SAMSUNG

GSM TELEPHONE

SGH-E950

SERVICE Manual

GSM TELEPHONE

CONTENTS

SAMSUNG ELECTRONICS

GSPN (Global Service Partner Network)

Country	Web Site
North America	service.samsungportal.com
Latin America	latin.samsungportal.com
CIS	cis.samsungportal.com
Europe	europe.samsungportal.com
China	china.samsungportal.com
Asia	asia.samsungportal.com
Mideast & Africa	mea.samsungportal.com

2007. 09. Rev.1.0

1. Safety Precautions

1-1. Repair Precaution

- Repair in Shield Box, during detailed tuning.
  Take specially care of tuning or test,
  because specipicty of cellular phone is sensitive for surrounding interference(RF noise).

- Be careful to use a kind of magnetic object or tool,
  because performance of parts is damaged by the influence of manetic force.

- Surely use a standard screwdriver when you disassemble this product,
  otherwise screw will be worn away.

- Use a thicken twisted wire when you measure level.
  A thicken twisted wire has low resistance, therefore error of measurement is few.

- Repair after separate Test Pack and Set because for short danger (for example an overcurrent and furious flames of parts etc) when you repair board in condition of connecting Test Pack and tuning on.

- Take specially care of soldering, because Land of PCB is small and weak in heat.

- Surely tune on/off while using AC power plug, because a repair of battery charger is dangerous when tuning ON/OFF PBA and Connector after disassembing charger.

- Don't use as you pleases after change other material than replacement registered on SEC System.
  Otherwise engineer in charge isn't charged with problem that you don't keep this rules.

1-2. ESD(Electrostatically Sensitive Devices) Precaution

Several semiconductor may be damaged easilly by static electricity. Such parts are called by ESD(Electrostatically Sensitive Devices), for example IC,BGA chip etc. Read Precaution below. You can prevent from ESD damage by static electricity.

- Remove static electricity remained your body before you touch semiconductor or parts with semiconductor. There are ways that you touch an earthed place or wear static electricity prevention string on wrist.

- Use earthed soldering steel when you connect or disconnect ESD.

- Use soldering removing tool to break static electricity. , otherwise ESD will be damaged by static electricity.

- Don't unpack until you set up ESD on product. Because most of ESD are packed by box and aluminum plate to have conductive power,they are prevented from static electricity.

- You must maintain electric contact between ESD and place due to be set up until ESD is connected completely to the proper place or a circuit board.

2. Specification

2-1. GSM/DCS1800/PCS1900 General Specification

	EGSM 900 Phase 2	DCS1800 Phase 1	PCS1900
Freq. Band[MHz] Uplink/Downlink	880~915 925~960	1710~1785 1805~1880	1850~1910 1930~1990
ARFCN range	0~124 & 975~1023	512~885	512~810
Tx/Rx spacing	45 MHz	95 MHz	80 MHz
Mod. Bit rate/ Bit Period	270.833 kbps 3.692 us	270.833 kbps 3.692 us	270.833 kbps 3.692 us
Time Slot Period/Frame Period	576.9 us 4.615 ms	576.9 us 4.615 ms	576.9 us 4.615 ms
Modulation	0.3 GMSK	0.3 GMSK	0.3 GMSK
MS Power	33 dBm~5 dBm	30 dBm~0 dBm	30 dBm~0 dBm
Power Class	5 pcl ~ 19 pcl	0 pcl ~ 15 pcl	0 pcl ~ 15 pcl
Sensitivity	-102 dBm	-100 dBm	-100 dBm
TDMA Mux	8	8	8
Cell Radius	35 Km	2 Km	-

2-2. GSM TX power class

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

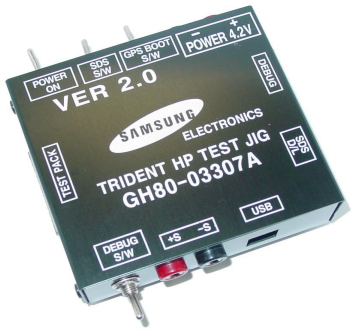
TX Power control level	PCS1900
0	30±3 dBm
1	28±3 dBm
2	26±3 dBm
3	24±3 dBm
4	22±3 dBm
5	20±3 dBm
6	18±3 dBm
7	16±3 dBm
8	14±3 dBm
9	12±4 dBm
10	10±4 dBm
11	8±4 dBm
12	6±4 dBm
13	4±4 dBm
14	2±5 dBm
15	0±5 dBm

3. Product Function

Main Function

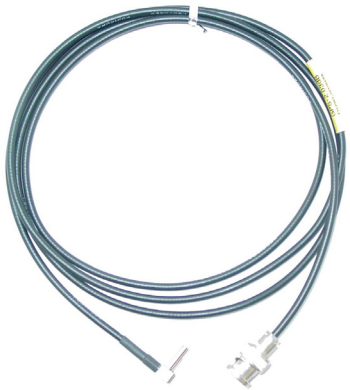
- Camera and Camcorder
- Synchronisation with Windows Media Player
- Music player
- FM radio
- Image editor
- Photo printing
- Phone to TV
- Offline mode
- Bluetooth
- File viewer
- SOS message

4. Array course control



Test Jig (GH80-03307A)

Test Cable (GH39-00484A)



RF Test Cable (GH39-00397A)

Software Downloading

4-1. Downloading Binary Files

• Three binary files for downloading E950.

– E950XXYY.s3 : Main source code binary.

4-2. Pre-requsite for Downloading

• Downloader Program(OptiFlash.exe)

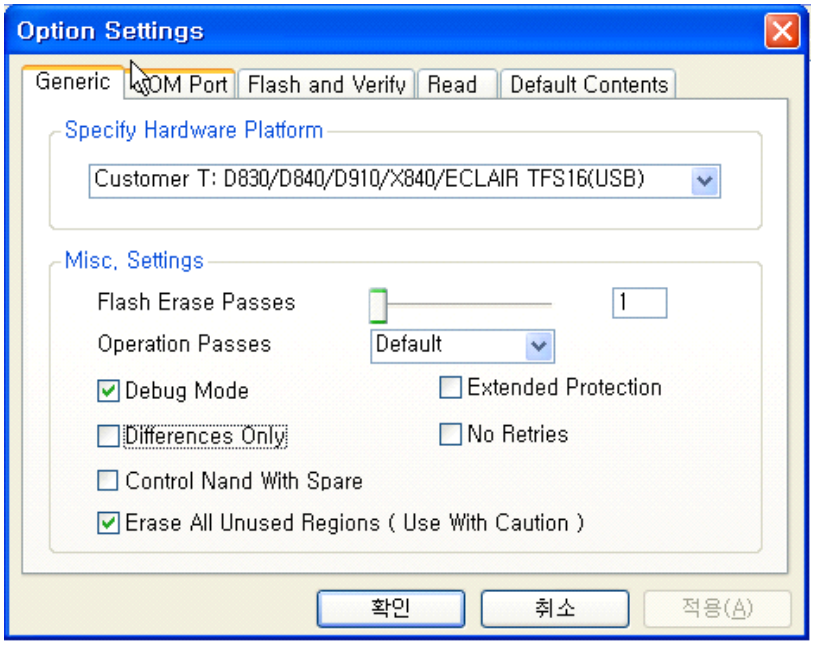
• E950 Mobile Phone

• Data Cable

• Binary files

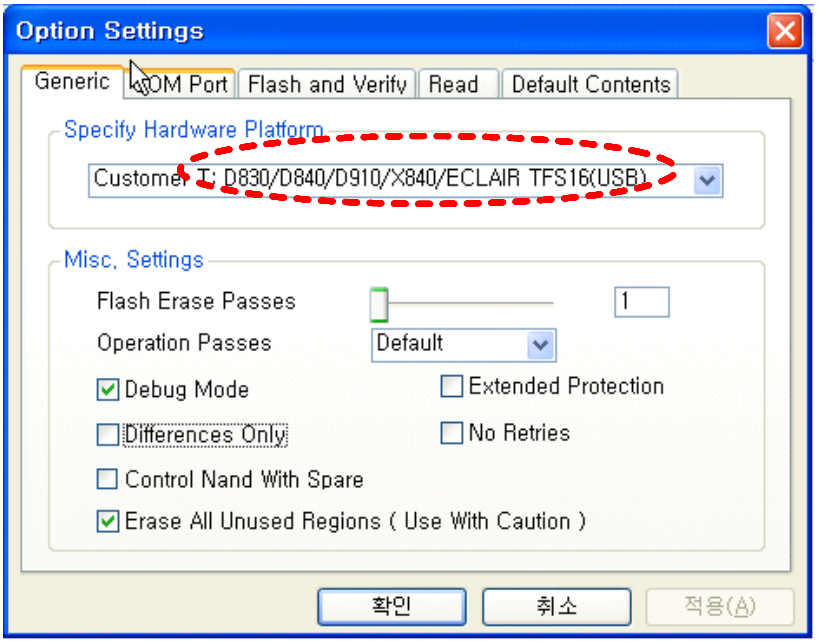
4-3. S/W Downloader Program

1. Load the binary download program by executing the "**OptiFlash.exe**"

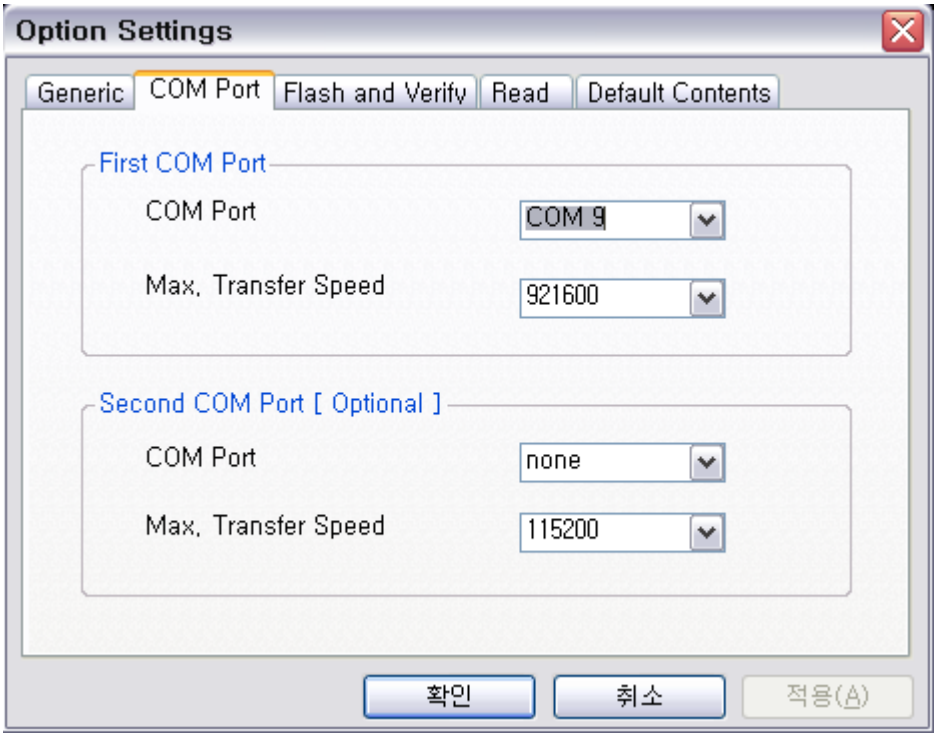


2. Select the **"Options" -> "Settings" -> "Generic" -> "Specify hardware platform"**. Choose hardware platform for the downloader file setting.

Set the everything else as the default values which are shown below



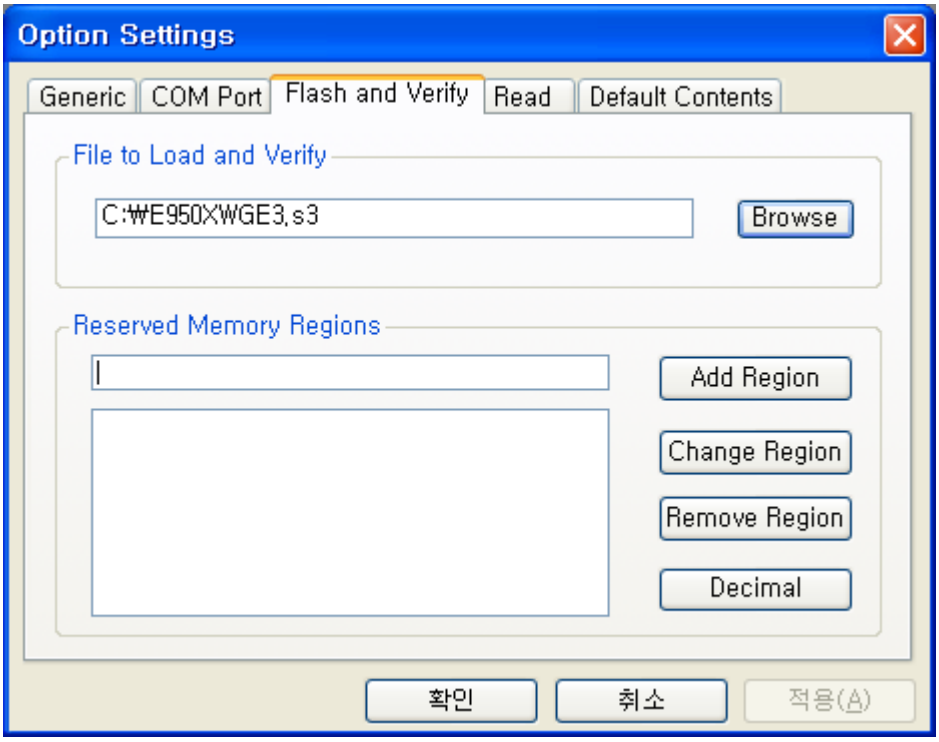
3. Select the **COM port** when the download cable is connected



Up to twelve ports are supported. Additionally you can select the maximum transfer speed OptiFlash will use to communicate with the phone. However, OptiFlash will use a slower speed if either the PC's or the phone's serial hardware is incapable of handling the selected speed

4. Select the“**Flash&Verify” -> “Browse**”

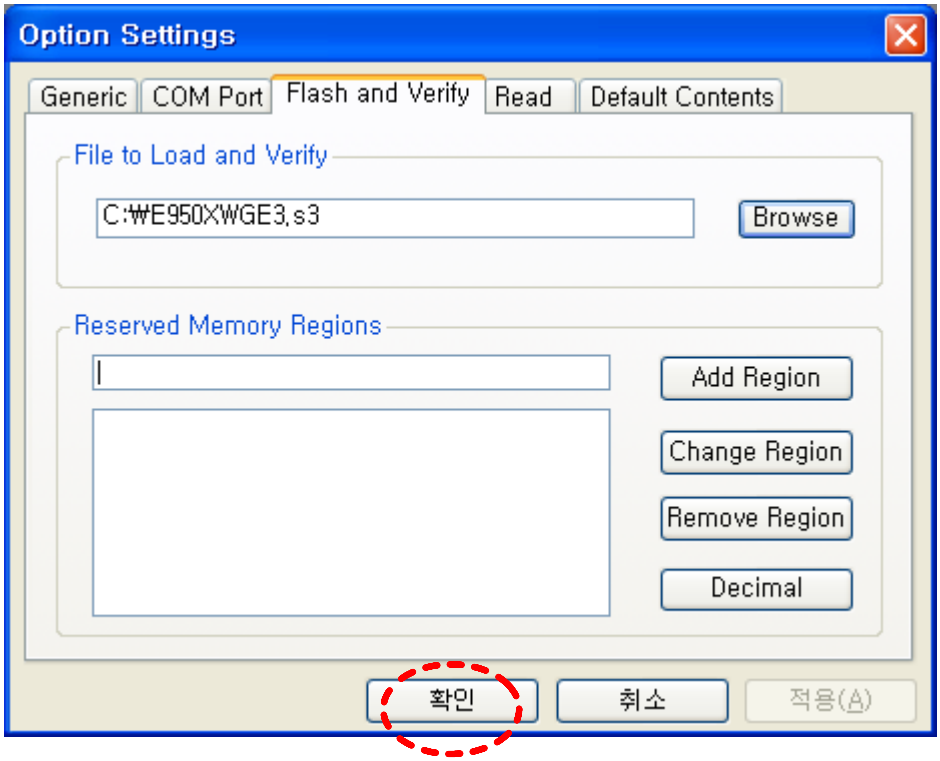
Set the directory path and choose the latest s/w binary, for example “E950XXYY.s3”, for the downloader binary setting.



The reserved memory regions are included in optiflash program, platform.def.

5. Click “**OK**” button then press “**Flash**”.
(Before pressing ‘Flash’ button, push the button **‘*’and ‘END’ at the same time**. Then press ‘Flash’.)

Downloader will upload the binary file as below for the downloading.



6. When downloading is finished successfully, there is a “All is well” message.

7. After finishing downloading, Certain memory resets should be done to guarantee the normal performance.

8. Confirm the downloaded version name and etc. :

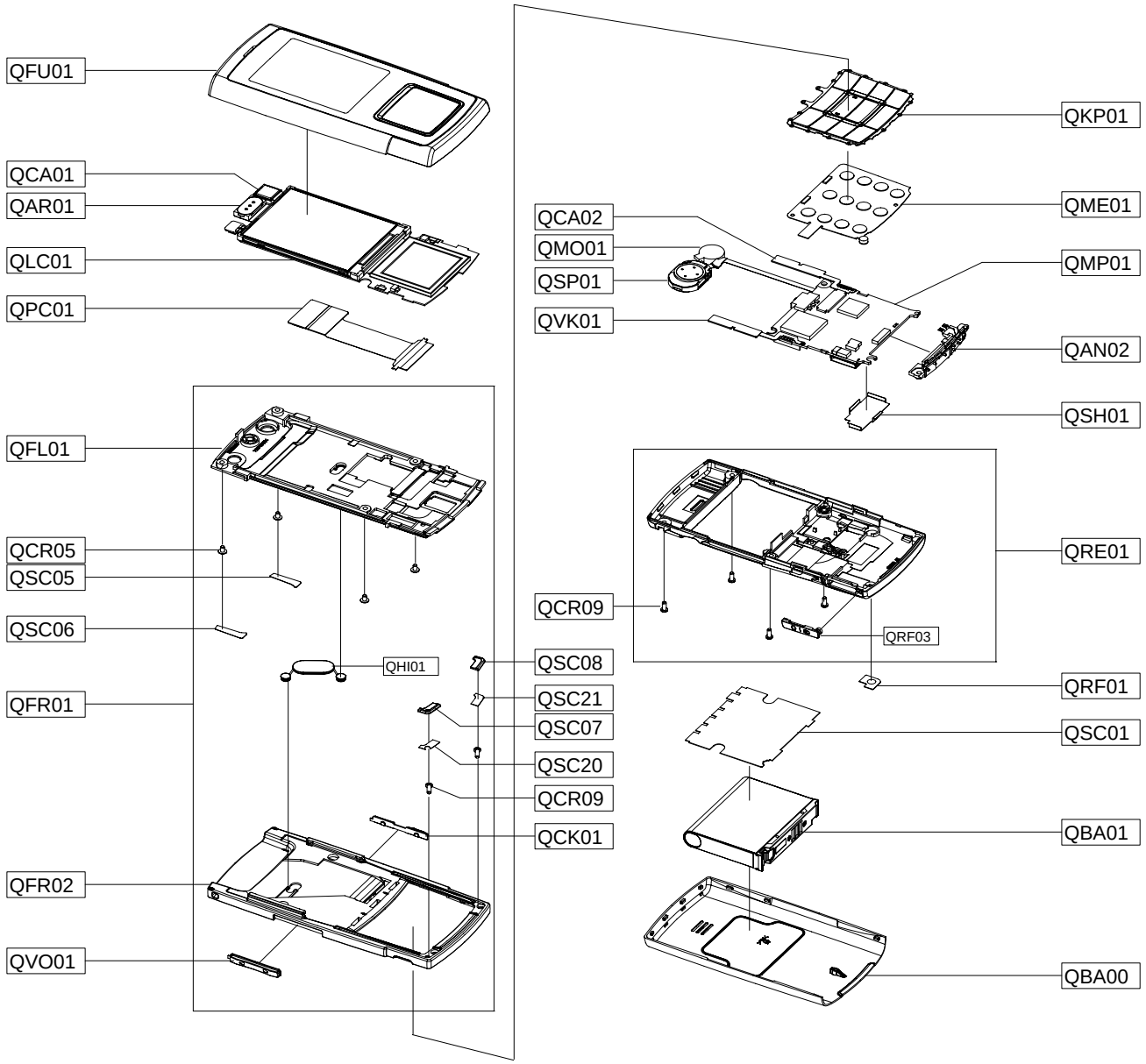
***#1234#**

Full Reset :

***2767*3855#**

5. Exploded View and Parts List

5-1. Cellular phone Exploded View



5-2. Cellular phone Parts list

Design LOC	Description	SEC CODE
QAN02	INTENNA-SGHE950	GH42-01229A
QAR01	AUDIO-RECEIVER	3009-001274
QBA00	ASSY CASE-BATT	GH98-04661A
QBA01	INNER BATTERY PACK-880MAH , BL	GH43-02666A
QCA01	CAMERA MODULE	GH59-04513A
QCA02	KEY FPCB-SGHE950 SIDE CAM 1 KE	GH59-04502A
QCK01	PMO-CAM KEY	GH72-39684A
QCR05	SCREW-MACHINE	6001-001478
QCR09	SCREW-MACHINE	6001-001670
QCR09	SCREW-MACHINE	6001-001670
QFL01	ASSY CASE-LOWER	GH98-06595A
QFL01	ASSY CASE-LOWER	GH98-06595A
QFR01	ASSY CASE-FRONT+LOWER	GH98-04663A
QFR02	ASSY CASE-FRONT	GH98-06594A
QFR02	ASSY CASE-FRONT	GH98-06594A
QFU01	ASSY CASE-UPPER	GH98-04662A
QHI01	ASSY HINGE-LINK HINGE	GH98-03994A
QKP01	ASSY KEYPAD-(XEF/DSA)	GH98-04920A
QLC01	ELA UNIT-SGHE950 LCD MODULE SV	GH96-02826A
QME01	KEY FPCB-SGHE950 TF KEY PBA	GH59-04504A
QMO01	MOTOR DC-SGH E250	GH31-00304A
QMP01	PBA MAIN-SGHE950	GH92-03584A
QPC01	MEA-SLIDE FPCB KIT	GH97-08084A
QRE01	ASSY CASE-REAR	GH98-04665A
QRF01	TAPE-RF	GH74-35022A
QRF03	PMO-COVER EAR	GH72-39675A
QSC01	MPR-TAPE BATT SHEET	GH74-31739A
QSC05	TAPE-SCREW SHEET L	GH74-33049A
QSC06	TAPE-SCREW SHEET R	GH74-33050A
QSC07	PMO-COVER FRONT SCREW L	GH72-39679A
QSC08	PMO-COVER FRONT SCREW R	GH72-39680A
QSC20	MPR-TAPE FRONT SCREW L	GH74-31787A
QSC21	MPR-TAPE FRONT SCREW R	GH74-31786A
QSH01	IPR SHIELD-CAN	GH70-02602A
QSP01	SPEAKER	3001-002172
QVK01	KEY FPCB-SGHE950 SIDE VOL 2 KE	GH59-04503A
QVO01	PMO-VOL KEY	GH72-39683A

Description	SEC CODE
CBF INTERFACE-DLC,X830,BLK,PCB	GH39-00720A
ADAPTOR-SGHE690,BLK,EU,A_TYPE	GH44-01361A
LABEL(R)-WATER SOAK	GH68-09361A
TAPE INSU	GH74-18904A
MPR-INSU TAPE SUB CON	GH74-31785A
TAPE INSU-SUB LDI	GH74-32206A
TAPE GASK	GH74-33541A
SPONGE-CAM CON	GH74-33951A
TAPE INSU	GH74-29554A
MPR-TAPE LCD PCB	GH74-31743A
TAPE ELEC-SUB PBA	GH74-34666A
TAPE INSU-LCD BACK	GH74-32205A
VINYL-BOHO FRONT BUSH	GH74-35094A
S/W CD-SGHE950 PC STUDIO 3.1	GH46-00463A
MANUAL USERS-EU FRENCH	GH68-15435A
BAG PE	6902-000634
LABEL(P)-UNIT SEAL	GH68-00518B
LABEL(P)-OPEN MP3	GH68-11246A
LABEL(R)-MAIN XEF	GH68-15775B
BOX(P)-UNIT MAIN EU	GH69-05782A
CUSHION-CASE TA2 MA2	GH69-05783A
EARPHONE-SGHJ600,20P,BLK,B-TYP	GH59-04923A
VINYL-BOHO UPPER	GH74-35650A

6. MAIN Electrical Parts List

SEC CODE	Design LOC	Discription	STATUS
0403-001547	ZD200	DIODE-ZENER	SA
0403-001547	ZD503	DIODE-ZENER	SA
0404-001172	D200	DIODE-SCHOTTKY	SA
0406-001210	ZD504	DIODE-TVS	SA
0406-001215	ZD500	DIODE-TVS	SA
0406-001215	ZD502	DIODE-TVS	SA
0406-001223	ZD600	DIODE-TVS	SA
0406-001223	ZD601	DIODE-TVS	SA
0406-001239	ZD501	DIODE-TVS	SA
0406-001256	U602	DIODE-TVS	SA
0407-001002	D400	DIODE-ARRAY	SA
0505-001518	Q600	FET-SILICON	SA
0505-002207	U502	FET-SILICON	SA
0801-002958	U600	IC-CMOS LOGIC	SA
0801-002995	U300	IC-CMOS LOGIC	SA
1001-001231	U506	IC-ANALOG SWITCH	SA
1001-001401	U204	IC-ANALOG SWITCH	SA
1009-001018	U203	IC-HALL EFFECT S/W	SA
1108-000063	UCP200	IC-MCP	SA
1201-002233	U410	IC-AUDIO AMP	SA
1201-002413	U411	IC-VIDEO AMP	SA
1201-002457	PAM100	IC-POWER AMP	SA
1203-003340	U403	IC-POSI.FIXED REG.	SA
1203-003432	U102	IC-POSI.FIXED REG.	SA
1203-003432	U404	IC-POSI.FIXED REG.	SA
1203-003737	U401	IC-POSI.FIXED REG.	SA
1203-003754	U500	IC-POSI.FIXED REG.	SA
1203-003787	U504	IC-POSI.FIXED REG.	SA
1203-003789	U601	IC-POWER SUPERVISOR	SA
1203-004119	UCP300	IC-POWER SUPERVISOR	SA
1203-004518	U301	IC-BATTERY	SA
1203-004548	U501	IC-DC/DC CONVERTER	SA
1203-004654	U201	IC-DC/DC CONVERTER	SA
1204-002138	U206	IC-MELODY	SA
1204-002746	U400	IC-TUNER	SA
1205-002272	U205	IC-TRANSCEIVER	SA

