

SAMSUNG

GSM TELEPHONE

SGH-i780

SERVICE *Manual*

GSM TELEPHONE

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**SAMSUNG
ELECTRONICS**



GSPN (Global Service Partner Network)

| Country | Web Site |
|------------------|------------------------------|
| North America | service.samsungportal.com |
| Latin America | latin.samsungportal.com |
| CIS | cis.samsungportal.com |
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1. Safety Precautions

1-1. Repair Precaution

- Repair in Shield Box, during detailed tuning.
Take specially care of tuning or test, because the specification 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

| | EGSM 900 | DCS 1800 | PCS 1900 | W-CDMA 2100 |
|------------------------------------|------------------------|------------------------|------------------------|--|
| Freq. Band[MHz] Uplink/Downlink | 880~915 925~960 | 1710~1785 1805~1880 | 1850~1910 1930~1990 | 1920~1980 2110~2170 |
| ARFCN range | 0~124 & 975~1023 | 512~885 | 512~810 | UL:9612~9888 DL:10562~10838 |
| Tx/Rx spacing | 45MHz | 95MHz | 80MHz | 190MHz |
| Mod. Bit rate/ Bit Period | 270.833kbps 3.692us | 270.833kbps 3.692us | 270.833kbps 3.692us | 3.84Mcps (chip rate) |
| Time Slot Period / Frame Period | 576.9us 4.615ms | 576.9us 4.615ms | 576.9us 4.615ms | Frame length : 10ms Slot length : 0.667ms |
| Modulation | 0.3GMSK | 0.3GMSK | 0.3GMSK | QPSK (DL) HPSK (UL) |
| MS Power | 33dBm ~ 5dBm | 30dBm ~ 0dBm | 30dBm ~ 0dBm | 24dBm ~ -50dBm |
| Power Class | 4 (max +33dBm) | 1 (max +30dBm) | 1 (max +30dBm) | 3 (max +24dBm) |
| Sensitivity | -102dBm | -100dBm | -100dBm | -106.7dBm |
| TDMA Mux | 8 | 8 | 8 | |
| Cell Radius | 35Km | 2Km | 2Km | 2Km |

2-2. GSM TX power class

| TX Power control level | GSM900 |
|-------------------------------|---------------|
| 5 | 33±2 dBm |
| 6 | 31±2 dBm |
| 7 | 29±2 dBm |
| 8 | 27±2 dBm |
| 9 | 25±2 dBm |
| 10 | 23±2 dBm |
| 11 | 21±2 dBm |
| 12 | 19±2 dBm |
| 13 | 17±2 dBm |
| 14 | 15±2 dBm |
| 15 | 13±2 dBm |
| 16 | 11±3 dBm |
| 17 | 9±3 dBm |
| 18 | 7±3 dBm |
| 19 | 5±3 dBm |

| TX Power control level | DCS1800 |
|-------------------------------|----------------|
| 0 | 30±3 dBm |
| 1 | 28±3 dBm |
| 2 | 26±3 dBm |
| 3 | 24±3 dBm |
| 4 | 22±3 dBm |
| 5 | 20±3 dBm |
| 6 | 18±3 dBm |
| 7 | 16±3 dBm |
| 8 | 14±3 dBm |
| 9 | 12±4 dBm |
| 10 | 10±4 dBm |
| 11 | 8±4 dBm |
| 12 | 6±4 dBm |
| 13 | 4±4 dBm |
| 14 | 2±5 dBm |
| 15 | 0±5 dBm |

| TX Power control level | PCS1900 |
|-------------------------------|----------------|
| 0 | 30±3 dBm |
| 1 | 28±3 dBm |
| 2 | 26±3 dBm |
| 3 | 24±3 dBm |
| 4 | 22±3 dBm |
| 5 | 20±3 dBm |
| 6 | 18±3 dBm |
| 7 | 16±3 dBm |
| 8 | 14±3 dBm |
| 9 | 12±4 dBm |
| 10 | 10±4 dBm |
| 11 | 8±4 dBm |
| 12 | 6±4 dBm |
| 13 | 4±4 dBm |
| 14 | 2±5 dBm |
| 15 | 0±5 dBm |

3. Product Function

Main Function

- Homescreen
- PIM - Contacts, Calendar, Tasks, Voice Note
- Messaging - SMS, MMS, Email, VoiceRecorder within MMS
- Windows Live! Portal
- Windows Update
- Email Setup Wizard
- Internet Explorer
- Multimedia capability - 2 Mega Pixel / VGA Camera, Camcorder, Windows Media Player
- Zoomer
- Dialer
- Video Telephony
- Accessary Applications - Alarms, Calculator, NotePad, Task Manager, Smart Converter, World Clock, Stopwatch, Smart Search
- Active Sync
- Bluetooth
- WIFI
- Document Viewer
- T9
- File Manager, My Item
- Java
- Pod Casting, RSS Reader
- Games (Solitaire, Bubble breaker)
- MTV
- Postcard
- Google Map

4. Array course control

4-1. Software Adjustments

There is 2 set to download the binary image into your device.

[First set]



1. JIG BOX (UMTS TEST JIG: GH80-03308A)
2. USB Cable : JIG to PC
3. Test Cable : JIG to SGH-i780 (GH39-00890A)
4. Power Cable : JIG to power supply
5. Serial Cable : SGH-i780 to PC
6. Power Supply
7. RF Cable : SGH-i560 to Agilent 8960 or CMU200 (GH39-00599A)
8. Test Cable : JIG to SGH-i780 (GH39-00886A)

[Second set]



1. USB DATA Link Cable : GH39-00922A
2. Battery : GH43-02969A

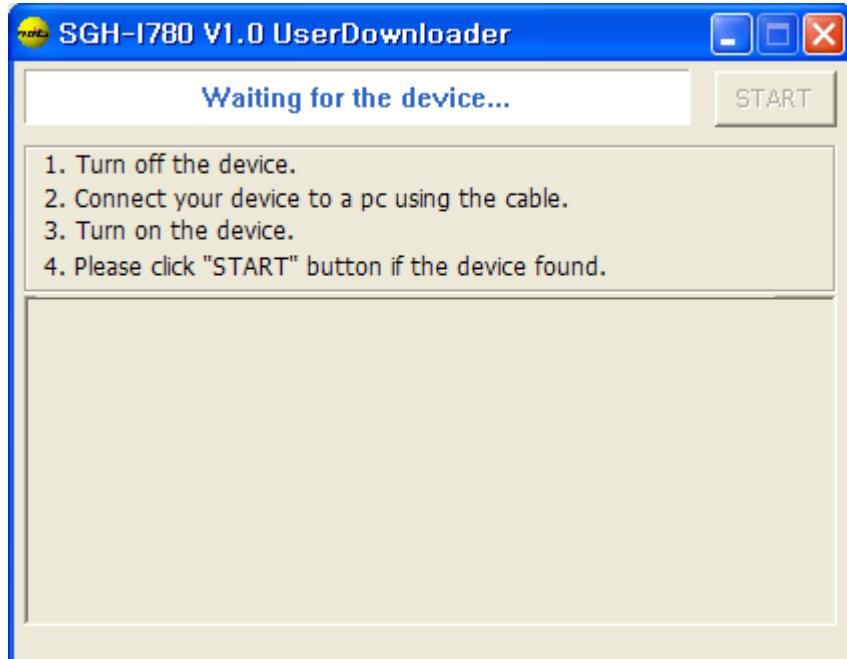
4-2. Software Download

4-2-1. Pre-requisite for Download

- Downloader Program (there are 2 ways to download.)
 - [\[Image version\].exe \(Single downloader\)](#)
 - [SGH_i780V_version.exe \(Multi downloader\)](#)
- SGH_i780V Mobile Device
- USB Driver
 - [PDA : Samsung MITs USB Sync \[Samsung MITs USB Sync.zip\]](#)
 - [Phone : Samsung CDMA Modem \[Samsung CDMA Modem.zip\]](#)
- Driver Installation.
 - [PDA](#)
Make sure that you install drivers.
If you installed the latest ActiveSync program, you don't need to install the pda driver. Please install the latest ActiveSync program.
- [Phone](#)
When you download the phone image, you need the driver of Samsung CDMA Modem.
If you want to download the phone image, install the Samsung CDMA Modem driver.
After you install the driver of Samsung CDMA Modem, please restart a host computer.

4-2-2. Single download ([Image version].exe)

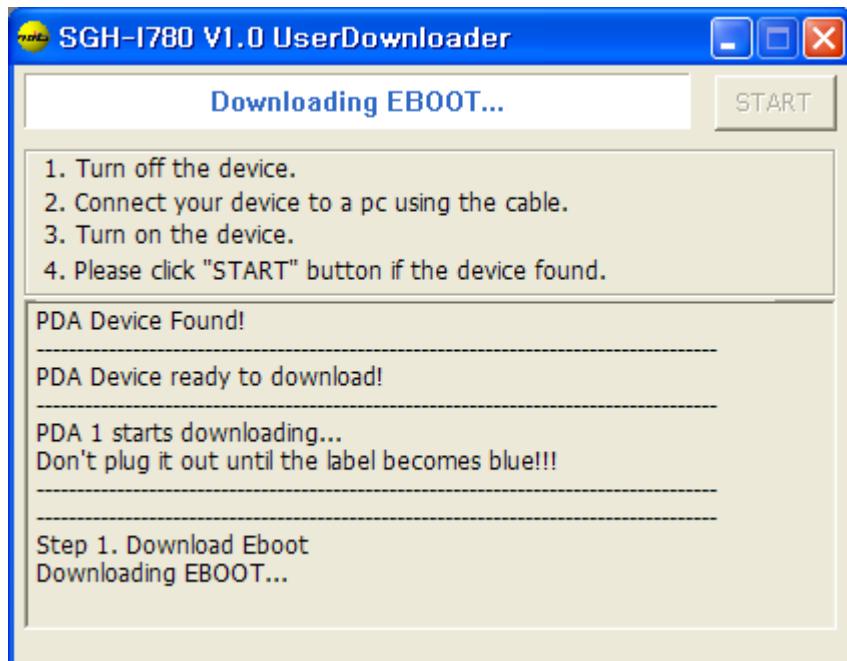
1. Execute the Downloader Program. [Image Version.exe]



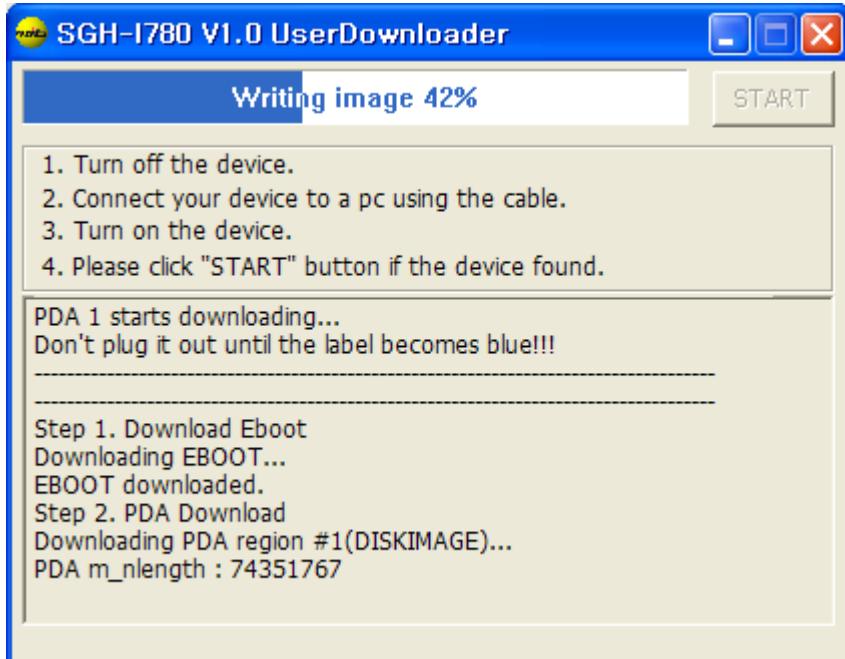
2. Turn off your device.

3. Connect your device to a host computer by using USB DATA Link Cable.

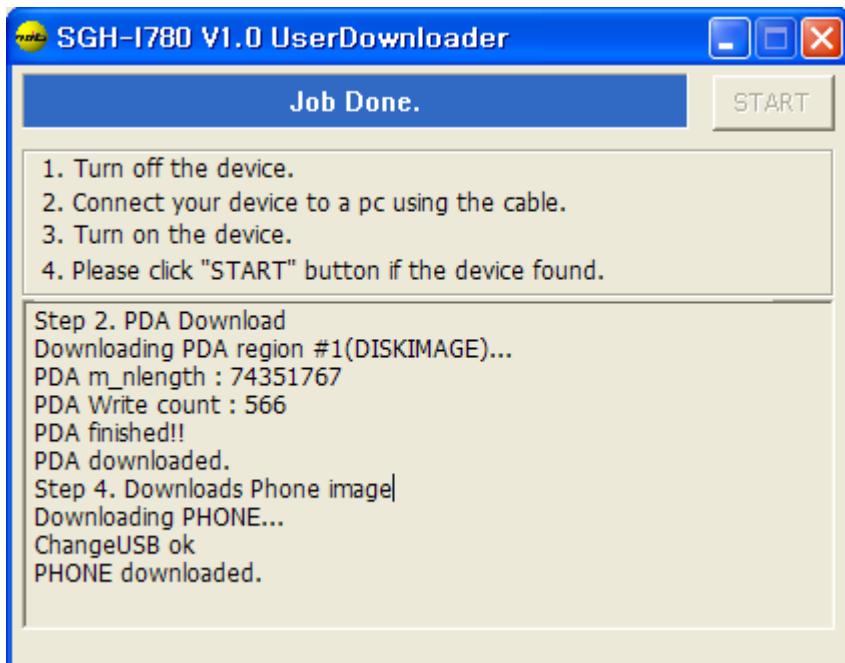
4. Turn on your device and wait.



5. Downloading is started automatically.



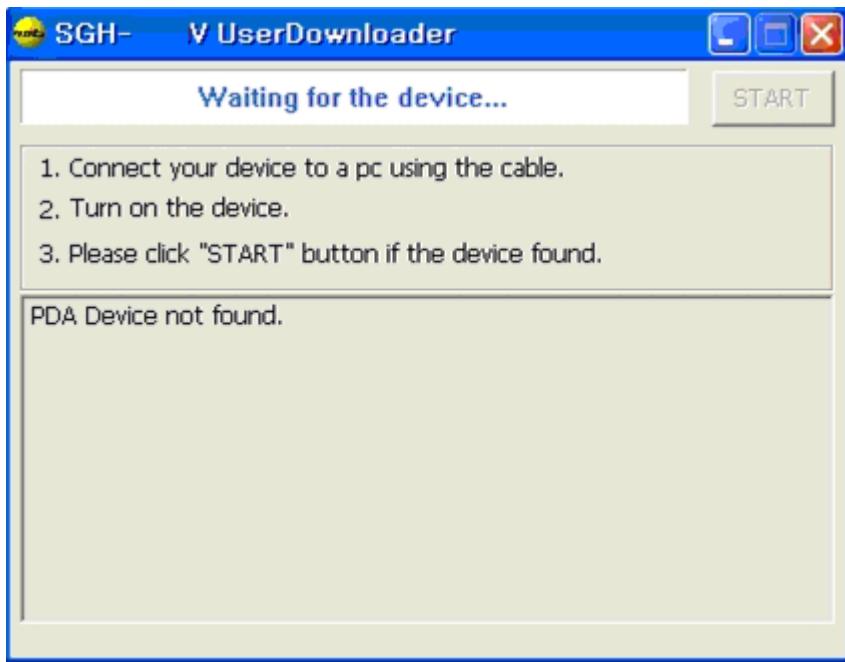
6. When the download is finished, the phone is turned off automatically.



[Job Done]

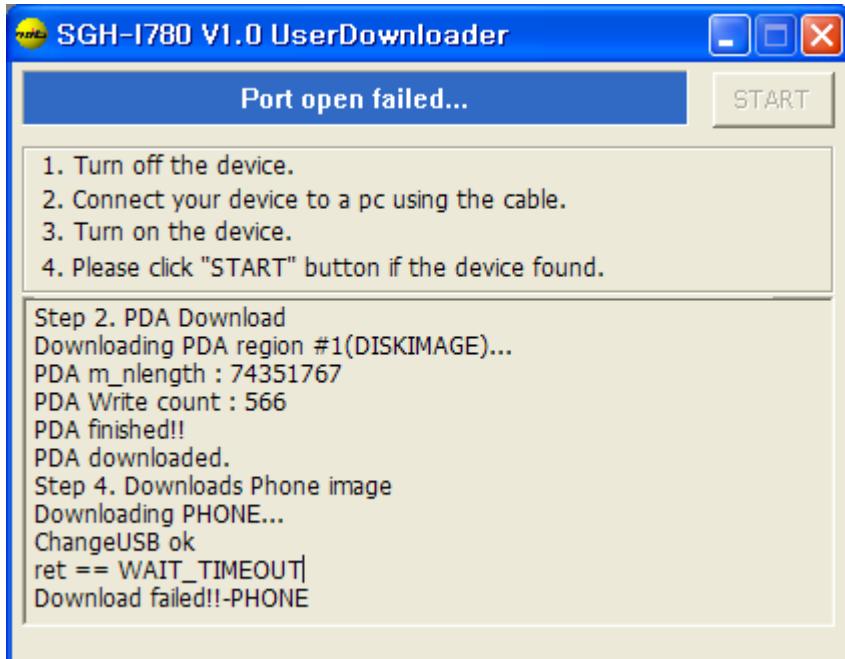
☞ Trouble Shooting

1. "PDA Device not found" message



☞ Make sure that your device is connected a host computer by USB DATA Link cable.

2. "Port Open Failed" message or application hang



☞ After you install “phone USB driver (Samsung CDMA Modem)” at first time, you may see “Port open failed...” message or application hang while downloading a phone image. If so, terminate the application and then try the download again.

- ☞ If USB port is changed, at first time you may see “Port open failed...” message or application hang. If so, terminate the application and then try the download again.
- ☞ If USB cable to the mobile device is not connected tightly, you may see “Port open failed...” message or application hang. If so, terminate the application and then try the download again.
- ☞ If you **always** see “port open failed” message or application hang,
 1. When application is activated, go to the device manager, remove the SAMSUNG CDMA Modem and SAMSUNG USB Composite Device.
 2. Rename C:\WINDOWS\system32\drivers\Modem.sys to other name. (ex. Modem-.sys)
 3. Go to control panel->program add/remove, and then remove Samsung CDMA Modem driver or Samsung USB driver(MCCI)
 4. Restart your PC.
 5. Install attached SAMSUNG CDMA Modem_4.34
 6. Try the download again.
- 3. “Write Failed” message
- ☞ If battery level is low, use charged battery and try again.

4-2-3. Multi download

1. Device Settings

1. USB 2.0 hub:

Use the D-Link DUB-H7, an authorized Hi-Speed USB 2.0 hub, only.

- 1) Connect the hub to PC.
- 2) Connect the hub to the adapter.



2. Data Cable: Check the serial number first. The number should start with 'D.'

- 1) Connect the hub to the cable.
- 2) Connect testing devices to the cable



3. Illustration of MultiDownloader Overall Figure after SettingsConfiguration



2. Prerequisite

1. Before beginning the download, make sure all testing devices have the GJ2 or later boot image. Go to the 'Start à Settings à System à Version' to check that the version is 'PDA: i870BVGJ2' or later.
2. Before beginning the download, confirm that the phone modem of the phone is attached to the computer USB port of the computer where the OS image will be downloaded.

To this end, make sure the phone image has been downloaded only once.

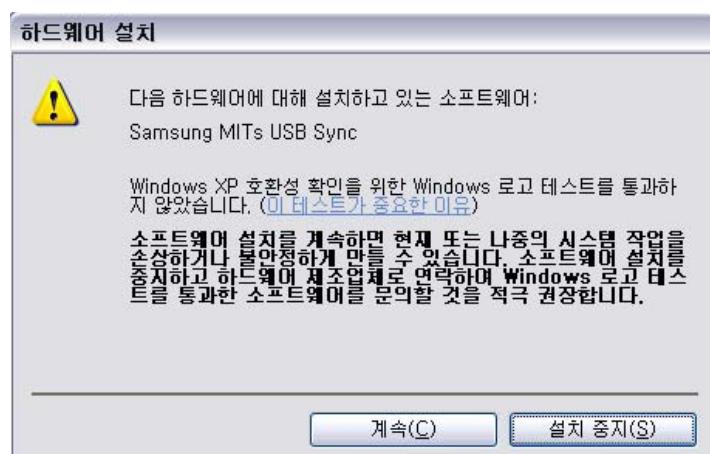
(The initial attempt will fail, but this is will be failed. This is to install the phone modem to the computer USB port will fail if the computer.)

Ex) In order to multi-download the OS image for 8 devices, select the phone image only to download download it to 8 devices. Initially, the download to 8 devices will be failed. However, you will see that there are 8 SAMSUNG CDMA modems under "Modem" of in the "Device Manager".
(It may take a while to confirm that the modems appear under the "Modem" category. If they appeared, they are installed successfully.)

Go to the '3. How to Download' to see the detailed instruction.

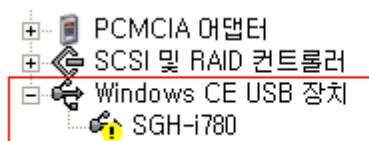
- (1) Run the program.
- (2) Load the image by selecting the phone image only.
- (3) Prepare to detect.
- (4) Connect testing devices.

When the below warning message appears,,

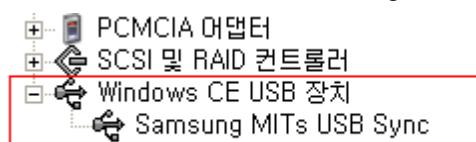


click 'Continue'

and check the Device Manager to see a 'SGH-i780.'



Within 30 seconds, it will change to 'Samsung MITs USB Sync.'



Then, separate the battery and reboot the device to see that the connection has been made.



- (5) Start downloading
- (6) Wait until the phone modems appear in the Device Manager.
Go to the 'My Computer → Properties → Hardware → Device Manager → Modem' to check that the SAMSUNG CDMA Modem appears.

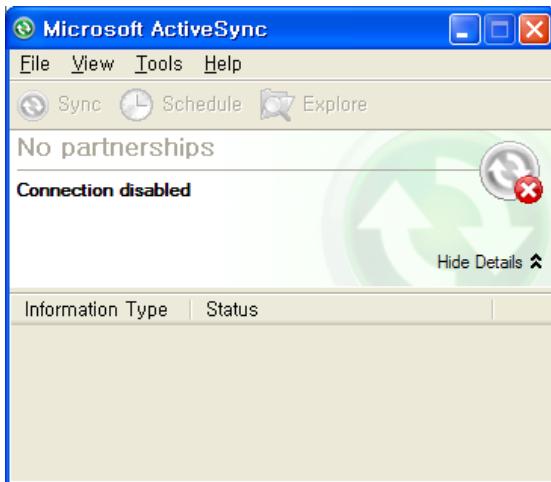
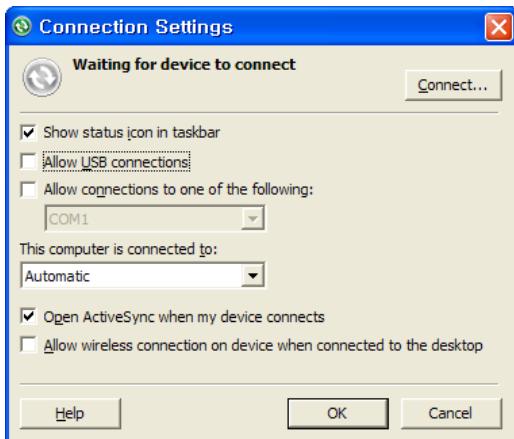
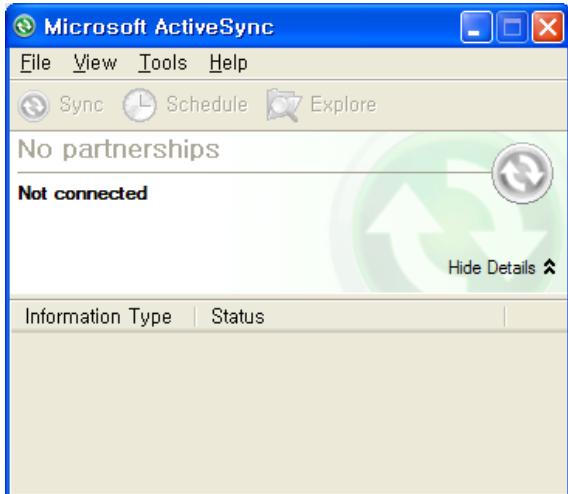


- (7) After terminating the program, disconnect the device.
- (8) Repeat the process from (1)
to confirm that downloading to the phone works appropriately.
If several phones do not appear,,,
repeat the same process until all devices are connected and appear.

3. How to Download

1. Disconnecting the ActiveSync

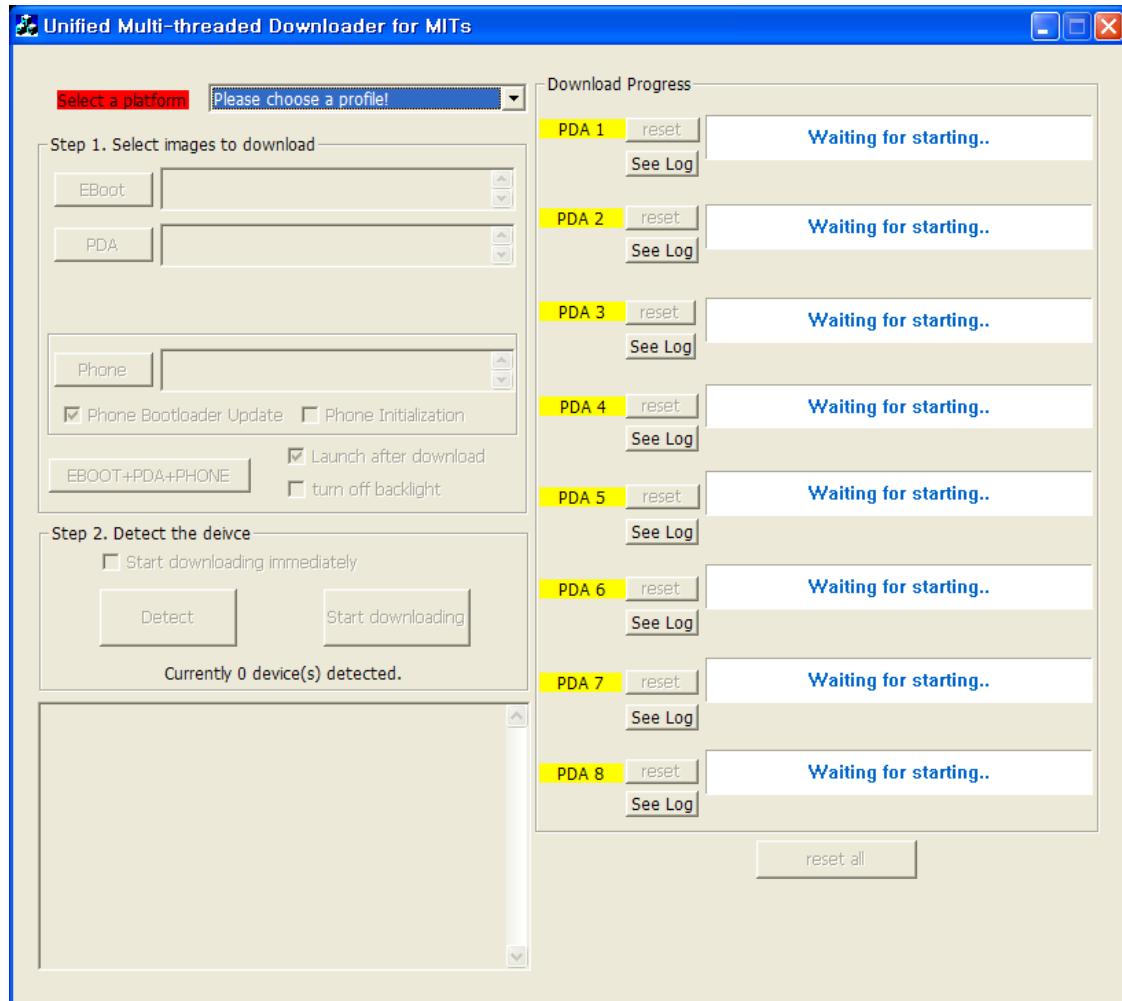
Run the ActiveSync. Then, select the Connection Settings under the 'File' tab. Deselect the 'Allow USB Connection.'



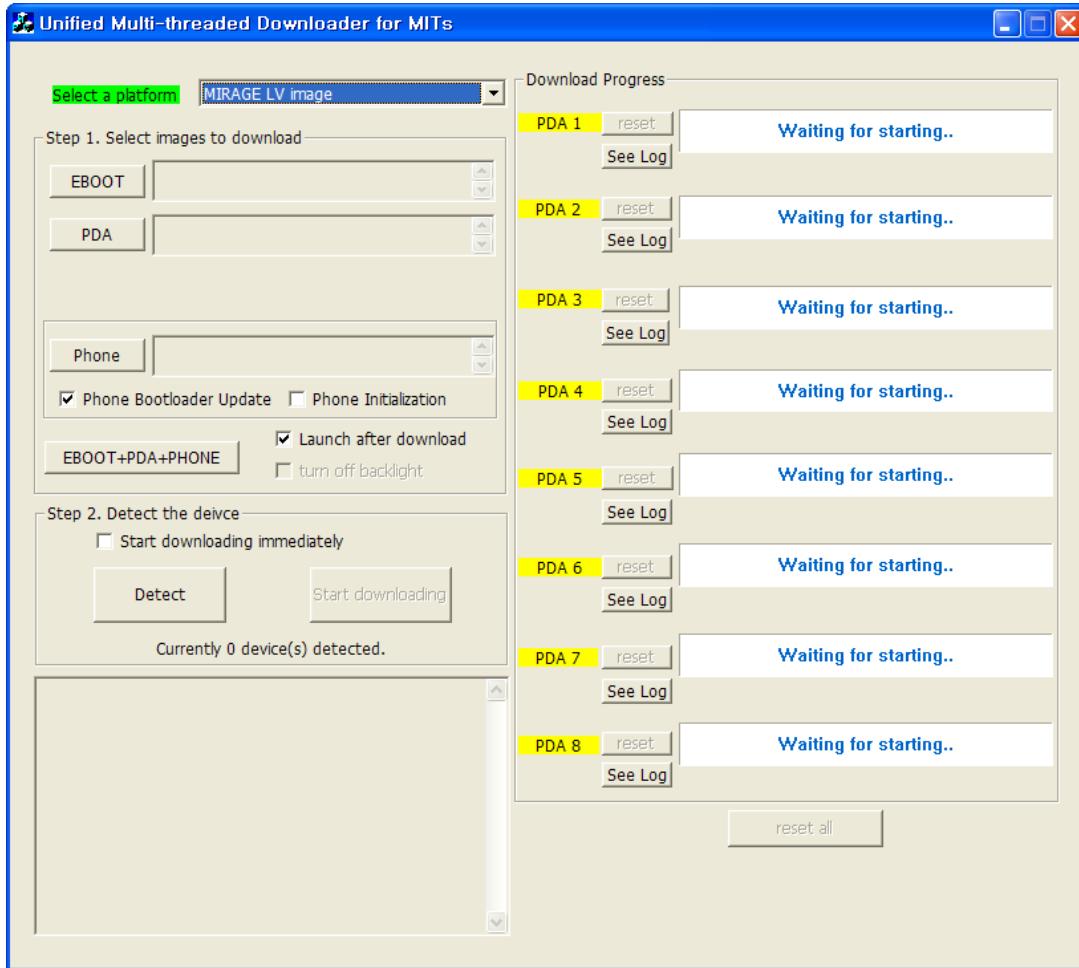
1) Running the program

Run the ‘UMDL_i780_v1.0.exe’.

Note, ‘Waiting for starting...’ in the screenshot sounds very odd. I would suggest that the client consider changing this to ‘Waiting to start...’



Buttons will be activated when the ‘MIRAGE LV Image’ is selected at in the ‘Select a platform’ menupane.



2) Loading the Image

Press Click the 'EBOOT,' 'PDA,' and 'Phone' buttons each to select the appropriate images.

EBOOT - BootImage.nb0

PDA - Flash.bin

Phone - MIRAGE_ORANGE_BVxxx.bin

3) Preparing to start 'Detect'

Click the 'Detect' button on the bottom left side of the menuat the left bottom.

4) Connecting testing devices

Connect testing devices to the cable and turn on the power.

The connection is complete if the 'Device 1 Detected' appears in the box on the bottom left sideat the left bottom and the PDA1 at on the right side turns green.

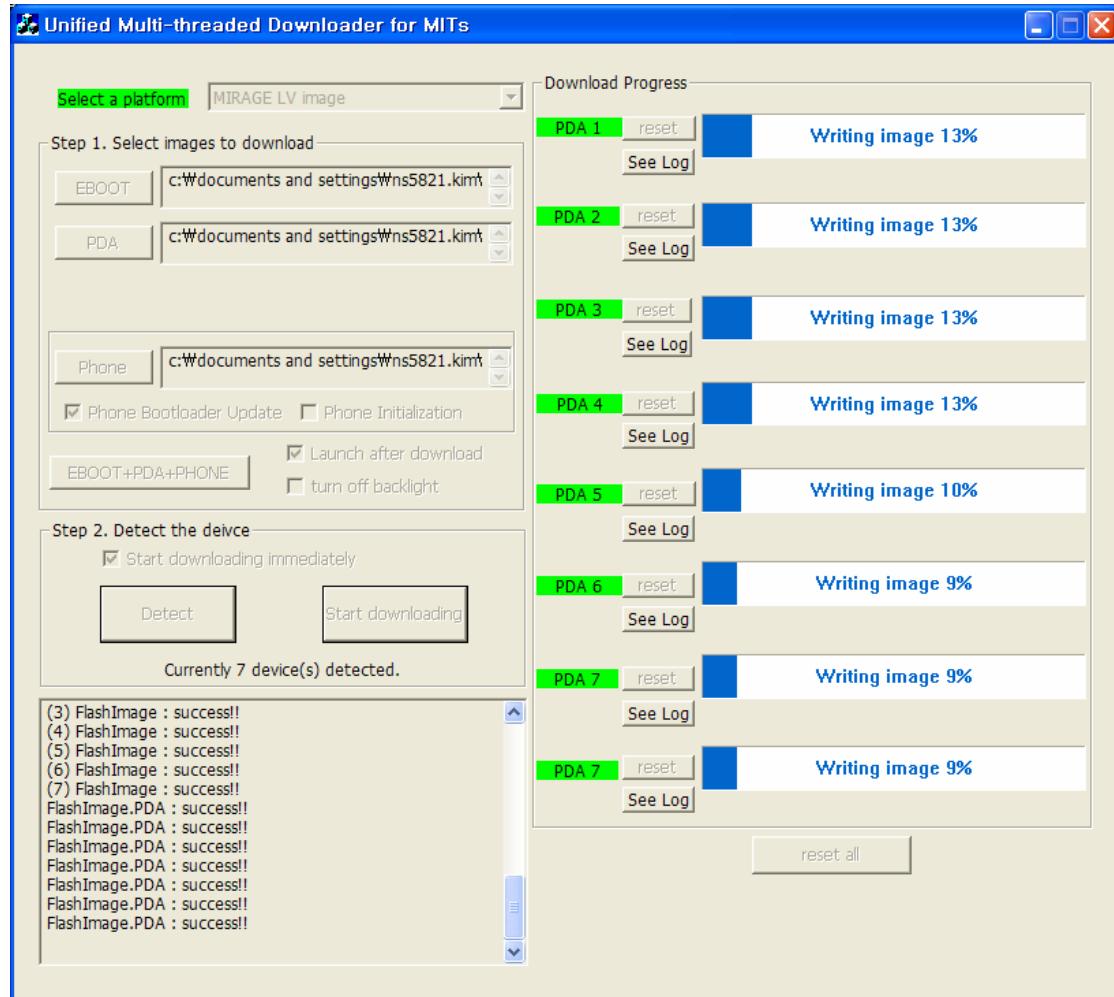
Connect all 8 devices as instructed written in the above.

NOTE: Connect the devices one by one.

Otherwise, an error may occur in the computer USB port of the computer. When this error occurs, go to the page 22 to see the reference.

5) Starting the download

Press Click the 'Start downloading' button.



NOTE1: Make sure the progress, shown in by the bar, is completed for each in a testing device.
(The progress of downloading the 'Flash.bin,' the PDA image, is shown as the green bar at the bottom of the LCD screen.)



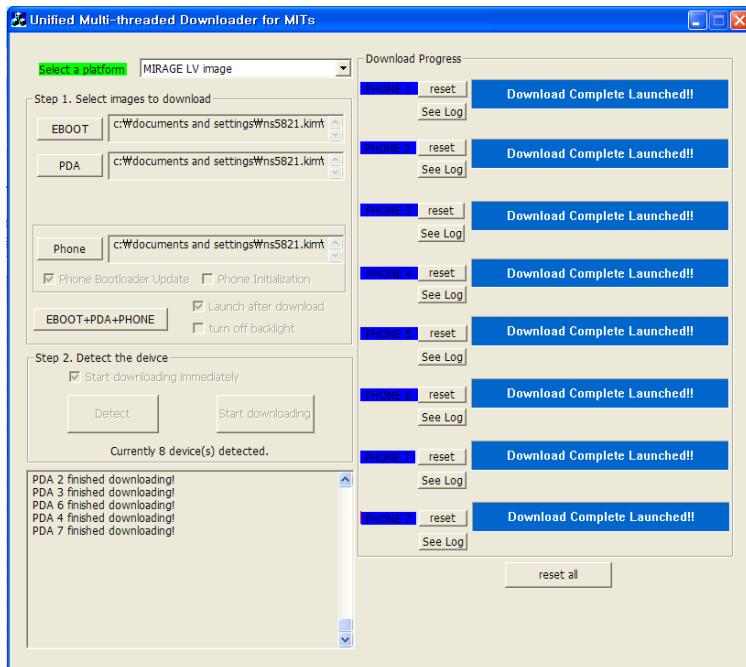
NOTE 2: If the progress bar is in blue, the process will not be completed.

Normally, the progress bar goes to the 'o' button only. (If the version of the image is previous than to GJ4, the error may occur.)

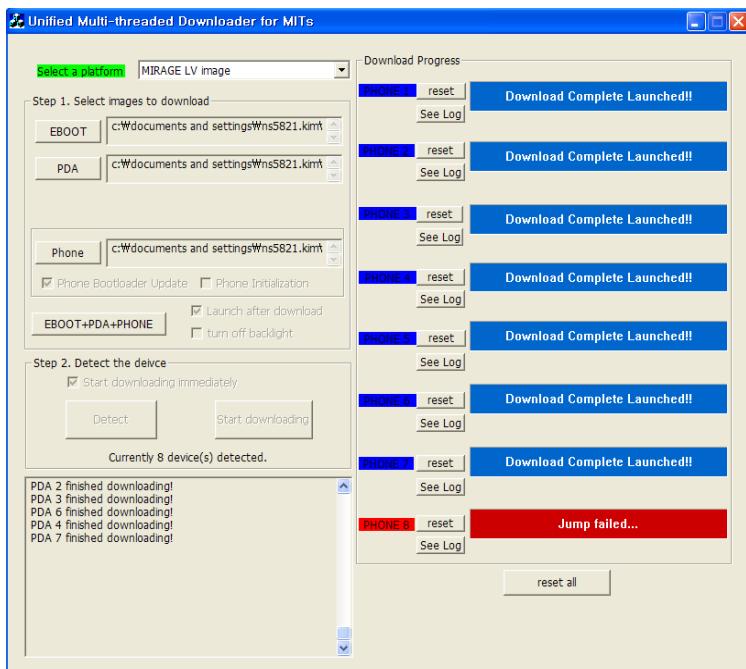
6) Confirming

Reboot testing devices to confirm whether they work properly.

