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M1971 Primary maintenance manual

(VERSION：V1.0)

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Chapter 1 Caution of Maintenance

1. Only authorized technicians can do maintenance and calibration.
2. Make sure that engineers wear antistatic wrist strap repair phones in antistatic station.
3. Make sure that maintenance room is covered with antistatic mat, and the maintenance table is covered with antistatic material.
4. Make sure that all necessary screws and parts are installed in correct location of phone after maintenance and adjustment.
5. After maintenance, clean the PCBA.
6. As static electricity is the main reason for electronics damages, engineers shall repair phones in an anti-static environment and shall take effective antistatic protection measures.
7. For an occurrence of NG test, engineers should check if the test point is dirty or test point contact is poor.
8. Check if water penetrates to mainboard. If yes, check all the components to see if there is oxidation.
9. Make sure that maintenance room is bright and has natural ventilation. Ventilation: When do maintenance or soldering, some equipment can emit hazardous gas. So the maintenance room should have good natural ventilation. If there are no windows in maintenance room, the room should be equipped with electric air regenerating equipment.
10. There should be obvious antistatic labels in Electrostatic Sensitive area, such as in maintenance area and spare part warehouse.

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Chapter2 The introduction of M1971

1. The appearance of M1971

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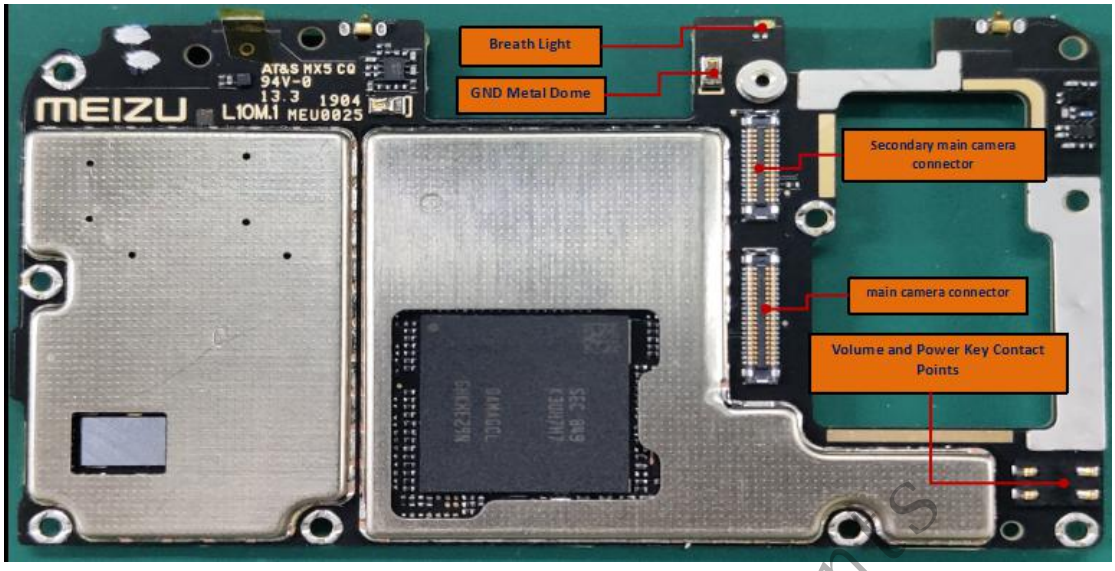
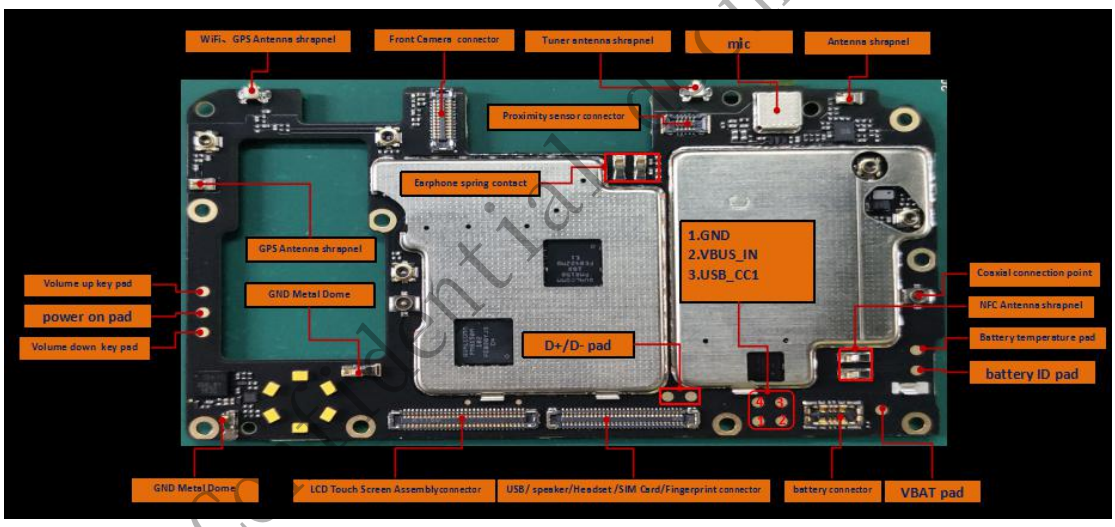
2.The main components of cellphone :





3.Technical specifications

Product overview	**Product model**	16s
	Item name	M1971
	Operating system	Flyme7.9（base on Android P）

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version and standard		**Band**	**model**	**SN prefix**
	Oversea version	GSM：B2/B3/B5/B8 WCDMA：B1/B2/B4/B5/B8 CDMA：BC0 TD-LTE：B40 FDD-LTE：B1/B2/B3/B4/B5/B7/B8/B20	M971H	971H
whole unit Size	151.9*73.4*7.65mm			
whole unit Weight	165g			
Color	Black、white、Gradient blue			
ID technology	Bright metal middle frame + 3D Glass back cover			
SIM card	Deal nano card			
Brand	QUALCOMM			
model	Qualcomm Snapdragon 8150			
process	7nm			
Frequency	The highest can reach 2.8GHz			
GPU	Adreno 640			
Framework	4x2.8GHz Gold + 4x1.7GHz Silver			
RAM	6GB/8GB DDR4X			
ROM	128GB UFS 2.1			
Storage combination	6+128GB，8+128GB			
Storage card	Not support			
Package method	POP			
TP	TP type	2.5D glass		
	TP function	Black Gesture unlock／Wet hand operation／Glove handling/10 点 touch/Edge preventing mistakenly touch		
	TP technology	On-cell，Anti-fingerprint coating		
LCM	LCM size	6.15" FHD+ 18:9 Hard screen，R angle Cutting		
	Display technique	AMOLED		
	Resolution	2232*1080		
	Chromatic number	16.7M		
	Brightness	430nit		
	Visual angle	ALL viewing angle display		
	PPI	403ppi		

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	Contrast	100000:1
	Raise to wake	Support
	Always OnDisplay	Support
Rear camera	Pixel	48M+20M
	Sensor	IMX 586+OIS+IMX 350
	Camera Lens	SUNNY 39176B
	Aperture	F1.7+F2.6
	Optical anti shake	Support
	Autofocus	AF
	Focusing mode	Phase focus、Laser focus
	ISP	Inside
	Flash light	6LED flash light ring
	Camera lens	Glass lenses
Front camera	Pixel	20M
	Sensor	Samsung 3T2（20M，0.8um）
	Lens	SUNNY 3972A
	Aperture	F2.2
	Optical anti shake	Not support
	Face recognition	Support
	Auto focusing	FF
	Focusing method	N/A
	ISP	Inside
	Flash light	Not support
Battery capacity	3600mAh（type）,3540mAh（min）	
mCharge	1.2C/0.7C Step charging	
Battery energy density	668	
PMU	PM855B+SMB1390	
Fuel gage	Qualcomm built-in solution	
Charger	Qualcomm built-in solution	
specification	UP0830S	
protocol	PE+	
HIFI	Not support	
Smart PA	Support	CS35L41
Noise reduction algorithm	Support	Spec timbre
Audio chip	Support	
speaker	1217　Superlinear	
Receiver	0815	
MIC	Dual MIC	

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Fingerprint recognition	Live detection	Not support
	Payment authentication	Wechat pay&Alipay
	Heart rate detection	Not support
Acceleration of gravity	Support	
Gyroscope	Support	
Distance sensor	Support	
Light sensor	Support	
Electronic compass	Support	
Holzer	No Support	
Applicable frequency	700-2700MHZ	
WLAN	Support 2.4G/5G WIFI；802.11a/b/g/n/ac；Support **2*2MIMO**	
Bluetooth	Support BT5.0	
GPS	GPS/Glonass/beidou	
Call and standby	Dual sim card dual standby single pass	
VoLTE	Support	
RF	SDR855	
NFC	Support	
Motor	0619 Horizontal Linear Motor	
Pedometer	Support	
Breathing light	Support	
FM	Not support	
Main antenna and Vice antenna switching	Support	
Waterproof / dust-proof	Not support	
OTG	support	
USB data port	Type C 2.0	
Headset port	Not support	
Audio format	flac、ape、aAc、mka、ogg、mp3、midi、m4a、amr、wav (ra、wma)	
Audio encoding format	FLAC、APE、DTS、AC3、OGG、AAC、ADPCM、ALAC、MP3、AMR－WB、AMR－NB (COOK、ATRC)	
Video format	mp4、3gp、mov、mkv、avi、flv、mpeg、m2ts、ts (wmv、asf、rm、rmvb)	

