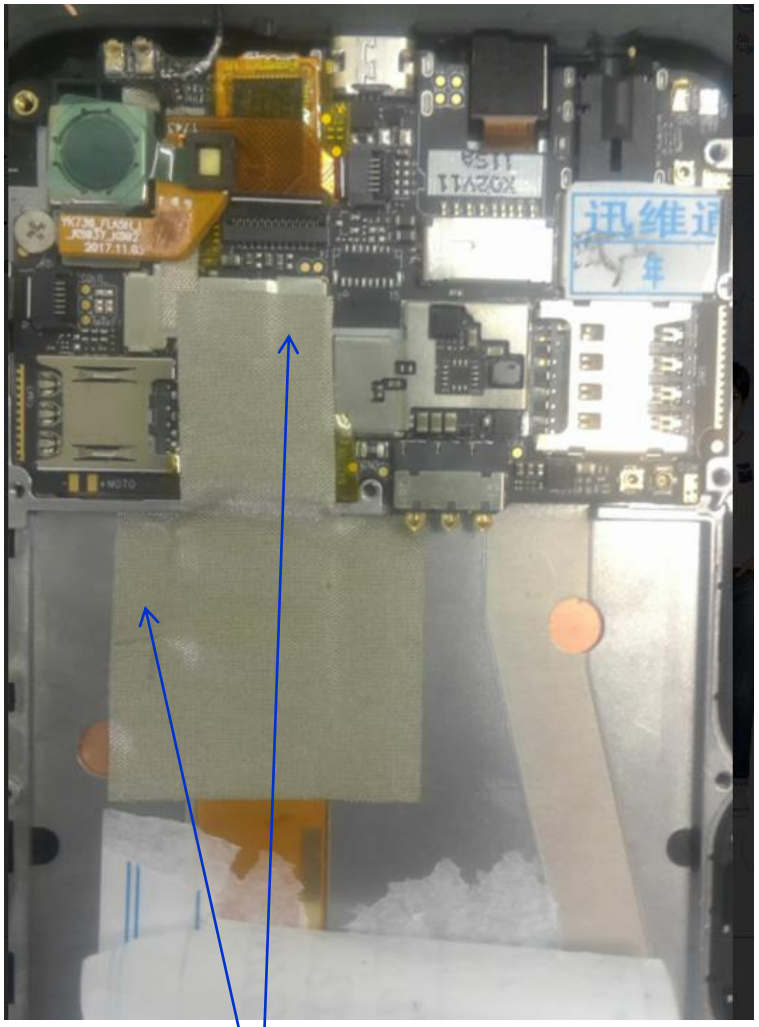
Band	Channel	TRP	TIS
WIFI-B（sample 2）	1	12.13	
	7	12.88	
	13	12.19	-84.27

GPS testing data

environment processing

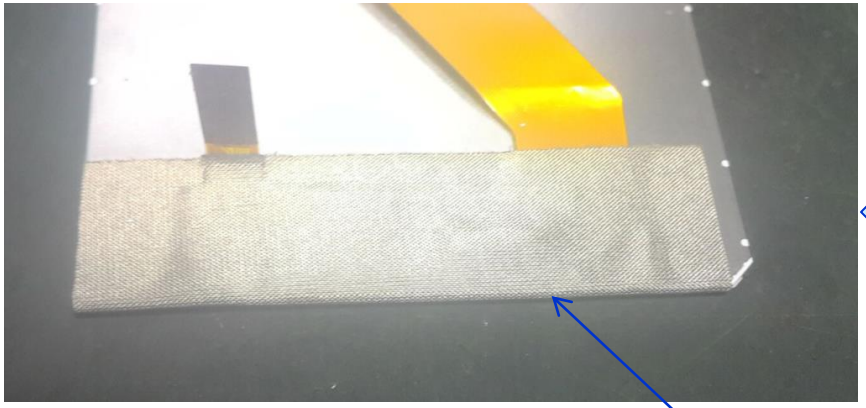


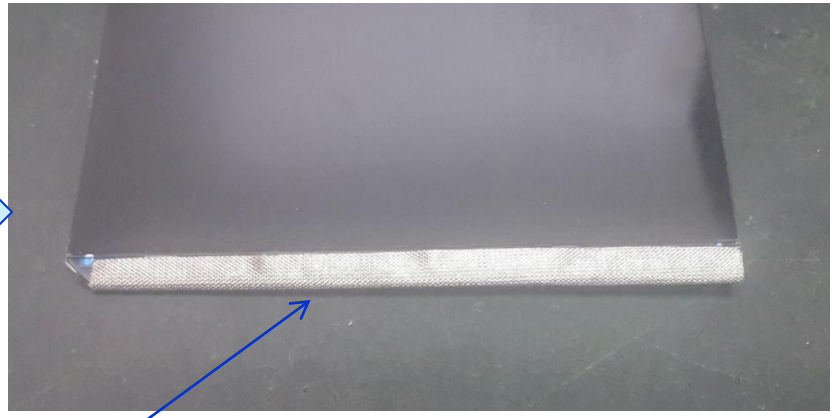
stick conductive foam on sub pcba make sure grouding with the metal frame



stick electric conductivity fabric on LCD flex cable that can improve the GPS antenna performance, which means bright LCD interfere GPS.

