

SAMSUNG

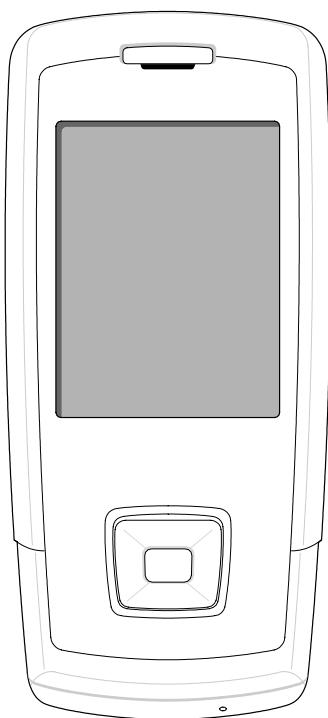
GSM TELEPHONE

SGH-E900

SERVICE *Manual*

GSM TELEPHONE

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11. Reference data

1. Safety Precautions

1-1. Repair Precaution

- Repair in Shield Box, during detailed tuning.
Take specially care of tuning or test,
because specificity 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 magnetic force.
- Surely use a standard screwdriver when you disassemble this product,
otherwise screw will be worn away.
- Use a thick twisted wire when you measure level.
A thick 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 disassembling 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 easily 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 General Specification

	GSM900 Phase 1	EGSM 900 Phase 2	DCS1800 Phase 1	PCS1900
Freq. Band[MHz] Uplink/Downlink	890~915 935~960	880~915 925~960	1710~1785 1805~1880	1850~1910 1930~1990
ARFCN range	1~124	0~124 & 975~1023	512~885	512~810
Tx/Rx spacing	45 MHz	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	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	576.9 us 4.615 ms
Modulation	0.3 GMSK	0.3 GMSK	0.3 GMSK	0.3 GMSK
MS Power	33 dBm~13 dBm	33 dBm~5 dBm	30 dBm~0 dBm	30 dBm~0 dBm
Power Class	5 pcl ~ 15 pcl	5 pcl ~ 19 pcl	0 pcl ~ 15 pcl	0 pcl ~ 15 pcl
Sensitivity	-102 dBm	-102 dBm	-100 dBm	-100 dBm
TDMA Mux	8	8	8	8
Cell Radius	35 Km	35 Km	2 Km	-

2-2. GSM Tx Power Class

TX Power control level	GSM900	TX Power control level	DCS1800	TX Power control level	PCS1900
5	33±2 dBm	0	30±3 dBm	0	30±3 dBm
6	31±2 dBm	1	28±3 dBm	1	28±3 dBm
7	29±2 dBm	2	26±3 dBm	2	26±3 dBm
8	27±2 dBm	3	24±3 dBm	3	24±3 dBm
9	25±2 dBm	4	22±3 dBm	4	22±3 dBm
10	23±2 dBm	5	20±3 dBm	5	20±3 dBm
11	21±2 dBm	6	18±3 dBm	6	18±3 dBm
12	19±2 dBm	7	16±3 dBm	7	16±3 dBm
13	17±2 dBm	8	14±3 dBm	8	14±3 dBm
14	15±2 dBm	9	12±4 dBm	9	12±4 dBm
15	13±2 dBm	10	10±4 dBm	10	10±4 dBm
16	11±3 dBm	11	8±4 dBm	11	8±4 dBm
17	9±3dBm	12	6±4 dBm	12	6±4 dBm
18	7±3 dBm	13	4±4 dBm	13	4±4 dBm
19	5±3 dBm	14	2±5 dBm	14	2±5 dBm
		15	0±5 dBm	15	0±5 dBm

3. Product Function

Main Function

- Camera and camcorder
- Image editor
- MP3 player
- Phonebook
- Name card
- Multimedia Message Service (MMS)
- E-mail
- Voice recorder
- Bluetooth
- Get personal with photo caller ID
- Web browser
- Java
- Calendar

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 E900.
 - E900XXYY.s3 : Main source code binary.

4-2. Pre-requisite for Downloading

- Downloader Program([OptiFlash.exe](#))
- E900 Mobile Phone
- Data Cable
- Binary files

4-3. S/W Downloader Program

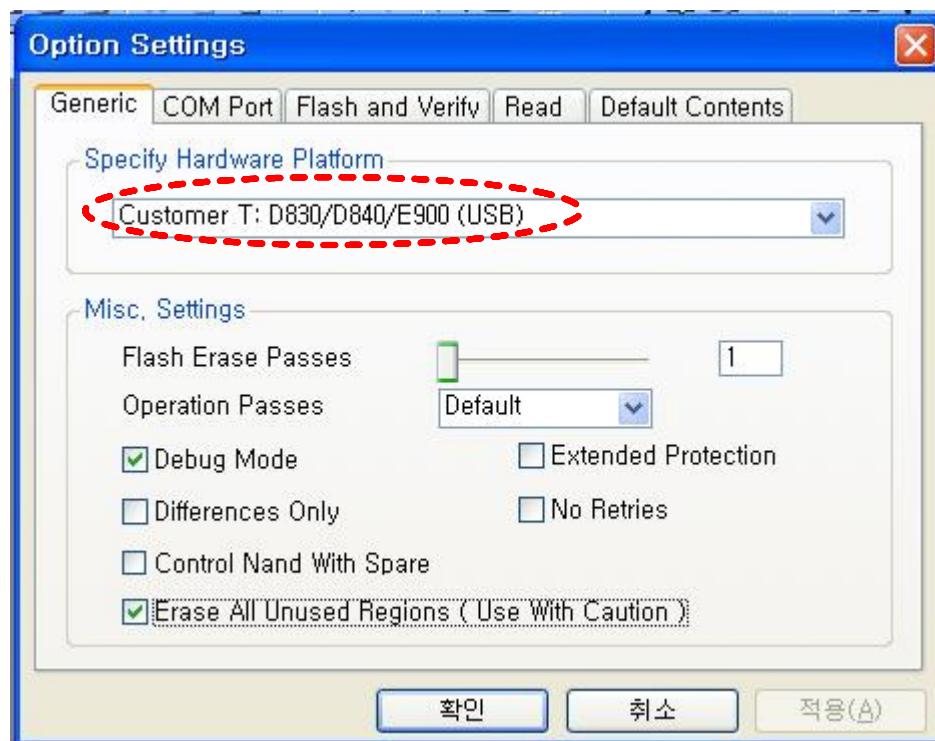
- Load the binary download program by executing the “**OptiFlash.exe**”



- 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



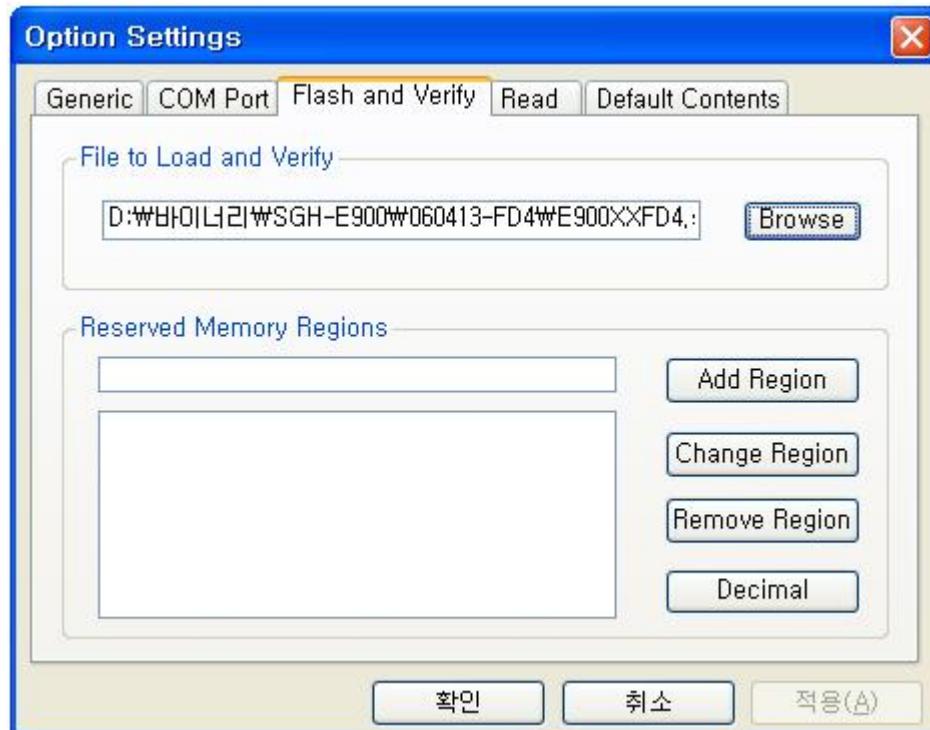
3. Select the **COM port** when the download cable is connected



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 "X810XXYY.s3", for the downloader binary setting.



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. :♪

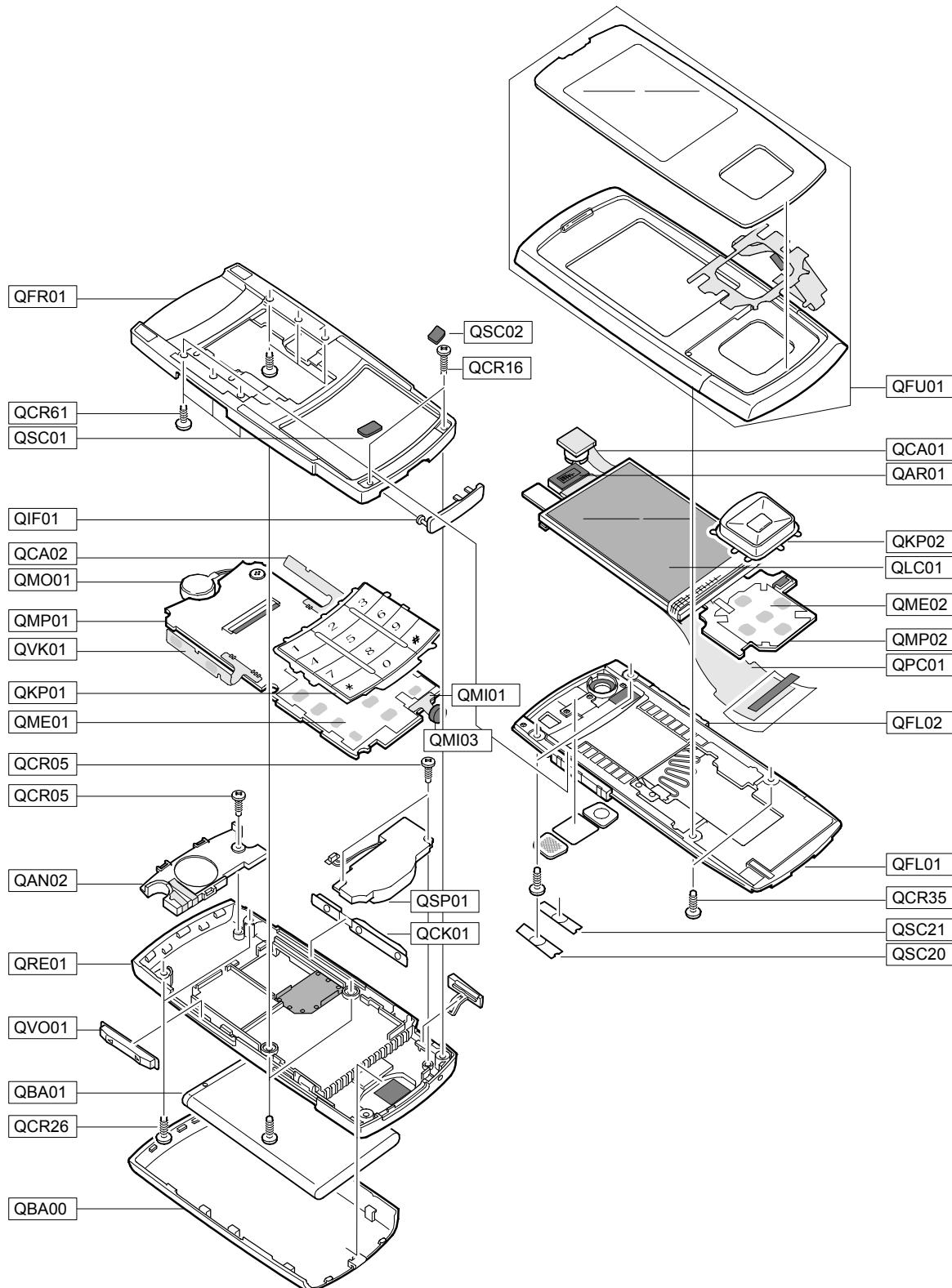
***#5002*8376263#**♪

Full Reset :♪

***2767*3855#**

5. Exploded View and Parts List

5-1. Cellular phone Exploded View



5-2. Cellular phone Parts list

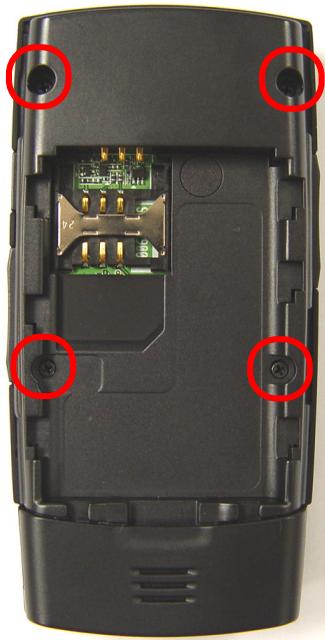
Design LOC	Description	SEC CODE
QAN02	INTENNA-SGHE900	GH42-00836A
QAR01	AUDIO-RECEIVER	3009-001198
QBA00	PMO-COVER BATTERY	GH72-30483A
QBA01	INNER BATTERY PACK-800MAH,BLK,	GH43-01850A
QCA01	UNIT-CAMERA	GH59-03089A
QCA02	UNIT-CAMERA KEY	GH59-03069A
QCK01	PMO-PWR CAM KEY	GH72-30485A
QCR05	SCREW-MACHINE	6001-001478
QCR16	SCREW-MACHINE	6001-001878
QCR26	SCREW-MACHINE	6001-001850
QCR35	SCREW-MACHINE	6001-001610
QCR61	SCREW-MACHINE	6001-002008
QFR01	ASSY-CASE-FRONT	GH98-00831A
QFU01	MEA-SLIDE UPPER ASSY	GH97-05923A
QKP01	ASSY-KEY-KEYPAD MAIN(EKA/XEF)	GH98-00836A
QKP02	ASSY-KEY-KEYPAD SUB(EKA/XEF)	GH98-00835A
QLC01	MEA-LCD MODULE KIT	GH97-05912A
QME01	UNIT-METAL DOME(MAIN)	GH59-03071A
QME02	UNIT-METAL DOME(SUB)	GH59-03072A
QMI01	MICROPHONE-ASSY-SCHV940	GH30-00243A
QMI03	RMO-MIC HOLDER	GH73-06560A
QMO01	MOTOR DC-SGHE900	GH31-00251A
QMP01	PBA MAIN-SGHE900	GH92-02709A
QMP02	PBA SUB-SGHE900	GH92-02739A
QPC01	MEA-SLIDE FPCB KIT	GH97-05913
QSC01	MPR-TAPE SCREW SHEET FL	GH74-23269A
QSC02	MPR-TAPE SCREW SHEET FR	GH74-23268A
QSC20	PMO-CUSHION DAMPER LOWER R	GH72-31288A
QSC21	PMO-CUSHION DAMPER LOWER L	GH72-31290A
QSP01	SPEAKER	3001-001973
QVK01	UNIT-VOLUMEKEY	GH59-03070A
QVO01	PMO-VOL KEY	GH72-30484A
QFL01	ASSY-CASE-SLIDE LOWER	GH98-00834A
QFL02	MEC-SLIDE MODULE	GH75-09385A
QRE01	ASSY-CASE-REAR	GH98-00833A
QIF01	PMO-COVER IF	GH72-30482A

Description	SEC CODE
BAG PE	6902-000297
CBF INTERFACE-DATA LINK CABLE	GH39-00444A
S/W CD-SAMSUNG PC STUDIO 3.0	GH46-00247A
LABEL(P)-WATER SOAK	GH68-02026A
LABEL(P)-WATER SOAK	GH68-02026A
MANUAL USERS-EU FRENCH	GH68-09787A
LABEL(R)-MAIN(FRANCE)	GH68-10716A
LABEL(P)-OPEN MP3	GH68-11246A
BOX(P)-UNIT MAIN(EU)	GH69-03893A
CUSHION-CASE TA2 MA2	GH69-03899A
RMO-RUBBER B/T MODULE	GH73-07379A
MPR-BOHO VINYL LCD CONN	GH74-15350A
MPR-TAPE FPCB SUB	GH74-23248A
MPR-TAPE LCD PCB A	GH74-23249A
MPR-TAPE LCD PCB B	GH74-23250A
MPR-TAPE LCD PCB DUAL	GH74-23251A
MPR-TAPE SHIELD SUB DOME	GH74-23252A
MPR-TAPE LCD FPCB	GH74-23255A
MPR-TAPE LCD CONTACT	GH74-23256A
MPR-TAPE RF SHEET	GH74-23260A
MPR-CUSHION TOUCH FPCB	GH74-23267A
MPR-CUSHION FPCB	GH74-23270A
MPR-TAPE LCD PCB C	GH74-23615A
MPR-VINYL BOHO TOP LOWER	GH74-24023A
MPR-VINYL BOHO UPPER A	GH74-24024A
MPR-VINYL BOHO UPPER B	GH74-24025A
MPR-VINYL BOHO UPPER C	GH74-24026A
MPR-VINYL BOHO MAIN WIN	GH74-24027A
MPR-VINYL BOHO UPPER D	GH74-24028A
MPR-TAPE INS TOUCH KEY	GH74-24029A
MPR-TAPE SMD MIC	GH74-24031A
MPR-SPONGE SMD MIC	GH74-24467A
MPR-SPONGE KEYPAD MAIN	GH74-24468A
MPR-TAPE MAIN PCB B	GH74-24469A
MPR-TAPE FLASH	GH74-24508A
MPR-VINYL BOHO KEYPAD	GH74-24510A
MPR-TAPE INS MAIN PBA	GH74-24749A
ASSY RUBBER-INTENNA CONTACT	GH98-01514A

6. Disassembly and Assembly instructions

6-1. Disassembly

1



1) RELEASE SCREW AT 4POINTS

* caution

1. DO NOT MAKE SCRATCH ON CASE

2



- 1) DETACH FRONT SCREW CAP
- 2) RELEASE SCREW AT 2 POINT

* caution

1. DO NOT MAKE SCRATCH ON CASE

3



1) DISASSEMBLE REAR LOCKING PART
USING TOOS

* caution

1. DO NOT MAKE SCRATCH ON CASE

4



- 1) PUSH REAR ARROW DIRECTION,
CAN DISASSEMBLE

* caution

1.DO NOT MAKE SCRATCH ON CASE
2.IN CASE THAT FORCE TO DISJOINT,
BREAK SPK WIRE. DO NOT TAKE
EXCESSIVE FORCE AT REAR

5

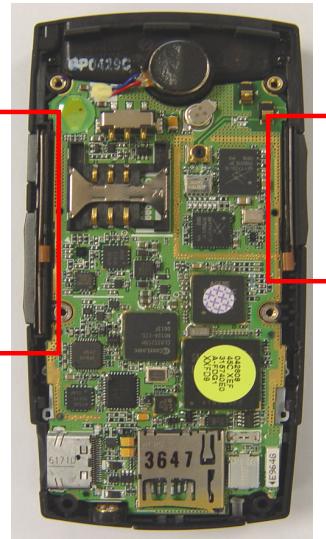


1) DISASSEMBLE SPK CONNECTOR

* caution

1. DISASSEMBLE BY PROPERLY POWER
2. DO NOT TAKE EXCESSIVE FORCE AT REAR,
TAKE CARE BREAKING WIRE

6

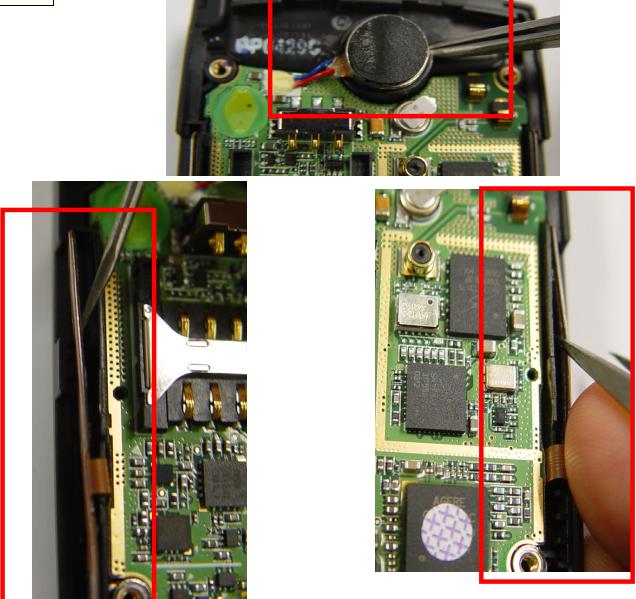


1) DIASSEMBLE VOLUME KEY, CAMERA KEY

* caution

1. DO NOT MAKE SCRATCH ON CASE

7



- 1) DISASSEMBLE MOTOR BY TOOS
- 2) DISASSEMBLE VOLUME KEY FPCB BY TOOS
- 3) DISASSEMBLE CAMERA KEY FPCB BY TOOS

* caution

1. WHEN DISASSEMBLE, TAKE CARE
DAMAGE AT PARTS

8

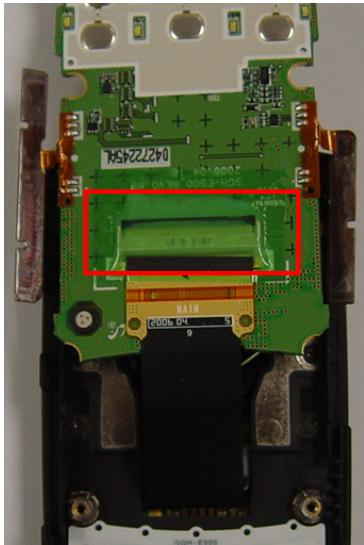


1) DIASSEMBLE HOOK WHICH FIXED PBA

* caution

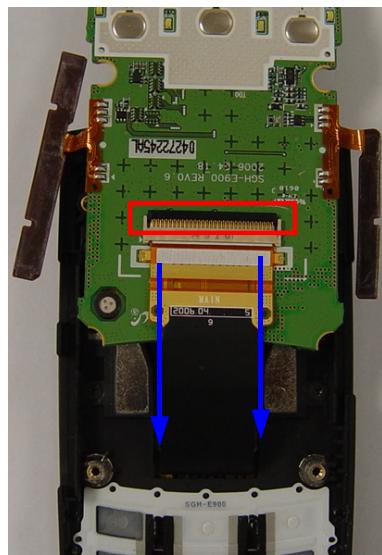
1. WHEN DISASSEMBLE, TAKE CARE
DAMAGE AT PARTS