When the download is complete,,



Click the 'reset all' button at on the bottom right sidethe right bottomto reset the downloader.



**NOTE: If the download failsis failed,,
try once again to downloadsucceed.**

- Reference -

How to deal with the an error in the computer USB port of the computer.

Symptom: Device is not identified after connecting it.

Cause: The device is connected before the previous connection is complete. All devices should be connected one by one. Otherwise, an error may occur in the computer USB port of the computer.

Solution:

Proceed with the following action in order only when the previous action does not work.

- 1) Unplug the USB port from the computer and plug it again.
- 2) Open the Device Manager and remove the USB hub and install it again.



- 3) Reboot the computer.

4. Trouble Shooting

1. "PDA Device not found" message

☞ Make sure that check box, Allow USB connection at the Connection Settings, is released. (ActiveSync)

2. "Port Open Failed" message or application hang

☞ After you install "phone USB driver (Samsung CDMA Modem)" at first time, you may see "Port open failed..." message or application hang(Opening COM XX succeed...) while downloading a

phone image. If so, terminate the application and then try the download again.

☞ If USB port is changed, at first time you may see “Port open failed...” message or application hang(Opening COM XX succeed...). If so, terminate the application and then try the download again.

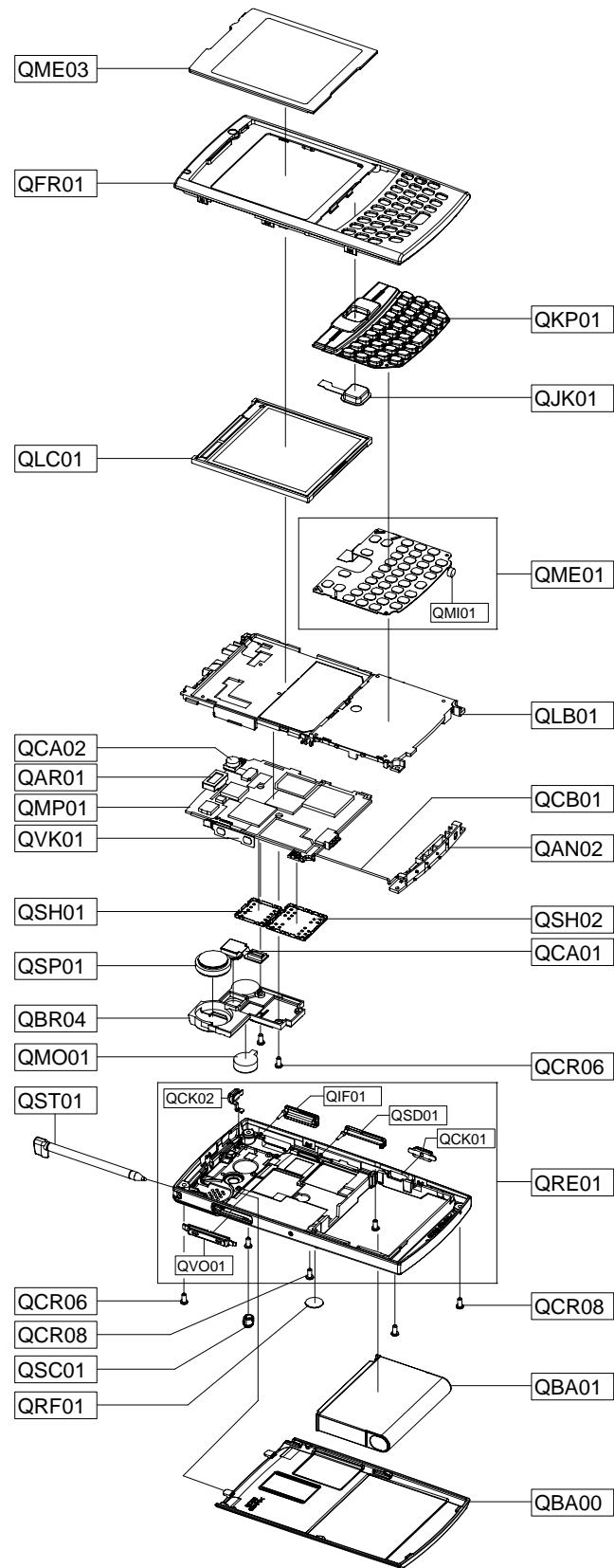
☞ If USB cable to the mobile device is not connected tightly, you may see “Port open failed...” message or application hang(Opening COM XX succeed...). If so, terminate the application and then try the download again.

3. “Write Failed” message

☞ If battery level is low, use charged battery and try again.

5. Exploded View and Parts List

5-1. Cellular phone Exploded View



5-2. Cellular phone Parts List

| Design LOC | Description | SEC CODE |
|------------|--------------------------------|-------------|
| QAN02 | INTENNA-SGHI780 | GH42-01329A |
| QAR01 | AUDIO-RECEIVER | 3009-001308 |
| QBA00 | ASSY COVER-BATT | GH98-07577A |
| QBA01 | INNER BATTERY PACK-1480MAH,BLK | GH43-02969A |
| QBR04 | ASSY BRACKET-SPEAKER | GH98-06544A |
| QCA01 | CAMERA MODULE | GH59-04823A |
| QCA02 | CAMERA MODULE | GH59-04824A |
| QCB01 | CBF COAXIAL CABLE-SGHI780 | GH39-00984A |
| QCK01 | ASSY KEY-CAMERA | GH98-06543A |
| QCK02 | PMO KEY-PWR | GH72-43404A |
| QCR06 | SCREW-MACHINE | 6001-001155 |
| QCR06 | SCREW-MACHINE | 6001-001155 |
| QCR08 | SCREW-MACHINE | 6001-001611 |
| QCR08 | SCREW-MACHINE | 6001-001611 |
| QFR01 | ASSY CASE-FRONT | GH98-05794A |
| QIF01 | PMO COVER-IF | GH72-43402A |
| QJK01 | UNIT-OPTICAL JOYSTICK | GH59-04912A |
| QKP01 | ASSY KEYPAD-(FTM/BLK) | GH98-07281A |
| QLB01 | ASSY BRACKET-LCD | GH98-06545A |
| QLC01 | LCD-MODULE SGHI780 | GH07-01158A |
| QME01 | KEY FPCB-KEY FPCB ASSY | GH59-04910A |
| QME03 | UNIT-TOUCH PANEL(ORA) | GH59-04930A |
| QMI01 | AS-SGHI607 MIC | GH81-06077A |
| QMO01 | MOTOR DC-SGHI780 | GH31-00390A |
| QMP01 | PBA MAIN-SGHI780 | GH92-04221A |
| QRE01 | ASSY CASE-REAR | GH98-05795A |
| QRF01 | TAPE-RF SHEET | GH74-35960A |
| QSC01 | PMO COVER-SCREW | GH72-45115A |
| QSD01 | PMO COVER-SD | GH72-43401A |
| QSH01 | ICT SHIELD-COVER A | GH70-02883A |
| QSH02 | ICT SHIELD-COVER B | GH70-02884A |
| QSP01 | MICRO SPEAKER | 3001-002311 |
| QST01 | ASSY ACCE-STYLUS PEN(BLK) | GH98-07299A |
| QVK01 | KEY FPCB-F.P.C(V/K)ASSY | GH59-04905A |
| QVO01 | PMO KEY-VOL | GH72-43403A |

| Description | SEC CODE |
|---------------------------------|-------------|
| CBF INTERFACE-DLC APCBS10BBE(S) | GH39-00922A |
| ADAPTOR-ATADS10EBE,BLK,EU | GH44-01702A |
| CHARGER-SGHI780,BTC,BLK | GH44-01842A |
| S/W CD-SGHI780 COMPANION CD | GH46-00542A |
| MANUAL USERS-FTM FRENCH QSG | GH68-16462A |
| MANUAL USERS-FTM FRENCH QRG | GH68-17163A |
| BAG PE | 6902-000634 |
| LABEL(P)-UNIT SEAL | GH68-00518B |
| LABEL(P)-FTM MP3SLIM | GH68-11246B |
| LABEL(R)-MAIN(FRAN) | GH68-16811C |
| CUSHION-CASE(EU) | GH69-06128A |
| BOX-UNIT(ORA) | GH69-06185A |
| LABEL(R)-PALLET FTM | GH68-16969B |
| RMO RUBBER-ANT C CLIP | GH73-11105A |
| SPONGE-SPK BRACKET | GH74-35963A |
| LABEL(R)-WATER SOAK | GH68-09361A |
| VINYL-BOHO MAIN LCD | GH74-35170A |
| VINYL-BOHO MAIN CASE | GH74-35171A |
| EARPHONE-EARPHONE,BLK,S20P,A T | GH59-05409A |

6. Main Electrical Parts List

| SEC Code | Design LOC | Description | STATUS |
|-----------------|-------------------|--------------------|---------------|
| 0401-001110 | D500 | DIODE-SWITCHING | SA |
| 0403-001547 | D301 | DIODE-ZENER | SA |
| 0406-001167 | ZD600 | DIODE-TVS | SA |
| 0406-001167 | ZD601 | DIODE-TVS | SA |
| 0406-001167 | ZD602 | DIODE-TVS | SA |
| 0406-001167 | ZD603 | DIODE-TVS | SA |
| 0406-001190 | ZD506 | DIODE-TVS | SA |
| 0406-001210 | ZD403 | DIODE-TVS | SA |
| 0406-001210 | ZD404 | DIODE-TVS | SA |
| 0406-001210 | ZD405 | DIODE-TVS | SA |
| 0406-001210 | ZD406 | DIODE-TVS | SA |
| 0406-001210 | ZD408 | DIODE-TVS | SA |
| 0406-001210 | ZD605 | DIODE-TVS | SA |
| 0406-001215 | ZD300 | DIODE-TVS | SA |
| 0406-001215 | ZD301 | DIODE-TVS | SA |
| 0406-001215 | ZD407 | DIODE-TVS | SA |
| 0406-001231 | D401 | DIODE-TVS | SA |
| 0406-001231 | D402 | DIODE-TVS | SA |
| 0406-001231 | D600 | DIODE-TVS | SA |
| 0406-001231 | D601 | DIODE-TVS | SA |
| 0406-001231 | D604 | DIODE-TVS | SA |
| 0406-001231 | D605 | DIODE-TVS | SA |
| 0406-001231 | D606 | DIODE-TVS | SA |
| 0406-001231 | ZD400 | DIODE-TVS | SA |
| 0406-001231 | ZD401 | DIODE-TVS | SA |
| 0406-001231 | ZD501 | DIODE-TVS | SA |
| 0406-001231 | ZD502 | DIODE-TVS | SA |
| 0406-001231 | ZD503 | DIODE-TVS | SA |
| 0406-001231 | ZD504 | DIODE-TVS | SA |
| 0406-001231 | ZD505 | DIODE-TVS | SA |
| 0407-000115 | D400 | DIODE-ARRAY | SA |
| 0407-001002 | D300 | DIODE-ARRAY | SA |
| 0407-001007 | D302 | DIODE-ARRAY | SA |
| 0501-000225 | TR600 | TR-SMALL SIGNAL | SA |
| 0501-000225 | TR601 | TR-SMALL SIGNAL | SA |
| 0501-000225 | TR602 | TR-SMALL SIGNAL | SA |
| 0504-000168 | Q300 | TR-DIGITAL | SA |
| 0504-000168 | Q301 | TR-DIGITAL | SA |
| 0504-000168 | Q303 | TR-DIGITAL | SA |
| 0505-001165 | Q302 | FET-SILICON | SA |
| 0601-001905 | LED600 | LED | SA |
| 0801-002237 | U202 | IC-CMOS LOGIC | SA |
| 0801-002529 | U203 | IC-CMOS LOGIC | SA |
| 0801-002800 | U205 | IC-CMOS LOGIC | SA |
| 0801-002800 | U303 | IC-CMOS LOGIC | SA |
| 0801-002800 | U307 | IC-CMOS LOGIC | SA |
| 0801-002800 | U500 | IC-CMOS LOGIC | SA |
| 0801-002800 | U518 | IC-CMOS LOGIC | SA |
| 0801-002882 | U305 | IC-CMOS LOGIC | SA |
| 0801-003013 | U200 | IC-CMOS LOGIC | SA |
| 0801-003013 | U601 | IC-CMOS LOGIC | SA |
| 0801-003013 | U602 | IC-CMOS LOGIC | SA |
| 0801-003052 | U204 | IC-CMOS LOGIC | SA |

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|-----------------|-------------------|---------------------|---------------|
| 0801-003052 | U508 | IC-CMOS LOGIC | SA |
| 0801-003076 | U201 | IC-CMOS LOGIC | SA |
| 0902-002235 | UCP700 | IC-MICROPROCESSOR | SA |
| 0909-001056 | U503 | IC-REAL TIME CLOCK | SA |
| 1001-001336 | U502 | IC-ANALOG SWITCH | SA |
| 1001-001362 | U402 | IC-ANALOG SWITCH | SA |
| 1001-001362 | U403 | IC-ANALOG SWITCH | SA |
| 1001-001401 | U501 | IC-ANALOG SWITCH | SA |
| 1002-001410 | U406 | IC-D/A CONVERTER | SA |
| 1006-001322 | U600 | IC-LINE TRANSCEIVER | SA |
| 1106-001564 | UME201 | IC-SRAM | SA |
| 1108-000127 | UME200 | IC-MCP | SA |
| 1201-002446 | PAM100 | IC-POWER AMP | SA |
| 1201-002531 | PAM101 | IC-POWER AMP | SA |
| 1201-002587 | U400 | IC-AUDIO AMP | SA |
| 1203-002785 | U507 | IC-VOL. DETECTOR | SA |
| 1203-002832 | U308 | IC-VOL. DETECTOR | SA |
| 1203-003328 | U514 | IC-DC/DC CONVERTER | SA |
| 1203-003531 | U506 | IC-POSI.FIXED REG. | SA |
| 1203-003643 | U511 | IC-MULTI REG. | SA |
| 1203-003664 | U512 | IC-MULTI REG. | SA |
| 1203-003664 | U515 | IC-MULTI REG. | SA |
| 1203-003664 | U516 | IC-MULTI REG. | SA |
| 1203-003748 | U510 | IC-MULTI REG. | SA |
| 1203-003926 | U306 | IC-VOL. DETECTOR | SA |
| 1203-004395 | U517 | IC-POSI.FIXED REG. | SA |
| 1203-004435 | U509 | IC-MULTI REG. | SA |
| 1203-004435 | U513 | IC-MULTI REG. | SA |
| 1203-004606 | U505 | IC-MULTI REG. | SA |
| 1203-004763 | U519 | IC-VOL. DETECTOR | SA |
| 1203-004838 | U301 | IC-BATTERY | SA |
| 1203-004841 | U309 | IC-POWER SUPERVISOR | SA |
| 1203-004926 | U302 | IC-POWER SUPERVISOR | SA |
| 1205-002720 | UCD400 | IC-CODEC | SA |
| 1205-002767 | U300 | IC-SWITCH | SA |
| 1205-003215 | UCP200 | IC-MODEM | SA |
| 1205-003285 | U100 | IC-TRANSCEIVER | SA |
| 1205-003286 | U101 | IC-RECEIVER | SA |
| 1205-003316 | U504 | IC-INTERFACE | SA |
| 1404-001221 | VR400 | THERMISTOR-NTC | SA |
| 2007-000070 | R300 | R-CHIP | SA |
| 2007-000138 | R115 | R-CHIP | SA |
| 2007-000138 | R132 | R-CHIP | SA |
| 2007-000138 | R136 | R-CHIP | SA |
| 2007-000138 | R141 | R-CHIP | SA |
| 2007-000140 | R520 | R-CHIP | SA |
| 2007-000141 | R113 | R-CHIP | SA |
| 2007-000141 | R206 | R-CHIP | SA |
| 2007-000148 | R703 | R-CHIP | SA |
| 2007-000148 | R706 | R-CHIP | SA |
| 2007-000148 | R712 | R-CHIP | SA |
| 2007-000157 | R302 | R-CHIP | SA |
| 2007-000162 | R139 | R-CHIP | SA |

| SEC Code | Design LOC | Description | STATUS |
|-----------------|-------------------|--------------------|---------------|
| 2007-000162 | R140 | R-CHIP | SA |
| 2007-000162 | R142 | R-CHIP | SA |
| 2007-000162 | R146 | R-CHIP | SA |
| 2007-000162 | R149 | R-CHIP | SA |
| 2007-000162 | R303 | R-CHIP | SA |
| 2007-000162 | R304 | R-CHIP | SA |
| 2007-000162 | R320 | R-CHIP | SA |
| 2007-000162 | R328 | R-CHIP | SA |
| 2007-000162 | R512 | R-CHIP | SA |
| 2007-000162 | R704 | R-CHIP | SA |
| 2007-000165 | R312 | R-CHIP | SA |
| 2007-000168 | R212 | R-CHIP | SA |
| 2007-000170 | R329 | R-CHIP | SA |
| 2007-000170 | R501 | R-CHIP | SA |
| 2007-000170 | R607 | R-CHIP | SA |
| 2007-000171 | R103 | R-CHIP | SA |
| 2007-000171 | R105 | R-CHIP | SA |
| 2007-000171 | R109 | R-CHIP | SA |
| 2007-000171 | R121 | R-CHIP | SA |
| 2007-000171 | R125 | R-CHIP | SA |
| 2007-000171 | R127 | R-CHIP | SA |
| 2007-000171 | R131 | R-CHIP | SA |
| 2007-000171 | R135 | R-CHIP | SA |
| 2007-000171 | R150 | R-CHIP | SA |
| 2007-000171 | R151 | R-CHIP | SA |
| 2007-000171 | R330 | R-CHIP | SA |
| 2007-000171 | R403 | R-CHIP | SA |
| 2007-000171 | R404 | R-CHIP | SA |
| 2007-000171 | R410 | R-CHIP | SA |
| 2007-000171 | R513 | R-CHIP | SA |
| 2007-000171 | R702 | R-CHIP | SA |
| 2007-000171 | R705 | R-CHIP | SA |
| 2007-000171 | R707 | R-CHIP | SA |
| 2007-000172 | R100 | R-CHIP | SA |
| 2007-000172 | R122 | R-CHIP | SA |
| 2007-000174 | R106 | R-CHIP | SA |
| 2007-001284 | R123 | R-CHIP | SA |
| 2007-001290 | R208 | R-CHIP | SA |
| 2007-001298 | R116 | R-CHIP | SA |
| 2007-001298 | R130 | R-CHIP | SA |
| 2007-001298 | R305 | R-CHIP | SA |
| 2007-001298 | R306 | R-CHIP | SA |
| 2007-001305 | R107 | R-CHIP | SA |
| 2007-001305 | R108 | R-CHIP | SA |
| 2007-001305 | R117 | R-CHIP | SA |
| 2007-001305 | R118 | R-CHIP | SA |
| 2007-001308 | R124 | R-CHIP | SA |
| 2007-001319 | R709 | R-CHIP | SA |
| 2007-001319 | R710 | R-CHIP | SA |
| 2007-003010 | R506 | R-CHIP | SA |
| 2007-003010 | R510 | R-CHIP | SA |
| 2007-003010 | R511 | R-CHIP | SA |
| 2007-003015 | R102 | R-CHIP | SA |

| SEC Code | Design LOC | Description | STATUS |
|-----------------|-------------------|--------------------|---------------|
| 2007-003015 | R110 | R-CHIP | SA |
| 2007-007009 | R133 | R-CHIP | SA |
| 2007-007014 | R313 | R-CHIP | SA |
| 2007-007014 | R314 | R-CHIP | SA |
| 2007-007107 | R210 | R-CHIP | SA |
| 2007-007107 | R211 | R-CHIP | SA |
| 2007-007107 | R401 | R-CHIP | SA |
| 2007-007107 | R402 | R-CHIP | SA |
| 2007-007107 | R412 | R-CHIP | SA |
| 2007-007107 | R516 | R-CHIP | SA |
| 2007-007107 | R517 | R-CHIP | SA |
| 2007-007107 | R518 | R-CHIP | SA |
| 2007-007132 | R319 | R-CHIP | SA |
| 2007-007132 | R503 | R-CHIP | SA |
| 2007-007137 | R317 | R-CHIP | SA |
| 2007-007137 | R318 | R-CHIP | SA |
| 2007-007142 | R143 | R-CHIP | SA |
| 2007-007142 | R144 | R-CHIP | SA |
| 2007-007142 | R200 | R-CHIP | SA |
| 2007-007142 | R203 | R-CHIP | SA |
| 2007-007142 | R204 | R-CHIP | SA |
| 2007-007142 | R205 | R-CHIP | SA |
| 2007-007142 | R301 | R-CHIP | SA |
| 2007-007142 | R323 | R-CHIP | SA |
| 2007-007142 | R500 | R-CHIP | SA |
| 2007-007142 | R519 | R-CHIP | SA |
| 2007-007142 | R602 | R-CHIP | SA |
| 2007-007142 | R603 | R-CHIP | SA |
| 2007-007148 | R332 | R-CHIP | SA |
| 2007-007155 | R413 | R-CHIP | SNA |
| 2007-007155 | R420 | R-CHIP | SNA |
| 2007-007193 | R101 | R-CHIP | SA |
| 2007-007193 | R111 | R-CHIP | SA |
| 2007-007306 | R213 | R-CHIP | SA |
| 2007-007309 | R104 | R-CHIP | SA |
| 2007-007314 | R126 | R-CHIP | SA |
| 2007-007316 | R207 | R-CHIP | SA |
| 2007-007316 | R307 | R-CHIP | SA |
| 2007-007316 | R309 | R-CHIP | SA |
| 2007-007317 | R507 | R-CHIP | SA |
| 2007-007317 | R509 | R-CHIP | SA |
| 2007-007318 | R315 | R-CHIP | SA |
| 2007-007318 | R515 | R-CHIP | SA |
| 2007-007318 | R600 | R-CHIP | SA |
| 2007-007318 | R605 | R-CHIP | SA |
| 2007-007318 | R608 | R-CHIP | SA |
| 2007-007405 | R308 | R-CHIP | SA |
| 2007-007468 | R310 | R-CHIP | SA |
| 2007-007468 | R409 | R-CHIP | SA |
| 2007-007491 | R120 | R-CHIP | SA |
| 2007-007528 | R414 | R-CHIP | SA |
| 2007-007528 | R419 | R-CHIP | SA |
| 2007-007589 | R326 | R-CHIP | SA |

| SEC Code | Design LOC | Description | STATUS |
|-----------------|-------------------|--------------------|---------------|
| 2007-007698 | R502 | R-CHIP | SA |
| 2007-007766 | R119 | R-CHIP | SA |
| 2007-007798 | R514 | R-CHIP | SA |
| 2007-007798 | R604 | R-CHIP | SA |
| 2007-007798 | R606 | R-CHIP | SA |
| 2007-007942 | R209 | R-CHIP | SA |
| 2007-007942 | R327 | R-CHIP | SA |
| 2007-007981 | R708 | R-CHIP | SA |
| 2007-007981 | R711 | R-CHIP | SA |
| 2007-008015 | R601 | R-CHIP | SA |
| 2007-008456 | R508 | R-CHIP | SA |
| 2007-008531 | R114 | R-CHIP | SA |
| 2007-008544 | R112 | R-CHIP | SA |
| 2007-008672 | R411 | R-CHIP | SA |
| 2007-008708 | R701 | R-CHIP | SA |
| 2007-008739 | R321 | R-CHIP | SA |
| 2007-008739 | R322 | R-CHIP | SA |
| 2007-008739 | R324 | R-CHIP | SA |
| 2007-008739 | R325 | R-CHIP | SA |
| 2007-008806 | R134 | R-CHIP | SA |
| 2203-000233 | C110 | C-CER,CHIP | SA |
| 2203-000233 | C157 | C-CER,CHIP | SA |
| 2203-000233 | C158 | C-CER,CHIP | SA |
| 2203-000233 | C164 | C-CER,CHIP | SA |
| 2203-000233 | C166 | C-CER,CHIP | SA |
| 2203-000233 | C167 | C-CER,CHIP | SA |
| 2203-000233 | C169 | C-CER,CHIP | SA |
| 2203-000233 | C170 | C-CER,CHIP | SA |
| 2203-000233 | C178 | C-CER,CHIP | SA |
| 2203-000233 | C181 | C-CER,CHIP | SA |
| 2203-000233 | C182 | C-CER,CHIP | SA |
| 2203-000233 | C503 | C-CER,CHIP | SA |
| 2203-000254 | C1004 | C-CER,CHIP | SA |
| 2203-000254 | C149 | C-CER,CHIP | SA |
| 2203-000254 | C156 | C-CER,CHIP | SA |
| 2203-000254 | C193 | C-CER,CHIP | SA |
| 2203-000254 | C204 | C-CER,CHIP | SA |
| 2203-000254 | C207 | C-CER,CHIP | SA |
| 2203-000254 | C214 | C-CER,CHIP | SA |
| 2203-000254 | C215 | C-CER,CHIP | SA |
| 2203-000254 | C225 | C-CER,CHIP | SA |
| 2203-000254 | C229 | C-CER,CHIP | SA |
| 2203-000254 | C232 | C-CER,CHIP | SA |
| 2203-000254 | C238 | C-CER,CHIP | SA |
| 2203-000254 | C242 | C-CER,CHIP | SA |
| 2203-000254 | C704 | C-CER,CHIP | SA |
| 2203-000254 | C710 | C-CER,CHIP | SA |
| 2203-000254 | C714 | C-CER,CHIP | SA |
| 2203-000254 | C719 | C-CER,CHIP | SA |
| 2203-000254 | C736 | C-CER,CHIP | SA |
| 2203-000311 | C611 | C-CER,CHIP | SA |
| 2203-000311 | C612 | C-CER,CHIP | SA |
| 2203-000311 | C614 | C-CER,CHIP | SA |

| SEC Code | Design LOC | Description | STATUS |
|-----------------|-------------------|--------------------|---------------|
| 2203-000330 | C303 | C-CER,CHIP | SA |
| 2203-000330 | C304 | C-CER,CHIP | SA |
| 2203-000330 | C432 | C-CER,CHIP | SA |
| 2203-000330 | C601 | C-CER,CHIP | SA |
| 2203-000330 | C604 | C-CER,CHIP | SA |
| 2203-000330 | C742 | C-CER,CHIP | SA |
| 2203-000330 | C743 | C-CER,CHIP | SA |
| 2203-000386 | C428 | C-CER,CHIP | SA |
| 2203-000386 | C434 | C-CER,CHIP | SA |
| 2203-000386 | C508 | C-CER,CHIP | SA |
| 2203-000386 | C509 | C-CER,CHIP | SA |
| 2203-000438 | C1007 | C-CER,CHIP | SA |
| 2203-000438 | C101 | C-CER,CHIP | SA |
| 2203-000438 | C120 | C-CER,CHIP | SA |
| 2203-000438 | C147 | C-CER,CHIP | SA |
| 2203-000438 | C152 | C-CER,CHIP | SA |
| 2203-000438 | C206 | C-CER,CHIP | SA |
| 2203-000438 | C705 | C-CER,CHIP | SA |
| 2203-000438 | C711 | C-CER,CHIP | SA |
| 2203-000489 | C200 | C-CER,CHIP | SA |
| 2203-000489 | C407 | C-CER,CHIP | SA |
| 2203-000489 | C408 | C-CER,CHIP | SA |
| 2203-000627 | C100 | C-CER,CHIP | SNA |
| 2203-000627 | C153 | C-CER,CHIP | SNA |
| 2203-000627 | C159 | C-CER,CHIP | SNA |
| 2203-000627 | C188 | C-CER,CHIP | SNA |
| 2203-000679 | C618 | C-CER,CHIP | SA |
| 2203-000679 | C619 | C-CER,CHIP | SA |
| 2203-000679 | C620 | C-CER,CHIP | SA |
| 2203-000679 | C621 | C-CER,CHIP | SA |
| 2203-000679 | C622 | C-CER,CHIP | SA |
| 2203-000679 | C623 | C-CER,CHIP | SA |
| 2203-000679 | C624 | C-CER,CHIP | SA |
| 2203-000679 | C625 | C-CER,CHIP | SA |
| 2203-000714 | C123 | C-CER,CHIP | SA |
| 2203-000812 | C1006 | C-CER,CHIP | SA |
| 2203-000812 | C103 | C-CER,CHIP | SA |
| 2203-000812 | C116 | C-CER,CHIP | SA |
| 2203-000812 | C126 | C-CER,CHIP | SA |
| 2203-000812 | C127 | C-CER,CHIP | SA |
| 2203-000812 | C162 | C-CER,CHIP | SA |
| 2203-000812 | C171 | C-CER,CHIP | SA |
| 2203-000812 | C180 | C-CER,CHIP | SA |
| 2203-000812 | C183 | C-CER,CHIP | SA |
| 2203-000812 | C344 | C-CER,CHIP | SA |
| 2203-000812 | C346 | C-CER,CHIP | SA |
| 2203-000812 | C400 | C-CER,CHIP | SA |
| 2203-000812 | C403 | C-CER,CHIP | SA |
| 2203-000812 | C405 | C-CER,CHIP | SA |
| 2203-000812 | C416 | C-CER,CHIP | SA |
| 2203-000812 | C422 | C-CER,CHIP | SA |
| 2203-000812 | C505 | C-CER,CHIP | SA |
| 2203-000812 | C506 | C-CER,CHIP | SA |

| SEC Code | Design LOC | Description | STATUS |
|-----------------|-------------------|--------------------|---------------|
| 2203-000812 | C512 | C-CER,CHIP | SA |
| 2203-000812 | C514 | C-CER,CHIP | SA |
| 2203-000812 | C516 | C-CER,CHIP | SA |
| 2203-000812 | C518 | C-CER,CHIP | SA |
| 2203-000812 | C600 | C-CER,CHIP | SA |
| 2203-000812 | C602 | C-CER,CHIP | SA |
| 2203-000812 | C605 | C-CER,CHIP | SA |
| 2203-000812 | U405 | C-CER,CHIP | SA |
| 2203-000854 | C148 | C-CER,CHIP | SA |
| 2203-000870 | C137 | C-CER,CHIP | SA |
| 2203-000870 | C142 | C-CER,CHIP | SA |
| 2203-000940 | C154 | C-CER,CHIP | SA |
| 2203-000995 | C119 | C-CER,CHIP | SA |
| 2203-000995 | C125 | C-CER,CHIP | SA |
| 2203-000995 | C136 | C-CER,CHIP | SA |
| 2203-001072 | C138 | C-CER,CHIP | SA |
| 2203-001153 | C424 | C-CER,CHIP | SA |
| 2203-001259 | C401 | C-CER,CHIP | SA |
| 2203-001259 | C406 | C-CER,CHIP | SA |
| 2203-001259 | C415 | C-CER,CHIP | SA |
| 2203-001259 | C421 | C-CER,CHIP | SA |
| 2203-001437 | C114 | C-CER,CHIP | SA |
| 2203-002668 | C118 | C-CER,CHIP | SA |
| 2203-002668 | C124 | C-CER,CHIP | SA |
| 2203-002668 | C174 | C-CER,CHIP | SA |
| 2203-002668 | C190 | C-CER,CHIP | SA |
| 2203-002677 | C139 | C-CER,CHIP | SA |
| 2203-002709 | C1001 | C-CER,CHIP | SA |
| 2203-002709 | C191 | C-CER,CHIP | SA |
| 2203-002709 | C194 | C-CER,CHIP | SA |
| 2203-002709 | C196 | C-CER,CHIP | SA |
| 2203-002709 | C198 | C-CER,CHIP | SA |
| 2203-002709 | C199 | C-CER,CHIP | SA |
| 2203-002709 | C201 | C-CER,CHIP | SA |
| 2203-002709 | C211 | C-CER,CHIP | SA |
| 2203-002709 | C212 | C-CER,CHIP | SA |
| 2203-002709 | C223 | C-CER,CHIP | SA |
| 2203-002709 | C224 | C-CER,CHIP | SA |
| 2203-002709 | C302 | C-CER,CHIP | SA |
| 2203-002709 | C309 | C-CER,CHIP | SA |
| 2203-002709 | C311 | C-CER,CHIP | SA |
| 2203-002709 | C313 | C-CER,CHIP | SA |
| 2203-002709 | C315 | C-CER,CHIP | SA |
| 2203-002709 | C320 | C-CER,CHIP | SA |
| 2203-002709 | C324 | C-CER,CHIP | SA |
| 2203-002709 | C325 | C-CER,CHIP | SA |
| 2203-002709 | C326 | C-CER,CHIP | SA |
| 2203-002709 | C327 | C-CER,CHIP | SA |
| 2203-002709 | C328 | C-CER,CHIP | SA |
| 2203-002709 | C329 | C-CER,CHIP | SA |
| 2203-002709 | C330 | C-CER,CHIP | SA |
| 2203-002709 | C336 | C-CER,CHIP | SA |
| 2203-002709 | C339 | C-CER,CHIP | SA |

| SEC Code | Design LOC | Description | STATUS |
|-----------------|-------------------|--------------------|---------------|
| 2203-002709 | C342 | C-CER,CHIP | SA |
| 2203-002709 | C343 | C-CER,CHIP | SA |
| 2203-002709 | C409 | C-CER,CHIP | SA |
| 2203-002709 | C412 | C-CER,CHIP | SA |
| 2203-002709 | C435 | C-CER,CHIP | SA |
| 2203-002709 | C501 | C-CER,CHIP | SA |
| 2203-002709 | C533 | C-CER,CHIP | SA |
| 2203-002709 | C561 | C-CER,CHIP | SA |
| 2203-002709 | C613 | C-CER,CHIP | SA |
| 2203-002709 | C615 | C-CER,CHIP | SA |
| 2203-002709 | C616 | C-CER,CHIP | SA |
| 2203-002709 | C617 | C-CER,CHIP | SA |
| 2203-002709 | C703 | C-CER,CHIP | SA |
| 2203-002709 | C708 | C-CER,CHIP | SA |
| 2203-002709 | C709 | C-CER,CHIP | SA |
| 2203-002709 | C713 | C-CER,CHIP | SA |
| 2203-002709 | C718 | C-CER,CHIP | SA |
| 2203-002709 | C734 | C-CER,CHIP | SA |
| 2203-002709 | C735 | C-CER,CHIP | SA |
| 2203-002709 | C737 | C-CER,CHIP | SA |
| 2203-002709 | C738 | C-CER,CHIP | SA |
| 2203-002759 | C155 | C-CER,CHIP | SA |
| 2203-002968 | C173 | C-CER,CHIP | SA |
| 2203-003054 | C510 | C-CER,CHIP | SA |
| 2203-003054 | C511 | C-CER,CHIP | SA |
| 2203-003054 | C513 | C-CER,CHIP | SA |
| 2203-003054 | C515 | C-CER,CHIP | SA |
| 2203-003054 | C517 | C-CER,CHIP | SA |
| 2203-003054 | C520 | C-CER,CHIP | SA |
| 2203-003054 | C603 | C-CER,CHIP | SA |
| 2203-005281 | C186 | C-CER,CHIP | SA |
| 2203-005288 | C109 | C-CER,CHIP | SA |
| 2203-005382 | C112 | C-CER,CHIP | SA |
| 2203-005382 | C113 | C-CER,CHIP | SA |
| 2203-005393 | C184 | C-CER,CHIP | SA |
| 2203-005481 | C210 | C-CER,CHIP | SA |
| 2203-005482 | C189 | C-CER,CHIP | SA |
| 2203-005482 | C197 | C-CER,CHIP | SA |
| 2203-005482 | C213 | C-CER,CHIP | SA |
| 2203-005482 | C248 | C-CER,CHIP | SA |
| 2203-005482 | C426 | C-CER,CHIP | SA |
| 2203-005659 | C104 | C-CER,CHIP | SA |
| 2203-005659 | C105 | C-CER,CHIP | SA |
| 2203-005659 | C106 | C-CER,CHIP | SA |
| 2203-005659 | C107 | C-CER,CHIP | SA |
| 2203-005725 | C133 | C-CER,CHIP | SA |
| 2203-005725 | C135 | C-CER,CHIP | SA |
| 2203-005725 | C150 | C-CER,CHIP | SA |
| 2203-005727 | C111 | C-CER,CHIP | SA |
| 2203-005736 | C134 | C-CER,CHIP | SA |
| 2203-005736 | C151 | C-CER,CHIP | SA |
| 2203-005806 | C1002 | C-CER,CHIP | SNA |
| 2203-005806 | C1005 | C-CER,CHIP | SNA |

| SEC Code | Design LOC | Description | STATUS |
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| 2203-006048 | C160 | C-CER,CHIP | SA |
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| 2203-006208 | C529 | C-CER,CHIP | SA |
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| 2203-006399 | C524 | C-CER,CHIP | SA |
| 2203-006399 | C557 | C-CER,CHIP | SA |
| 2203-006423 | C121 | C-CER,CHIP | SA |
| 2203-006423 | C122 | C-CER,CHIP | SA |
| 2203-006423 | C131 | C-CER,CHIP | SA |
| 2203-006423 | C132 | C-CER,CHIP | SA |
| 2203-006423 | C143 | C-CER,CHIP | SA |
| 2203-006423 | C144 | C-CER,CHIP | SA |
| 2203-006423 | C145 | C-CER,CHIP | SA |
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| SEC Code | Design LOC | Description | STATUS |
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| 2203-006562 | C218 | C-CER,CHIP | SA |
| 2203-006562 | C221 | C-CER,CHIP | SA |
| 2203-006562 | C222 | C-CER,CHIP | SA |
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| 2203-006562 | C724 | C-CER,CHIP | SA |
| 2203-006562 | C725 | C-CER,CHIP | SA |
| 2203-006562 | C726 | C-CER,CHIP | SA |
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| 2203-006562 | C729 | C-CER,CHIP | SA |
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| 2203-006562 | C731 | C-CER,CHIP | SA |

| SEC Code | Design LOC | Description | STATUS |
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| 2203-006562 | C733 | C-CER,CHIP | SA |
| 2203-006681 | C1008 | C-CER,CHIP | SA |
| 2203-006681 | C115 | C-CER,CHIP | SA |
| 2203-006681 | C176 | C-CER,CHIP | SA |
| 2203-006681 | C500 | C-CER,CHIP | SA |
| 2203-006681 | C502 | C-CER,CHIP | SA |
| 2203-006681 | C519 | C-CER,CHIP | SA |
| 2203-006681 | C528 | C-CER,CHIP | SA |
| 2203-006681 | C531 | C-CER,CHIP | SA |
| 2203-006681 | C716 | C-CER,CHIP | SA |
| 2203-006681 | C720 | C-CER,CHIP | SA |
| 2203-006681 | C721 | C-CER,CHIP | SA |
| 2203-006824 | C117 | C-CER,CHIP | SA |
| 2203-006824 | C220 | C-CER,CHIP | SA |
| 2203-006824 | C301 | C-CER,CHIP | SA |
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| 2203-006825 | C334 | C-CER,CHIP | SA |
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| 2203-006837 | C172 | C-CER,CHIP | SA |
| 2203-006838 | C312 | C-CER,CHIP | SA |
| 2203-006838 | C414 | C-CER,CHIP | SA |
| 2203-006838 | C425 | C-CER,CHIP | SA |