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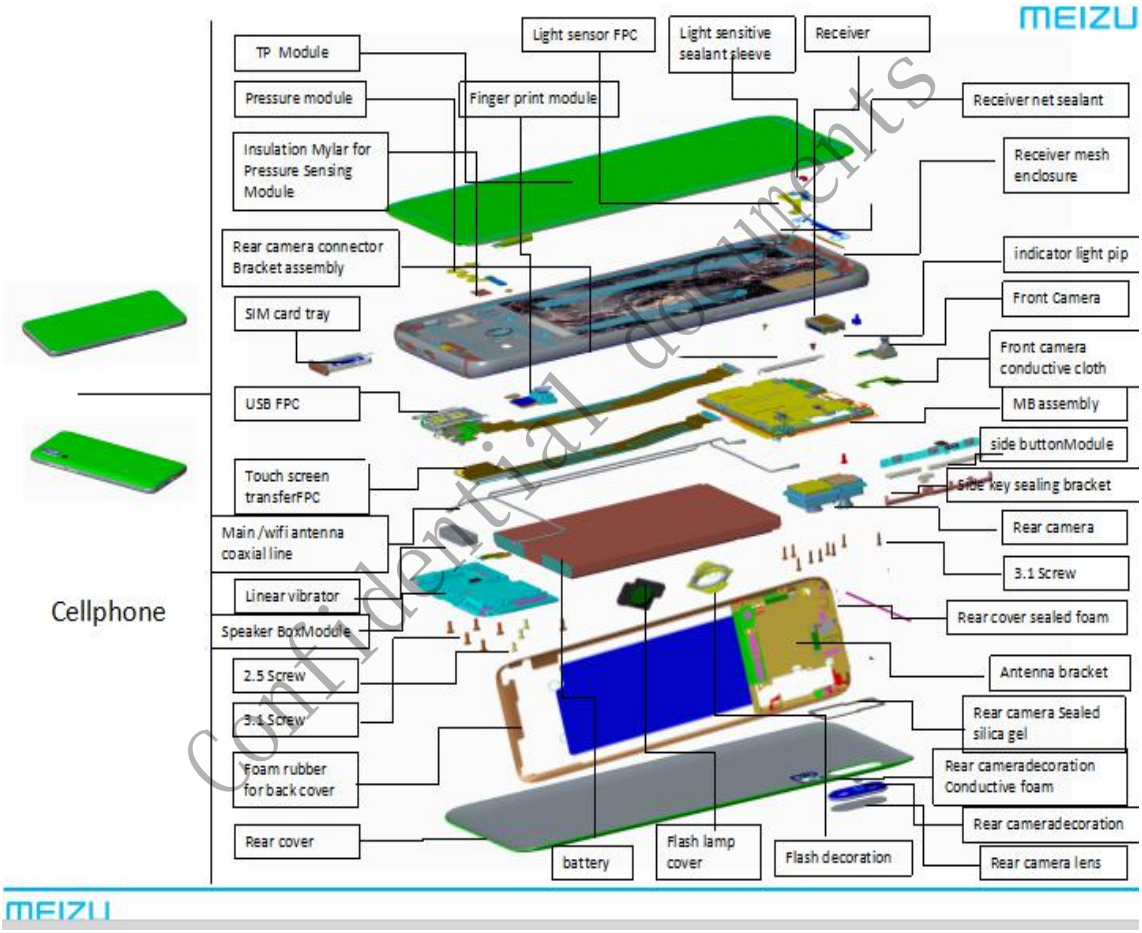
Video encoding format	H264、MPEG4、VC1、H263、MPEG1、MPEG2、VP8 (XVID、DIVX5、DIVX4、DIVX3、VP6、WMV1、WMV2、WMV3、RV10、RV20、RV30、RV40)
Picture format	JPEG、PNG、GIF、BMP

Chapter3 Explode view



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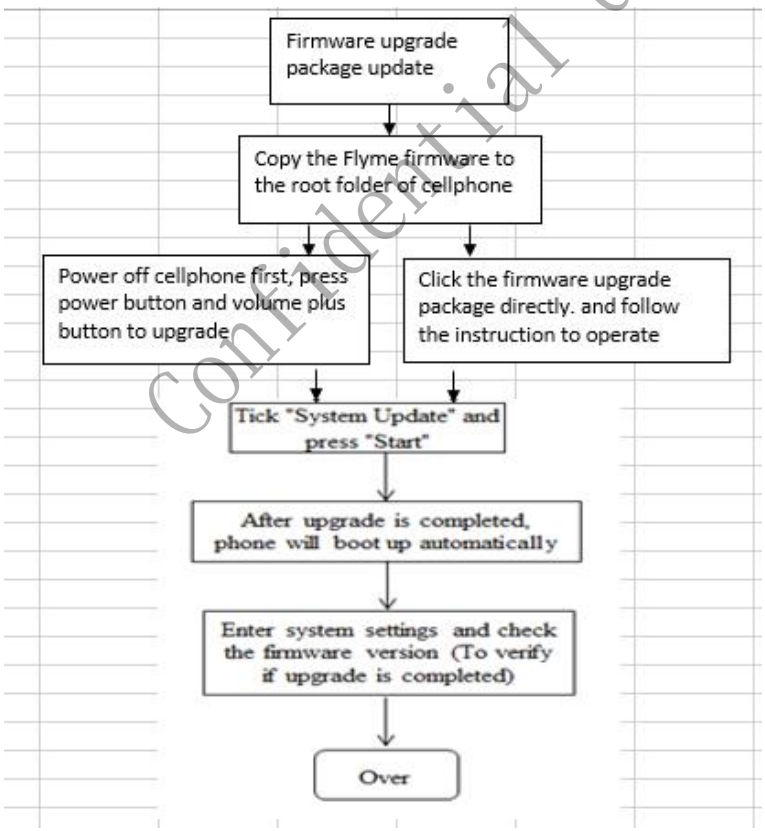
Chapter4 Common fault detection and maintenance

For poor functional machines, the problem of software should be eliminated first. And then investigation of hardware failures. Software upgrade should be follow below step:

Firmware update

If the phone is flashed to Flyme firmware once again and the current problem still can’t be solved, Please flash the phone to Engineer firmware (Refer to M1971 Upgrade Guide). Then use the test software carried by phone to do further tests to troubleshoot.



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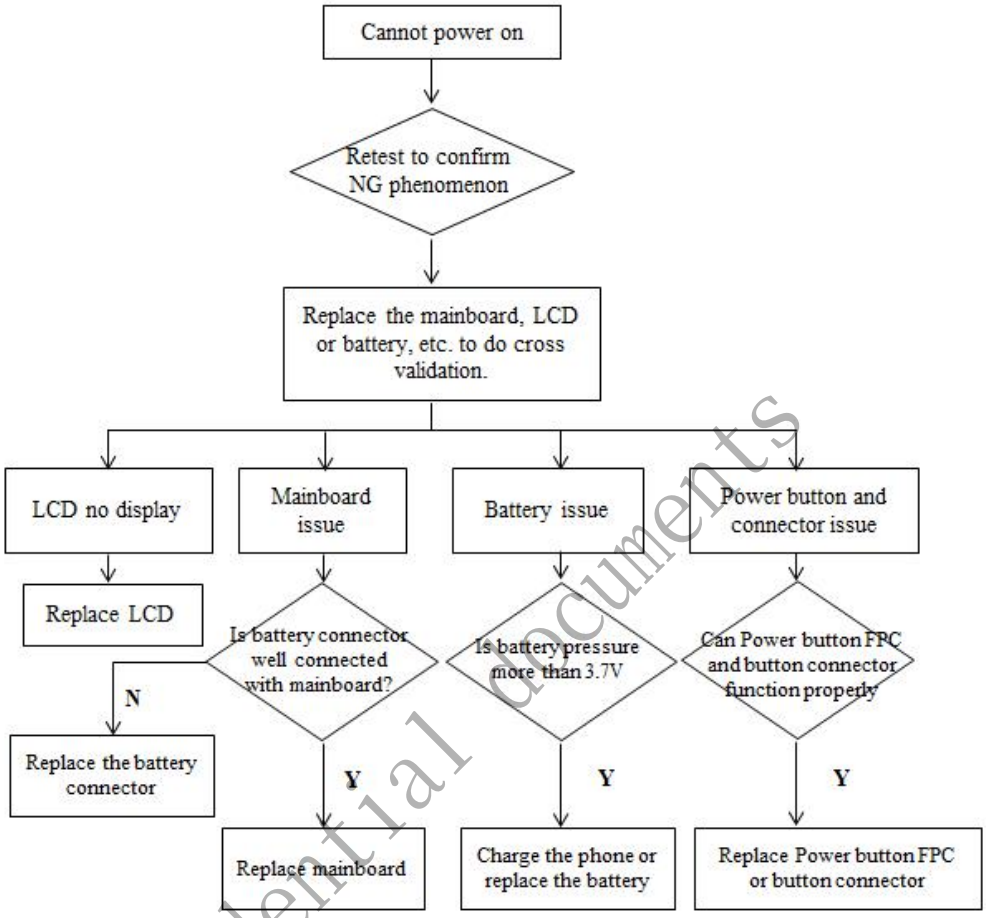
1. No boot issue



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a. Press the power button +volume down button at the same time, cellphone will auto access fastboot mode. As below picture

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b.Press the power button + volume plus button at the same tme. Cellphone will access Recovery mode

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c. Press volume plus ,volume down and power button at the same time.the cellphone will access the USB download mode.note:the cellphone will not show anything at this monent. You need to press the power buttton about 10s.and then the cellphone will boot up.

