Samsung SM-A025F Service Manual

SAMSUNG

SERVICE Manual

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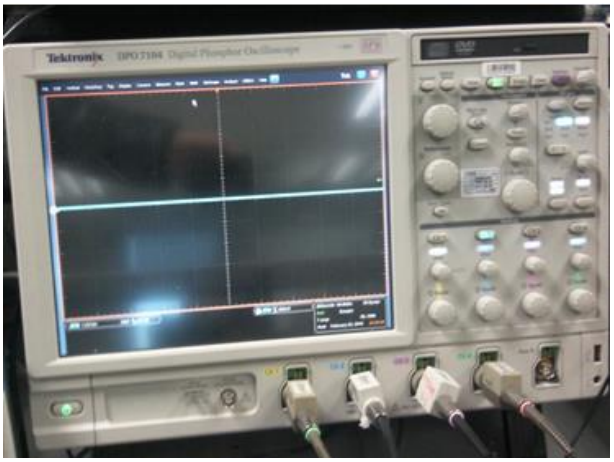
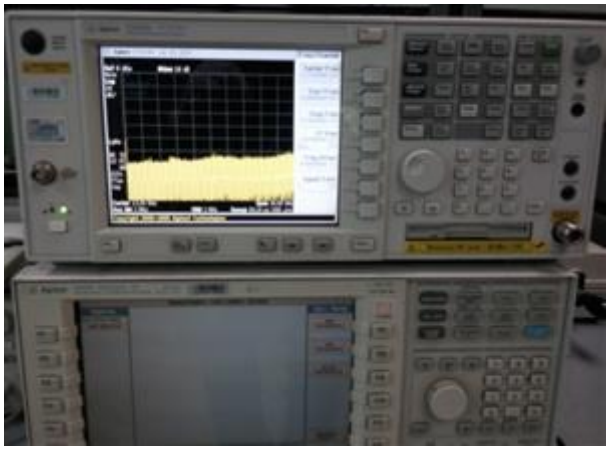
HARDWARE

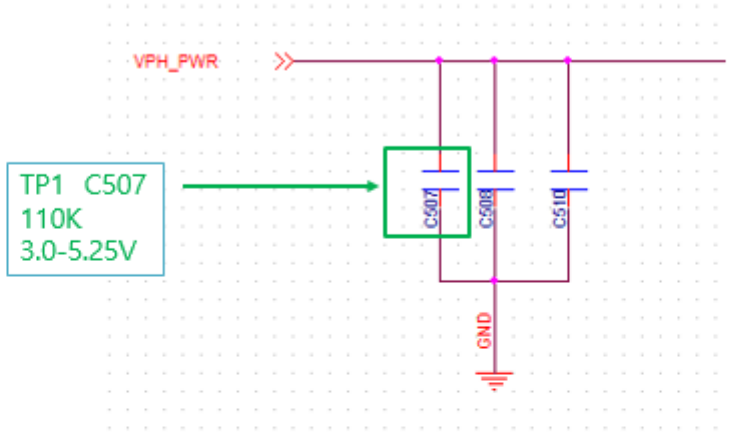
8-3. Flow chart of Troubleshooting.

