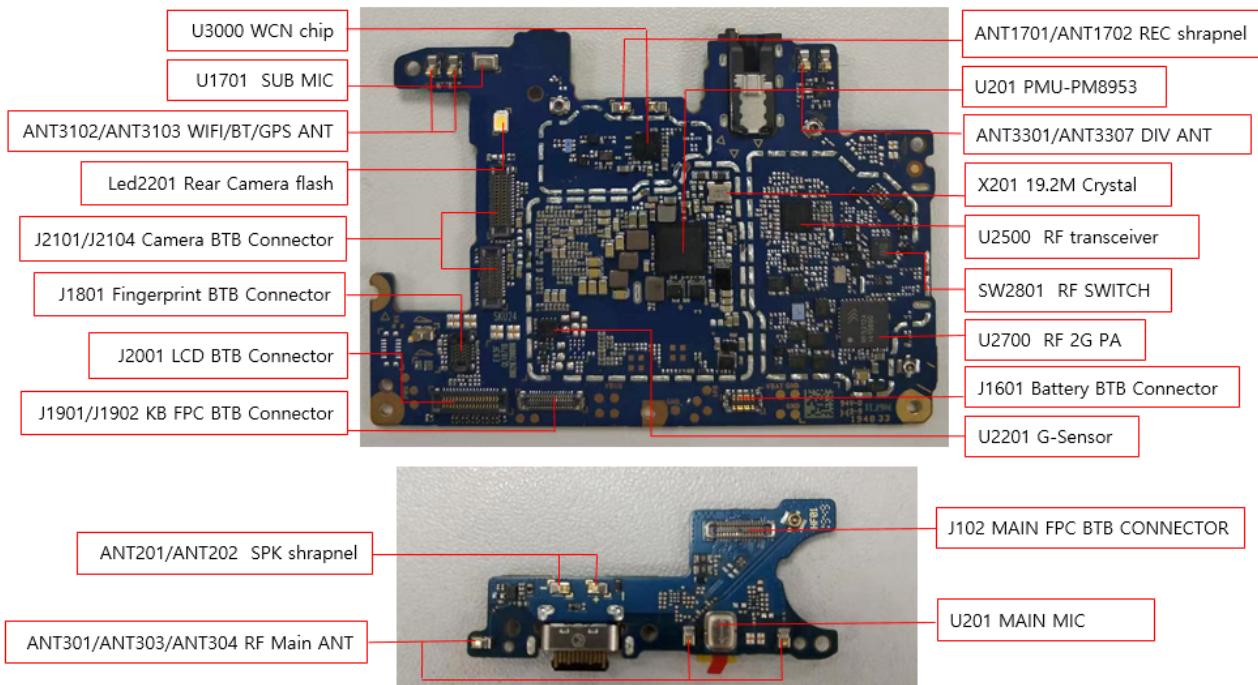


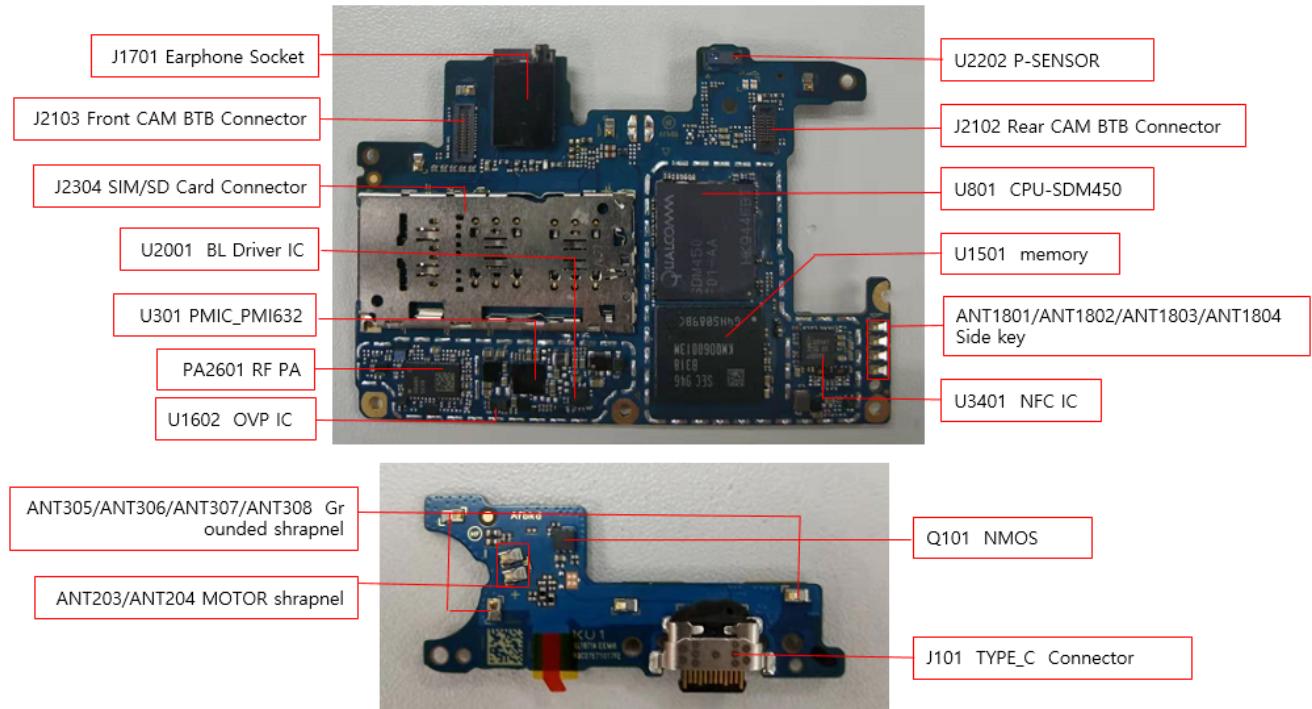
8. Level 3 Repair

8-1. Components Layout

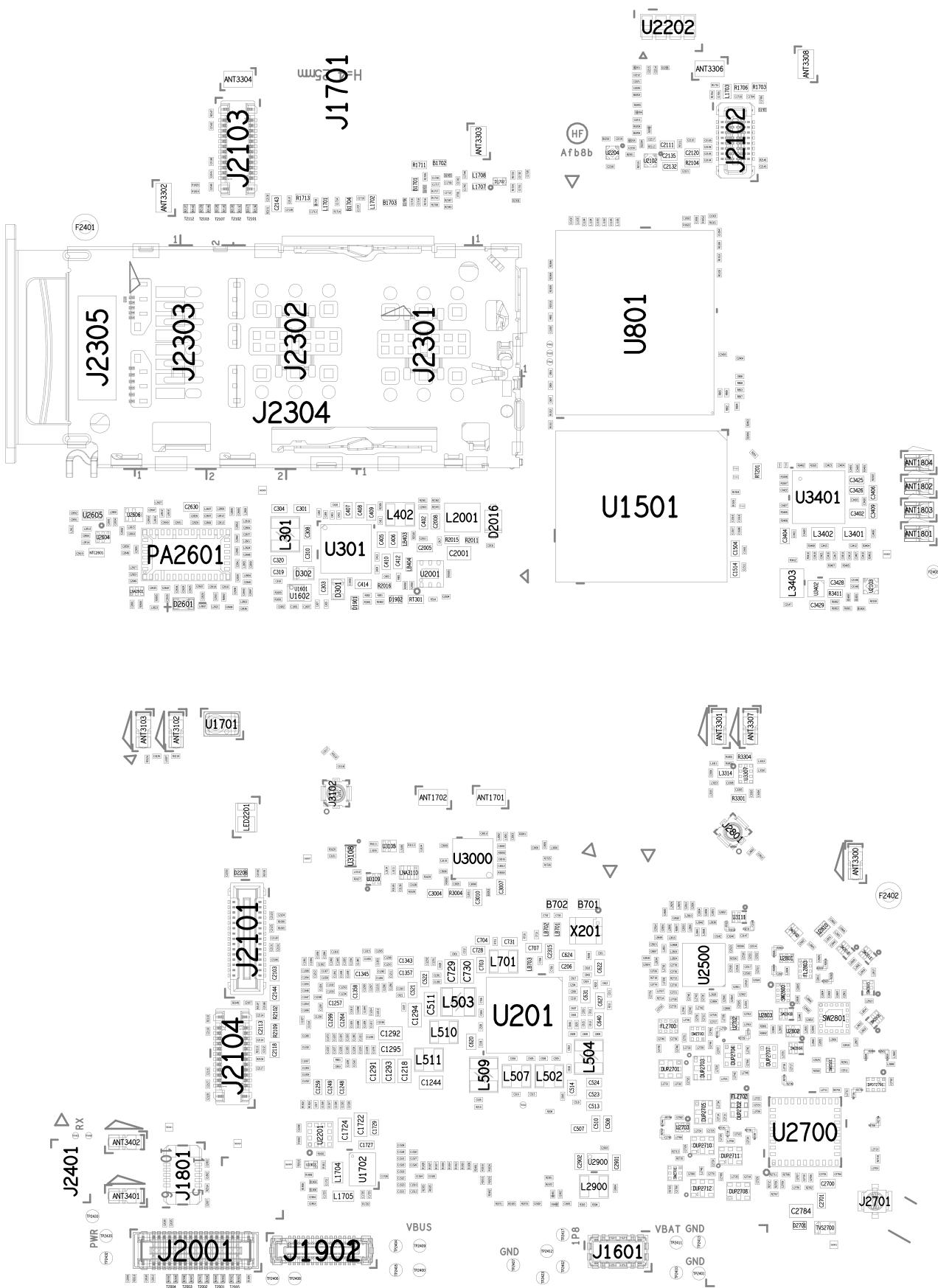
PBA (Bottom)



PBA (TOP)



