

# New Product SVC Guide [SM-A11 Global]

Rev 1.2

**SAMSUNG**

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# Contents

1. Specification of SM-Galaxy A11\_Global
2. H/W
  - 2-1. New Concepts of H/W
  - 2-2. Disassembly & Assembly
  - 2-3. New Sensors & Test method
  - 2-4. Parts Diagram (Module & ICs)
  - 2-5. Troubleshooting
  - 2-6. R/F Calibration
3. S/W
  - 3-1. S/W Download
  - 3-2. Key Features
  - 3-3. New S/W features & New Concepts(UI/IX)
4. SVC Technical Information



# Specification

| Item                             | Spec.  |                             |  |
|----------------------------------|--|-----------------------------|--|
| AP Chipset                       | Vendor & Name  | Cores & Architecture        | Speed (Big/Little)                                       |
|                                  | Qualcomm SDM450  | 8 × Arm Cortex-A53 & 64 bit | 1.8 Ghz  |
| Memory                           | RAM  | Storage                     | External Memory (Micro SD)                               |
|                                  | 2GB/3GB  | 32GB                        | Up to 2TB  |
| Display                          | Size   | Resolution                  | Type   |
|                                  | 6.39 inch  | HD+ ( 1560X720 )            | Incell   |
| CAMERA                           | Resolution (Main / Front)  | Flash LED                   | Dual Camera  |
|                                  | 13MP+2MP+5MP / 8MP   | Rear only                   | -  |
| Network                          | 2G/3G  | LTE                         |  |
|                                  | Support  | 4G LTE FDD, 4G LTE TDD      |  |
| Sensors                          | A-sensor , P-sensor , L-sensor , SAR sensor for NA   |                             |  |
| Connectivity & LBS               | BT 4.2, Integrated 802.11b/g/n/ac 2.4GHz/5.0GHz , WiFi-Direct , only 2.4GHz for global , 2.4GHz/5.0GHz for NA<br>NA need to support WIFI 5G a b g n ac |                             | Support GPS , Glonass , Beidou(NA not support) , Galileo |
| Battery Type & Capacity          | Embedded battery   |                             | 4,000 mAh  |
| Charging capacity & Adapter type | 9V1.67A  |                             | Type C   |
| Water Resistance & OS Ver.       | -  |                             | Android Q  |
| Ear Jack & Wireless charging     | 3.5 mm stereo  |                             | -  |
| Remarks                          |  |                             |  |

# RAM & Storage size by region - Global

| SKU CODE Rule  | Model Name   | Region                   | RAM | Storage | Color | Status     |
|----------------|--------------|--------------------------|-----|---------|-------|------------|
| SM-A115FZKDXXX | SM-A115F/DSN | CIS                      | 2   | 32      | Black | double SIM |
| SM-A115FZBDXXX |              |                          | 2   | 32      | Blue  | double SIM |
| SM-A115FZWDXXX |              |                          | 2   | 32      | White | double SIM |
| SM-A115FZRDXXX |              |                          | 2   | 32      | Red   | double SIM |
| SM-A115FZKDXXX | SM-A115F/DS  | SEA<br>AFR<br>MEA<br>SWA | 2   | 32      | Black | double SIM |
| SM-A115FZBDXXX |              |                          | 2   | 32      | Blue  | double SIM |
| SM-A115FZWDXXX |              |                          | 2   | 32      | White | double SIM |
| SM-A115FZRDXXX |              |                          | 2   | 32      | Red   | double SIM |
| SM-A115FZKAXXX | SM-A115F     |                          | 2   | 32      | Black | single SIM |
| SM-A115FZBAXXX |              |                          | 2   | 32      | Blue  | single SIM |
| SM-A115FZWAXXX |              |                          | 2   | 32      | White | single SIM |
| SM-A115FZRAXXX |              |                          | 2   | 32      | Red   | single SIM |
| SM-A115FZKDXXX | SM-A115F/DS  | SEA<br>AFR<br>MEA<br>SWA | 3   | 32      | Black | double SIM |

# RAM & Storage size by region - Global

| SKU CODE Rule  | Model Name  | Region | RAM | Storage | Color | Status     |
|----------------|-------------|--------|-----|---------|-------|------------|
| SM-A115MZKDXXX | SM-A115M/DS | LATAM  | 2   | 32      | Black | double SIM |
| SM-A115MZBDXXX |             |        | 2   | 32      | Blue  | double SIM |
| SM-A115MZWDXXX |             |        | 2   | 32      | White | double SIM |
| SM-A115MZRDXXX |             |        | 2   | 32      | Red   | double SIM |
| SM-A115MZKAXXX | SM-A115M    |        | 2   | 32      | Black | single SIM |
| SM-A115MZBAXXX |             |        | 2   | 32      | Blue  | single SIM |
| SM-A115MZWAXXX |             |        | 2   | 32      | White | single SIM |
| SM-A115MZRAXXX |             |        | 2   | 32      | Red   | single SIM |

# RAM & Storage size by region - NA

| SKU CODE Rule   | Model Name | Region       | RAM | Storage | Color | Status     |
|-----------------|------------|--------------|-----|---------|-------|------------|
| SM-A115AZZKAXXX | SM-A115AZ  | AIO (Criket) | 2   | 32      | Black | single SIM |
| SM-A115AZZBAXXX |            |              | 2   | 32      | Blue  | single SIM |
| SM-A115AZZWAXXX |            |              | 2   | 32      | White | single SIM |
| SM-A115AZZRAXXX |            |              | 2   | 32      | Red   | single SIM |
| SM-A115U1ZKAXXX | SM-A115U1  | OYM          | 2   | 32      | Black | single SIM |
| SM-A115U1ZBAXXX |            |              | 2   | 32      | Blue  | single SIM |
| SM-A115U1ZWAXXX |            |              | 2   | 32      | White | single SIM |
| SM-A115U1ZRAXXX |            |              | 2   | 32      | Red   | single SIM |
| SM-A115UZKAXXX  | SM-A115U   | VZW          | 2   | 32      | Black | single SIM |
| SM-A115UZBAXXX  |            |              | 2   | 32      | Blue  | single SIM |
| SM-A115UZWAXXX  |            |              | 2   | 32      | White | single SIM |
| SM-A115UZRAXXX  |            |              | 2   | 32      | Red   | single SIM |
| SM-A115UZKAXXX  | SM-A115U   | TMK          | 2   | 32      | Black | single SIM |
| SM-A115UZBAXXX  |            |              | 2   | 32      | Blue  | single SIM |
| SM-A115UZWAXXX  |            |              | 2   | 32      | White | single SIM |
| SM-A115UZRAXXX  |            |              | 2   | 32      | Red   | single SIM |
| SM-A115UZKAXXX  | SM-A115U   | TMB          | 2   | 32      | Black | single SIM |
| SM-A115UZBAXXX  |            |              | 2   | 32      | Blue  | single SIM |
| SM-A115UZWAXXX  |            |              | 2   | 32      | White | single SIM |
| SM-A115UZRAXXX  |            |              | 2   | 32      | Red   | single SIM |

# RAM & Storage size by region - NA

| SKU CODE Rule   | Model Name | Region | RAM | Storage | Color | Status     |
|-----------------|------------|--------|-----|---------|-------|------------|
| SM-A115UZKAXXX  | SM-A115U   | SPR    | 2   | 32      | Black | single SIM |
| SM-A115UzbAXXX  |            |        | 2   | 32      | Blue  | single SIM |
| SM-A115UZWAXXX  |            |        | 2   | 32      | White | single SIM |
| SM-A115UZRAXXX  |            |        | 2   | 32      | Red   | single SIM |
| SM-A115UZKAXXX  | SM-A115U   | USC    | 2   | 32      | Black | single SIM |
| SM-A115UzbAXXX  |            |        | 2   | 32      | Blue  | single SIM |
| SM-A115UZWAXXX  |            |        | 2   | 32      | White | single SIM |
| SM-A115UZRAXXX  |            |        | 2   | 32      | Red   | single SIM |
| SM-A115WZKAXXX  | SM-A115W   | XAC    | 2   | 32      | Black | single SIM |
| SM-A115WZBAXXX  |            |        | 2   | 32      | Blue  | single SIM |
| SM-A115WZWAXXX  |            |        | 2   | 32      | White | single SIM |
| SM-A115WZRAXXX  |            |        | 2   | 32      | Red   | single SIM |
| SM-S115DLZKAXXX | SM-S115DL  | TFN    | 2   | 32      | Black | single SIM |
| SM-S115DLZBAXXX |            |        | 2   | 32      | Blue  | single SIM |
| SM-S115DLZWAXXX |            |        | 2   | 32      | White | single SIM |
| SM-S115DLZRAXXX |            |        | 2   | 32      | Red   | single SIM |



# RAM & Storage size by region

1. Now we have three kinds of EMCPs : 2+32G, 3+32G
2. SKU CODE Rules("SM-A115FZKDCIS" as an example):
  - "SM-A115F" is the model name
  - After model name, we use two letters (such as "ZK") to present the color, "SM-A115FZKDCIS" is black. More details refer to below matrix

| Color | Code |
|-------|------|
| Black | ZK   |
| Blue  | ZB   |
| White | ZW   |
| Red   | ZR   |

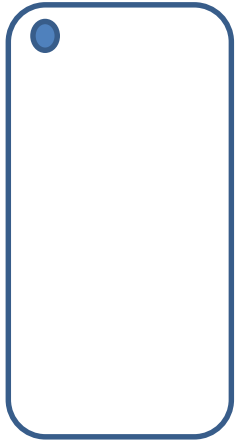
- We use "D" or "A" to present double SIM or single SIM, "SM-A115FZKD" is a double SIM product.

| SIM card info | Code |
|---------------|------|
| double SIM    | D    |
| single SIM    | A    |

- The last three letters is country operator "SM-A115FZKD" is

# New Concepts of H/W

## Infinity V-Display and New Battery with 4000mAh






**HID Display**



**4000mAh battery**

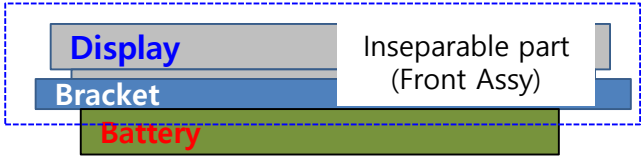
# Disassembly & Reassembly

## Part list which must be changed after reassembly

| Item  | Code        | Pictures (Images)   |
|---|-------------|---|
| Fingerprint Module Tape<br>(Whenever the rear cover is disassembled.)         | GH81-18930A |  |
| Front camera CU TAPE<br>(When the front camera is changed.)                   | GH81-19061A |  |
| A/S JDM-ETC FRONT CAM FOAM_SM-A115_SVC<br>(When the front camera is changed.) | GH81-18785A |  |

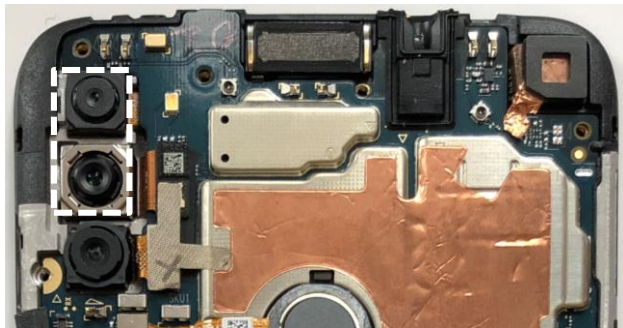
# Disassembly & Reassembly

## Battery replacement

| Type   | Structure  | Battery replace   |
|--|--|---|
|  <p>The diagram illustrates the front assembly components. A dashed blue box encloses the 'Display' (grey rectangle) and 'Bracket' (blue rectangle), which are labeled as an 'Inseparable part (Front Assy)'. Below the bracket is the 'Battery' (green rectangle), which is not part of the front assembly.</p> | <p>Display and Bracket can not be separated.</p> <p>Battery replacement is required when Front Ass'y(Display) is replaced.</p> <p>If the Front Assy is supplied without battery, please order battery together.</p> <p>※ Do not reuse the battery.</p> | <p>It need to replace the battery when the display replace.</p> |

# Disassembly & Reassembly

## Important management points



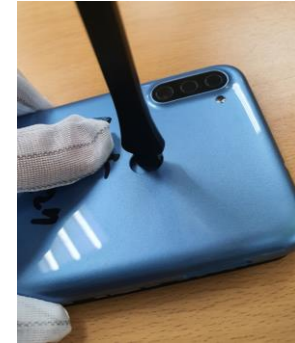
Ensure the camera located well in right place and BTB shall be buckled in place without deviation and avoid collapse.

- The main camera (13M) and auxiliary camera(2M) must be replaced in pairs. (GH81-18979A is pair code.)
- After replacing camera module, A/S engineer needs to check the camera as following steps:
  - Step 1: Open the camera function and check whether camera can work normally.
  - Step 2: Download and install the Galaxy Diagnostic tool
  - Step 3: Open the Galaxy Diagnostic tool and set the Golden Value flag
  - Step 4: After opening the Golden Value flag, Arcsoft algorithm will call the Golden Value built in the S/W version and imaging.
- Full function test should be do after any level repairing.

# Disassembly & Reassembly

## Important management points

### ■ Back cover disassemble



### ■ After replacing camera module, A/S engineer needs to check the camera as following steps:

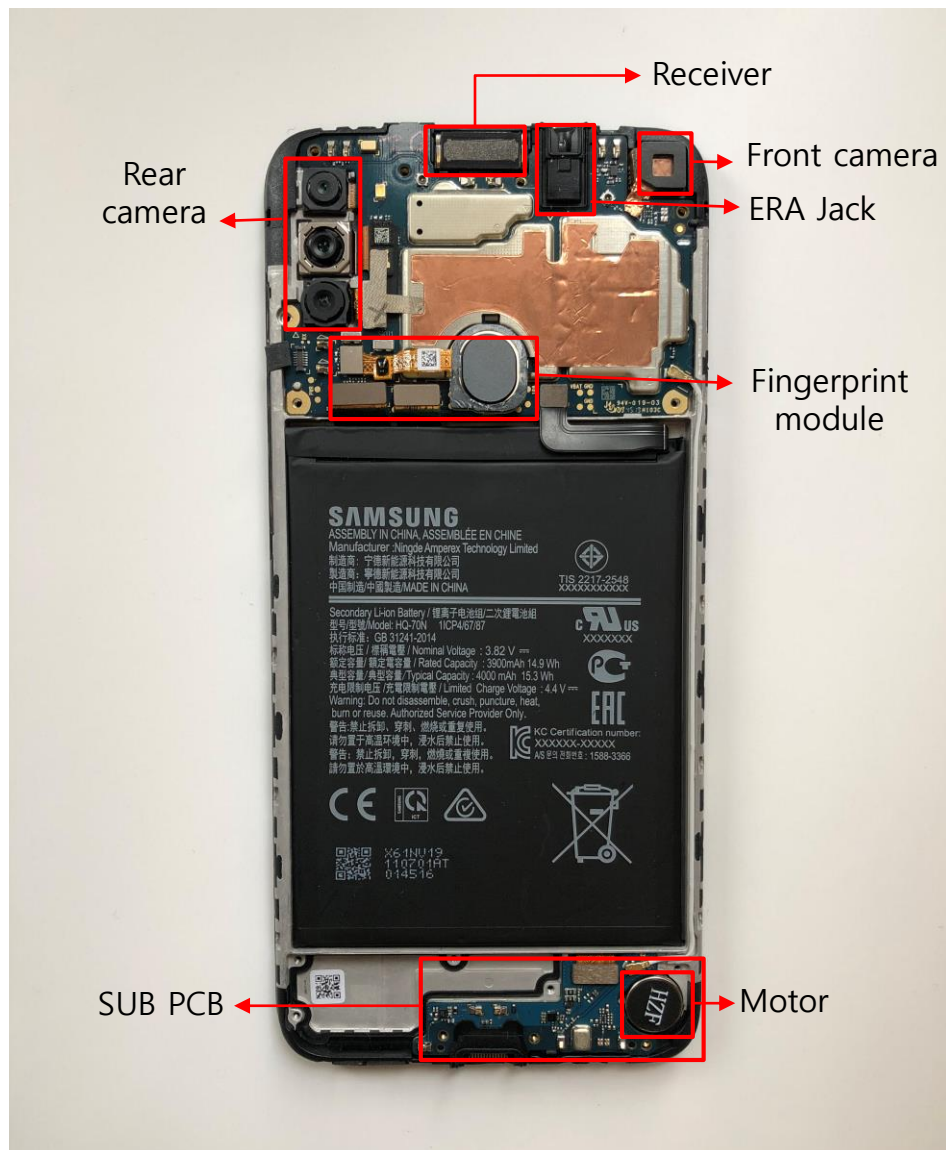
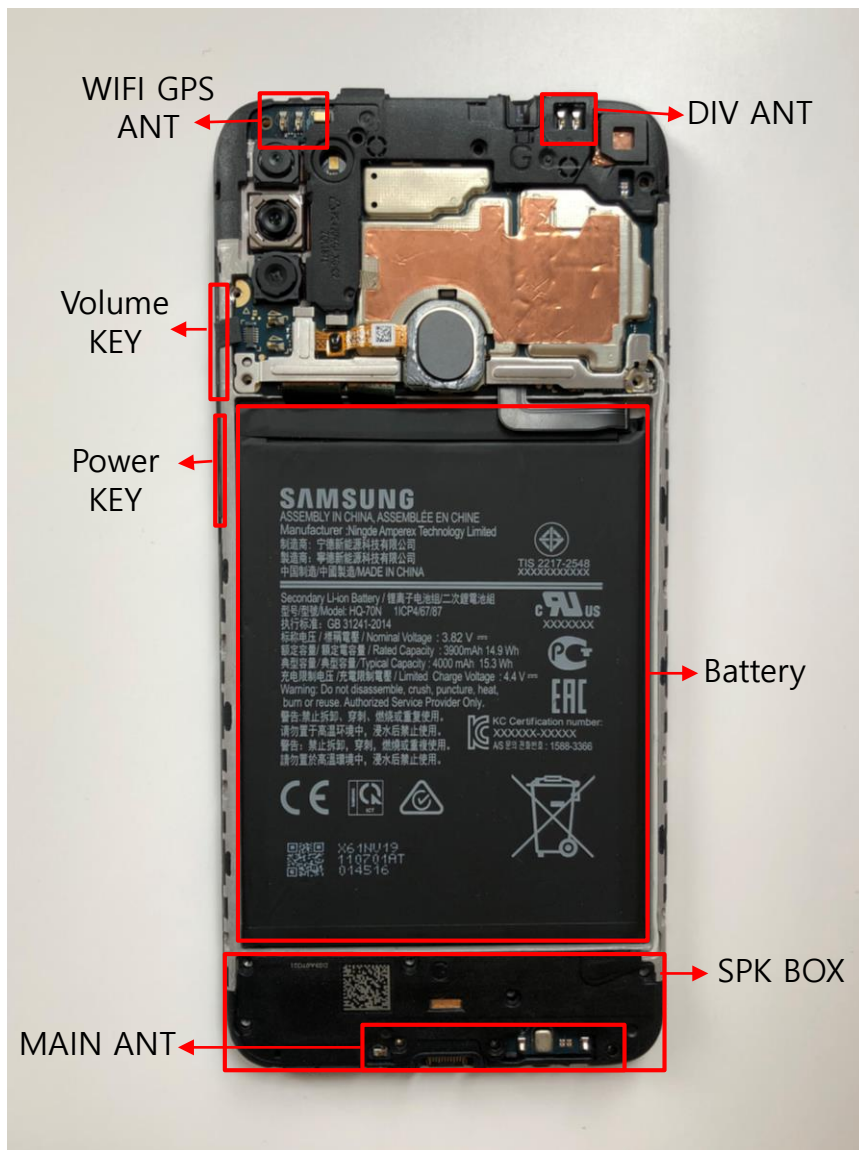
Step 1: Remove the SIM tray using the eject pin.