9



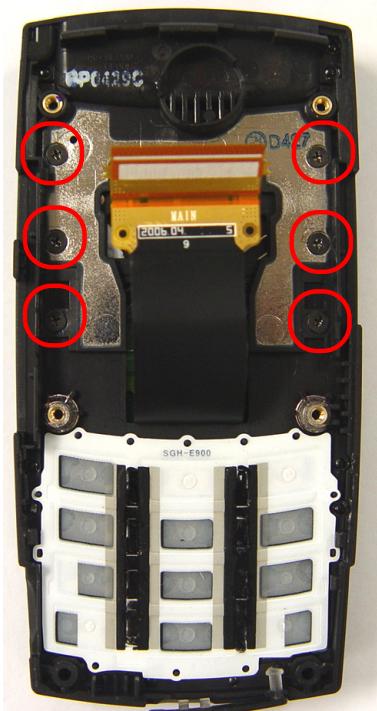
- 1) UPSIDE DOWN PBA
 - 2) REMOVE TAPE ON FPCB CONNECTOR
- * caution
1. WHEN DISASSEMBLE, TAKE CARE DAMAGE AT PARTS

10



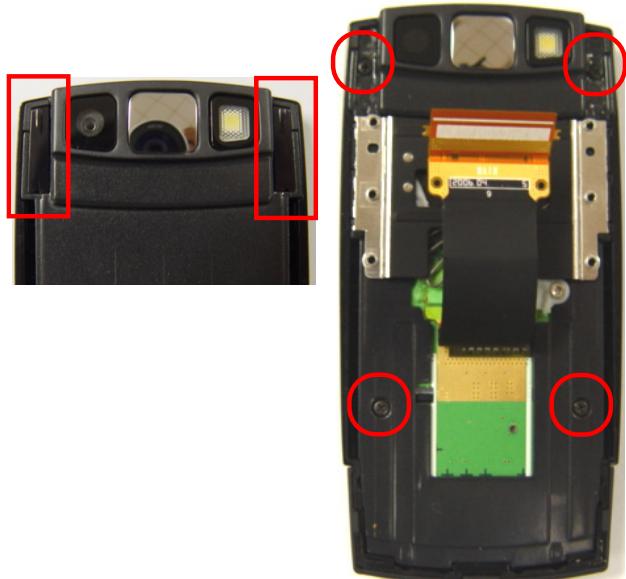
- 1) OPEN FPCB CONNECTOR
 - 2) PULL FPCB TO ARROW DIRECTION
- * caution
1. DO NOT TAKE EXCESSIVE FORCE AT FPCB

11



- 1) RELEASE SCREW AT 6 POINT
- * caution
1. DO NOT MAKE SCRATCH ON CASE

12



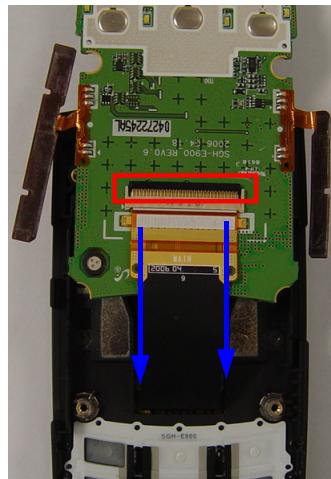
- 1) DETACH SCREW CAP
 - 2) RELEASE SCREW AT 4 POINT
- * caution
1. DO NOT MAKE SCRATCH ON CASE

13



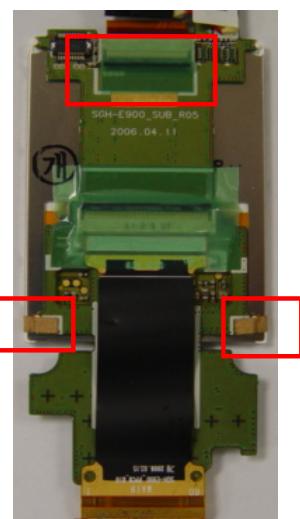
- 1) DISASSEMBLE CAMERA AT CONNECTOR
 - 2) REMOVE CAMERA
- * caution**
1. WHEN DISASSEMBLE CAMERA, TAKE CARE
BREAKING CAMERA FPCB

14



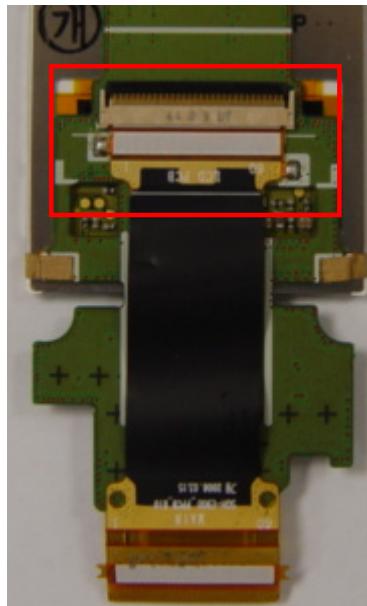
- 1) UPSIDE DOWN PBA
 - 2) DETACH TAPE ON TOUCH KEY CON
 - 3) OPEN TOUCH KEY CON
- * caution**
1. LEAVE NO PARTICLE AND NO FINGER
PRINT LCD AND WINDOW

15



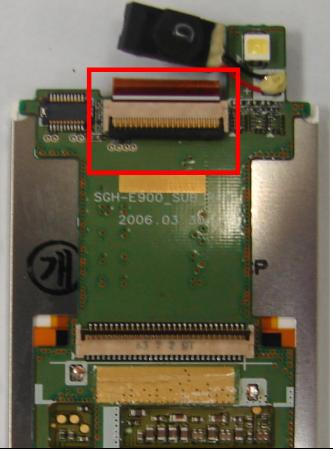
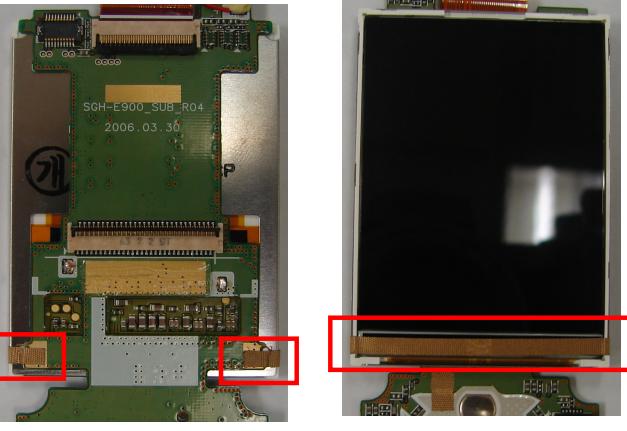
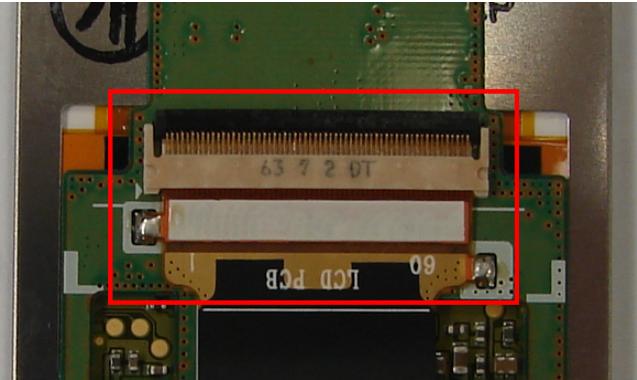
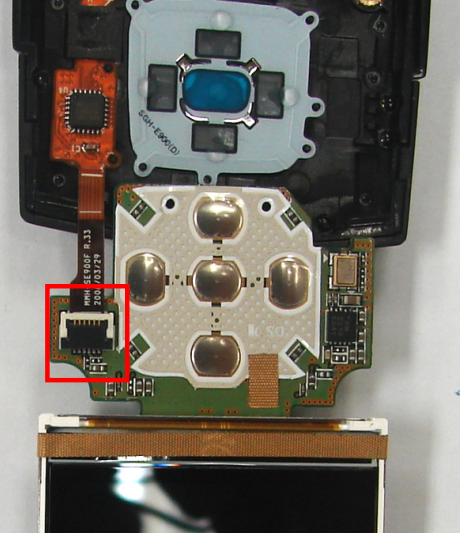
- 1) DETACH TAPE ON LCD CONNECTOR
 - 2) OPEN CONNECTOR, PULL LCD FPCB AT
CONNECTOR
 - 3) DETACH GOLDEN TAPE AT LCD LOWER
END
 - 4) DISASSEMBLE LCD AND PBA
- * caution**
1. WHEN DISASSEMBLE, TAKE CARE DEMAGE
ON PBA

16



- 1) DETACH TAPE ON FPCB CONNECTOR
 - 2) REMOVE SOLDERING LEAD ON FPCB
 - 3) OPEN FPCB CONNECTOR, PULL FPCB
- * caution**
1. THROW AWAY FPCB AFTER DISASSEMBLE

6-2. Assembly

	
<p>1) Attach LCD on PBA. 2) Insert LCD FPCB to CONNECTOR. 3) Attach tape on LCD FPCB CONNECTOR.</p> <p>* caution</p> <ol style="list-style-type: none"> Leave no particle and no finger print on LCD. Make sure that FPCB is completely inserted. 	<p>1) Attach Tape below the line on LCD.</p> <p>* caution</p> <ol style="list-style-type: none"> Keep the TAPE below the line on LCD.
	
<p>1) Insert SLIDE FPCB to CONNECTOR. 2) CLOSE the CONNECTOR. 3) Solder 2POINT beside of FPCB. 4) Attach TAPE on CONNECTOR.</p> <p>* caution</p> <ol style="list-style-type: none"> Make sure that FPCB is completely inserted. Don't make the solder disturb other parts. 	<p>1) Insert TOUCH KEY FPCB to CONNECTOR. 2) CLOSE the CONNECTOR. 3) Attach TAPE on CONNECTOR.</p> <p>* caution</p> <ol style="list-style-type: none"> Make sure that FPCB is completely inserted.

5



1) Insert SLIDE LOWER from top to bottom.

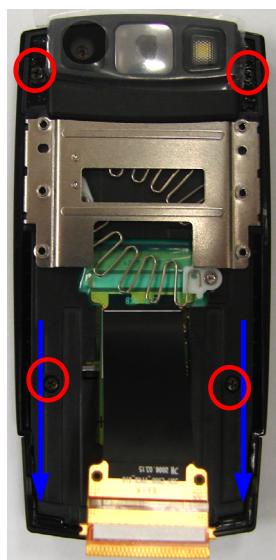
2) Drive SCREWS at 4 POINT.

*** caution**

1. Make sure that CAMERA CONNECTOR is completely inserted.

2. Leave no particle and no finger print between LCD and WINDOW.

6



1) Put LCD, SPK and PBA on UPPER.

2) Put the CAMERA on UPPER.

3) Connect the CAMERA

*** caution**

1. Do not make SCRATCH on the surface.

7



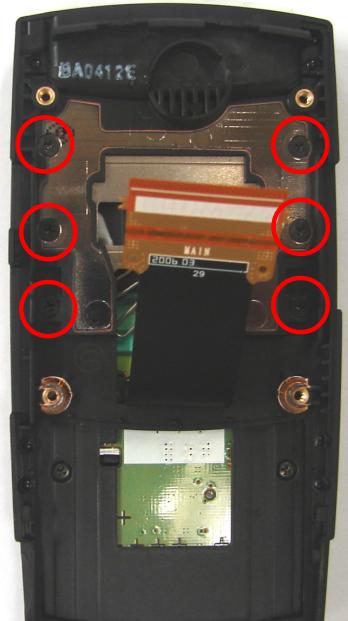
1) Attach left and right SCREW CAPS.

2) Press SCREW CAPS.

*** caution**

1. Make sure that the SCREW CAP is completely attached.

8



1) Assemble the FRONT.

2) Drive SCREWS at 6 POINT.

*** caution**

1. Do not make SCRATCH on the surface.

9



- 1) Put KEY PAD on.

*** caution**

1. Do not make SCRATCH on the surface.

10



- 1) Connect FPCB.

- 2) CLOSE the CONNECTOR.

*** caution**

1. Make sure that FPCB is completely inserted.

2. Be careful of DAMAGE on FPCB.

11



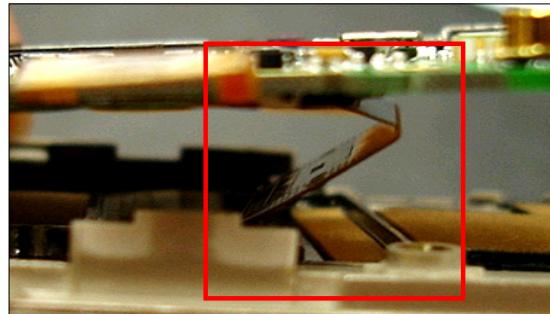
- 1) Attach the TAPE on the FPCB CONNECTOR.

- 2) Attach the SPONGE on the TAPE.

*** caution**

1. Press the TAPE
2. The SPONGE must be placed like the picture, not on the CONNECTOR.

12



- 1) Turn PBA over and Make sure that the FPCB is folded.

*** caution**

1. Be careful of DAMAGE on FPCB.

13

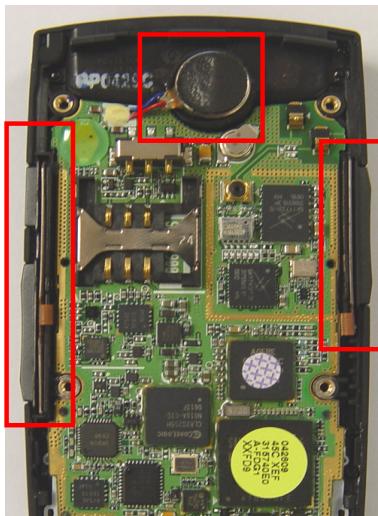


- 1) Assemble PBA. Fasten it to 2 point of FRONT HOOK.

*** caution**

1. Don't make PBA get stressed.
2. Don't break the HOOK.

14

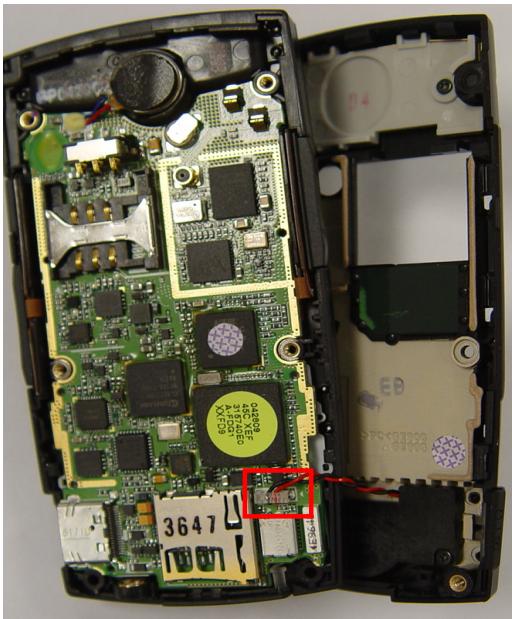


- 1) fix the MOTOR at the FRONT.
- 2) Attach VOLUME KEY FPCB on the FRONT.
- 3) Attach CAMERA KEY FPCB on the FRONT.
- 4) insert VOLUME KEY and CAMERA KEY.

*** caution**

1. Be careful of MOTOR WIRE broken.
2. Be careful of DAMAGE on FPCB.

15

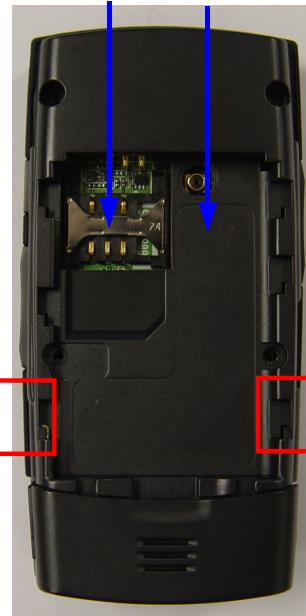


- 1) Connect the SPK.

*** caution**

1. The WIRE is the upper direction.
2. Be careful of WIRE broken.

16



- 1) Assemble the REAR by push from top to bottom

- 2) Press 2 point of HOOK on the REAR

*** caution**

1. Do not make SCRATCH on the surface.

17



18



- 1) Drive SCREWS at 4 POINT on the REAR.
- 2) Drive SCREWS at 2 POINT on the FRONT.
*** caution**
 1. Do not make SCRATCH on the surface.

- 1) Attach SCREW CAP.
- 2) Press the SCREW CAP.
*** caution**
 - 1) Make sure that the SCREW CAP is completely attatched.

7. MAIN Electrical Parts List

SEC CODE	Design LOC	Description	STATUS
GH71-06338A	ANT_GND	NPR-BRACKET ANT CONTACT	SA
GH71-06338A	ANT_PAD	NPR-BRACKET ANT CONTACT	SA
4202-001150	ANT101	ANTENNA-CHIP	SA
4302-001158	BAT300	BATTERY-LI(2ND)	SA
3711-006137	BTC506	HEADER-BATTERY	SA
2203-005725	C100	C-CER,CHIP	SA
2203-006838	C101	C-CER,CHIP	SA
2203-005052	C102	C-CER,CHIP	SA
2203-006361	C103	C-CER,CHIP	SA
2203-006423	C104	C-CER,CHIP	SA
2203-006423	C104	C-CER,CHIP	SA
2203-005725	C105	C-CER,CHIP	SA
2203-006423	C105	C-CER,CHIP	SA
2203-005682	C106	C-CER,CHIP	SA
2203-005819	C106	C-CER,CHIP	SA
2203-000330	C107	C-CER,CHIP	SA
2203-006838	C107	C-CER,CHIP	SA
2203-002677	C108	C-CER,CHIP	SA
2203-006838	C108	C-CER,CHIP	SA
2203-005682	C109	C-CER,CHIP	SA
2203-006423	C110	C-CER,CHIP	SA
2203-006423	C110	C-CER,CHIP	SA
2203-006305	C111	C-CER,CHIP	SA
2203-006423	C111	C-CER,CHIP	SA
2203-005736	C112	C-CER,CHIP	SA
2203-006838	C113	C-CER,CHIP	SA
2203-000812	C116	C-CER,CHIP	SA
2203-005736	C118	C-CER,CHIP	SA
2203-005736	C119	C-CER,CHIP	SA
2203-006361	C120	C-CER,CHIP	SA
2203-005736	C121	C-CER,CHIP	SA
2203-006194	C122	C-CER,CHIP	SA
2203-000254	C123	C-CER,CHIP	SA
2203-006121	C124	C-CER,CHIP	SA
2203-006838	C124	C-CER,CHIP	SA
2203-000311	C126	C-CER,CHIP	SA
2203-006194	C127	C-CER,CHIP	SA
2203-005806	C128	C-CER,CHIP	SA
2203-005683	C129	C-CER,CHIP	SA

SEC CODE	Design LOC	Description	STATUS
2203-006194	C130	C-CER,CHIP	SA
2203-006562	C130	C-CER,CHIP	SA
2203-006194	C131	C-CER,CHIP	SA
2203-006838	C131	C-CER,CHIP	SA
2203-005682	C132	C-CER,CHIP	SA
2203-006562	C132	C-CER,CHIP	SA
2203-006423	C133	C-CER,CHIP	SA
2203-006562	C133	C-CER,CHIP	SA
2203-006324	C134	C-CER,CHIP	SA
2203-006562	C135	C-CER,CHIP	SA
2203-006838	C135	C-CER,CHIP	SA
2203-006562	C136	C-CER,CHIP	SA
2203-006423	C137	C-CER,CHIP	SA
2203-006423	C138	C-CER,CHIP	SA
2203-006562	C139	C-CER,CHIP	SA
2203-006423	C140	C-CER,CHIP	SA
2203-005792	C141	C-CER,CHIP	SA
2203-006838	C143	C-CER,CHIP	SA
2203-006838	C146	C-CER,CHIP	SA
2203-006708	C150	C-CER,CHIP	SA
2203-006194	C154	C-CER,CHIP	SA
2203-006648	C155	C-CER,CHIP	SA
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2203-006257	C157	C-CER,CHIP	SA
2203-006194	C159	C-CER,CHIP	SA
2203-006562	C160	C-CER,CHIP	SA
2203-006838	C162	C-CER,CHIP	SA
2203-005682	C163	C-CER,CHIP	SA
2203-006194	C200	C-CER,CHIP	SA
2203-006423	C201	C-CER,CHIP	SA
2203-006423	C202	C-CER,CHIP	SA
2203-006194	C203	C-CER,CHIP	SA
2203-006423	C204	C-CER,CHIP	SA
2203-006194	C205	C-CER,CHIP	SA
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2203-006194	C208	C-CER,CHIP	SA
2203-006423	C209	C-CER,CHIP	SA
2203-006562	C210	C-CER,CHIP	SA

SEC CODE	Design LOC	Description	STATUS
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2203-006562	C213	C-CER,CHIP	SA
2203-006423	C215	C-CER,CHIP	SA
2203-005727	C216	C-CER,CHIP	SA
2203-005727	C217	C-CER,CHIP	SA
2203-006194	C300	C-CER,CHIP	SA
2203-006194	C301	C-CER,CHIP	SA
2203-006423	C302	C-CER,CHIP	SA
2203-006423	C303	C-CER,CHIP	SA
2203-005682	C304	C-CER,CHIP	SA
2203-006562	C305	C-CER,CHIP	SA
2203-006324	C306	C-CER,CHIP	SA
2203-005736	C307	C-CER,CHIP	SA
2203-006562	C308	C-CER,CHIP	SA
2203-006562	C309	C-CER,CHIP	SA
2203-006562	C310	C-CER,CHIP	SA
2203-006562	C311	C-CER,CHIP	SA
2203-006562	C312	C-CER,CHIP	SA
2203-006562	C313	C-CER,CHIP	SA
2203-006562	C314	C-CER,CHIP	SA
2203-005736	C315	C-CER,CHIP	SA
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2203-006648	C318	C-CER,CHIP	SA
2203-006423	C319	C-CER,CHIP	SA
2203-006562	C320	C-CER,CHIP	SA
2203-006423	C321	C-CER,CHIP	SA
2203-006562	C322	C-CER,CHIP	SA
2203-006562	C324	C-CER,CHIP	SA
2203-006048	C326	C-CER,CHIP	SA
2203-006825	C327	C-CER,CHIP	SA
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2203-006562	C329	C-CER,CHIP	SA
2203-006825	C330	C-CER,CHIP	SA
2203-006825	C332	C-CER,CHIP	SA
2203-006423	C333	C-CER,CHIP	SA
2203-006423	C334	C-CER,CHIP	SA
2203-006642	C335	C-CER,CHIP	SNA

