

SAMSUNG

GSM TELEPHONE

SGH-E250

SERVICE *Manual*

GSM TELEPHONE



CONTENTS

1. Safety Precautions
2. Specification
3. Product Function
4. Array course control
5. Exploded View/Disassembly and Assembly Instructions
6. MAIN Electrical Parts List
7. Block Diagrams
8. PCB Diagrams
9. Flow Chart of Troubleshooting
10. Reference data

CONTENTS

1. Safety Precautions

- 1-1. Repair Precaution.....1-1
- 1-2. ESD(Electrostatically Sensitive Devices) Precaution.....1-2

2. Specification

- 2-1. GSM General Specification.....2-1
- 2-2. GSM Tx Power Class.....2-2

3. Product Function

4. Array course control

- 4-1. Software Adjustments.....4-1
- 4-2. Software Downloading4-2

5. Exploded View/Disassembly & Assembly Instructions

- 5-1. Cellular phone Exploded View.....5-1
- 5-2. Cellular phone Parts list.....5-2
- 5-3. Disassembly & Assembly Instructions.....5-4

6. MAIN Electrical Parts List

7. Block Diagrams

- 7-1. Base Band Block Diagram.....7-1
- 7-2. RF Block Diagram.....7-2

8. PCB Diagrams

CONTENTS

9. Flow Chart of Troubleshooting

9-1. Pown on.....	9-1
9-2. Initial.....	9-3
9-3. Charging Part.....	9-5
9-4. SIM Part.....	9-7
9-5. Microphone Part.....	9-9
9-6. Speaker Part(Melody).....	9-11
9-7. Key Data Input.....	9-13
9-8. Receiver Part.....	9-14
9-9. Back Light(for Color Main LCD).....	9-15
9-10. Key Back Light.....	9-17
9-11. Camera Part.....	9-19
9-12. GSM Receiver.....	9-21
9-13. GSM Transmitter.....	9-22
9-14. DCS Receiver.....	9-23
9-15. DCS Transmitter.....	9-24
9-16. PCS Receiver.....	9-25
9-17. PCS Transmitter.....	9-26
9-18. Bluetooth Part.....	9-28
9-19. Radio Part.....	9-30

10. 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 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 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	45MHz	45MHz	95MHz	80MHz
Mod. Bit rate/ Bit Period	270.833kbps 3.692us	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	576.9us 4.615ms
Modulation	0.3GMSK	0.3GMSK	0.3GMSK	0.3GMSK
MS Power	33dBm~5dBm	33dBm~5dBm	30dBm~0dBm	30dBm~0dBm
Power Class	5pcl ~ 19pcl	5pcl ~ 19pcl	0pcl ~ 15pcl	0pcl ~ 15pcl
Sensitivity	-102dBm	-102dBm	-100dBm	-100dBm
TDMA Mux	8	8	8	8
Cell Radius	35Km	35Km	2Km	-

2-2. GSM Tx Power Class

TX Power control level	GSM900	TX Power control level	DCS1800	TX Power control level	PCS1800
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±4dBm	11	8±4dBm
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

- SlimSlide Design Intenna
- VGA Camera
- Bluetooth V.2.0
- Stereo Bluetooth Headset
- Mobile Tracker & SOS Messaging
- Large 2.0" 65K Color TFT Display
- SMS/MMS/E-Mail
- WAP 2.0 / Java MIDP 2.0
- MP3, AAC, MP4, 3GPP Decoding
- Video Recording and Messaging
- GSM/GPRS Class 10
- Triple Band(GSM900/DCS,PCS)
- 64 Poly
- Speaker Phone
- Voice Clarity

4. Array course control

4-1. Software Adjustments

Test Jig (GH80-03306A)



Test Cable (GH39-00499A)



Serial Cable(CSA LL64151-A)



Power Supply Cable



4-2. Software Downloading

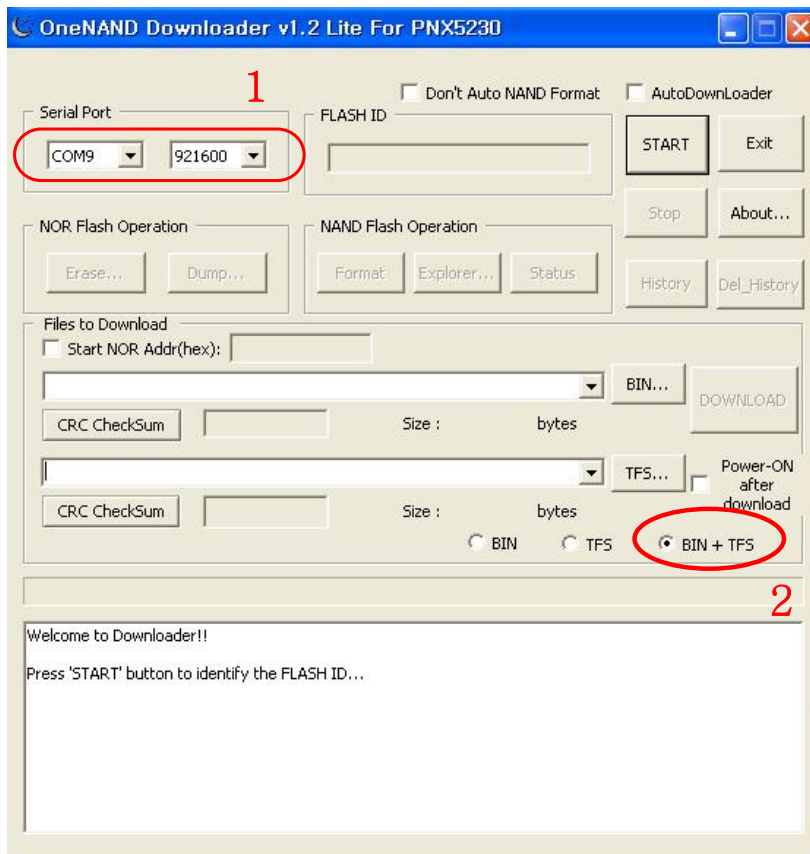
4-2-1. Pre-requisite for Downloading

- Downloader Program([OneNAND Downloder V1.2 Lite For PNX5230.exe](#))
- E250 Mobile Phone
- Data Cable
- Binary file, TFS file

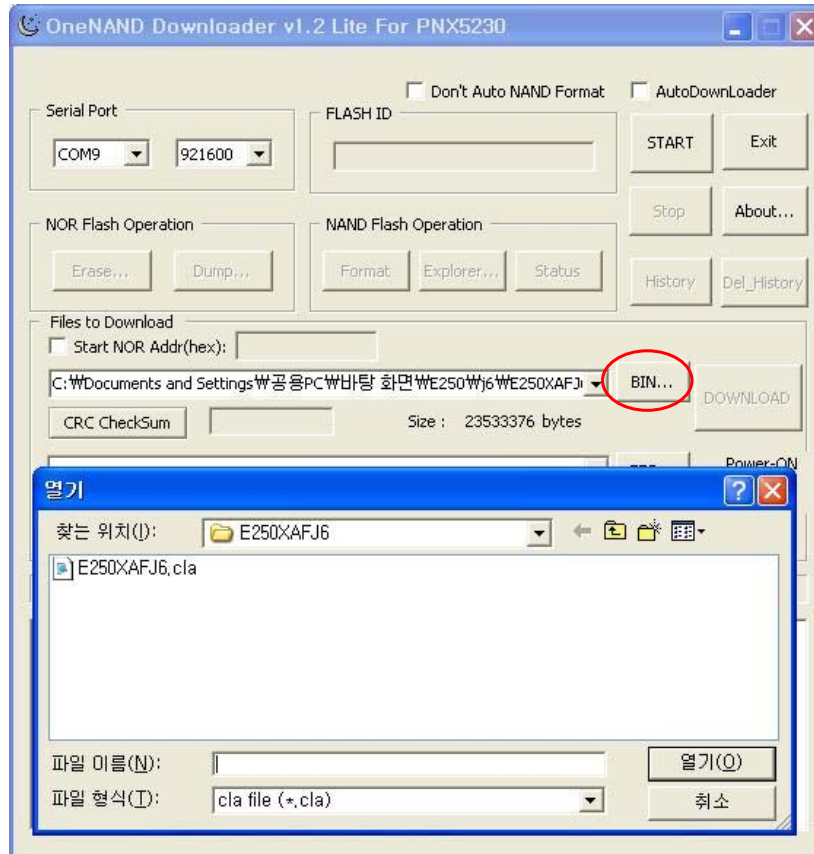
4-2-2. S/W Downloader Program

■ Load the binary download program by executing the ["OneNAND Downloder V1.2 Lite For PNX5230.exe"](#)

1. Select the connected serial port and the rate of speed
2. Select the check box, the mode you want to download.
 - if the binary file wanted, check only 'BIN'
 - if the tfs file wanted, check only 'TFS'
 - if all the files wanted, check 'BIN+TFS'

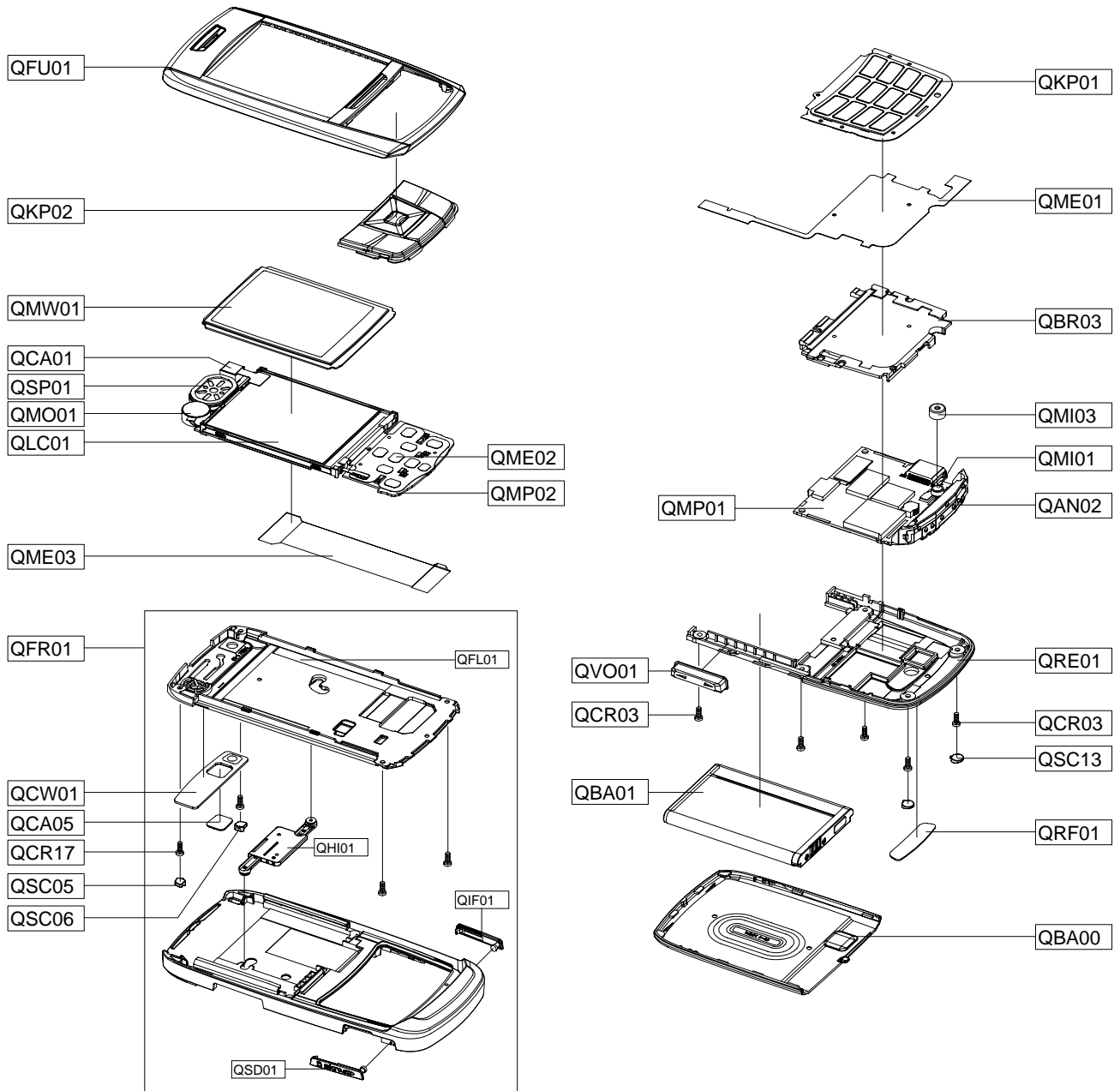


3. Select the file(s) what you want to download



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-SGH E250	GH42-00985A
QBA00		ASSY CASE-BATTERY	GH98-03586A
QBA01		INNER BATTERY PACK-750MAH,BLK,	GH43-02483A
QBR03		ASSY BRACKET-KEYPAD	GH98-02620A
QCA01		UNIT-CAMERA MODULE	GH59-03619A
QCA05		PMO-DECO MIRROR	GH72-34243A
QCR03		SCREW-MACHINE	6001-001811
QCR03		SCREW-MACHINE	6001-001811
QCR17		SCREW-MACHINE	6001-001460
QCW01		PCT-COVER WINDOW CAMERA	GH72-34247A
QFU01		ASSY CASE-SLIDE UPPER	GH98-02259A
QKP01		ASSY KEYPAD-MAIN(EU/SIL)	GH98-02264A
QKP02		ASSY KEYPAD-SUB(EU/SIL)	GH98-02263A
QME01		UNIT-KEY FPCB	GH59-03615A
QME03		MEA-SLIDE FPCBKIT	GH97-06873A
QMI01		MICROPHONE-ASSY	GH30-00309A
QMI03		RMO-RUBBER MIC	GH73-08308A
QMP01		PBA MAIN-SGH E250 MAIN	GH92-03188A
QRE01		ASSY CASE-REAR	GH98-02262A
QRF01		MPR-TAPE RF SHEET	GH74-27453A
QSC05		RMO-RUBBER SCREW SLIDE L	GH73-08309A
QSC06		RMO-RUBBER SCREW SLIDE R	GH73-08310A
QSC13		RMO-RUBBER SCREW REAR	GH73-08311A
QVO01		PMO-VOLUME KEY	GH72-34246A
QLC01		LCD-SGH E250 MODULE	GH07-01018A
QMW01		ASSY COVER-WINDOW MAIN	GH98-02619A
QSP01		SPEAKER	3001-002061
QMO01		MOTOR DC-SCHF509	GH31-00249A
QMP02		PBA SUB-SGH E250 PCB	GH92-03393A
	QME02	UNIT-METAL DOME	GH59-03617A
QFR01		ASSY CASE-F/C+S/L	GH98-02261A
	QFL01	ASSY CASE-SLIDE LOWER	GH98-02260A
	QHI01	ASSY HINGE-PUSH ROD	GH98-03165A
	QIF01	PMO-COVER IF	GH72-34244A
	QSD01	PMO-COVER M SD	GH72-34245A

Description	Sec Code
BAG PE	6902-000634
ADAPTOR-SGHE690,SIL,EU,A_TYPE	GH44-01361B
UNIT-20P,EARPHONE,SIL,B-TYPE	GH59-03848B
LABEL(P)-WATER SOAK	GH68-02026A
LABEL(P)-WATER SOAK	GH68-02026A
MANUAL USERS-XEG GERMAN	GH68-12415A
LABEL(R)-MAIN(EU)	GH68-12733A
BOX-UNIT(EU)	GH69-04558A
CUSHION-CASE(EU)	GH69-04565A
RMO-RUBBER SIM	GH73-08686A
MPR-BOHO VINYL MAIN WIN	GH74-16880A
MPR-INSU TAPE	GH74-27455A
MPR-INSU TAPE	GH74-27456A
MPR-ELEC TAPE	GH74-27457A
MPR-ELEC TAPE	GH74-27495A
MPR-TAPE LABEL	GH74-28874A
MPR-INSU TAPE	GH74-29298A
MPR-SPONGE	GH74-29496A
MPR-TAPE S UPPER	GH74-29611A
MPR-VINYL BOHOREAR	GH74-29677A
MPR-VINYL BOHO MAIN STA	GH74-29774A

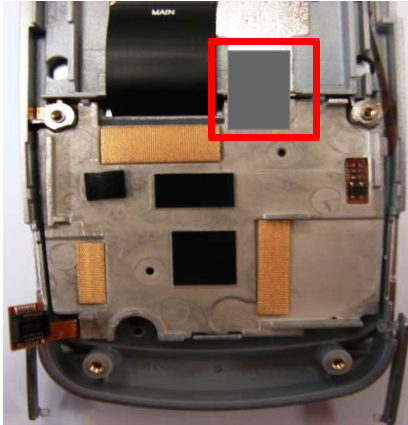
5-3. Disassembly and Assembly Instructions

— Disassembly

<div data-bbox="170 325 803 409" style="border: 1px solid black; padding: 5px;"> <p>1</p> <p>1) Remove the RF Sheet,SCREW Cover of rear 2) Unscrew 5 screws</p> </div> <div data-bbox="230 472 755 945"> </div>	<div data-bbox="836 325 1461 409" style="border: 1px solid black; padding: 5px;"> <p>2</p> <p>1) Remove the volume Key 2) Disassemble the connector</p> </div> <div data-bbox="1023 472 1372 945"> </div>
<p>1) Be careful of body damage and scrtch 2) Be careful of transforming the rear cover</p>	
<div data-bbox="170 1144 803 1270" style="border: 1px solid black; padding: 5px;"> <p>3</p> <p>1) Open the T-Flash, power cover 2) Lift main board 3) Detach the LCD Connector after slide down</p> </div> <div data-bbox="246 1333 803 1795"> </div>	<div data-bbox="836 1144 1461 1197" style="border: 1px solid black; padding: 5px;"> <p>4</p> <p>1) Separate board from the set</p> </div> <div data-bbox="1031 1312 1282 1585"> </div>
<p>1) Be careful of damaging F-PCB</p> <p>1) Be careful of damaging components</p>	

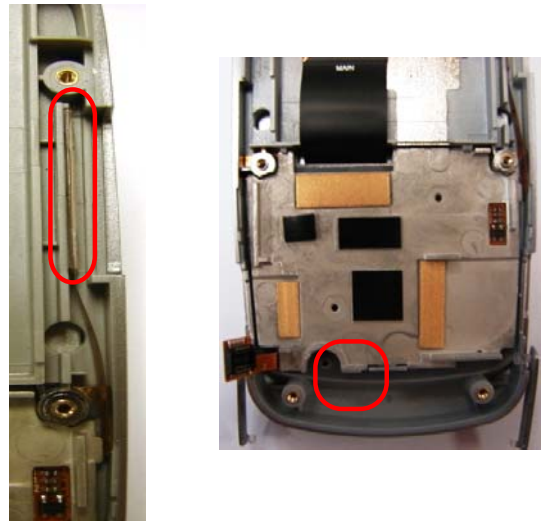
5

1) Remove the EMI tape



6

1) Detach the Volume Key Fpcb
2) Disassemble key-can from the point of the picture



1) Be careful of damaging FPCB detaching Volume Key Fpcb
2) Be careful of body damage and scratch

7

1) Disassemble the key-pad



8

1) Unscrew 2 screws



1) Be careful of body damage and scratch

<p>9</p> <p>1) Unscrew 4 screws 2) Disassemble the upper with a couple of thumbs pressing the point of picture</p> 	<p>10</p> <p>1) Match the hole of LOWER and FRONT holding up the slide 2) Draw out the FPCB from the hole</p> 
<p>1) Be careful of body damage and scrtch</p>	<p>1) Be careful of cutting wire 2) Be careful of body damage and scrtch</p>
<p>11</p> <p>1) Remove the tape covering FPCB Connector 2) Disassemble FPCB after lifting Connector</p> 	<p>12</p> <p>1) Disassemble Speaker, Motor 2) Remove the tape on the Camera Connector 3) Disassemble the Camera taking down the top of the camera</p> 
<p>1) Be careful of body damage and scrtch 2) Be careful of damaging F-PCB</p>	<p>1) Be careful of body damage and scrtch 2) Be careful of damaging camera F-PCB</p>

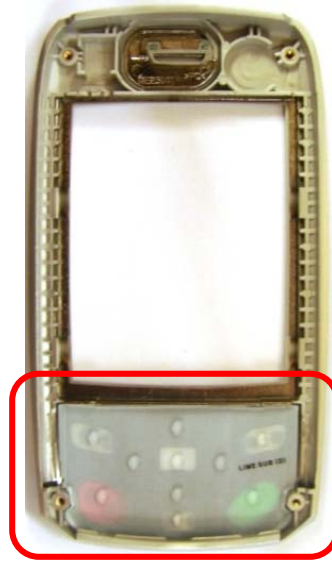
13

- 1) Disassemble from upper after lifting lightly the upside of the Sub PBA
- 2) Disassemble SPK, MOT, CAMERA



15

- 1) Disassemble Sub Key Pad



- 1) Be careful of body damage and scratch
- 2) Be careful of sticking between two sides tape and LCD

— Assembly

<div data-bbox="170 304 803 352" style="border: 1px solid black; padding: 2px;"> <p>1 1) Joint the Sub Key Pad</p> </div> <div data-bbox="332 415 665 972">  </div>	<div data-bbox="836 304 1461 472" style="border: 1px solid black; padding: 2px;"> <p>2 1) Assemble Sub PBA inserting the bottom of the board 2) Assemble CAMERA, SPK, MOT after inserting camera FPCB</p> </div> <div data-bbox="836 556 1461 840">  </div>
<p>1) Be careful of damaging CAMERA FPCB</p>	
<div data-bbox="170 1081 803 1171" style="border: 1px solid black; padding: 2px;"> <p>3 1) Insert FPCB(CON TO CON) 2) Attach conserving TAPE</p> </div> <div data-bbox="194 1218 787 1669">  </div>	<div data-bbox="836 1081 1461 1186" style="border: 1px solid black; padding: 2px;"> <p>4 1) Match the hole pulling down lightly the SLIDE ASSY like picture 2) Insert FPCB</p> </div> <div data-bbox="966 1197 1356 1753">  </div>
<p>1) Be careful of body damage and scratch 2) Be careful of damaging F-PCB</p>	<p>1) Be careful of damaging F-PCB</p>