	
Oscilloscope	**Digital Multimeter**
	
Power Supply	**+ driver, ESD Safe Tweezer**
	
8960 & Spectrum Analyzer	**Soldering iron**

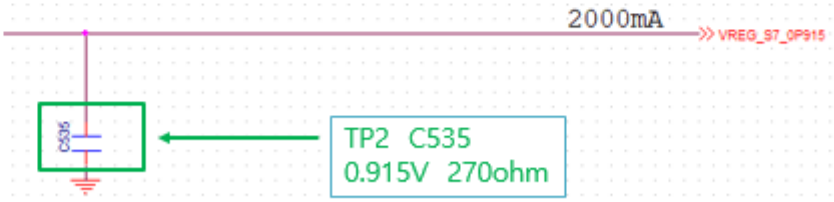
8-4-1. Power On

■ **Checking Power signal (Battery connector, PMU, Clock)**

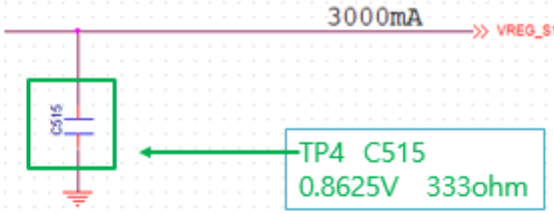
VPH_PWR



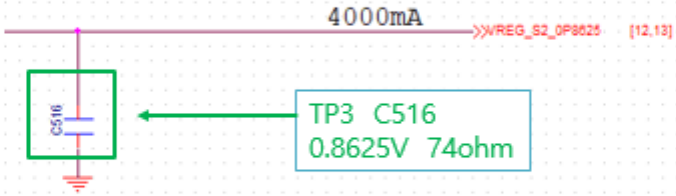
VDD_MEM



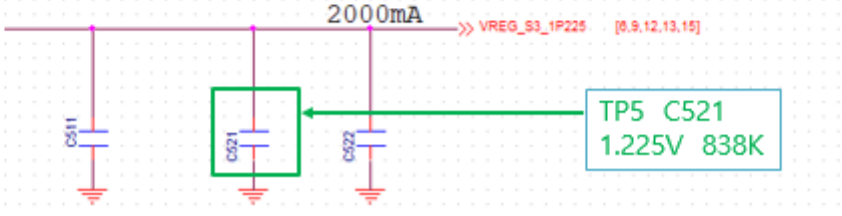
VPH_MODEM

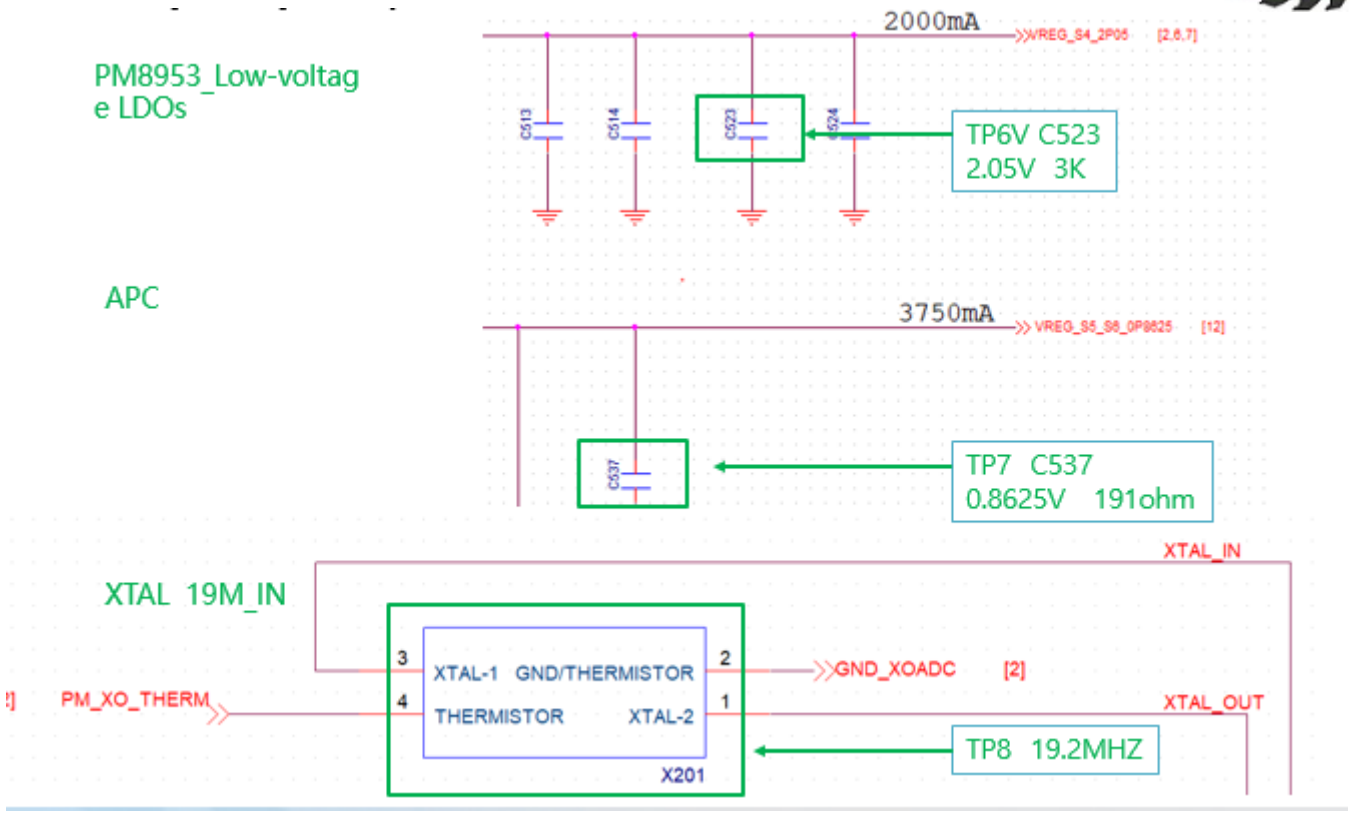


VPH_CODE

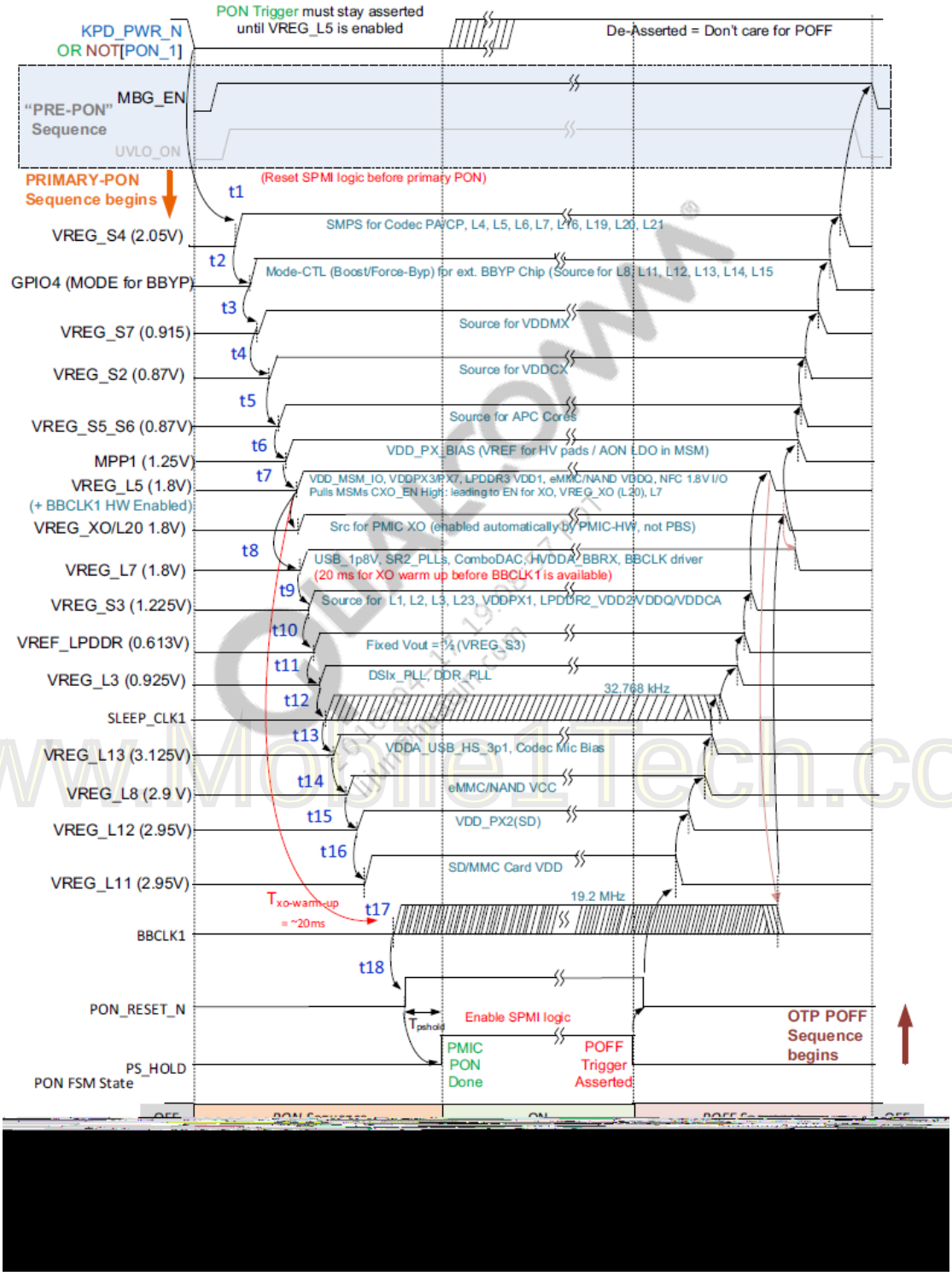


PM8953_Low-voltage LDOs





8. Level 3 Repair

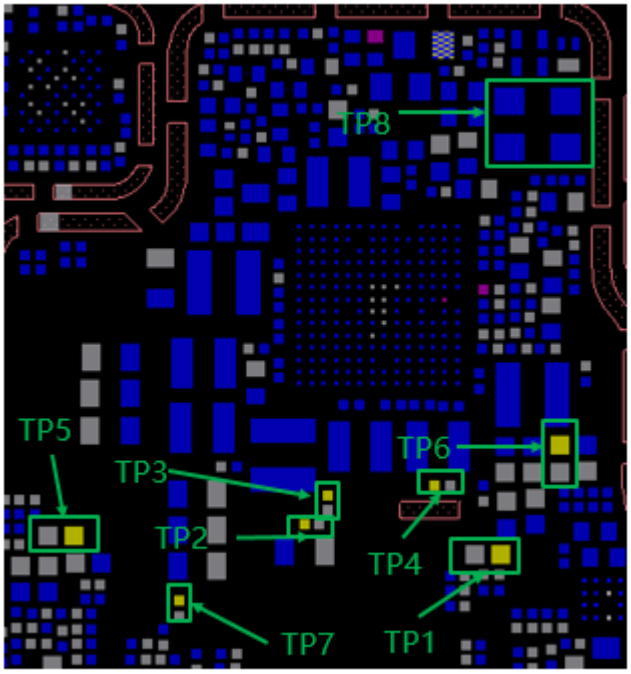


Power-on Voltage(VREG_S2~7,L2,L3,L5,L7,L8,L11~13)

8. Level 3 Repair

No Power

Power on voltage check				
Power Domain	Configurable Voltage	Signal Name	Measurment Location	TP
VPH_PWR	3.0-5.25V	VPH_PWR	C507	TP1
VDD_MEM	0.915V	VREG_S7_0P915	C535	TP2
VDD_CORE	0.8625V	VREG_S2_0P8625	C516	TP3
VDD_MODEM	0.8625V	VREG_S1_0P8625	C515	TP4
PM8953_Low-voltage LDOs	1.225V	VREG_S3_1P225	C521	TP5
PM8953_High-voltage LDOs	2.04V	VREG_S4_2P05	C523	TP6
APC	0.87v	VREG_S5_S6_0P8625	C537	TP7

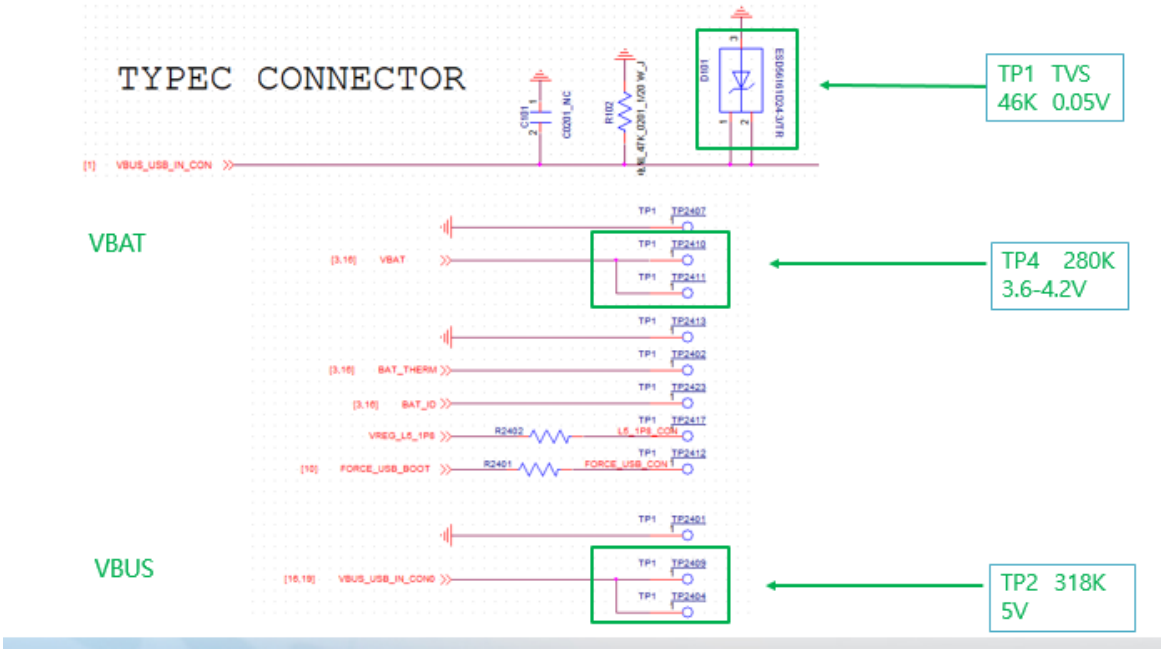


➢ **Oscillate frequency measurement**

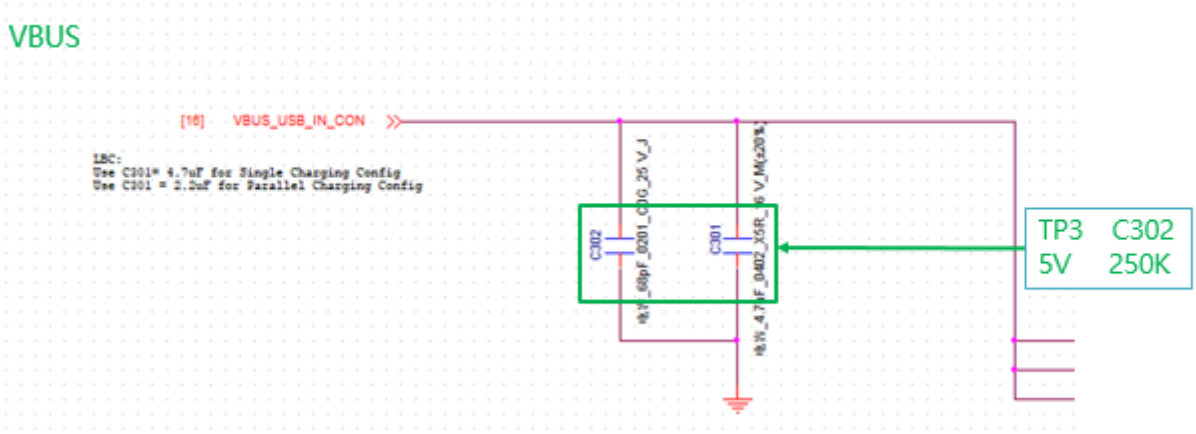
Signal Name	Frequency MHZ	Measurment Location	TP
XTAL_19M_IN	19.2M	X201	TP8