SEC CODE	Design LOC	Description	STATUS
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2203-006423	C337	C-CER,CHIP	SA
2203-006423	C360	C-CER,CHIP	SA
2203-006423	C400	C-CER,CHIP	SA
2203-005481	C401	C-CER,CHIP	SA
2203-006423	C402	C-CER,CHIP	SA
2203-006423	C403	C-CER,CHIP	SA
2203-006824	C404	C-CER,CHIP	SA
2203-006423	C405	C-CER,CHIP	SA
2404-001381	C406	C-TA,CHIP	SA
2203-005481	C407	C-CER,CHIP	SA
2203-006824	C408	C-CER,CHIP	SA
2203-006260	C409	C-CER,CHIP	SA
2203-006260	C410	C-CER,CHIP	SA
2404-001339	C411	C-TA,CHIP	SA
2203-005481	C412	C-CER,CHIP	SA
2203-006423	C413	C-CER,CHIP	SA
2203-000654	C414	C-CER,CHIP	SA
2203-001033	C415	C-CER,CHIP	SA
2203-006257	C416	C-CER,CHIP	SA
2203-006423	C417	C-CER,CHIP	SA
2203-006257	C418	C-CER,CHIP	SA
2203-006562	C419	C-CER,CHIP	SA
2203-005806	C420	C-CER,CHIP	SA
2203-006562	C421	C-CER,CHIP	SA
2203-006423	C422	C-CER,CHIP	SA
2203-006562	C423	C-CER,CHIP	SA
2203-006324	C424	C-CER,CHIP	SA
2203-006423	C425	C-CER,CHIP	SA
2203-006423	C426	C-CER,CHIP	SA
2203-006379	C427	C-CER,CHIP	SA
2203-006305	C428	C-CER,CHIP	SA
2203-006305	C429	C-CER,CHIP	SA
2203-006423	C430	C-CER,CHIP	SA
2203-006562	C431	C-CER,CHIP	SA
2203-006423	C432	C-CER,CHIP	SA
2203-006562	C433	C-CER,CHIP	SA
2203-006562	C434	C-CER,CHIP	SA
2203-005719	C435	C-CER,CHIP	SA

SEC CODE	Design LOC	Description	STATUS
2203-006562	C436	C-CER,CHIP	SA
2203-006562	C437	C-CER,CHIP	SA
2203-005719	C438	C-CER,CHIP	SA
2203-006257	C439	C-CER,CHIP	SA
2404-001352	C440	C-TA,CHIP	SA
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2203-006562	C442	C-CER,CHIP	SA
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2203-005683	C444	C-CER,CHIP	SA
2203-005481	C445	C-CER,CHIP	SA
2203-002759	C446	C-CER,CHIP	SA
2203-002759	C447	C-CER,CHIP	SA
2203-006562	C448	C-CER,CHIP	SA
2203-006562	C449	C-CER,CHIP	SA
2203-006562	C452	C-CER,CHIP	SA
2203-006562	C453	C-CER,CHIP	SA
2203-005729	C454	C-CER,CHIP	SA
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2203-006423	C502	C-CER,CHIP	SA
2203-005683	C503	C-CER,CHIP	SA
2203-006048	C504	C-CER,CHIP	SA
2203-006423	C505	C-CER,CHIP	SA
2203-006562	C506	C-CER,CHIP	SA
2203-005682	C507	C-CER,CHIP	SA
2203-005682	C509	C-CER,CHIP	SA
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2203-006648	C519	C-CER,CHIP	SA
2203-005682	C520	C-CER,CHIP	SA
2203-006825	C529	C-CER,CHIP	SA
2203-006562	C530	C-CER,CHIP	SA
2203-005729	C533	C-CER,CHIP	SA
2203-006348	C534	C-CER,CHIP	SA
2203-006626	C535	C-CER,CHIP	SA
2203-005061	C537	C-CER,CHIP	SA
3709-001344	CD501	CONNECTOR-CARD EDGE	SA

SEC CODE	Design LOC	Description	STATUS
0404-001172	D301	DIODE-SCHOTTKY	SA
0407-001002	D500	DIODE-ARRAY	SA
2911-000034	F100	DUPLEXER-FEM	SA
2901-001324	F500	FILTER-EMI/ESD	SA
2901-001324	F502	FILTER-EMI/ESD	SA
2901-001324	F503	FILTER-EMI/ESD	SA
2901-001324	F505	FILTER-EMI/ESD	SA
2901-001324	F506	FILTER-EMI/ESD	SA
0601-002132	FLED100	LED	SA
3711-005646	HDC100	HEADER-BOARD TO BOARD	SA
3708-002170	HDC503	CONNECTOR-FPC/FFC/PIC	SA
3710-002306	IFC502	SOCKET-INTERFACE	SA
2703-002910	L100	INDUCTOR-SMD	SA
3301-001342	L100	BEAD-SMD	SA
2703-002204	L101	INDUCTOR-SMD	SA
2703-002198	L102	INDUCTOR-SMD	SA
2703-002198	L103	INDUCTOR-SMD	SA
2703-002281	L104	INDUCTOR-SMD	SA
2703-002281	L105	INDUCTOR-SMD	SA
2703-002267	L106	INDUCTOR-SMD	SA
2703-002267	L107	INDUCTOR-SMD	SA
2703-003003	L108	INDUCTOR-SMD	SA
2703-002204	L109	INDUCTOR-SMD	SA
2703-002200	L110	INDUCTOR-SMD	SA
2007-008542	L111	R-CHIP	SA
3301-001342	L200	BEAD-SMD	SA
3301-001342	L301	BEAD-SMD	SA
2703-003001	L302	INDUCTOR-SMD	SA
2703-003002	L303	INDUCTOR-SMD	SA
3301-001342	L400	BEAD-SMD	SA
3301-001342	L401	BEAD-SMD	SA
3301-001342	L402	BEAD-SMD	SA
3301-001342	L403	BEAD-SMD	SA
3301-001342	L404	BEAD-SMD	SA
2703-001913	L500	INDUCTOR-SMD	SA
2703-001913	L501	INDUCTOR-SMD	SA
0601-002094	LED300	LED	SA
0601-002094	LED301	LED	SA
0601-002094	LED302	LED	SA

SEC CODE	Design LOC	Description	STATUS
0601-002094	LED303	LED	SA
0601-002094	LED304	LED	SA
0601-002094	LED305	LED	SA
0601-002094	LED306	LED	SA
0601-002094	LED307	LED	SA
0601-002094	LED308	LED	SA
0601-002094	LED309	LED	SA
0601-002094	LED310	LED	SA
0601-002094	LED311	LED	SA
GH30-00266A	MIC_S	MICROPHONE-ASSY	SA
4709-001451	MOD100	BLUETOOTH MODULE	SA
2804-001648	OSC100	OSCILLATOR-CLOCK	SA
2801-004466	OSC200	CRYSTAL-SMD	SA
2801-004340	OSC400	CRYSTAL-SMD	SA
1201-002368	PAM100	IC-POWER AMP	SA
2007-008516	R100	R-CHIP	SA
2007-008045	R101	R-CHIP	SA
2007-001290	R102	R-CHIP	SA
2007-008045	R102	R-CHIP	SA
2007-000139	R103	R-CHIP	SA
2007-000139	R104	R-CHIP	SA
2007-008478	R104	R-CHIP	SA
2007-008478	R105	R-CHIP	SA
2007-007317	R106	R-CHIP	SA
2007-008044	R106	R-CHIP	SA
2007-008542	R107	R-CHIP	SA
2007-007741	R108	R-CHIP	SA
2007-008516	R108	R-CHIP	SA
2007-009084	R109	R-CHIP	SA
2007-007134	R112	R-CHIP	SA
2007-008531	R114	R-CHIP	SA
2007-009084	R114	R-CHIP	SA
2007-000174	R115	R-CHIP	SA
2007-008045	R115	R-CHIP	SA
2007-000174	R116	R-CHIP	SA
2007-008483	R117	R-CHIP	SA
2007-008516	R118	R-CHIP	SA
2007-008587	R119	R-CHIP	SA
2007-008048	R120	R-CHIP	SA

SEC CODE	Design LOC	Description	STATUS
2007-009314	R121	R-CHIP	SA
2007-008483	R122	R-CHIP	SA
2007-008542	R123	R-CHIP	SA
2007-008483	R200	R-CHIP	SA
2007-008055	R201	R-CHIP	SA
2007-008483	R202	R-CHIP	SA
2007-008055	R203	R-CHIP	SA
2007-008542	R204	R-CHIP	SA
2007-008542	R205	R-CHIP	SA
2007-008542	R206	R-CHIP	SA
2007-008542	R207	R-CHIP	SA
2007-008542	R208	R-CHIP	SA
2007-008542	R209	R-CHIP	SA
2007-008542	R210	R-CHIP	SA
2007-008542	R212	R-CHIP	SA
2007-008542	R213	R-CHIP	SA
2007-008542	R214	R-CHIP	SA
2007-008542	R215	R-CHIP	SA
2007-008542	R216	R-CHIP	SA
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2007-008542	R219	R-CHIP	SA
2007-008542	R220	R-CHIP	SA
2007-008516	R221	R-CHIP	SA
2007-008055	R222	R-CHIP	SA
2007-008055	R223	R-CHIP	SA
2007-008045	R300	R-CHIP	SA
2007-008045	R301	R-CHIP	SA
2007-008045	R302	R-CHIP	SA
2007-008045	R303	R-CHIP	SA
2007-008045	R304	R-CHIP	SA
2007-008588	R305	R-CHIP	SA
2007-008045	R306	R-CHIP	SA
2007-009166	R307	R-CHIP	SA
2007-009167	R308	R-CHIP	SA
2007-008052	R309	R-CHIP	SA
2007-008542	R310	R-CHIP	SA
2007-008544	R312	R-CHIP	SA
2007-008544	R313	R-CHIP	SA

SEC CODE	Design LOC	Description	STATUS
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2007-008057	R315	R-CHIP	SA
2007-008579	R316	R-CHIP	SA
2007-008045	R317	R-CHIP	SA
2007-008806	R318	R-CHIP	SA
2007-008045	R319	R-CHIP	SA
2007-008045	R320	R-CHIP	SA
2007-008420	R321	R-CHIP	SA
2007-008544	R322	R-CHIP	SA
2007-008544	R323	R-CHIP	SA
2007-008516	R325	R-CHIP	SA
2007-008648	R326	R-CHIP	SA
2007-008483	R327	R-CHIP	SA
2007-008478	R328	R-CHIP	SA
2007-008483	R330	R-CHIP	SA
2007-008420	R331	R-CHIP	SA
2007-008420	R332	R-CHIP	SA
2007-008516	R333	R-CHIP	SA
2007-008419	R334	R-CHIP	SA
2007-008531	R400	R-CHIP	SA
2007-008210	R401	R-CHIP	SA
2007-008210	R402	R-CHIP	SA
2007-007798	R403	R-CHIP	SA
2007-007798	R404	R-CHIP	SA
2007-007334	R405	R-CHIP	SA
2007-000775	R406	R-CHIP	SA
2007-000775	R407	R-CHIP	SA
2007-008051	R408	R-CHIP	SA
2007-008419	R409	R-CHIP	SA
2007-008419	R410	R-CHIP	SA
2007-008483	R411	R-CHIP	SA
2007-008588	R412	R-CHIP	SA
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2007-008516	R415	R-CHIP	SA
2007-009084	R416	R-CHIP	SA
2007-008483	R417	R-CHIP	SA
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2007-007009	R419	R-CHIP	SA
2007-001306	R420	R-CHIP	SA

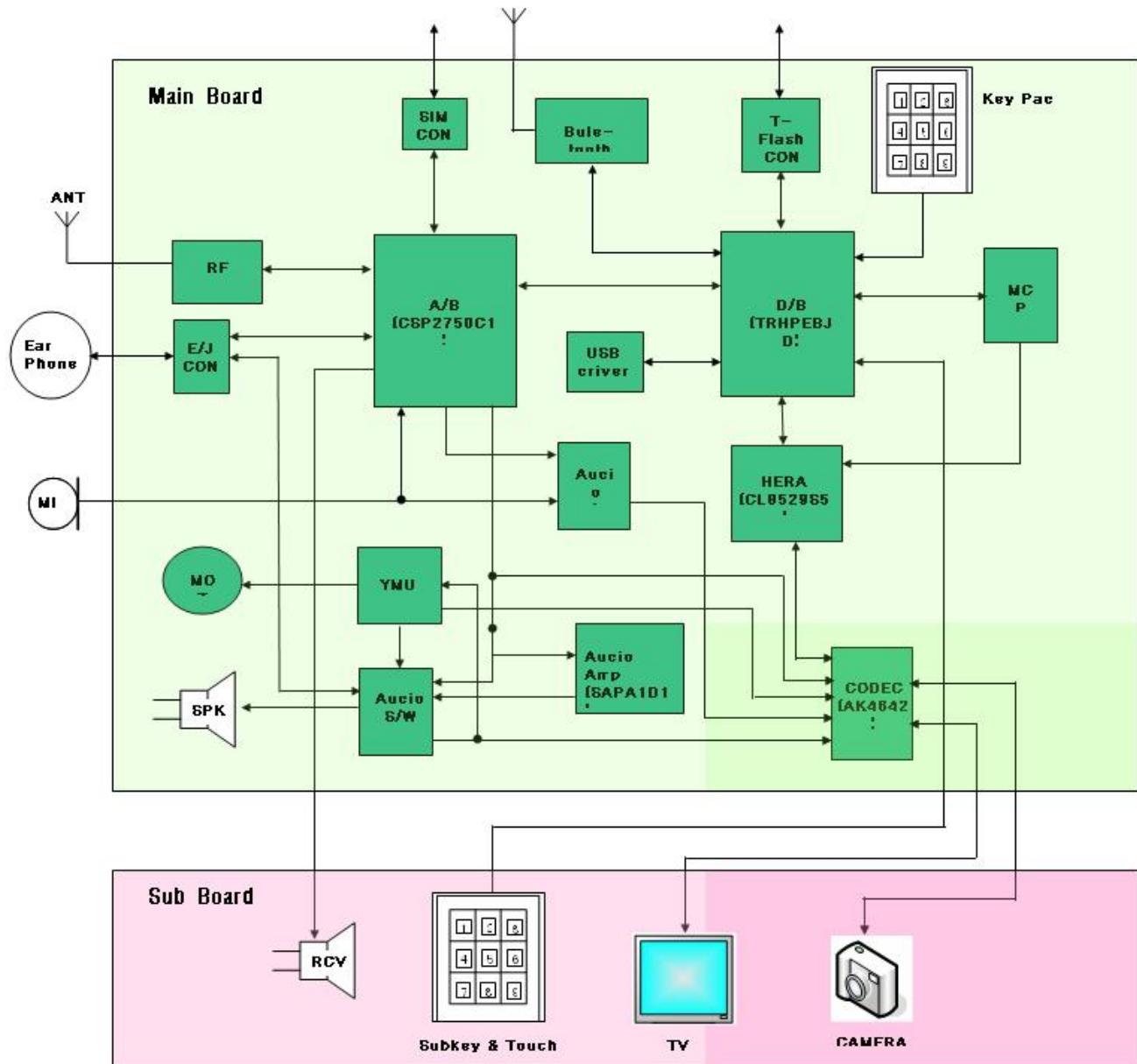
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2007-008483	R425	R-CHIP	SA
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2007-008052	R427	R-CHIP	SA
2007-008542	R428	R-CHIP	SA
2007-008052	R429	R-CHIP	SA
2007-008419	R430	R-CHIP	SA
2007-009201	R431	R-CHIP	SA
2007-009201	R432	R-CHIP	SA
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2007-007528	R437	R-CHIP	SA
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2007-007488	R440	R-CHIP	SA
2007-007142	R441	R-CHIP	SA
2007-000171	R442	R-CHIP	SA
2007-007142	R443	R-CHIP	SA
2007-007488	R444	R-CHIP	SA
2007-000171	R445	R-CHIP	SA
2007-007142	R446	R-CHIP	SA
2007-008516	R447	R-CHIP	SA
2007-008516	R448	R-CHIP	SA
2007-000171	R449	R-CHIP	SA
2007-008542	R450	R-CHIP	SA
2007-008542	R451	R-CHIP	SA
2007-008542	R452	R-CHIP	SA
2007-008055	R500	R-CHIP	SA
2007-008055	R501	R-CHIP	SA
2007-008483	R502	R-CHIP	SA
2007-008483	R503	R-CHIP	SA
2007-008483	R504	R-CHIP	SA
2007-009170	R505	R-CHIP	SA
2007-008483	R506	R-CHIP	SA
2007-009160	R507	R-CHIP	SA

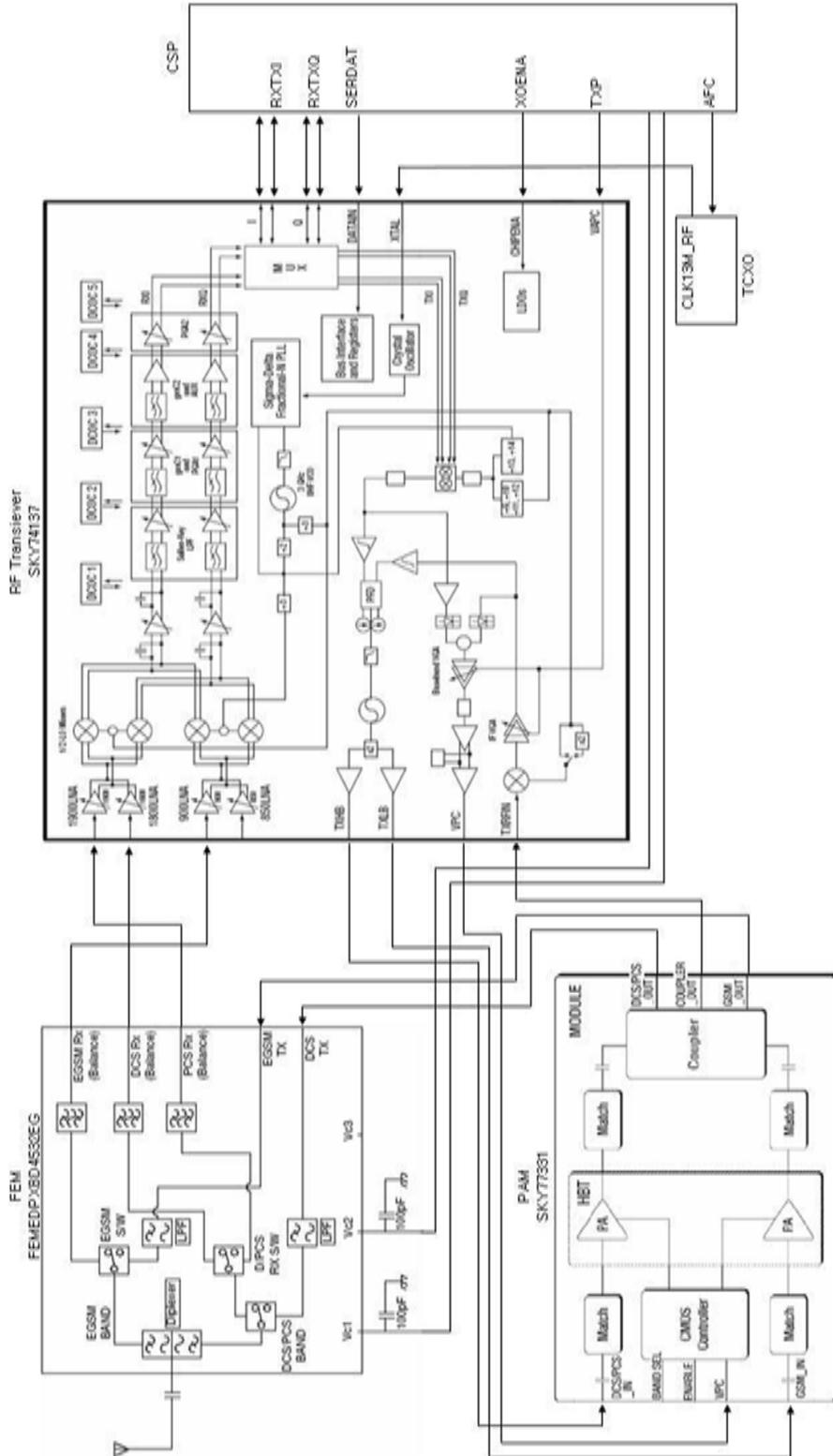
SEC CODE	Design LOC	Description	STATUS
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2007-008542	R509	R-CHIP	SA
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2007-007142	R511	R-CHIP	SA
2007-001119	R512	R-CHIP	SA
2007-008486	R513	R-CHIP	SA
2007-007529	R514	R-CHIP	SA
2007-007142	R515	R-CHIP	SA
2007-008055	R516	R-CHIP	SA
2007-008055	R517	R-CHIP	SA
2007-007528	R518	R-CHIP	SA
2007-007528	R519	R-CHIP	SA
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2007-008419	R522	R-CHIP	SA
2007-008419	R523	R-CHIP	SA
2007-000157	R524	R-CHIP	SA
2007-008785	R525	R-CHIP	SNA
2007-008785	R526	R-CHIP	SNA
2007-008483	R532	R-CHIP	SA
2007-008483	R533	R-CHIP	SA
2007-008483	R534	R-CHIP	SA
2007-008785	R535	R-CHIP	SNA
2007-008785	R536	R-CHIP	SNA
2007-008483	R537	R-CHIP	SA
2007-008045	R538	R-CHIP	SA
2007-008045	R539	R-CHIP	SA
2007-008542	R540	R-CHIP	SA
3705-001358	RFS100	CONNECTOR-COAXIAL	SA
3709-001451	SIM301	CONNECTOR-CARD EDGE	SA
3708-002015	SLC102	CONNECTOR-FPC/FFC/PIC	SA
3708-002234	SLC103	CONNECTOR-FPC/FFC/PIC	SA
3708-002170	SLP100	CONNECTOR-FPC/FFC/PIC	SA
3710-002081	SPK400	SOCKET-BOARD TO BOARD	SA
2404-001381	TA300	C-TA,CHIP	SA
2404-001377	TA501	C-TA,CHIP	SA
2404-001445	TA502	C-TA,CHIP	SA
2404-001445	TA503	C-TA,CHIP	SA
2404-001406	TA504	C-TA,CHIP	SA
2404-001381	TA505	C-TA,CHIP	SA

SEC CODE	Design LOC	Description	STATUS
2809-001295	TCX101	OSCILLATOR-VCTCXO	SA
0801-002958	U100	IC-CMOS LOGIC	SA
1203-003517	U100	IC-MULTI REG.	SA
1203-003432	U101	IC-POSI.FIXED REG.	SA
1203-003635	U101	IC-DC/DC CONVERTER	SA
2203-006838	U102	C-CER,CHIP	SA
1009-001018	U200	IC-HALL EFFECT S/W	SA
1006-001322	U201	IC-LINE TRANSCEIVER	SNA
1108-000063	U202	IC-MCP	SA
GH09-00045A	U202	IC MICOM	SA
1205-002272	U301	IC-TRANSCEIVER	SA
0801-002529	U302	IC-CMOS LOGIC	SA
1203-003523	U303	IC-POSI.FIXED REG.	SA
1203-004164	U304	IC-DC/DC CONVERTER	SA
1203-003340	U305	IC-POSI.FIXED REG.	SA
1001-001231	U401	IC-ANALOG SWITCH	SA
1203-003523	U402	IC-POSI.FIXED REG.	SA
1201-002147	U403	IC-VIDEO AMP	SA
1001-001281	U404	IC-ANALOG SWITCH	SA
1203-003523	U405	IC-POSI.FIXED REG.	SA
1001-001281	U406	IC-ANALOG SWITCH	SA
1201-002233	U407	IC-AUDIO AMP	SA
1203-003789	U500	IC-POWER SUPERVISOR	SA
0801-002958	U501	IC-CMOS LOGIC	SA
0406-001200	U502	DIODE-TVS	SA
0801-002529	U503	IC-CMOS LOGIC	SA
1203-003663	U504	IC-BATTERY	SA
1203-003754	U505	IC-POSI.FIXED REG.	SA
1205-002944	UCD100	IC-TRANSCEIVER	SA
1205-002681	UCD402	IC-CODEC	SA
1204-002138	UCD403	IC-MELODY	SA
1203-004119	UCP301	IC-POWER SUPERVISOR	SA
1205-002943	UCP401	IC-CODEC	SA
2901-001326	V100	FILTER-EMI/ESD	SA
2901-001326	V101	FILTER-EMI/ESD	SA
2901-001326	V103	FILTER-EMI/ESD	SA
1405-001110	V105	VARISTOR	SA
1405-001110	V107	VARISTOR	SA
1405-001082	V111	VARISTOR	SA