7

- 1) Assemble SLIDE ASSY part
- 2) Assemble from the bottom side



1) Be careful of body damage and scrtch

8

- 1) Screw down 4 screws



1) Be careful of body damage and scrtch

7

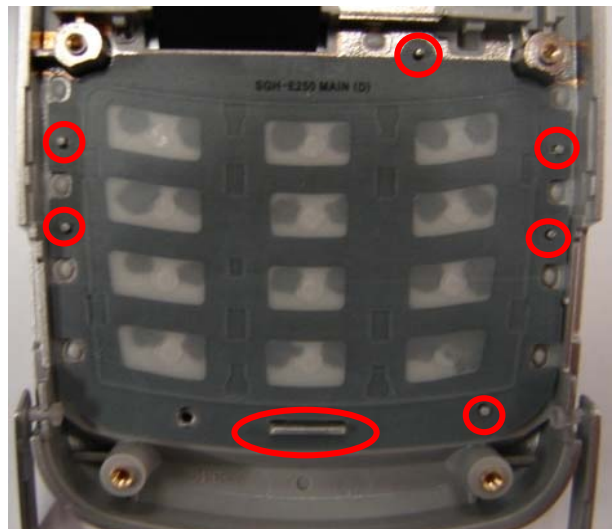
- 1) Insert both screw caps in each direction



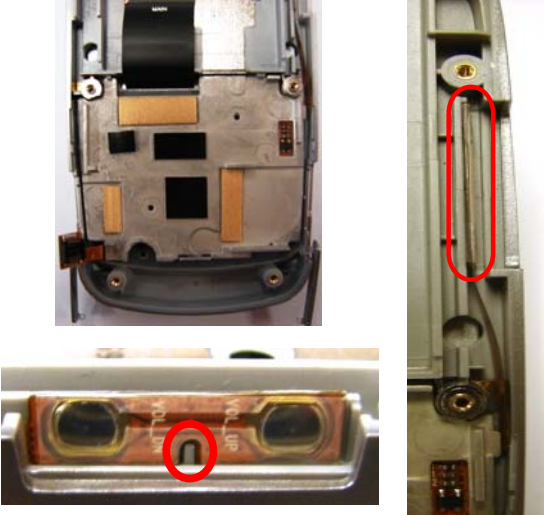
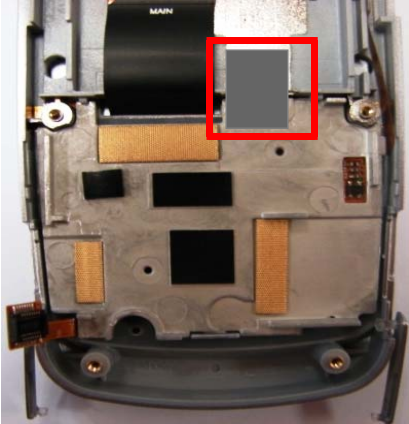
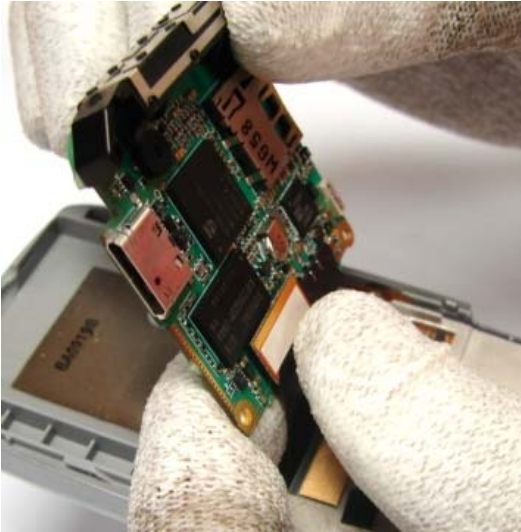

1) Be careful of body damage and scrtch

8

- 1) Assemble the key pad in FRONT

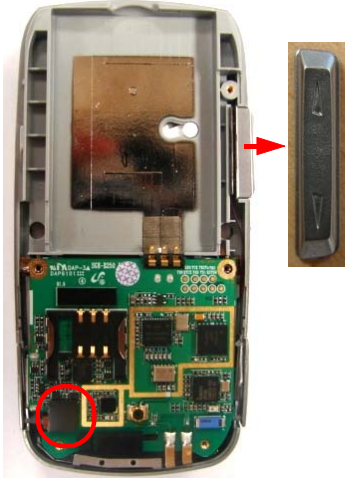


1) Check up the fitting between key pad and REAR

<p>9</p> <p>1) Assemble the key can 2) Check up the attaching FPCB in Volume Key side</p> 	<p>10</p> <p>1) Attach the EMI tape</p> 
<p>1) Be careful of damaging F-PCB</p>	<p>1) Check up whether tape color is same with SET color or not</p>
<p>11</p> <p>1) Assemble the FPCB with main board</p> 	<p>12</p> <p>1) Open the T-Flash, Power Cover 2) Assemble the main board</p> 
<p>1) Be careful of damaging BGA components</p>	<p>1) Be careful of body damage and scratch</p>

13

- 1) Insert the Volumn Key
- 2) Assemble the Key Connector



14

- 1) Screw down 5screws
- 2) Attach RF Sheet,SCREW Cover of rear



1) Be careful of damaging BGA components

1) Be careful of body damage and scrtch

6. MAIN Electrical Parts List

Design LOC	Description	SEC Code	STATUS
ANT600	ANTENNA-CHIP	4202-001031	SA
BAT400	BATTERY-LI(2ND)	4302-001181	SA
BTC600	HEADER-BATTERY	3711-006217	SA
C100	C-CER,CHIP	2203-005050	SA
C101	C-CER,CHIP	2203-005234	SA
C102	C-CER,CHIP	2203-005234	SA
C103	C-CER,CHIP	2203-000233	SA
C104	C-CER,CHIP	2203-005234	SA
C105	C-CER,CHIP	2203-005234	SA
C106	C-CER,CHIP	2203-000233	SA
C107	C-CER,CHIP	2203-000233	SA
C108	C-CER,CHIP	2203-005234	SA
C109	C-CER,CHIP	2203-005234	SA
C112	C-CER,CHIP	2203-005552	SA
C114	C-CER,CHIP	2203-000233	SA
C115	C-CER,CHIP	2203-000233	SA
C116	C-CER,CHIP	2203-000233	SA
C117	C-CER,CHIP	2203-000278	SA
C118	C-CER,CHIP	2203-005482	SA
C119	C-CER,CHIP	2203-000812	SA
C123	C-CER,CHIP	2203-005061	SA
C125	C-CER,CHIP	2203-001221	SA
C126	C-CER,CHIP	2203-005061	SA
C128	C-CER,CHIP	2203-000233	SA
C131	C-CER,CHIP	2203-000233	SA
C201	C-CER,CHIP	2203-005482	SA
C202	C-CER,CHIP	2203-000812	SA
C203	C-CER,CHIP	2203-005482	SA
C204	C-CER,CHIP	2203-005482	SA
C205	C-CER,CHIP	2203-005482	SA
C206	C-CER,CHIP	2203-005482	SA
C208	C-CER,CHIP	2203-005482	SA
C209	C-CER,CHIP	2203-005482	SA
C210	C-CER,CHIP	2203-006562	SA
C211	C-CER,CHIP	2203-000254	SA
C212	C-CER,CHIP	2203-005482	SA
C213	C-CER,CHIP	2203-000812	SA
C214	C-CER,CHIP	2203-005482	SA
C215	C-CER,CHIP	2203-000425	SA
C216	C-CER,CHIP	2203-006208	SA
C221	C-CER,CHIP	2203-005482	SA
C222	C-CER,CHIP	2203-000425	SA
C301	C-CER,CHIP	2203-006423	SA
C302	C-CER,CHIP	2203-006423	SA
C303	C-CER,CHIP	2203-006562	SA
C304	C-CER,CHIP	2203-006208	SA
C306	C-CER,CHIP	2203-006562	SA
C307	C-CER,CHIP	2203-005482	SA
C308	C-CER,CHIP	2203-006562	SA
C309	C-CER,CHIP	2203-005482	SA
C310	C-CER,CHIP	2203-000233	SA
C312	C-CER,CHIP	2203-005482	SA
C316	C-CER,CHIP	2203-006562	SA

Design LOC	Description	SEC Code	STATUS
C317	C-CER,CHIP	2203-005482	SA
C318	C-CER,CHIP	2203-005482	SA
C319	C-CER,CHIP	2203-006838	SA
C320	C-CER,CHIP	2203-005050	SA
C321	C-CER,CHIP	2203-006838	SA
C322	C-CER,CHIP	2203-000278	SA
C323	C-CER,CHIP	2203-000233	SA
C324	C-CER,CHIP	2203-006842	SA
C325	C-CER,CHIP	2203-000278	SA
C326	C-CER,CHIP	2203-000278	SA
C327	C-CER,CHIP	2203-000233	SA
C400	C-CER,CHIP	2203-006257	SA
C401	C-CER,CHIP	2203-006562	SA
C403	C-CER,CHIP	2203-006562	SA
C404	C-CER,CHIP	2203-006208	SA
C405	C-CER,CHIP	2203-006257	SA
C407	C-CER,CHIP	2203-006257	SA
C409	C-CER,CHIP	2203-006208	SA
C410	C-CER,CHIP	2203-006208	SA
C411	C-CER,CHIP	2203-006257	SA
C412	C-CER,CHIP	2203-005736	SA
C413	C-CER,CHIP	2203-006257	SA
C414	C-CER,CHIP	2203-006562	SA
C415	C-CER,CHIP	2203-006562	SA
C416	C-CER,CHIP	2203-000550	SA
C417	C-CER,CHIP	2203-000550	SA
C420	C-CER,CHIP	2203-006257	SA
C421	C-CER,CHIP	2203-006324	SA
C422	C-CER,CHIP	2203-006423	SA
C423	C-CER,CHIP	2203-006562	SA
C424	C-CER,CHIP	2203-006562	SA
C425	C-CER,CHIP	2203-006361	SA
C426	C-CER,CHIP	2203-006361	SA
C427	C-CER,CHIP	2203-006208	SA
C428	C-CER,CHIP	2203-005482	SA
C429	C-CER,CHIP	2203-006562	SA
C430	C-CER,CHIP	2203-006562	SA
C431	C-CER,CHIP	2203-006562	SA
C432	C-CER,CHIP	2203-006825	SA
C501	C-CER,CHIP	2203-000254	SA
C502	C-CER,CHIP	2203-005482	SA
C503	C-CER,CHIP	2203-006260	SA
C504	C-CER,CHIP	2203-006562	SA
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C506	C-CER,CHIP	2203-006562	SA
C511	C-CER,CHIP	2203-005395	SA
C512	C-CER,CHIP	2203-005395	SA
C513	C-CER,CHIP	2203-005482	SA
C514	C-CER,CHIP	2203-005482	SA
C515	C-CER,CHIP	2203-000679	SA
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C518	C-CER,CHIP	2203-000330	SA

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C531	C-CER,CHIP	2203-005482	SA
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C533	C-CER,CHIP	2203-006423	SA
C534	C-CER,CHIP	2203-006260	SA
C535	C-CER,CHIP	2203-006260	SA
C536	C-CER,CHIP	2203-006048	SA
C537	C-CER,CHIP	2203-000995	SA
C538	C-CER,CHIP	2203-000679	SA
C539	C-CER,CHIP	2203-000359	SA
C540	C-CER,CHIP	2203-000278	SA
C541	C-CER,CHIP	2203-000386	SA
C542	C-CER,CHIP	2203-000386	SA
C543	C-CER,CHIP	2203-003054	SA
C544	C-CER,CHIP	2203-000278	SA
C545	C-CER,CHIP	2203-005444	SA
C546	C-CER,CHIP	2203-000278	SA
C547	C-CER,CHIP	2203-005393	SA
C548	C-CER,CHIP	2203-001259	SA
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C550	C-CER,CHIP	2203-005393	SA
C551	C-CER,CHIP	2203-000278	SA
C601	C-CER,CHIP	2203-006423	SA
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C610	C-CER,CHIP	2203-006562	SA
C611	C-CER,CHIP	2203-006562	SA
C612	C-CER,CHIP	2203-005682	SA
C613	C-CER,CHIP	2203-005682	SA
C614	C-CER,CHIP	2203-006208	SA
CD600	CONNECTOR-CARD EDGE	3709-001344	SA
CN205	CONNECTOR-COAXIAL	3705-001358	SA
F100	DUPLEXER-FEM	2911-000054	SA
F400	FILTER-LC	2909-001279	SA
F500	FILTER-EMI/ESD	2901-001376	SA
F602	FILTER-EMI/ESD	2901-001370	SA
F603	FILTER-EMI/ESD	2901-001370	SA
F604	FILTER-EMI/ESD	2901-001376	SA
HDC600	HEADER-BOARD TO BOARD	3711-005747	SA
HEA300	HEADER-BOARD TO BOARD	3711-005578	SA
IFC500	SOCKET-INTERFACE	3710-002306	SA
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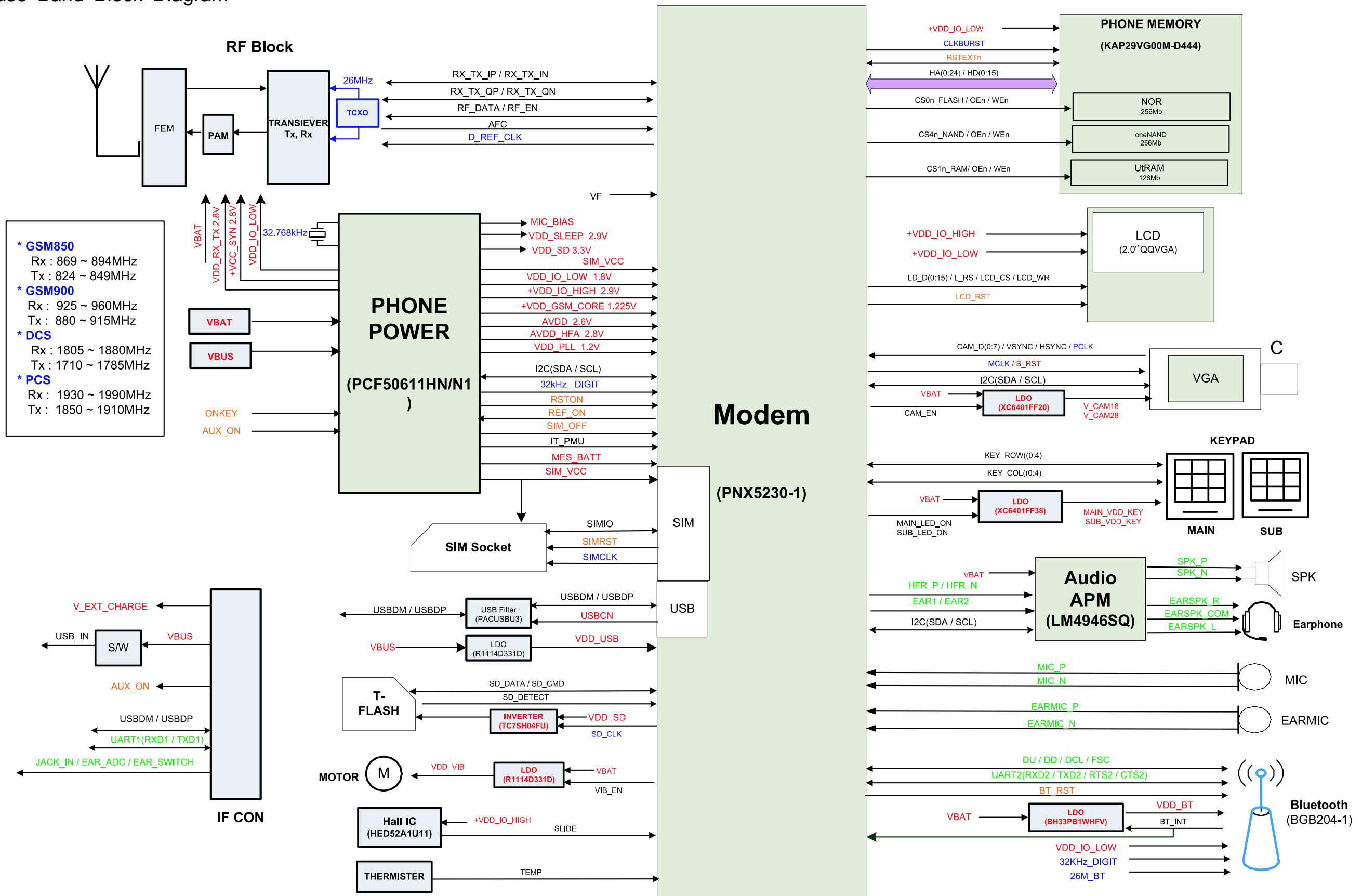
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L300	C-CER,CHIP	2203-006286	SA
L303	BEAD-SMD	3301-001659	SA
L400	INDUCTOR-SMD	2703-003113	SA
L500	BEAD-SMD	3301-001729	SA
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L505	INDUCTOR-SMD	2703-001285	SA
L506	INDUCTOR-SMD	2703-001673	SA
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L509	BEAD-SMD	3301-001729	SA
OSC100	CRYSTAL-SMD	2801-004587	SA
OSC1001	CRYSTAL-SMD	2801-004506	SA
OSC400	CRYSTAL-SMD	2801-004339	SA
Q600	FET-SILICON	0505-001518	SA
R101	R-CHIP	2007-001313	SA
R103	R-CHIP	2007-000140	SA
R201	R-CHIP	2007-000143	SA
R202	R-CHIP	2007-000171	SA
R204	R-CHIP	2007-000171	SA
R205	R-CHIP	2007-000148	SA
R206	R-CHIP	2007-002796	SA
R209	R-CHIP	2007-000140	SA
R212	R-CHIP	2007-000170	SA
R213	R-CHIP	2007-000148	SA
R214	R-CHIP	2007-000170	SA
R215	R-CHIP	2007-001319	SA
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R218	R-CHIP	2007-000758	SA
R221	R-CHIP	2007-000171	SA
R223	R-CHIP	2007-000758	SA
R225	R-CHIP	2007-000171	SA
R227	R-CHIP	2007-000171	SA
R301	R-CHIP	2007-000162	SA
R302	R-CHIP	2007-008055	SA
R303	R-CHIP	2007-000171	SA
R304	R-CHIP	2007-000171	SA
R306	R-CHIP	2007-000171	SA
R307	R-CHIP	2007-001333	SA
R308	R-CHIP	2007-001303	SA
R309	R-CHIP	2007-007014	SA
R311	R-CHIP	2007-007014	SA
R312	R-CHIP	2007-000170	SA
R313	R-CHIP	2007-007489	SA
R317	R-CHIP	2007-000171	SA
R318	R-CHIP	2007-000171	SA
R321	R-CHIP	2007-000171	SA
R322	R-CHIP	2007-000148	SA
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R407	R-CHIP	2007-009157	SA
R408	R-CHIP	2007-008542	SA
R409	R-CHIP	2007-008542	SA
R410	R-CHIP	2007-007100	SA
R411	R-CHIP	2007-007311	SA
R412	R-CHIP	2007-008542	SA
R413	R-CHIP	2007-007317	SA
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R416	R-CHIP	2007-000758	SA
R418	R-CHIP	2007-007107	SA
R419	R-CHIP	2007-007142	SA
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R502	R-CHIP	2007-007334	SA
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R524	R-CHIP	2007-003001	SA
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R529	R-CHIP	2007-001333	SA
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R602	R-CHIP	2007-007107	SA
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R613	R-CHIP	2007-000162	SA
R614	R-CHIP	2007-001333	SA
R615	R-CHIP	2007-000148	SA
R617	R-CHIP	2007-001333	SA
R619	R-CHIP	2007-007528	SA
SIM400	CONNECTOR-CARD EDGE	3709-001400	SA
TA100	C-TA,CHIP	2404-001474	SA
TA400	C-TA,CHIP	2404-001430	SA