SEC CODE	Design LOC	Discription	STATUS
1205-002946	U408	IC-CODEC	SA
1205-003093	U100	IC-TRANSCEIVER	SA
1205-003210	U505	IC-CODEC	SA
1205-003235	U103	IC-DATA COMM./GEN.	SA
1404-001165	VR301	THERMISTOR-NTC	SA
1405-001108	VR622	VARISTOR	SA
1405-001177	V400	VARISTOR	SA
1405-001177	V401	VARISTOR	SA
1405-001177	VR200	VARISTOR	SA
1405-001177	VR600	VARISTOR	SA
1405-001177	VR601	VARISTOR	SA
1405-001177	VR602	VARISTOR	SA
1405-001177	VR603	VARISTOR	SA
1405-001177	VR604	VARISTOR	SA
1405-001177	VR605	VARISTOR	SA
1405-001177	VR606	VARISTOR	SA
1405-001177	VR607	VARISTOR	SA
1405-001177	VR608	VARISTOR	SA
1405-001177	VR609	VARISTOR	SA
1405-001177	VR610	VARISTOR	SA
1405-001177	VR612	VARISTOR	SA
1405-001177	VR613	VARISTOR	SA
1405-001177	VR614	VARISTOR	SA
1405-001177	VR615	VARISTOR	SA
1405-001177	VR616	VARISTOR	SA
1405-001177	VR617	VARISTOR	SA
1405-001177	VR618	VARISTOR	SA
1405-001177	VR620	VARISTOR	SA
1405-001177	VR621	VARISTOR	SA
2007-000171	R123	R-CHIP	SA
2007-000171	R124	R-CHIP	SA
2007-000171	R125	R-CHIP	SA
2007-000171	R126	R-CHIP	SA
2007-000171	R227	R-CHIP	SA
2007-000171	R414	R-CHIP	SA
2007-000171	R556	R-CHIP	SA

SEC CODE	Design LOC	Discription	STATUS
2007-000171	R557	R-CHIP	SA
2007-000171	R615	R-CHIP	SA
2007-000171	R623	R-CHIP	SA
2007-000172	R452	R-CHIP	SA
2007-000172	R453	R-CHIP	SA
2007-000173	R421	R-CHIP	SA
2007-000173	R424	R-CHIP	SA
2007-001119	R409	R-CHIP	SA
2007-001306	R439	R-CHIP	SA
2007-007009	R438	R-CHIP	SA
2007-007014	R223	R-CHIP	SA
2007-007132	R325	R-CHIP	SA
2007-007139	R422	R-CHIP	SA
2007-007139	R425	R-CHIP	SA
2007-007489	R221	R-CHIP	SA
2007-007528	R411	R-CHIP	SA
2007-007590	R222	R-CHIP	SA
2007-007741	R104	R-CHIP	SA
2007-007741	R327	R-CHIP	SA
2007-007741	R328	R-CHIP	SA
2007-007741	R440	R-CHIP	SA
2007-007741	R441	R-CHIP	SA
2007-007741	R458	R-CHIP	SA
2007-007741	R460	R-CHIP	SA
2007-007741	R463	R-CHIP	SA
2007-007741	R465	R-CHIP	SA
2007-008045	R214	R-CHIP	SA
2007-008045	R532	R-CHIP	SA
2007-008045	R606	R-CHIP	SA
2007-008045	R607	R-CHIP	SA
2007-008045	R608	R-CHIP	SA
2007-008045	R609	R-CHIP	SA
2007-008045	R610	R-CHIP	SA
2007-008045	R611	R-CHIP	SA
2007-008045	R613	R-CHIP	SA
2007-008048	R114	R-CHIP	SA

SEC CODE	Design LOC	Discription	STATUS
2007-008051	R224	R-CHIP	SA
2007-008051	R551	R-CHIP	SA
2007-008052	R208	R-CHIP	SA
2007-008052	R308	R-CHIP	SA
2007-008052	R547	R-CHIP	SA
2007-008053	R324	R-CHIP	SA
2007-008055	R207	R-CHIP	SA
2007-008055	R209	R-CHIP	SA
2007-008055	R212	R-CHIP	SA
2007-008055	R213	R-CHIP	SA
2007-008055	R330	R-CHIP	SA
2007-008055	R454	R-CHIP	SA
2007-008055	R455	R-CHIP	SA
2007-008055	R614	R-CHIP	SA
2007-008056	R102	R-CHIP	SA
2007-008419	R523	R-CHIP	SA
2007-008419	R527	R-CHIP	SA
2007-008419	R528	R-CHIP	SA
2007-008419	R529	R-CHIP	SA
2007-008419	R530	R-CHIP	SA
2007-008419	R531	R-CHIP	SA
2007-008420	R219	R-CHIP	SA
2007-008420	R220	R-CHIP	SA
2007-008477	R600	R-CHIP	SNA
2007-008477	R601	R-CHIP	SNA
2007-008477	R602	R-CHIP	SNA
2007-008477	R603	R-CHIP	SNA
2007-008477	R604	R-CHIP	SNA
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2007-008478	R217	R-CHIP	SA
2007-008483	R118	R-CHIP	SA
2007-008483	R121	R-CHIP	SA
2007-008483	R206	R-CHIP	SA
2007-008483	R218	R-CHIP	SA
2007-008483	R329	R-CHIP	SA
2007-008483	R404	R-CHIP	SA

SEC CODE	Design LOC	Discription	STATUS
2007-008483	R433	R-CHIP	SA
2007-008483	R437	R-CHIP	SA
2007-008483	R451	R-CHIP	SA
2007-008483	R543	R-CHIP	SA
2007-008483	R617	R-CHIP	SA
2007-008483	R618	R-CHIP	SA
2007-008483	R619	R-CHIP	SA
2007-008486	R122	R-CHIP	SA
2007-008486	R621	R-CHIP	SA
2007-008516	C218	R-CHIP	SA
2007-008516	R103	R-CHIP	SA
2007-008542	R105	R-CHIP	SA
2007-008542	R117	R-CHIP	SA
2007-008542	R204	R-CHIP	SA
2007-008542	R225	R-CHIP	SA
2007-008542	R231	R-CHIP	SA
2007-008542	R321	R-CHIP	SA
2007-008542	R450	R-CHIP	SA
2007-008542	R538	R-CHIP	SA
2007-008542	R539	R-CHIP	SA
2007-008542	R546	R-CHIP	SA
2007-008542	R548	R-CHIP	SA
2007-008542	R554	R-CHIP	SA
2007-008542	R616	R-CHIP	SA
2007-008542	R620	R-CHIP	SA
2007-008544	R456	R-CHIP	SA
2007-008548	R113	R-CHIP	SA
2007-008588	R215	R-CHIP	SA
2007-008588	R216	R-CHIP	SA
2007-008588	R305	R-CHIP	SA
2007-008588	R462	R-CHIP	SA
2007-008588	R550	R-CHIP	SA
2007-008588	R552	R-CHIP	SA
2007-008588	R553	R-CHIP	SA
2007-008588	U603	R-CHIP	SA
2007-008774	R120	R-CHIP	SA

SEC CODE	Design LOC	Discription	STATUS
2007-008785	R415	R-CHIP	SNA
2007-008785	R416	R-CHIP	SNA
2007-008808	R459	R-CHIP	SA
2007-008808	R461	R-CHIP	SA
2007-008808	R464	R-CHIP	SA
2007-008808	R466	R-CHIP	SA
2007-009084	R544	R-CHIP	SA
2007-009157	R331	R-CHIP	SA
2007-009157	R332	R-CHIP	SA
2007-009157	R545	R-CHIP	SA
2007-009166	R306	R-CHIP	SA
2007-009167	R307	R-CHIP	SA
2007-009168	R326	R-CHIP	SA
2007-009169	R323	R-CHIP	SA
2007-009170	R524	R-CHIP	SA
2007-009170	R525	R-CHIP	SA
2007-009194	R622	R-CHIP	SNA
2007-009208	R536	R-CHIP	SA
2007-009208	R537	R-CHIP	SA
2007-009233	R322	R-CHIP	SA
2007-009402	R457	R-CHIP	SA
2203-000359	C234	C-CER,CHIP	SA
2203-000438	C340	C-CER,CHIP	SA
2203-000438	C466	C-CER,CHIP	SA
2203-000438	C467	C-CER,CHIP	SA
2203-000854	C448	C-CER,CHIP	SA
2203-000995	C105	C-CER,CHIP	SA
2203-001405	C319	C-CER,CHIP	SA
2203-002709	C233	C-CER,CHIP	SA
2203-002709	C435	C-CER,CHIP	SA
2203-002709	C436	C-CER,CHIP	SA
2203-002709	C444	C-CER,CHIP	SA
2203-002709	C449	C-CER,CHIP	SA
2203-002709	C465	C-CER,CHIP	SA
2203-002709	C536	C-CER,CHIP	SA
2203-002982	C235	C-CER,CHIP	SA

SEC CODE	Design LOC	Discription	STATUS
2203-005482	C125	C-CER,CHIP	SA
2203-005482	C412	C-CER,CHIP	SA
2203-005552	C163	C-CER,CHIP	SA
2203-005682	C108	C-CER,CHIP	SA
2203-005682	C127	C-CER,CHIP	SA
2203-005682	C128	C-CER,CHIP	SA
2203-005682	C129	C-CER,CHIP	SA
2203-005682	C130	C-CER,CHIP	SA
2203-005682	C131	C-CER,CHIP	SA
2203-005682	C151	C-CER,CHIP	SA
2203-005682	C344	C-CER,CHIP	SA
2203-005682	C401	C-CER,CHIP	SA
2203-005682	C402	C-CER,CHIP	SA
2203-005682	C404	C-CER,CHIP	SA
2203-005682	C406	C-CER,CHIP	SA
2203-005682	C408	C-CER,CHIP	SA
2203-005682	C518	C-CER,CHIP	SA
2203-005682	C519	C-CER,CHIP	SA
2203-005682	C602	C-CER,CHIP	SA
2203-005682	C605	C-CER,CHIP	SA
2203-005682	C606	C-CER,CHIP	SA
2203-005683	C343	C-CER,CHIP	SA
2203-005719	C452	C-CER,CHIP	SA
2203-005719	C453	C-CER,CHIP	SA
2203-005719	C609	C-CER,CHIP	SA
2203-005719	C610	C-CER,CHIP	SA
2203-005725	C148	C-CER,CHIP	SA
2203-005727	C226	C-CER,CHIP	SA
2203-005727	C227	C-CER,CHIP	SA
2203-005736	C101	C-CER,CHIP	SA
2203-005736	C110	C-CER,CHIP	SA
2203-005736	C116	C-CER,CHIP	SA
2203-005736	C126	C-CER,CHIP	SA
2203-005736	C154	C-CER,CHIP	SA
2203-005736	C311	C-CER,CHIP	SA
2203-005736	C318	C-CER,CHIP	SA

SEC CODE	Design LOC	Discription	STATUS
2203-005736	C423	C-CER,CHIP	SA
2203-005736	C426	C-CER,CHIP	SA
2203-005736	C432	C-CER,CHIP	SA
2203-005777	C113	C-CER,CHIP	SA
2203-005792	C100	C-CER,CHIP	SA
2203-005792	C104	C-CER,CHIP	SA
2203-005806	C111	C-CER,CHIP	SNA
2203-005806	C240	C-CER,CHIP	SNA
2203-006048	C229	C-CER,CHIP	SA
2203-006048	C230	C-CER,CHIP	SA
2203-006048	C611	C-CER,CHIP	SA
2203-006194	C118	C-CER,CHIP	SA
2203-006194	C123	C-CER,CHIP	SA
2203-006194	C200	C-CER,CHIP	SA
2203-006194	C202	C-CER,CHIP	SA
2203-006194	C205	C-CER,CHIP	SA
2203-006194	C207	C-CER,CHIP	SA
2203-006194	C208	C-CER,CHIP	SA
2203-006194	C301	C-CER,CHIP	SA
2203-006194	C304	C-CER,CHIP	SA
2203-006194	C321	C-CER,CHIP	SA
2203-006257	C312	C-CER,CHIP	SA
2203-006257	C431	C-CER,CHIP	SA
2203-006305	C103	C-CER,CHIP	SA
2203-006305	C142	C-CER,CHIP	SA
2203-006305	C552	C-CER,CHIP	SA
2203-006305	C553	C-CER,CHIP	SA
2203-006318	C109	C-CER,CHIP	SA
2203-006318	C112	C-CER,CHIP	SA
2203-006318	C115	C-CER,CHIP	SA
2203-006318	C117	C-CER,CHIP	SA
2203-006348	C338	C-CER,CHIP	SA
2203-006377	C339	C-CER,CHIP	SA
2203-006399	C236	C-CER,CHIP	SA
2203-006399	C237	C-CER,CHIP	SA
2203-006399	C514	C-CER,CHIP	SA

SEC CODE	Design LOC	Discription	STATUS
2203-006410	C138	C-CER,CHIP	SA
2203-006423	C102	C-CER,CHIP	SA
2203-006423	C119	C-CER,CHIP	SA
2203-006423	C132	C-CER,CHIP	SA
2203-006423	C134	C-CER,CHIP	SA
2203-006423	C145	C-CER,CHIP	SA
2203-006423	C146	C-CER,CHIP	SA
2203-006423	C150	C-CER,CHIP	SA
2203-006423	C201	C-CER,CHIP	SA
2203-006423	C203	C-CER,CHIP	SA
2203-006423	C204	C-CER,CHIP	SA
2203-006423	C206	C-CER,CHIP	SA
2203-006423	C209	C-CER,CHIP	SA
2203-006423	C225	C-CER,CHIP	SA
2203-006423	C231	C-CER,CHIP	SA
2203-006423	C232	C-CER,CHIP	SA
2203-006423	C238	C-CER,CHIP	SA
2203-006423	C239	C-CER,CHIP	SA
2203-006423	C241	C-CER,CHIP	SA
2203-006423	C242	C-CER,CHIP	SA
2203-006423	C302	C-CER,CHIP	SA
2203-006423	C303	C-CER,CHIP	SA
2203-006423	C322	C-CER,CHIP	SA
2203-006423	C424	C-CER,CHIP	SA
2203-006423	C475	C-CER,CHIP	SA
2203-006423	C480	C-CER,CHIP	SA
2203-006423	C526	C-CER,CHIP	SA
2203-006423	C537	C-CER,CHIP	SA
2203-006423	C540	C-CER,CHIP	SA
2203-006423	C542	C-CER,CHIP	SA
2203-006423	C543	C-CER,CHIP	SA
2203-006423	C545	C-CER,CHIP	SA
2203-006423	C546	C-CER,CHIP	SA
2203-006423	C547	C-CER,CHIP	SA
2203-006423	C548	C-CER,CHIP	SA
2203-006423	C549	C-CER,CHIP	SA

SEC CODE	Design LOC	Discription	STATUS
2203-006423	C550	C-CER,CHIP	SA
2203-006423	C554	C-CER,CHIP	SA
2203-006423	C555	C-CER,CHIP	SA
2203-006423	C604	C-CER,CHIP	SA
2203-006423	C613	C-CER,CHIP	SA
2203-006423	C616	C-CER,CHIP	SA
2203-006423	C617	C-CER,CHIP	SA
2203-006426	C156	C-CER,CHIP	SNA
2203-006466	C517	C-CER,CHIP	SA
2203-006556	C107	C-CER,CHIP	SA
2203-006556	C223	C-CER,CHIP	SA
2203-006562	C137	C-CER,CHIP	SA
2203-006562	C222	C-CER,CHIP	SA
2203-006562	C228	C-CER,CHIP	SA
2203-006562	C310	C-CER,CHIP	SA
2203-006562	C313	C-CER,CHIP	SA
2203-006562	C314	C-CER,CHIP	SA
2203-006562	C315	C-CER,CHIP	SA
2203-006562	C316	C-CER,CHIP	SA
2203-006562	C317	C-CER,CHIP	SA
2203-006562	C323	C-CER,CHIP	SA
2203-006562	C341	C-CER,CHIP	SA
2203-006562	C342	C-CER,CHIP	SA
2203-006562	C433	C-CER,CHIP	SA
2203-006562	C474	C-CER,CHIP	SA
2203-006562	C477	C-CER,CHIP	SA
2203-006562	C478	C-CER,CHIP	SA
2203-006562	C479	C-CER,CHIP	SA
2203-006562	C521	C-CER,CHIP	SA
2203-006562	C524	C-CER,CHIP	SA
2203-006562	C525	C-CER,CHIP	SA
2203-006562	C527	C-CER,CHIP	SA
2203-006562	C528	C-CER,CHIP	SA
2203-006562	C529	C-CER,CHIP	SA
2203-006562	C530	C-CER,CHIP	SA
2203-006562	C538	C-CER,CHIP	SA

SEC CODE	Design LOC	Discription	STATUS
2203-006562	C541	C-CER,CHIP	SA
2203-006562	C544	C-CER,CHIP	SA
2203-006562	C551	C-CER,CHIP	SA
2203-006562	C603	C-CER,CHIP	SA
2203-006562	C612	C-CER,CHIP	SA
2203-006585	C463	C-CER,CHIP	SA
2203-006585	C464	C-CER,CHIP	SA
2203-006626	C136	C-CER,CHIP	SA
2203-006626	C411	C-CER,CHIP	SA
2203-006626	C414	C-CER,CHIP	SA
2203-006626	C468	C-CER,CHIP	SA
2203-006626	C469	C-CER,CHIP	SA
2203-006647	C400	C-CER,CHIP	SA
2203-006647	C403	C-CER,CHIP	SA
2203-006647	C405	C-CER,CHIP	SA
2203-006647	C407	C-CER,CHIP	SA
2203-006648	C133	C-CER,CHIP	SA
2203-006648	C153	C-CER,CHIP	SA
2203-006648	C320	C-CER,CHIP	SA
2203-006648	C520	C-CER,CHIP	SA
2203-006674	C143	C-CER,CHIP	SNA
2203-006824	C210	C-CER,CHIP	SA
2203-006824	C213	C-CER,CHIP	SA
2203-006824	C307	C-CER,CHIP	SA
2203-006824	C539	C-CER,CHIP	SA
2203-006825	C211	C-CER,CHIP	SA
2203-006825	C212	C-CER,CHIP	SA
2203-006825	C476	C-CER,CHIP	SA
2203-006838	C522	C-CER,CHIP	SA
2203-006838	C523	C-CER,CHIP	SA
2203-006872	C139	C-CER,CHIP	SA
2203-006872	C413	C-CER,CHIP	SA
2203-006872	C415	C-CER,CHIP	SA
2203-006872	C425	C-CER,CHIP	SA
2203-006979	C144	C-CER,CHIP	SA
2203-006979	C147	C-CER,CHIP	SA

SEC CODE	Design LOC	Discription	STATUS
2203-006979	C152	C-CER,CHIP	SA
2404-001339	TA200	C-TA,CHIP	SA
2404-001352	TA403	C-TA,CHIP	SA
2404-001374	C124	C-TA,CHIP	SA
2404-001381	C434	C-TA,CHIP	SA
2404-001381	TA400	C-TA,CHIP	SA
2404-001381	TA404	C-TA,CHIP	SA
2404-001396	TA501	C-TA,CHIP	SA
2404-001406	TA300	C-TA,CHIP	SA
2404-001416	TA502	C-TA,CHIP	SA
2404-001448	TA401	C-TA,CHIP	SA
2404-001448	TA402	C-TA,CHIP	SA
2703-002309	L101	INDUCTOR-SMD	SA
2703-002485	L100	INDUCTOR-SMD	SA
2703-002603	L103	INDUCTOR-SMD	SA
2703-002603	L106	INDUCTOR-SMD	SA
2703-002649	L112	INDUCTOR-SMD	SNA
2703-002795	L104	INDUCTOR-SMD	SNA
2703-002842	L105	INDUCTOR-SMD	SA
2703-002842	L108	INDUCTOR-SMD	SA
2703-002900	L107	INDUCTOR-SMD	SA
2703-003001	L200	INDUCTOR-SMD	SA
2703-003001	L201	INDUCTOR-SMD	SA
2703-003001	L503	INDUCTOR-SMD	SA
2703-003064	L504	INDUCTOR-SMD	SA
2801-004455	OSC100	CRYSTAL-SMD	SA
2801-004458	OSC500	CRYSTAL-SMD	SA
2801-004466	OSC200	CRYSTAL-SMD	SA
2801-004560	OSC101	CRYSTAL-SMD	SA
2901-001413	F601	FILTER-EMI SMD	SA
2901-001413	F602	FILTER-EMI SMD	SA
2901-001453	F604	FILTER-EMI SMD	SA
2901-001453	F605	FILTER-EMI SMD	SA
2901-001460	F600	FILTER-EMI/ESD	SA
2904-001592	F100	FILTER-SAW	SA
2904-001599	F101	FILTER-SAW	SA

SEC CODE	Design LOC	Discription	STATUS
2904-001600	F102	FILTER-SAW	SA
2909-001283	F103	FILTER-LC	SA
3301-001158	L405	BEAD-SMD	SA
3301-001158	L406	BEAD-SMD	SA
3301-001342	L202	BEAD-SMD	SA
3301-001342	L404	BEAD-SMD	SA
3301-001342	L500	BEAD-SMD	SA
3301-001342	L501	BEAD-SMD	SA
3301-001342	L502	BEAD-SMD	SA
3301-001912	L407	BEAD-SMD	SA
3705-001358	RFS100	CONNECTOR-COAXIAL	SA
3708-001872	SPK400	CONNECTOR-FPC/FFC/PIC	SA
3708-002283	HDC600	CONNECTOR-FPC/FFC/PIC	SA
3709-001381	CD600	CONNECTOR-CARD EDGE	SA
3709-001391	SIM600	CONNECTOR-CARD EDGE	SA
3710-002442	IFC500	SOCKET-INTERFACE	SA
3711-005933	HDC601	HEADER-BOARD TO BOARD	SA
3711-006217	BTC300	HEADER-BATTERY	SA
4202-001317	BTANT100	ANTENNA-CHIP	SA
4302-001158	BAT300	BATTERY-LI(2ND)	SA
GH09-00045A	UCP200	IC MICOM	SA
GH70-02367A	FPC600	ICT-ON-BOARD CLIP	SA
GH70-02367A	FPC602	ICT-ON-BOARD CLIP	SA
GH70-02367A	FPC603	ICT-ON-BOARD CLIP	SA

7. Disassembly and Assembly Instructions

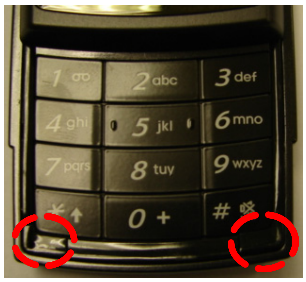
7-1. Disassembly

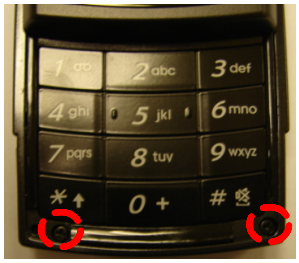
1

※ caution

1) Remove the battery and SIM CARD.

2



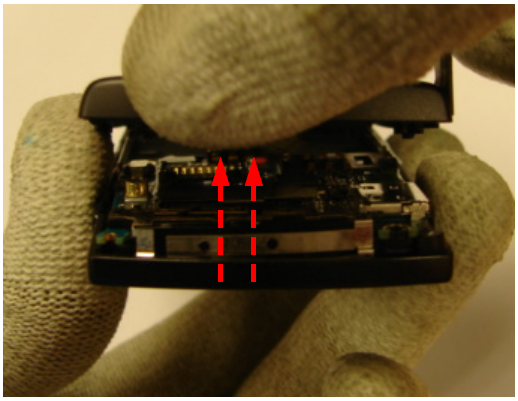


1) Unscrew 4 points of Rear.
2) Remove the screw cap of FRONT.
3) Unscrew 2 points of FRONT.

※ caution

1) Be careful not to scratch molding.

3



1) Disjoint both hooks of REAR.
2) Pull the foot of REAR.

※ caution

1) Be careful not to damage LOCKER.

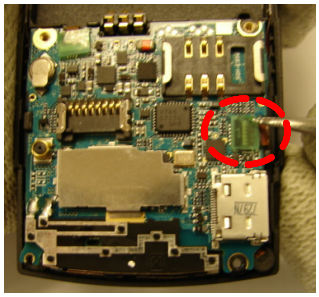
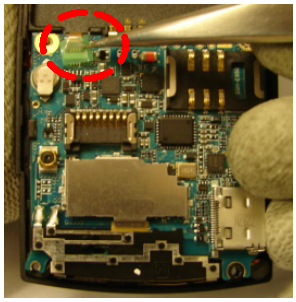
4

1) Hold the head of REAR and disassemble REAR.

※ caution

1) Be careful not to damage HOOK.

5

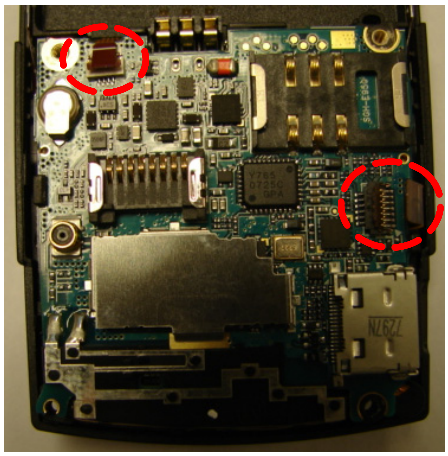



1) Remove the green insulating tape on the connector of KEY PBA.
2) Remove the green insulating tape on the connector of SPK and MOTOR.

※ caution

1) Be careful not to damage CONNECTOR.

6

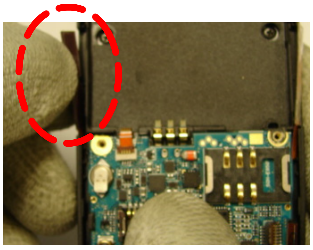
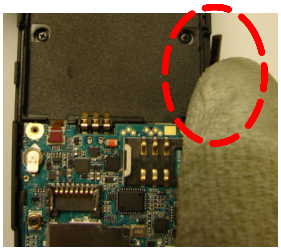


1) Pull out KEY PBA FPCB from the connector.
2) Pull out SPK and MOTOR FPCB from the connector.

※ caution

1) Be careful not to damage CONNECTOR.

