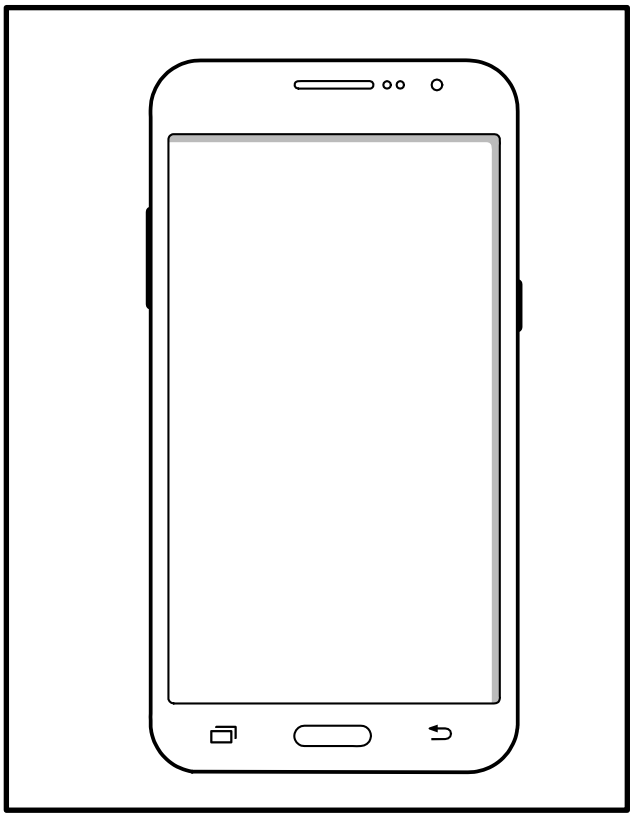
SAMSUNG

Wireless Device

SM-G531H

SERVICE Manual

Wireless Device



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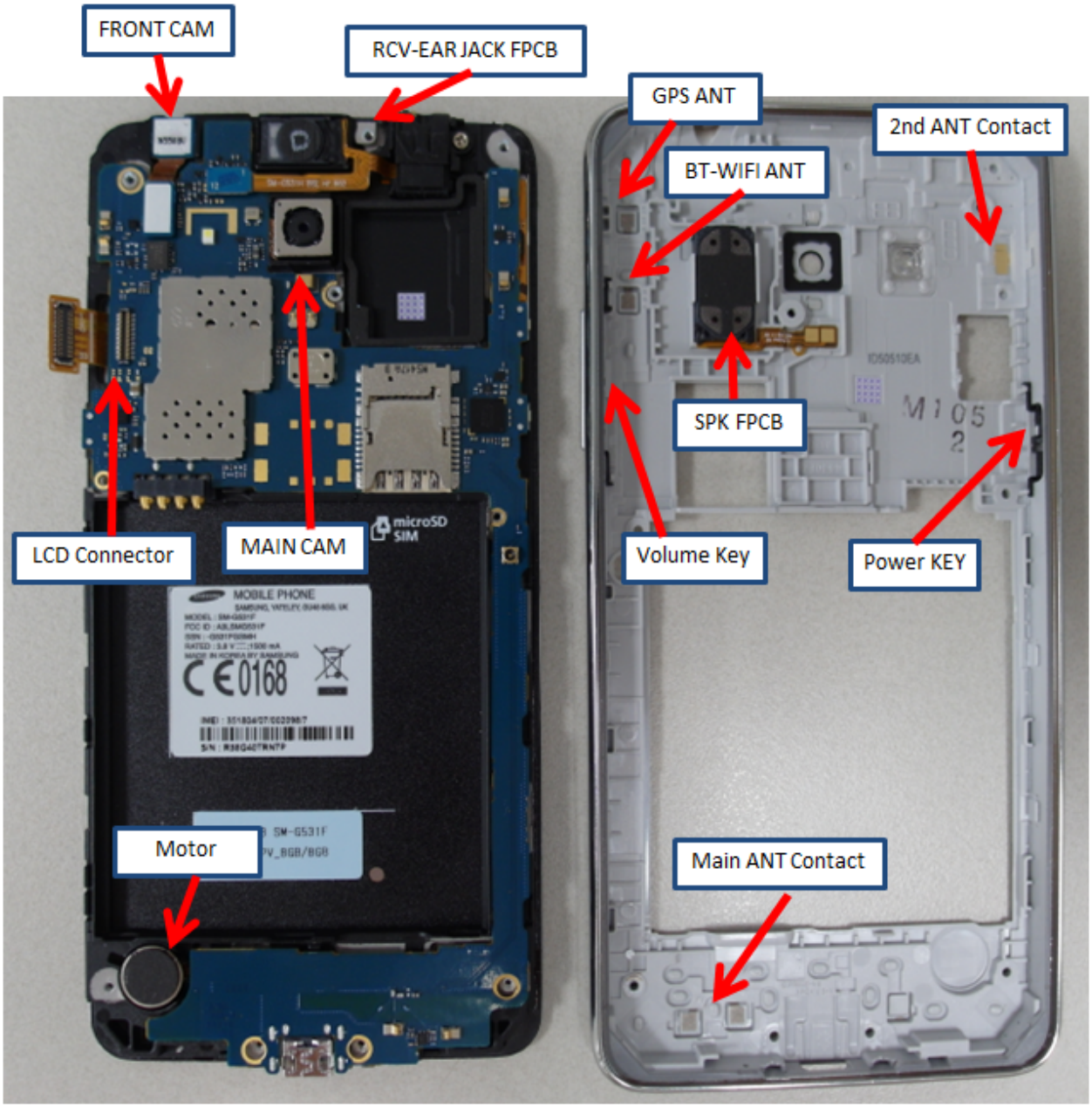
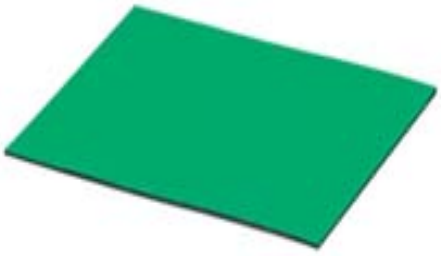
2015. 06. Rev.1.0

7. Level 2 Repair

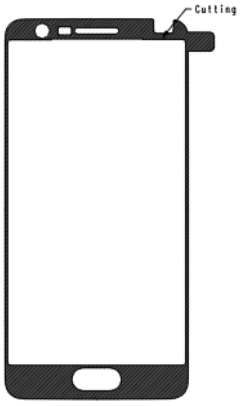
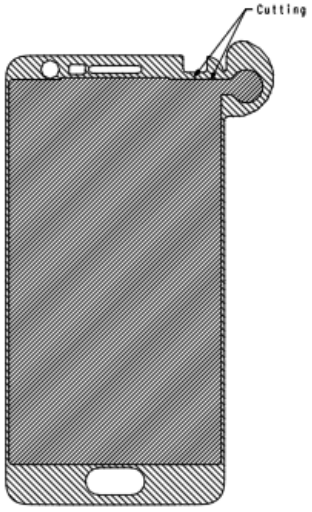
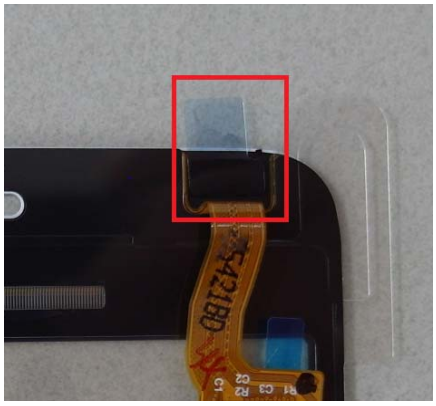
7-1. Components on the Rear Case



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

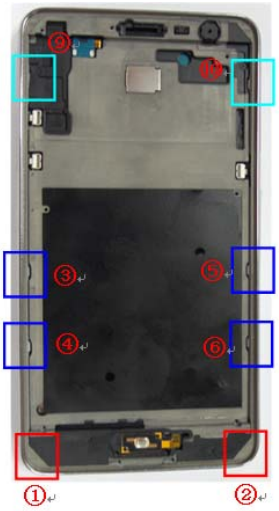
BOM Discription	Picture	Remarks
REWORK SVC [GH81-13029A]		**At the LCD and TSP assy, attach the tape round it.**
LCD+TSP REWORK SVC [GH81-13030A]		**After disassembly LCD and TSP, the tape attach the TSP side**
TSP TOP SVC [GH81-13031A]		

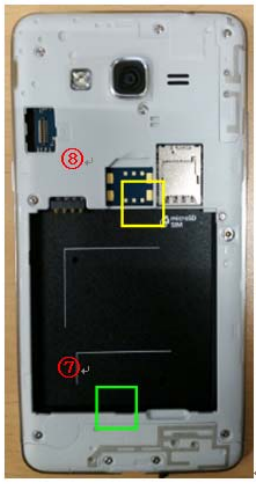
7-4. Disassembly

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) Detech 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





※ Caution
1) Be care of damage to the Bracket
2) Be care of damage to the PBA 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 RCV-EAR JACK module
2) Be care of damage to the part's FPCB

6

1) Separate the VT, MEGA Camera from PBA

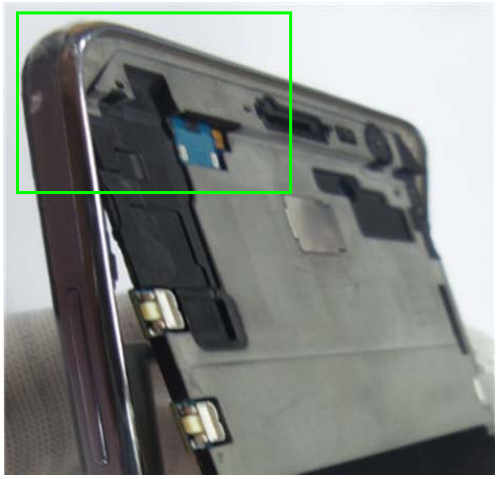
※ Caution
1) Be care of damage to the part's FPCB

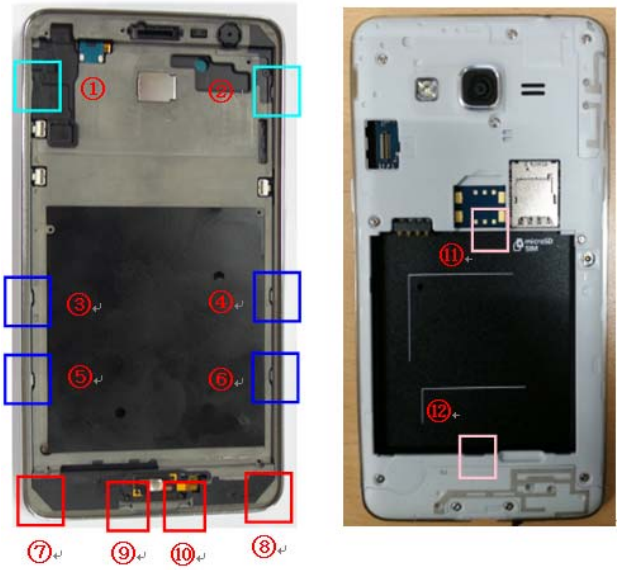
8

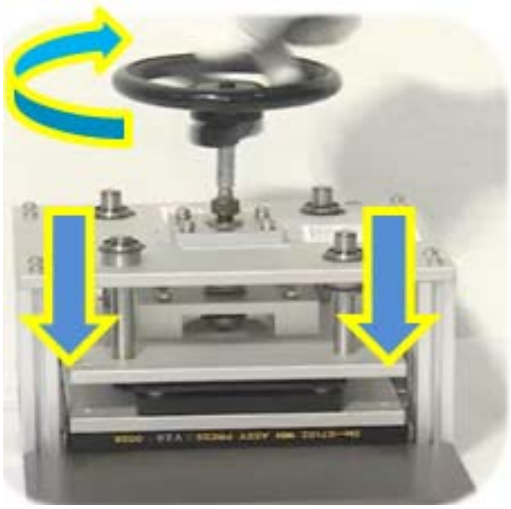
1) Separate the RCV-Ear Jack, Motor from hook

※ Caution
1) Be care of scratch, molding damage and part

7-5. Aassembly

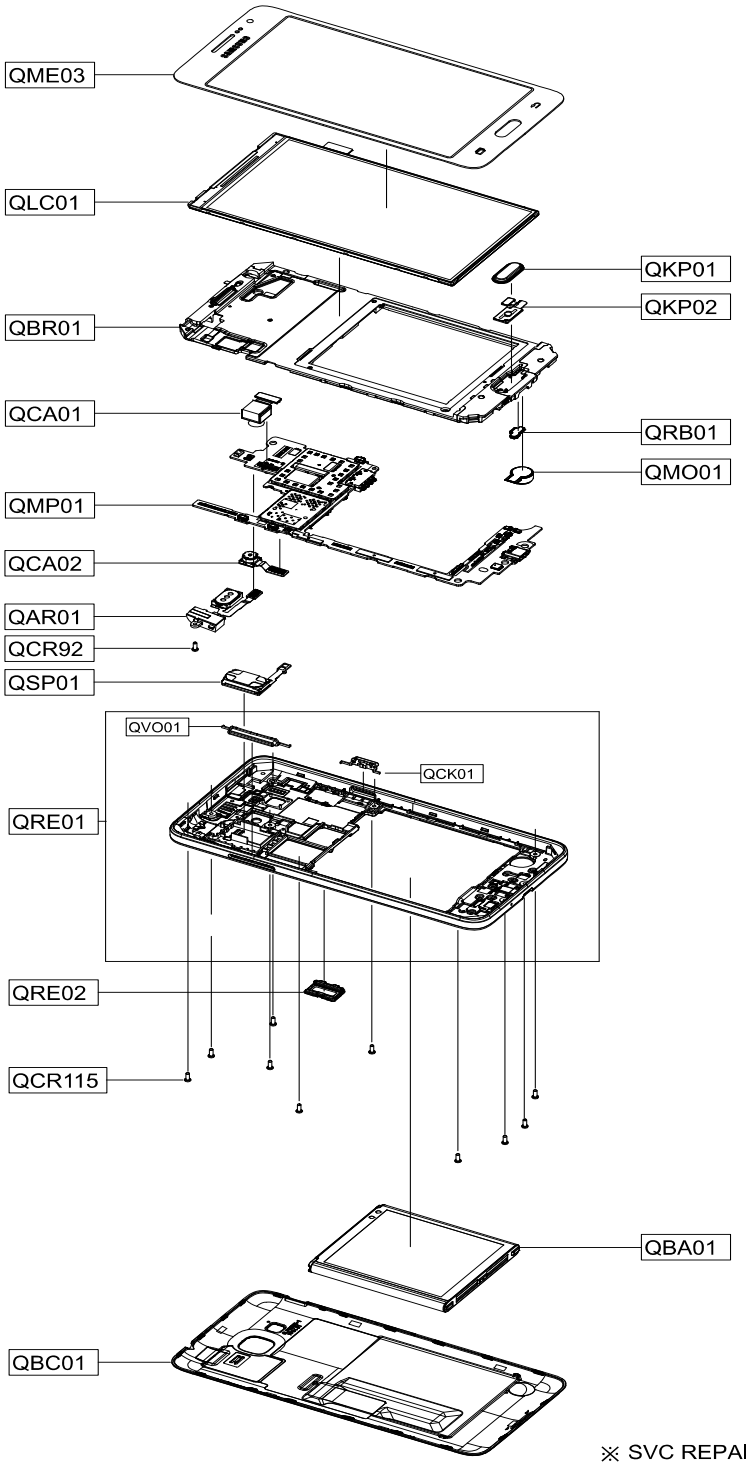
1 1) Assamble the RCV/EARJACK module, Motor on Bracket 	2 1) Assemble the VT, MEGA Camera on PBA 
※ Caution 1) Be care of damage to the part	※ Caution 1) Be care of damage to the part and it's FPCB
3 1) Assemble RCV/EARJACK module on PBA 2) Hang the 2 hook of PBA and screw 1 point 	4 1) First, insert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

4. Exploded View and Parts List

4-1. Cellular phone Exploded View



※ SVC REPAIR TAPE QRT01

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
5	33±2 dBm
6	31±2 dBm
7	29±2 dBm
8	27±2 dBm
9	25±2 dBm
10	23±2 dBm
11	21±2 dBm
12	19±2 dBm
13	17±2 dBm
14	15±2 dBm
15	13±2 dBm
16	11±3 dBm
17	9±3dBm
18	7±3 dBm
19	5±3 dBm

TX Power control level	EGSM900
5	33±2 dBm
6	31±2 dBm
7	29±2 dBm
8	27±2 dBm
9	25±2 dBm
10	23±2 dBm
11	21±2 dBm
12	19±2 dBm
13	17±2 dBm
14	15±2 dBm
15	13±2 dBm
16	11±3 dBm
17	9±3dBm
18	7±3 dBm
19	5±3 dBm

TX Power control level	DCS1800
0	30±3 dBm
1	28±3 dBm
2	26±3 dBm
3	24±3 dBm
4	22±3 dBm
5	20±3 dBm
6	18±3 dBm
7	16±3 dBm
8	14±3 dBm
9	12±4 dBm
10	10±4 dBm
11	8±4 dBm
12	6±4 dBm
13	4±4 dBm
14	2±5 dBm
15	0±5 dBm

TX Power control level	PCS1900
0	30±3 dBm
1	28±3 dBm
2	26±3 dBm
3	24±3 dBm
4	22±3 dBm
5	20±3 dBm
6	18±3 dBm
7	16±3 dBm
8	14±3 dBm
9	12±4 dBm
10	10±4 dBm
11	8±4 dBm
12	6±4 dBm
13	4±4 dBm
14	2±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 replac ement parts may not function properly.

1-2. ESD(Electrostatically Sensitive Devices) Precaution

Many semiconductors and ESDs in electronic devices are particularly sensitive to static discha rge and can be easily damaged by it. We recommend protecting these components with cond uctive 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.

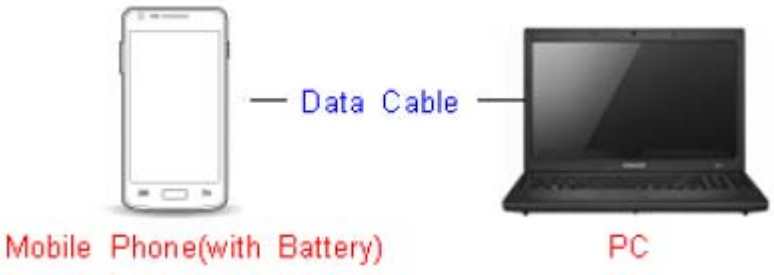
6. Level 1 Repair

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

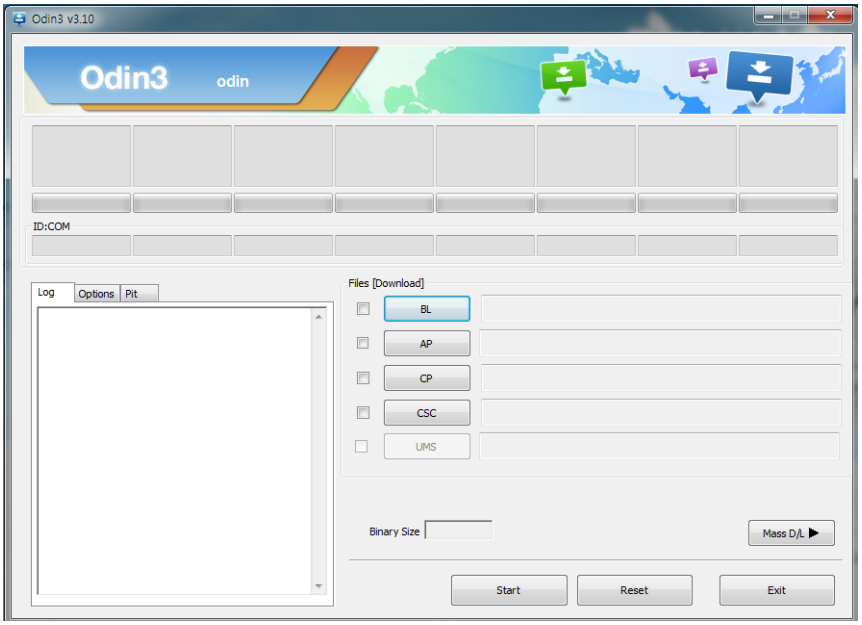
※ Settings



Data Cable : GH39-01681A

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

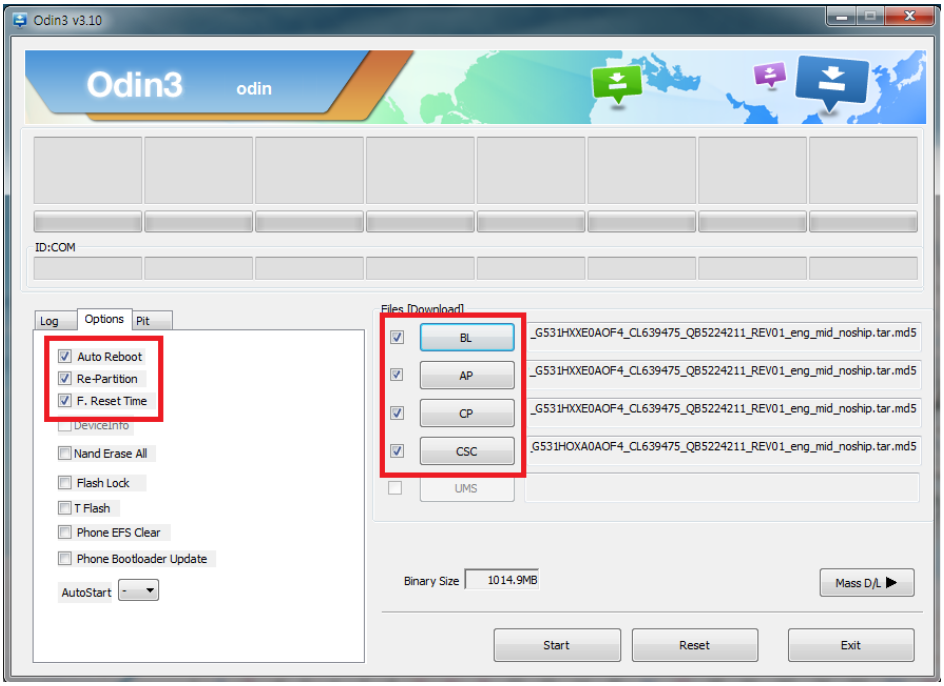
■ Open up the S/W Installation Program by executing the **"Odin3 v3.10.5.exe"**



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

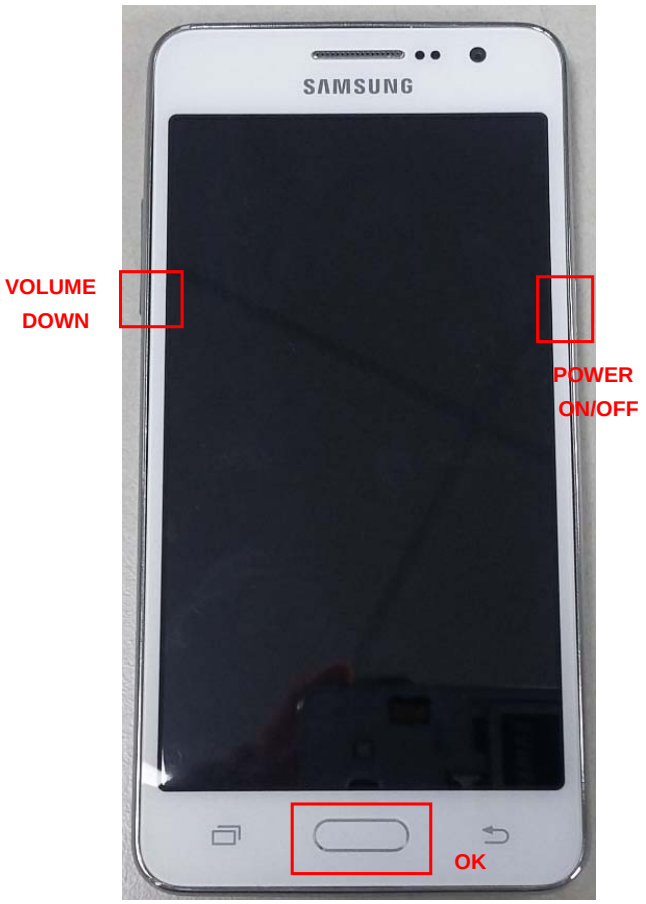
1. Enable the check mark by click on the following options,

- 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.