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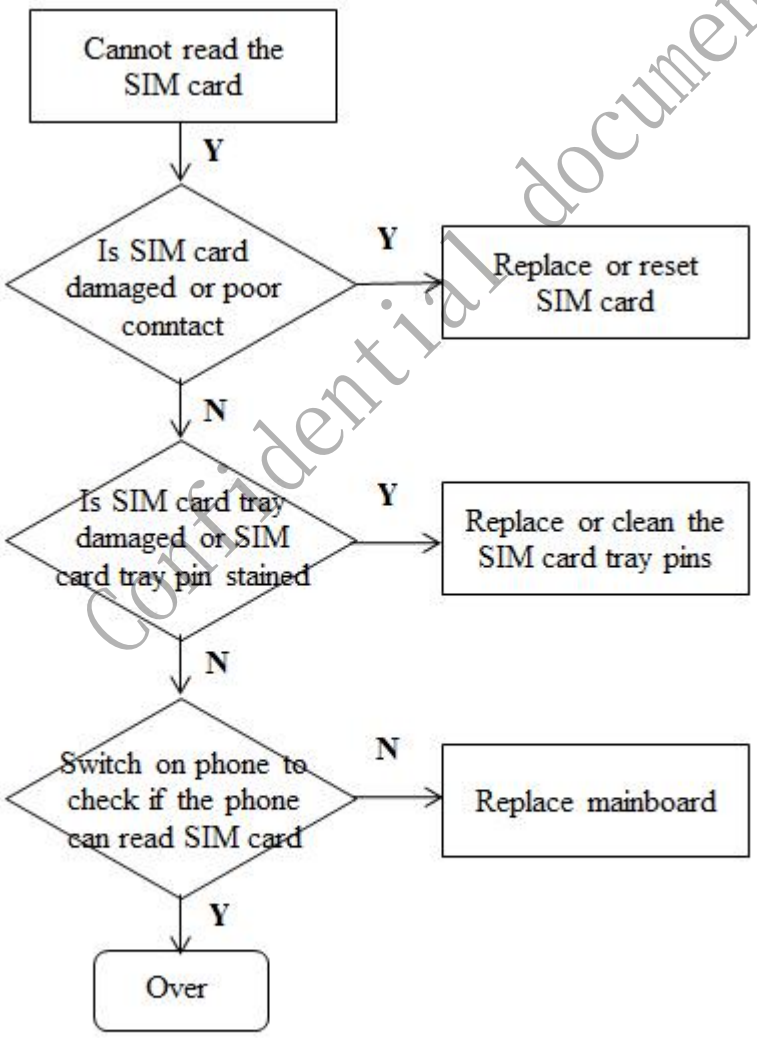
2. Recognized SIM Card Malfunction



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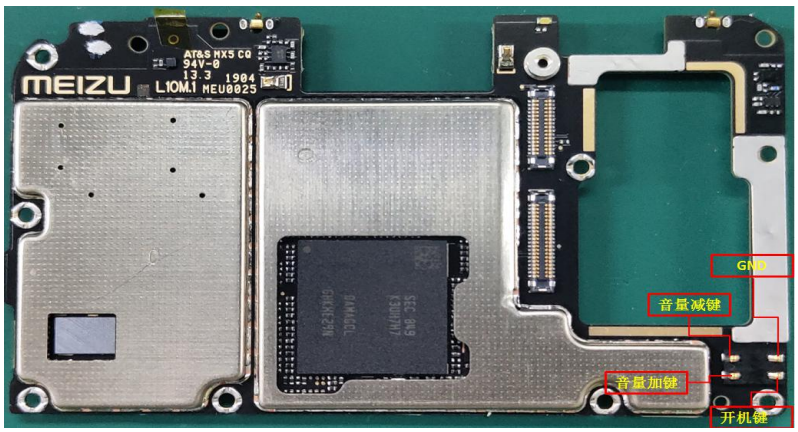
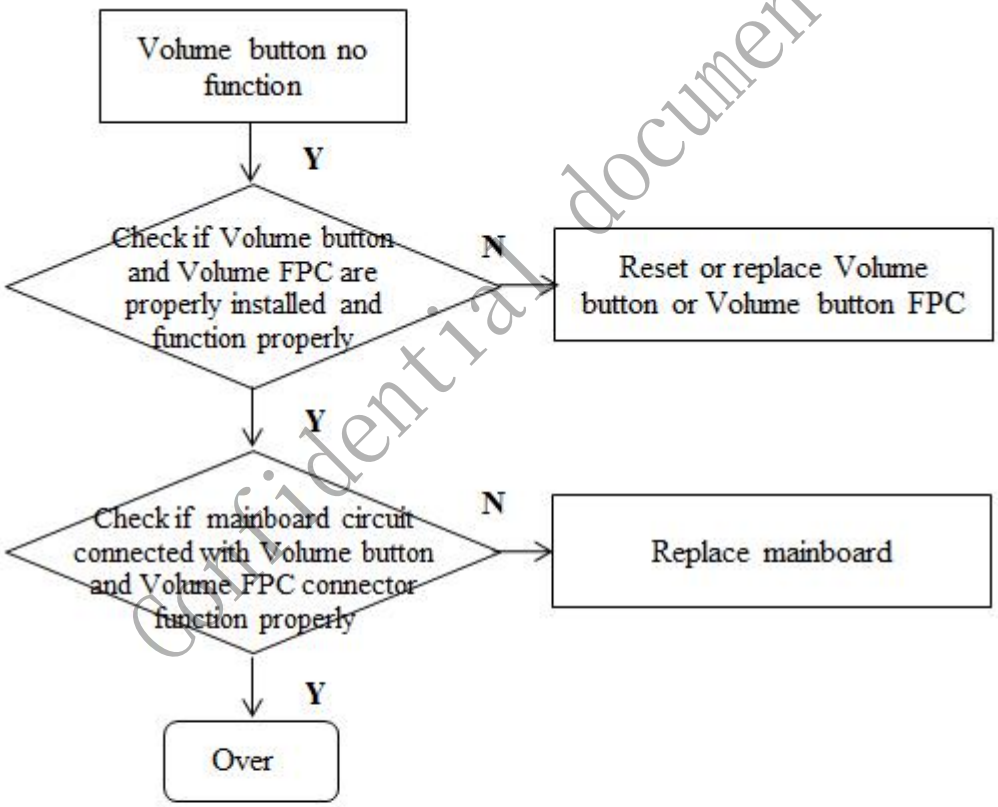
3.Volume button Malfunction





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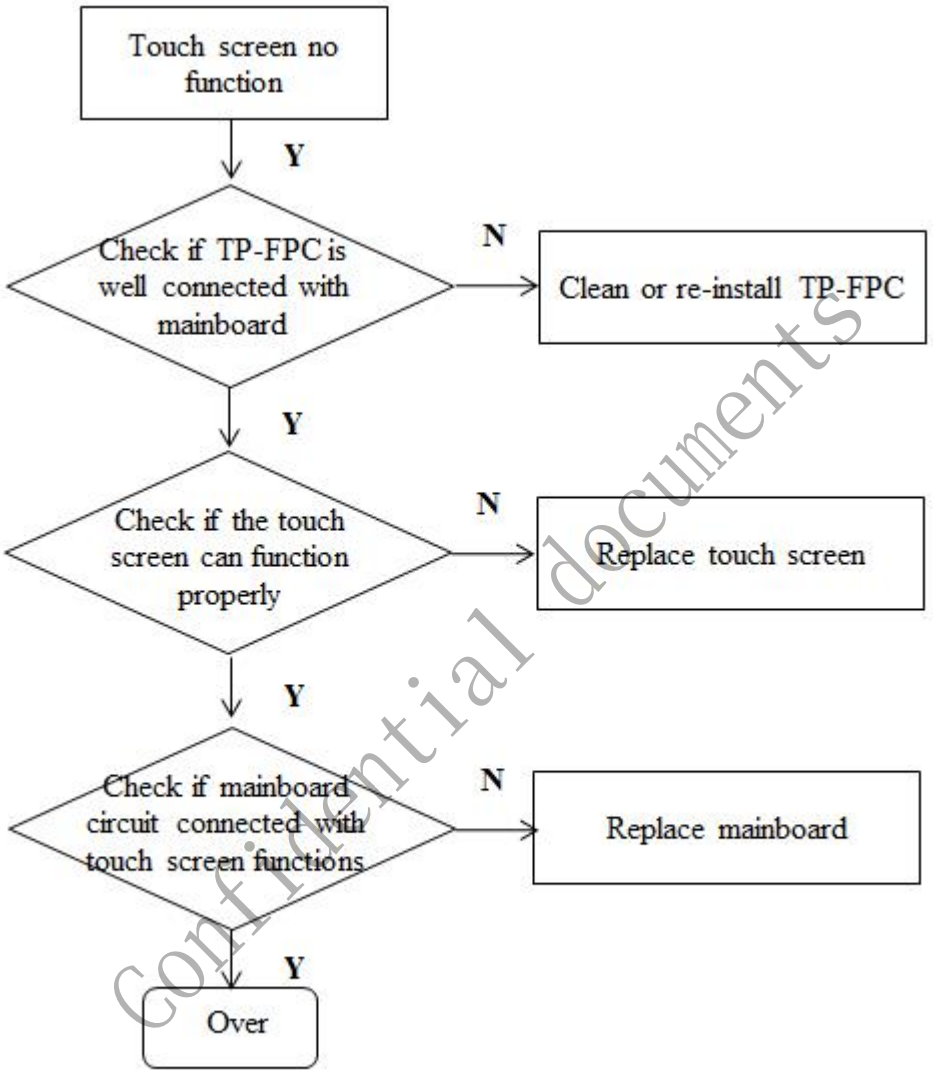
4. Screen Touch Malfunction