7

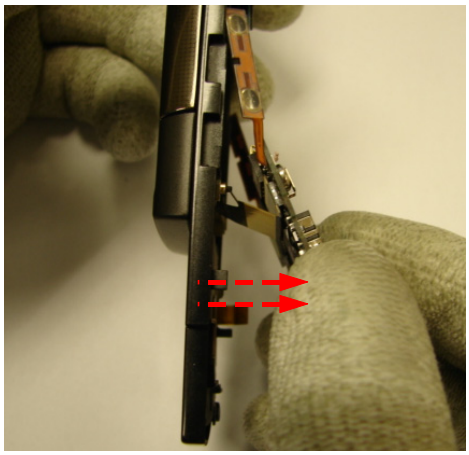



1) Disassemble CAMERA KEY FPCB.
2) Disassemble VOLUME KEY FPCB..

※ caution

1) Be careful not to damage FPCB.

8

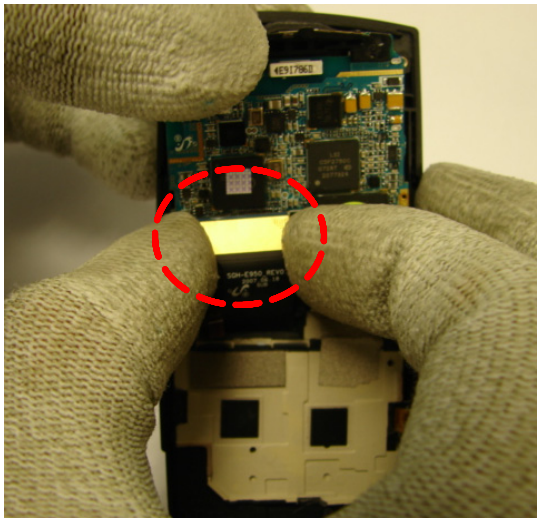


1) Disjoint HOOK holding MAIN PBA, and detach MAIN PBA from SET.

※ caution

1) Be careful not to damage SLIDE FPCB.

9

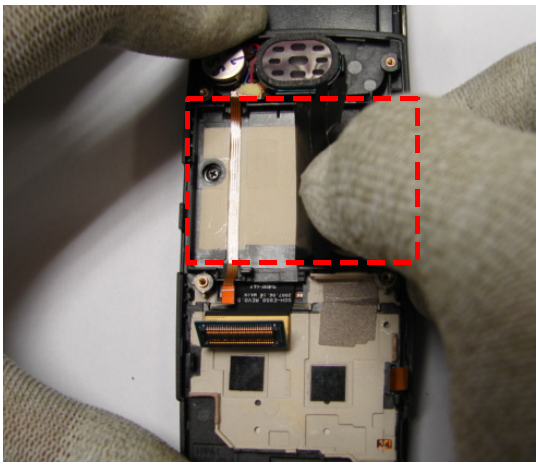


1) Detach SLIDE FPCB from MAIN PBA.

※ caution

1) When disassembling SLIDE FPCB, be careful not to damage PBA and SLIDE FPCB.

10

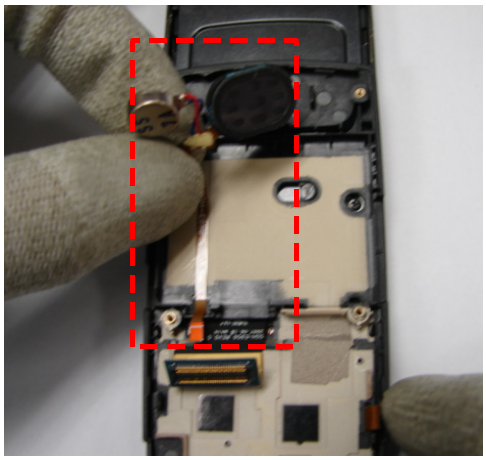


1) Remove BATTERY SHEET.

※ caution

1) When removing BATTERY SHEET, be careful not to damage at other parts.

11

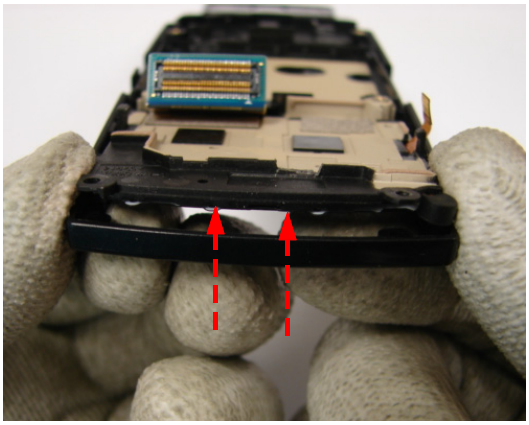


1) Detach SPK & MOTOR from FRONT, and remove FPCB carefully.

※ caution

1) Be careful not to damage SPK & MOTOR FPCB.

12

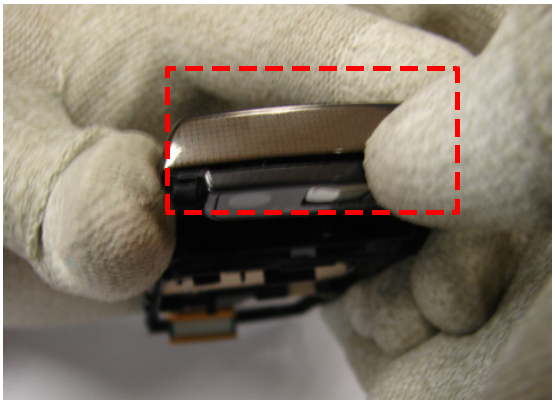


1) Pull the bottom of KEY BRACKET and detach KEY BRACKET from FRONT.

※ caution

1) Be careful not to damage MIC.

13

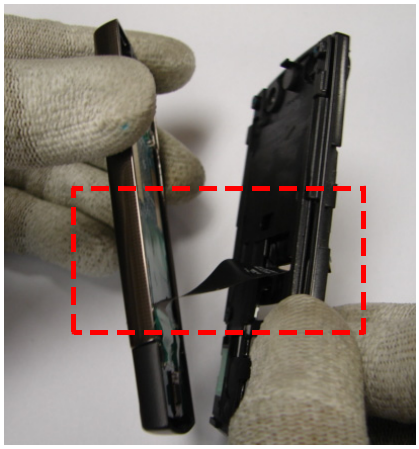


1) Disjoint the hook of LOWER like picture.

※ caution

1) Be careful not to be scratched on the SET.

14



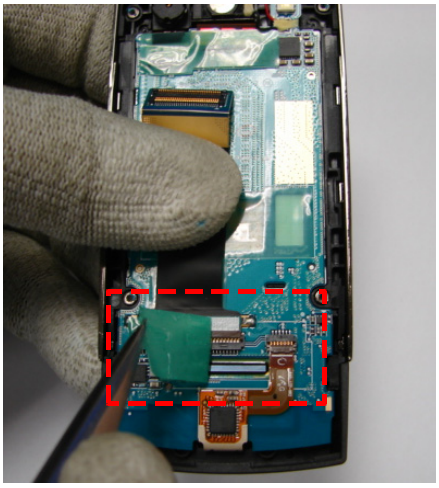
1) Close FRONT SLIDE, and pull out SLIDE FPCB from FRONT HOLE.

※ caution

1) Be careful not to damage SLIDE FPCB.

2) Close FRONT SLIDE, and pull out SLIDE FPCB

15

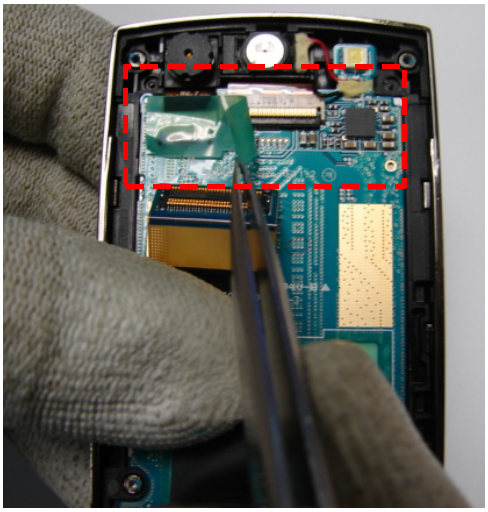


1) Remove the green insulating tape on SLIDE FPCB CONNECTOR of SUB PBA.

※ caution

1) Be careful not to damage the connector.

16

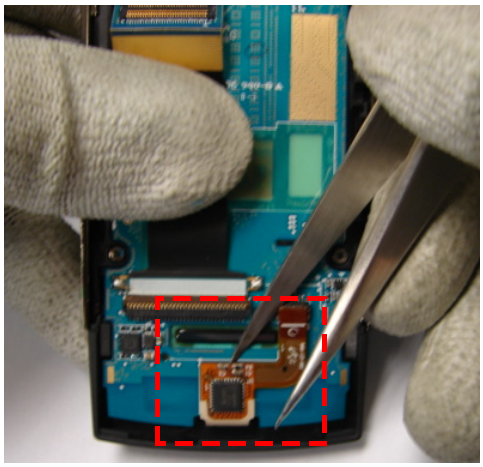


1) Remove the green insulating tape on MAIN LCD CONNECTOR of SUB PBA.

※ caution

1) Be careful not to damage the connector.

17



1) Detach TOUCH KEY FPCB from the connector.
2) Detach TOUCH KEY from SUB PCB.

※ caution

1) Be careful not to damage TOUCH KEY FPCB.

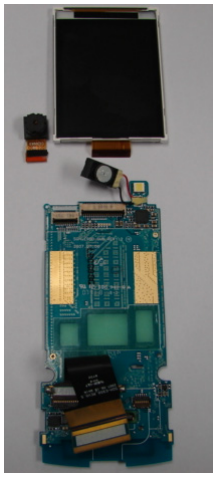
18

1) Detach CAMERA & RECEIVER from UPPER.

※ caution

1) Be careful not to damage TOUCH KEY FPCB.

19

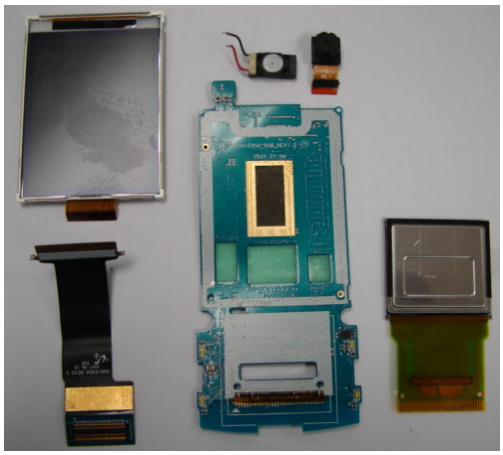


1) Detach MAIN LCD and CAMERA from SUB PBA.
2) Detach SUB LCD from SUB PBA.

※ caution

1) When detaching SUB LCD, be careful not to be scratched on the LCD.

20



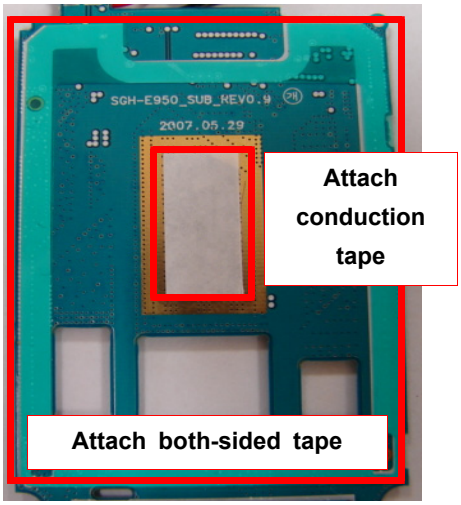
1) Unsolder RECEIVER & SLIDE FPCB in SUB PBA.
2) Unsolder HOT BAR of SUB LCD in SUB PBA.

※ caution

1) When detach HOT BAR, be careful.

7-2. Assembly

1

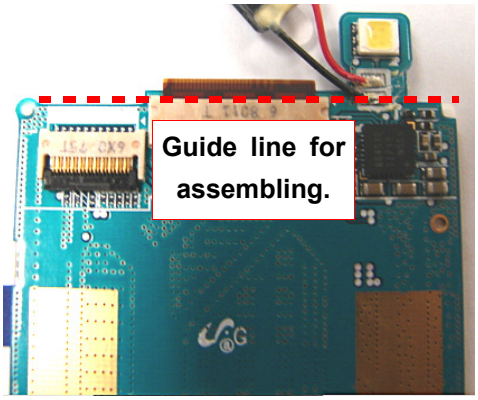


1) Attach the conduction tape.
2) Attach the both-sided tape.

※ caution

1) Attach the tape in the guide line.

2

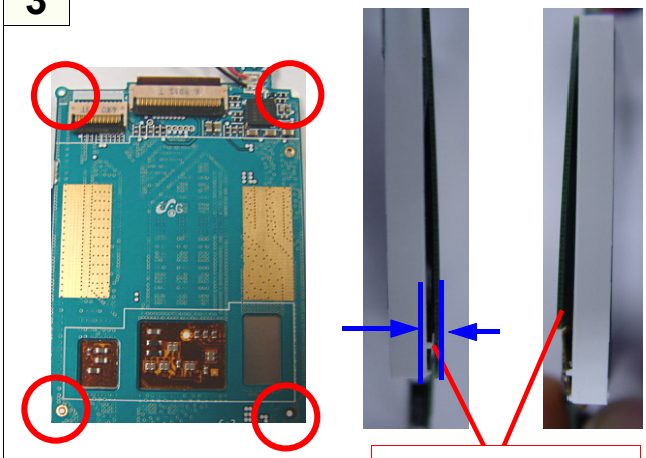


1) Insert MAIN LCD FPCB into the connector according to guide line.

※ caution

1) Insert LCD FPCB according to guide line.

3

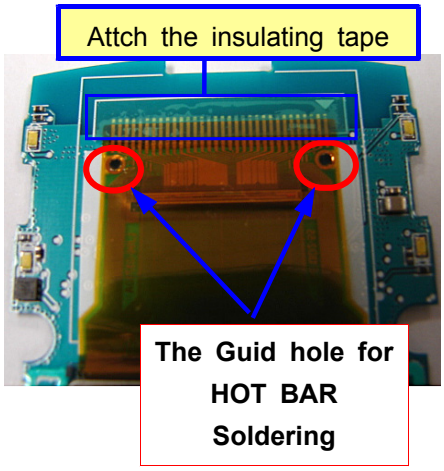


1) Detach release papers of the conduction tape and the both-sided tape.
2) Attach MAIN LCD to SUB PBA closely according to GUIDE RIB.

※ caution

1) Attach MAIN LCD to SUB PBA closely according to GUIDE RIB.

4

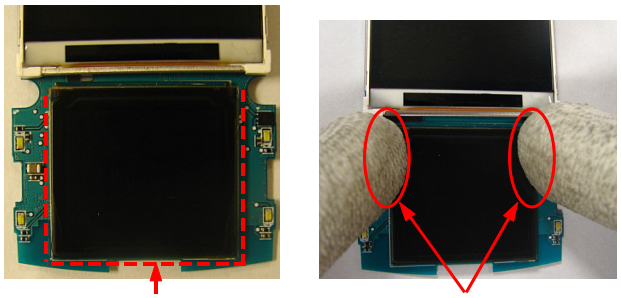


1) Put SUB LCD FPCB according to guide hole.
2) Solder SUB LCD FPCB using HOT BAR JIG.
3) Attch the insulating tape according to guide line of the HOT BAR soldering part.

※ caution

1) Put SUB LCD FPCB according to guide hole.
2) Attch the insulating tape according to guide line.

5

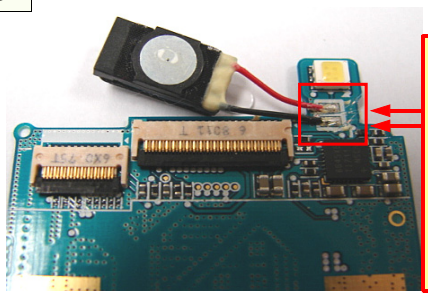


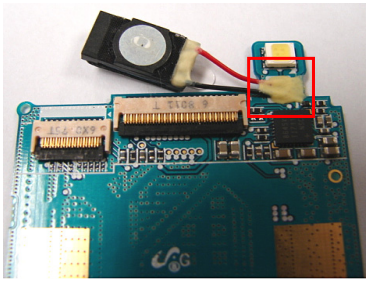
1) Attach SUB LCD according to guide line safely.
2) Press the top of SUB LCD softly like picture.

※ caution

1) Attach SUB LCD according to guide line safely.

6



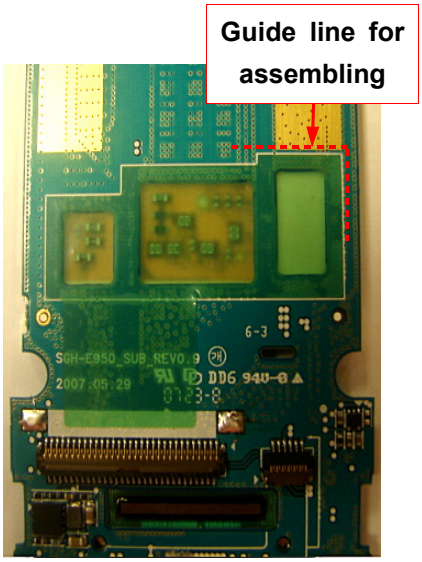


1) Solder RECIVER WIRE like the picture.
2) BONDING there like the picture.

※ caution

1) Don't damage MAIN LCD FPCB when soldering.

7

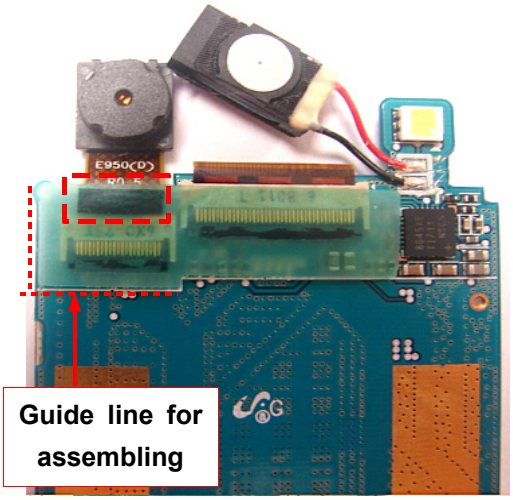


1) Attach the green insulating tape according to guide line on SUB PBA.

※ caution

1) Attach the insulating tape according to guide line.

8

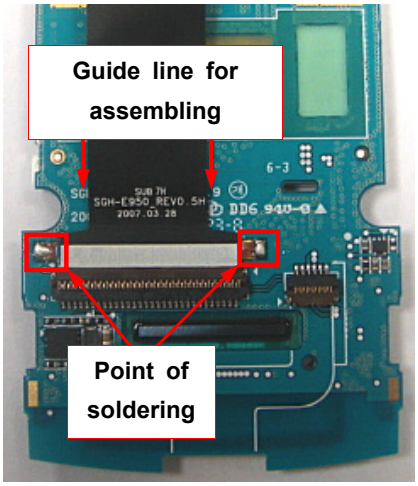


1) Attach CAMERA SPONGE like picture.
2) Attach the insulating tape on LCD FPCB CONNECTOR according to guide line.

※ caution

1) Attach the insulating tape according to guide line.

9

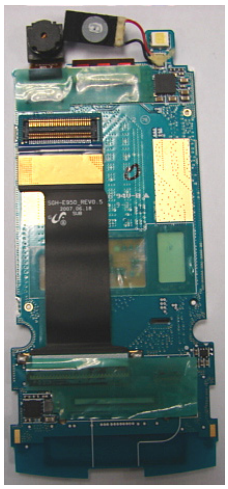


1) Assemble INTENNA.
2) Drive Screw on PBA.

※ caution

1) Be careful not to get a damage of PBA.
2) Push Intenna carefully to be hooked.

10



1) Assemble the Rear case from upper hooker.
2) Assemble the Rear case like a picture.

※ caution

1) Be careful not to get a damage of PBA.

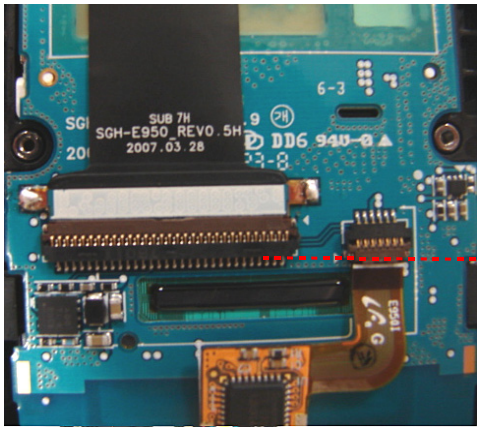
11

1) Insert SUB PBA ASS'Y in UPPER safely.

※ caution

1) Be careful not to be scratched on the SET.

12

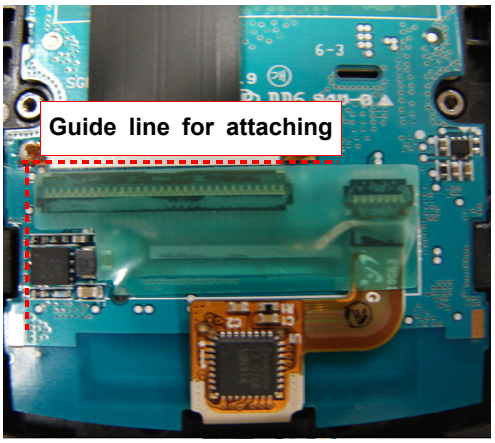


1) Insert TOUCH KEY FPCB into the connector.

※ caution

1) Insert FPCB into the connector according to the guide line.

13

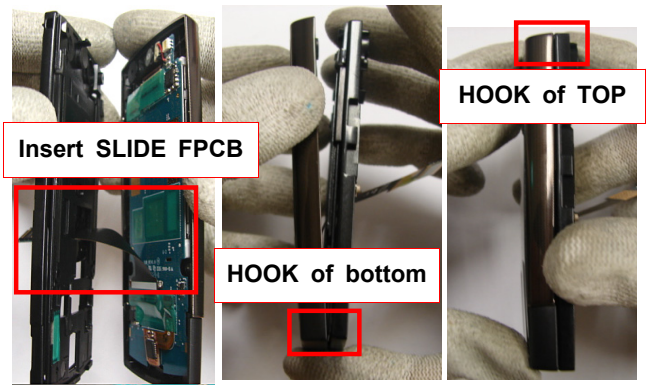


1) Attach the insulating tape of SLIDE FPCB according to the guide line.

※ caution

1) Attach the insulating tape according to guide line.

14

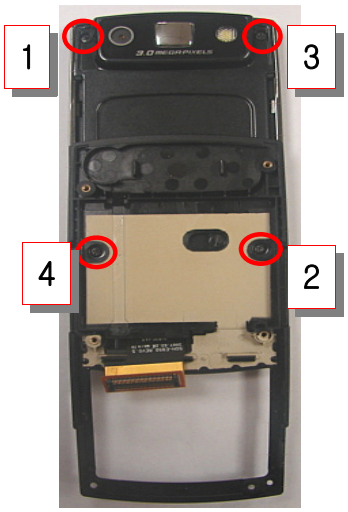


1) Insert SLIDE FPCB into the hole of the FRONT SLIDE which is closed.
2) Fit HOOK of FRONT's bottom part in UPPER and fit HOOK of FRONT's top part in UPPER.

※ caution

1) Be careful not to be scratched on SET.

15

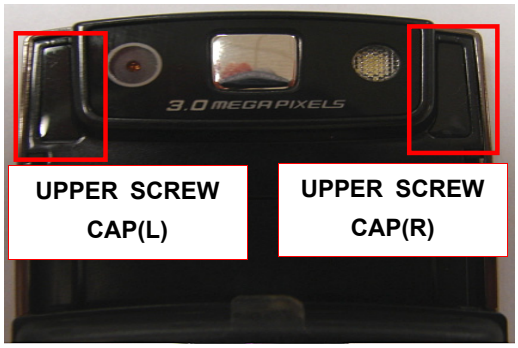


1) Screw 4 points of FRONT.

※ caution

1) Be careful not to be scratched on SET.

16

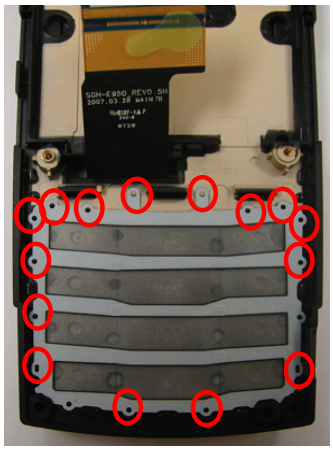


1) Attach SCREW CAP of FRONT.

※ caution

1) Be careful not to be scratched on SET.

17

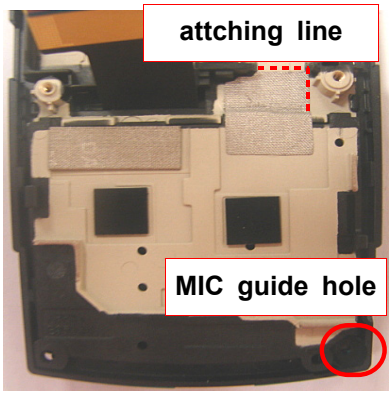


1) Put the KEYPAD according to the KEYPAD GUIDE HOLE.

※ caution

1) Be careful that the KEYPAD exceeds the KEYPAD GUIDE HOLE.

18

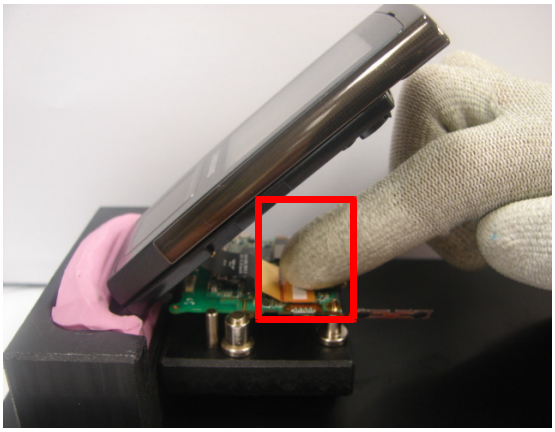


1) Assemble the KEY ASS'Y to the FRONT.
2) Insert the MIC of the KEY ASS'Y to the MIC GUIDE HOLE.

※ caution

1) Be careful that MIC exceeds the MIC GUIDE HOLE.

