SAMSUNG

GSM TELEPHONE

SGH-C240

SERVICE Manual

GSM TELEPHONE

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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 General Specification

	GSM900 Phase 1	EGSM 900 Phase 2	DCS1800 Phase 1
Freq. Band[MHz] Uplink/Downlink	890~915 935~960	880~915 925~960	1710~1785 1805~1880
ARFCN range	1~124	0~124 & 975~1023	512~885
Tx/Rx spacing	45MHz	45MHz	95MHz
Mod. Bit rate/ Bit Period	270.833kbps 3.692us	270.833kbps 3.692us	270.833kbps 3.692us
Time Slot Period/Frame Period	576.9us 4.615ms	576.9us 4.615ms	576.9us 4.615ms
Modulation	0.3GMSK	0.3GMSK	0.3GMSK
MS Power	33dBm~13dBm	33dBm~5dBm	30dBm~0dBm
Power Class	5pcl ~ 15pcl	5pcl ~ 19pcl	0pcl ~ 15pcl
Sensitivity	-102dBm	-102dBm	-100dBm
TDMA Mux	8	8	8
Cell Radius	35Km	35Km	2Km

2-2. GSM Tx Power Class

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

3. Product Function

Main Function

-Name card

Create name cards with your number and profile. Whenever introducing yourself to others, use this convenient electronic name card.

-Web browser

Access the wireless web to get current information and up-to-the-minute a wide variety of media content.

-Multimedia Message Service (MMS)

Send and receive MMS messages with a combination of text, image, video, and audio.

-E-mail

Send and receive-emails with image, video,and audio attachments.

-Java

Enjoy Java™-based embedded games and download new games.

-Calendar

Keep track of your daily, weekly, and monthly schedule.

-Voice recorder

Record memos or sounds.

4. Array course control

4-1. Software Adjustments

TEST JIG (GH80-00865A)

DATA CABLE
(GH39-00127A)

RF Test Cable
(GH39-00283A)

4-2. Software Downloading

4-2-1. Downloading Binary File

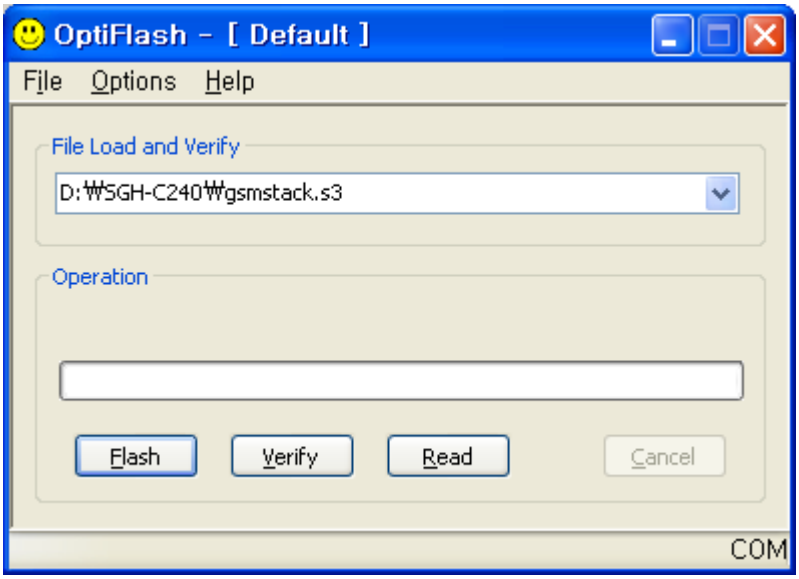
- Binary file for downloading C240.
  – C240XXYY.s3 : Main source code binary.

4-2-2. Pre-requsite for Downloading

- Downloader Program(OptiFlash.exe)
- C240 Mobile Phone
- Data Cable
- Binary file

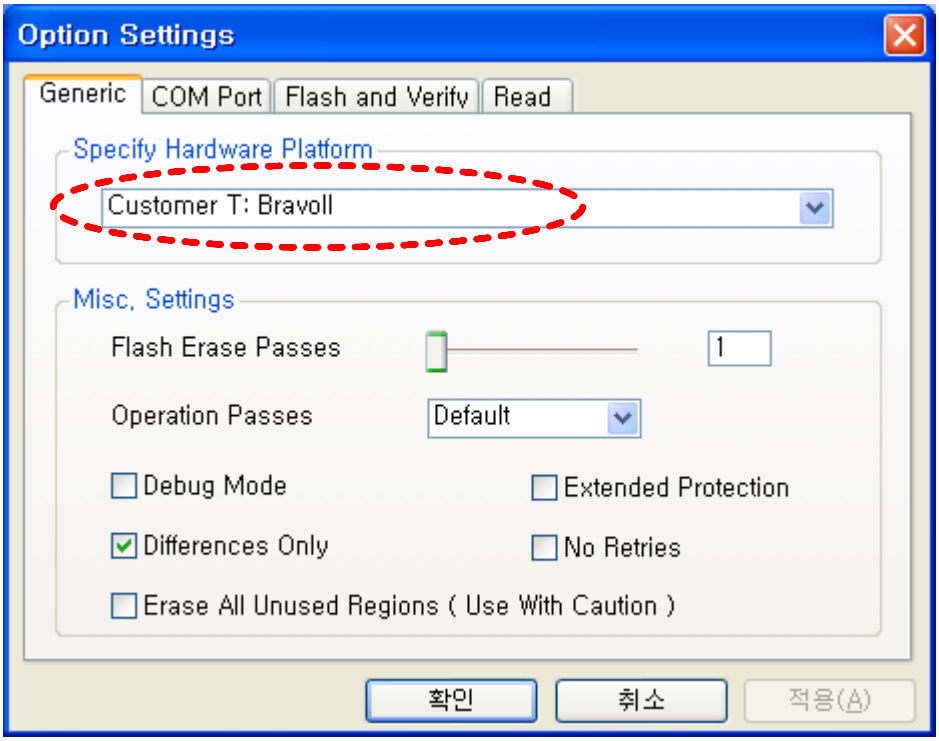
4-2-3. S/W Downloader Program

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

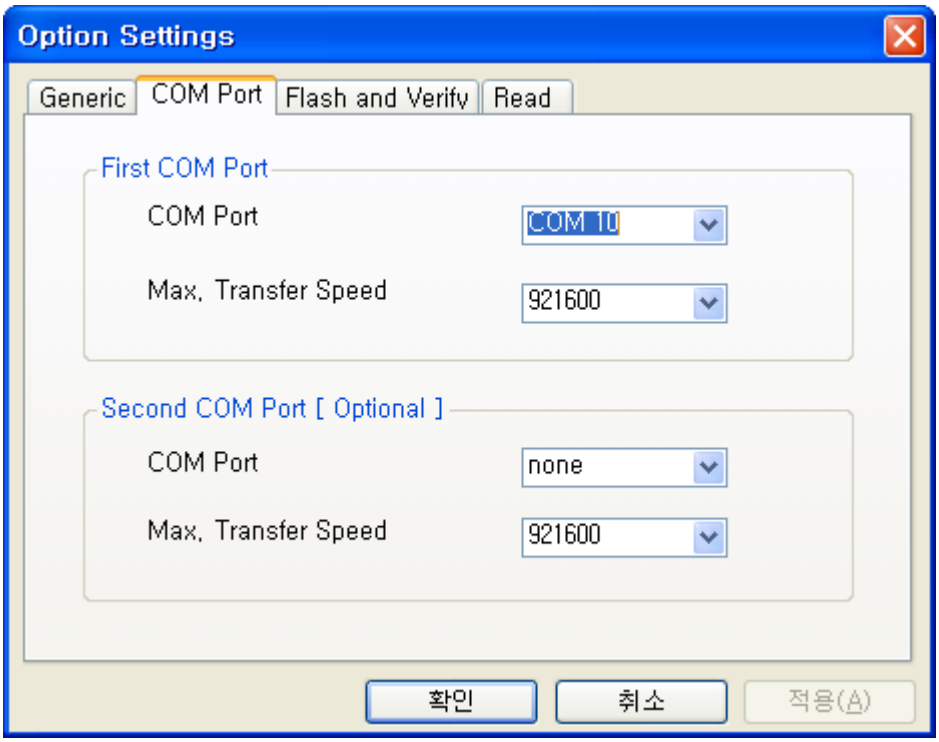


2. Select the **"Options" -> "Settings" -> "Generic" -> "Specify hardware platform"**. Choose hardware platform for the downloader file setting.

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



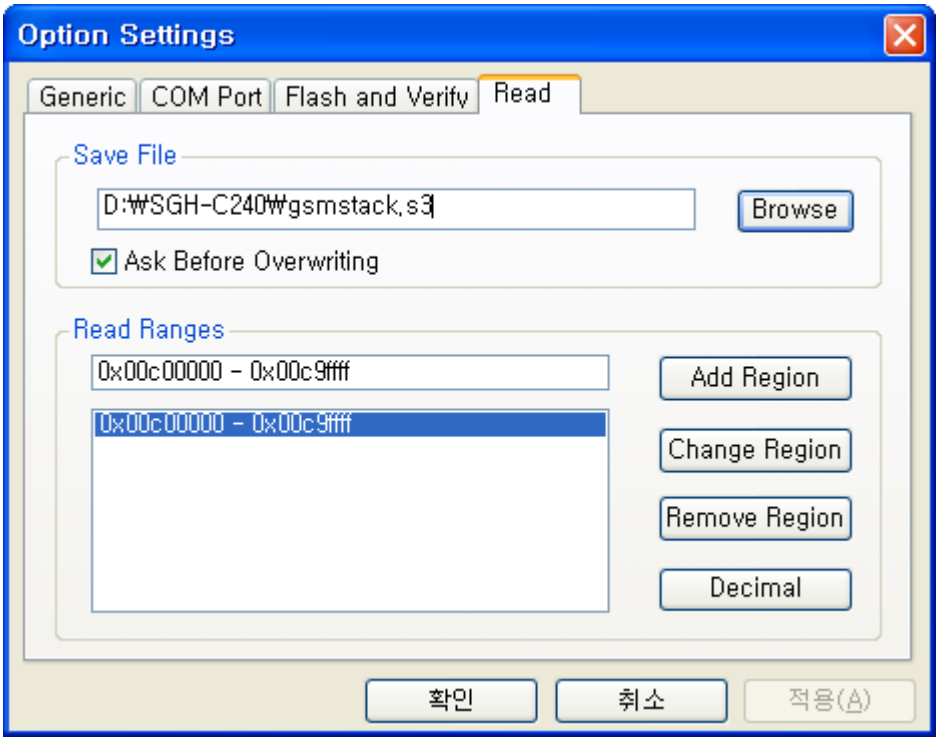
3. Select the **COM port** when the download cable is connected



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 "C240XXYY.s3",for the downloader binary setting.

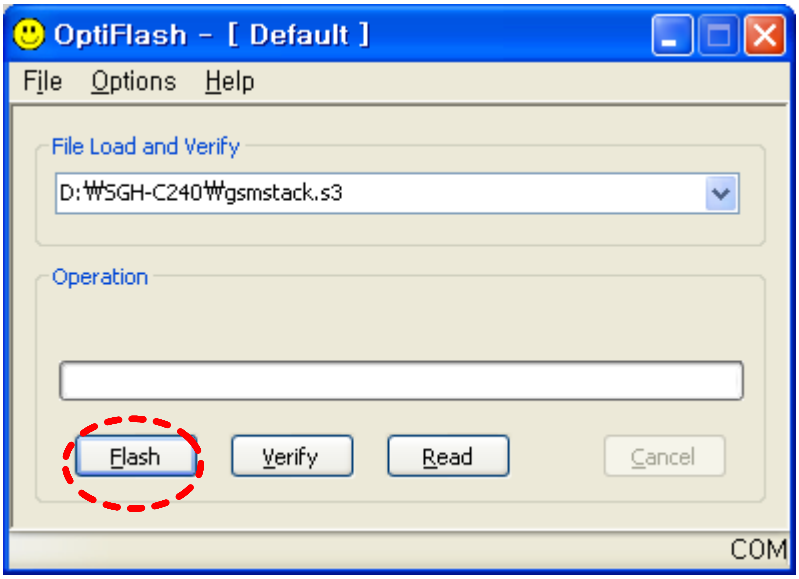


Make sure that not to change the reserved memory regions.

In case of C240 the reserved regions are :

- 0x00c00000 - 0x00c9ffff

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.



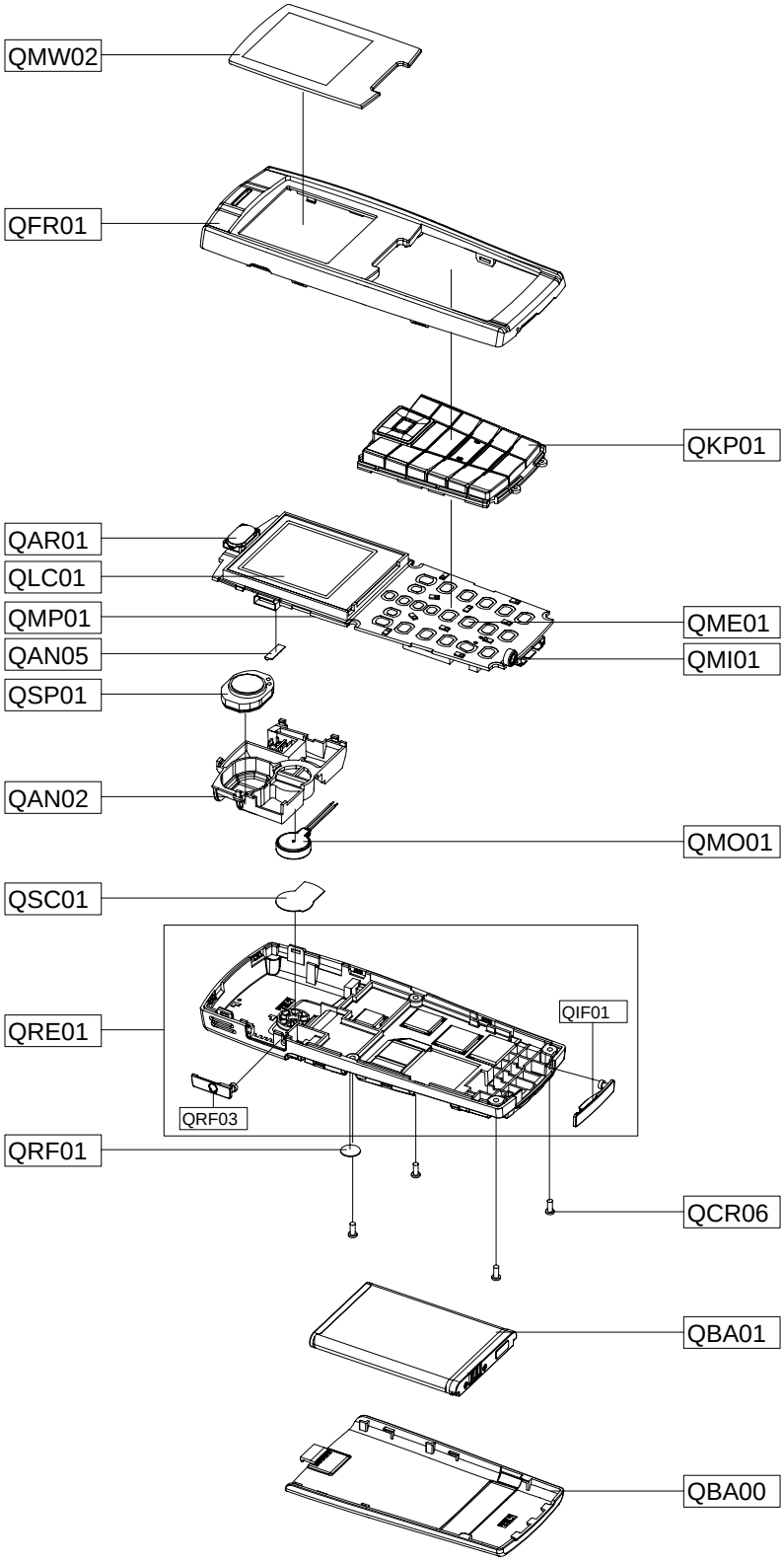
6. When downloading is finished successfully, there is a "All is well" message.

