

**SAMSUNG**

# GSM TELEPHONE

## SGH-E690

# ***SERVICE*** *Manual*

### GSM TELEPHONE



### CONTENTS

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

## 4. Array course control

- 4-1. Software Adjustments.....4-1
- 4-2. Software Downloading.....4-3

## 5. Exploded View/Disassembly & Assembly Instructions

- 5-1. Cellular phone Exploded View.....5-1
- 5-2. Cellular phone Parts list.....5-2
- 5-3. Disassembly & Assembly Instructions.....5-4

## 6. MAIN Electrical Parts List

## 7. Block Diagrams

## 8. PCB Diagrams

---

# CONTENTS

## 9. Flow Chart of Troubleshooting

9-1. Pown on.....	9-1
9-2. Initial.....	9-4
9-3. Charging Part.....	9-7
9-4. SIM Part.....	9-8
9-5. Microphone Part.....	9-10
9-6. Speaker Part.....	9-13
9-7. Key Data Input.....	9-16
9-8. Receiver Part.....	9-18
9-9. LCD Part.....	9-20
9-10. Camera Part.....	9-23
9-11. Trans Flash Card Part.....	9-27
9-12. Bluetooth Part.....	9-30
9-13. Main Key LED Part.....	9-32
9-14. GSM900 Receiver.....	9-33
9-15. GSM900 Transmitter.....	9-34
9-16. DCS Receiver.....	9-35
9-17. DCS/PCS Transmitter.....	9-36
9-18. PCS Receiver.....	9-37

## 10. Reference data

---

---

# 1. Safety Precautions

---

## 1-1. Repair Precaution

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

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

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

You can prevent from ESD damage by static electricity.

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

---

## 2. Specification

---

### 2-1. GSM General Specification

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

## 2-2. GSM Tx Power Class

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

---

### 3. Product Function

---

#### Main Function

- VGA Camera
- 64poly sw midi / Audio Amp
- BT V1.2
- USB 1.1
- WAP2.0, JAVA2.0, MP3, MPEG4
- FM Radio
- EDGE Class 10
- Tri-Band: 900/1800/1900
- RF: PMB6272(infineon)
- BT: CSR / Discrete, Ant:SEMCO
- Battery: 800mAh(503442)
- Size: 94 x 48 x 15.9 mm
- Weight: 93 g
- Memory:256Mb+256Mb+128Mb(SEC)
- Camera: CMOS VGA, LSI
- B/E: MV3017(Mtek)
- LCD
  - ◆ Main: 2.0" 128x160  
65K color, TFT
  - ◆ Sub : 1.0" 96x96, 65K STN





---

## 4. Array course control

---

### 4-1. Software Adjustments

Test Jig (GH80-03306A)



RF Test Cable  
(GH39-00397A)



Test Cable  
(GH39-00499B)



Serial Cable



Power Supply Cable



DATA CABLE  
(GH39-00482B)



## TA

GH44-01362B (Malaysia,Singapore BLACK)

GH44-01363B (the Republic of the Philippines,BLACK)

GH44-01361B (South-East Asia,BLACK)

GH44-01363A (the Republic of the Philippines,,SILVER)

GH44-01362A (Malaysia,Singapore , SILVER)

GH44-01361A (South-East Asia,SILVER)



<BLACK>



<SILVER>

## 4-2. Software Downloading

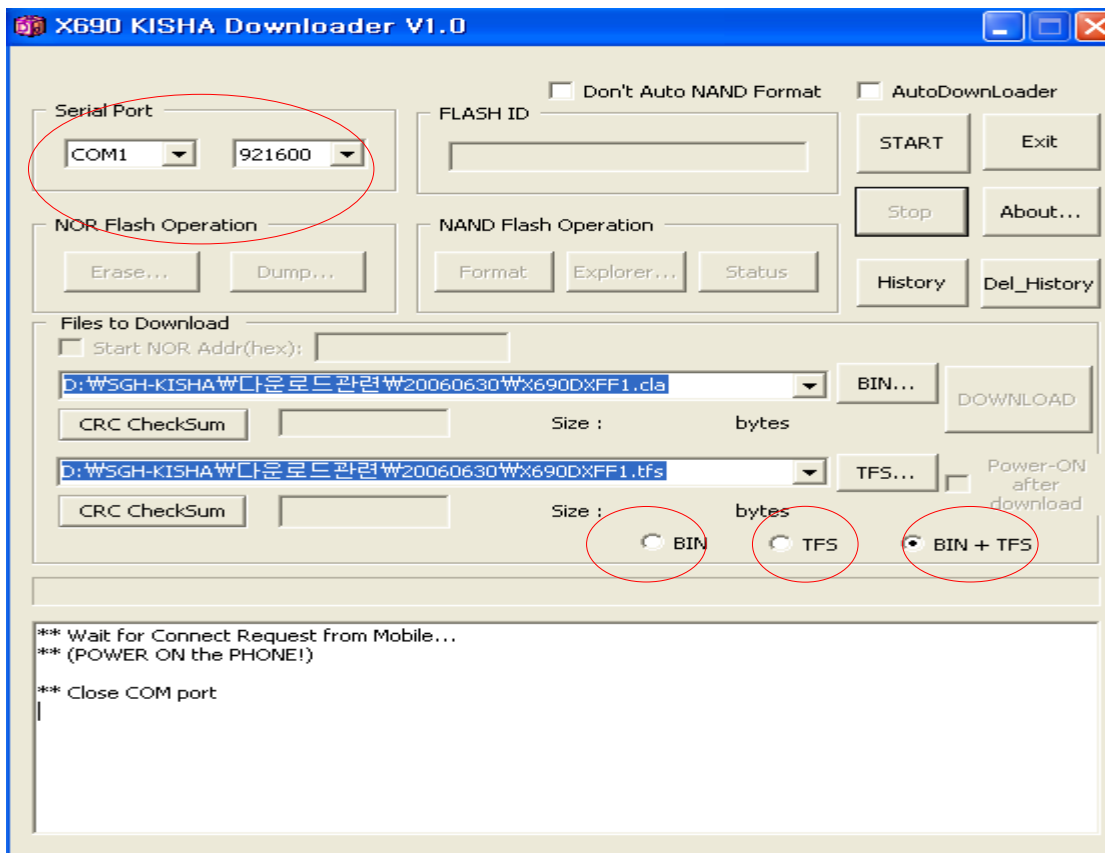
### 4-2-1. Pre-requisite for Downloading

- Downloader Program([X690\\_DownloadV1\[1\].0.exe](#))
- E690 Mobile Phone
- Data Cable
- Binary file, TFS file

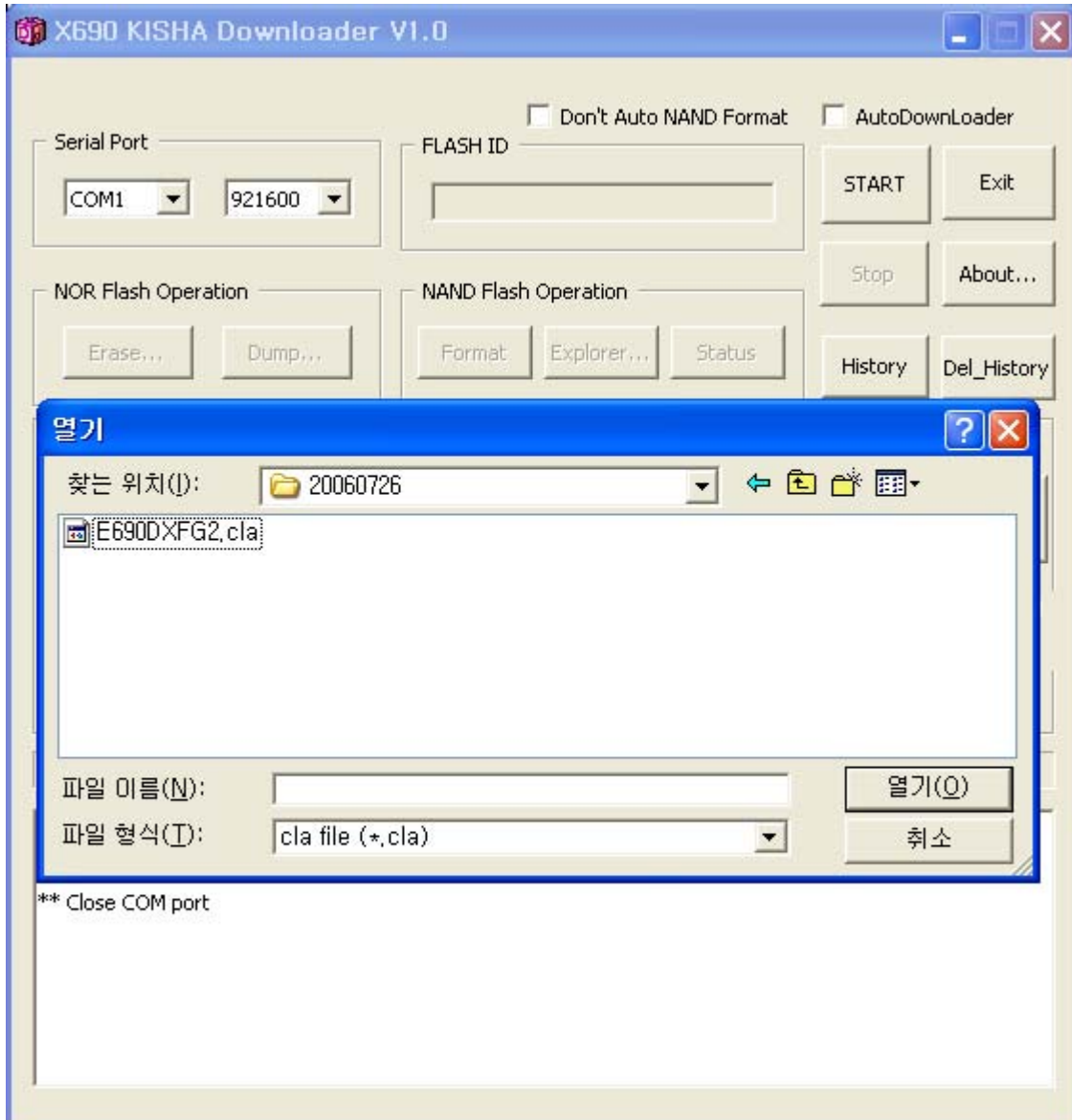
### 4-2-2. S/W Downloader Program

- Load the binary download program by executing the  
["X690\\_DownloadV1\[1\].0.exe"](#)

1. Select the connected serial port and the rate of speed
2. Select the check box, the mode you want to download.
  - if the binary file wanted, check only 'BIN'
  - if the tfs file wanted, check only 'TFS'
  - if all the files wanted, check 'BIN+TFS'

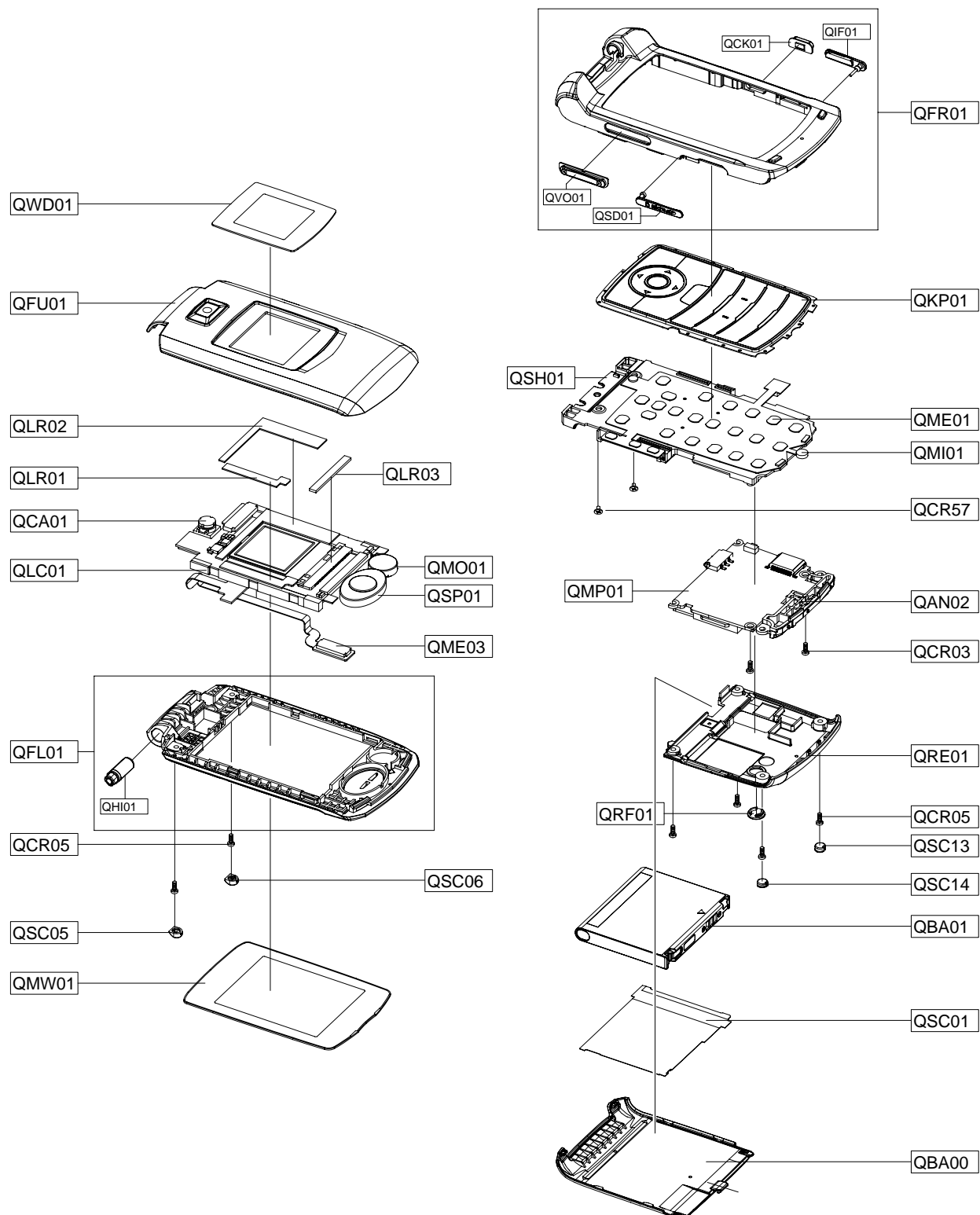


3. Select the file(s) what you want to download



## 5. Exploded View/Disassembly&Assembly Instructions

### 5-1. Cellular phone Exploded View



## 5-2. Cellular phone Parts list

Design LOC		Description	Sec Code
QAN02		INTENNA-SGHX690	GH42-00935A
QBA00		PMO-CASE BATTERY V2	GH72-34215A
QBA01		INNER BATTERY PACK-800MAH, BLA	GH43-02539A
QCA01		UNIT-CAMERA	GH59-02886A
QCR03		SCREW-MACHINE	6001-001811
QCR03		SCREW-MACHINE	6001-001811
QCR05		SCREW-MACHINE	6001-001478
QCR05		SCREW-MACHINE	6001-001478
QCR57		SCREW-MACHINE	6001-002001
QFU01		ASSY CASE-FOLDER UPPER	GH98-01644A
QKP01		ASSY KEYPAD-MAIN(EU/BLK)	GH98-01649A
QLC01		ELA ETC-SGHX690 LCD MODULE	GH96-02223A
QLR01		RMO-RUBBER LCD UPPER 1	GH73-08644A
QLR02		RMO-RUBBER LCD UPPER 2	GH73-08645A
QLR03		RMO-RUBBER LCD LOWER	GH73-08599A
QME01		UNIT-MAIN KEY FPCB	GH59-03410A
QME03		UNIT-CON TO CON	GH59-03404A
QMI01		AS-MIC SVC	GH81-05445A
QMO01		MOTOR DC-SGHE690	GH31-00282A
QMP01		PBA-MAIN-SGH-E690S	GH92-02984A
QMW01		ASSY COVER-WINDOW MAIN	GH98-01647A
QRE01		ASSY CASE-REAR	GH98-02445A
QRF01		PMO-RF CAP	GH72-34826A
QSC01		MPR-TAPE	GH74-26708A
QSC05		RMO-RUBBER SCREW CAP L	GH73-08035A
QSC06		RMO-RUBBER SCREW CAP R	GH73-08036A
QSC13		RMO-REAR SCREWCAP R	GH73-08543A
QSC14		RMO-REAR SCREWCAP L	GH73-08546A
QSH01		ASSY COVER-SHIELD	GH98-03211A
QSP01		MICRO SPEAKER	3001-002050
QWD01		PCT-WINDOW SUB	GH72-34218A
QFL01		ASSY CASE-FOLDER LOWER	GH98-01645A
	QHI01	ASSY HINGE-FOLDER	GH98-02958A
QFR01		ASSY CASE-FRONT	GH98-01646A
	QCK01	PMO-CAM KEY	GH72-34217A
	QIF01	PMO-COVER IF EAR JACK V2	GH72-34824A
	QSD01	PMO-COVER MICRO SD V2	GH72-34825A
	QVO01	PMO-VOL KEY	GH72-34216A

<b>Description</b>	<b>Sec Code</b>
BAG PE	6902-000634
ADAPTOR-SGHE690,SIL,USA	GH44-01363B
UNIT-EARPHONE, EU, PINK, B-TYP	GH59-03596B
LABEL(P)-IMEI	GH68-01335D
LABEL(P)-WATER SOAK	GH68-02026A
LABEL(P)-WATER SOAK	GH68-02026A
LABEL(R)-MAIN(EU)	GH68-11764A
MANUAL USERS-FPT ENGLISH	GH68-11806A
BOX-UNIT(SEA)	GH69-04193A
CUSHION-CASE(1~2)	GH69-04520A
MPR-REMOVE TAPE LCD	GH74-13804A
MPR-TAPE SUB LCD INSUL	GH74-18531A
CONE-TAPE SUB LCD INSUL	GH74-19756A
MPR-INSU TAPE	GH74-24458A
MPR-GASK TAPE	GH74-25025A
MPR-VINYL BOHO UPPER OUT 2	GH74-25484A
MPR-VINYL BOHO LOWER OUT	GH74-25487A
MPR-VINYL BOHO STA ELE SUB WIN	GH74-25811A
MPR-TAPE WINDOW	GH74-26705A
MPR-VINYL BOHO FPCB CONN	GH74-26798A
MPR-INSU TAPE MAIN BOARD	GH74-27021A
MPR-INSU TAPE ZIP CON	GH74-27022A
MPR-INSU TAPE	GH74-27711A
MPR-TAPE	GH74-27712A
MPR-TAPE	GH74-27713A
MPR-INSU TAPE	GH74-28241A
MPR-GASK TAPE	GH74-28495A
MPR-GASK TAPE	GH74-28496A
MPR-SPONGE LCD	GH74-28759A



## 5-3. Disassembly&Assembly Instructions

### — Disassembly

<div data-bbox="168 317 245 373" data-label="Text">1</div>  <div data-bbox="266 533 735 594" data-label="Text">1) Remove SIM CARD and BATTERY.</div>	<div data-bbox="831 317 907 373" data-label="Text">2</div>  <div data-bbox="899 596 1409 657" data-label="Text">1) Remove Screw Covers by a Pincette.</div> 
	<div data-bbox="818 1031 1409 1062" data-label="Text">1) Be careful not to get a damage of Rear Case.</div>
<div data-bbox="168 1121 245 1178" data-label="Text">3</div>  <div data-bbox="298 1423 656 1520" data-label="Text">1)Remove four points of Rear Screw.</div>	<div data-bbox="831 1121 907 1178" data-label="Text">4</div>  <div data-bbox="922 1398 1360 1535" data-label="Text">1)Lift up Rear Case softly and twist it to the left after this, remove it.</div> 
<div data-bbox="159 1835 764 1866" data-label="Text">1) Be Careful not to get a damage of any Devices</div>	<div data-bbox="818 1835 1352 1866" data-label="Text">1) Be careful not to get a damage of Hooks</div>

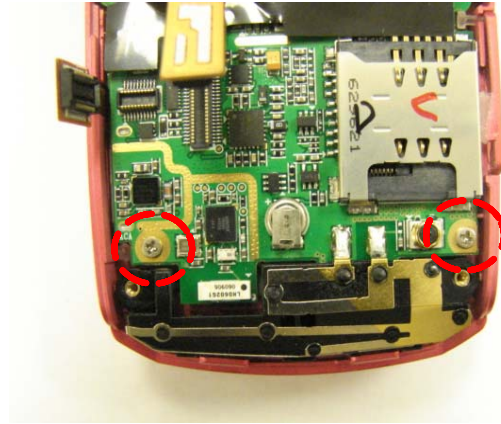
5



1) Disjoint KEY Connector and Con To Con Connector by a Pincette.

1) Be Careful not to get a damage of FPCB.

6



1) Remove two points of screw which is used to fix a PCB.

1) Be Careful not to get a damage of PCB.

7



1) Disjoint a PBA in Front by lifting up from down.

1) Be Careful not to get damage of Connector  
2) Be Careful not to get a damage around Cases

8



1) Remove black insulation TAPE that is attached to Shield Can by a Pincette.

1) Be Careful not to get damage of Con To Con.

9



1) Remove Screws on Shield Can.

1) Be Careful not to get a damage around Cases

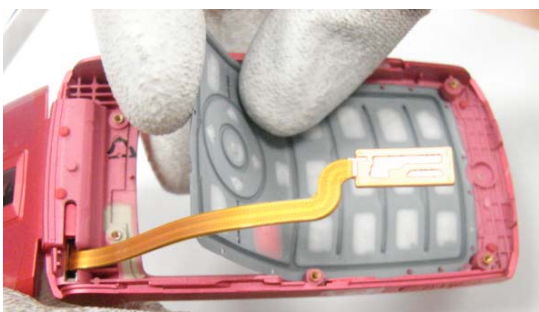
10



1) Lift up Shield Can's upper side by a Pincette and Disjoint Shield Can from the SET.

1) Be Careful not to get damage of Con To Con

11



1) Disjoint Key Pad in Front.

1) Be Careful not to get a damage around Cases

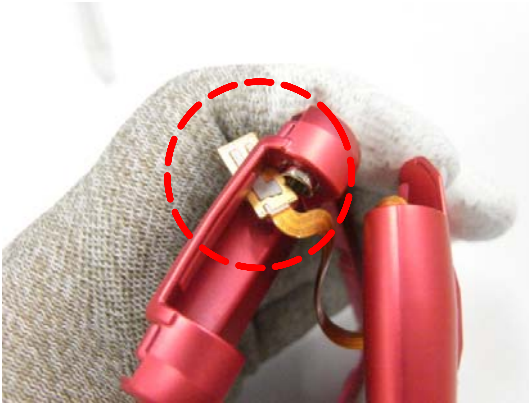
12



1) Disassemble the Folder from Front Case

1) Be Careful not to get a damage.

13



1) Separate the Folder From Front Case  
with carefully checking Con To Con

- 1) Be Careful not to get damage of Con To Con
- 2) Be Careful not to get a damage around Cases

14



1) Remove Screw Covers by a Pincette.