Step 2: Disassembly the back cover from the front ass'y using the disassemble stick.

Step 3: Set the temperature to **65 °C/ 5 minutes** using the mobile dryer and put the device

Step 4: Gently press the fingerprint key **using the disassemble stick or your finger** to remove the back cover

# Parts Layout





# Parts Layout

## PBA ( Bottom )

U3000 WCN chip

U1701 SUB MIC

ANT3102/ANT3103 WIFI/BT/GPS ANT

Led2201 Rear Camera flash

J2101/J2104 Camera BTB Connector

J1801 Fingerprint BTB Connector

J2001 LCD BTB Connector

J1901/J1902 KB FPC BTB Connector

ANT1701/ANT1702 REC shrapnel

U201 PMU-PM8953

ANT3301/ANT3307 DIV ANT

X201 19.2M Crystal

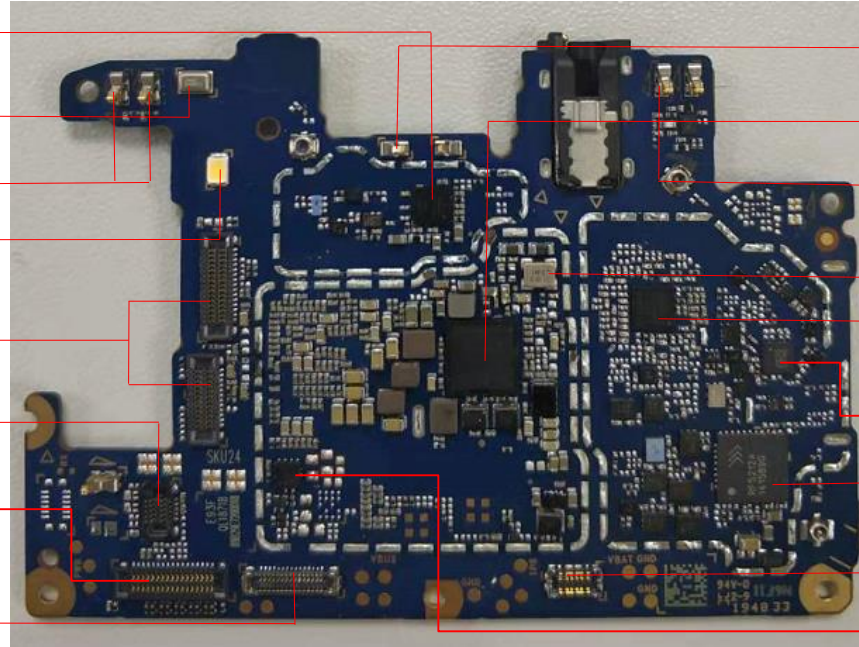
U2500 RF transceiver

SW2801 RF SWITCH

U2700 RF 2G PA

J1601 Battery BTB Connector

U2201 G-Sensor

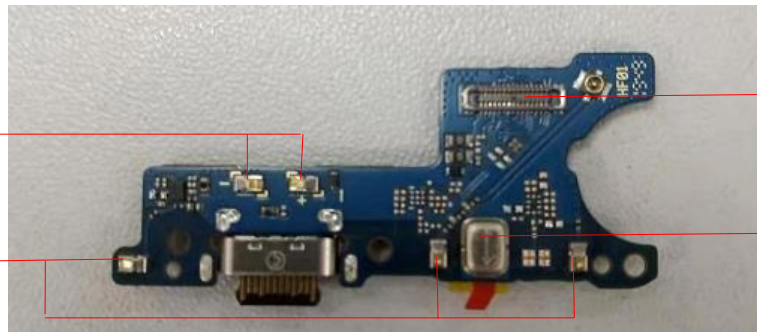


ANT201/ANT202 SPK shrapnel

ANT301/ANT303/ANT304 RF Main ANT

J102 MAIN FPC BTB CONNECTOR

U201 MAIN MIC





# Parts Layout

## PBA ( TOP )

J1701 Earphone Socket

J2103 Front CAM BTB Connector

J2304 SIM/SD Card Connector

U2001 BL Driver IC

U301 PMIC\_PMI632

PA2601 RF PA

U1602 OVP IC

U2202 P-SENSOR

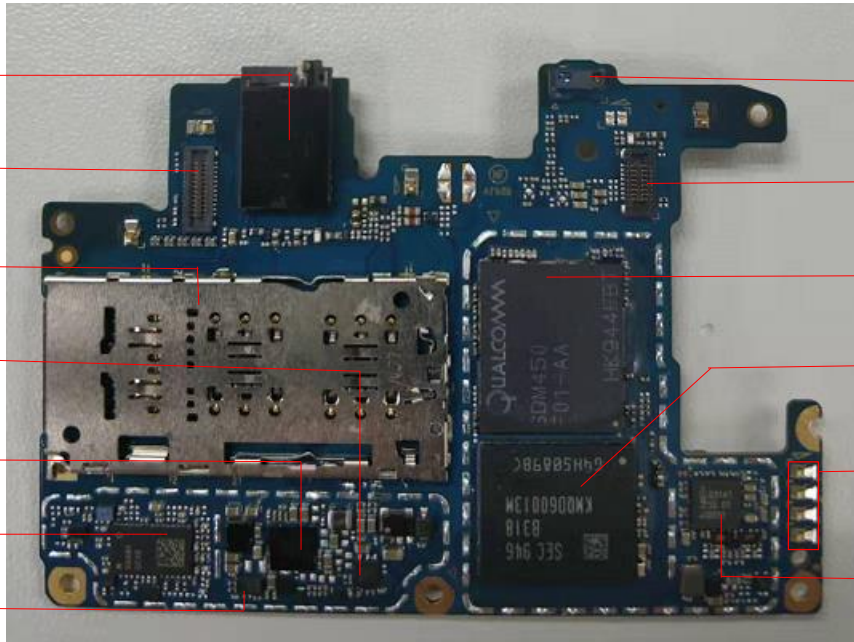
J2102 Rear CAM BTB Connector

U801 CPU-SDM450

U1501 memory

ANT1801/ANT1802/ANT1803/ANT1804  
Side key

U3401 NFC IC

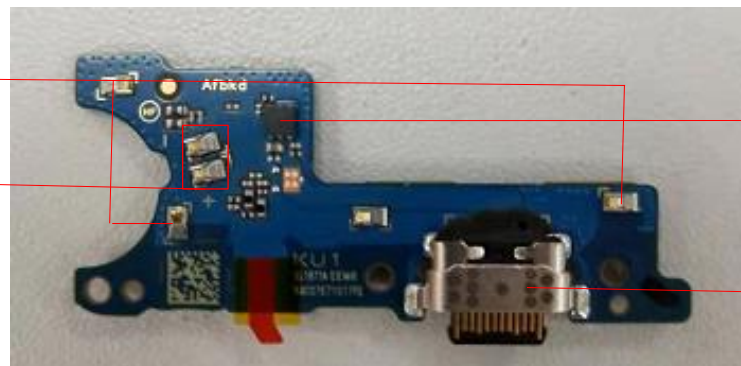


ANT305/ANT306/ANT307/ANT308 Gr  
ounded shrapnel

ANT203/ANT204 MOTOR shrapnel

Q101 NMOS

J101 TYPE\_C Connector



# Troubleshooting

## ■ No Power

| CHECKING FLOW   | IMAGE   |
|---|---|
| <p>Flowchart for checking power issues:</p> <pre>graph TD; START([START]) --&gt; D1{Battery voltage higher than 3.5V?}; D1 -- YES --&gt; D2{Check test points}; D1 -- NO --&gt; A1[Change battery or charging the battery]; D2 -- YES --&gt; D3{Check clock}; D2 -- NO --&gt; A1; D3 -- YES --&gt; E1([Device can power on]); D3 -- NO --&gt; A2[Re-solder or change PMU(U201)]; A1 --&gt; D2; A2 --&gt; D3; A3[Re-solder or change X201, J101, U801, U1501] --&gt; E1;</pre> | <p>Images showing components related to power issues:</p> <ul style="list-style-type: none"><li>Top image: U801 CPU-SDM450, U1501 MEMORY, U301 PMIC-PMI632.</li><li>Middle image: X201 19.2M Crystal, U201 PMU-PMI632.</li><li>Bottom image: J101 TYPE_C Connector.</li></ul> |

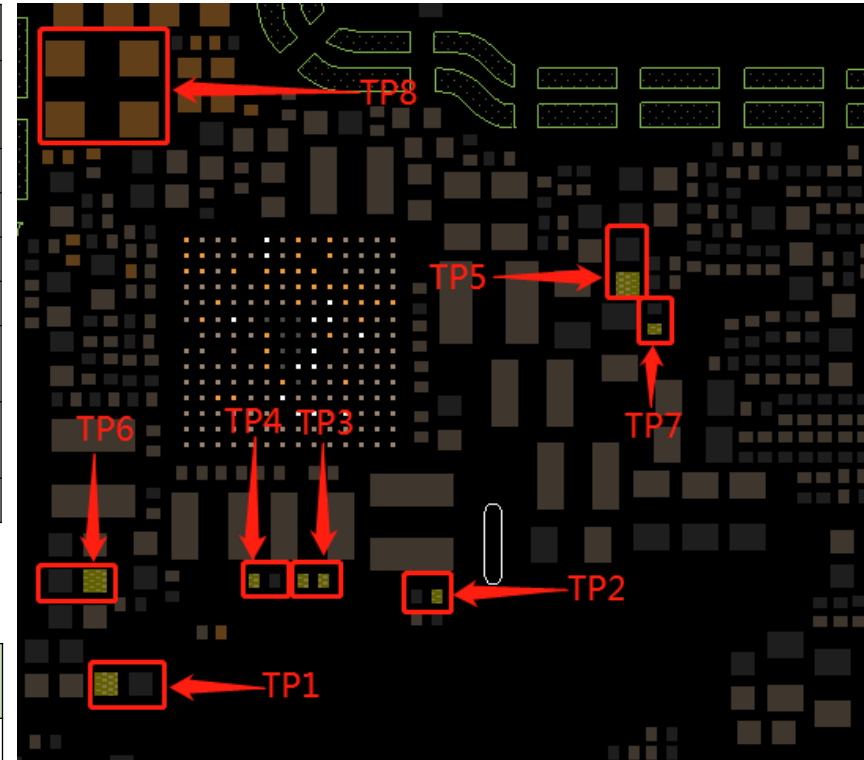
# Troubleshooting

## ■ No Power

| Power on voltage check   |                      |                   |                      |     |
|--------------------------|----------------------|-------------------|----------------------|-----|
| Power Domain             | Configurable Voltage | Signal Name       | Measurement 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

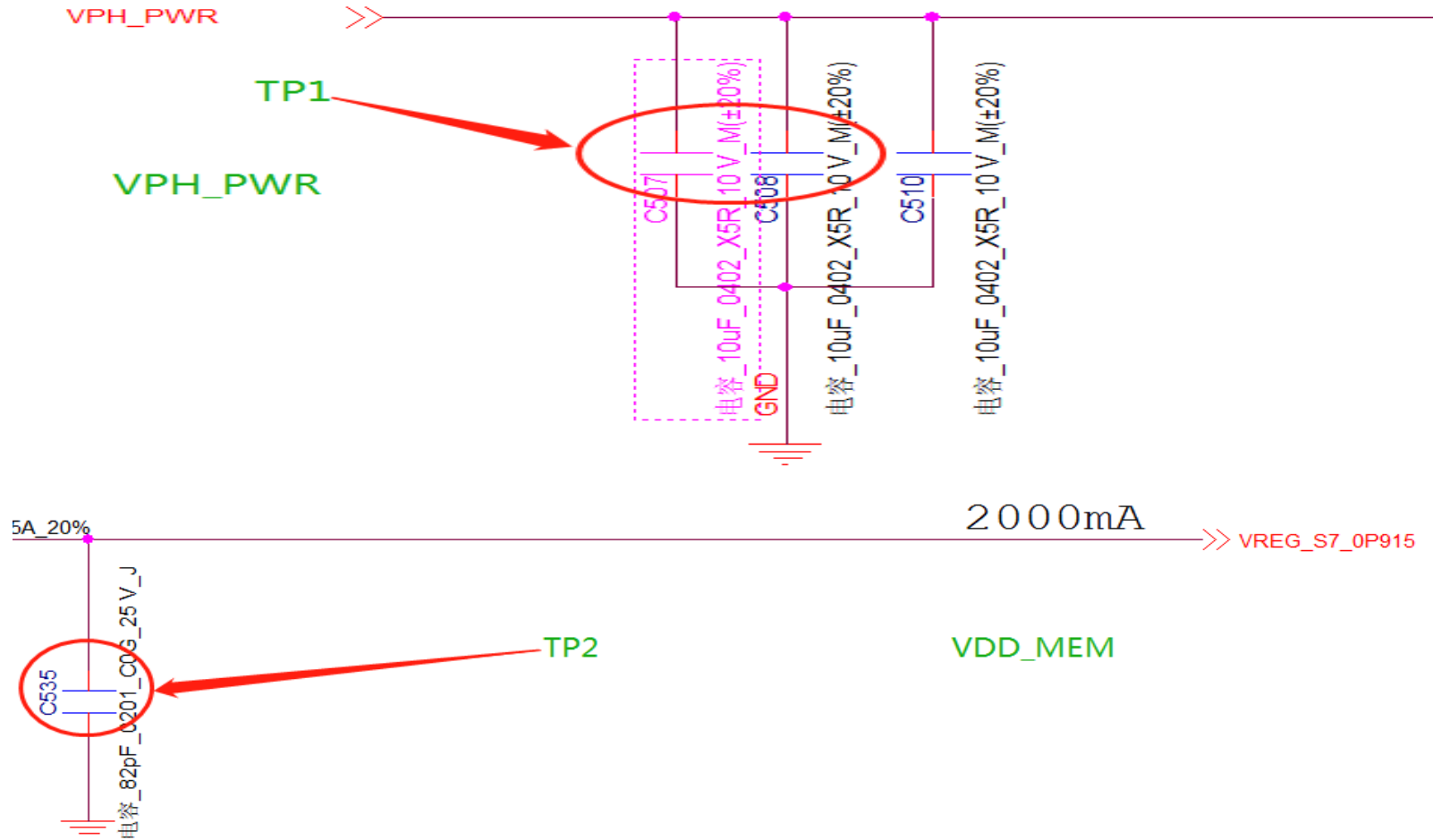
| Signal Name | Frequency MHZ | Measurement Location | TP  |
|-------------|---------------|----------------------|-----|
| XTAL_19M_IN | 19.2M         | X201                 | TP8 |