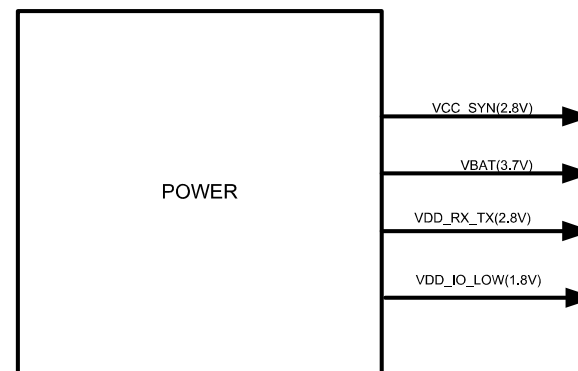
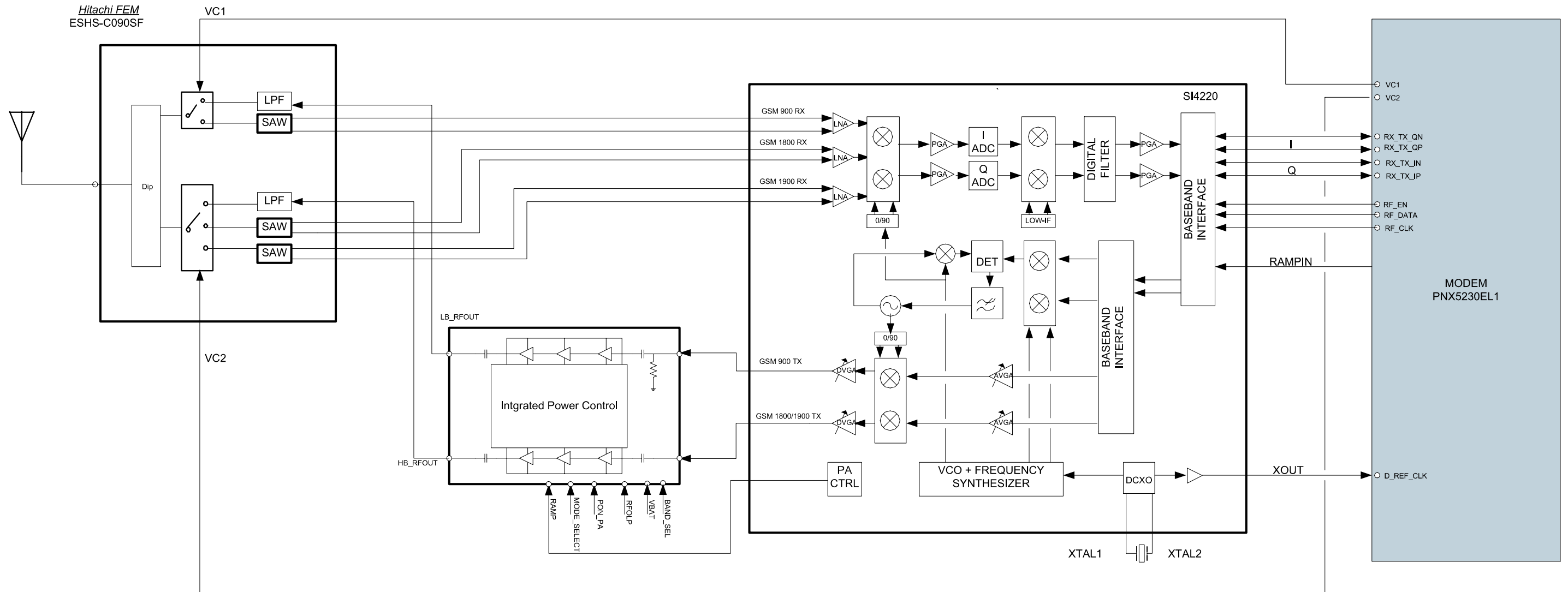
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TA502	C-TA,CHIP	2404-001381	SA
TA503	C-TA,CHIP	2404-001226	SA
TA504	C-TA,CHIP	2404-001474	SA
U102	IC-TRANSCIEVER	1205-003093	SA
U103	IC-POWER AMP	1201-002423	SA
U1109	IC-TRANSCIEVER	1205-002942	SA
U1111	C-CER,CHIP	2203-006257	SA
U1112	C-CER,CHIP	2203-006562	SA
U1125	R-CHIP	2007-000171	SA
U1126	R-CHIP	2007-000171	SA
U1127	R-CHIP	2007-000148	SA
U1130	R-CHIP	2007-000162	SA
U1131	C-CER,CHIP	2203-000386	SA
U1132	C-CER,CHIP	2203-005050	SA
U1133	C-CER,CHIP	2203-005444	SA
U202	FILTER-EMI SMD	2901-001316	SA
U300	IC ASIC-SGHE420	GH13-00042A	SA
U301	IC-CMOS LOGIC	0801-002237	SA
U302	IC-CMOS LOGIC	0801-002237	SA
U402	IC-POSI.FIXED REG.	1203-003737	SA
U403	IC-POWER SUPERVISOR	1203-004382	SA
U404	IC-POSI.FIXED REG.	1203-003737	SA
U500	IC-AUDIO AMP	1201-002492	SA
U501	IC-DEMODULATOR	1204-002688	SA
U503	IC-ANALOG SWITCH	1001-001231	SA
U504	IC-ANALOG SWITCH	1001-001231	SA
U601	C-CER,CHIP	2203-006423	SA
U905	IC-POSI.FIXED REG.	1203-003737	SA
U906	IC-POSI.FIXED REG.	1203-003737	SA
UCP200	IC-COMM. CONTROLLER	1205-003082	SA
UME301	IC-MCP	1108-000080	SA
VR600	THERMISTOR-NTC	1404-001221	SA
ZD301	DIODE-TVS	0406-001190	SA
ZD302	DIODE-TVS	0406-001190	SA
ZD401	DIODE-ZENER	0403-001547	SA
ZD500	DIODE-TVS	0406-001208	SA
ZD501	DIODE-TVS	0406-001254	SA
ZD502	DIODE-TVS	0406-001254	SA
ZD505	DIODE-TVS	0406-001254	SA
ZD506	DIODE-TVS	0406-001254	SA
ZD600	DIODE-TVS	0406-001201	SA
ZD601	DIODE-TVS	0406-001200	SA

7. Block Diagrams

7-1. Base Band Block Diagram

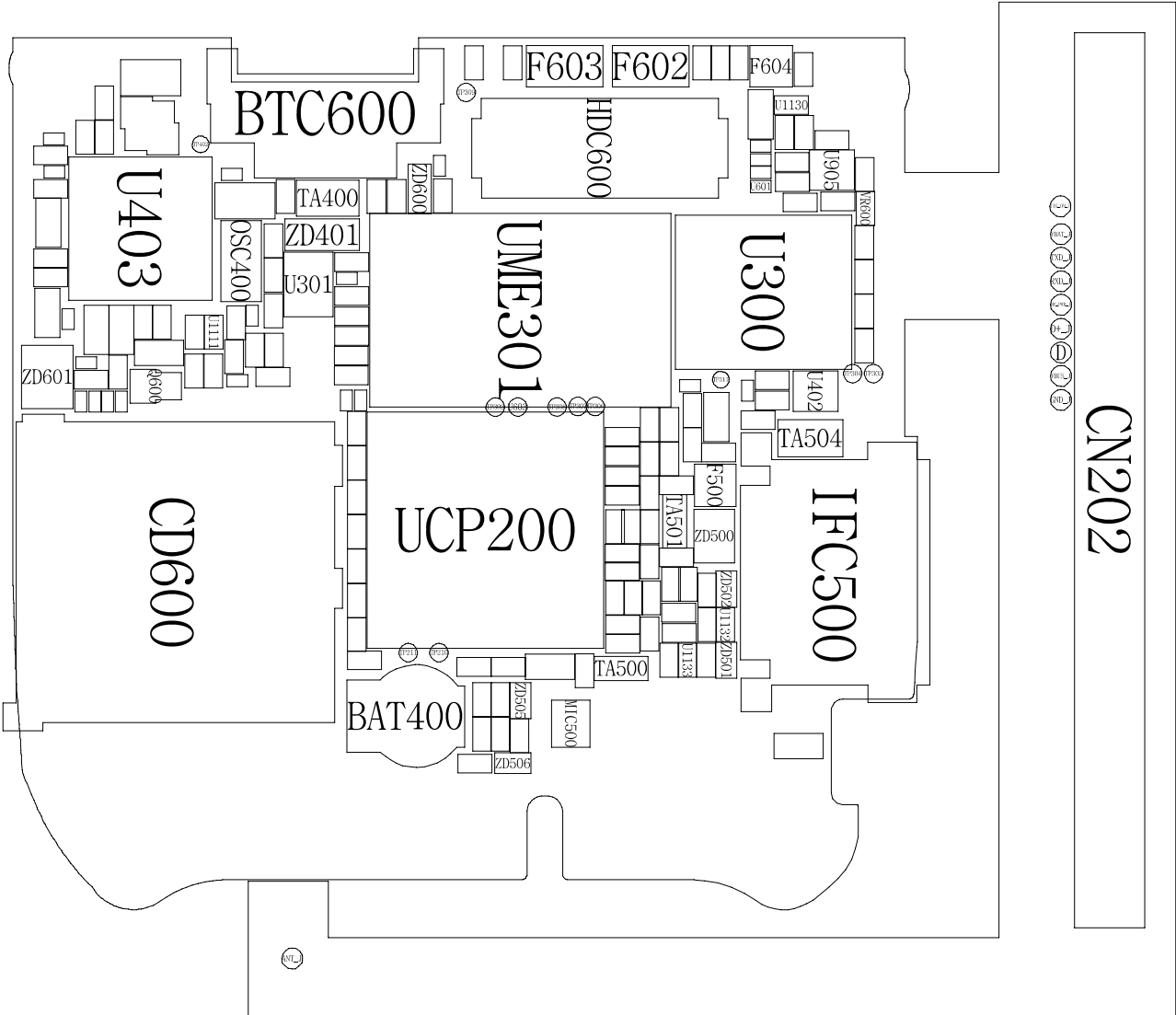


7-2. RF Block Diagram

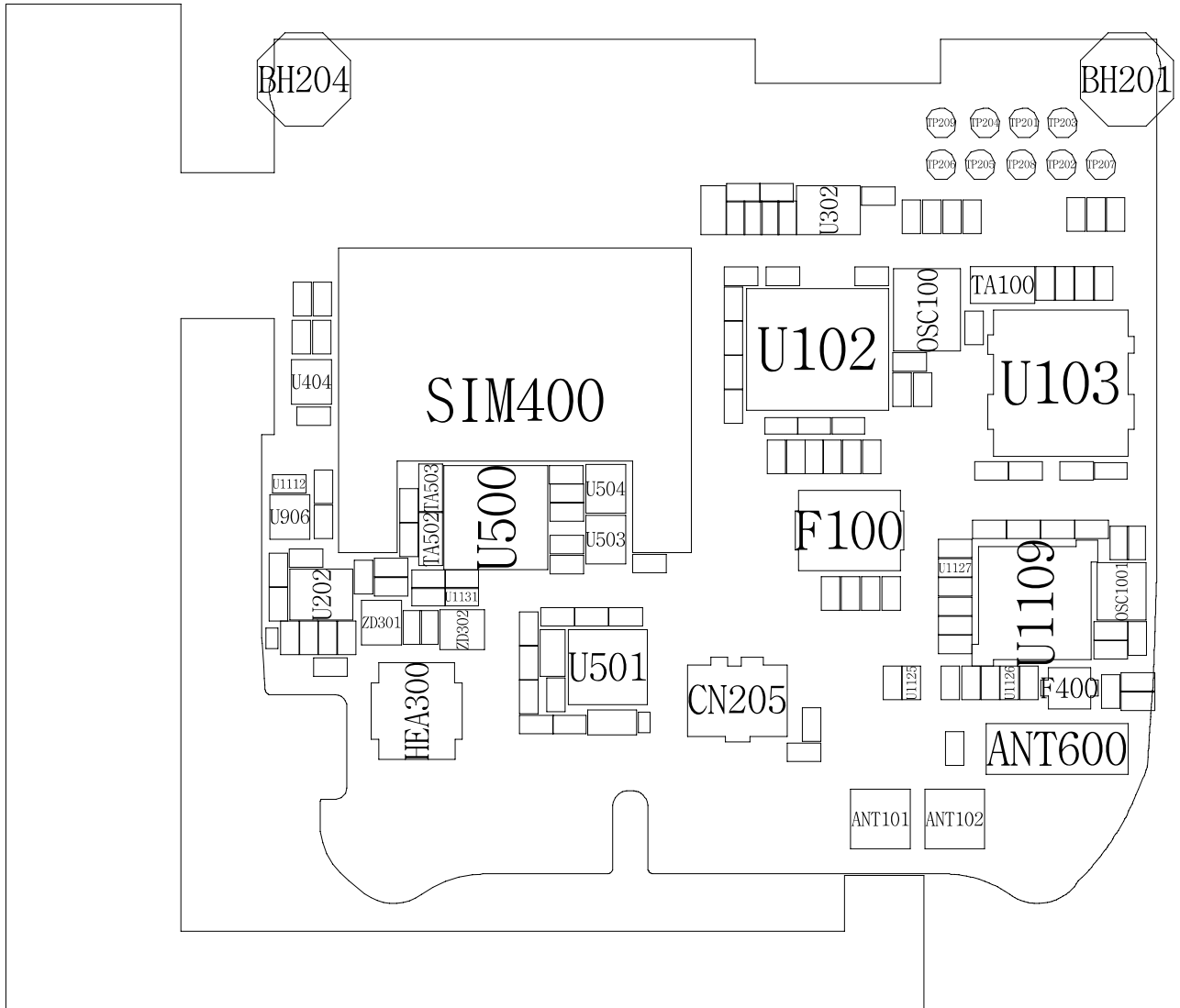


8. PCB Diagrams

Top

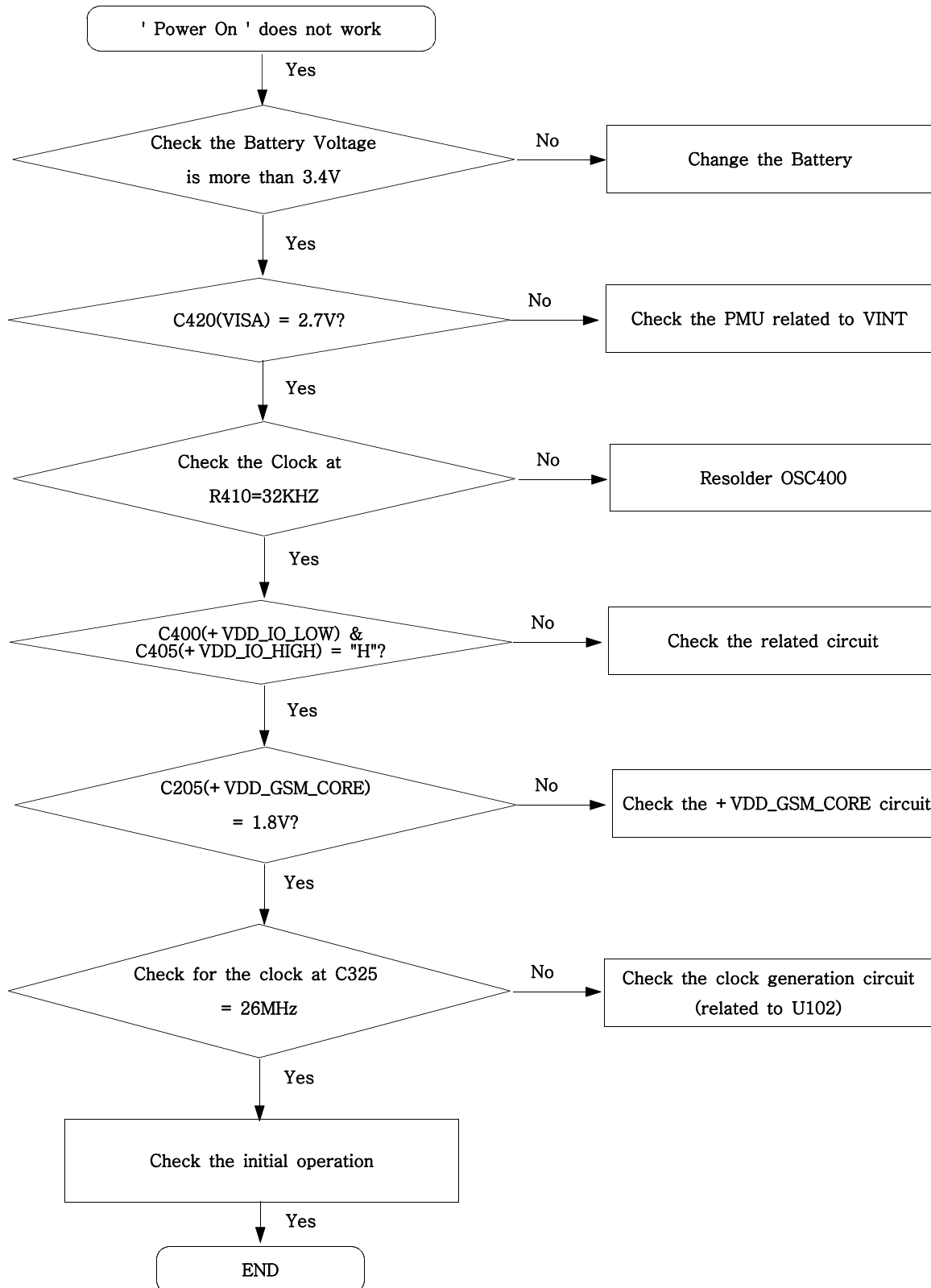


Bottom

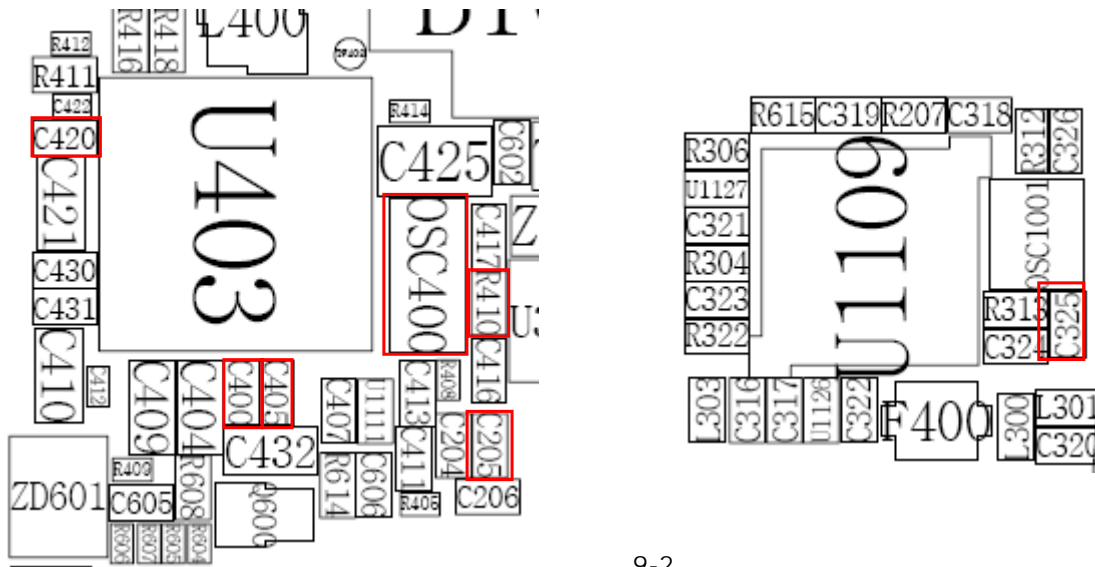
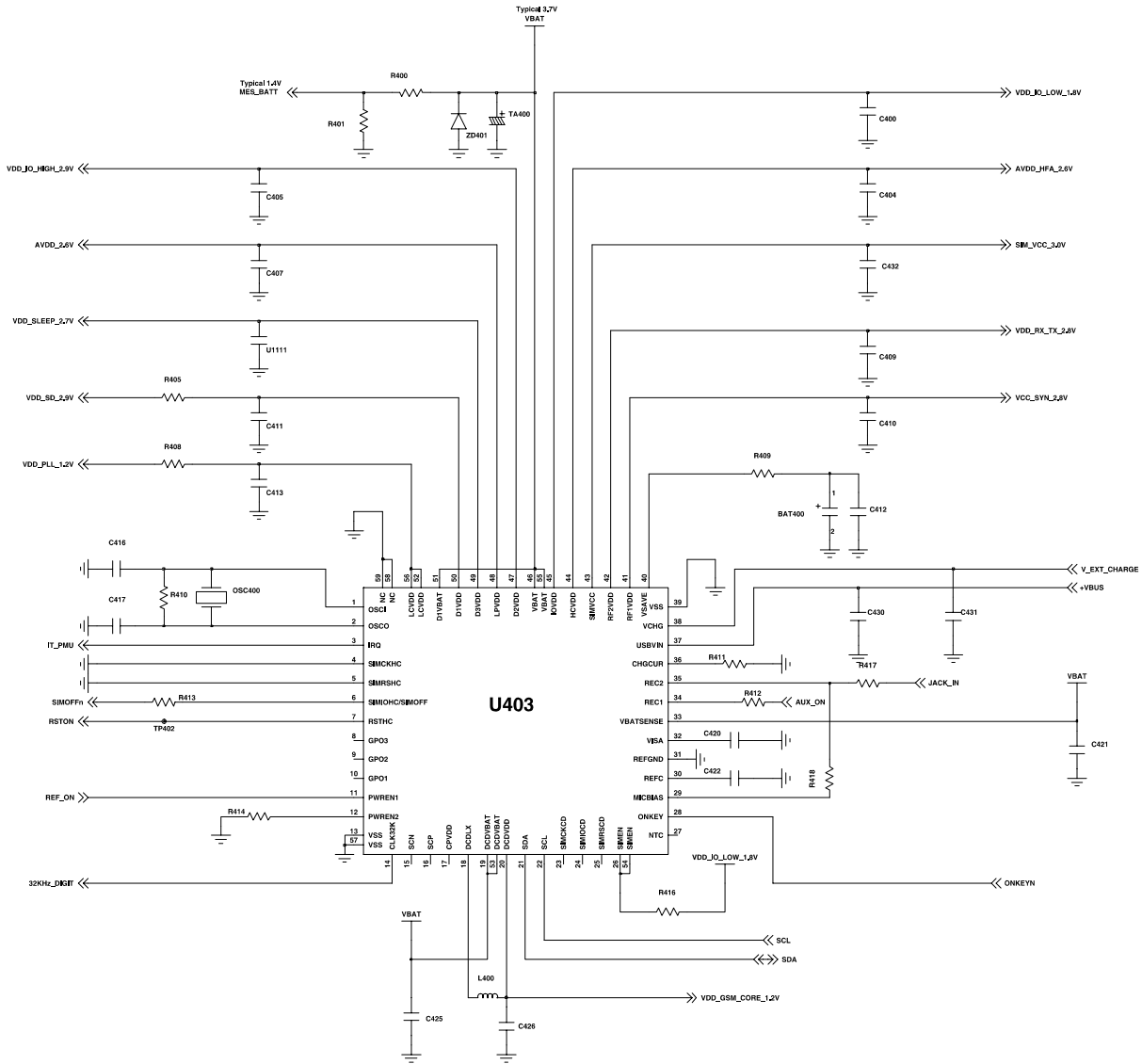