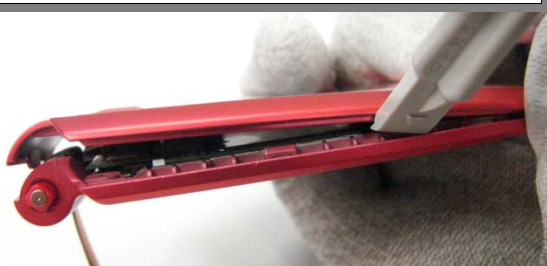
2) Remove Screws on Folder

- 1) Be Careful not to get a damage around Cases

15



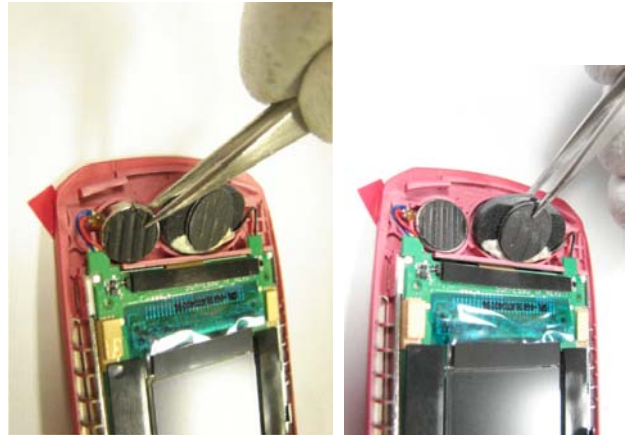
1) Open Hooker in the Upper Hinge  
decomposition groove by a pincette.



2) Disassemble the Side of Hookers by  
assembly stick

- 1) Be careful not to get a damage around cases.

16

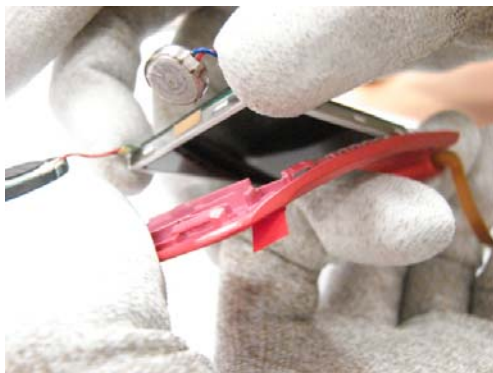


1) Separate the motor from lower case  
by a Pincette.  
2) Separate the speaker from lower case  
by a Pincette.

- 1) Be careful not to get a damage of speaker&motor.
- 2) Be careful not to separate non-woven fabric from speaker.



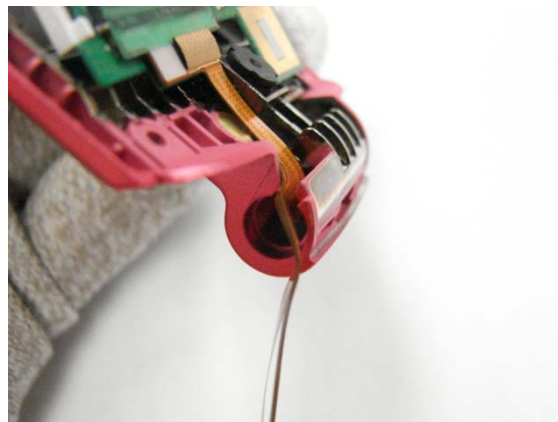
17



1) Bend Lower a little and separate LCD.

1) Don't touch LCD's Glass part.

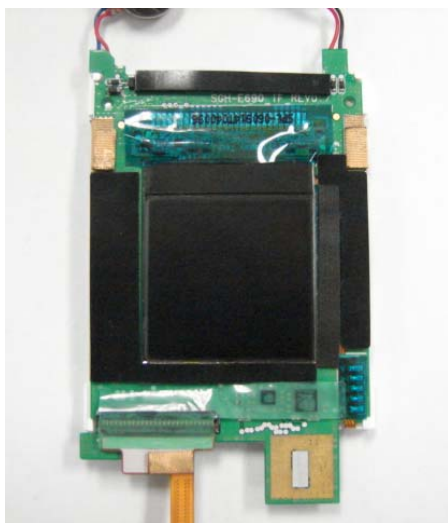
18



1) Separate Con To Con from the Lower.

1) Be careful not to get a damage of Con To Con.

19

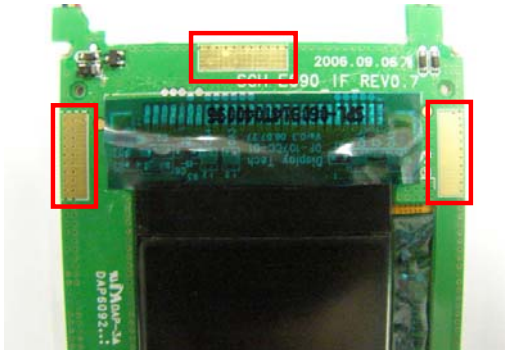


1) Dissolution Completion.

1) Be careful not to get a damage of window.

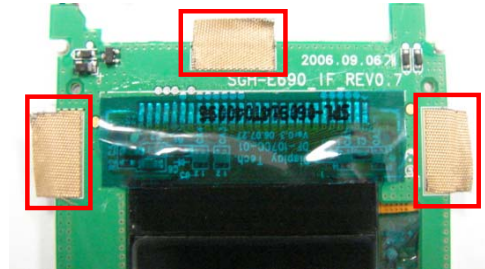
## — Assembly

1



1) clean dust on the ground pad by alcohol.

2

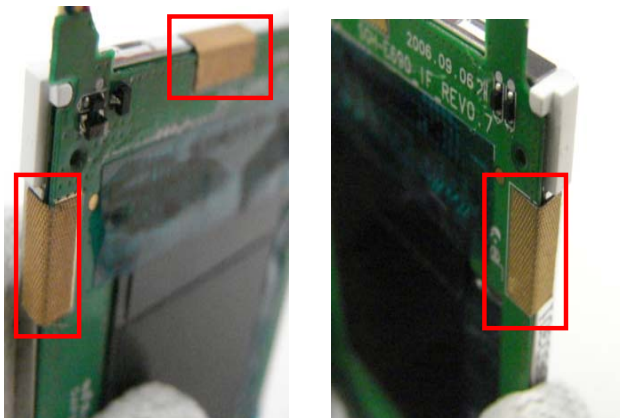


1) Attach electric conduction Tapes on the LCD's left, right, upper sides like picture.

1) Be careful not to be covered any dust on LCD

1) Take care so that electric conduction Tape may not attach outside silk.

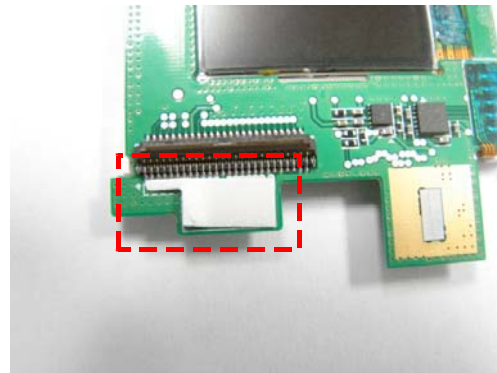
3



1) Attach electric conduction Tape on the LCD's left, right, upper sides like picture.

1) Press electric conduction Tape again so that TAPE may not get loose.

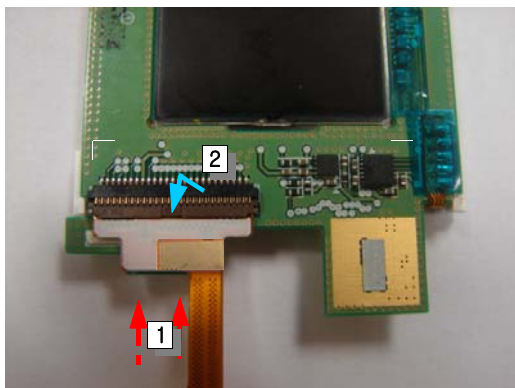
4



1) Remove Tape after attaching two faces Tape for fixing under ZIP Connector.

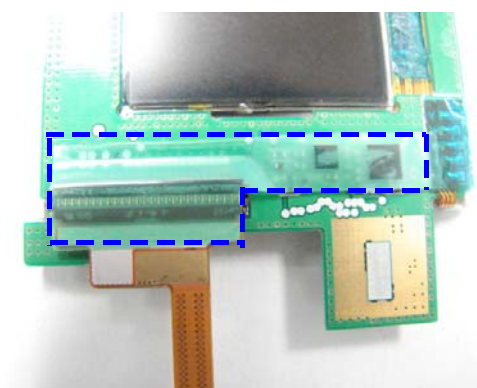
1) Attach two faces Tape according to silk.

5



1) Fix Connector after inserting Con To Con to the Zip Connector.

6

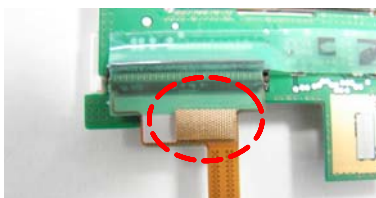


1) Attach Tape for fixing a Connector.

1) When inserting Con To Con to the Connector, be careful not to be inserted incompletely.

1) Attach Tape according to the base line.

7



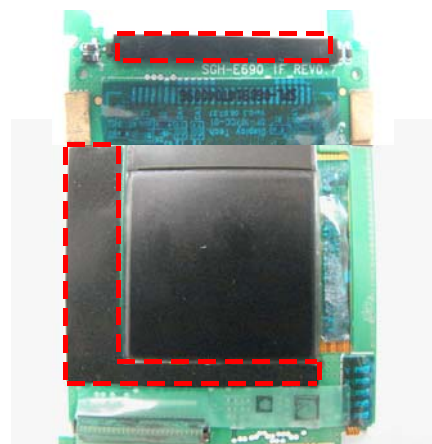
1) Attact 0.3T electric conduction Tape on the Con To Con.



1) Attact 0.5T electric conduction Tape on where LCD's left,right electric conduction Tape are attached.

1) Attach electric conduction Tape so that it may not come out outside base line.

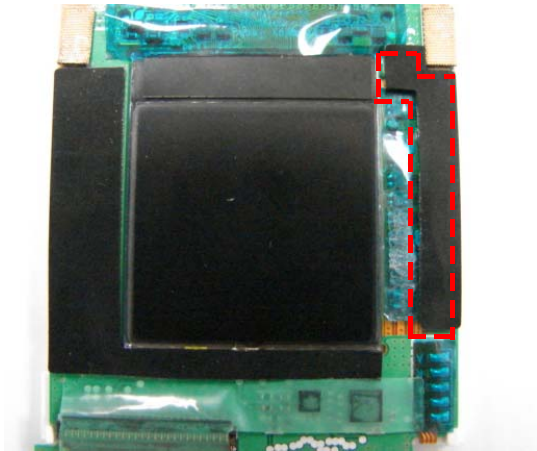
8



1) Attach Rubber like picture.

1) Attach rubber so that it may not be projected to outer block of PCB.

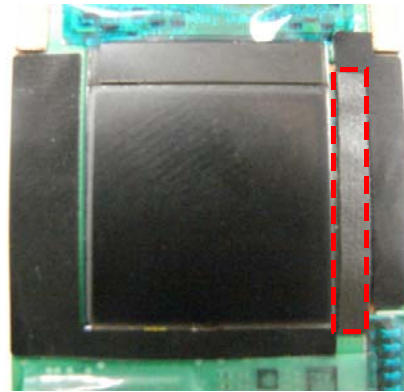
9



1) Attach Rubber like picture.

1) Attach rubber so that it may not be projected to outer block of PCB.

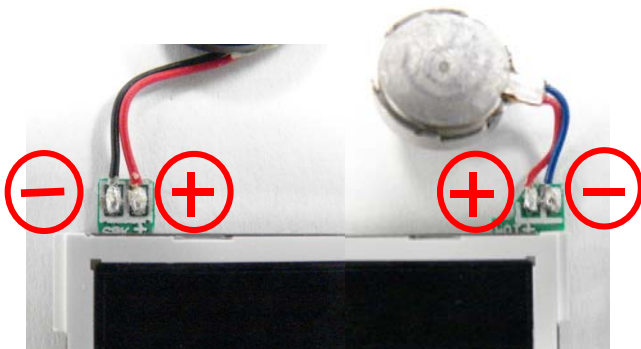
10



1) Attach Sponge like picture.

1) Take care so that Sponge may not infringe to the Sub LCD and rubber.

11



1) During Solder speaker and vibrator, concern about polarity.

1) If some dust are covered on LCD, it should be removed by alcohol.

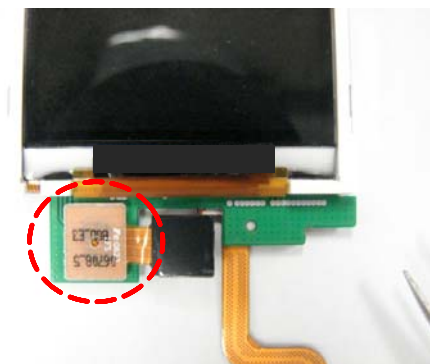


1) paint a little of adhesive on soldering parts.

1) Be careful not to get a damage of cases.



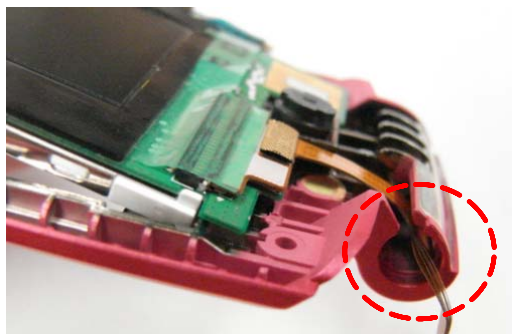
9



1) Assemble Camera.

1) Press Camera until it is sonant "Click".

10



1) Insert Con To Con first to the Lower.

1) Be careful not to get a damage of Con To Con.

11



1) After checking up foreign substances of Window, assemble Motor, Speaker, Camera.

1) When you assemble, take care so that foreign substances may not come into the Main Lcd.

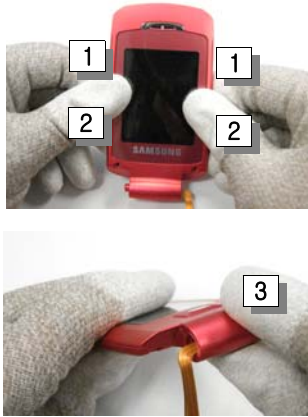
12



1) Combine Lower and Upper.

1) Be careful not to get a damage of cases.

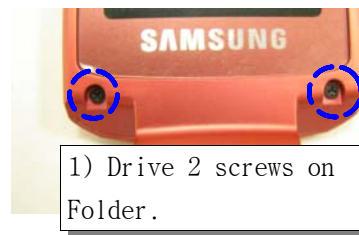
13



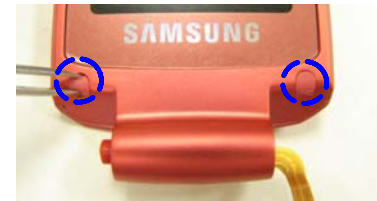
1) Assemble Hooker by left, right side and Hinge in order.

1) Be careful not to get a damage of cases.

14



1) Drive 2 screws on Folder.



2) Assemble 2 screw covers on Folder.

1) Be careful not to get a damage of cases.

15



1) Insert the Con To Con to front hole.

1) Be careful not to get a damage of Con To Con.

16



1) Assemble the folder to Front case.

1) Be careful not to get a damage of Case.

17



1) Insert the KeyPad From lower part.

1) Insert KeyPad according to the Front standard rib.

18



1) Insert the Shield Can From lower part.  
2) Insert right side volume key first.

1) Confirm first whether volume and camera key has attached.  
2) Be careful not to get a damage of Case.

19



1) Insert Con To Con to the Shield Can Hole before assembling the Shield Can.

1) Be Careful not to get damage of Con To Con

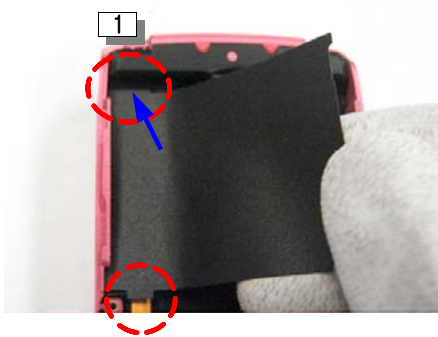
20



1) Tighten two Points of Screw on Shield Can.

1) Be careful not to get a damage of Shield Can.  
2) SCREW TORQUE : 0.7~ 0.9 kgf.cm

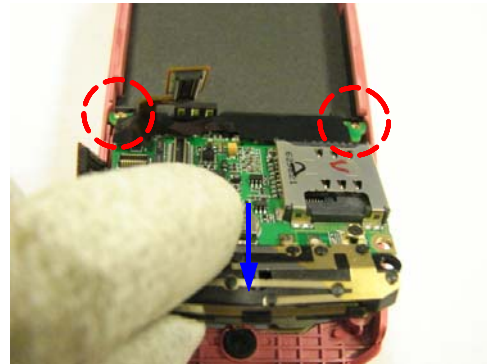
21



1) When attaching a black insulation Tape, insert left side upper part of the tape first.

1) Take care so that Con To Con may not attach Tape.  
(Con To Con must be flexible to the left and right.)

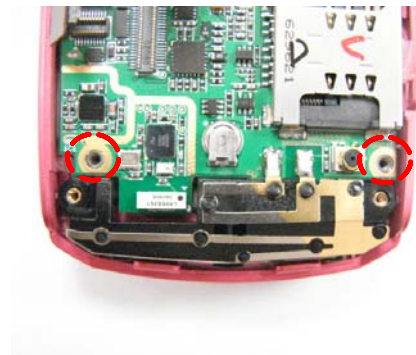
22



1) Assemble a PBA after inserting upper side Boss hall of PBA first.

1) Be Careful not to get damage of Connector

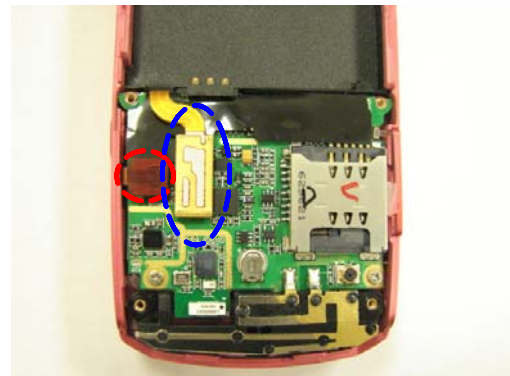
23



1) Tighten two Points of screw of the PBA after inserting PBA and Intenna into the Front hall.

1) Be careful not to get a damage of case.  
2) SCREW TORQUE : 1.0 ~ 1.2 kgf.cm

24



1) Assemble two Connectors.

1) Be Careful not to get damage of Con To Con

25



1) Assemble Rear Case SET.

- 1) press bottom side of Rear Case with thumb and assemble it.
- 2) Be careful not to get a damage of Front case.

26



1) drive 4 screws on rear case.

- 1) Be careful not to get a damage of case.
- 2) SCREW TORQUE : 1.0 ~ 1.2 kgf.cm

27



1) Insert Screw Caps by pincette.

- 1) Be careful not to get a damage of case.

## 6. MAIN Electrical Parts List

Design LOC	Description	SEC Code	STATUS
ANT600	ANTENNA-CHIP	4202-001225	SA
BAT409	BATTERY-LI(2ND)	4302-001180	SA
BTC600	CONNECTOR-BATTERY	3711-006003	SA
C101	C-CER,CHIP	2203-000812	SA
C102	C-CER,CHIP	2203-000812	SA
C103	C-CER,CHIP	2203-000278	SA
C104	C-CER,CHIP	2203-000278	SA
C106	C-CER,CHIP	2203-000278	SA
C107	C-CER,CHIP	2203-000254	SA
C108	C-CER,CHIP	2203-000812	SA
C109	C-CER,CHIP	2203-000278	SA
C110	C-CER,CHIP	2203-001432	SA
C111	C-CER,CHIP	2203-005482	SA
C112	C-CER,CHIP	2203-000438	SA
C113	C-CER,CHIP	2203-005482	SA
C114	C-CER,CHIP	2203-001432	SA
C115	C-CER,CHIP	2203-000812	SA
C117	C-CER,CHIP	2203-001432	SA
C118	C-CER,CHIP	2203-005482	SA
C119	C-CER,CHIP	2203-005482	SA
C120	C-CER,CHIP	2203-005482	SA
C121	C-CER,CHIP	2203-005482	SA
C122	C-CER,CHIP	2203-005968	SA
C123	C-CER,CHIP	2203-000530	SNA
C124	C-CER,CHIP	2203-005234	SA
C125	C-CER,CHIP	2203-000233	SA
C126	C-CER,CHIP	2203-005061	SA
C127	C-CER,CHIP	2203-002668	SA
C129	C-CER,CHIP	2203-006399	SA
C130	C-CER,CHIP	2203-006399	SA
C131	C-CER,CHIP	2203-005234	SA
C201	C-CER,CHIP	2203-006194	SA
C202	C-CER,CHIP	2203-006423	SA
C203	C-CER,CHIP	2203-006423	SA
C204	C-CER,CHIP	2203-006423	SA
C205	C-CER,CHIP	2203-006423	SA
C206	C-CER,CHIP	2203-006423	SA
C207	C-CER,CHIP	2203-006423	SA
C208	C-CER,CHIP	2203-006423	SA
C209	C-CER,CHIP	2203-006423	SA
C210	C-CER,CHIP	2203-006562	SA
C211	C-CER,CHIP	2203-006423	SA
C212	C-CER,CHIP	2203-006423	SA
C213	C-CER,CHIP	2203-006423	SA
C218	C-CER,CHIP	2203-006048	SA
C219	C-CER,CHIP	2203-006423	SA
C221	C-CER,CHIP	2203-005682	SA
C301	C-CER,CHIP	2203-005482	SA
C302	C-CER,CHIP	2203-005482	SA
C303	C-CER,CHIP	2203-005482	SA
C306	C-CER,CHIP	2203-006141	SA
C307	C-CER,CHIP	2203-005482	SA
C308	C-CER,CHIP	2203-006053	SA

Design LOC	Description	SEC Code	STATUS
C309	C-CER,CHIP	2203-005482	SA
C310	C-CER,CHIP	2203-000233	SA
C311	C-CER,CHIP	2203-000995	SA
C312	C-CER,CHIP	2203-005482	SA
C313	C-CER,CHIP	2203-002443	SA
C401	C-CER,CHIP	2203-006562	SA
C402	C-CER,CHIP	2203-006562	SA
C403	C-CER,CHIP	2203-006708	SA
C404	C-CER,CHIP	2203-006824	SA
C405	C-CER,CHIP	2203-006562	SA
C406	C-CER,CHIP	2203-006562	SA
C407	C-CER,CHIP	2203-006890	SA
C408	C-CER,CHIP	2203-006190	SA
C409	C-CER,CHIP	2203-006824	SA
C410	C-CER,CHIP	2203-006048	SA
C411	C-CER,CHIP	2203-000425	SA
C412	C-CER,CHIP	2203-006257	SA
C413	C-CER,CHIP	2203-000425	SA
C415	C-CER,CHIP	2203-000233	SA
C416	C-CER,CHIP	2203-000812	SA
C417	C-CER,CHIP	2203-006824	SA
C418	C-CER,CHIP	2203-006824	SA
C419	C-TA,CHIP	2404-001381	SA
C420	C-CER,CHIP	2203-006257	SA
C421	C-CER,CHIP	2203-006824	SA
C422	C-CER,CHIP	2203-006048	SA
C425	C-CER,CHIP	2203-006208	SA
C426	C-CER,CHIP	2203-006257	SA
C427	C-CER,CHIP	2203-006257	SA
C428	C-CER,CHIP	2203-006562	SA
C429	C-CER,CHIP	2203-006257	SA
C500	C-CER,CHIP	2203-005395	SA
C501	C-CER,CHIP	2203-005482	SA
C502	C-CER,CHIP	2203-000330	SA
C503	C-CER,CHIP	2203-005482	SA
C504	C-CER,CHIP	2203-005395	SA
C506	C-CER,CHIP	2203-005482	SA
C508	C-CER,CHIP	2203-005482	SA
C510	C-CER,CHIP	2203-005482	SA
C511	C-CER,CHIP	2203-000254	SA
C512	C-CER,CHIP	2203-006260	SA
C513	C-CER,CHIP	2203-000254	SA
C514	C-CER,CHIP	2203-006260	SA
C517	C-CER,CHIP	2203-006257	SA
C518	C-CER,CHIP	2203-006257	SA
C604	C-CER,CHIP	2203-000254	SA
C605	C-CER,CHIP	2203-005061	SA
C606	C-CER,CHIP	2203-006423	SA
C608	C-CER,CHIP	2203-000386	SA
C609	C-CER,CHIP	2203-000386	SA
C610	C-CER,CHIP	2203-000386	SA
C611	C-CER,CHIP	2203-006194	SA
C612	C-CER,CHIP	2203-006681	SA



