

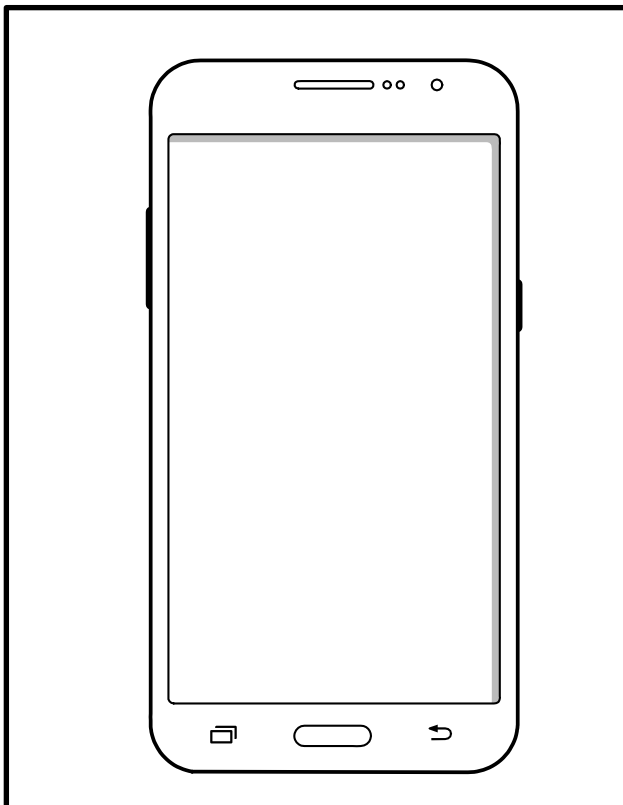
SAMSUNG

Wireless Device

SM-G531BT

SERVICE *Manual*

Wireless Device



CONTENTS

1. Safety Precautions
2. Specification
3. Product Function
4. Exploded View and Parts list
5. MAIN Electrical Parts List
6. Level 1 Repair
7. Level 2 Repair
8. Level 3 Repair
9. Reference data

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2. Specification

2-1. GSM General Specification

	GSM850	EGSM 900	DCS1800	PCS1900	WCDMA 2100	WCDMA 1900	WCDMA 850	WCDMA 900
Freq. Band[MHz] Uplink/ Downlink	824~849 869~894	880~915 925~960	1710~1785 1805~1880	1850~1910 1930~1990	1922~1977 2112~2167	1850~1910 1930~1990	824~849 869~894	880~915 925~960
ARFCN range	128~251	0~124 & 975~1023	512~885	512~810	UL: 9612~9888 DL: 10562~10838	UL: 9262~9538 DL: 9662~9938	UL: 4132~4233 DL: 4357~4458	UL: 2712~2863 DL: 2937~3088
Tx/Rx spacing	45MHz	45MHz	95MHz	80MHz	190MHz	80MHz	45MHz	45MHz
Mod. Bit rate/ Bit Period	270.833 kbps 3.692us	270.833 kbps 3.692us	270.833 kbps 3.692us	270.833 kbps 3.692us	3.84Mcps	3.84Mcps	3.84Mcps	3.84Mcps
Time Slot Period/ Frame Period	576.9us 4.615ms	576.9us 4.615ms	576.9us 4.615ms	576.9us 4.615ms	FrameLength: 10ms Slotlength: 0.667ms	FrameLength: 10ms Slotlength: 0.667ms	FrameLength: 10ms Slotlength: 0.667ms	FrameLength: 10ms Slotlength: 0.667ms
Modulation	0.3GMSK	0.3GMSK	0.3GMSK	0.3GMSK	QPSKHQPSK	QPSKHQPSK	QPSKHQPSK	QPSKHQPSK
MS Power	33dBm~5dBm	33dBm~5dBm	30dBm~0dBm	30dBm~0dBm	24dBm~-50dBm	24dBm~-50dBm	24dBm~-50dBm	24dBm~-50dBm
Power Class	5pcl ~ 19pcl	5pcl ~ 19pcl	0pcl ~ 15pcl	0pcl ~ 15pcl	3(max+24dBm)	3(max+24dBm)	3(max+24dBm)	3(max+24dBm)
Sensitivity	-102dBm	-102dBm	-100dBm	-100dBm	-106.7dBm	-106.7dBm	-106.7dBm	-106.7dBm
TDMA Mux	8	8	8	8	8	8	8	8
Cell Radius	35Km	35Km	2Km	2Km	2Km	2Km	2Km	2Km

2-2. GSM Tx Power Class

TX Power control level	GSM850	TX Power control level	EGSM900	TX Power control level	DCS1800	TX Power control level	PCS1900
5	33±2 dBm	5	33±2 dBm	0	30±3 dBm	0	30±3 dBm
6	31±2 dBm	6	31±2 dBm	1	28±3 dBm	1	28±3 dBm
7	29±2 dBm	7	29±2 dBm	2	26±3 dBm	2	26±3 dBm
8	27±2 dBm	8	27±2 dBm	3	24±3 dBm	3	24±3 dBm
9	25±2 dBm	9	25±2 dBm	4	22±3 dBm	4	22±3 dBm
10	23±2 dBm	10	23±2 dBm	5	20±3 dBm	5	20±3 dBm
11	21±2 dBm	11	21±2 dBm	6	18±3 dBm	6	18±3 dBm
12	19±2 dBm	12	19±2 dBm	7	16±3 dBm	7	16±3 dBm
13	17±2 dBm	13	17±2 dBm	8	14±3 dBm	8	14±3 dBm
14	15±2 dBm	14	15±2 dBm	9	12±4 dBm	9	12±4 dBm
15	13±2 dBm	15	13±2 dBm	10	10±4 dBm	10	10±4 dBm
16	11±3 dBm	16	11±3 dBm	11	8±4 dBm	11	8±4 dBm
17	9±3dBm	17	9±3dBm	12	6±4 dBm	12	6±4 dBm
18	7±3 dBm	18	7±3 dBm	13	4±4 dBm	13	4±4 dBm
19	5±3 dBm	19	5±3 dBm	14	2±5 dBm	14	2±5 dBm
				15	0±5 dBm	15	0±5 dBm

3. Operation Instruction and Installation

Main Function

Item	Description
OS	Android V5.1.1 (Lollipop)
RF	2G Quad (850/900/1800/1900) 3G Quad (2100/1900/850/900)
Battery	2,600mAh
Base Band	1.3GHZ, Quad-Core
Other RF	A-GPS / BT 4.0 / USB v2.0 / WiFi (802.11 b/g/n)
Camera	8.0 MP Main CAM + 5 MP Sub CAM
LCD	5.0" qHDLCD, 540 x 960
RAM	1GB
Sensor	Sensors: Accelerometer, Magnetic, Proximity
Accessory	Charger: 5V/1A Data cable: 2.7pi, 1.2m Ear phone: 3.5pi, 4pin

9. Reference Abbreviate

Reference Abbreviate

- **AAC**: Advanced Audio Coding.
- **AVC** : Advanced Video Coding.
- **BER** : Bit Error Rate
- **BPSK**: Binary Phase Shift Keying
- **CA** : Conditional Access
- **CDM** : Code Division Multiplexing
- **C/I** : Carrier to Interference
- **DMB** : Digital Multimedia Broadcasting
- **EN** : European Standard
- **ES** : Elementary Stream
- **ETSI**: European Telecommunications Standards Institute
- **MPEG**: Moving Picture Experts Group
- **PN** : Pseudo-random Noise
- **PS** : Pilot Symbol
- **QPSK**: Quadrature Phase Shift Keying
- **RS** : Reed-Solomon
- **SI** : Service Information
- **TDM** : Time Division Multiplexing
- **TS** : Transport Stream

1. Safety Precautions

1-1. Repair Precaution

Before attempting any repair or detailed tuning, shield the device from RF noise or static electricity discharges.

Use only demagnetized tools that are specifically designed for small electronic repairs, as most electronic parts are sensitive to electromagnetic forces.

Use only high quality screwdrivers when servicing products. Low quality screwdrivers can easily damage the heads of screws.

Use only conductor wire of the properly gauge and insulation for low resistance, because of the low margin of error of most testing equipment.

We recommend 22-gauge twisted copper wire.

Hand-soldering is not recommended, because printed circuit boards (PCBs) can be easily damaged, even with relatively low heat. Never use a soldering iron with a power rating of more than 100 watts and use only lead-free solder with a melting point below 250°C (482°F).

Prior to disassembling the battery charger for repair, ensure that the AC power is disconnected. Always use the replacement parts that are registered in the SEC system. Third-party replacement parts may not function properly.

1-2. ESD(Electrostatically Sensitive Devices) Precaution

Many semiconductors and ESDs in electronic devices are particularly sensitive to static discharge and can be easily damaged by it. We recommend protecting these components with conductive anti-static bags when you store or transport them.

Always use an anti-static strap or wristband and remove electrostatic buildup or dissipate static electricity from your body before repairing ESDs.

Ensure that soldering irons have AC adapter with ground wires and that the ground wires are properly connected.

Use only desoldering tools with plastic tips to prevent static discharge.

Properly shield the work environment from accidental electrostatic discharge before opening packages containing ESDs.

The potential for static electricity discharge may be increased in low humidity environments, such as air-conditioned rooms. Increase the airflow to the working area to decrease the chance of accidental static electricity discharges.

6. Level 1 Repair

6-1. S/W installation

6-1-1. Required items in order to install S/W

- Installation program: Downloader Program ([Odin3 v3.10.5.exe](#))
- Mobile Phone
- Data Cable
- Mobile device specific S/W: Binary files

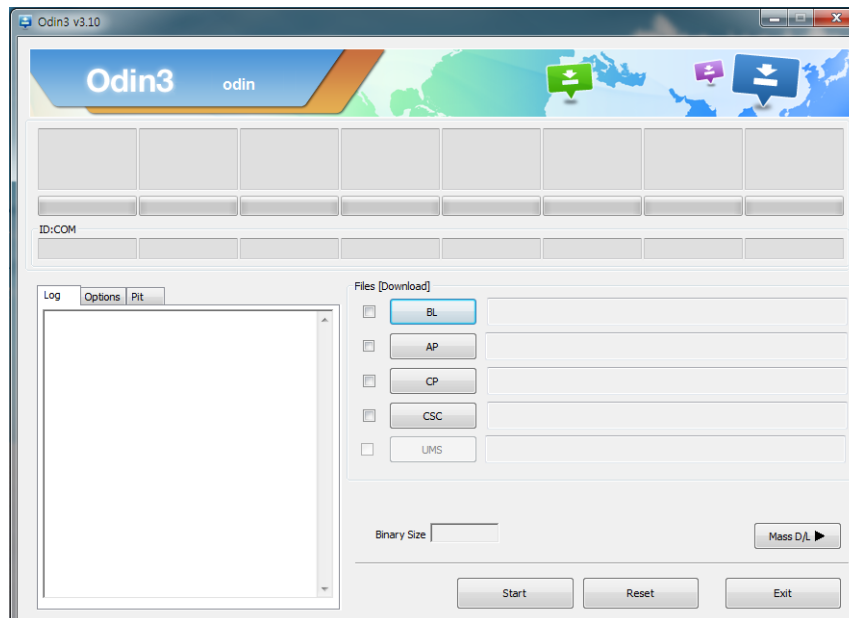
※ Settings



Data Cable : GH39-01681A

6-1-2. S/W Installation Program (Downloader program)

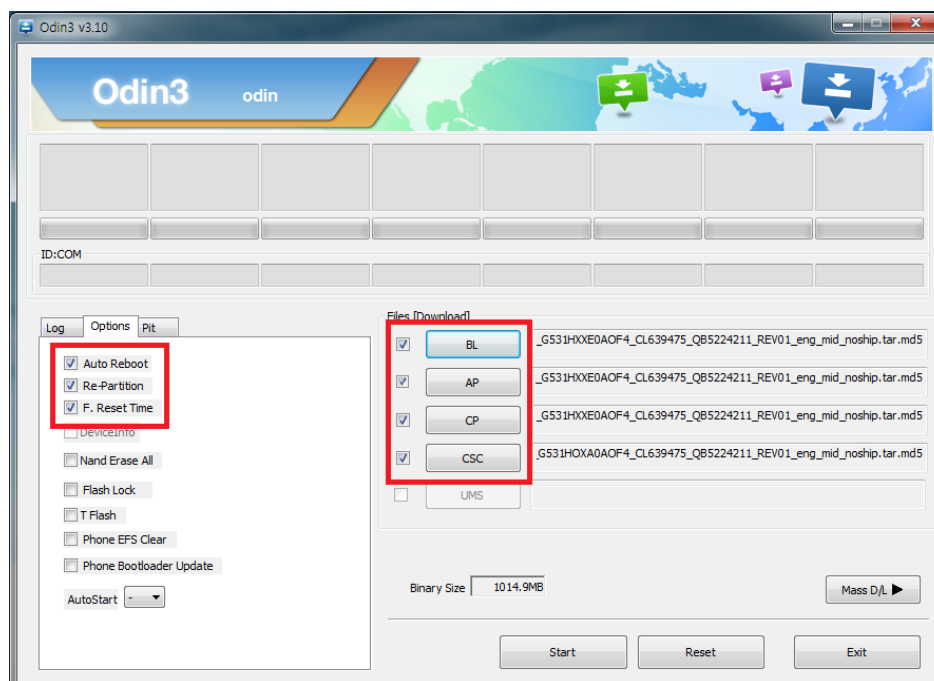
- Open up the S/W Installation Program by executing the **"Odin3 v3.10.5.exe"**



("odin3.ini" file should be in the same folder with odin3 v3.10.5.exe)

1. Enable the check mark by click on the following options,

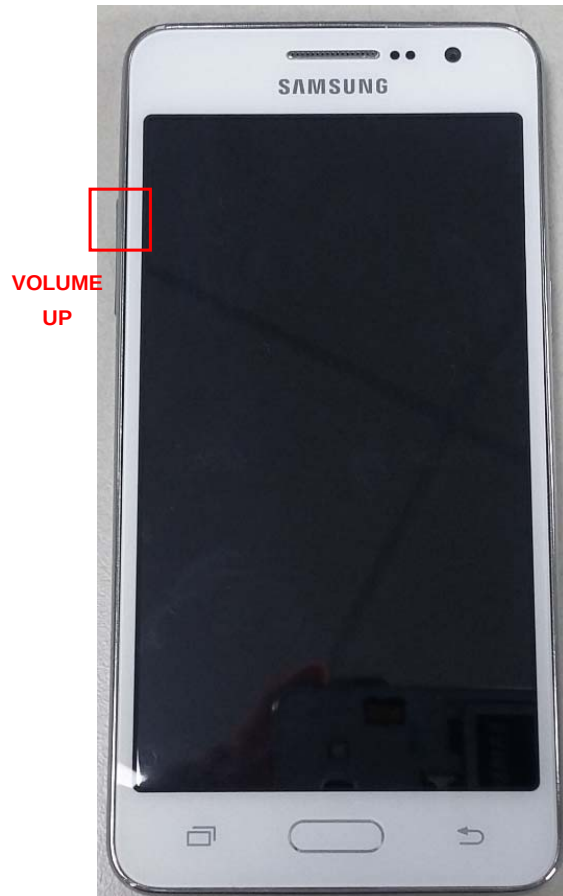
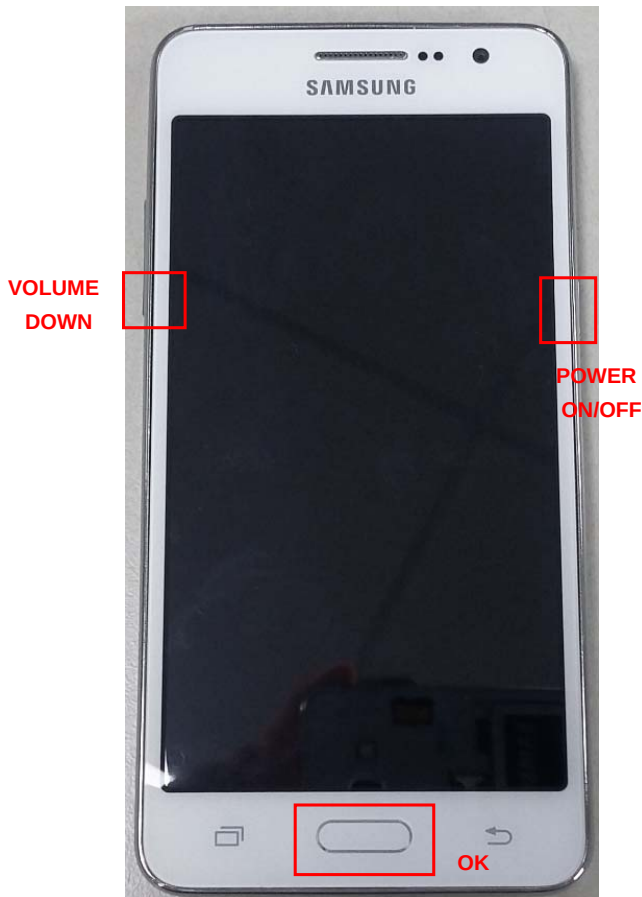
- Check Auto Reboot and F. Reset Time
- Check BL, AP, CP, and CSC Files



2. Enter into Download Mode

1. Press Volume Down button, OK button, and ON/OFF Button simultaneously.

2. After confirm the warning message, Volume UP button press to enter download mode.

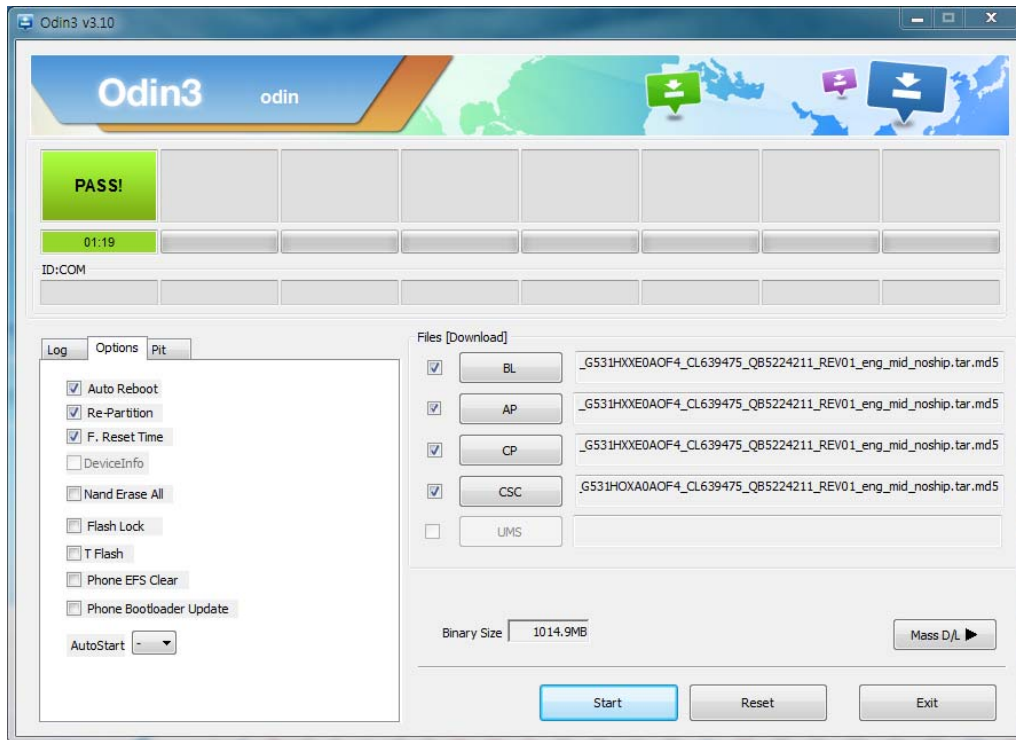


3. Connect the device to PC via Data Cable.

Make sure that the one of communication port [ID:COM] box is pop-up. The device is now connected with the PC and ready to download the binary file into the device.

4. Start downloading binary file into the device by clicking Start Button on the screen. the green colored "PASS!" sign will appear on the upper-left box if the binary file has been successfully downloaded into the device.

5. Disconnect the device from the Data cable.



6. Once the device boots up, you can check the version of the binary file or name by pressing the following code in sequence;

***#1234#**

Full Reset :

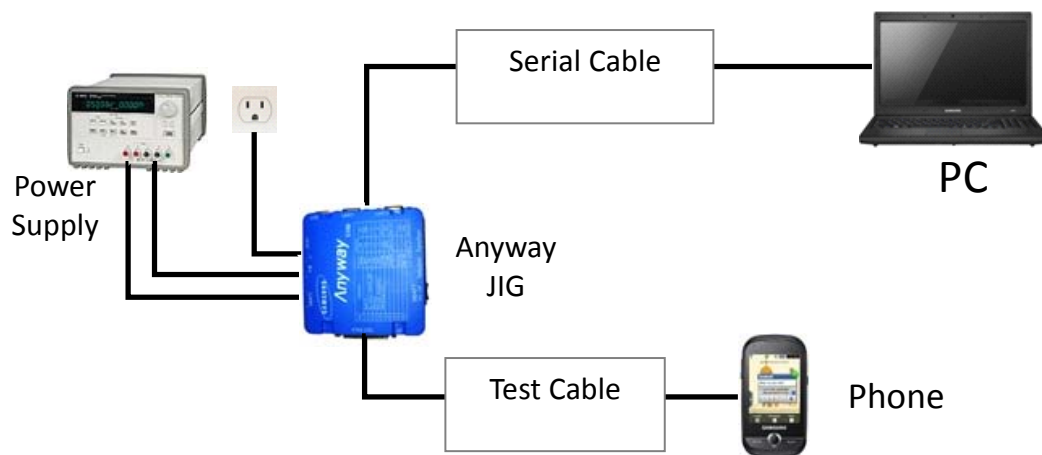
Apps > Settings > Backup and reset > Factory data reset

6-2 IMEI writing

6-2-1 Preparation

- New IMEI writing Program has been released.
- Supported Model : Models which CAB files are uploaded on HHPsvc INI File category, instead of ini file.
- Refer to below IMEI writing procedure.

- H/W

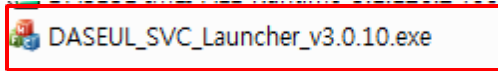


- S/W

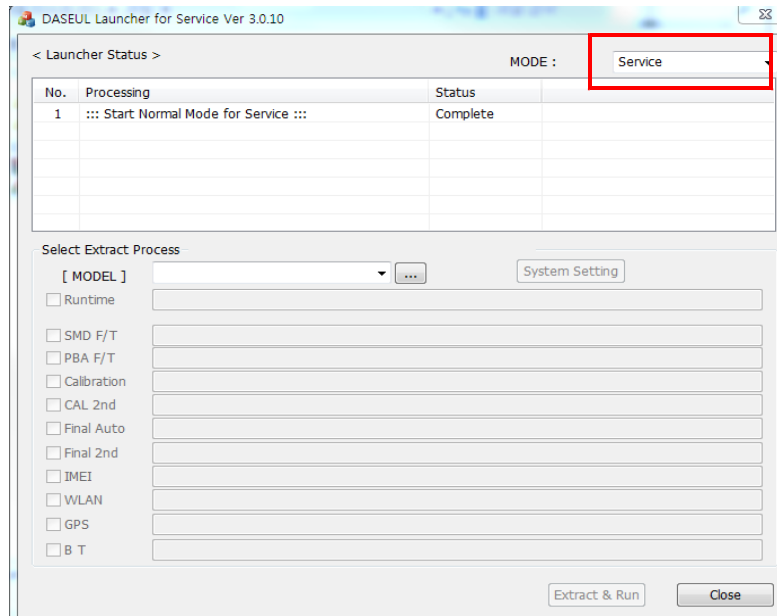
① Library Install	To use Daseul, library files should be installed. Refer to SVC Bulletin “(11-82) Daseul (New IMEI writing Program) Library Install guide_rev1.0”
② Launcher	DASEUL_SVC_Launcher_v3_0_10 or higher -Uploaded on HHPsvc Notice
③ Runtime File	1. DASEUL_IMEI_ALL_Runtime_129_r00165 .CAB or higher -Uploaded on HHPsvc Notice 2. Make 'ModelName' folder at the same position with launcher & Runtime file.
④ Model File	Copy Model File under the 'Model Name' folder

6-2-2 IMEI writing Process

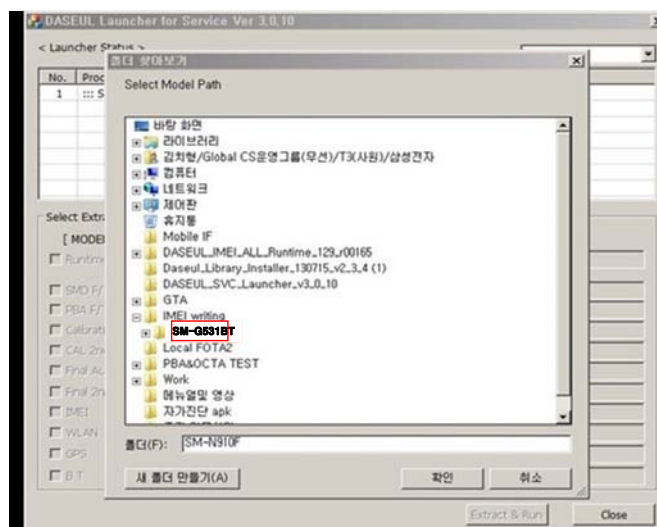
1. Run DASEUL_SVC_Launcher_v3.0.10.exe



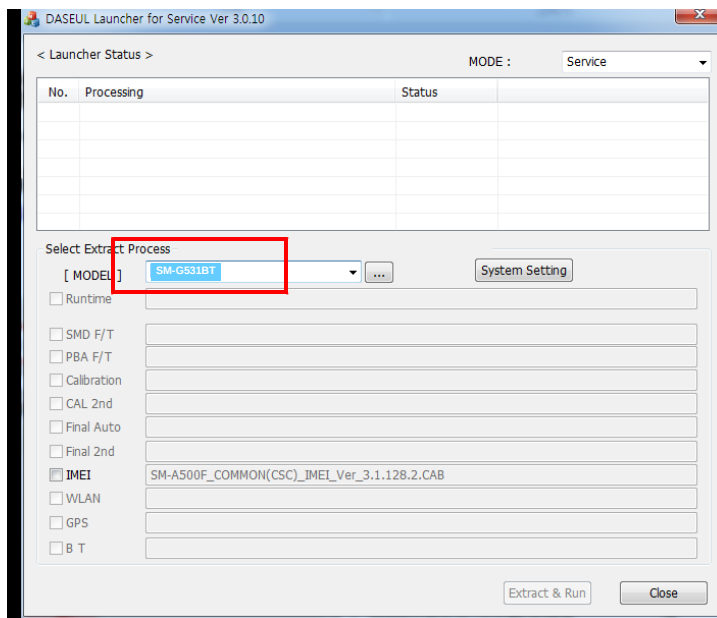
2. Select Service Mode



3. Click and Select folder where the Launcher exists

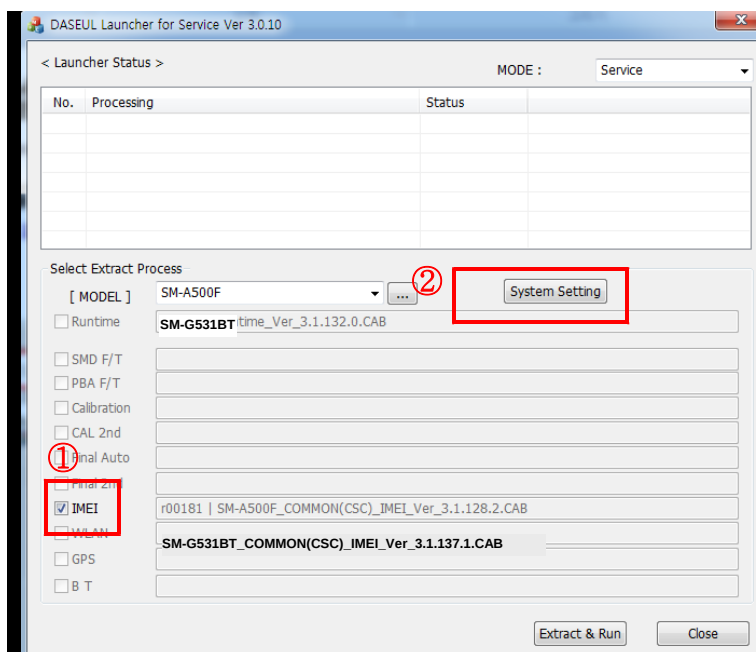


4. Select Model

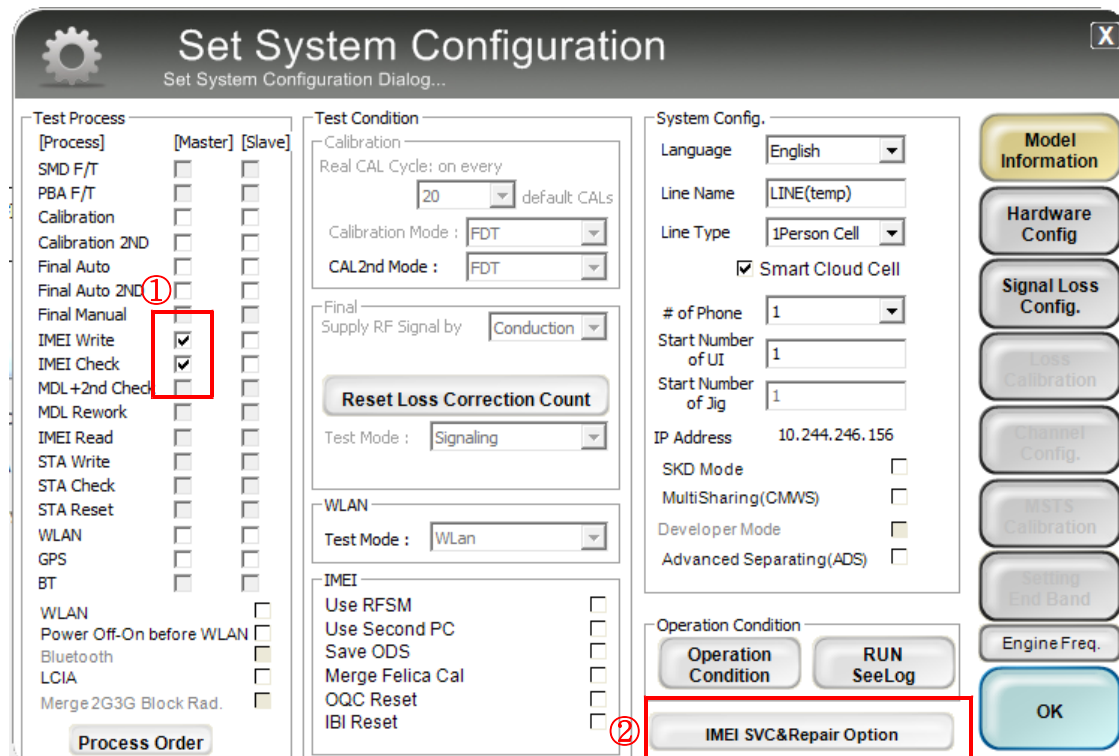


5. Check IMEI and click 'System Setting'

※Once you setup the setting, you don't have to do it again, unless there is change. From second run of the IMEI program, check IMEI and click 'Extract & Run'.