| SEC Code | Design LOC | Description | STATUS |
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| 2203-006838 | C530 | C-CER,CHIP | SA |
| 2203-006838 | C608 | C-CER,CHIP | SA |
| 2203-006838 | C610 | C-CER,CHIP | SA |
| 2203-006872 | C219 | C-CER,CHIP | SA |
| 2203-006890 | C241 | C-CER,CHIP | SA |
| 2203-006890 | C308 | C-CER,CHIP | SA |
| 2203-007147 | C305 | C-CER,CHIP | SA |
| 2203-007147 | C349 | C-CER,CHIP | SA |
| 2203-007165 | C562 | C-CER,CHIP | SA |
| 2404-001268 | TA401 | C-TA,CHIP | SA |
| 2404-001339 | TA500 | C-TA,CHIP | SA |
| 2404-001377 | ZD409 | C-TA,CHIP | SA |
| 2404-001381 | C606 | C-TA,CHIP | SA |
| 2404-001381 | TA400 | C-TA,CHIP | SA |
| 2404-001381 | TA402 | C-TA,CHIP | SA |
| 2404-001381 | TA403 | C-TA,CHIP | SA |
| 2404-001381 | TA404 | C-TA,CHIP | SA |
| 2404-001381 | TA501 | C-TA,CHIP | SA |
| 2404-001449 | TA300 | C-TA,CHIP | SA |
| 2404-001449 | TA301 | C-TA,CHIP | SA |
| 2404-001496 | TA100 | C-TA,CHIP | SA |
| 2703-001180 | L102 | INDUCTOR-SMD | SA |
| 2703-001701 | L119 | INDUCTOR-SMD | SA |
| 2703-001749 | L115 | INDUCTOR-SMD | SA |
| 2703-001750 | L100 | INDUCTOR-SMD | SA |
| 2703-001938 | L407 | INDUCTOR-SMD | SA |
| 2703-001938 | L408 | INDUCTOR-SMD | SA |
| 2703-002155 | L110 | INDUCTOR-SMD | SA |
| 2703-002198 | L121 | INDUCTOR-SMD | SA |
| 2703-002198 | L414 | INDUCTOR-SMD | SA |
| 2703-002198 | L415 | INDUCTOR-SMD | SA |
| 2703-002199 | L120 | INDUCTOR-SMD | SA |
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| 2703-002200 | L118 | INDUCTOR-SMD | SA |
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| 2703-002201 | L410 | INDUCTOR-SMD | SA |
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| 2703-002202 | L111 | INDUCTOR-SMD | SA |
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| 2703-002267 | L113 | INDUCTOR-SMD | SA |
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| 2703-002281 | L105 | INDUCTOR-SMD | SA |
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| 2703-002365 | L126 | INDUCTOR-SMD | SA |
| 2703-002367 | L122 | INDUCTOR-SMD | SA |
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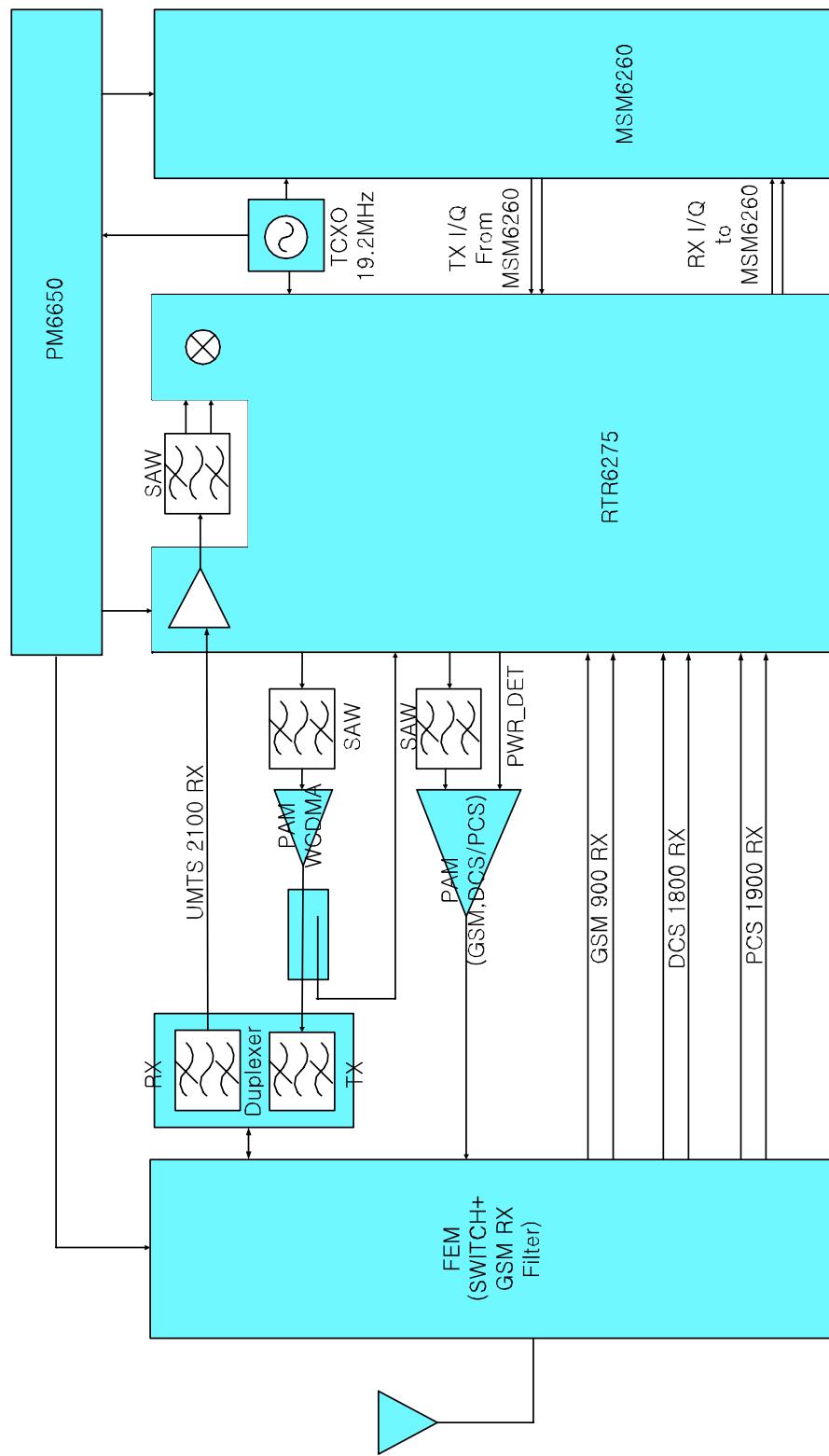
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| 2703-002798 | L116 | INDUCTOR-SMD | SNA |
| 2703-002893 | L501 | INDUCTOR-SMD | SA |
| 2703-002919 | L117 | INDUCTOR-SMD | SA |
| 2703-003182 | L304 | INDUCTOR-SMD | SA |
| 2703-003182 | L305 | INDUCTOR-SMD | SA |
| 2703-003184 | L300 | INDUCTOR-SMD | SA |
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| 2703-003240 | L306 | INDUCTOR-SMD | SA |
| 2801-004189 | OSC700 | CRYSTAL-SMD | SA |
| 2801-004466 | OSC300 | CRYSTAL-SMD | SA |
| 2801-004466 | OSC500 | CRYSTAL-SMD | SA |
| 2801-004466 | OSC701 | CRYSTAL-SMD | SA |
| 2804-001725 | OSC400 | OSCILLATOR-CLOCK | SA |
| 2809-001280 | TCX100 | OSCILLATOR-VCTCXO | SA |
| 2901-001361 | F600 | FILTER-EMI/ESD | SNA |
| 2901-001361 | F602 | FILTER-EMI/ESD | SNA |
| 2901-001361 | F604 | FILTER-EMI/ESD | SNA |
| 2901-001461 | F601 | FILTER-EMI/ESD | SA |
| 2901-001461 | F603 | FILTER-EMI/ESD | SA |
| 2904-001629 | F105 | FILTER-SAW | SA |
| 2904-001702 | F101 | FILTER-SAW | SA |
| 2904-001703 | F102 | FILTER-SAW | SA |
| 2904-001738 | F103 | FILTER-SAW | SA |
| 2904-001759 | F104 | FILTER-SAW | SA |
| 2910-000004 | F107 | DUPLEXER-FBAR | SA |
| 2911-000091 | F100 | DUPLEXER-FEM | SA |
| 3301-001438 | L405 | BEAD-SMD | SA |
| 3301-001438 | L406 | BEAD-SMD | SA |
| 3301-001534 | L500 | BEAD-SMD | SA |
| 3301-001682 | L402 | BEAD-SMD | SA |
| 3301-001682 | L403 | BEAD-SMD | SA |
| 3301-001682 | L404 | BEAD-SMD | SA |
| 3301-001756 | L131 | BEAD-SMD | SA |
| 3301-001789 | L400 | BEAD-SMD | SA |
| 3301-001789 | L401 | BEAD-SMD | SA |
| 3404-001303 | SW600 | SWITCH-TACT | SA |
| 3404-001303 | SW601 | SWITCH-TACT | SA |
| 3705-001225 | ANT100 | CONNECTOR-COAXIAL | SA |
| 3705-001421 | RFS100 | CONNECTOR-COAXIAL | SA |
| 3708-002222 | SLC600 | CONNECTOR-FPC/FFC/PIC | SA |
| 3708-002222 | SLC601 | CONNECTOR-FPC/FFC/PIC | SA |
| 3708-002283 | SLC602 | CONNECTOR-FPC/FFC/PIC | SA |
| 3709-001465 | CD300 | CONNECTOR-CARD EDGE | SA |
| 3710-002499 | IFC500 | SOCKET-INTERFACE | SA |
| 3711-005296 | HDC601 | HEADER-BOARD TO BOARD | SA |
| 3711-005394 | HDC600 | HEADER-BOARD TO BOARD | SA |
| 3711-006217 | BTC300 | HEADER-BATTERY | SA |
| 3711-006277 | HDC602 | HEADER-BOARD TO BOARD | SA |
| 3711-006277 | HDC603 | HEADER-BOARD TO BOARD | SA |
| 4202-001356 | ANT102 | ANTENNA-CHIP | SA |

| SEC Code | Design LOC | Description | STATUS |
|-----------------|-------------------|--------------------|---------------|
| 4302-001180 | BAT500 | BATTERY-LI(2ND) | SA |
| 4709-001399 | F106 | COUPLER-DIRECTION | SA |
| 4709-001527 | MOD101 | W-LAN MODULE | SA |
| 4709-001544 | MOD100 | BLUETOOTH MODULE | SA |
| GH71-06620A | ANT104 | NPR-CONTACT INTENA | SA |
| GH71-06620A | ANT105 | NPR-CONTACT INTENA | SA |
| GH71-06620A | ANT106 | NPR-CONTACT INTENA | SA |
| GH71-07813A | SC100 | NPR SHIELD-FRAME A | SA |
| GH71-07814A | SC101 | NPR SHIELD-FRAME B | SA |

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

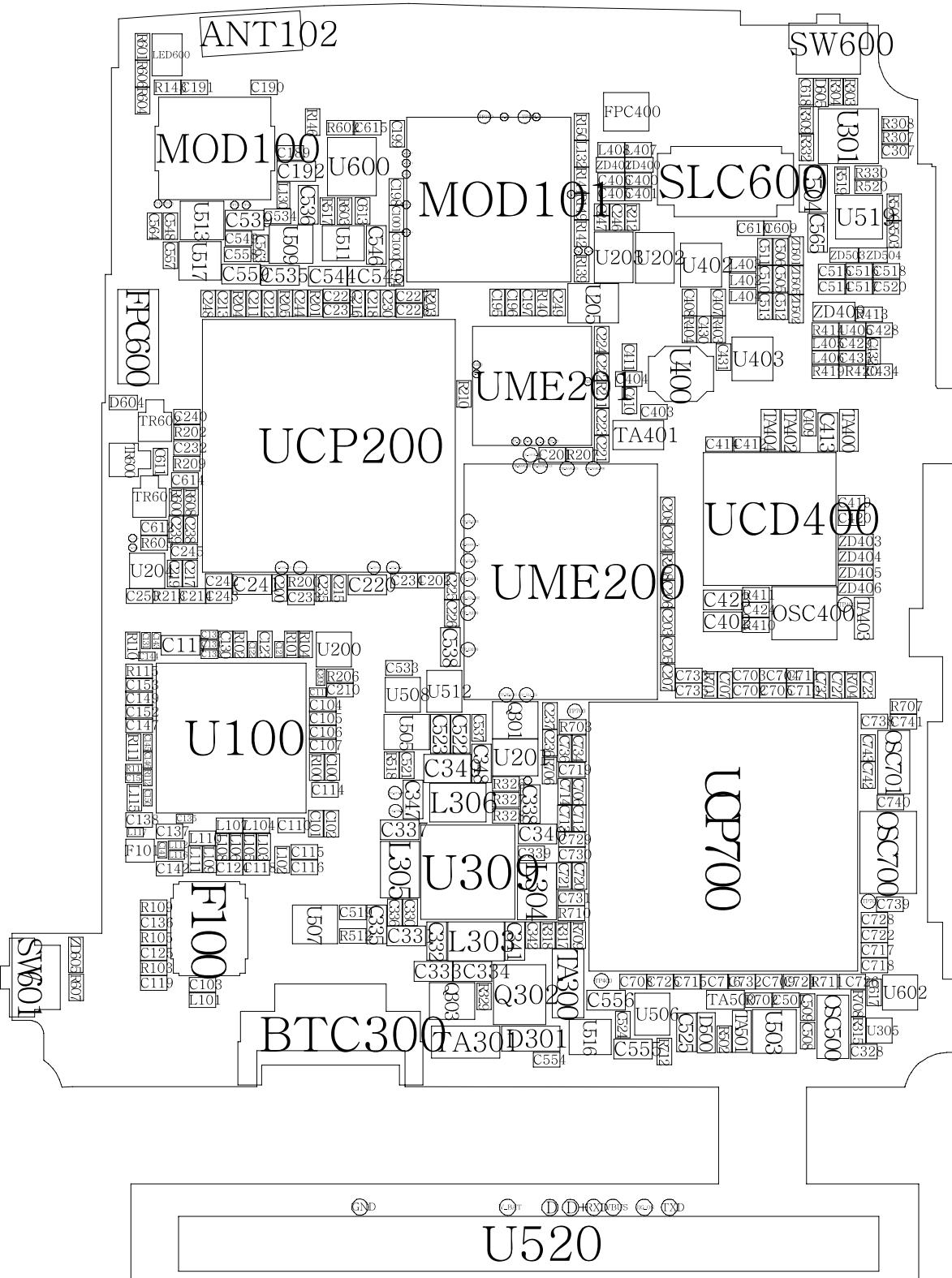
7. Block Diagrams

7-1. RF Solution Block Diagram

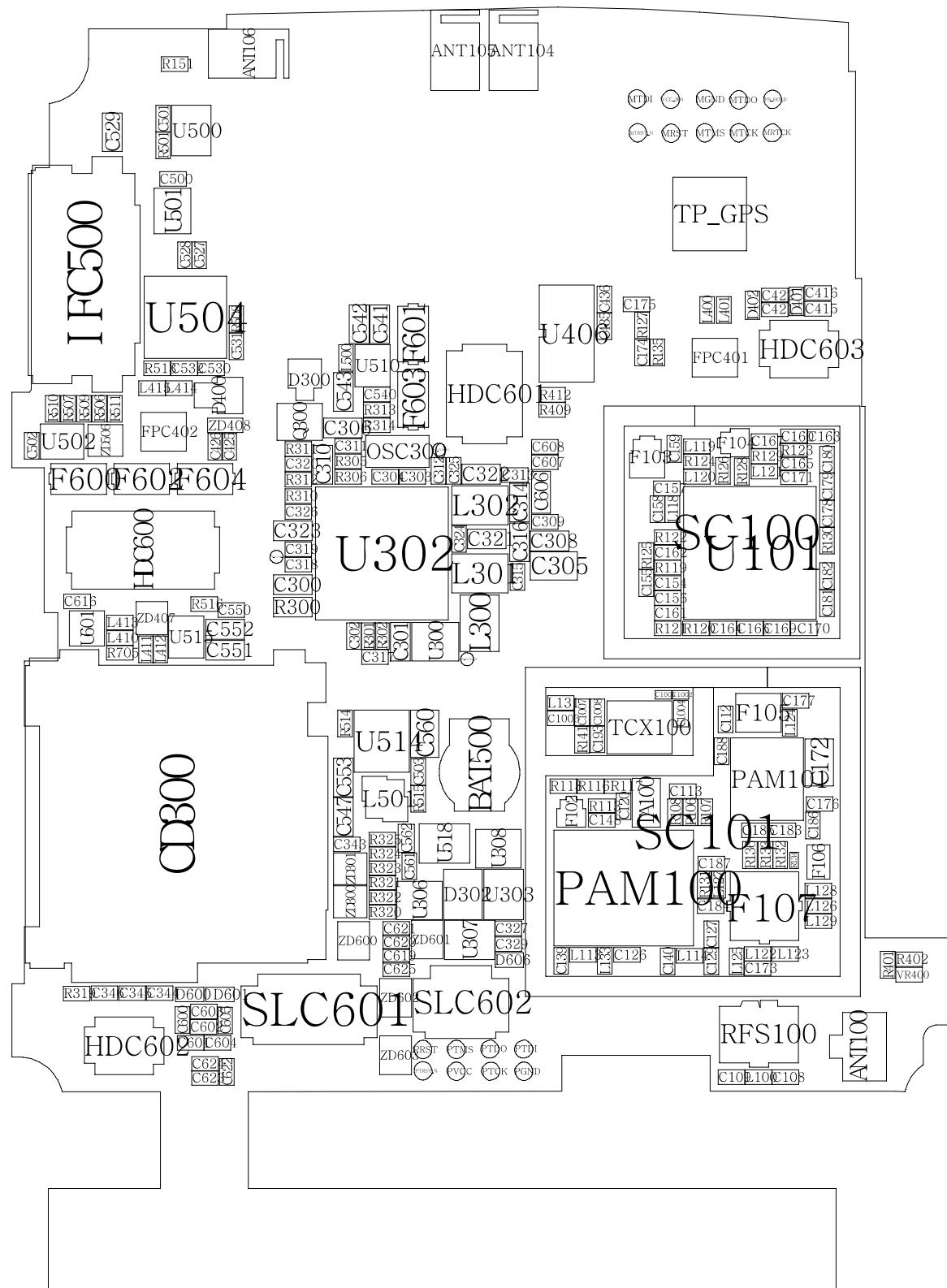


8. PCB Diagrams

8-1. Main top view



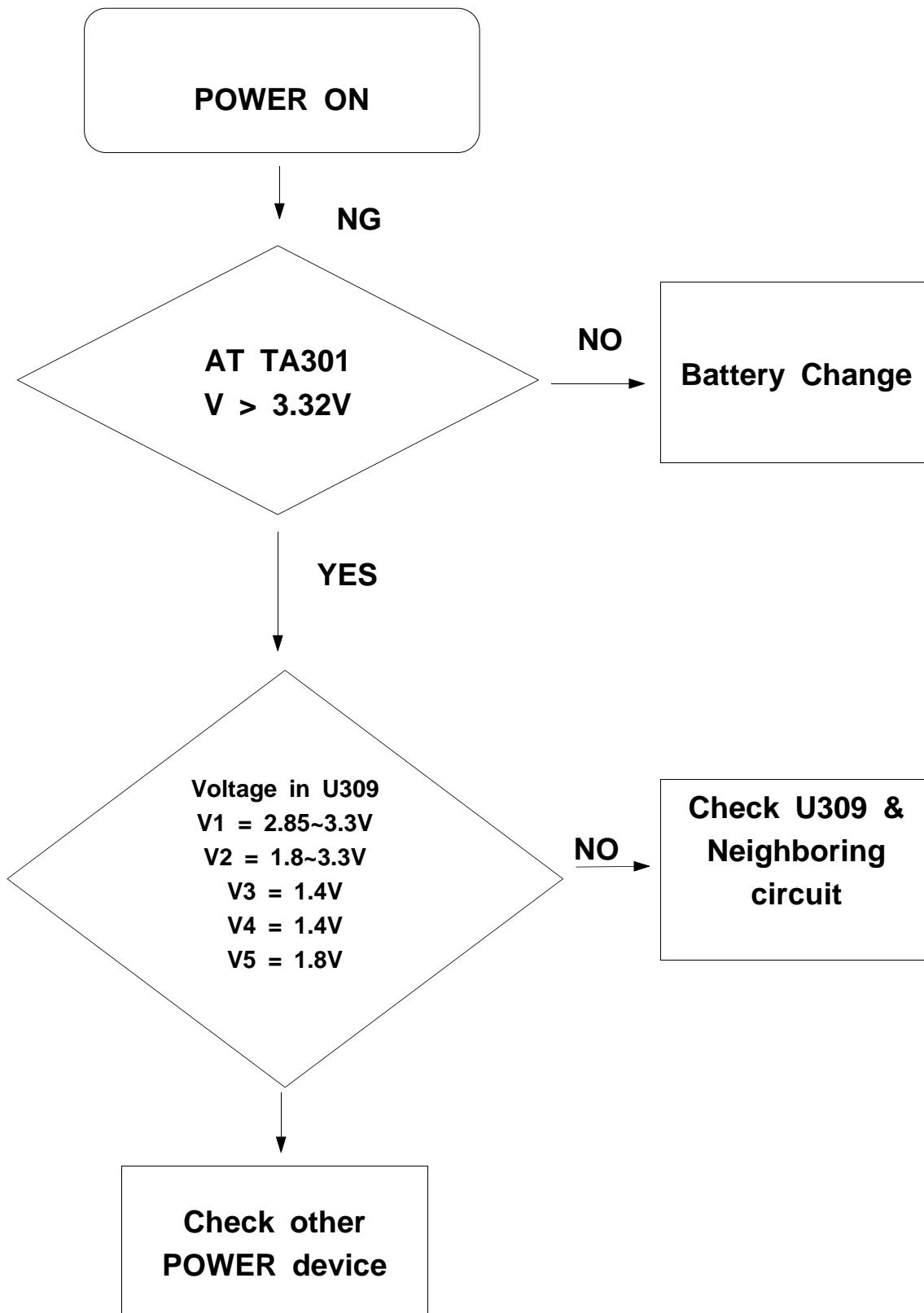
8-2. Main bottom view



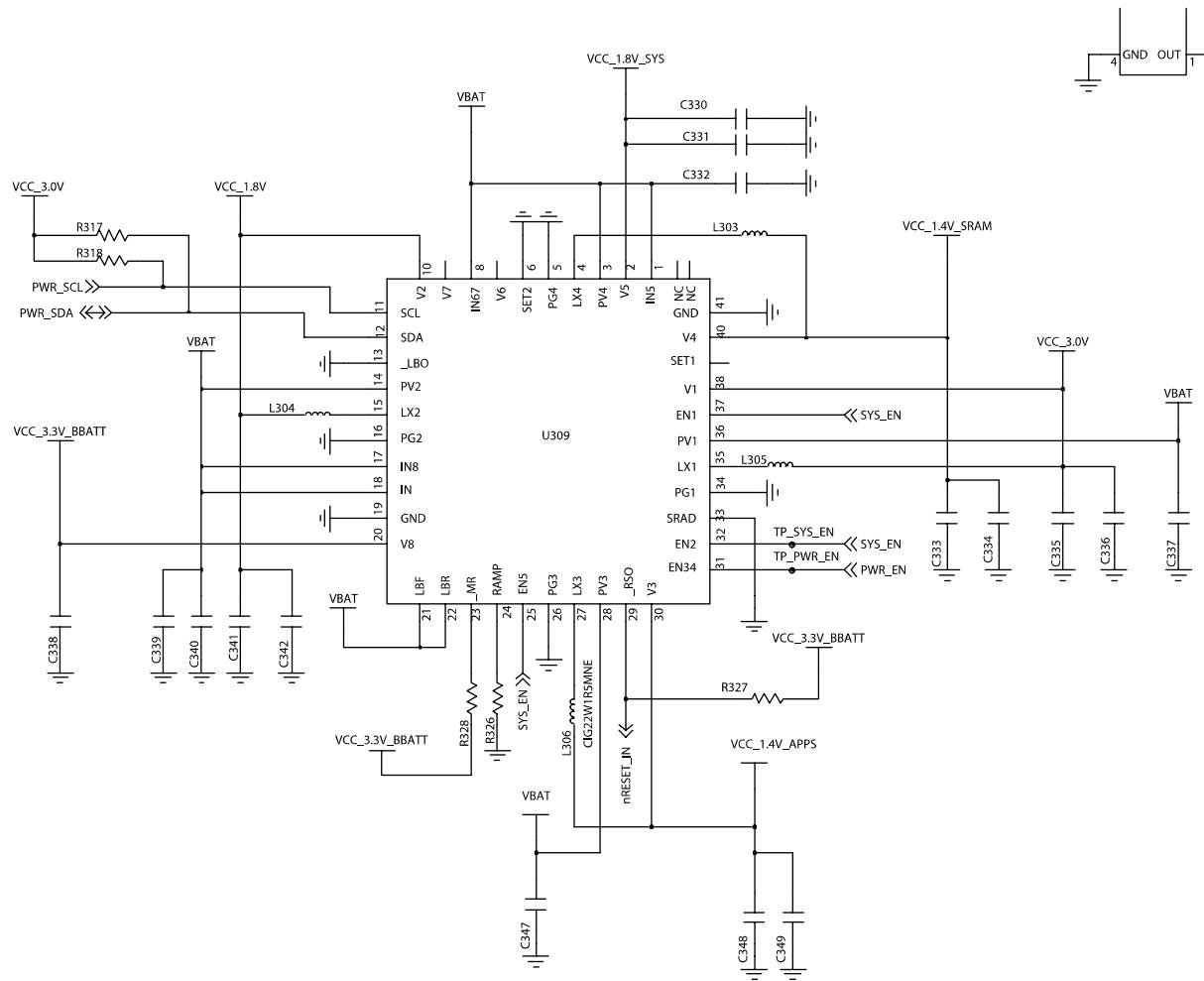
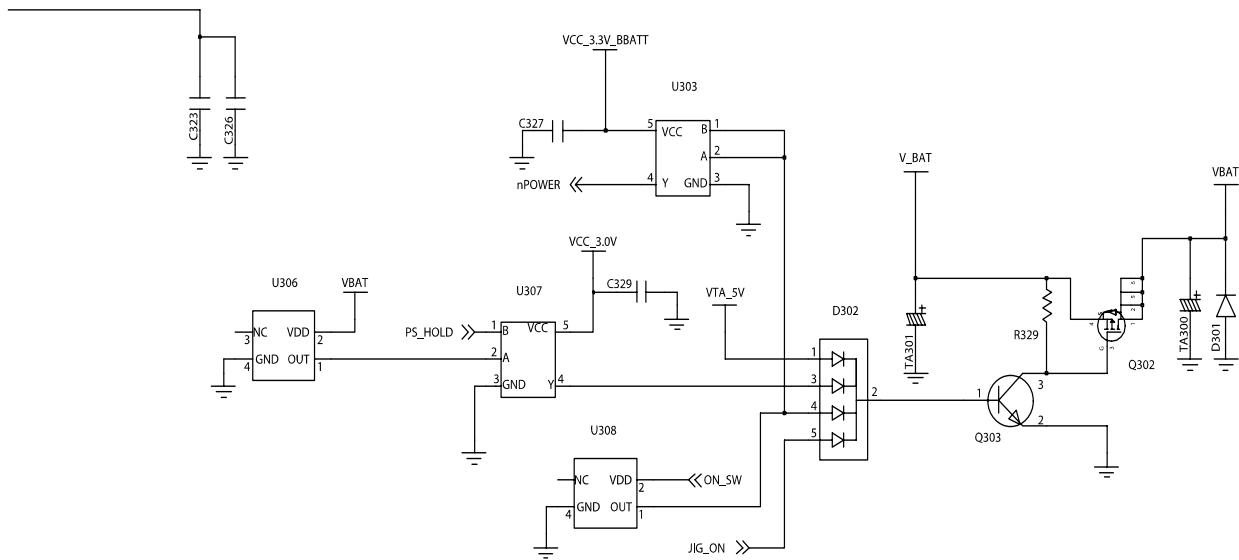
9. Flow Chart of TroubleShooting

9-1. Power On

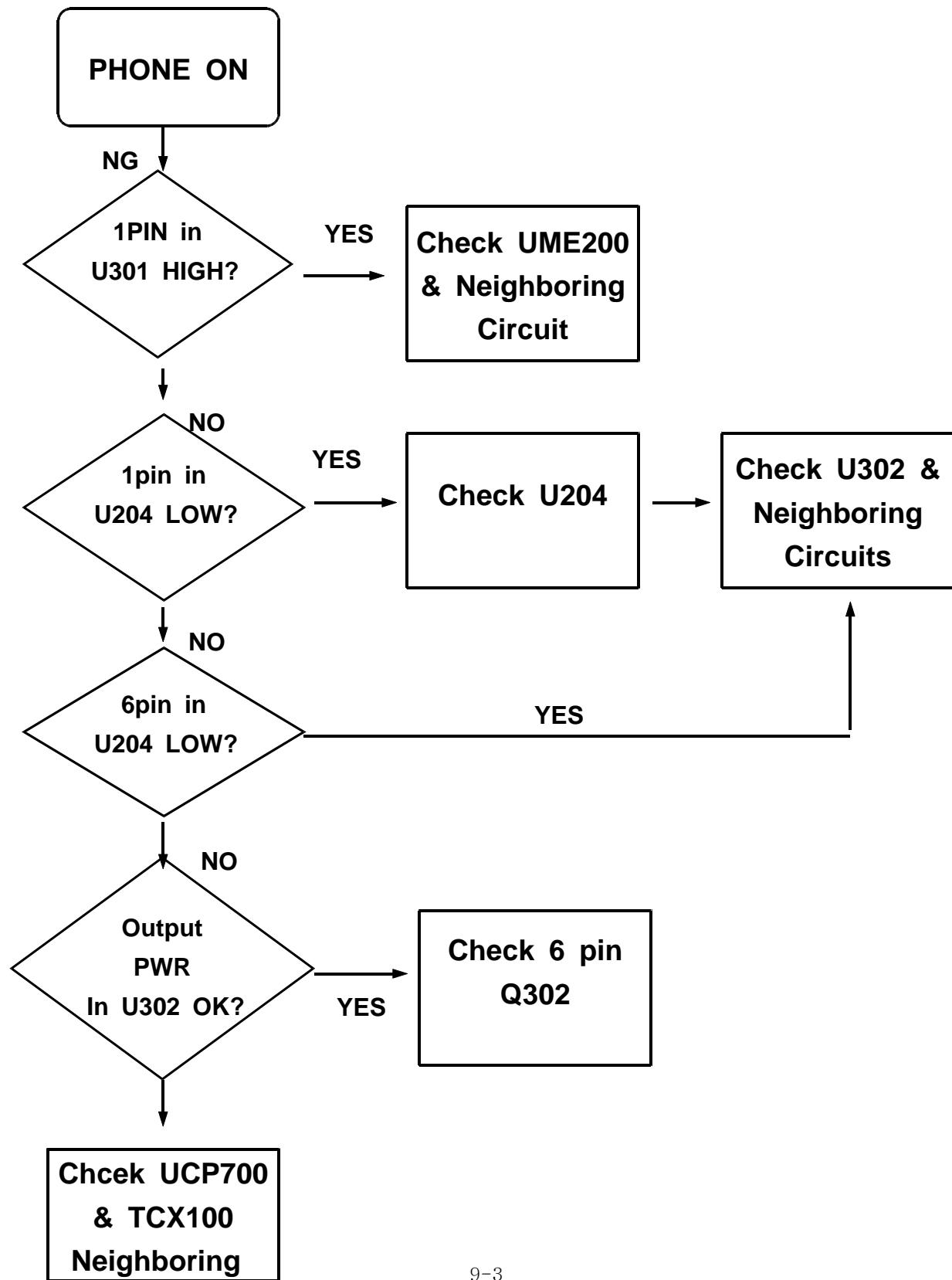
- PDA Part



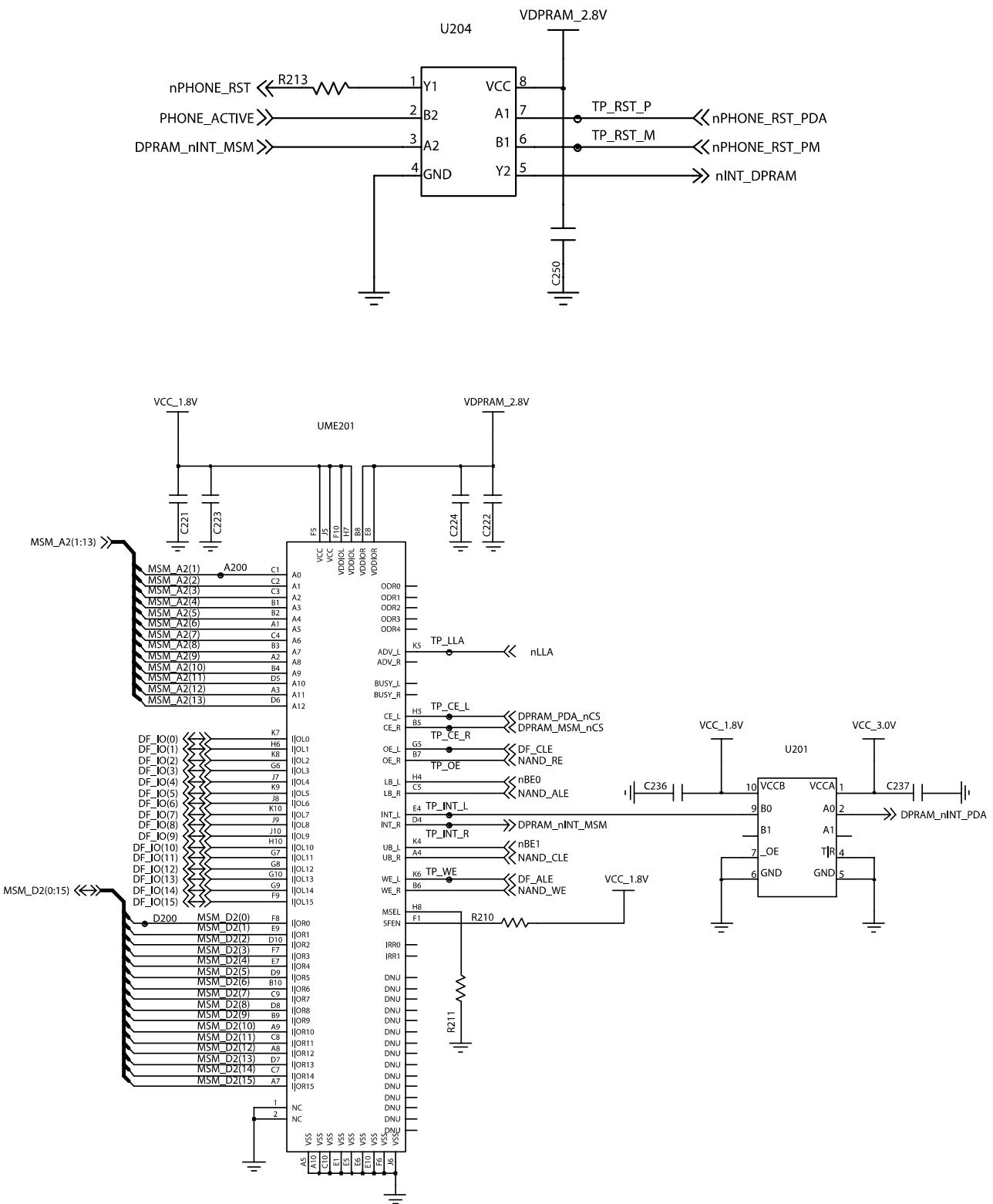
Flow Chart of Troubleshooting



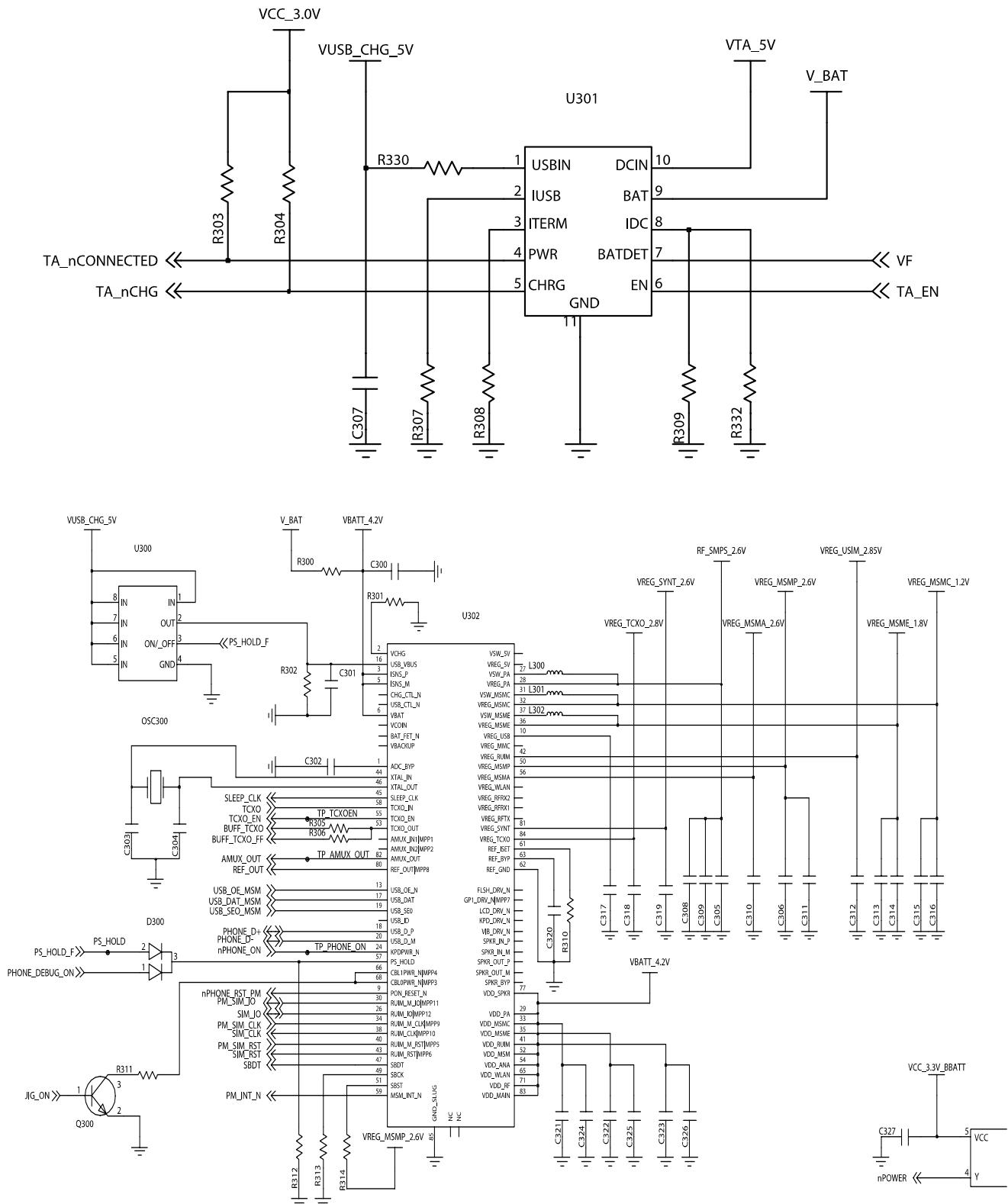
- PHONE Part



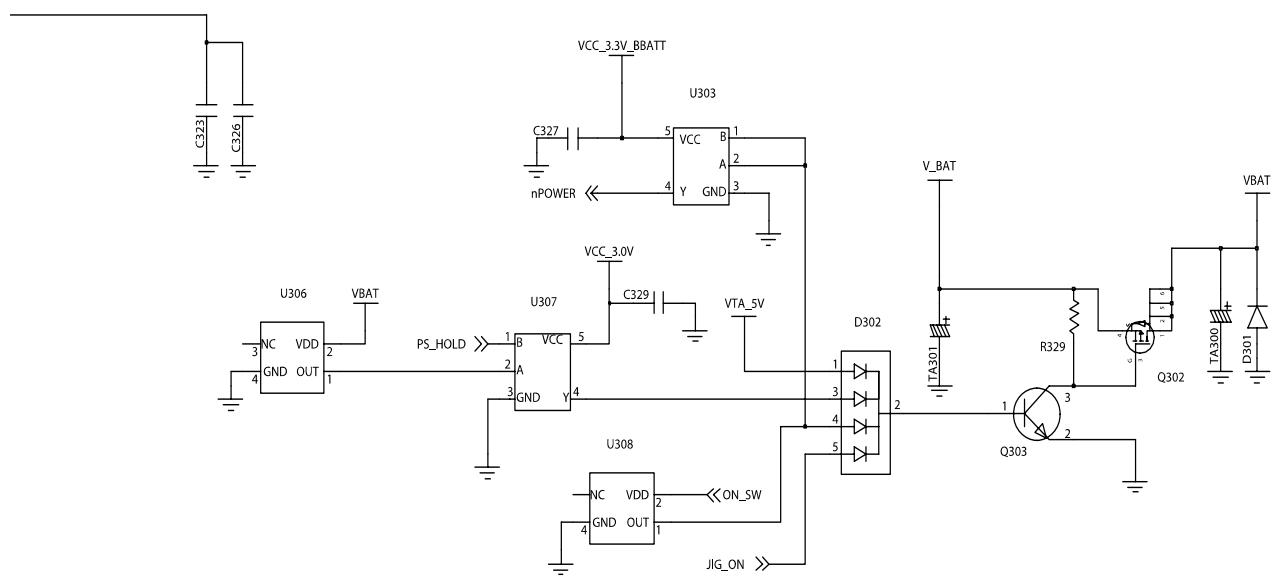
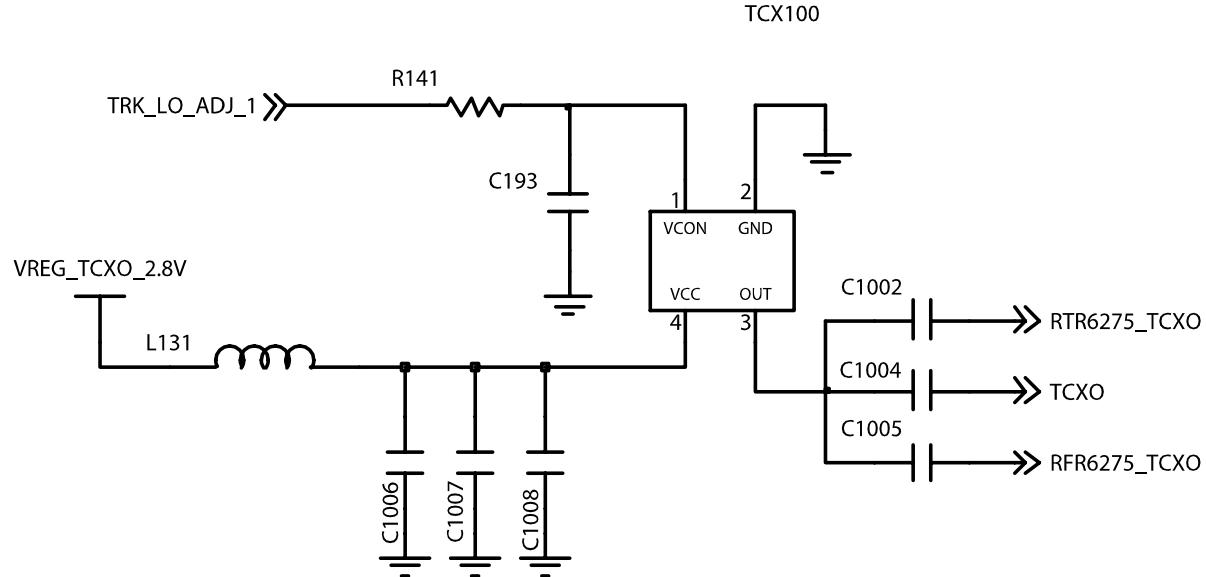
Flow Chart of Troubleshooting

