# GSM TELEPHONE

## GT-E2600

# SERVICE Manual

## GSM TELEPHONE


## CONTENTS

SAMSUNG
ELECTRONICS




2011. 10. Rev.1.0

# 1. Safety Precautions

## 1-1. Repair Precaution

Before attempting any repair or detailed tuning, shield the device from RF noise or static electricity discharges.

Use only demagnetized tools that are specifically designed for small electronic repairs, as most electronic parts are sensitive to electromagnetic forces.

Use only high quality screwdrivers when servicing products. Low quality screwdrivers can easily damage the heads of screws.

Use only conductor wire of the properly gauge and insulation for low resistance, because of the low margin of error of most testing equipment.
We recommend 22-gauge twisted copper wire.

Hand-soldering is not recommended, because printed circuit boards (PCBs) can be easily damaged, even with relatively low heat. Never use a soldering iron with a power rating of more than 100 watts and use only lead-free solder with a melting point below 250°C (482°F).

Prior to disassembling the battery charger for repair, ensure that the AC power is disconnected. Always use the replacement parts that are registered in the SEC system. Third-party replac ement parts may not function properly.

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

Many semiconductors and ESDs in electronic devices are particularly sensitive to static discha rge and can be easily damaged by it. We recommend protecting these components with cond uctive anti-static bags when you store or transport them.

Always use an anti-static strap or wristband and remove electrostatic buildup or dissipate static electricity from your body before repairing ESDs.

Ensure that soldering irons have AC adapter with ground wires and that the ground wires are properly connected.

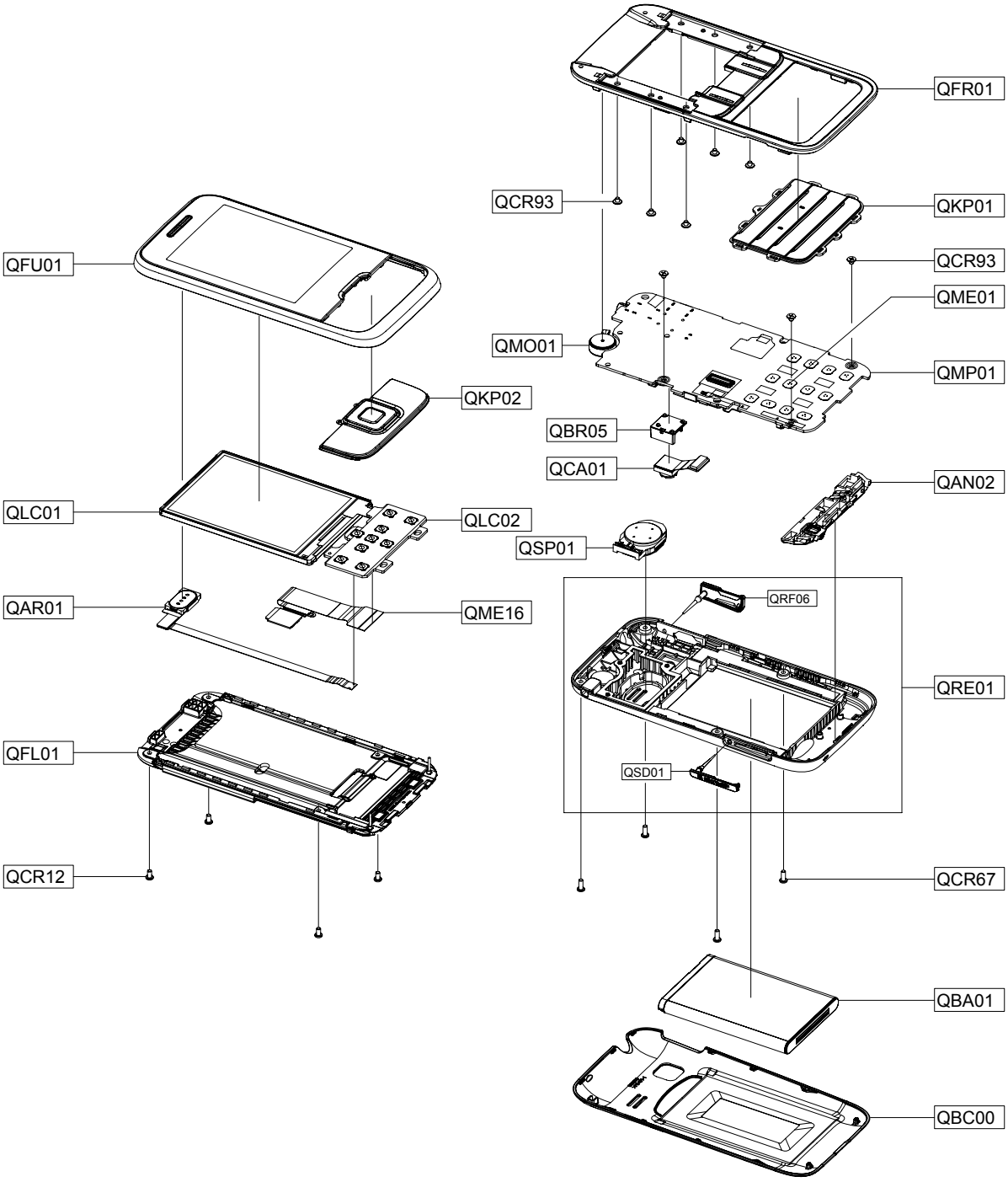
Use only desoldering tools with plastic tips to prevent static discharge.

Properly shield the work environment from accidental electrostatic discharge before opening packages containing ESDs.

The potential for static electricity discharge may be increased in low humidity environments, such as air-conditioned rooms. Increase the airflow to the working area to decrease the chance of accidental static electricity discharges.

# 4. Exploded View and Parts List

## 4-1. Cellular phone Exploded View



## 4-2. Cellular phone Parts list

| Design LOC | | Description | SEC CODE |
|---|---|---|---|
| QSP01 | | SPEAKER | 3001-002671 |
| QAR01 | | AUDIO-RECEIVER | 3009-001578 |
| QCR12 | | SCREW-MACHINE | 6001-001530 |
| QCR67 | | SCREW-MACHINE | 6001-002083 |
| QCR93 | | SCREW-MACHINE | 6001-002263 |
| QCR93 | | SCREW-MACHINE | 6001-002263 |
| QMO01 | | MOTOR DC-SPHM500 | GH31-00242A |
| QAN02 | | INTENNA-MAIN (GT-E2600) | GH42-03316A |
| QBA01 | | INNER BATTERY PACK-800MAH,BLK,UNI,MAIN | GH43-03241A |
| QLC02 | | ASSY ETC-LCD SUB PBA(GT-E2600) | GH59-11614A |
| QME01 | | DOME SHEET-MAIN (GT-E2600) | GH59-11619A |
| QME16 | | UNIT-CON TO CON(GT-E2600) | GH59-11632A |
| QKP01 | | RMO KEY-MAIN (RUSSIA) | GH73-15553A |
| QMP01 | | A/S ASSY-PBA MAIN | GH82-06093A |
| QLC01 | | ELA MODULE-GT_C3500 LCD | GH96-04920A |
| QCA01 | | ASSY CAMERA-2M 1/5 SF MODULE(GT-E2600) | GH96-05387A |
| QKP02 | | ASSY KEYPAD-SUB | GH98-21047A |
| QFU01 | | ASSY CASE-SLIDE UPPER | GH98-21042A |
| QBC00 | | ASSY COVER-BATTERY | GH98-21044A |
| QFR01 | | ASSY CASE-SLIDE FRONT | GH98-21045A |
| QFL01 | | ASSY CASE-SLIDE LOWER | GH98-21048A |
| QBR05 | | ASSY DECO-CAM DUMMY | GH98-21481A |
| QRE01 | | ASSY CASE-SLIDE REAR | GH98-21046A |
| | QSD01 | PMO COVER-SD | GH72-65019A |
| | QRF06 | PMO COVER-USB | GH72-65020A |

# 5. MAIN Electrical Parts List

| SEC CODE | Design LOC | Descreiption |
|---|---|---|
| 0401-001141 | D501 | Switching Diode |
| 0403-001688 | D300 | Zener Diode |
| 0406-001286 | ZD300,ZD302 | TVS Diode |
| 0406-001361 | ZD500 | TVS Diode |
| 0406-001369 | D400 | TVS Diode |
| 0406-001375 | ZD501 | TVS Diode |
| 0406-001446 | ZD504,ZD505 | TVS Diode |
| 0501-002680 | Q100 | FET-SILICON |
| 0601-002652 | LED300,LED301,LED302,LED303 | LED |
| 1001-001706 | U402 | IC |
| 1009-001035 | U201 | IC |
| 1108-000406 | UME200 | IC |
| 1201-003208 | U501 | IC |
| 1201-003290 | PAM100 | IC |
| 1202-001088 | U500 | IC |
| 1203-005580 | U401 | IC |
| 1203-005848 | U400 | IC |
| 1205-004116 | U101 | IC |
| 1205-004215 | UCP200 | IC |
| 1404-001224 | TH200 | THERMISTOR |
| 1405-001317 | D301 | Diode |
| 2007-000138 | R331,R332,R333,R338,R339,R519 | R-CHIP |
| 2007-000140 | R318 | R-CHIP |
| 2007-000141 | R210,R211 | R-CHIP |
| 2007-000143 | R312,R405 | R-CHIP |
| 2007-000148 | R103,R202,R205,R209 | R-CHIP |
| 2007-000148 | R324,R325,R326,R327 | R-CHIP |
| 2007-000148 | R328,R400,R401,R402 | R-CHIP |
| 2007-000148 | R517,R539 | R-CHIP |
| 2007-000153 | R120,R408,R515 | R-CHIP |
| 2007-000157 | R213,R329,R500 | R-CHIP |
| 2007-000162 | R111,R208,R412,R416 | R-CHIP |
| 2007-000166 | R520 | R-CHIP |
| 2007-000170 | R522 | R-CHIP |
| 2007-000172 | R406,R407 | R-CHIP |
| 2007-000242 | R403,R404 | R-CHIP |

| SEC CODE | Design LOC | Descreiption |
|---|---|---|
| 2007-001288 | R501,R502 | R-CHIP |
| 2007-001292 | R334,R335,R336,R337 | R-CHIP |
| 2007-002970 | R119 | R-CHIP |
| 2007-007142 | R204 | R-CHIP |
| 2007-007308 | R526,R527 | R-CHIP |
| 2007-007317 | R518 | R-CHIP |
| 2007-007528 | R512 | R-CHIP |
| 2007-007942 | R521 | R-CHIP |
| 2007-008296 | R523 | R-CHIP |
| 2007-008516 | R413 | R-CHIP |
| 2007-008582 | R117 | R-CHIP |
| 2007-009804 | R509 | R-CHIP |
| 2203-000233 | C117,C118,C141,C142,C413 | C-CERAMIC,CHIP |
| 2203-000254 | C309 | C-CERAMIC,CHIP |
| 2203-000278 | C105,C241,C242,C243,C244 | C-CERAMIC,CHIP |
| 2203-000311 | C143 | C-CERAMIC,CHIP |
| 2203-000386 | C114,C531,C532 | C-CERAMIC,CHIP |
| 2203-000438 | C120,C132,C138,C139,C140,C203,C211 | C-CERAMIC,CHIP |
| 2203-000466 | C104 | C-CERAMIC,CHIP |
| 2203-000550 | C227,C228 | C-CERAMIC,CHIP |
| 2203-000585 | C109,C503,C504 | C-CERAMIC,CHIP |
| 2203-000812 | C107,C302,C303,C304,C305 | C-CERAMIC,CHIP |
| 2203-000854 | C119,C125,C400 | C-CERAMIC,CHIP |
| 2203-000995 | C233 | C-CERAMIC,CHIP |
| 2203-001153 | C505,C506,C508,C535 | C-CERAMIC,CHIP |
| 2203-002443 | C229 | C-CERAMIC,CHIP |
| 2203-002487 | C214,C221 | C-CERAMIC,CHIP |
| 2203-002668 | C230,L103 | C-CERAMIC,CHIP |
| 2203-005234 | C108 | C-CERAMIC,CHIP |
| 2203-005382 | C100,C135 | C-CERAMIC,CHIP |
| 2203-005480 | C226 | C-CERAMIC,CHIP |
| 2203-005481 | C205,C220 | C-CERAMIC,CHIP |
| 2203-005483 | C507,C511 | C-CERAMIC,CHIP |
| 2203-005717 | C500 | C-CERAMIC,CHIP |
| 2203-005736 | C537 | C-CERAMIC,CHIP |
| 2203-005777 | C131 | C-CERAMIC,CHIP |

| SEC CODE | Design LOC | Descreiption |
|---|---|---|
| 2203-005993 | C518,C525 | C-CERAMIC,CHIP |
| 2203-006048 | C113,C200,C201,C202 | C-CERAMIC,CHIP |
| 2203-006048 | C207,C210,C219,C222 | C-CERAMIC,CHIP |
| 2203-006048 | ,C224,C236,C317,C405 | C-CERAMIC,CHIP |
| 2203-006048 | C406,C530 | C-CERAMIC,CHIP |
| 2203-006190 | C204,C238 | C-CERAMIC,CHIP |
| 2203-006257 | C111,C209,C215 | C-CERAMIC,CHIP |
| 2203-006260 | C235,C237 | C-CERAMIC,CHIP |
| 2203-006324 | C217,C218 | C-CERAMIC,CHIP |
| 2203-006399 | C239,C516,C519,C521,C523 | C-CERAMIC,CHIP |
| 2203-006562 | C206,C216,C223,C225 | C-CERAMIC,CHIP |
| 2203-006562 | C404,C509,C510,C524,C529 | C-CERAMIC,CHIP |
| 2203-006668 | C127,C128 | C-CERAMIC,CHIP |
| 2203-006681 | C314 | C-CERAMIC,CHIP |
| 2203-006839 | C316 | C-CERAMIC,CHIP |
| 2203-006841 | C212 | C-CERAMIC,CHIP |
| 2203-006872 | C110,C112,C116,C402,C403,C414 | C-CERAMIC,CHIP |
| 2203-006890 | C514 | C-CERAMIC,CHIP |
| 2203-007269 | C231 | C-CERAMIC,CHIP |
| 2203-007271 | C126,C234,C401,C410 | C-CERAMIC,CHIP |
| 2203-007279 | C103,C315,C407 | C-CERAMIC,CHIP |
| 2203-007317 | C411 | C-CERAMIC,CHIP |
| 2203-007342 | C408,C409 | C-CERAMIC,CHIP |
| 2203-007385 | C240 | C-CERAMIC,CHIP |
| 2203-007693 | C412 | C-CERAMIC,CHIP |
| 2203-007701 | C208 | C-CERAMIC,CHIP |
| 2203-007753 | C133 | C-CERAMIC,CHIP |
| 2203-007756 | C134 | C-CERAMIC,CHIP |
| 2203-007760 | C136 | C-CERAMIC,CHIP |
| 2203-007456 | C419 | C-CERAMIC,CHIP |
| 2703-001181 | L102 | INDUCTOR-SMD |
| 2703-001734 | L114 | INDUCTOR-SMD |
| 2703-001747 | L106 | INDUCTOR-SMD |
| 2703-002176 | L126,L127 | INDUCTOR-SMD |
| 2703-002198 | L105,L108 | INDUCTOR-SMD |
| 2703-002208 | L110,L111,L125 | INDUCTOR-SMD |

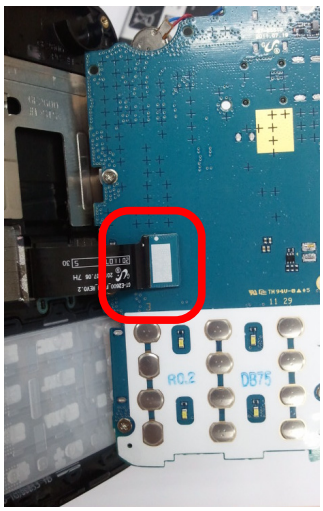
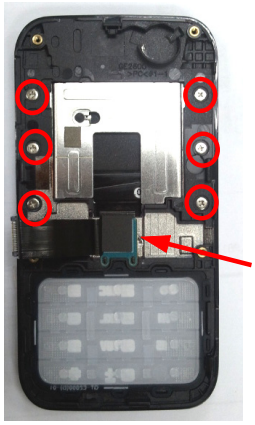
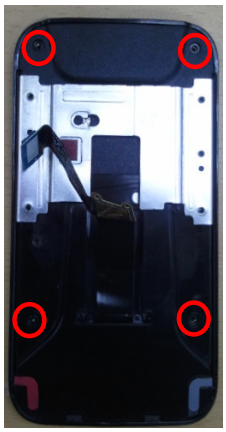
| SEC CODE | Design LOC | Descreiption |
|---|---|---|
| 2703-002308 | L119 | INDUCTOR-SMD |
| 2703-002365 | L113,L118 | INDUCTOR-SMD |
| 2703-002369 | L112 | INDUCTOR-SMD |
| 2703-002907 | L124 | INDUCTOR-SMD |
| 2703-003476 | L122,L123 | INDUCTOR-SMD |
| 2703-003869 | L201 | INDUCTOR-SMD |
| 2703-004197 | L505 | INDUCTOR-SMD |
| 3301-001885 | L500,L501,L502,L503,L504,L506,L508 | INDUCTOR-SMD |
| 3301-001917 | L509,L510 | INDUCTOR-SMD |
| 3301-002000 | L200 | INDUCTOR-SMD |
| 3301-002070 | L507 | INDUCTOR-SMD |
| 2801-004909 | OSC200 | Crystal Unit |
| 2801-004931 | OSC201 | Crystal Unit |
| 2901-001422 | F403,F404 | Filter-EMI |
| 2901-001435 | F400,F401,F402 | Filter-EMI |
| 2904-001987 | F100 | Filter-SAW |
| 2909-001337 | F102 | Filter-SAW |
| 3003-001136 | MIC500 | Microphone Unit |
| 3301-001342 | F200 | Filter-SAW |
| 3705-001731 | RFS100 | Connector-Coaxial |
| 3709-001570 | CD301 | Connector-Card Edge |
| 3709-001645 | SIM300 | Connector-Card Edge |
| 3711-005581 | HEA400 | HEADER-BOARD TO BOARD |
| 3711-007071 | CN400 | HEADER-BOARD TO BOARD |
| 3711-007393 | BTC300 | HEADER-BATTERY |
| 3722-003115 | IFC400 | Connector-USB |
| GH62-00019A | CON100 | GASKET |
| 3722-003388 | EAR500 | EARJACK |

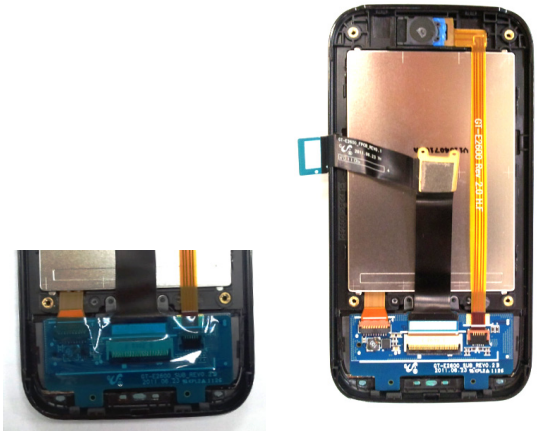
Please consult the GSPN website (Samsung Portal) for the most recent version of the product's part list.