9. Flow Chart of Troubleshooting

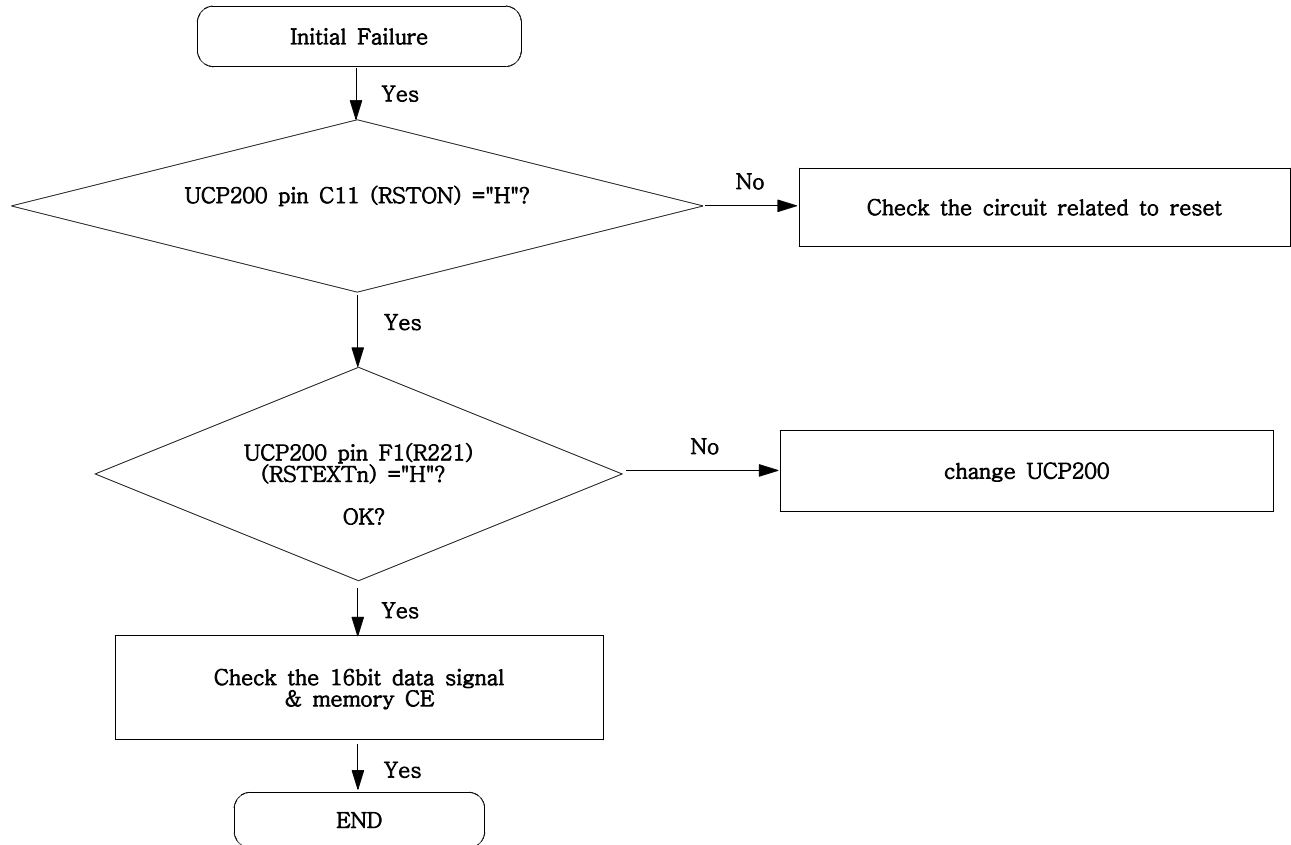
9-1. Power On



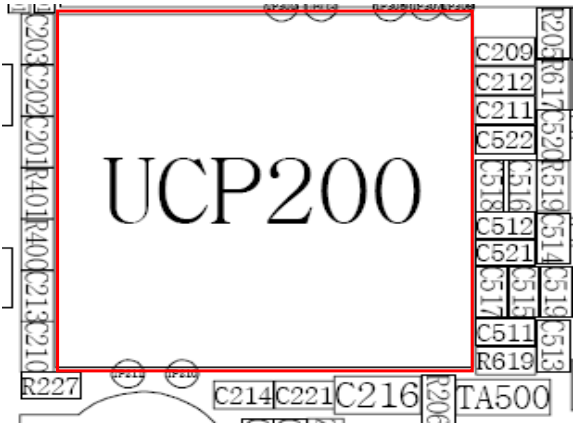
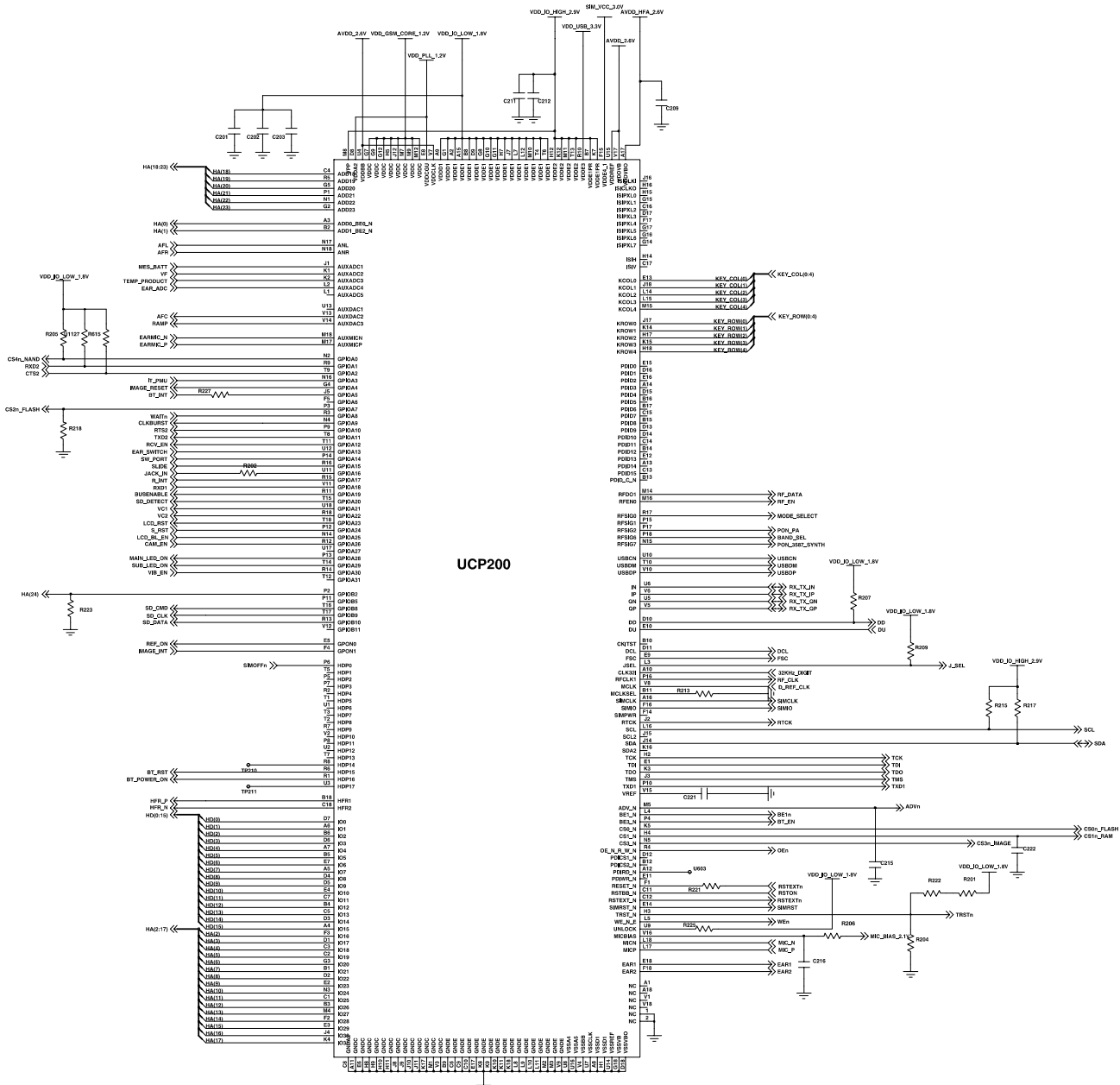
Flow Chart of Troubleshooting



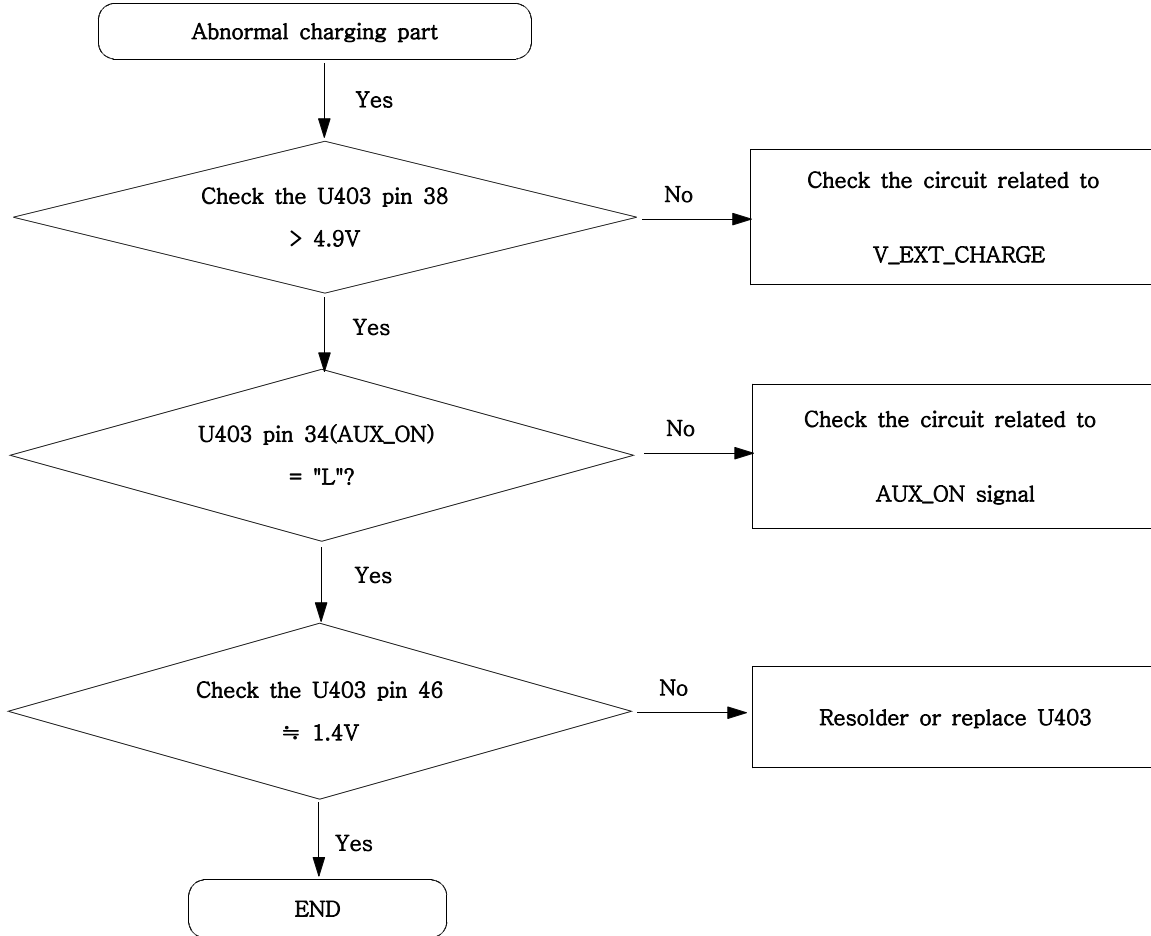
9-2. Initial



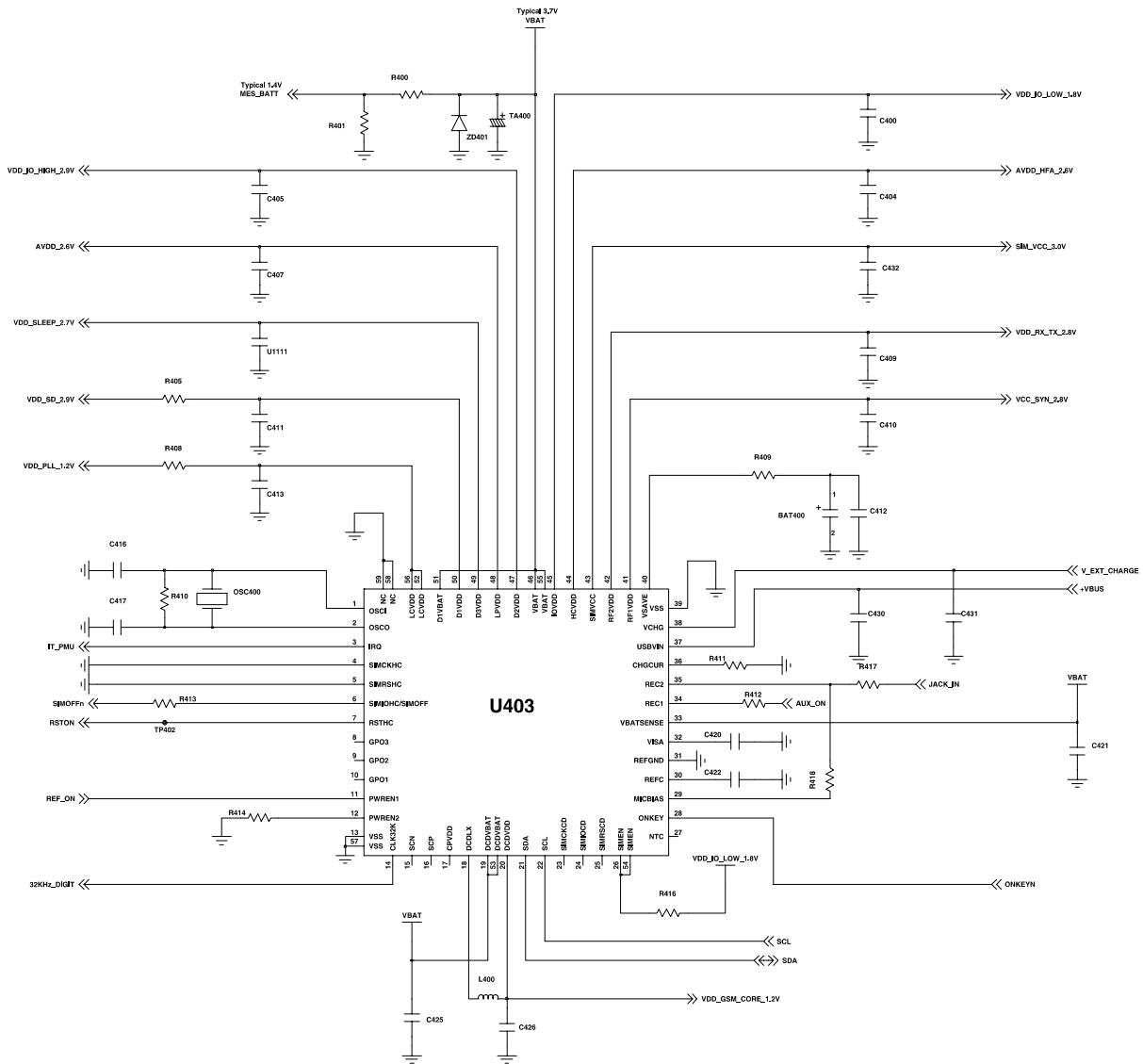
Flow Chart of Troubleshooting



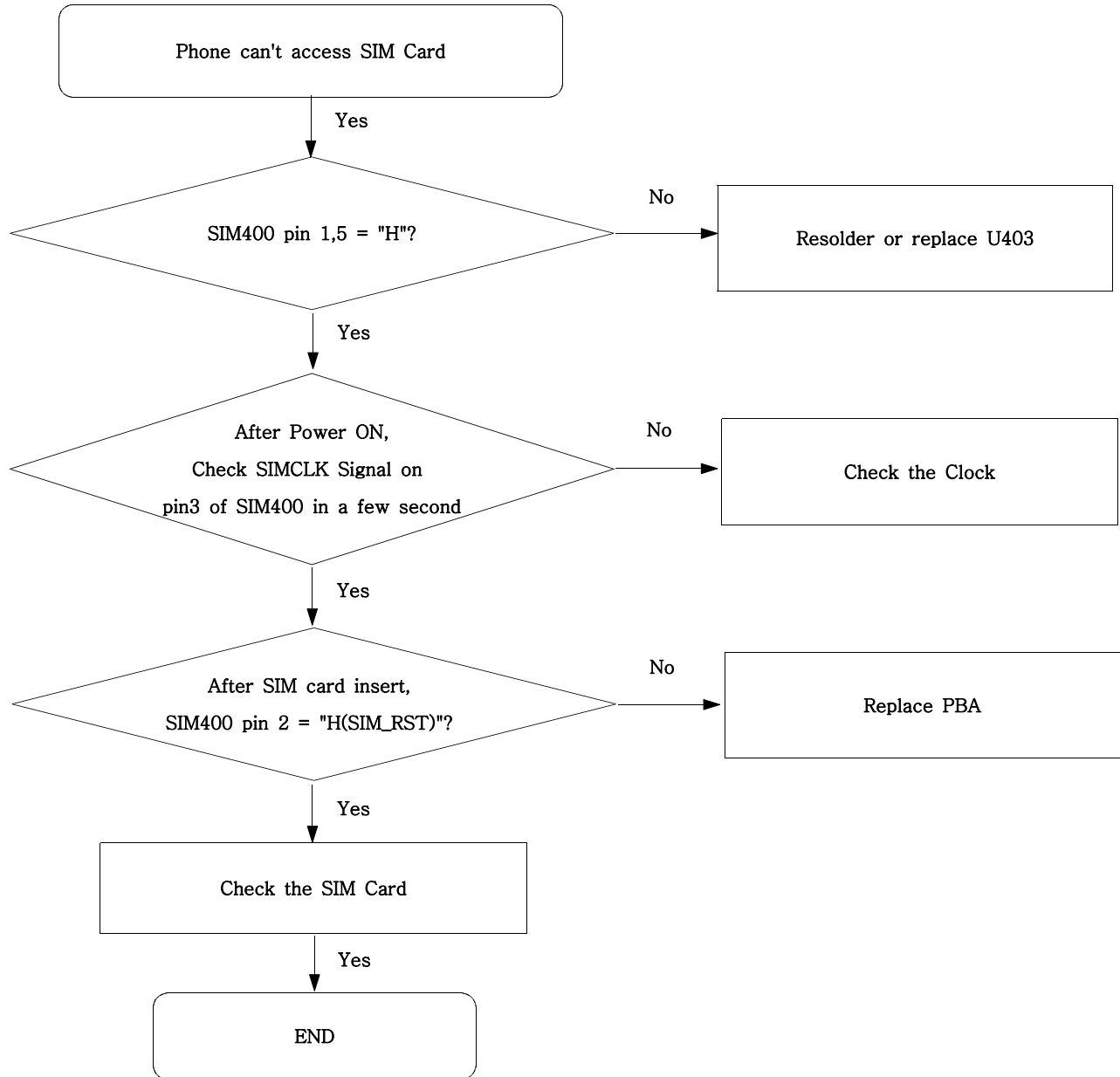
9-3. Charging Part

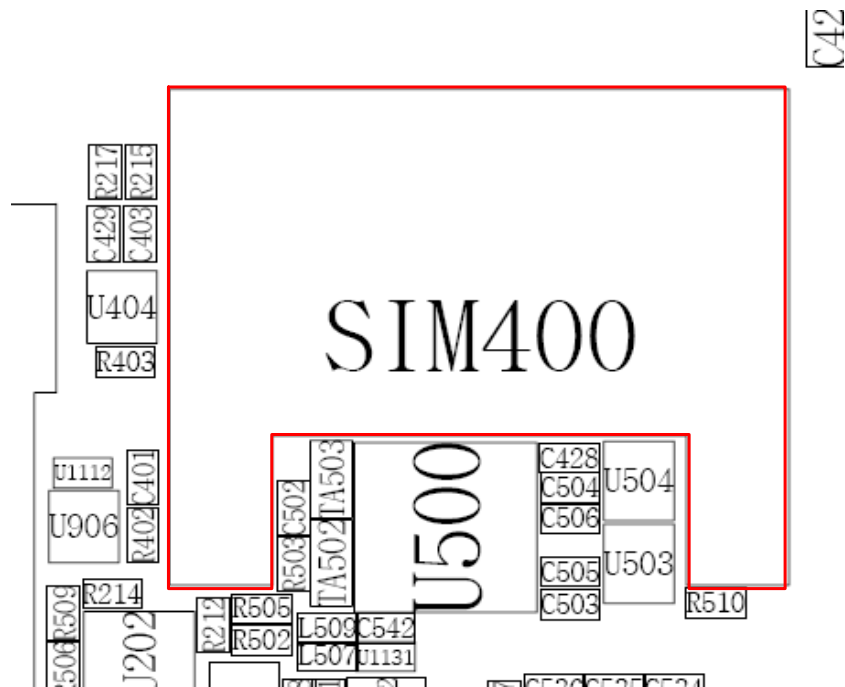
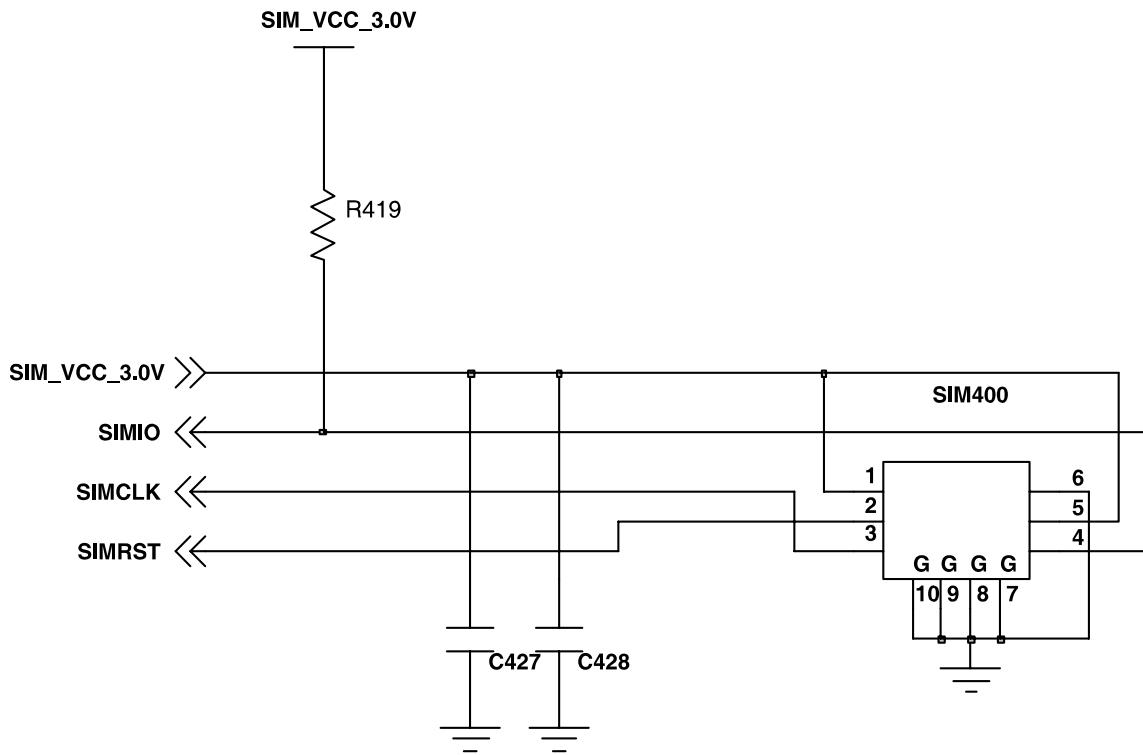