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 / Disassembly&Assembly Instructions

5-1. Cellular phone Exploded View



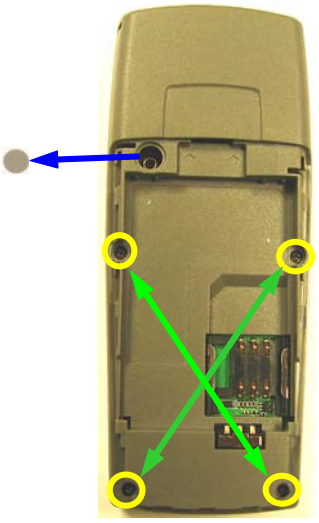
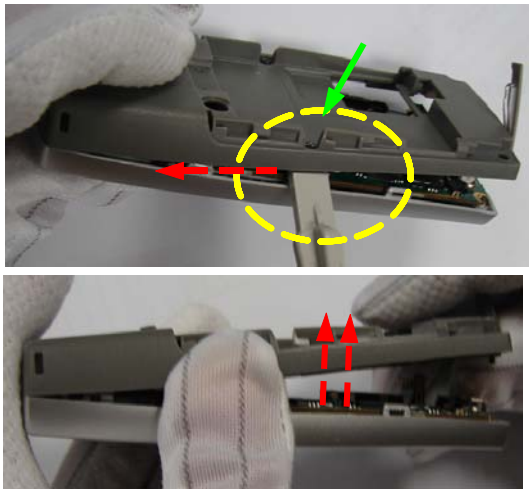
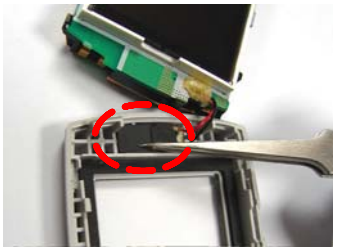
5-2. Cellular phone Parts List

Design LOC		Description	SEC CODE
QAN02		INTENNA-SGHC240	GH42-00891A
QAN05		ASSY RUBBER-INTENNA CONTACT	GH98-03564A
QAR01		AUDIO-RECEIVER	3009-001214
QBA00		PMO-COVER BATTERY V3	GH72-35740A
QBA01		INNER BATTERY PACK-750MAH,BLK,	GH43-02483A
QCR06		SCREW-MACHINE	6001-001155
QFR01		ASSY CASE-FRONT	GH98-01615A
QKP01		ASSY KEYPAD-(SER/SIL)	GH98-01995A
QLC01		LCD-LCD MODULE	GH07-00928A
QME01		UNIT-METAL DOME	GH59-03278A
QMI01		MICROPHONE-ASSY-SGHC240	GH30-00288A
QMO01		MOTOR DC-SGHC240	GH31-00268A
QMP01		PBA MAIN-SGHC240	GH92-02900A
QMW02		PCT-COVER WINDOW MAIN	GH72-34846A
QRF01		MPR-TAPE SHEET RF COVER	GH74-27237A
QSC01		MPR-TAPE SHEET INTENNA COVER	GH74-27823A
QSP01		SPEAKER	3001-002018
QRE01		ASSY CASE-REAR	GH98-01616A
	QIF01	PMO-IF COVER V4	GH72-36725A
	QRF03	PMO-COVER EAR V4	GH72-35742A

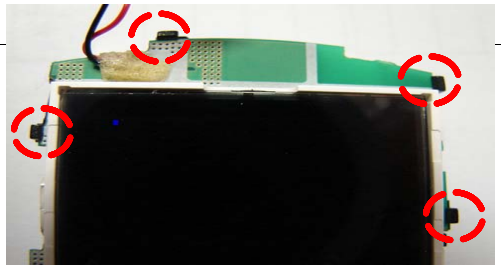
Description	SEC CODE
BAG PE	6902-000634
ADAPTOR-SGHD500 TA	GH44-01451A
UNIT-EARPHONE(SIL)	GH59-02472B
LABEL(P)-WATER SOAK	GH68-02026A
LABEL(P)-WATER SOAK	GH68-02026A
MANUAL-SFC	GH68-04336A
LABEL(P)-BARCODE RUSSIA	GH68-08494A
LABEL(R)-MAIN(SER)	GH68-11762C
MANUAL USERS-EU RUSSIAN	GH68-11868A
BOX-UNIT(SER)	GH69-04190B
MPR-SPONGE INTENNA CARRIER	GH74-27236A
MPR-TAPE RECEIVER	GH74-29274A
MPR-TAPE EMI SHEET	GH74-29420A

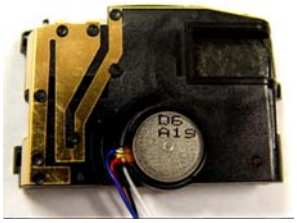
5-3. Disassembly&Assembly Instructions

– Disassembly

1 	2 
1. Loosen a screw this four point form Rear. 2. And remove the IF cover.	1. Make the space between rear cover and front cover using assembly stick. 2. And then widen space with hand and separate 2 parts.
3  	4  
1. Separate the PBA from front cover regard of 2 hooks and lift up.	1. Remove the tape from front cover. 2. And Remove the receiver from front cover using removing hole.

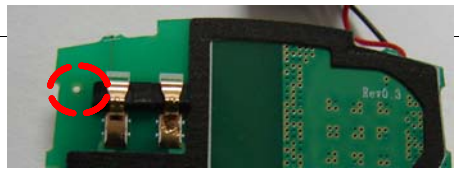
5

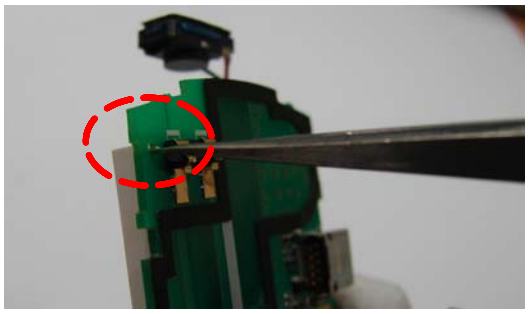




1. Loosen the 4 hooks of intenna carrier from PBA board and separate.

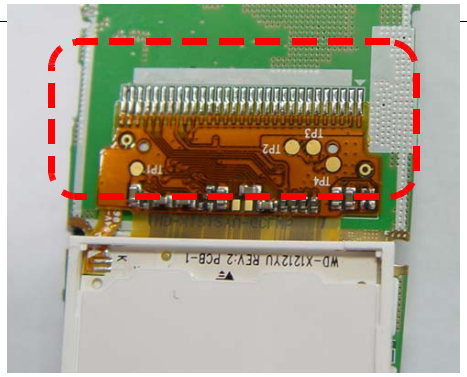
6





1. And separate the LCD module from PBA board using removing hole with pinset.

7

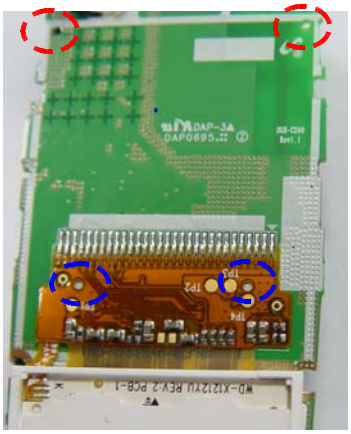
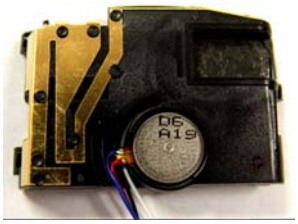
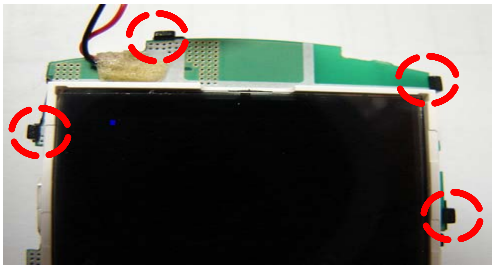


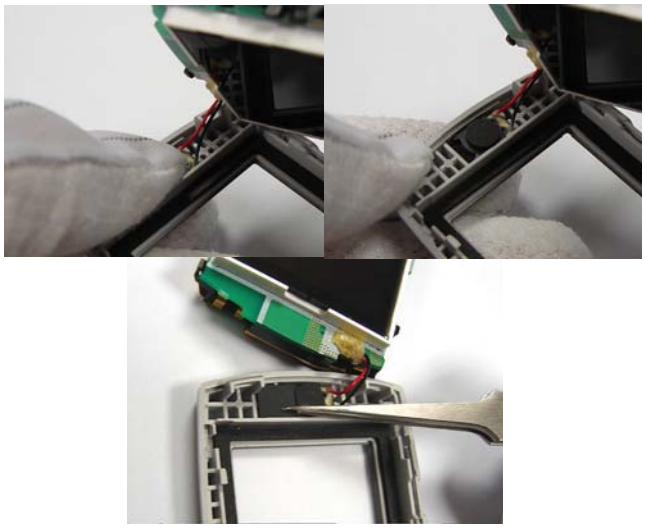
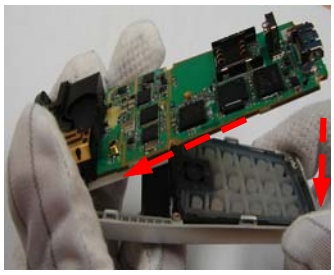
1. Remove the LCD module from PBA board using soldering tip.

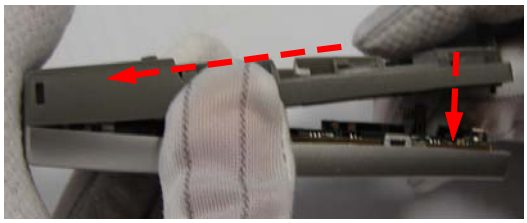
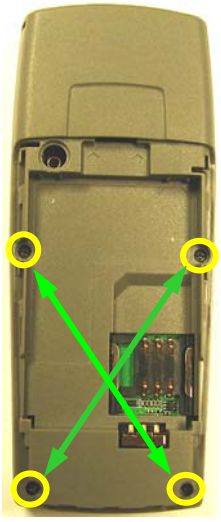
8

1. Verify all kinds of elements after finishing disassembling

– Assembly

1  	2  
1. Remove the tape cover and attach the LCD FPCB to PBA board using 2 point of mark 2. And soldering the module and attach the LCD module on PBA regarding guide hole.	1. Assemble the intenna carrier to PBA board using hooks like picture.

3 	4  
1. Insert the receiver to receiver hole and push. 2. Attach the Tape on receiver air hole like a picture.	1. Insert the upside of PBA to front 2. And locking the hook like picture. 3. Insert the mic in mic hole on front.

5	6
	
1. Assemble the rear to front from top side.	1. Fasten the 4 point of screw like picture.

6. Electrical Parts List

Design LOC	Description	SEC CODE	STATUS
ANT100	NPR-ANTENNA CONTACT	GH71-04813A	SA
ANT101	NPR-ANTENNA CONTACT	GH71-04813A	SA
BAT200	BATTERY-LI(2ND)	4302-001130	SA
BTC800	HEADER-BATTERY	3711-006084	SA
C101	C-CER,CHIP	2203-000995	SA
C103	C-CER,CHIP	2203-002668	SA
C113	C-CER,CHIP	2203-006048	SA
C114	C-CER,CHIP	2203-000854	SA
C115	C-CER,CHIP	2203-000278	SA
C117	C-CER,CHIP	2203-000233	SA
C123	C-CER,CHIP	2203-006048	SA
C124	C-CER,CHIP	2203-000386	SA
C125	C-CER,CHIP	2203-000812	SA
C126	C-CER,CHIP	2203-006048	SA
C127	C-CER,CHIP	2203-005234	SA
C128	C-CER,CHIP	2203-005234	SA
C129	C-CER,CHIP	2203-001017	SA
C130	C-CER,CHIP	2203-005050	SA
C131	C-CER,CHIP	2203-000278	SA
C132	C-CER,CHIP	2203-005050	SA
C135	C-TA,CHIP	2404-001474	SA
C136	C-CER,CHIP	2203-006048	SA
C137	C-CER,CHIP	2203-006048	SA
C139	C-CER,CHIP	2203-000359	SA
C141	C-CER,CHIP	2203-000585	SA
C142	C-CER,CHIP	2203-006048	SA
C143	C-CER,CHIP	2203-006048	SA
C200	C-CER,CHIP	2203-000254	SA
C201	C-CER,CHIP	2203-001072	SA
C202	C-CER,CHIP	2203-006048	SA
C203	C-CER,CHIP	2203-006324	SA
C204	C-CER,CHIP	2203-000995	SA
C205	C-CER,CHIP	2203-000812	SA
C206	C-CER,CHIP	2203-000812	SA
C207	C-CER,CHIP	2203-002709	SA
C208	C-CER,CHIP	2203-006183	SA
C209	C-CER,CHIP	2203-000233	SA
C210	C-TA,CHIP	2404-001240	SA
C211	C-CER,CHIP	2203-006183	SA
C212	C-CER,CHIP	2203-006562	SA
C213	C-CER,CHIP	2203-006562	SA
C214	C-CER,CHIP	2203-006562	SA
C215	C-CER,CHIP	2203-006562	SA
C216	C-CER,CHIP	2203-006562	SA
C217	C-CER,CHIP	2203-000254	SA
C218	C-CER,CHIP	2203-002709	SA
C219	C-CER,CHIP	2203-000254	SA
C220	C-CER,CHIP	2203-005819	SA
C223	C-CER,CHIP	2203-006348	SA
C224	C-TA,CHIP	2404-001381	SA
C300	C-CER,CHIP	2203-000254	SA
C301	C-CER,CHIP	2203-000254	SA
C302	C-CER,CHIP	2203-000254	SA
C303	C-CER,CHIP	2203-000254	SA
C304	C-CER,CHIP	2203-006260	SA

Design LOC	Description	SEC CODE	STATUS
C305	C-CER,CHIP	2203-002709	SA
C306	C-CER,CHIP	2203-000679	SA
C307	C-CER,CHIP	2203-000254	SA
C308	C-CER,CHIP	2203-002709	SA
C309	C-CER,CHIP	2203-000254	SA
C310	C-CER,CHIP	2203-000254	SA
C311	C-CER,CHIP	2203-000254	SA
C312	C-CER,CHIP	2203-000254	SA
C313	C-CER,CHIP	2203-006260	SA
C315	C-CER,CHIP	2203-000330	SA
C316	C-CER,CHIP	2203-000330	SA
C317	C-CER,CHIP	2203-006626	SA
C400	C-CER,CHIP	2203-000330	SA
C402	C-CER,CHIP	2203-006260	SA
C404	C-CER,CHIP	2203-000995	SA
C407	C-CER,CHIP	2203-006260	SA
C408	C-CER,CHIP	2203-001153	SA
C410	C-TA,CHIP	2404-001414	SA
C411	C-CER,CHIP	2203-000233	SA
C412	C-CER,CHIP	2203-006048	SA
C413	C-CER,CHIP	2203-000330	SA
C416	C-CER,CHIP	2203-000995	SA
C417	C-CER,CHIP	2203-000278	SA
C418	C-CER,CHIP	2203-006048	SA
C419	C-CER,CHIP	2203-001153	SA
C420	C-CER,CHIP	2203-001153	SA
C422	C-CER,CHIP	2203-000254	SA
C423	C-CER,CHIP	2203-001405	SA
C500	C-CER,CHIP	2203-006466	SA
C503	C-CER,CHIP	2203-000940	SA
C504	C-TA,CHIP	2404-001381	SA
C505	C-CER,CHIP	2203-002709	SA
C506	C-CER,CHIP	2203-006091	SA
C507	C-CER,CHIP	2203-006825	SA
C508	C-CER,CHIP	2203-006165	SA
C509	C-CER,CHIP	2203-005061	SA
C511	C-CER,CHIP	2203-001072	SA
C512	C-CER,CHIP	2203-001072	SA
C513	C-CER,CHIP	2203-000585	SA
C514	C-CER,CHIP	2203-002709	SA
C515	C-CER,CHIP	2203-006260	SA
C516	C-CER,CHIP	2203-000438	SA
C517	C-CER,CHIP	2203-006824	SA
C518	C-CER,CHIP	2203-002709	SA
C519	C-TA,CHIP	2404-001240	SA
C520	C-CER,CHIP	2203-006048	SA
C521	C-CER,CHIP	2203-005482	SA
C522	C-CER,CHIP	2203-006635	SA
C523	C-CER,CHIP	2203-005993	SA
C524	C-CER,CHIP	2203-006260	SA
C525	C-CER,CHIP	2203-005481	SA
C528	C-CER,CHIP	2203-005481	SA
C529	C-CER,CHIP	2203-006260	SA
C532	C-CER,CHIP	2203-005482	SA
C534	C-CER,CHIP	2203-000995	SA

