

SAMSUNG

GSM TELEPHONE SGH-E740S

SERVICE *Manual*

GSM TELEPHONE



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**SAMSUNG
ELECTRONICS**



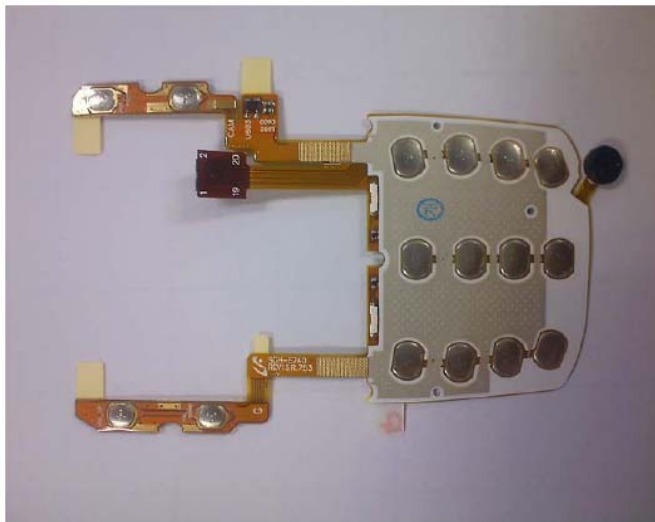
GSPN (Global Service Partner Network)

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

1. Safety Precautions

1-1. Repair Precaution

- Repair in Shield Box, during detailed tuning. Take specially care of tuning or test, because the specification of cellular phone is sensitive for surrounding interference(RF noise).
- Be careful to use a kind of magnetic object or tool, because performance of parts is damaged by the influence of magnetic force.
- Surely use a standard screwdriver when you disassemble this product, otherwise screw will be worn away.
- Use a thicken twisted wire when you measure level. A thicken twisted wire has low resistance, therefore error of measurement is few.
- Repair after separate Test Pack and Set because for short danger (for example an overcurrent and furious flames of parts etc) when you repair board in condition of connecting Test Pack and tuning on.
- Take specially care of soldering, because Land of PCB is small and weak in heat.
- Surely tune on/off while using AC power plug, because a repair of battery charger is dangerous when tuning ON/OFF PBA and Connector after disassembling charger.
- Don't use as you pleases after change other material than replacement registered on SEC System. Otherwise engineer in charge isn't charged with problem that you don't keep this rules.
- Background color for Navi-keys and 3*4 key pad of silver-coloured mold is 'silver'. Due to its background color, white LED causes problems in daytime discrimination and brightness uniformity. By applying Sky-blue LED, advantages both in discrimination and design can be satisfied.
- Be careful to classify
SUB PBA: Print "**BLUE LED**" on the backside
3*4 KEY FPCB: Stamp "**BLUE LED**" on the frontside (**see picture attached**)
- Colours of SGH-E740(Total of 8): Metal silver, Black dynamic, Light pink, Blue, Hot pink, Blue green, Yellow green, Emerald green.
- Among above eight, **only Metal silver needs Sky-blue LED**, while the rest stay with White LED



WHITE LED



BLUE LED

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

	GSM 900 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	4 (max +33dBm)	4 (max +33dBm)	1 (max +30dBm)	1 (max +30dBm)
Sensitivity	-102dBm	-102dBm	-100dBm	-100dBm
TDMA Mux	8	8	8	8
Cell Radius	35Km	35Km	2Km	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. Operation Instruction and Installation

Main Function

- Video recording & Messaging
- Mobile Tracker, My Menu, Living world
- Built-In 2 Mega-Fixel Digital Camera
- MP3 Player(Music Library) and Java Games
- MP3, AAC+, MP4, 3GPP Decoding(Off-line mode)
- WMDRM(Windows Media DRM 10 for Portable Devices)
- MTP(Media Transfer Protocol): Easy & Fast PC sync
- Hands-free speaker phone function
- Bluetooth v.2.0 + EDR / USB v.2.0(B/T Headset)
- FM Radio (FM radio recording: MP3 format support)
- Organizer feature provides Calendar, Alarms, Calculator, and Converter
- Multimedia Messaging Service-send and receive text messages with animation and sound
- Text Messaging Service-send and receive alphanumeric messages and Email
- Media Net Internet browsing
- Support 64 note polyphonic ringtones, MP3 ringtones, and AAC ringtones(Madwave)
- Tri-Band(900/1800/1900) EDGE Support
- WAP 2.0 / Java MIDP 2.0
- Extended Memory (microSD slot)
- Black GUI / UI

4. Array course control

4-1. Software Adjustments

Test Jig (GH80-03306A)



Test Cable (GH39-00499A)



Power Supply Cable



Serial Cable(CSA LL64151-A)



Data Cable



4-2. Software Downloading

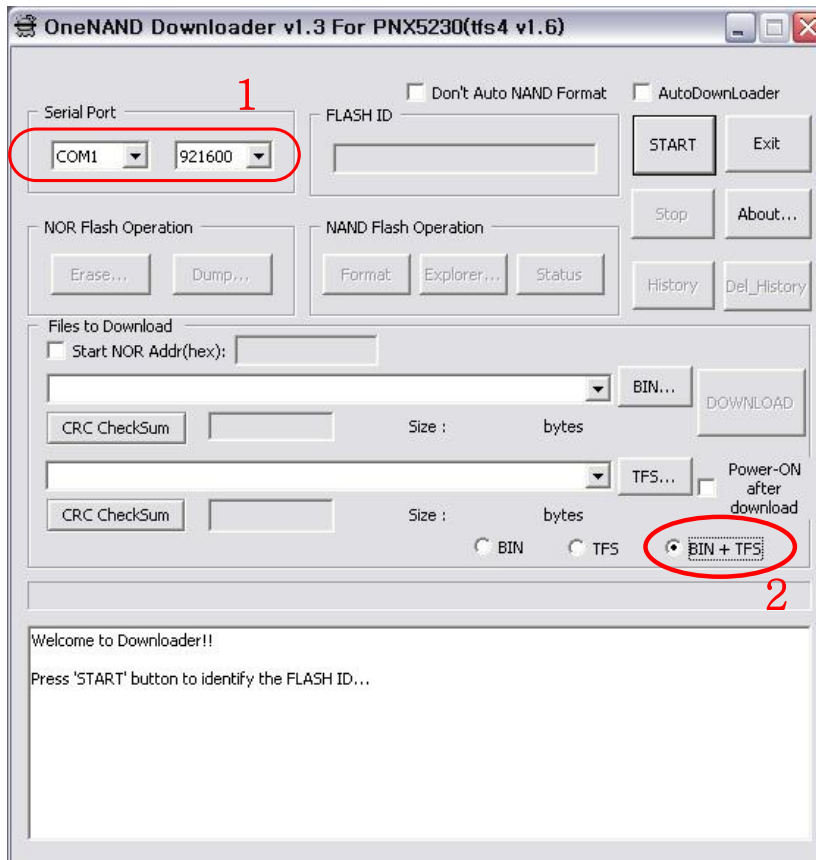
4-2-1. Pre-requisite for Downloading

- Downloader Program([OneNAND Downloader v1.3 For PNx5230\(tfs4 v1.6\).exe](#))
- E740 Mobile Phone
- Data Cable
- Binary file, TFS file

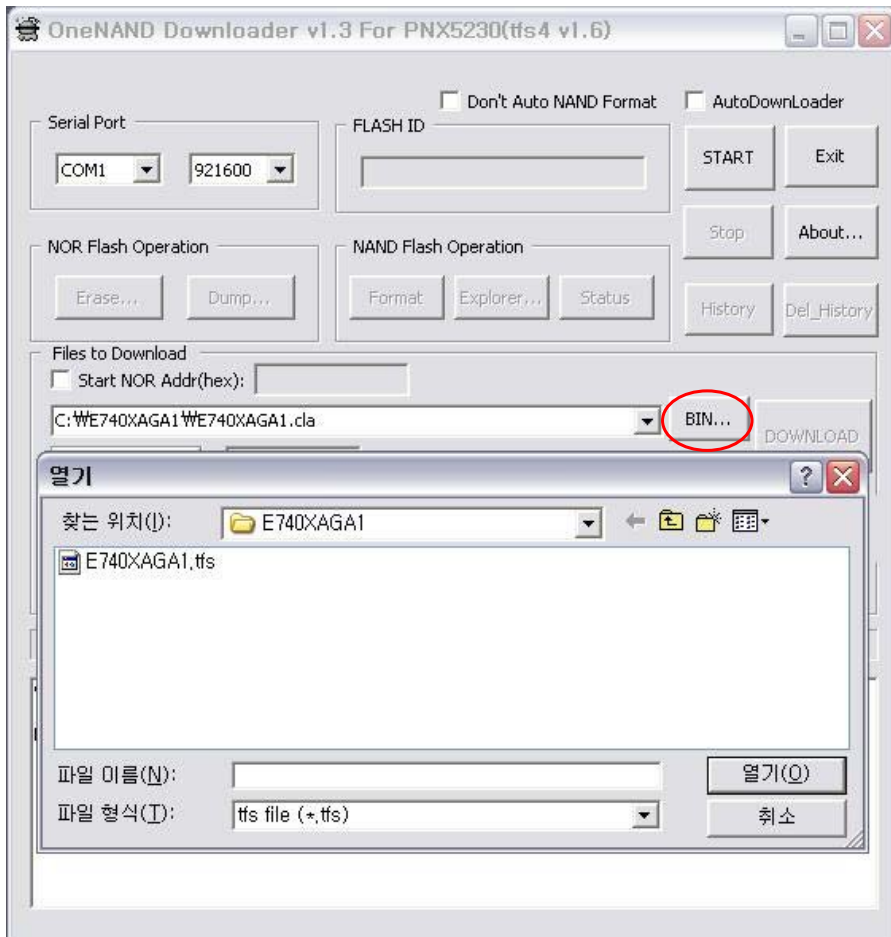
4-2-2. S/W Downloader Program

■ Load the binary download program by executing the "[OneNAND Downloader v1.3 For PNx5230\(tfs4 v1.6\).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'

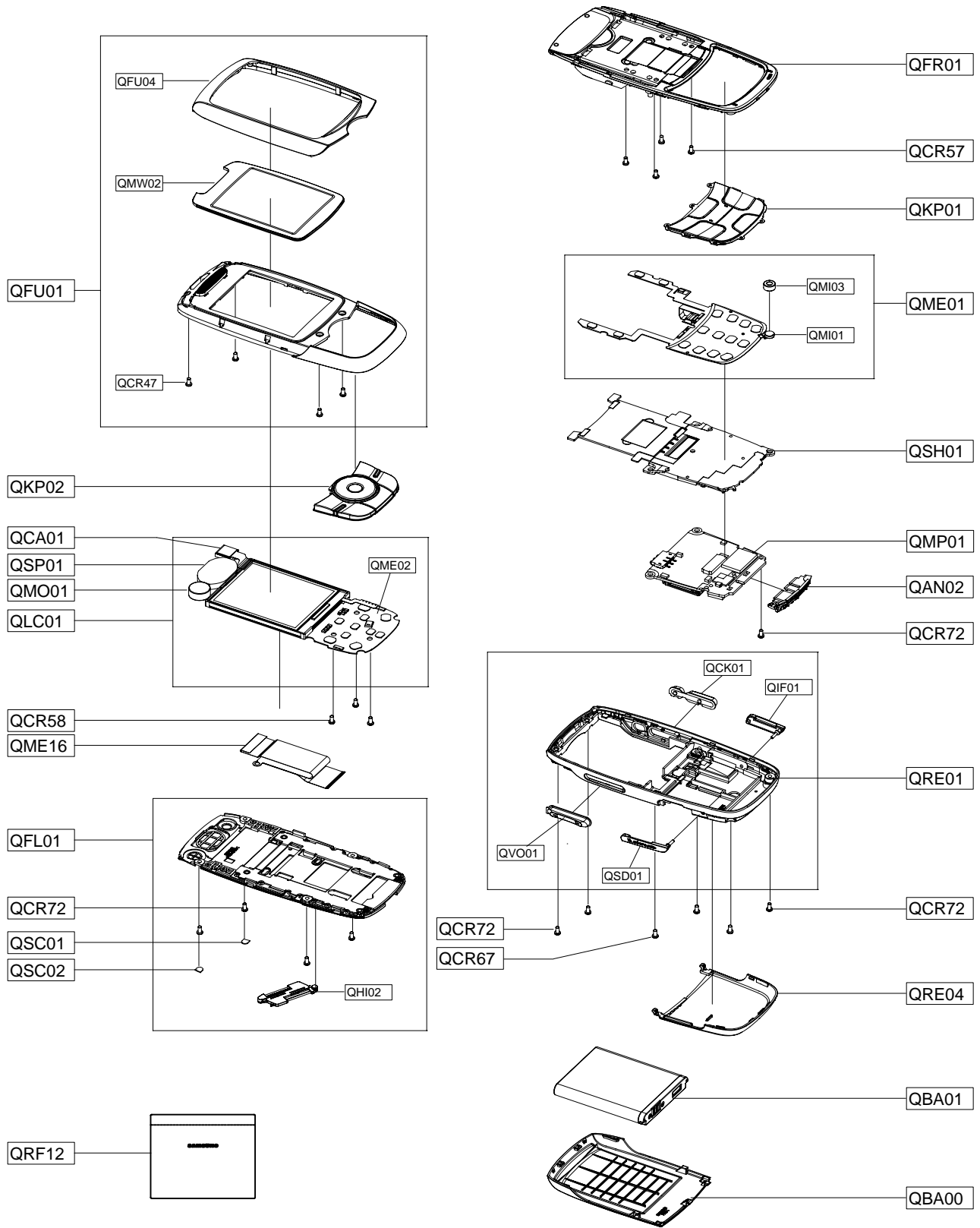


3. Select the file(s) what you want to download



5. Exploded View/Disassembly&Assembly Instructions

5-1. Cellular phone Exploded View




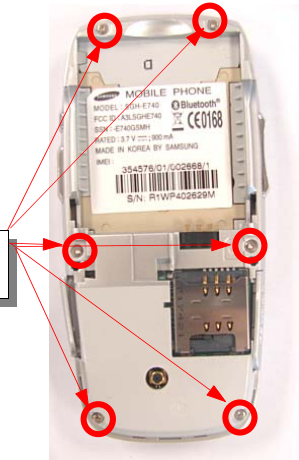

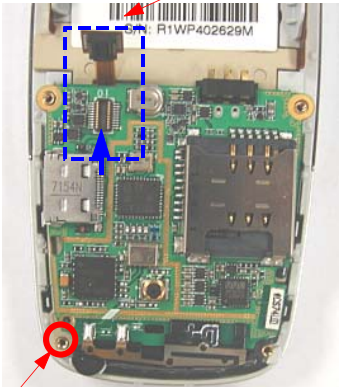
5-2. Cellular phone Parts list

Design LOC	Description	SEC CODE
QAN02	ANTENNA-SGH E740	GH42-01139A
QBA00	PMO-COVER BATTERY V2	GH72-37897A
QBA01	INNER BATTERY PACK-880MAH , BL	GH43-02772A
QCA01	CAMERA MODULE	GH59-04088A
QCK01	PMO-CAMERA KEY V3	GH72-39445A
QCR47	SCREW-MACHINE	6001-001695
QCR57	SCREW-MACHINE	6001-002001
QCR58	SCREW-MACHINE	6001-001870
QCR67	SCREW-MACHINE	6001-002083
QCR72	SCREW-MACHINE	6001-002051
QCR72	SCREW-MACHINE	6001-002051
QFL01	ASSY CASE-SLIDE LOWER	GH98-03666A
QFR01	ASSY CASE-FRONT	GH98-03668A
QFU01	ASSY CASE-UPPER DECO	GH98-05929A
QFU04	NDC-DECO UPPER V2	GH71-07423A
QHI02	ASSY HINGE-ACTUATOR BODY	GH98-04898A
QIF01	PMO-COVER IF V3	GH72-39152A
QKP01	ASSY KEYPAD-MAIN(TEC/SIL)	GH98-05021A
QKP02	ASSY KEYPAD-(EU/SIL)	GH98-03671A
QLC01	ELA ETC-SGHE740 LCD MODULE(M/S	GH96-02637B
QME01	KEY FPCB-MAIN KEY PBA(S/BLU)	GH59-04751A
QME02	DOME SHEET-DOME SHEET 10KEY(SU	GH59-04291A
QME16	MEA-SLIDER FPCB KIT(E740)	GH97-07815A
QMI01	AS-MIC SVC	GH81-05445A
QMI03	AS-SCHF679 MIC RUBBER	GH81-06599A
QMO01	MOTOR DC-SGH E740	GH31-00306A
QMP01	PBA MAIN-SGHE740S	GH92-03648A
QMW02	PCT-COVER MAIN WINDOW	GH72-37012A
QRE01	ASSY CASE-REAR	GH98-03669A
QRE04	PMO-DECO REAR V2	GH72-37898A
QRF12	ASSY ACCE-EARPHONE CASE	GH98-05770A
QSC01	RMO RUBBER-SCREW CAP L	GH73-09822A
QSC02	RMO RUBBER-SCREW CAP R	GH73-09823A
QSD01	PMO-COVER MICRO SD V2	GH72-37902A
QSH01	ASSY BRACKET-SHIELD CAN	GH98-04897A
QSP01	SPEAKER	3001-002120
QVO01	PMO-VOLUME KEY V3	GH72-39444A

Description	SEC CODE
CBF INTERFACE-DLC,X830,SIL,PCB	GH39-00720B
ADAPTOR-SGHE690,SIL,UK,A_TYPE	GH44-01362B
LABEL(R)-WATER SOAK	GH68-09361A
AS-SGHE740 CAMERA TAPE	GH81-06677A
VINYL-BOHO WHEEL TOP	GH74-33987A
TAPE INSU	GH74-33431A
MPR-ELEC TAPE	GH74-19116A
TAPE GASK	GH74-24020A
TAPE INSU	GH74-32907A
TAPE ELEC-LCD MODULE	GH74-33381A
TAPE INSU-KEY FPCB L	GH74-33780A
TAPE INSU-KEY FPCB R	GH74-33781A
BAG PE	6902-000634
LABEL(P)-IMEI	GH68-01335D
LABEL(R)-MAIN(EU)	GH68-14766A
BOX-UNIT(SEA)	GH69-05392C
CUSHION-CASE(UK/XSA_NEW)	GH69-05654A
IC-MEMORY CARD	1109-001352
BAG ZIPPER	6902-000683
S/W CD-SGHE740 PC LINK CD	GH46-00452A
MANUAL USERS-SEA ENGLISH	GH68-15060A
CONNECTOR-ADAPTOR	3719-001319
VINYL-BOHO MAIN WINDOW 2	GH74-33552A
EARPHONE-AAEP452SSE,M20,SIL,EU	GH59-04781A

5-3. Disassembly and Assembly Instructions

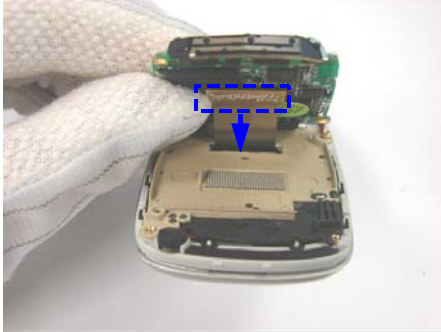
5-3-1. Disassembly

<p>1</p> <p>1) Open the earjack cover downward. 2) Undo a hook beside earjack cover with a disassembly tool and disassemble the rear cover in the direction which the arrow points to.</p> 	<p>2</p> <p>1) Unscrew 6 rear screws.</p>  <p>1) Unscrew screws.</p>
<p>1) Take care of not scratching on the rear cover. 2) Use a disassembly tool.</p> <p>1) Take care of not scratching on the rear. 2) Use a cruciform screwdriver.</p>	
<p>3</p> <p>1) Undo a hook in the middle of rear with a disassembly tool and disassemble the rear in the direction which the arrow points to.</p> 	<p>4</p> <p>1) Unscrew the screw at the bottom of PBA. 2) Pull out the key FPCB connector at the top of PBA.</p>  <p>Unscrew a screw.</p> <p>Pull out the connector.</p>
<p>1) Take care of not scratching on the rear and the front. 2) Use a disassembly tool.</p> <p>1) Use a cruciform screwdriver.</p>	

5

1) Pull out the LCD connector raising a PBA by your own hand.

