

SAMSUNG

GSM TELEPHONE

SGH-E250

SERVICE *Manual*

GSM TELEPHONE



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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

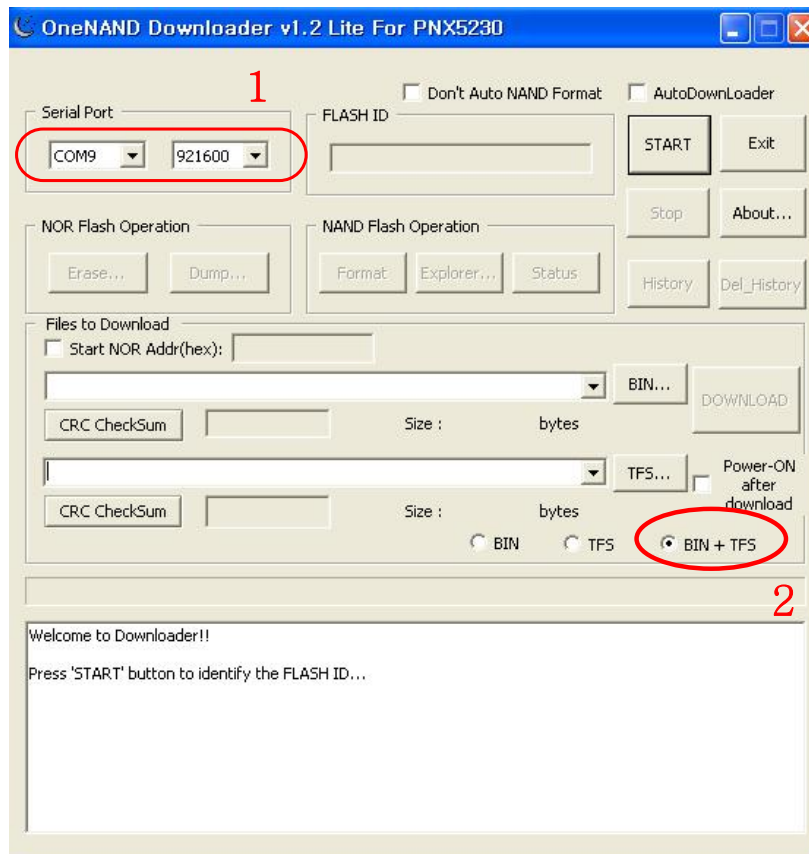
4-2-1. Pre-requisite for Downloading

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

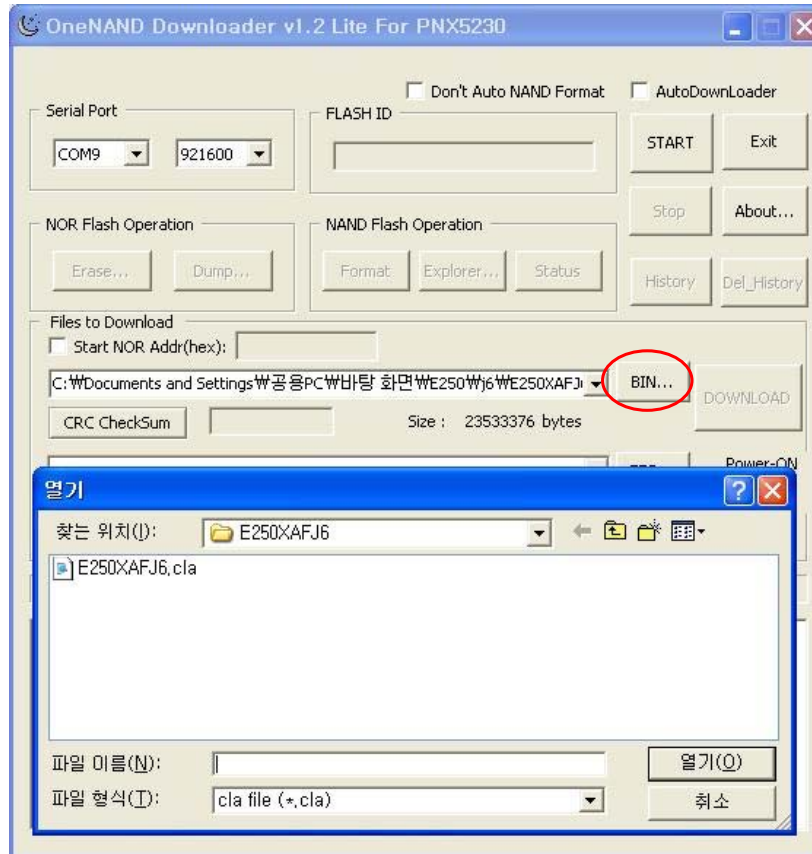
4-2-2. S/W Downloader Program

- 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'

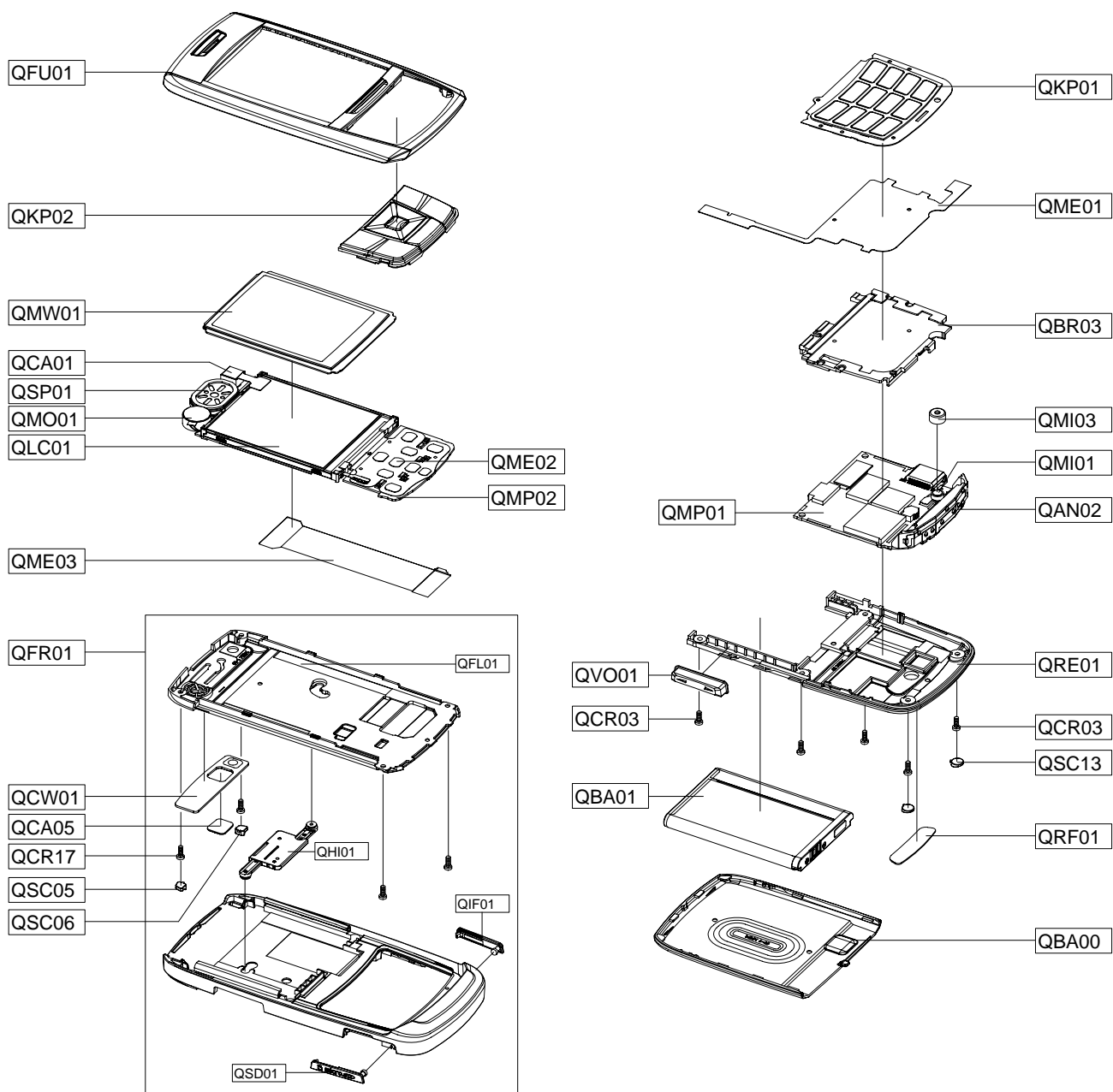


3. Select the file(s) what you want to download



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 |

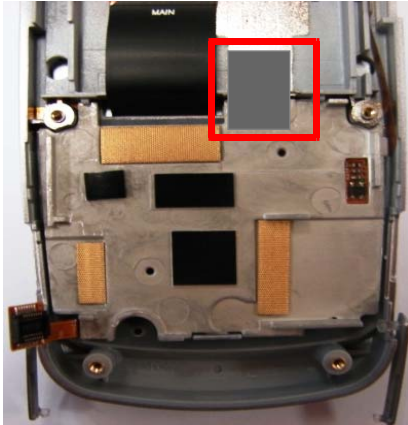
5-3. Disassembly and Assembly Instructions

— Disassembly

| | |
|--|--|
| <div data-bbox="168 323 797 411"> <div>1</div> <div>1) Remove the RF Sheet,SCREW Cover of rear 2) Unscrew 5 screws</div> </div> <div data-bbox="230 474 753 942"> </div> | <div data-bbox="833 323 1459 411"> <div>2</div> <div>1) Remove the volume Key 2) Disassemble the connector</div> </div> <div data-bbox="1021 474 1365 942"> </div> |
| <div data-bbox="147 1024 797 1100"> <div>1) Be careful of body damage and scratch</div> <div>2) Be careful of transforming the rear cover</div> </div> | <div data-bbox="812 1024 1459 1058"> <div>1) Be careful of body damage and scratch</div> </div> |
| <div data-bbox="168 1148 797 1266"> <div>3</div> <div>1) Open the T-Flash, power cover 2) Lift main board 3) Detach the LCD Connector after slide down</div> </div> <div data-bbox="248 1329 797 1797"> </div> | <div data-bbox="833 1148 1459 1192"> <div>4</div> <div>1) Separate board from the set</div> </div> <div data-bbox="1029 1308 1279 1579"> </div> |
| <div data-bbox="147 1839 797 1873"> <div>1) Be careful of damaging F-PCB</div> </div> | <div data-bbox="812 1839 1459 1873"> <div>1) Be careful of damaging components</div> </div> |

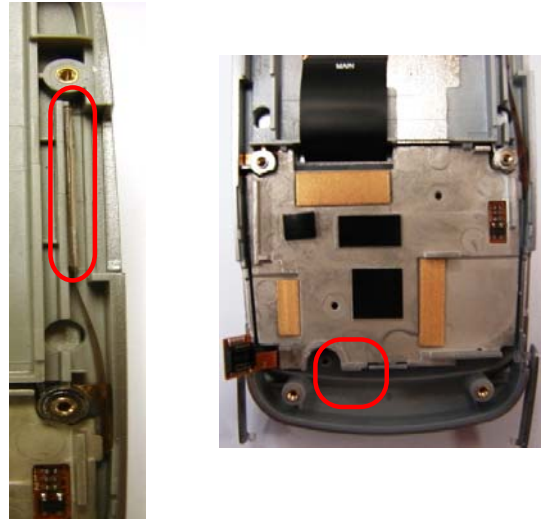
5

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

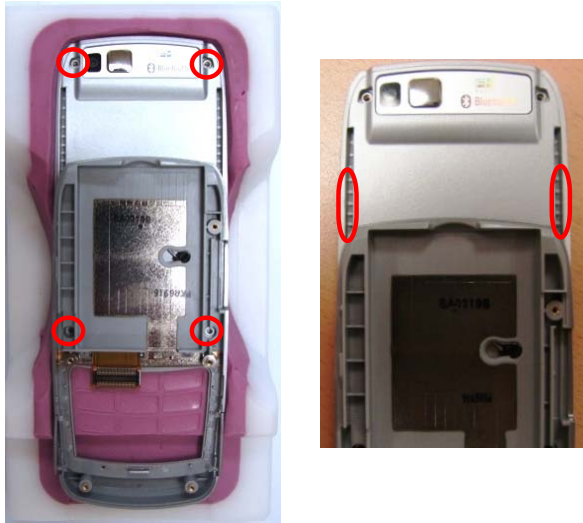
1) Unscrew 2 screws



1) Be careful of body damage and scratch

9

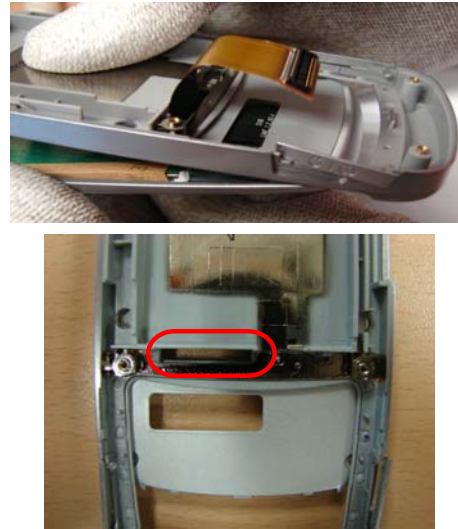
- 1) Unscrew 4 screws
- 2) Disassemble the upper with a couple of thumbs pressing the point of picture



- 1) Be careful of body damage and scratch

10

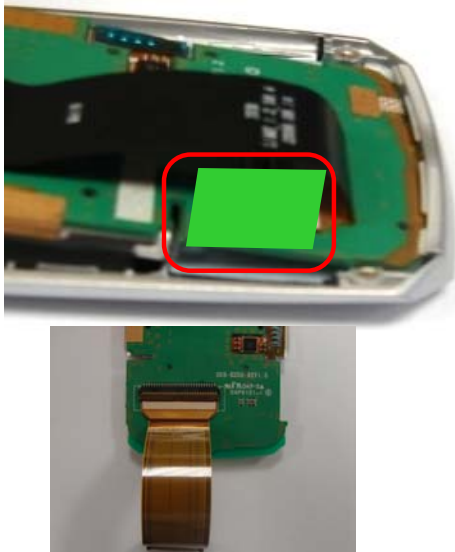
- 1) Match the hole of LOWER and FRONT holding up the slide
- 2) Draw out the FPCB from the hole



- 1) Be careful of cutting wire
- 2) Be careful of body damage and scratch

11

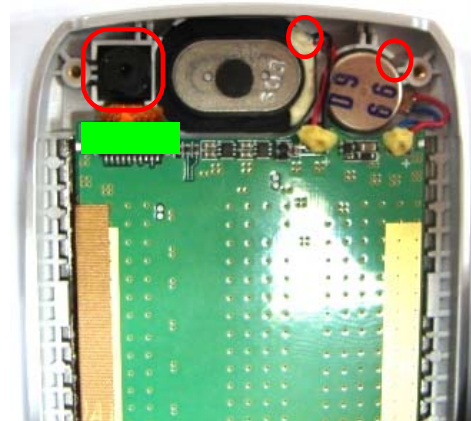
- 1) Remove the tape covering FPCB Connector
- 2) Disassemble FPCB after lifting Connector



- 1) Be careful of body damage and scratch
- 2) Be careful of damaging F-PCB

12

- 1) Disassemble Speaker, Motor
- 2) Remove the tape on the Camera Connector
- 3) Disassemble the Camera taking down the top of the camera



- 1) Be careful of body damage and scratch
- 2) Be careful of damaging camera F-PCB

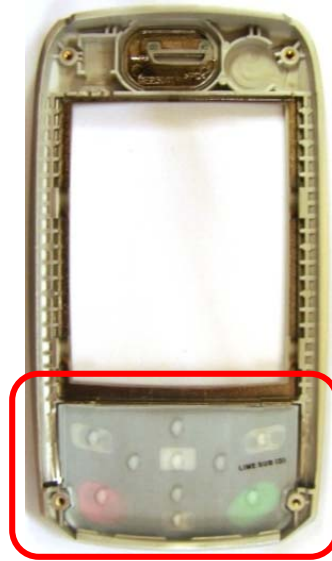
13

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



15

- 1) Disassemble Sub Key Pad

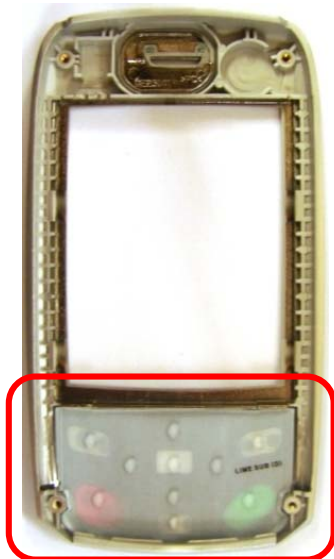


- 1) Be careful of body damage and scratch
- 2) Be careful of sticking between two sides tape and LCD

— Assembly

1

1) Joint the Sub Key Pad



2

1) Assemble Sub PBA inserting the bottom of the board
2) Assemble CAMERA, SPK, MOT after inserting camera FPCB



1) Be careful of damaging CAMERA FPCB

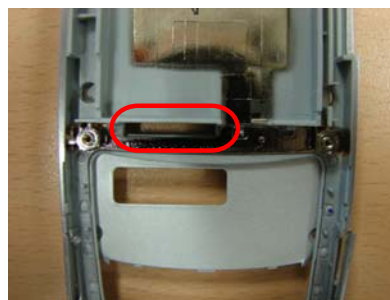
3

1) Insert FPCB(CON TO CON)
2) Attach conserving TAPE



4

1) Match the hole pulling down lightly the SLIDE ASSY like picture
2) Insert FPCB



1) Be careful of body damage and scratch
2) Be careful of damaging F-PCB

1) Be careful of damaging F-PCB

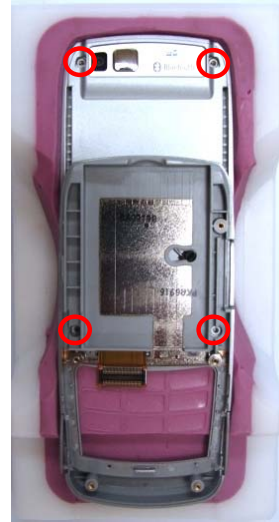
7

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



8

- 1) Screw down 4 screws



1) Be careful of body damage and scratch

1) Be careful of body damage and scratch

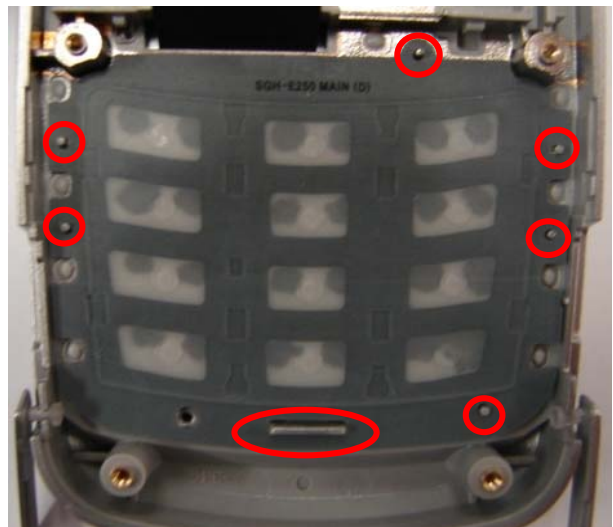
7

- 1) Insert both screw caps in each direction



8

- 1) Assemble the key pad in FRONT

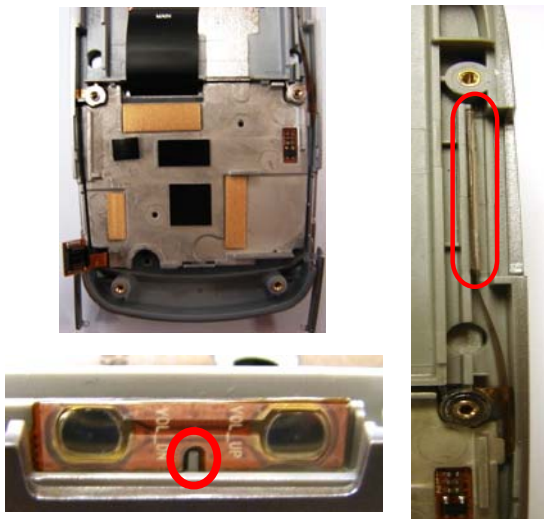


1) Be careful of body damage and scratch

1) Check up the fitting between key pad and REAR

9

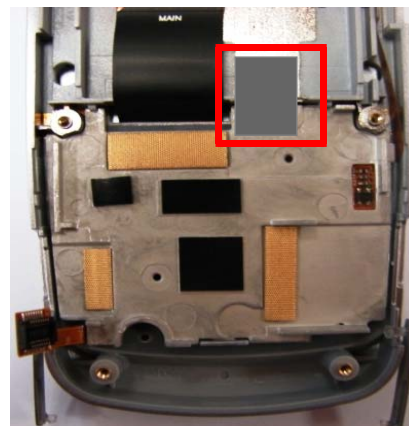
- 1) Assemble the key can
- 2) Check up the attaching FPCB in Volumn Key side