# Troubleshooting

## ■ No Power

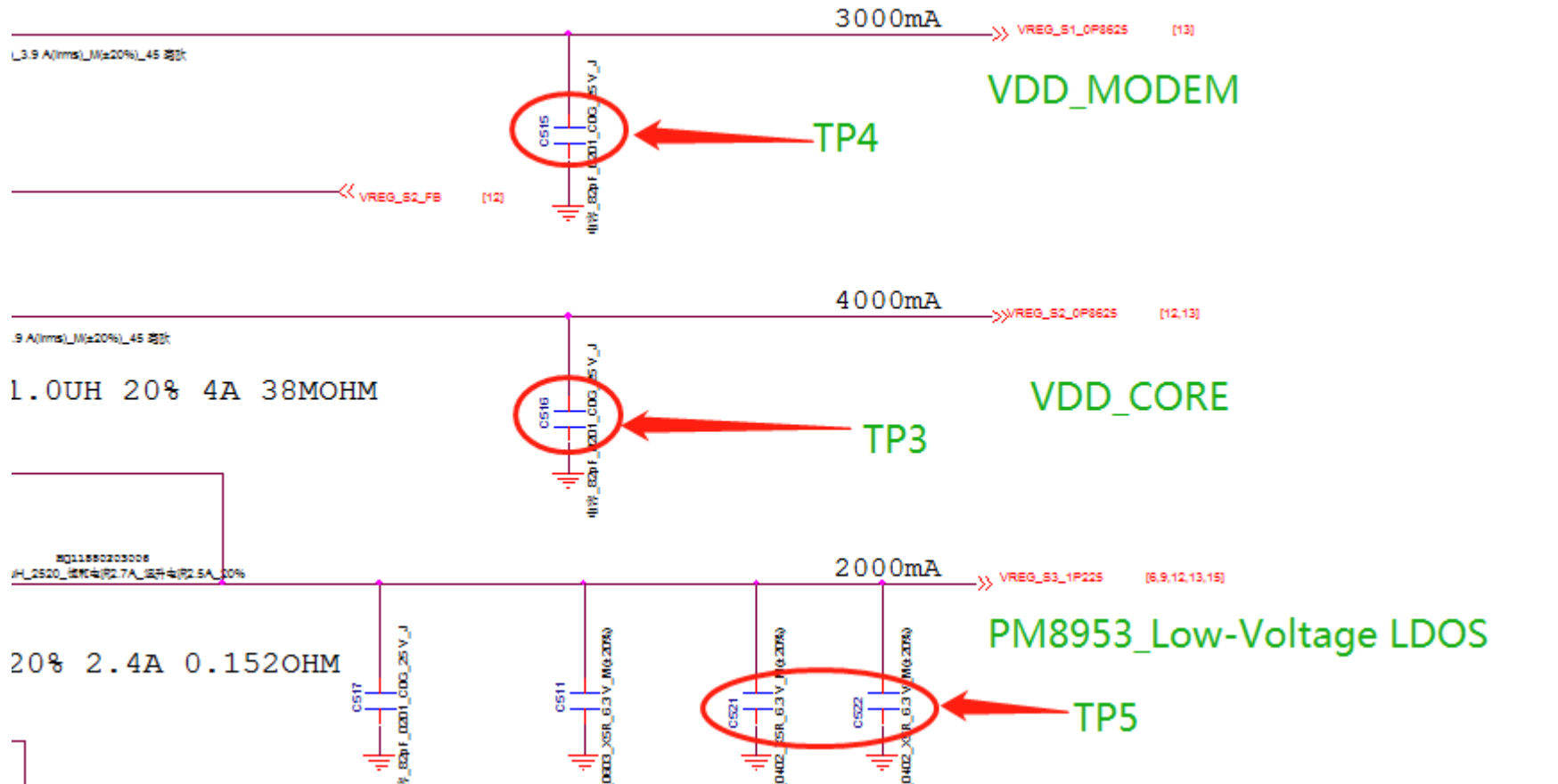
- Checking Power signal(Battery connector, PMU, Clock)



# Troubleshooting

## ■ No Power

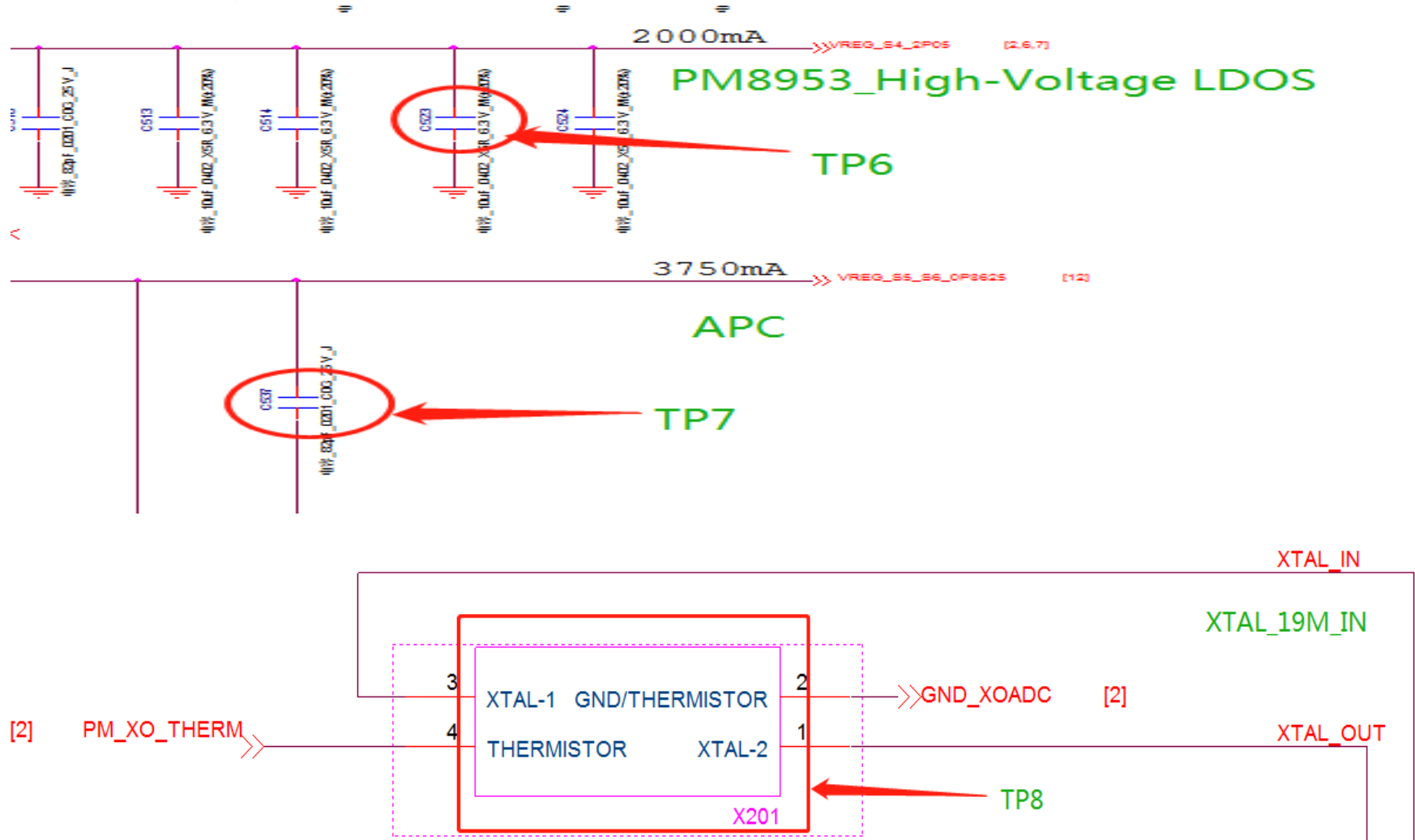
- Checking Power signal(Battery connector, PMU, Clock)



# Troubleshooting

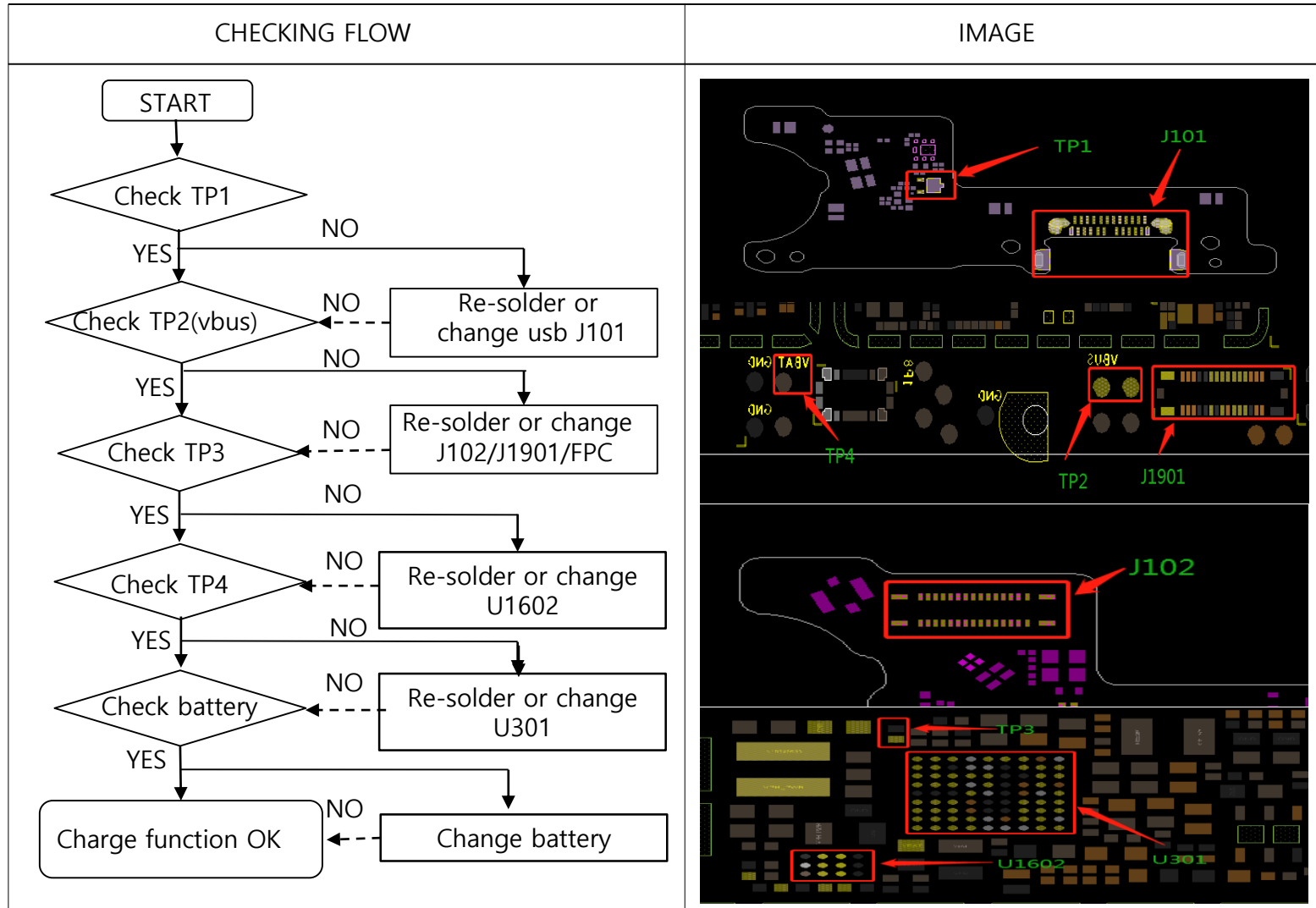
## ■ No Power

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



# Troubleshooting

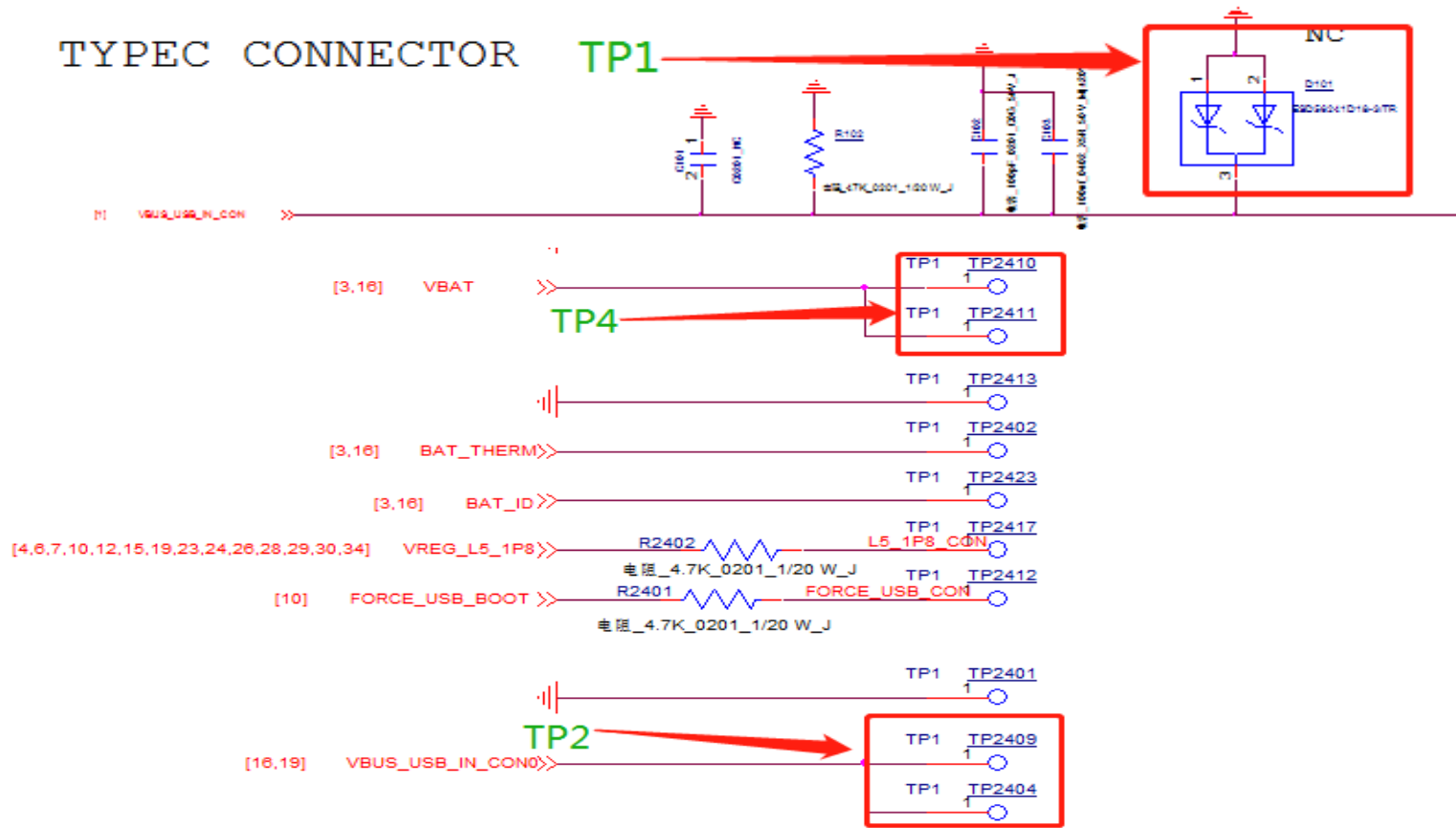
## ■ No Charging



# Troubleshooting

- **No Charging**

- The charging controlled by PMU chip PMI632 (U301).





# Troubleshooting

## ■ No Charging

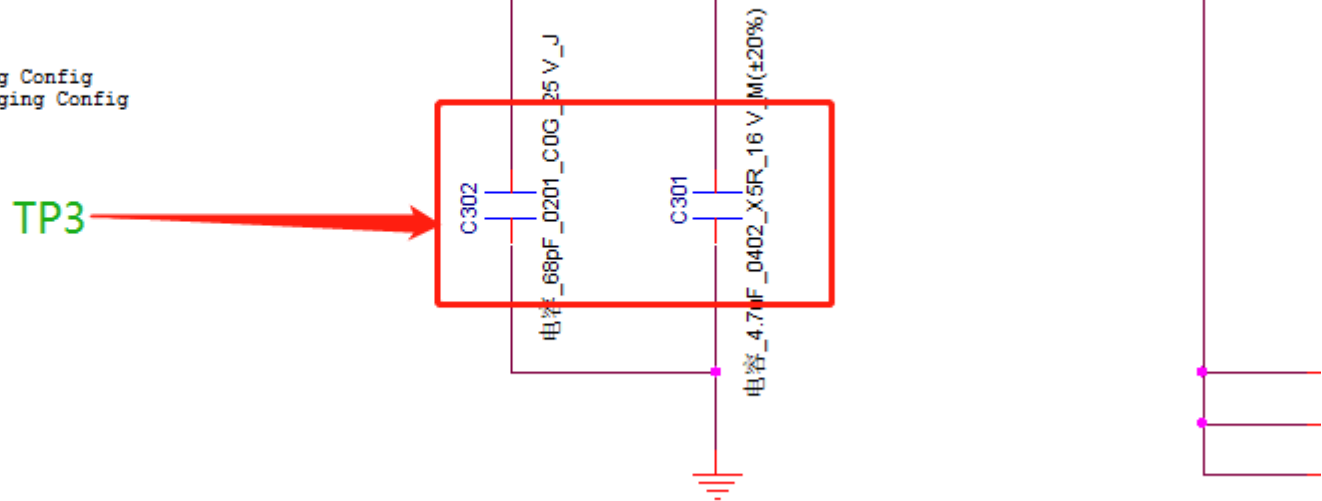
- The charging controlled by PMU chip PMI632 (U301).