Design LOC	Description	SEC Code	STATUS
C613	C-CER,CHIP	2203-000870	SA
C614	C-CER,CHIP	2203-006194	SA
C615	C-CER,CHIP	2203-006194	SA
C616	C-CER,CHIP	2203-005052	SA
C617	C-CER,CHIP	2203-000278	SA
C618	C-CER,CHIP	2203-000233	SA
C623	C-CER,CHIP	2203-006562	SA
C624	C-CER,CHIP	2203-000359	SA
C627	C-CER,CHIP	2203-000995	SA
C628	C-CER,CHIP	2203-000679	SA
C631	C-CER,CHIP	2203-005481	SA
C632	C-CER,CHIP	2203-006257	SA
C633	C-CER,CHIP	2203-006423	SA
C634	C-CER,CHIP	2203-006048	SA
C636	C-CER,CHIP	2203-005482	SA
C637	C-CER,CHIP	2203-006377	SA
C639	C-CER,CHIP	2203-006562	SA
C640	C-CER,CHIP	2203-005052	SA
C641	C-CER,CHIP	2203-006048	SA
C642	C-CER,CHIP	2203-000386	SA
C643	C-CER,CHIP	2203-006260	SA
C644	C-CER,CHIP	2203-006260	SA
D601	DIODE-SCHOTTKY	0404-001172	SA
D602	DIODE-TVS	0406-001208	SA
F101	FILTER-EMI SMD	2901-001254	SA
F301	FILTER-EMI/ESD	2901-001322	SA
F302	FILTER-EMI/ESD	2901-001370	SA
F303	FILTER-EMI/ESD	2901-001370	SA
F601	FILTER-LC	2909-001283	SA
F602	FILTER-EMI/ESD	2901-001322	SA
HEA301	HEADER-BOARD TO BOARD	3711-005937	SA
HEA302	HEADER-BOARD TO BOARD	3711-005456	SA
IFC600	SOCKET-INTERFACE	3710-002306	SA
L100	INDUCTOR-SMD	2703-001723	SA
L101	INDUCTOR-SMD	2703-002544	SA
L103	INDUCTOR-SMD	2703-002203	SA
L104	INDUCTOR-SMD	2703-002544	SA
L105	INDUCTOR-SMD	2703-002368	SA
L106	INDUCTOR-SMD	2703-002267	SA
L107	INDUCTOR-SMD	2703-002368	SA
L108	INDUCTOR-SMD	2703-002710	SA
L109	INDUCTOR-SMD	2703-001751	SA
L110	INDUCTOR-SMD	2703-002710	SA
L111	INDUCTOR-SMD	2703-002365	SA
L113	INDUCTOR-SMD	2703-001751	SA
L114	INDUCTOR-SMD	2703-001750	SA
L401	BEAD-SMD	3301-001120	SA
L402	INDUCTOR-SMD	2703-002619	SA
L500	BEAD-SMD	3301-001729	SA
L501	BEAD-SMD	3301-001729	SA
L502	INDUCTOR-SMD	2703-002155	SA
L503	INDUCTOR-SMD	2703-002155	SA
L600	BEAD-SMD	3301-001876	SA



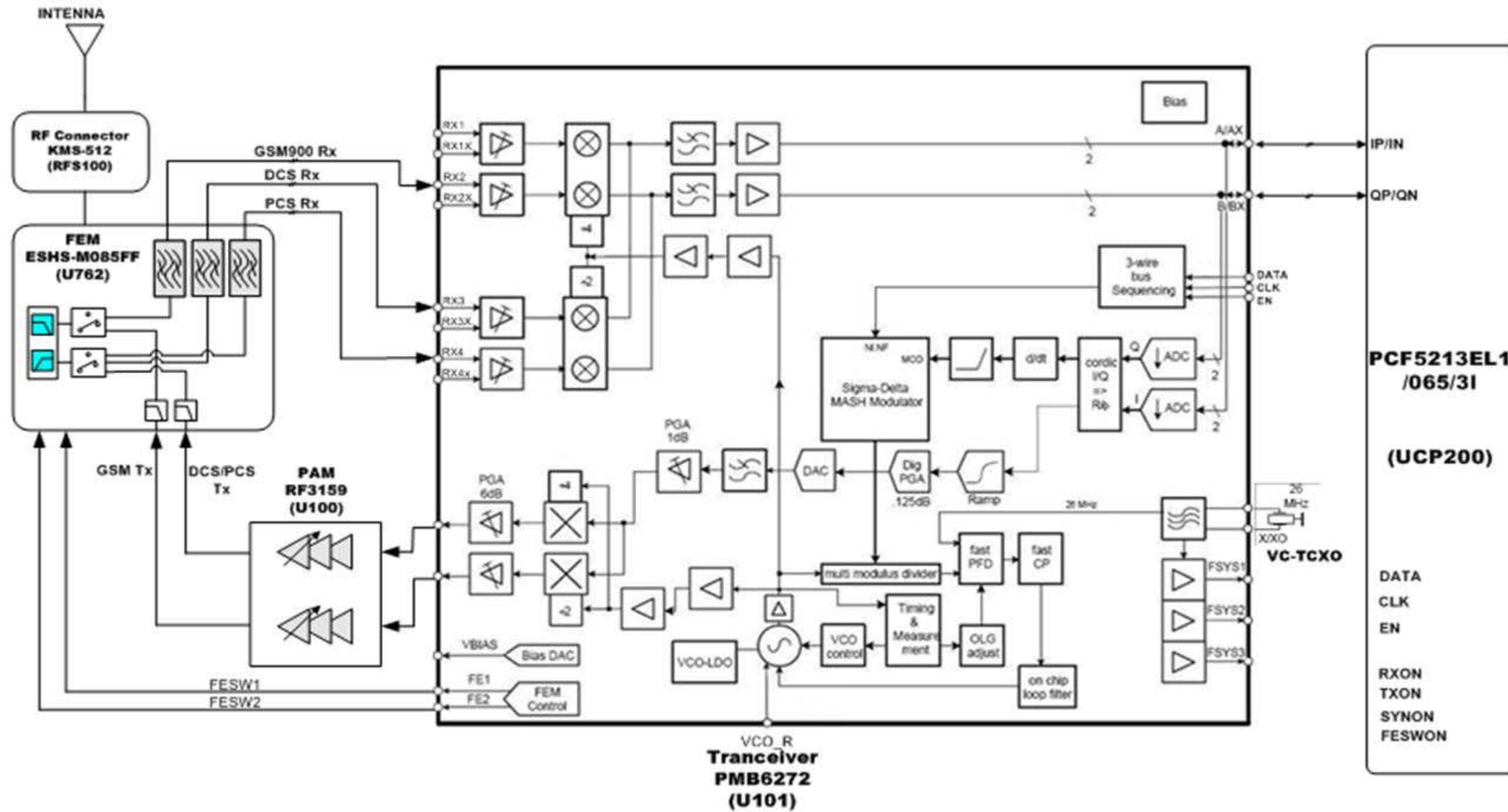
Design LOC	Description	SEC Code	STATUS
L601	BEAD-SMD	3301-001876	SA
L602	BEAD-SMD	3301-001876	SA
L603	INDUCTOR-SMD	2703-002204	SA
L604	INDUCTOR-SMD	2703-001231	SNA
L605	INDUCTOR-SMD	2703-001673	SA
L606	INDUCTOR-SMD	2703-001285	SA
MODULE1	DUPLEXER-FEM	2911-000050	SA
OSC400	CRYSTAL-SMD	2801-004466	SA
OSC601	CRYSTAL-SMD	2801-004560	SA
R102	R-CHIP	2007-000171	SA
R103	R-CHIP	2007-000171	SA
R104	R-CHIP	2007-001284	SA
R105	R-CHIP	2007-000172	SA
R106	R-CHIP	2007-001316	SA
R107	R-CHIP	2007-000172	SA
R108	R-CHIP	2007-000140	SA
R109	R-CHIP	2007-000140	SA
R110	R-CHIP	2007-000162	SA
R111	R-CHIP	2007-000171	SA
R112	R-CHIP	2007-000140	SA
R113	R-CHIP	2007-000171	SA
R200	R-CHIP	2007-000147	SA
R201	R-CHIP	2007-008516	SA
R203	R-CHIP	2007-008548	SA
R204	R-CHIP	2007-008548	SA
R205	R-CHIP	2007-000162	SA
R206	R-CHIP	2007-000162	SA
R207	R-CHIP	2007-000162	SA
R208	R-CHIP	2007-008052	SA
R209	R-CHIP	2007-000170	SA
R210	R-CHIP	2007-000170	SA
R211	R-CHIP	2007-000171	SA
R304	R-CHIP	2007-000148	SA
R305	R-CHIP	2007-000162	SA
R308	R-CHIP	2007-001303	SA
R309	R-CHIP	2007-007014	SA
R310	R-CHIP	2007-008055	SA
R311	R-CHIP	2007-007014	SA
R317	R-CHIP	2007-000171	SA
R318	R-CHIP	2007-000171	SA
R321	R-CHIP	2007-000171	SA
R350	R-CHIP	2007-000162	SA
R401	R-CHIP	2007-007100	SA
R402	R-CHIP	2007-007190	SA
R403	R-CHIP	2007-000162	SA
R404	R-CHIP	2007-000162	SA
R406	R-CHIP	2007-000171	SA
R407	R-CHIP	2007-000162	SA
R500	R-CHIP	2007-007317	SA
R501	R-CHIP	2007-000148	SA
R502	R-CHIP	2007-007317	SA
R503	R-CHIP	2007-007317	SA
R504	R-CHIP	2007-007317	SA

Design LOC	Description	SEC Code	STATUS
R505	R-CHIP	2007-000148	SA
R506	R-CHIP	2007-000171	SA
R507	R-CHIP	2007-000171	SA
R508	R-CHIP	2007-000172	SA
R509	R-CHIP	2007-000171	SA
R510	R-CHIP	2007-000172	SA
R511	R-CHIP	2007-000171	SA
R512	R-CHIP	2007-000171	SA
R601	R-CHIP	2007-000162	SA
R602	R-CHIP	2007-007334	SA
R603	R-CHIP	2007-001339	SA
R604	R-CHIP	2007-001339	SA
R605	R-CHIP	2007-000172	SA
R606	R-CHIP	2007-000162	SA
R607	R-CHIP	2007-007573	SA
R608	R-CHIP	2007-000172	SA
R609	R-CHIP	2007-000164	SA
R610	R-CHIP	2007-003015	SA
R613	R-CHIP	2007-008055	SA
R614	R-CHIP	2007-007741	SA
R615	R-CHIP	2007-008055	SA
R616	R-CHIP	2007-009168	SA
R617	R-CHIP	2007-008419	SA
R618	R-CHIP	2007-008055	SA
R619	R-CHIP	2007-008055	SA
R620	R-CHIP	2007-007107	SA
R621	R-CHIP	2007-007312	SA
R622	R-CHIP	2007-000137	SA
R623	R-CHIP	2007-007489	SA
R624	R-CHIP	2007-000775	SA
R625	R-CHIP	2007-000171	SA
R626	R-CHIP	2007-001325	SA
R627	R-CHIP	2007-008275	SA
R628	R-CHIP	2007-007573	SA
R629	R-CHIP	2007-007334	SA
R632	R-CHIP	2007-008542	SA
R633	R-CHIP	2007-007142	SA
R635	R-CHIP	2007-007139	SA
R636	R-CHIP	2007-008542	SA
R637	R-CHIP	2007-000171	SA
R638	R-CHIP	2007-000171	SA
RFS100	CONNECTOR-COAXIAL	3705-001358	SA
SW1	SWITCH-TACT	3404-001152	SA
T/SIM600	CONNECTOR-CARD EDGE	3709-001453	SA
TA101	C-TA,CHIP	2404-001413	SA
TA410	C-TA,CHIP	2404-001381	SA
TA420	C-TA,CHIP	2404-001377	SA
TA428	C-TA,CHIP	2404-001445	SA
TA501	C-TA,CHIP	2404-001240	SA
TA502	C-TA,CHIP	2404-001226	SA
TCX100	OSCILLATOR-VCTCXO	2809-001303	SA
TR201	FET-SILICON	0505-001518	SA
U100	IC-POWER AMP	1201-002423	SA

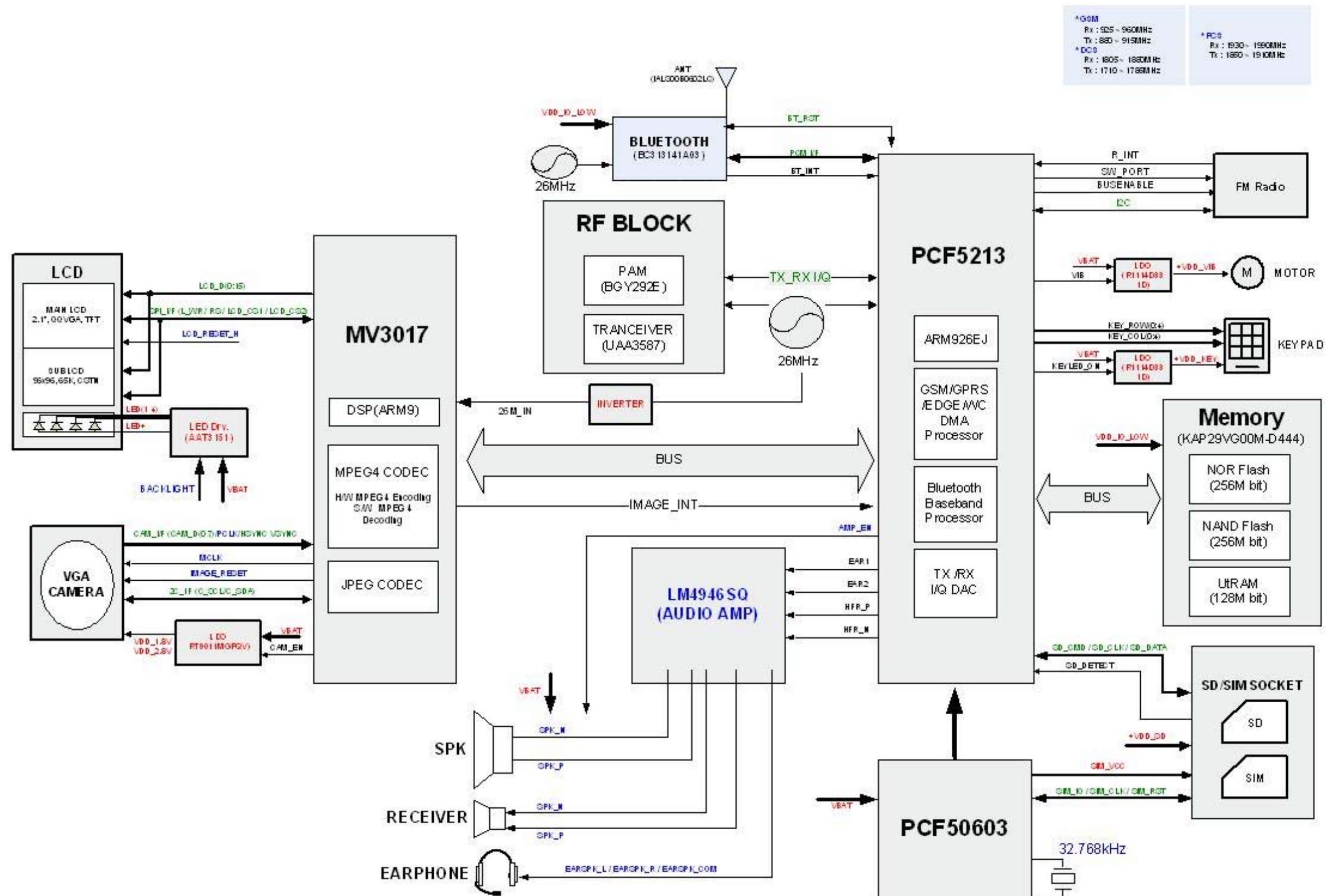
Design LOC	Description	SEC Code	STATUS
U101	IC-TRANSCIEVER	1205-003057	SA
U103	IC-POSI.FIXED REG.	1203-003767	SA
U202	FILTER-EMI SMD	2901-001316	SA
U300	IC ASIC-SGHX670	GH13-00036A	SA
U302	IC-CMOS LOGIC	0801-002237	SA
U304	IC-CMOS LOGIC	0801-002922	SA
U400	IC-POWER SUPERVISOR	1203-003882	SA
U401	IC-DC/DC CONVERTER	1203-003545	SA
U402	IC-POSI.FIXED REG.	1203-003737	SA
U403	IC-POSI.FIXED REG.	1203-003737	SA
U404	IC-POSI.FIXED REG.	1203-003737	SA
U500	IC-AUDIO AMP	1201-002356	SA
U601	TR-DIGITAL	0504-001151	SA
U602	IC-DATA COMM./GEN.	1205-003064	SA
U603	IC-CMOS LOGIC	0801-002237	SA
U604	IC-DEMODULATOR	1204-002688	SA
U605	IC-BATTERY	1203-003742	SA
U607	DIODE-TVS	0406-001200	SA
U610	DIODE-TVS	0406-001201	SA
UCP200	IC-COMM. CONTROLLER	1205-002757	SA
UME301	IC-MCP	1108-000080	SA
V400	VARISTOR	1405-001082	SA
V401	VARISTOR	1405-001082	SA
VR600	VARISTOR	1405-001082	SA
VR601	VARISTOR	1405-001082	SA
VR603	THERMISTOR-NTC	1404-001221	SA
ZD301	DIODE-TVS	0406-001201	SA
ZD302	DIODE-TVS	0406-001201	SA
ZD303	DIODE-TVS	0406-001190	SA
ZD304	DIODE-TVS	0406-001190	SA
ZD305	DIODE-TVS	0406-001201	SA
ZD602	DIODE-ZENER	0403-001547	SA
ZD603	DIODE-TVS	0406-001201	SA
ZD690	DIODE-TVS	0406-001201	SA
ZD691	DIODE-TVS	0406-001201	SA

## 7. Block Diagrams

## 7-1. RF Solution Block Diagram



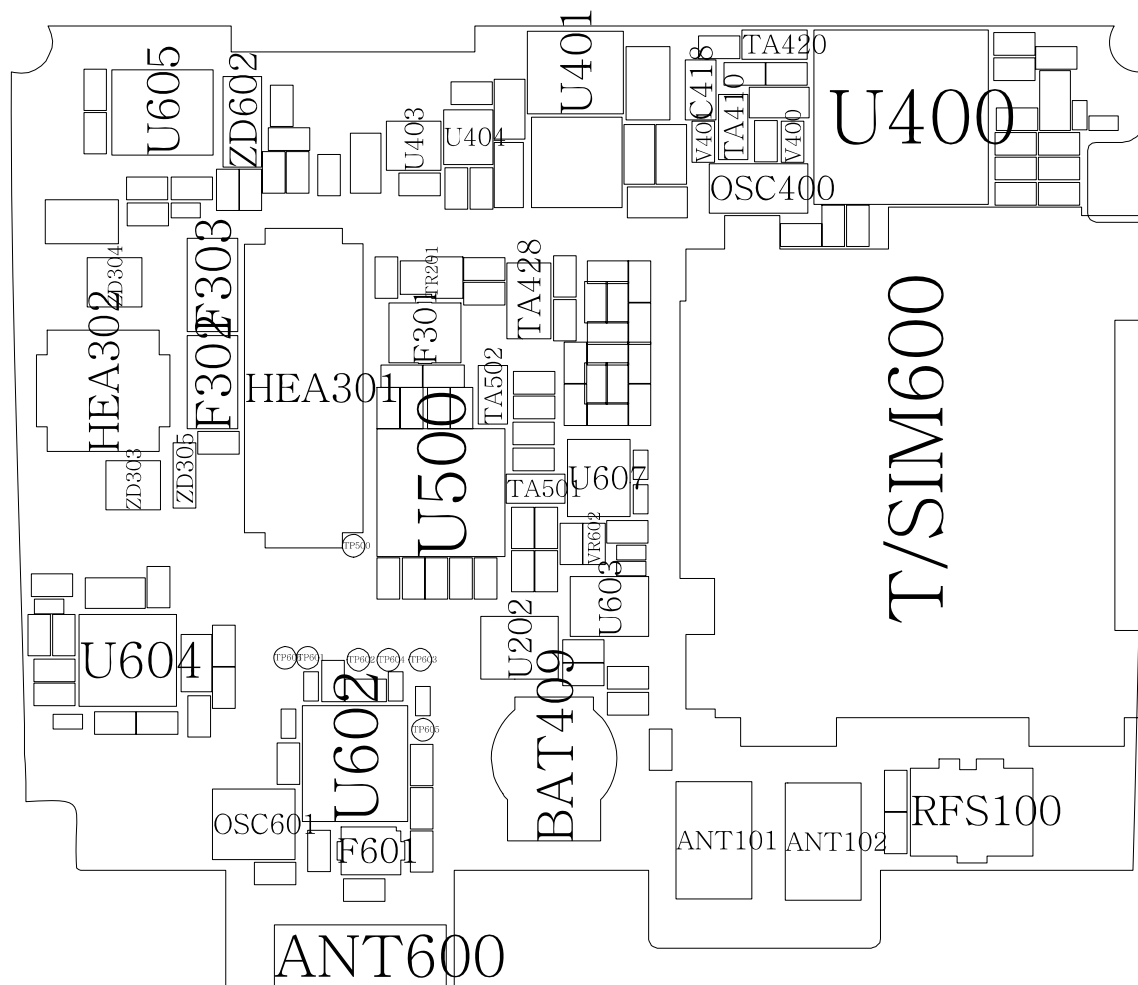
## 7-2. Base Band Solution Block Diagram