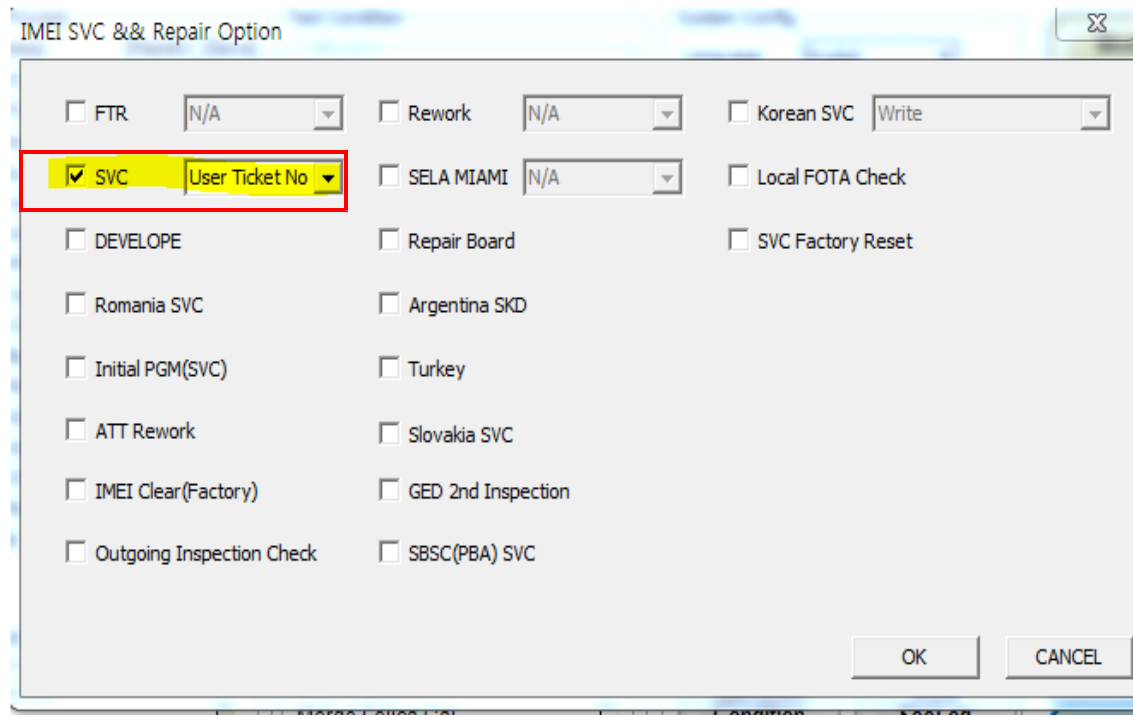
6. Check 'IMEI Write / IMEI Check', and click 'IMEI SVC & Repair Option'



The 'Set System Configuration' dialog box is shown. It has a title bar with a gear icon and a close button. The main area is divided into several sections:

- Test Process:** A list of test processes with checkboxes for [Process], [Master], and [Slave]. 'IMEI Write' and 'IMEI Check' are checked, and a red box highlights this section with a circled '1'.
- Test Condition:** Includes 'Calibration' (Real CAL Cycle: on every 20, default CALs), 'Calibration Mode' (FDT), 'CAL2nd Mode' (FDT), 'Final Supply RF Signal by' (Conduction), 'Reset Loss Correction Count', 'Test Mode' (Signaling), 'WLAN Test Mode' (Wlan), and 'IMEI' (Use RFSM, Use Second PC, Save ODS, Merge Felica Cal, OQC Reset, IBI Reset). A red box highlights the 'IMEI SVC & Repair Option' button at the bottom right with a circled '2'.
- System Config.:** Includes 'Language' (English), 'Line Name' (LINE(temp)), 'Line Type' (1Person Cell), 'Smart Cloud Cell' (checked), '# of Phone' (1), 'Start Number of UI' (1), 'Start Number of Jig' (1), 'IP Address' (10.244.246.156), 'SKD Mode', 'MultiSharing(CMWS)', 'Developer Mode', and 'Advanced Separating(ADS)'.
- Model Information:** A vertical stack of buttons: Model Information, Hardware Config, Signal Loss Config., Loss Calibration, Channel Config., MSTs Calibration, Setting End Band, Engine Freq., and OK.

7. Check 'SVC , User Ticket No' and click OK

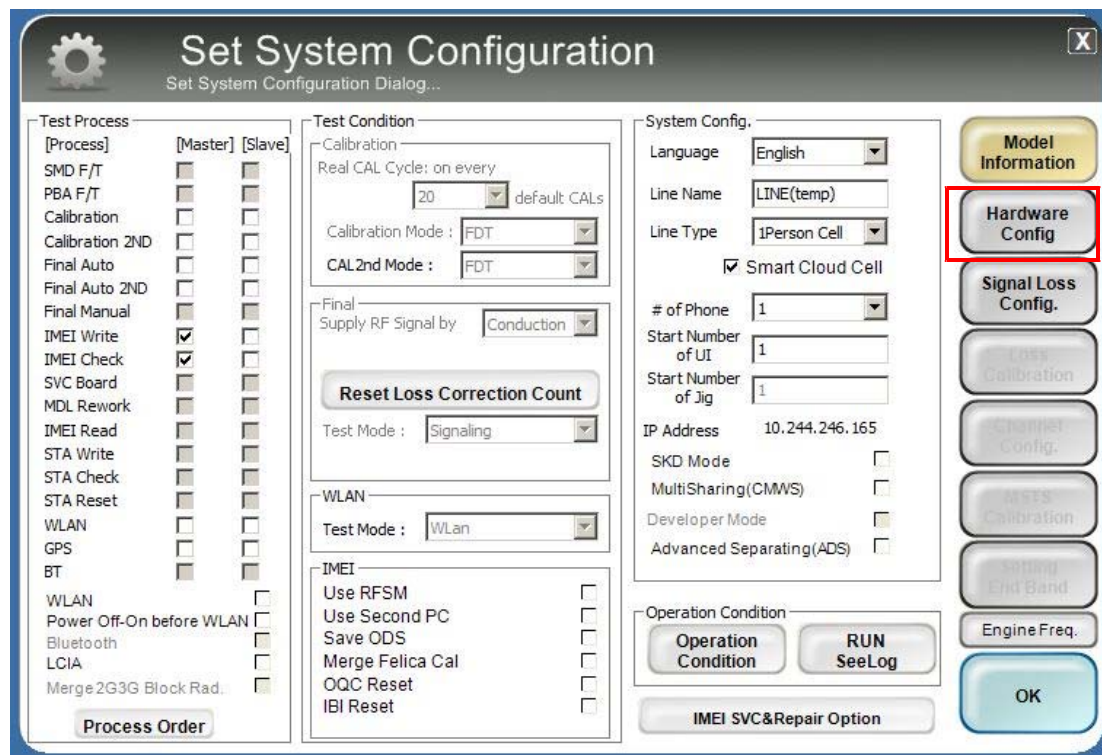


The 'IMEI SVC & Repair Option' dialog box is shown. It has a title bar with a close button. The main area contains several options:

- FTR:** N/A
- Rework:** N/A
- Korean SVC:** Write
- SVC:** User Ticket No (highlighted with a red box)
- SELA MIAMI:** N/A
- Local FOTA Check:**
- DEVELOPE:**
- Repair Board:**
- SVC Factory Reset:**
- Romania SVC:**
- Argentina SKD:**
- Initial PGM(SVC):**
- Turkey:**
- ATT Rework:**
- Slovakia SVC:**
- IMEI Clear(Factory):**
- GED 2nd Inspection:**
- Outgoing Inspection Check:**
- SBSC(PBA) SVC:**

At the bottom, there are 'OK' and 'CANCEL' buttons.

8. Click 'Hardware Config'



Set System Configuration
Set System Configuration Dialog...

Test Process

[Process]	[Master]	[Slave]
SMD F/T	☐	☐
PBA F/T	☐	☐
Calibration	☐	☐
Calibration 2ND	☐	☐
Final Auto	☐	☐
Final Auto 2ND	☐	☐
Final Manual	☐	☐
IMEI Write	☒	☐
IMEI Check	☒	☐
SVC Board	☐	☐
MDL Rework	☐	☐
IMEI Read	☐	☐
STA Write	☐	☐
STA Check	☐	☐
STA Reset	☐	☐
WLAN	☐	☐
GPS	☐	☐
BT	☐	☐
WLAN	☐	☐
Power Off-On before WLAN	☐	☐
Bluetooth	☐	☐
LCIA	☐	☐
Merge 2G3G Block Rad.	☐	☐

Test Condition

Calibration
Real CAL Cycle: on every default CALs

Calibration Mode:

CAL2nd Mode:

Final
Supply RF Signal by:

Reset Loss Correction Count

Test Mode:

WLAN
Test Mode:

IMEI
Use RFSM ☐
Use Second PC ☐
Save ODS ☐
Merge Felica Cal ☐
OQC Reset ☐
IBI Reset ☐

System Config.

Language:

Line Name:

Line Type:

☒ Smart Cloud Cell

of Phone:

Start Number of UI:

Start Number of Jig:

IP Address:

SKD Mode ☐

MultiSharing(CMWS) ☐

Developer Mode ☐

Advanced Separating(ADS) ☐

Operation Condition

IMEI SVC&Repair Option

Model Information

Hardware Config

Signal Loss Config.

Loss Calibration

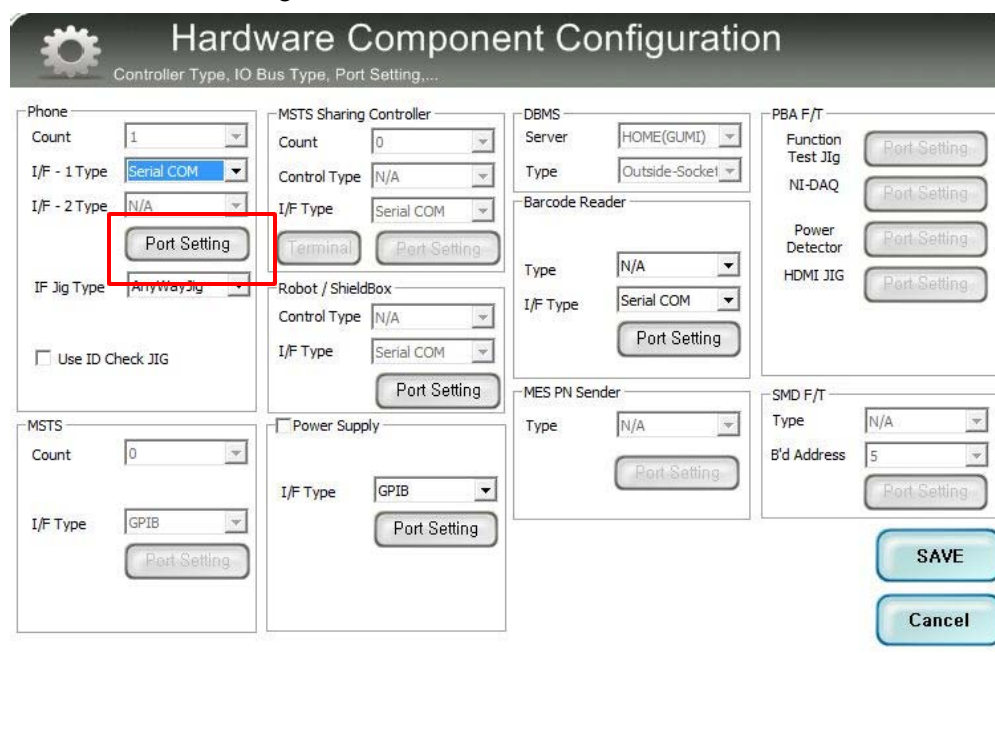
Channel Config.

MSTC Calibration

Setting End Band

Engine Freq.

9. Click 'Port Setting'



Hardware Component Configuration
Controller Type, IO Bus Type, Port Setting,....

Phone

Count:

I/F - 1 Type:

I/F - 2 Type:

Port Setting

IF Jig Type:

☐ Use ID Check JIG

MSTS

Count:

I/F Type:

Port Setting

MSTS Sharing Controller

Count:

Control Type:

I/F Type:

Terminal **Port Setting**

Robot / ShieldBox

Control Type:

I/F Type:

Port Setting

Power Supply

I/F Type:

Port Setting

DBMS

Server:

Type:

Barcode Reader

Type:

I/F Type:

Port Setting

MES PN Sender

Type:

Port Setting

PBA F/T

Function Test Jig **Port Setting**

NI-DAQ **Port Setting**

Power Detector **Port Setting**

HDMI JIG **Port Setting**

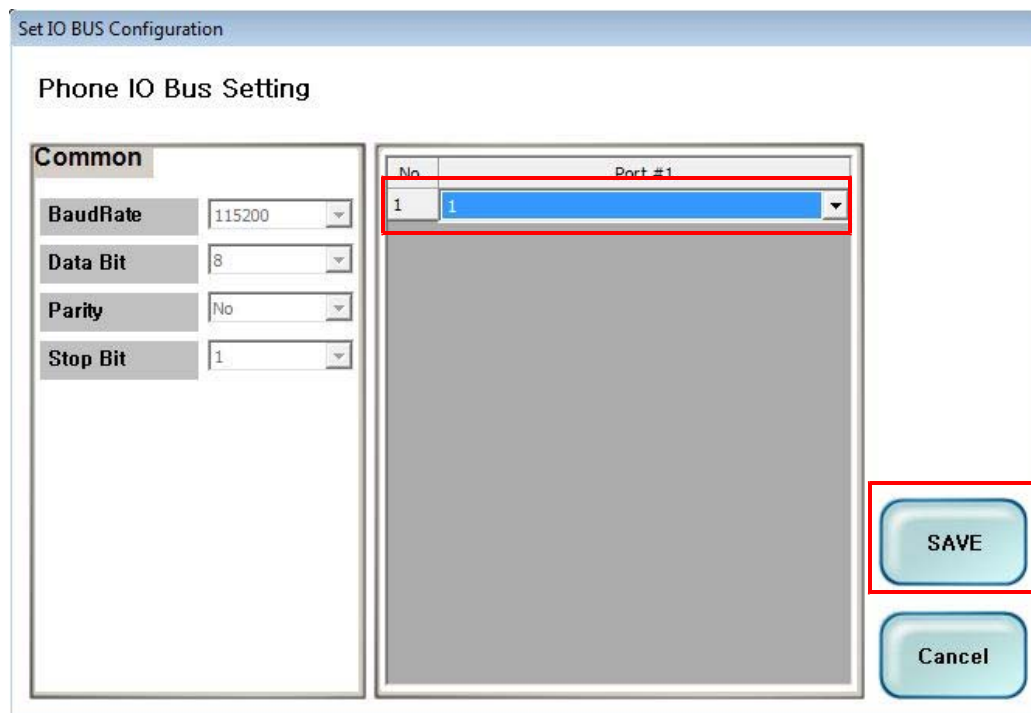
SMD F/T

Type:

B'd Address:

Port Setting

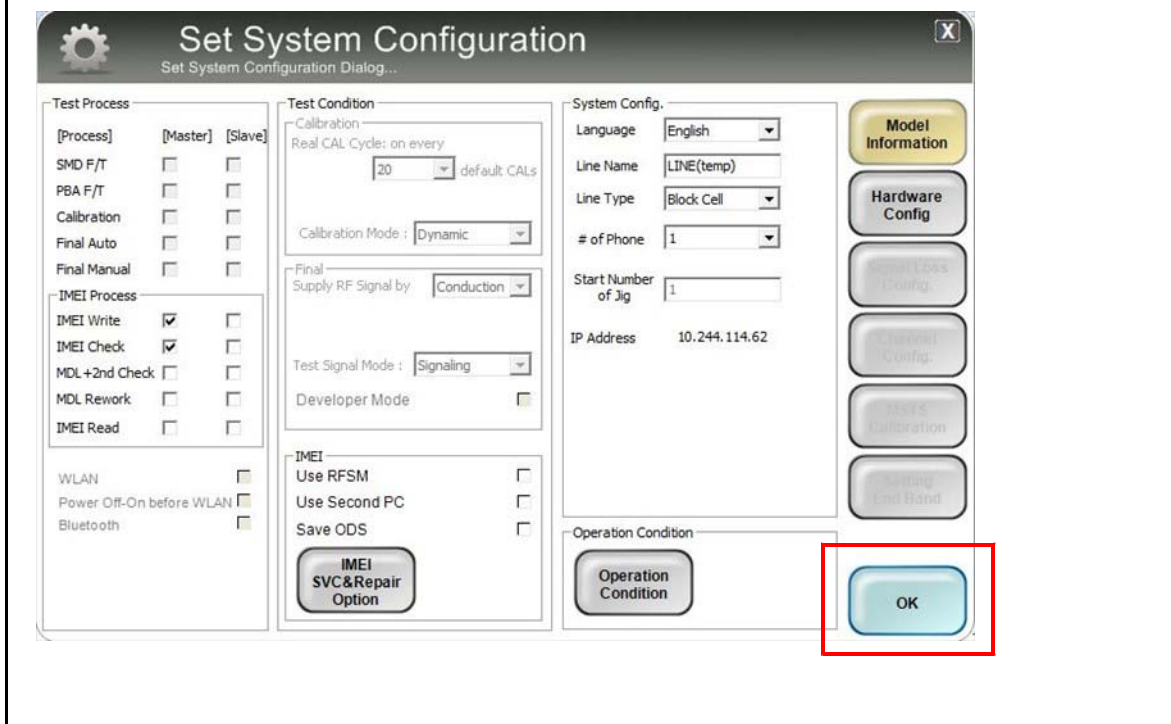
10. Select Port Number and SAVE



The 'Set IO BUS Configuration' dialog box is shown. It has a title bar and a main area with the following components:

- Phone IO Bus Setting**: A section header.
- Common**: A tab with settings for BaudRate (115200), Data Bit (8), Parity (No), and Stop Bit (1).
- Port #1**: A table with two columns: 'No.' and 'Port #1'. The first row shows '1' in the 'No.' column and '1' in the 'Port #1' column. The 'Port #1' column is highlighted with a blue background.
- SAVE**: A button located at the bottom right of the dialog box, highlighted with a red border.
- Cancel**: A button located below the 'SAVE' button.

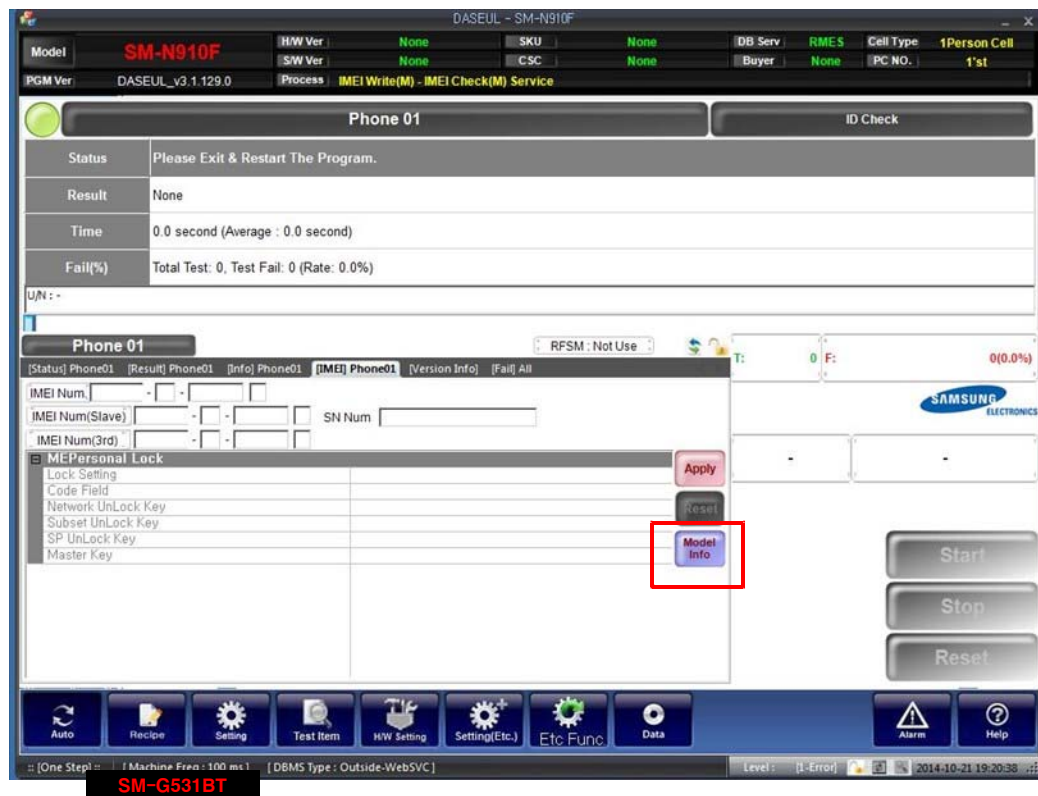
11. Click OK to proceed



The 'Set System Configuration' dialog box is shown. It has a title bar and a main area with the following components:

- Test Process**: A section with checkboxes for [Process], [Master], and [Slave].
- Test Condition**: A section with checkboxes for SMD F/T, PBA F/T, Calibration, Final Auto, Final Manual, IMEI Process, IMEI Write, IMEI Check, MDL +2nd Check, MDL Rework, IMEI Read, WLAN, Power Off-On before WLAN, and Bluetooth.
- System Config.**: A section with dropdown menus for Language (English), Line Name (LINE(temp)), Line Type (Block Cell), # of Phone (1), Start Number of Jig (1), and IP Address (10.244.114.62).
- Model Information**: A button located at the top right of the dialog box.
- Hardware Config**: A button located below the 'Model Information' button.
- Connect Loss Config**: A button located below the 'Hardware Config' button.
- Channel Config**: A button located below the 'Connect Loss Config' button.
- IMEI Calibration**: A button located below the 'Channel Config' button.
- Setting Test Band**: A button located below the 'IMEI Calibration' button.
- IMEI SVC&Repair Option**: A button located at the bottom left of the dialog box.
- Operation Condition**: A button located at the bottom center of the dialog box.
- OK**: A button located at the bottom right of the dialog box, highlighted with a red border.