19

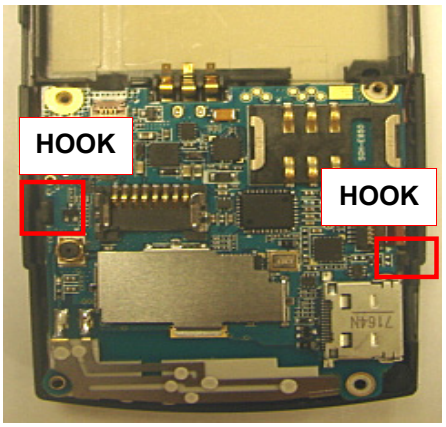


1) Assemble the SLIDE FPCB of the SLIDE ASS'Y to the MAIN PBA.

※ caution

1) Be careful not to be scratched on the SET.

20

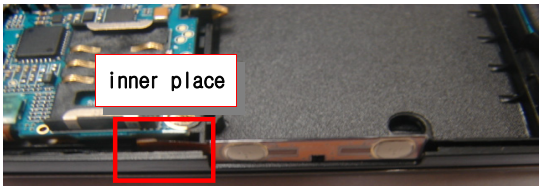


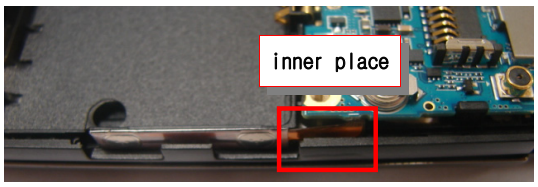
1) Assemble the both HOOK of the FRONT to the MAIN PBA.

※ caution

1) Be careful not to be broken the HOOK.

21



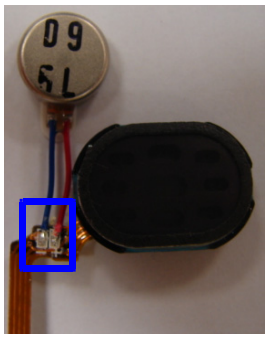


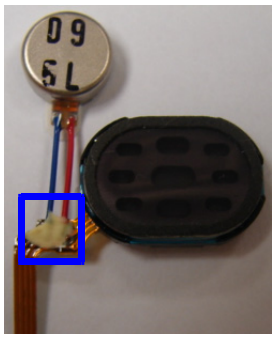
1) Attach the CAMERA KEY and VOLUME KEY.

※ caution

1) Be careful not to be damaged to the FPCB

22





1) Soldering the Motor to the SPK FPCB.

2) Bonding to the soldering point.

※ caution

1) When soldering the MOTOR, Be careful not to be shorted the MOTOR wires.

23

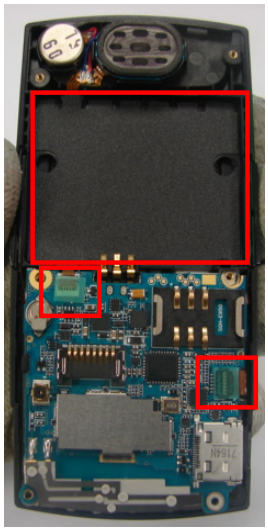
1) Attach the SPK and MOTOR.

2) Attach the FPCB to the Front GROOVE.

※ caution

1) When attaching the FPCB , Be careful not to be out of the guide groove.

24



1) Assemble the SPK & MOTOR FPCB to the MAIN CONN.

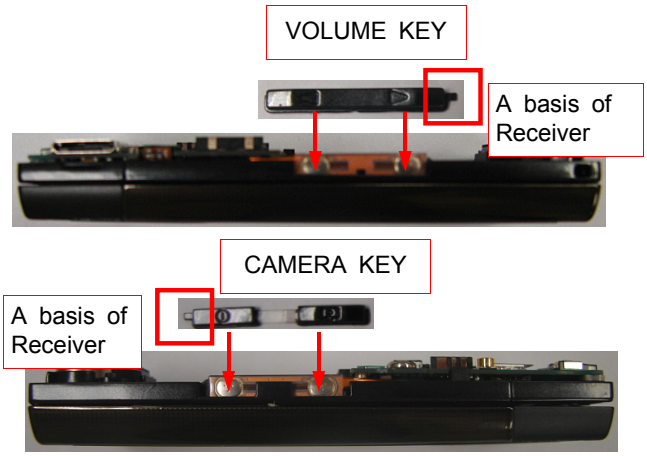
2) Assemble the KEY PBA FPCB to the MAIN CONN.

3) Attach the BATTERY SHEET.

※ caution

1) When attaching the BATTERY SHEET, Be careful not to be out of attached place.

25

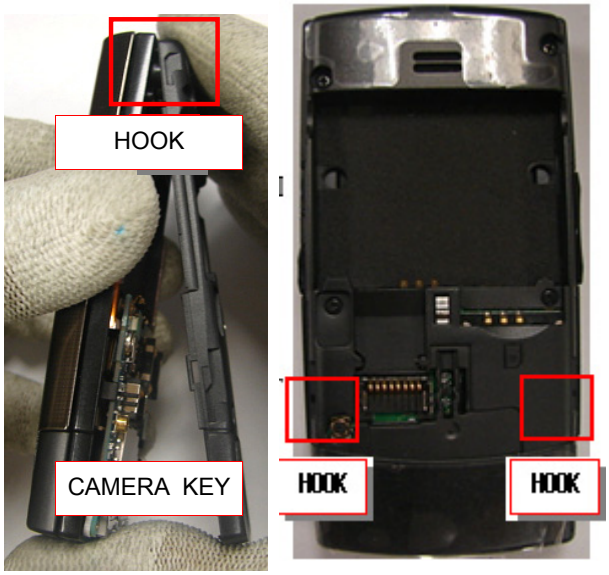


1) Assemble the VOLUME KEY and CAMERA KEY.

※ caution

1) Assemble the SET in proportion to the projection part of SIDE KEY.

26



1) Insert the upper HOOK of REAR
2) Insert the lower HOOK of REAR and assemble.

※ caution

1) Be careful not to be scratched on the SET.

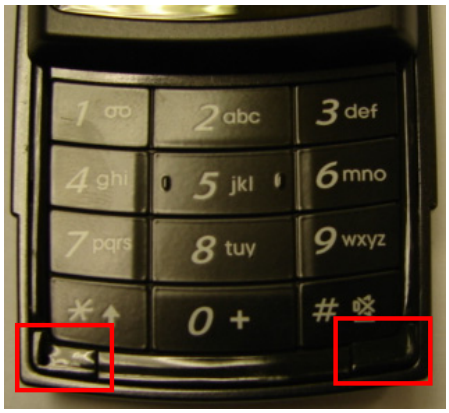
27

1) Attach the SCREW TWO FACES TAPE to the FRONT BOTTOM.

※ caution

1) Be careful not to be scratched on the SET.

28



1) Attach the SCREW CAP to the FRONT BOTTOM.

※ caution

1) Be careful not to be scratched on the SET.

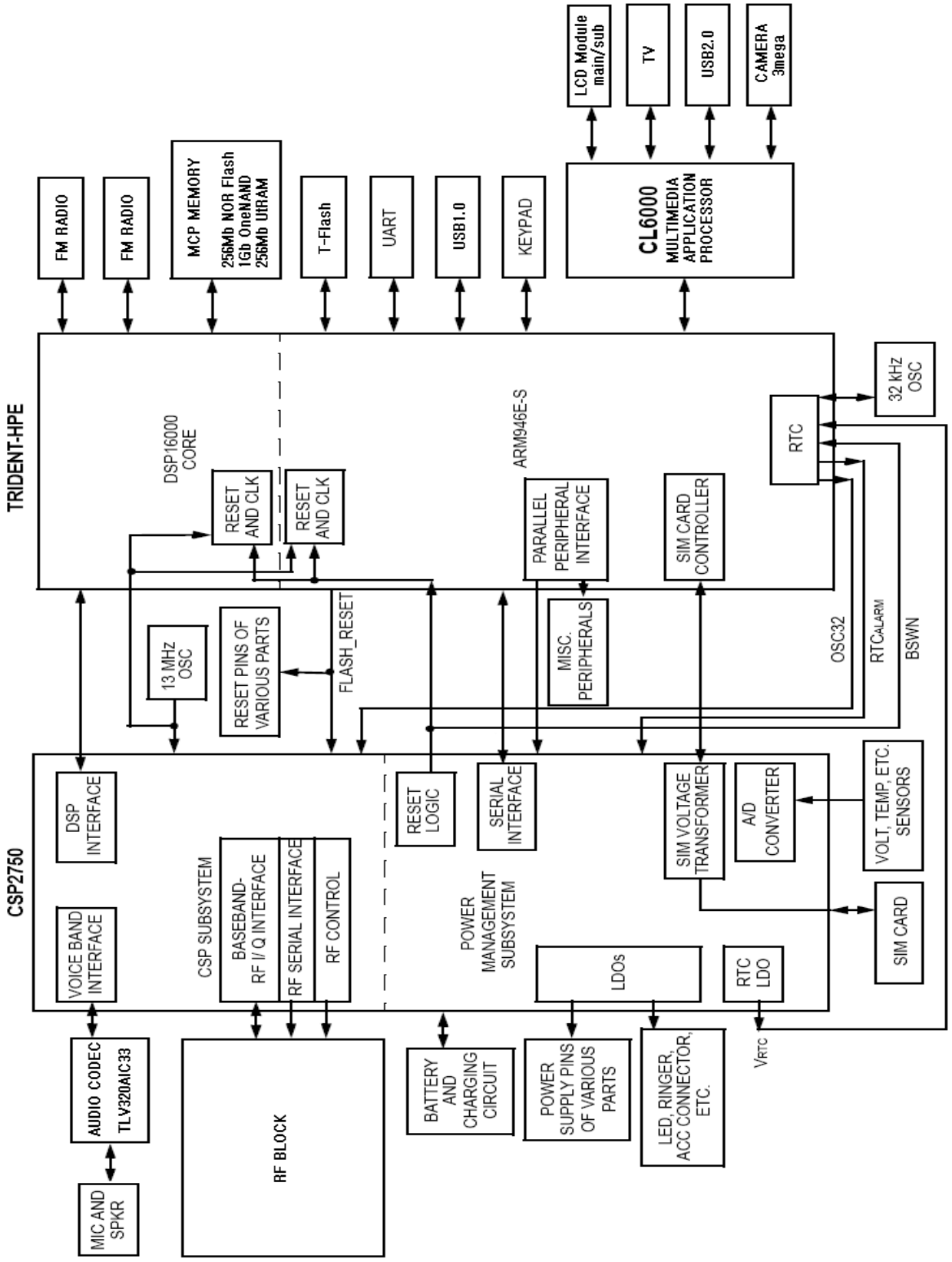
29

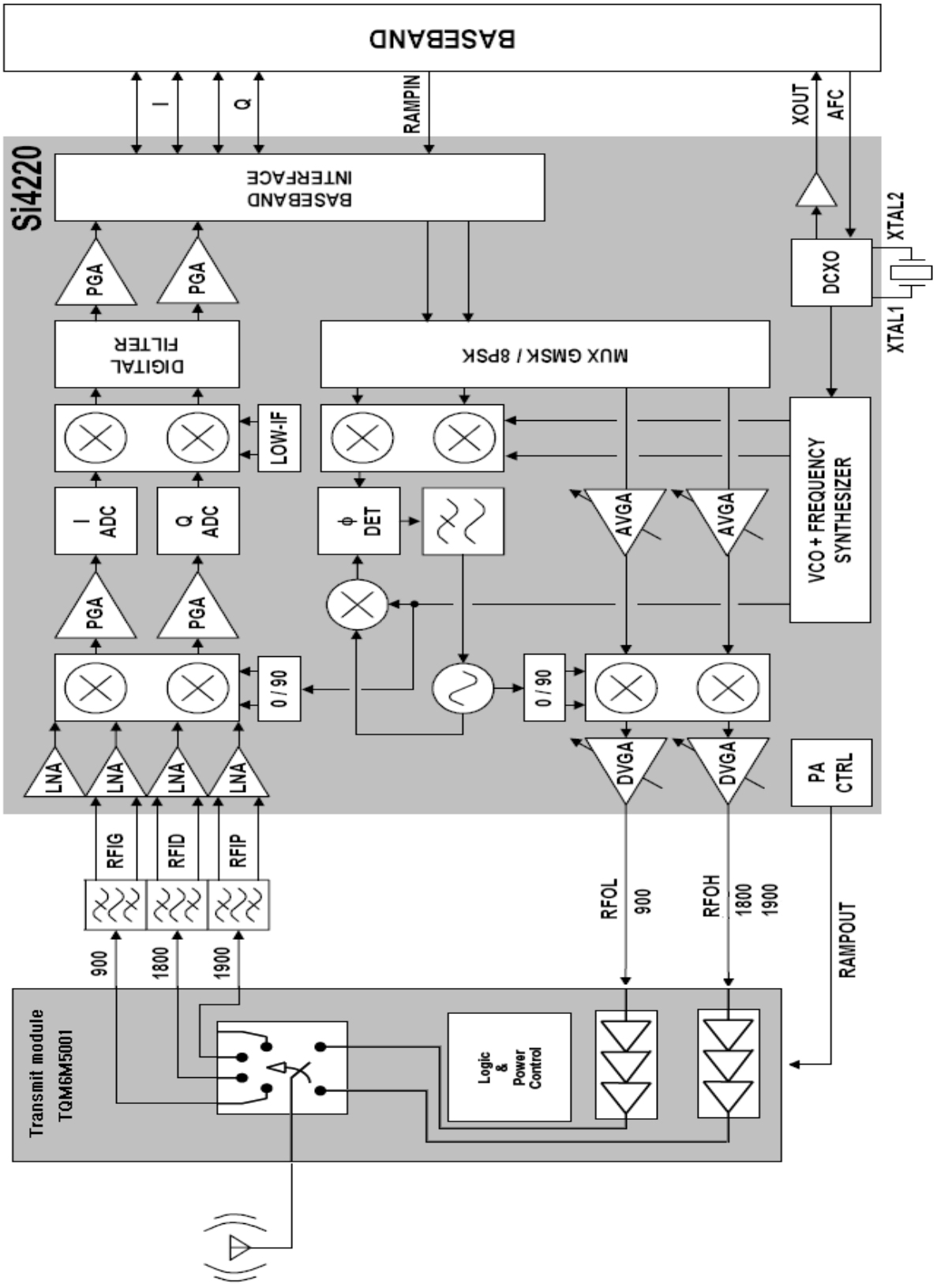
1) Screw 4 points of the REAR.

※ caution

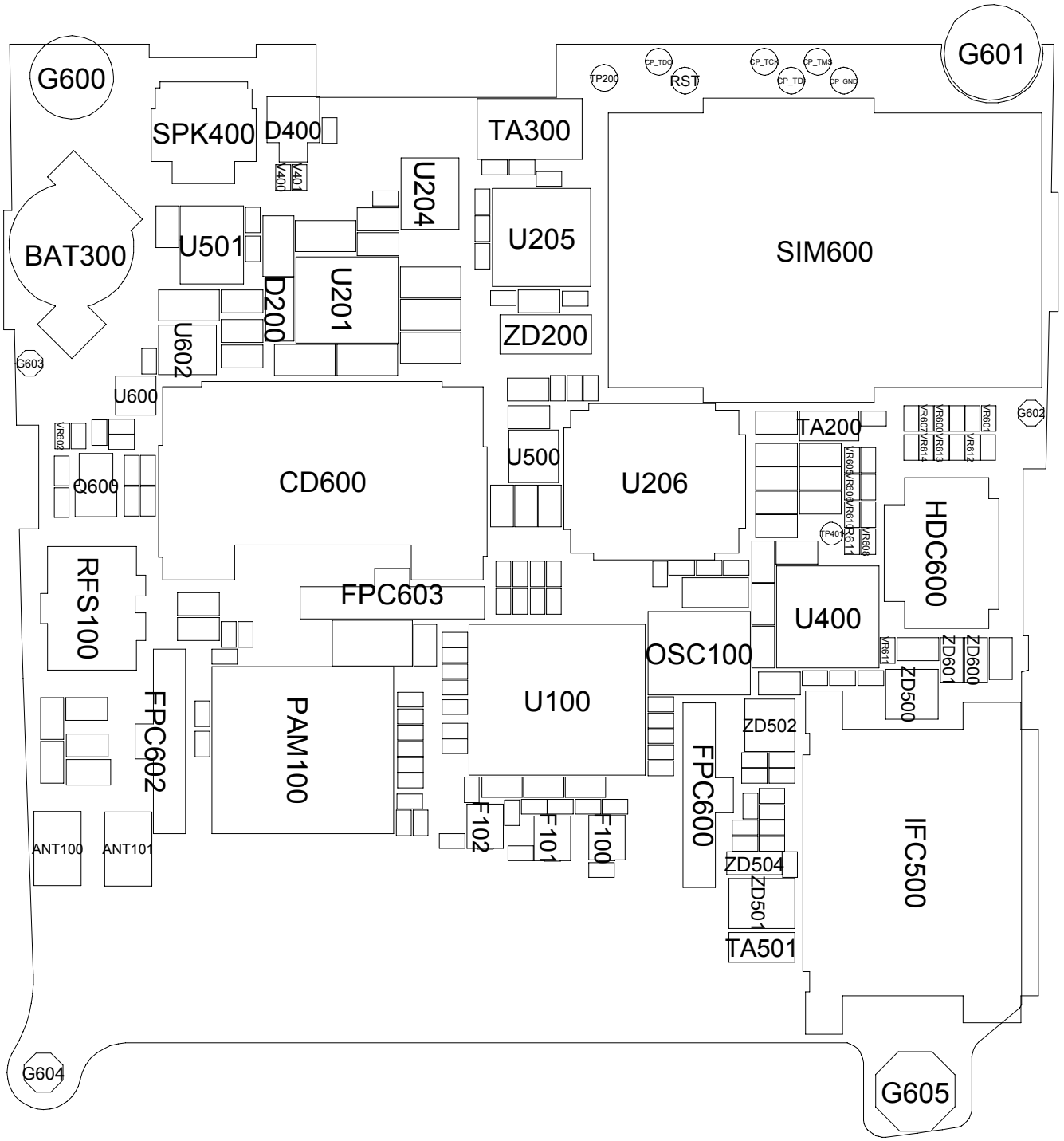
1) Be careful not to be scratched on the SET.