Top

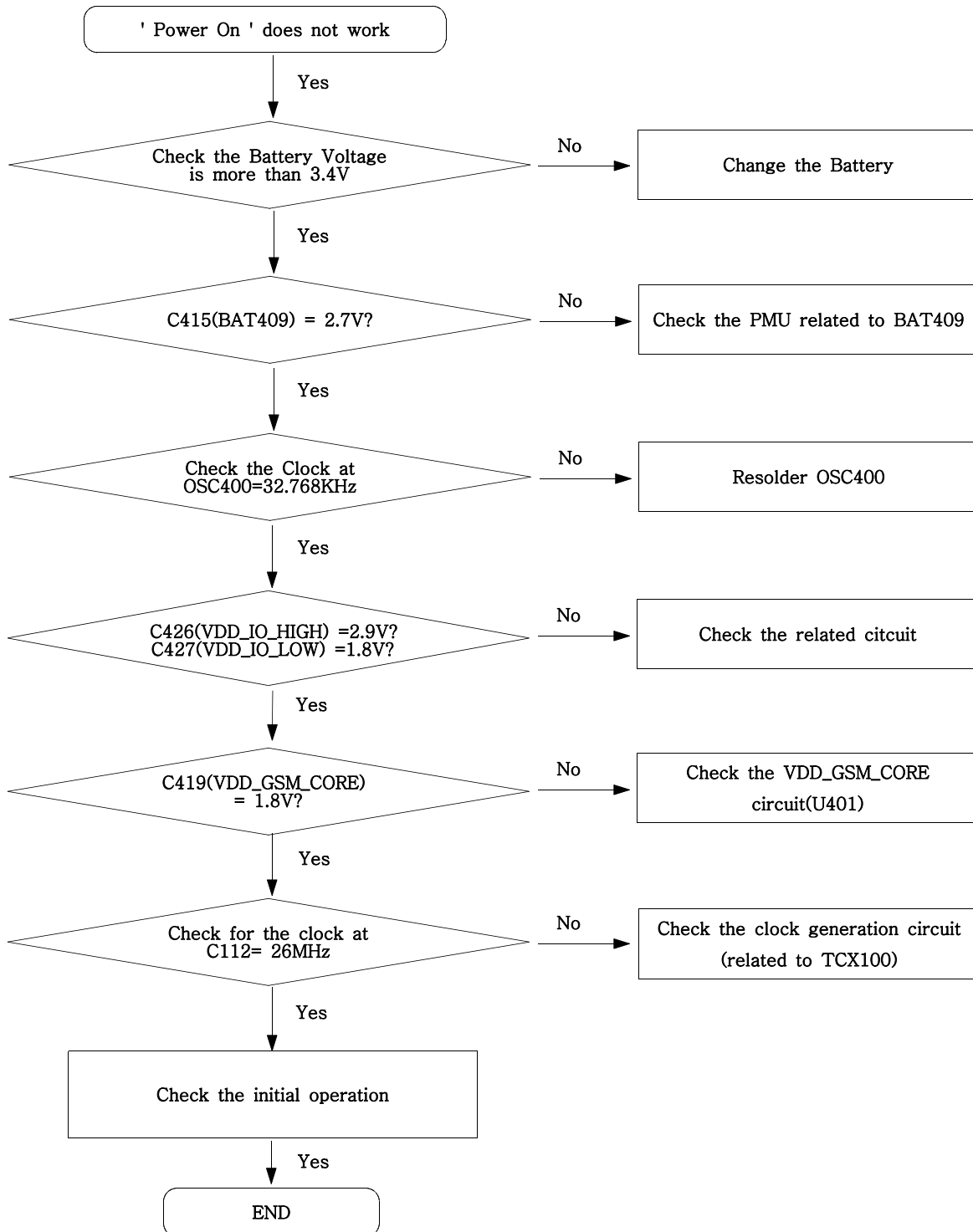


Bottom

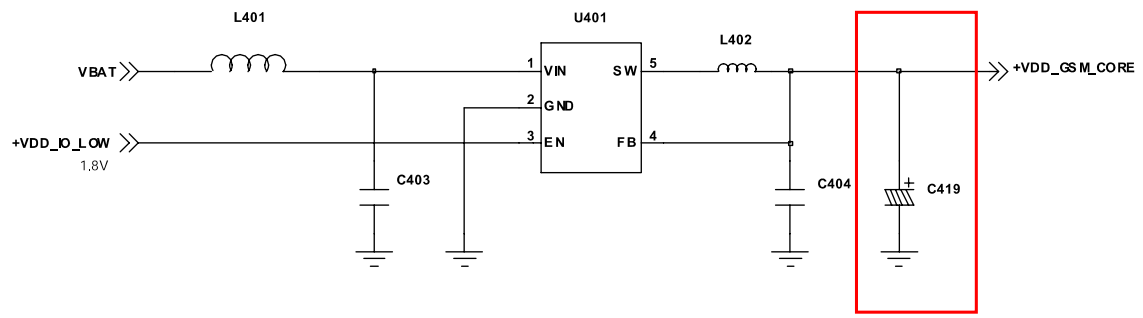


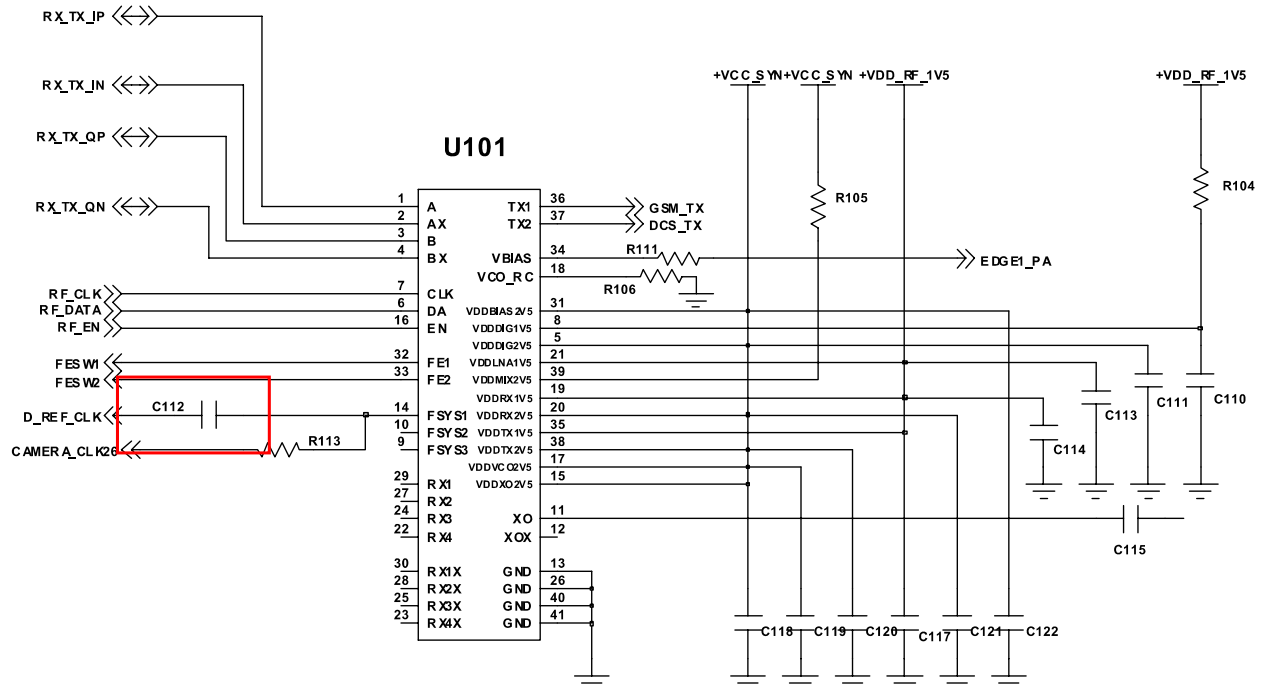
## 9. Flow Chart of Troubleshooting

### 9-1. Power On

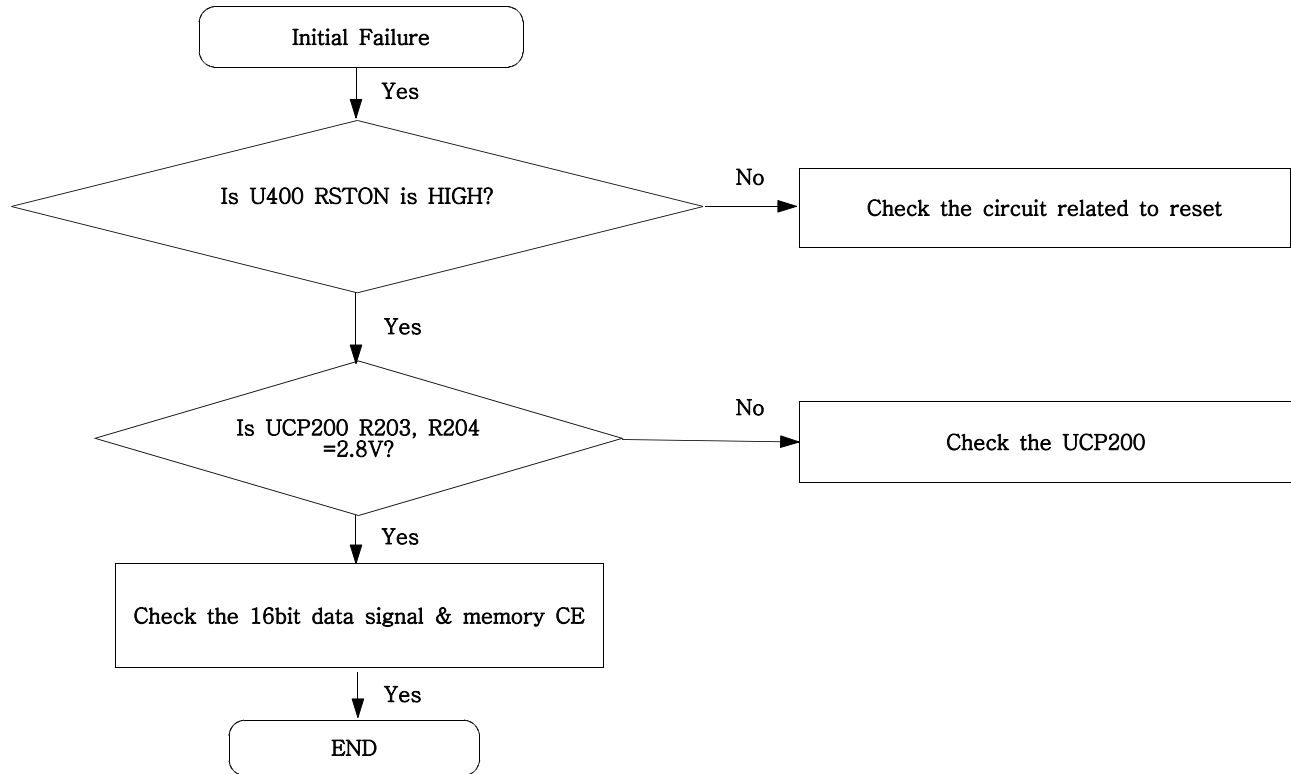


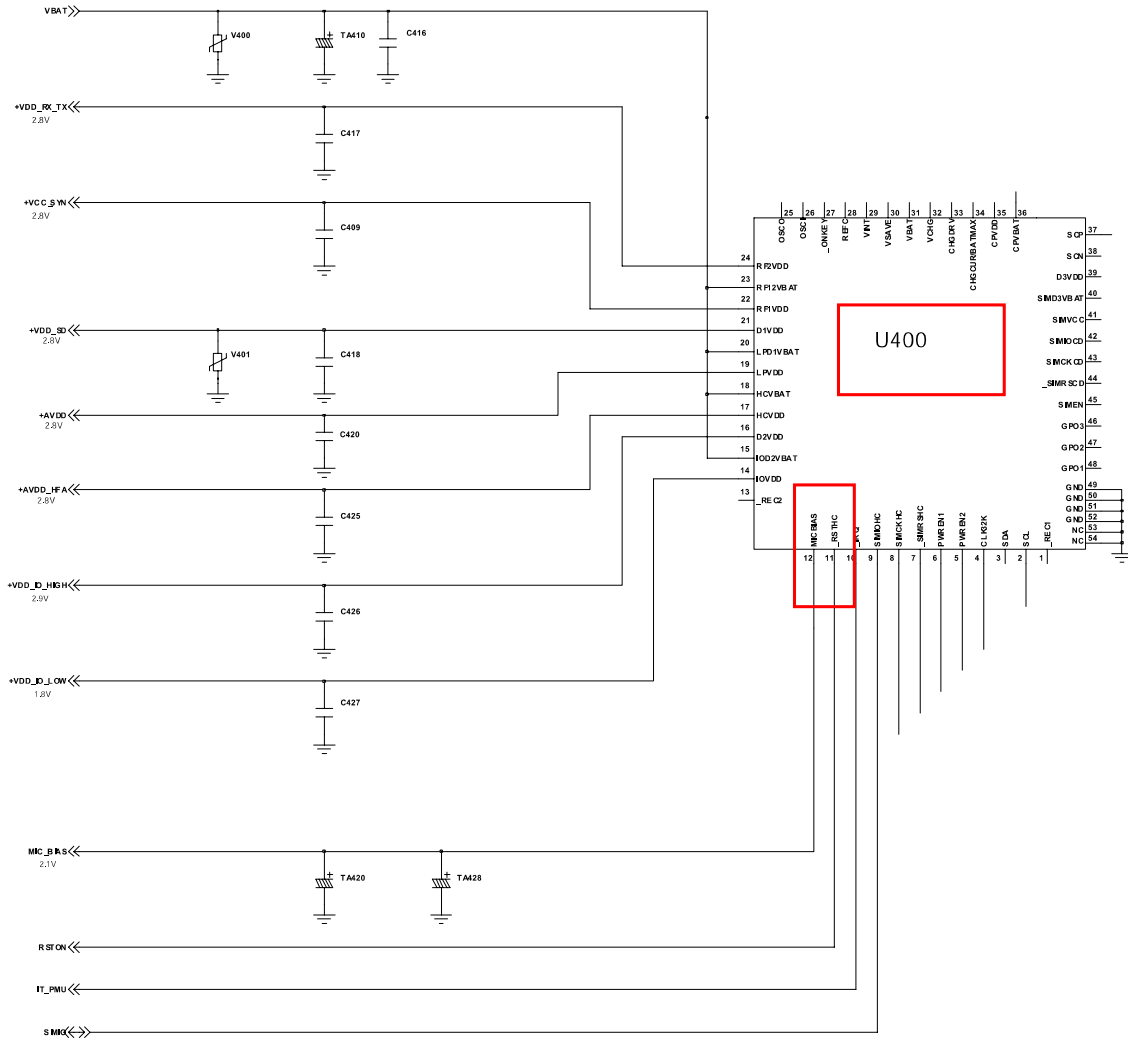




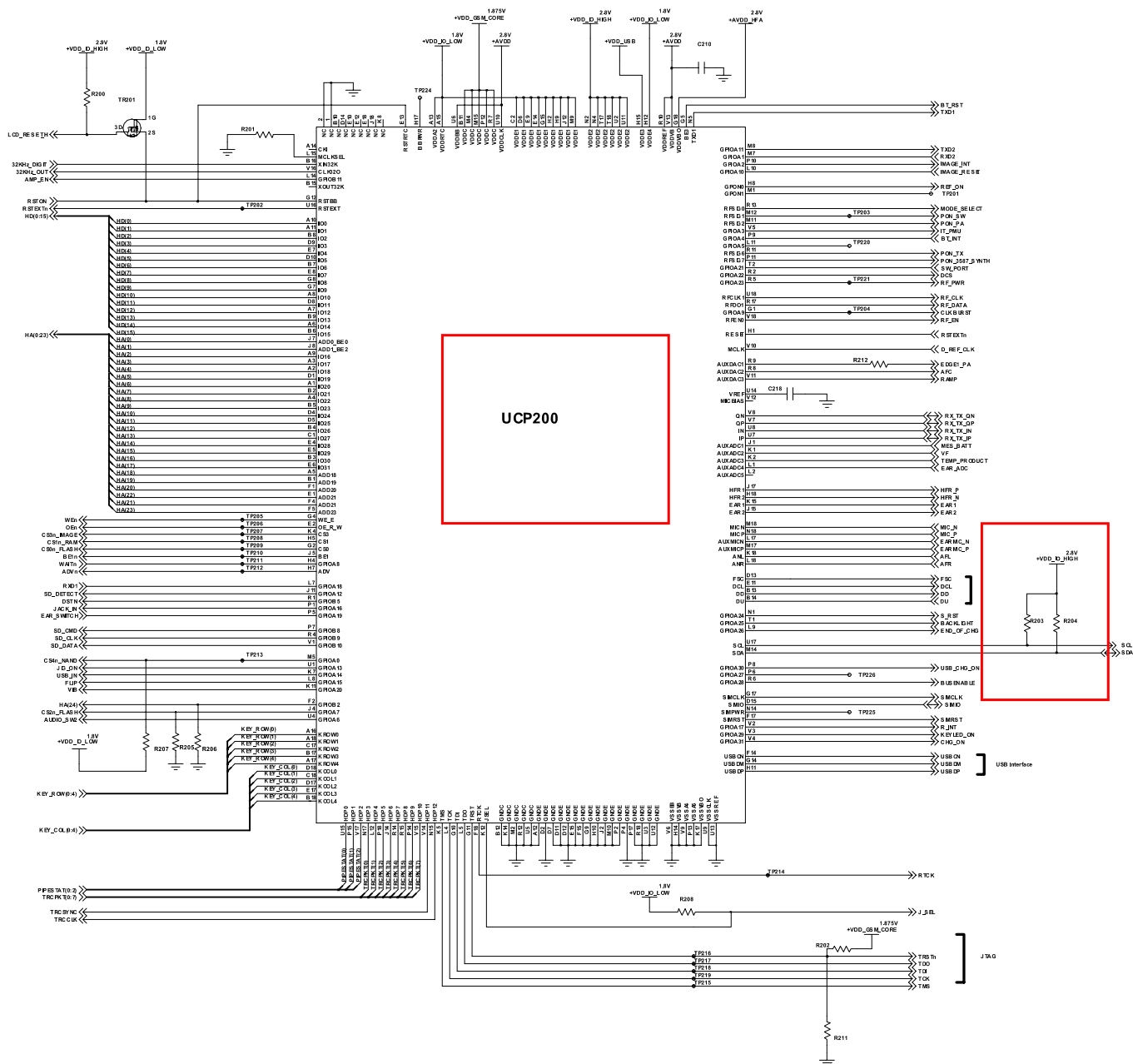


## 9-2. Initial

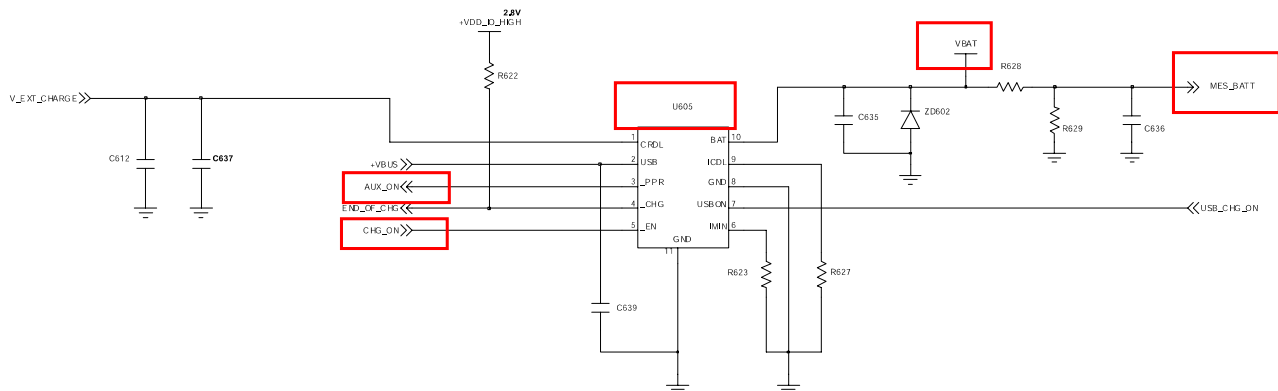
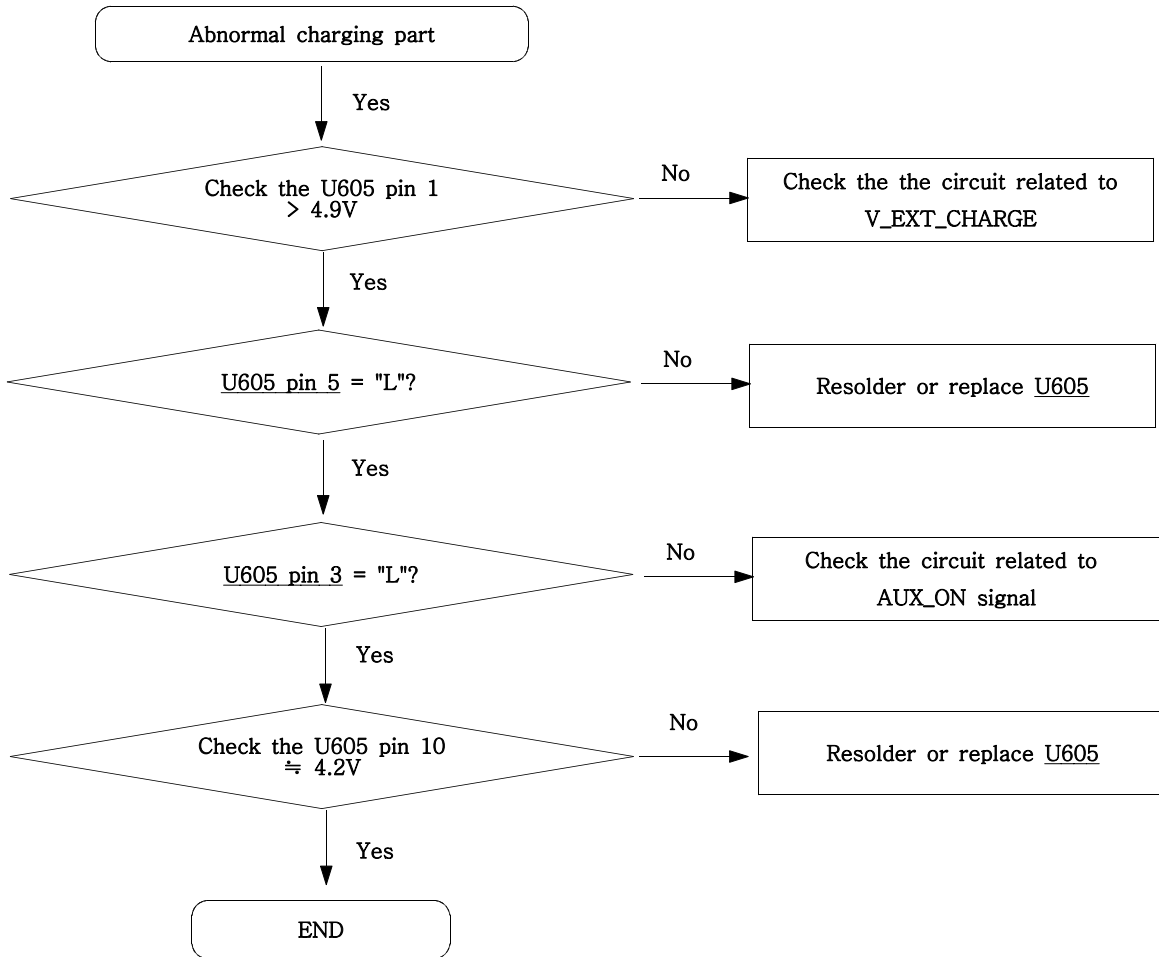