12. Click Model Info and OK when pop-up shows



13. Click OK



14. Input SKU_CODE and BUYER, then click Save button.

※ Refer to HHPsvc→IMEI Review to check SKU Code and buyer

CSC	G531FSER0AOE8
PDA	G531FXXU0AOE8
Software2	
LPD	
Contents	
DMB	
SKU_CODE	SM-G531FXXXSER
BUYER	SER
Material_Code	
Boot	

Factory Software

☐ FactoryReset+Check
☐ Pre Product
☐ 2nd Func Test (AT&T)
☐ Lock Write (OQC)
☐ 2nd Check after Pwr Reset

MDL Rework

☐ Main Repair
☐ SMD Test NV Write

STA Option

☐ Don't DB Upload
☐ Packing Rework
☐ Tizen Download
☐ Android Download

Buttons: Save, Load, Cancel

15. Input IMEI Number and click Apply

Phone 01

Status	Wait End of Prior Test.
Result	None
Time	0.0 second (Average : 0.0 second)
Fail(%)	Total Test: 0, Test Fail: 0 (Rate: 0.0%)

UN: -

Phone 01

IMEI Num: 359973 - 06 - 013273 4

IMEI Num(Slave): 359974 - 06 - 013273 2

IMEI Num(3rd): - - -

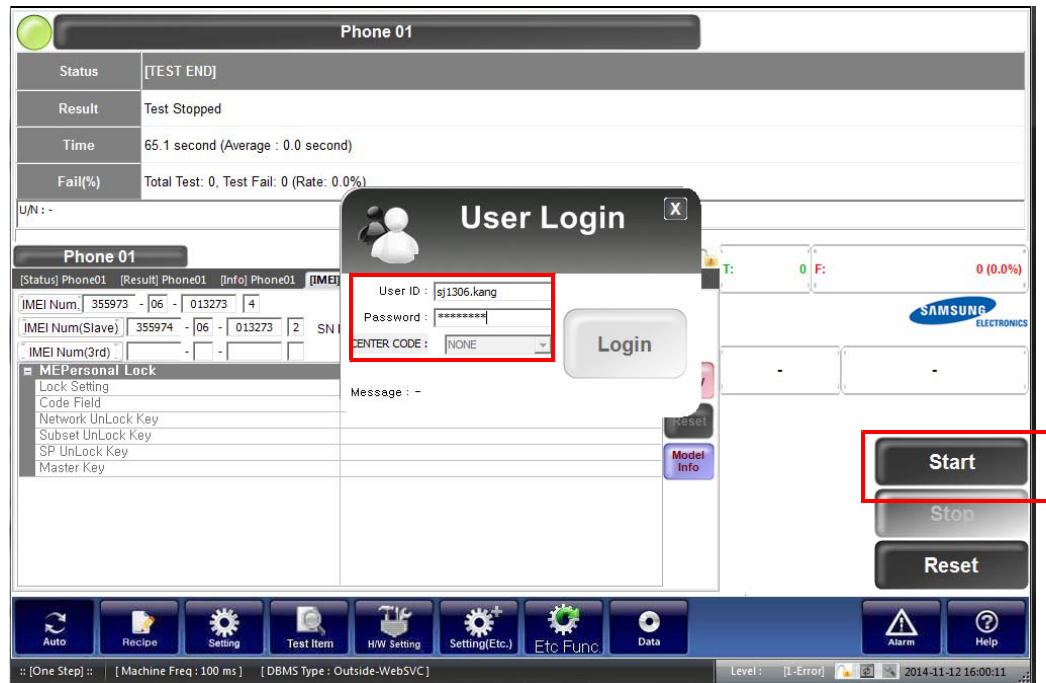
SN Num:

Apply

Buttons: Start, Stop, Pause

Footer: Auto, Recipe, Setting, Test Item, HW Setting, Setting(Etc.), Etc Func, Data, Alarm, Help

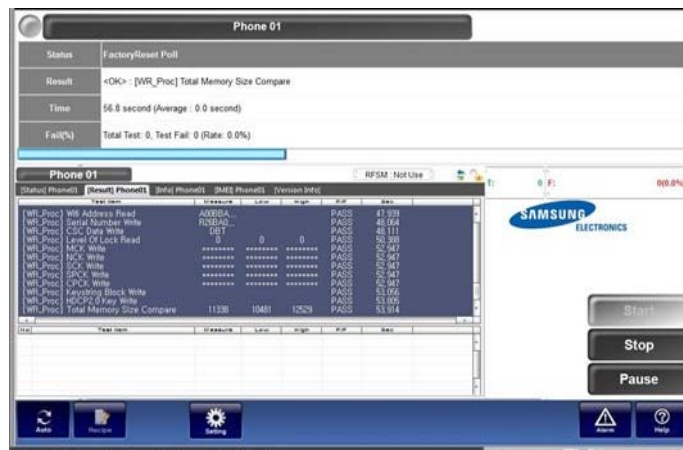
System Info: [One Step] [Machine Freq: 100 ms] [DBMS Type: Outside-WebSVC] Level: 1-Error 2014-11-12 15:58:16



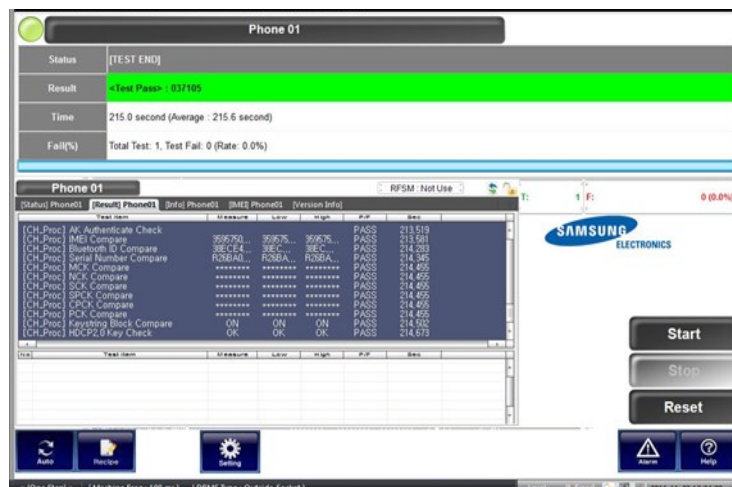
- ✖ When you connect the phone, the r

After connecting the phone, the phone will be booted autom

Downloaded from <http://ajph.org/> on November 10, 2015



19. IMEI Writing Success



6-4. RF Calibration

6-1-1. Required items in order to calibrate RF

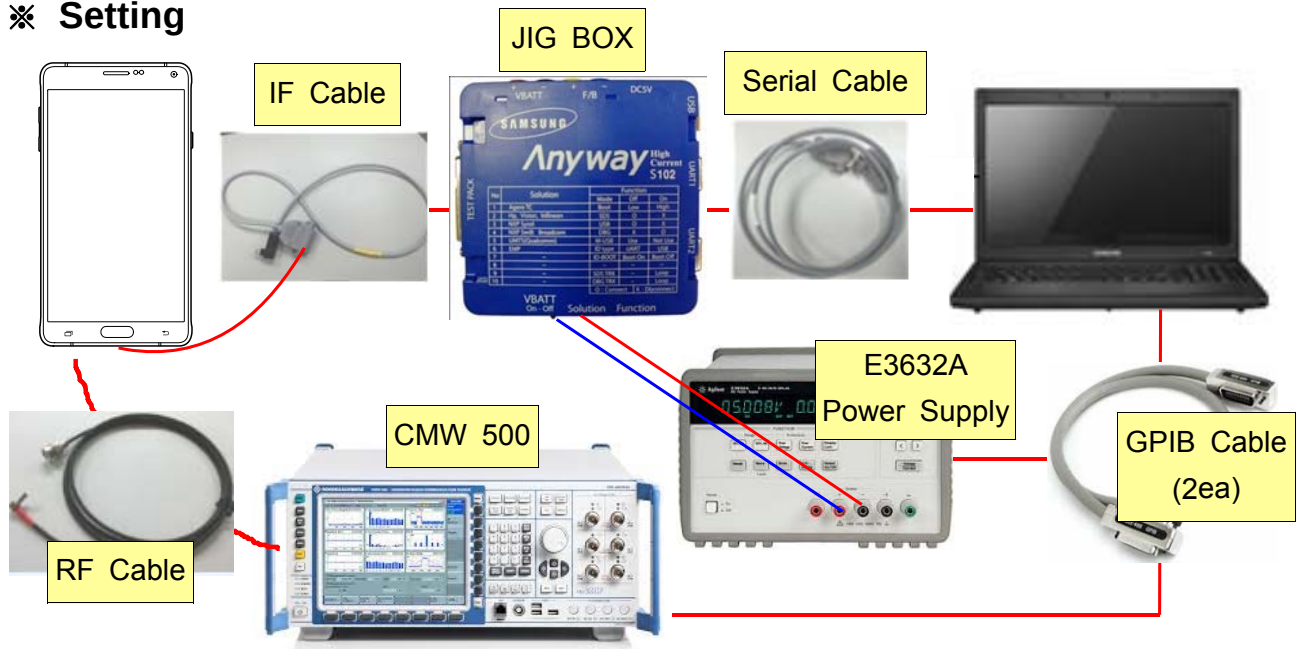
- Installation program: RF Calibration Program
 - Daseul_Launcher_vx.x.xx.exe
 - Daseul_CAL_ALL_Runtime_x.x.xxx.x.CAB
 - Model File (SM-XXXXX_OPEN_CALIBRATION_VER_x.x.xxx.xx.CAB)

※ It is required to use the latest program.

- Mobile Phone
- E3632A Power Supply
- JIG BOX (GH81-11888A)
- UART Serial Cable
- Table of test cables
- R&S CMW500
- GPIB Cable (2ea)
- Adapter (GH81-11888K)

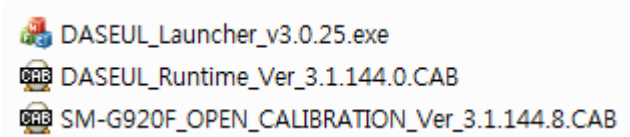
IF Cable	GH81-10631A	GH81-10952A	GH81-11171A	
	11 pin	7 pin (New)	7 pin (Old)	
RF Cable	GH81-11962D	GH81-12937A	GH81-11962C	GH81-11962F
	1.35T, Short	1.35T, Long	1.6T, Short	1.6T, Long
Others	GH81-11962A	GH81-11962B	GH81-11962E	
	Divider	Divider Cable	50Ω Terminator	

※ Setting

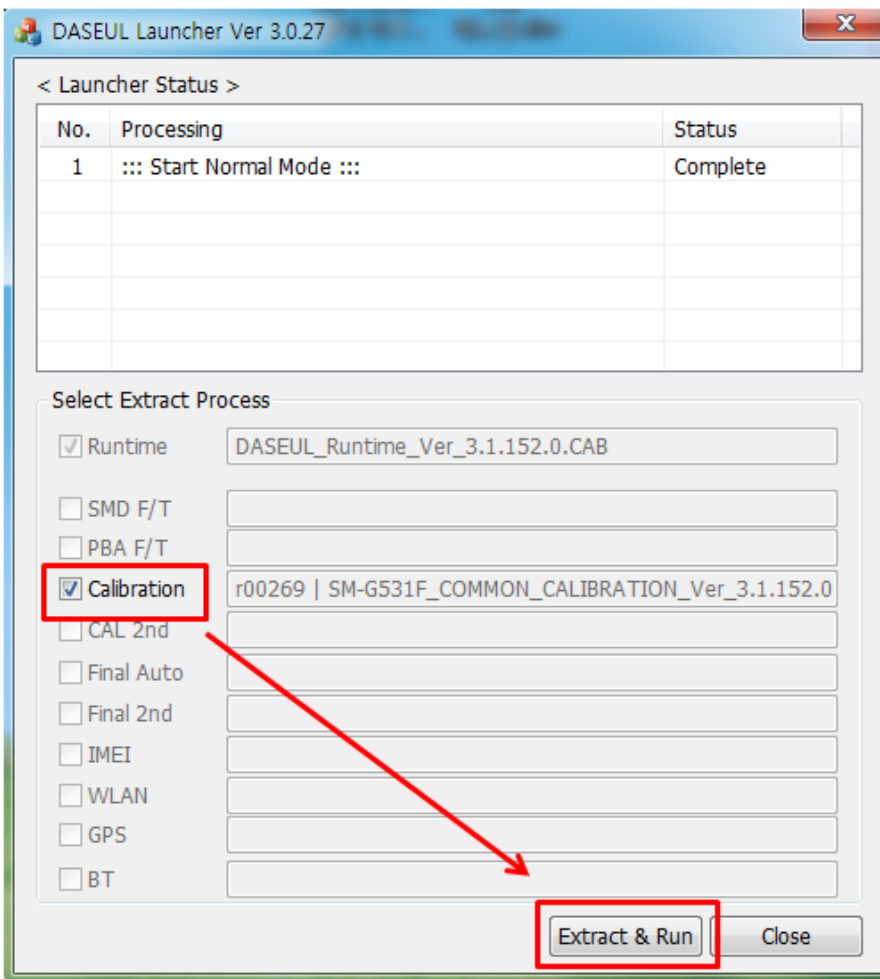


6-1-2. RF Calibration Program

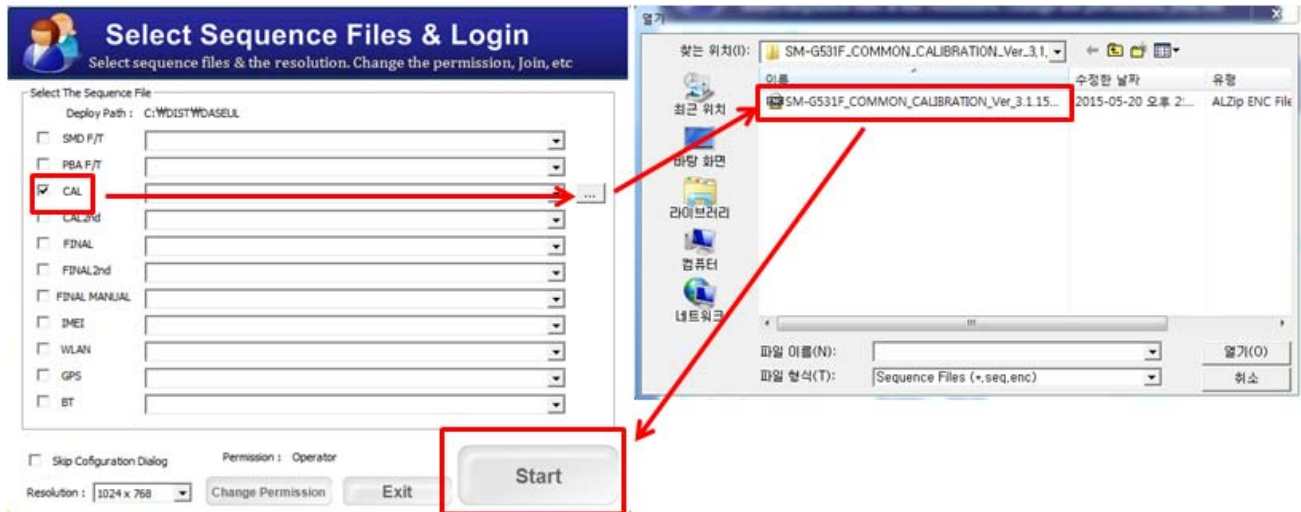
1. Run the RF Calibration Program Launcher, '[DASEUL_Launcher_vx.x.xx.exe](#)'.



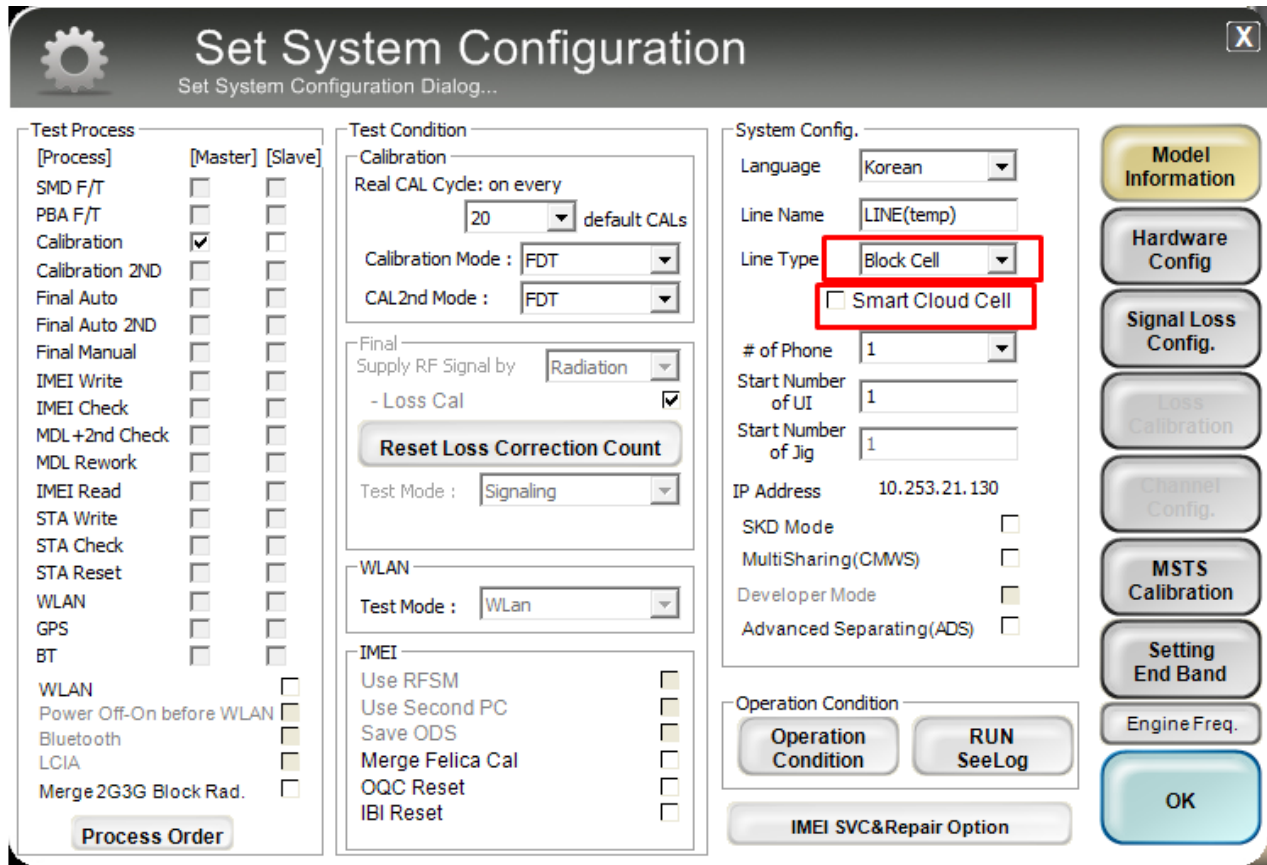
2. Check the '[Calibration](#)' menu, and select '[Extract & Run](#)'.



3. Check the 'CAL' and open the [model file](#), then select 'Start' button.



4. Change the Line Type to 'Block Cell' and disable 'Smart Cloud Cell'.



Set System Configuration
Set System Configuration Dialog...

Test Process

[Process]	[Master]	[Slave]
SMD F/T	☐	☐
PBA F/T	☐	☐
Calibration	☒	☐
Calibration 2ND	☐	☐
Final Auto	☐	☐
Final Auto 2ND	☐	☐
Final Manual	☐	☐
IMEI Write	☐	☐
IMEI Check	☐	☐
MDL+2nd Check	☐	☐
MDL Rework	☐	☐
IMEI Read	☐	☐
STA Write	☐	☐
STA Check	☐	☐
STA Reset	☐	☐
WLAN	☐	☐
GPS	☐	☐
BT	☐	☐
WLAN	☐	☐
Power Off-On before WLAN	☐	☐
Bluetooth	☐	☐
LCIA	☐	☐
Merge 2G3G Block Rad.	☐	☐

Test Condition

Calibration
Real CAL Cycle: on every default CALs
Calibration Mode :
CAL2nd Mode :

Final
Supply RF Signal by
- Loss Cal ☒
Reset Loss Correction Count
Test Mode :

WLAN
Test Mode :

IMEI
Use RFSM ☐
Use Second PC ☐
Save ODS ☐
Merge Felica Cal ☐
OQC Reset ☐
IBI Reset ☐

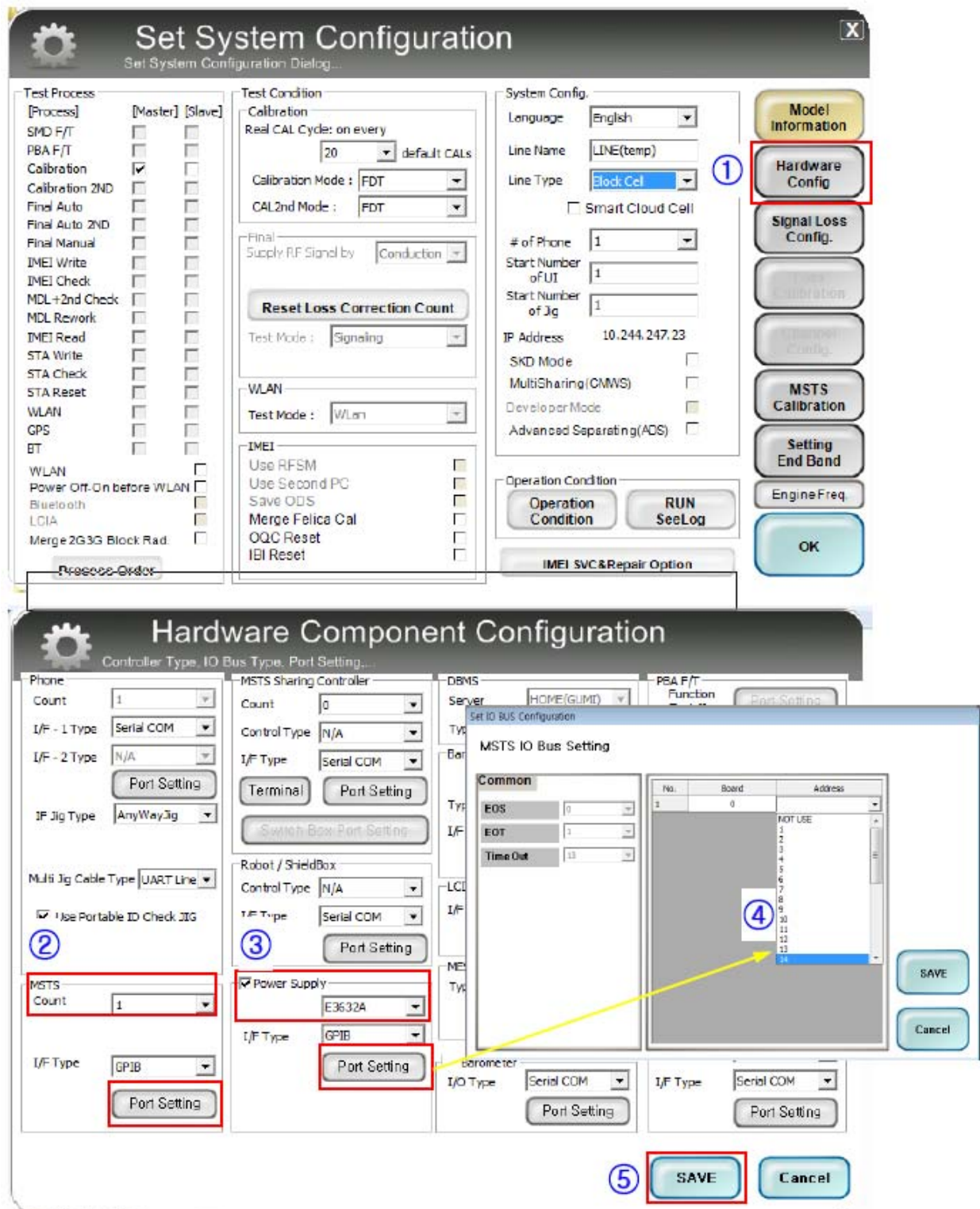
System Config.
Language
Line Name
Line Type
☐ Smart Cloud Cell
of Phone
Start Number of UI
Start Number of Jig
IP Address
SKD Mode ☐
MultiSharing(CMWS) ☐
Developer Mode ☐
Advanced Separating(ADS) ☐

Operation Condition

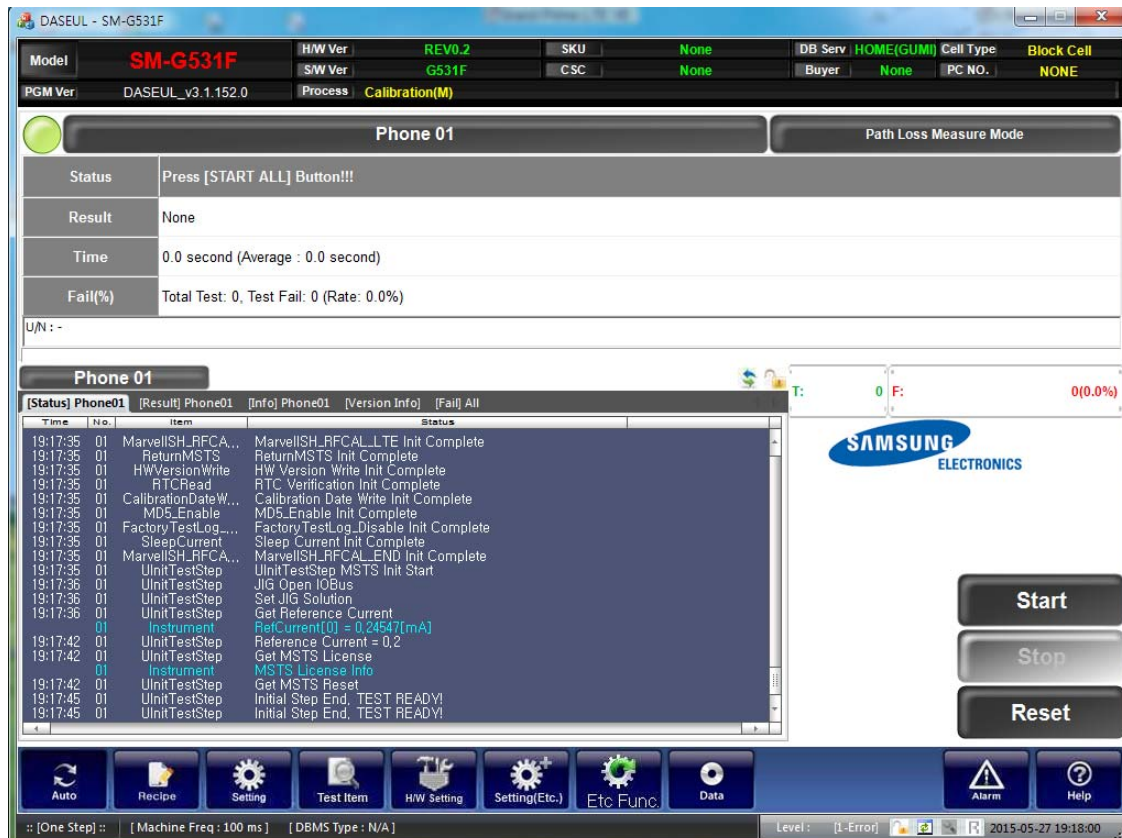
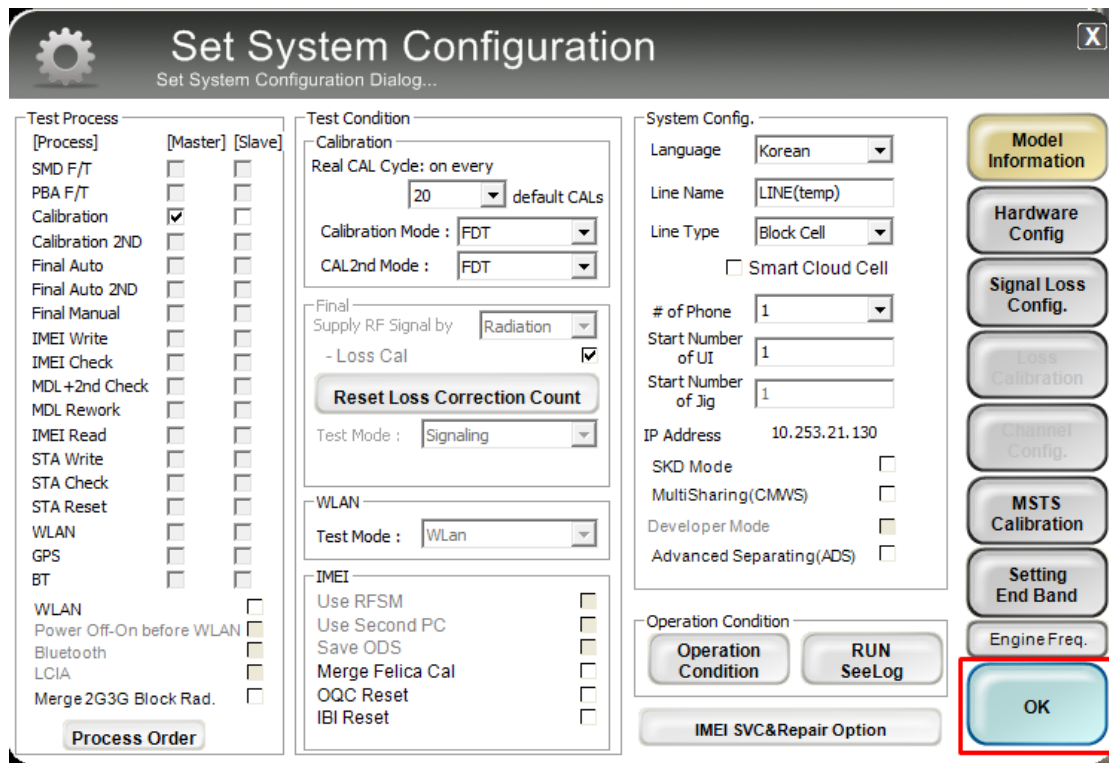
Model Information

Process Order

5. Set the GPIB address of MSTs(CMW500) and Power Supply(E3632A) to enter 'Hardware Config' and 'Save'. (Check the GPIB address of equipments in advance)

