

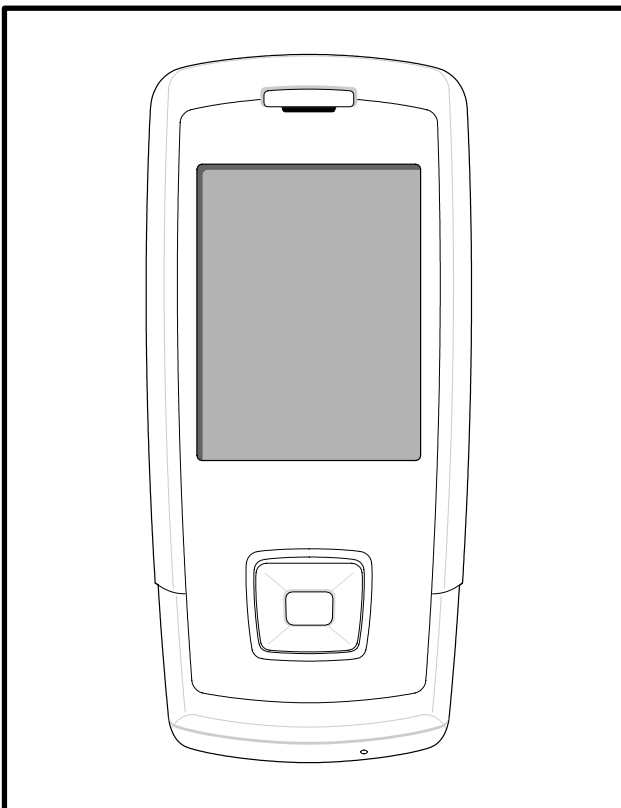
**SAMSUNG**

# GSM TELEPHONE

## SGH-E900

# ***SERVICE*** *Manual*

### GSM TELEPHONE



### CONTENTS

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

# Contents

## 1. Safety Precautions

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

## 2. Specification

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

## 3. Product Function

- 3-1. Main Function .....3-1

## 4. Array course control

Software Downloading

- 4-1. Downloading Binary Files .....4-2
- 4-2. Pre-requisite for Downloading .....4-2
- 4-3. S/W Downloader Program .....4-3

## 5. Exploded View and Parts List

- 5-1. Cellular phone Exploded View .....5-1
- 5-2. Cellular phone Part list .....5-2

## 6. Disassembly and Assembly instructions

- 6-1. Disassembly .....6-1
- 6-2. Assembly .....6-5

## 7. MAIN Electrical Parts List

## 8. Block Diagrams

## 9. PCB Diagrams

- 9-1. Main .....9-1
  - 9-2. LCD .....9-3
-

# Contents

## 10. Flow Chart of Troubleshooting

### 10-1. Baseband

|                               |       |
|-------------------------------|-------|
| 10-1-1. Power ON .....        | 10-1  |
| 10-1-2. Initial .....         | 10-4  |
| 10-1-3. Sim Part .....        | 10-6  |
| 10-1-4. Charging Part .....   | 10-8  |
| 10-1-5. Microphone Part ..... | 10-10 |
| 10-1-6. Speaker Part .....    | 10-12 |
| 10-1-7. LCD .....             | 10-15 |
| 10-1-8. Camera .....          | 10-17 |

### 10-2. RF

|                              |       |
|------------------------------|-------|
| 10-2-1. GSM Receiver.....    | 10-19 |
| 10-2-2. DCS Receiver.....    | 10-20 |
| 10-2-3. PCS Receiver.....    | 10-21 |
| 10-2-4. GSM Transmitter..... | 10-23 |
| 10-2-5. DCS Transmitter..... | 10-24 |
| 10-2-6. PCS Transmitter..... | 10-25 |
| 10-2-7. Bluetooth Part ..... | 10-27 |

## 11. Reference data

---

---

# 1. Safety Precautions

---

## 1-1. Repair Precaution

- Repair in Shield Box, during detailed tuning.  
Take specially care of tuning or test,  
because specipicty of cellular phone is sensitive for surrounding interference(RF noise).
- Be careful to use a kind of magnetic object or tool,  
because performance of parts is damaged by the influence of manetic force.
- Surely use a standard screwdriver when you disassemble this product,  
otherwise screw will be worn away.
- Use a thicken twisted wire when you measure level.  
A thicken twisted wire has low resistance, therefore error of measurement is few.
- Repair after separate Test Pack and Set because for short danger (for example an  
overcurrent and furious flames of parts etc) when you repair board in condition of  
connecting Test Pack and tuning on.
- Take specially care of soldering, because Land of PCB is small and weak in heat.
- Surely tune on/off while using AC power plug, because a repair of battery charger is  
dangerous when tuning ON/OFF PBA and Connector after disassembling charger.
- Don't use as you pleases after change other material than replacement registered on SEC  
System.  
Otherwise engineer in charge isn't charged with problem that you don't keep this rules.

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

Several semiconductor may be damaged easily by static electricity. Such parts are called by ESD(Electrostatically Sensitive Devices), for example IC,BGA chip etc. Read Precaution below. You can prevent from ESD damage by static electricity.

- Remove static electricity remained your body before you touch semiconductor or parts with semiconductor. There are ways that you touch an earthed place or wear static electricity prevention string on wrist.
- Use earthed soldering steel when you connect or disconnect ESD.
- Use soldering removing tool to break static electricity. , otherwise ESD will be damaged by static electricity.
- Don't unpack until you set up ESD on product. Because most of ESD are packed by box and aluminum plate to have conductive power,they are prevented from static electricity.
- You must maintain electric contact between ESD and place due to be set up until ESD is connected completely to the proper place or a circuit board.

## 2. Specification

### 2-1. GSM General Specification

|                                       | GSM900<br>Phase 1        | EGSM 900<br>Phase 2      | DCS1800<br>Phase 1       | PCS1900                  |
|---------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Freq.<br>Band[MHz]<br>Uplink/Downlink | 890~915<br>935~960       | 880~915<br>925~960       | 1710~1785<br>1805~1880   | 1850~1910<br>1930~1990   |
| ARFCN range                           | 1~124                    | 0~124 &<br>975~1023      | 512~885                  | 512~810                  |
| Tx/Rx spacing                         | 45 MHz                   | 45 MHz                   | 95 MHz                   | 80 MHz                   |
| Mod. Bit rate/<br>Bit Period          | 270.833 kbps<br>3.692 us | 270.833 kbps<br>3.692 us | 270.833 kbps<br>3.692 us | 270.833 kbps<br>3.692 us |
| Time Slot<br>Period/Frame<br>Period   | 576.9 us<br>4.615 ms     | 576.9 us<br>4.615 ms     | 576.9 us<br>4.615 ms     | 576.9 us<br>4.615 ms     |
| Modulation                            | 0.3 GMSK                 | 0.3 GMSK                 | 0.3 GMSK                 | 0.3 GMSK                 |
| MS Power                              | 33 dBm~13 dBm            | 33 dBm~5 dBm             | 30 dBm~0 dBm             | 30 dBm~0 dBm             |
| Power Class                           | 5 pcl ~ 15 pcl           | 5 pcl ~ 19 pcl           | 0 pcl ~ 15 pcl           | 0 pcl ~ 15 pcl           |
| Sensitivity                           | -102 dBm                 | -102 dBm                 | -100 dBm                 | -100 dBm                 |
| TDMA Mux                              | 8                        | 8                        | 8                        | 8                        |
| Cell Radius                           | 35 Km                    | 35 Km                    | 2 Km                     | -                        |

## 2-2. GSM Tx Power Class

| <b>TX Power control level</b> | <b>GSM900</b> | <b>TX Power control level</b> | <b>DCS1800</b> | <b>TX Power control level</b> | <b>PCS1900</b> |
|-------------------------------|---------------|-------------------------------|----------------|-------------------------------|----------------|
| 5                             | 33±2 dBm      | 0                             | 30±3 dBm       | 0                             | 30±3 dBm       |
| 6                             | 31±2 dBm      | 1                             | 28±3 dBm       | 1                             | 28±3 dBm       |
| 7                             | 29±2 dBm      | 2                             | 26±3 dBm       | 2                             | 26±3 dBm       |
| 8                             | 27±2 dBm      | 3                             | 24±3 dBm       | 3                             | 24±3 dBm       |
| 9                             | 25±2 dBm      | 4                             | 22±3 dBm       | 4                             | 22±3 dBm       |
| 10                            | 23±2 dBm      | 5                             | 20±3 dBm       | 5                             | 20±3 dBm       |
| 11                            | 21±2 dBm      | 6                             | 18±3 dBm       | 6                             | 18±3 dBm       |
| 12                            | 19±2 dBm      | 7                             | 16±3 dBm       | 7                             | 16±3 dBm       |
| 13                            | 17±2 dBm      | 8                             | 14±3 dBm       | 8                             | 14±3 dBm       |
| 14                            | 15±2 dBm      | 9                             | 12±4 dBm       | 9                             | 12±4 dBm       |
| 15                            | 13±2 dBm      | 10                            | 10±4 dBm       | 10                            | 10±4 dBm       |
| 16                            | 11±3 dBm      | 11                            | 8±4 dBm        | 11                            | 8±4 dBm        |
| 17                            | 9±3dBm        | 12                            | 6±4 dBm        | 12                            | 6±4 dBm        |
| 18                            | 7±3 dBm       | 13                            | 4±4 dBm        | 13                            | 4±4 dBm        |
| 19                            | 5±3 dBm       | 14                            | 2±5 dBm        | 14                            | 2±5 dBm        |
|                               |               | 15                            | 0±5 dBm        | 15                            | 0±5 dBm        |

---

## 3. Product Function

---

### Main Function

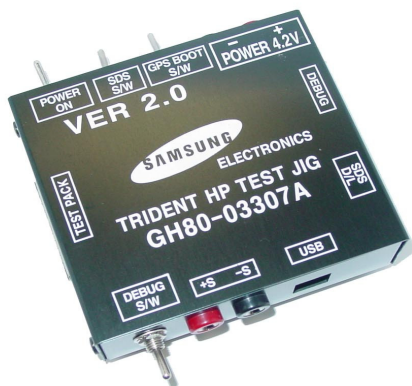
- Camera and camcorder
- Image editor
- MP3 player
- Phonebook
- Name card
- Multimedia Message Service (MMS)
- E-mail
- Voice recorder
- Bluetooth
- Get personal with photo caller ID
- Web browser
- Java
- Calendar



---

## 4. Array course control

---



**Test Jig (GH80-03307A)**



**Test Cable (GH39-00484A)**



**RF Test Cable (GH39-00397A)**

## **Software Downloading**

### **4-1. Downloading Binary Files**

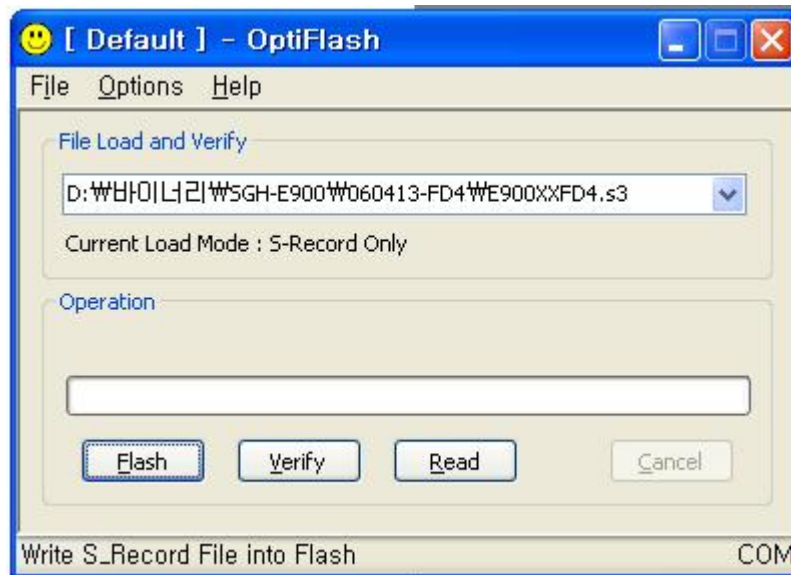
- Three binary files for downloading E900.
  - E900XXYY.s3 : Main source code binary.

### **4-2. Pre-requisite for Downloading**

- Downloader Program([OptiFlash.exe](#))
- E900 Mobile Phone
- Data Cable
- Binary files

### 4-3. S/W Downloader Program

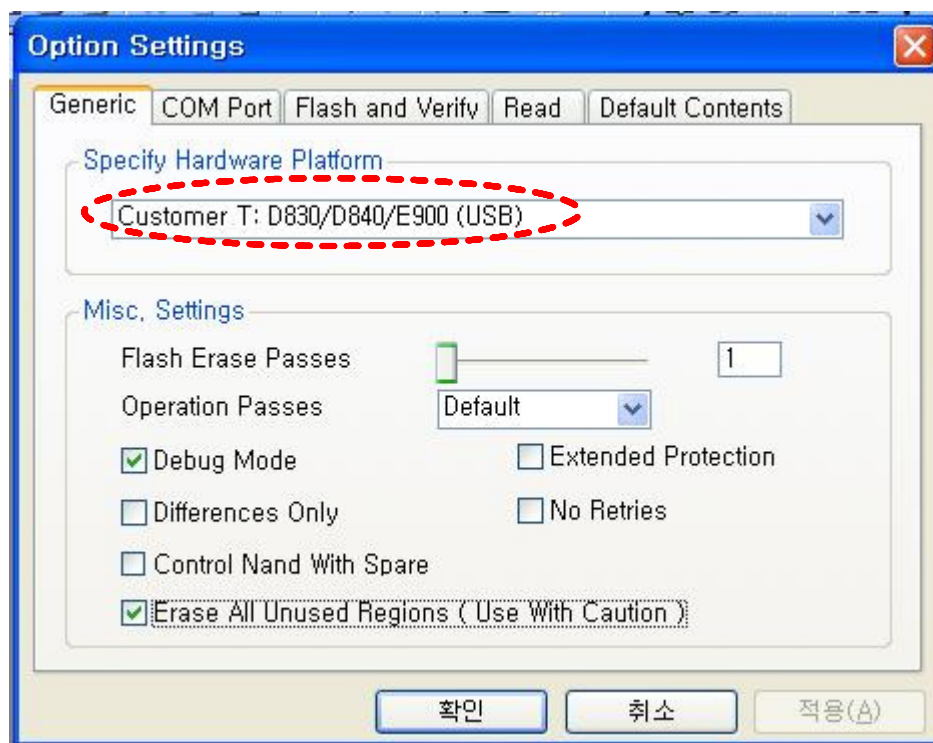
1. Load the binary download program by executing the **"OptiFlash.exe"**



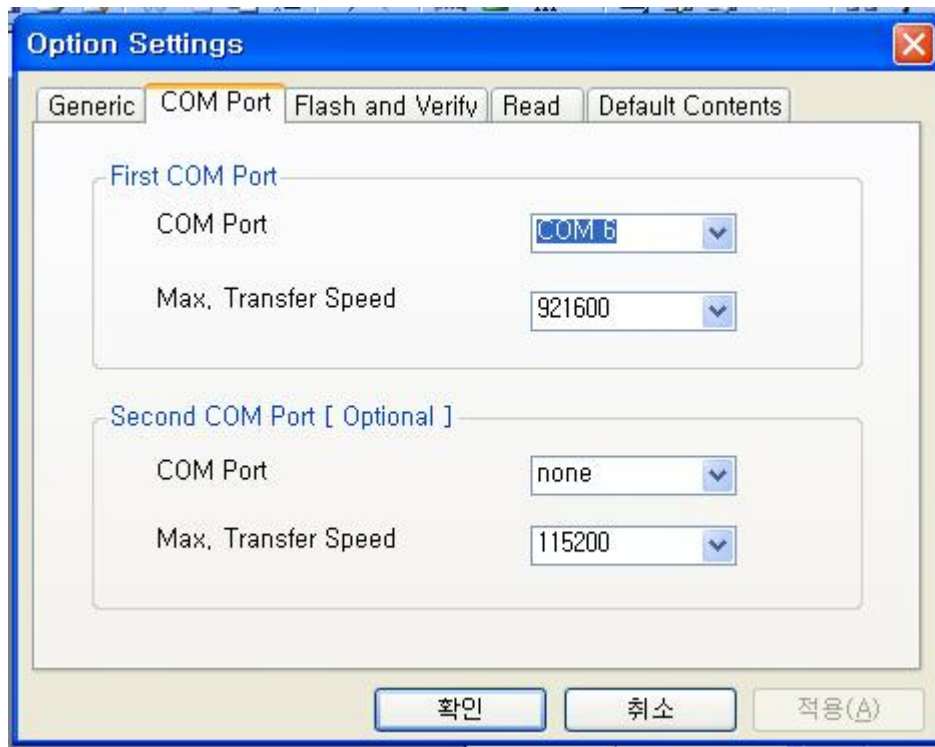
2. Select the **"Options" -> "Settings" -> "Generic" -> "Specify hardware platform"**.

Choose hardware platform for the downloader file setting.

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



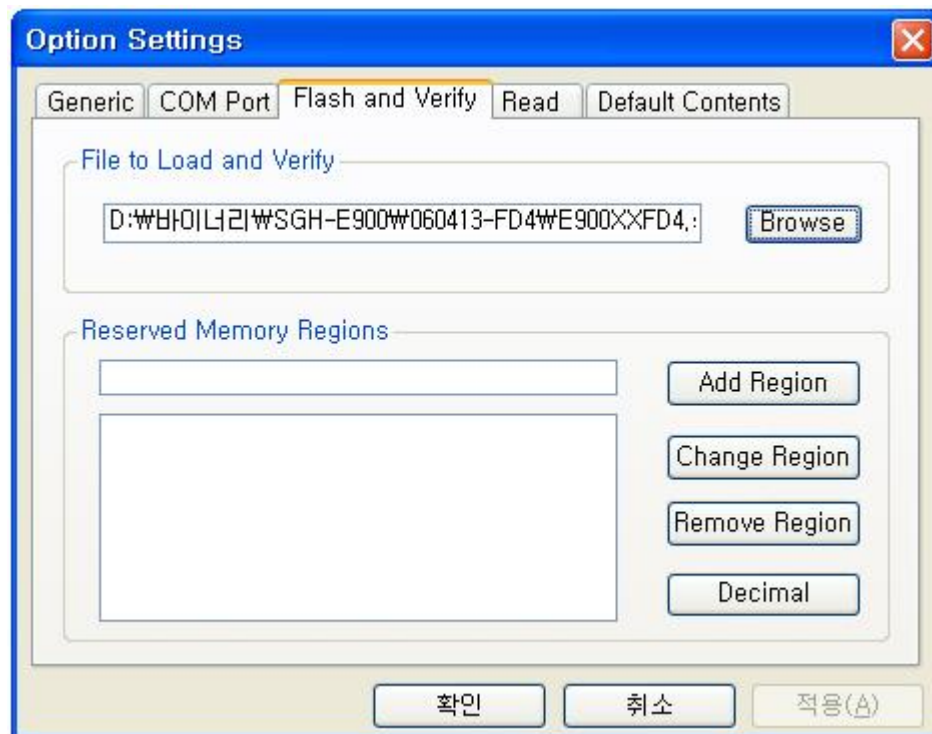
3. Select the **COM port** when the download cable is connected



Up to twelve ports are supported. Additionally you can select the maximum transfer speed OptiFlash will use to communicate with the phone. However, OptiFlash will use a slower speed if either the PC's or the phone's serial hardware is incapable of handling the selected speed

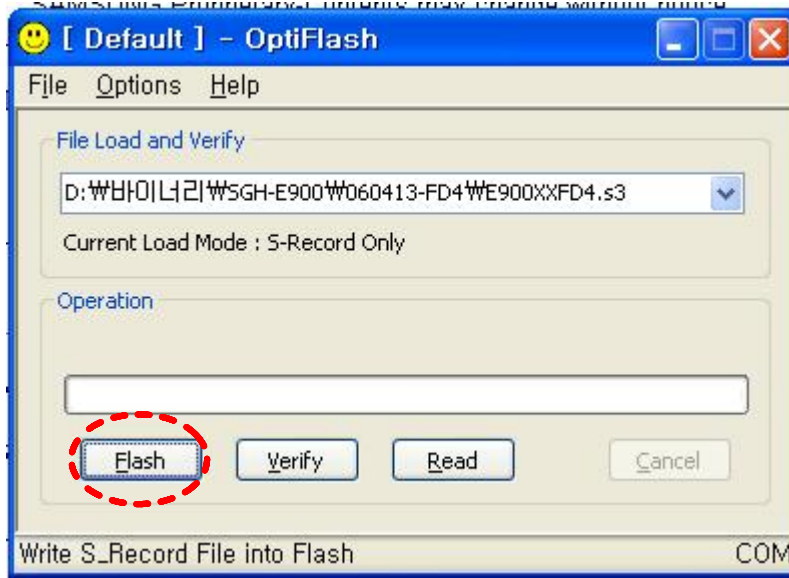
4. Select the **"Flash&Verify"** -> **"Browse"**

Set the directory path and choose the latest s/w binary, for example "X810XXYY.s3", for the downloader binary setting.



5. Click "OK" button then press "Flash".  
(Before pressing 'Flash' button, push the button '\*and 'END' at the same time. Then press 'Flash'.)

Downloader will upload the binary file as below for the downloading. 🎵



6. When downloading is finished successfully, there is a "All is well" message. 🎵
7. After finishing downloading, Certain memory resets should be done to guarantee the normal performance. 🎵
8. Confirm the downloaded version name and etc. : 🎵

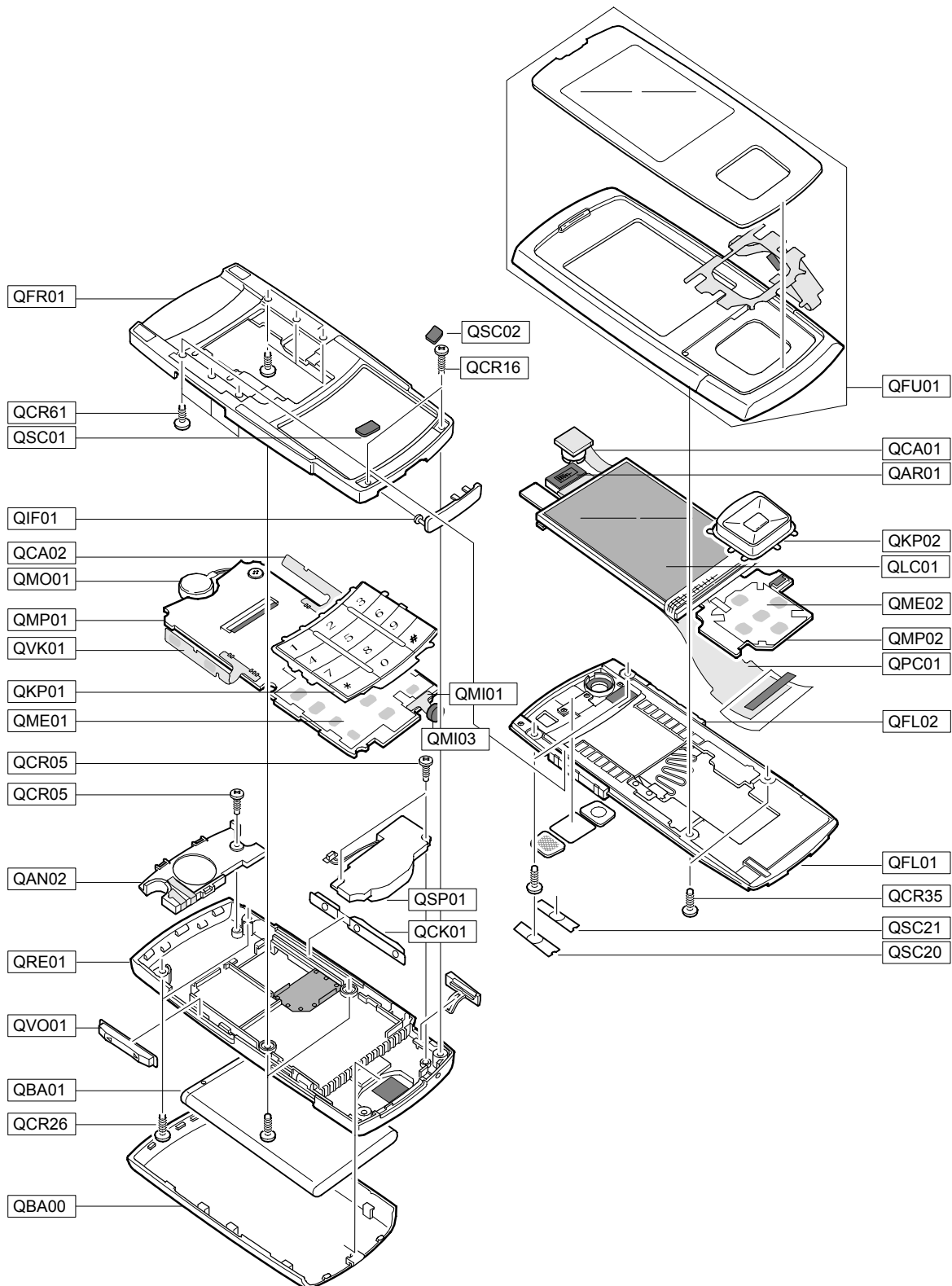
**\*#5002\*8376263#** 🎵

Full Reset : 🎵

**\*2767\*3855#**

# 5. Exploded View and Parts List

## 5-1. Cellular phone Exploded View



**5-2. Cellular phone Parts list**

| Design LOC |       | Discription                    | SEC CODE    |
|------------|-------|--------------------------------|-------------|
| QAN02      |       | INTENNA-SGHE900                | GH42-00836A |
| QAR01      |       | AUDIO-RECEIVER                 | 3009-001198 |
| QBA00      |       | PMO-COVER BATTERY              | GH72-30483A |
| QBA01      |       | INNER BATTERY PACK-800MAH,BLK, | GH43-01850A |
| QCA01      |       | UNIT-CAMERA                    | GH59-03089A |
| QCA02      |       | UNIT-CAMERA KEY                | GH59-03069A |
| QCK01      |       | PMO-PWR CAM KEY                | GH72-30485A |
| QCR05      |       | SCREW-MACHINE                  | 6001-001478 |
| QCR16      |       | SCREW-MACHINE                  | 6001-001878 |
| QCR26      |       | SCREW-MACHINE                  | 6001-001850 |
| QCR35      |       | SCREW-MACHINE                  | 6001-001610 |
| QCR61      |       | SCREW-MACHINE                  | 6001-002008 |
| QFR01      |       | ASSY-CASE-FRONT                | GH98-00831A |
| QFU01      |       | MEA-SLIDE UPPER ASSY           | GH97-05923A |
| QKP01      |       | ASSY-KEY-KEYPAD MAIN(EKA/XEF)  | GH98-00836A |
| QKP02      |       | ASSY-KEY-KEYPAD SUB(EKA/XEF)   | GH98-00835A |
| QLC01      |       | MEA-LCD MODULE KIT             | GH97-05912A |
| QME01      |       | UNIT-METAL DOME(MAIN)          | GH59-03071A |
| QME02      |       | UNIT-METAL DOME(SUB)           | GH59-03072A |
| QMI01      |       | MICROPHONE-ASSY-SCHV940        | GH30-00243A |
| QMI03      |       | RMO-MIC HOLDER                 | GH73-06560A |
| QMO01      |       | MOTOR DC-SGHE900               | GH31-00251A |
| QMP01      |       | PBA MAIN-SGHE900               | GH92-02709A |
| QMP02      |       | PBA SUB-SGHE900                | GH92-02739A |
| QPC01      |       | MEA-SLIDE FPCB KIT             | GH97-05913  |
| QSC01      |       | MPR-TAPE SCREW SHEET FL        | GH74-23269A |
| QSC02      |       | MPR-TAPE SCREW SHEET FR        | GH74-23268A |
| QSC20      |       | PMO-CUSHION DAMPER LOWER R     | GH72-31288A |
| QSC21      |       | PMO-CUSHION DAMPER LOWER L     | GH72-31290A |
| QSP01      |       | SPEAKER                        | 3001-001973 |
| QVK01      |       | UNIT-VOLUMEKEY                 | GH59-03070A |
| QVO01      |       | PMO-VOL KEY                    | GH72-30484A |
| QFL01      |       | ASSY-CASE-SLIDE LOWER          | GH98-00834A |
|            | QFL02 | MEC-SLIDE MODULE               | GH75-09385A |
| QRE01      |       | ASSY-CASE-REAR                 | GH98-00833A |
|            | QIF01 | PMO-COVER IF                   | GH72-30482A |