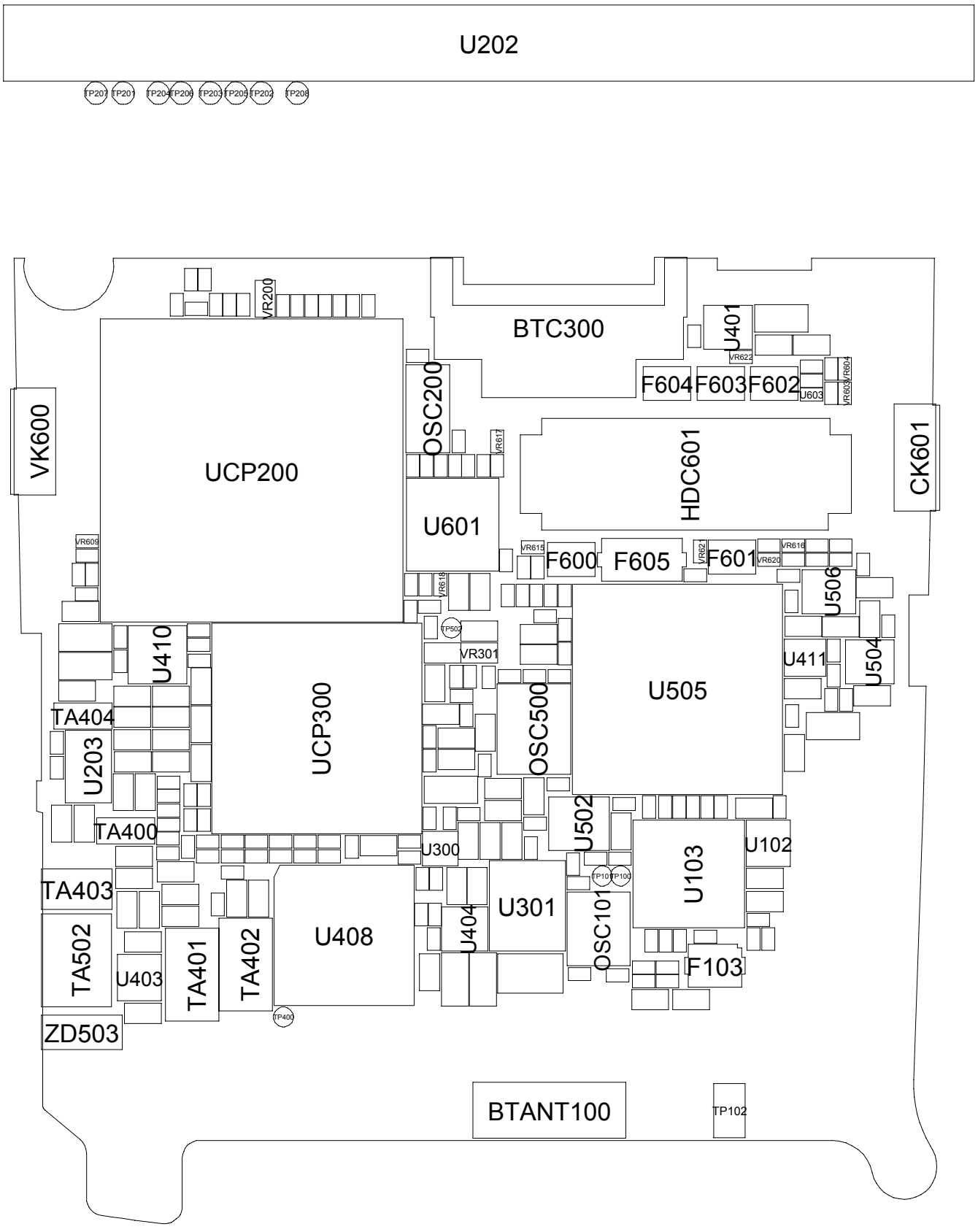
8. Block Diagrams





9. PCB Diagrams

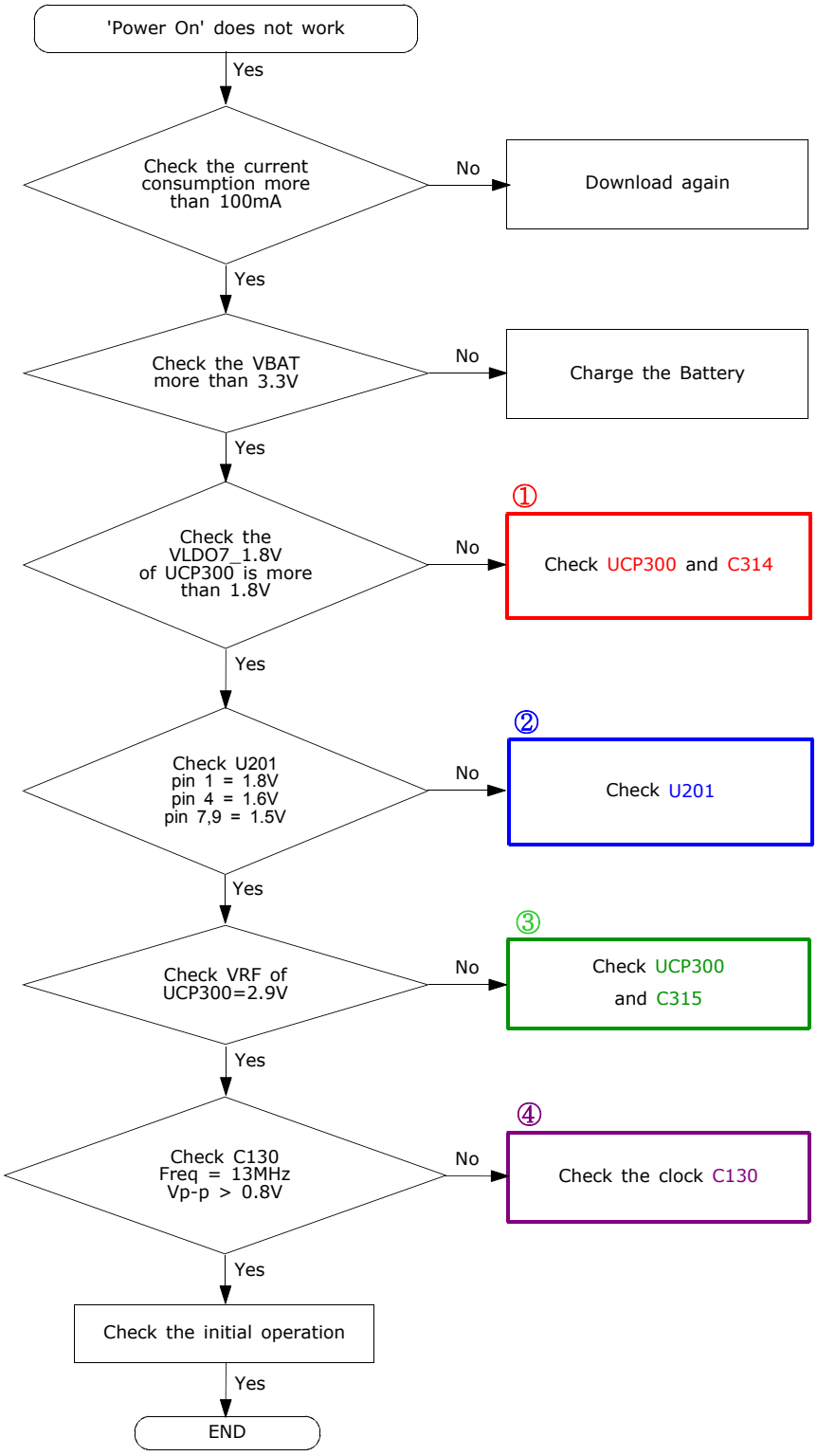


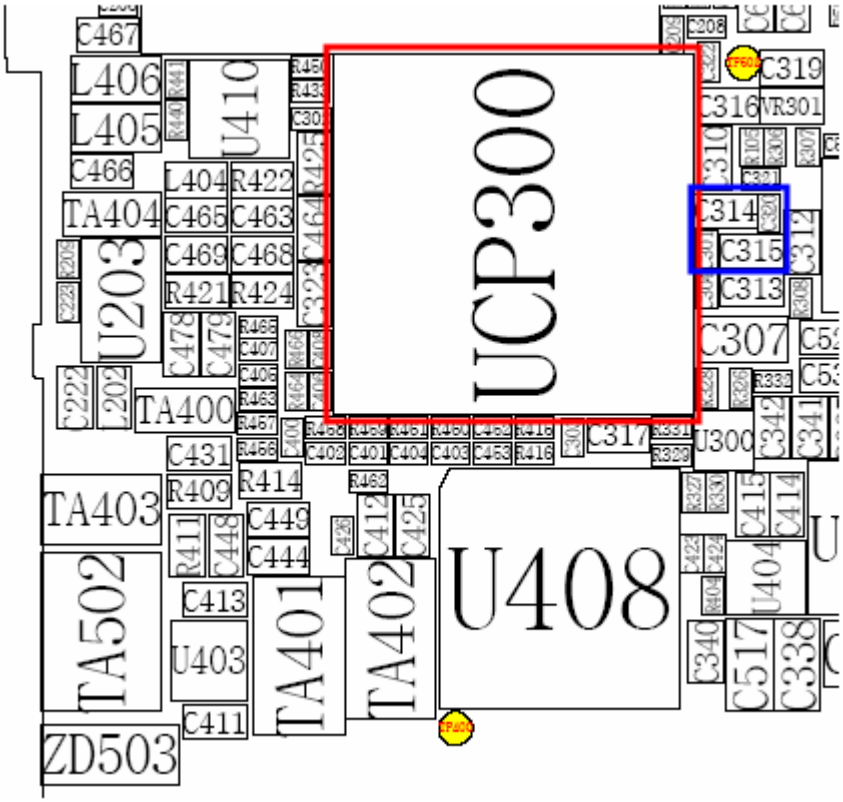


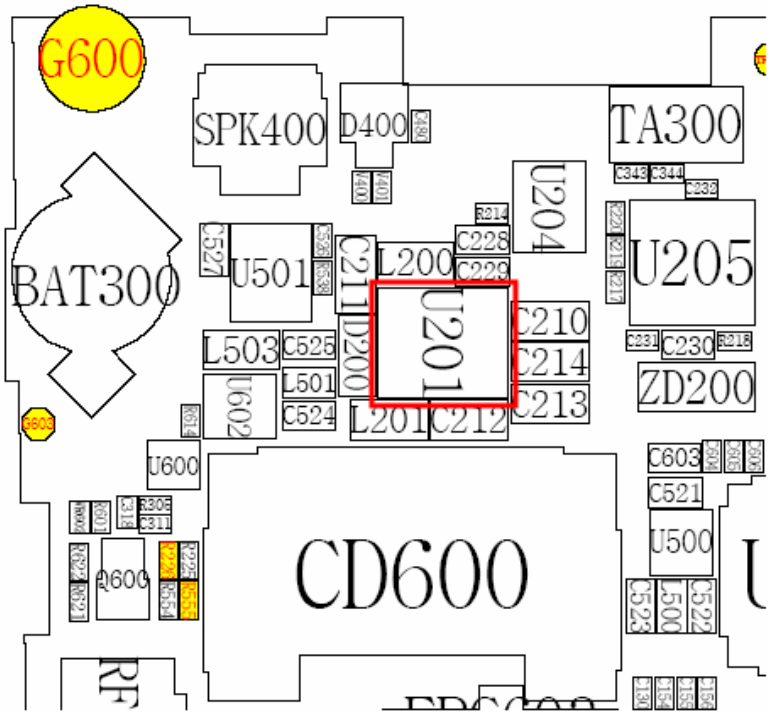
10. Flow Chart of Troubleshooting

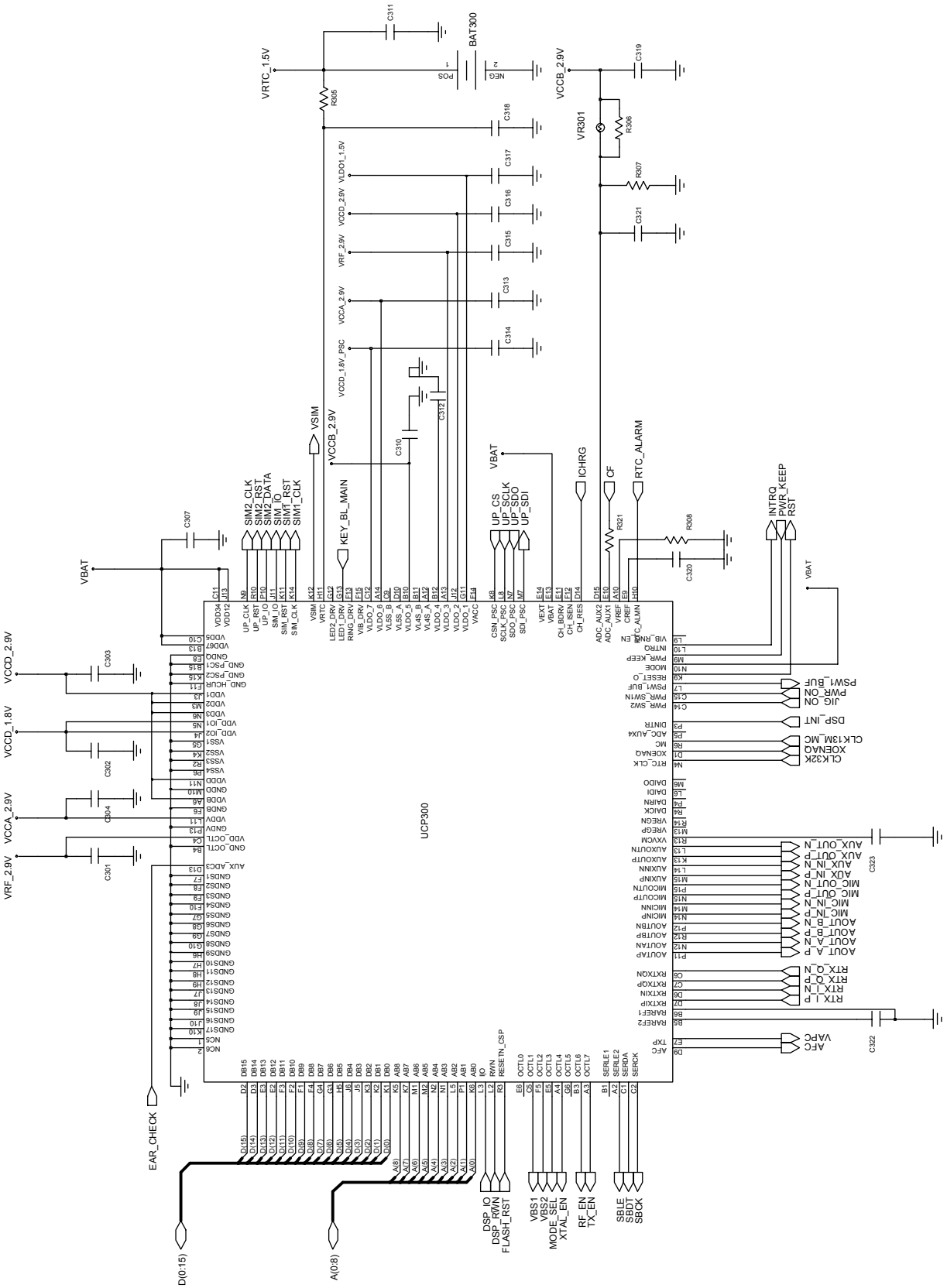
10-1 BASEBAND

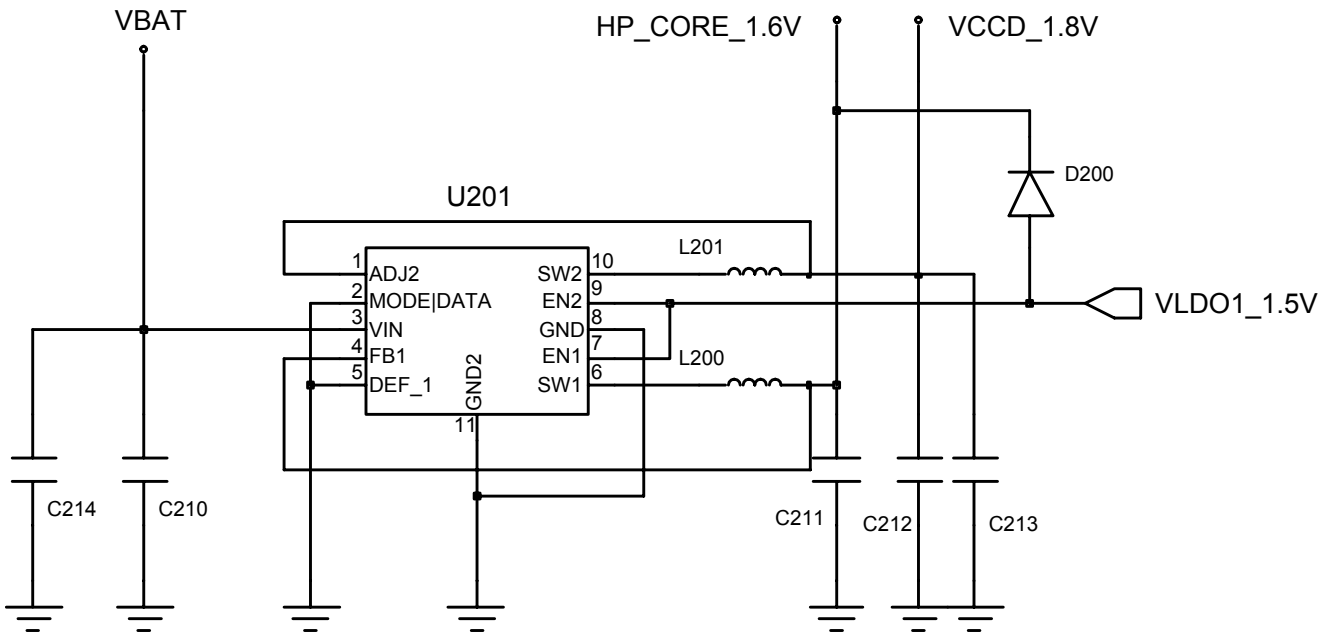
10-1-1. Power ON



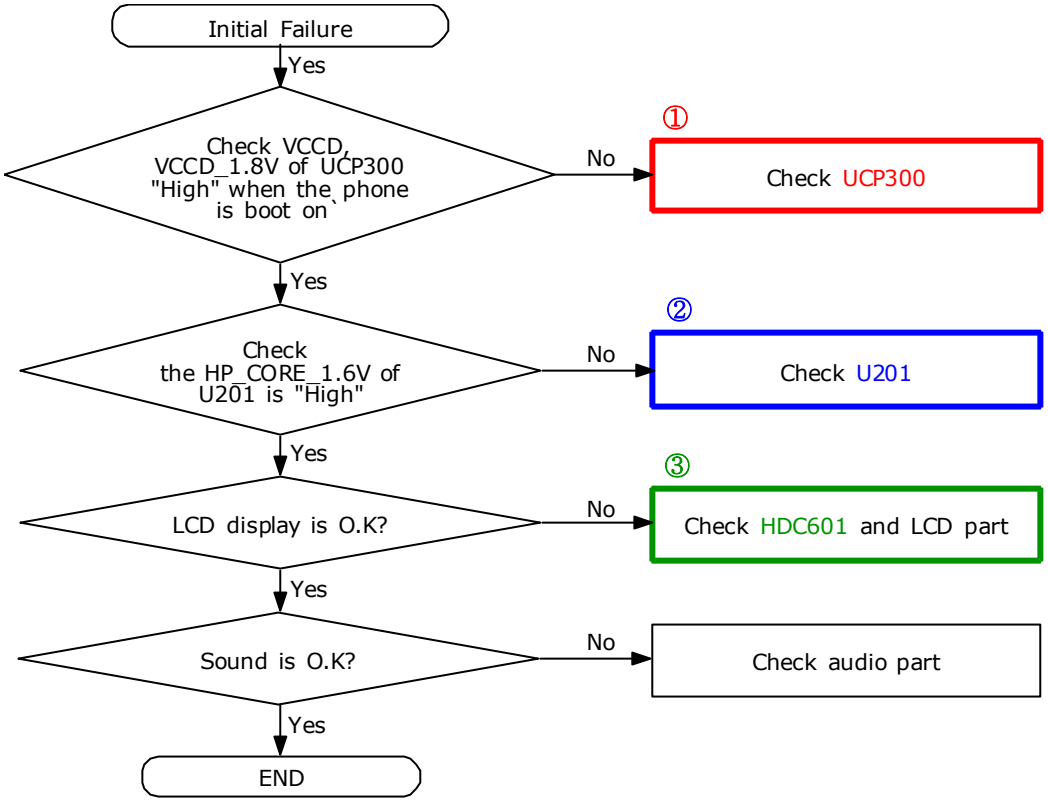


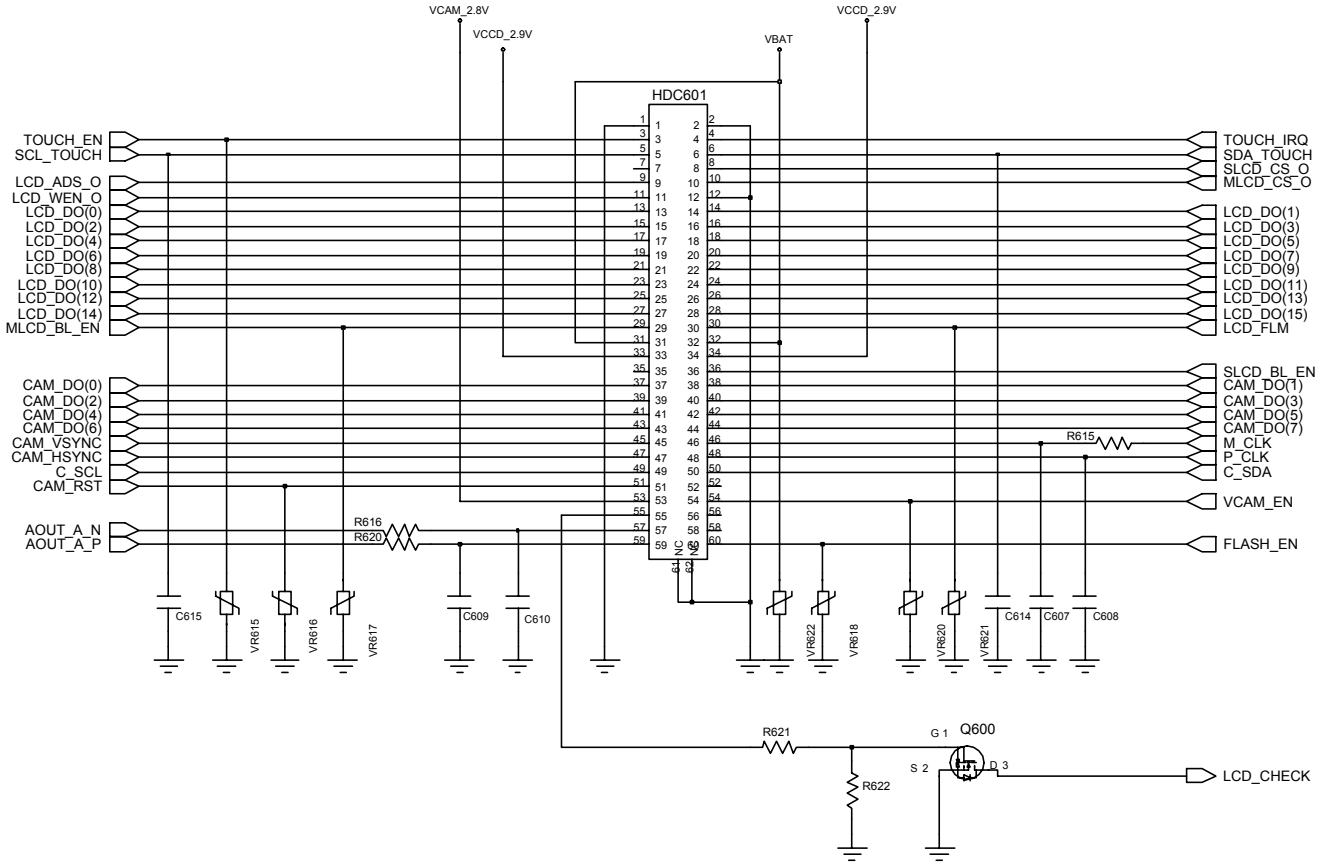




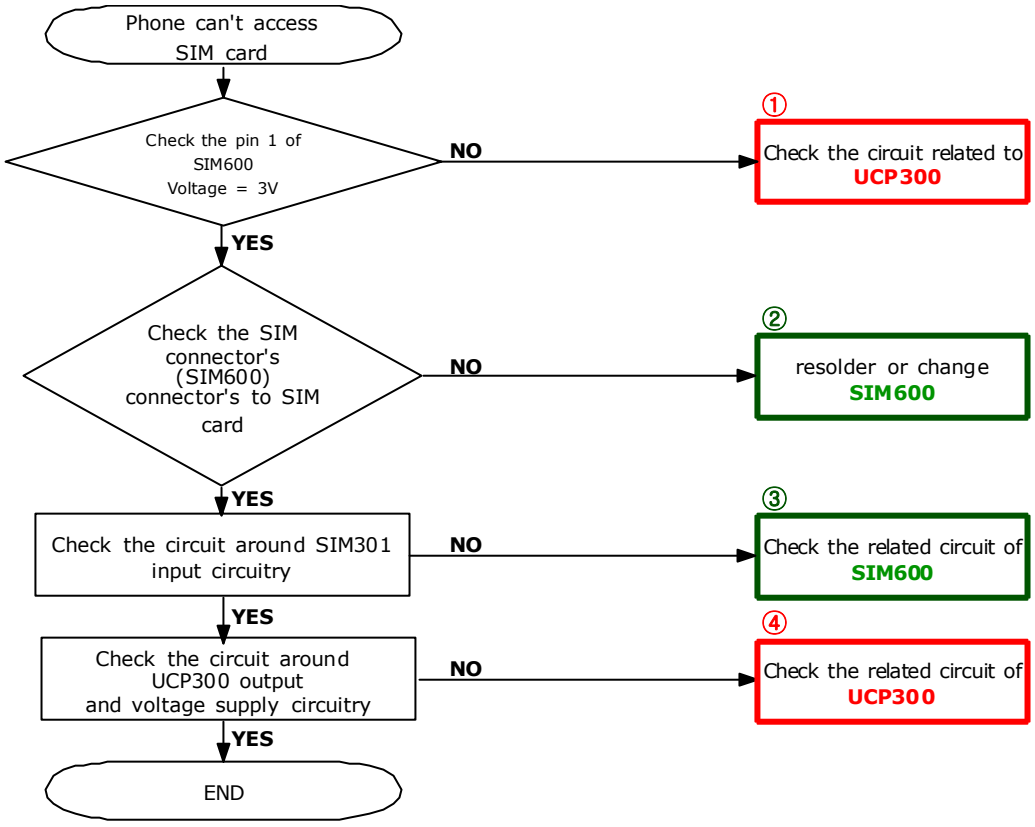


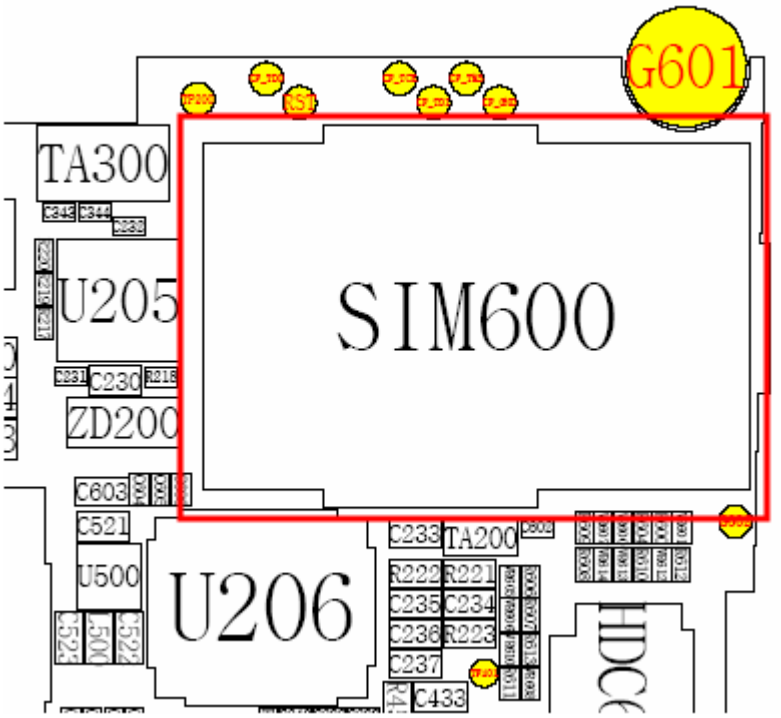
10-2-2. Initial

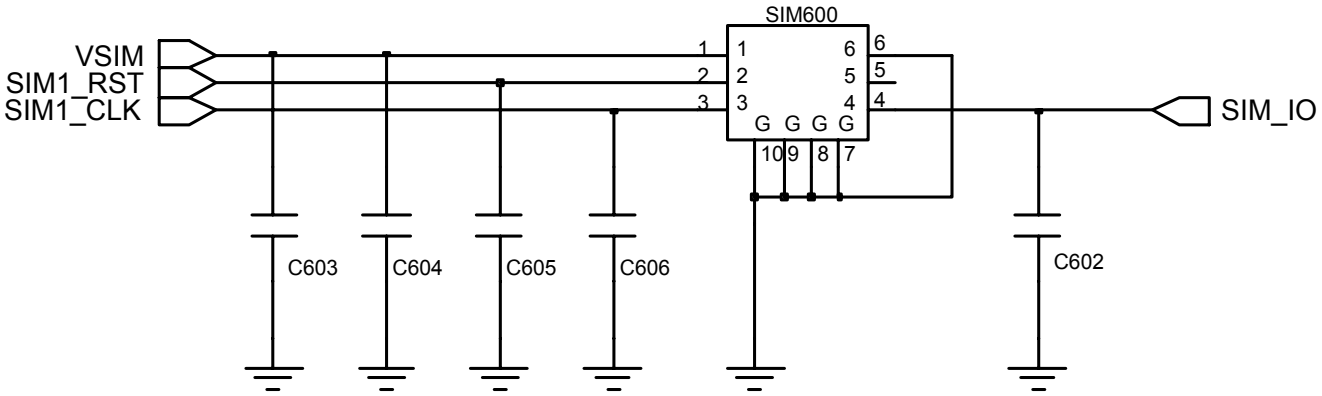




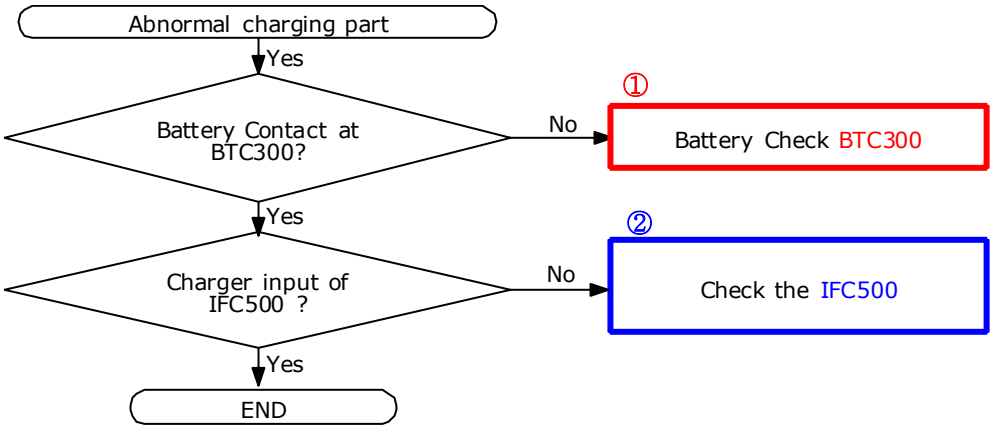
10-1-3. Sim Part

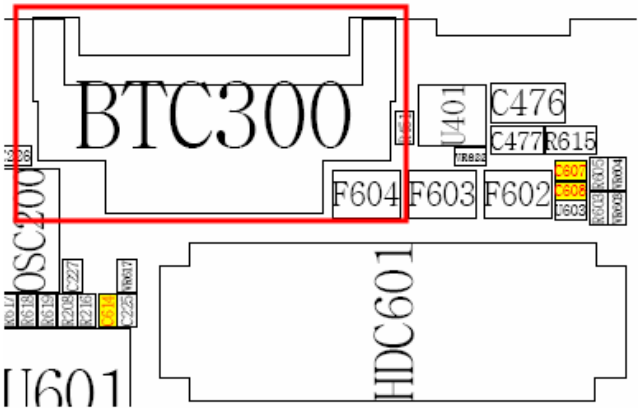