Pull out the connector



6

1) Take off volume key FPCB and camera key FPCB outward from the front.
2) Take off a shield can from the front.



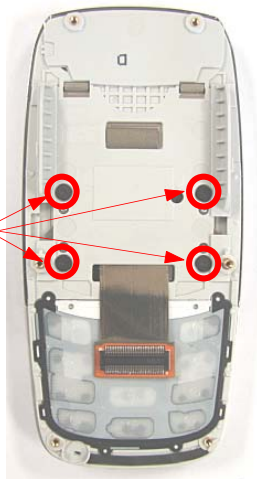
1) Be aware of not damaging on FPCB.

1) Be aware of not damaging on camera key and volume key FPCBs.

7

1) Unscrew 4 front screws.

Unscrew screws.

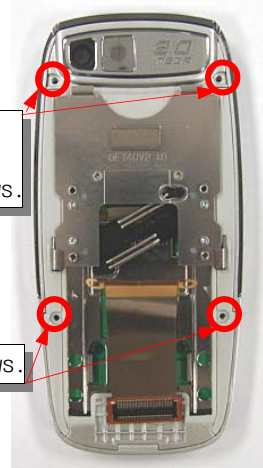


8

1) Remove 2 screw caps at the top of the slide lower with tweezers.
2) Unscrew 4 slide lower screws.

1) Remove screw caps.
2) Unscrew screws.

1) Unscrew screws.

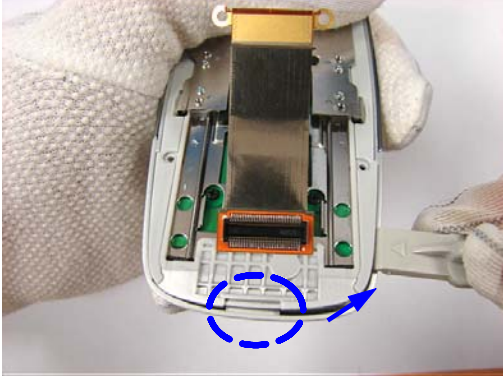


1) Take care of not scratching on the front.
2) Use a cruciform screwdriver.

1) Take care of not scratching on the slide lower.
2) Use a cruciform screwdriver.
3) When you remove screw caps, use tweezers.

9

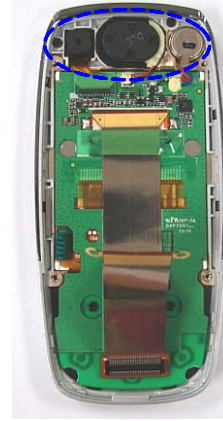
1) Undo a hook at the bottom of slide lower with a disassembly tool and disassemble the rear in the direction which the arrow points to.



1) Take care of not scratching on the slide upper and lower.
2) Use a disassembly tool.

10

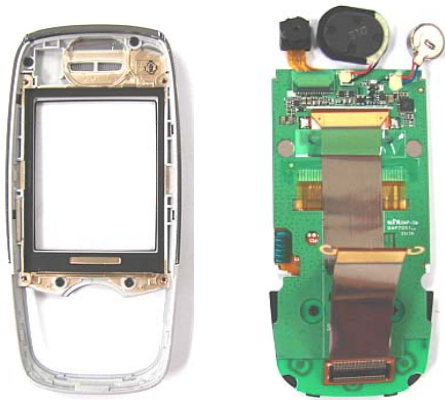
1) Take off camera, speaker and motor.



1) Pay special attention to not scratching on FPCB and damaging on nearby components.

11

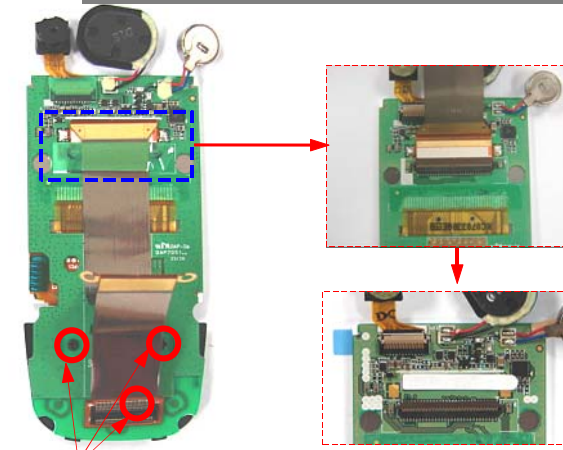
1) Take away SUB PBA from the slide upper.



1) Be careful of not scratching on LCD.
2) Be aware of dust inside the main window of slide upper.

12

1) Remove a green insulation tape.
2) Remove soldered joints on both sides of FPCB.
3) Take an FPCB off.
4) Unscrew 3 screws at the bottom of SUB PBA.



1) Unscrew screws.

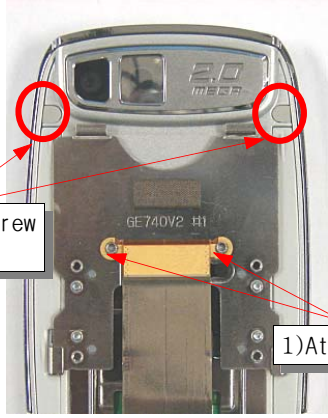
1) Pay special attention to surrounding components when using a soldering iron.
2) Use a cruciform screwdriver.

5-3-2. Assembly

<p>1</p> <ol style="list-style-type: none"> 1) Adhere a conductivity tape above the zip connector. 2) Insert an FPCB into the zip connector and solder both sides of FPCB. 3) Put a green insulation tape on FPCB standing on the white silk line. 4) Tighten 3 screws with a SUB keypad. <p>4) Tighten screws.</p>	<p>2</p> <ol style="list-style-type: none"> 1) Put a sub PBA on slide upper. 2) Make camera, speaker and motor reach safe. <p>*Attention!! Let motor wire be inside a groove() surely.</p>
<p>1) Pay special attention to not scratching on FPCB and damaging on nearby components.</p>	<p>1) Pay special attention to not scratching on FPCB. 2) Be aware of dust inside the main window of slide upper.</p>
<p>3</p> <ol style="list-style-type: none"> 1) After putting slide hinge up, insert slide FPCB into the hole.(1) 2) Put the top of slide lower into the hook first.(2) 3) Press down 5 hooks of slide lower.(3) <p>1) Tighten screws.</p>	<p>4</p> <ol style="list-style-type: none"> 1) Tighten 4 screws. <p>1) Tighten screws.</p>
<p>1) Pay special attention to not cracking on FPCB.</p>	<p>1) Use a cruciform screwdriver.</p>

5

- 1) Attach screw caps to screws at the top of slide lower in accord with the direction(right or left)
- 2) Attach slide FPCB to the slide hinge in accord with 2 holes on FPCB.




1)Attach screw caps.

1)Attach FPCB.

1) Make sure that you can distinguish between right and left screw caps.

6

- 1) Put front into the 2 hooks at the top of slide hinge.
- 2) Tighten 4 screws.
- 3) Put main keypad on front.



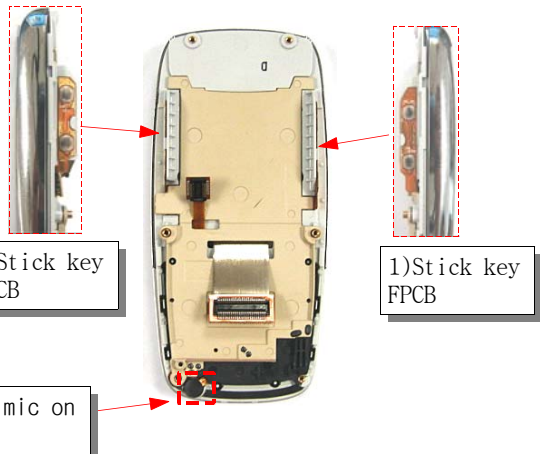
1)Insert 2 hooks into front.

2)Tighten screws.

1) Use a cruciform screwdriver.
2) After putting front into 2 hooks, tighten screws.

7

- 1) After putting a shield can on front, stick volume key and camera key FPCB to front.
- 2) Put mic on front in accord with guide.



1)Stick key FPCB

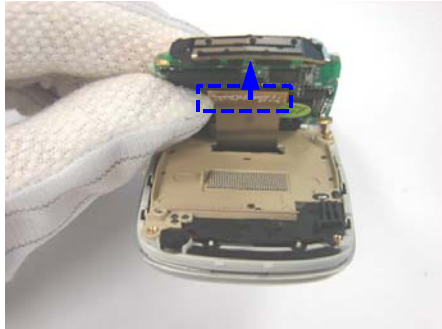
1)Stick key FPCB

2)Put mic on front

1) Be aware of not damaging on camera key and volume key FPCBs.
2) Make sure that mic is put into guide hole in good position.

8

- 1) Insert slide FPCB into the connector of main PBA.

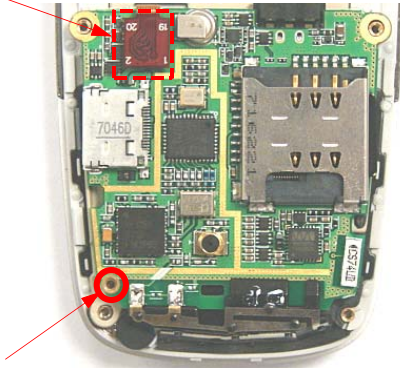


1) Make sure that slide FPCB and connector are assembled well.

9

- 1) Insert key FPCB into the connector of main PBA.
- 2) Tighten a screw at the bottom of main PBA.

1) Insert FPCB into the connector.



2) Tighten a screw.

10

- 1) Tighten 4 screws at the top and bottom of rear.
- 2) Tighten 2 screws in the middle of rear.



- 1) Make sure that key FPCB and connector are assembled well.
- 2) Use a cruciform screwdriver.

- 1) Make sure that you can distinguish between top-bottom and middle screws. Top and bottom screws are identical. But middle screws are different from them.
- 2) Use a cruciform screwdriver.

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- 1) Insert rear cover hook into rear hole.(1)
- 2) Press hooks from the right side of phone to the left side of that.(2)



- 1) Be careful of not scratching on a rear cover and a rear.

6. MAIN Electrical Parts List

Design LOC	Description	SEC Code	STATUS
ANT102	ANTENNA-CHIP	4202-001275	SA
BAT400	BATTERY-LI(2ND)	4302-001181	SA
BTC500	HEADER-BATTERY	3711-006256	SA
C100	C-CER,CHIP	2203-005055	SA
C101	C-CER,CHIP	2203-005057	SA
C102	C-CER,CHIP	2203-000233	SA
C104	C-CER,CHIP	2203-000812	SA
C105	C-CER,CHIP	2203-000254	SA
C106	C-CER,CHIP	2203-000278	SA
C108	C-CER,CHIP	2203-005234	SA
C109	C-CER,CHIP	2203-000233	SA
C110	C-CER,CHIP	2203-000233	SA
C112	C-CER,CHIP	2203-001383	SA
C113	C-CER,CHIP	2203-000530	SNA
C114	C-CER,CHIP	2203-001432	SA
C115	C-CER,CHIP	2203-000812	SA
C116	C-CER,CHIP	2203-000438	SA
C117	C-CER,CHIP	2203-005482	SA
C118	C-CER,CHIP	2203-005482	SA
C119	C-CER,CHIP	2203-000438	SA
C120	C-CER,CHIP	2203-006399	SA
C121	C-CER,CHIP	2203-006399	SA
C122	C-CER,CHIP	2203-005061	SA
C123	C-CER,CHIP	2203-000233	SA
C124	C-CER,CHIP	2203-000812	SA
C125	C-CER,CHIP	2203-005482	SA
C126	C-CER,CHIP	2203-005482	SA
C127	C-CER,CHIP	2203-005482	SA
C128	C-CER,CHIP	2203-000438	SA
C130	C-CER,CHIP	2203-006562	SA
C132	C-CER,CHIP	2203-000995	SA
C133	C-CER,CHIP	2203-000995	SA
C134	C-CER,CHIP	2203-005482	SA
C135	C-CER,CHIP	2203-006048	SA
C136	C-CER,CHIP	2203-006562	SA
C137	C-CER,CHIP	2203-000278	SA
C138	C-CER,CHIP	2203-006562	SA
C200	C-CER,CHIP	2203-006423	SA
C201	C-CER,CHIP	2203-005682	SA
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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	2203-006194	SA
C210	C-CER,CHIP	2203-006423	SA
C211	C-CER,CHIP	2203-005682	SA
C212	C-CER,CHIP	2203-006423	SA
C213	C-CER,CHIP	2203-006423	SA
C217	C-CER,CHIP	2203-006423	SA
C218	C-CER,CHIP	2203-005725	SA

Design LOC	Description	SEC Code	STATUS
C219	C-CER,CHIP	2203-005725	SA
C221	C-CER,CHIP	2203-006838	SA
C222	C-CER,CHIP	2203-006838	SA
C300	C-CER,CHIP	2203-006423	SA
C301	C-CER,CHIP	2203-006423	SA
C302	C-CER,CHIP	2203-006423	SA
C303	C-CER,CHIP	2203-006423	SA
C304	C-CER,CHIP	2203-006423	SA
C305	C-CER,CHIP	2203-006194	SA
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D502	DIODE-TVS	0406-001190	SA
D503	DIODE-TVS	0406-001256	SA
D600	DIODE-TVS	0406-001254	SA
D601	DIODE-TVS	0406-001254	SA
F100	FILTER-LC	2909-001279	SA
F500	FILTER-EMI/ESD	2901-001376	SA
F501	FILTER-EMI SMD	2901-001316	SA
HDC500	HEADER-BOARD TO BOARD	3711-005367	SA
HDC600	HEADER-BOARD TO BOARD	3711-005456	SA
IFC501	SOCKET-INTERFACE	3710-002442	SA
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L102	INDUCTOR-SMD	2703-002155	SA
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L104	INDUCTOR-SMD	2703-002700	SA
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L118	BEAD-SMD	3301-001534	SA
L120	INDUCTOR-SMD	2703-001701	SA
L300	BEAD-SMD	3301-001729	SA
L401	INDUCTOR-SMD	2703-002829	SA
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MOD100	DUPLEXER-FEM	2911-000054	SA
OSC300	CRYSTAL-SMD	2801-004466	SA
OSC301	CRYSTAL-SMD	2801-004543	SA
OSC400	CRYSTAL-SMD	2801-004466	SA
PAM100	IC-POWER AMP	1201-002423	SA
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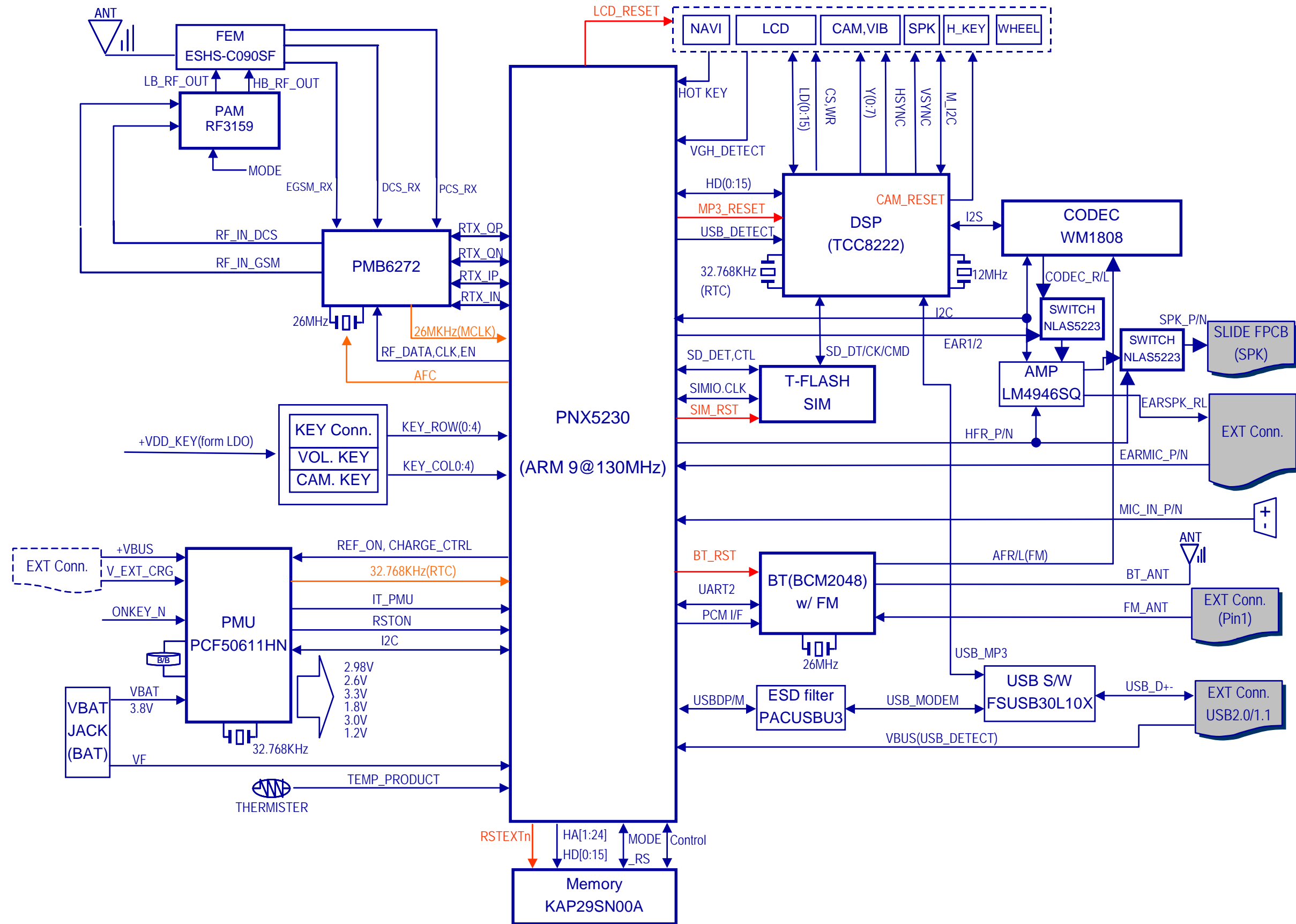
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R110	R-CHIP	2007-007489	SA
R111	R-CHIP	2007-008055	SA
R112	R-CHIP	2007-008055	SA
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R232	R-CHIP	2007-000148	SA
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R308	R-CHIP	2007-008542	SA
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R322	R-CHIP	2007-008591	SA
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R329	R-CHIP	2007-008052	SA
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R331	R-CHIP	2007-008483	SA
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R405	R-CHIP	2007-007100	SA
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R608	R-CHIP	2007-007137	SA
R609	R-CHIP	2007-007318	SA
R610	R-CHIP	2007-008531	SA
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RFS100	CONNECTOR-COAXIAL	3705-001358	SA
T/SIM500	CONNECTOR-CARD EDGE	3709-001453	SA
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TA402	C-TA,CHIP	2404-001381	SA