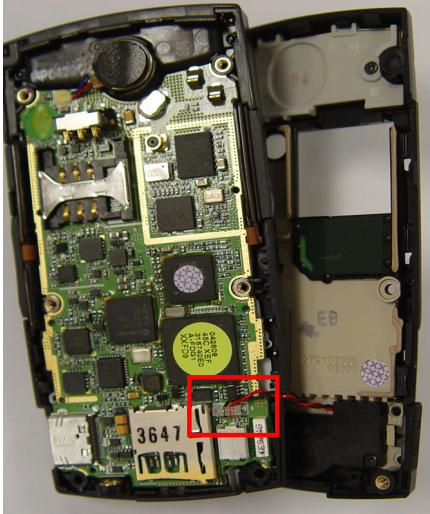
| Discription                   | SEC CODE    |
|-------------------------------|-------------|
| BAG PE                        | 6902-000297 |
| CBF INTERFACE-DATA LINK CABLE | GH39-00444A |
| S/W CD-SAMSUNG PC STUDIO 3.0  | GH46-00247A |
| LABEL(P)-WATER SOAK           | GH68-02026A |
| LABEL(P)-WATER SOAK           | GH68-02026A |
| MANUAL USERS-EU FRENCH        | GH68-09787A |
| LABEL(R)-MAIN(FRANCE)         | GH68-10716A |
| LABEL(P)-OPEN MP3             | GH68-11246A |
| BOX(P)-UNIT MAIN(EU)          | GH69-03893A |
| CUSHION-CASE TA2 MA2          | GH69-03899A |
| RMO-RUBBER B/T MODULE         | GH73-07379A |
| MPR-BOHO VINYL LCD CONN       | GH74-15350A |
| MPR-TAPE FPCB SUB             | GH74-23248A |
| MPR-TAPE LCD PCB A            | GH74-23249A |
| MPR-TAPE LCD PCB B            | GH74-23250A |
| MPR-TAPE LCD PCB DUAL         | GH74-23251A |
| MPR-TAPE SHIELD SUB DOME      | GH74-23252A |
| MPR-TAPE LCD FPCB             | GH74-23255A |
| MPR-TAPE LCD CONTACT          | GH74-23256A |
| MPR-TAPE RF SHEET             | GH74-23260A |
| MPR-CUSHION TOUCH FPCB        | GH74-23267A |
| MPR-CUSHION FPCB              | GH74-23270A |
| MPR-TAPE LCD PCB C            | GH74-23615A |
| MPR-VINYL BOHO TOP LOWER      | GH74-24023A |
| MPR-VINYL BOHO UPPER A        | GH74-24024A |
| MPR-VINYL BOHO UPPER B        | GH74-24025A |
| MPR-VINYL BOHO UPPER C        | GH74-24026A |
| MPR-VINYL BOHO MAIN WIN       | GH74-24027A |
| MPR-VINYL BOHO UPPER D        | GH74-24028A |
| MPR-TAPE INS TOUCH KEY        | GH74-24029A |
| MPR-TAPE SMD MIC              | GH74-24031A |
| MPR-SPONGE SMD MIC            | GH74-24467A |
| MPR-SPONGE KEYPAD MAIN        | GH74-24468A |
| MPR-TAPE MAIN PCB B           | GH74-24469A |
| MPR-TAPE FLASH                | GH74-24508A |
| MPR-VINYL BOHO KEYPAD         | GH74-24510A |
| MPR-TAPE INS MAIN PBA         | GH74-24749A |
| ASSY RUBBER-INTENNA CONTACT   | GH98-01514A |

## 6. Disassembly and Assembly instructions

### 6-1. Disassembly

|  |   |
|--|---|
| <p>1</p>                        | <p>2</p>    |
| <p>1) RELEASE SCREW AT 4POINTS</p> <p><b>* caution</b></p> <p>1. DO NOT MAKE SCRATCH ON CASE</p>                 | <p>1) DETACH FRONT SCREW CAP</p> <p>2) RELEASE SCREW AT 2 POINT</p> <p><b>* caution</b></p> <p>1. DO NOT MAKE SCRATCH ON CASE</p>   |
| <p>3</p>                      | <p>4</p>   |
| <p>1) DISASSEMBLE REAR LOCKING PART USING TOOS</p> <p><b>* caution</b></p> <p>1. DO NOT MAKE SCRATCH ON CASE</p> | <p>1) PUSH REAR ARROW DIRECTION, CAN DISASSEMBLE</p> <p><b>* caution</b></p> <p>1.DO NOT MAKE SCRATCH ON CASE</p> <p>2.IN CASE THAT FORCE TO DISJOINT, BREAKS SPK WIRE. DO NOT TAKE EXCESSIVE FORCE AT REAR</p> |

5

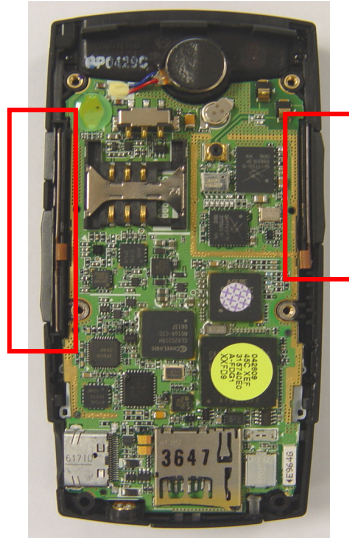


1) DISASSEMBLE SPK CONNECTOR

**\* caution**

1. DISASSEMBLE BY PROPERLY POWER
2. DO NOT TAKE EXCESSIVE FORCE AT REAR, TAKE CARE BREAKING WIRE

6

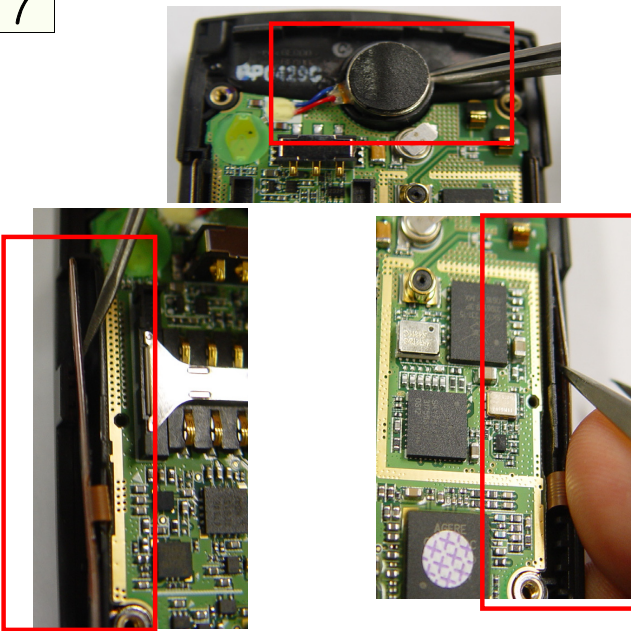


1) DIASSEMBLE VOLUME KEY, CAMERA KEY

**\* caution**

- 1.DO NOT MAKE SCRATCH ON CASE

7

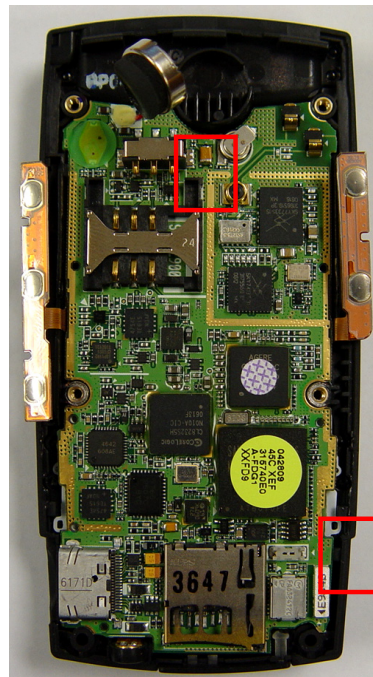


- 1) DISASSEMBLE MOTOR BY TOOS
- 2) DISASSEMBLE VOLUME KEY FPCB BY TOOS
- 3) DISASSEMBLE CAMERA KEY FPCB BY TOOS

**\* caution**

1. WHEN DISASSEMBLE, TAKE CARE DAMAGE AT PARTS

8

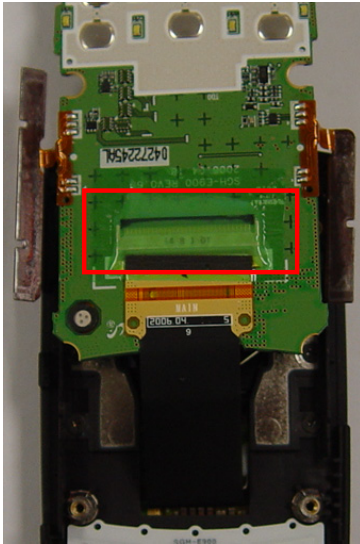


1) DIASSEMBLE HOOK WHICH FIXED PBA

**\* caution**

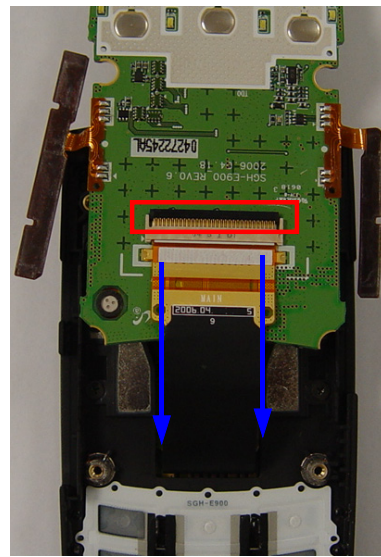
1. WHEN DISASSEMBLE, TAKE CARE DAMAGE AT PARTS

9



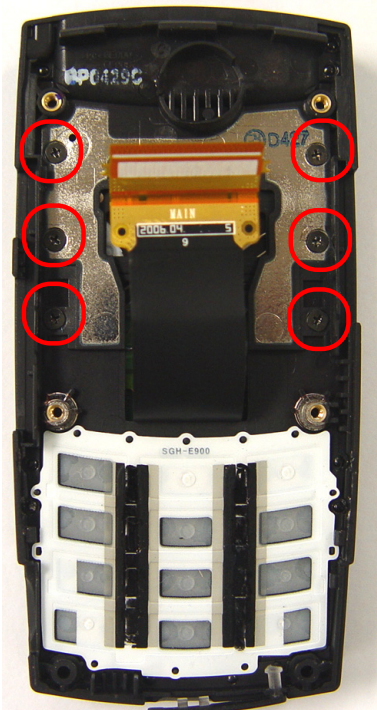
- 1) UPSIDE DOWN PBA
  - 2) REMOVE TAPE ON FPCB CONNECTOR
- \* caution**
1. WHEN DISASSEMBLE, TAKE CARE DAMAGE AT PARTS

10



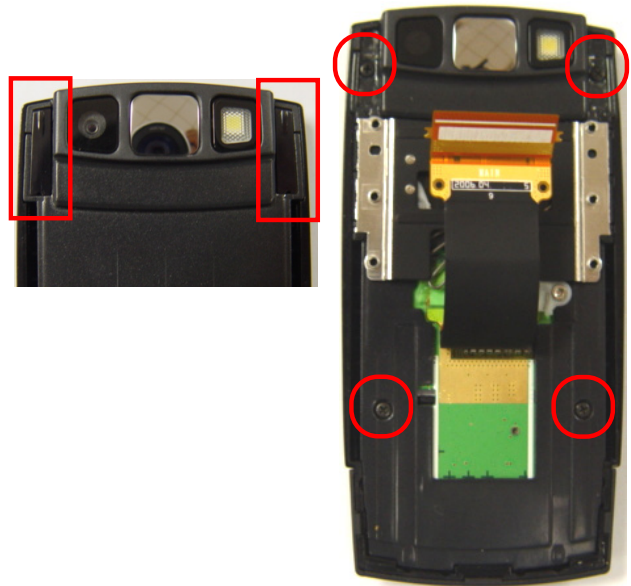
- 1) OPEN FPCB CONNECTOR
  - 2) PULL FPCB TO ARROW DIRECTION
- \* caution**
1. DO NOT TAKE EXCESSIVE FORCE AT FPCB

11


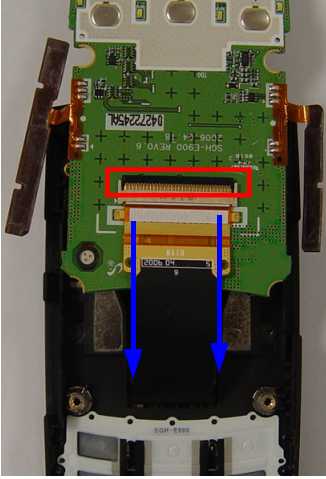
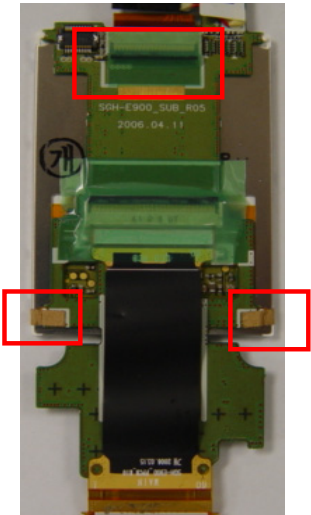
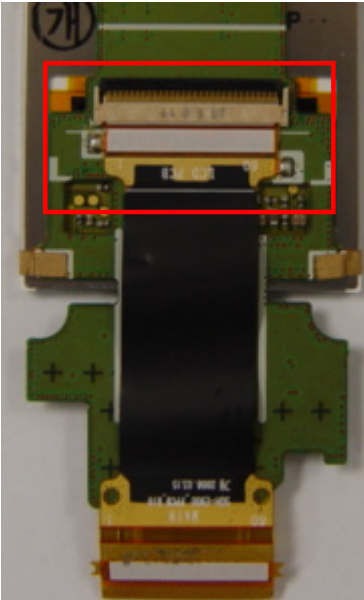


- 1)RELEASE SCREW AT 6 POINT
- \* caution**
1. DO NOT MAKE SCRATCH ON CASE

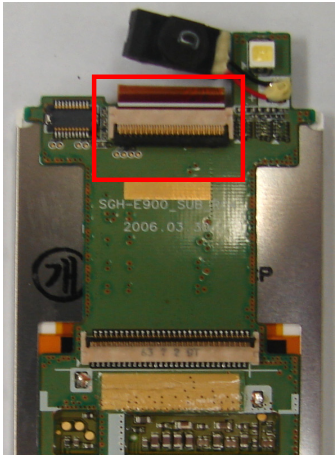
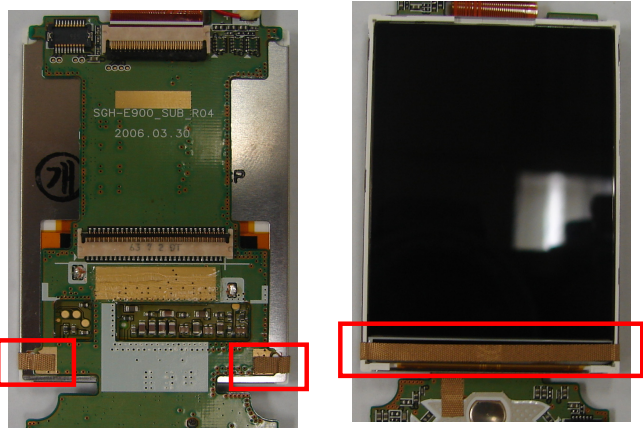
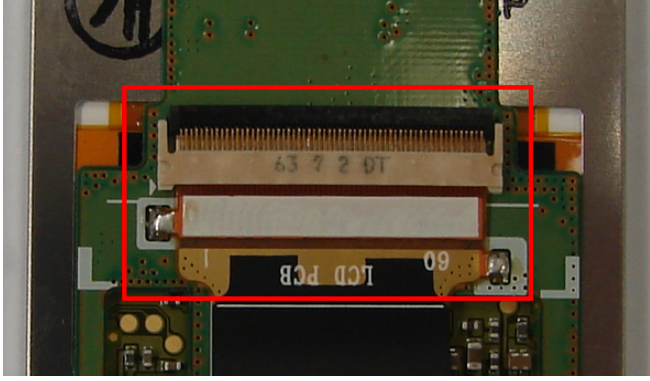
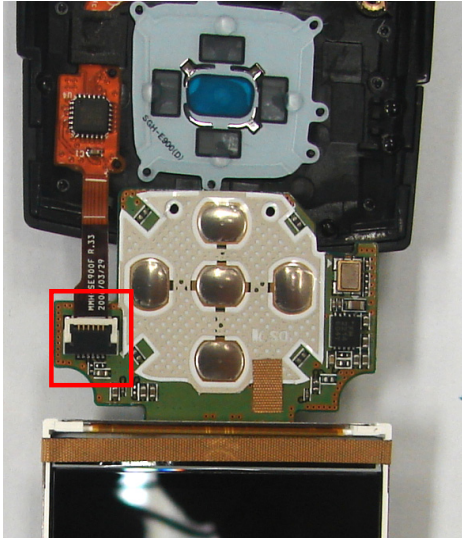
12

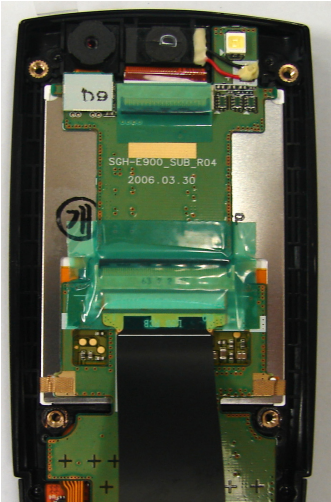
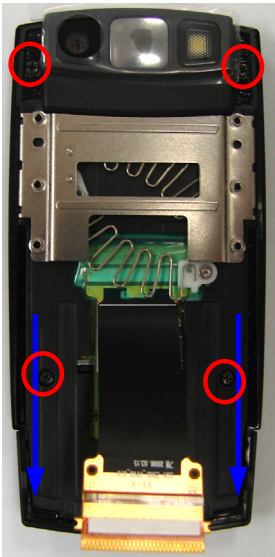

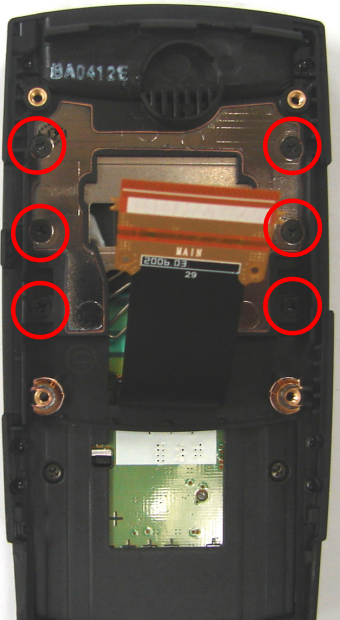


- 1)DETACH SCREW CAP
  - 2)RELEASE SCREW AT 4 POINT
- \* caution**
1. DO NOT MAKE SCRATCH ON CASE

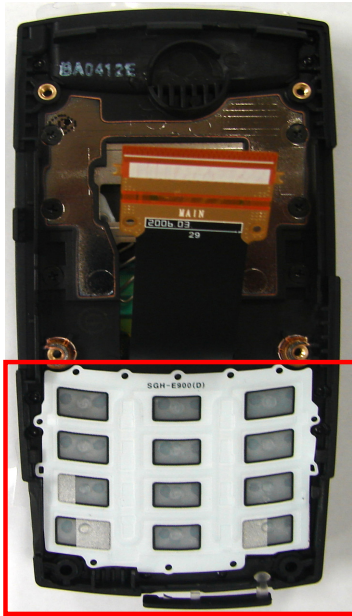
|  |  |
|--|--|
| <p>13</p>   | <p>14</p>    |
| <p>1) DISASSEMBLE CAMERA AT CONNECTOR<br/>2) REMOVE CAMERA</p> <p><b>* caution</b></p> <p>1. WHEN DISASSEMBLE CAMERA, TAKE CARE BREAKING CAMERA FPCB</p>   | <p>1) UPSIDE DOWN PBA<br/>2) DETACH TAPE ON TOUCH KEY CON<br/>3) OPEN TOUCH KEY CON</p> <p><b>* caution</b></p> <p>1. LEAVE NO PARTICLE AND NO FINGER PRINT LCD AND WINDOW</p>         |
| <p>15</p>   | <p>16</p>    |
| <p>1) DETACH TAPE ON LCD CONNECTOR<br/>2) OPEN CONNECTOR, PULL LCD FPCB AT CONNECTOR<br/>3) DETACH GOLDEN TAPE AT LCD LOWER END<br/>4) DISASSEMBLE LCD AND PBA</p> <p><b>* caution</b></p> <p>1. WHEN DISASSEMBLE, TAKE CARE DAMAGE ON PBA</p> | <p>1) DETACH TAPE ON FPCB CONNECTOR<br/>2) REMOVE SOLDERING LEAD ON FPCB<br/>3) OPEN FPCB CONNECTOR, PULL FPCB</p> <p><b>* caution</b></p> <p>1. THROW AWAY FPCB AFTER DISASSEMBLE</p> |

## 6-2. Assembly

|   |  |
|---|--|
| <p>1</p>   | <p>2</p>   |
| <p>1) Attach LCD on PBA.<br/>2) Insert LCD FPCB to CONNECTOR.<br/>3) Attach tape on LCD FPCB CONNECTOR.<br/><b>* caution</b><br/>1. Leave no particle and no finger print on LCD.<br/>2. Make sure that FPCB is completely inserted.</p>                              | <p>1) Attach Tape below the line on LCD.<br/><b>* caution</b><br/>1. Keep the TAPE below the line on LCD.</p>  |
| <p>3</p>   | <p>4</p>   |
| <p>1) Insert SLIDE FPCB to CONNECTOR.<br/>2) CLOSE the CONNECTOR.<br/>3) Solder 2POINT beside of FPCB.<br/>4) Attach TAPE on CONNECTOR.<br/><b>* caution</b><br/>1. Make sure that FPCB is completely inserted.<br/>2. Don't make the solder disturb other parts.</p> | <p>1) Insert TOUCH KEY FPCB to CONNECTOR.<br/>2) CLOSE the CONNECTOR.<br/>3) Attach TAPE on CONNECTOR.<br/><b>* caution</b><br/>1. Make sure that FPCB is completely inserted.</p> |

|   |  |
|---|--|
| <p>5</p>   | <p>6</p>    |
| <p>1) Insert SLIDE LOWER from top to bottom.<br/>2) Drive SCREWS at 4 POINT.</p> <p><b>* caution</b></p> <p>1. Make sure that CAMERA CONNECTOR is completely inserted.<br/>2. Leave no particle and no finger print between LCD and WINDOW.</p> | <p>1) Put LCD, SPK and PBA on UPPER.<br/>2) Put the CAMERA on UPPER.<br/>3) Connect the CAMERA</p> <p><b>* caution</b></p> <p>1. Do not make SCRATCH on the surface.</p> |
| <p>7</p>   | <p>8</p>   |
| <p>1) Attatch left and right SCREW CAPS.<br/>2) Press SCREW CAPS.</p> <p><b>* caution</b></p> <p>1. Make sure that the SCREW CAP is completely attached.</p>  | <p>1) Assemble the FRONT.<br/>2) Drive SCREWS at 6 POINT.</p> <p><b>* caution</b></p> <p>1. Do not make SCRATCH on the surface.</p>                                      |

9

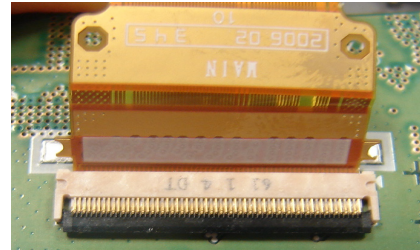
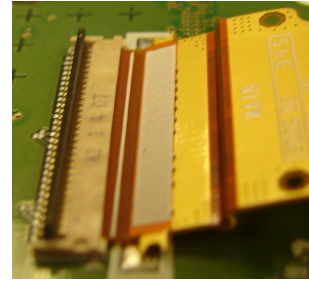


1) Put KEY PAD on.

**\* caution**

1. Do not make SCRATCH on the surface.

10



1) Connect FPCB.

2) CLOSE the CONNECTOR.

**\* caution**

1. Make sure that FPCB is completely inserted.

2. Be careful of DAMAGE on FPCB.

11



1) Attatch the TAPE on the FPCB CONNECTOR.

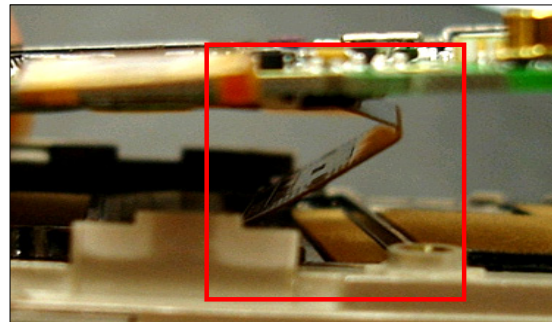
2) Attatch the SPONGE on the TAPE.