Flow Chart of Troubleshooting

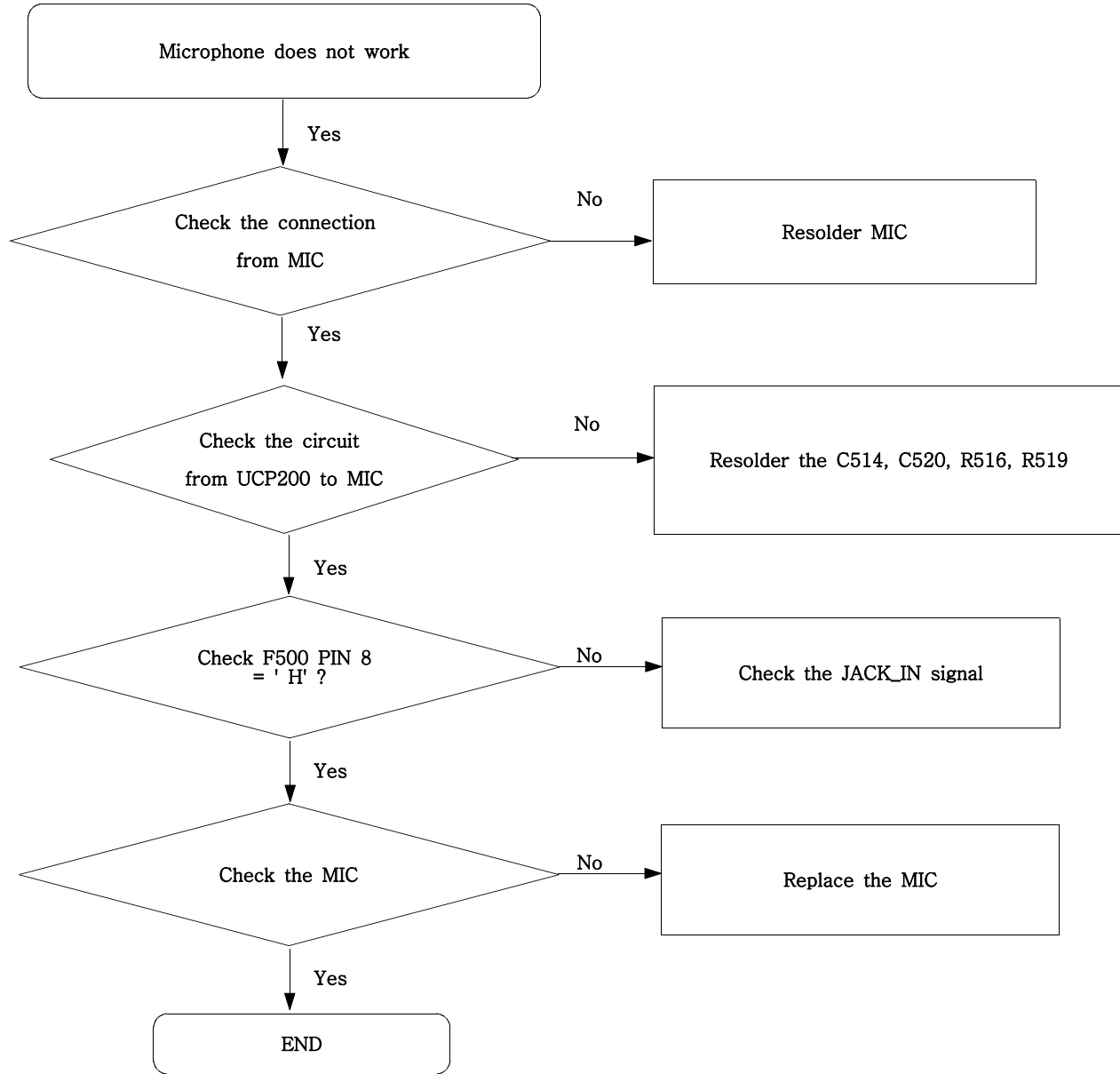


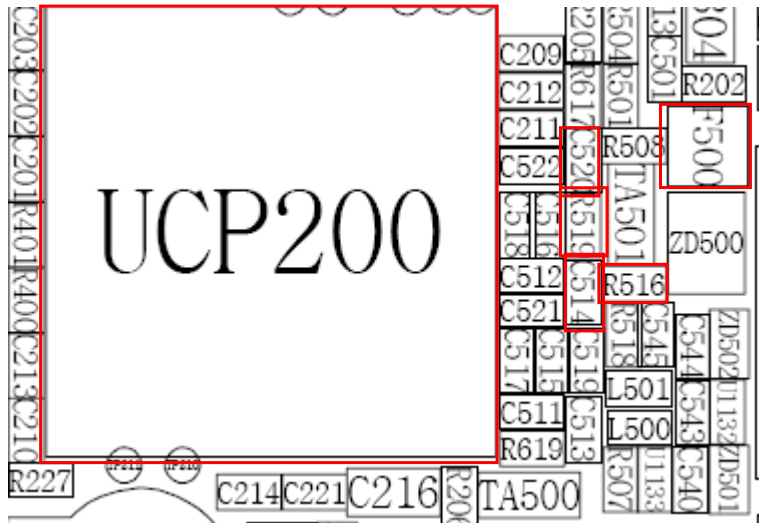
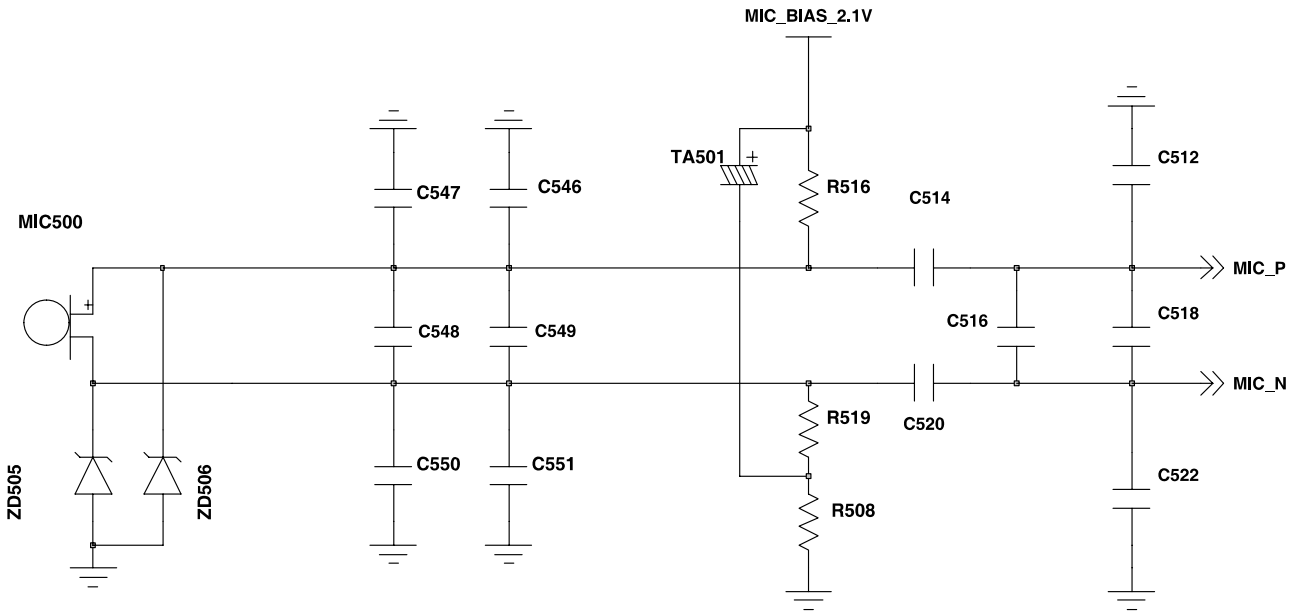
9-4. Sim Part



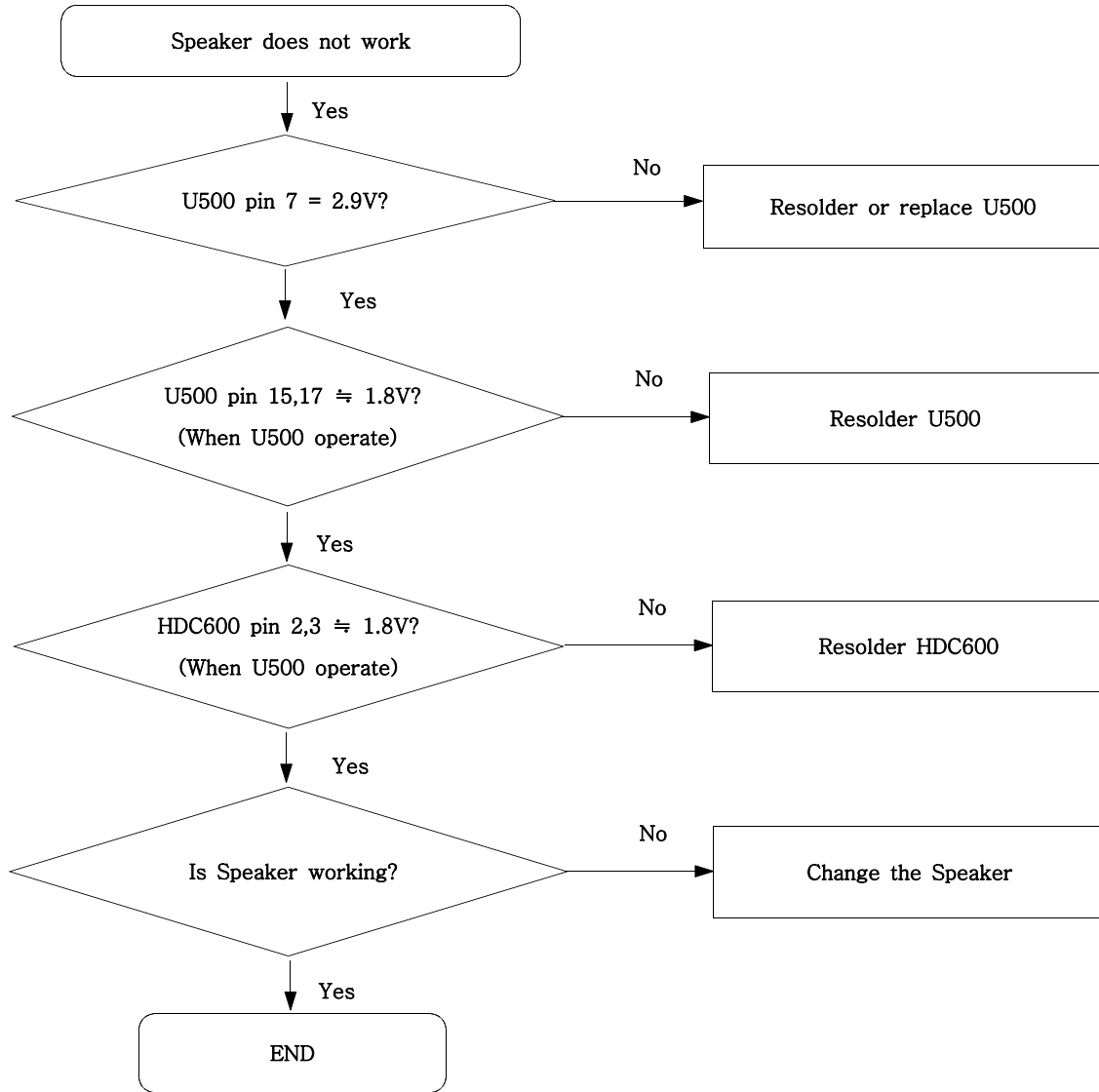


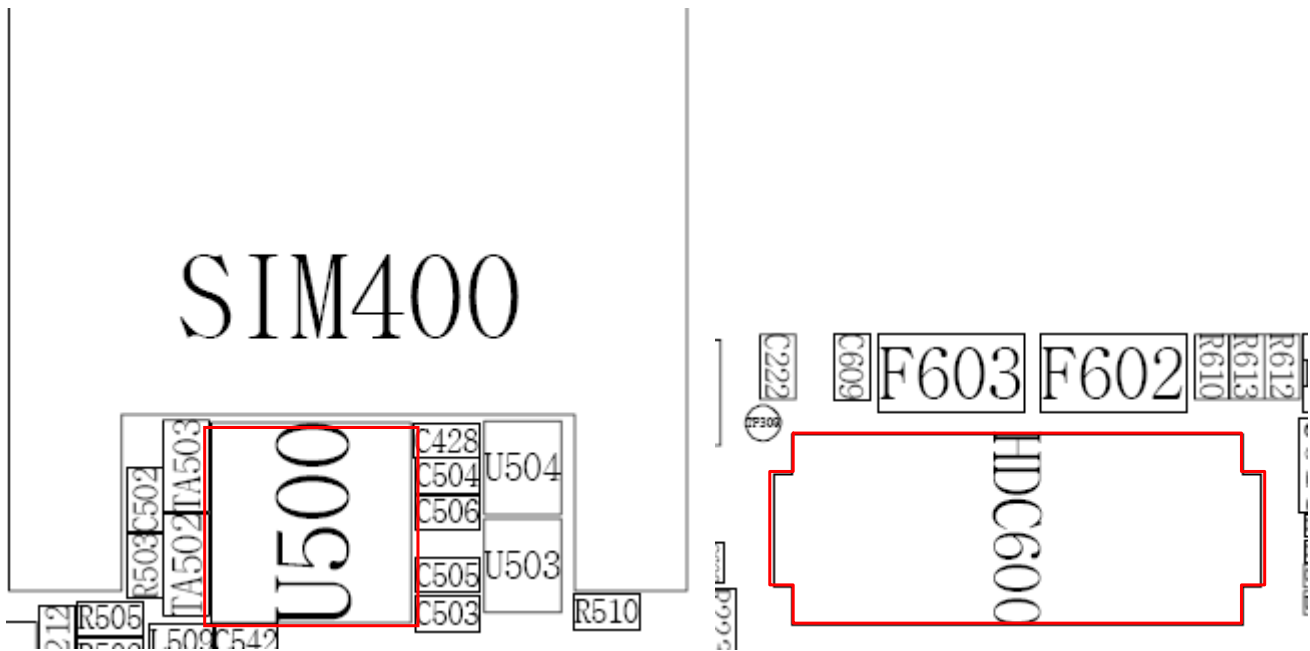
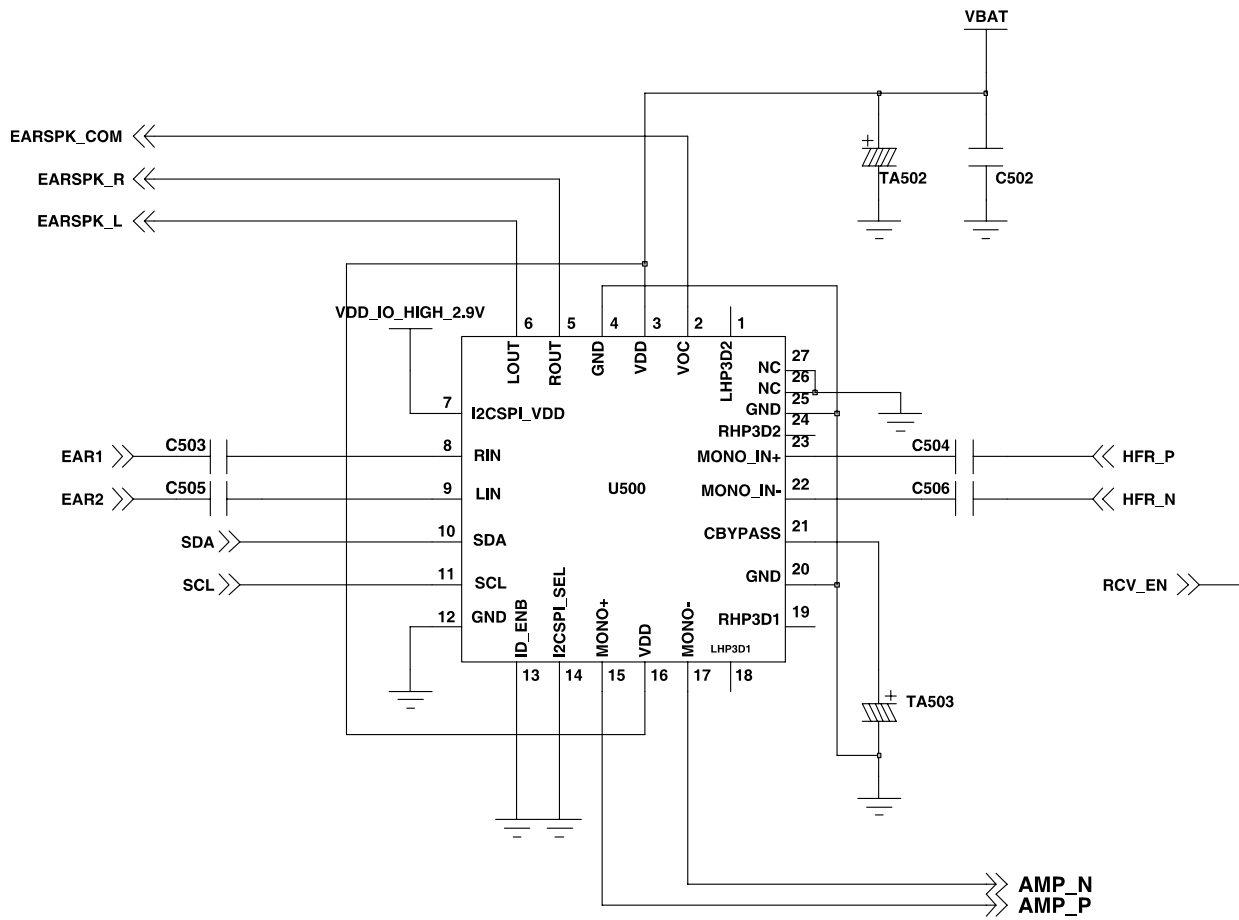
9-5. Microphone Part



