# UMTS TELEPHONE

## SGH-L770

# SERVICE Manual

**UMTS TELEPHONE**


**CONTENTS**

SAMSUNG ELECTRONICS


GSPN (Global Service Partner Network)

| Country | Web Site |
|---|---|
| North America | service.samsungportal.com |
| Latin America | latin.samsungportal.com |
| CIS | cis.samsungportal.com |
| Europe | europe.samsungportal.com |
| China | china.samsungportal.com |
| Asia | asia.samsungportal.com |
| Mideast & Africa | mea.samsungportal.com |



2008. 05 Rev.1.0

# 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 disassembing 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 easilly 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/DCS1800/PCS1900/WCDMA2100 General Specification

| | EGSM 900 Phase 2 | DCS1800 Phase 1 | PCS1900 | WCDMA 2100 |
|---|---|---|---|---|
| Freq. Band[MHz] Uplink/Downlink | 880~915<br>925~960 | 1710~1785<br>1805~1880 | 1850~1910<br>1930~1990 | 1920~1980<br>2110~2170 |
| ARFCN range | 0~124 & 975~1023 | 512~885 | 512~810 | 9612~9888<br>10562~10838 |
| Tx/Rx spacing | 45 MHz | 95 MHz | 80 MHz | 190MHZ |
| Mod. Bit rate/ Bit Period | 270.833 kbps<br>3.692 us | 270.833 kbps<br>3.692 us | 270.833 kbps<br>3.692 us | 4.096Mcps |
| Time Slot Period/Frame Period | 576.9 us<br>4.615 ms | 576.9 us<br>4.615 ms | 576.9 us<br>4.615 ms | 10ms |
| modulation | 0.3 GMSK | 0.3 GMSK | 0.3 GMSK | QPSK |
| MS Power | 33 dBm~5 dBm | 30 dBm~0 dBm | 30 dBm~0 dBm | 24dBm~<br>-50dBm |
| Power Class | 5 pcl ~ 19 pcl | 0 pcl ~ 15 pcl | 0 pcl ~ 15 pcl | Power class 3 |
| Sensitivity | -102 dBm | -100 dBm | -100 dBm | -106.7dBm |
| TDMA Mux | 8 | 8 | 8 | - |
| Cell Radius | 35 Km | 2 Km | - | - |

## 2-2. GSM TX power class

| TX Power control level | GSM850/ EGSM900 |
|---|---|
| 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± 3dBm |
| 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

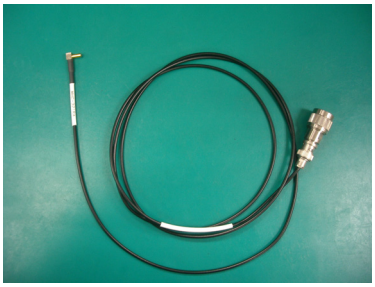
## Main Function

- MP3 Music player
- SOS message
- FM radio support
- DRM OMA V2.0 support
- Bluetooth CSR V2.0 support
- External memory support
- 2M camera support
- RF support band
  : GSM 900 + DCS1800 + PCS 1900 + WCDMA2100 (band1)

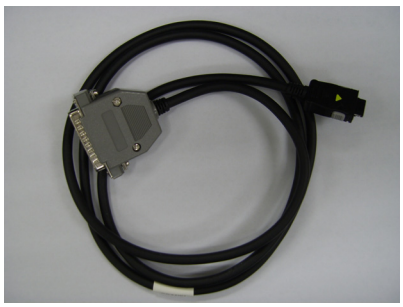
# 4. Array course control

## Test Jig (GH80-03307A)

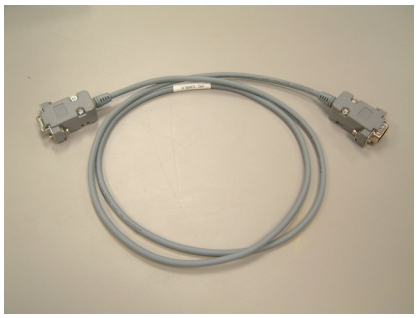

RF Test Cable
(GH39-00397A)



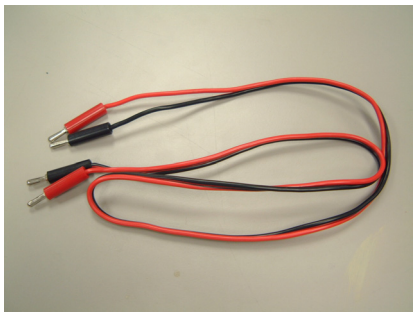
Test Cable
(GH39-01106A / GH39-01104A)



Serial Cable

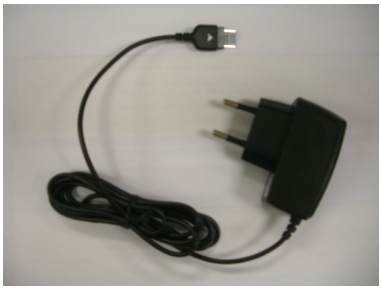


Power Supply Cable



DATA CABLE
(GH39-00922A)

TA
(GH44-01702A)



# Software Downloading

## 4-1. Downloading Binary Files

- Three binary files for downloading L770
  - L770XXYY.fls : Main source code binary

## 4-2. Pre-requsite for Downloading

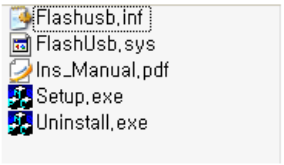
- Driver Program(**FlashUsb.sys**)
- Downloader Program(**FlashTool_E2.exe**)
- L770 Mobile Phone
- Data Cable
- Binary files

## 4-3. USB Driver Installation Guide

### * Install Flash Loader utility USB Driver

**SGH-L770 use the USB cable for downloading binary files**

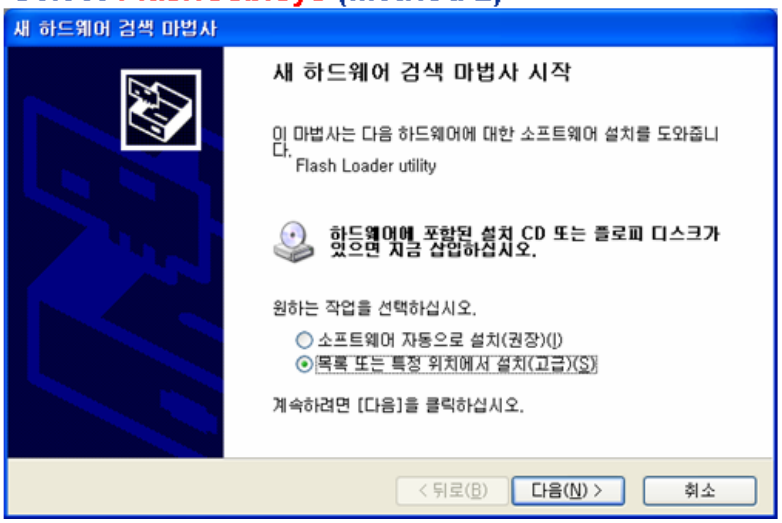

[ Flash Tool]

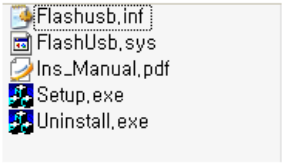



[ Flash Loader utility USB driver ]

### * Install Flash Loader utility USB Driver

- Hardware searching wizard execute when connecting USB cable from mobile phone to PC first time.
- Execute Setup.exe for USB driver installation. (Method 1)
- Select FlashUsb.sys (Method 2)

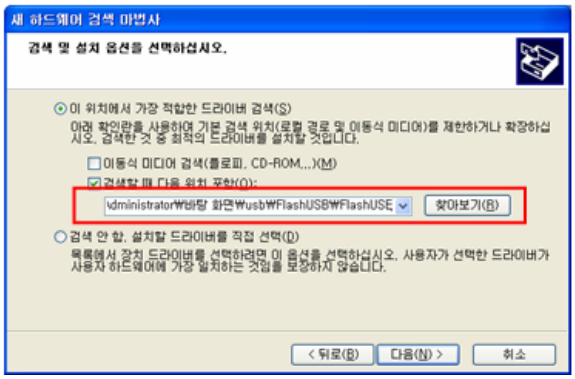


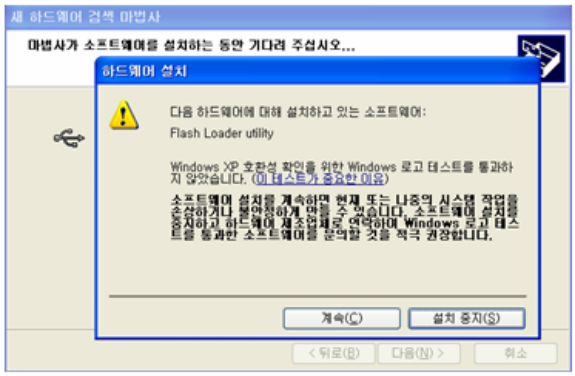




[ File List]

## * Install Flash Loader utility USB Driver

- Select the FlashUsb.sys in file path
- Click next button.
- Click continue button when finding "Flash Loader Utility" software.
- Click finish button.

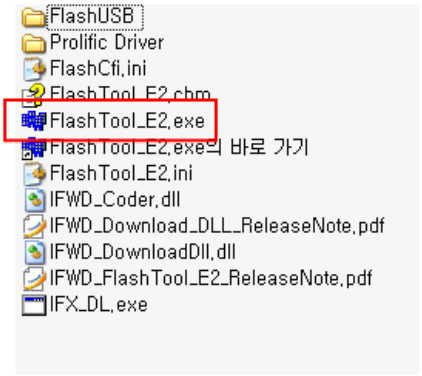


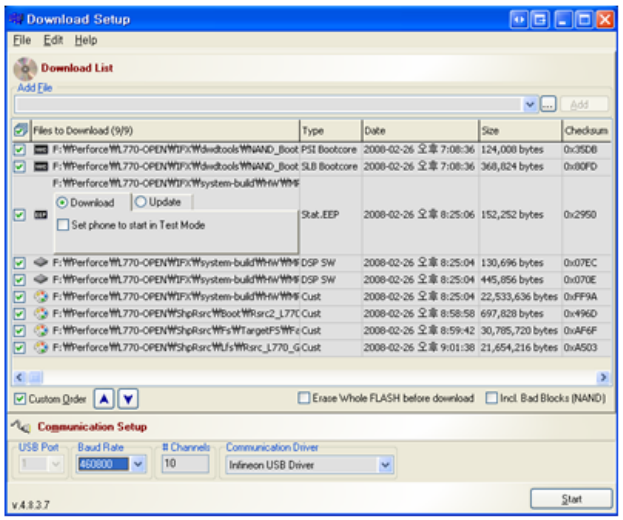
## 4-4. Flash Tool Usage Guide

### * Install Flash Loader Tool & Run.

- Unzip FlashTool_E2.zip file using compression tool (winzip , winrar , etc…)
- Execute FlashTool_E2.exe

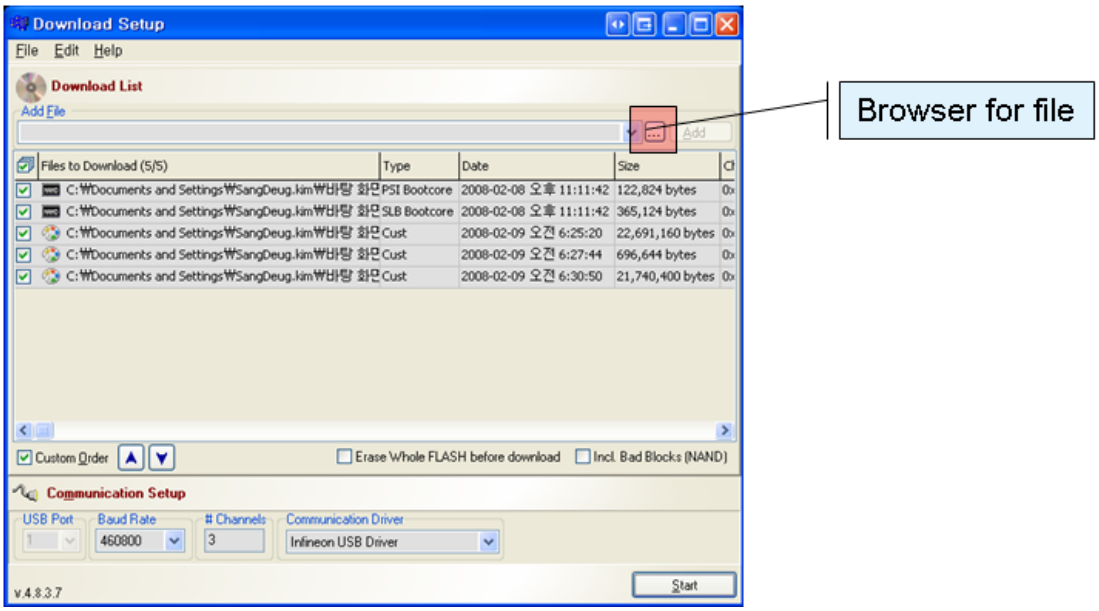



[ FlashTool_E2.zip]




[ FlashTool_E2.exe]