**\* caution**

1. Press the TAPE

2. The SPONGE must be placed like the picture, not on the CONNECTOR.

12

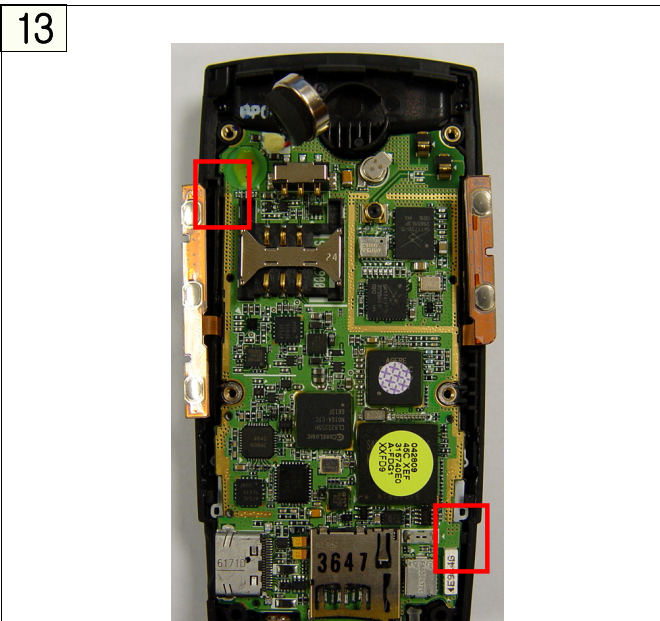


1) Turn PBA over and Make sure that the FPCB is folded.

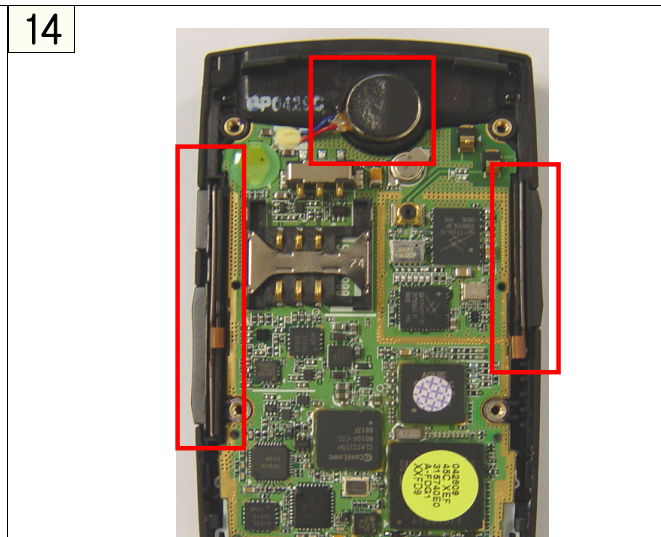
**\* caution**

1. Be careful of DAMAGE on FPCB.

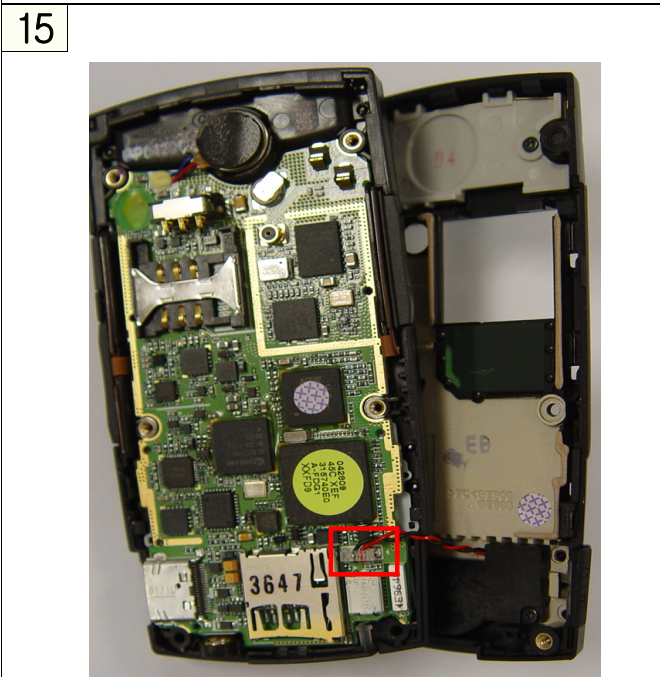




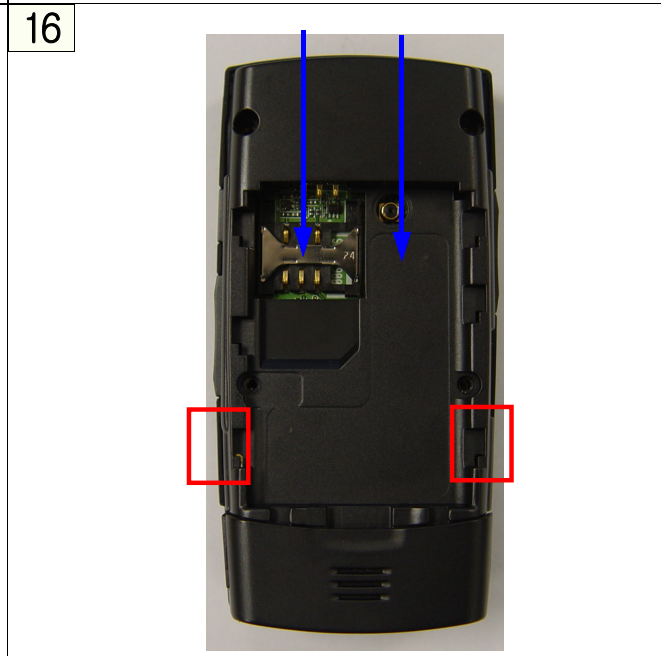
1) Assemble PBA. Fasten it to 2 point of FRONT HOOK.  
**\* caution**  
 1. Don't make PBA get stressed.  
 2. Don't break the HOOK.



1) fix the MOTOR at the FRONTe.  
 2) Attatch VOLUME KEY FPCB on the FRONT.  
 3) Attatch CAMERA KEY FPCB on the FRONT.  
 4)insert VOLUME KEY and CAMERA KEY.  
**\* caution**  
 1. Be careful of MOTOR WIRE broken.  
 2. Be careful of DAMAGE on FPCB.



1) Connect the SPK.  
**\* caution**  
 1. The WIRE is the upper direction.  
 2. Be careful of WIRE broken.



1) Assemble the REAR by push from top to bottom  
 2) Press 2 point of HOOK on the REAR  
**\* caution**  
 1. Do not make SCRATCH on the surface.

17



- 1) Drive SCREWS at 4 POINT on the REAR.
  - 2) Drive SCREWS at 2 POINT on the FRONT.
- \* caution**
1. Do not make SCRATCH on the surface.

18



- 1) Attatch SCREW CAP.
  - 2) Press the SCREW CAP.
- \* caution**
- 1) Make sure that the SCREW CAP is completely attached.

## 7. MAIN Electrical Parts List

| SEC CODE    | Design LOC | Discription             | STATUS |
|-------------|------------|-------------------------|--------|
| GH71-06338A | ANT_GND    | NPR-BRACKET ANT CONTACT | SA     |
| GH71-06338A | ANT_PAD    | NPR-BRACKET ANT CONTACT | SA     |
| 4202-001150 | ANT101     | ANTENNA-CHIP            | SA     |
| 4302-001158 | BAT300     | BATTERY-LI(2ND)         | SA     |
| 3711-006137 | BTC506     | HEADER-BATTERY          | SA     |
| 2203-005725 | C100       | C-CER,CHIP              | SA     |
| 2203-006838 | C101       | C-CER,CHIP              | SA     |
| 2203-005052 | C102       | C-CER,CHIP              | SA     |
| 2203-006361 | C103       | C-CER,CHIP              | SA     |
| 2203-006423 | C104       | C-CER,CHIP              | SA     |
| 2203-006423 | C104       | C-CER,CHIP              | SA     |
| 2203-005725 | C105       | C-CER,CHIP              | SA     |
| 2203-006423 | C105       | C-CER,CHIP              | SA     |
| 2203-005682 | C106       | C-CER,CHIP              | SA     |
| 2203-005819 | C106       | C-CER,CHIP              | SA     |
| 2203-000330 | C107       | C-CER,CHIP              | SA     |
| 2203-006838 | C107       | C-CER,CHIP              | SA     |
| 2203-002677 | C108       | C-CER,CHIP              | SA     |
| 2203-006838 | C108       | C-CER,CHIP              | SA     |
| 2203-005682 | C109       | C-CER,CHIP              | SA     |
| 2203-006423 | C110       | C-CER,CHIP              | SA     |
| 2203-006423 | C110       | C-CER,CHIP              | SA     |
| 2203-006305 | C111       | C-CER,CHIP              | SA     |
| 2203-006423 | C111       | C-CER,CHIP              | SA     |
| 2203-005736 | C112       | C-CER,CHIP              | SA     |
| 2203-006838 | C113       | C-CER,CHIP              | SA     |
| 2203-000812 | C116       | C-CER,CHIP              | SA     |
| 2203-005736 | C118       | C-CER,CHIP              | SA     |
| 2203-005736 | C119       | C-CER,CHIP              | SA     |
| 2203-006361 | C120       | C-CER,CHIP              | SA     |
| 2203-005736 | C121       | C-CER,CHIP              | SA     |
| 2203-006194 | C122       | C-CER,CHIP              | SA     |
| 2203-000254 | C123       | C-CER,CHIP              | SA     |
| 2203-006121 | C124       | C-CER,CHIP              | SA     |
| 2203-006838 | C124       | C-CER,CHIP              | SA     |
| 2203-000311 | C126       | C-CER,CHIP              | SA     |
| 2203-006194 | C127       | C-CER,CHIP              | SA     |
| 2203-005806 | C128       | C-CER,CHIP              | SA     |
| 2203-005683 | C129       | C-CER,CHIP              | SA     |

Main Electrical Parts List

| SEC CODE    | Design LOC | Discription | STATUS |
|-------------|------------|-------------|--------|
| 2203-006194 | C130       | C-CER,CHIP  | SA     |
| 2203-006562 | C130       | C-CER,CHIP  | SA     |
| 2203-006194 | C131       | C-CER,CHIP  | SA     |
| 2203-006838 | C131       | C-CER,CHIP  | SA     |
| 2203-005682 | C132       | C-CER,CHIP  | SA     |
| 2203-006562 | C132       | C-CER,CHIP  | SA     |
| 2203-006423 | C133       | C-CER,CHIP  | SA     |
| 2203-006562 | C133       | C-CER,CHIP  | SA     |
| 2203-006324 | C134       | C-CER,CHIP  | SA     |
| 2203-006562 | C135       | C-CER,CHIP  | SA     |
| 2203-006838 | C135       | C-CER,CHIP  | SA     |
| 2203-006562 | C136       | C-CER,CHIP  | SA     |
| 2203-006423 | C137       | C-CER,CHIP  | SA     |
| 2203-006423 | C138       | C-CER,CHIP  | SA     |
| 2203-006562 | C139       | C-CER,CHIP  | SA     |
| 2203-006423 | C140       | C-CER,CHIP  | SA     |
| 2203-005792 | C141       | C-CER,CHIP  | SA     |
| 2203-006838 | C143       | C-CER,CHIP  | SA     |
| 2203-006838 | C146       | C-CER,CHIP  | SA     |
| 2203-006708 | C150       | C-CER,CHIP  | SA     |
| 2203-006194 | C154       | C-CER,CHIP  | SA     |
| 2203-006648 | C155       | C-CER,CHIP  | SA     |
| 2203-006423 | C156       | C-CER,CHIP  | SA     |
| 2203-006257 | C157       | C-CER,CHIP  | SA     |
| 2203-006194 | C159       | C-CER,CHIP  | SA     |
| 2203-006562 | C160       | C-CER,CHIP  | SA     |
| 2203-006838 | C162       | C-CER,CHIP  | SA     |
| 2203-005682 | C163       | C-CER,CHIP  | SA     |
| 2203-006194 | C200       | C-CER,CHIP  | SA     |
| 2203-006423 | C201       | C-CER,CHIP  | SA     |
| 2203-006423 | C202       | C-CER,CHIP  | SA     |
| 2203-006194 | C203       | C-CER,CHIP  | SA     |
| 2203-006423 | C204       | C-CER,CHIP  | SA     |
| 2203-006194 | C205       | C-CER,CHIP  | SA     |
| 2203-006194 | C206       | C-CER,CHIP  | SA     |
| 2203-006194 | C207       | C-CER,CHIP  | SA     |
| 2203-006194 | C208       | C-CER,CHIP  | SA     |
| 2203-006423 | C209       | C-CER,CHIP  | SA     |
| 2203-006562 | C210       | C-CER,CHIP  | SA     |

| SEC CODE    | Design LOC | Discription | STATUS |
|-------------|------------|-------------|--------|
| 2203-006556 | C211       | C-CER,CHIP  | SA     |
| 2203-005806 | C212       | C-CER,CHIP  | SA     |
| 2203-006562 | C213       | C-CER,CHIP  | SA     |
| 2203-006423 | C215       | C-CER,CHIP  | SA     |
| 2203-005727 | C216       | C-CER,CHIP  | SA     |
| 2203-005727 | C217       | C-CER,CHIP  | SA     |
| 2203-006194 | C300       | C-CER,CHIP  | SA     |
| 2203-006194 | C301       | C-CER,CHIP  | SA     |
| 2203-006423 | C302       | C-CER,CHIP  | SA     |
| 2203-006423 | C303       | C-CER,CHIP  | SA     |
| 2203-005682 | C304       | C-CER,CHIP  | SA     |
| 2203-006562 | C305       | C-CER,CHIP  | SA     |
| 2203-006324 | C306       | C-CER,CHIP  | SA     |
| 2203-005736 | C307       | C-CER,CHIP  | SA     |
| 2203-006562 | C308       | C-CER,CHIP  | SA     |
| 2203-006562 | C309       | C-CER,CHIP  | SA     |
| 2203-006562 | C310       | C-CER,CHIP  | SA     |
| 2203-006562 | C311       | C-CER,CHIP  | SA     |
| 2203-006562 | C312       | C-CER,CHIP  | SA     |
| 2203-006562 | C313       | C-CER,CHIP  | SA     |
| 2203-006562 | C314       | C-CER,CHIP  | SA     |
| 2203-005736 | C315       | C-CER,CHIP  | SA     |
| 2203-006194 | C316       | C-CER,CHIP  | SA     |
| 2203-001405 | C317       | C-CER,CHIP  | SA     |
| 2203-006648 | C318       | C-CER,CHIP  | SA     |
| 2203-006423 | C319       | C-CER,CHIP  | SA     |
| 2203-006562 | C320       | C-CER,CHIP  | SA     |
| 2203-006423 | C321       | C-CER,CHIP  | SA     |
| 2203-006562 | C322       | C-CER,CHIP  | SA     |
| 2203-006562 | C324       | C-CER,CHIP  | SA     |
| 2203-006048 | C326       | C-CER,CHIP  | SA     |
| 2203-006825 | C327       | C-CER,CHIP  | SA     |
| 2203-006562 | C328       | C-CER,CHIP  | SA     |
| 2203-006562 | C329       | C-CER,CHIP  | SA     |
| 2203-006825 | C330       | C-CER,CHIP  | SA     |
| 2203-006825 | C332       | C-CER,CHIP  | SA     |
| 2203-006423 | C333       | C-CER,CHIP  | SA     |
| 2203-006423 | C334       | C-CER,CHIP  | SA     |
| 2203-006642 | C335       | C-CER,CHIP  | SNA    |

Main Electrical Parts List

| SEC CODE    | Design LOC | Discription | STATUS |
|-------------|------------|-------------|--------|
| 2203-006642 | C336       | C-CER,CHIP  | SNA    |
| 2203-006423 | C337       | C-CER,CHIP  | SA     |
| 2203-006423 | C360       | C-CER,CHIP  | SA     |
| 2203-006423 | C400       | C-CER,CHIP  | SA     |
| 2203-005481 | C401       | C-CER,CHIP  | SA     |
| 2203-006423 | C402       | C-CER,CHIP  | SA     |
| 2203-006423 | C403       | C-CER,CHIP  | SA     |
| 2203-006824 | C404       | C-CER,CHIP  | SA     |
| 2203-006423 | C405       | C-CER,CHIP  | SA     |
| 2404-001381 | C406       | C-TA,CHIP   | SA     |
| 2203-005481 | C407       | C-CER,CHIP  | SA     |
| 2203-006824 | C408       | C-CER,CHIP  | SA     |
| 2203-006260 | C409       | C-CER,CHIP  | SA     |
| 2203-006260 | C410       | C-CER,CHIP  | SA     |
| 2404-001339 | C411       | C-TA,CHIP   | SA     |
| 2203-005481 | C412       | C-CER,CHIP  | SA     |
| 2203-006423 | C413       | C-CER,CHIP  | SA     |
| 2203-000654 | C414       | C-CER,CHIP  | SA     |
| 2203-001033 | C415       | C-CER,CHIP  | SA     |
| 2203-006257 | C416       | C-CER,CHIP  | SA     |
| 2203-006423 | C417       | C-CER,CHIP  | SA     |
| 2203-006257 | C418       | C-CER,CHIP  | SA     |
| 2203-006562 | C419       | C-CER,CHIP  | SA     |
| 2203-005806 | C420       | C-CER,CHIP  | SA     |
| 2203-006562 | C421       | C-CER,CHIP  | SA     |
| 2203-006423 | C422       | C-CER,CHIP  | SA     |
| 2203-006562 | C423       | C-CER,CHIP  | SA     |
| 2203-006324 | C424       | C-CER,CHIP  | SA     |
| 2203-006423 | C425       | C-CER,CHIP  | SA     |
| 2203-006423 | C426       | C-CER,CHIP  | SA     |
| 2203-006379 | C427       | C-CER,CHIP  | SA     |
| 2203-006305 | C428       | C-CER,CHIP  | SA     |
| 2203-006305 | C429       | C-CER,CHIP  | SA     |
| 2203-006423 | C430       | C-CER,CHIP  | SA     |
| 2203-006562 | C431       | C-CER,CHIP  | SA     |
| 2203-006423 | C432       | C-CER,CHIP  | SA     |
| 2203-006562 | C433       | C-CER,CHIP  | SA     |
| 2203-006562 | C434       | C-CER,CHIP  | SA     |
| 2203-005719 | C435       | C-CER,CHIP  | SA     |

| SEC CODE    | Design LOC | Discription         | STATUS |
|-------------|------------|---------------------|--------|
| 2203-006562 | C436       | C-CER,CHIP          | SA     |
| 2203-006562 | C437       | C-CER,CHIP          | SA     |
| 2203-005719 | C438       | C-CER,CHIP          | SA     |
| 2203-006257 | C439       | C-CER,CHIP          | SA     |
| 2404-001352 | C440       | C-TA,CHIP           | SA     |
| 2203-006562 | C441       | C-CER,CHIP          | SA     |
| 2203-006562 | C442       | C-CER,CHIP          | SA     |
| 2203-005481 | C443       | C-CER,CHIP          | SA     |
| 2203-005683 | C444       | C-CER,CHIP          | SA     |
| 2203-005481 | C445       | C-CER,CHIP          | SA     |
| 2203-002759 | C446       | C-CER,CHIP          | SA     |
| 2203-002759 | C447       | C-CER,CHIP          | SA     |
| 2203-006562 | C448       | C-CER,CHIP          | SA     |
| 2203-006562 | C449       | C-CER,CHIP          | SA     |
| 2203-006562 | C452       | C-CER,CHIP          | SA     |
| 2203-006562 | C453       | C-CER,CHIP          | SA     |
| 2203-005729 | C454       | C-CER,CHIP          | SA     |
| 2203-005729 | C455       | C-CER,CHIP          | SA     |
| 2203-006423 | C502       | C-CER,CHIP          | SA     |
| 2203-005683 | C503       | C-CER,CHIP          | SA     |
| 2203-006048 | C504       | C-CER,CHIP          | SA     |
| 2203-006423 | C505       | C-CER,CHIP          | SA     |
| 2203-006562 | C506       | C-CER,CHIP          | SA     |
| 2203-005682 | C507       | C-CER,CHIP          | SA     |
| 2203-005682 | C509       | C-CER,CHIP          | SA     |
| 2203-006260 | C510       | C-CER,CHIP          | SA     |
| 2203-006260 | C513       | C-CER,CHIP          | SA     |
| 2203-006562 | C516       | C-CER,CHIP          | SA     |
| 2203-005682 | C517       | C-CER,CHIP          | SA     |
| 2203-005682 | C518       | C-CER,CHIP          | SA     |
| 2203-006648 | C519       | C-CER,CHIP          | SA     |
| 2203-005682 | C520       | C-CER,CHIP          | SA     |
| 2203-006825 | C529       | C-CER,CHIP          | SA     |
| 2203-006562 | C530       | C-CER,CHIP          | SA     |
| 2203-005729 | C533       | C-CER,CHIP          | SA     |
| 2203-006348 | C534       | C-CER,CHIP          | SA     |
| 2203-006626 | C535       | C-CER,CHIP          | SA     |
| 2203-005061 | C537       | C-CER,CHIP          | SA     |
| 3709-001344 | CD501      | CONNECTOR-CARD EDGE | SA     |

Main Electrical Parts List

| SEC CODE    | Design LOC | Discription           | STATUS |
|-------------|------------|-----------------------|--------|
| 0404-001172 | D301       | DIODE-SCHOTTKY        | SA     |
| 0407-001002 | D500       | DIODE-ARRAY           | SA     |
| 2911-000034 | F100       | DUPLEXER-FEM          | SA     |
| 2901-001324 | F500       | FILTER-EMI/ESD        | SA     |
| 2901-001324 | F502       | FILTER-EMI/ESD        | SA     |
| 2901-001324 | F503       | FILTER-EMI/ESD        | SA     |
| 2901-001324 | F505       | FILTER-EMI/ESD        | SA     |
| 2901-001324 | F506       | FILTER-EMI/ESD        | SA     |
| 0601-002132 | FLED100    | LED                   | SA     |
| 3711-005646 | HDC100     | HEADER-BOARD TO BOARD | SA     |
| 3708-002170 | HDC503     | CONNECTOR-FPC/FFC/PIC | SA     |
| 3710-002306 | IFC502     | SOCKET-INTERFACE      | SA     |
| 2703-002910 | L100       | INDUCTOR-SMD          | SA     |
| 3301-001342 | L100       | BEAD-SMD              | SA     |
| 2703-002204 | L101       | INDUCTOR-SMD          | SA     |
| 2703-002198 | L102       | INDUCTOR-SMD          | SA     |
| 2703-002198 | L103       | INDUCTOR-SMD          | SA     |
| 2703-002281 | L104       | INDUCTOR-SMD          | SA     |
| 2703-002281 | L105       | INDUCTOR-SMD          | SA     |
| 2703-002267 | L106       | INDUCTOR-SMD          | SA     |
| 2703-002267 | L107       | INDUCTOR-SMD          | SA     |
| 2703-003003 | L108       | INDUCTOR-SMD          | SA     |
| 2703-002204 | L109       | INDUCTOR-SMD          | SA     |
| 2703-002200 | L110       | INDUCTOR-SMD          | SA     |
| 2007-008542 | L111       | R-CHIP                | SA     |
| 3301-001342 | L200       | BEAD-SMD              | SA     |
| 3301-001342 | L301       | BEAD-SMD              | SA     |
| 2703-003001 | L302       | INDUCTOR-SMD          | SA     |
| 2703-003002 | L303       | INDUCTOR-SMD          | SA     |
| 3301-001342 | L400       | BEAD-SMD              | SA     |
| 3301-001342 | L401       | BEAD-SMD              | SA     |
| 3301-001342 | L402       | BEAD-SMD              | SA     |
| 3301-001342 | L403       | BEAD-SMD              | SA     |
| 3301-001342 | L404       | BEAD-SMD              | SA     |
| 2703-001913 | L500       | INDUCTOR-SMD          | SA     |
| 2703-001913 | L501       | INDUCTOR-SMD          | SA     |
| 0601-002094 | LED300     | LED                   | SA     |
| 0601-002094 | LED301     | LED                   | SA     |
| 0601-002094 | LED302     | LED                   | SA     |



| SEC CODE    | Design LOC | Discription      | STATUS |
|-------------|------------|------------------|--------|
| 0601-002094 | LED303     | LED              | SA     |
| 0601-002094 | LED304     | LED              | SA     |
| 0601-002094 | LED305     | LED              | SA     |
| 0601-002094 | LED306     | LED              | SA     |
| 0601-002094 | LED307     | LED              | SA     |
| 0601-002094 | LED308     | LED              | SA     |
| 0601-002094 | LED309     | LED              | SA     |
| 0601-002094 | LED310     | LED              | SA     |
| 0601-002094 | LED311     | LED              | SA     |
| GH30-00266A | MIC_S      | MICROPHONE-ASSY  | SA     |
| 4709-001451 | MOD100     | BLUETOOTH MODULE | SA     |
| 2804-001648 | OSC100     | OSCILLATOR-CLOCK | SA     |
| 2801-004466 | OSC200     | CRYSTAL-SMD      | SA     |
| 2801-004340 | OSC400     | CRYSTAL-SMD      | SA     |
| 1201-002368 | PAM100     | IC-POWER AMP     | SA     |
| 2007-008516 | R100       | R-CHIP           | SA     |
| 2007-008045 | R101       | R-CHIP           | SA     |
| 2007-001290 | R102       | R-CHIP           | SA     |
| 2007-008045 | R102       | R-CHIP           | SA     |
| 2007-000139 | R103       | R-CHIP           | SA     |
| 2007-000139 | R104       | R-CHIP           | SA     |
| 2007-008478 | R104       | R-CHIP           | SA     |
| 2007-008478 | R105       | R-CHIP           | SA     |
| 2007-007317 | R106       | R-CHIP           | SA     |
| 2007-008044 | R106       | R-CHIP           | SA     |
| 2007-008542 | R107       | R-CHIP           | SA     |
| 2007-007741 | R108       | R-CHIP           | SA     |
| 2007-008516 | R108       | R-CHIP           | SA     |
| 2007-009084 | R109       | R-CHIP           | SA     |
| 2007-007134 | R112       | R-CHIP           | SA     |
| 2007-008531 | R114       | R-CHIP           | SA     |
| 2007-009084 | R114       | R-CHIP           | SA     |
| 2007-000174 | R115       | R-CHIP           | SA     |
| 2007-008045 | R115       | R-CHIP           | SA     |
| 2007-000174 | R116       | R-CHIP           | SA     |
| 2007-008483 | R117       | R-CHIP           | SA     |
| 2007-008516 | R118       | R-CHIP           | SA     |
| 2007-008587 | R119       | R-CHIP           | SA     |
| 2007-008048 | R120       | R-CHIP           | SA     |