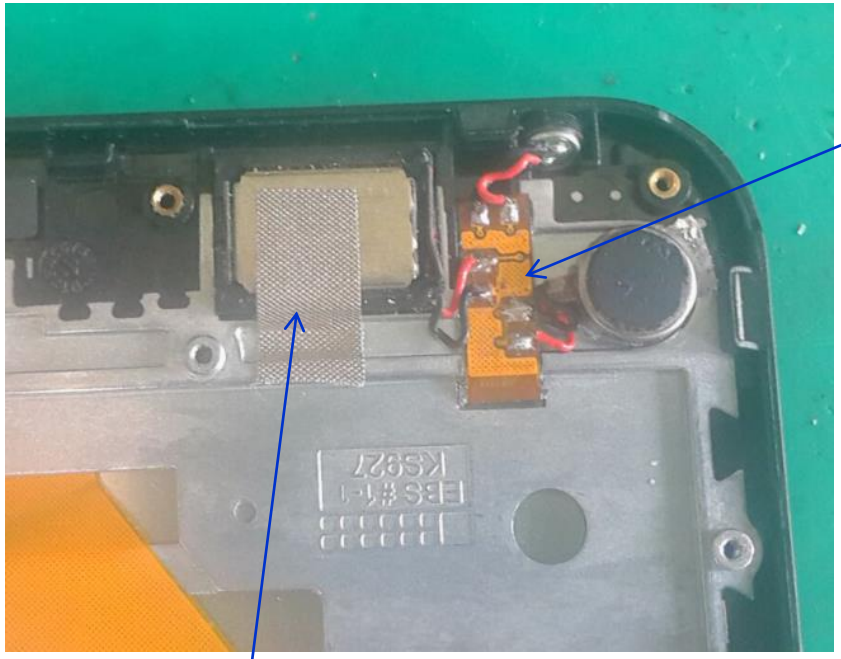
environment processing





stick electronic conductivity fabric on LCD to decrese the interference that bright LCD bring to low frequency