# 7. Level 2 Repair

## 7-1. Disassembly and Assembly Instructions

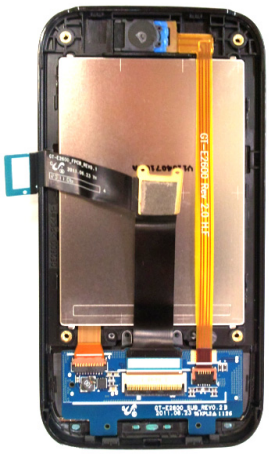
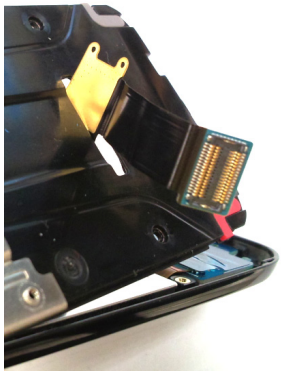
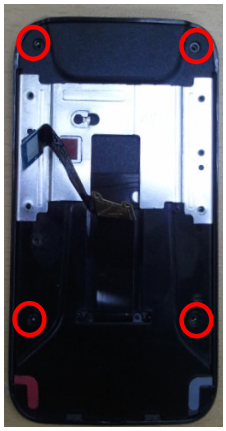
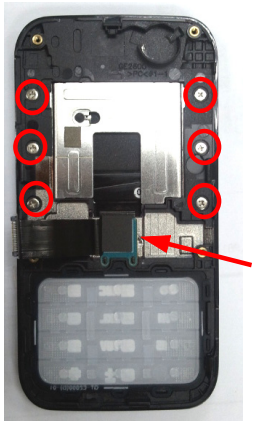
### 7-1-1. Disassembly

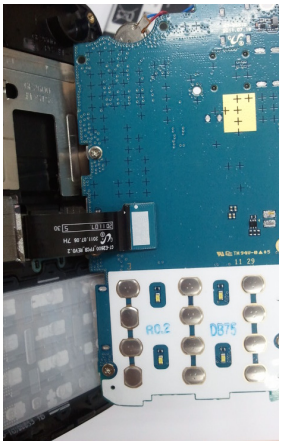
| | |
|---|---|
| 1 Unscrew REAR.  | 2 Disassemble PBA  |
| 1. Unscrew 4 points.<br>(Size: M1.4*L3.5) → REAR SCREW<br>(Torque: 1.2+ 0 kgf.cm/ -0.1kgf.cm) | 1. Turn over the PBA<br>2. Take off LCD connector. |
| 3 Detach Slide FPCB & Unscrew FRONT  | 4 Unscrew LOWER  |
| 1.Detach Slide FPCB using a tweezer.<br>2. Unscrew 6 points.<br>(Size: M1.4*L1.3)<br>(Torque: 1.2+ 0 kgf.cm/-0.1kgf.cm) | 1.Unscrew 4 points.<br>(Size: M1.4*L2.5) (Torque: 1.2 + 0 kgf.cm/-0.1kgf.cm) |

| 5 Detach SUB PBA TAPE | 6 Disassemble SUB PBA, RCV and SLIDE FPCB |
|---|---|
|  |  |
| 1. Detach SUB PBA Tape. | 1. Disassemble SLIDE FPCB.<br>2. Disassemble RCV.<br>3. Disassemble SUB PBA. |

## 7-1. Disassembly and Assembly Instructions

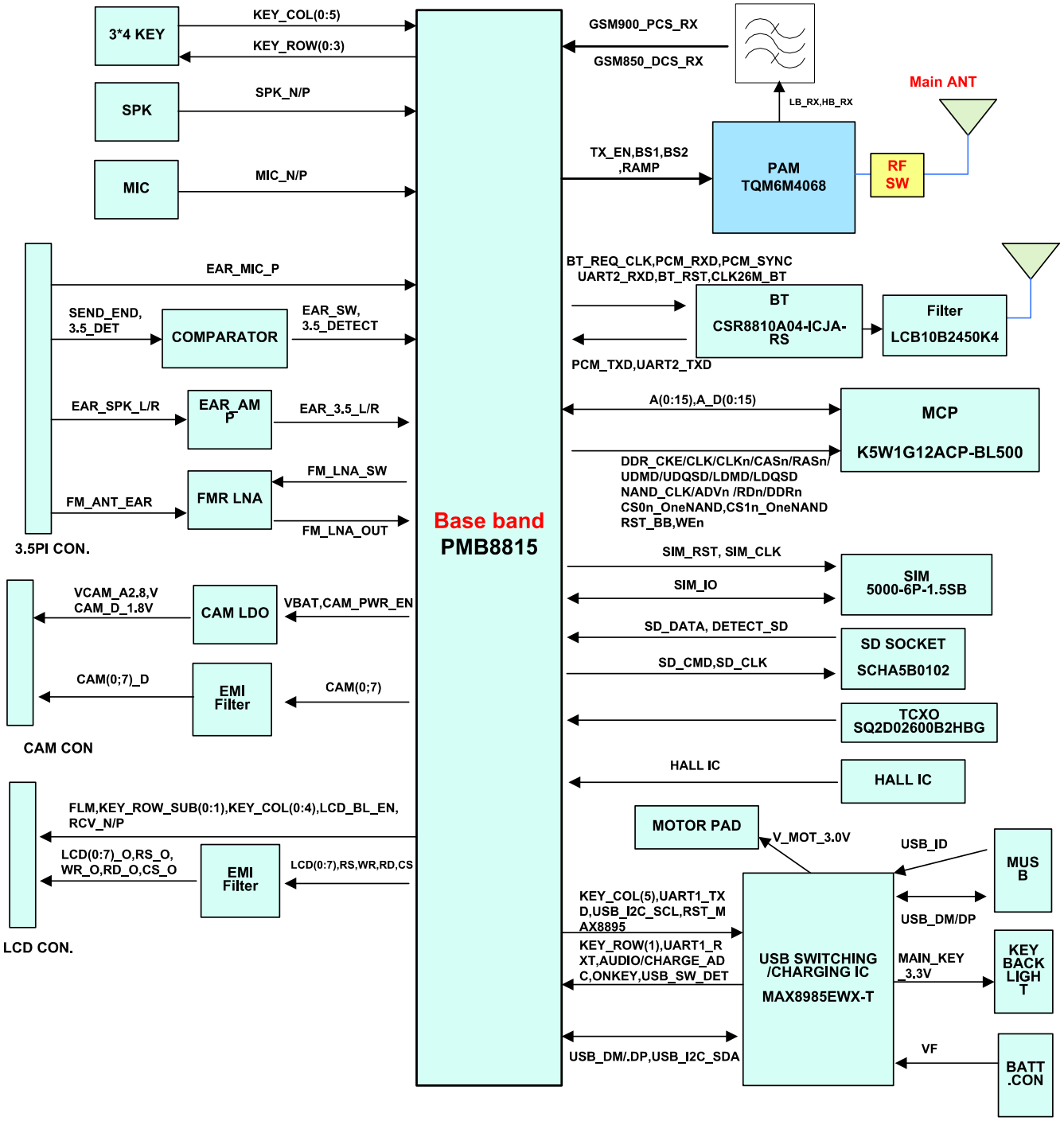
### 7-1-2. Assembly

| | |
|---|---|
| **1** Assemble LCD module & SUB PBA<br>  | **2** Assemble SLIDE FPCB and RCV<br>  |
| 1. Close LCD Module FPCB connector after assembling with SUB PBA.<br>2. Assemble LCD module & SUB PBA. with UPPER.<br>- Becareful FPCB damage | 1. Close SILDE FPCB connector after assembling on SUB PBA.<br>2. Close RCV connector after assembling on SUB PBA.<br>- Becareful FPCB damage |
| **3** Assemble Lower & Screw<br>   | **4** Assemble FRONT & KEY PAD<br>  |
| 1. Screw 4 Points. | 1. Detach a white tape & attach SLIDE FPCB.<br>=> Follow red arrow direction.<br>2. Screw 6 points.<br>3. Assemble KEY PAD |

| 5 Assemble PBA | 6 Assemble REAR |
| --- | --- |
|  |  |
| 1. Assemble PBA. | 1. Assemble REAR<br>2. Screw 4 points. |