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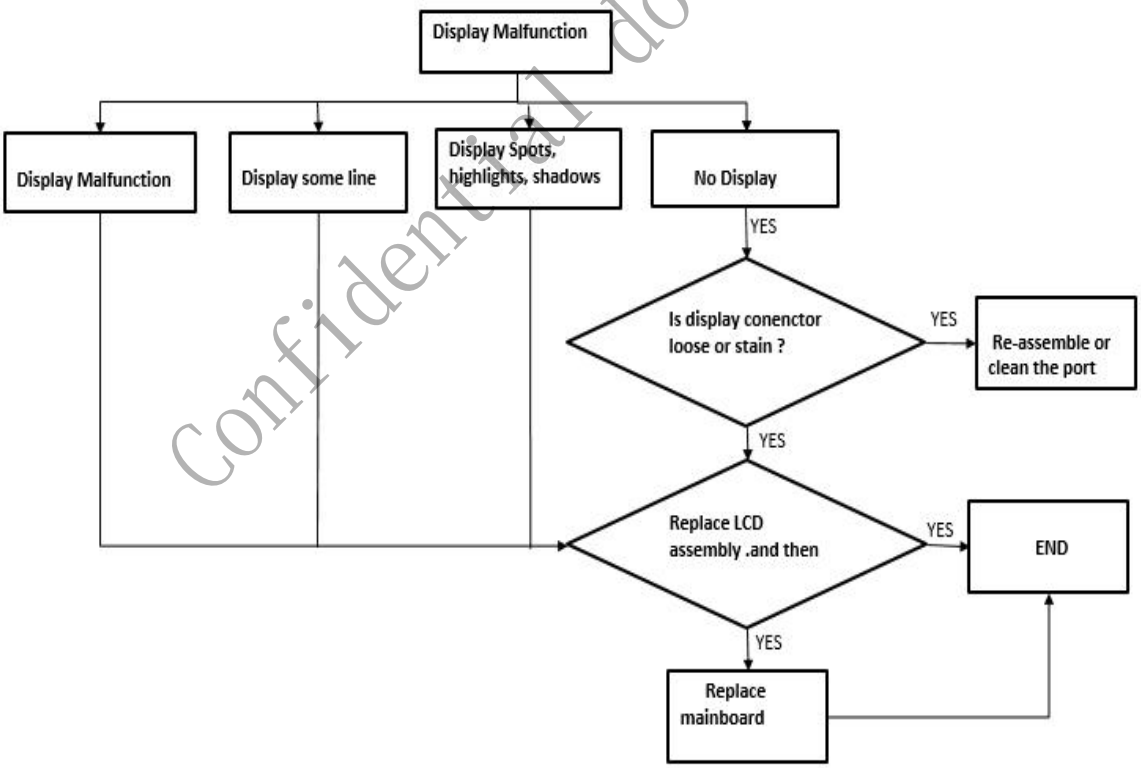
5.OLED display Malfunction



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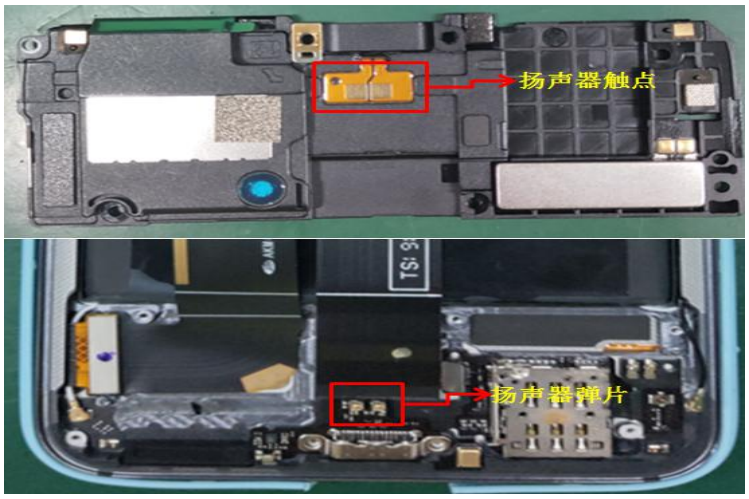
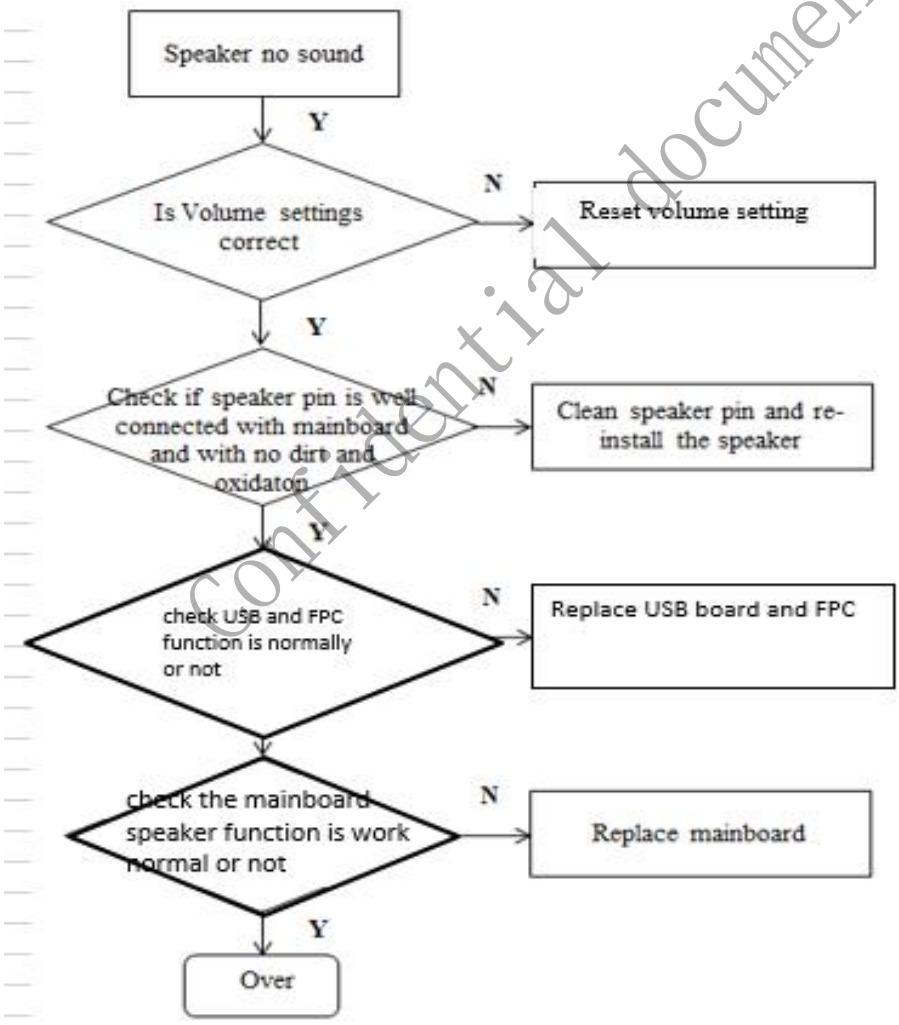
6. Speaker Malfunction





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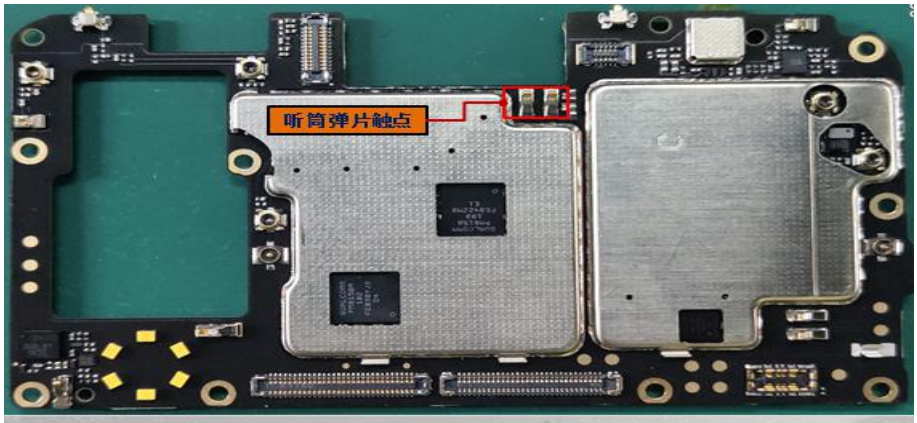
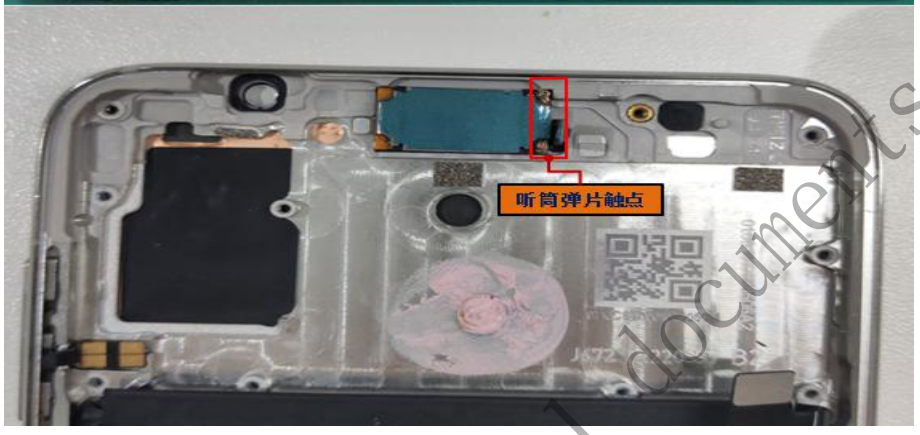
7.Receiver Malfunction





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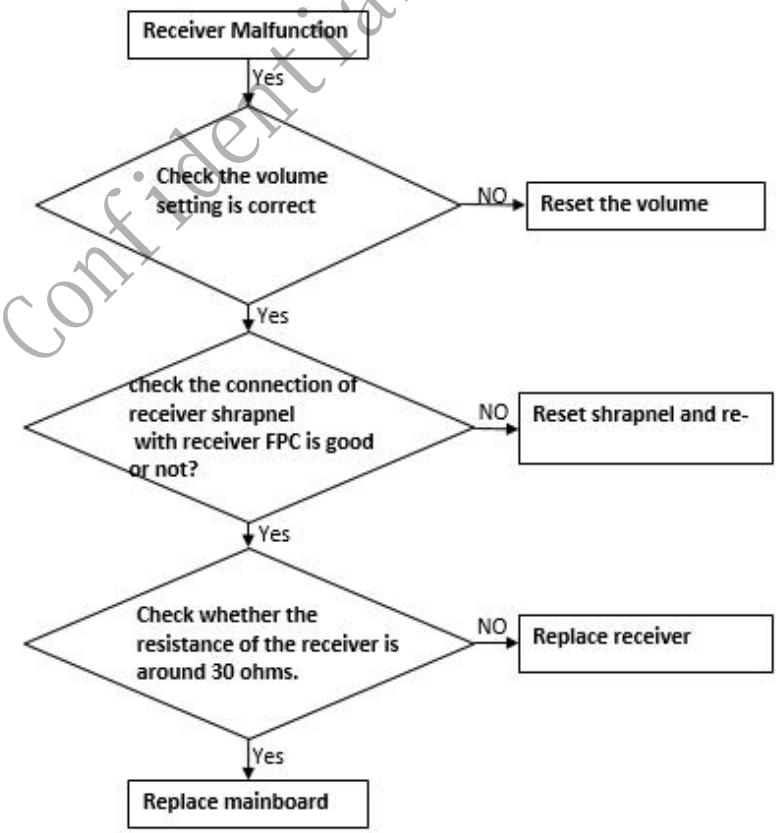