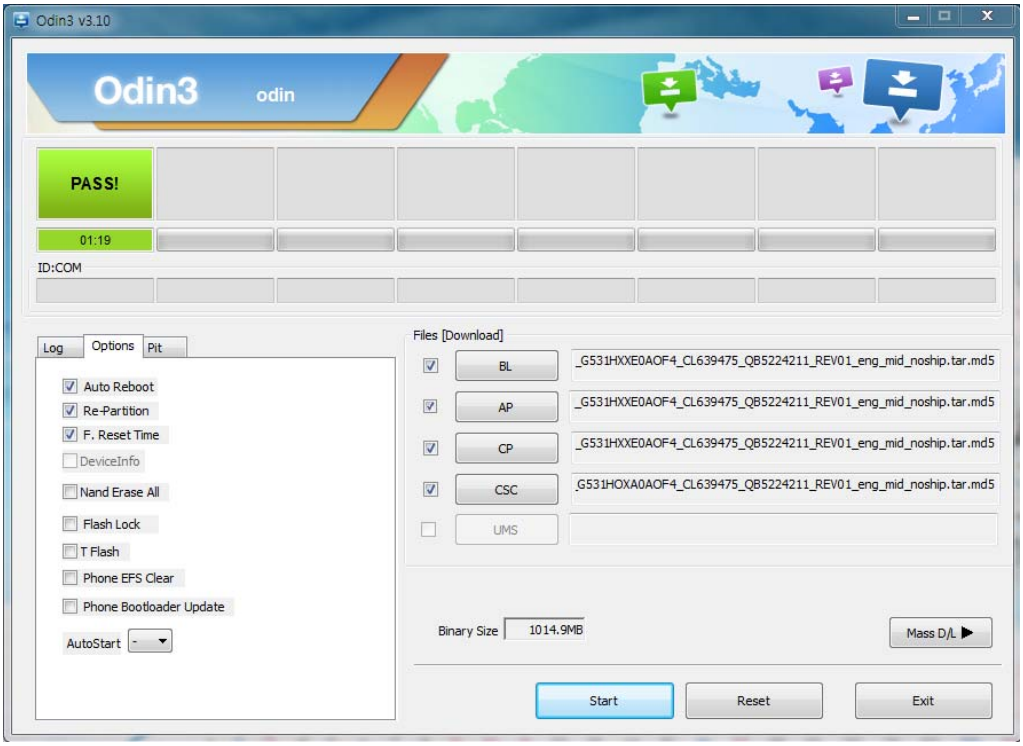


2. After confirm the warning message, Volume UP button press to enter download mode.

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 :

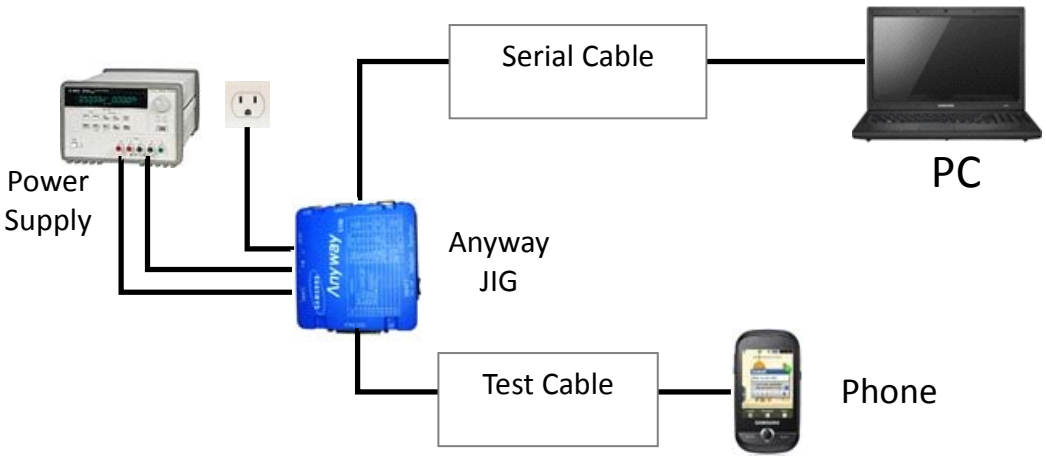
Apps > Settings > Backup and reset > Factory data reset

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

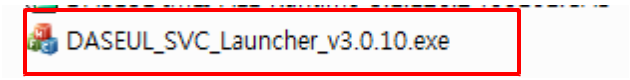


- S/W

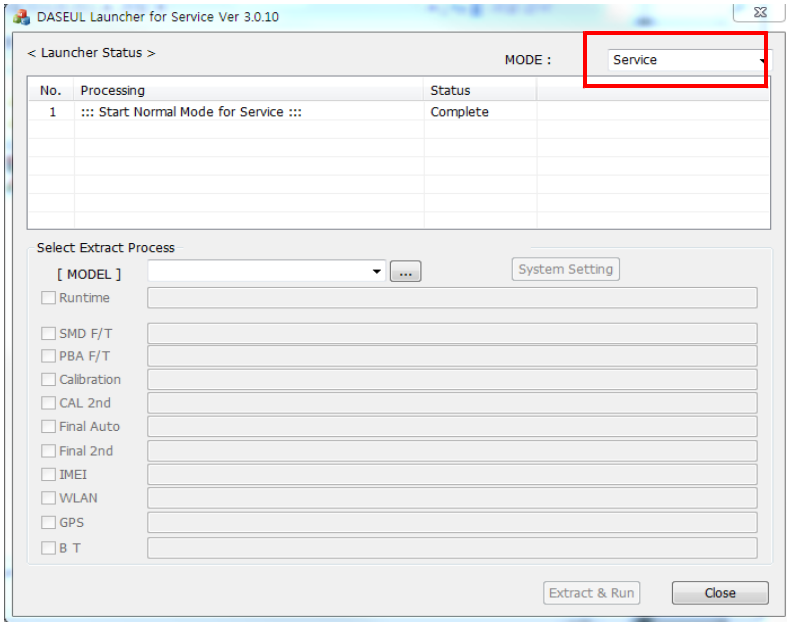
① Library Install	To use Daseul, library files should be installed. Refer to SVC Bulletin "(11-82) Daseul (New IMEI writing Program) Library Install gui de_rev1.0"
②Launcher	DASEUL_SVC_Launcher_v3_0_10 or higher -Uploaded on HHPsvc Notice
③ Runtime File	1. DASEUL_IMEI_ALL_Runtime_129_r00165 .CAB or higher -Uploaded on HHPsvc Notice 2. Make 'ModelName' folder at the same position with launcher & Runtime file.
④Model File	Copy Model File under the 'Model Name' folder

6-2-2 IMEI writing Process

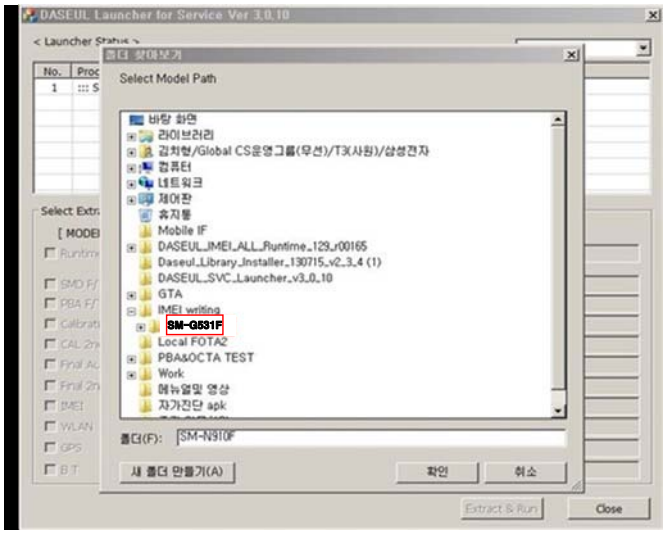
1. Run DASEUL_SVC_Launcher_v3.0.10.exe



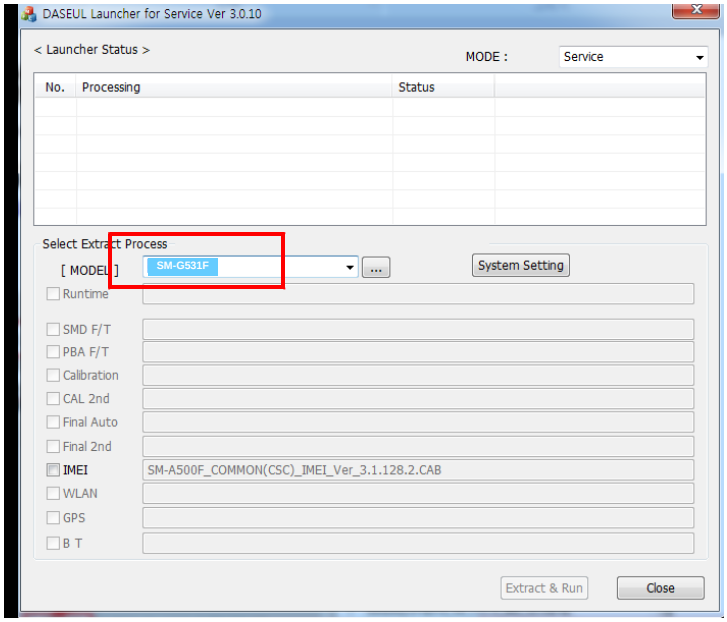
2. Select Service Mode



3. Click [ ] and Select folder where the Launcher exists

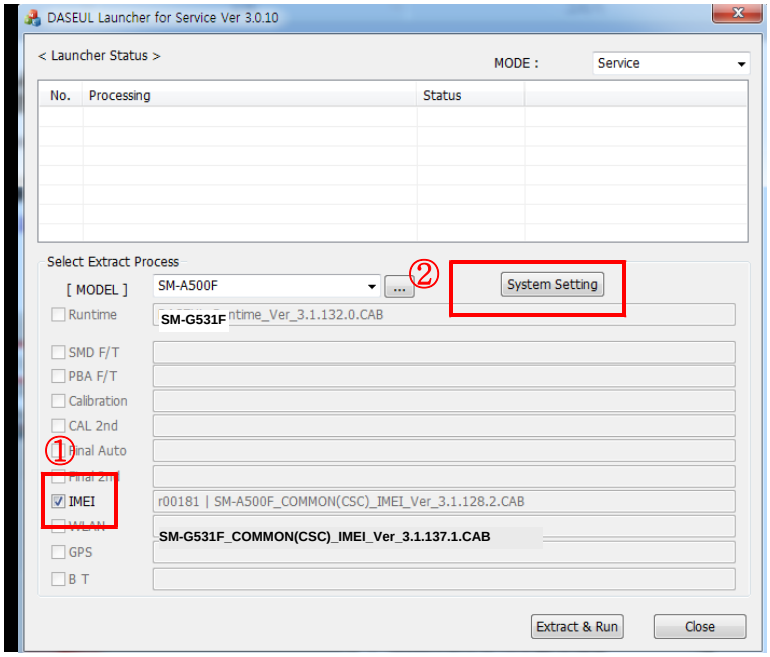


4. Select Model

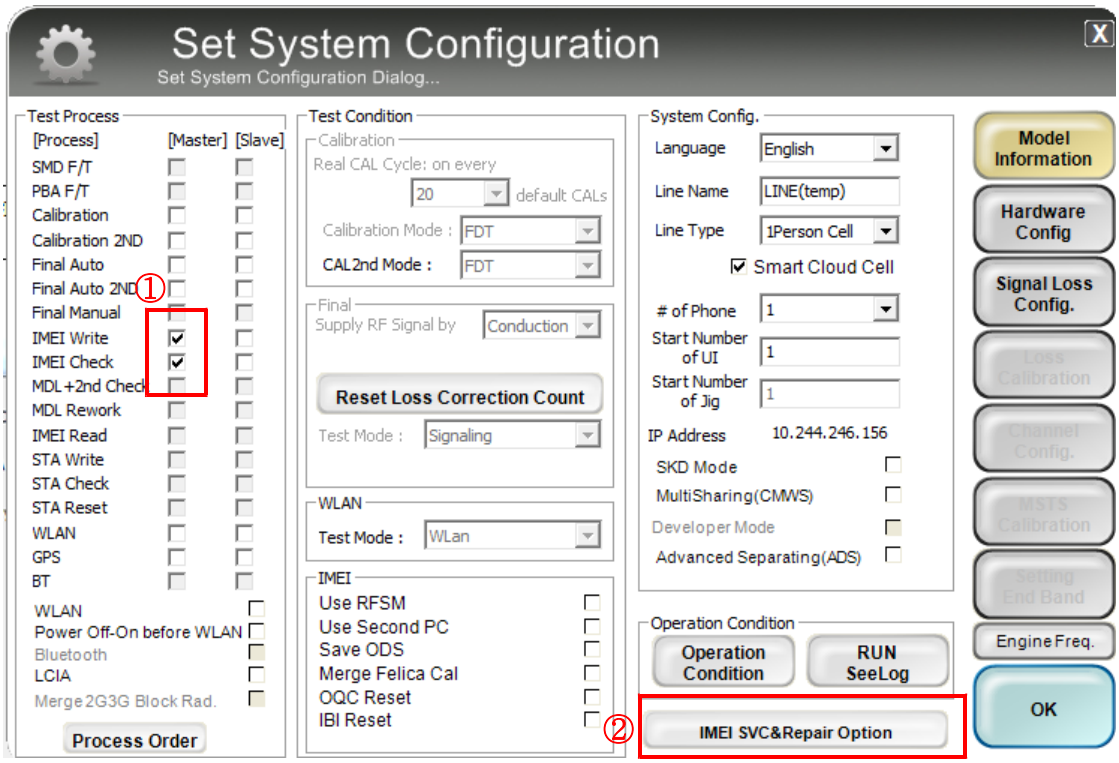


5. Check IMEI and click 'System Setting'

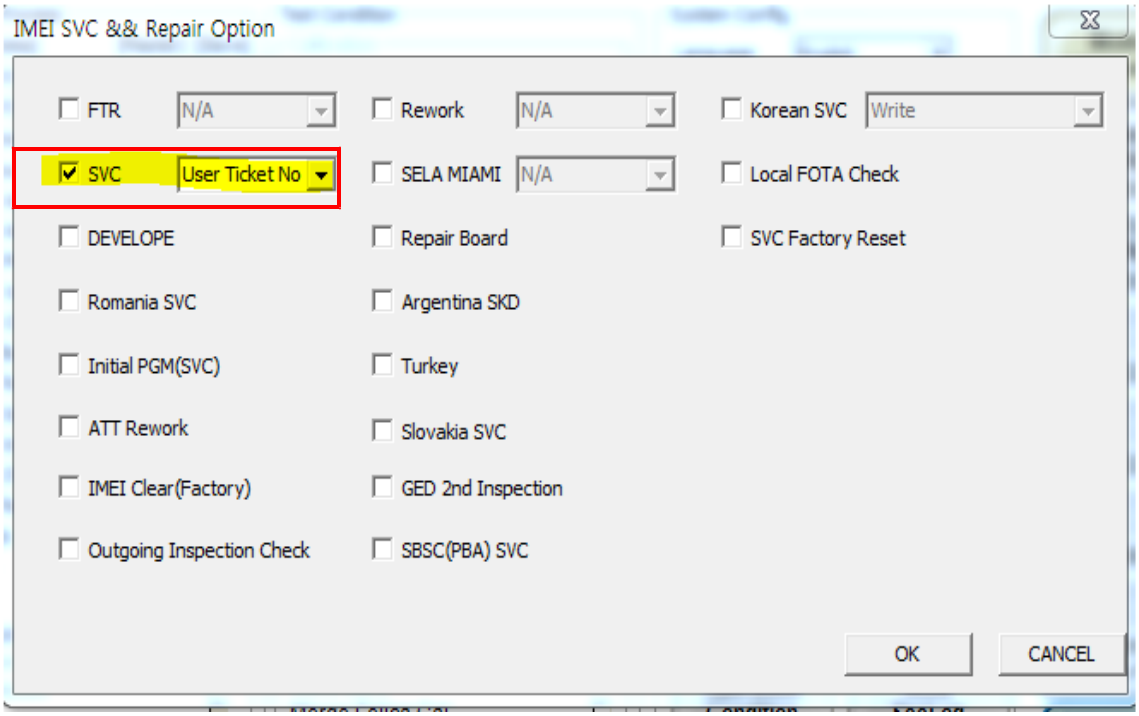
※Once you setup the setting, you don't have to do it again, unless there is change. From second run of the IMEI program, check IMEI and click 'Extract & Run'.



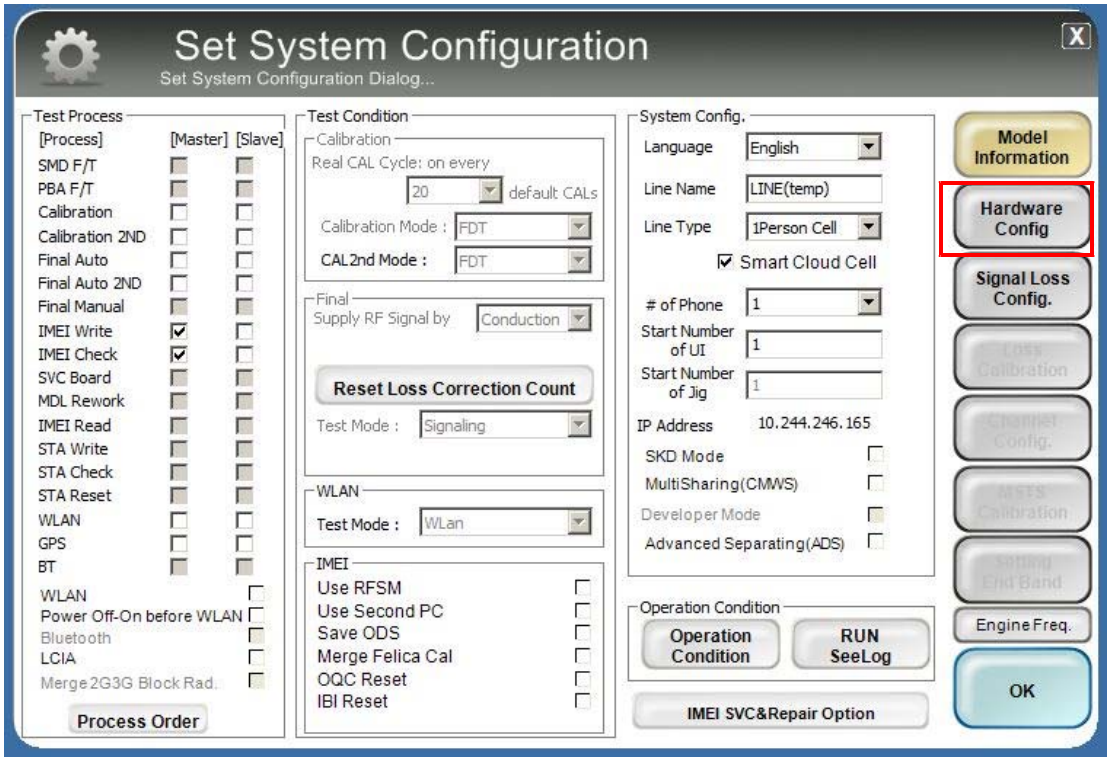
6. Check ‘IMEI Write / IMEI Check’, and click ‘IMEI SVC & Repair Option’



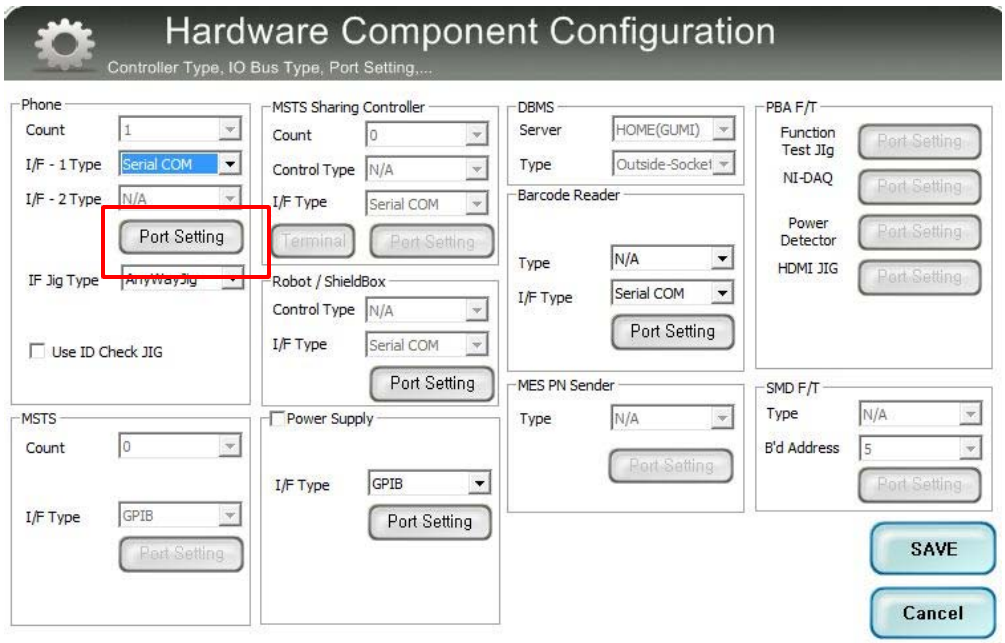
7. Check ‘SVC , User Ticket No’ and click OK



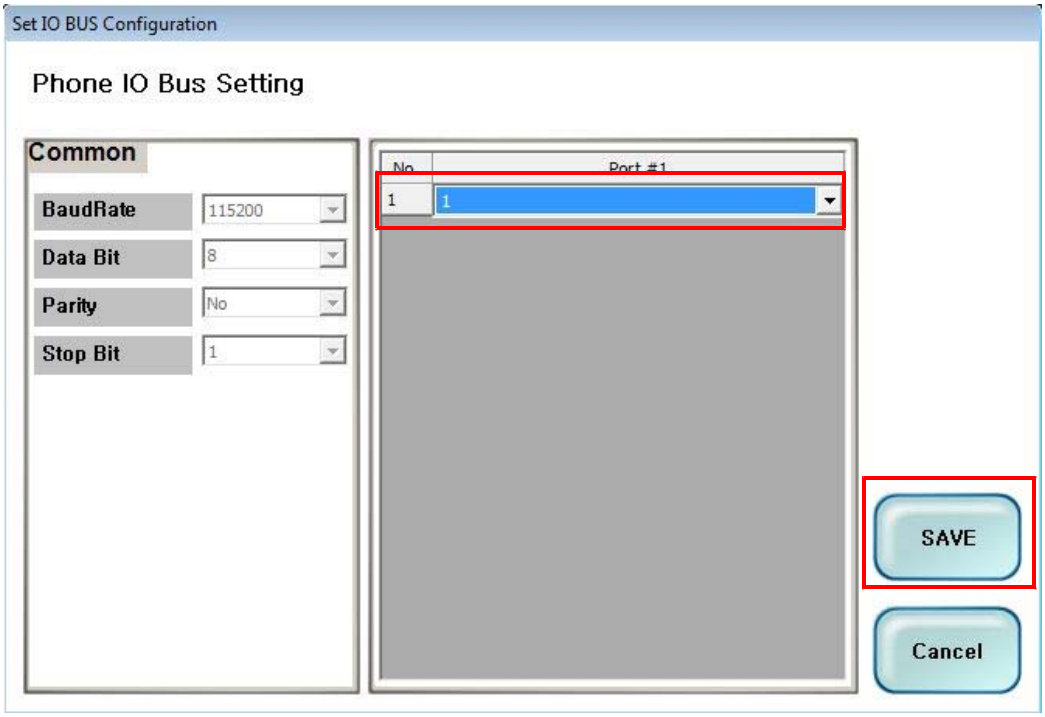
8. Click 'Hardware Config'



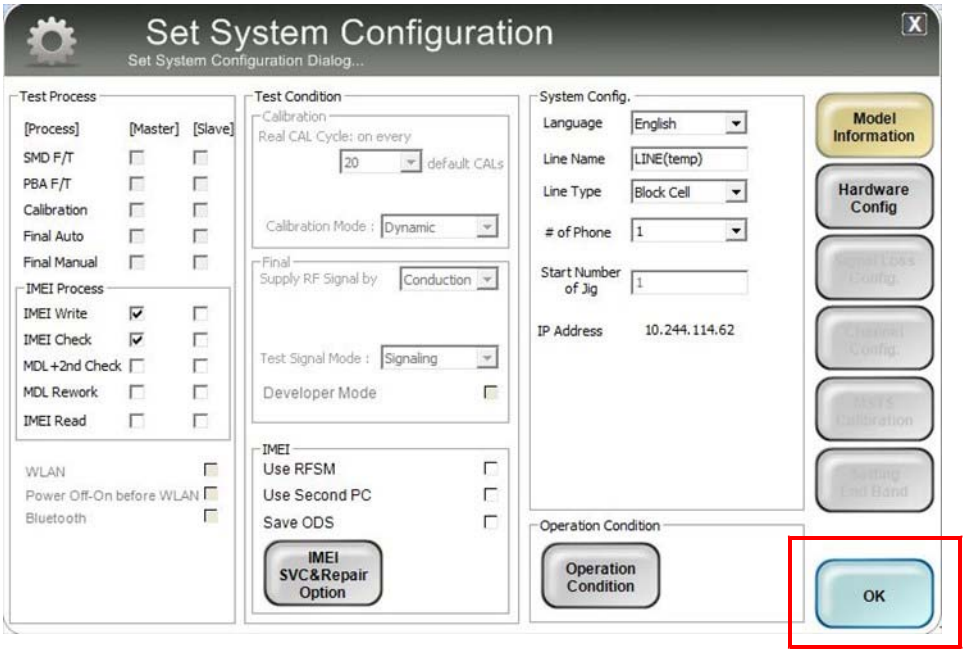
9. Click 'Port Setting'



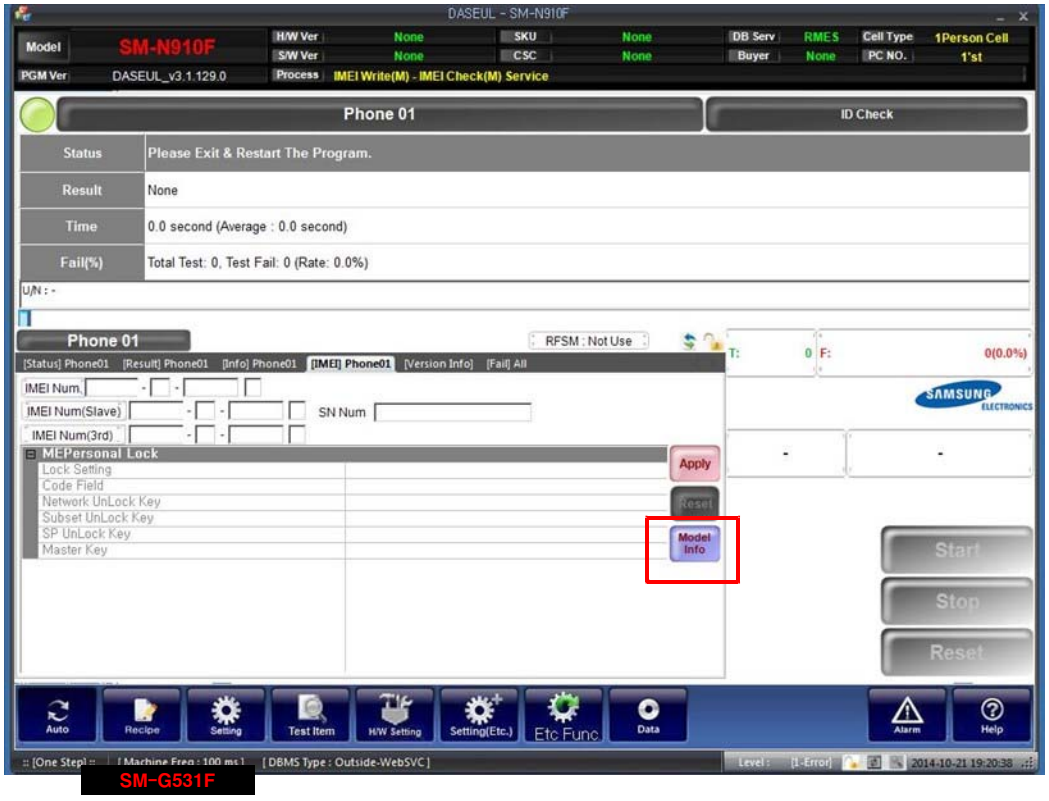
10. Select Port Number and SAVE



11.Click OK to proceed



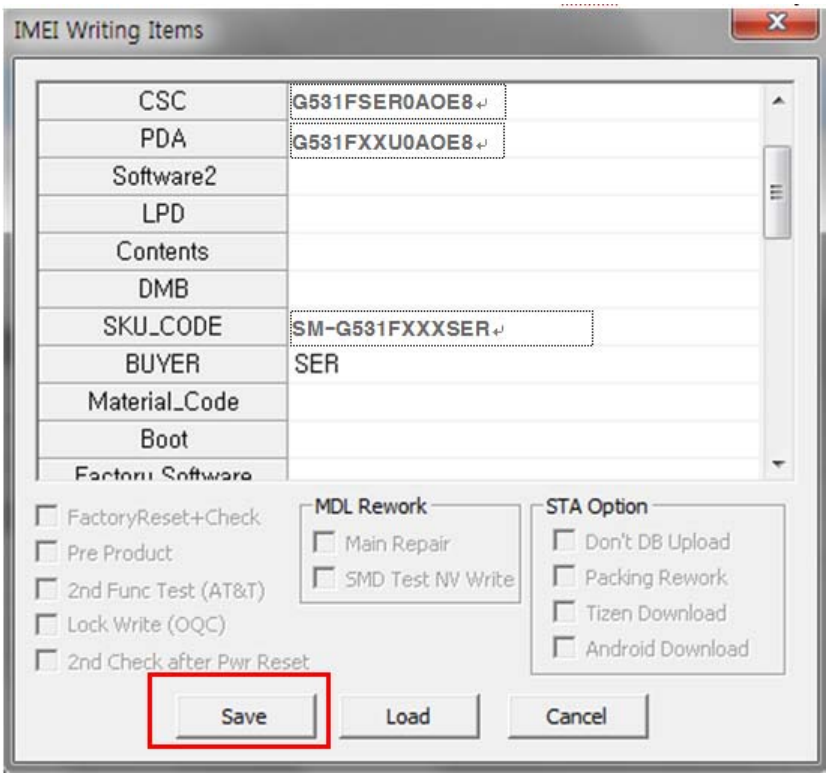
12. Click Model Info and OK when pop-up shows