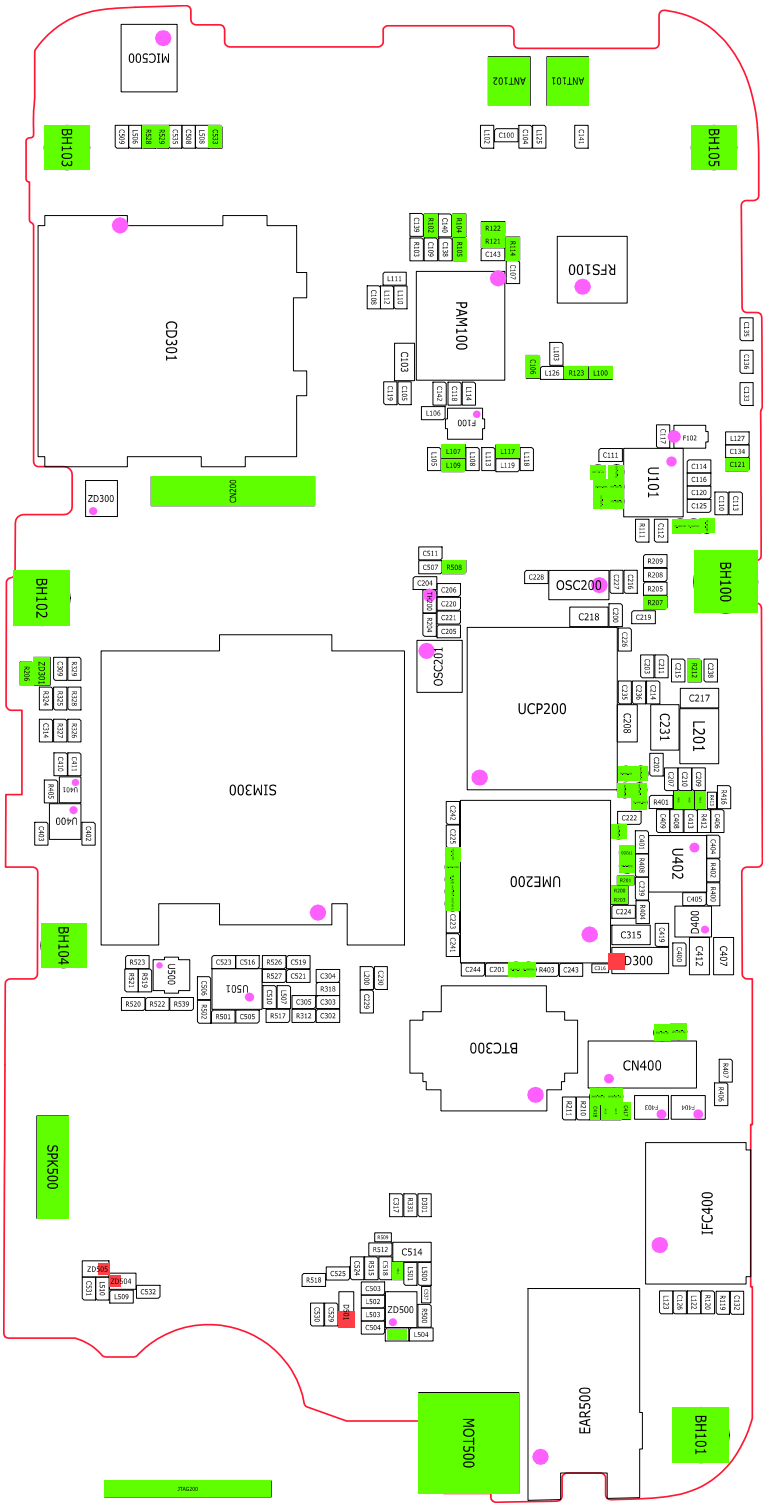
# 8. Level 3 Repair

## 8-1. Block Diagram

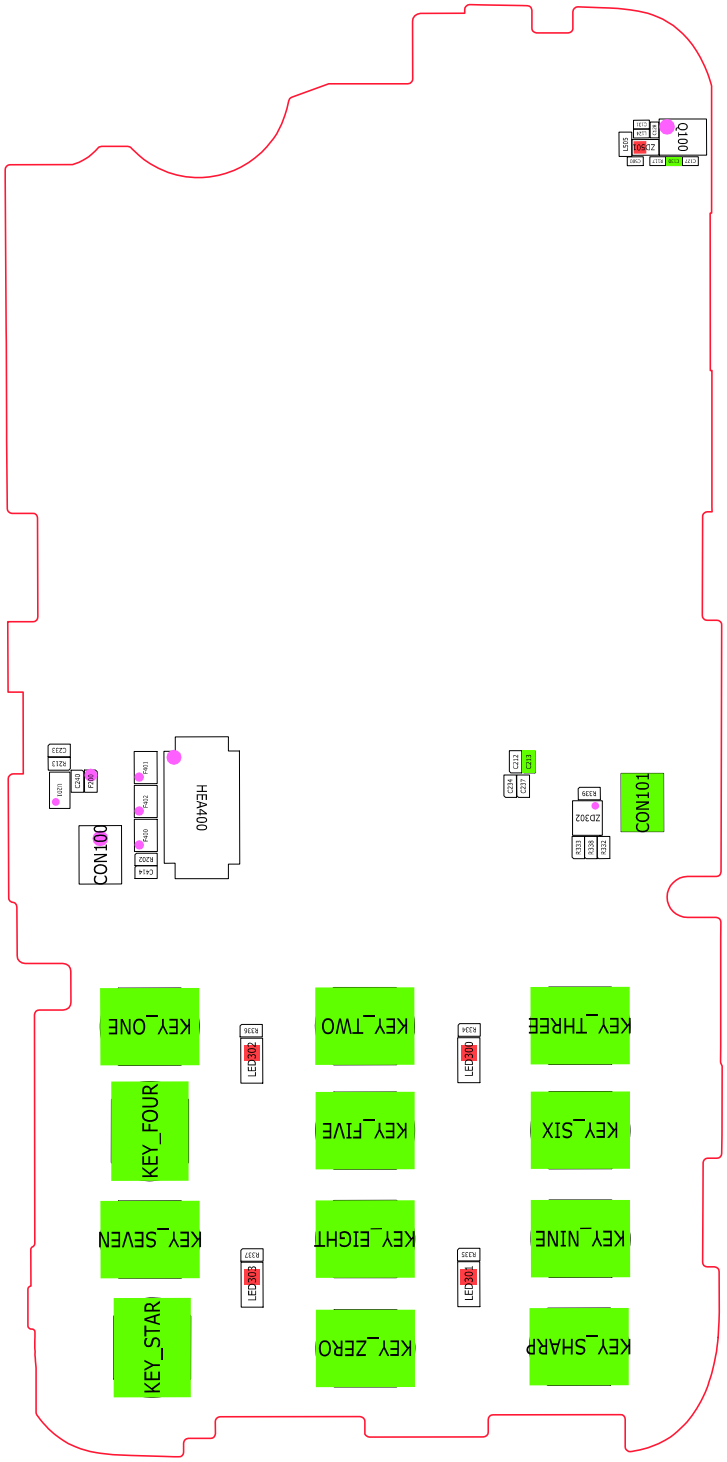


## 8-2. PCB Diagrams

### 8-2-1. Top

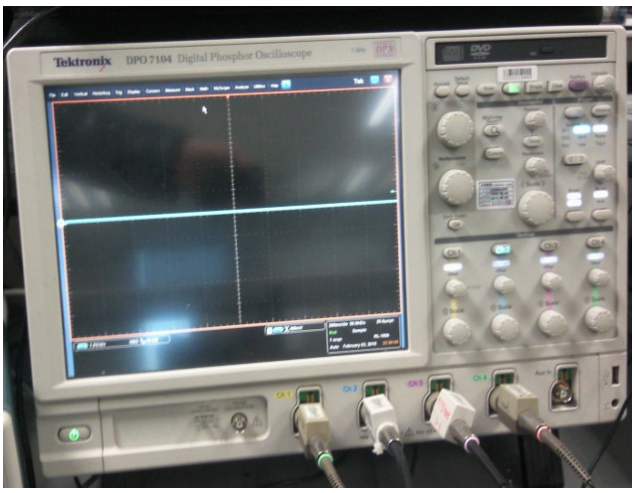


## 8-2-2. Bottom



## 8-3. Flow Chart of Troubleshooting

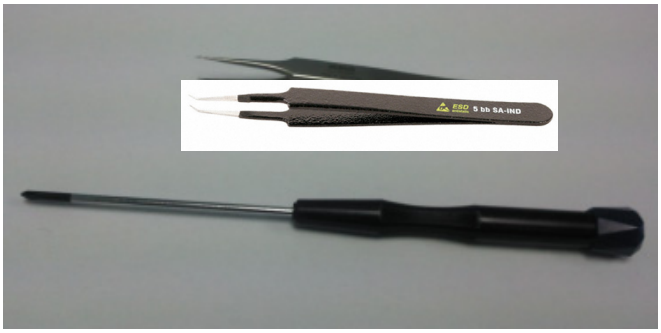
### Equipments



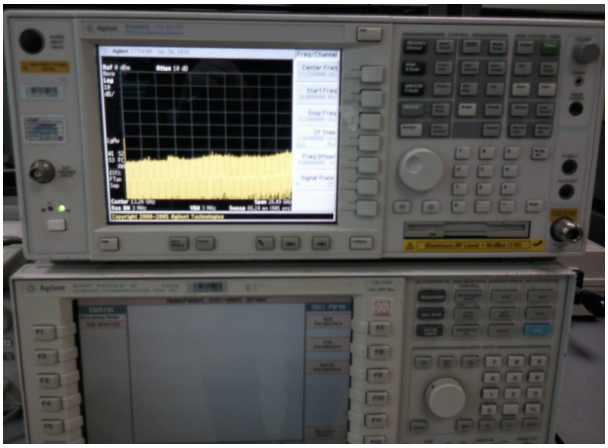

á Oscilloscope

á Digital Multimete

á Power Supply



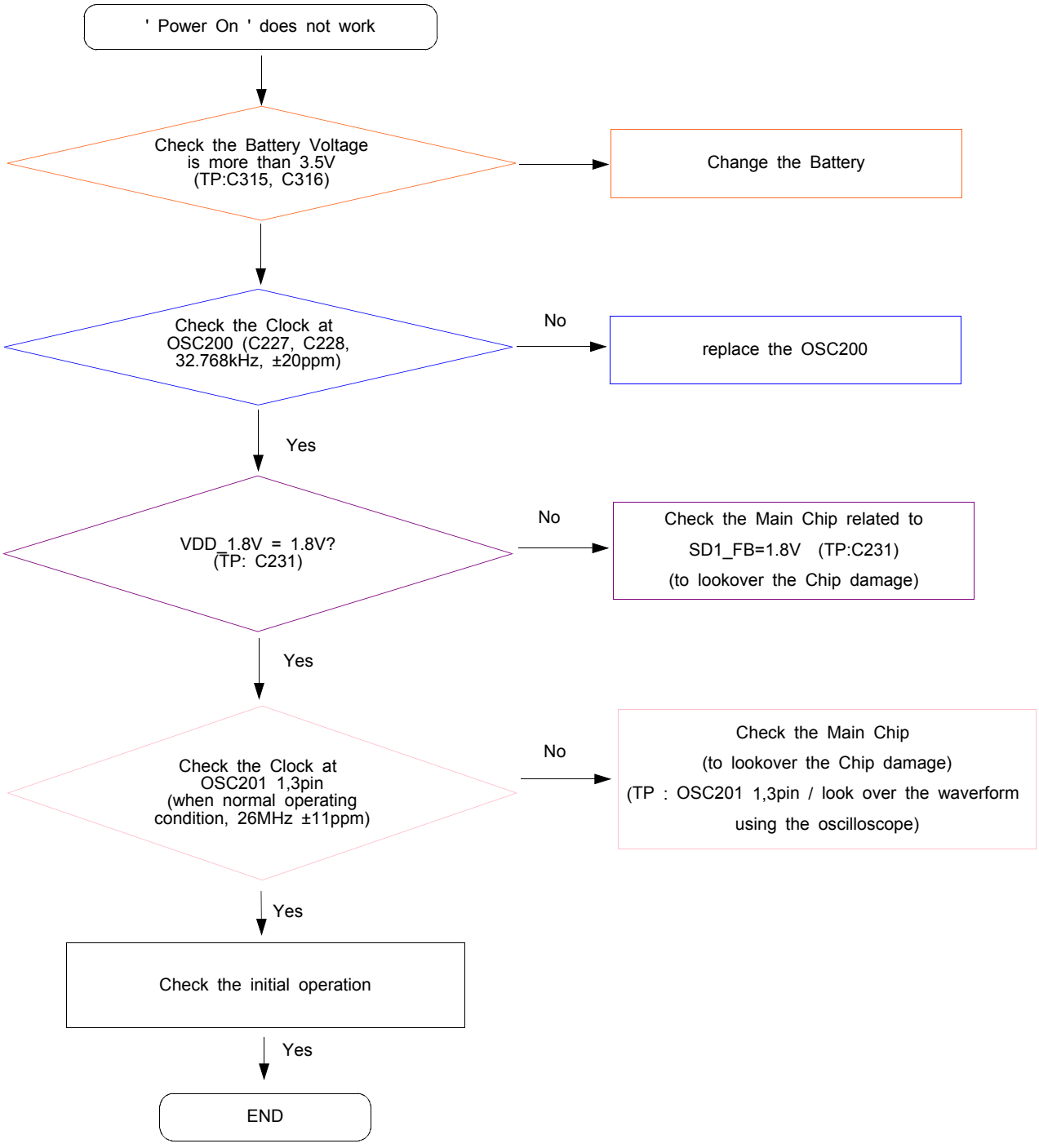
á + driver, ESD Safe Tweezer

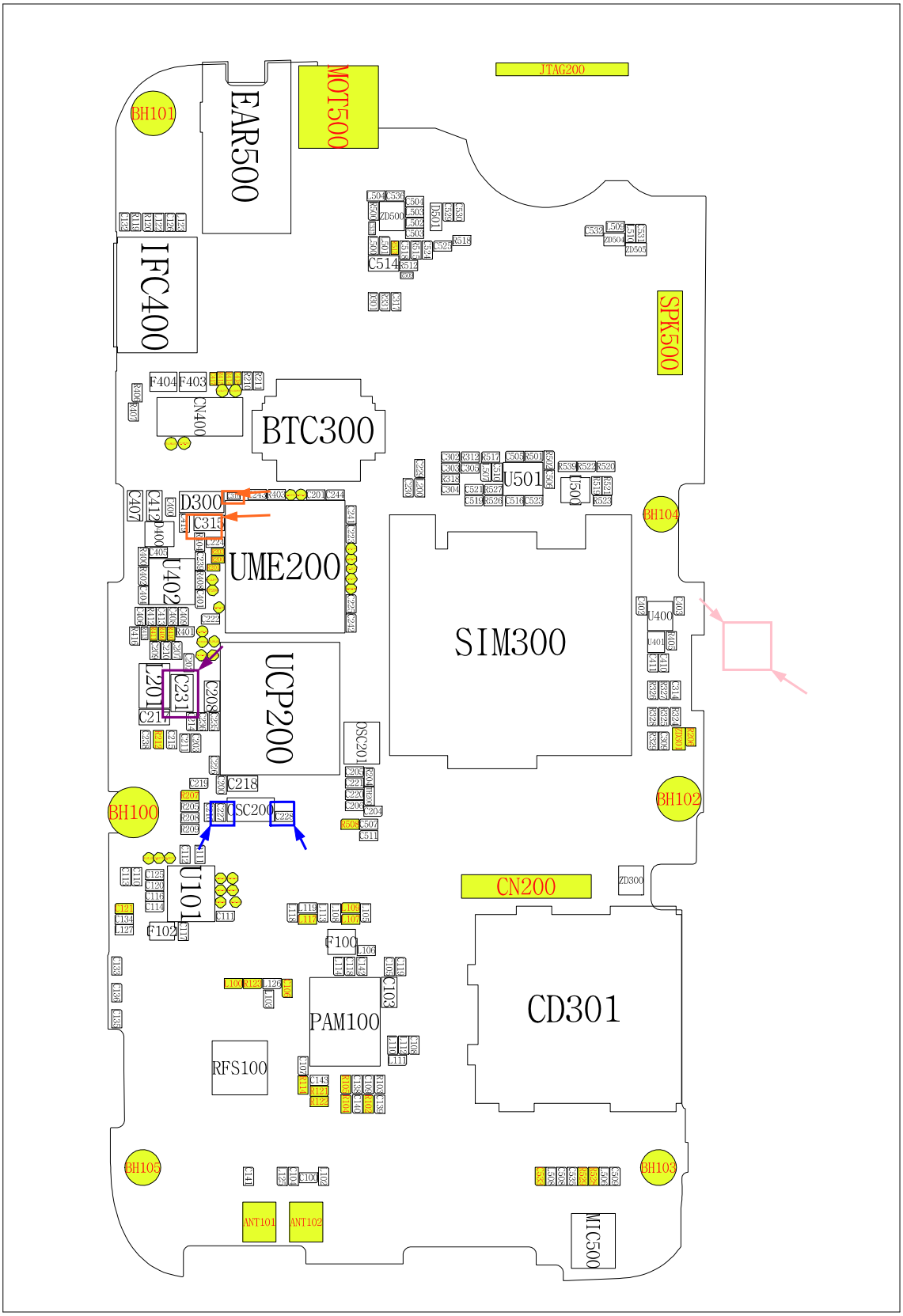


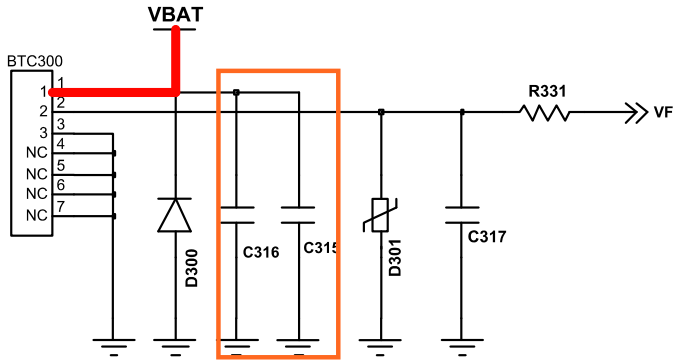
↑ 8960 & Spectrum Analyzer

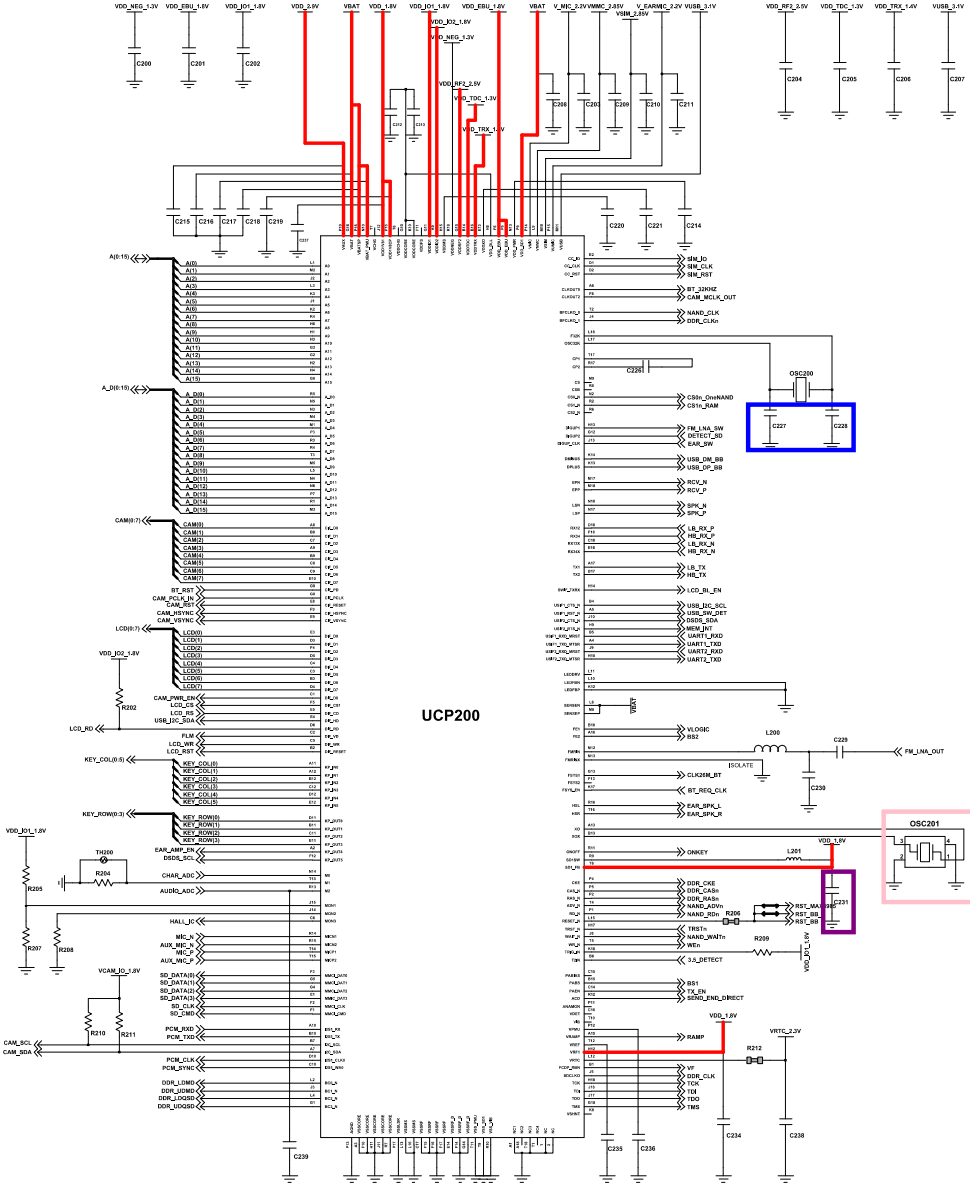

á Soldering iron

## 8-3-1. Power On

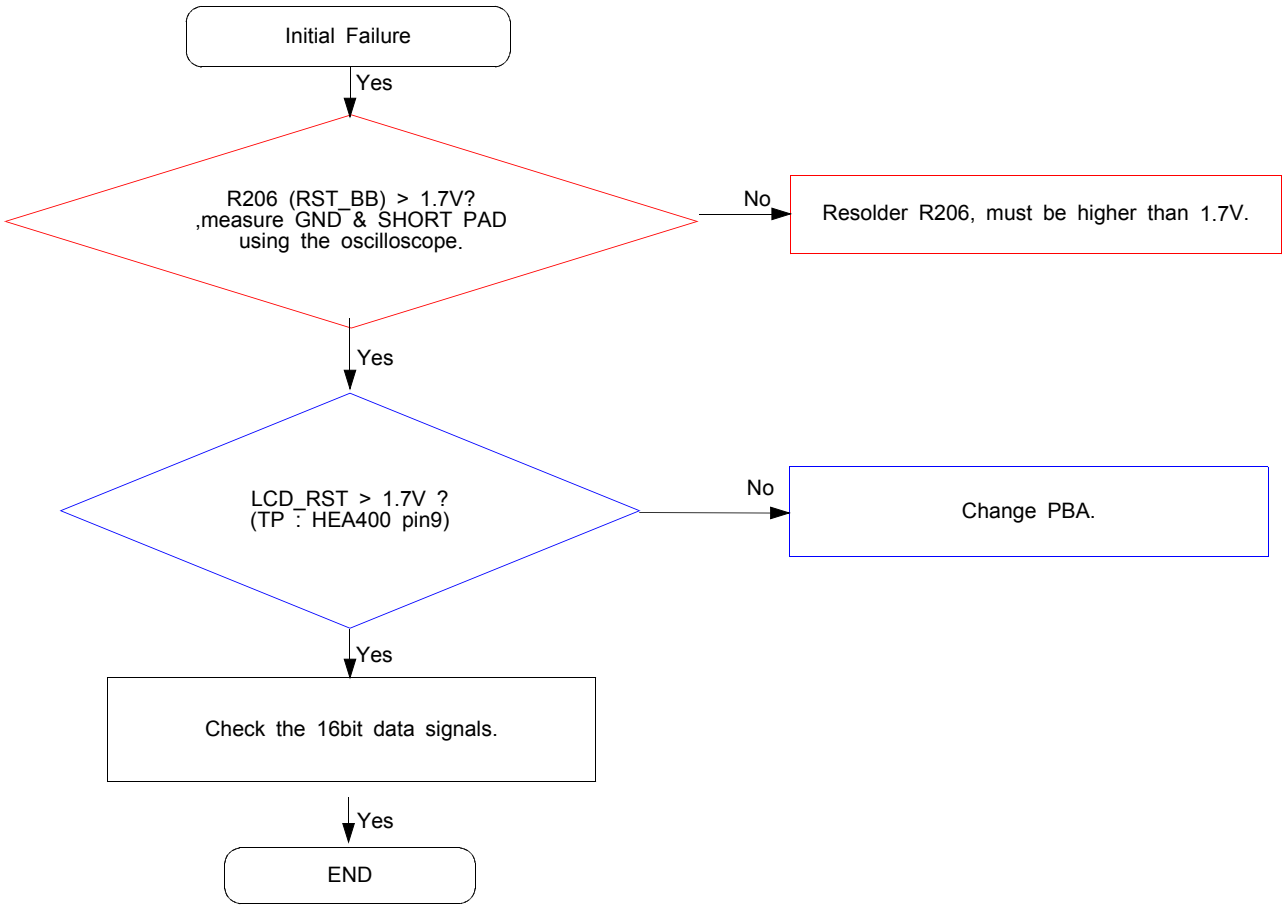


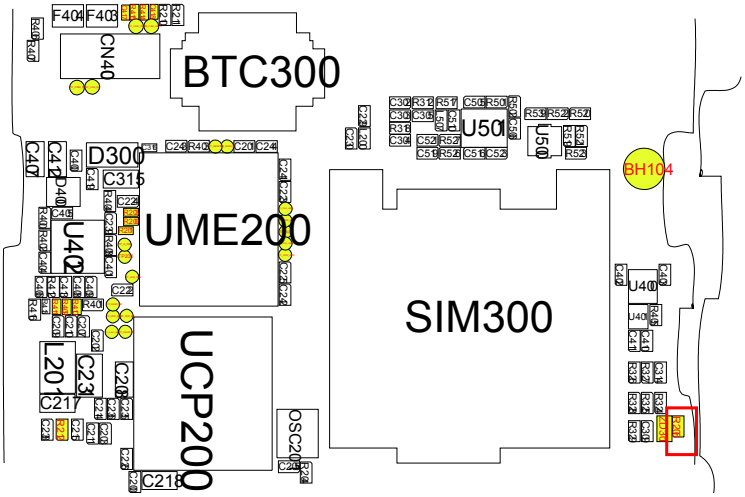




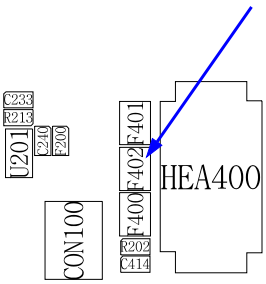



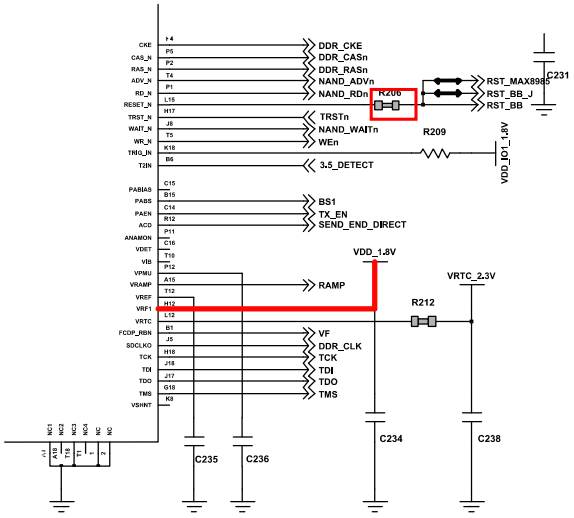
## 8-3-2. Initial

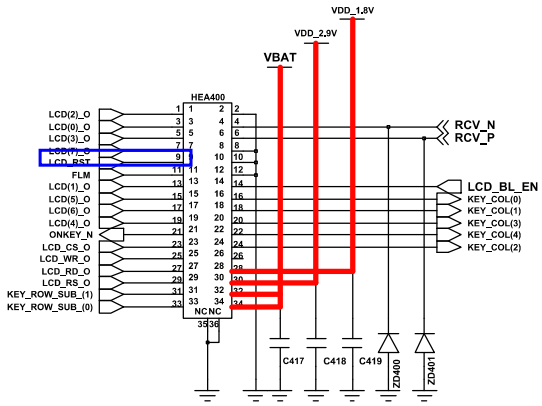




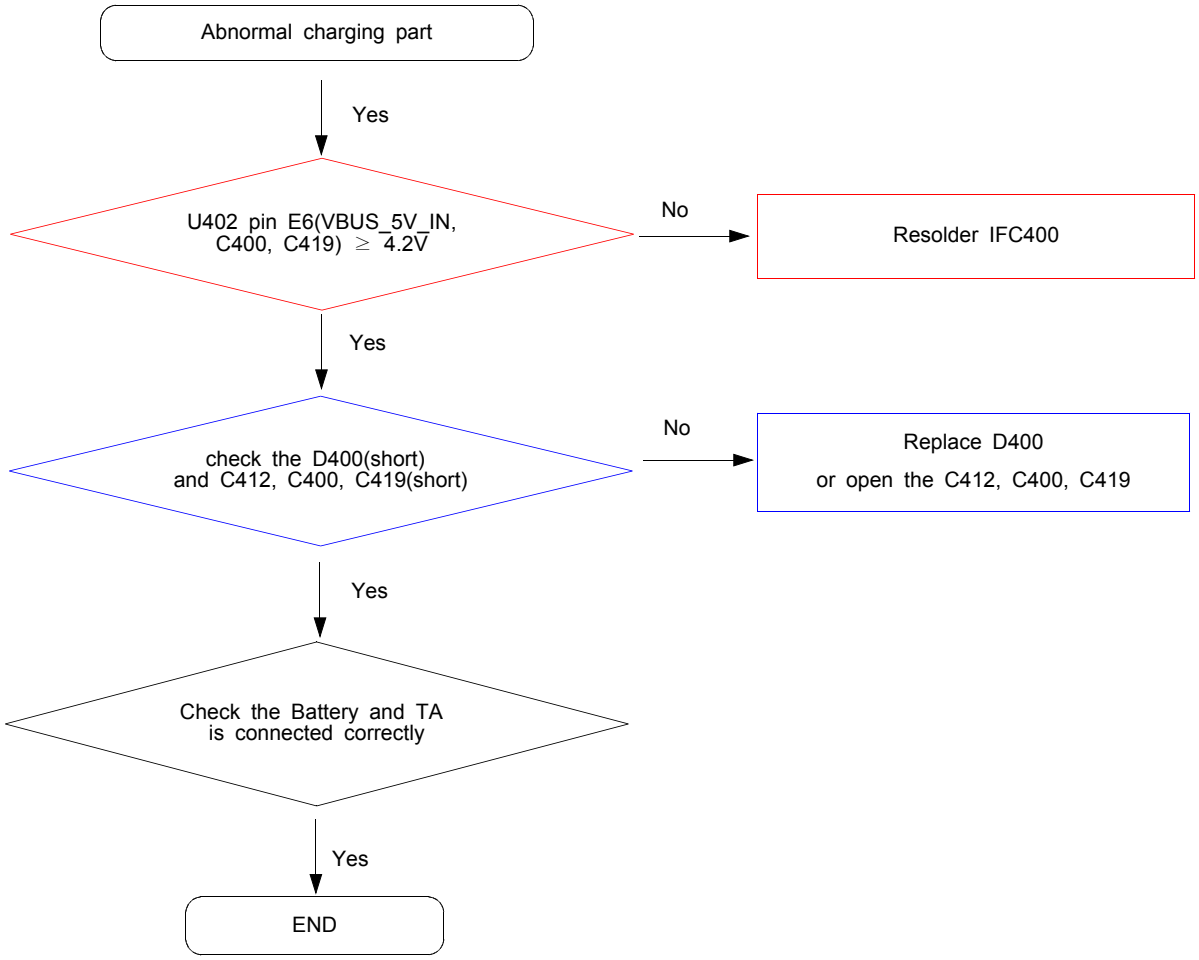

the 5th pin from the the top of left pin.