### * Add binary file

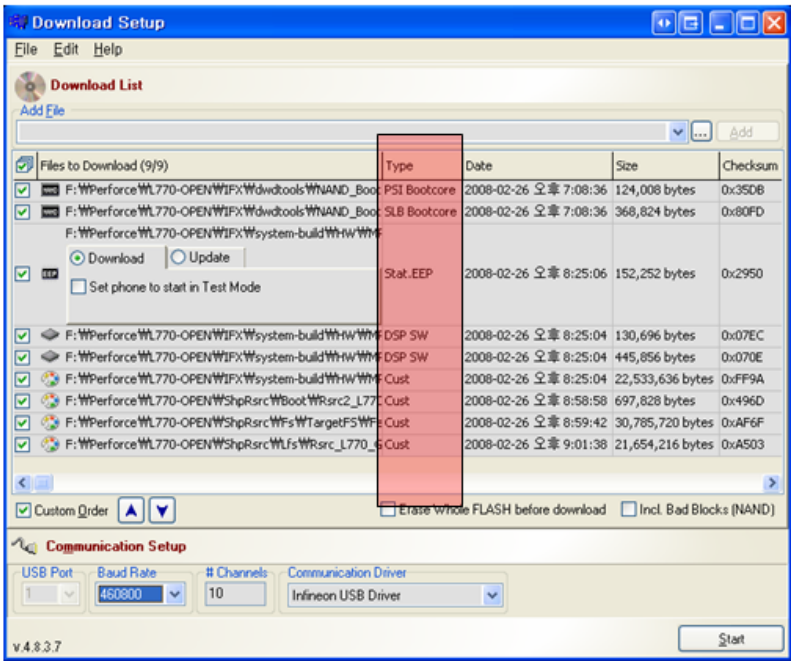


## * Download file list.

[ Boot Loader ]
- psi_large_QVGA_comp.flb
- slb_large_QVGA_comp.flb

[ Target Software & Calibration Data ]
- SLEEK.fls
- SLEEK.eep
- SLEEK_gsm.dsp
- SLEEK_umts.dsp

[ Resource File ]
- Rsrc2_L770(Mid).cust
- FactoryFs_L770_XXX.dfat
- Rsrc_L770_XXX.cust




## * Boot loader download.

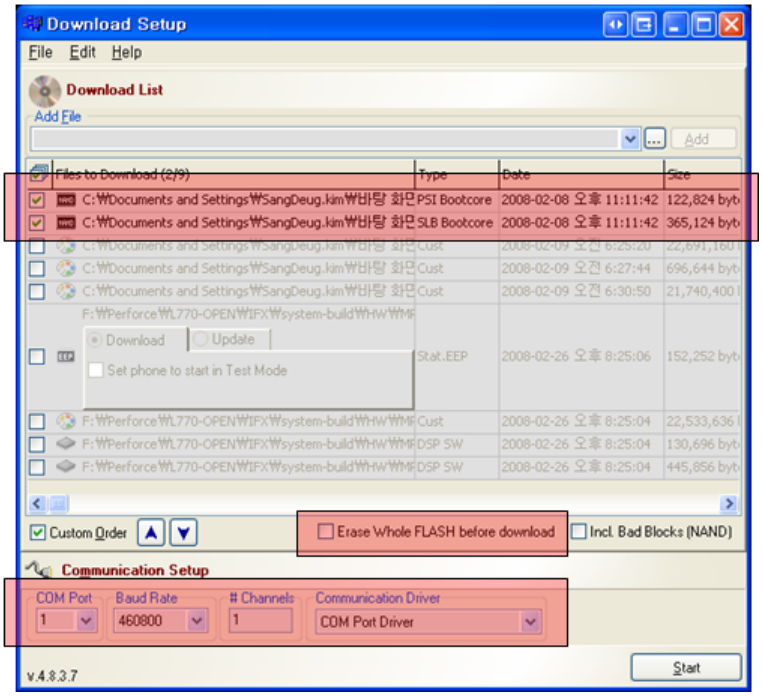
[ Boot Loader file ]
- psi_large_QVGA_comp.flb
- slb_large_QVGA_comp.flb

- Select com port

- Set Baud Rate (MAX 460800)

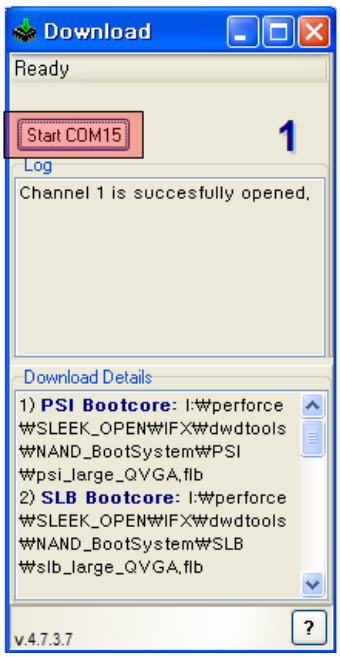
- Communication Driver : COM Port Driver

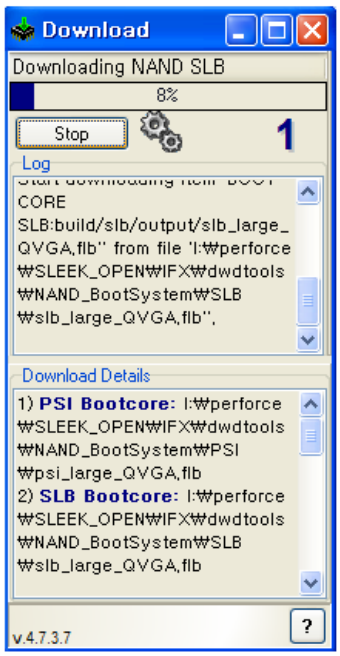
- Click [Start] Button.

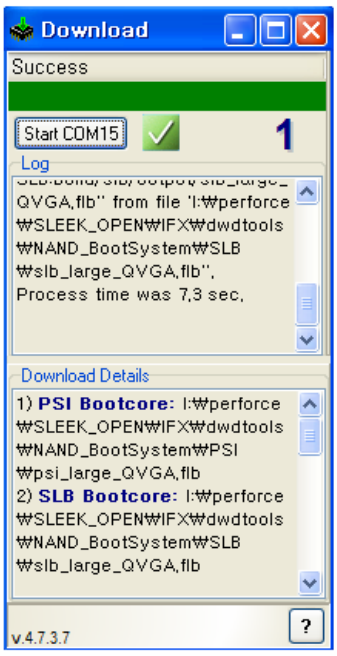


## * Boot loader download.

- Click [Start COM XX] button
- Power up



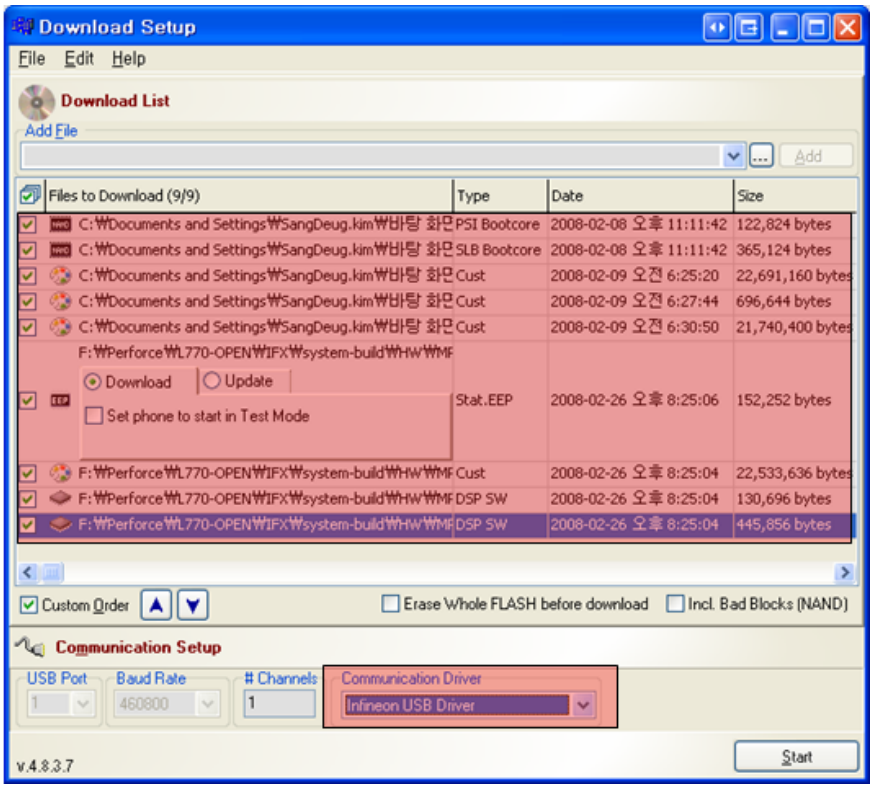




## * Full binary download.

- select full binary (9 files)

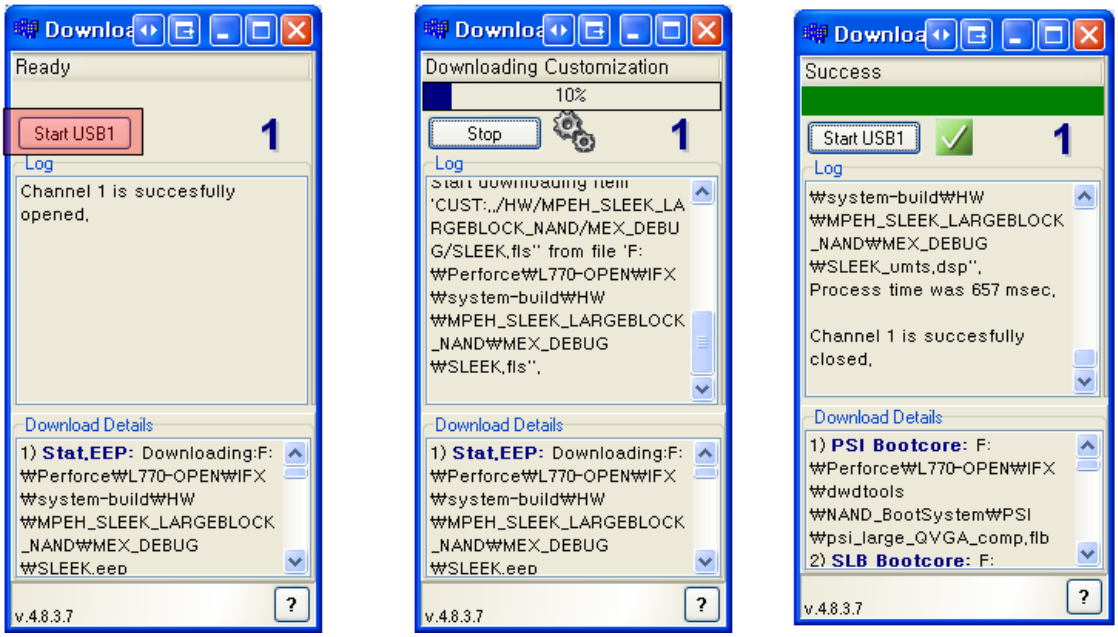
- Communication Driver
  : Infineon USB Driver

- Click [Start] Button.



## * Full binary download.

- Click [Start USB XX] button
- Connecting USB cable and then pressing [ * ] button on mobile phone keypad




When downloading is finished successfully, there is a "Success" message.

After finishing downloading, Certain memory resets should be done to guarantee the normal performance.

Confirm the downloaded version name and etc. :