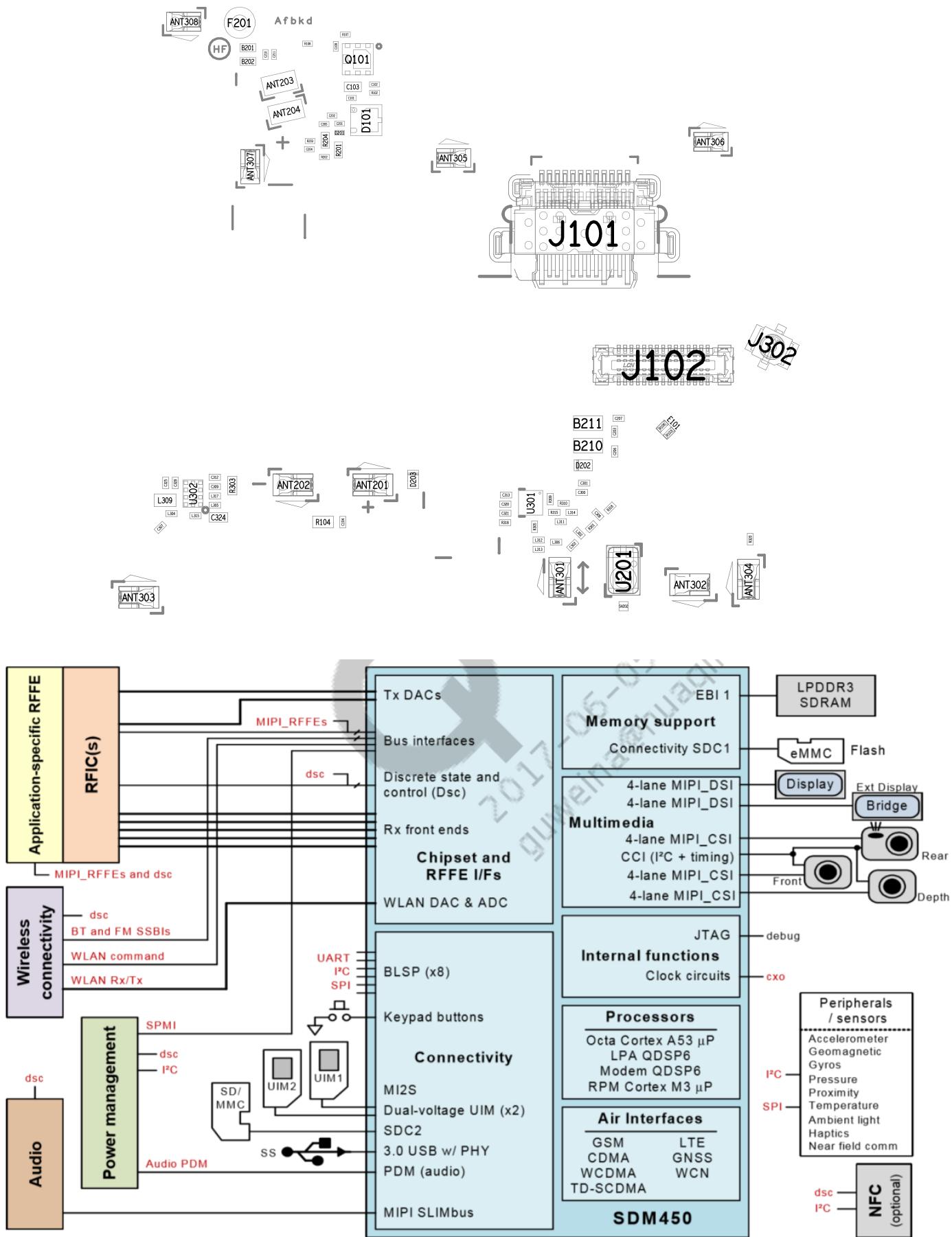
8. Level 3 Repair



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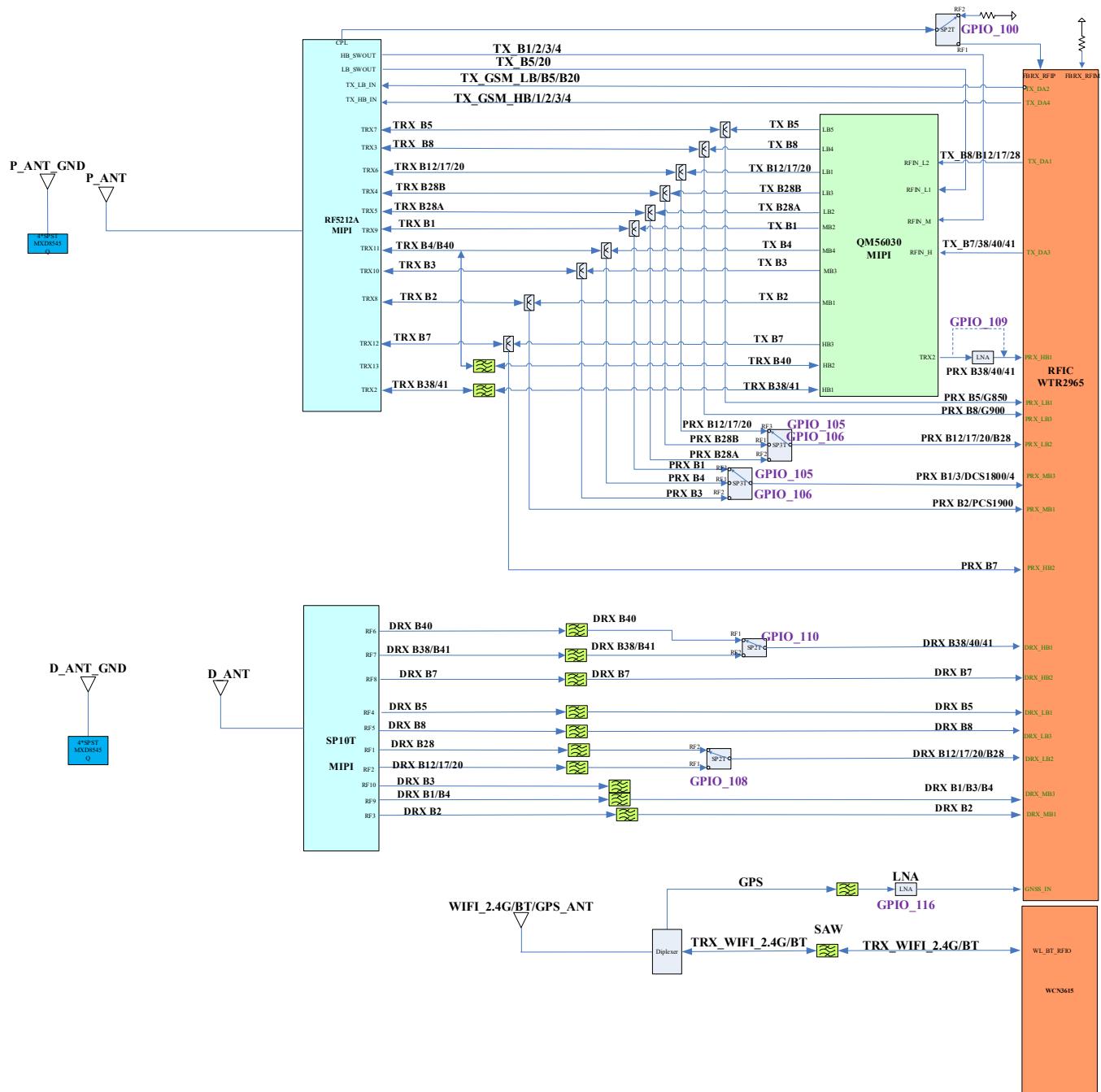
8. Level 3 Repair



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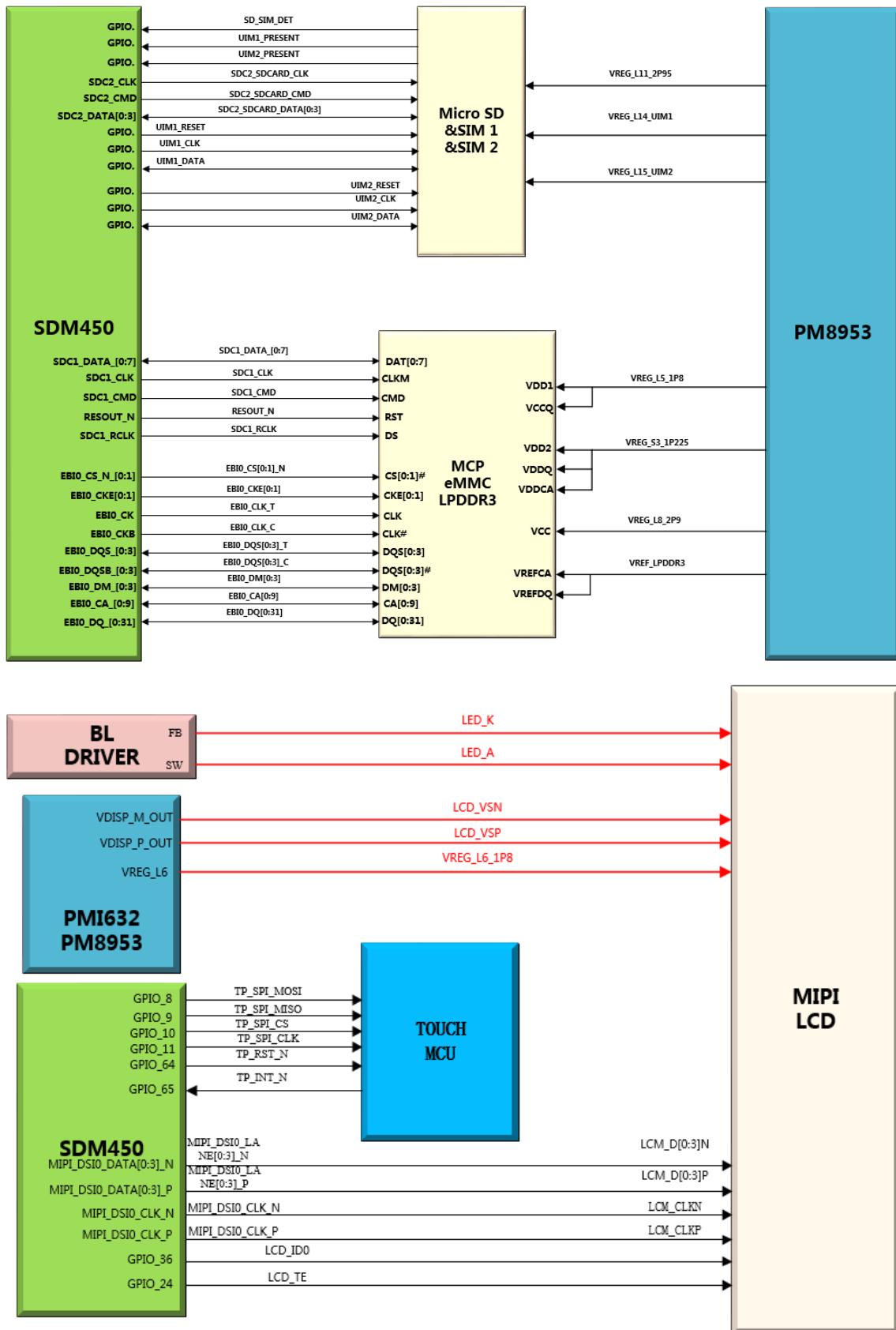