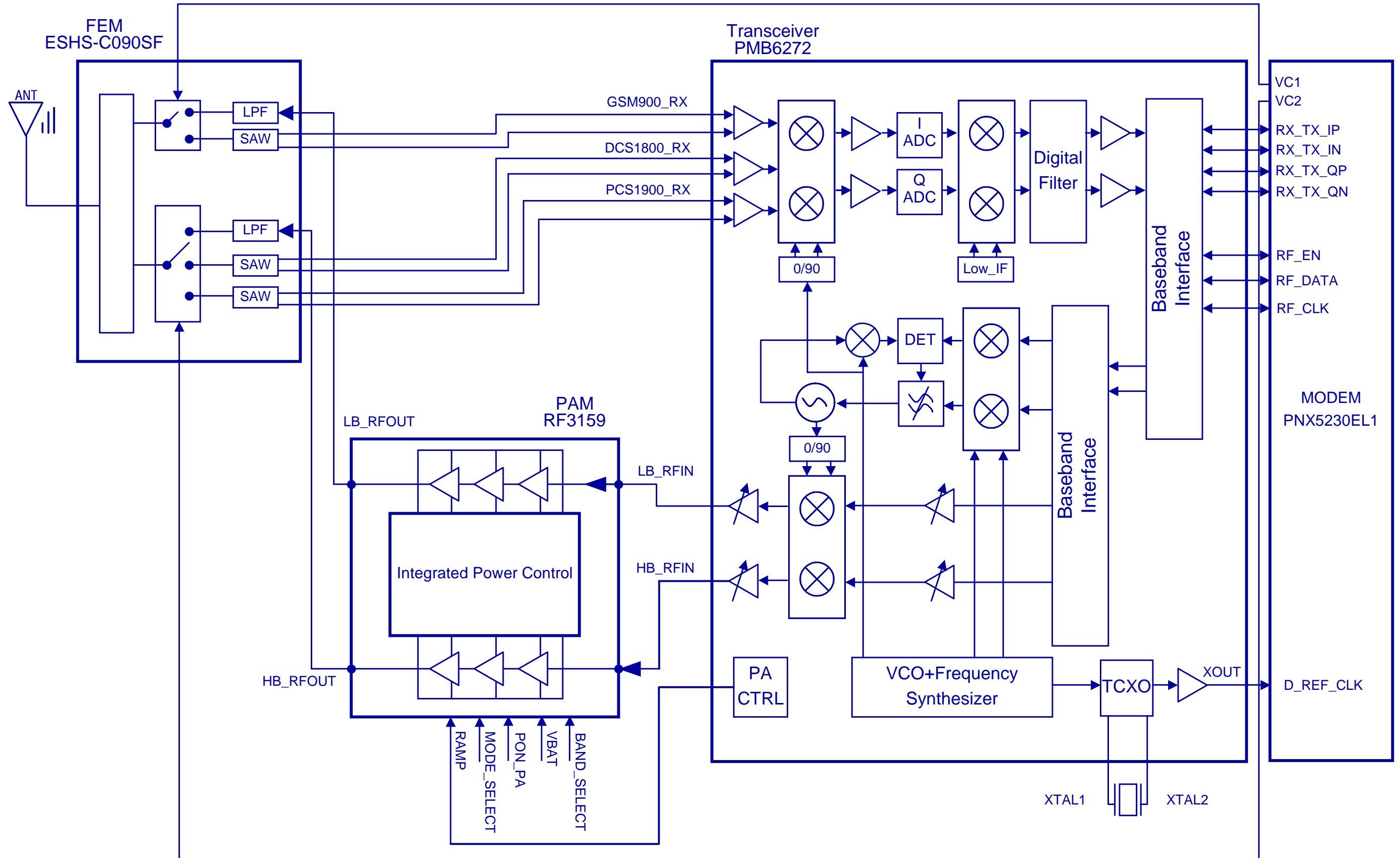
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TA602	C-TA,CHIP	2404-001380	SA
TA603	C-TA,CHIP	2404-001381	SA
TA604	C-TA,CHIP	2404-001396	SA
TCX100	OSCILLATOR-VCTCXO	2809-001287	SA
TR401	FET-SILICON	0505-002207	SA
U100	IC-POSI.FIXED REG.	1203-003767	SA
U101	IC-TRANSCEIVER	1205-003057	SA
U102	IC-TRANSCEIVER	1205-003216	SA
U103	IC-CMOS LOGIC	0801-003012	SA
U302	IC-MICROPROCESSOR	0902-002142	SA
U303	IC-CMOS LOGIC	0801-003022	SA
U400	IC-POSI.FIXED REG.	1203-003737	SA
U401	IC-POSI.FIXED REG.	1203-003737	SA
U402	IC-POSI.FIXED REG.	1203-003688	SA
U403	IC-POWER SUPERVISOR	1203-004382	SA
U405	IC-POSI.FIXED REG.	1203-003737	SA
U406	IC-POSI.FIXED REG.	1203-003737	SA
U407	IC-POSI.FIXED REG.	1203-003787	SA
U502	IC-ANALOG SWITCH	1001-001401	SA
U503	IC-CMOS LOGIC	0801-003130	SA
U600	IC-CODEC	1205-003214	SA
U601	IC-AUDIO AMP	1201-002492	SA
U602	IC-ANALOG SWITCH	1001-001410	SA
U603	IC-ANALOG SWITCH	1001-001410	SA
UCP200	IC-COMM. CONTROLLER	1205-003082	SA
UME300	IC-MCP	1108-000102	SA
V501	VARISTOR	1405-001177	SA
V502	VARISTOR	1405-001177	SA
VR200	THERMISTOR-NTC	1404-001221	SA
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ZD502	DIODE-TVS	0406-001254	SA
ZD503	DIODE-TVS	0406-001267	SA
ZD504	DIODE-TVS	0406-001267	SA
ZD505	DIODE-TVS	0406-001267	SA
ZD600	DIODE-TVS	0406-001190	SA
ZD601	DIODE-TVS	0406-001190	SA

7. Block Diagrams

7-1. Base Band Solution Block Diagram

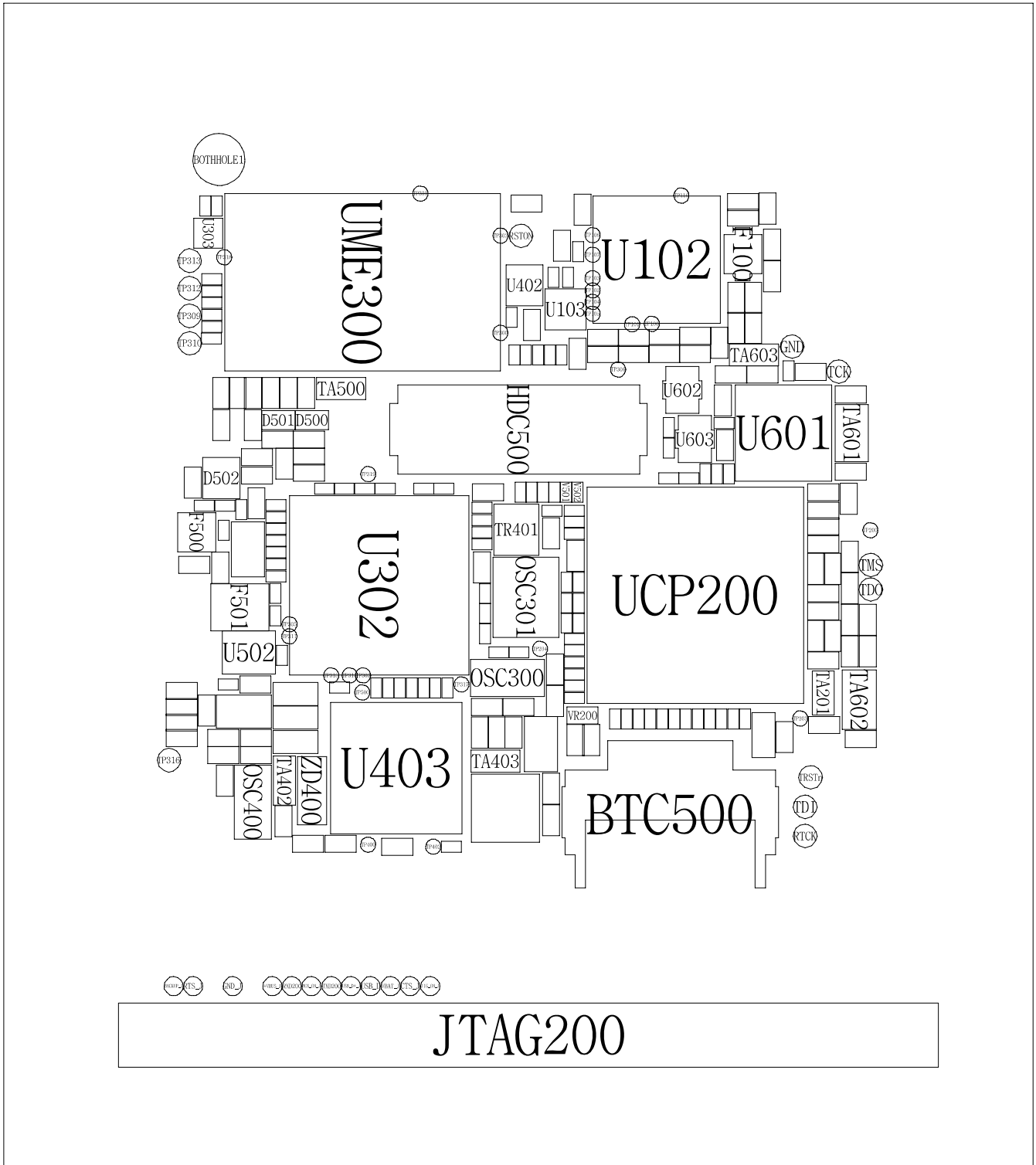


7-2. RF Solution Block Diagram

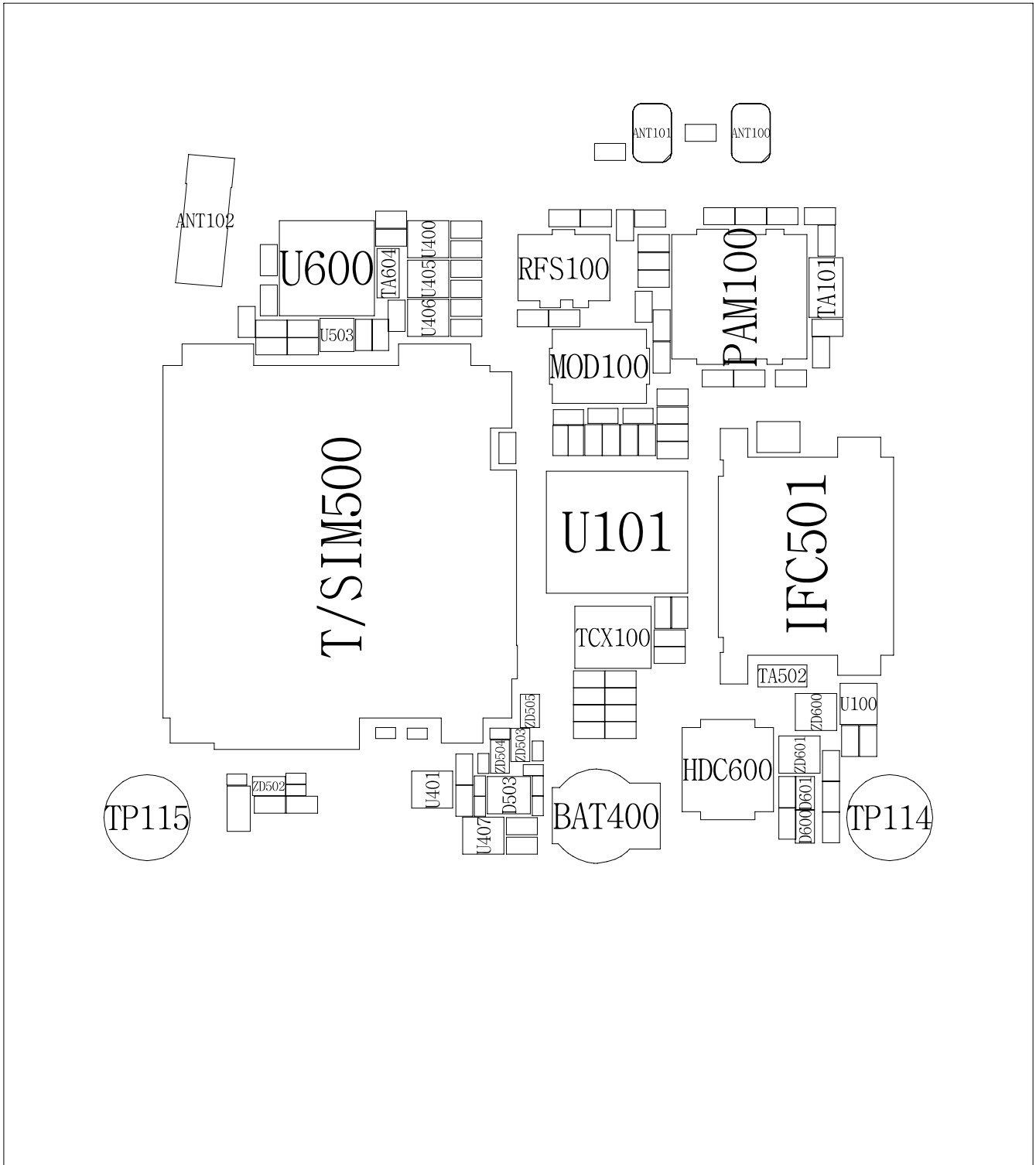


8. PCB Diagrams

Top

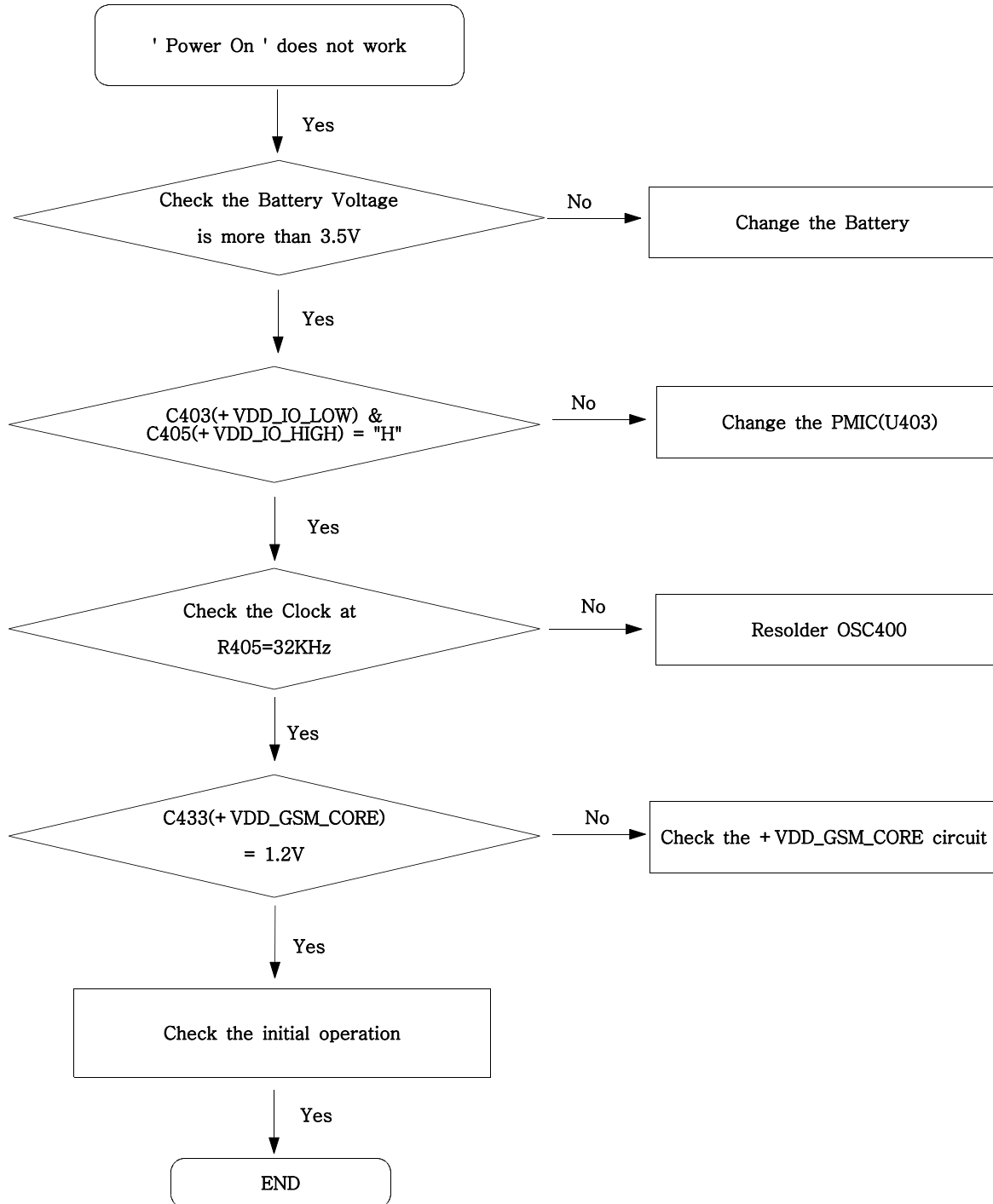


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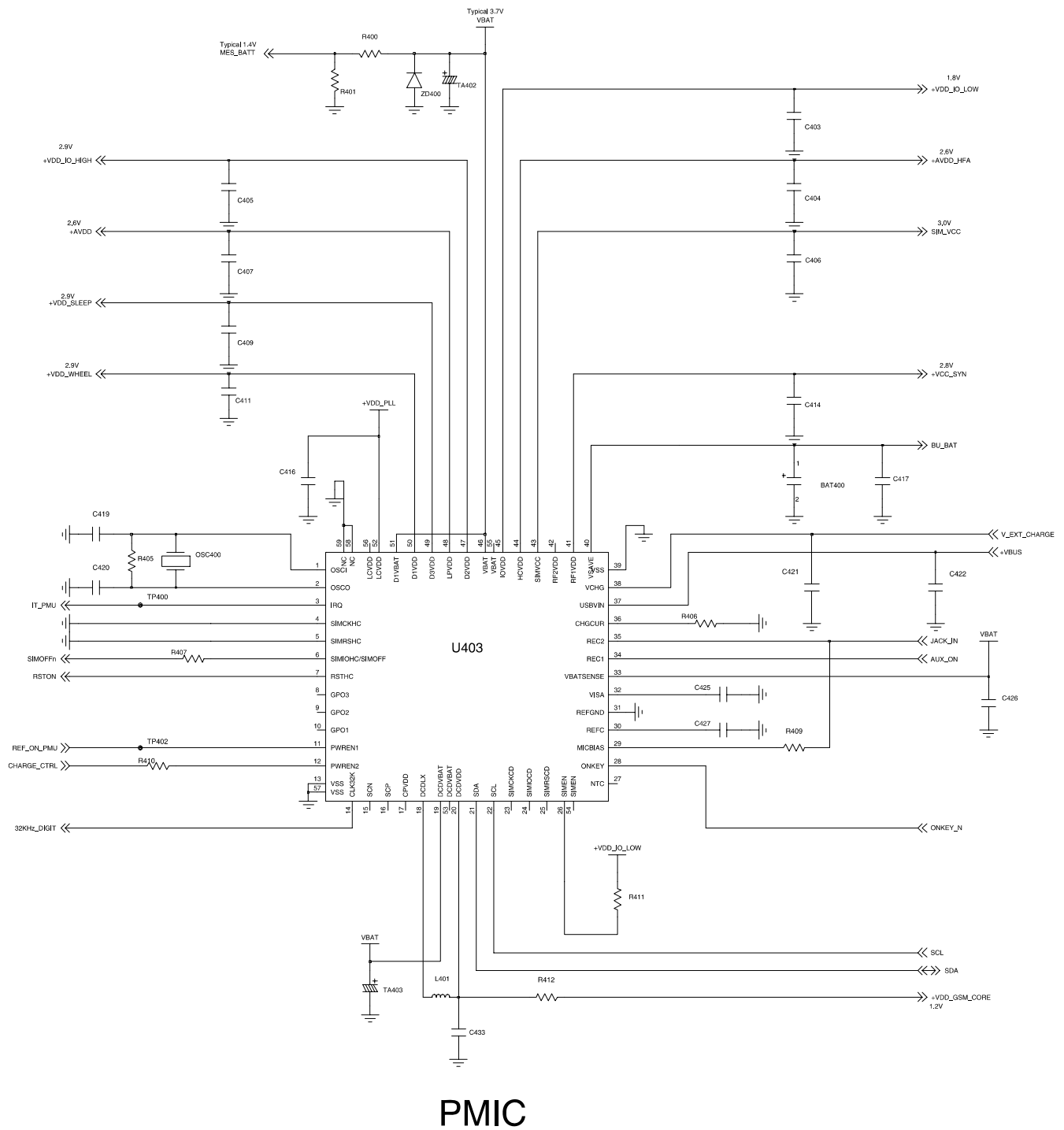