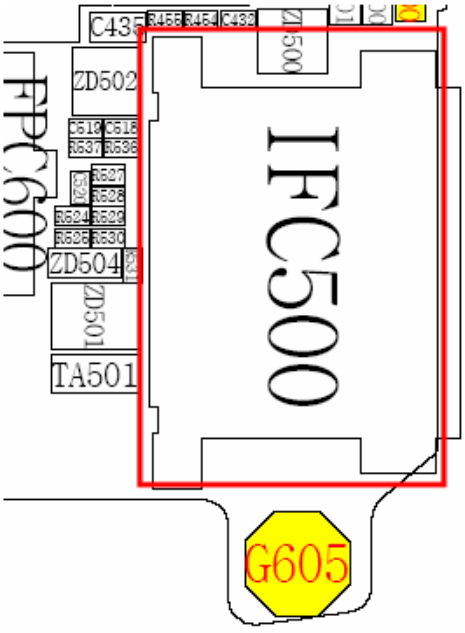


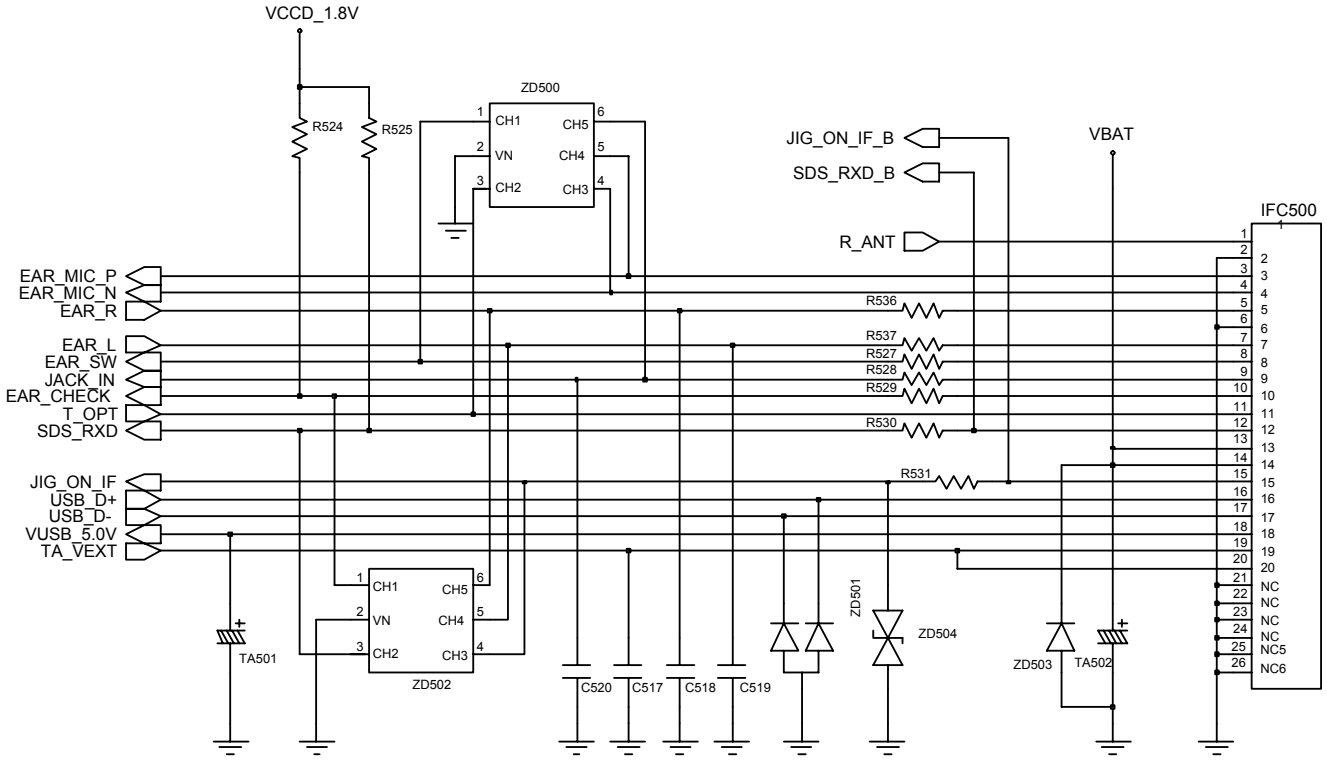


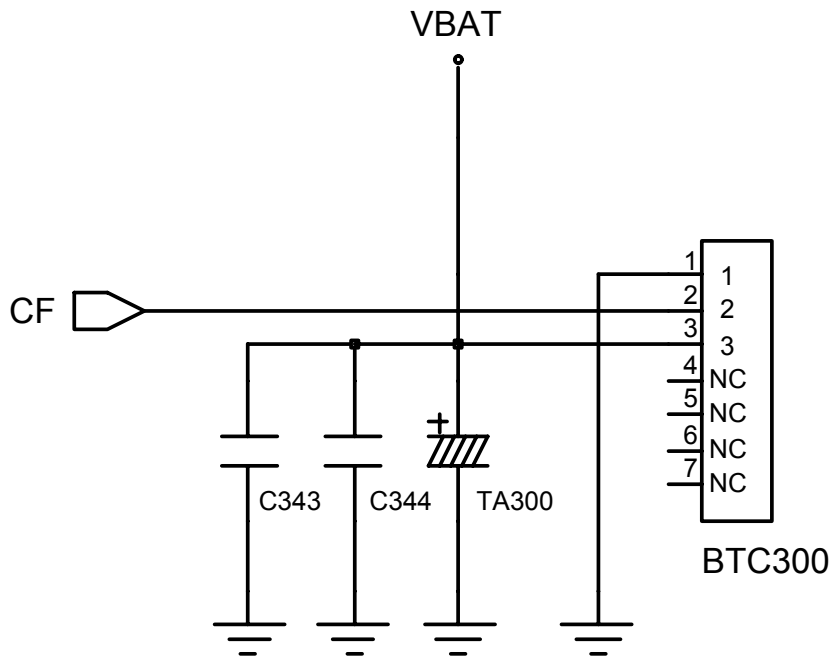
10-1-4. Charging Part



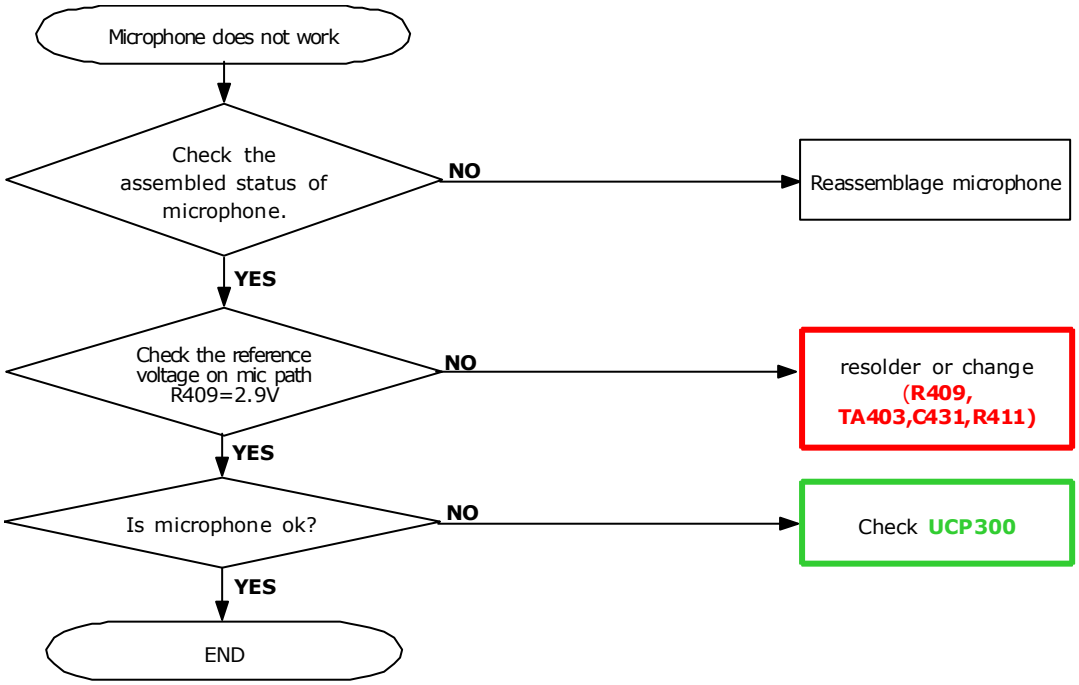


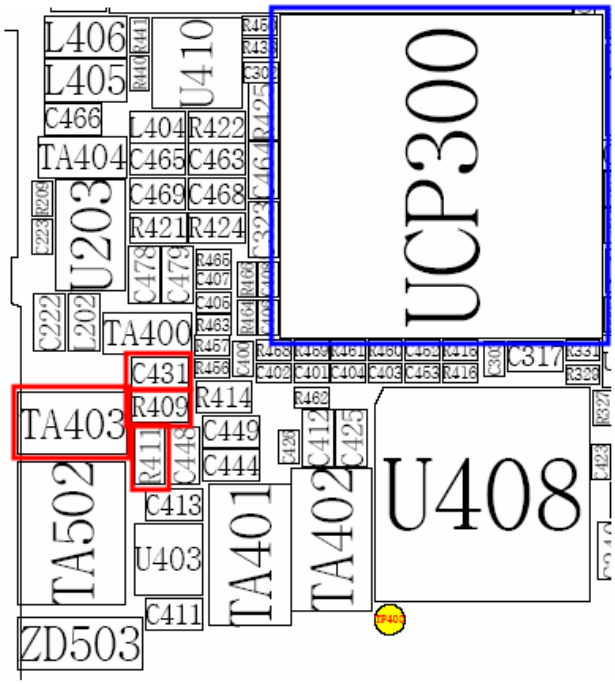


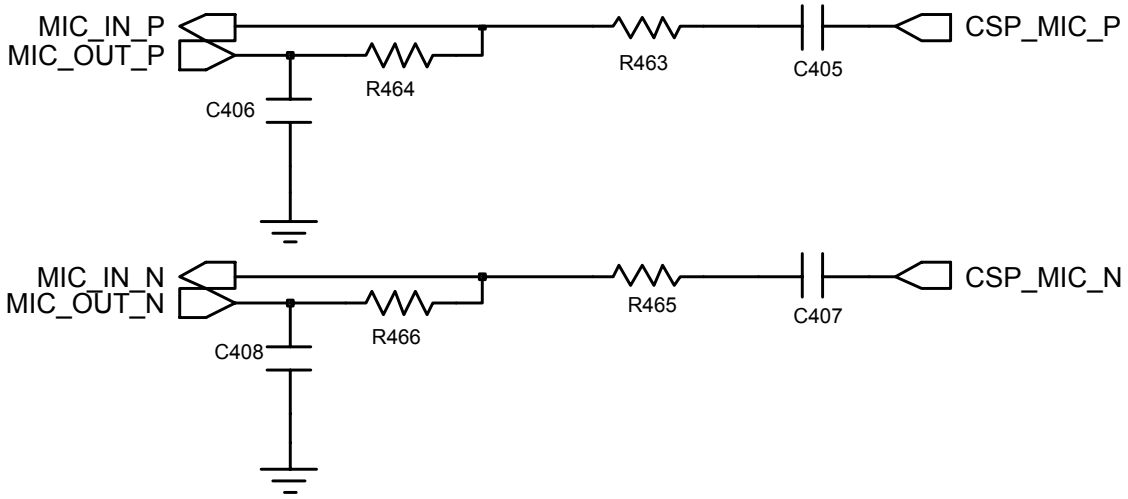


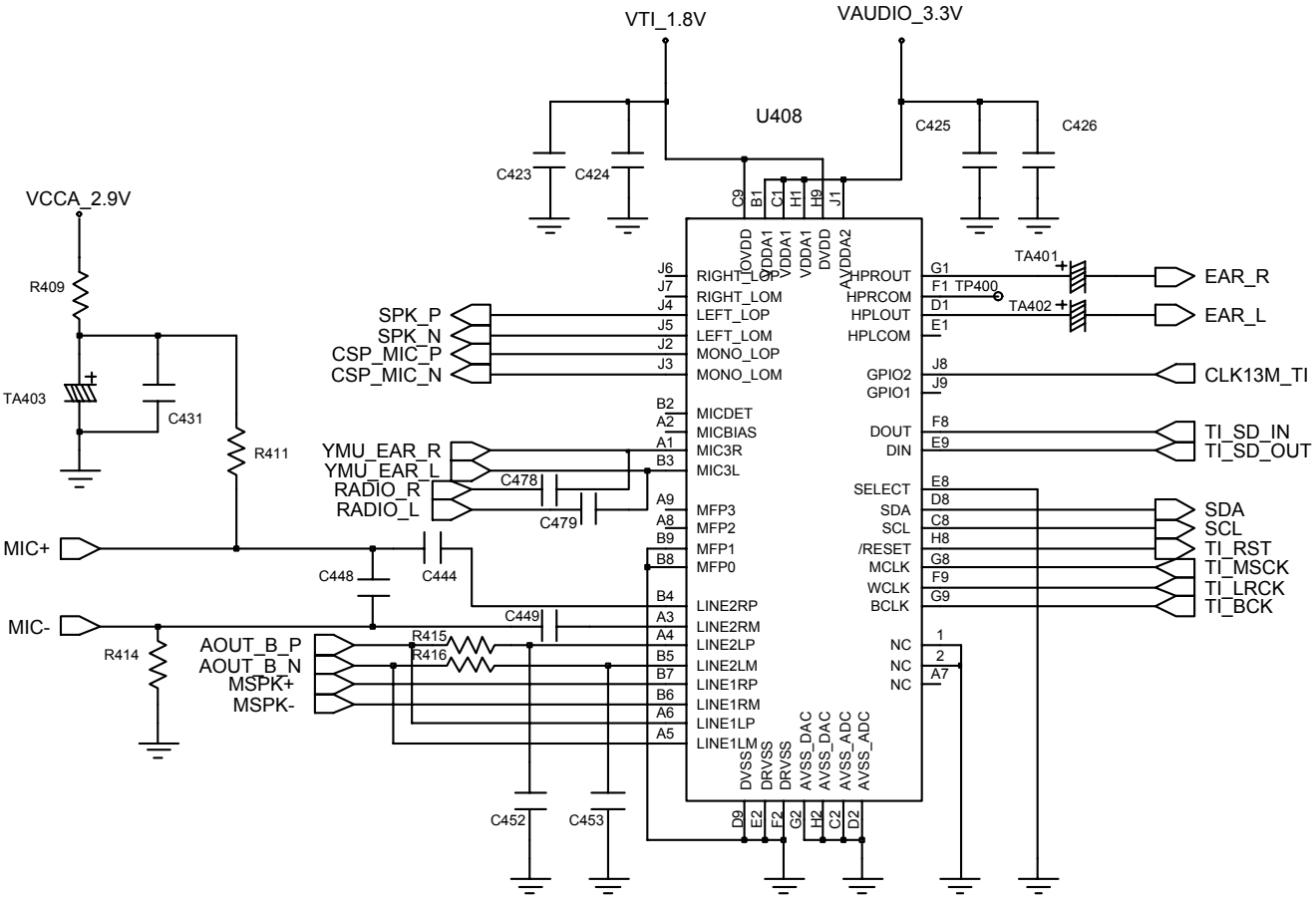


10-1-5. Microphone Part









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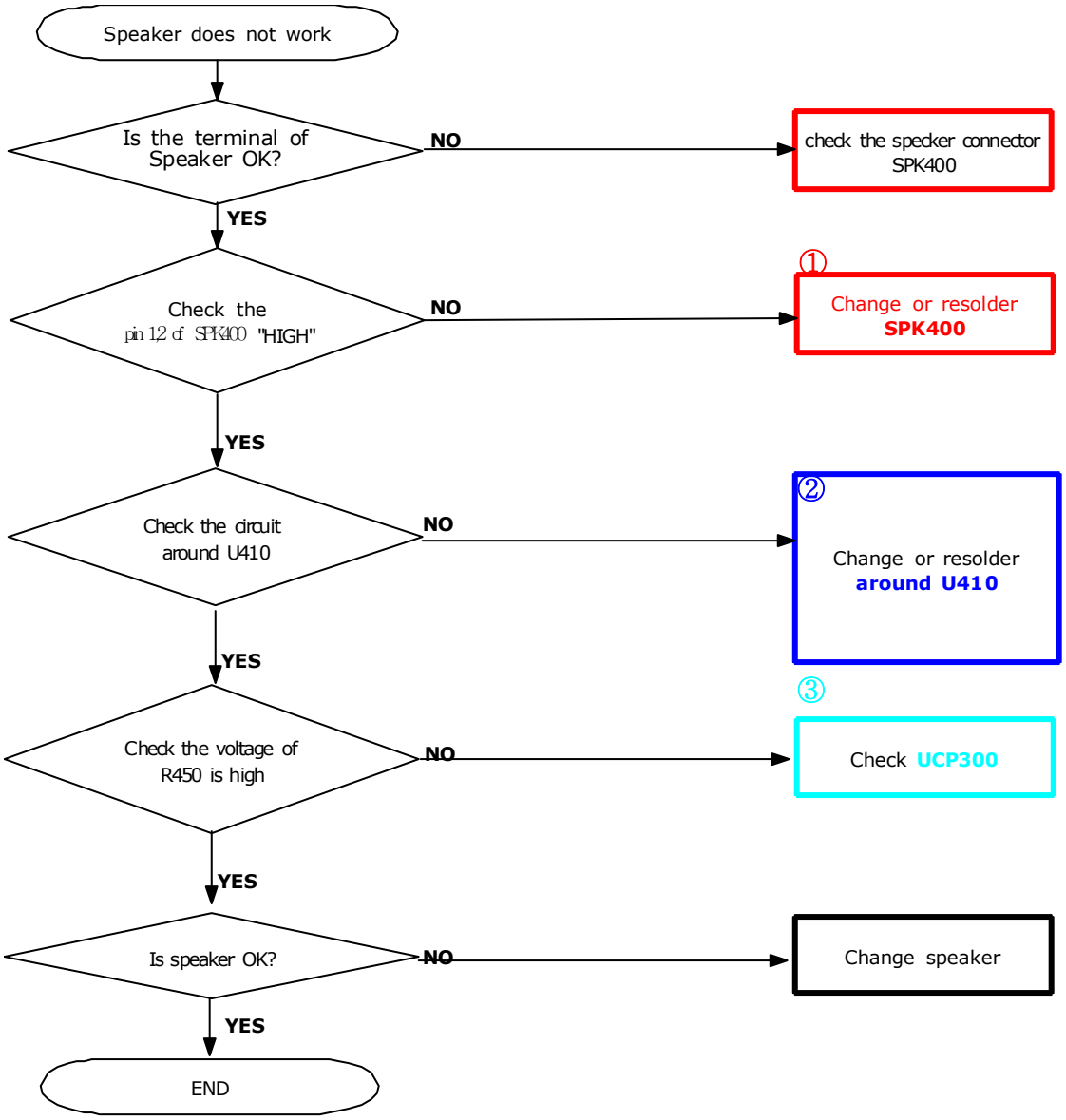

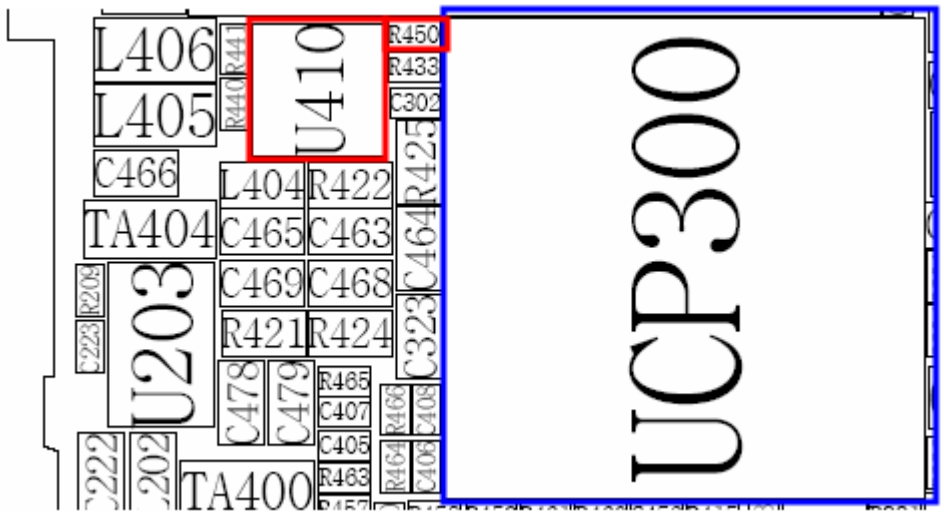

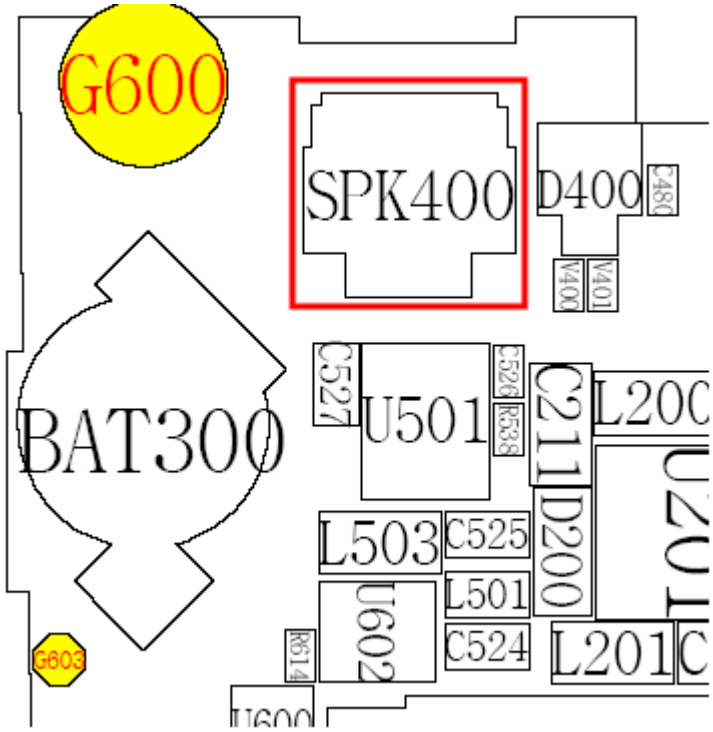

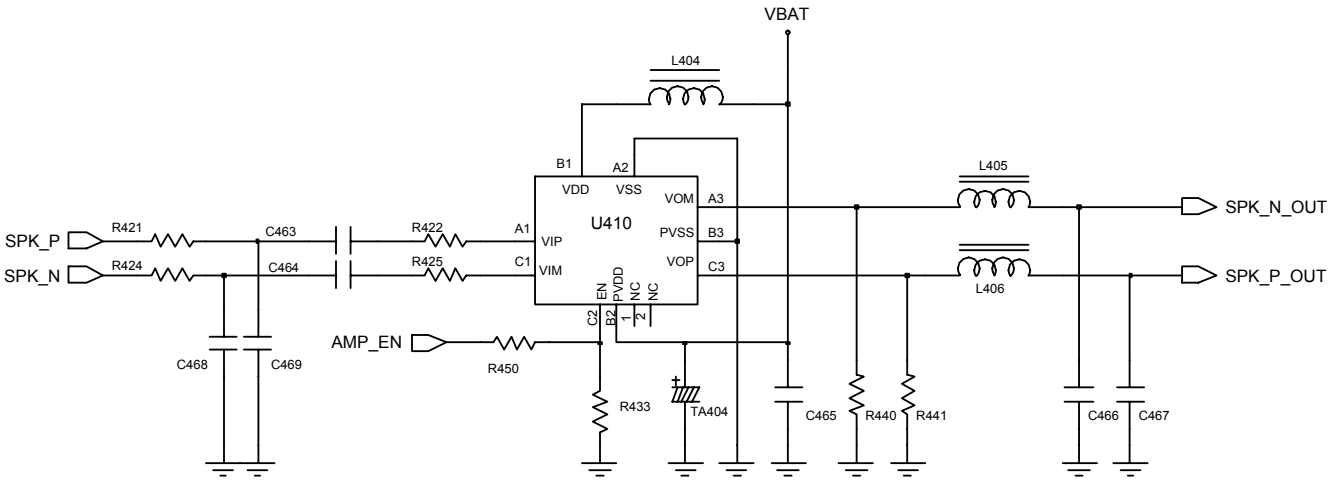

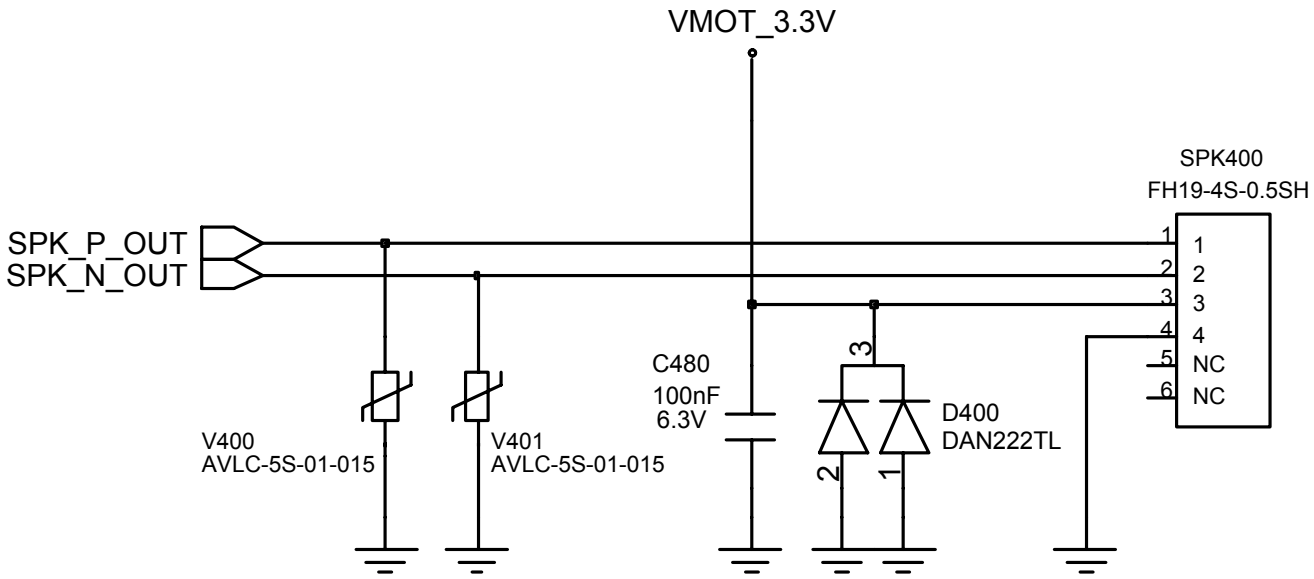

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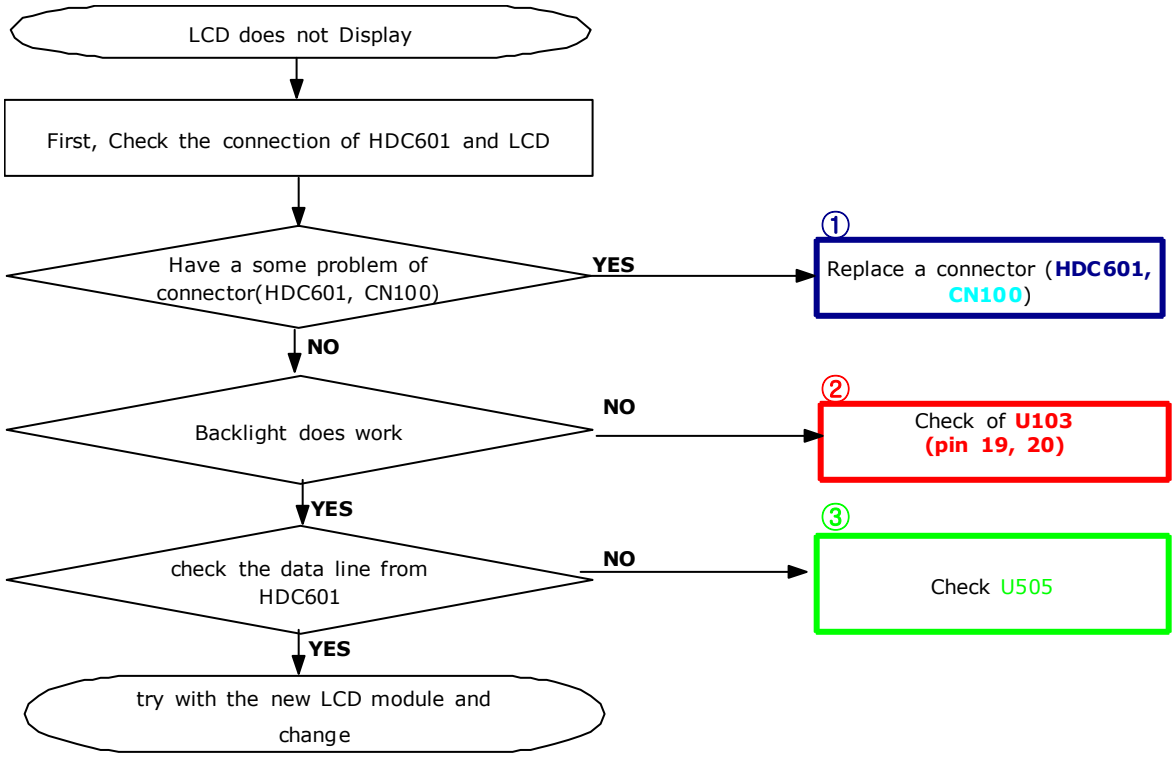