8. Level 3 Repair



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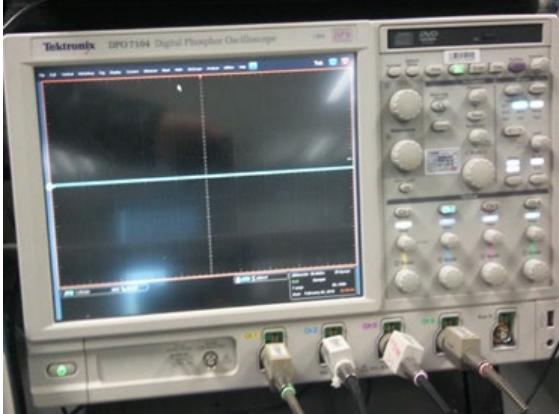
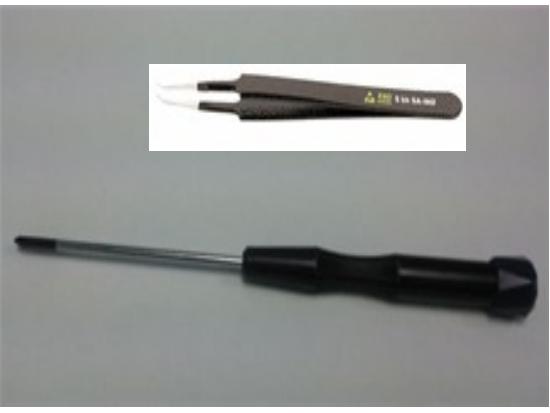
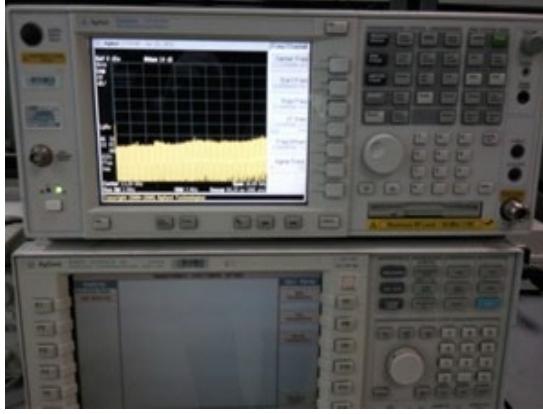
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8. Level 3 Repair