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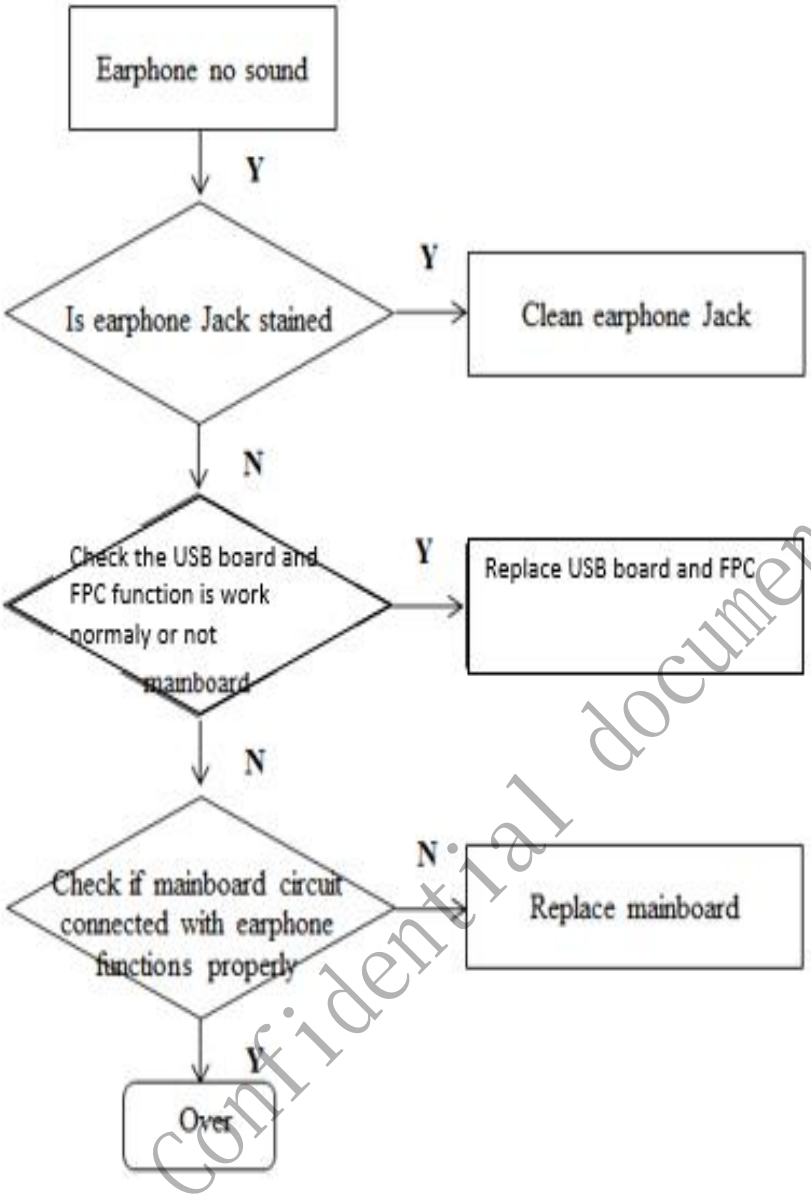
8. Headset Malfunction



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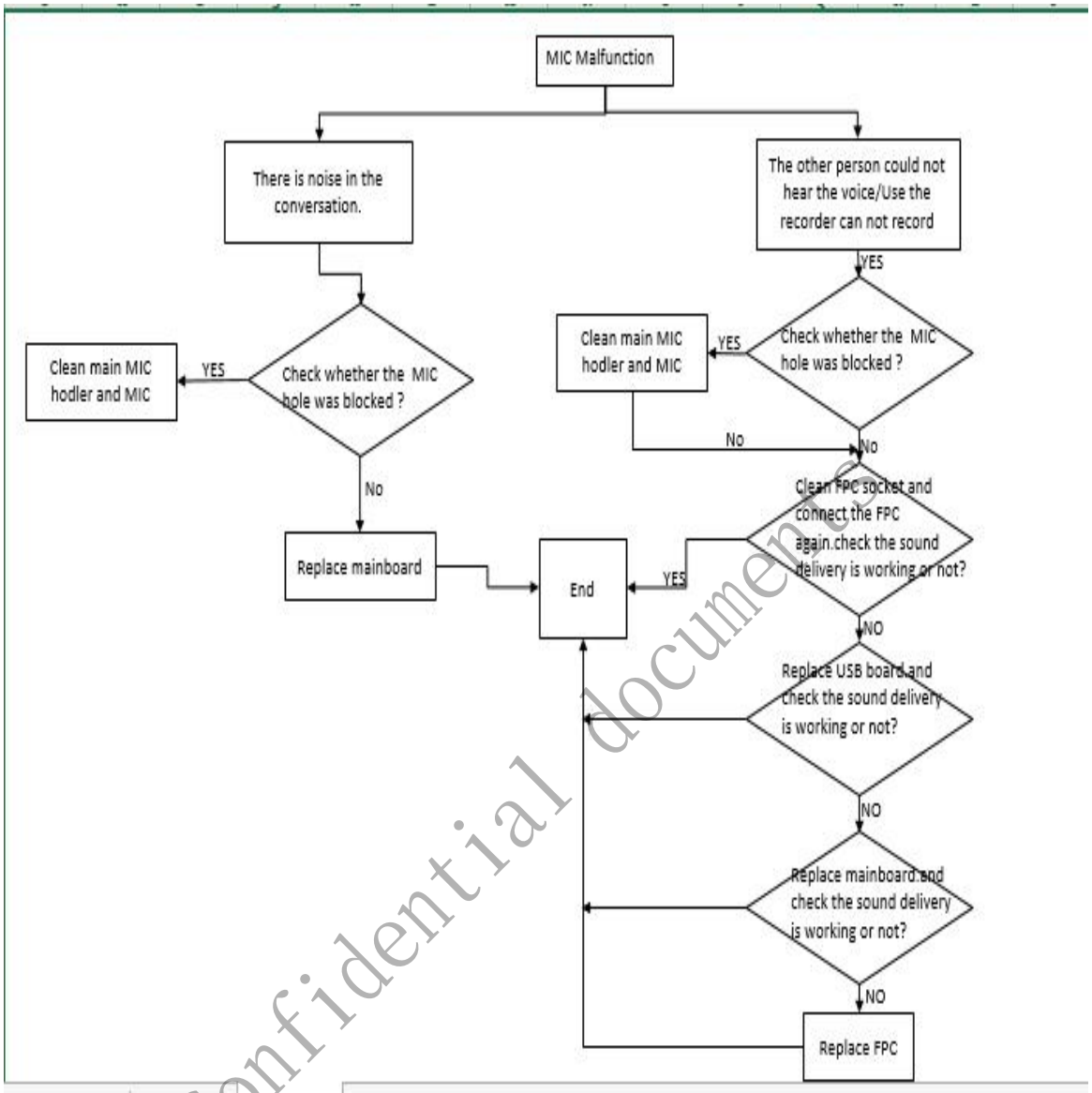
9. Main MIC and Sub MIC Malfunction



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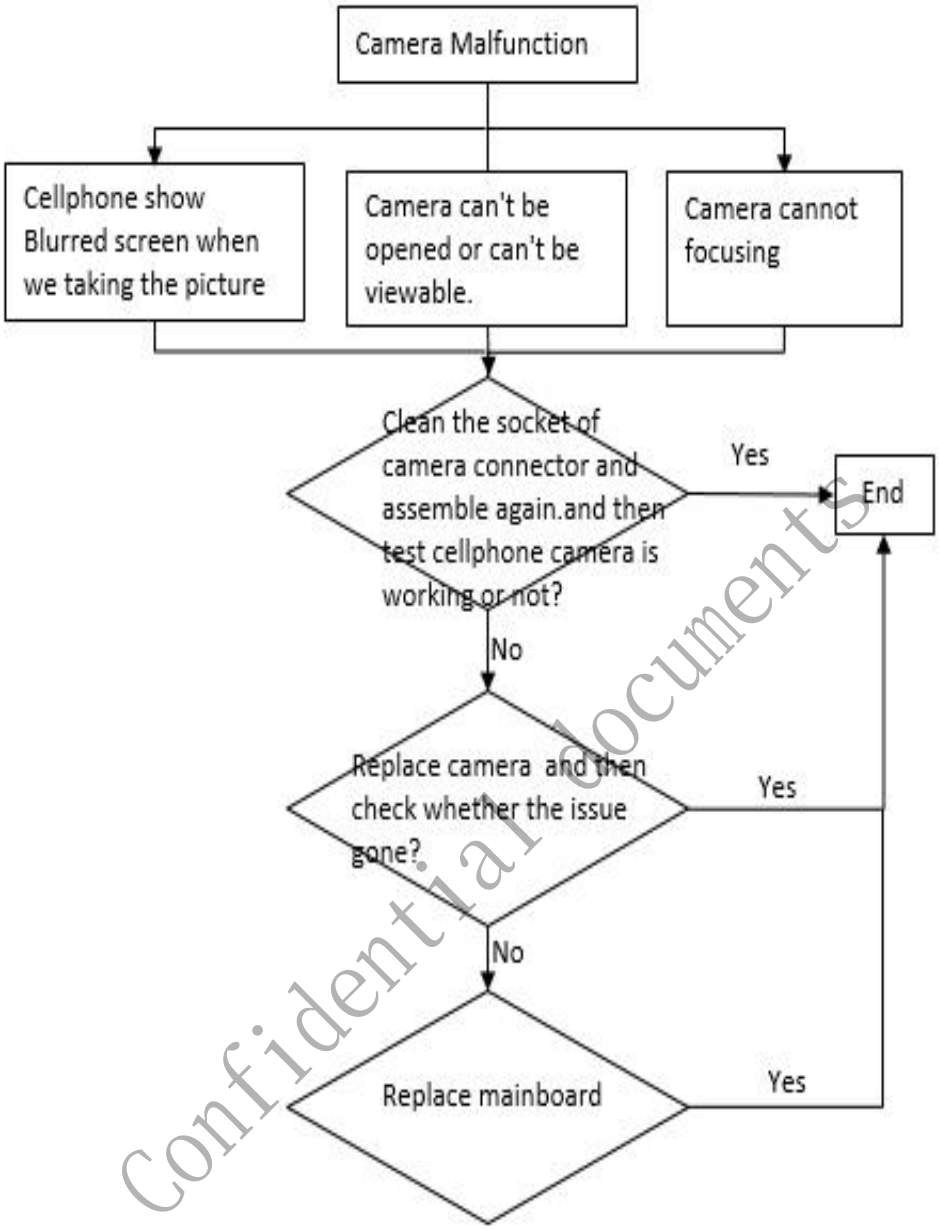
10. Rear camera and front camera Malfunction