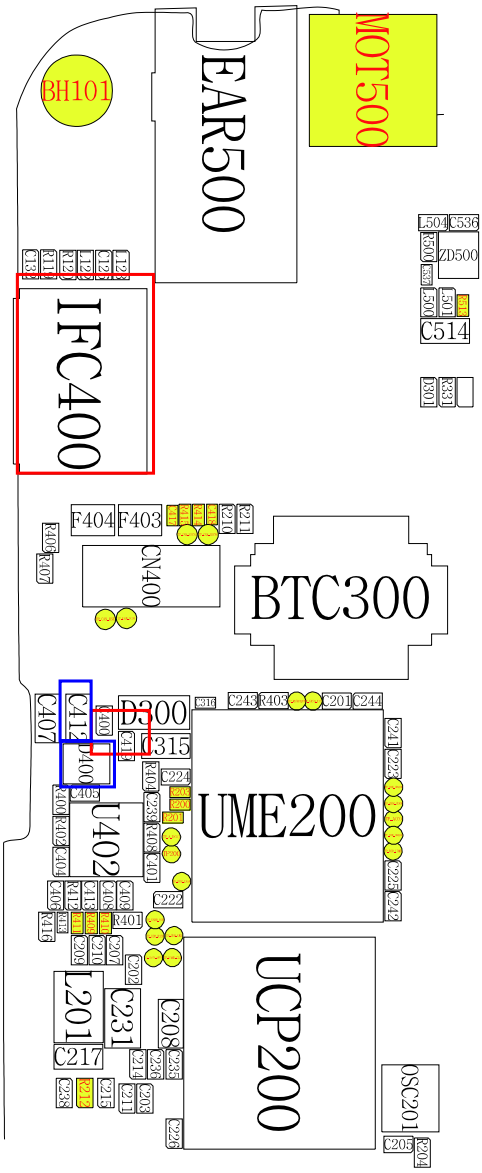


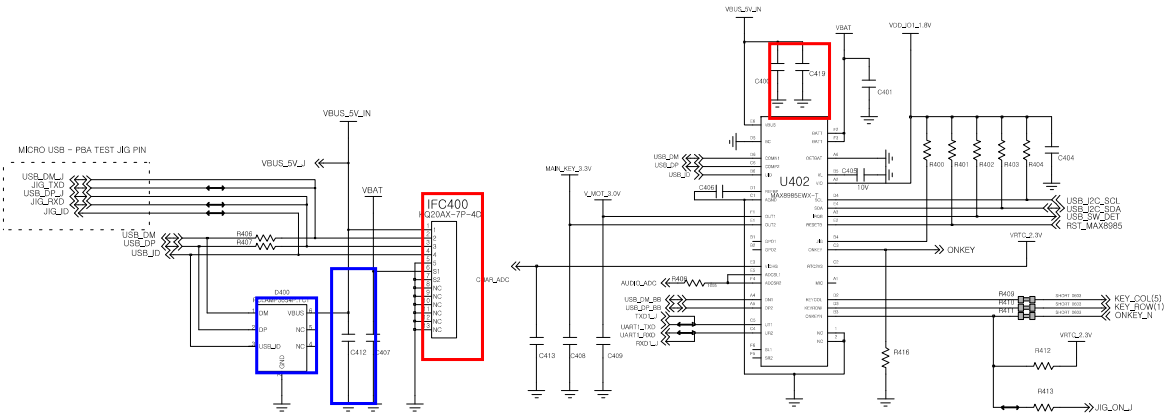



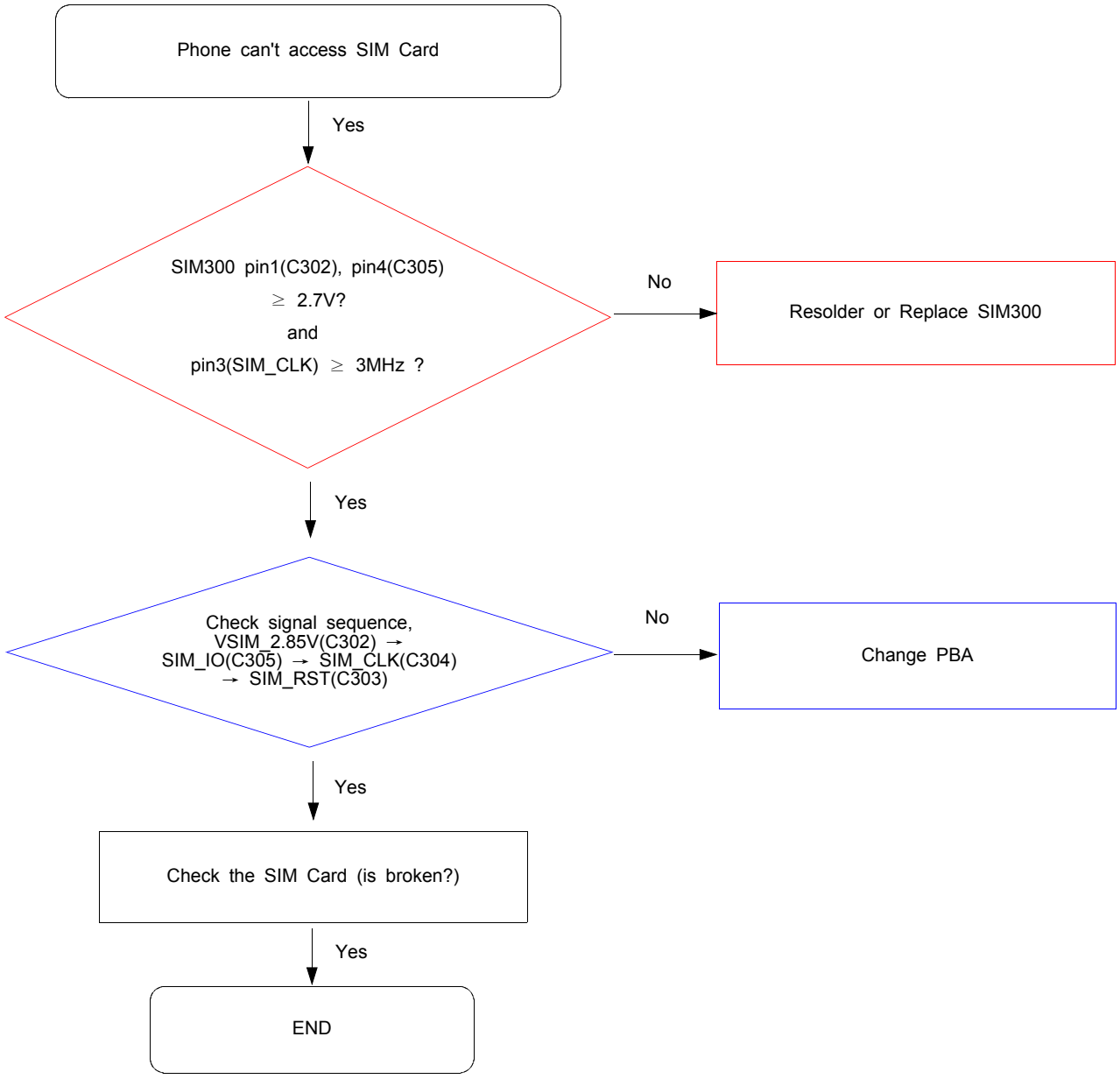
## 8-3-3. Charging Part

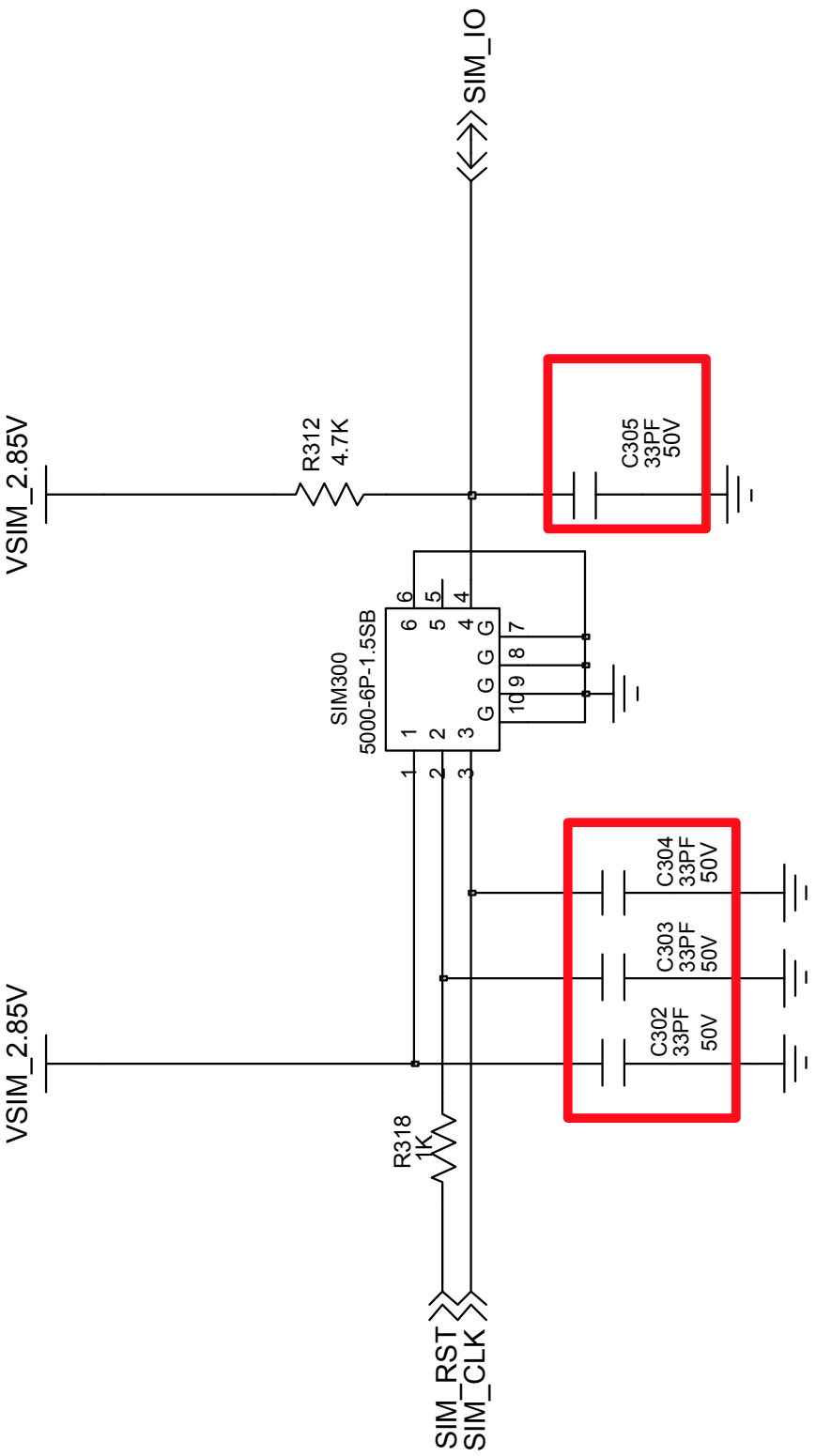


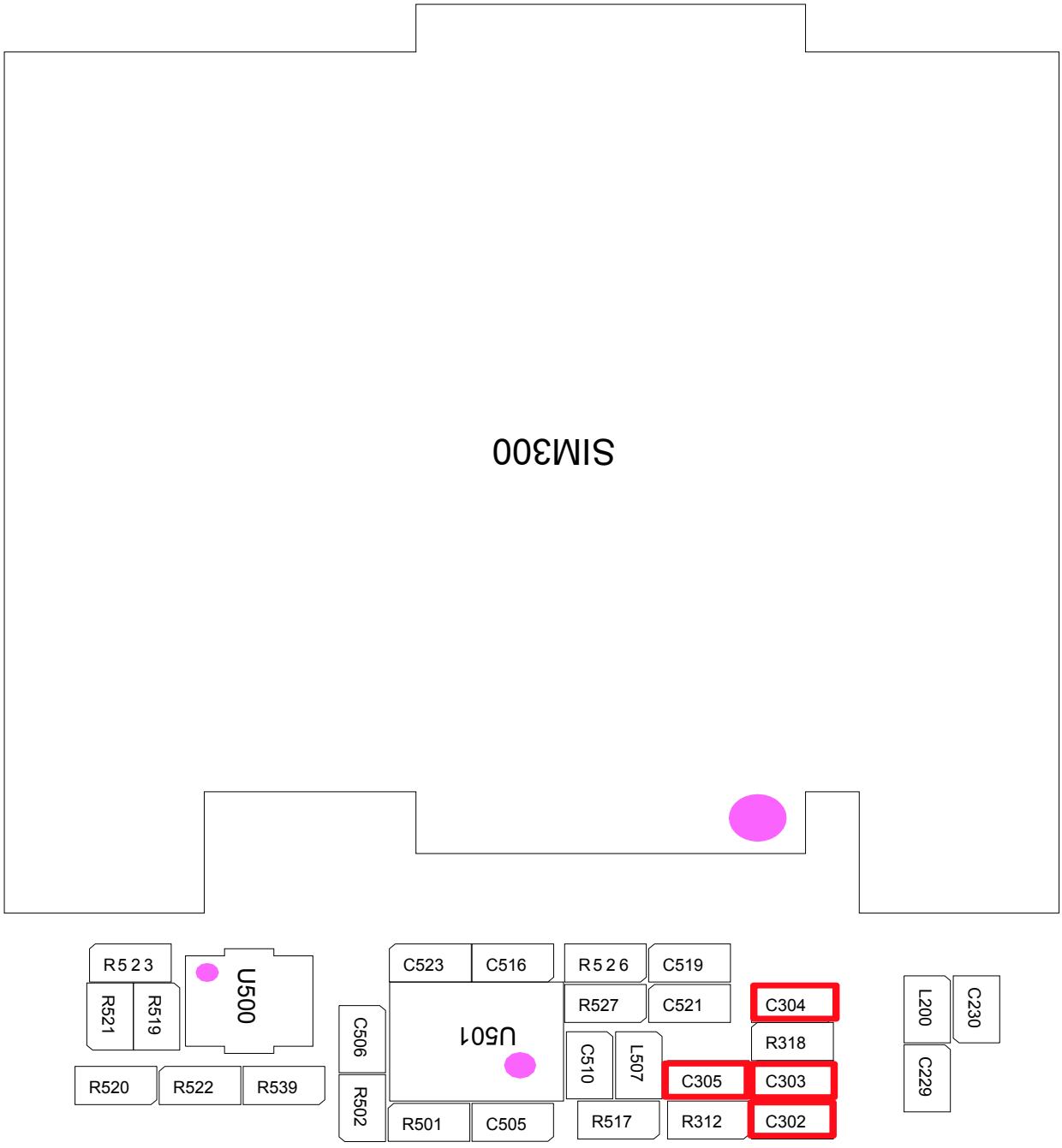


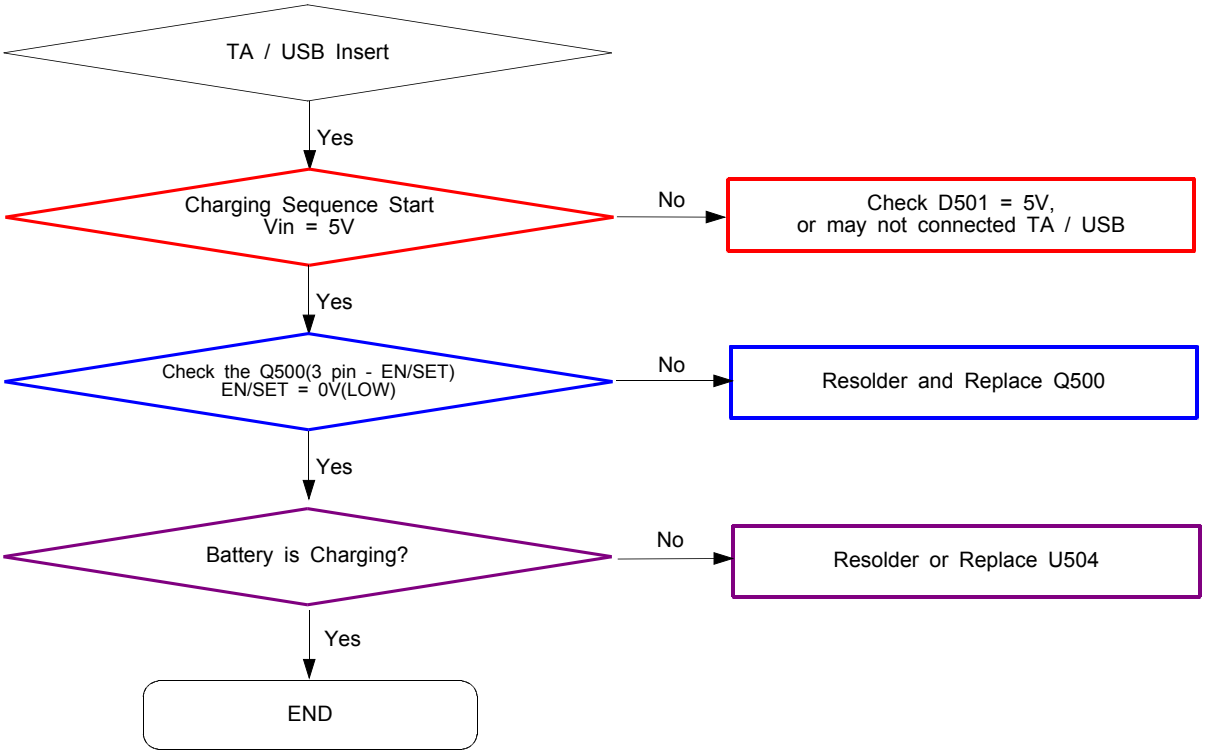
## 8-3-4. Sim Part

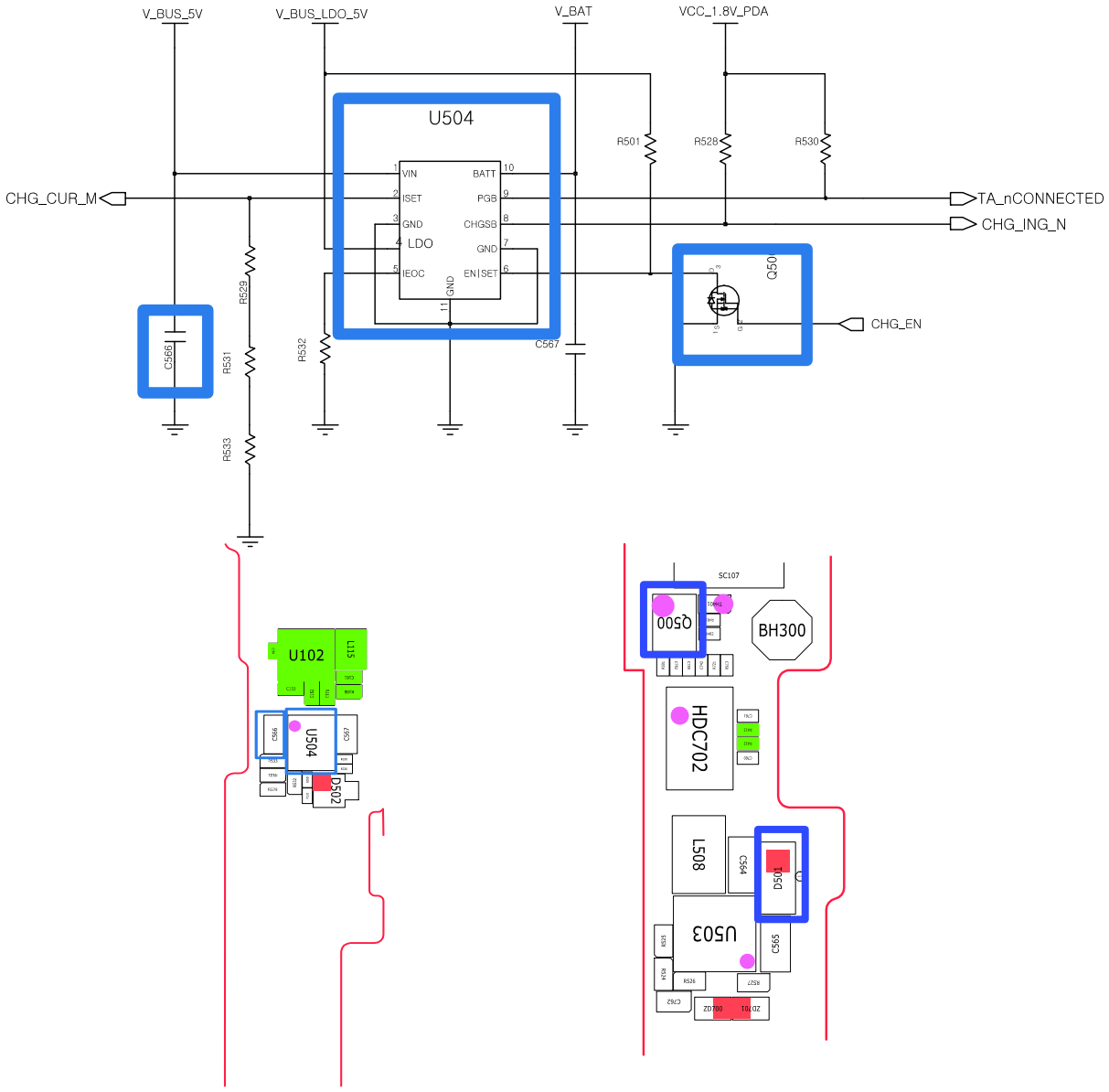




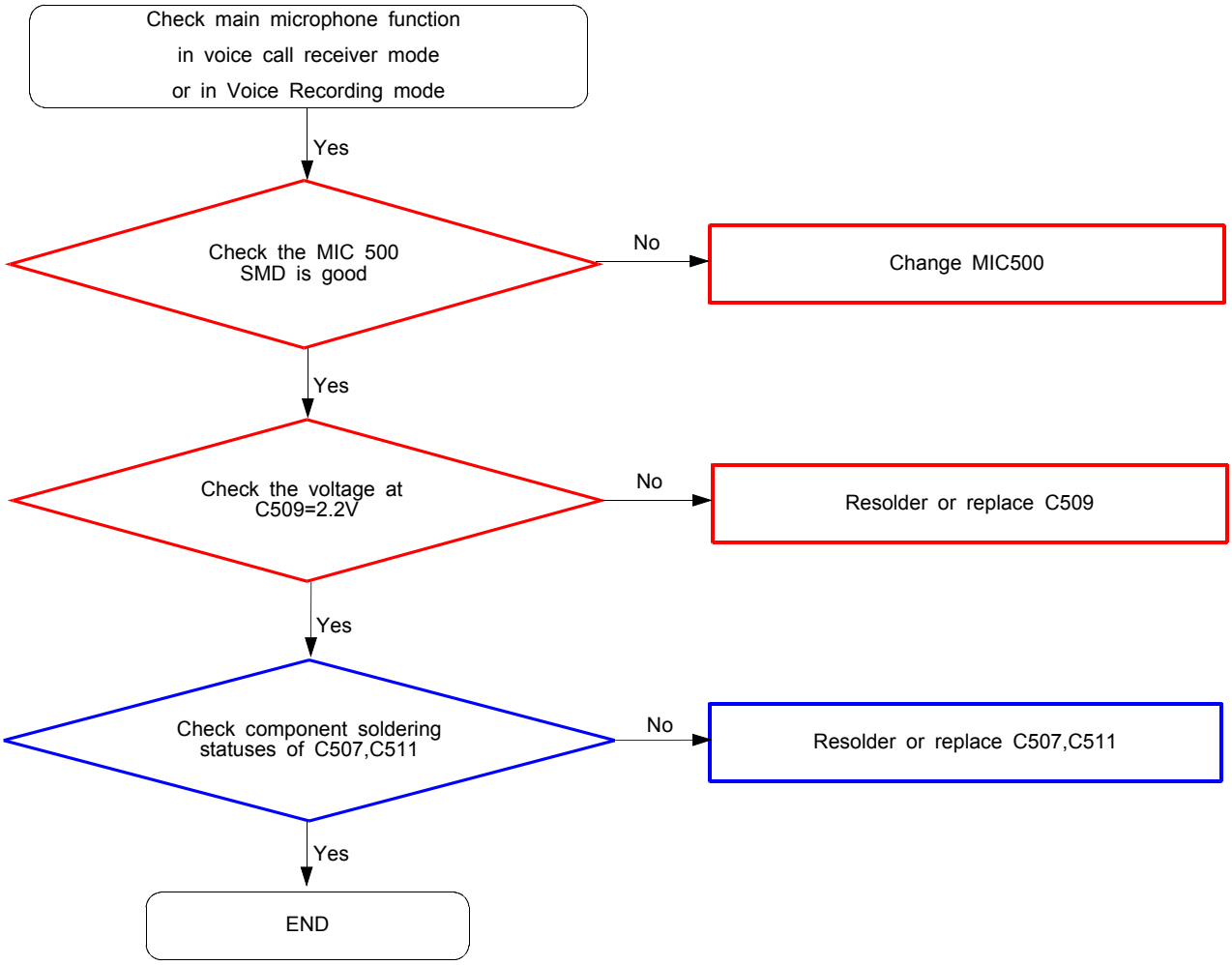