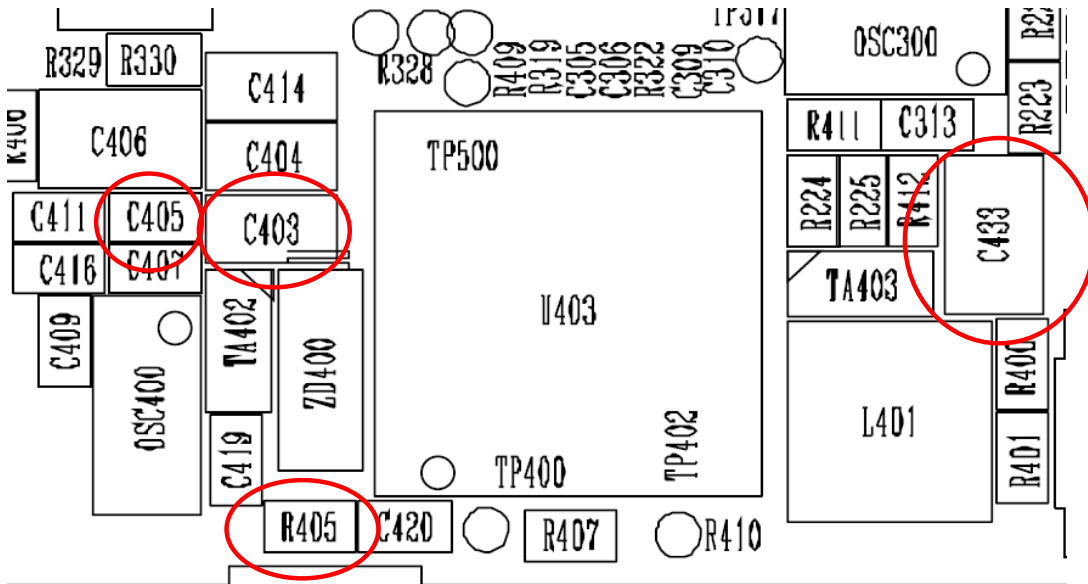
9. Flow Chart of Troubleshooting

9-1. Power On

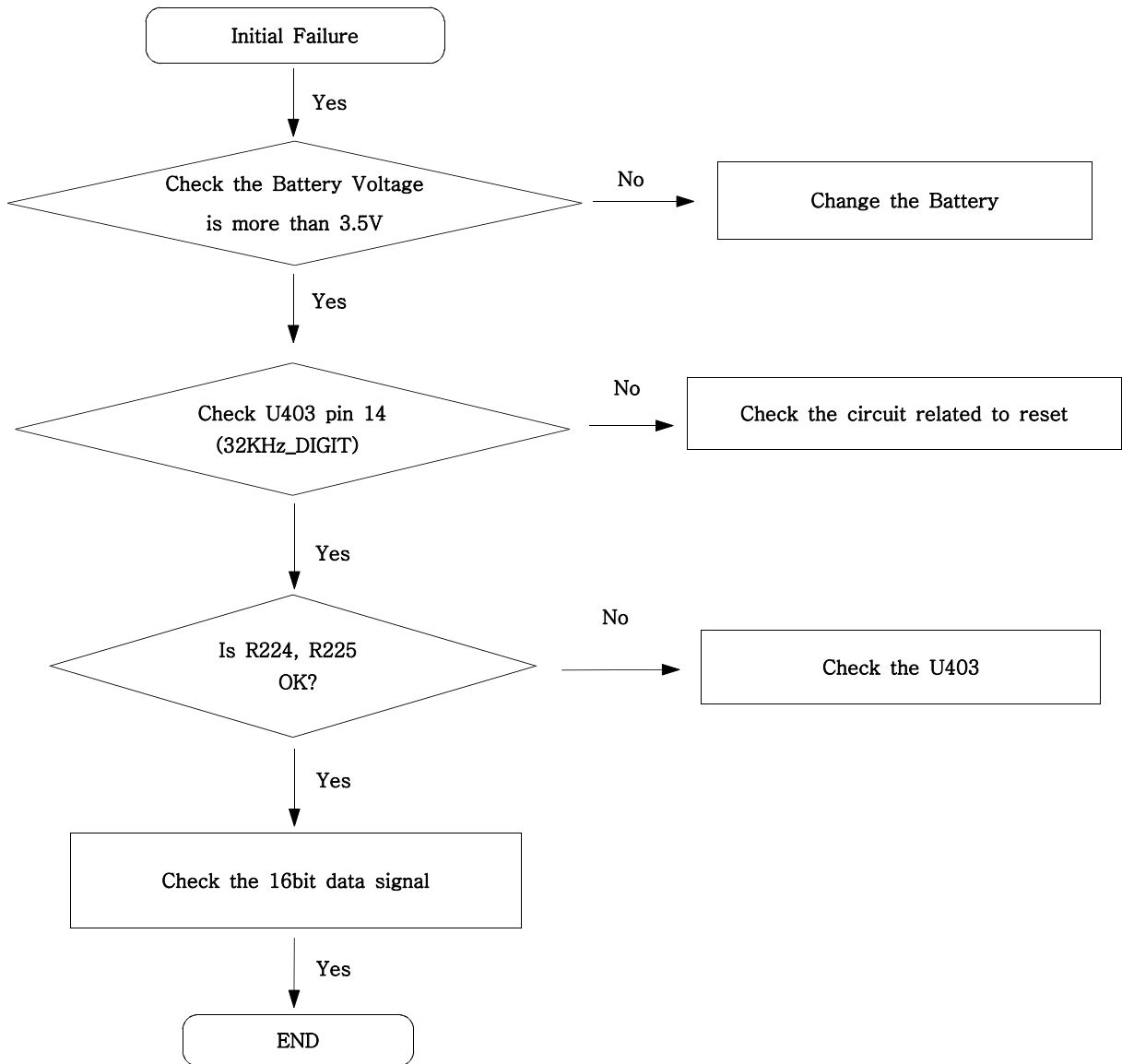


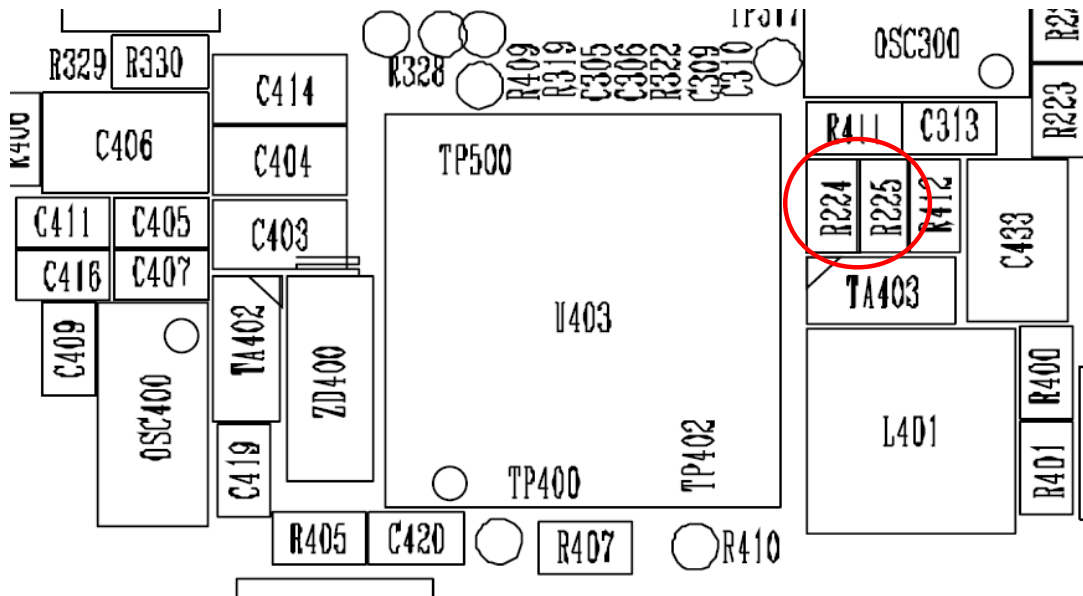
Flow Chart of Troubleshooting



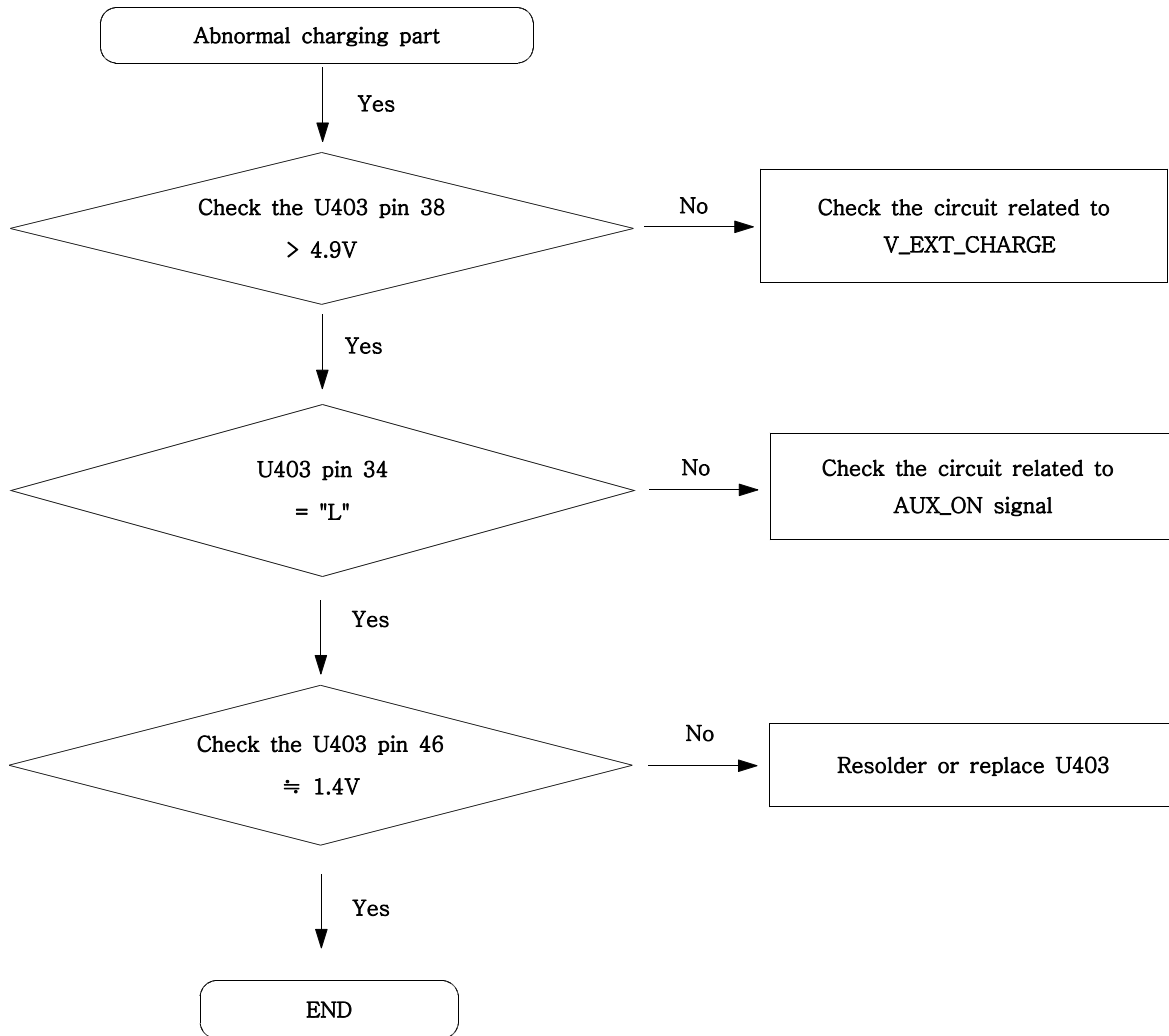


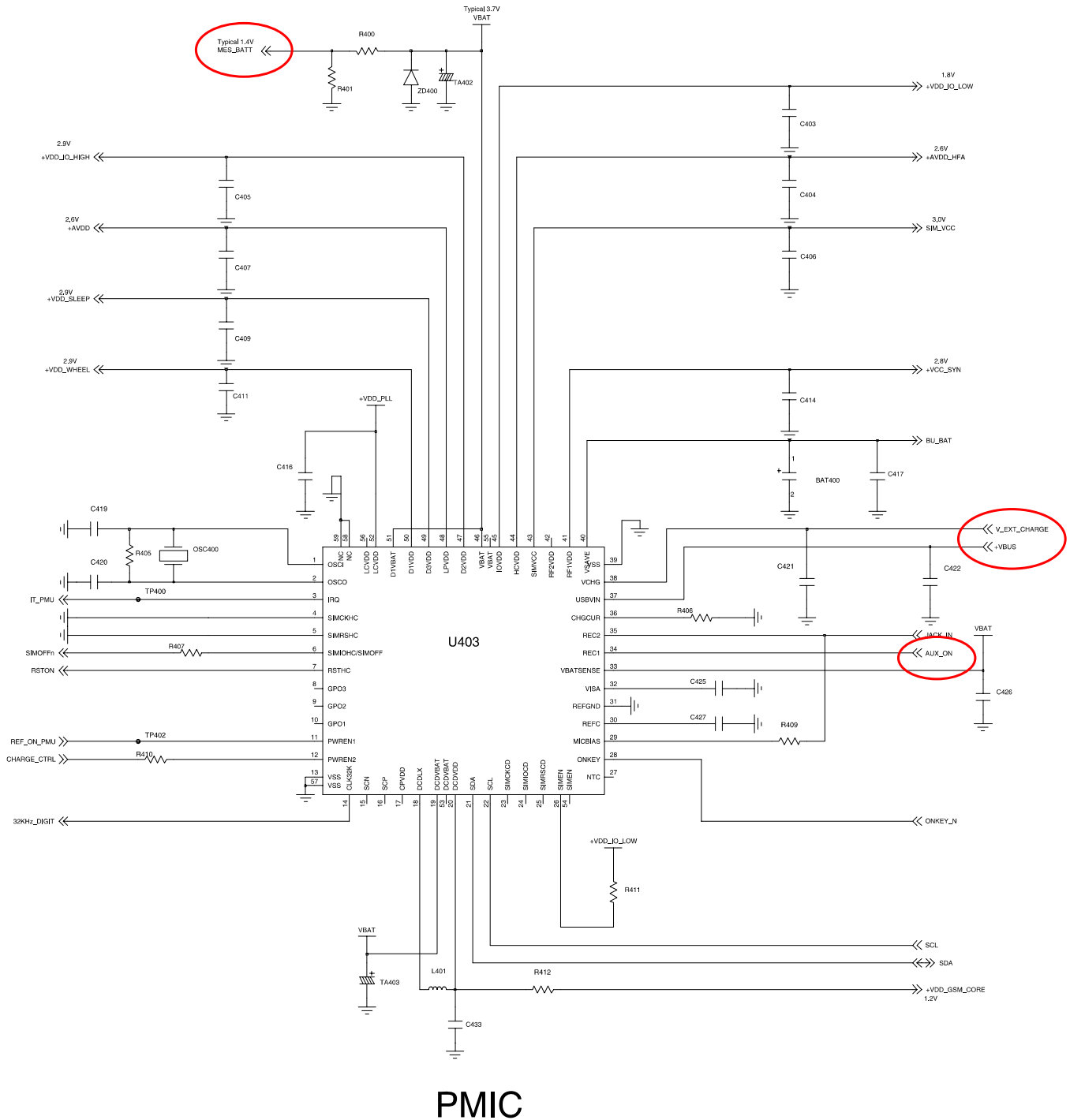
9-2. Initial



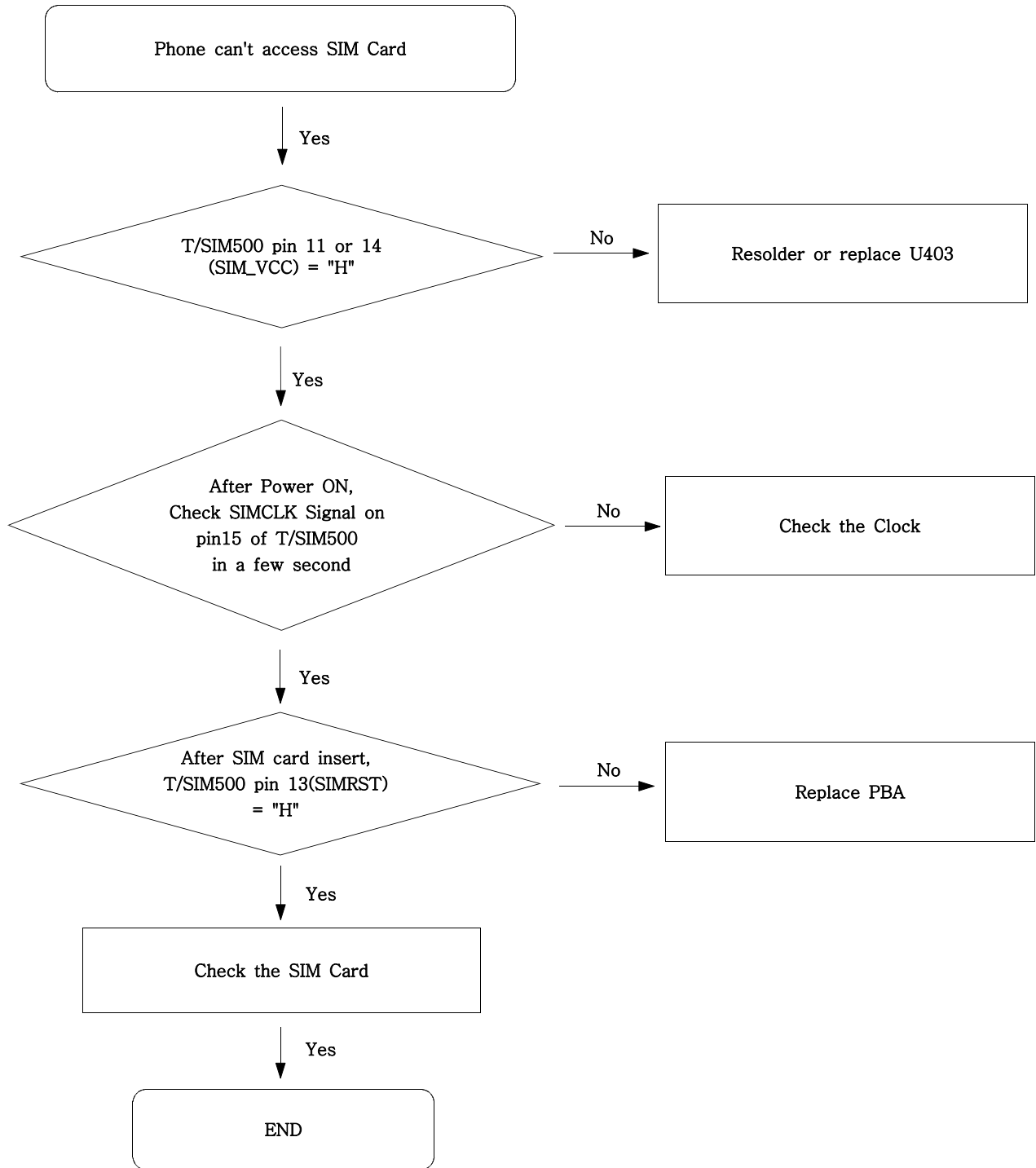