8. Level 3 Repair

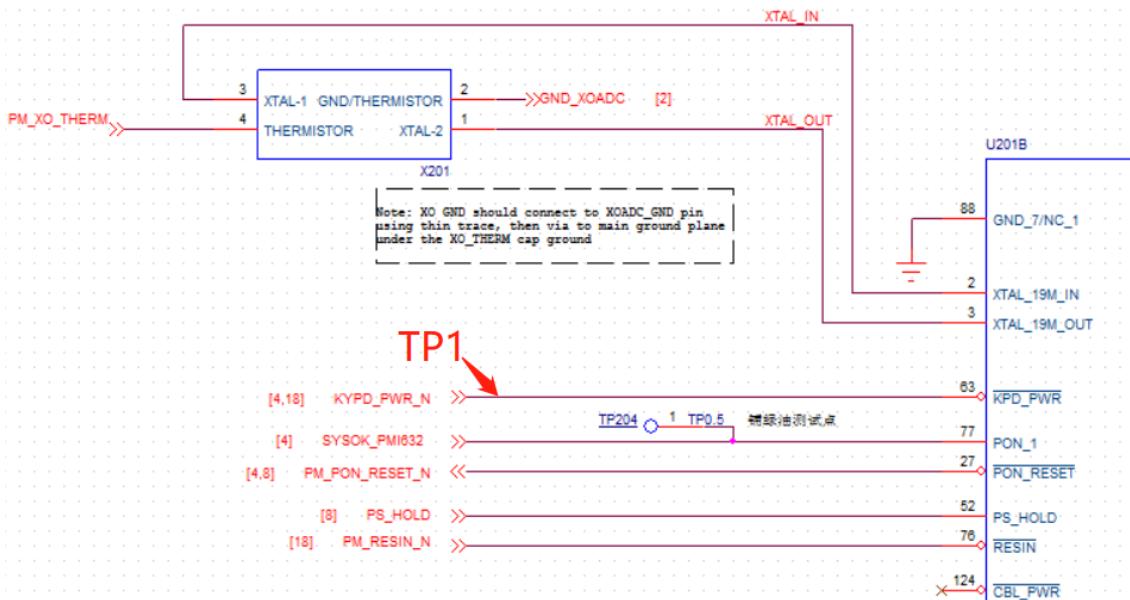
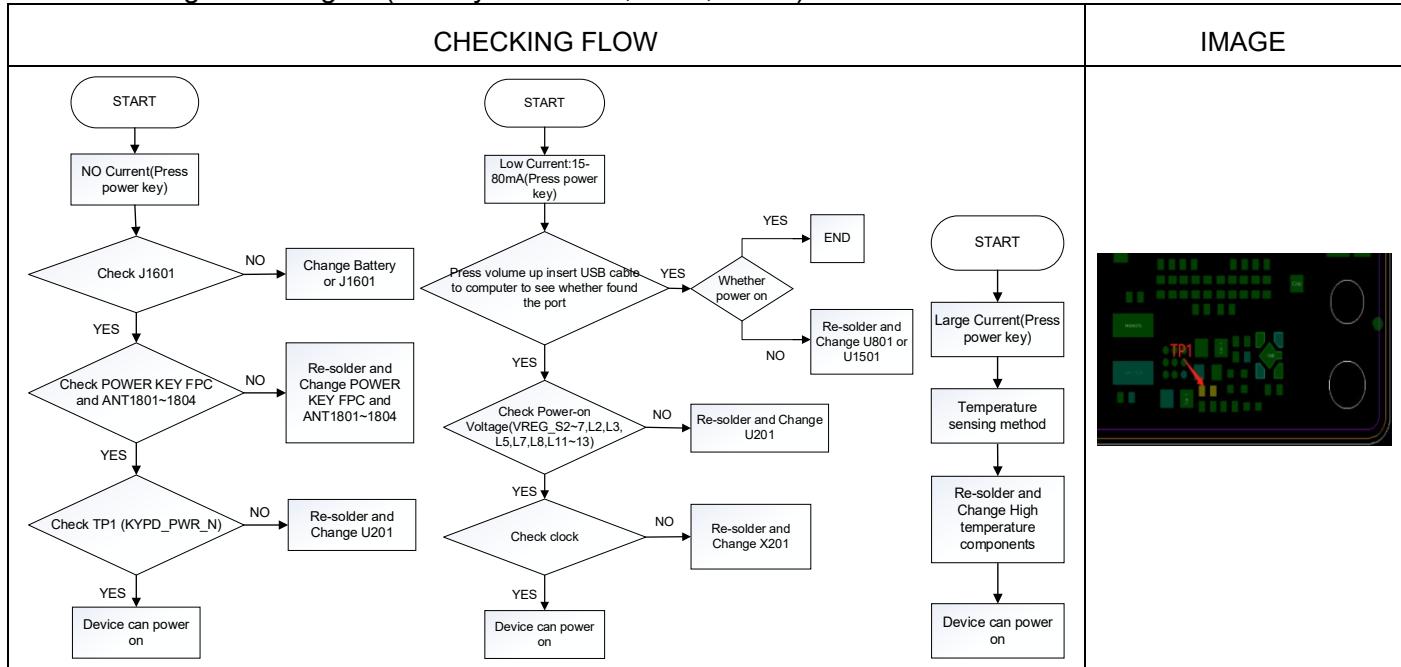
8-3. Flow chart of Troubleshooting.