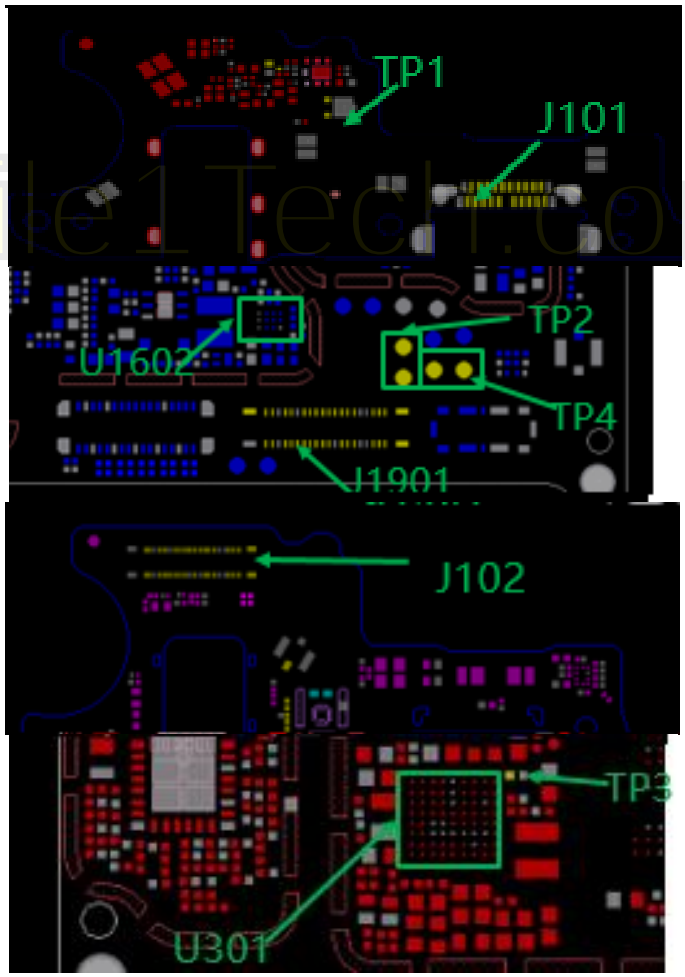
8-4-2. Charging

■ The charging controlled by PMU chip PMI632 (U301) and OVP chip U1602



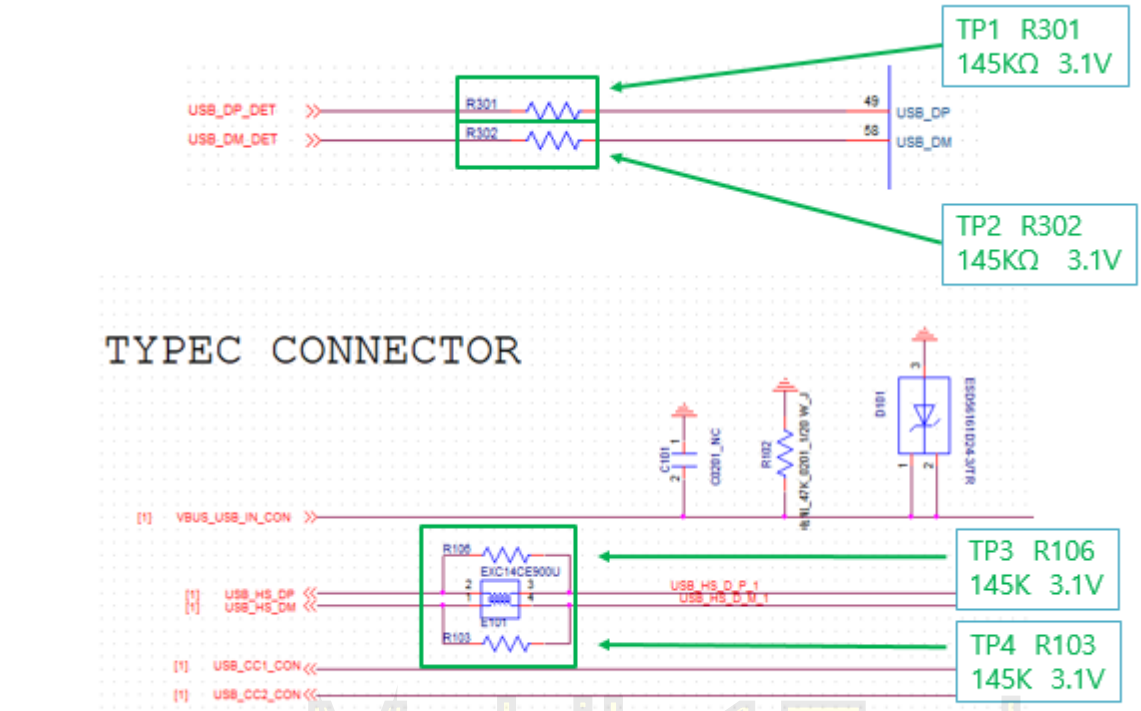
8. Level 3 Repair

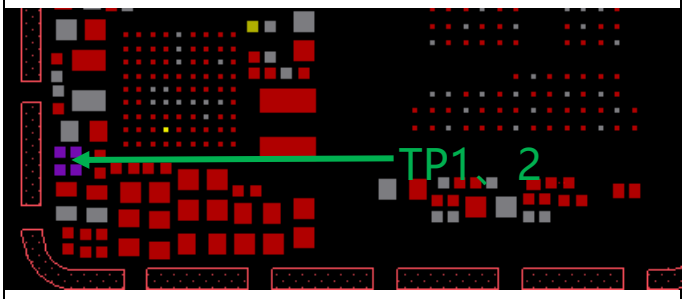
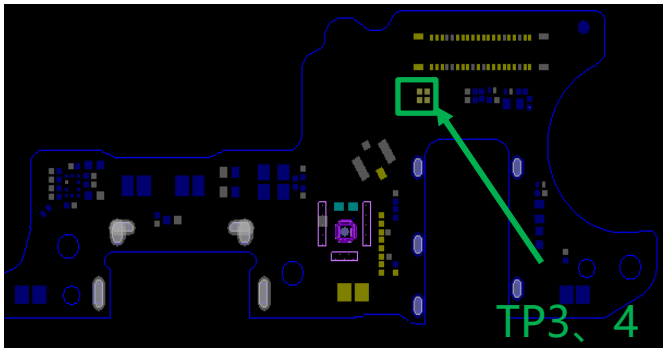


CHECKING FLOW	IMAGE
START Check TP1 — NO → Re-solder and Change J102 or J101 YES Check VBUS(TP2) — NO → Re-solder and Change J1901 or FPC YES Check TP3 or TP4 — NO → Re-solder and Change U1602 YES Check Vbat(TP5) — NO → Re-solder and Change U301 YES Check battery YES Charge function OK	

8-4-3. USB

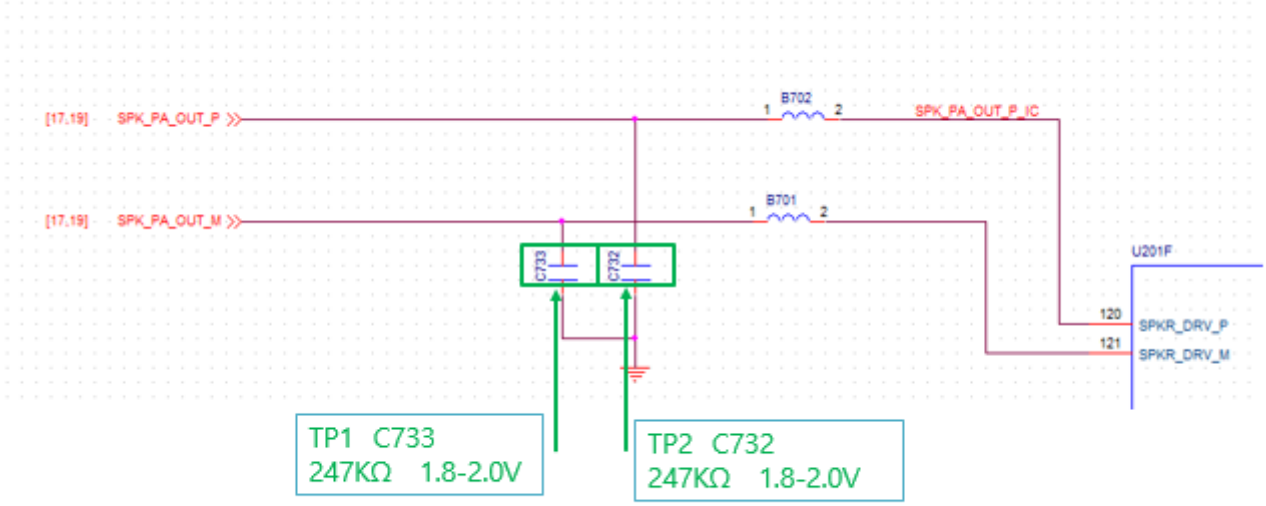
■ I/O connector is used as the USB port.

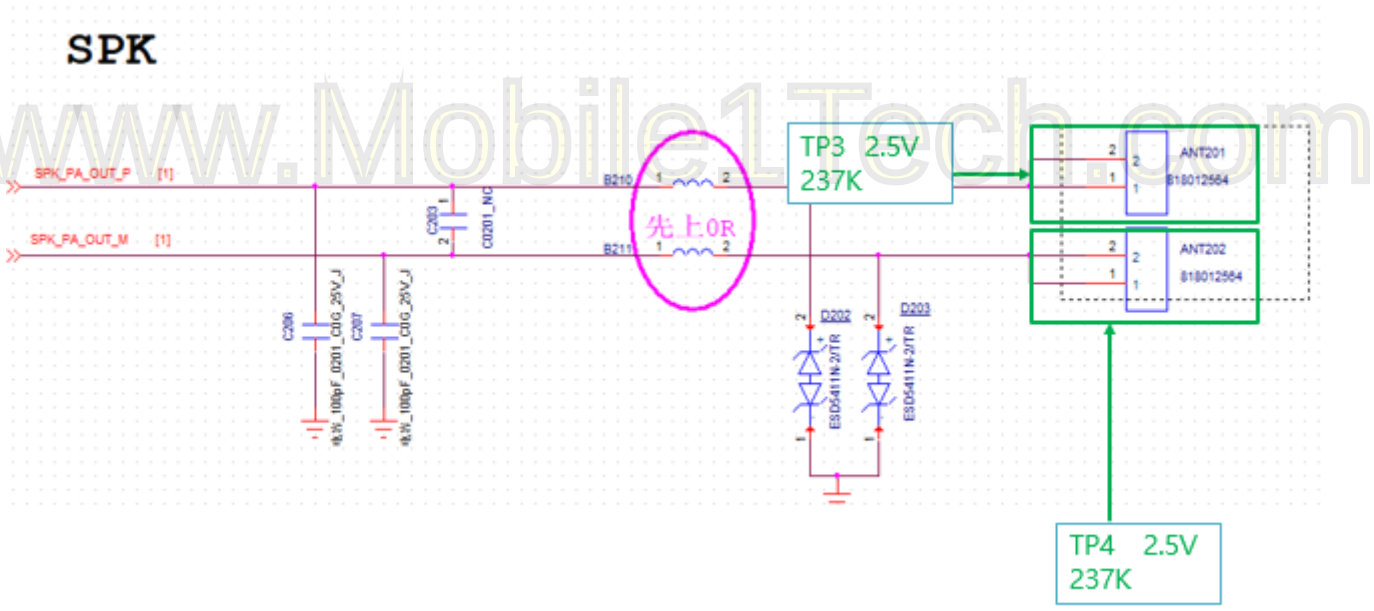


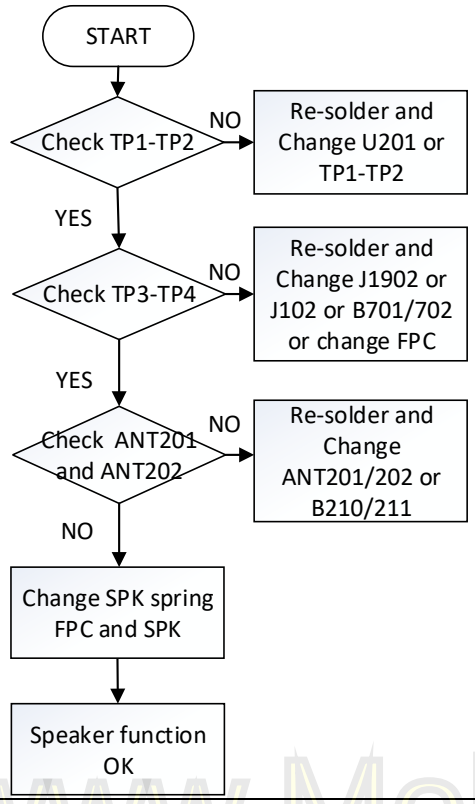
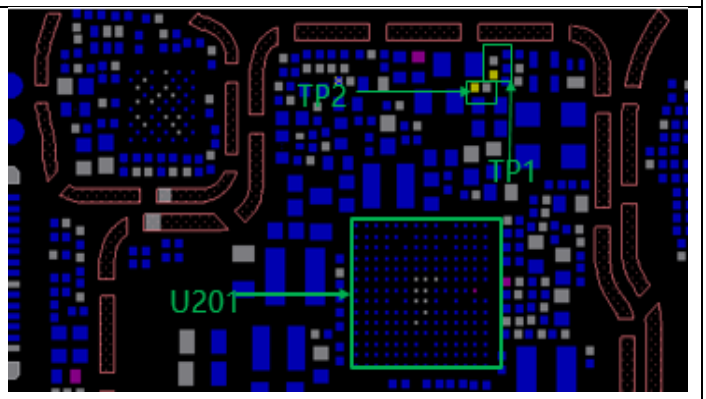
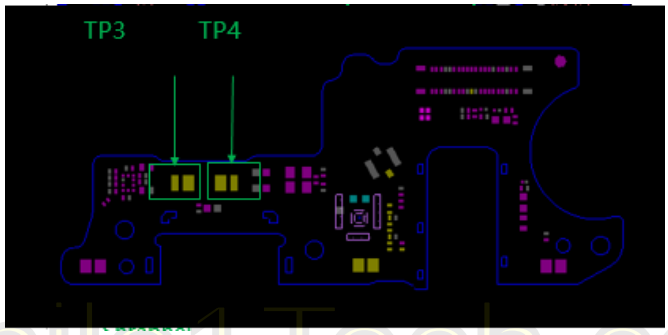
CHECKING FLOW	IMAGE
START Check TP1 and TP2 — NO → Re-solder and Change U801 or R1901 or R1902 YES Check TP3 and TP4 — NO → Re-solder and Change J1901 or FPC or J102 or R103 or R106 YES Check J101 soldering — NO → Re-solder and Change J101 YES USB function OK	 

8-4-4. Audio speaker

- The Speaker control signals are generated by chip PM8953(U201) , the chip and the speaker are to be checked out.