SEC CODE	Design LOC	Description	STATUS
1405-001082	V112	VARISTOR	SA
1405-001082	V113	VARISTOR	SA
1405-001082	V115	VARISTOR	SA
1405-001082	V116	VARISTOR	SA
1405-001133	V117	VARISTOR	SNA
1405-001133	V118	VARISTOR	SNA
1405-001082	VR200	VARISTOR	SA
1405-001082	VR300	VARISTOR	SA
1405-001133	VR301	VARISTOR	SNA
1405-001133	VR302	VARISTOR	SNA
1405-001133	VR303	VARISTOR	SNA
1405-001133	VR304	VARISTOR	SNA
1405-001133	VR305	VARISTOR	SNA
1405-001133	VR306	VARISTOR	SNA
1405-001133	VR307	VARISTOR	SNA
1404-001165	VR313	THERMISTOR-NTC	SA
1405-001138	VR316	VARISTOR	SA
1405-001138	VR317	VARISTOR	SA
1405-001133	VR318	VARISTOR	SNA
1405-001082	VR400	VARISTOR	SA
1405-001082	VR401	VARISTOR	SA
1405-001138	VR402	VARISTOR	SA
1405-001133	VR515	VARISTOR	SNA
1405-001133	VR516	VARISTOR	SNA
0403-001547	ZD300	DIODE-ZENER	SA
0406-001201	ZD301	DIODE-TVS	SA
0406-001167	ZD310	DIODE-TVS	SA
0406-001167	ZD311	DIODE-TVS	SA
0406-001167	ZD500	DIODE-TVS	SA
0406-001190	ZD501	DIODE-TVS	SA
0403-001547	ZD502	DIODE-ZENER	SA

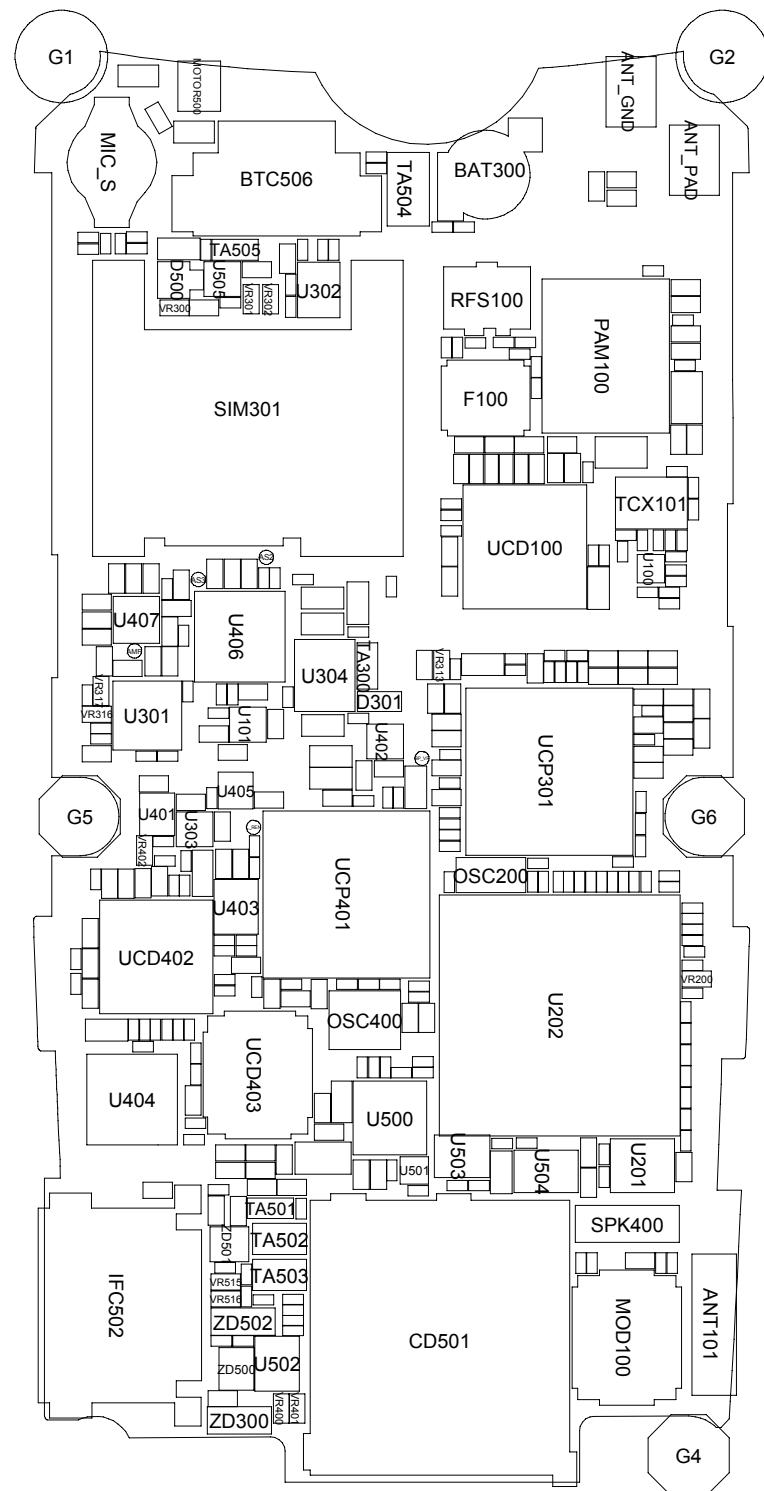
8. Block Diagrams

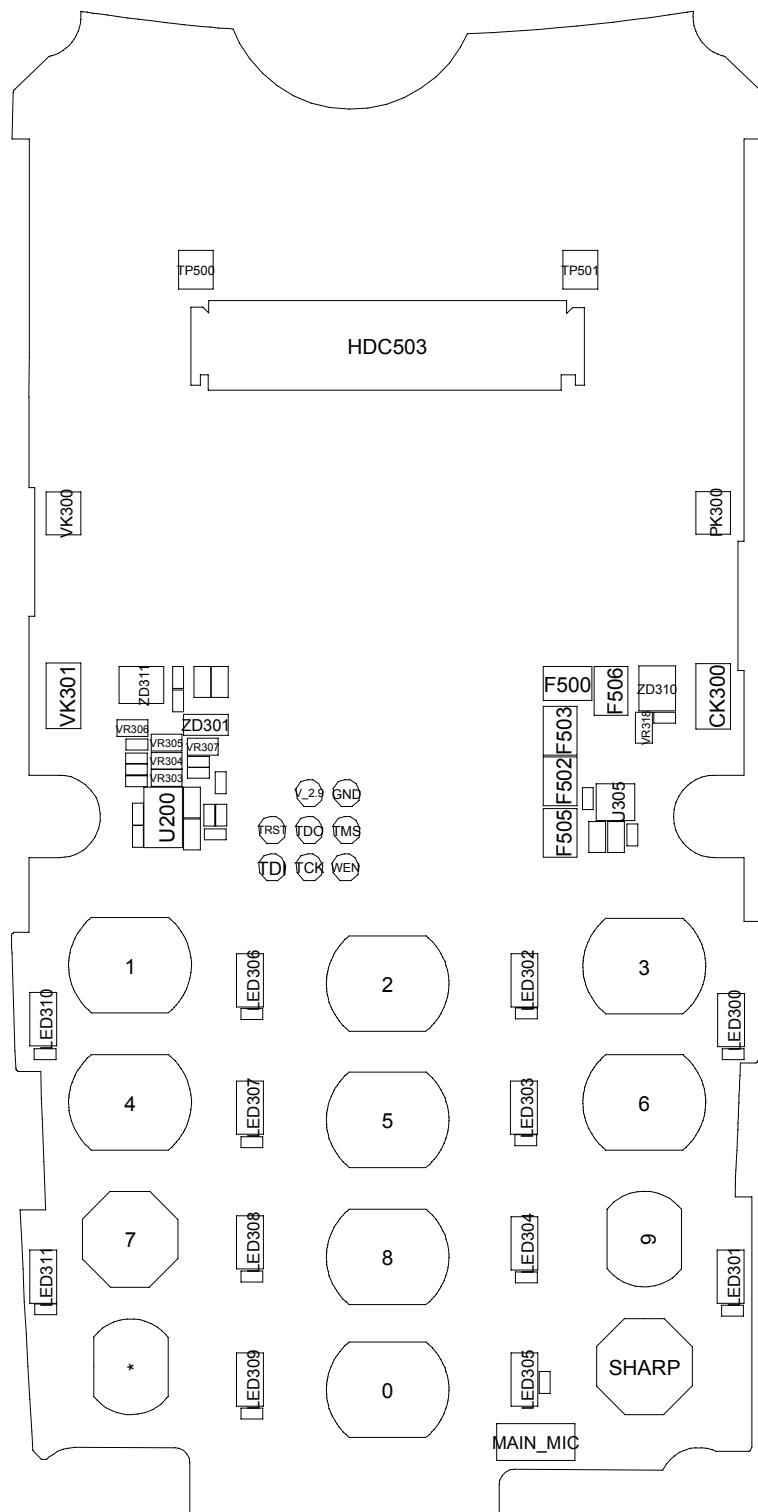




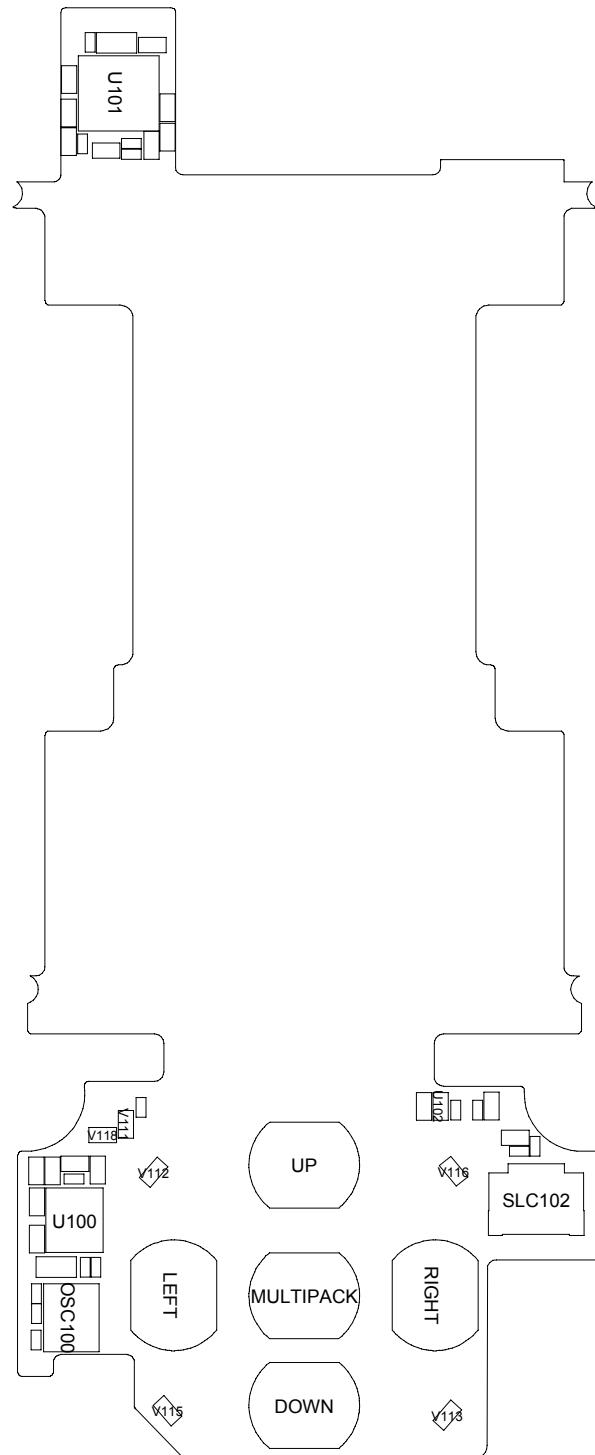
9. PCB Diagrams

9-1 Main

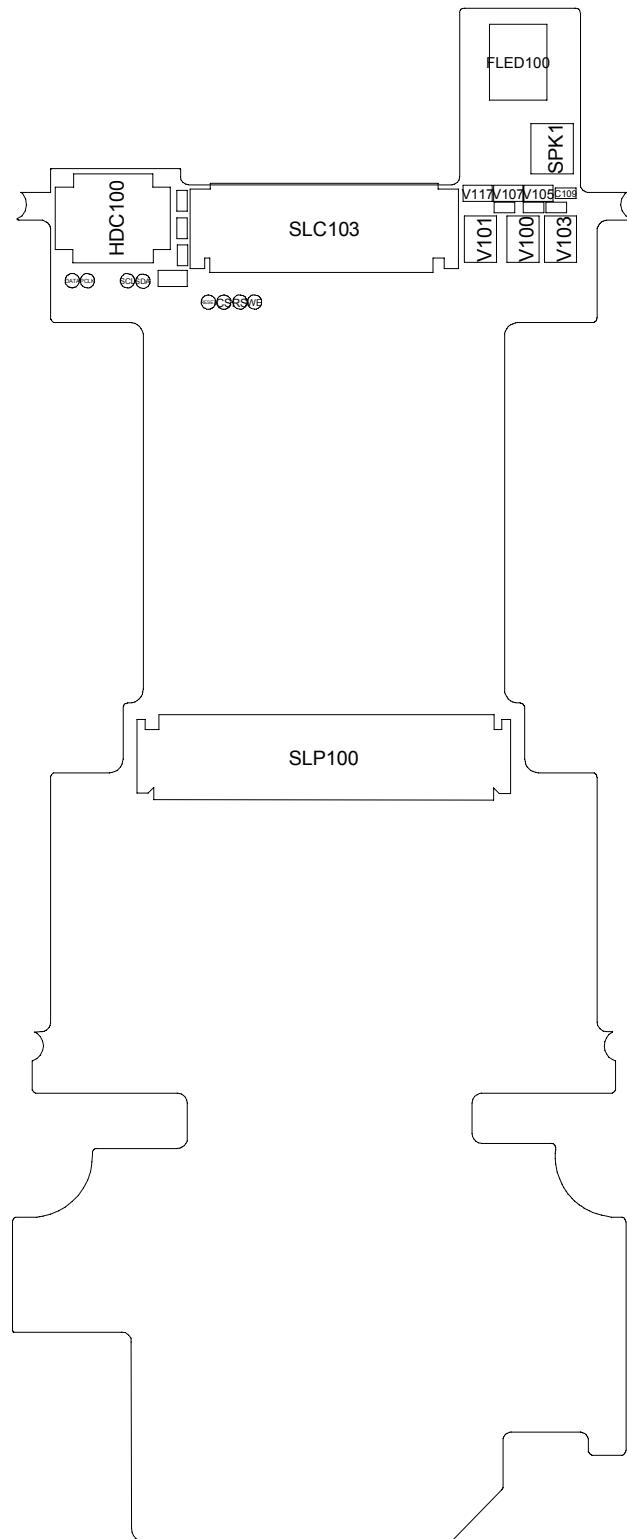




9-2 Sub



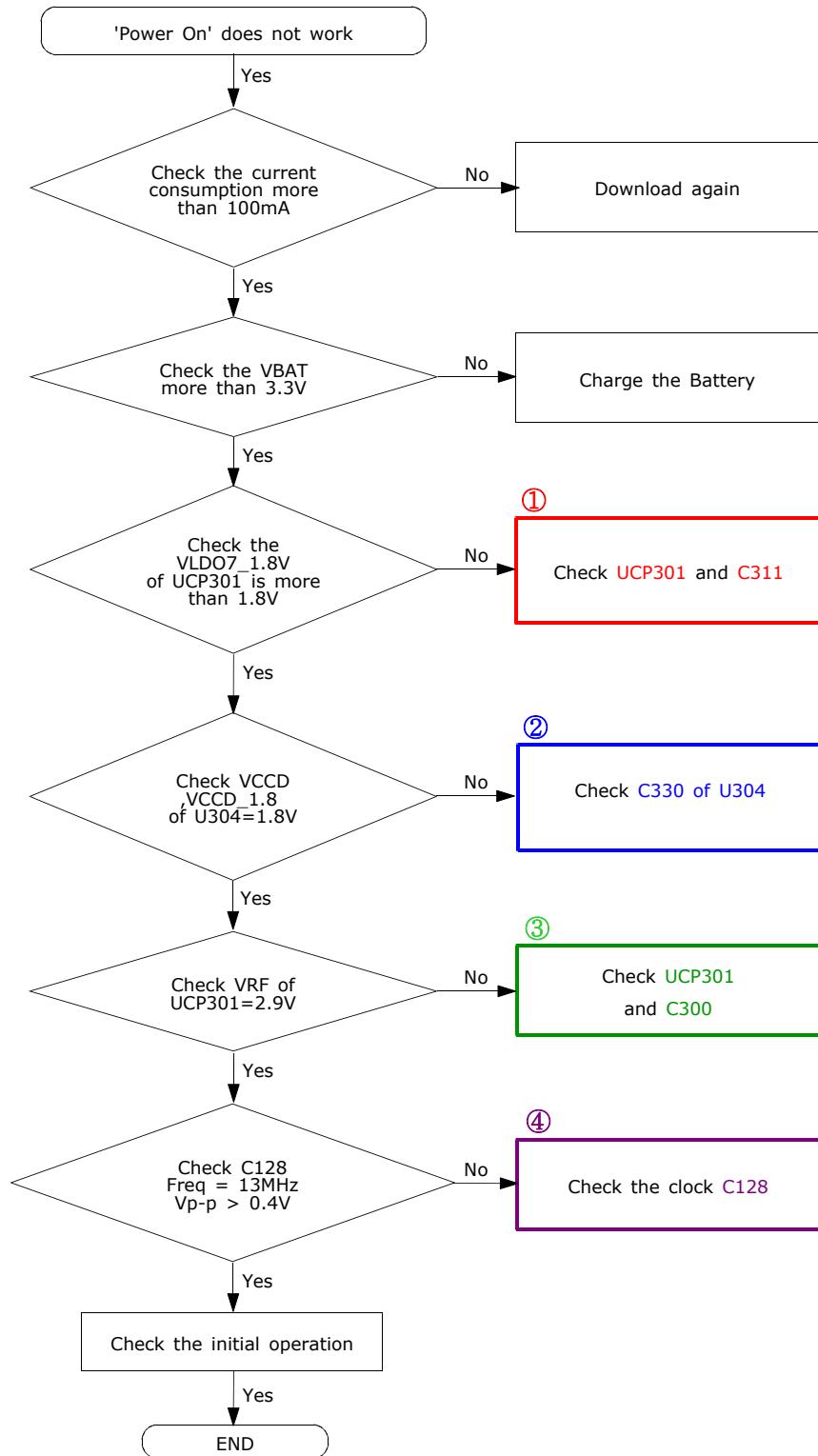
9-3

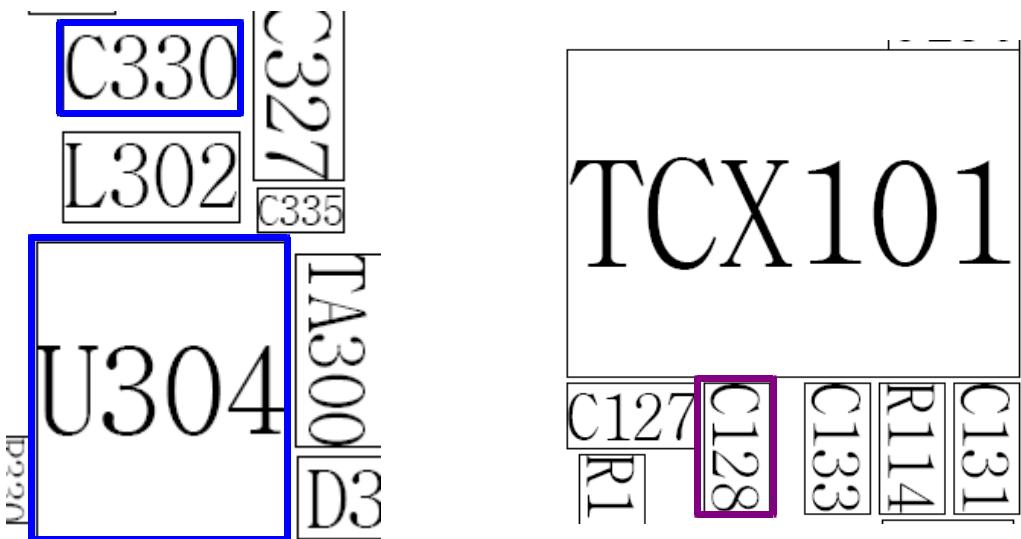
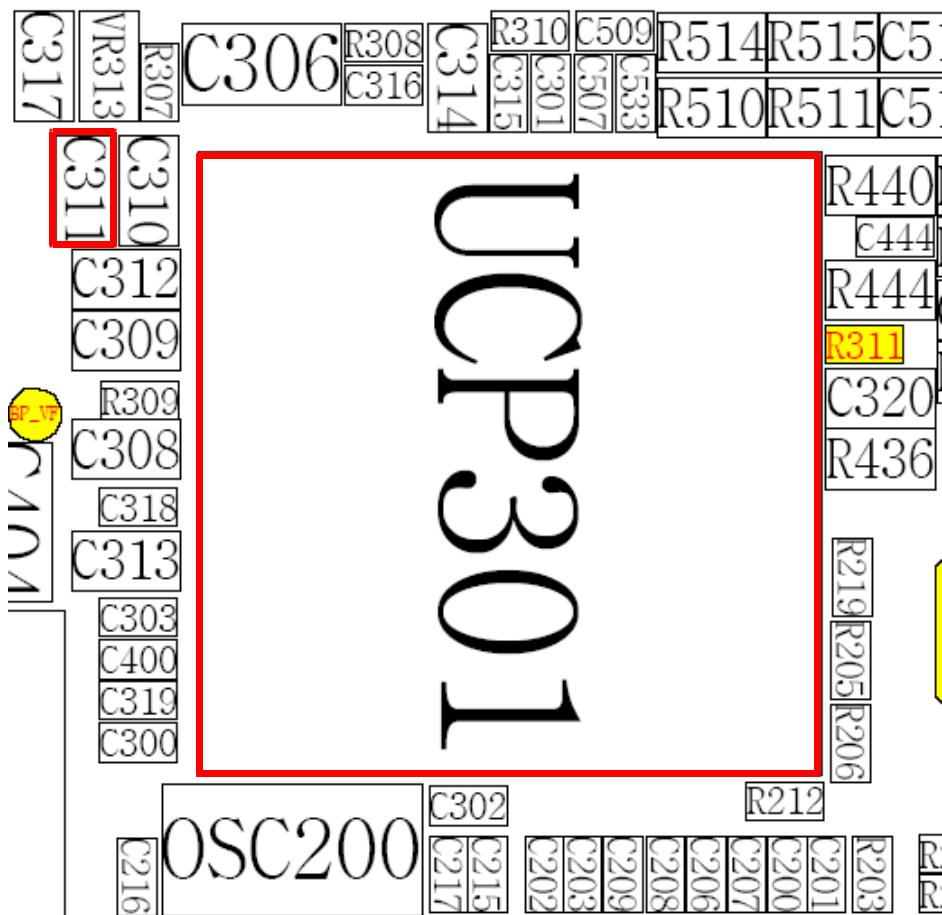