Main Electrical Parts List

| SEC CODE    | Design LOC | Discription | STATUS |
|-------------|------------|-------------|--------|
| 2007-009314 | R121       | R-CHIP      | SA     |
| 2007-008483 | R122       | R-CHIP      | SA     |
| 2007-008542 | R123       | R-CHIP      | SA     |
| 2007-008483 | R200       | R-CHIP      | SA     |
| 2007-008055 | R201       | R-CHIP      | SA     |
| 2007-008483 | R202       | R-CHIP      | SA     |
| 2007-008055 | R203       | R-CHIP      | SA     |
| 2007-008542 | R204       | R-CHIP      | SA     |
| 2007-008542 | R205       | R-CHIP      | SA     |
| 2007-008542 | R206       | R-CHIP      | SA     |
| 2007-008542 | R207       | R-CHIP      | SA     |
| 2007-008542 | R208       | R-CHIP      | SA     |
| 2007-008542 | R209       | R-CHIP      | SA     |
| 2007-008542 | R210       | R-CHIP      | SA     |
| 2007-008542 | R212       | R-CHIP      | SA     |
| 2007-008542 | R213       | R-CHIP      | SA     |
| 2007-008542 | R214       | R-CHIP      | SA     |
| 2007-008542 | R215       | R-CHIP      | SA     |
| 2007-008542 | R216       | R-CHIP      | SA     |
| 2007-008542 | R217       | R-CHIP      | SA     |
| 2007-008542 | R218       | R-CHIP      | SA     |
| 2007-008542 | R219       | R-CHIP      | SA     |
| 2007-008542 | R220       | R-CHIP      | SA     |
| 2007-008516 | R221       | R-CHIP      | SA     |
| 2007-008055 | R222       | R-CHIP      | SA     |
| 2007-008055 | R223       | R-CHIP      | SA     |
| 2007-008045 | R300       | R-CHIP      | SA     |
| 2007-008045 | R301       | R-CHIP      | SA     |
| 2007-008045 | R302       | R-CHIP      | SA     |
| 2007-008045 | R303       | R-CHIP      | SA     |
| 2007-008045 | R304       | R-CHIP      | SA     |
| 2007-008588 | R305       | R-CHIP      | SA     |
| 2007-008045 | R306       | R-CHIP      | SA     |
| 2007-009166 | R307       | R-CHIP      | SA     |
| 2007-009167 | R308       | R-CHIP      | SA     |
| 2007-008052 | R309       | R-CHIP      | SA     |
| 2007-008542 | R310       | R-CHIP      | SA     |
| 2007-008544 | R312       | R-CHIP      | SA     |
| 2007-008544 | R313       | R-CHIP      | SA     |

| SEC CODE    | Design LOC | Discription | STATUS |
|-------------|------------|-------------|--------|
| 2007-008057 | R314       | R-CHIP      | SA     |
| 2007-008057 | R315       | R-CHIP      | SA     |
| 2007-008579 | R316       | R-CHIP      | SA     |
| 2007-008045 | R317       | R-CHIP      | SA     |
| 2007-008806 | R318       | R-CHIP      | SA     |
| 2007-008045 | R319       | R-CHIP      | SA     |
| 2007-008045 | R320       | R-CHIP      | SA     |
| 2007-008420 | R321       | R-CHIP      | SA     |
| 2007-008544 | R322       | R-CHIP      | SA     |
| 2007-008544 | R323       | R-CHIP      | SA     |
| 2007-008516 | R325       | R-CHIP      | SA     |
| 2007-008648 | R326       | R-CHIP      | SA     |
| 2007-008483 | R327       | R-CHIP      | SA     |
| 2007-008478 | R328       | R-CHIP      | SA     |
| 2007-008483 | R330       | R-CHIP      | SA     |
| 2007-008420 | R331       | R-CHIP      | SA     |
| 2007-008420 | R332       | R-CHIP      | SA     |
| 2007-008516 | R333       | R-CHIP      | SA     |
| 2007-008419 | R334       | R-CHIP      | SA     |
| 2007-008531 | R400       | R-CHIP      | SA     |
| 2007-008210 | R401       | R-CHIP      | SA     |
| 2007-008210 | R402       | R-CHIP      | SA     |
| 2007-007798 | R403       | R-CHIP      | SA     |
| 2007-007798 | R404       | R-CHIP      | SA     |
| 2007-007334 | R405       | R-CHIP      | SA     |
| 2007-000775 | R406       | R-CHIP      | SA     |
| 2007-000775 | R407       | R-CHIP      | SA     |
| 2007-008051 | R408       | R-CHIP      | SA     |
| 2007-008419 | R409       | R-CHIP      | SA     |
| 2007-008419 | R410       | R-CHIP      | SA     |
| 2007-008483 | R411       | R-CHIP      | SA     |
| 2007-008588 | R412       | R-CHIP      | SA     |
| 2007-008588 | R413       | R-CHIP      | SA     |
| 2007-008516 | R415       | R-CHIP      | SA     |
| 2007-009084 | R416       | R-CHIP      | SA     |
| 2007-008483 | R417       | R-CHIP      | SA     |
| 2007-008483 | R418       | R-CHIP      | SA     |
| 2007-007009 | R419       | R-CHIP      | SA     |
| 2007-001306 | R420       | R-CHIP      | SA     |

Main Electrical Parts List

| SEC CODE    | Design LOC | Discription | STATUS |
|-------------|------------|-------------|--------|
| 2007-008542 | R421       | R-CHIP      | SA     |
| 2007-007136 | R422       | R-CHIP      | SA     |
| 2007-008542 | R424       | R-CHIP      | SA     |
| 2007-008483 | R425       | R-CHIP      | SA     |
| 2007-008483 | R426       | R-CHIP      | SA     |
| 2007-008052 | R427       | R-CHIP      | SA     |
| 2007-008542 | R428       | R-CHIP      | SA     |
| 2007-008052 | R429       | R-CHIP      | SA     |
| 2007-008419 | R430       | R-CHIP      | SA     |
| 2007-009201 | R431       | R-CHIP      | SA     |
| 2007-009201 | R432       | R-CHIP      | SA     |
| 2007-001119 | R433       | R-CHIP      | SA     |
| 2007-008483 | R434       | R-CHIP      | SA     |
| 2007-008419 | R435       | R-CHIP      | SA     |
| 2007-000171 | R436       | R-CHIP      | SA     |
| 2007-007528 | R437       | R-CHIP      | SA     |
| 2007-007528 | R438       | R-CHIP      | SA     |
| 2007-007142 | R439       | R-CHIP      | SA     |
| 2007-007488 | R440       | R-CHIP      | SA     |
| 2007-007142 | R441       | R-CHIP      | SA     |
| 2007-000171 | R442       | R-CHIP      | SA     |
| 2007-007142 | R443       | R-CHIP      | SA     |
| 2007-007488 | R444       | R-CHIP      | SA     |
| 2007-000171 | R445       | R-CHIP      | SA     |
| 2007-007142 | R446       | R-CHIP      | SA     |
| 2007-008516 | R447       | R-CHIP      | SA     |
| 2007-008516 | R448       | R-CHIP      | SA     |
| 2007-000171 | R449       | R-CHIP      | SA     |
| 2007-008542 | R450       | R-CHIP      | SA     |
| 2007-008542 | R451       | R-CHIP      | SA     |
| 2007-008542 | R452       | R-CHIP      | SA     |
| 2007-008055 | R500       | R-CHIP      | SA     |
| 2007-008055 | R501       | R-CHIP      | SA     |
| 2007-008483 | R502       | R-CHIP      | SA     |
| 2007-008483 | R503       | R-CHIP      | SA     |
| 2007-008483 | R504       | R-CHIP      | SA     |
| 2007-009170 | R505       | R-CHIP      | SA     |
| 2007-008483 | R506       | R-CHIP      | SA     |
| 2007-009160 | R507       | R-CHIP      | SA     |

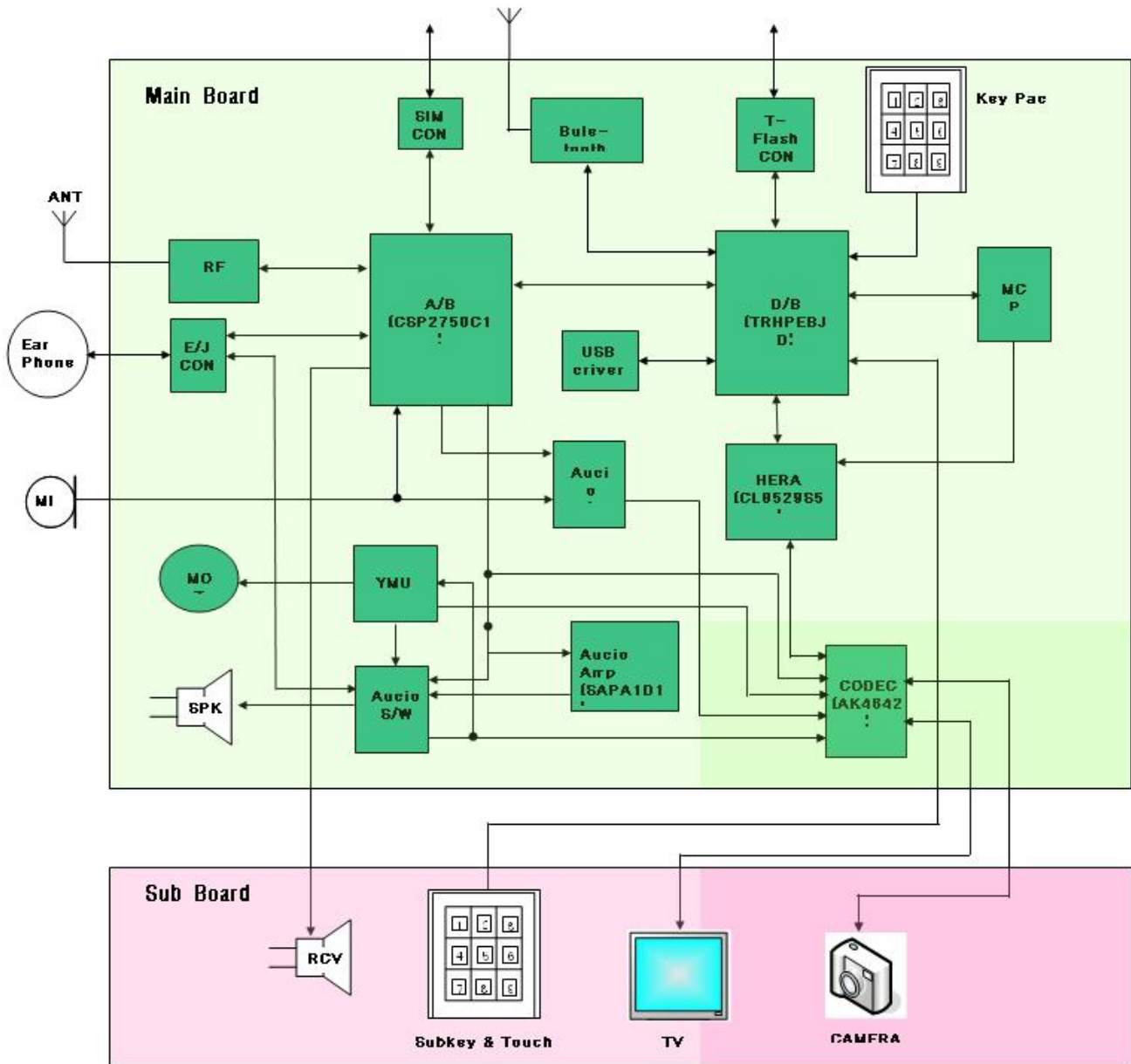
| SEC CODE    | Design LOC | Discription           | STATUS |
|-------------|------------|-----------------------|--------|
| 2007-008137 | R508       | R-CHIP                | SA     |
| 2007-008542 | R509       | R-CHIP                | SA     |
| 2007-007529 | R510       | R-CHIP                | SA     |
| 2007-007142 | R511       | R-CHIP                | SA     |
| 2007-001119 | R512       | R-CHIP                | SA     |
| 2007-008486 | R513       | R-CHIP                | SA     |
| 2007-007529 | R514       | R-CHIP                | SA     |
| 2007-007142 | R515       | R-CHIP                | SA     |
| 2007-008055 | R516       | R-CHIP                | SA     |
| 2007-008055 | R517       | R-CHIP                | SA     |
| 2007-007528 | R518       | R-CHIP                | SA     |
| 2007-007528 | R519       | R-CHIP                | SA     |
| 2007-008419 | R521       | R-CHIP                | SA     |
| 2007-008419 | R522       | R-CHIP                | SA     |
| 2007-008419 | R523       | R-CHIP                | SA     |
| 2007-000157 | R524       | R-CHIP                | SA     |
| 2007-008785 | R525       | R-CHIP                | SNA    |
| 2007-008785 | R526       | R-CHIP                | SNA    |
| 2007-008483 | R532       | R-CHIP                | SA     |
| 2007-008483 | R533       | R-CHIP                | SA     |
| 2007-008483 | R534       | R-CHIP                | SA     |
| 2007-008785 | R535       | R-CHIP                | SNA    |
| 2007-008785 | R536       | R-CHIP                | SNA    |
| 2007-008483 | R537       | R-CHIP                | SA     |
| 2007-008045 | R538       | R-CHIP                | SA     |
| 2007-008045 | R539       | R-CHIP                | SA     |
| 2007-008542 | R540       | R-CHIP                | SA     |
| 3705-001358 | RFS100     | CONNECTOR-COAXIAL     | SA     |
| 3709-001451 | SIM301     | CONNECTOR-CARD EDGE   | SA     |
| 3708-002015 | SLC102     | CONNECTOR-FPC/FFC/PIC | SA     |
| 3708-002234 | SLC103     | CONNECTOR-FPC/FFC/PIC | SA     |
| 3708-002170 | SLP100     | CONNECTOR-FPC/FFC/PIC | SA     |
| 3710-002081 | SPK400     | SOCKET-BOARD TO BOARD | SA     |
| 2404-001381 | TA300      | C-TA,CHIP             | SA     |
| 2404-001377 | TA501      | C-TA,CHIP             | SA     |
| 2404-001445 | TA502      | C-TA,CHIP             | SA     |
| 2404-001445 | TA503      | C-TA,CHIP             | SA     |
| 2404-001406 | TA504      | C-TA,CHIP             | SA     |
| 2404-001381 | TA505      | C-TA,CHIP             | SA     |

Main Electrical Parts List

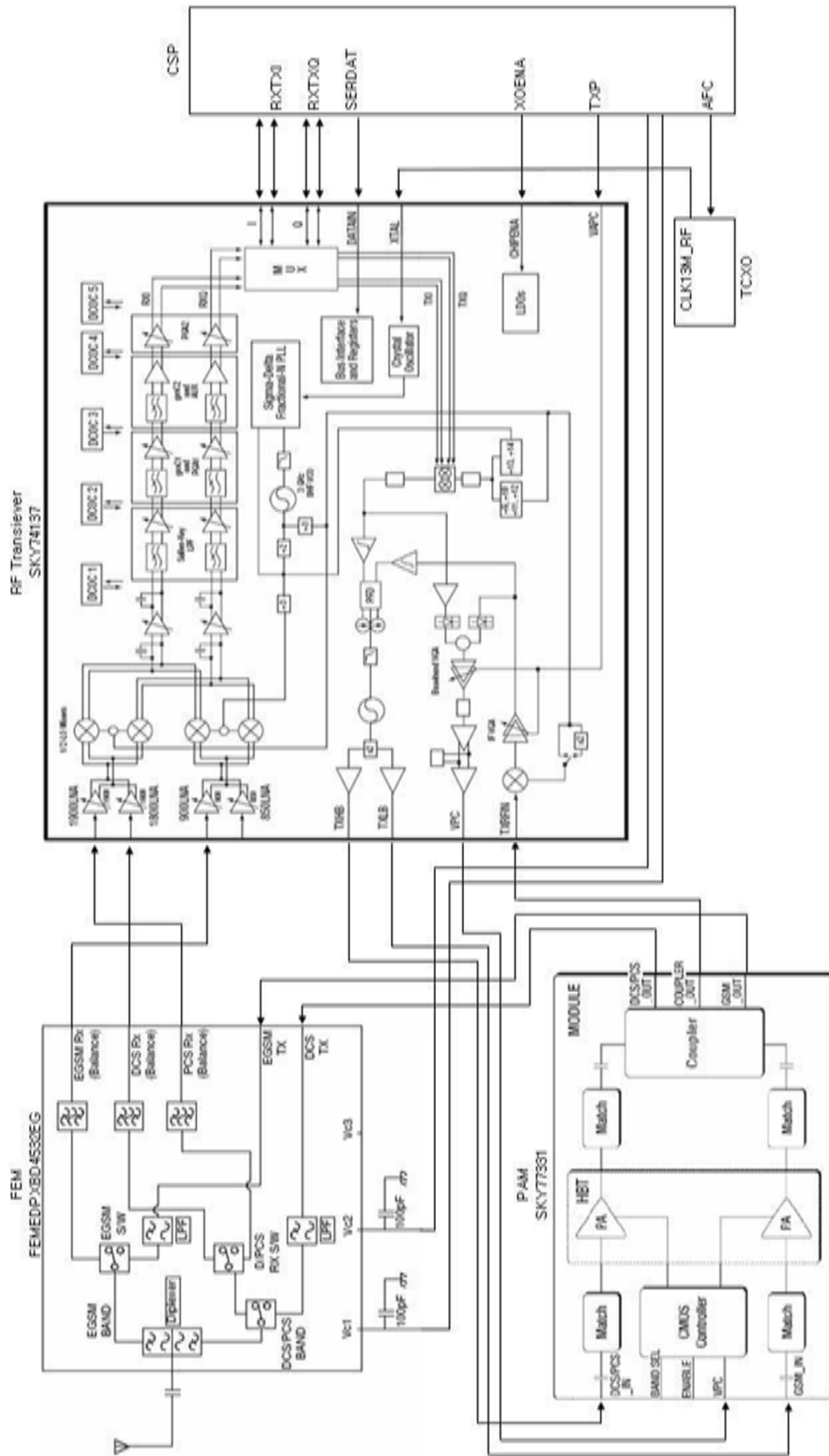
| SEC CODE    | Design LOC | Discription         | STATUS |
|-------------|------------|---------------------|--------|
| 2809-001295 | TCX101     | OSCILLATOR-VCTCXO   | SA     |
| 0801-002958 | U100       | IC-CMOS LOGIC       | SA     |
| 1203-003517 | U100       | IC-MULTI REG.       | SA     |
| 1203-003432 | U101       | IC-POSI.FIXED REG.  | SA     |
| 1203-003635 | U101       | IC-DC/DC CONVERTER  | SA     |
| 2203-006838 | U102       | C-CER,CHIP          | SA     |
| 1009-001018 | U200       | IC-HALL EFFECT S/W  | SA     |
| 1006-001322 | U201       | IC-LINE TRANSCEIVER | SNA    |
| 1108-000063 | U202       | IC-MCP              | SA     |
| GH09-00045A | U202       | IC MICOM            | SA     |
| 1205-002272 | U301       | IC-TRANSCEIVER      | SA     |
| 0801-002529 | U302       | IC-CMOS LOGIC       | SA     |
| 1203-003523 | U303       | IC-POSI.FIXED REG.  | SA     |
| 1203-004164 | U304       | IC-DC/DC CONVERTER  | SA     |
| 1203-003340 | U305       | IC-POSI.FIXED REG.  | SA     |
| 1001-001231 | U401       | IC-ANALOG SWITCH    | SA     |
| 1203-003523 | U402       | IC-POSI.FIXED REG.  | SA     |
| 1201-002147 | U403       | IC-VIDEO AMP        | SA     |
| 1001-001281 | U404       | IC-ANALOG SWITCH    | SA     |
| 1203-003523 | U405       | IC-POSI.FIXED REG.  | SA     |
| 1001-001281 | U406       | IC-ANALOG SWITCH    | SA     |
| 1201-002233 | U407       | IC-AUDIO AMP        | SA     |
| 1203-003789 | U500       | IC-POWER SUPERVISOR | SA     |
| 0801-002958 | U501       | IC-CMOS LOGIC       | SA     |
| 0406-001200 | U502       | DIODE-TVS           | SA     |
| 0801-002529 | U503       | IC-CMOS LOGIC       | SA     |
| 1203-003663 | U504       | IC-BATTERY          | SA     |
| 1203-003754 | U505       | IC-POSI.FIXED REG.  | SA     |
| 1205-002944 | UCD100     | IC-TRANSCEIVER      | SA     |
| 1205-002681 | UCD402     | IC-CODEC            | SA     |
| 1204-002138 | UCD403     | IC-MELODY           | SA     |
| 1203-004119 | UCP301     | IC-POWER SUPERVISOR | SA     |
| 1205-002943 | UCP401     | IC-CODEC            | SA     |
| 2901-001326 | V100       | FILTER-EMI/ESD      | SA     |
| 2901-001326 | V101       | FILTER-EMI/ESD      | SA     |
| 2901-001326 | V103       | FILTER-EMI/ESD      | SA     |
| 1405-001110 | V105       | VARISTOR            | SA     |
| 1405-001110 | V107       | VARISTOR            | SA     |
| 1405-001082 | V111       | VARISTOR            | SA     |

| SEC CODE    | Design LOC | Discription    | STATUS |
|-------------|------------|----------------|--------|
| 1405-001082 | V112       | VARISTOR       | SA     |
| 1405-001082 | V113       | VARISTOR       | SA     |
| 1405-001082 | V115       | VARISTOR       | SA     |
| 1405-001082 | V116       | VARISTOR       | SA     |
| 1405-001133 | V117       | VARISTOR       | SNA    |
| 1405-001133 | V118       | VARISTOR       | SNA    |
| 1405-001082 | VR200      | VARISTOR       | SA     |
| 1405-001082 | VR300      | VARISTOR       | SA     |
| 1405-001133 | VR301      | VARISTOR       | SNA    |
| 1405-001133 | VR302      | VARISTOR       | SNA    |
| 1405-001133 | VR303      | VARISTOR       | SNA    |
| 1405-001133 | VR304      | VARISTOR       | SNA    |
| 1405-001133 | VR305      | VARISTOR       | SNA    |
| 1405-001133 | VR306      | VARISTOR       | SNA    |
| 1405-001133 | VR307      | VARISTOR       | SNA    |
| 1404-001165 | VR313      | THERMISTOR-NTC | SA     |
| 1405-001138 | VR316      | VARISTOR       | SA     |
| 1405-001138 | VR317      | VARISTOR       | SA     |
| 1405-001133 | VR318      | VARISTOR       | SNA    |
| 1405-001082 | VR400      | VARISTOR       | SA     |
| 1405-001082 | VR401      | VARISTOR       | SA     |
| 1405-001138 | VR402      | VARISTOR       | SA     |
| 1405-001133 | VR515      | VARISTOR       | SNA    |
| 1405-001133 | VR516      | VARISTOR       | SNA    |
| 0403-001547 | ZD300      | DIODE-ZENER    | SA     |
| 0406-001201 | ZD301      | DIODE-TVS      | SA     |
| 0406-001167 | ZD310      | DIODE-TVS      | SA     |
| 0406-001167 | ZD311      | DIODE-TVS      | SA     |
| 0406-001167 | ZD500      | DIODE-TVS      | SA     |
| 0406-001190 | ZD501      | DIODE-TVS      | SA     |
| 0403-001547 | ZD502      | DIODE-ZENER    | SA     |