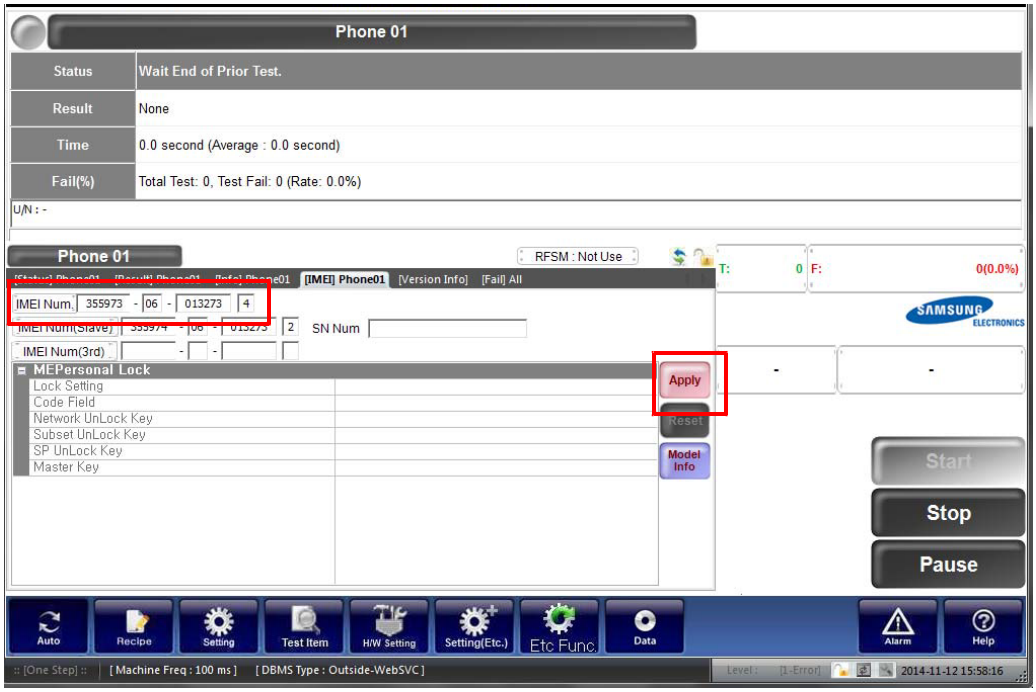
13. Click OK

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

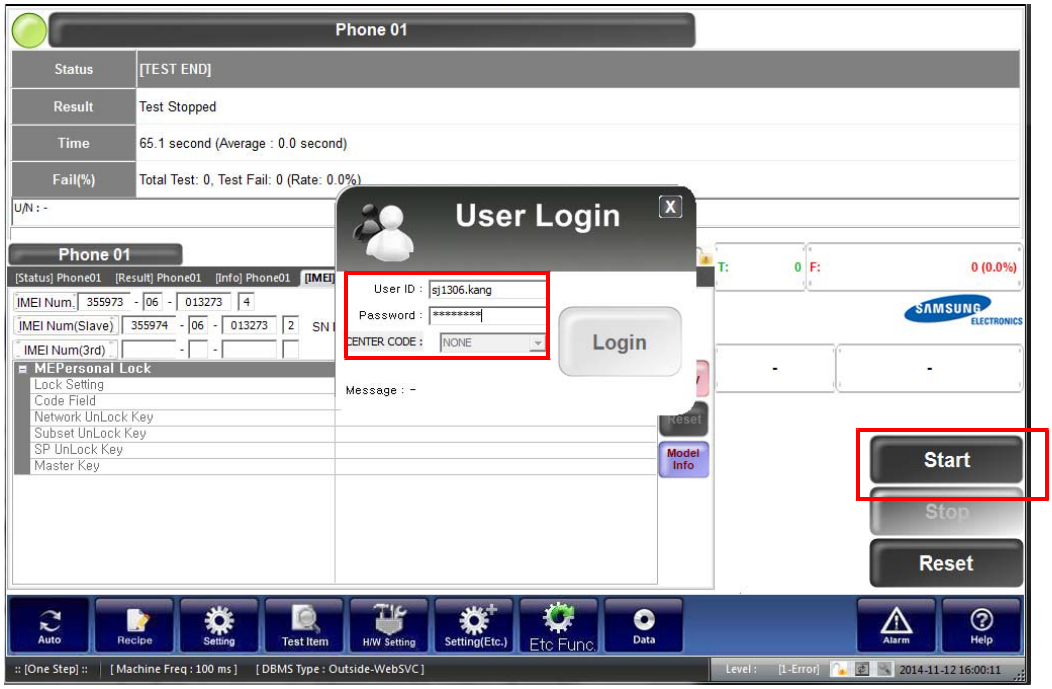
※ Refer to HHPsvc→IMEI Review to check SKU Code and buyer



15. Input IMEI Number and click Apply



16. ① Click Start, and input IMEI writing ID and Password →②input Ticket No

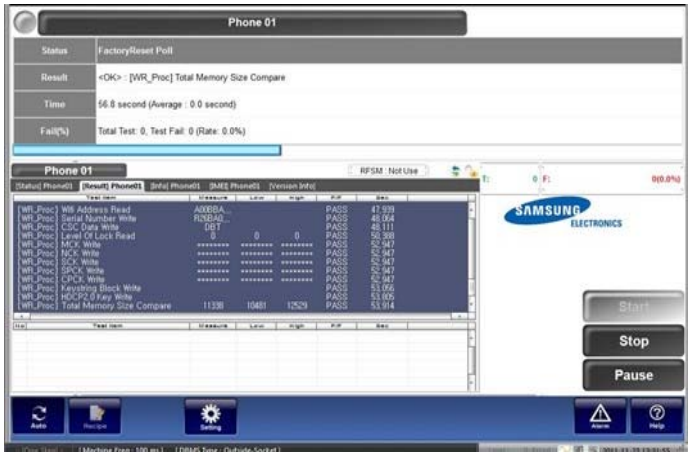


17. Connect the phone to Anyway JIG

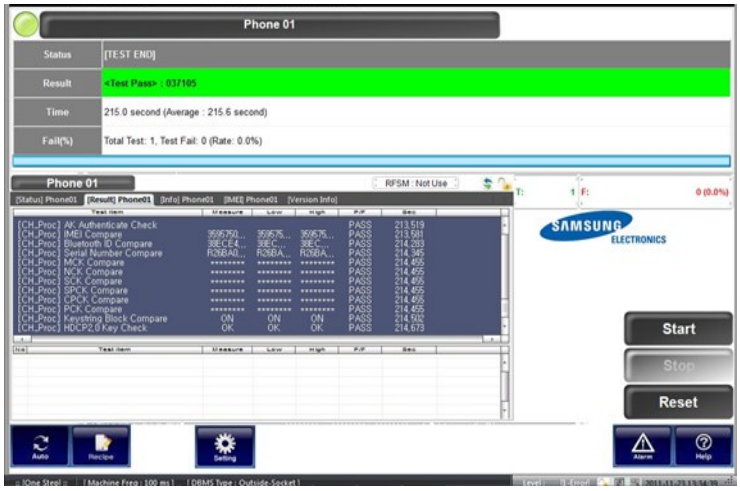
※ When you connect the phone, the phone should be turned off.

After connecting the phone, the phone will be booted automatically.

18. IMEI Writing Proceeding



19. IMEI Writing Success



6-4. RF Calibration

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

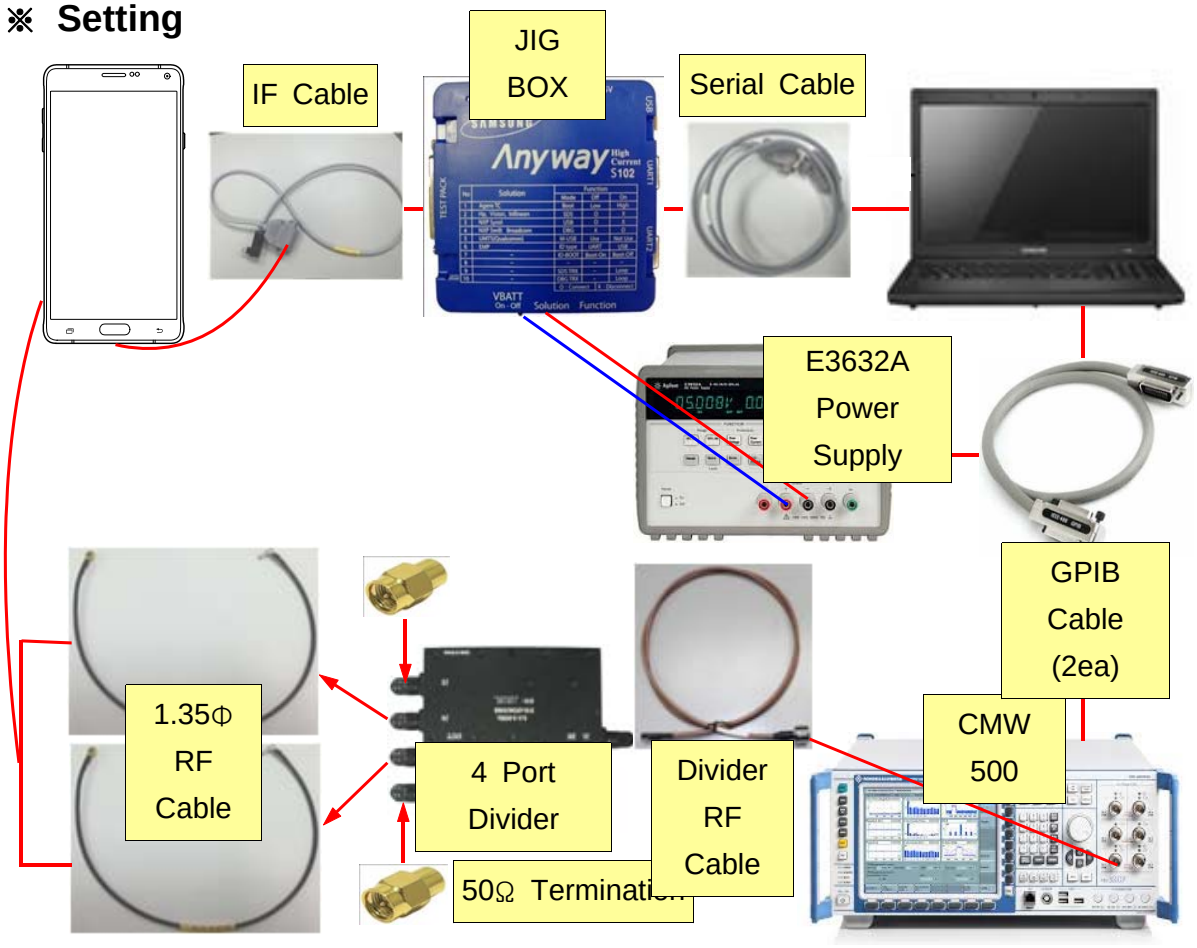
- Installation program: RF Calibration Program
  - Daseul_Launcher_vx.x.xx.exe
  - Daseul_CAL_ALL_Runtime_x.x.xxx.x.CAB
  - Model File (SM-XXXXX_OPEN_CALIBRATION_VER_x.x.xxx.xx.CAB)

※ It is required to use the latest program.

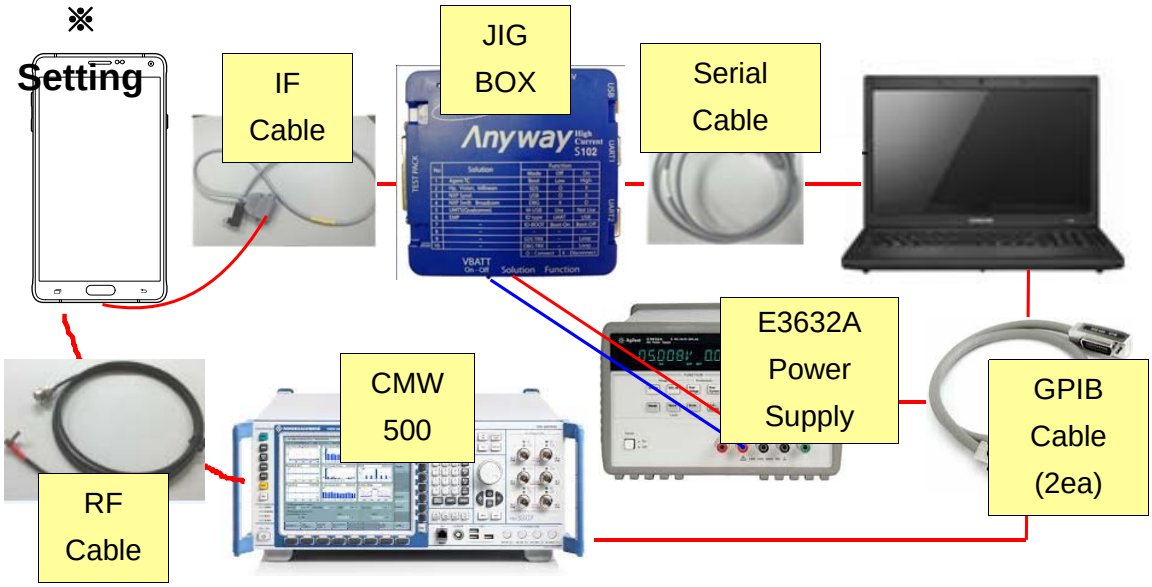
- Mobile Phone
- E3632A Power Supply
- JIG BOX (GH81-11888A)
- JIG BOX (5902-002550)
- Adapter (GH99-38251A)
- 4 Port Divider (GH81-11962A)
- 1.35Φ RF Cable (GH81-11459A, 2ea)
- R&S CMW500
- GPIB Cable (2ea)
- Adapter (GH81-11888K)
- Jig Cable (GH81-10965A)
- UART Serial Cable
- 50Ω Termination (GH81-11962E, 2ea)
- Divider RF Cable (GH81-11962B)

IF Cable	GH81-10965A	GH81-10952A	GH81-11171A	
	7 pin	7 pin (New)	7 pin (Old)	
RF Cable	GH81-11459A	GH81-11962G	GH81-11962C	GH81-11962F
	1.35T, Short	1.35T, Long	1.6T, Short	1.6T, Long
4 Port Divider	GH81-11962A			
	Use / No use			

※ Setting

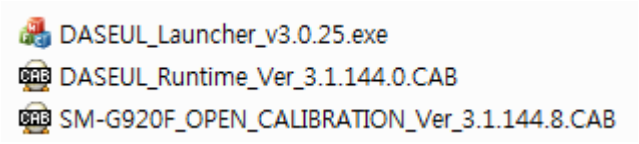


※ Setting

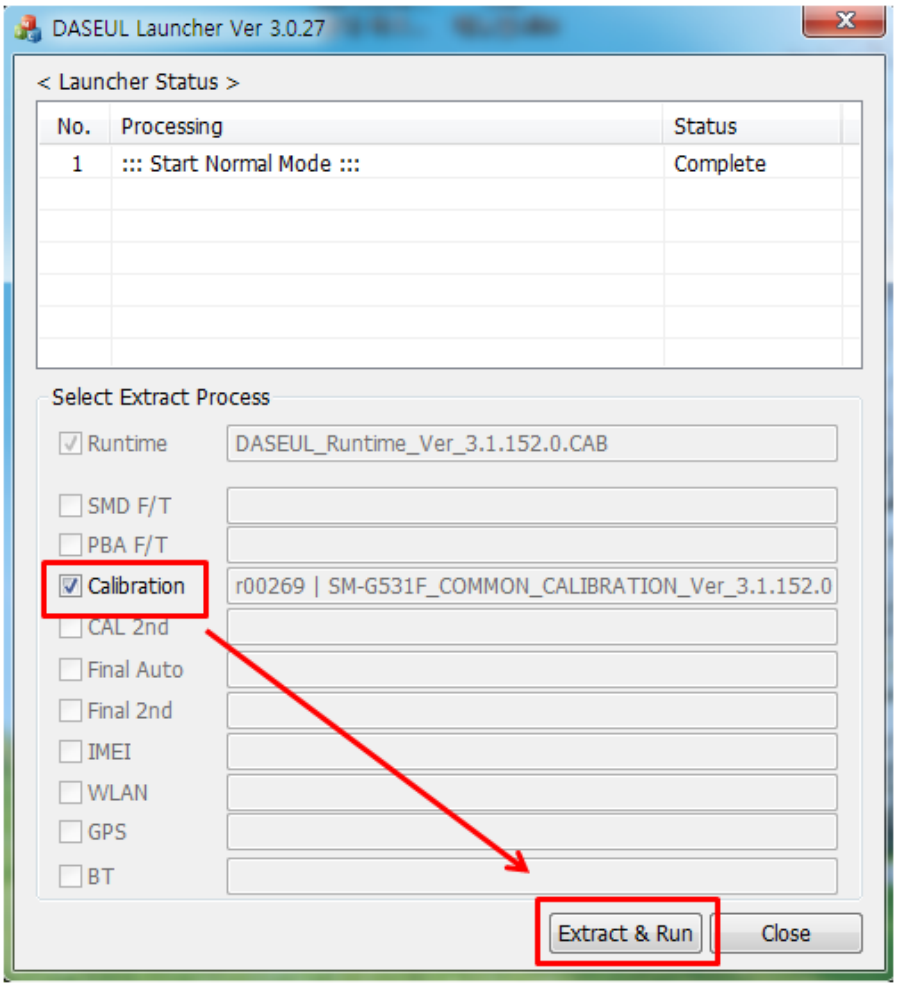


6-1-2. RF Calibration Program

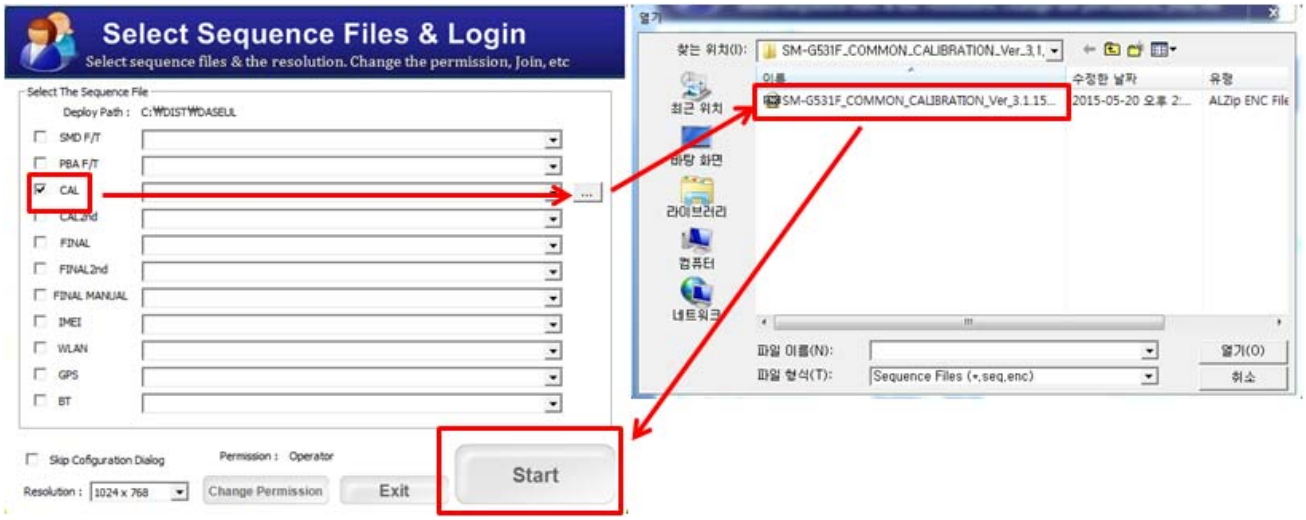
1. Run the RF Calibration Program Launcher, 'DASEUL_Launcher_vx.x.xx.exe'.



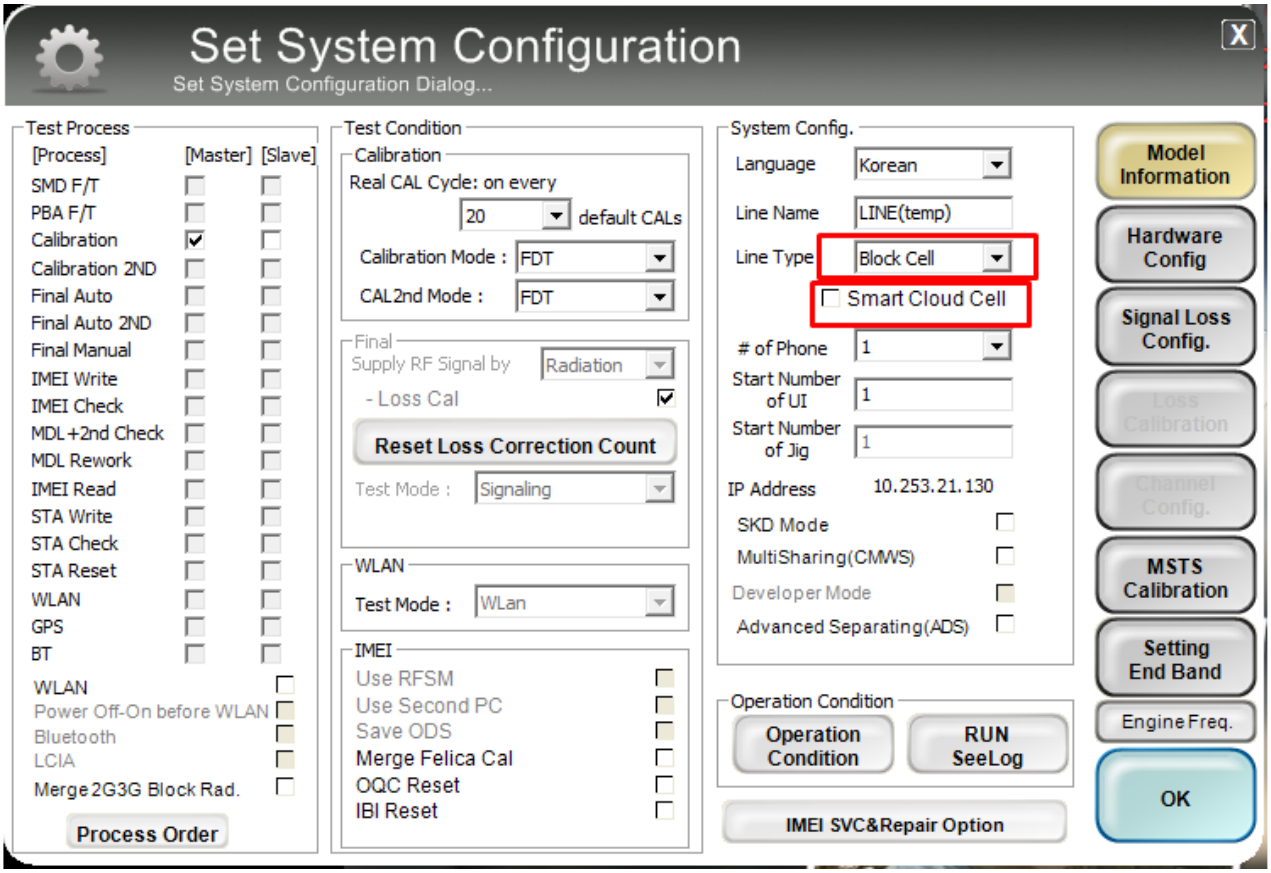
2. Check the 'Calibration' menu, and select 'Extract & Run'.



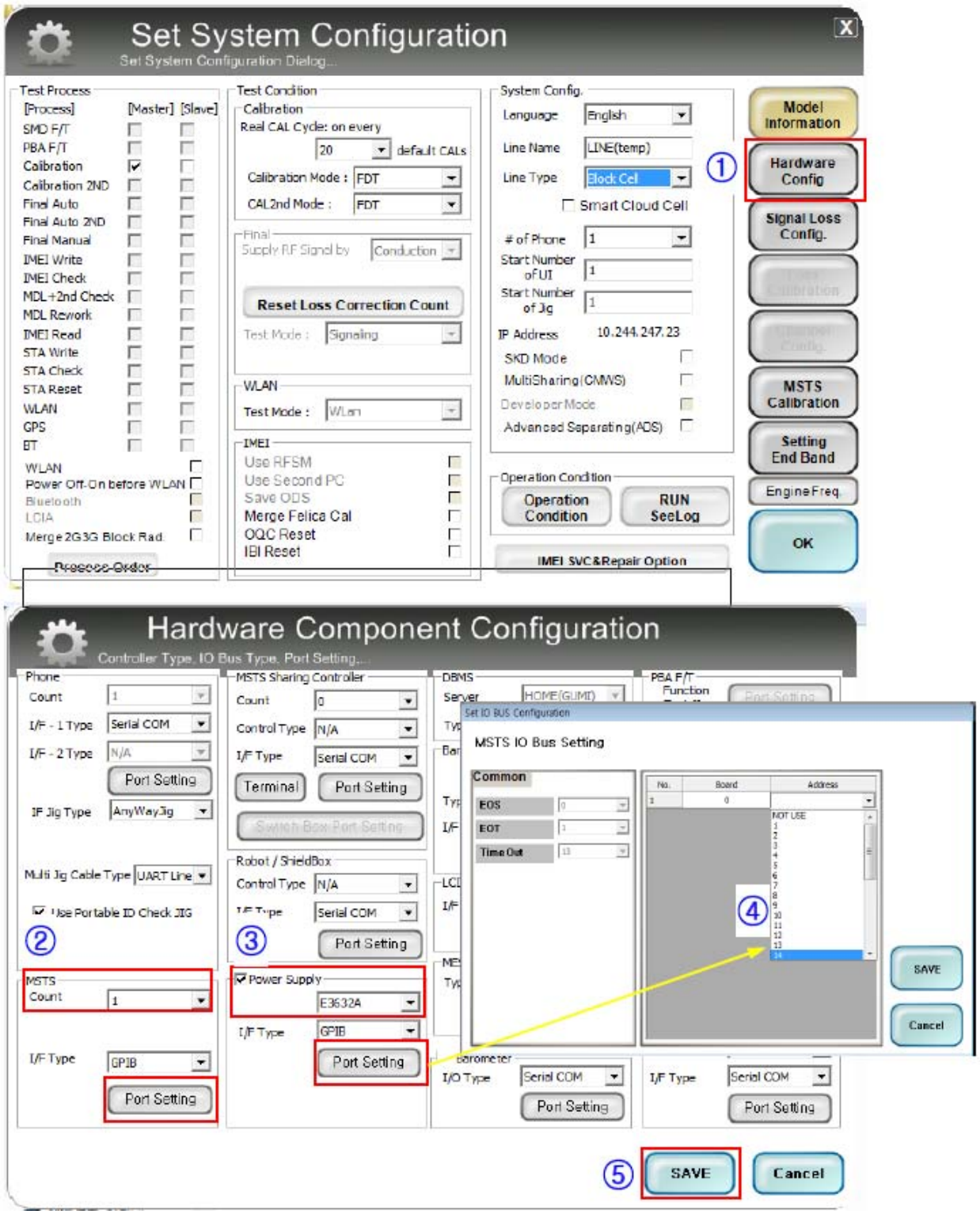
3. Check the 'CAL' and open the model file, then select 'Start' button.