Design LOC	Description	SEC CODE	STATUS
C535	C-CER,CHIP	2203-006324	SA
C537	C-CER,CHIP	2203-000679	SA
C538	C-CER,CHIP	2203-000359	SA
C601	C-CER,CHIP	2203-000233	SA
C602	C-CER,CHIP	2203-002709	SA
C603	C-CER,CHIP	2203-000233	SA
C604	C-CER,CHIP	2203-002709	SA
C605	C-CER,CHIP	2203-000254	SA
C700	C-CER,CHIP	2203-006324	SA
C701	C-TA,CHIP	2404-001450	SA
C702	C-CER,CHIP	2203-006562	SA
C800	C-NETWORK	2503-001053	SA
C801	C-NETWORK	2503-001053	SA
C802	C-NETWORK	2503-001053	SA
C803	C-CER,CHIP	2203-000438	SA
C804	C-TA,CHIP	2404-001381	SA
C805	C-CER,CHIP	2203-000854	SA
CON100	CONNECTOR-COAXIAL	3705-001358	SA
D500	DIODE-ARRAY	0407-001002	SA
D501	DIODE-TVS	0406-001223	SA
D502	DIODE-TVS	0406-001223	SA
D503	DIODE-TVS	0406-001223	SA
D504	DIODE-TVS	0406-001223	SA
EAR400	JACK-EAR PHONE	3722-002010	SA
F100	DUPLEXER-ASM	2911-000067	SA
F101	FILTER-SAW	2904-001744	SA
F800	FILTER-EMI SMD	2901-001254	SA
IFC800	CONNECTOR-INTERFACE	3710-001611	SA
L102	R-CHIP	2007-000171	SA
L103	INDUCTOR-SMD	2703-002269	SA
L105	C-CER,CHIP	2203-000550	SA
L106	C-CER,CHIP	2203-000995	SA
L107	INDUCTOR-SMD	2703-002370	SA
L108	INDUCTOR-SMD	2703-002170	SA
L109	INDUCTOR-SMD	2703-001990	SA
L110	INDUCTOR-SMD	2703-002199	SA
L400	INDUCTOR-SMD	2703-002202	SA
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L402	BEAD-SMD	3301-001729	SA
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L406	BEAD-SMD	3301-001729	SA
L407	INDUCTOR-SMD	2703-001231	SNA
L408	BEAD-SMD	3301-001729	SA
L501	INDUCTOR-SMD	2703-001180	SA
L502	INDUCTOR-SMD	2703-002206	SA
L503	INDUCTOR-SMD	2703-001180	SA
L504	INDUCTOR-SMD	2703-001673	SA
L700	INDUCTOR-SMD	2703-002768	SNA
L800	BEAD-SMD	3301-001659	SA
LED700	LED	0601-002037	SA
LED701	LED	0601-002037	SA
LED702	LED	0601-002037	SA
LED703	LED	0601-002037	SA

Design LOC	Description	SEC CODE	STATUS
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LED705	LED	0601-002037	SA
LED706	LED	0601-002037	SA
LED707	LED	0601-002037	SA
LED708	LED	0601-002037	SA
LED709	LED	0601-002037	SA
LED710	LED	0601-002037	SA
MEM600	IC-MCP	1108-000010	SA
OSC100	CRYSTAL-SMD	2801-004426	SA
OSC300	CRYSTAL-SMD	2801-003856	SA
PAM100	IC-POWER AMP	1201-002425	SA
R100	R-CHIP	2007-001298	SA
R101	R-CHIP	2007-002970	SA
R104	R-CHIP	2007-000171	SA
R105	R-CHIP	2007-002797	SA
R106	R-CHIP	2007-000148	SA
R107	R-CHIP	2007-001308	SA
R108	R-CHIP	2007-000171	SA
R111	R-CHIP	2007-000147	SA
R200	R-CHIP	2007-000144	SA
R201	R-CHIP	2007-000171	SA
R203	R-CHIP	2007-000171	SA
R208	R-CHIP	2007-000171	SA
R209	R-CHIP	2007-000167	SA
R210	R-CHIP	2007-000172	SA
R212	R-CHIP	2007-000172	SA
R213	R-CHIP	2007-000162	SA
R215	R-CHIP	2007-007142	SA
R216	R-CHIP	2007-000154	SA
R217	R-CHIP	2007-000153	SA
R218	R-CHIP	2007-000162	SA
R219	R-CHIP	2007-000140	SA
R220	R-CHIP	2007-000171	SA
R300	R-CHIP	2007-000157	SA
R301	R-CHIP	2007-000157	SA
R302	R-CHIP	2007-000162	SA
R303	R-CHIP	2007-000171	SA
R304	R-CHIP	2007-007480	SA
R305	R-CHIP	2007-000157	SA
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R307	R-CHIP	2007-007142	SA
R308	R-CHIP	2007-000171	SA
R309	R-CHIP	2007-007573	SA
R310	R-CHIP	2007-000162	SA
R311	R-CHIP	2007-007573	SA
R312	R-CHIP	2007-000143	SA
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R315	R-CHIP	2007-000171	SA
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R404	R-CHIP	2007-007107	SA
R405	R-CHIP	2007-001320	SA
R406	R-CHIP	2007-000142	SA
R407	R-CHIP	2007-001317	SA

Design LOC	Description	SEC CODE	STATUS
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R411	R-CHIP	2007-007142	SA
R412	R-CHIP	2007-007101	SA
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R416	R-CHIP	2007-007480	SA
R417	R-CHIP	2007-001339	SA
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R419	R-CHIP	2007-001317	SA
R420	R-CHIP	2007-000172	SA
R421	R-CHIP	2007-000172	SA
R422	R-CHIP	2007-000171	SA
R500	R-CHIP	2007-007156	SA
R501	R-CHIP	2007-007156	SA
R502	R-CHIP	2007-000171	SA
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R507	R-CHIP	2007-000172	SA
R508	R-CHIP	2007-001325	SA
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R510	R-CHIP	2007-000171	SA
R511	R-CHIP	2007-008137	SA
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R515	R-CHIP	2007-000172	SA
R516	R-CHIP	2007-000172	SA
R601	R-CHIP	2007-000172	SA
R602	R-CHIP	2007-000171	SA
R700	R-CHIP	2007-001307	SA
R701	R-CHIP	2007-001301	SA
R702	R-CHIP	2007-001308	SA
R703	R-CHIP	2007-003004	SA
R704	R-CHIP	2007-003004	SA
R705	R-CHIP	2007-001307	SA
R706	R-CHIP	2007-001307	SA
R707	R-CHIP	2007-002970	SA
R708	R-CHIP	2007-003030	SA
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R710	R-CHIP	2007-003030	SA
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R804	R-CHIP	2007-000566	SA
R805	R-CHIP	2007-000566	SA
R806	R-CHIP	2007-000566	SA
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R808	R-CHIP	2007-000140	SA

Design LOC	Description	SEC CODE	STATUS
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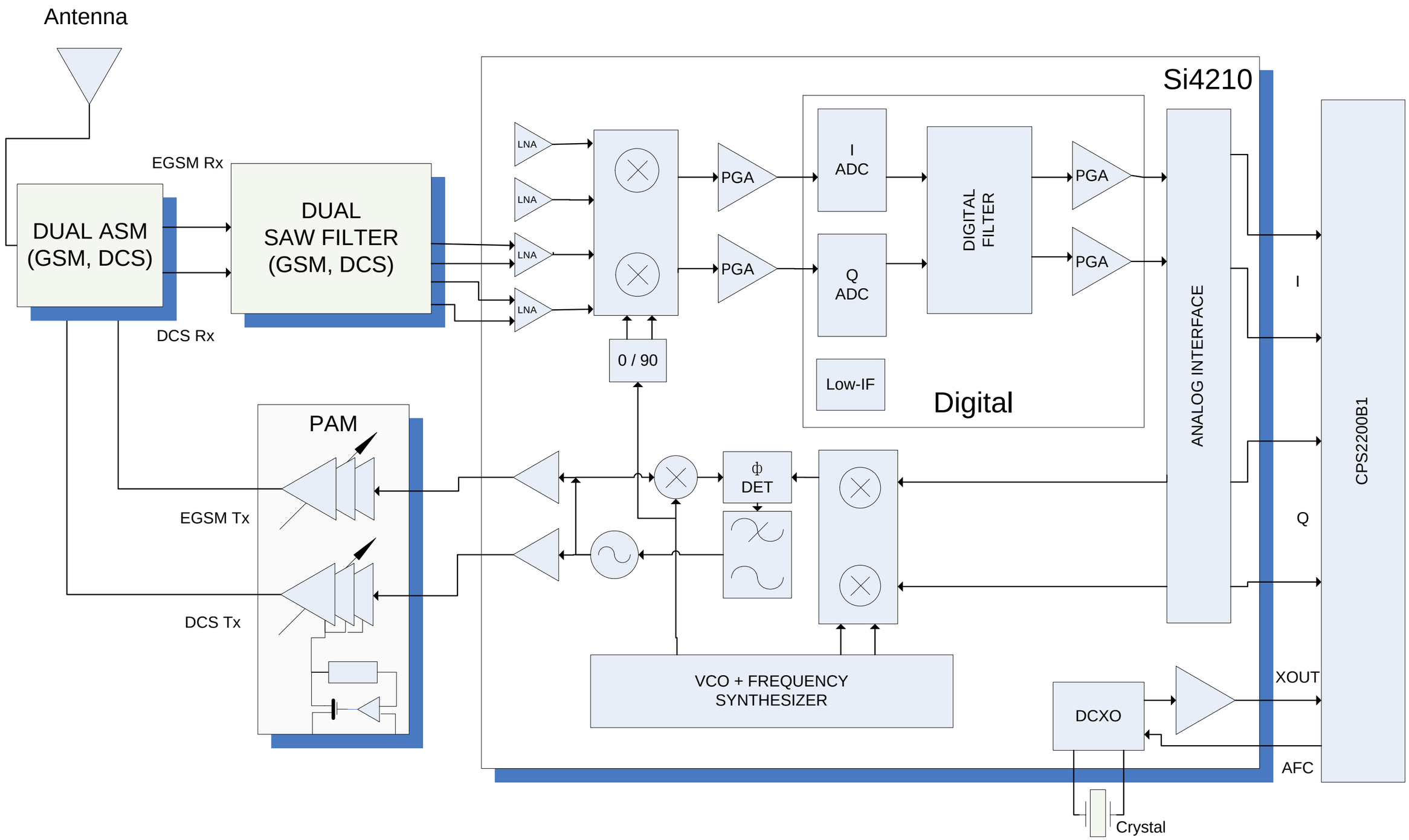
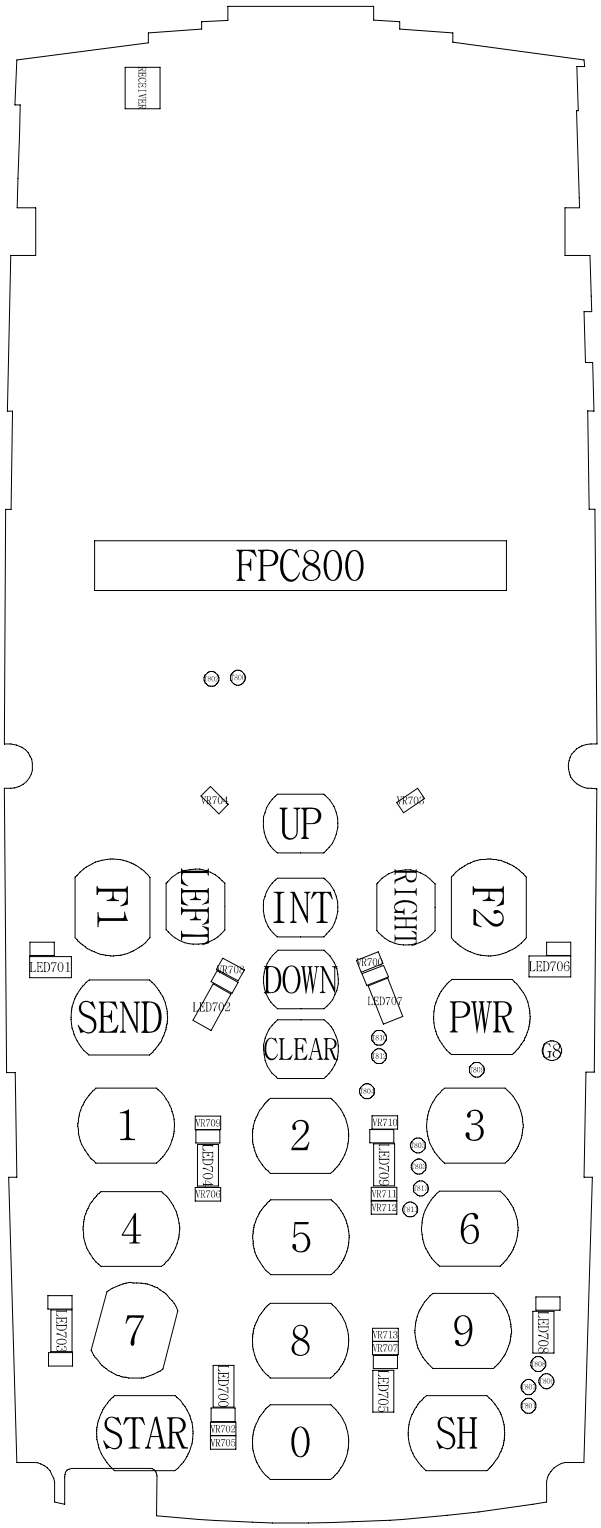
R812	R-CHIP	2007-000140	SA
R813	R-CHIP	2007-000140	SA
R814	R-CHIP	2007-000140	SA
R815	R-CHIP	2007-000140	SA
R816	R-CHIP	2007-000140	SA
R817	R-CHIP	2007-000140	SA
R818	R-CHIP	2007-000171	SA
R819	R-CHIP	2007-000140	SA
R820	R-CHIP	2007-000140	SA
SIM200	CONNECTOR-CARD EDGE	3709-001229	SA
TH300	THERMISTOR-NTC	1404-001221	SA
TR200	TR-DIGITAL	0504-000168	SA
U101	IC-TRANSCEIVER	1205-003116	SA
U201	IC-BATTERY	1203-003663	SA
U202	IC-CMOS LOGIC	0801-000796	SA
U401	IC-VOLTAGE COMP.	1202-001068	SA
U500	IC-MELODY	1204-001811	SA
U501	IC-DEMODULATOR	1204-002688	SA
U502	IC-AUDIO AMP	1201-002356	SA
U503	IC-POSI.FIXED REG.	1203-003737	SA
U700	VARISTOR	1405-001082	SA
U701	IC-DC/DC CONVERTER	1203-004247	SA
UCP200	IC-POWER SUPERVISOR	1203-003304	SA
UCP300	IC MICOM-SGHX480	GH09-00036A	SA
VR401	VARISTOR	1405-001082	SA
VR402	VARISTOR	1405-001082	SA
VR403	DIODE-TVS	0406-001223	SA
VR404	DIODE-TVS	0406-001223	SA
VR700	VARISTOR	1405-001082	SA
VR701	DIODE-TVS	0406-001223	SA
VR702	DIODE-TVS	0406-001223	SA
VR703	DIODE-TVS	0406-001223	SA
VR704	DIODE-TVS	0406-001223	SA
VR705	DIODE-TVS	0406-001223	SA
VR706	DIODE-TVS	0406-001223	SA
VR707	DIODE-TVS	0406-001223	SA
VR708	DIODE-TVS	0406-001223	SA
VR709	DIODE-TVS	0406-001223	SA
VR710	DIODE-TVS	0406-001223	SA
VR711	DIODE-TVS	0406-001223	SA
VR712	DIODE-TVS	0406-001223	SA
ZD400	DIODE-TVS	0406-001104	SA
ZD800	DIODE-ZENER	0403-001547	SA
ZD801	DIODE-ZENER	0403-001547	SA
ZD802	DIODE-TVS	0406-001190	SA
ZD803	DIODE-TVS	0406-001190	SA
ZD804	DIODE-TVS	0406-001190	SA