# 8. Block Diagrams

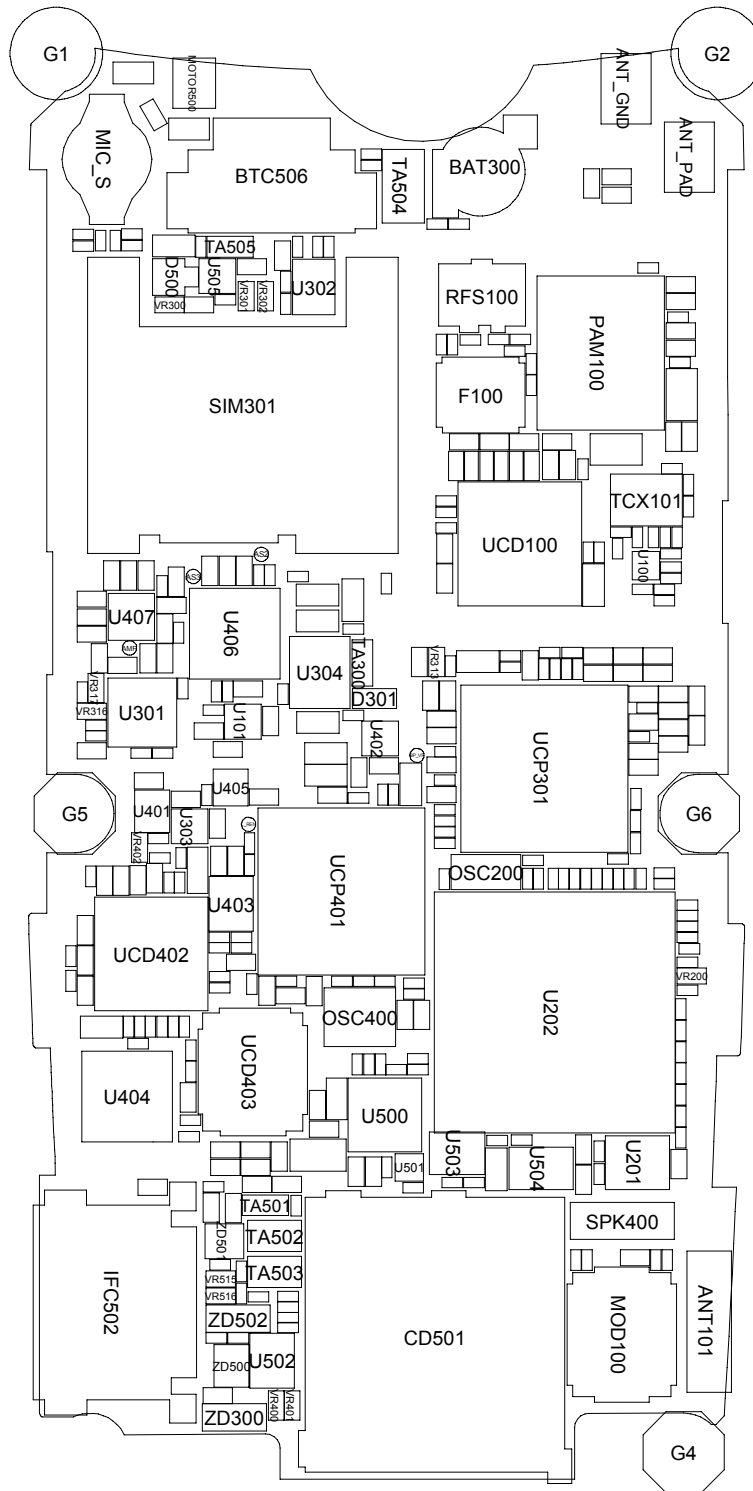


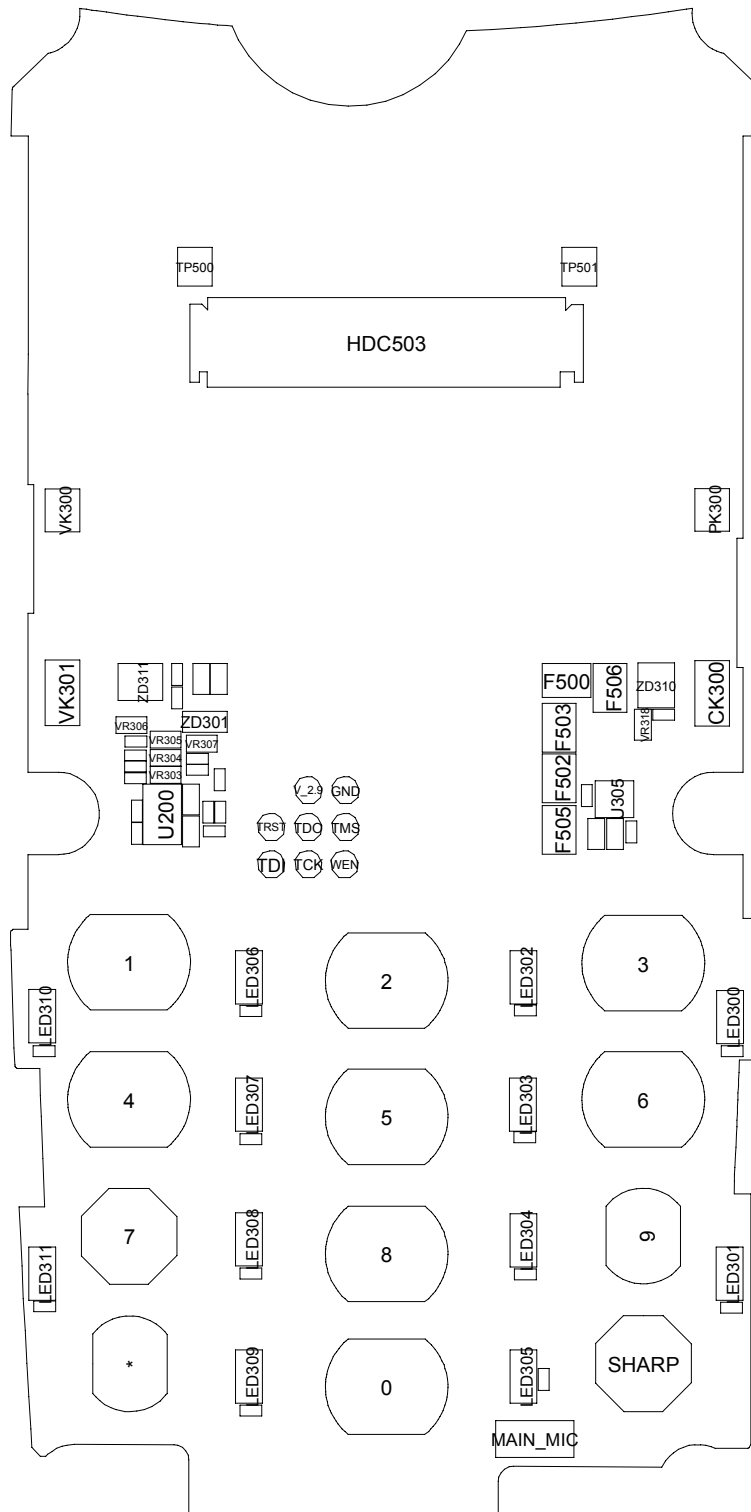




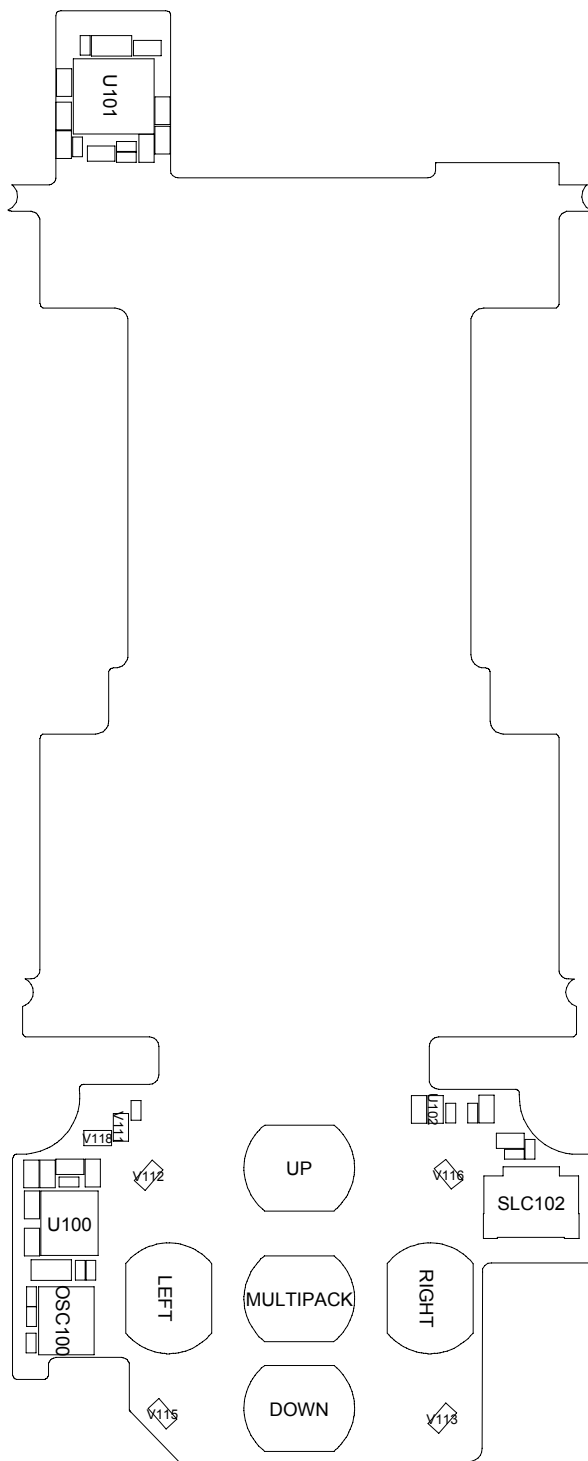
# 9. PCB Diagrams

## 9-1 Main

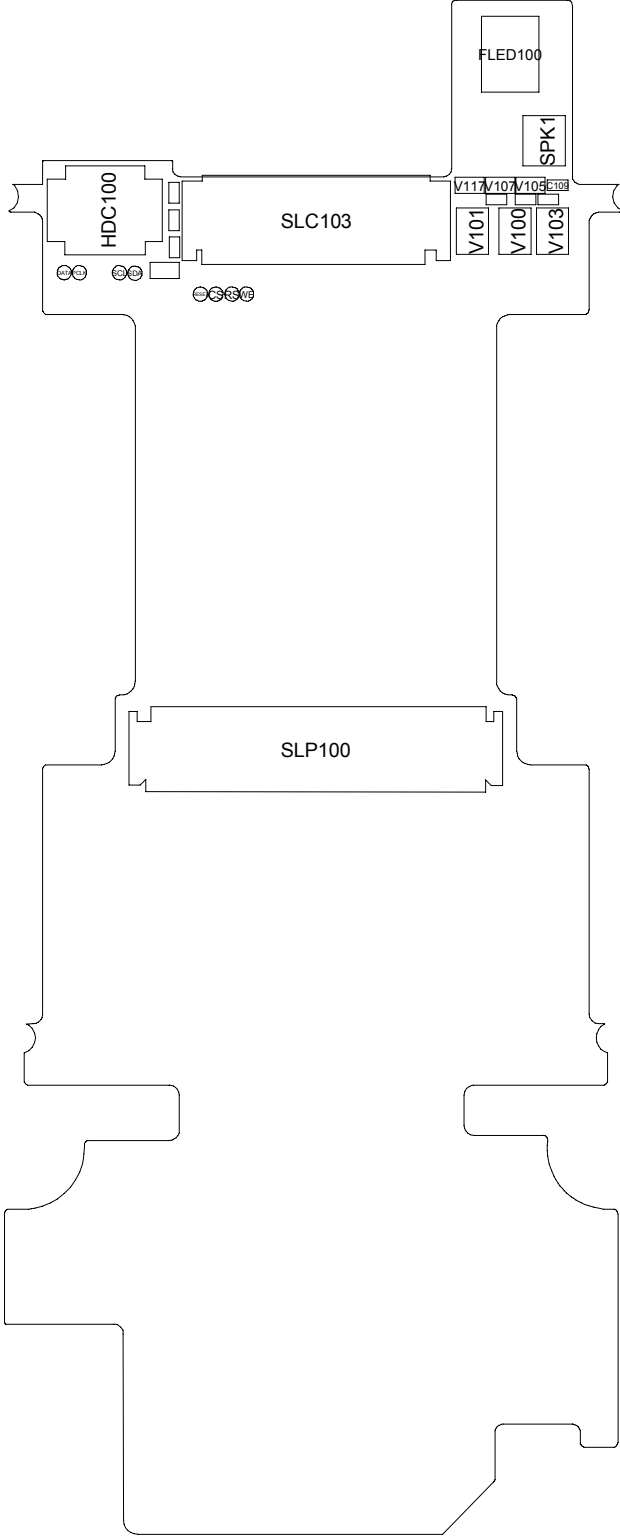




9-2 Sub



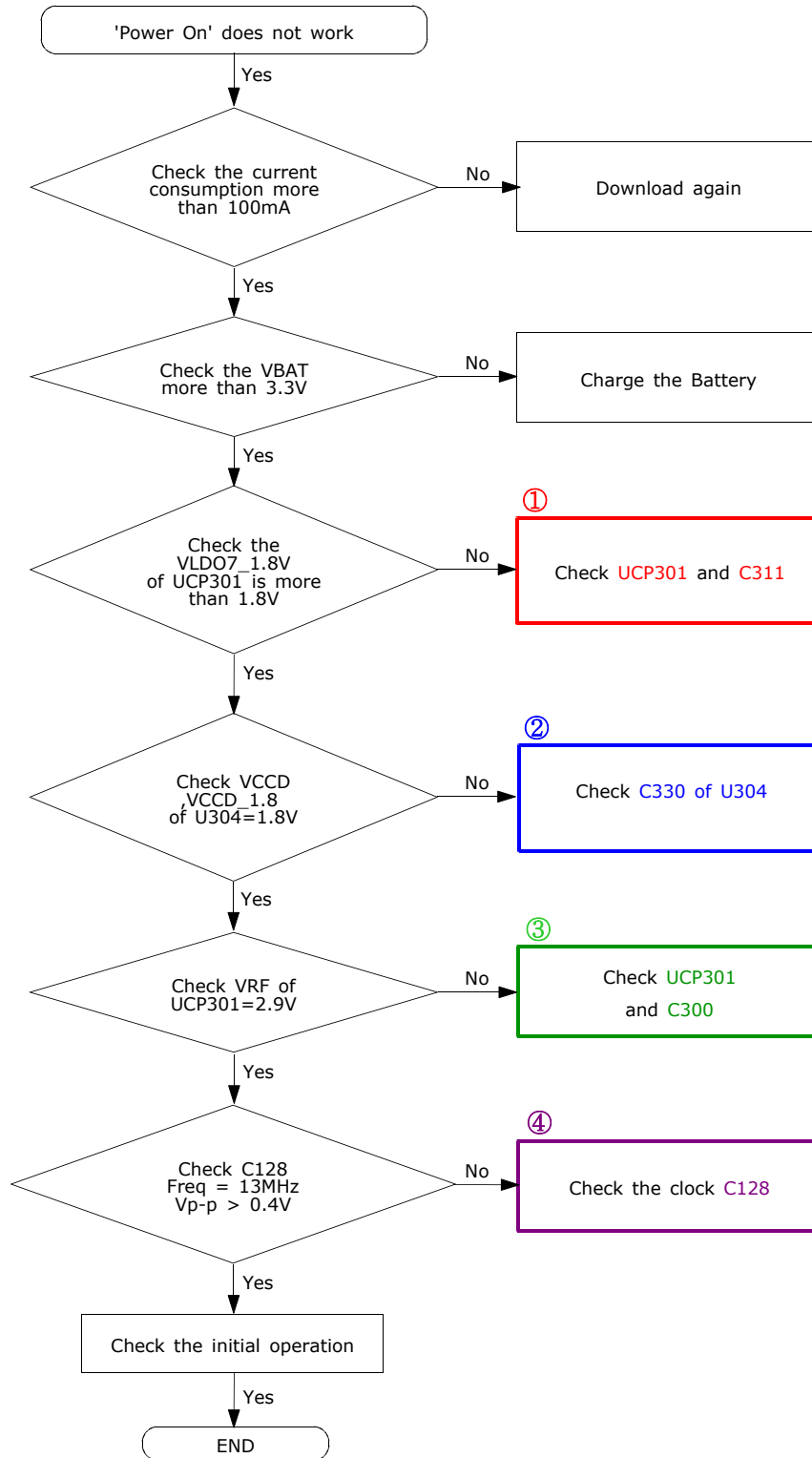
9-3

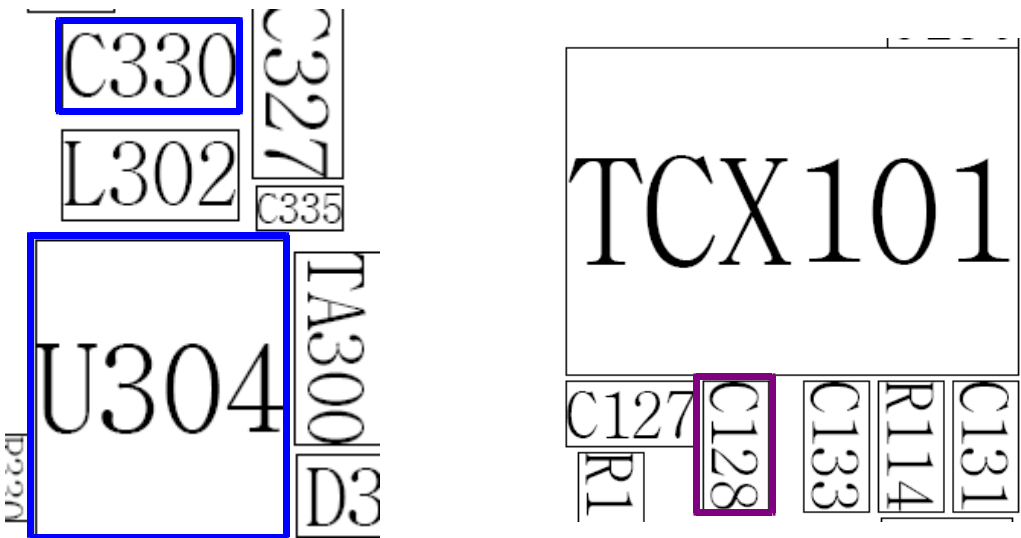
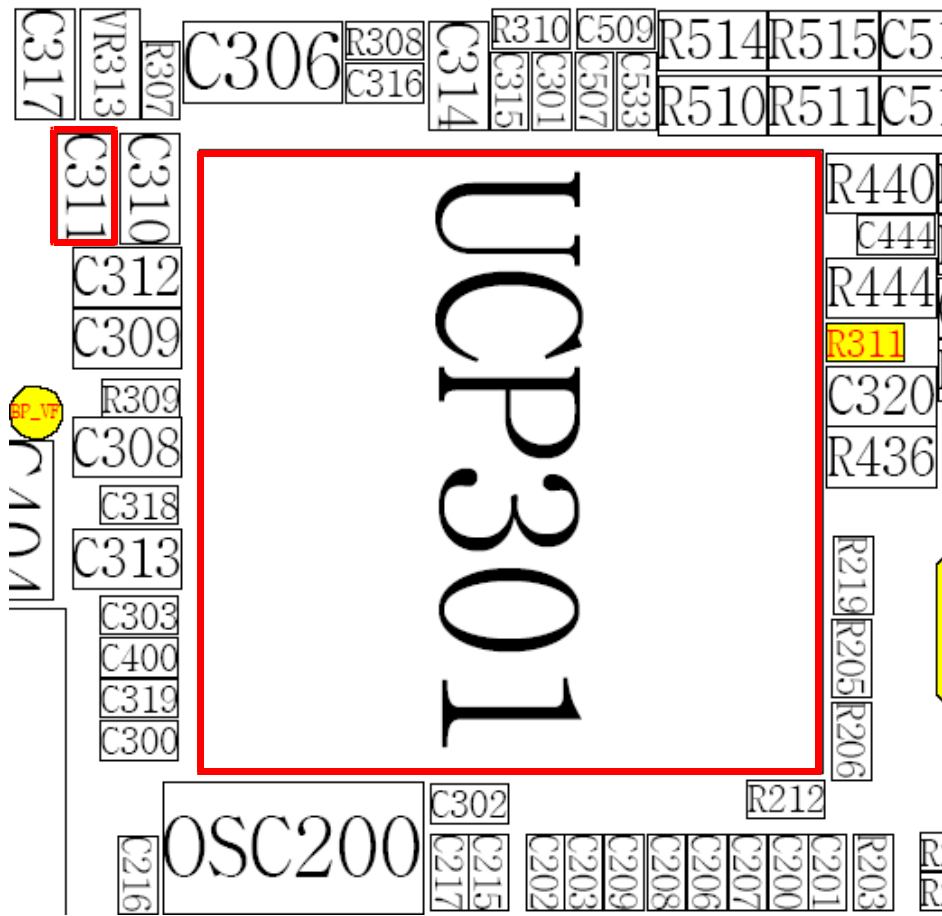


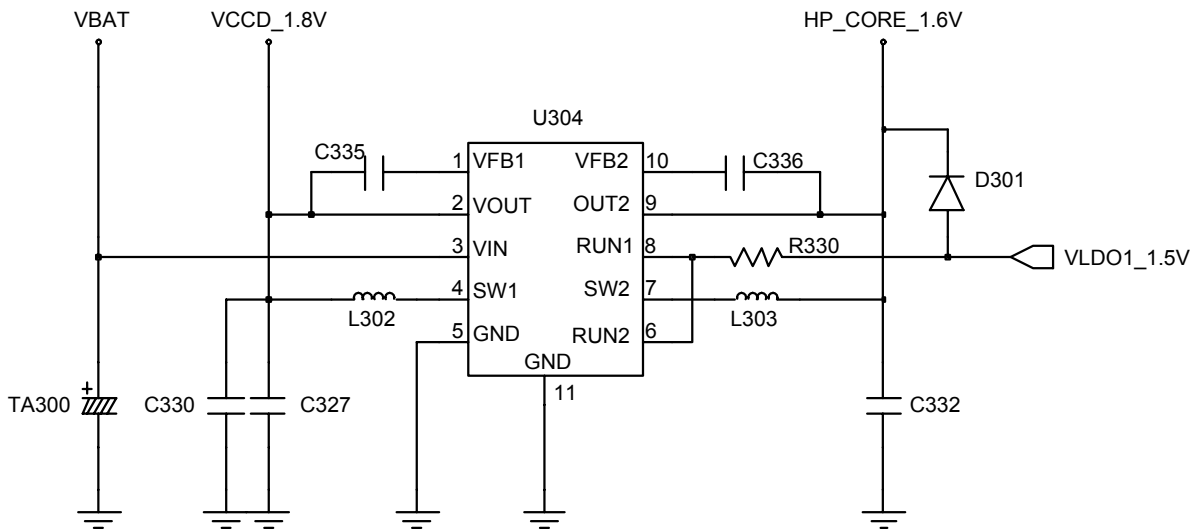
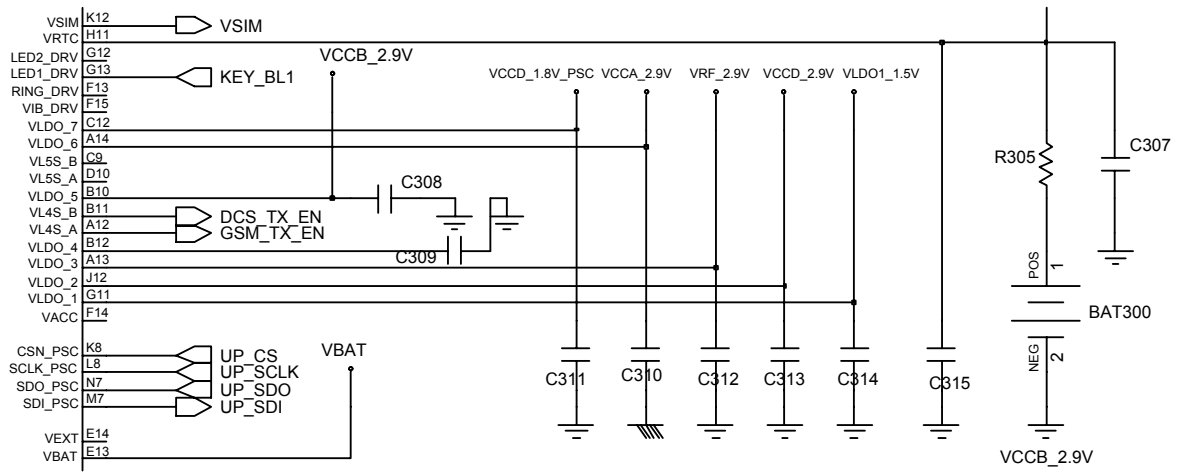
# 10. Flow Chart of Troubleshooting

## 10-1 BASEBAND

### 10-1-1. Power ON

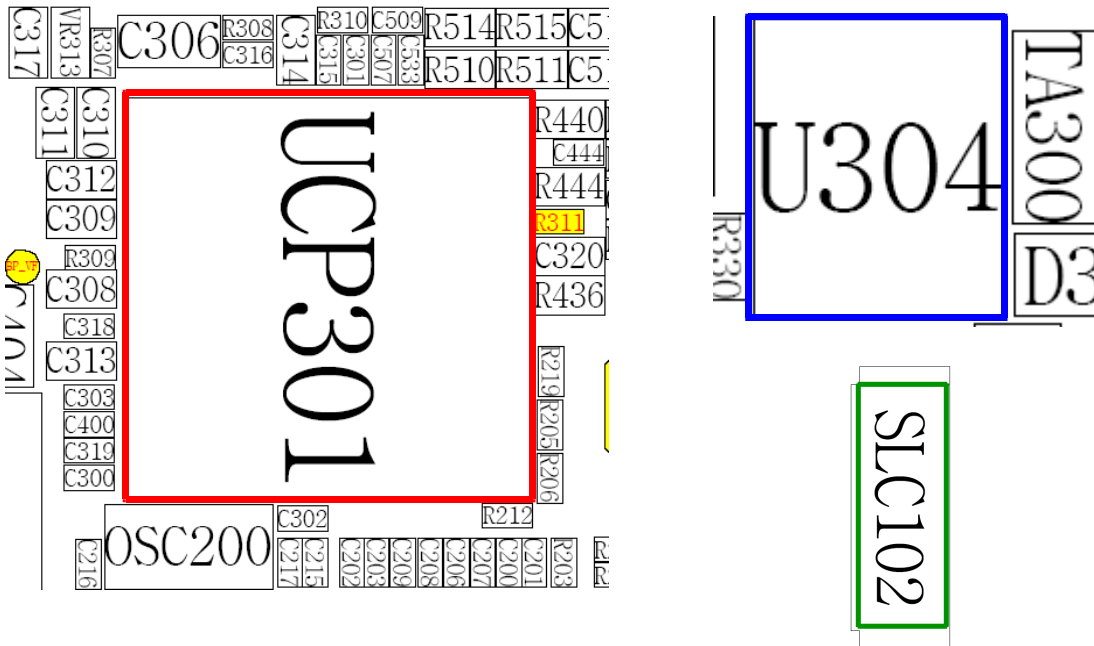
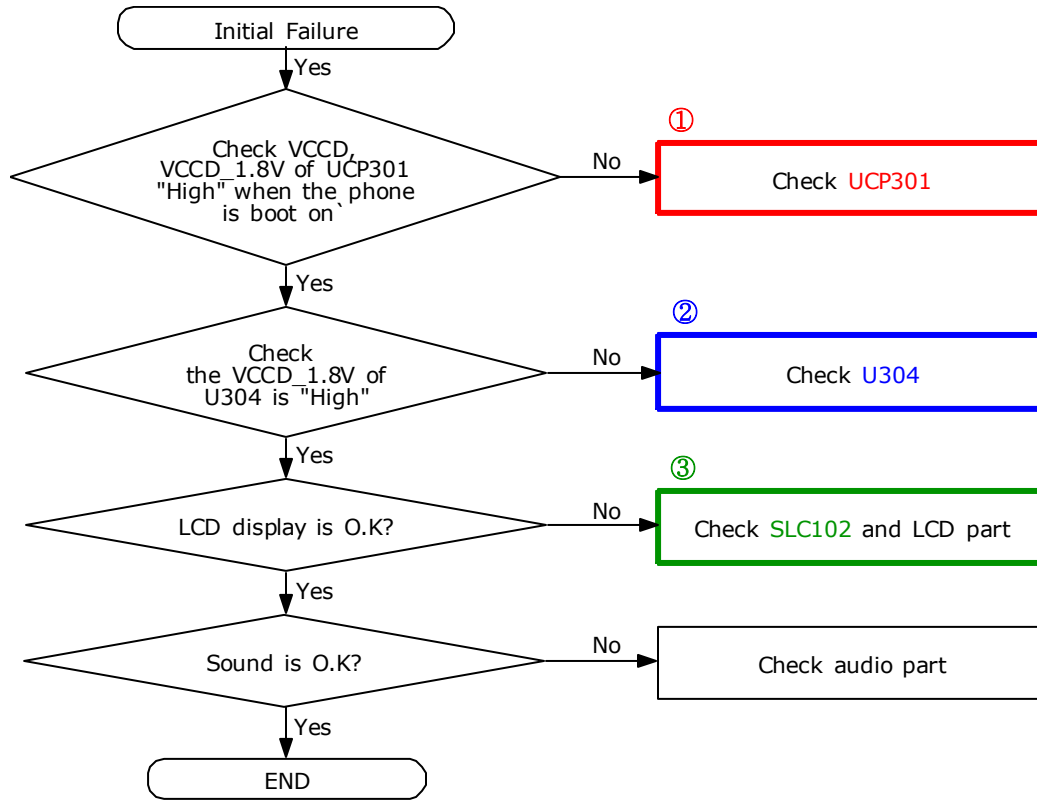