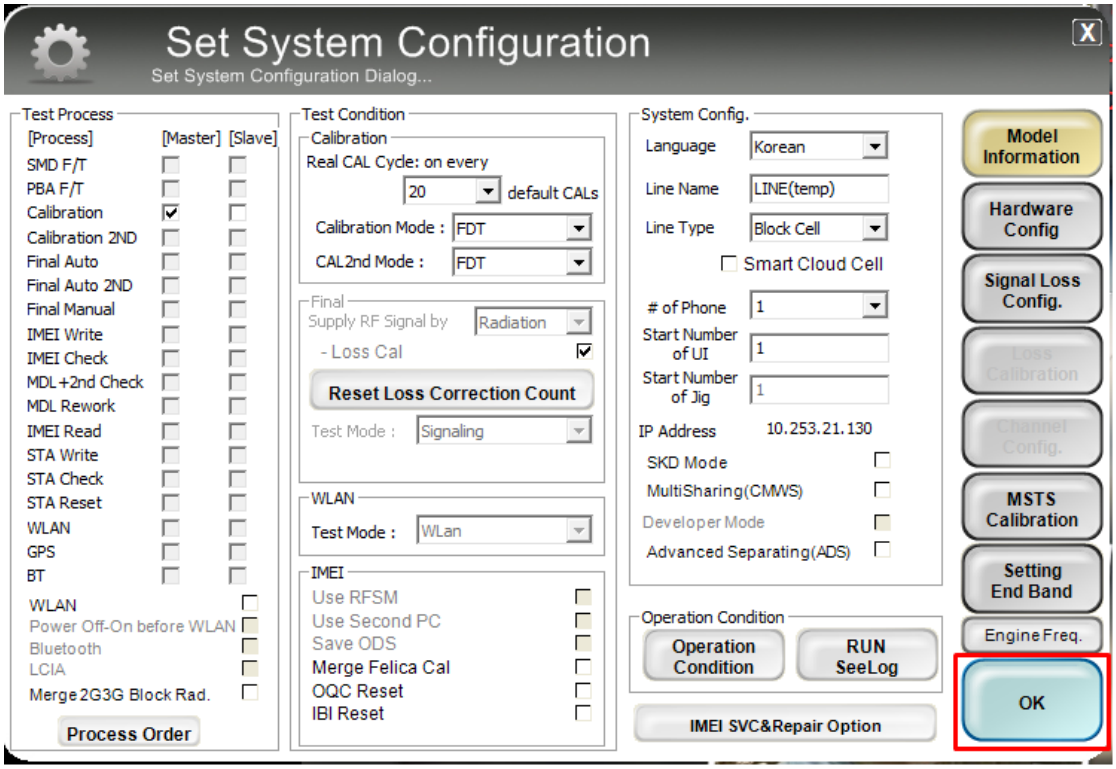
4. Change the Line Type to 'Block Cell' and disable 'Smart Cloud Cell'.

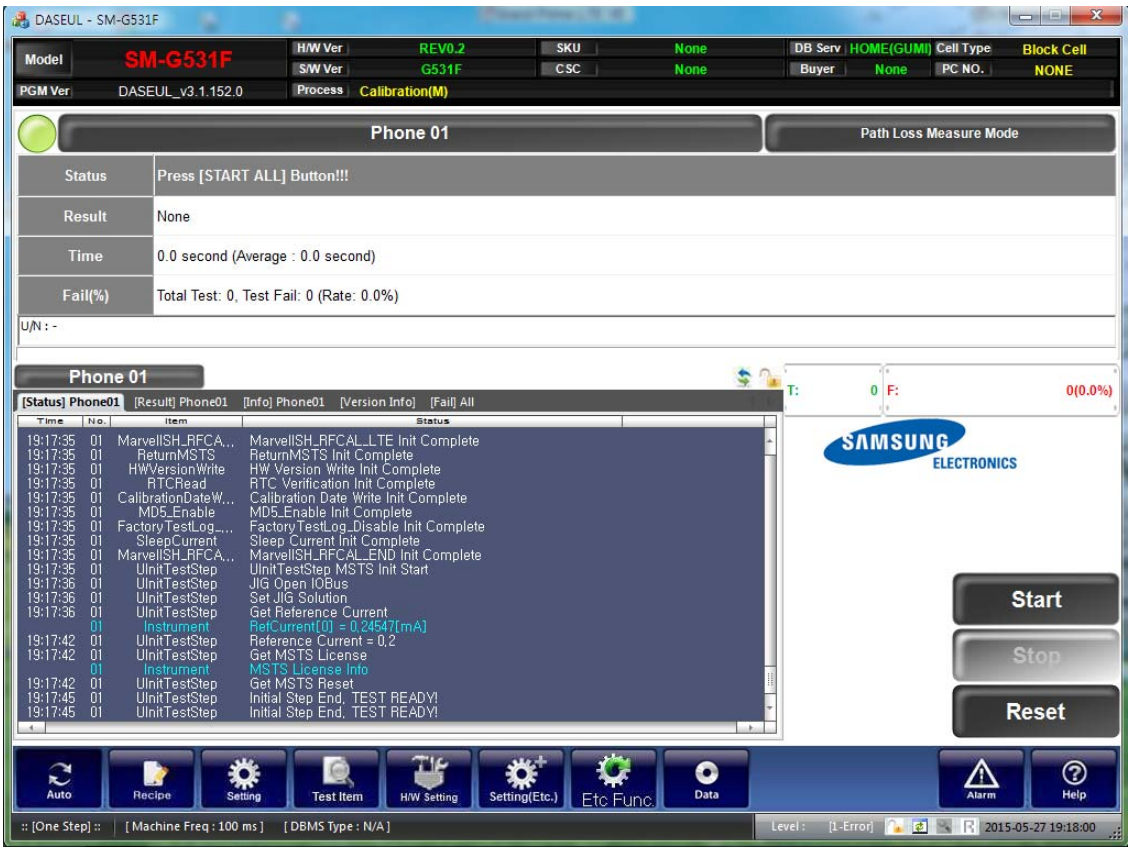


5. Set the GPIB address of MSTS(CMW500) and Power Supply(E3632A) to enter 'Hardware Config' and 'Save'. (Check the GPIB address of equipments in advance)



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





5. MAIN Electrical Parts List

SEC CODE	Design Location	Description
0404-001646	D600	DIODE
0406-001413	ZD506,ZD510	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
1201-003962	PAM101	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
1205-005106	U403	IC
1205-005175	U405	IC
1205-005220	U201	IC
1205-005310	U203	IC
1205-005326	U102	IC
1205-005374	UCP300	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,R424,R437,R521	R-CHIP
2007-008531	R610,R612	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,R611	R-CHIP
2007-008648	R440	R-CHIP
2007-008774	R400,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	C101,C507	C-CERAMIC,CHIP
2203-000254	C506	C-CERAMIC,CHIP
2203-000627	C616	C-CERAMIC,CHIP
2203-000812	C515,C516	C-CERAMIC,CHIP
2203-000940	C483	C-CERAMIC,CHIP
2203-001239	C482	C-CERAMIC,CHIP
2203-002668	C103	C-CERAMIC,CHIP
2203-005249	C600	C-CERAMIC,CHIP
2203-005344	C470	C-CERAMIC,CHIP
2203-005682	C107,C109,C116,C137	C-CERAMIC,CHIP
2203-005682	C145,C148,C150,C151	C-CERAMIC,CHIP
2203-005682	C154,C157,C215,C225	C-CERAMIC,CHIP
2203-005682	C640	C-CERAMIC,CHIP
2203-005717	C113	C-CERAMIC,CHIP
2203-005725	C236	C-CERAMIC,CHIP
2203-005726	C119	C-CERAMIC,CHIP
2203-005727	C603,C611	C-CERAMIC,CHIP
2203-005729	C400,C401,C428,C445	C-CERAMIC,CHIP
2203-005729	C490,C511,C526	C-CERAMIC,CHIP
2203-005732	C476,C500,C501,C512	C-CERAMIC,CHIP
2203-005736	C102,C121,C125,C126	C-CERAMIC,CHIP
2203-005736	C130,C131,C142,C143	C-CERAMIC,CHIP
2203-005736	C144,C153,C155,C224	C-CERAMIC,CHIP
2203-005777	C147,C239	C-CERAMIC,CHIP
2203-005789	C106,C174	C-CERAMIC,CHIP
2203-005806	C139,C141,C180	C-CERAMIC,CHIP
2203-006048	C471,C622	C-CERAMIC,CHIP
2203-006121	C127	C-CERAMIC,CHIP
2203-006123	C240	C-CERAMIC,CHIP
2203-006187	C156,C160	C-CERAMIC,CHIP
2203-006190	C200	C-CERAMIC,CHIP
2203-006194	C306,C335	C-CERAMIC,CHIP
2203-006257	C410	C-CERAMIC,CHIP
2203-006305	C164,C165,C167,C172	C-CERAMIC,CHIP
2203-006305	C202,C211,C214,C218	C-CERAMIC,CHIP
2203-006318	C176	C-CERAMIC,CHIP
2203-006379	C464,C465	C-CERAMIC,CHIP
2203-006399	C209,C229,C230,C233	C-CERAMIC,CHIP
2203-006399	C234,C313,C331,C333	C-CERAMIC,CHIP

2203-006399	C339,C340,C345,C350	C-CERAMIC,CHIP
2203-006399	C351,C352,C362,C405	C-CERAMIC,CHIP
2203-006399	C441,C442,C443,C456	C-CERAMIC,CHIP
2203-006399	C457,C459,C460,C463	C-CERAMIC,CHIP
2203-006399	C479,C514,C525,C527	C-CERAMIC,CHIP
2203-006399	C620,C621,C623	C-CERAMIC,CHIP
2203-006400	C178,C179,C223,C227	C-CERAMIC,CHIP
2203-006400	C448	C-CERAMIC,CHIP
2203-006423	C177,C302,C304,C305	C-CERAMIC,CHIP
2203-006423	C315,C316,C329,C330	C-CERAMIC,CHIP
2203-006423	C337,C341,C342,C343	C-CERAMIC,CHIP
2203-006423	C344,C346,C347,C348	C-CERAMIC,CHIP
2203-006423	C349,C510,C513,C517	C-CERAMIC,CHIP
2203-006423	C521,C522,C523,C524	C-CERAMIC,CHIP
2203-006423	C624,C625,C629	C-CERAMIC,CHIP
2203-006556	C232,C486,C487	C-CERAMIC,CHIP
2203-006562	C138	C-CERAMIC,CHIP
2203-006647	C504	C-CERAMIC,CHIP
2203-006665	C115	C-CERAMIC,CHIP
2203-006668	C484	C-CERAMIC,CHIP
2203-006674	C168,C175	C-CERAMIC,CHIP
2203-006707	C124	C-CERAMIC,CHIP
2203-006815	C502,C503	C-CERAMIC,CHIP
2203-006839	C122,C415,C417,C420	C-CERAMIC,CHIP
2203-006839	C422,C489,C508,C509	C-CERAMIC,CHIP
2203-006872	C207,C208	C-CERAMIC,CHIP
2203-006890	C321,C409,C413,C433	C-CERAMIC,CHIP
2203-006890	C491	C-CERAMIC,CHIP
2203-006978	C481,C612	C-CERAMIC,CHIP
2203-006979	C237	C-CERAMIC,CHIP
2203-007210	C332,C334	C-CERAMIC,CHIP
2203-007235	C458	C-CERAMIC,CHIP
2203-007240	C320,C360,C361,C421	C-CERAMIC,CHIP
2203-007240	C423,C451,C452,C453	C-CERAMIC,CHIP
2203-007240	C454,C455,C461,C462	C-CERAMIC,CHIP
2203-007271	C235,C300,C309,C314	C-CERAMIC,CHIP
2203-007271	C318,C324,C325,C354	C-CERAMIC,CHIP
2203-007271	C402,C403,C404,C407	C-CERAMIC,CHIP
2203-007271	C408,C412,C414,C416	C-CERAMIC,CHIP
2203-007271	C429,C430,C431,C432	C-CERAMIC,CHIP
2203-007271	C434,C435,C436,C437	C-CERAMIC,CHIP

2203-007271	C438,C439,C444,C446	C-CERAMIC,CHIP
2203-007271	C467,C473,C480	C-CERAMIC,CHIP
2203-007312	C311	C-CERAMIC,CHIP
2203-007317	C140,C163,C303,C312	C-CERAMIC,CHIP
2203-007317	C317,C449,C450,C528	C-CERAMIC,CHIP
2203-007317	C608,C618,C639	C-CERAMIC,CHIP
2203-007369	C201,C206	C-CERAMIC,CHIP
2203-007393	C221	C-CERAMIC,CHIP
2203-007449	C158,C166,C173,C474	C-CERAMIC,CHIP
2203-007449	C605,C606,C607,C609	C-CERAMIC,CHIP
2203-007449	C610,C613,C615	C-CERAMIC,CHIP
2203-007474	C120,C326,C328,C418	C-CERAMIC,CHIP
2203-007474	C419,C424,C425,C466	C-CERAMIC,CHIP
2203-007474	C485,C529,C617,C619	C-CERAMIC,CHIP
2203-007775	C205,C210	C-CERAMIC,CHIP
2203-007781	C488	C-CERAMIC,CHIP
2203-007795	C468,C477,C520	C-CERAMIC,CHIP
2203-007796	C203,C204,C231,C469	C-CERAMIC,CHIP
2203-008097	C217,C336,C338,C359	C-CERAMIC,CHIP
2203-008123	C406,C426	C-CERAMIC,CHIP
2203-008242	C170,C427,C518,C614	C-CERAMIC,CHIP
2203-008394	C108,C440,C447,L126	C-CERAMIC,CHIP
2203-008394	L128	C-CERAMIC,CHIP
2203-008654	C475,C478	C-CERAMIC,CHIP
2203-008886	C169,C171	C-CERAMIC,CHIP
2203-009223	C505	C-CERAMIC,CHIP
2703-001726	L514	INDUCTOR-SMD
2703-002309	L505	INDUCTOR-SMD
2703-002369	L100	INDUCTOR-SMD
2703-002649	C159,L123,L146	INDUCTOR-SMD
2703-002901	L127	INDUCTOR-SMD
2703-002903	L103	INDUCTOR-SMD
2703-002958	L211	INDUCTOR-SMD
2703-003004	L101	INDUCTOR-SMD
2703-003878	L508	INDUCTOR-SMD
2703-003915	L105	INDUCTOR-SMD
2703-004000	L107	INDUCTOR-SMD
2703-004012	L117	INDUCTOR-SMD
2703-004013	L131	INDUCTOR-SMD
2703-004014	C128,C132,L111,L139	INDUCTOR-SMD
2703-004030	L116,L121	INDUCTOR-SMD

2703-004032	L138,L142	INDUCTOR-SMD
2703-004034	C129,C133,C134,L134	INDUCTOR-SMD
2703-004034	L206,L210	INDUCTOR-SMD
2703-004035	L112,L115,L124,L140	INDUCTOR-SMD
2703-004035	L144	INDUCTOR-SMD
2703-004036	L129,L132,L135	INDUCTOR-SMD
2703-004193	L407	INDUCTOR-SMD
2703-004288	L147	INDUCTOR-SMD
2703-004298	L208	INDUCTOR-SMD
2703-004318	L405,L406	INDUCTOR-SMD
2703-004328	L203,L207,L215	INDUCTOR-SMD
2703-004366	L213	INDUCTOR-SMD
2703-004367	L212	INDUCTOR-SMD
2703-004369	L108,L133,L136,L141	INDUCTOR-SMD
2703-004599	L403,L404,L410	INDUCTOR-SMD
2703-004764	L106	INDUCTOR-SMD
2703-004862	L110,L114	INDUCTOR-SMD
2703-004914	L214	INDUCTOR-SMD
2703-004976	L125,L130	INDUCTOR-SMD
2703-005109	L401	INDUCTOR-SMD
2703-005118	U613	INDUCTOR-SMD
2703-005224	L402,L602	INDUCTOR-SMD
2801-004820	OSC400	CRYSTAL-UNIT
2805-001113	OSC200	CRYSTAL-UNIT
2809-001411	OSC100	CRYSTAL-UNIT
2901-001673	F601	FILTER-EMI SMD
2901-001674	F600	FILTER-EMI SMD
2904-002111	F103	FILTER-SAW
2904-002168	F201	FILTER-SAW
2904-002247	F101	FILTER-SAW
2904-002321	F100	FILTER-SAW
2909-001307	F200	FILTER-DUPLEXER
2910-000295	F106	FILTER
2910-000313	F104	FILTER
2910-000318	F105	FILTER
2910-000349	F102	FILTER
3003-001208	MIC500	MIC-CONDENSOR
3301-001438	L202	CORE-FERRITE BEAD
3301-001534	L300	CORE-FERRITE BEAD
3301-001659	L209	CORE-FERRITE BEAD
3301-001682	L509,L510	CORE-FERRITE BEAD

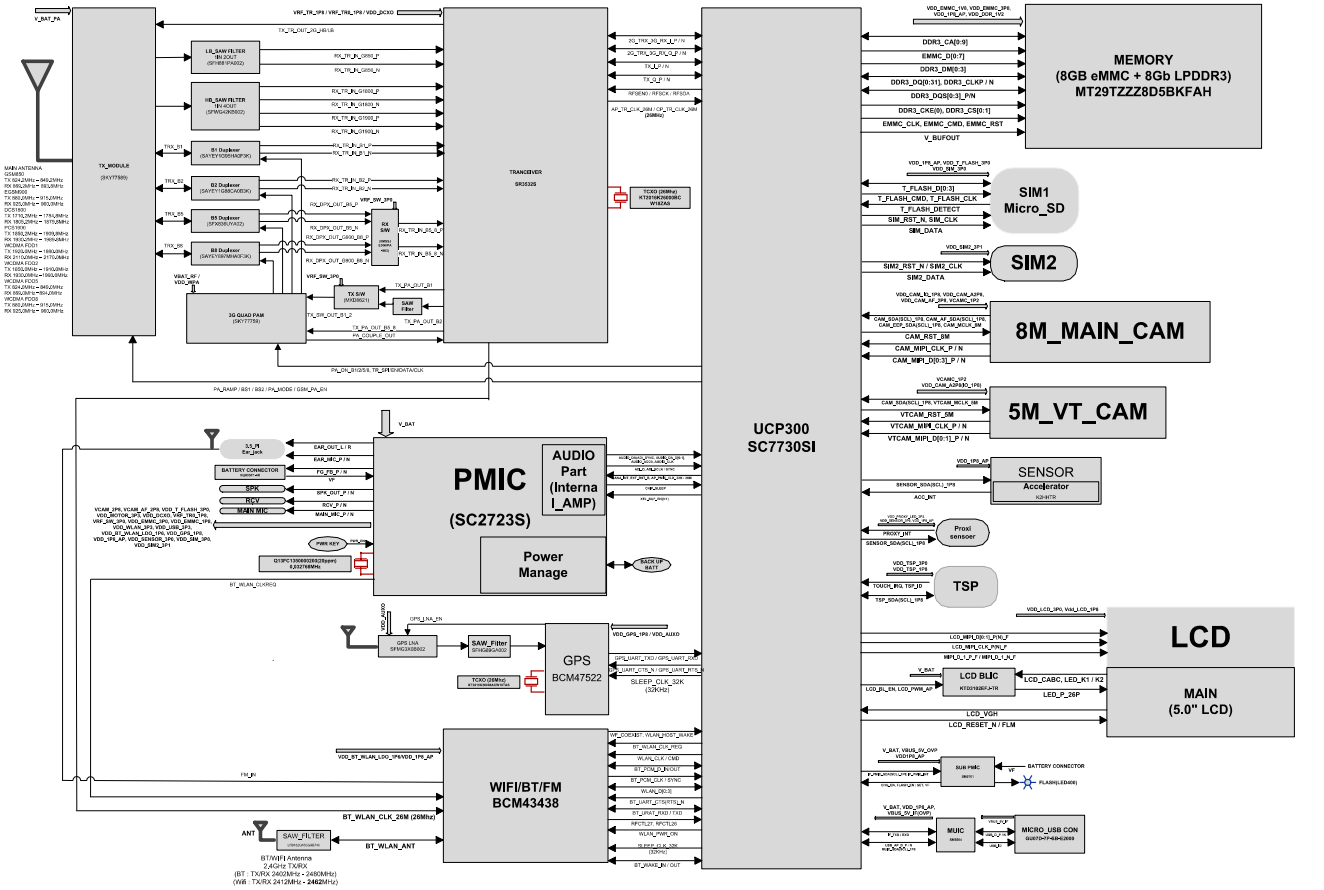
3301-001789	L400	CORE-FERRITE BEAD
3301-001812	L600	CORE-FERRITE BEAD
3301-001885	L500,L503,L507	CORE-FERRITE BEAD
3301-001895	L200,L205	CORE-FERRITE BEAD
3301-001901	L601	CORE-FERRITE BEAD
3301-001917	L502,L515,L516	CORE-FERRITE BEAD
3301-002078	L501,L504	CORE-FERRITE BEAD
3301-002228	L104	CORE-FERRITE BEAD
3301-002236	L511	CORE-FERRITE BEAD
3301-002254	L409	CORE-FERRITE BEAD
3301-002286	L512,L513	CORE-FERRITE BEAD
3404-001550	TAC400,TAC401,TAC402	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	ANT500,ANT501	CONNECTOR
3712-001540	ANT400,ANT401,ANT502	CONNECTOR
3712-001540	ANT503	CONNECTOR
3712-001541	ANT101,ANT200,ANT201	CONNECTOR
3722-003708	IFC400	CONNECTOR
GH61-04949A	ANT102	CONNECTOR
GH61-07601A	SUS109	PLATE-SMD TOP
GH61-07602A	SUS107,SUS108	PLATE-SMD BTM
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
GH98-35698A	SC103	SHIELDCAN
GH98-35699A	SC104	SHIELDCAN
GH98-37640A	SC105	SHIELDCAN