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

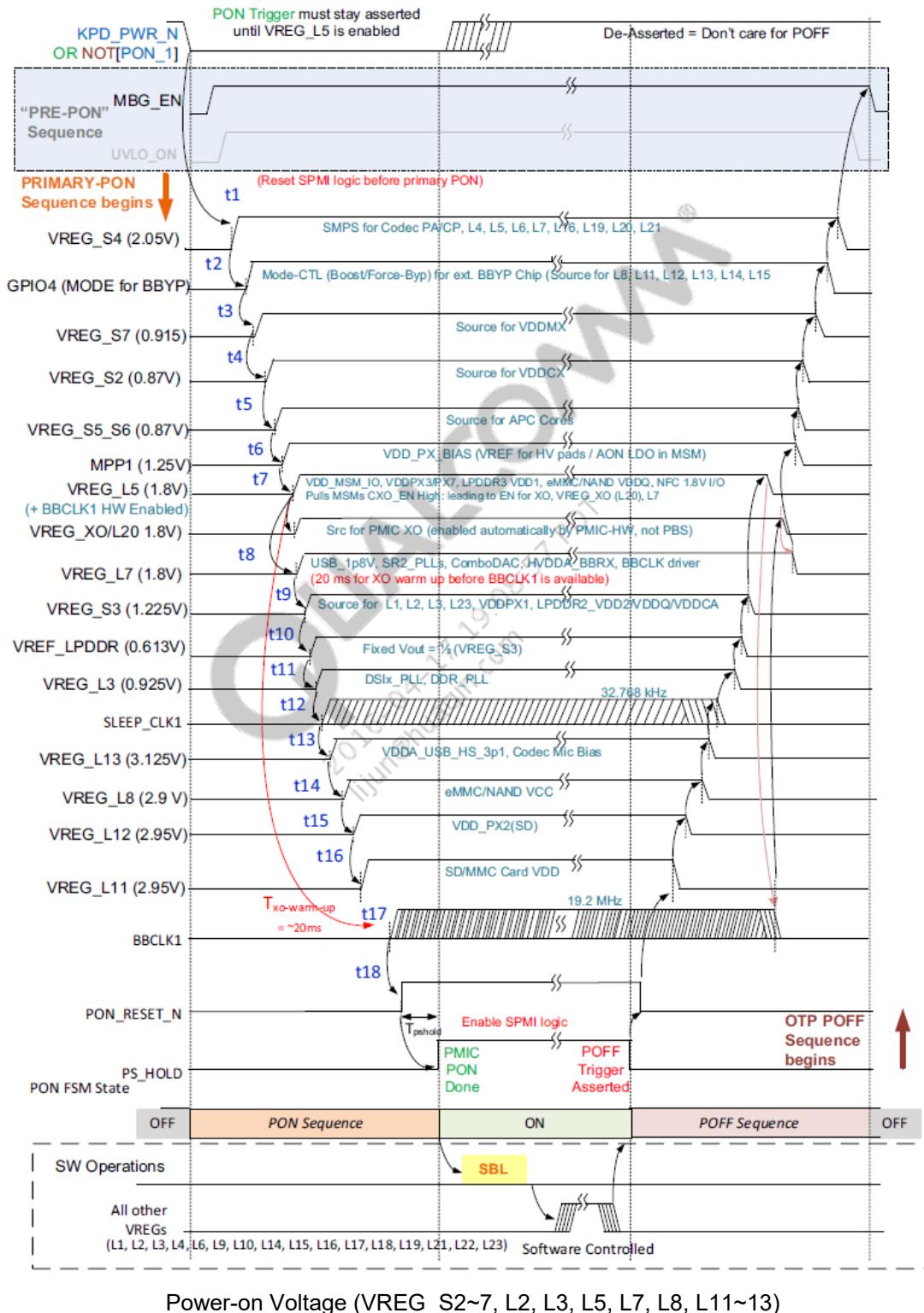
8. Level 3 Repair

8-4-1. Power On

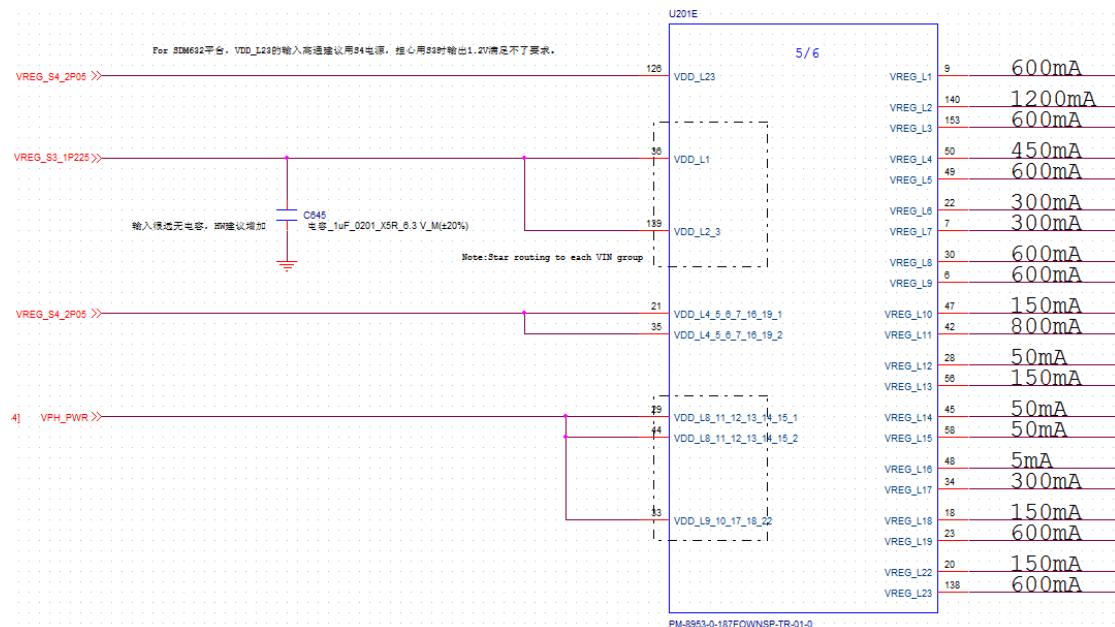
■ Checking Power signal (Battery connector, PMU, Clock)



8. Level 3 Repair



8. Level 3 Repair



VREG_S2~7, L2, L3, L5, L7, L8, L11~13 schematic diagram

8. Level 3 Repair

8-4-2. Charging

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

CHECKING FLOW	IMAGE
<pre>graph TD START([START]) --> TP1{Check TP1} TP1 -- NO --> J102[Re-solder and Change J102 or J101] TP1 -- YES --> VBUS{Check VBUS(TP2)} VBUS -- NO --> J1901[Re-solder and Change J1901 or FPC] VBUS -- YES --> TP3{Check TP3 or TP4} TP3 -- NO --> U1602[Re-solder and Change U1602] TP3 -- YES --> Vbat{Check Vbat(TP5)} Vbat -- NO --> U301[Re-solder and Change U301] Vbat -- YES --> CheckBattery[Check battery] CheckBattery -- YES --> ChargeOK[Charge function OK] CheckBattery -- NO --> J102</pre>	

8. Level 3 Repair

8-4-3. USB

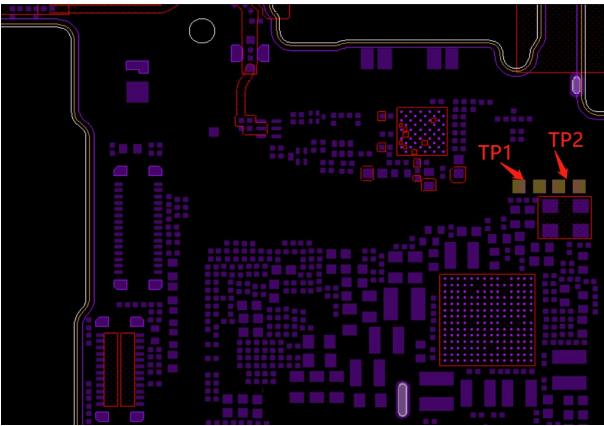
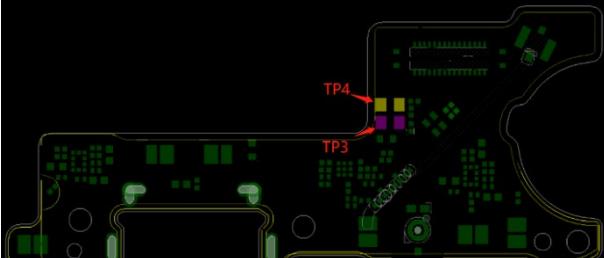
- I/O connector is used as the USB port.