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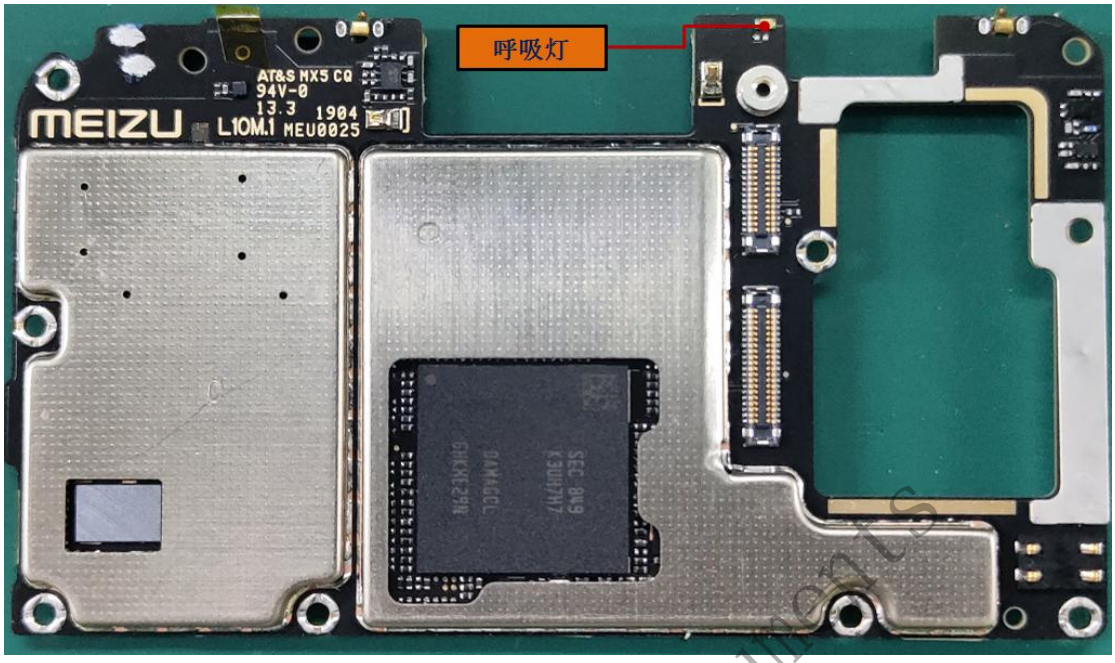
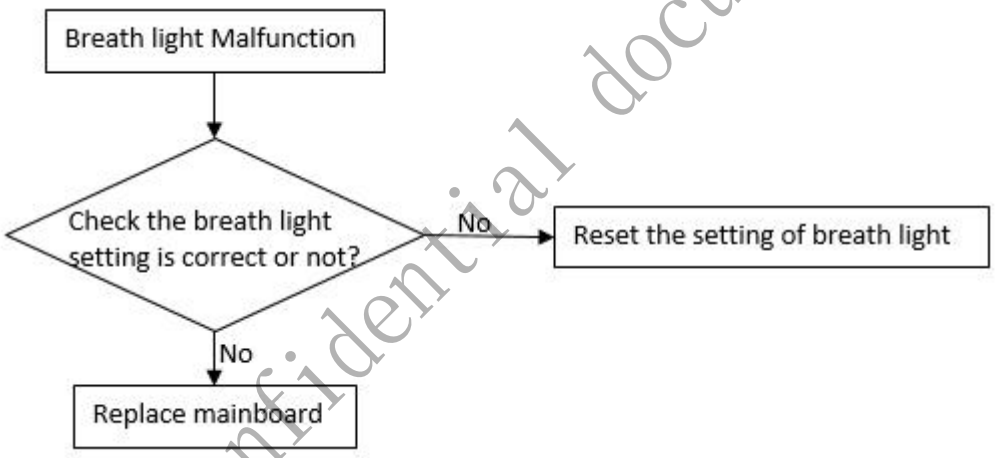
11. Breath light Malfunction





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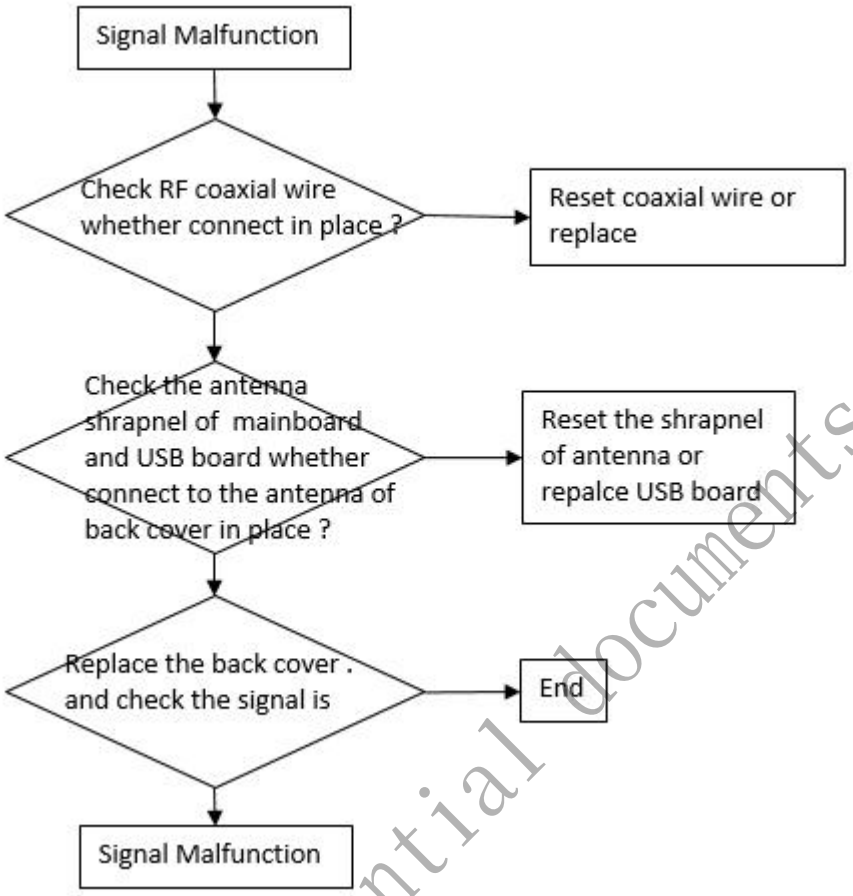
12. Signal Malfunction



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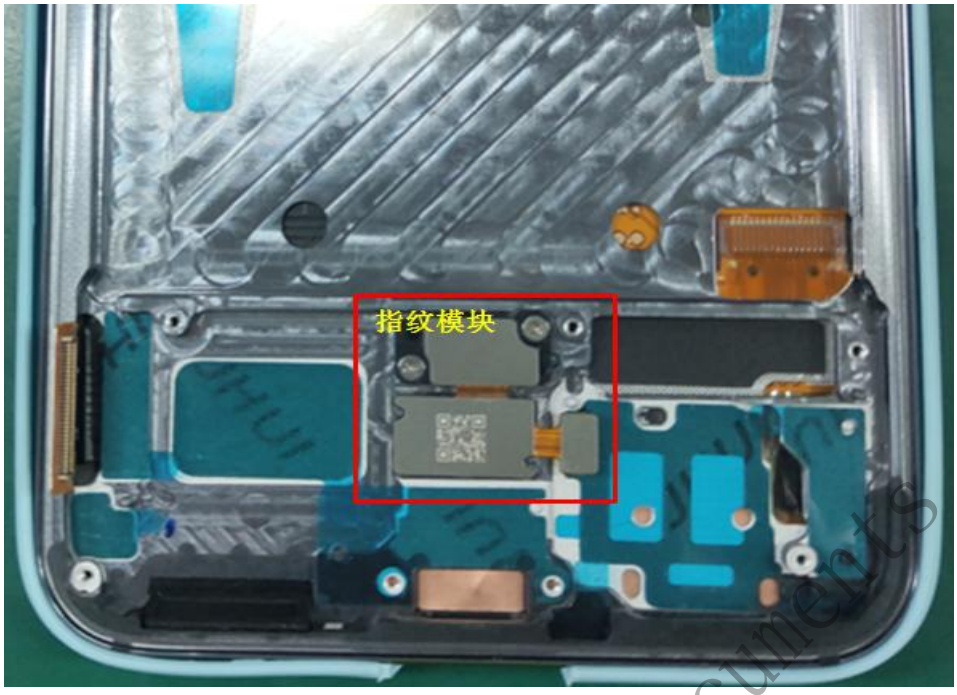
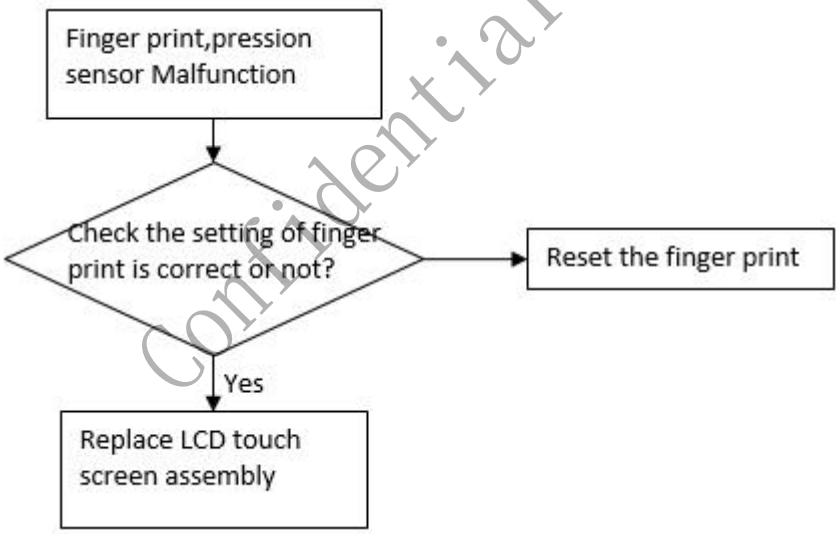
13. Finger print& Pressure induction Malfunction