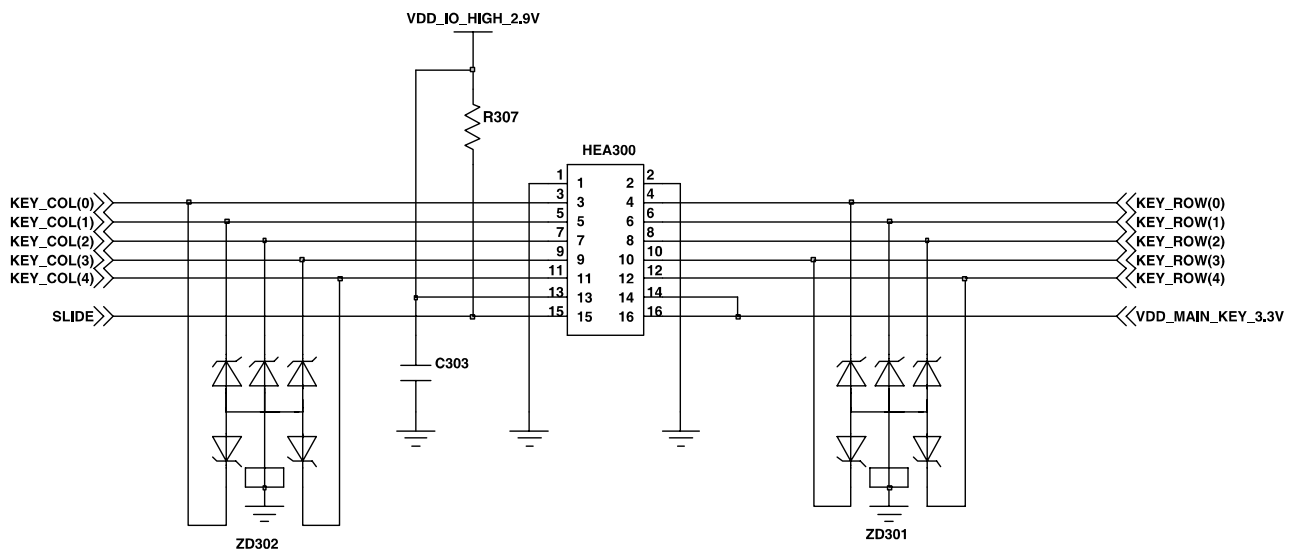
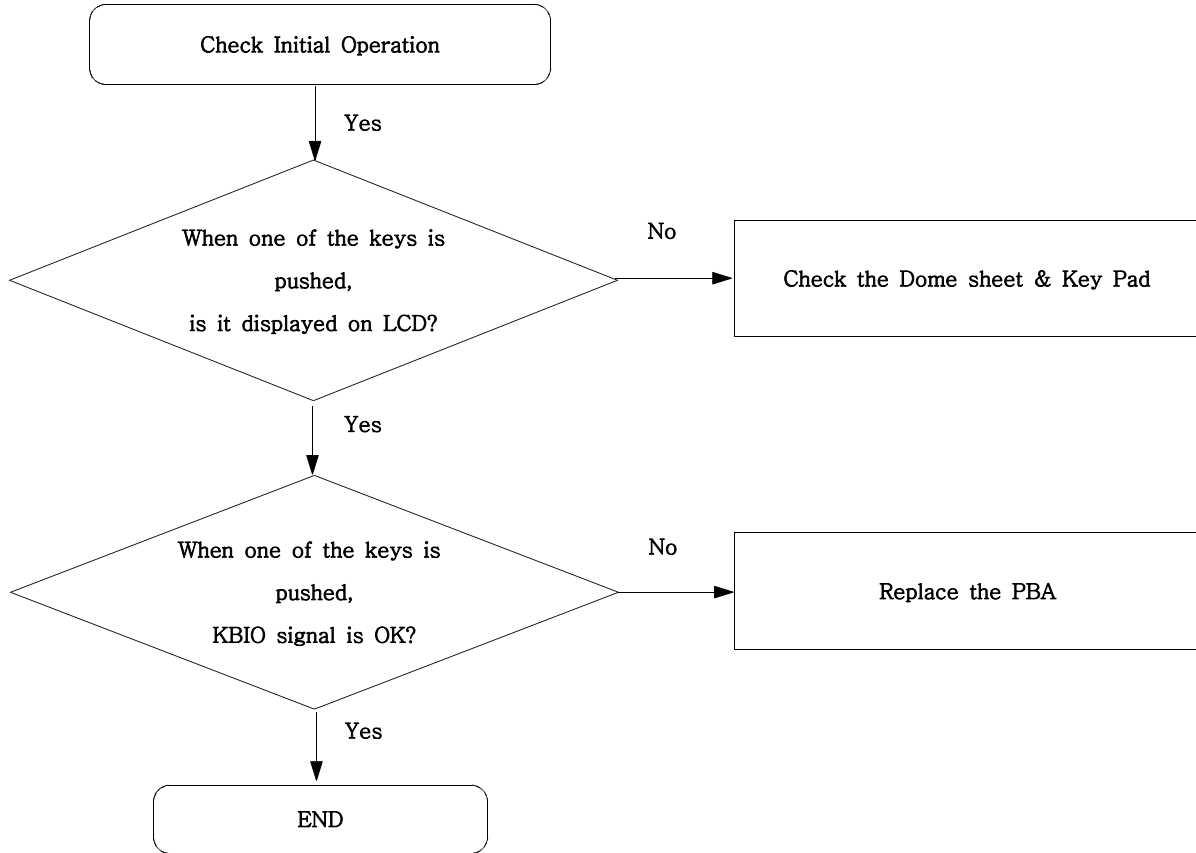


9-6. Speaker Part(Melody)

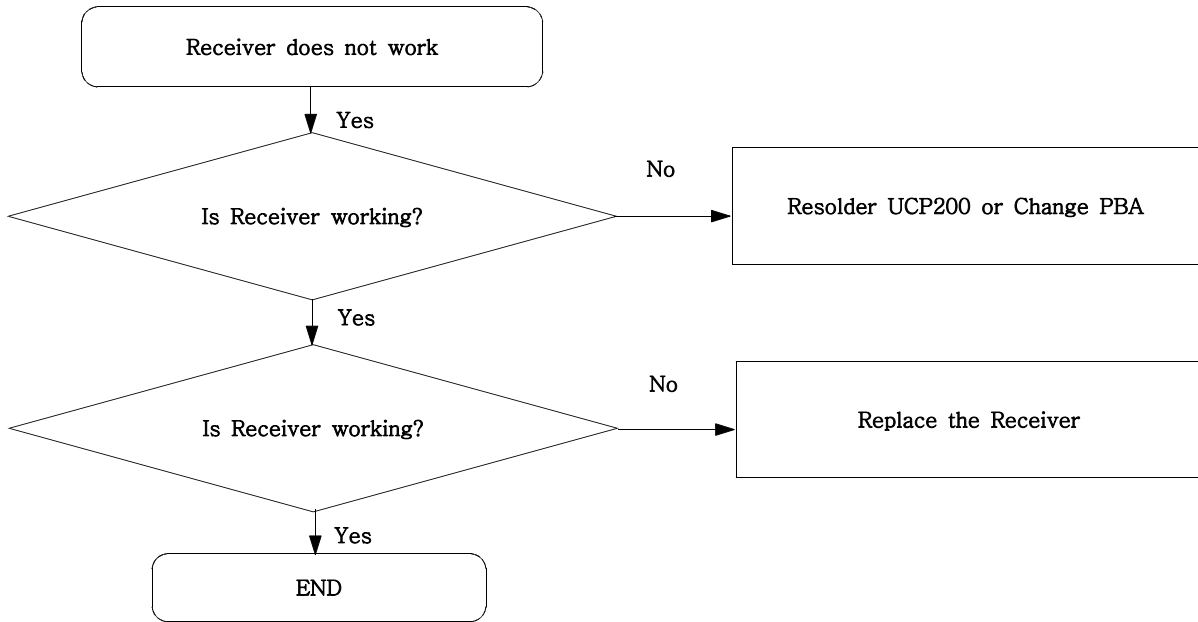




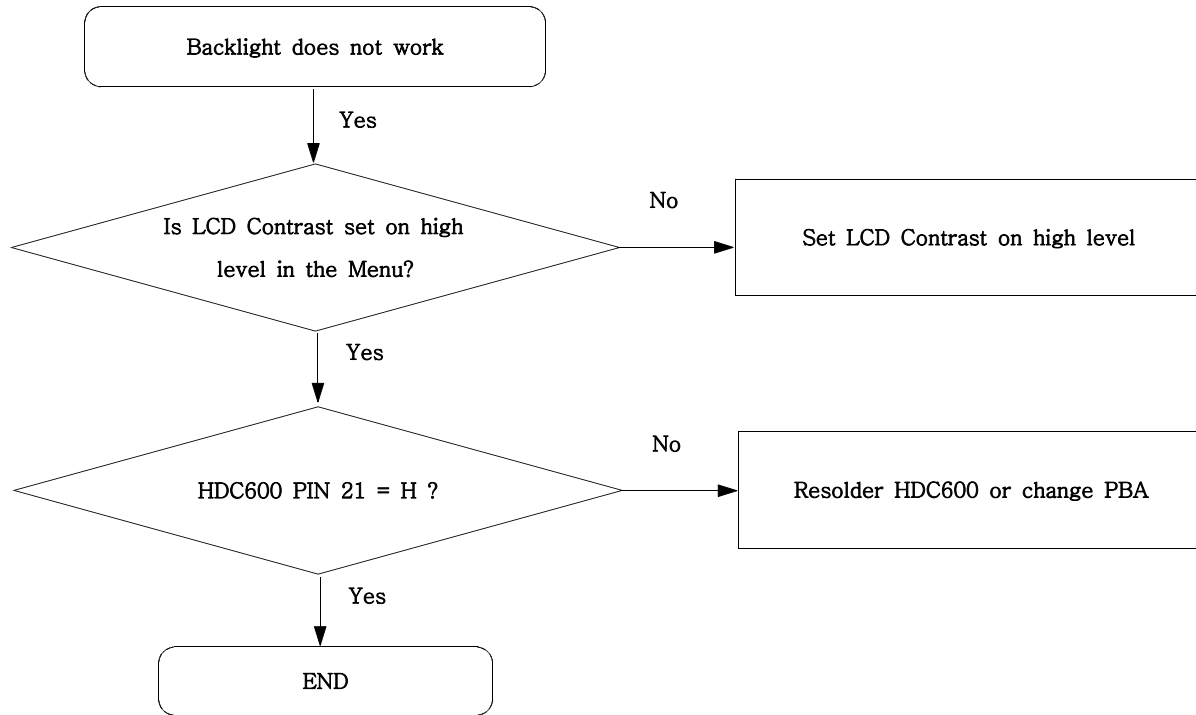
9-7. Key Data Input



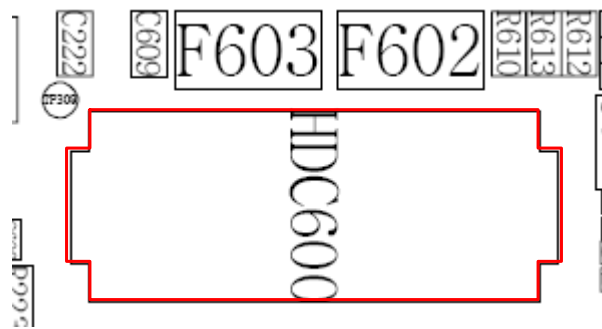
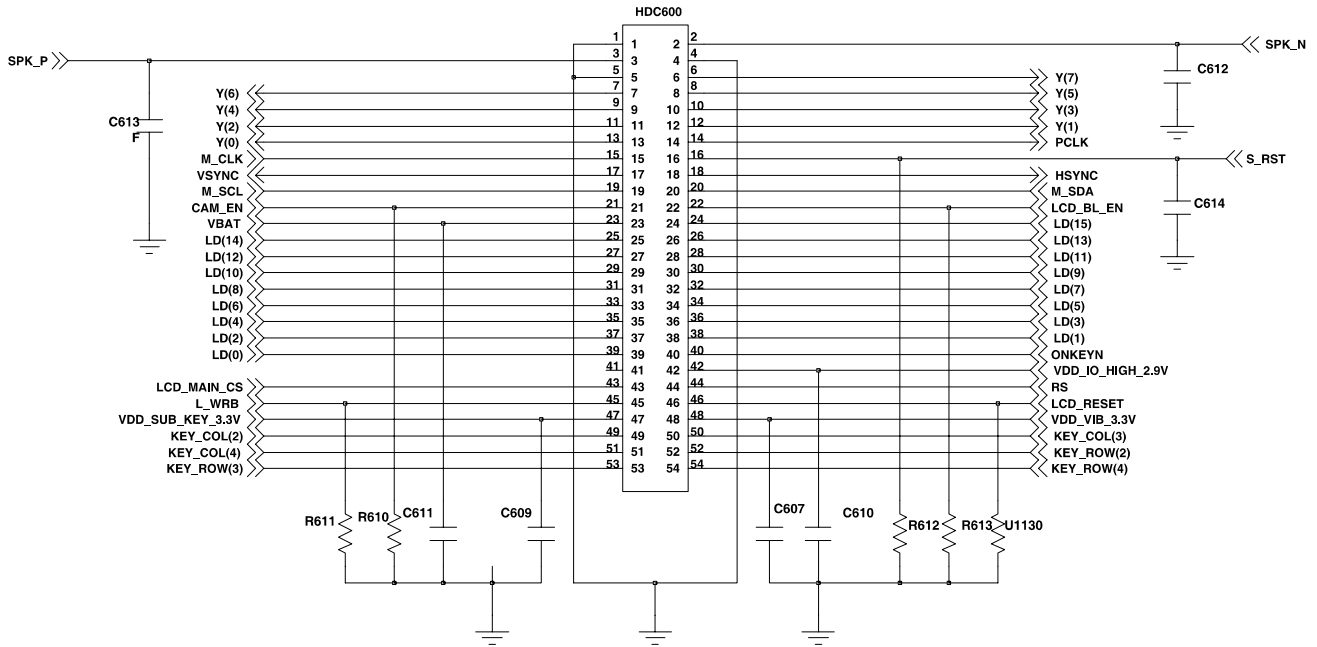
9-8. Receiver Part



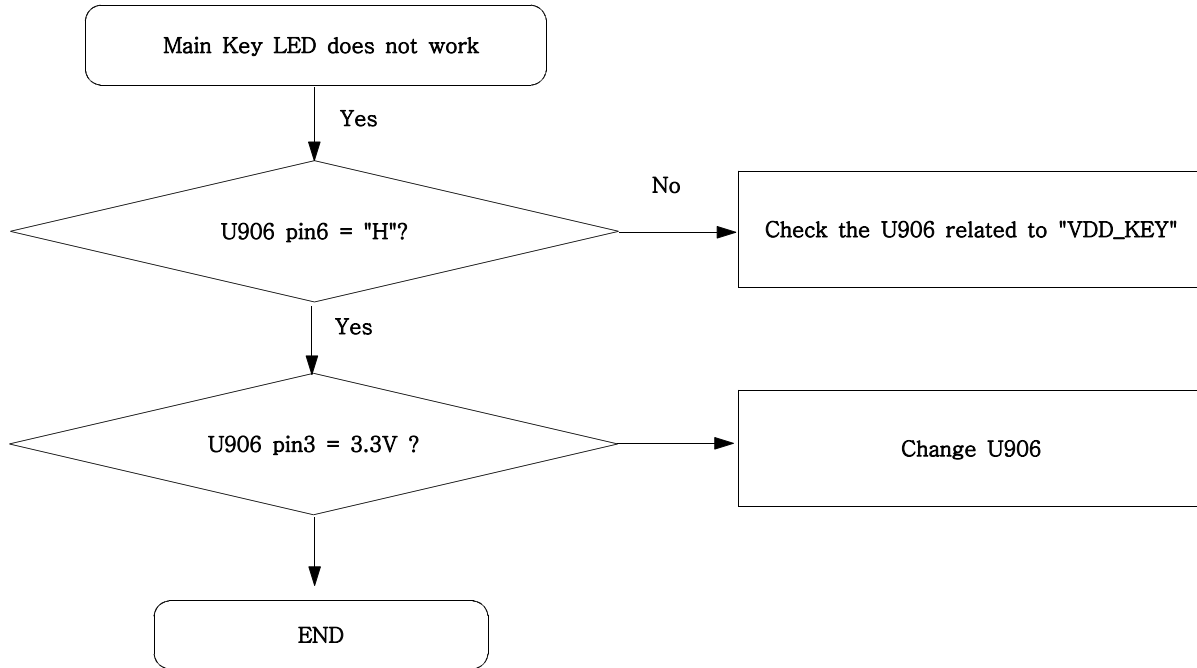
9-9. Back Light (for Color Main LCD)

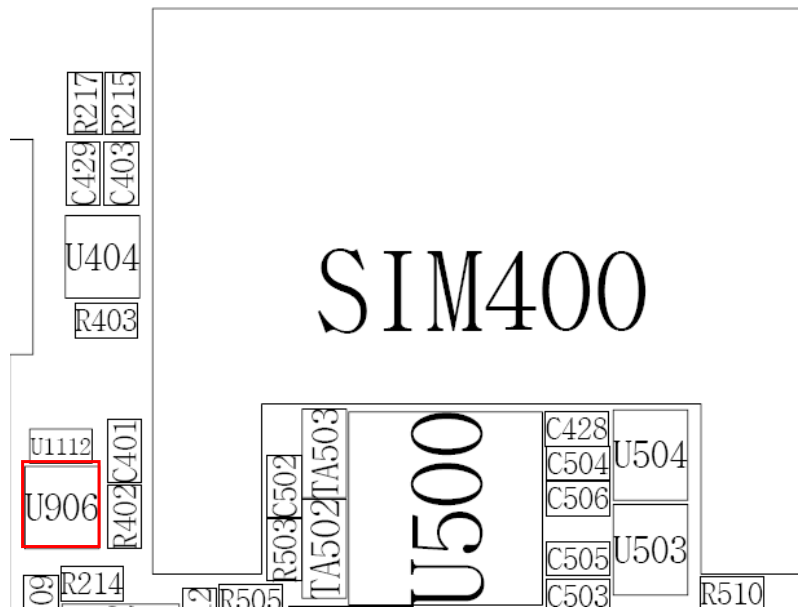
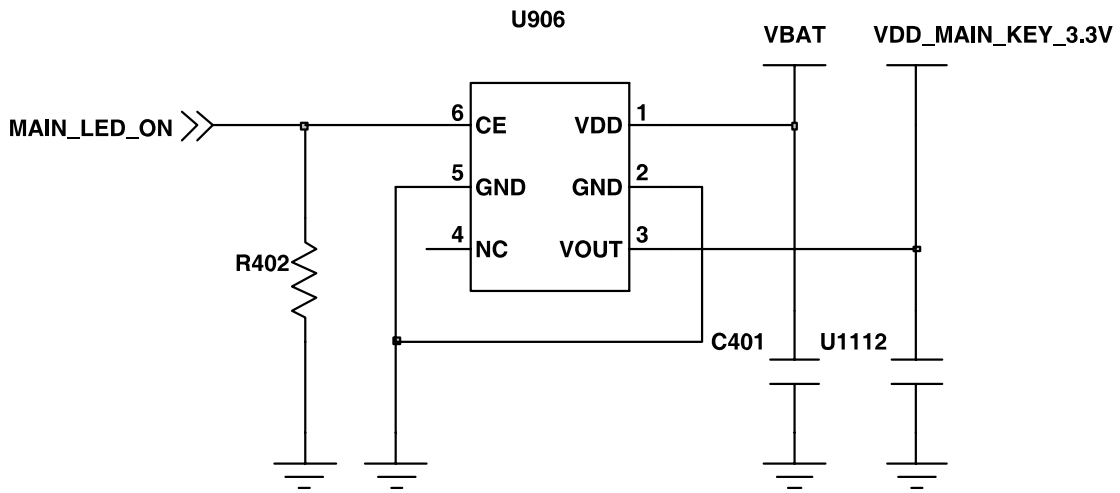


Flow Chart of Troubleshooting

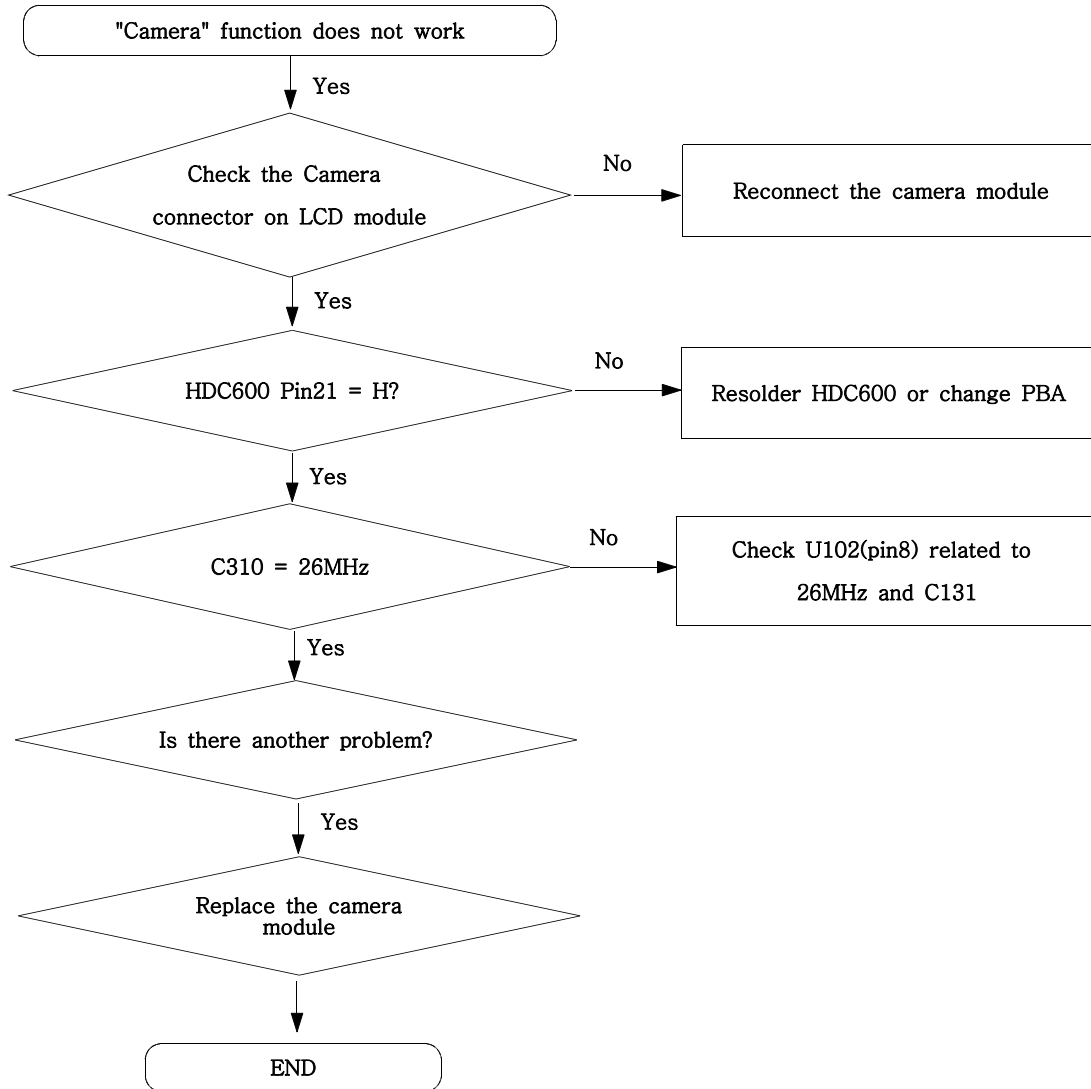


9-10. Key Back Light

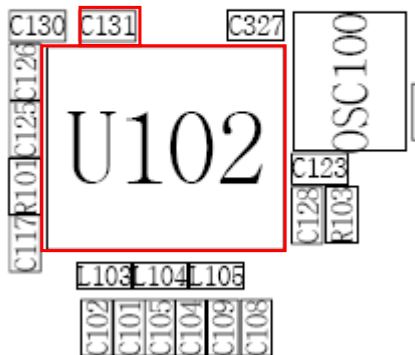
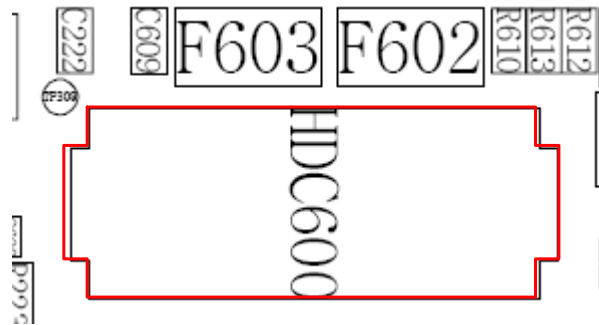
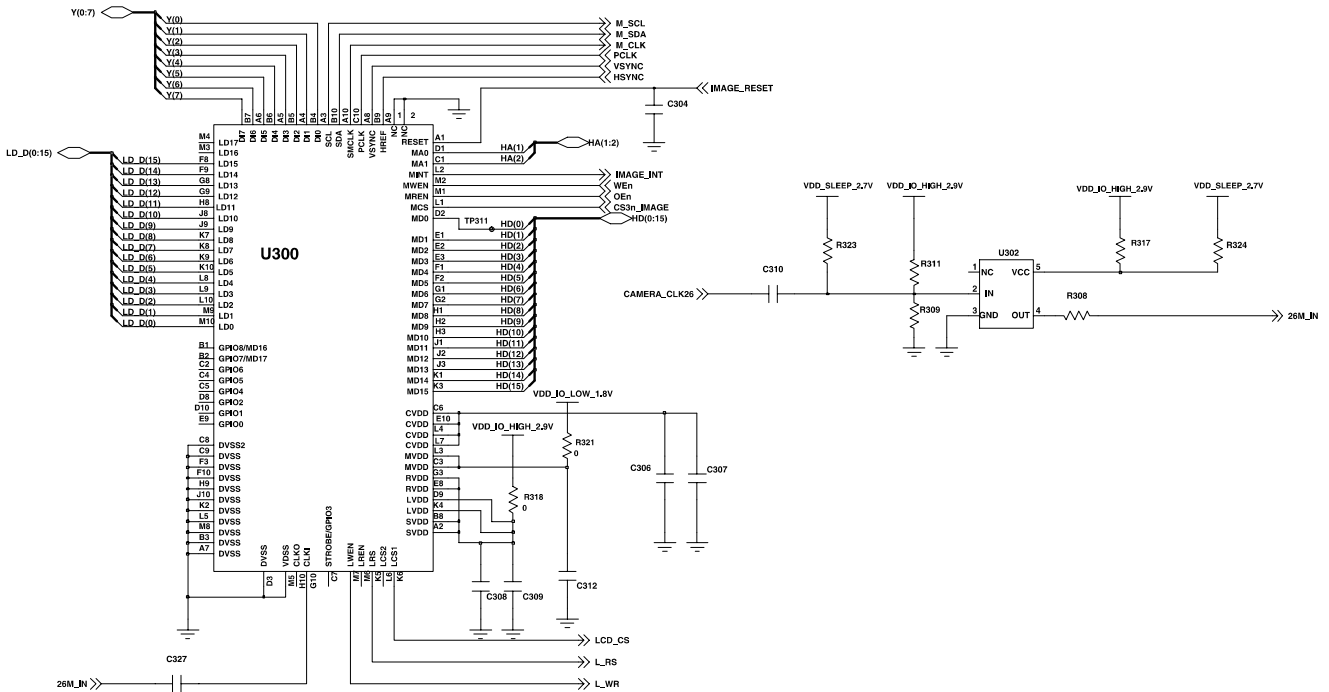