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

8. Level 3 Repair

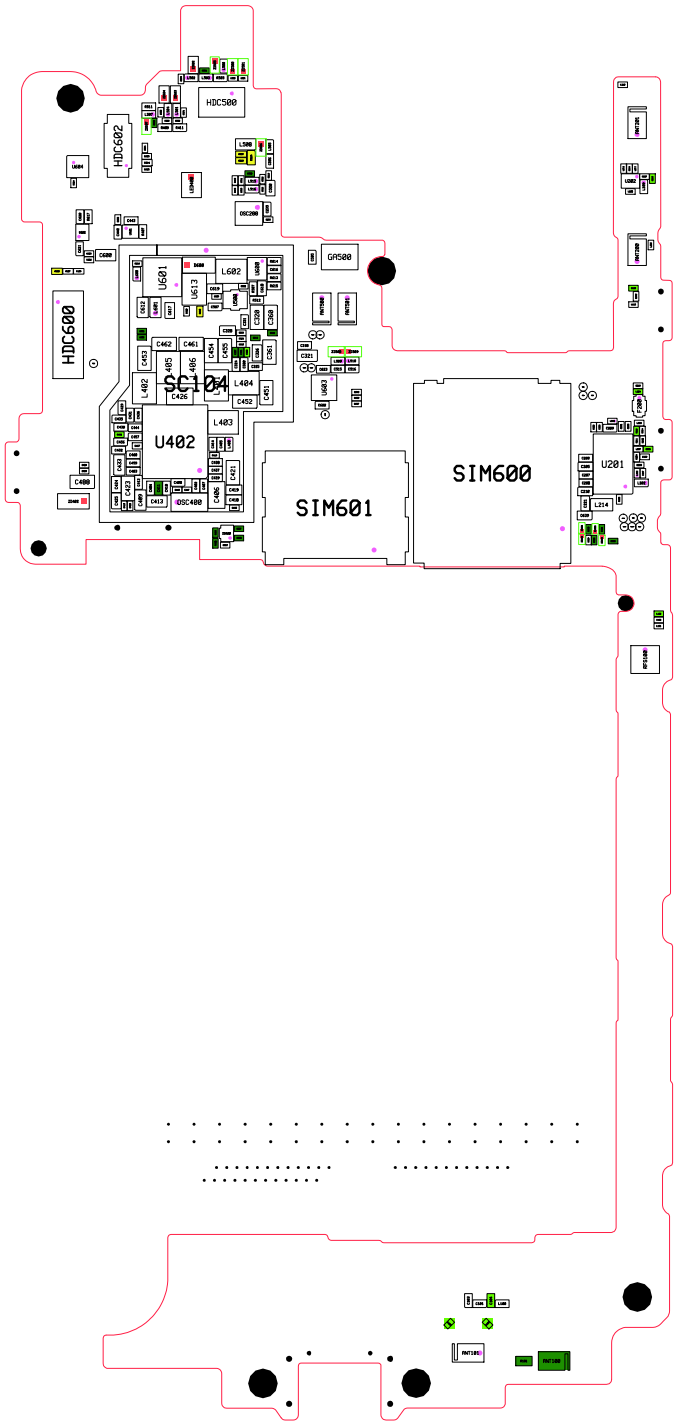
8-1. Block Diagram

SM-G531H/DS REV1.0 Block Diagram

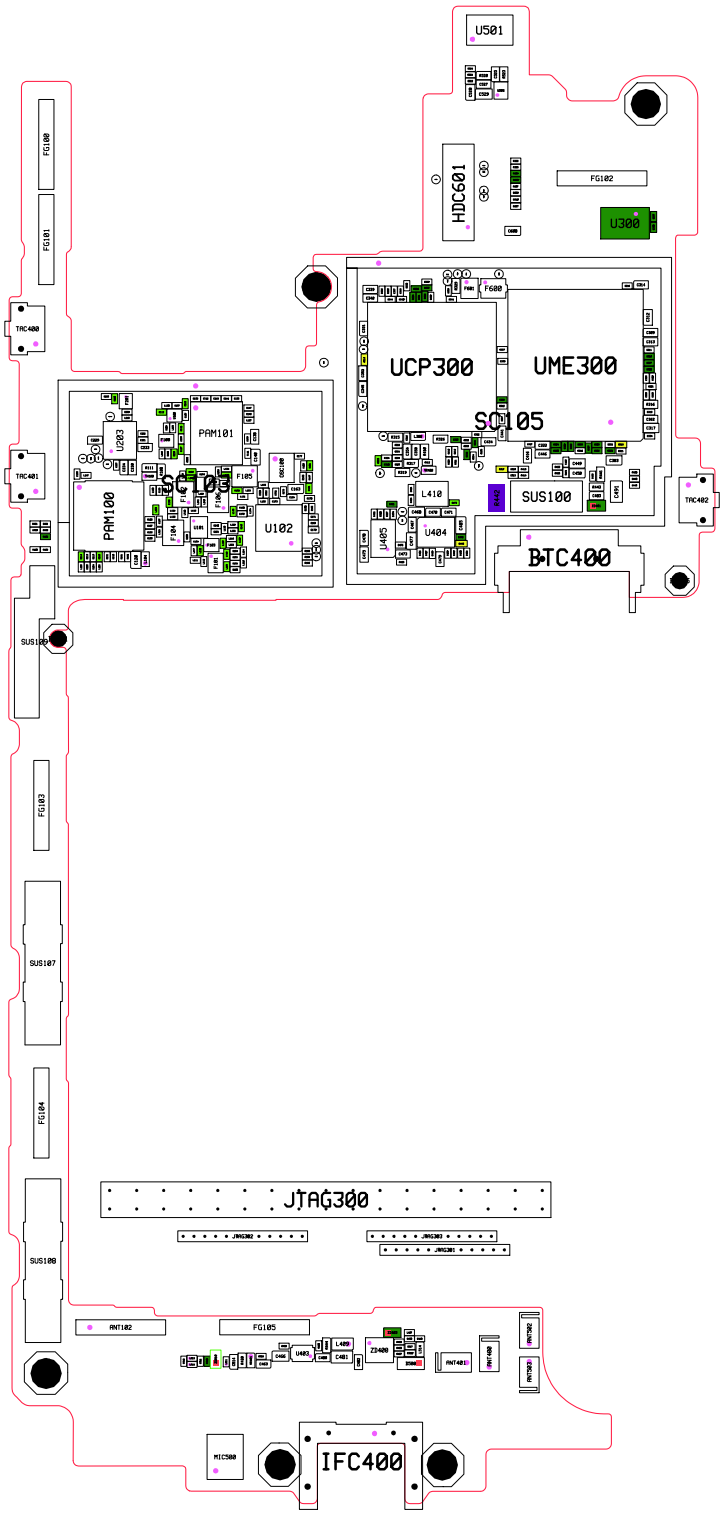


8-2. PCB Diagrams

8-2-1. Top

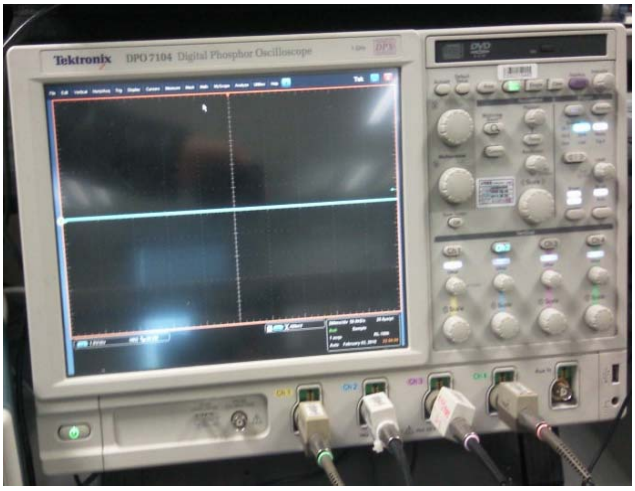


8-2-2. Bottom



8-3. Flow Chart of Troubleshooting

Equipments

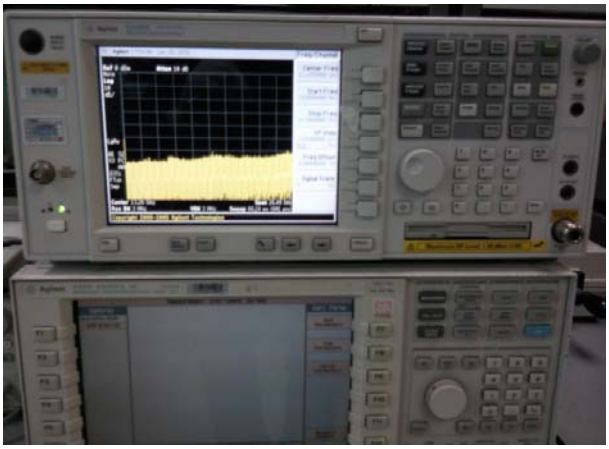


↑ Oscilloscope

↑ Digital Multimeter

↑ Power Supply

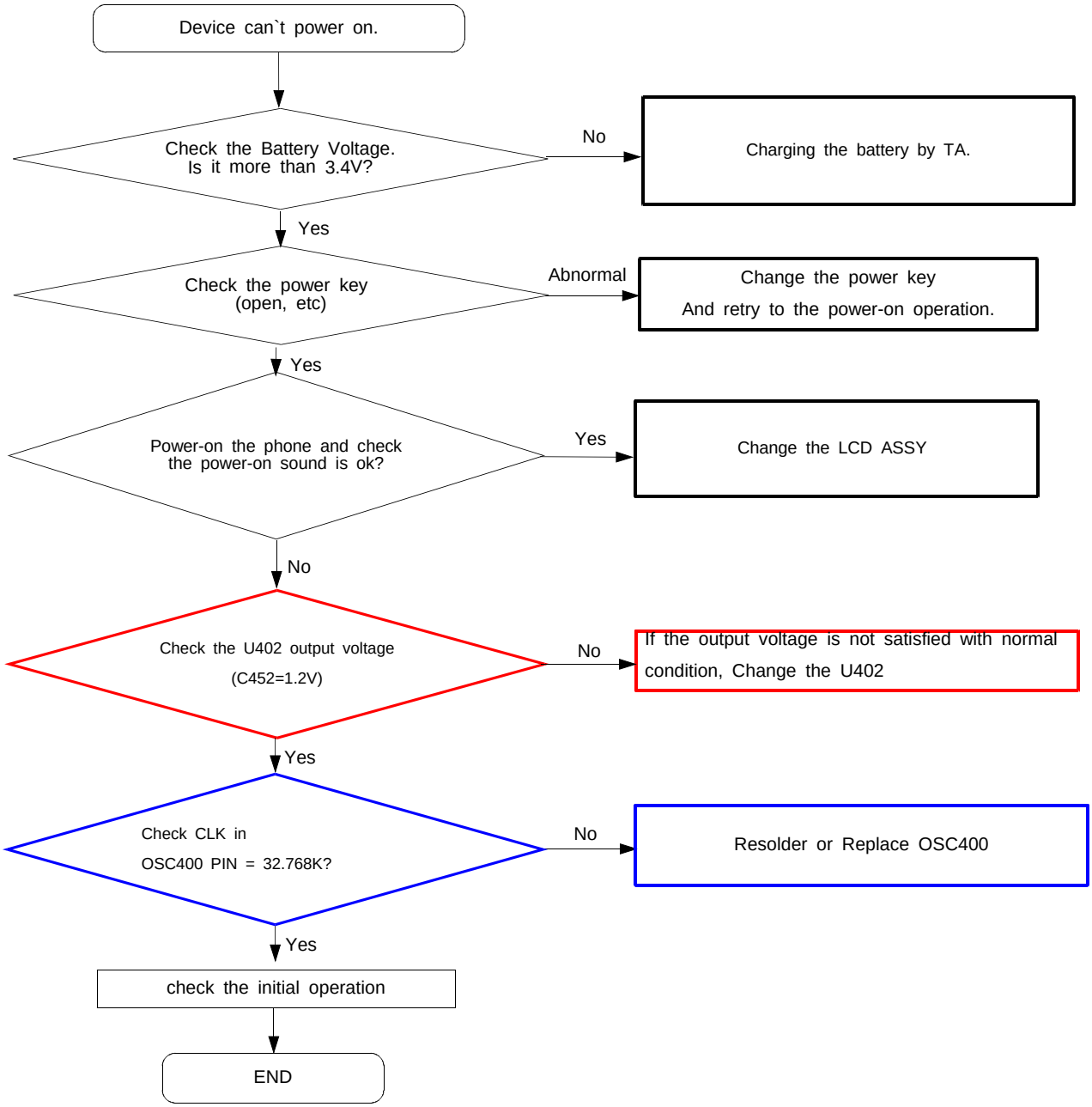
↑ + driver, ESD Safe Tweezer

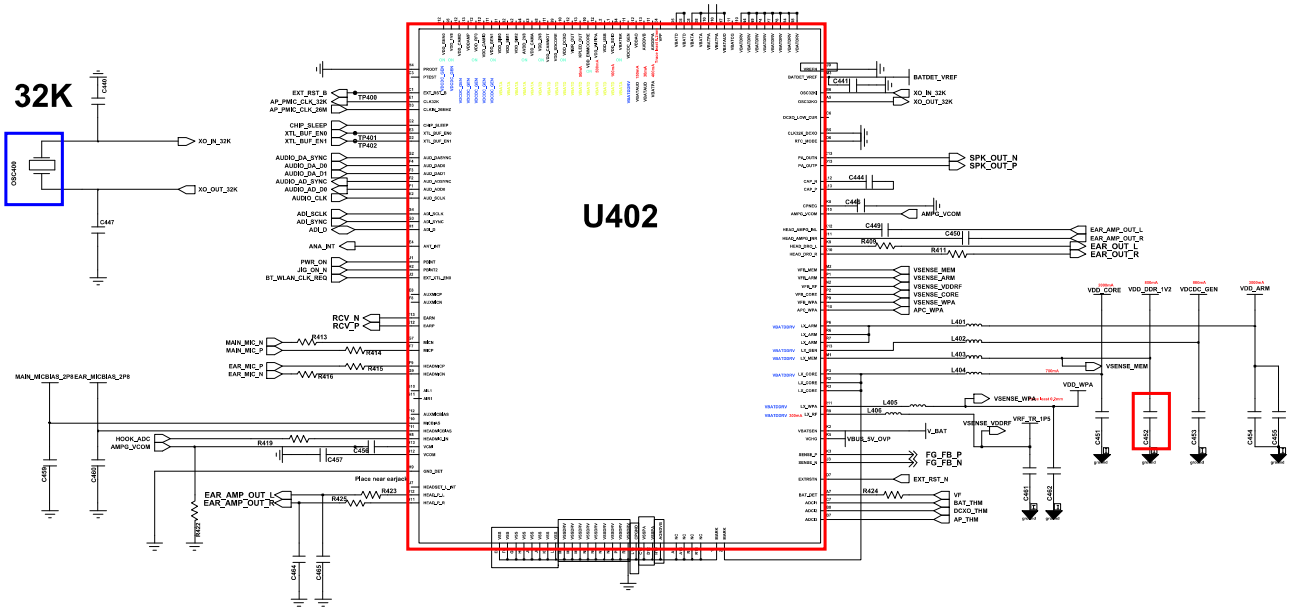


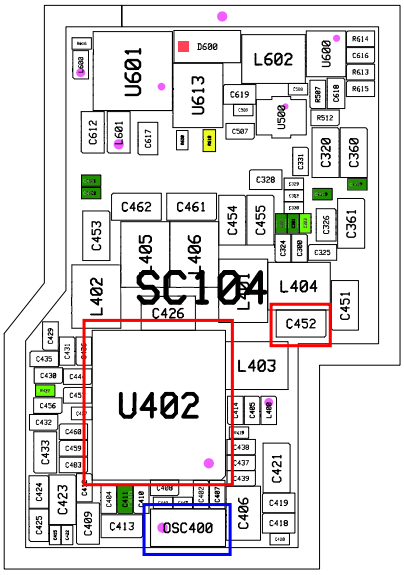
↑ 8960 & Spectrum Analyzer

↑ Soldering iron

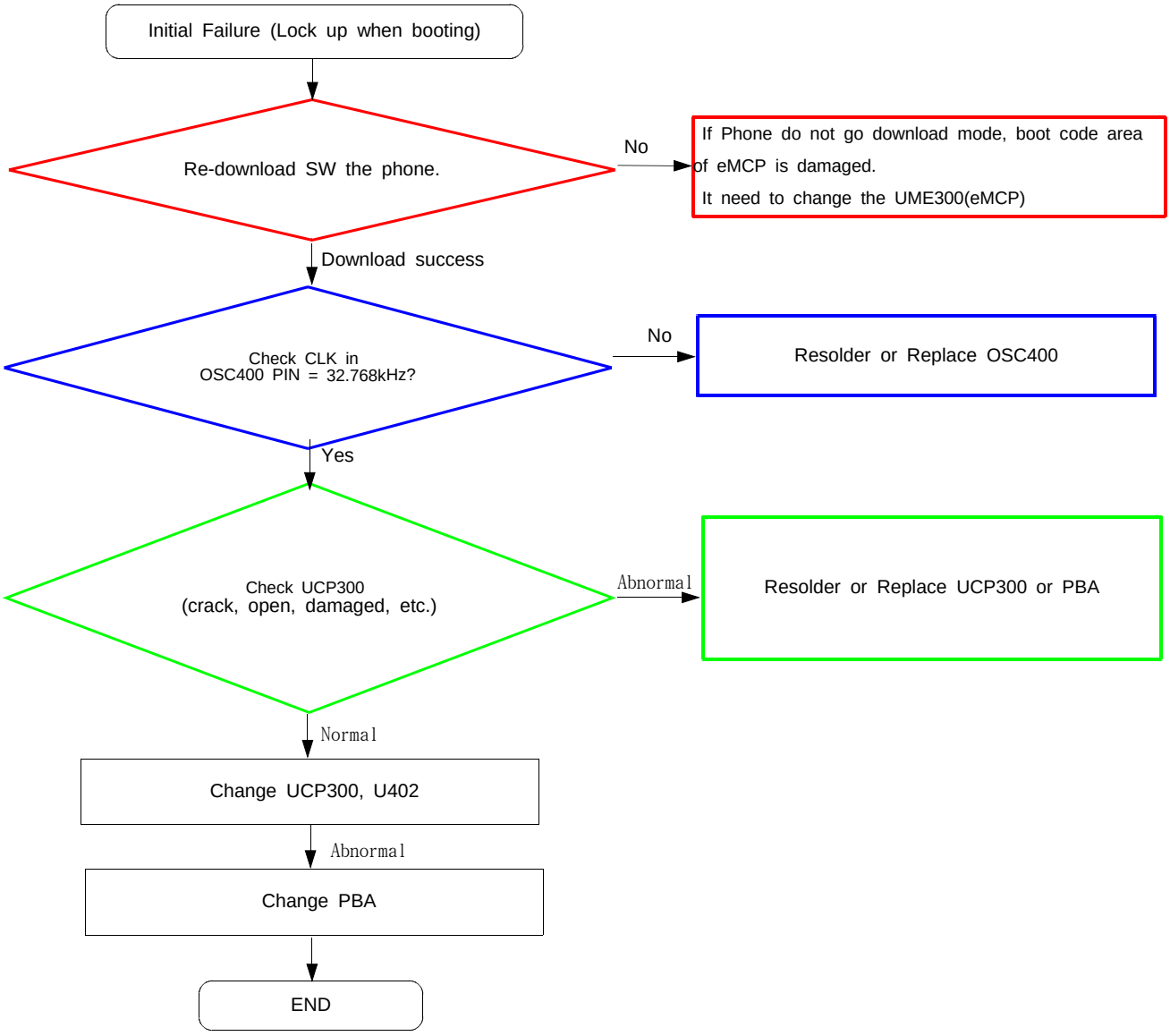
8-3-1. Power On

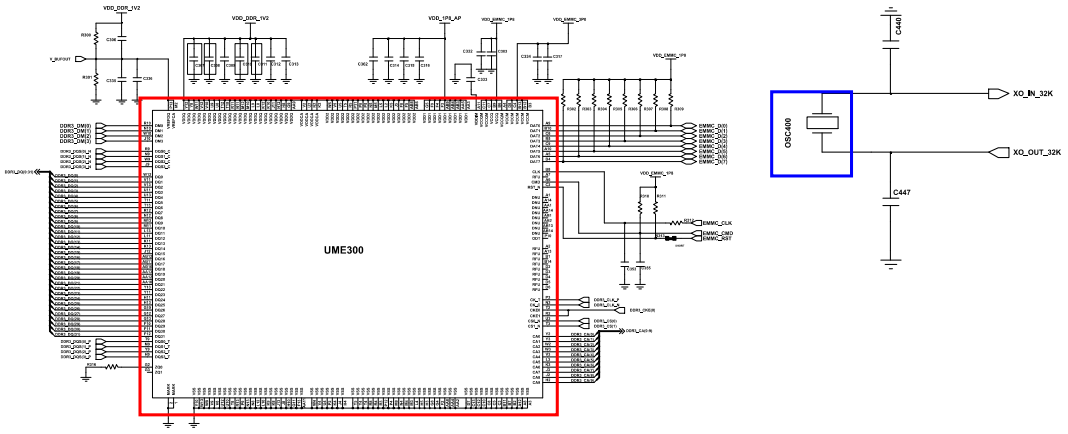


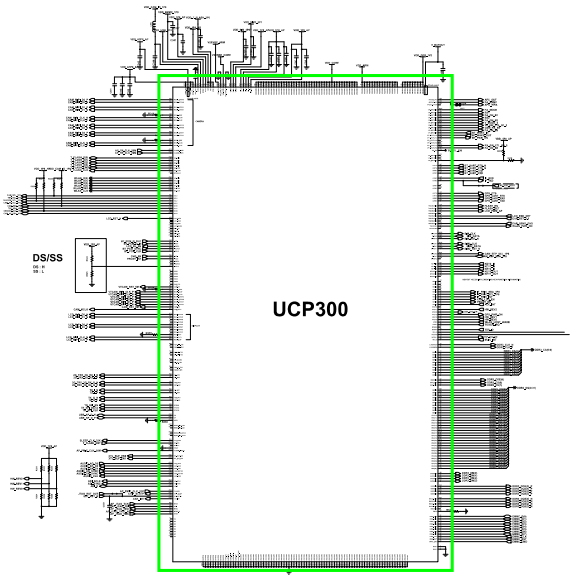


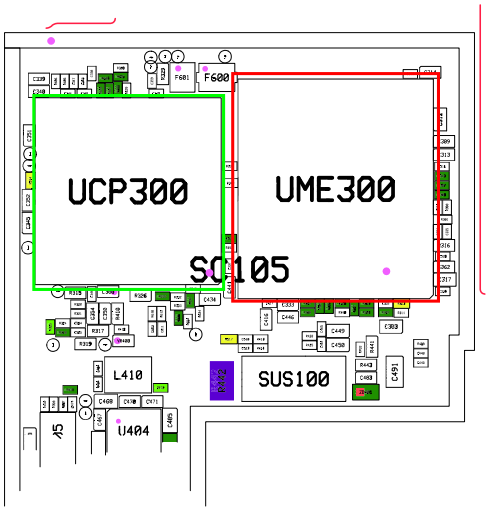


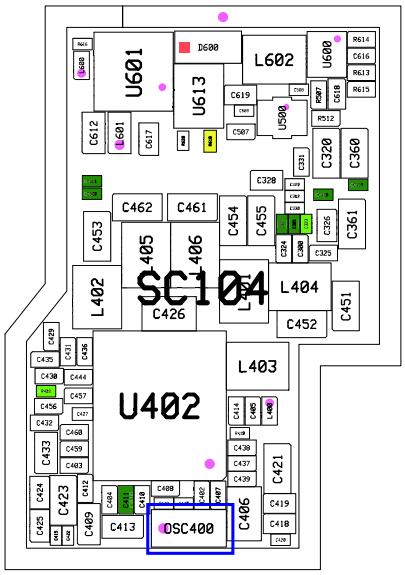
8-3-2. Initial (Lock up)