VBUS通路要求走3A电流，线宽至少3mm

[16] VBUS\_USB\_IN\_CON >>

LBC:  
Use C301= 4.7uF for Single Charging Config  
Use C301 = 2.2uF for Parallel Charging Config

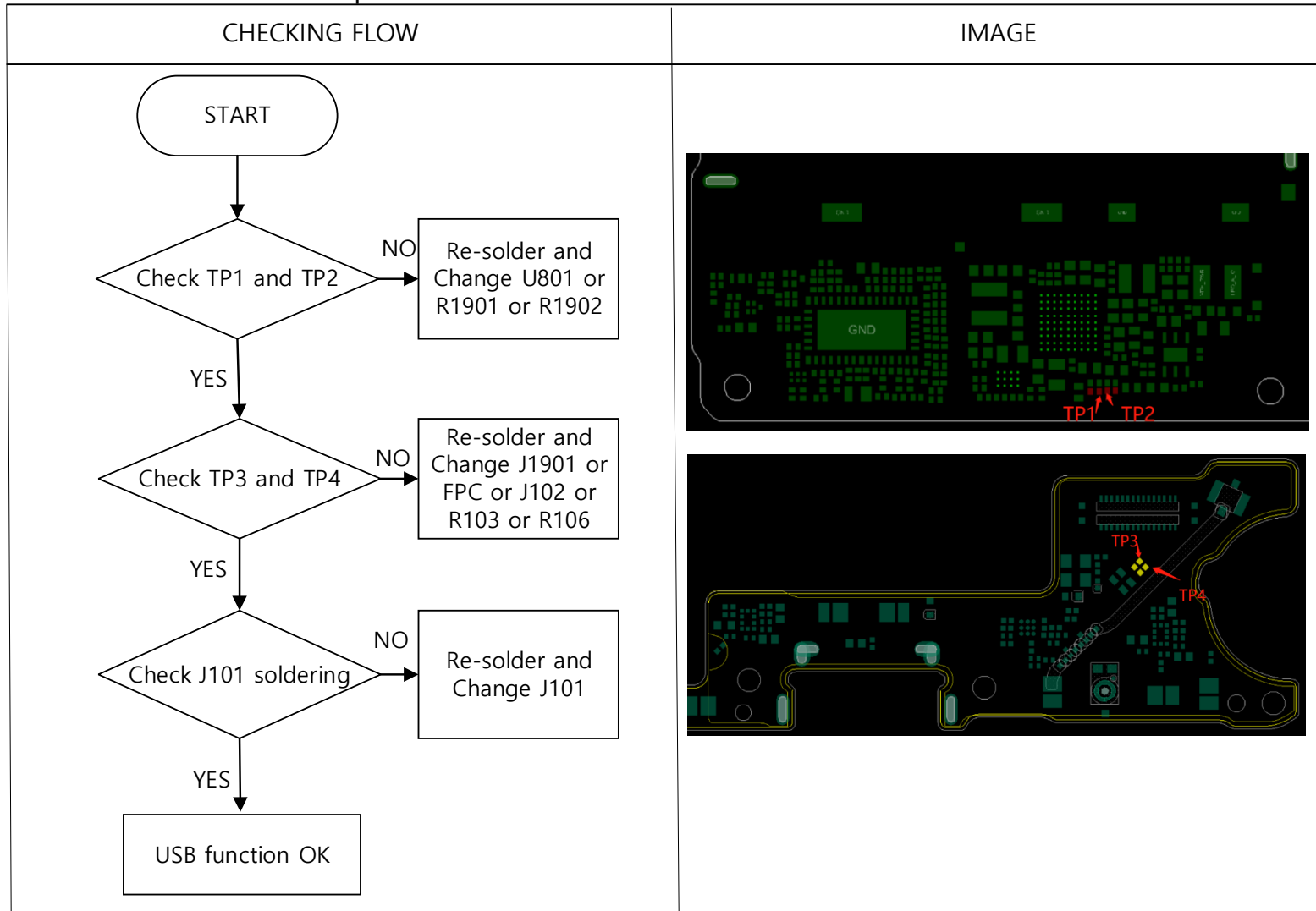
TP3



# Troubleshooting

## ■ USB

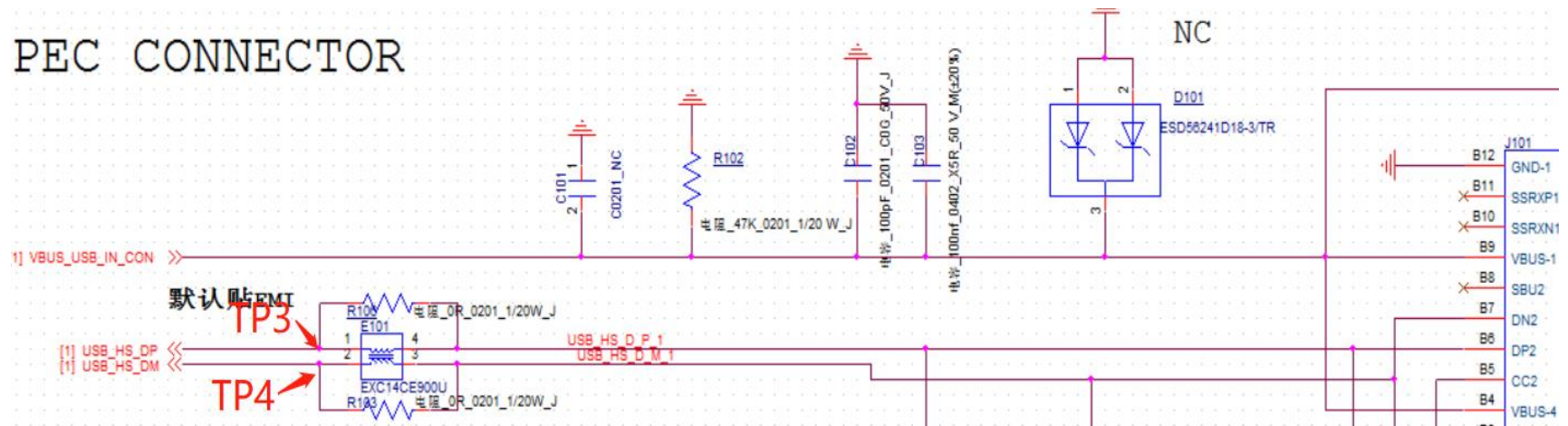
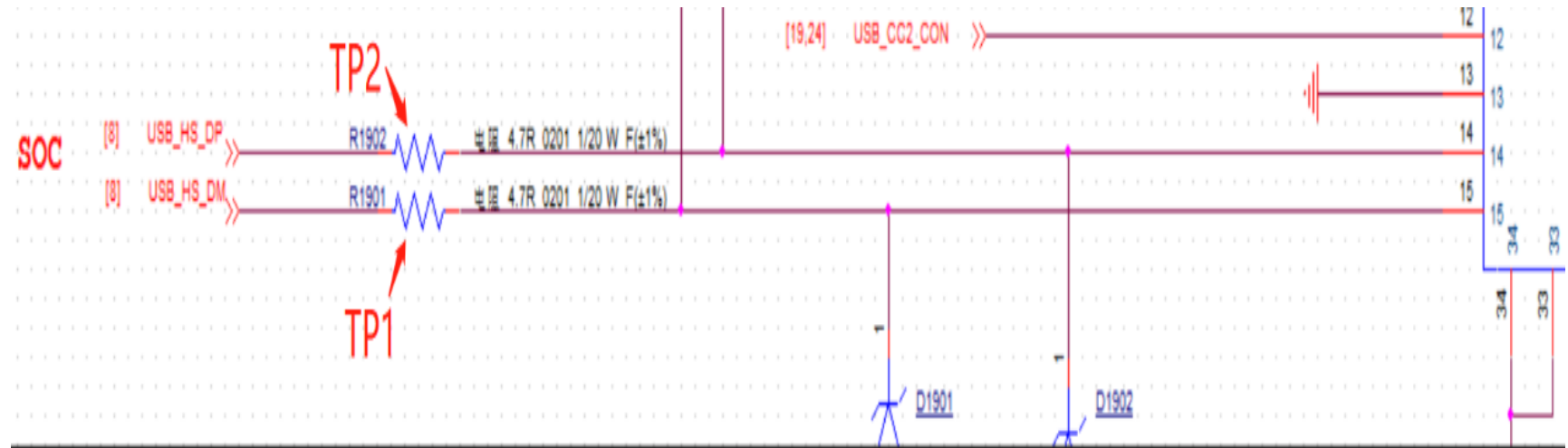
1. I/O connector is used as the USB port.