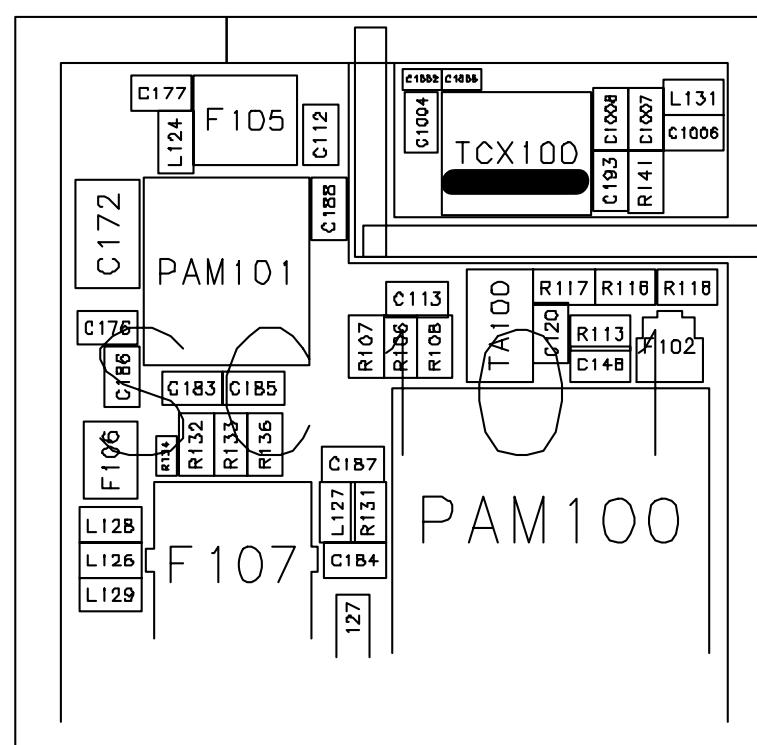
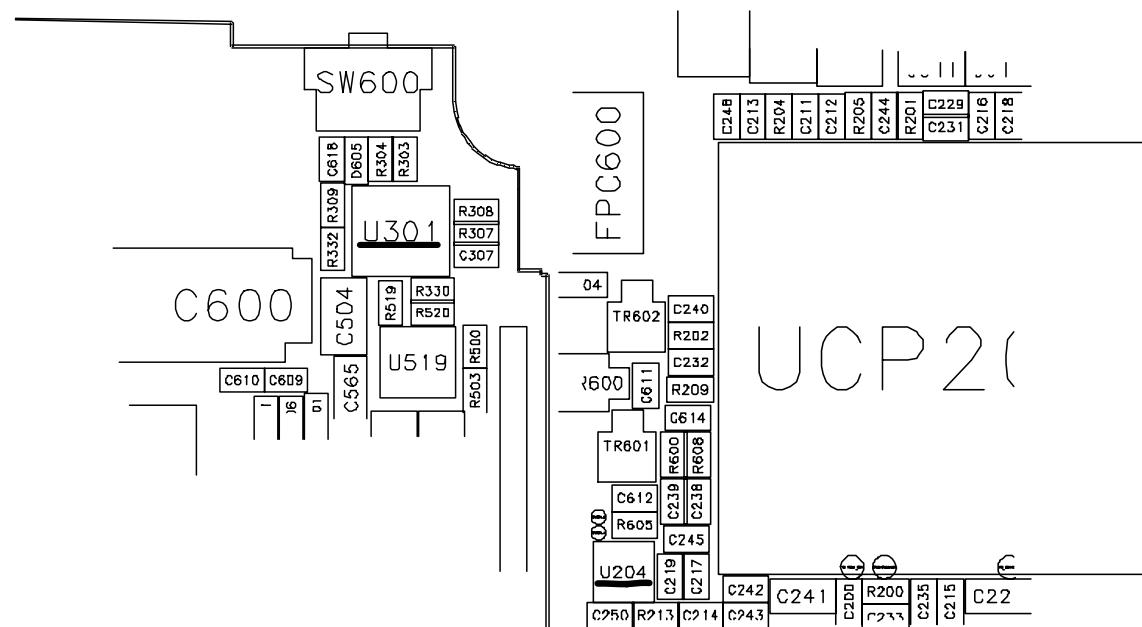


Flow Chart of Troubleshooting

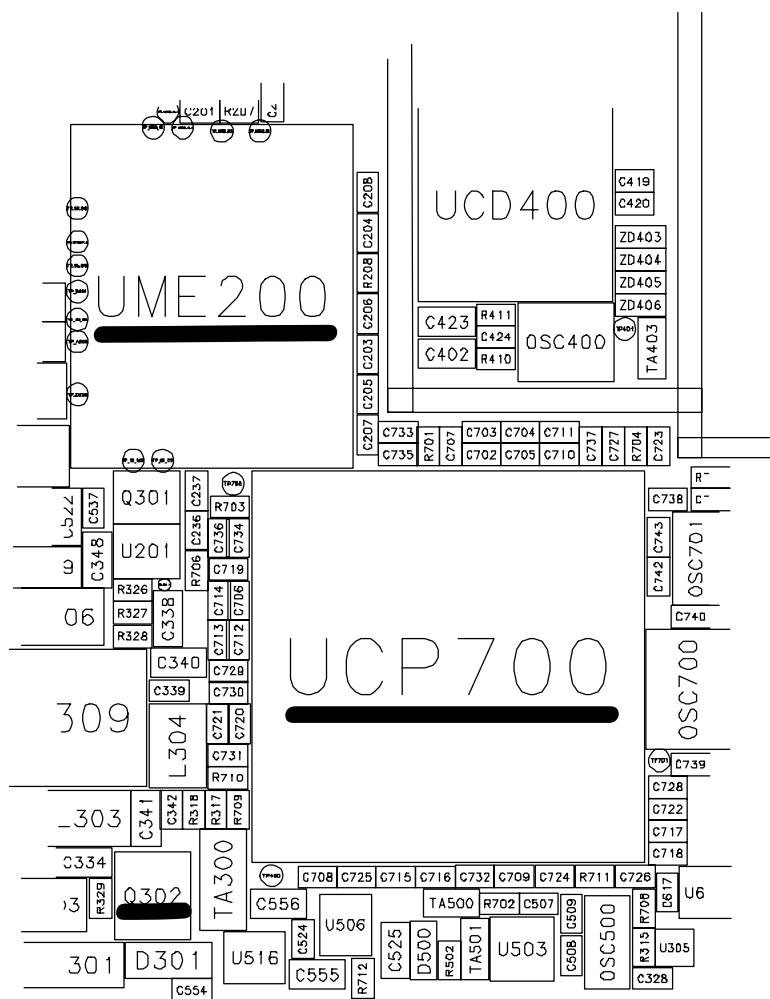


Flow Chart of Troubleshooting

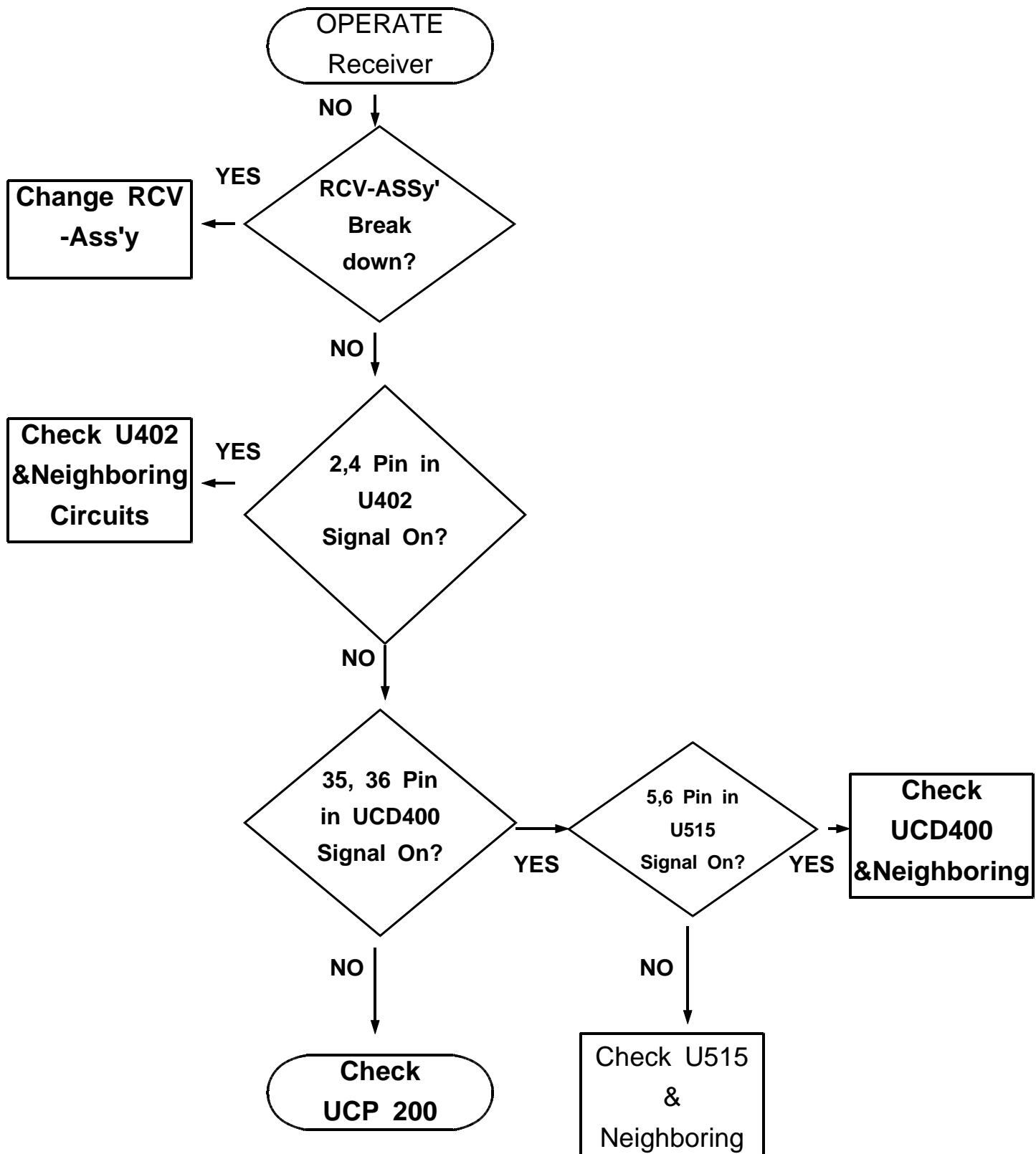




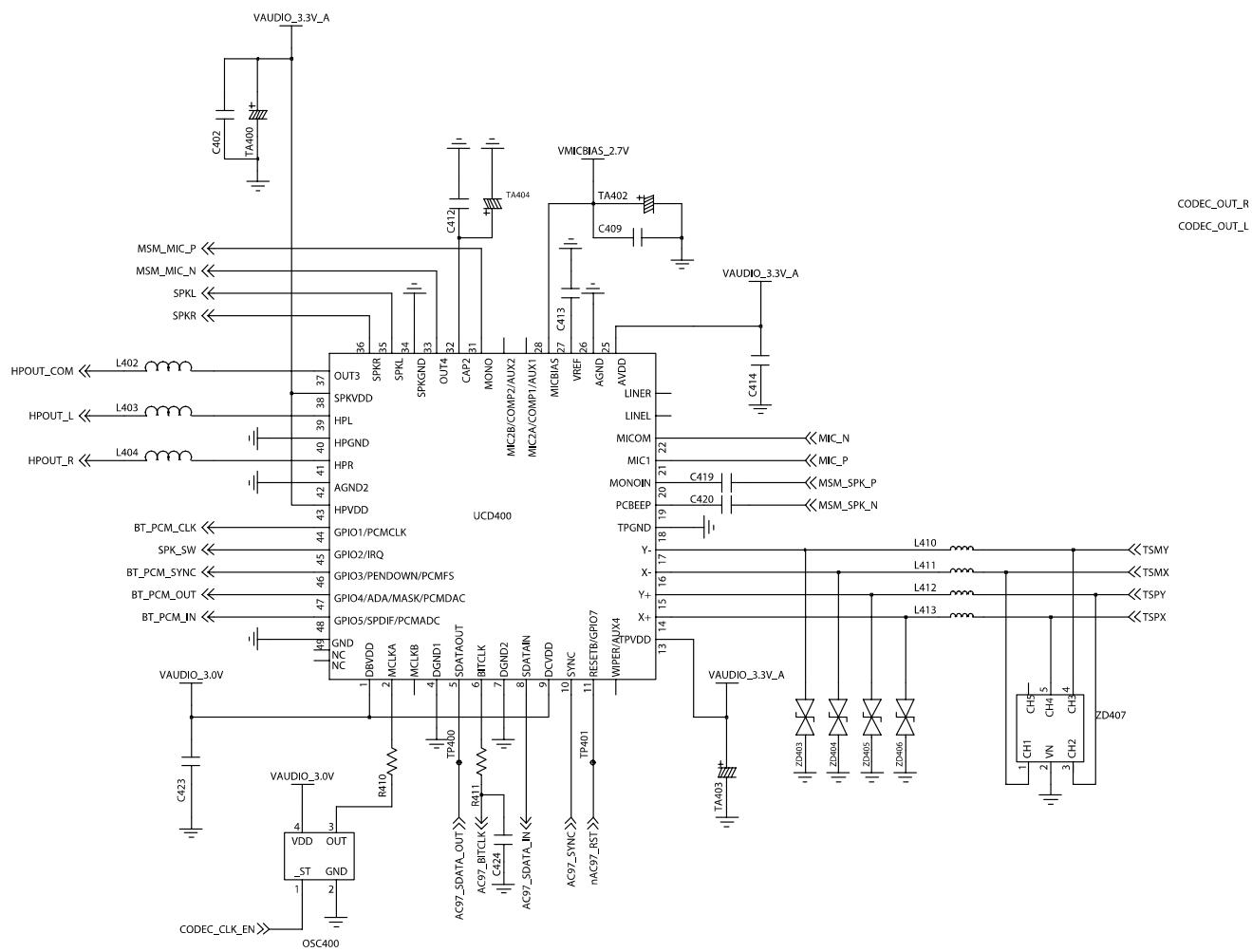
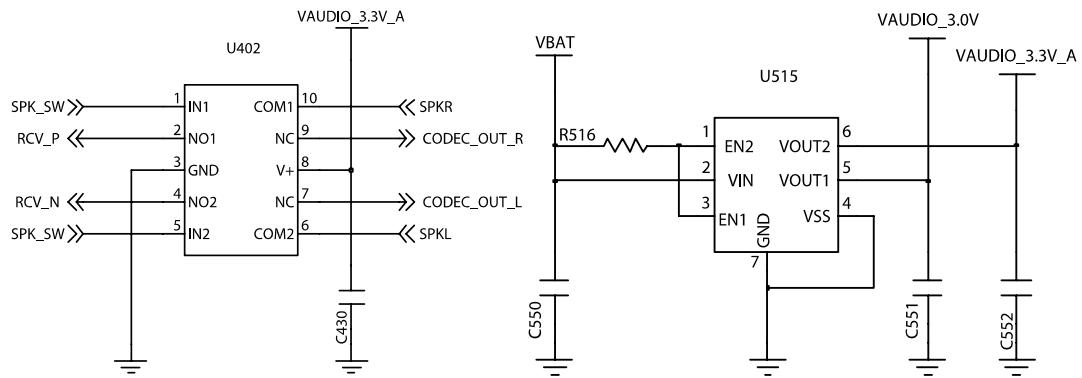
Flow Chart of Troubleshooting



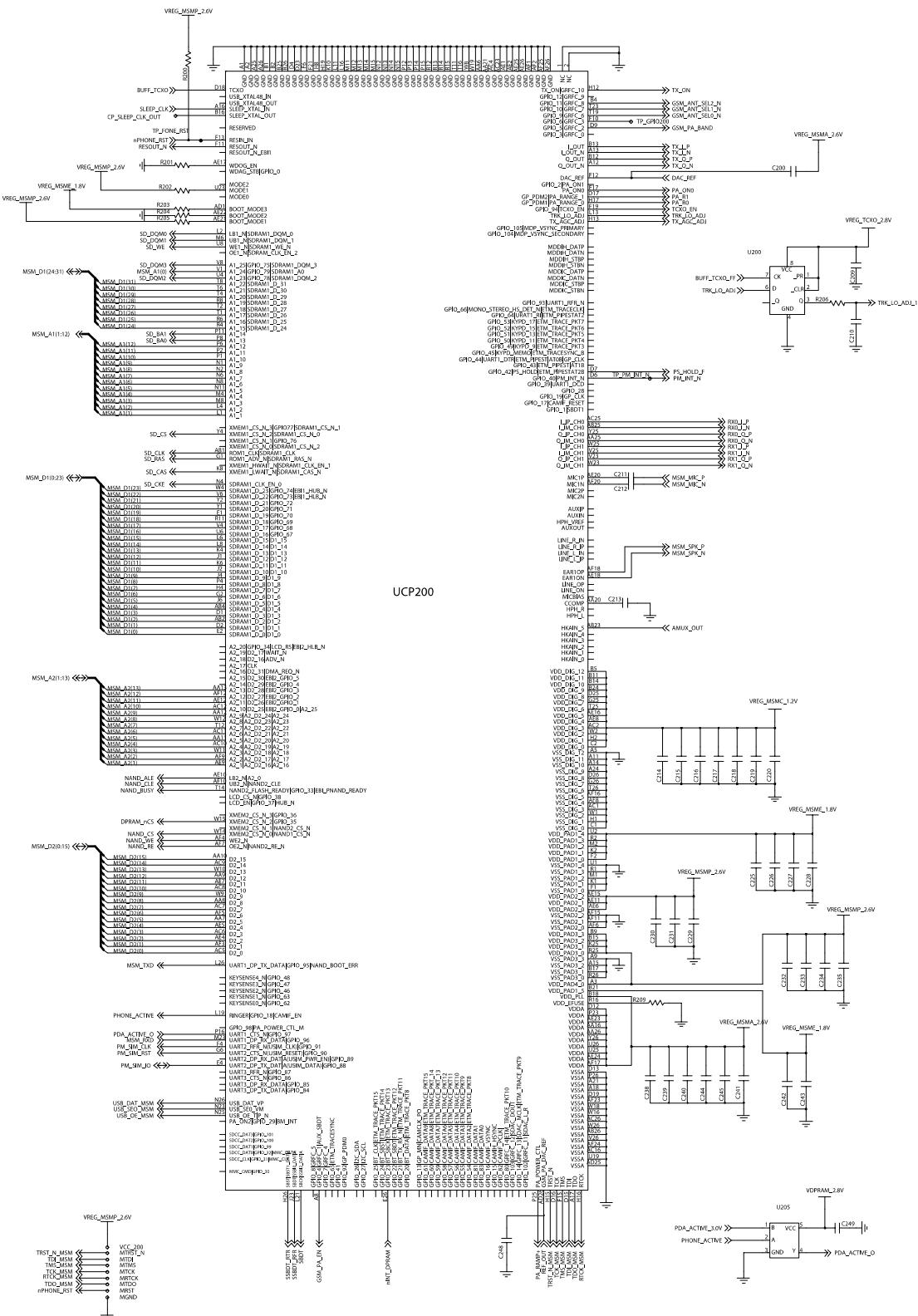
9-2. RECEIVER Working



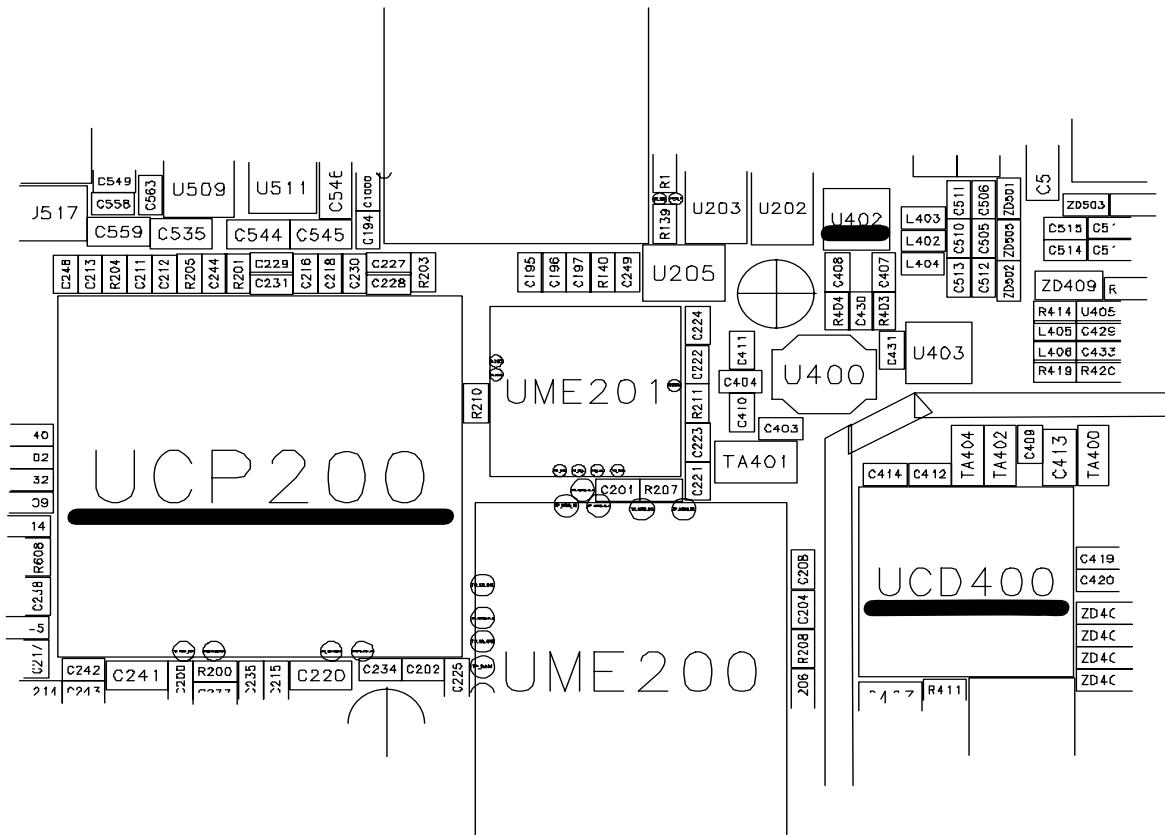
Flow Chart of Troubleshooting



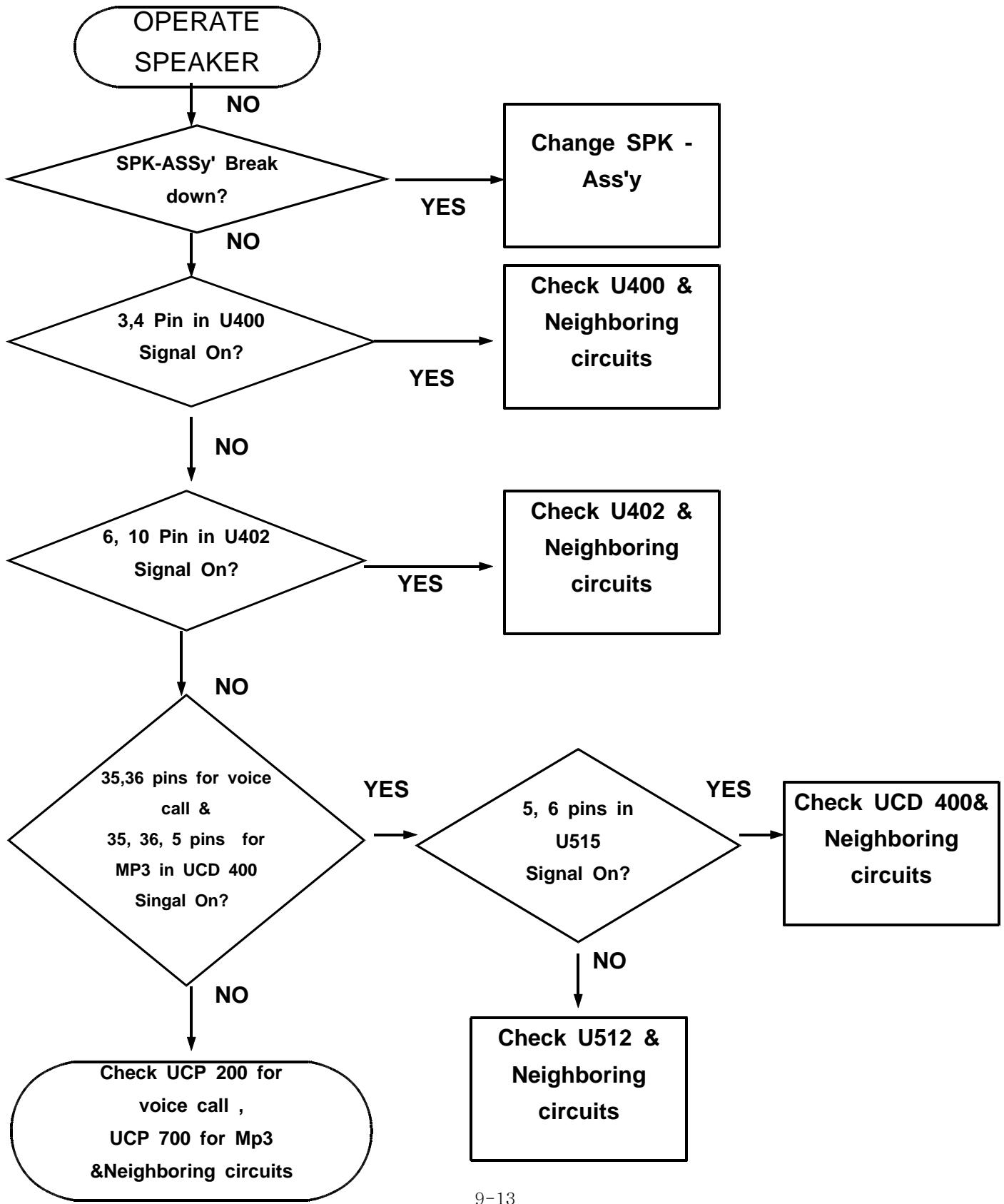
Flow Chart of Troubleshooting



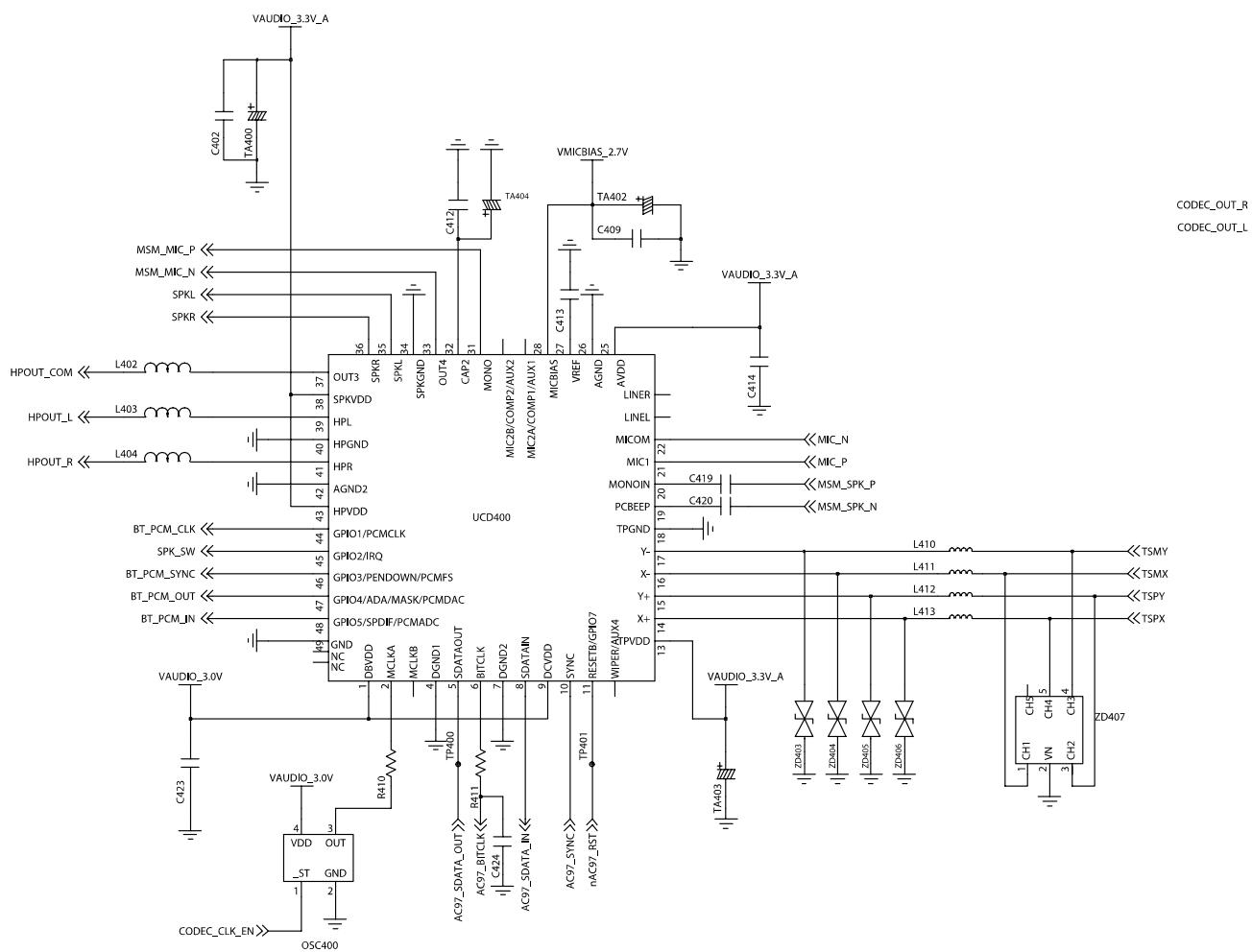
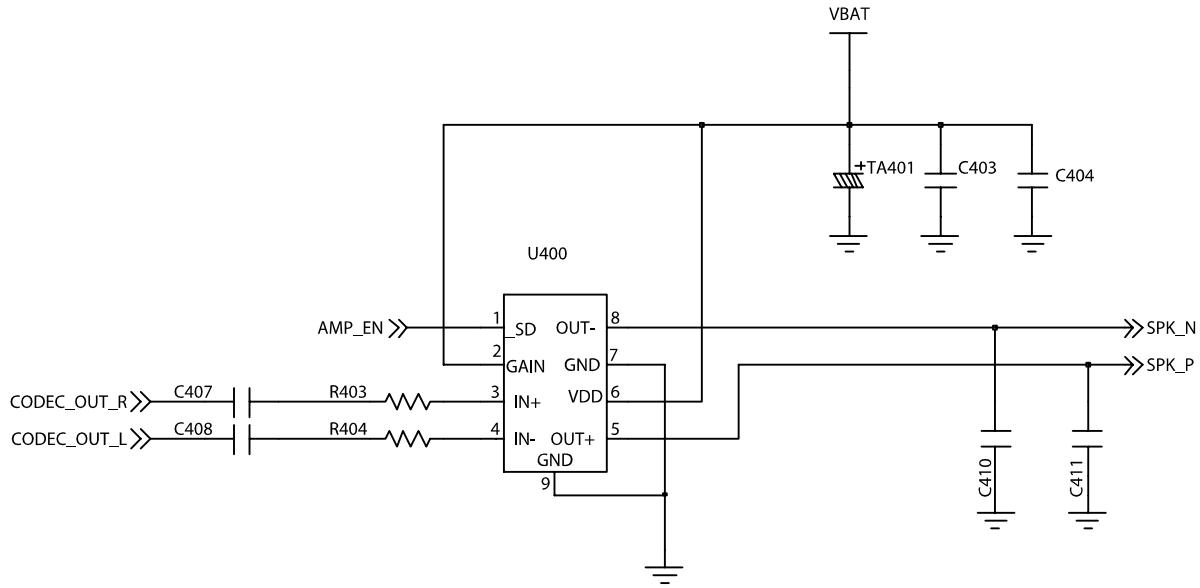
Flow Chart of Troubleshooting