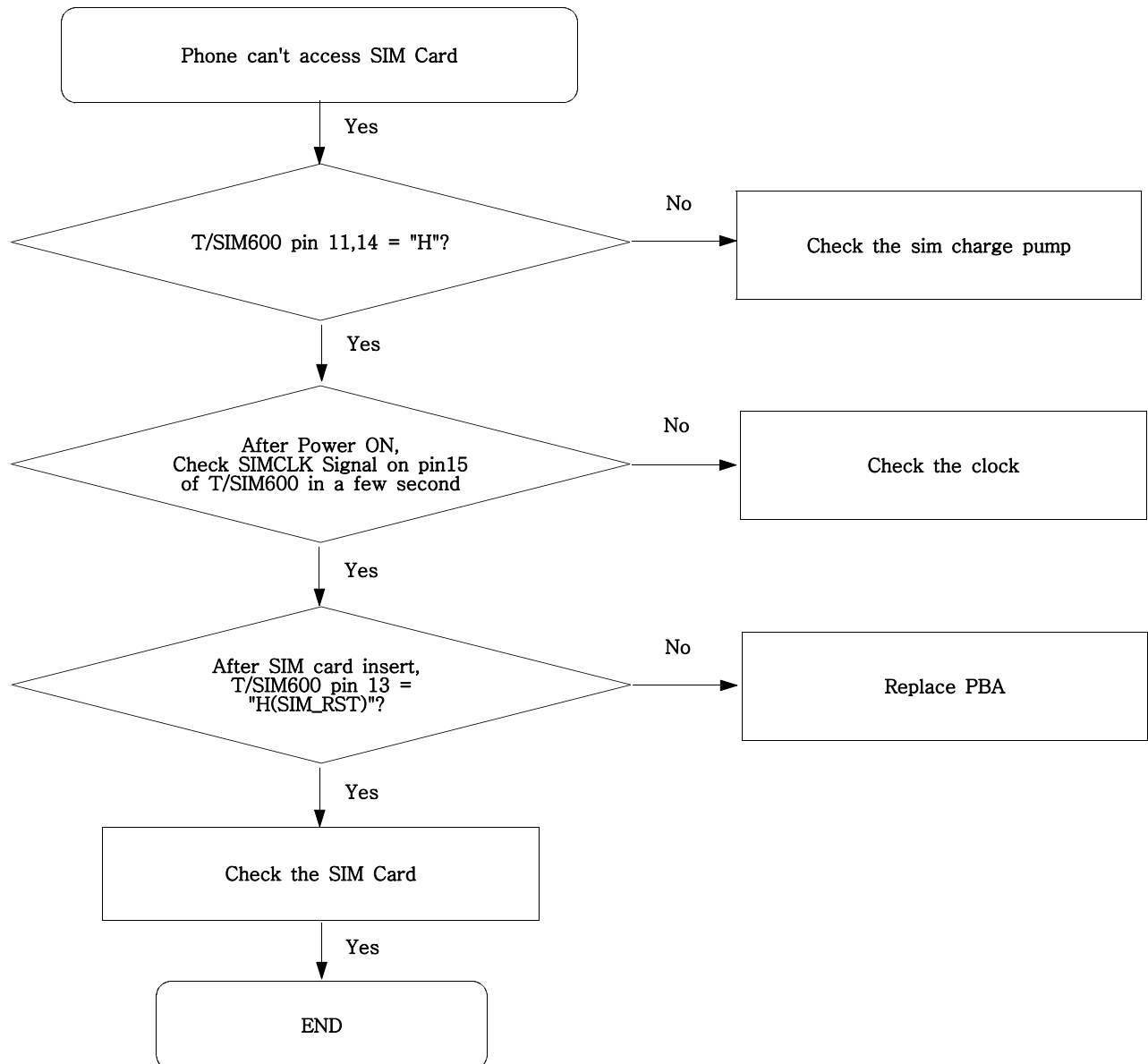
## Flow Chart of Troubleshooting

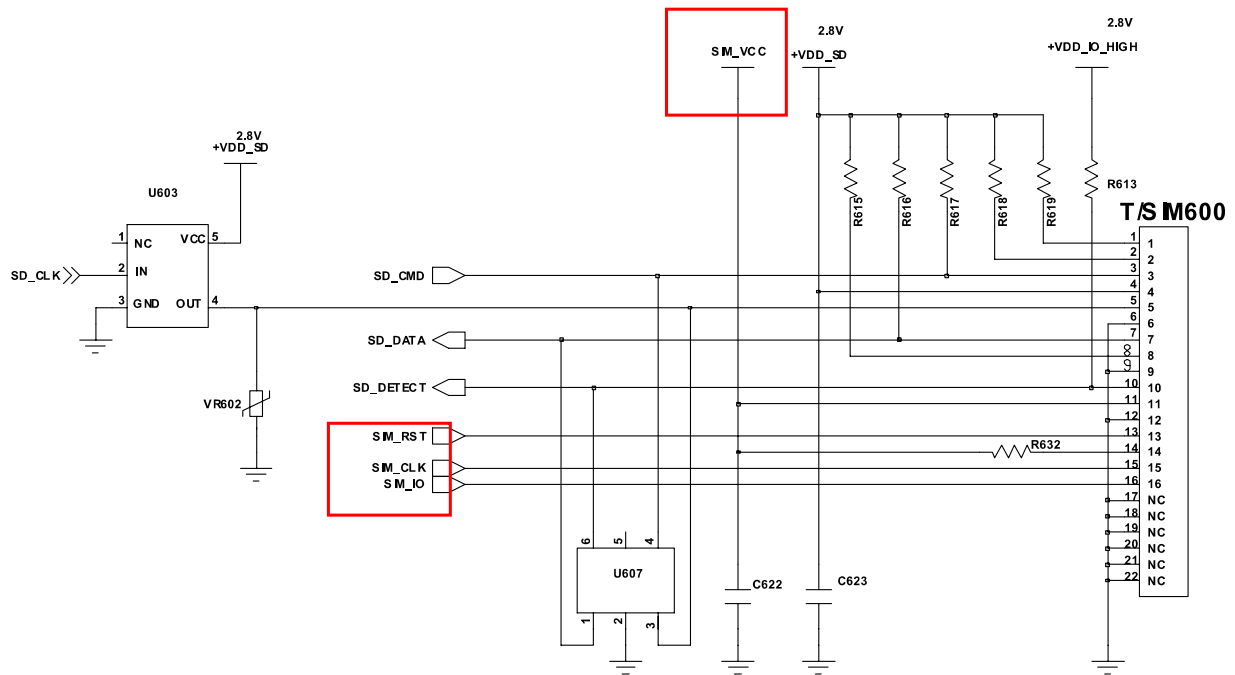


## 9-3. Charging Part



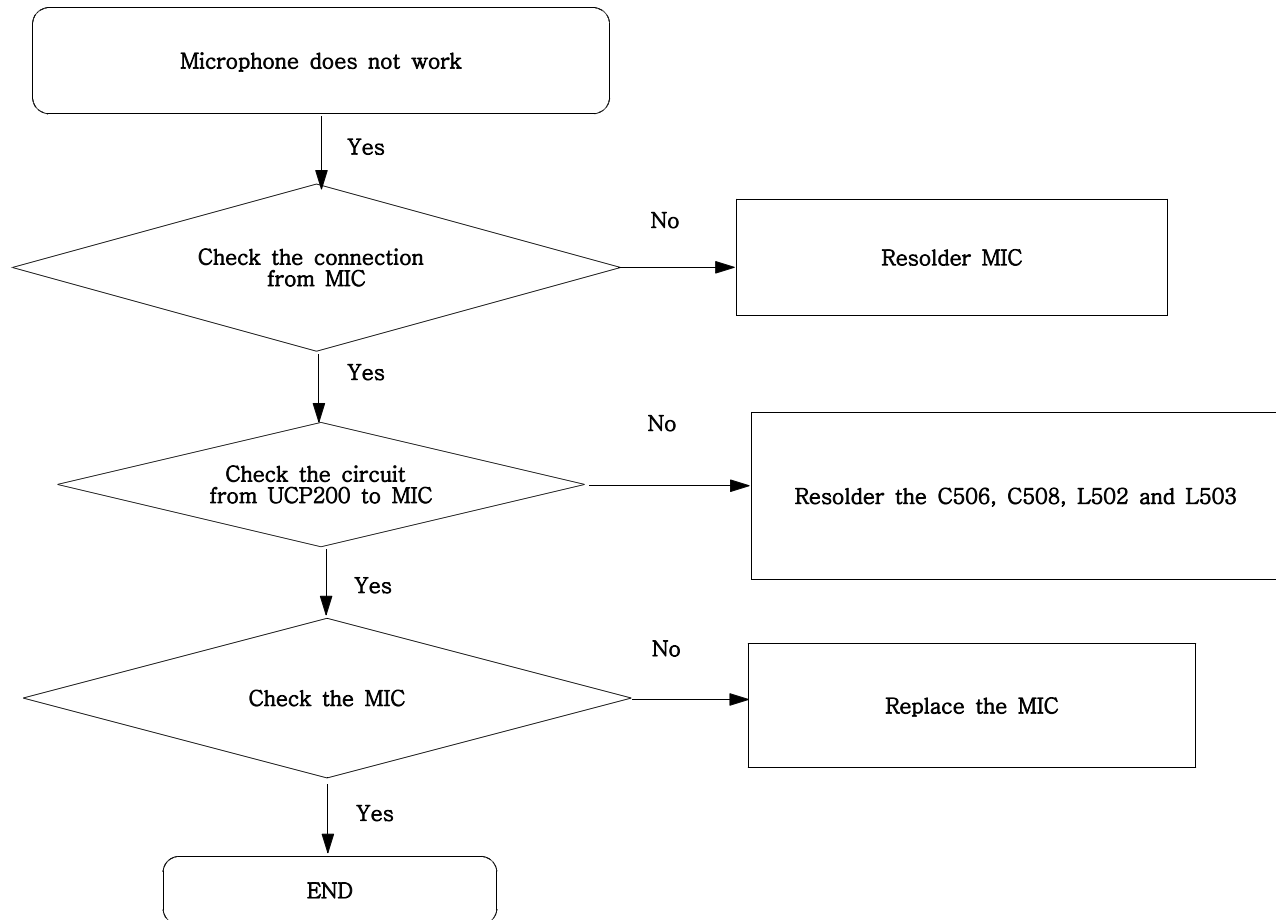
## 9-4. Sim Part

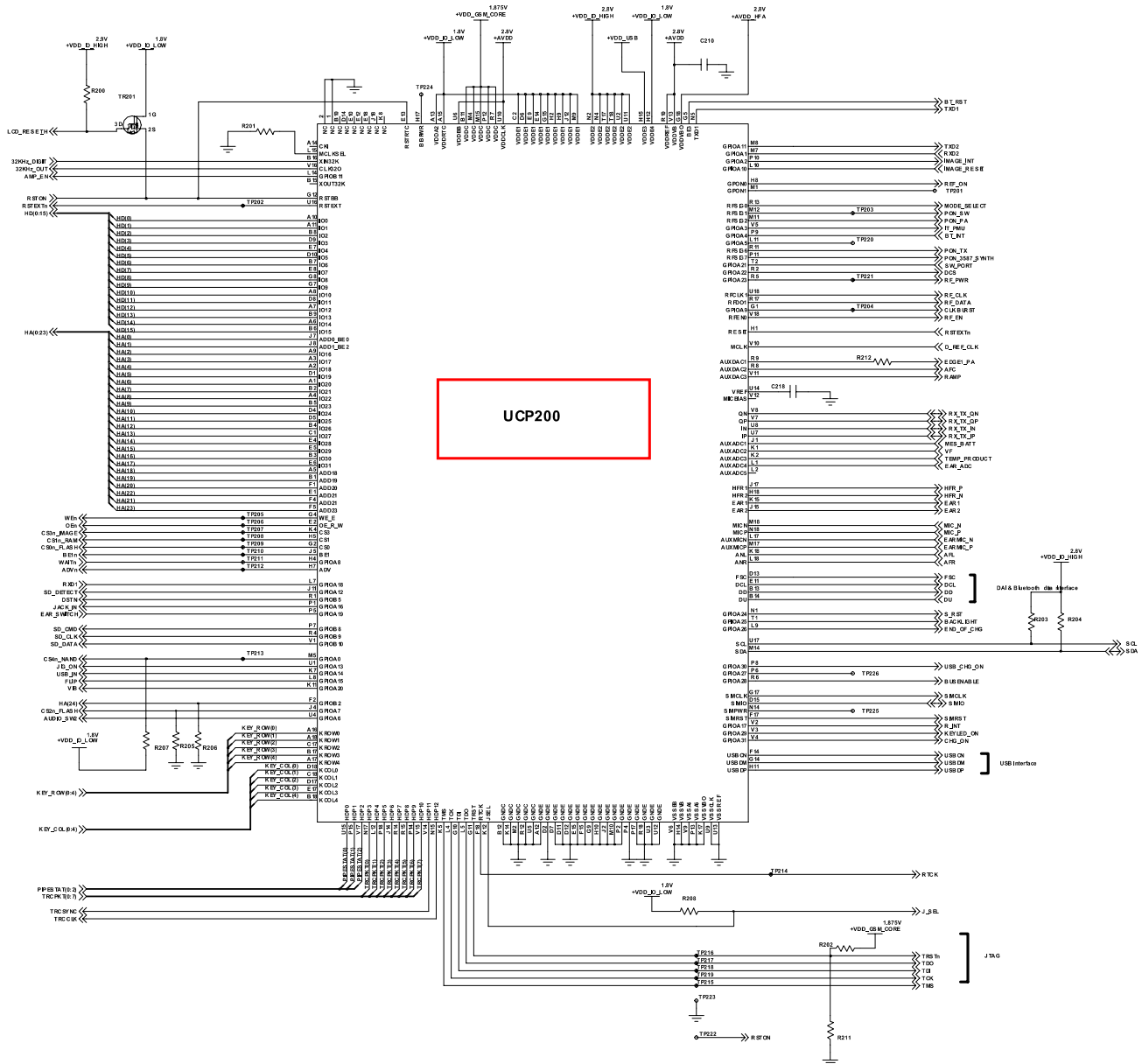


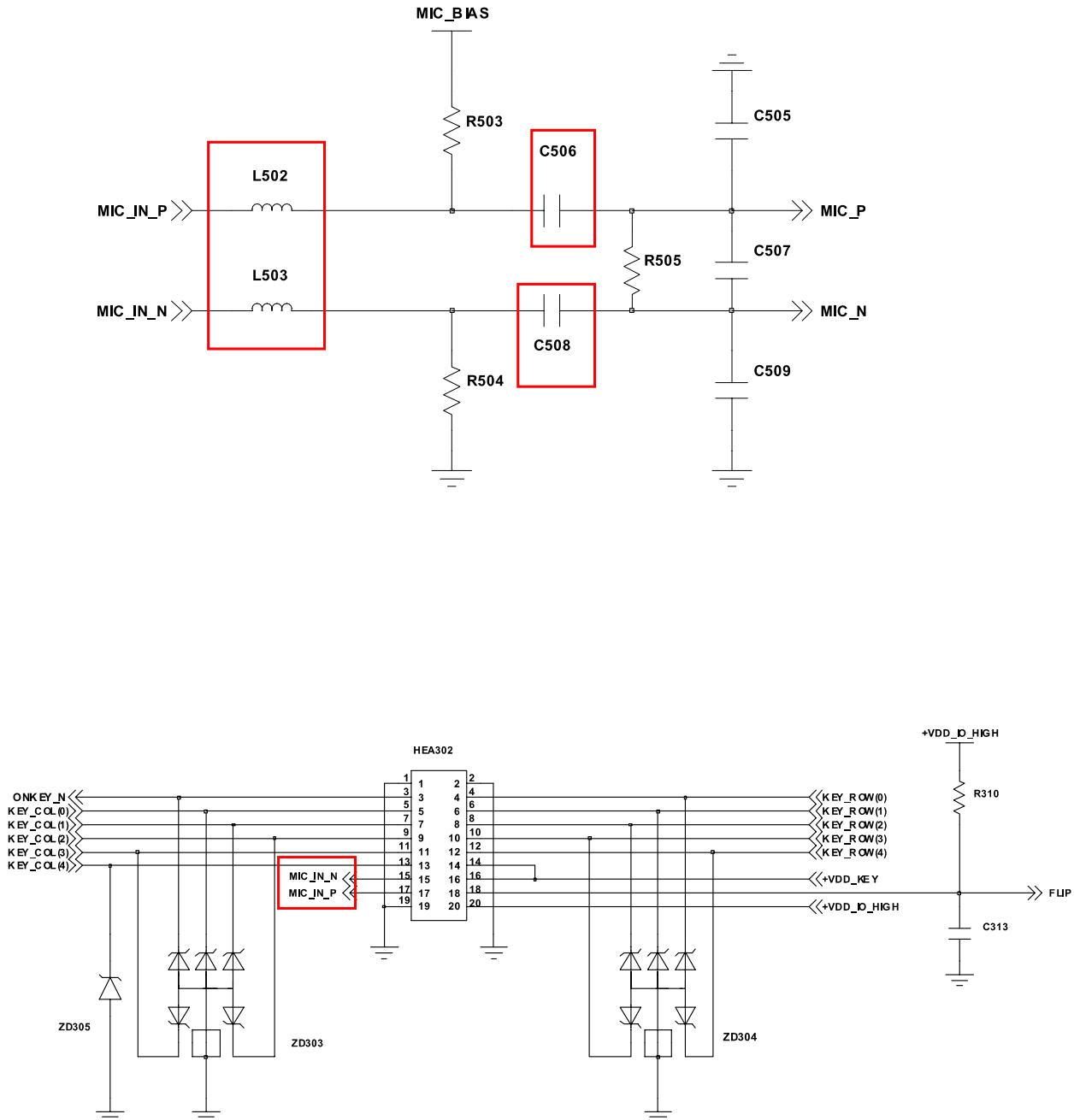




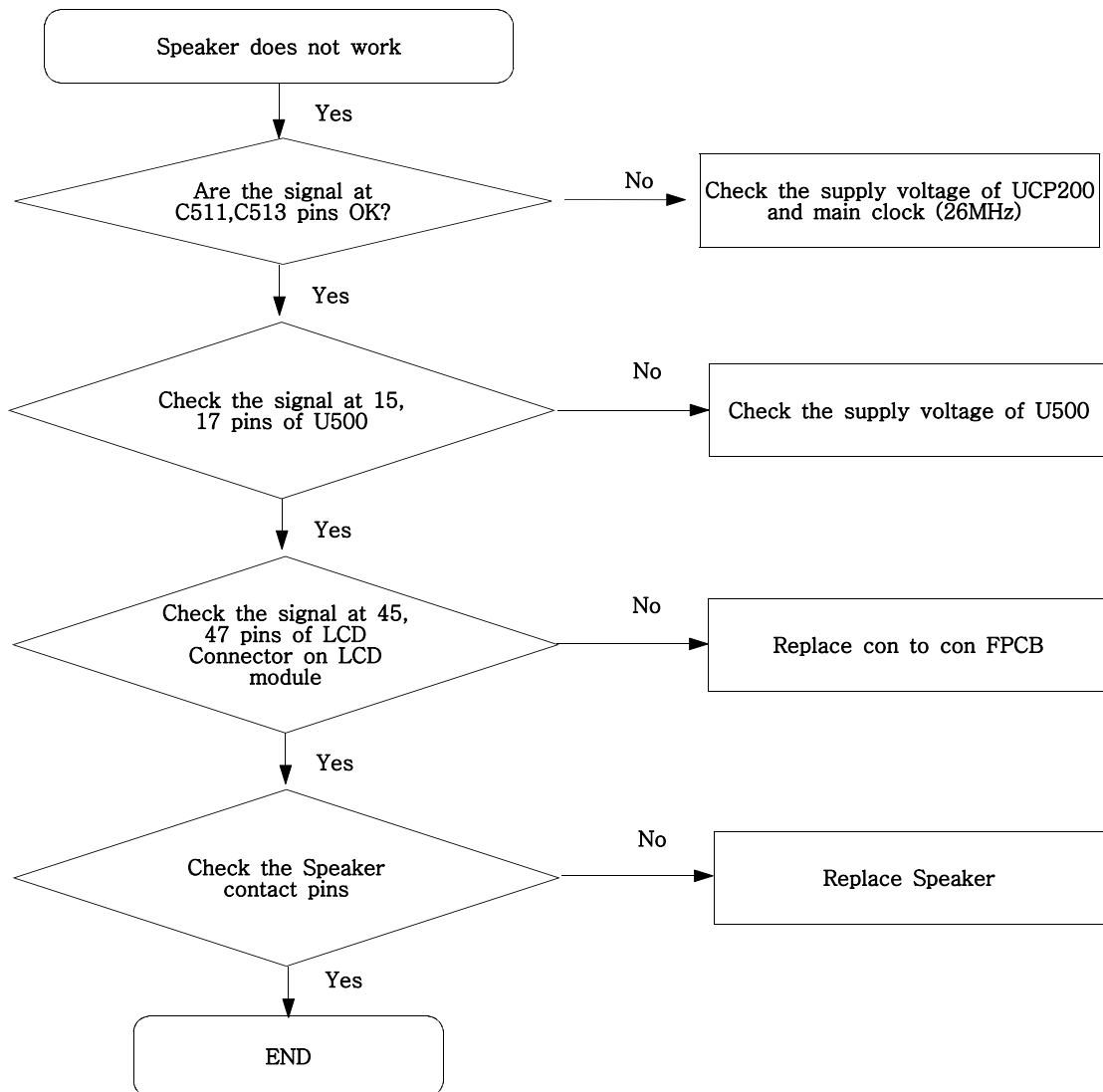
## 9-5. Microphone Part



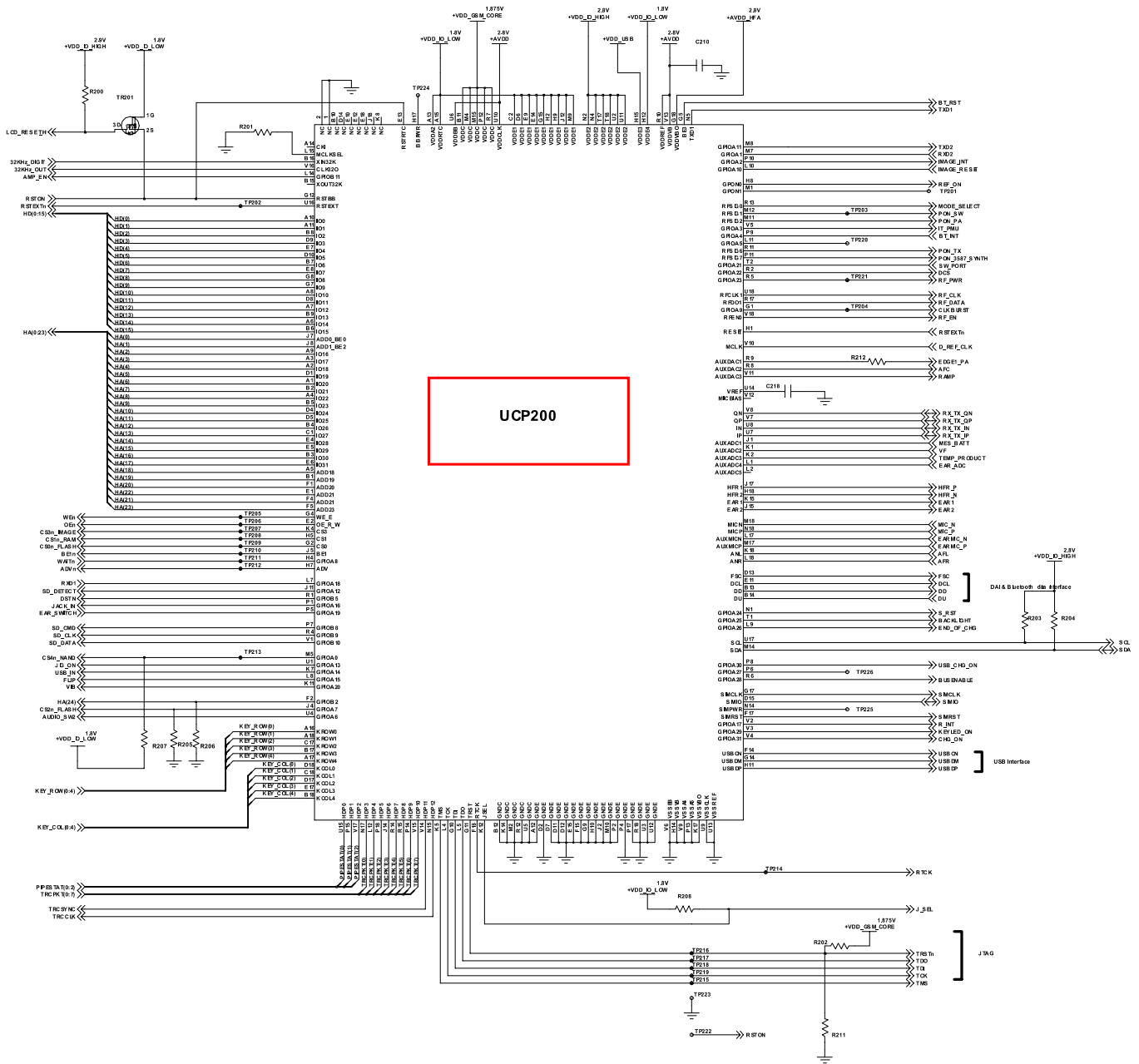




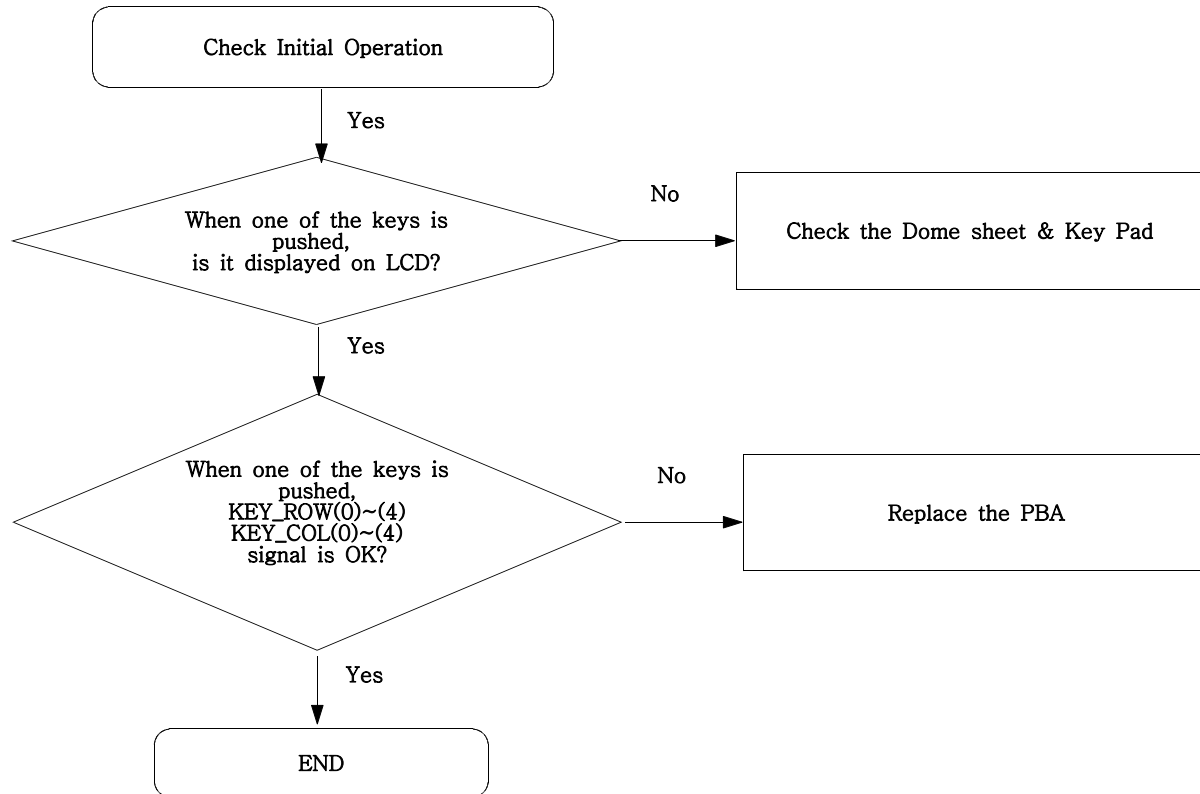
## 9-6. Speaker Part(MP3/Spk)