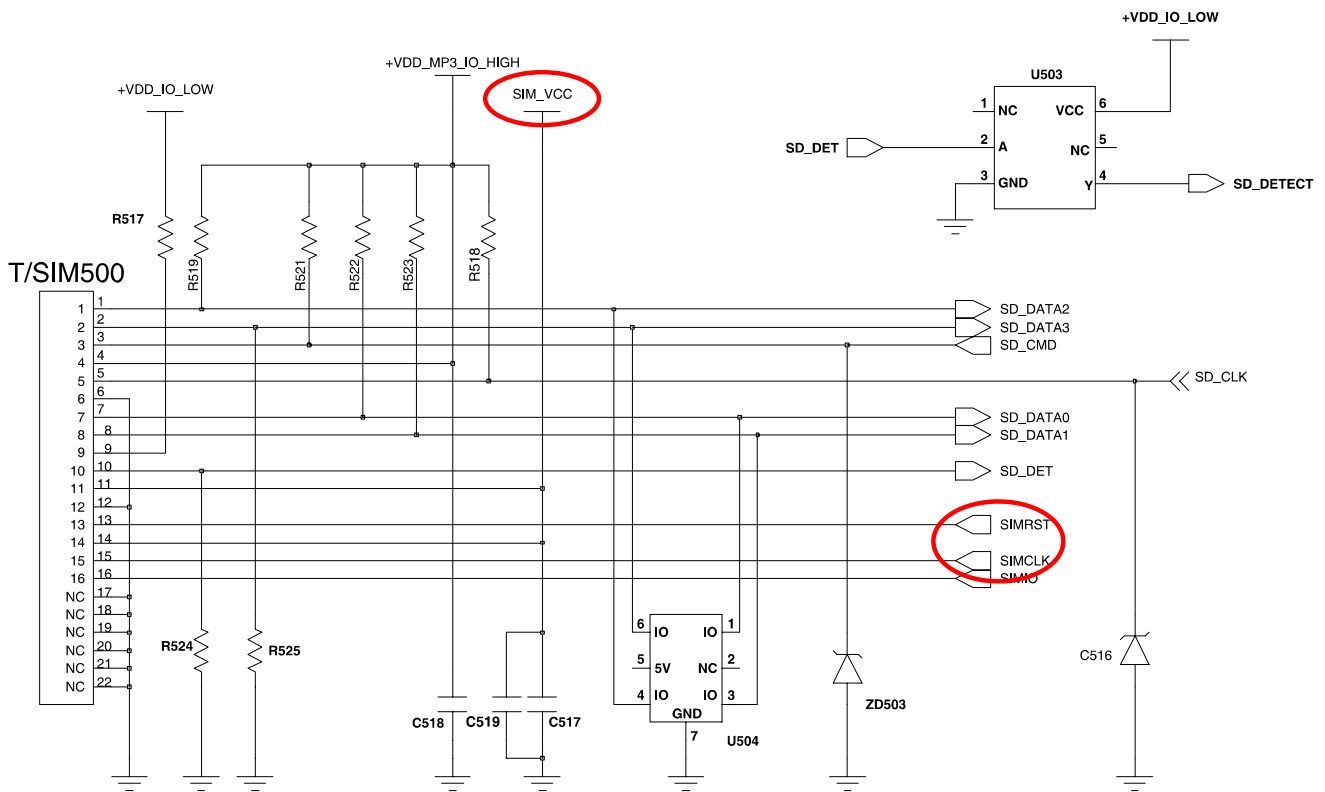
9-3. Charging Part



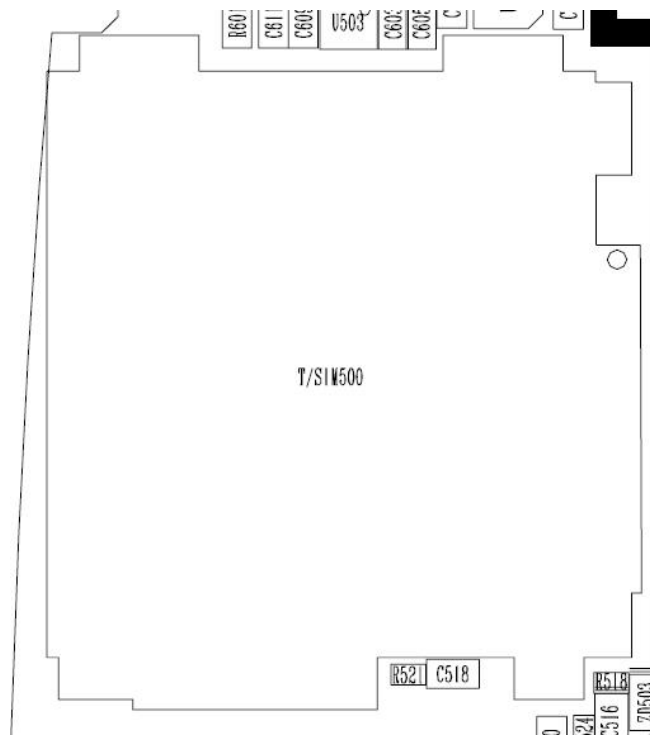


9-4. Sim Part

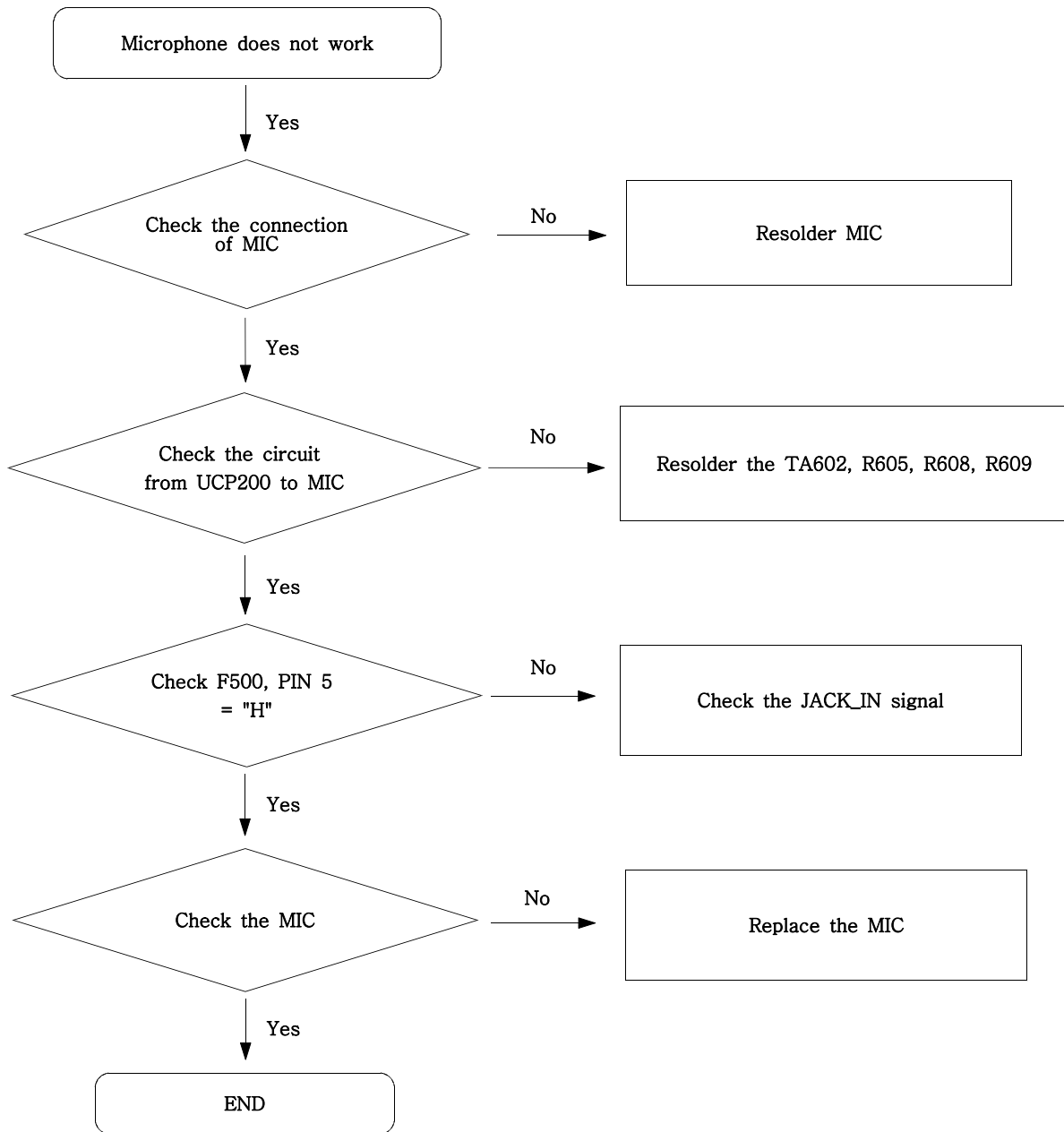


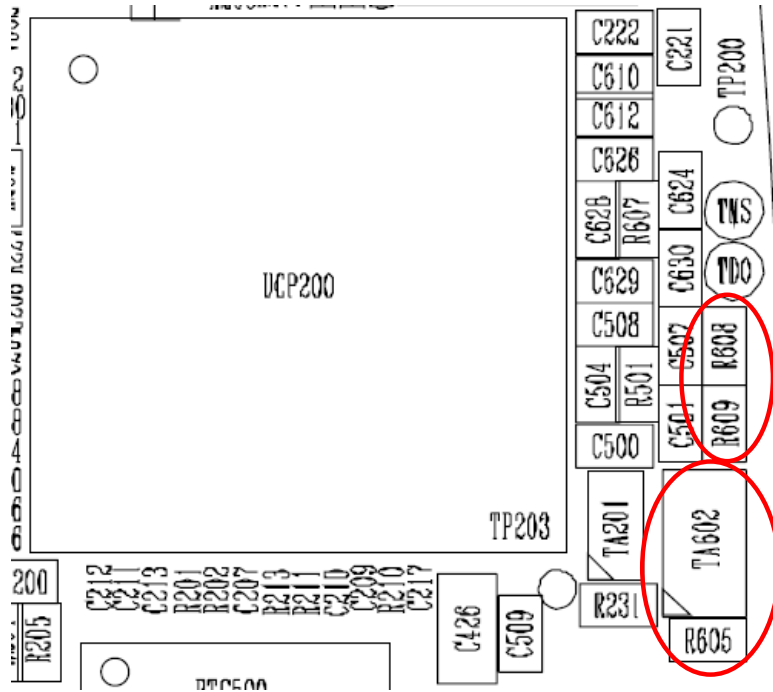
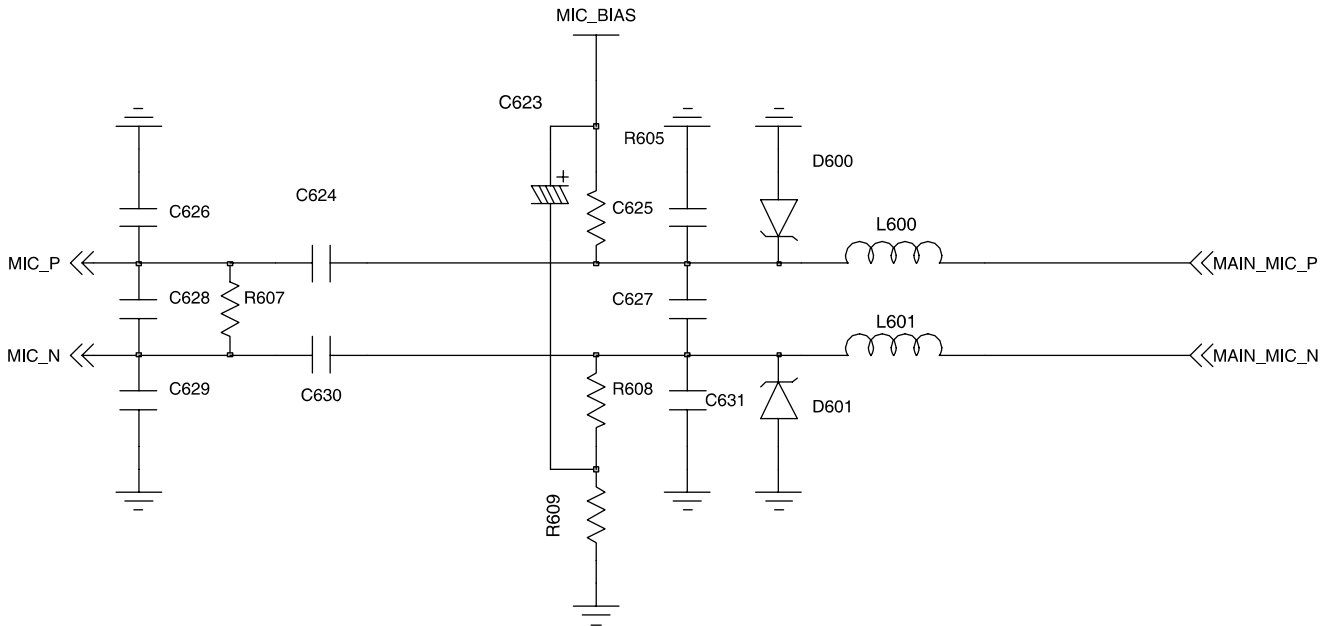


T_FLASH & SIM

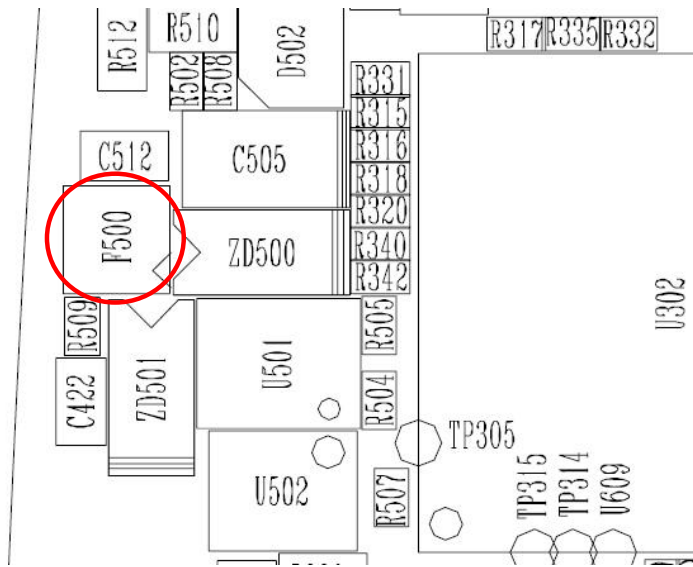
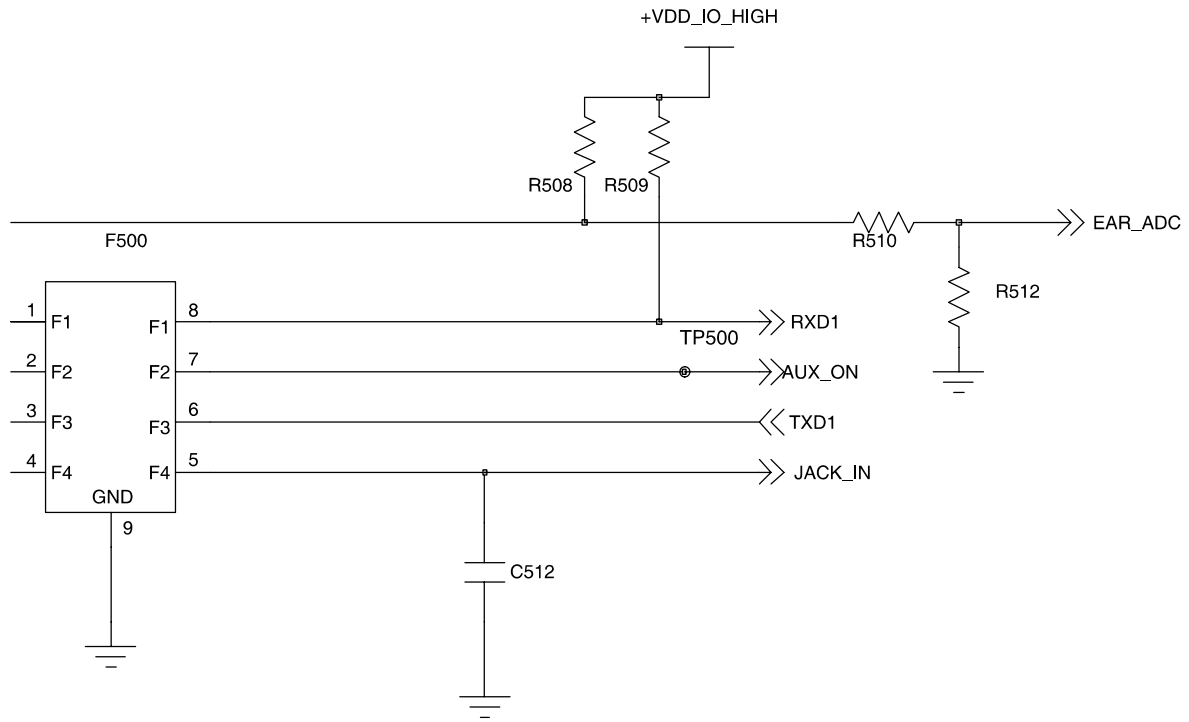