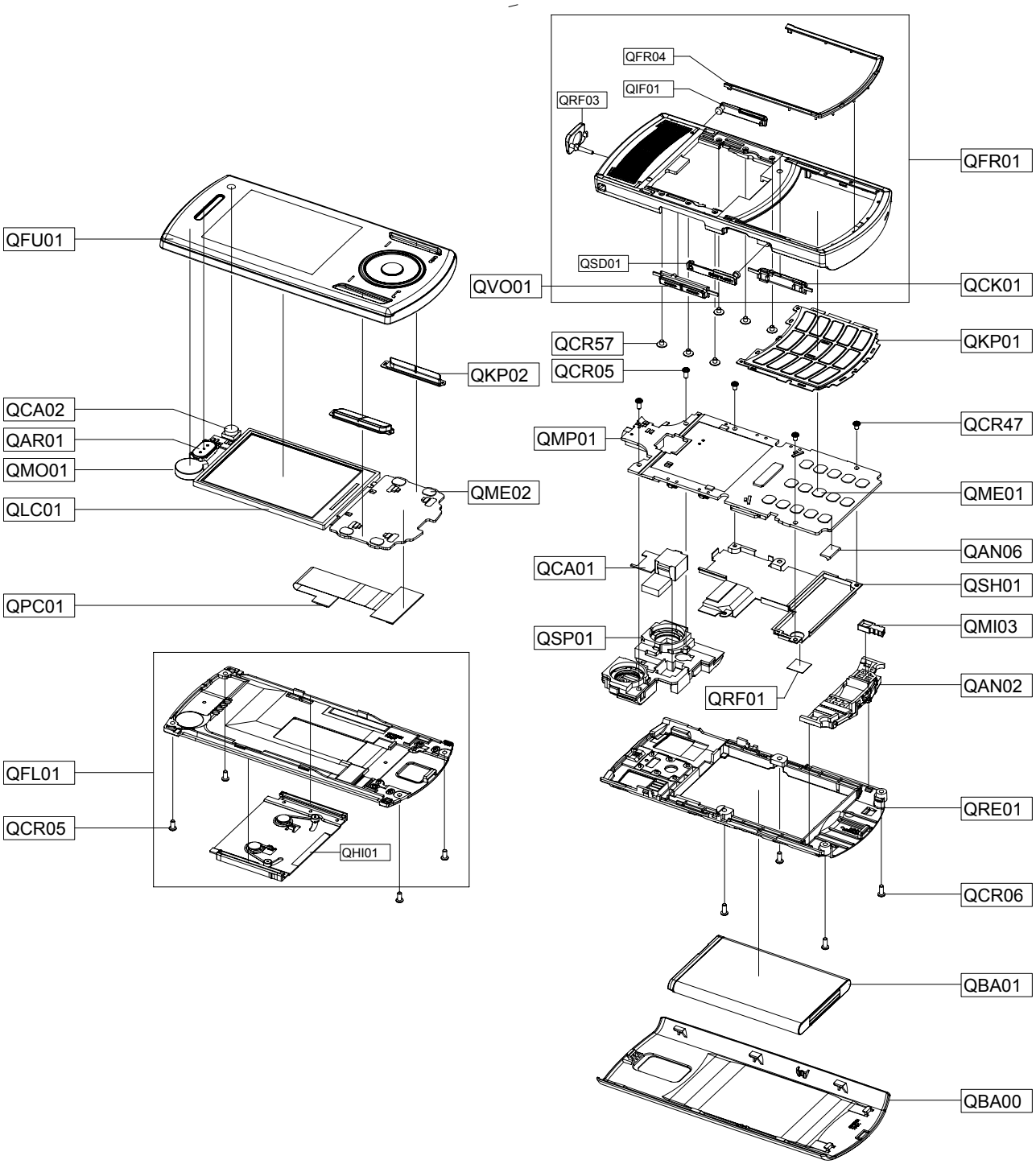
***#1234#**

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-SGH-L770 | GH42-01477A |
| QBA00 | | PMO COVER-BATT(ORANGE) | GH72-46853B |
| QBA01 | | INNER BATTERY PACK-880MAH , BL | GH43-02666A |
| QCA01 | | CAMERA MODULE-SGH-L770 | GH59-05708A |
| QCA02 | | KEY FPCB-SIDE CAMERA KEY | GH59-05392A |
| QCK01 | | PMO KEY-CAMERA | GH72-45847B |
| QCR05 | | SCREW-MACHINE | 6001-001478 |
| QCR72 | | SCREW-MACHINE | 6001-002051 |
| QFL01 | | ASSY CASE-SLIDE LOWER | GH98-07227B |
| QHI01 | | ASSY HINGE-MODULE | GH98-07230A |
| QHI04 | | PMO COVER-HINGE CAP | GH72-45849A |
| QKP02 | | ASSY CASE-SUB KEYPAD(OPEN) | GH98-07231A |
| QLC01 | | LCD-MODULE (SGH-L770) | GH07-01244A |
| QMP01 | | PBA MAIN-SGH_L770 | GH92-04256A |
| QPC01 | | FPC-SLIDE FPCB | GH41-02038A |
| QRE01 | | ASSY CASE-REAR | GH98-07232B |
| QRF01 | | ASSY COVER-RF | GH98-07840B |
| QSH04 | | ASSY COVER-SHIELD FRONT | GH98-08144A |
| QSH05 | | ASSY COVER-SHIELD CAN REAR B | GH98-08968A |
| QSP01 | | ASSY ETC-SPK/MOT MODULE | GH59-05475A |
| QVK01 | | KEY FPCB-SIDE VOLUME KEY | GH59-05391A |
| QVO01 | | PMO KEY-VOLUME | GH72-45846B |
| QFU01 | | ASSY CASE-SLIDE UPPER(OPEN/BLK | GH98-07224B |
| | QMW01 | ASSY COVER-WINDOW MAIN(OPEN) | GH98-07225A |
| QFR01 | | ASSY CASE-FRONT | GH98-07228B |
| | QIF01 | PMO COVER-IF | GH72-45844B |
| | QSD01 | PMO COVER-MICRO SD | GH72-45845B |

# 6. MAIN Electrical Parts List

| SEC CODE | Design LOC | Discription |
|---|---|---|
| GH42-01477A | ANT100, ANT102, BT_ANT,BTGND | INTENNA-SGH-L770 |
| GH59-05391A | L701 | KEY FPCB-SIDE VOLUME KEY |
| GH59-05392A | L702 | KEY FPCB-SIDE CAMERA KEY |
| 0403-001427 | ZD405 | DIODE-ZENER |
| 0403-001547 | ZD601 | DIODE-ZENER |
| 0404-001172 | D401 | DIODE-SCHOTTKY |
| 0404-001172 | D402 | DIODE-SCHOTTKY |
| 0404-001250 | D403 | DIODE-SCHOTTKY |
| 0404-001250 | D404 | DIODE-SCHOTTKY |
| 0406-001237 | ZD603 | DIODE-TVS |
| 0504-000168 | Q400 | TR-DIGITAL |
| 0504-000168 | Q401 | TR-DIGITAL |
| 0504-001113 | Q501 | TR-DIGITAL |
| 0504-001151 | Q200 | TR-DIGITAL |
| 0801-003013 | U102 | IC-CMOS LOGIC |
| 0801-003031 | U103 | IC-CMOS LOGIC |
| 0801-003140 | U204 | IC-CMOS LOGIC |
| 1009-001035 | U701 | IC-HALL EFFECT S/W |
| 1009-001035 | U703 | IC-HALL EFFECT S/W |
| 1108-000157 | U301 | IC-MCP |
| 1201-002195 | U504 | IC-AUDIO AMP |
| 1201-002423 | PAM101 | IC-POWER AMP |
| 1201-002455 | PAM201 | IC-POWER AMP |
| 1201-002559 | Q202 | IC-MMIC AMP |
| 1201-002597 | U502 | IC-AUDIO AMP |
| 1203-004339 | U607 | IC-MULTI REG. |
| 1203-004518 | U403 | IC-BATTERY |
| 1203-004906 | U401 | IC-BATTERY |
| 1203-005028 | U402 | IC-VOL. DETECTOR |
| 1203-005118 | U702 | IC-MULTI REG. |
| 1204-002746 | U503 | IC-TUNER |
| 1205-003099 | U201 | IC-TRANSCEIVER |
| 1205-003235 | U101 | IC-DATA COMM./GEN. |
| 1205-003325 | U302 | IC-DATA COMM./GEN. |
| 1404-001165 | TH201 | THERMISTOR-NTC |
| 1405-001082 | VR601 | VARISTOR |
| 1405-001082 | VR603 | VARISTOR |

| SEC CODE | Design LOC | Discription |
|---|---|---|
| 1405-001082 | VR604 | VARISTOR |
| 1405-001082 | VR605 | VARISTOR |
| 1405-001082 | VR606 | VARISTOR |
| 1405-001082 | VR701 | VARISTOR |
| 1405-001082 | VR702 | VARISTOR |
| 1405-001082 | VR705 | VARISTOR |
| 1405-001082 | VR706 | VARISTOR |
| 1405-001082 | VR708 | VARISTOR |
| 1405-001082 | VR722 | VARISTOR |
| 1405-001093 | VR730 | VARISTOR |
| 1405-001093 | VR731 | VARISTOR |
| 1405-001133 | VR401 | VARISTOR |
| 1405-001133 | VR402 | VARISTOR |
| 1405-001133 | VR403 | VARISTOR |
| 1405-001133 | VR404 | VARISTOR |
| 1405-001133 | VR405 | VARISTOR |
| 1405-001133 | VR406 | VARISTOR |
| 1405-001177 | VR602 | VARISTOR |
| 1405-001177 | VR714 | VARISTOR |
| 1405-001177 | VR732 | VARISTOR |
| 1405-001177 | VR733 | VARISTOR |
| 1405-001177 | VR734 | VARISTOR |
| 1405-001177 | VR735 | VARISTOR |
| 2007-000143 | R514 | R-CHIP |
| 2007-000143 | R515 | R-CHIP |
| 2007-000163 | R448 | R-CHIP |
| 2007-000167 | R322 | R-CHIP |
| 2007-000171 | L601 | R-CHIP |
| 2007-000171 | R503 | R-CHIP |
| 2007-000171 | R506 | R-CHIP |
| 2007-000171 | R700 | R-CHIP |
| 2007-001316 | R210 | R-CHIP |
| 2007-007107 | R204 | R-CHIP |
| 2007-007107 | R325 | R-CHIP |
| 2007-007107 | R417 | R-CHIP |
| 2007-007132 | R432 | R-CHIP |
| 2007-007311 | R314 | R-CHIP |

| SEC CODE | Design LOC | Discription |
|---|---|---|
| 2007-007314 | R433 | R-CHIP |
| 2007-007317 | R502 | R-CHIP |
| 2007-007317 | R508 | R-CHIP |
| 2007-007741 | R605 | R-CHIP |
| 2007-008040 | R303 | R-CHIP |
| 2007-008040 | R304 | R-CHIP |
| 2007-008040 | R305 | R-CHIP |
| 2007-008040 | R306 | R-CHIP |
| 2007-008040 | R307 | R-CHIP |
| 2007-008040 | R308 | R-CHIP |
| 2007-008040 | R309 | R-CHIP |
| 2007-008040 | R310 | R-CHIP |
| 2007-008040 | R311 | R-CHIP |
| 2007-008040 | R312 | R-CHIP |
| 2007-008040 | R313 | R-CHIP |
| 2007-008045 | R201 | R-CHIP |
| 2007-008045 | R717 | R-CHIP |
| 2007-008045 | R718 | R-CHIP |
| 2007-008045 | R719 | R-CHIP |
| 2007-008045 | R720 | R-CHIP |
| 2007-008045 | R721 | R-CHIP |
| 2007-008045 | R722 | R-CHIP |
| 2007-008045 | R723 | R-CHIP |
| 2007-008045 | R729 | R-CHIP |
| 2007-008051 | R318 | R-CHIP |
| 2007-008051 | R323 | R-CHIP |
| 2007-008052 | R326 | R-CHIP |
| 2007-008052 | R335 | R-CHIP |
| 2007-008052 | R336 | R-CHIP |
| 2007-008052 | R436 | R-CHIP |
| 2007-008054 | R703 | R-CHIP |
| 2007-008054 | R704 | R-CHIP |
| 2007-008054 | R705 | R-CHIP |
| 2007-008054 | R707 | R-CHIP |
| 2007-008055 | R207 | R-CHIP |
| 2007-008055 | R209 | R-CHIP |
| 2007-008055 | R416 | R-CHIP |

| SEC CODE | Design LOC | Discription |
|---|---|---|
| 2007-008055 | R427 | R-CHIP |
| 2007-008055 | R434 | R-CHIP |
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| 2007-008419 | R412 | R-CHIP |
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| 2007-008542 | R413 | R-CHIP |
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| 2007-008542 | R713 | R-CHIP |
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| 2007-008548 | R530 | R-CHIP |
| 2007-008549 | R108 | R-CHIP |
| 2007-008590 | R531 | R-CHIP |
| 2007-008648 | R331 | R-CHIP |
| 2007-008774 | R110 | R-CHIP |
| 2007-008786 | R425 | R-CHIP |
| 2007-008786 | R443 | R-CHIP |
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| 2007-008786 | R645 | R-CHIP |
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| 2007-009111 | R319 | R-CHIP |
| 2007-009111 | R321 | R-CHIP |
| 2007-009167 | R415 | R-CHIP |
| 2007-009315 | R203 | R-CHIP |
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| SEC CODE | Design LOC | Discription |
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| 2203-000812 | C108 | C-CER,CHIP |
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| 2203-000854 | R116 | C-CER,CHIP |
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| 2203-005234 | C213 | C-CER,CHIP |
| 2203-005234 | R106 | C-CER,CHIP |
| 2203-005281 | R104 | C-CER,CHIP |
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| SEC CODE | Design LOC | Discription |
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| 2203-006048 | C503 | C-CER,CHIP |
| 2203-006048 | C510 | C-CER,CHIP |
| 2203-006053 | C435 | C-CER,CHIP |
| 2203-006141 | C601 | C-CER,CHIP |
| 2203-006187 | C210 | C-CER,CHIP |
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| 2203-006194 | C103 | C-CER,CHIP |
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| SEC CODE | Design LOC | Discription |
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| 2203-006423 | C719 | C-CER,CHIP |

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| 2203-006562 | C302 | C-CER,CHIP |
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| 2203-006562 | C311 | C-CER,CHIP |
| 2203-006562 | C313 | C-CER,CHIP |
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| 2203-006562 | C607 | C-CER,CHIP |
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| 2203-006562 | C703 | C-CER,CHIP |
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| 2203-006674 | C138 | C-CER,CHIP |
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| 2203-006872 | C438 | C-CER,CHIP |
| 2203-006872 | C709 | C-CER,CHIP |
| 2404-001381 | TA400 | C-TA,CHIP |
| 2404-001381 | TA402 | C-TA,CHIP |
| 2404-001381 | TA537 | C-TA,CHIP |
| 2404-001397 | TA711 | C-TA,CHIP |
| 2404-001406 | TA201 | C-TA,CHIP |
| 2404-001506 | TA102 | C-TA,CHIP |

| SEC CODE | Design LOC | Discription |
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| 2703-001180 | L106 | INDUCTOR-SMD |
| 2703-001180 | L107 | INDUCTOR-SMD |
| 2703-001726 | L204 | INDUCTOR-SMD |
| 2703-001734 | C111 | INDUCTOR-SMD |
| 2703-001734 | L111 | INDUCTOR-SMD |
| 2703-001734 | L215 | INDUCTOR-SMD |
| 2703-001737 | C219 | INDUCTOR-SMD |
| 2703-001737 | L210 | INDUCTOR-SMD |
| 2703-001737 | L213 | INDUCTOR-SMD |
| 2703-001747 | L102 | INDUCTOR-SMD |
| 2703-001747 | L103 | INDUCTOR-SMD |
| 2703-001747 | L104 | INDUCTOR-SMD |
| 2703-001747 | L105 | INDUCTOR-SMD |
| 2703-001748 | L109 | INDUCTOR-SMD |
| 2703-001748 | R115 | INDUCTOR-SMD |
| 2703-001750 | C134 | INDUCTOR-SMD |
| 2703-001786 | L209 | INDUCTOR-SMD |
| 2703-001990 | L110 | INDUCTOR-SMD |
| 2703-001990 | L200 | INDUCTOR-SMD |
| 2703-002205 | L203 | INDUCTOR-SMD |
| 2703-002205 | L208 | INDUCTOR-SMD |
| 2703-002314 | L100 | INDUCTOR-SMD |
| 2703-002649 | L101 | INDUCTOR-SMD |
| 2703-002649 | L211 | INDUCTOR-SMD |
| 2703-002768 | L402 | INDUCTOR-SMD |
| 2703-002768 | L403 | INDUCTOR-SMD |
| 2703-002795 | L201 | INDUCTOR-SMD |
| 2703-002795 | L205 | INDUCTOR-SMD |
| 2703-002961 | L704 | INDUCTOR-SMD |
| 2703-002961 | L705 | INDUCTOR-SMD |
| 2703-002961 | L706 | INDUCTOR-SMD |
| 2703-002961 | L707 | INDUCTOR-SMD |
| 2703-002961 | L708 | INDUCTOR-SMD |
| 2703-003125 | L202 | INDUCTOR-SMD |
| 2703-003125 | L206 | INDUCTOR-SMD |
| 2703-003196 | L501 | INDUCTOR-SMD |