- 1) Be careful of damaging F-PCB

10

- 1) Attach the EMI tape



- 1) Check up whether tape color is same with SET color or not

11

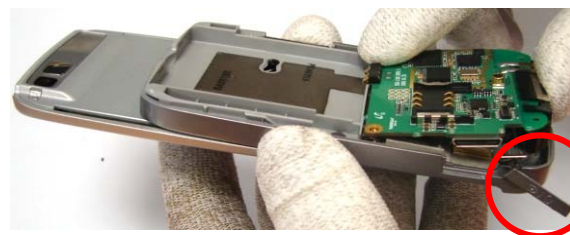
- 1) Assemble the FPCB with main board



- 1) Be careful of damaging BGA components

12

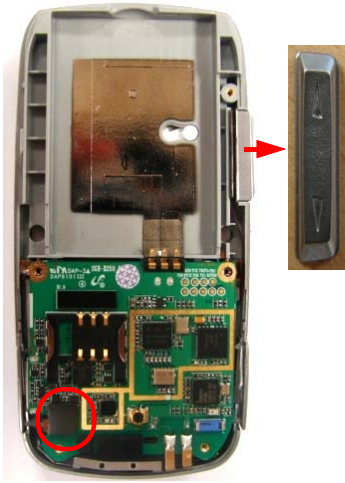
- 1) Open the T-Flash, Power Cover
- 2) Assemble the main board



- 1) Be careful of body damage and scratch

13

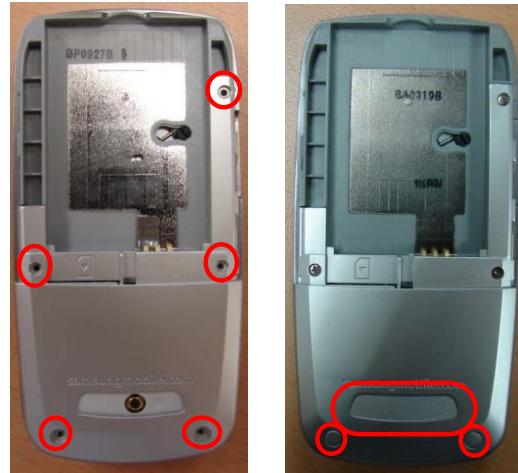
- 1) Insert the Volume Key
- 2) Assemble the Key Connector



1) Be careful of damaging BGA components

14

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



1) Be careful of body damage and scratch

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 |
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| C322 | C-CER,CHIP | 2203-000278 | SA |
| C323 | C-CER,CHIP | 2203-000233 | SA |
| C324 | C-CER,CHIP | 2203-006842 | SA |
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| 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 |
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| HDC600 | HEADER-BOARD TO BOARD | 3711-005747 | SA |
| HEA300 | HEADER-BOARD TO BOARD | 3711-005578 | SA |
| IFC500 | SOCKET-INTERFACE | 3710-002306 | SA |
| L101 | INDUCTOR-SMD | 2703-002365 | SA |
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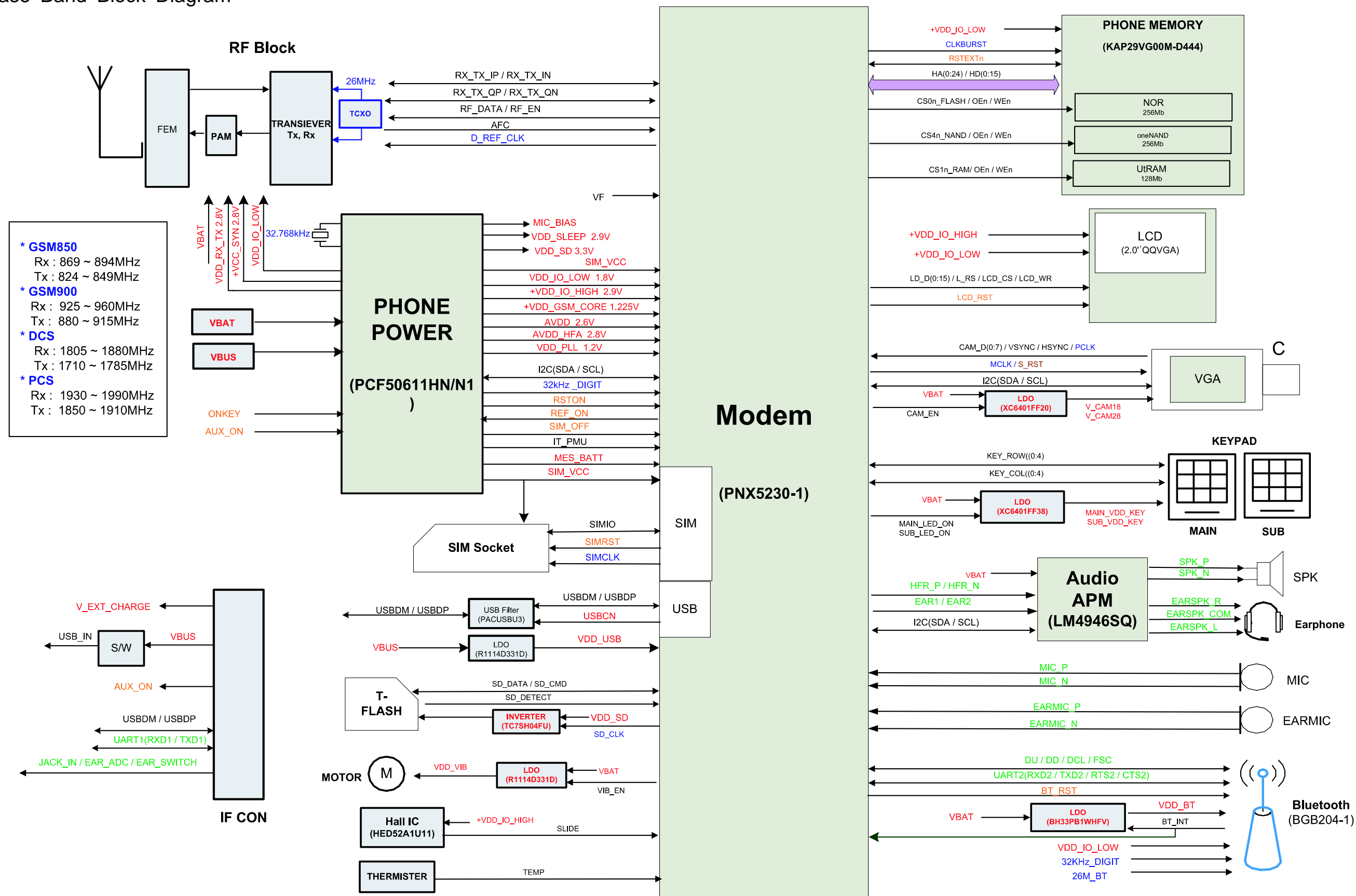
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| L108 | INDUCTOR-SMD | 2703-002370 | SA |
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| L303 | BEAD-SMD | 3301-001659 | SA |
| L400 | INDUCTOR-SMD | 2703-003113 | SA |
| L500 | BEAD-SMD | 3301-001729 | SA |
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| Q600 | FET-SILICON | 0505-001518 | SA |
| R101 | R-CHIP | 2007-001313 | SA |
| R103 | R-CHIP | 2007-000140 | SA |
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| 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 |
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| R414 | R-CHIP | 2007-008542 | SA |
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| R619 | R-CHIP | 2007-007528 | SA |
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| TA400 | C-TA,CHIP | 2404-001430 | SA |

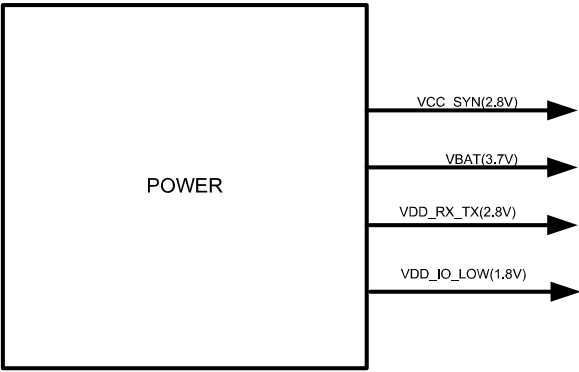
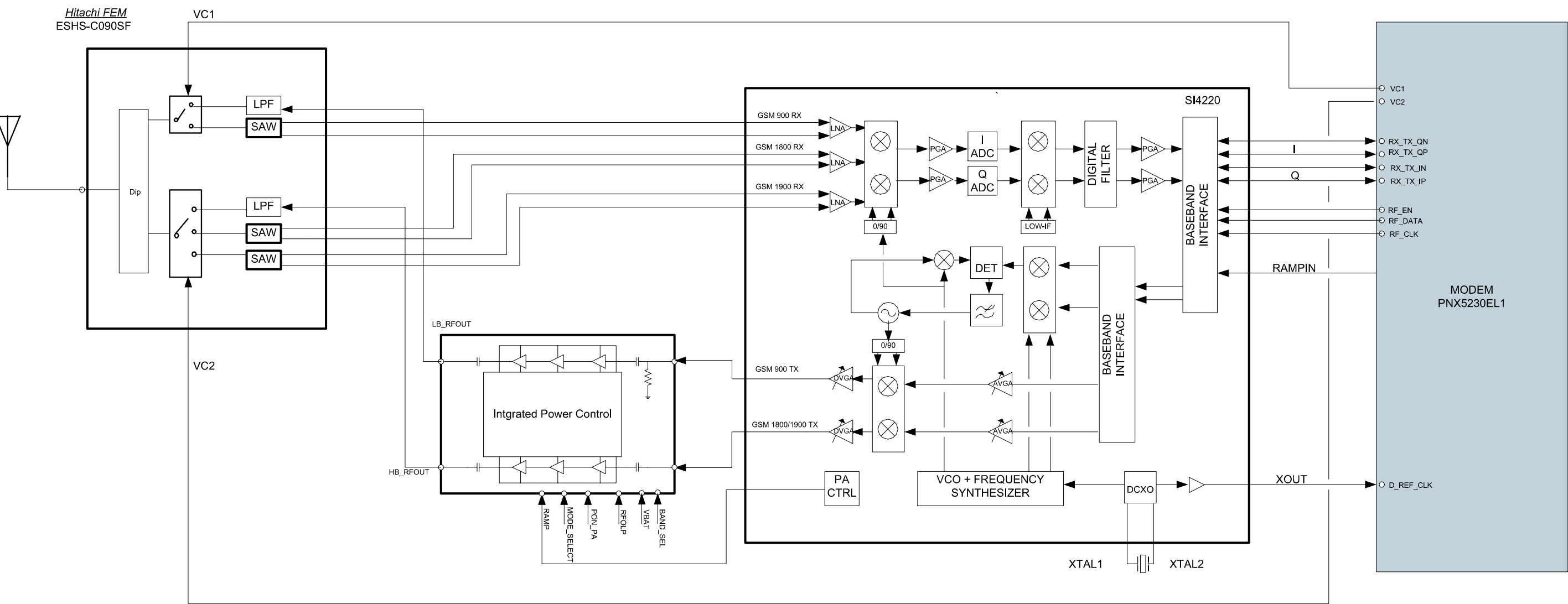
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| TA503 | C-TA,CHIP | 2404-001226 | SA |
| TA504 | C-TA,CHIP | 2404-001474 | SA |
| U102 | IC-TRANSCEIVER | 1205-003093 | SA |
| U103 | IC-POWER AMP | 1201-002423 | SA |
| U1109 | IC-TRANSCEIVER | 1205-002942 | SA |
| U1111 | C-CER,CHIP | 2203-006257 | 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 |
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7. Block Diagrams