Fingerprint and pressure sensor are integrated into the LCD touch screen assembly.



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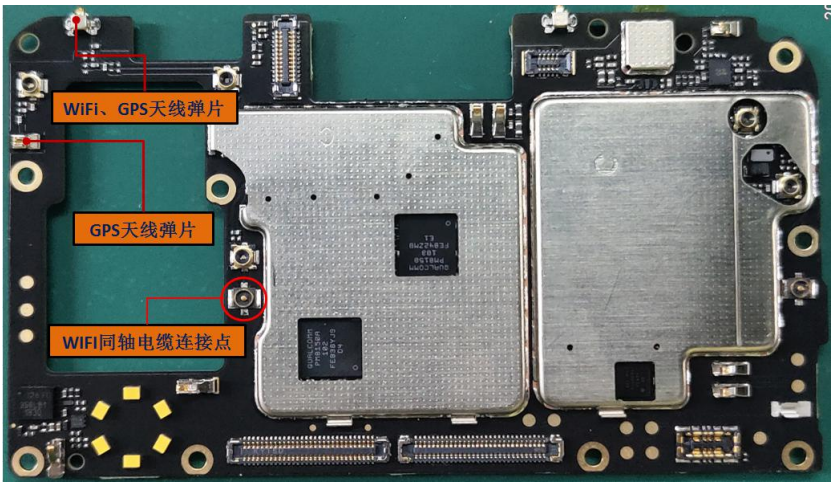
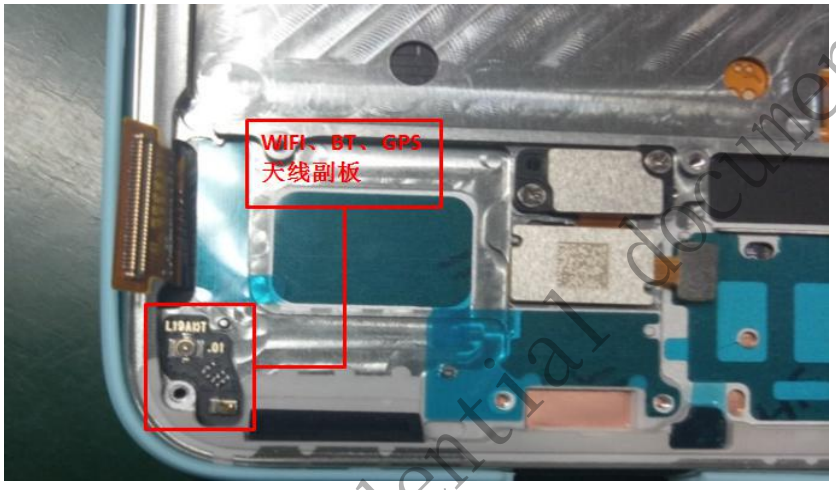
14. WIFI / Bluetooth / GPS　Malfunction





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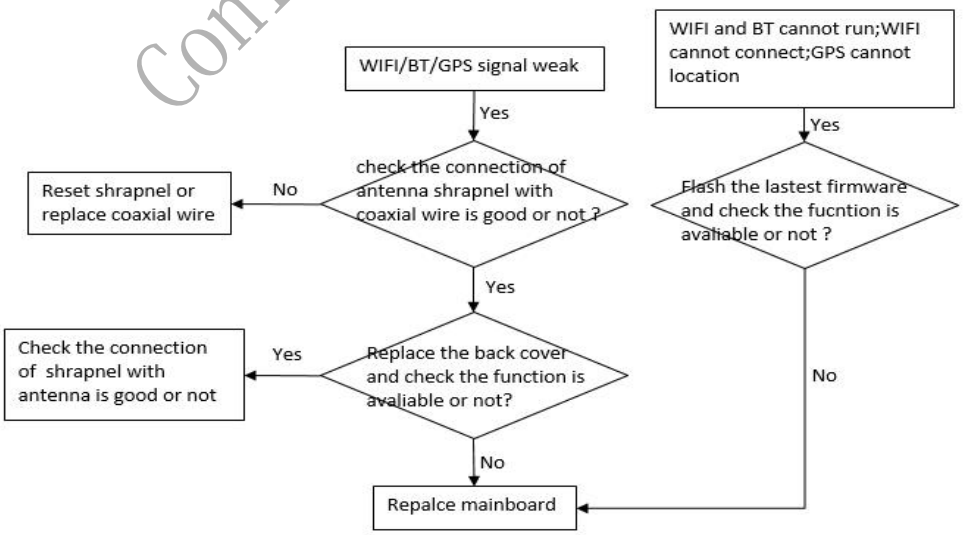

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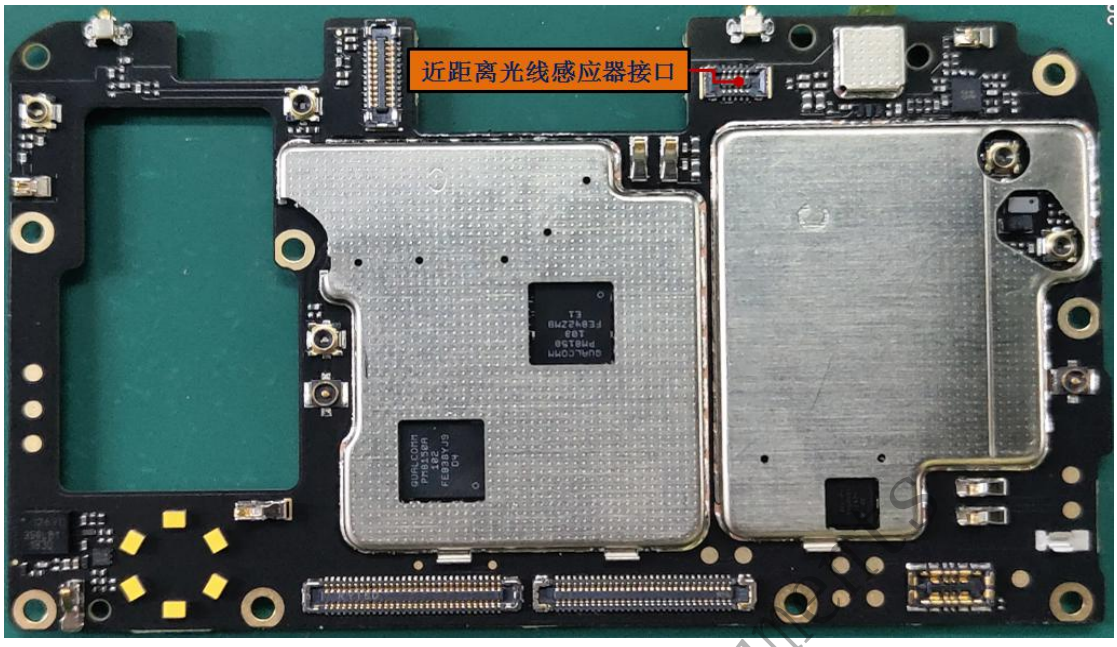
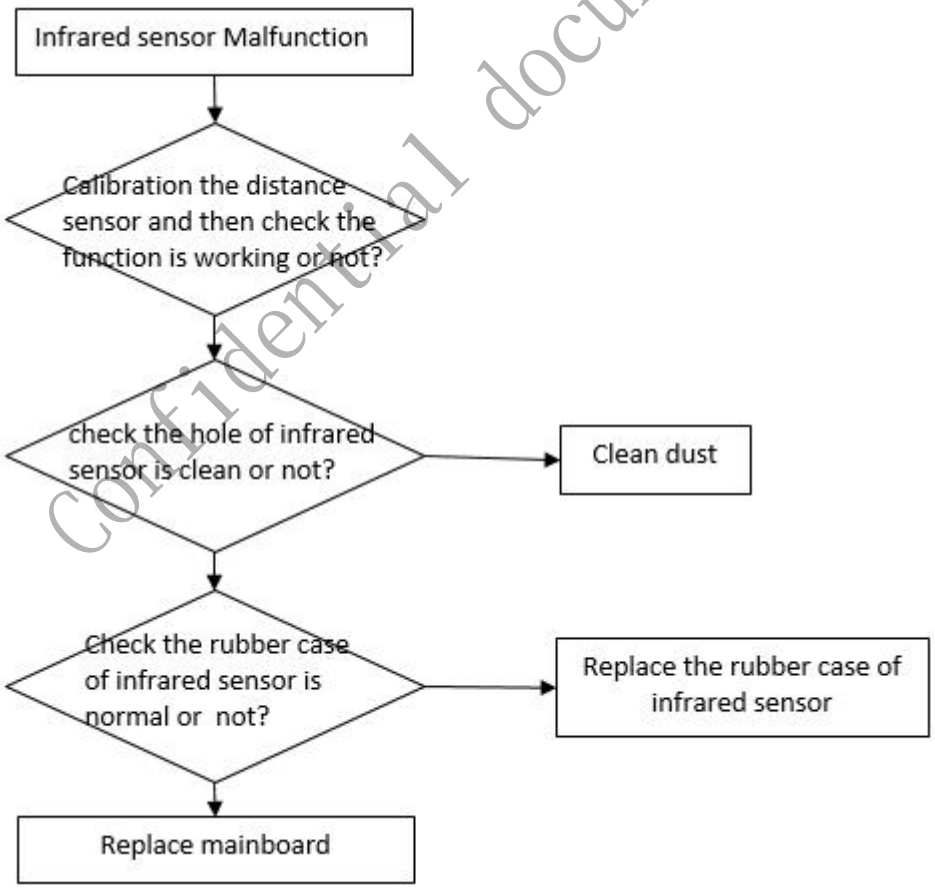
15. Infrared sensor Malfunction