7. Block Diagrams

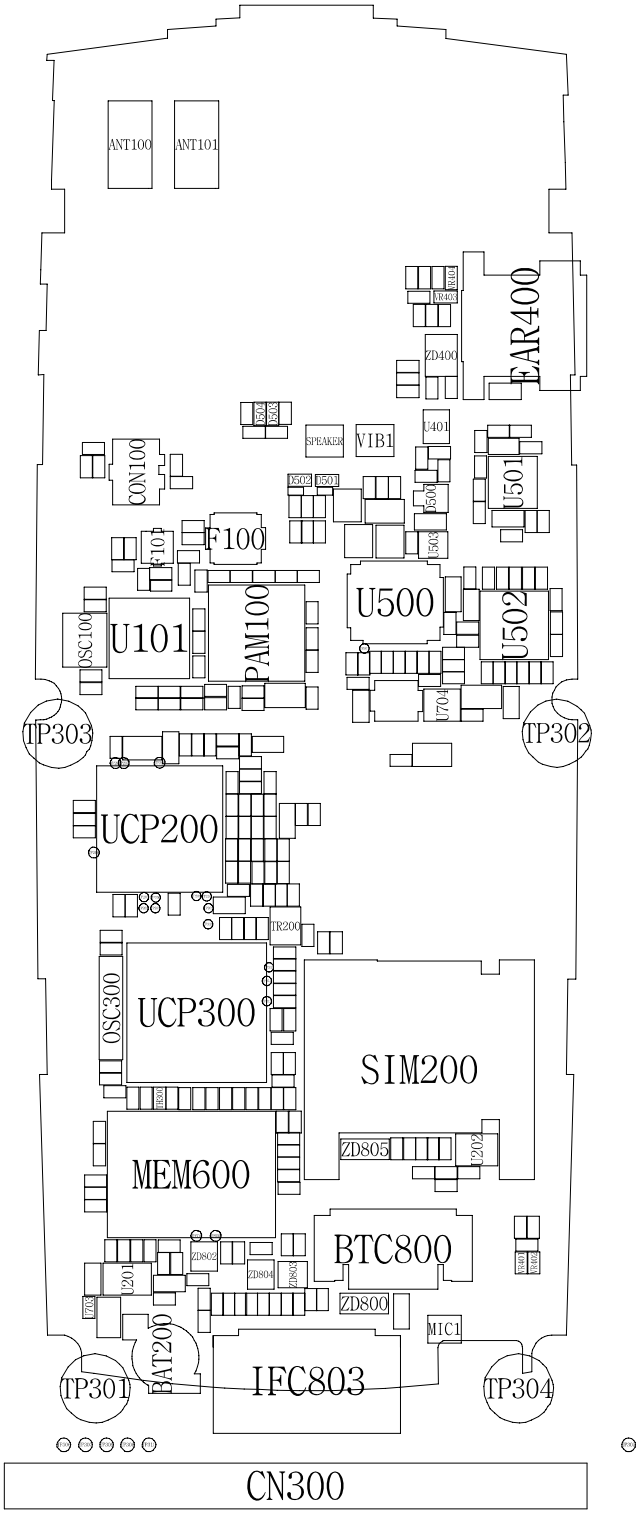


8. PCB Diagrams

Top



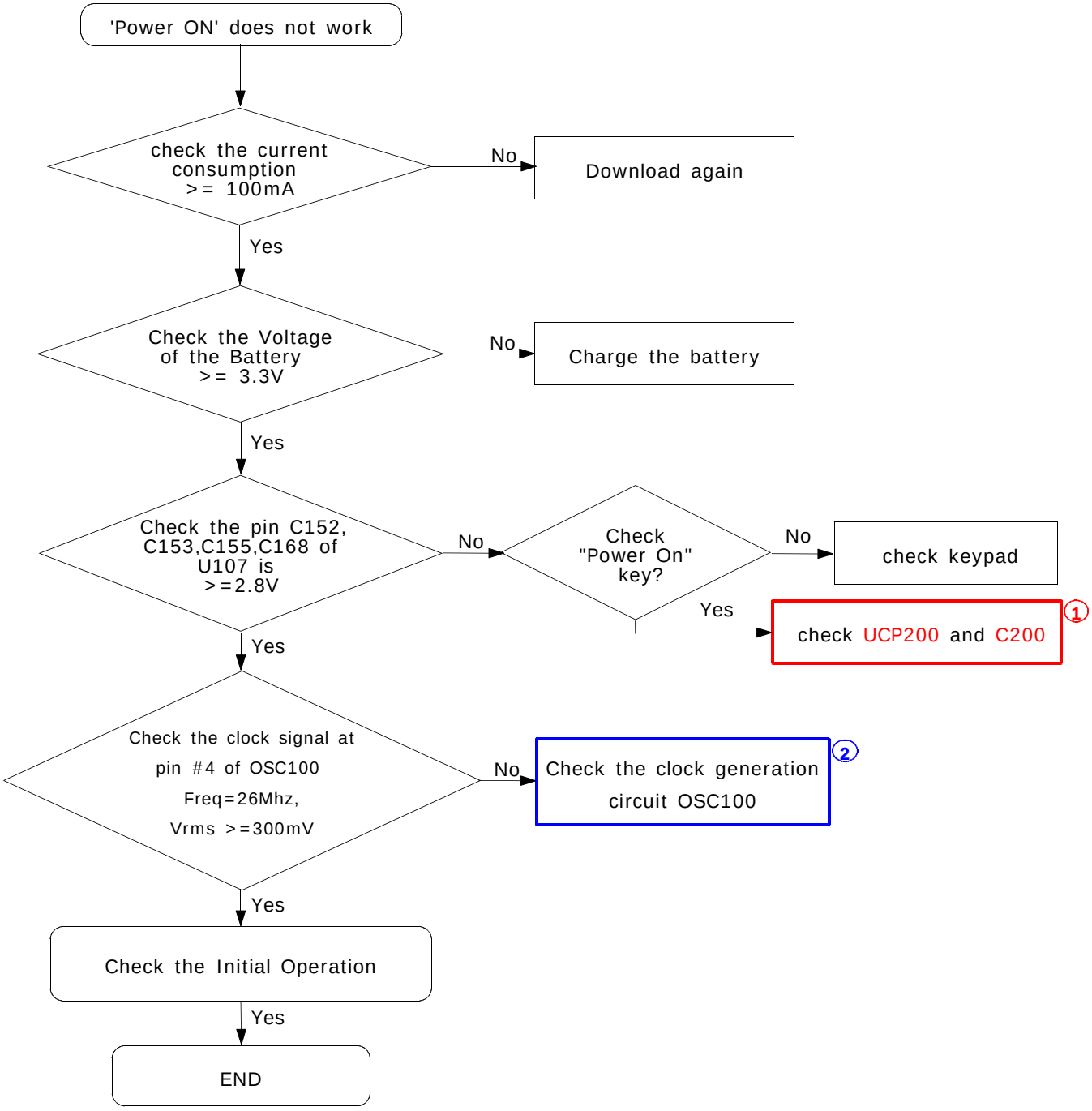
Bottom

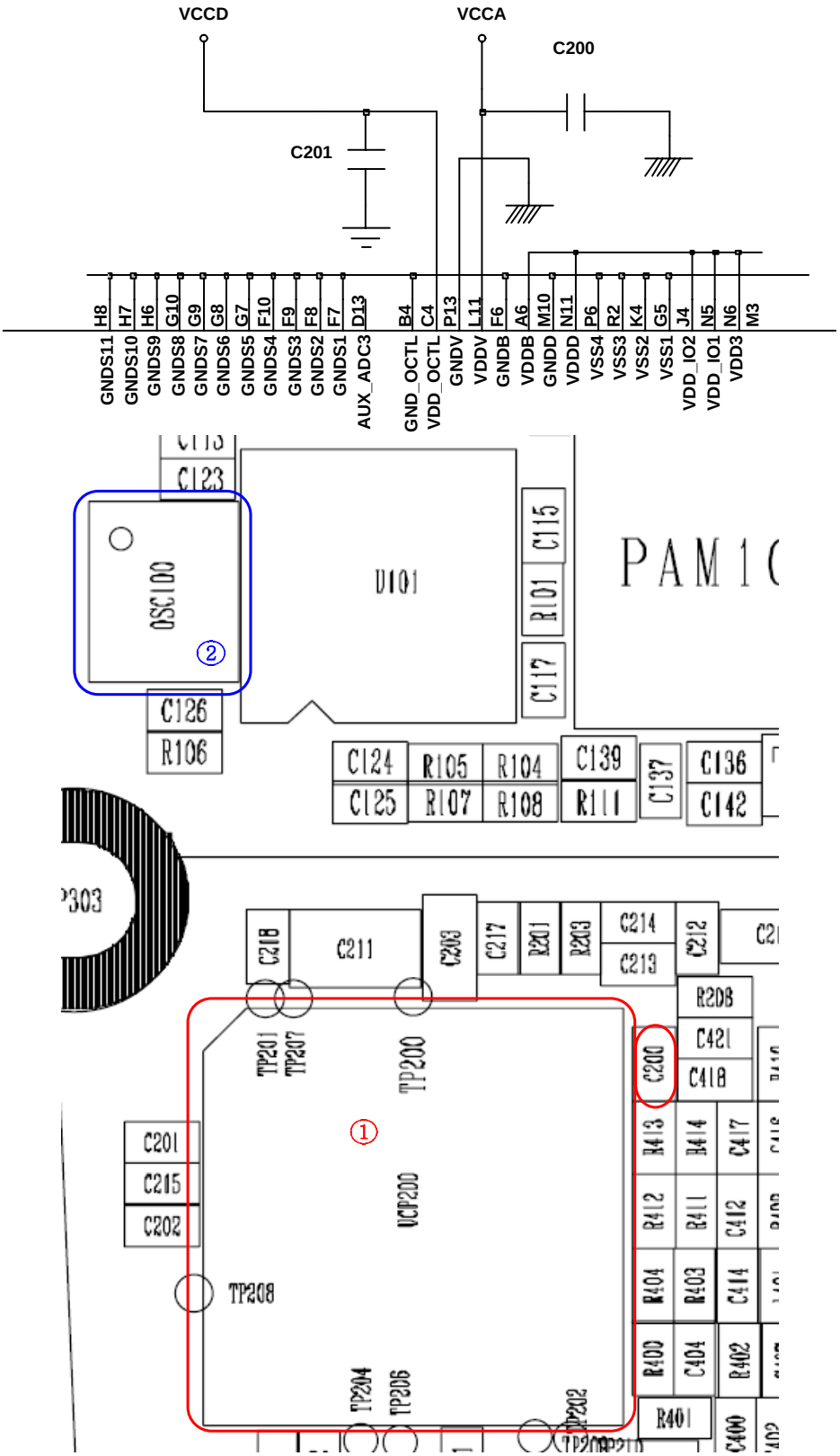


9. Flow Chart of Troubleshooting

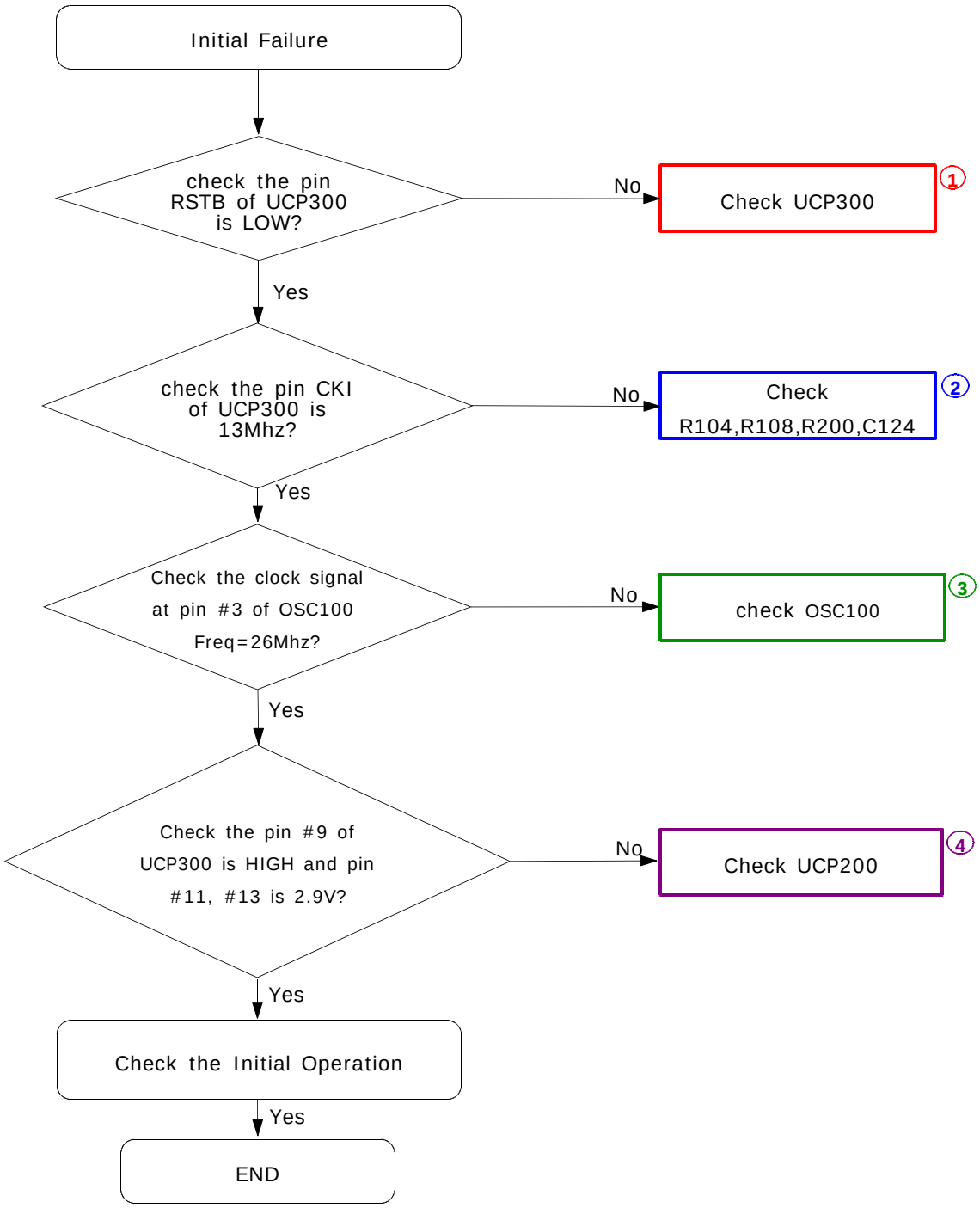
9-1. Baseband