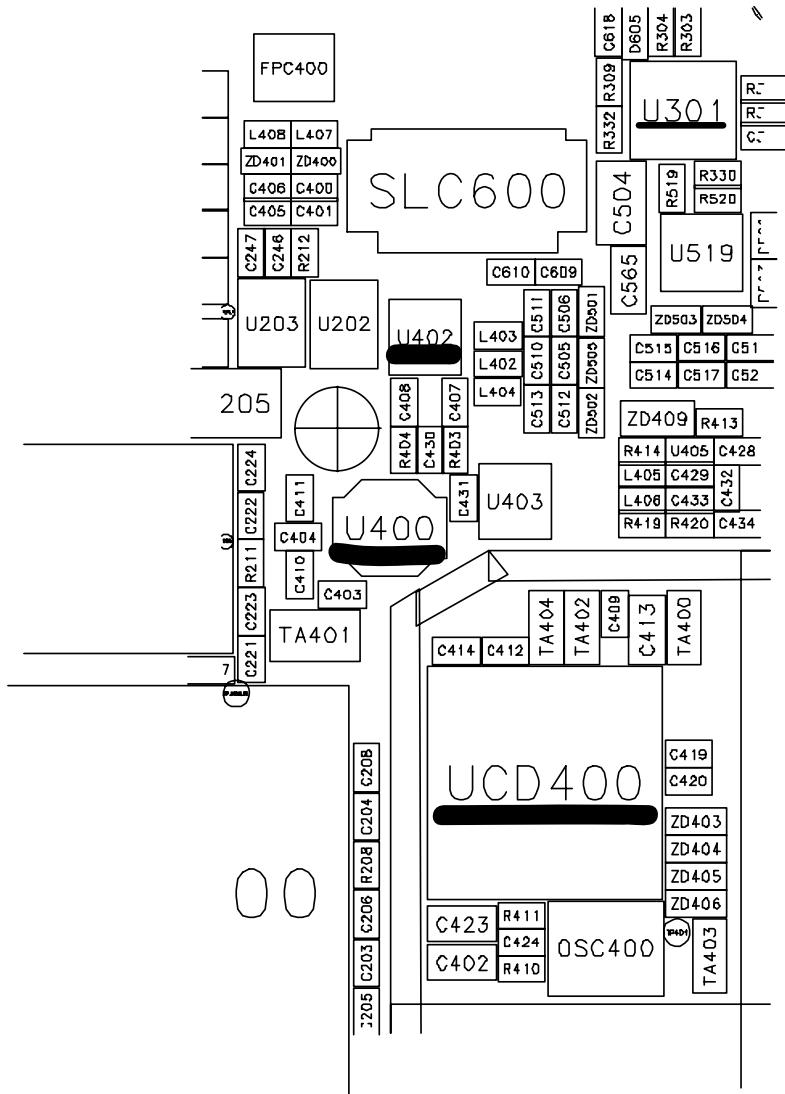


9-3. SPEAKER Working

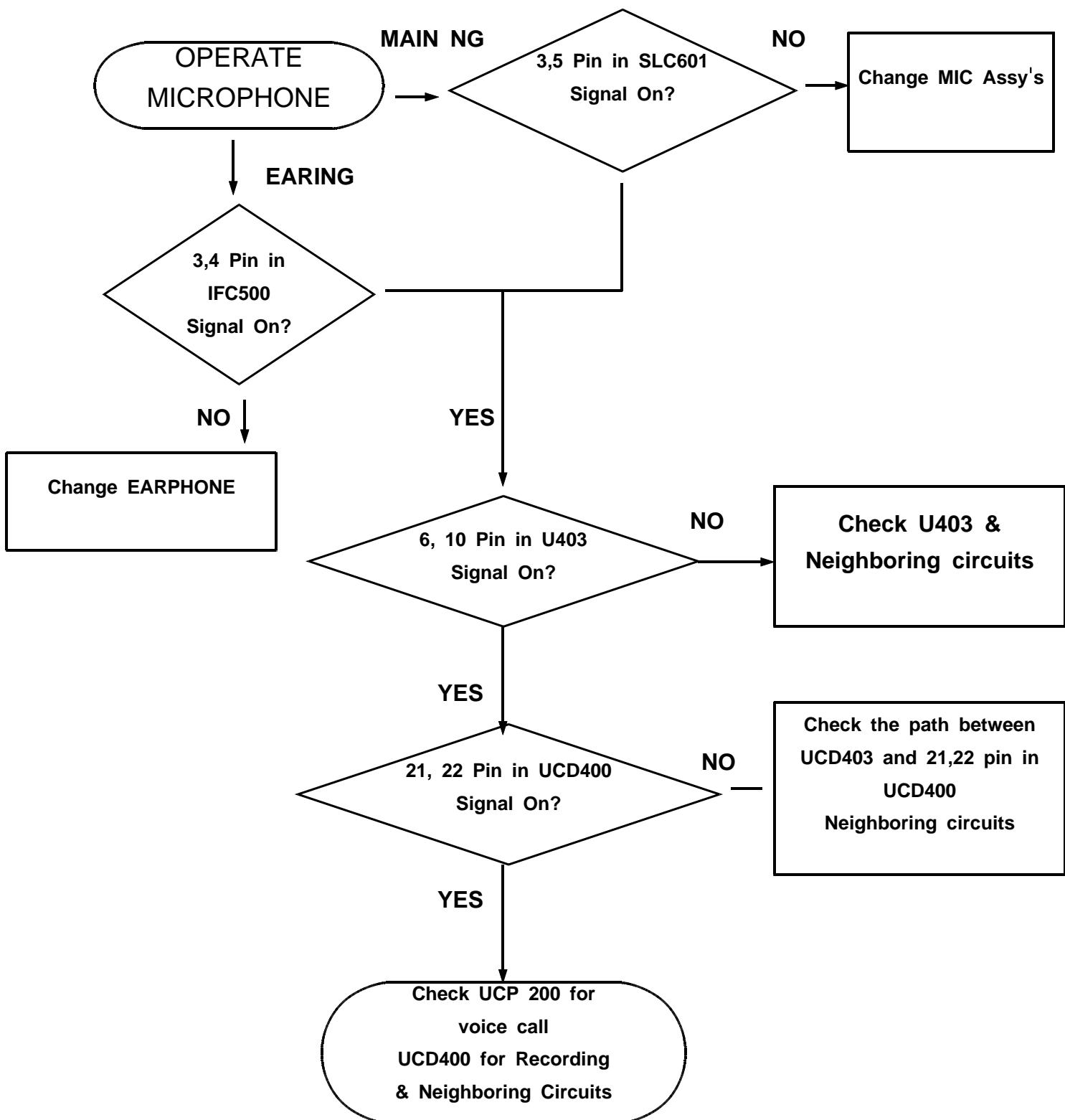


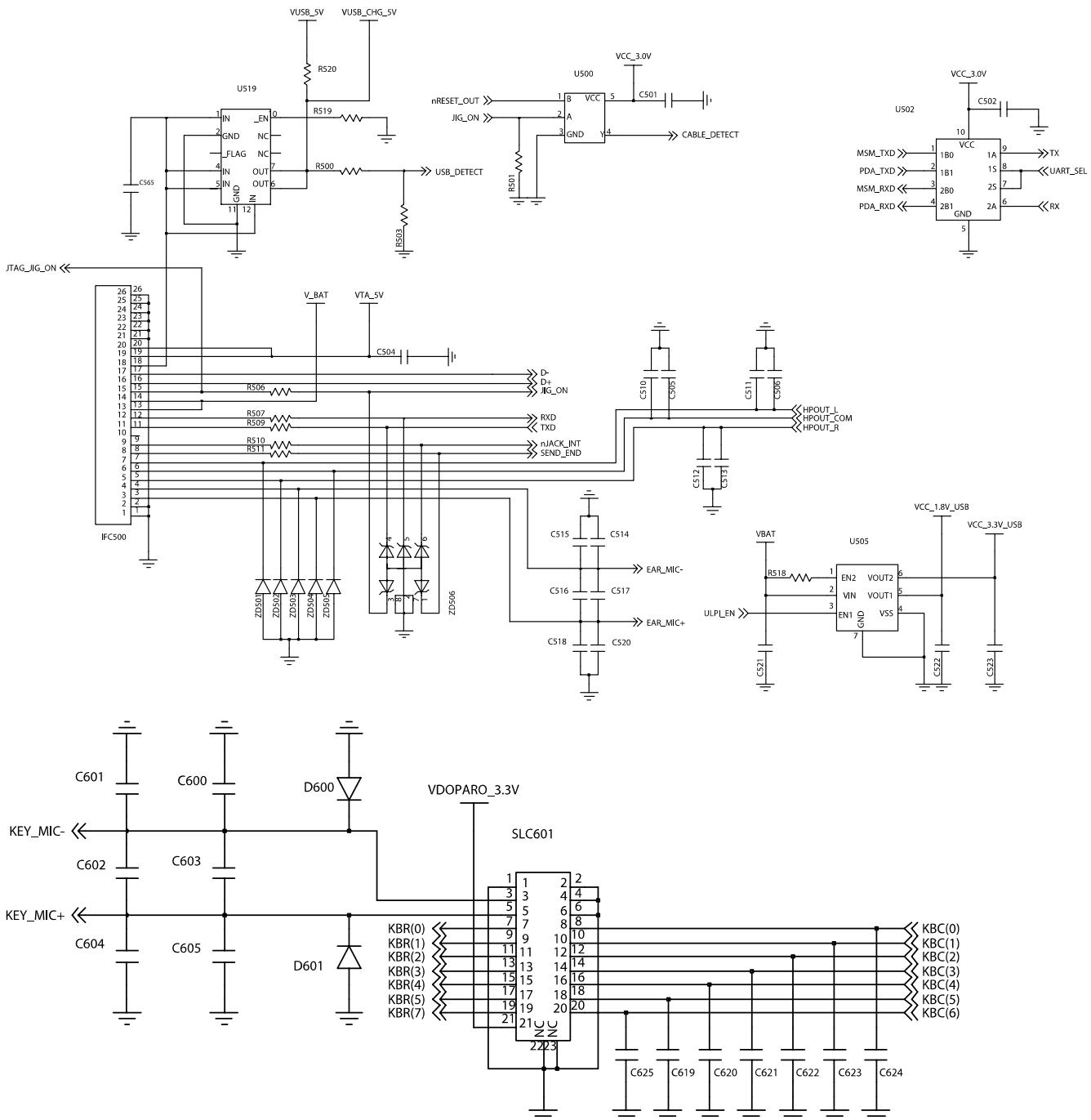
Flow Chart of Troubleshooting



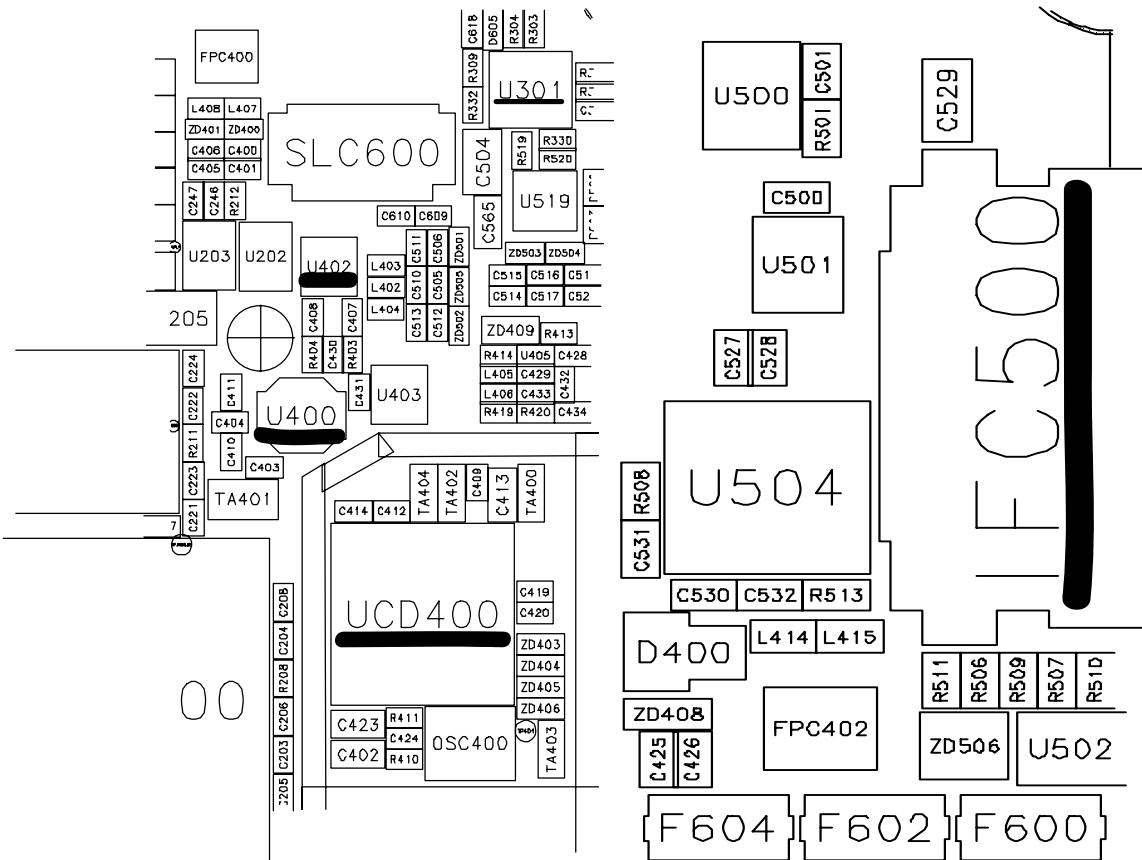


9-4. MIC Working

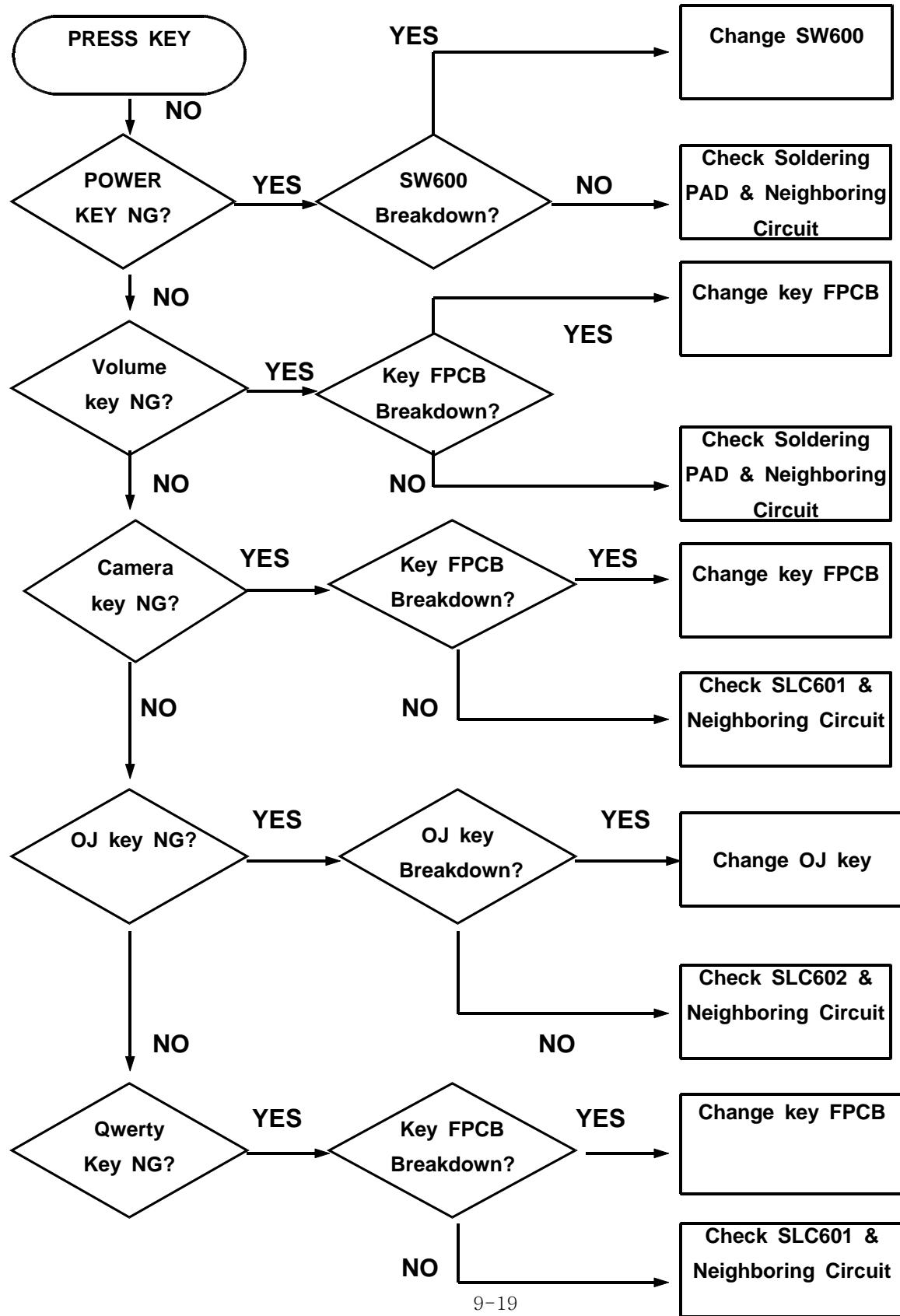




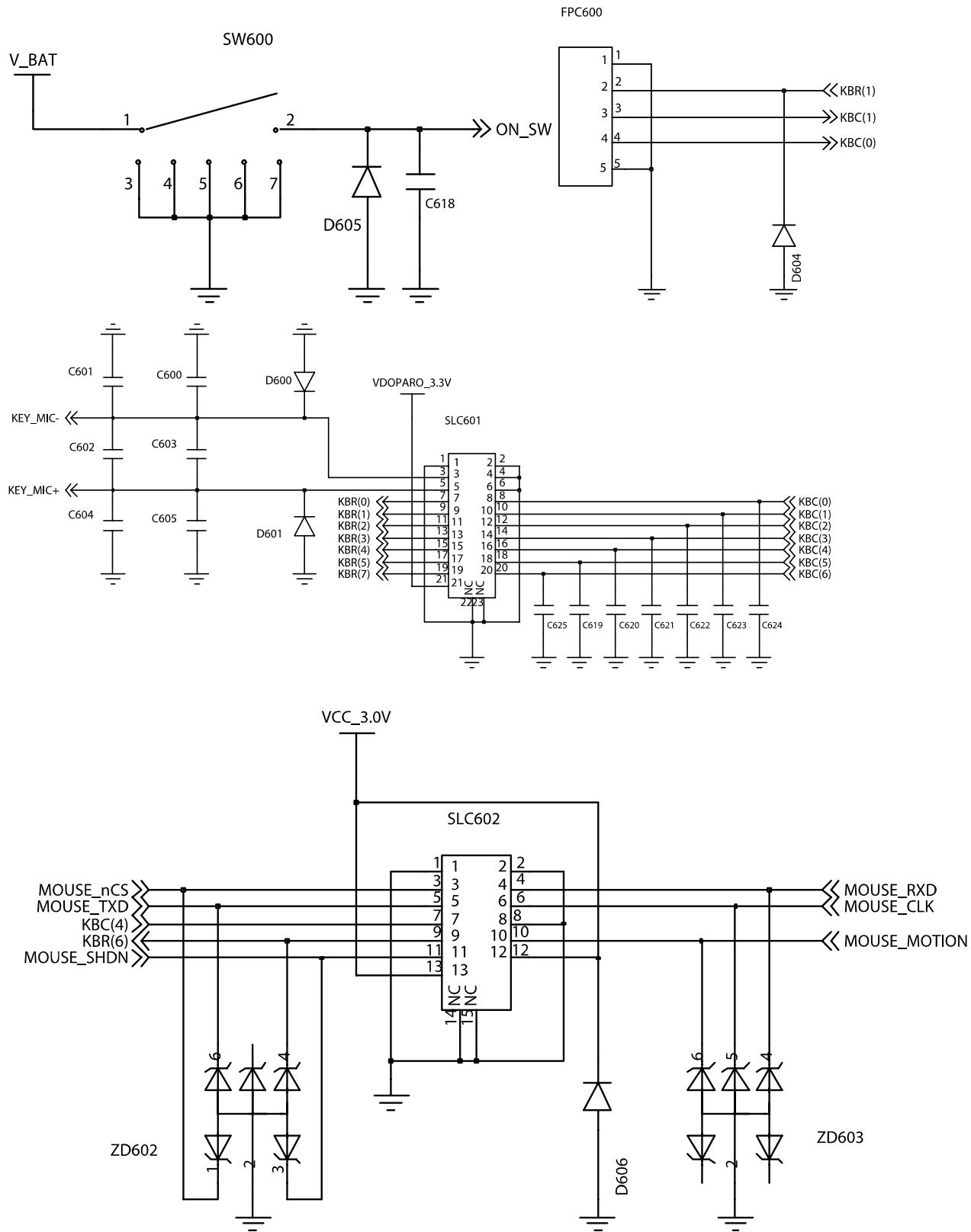
Flow Chart of Troubleshooting

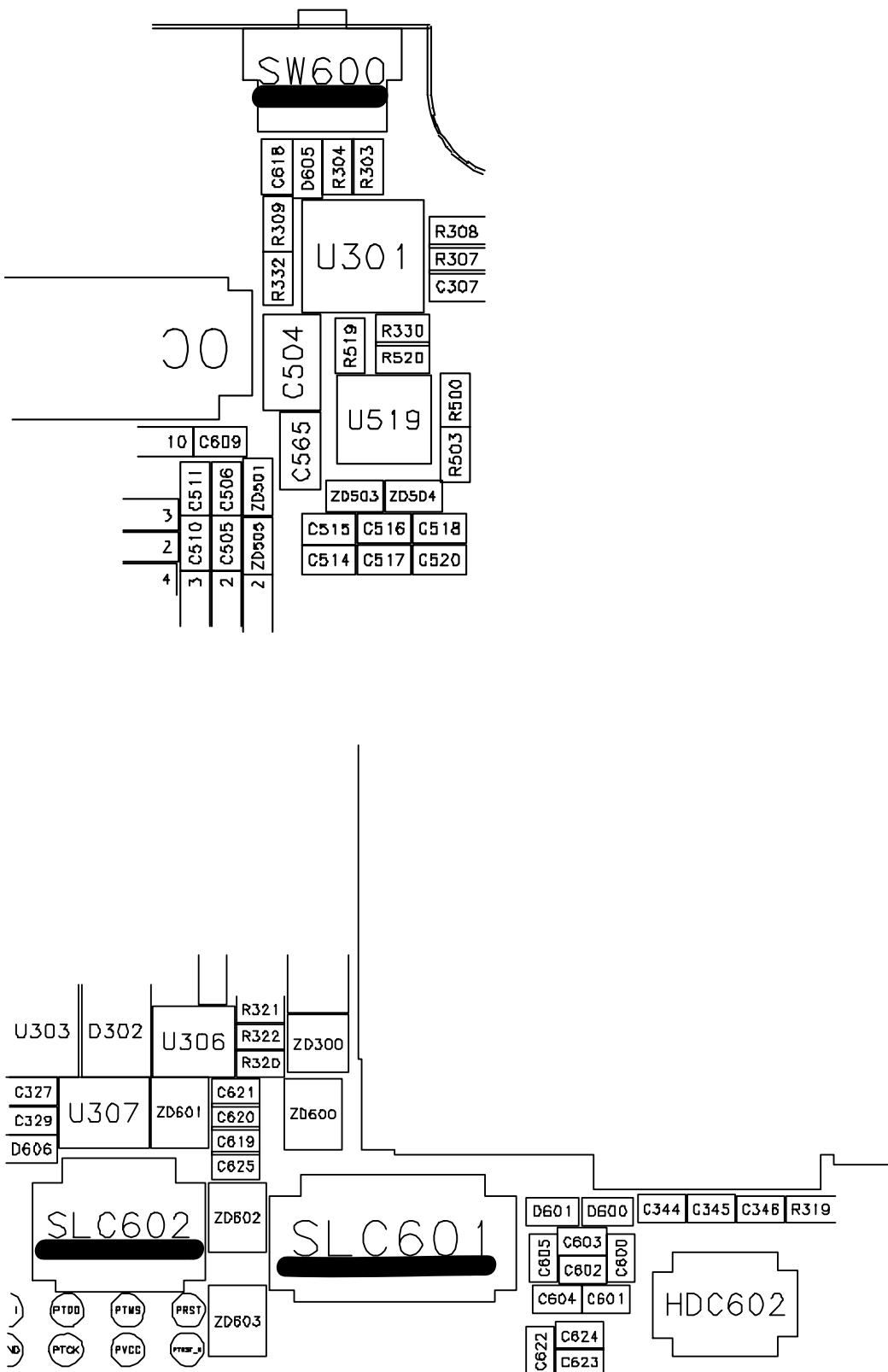


9-5. KEY Working

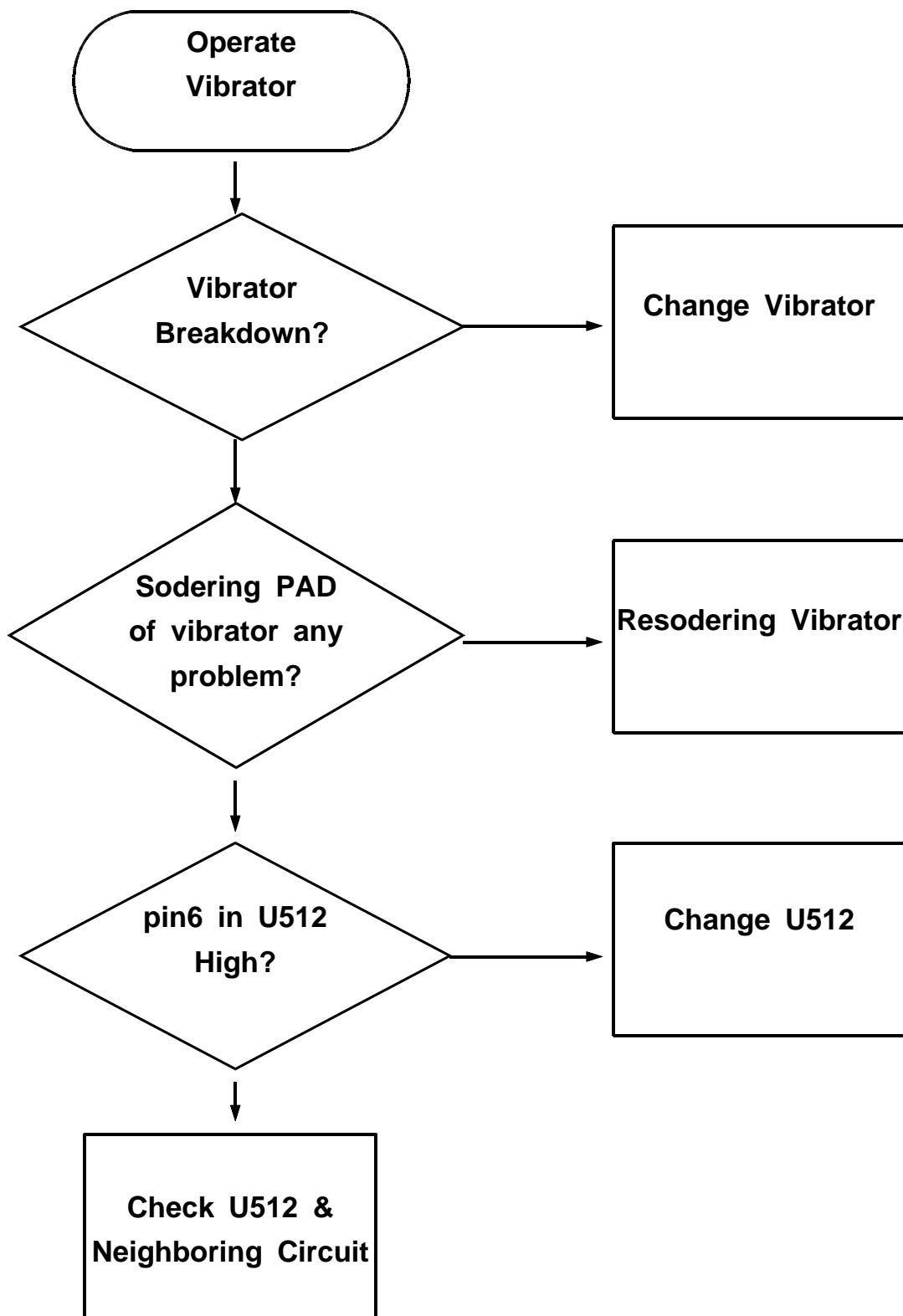


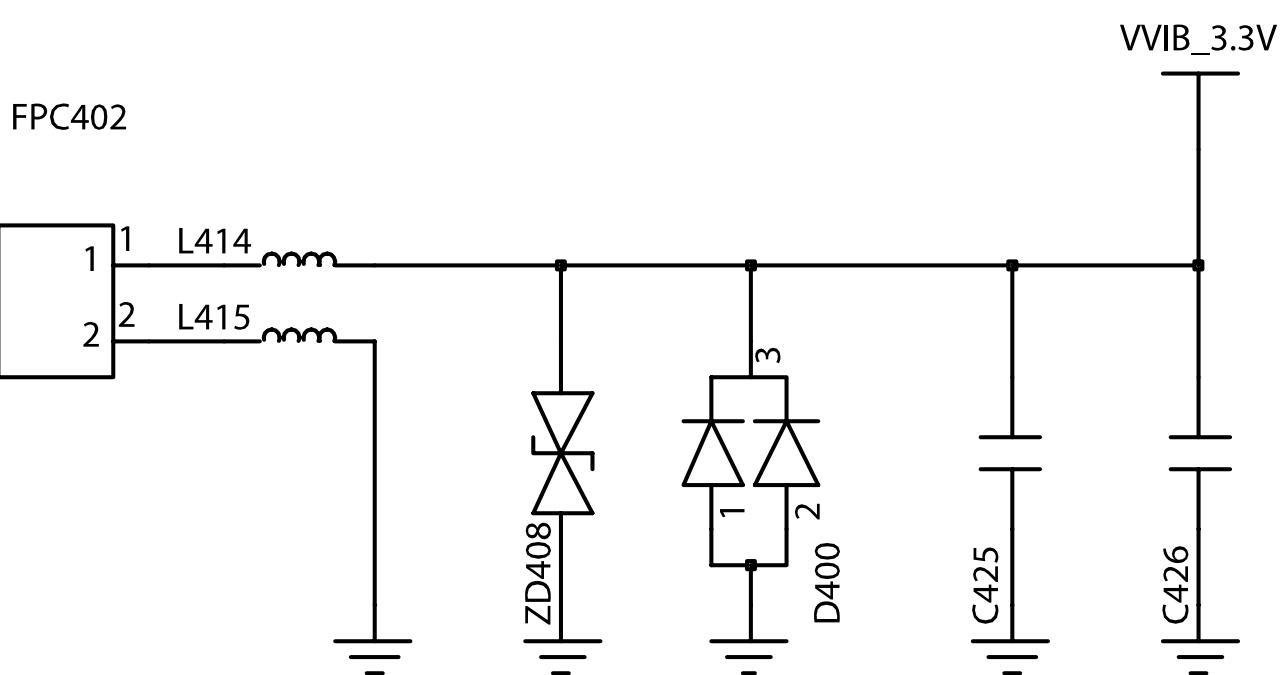
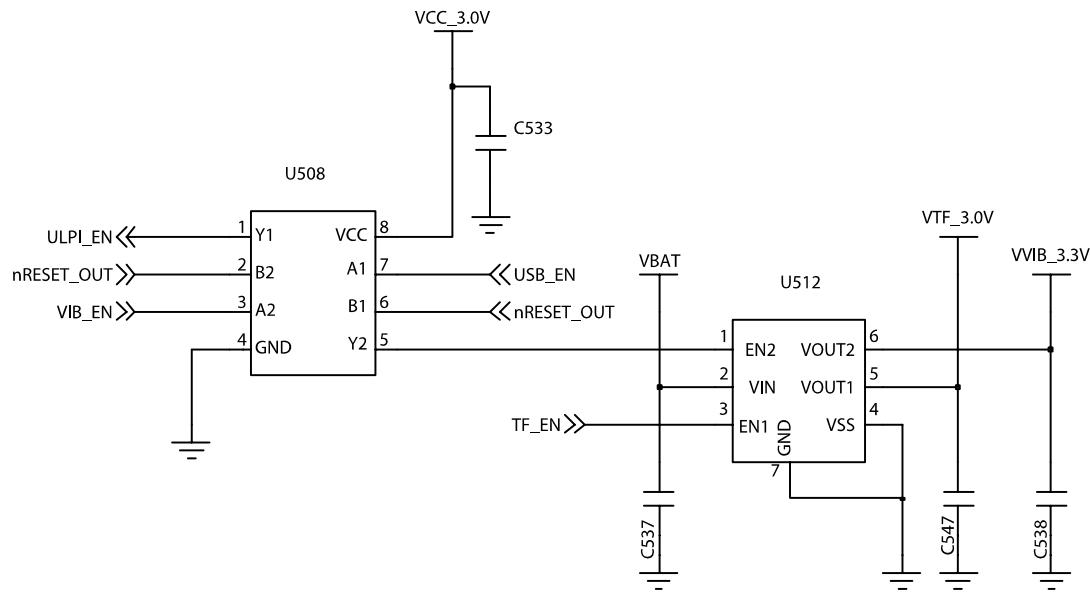
Flow Chart of Troubleshooting



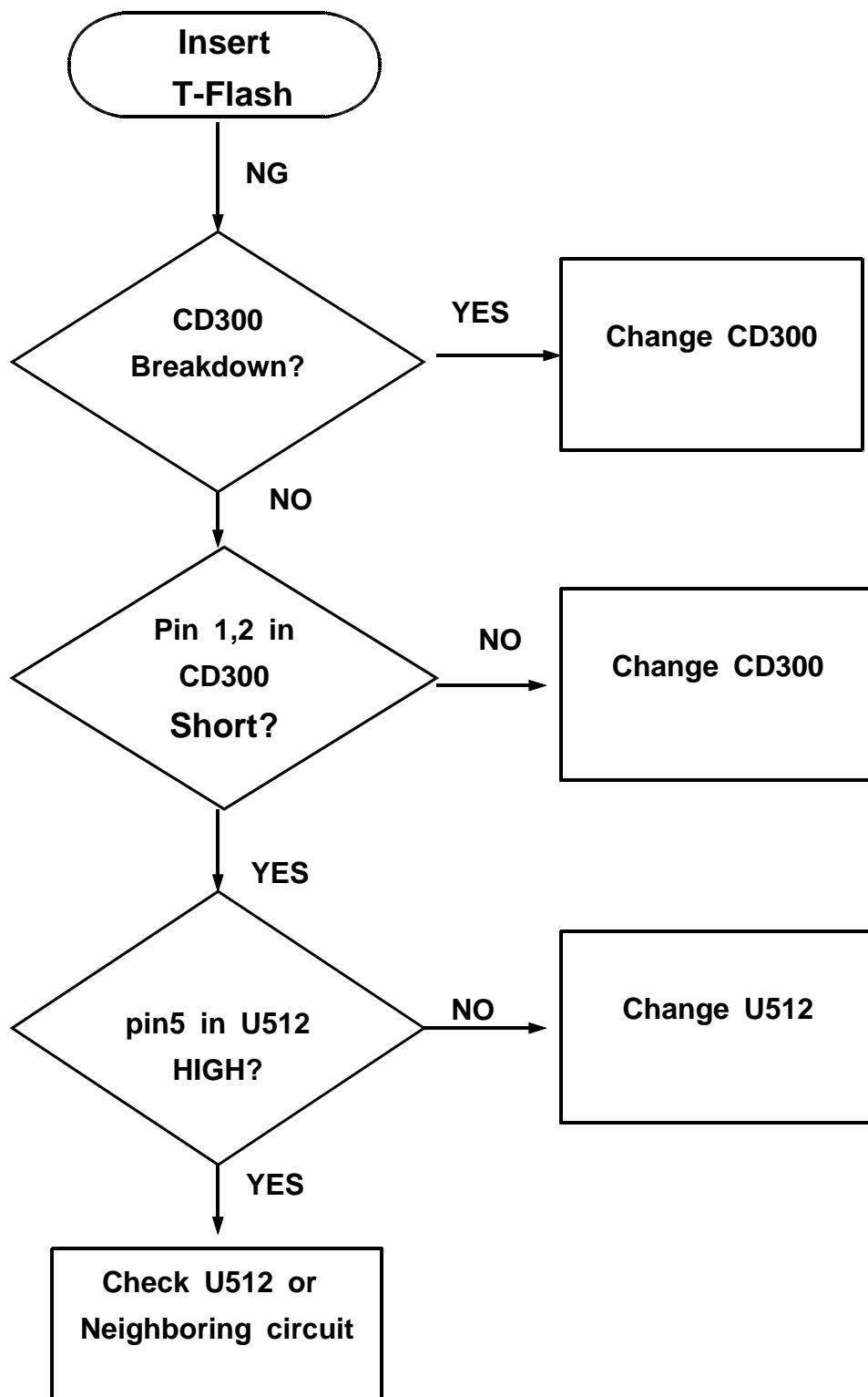


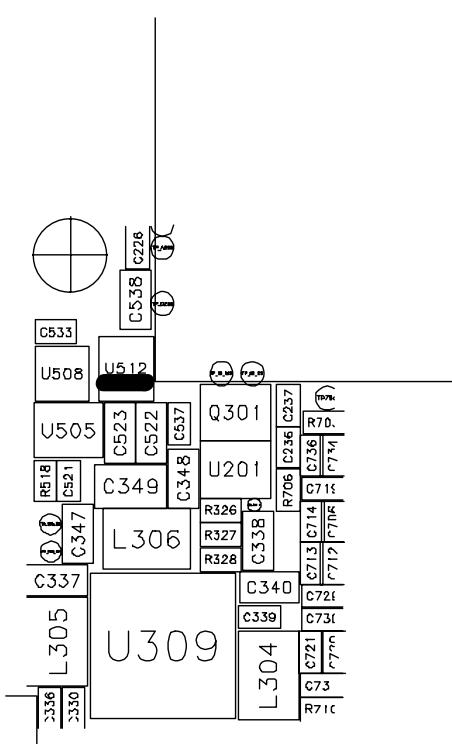
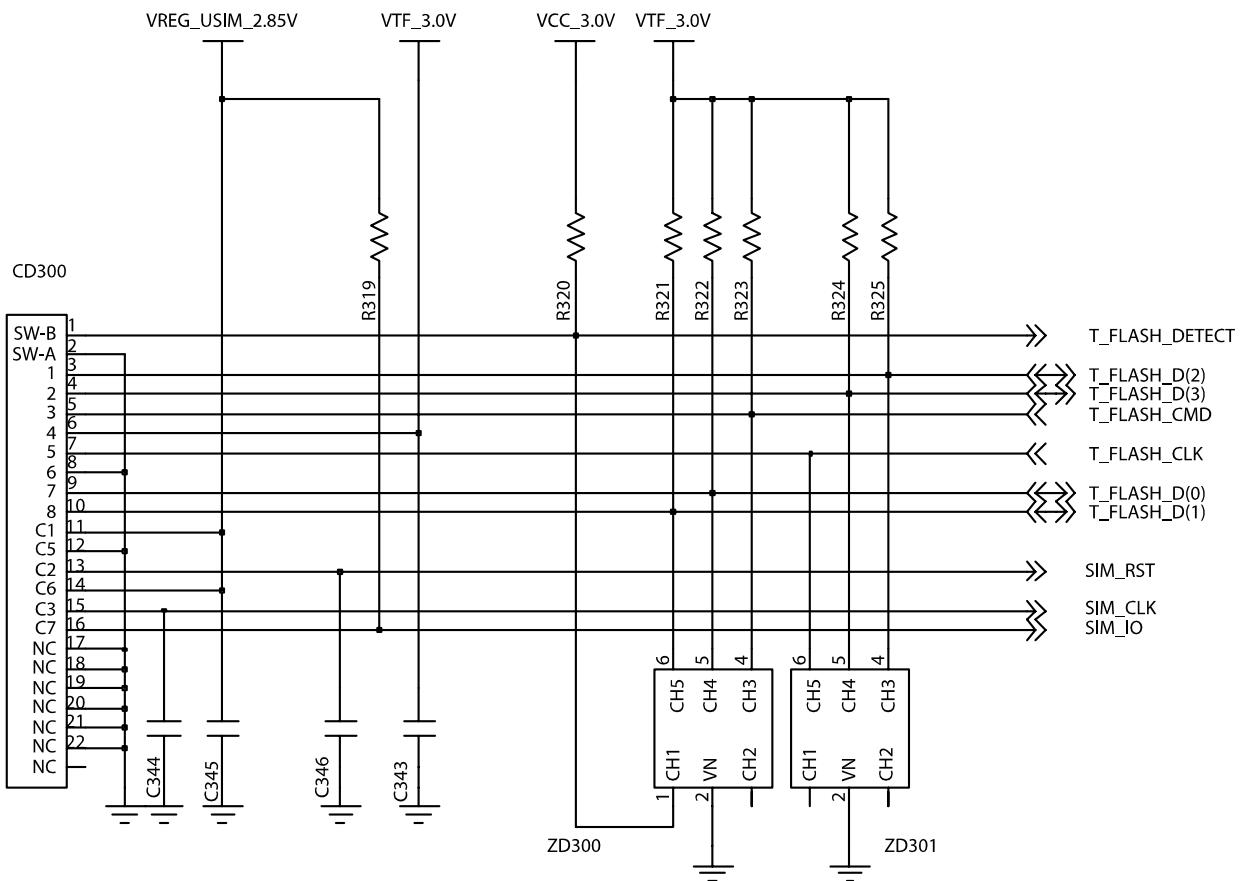
9-6. Vibrator Working