9-5. Microphone Part

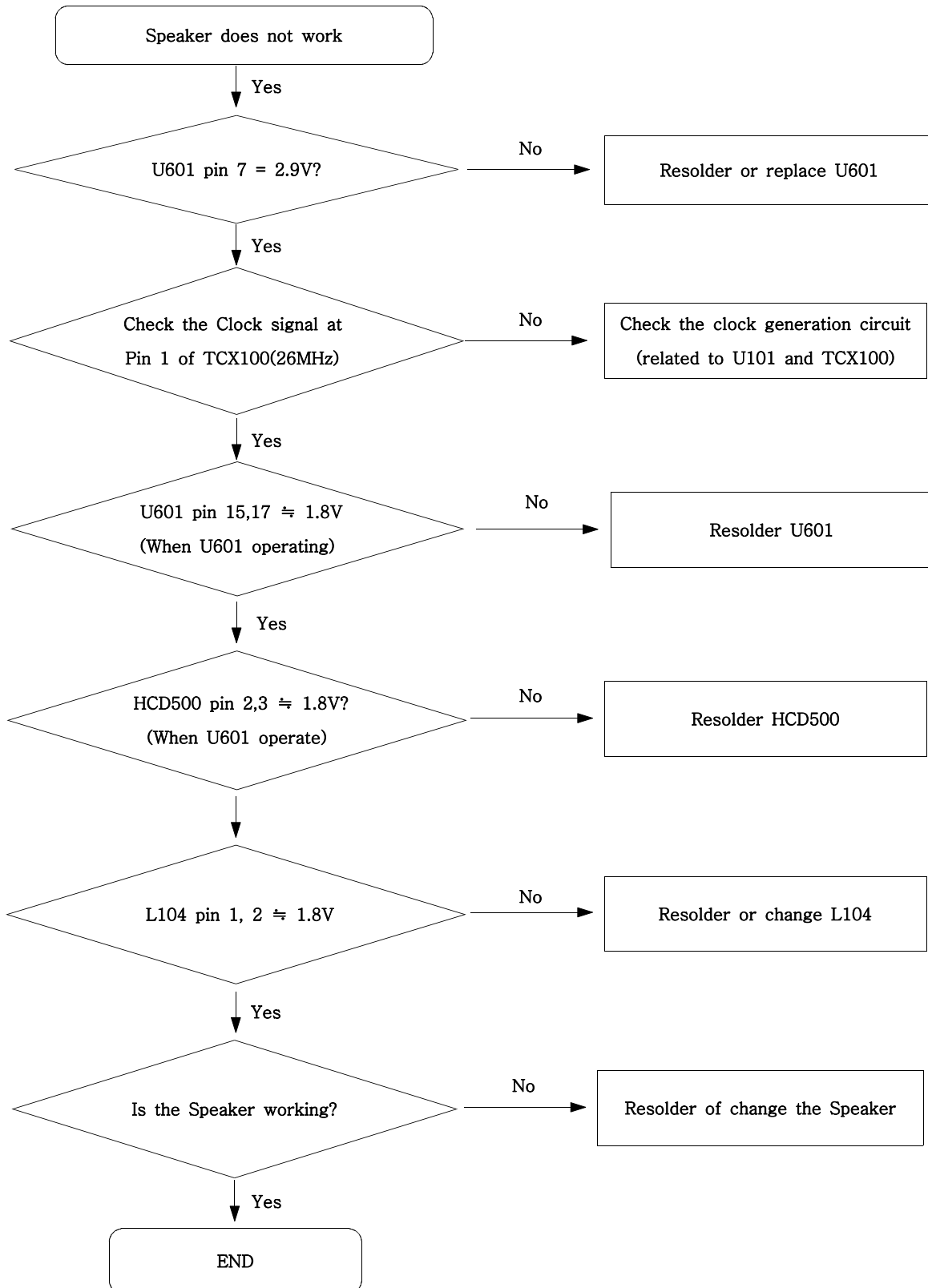


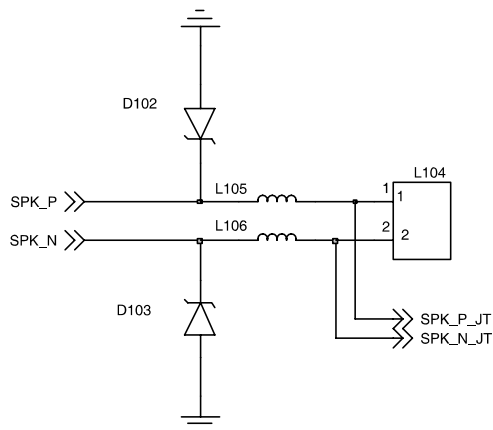
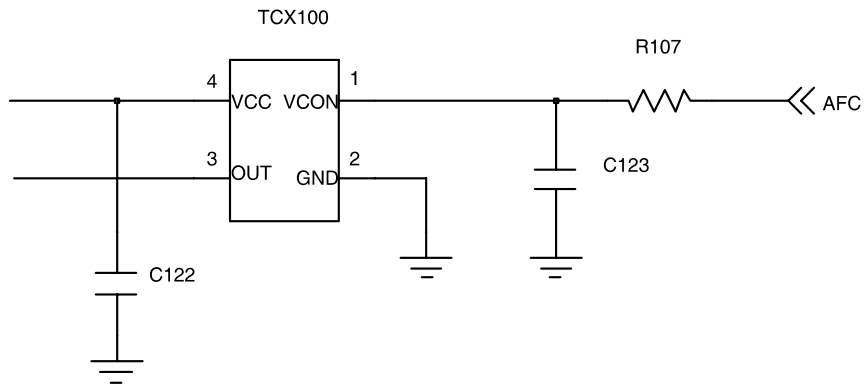
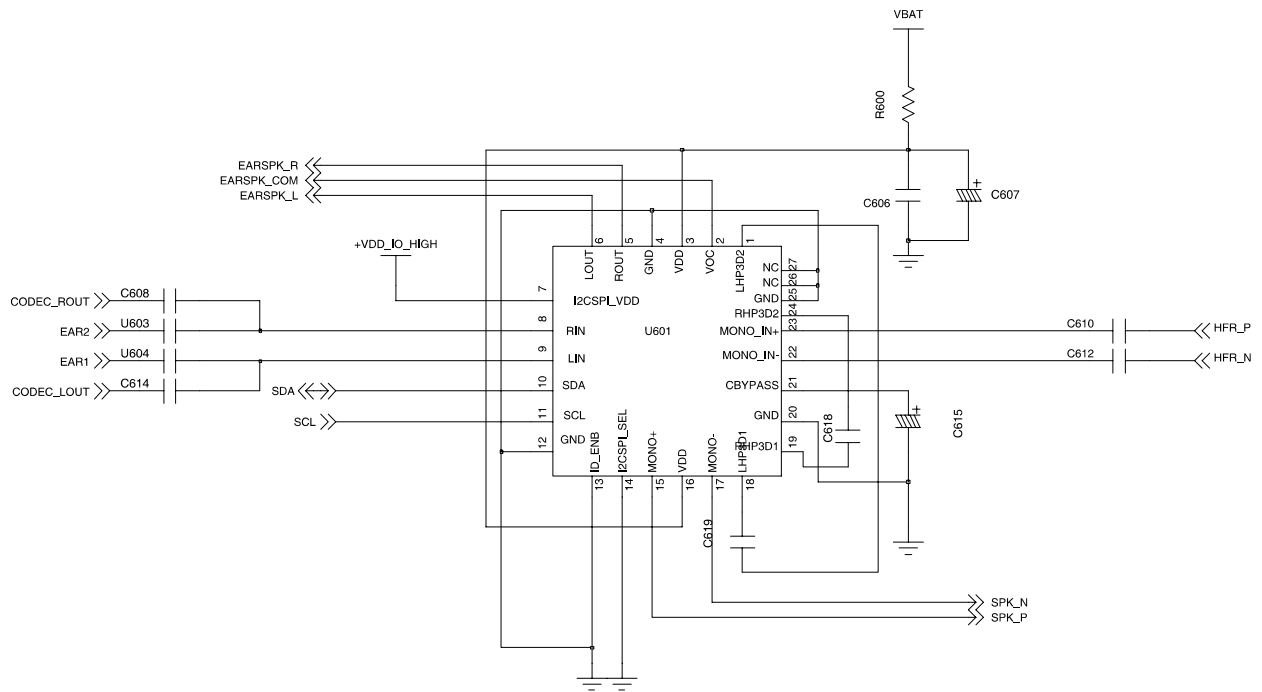


Flow Chart of Troubleshooting



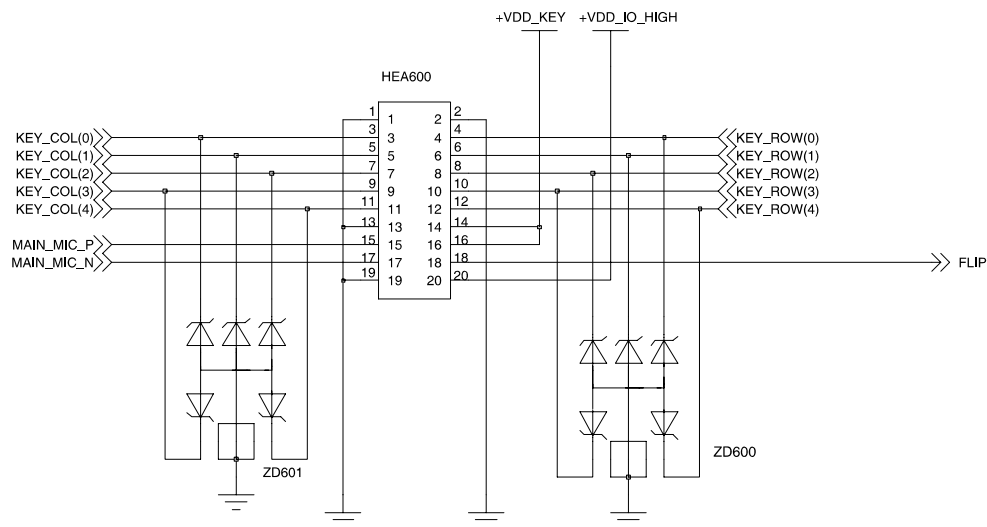
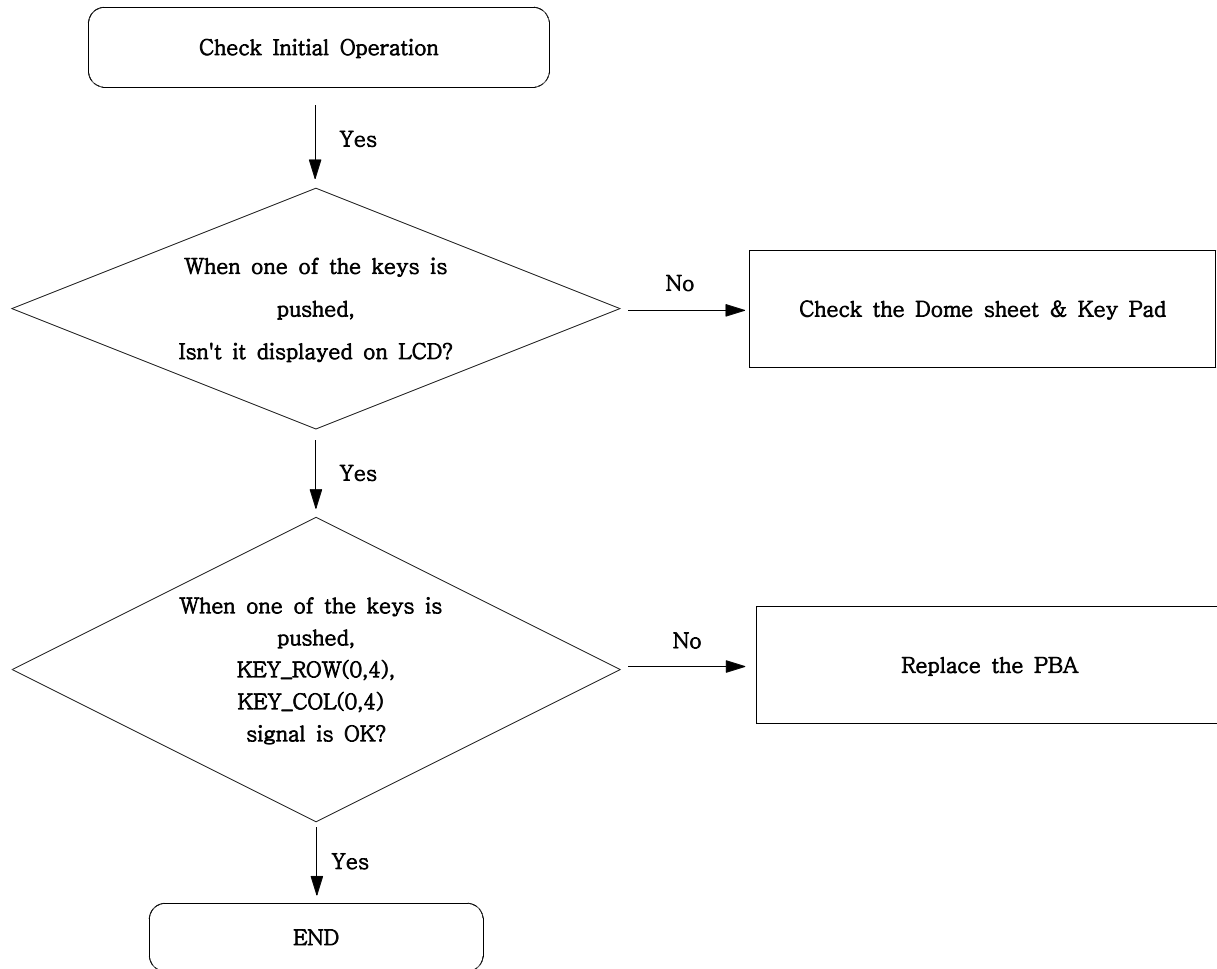
9-6. Speaker Part(Melody)





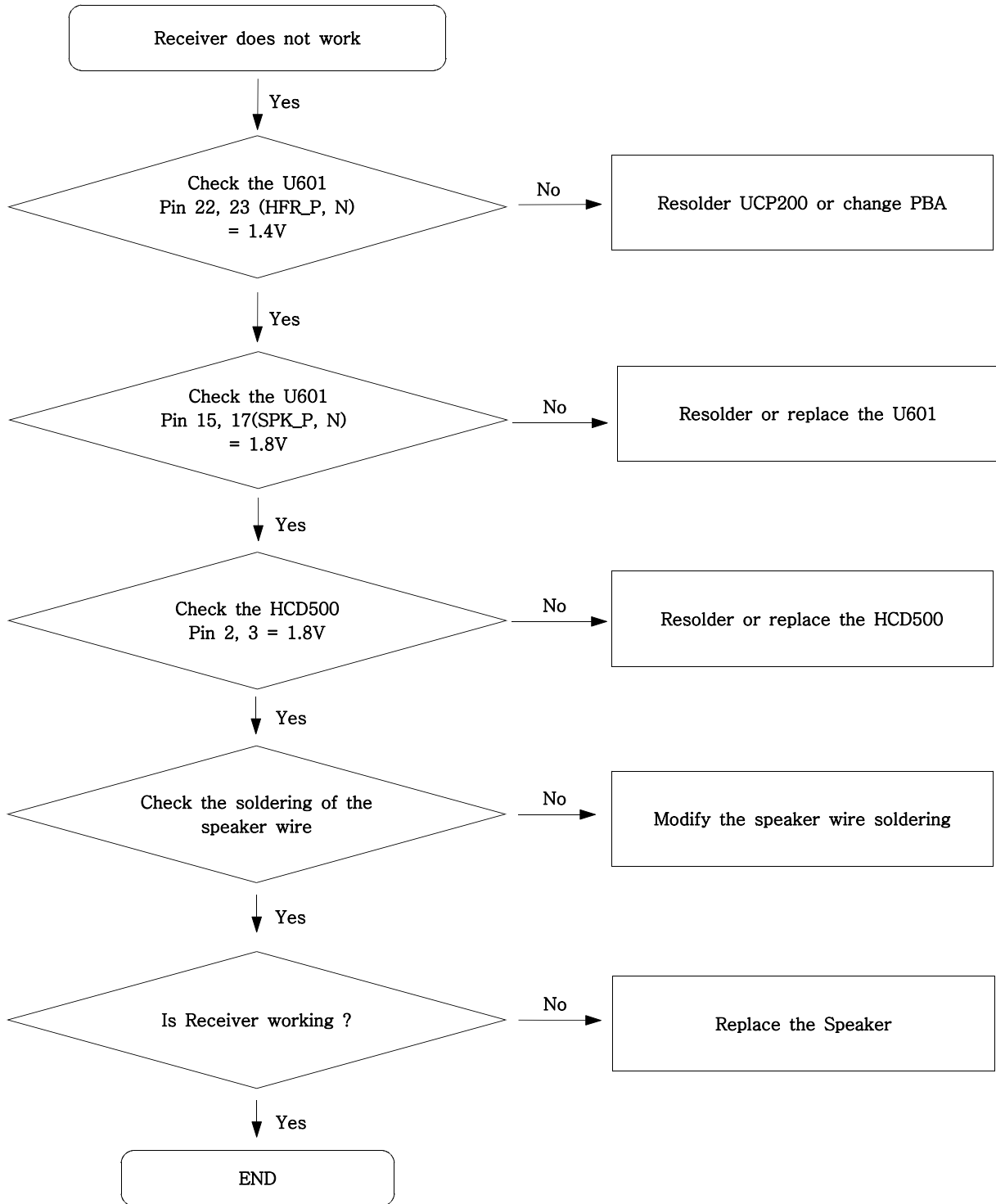
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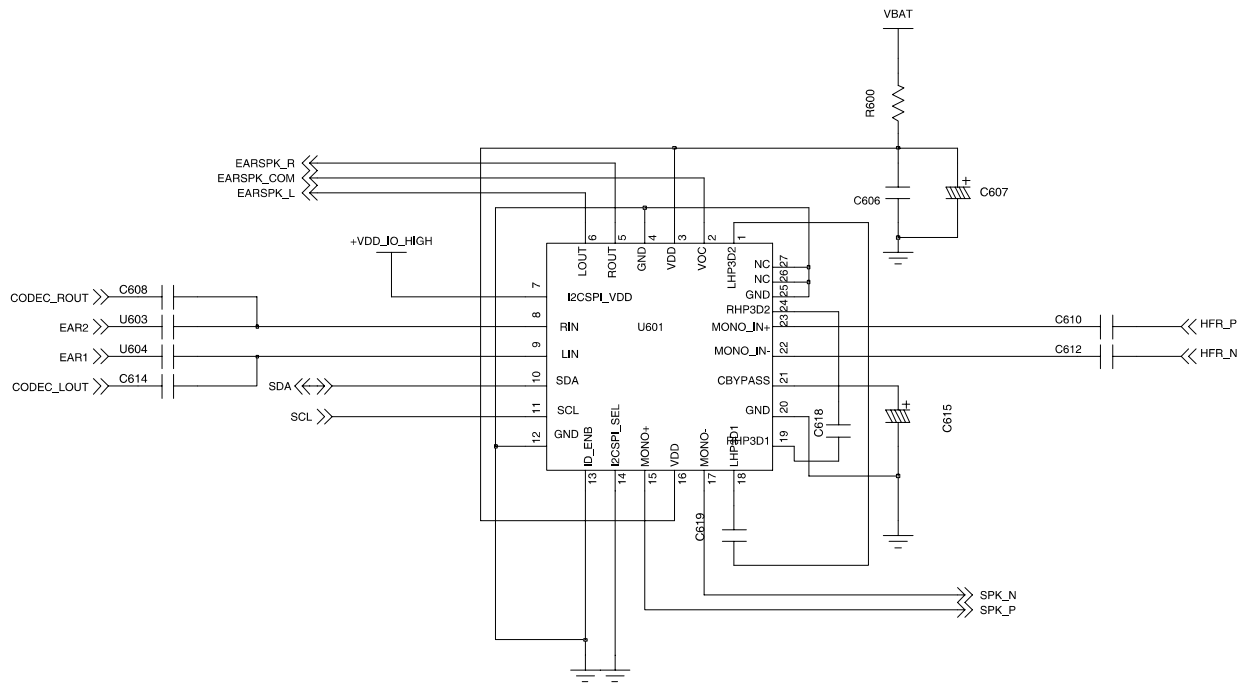
9-7. Key Data Input