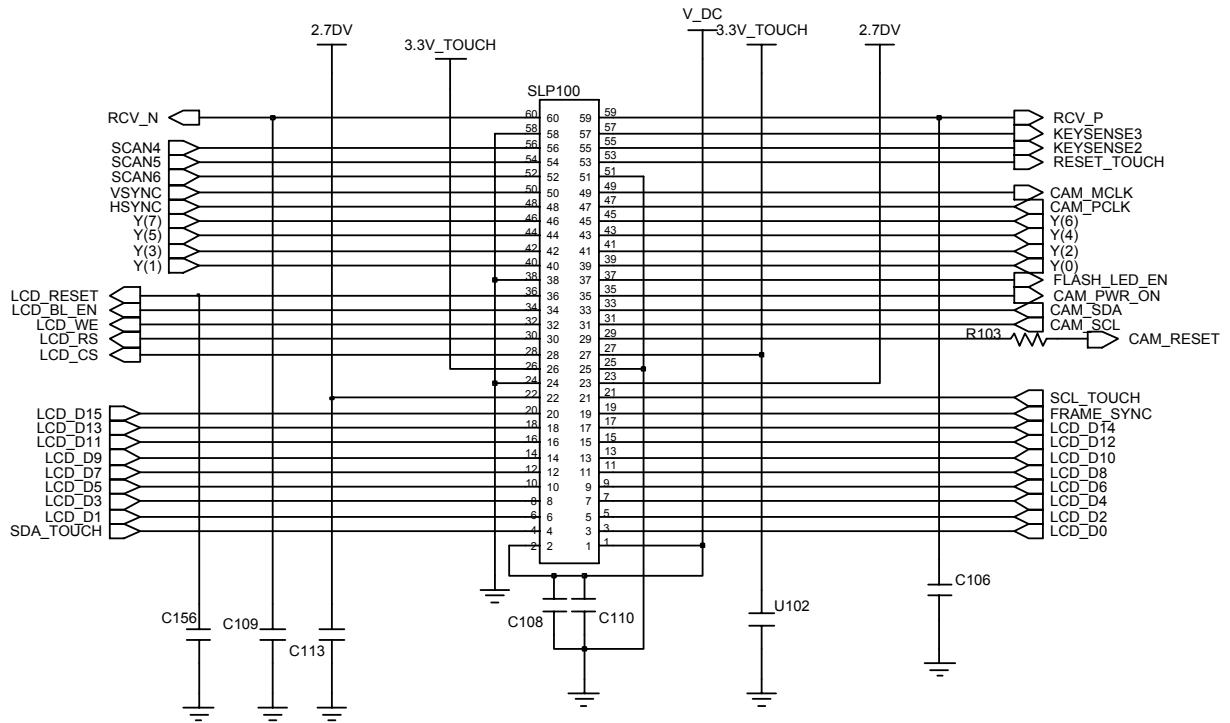




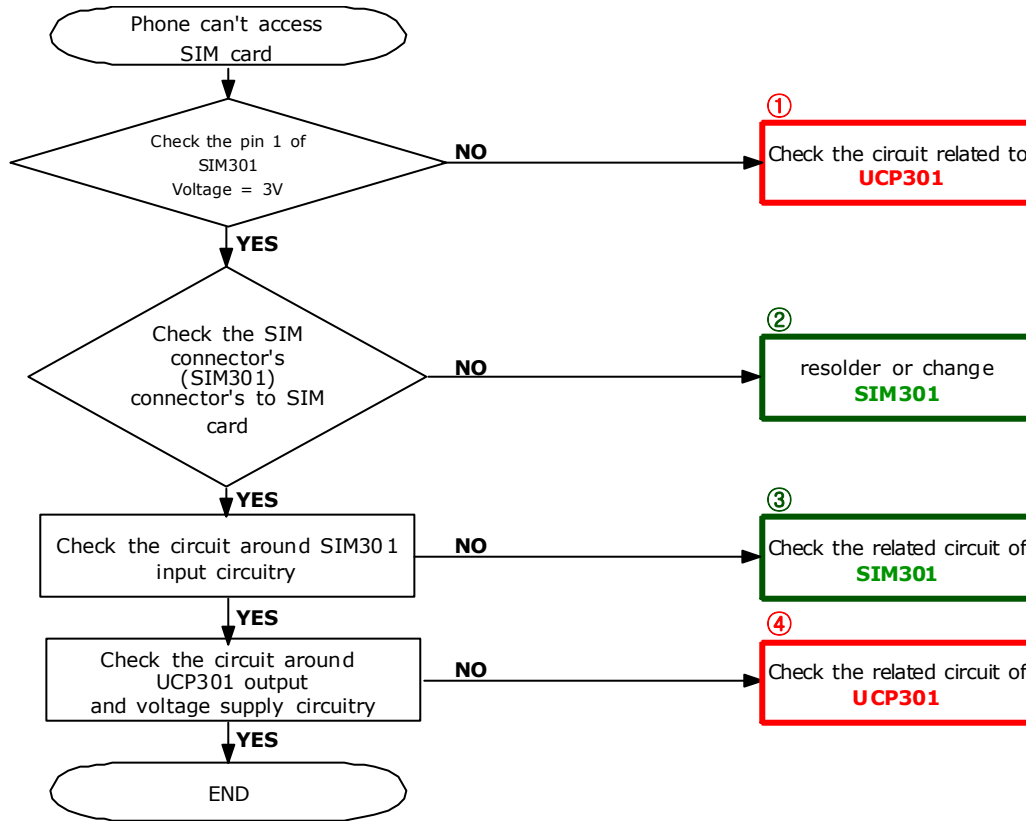


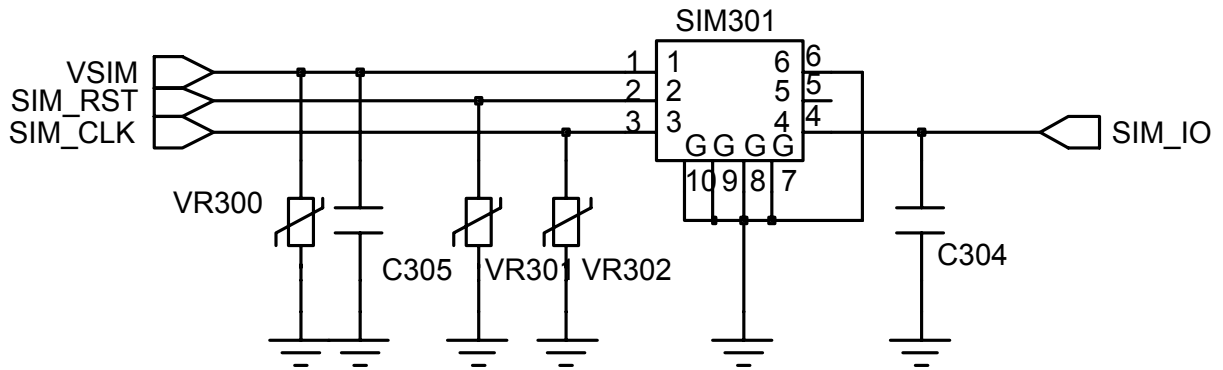
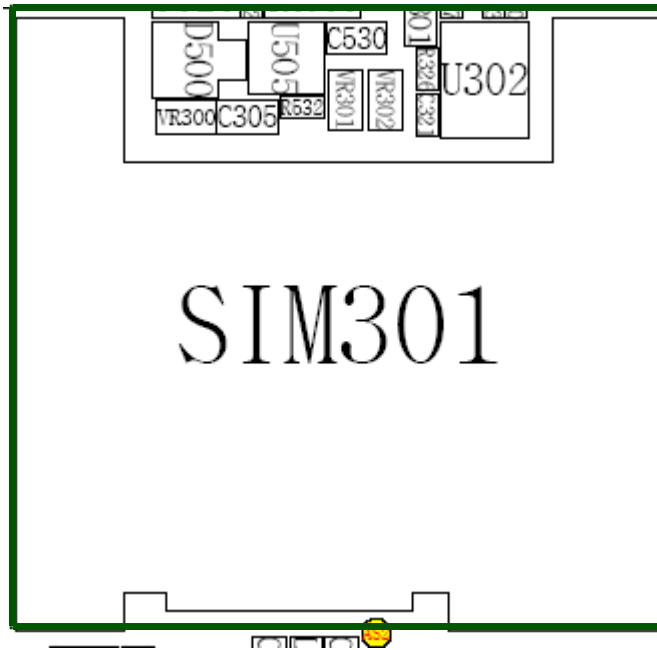
### 10-2-2. Initial



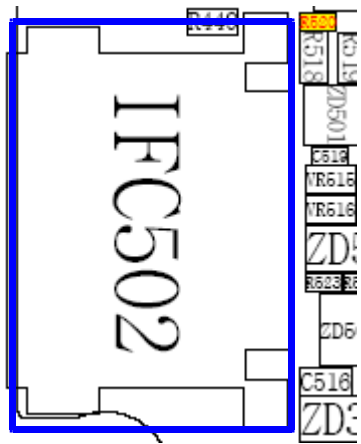
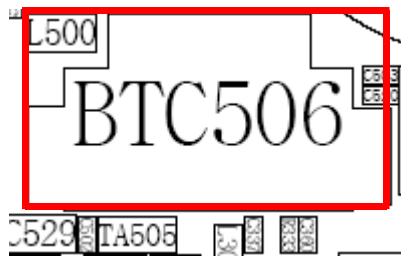
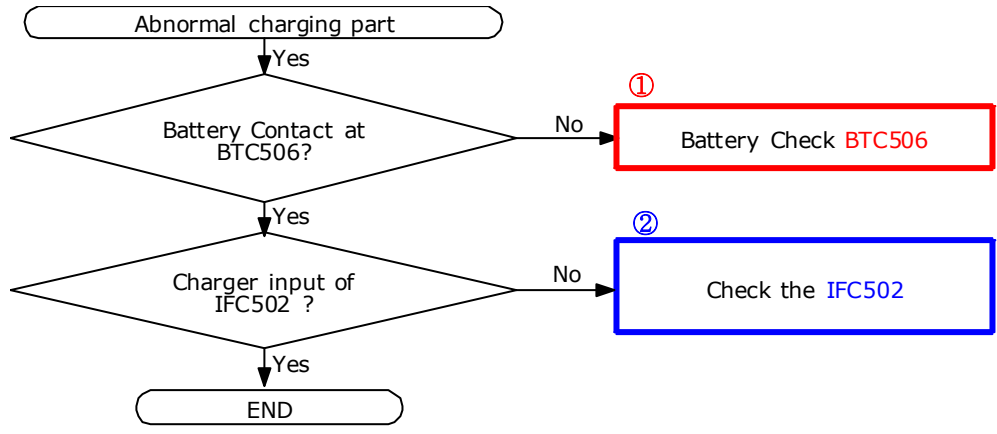


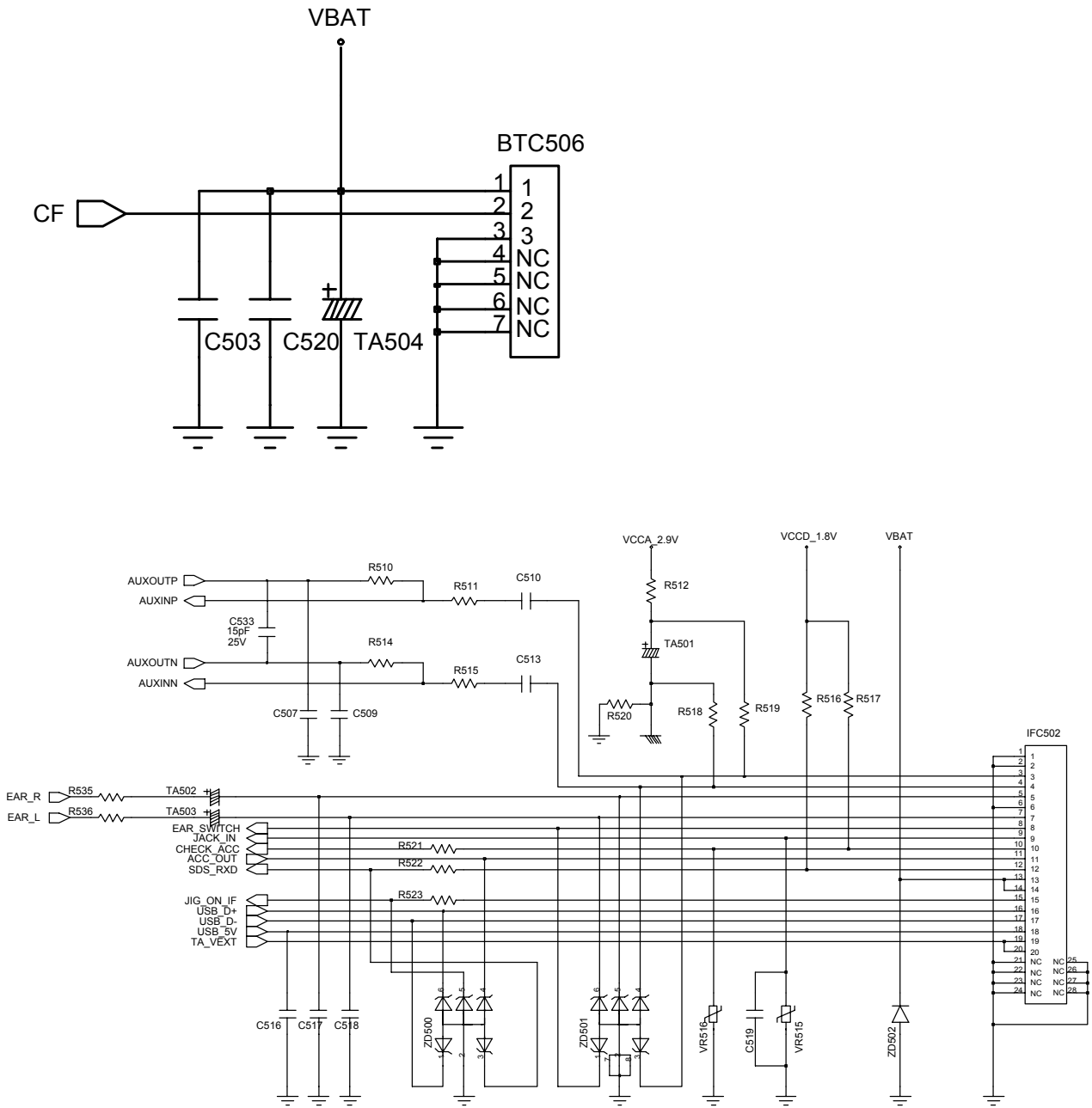
### 10-1-3. Sim Part



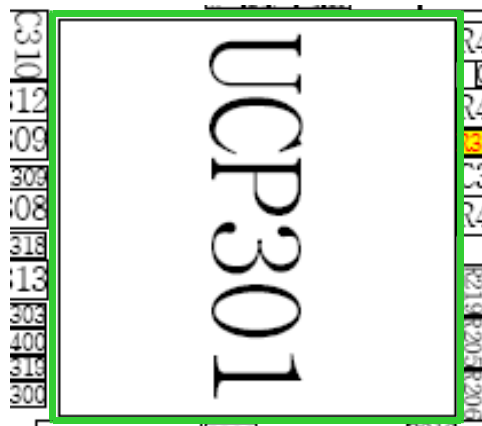
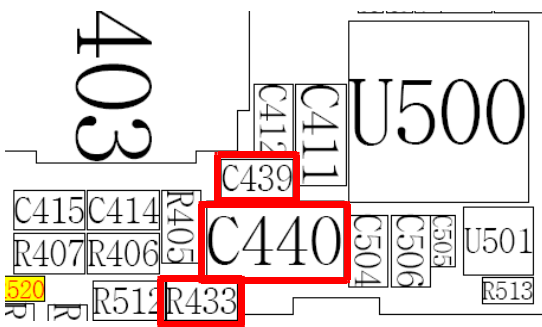
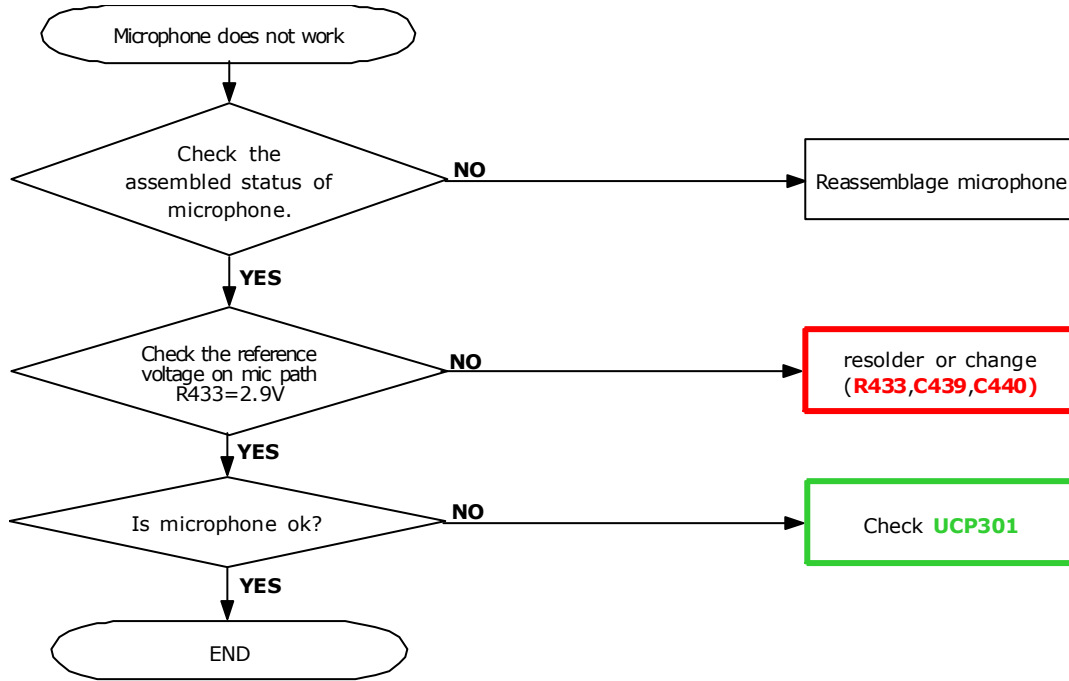