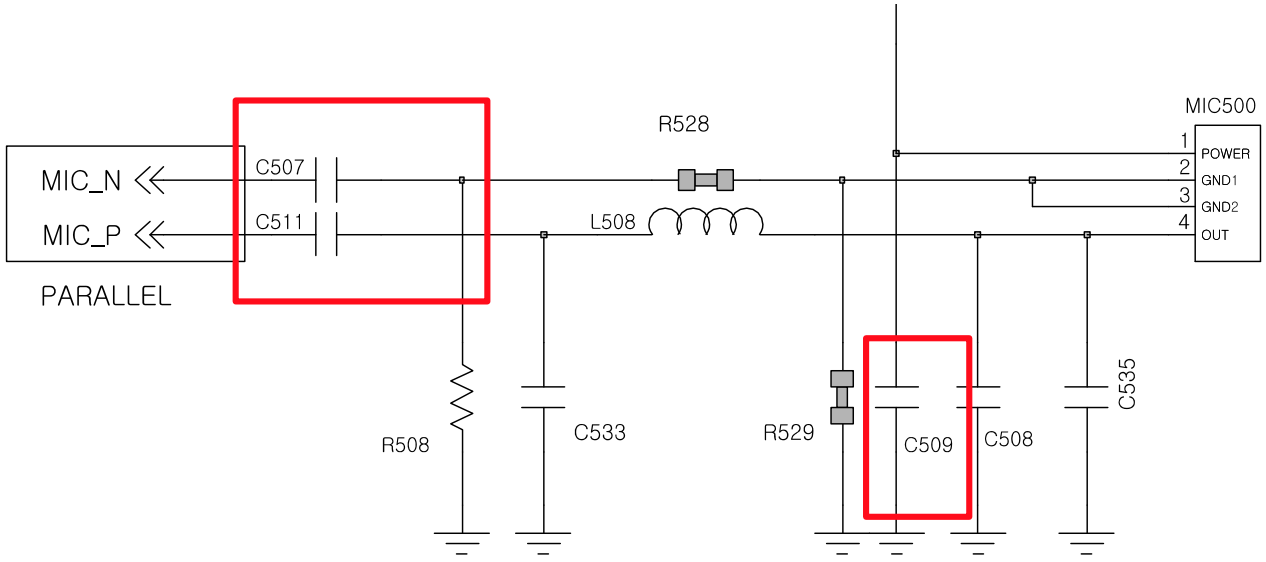
## 8-3-5. Charging Part



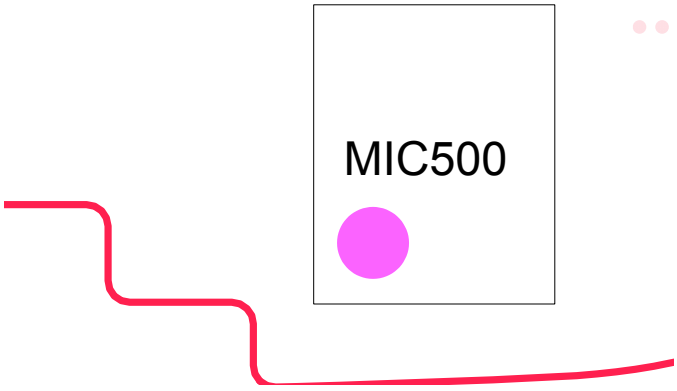


## 8-3-6. Microphone Part (Main MIC)

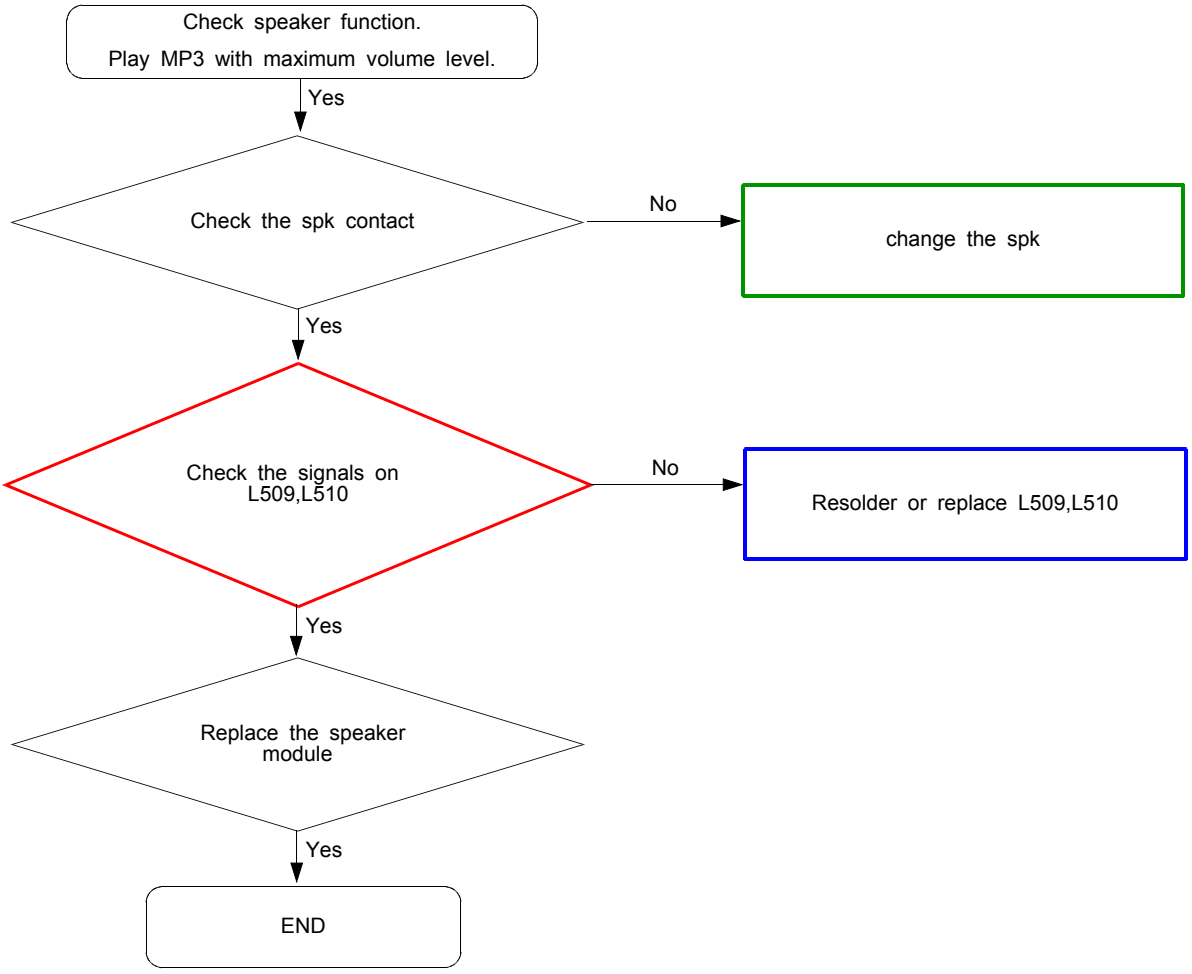


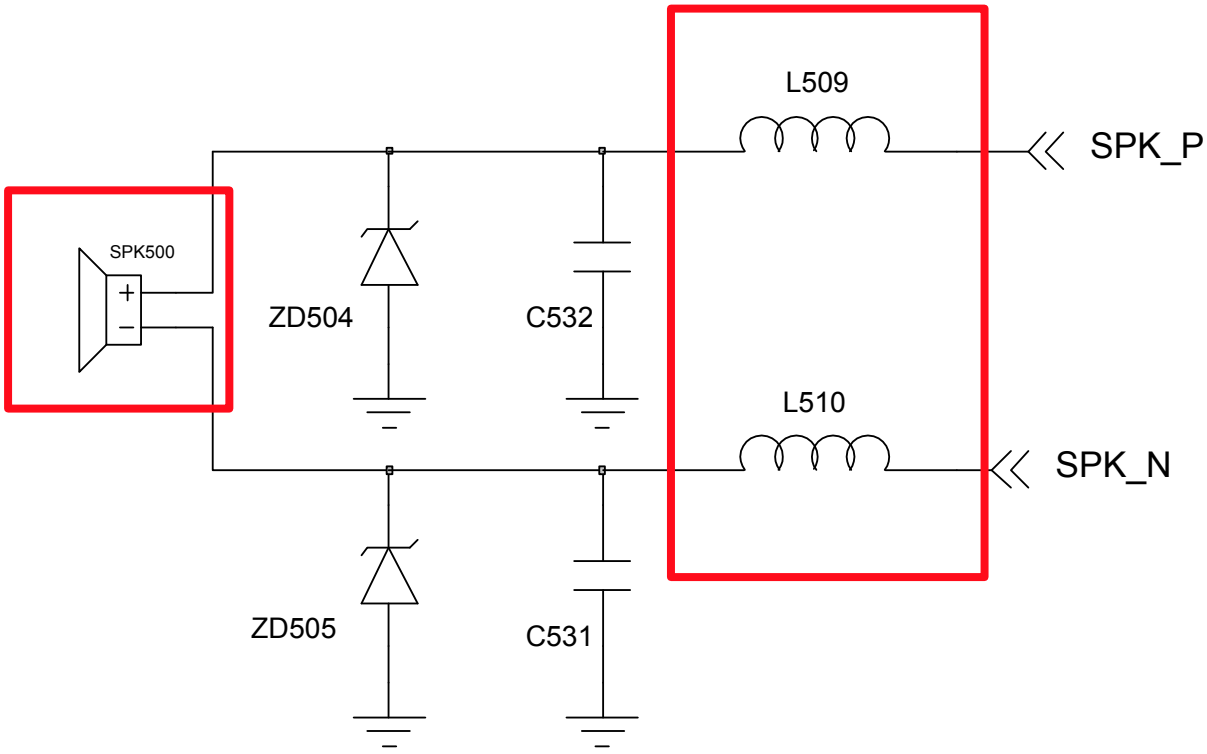




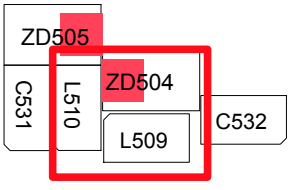


## 8-3-7. Speaker Part

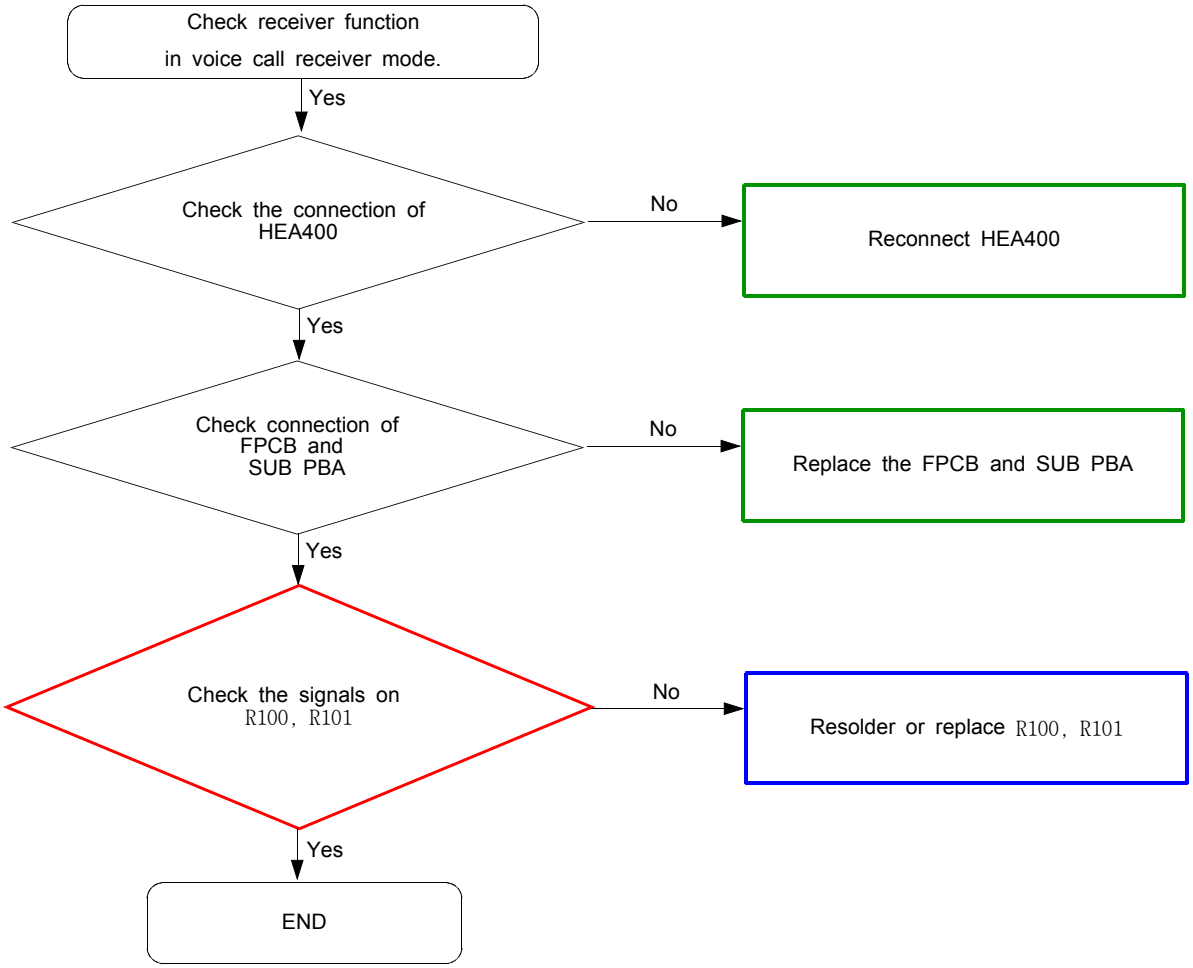


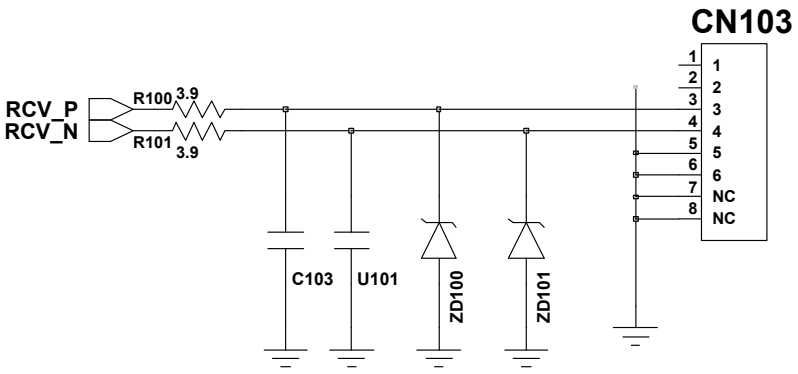