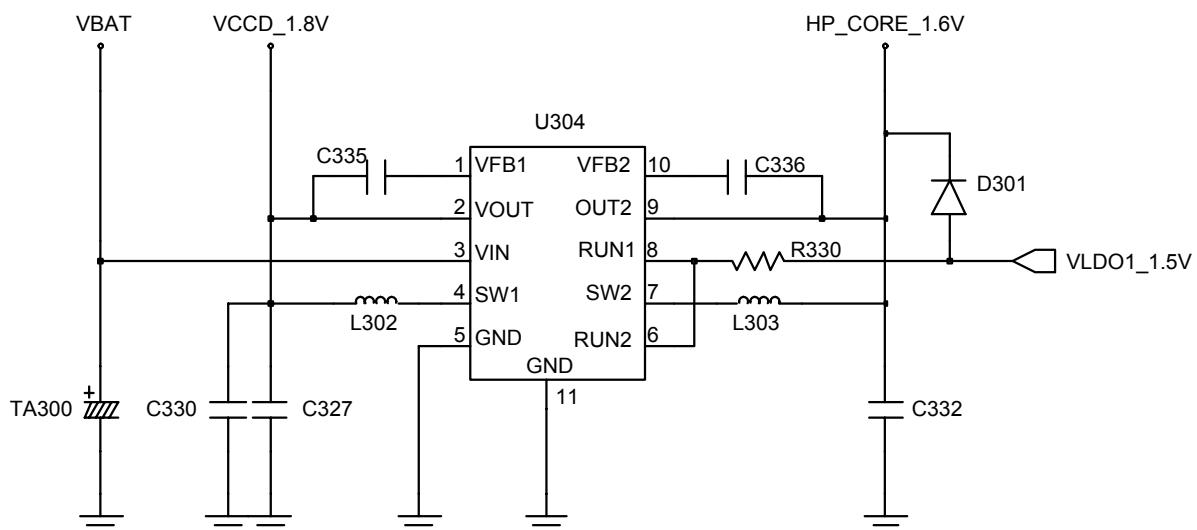
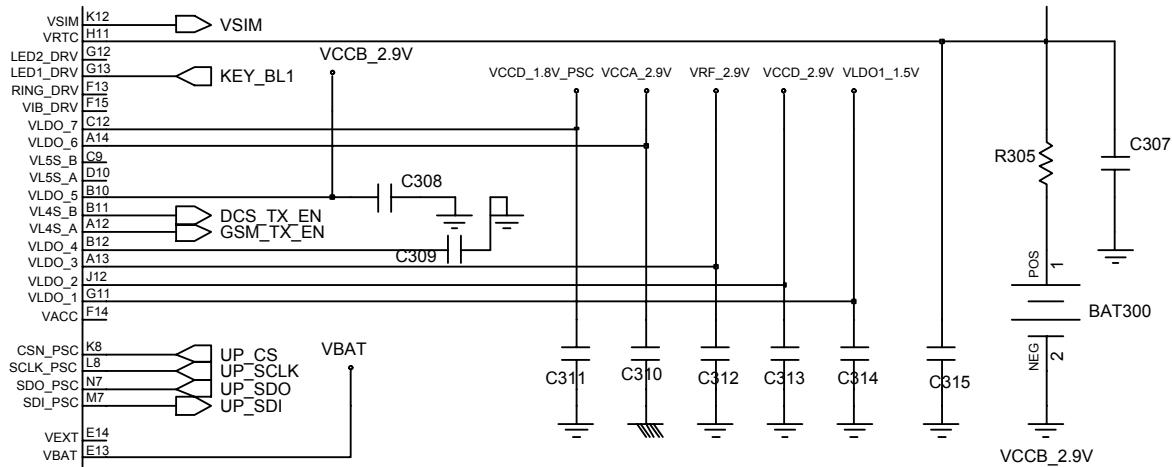
10. Flow Chart of Troubleshooting

10-1 BASEBAND

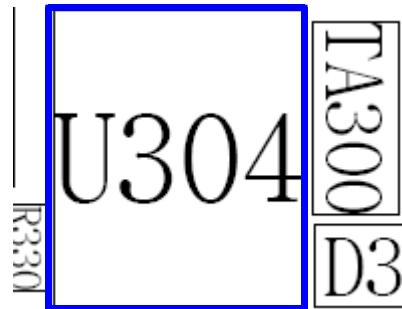
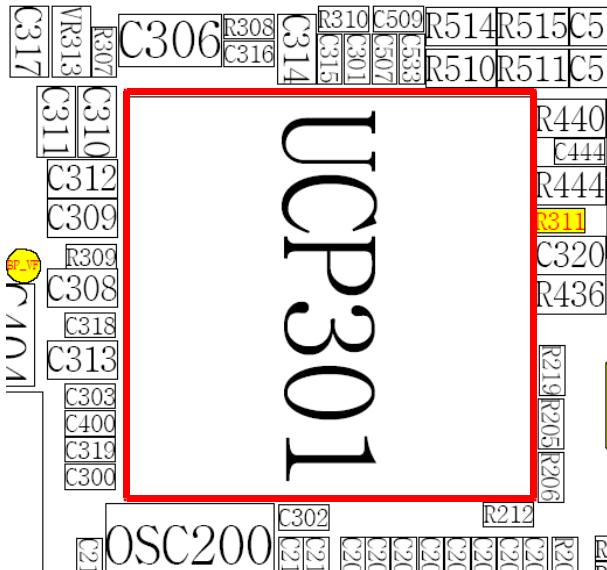
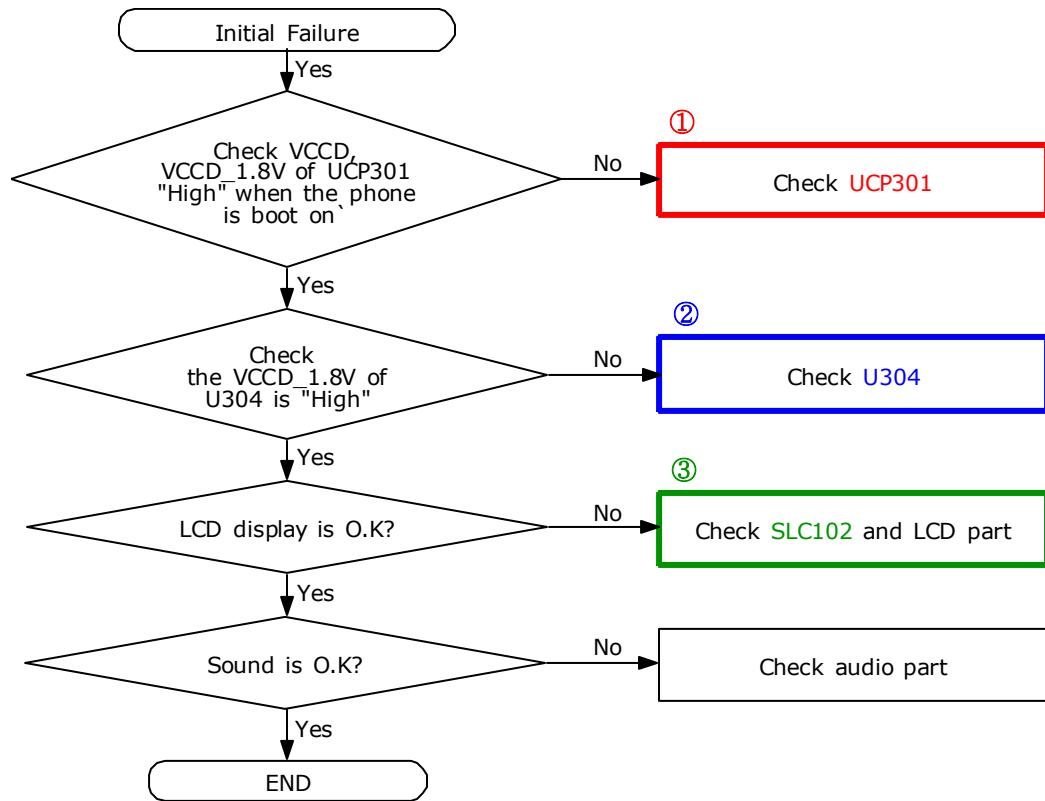
10-1-1. Power ON

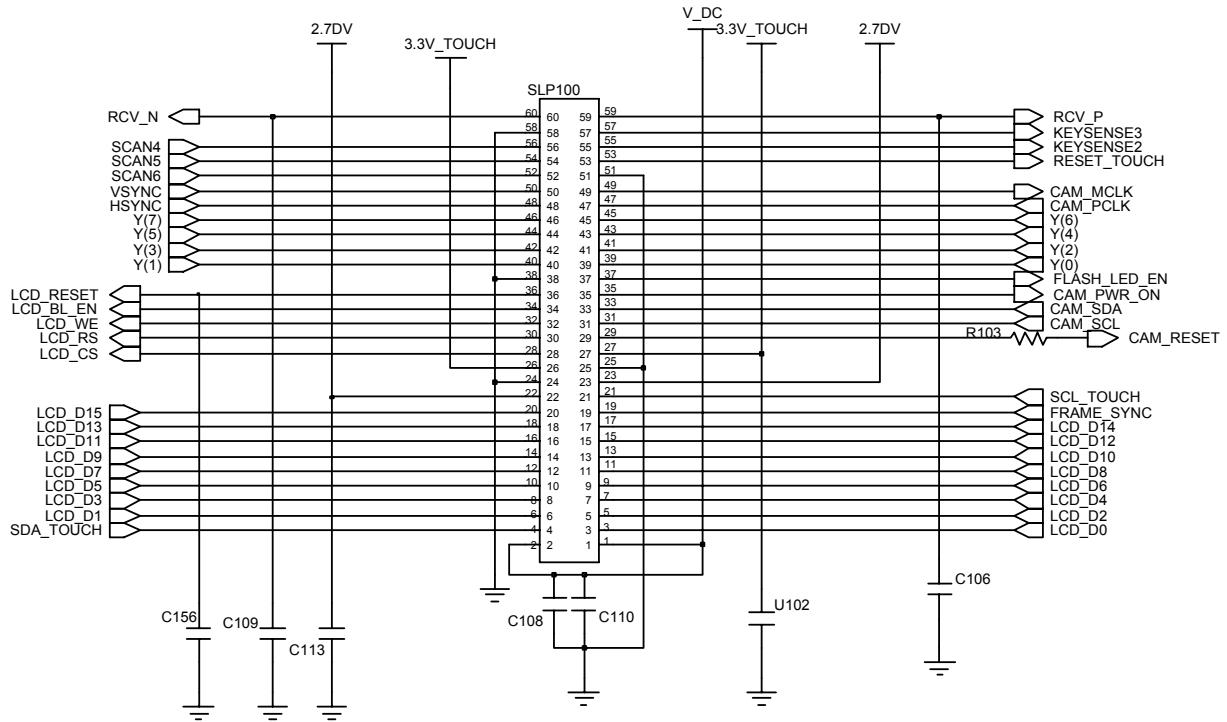




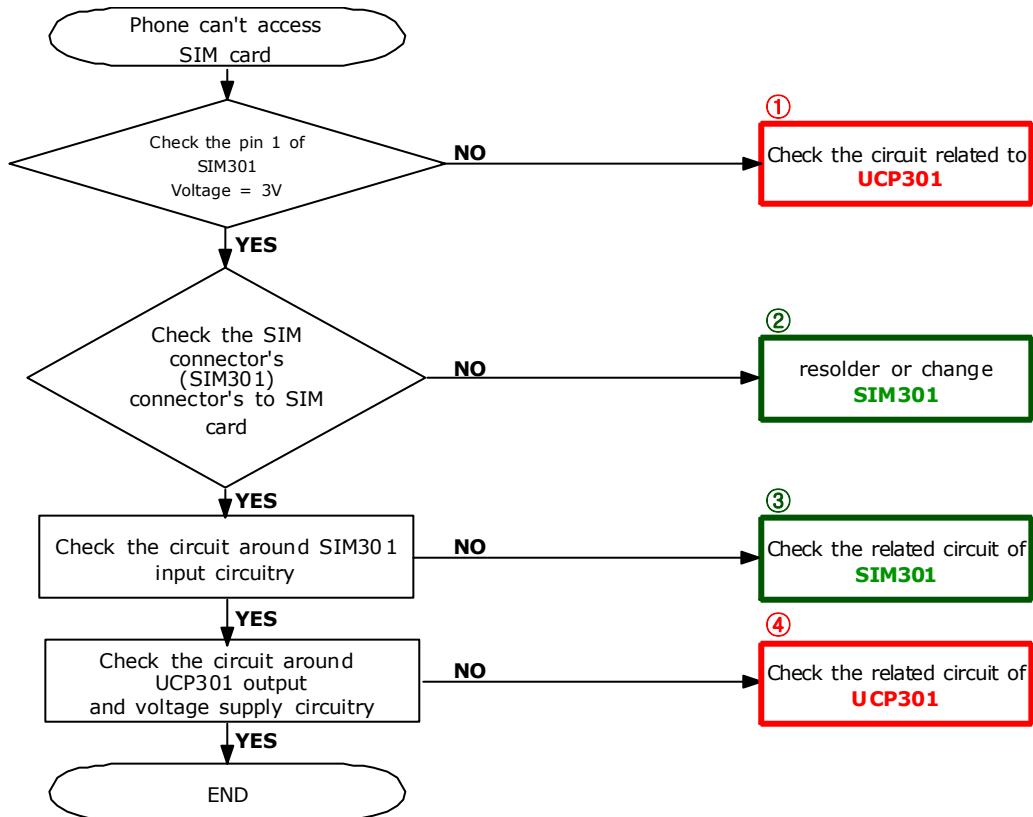


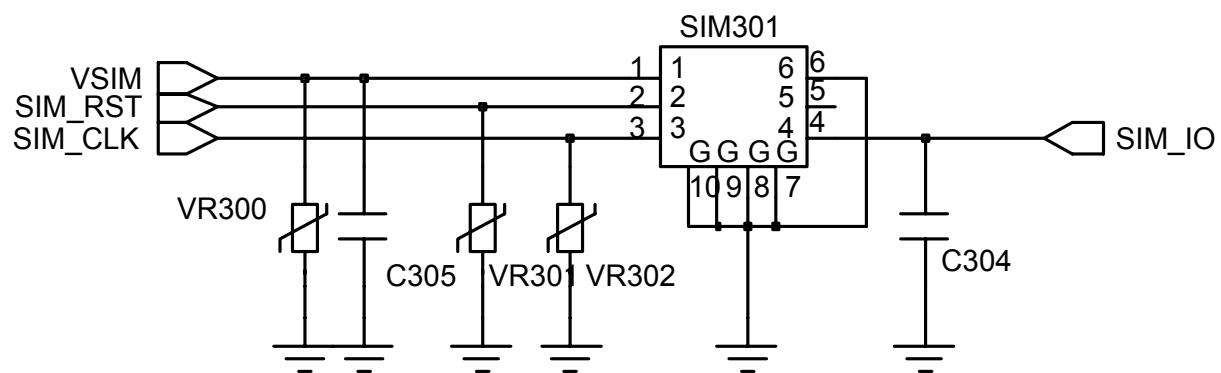
10-2-2. Initial



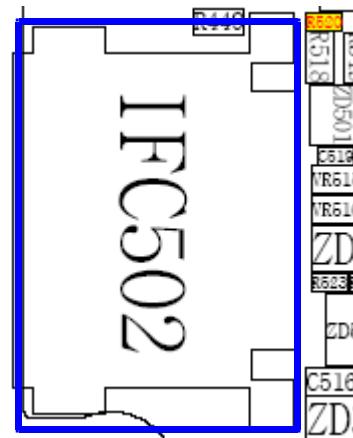
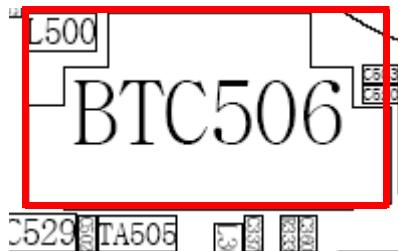
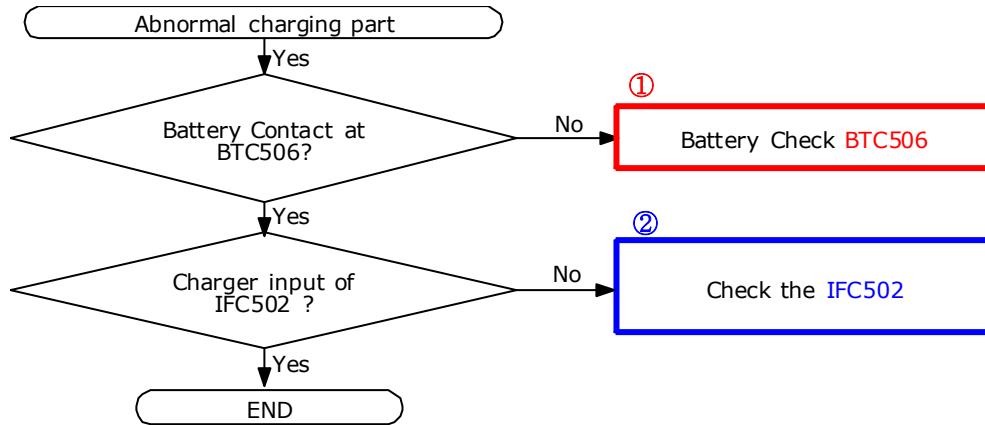


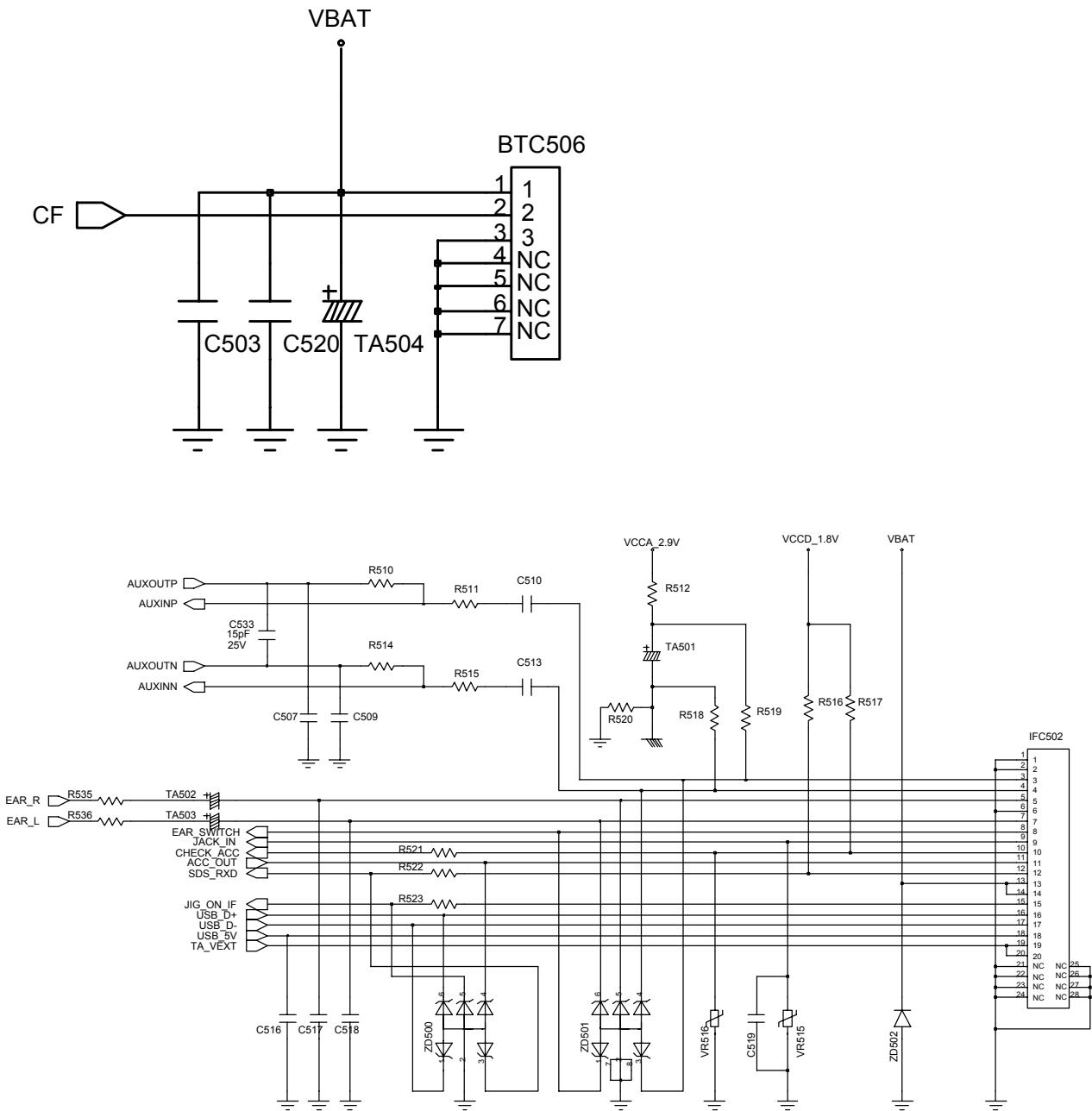
10-1-3. Sim Part



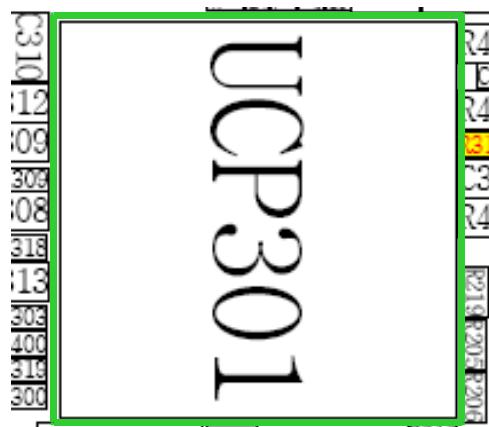
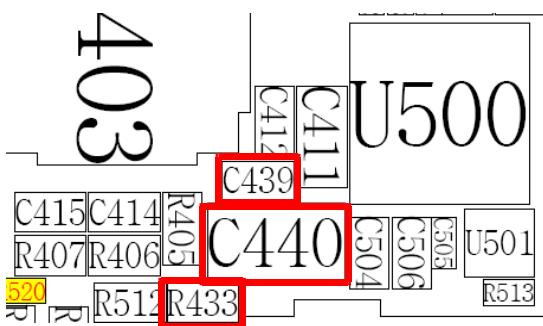
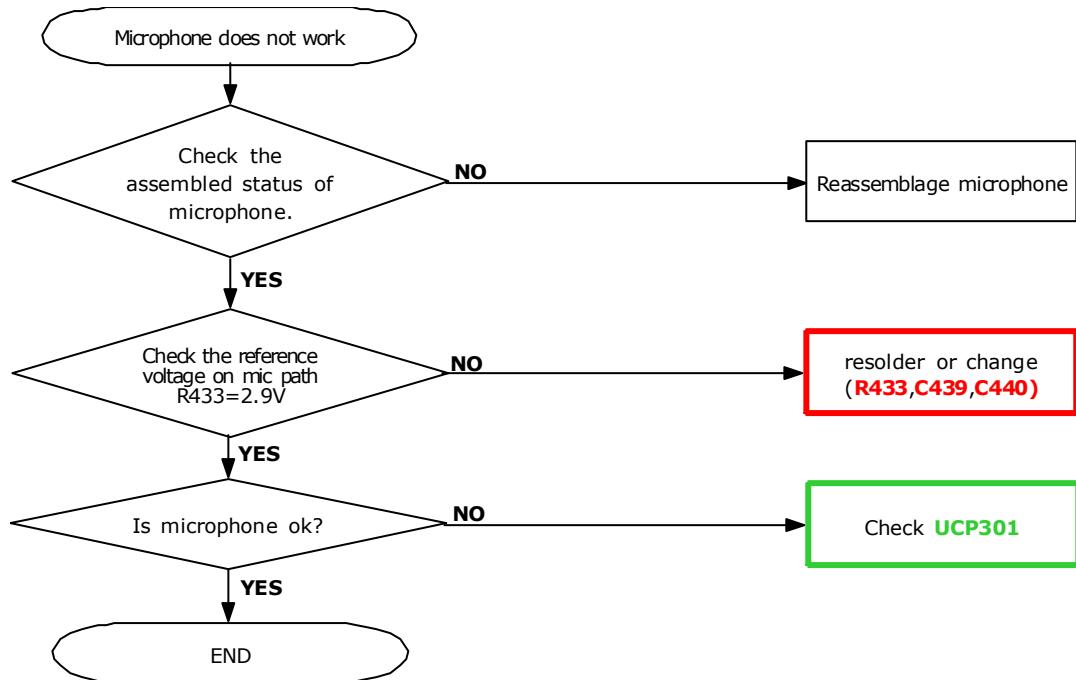