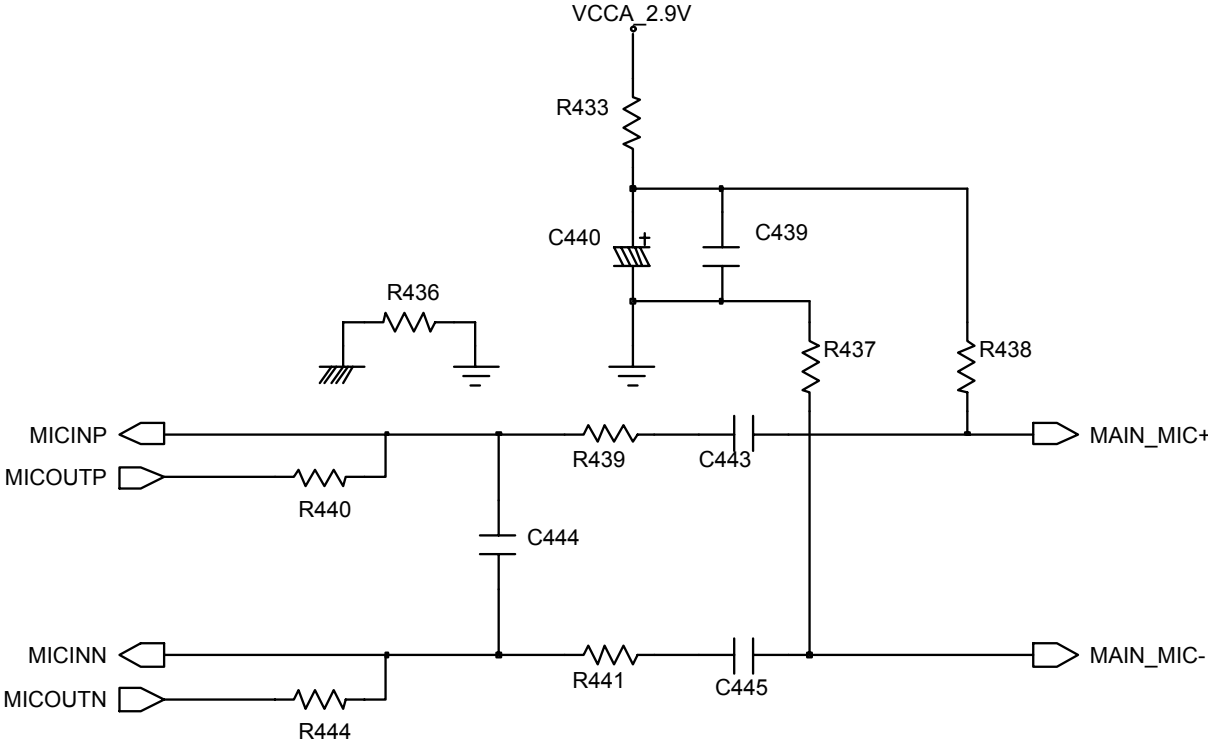
### 10-1-4. Charging Part





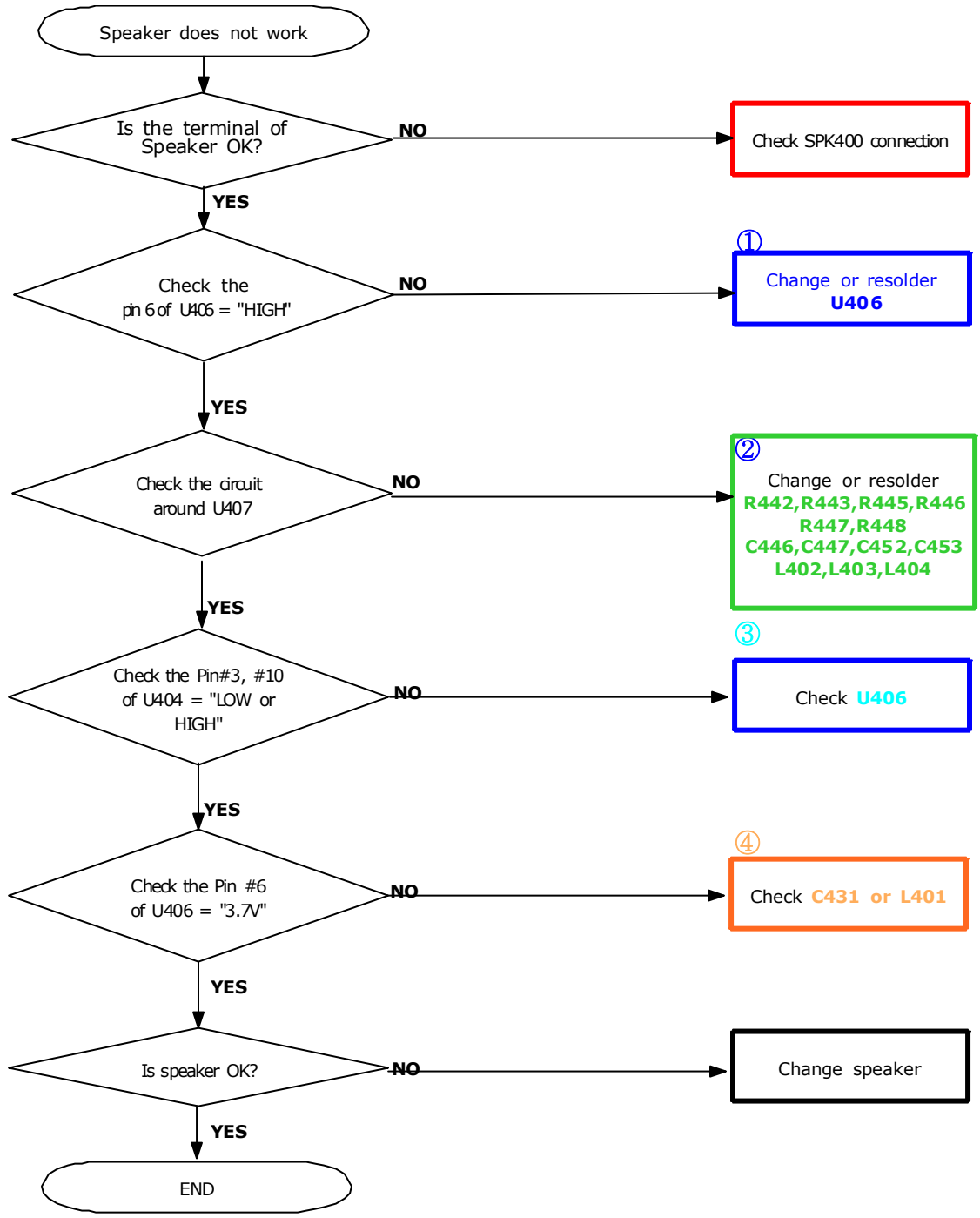
### 10-1-5. Microphone Part



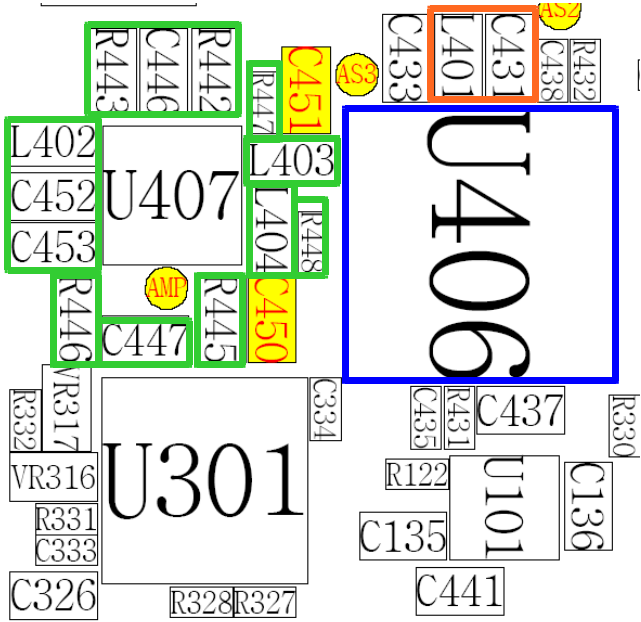


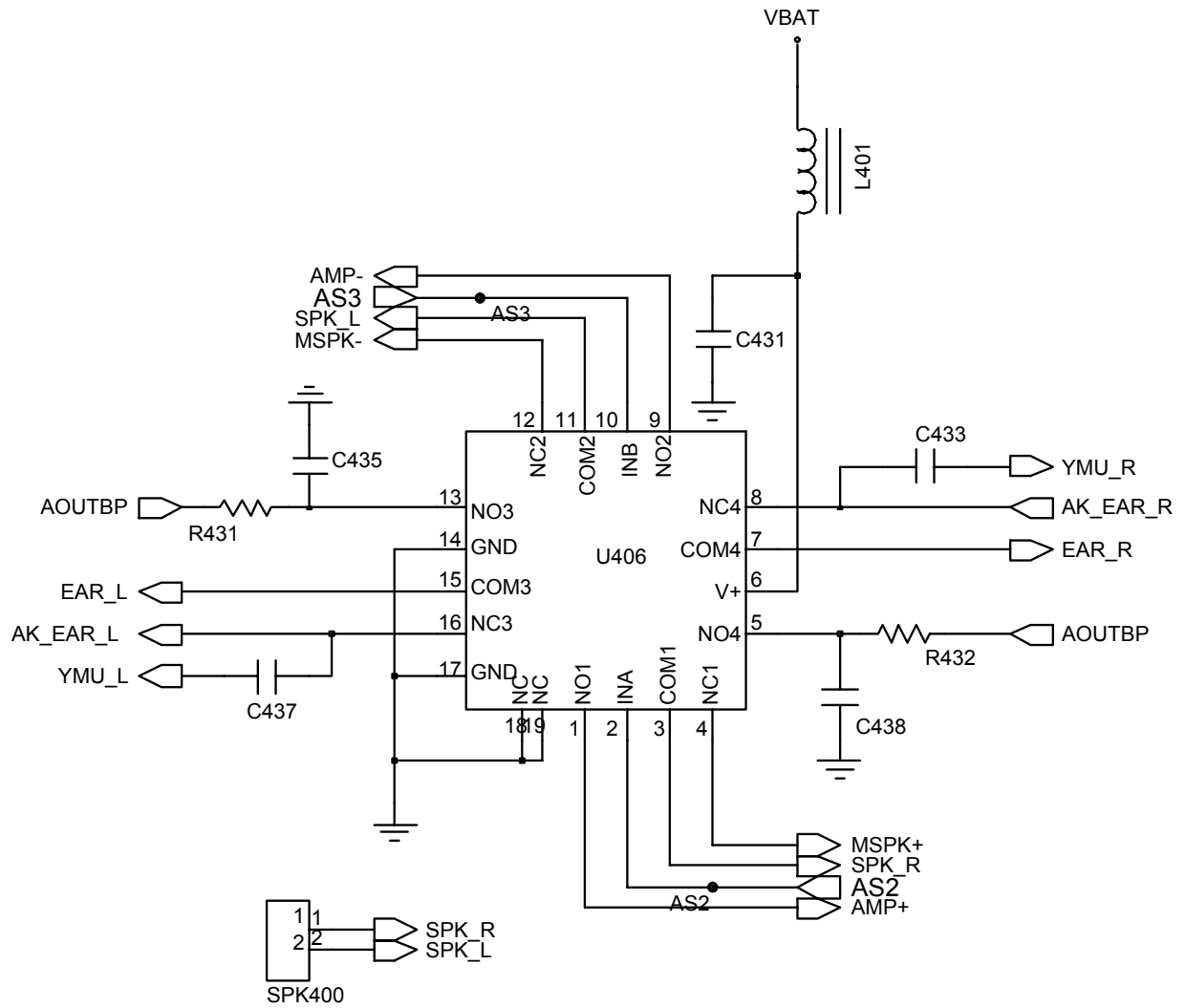


### 10-1-6. Speaker Part

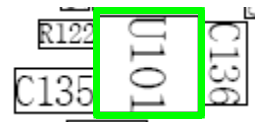
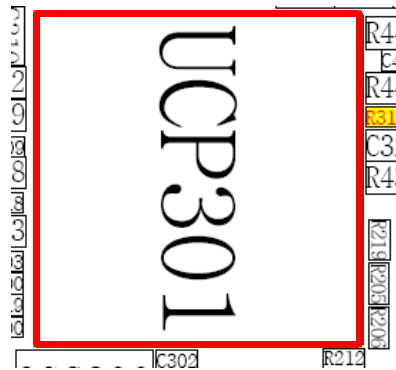
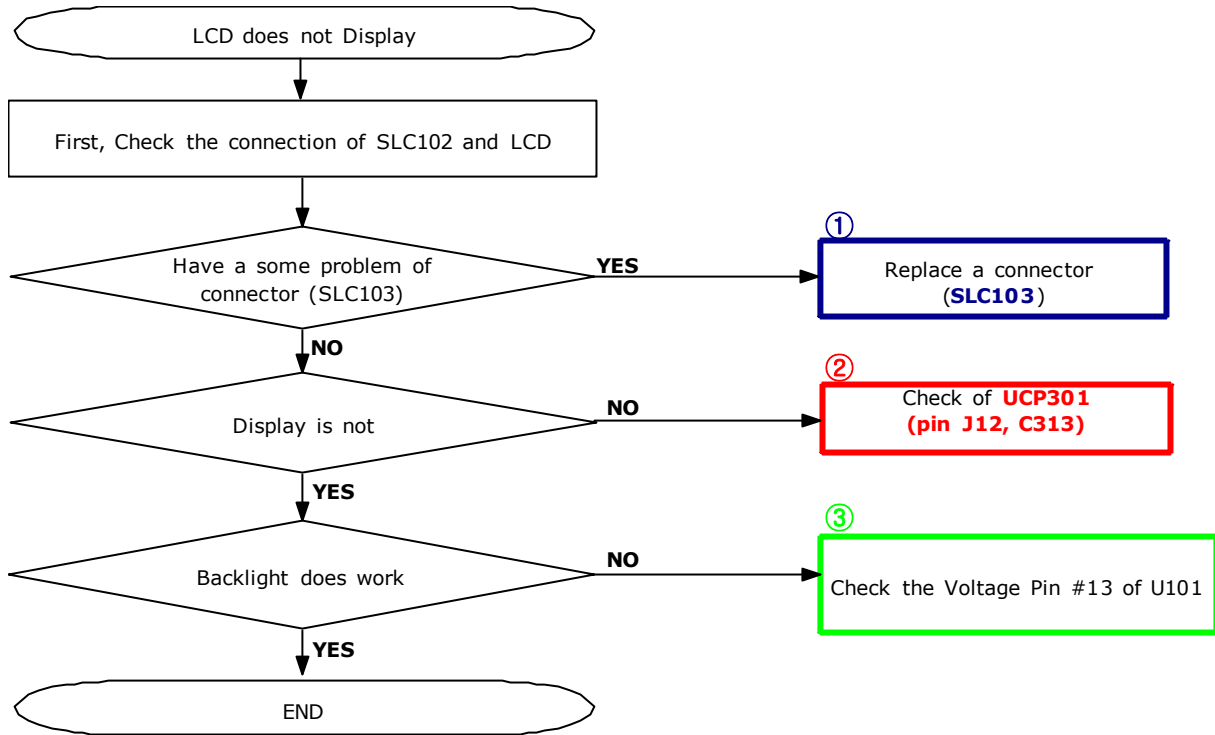


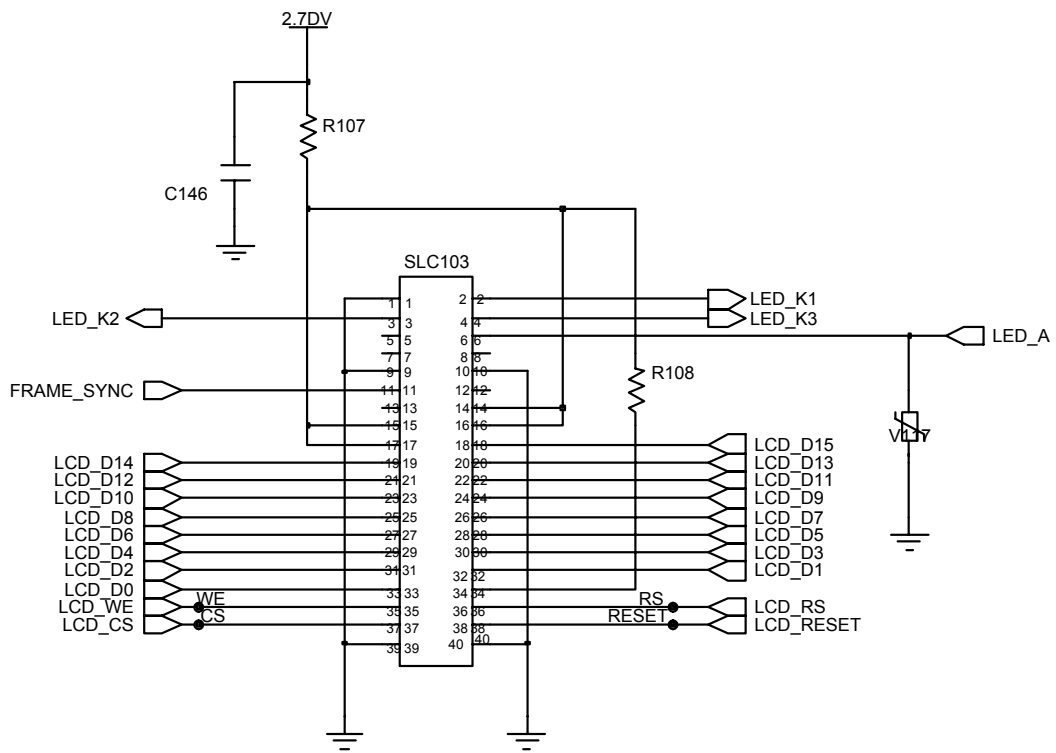
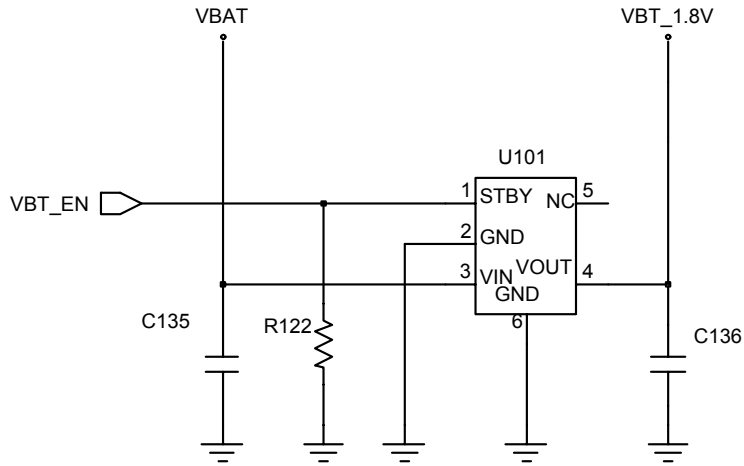
# SPK400



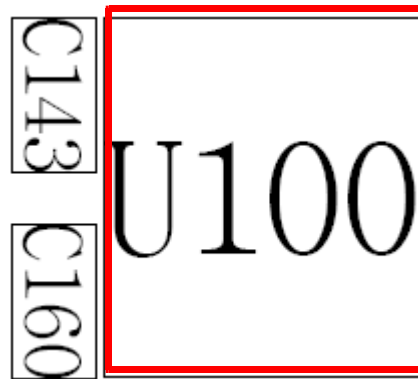
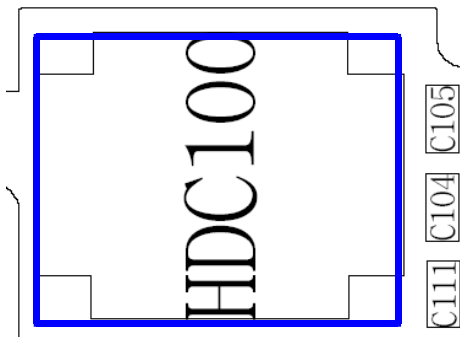
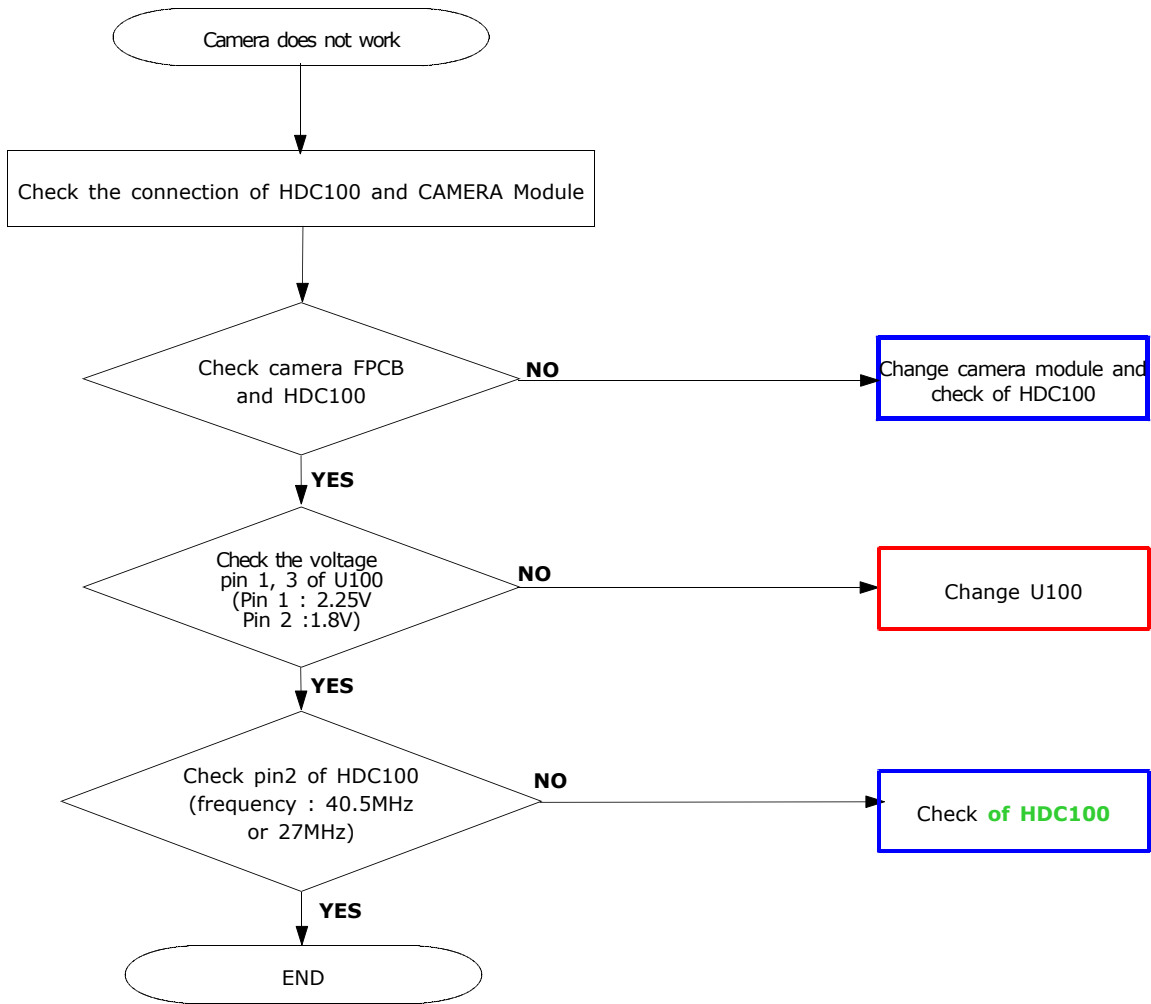


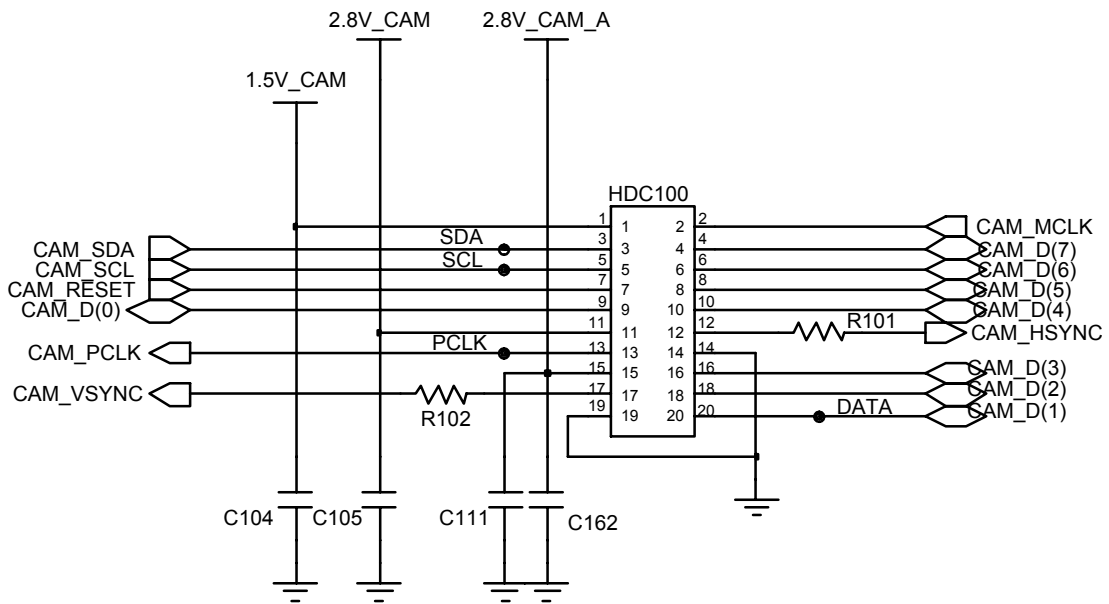
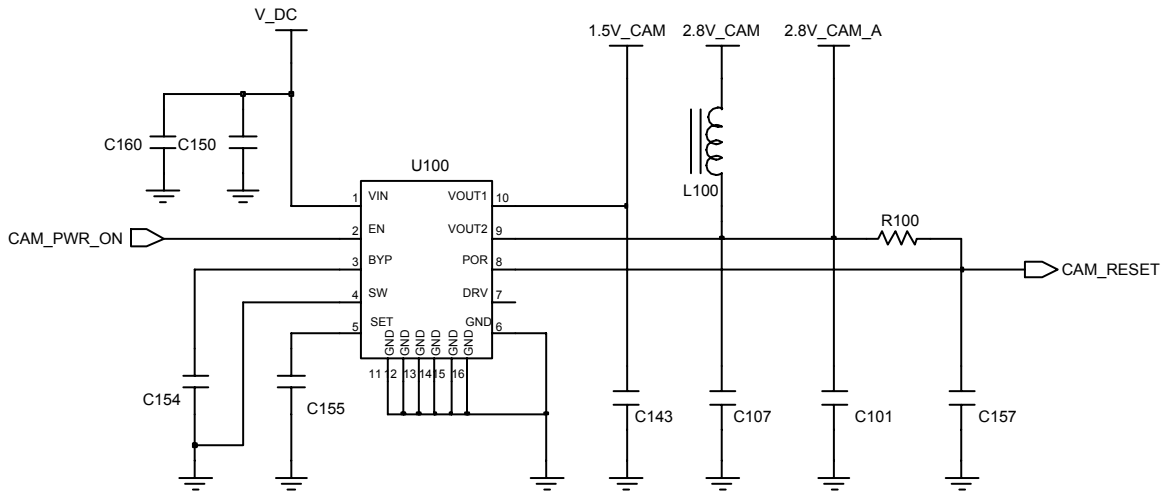
10-1-7. LCD





10-1-8. Camera

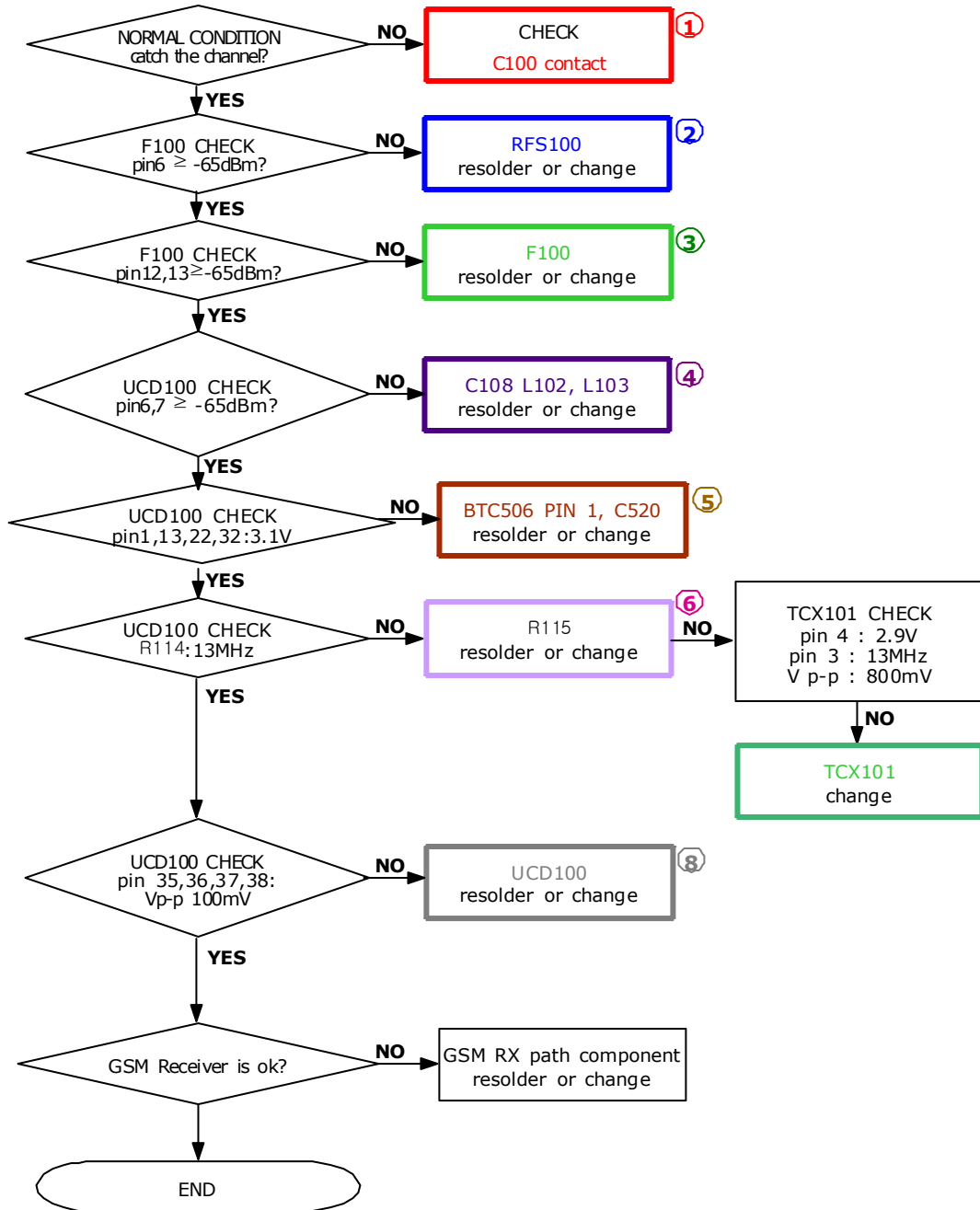




## 10-2. RF

### 10-2-1. GSM Receiver

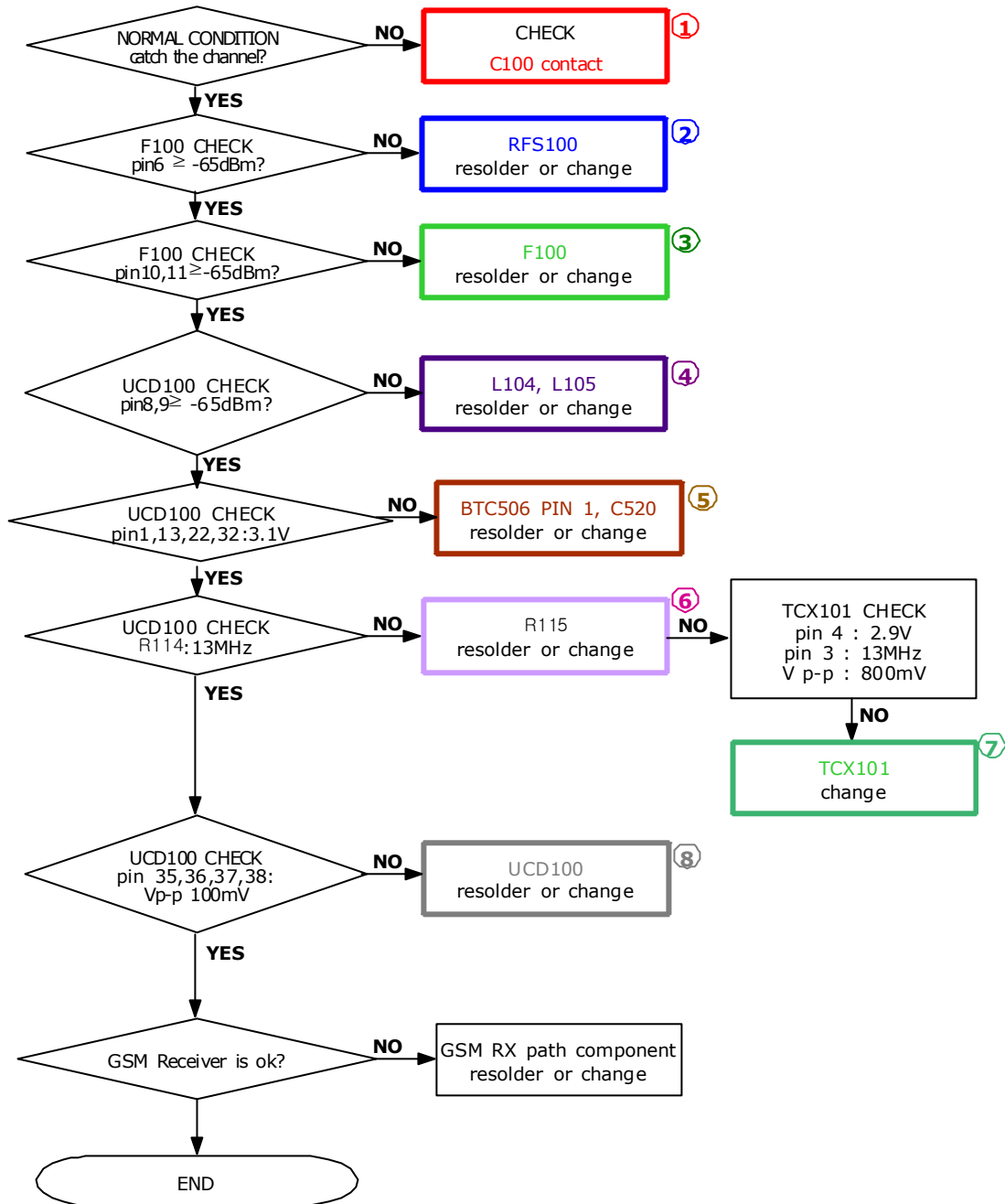
CONTINUOUS RX ON  
RF INPUT : 62CH  
Cell power : -50dBm