| SEC CODE | Design LOC | Discription |
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| 2801-004466 | OSC301 | CRYSTAL-SMD |
| 2801-004506 | OSC101 | CRYSTAL-SMD |
| 2809-001315 | TCS101 | OSCILLATOR-VCTCXO |
| 2901-001521 | F701 | FILTER-EMI SMD |
| 2901-001521 | F702 | FILTER-EMI SMD |
| 2901-001521 | F703 | FILTER-EMI SMD |
| 2901-001521 | F704 | FILTER-EMI SMD |
| 2901-001521 | F705 | FILTER-EMI SMD |
| 2901-001521 | F706 | FILTER-EMI SMD |
| 2904-001833 | F202 | FILTER-SAW |
| 2904-001835 | F201 | FILTER-SAW |
| 2909-001283 | F101 | FILTER-LC |
| 2910-000024 | DUF201 | DUPLEXER-SAW |
| 2911-000108 | MOD101 | DUPLEXER-FEM |
| 3301-001342 | L216 | BEAD-SMD |
| 3301-001342 | L217 | BEAD-SMD |
| 3301-001342 | L218 | BEAD-SMD |
| 3301-001342 | L219 | BEAD-SMD |
| 3301-001342 | L220 | BEAD-SMD |
| 3301-001342 | L221 | BEAD-SMD |
| 3301-001342 | L700 | BEAD-SMD |
| 3301-001342 | L703 | BEAD-SMD |
| 3301-001534 | L500 | BEAD-SMD |
| 3301-001534 | L502 | BEAD-SMD |
| 3301-001534 | L503 | BEAD-SMD |
| 3301-001534 | L505 | BEAD-SMD |
| 3301-001935 | L504 | BEAD-SMD |
| 3301-001946 | L400 | BEAD-SMD |
| 3301-001946 | L401 | BEAD-SMD |
| 3705-001358 | RFS101 | CONNECTOR-COAXIAL |
| 3709-001448 | CN703 | CONNECTOR-CARD EDGE |
| 3709-001487 | CN701 | CONNECTOR-CARD EDGE |
| 3710-002523 | IFC601 | SOCKET-INTERFACE |
| 3711-005873 | HEA702 | HEADER-BOARD TO BOARD |
| 3711-006329 | BTC701 | HEADER-BATTERY |
| 3711-006782 | HEA701 | HEADER-BOARD TO BOARD |
| 4302-001184 | M401 | BATTERY-LI(2ND) |

| SEC CODE | Design LOC | Discription |
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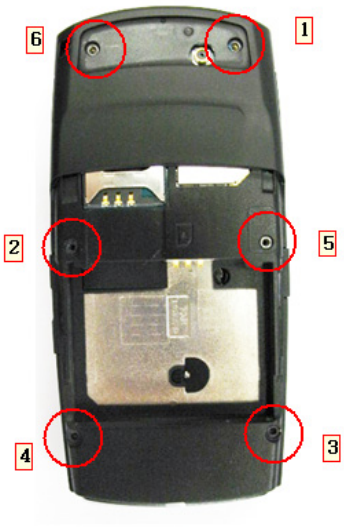
| GH70-02367A | FPC701 | ICT-ON-BOARD CLIP |
| GH70-02367A | FPC702 | ICT-ON-BOARD CLIP |
| GH70-02367A | FPC703 | ICT-ON-BOARD CLIP |
| GH70-02367A | FPC704 | ICT-ON-BOARD CLIP |
| GH70-02367A | FPC705 | ICT-ON-BOARD CLIP |
| GH70-02367A | FPC706 | ICT-ON-BOARD CLIP |
| GH70-02367A | FPC707 | ICT-ON-BOARD CLIP |
| GH70-02367A | FPC708 | ICT-ON-BOARD CLIP |

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

# 7. Disassembly and Assembly Instructions

## 7-1. Disassembly

**1**

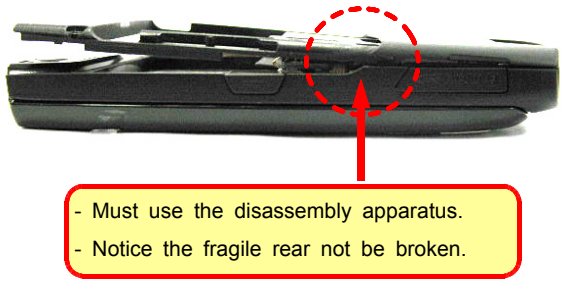



1) Remove the RF COVER.
2) Unscrew 6 points on the rear case.

※ **Caution**

1) Notice the rear case should not be damaged or scratched.

**2**



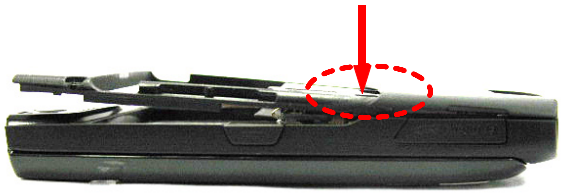
- Must use the disassembly apparatus.
- Notice the fragile rear not be broken.

1) Separate the locker by inserting the disassembly apparatus into the gap between the front and the rear.

※ **Caution**

1) Notice the rear case not be damaged or scratched.
2) Notice the rear case not be deformed.

**3**

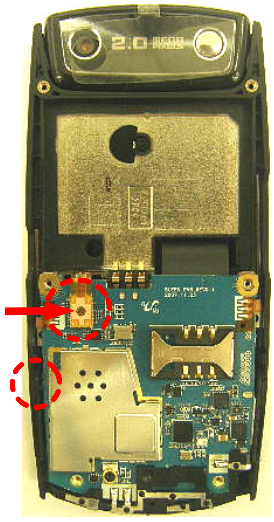


1) Separate the locker on the opposite side by inserting the disassembly apparatus into the gap between 손 front and the rear.
2) Remove the REAR.

※ **Caution**

1) Notice the rear case not be damaged or scratched.
2) Notice the rear case not be deformed.

**4**

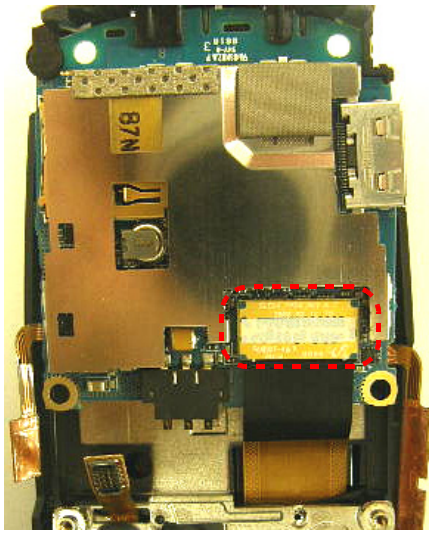


1) Detach the KEY FPCB CONNECTOR.
2) Remove PBA pulling to left HOOK.

※ **Caution**

1) Notice the both INTENNA and INTENNA CARRIER not be damaged.
2) Notice the SLIDE FPCB not be damaged.

**5**

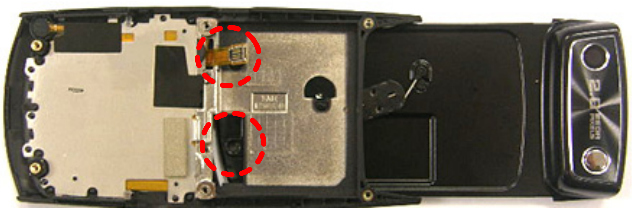


1) Detach the SLIDE FPCB CONNECTOR.

※ **Caution**

1) Notice the both PBA and FPCB not be damaged.

**6**



1) Unscrew 2 point on the lower case.

※ **Caution**

1) Notice the FPCB not be damaged.

**7**


1) Separate the UPPER from lower part of FRONT case.

※ **Caution**

1) Notice the rear case should not be damaged or scratched.
2) Must use the disassembly apparatus.

**8**

1) Detach the SLIDE FPCB and SPK/CAM FPCB Connector. Then Separate them from PBA.

※ **Caution**

1) Notice the FPCB not be damaged.

| | |
|---|---|
| **9**<br>  | |
| 1) Separate UPPER into LCD Module, UPPER, SUB KEY PAD.<br>※ **Caution**<br>1) Notice the UPPER & LCD Module not be damaged | |

## 7-2. Assembly

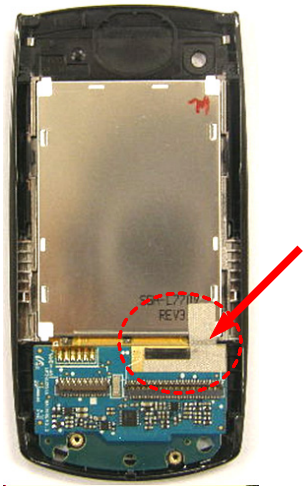
**1**

1) Join the SUB KEYPAD on the UPPER.

※ **Caution**

1) Make sure in the guideline.

**2**

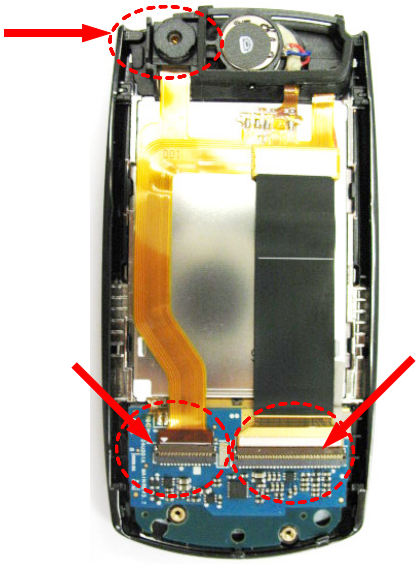


1) Join the LCD module on the UPPER.
2) Attach the conductive tape.

※ **Caution**

1) Make sure no between the WINDOW and LCD module.

**3**



1) Connect the SLIDE FPCB and SPK/CAM FPCB with PBA.

※ **Caution**

1) Notice the FPCB not be damaged.
2) Make sure CAMERA MODULE is exactly in place.

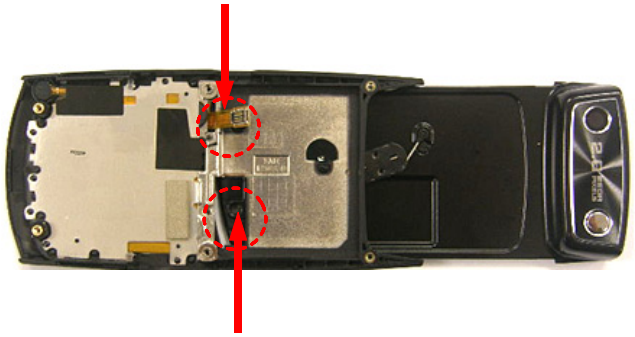
**4**

1) Make the Slide FPCB pass through the lower case. Then assemble the UPPER.

※ **Caution**

1) Notice the FPCB not be damaged.

**5**

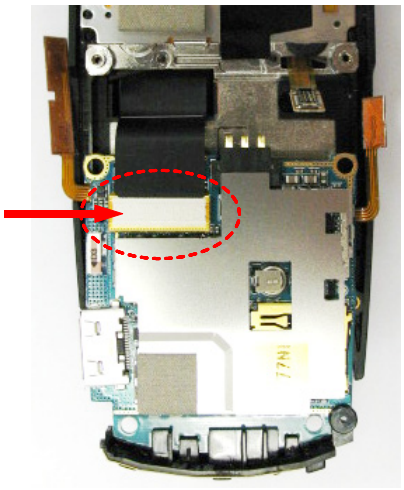


1) Screw 2 points on the lower case

※ **Caution**

1) Notice the FPCB not be damaged.

**6**

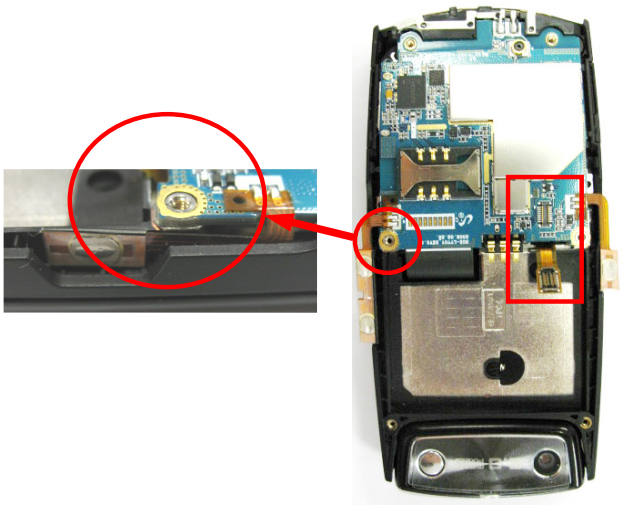


1) Attach the SLIDE FPCB to PBA.

※ **Caution**

1) Make sure the SLIDE FPCB CONNECTION.

**7**

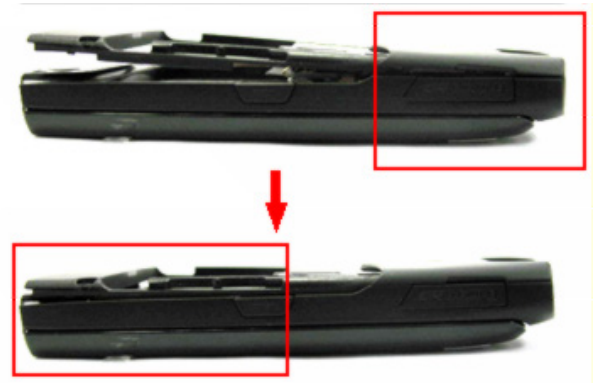


1) Join the PBA on the LOWER case.
2) Attach the KEY FPCB CONNECTOR.