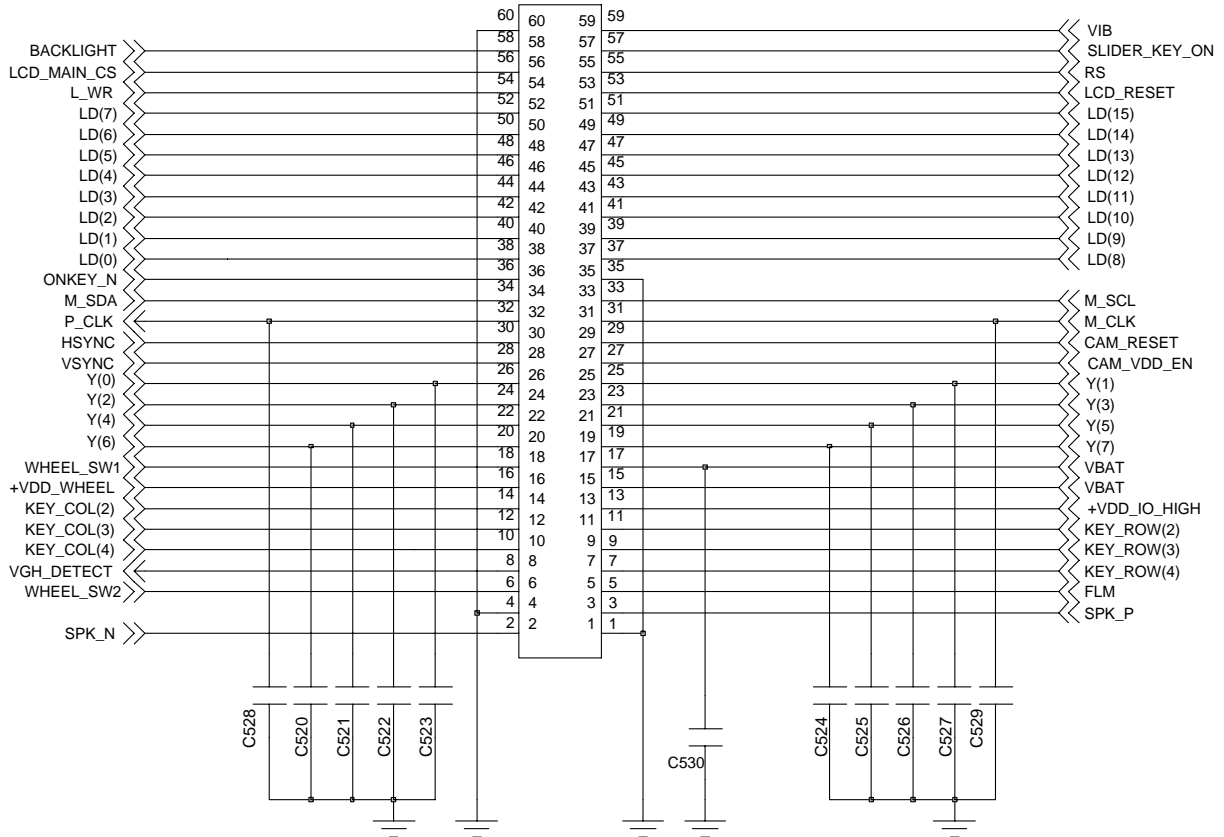
MAIN KEY MAP

9-8. Receiver Part

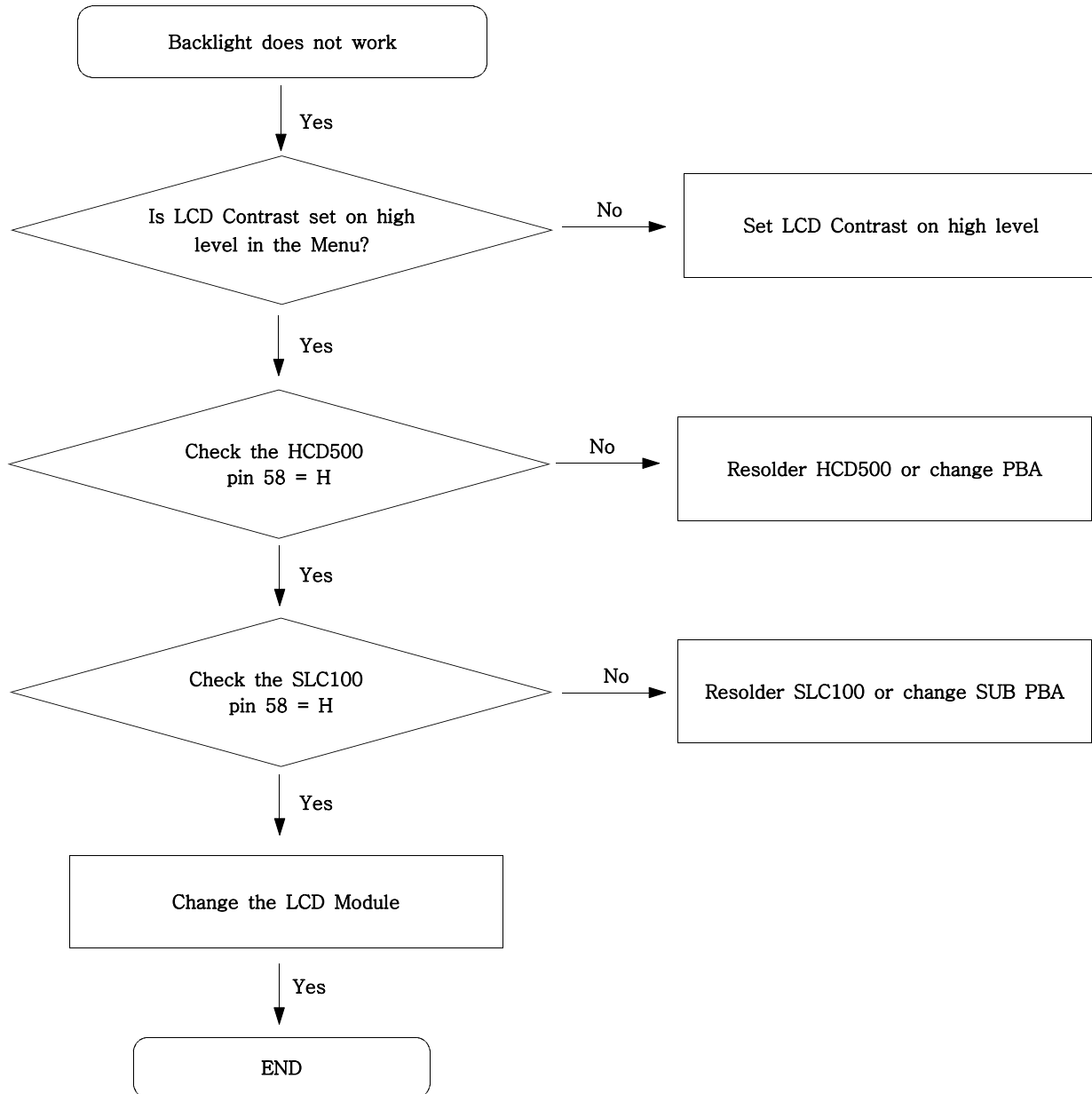


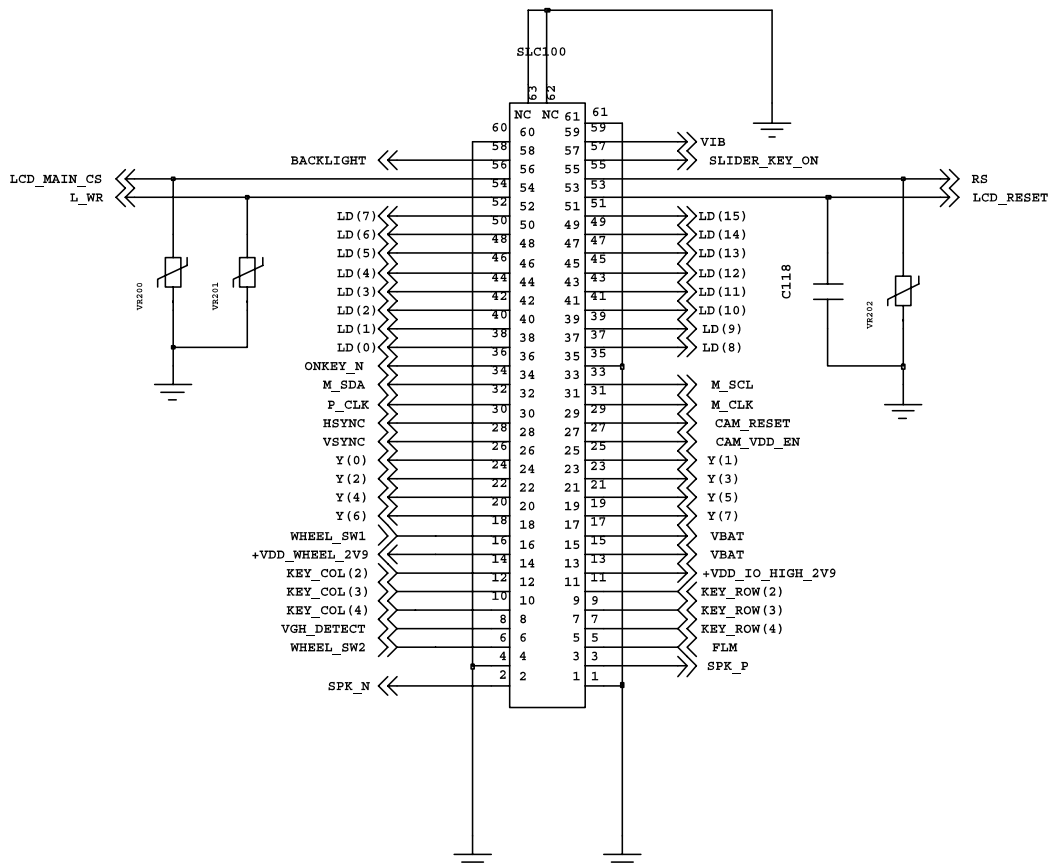
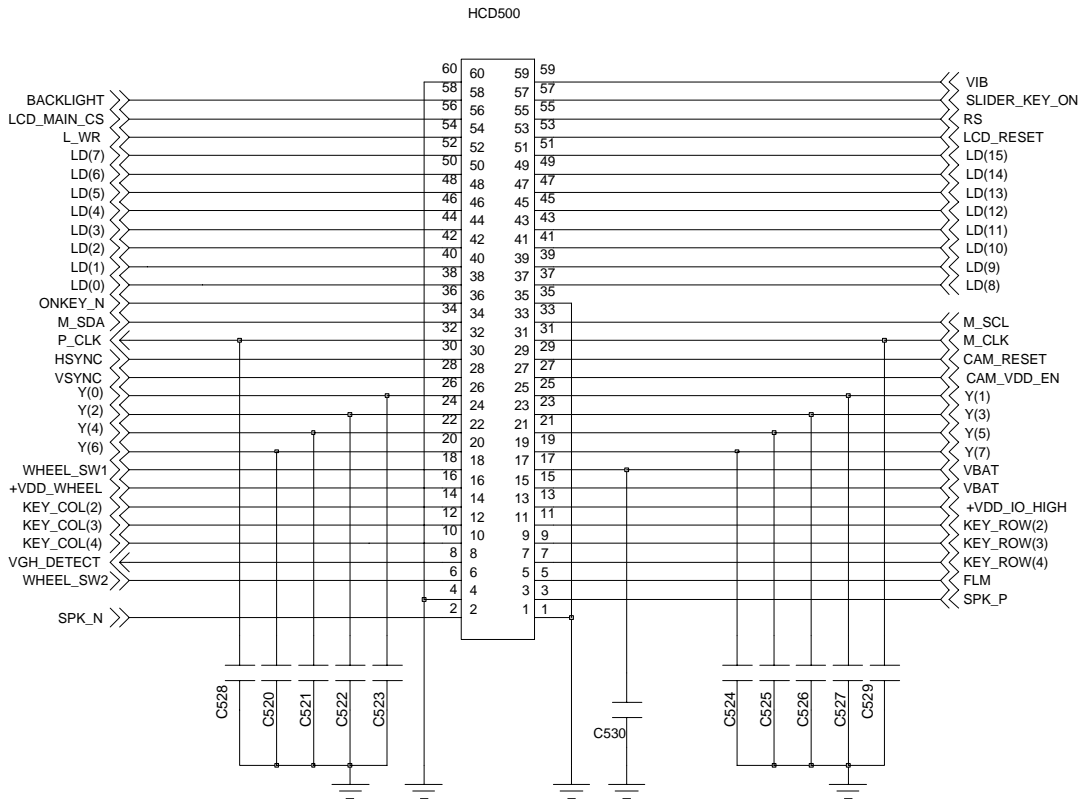


HCD500

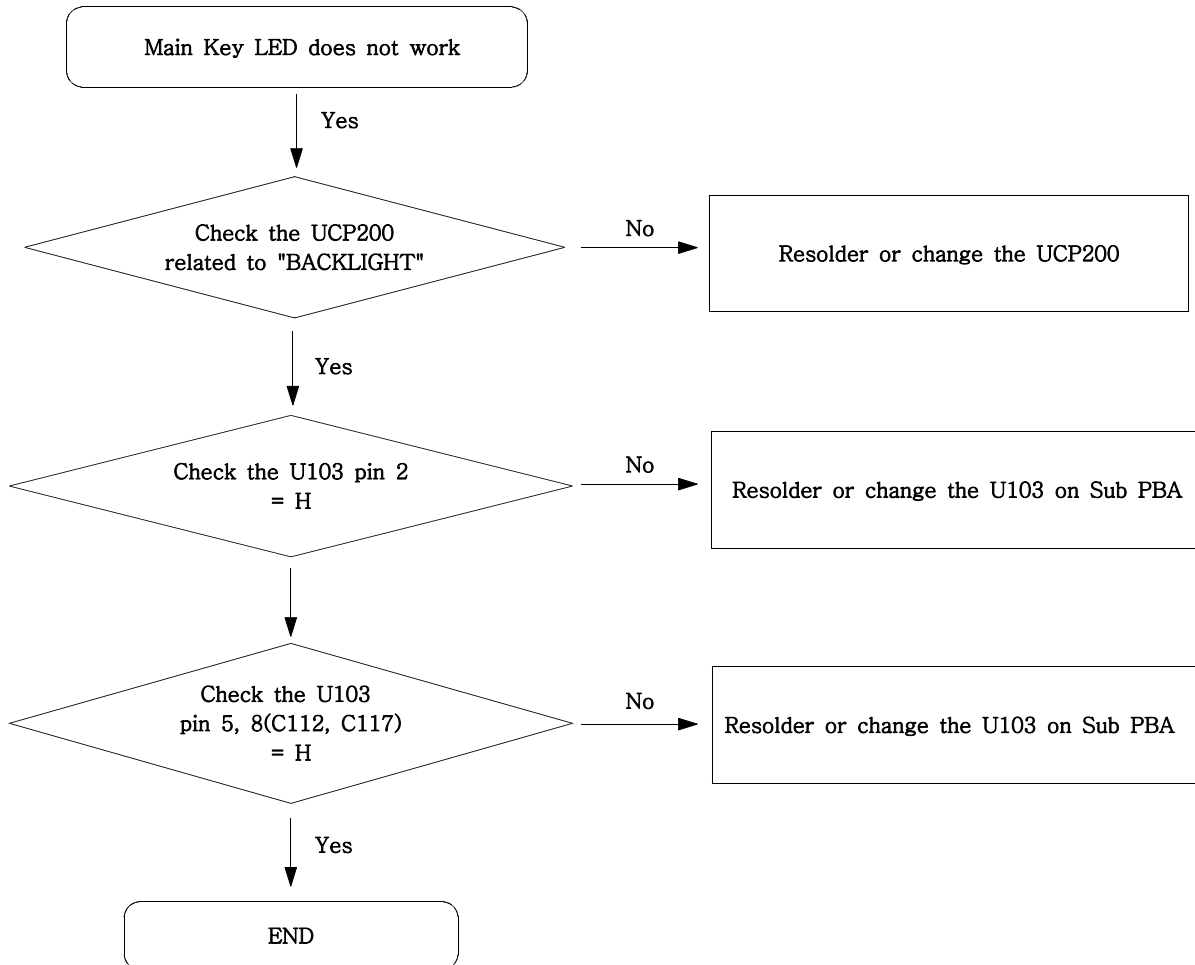


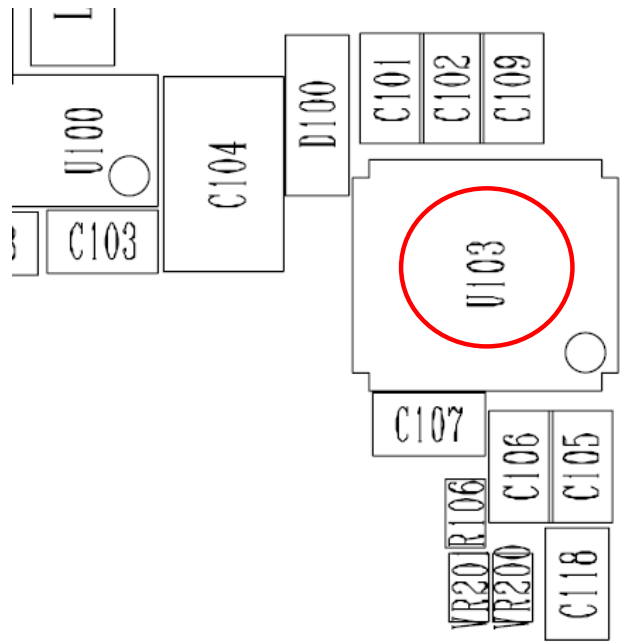
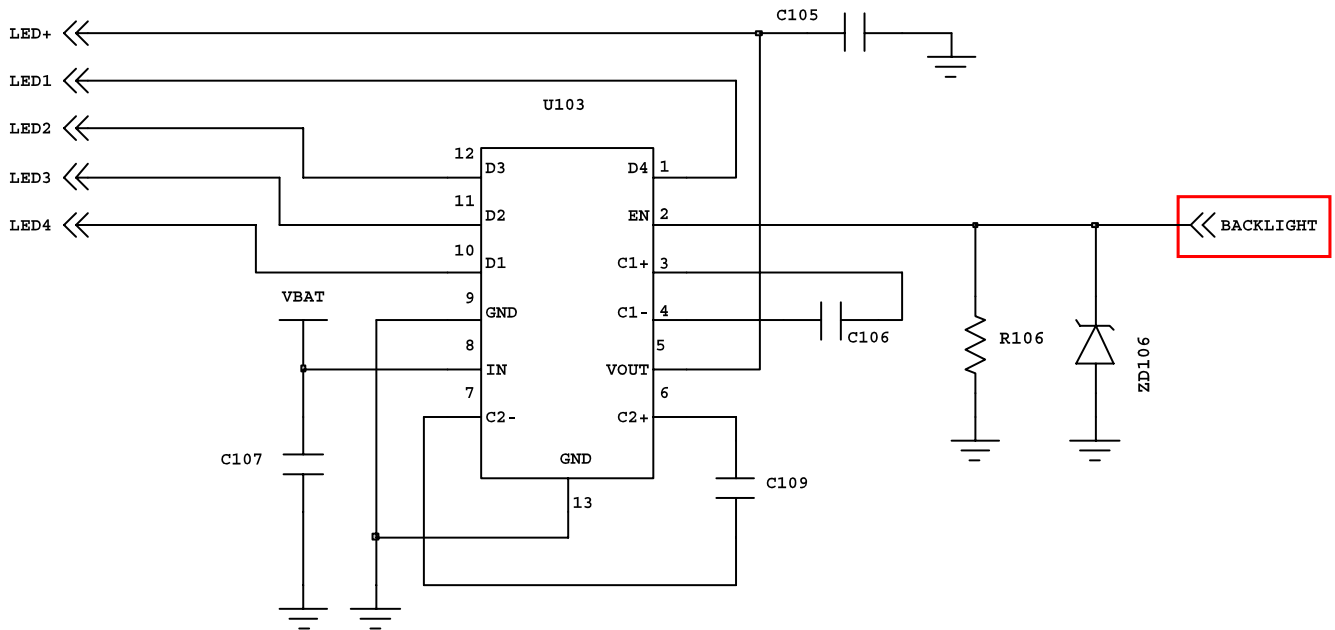
9-9. Back Light (for Color Main LCD)