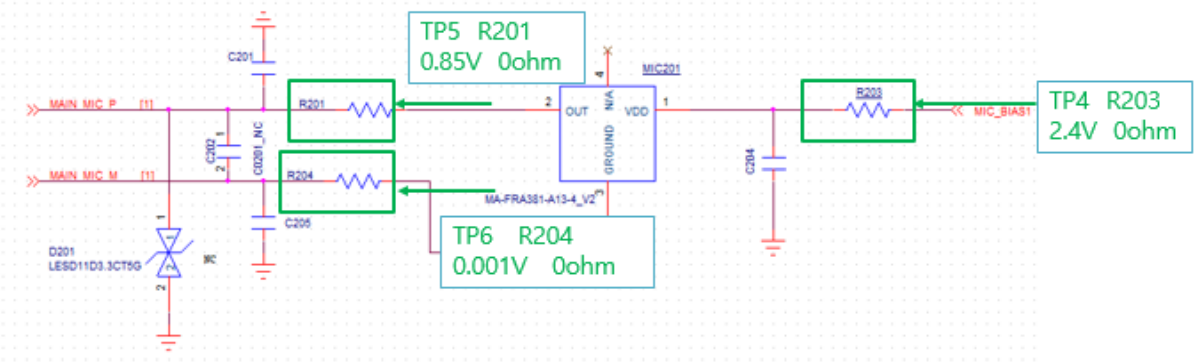




CHECKING FLOW	IMAGE
	 

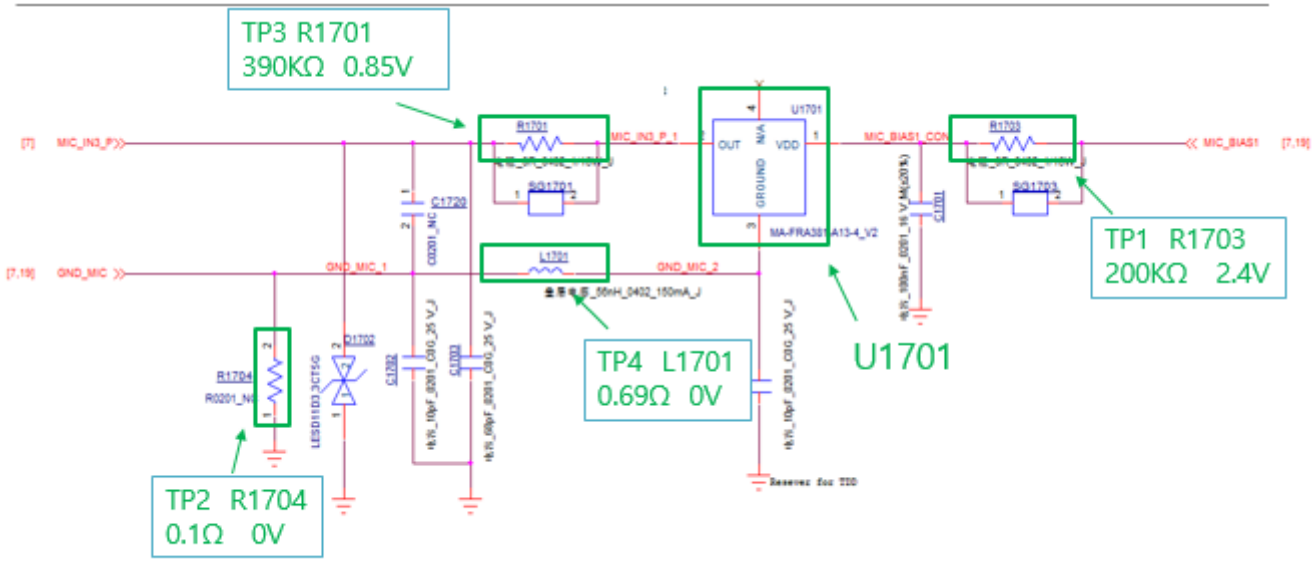
8-4-5. Audio_ MIC

- The MIC control signals are generated by chip PM8953(U201), the chip and the MIC(main mic U201 and sub mic U1701) are to be checked out.



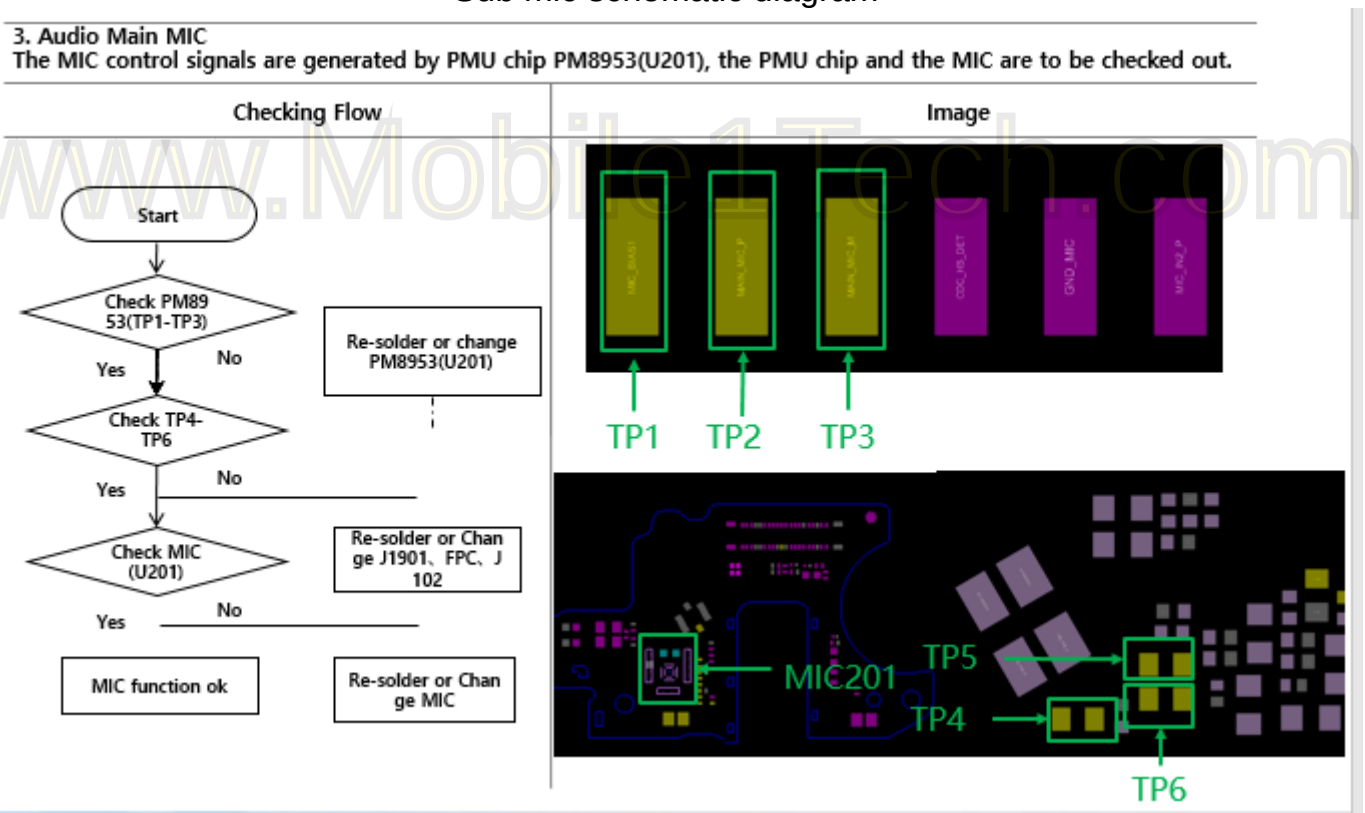
8. Level 3 Repair

Main mic schematic diagram

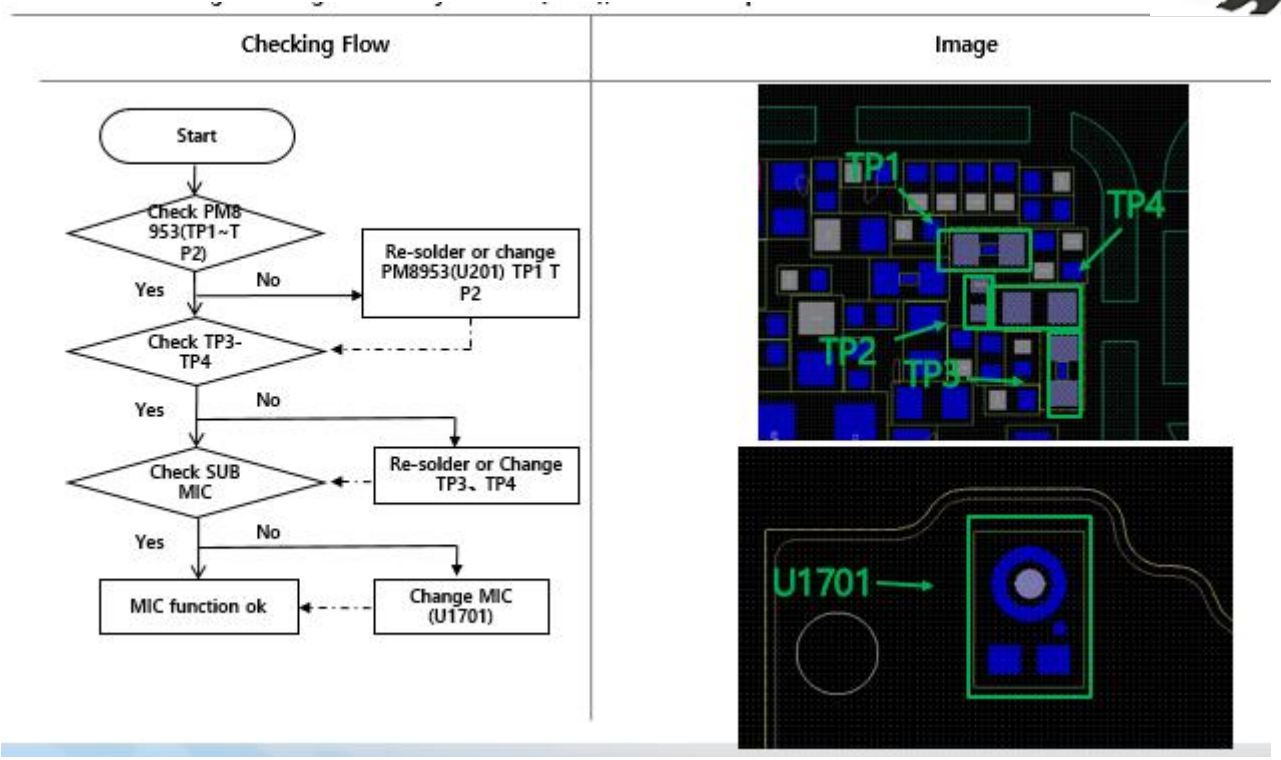


Sub mic schematic diagram

3. Audio Main MIC
The MIC control signals are generated by PMU chip PM8953(U201), the PMU chip and the MIC are to be checked out.