※ **Caution**

1) Make sure the KEY FPCB CONNECTION.
2) Keep the guide line

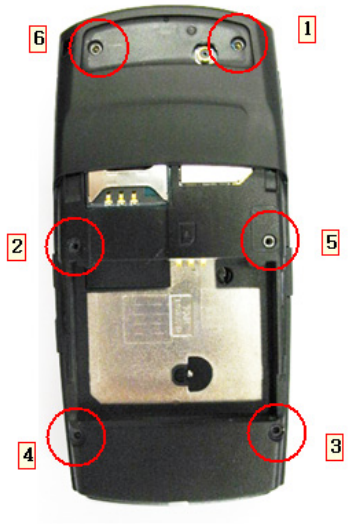
**8**



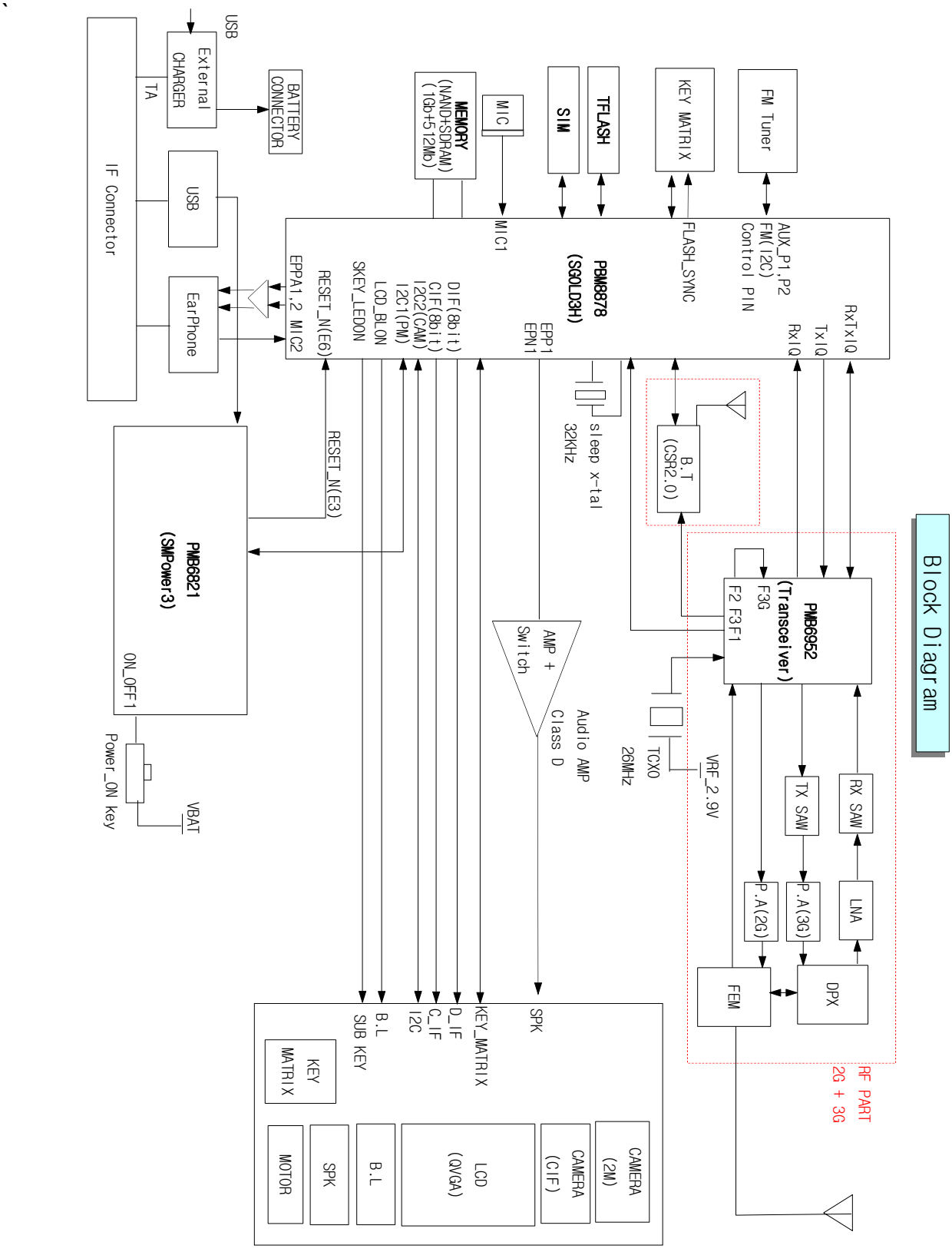
1) Assemble the rear case with SET from the lower part of it.

※ **Caution**

1) Notice the rear case should not be damaged or scratched.
2) Make sure no gap between the front and rear case.

| | |
|---|---|
| **9**<br>  <br> | |
| 1) Screw 6 points on the rear case.<br>※ **Caution**<br>1) Notice the rear case should not be damaged or scratched. | |

# 8. Block Diagrams



# 9. PCB Diagrams

# 10. Flow Chart of Troubleshooting

## 10-1-1. Power ON

**Deduct power management component damage**

↓

**Check VBAT**
**L400, L401 ≒ 3.4 ~ 4.2** → **Resoldering each Component**

↓

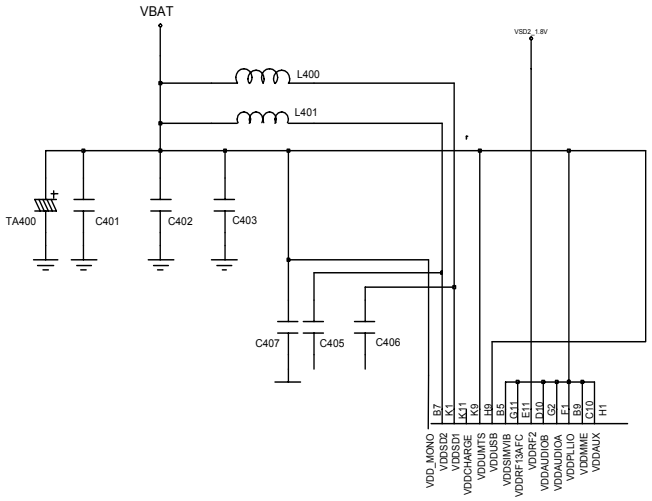
**Check VBAT**
**C429 ≒ 1.35V**
**C432 ≒ 1.8V**
**TP402 ≒ 3.6 ~ 4.1V** → **Check VBAT**
**C429 ≒ 1.35V**
**C432 ≒ 1.8V**
**TP402 ≒ 3.6 ~ 4.1V**

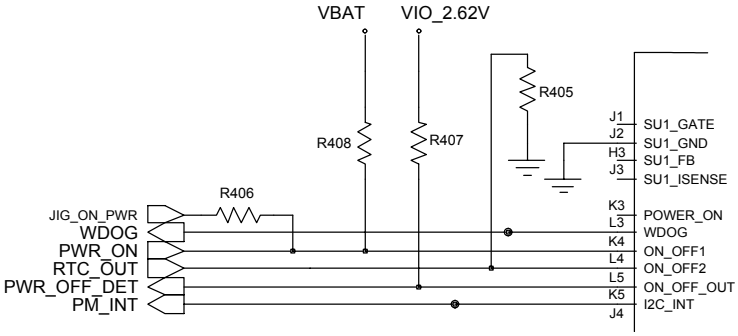
↓

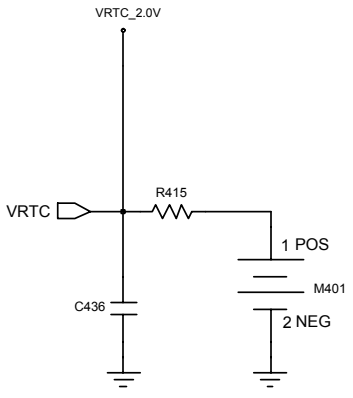
**Check TCXO**
**R111 ≒ 2.9V**
**C436 ≒ VRTC~2V**
**TP407 ≒ VRTC~2V** → **Check TCS101**
**PIN 3 ≒ 26MHz**
**Check ≒ OSC301**
**C327 ≒ 32.768kHz**