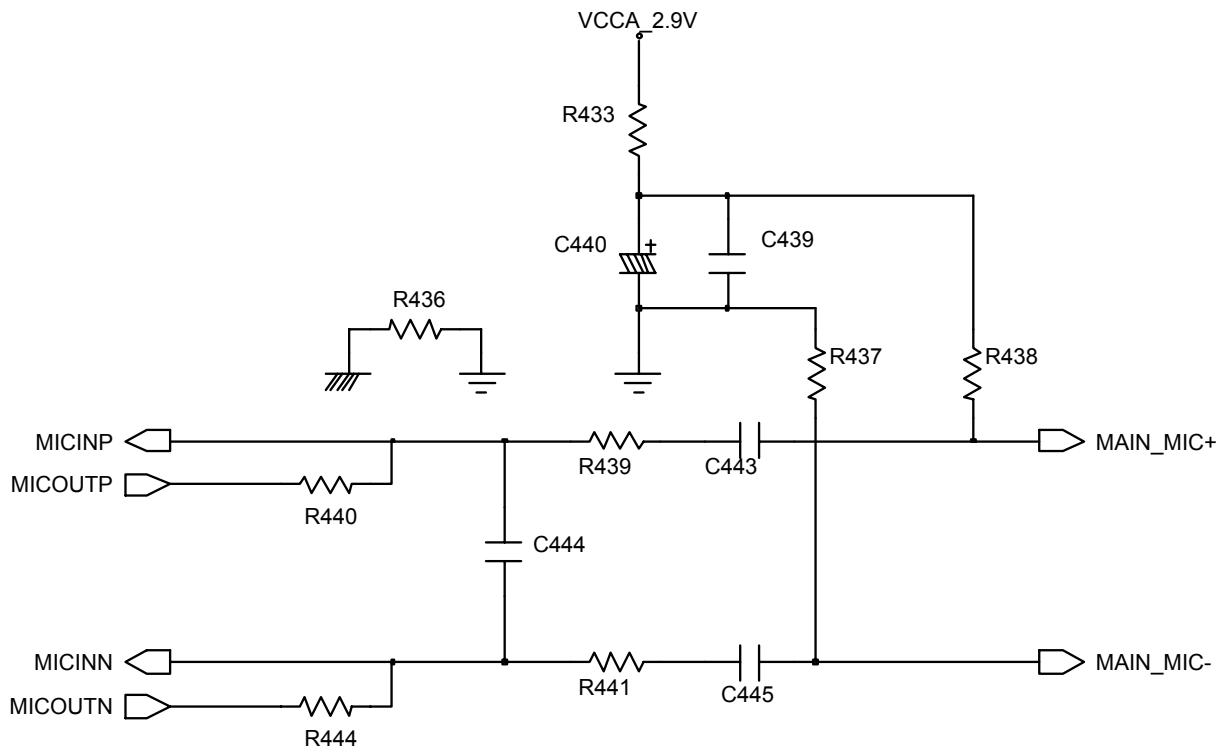
10-1-4. Charging Part



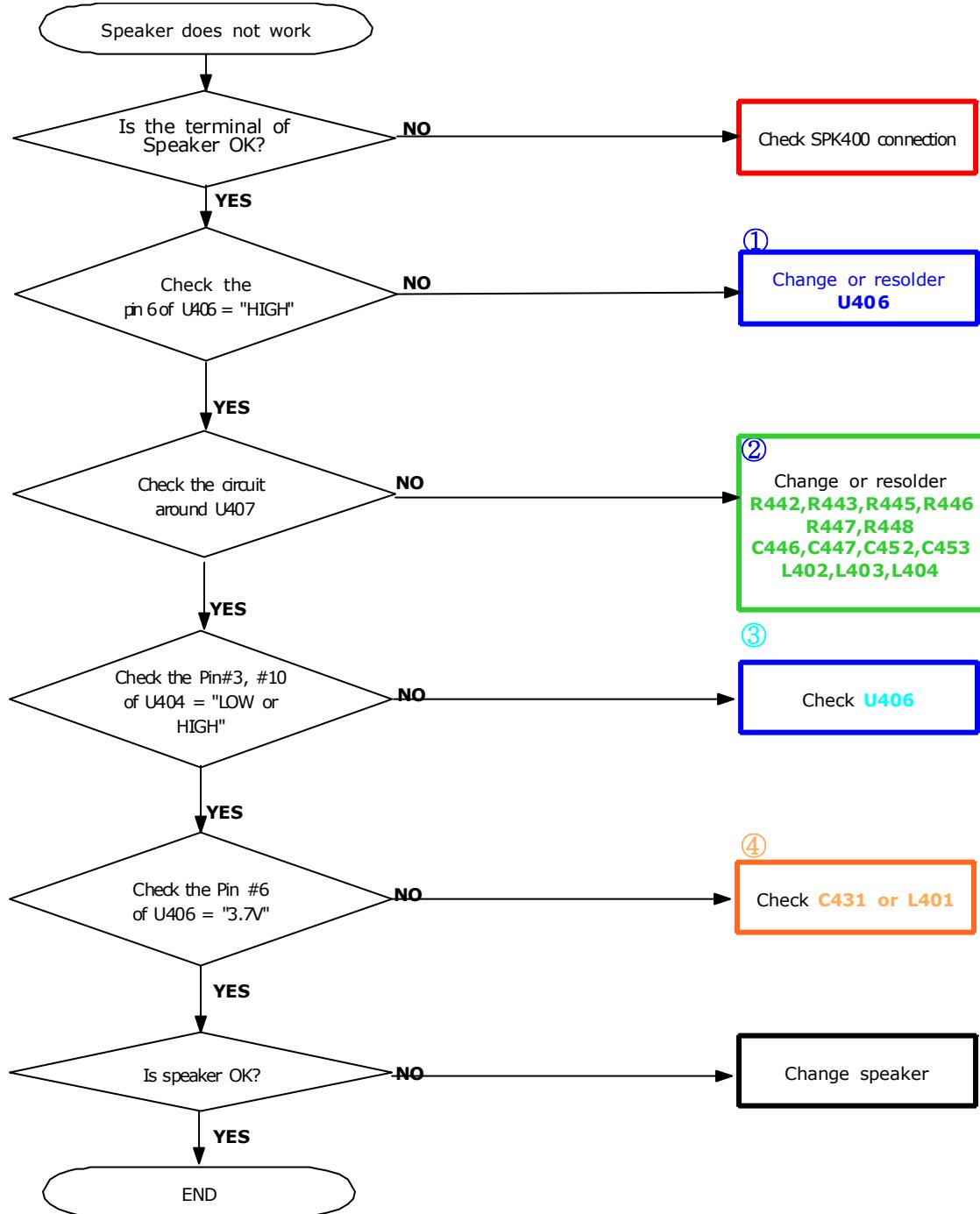


10-1-5. Microphone Part

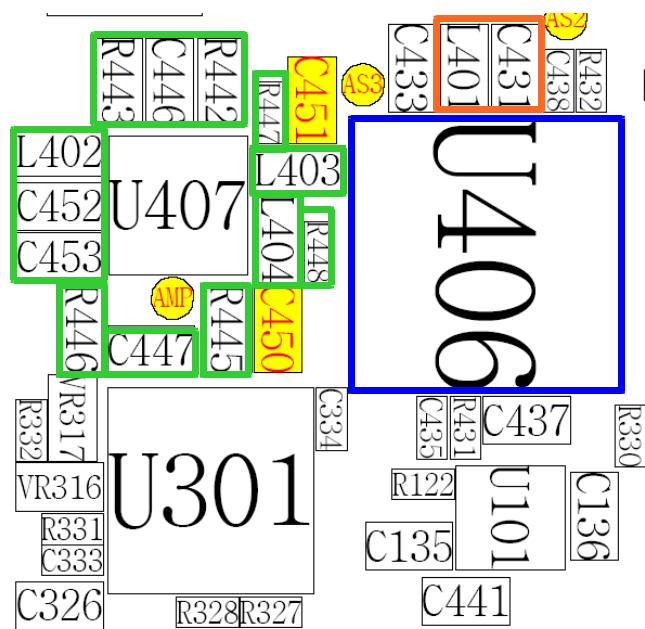


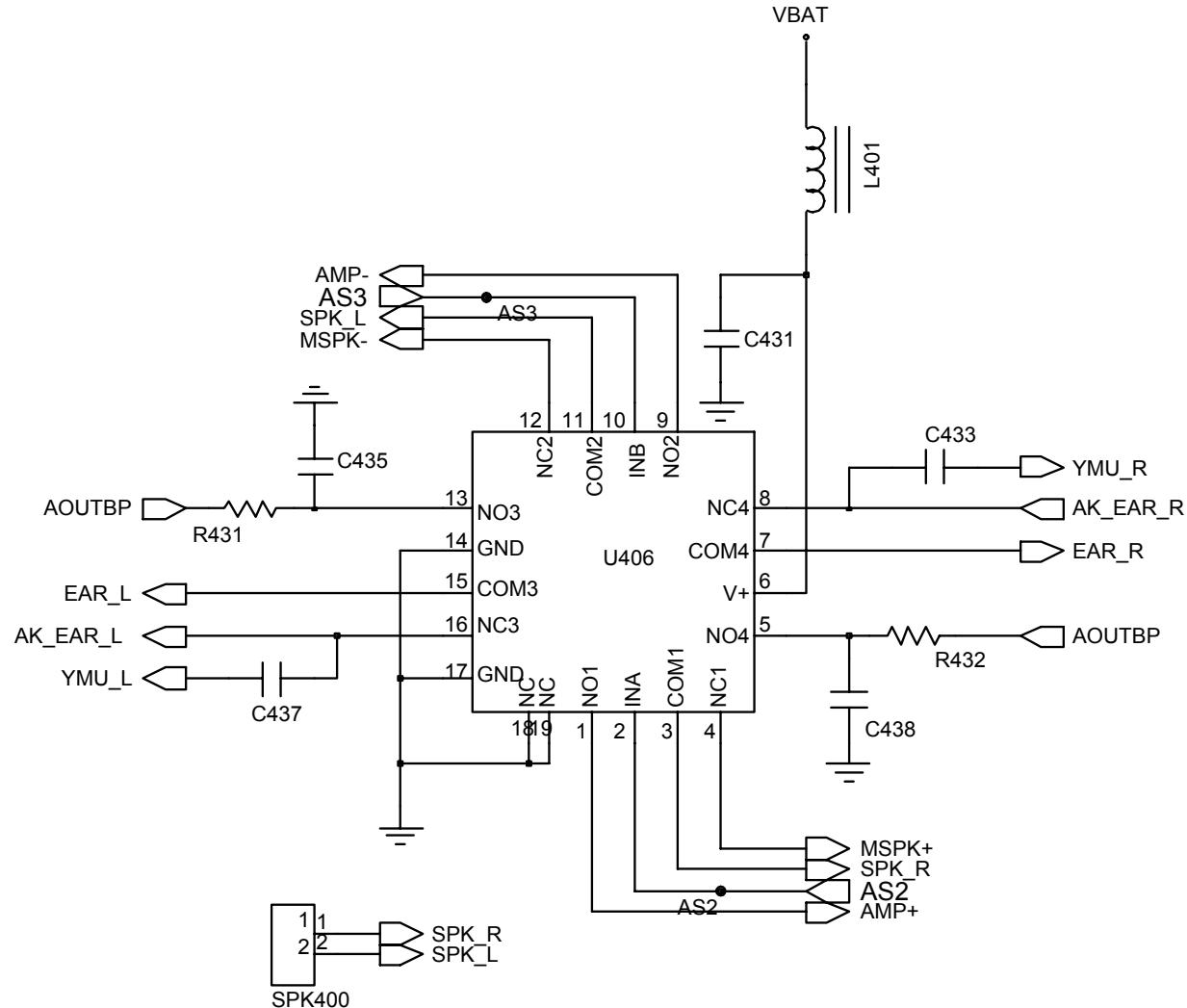


10-1-6. Speaker Part

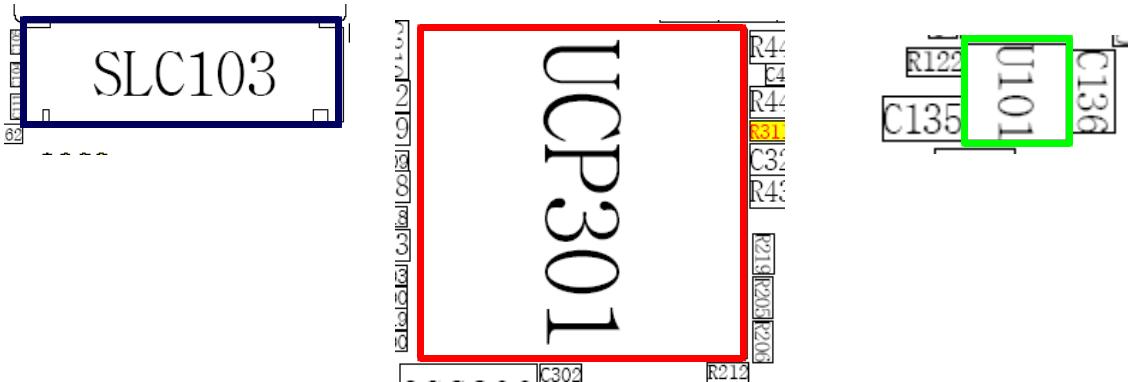
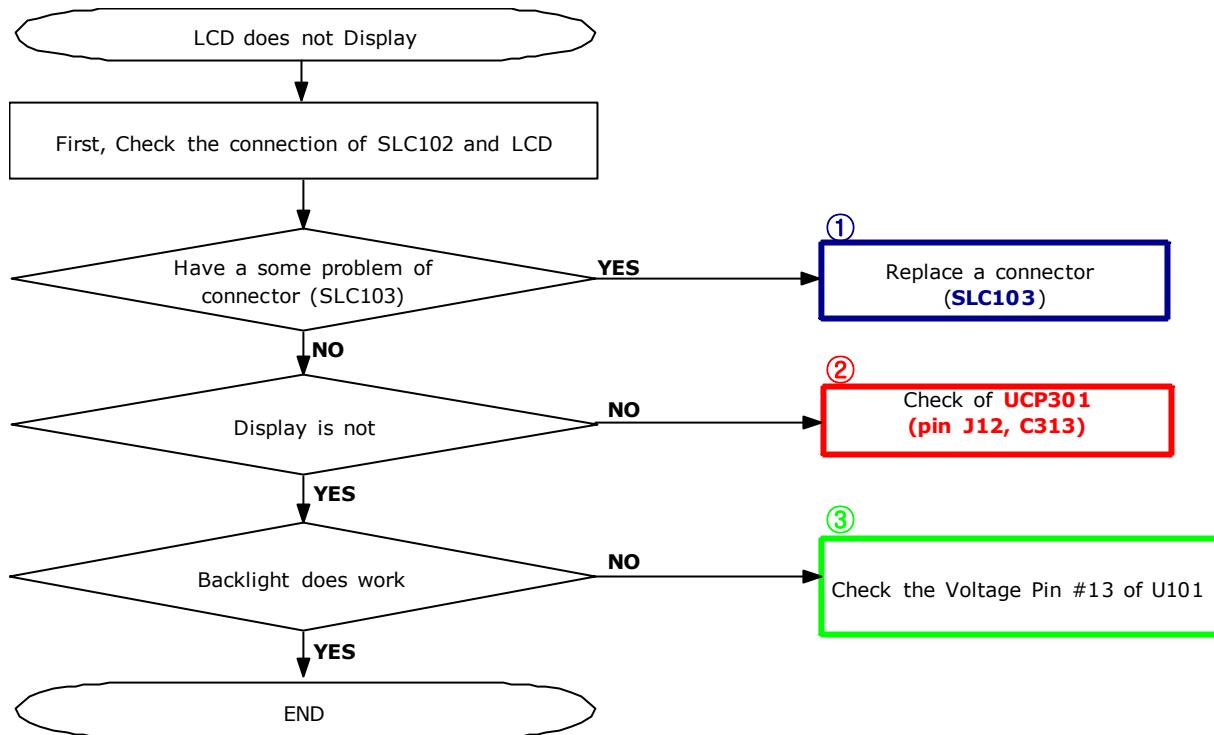


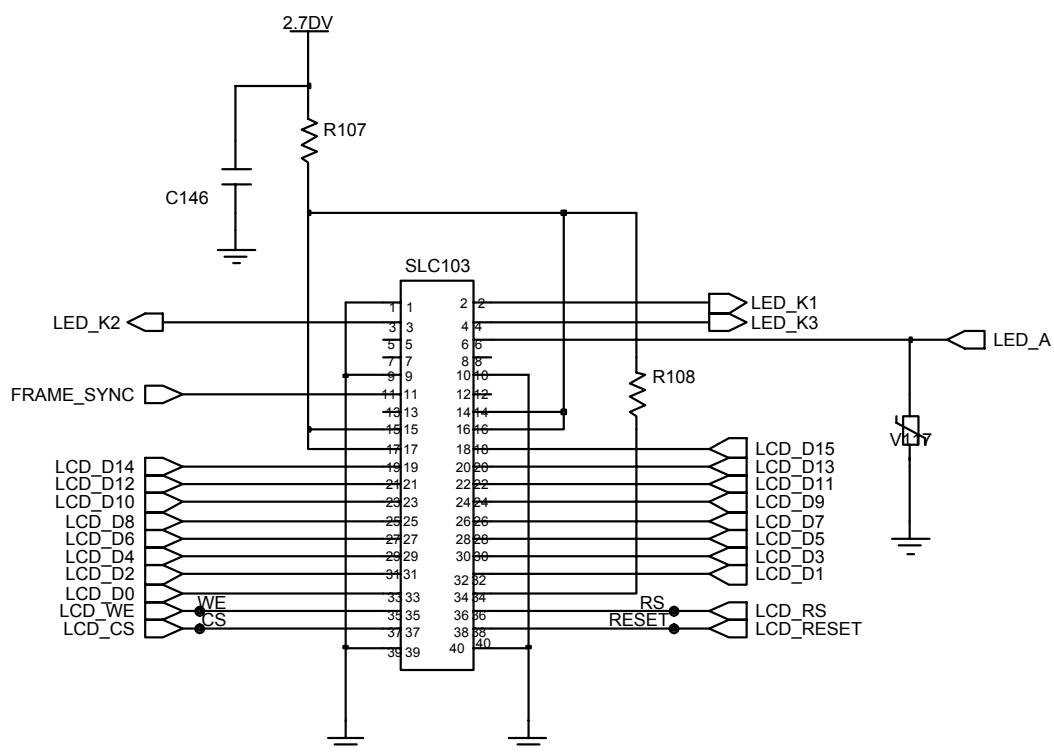
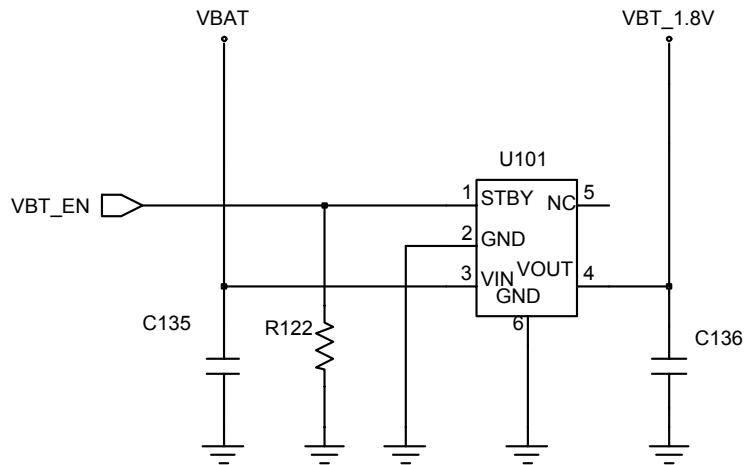
SPK400