CHECKING FLOW	IMAGE
<pre>graph TD START([START]) --> TP1{Check TP1 and TP2} TP1 -- NO --> U801[Re-solder and Change U801 or R1901 or R1902] TP1 -- YES --> TP3{Check TP3 and TP4} TP3 -- NO --> J1901[Re-solder and Change J1901 or FPC or J102 or R103 or R106] TP3 -- YES --> J101{Check J101 soldering} J101 -- NO --> J101[Re-solder and Change J101] J101 -- YES --> OK[USB function OK]</pre>	

8. Level 3 Repair

8-4-4. Audio speaker

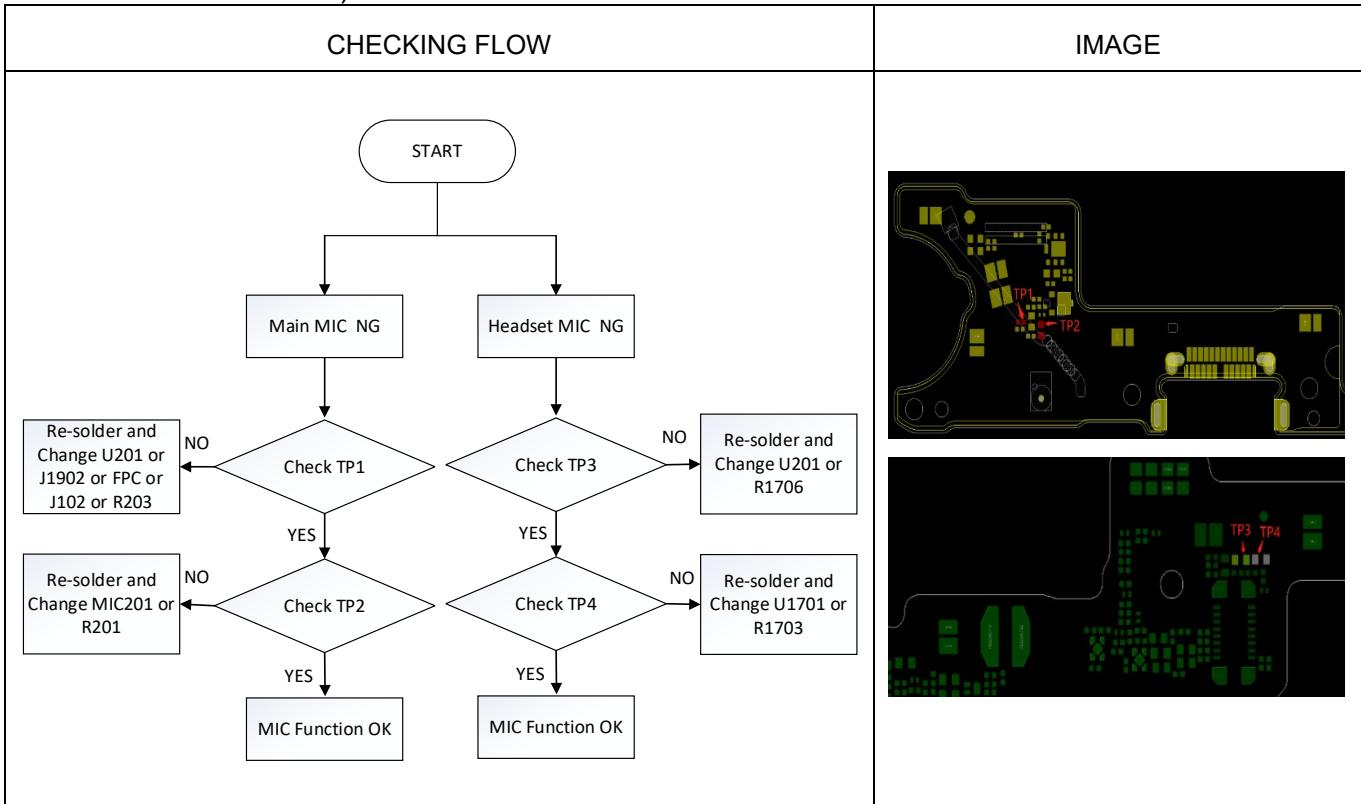
- The Speaker control signals are generated by chip PM8953 (U201), the chip and the speaker are to be checked out.

CHECKING FLOW	IMAGE
<pre>graph TD START([START]) --> TP1TP2{Check TP1-TP2} TP1TP2 -- NO --> U201[Re-solder and Change U201 or TP1-TP2] TP1TP2 -- YES --> TP3TP4{Check TP3-TP4} TP3TP4 -- NO --> J1902[Re-solder and Change J1902 or J102 or B701/702 or change FPC] TP3TP4 -- YES --> ANT201{Check ANT201 and ANT202} ANT201 -- NO --> SPK[Change SPK spring FPC and SPK] SPK --> OK[Speaker function OK] ANT201 -- YES --> U201 J1902 --> U201 U201 --> OK</pre>	 

8. Level 3 Repair

8-4-5. Audio_ MIC

- The MIC control signals are generated by chip PM8953 (U201), the chip and the MIC (main micU201 and headset micU1701) are to be checked out.



8. Level 3 Repair

8-4-6. G sensor

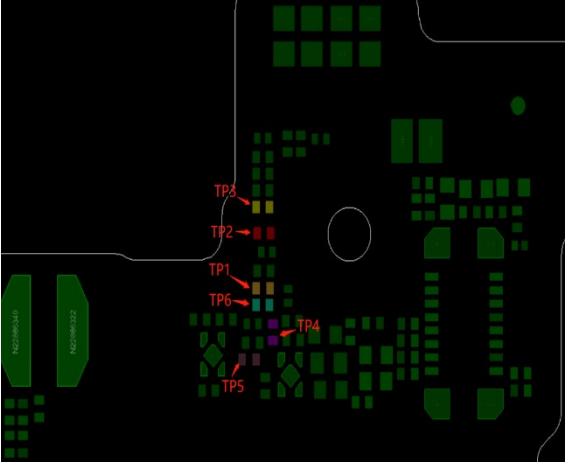
- The G sensor is calibrated by using SW algorithm.

CHECKING FLOW	IMAGE
<pre>graph TD START([START]) --> VREG{Check VREG_L6_1P8(TP 1)} VREG -- NO --> U201[Re-solder and Change U201] VREG -- YES --> TP2TP3{Check TP2-TP3} TP2TP3 -- NO --> R1001[Re-solder and Change R1001 or R1002] TP2TP3 -- YES --> U2201[Re-solder and Change U2201] U2201 --> OK[G sensor function OK]</pre>	

8. Level 3 Repair

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.

CHECKING FLOW	IMAGE
<pre>graph TD START([START]) --> VREG{Check VREG_L6_1P8(TP1&TP2)} VREG -- NO --> R1[Re-solder and Change R2204 or R2205 or U201] VREG -- YES --> VDD{Check VDD_ALPS_3V0(TP3)} VDD -- NO --> R2[Re-solder and Change B2203 or B2202 or U201] VDD -- YES --> TP4{Check TP4&TP5&TP6} TP4 -- NO --> R3[Re-solder and Change B2204 or B2201 or B2206 or U801] TP4 -- YES --> U2202[Re-solder and Change U2202] U2202 --> OK[ALPS function OK]</pre>	

8. Level 3 Repair

8-4-11. TOUCH SCREEN

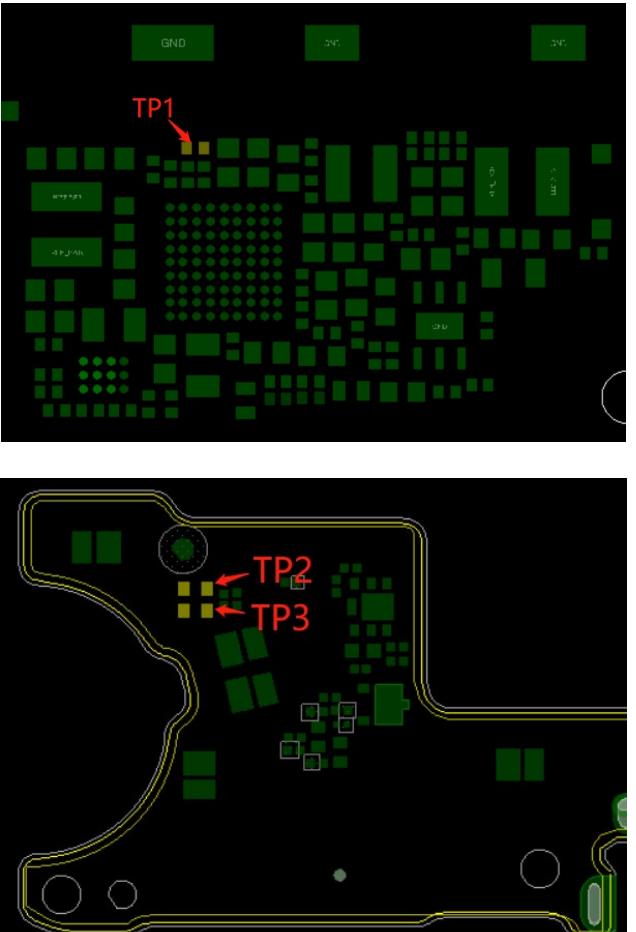
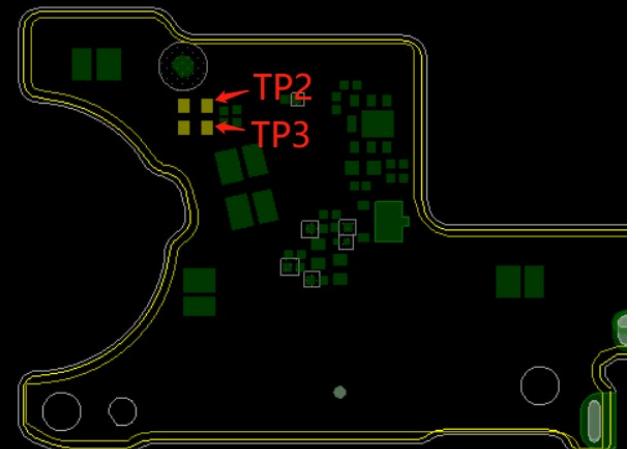
- The Touch control signals are generated by SDM450 (U801). It is assembled with LCD.