7-1. Base Band Block Diagram

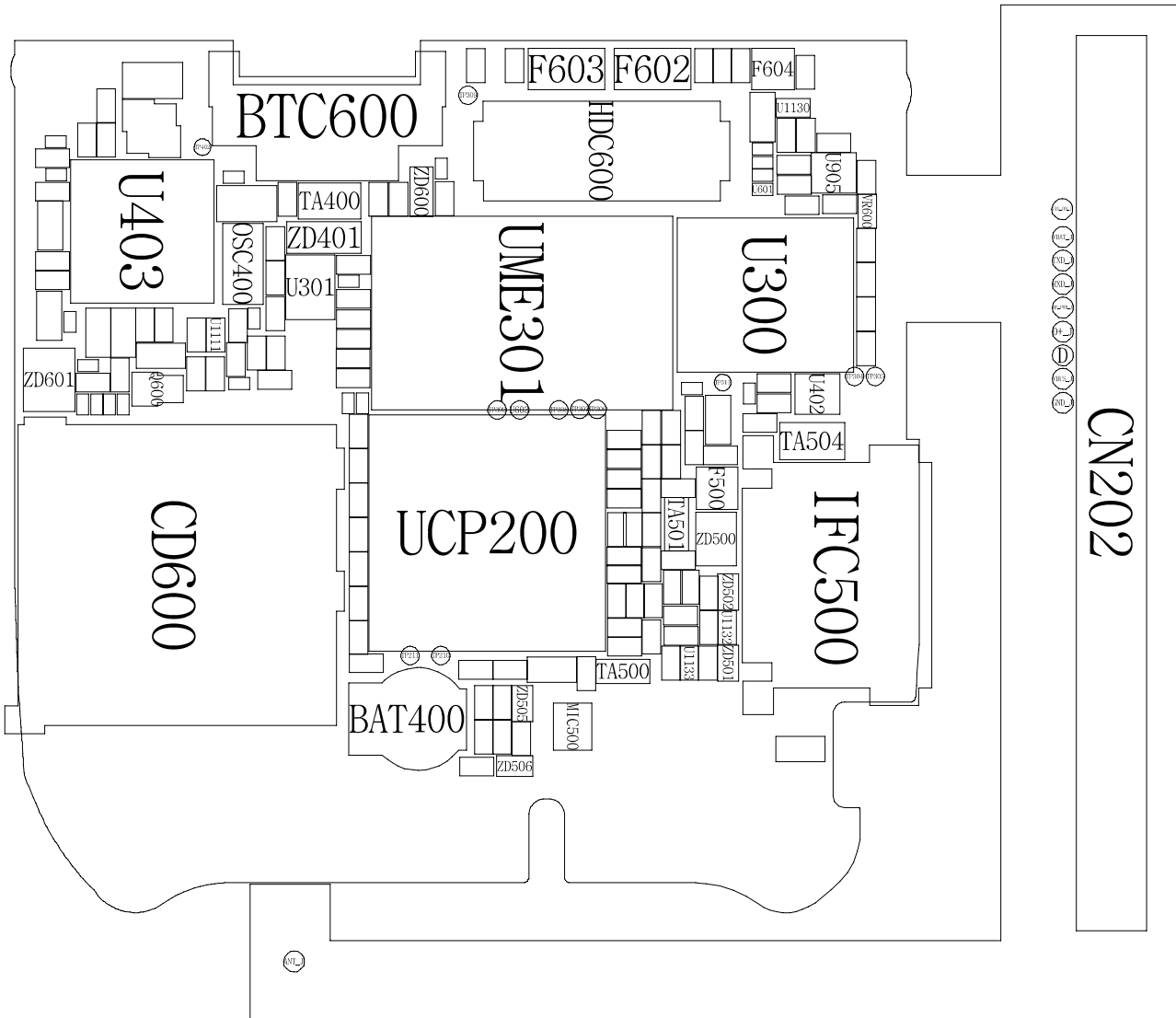


7-2. RF Block Diagram

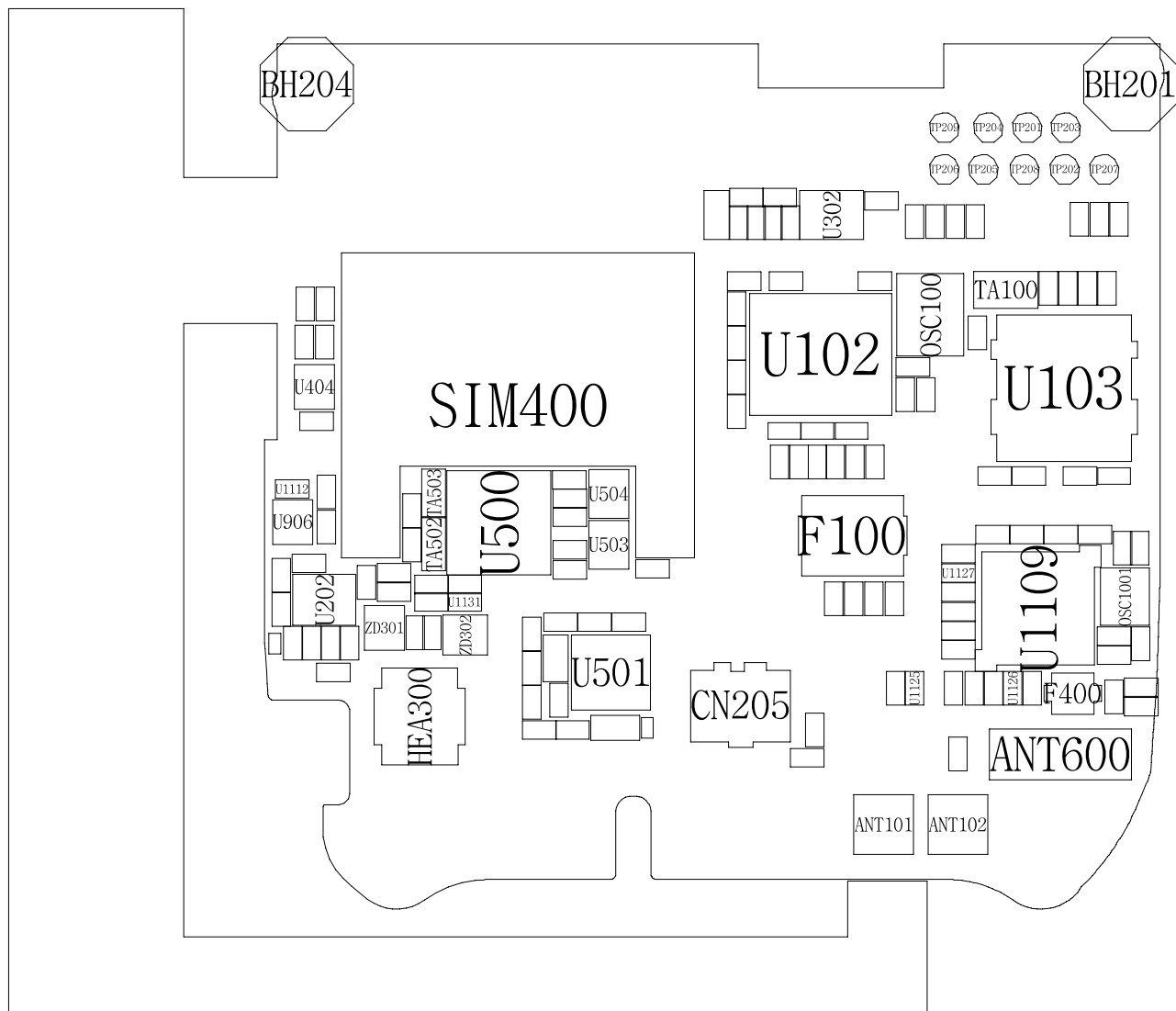


8. PCB Diagrams

Top

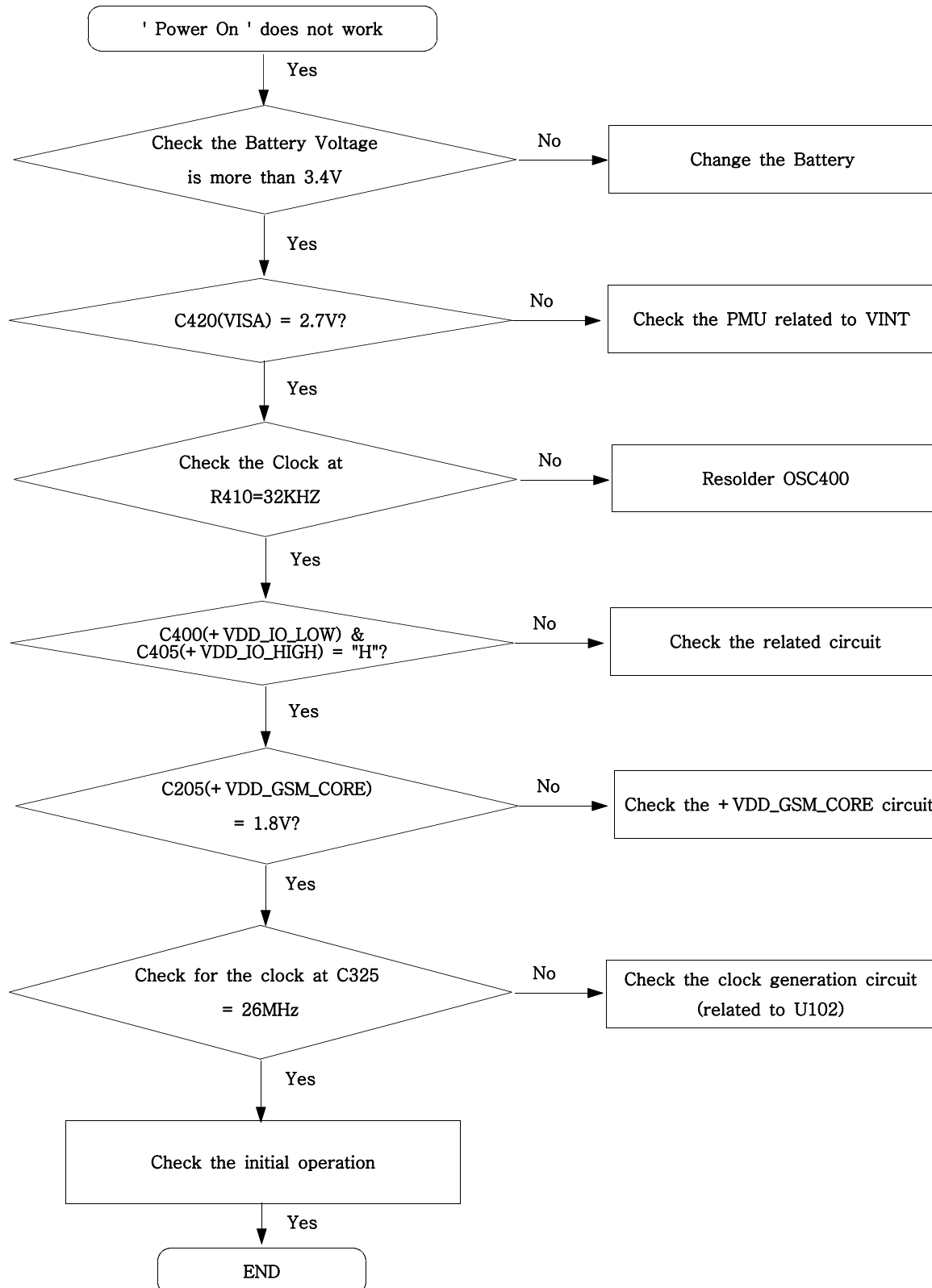


Bottom

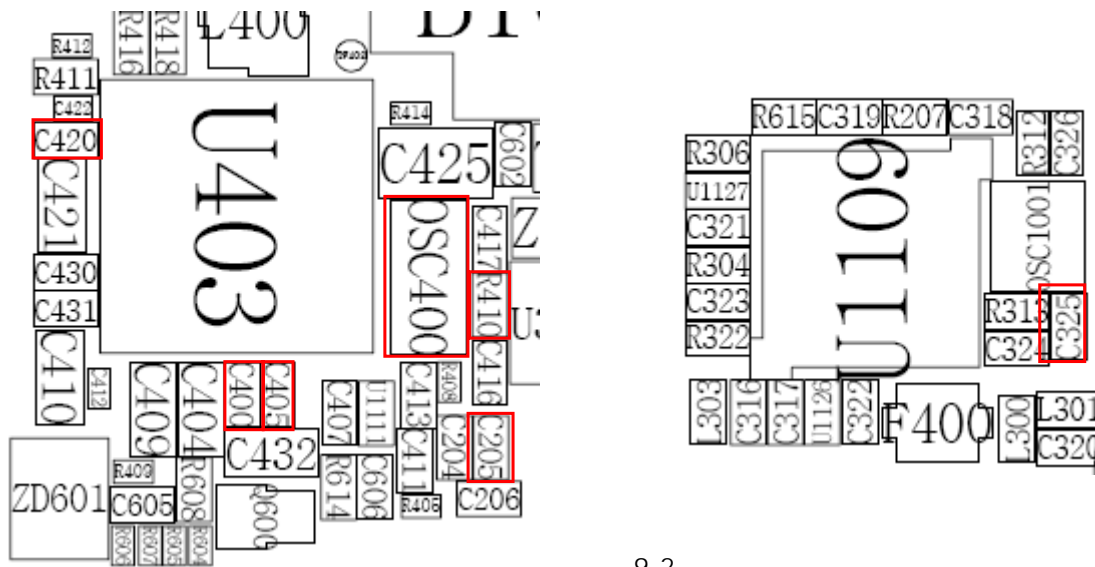
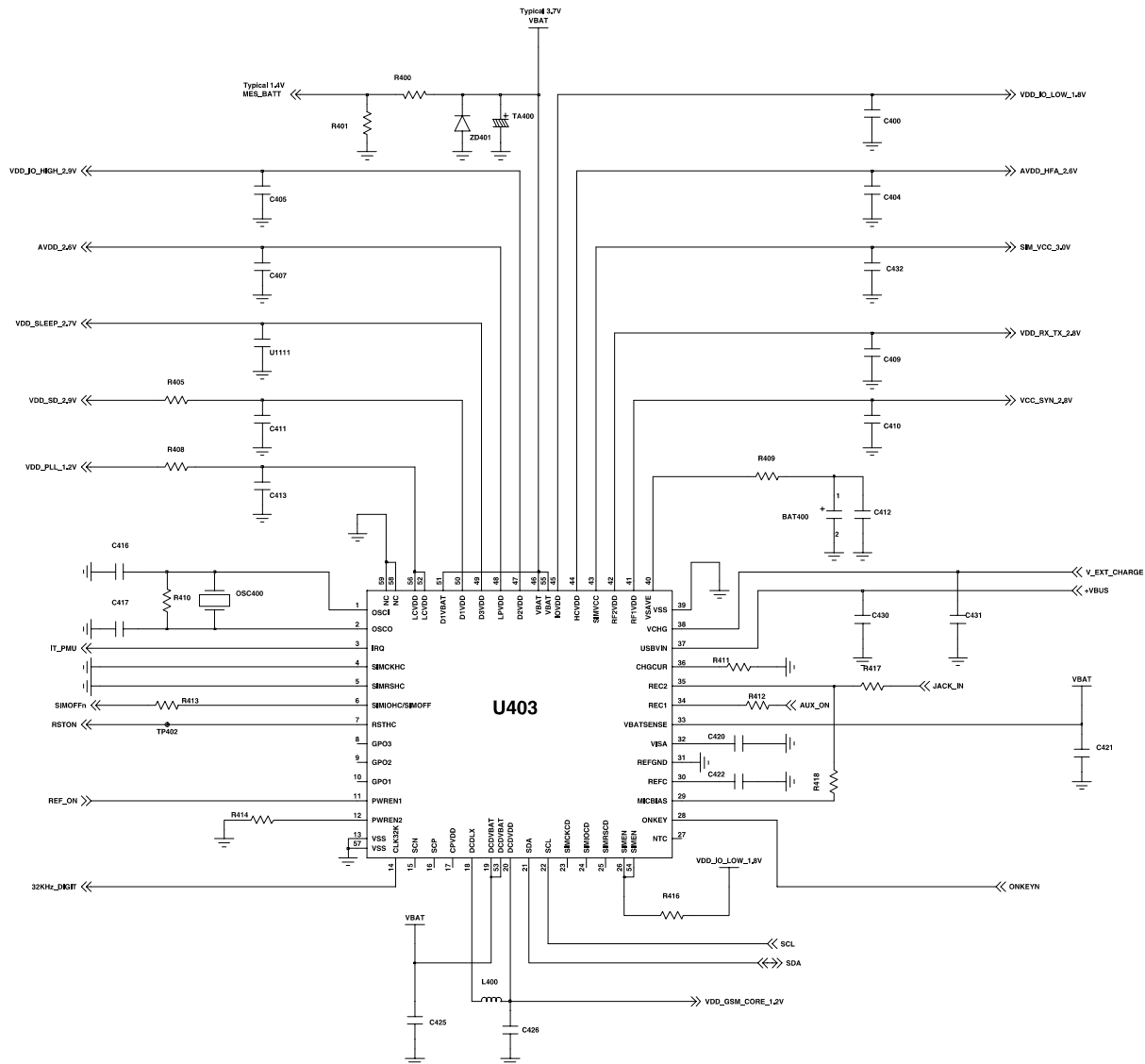