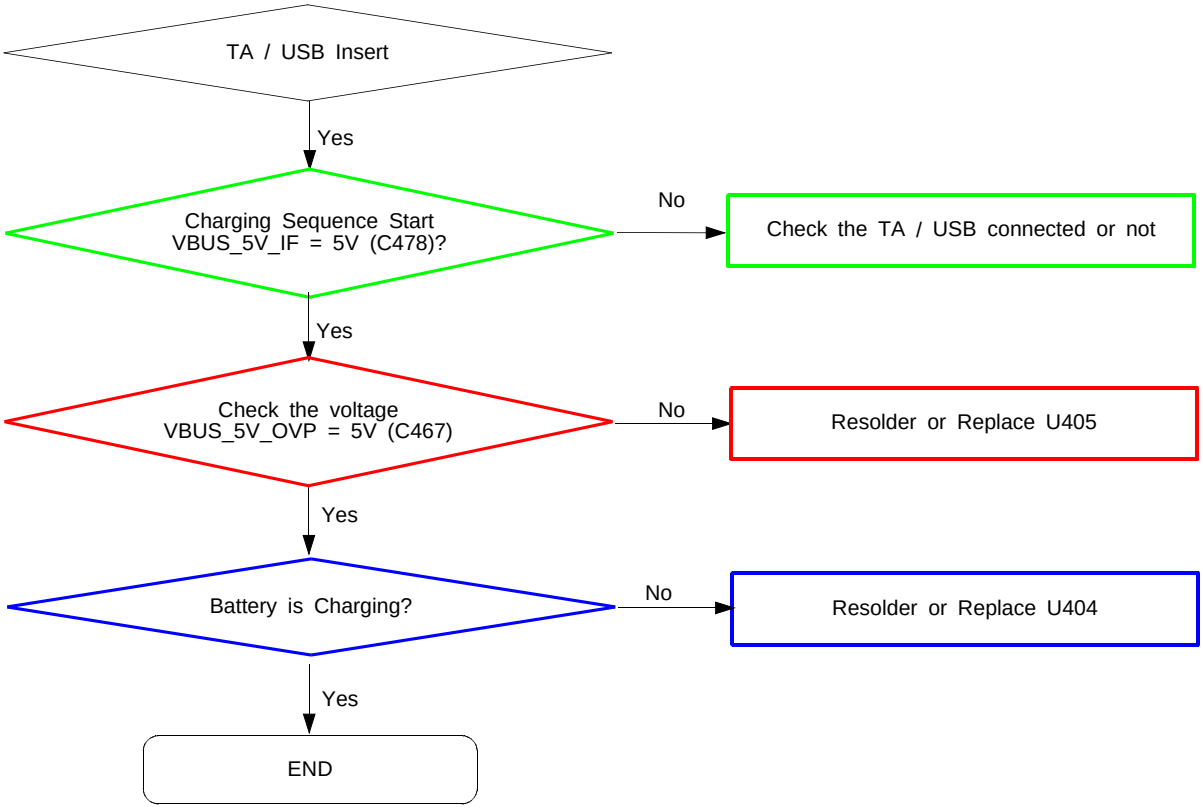


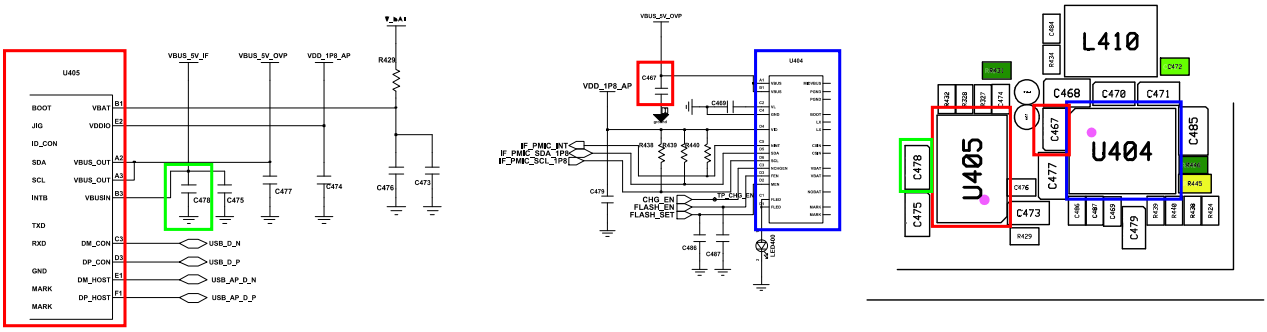




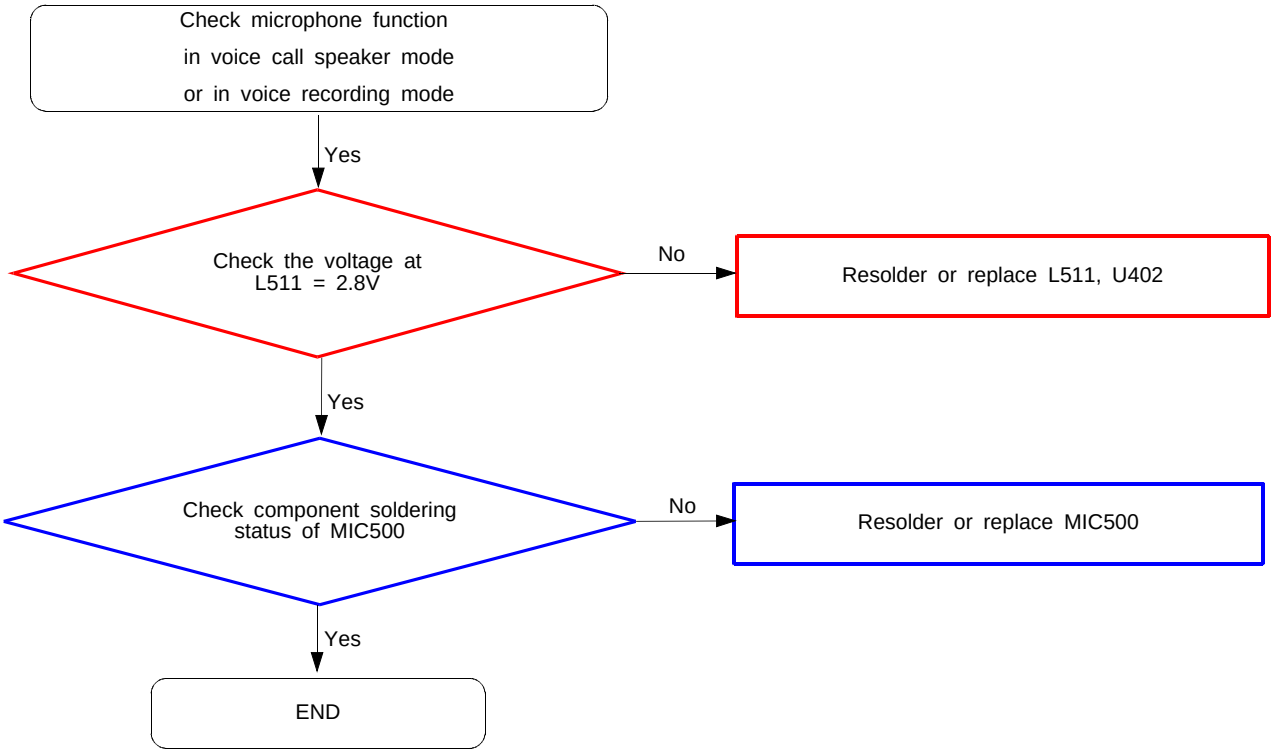


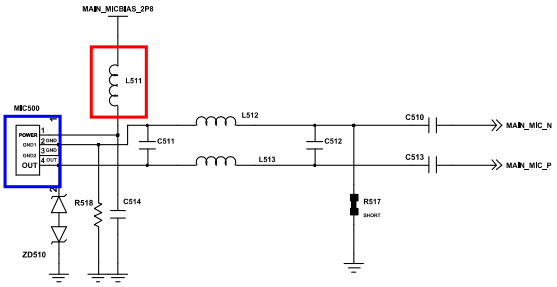
8-3-3. Charging Part

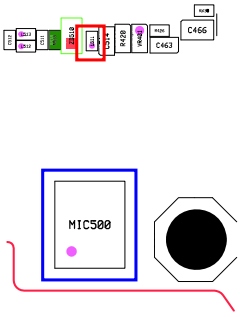


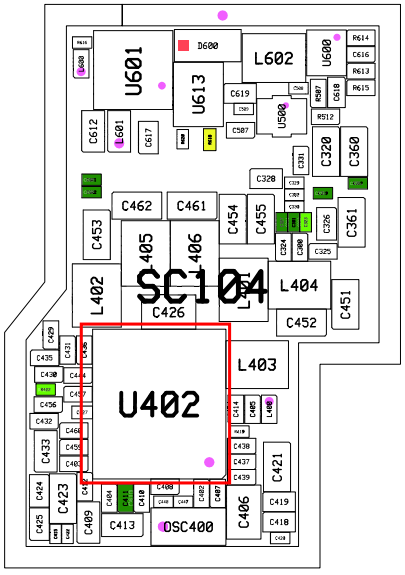


8-3-4. Microphone Part

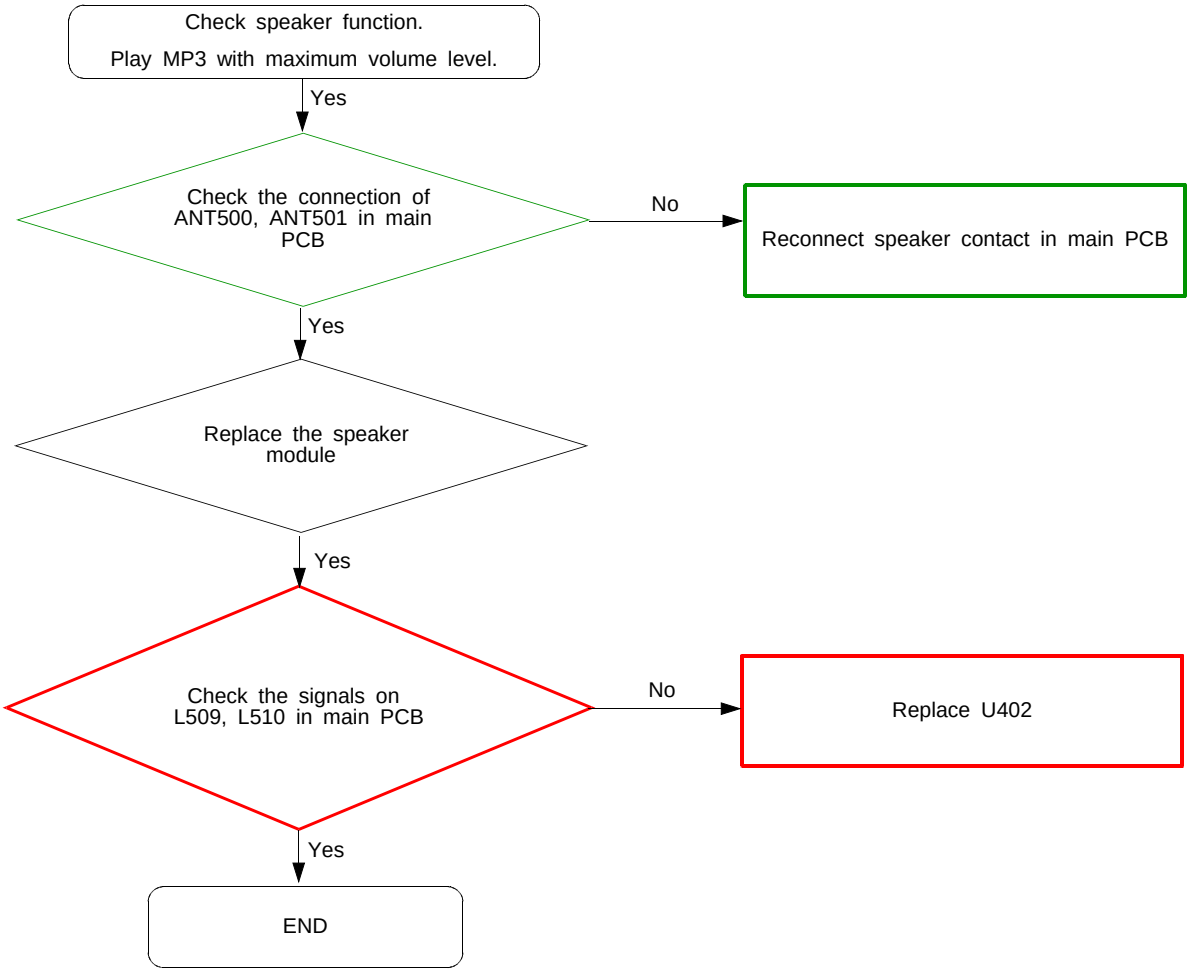


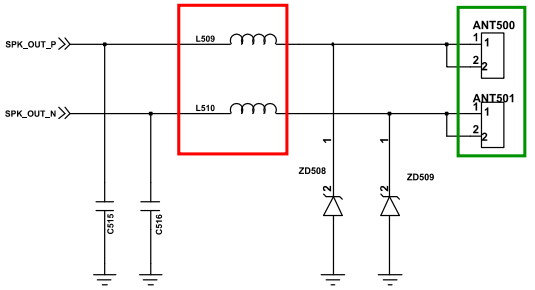


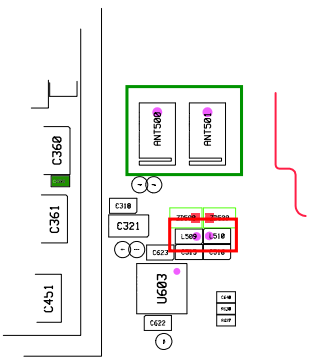


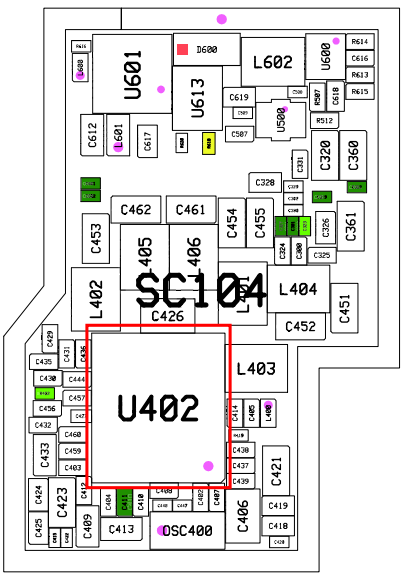


8-3-5. Speaker Part

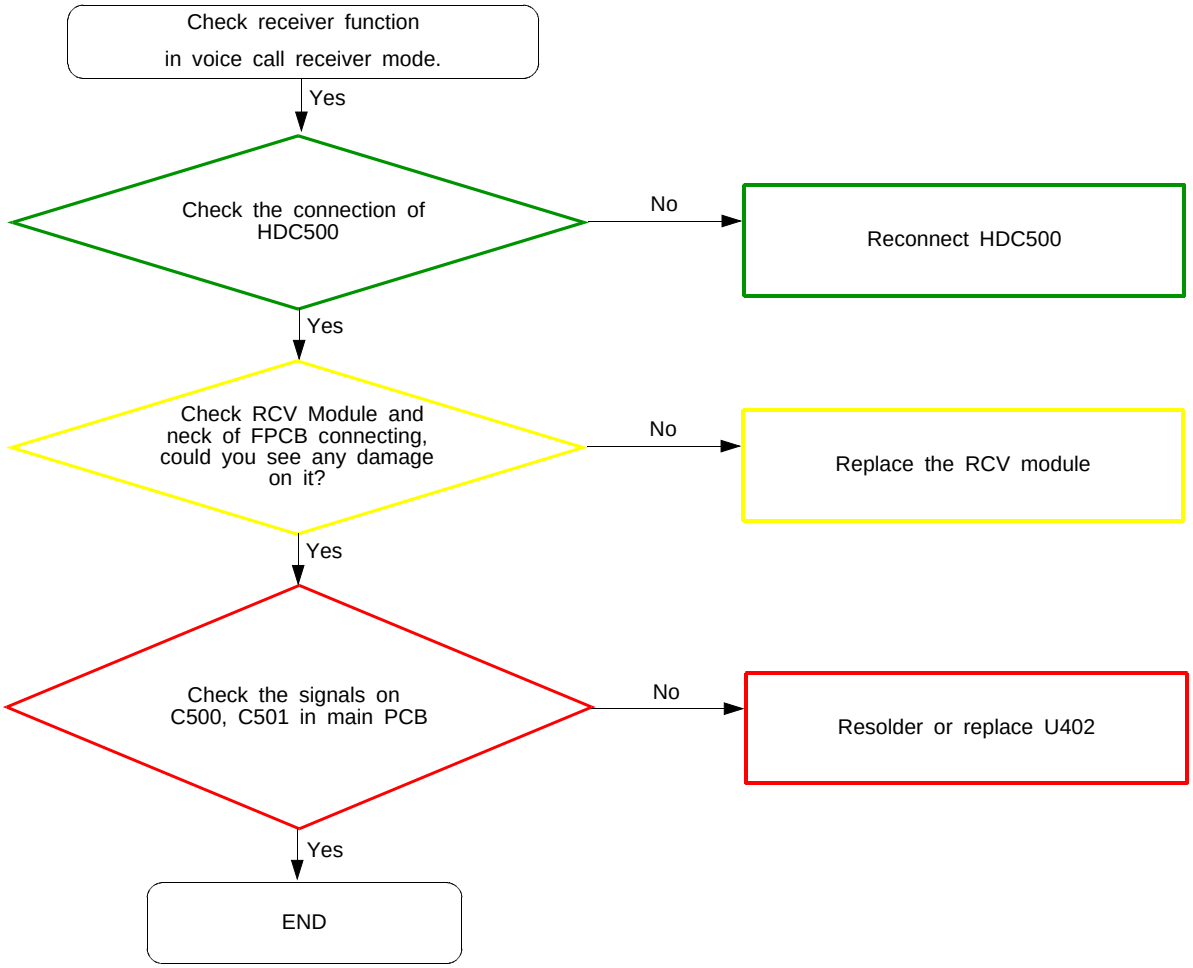


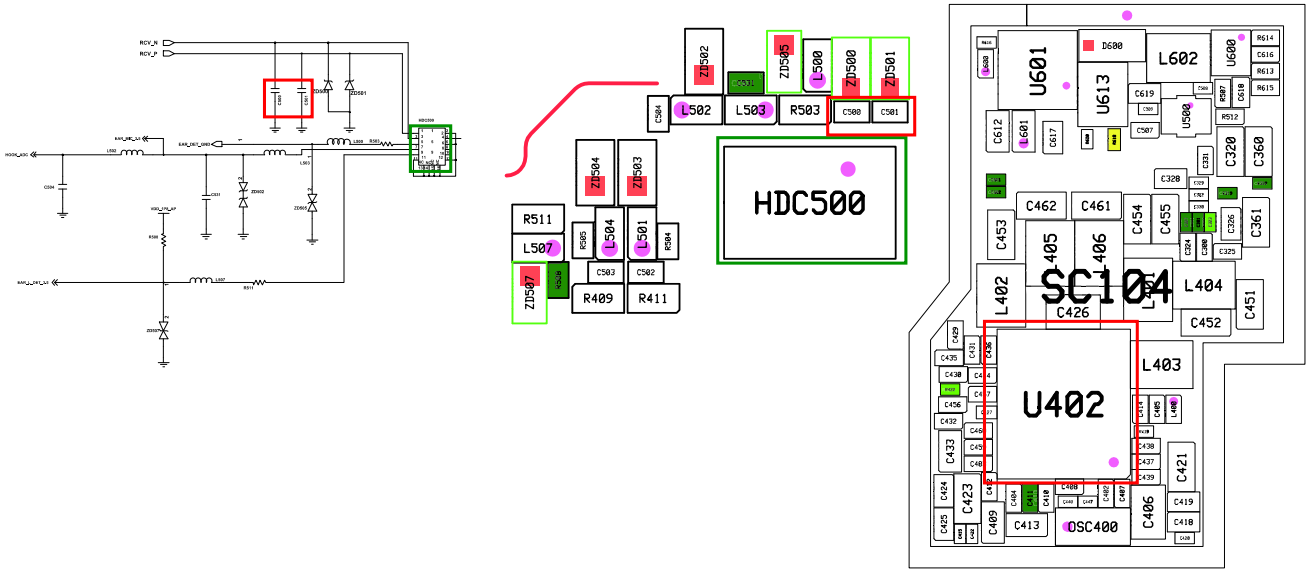




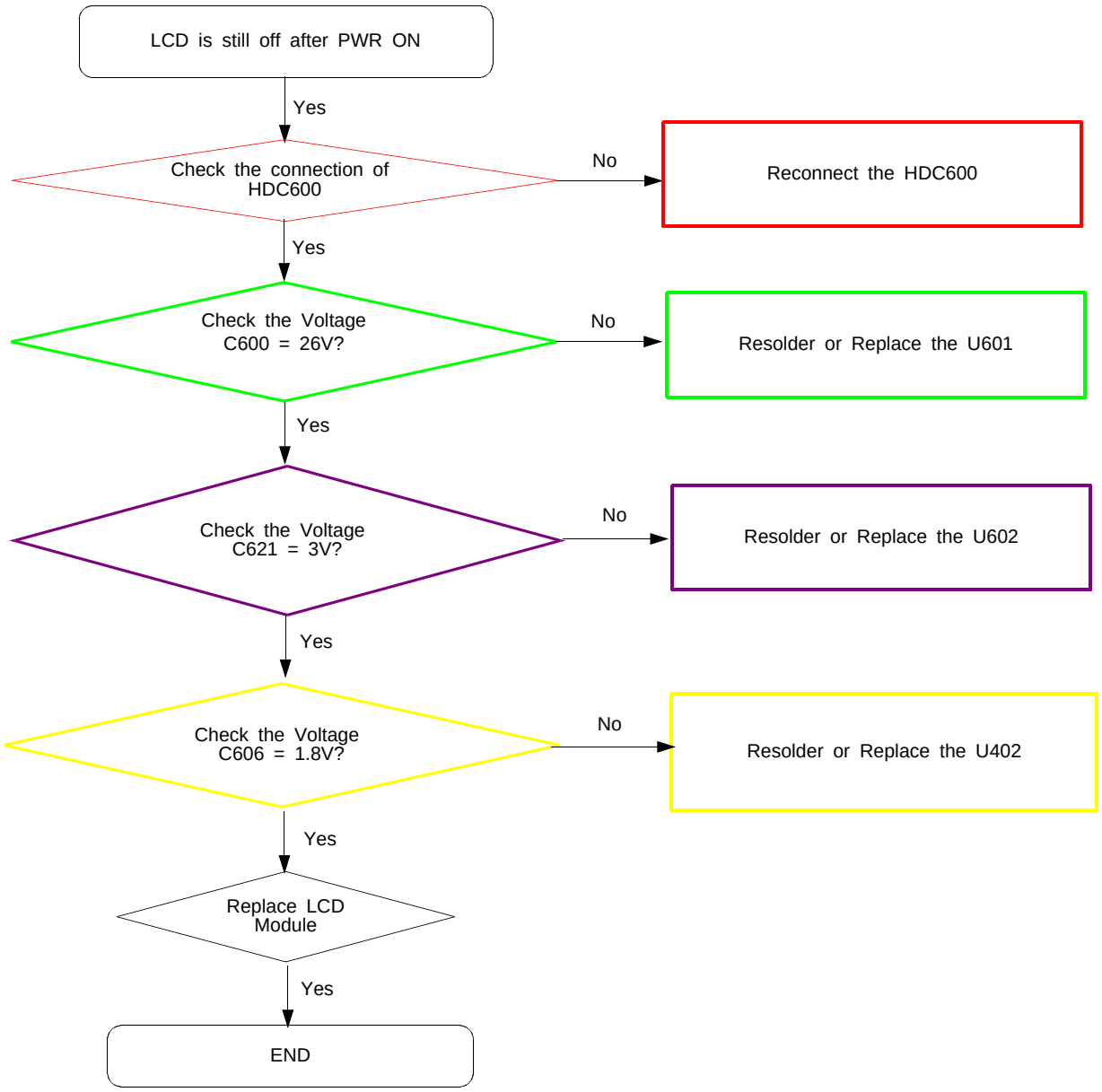