# Troubleshooting

## ■ USB

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

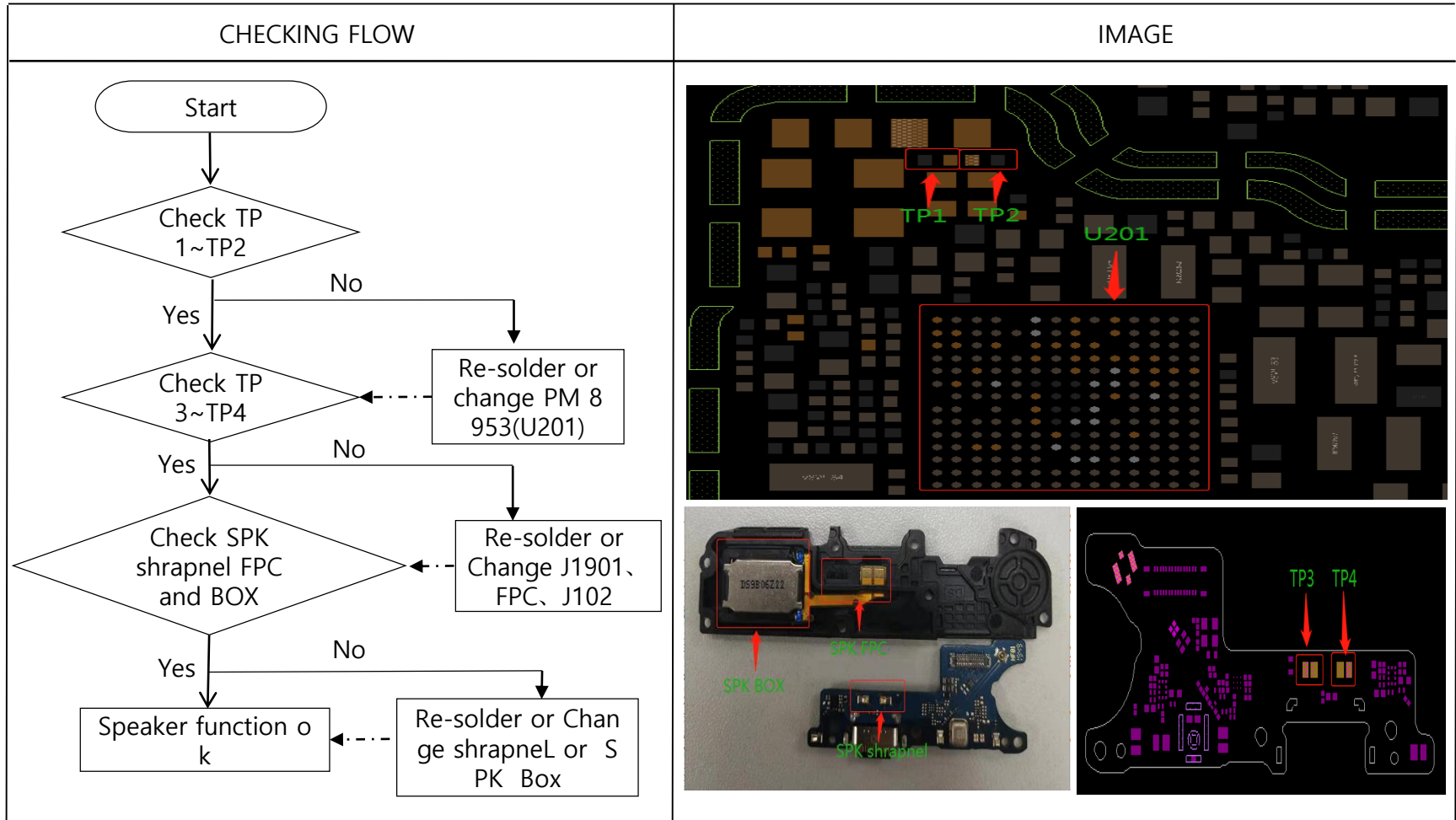


# Troubleshooting

## ■ Sound Problem

### 2. Audio speaker

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



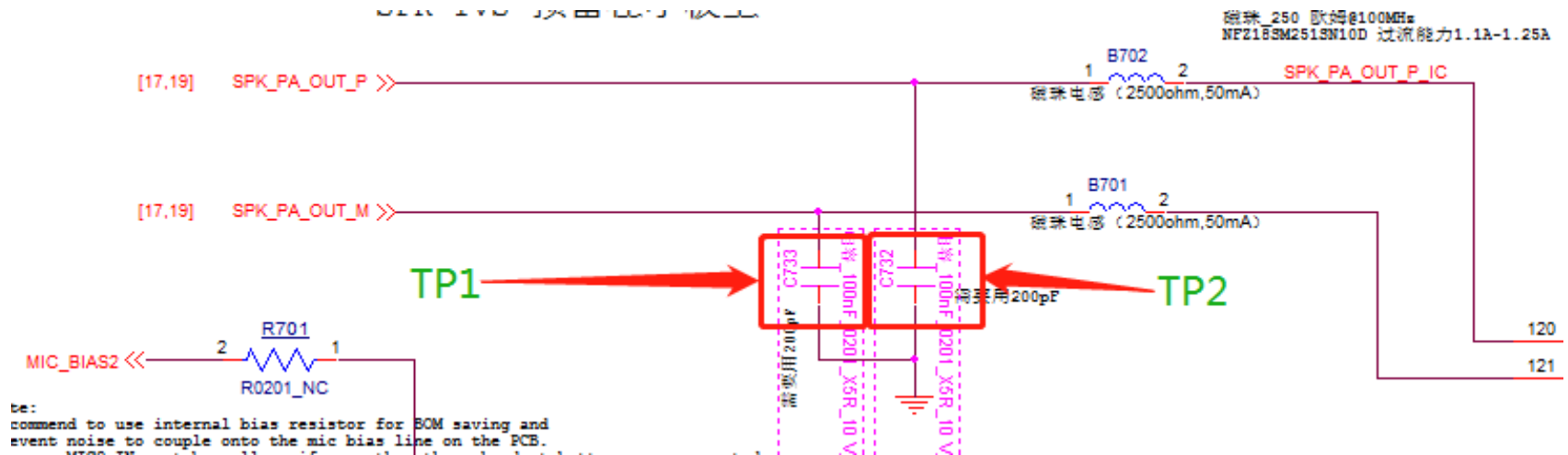
# Troubleshooting

## ■ Sound Problem

### 2.1 Audio speaker

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

Circuit Diagram



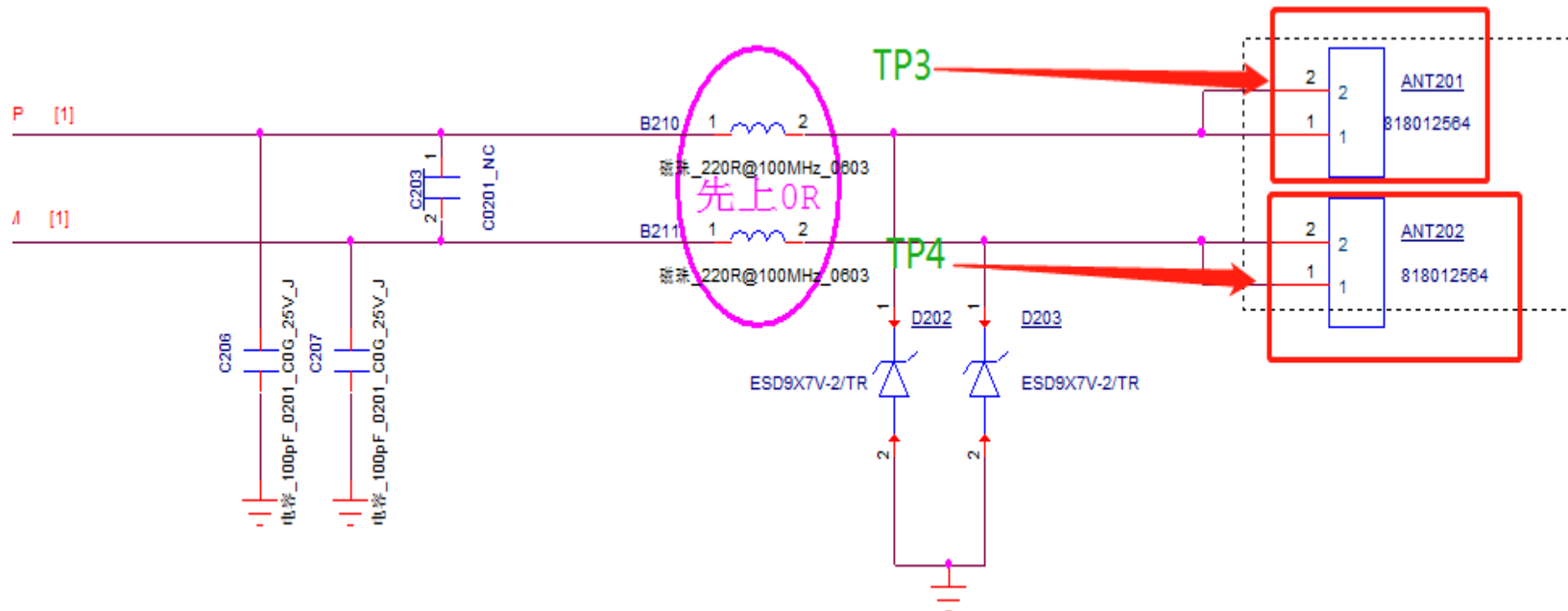
# Troubleshooting

## ■ Sound Problem

### 2. 2 Audio speaker

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

#### Circuit Diagram

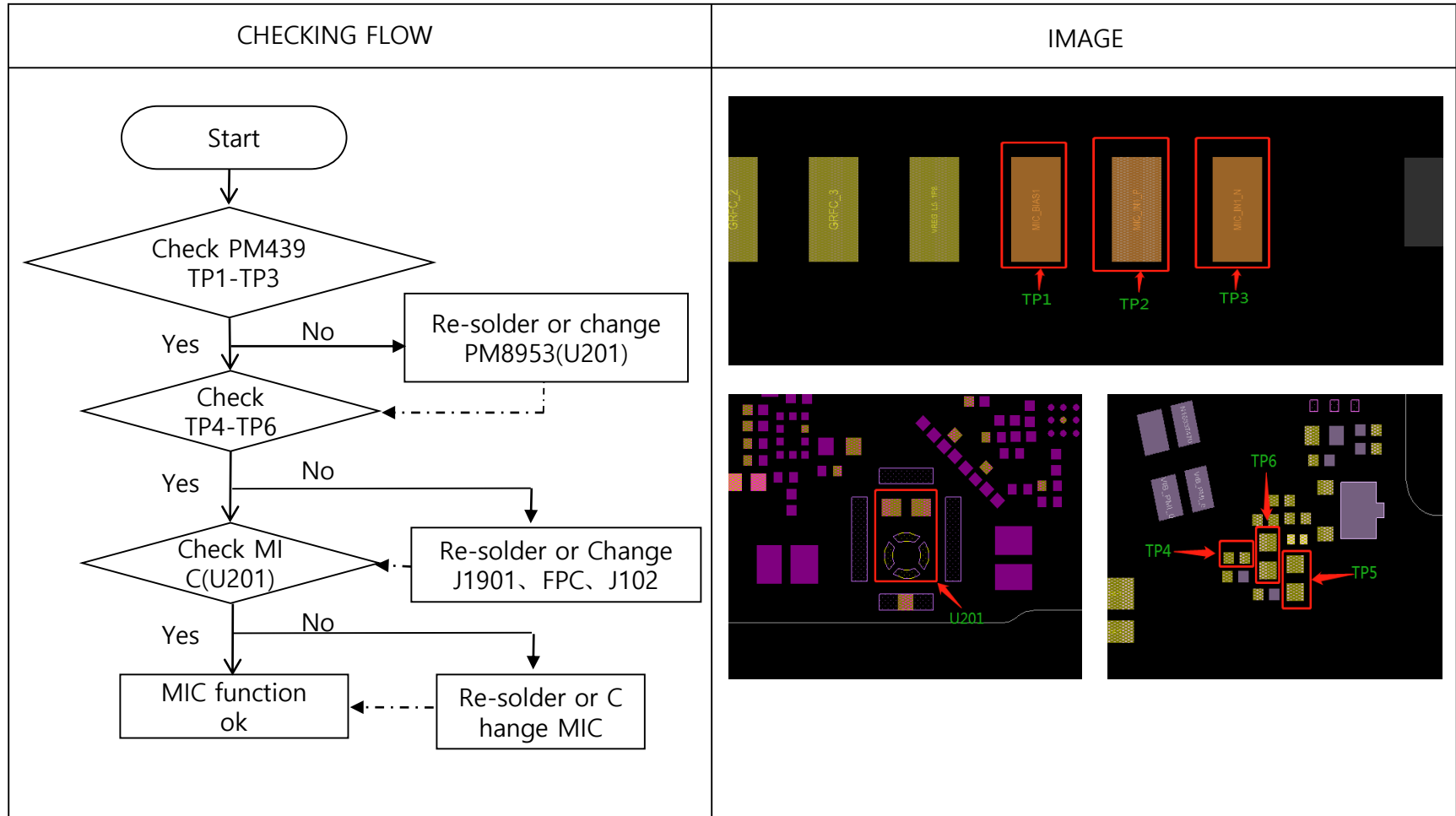


# Troubleshooting

## ■ Sound Problem

### 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.





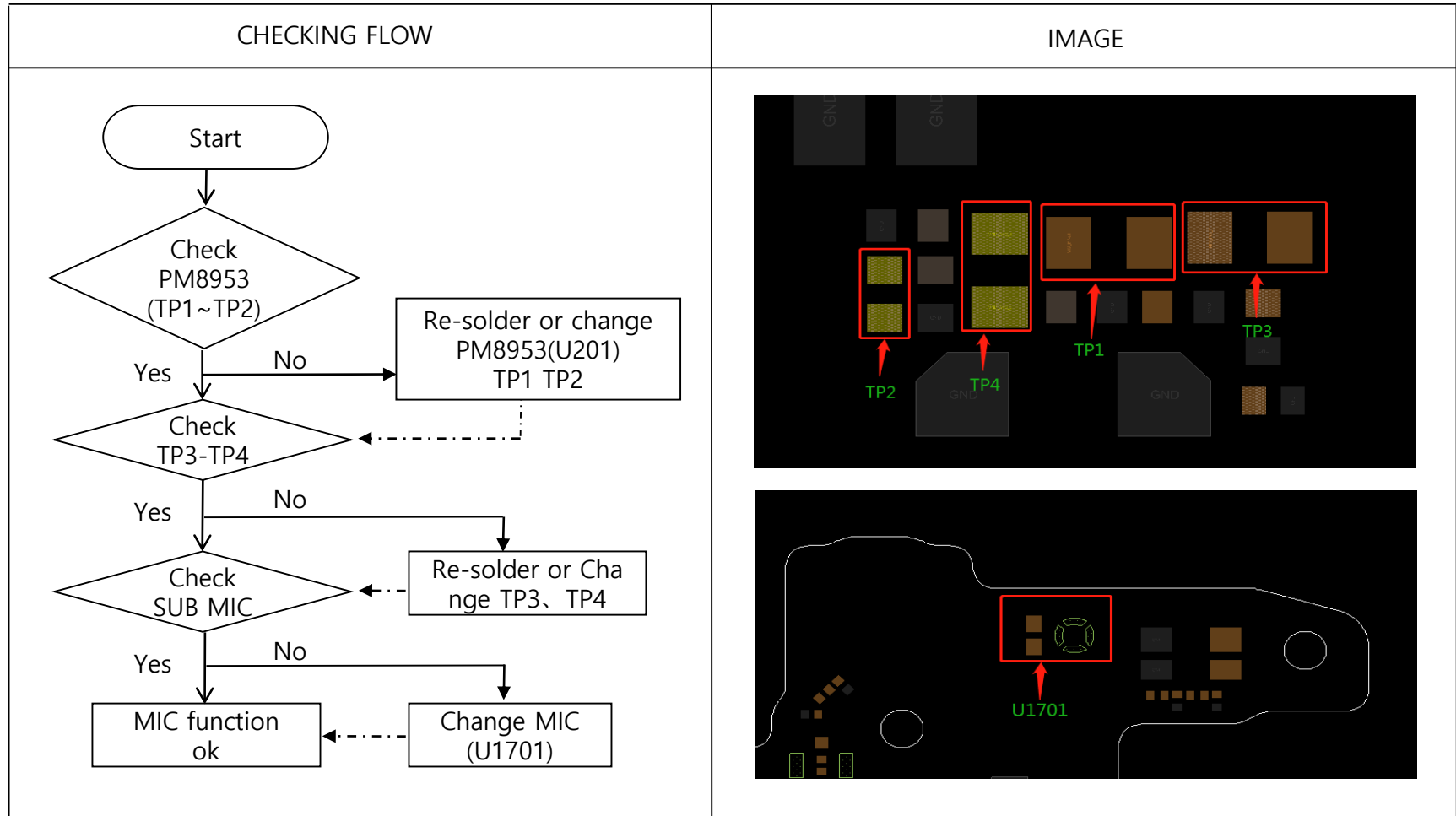


# Troubleshooting

## ■ Sound Problem

### 4. Audio SUB MIC

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



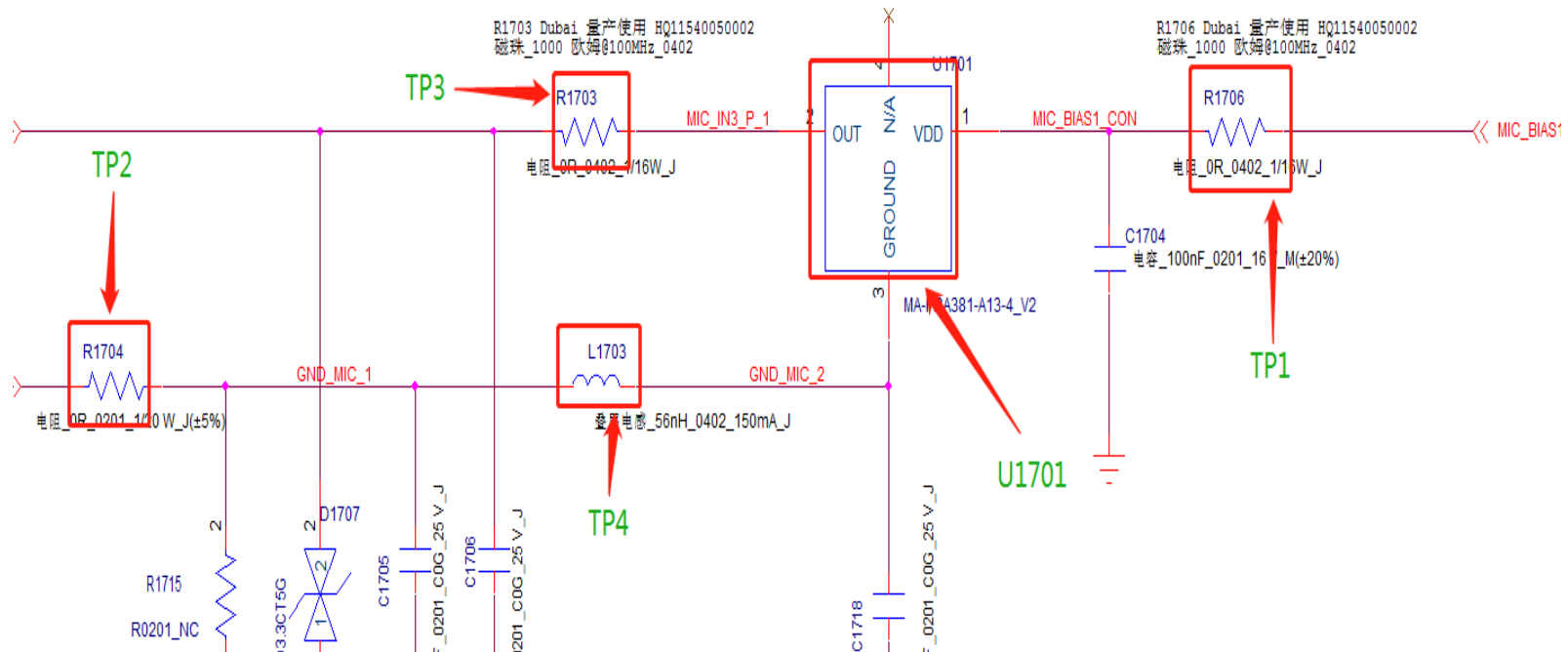
# Troubleshooting

## ■ Sound Problem

### 4.1 Audio SUB MIC

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

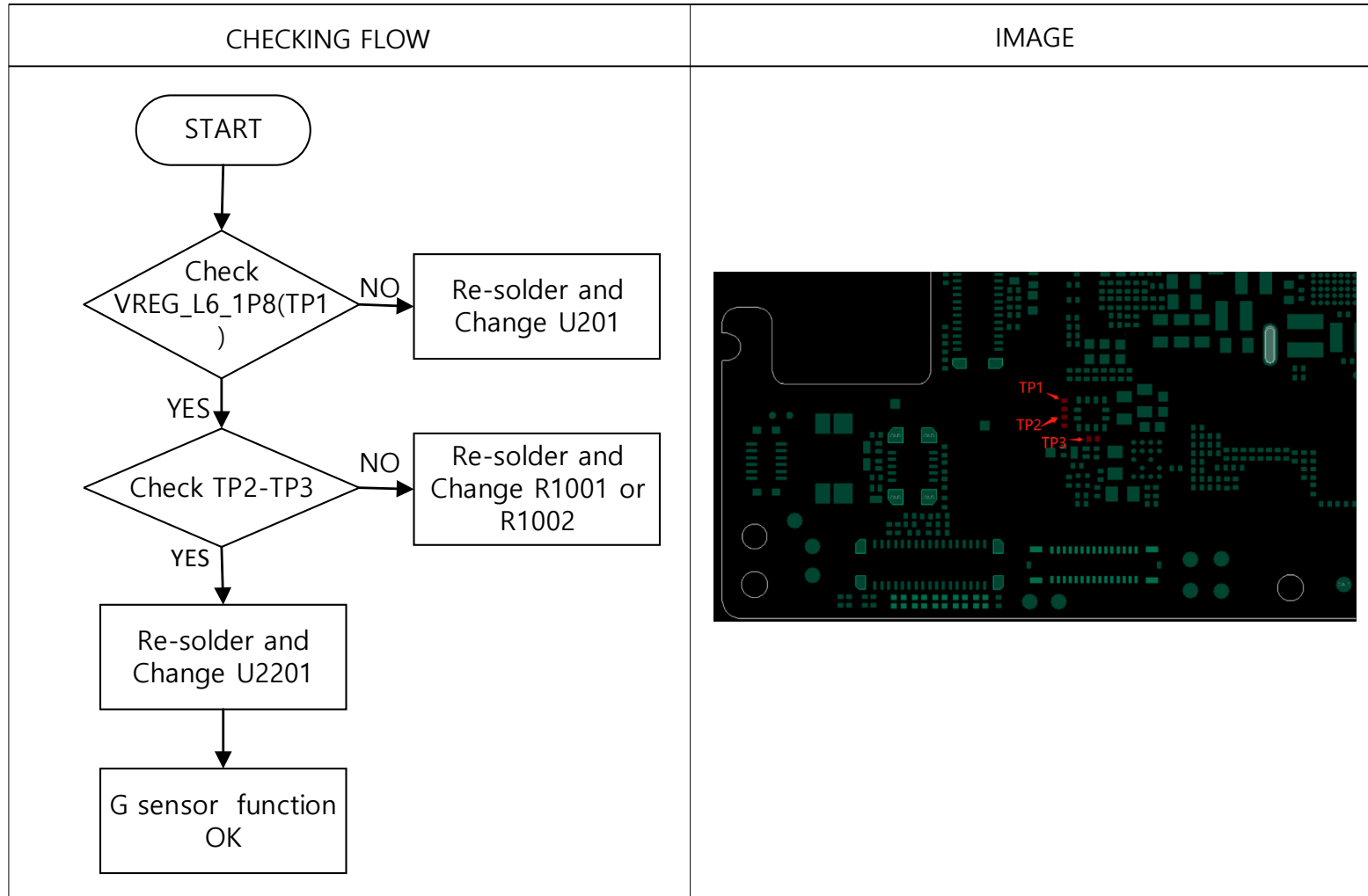
Circuit Diagram



# Troubleshooting

## ■ G-SENSOR

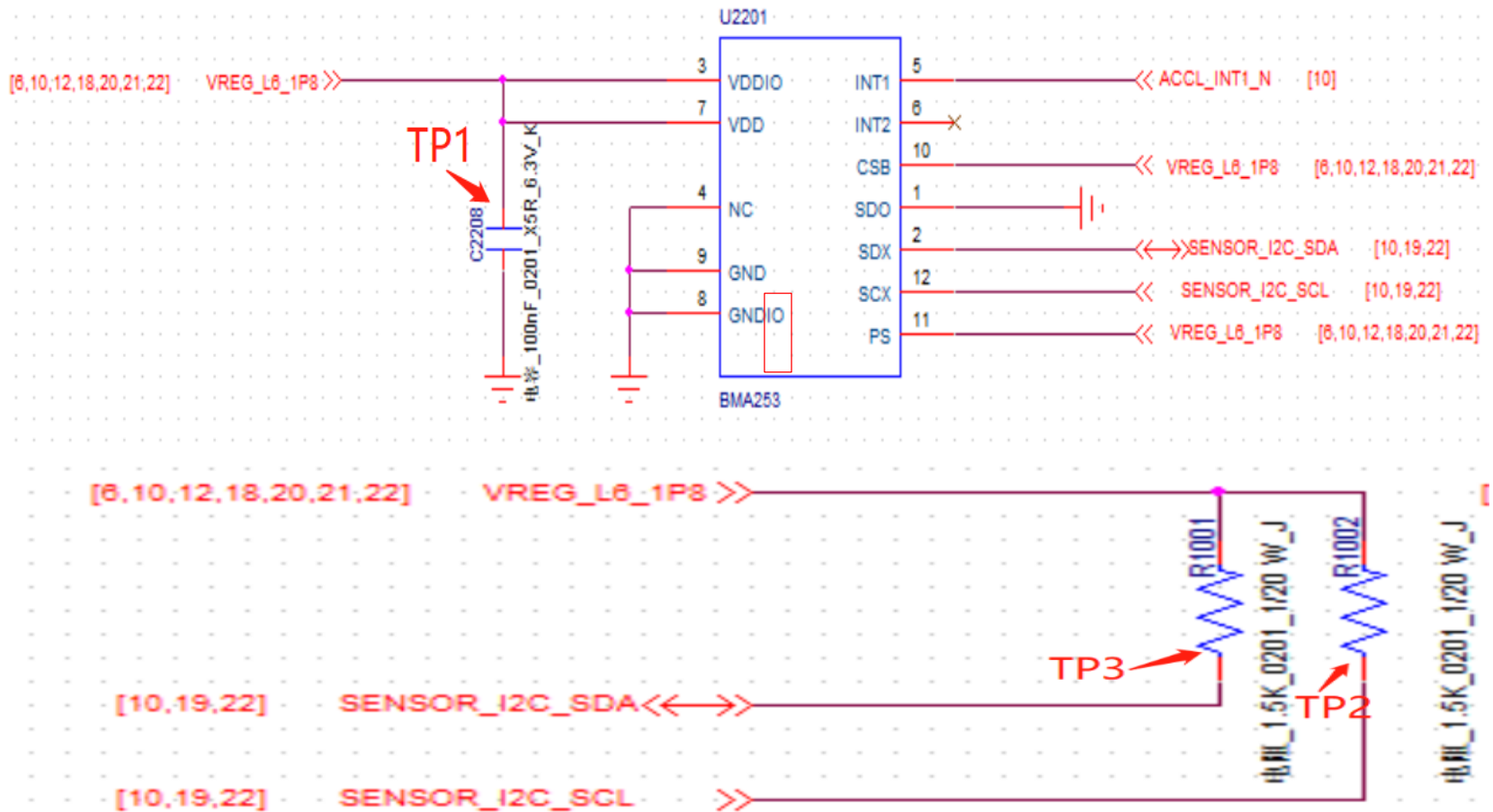
5. The G sensor is calibrated by using SW algorithm.