9. Flow Chart of Troubleshooting

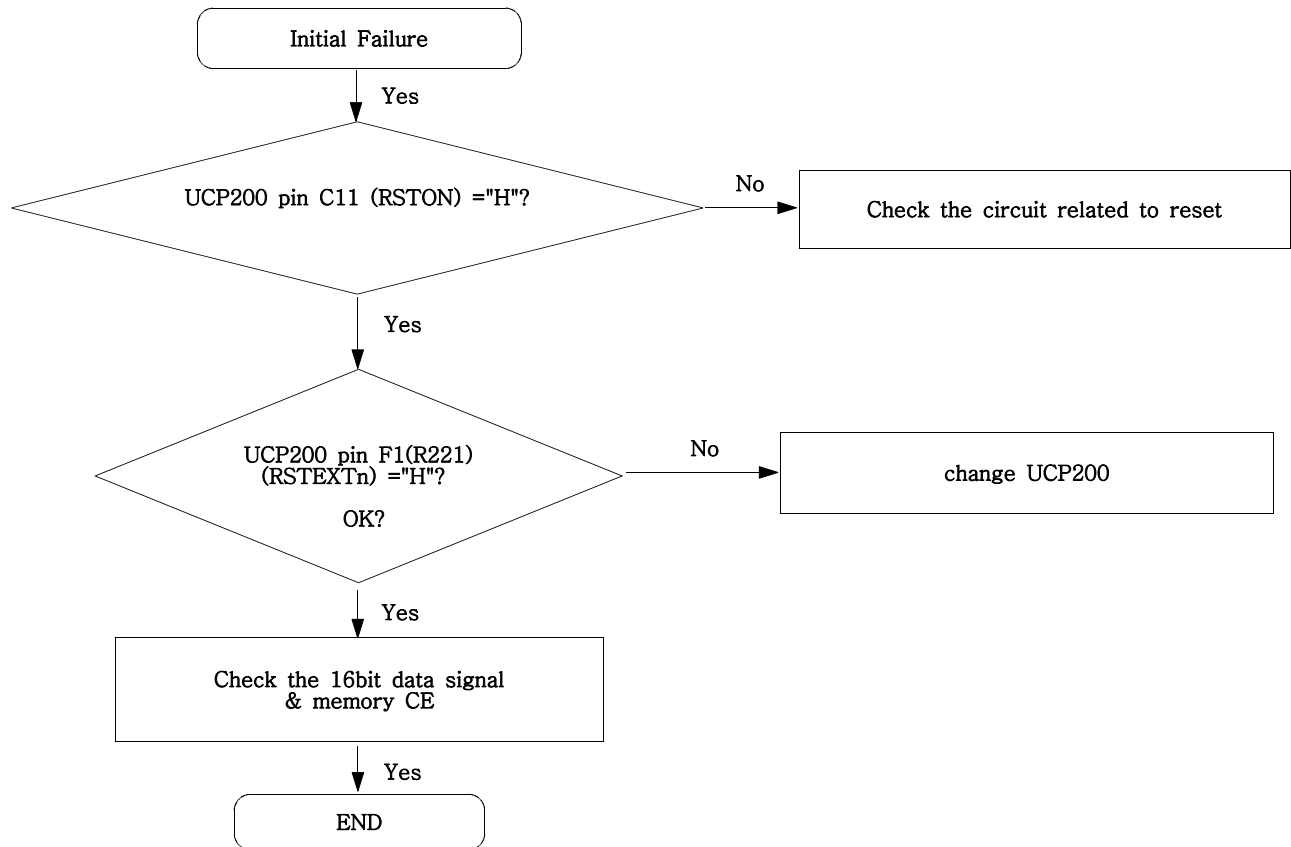
9-1. Power On

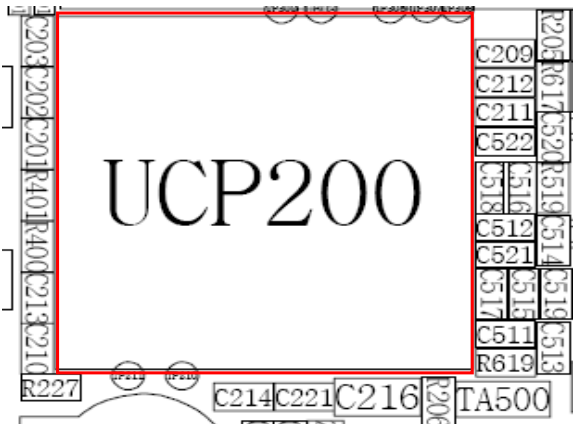


Flow Chart of Troubleshooting

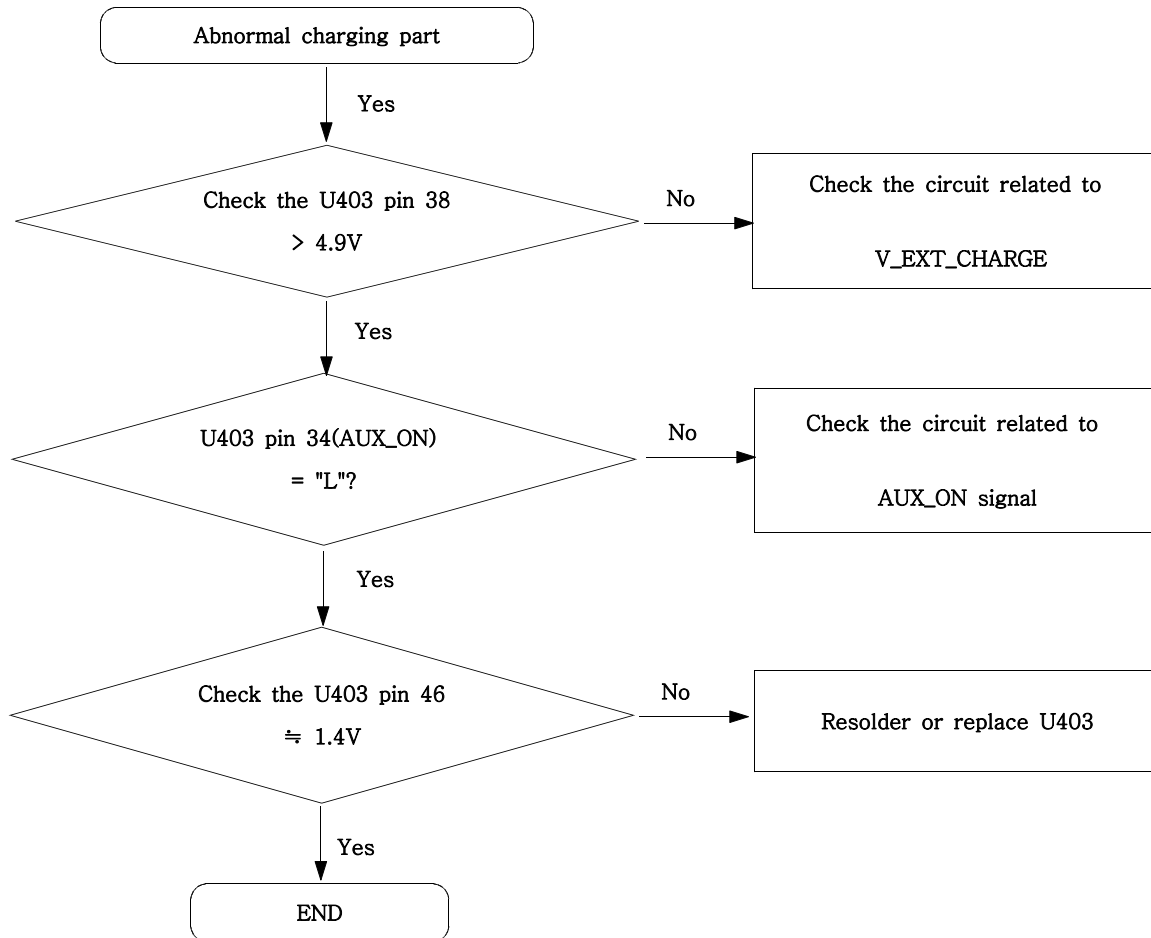


9-2. Initial

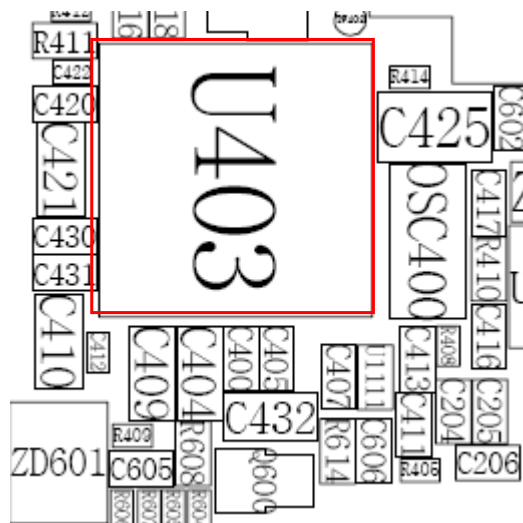
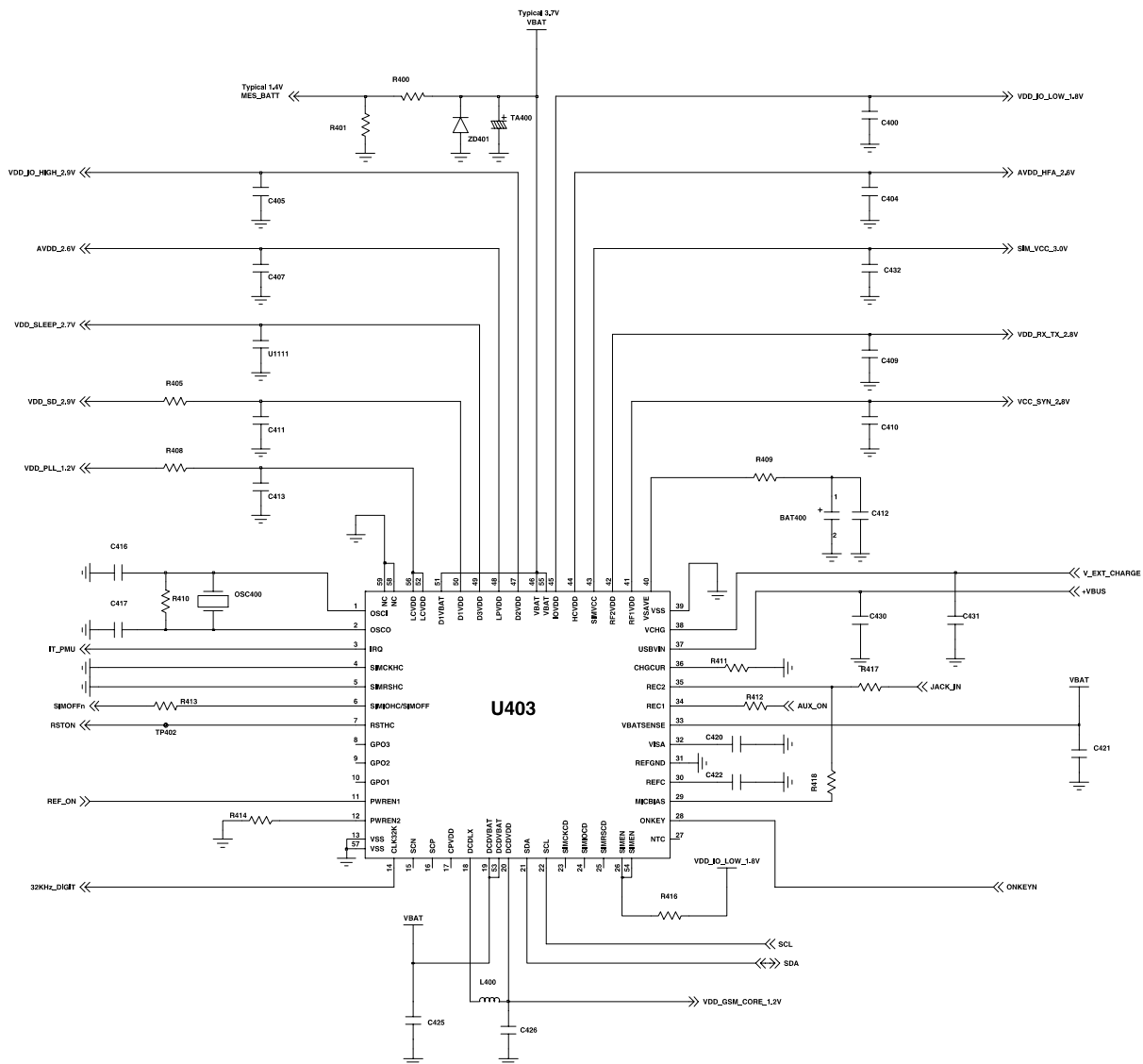




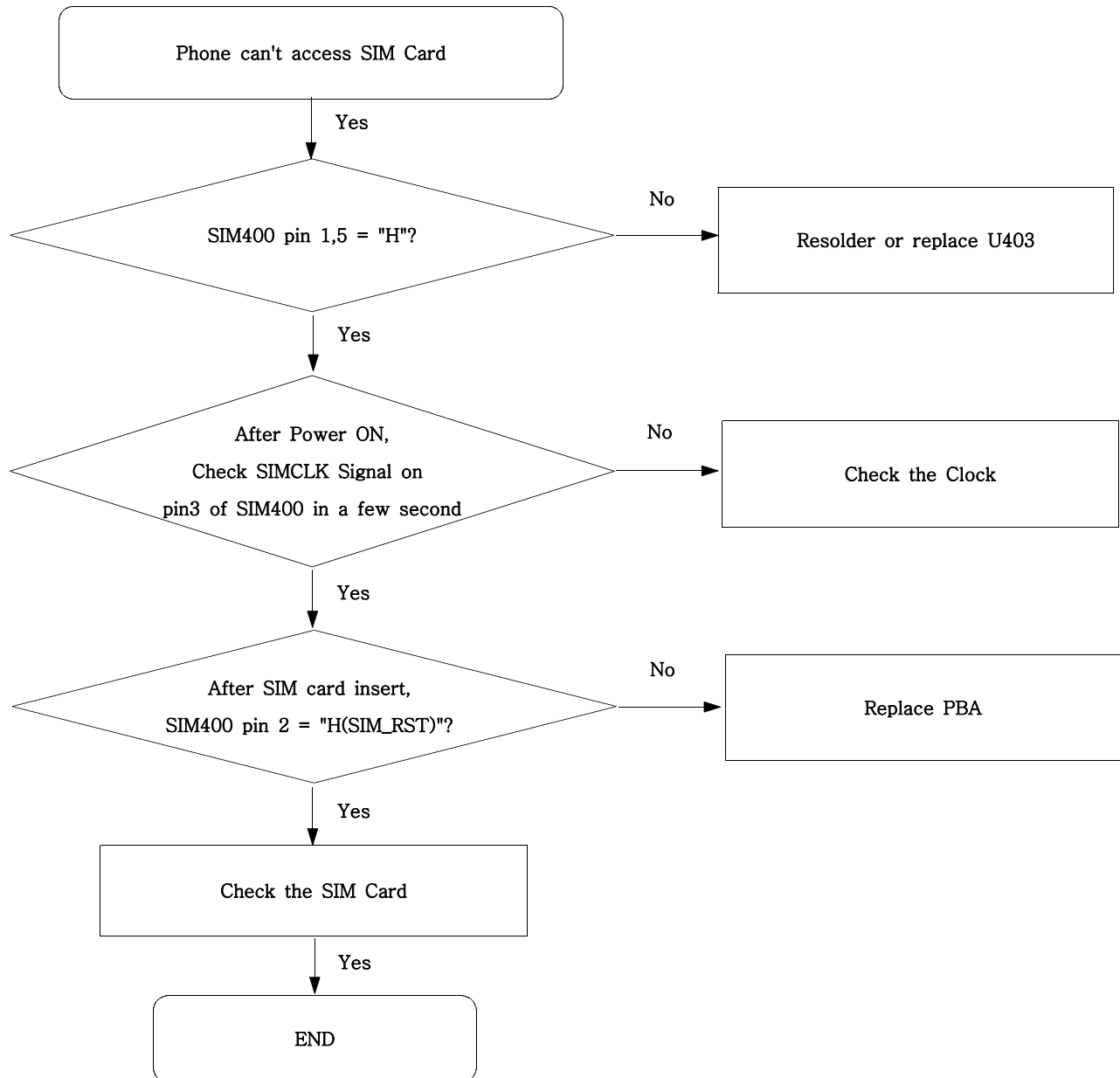
9-3. Charging Part

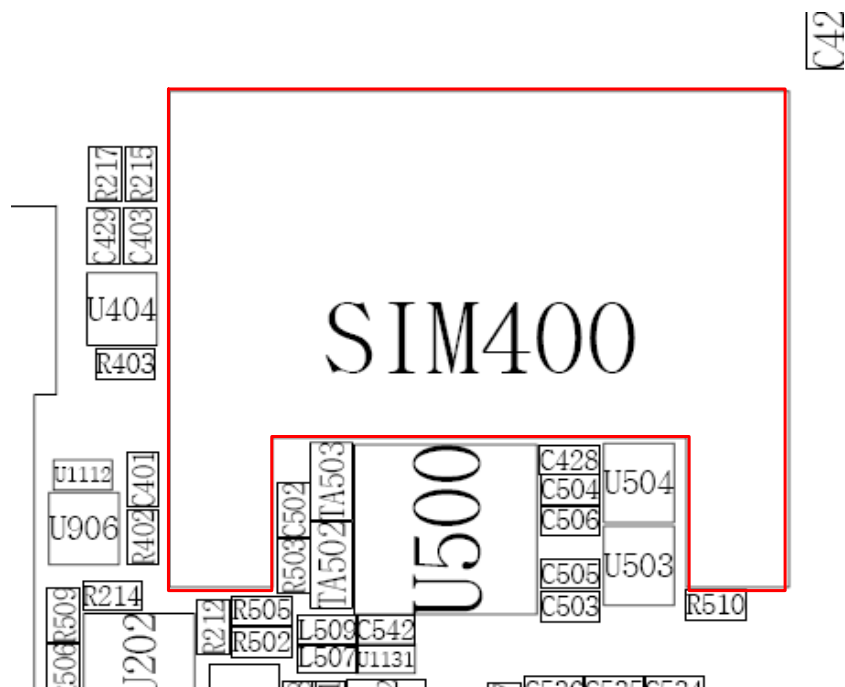
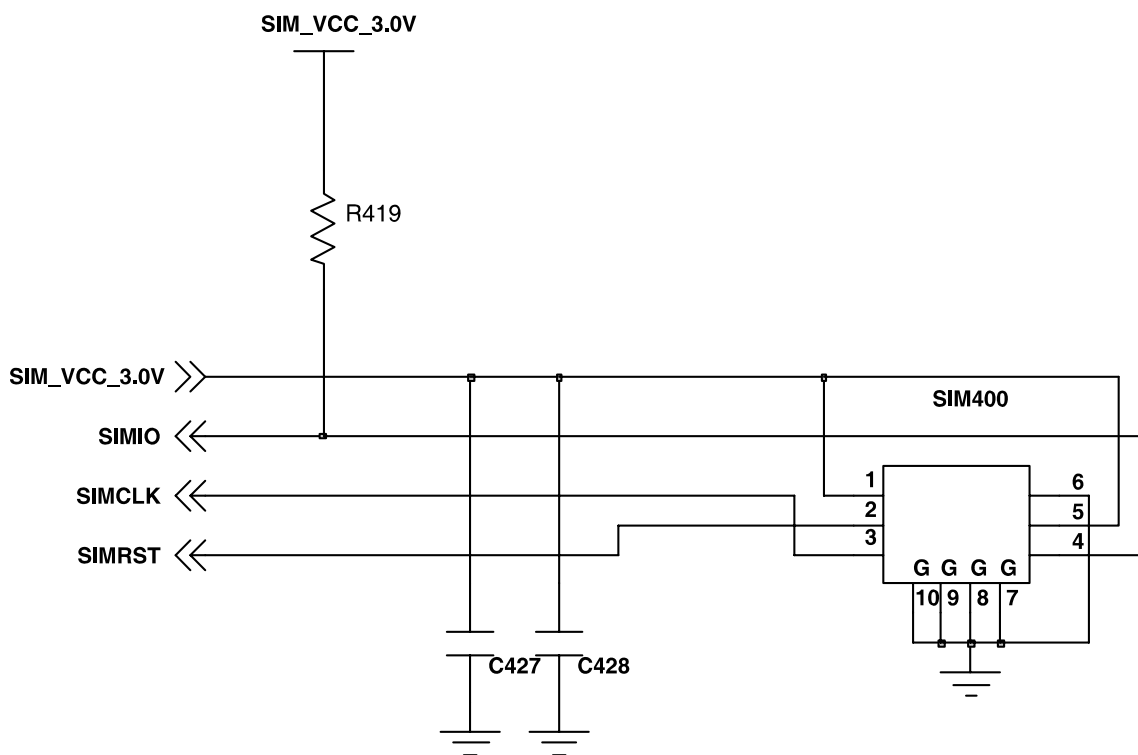


Flow Chart of Troubleshooting

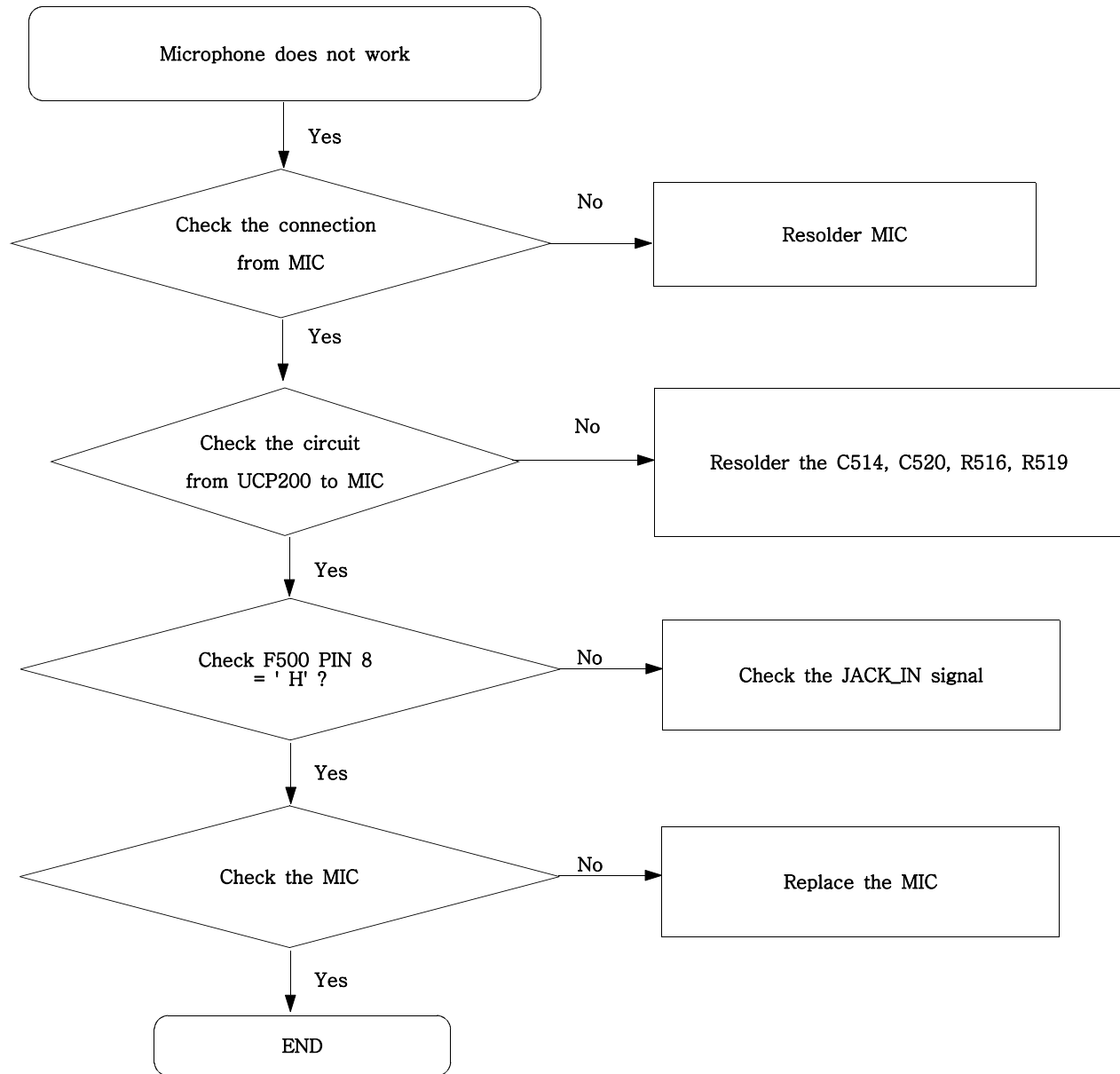


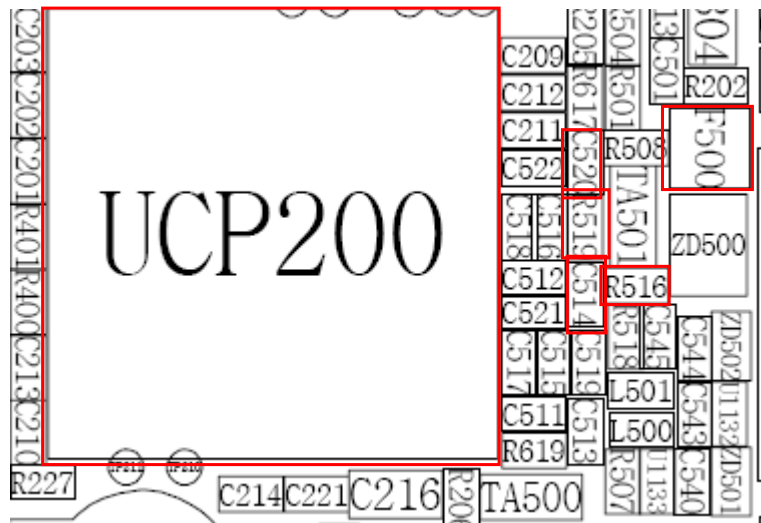
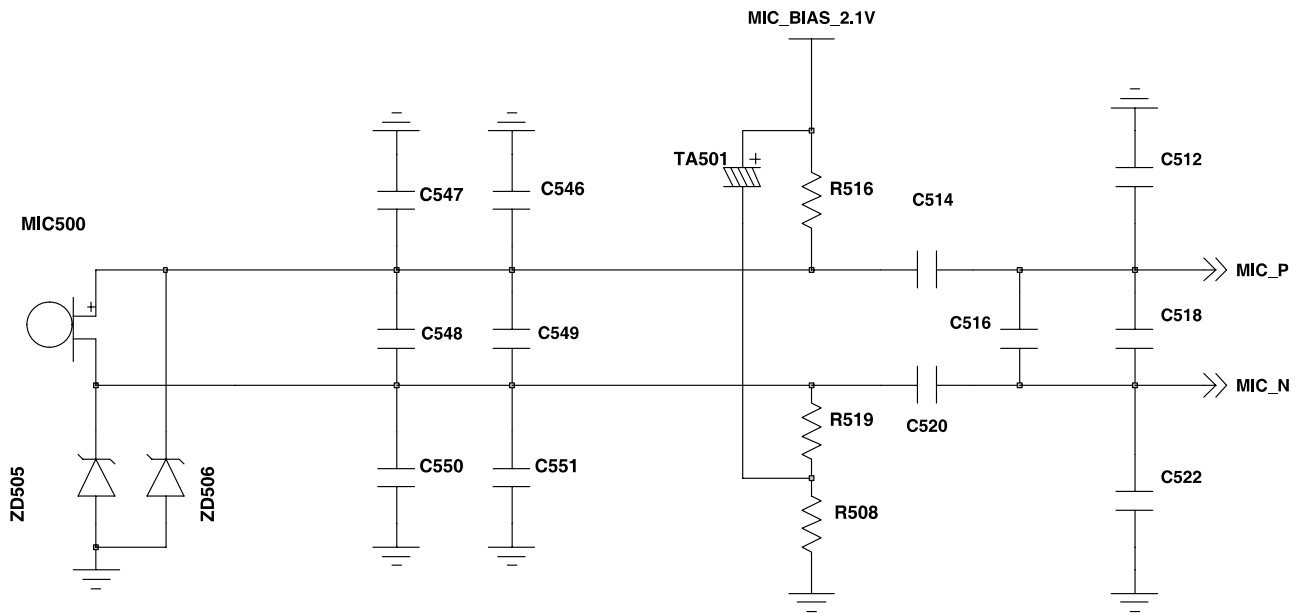
9-4. Sim Part