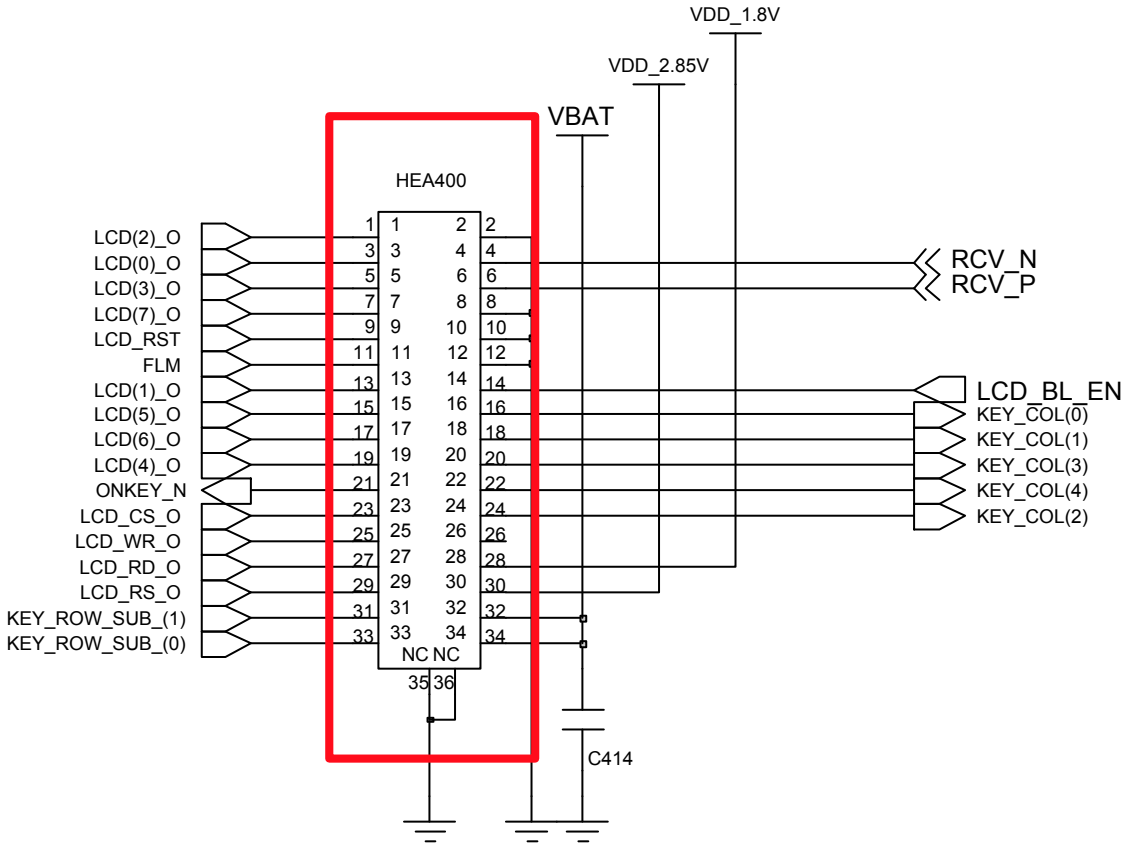


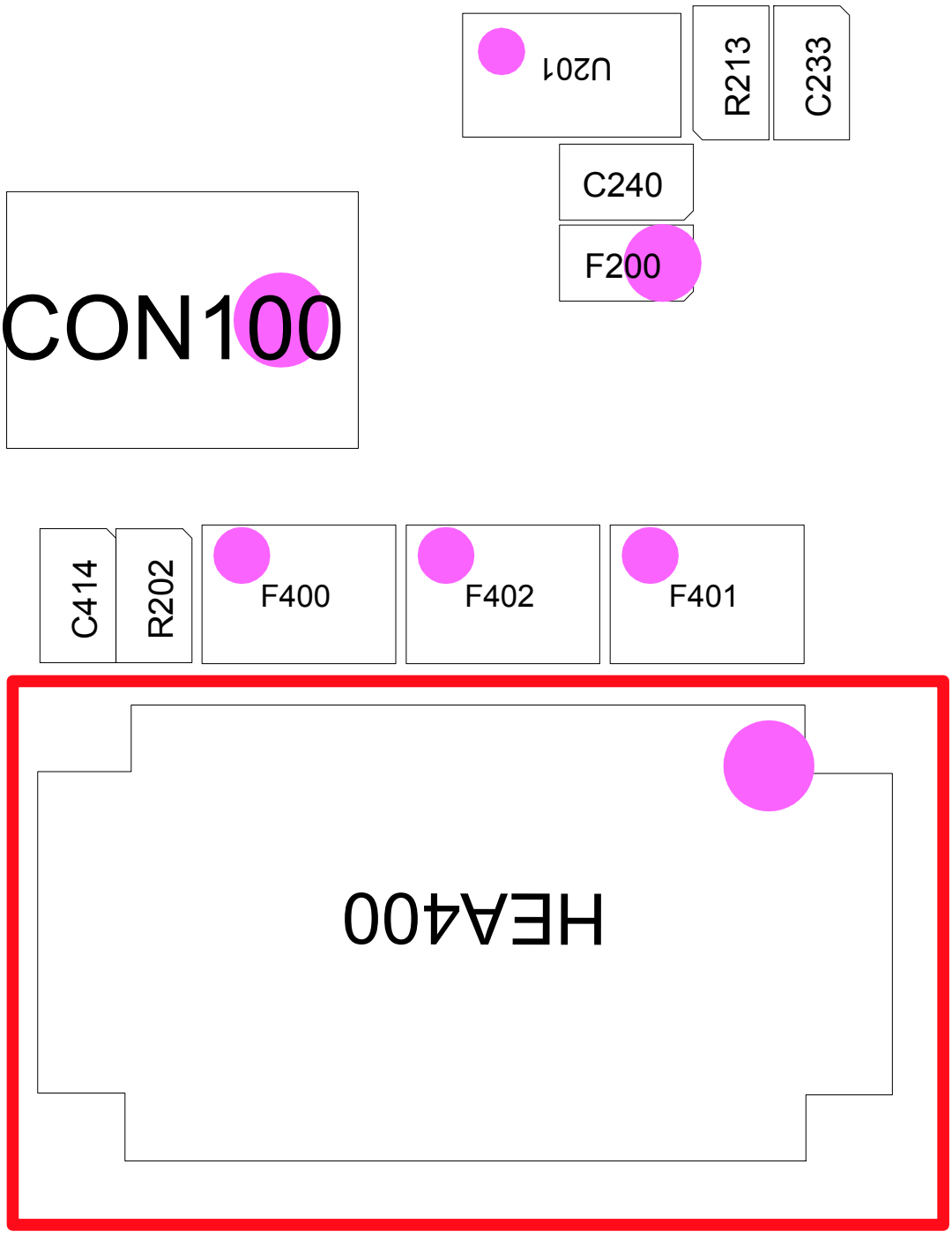
## 8-3-7. Receiver Part



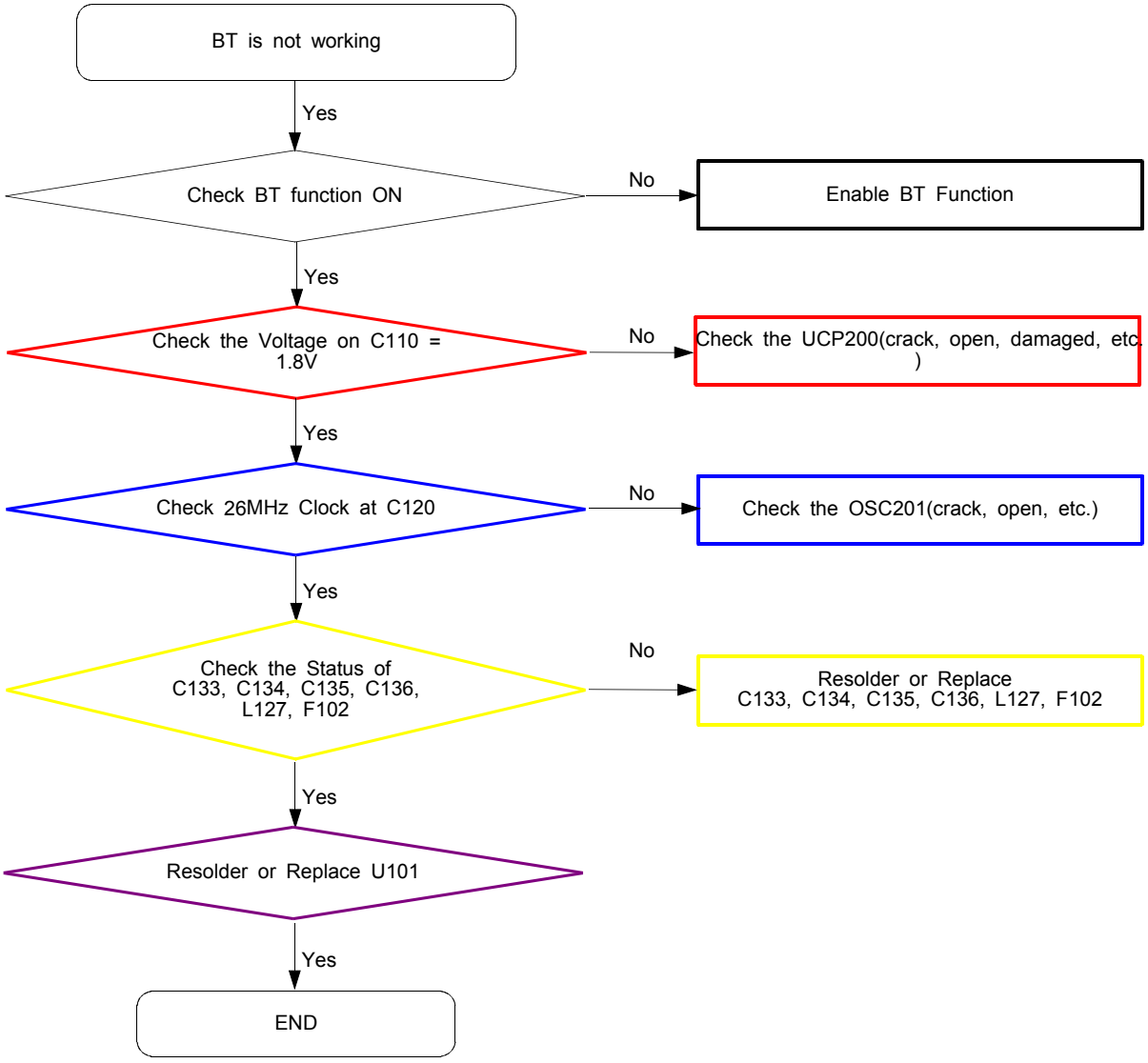


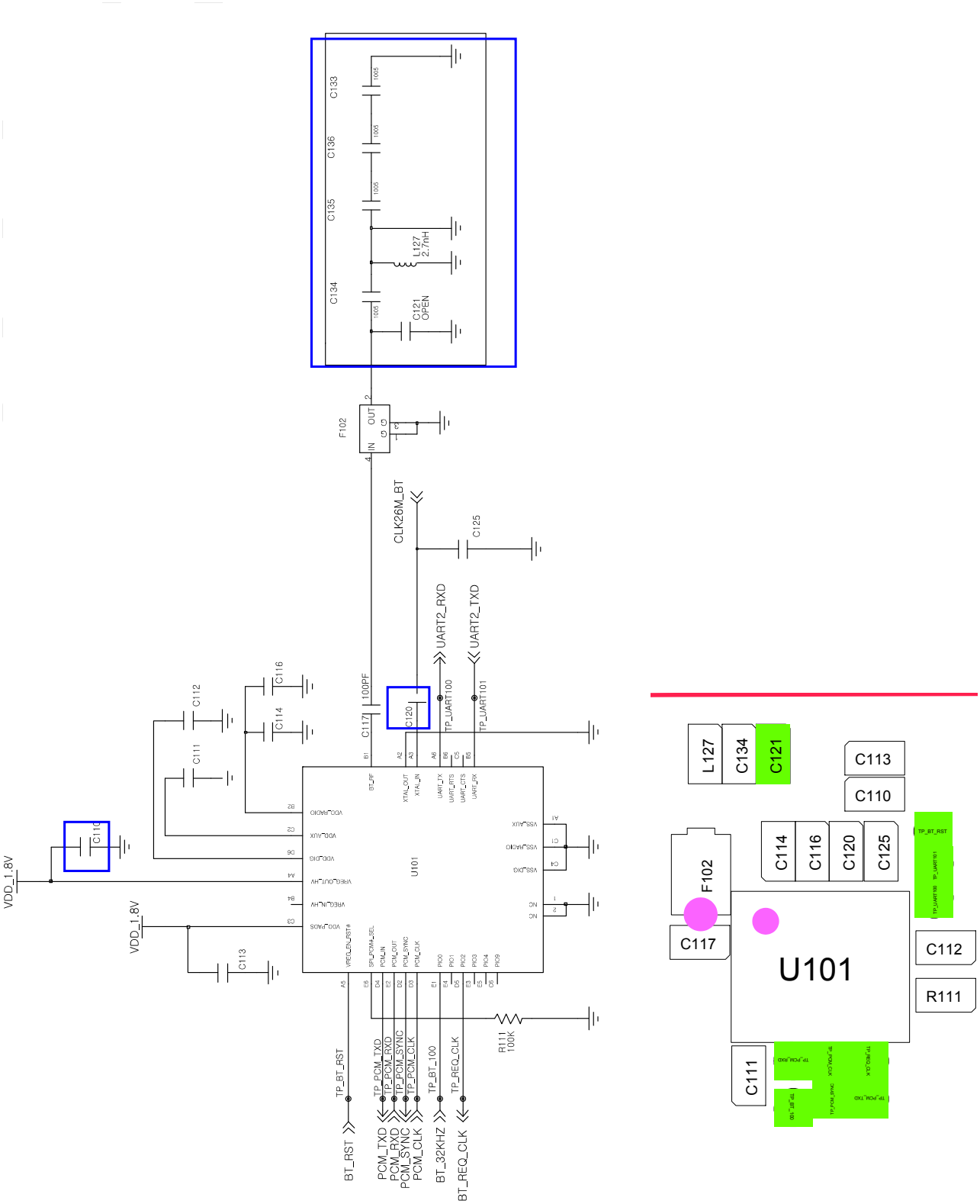

**RCV +/-**



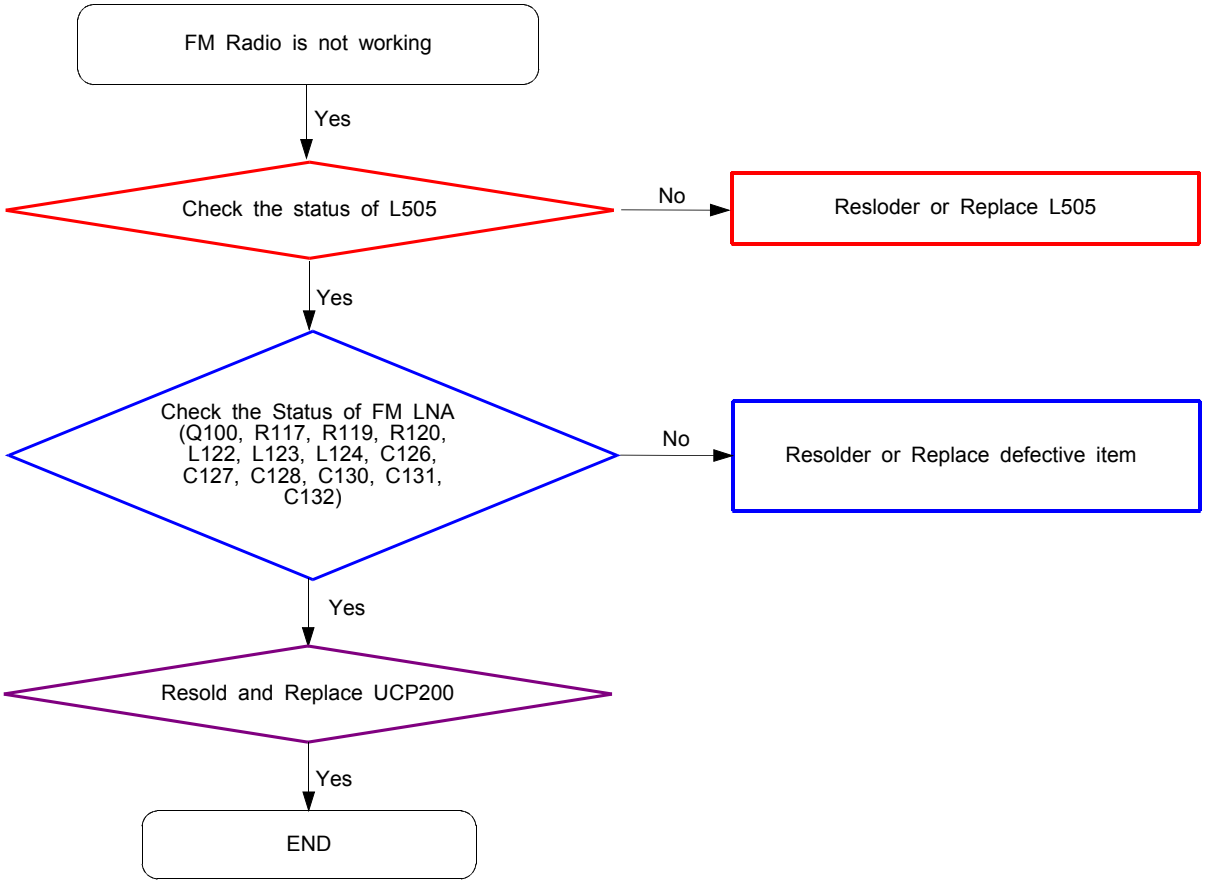


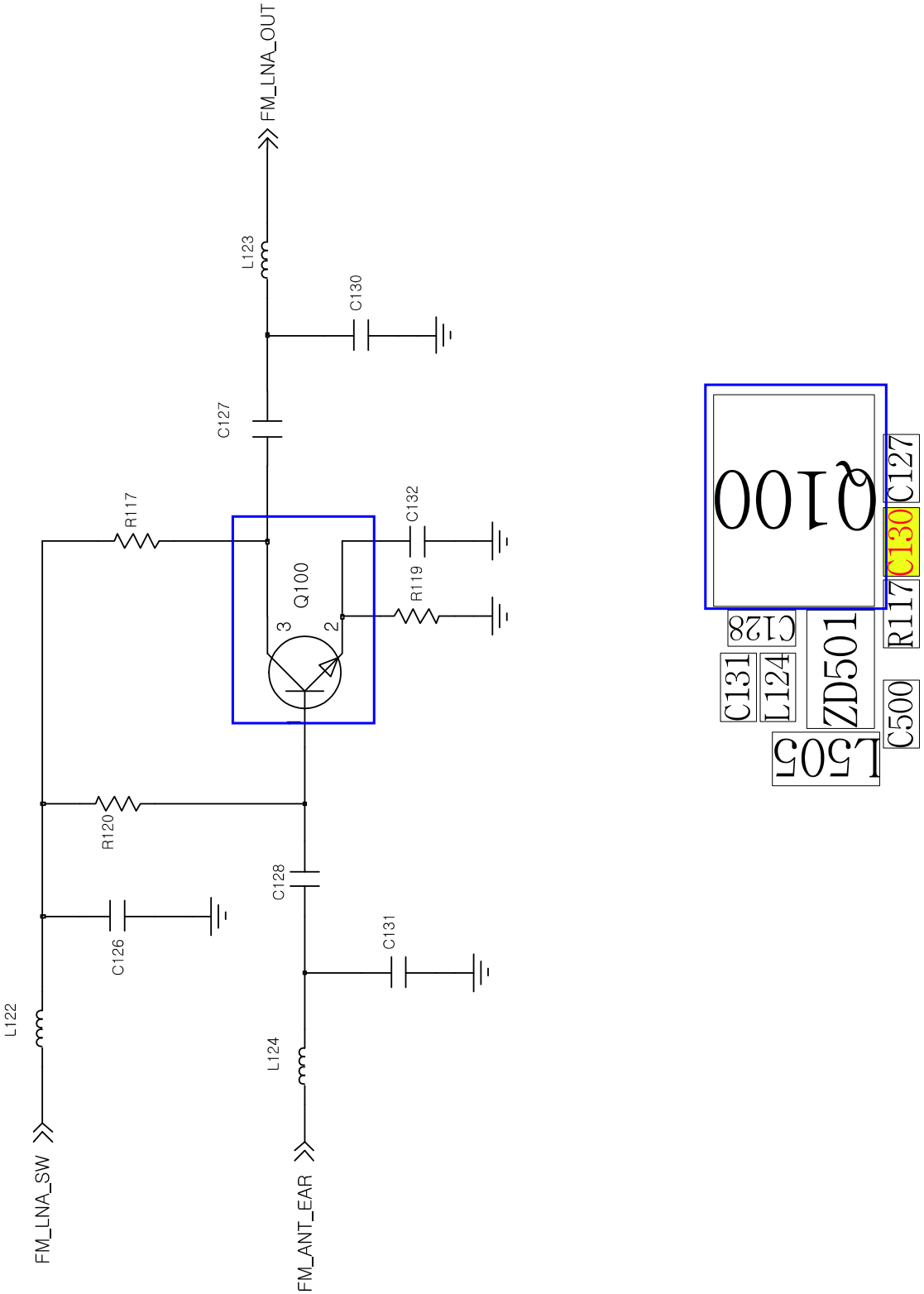
## 8-3-8. BT



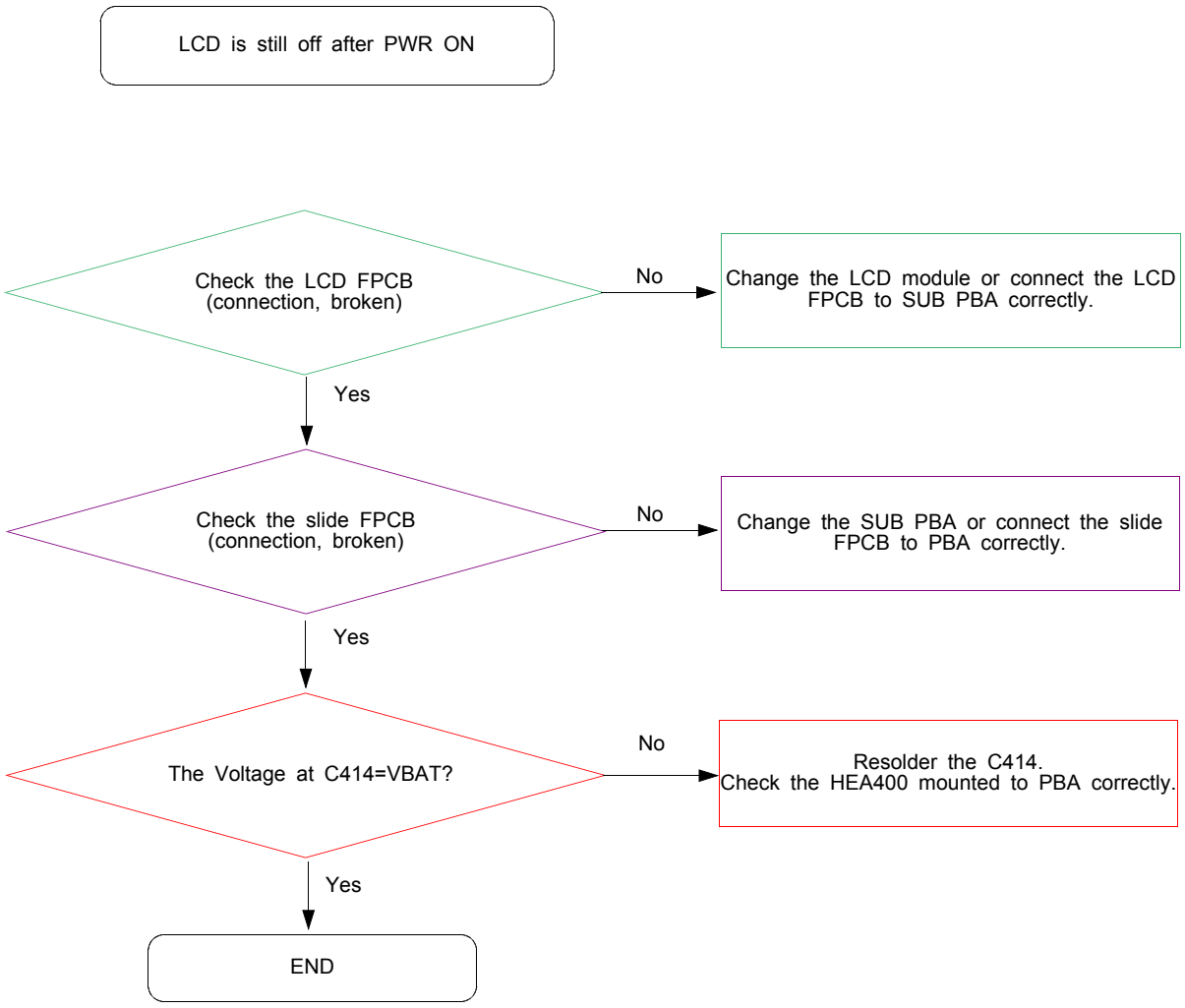