CHECKING FLOW	IMAGE
<pre>graph TD START([START]) --> TP1{Check TP1~TP6} TP1 -- NO --> ReSolder1[Re-solder and Change U801] TP1 -- YES --> J2001{Check J2001} J2001 -- NO --> ReSolder1 J2001 -- YES --> TPModule{Check TP Module} TPModule -- NO --> ChangeTP[Change TP Module] TPModule -- YES --> TouchOK[Touch function OK]</pre>	

8. Level 3 Repair

8-4-12. Vibrator

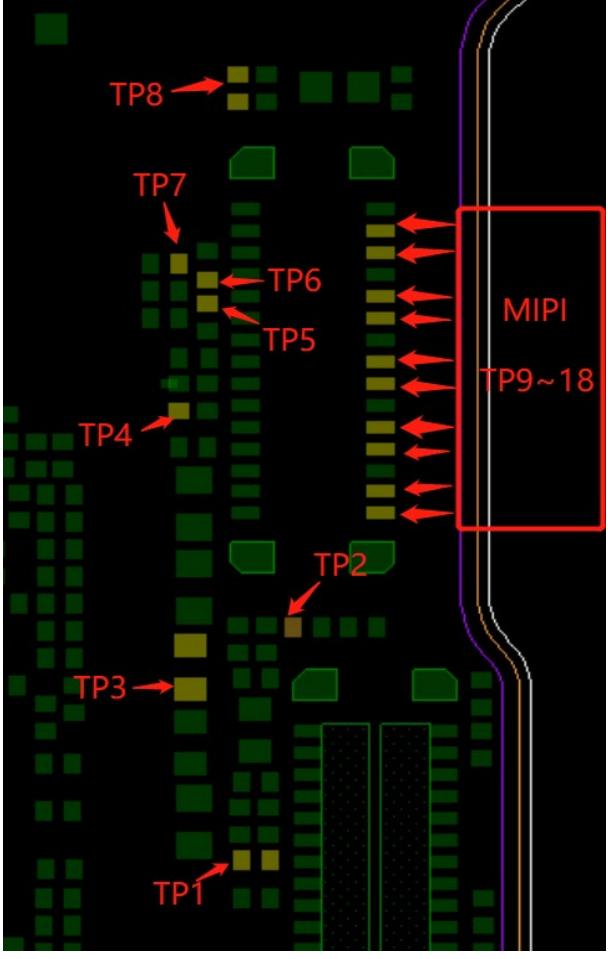
- The Vibrator control signals are generated by PMI632 (U301).

CHECKING FLOW	IMAGE
<pre>graph TD START([START]) --> CheckTP1{Check TP1} CheckTP1 -- NO --> ResolderU301[Re-solder and Change U301] CheckTP1 -- YES --> CheckJ102{Check J102/ J1901/FPC} CheckJ102 -- NO --> ResolderJ102[Re-solder and Change J102/ J1901/FPC] CheckJ102 -- YES --> CheckTP2TP3{Check TP2,TP3} CheckTP2TP3 -- NO --> ResolderB201B202[Re-solder and Change B201 or B202] CheckTP2TP3 -- YES --> CheckANT203ANT204{Check ANT203 ANT204 and vibrator} CheckANT203ANT204 -- NO --> ResolderANT203ANT204[Re-solder and Change ANT203 ANT204 or vibrator] CheckANT203ANT204 -- YES --> VibratorFunctionOk[Vibrator function ok]</pre>	 

8. Level 3 Repair

8-4-13.Main Camera

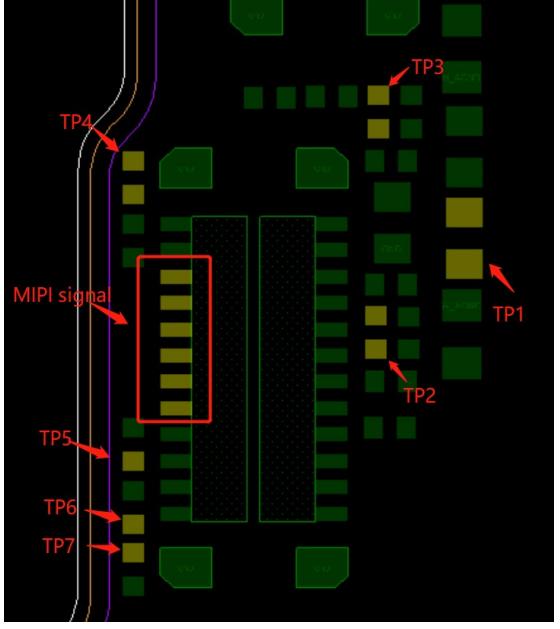
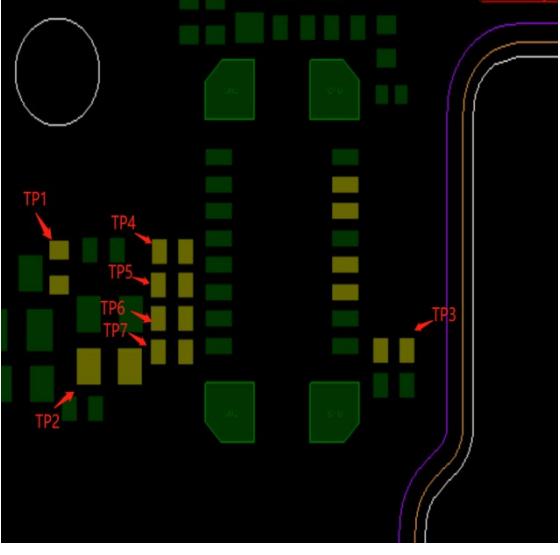
- The Camera control signals are generated by PM8953 (U201) and SDM450(U801).