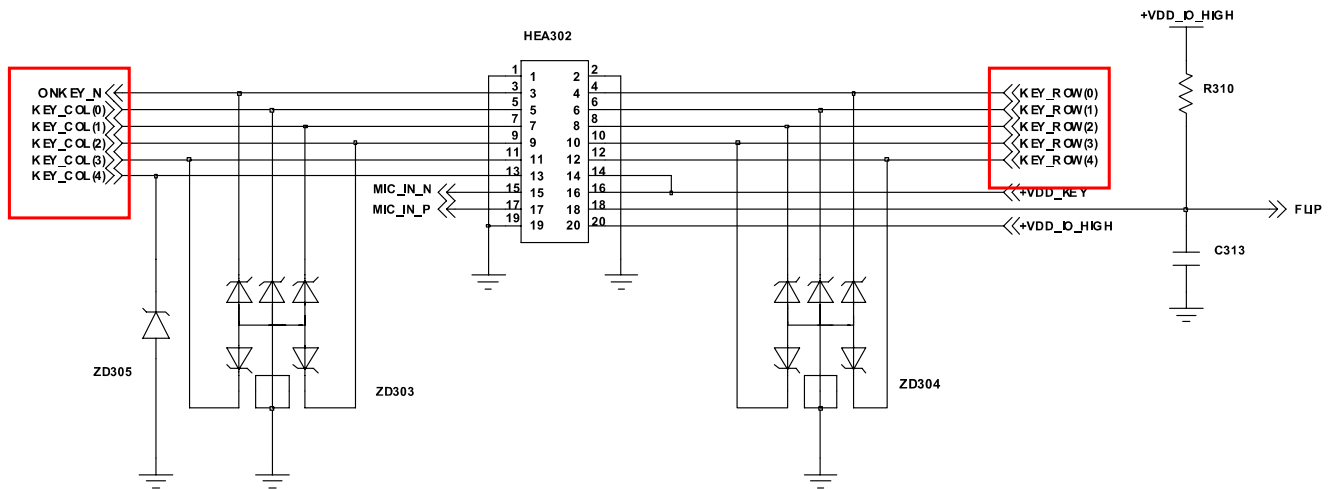






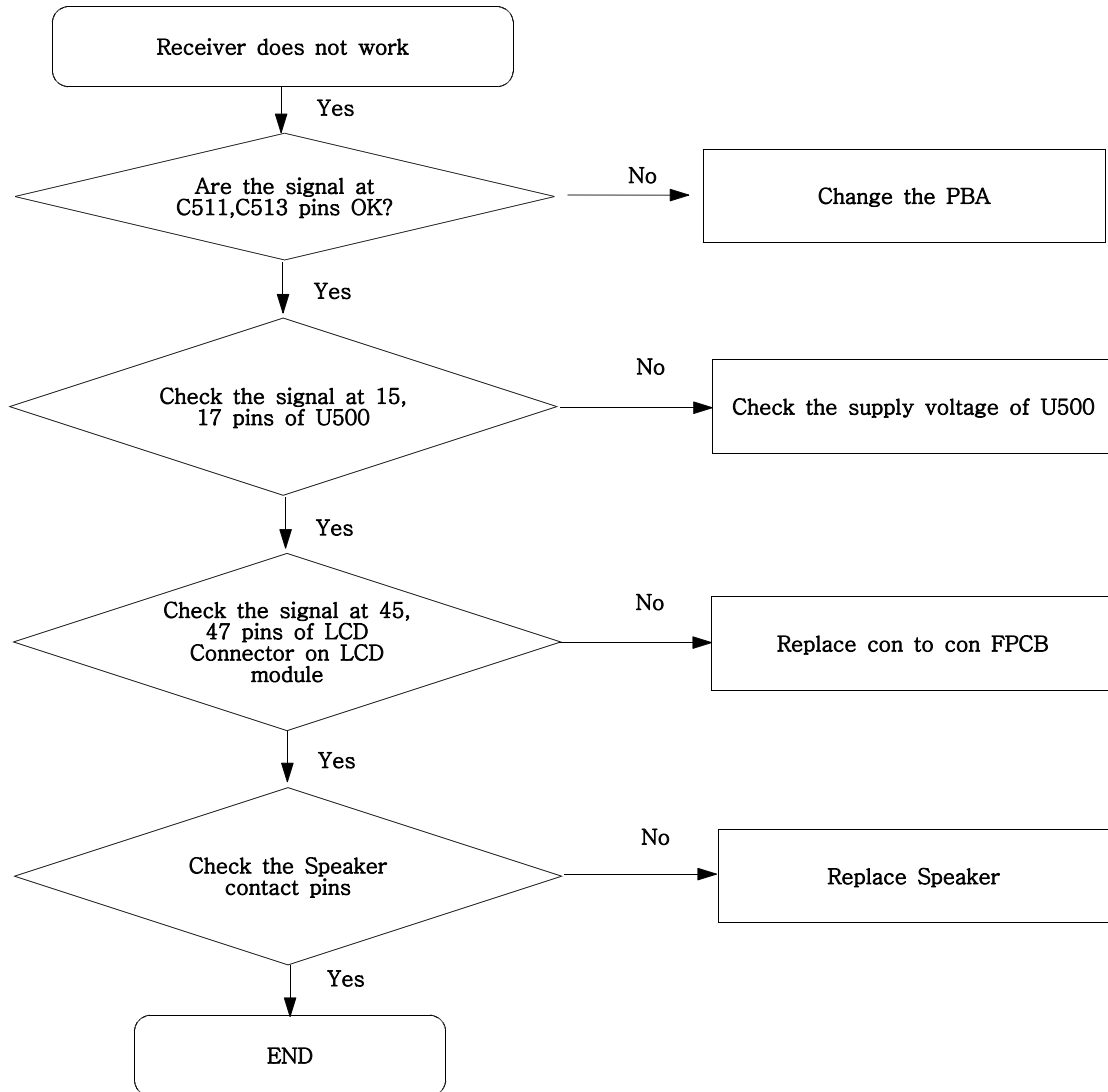
## 9-7. Key Data Input

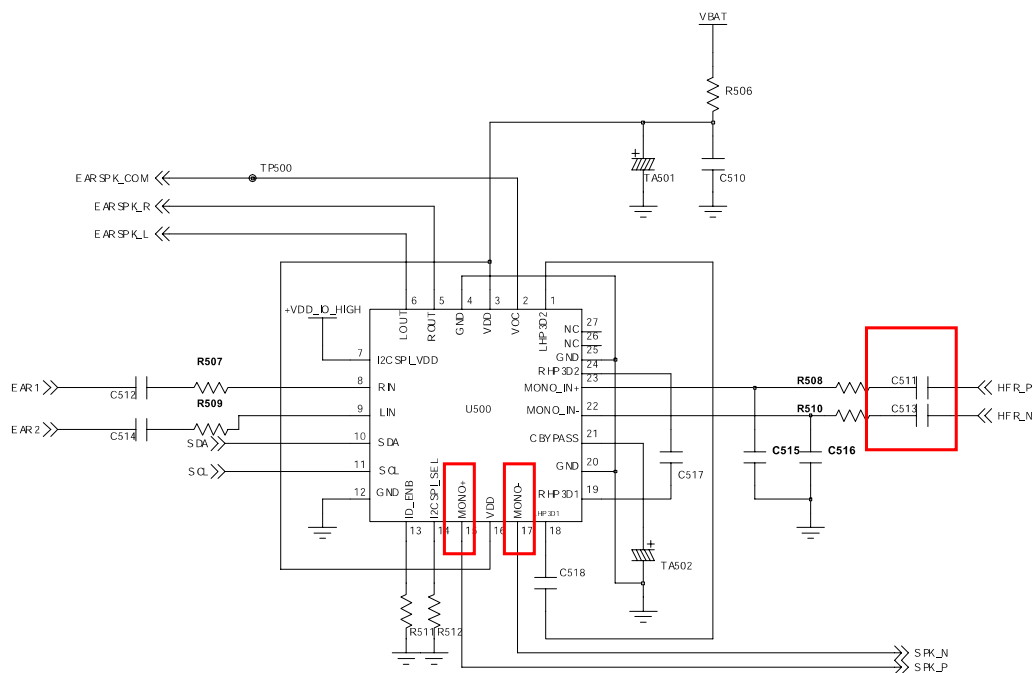






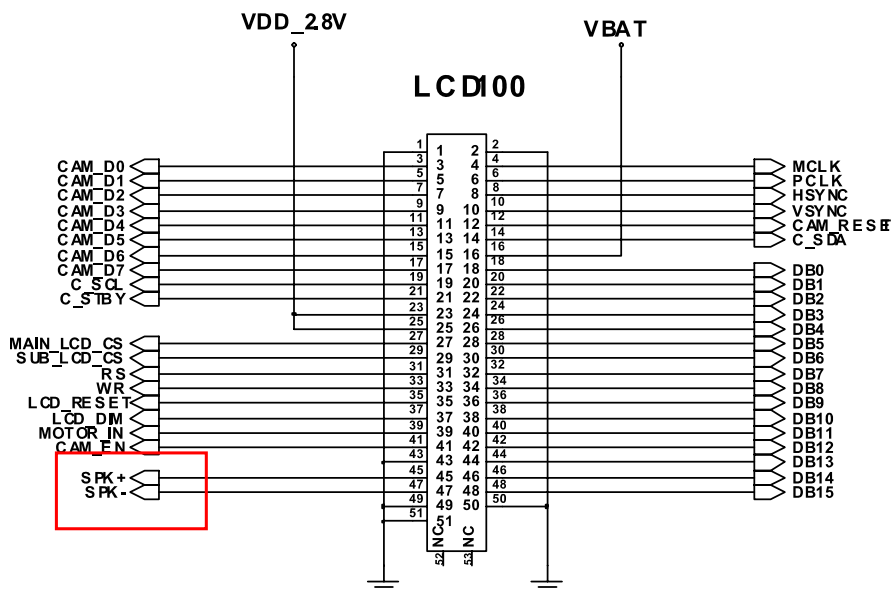
## 9-8. Receiver Part



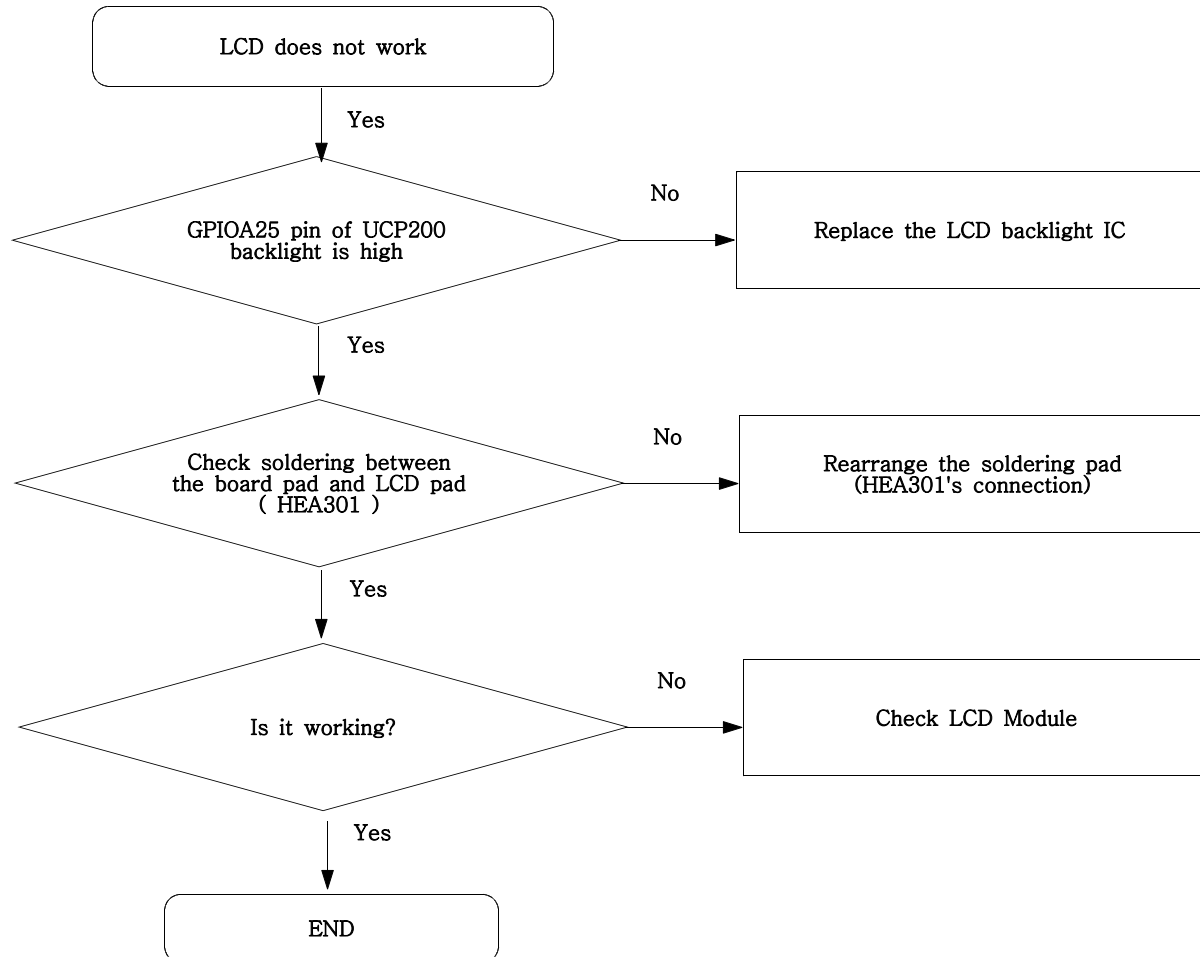


## AUDIO AMP

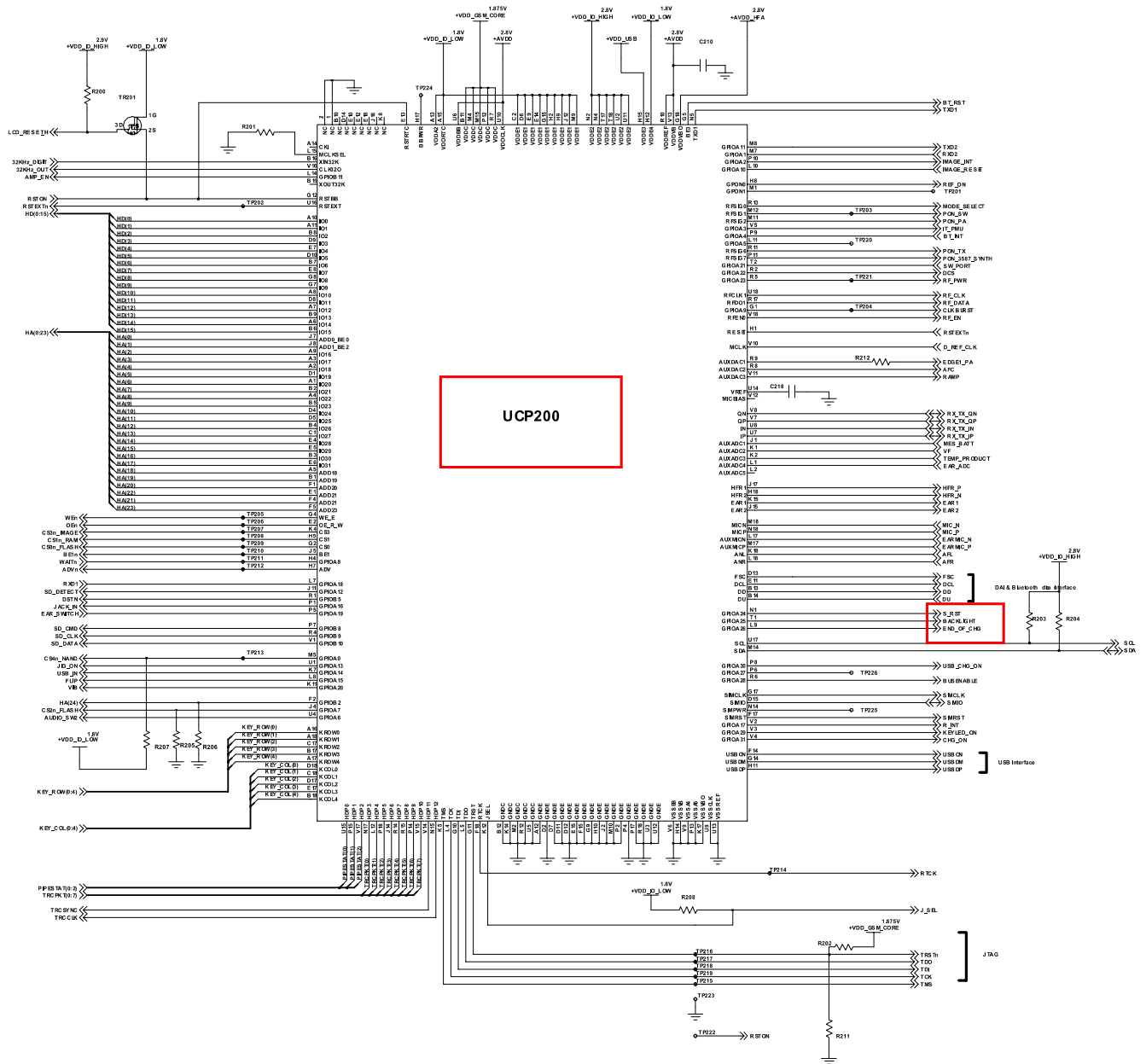
## LCD CONN.