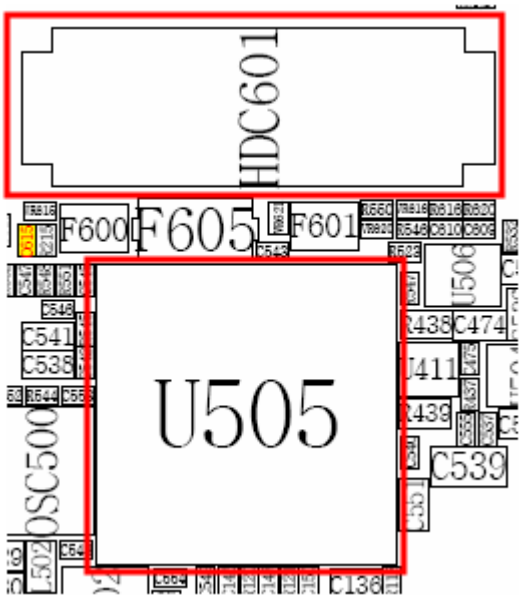

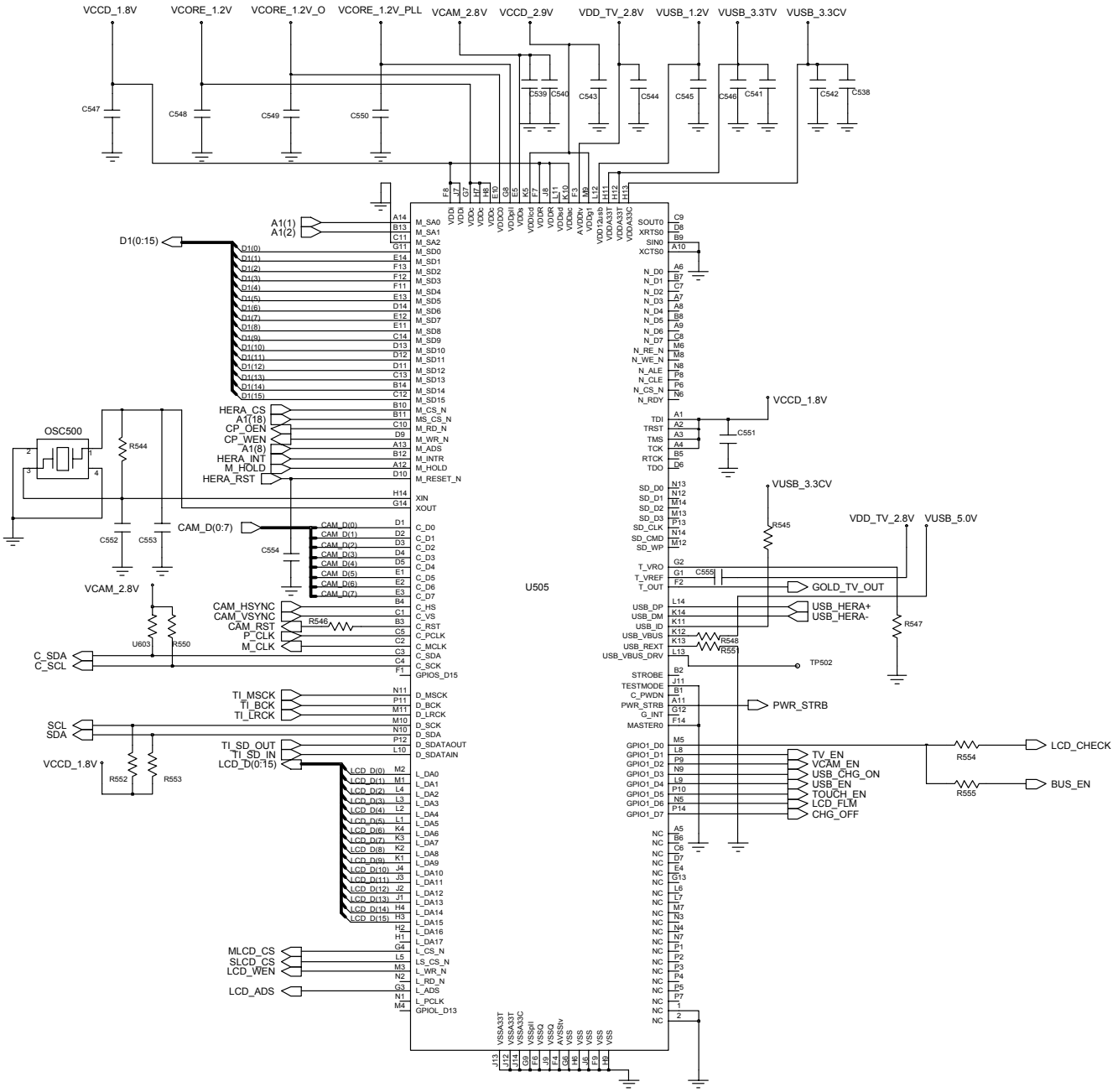

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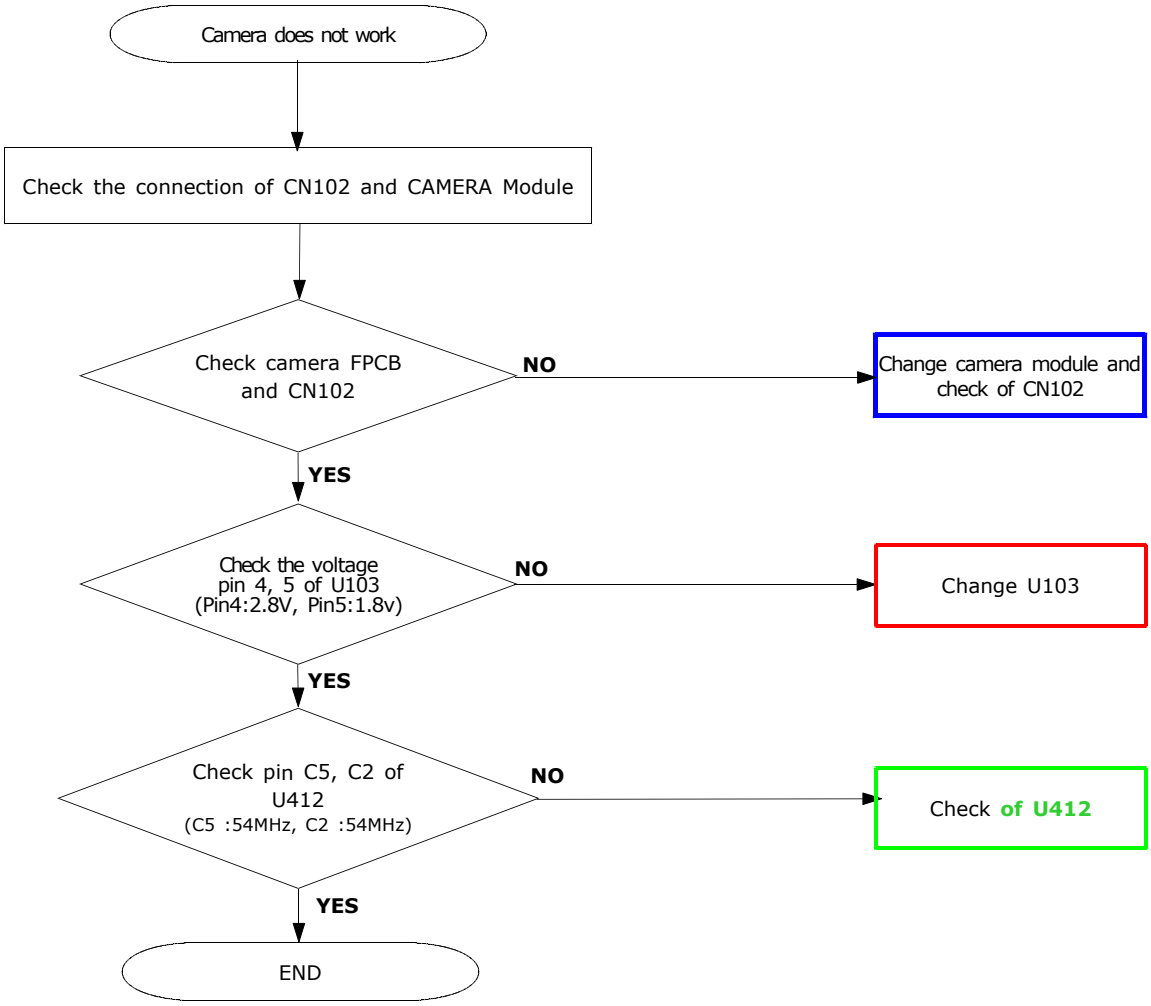
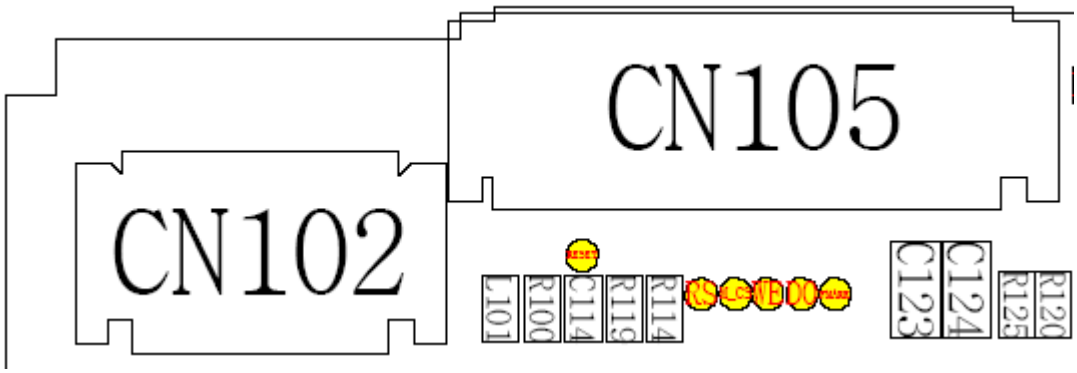
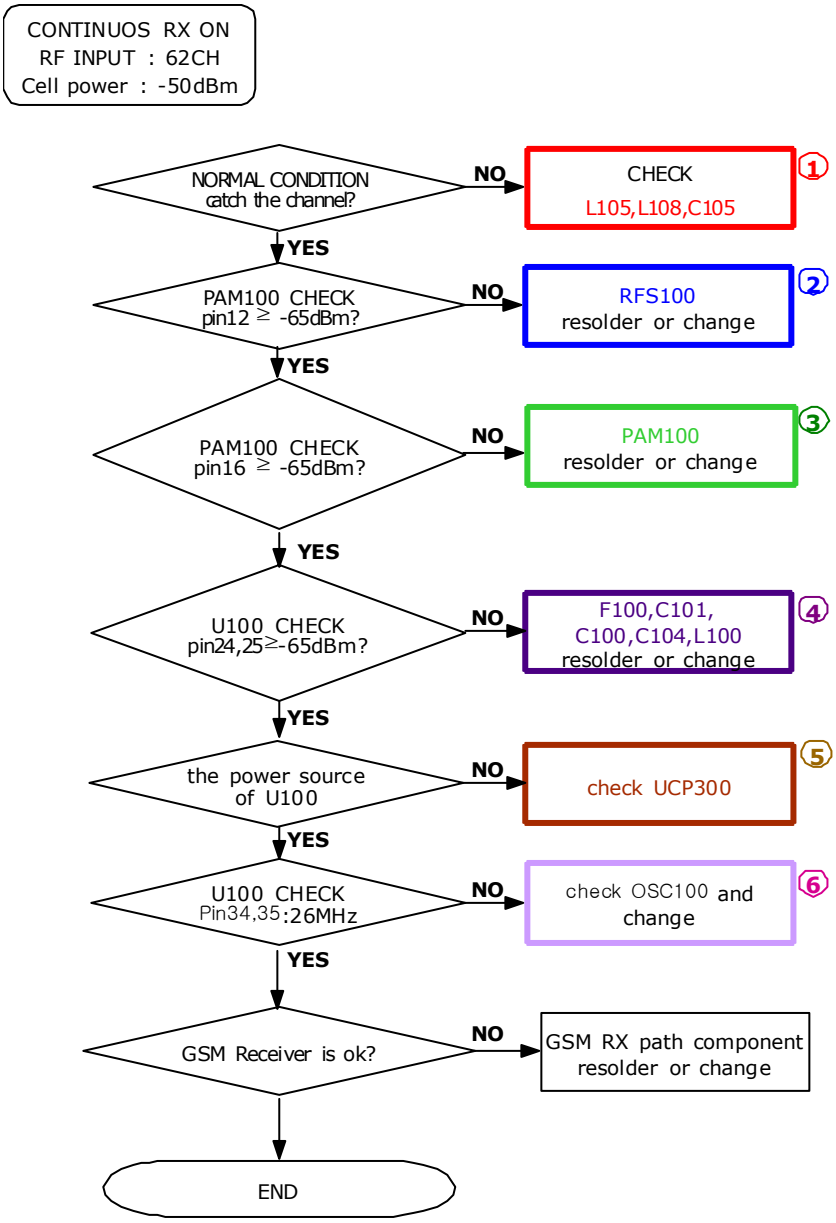


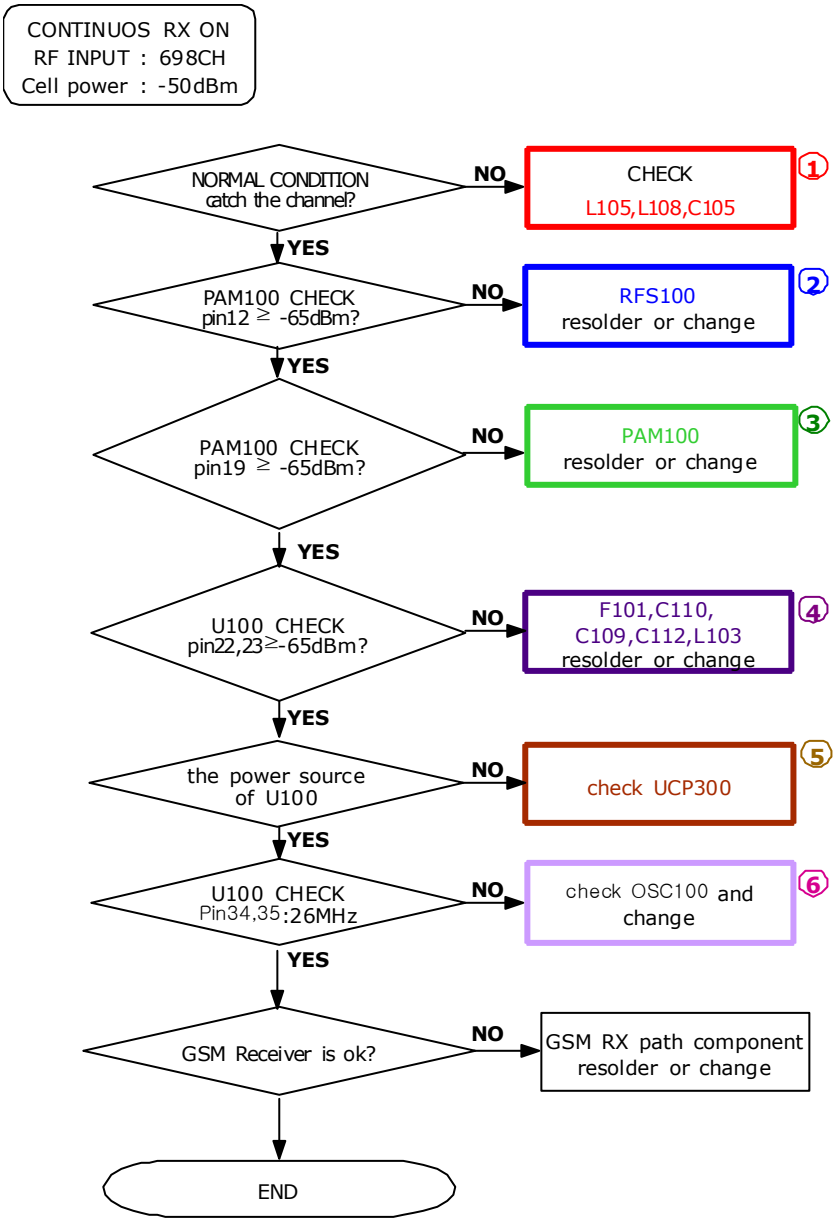


10-2. RF

10-2-1. GSM900 Receiver



10-2-2. DCS Receiver



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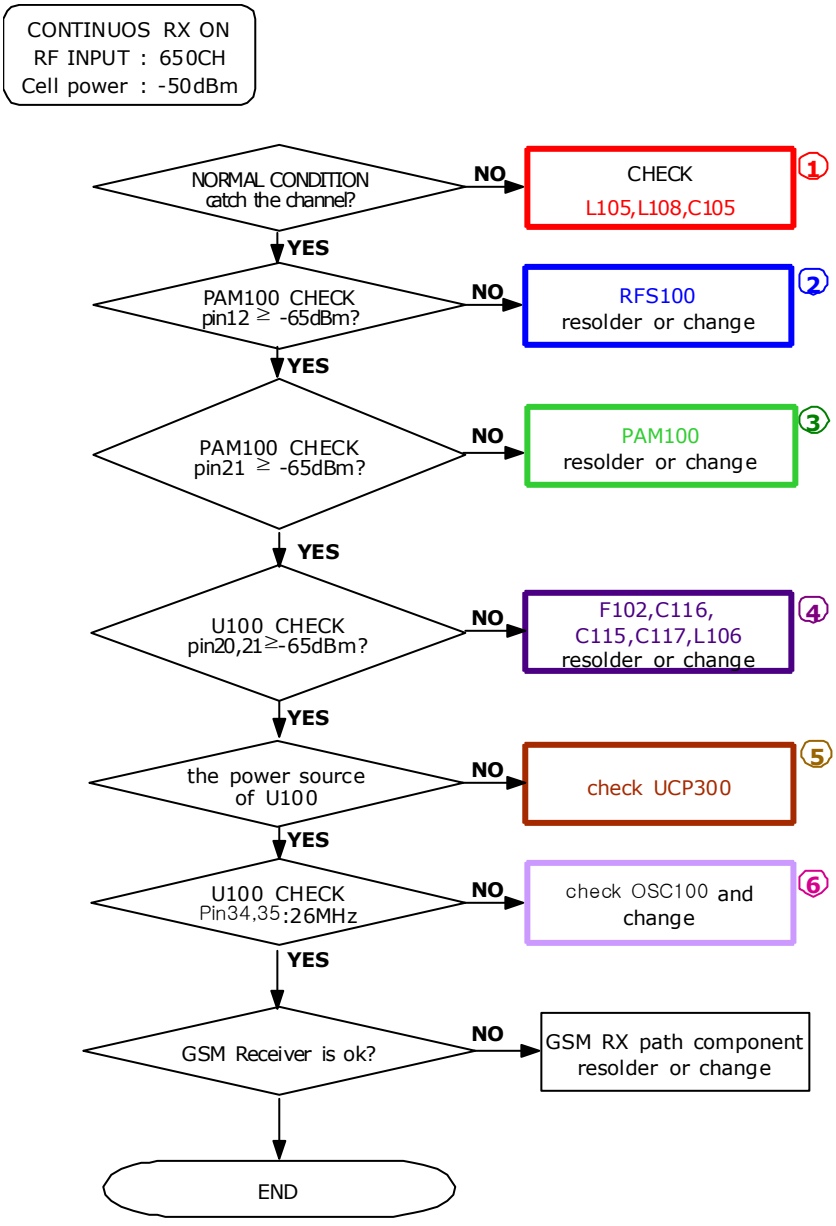