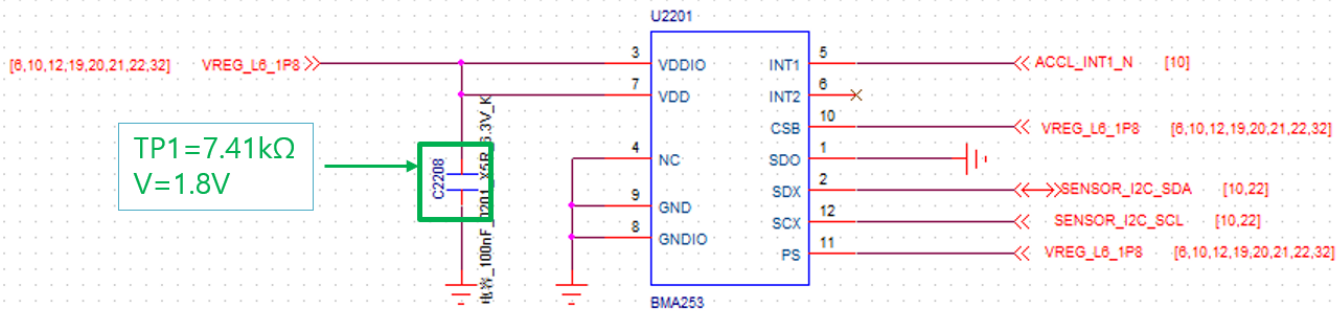


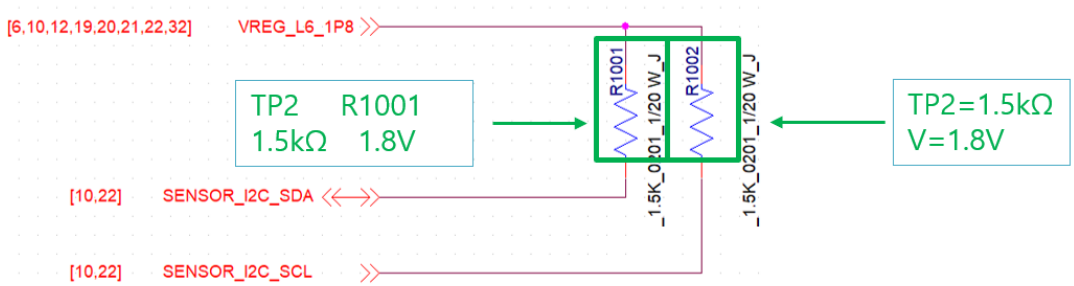
8. Level 3 Repair



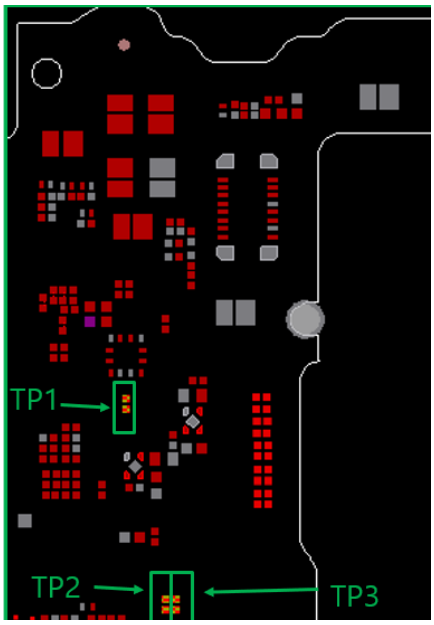
8-4-6. G sensor

■ The G sensor is calibrated by using SW algorithm.



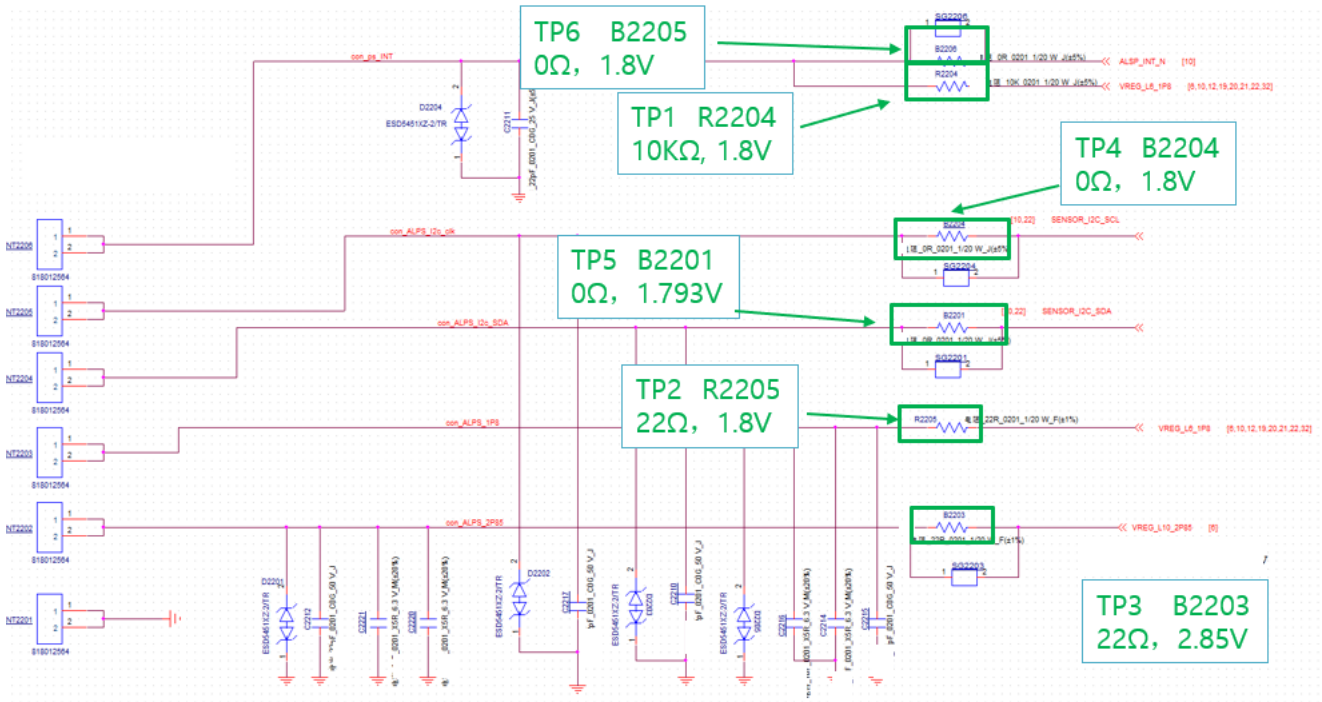


8. Level 3 Repair

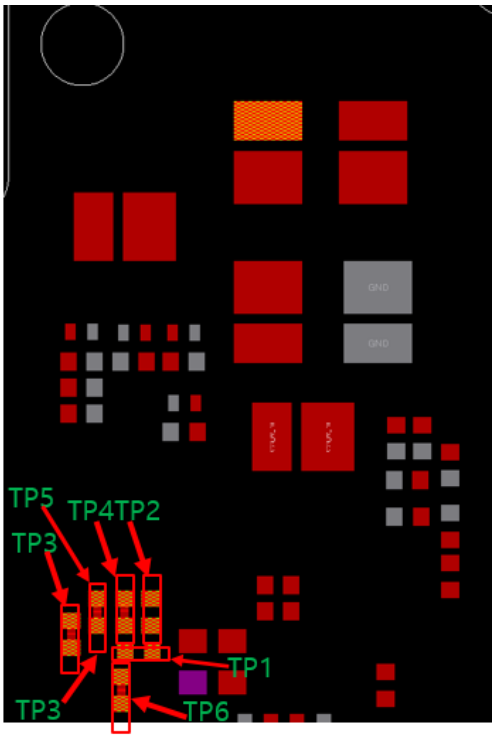
CHECKING FLOW	IMAGE
START Check VREG_L6_1P8(TP 1) NO → Re-solder and Change U201 YES Check TP2-TP3 NO → Re-solder and Change R1001 or R1002 YES Re-solder and Change U2201 G sensor function OK	

8-4-7. Proximity and light sensor

■ Proximity and Light Sensor is worked as below: Control the screen's on/off operation automatically while making phone calls, and adjust the screen brightness according to ambient light.

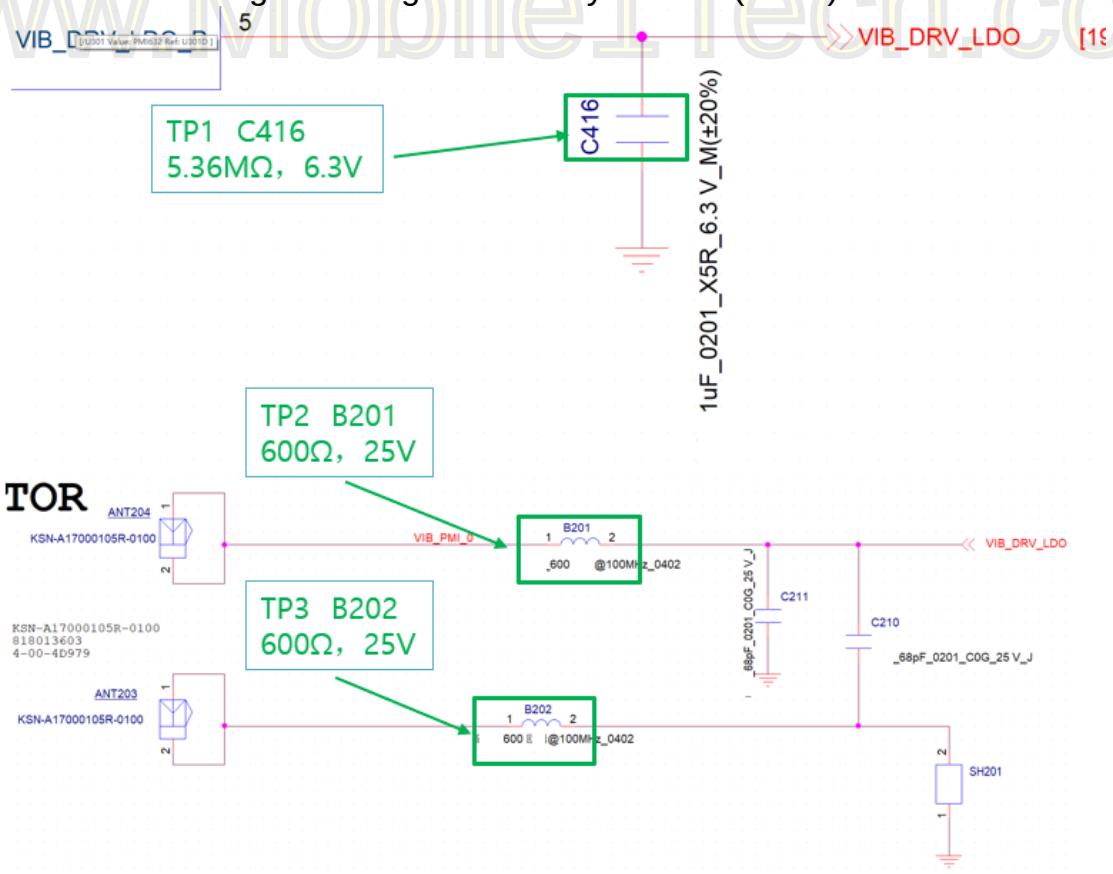


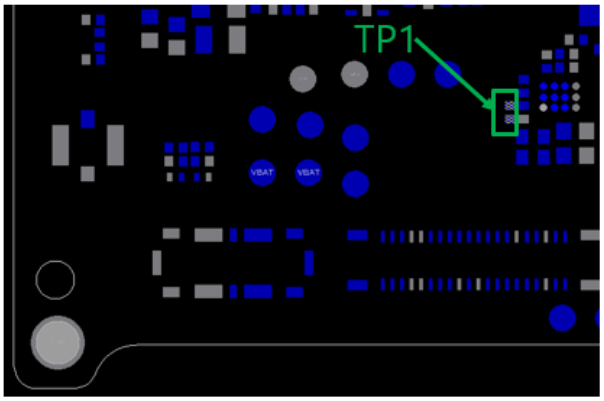
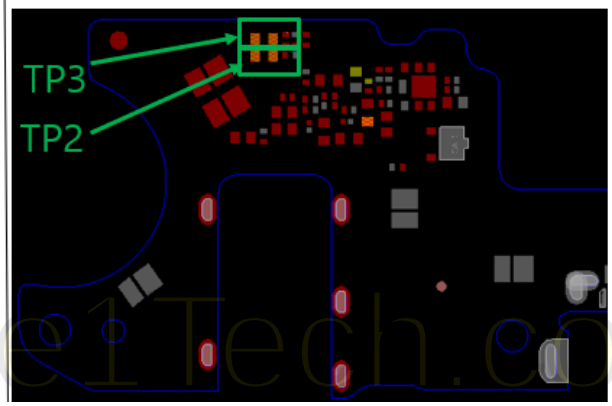
8. Level 3 Repair