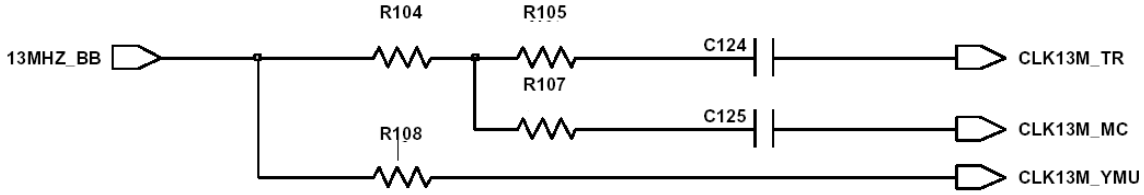
9-1-1. Power ON

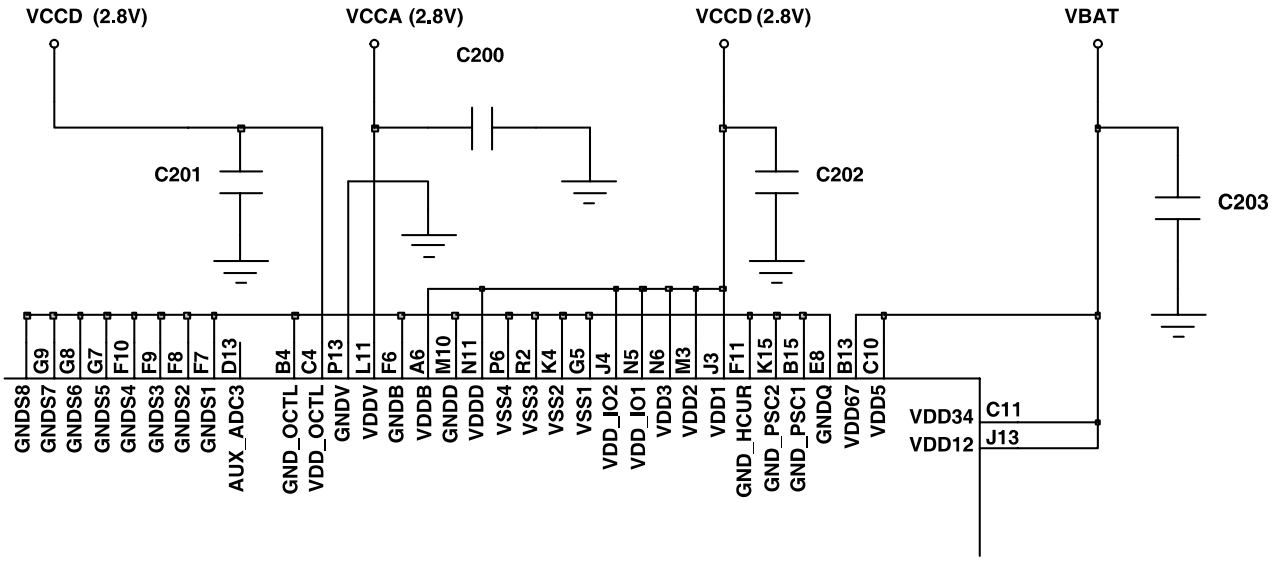


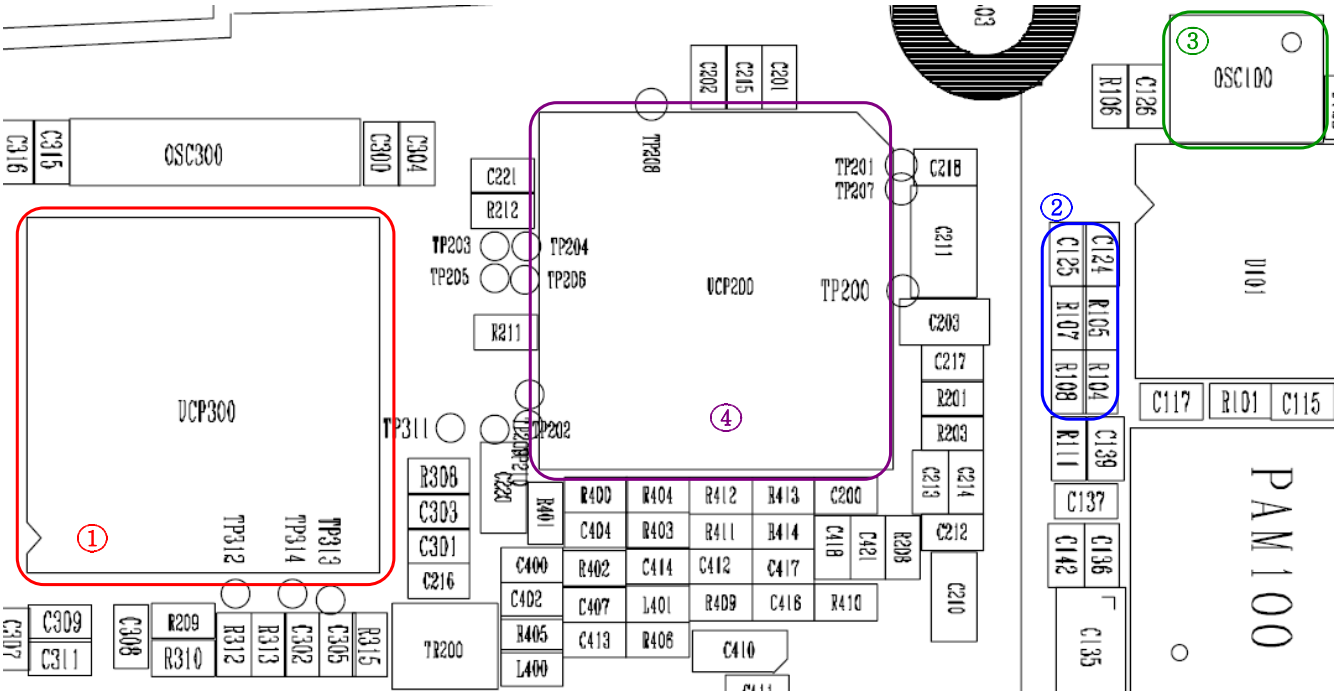


9-1-2. Initial

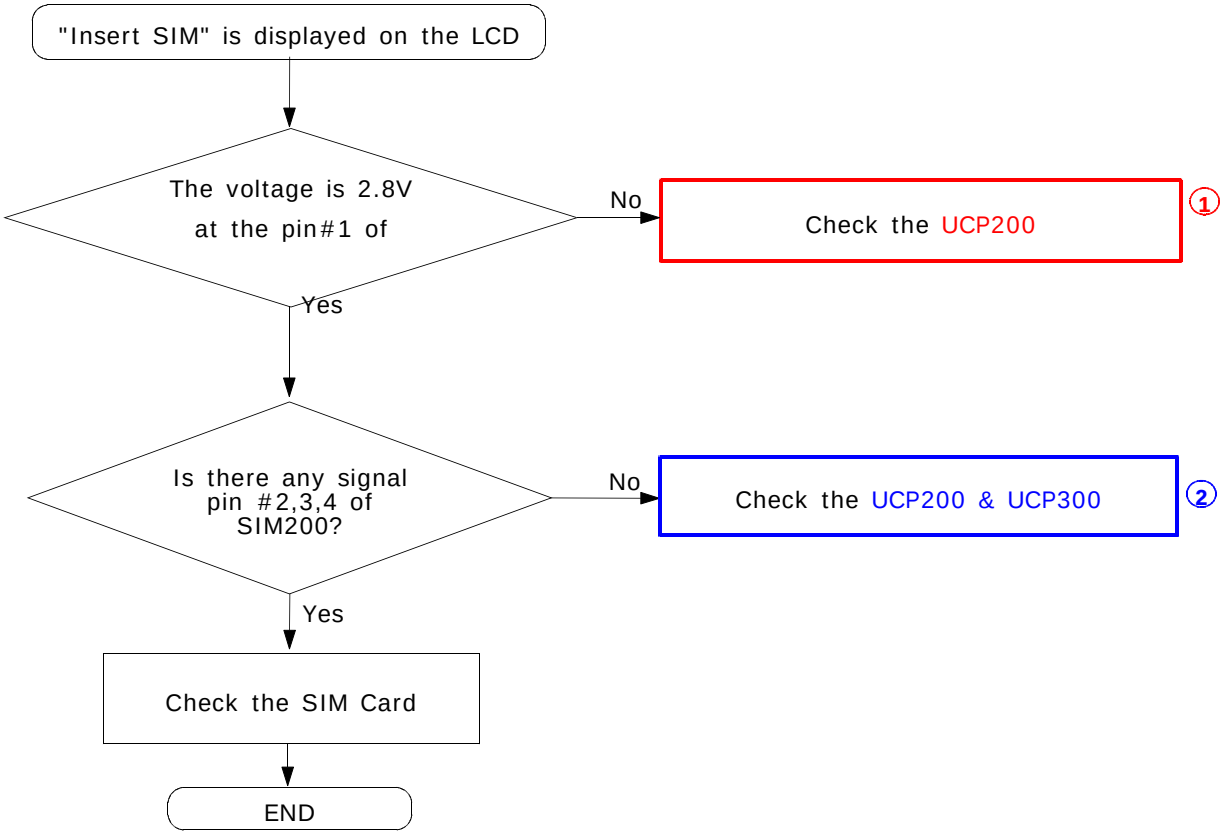


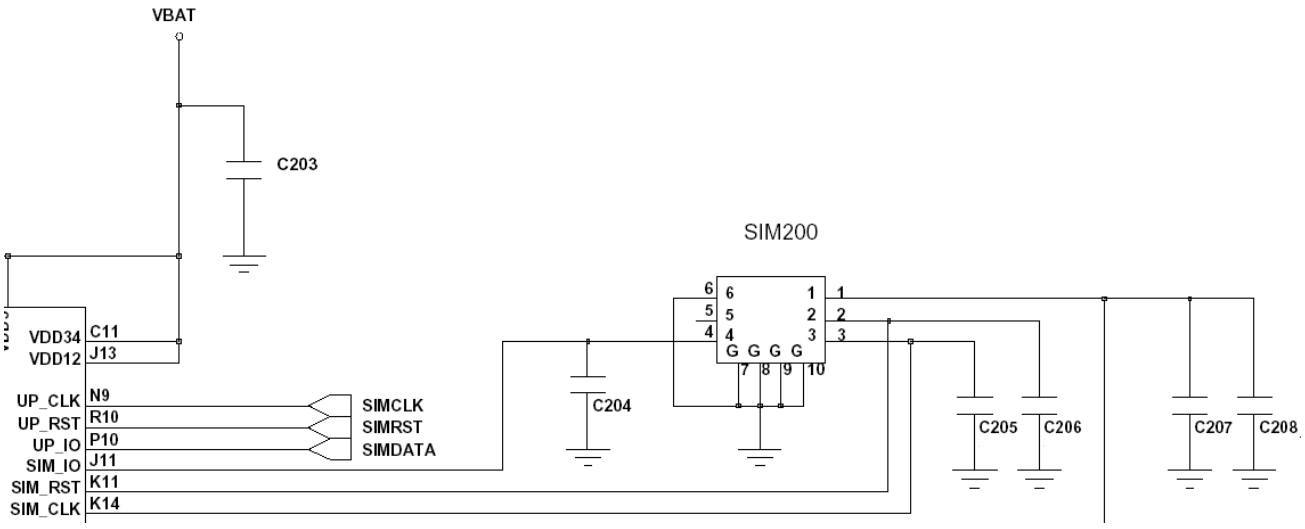