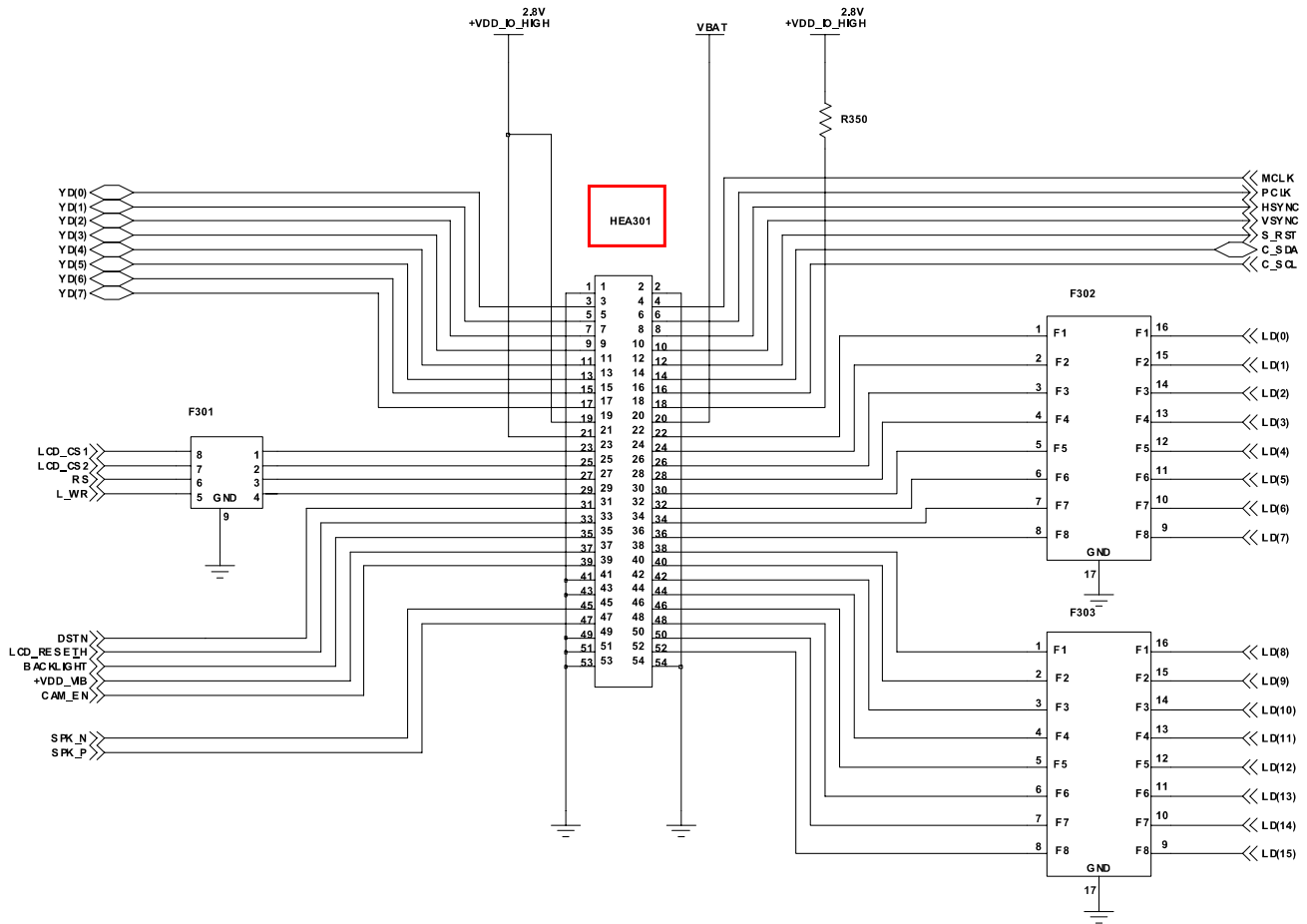


## 9-9. LCD Part

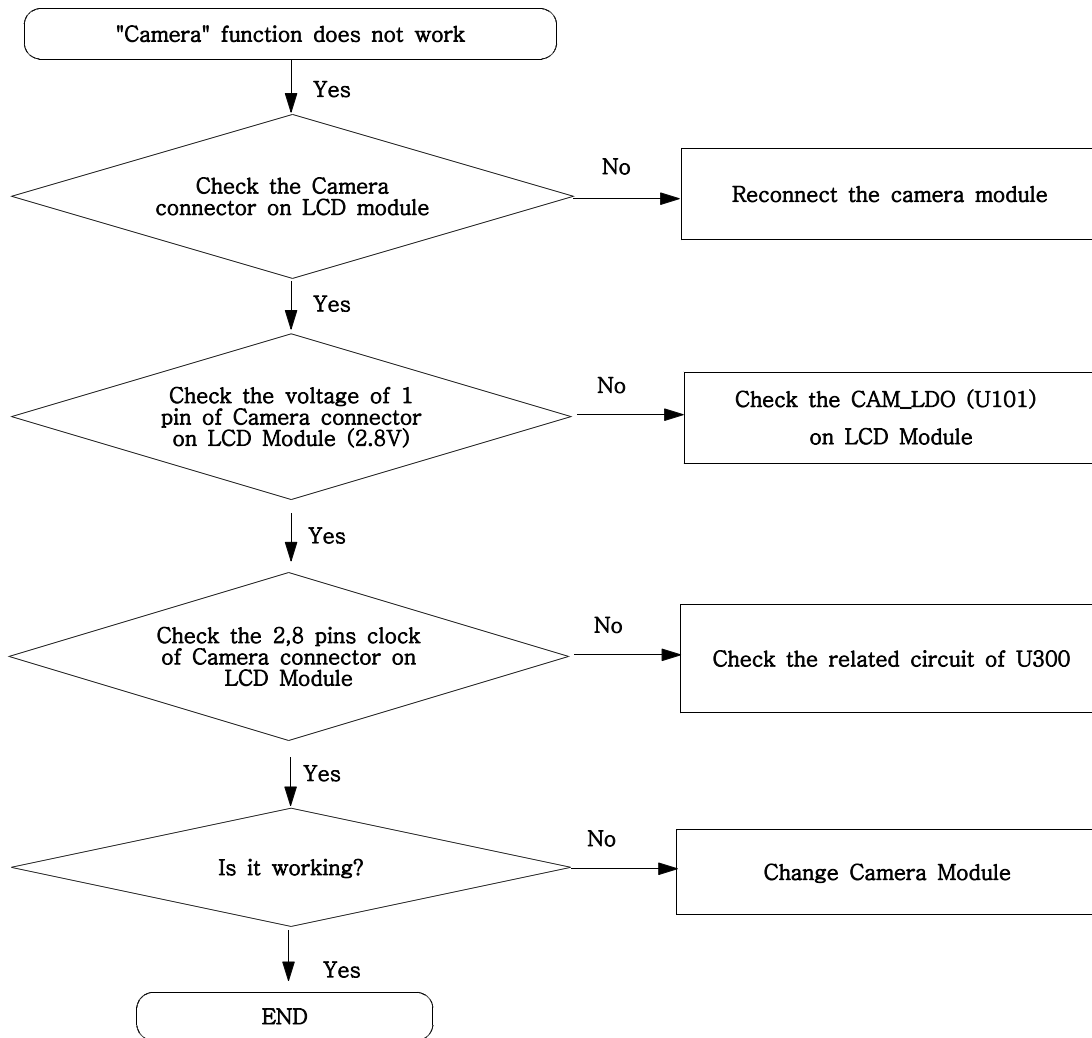


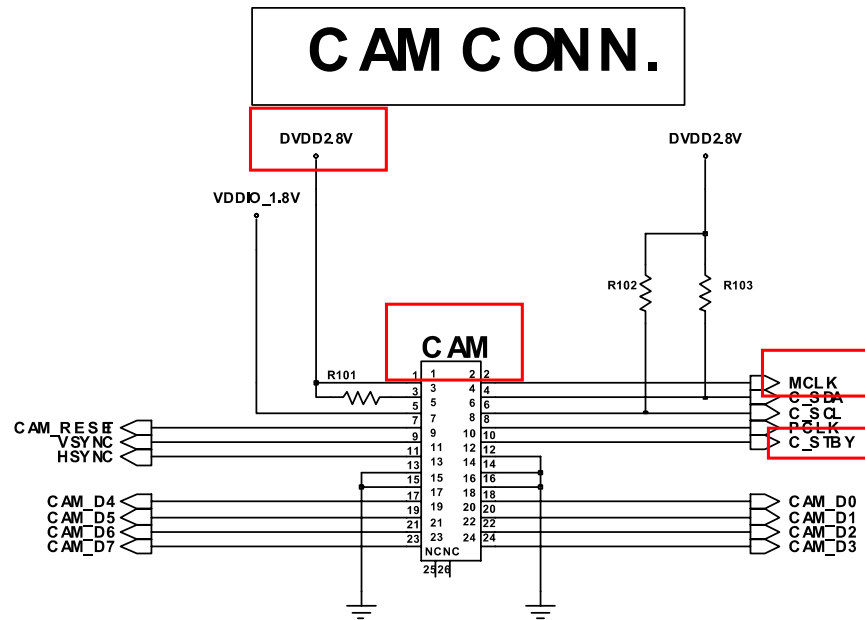
# Flow Chart of Troubleshooting

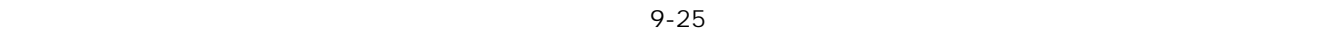




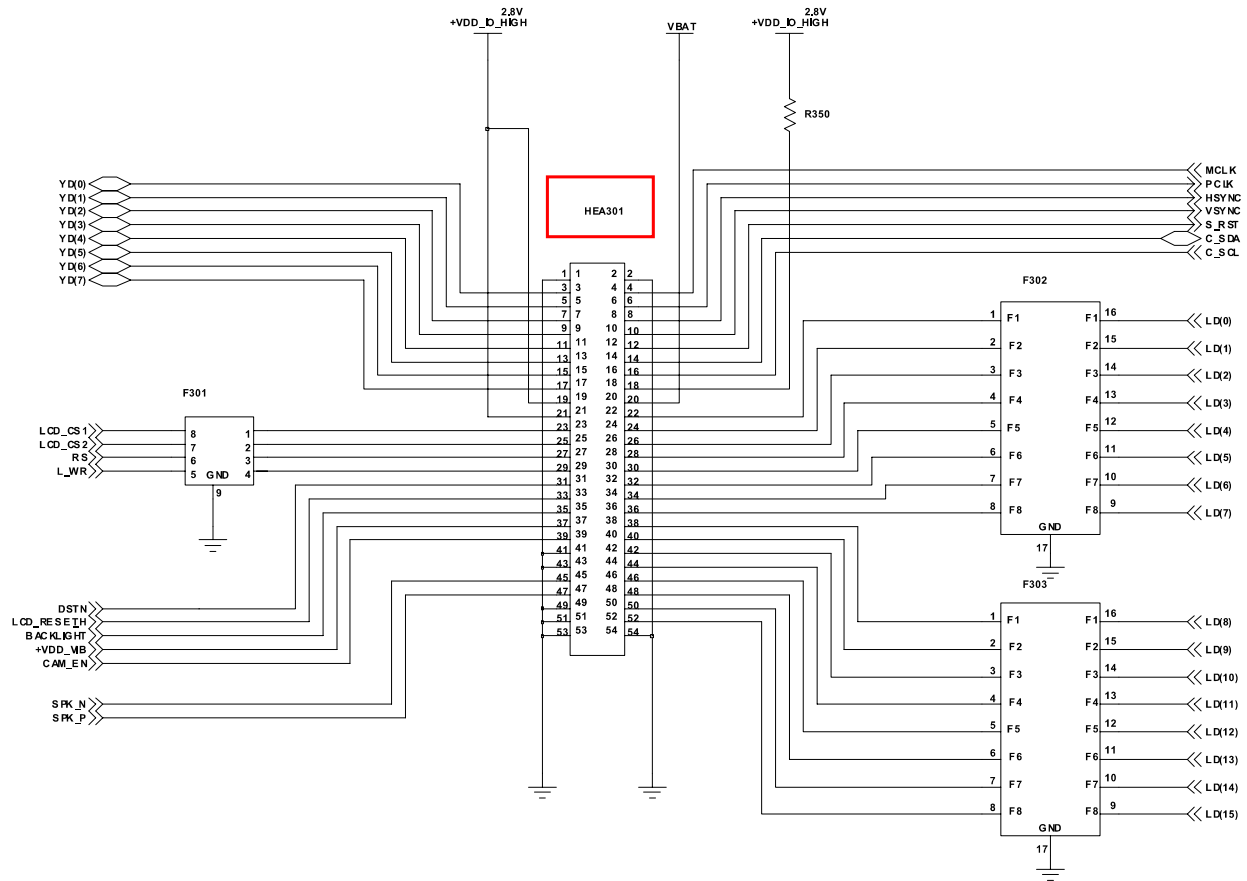
## 9-10. Camera part



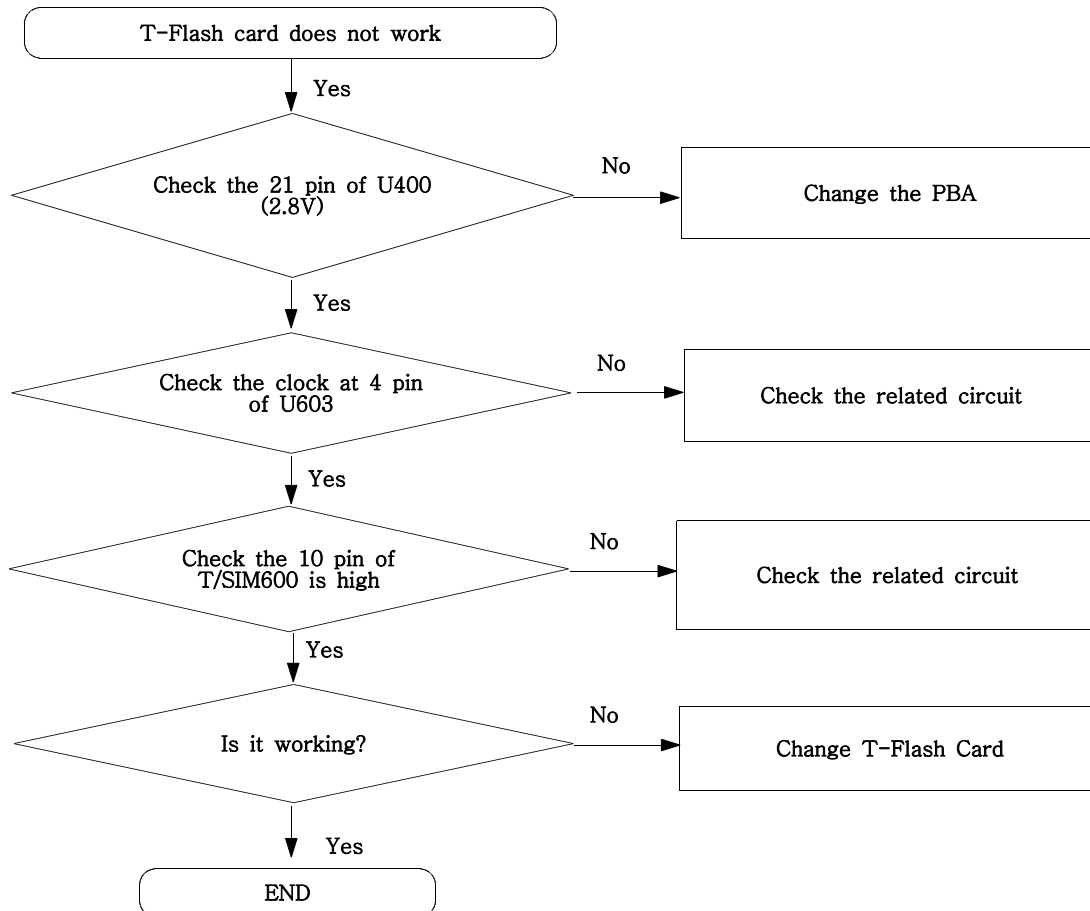




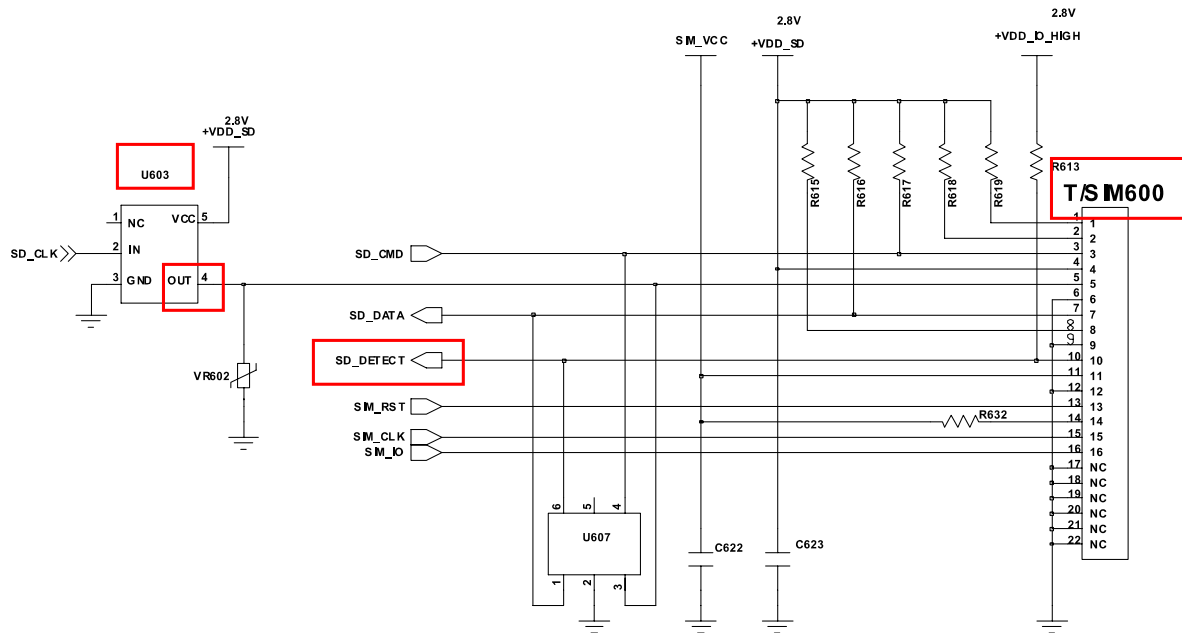




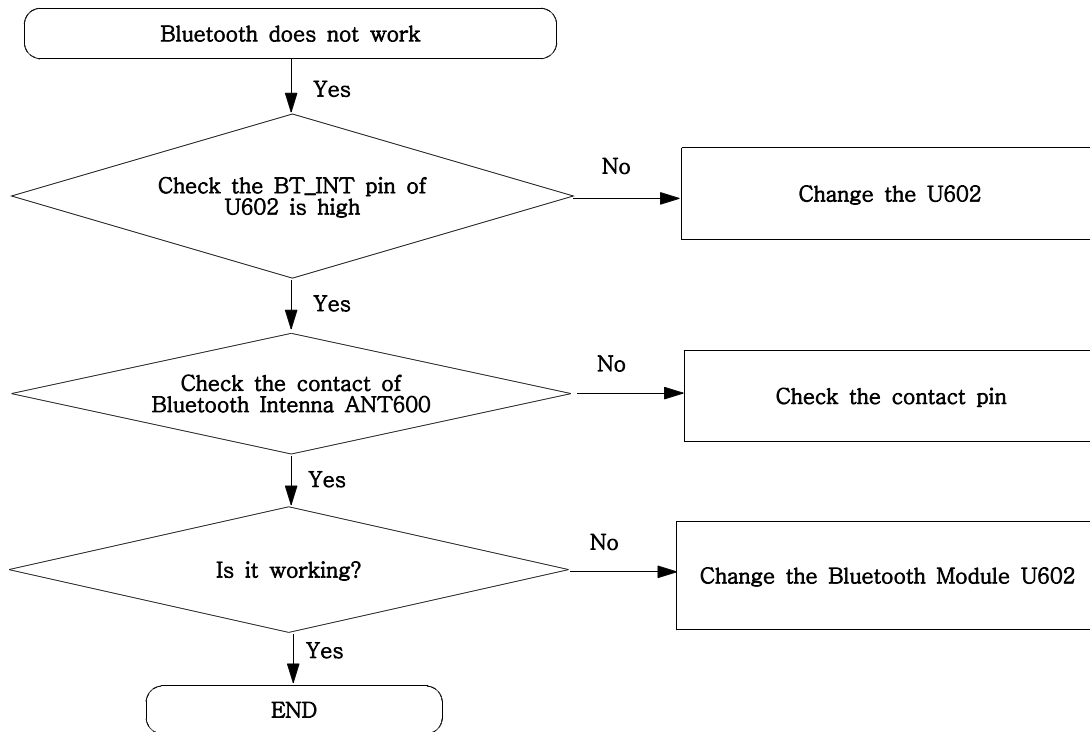
## 9-11. Trans Flash Card part

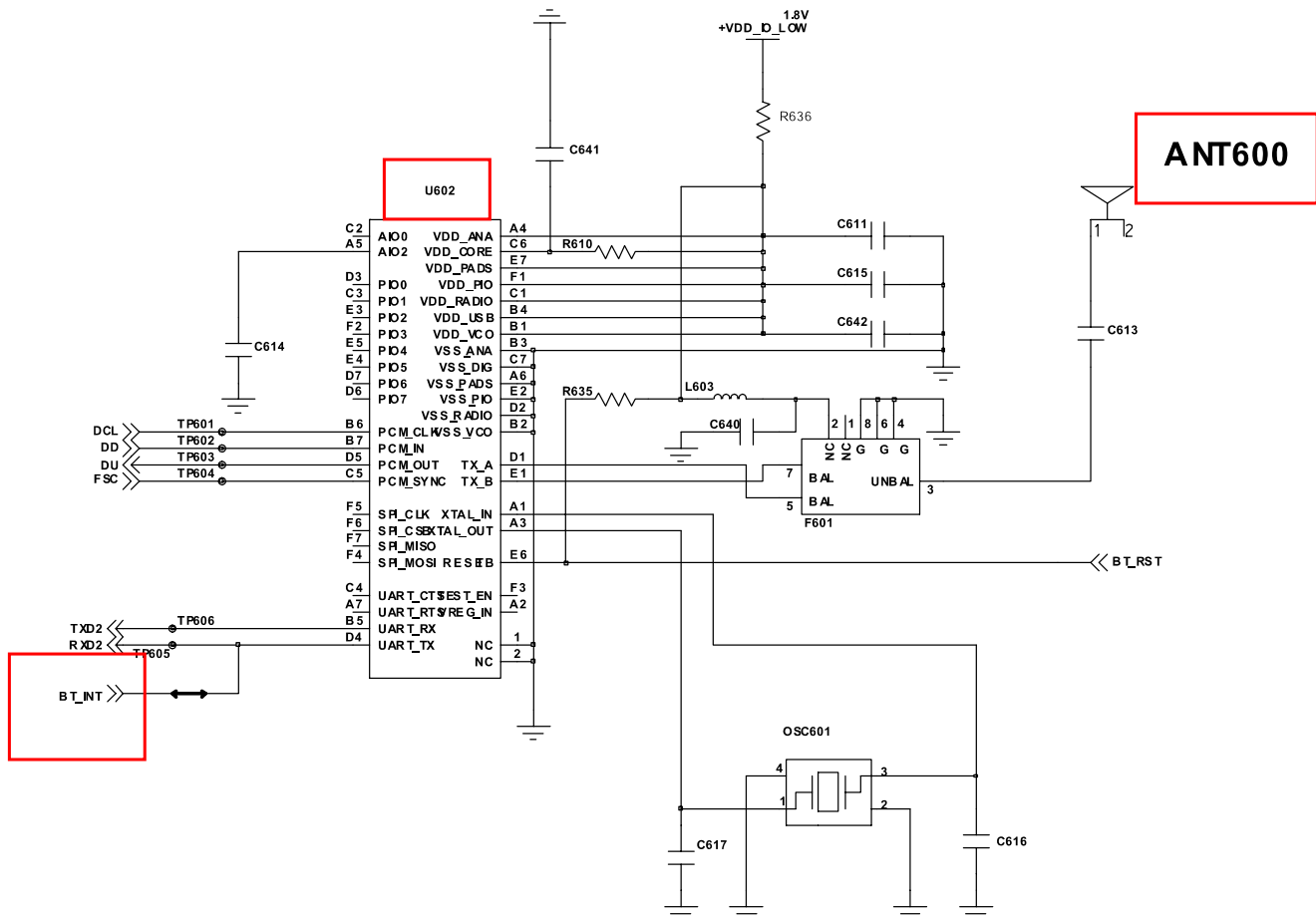




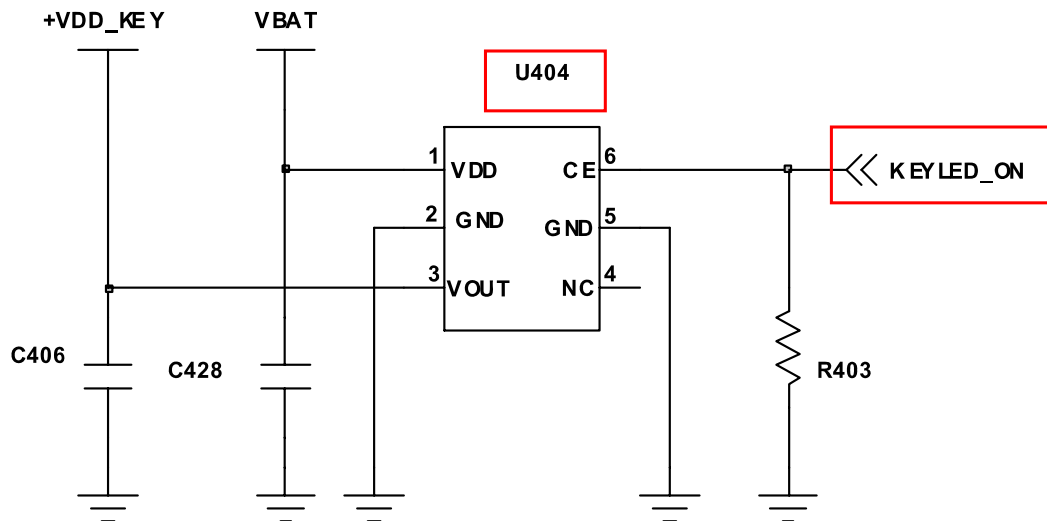
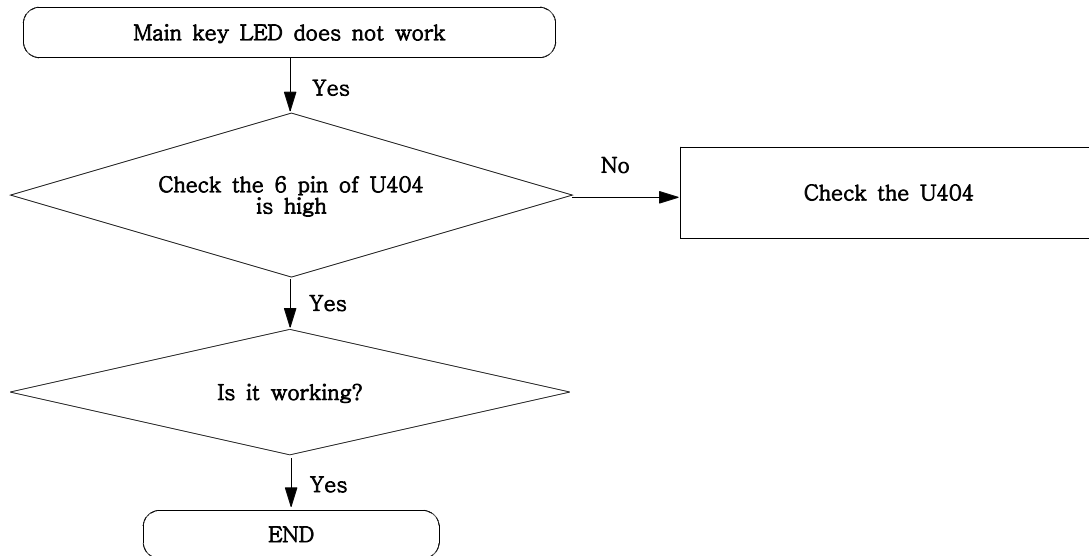