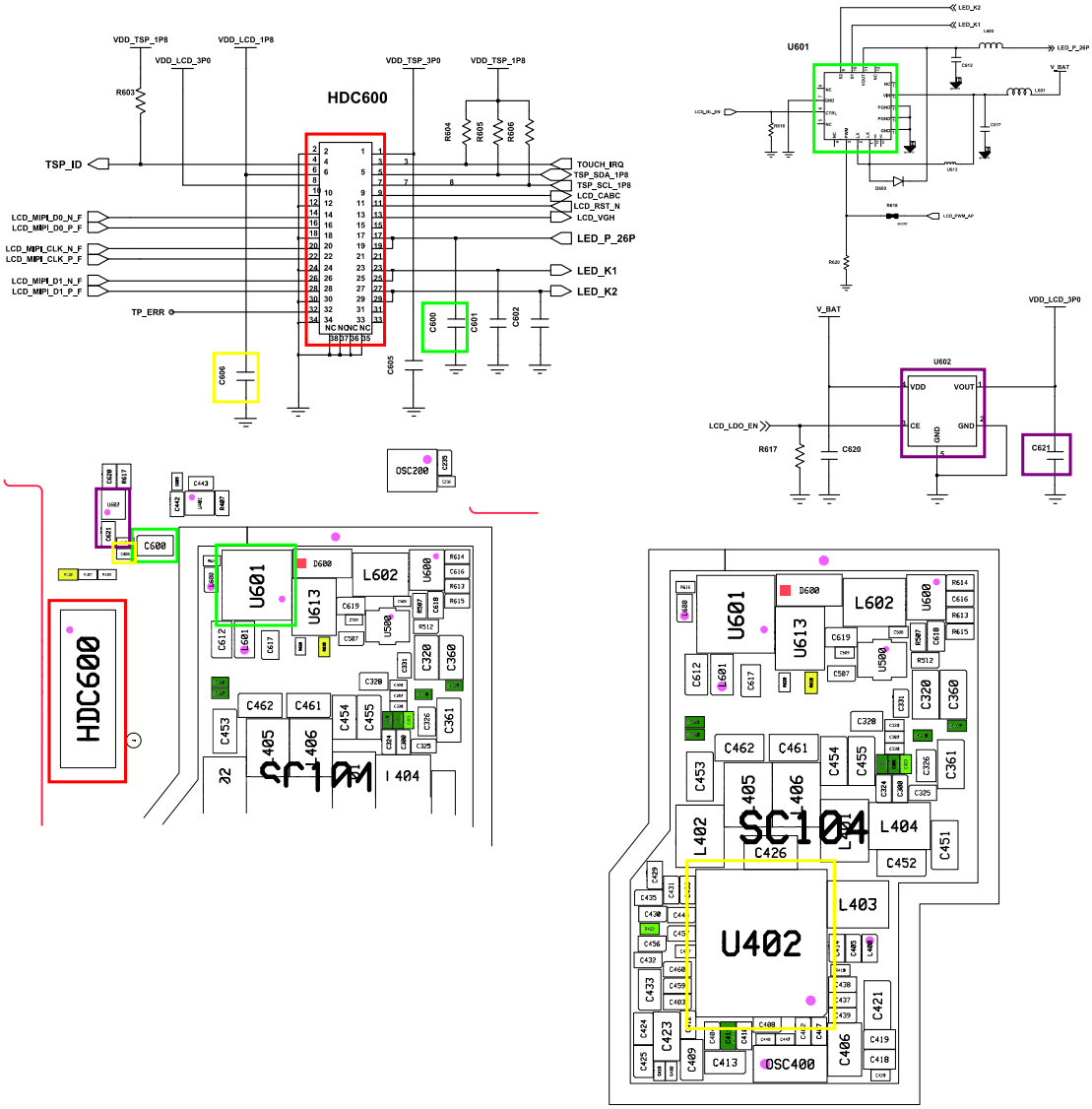
8-3-6. Receiver Part



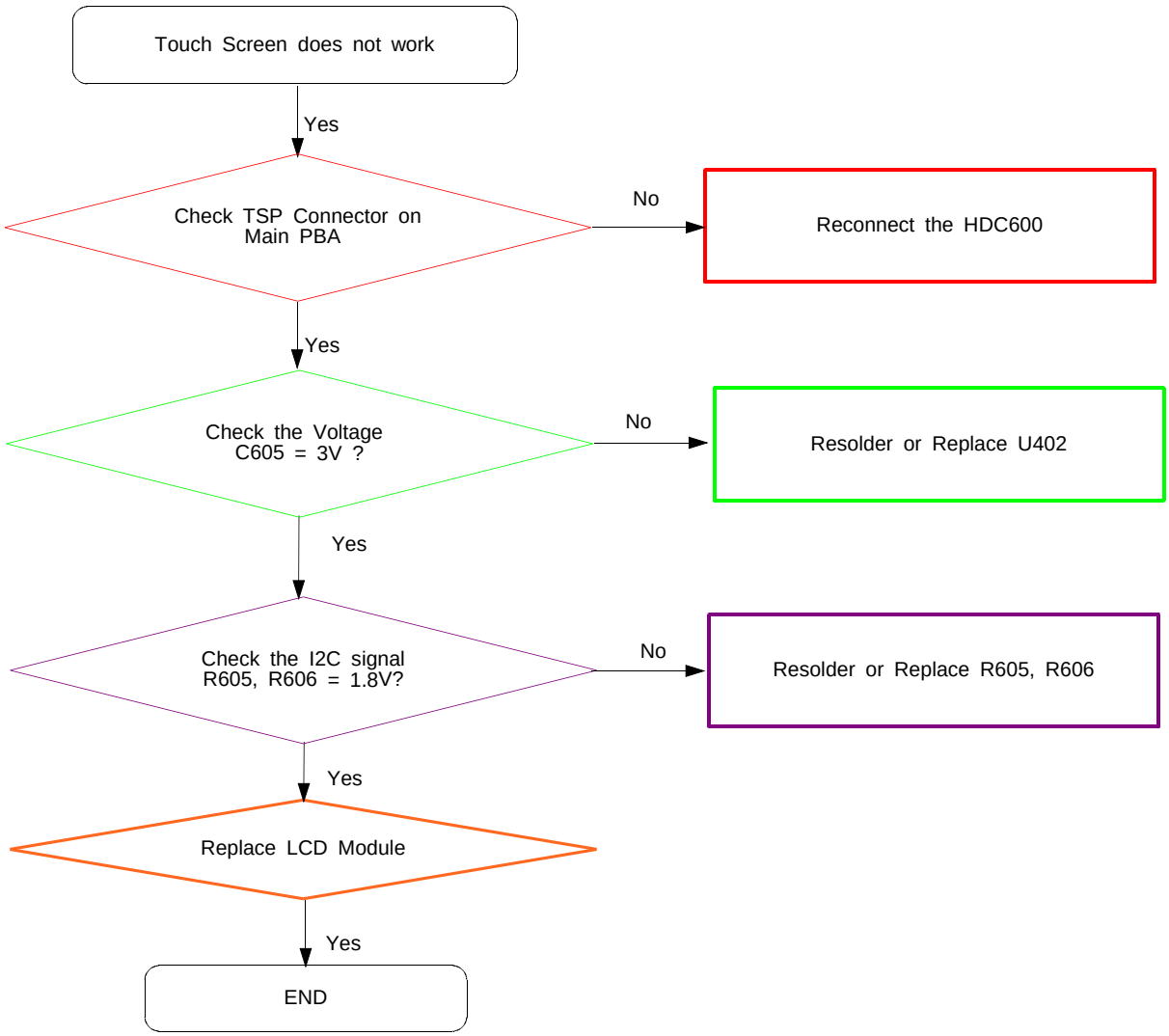


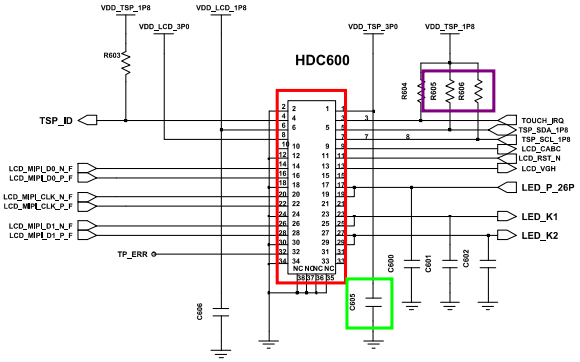
8-3-7. LCD

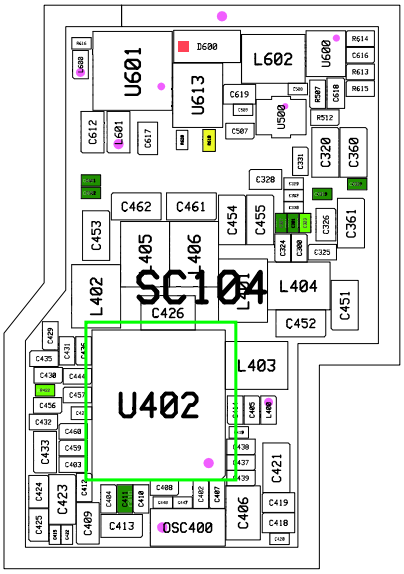


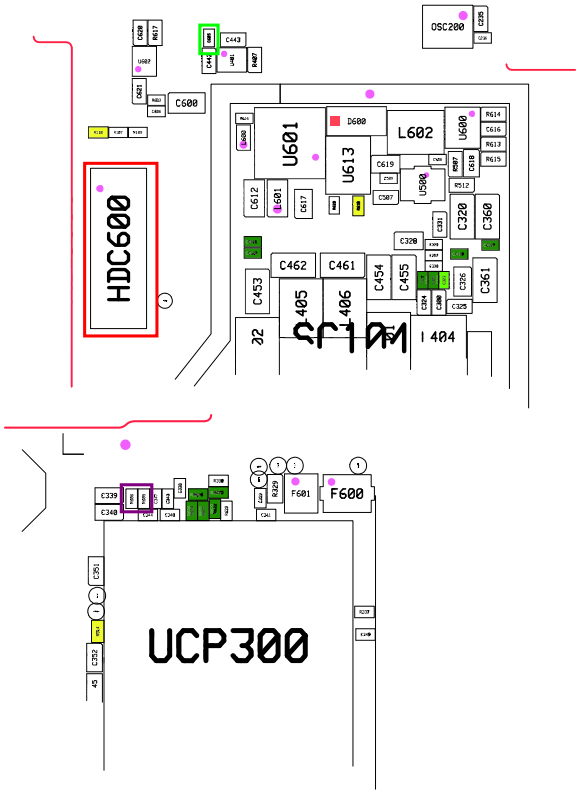


8-3-8. TSP

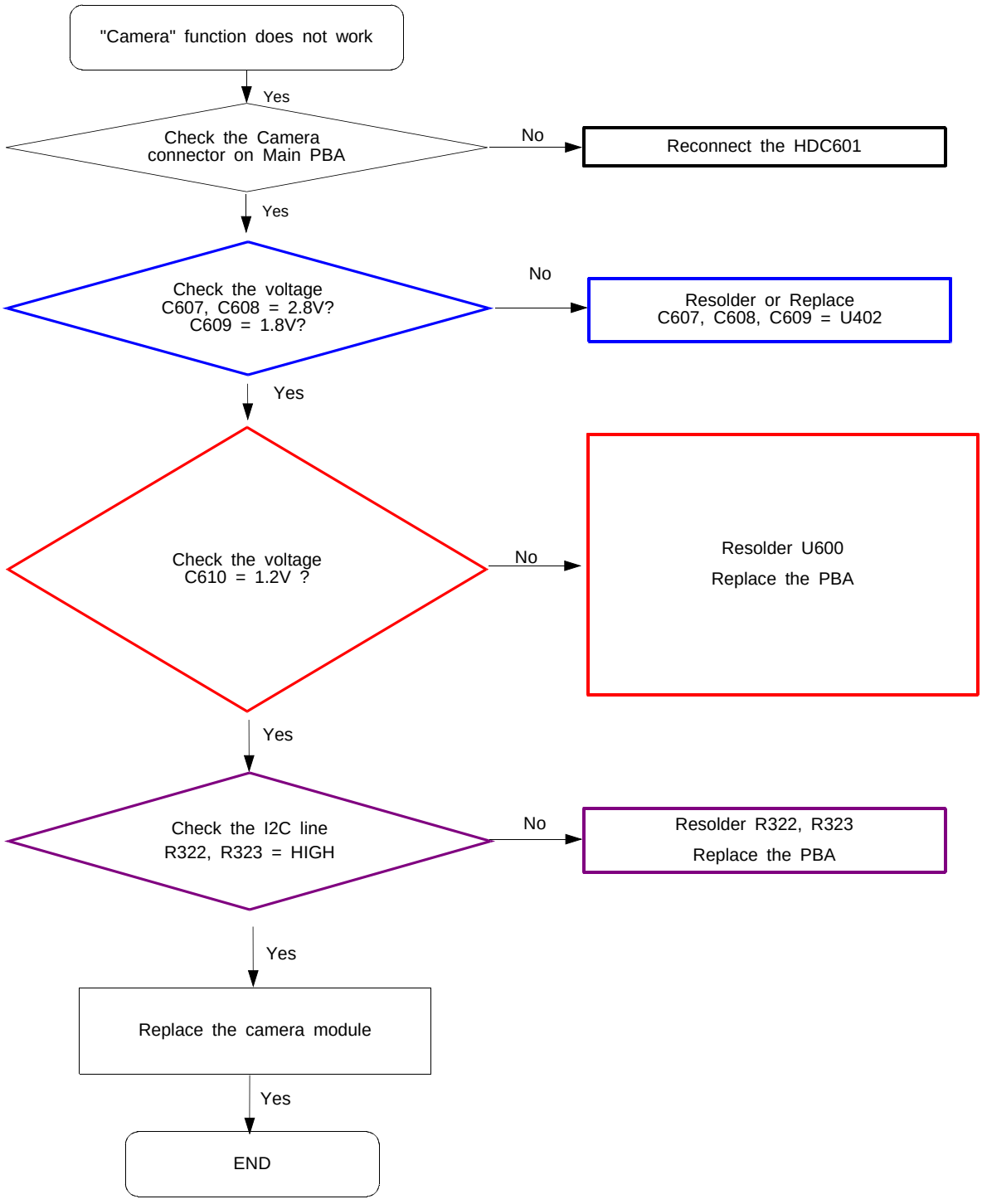


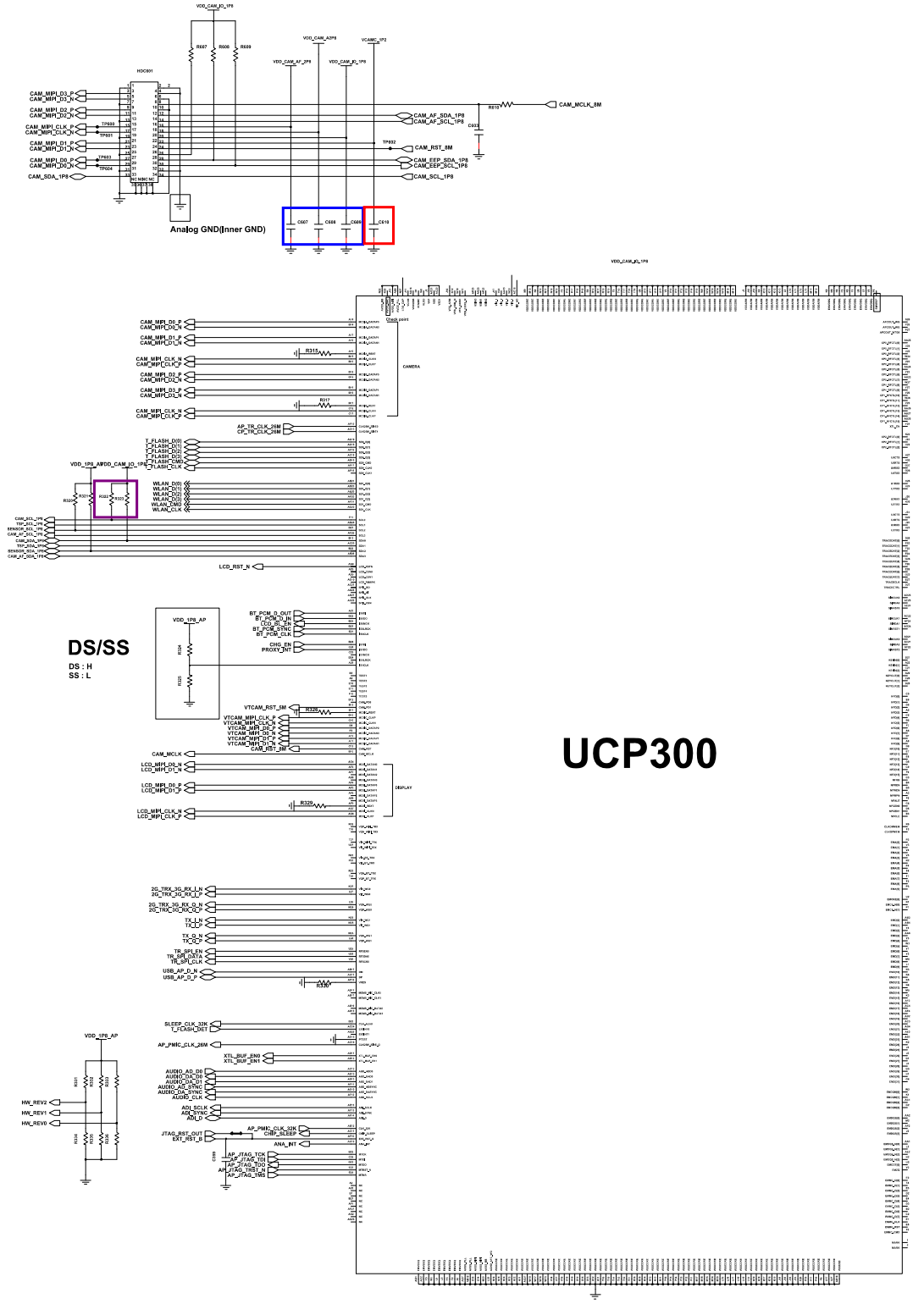


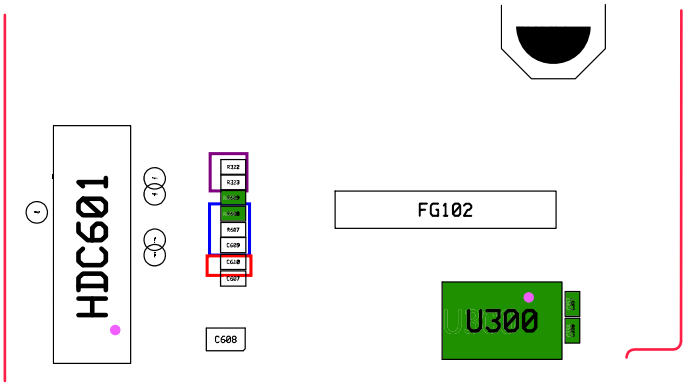


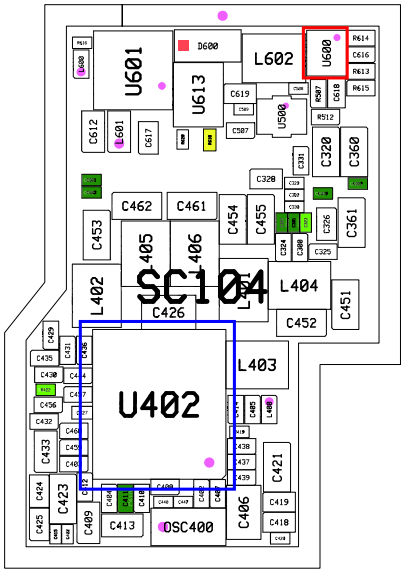


8-3-9. 8M CAM (Main)

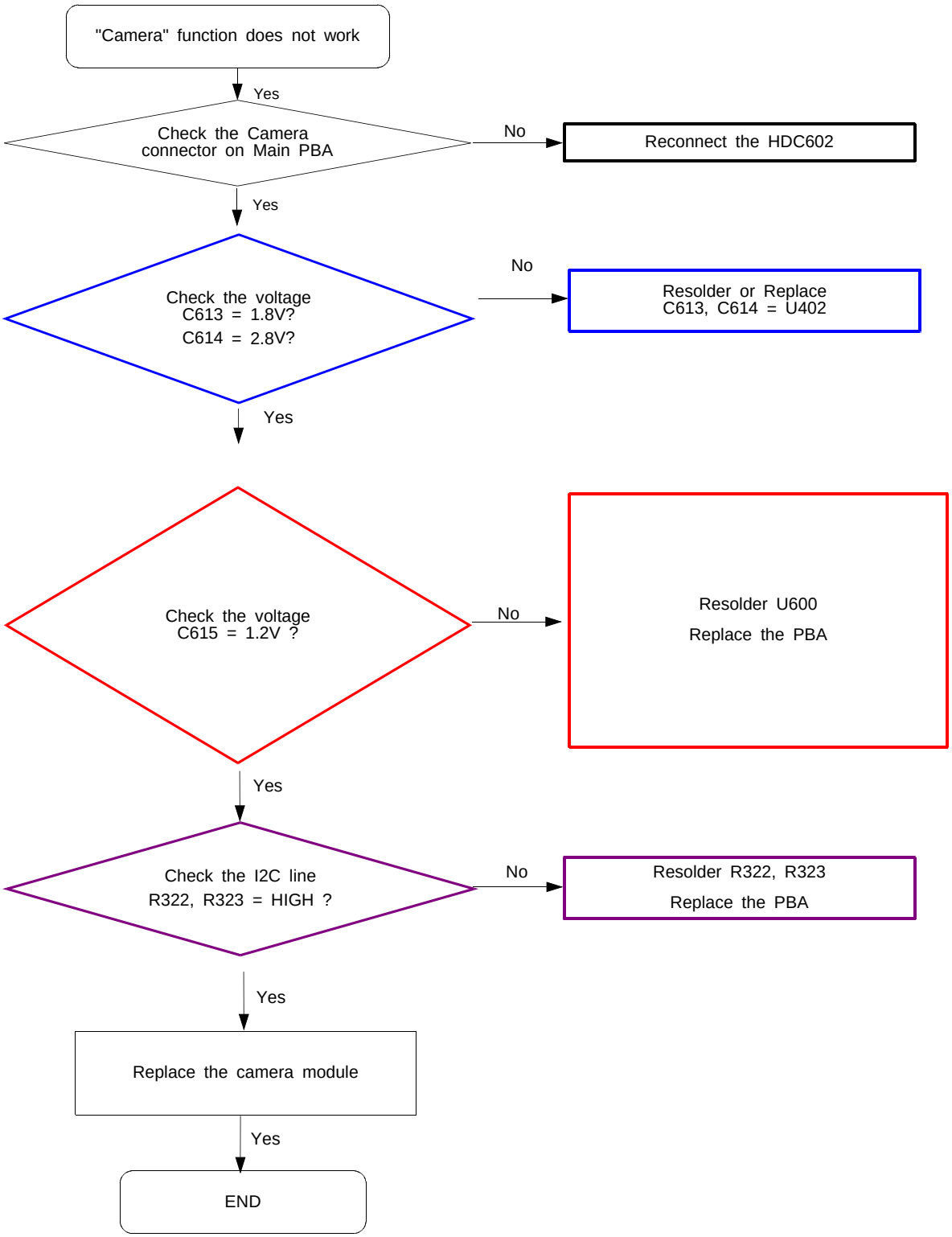


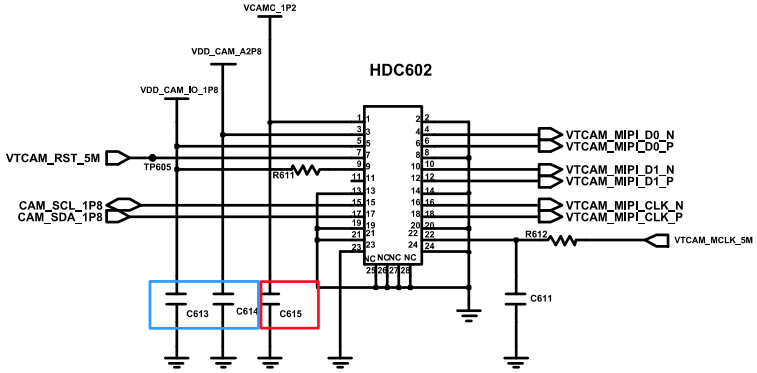


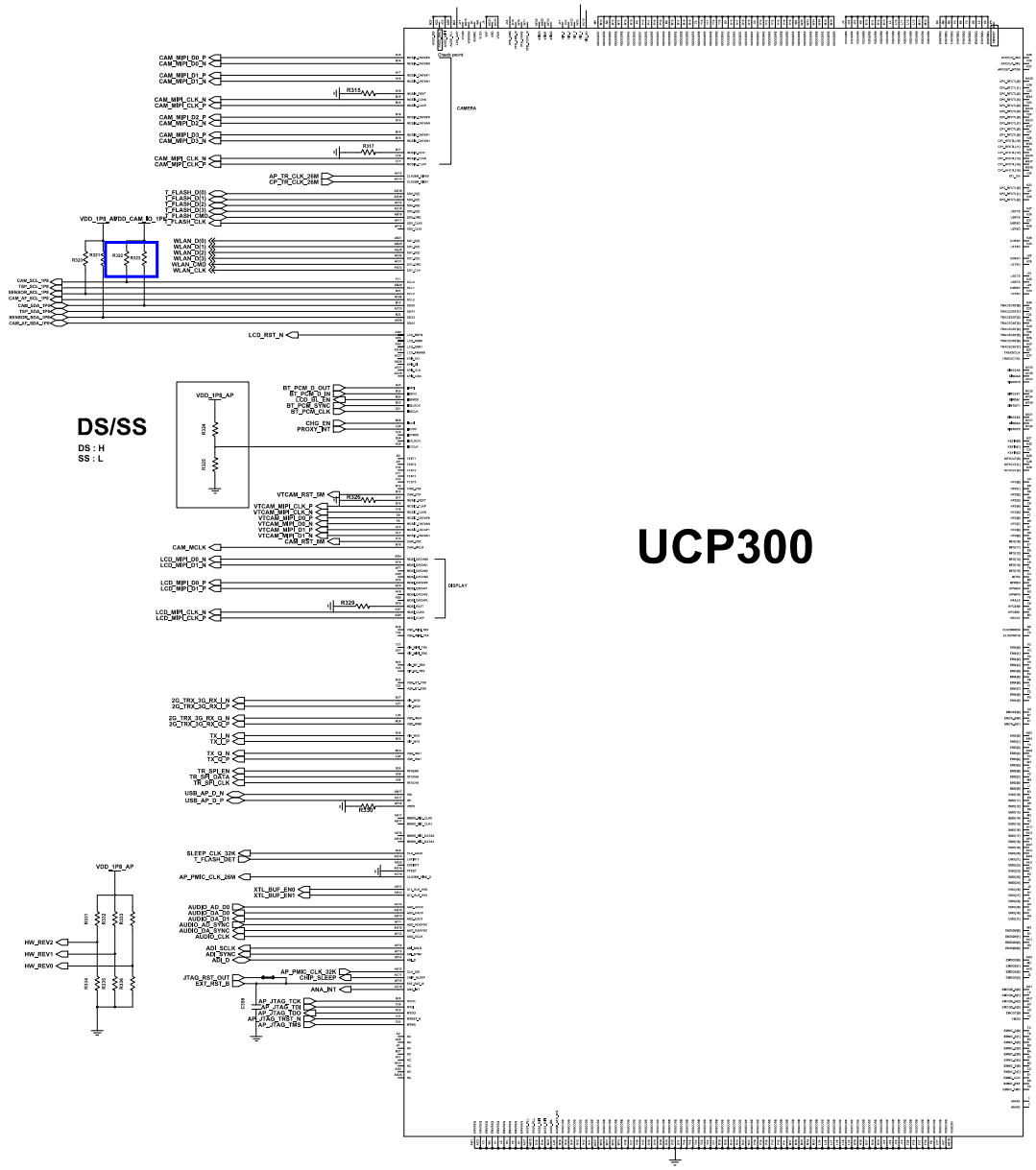


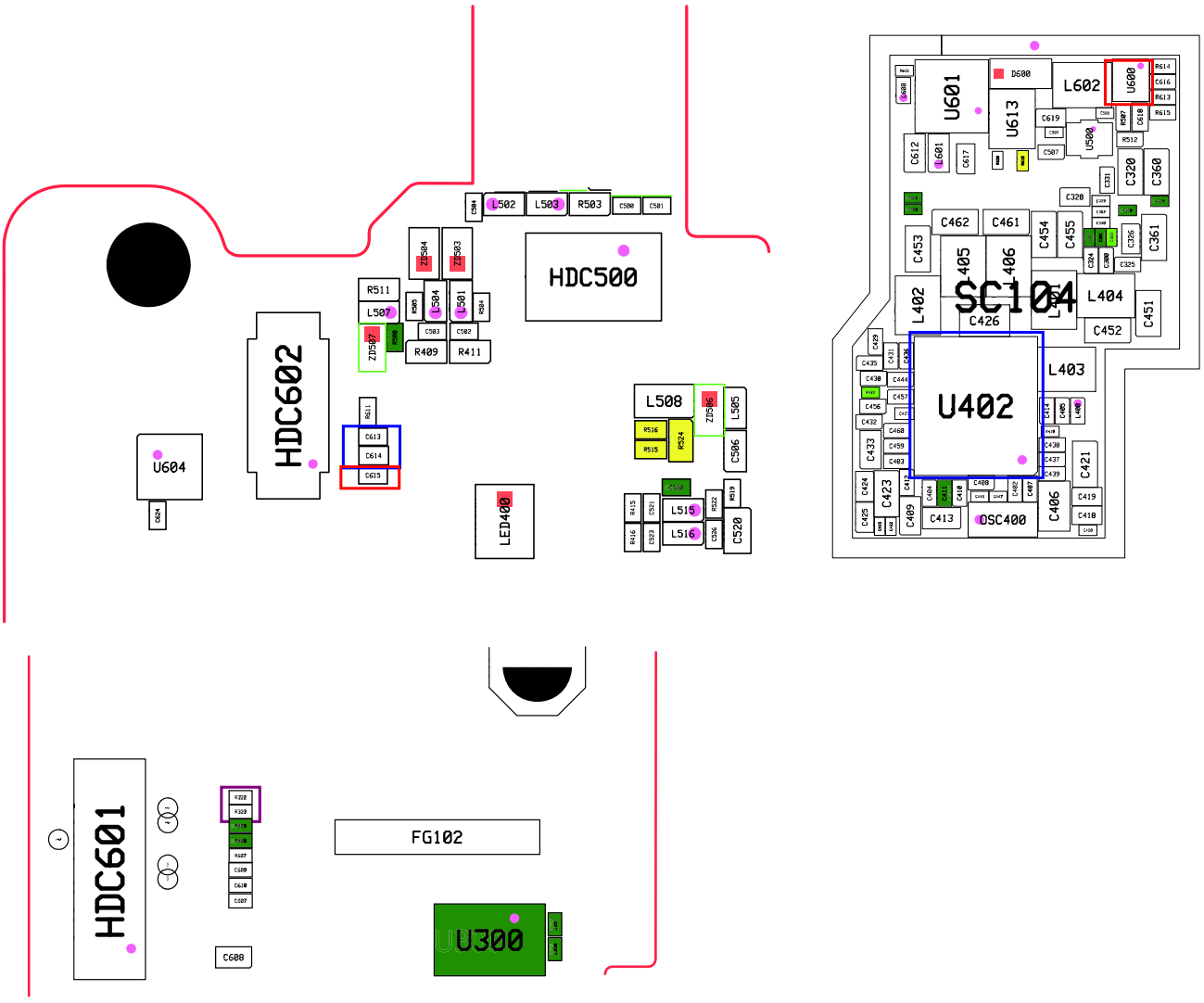


8-3-10. 5M CAM (Sub)