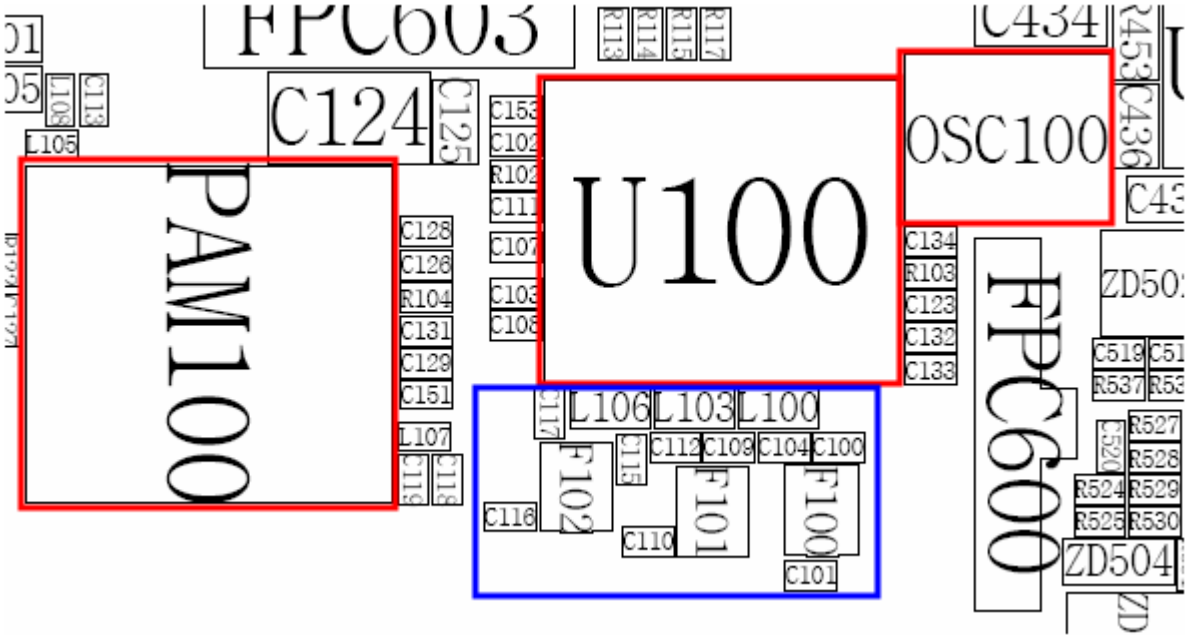

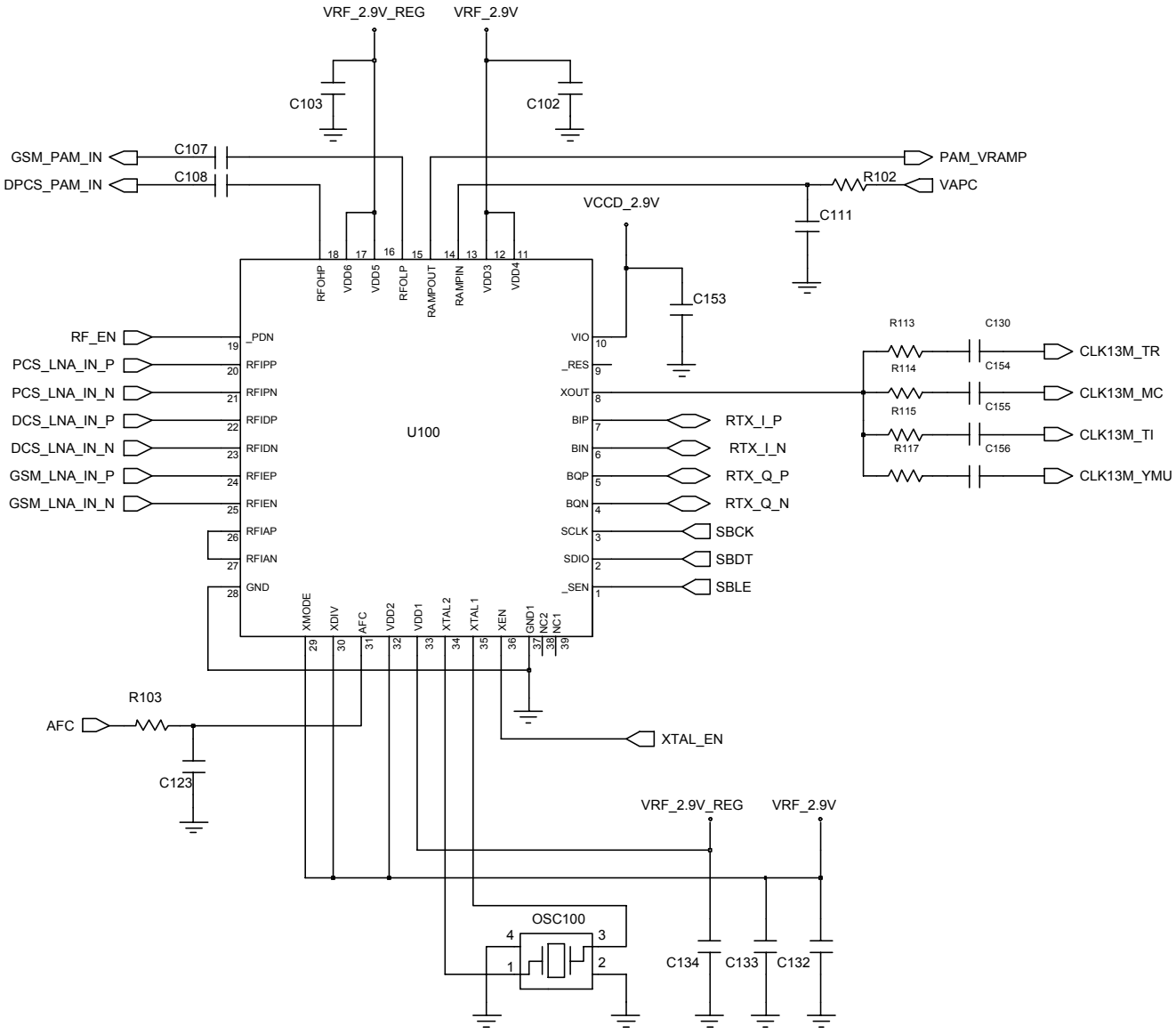

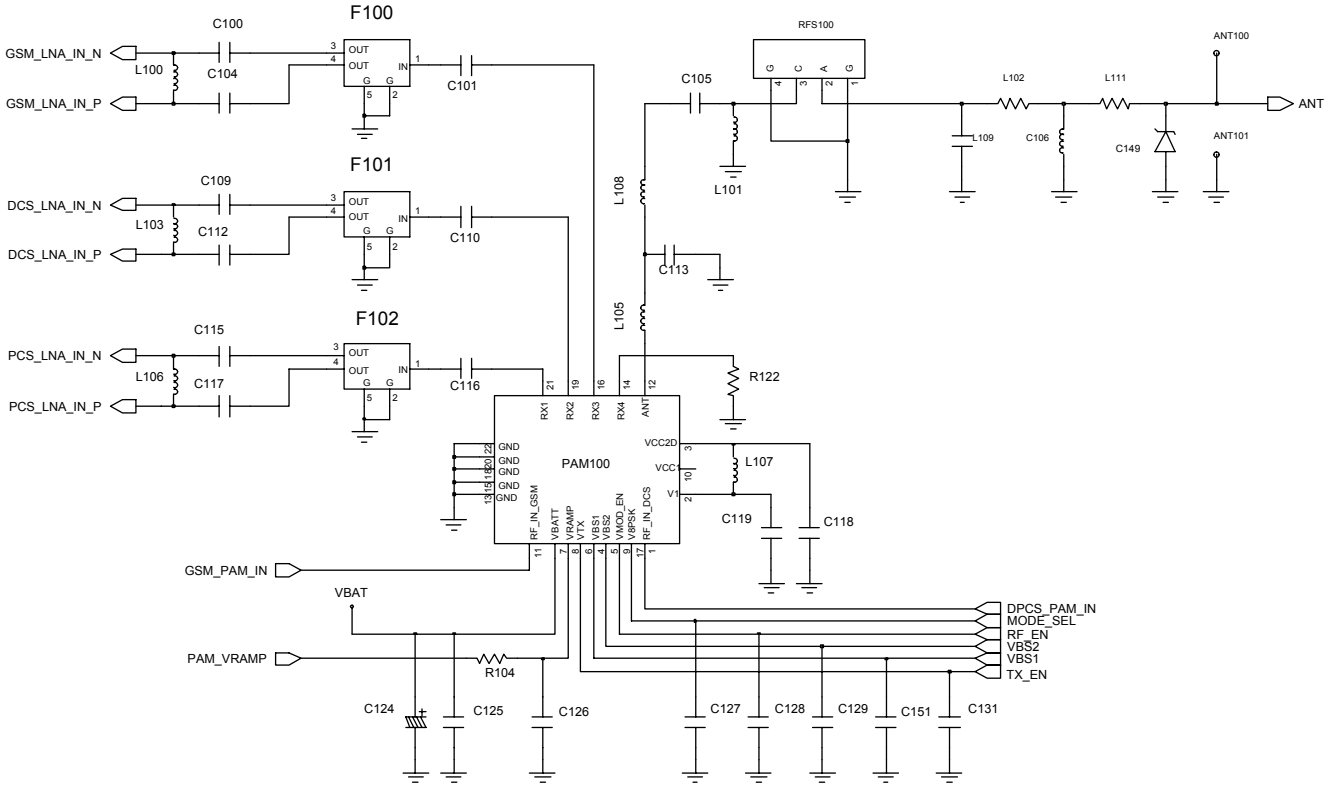

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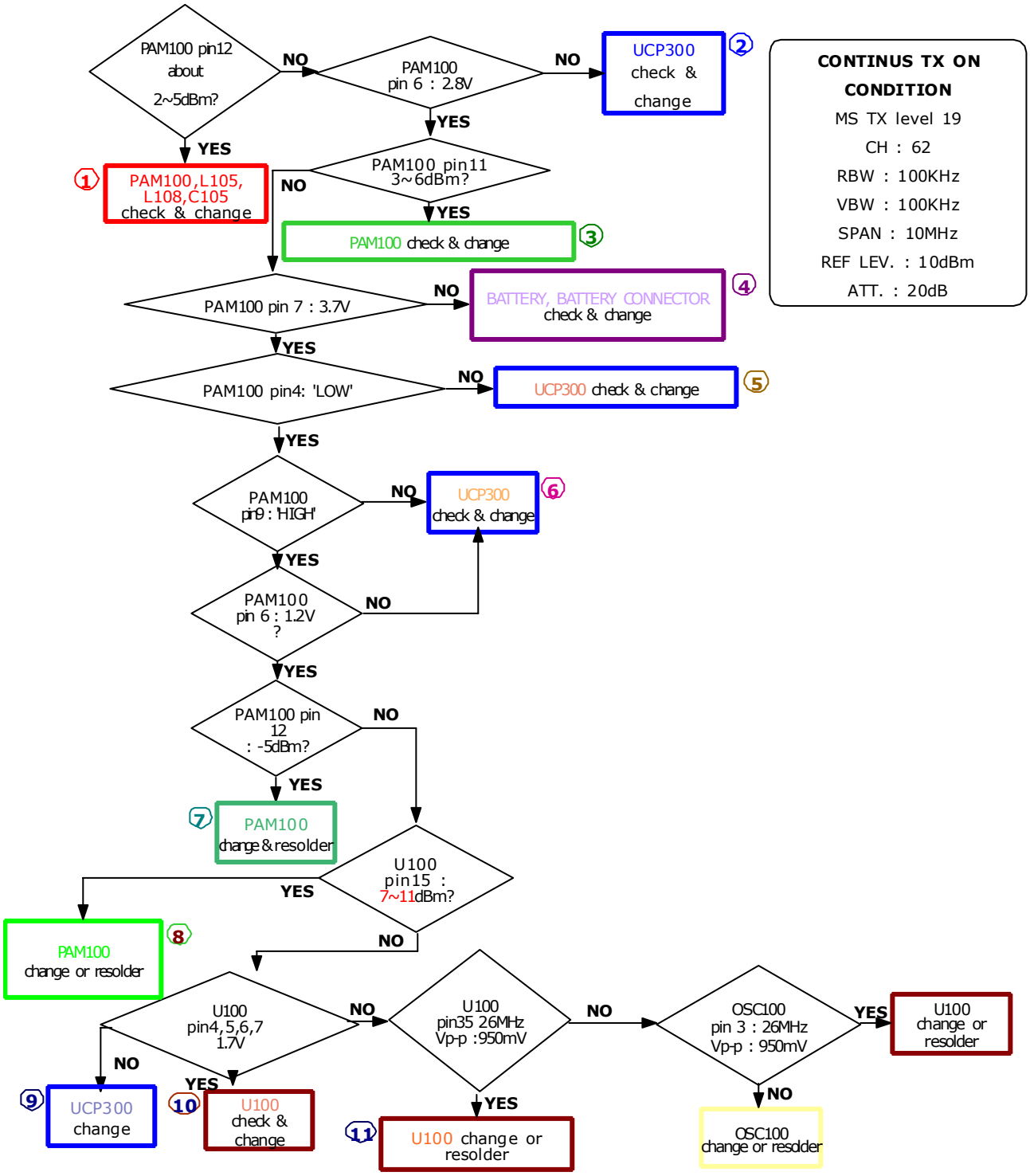

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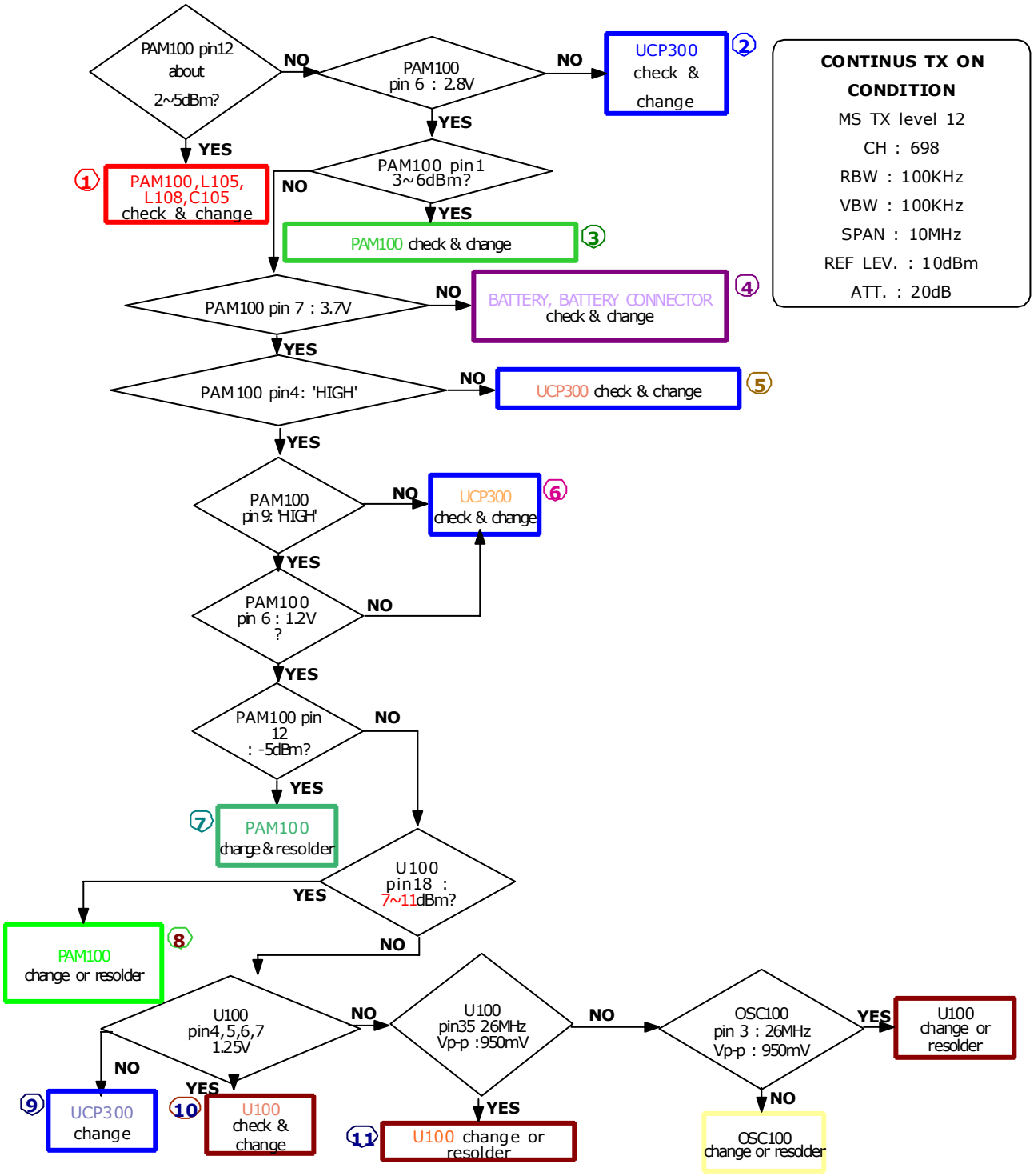
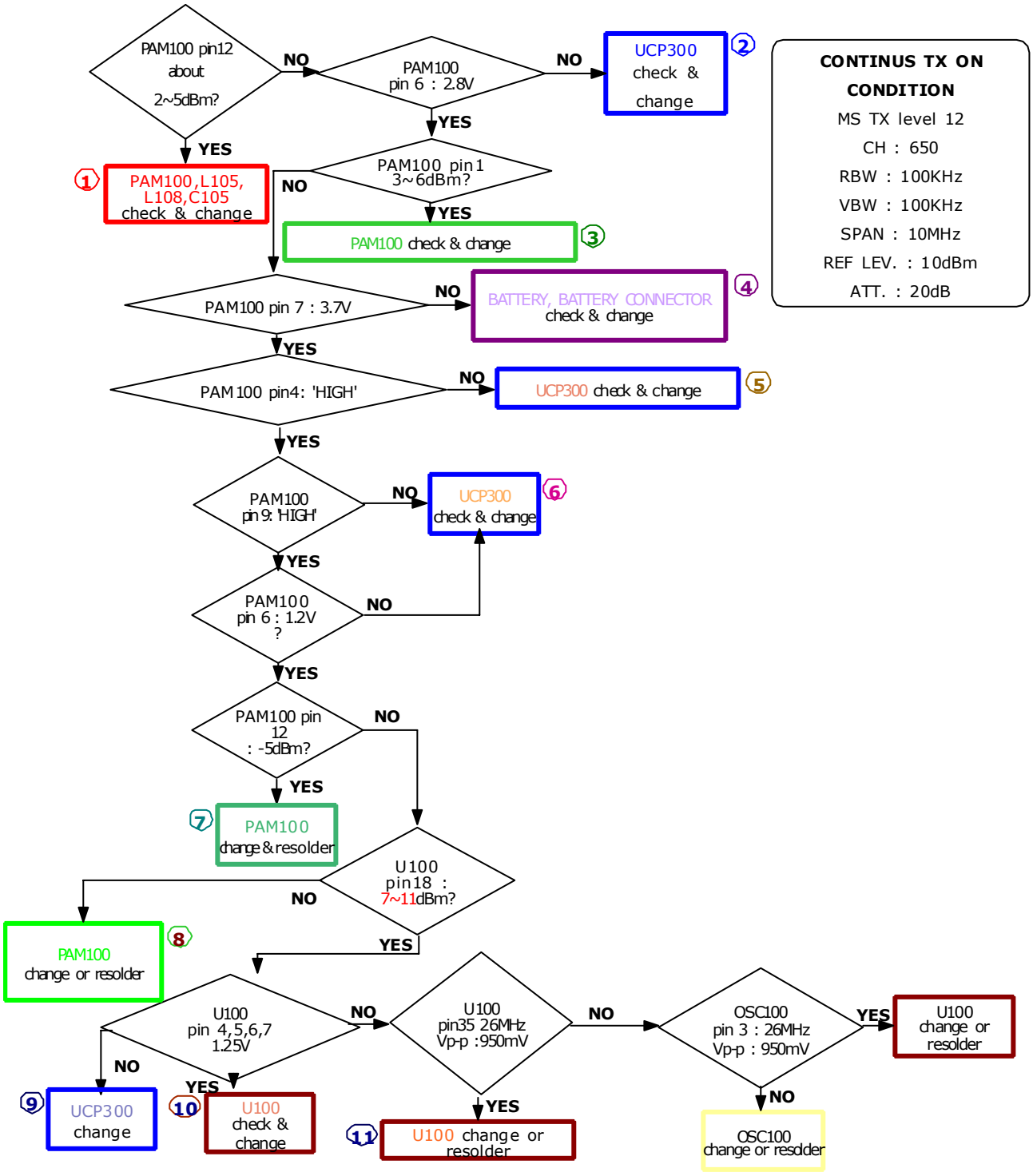
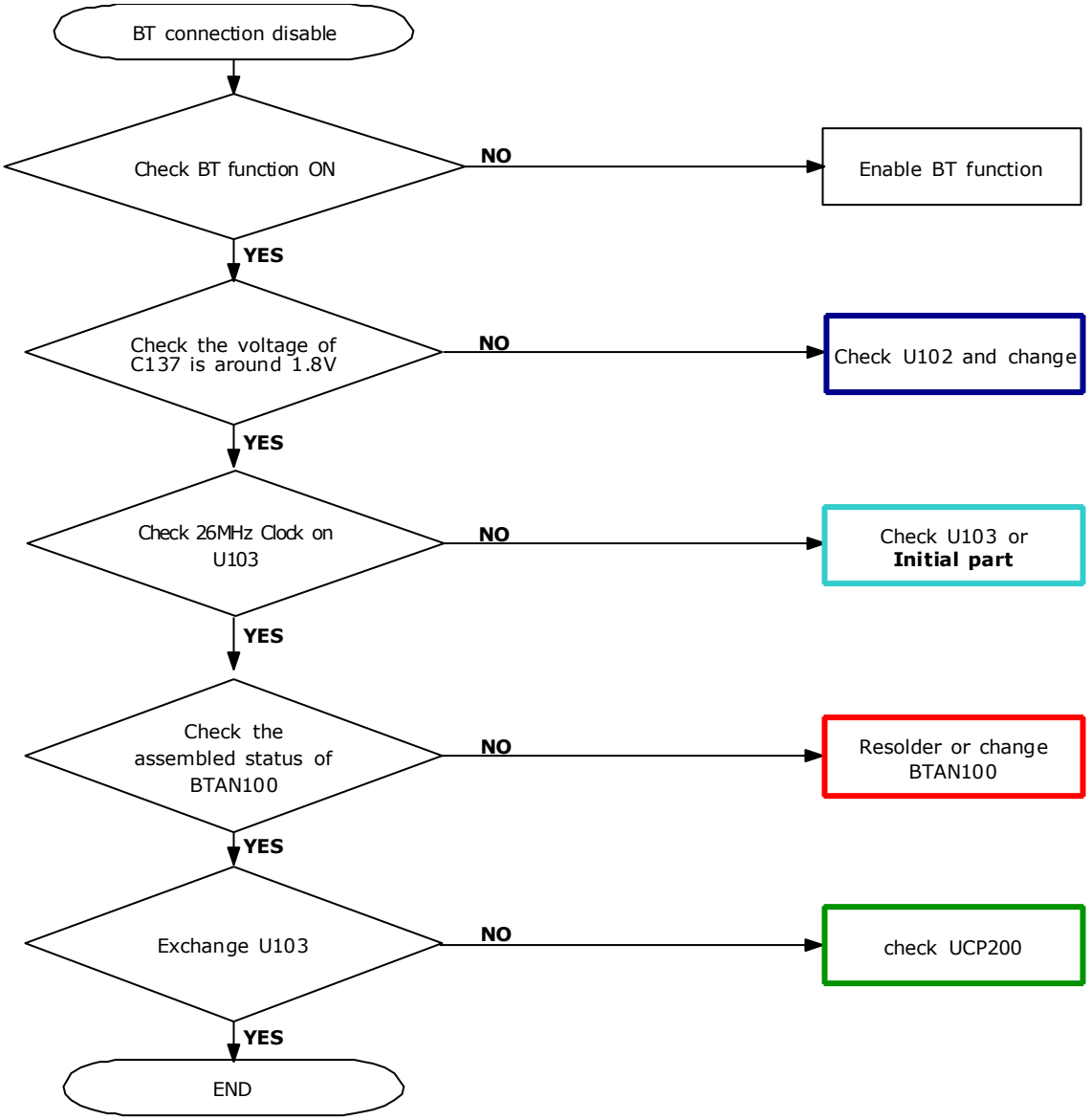
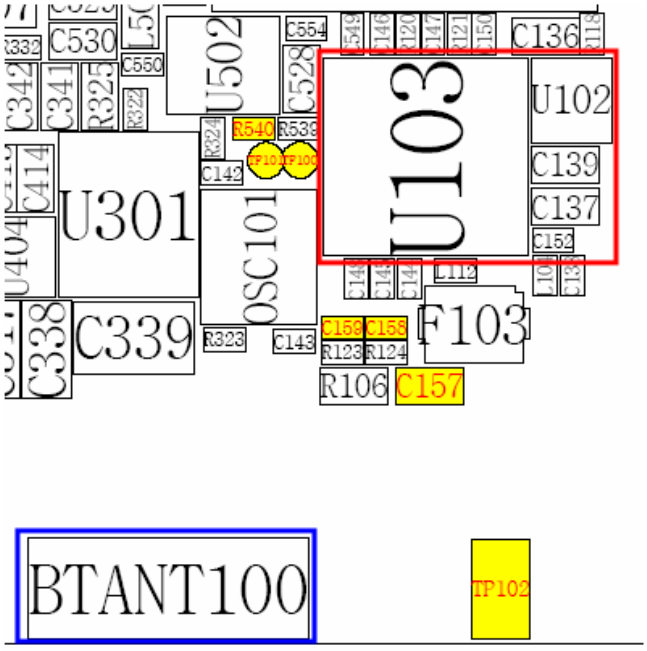


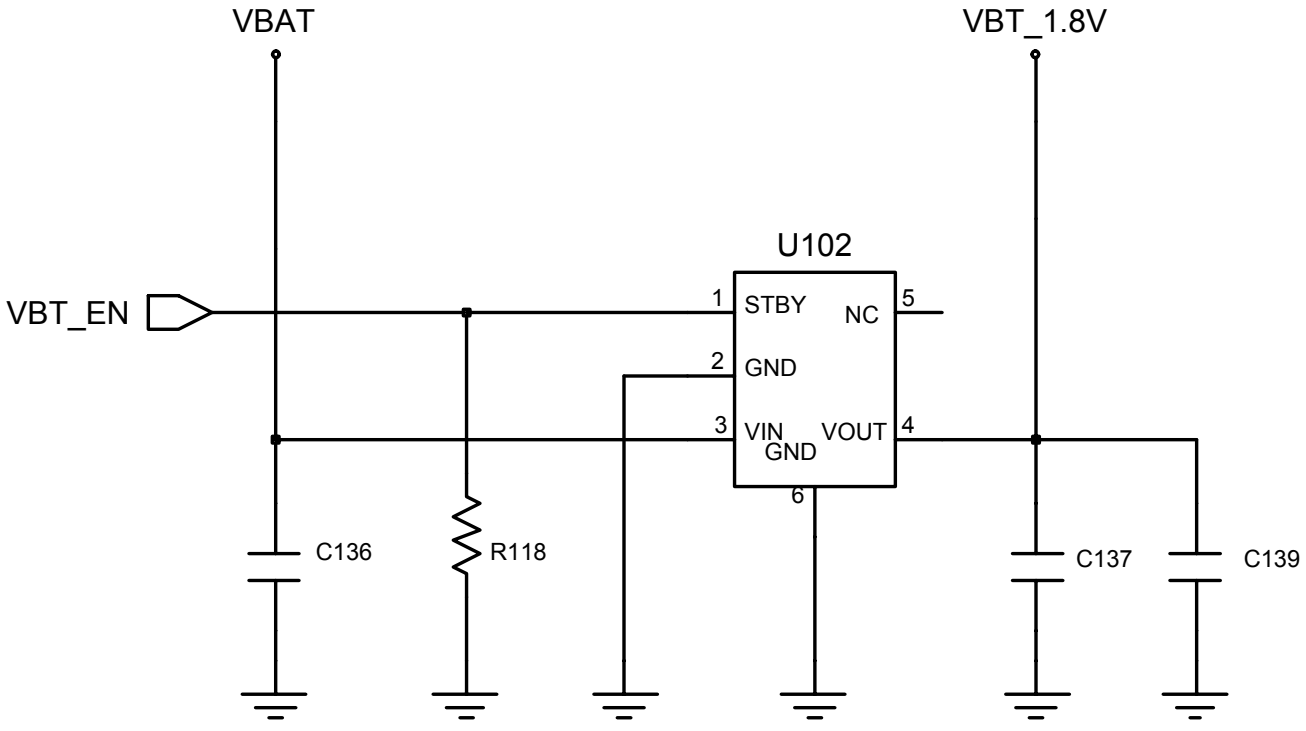
10-2-6. PCS Transmitter

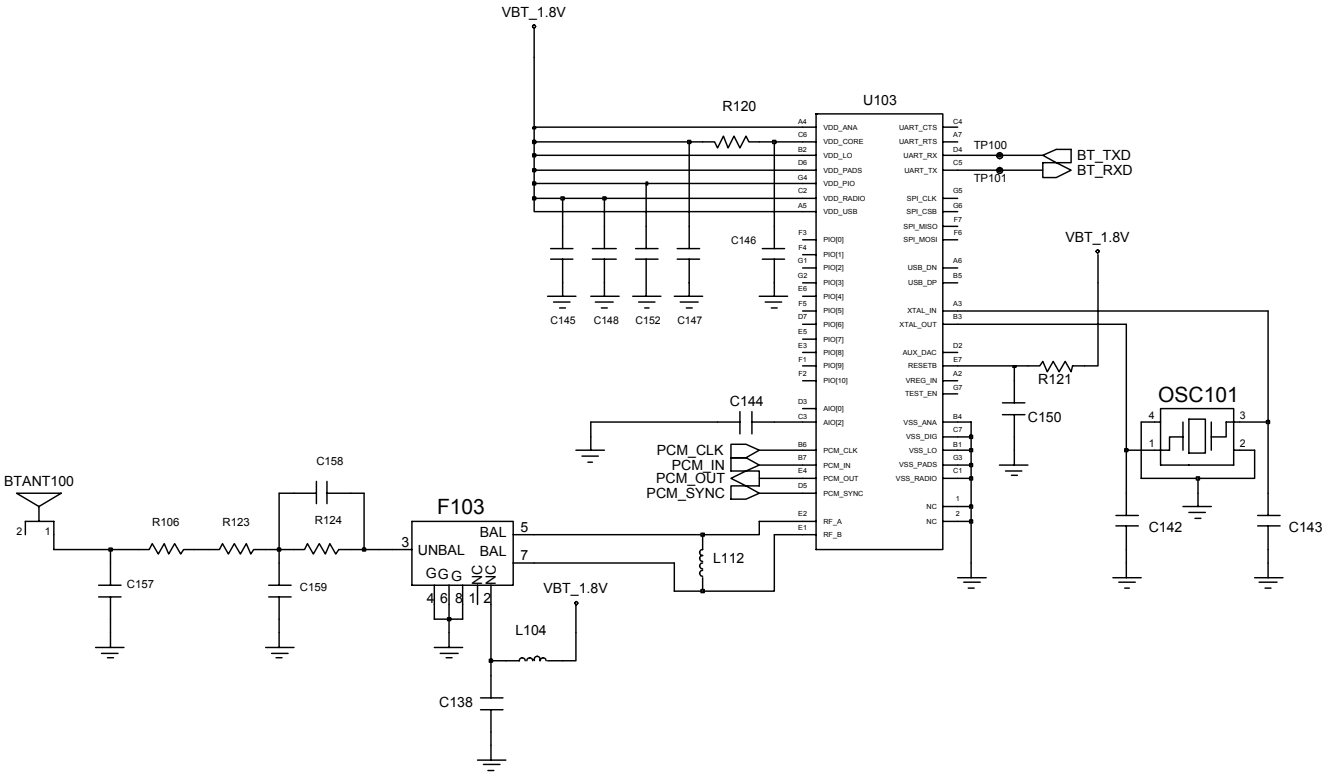


10-2-7. Bluetooth Part









11. Reference data

11-1. 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