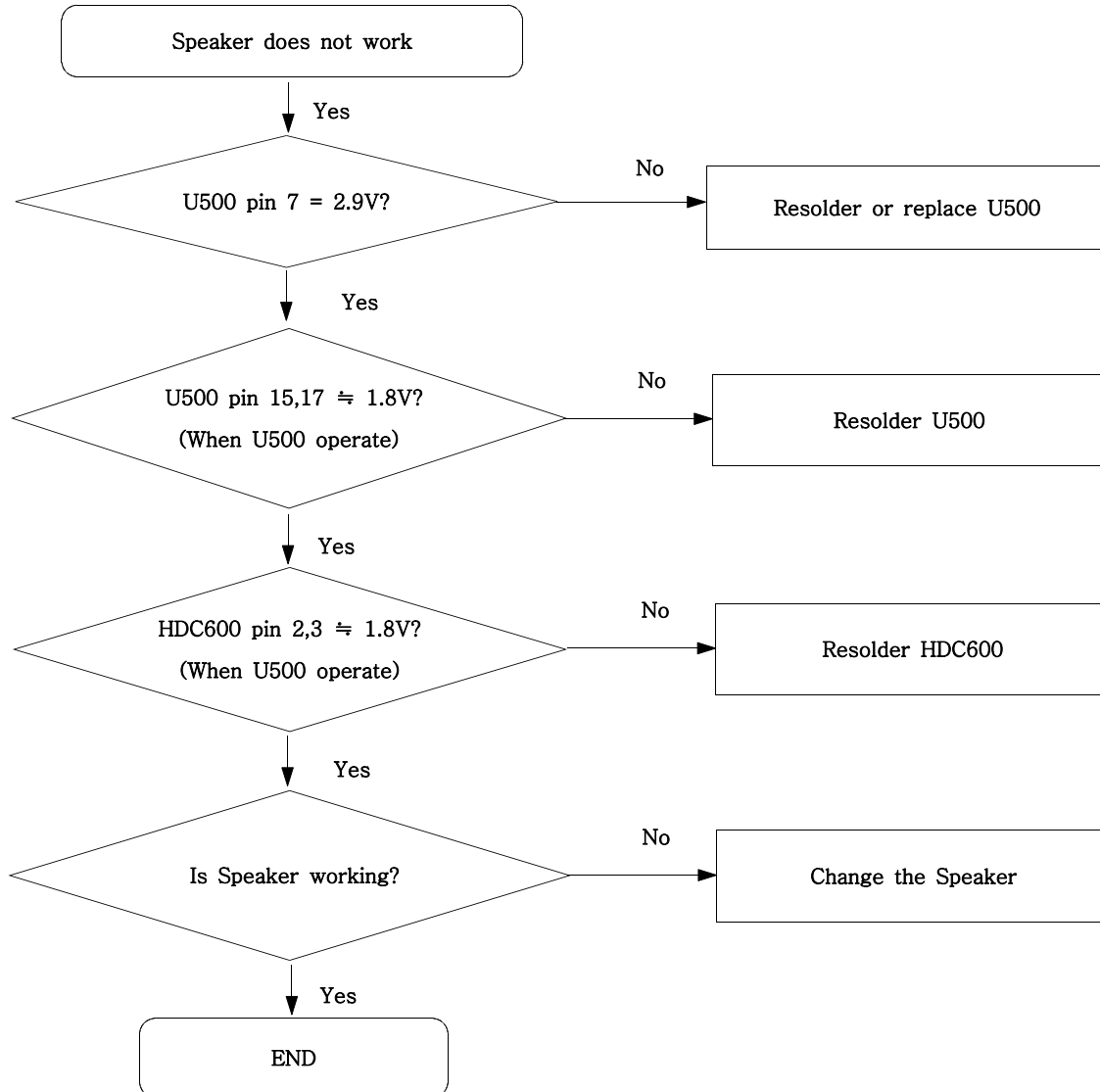


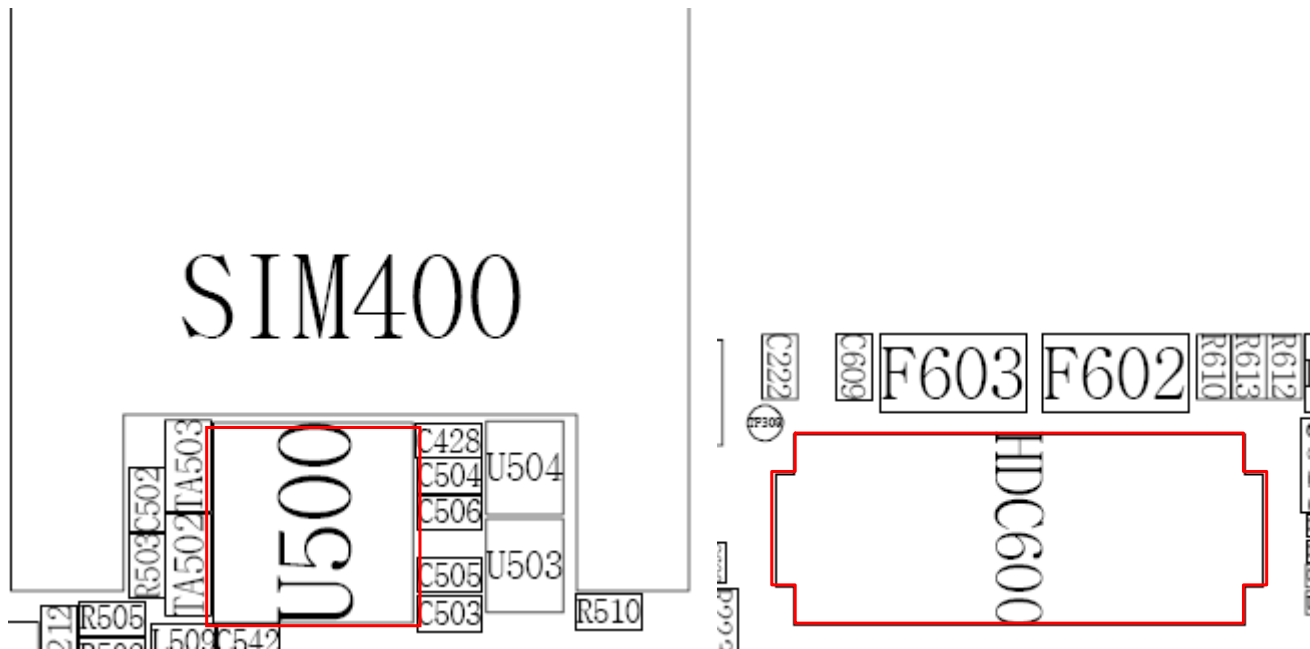
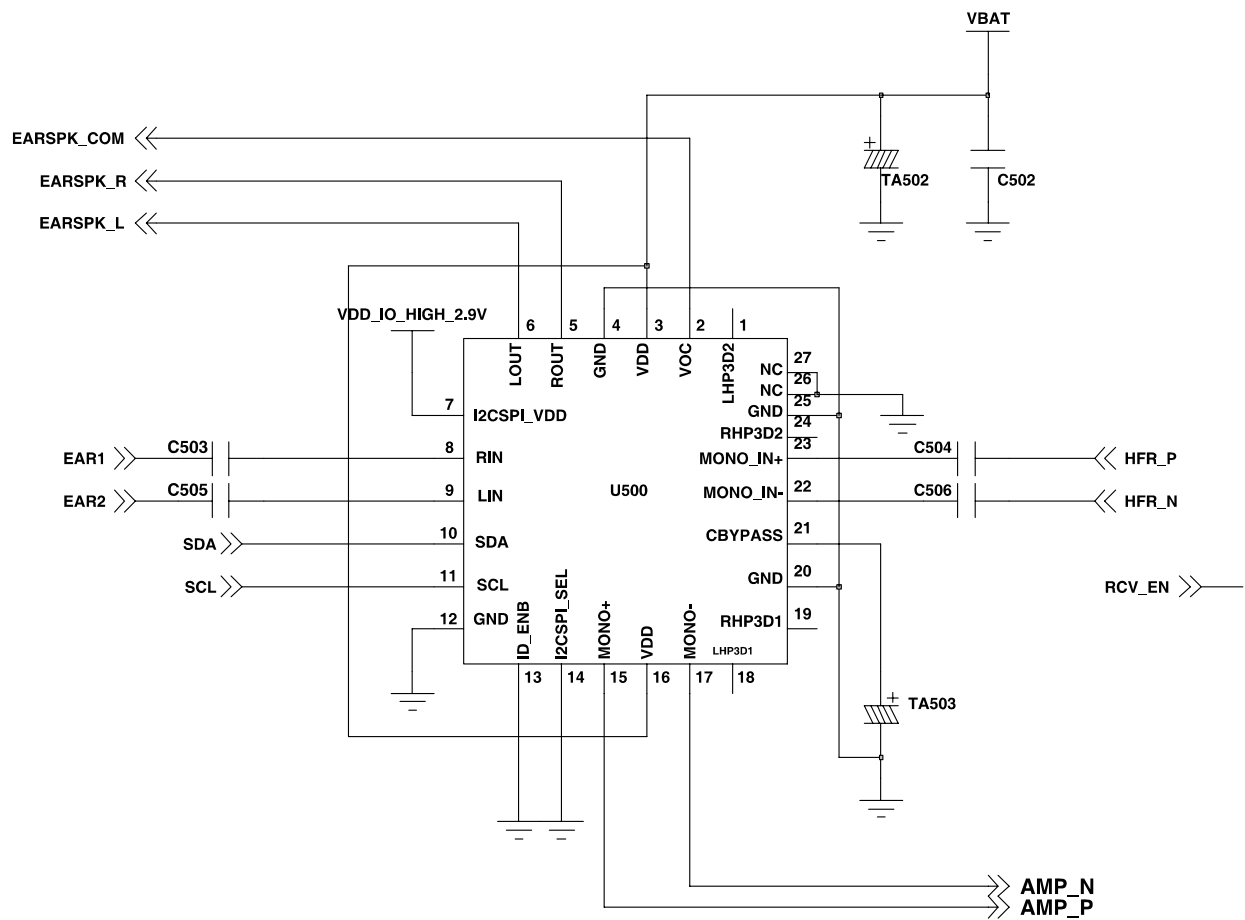
9-5. Microphone Part



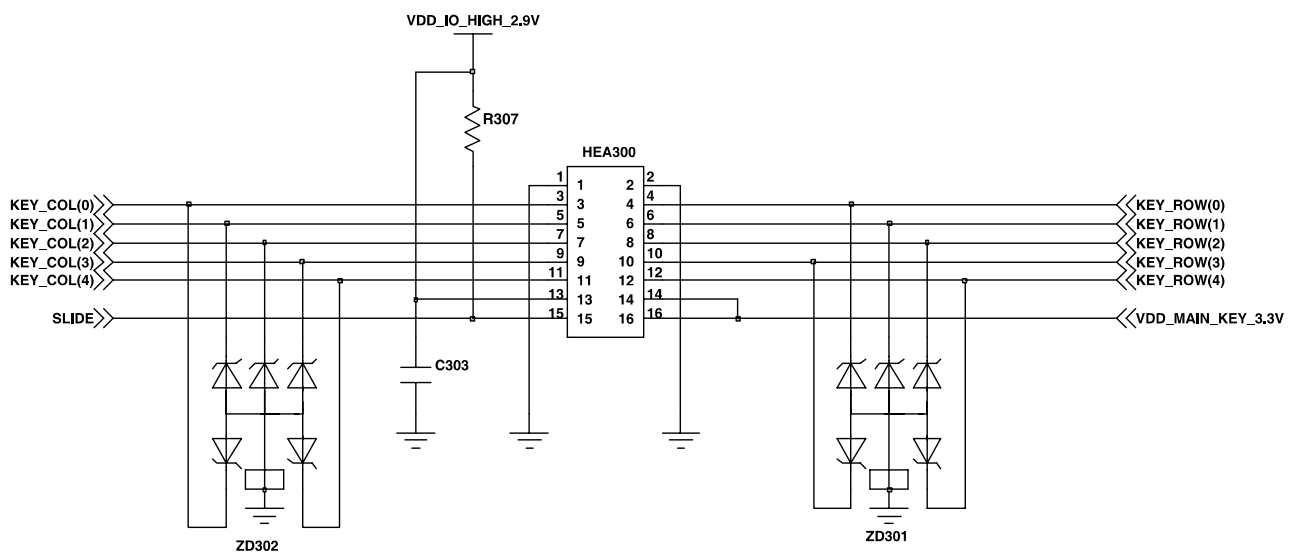
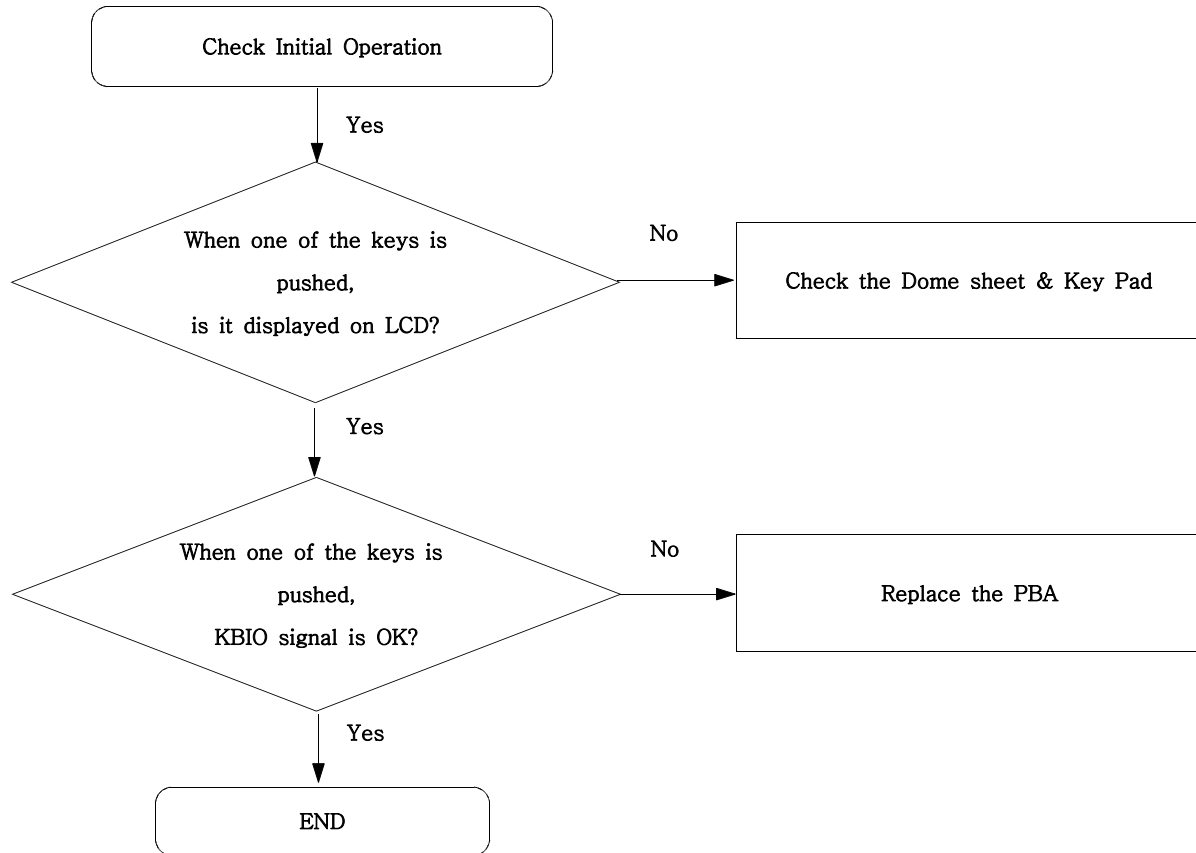


9-6. Speaker Part(Melody)