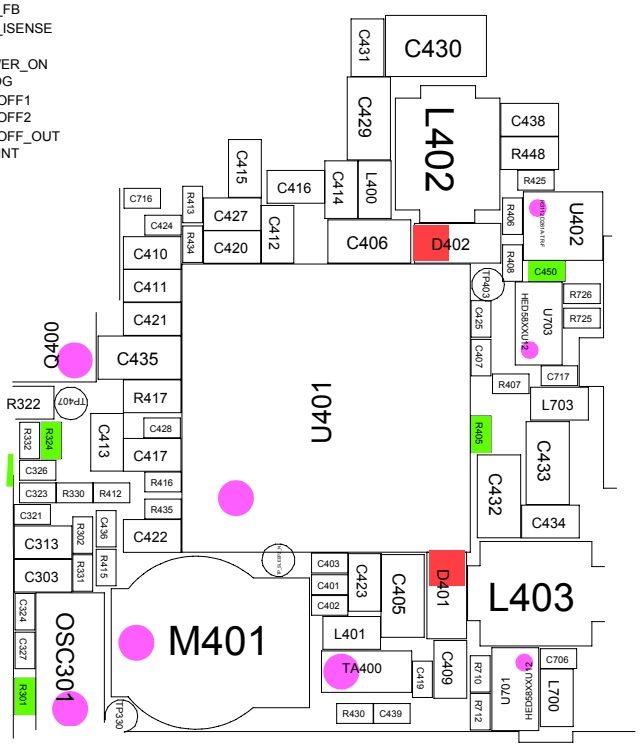
↓

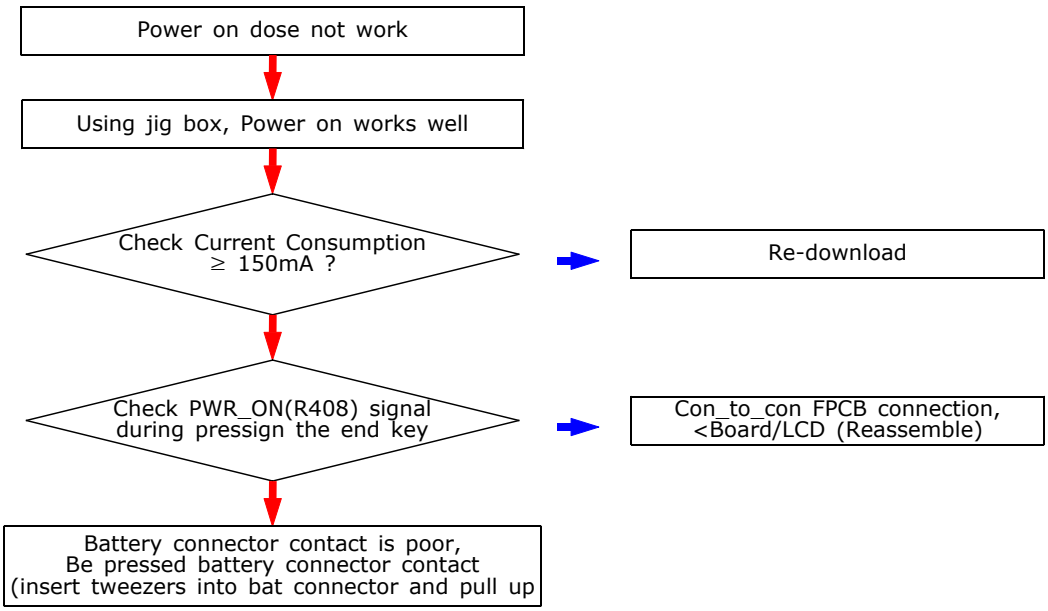
**Check Initial Operation**

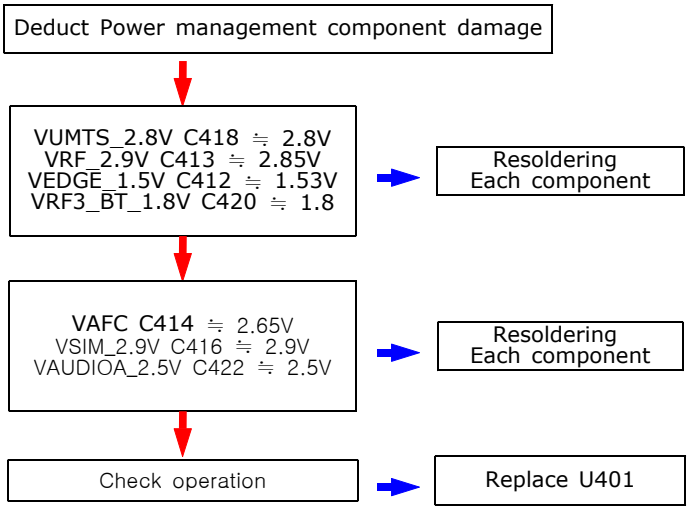


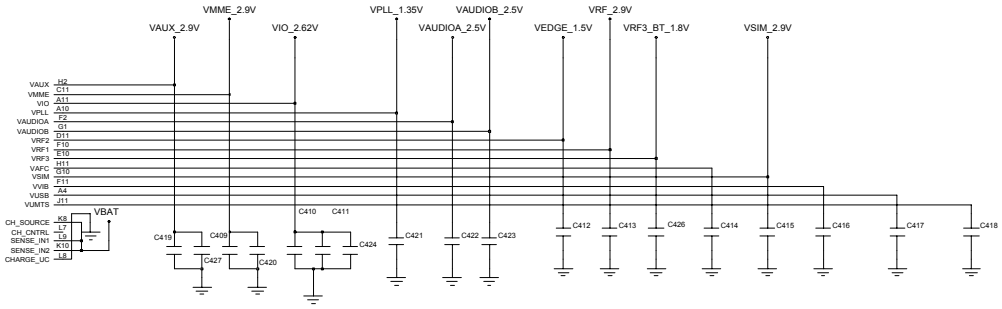



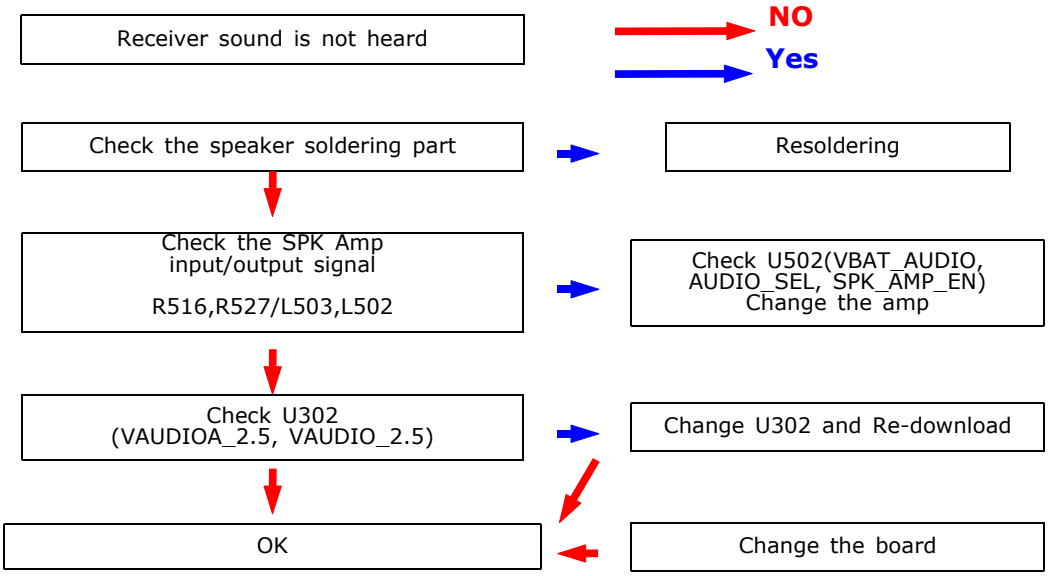



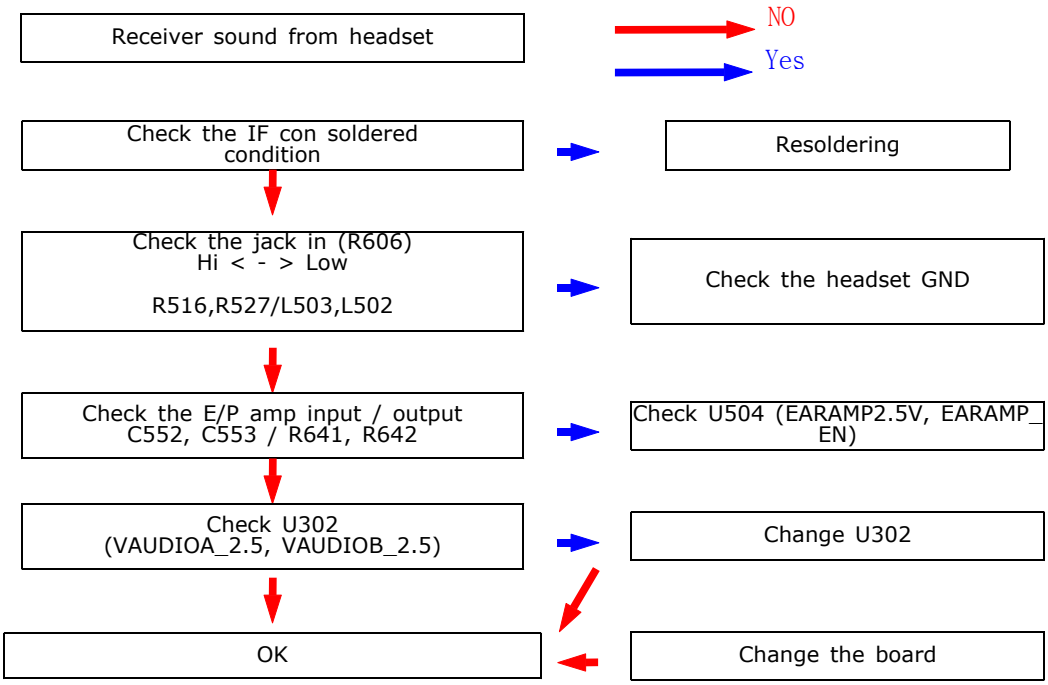


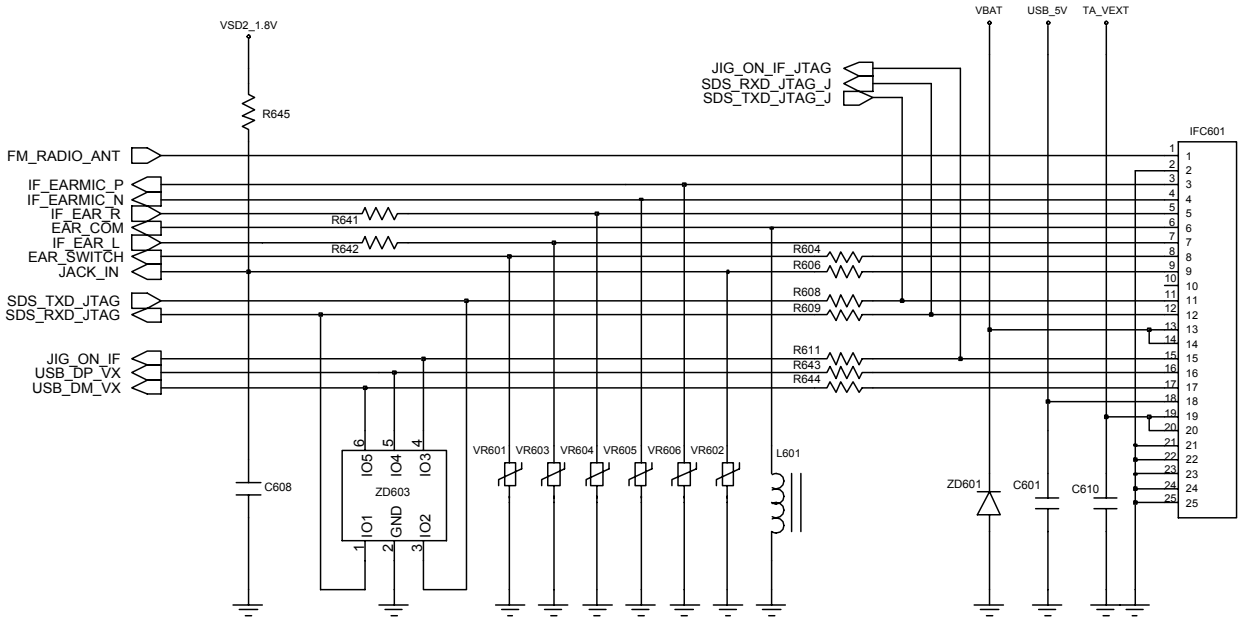


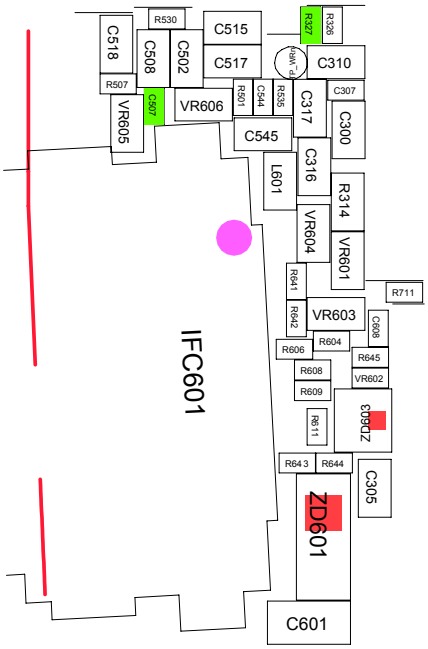



## 10-1-2. Audio part



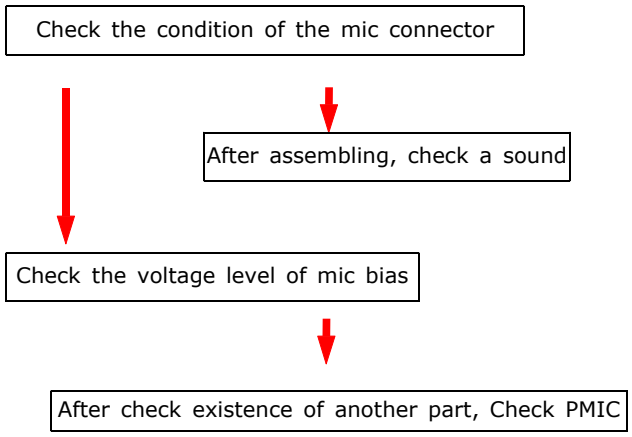





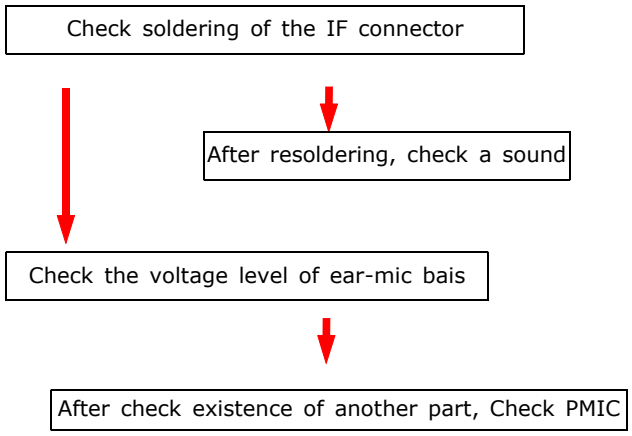



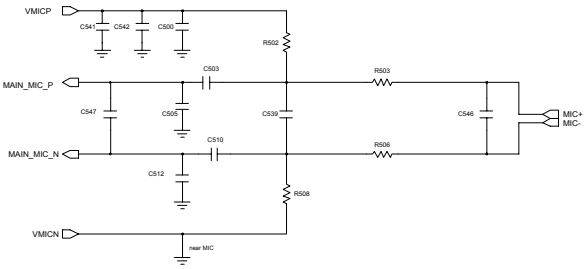
## 10-1-3 Microphone Part

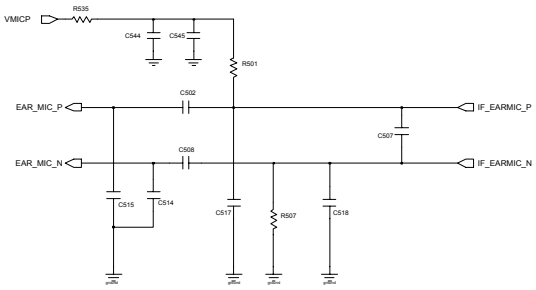
### 1.