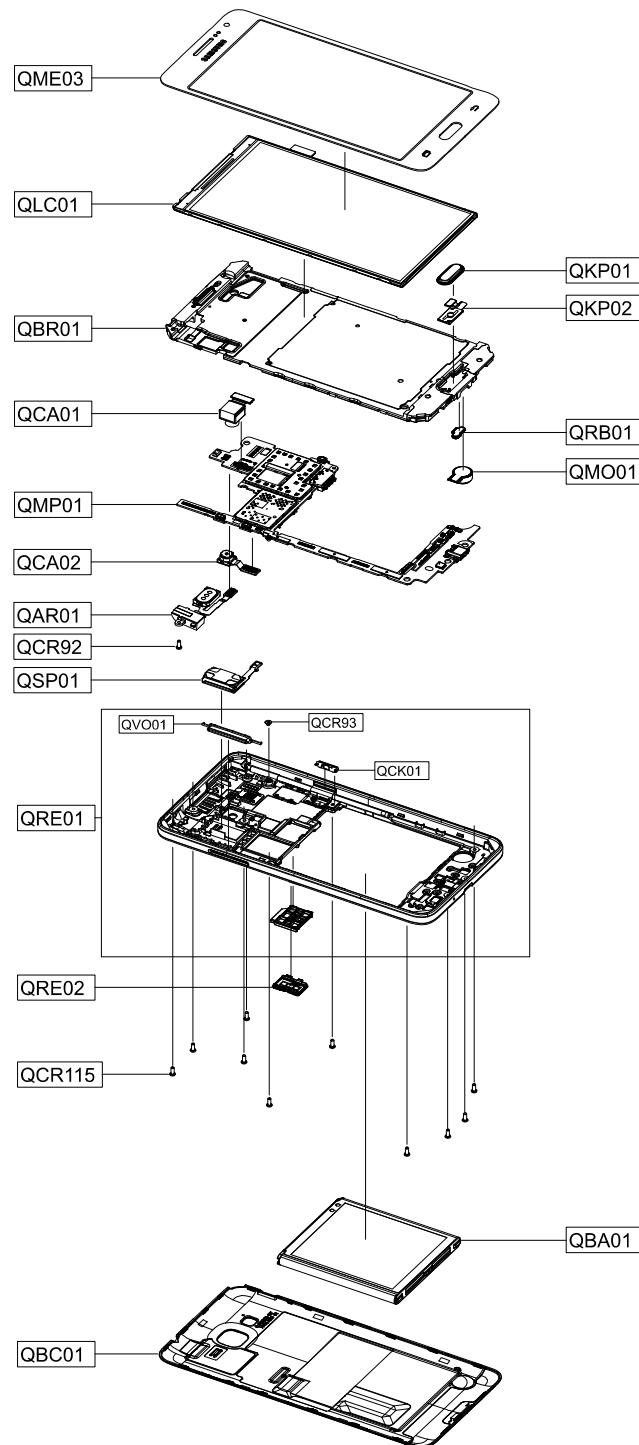


6. Press 'OK' to start RF Calibration after completing all settings.



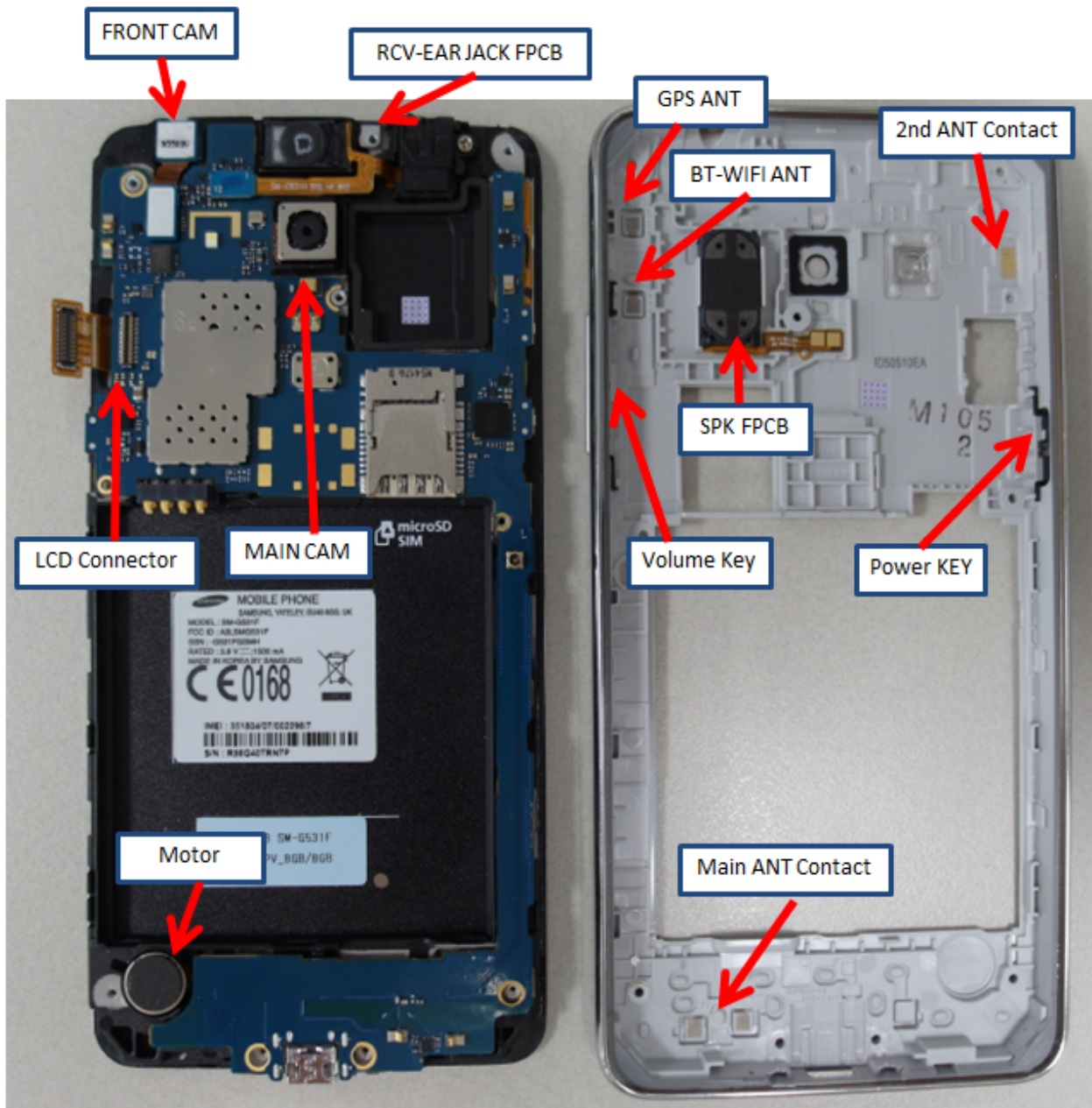
4. Exploded View and Parts List

4-1. Cellular phone Exploded View



7. Level 2 Repair

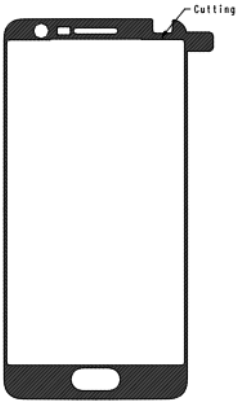
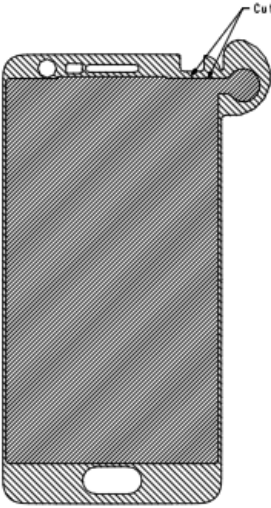
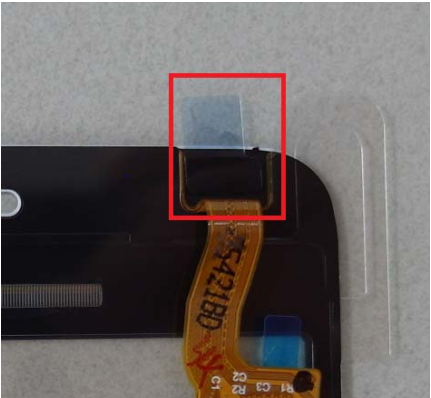
7-1. Components on the Rear Case



7-2. Pre-requisite

	
Tweezers / Disass'y Stick / Screw Driver	Anti-static Gloves
	
Anti-static Mat	Glass Absorber
	
OCTA Disassembly Holder	OCTA Disassembly Upper
	
Ethyl Alcohol	Clean Swab

7-3. Parts which must be changed after repair

BOM Discription	Picture	Remarks
REWORK SVC [GH81-13029A]	 RELEASE PAPER-1	At the LCD and TSP assy, attach the tape round it.
LCD+TSP REWORK SVC [GH81-13030A]	 RELEASE PAPER-1	After disassembly LCD and TSP, the tape attach the TSP side
TSP TOP SVC [GH81-13031A]		

7-4. Disassembly

1

1) Disassemble LCD connector protect cover



2

1) Separate the LCD connector



※ Caution

1) Be care of scratch and molding damage.

※ Caution

1) Be care of scratch and molding damage
2) Be care of damage to the LCD FPCB and PBA



3

1) Unscrew the 10 points



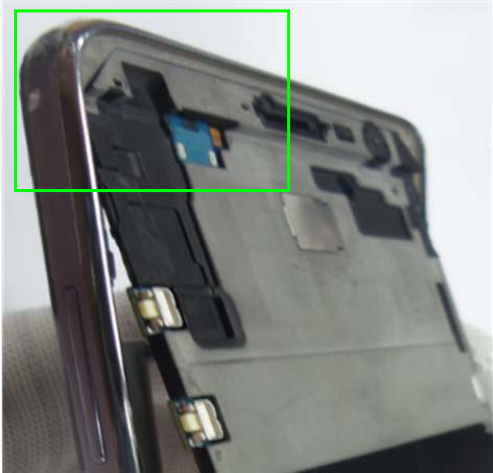
1) Put the device in the chamber for 5~10 minutes under 70~80℃.
2) Detach the LCD with Disass'y JIG.

※ Caution

1) Be care of FPCB damage
2) Be care of SUB PBA connector

4 1) Release the 10 hooks according to below image 2) Detach the REAR and Bracket Assy	5 1) Disassemble the RCV/EARJACK module from PBA 2) Release the 2 hook & unscrew 1 point
* Caution 1) Be care of damage to the Bracket 2) Be care of damage to the PBA Assy	* Caution 1) Be care of damage to RCV-EAR JACK module 2) Be care of damage to the part's FPCB
6 1) Separate the VT, MEGA Camera from PBA	8 1) Separate the RCV-Ear Jack, Motor from hook
* Caution 1) Be care of damage to the part's FPCB	* Caution 1) Be care of scratch, molding damage and part

7-5. Assembly

1 1) Assemble the RCV/EARJACK module, Motor on Bracket 	2 1) Assemble the VT, MEGA Camera on PBA 
※ Caution 1) Be care of damage to the part	※ Caution 1) Be care of damage to the part and it's FPCB
3 1) Assemble RCV/EARJACK module on PBA 2) Hang the 2 hook of PBA and screw 1 point 	4 1) First, insert a bracket from EARJACK part of REAR 
※ Caution 1) Be care of damage to PBA 2) 1.1 ± 0.1 Kg/cm²	※ Caution 1) Be care of damage to the REAR and Bracket

5 1) Hang the 10 hooks, 2 ribs and press it	6 1) Remove the TSP tape
※ Caution 1) Press the 11 hooks and 2 ribs	※ Caution 1) Be care of damage to the TSP and LCD
7 1) Attach the TSP tape	8 1) Screw the 10 points of the Rear 1.1 ± 0.1 Kg/cm²
※ Caution 1) Be care of damage to TSP and LCD	※ Caution 1) Be care of scratch and molding damage

9

1) Attach the LCD assay to the Rear Assy



10

1) Assemble LCD connector



※ **Caution**

1) Be care of scratch and molding damage

※ **Caution**

1) Be care of scratch, LCD FPCB and PBA

11

1) Assemble LCD connector protect cover



12

1) Press the set 2 times using pressure jig



※ **Caution**

1) Be care of scratch and molding damage

※ **Caution**

- Pressure : 1N - Pressure time : 1 min

5. MAIN Electrical Parts List

SEC CODE	Design Location	Description
0404-001646	D600	DIODE
0406-001413	ZD506,ZD510,ZD700	DIODE
0406-001459	ZD500,ZD501,ZD508	DIODE
0406-001459	ZD509	DIODE
0406-001623	ZD600	DIODE
0406-001642	ZD505,ZD507	DIODE
0406-001675	ZD402	DIODE
0406-001679	ZD601,ZD602,ZD603	DIODE
0406-001679	ZD604	DIODE
0406-001709	ZD502,ZD503,ZD504	DIODE
0407-001055	ZD400	DIODE
0601-003526	LED400	LED
1001-001850	U101	IC
1001-001968	U500	IC
1001-001970	U100	IC
1108-000583	UME300	IC
1201-003581	PAM100	IC
1201-003853	U202	IC
1203-007000	U702	IC
1203-007669	U601	IC
1203-008251	U502	IC
1203-008268	U600	IC
1203-008326	U401,U602	IC
1203-008416	U404	IC
1203-008565	U402	IC
1204-003532	U701	IC
1205-005067	U102	IC
1205-005106	U403	IC
1205-005175	U405	IC
1205-005220	U201	IC
1205-005308	UCP300	IC
1205-005310	U203	IC
1209-002065	U501	IC
1209-002275	U603	IC
1209-002330	U604	IC
1404-001694	TH100,VR400,VR401	THERMISTOR
2007-000148	R319,R503,R511	R-CHIP
2007-000162	R407,R523,R614,R617	R-CHIP
2007-000169	R443	R-CHIP
2007-002796	R441	R-CHIP

2007-003025	R409,R411	R-CHIP
2007-007107	R111	R-CHIP
2007-007156	R444	R-CHIP
2007-007517	R316	R-CHIP
2007-007538	R108	R-CHIP
2007-007741	R300,R301,R419	R-CHIP
2007-007861	R410,R420	R-CHIP
2007-007946	R507	R-CHIP
2007-007981	R613,R615	R-CHIP
2007-008043	R104	R-CHIP
2007-008045	R105,R106,R401,R408	R-CHIP
2007-008045	R429	R-CHIP
2007-008055	R202,R433,R504,R505	R-CHIP
2007-008055	R603	R-CHIP
2007-008403	R512	R-CHIP
2007-008419	R403,R413,R414,R415	R-CHIP
2007-008419	R416,R432	R-CHIP
2007-008420	R629	R-CHIP
2007-008478	R102,R438,R439	R-CHIP
2007-008516	R310,R311,R324,R332	R-CHIP
2007-008516	R333,R334,R604,R616	R-CHIP
2007-008516	R620,R630	R-CHIP
2007-008531	R418,R437,R521,R610	R-CHIP
2007-008531	R612,R708	R-CHIP
2007-008587	R423,R425	R-CHIP
2007-008588	R320,R321,R322,R323	R-CHIP
2007-008588	R327,R328,R605,R606	R-CHIP
2007-008588	R607,R608,R609,R611	R-CHIP
2007-008648	R440	R-CHIP
2007-008774	R402,R435,R436	R-CHIP
2007-008788	R312	R-CHIP
2007-008806	R103	R-CHIP
2007-009111	R200	R-CHIP
2007-009170	R428,R627	R-CHIP
2007-009212	R519	R-CHIP
2007-009838	R430	R-CHIP
2007-009920	R337	R-CHIP
2007-009924	R520	R-CHIP
2007-009969	R522	R-CHIP
2007-010202	R412,R426	R-CHIP
2007-010233	R315,R317,R326,R329	R-CHIP

2007-010848	R442	R-CHIP
2007-011043	R330	R-CHIP
2007-011648	R434	R-CHIP
2203-000233	C507,L706	C-CER,CHIP
2203-000254	C506	C-CER,CHIP
2203-000627	C616	C-CER,CHIP
2203-000679	C505	C-CER,CHIP
2203-000812	C515,C516	C-CER,CHIP
2203-000940	C483	C-CER,CHIP
2203-001239	C482	C-CER,CHIP
2203-002668	C103,C104	C-CER,CHIP
2203-005249	C600	C-CER,CHIP
2203-005344	C470	C-CER,CHIP
2203-005682	C102,C106,C145,C153	C-CER,CHIP
2203-005682	C154,C156,C157,C161	C-CER,CHIP
2203-005682	C164,C215,C225,C640	C-CER,CHIP
2203-005683	C448,C707,C709	C-CER,CHIP
2203-005717	C113,C139	C-CER,CHIP
2203-005725	C236	C-CER,CHIP
2203-005726	C119	C-CER,CHIP
2203-005727	C603,C611	C-CER,CHIP
2203-005729	C400,C401,C428,C445	C-CER,CHIP
2203-005729	C490,C511,C526	C-CER,CHIP
2203-005732	C476,C500,C501,C512	C-CER,CHIP
2203-005736	C121,C125,C126,C131	C-CER,CHIP
2203-005736	C132,C146,C147,C148	C-CER,CHIP
2203-005736	C160,C162,C224,C712	C-CER,CHIP
2203-005736	L210	INDUCTOR-SMD
2203-005777	C117,C239	C-CER,CHIP
2203-005806	C141,C143,C189	C-CER,CHIP
2203-006048	C471,C622	C-CER,CHIP
2203-006121	C127	C-CER,CHIP
2203-006123	C129,C163,C167,C240	C-CER,CHIP
2203-006190	C200	C-CER,CHIP
2203-006194	C306,C335	C-CER,CHIP
2203-006257	C410	C-CER,CHIP
2203-006305	C172,C173,C175,C181	C-CER,CHIP
2203-006305	C202,C211,C214,C218	C-CER,CHIP
2203-006305	L127	INDUCTOR-SMD
2203-006379	C464,C465	C-CER,CHIP
2203-006399	C209,C229,C230,C233	C-CER,CHIP

2203-006399	C234,C313,C331,C333	C-CER,CHIP
2203-006399	C339,C340,C345,C350	C-CER,CHIP
2203-006399	C351,C352,C362,C405	C-CER,CHIP
2203-006399	C441,C442,C443,C456	C-CER,CHIP
2203-006399	C457,C459,C460,C463	C-CER,CHIP
2203-006399	C479,C514,C525,C527	C-CER,CHIP
2203-006399	C620,C621,C623	C-CER,CHIP
2203-006400	C187,C188,C223,C227	C-CER,CHIP
2203-006423	C186,C302,C304,C305	C-CER,CHIP
2203-006423	C315,C316,C329,C330	C-CER,CHIP
2203-006423	C337,C341,C342,C343	C-CER,CHIP
2203-006423	C344,C346,C347,C348	C-CER,CHIP
2203-006423	C349,C510,C513,C517	C-CER,CHIP
2203-006423	C521,C522,C523,C524	C-CER,CHIP
2203-006423	C624,C625,C629,C701	C-CER,CHIP
2203-006423	C705,C706,C710,C713	C-CER,CHIP
2203-006556	C232,C486,C487	C-CER,CHIP
2203-006562	C140	C-CER,CHIP
2203-006611	L133	INDUCTOR-SMD
2203-006647	C504	C-CER,CHIP
2203-006665	C115	C-CER,CHIP
2203-006668	C484	C-CER,CHIP
2203-006681	C704	C-CER,CHIP
2203-006707	C124,C177,C184	C-CER,CHIP
2203-006815	C502,C503	C-CER,CHIP
2203-006839	C122,C415,C417,C420	C-CER,CHIP
2203-006839	C422,C489,C508,C509	C-CER,CHIP
2203-006872	C207,C208	C-CER,CHIP
2203-006890	C321,C409,C413,C433	C-CER,CHIP
2203-006890	C491	C-CER,CHIP
2203-006978	C481,C612	C-CER,CHIP
2203-006979	C237	C-CER,CHIP
2203-007194	C135,C136	C-CER,CHIP
2203-007210	C332,C334	C-CER,CHIP
2203-007235	C458	C-CER,CHIP
2203-007240	C320,C360,C361,C421	C-CER,CHIP
2203-007240	C423,C451,C452,C453	C-CER,CHIP
2203-007240	C454,C455,C461,C462	C-CER,CHIP
2203-007271	C235,C300,C309,C314	C-CER,CHIP
2203-007271	C318,C324,C325,C354	C-CER,CHIP
2203-007271	C402,C403,C404,C407	C-CER,CHIP

2203-007271	C408,C412,C414,C416	C-CER,CHIP
2203-007271	C429,C430,C431,C432	C-CER,CHIP
2203-007271	C434,C435,C436,C437	C-CER,CHIP
2203-007271	C438,C439,C444,C446	C-CER,CHIP
2203-007271	C467,C473	C-CER,CHIP
2203-007312	C311	C-CER,CHIP
2203-007317	C142,C171,C303,C312	C-CER,CHIP
2203-007317	C317,C449,C450,C528	C-CER,CHIP
2203-007317	C608,C618,C639	C-CER,CHIP
2203-007369	C201,C206	C-CER,CHIP
2203-007391	C700,C708	C-CER,CHIP
2203-007392	C480	C-CER,CHIP
2203-007393	C221	C-CER,CHIP
2203-007449	C165,C174,C182,C474	C-CER,CHIP
2203-007449	C605,C606,C607,C609	C-CER,CHIP
2203-007449	C610,C613,C615	C-CER,CHIP
2203-007456	C723,C724	C-CER,CHIP
2203-007474	C120,C326,C328,C418	C-CER,CHIP
2203-007474	C419,C424,C425,C466	C-CER,CHIP
2203-007474	C485,C529,C617,C619	C-CER,CHIP
2203-007759	C715	C-CER,CHIP
2203-007775	C205,C210	C-CER,CHIP
2203-007781	C488	C-CER,CHIP
2203-007795	C468,C477,C520	C-CER,CHIP
2203-007796	C203,C204,C231,C469	C-CER,CHIP
2203-008097	C217,C336,C338,C359	C-CER,CHIP
2203-008123	C406,C426	C-CER,CHIP
2203-008242	C179,C427,C518,C614	C-CER,CHIP
2203-008394	C107,C440,C447	C-CER,CHIP
2203-008654	C475,C478	C-CER,CHIP
2203-008886	C178,C180	C-CER,CHIP
2703-001726	L514	INDUCTOR-SMD
2703-002198	C711	C-CER,CHIP
2703-002202	C714	C-CER,CHIP
2703-002208	L100	INDUCTOR-SMD
2703-002367	C101	C-CER,CHIP
2703-002649	C110,L700	C-CER,CHIP
2703-002901	L704	INDUCTOR-SMD
2703-002903	C166,L130	C-CER,CHIP
2703-002951	L705	INDUCTOR-SMD
2703-002958	L211	INDUCTOR-SMD

2703-003004	L102	INDUCTOR-SMD
2703-003476	L505	INDUCTOR-SMD
2703-003878	L508	INDUCTOR-SMD
2703-003915	L105	INDUCTOR-SMD
2703-003970	L701	INDUCTOR-SMD
2703-004013	L125	INDUCTOR-SMD
2703-004014	C133,R100	C-CER,CHIP
2703-004018	L121	INDUCTOR-SMD
2703-004030	C137	C-CER,CHIP
2703-004032	C116,C149,L112,L129	C-CER,CHIP
2703-004034	L115,L131,L206	INDUCTOR-SMD
2703-004035	L109,L110,L113,L122	INDUCTOR-SMD
2703-004035	L132,L135	INDUCTOR-SMD
2703-004036	L212	INDUCTOR-SMD
2703-004037	C108	C-CER,CHIP
2703-004038	C128,C134	C-CER,CHIP
2703-004193	L407,L703	INDUCTOR-SMD
2703-004298	L208	INDUCTOR-SMD
2703-004318	L405,L406	INDUCTOR-SMD
2703-004328	C183,L126,L203,L207	C-CER,CHIP
2703-004328	L215	INDUCTOR-SMD
2703-004365	L101,L702	INDUCTOR-SMD
2703-004366	C176,L213	C-CER,CHIP
2703-004367	C185	C-CER,CHIP
2703-004368	C155,C159,L128	C-CER,CHIP
2703-004369	L107	INDUCTOR-SMD
2703-004599	L403,L404,L410	INDUCTOR-SMD
2703-004764	L106	INDUCTOR-SMD
2703-004914	L214	INDUCTOR-SMD
2703-004976	C130,C144,L114,L119	C-CER,CHIP
2703-005109	L401	INDUCTOR-SMD
2703-005118	L603	INDUCTOR-SMD
2703-005224	L402,L602	INDUCTOR-SMD
2801-004820	OSC400	CRYSTAL-UNIT
2801-005176	OSC700	CRYSTAL-UNIT
2805-001113	OSC200	CRYSTAL-UNIT
2809-001411	OSC100	CRYSTAL-UNIT
2901-001673	F601	FILTER-EMI SMD
2901-001674	F600	FILTER-EMI SMD
2904-001840	F700	FILTER-SAW
2904-002111	F103	FILTER-SAW

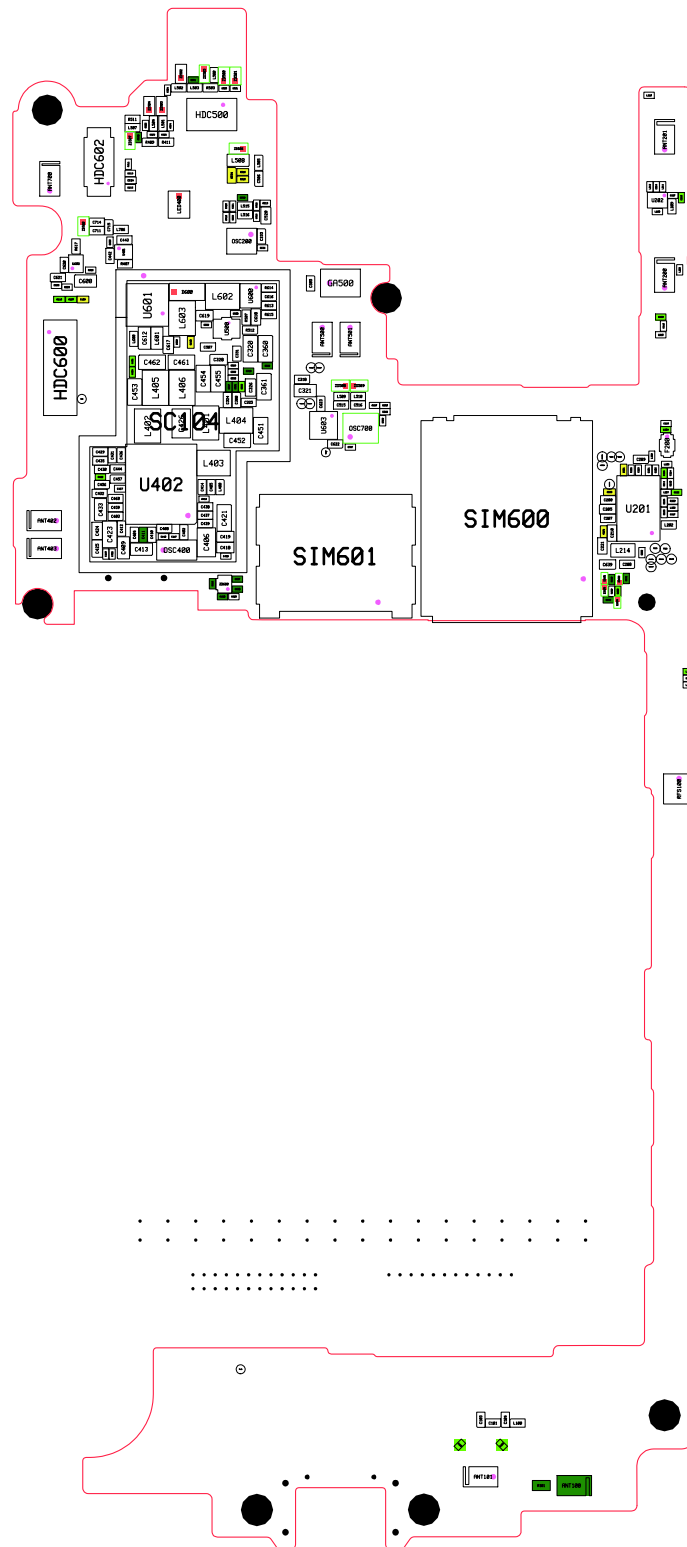
2904-002168	F201	FILTER-SAW
2904-002247	F101	FILTER-SAW
2904-002321	F100	FILTER-SAW
2909-001307	F200	FILTER-SAW
2910-000295	F106	FILTER-SAW
2910-000313	F104	FILTER-SAW
2910-000318	F105	FILTER-SAW
2910-000349	F102	FILTER-SAW
3003-001208	MIC500	MIC-CONDENSOR
3301-001438	L202	INDUCTOR-SMD
3301-001534	L300	INDUCTOR-SMD
3301-001659	L209	INDUCTOR-SMD
3301-001682	L509,L510	INDUCTOR-SMD
3301-001789	L400	INDUCTOR-SMD
3301-001812	L600	INDUCTOR-SMD
3301-001885	L500,L503,L507	INDUCTOR-SMD
3301-001895	L200,L205	INDUCTOR-SMD
3301-001901	L601	INDUCTOR-SMD
3301-001917	L502,L515,L516	INDUCTOR-SMD
3301-002078	L501,L504	INDUCTOR-SMD
3301-002228	L104	INDUCTOR-SMD
3301-002236	L511	INDUCTOR-SMD
3301-002254	L409	INDUCTOR-SMD
3301-002286	L512,L513	INDUCTOR-SMD
3404-001550	TAC400,TAC401	SWTICH-TACT
3705-001708	RFS100	CONNECTOR-COAXIAL
3709-001799	SIM601	CONNECTOR-CARD EDGE
3709-001840	SIM600	CONNECTOR-CARD EDGE
3711-007173	HDC500	CONNECTOR-HEADER
3711-007295	HDC601	CONNECTOR-HEADER
3711-007883	HDC600	CONNECTOR-HEADER
3711-008485	BTC400	CONNECTOR-HEADER
3711-008511	HDC602	CONNECTOR-HEADER
3712-001517	ANT402,ANT403,ANT500	CONNECTOR
3712-001517	ANT501,ANT700	CONNECTOR
3712-001540	ANT400,ANT401,ANT502	CONNECTOR
3712-001540	ANT503	CONNECTOR
3712-001541	ANT101,ANT200,ANT201	CONNECTOR
3722-003708	IFC400	CONNECTOR
GH61-04484A	SUS101,SUS102,SUS103	PLATE-SMD BTM
GH61-04949A	ANT102	CONNECTOR