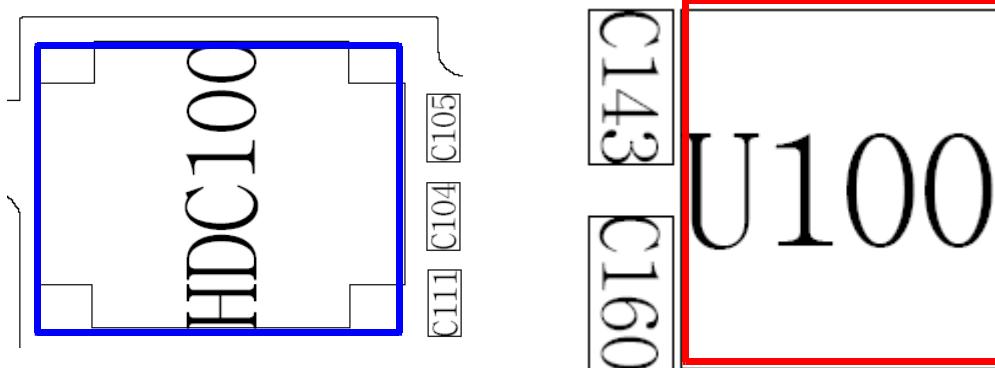
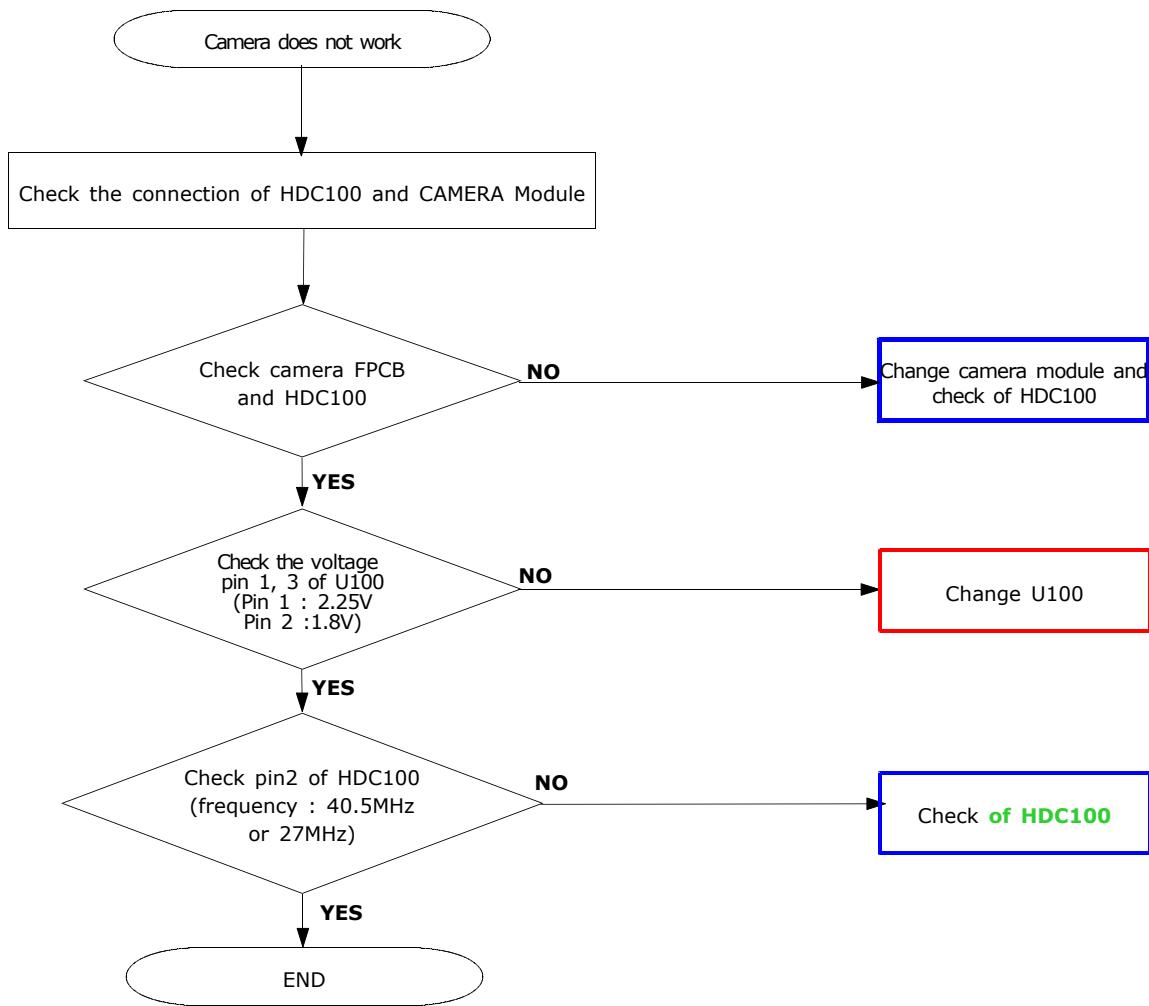