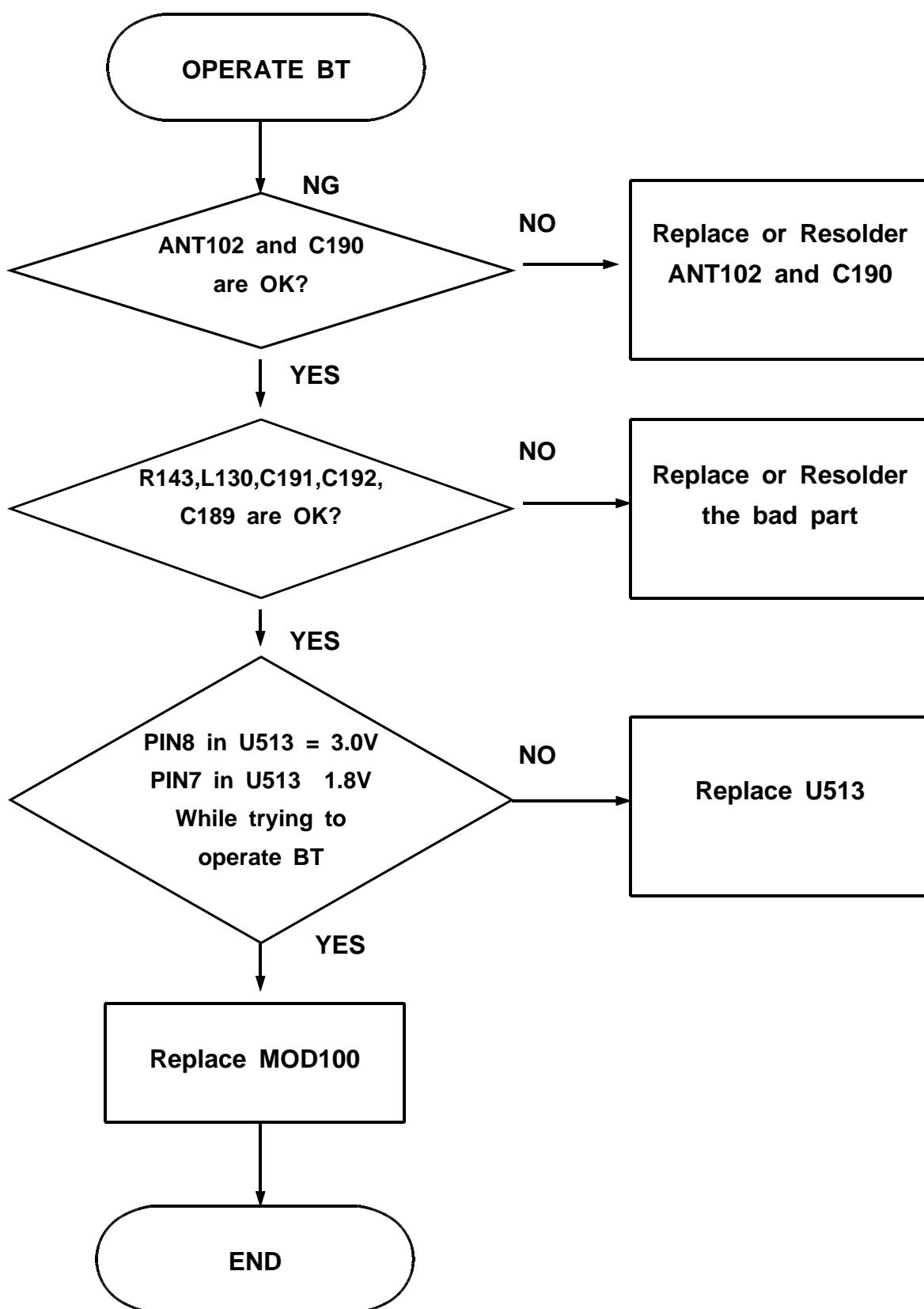


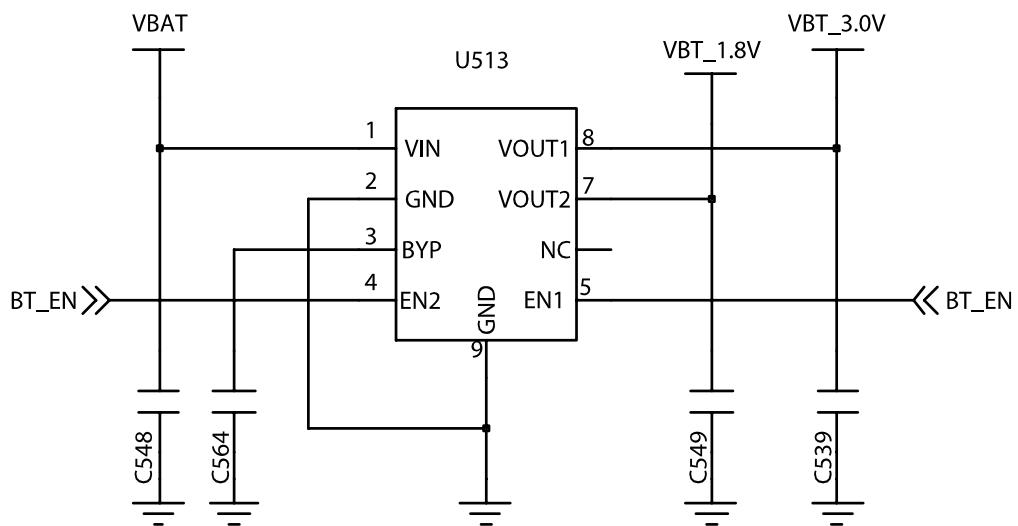
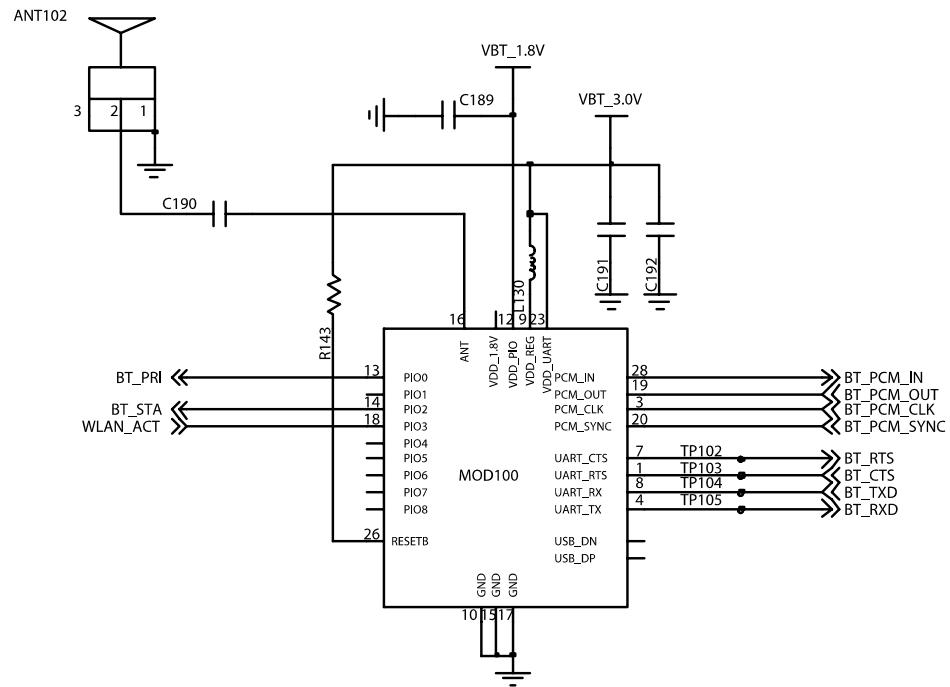
9-7. T-Flash Card Working