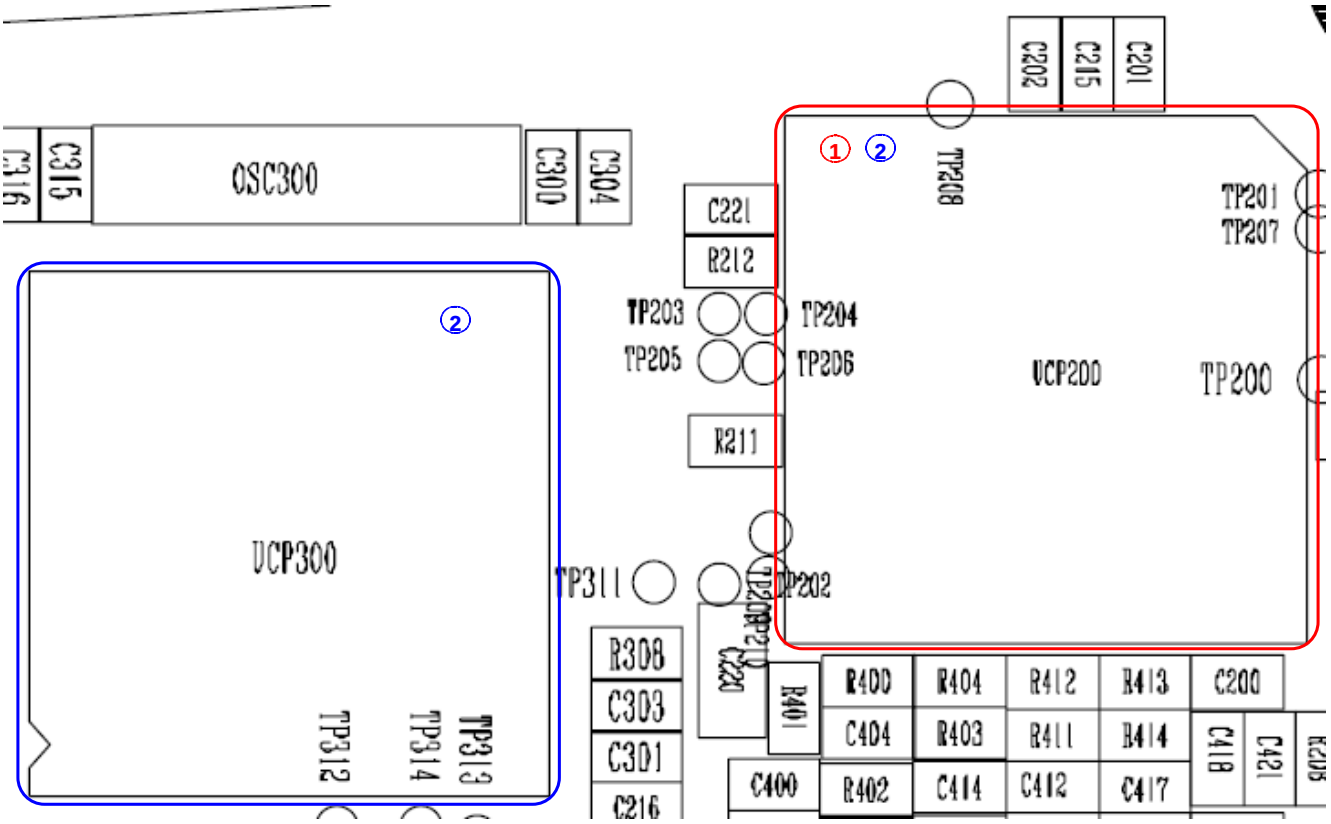




9-1-3. Sim Part

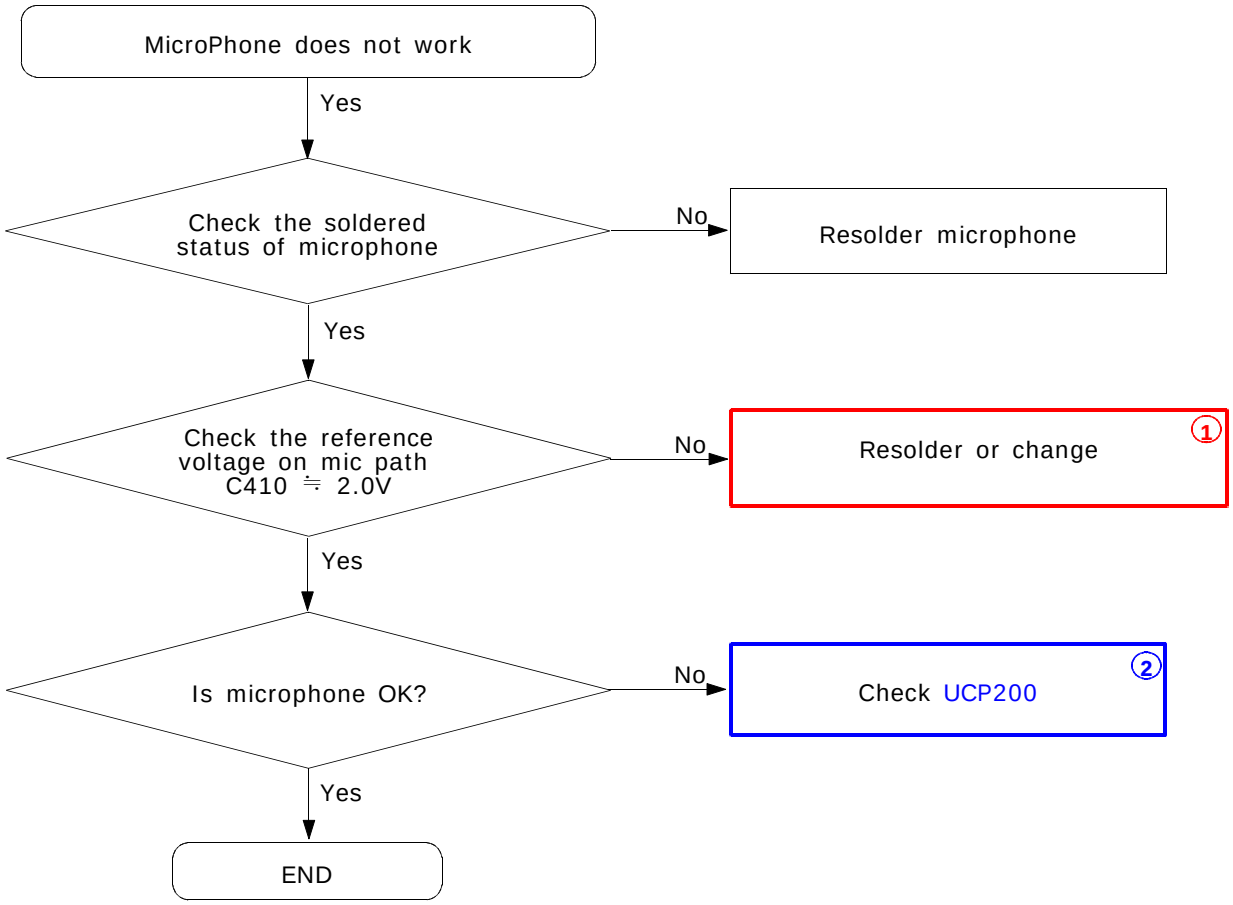


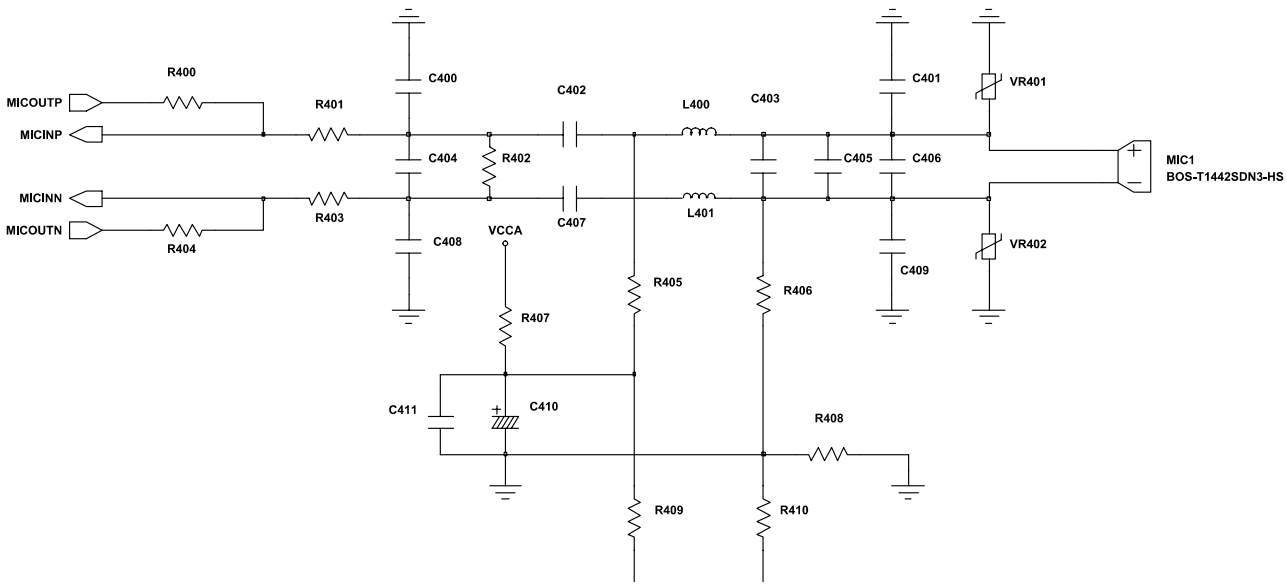


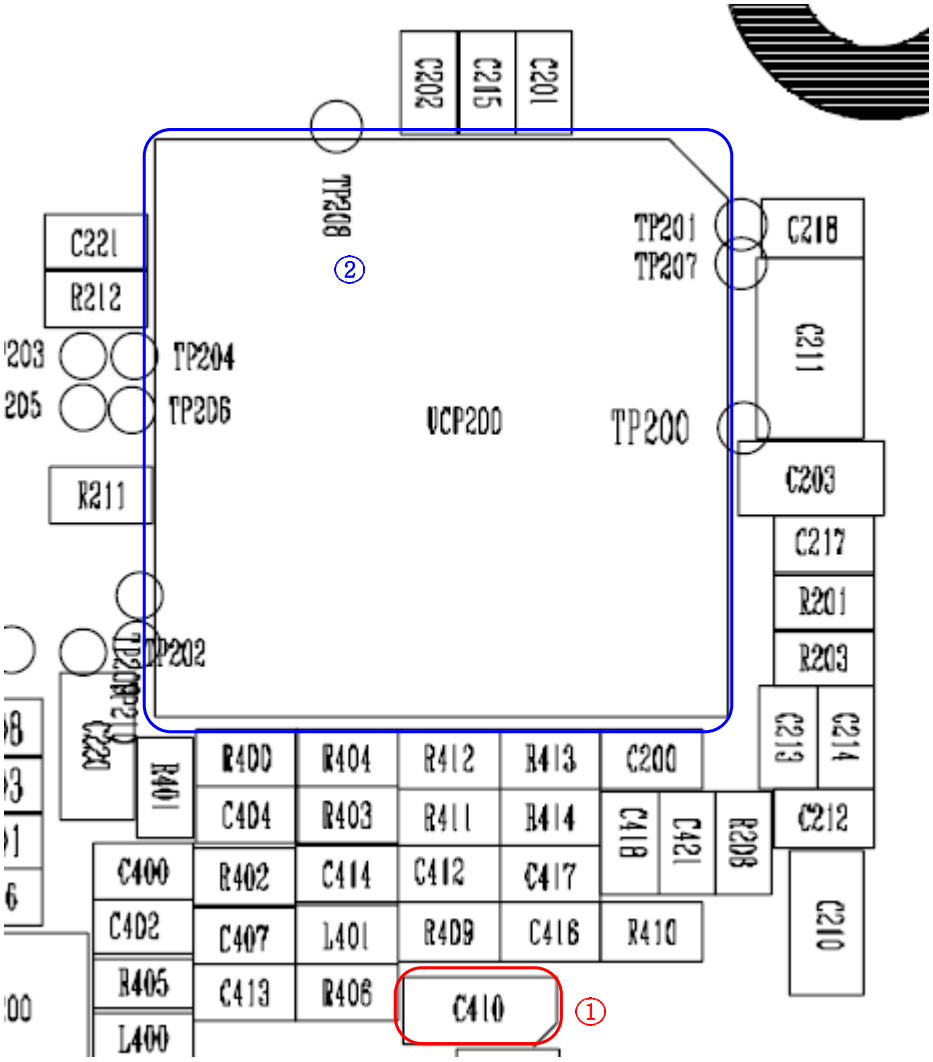


9-1-4.Microphone Part

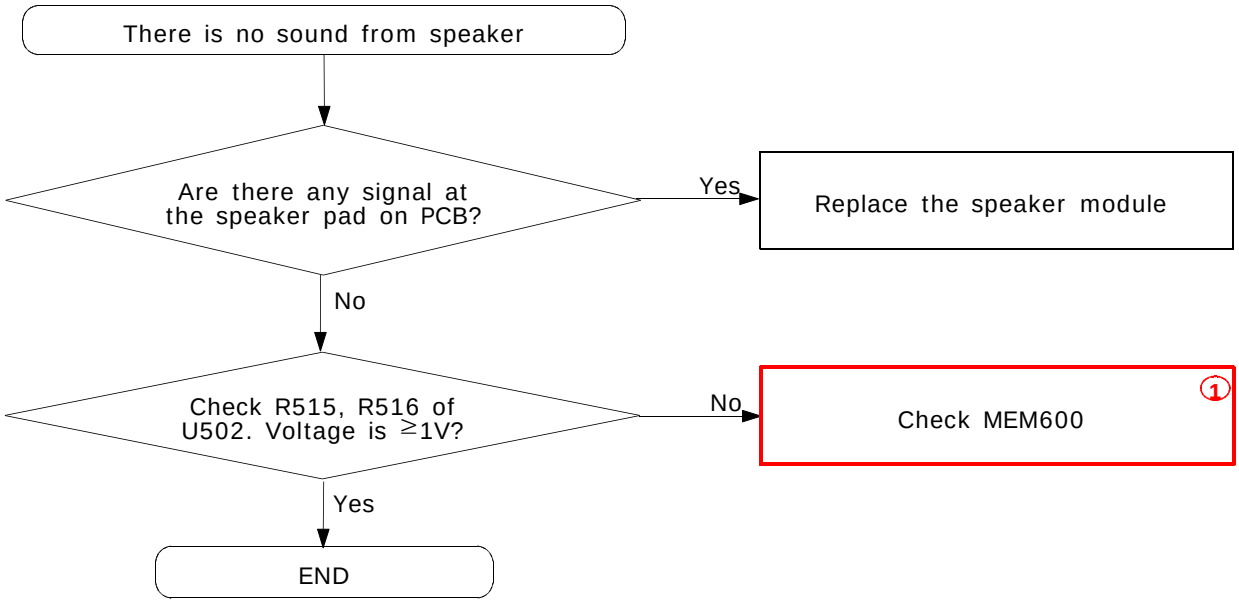
* Call with Sim before testing.