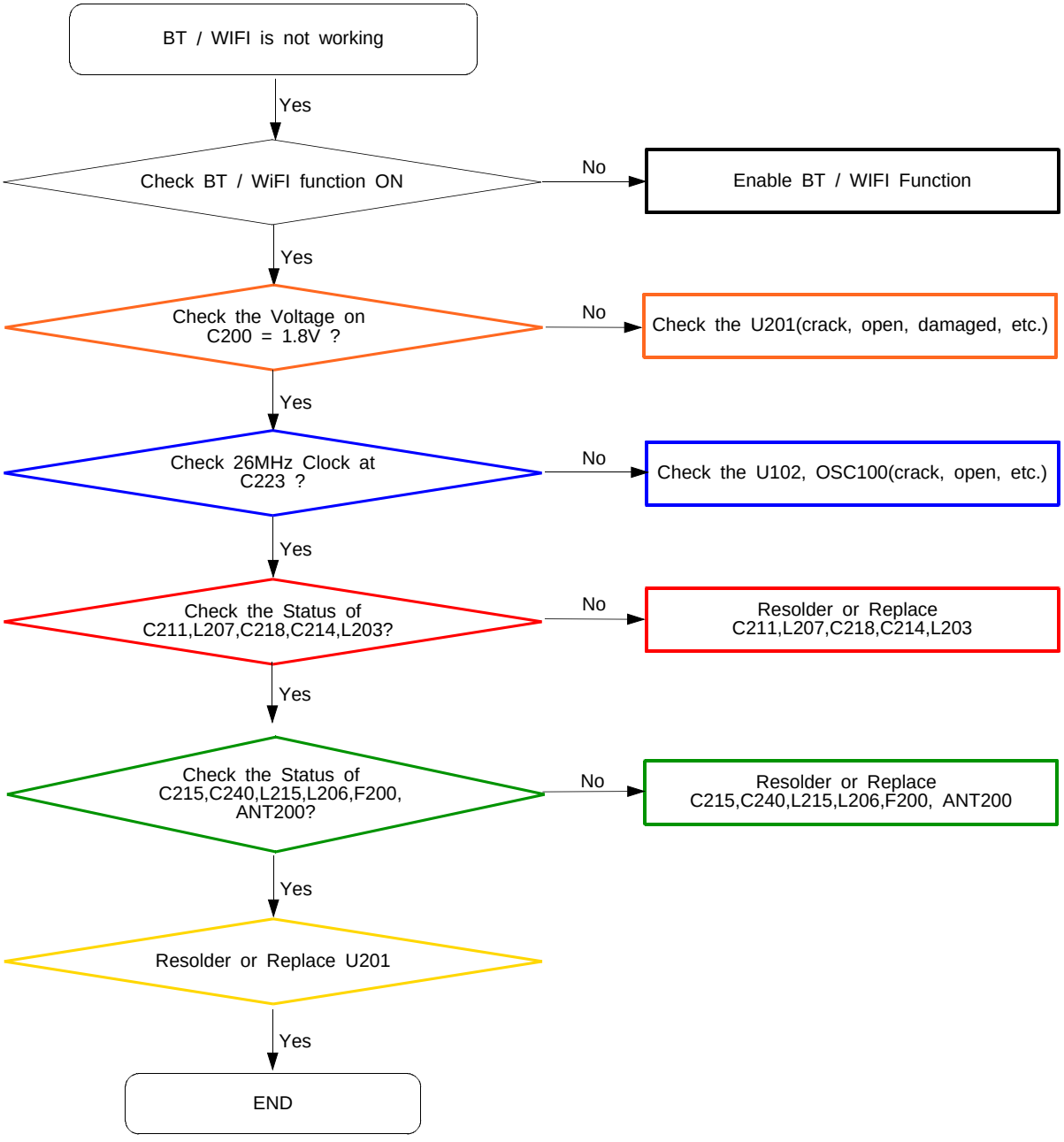


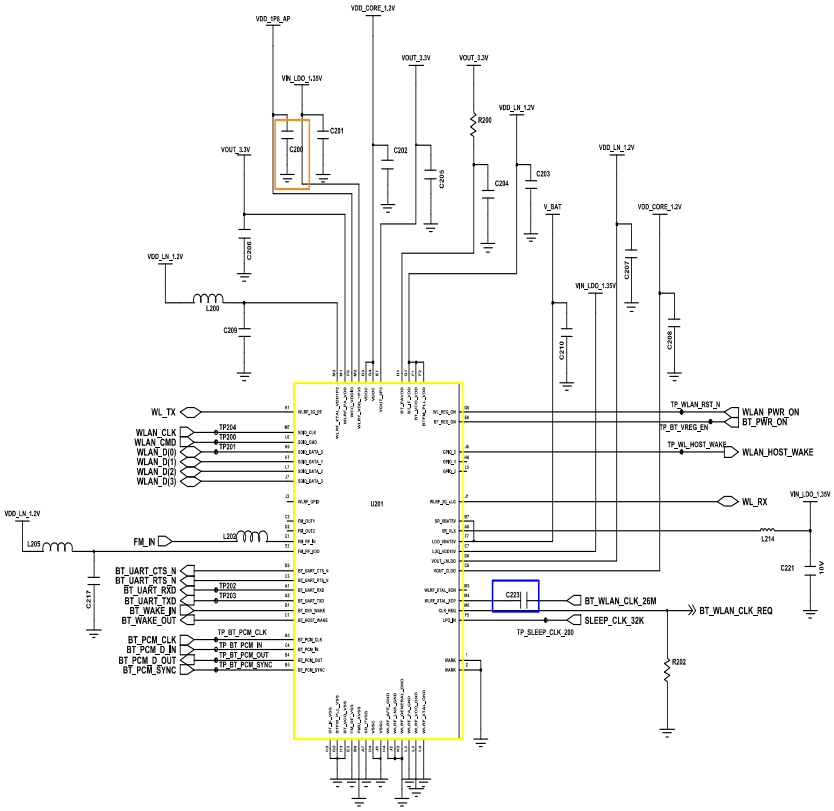


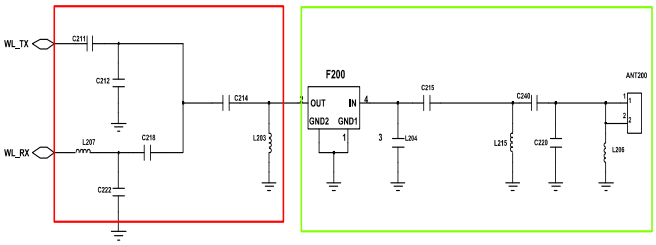


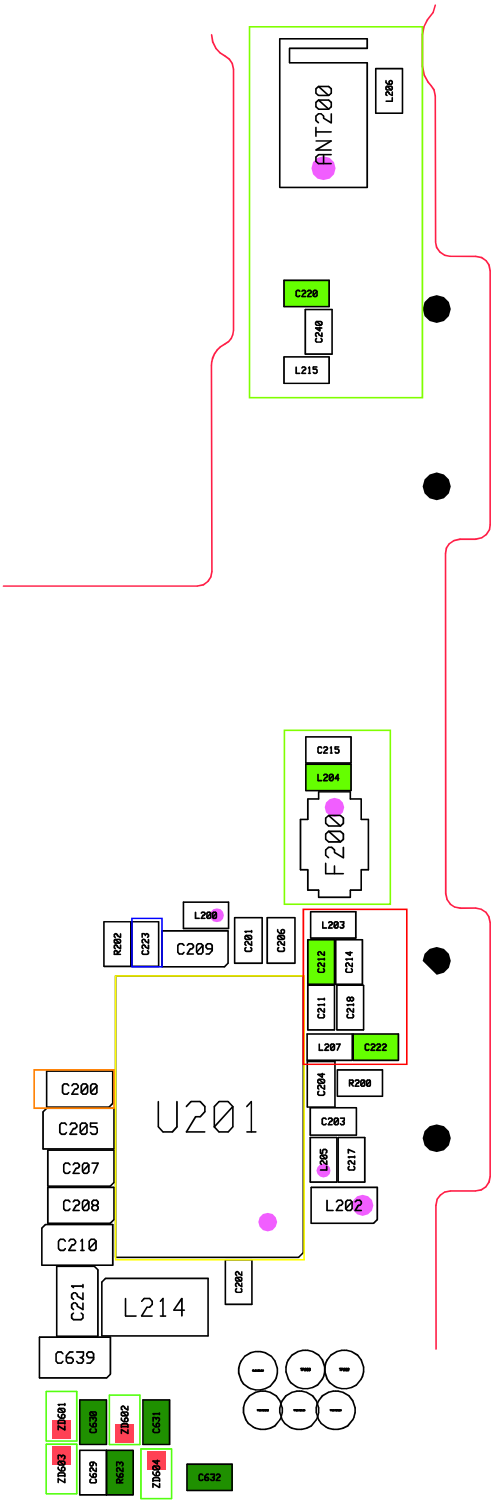


8-3-11. WIFI / BT Part

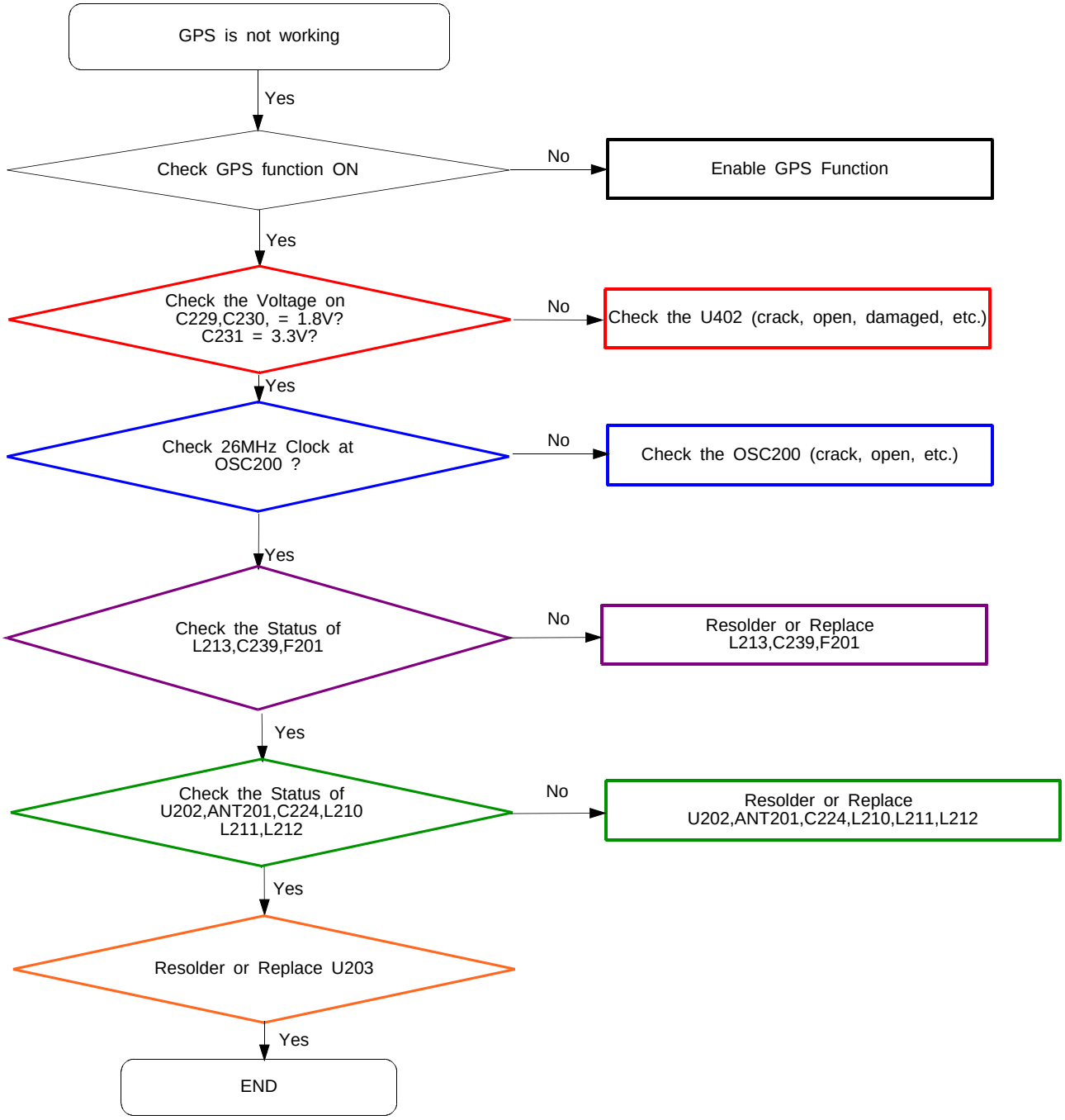


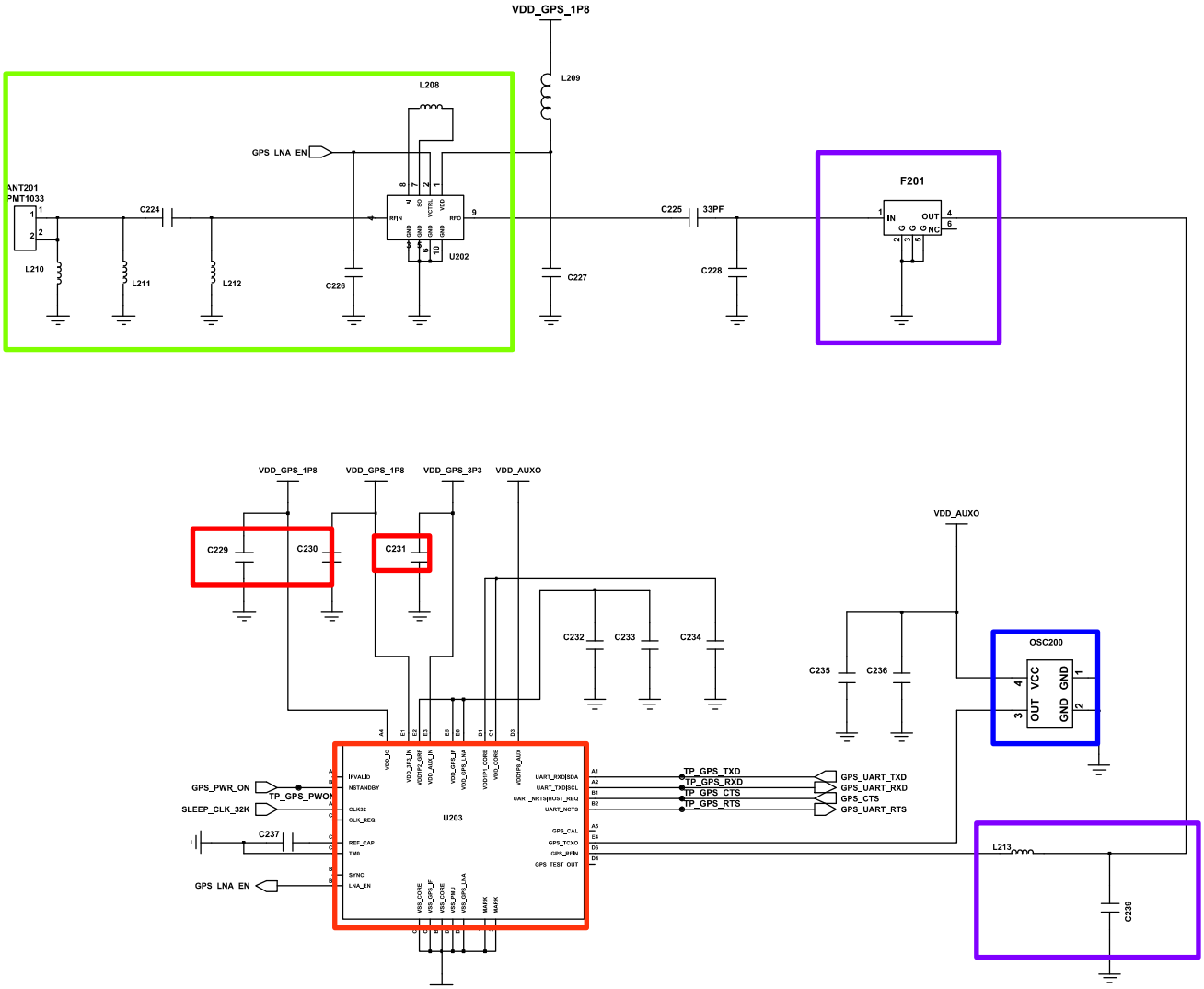


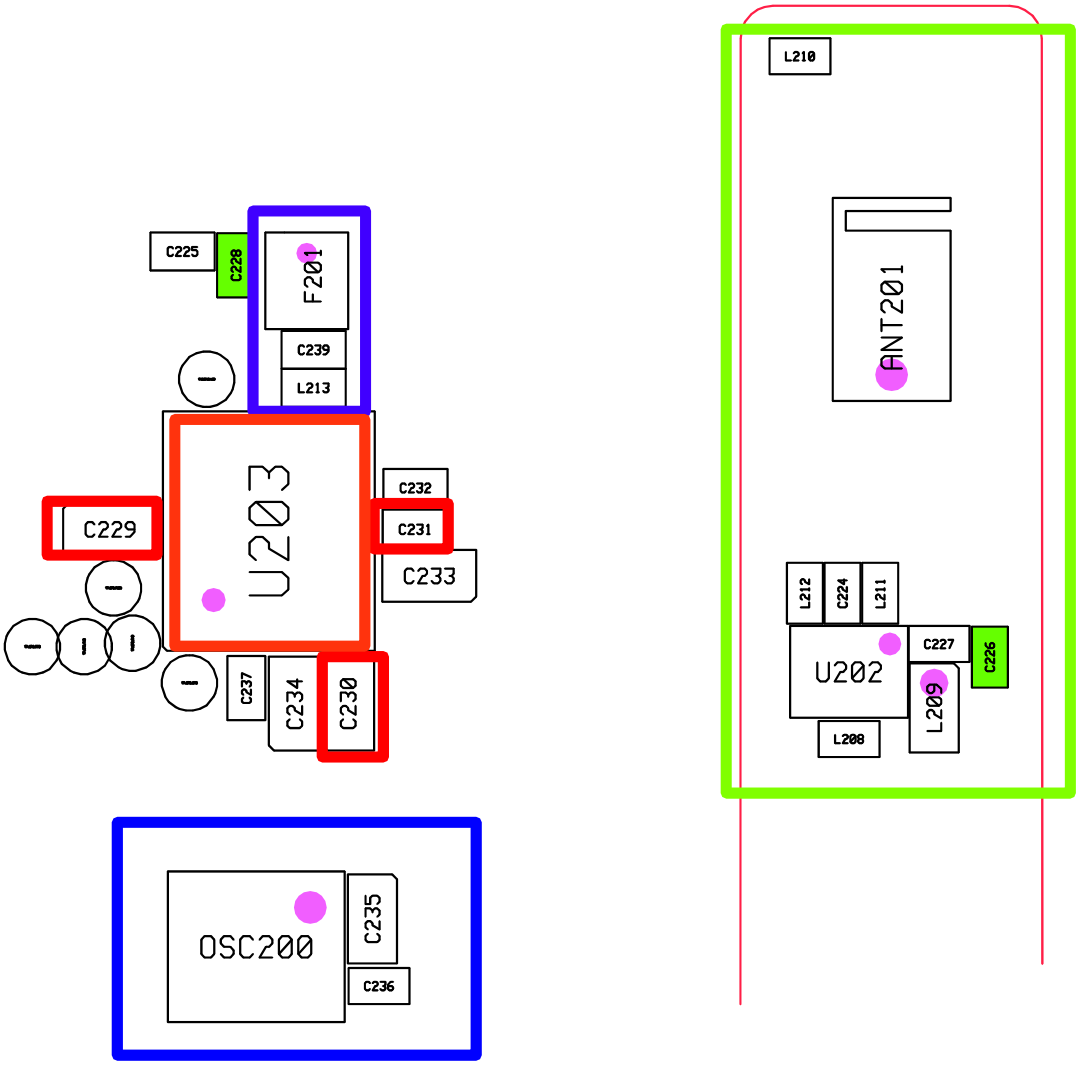




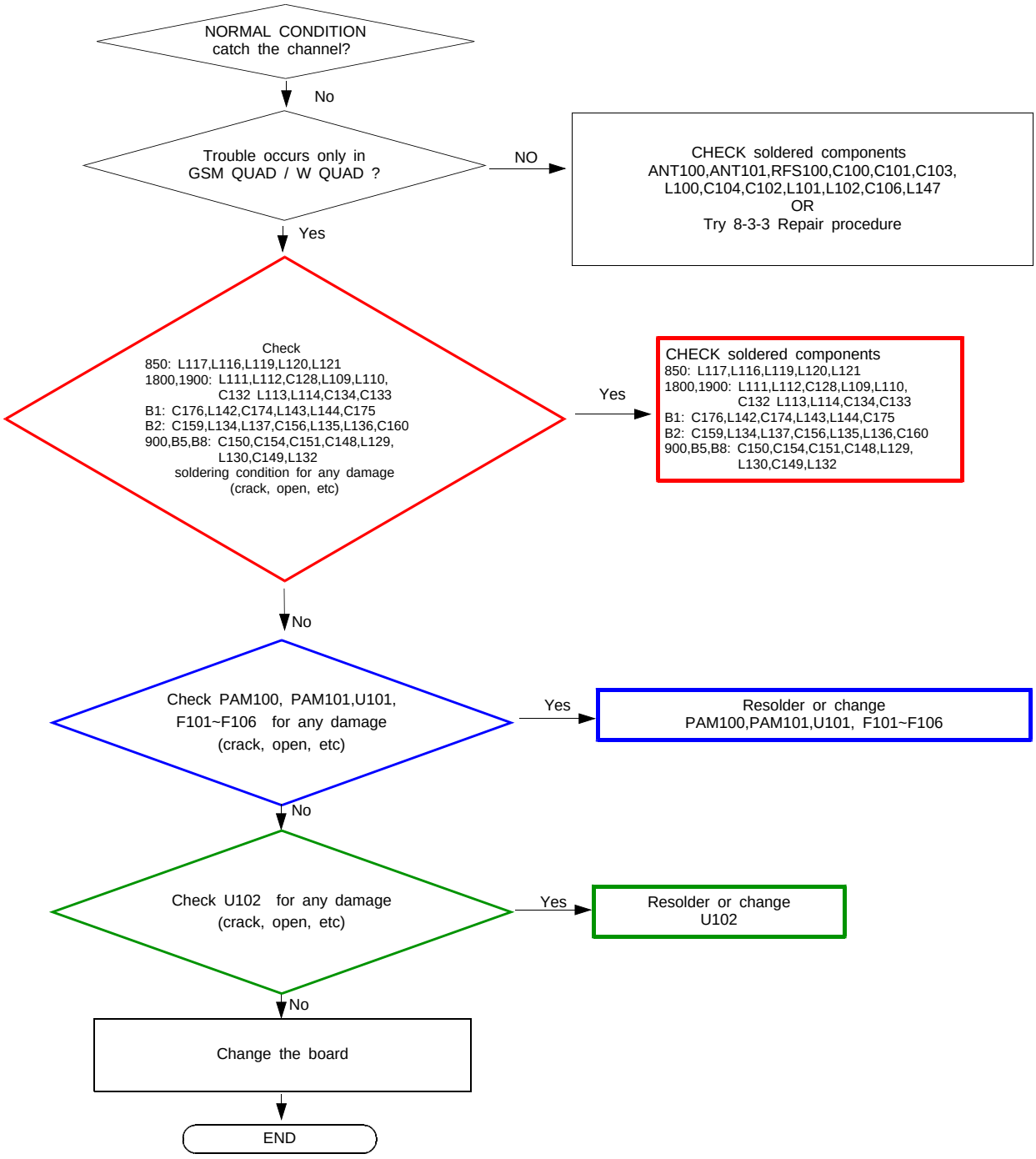
8-3-12. GPS Part

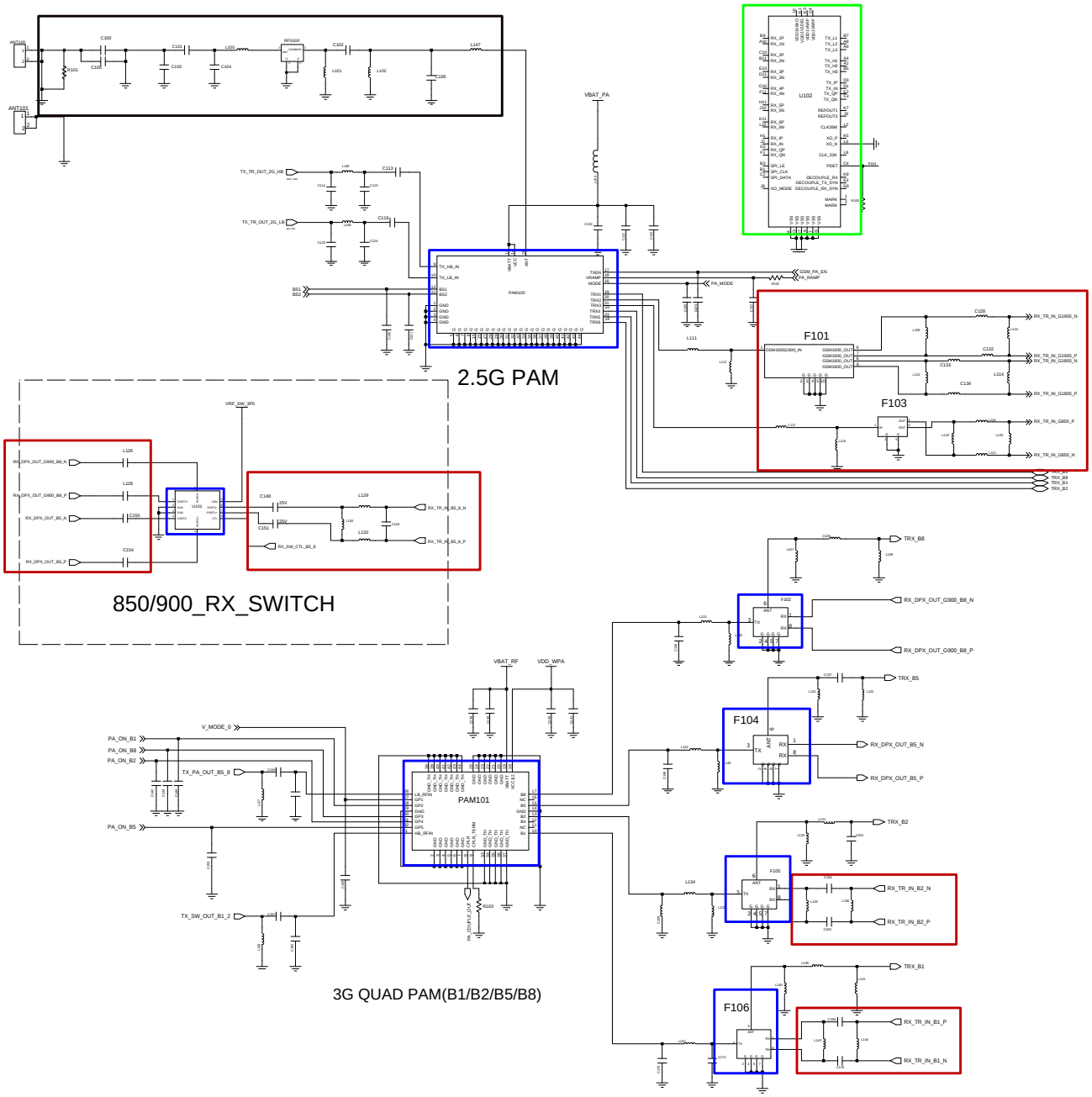


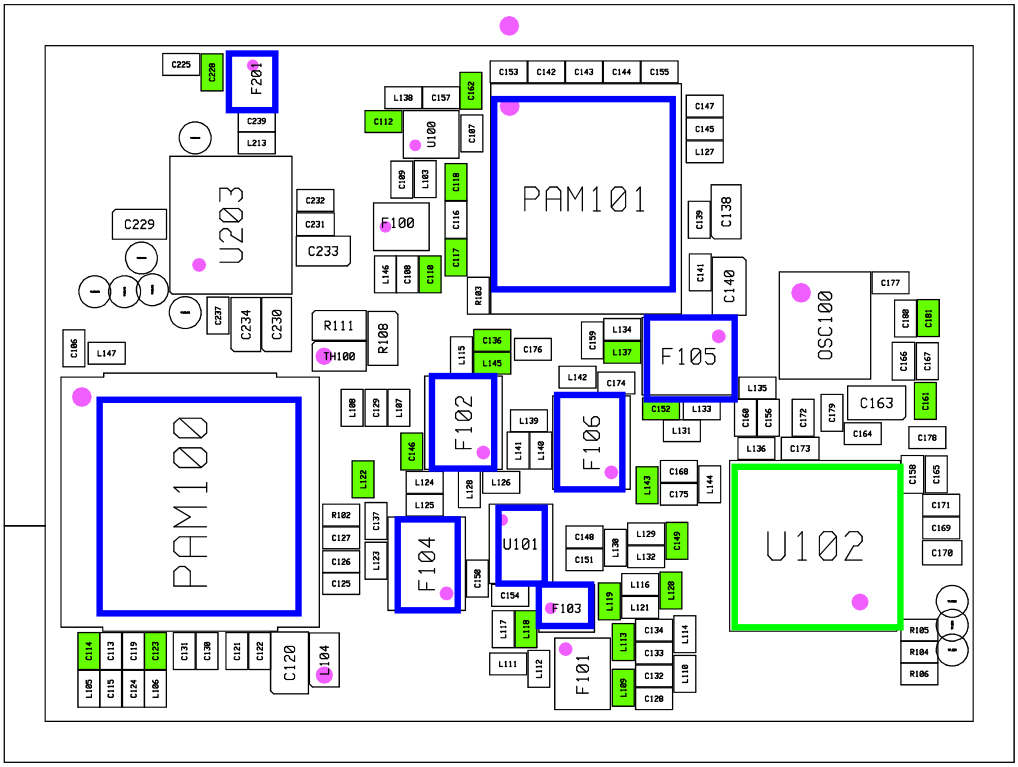




8-3-13. GSM 850,900,1800,1900 / WCDMA BAND 1,2,5,8 (RX)







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