CHECKING FLOW	IMAGE
START Check VREG_L6_1P8(TP 1&TP2) — NO → Re-solder and Change R2204 or R2205 or U201 YES Check VREG_L6_2P85(T P3) — NO → Re-solder and Change B2203 or B2202 or U201 YES Check TP4&TP5&TP6 — NO → Re-solder and Change B2204 or B2201 or B2206 or U801 YES Re-solder and Change U2202 ALPS function OK	

8-4-8. Vibrator

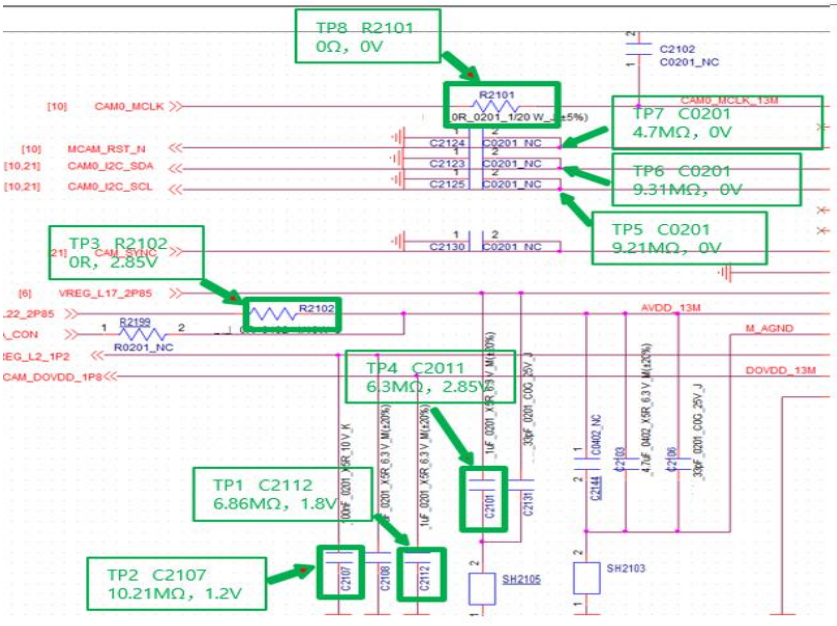
■ The Vibrator control signals are generated by PMI632(U301).

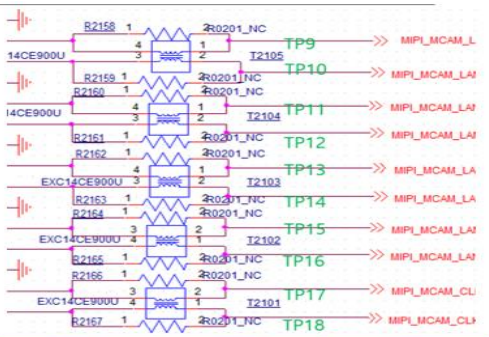


CHECKING FLOW	IMAGE
START Check TP1 — NO → Re-solder and Change U301 YES Check J102/ J1901/FPC — NO → Re-solder and Change J102/ J1901/FPC YES Check TP2,TP3 — NO → Re-solder and Change B201 or B202 YES Check ANT203 ANT204 and vibrator — NO → Re-solder and Change ANT203 ANT204 or vibrator YES Vibrator function ok	 

8-4-9.Main Camera

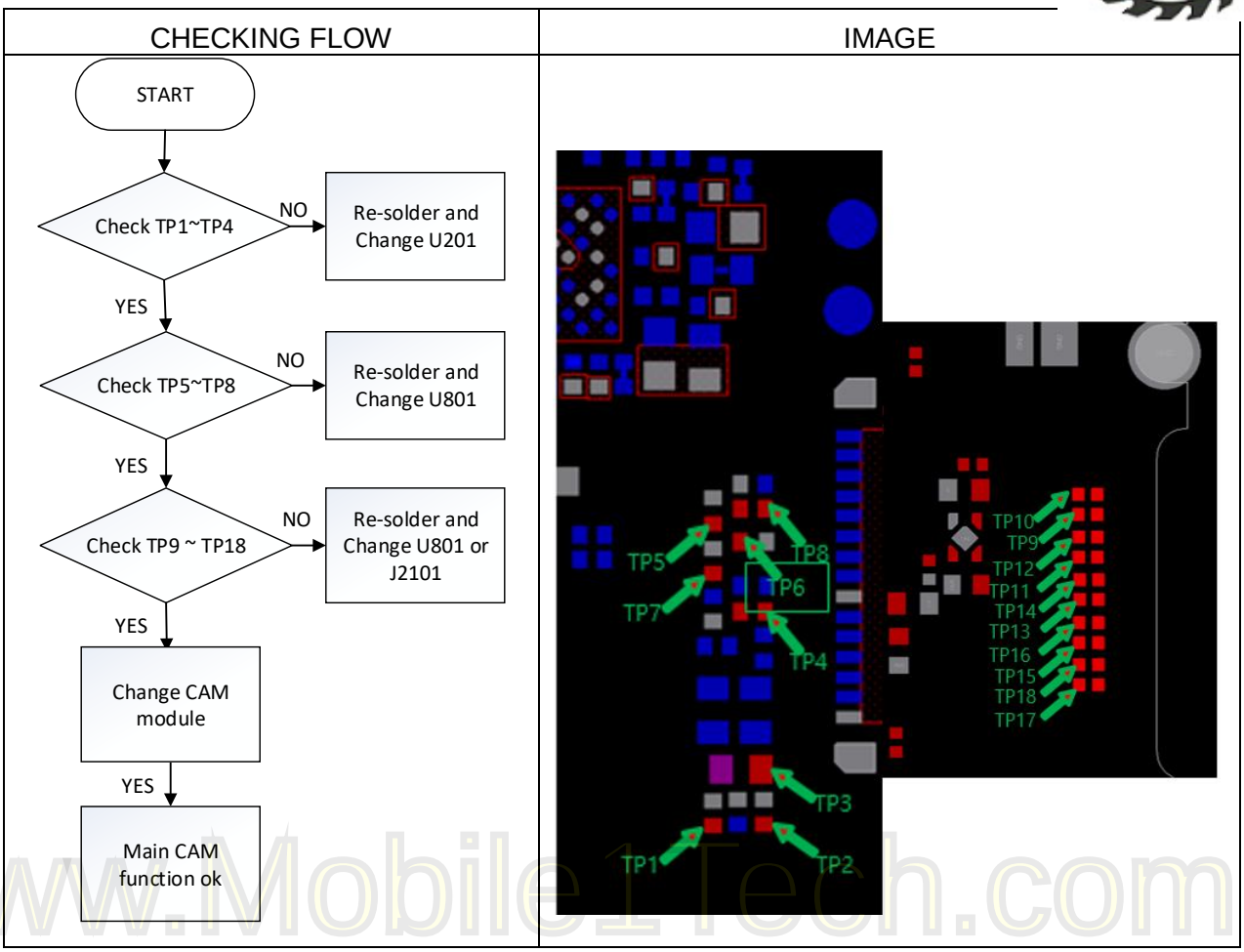
■ The Camera control signals are generated by PM8953（U201） and SDM450(U801).





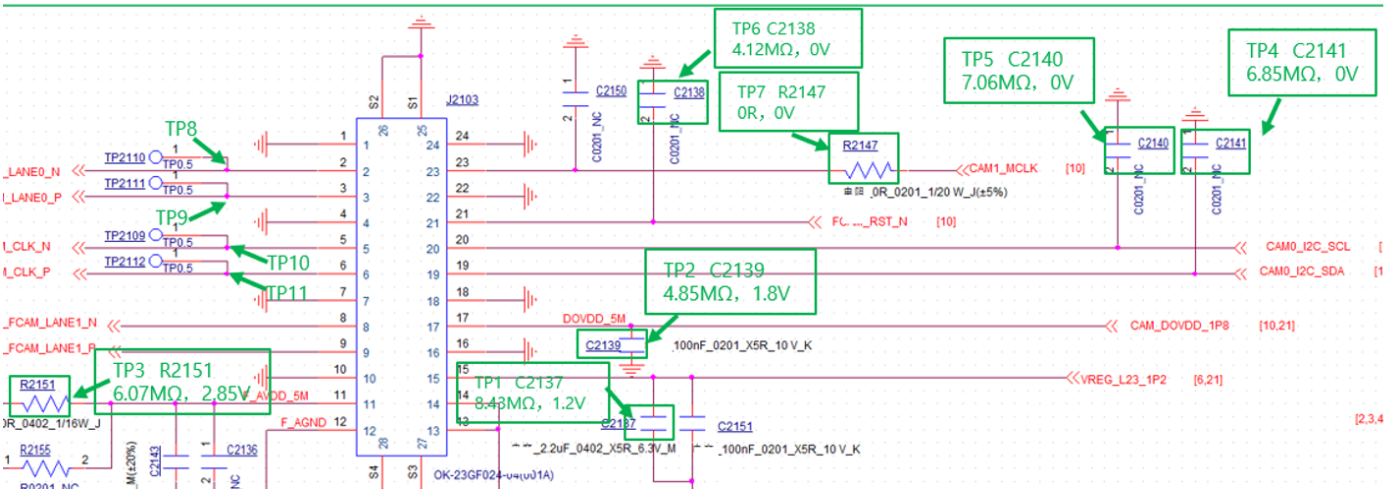
测试点	阻抗	电压
TP9	9.21MΩ	0.17V
TP10	8.54MΩ	0.11V
TP11	8.74MΩ	0.09V
TP12	8.37MΩ	0.118V
TP13	8.46MΩ	0.09V
TP14	8.92MΩ	0.15V
TP15	8.72MΩ	0.16V
TP16	8.62MΩ	0.063V
TP17	8.56MΩ	0.16V
TP18	8.73MΩ	0.1V