GH61-07715A	SUS100	PLATE-SMD-PMIC
GH61-07985A	FG100,FG101,FG102	FINGER-SMD FINGER
GH61-07985A	FG103,FG104,FG105	FINGER-SMD FINGER
GH62-00034A	GA500	GASKET-SMD
GH80-03321A	R109,R201,R424	R-CHIP
GH07-01720A	LCD	LCD
GH42-05173A	MAIN ANT	MAIN ANT

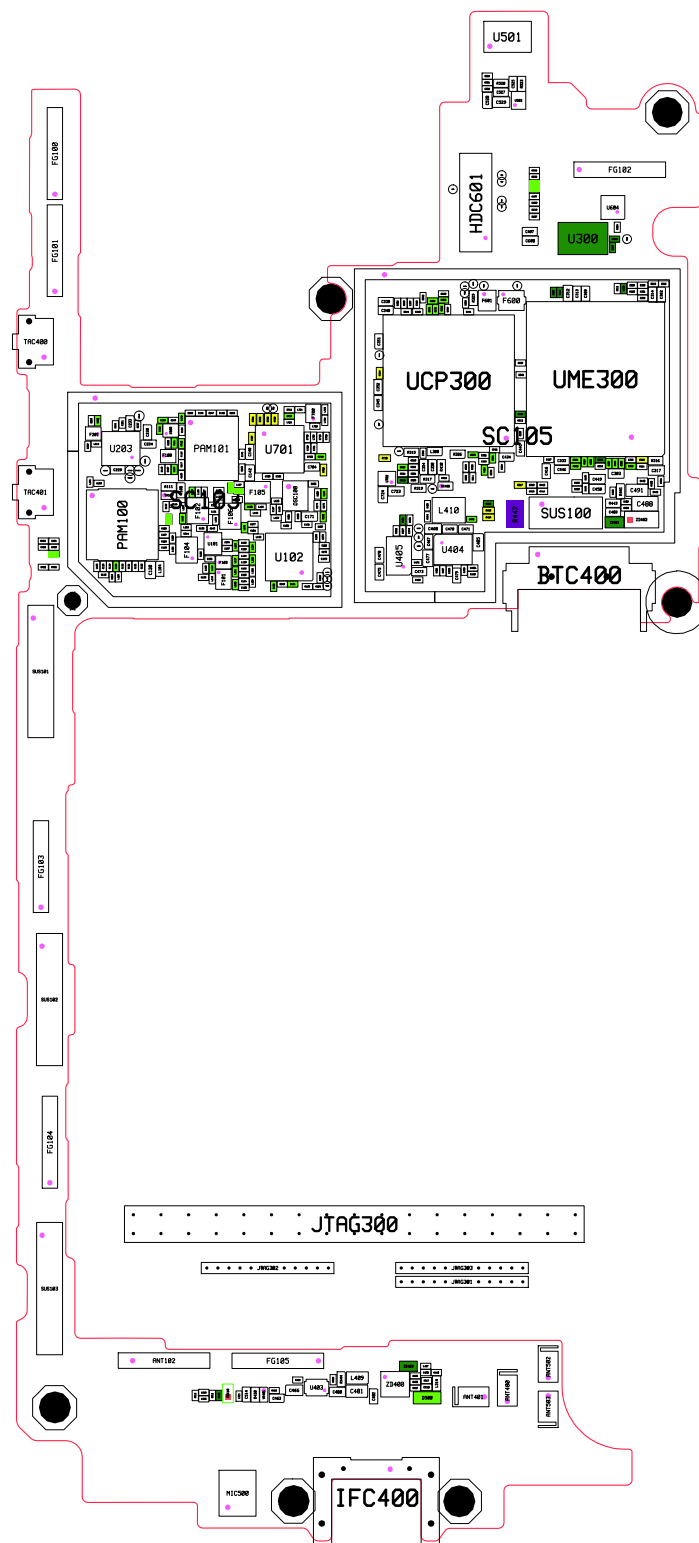
Please consult the GSPN website (Samsung Portal) for the most recent version of the product's part list.

8-2. PCB Diagrams

8-2-1. Top

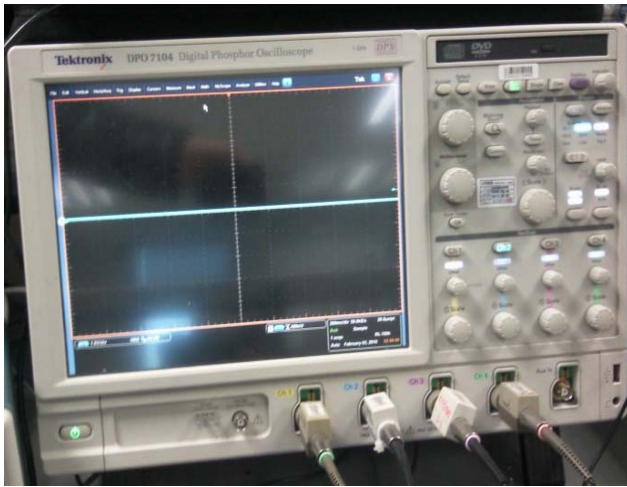


8-2-2. Bottom



8-3. Flow Chart of Troubleshooting

Equipments



↑ Oscilloscope



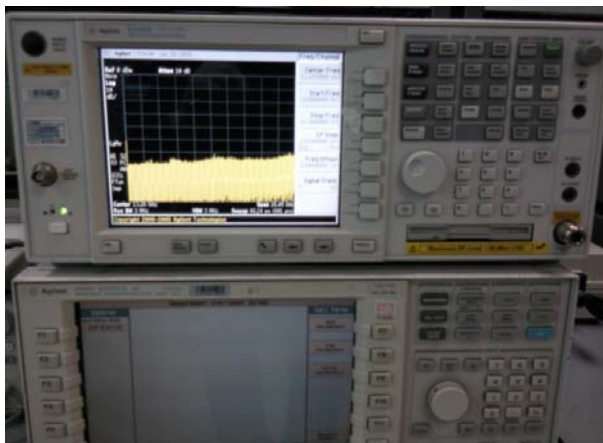
↑ Digital Multimeter



↑ Power Supply



↑ + driver, ESD Safe Tweezer

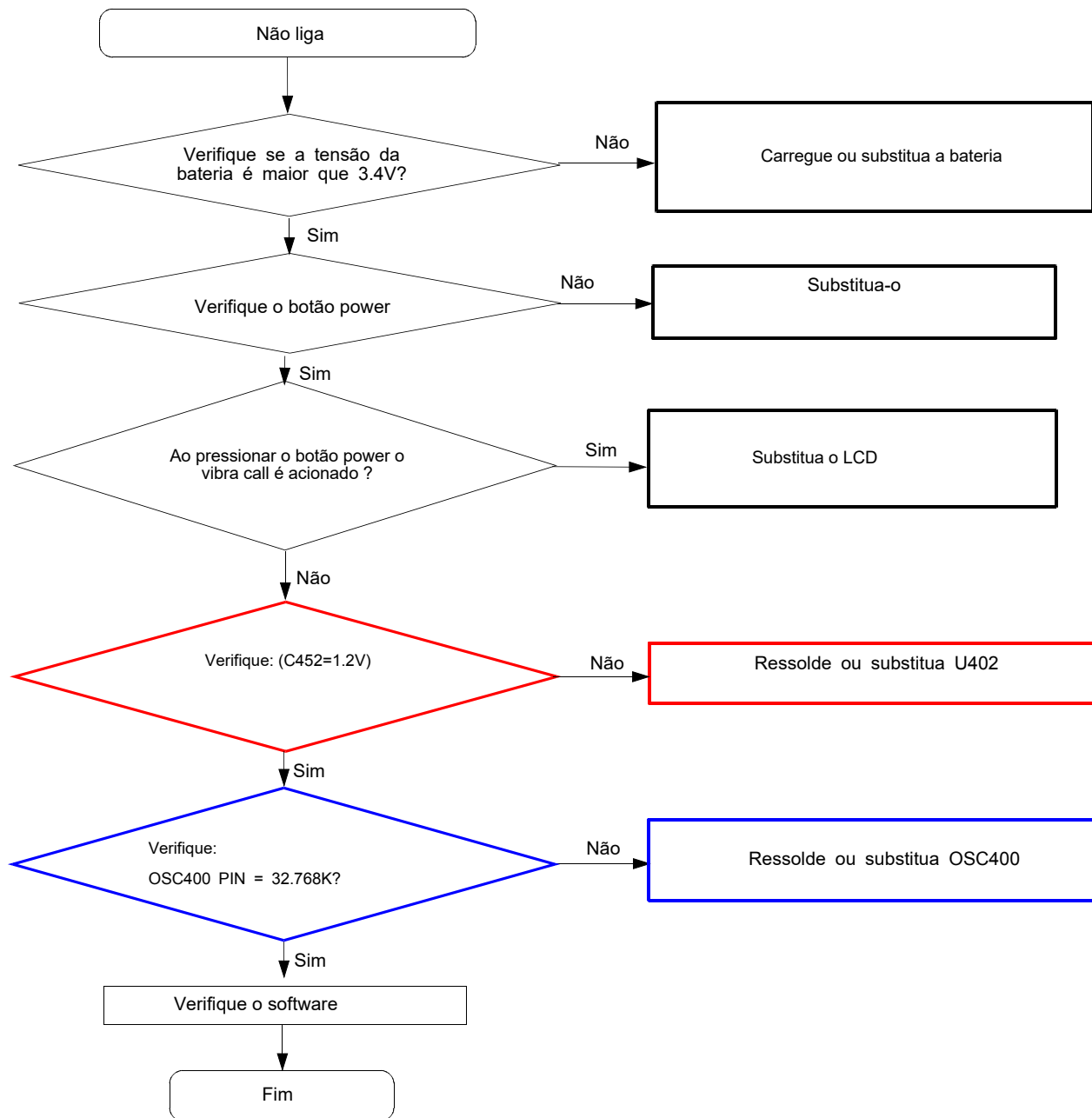


↑ 8960 & Spectrum Analyzer

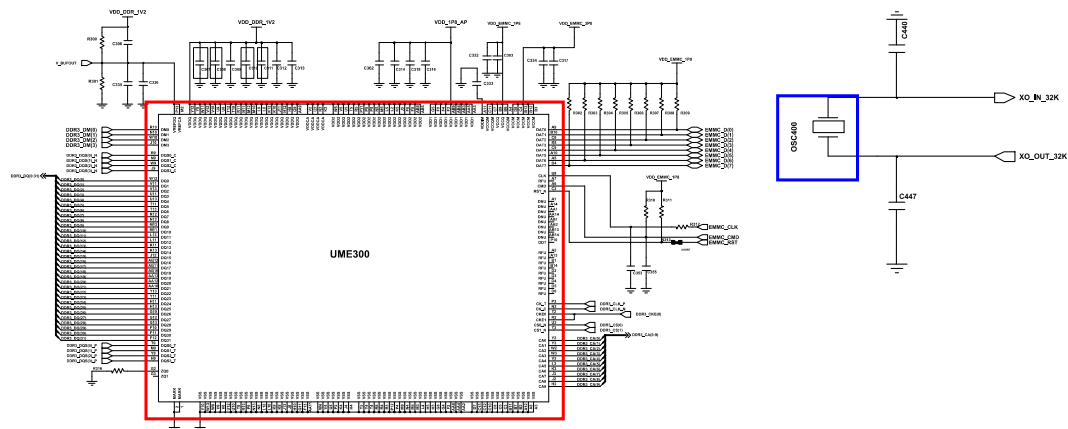
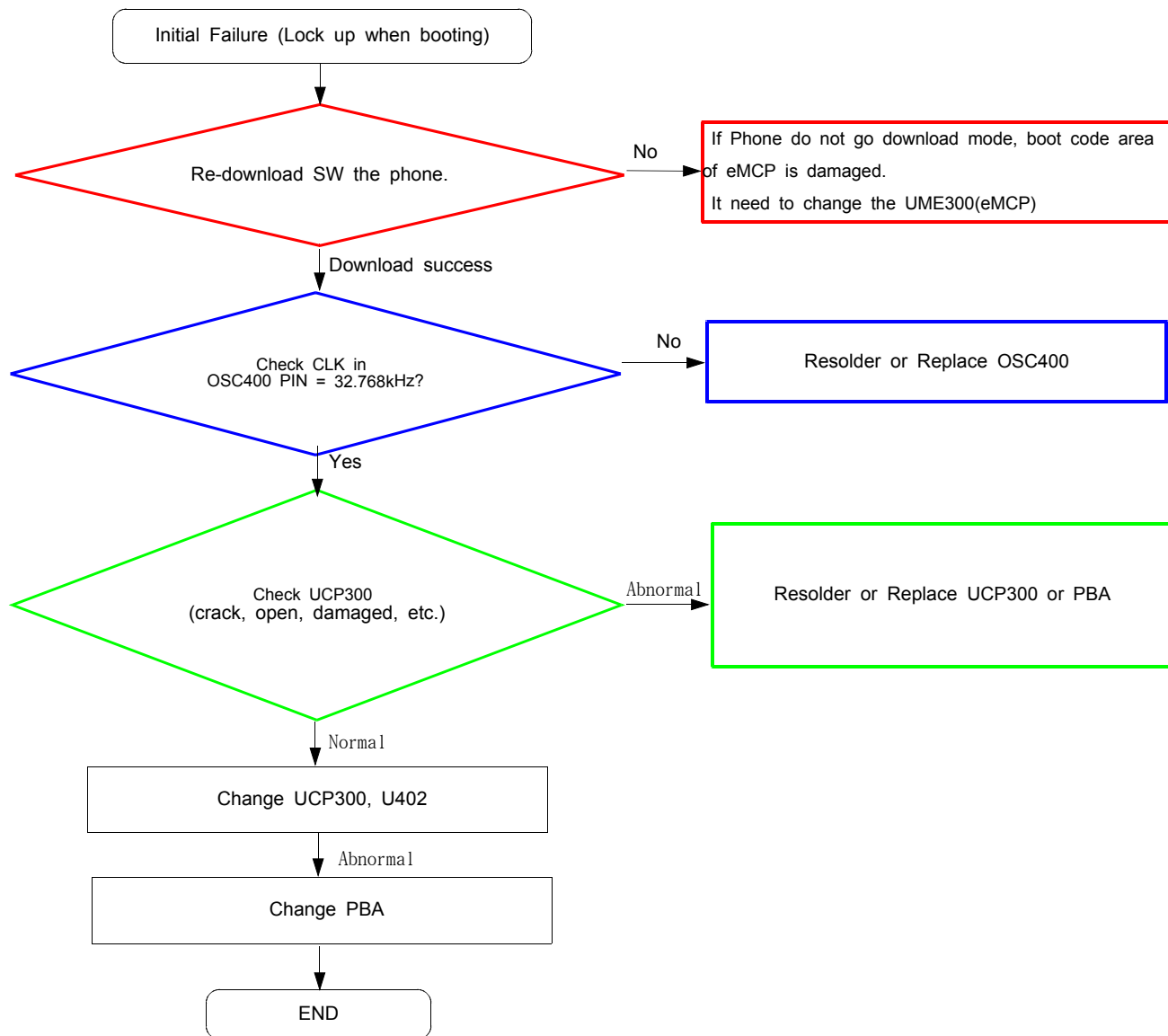


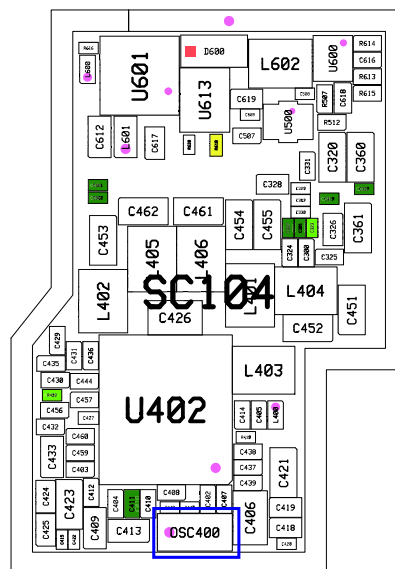
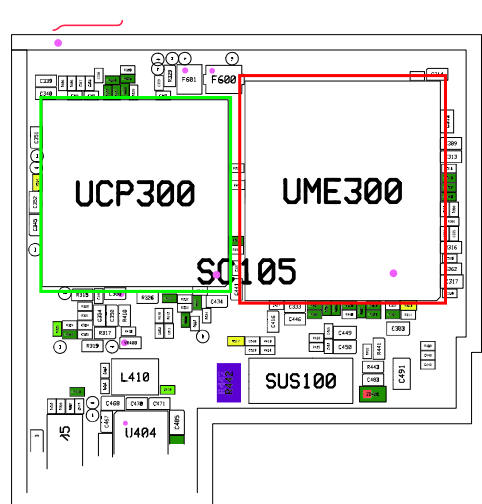
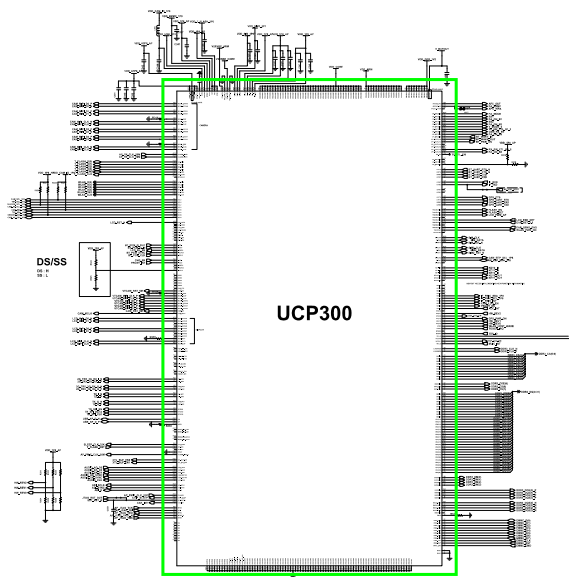
↑ Soldering iron

8-3-1. Power On

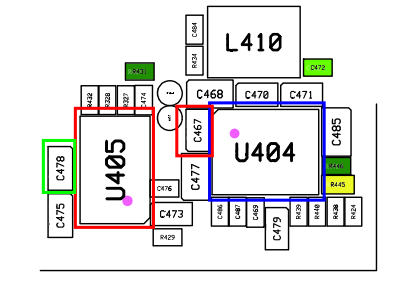
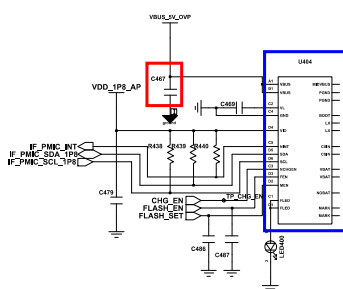
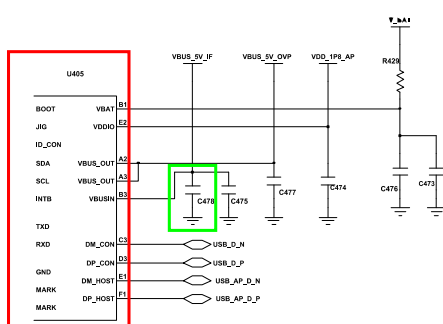
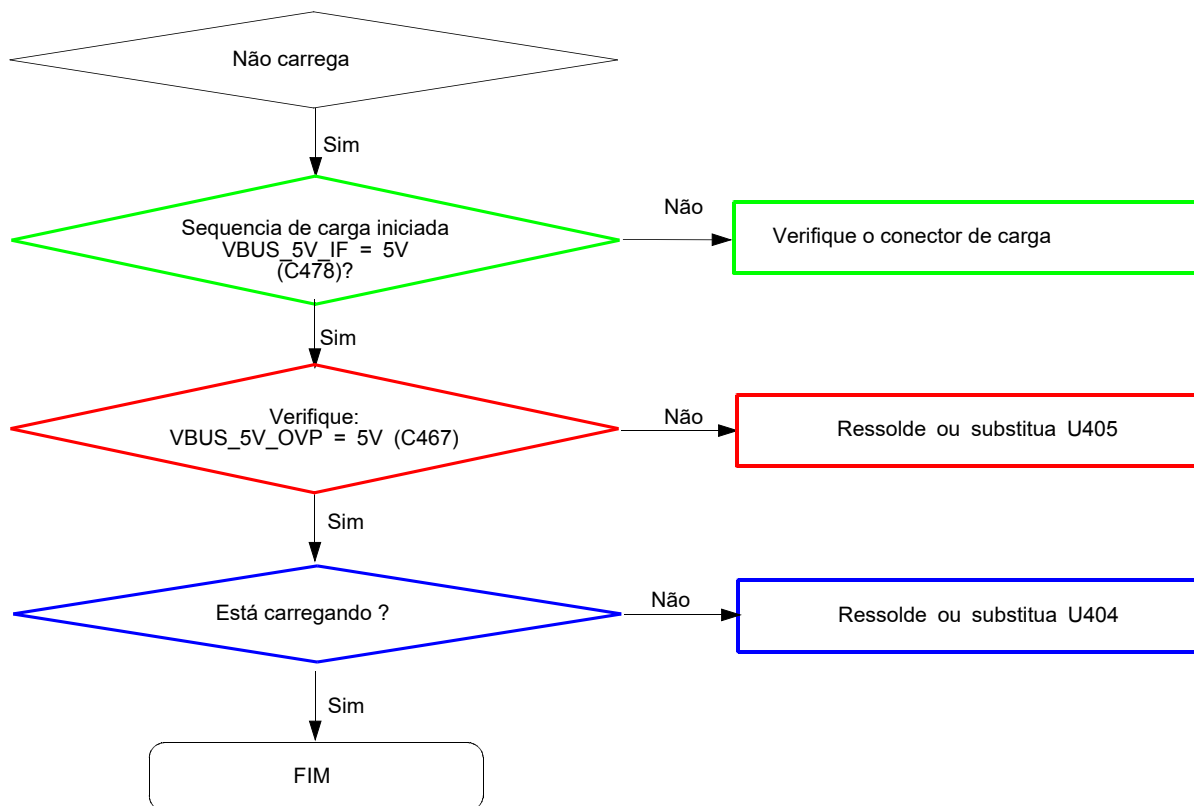


8-3-2. Initial (Lock up)

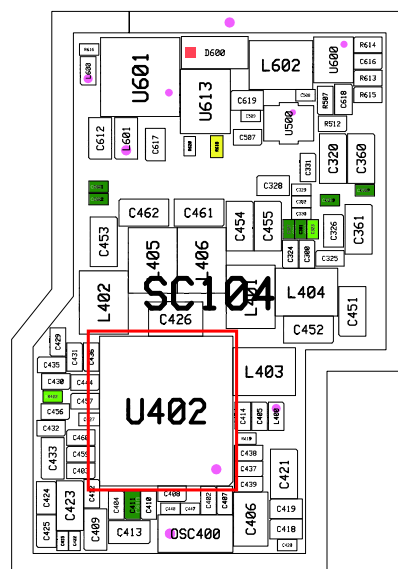
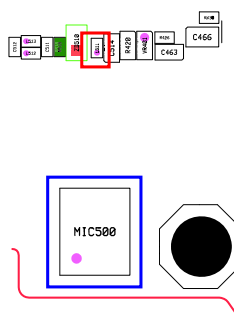
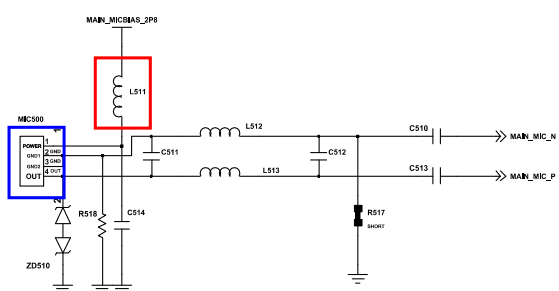
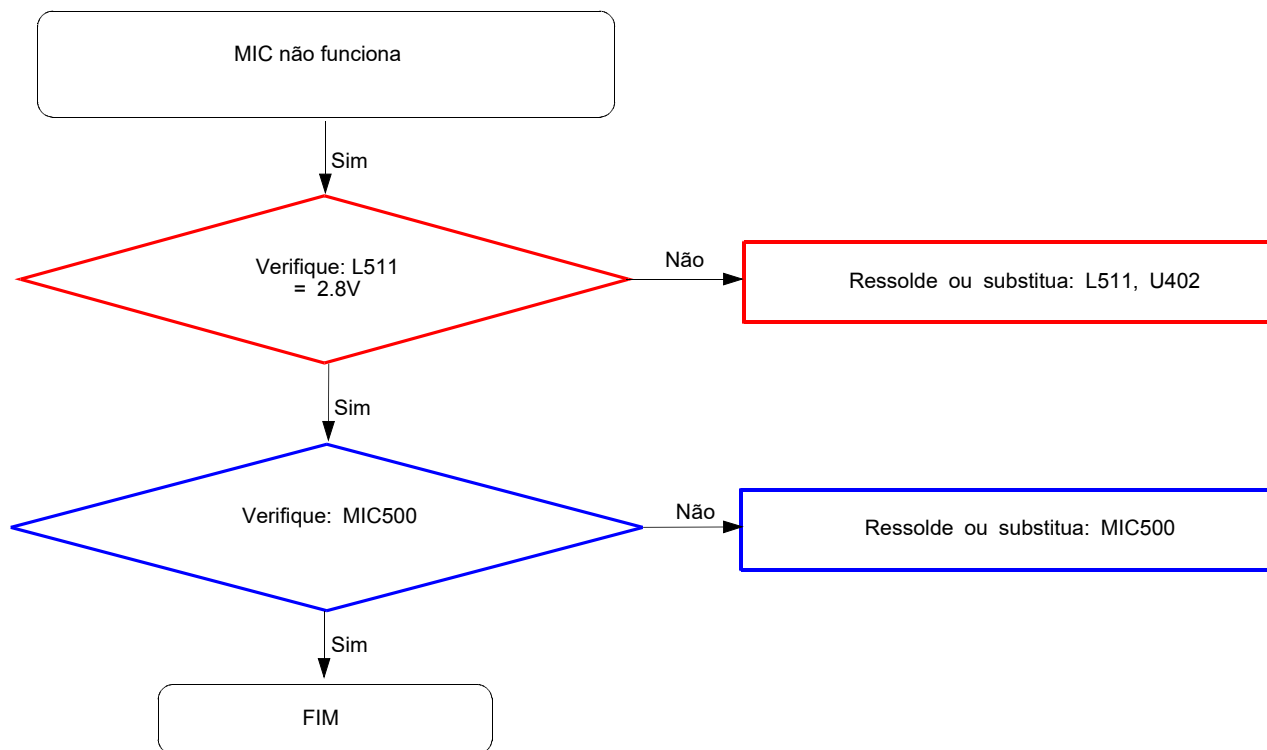