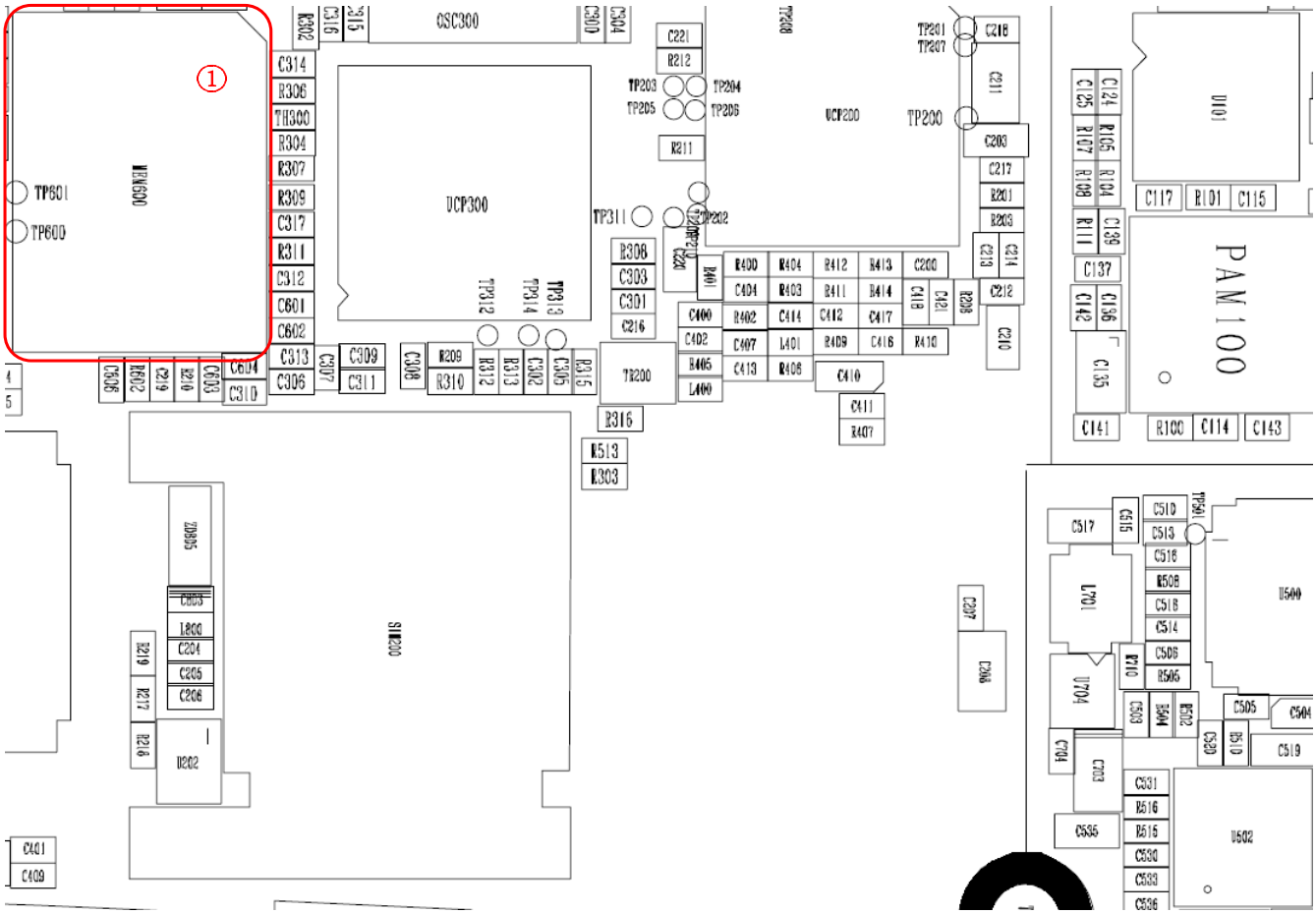




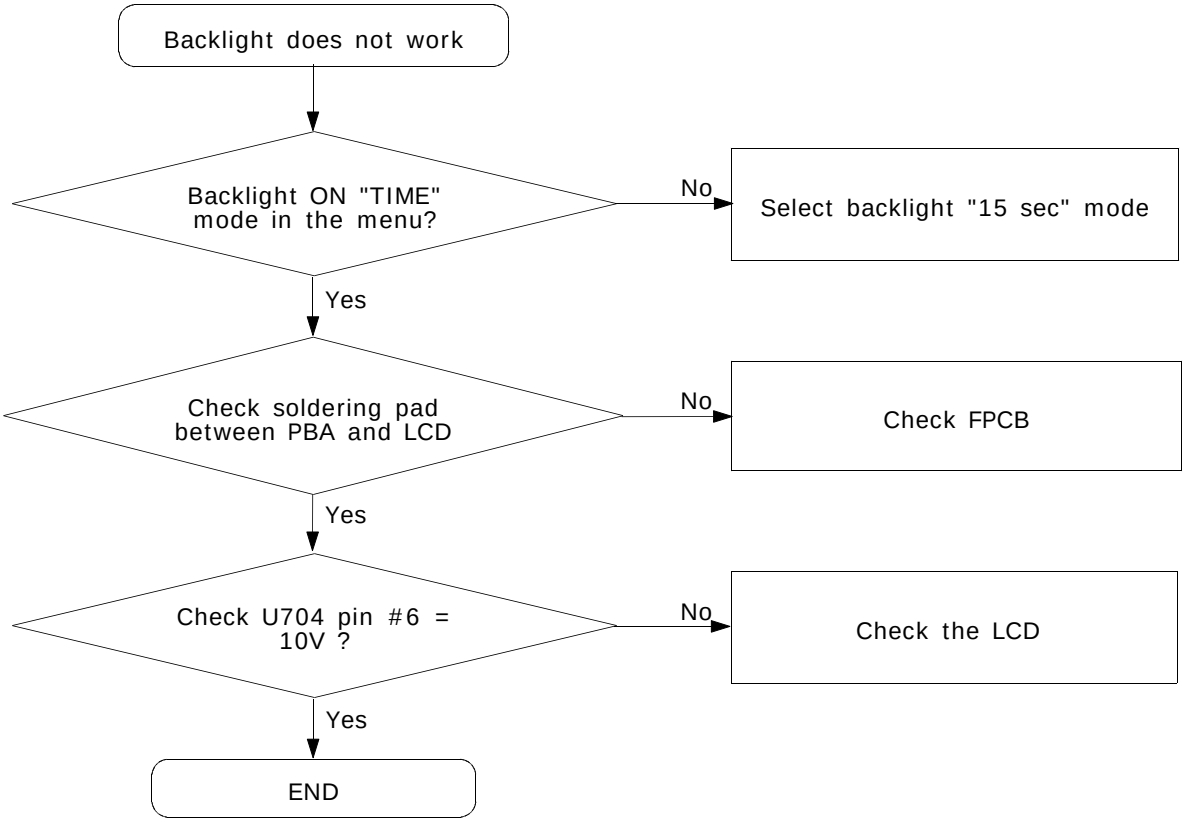


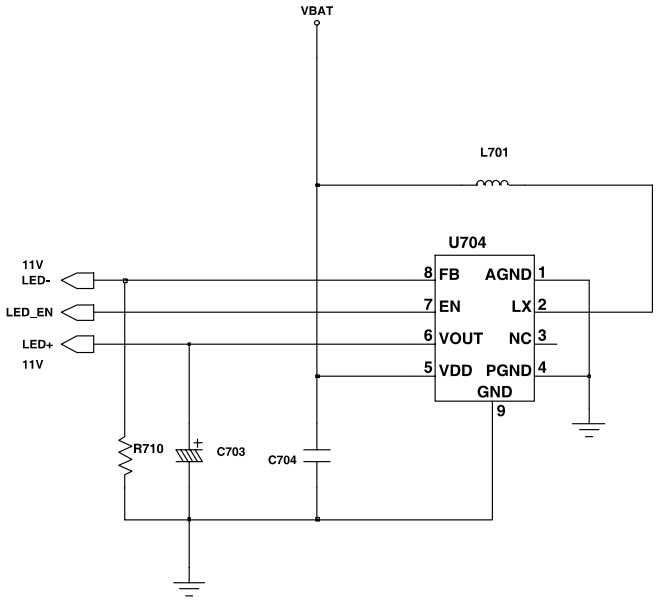
9-1-5. Speaker Part





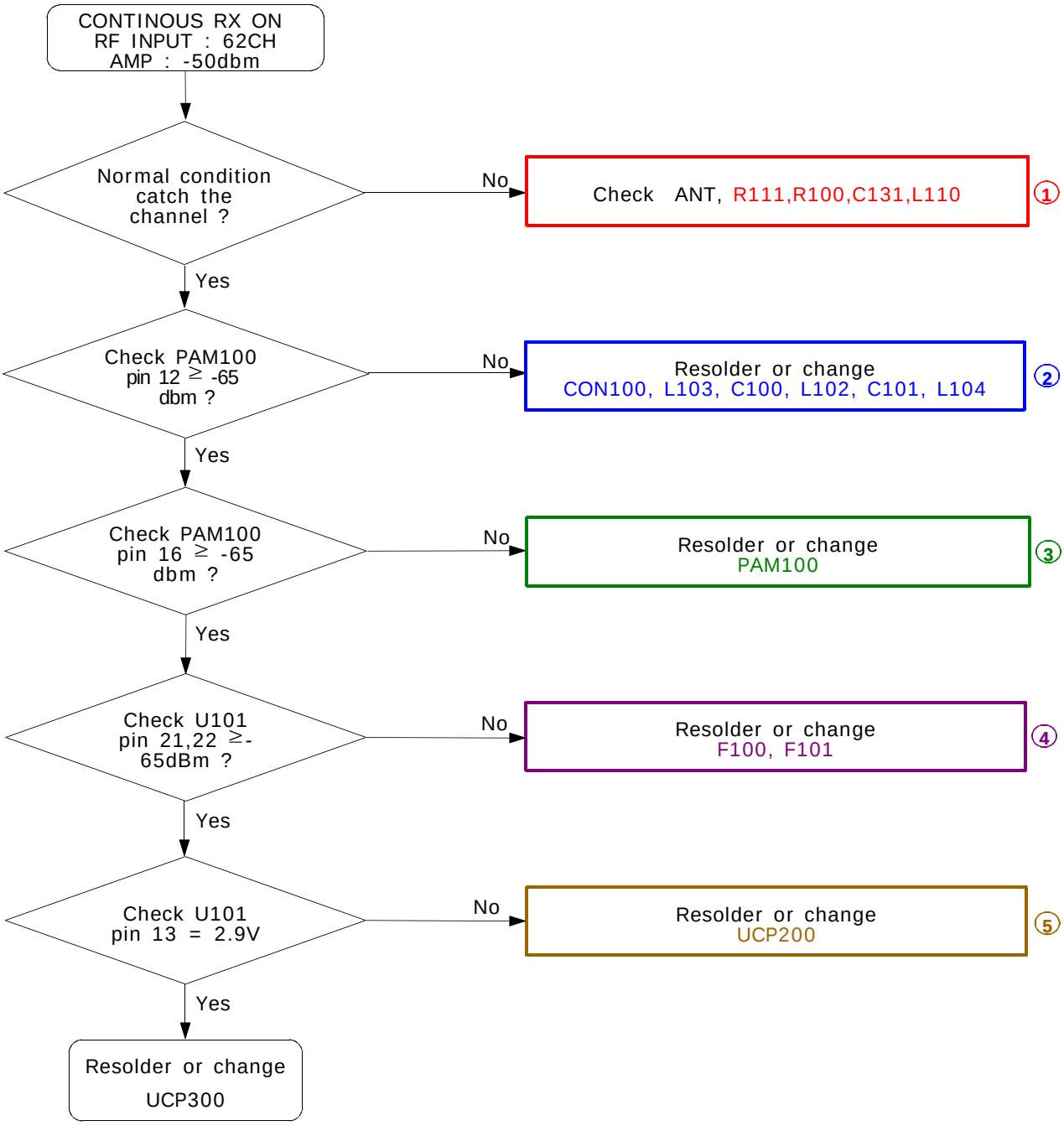
9-1-6. LCD Backlight

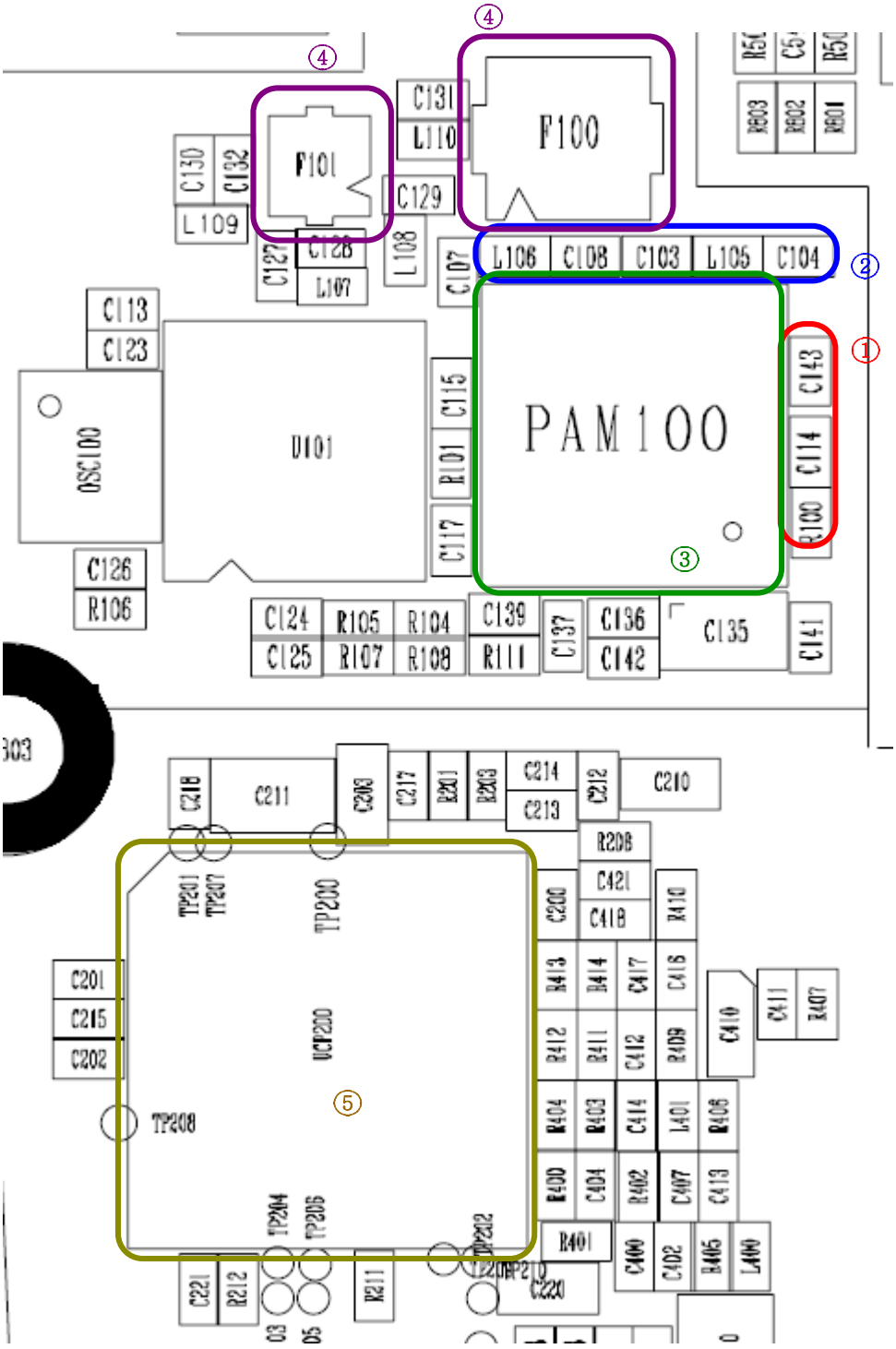




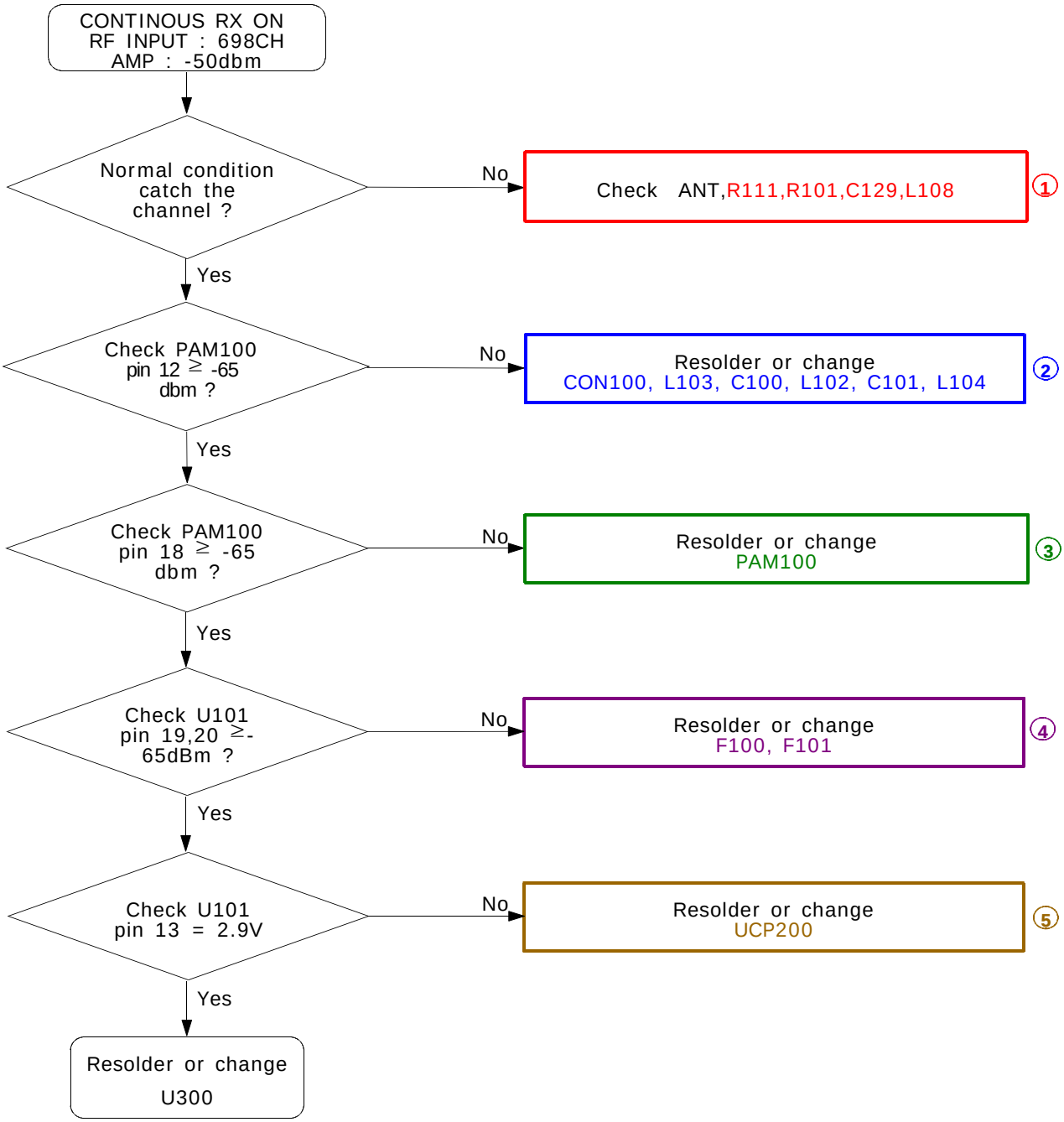
9-2. RF

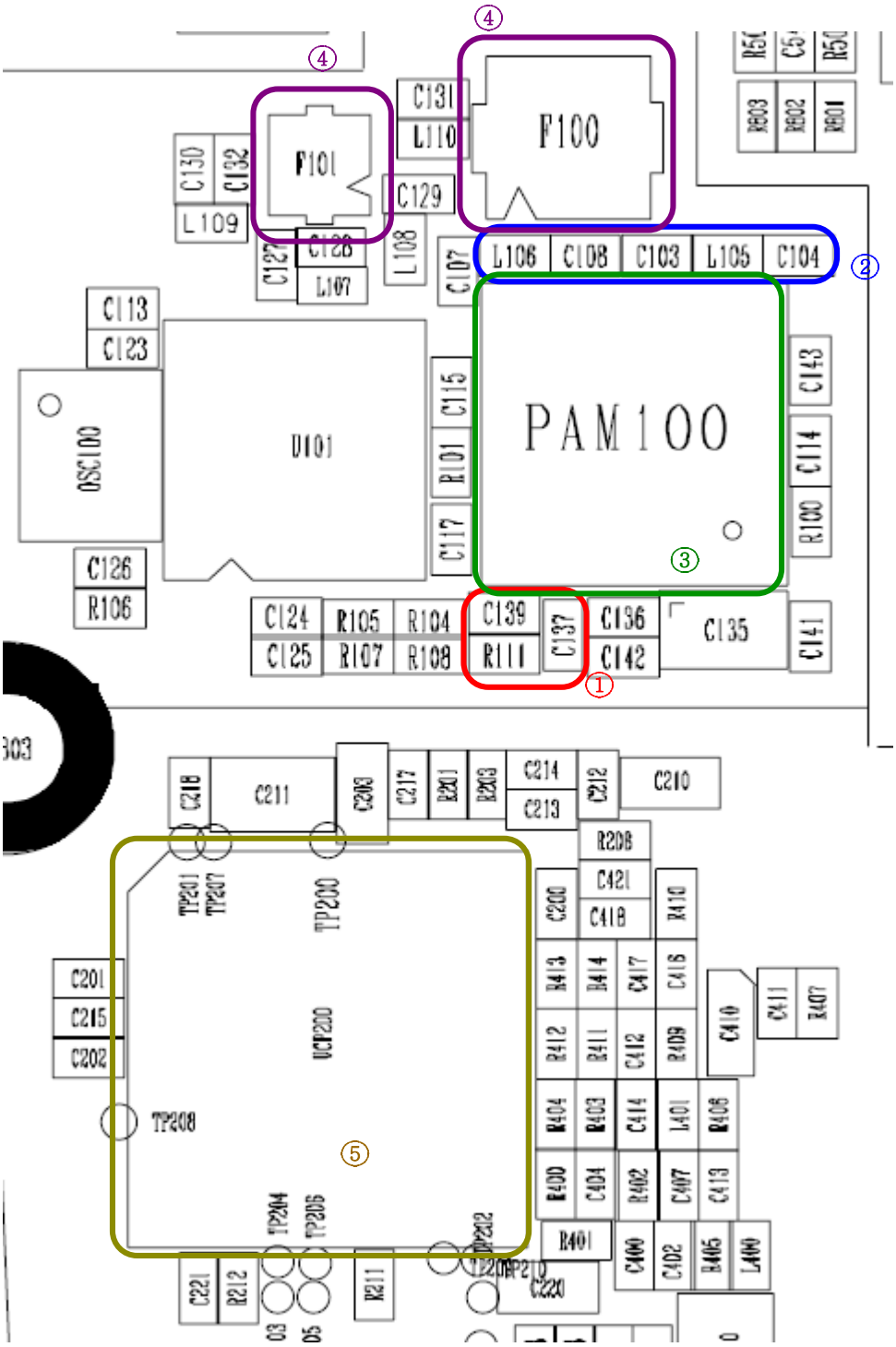
9-2-1. GSM Rx