8. Level 3 Repair

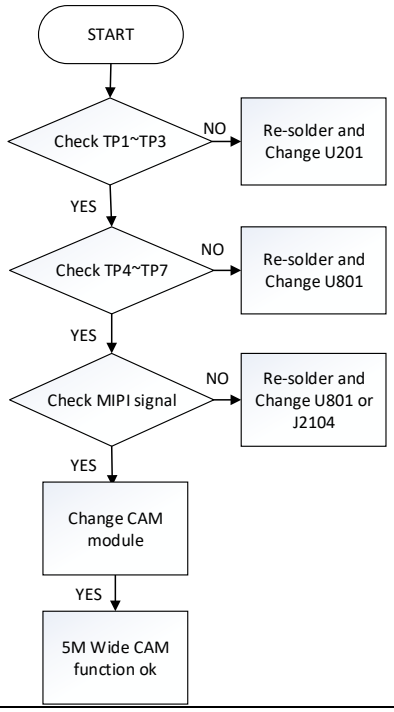
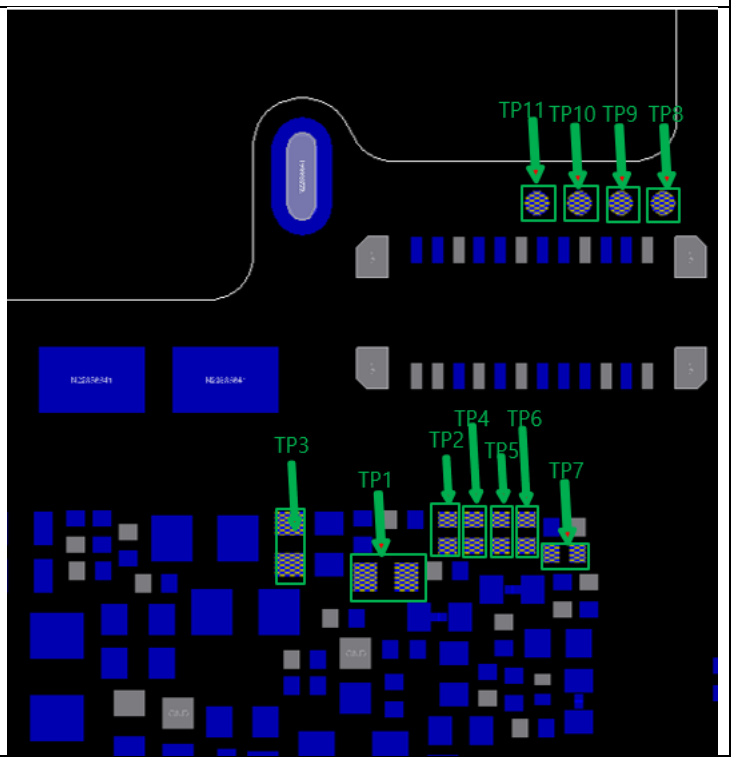


8-4-10. Rear 5M auxiliary Camera

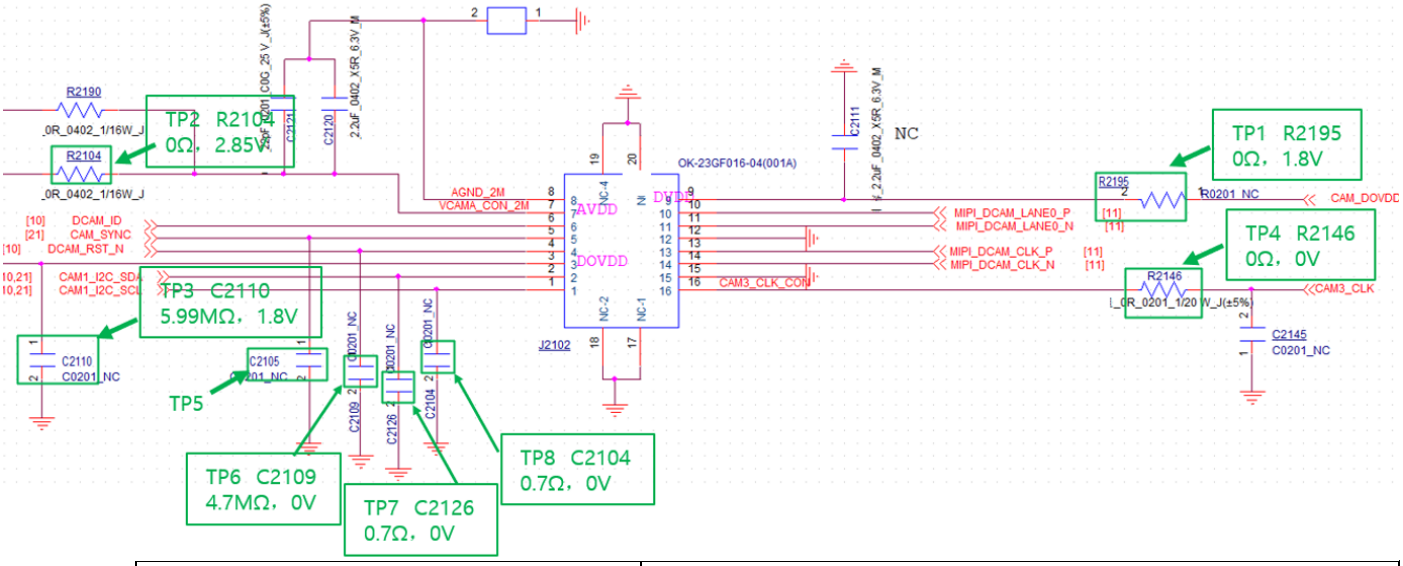
■ The Camera control signals are generated by PM8953（U201） and SDM450(U801).

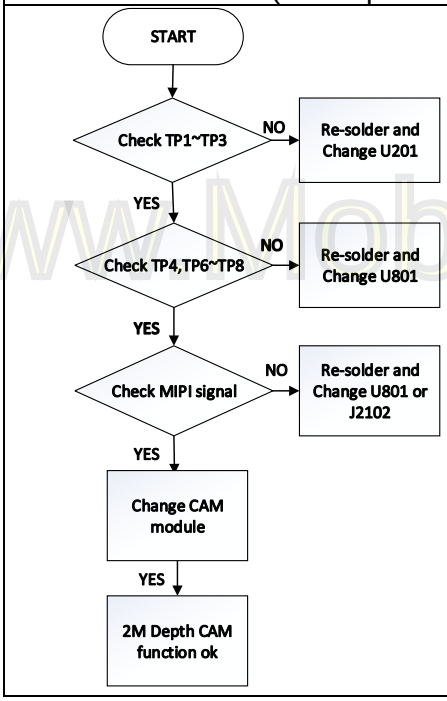
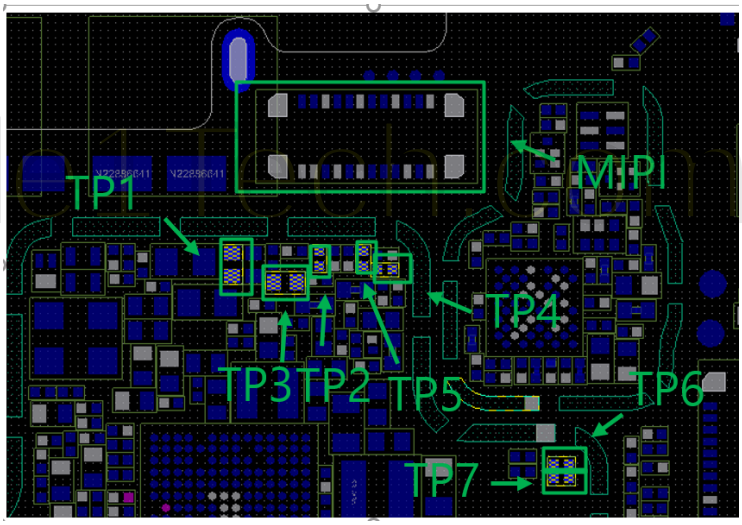