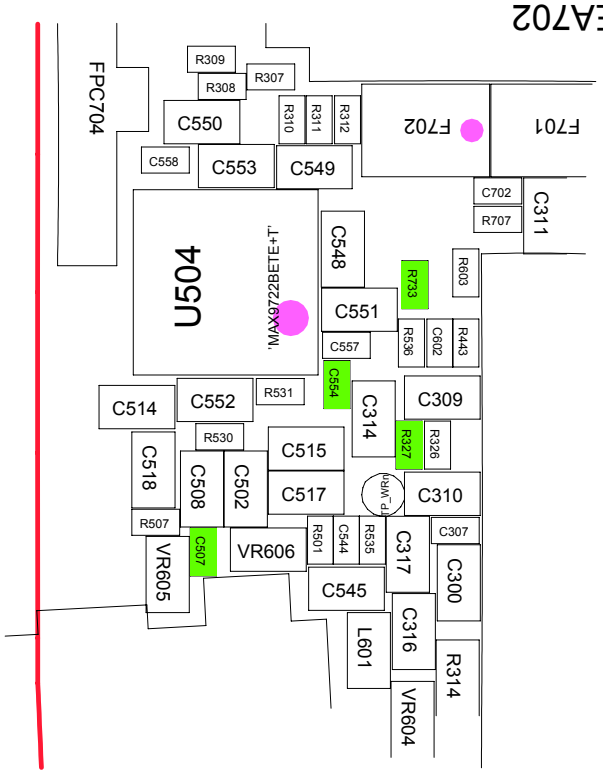

### 2.



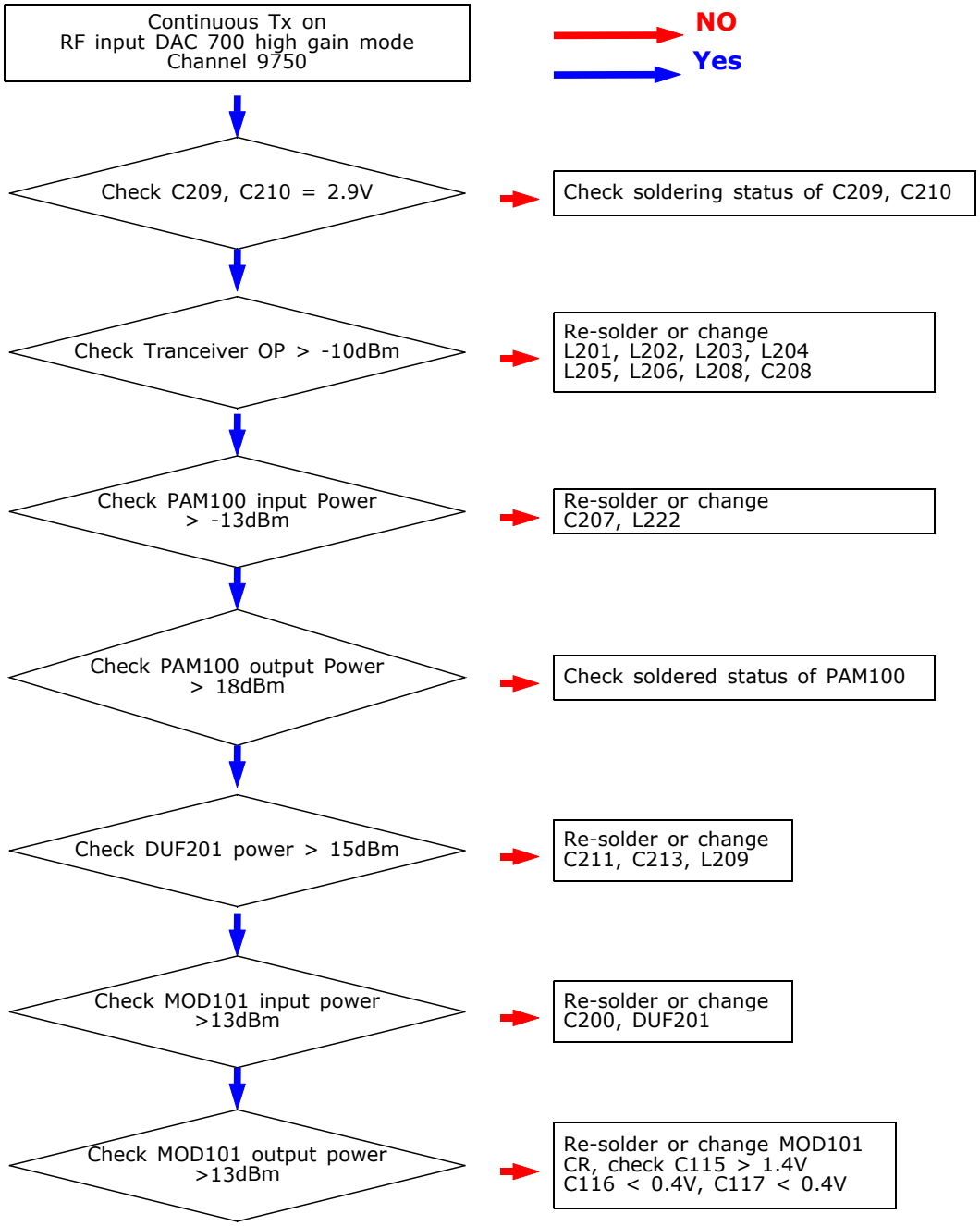


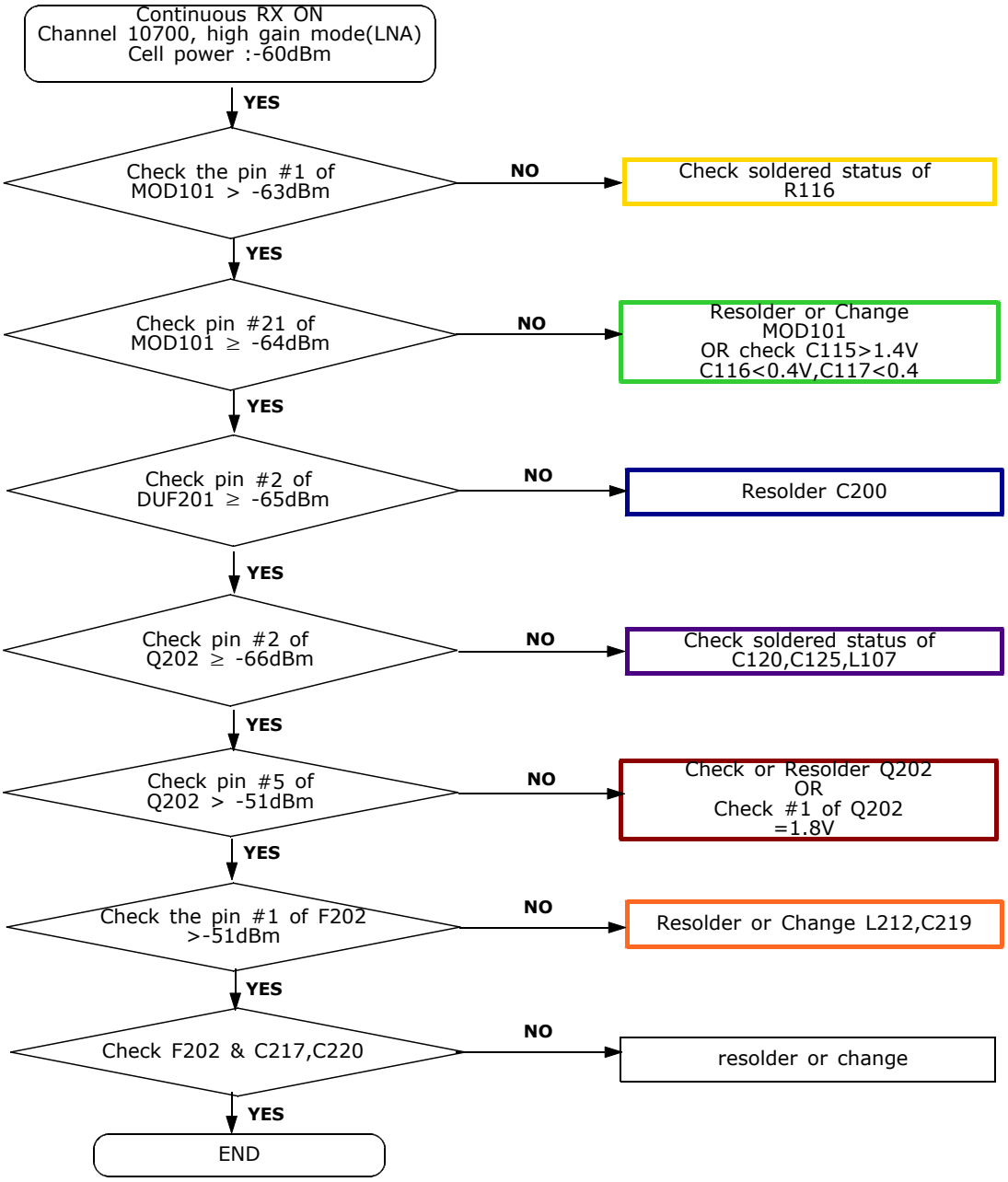

HEA702

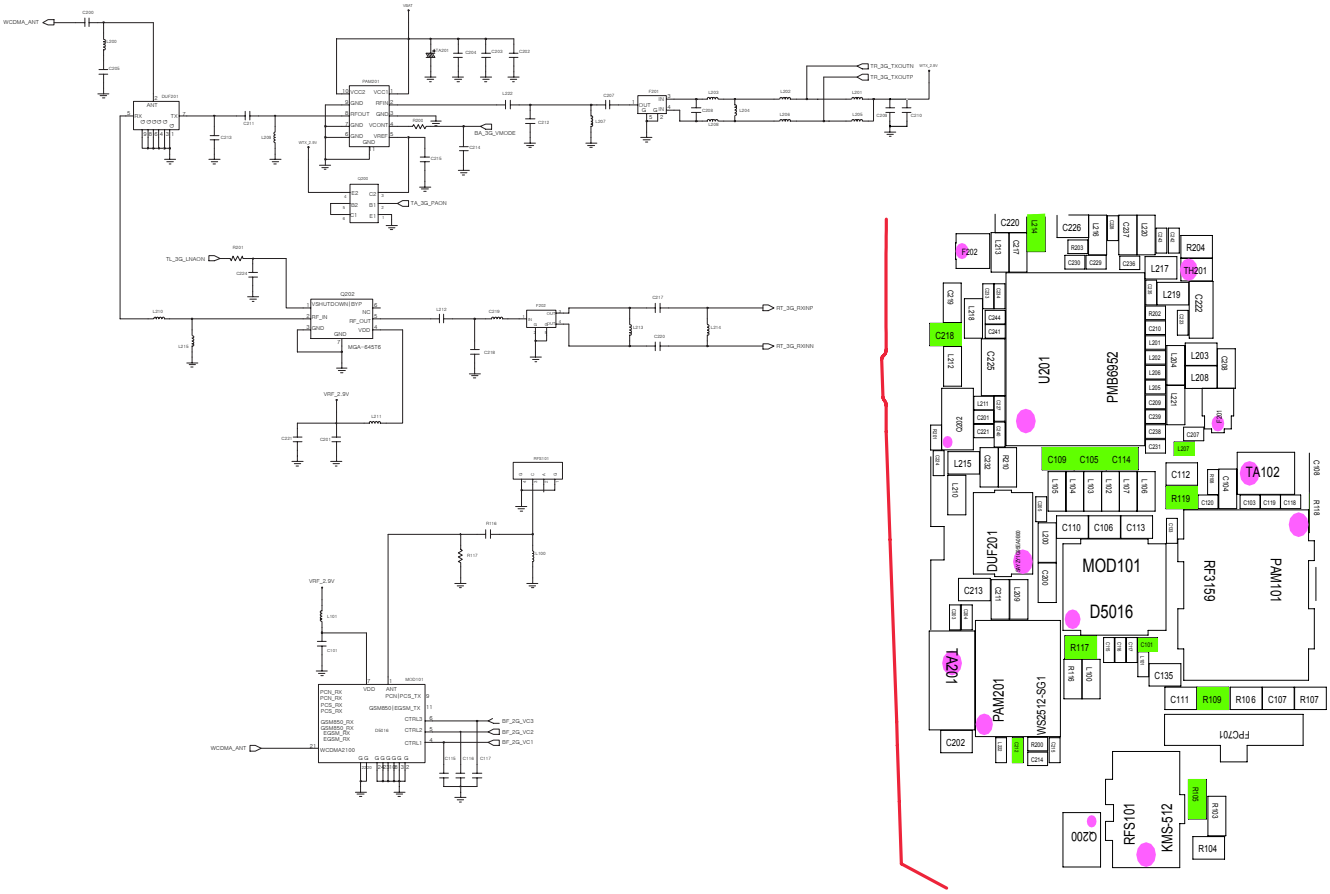


## 10-1-5. Transceiver 3G Tx part

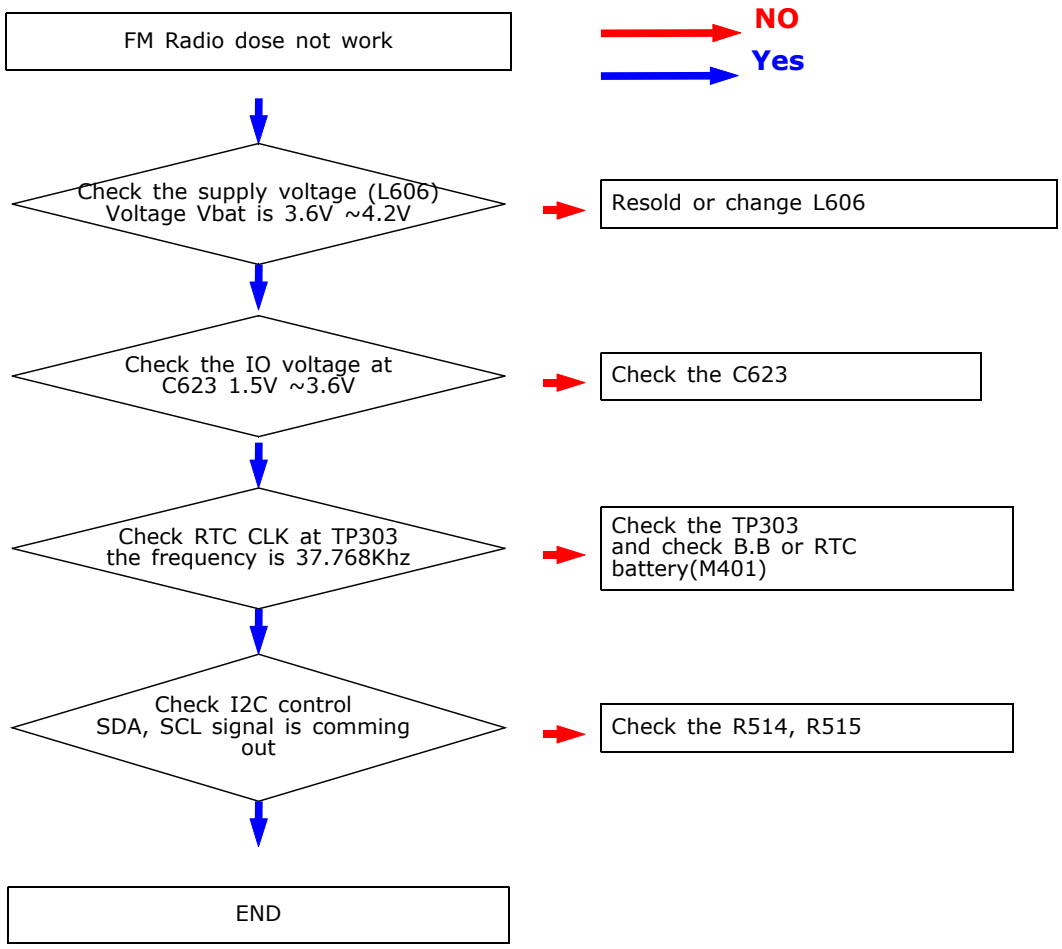


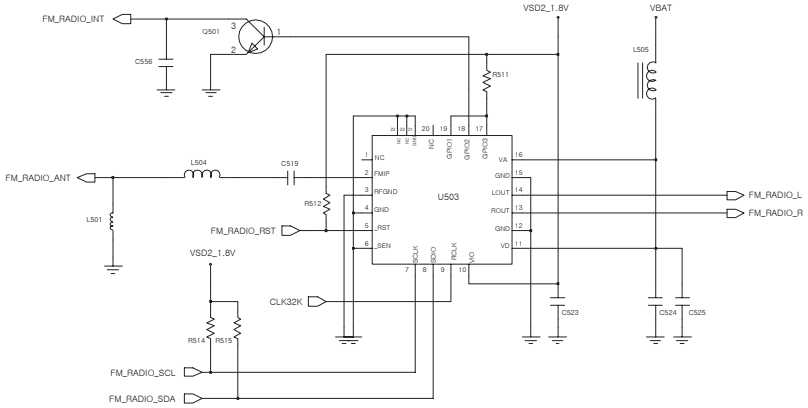
## 10-1-6 Transceiver 3G Rx part

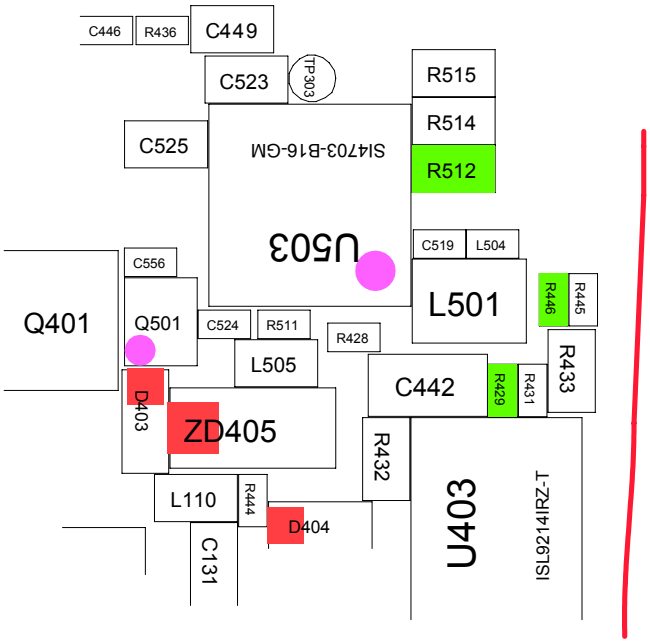




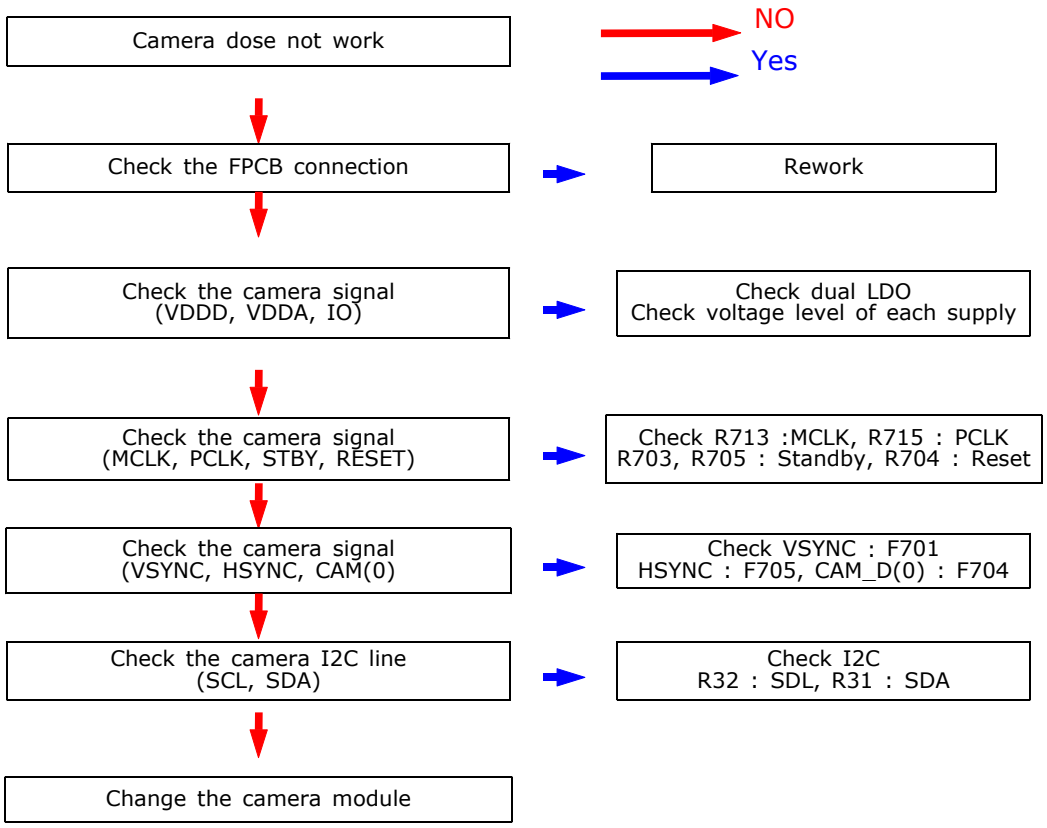
## 10-1-6 FM radio part

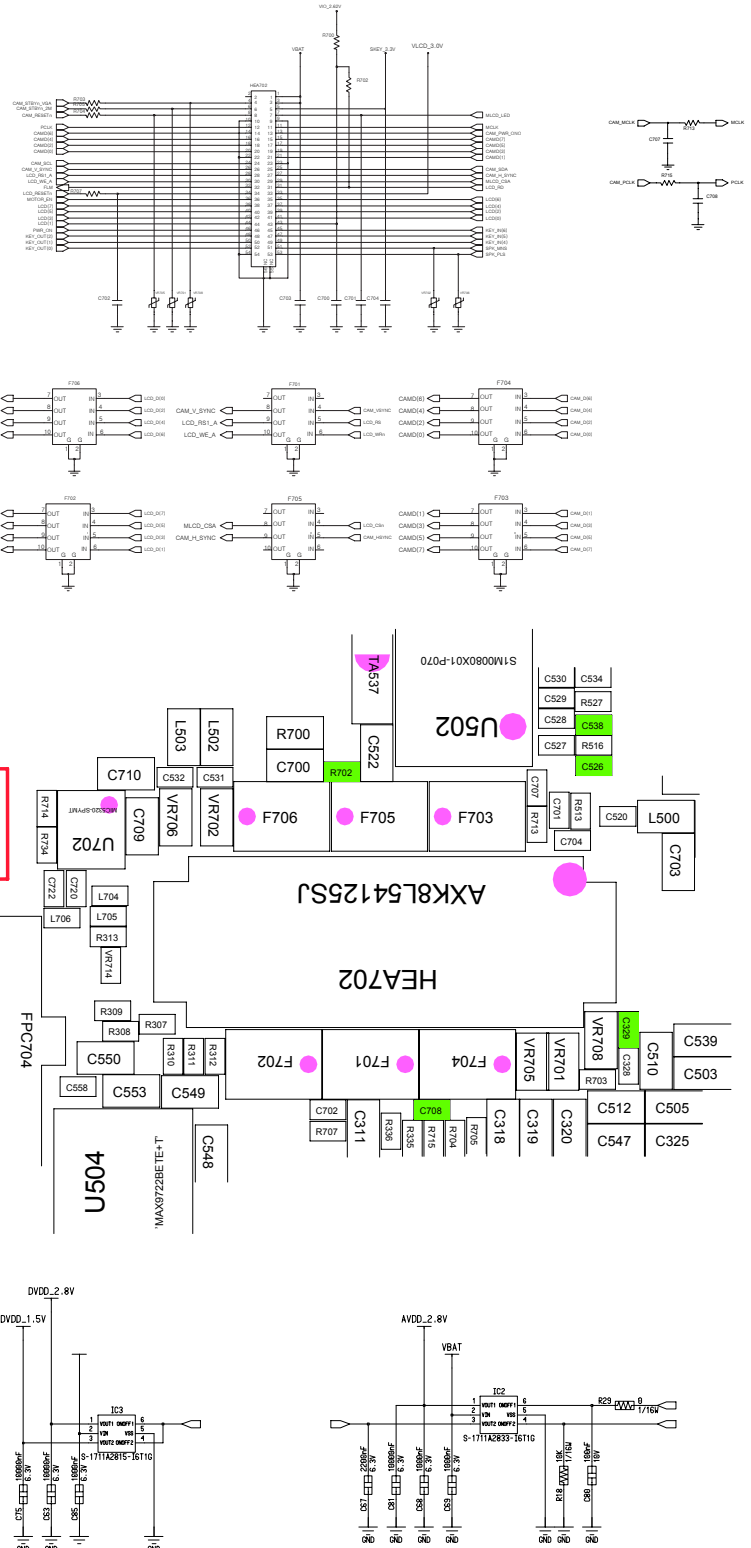