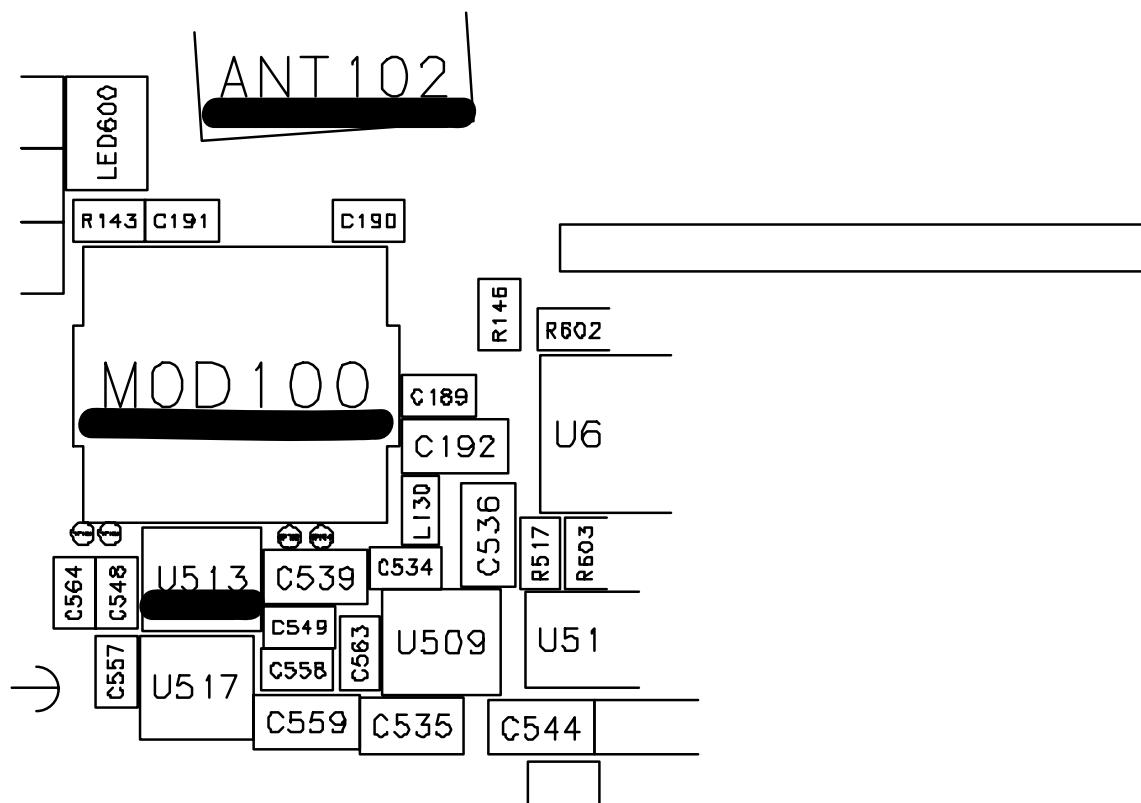


9-8. Bluetooth Working

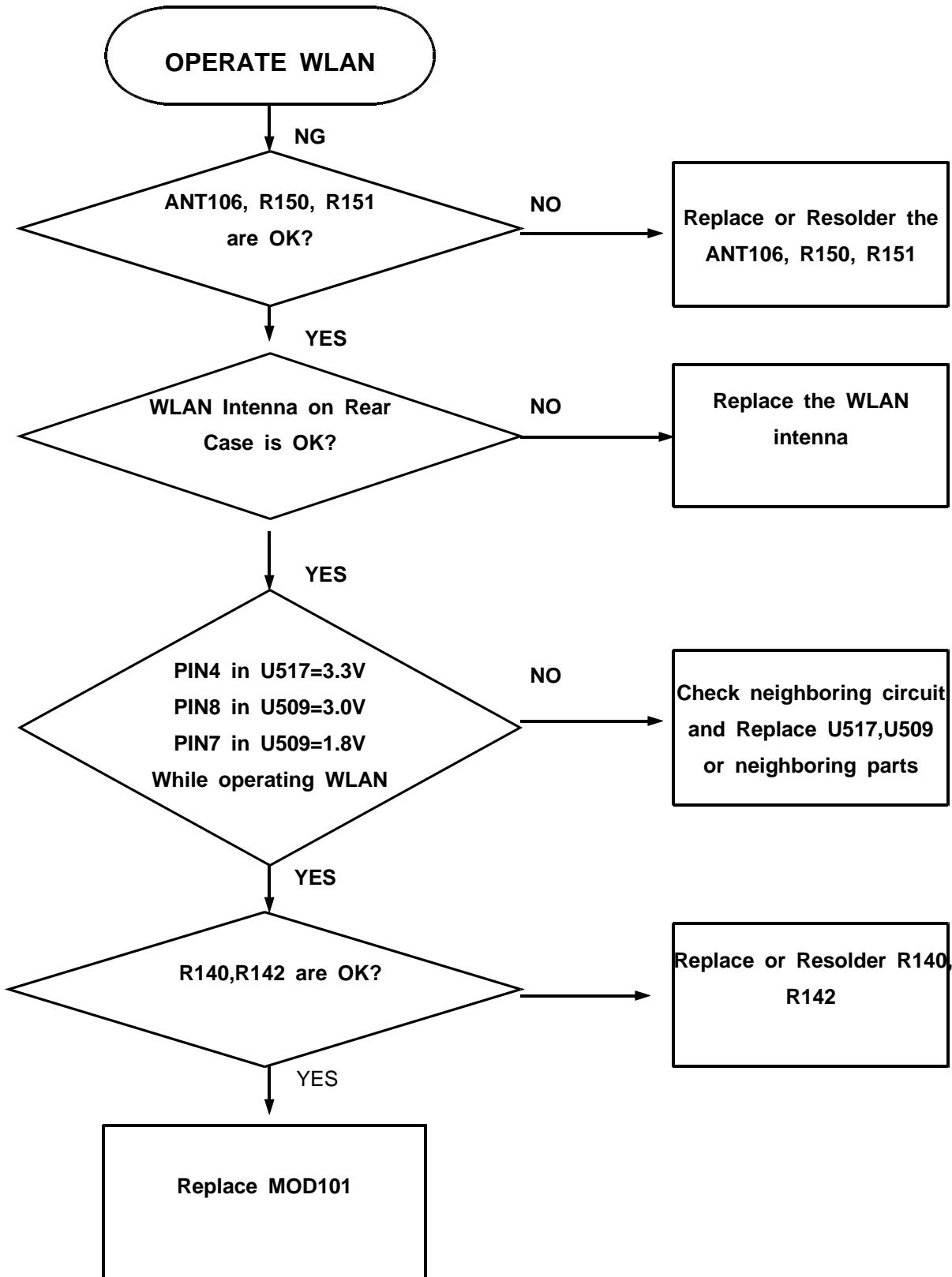




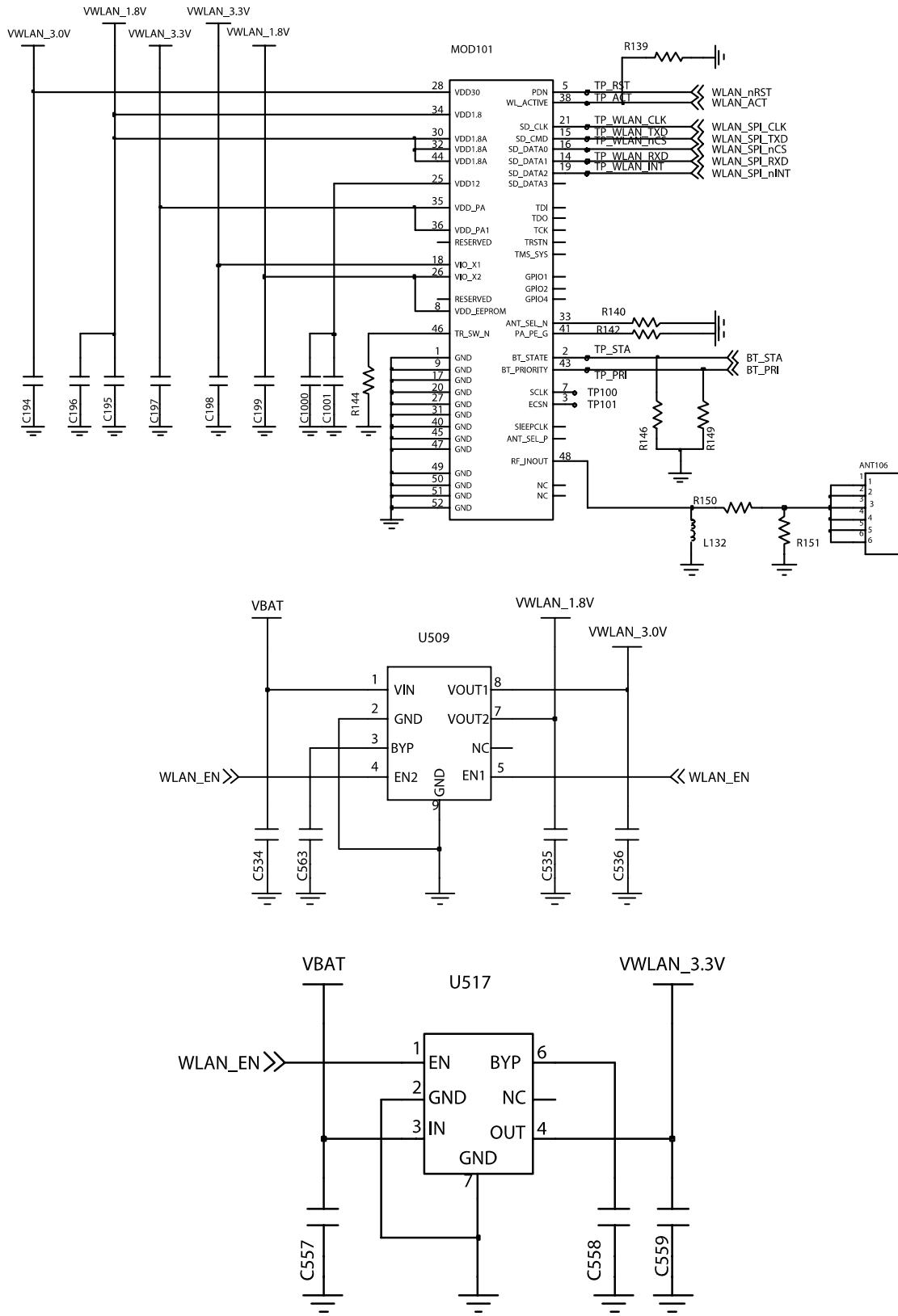
Flow Chart of Troubleshooting

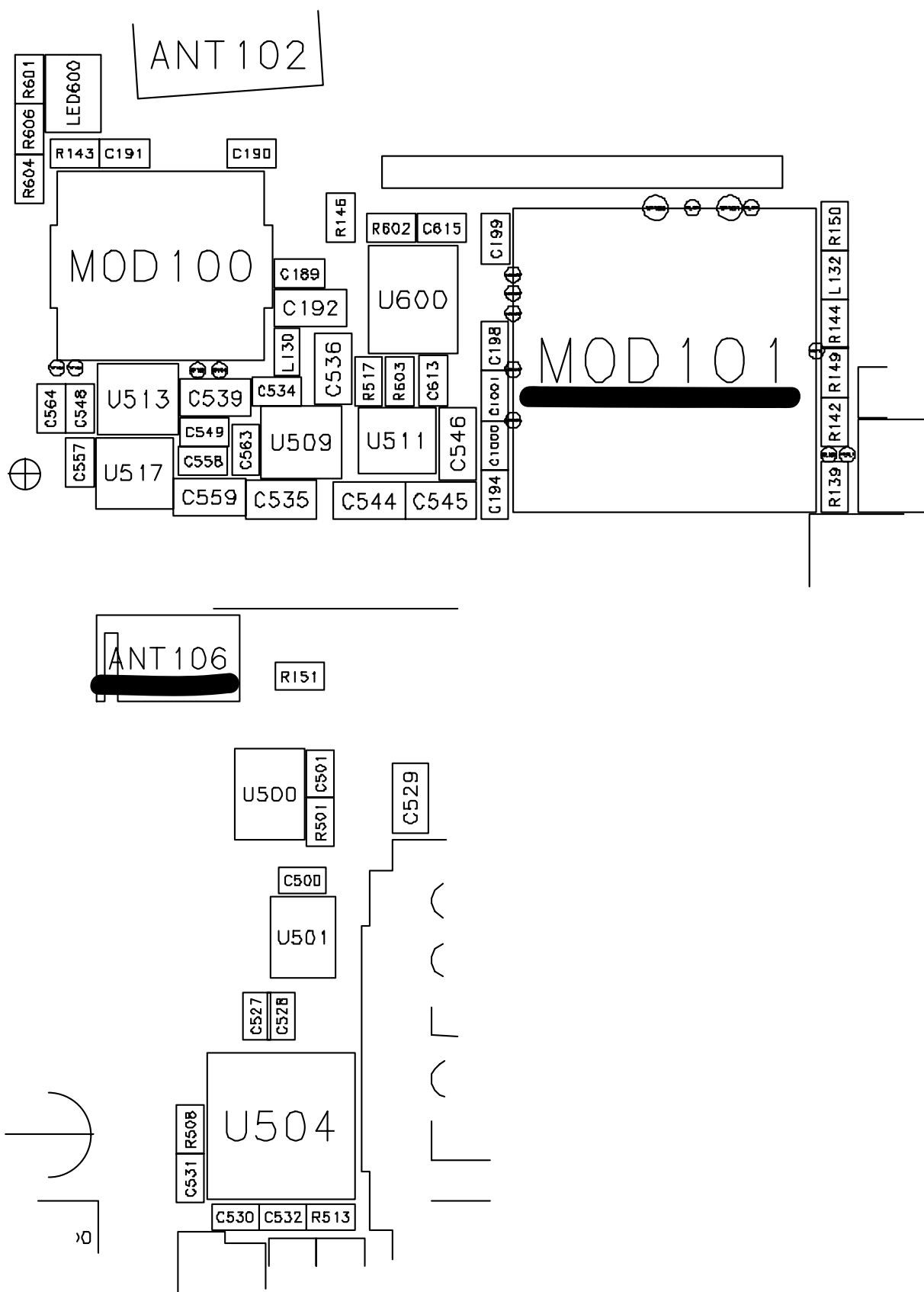


9-9. WLAN Working

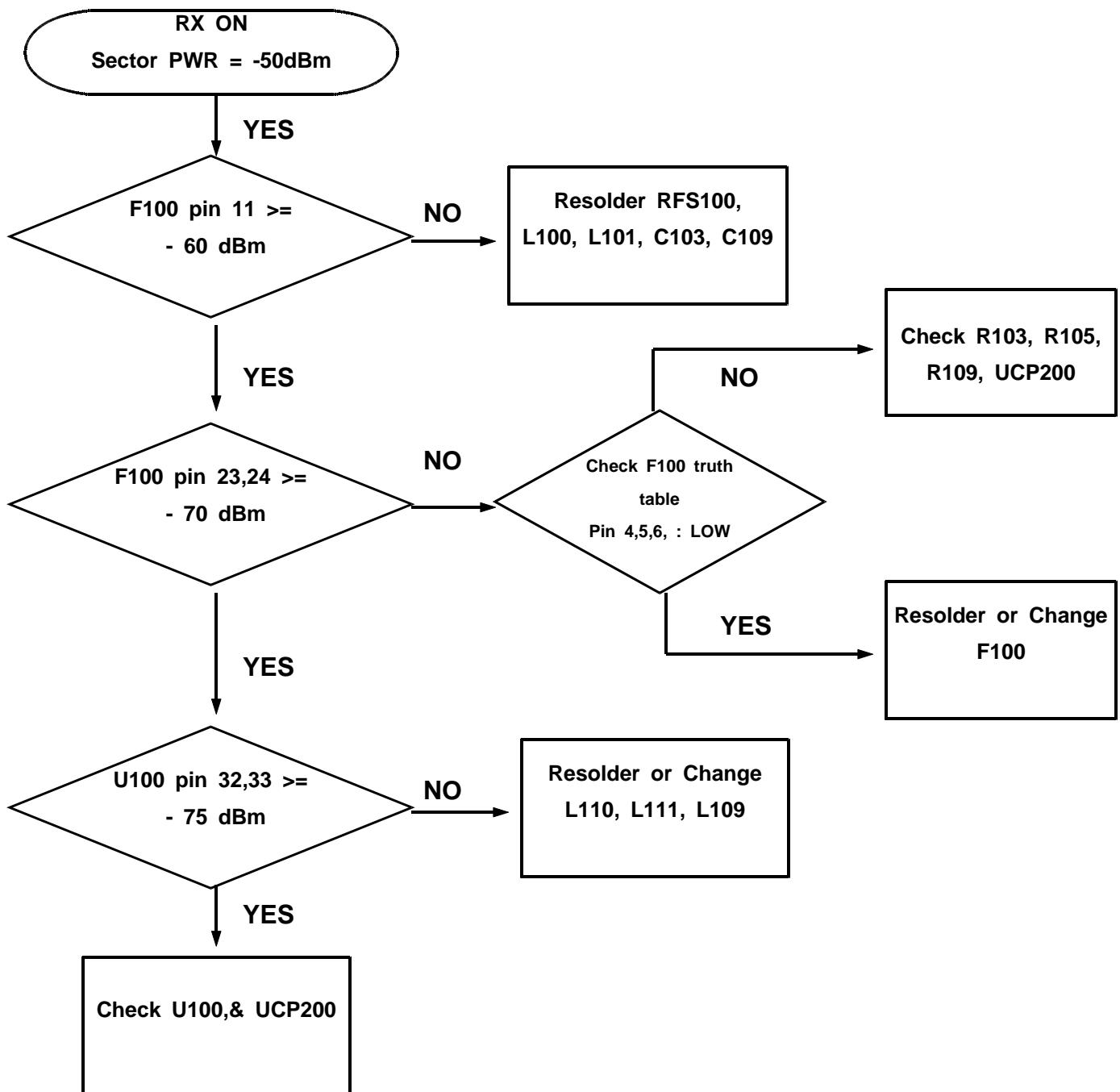


Flow Chart of Troubleshooting

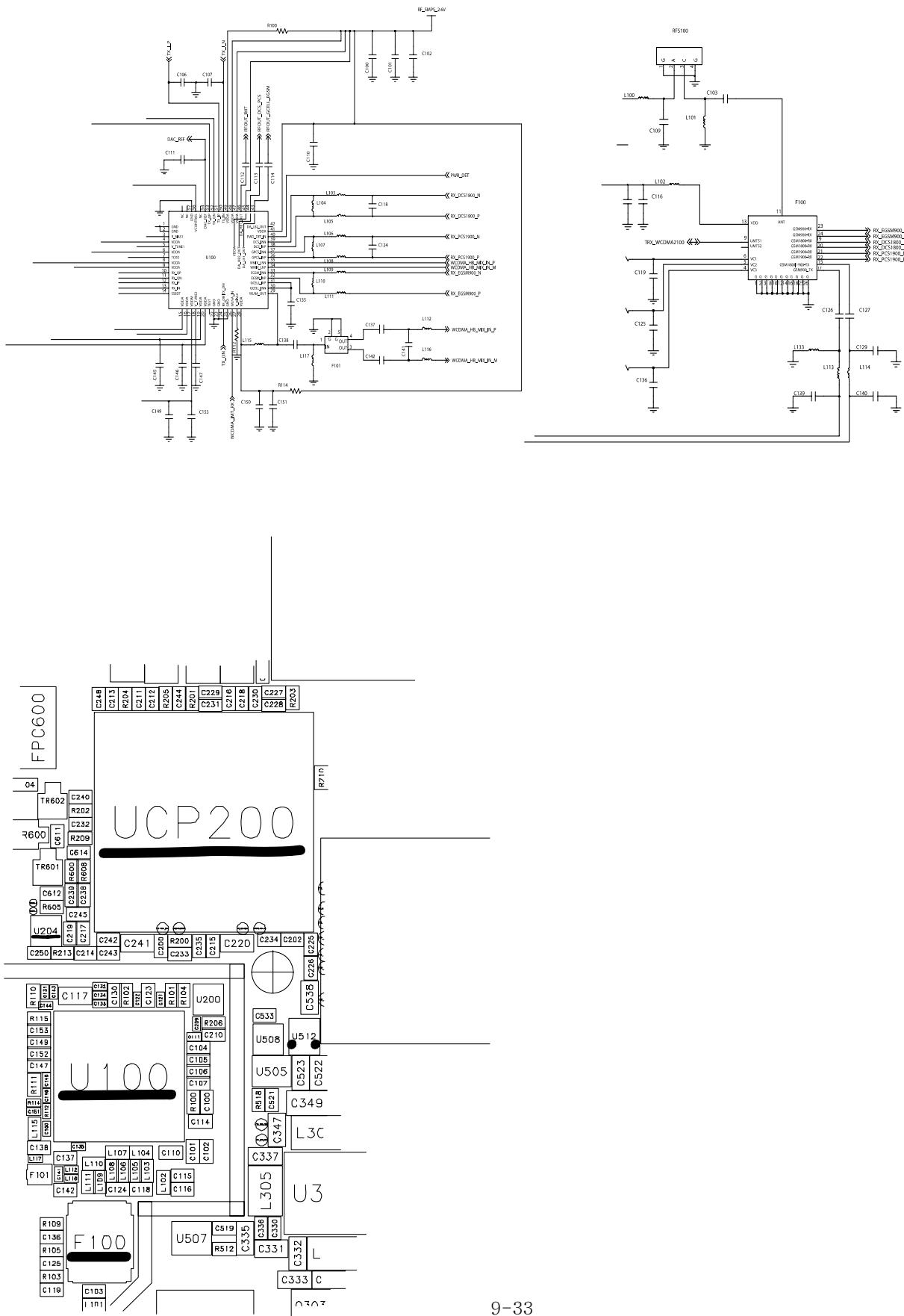




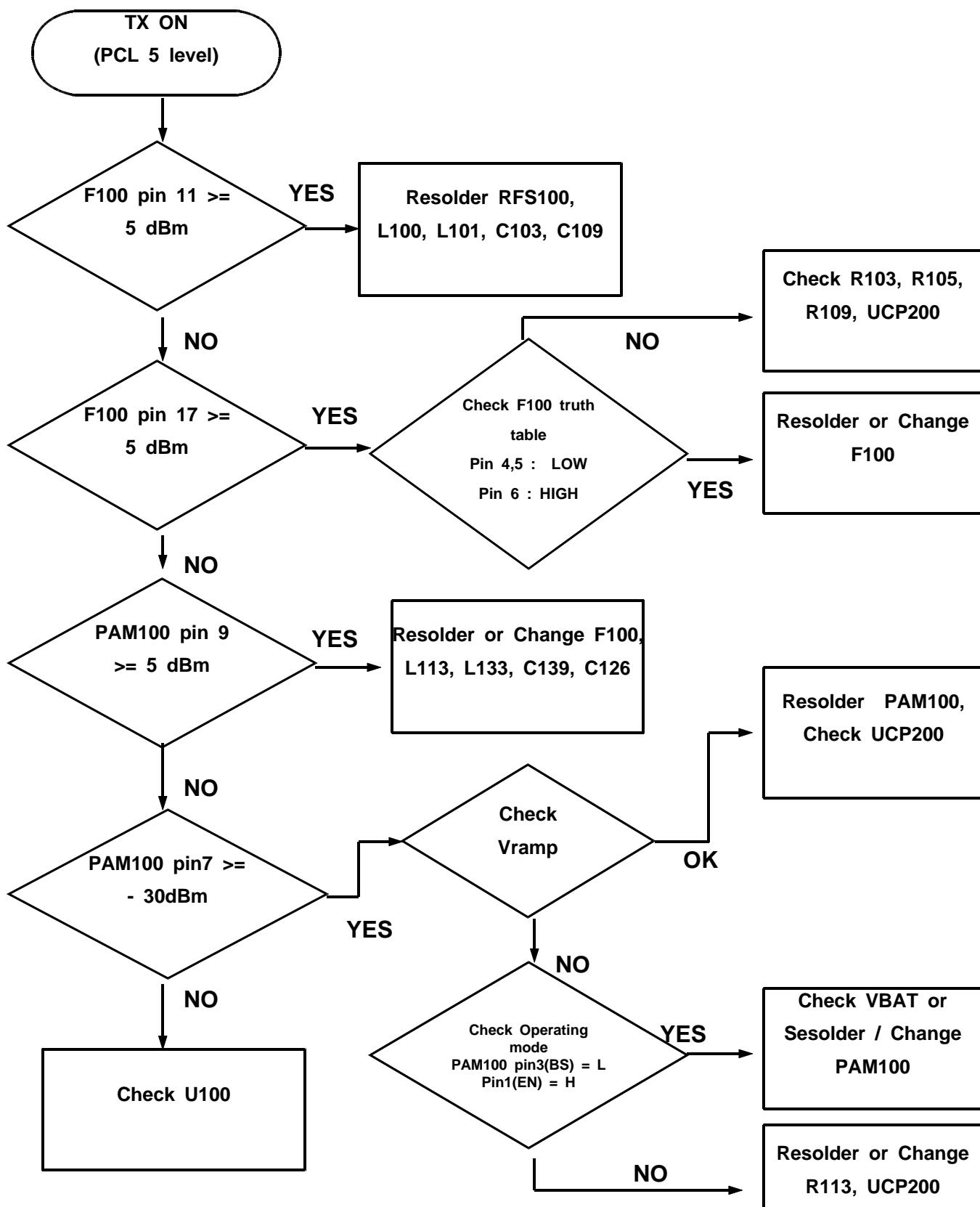
9-10. GSM Receiver



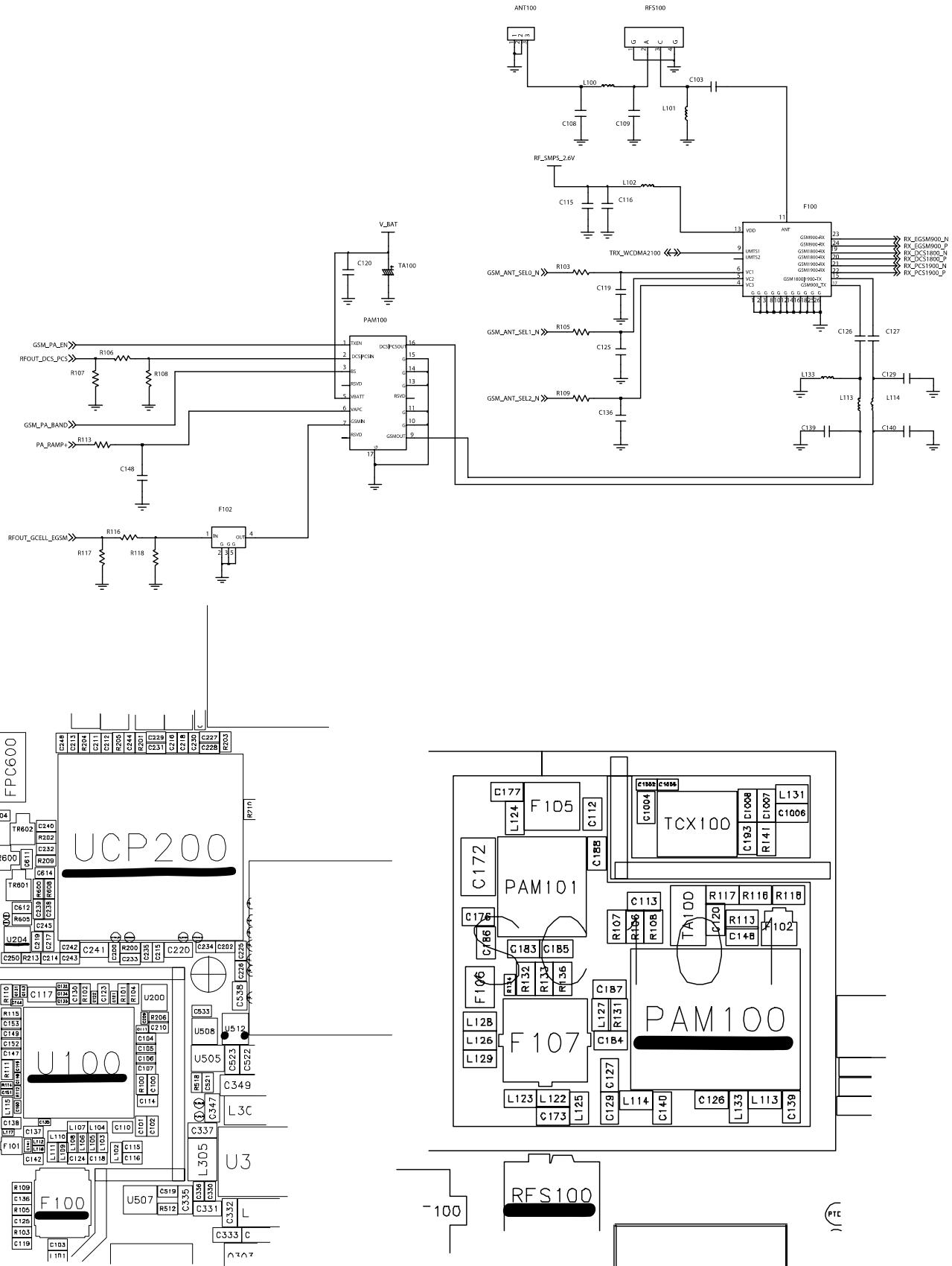
Flow Chart of Troubleshooting



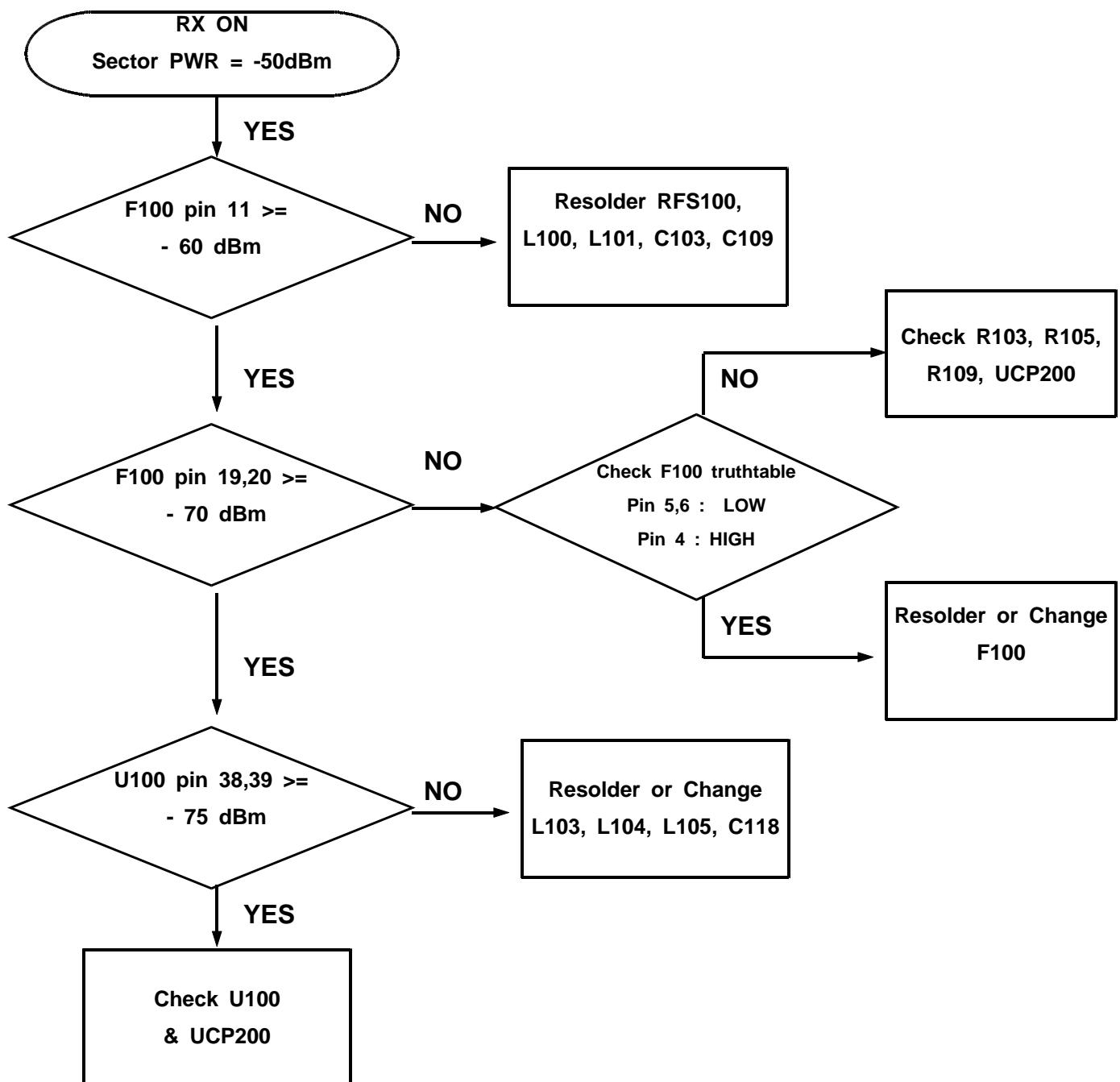
9-11. GSM Transmitter



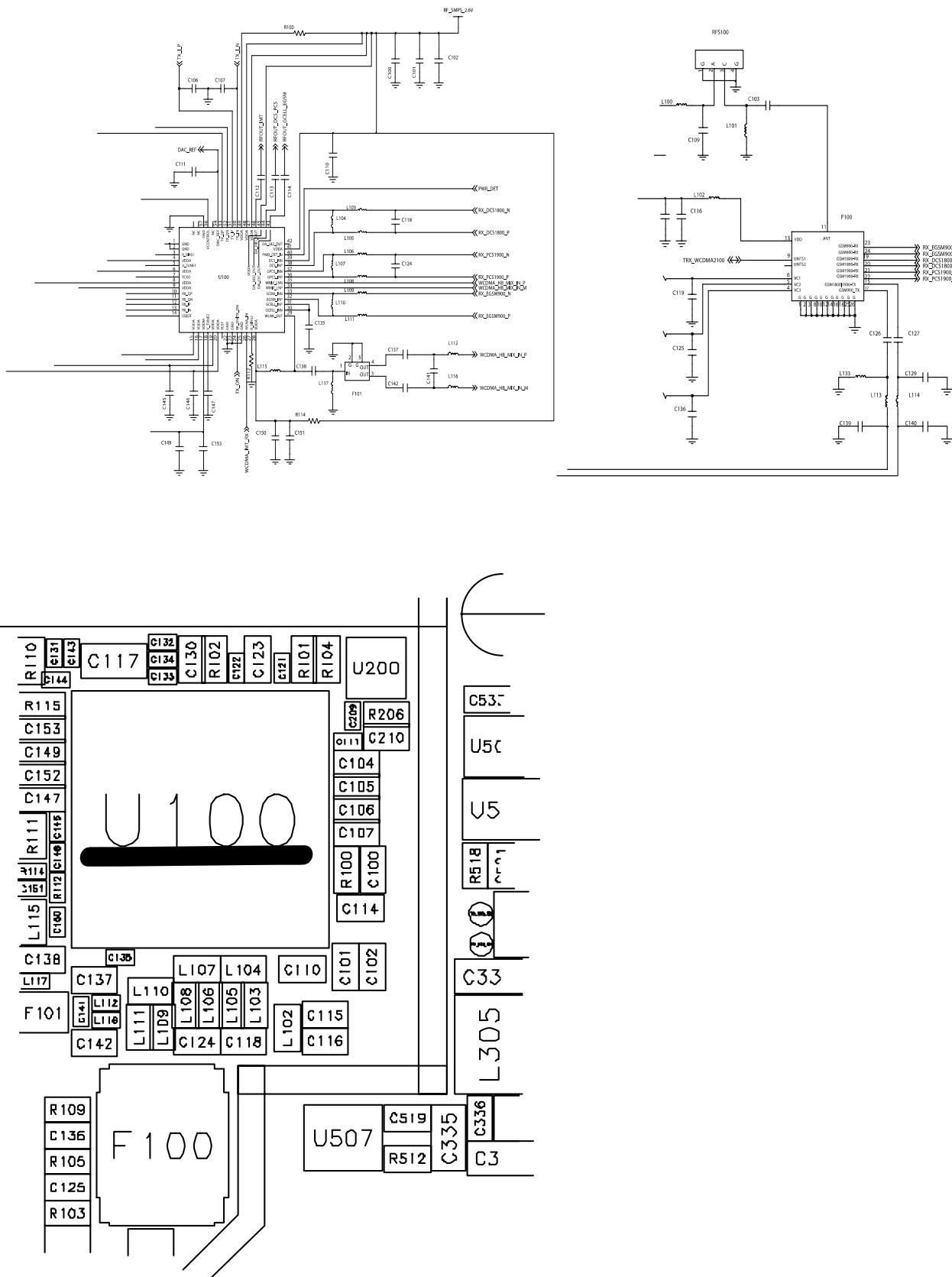
Flow Chart of Troubleshooting



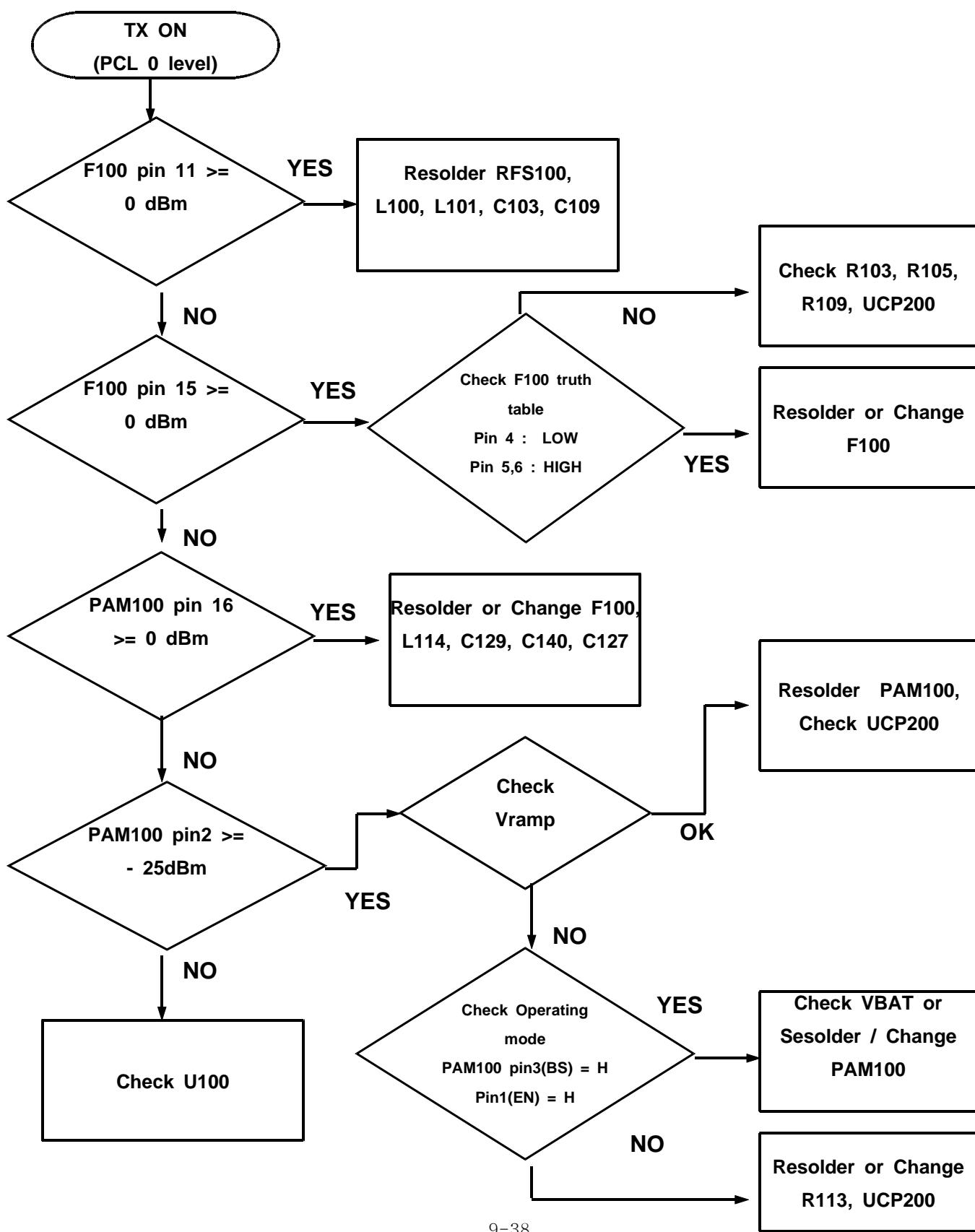
9-12. DCS Receiver



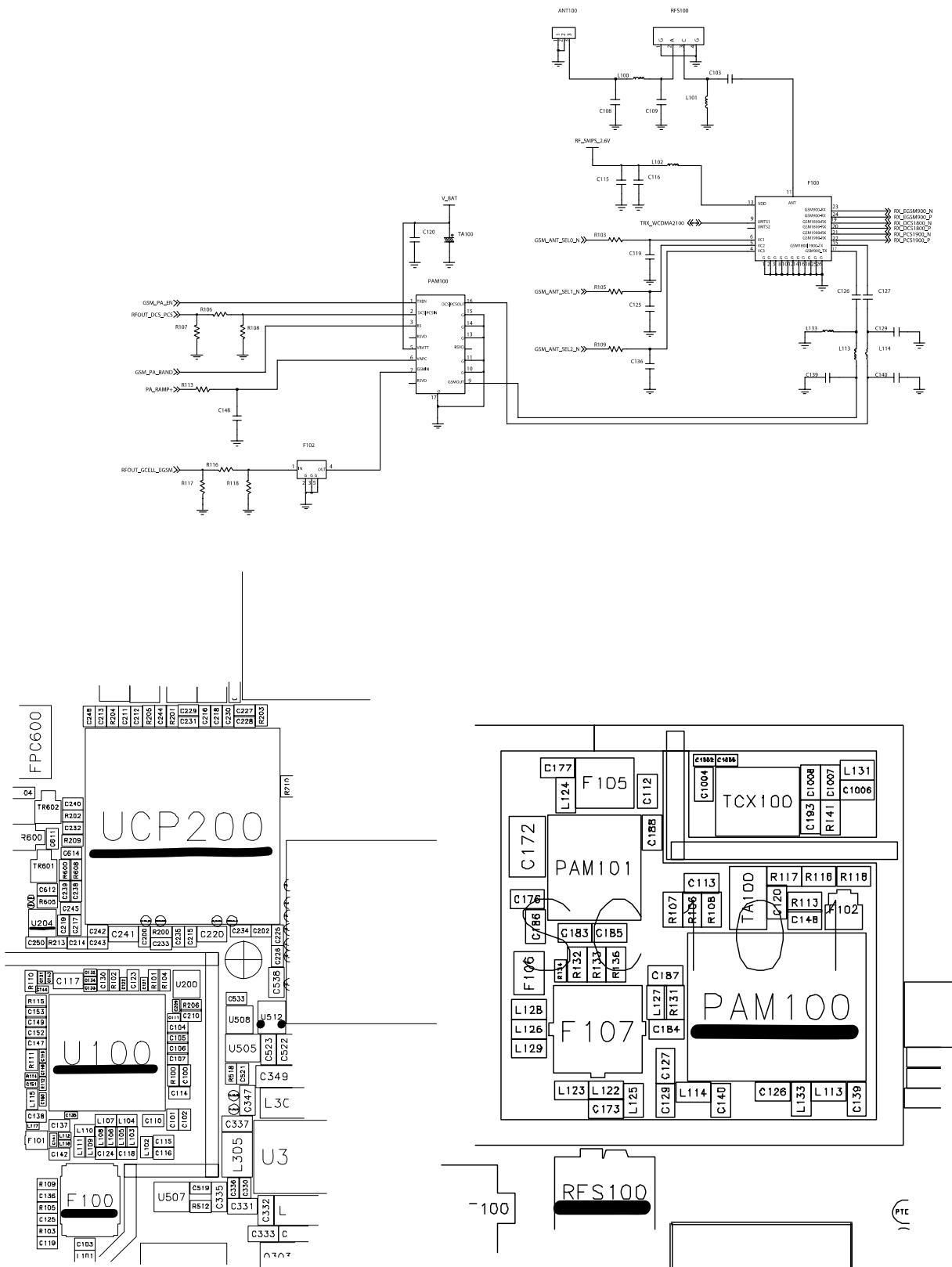
Flow Chart of Troubleshooting



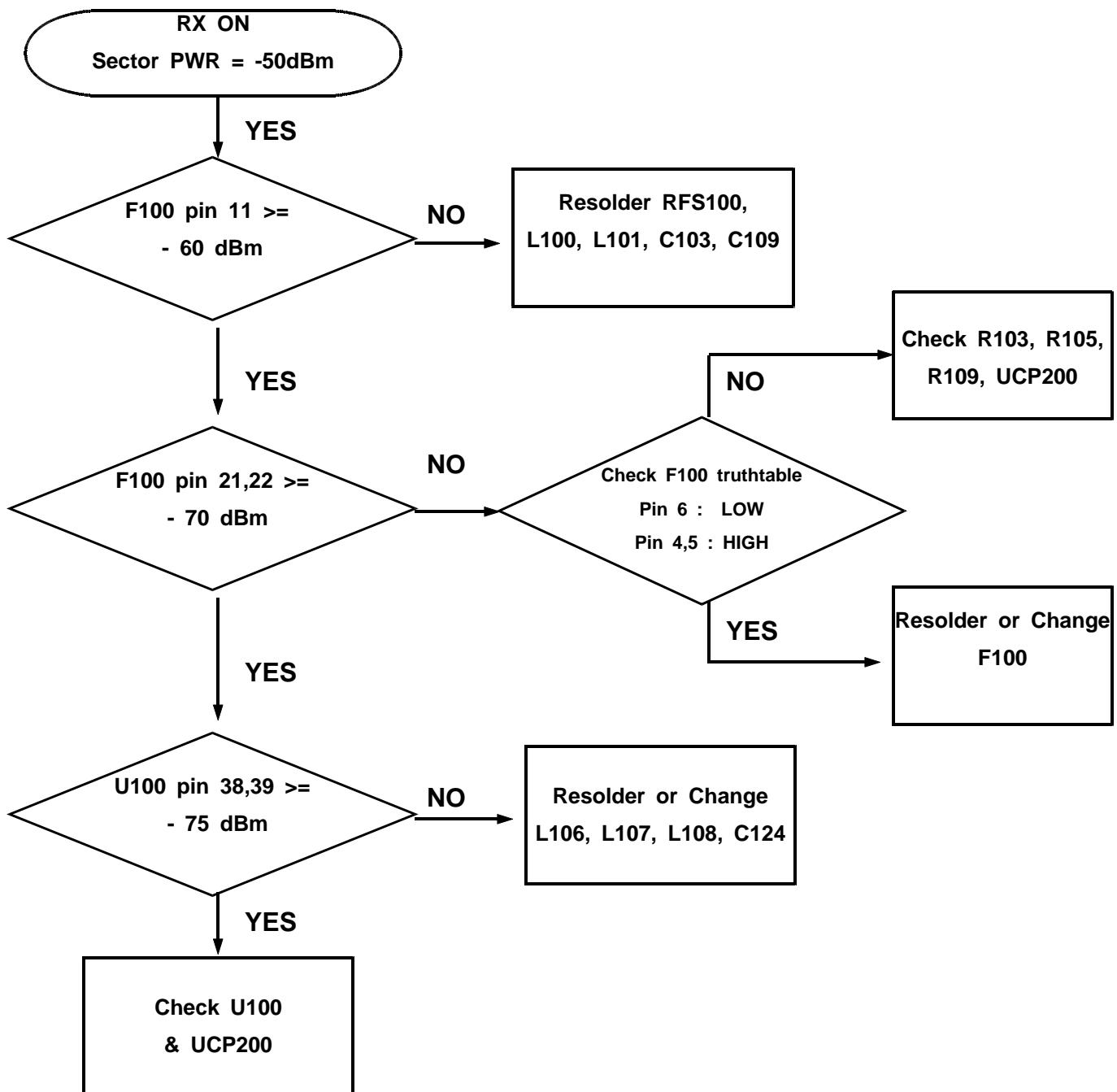
9-13. DCS Transmitter



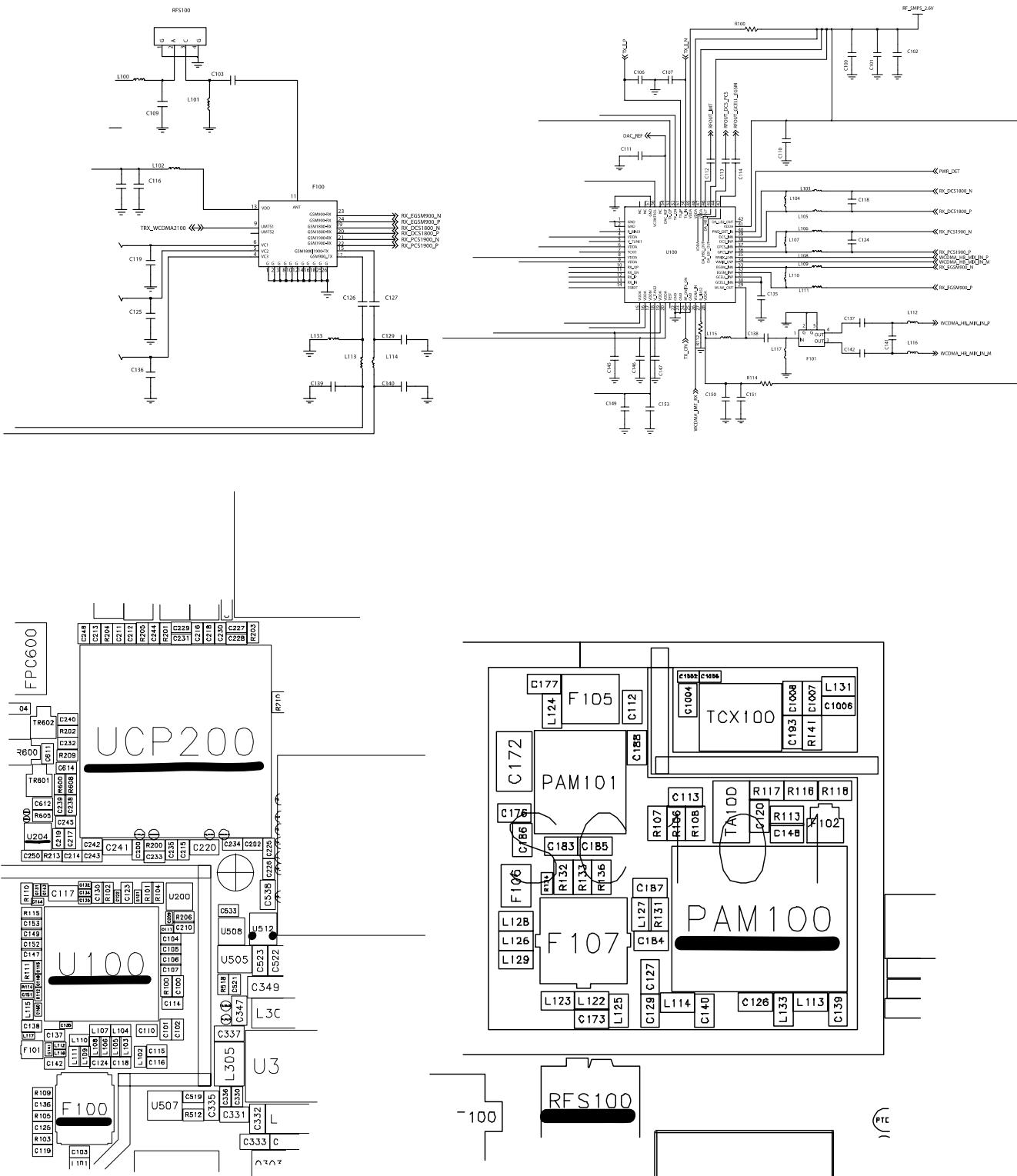
Flow Chart of Troubleshooting



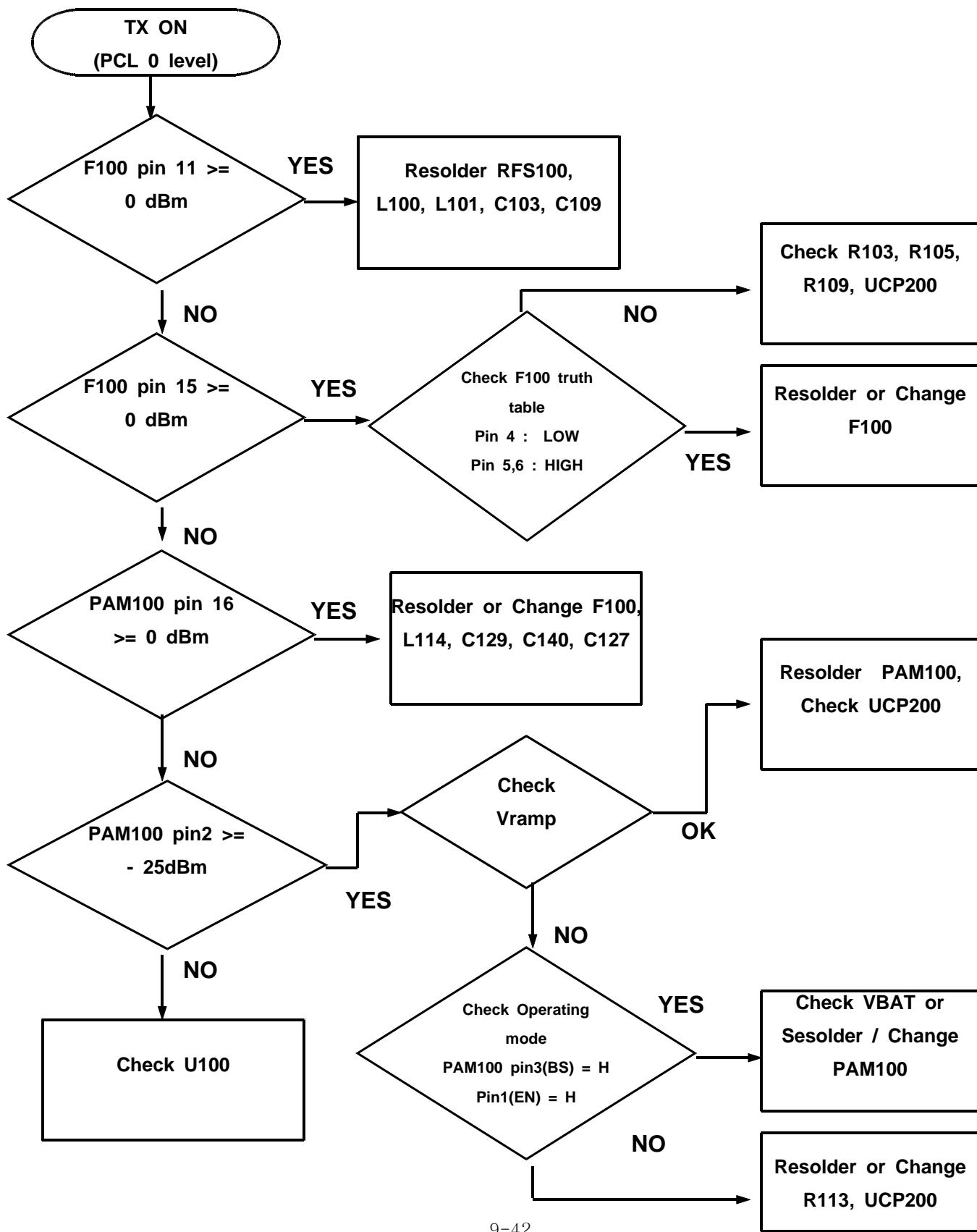
9-14. PCS Receiver

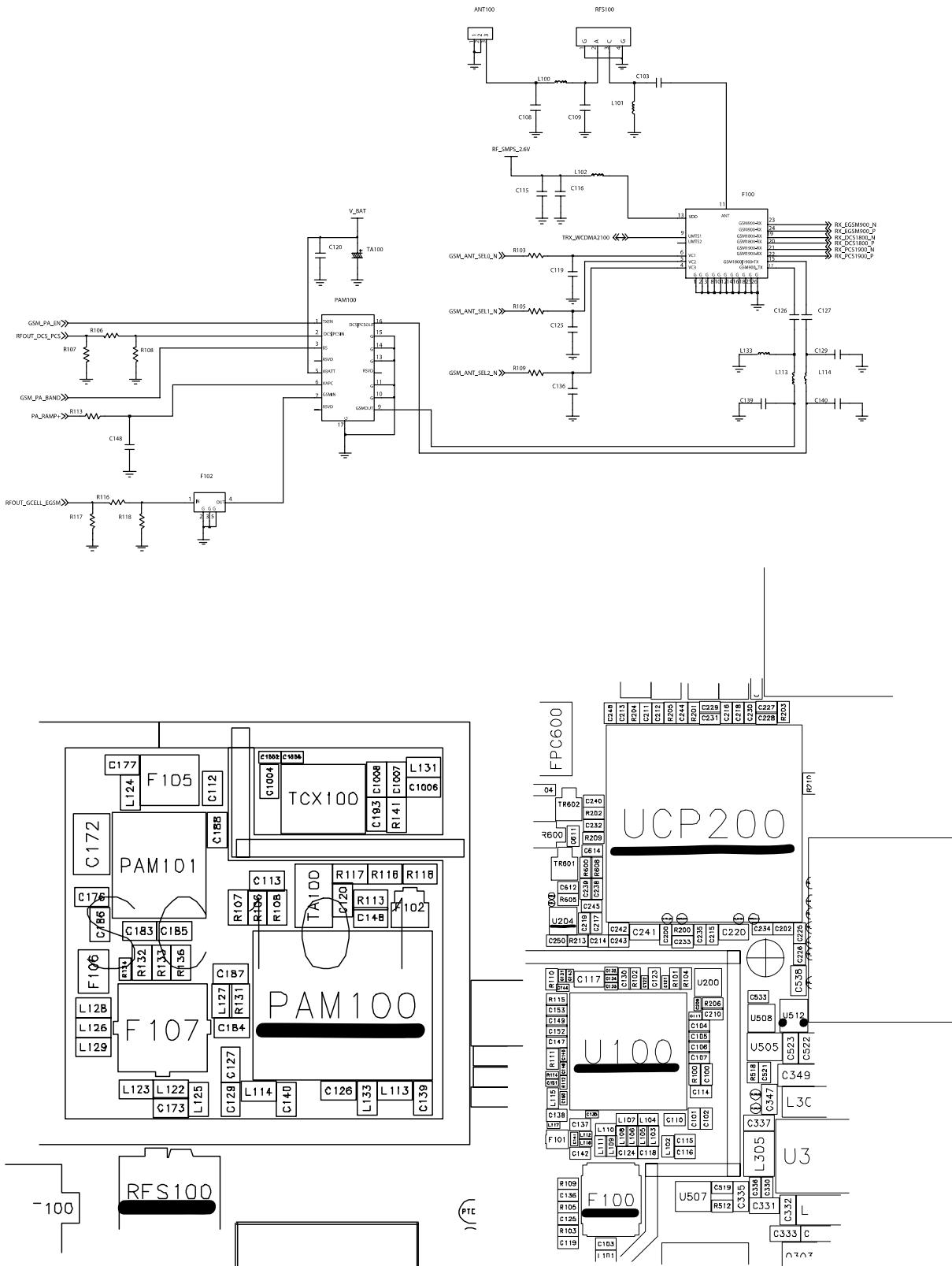


Flow Chart of Troubleshooting

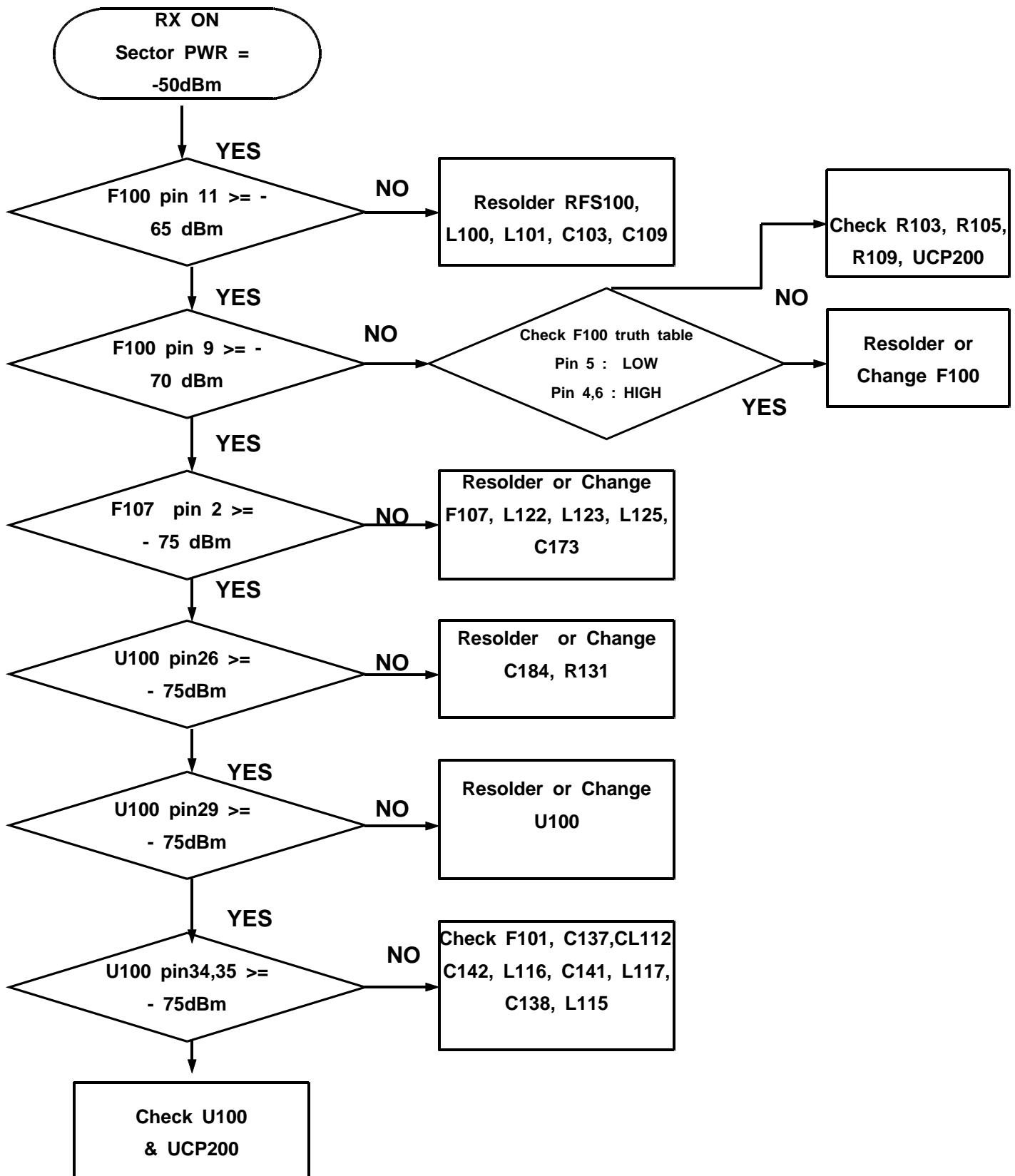


9-15. PCS Transmitter

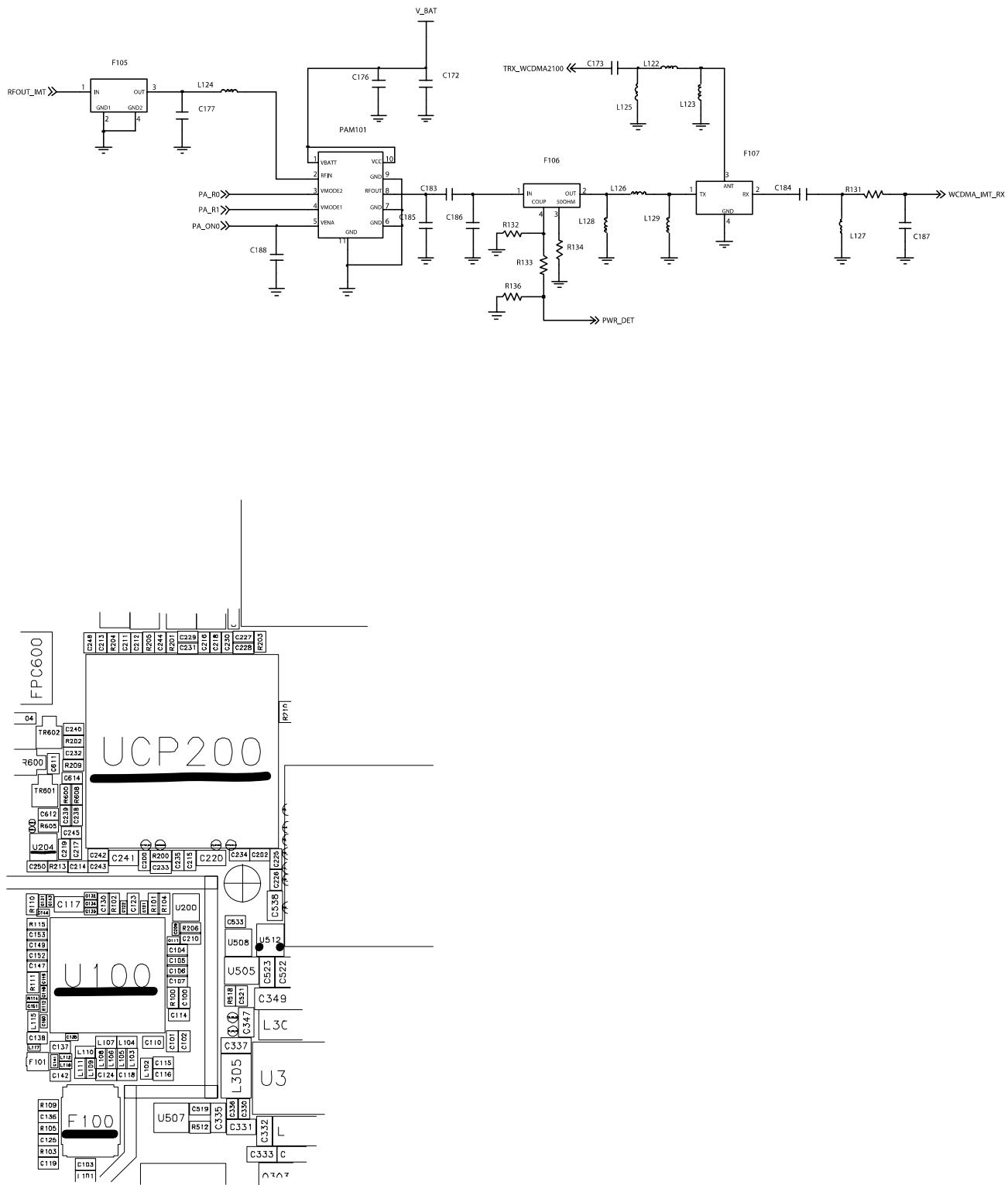




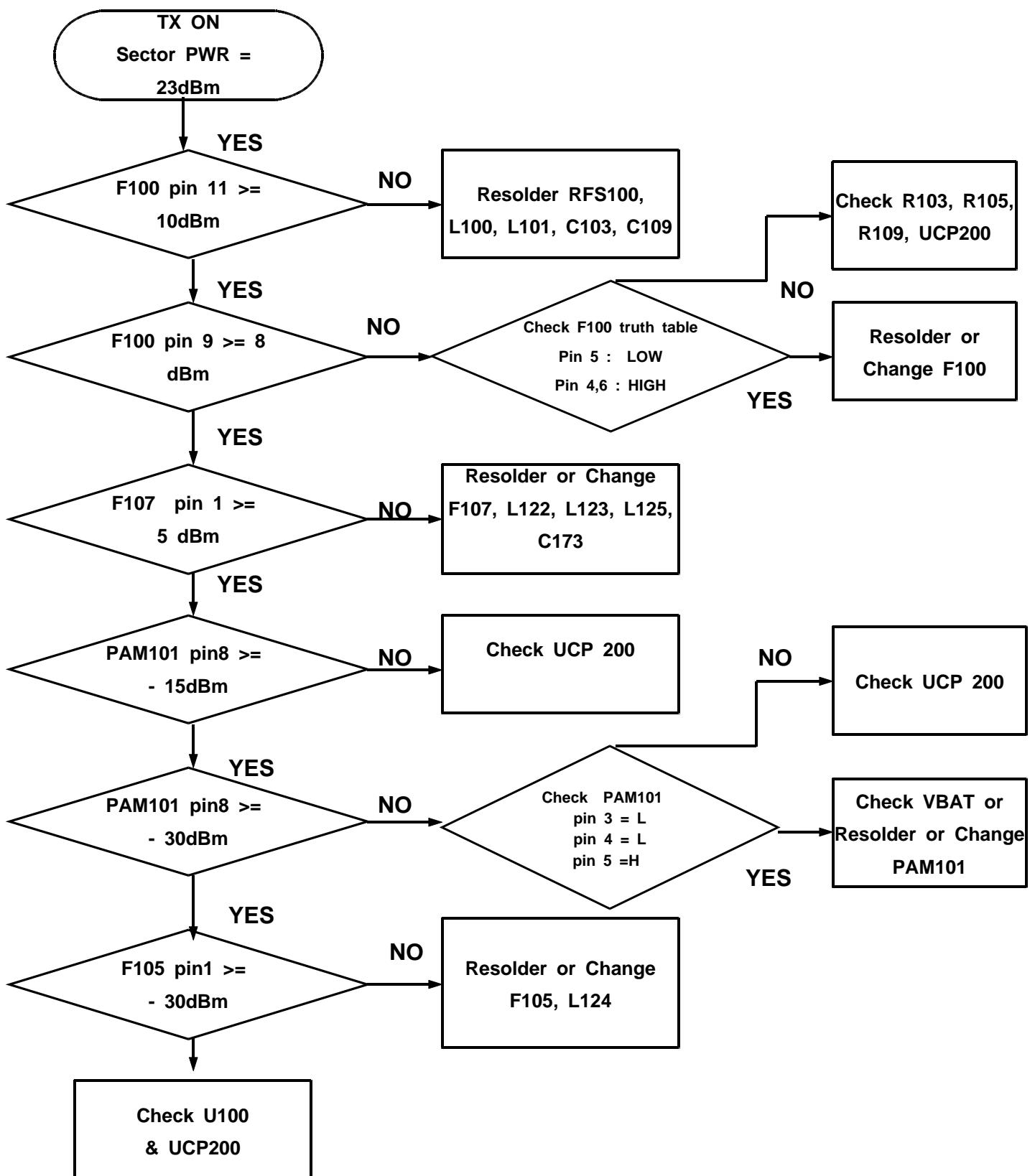
9-16. WCDMA Receiver



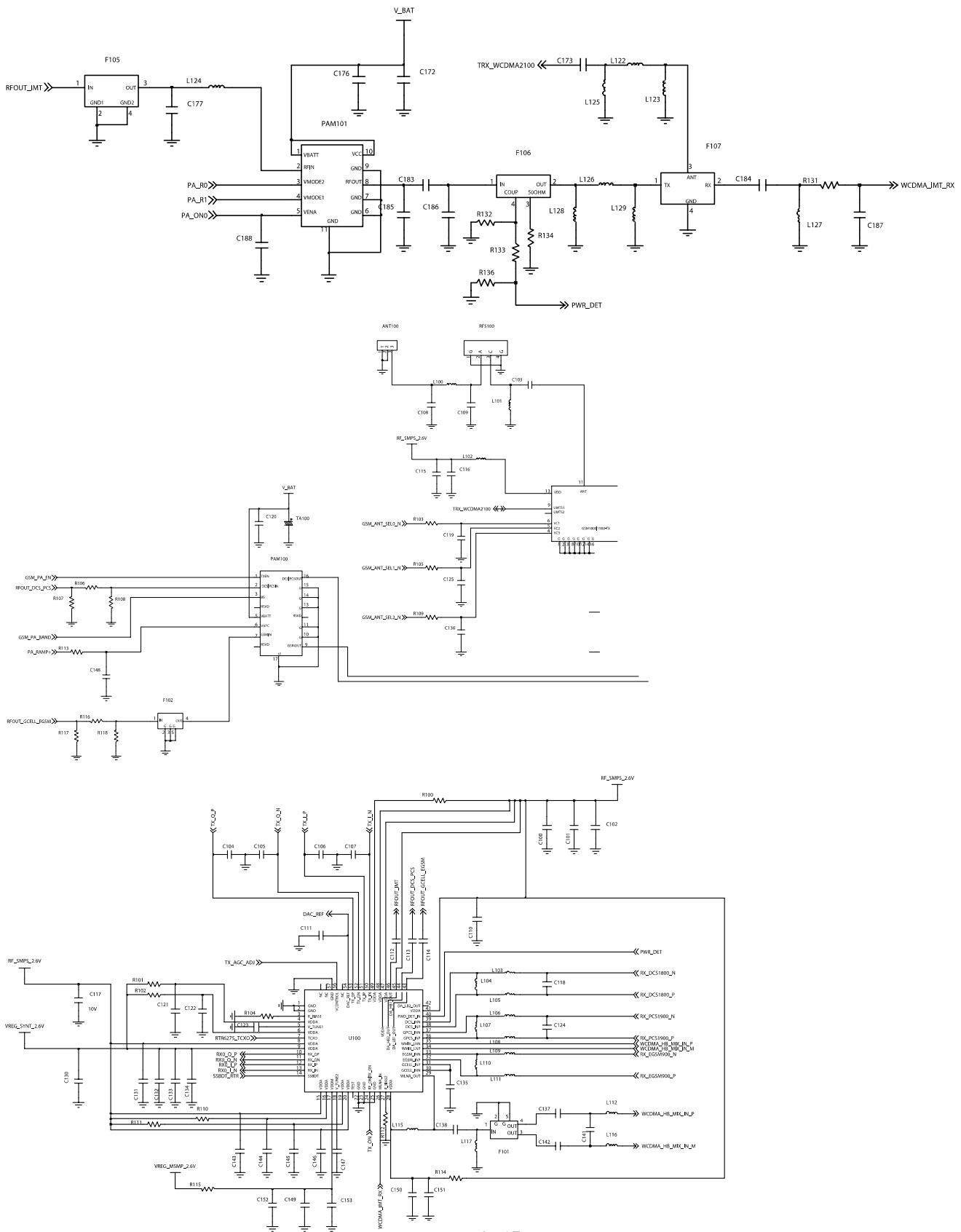
Flow Chart of Troubleshooting



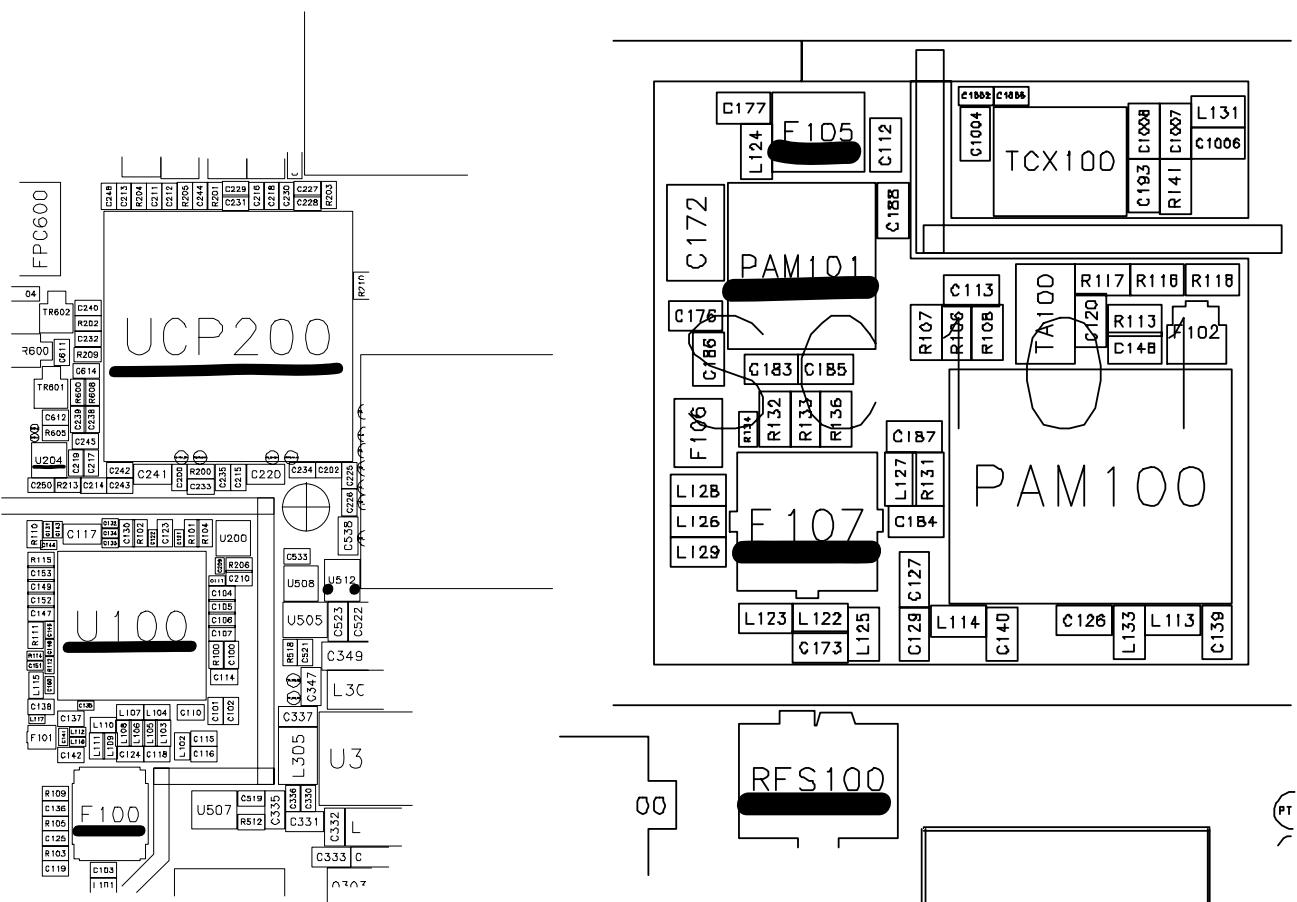
9-17. WCDMA 2100 Transmitter



Flow Chart of Troubleshooting



Flow Chart of Troubleshooting



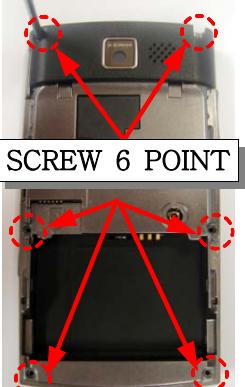
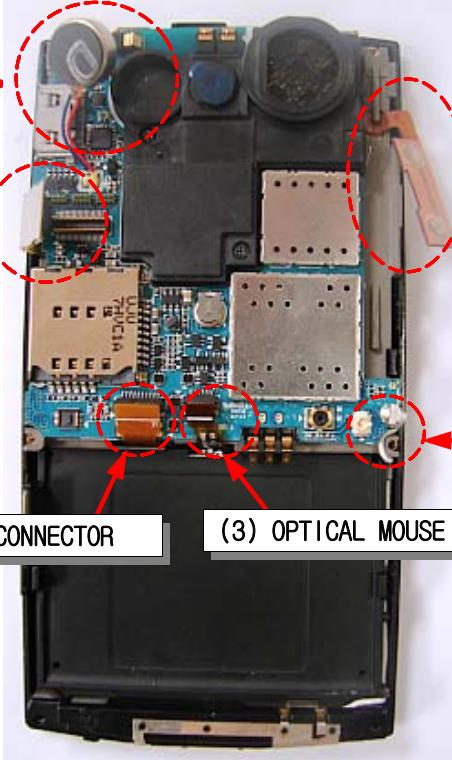
10. Reference data

Reference Abbreviate

- **ARFCN** : Absolute Radio Frequency Channel Number
- **BGA** : Ball Grid Array
- **DCS** : Digital Communications System
- **DL** : Downlink
- **EDR** : Enhanced Data Rate
- **EFS** : Embaded File System
- **EGSM** : Enhanced Global System for Mobile Communications
- **FTP** : File Transfer Protocol
- **HPSK** : Hybrid Phase Shift Keying
- **HSDPA** : High Speed Downlink Packet Access
- **Mcps** : Mega-chips per second
- **MMS** : Multimedia Messaging Service
- **MSK** : Minimum Shift Keying
- **OBEX** : OBject EXchange
- **PBA** : Panel Board Assembly
- **PCS** : Personal Communication System
- **PIM(S)** : Personal Information Management (System)
- **QPSK** : Quadrature Phase Shift Keying
- **RNDIS** : Remote Network Driver Interface Specification
- **RSS** : Received Signal Strength
- **SAW** : Surface Acoustic Wave
- **SMS** : Short Message Service
- **UL** : Uplink
- **USB** : Universal Serial Bus
- **WCDMA** : Wideband Code Division Multiple Access

11. Disassembly and Assembly Instructions

11-1. Disassembly Instructions

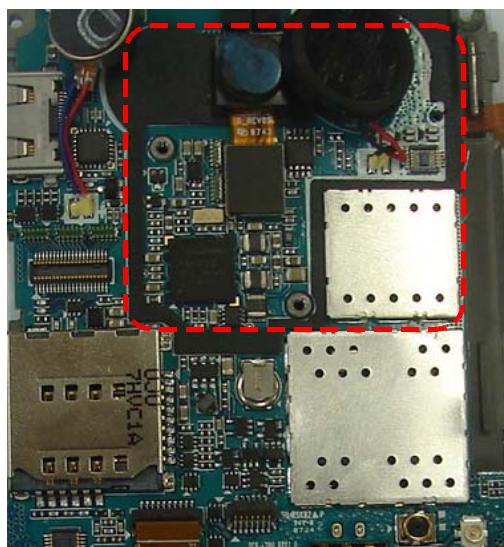
| | |
|---|---|
|  |  |
| <p>Unscrew 6 points in the rear case. - SCREW 6 POINT</p> | <p>Remove rear cover. - Separate the locker by inserting the disassembly apparatus into the gap between the front and the rear.</p> |
|  <p>(1) VOLUME KEY FPCB CONNECTOR (2) INTENNA CONNECTOR WIRE (3) OPTICAL MOUSE CONNECTOR (4) KEY FPCB CONNECTOR (5) LCD CONNECTOR (6) MOTOR Detach FPCB. Separate the MOTOR.</p> | |

4



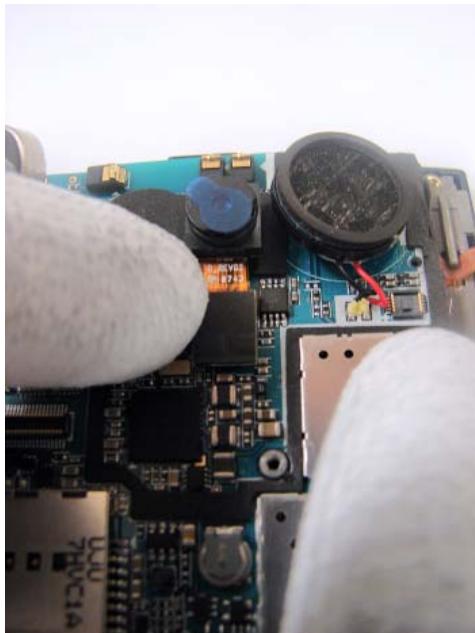
Unscrew 2 points

5



Separate the speaker bracket.

6



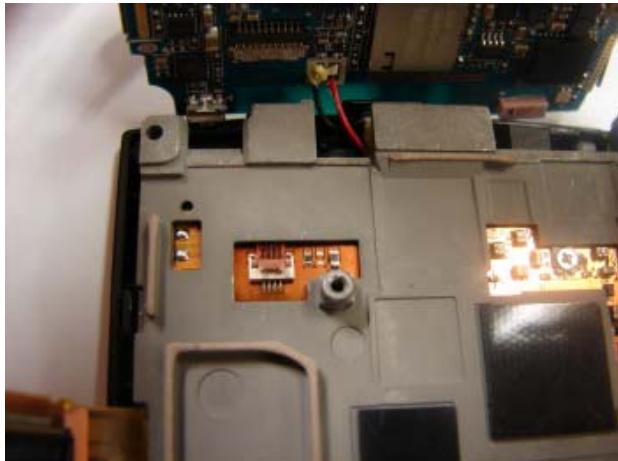
Separate the 2M camera.

7

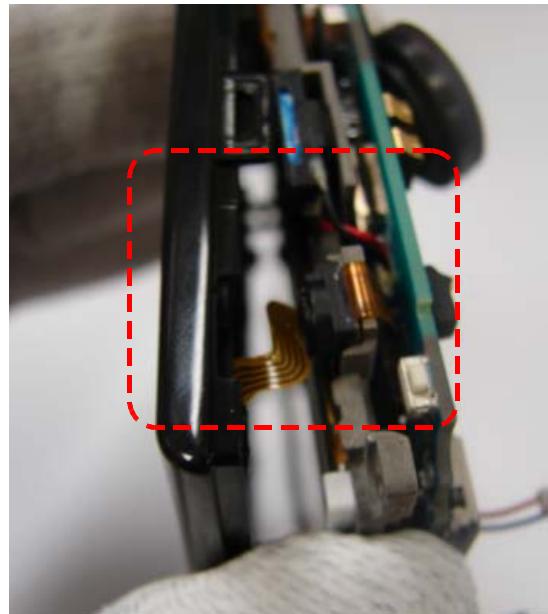


Remove the insulation tape after raising the PBA.

8



9



Open the TSP WINDOW CONNECTOR LOCKER.

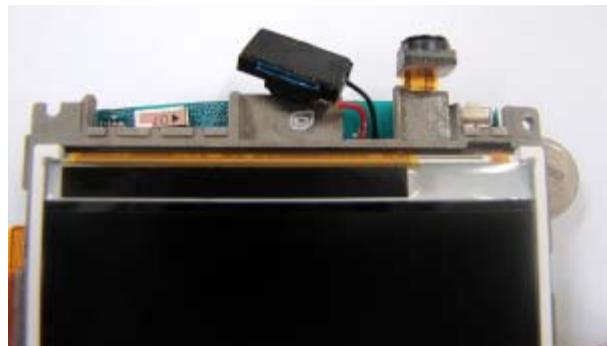
Pick out the tsp window connector from the space between LCD and PBA BRACKET.

10



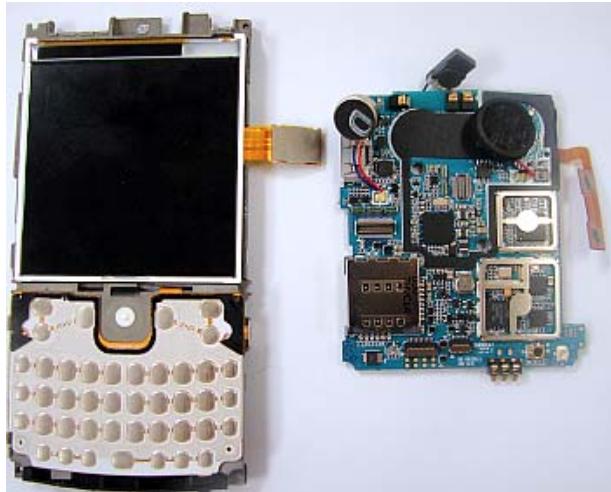
Separate FRONT and PBA BRACKET ASS'Y.

11



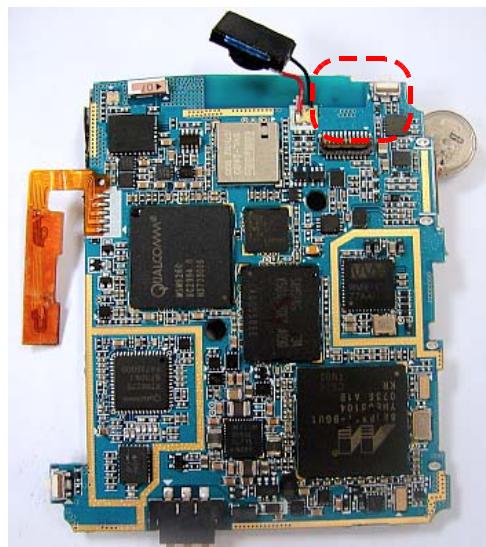
Separate RECEIVER and VGA CAMERA.

12



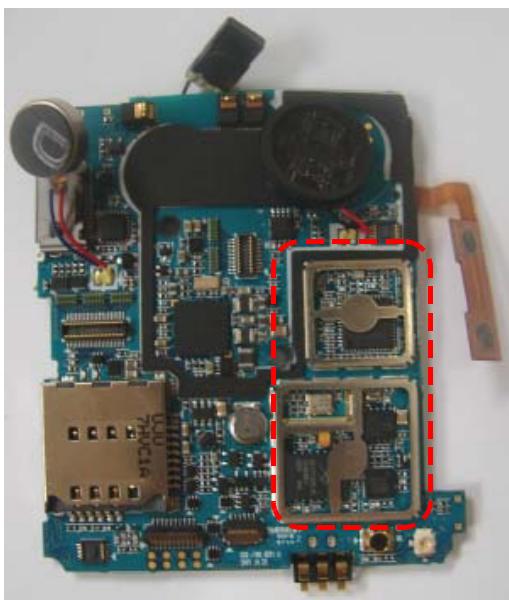
Separate PBA BRACKET and PBA.

13



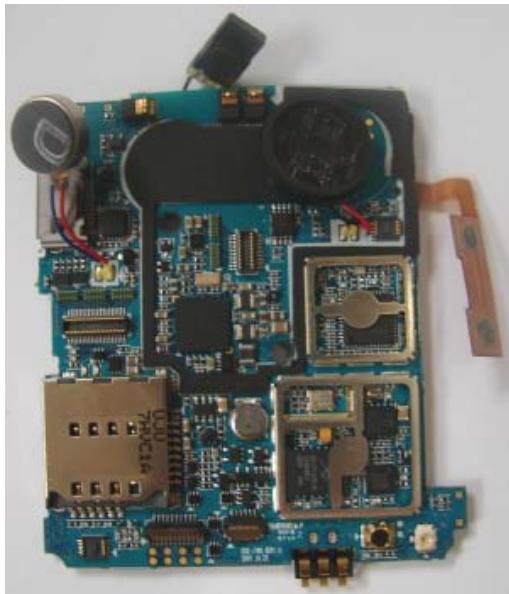
Separate the VGA CAMERA after removing the insulation tape.

14



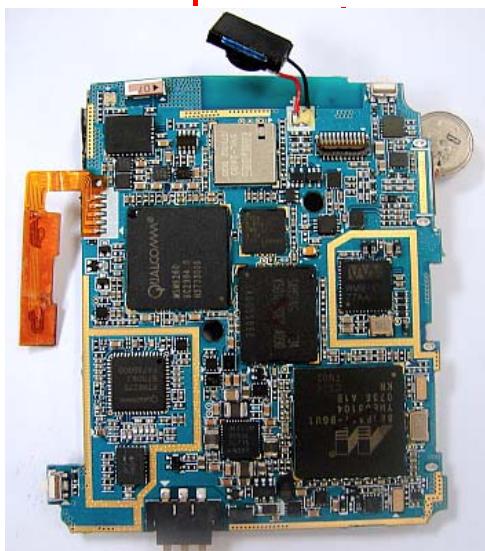
Detach two SHIELD COVERS.

15



Separate the MOTOR and SPEAKER after RE-SOLDERING.

16



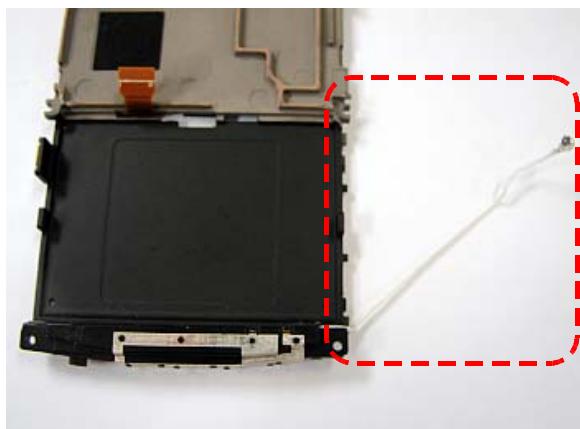
Separate the MOTOR and SPEAKER after
RESOLDERING.

17



Separate LCD and PBA BRACKET.

18



Separate PBA BRACKET and INTENNA WIRE.

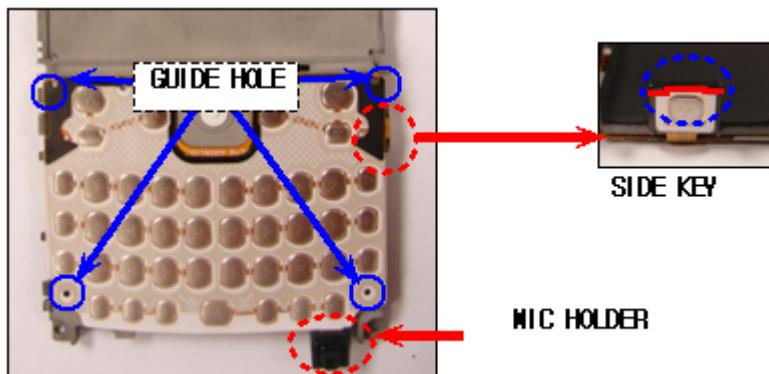
19



Remove the INTENNA.
Notice the MIC HOLDER.

11-2. Assembly Instructions

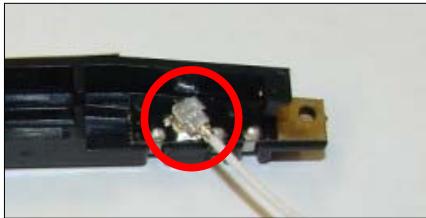
1



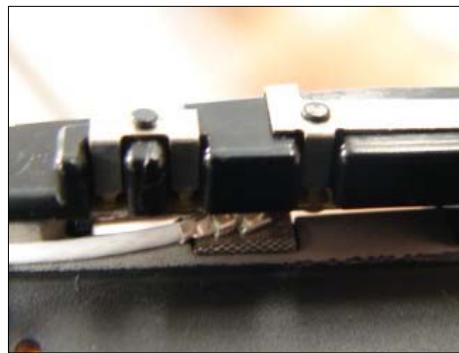
Attach KEY FPCB

1. Remove the sticker of the KEY FPCB.
2. Attach the KEY FPCB standardizing guide hole.

2



< 1. INTENNA CONNECTOR 체결 >



< 2. GOLD GASKET과 INTENNA
CONNECTOR 접촉 확인 >



< 3. INTENNA ASSEMBLY >



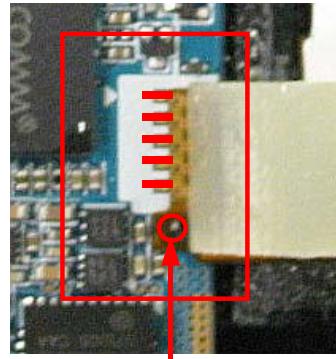
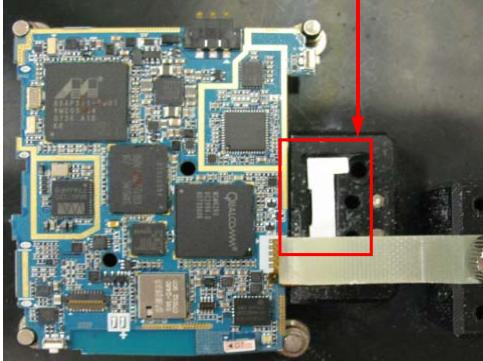
< 4. INTENNA CONNECTOR WIRE 안착 >

INTENNA ASSEMBLY

1. Press the intenna conector on intenna perpendicularly.