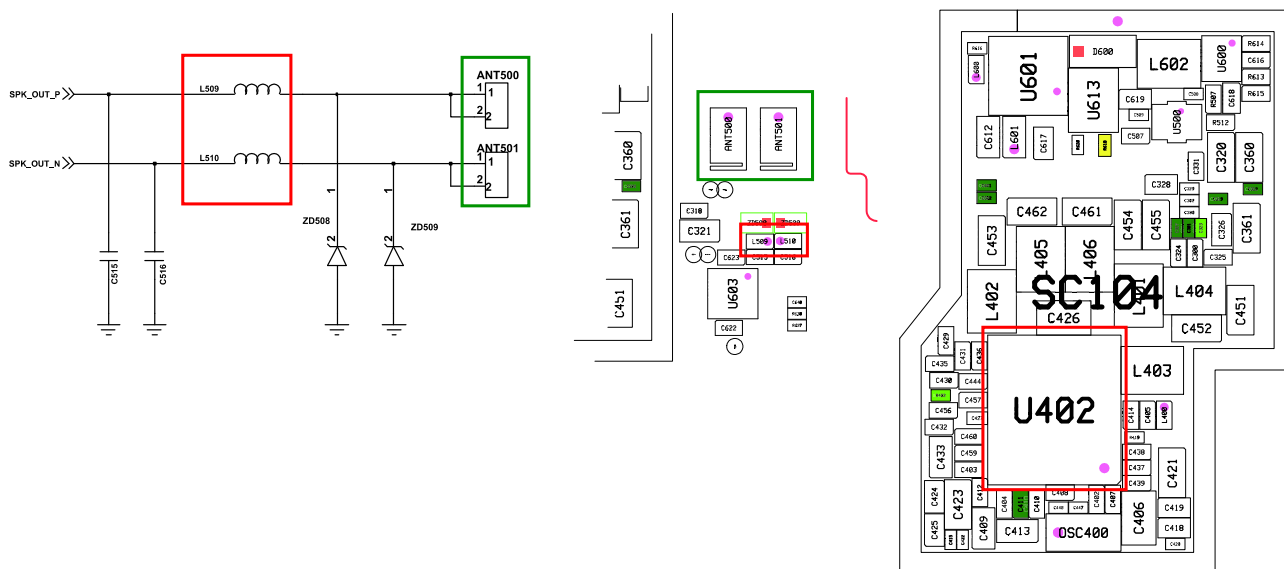
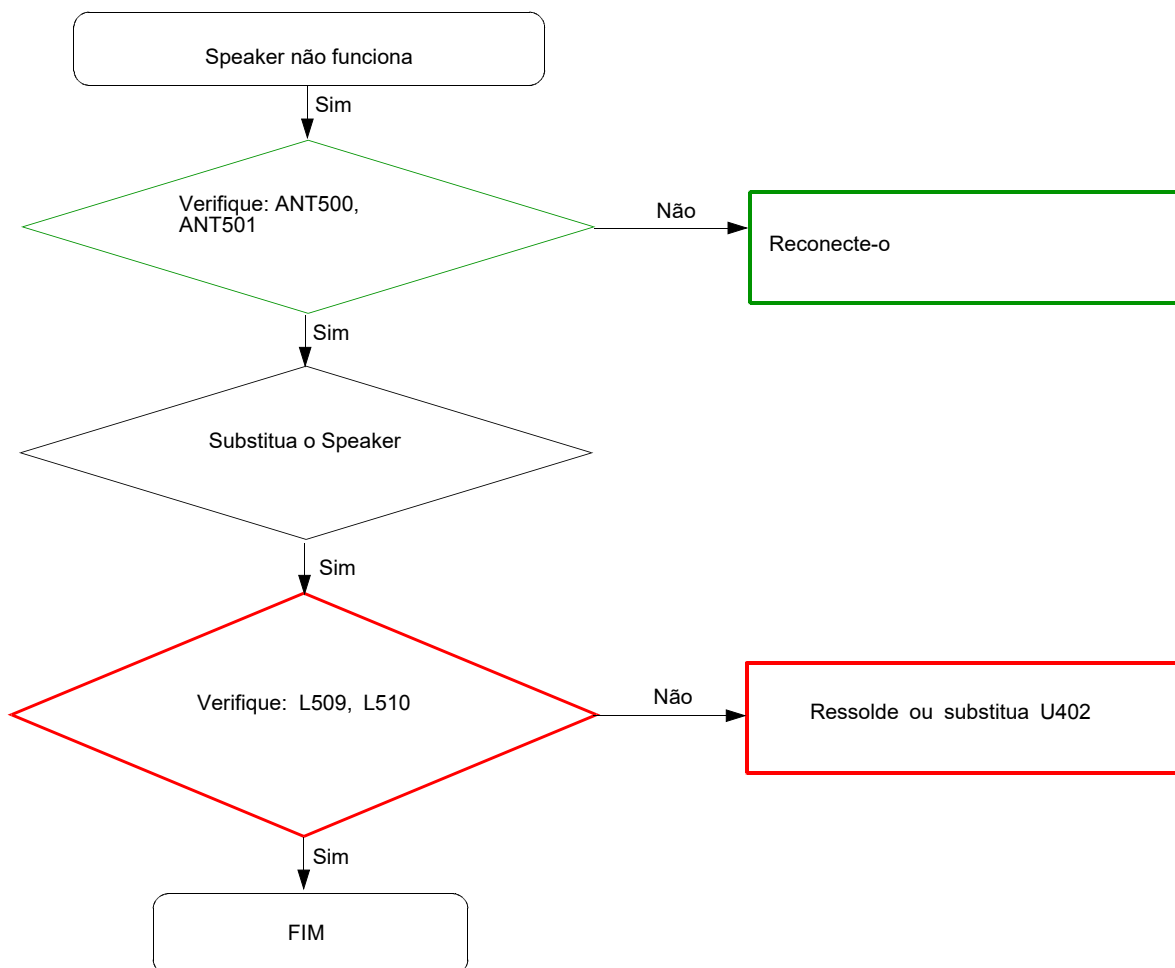
8-3-3. Charging Part



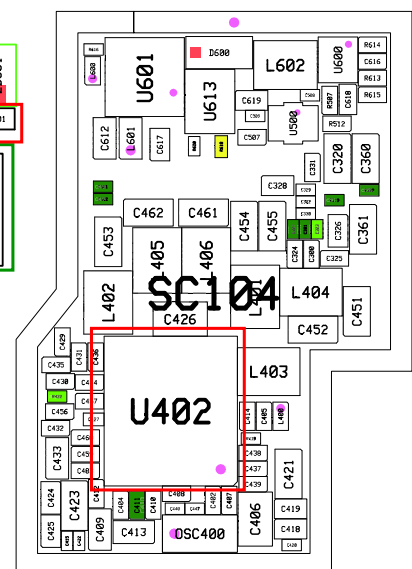
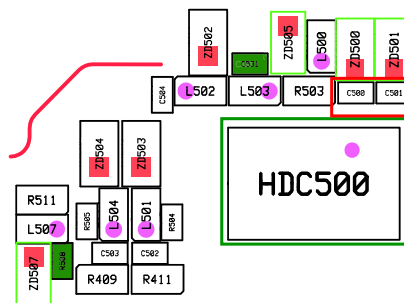
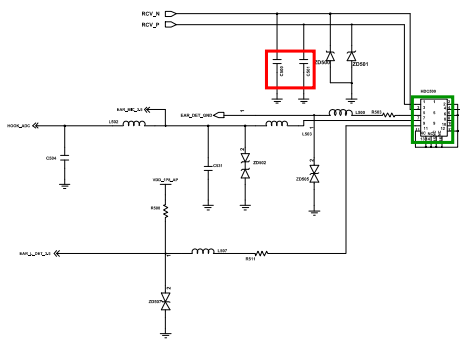
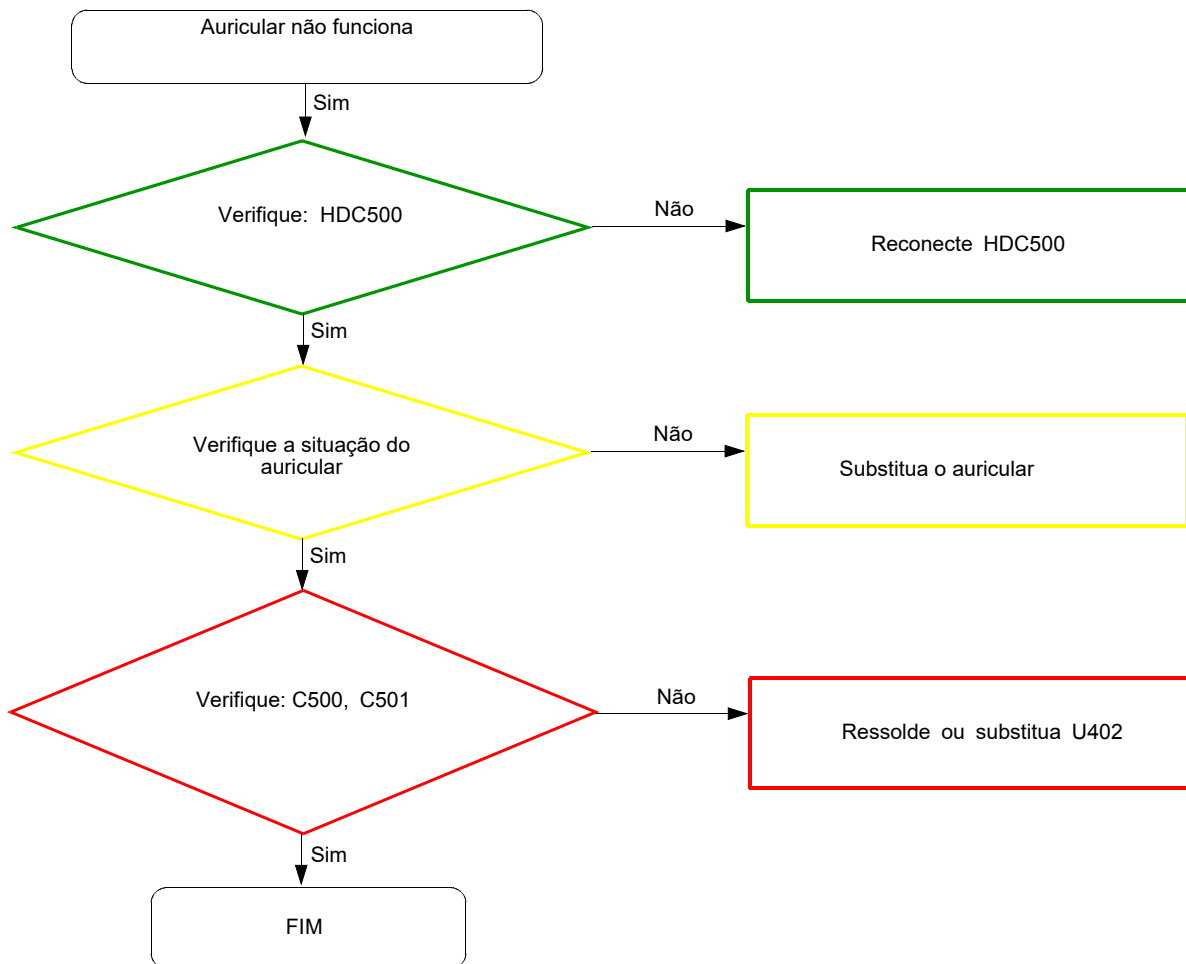
8-3-4. Microphone Part



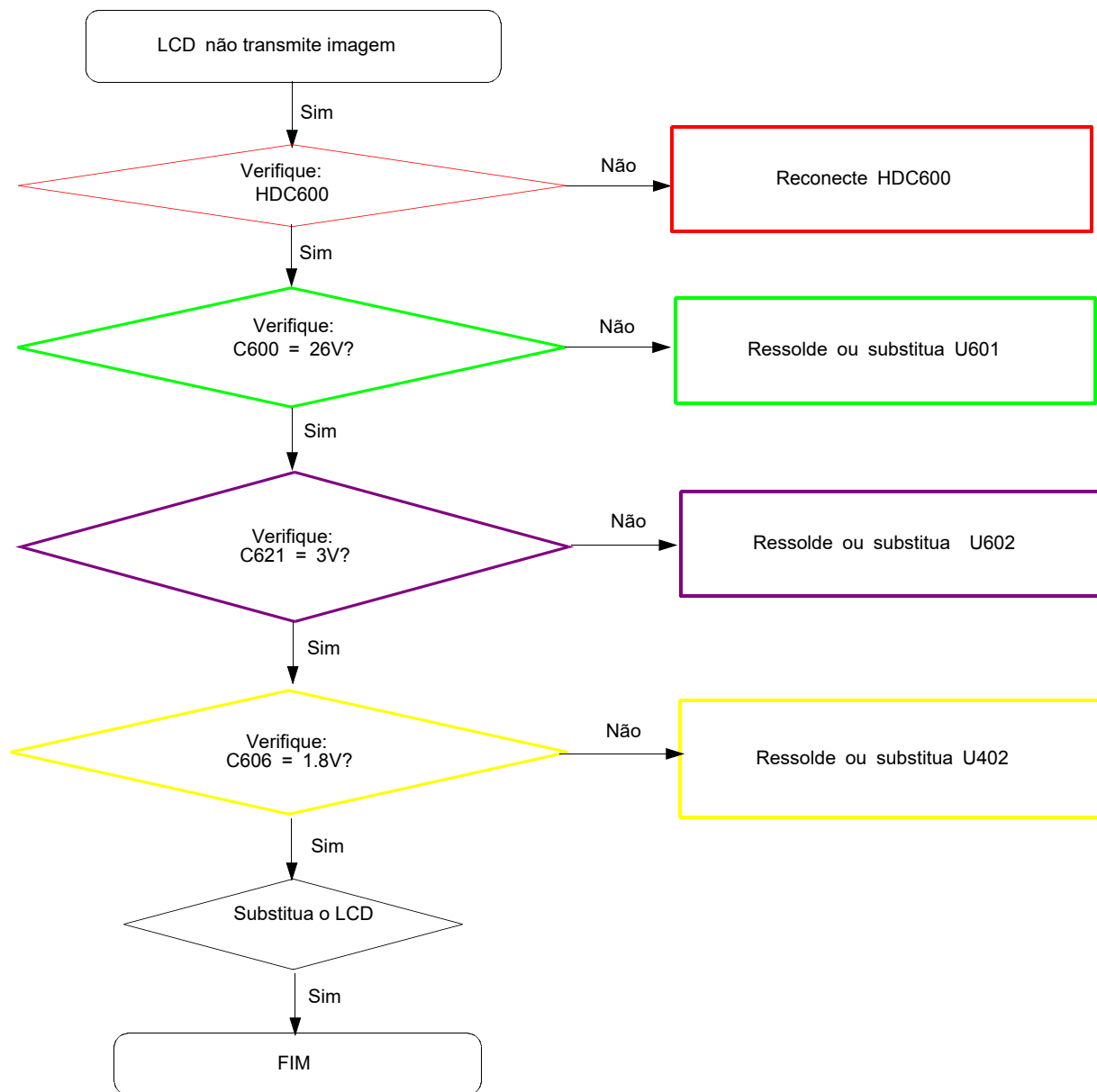
8-3-5. Speaker Part

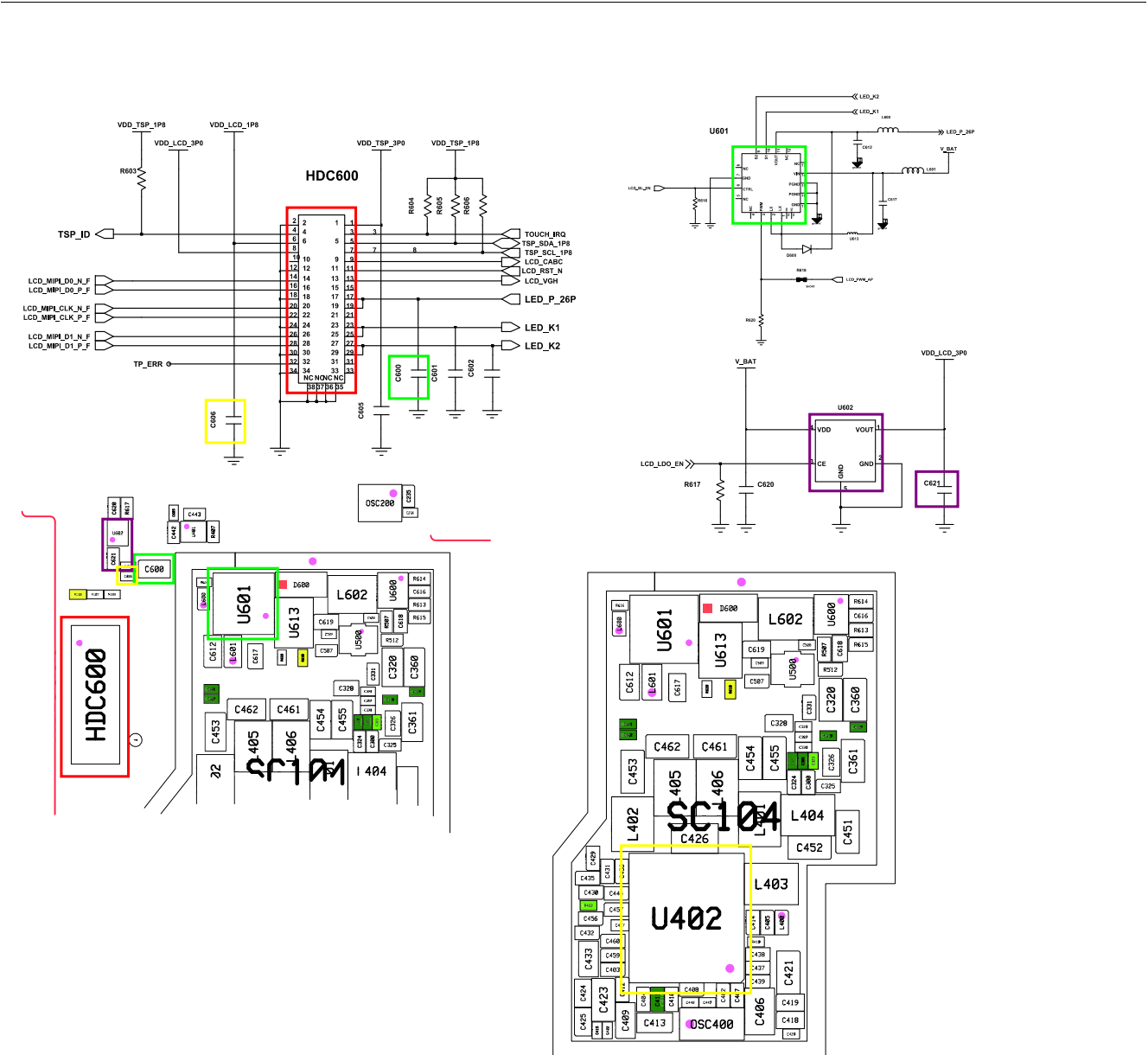


8-3-6. Receiver Part

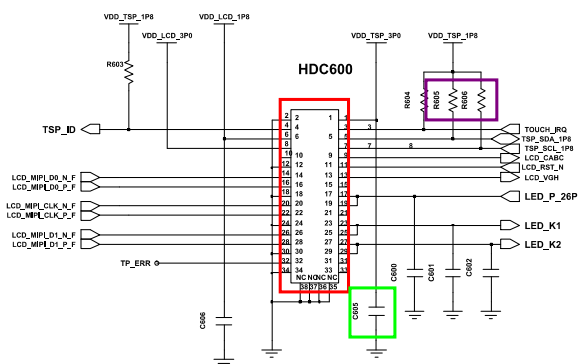
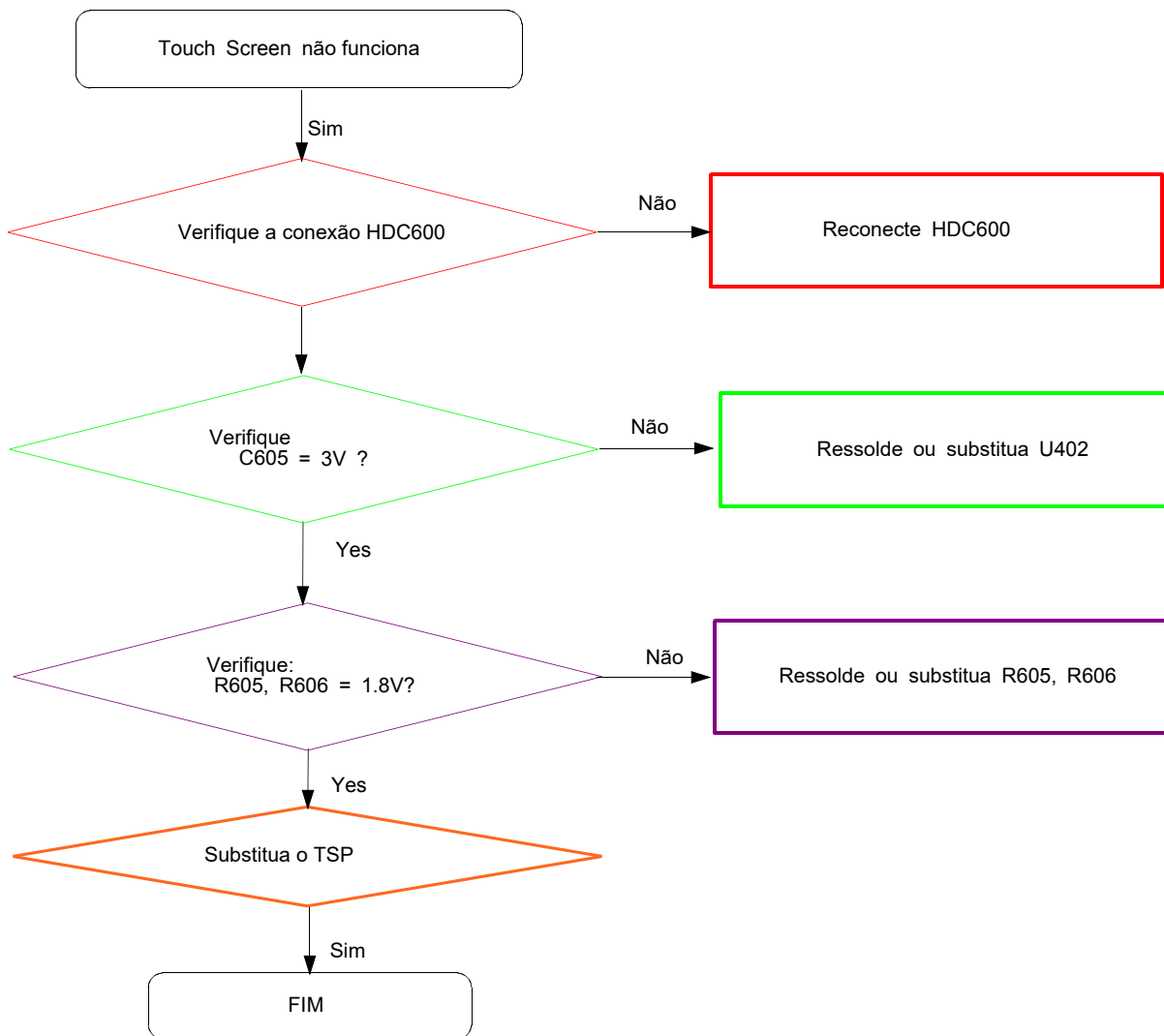