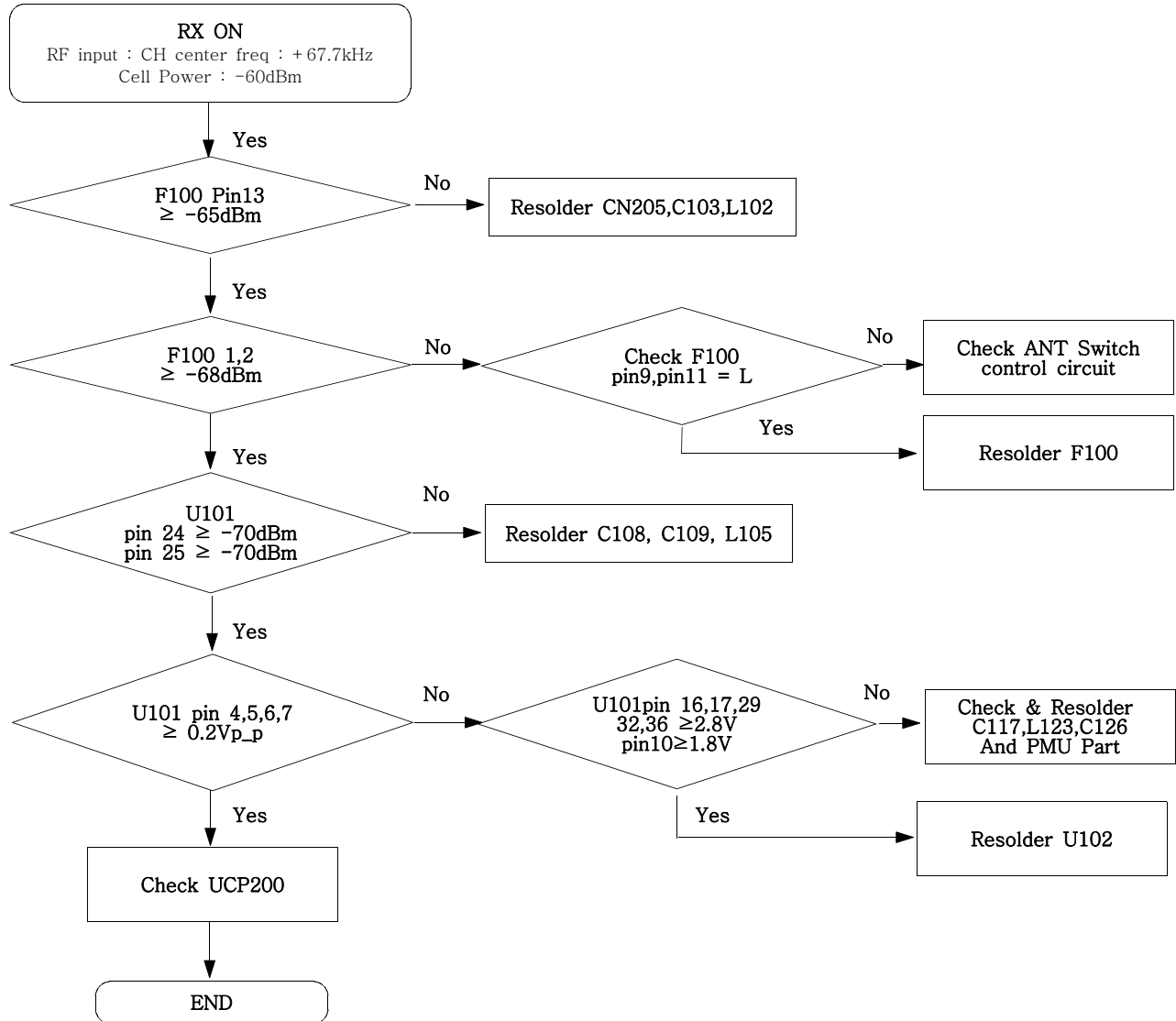
9-11. Camera part



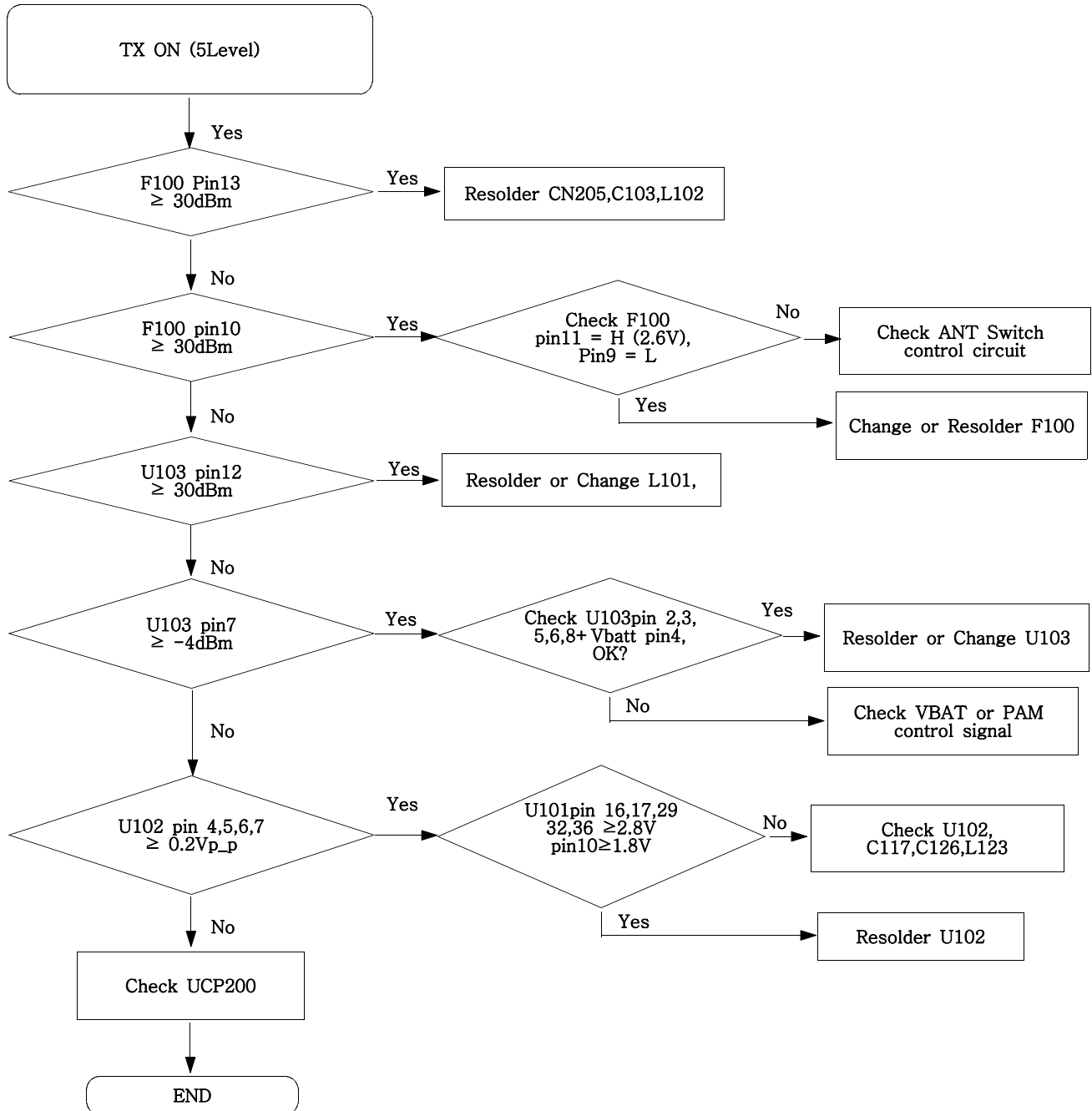
Flow Chart of Troubleshooting



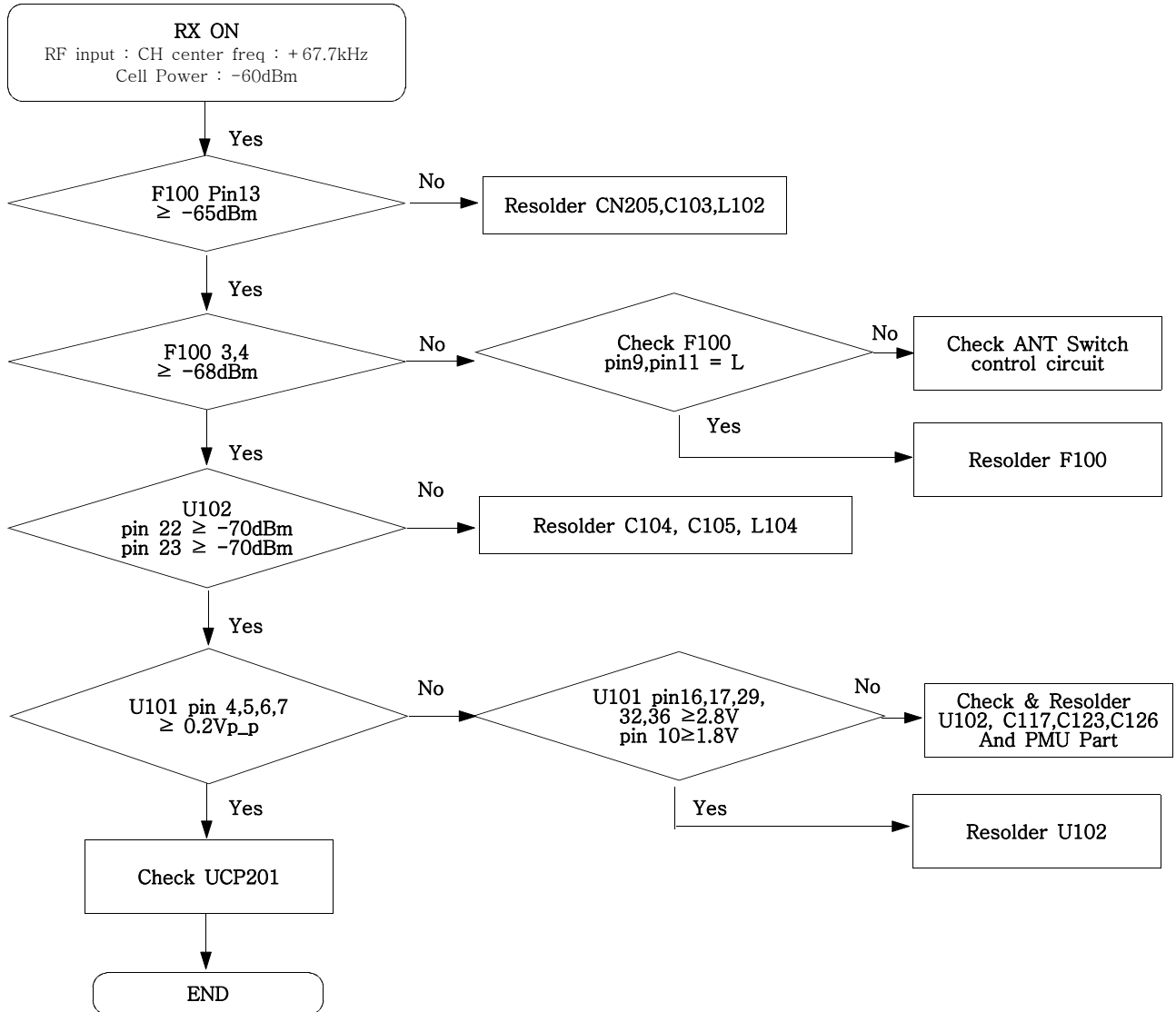
9-12. GSM Receiver



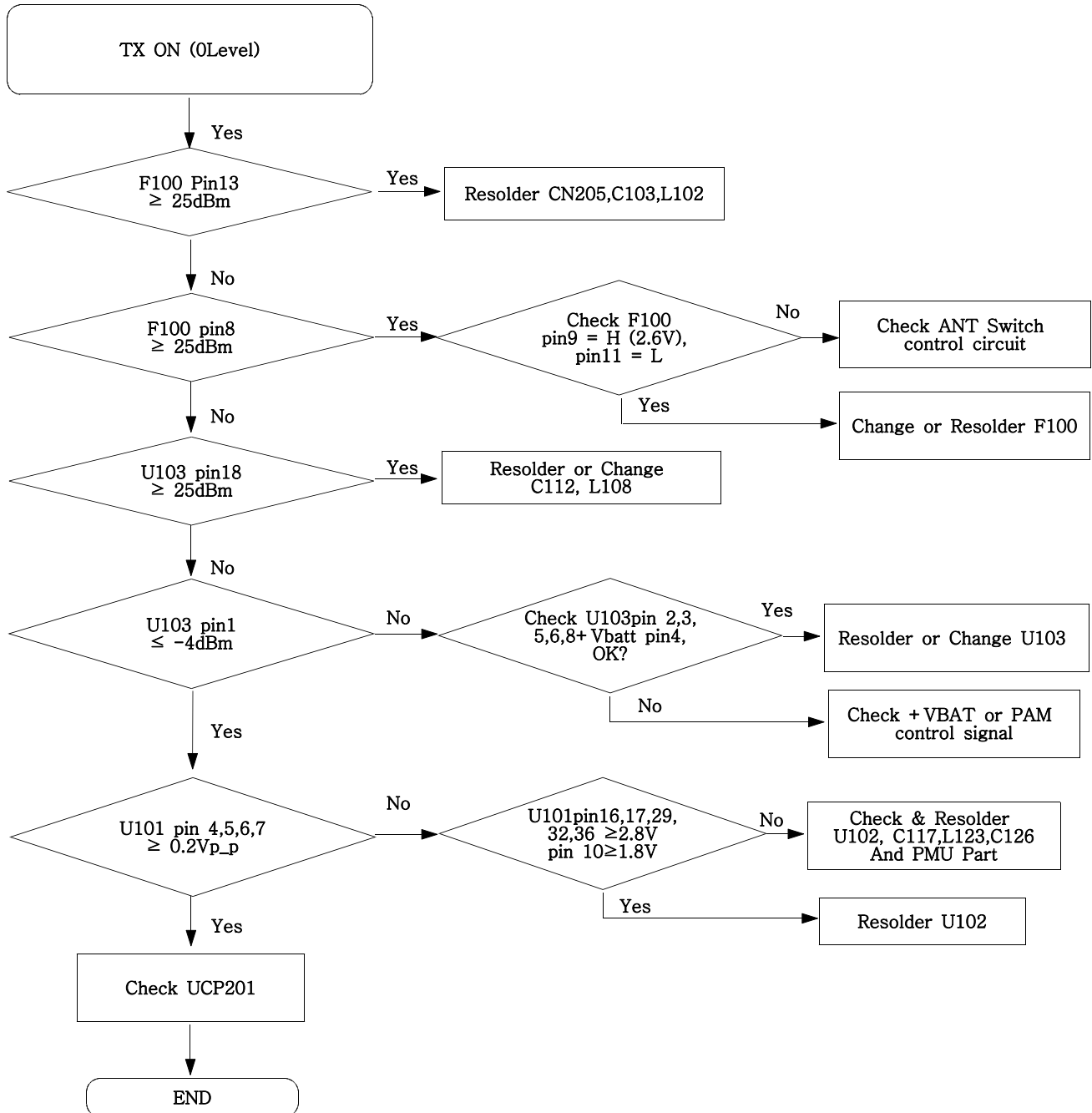
9-13. GSM Transmitter



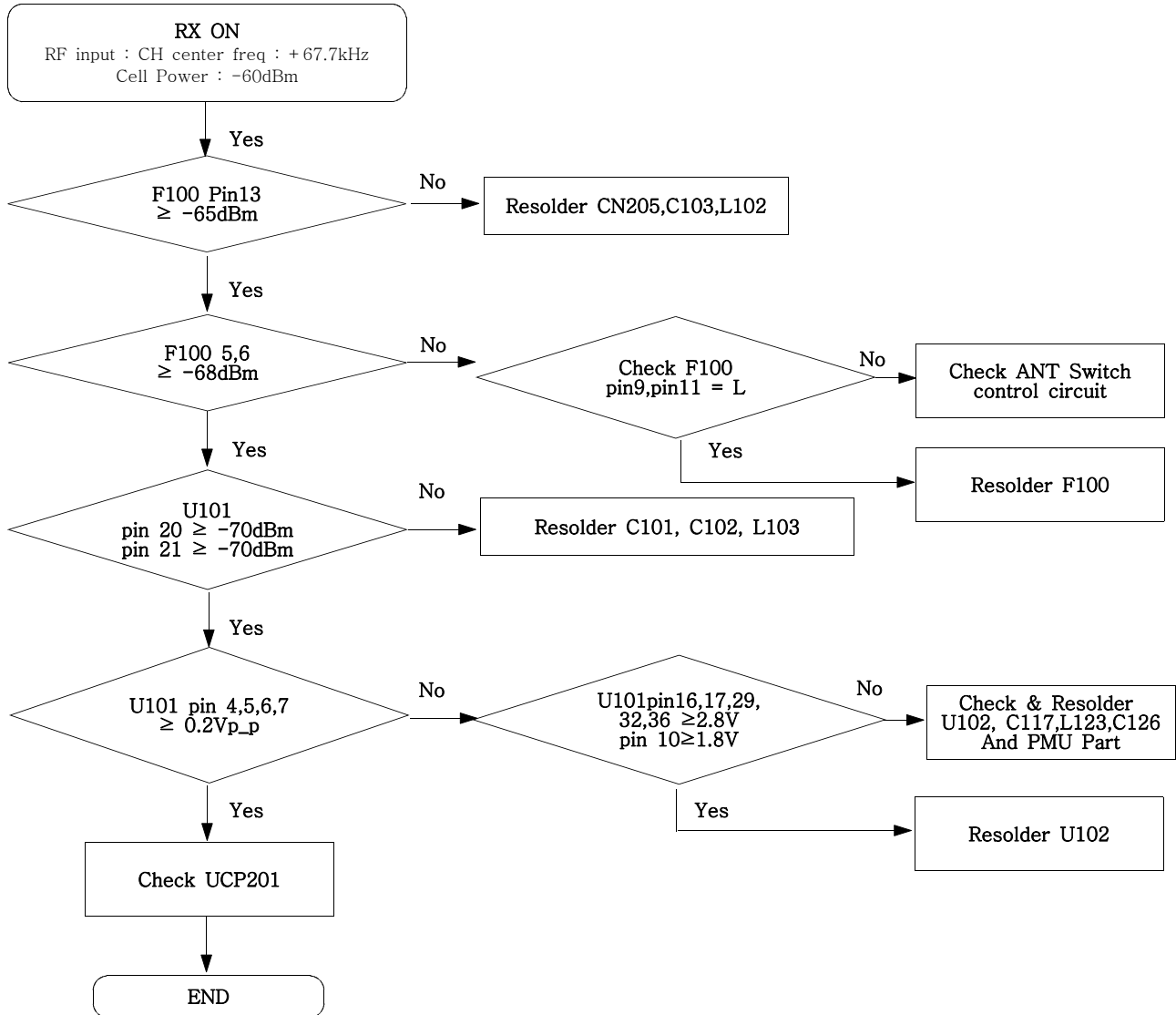
9-14. DCS Receiver



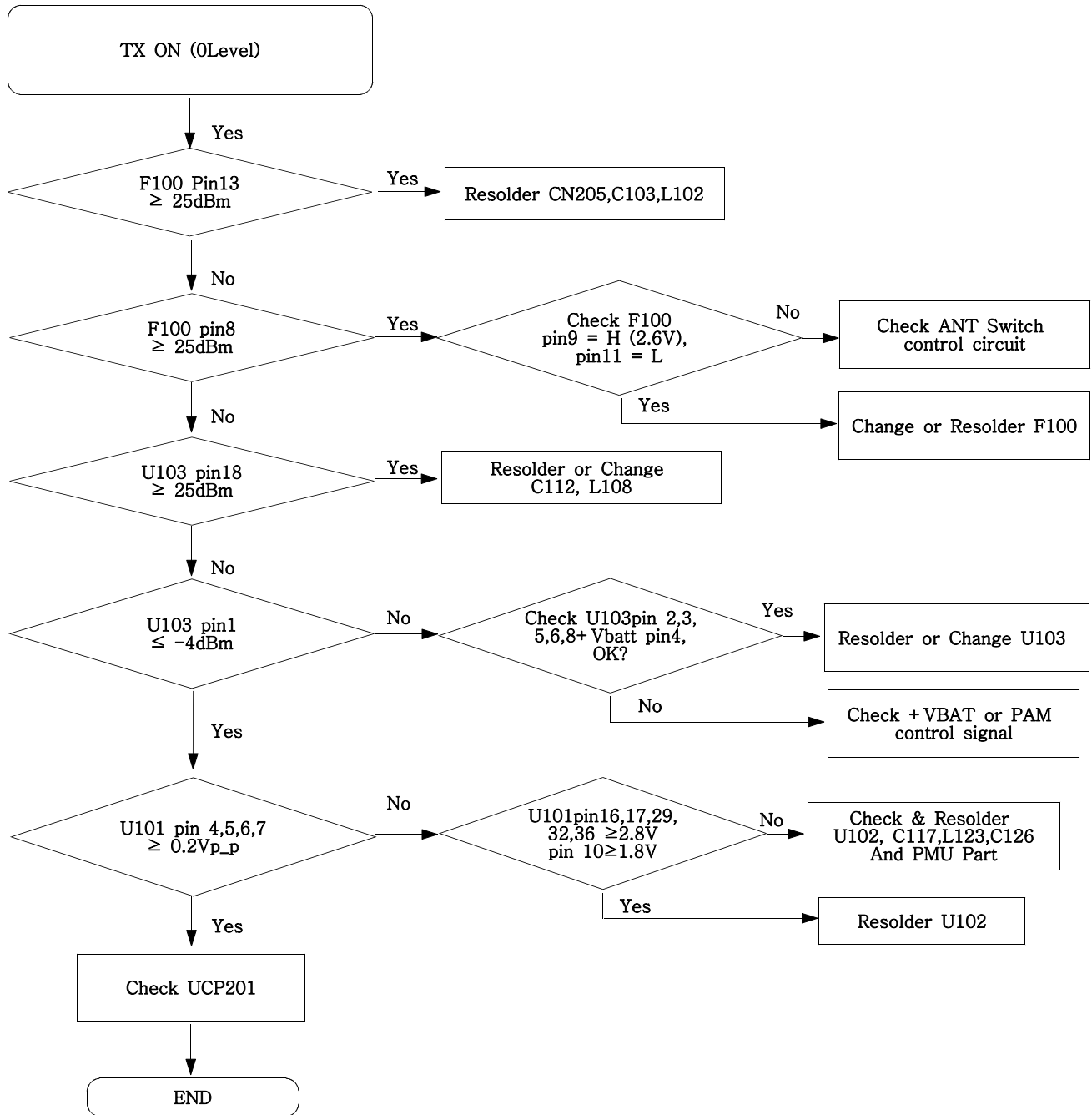
9-15. DCS Transmitter