# Troubleshooting

## ■ G-SENSOR

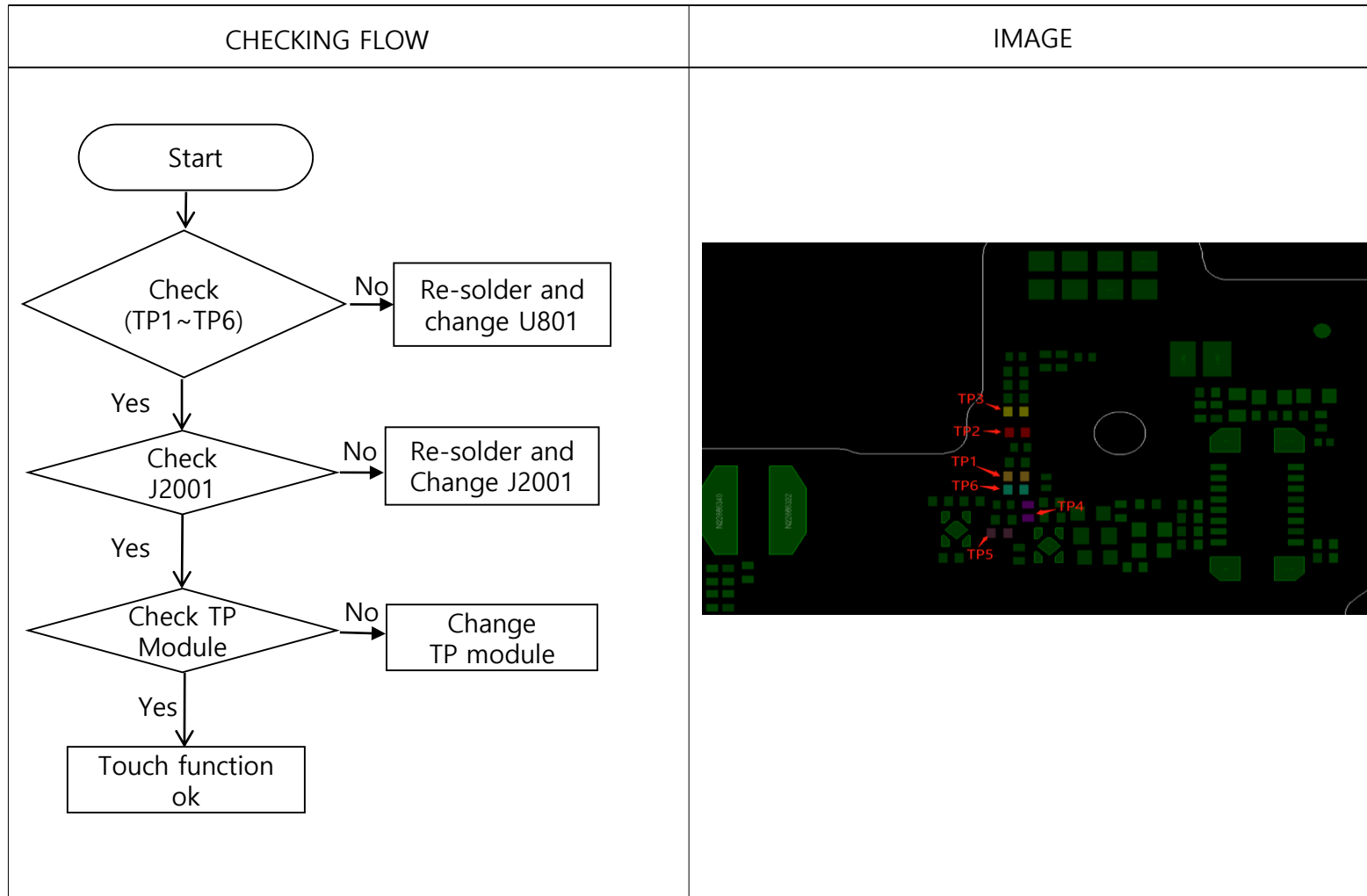
5.1 The G sensor is calibrated by using SW algorithm.



# Troubleshooting

## ■ Proximity and light sensor

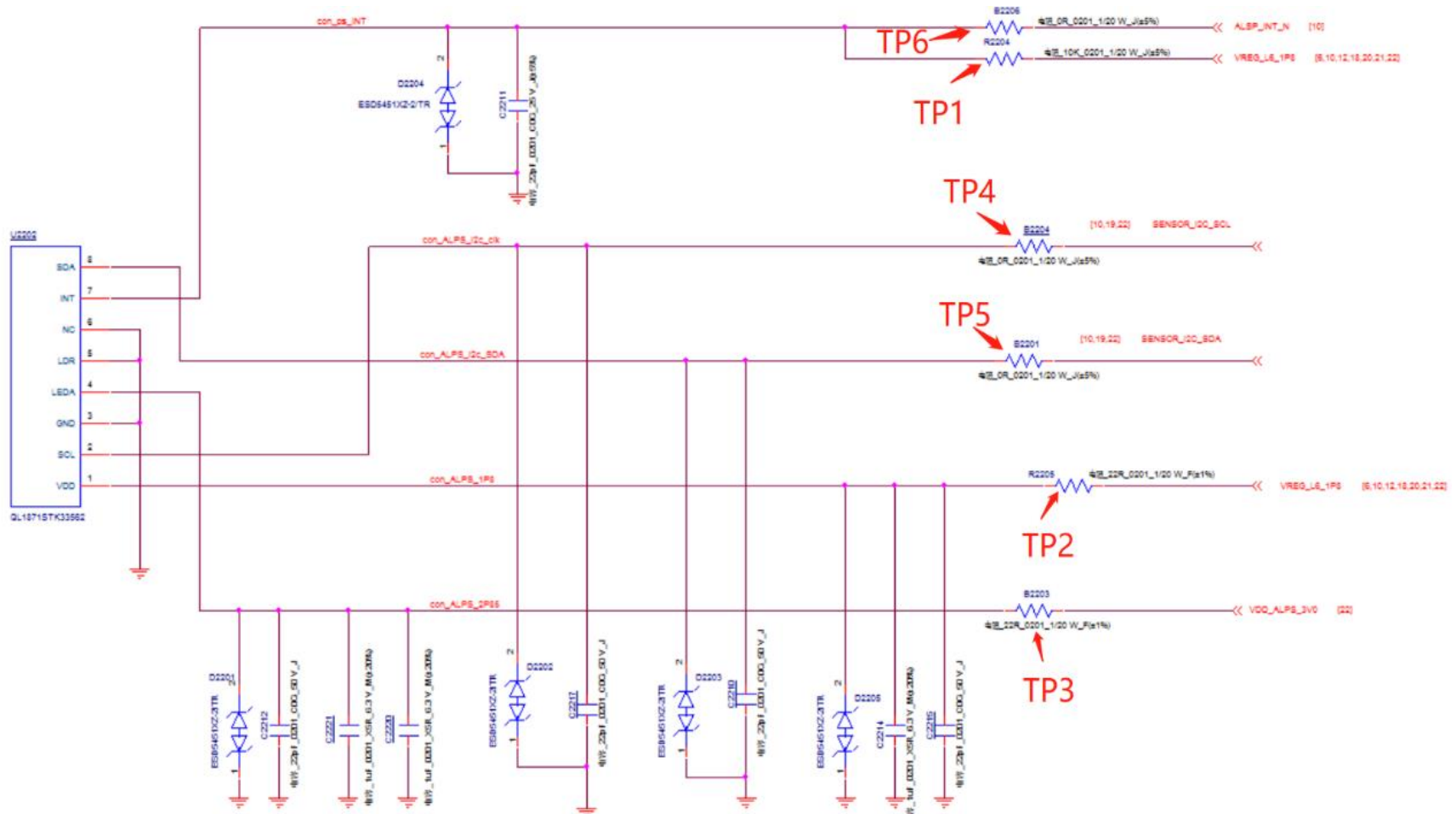
6. Proximity and Light Sensor is worked as below: Control the screen's on/off operation automatically while making phone calls, and adjust the screen brightness according to ambient light



# Troubleshooting

## ■ Proximity and light sensor

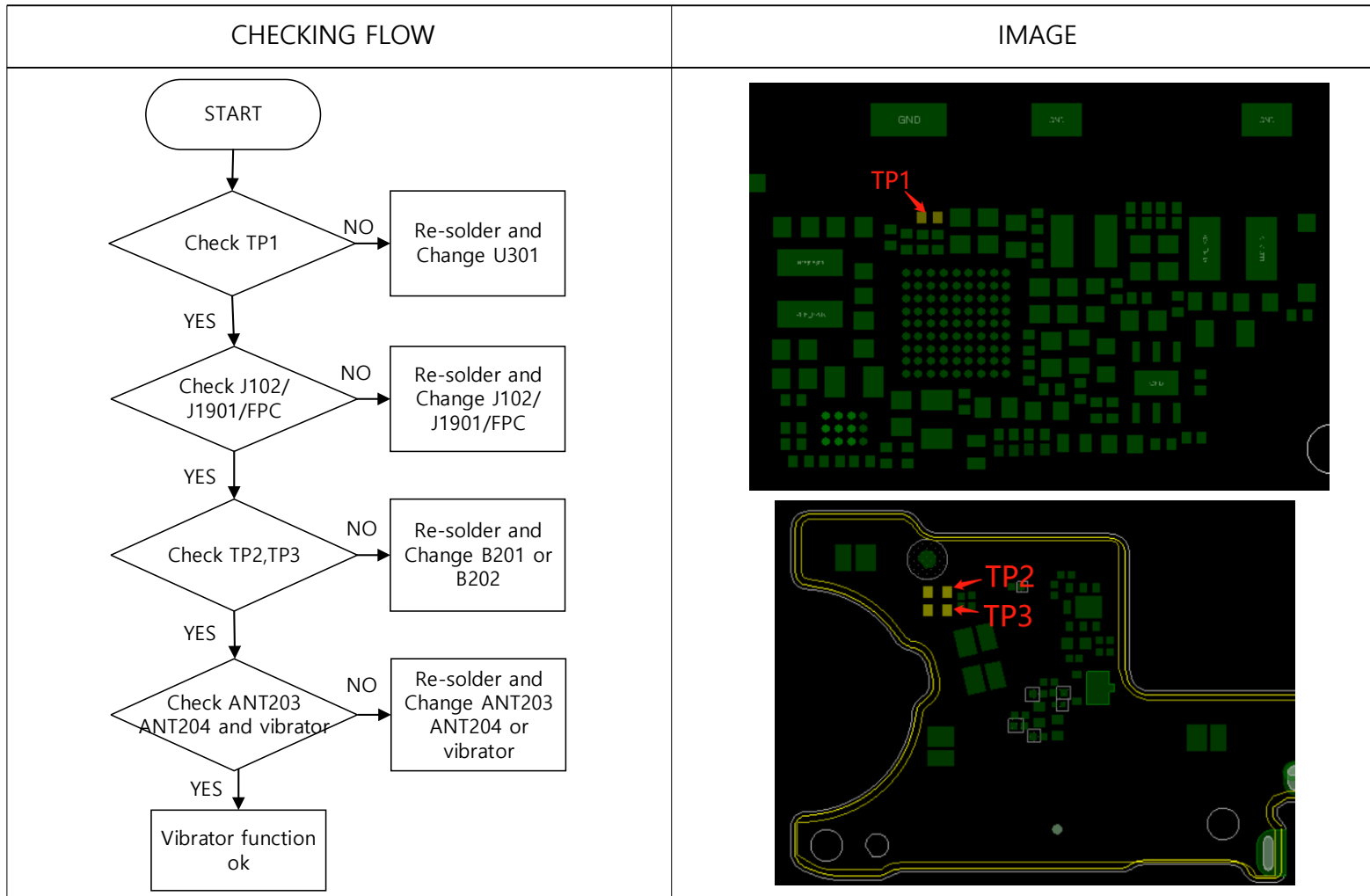
6.1 Proximity and Light Sensor is worked as below: Control the screen's on/off operation automatically while making ph one calls, and adjust the screen brightness according to ambient light.



# Troubleshooting

## ■ Vibrator

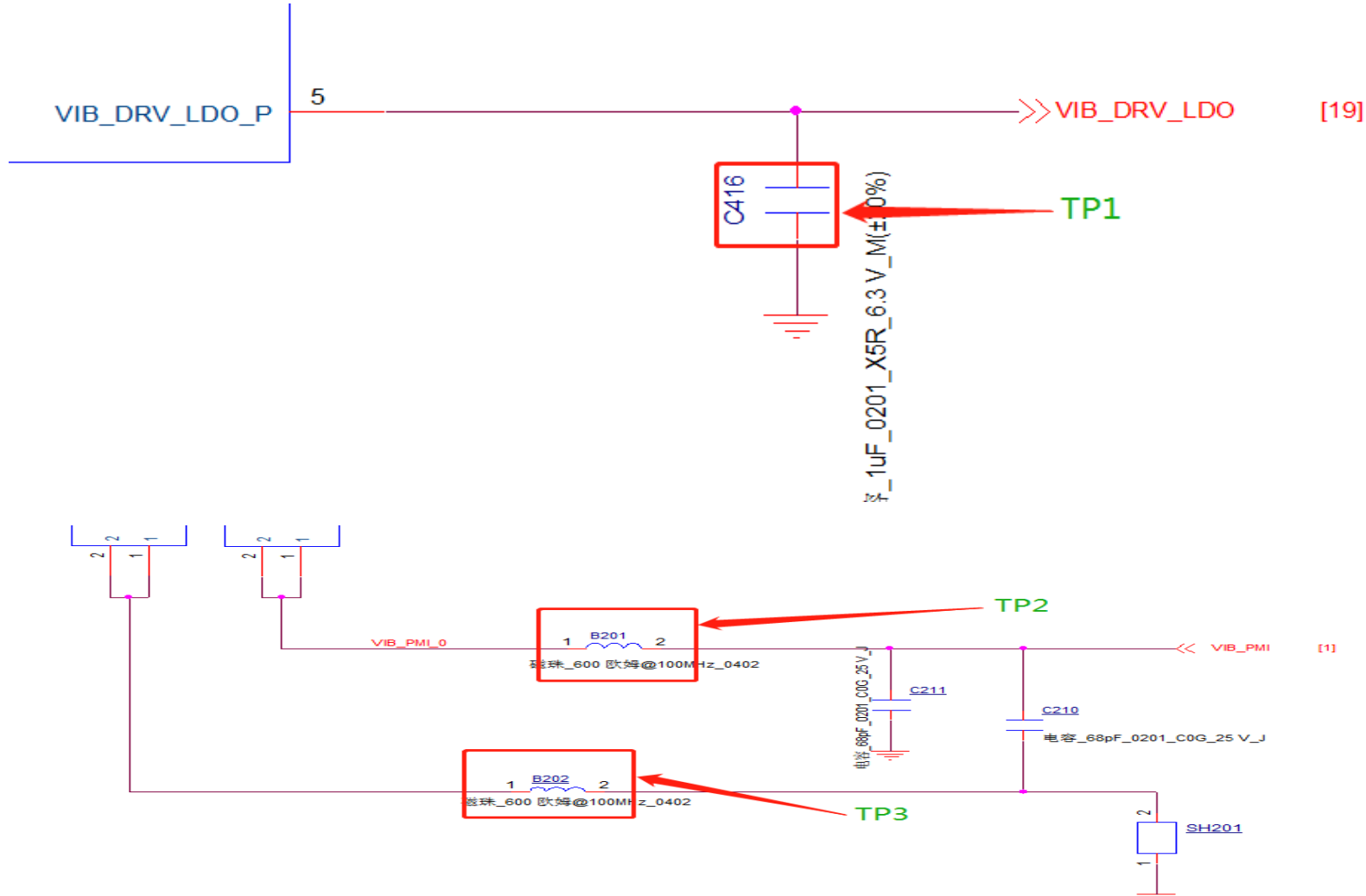
7. The Vibrator control signals are generated by PMI632(U301).