8. Level 3 Repair

CHECKING FLOW(5M Wide CAM)	IMAGE
	

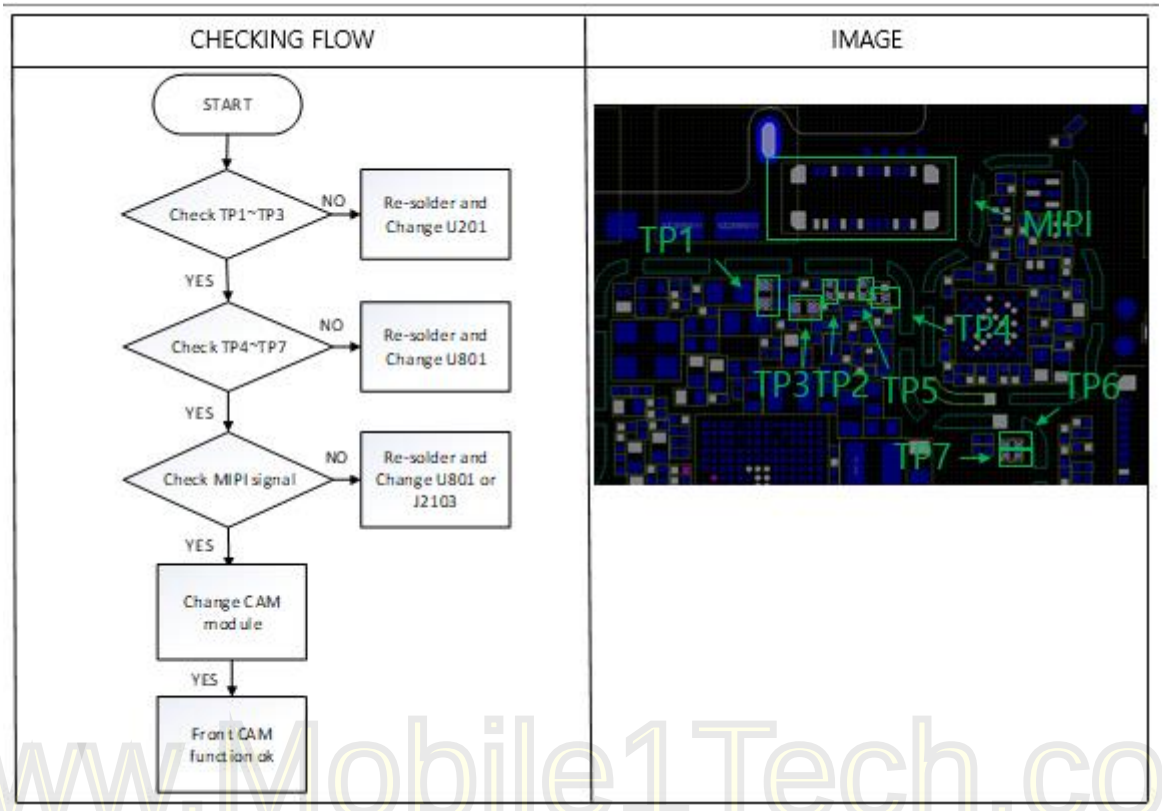
8-4-11. Rear 2M auxiliary Camera

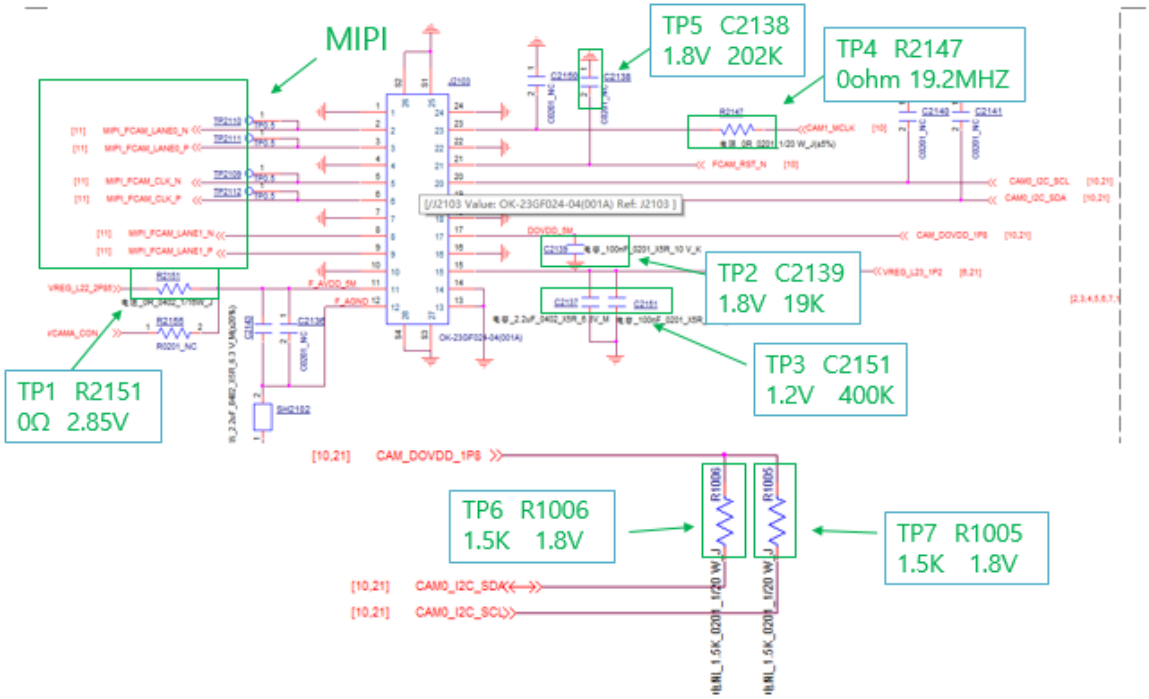


CHECKING FLOW(2M Depth CAM)	IMAGE
	

8-4-15. Front Camera

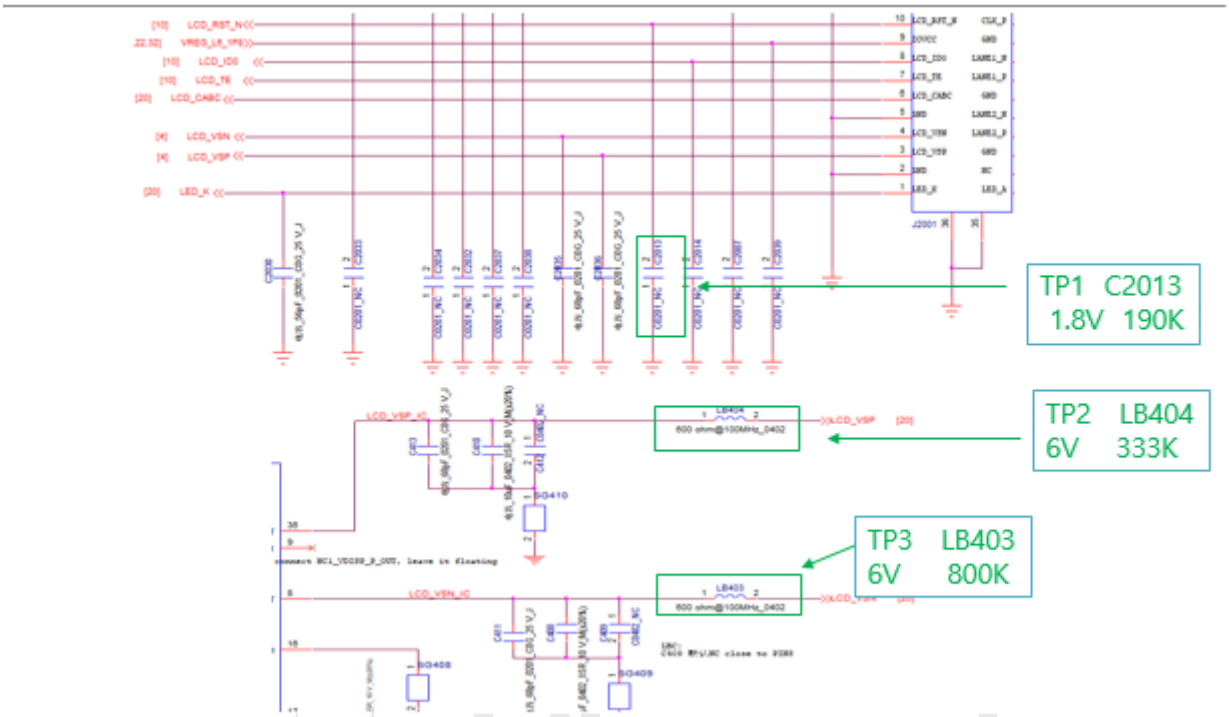
■ The Camera control signals are generated by PM8953（U201） and SDM450(U801).



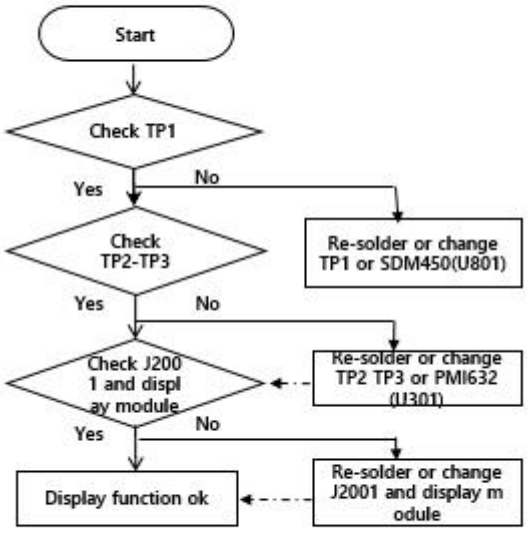


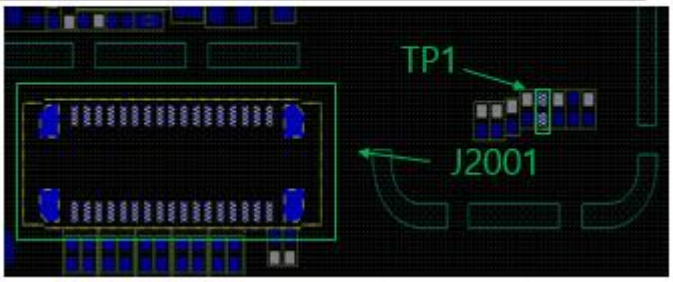
8-4-16. LCD

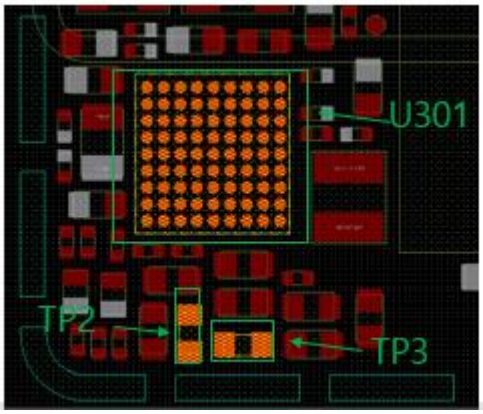
■ The LCD control signals are generated by SDM450(U801).



Checking Flow	Image

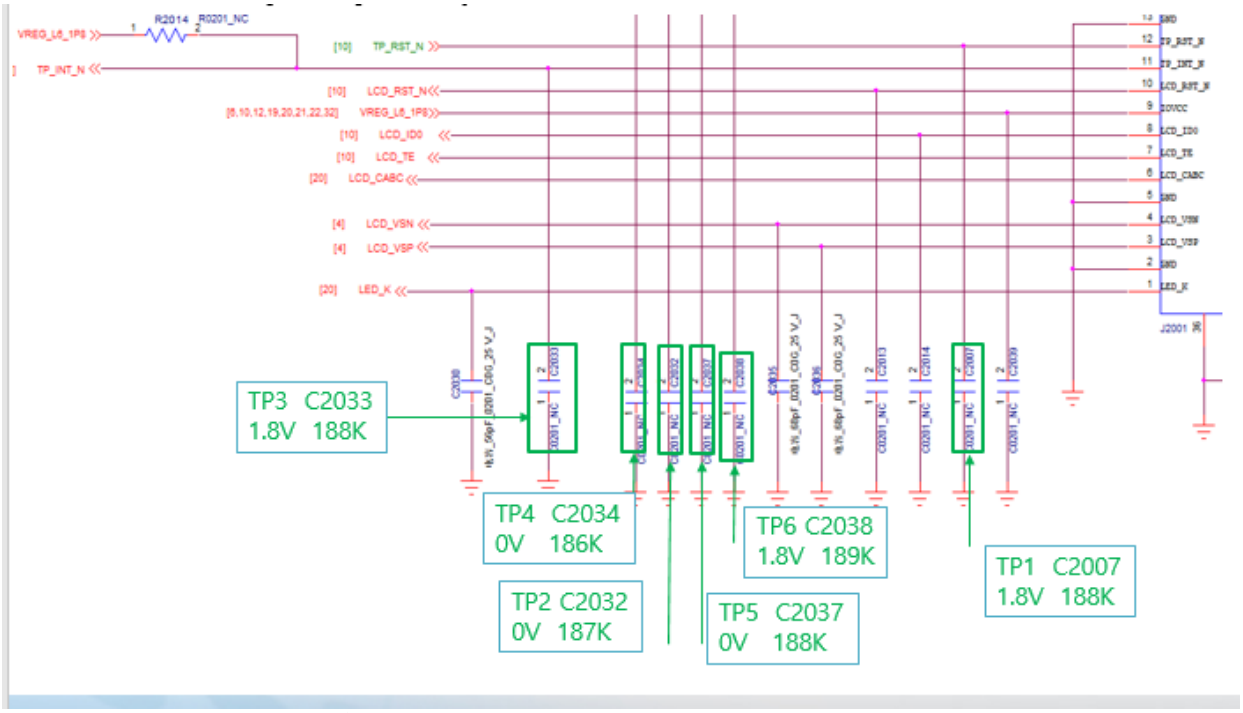




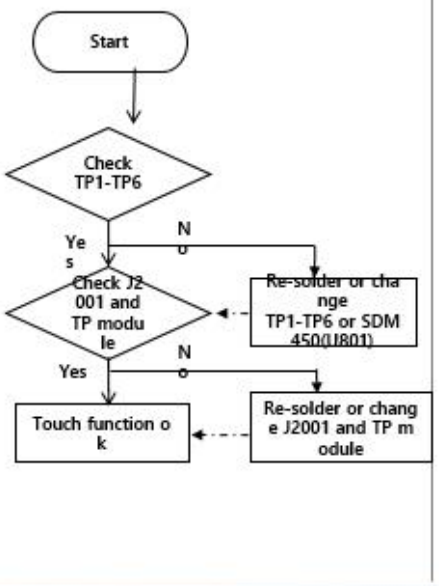


8-4-17. touch

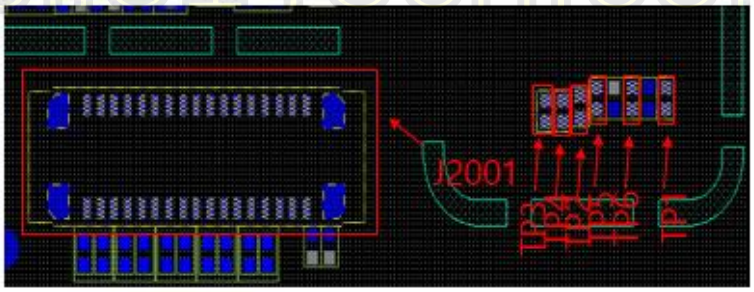
- The Touch control signals are generated by SDM450. It is assembled with LCD

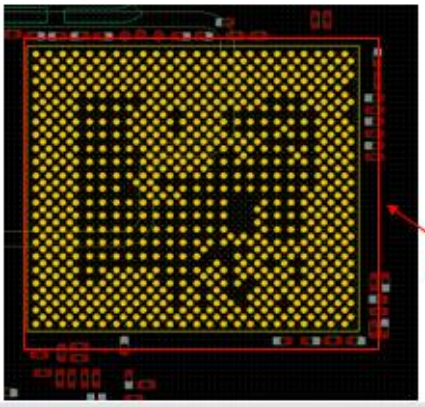


Checking Flow



Image





8-5. Service Schematics

■ U801_SDM450_BB chip IC , Digital Baseband Processor(Top)