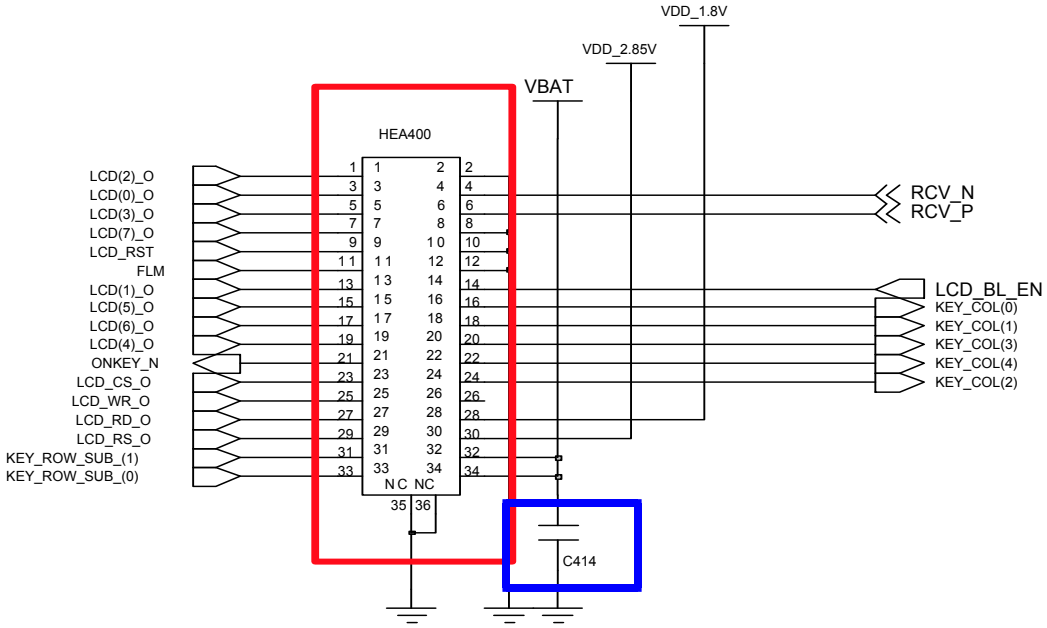
## 8-3-9. FM RADIO

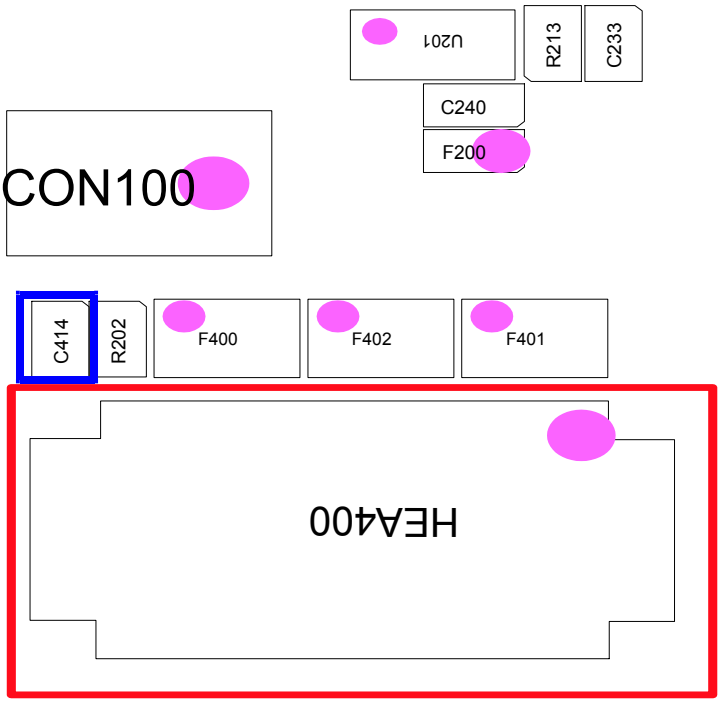




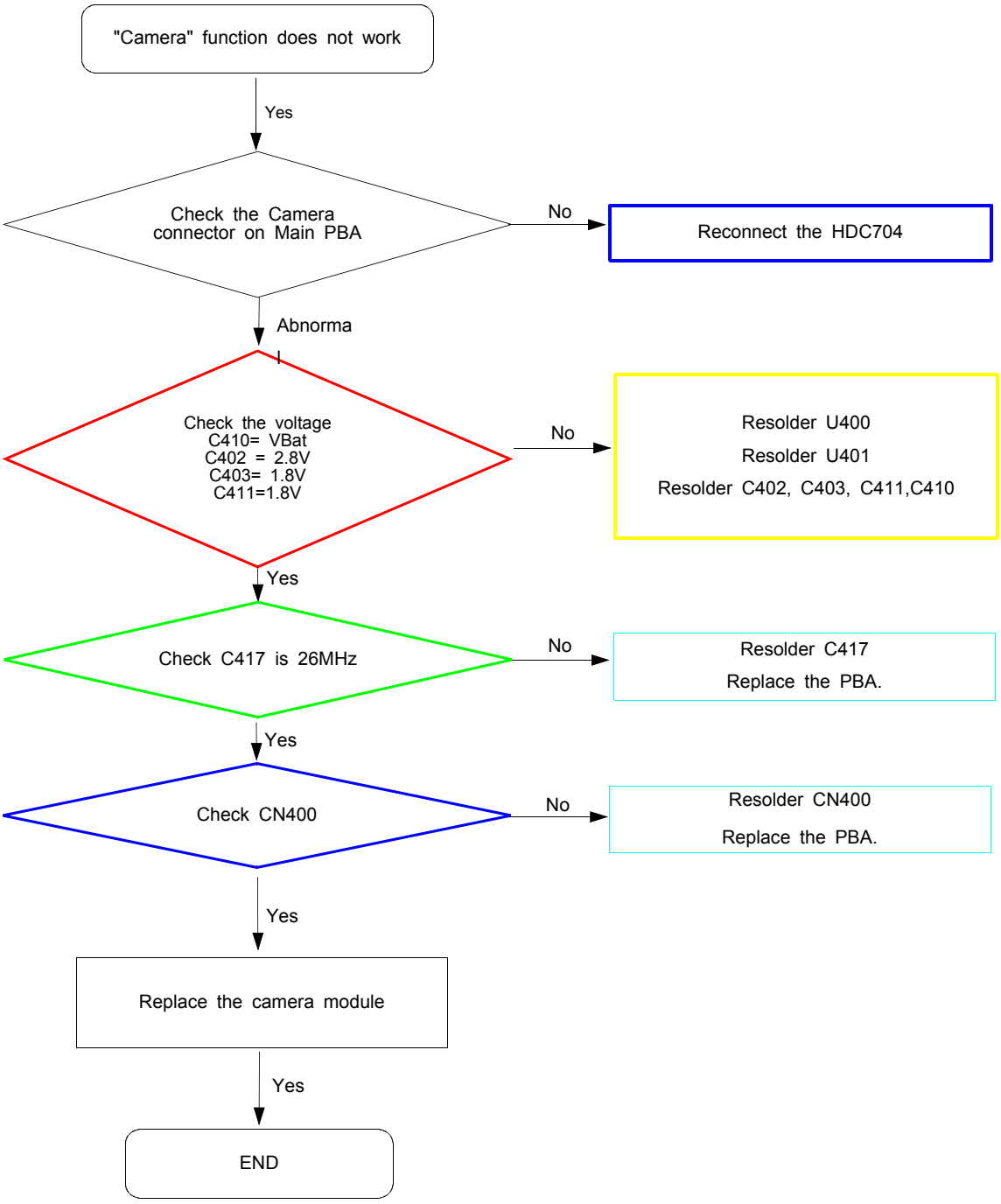
## 8-3-10. LCD

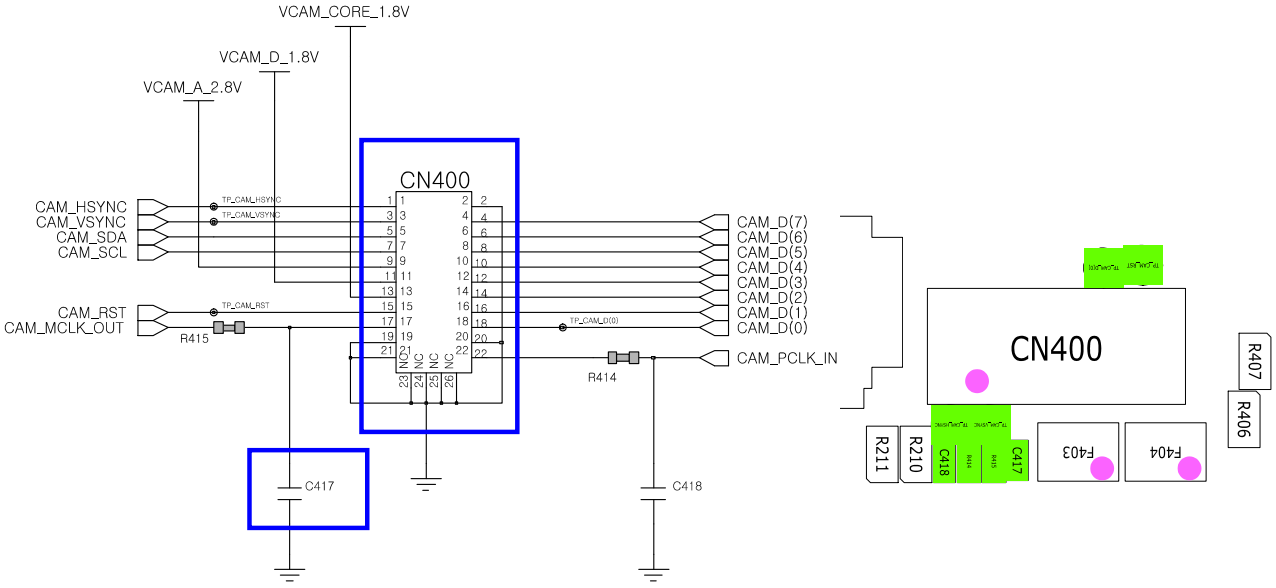


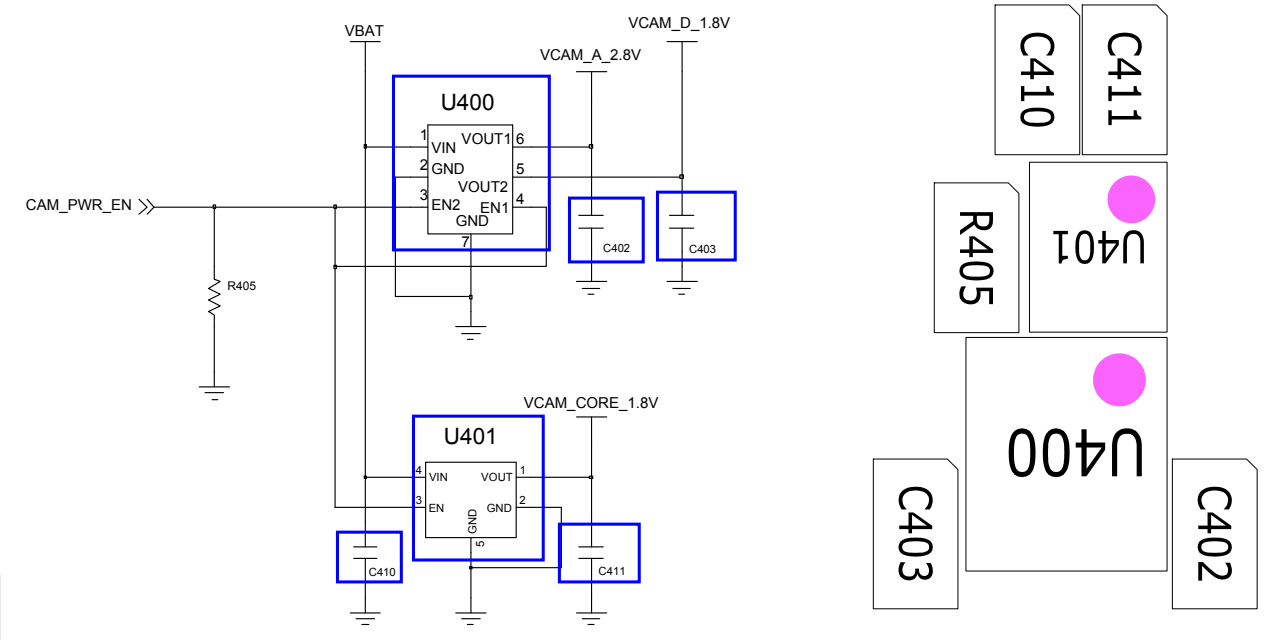


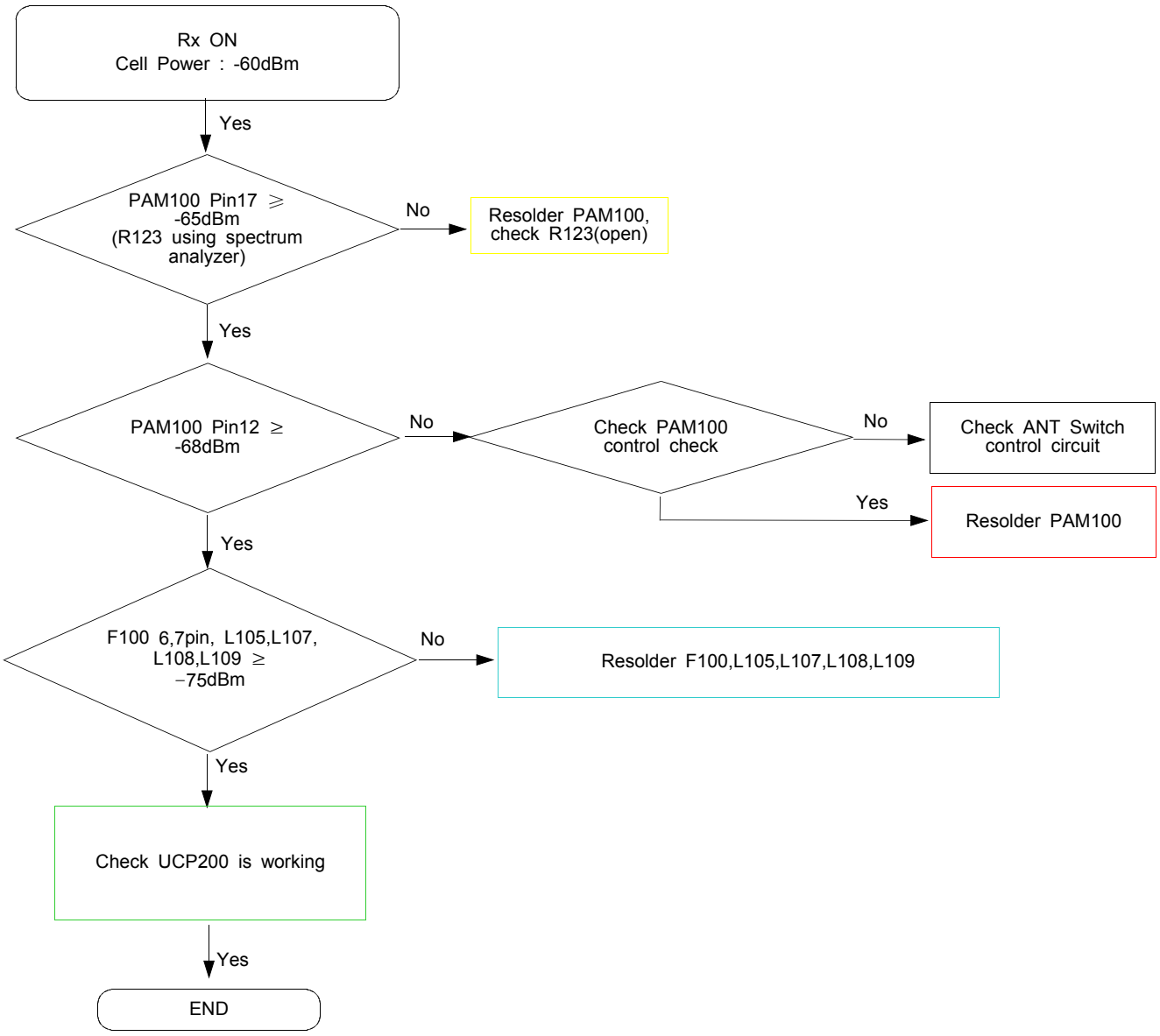
## 8-3-11. 2M CAM



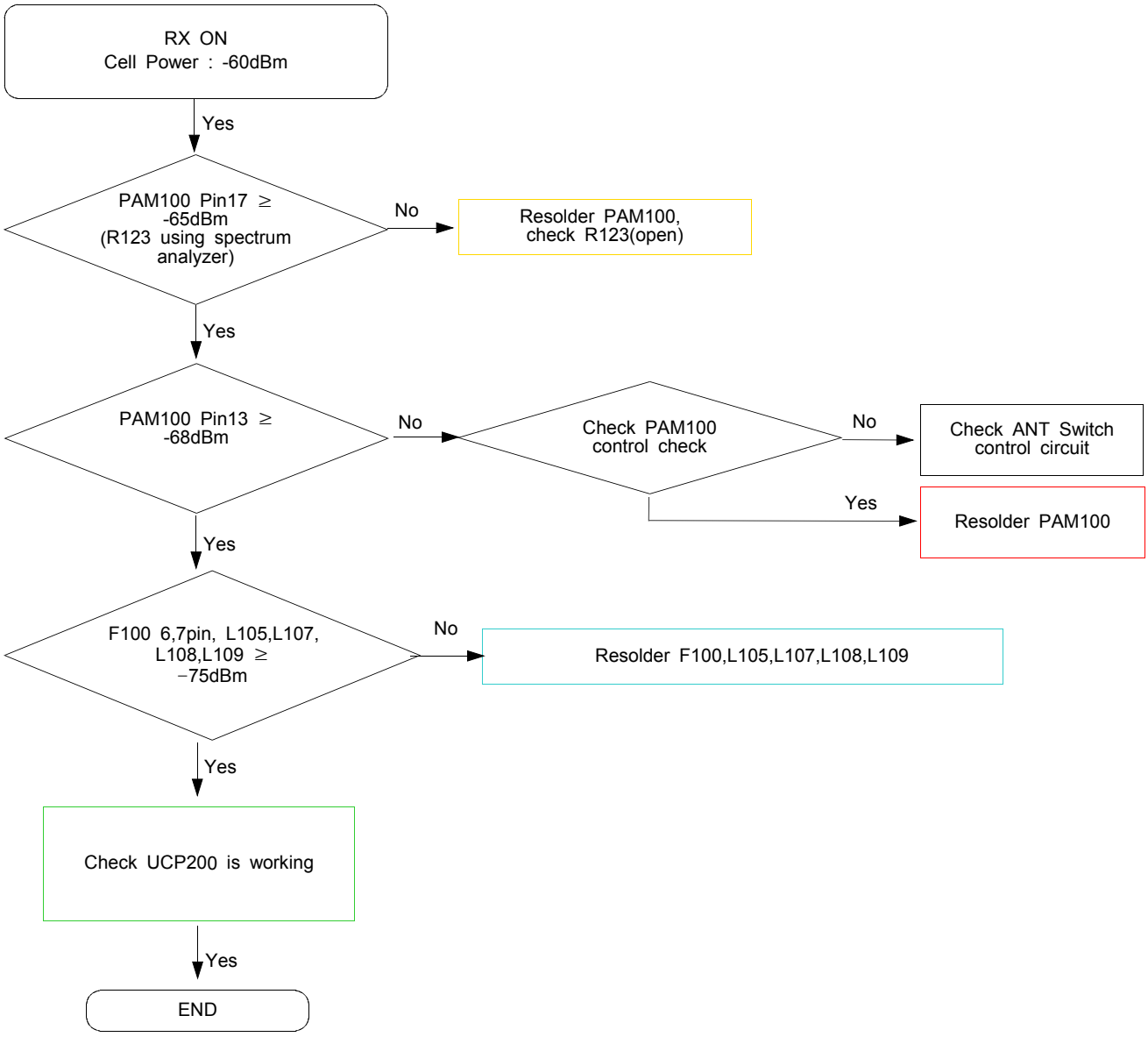


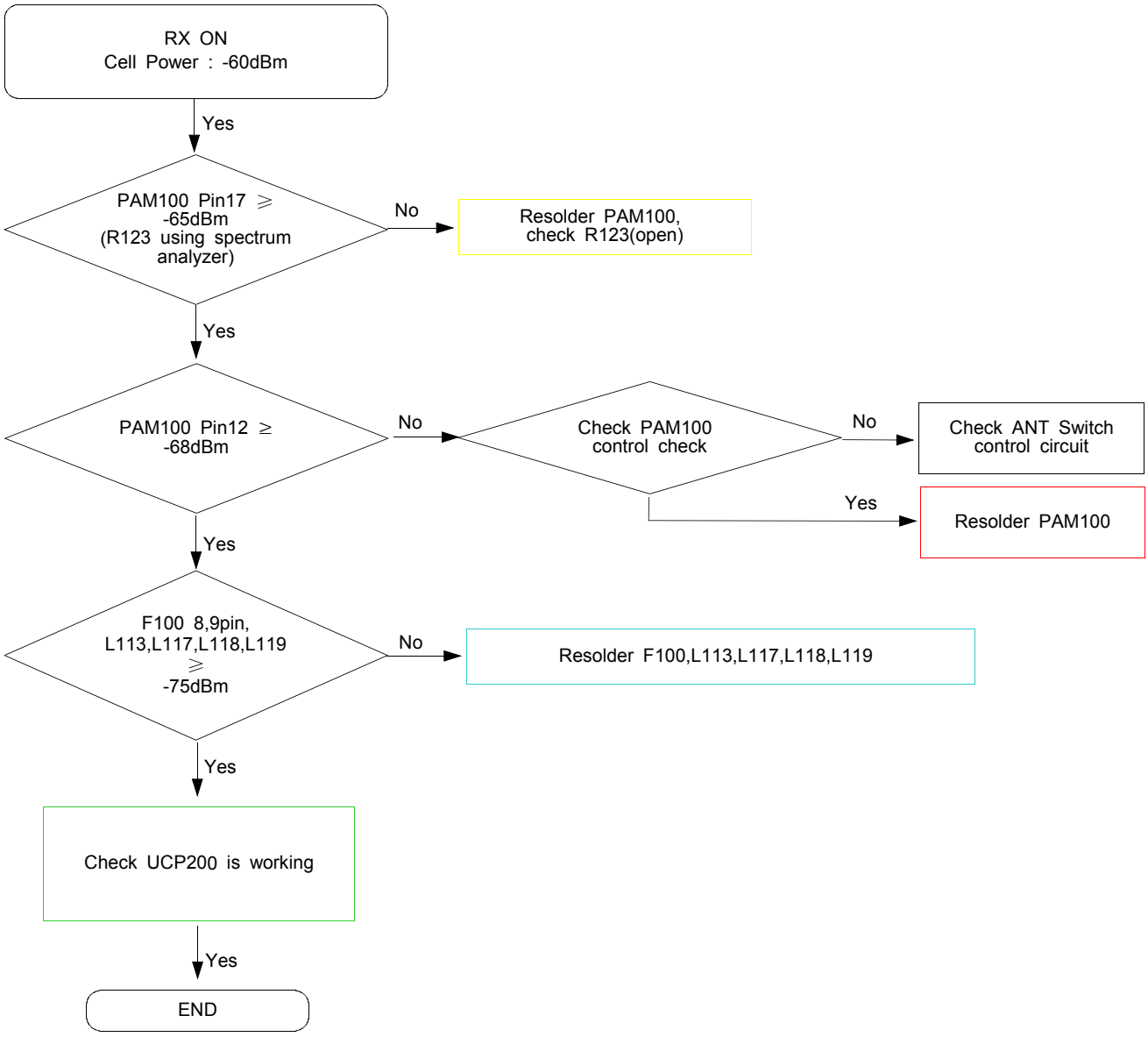