# Troubleshooting

## ■ Vibrator

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

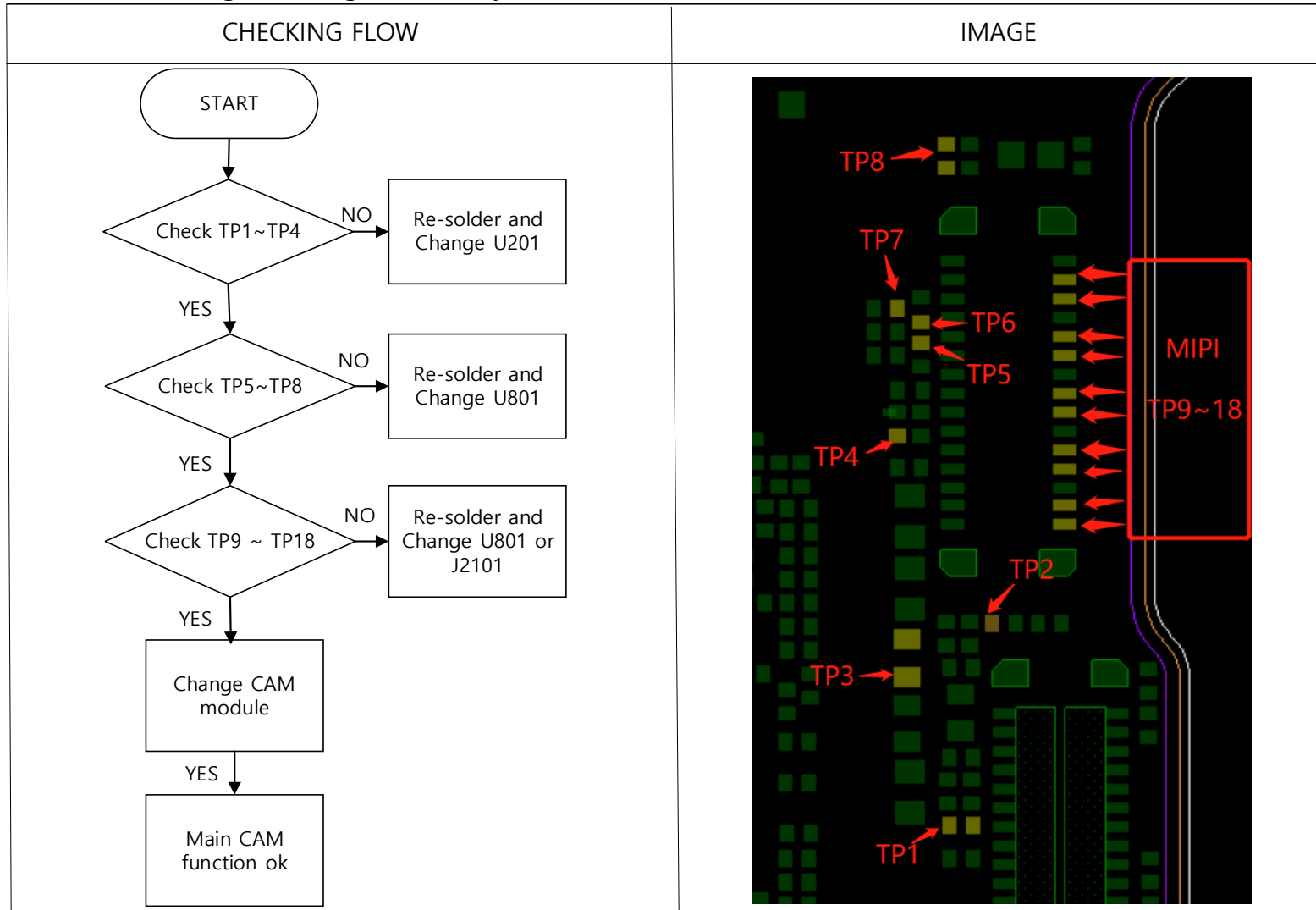




# Troubleshooting

## ■ Main Camera

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

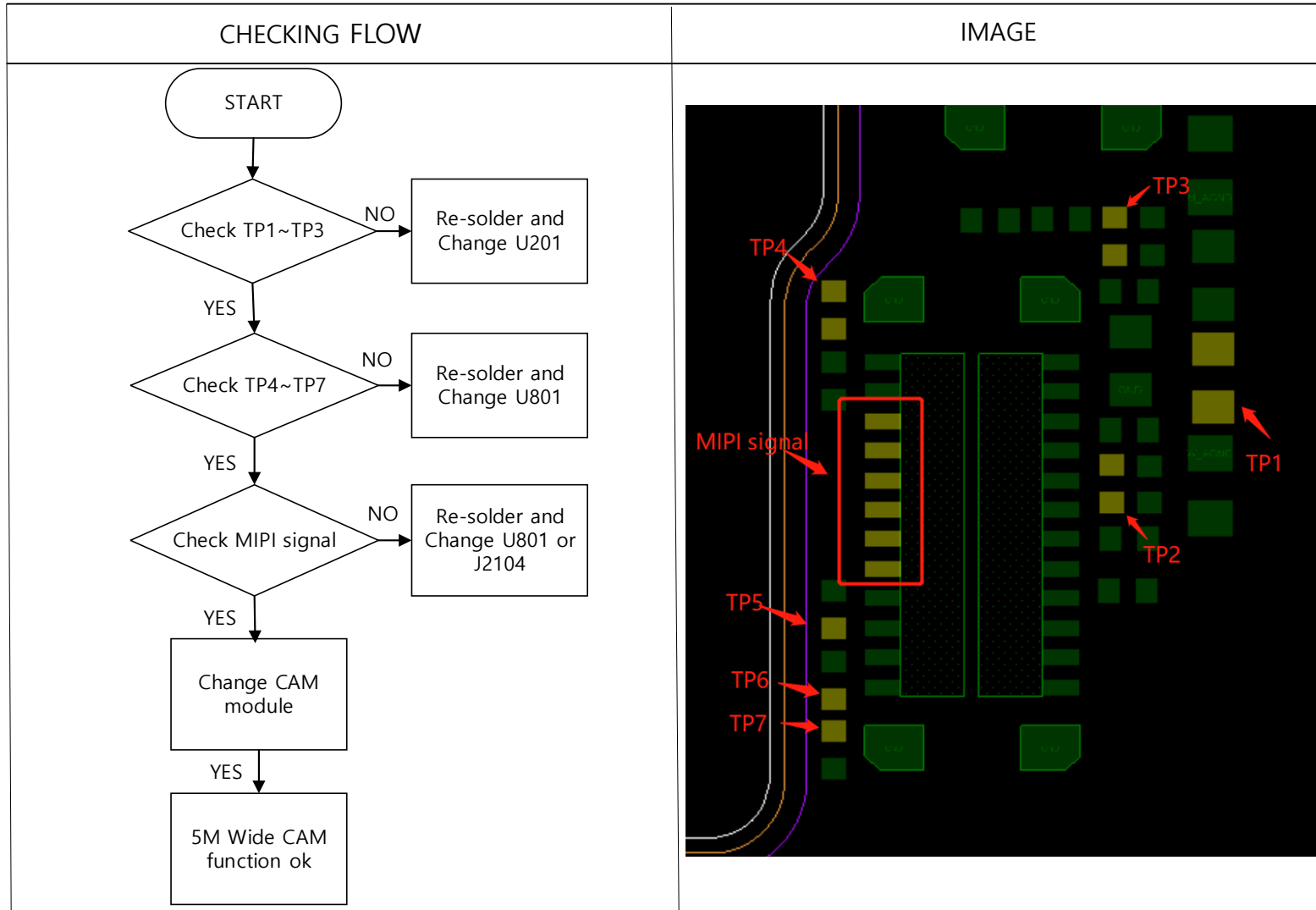




# Troubleshooting

## ■ Rear auxiliary 5M Camera

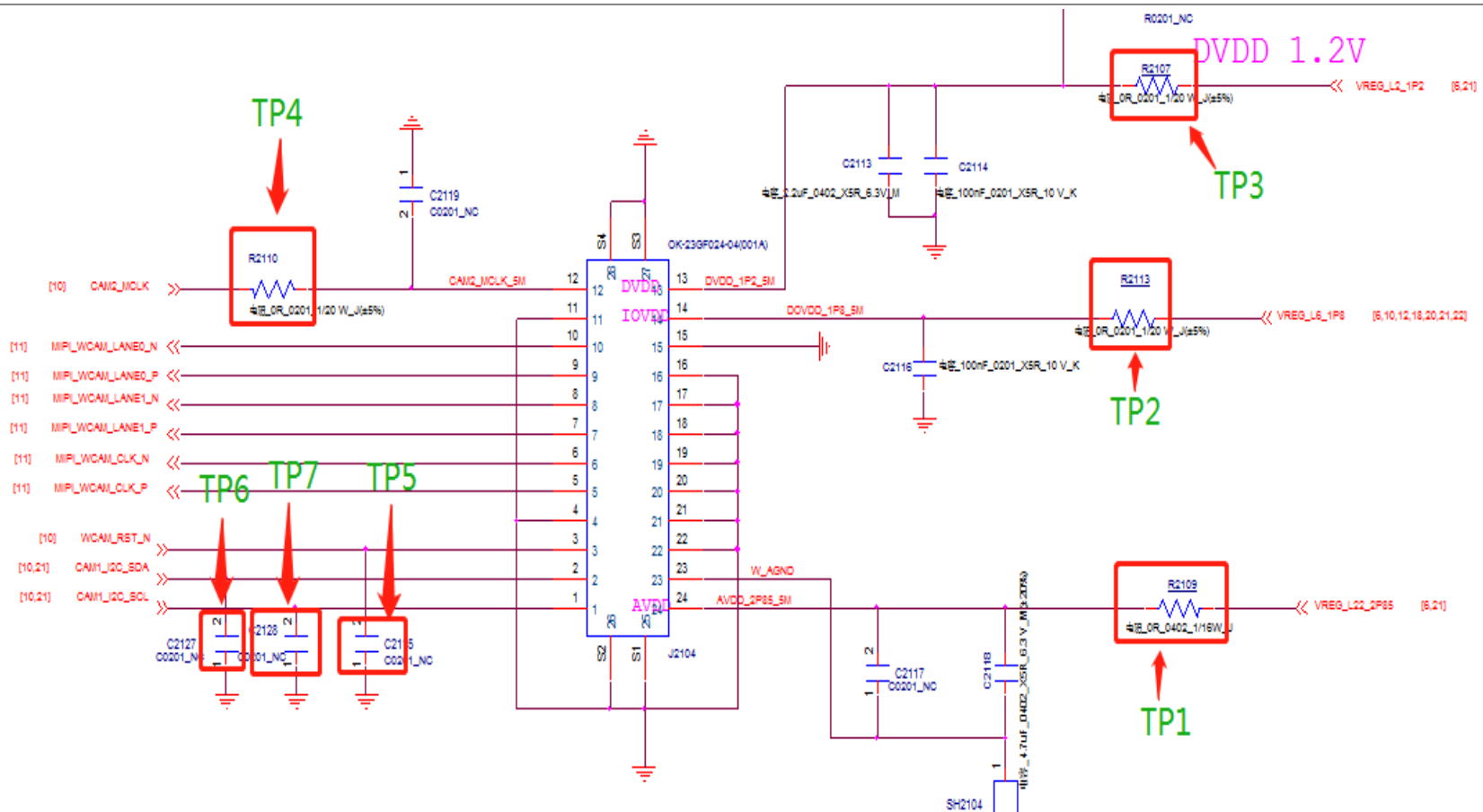
9. The Camera control signals are generated by PM8953 ( U201 ) and SDM450(U801)



# Troubleshooting

## ■ Rear auxiliary 5M Camera

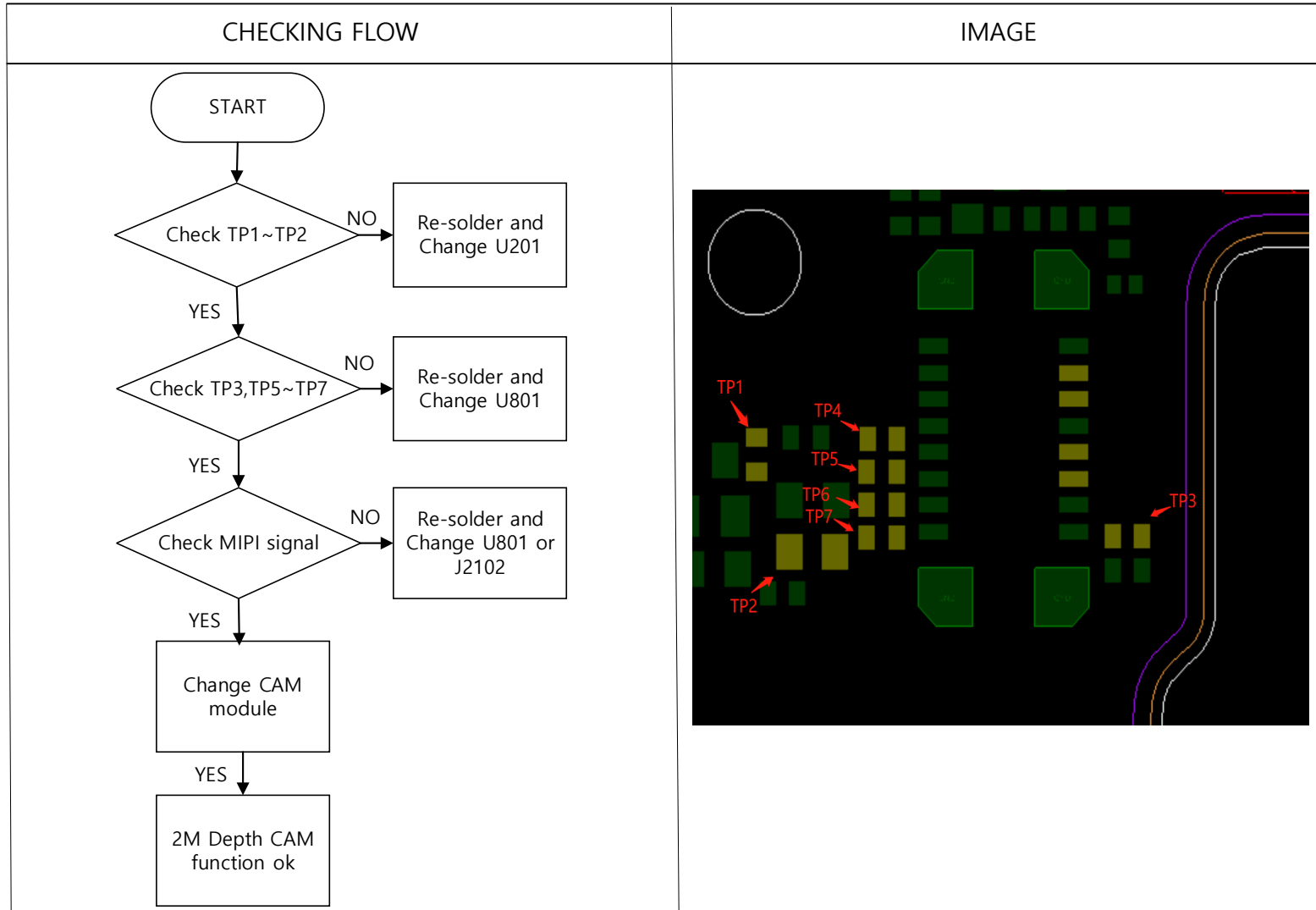
9.1 The Camera control signals are generated by PM8953 ( U201 ) and SDM450(U801)