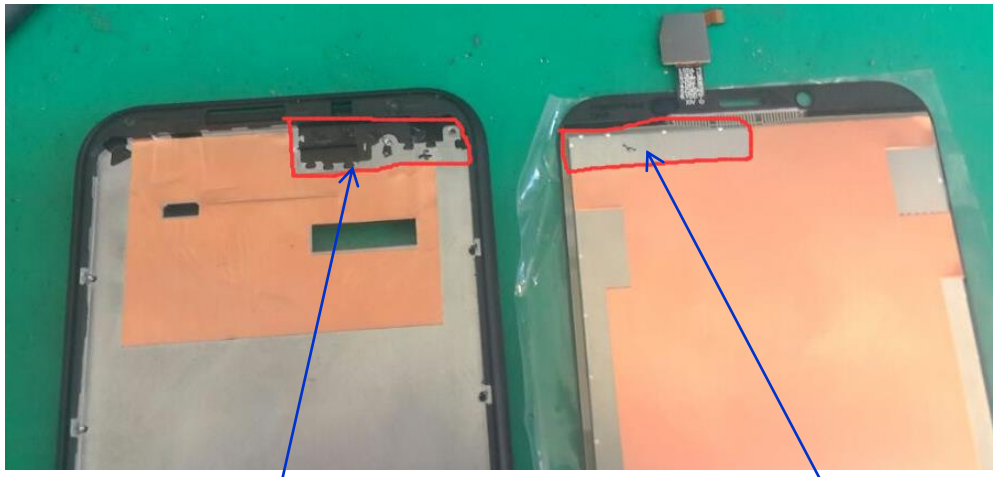
environment processing

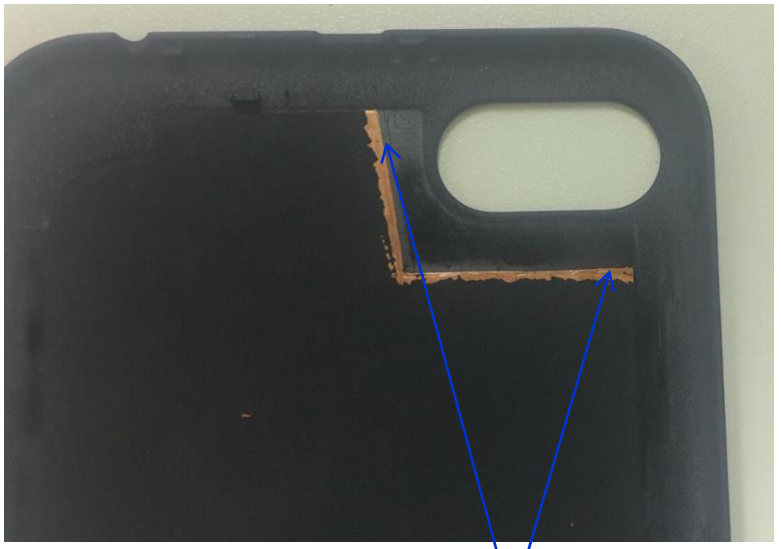


the flex cable here will leak the copper to grounding with metal frame

Speaker magnet steel stick electronic conductivity fabric to grounding with metal frame (motor also need do groundin processing)

environment processing





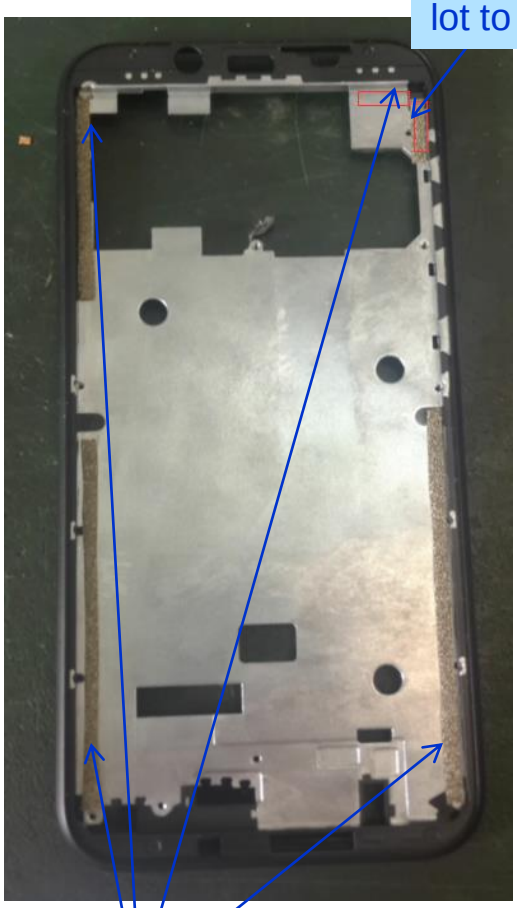
heat release film minus 5~7mm, avoid GPS antenna

remove the heating release film on this area, increase antenna clearance

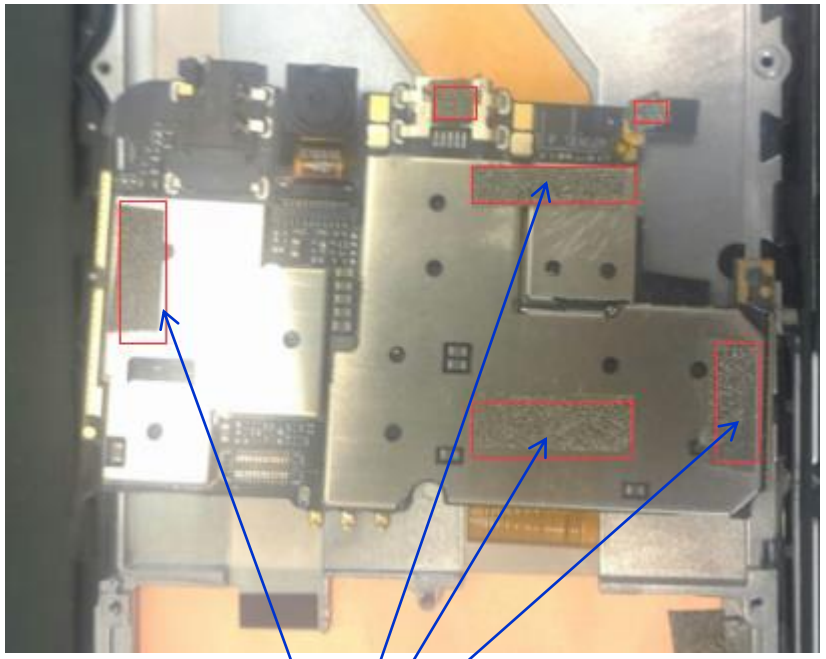
remove the heating release film on this area, make sure LCD rear frame grounding with metal frame