2. Attach INTENNA on PBA BRACKET.
Make sure the contact between GOLD GASKET and INTENNA CONNECTOR.
3. MIC HOLDER must be settled in INTENNA HOLE.
4. Attach the NTENNA CONNECTOR WIRE side of the PBA BRACKET. (refer to the picture)

3

Do not remove the sticker



Settle standardizing the hole

VOLUME KEY FPCB SOLDERING

1. Settle the VOLUME KEY FPCB using the GUIDE HOLE and SOLDER the FPCB.

※ Notice SHORT and getting loose

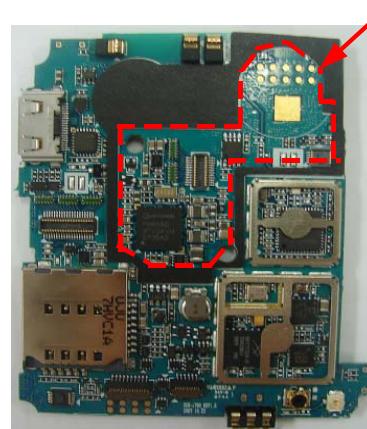
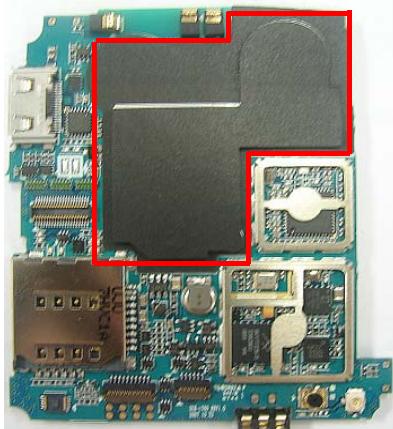
iron temperature : 350~380°

4

**Insert ANTENNA CONTACT RUBBER**

1. Insert rubber into the lower end of the INTENNA CONTACT.

5



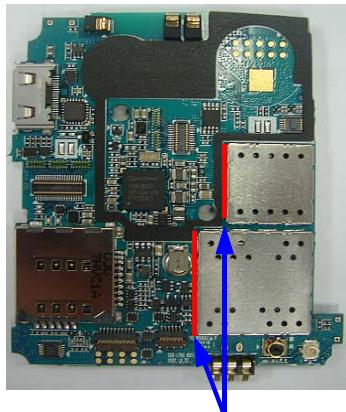
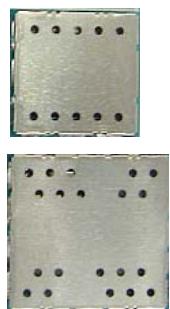
the inner removal part

Attach the PORON SPEAKER BRACKET

1. Attach the PORON SPEAKER BRACKET following the guide line of the PCB

2. Remove the inner removal part of the PORON

6



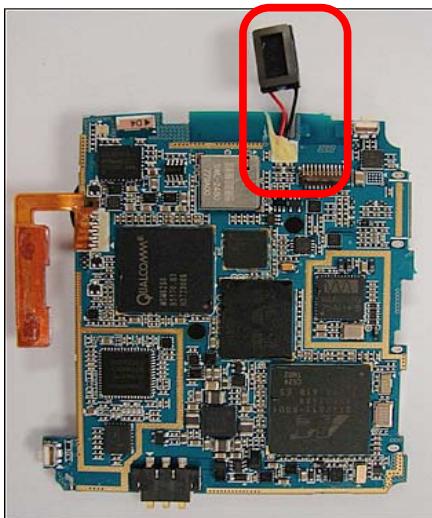
notice the right insertion direction insert from the left side.

Attach SHIELD COVER

1. Attach SHIELD COVER from the left side.

7

RECEIVER SOLDERING



MOTOR, SPEAKER SOLDERING



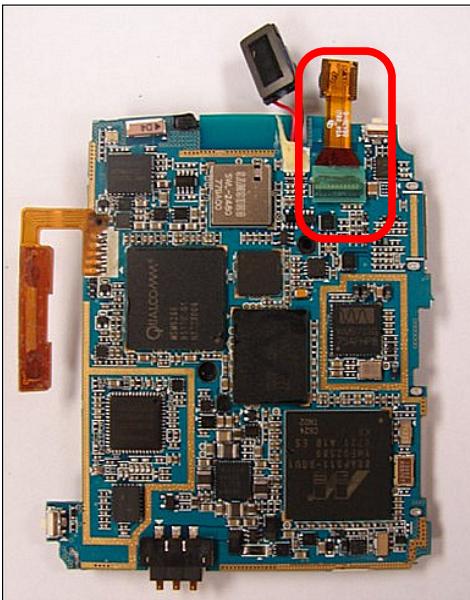
RECEIVER, MOTOR, SPEAKER SOLDERING

1. Solder the RECEIVER on the TOP side.
2. Solder the MOTOR and SPEAKER on the BOTTOM side.

* Notice SHORT and getting loose
iron temperature : 350~380'

8

attach VGA CAMERA



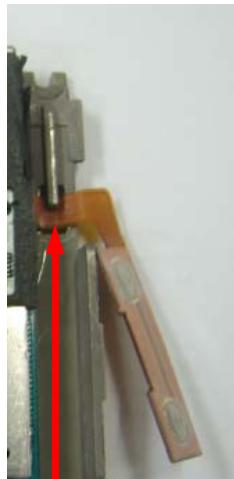
attach 2MEGA CAMERA



Attach CAMERAS

1. Inset the VGA CAMERA (standardize the FPCB SILK LINE) and attach the insulation tape after closing the LOCKER.
2. Press the 2MEGA CAMERA.

9



Inset the FPCB into
the bracket FIRST.

attach
the MOTOR

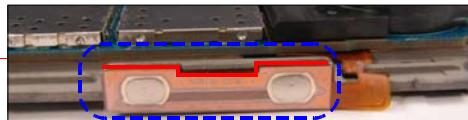
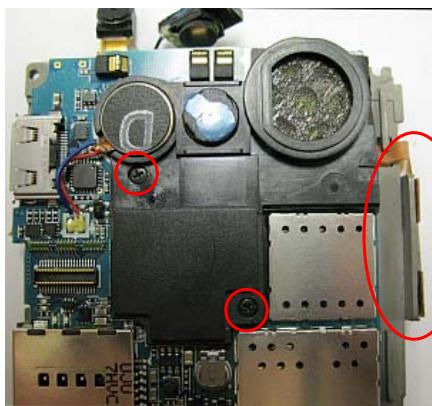


notice
the
SPEAKER
settling

Settle PBA / Attach the SPEAKER BRACKET

1. Inset the FPCB into the BRACKET.
2. Settle the PBA into the PBA BRACKET
3. Attach the MOTOR after assembling the SPEAKER BRACKET.

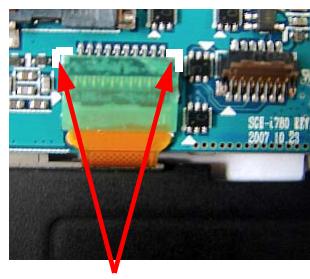
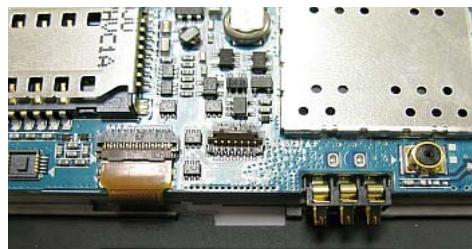
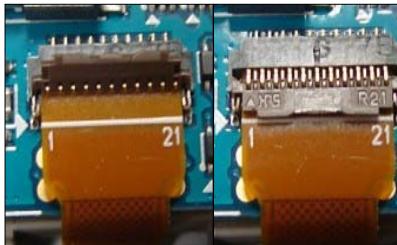
10



SCREW / Attach VOLUME KEY FPCB

1. SCREW 2 POINTS. (SCREW SIZE : M1.4,L3.5, TORQUE : 1.1~1.3 Kgf.cm)
2. Attach the VOLUME KEY FPCB on the PBA BRACKET following the picture.

11

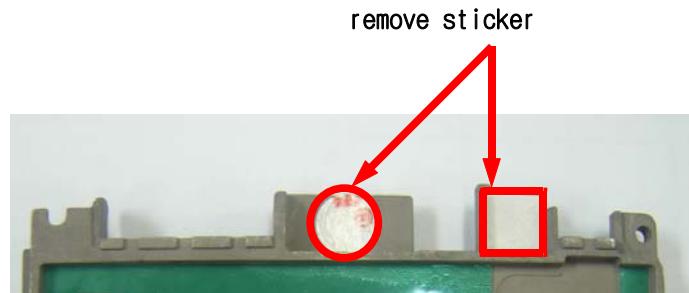


SILK LINE

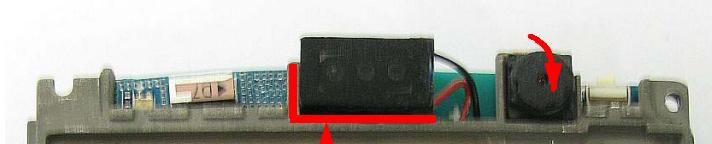
Connect KEY FPCB CONNECTOR

1. Close the LOCKER (SILK LINE of the FPCB must be placed end of the LOCKER)
2. Attach the insulation tape standardizing the CONNECTOR upper SILK LINE

12



attach after holding



attach the receiver standardizing left/lower-end RIB

Connect the INTENNA WIRE CONNECTOR / attach the RECEIVER and VGA CAMERA

1. Press the INTENNA WIRE CONNECTOR perpendicularly
2. Attach the RECEIVER and VGA CAMERA after removing stickers.

13



insert TSP WINDOW
FPCB CONNECTOR into the FRONT hole

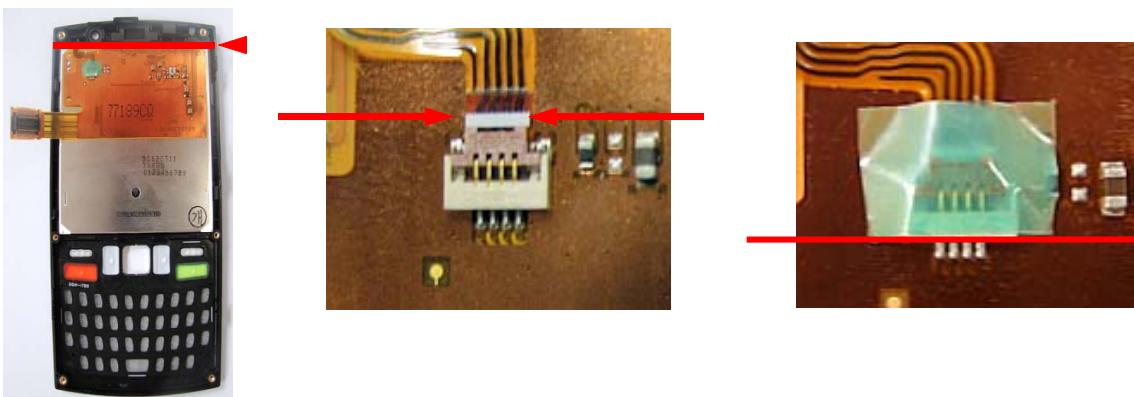


attach the TSP WINDOW on FRONT
standardizing the upper line

Attach the TSP WINDOW on FRONT

1. Remove the sticker of FRONT WINDOW
2. Insert TSP WINDOW FPCB CONNECTOR into the FRONT hole
3. Attach the TSP WINDOW on FRONT standardizing the upper line

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Settle LCD / Connect TSP WINDOW CONNECTOR

1. Settle LCD on FRONT standardizing the upper line
2. Close the LOCKER (FPCB SILK LINE must be placed end of the LOCKER)
3. Attach the insulation tape standardizing the CONNECTOR lower end

15



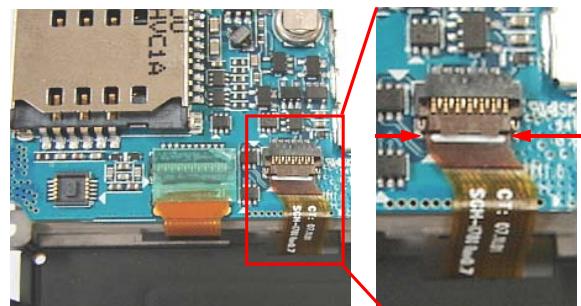
KEY PAD

1. Settle the KEY PAD standardizing the HOOKER.
2. Make sure the key pad attachment.

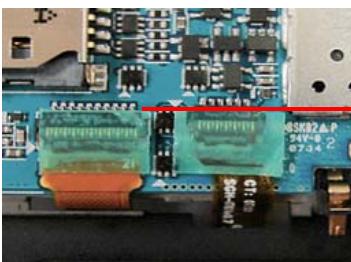
16



Inset the OPTICAL MOUSE FPCB into the BRACKET hole



standardizing the SILK LINE



attach the insulation tape
standardizing the CONNECTOR upper side.

OPTICAL MOUSE

1. Inset the OPTICAL MOUSE FPCB into the BRACKET hole
2. Close the LOCKER after inserting the CONNECTOR
3. Attach the insulation tape standardizing the CONNECTOR upper side.

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notice interference between
VOLUME KEY FPCB and FRONT RIB

connect the LCD CONNECTOR



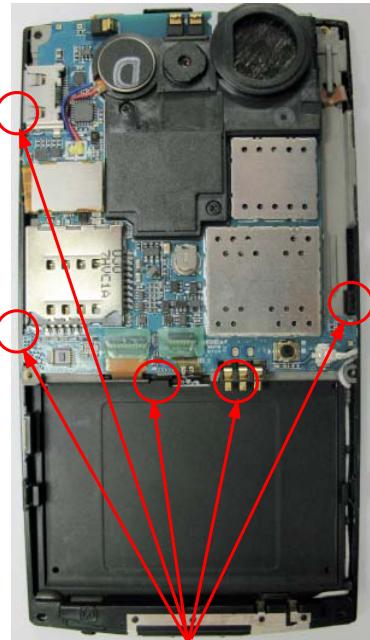
notice interference between
VOLUME KEY FPCB and FRONT RIB

Put the PBA BRACKET ASS'Y on FRONT

1. Put the PBA BRACKET ASS'Y on FRONT (right / upper side FIRST)
Notice interference between VOLUME KEY FPCB and FRONT RIB
2. Connect LCD CONNECTOR

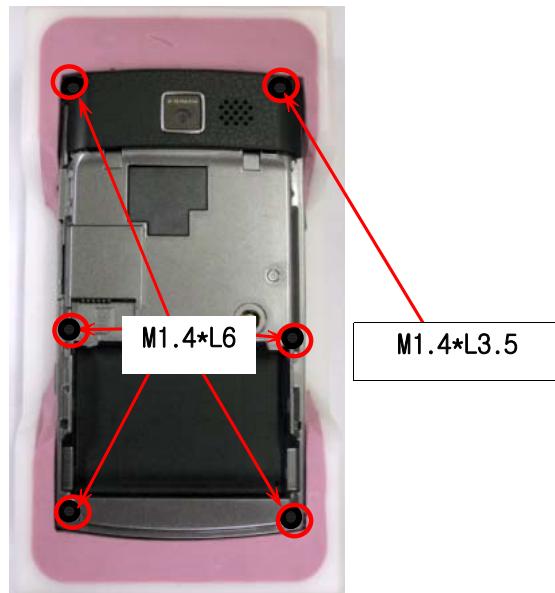
16

HOOKER 5 POINT



Make sure the HOOKER 5 POINT attachment with accuracy

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Assemble the rear case / SCREW 6 points

1. Assemble the rear case and SCREW 6 POINTS

(SCREW SIZE → M1.4*L6 : 5 POINT, M1.4*L3.5 : 1 POINT)

SCREW TORQUE : 1.1~1.3 Kgf.cm

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