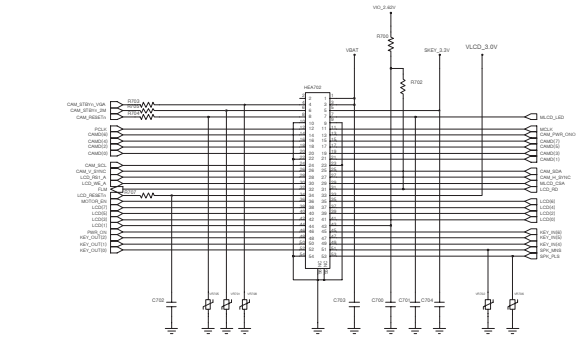
## 10-1-6 Camera part

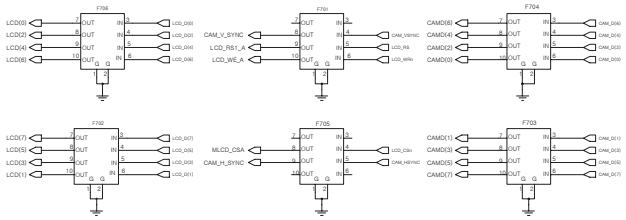


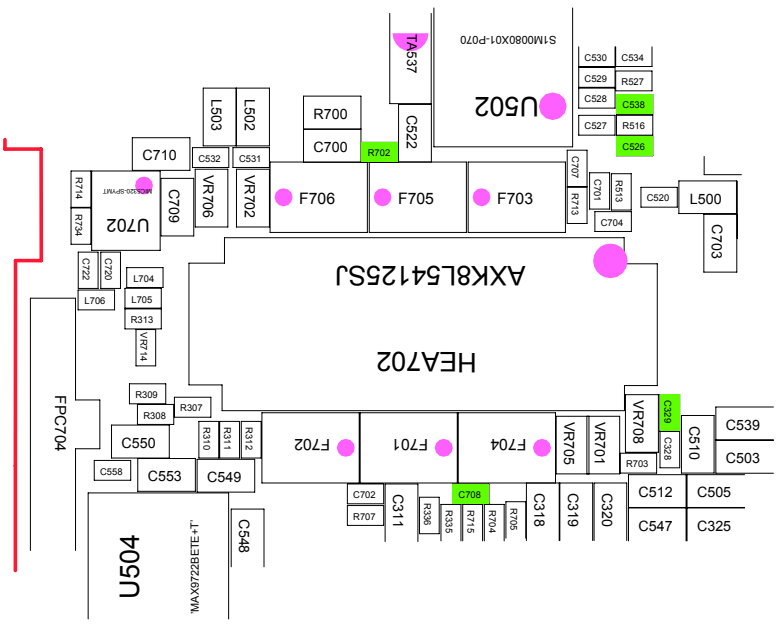


## 10-1-7 LCD part

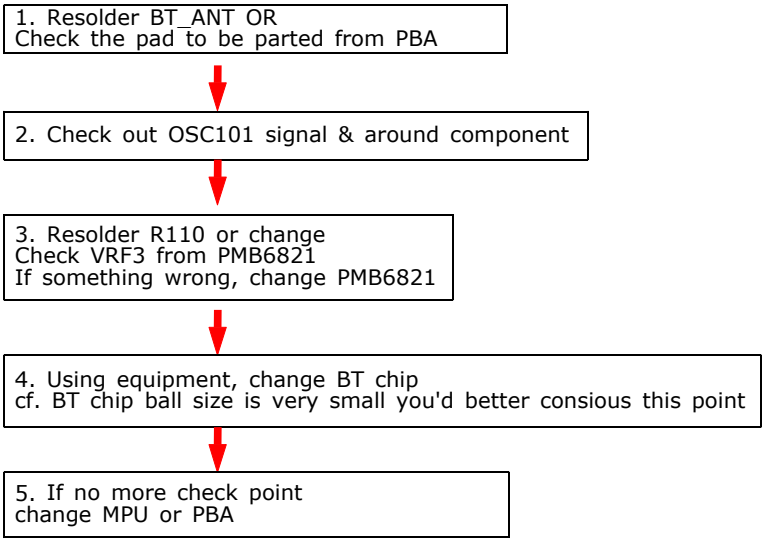
| | | |
|---|---|---|
| 1. LCD_3.0V always on | → | Check C709 |
| 2. MLCD_LED EN/SET : 1.8V<br>Backlight Enable port | → | Check C701 |

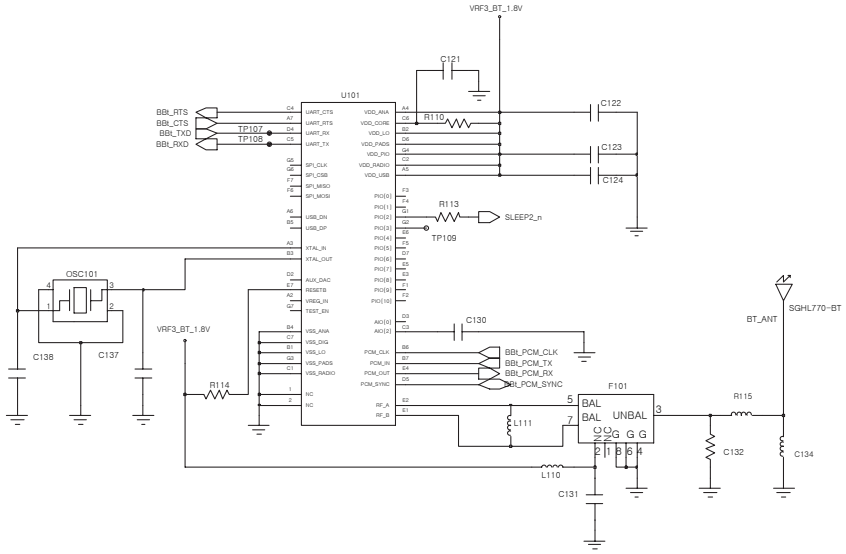


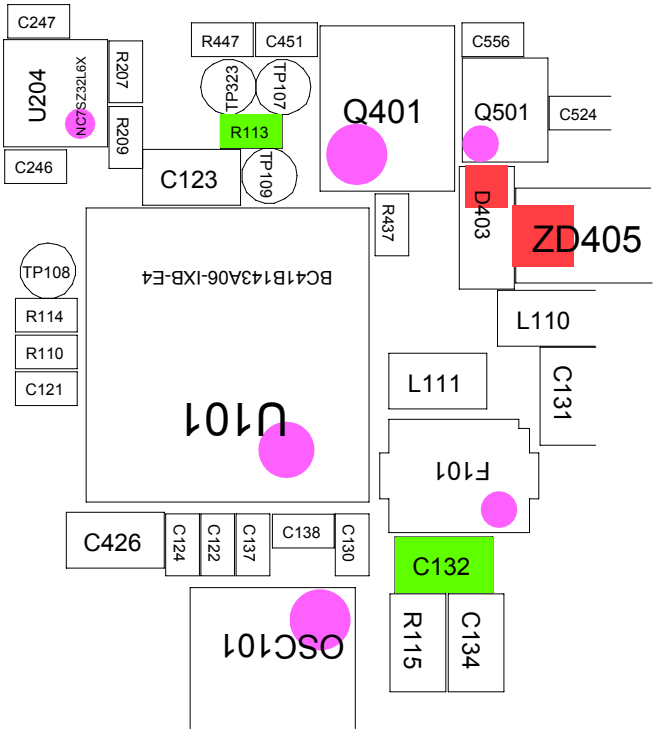




## 10-1-8 Bluetooth part





# 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