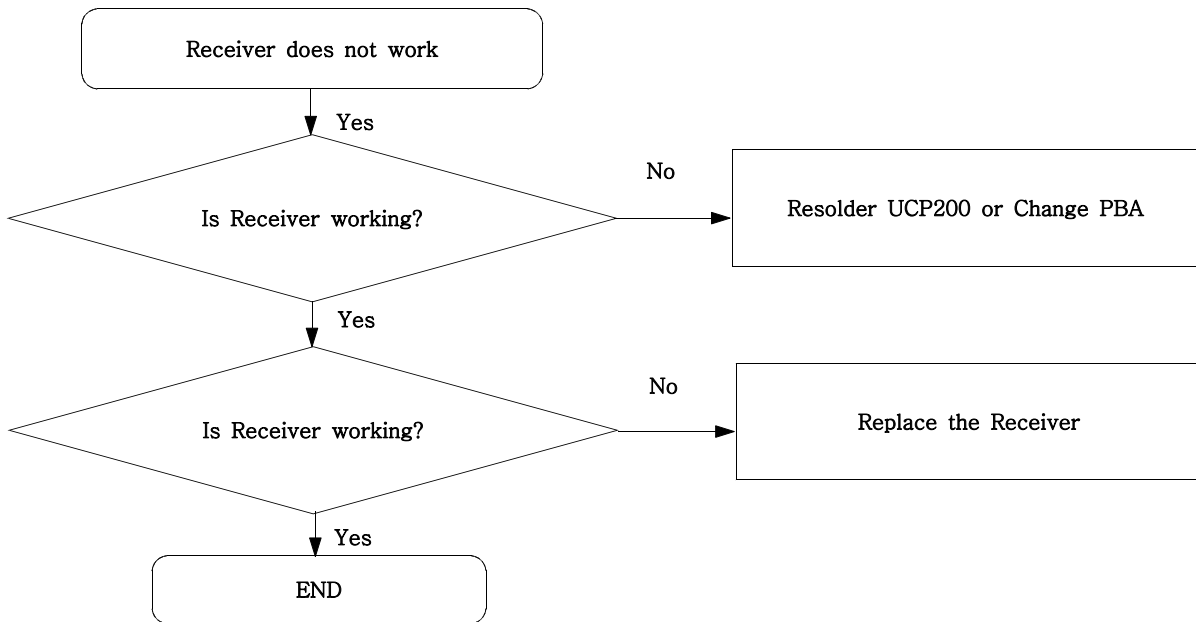




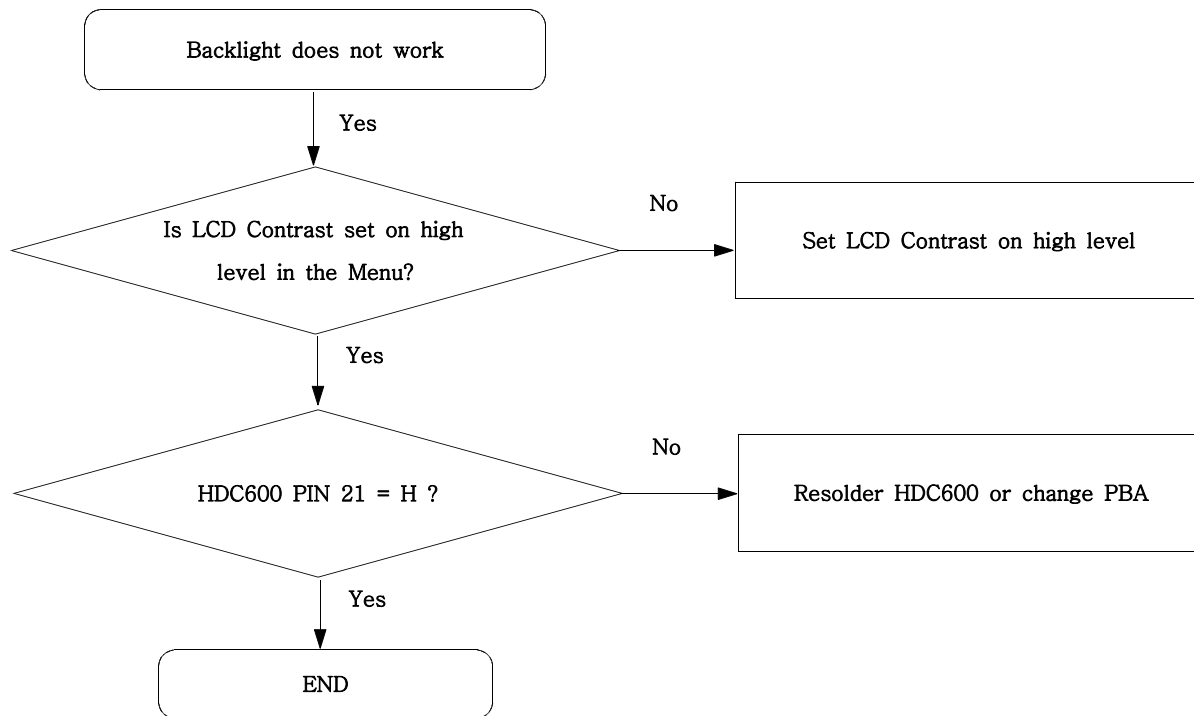
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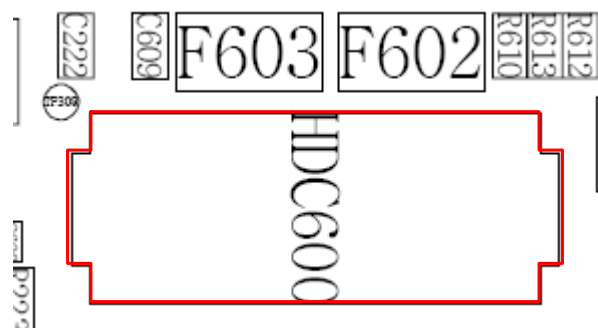
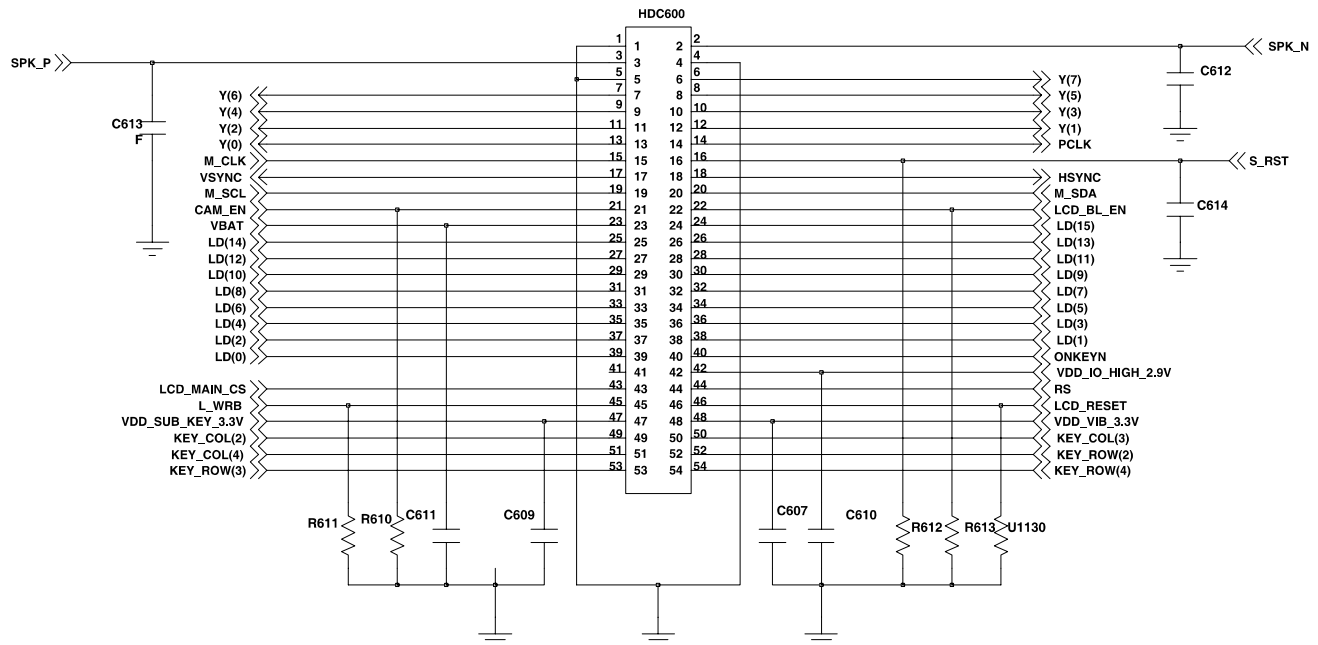


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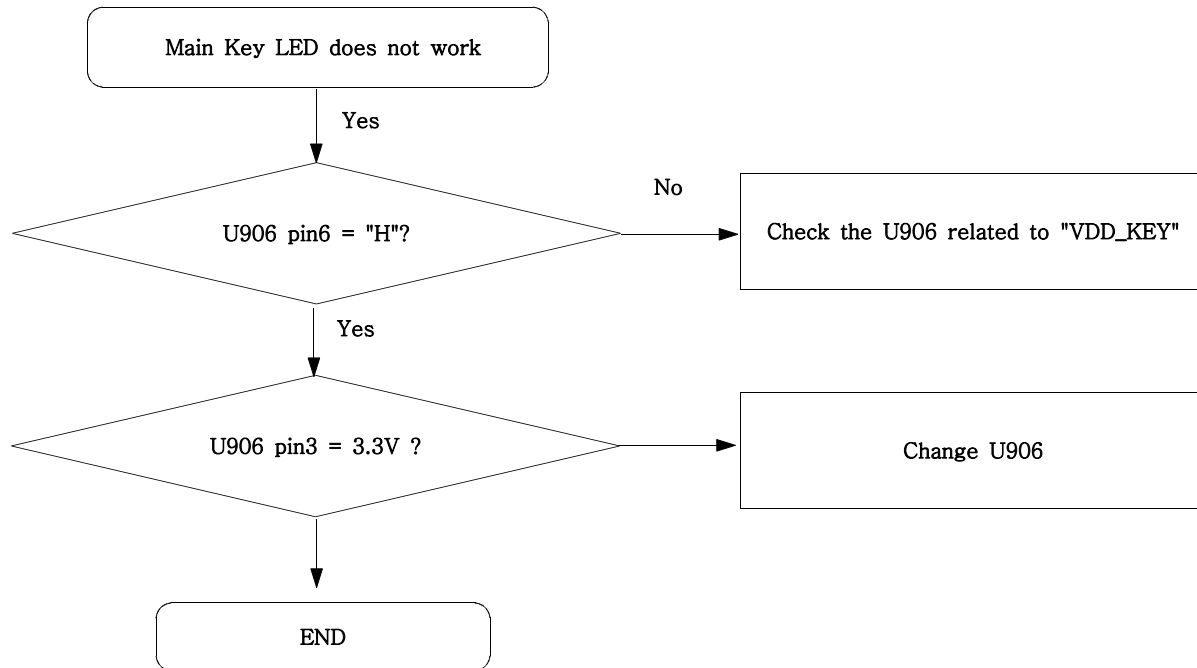


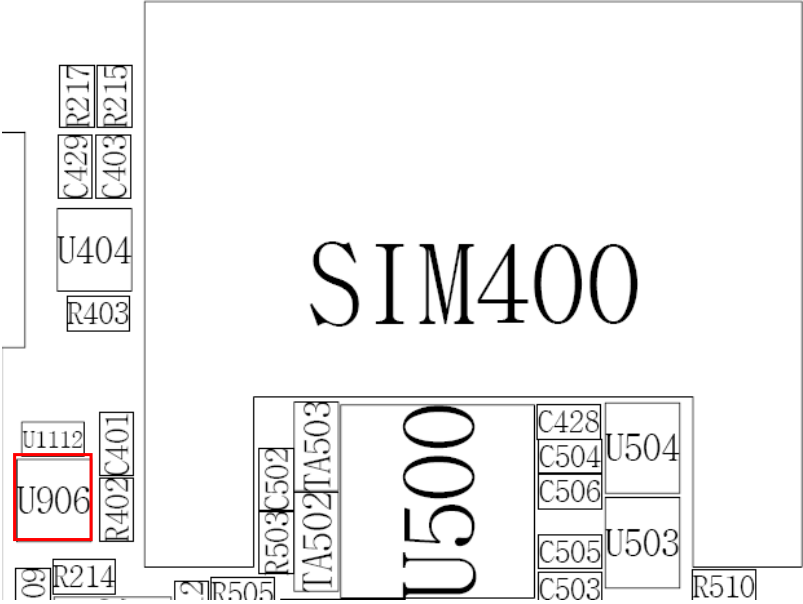
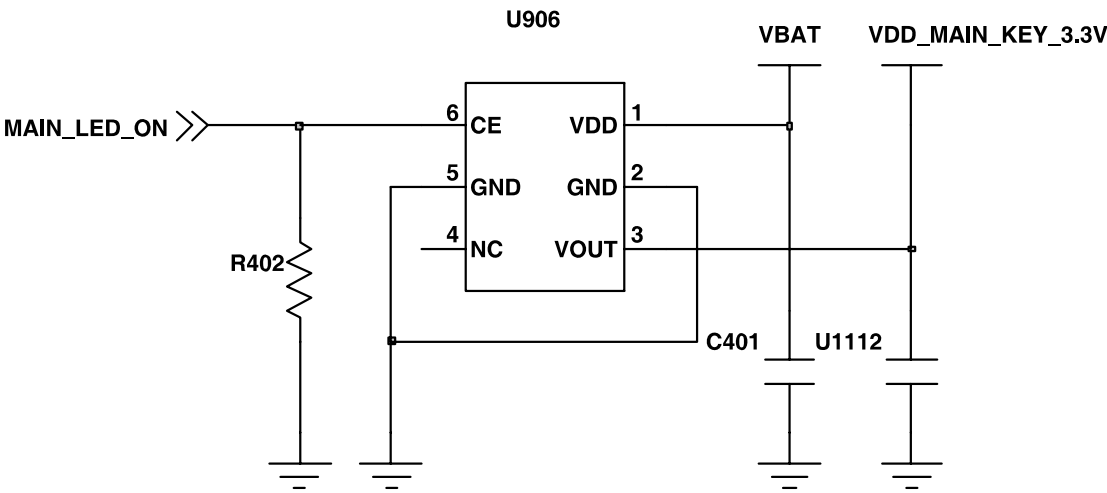
9-9. Back Light (for Color Main LCD)



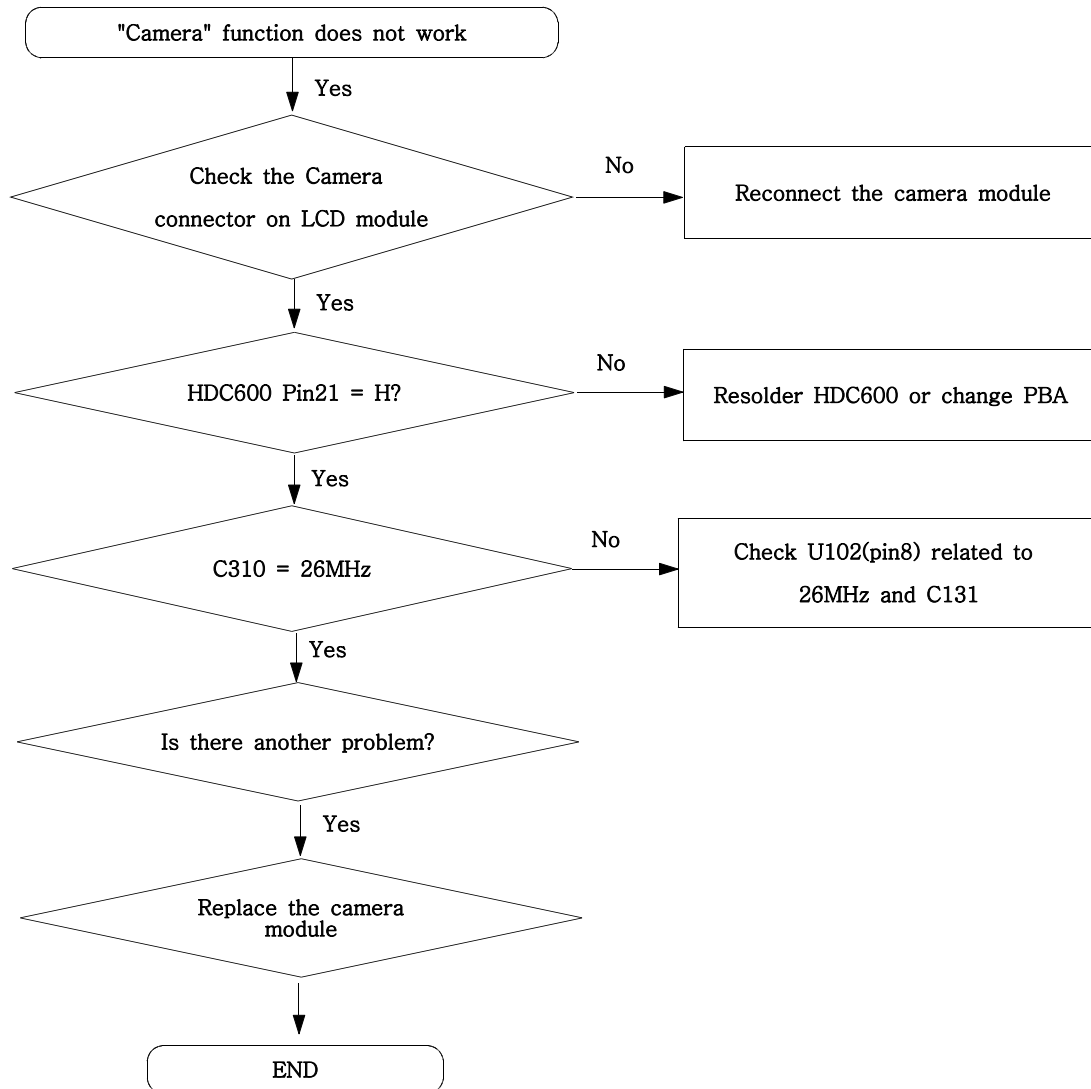


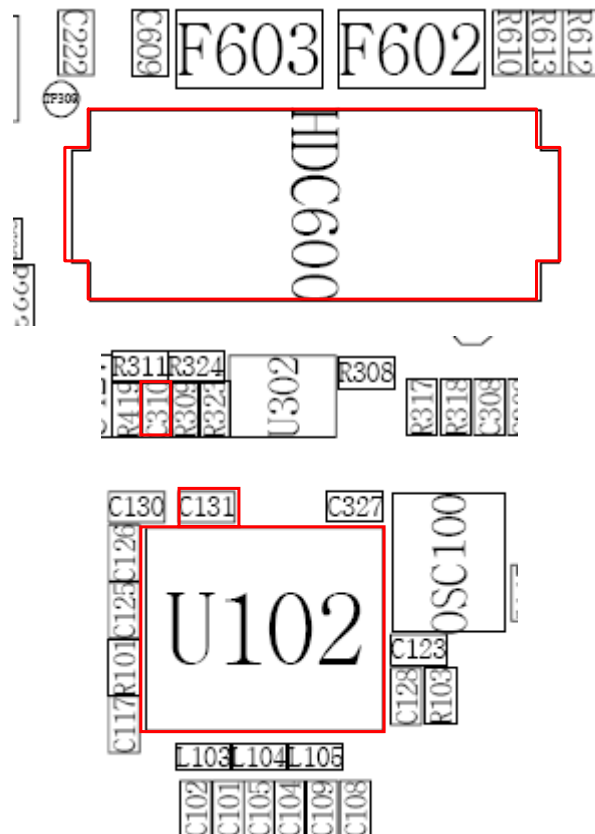
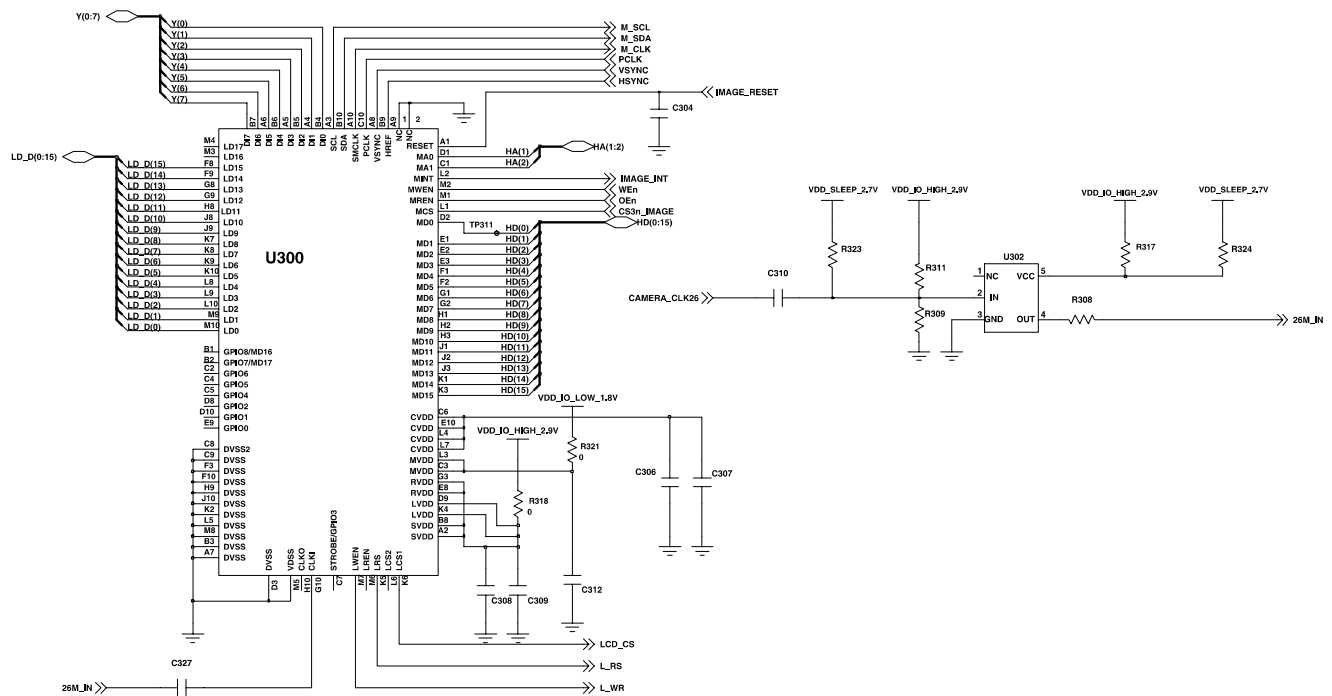
9-10. Key Back Light