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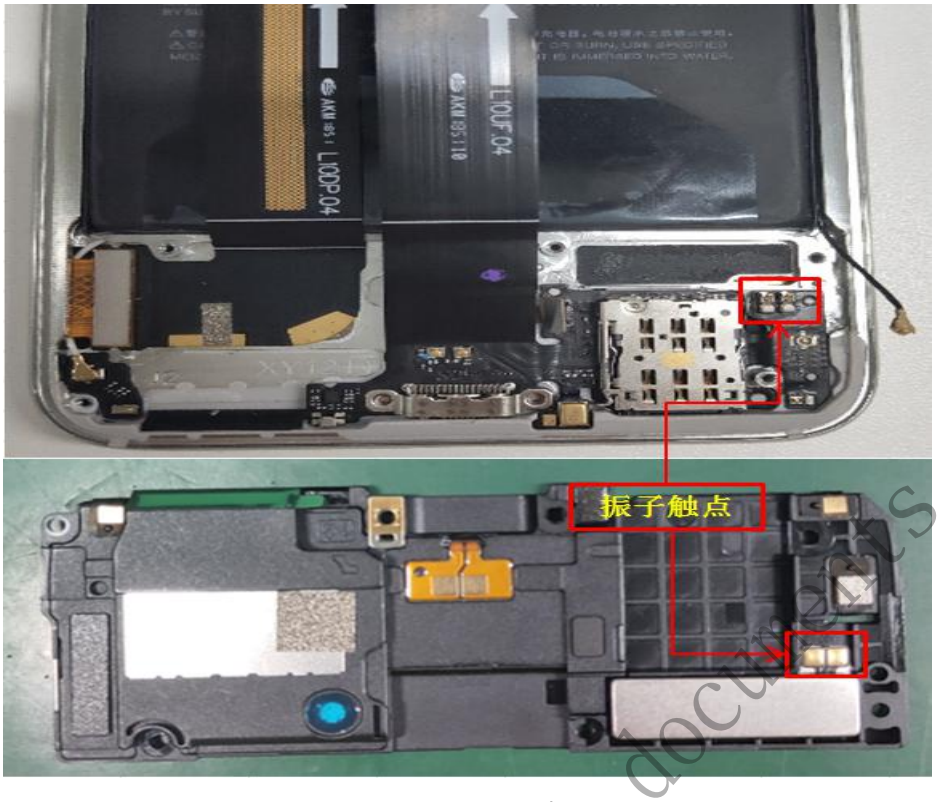
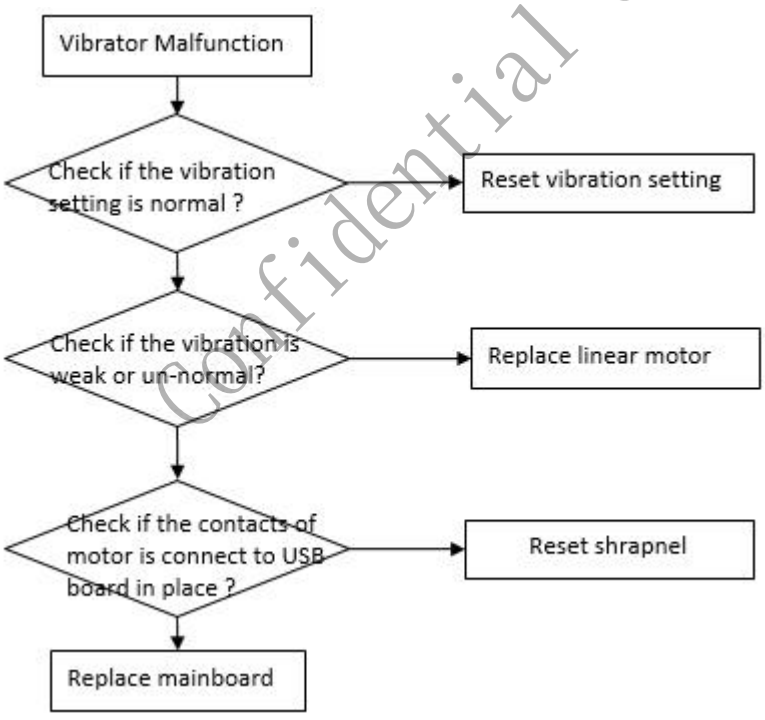
16. Motor Malfunction





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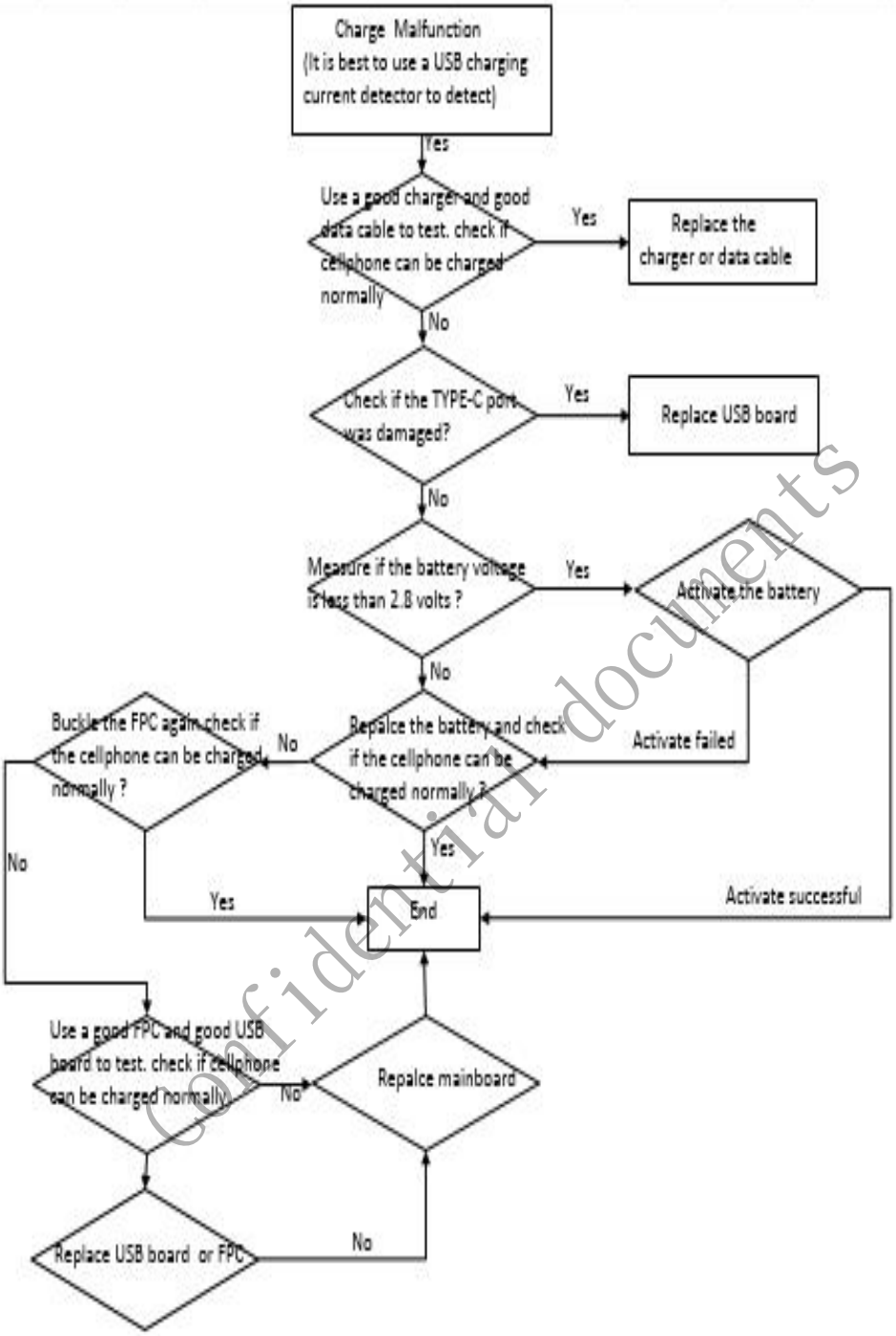
17. Charge Malfunction



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18.Note：

If you meet one of below issue and you can try to flash Flyme firmware again. If it's doesn't work. You can replace mainboard directly.：

Fault item	Maintenance step 1	Maintenance step 2
Gyroscope	Re-flash Flyme	Replace mainboard
Gravitational induction	Re-flash Flyme	Replace mainboard
Compass	Re-flash Flyme	Replace mainboard
Hall sensor	Re-flash Flyme	Replace mainboard

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