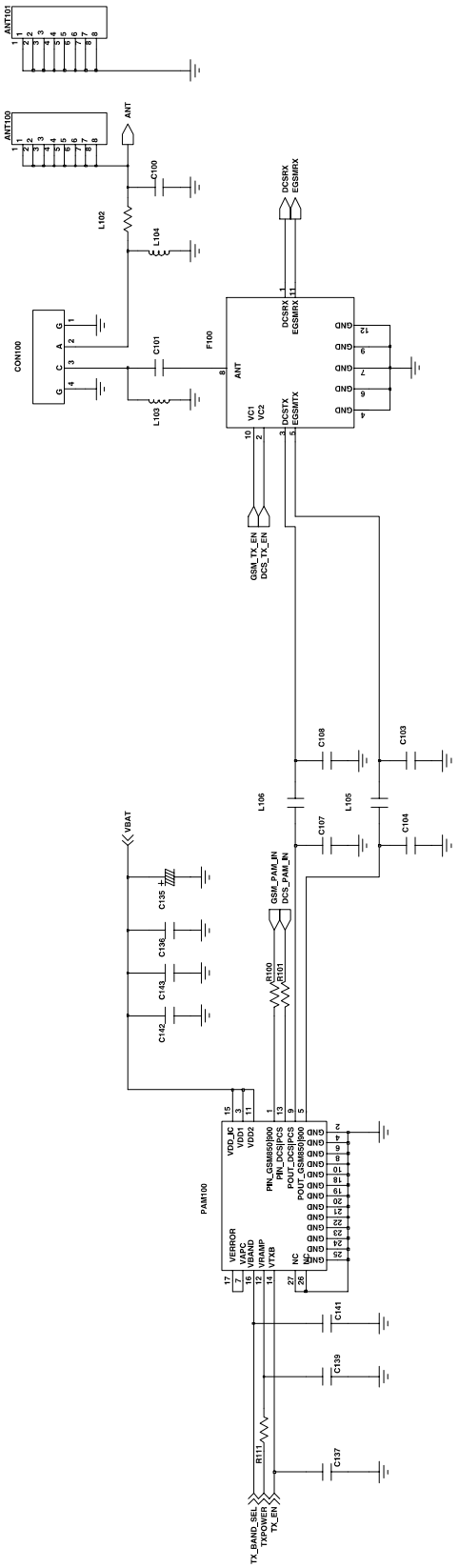




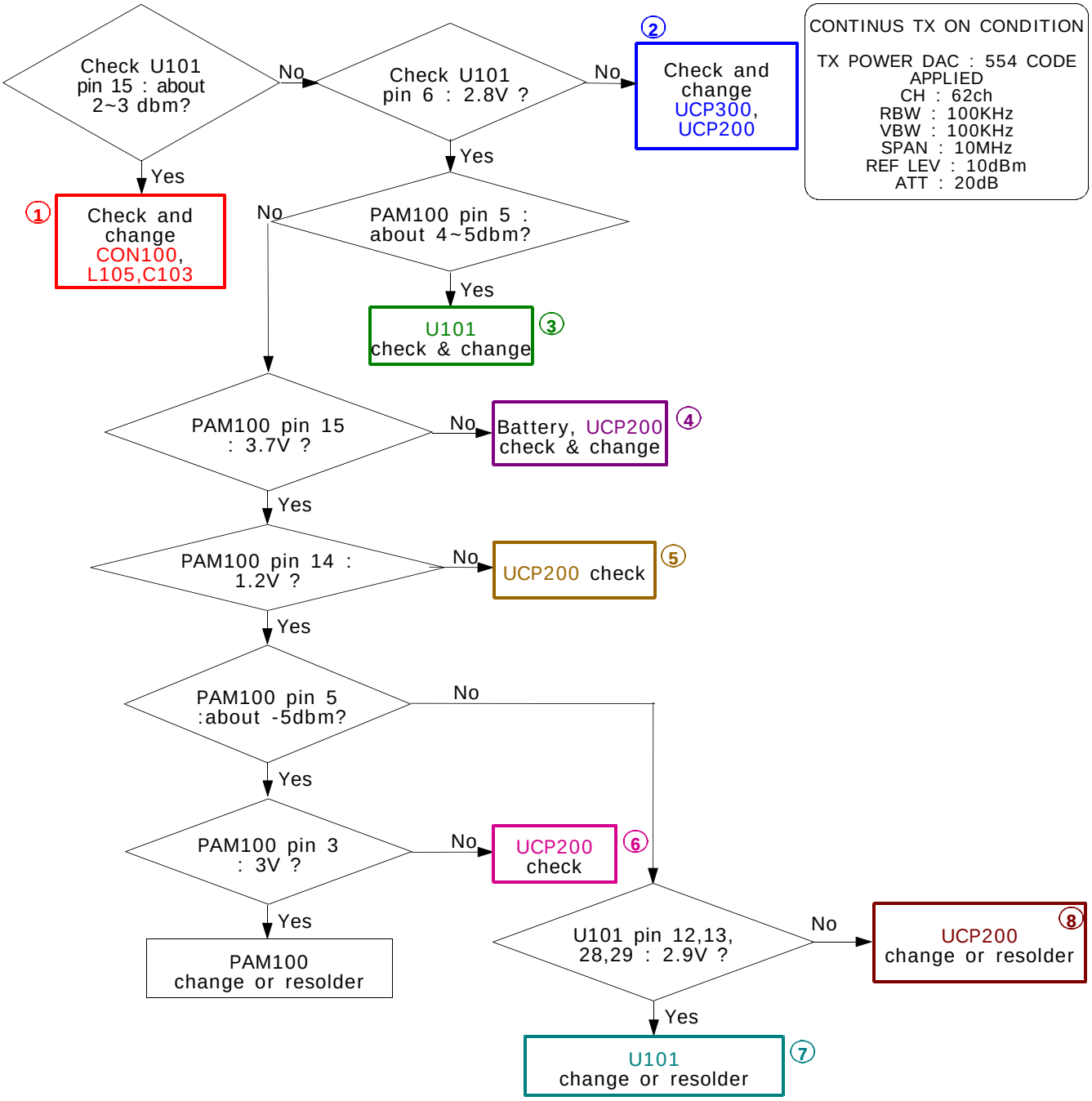
9-2-2. DCS Rx

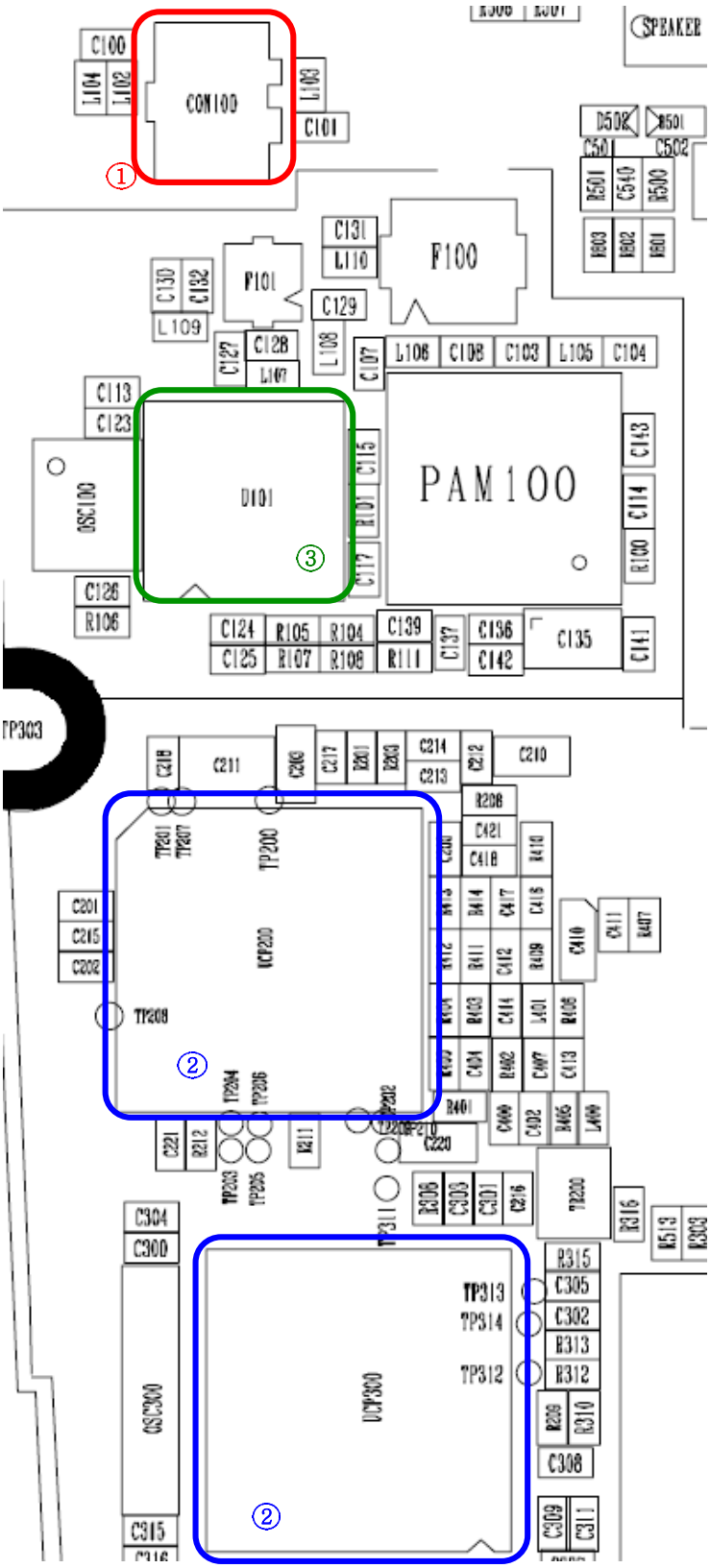




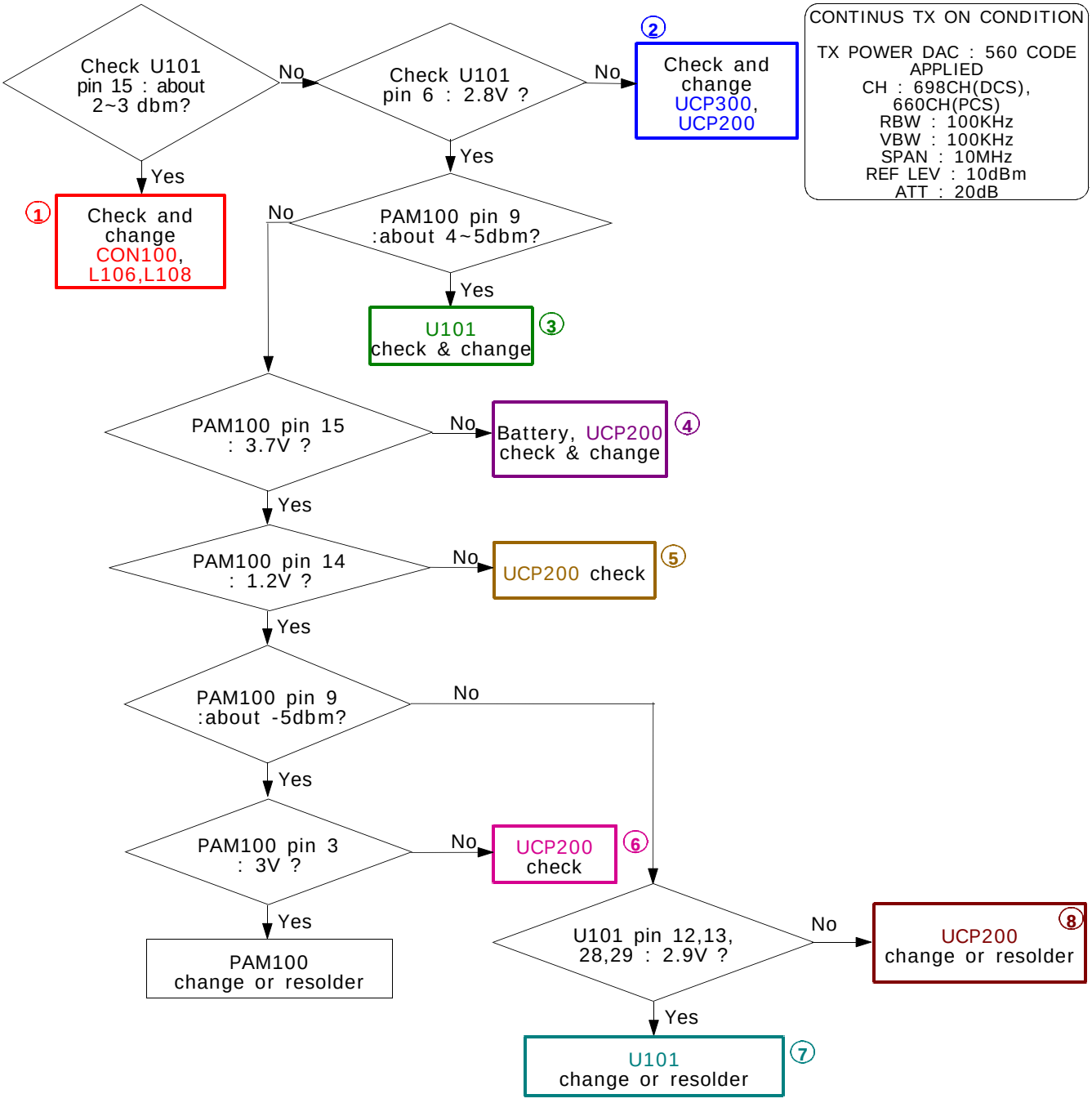


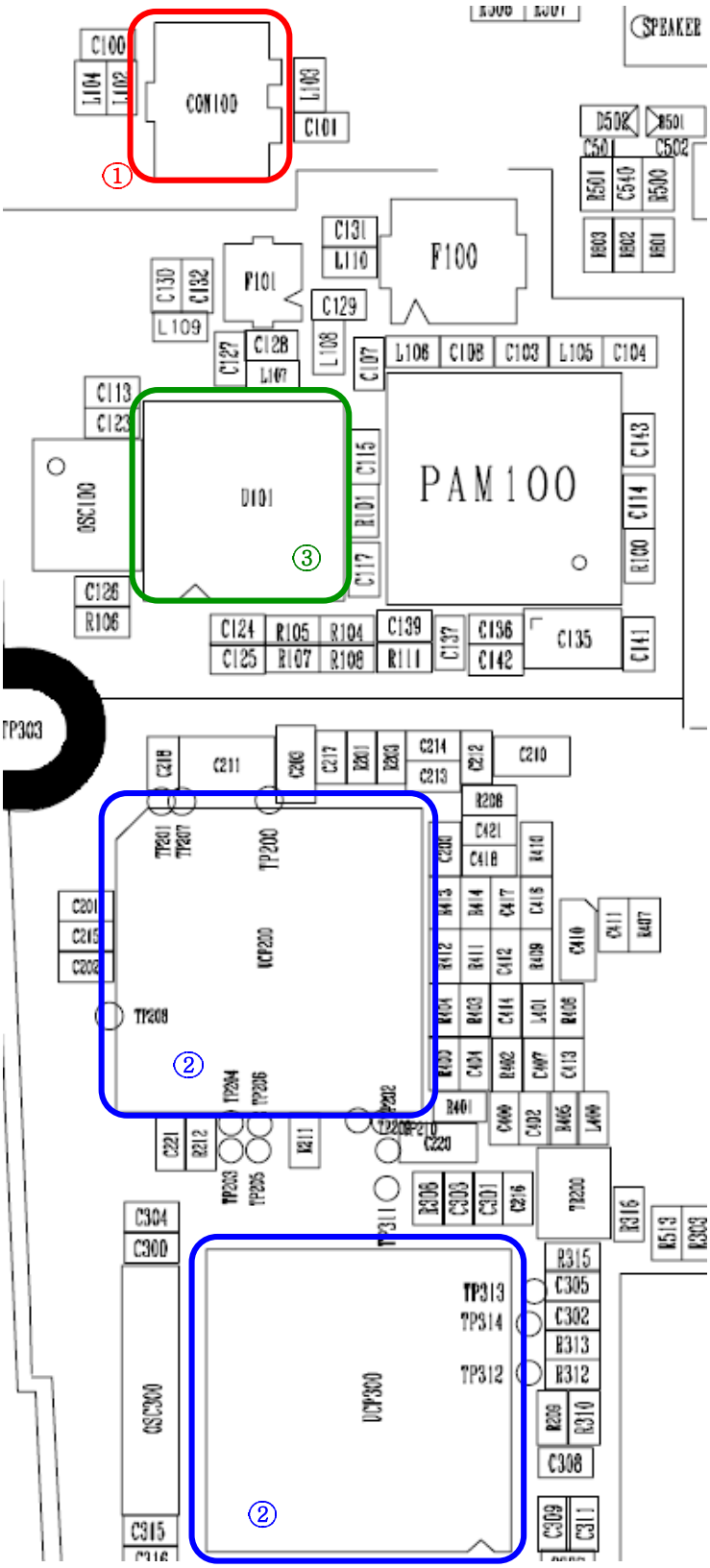
9-2-3. GSM Tx





9-2-4. DCS Tx





10. Reference data

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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