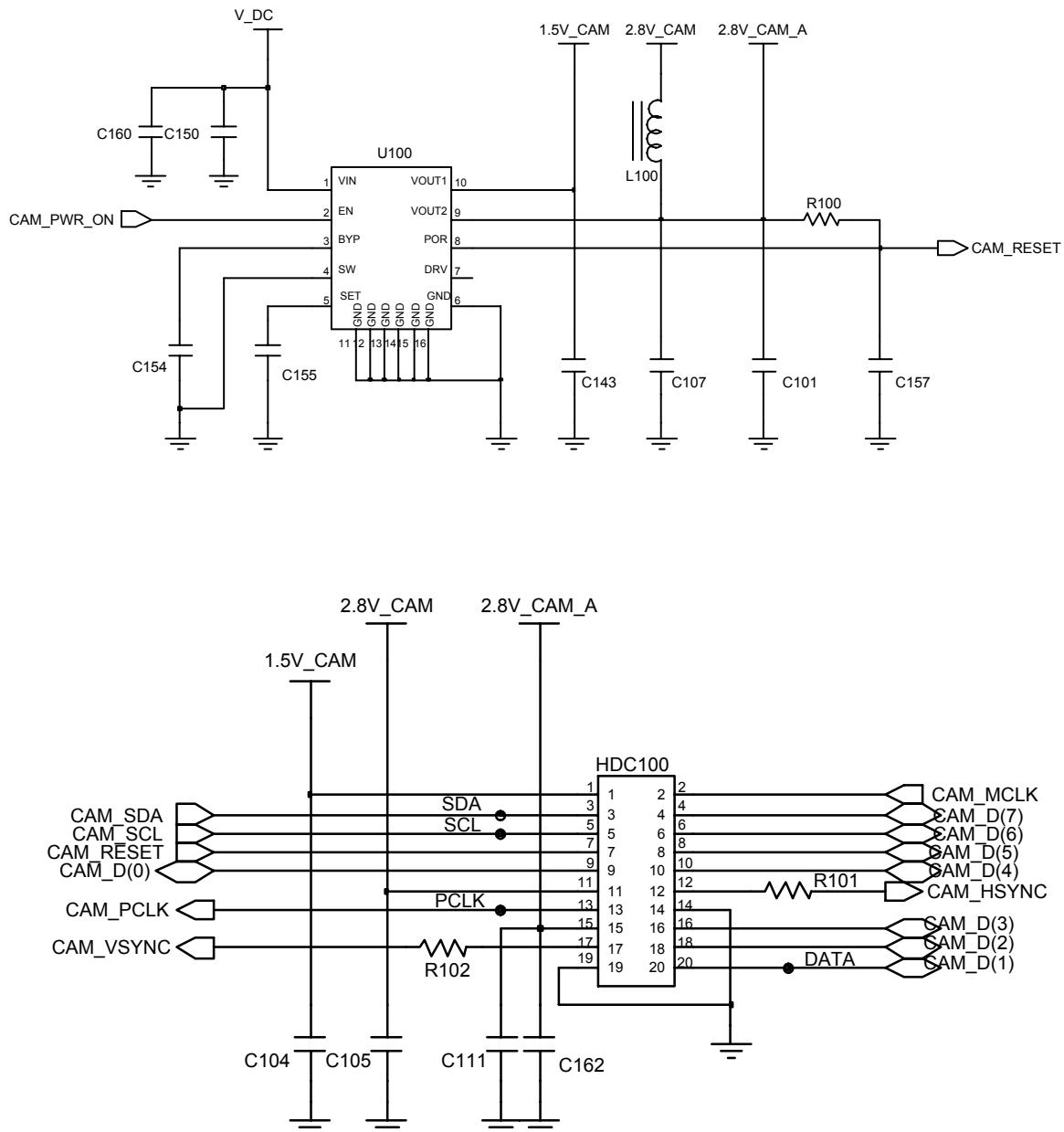
10-1-7. LCD





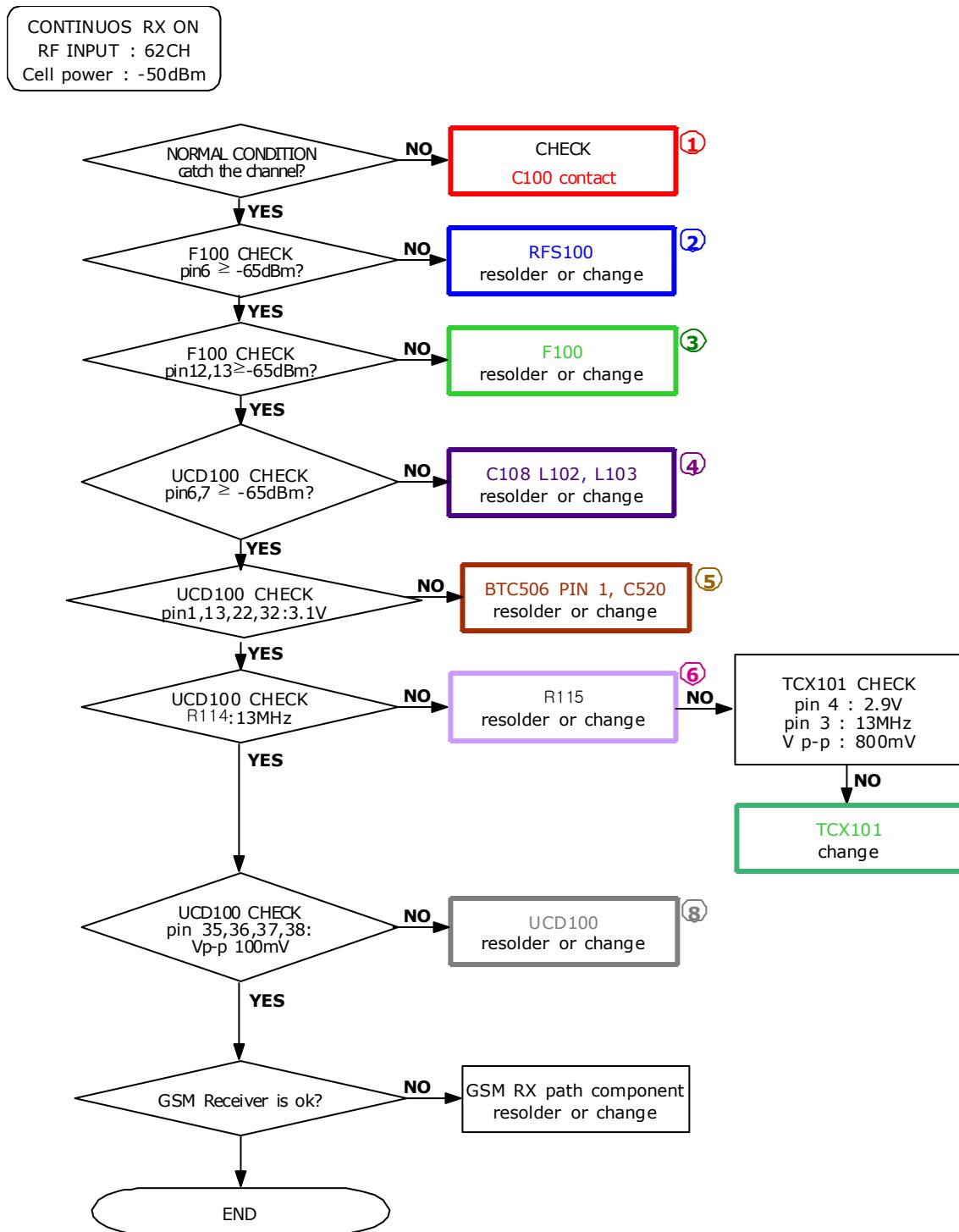
10-1-8. Camera



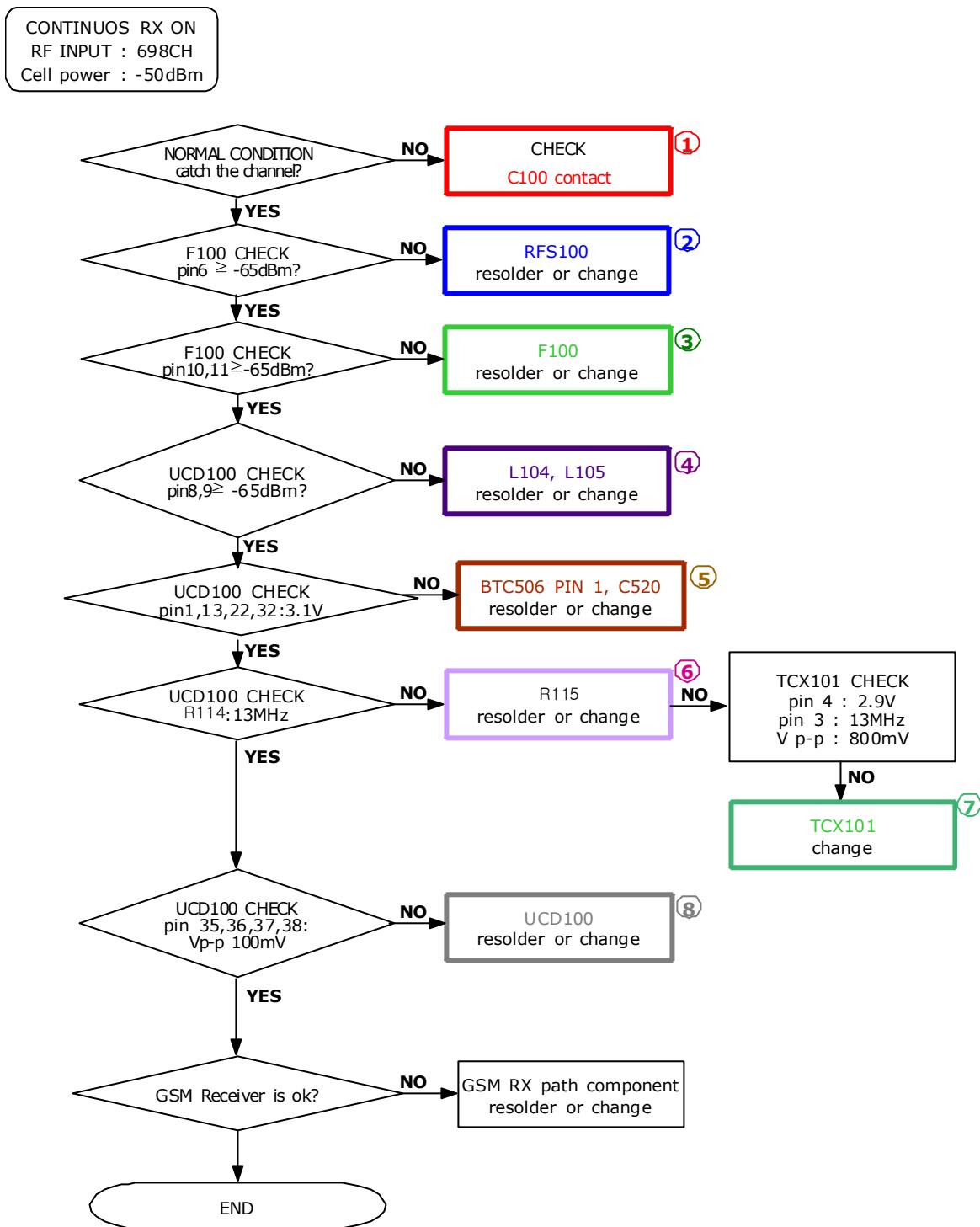


10-2. RF

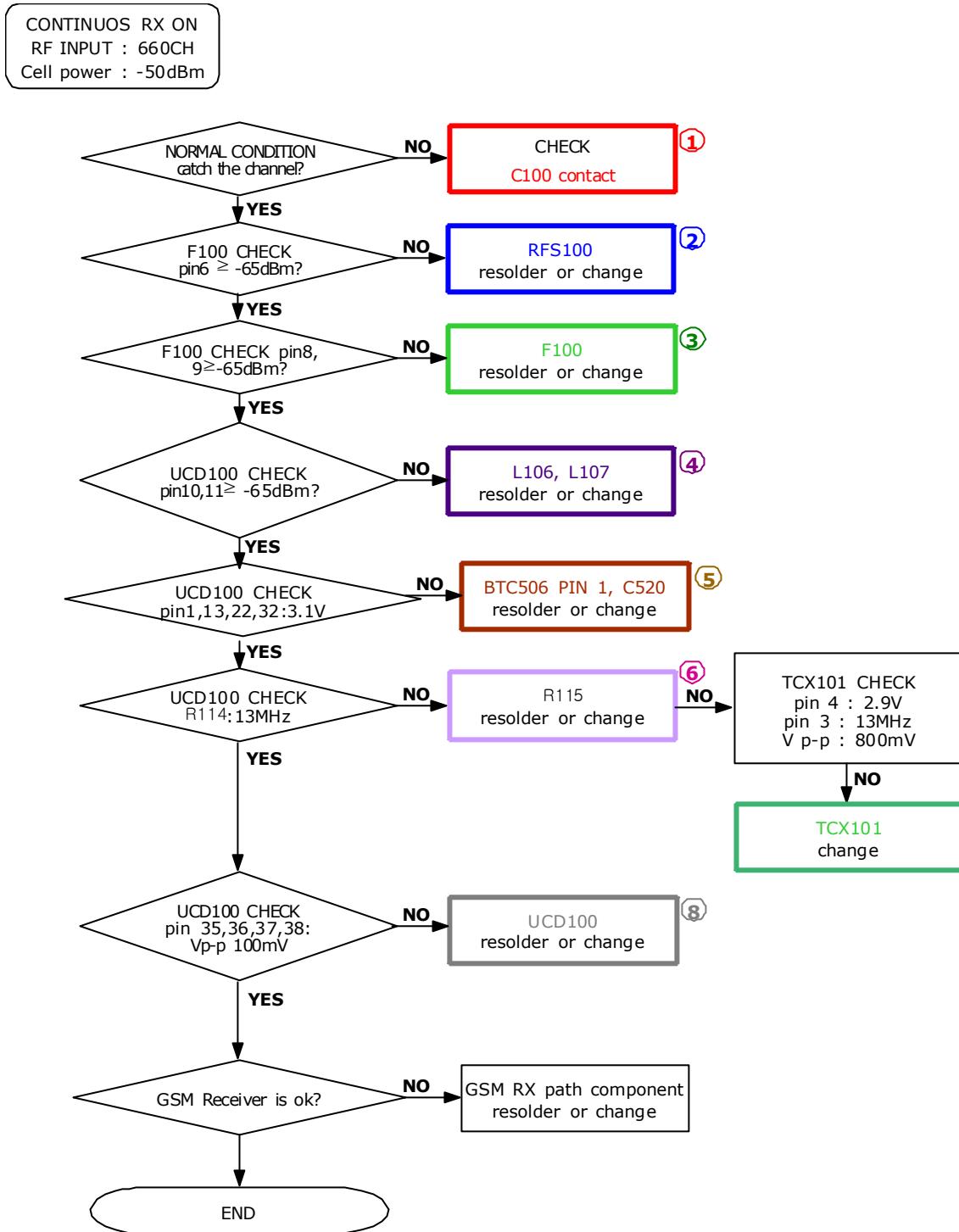
10-2-1. GSM Receiver

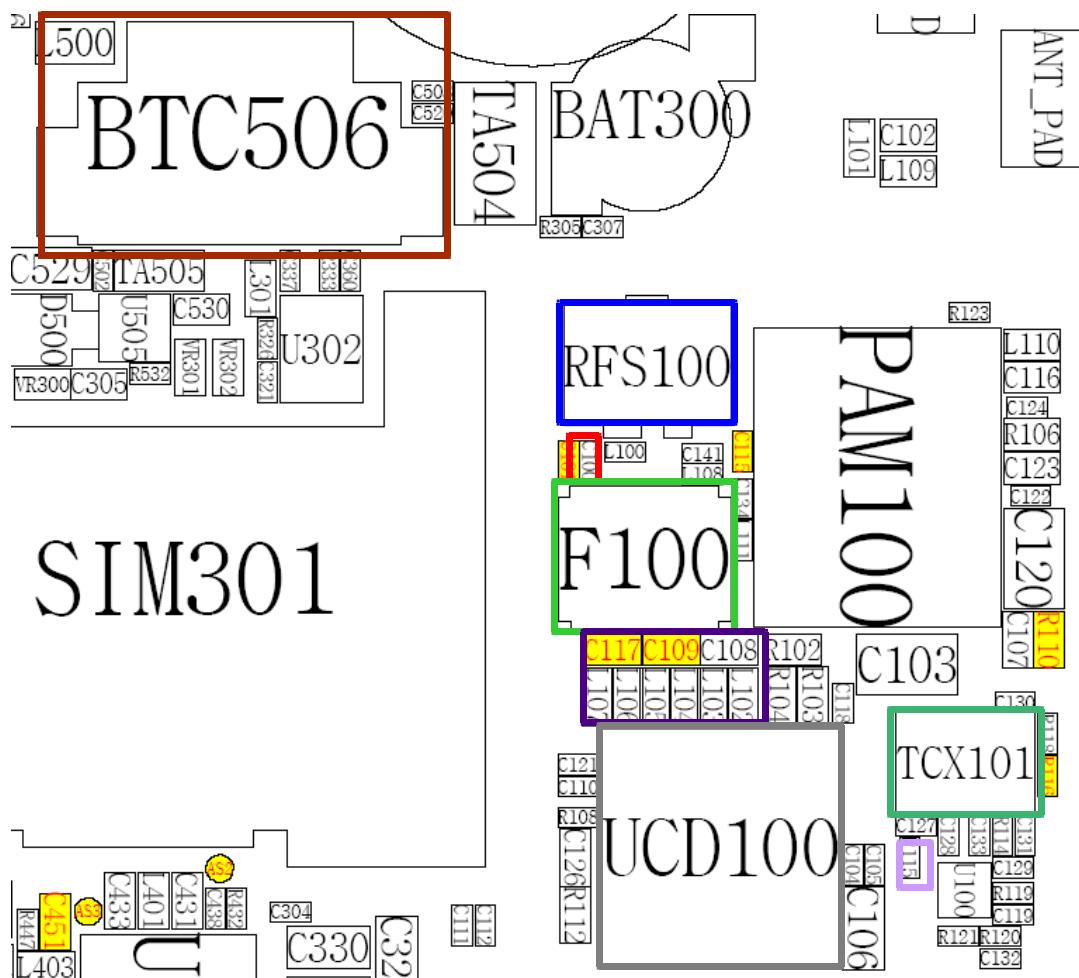


10-2-2. DCS Receiver

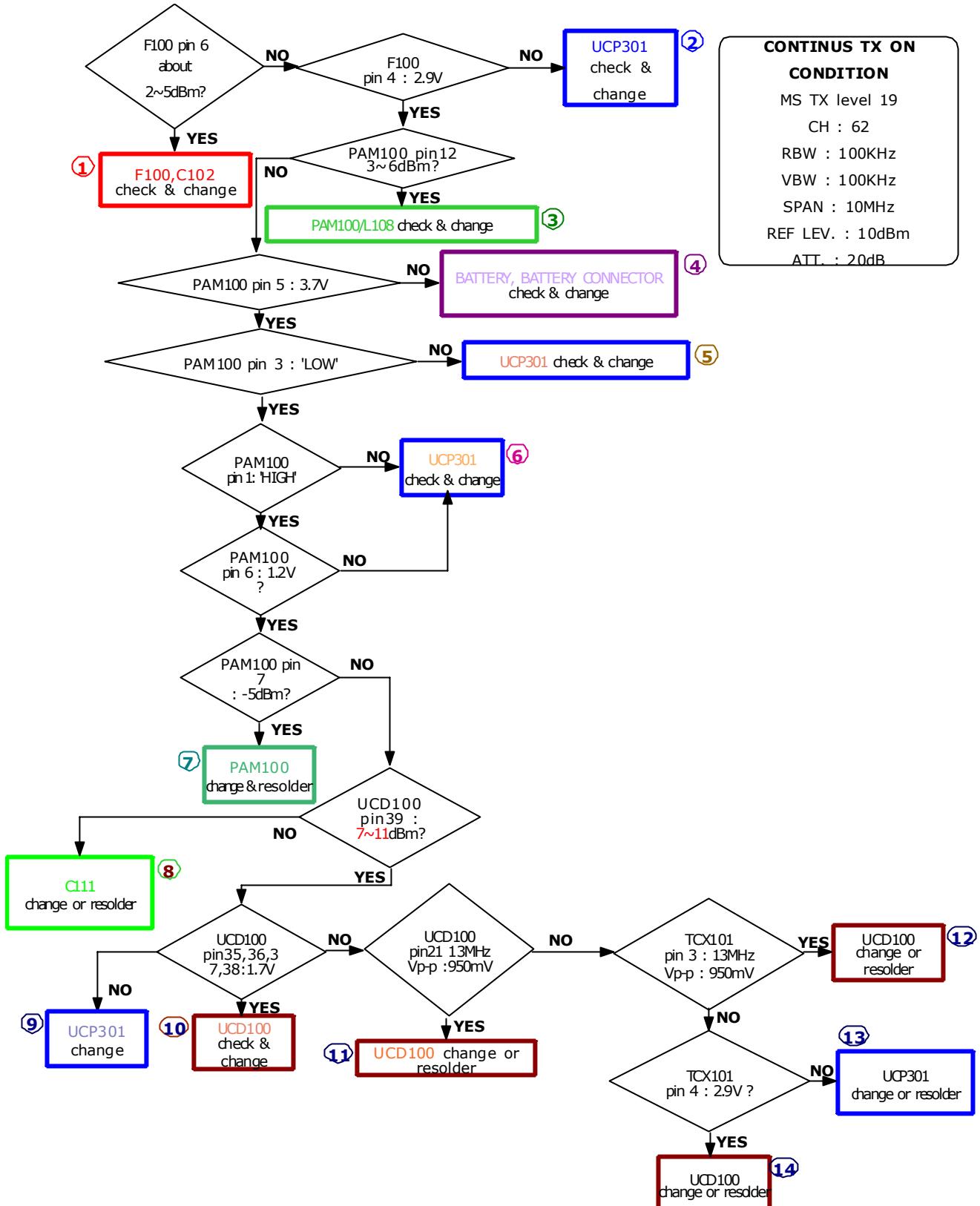


10-2-3. PCS Receiver

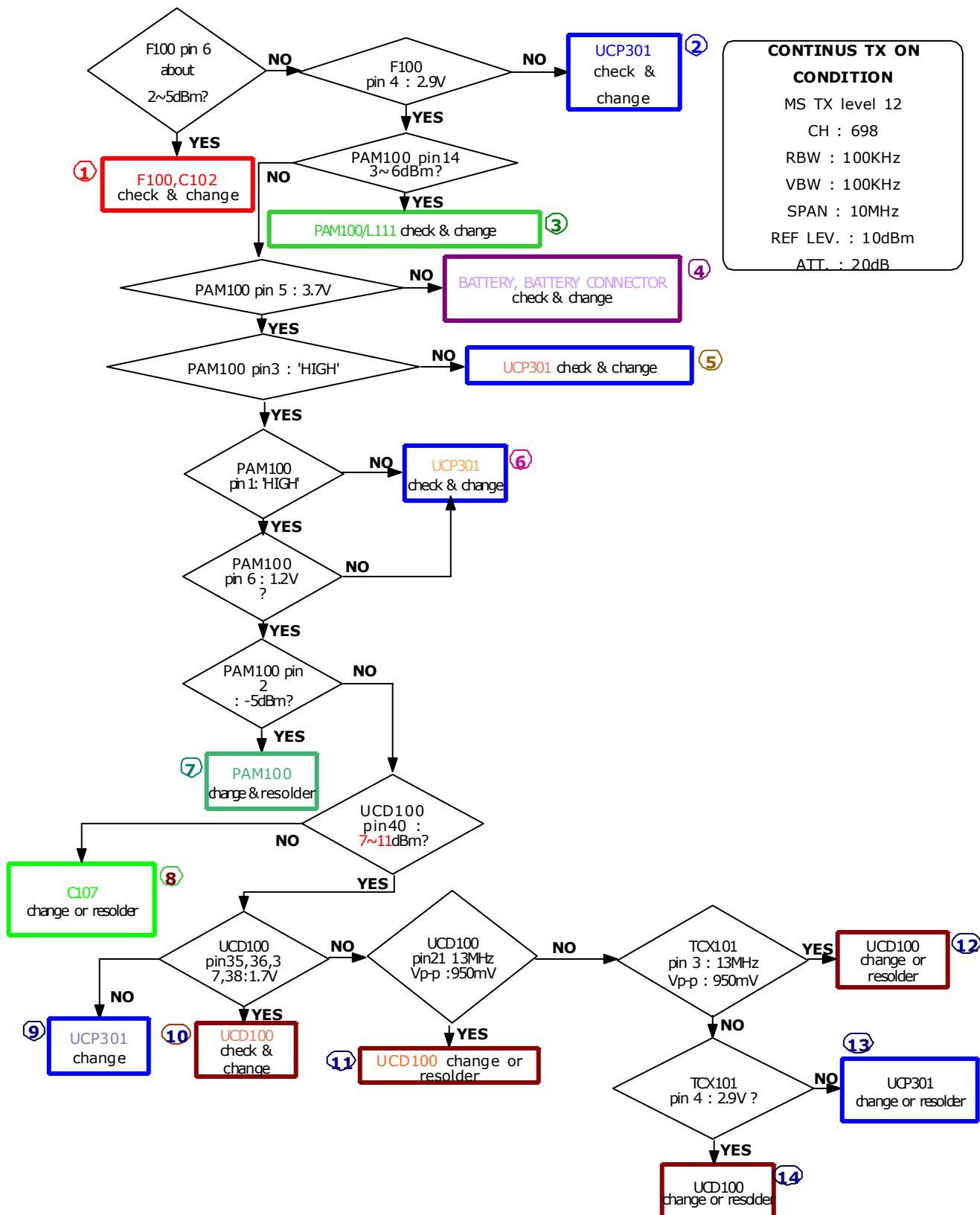




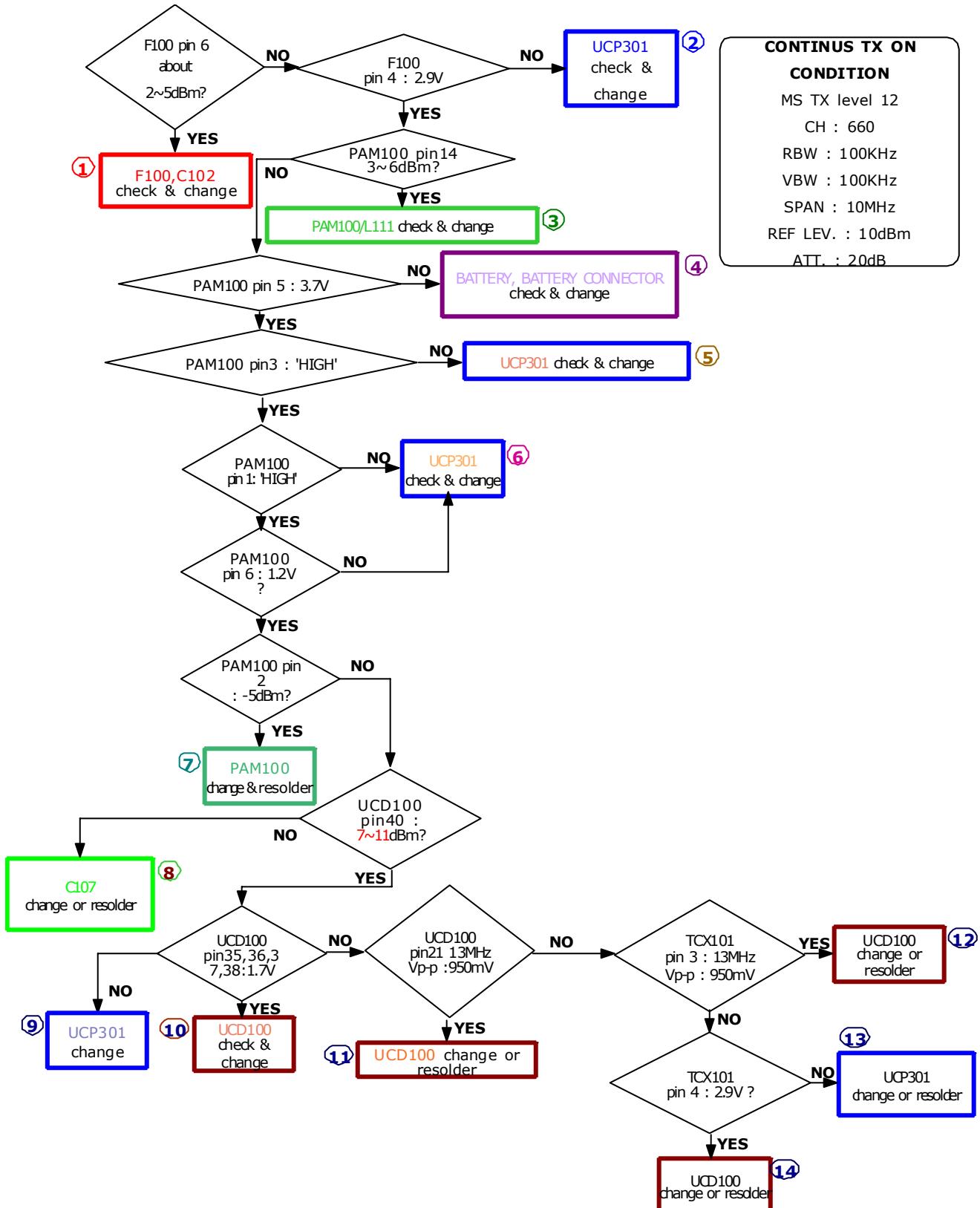
10-2-4. GSM Transmitter

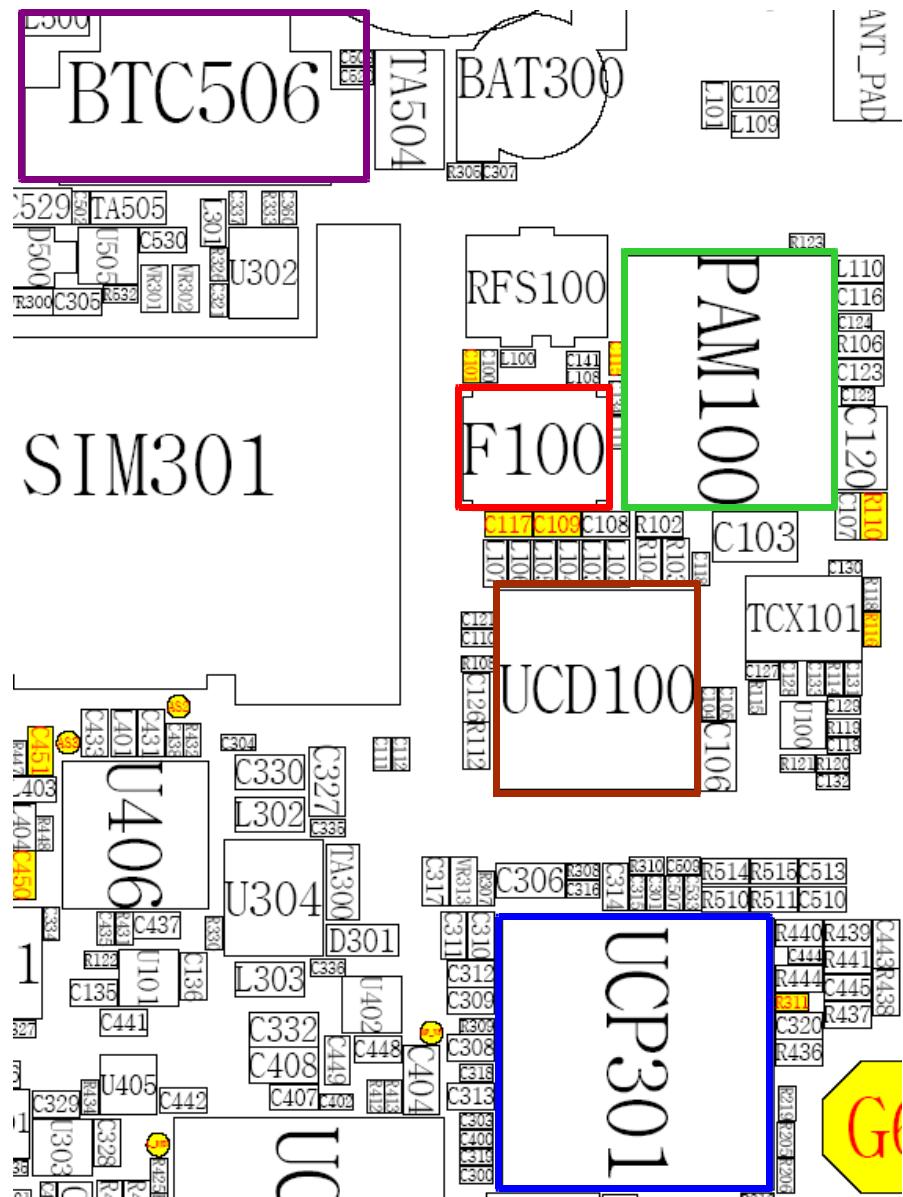


10-2-5. DCS Transmitter

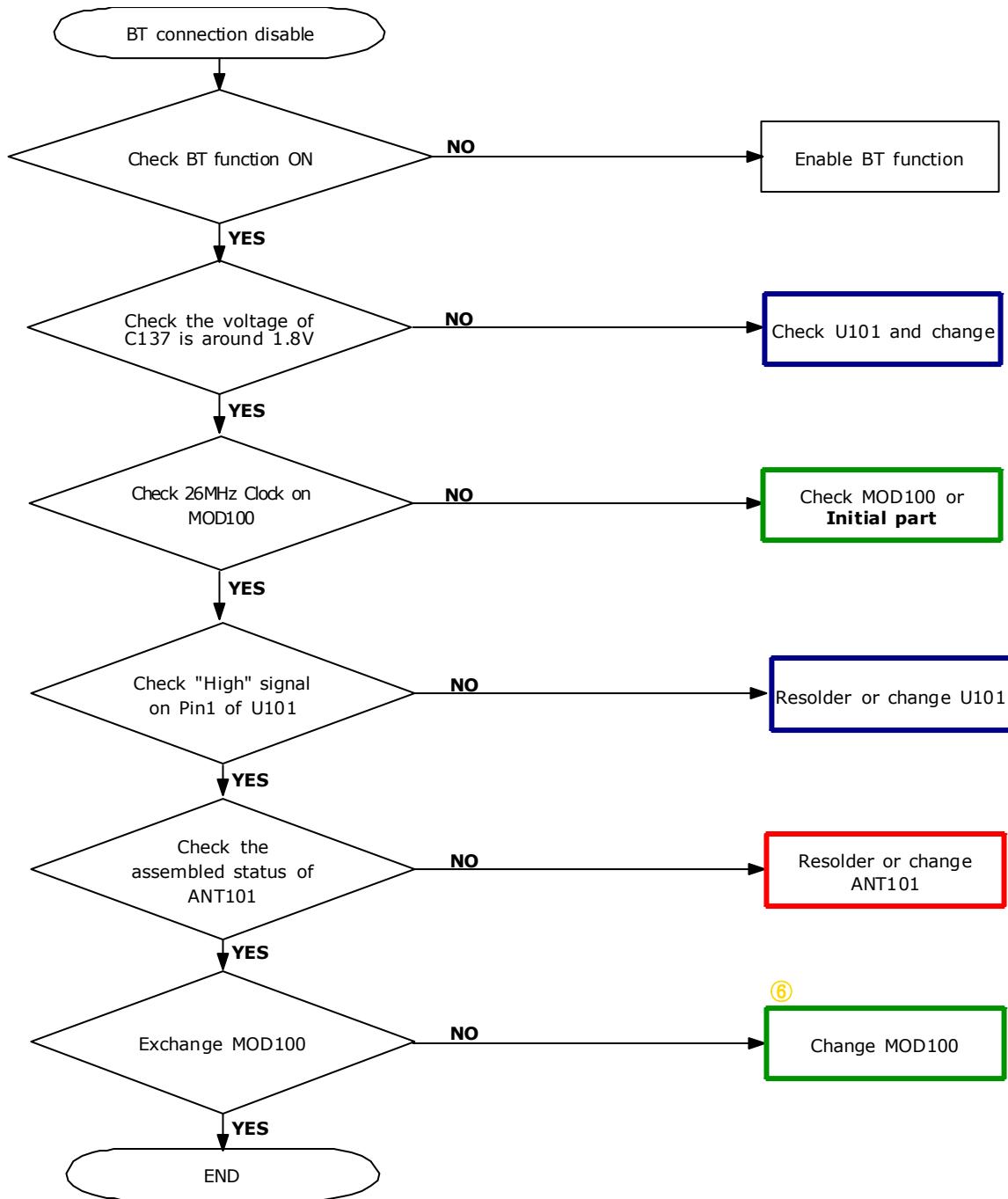


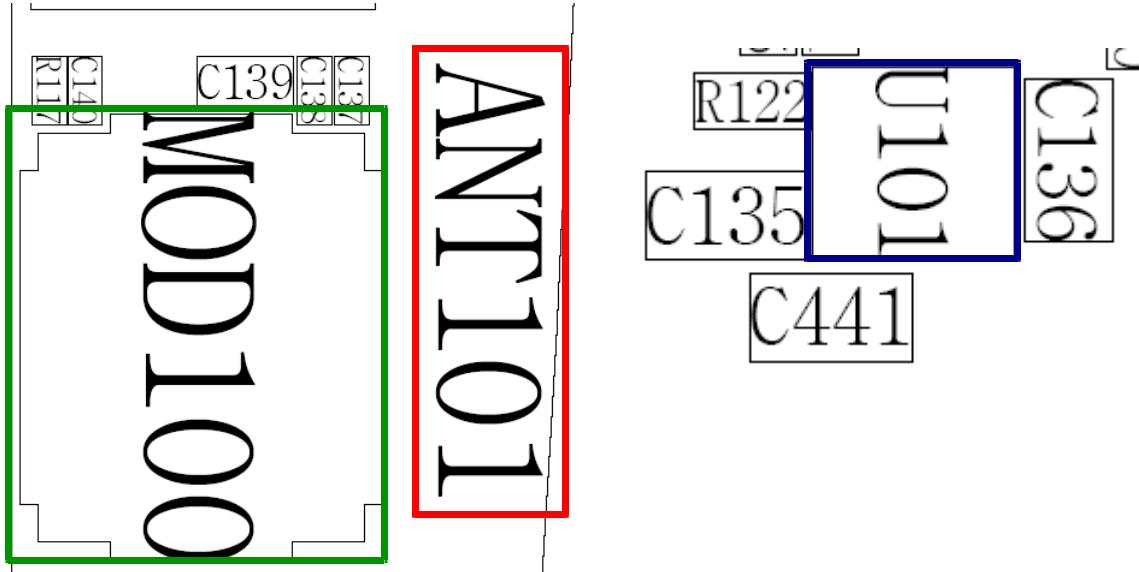
10-2-6. PCS Transmitter

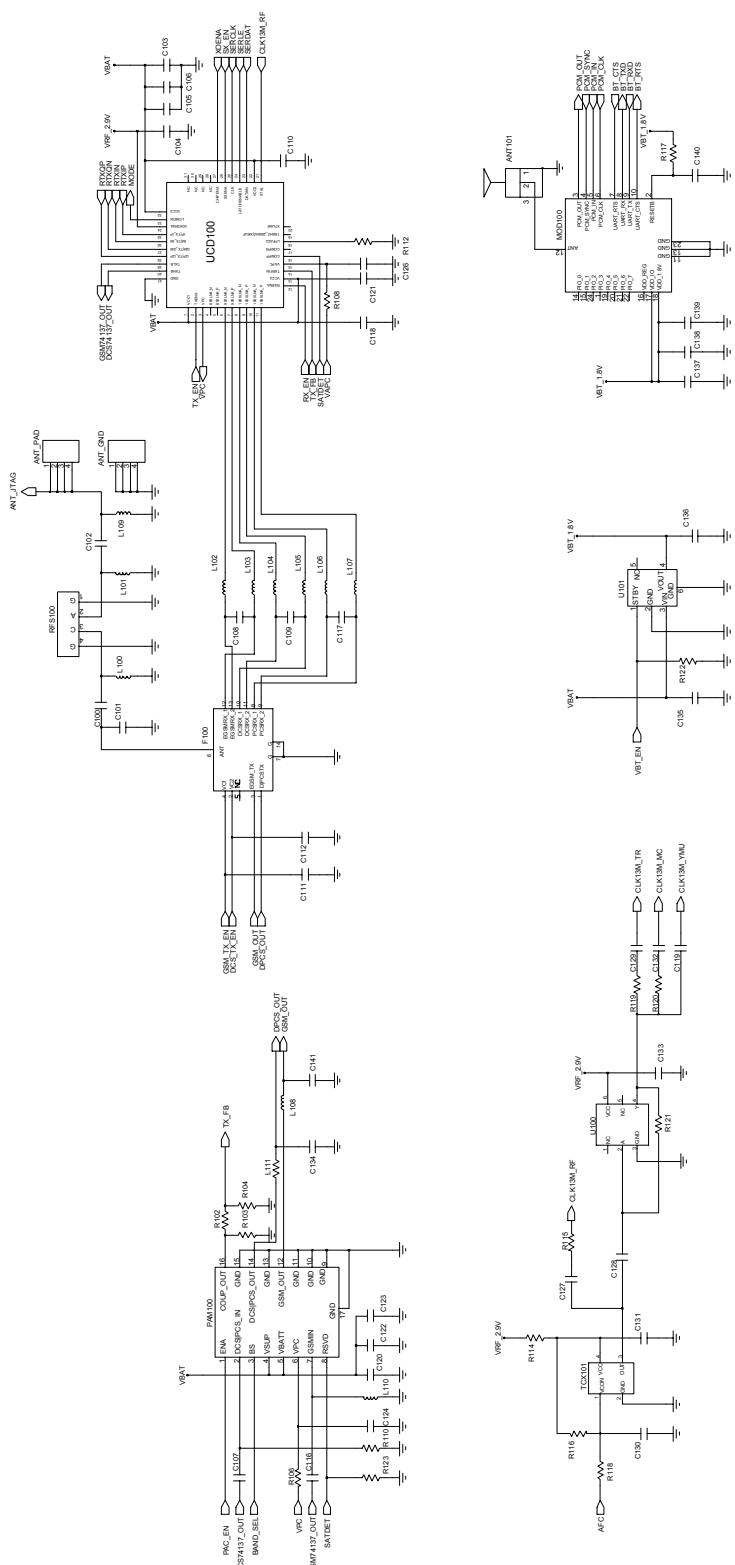




10-2-7. Bluetooth Part







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

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