## 9-12. Bluetooth part

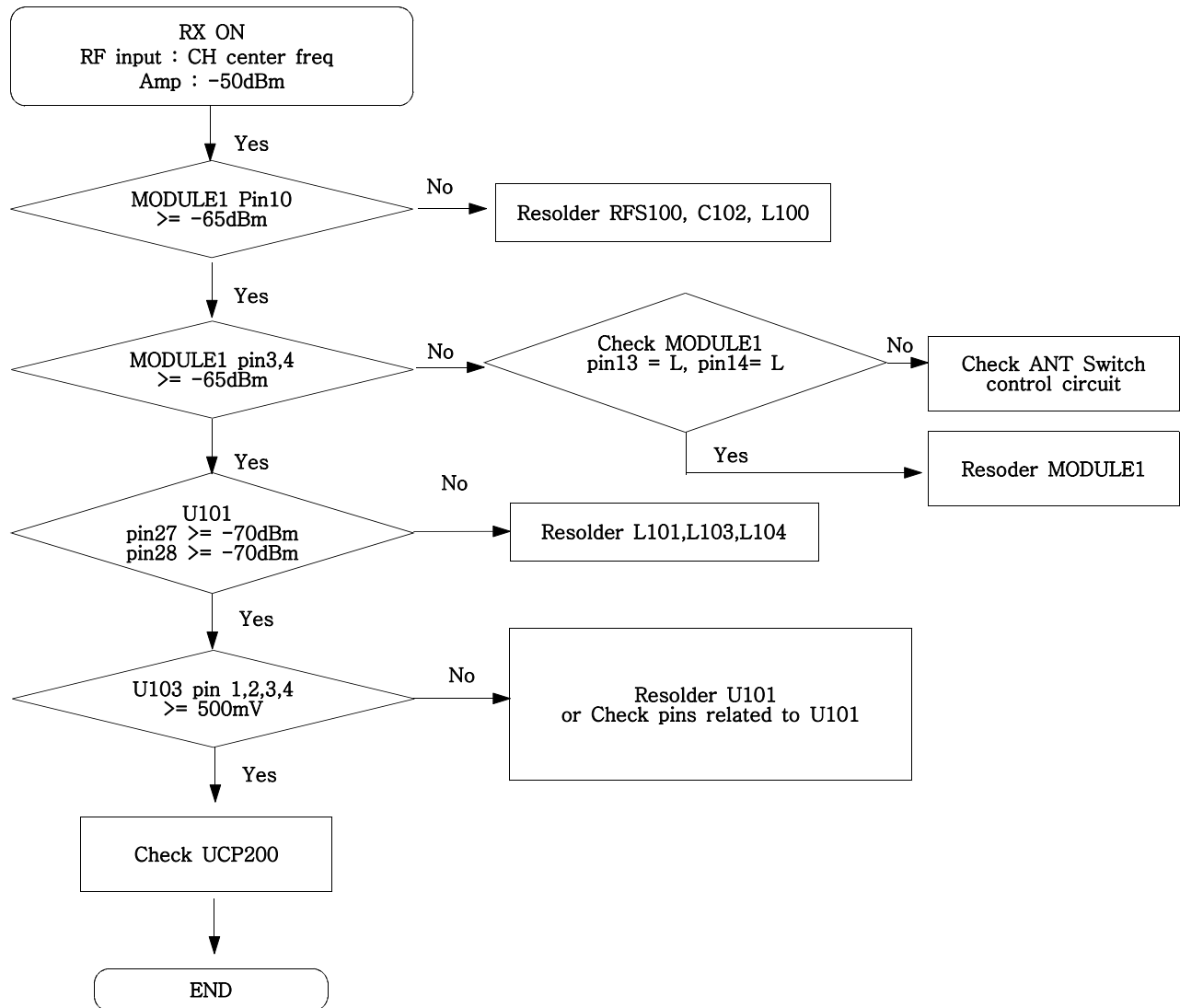




## 9-13. Main Key LED part

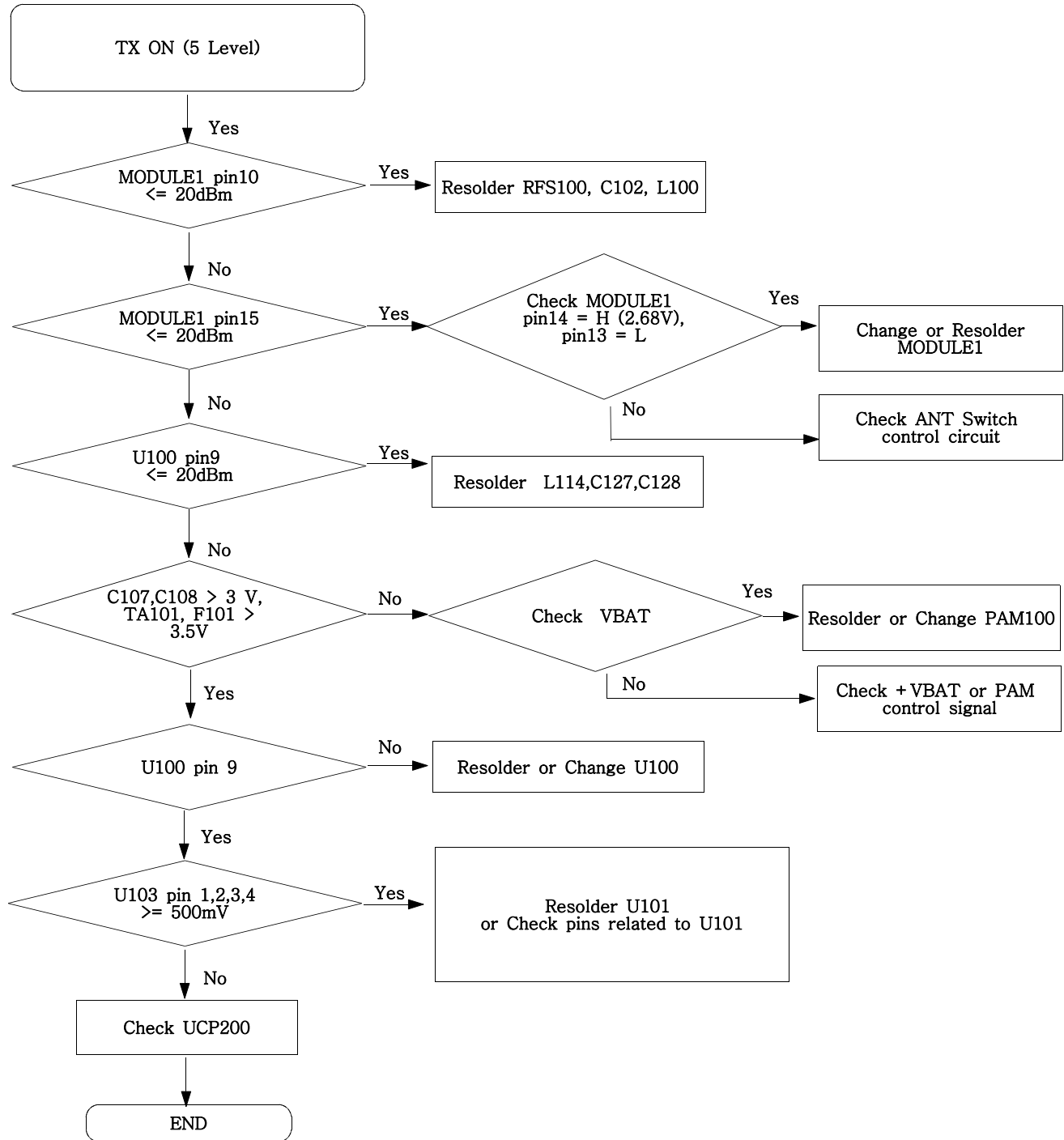


## 9-14. GSM900 Receiver

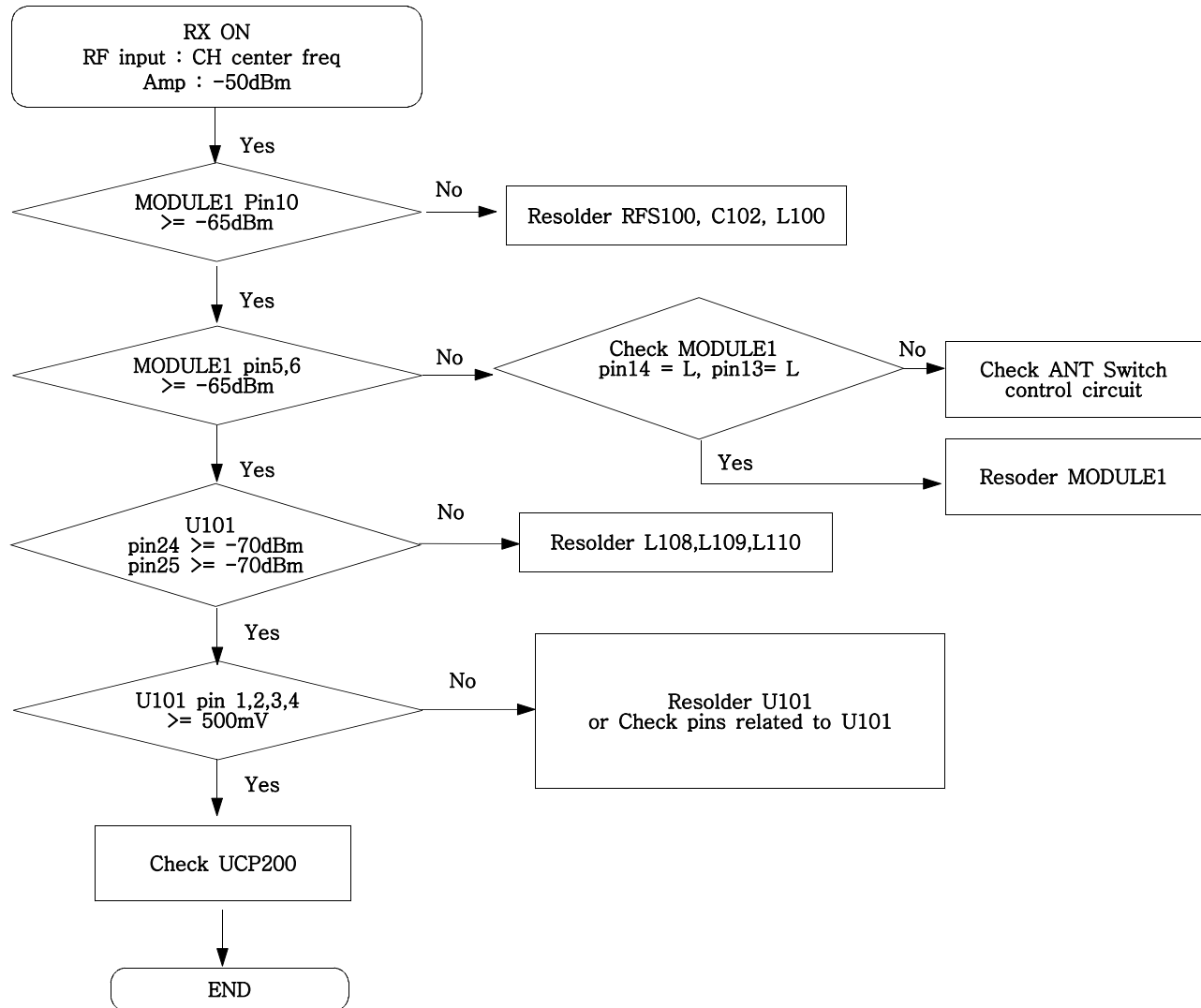




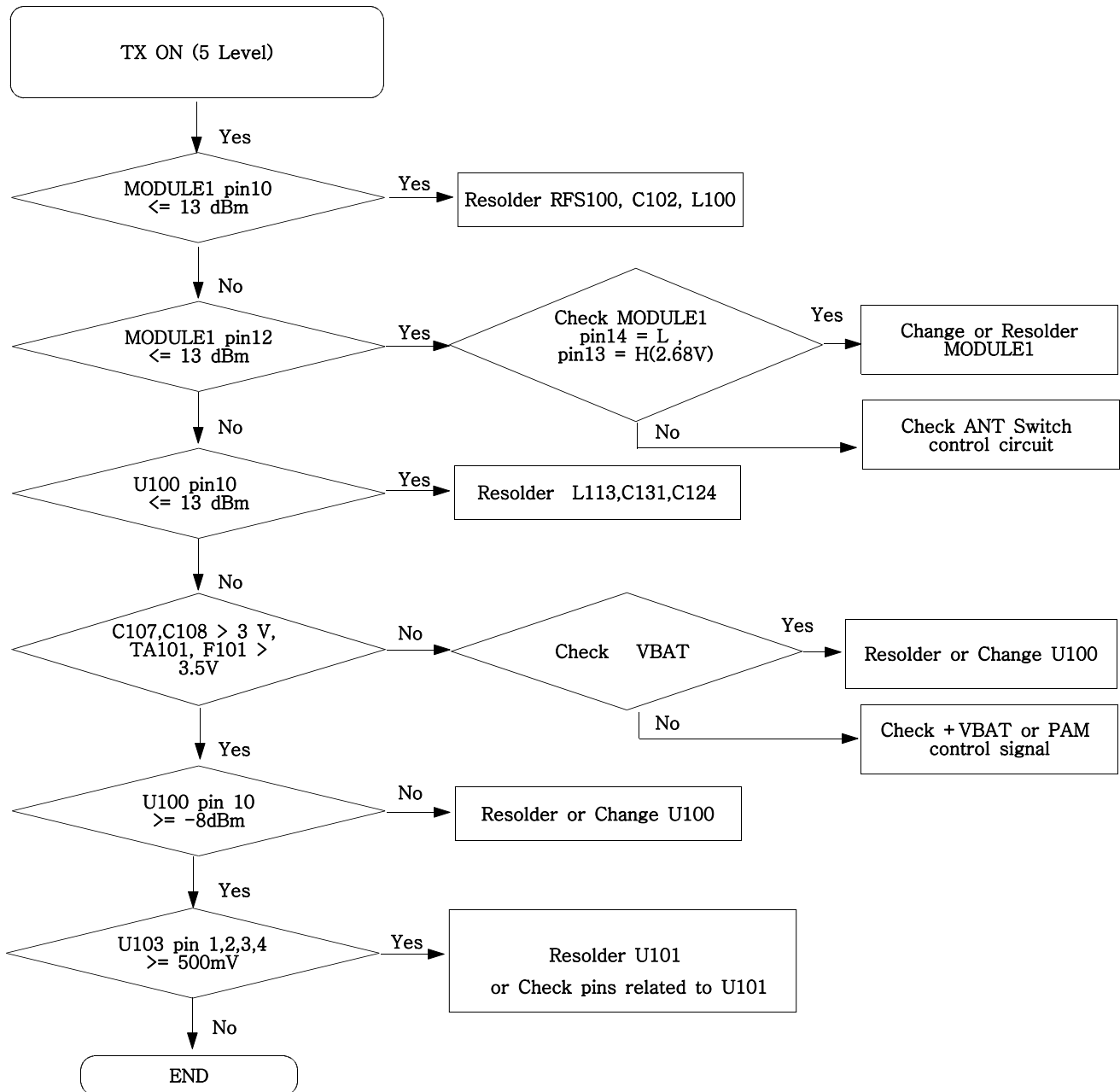
## 9-15. GSM900 Transmitter



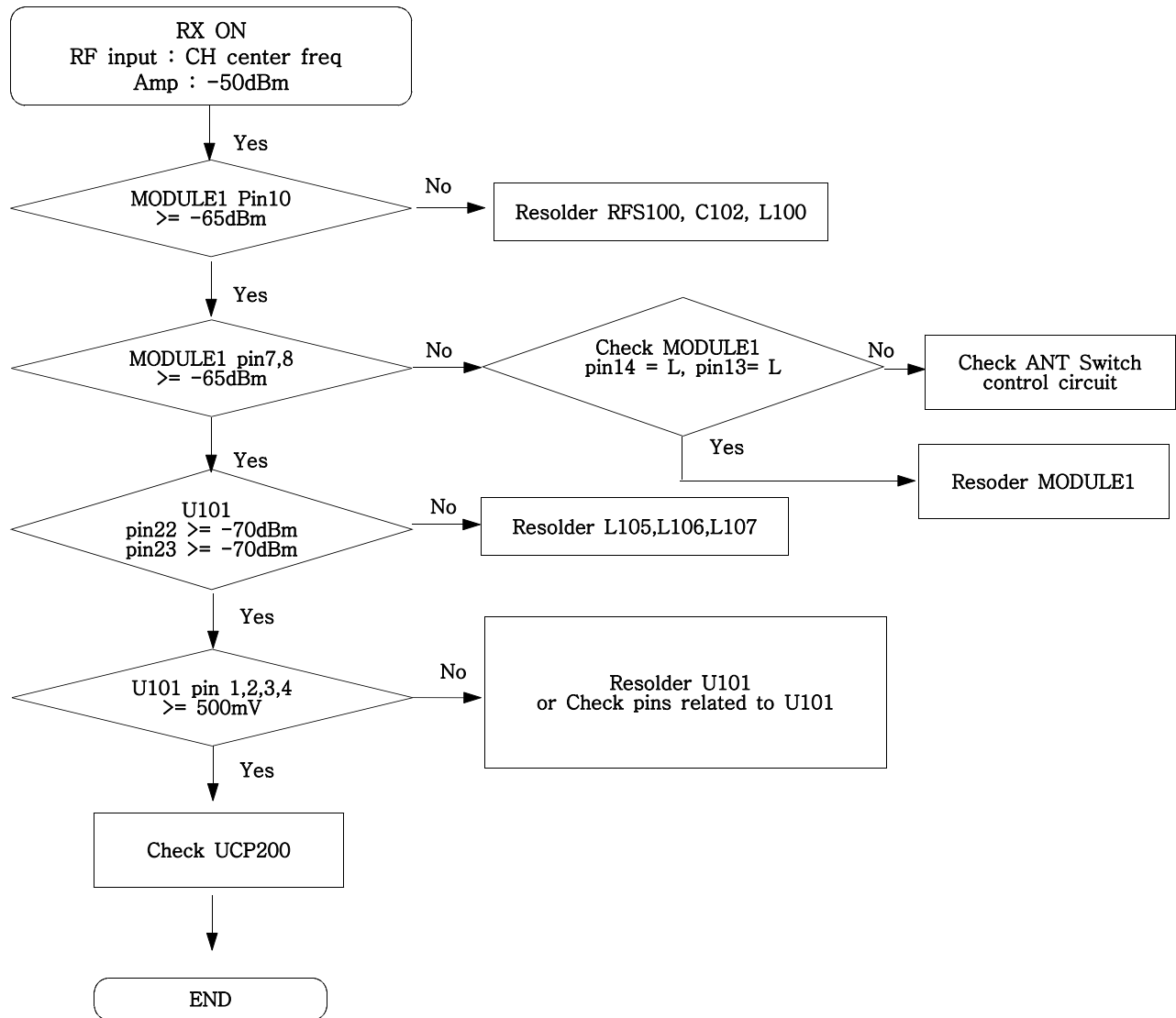
## 9-16. DCS Receiver

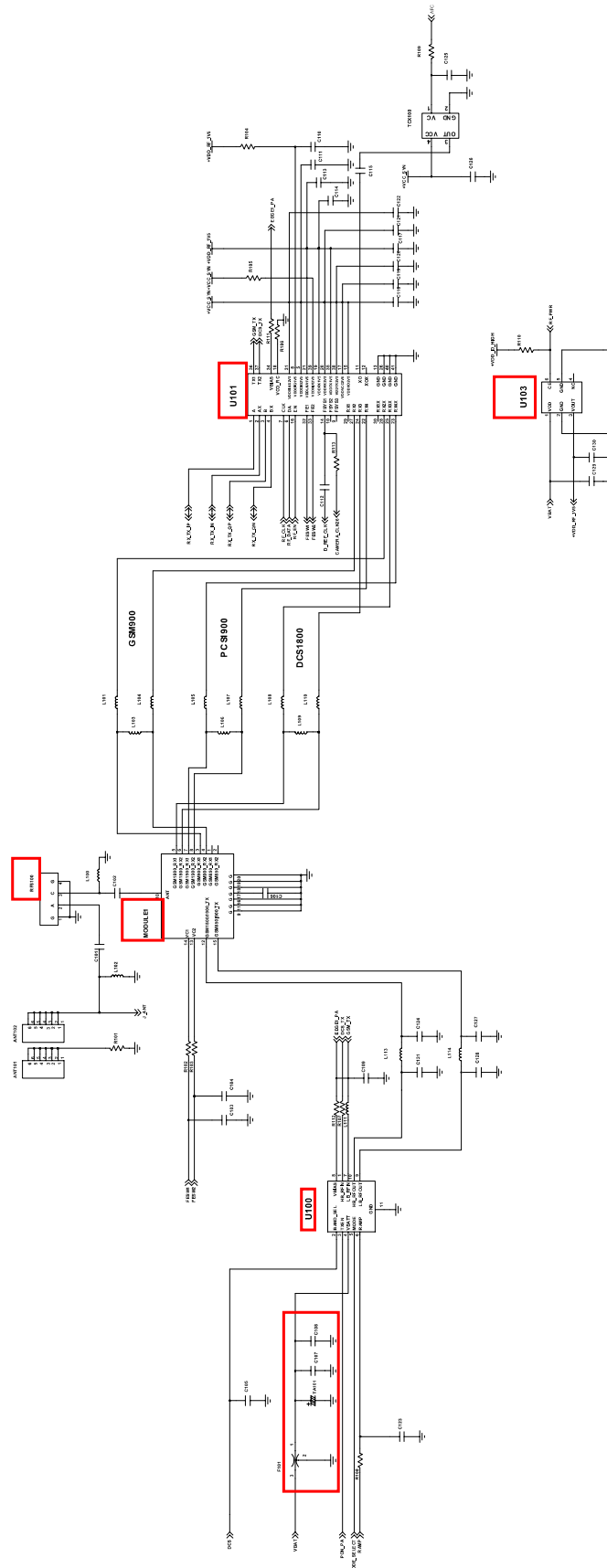


## 9-17. DCS/PCS Transmitter



## 9-18. PCS Receiver





---

## 10. Reference data

---

### Reference Abbreviate

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



**SAMSUNG  
ELECTRONICS**