CHECKING FLOW	IMAGE
<pre> graph TD START([START]) --> C1{Check TP1~TP4} C1 -- NO --> R1[Re-solder and Change U201] C1 -- YES --> C2{Check TP5~TP8} C2 -- NO --> R2[Re-solder and Change U801] C2 -- YES --> C3{Check TP9 ~ TP18} C3 -- NO --> R3[Re-solder and Change U801 or J2101] C3 -- YES --> C4[Change CAM module] C4 -- YES --> C5[Main CAM function ok] </pre>	

8. Level 3 Repair

8-4-14. Rear auxiliary Camera

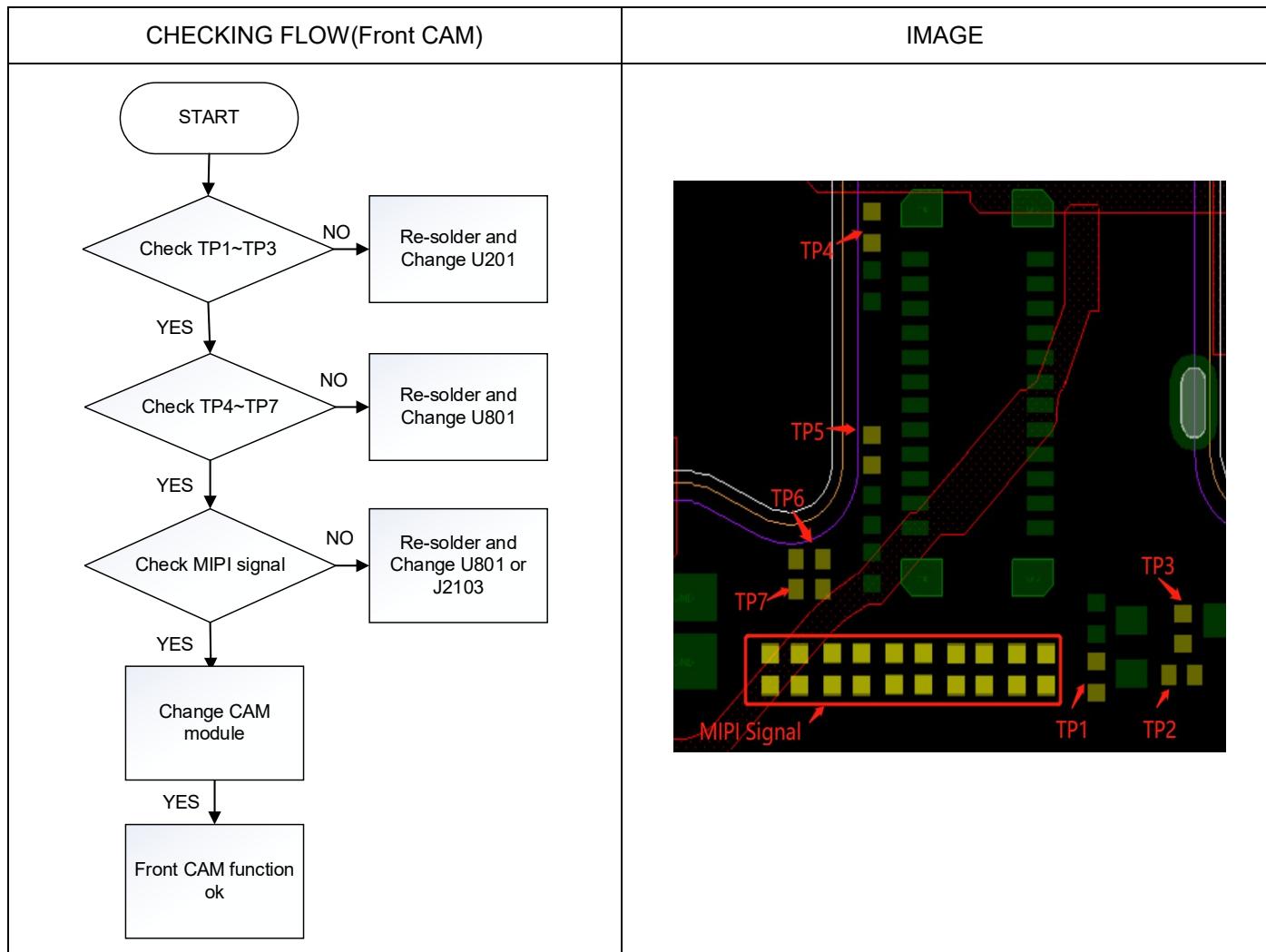
- The Camera control signals are generated by PM8953 (U201) and SDM450(U801).

CHECKING FLOW(5M Wide CAM)	IMAGE
<pre> graph TD START([START]) --> C1{Check TP1~TP3} C1 -- NO --> R1[Re-solder and Change U201] C1 -- YES --> C2{Check TP4~TP7} C2 -- NO --> R2[Re-solder and Change U801] C2 -- YES --> C3{Check MIPI signal} C3 -- NO --> R3[Re-solder and Change U801 or J2104] C3 -- YES --> C4[Change CAM module] C4 -- YES --> F1[5M Wide CAM function ok] </pre>	
<pre> graph TD START([START]) --> C1{Check TP1~TP2} C1 -- NO --> R1[Re-solder and Change U201] C1 -- YES --> C2{Check TP3,TP5~TP7} C2 -- NO --> R2[Re-solder and Change U801] C2 -- YES --> C3{Check MIPI signal} C3 -- NO --> R3[Re-solder and Change U801 or J2102] C3 -- YES --> C4[Change CAM module] C4 -- YES --> F1[2M Depth CAM function ok] </pre>	

8. Level 3 Repair

8-4-15. Front Camera

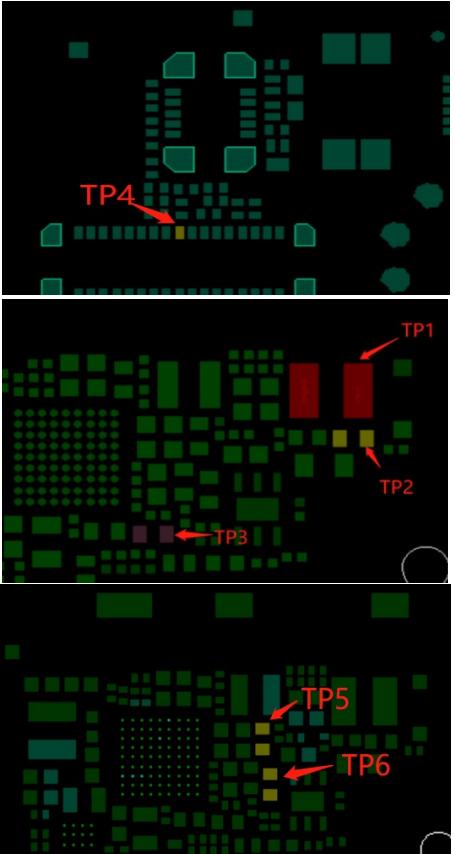
- The Camera control signals are generated by PM8953 (U201) and SDM450(U801).



8. Level 3 Repair

8-4-16. LCD

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

CHECKING FLOW	IMAGE
<pre> graph TD START([START]) --> LED[Backlight LED NG] START --> LCD[LCD NG] LED -- NO --> TP1{Check TP1} LCD -- NO --> VREG{Check VREG_L6_1P8(TP4)} TP1 -- NO --> D2016{Check D2016 or R2011 or R2016 or U201} TP1 -- YES --> TP2{Check TP2&TP3} VREG -- NO --> U201[Re-solder and Change U201] VREG -- YES --> TP5{Check TP5&TP6} D2016 -- NO --> TP2 D2016 -- YES --> J2001[Check J2001 & LCM Module] TP2 -- NO --> TP3{Check TP2&TP3} TP2 -- YES --> J2001 TP3 -- NO --> U801[Re-solder and Change U801] TP3 -- YES --> LED TP5 -- NO --> LB403[Re-solder and Change LB403 or LB404 or U301] TP5 -- YES --> LCD U801 -- NO --> LB403 U801 -- YES --> LCD LB403 -- NO --> J2001 LB403 -- YES --> LCD J2001 -- NO --> LED J2001 -- YES --> LCD LED --> LED_OK[Backlight LED Function OK] LCD --> LCD_OK[LCD Function OK] </pre>	

8. Level 3 Repair

8-5. Service Schematics

■ U801_SDM450_BB chip IC , Digital Baseband Processor(Top)