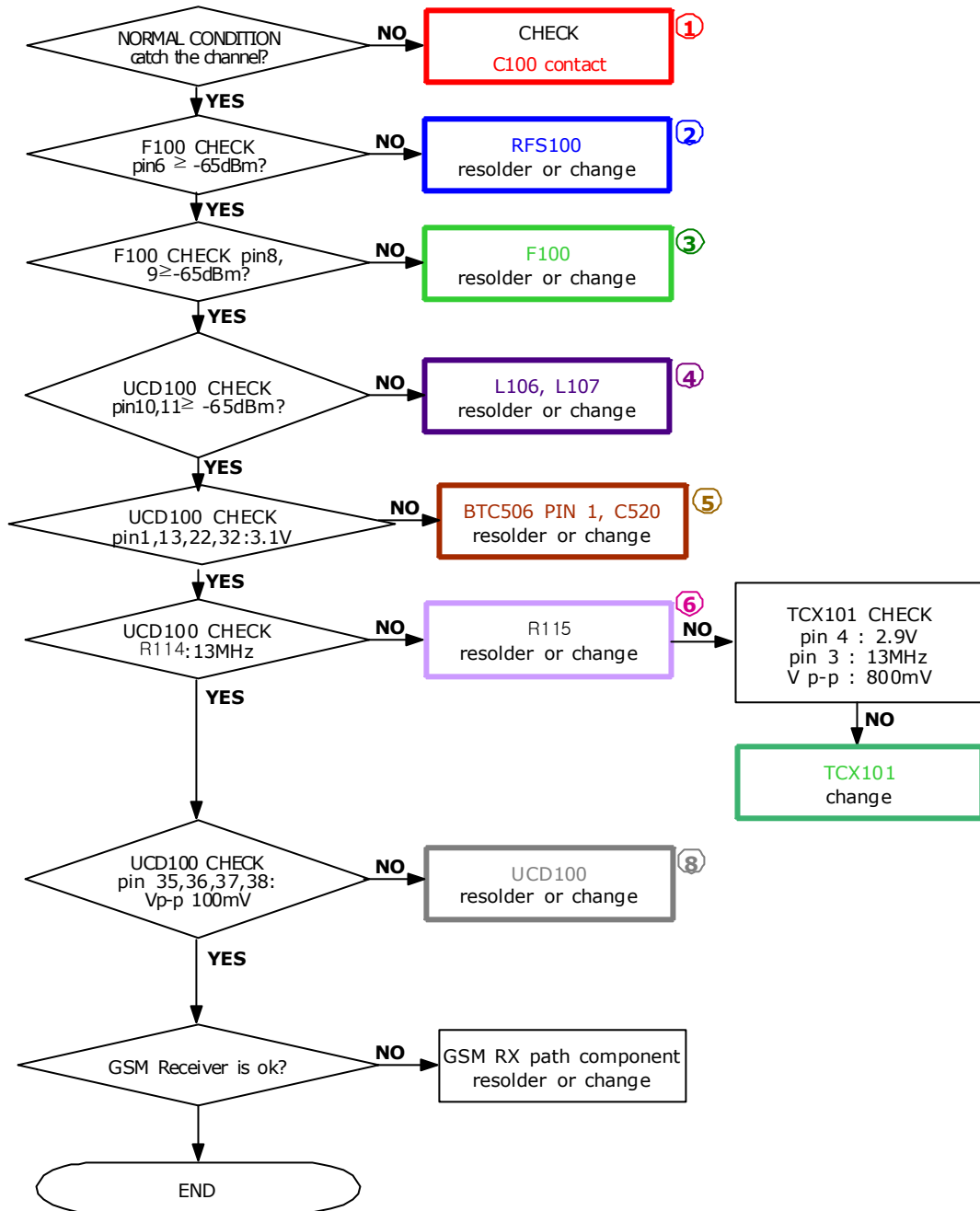
### 10-2-2. DCS Receiver

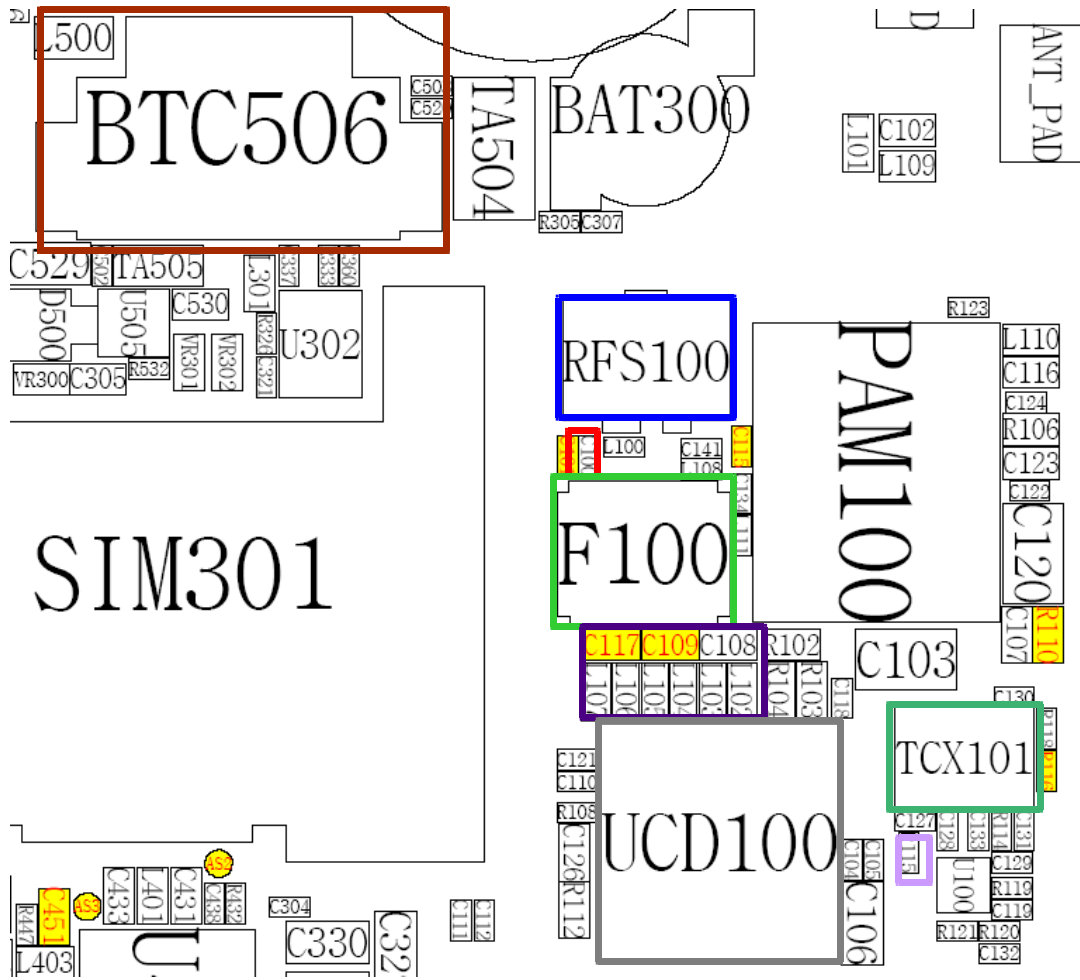
CONTINUOUS RX ON  
 RF INPUT : 698CH  
 Cell power : -50dBm



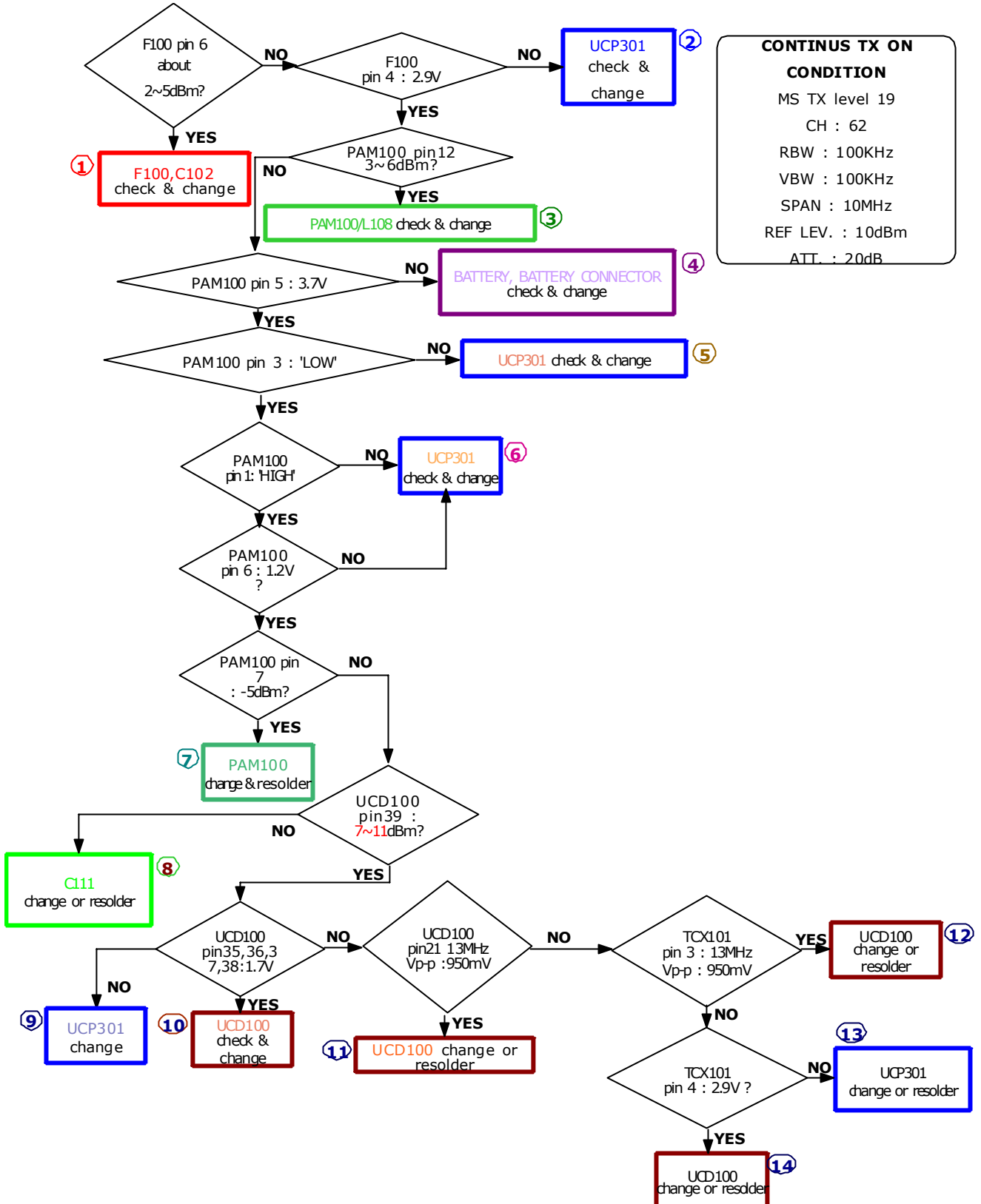
### 10-2-3. PCS Receiver

CONTINUOUS RX ON  
RF INPUT : 660CH  
Cell power : -50dBm



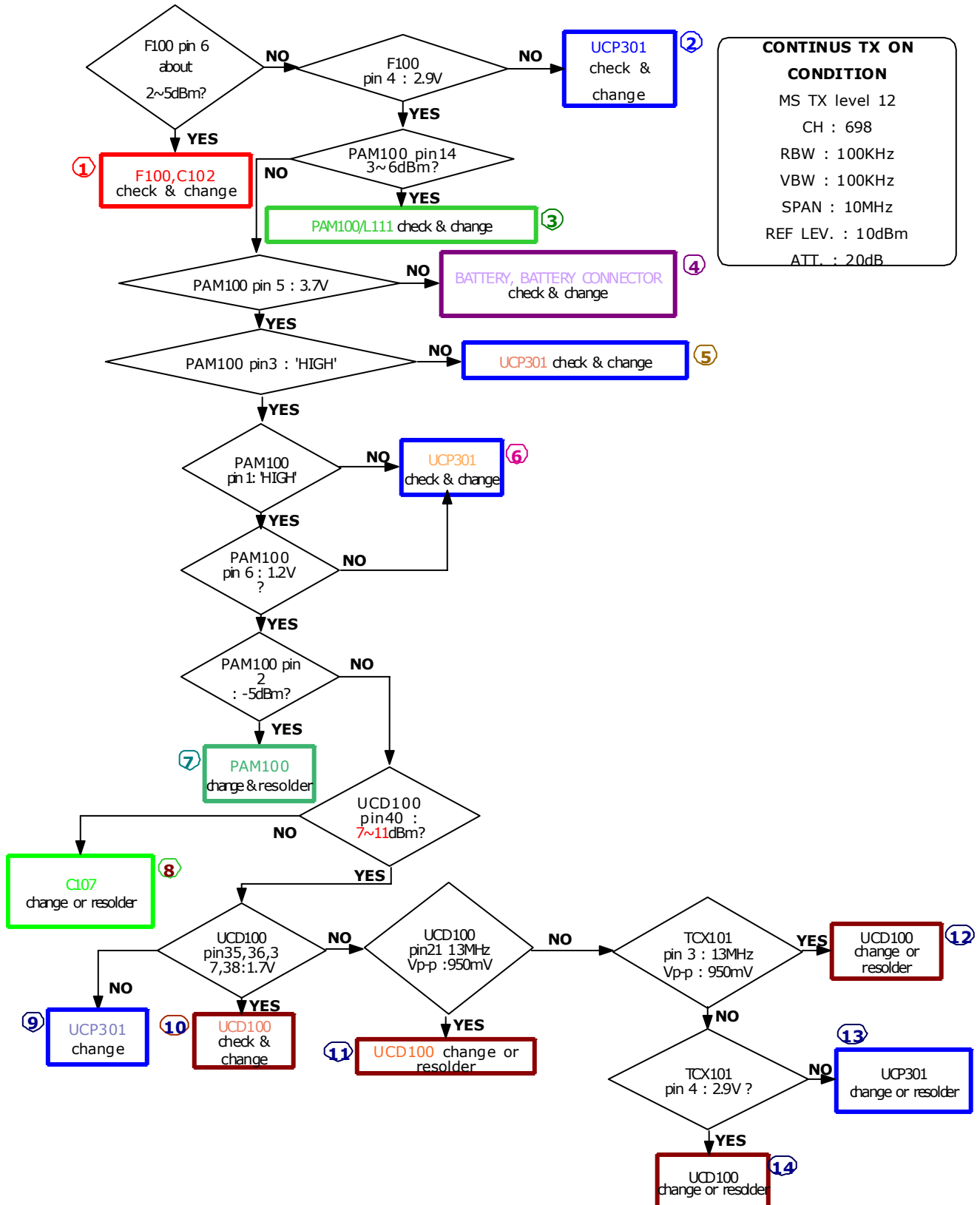


10-2-4. GSM Transmitter

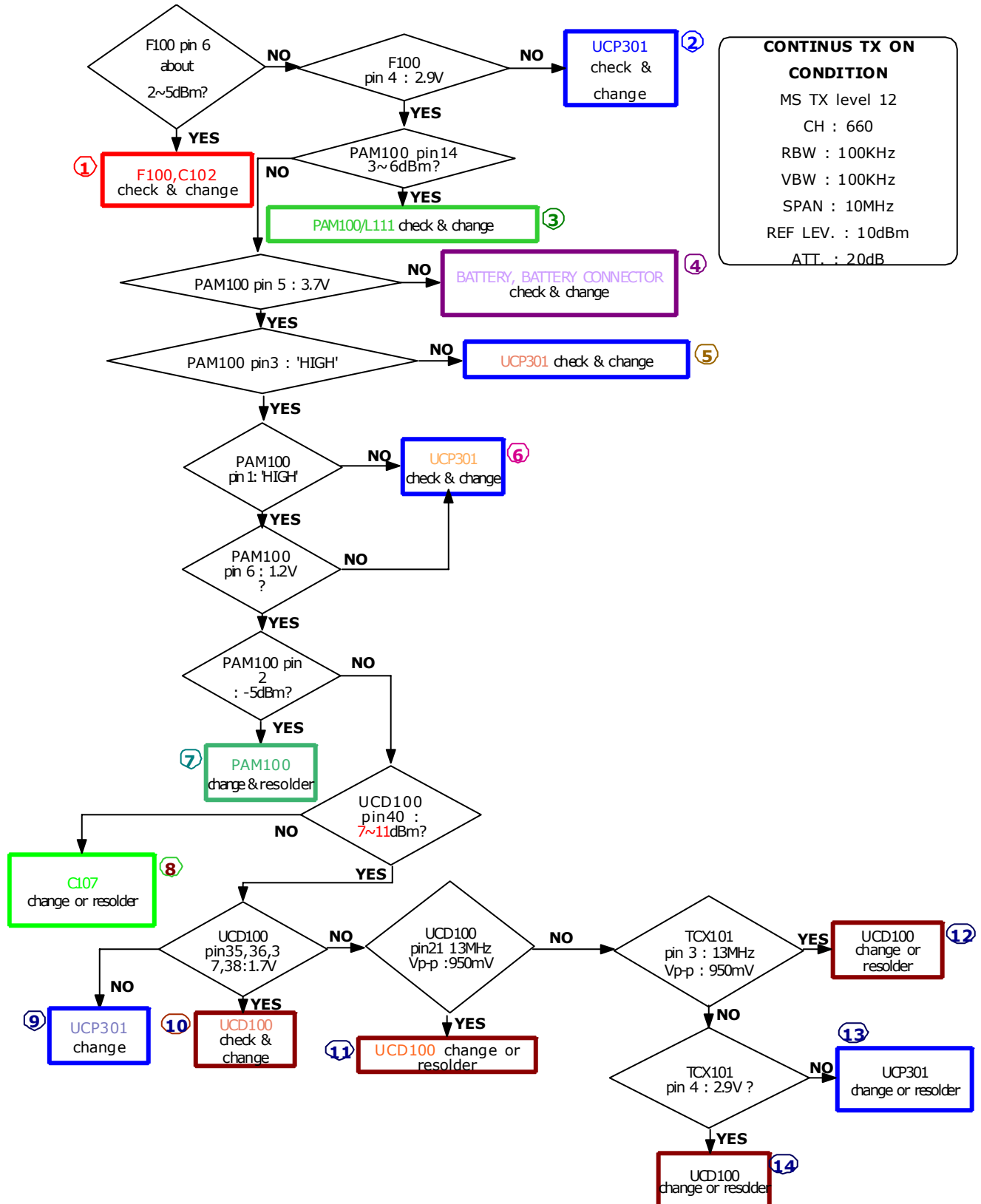


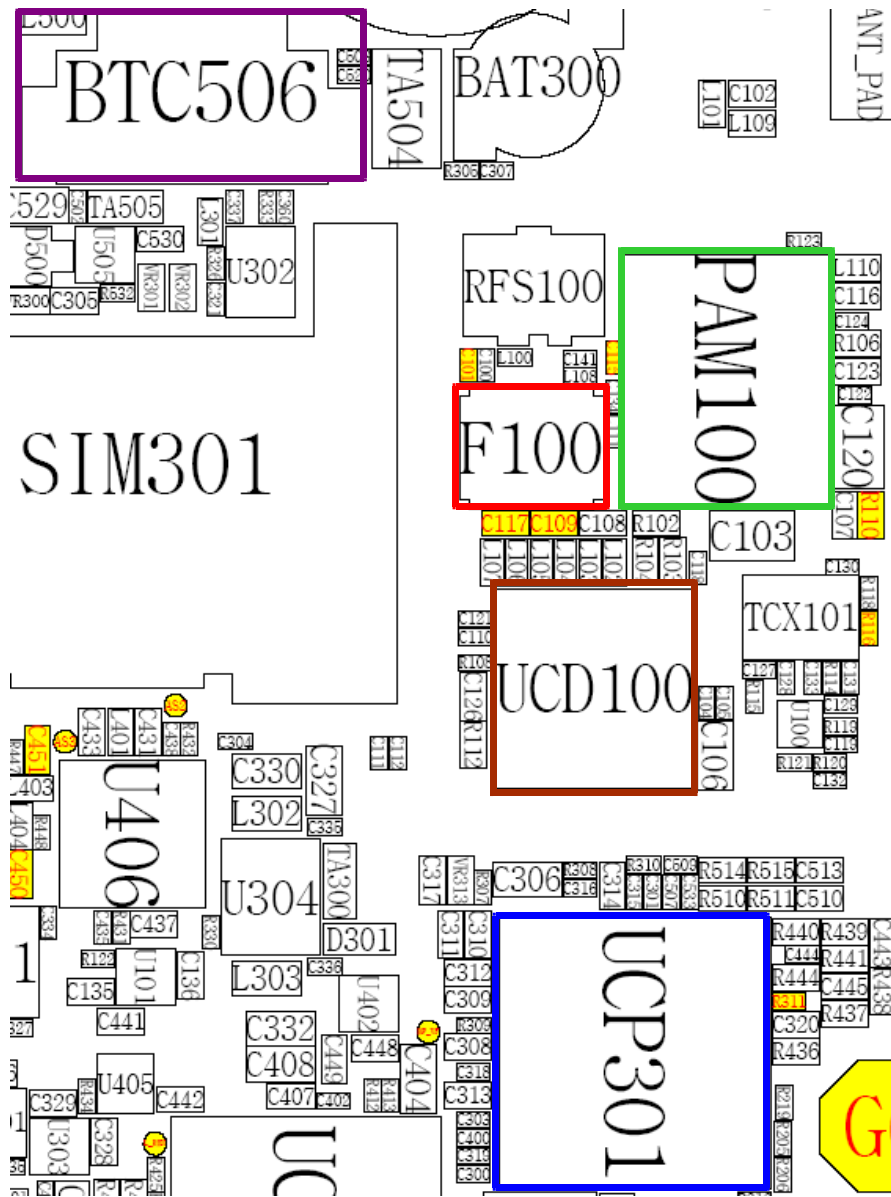
**CONTINUS TX ON CONDITION**  
 MS TX level 19  
 CH : 62  
 RBW : 100KHz  
 VBW : 100KHz  
 SPAN : 10MHz  
 REF LEV. : 10dBm  
 ATT. : 20dB

10-2-5. DCS Transmitter

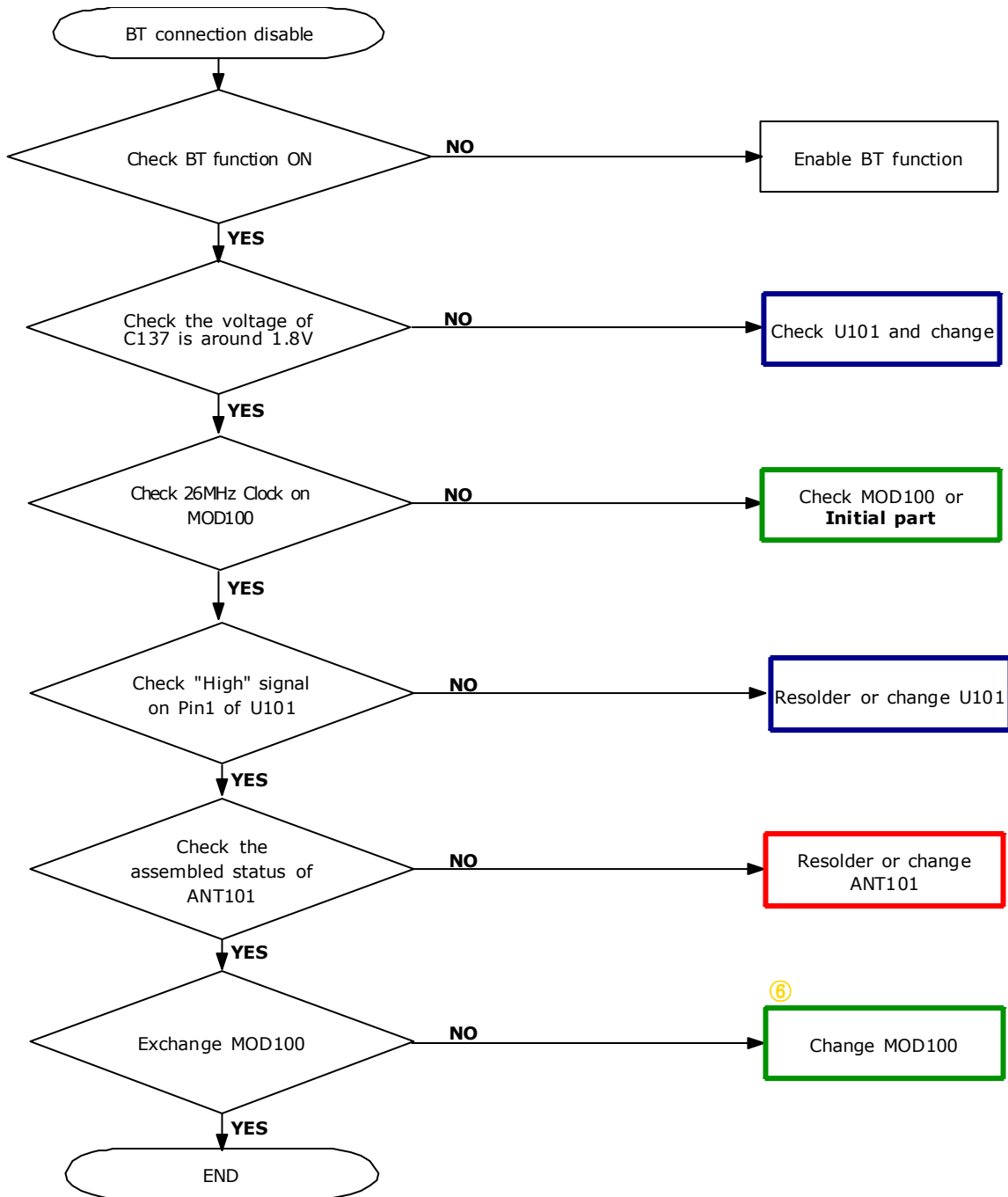


10-2-6. PCS Transmitter

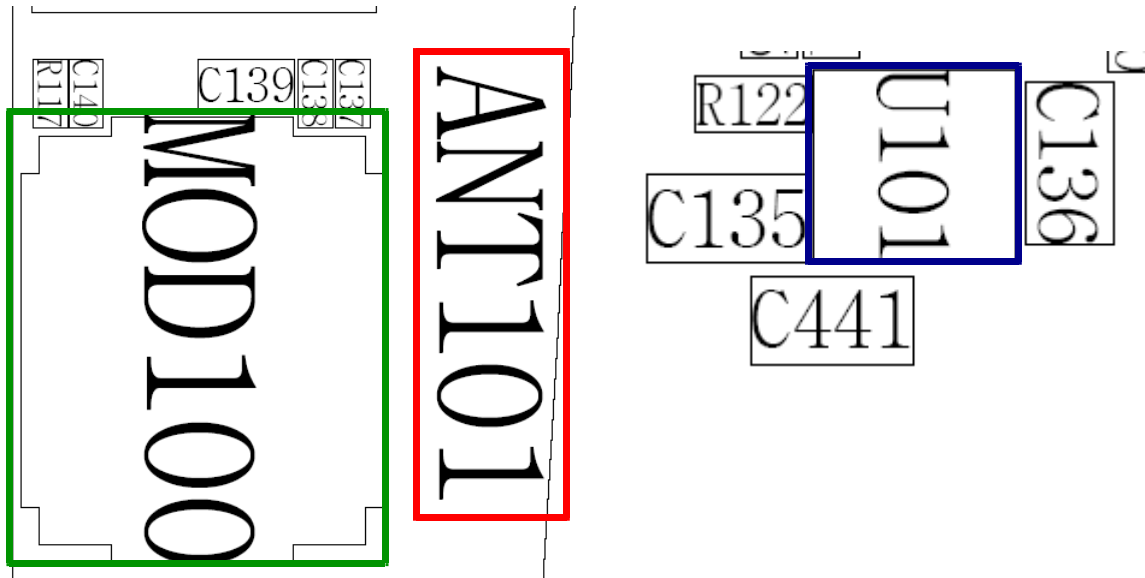




## 10-2-7. Bluetooth Part









---

# 11. Reference data

---

## 11-1. Reference Abbreviate

**AAC**: Advanced Audio Coding.  
**AVC** : Advanced Video Coding.  
**BER** : Bit Error Rate  
**BPSK**: Binary Phase Shift Keying  
**CA** : Conditional Access  
**CDM** : Code Division Multiplexing  
**C/I** : Carrier to Interference  
**DMB** : Digital Multimedia Broadcasting  
**EN** : European Standard  
**ES** : Elementary Stream  
**ETSI**: European Telecommunications Standards Institute  
**MPEG**: Moving Picture Experts Group  
**PN** : Pseudo-random Noise  
**PS** : Pilot Symbol  
**QPSK**: Quadrature Phase Shift Keying  
**RS** : Reed-Solomon  
**SI** : Service Information  
**TDM** : Time Division Multiplexing  
**TS** : Transport Stream

**SAMSUNG  
ELECTRONICS**