# Troubleshooting

## ■ Rear auxiliary 5M Camera

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

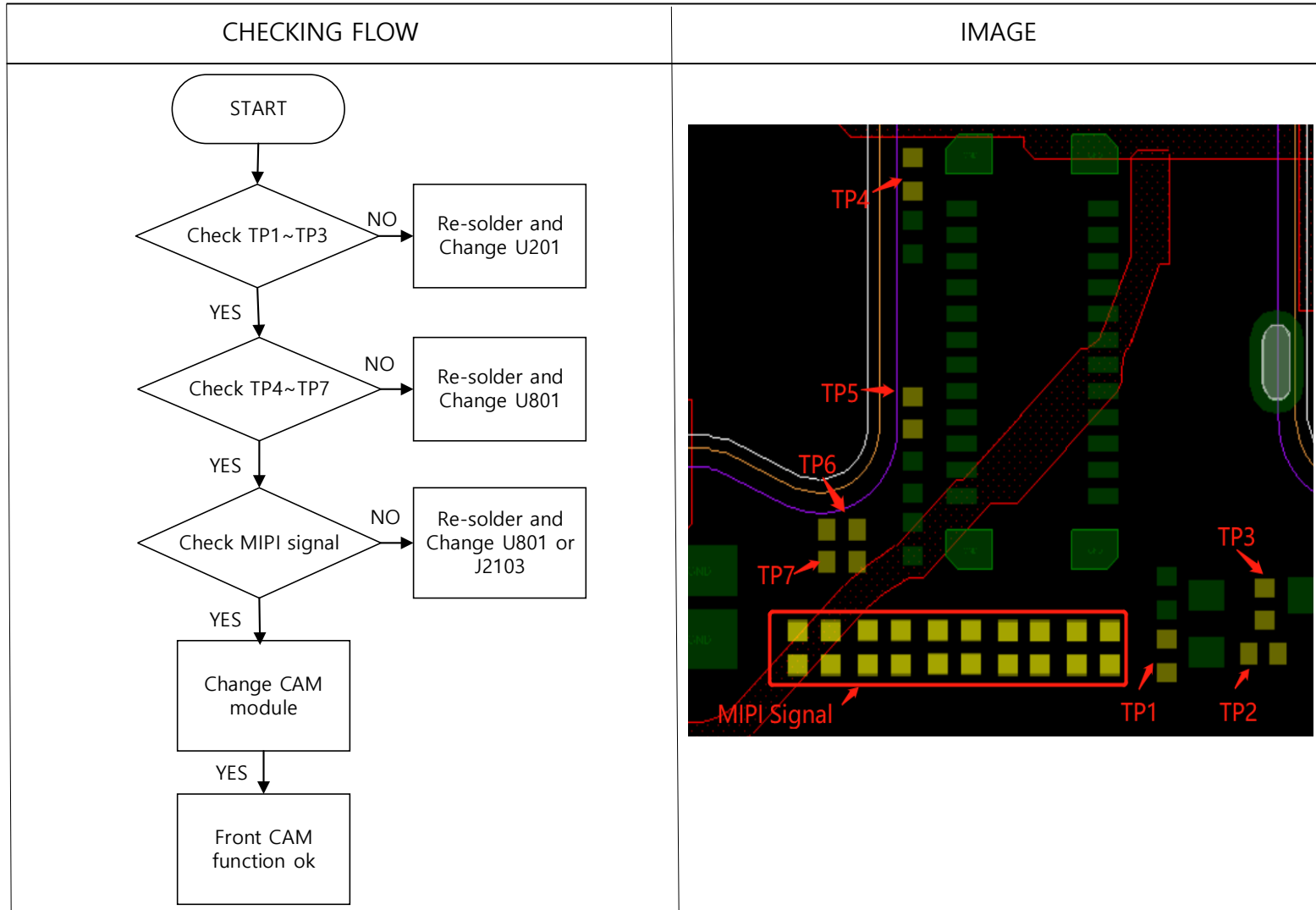




# Troubleshooting

## ■ Front Camera

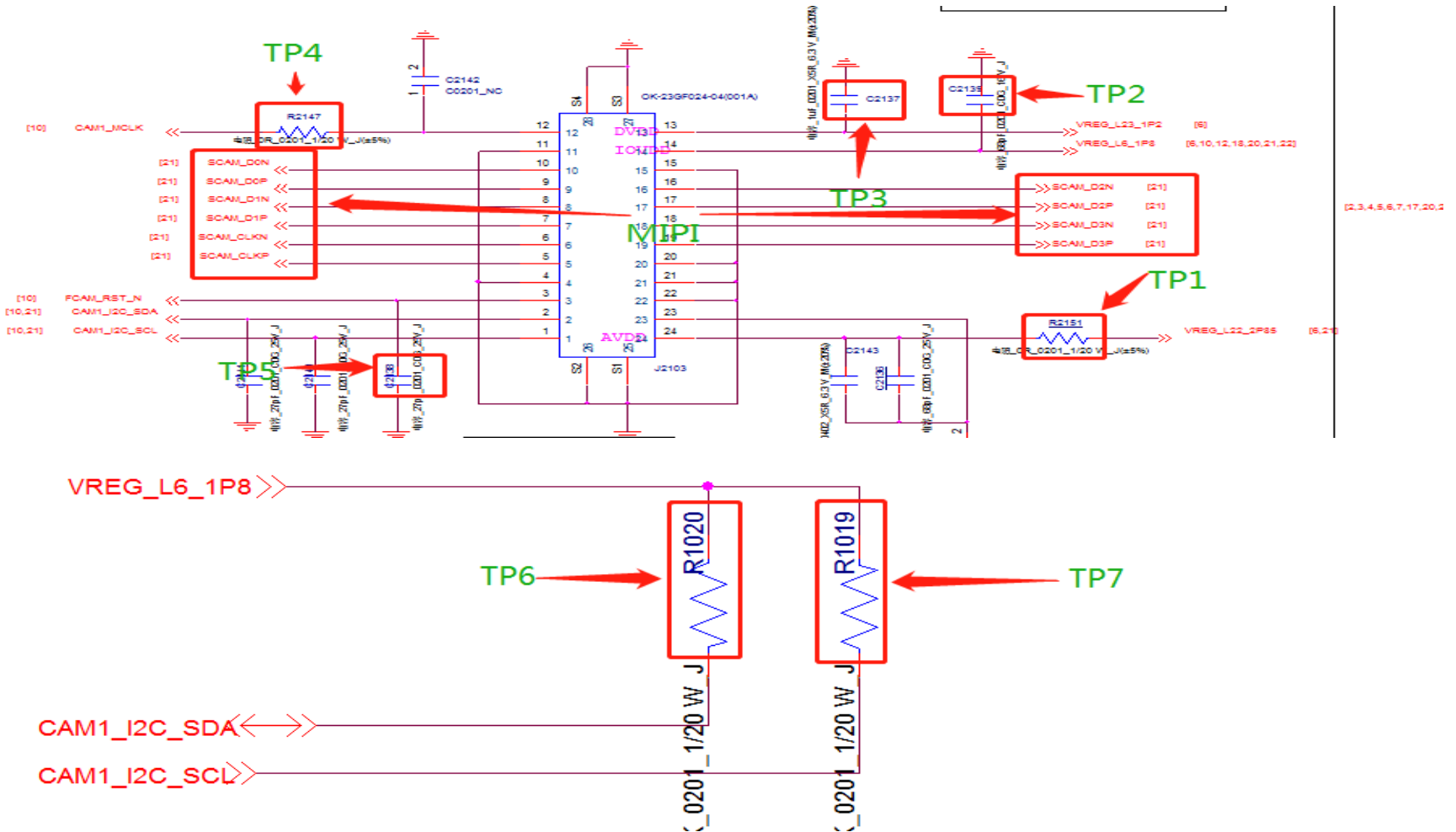
11. The Camera control signals are generated by PM8953 ( U201 ) and SDM450(U801).



# Troubleshooting

## ■ Front Camera

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

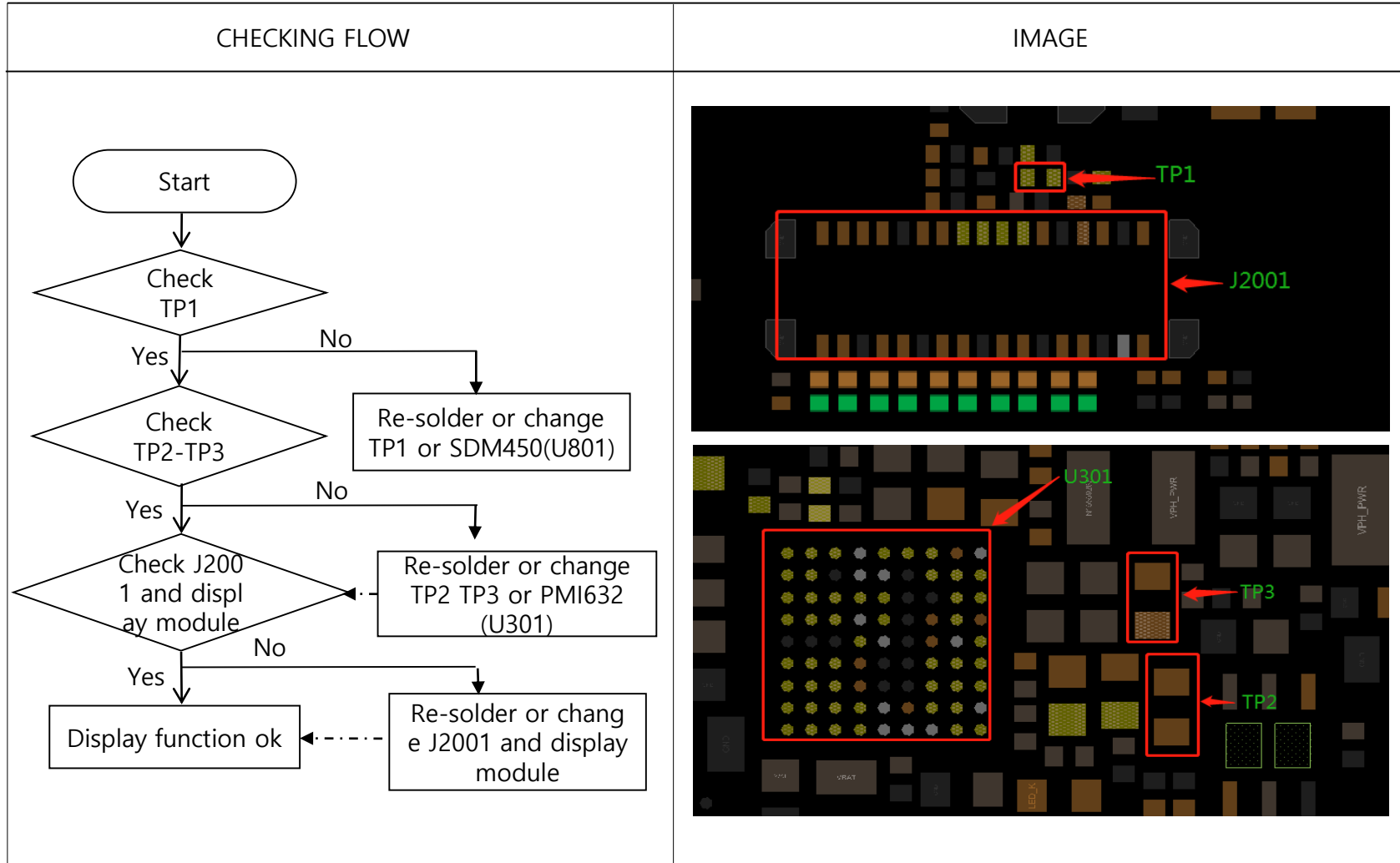




# Troubleshooting

## ■ Display Problem

12. The LCD control signals are generated by SDM450.

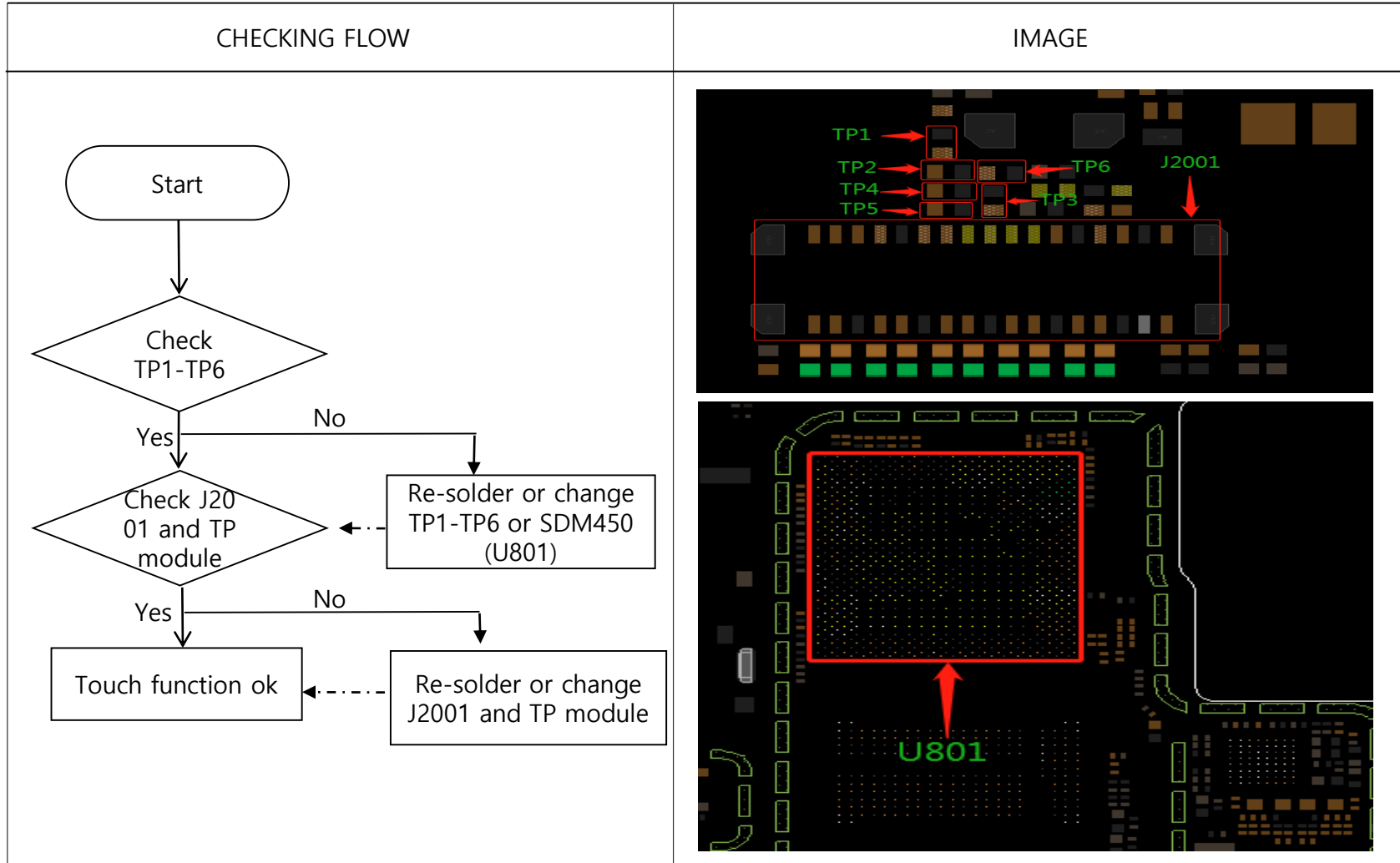




# Troubleshooting

## ■ Touch Problem

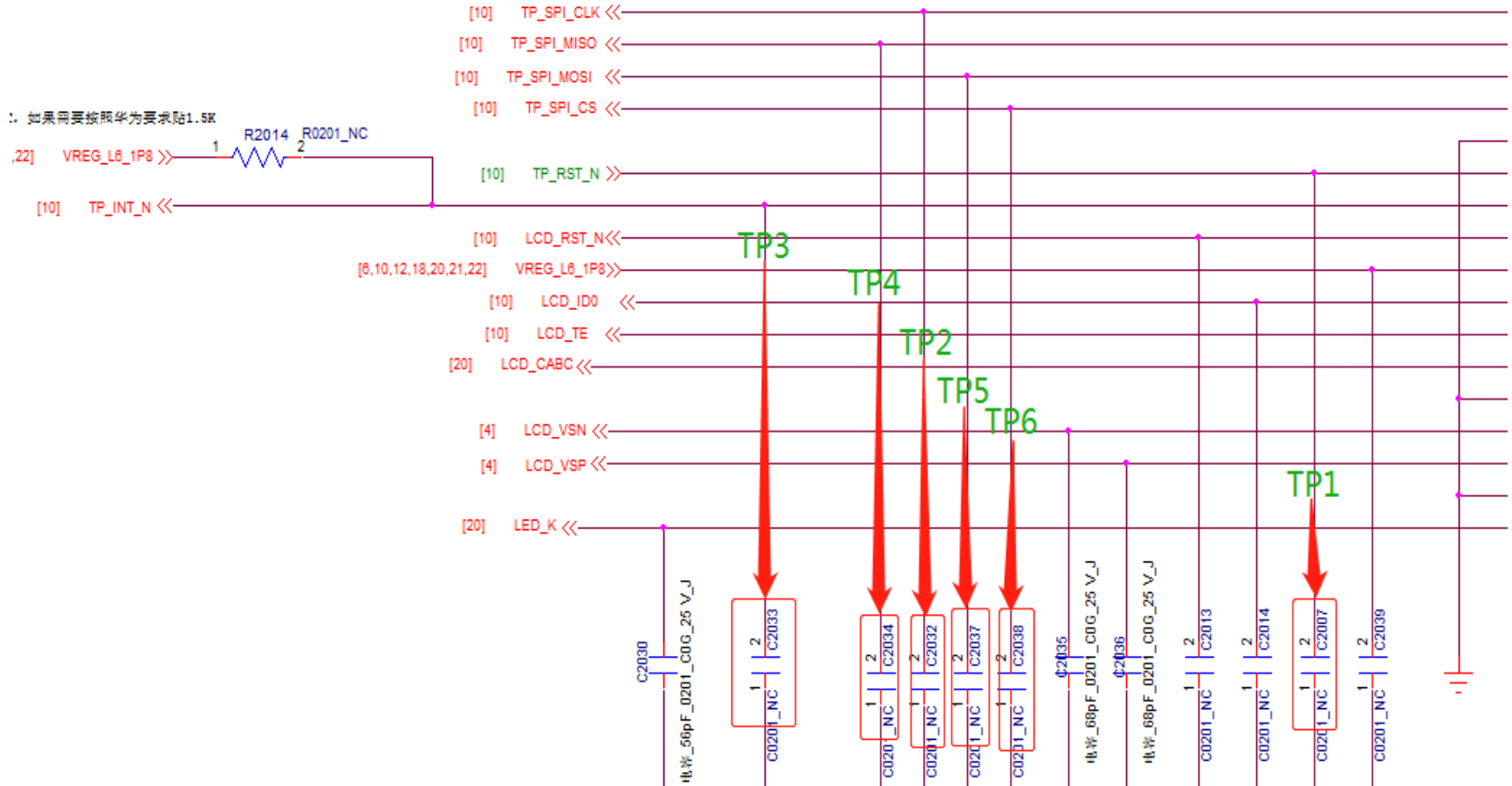
13.The Touch control signals are generated by SDM450. It is assembled with LCD.



# Troubleshooting

## ■ Touch Problem

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

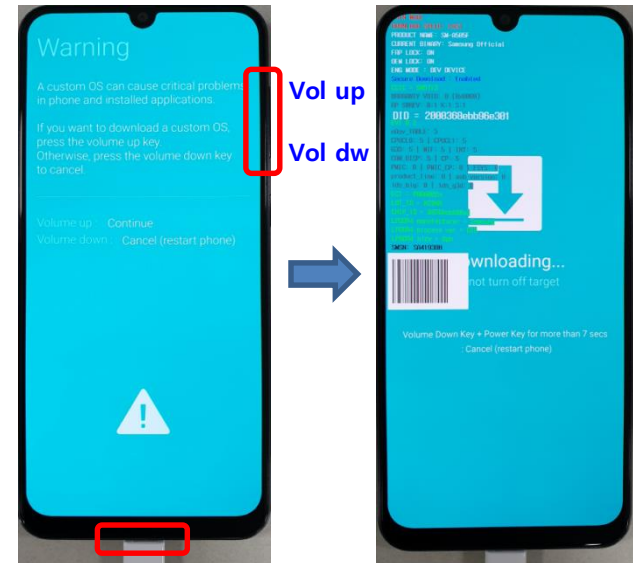


# S/W Download

※ S/W Update via Fenrir is mandatory.

## How to enter the S/W download mode

1. Turn off the device.
2. Connect USB Data Cable while pressing Volume Up/Down buttons simultaneously  
- Volume Up + Volume down + USB Data Cable
3. Press Volume Up button after 'Warning' message.
4. See 'Downloading' message.



# SVC Technical Information

## Basic Information

| AP/CP Chipset    | Charger Spec         | IF Cable    | IMEI Power | Water Resistance |
|------------------|----------------------|-------------|------------|------------------|
| Qualcomm SDM 450 | Adaptive (9V, 1.67A) | GH81-11962W | 4.2V       | -                |

## Part list which must be changed after reassembly

| Item              | Code        | Item | Code |
|-------------------|-------------|------|------|
| Finger print tape | GH81-18930A |      |      |

## SVC Jig List for Galaxy A115F

| Item | Code | Item | Code |
|------|------|------|------|
|      |      |      |      |

## Calibration items for A115F

|              |   |                      |   |                           |   |                   |   |
|--------------|---|----------------------|---|---------------------------|---|-------------------|---|
| TSP Cal.     | X | Force Touch Cal.     | X | Optical Finger print Cal. | X | mmWave RF Cal.    | X |
| Speaker Cal. | O | Digital Hall IC Cal. | X | TOF Camera Cal.           | X | Multi Camera Cal. | O |

※ Only USA device need Speaker Cal.



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