## 8-3-12. GSM850 Rx



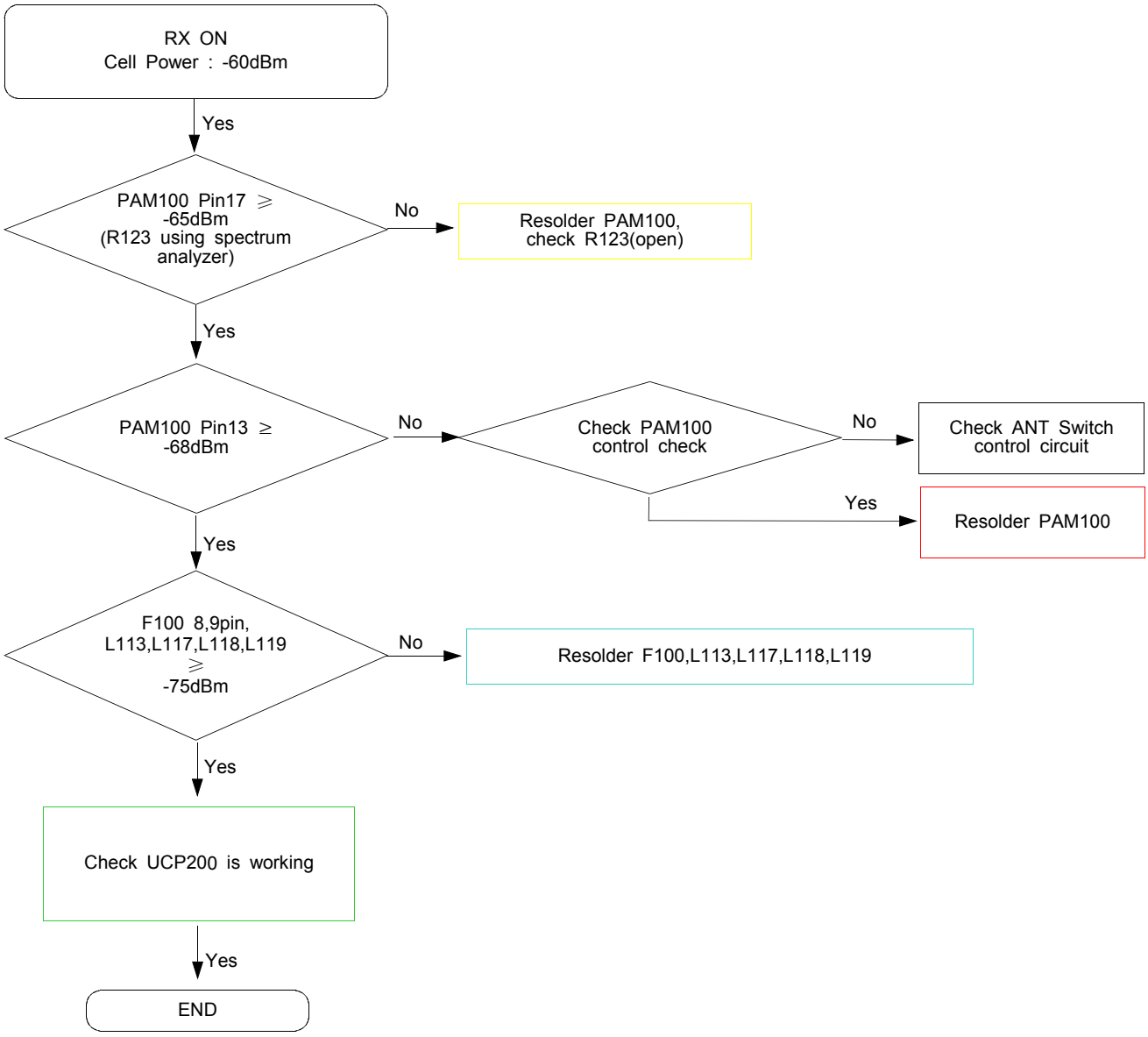
## 8-3-13. GSM900 Rx

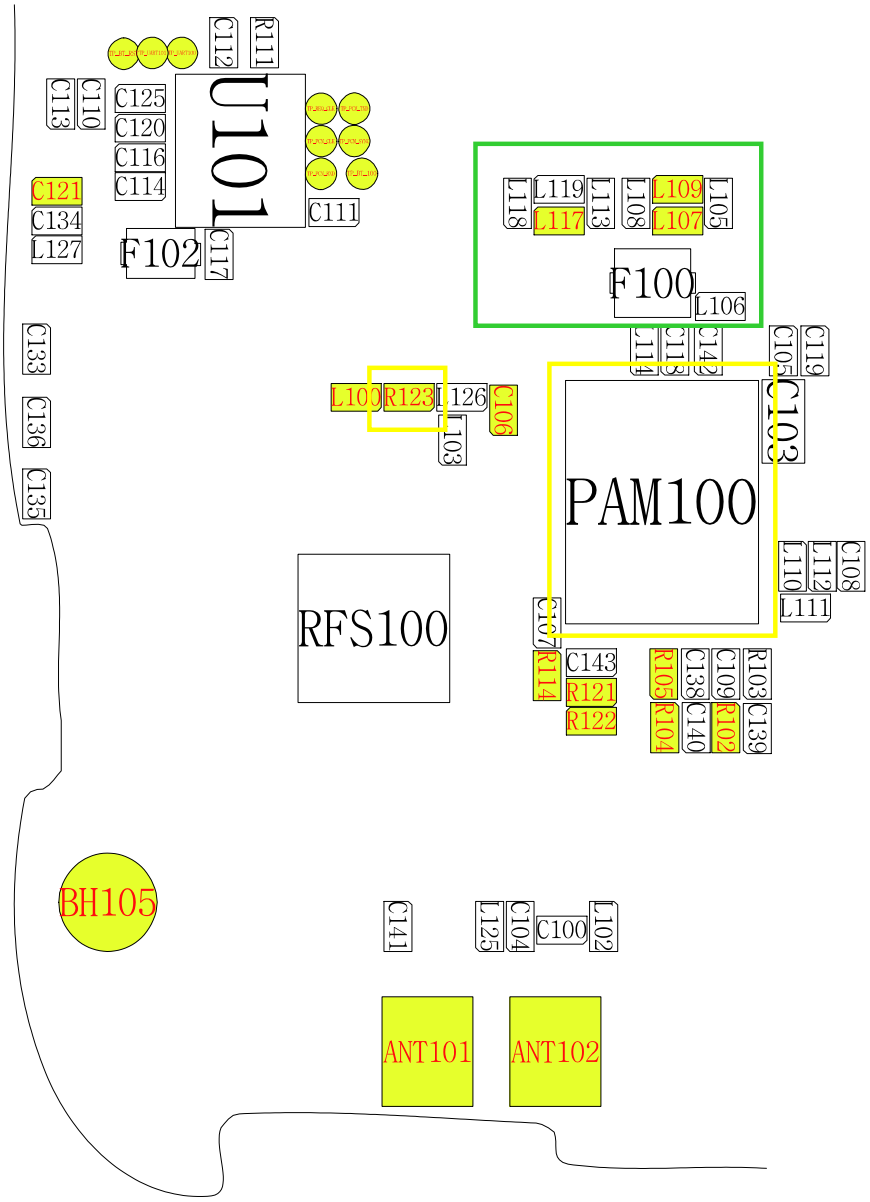


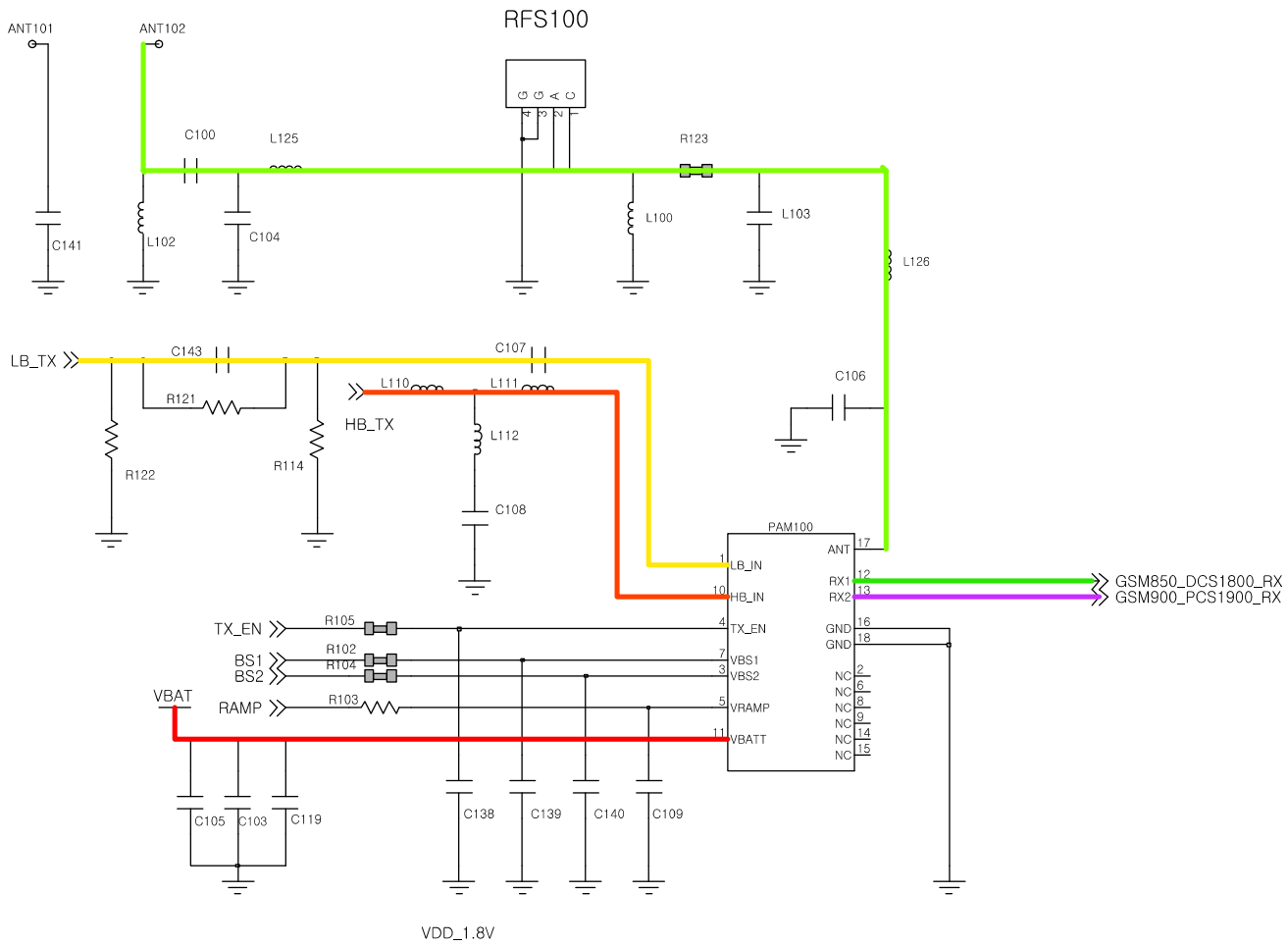
## 8-3-14. DCS Rx

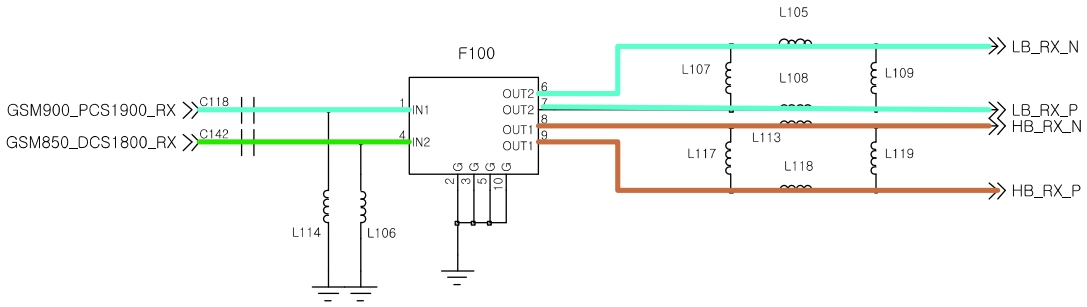


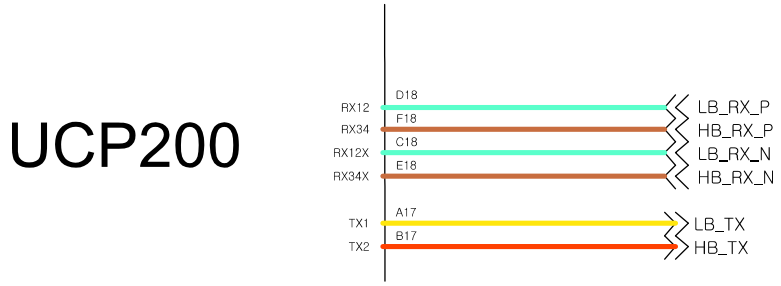
## 8-3-15. PCS Rx



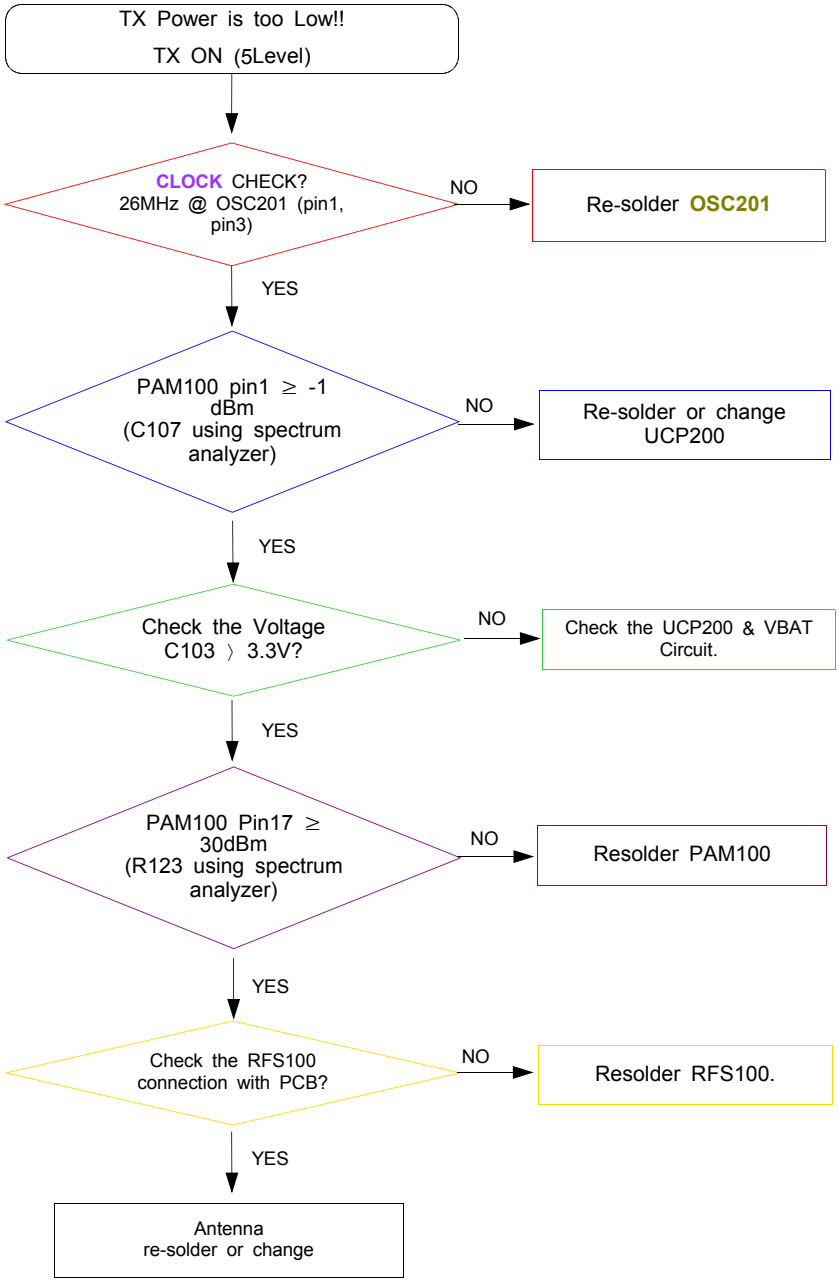




## 8-3-16. GSM850/900 Tx



## 8-3-17. DCS/PCS Tx