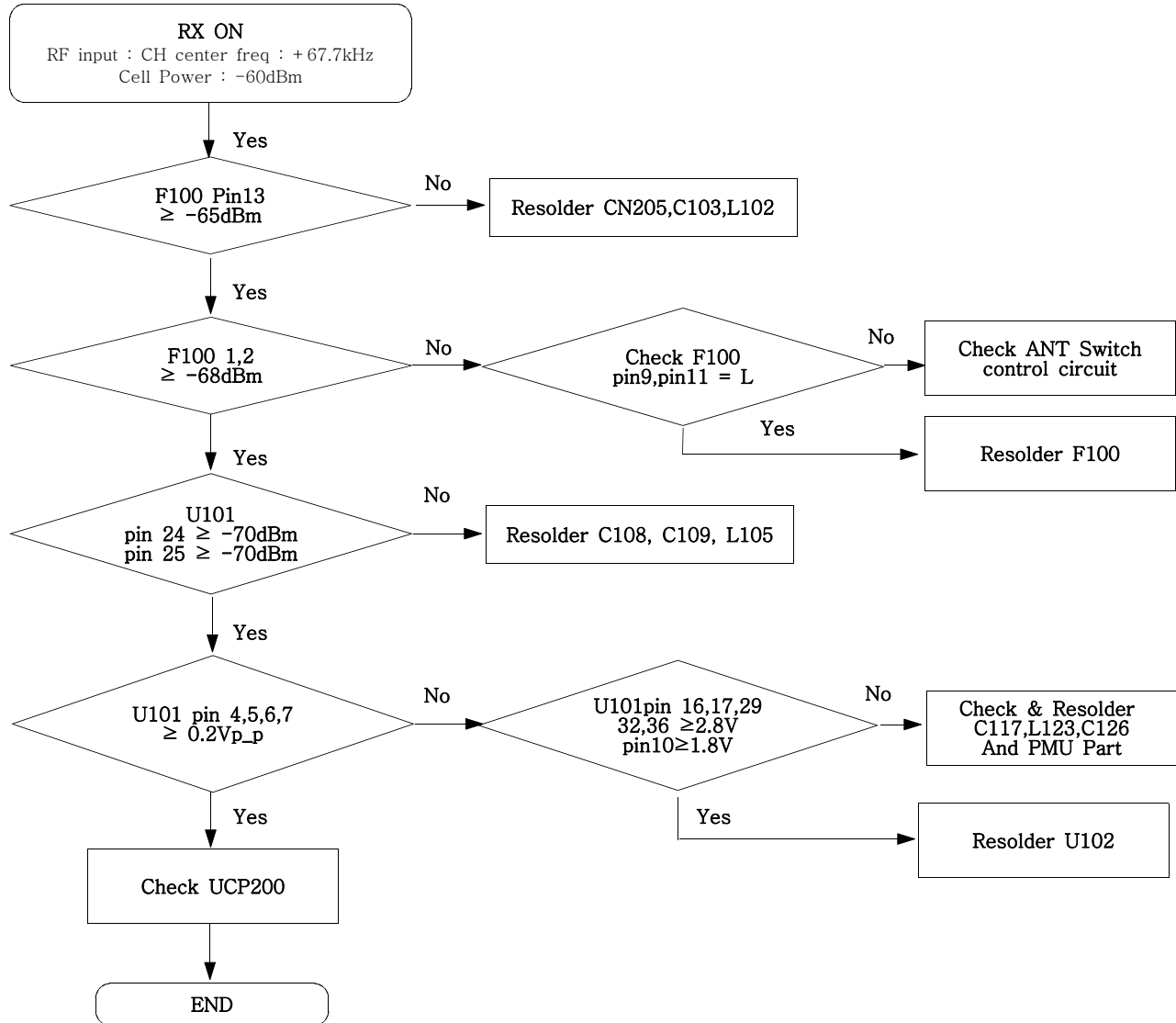


9-11. Camera part

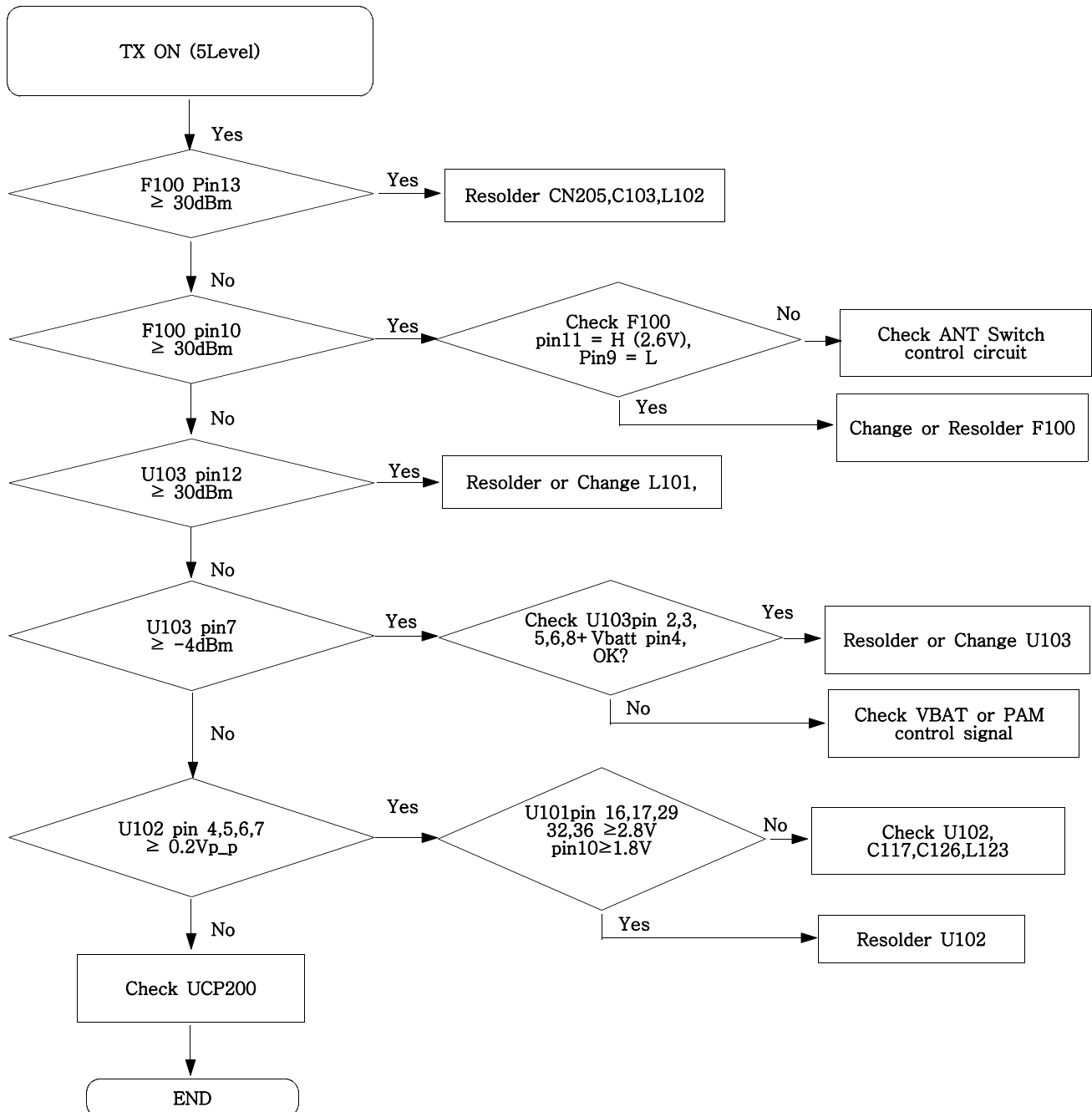




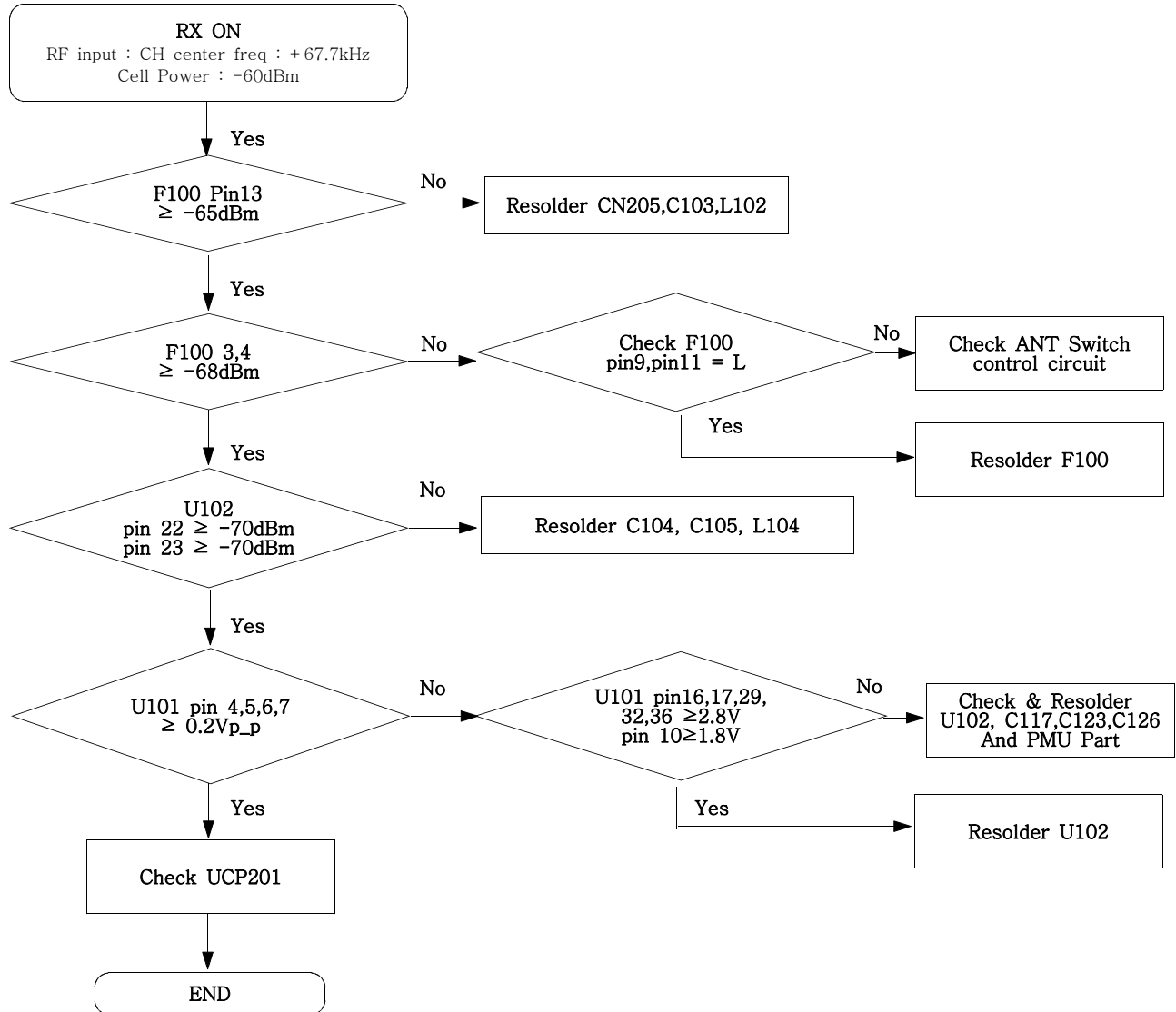
9-12. GSM Receiver



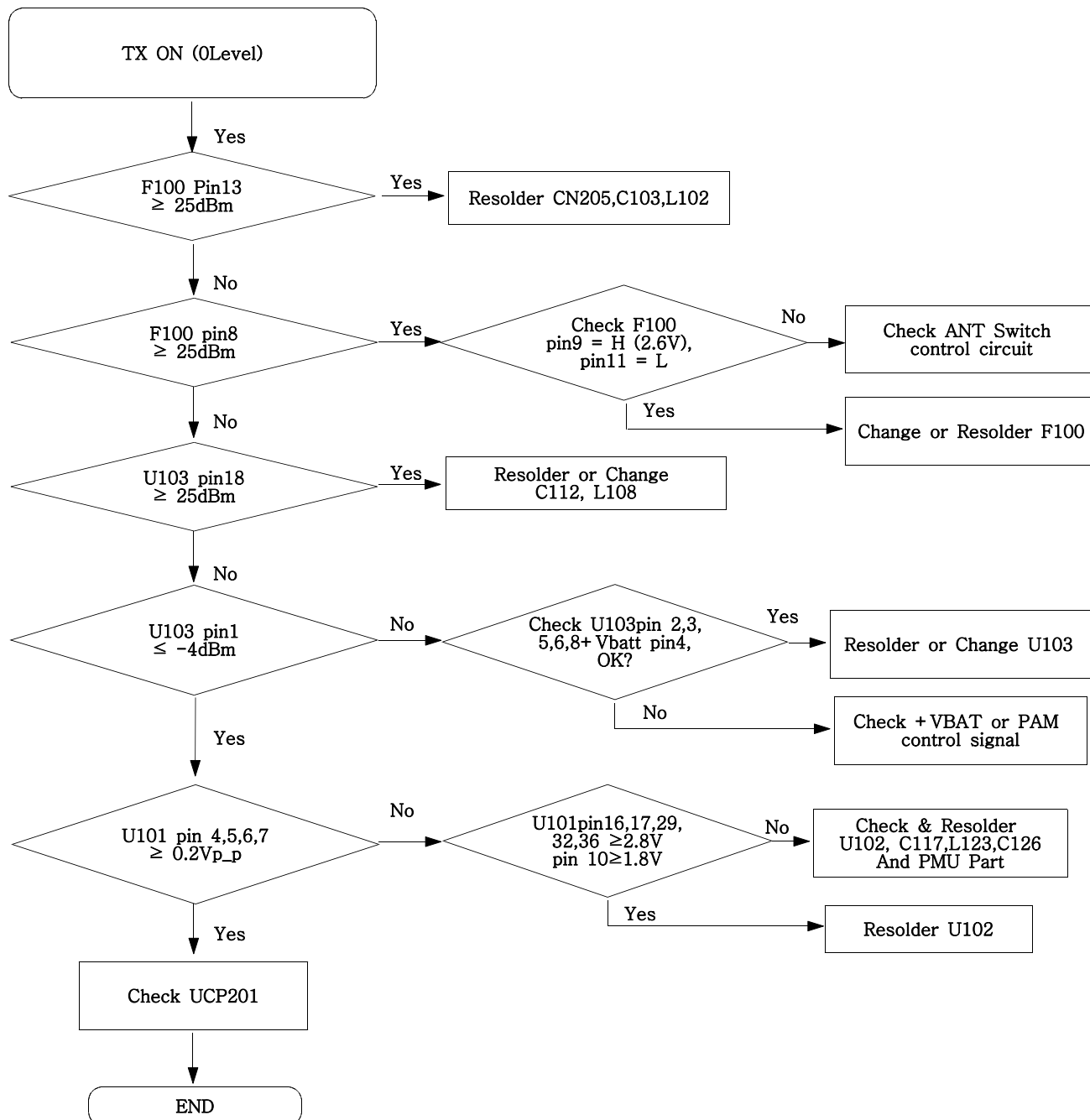
9-13. GSM Transmitter



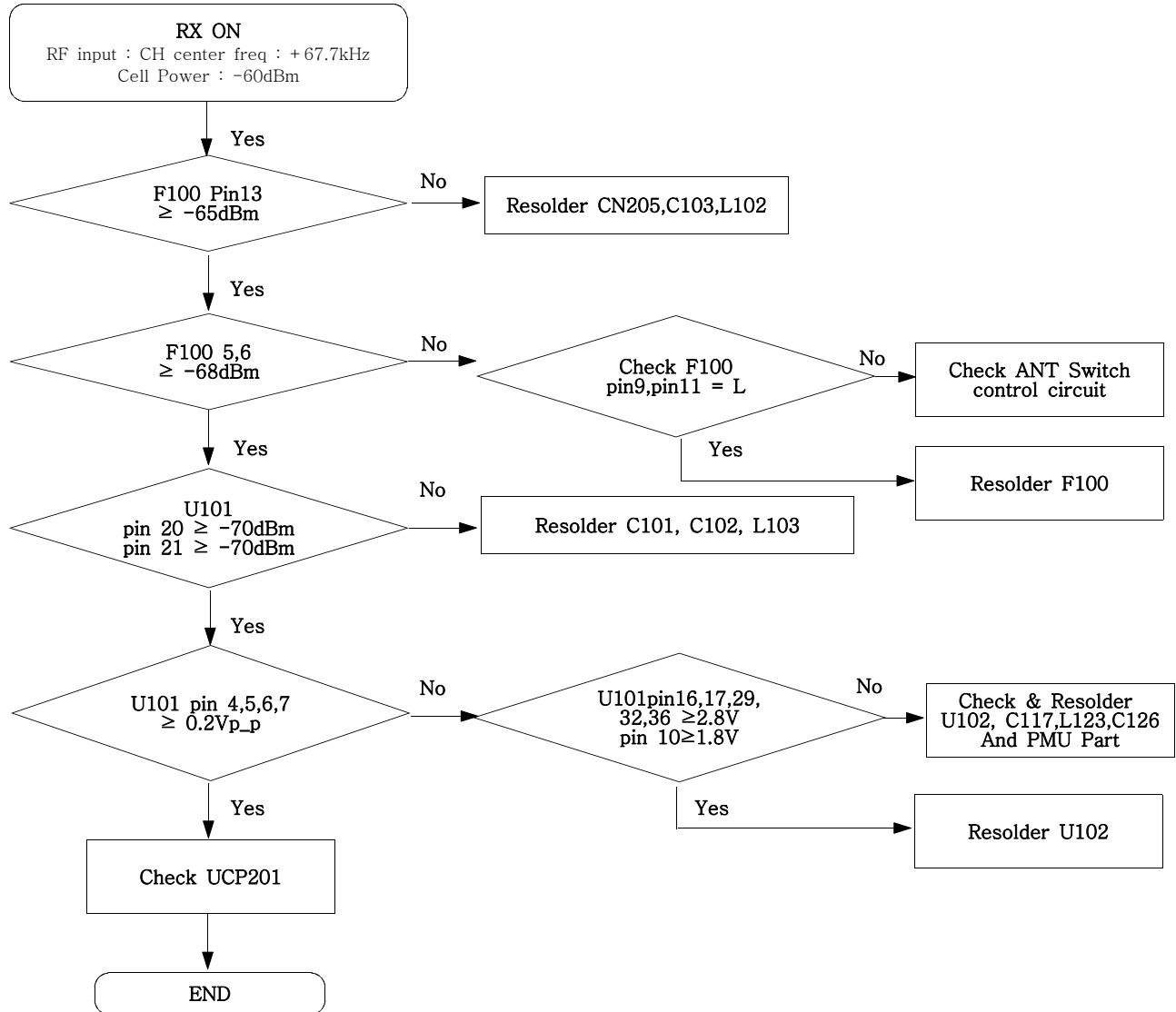
9-14. DCS Receiver



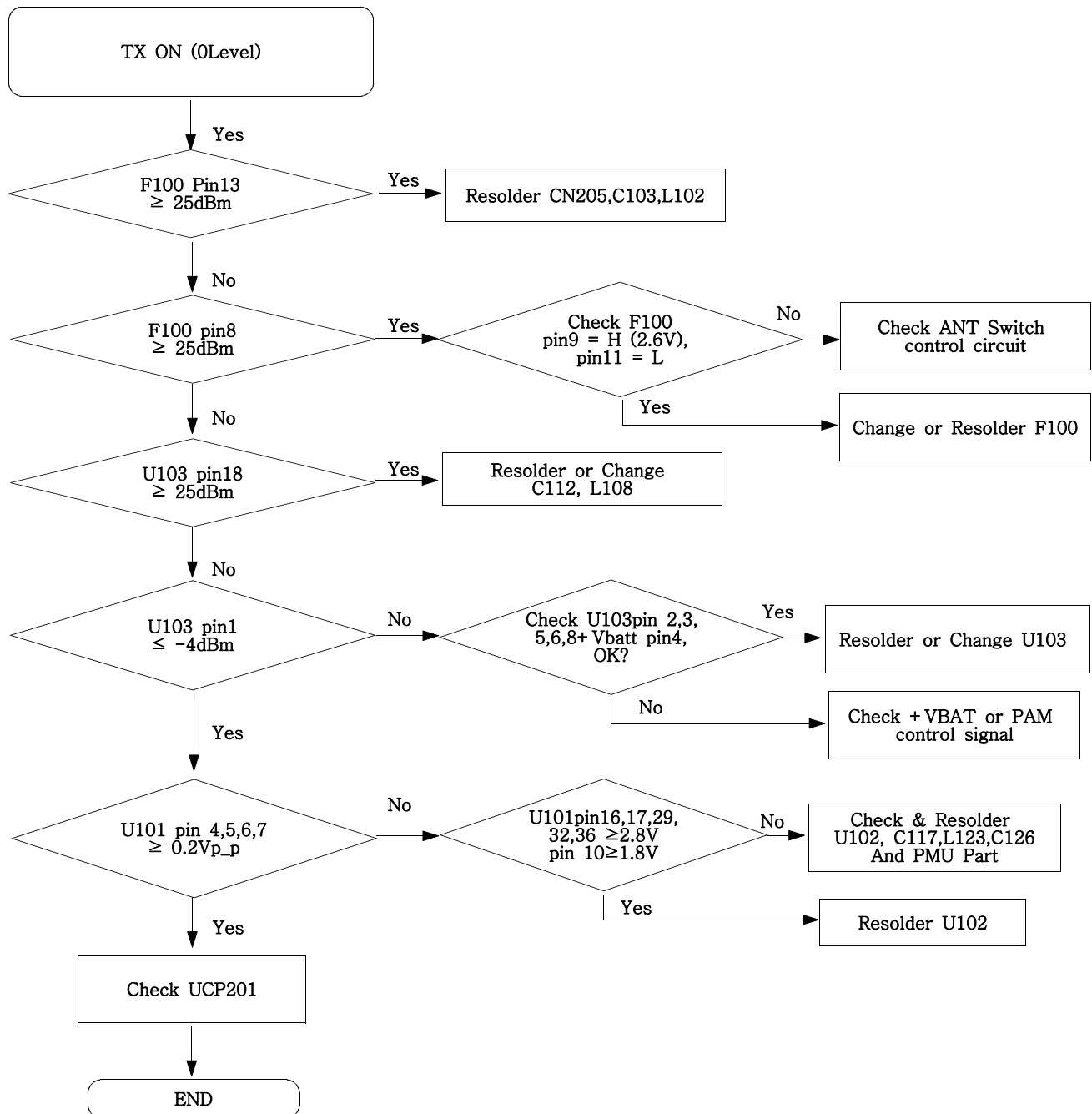
9-15. DCS Transmitter