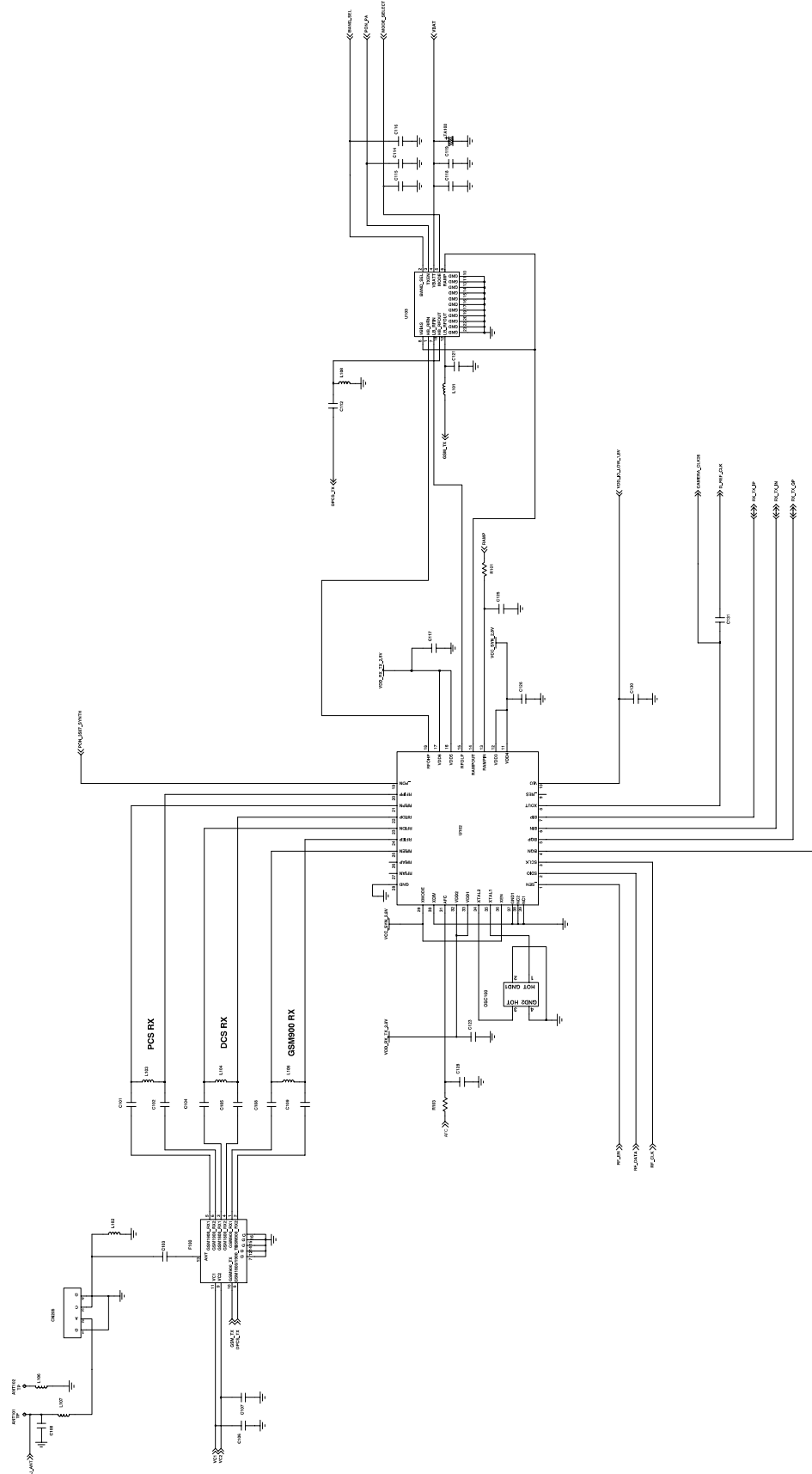


9-16. PCS Receiver

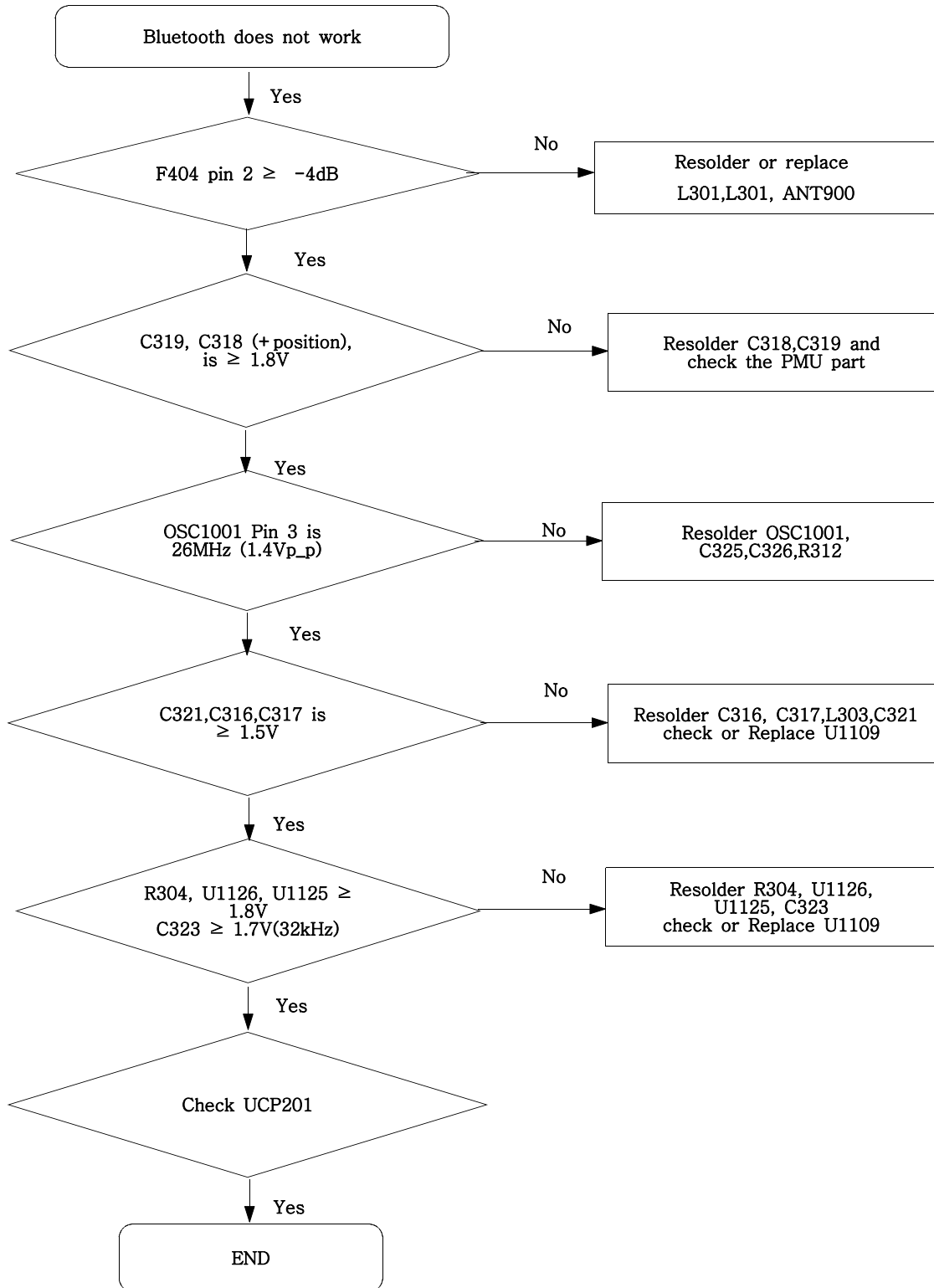


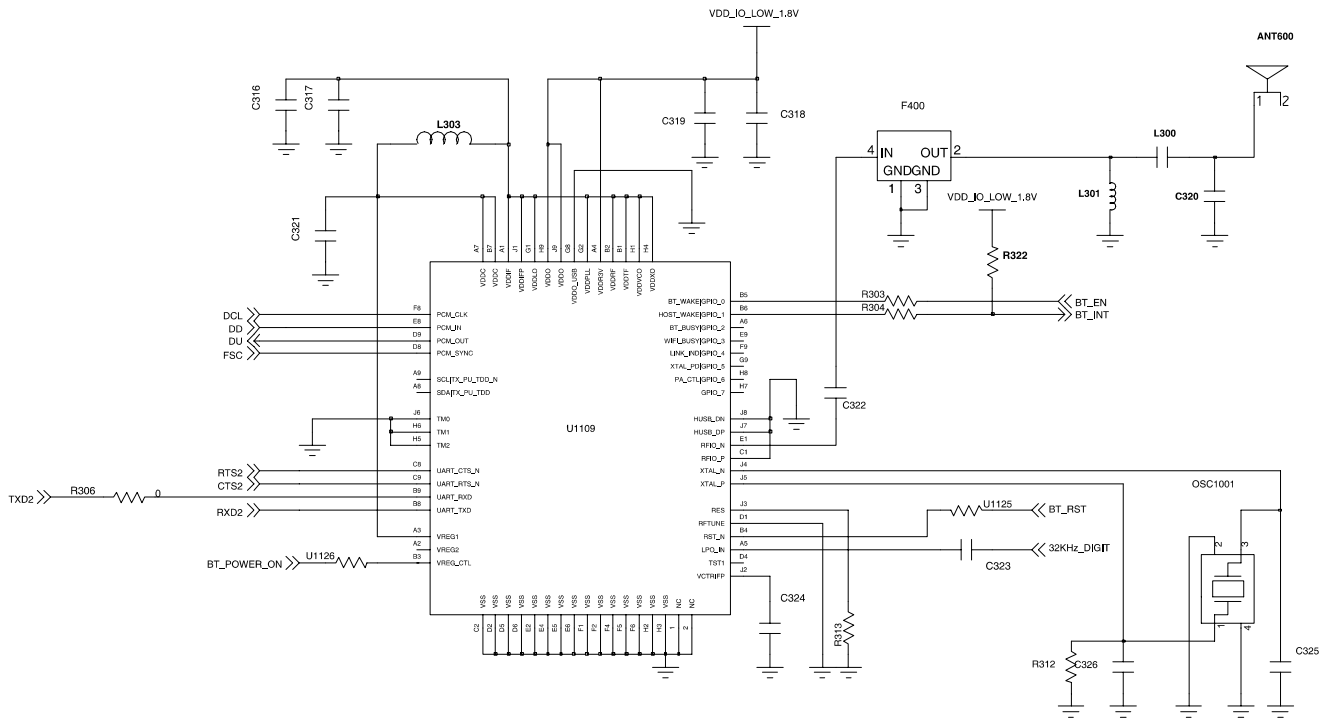
9-17. PCS Transmitter



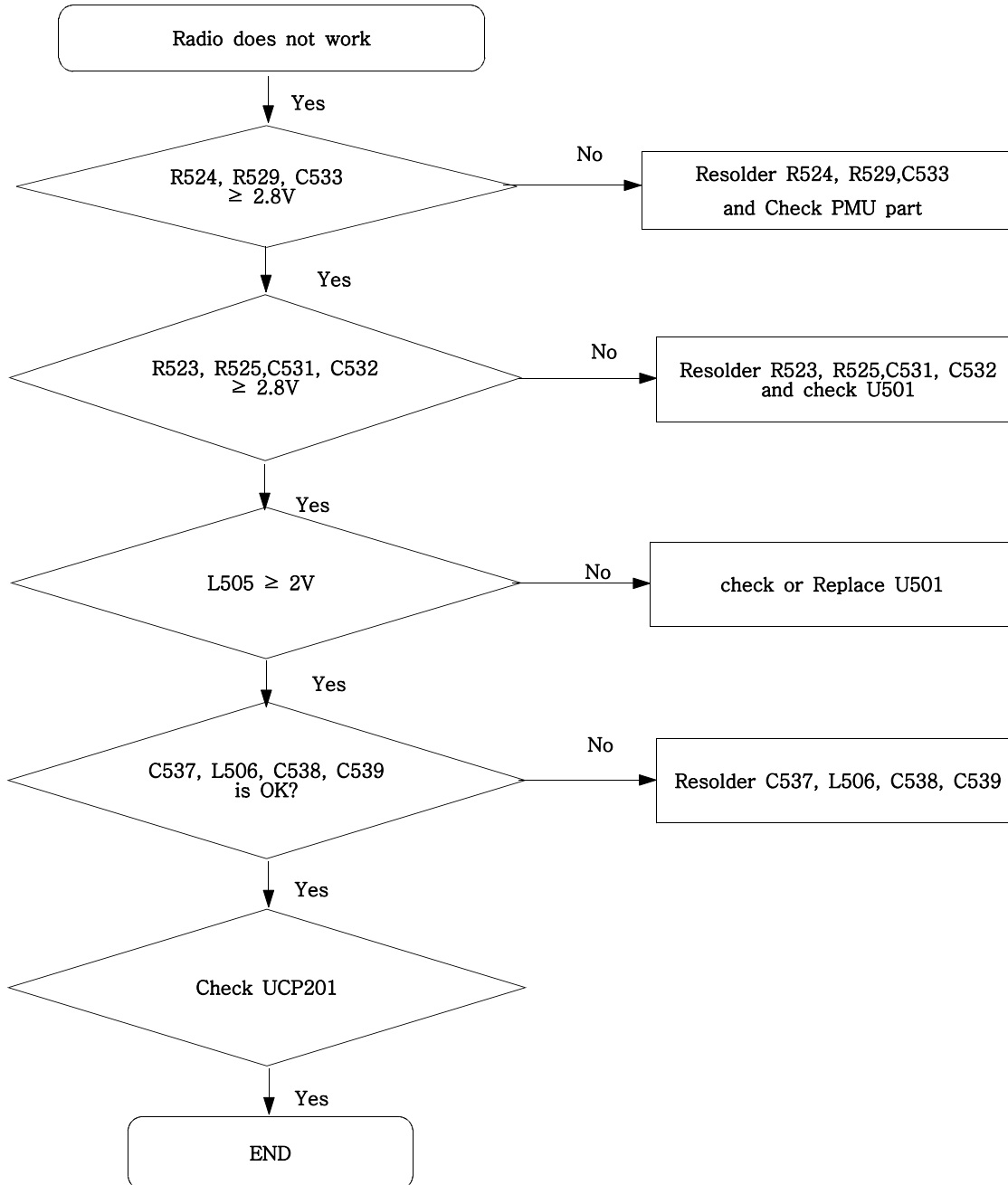


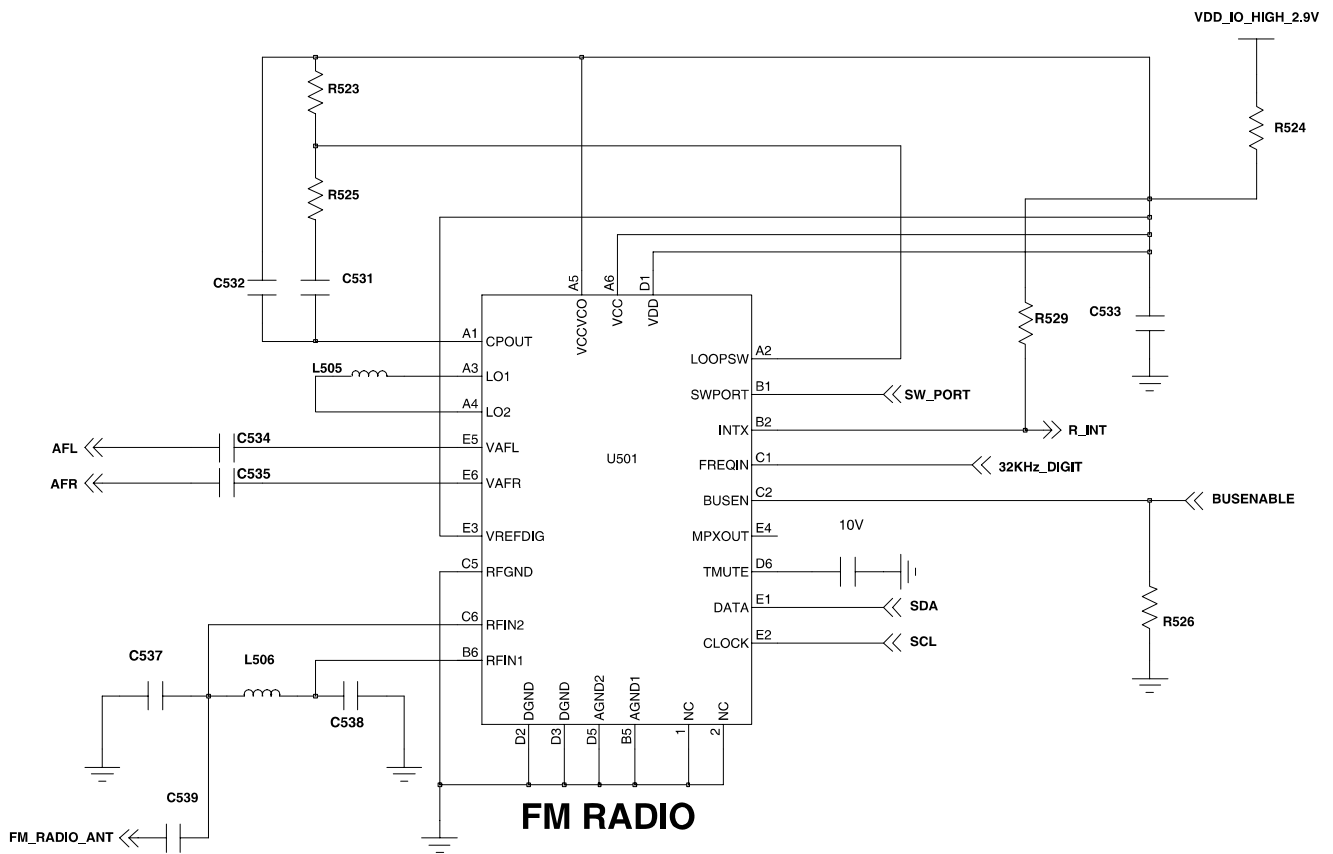
9-18. Bluetooth part





9-19. Radio part





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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