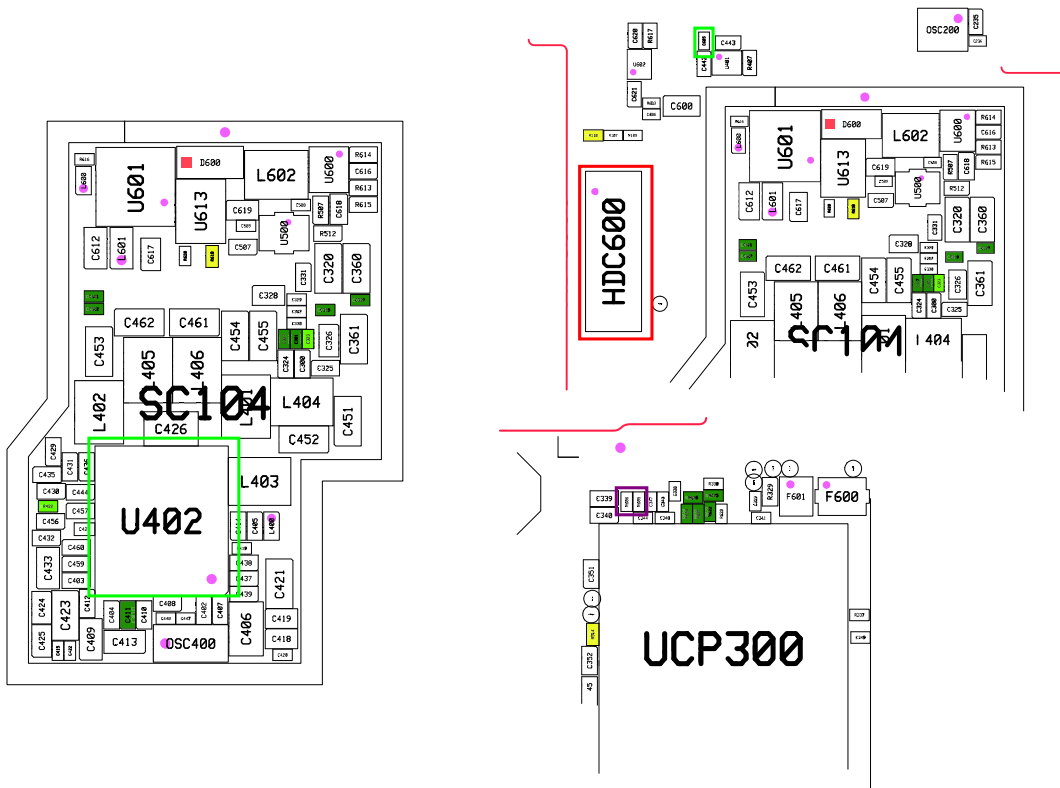
8-3-7. LCD



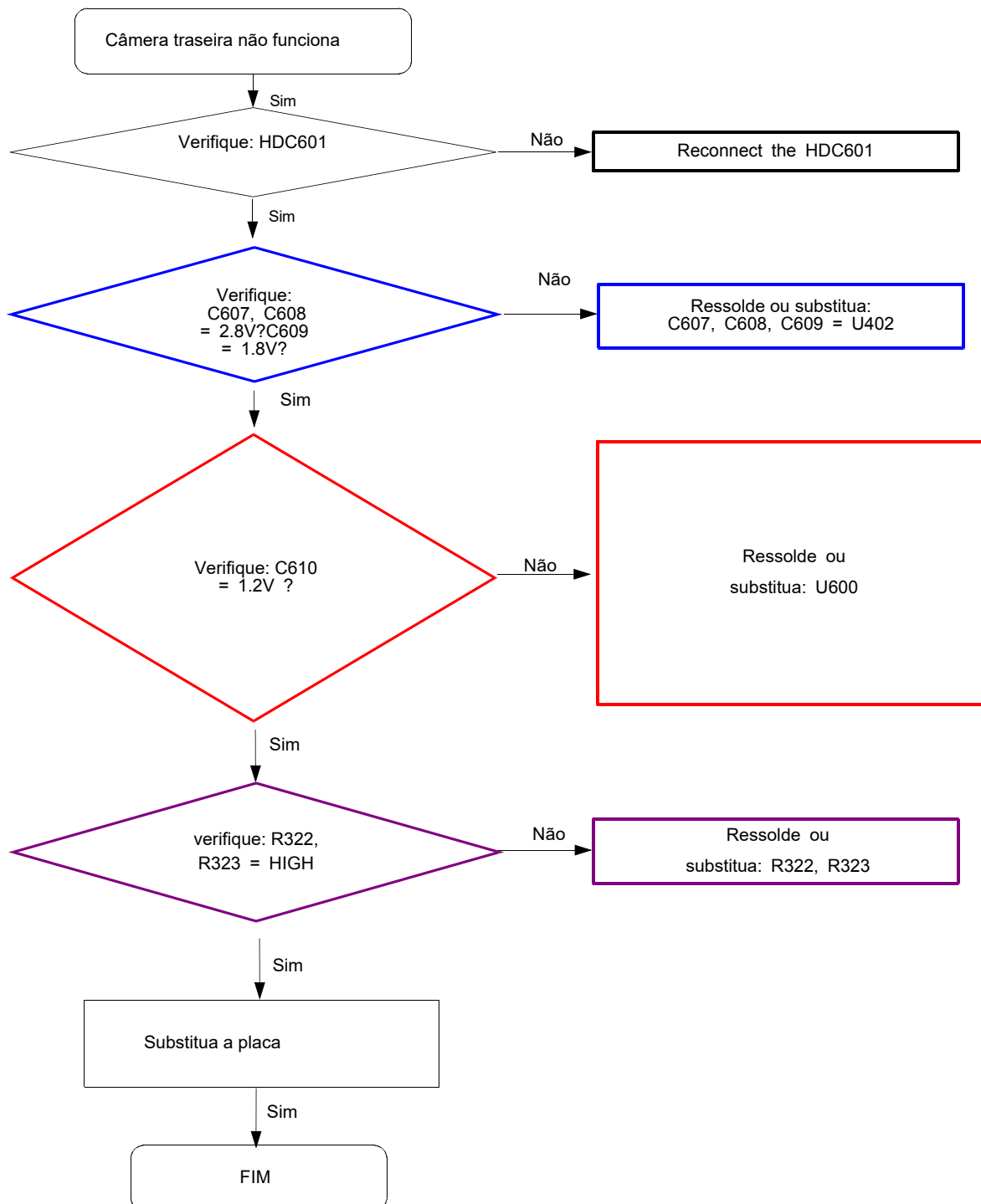


8-3-8. TSP

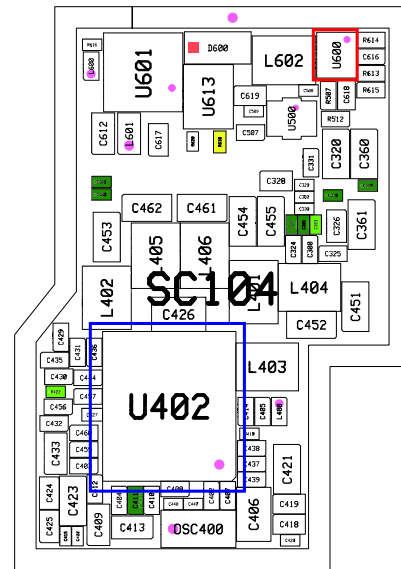




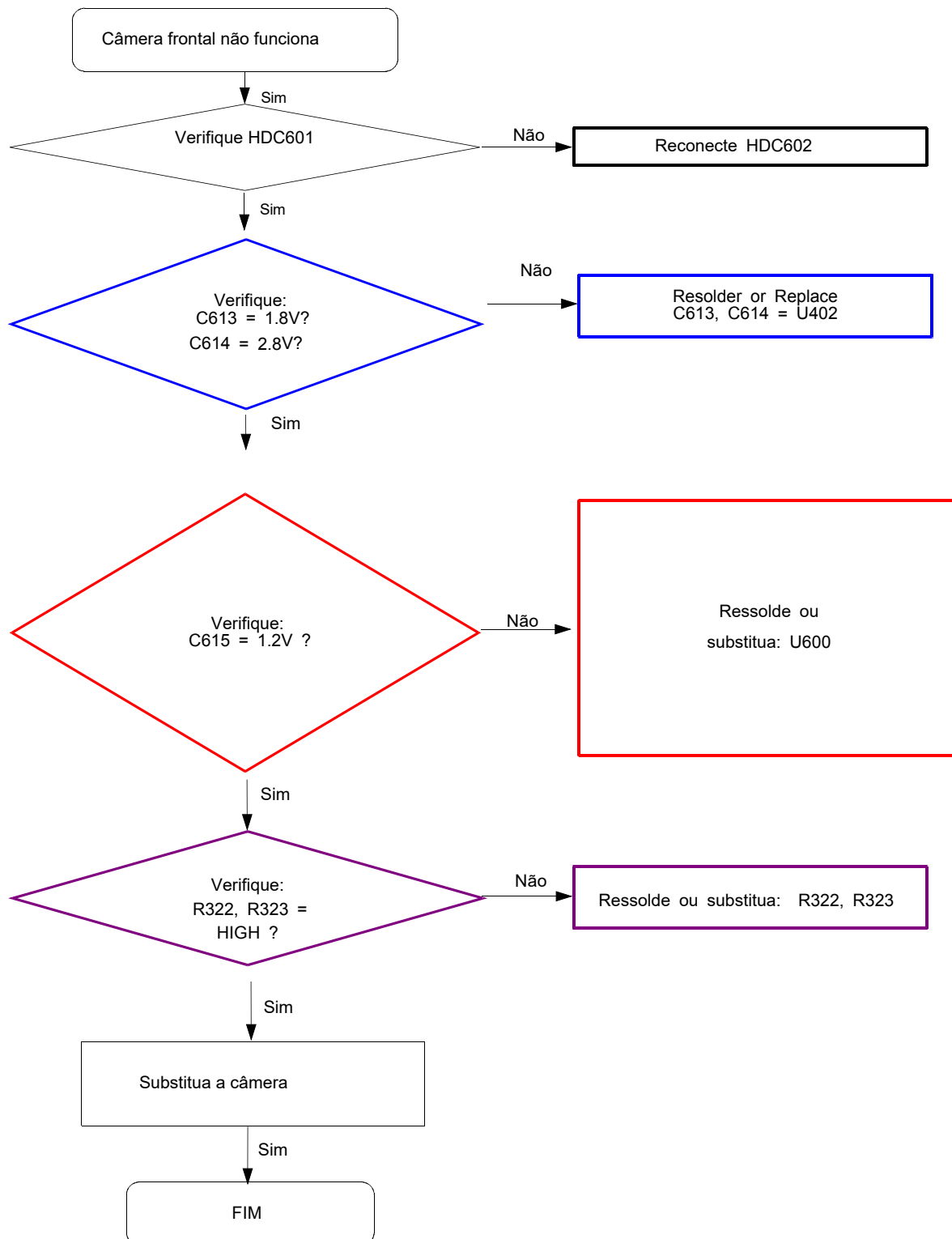
8-3-9. 8M CAM (Main)

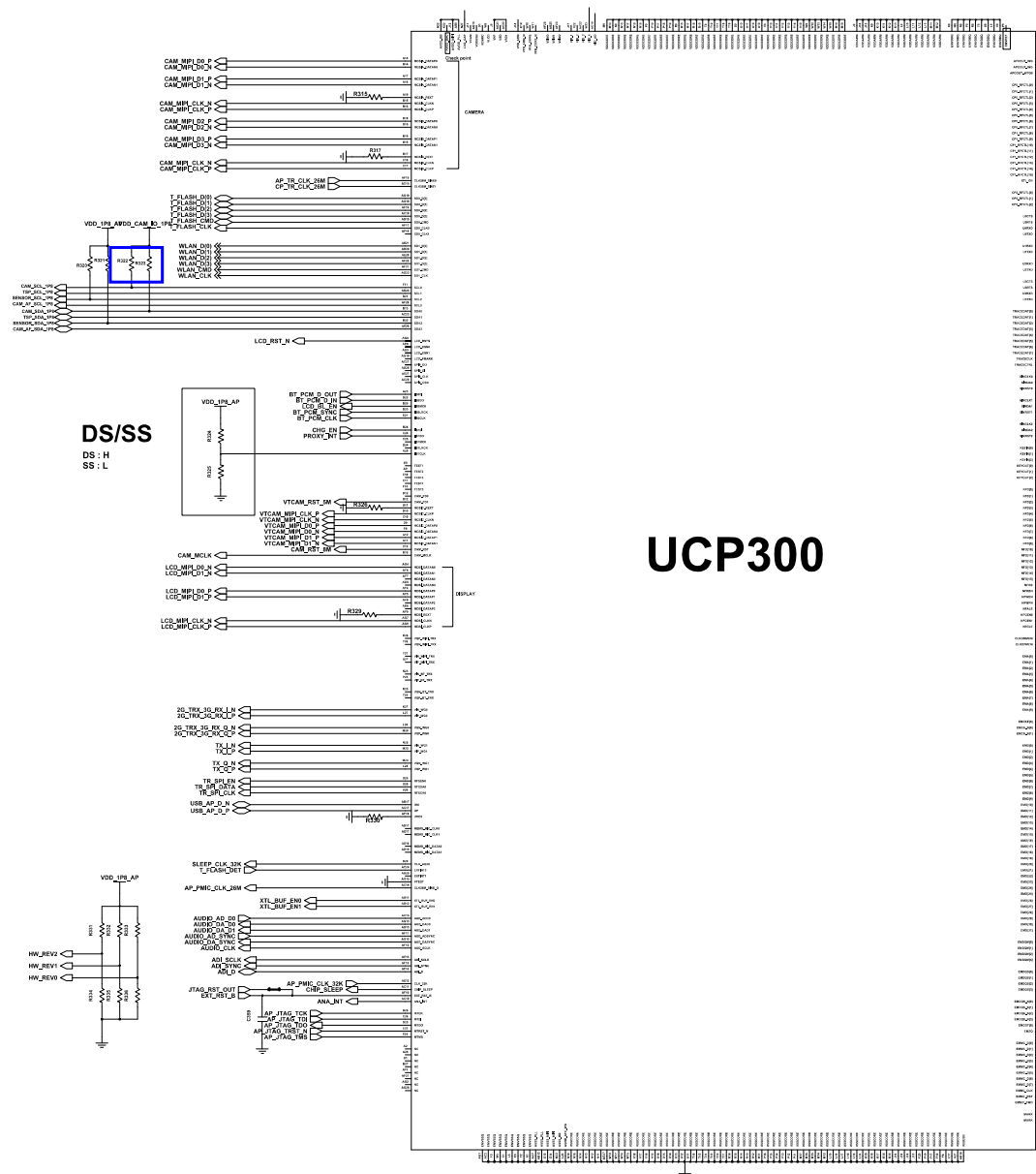
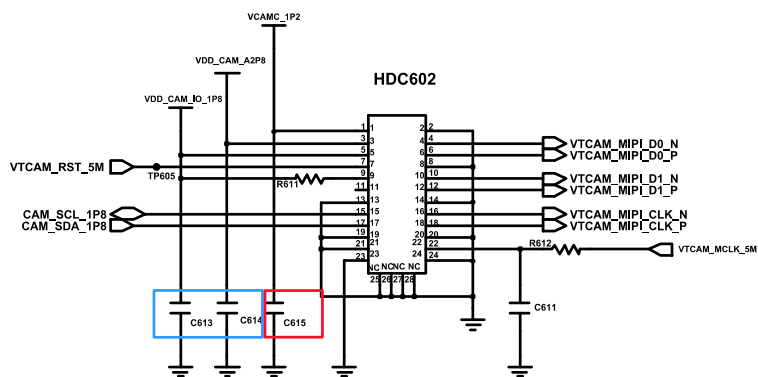


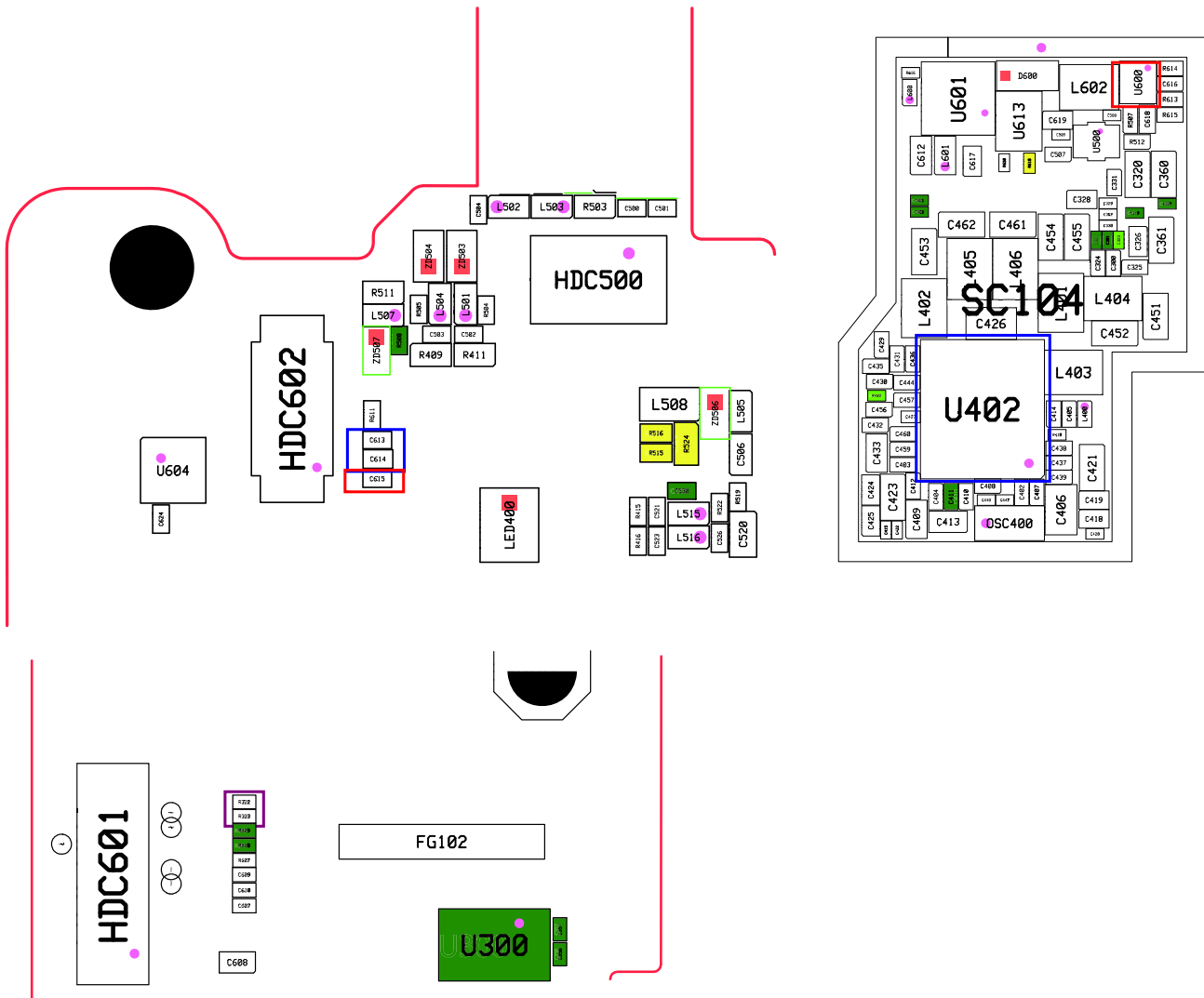




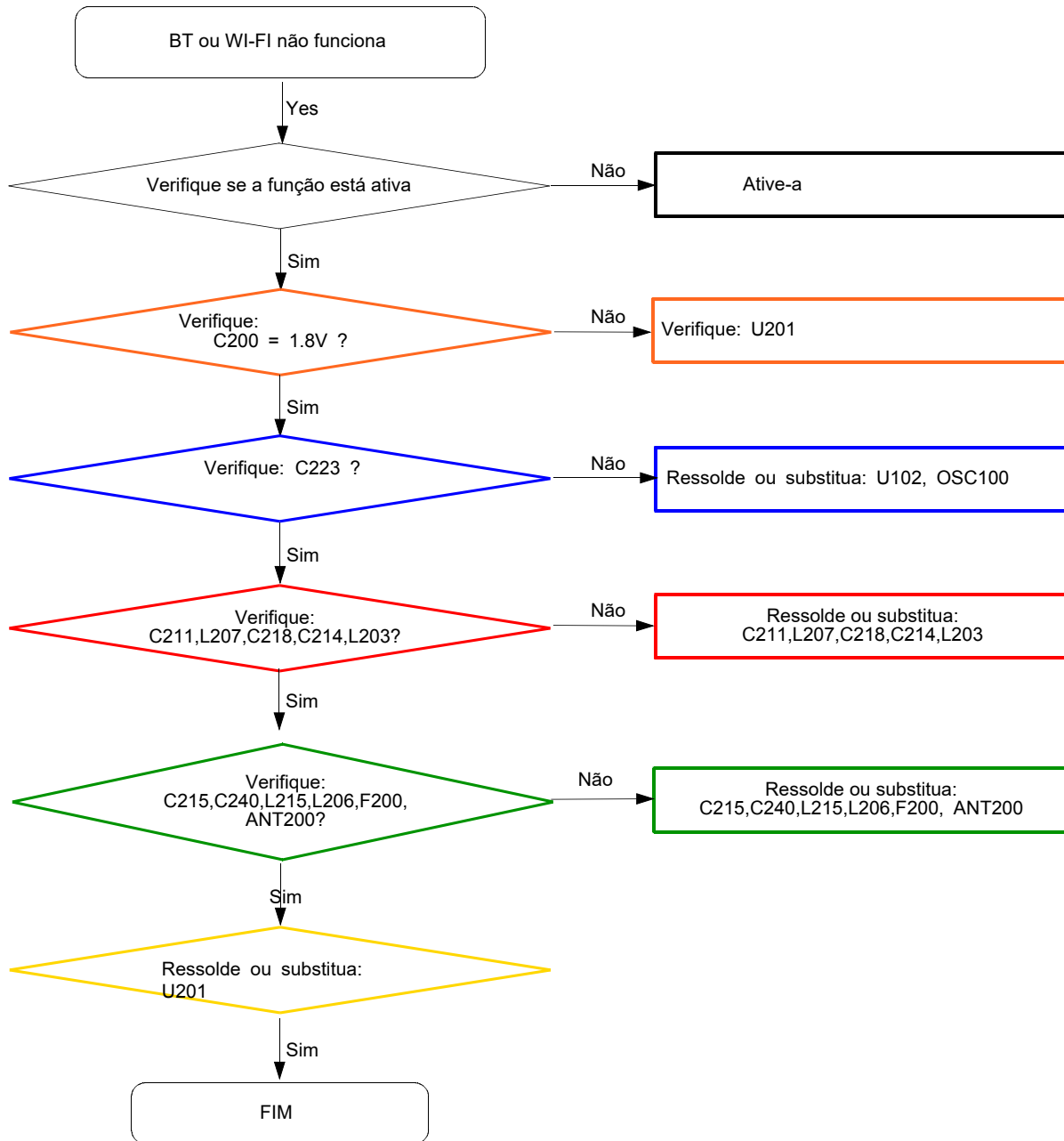
8-3-10. 5M CAM (Sub)

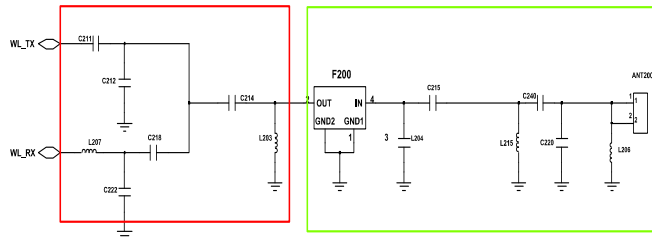


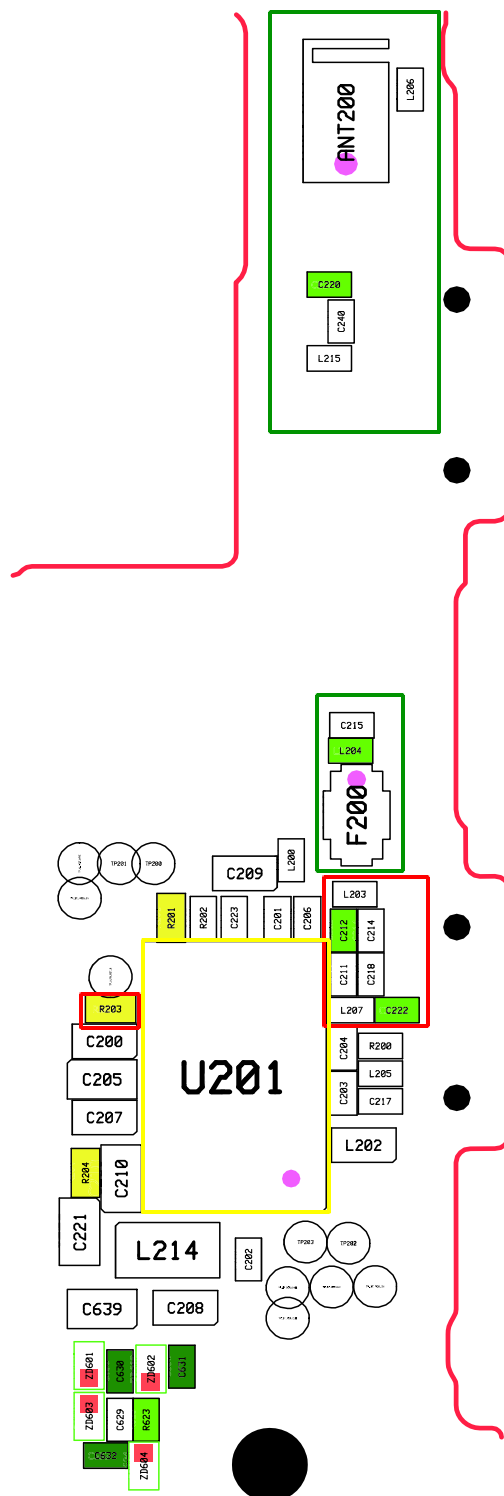




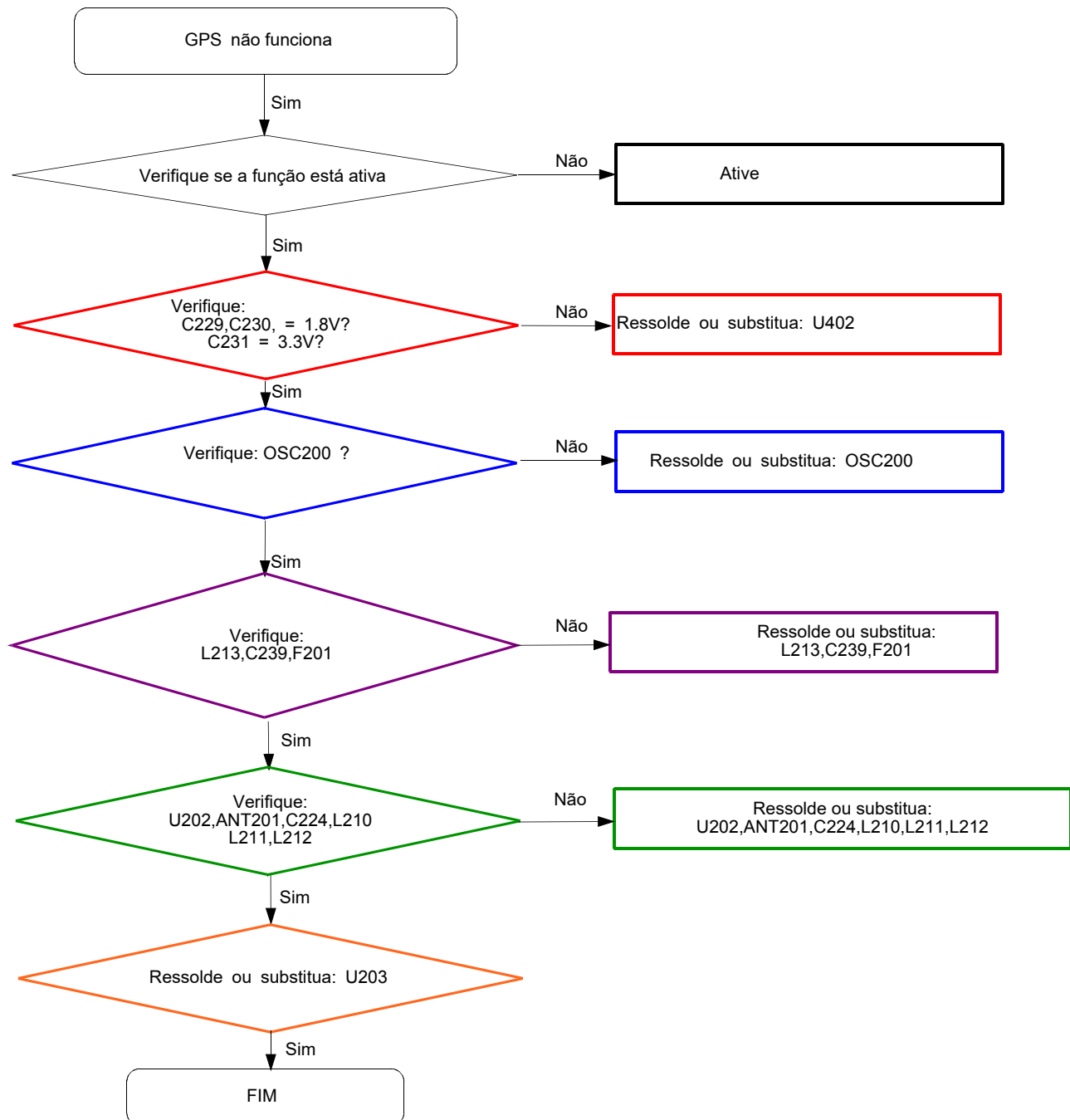
8-3-11. WIFI / BT Part

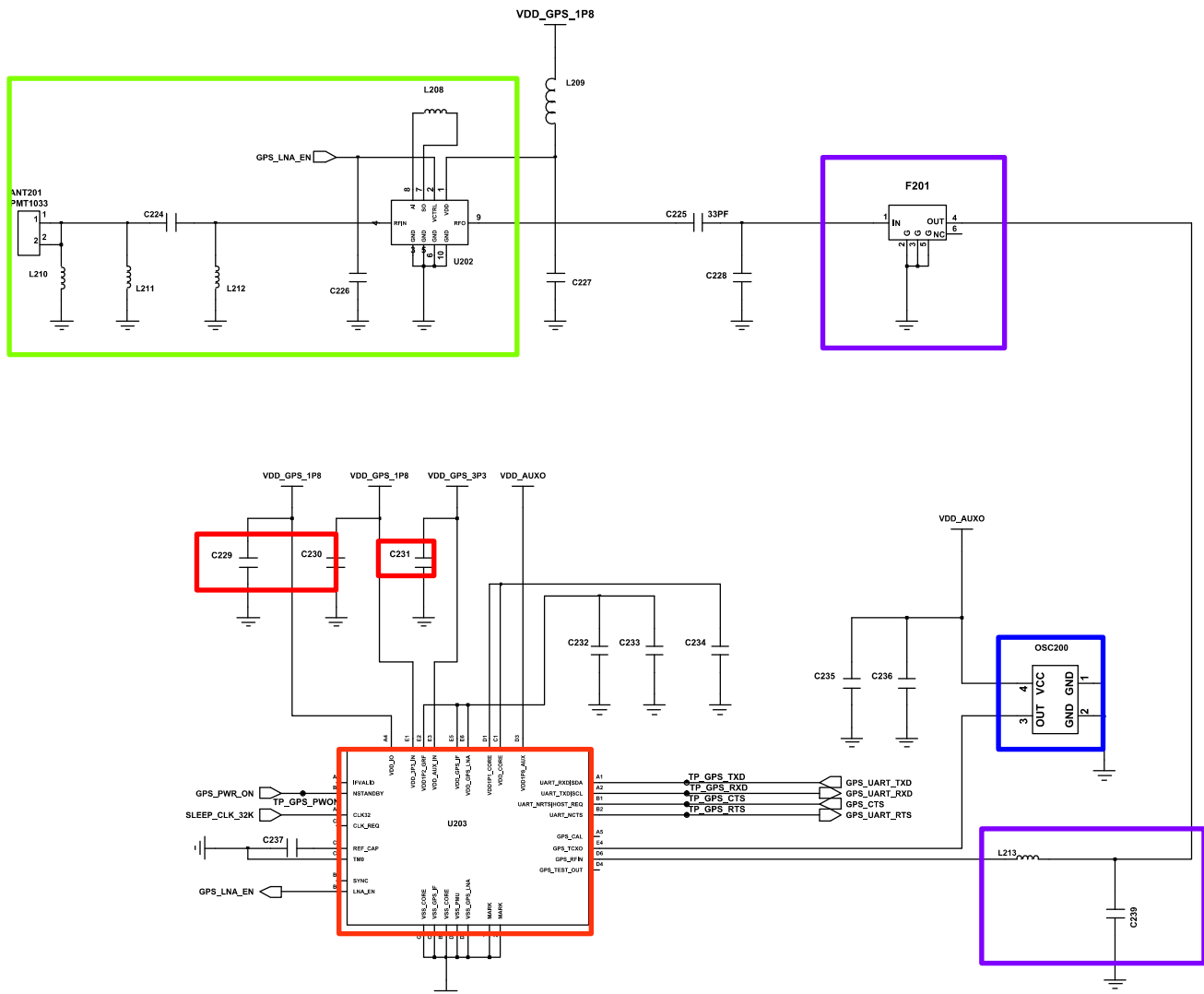


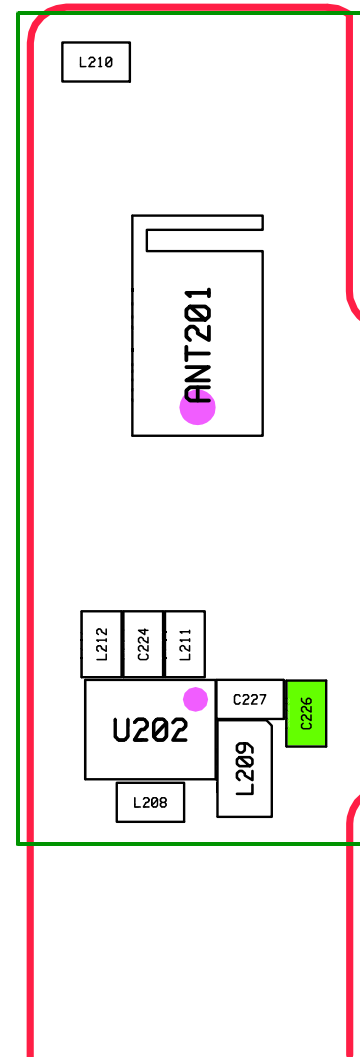
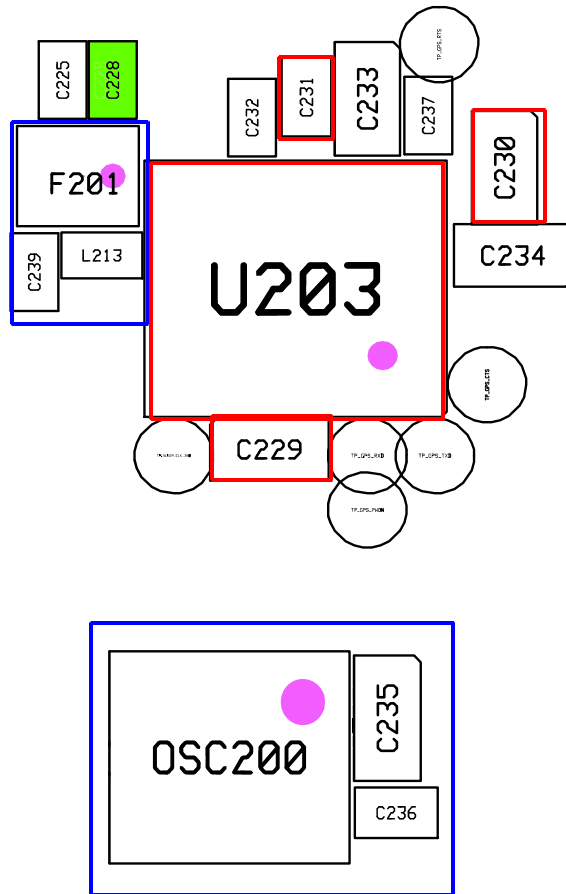