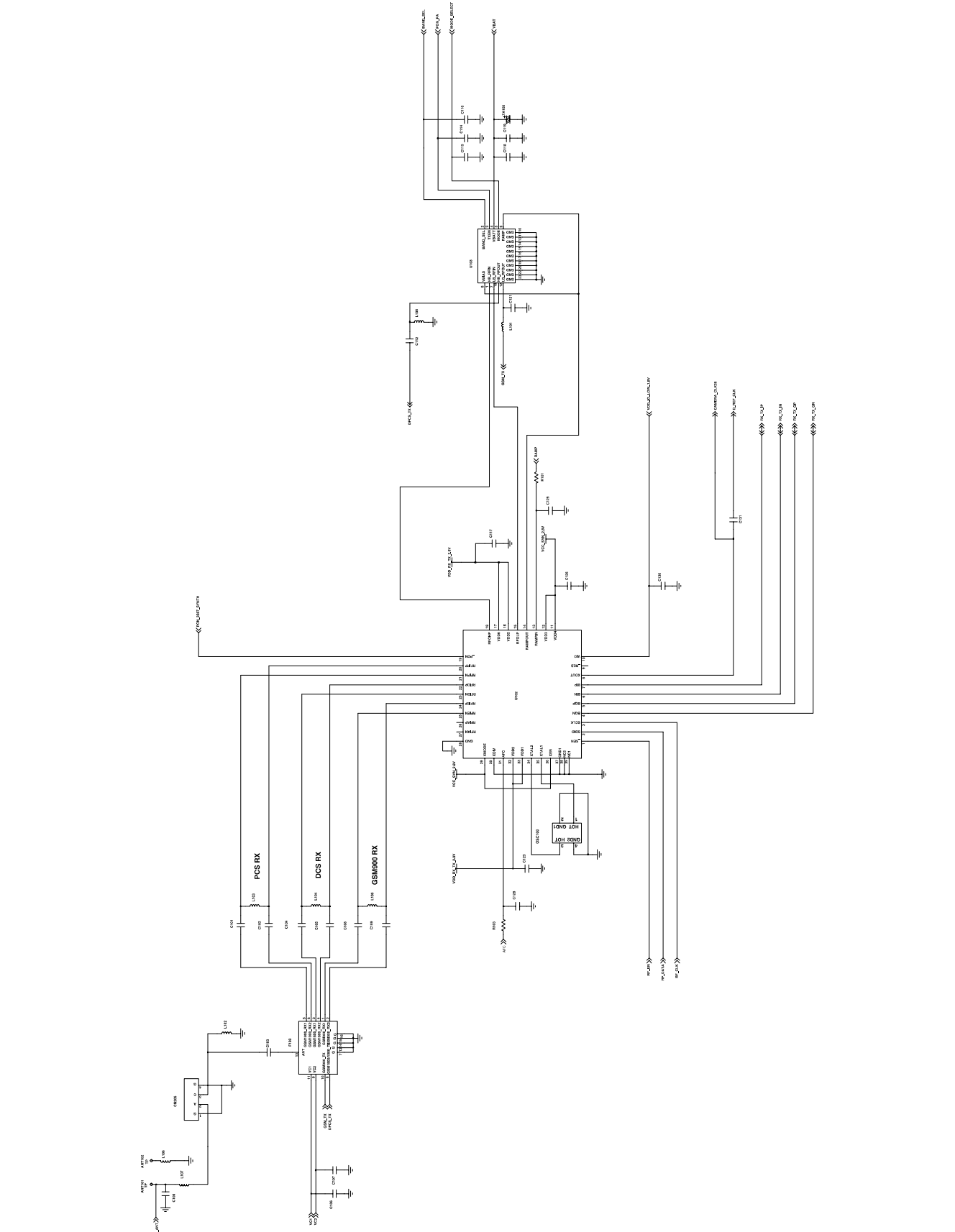


9-16. PCS Receiver

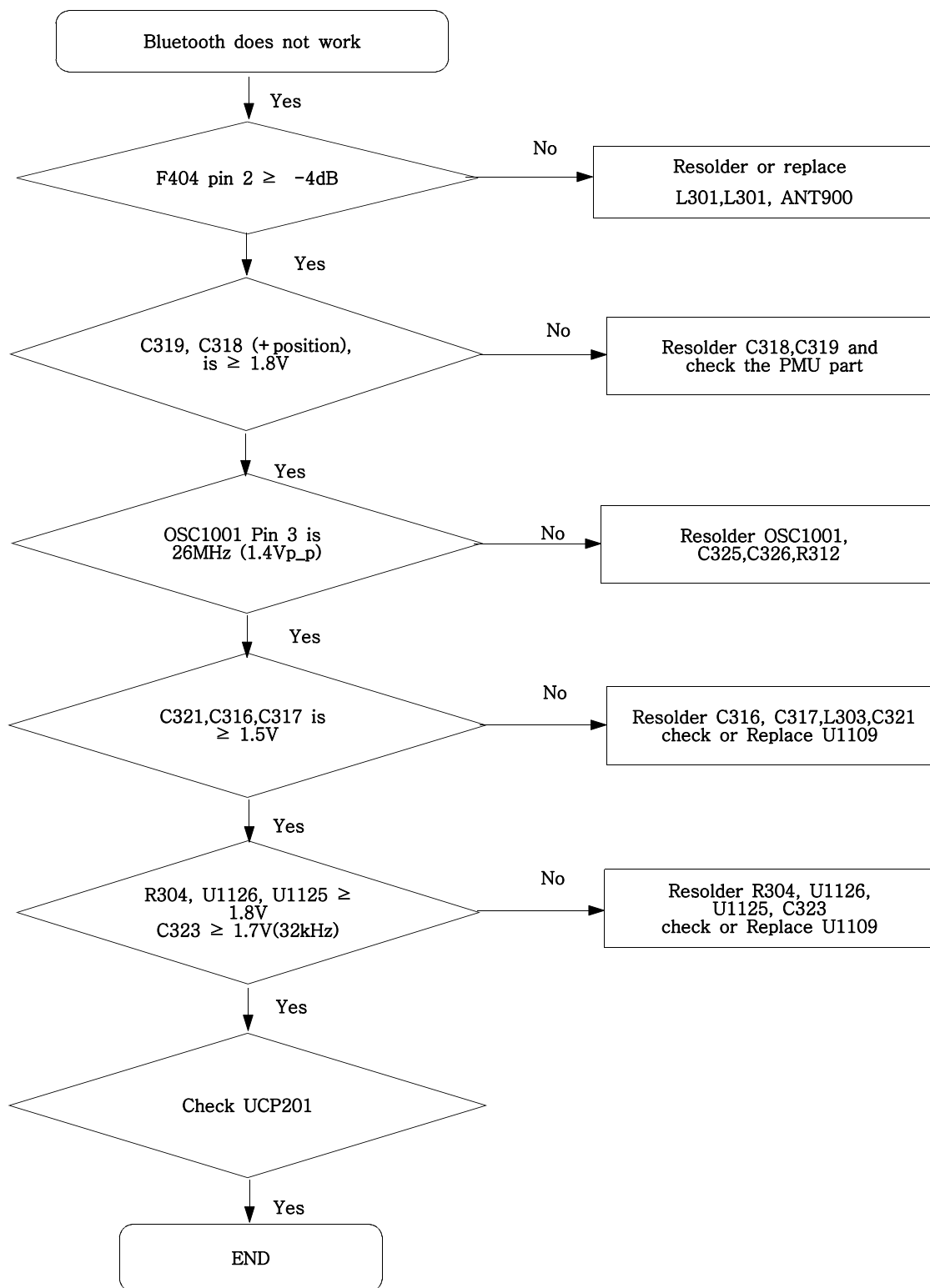


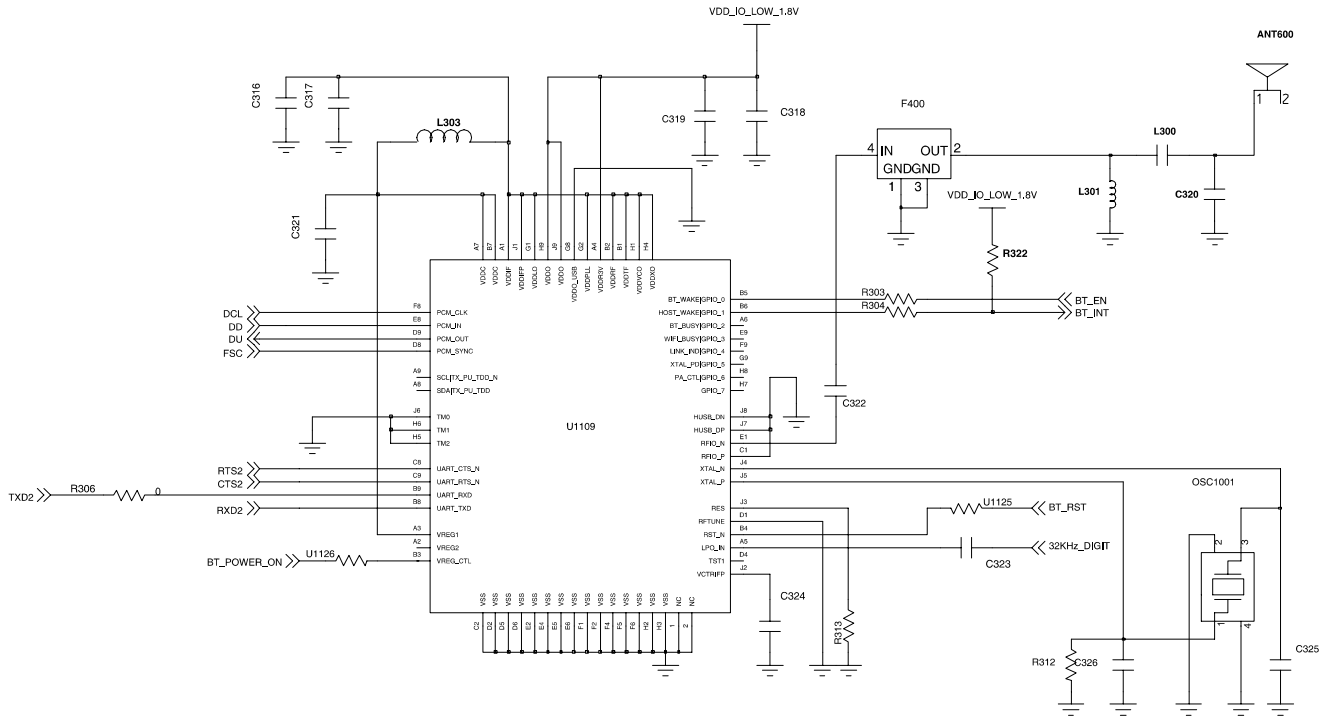
9-17. PCS Transmitter



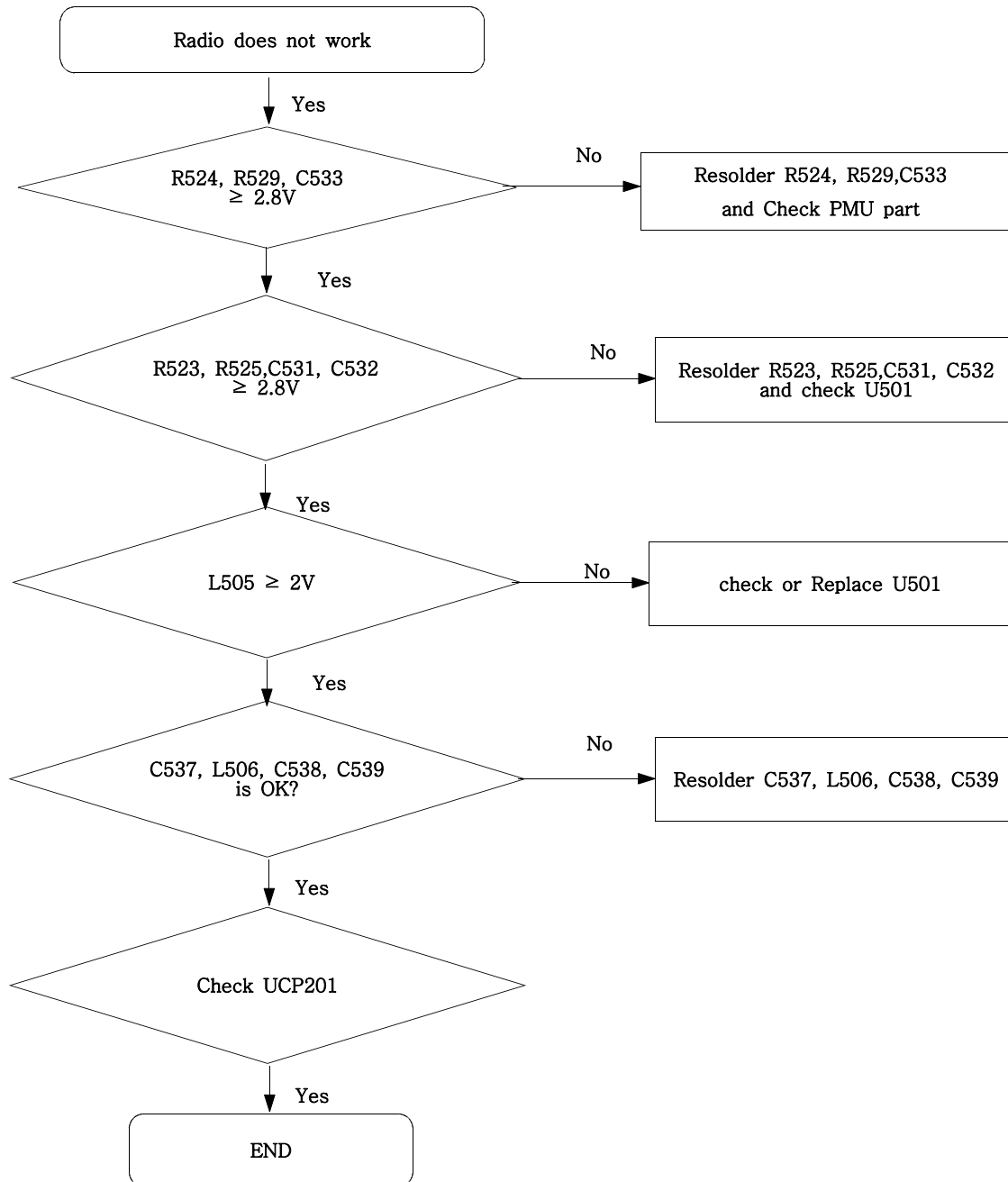


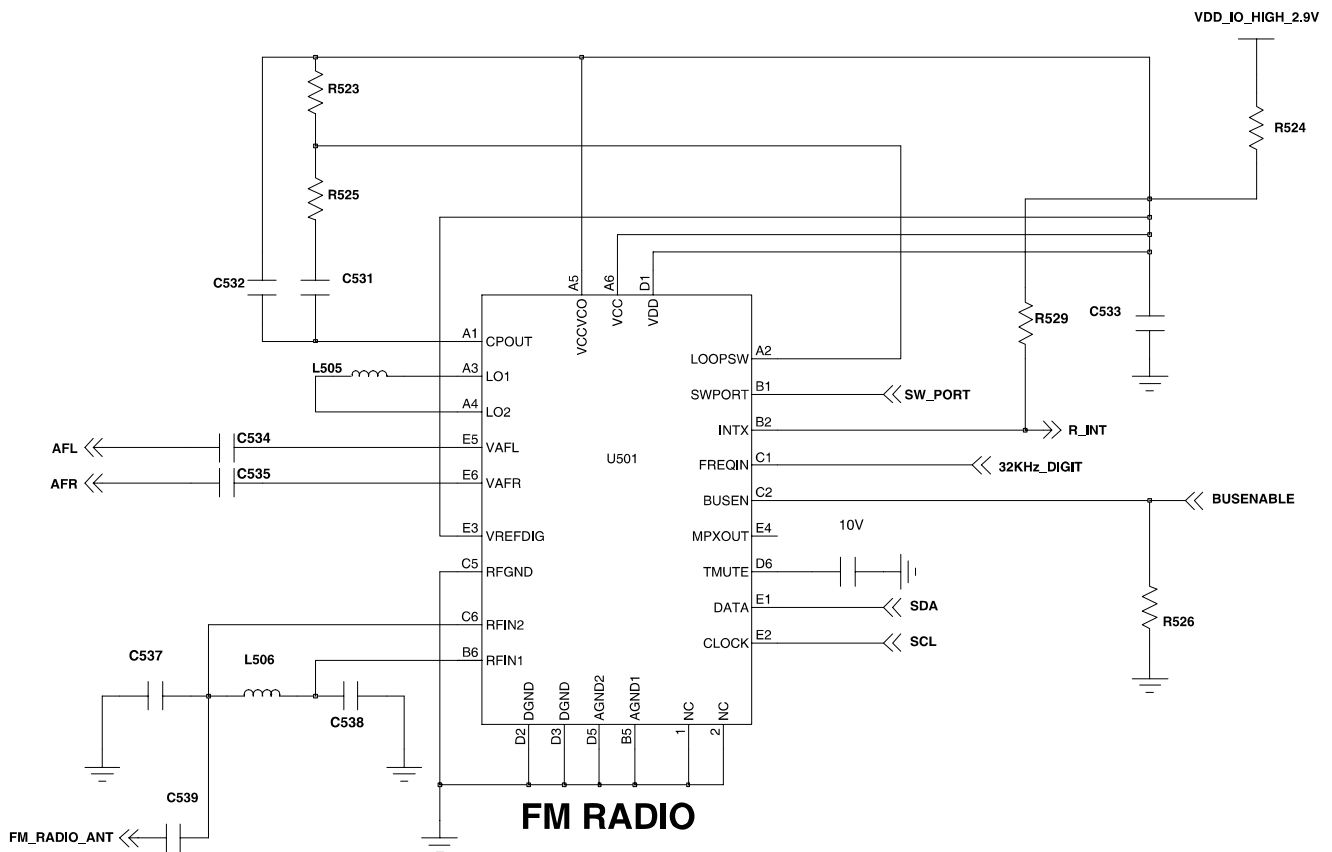
9-18. Bluetooth part





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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