environment processing

make sure LCD rear frame grounding which influence a lot to GPS

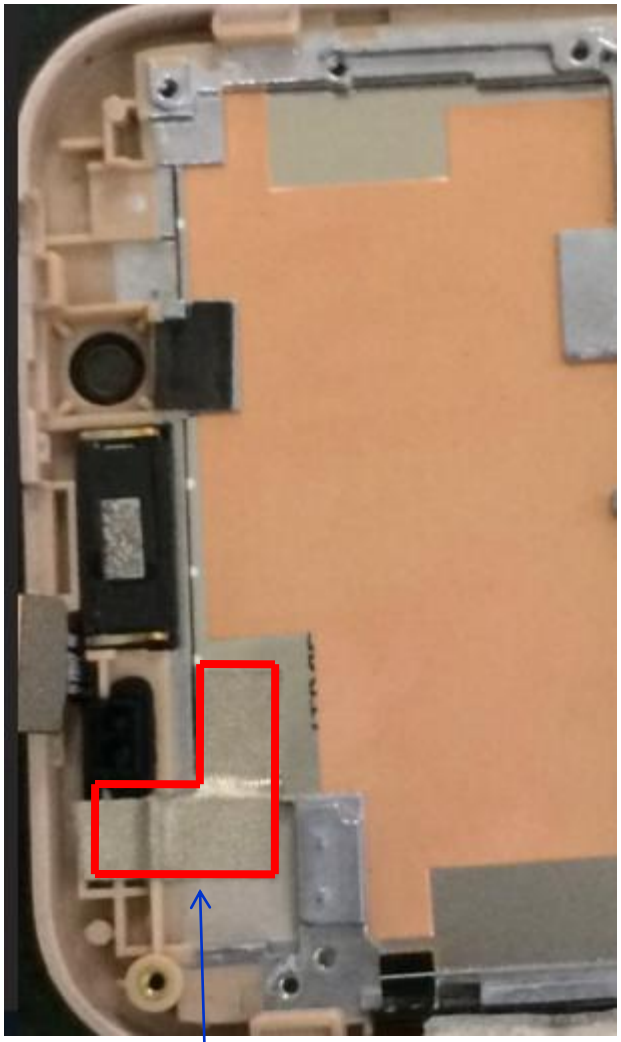


metal frame stick electronic conductivity foam to grounding LCD rear frame

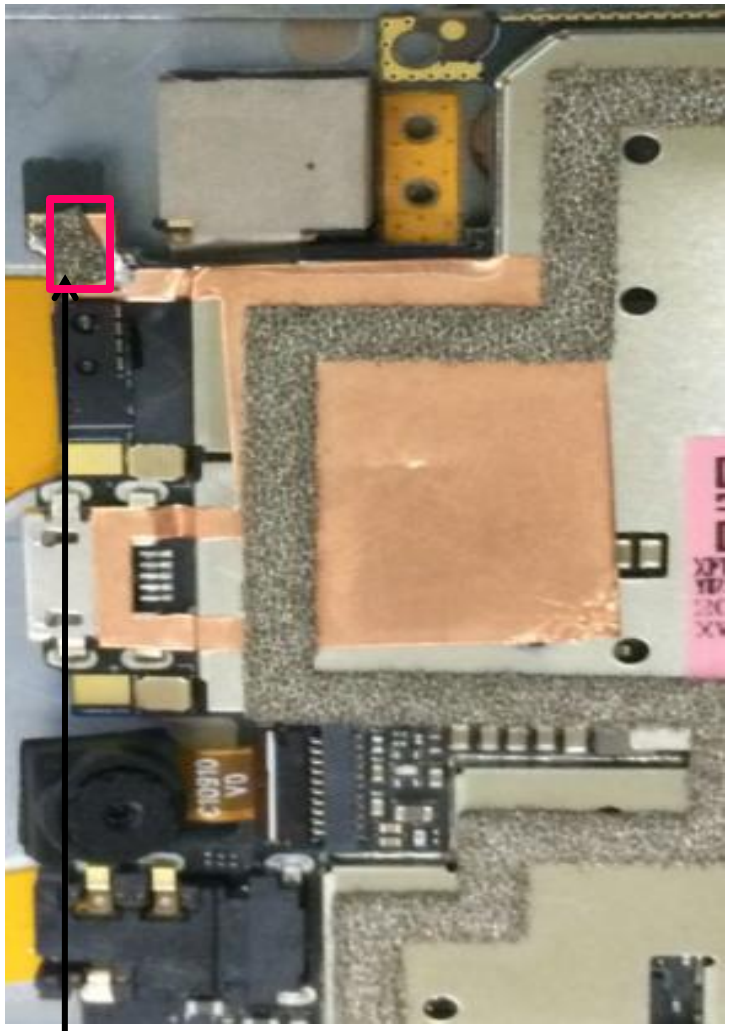


Stick electronic conductivity foam on PCBA to grounding with LCD rear frame

environment processing



stick electronic conductivity fabric on LCD rear frame to grouding PCBA.



stick electronic conductivity fabric on this area to grounding.

Contact US

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Thanks and best regards!