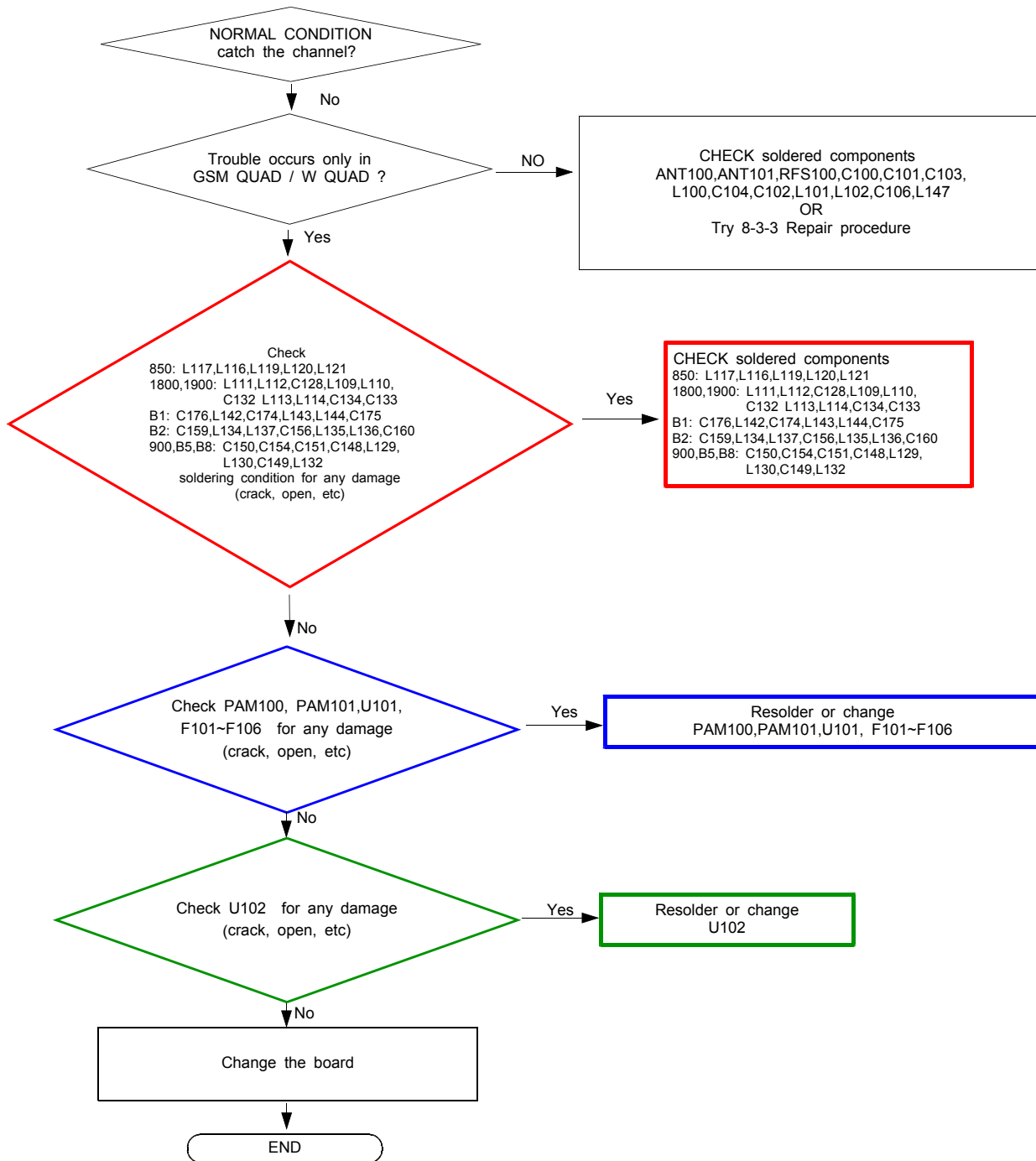
8-3-12. GPS Part

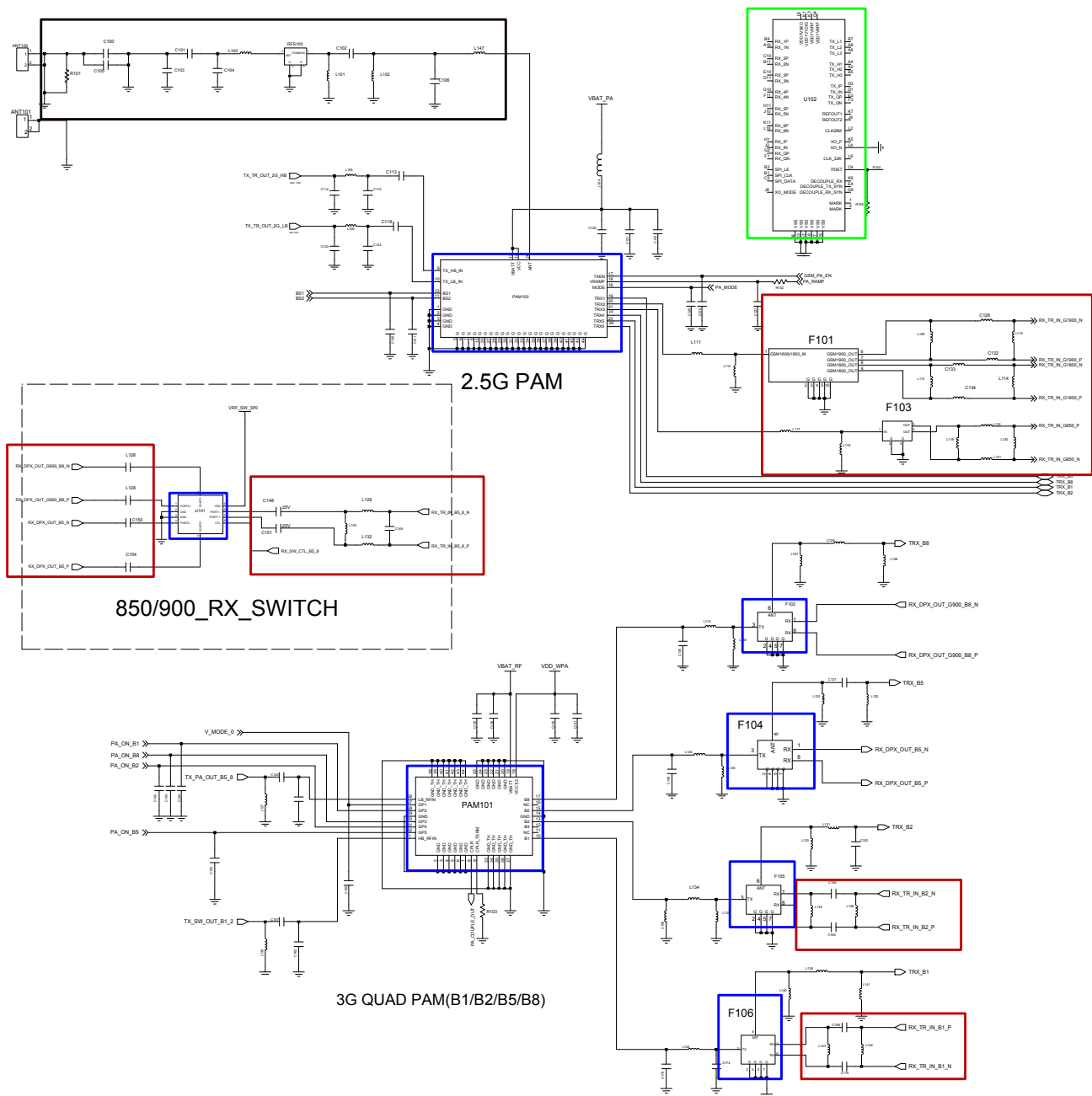


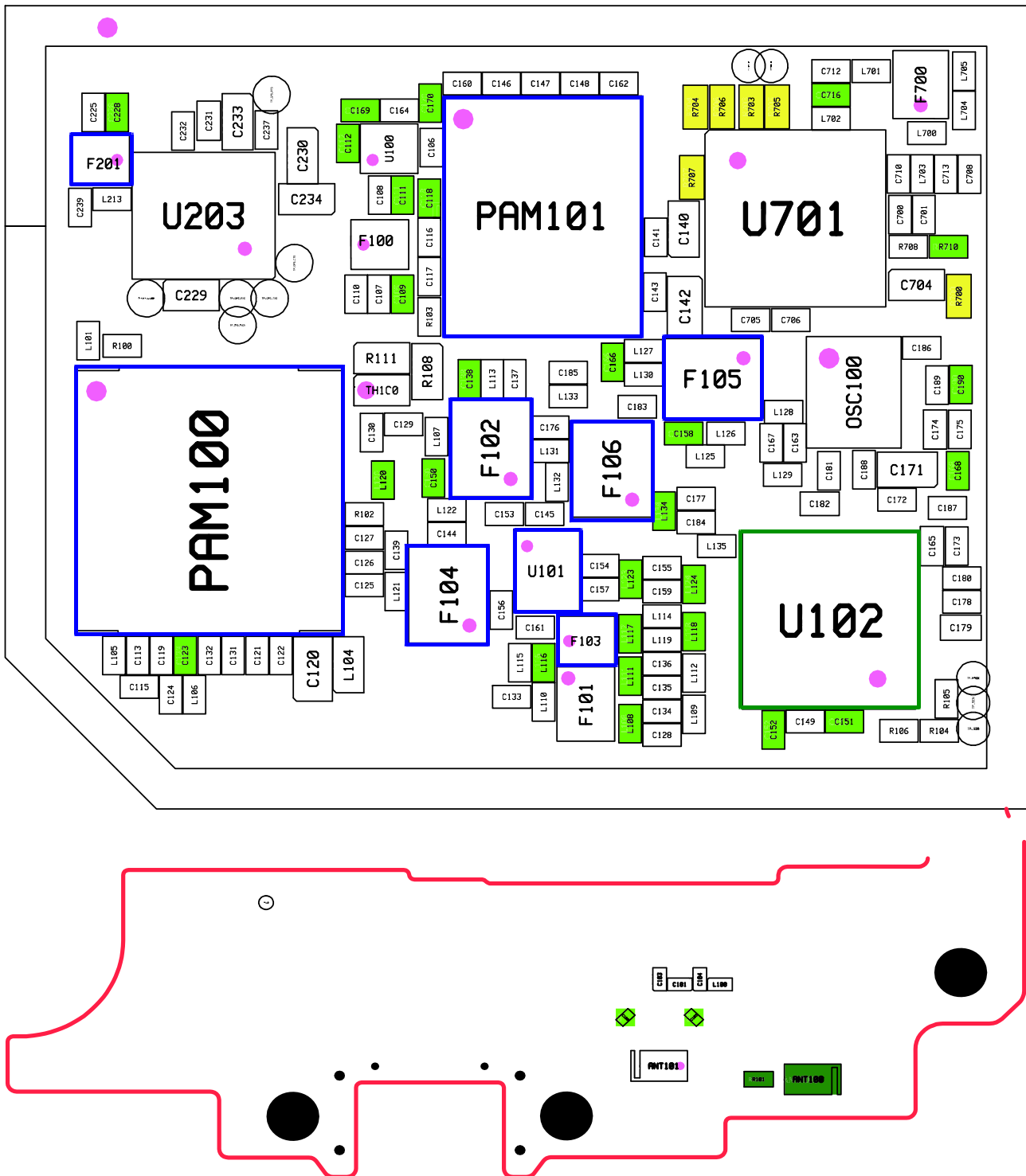




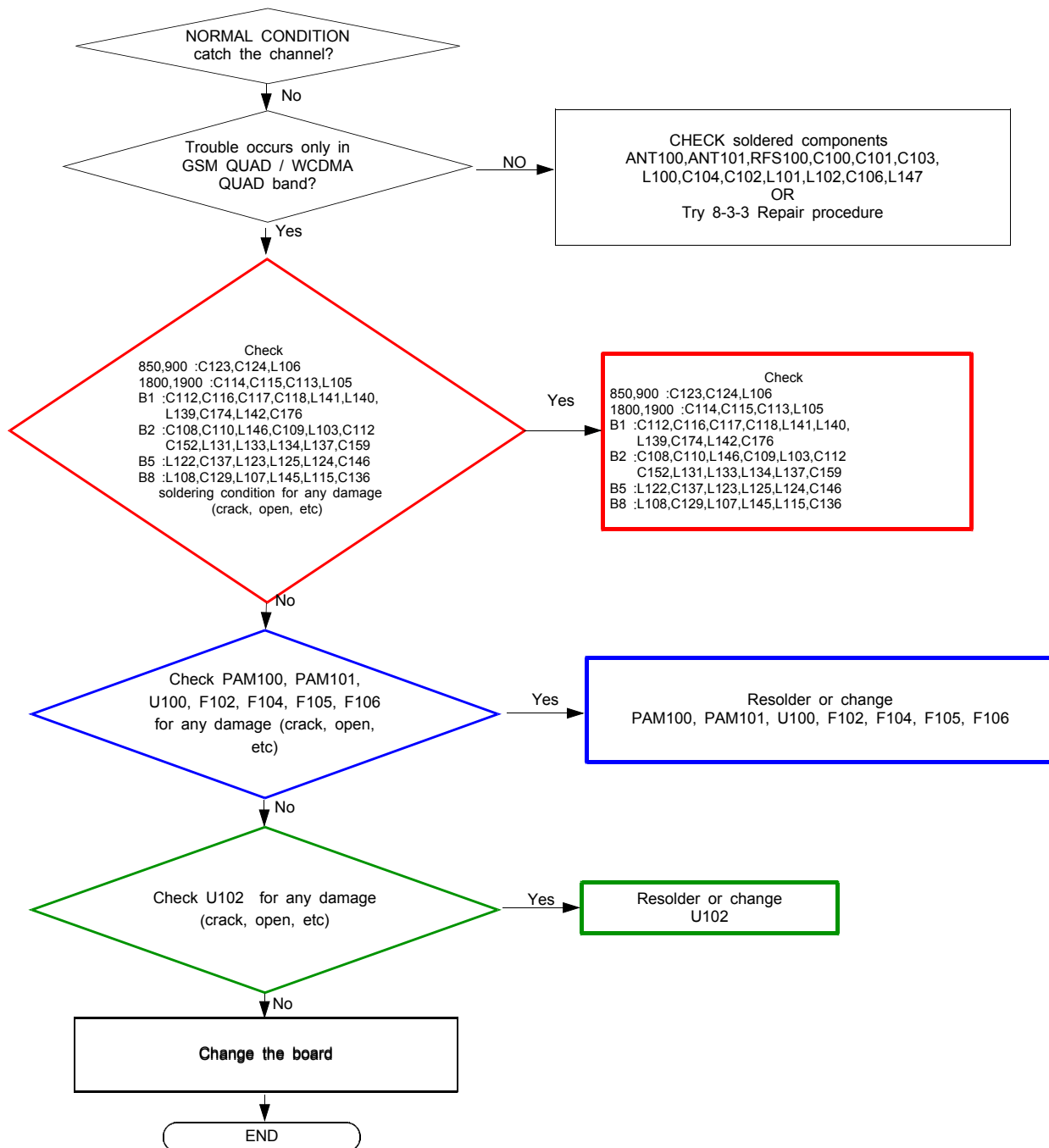
8-3-13. GSM 850,900,1800,1900 / WCDMA BAND 1,2,5,8 (RX)

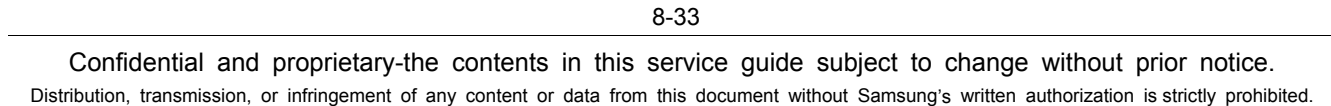




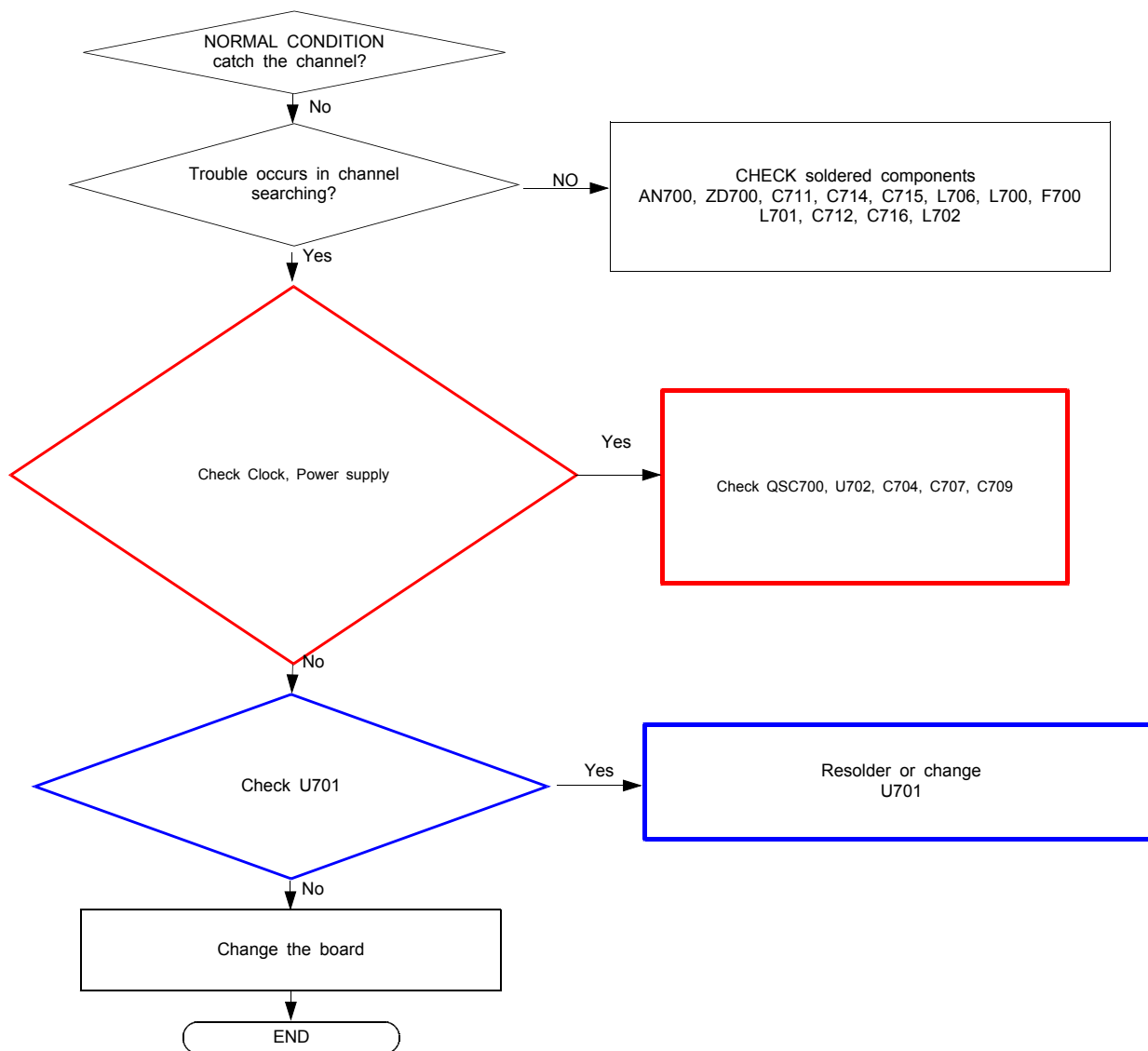


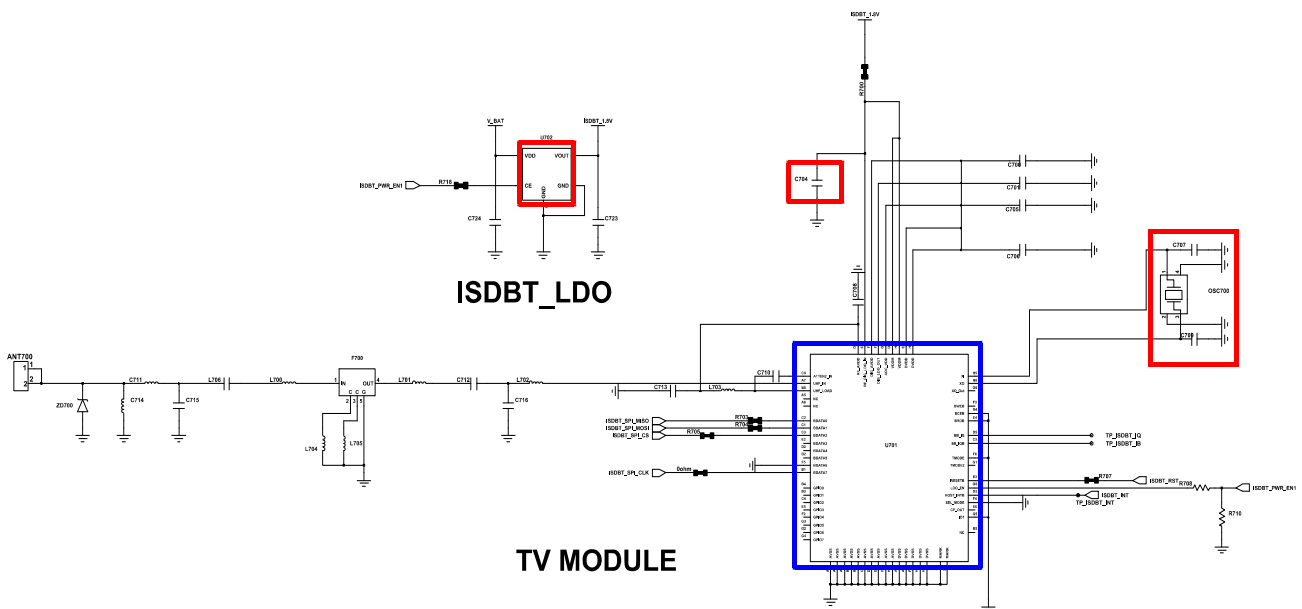
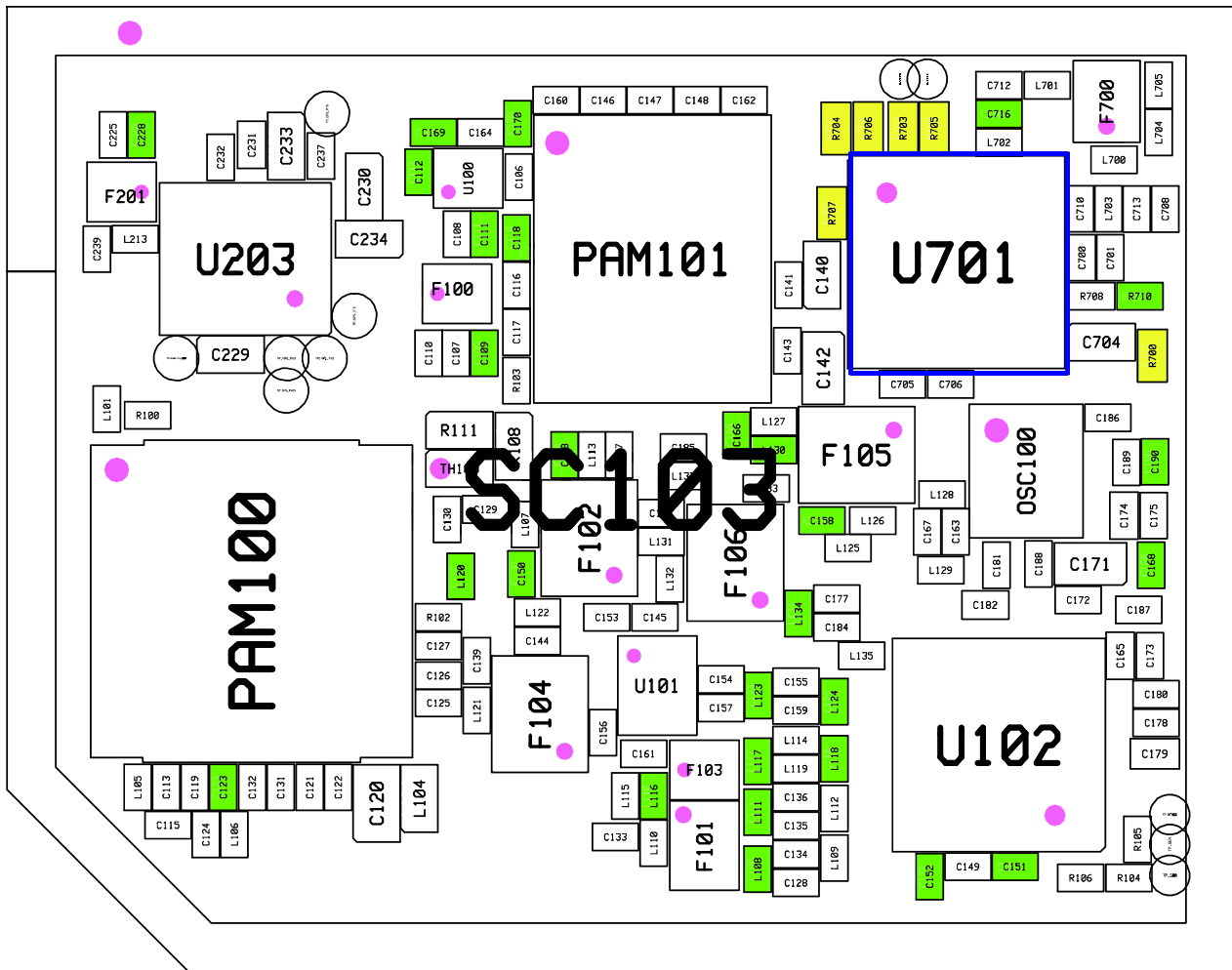
8-3-14. GSM 850,900,1800,1900 / WCDMA BAND 1,2,5,8 (TX)





8-3-15. DTV





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