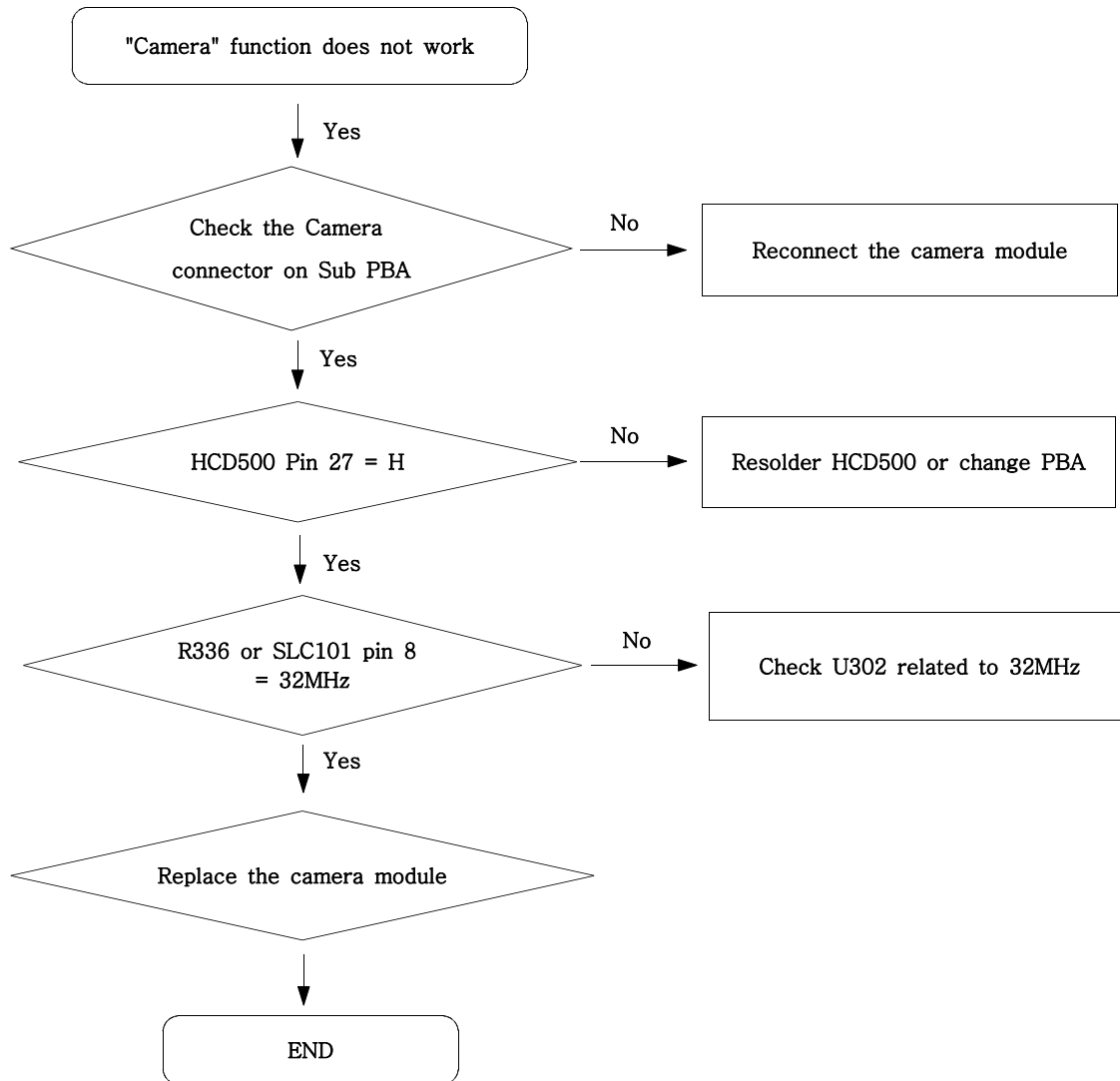


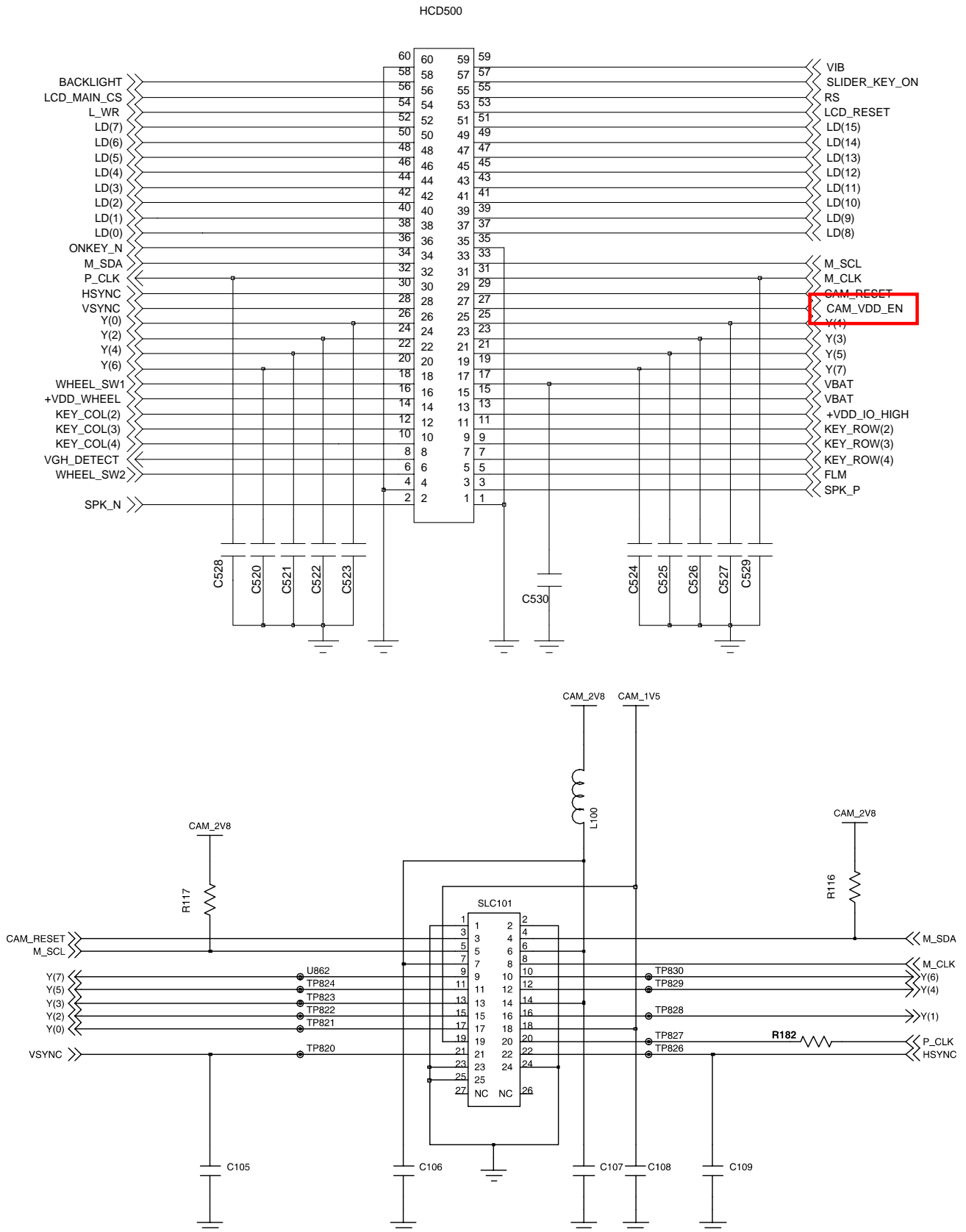
9-10. Key Back Light



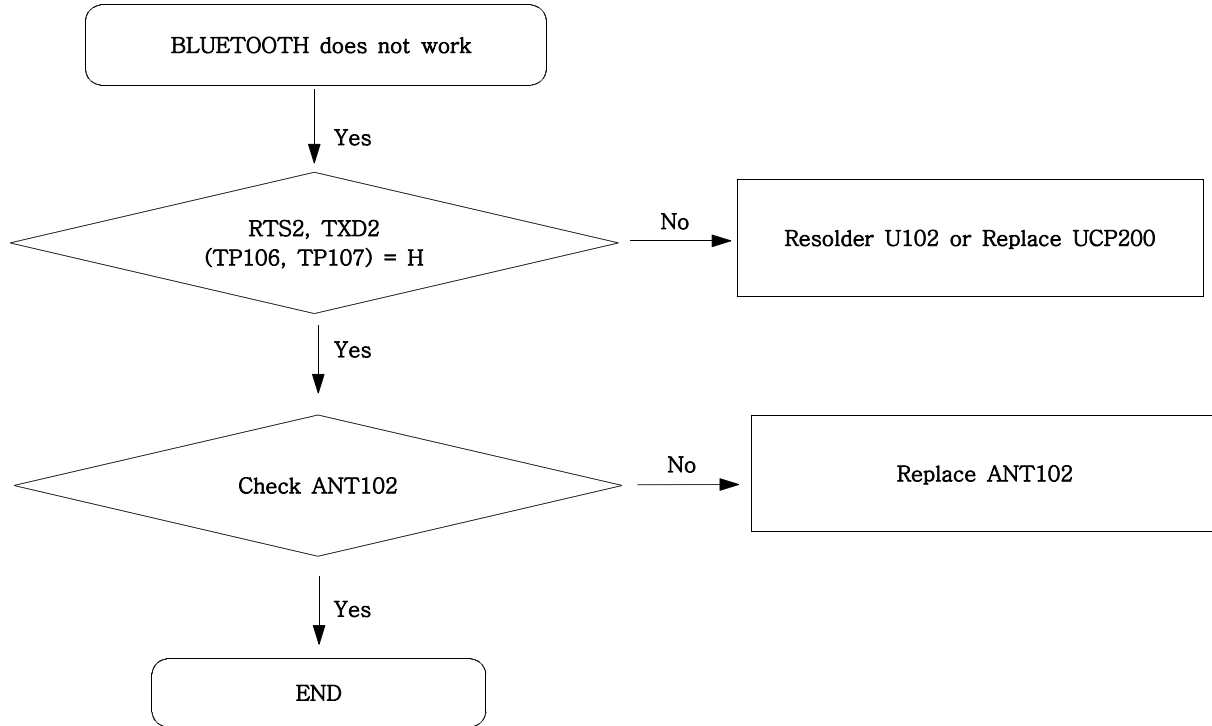


9-11. Camera part

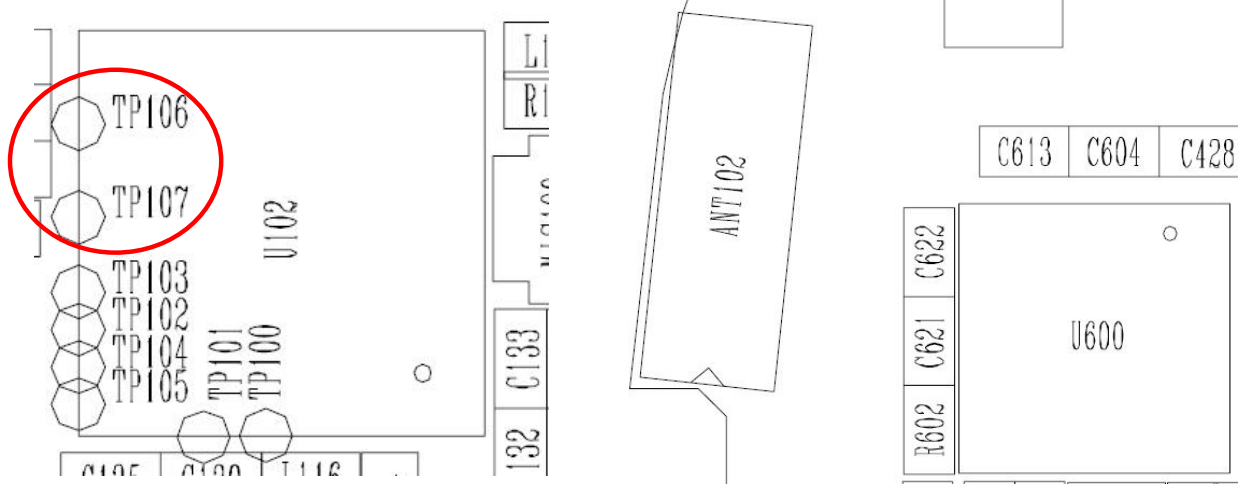
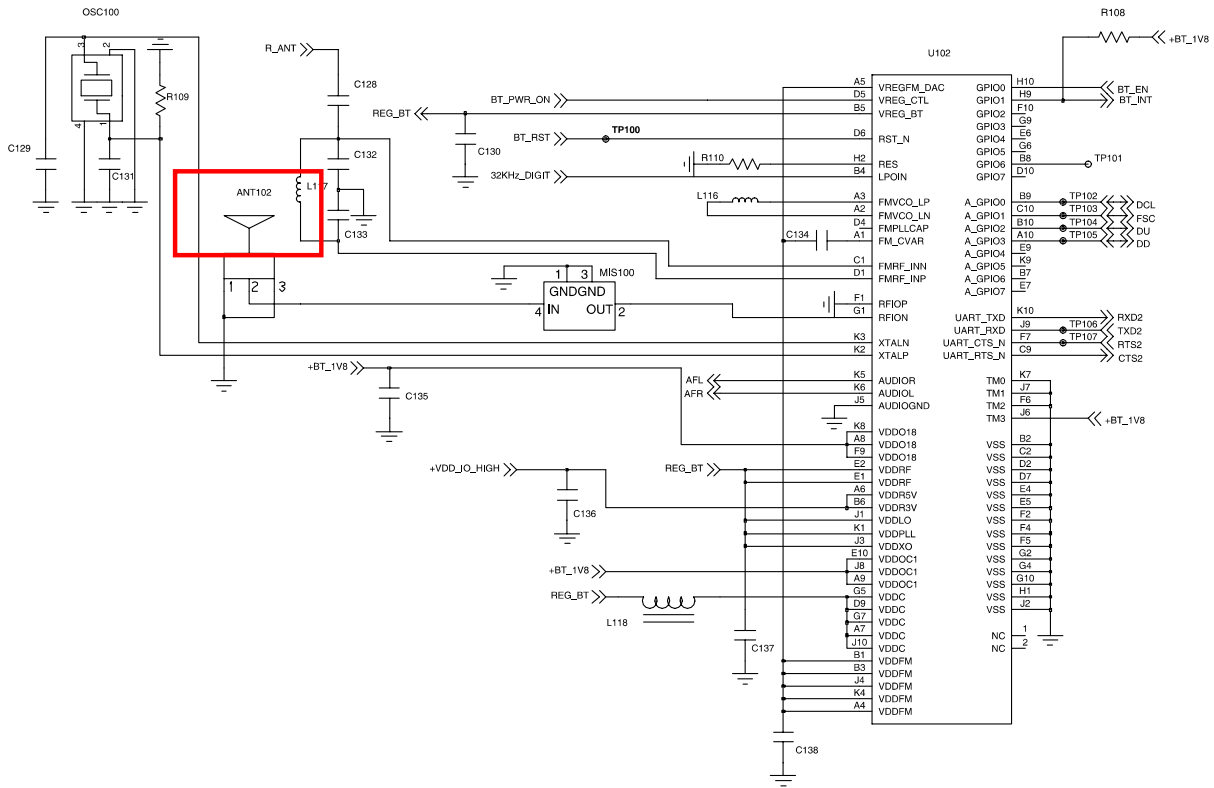




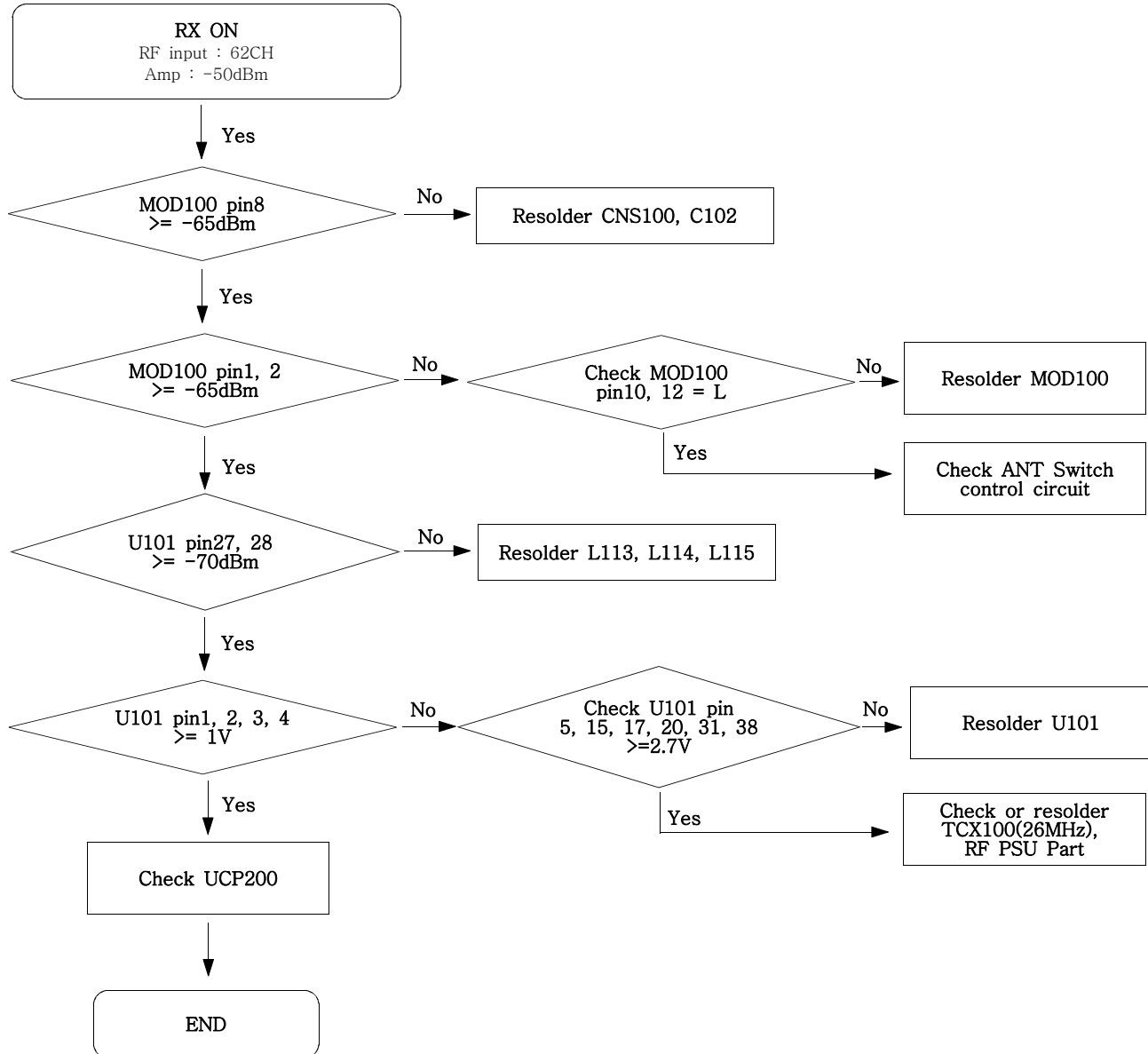
9-12. BLUETOOTH



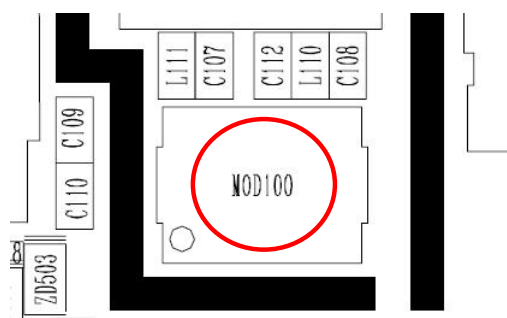
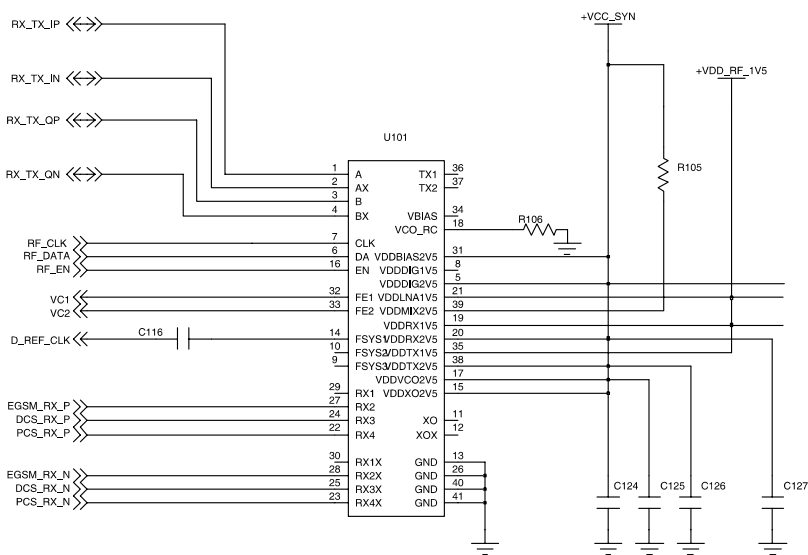
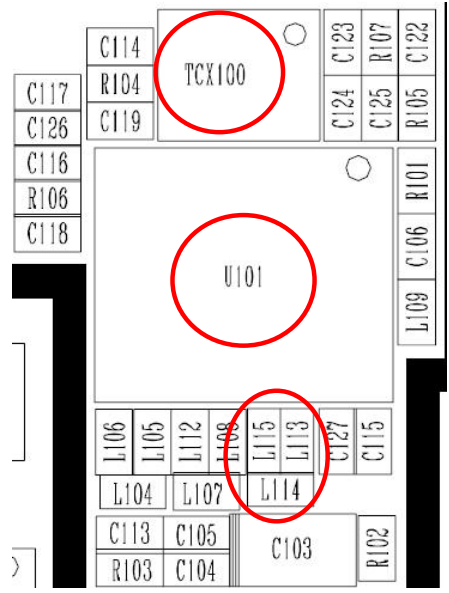
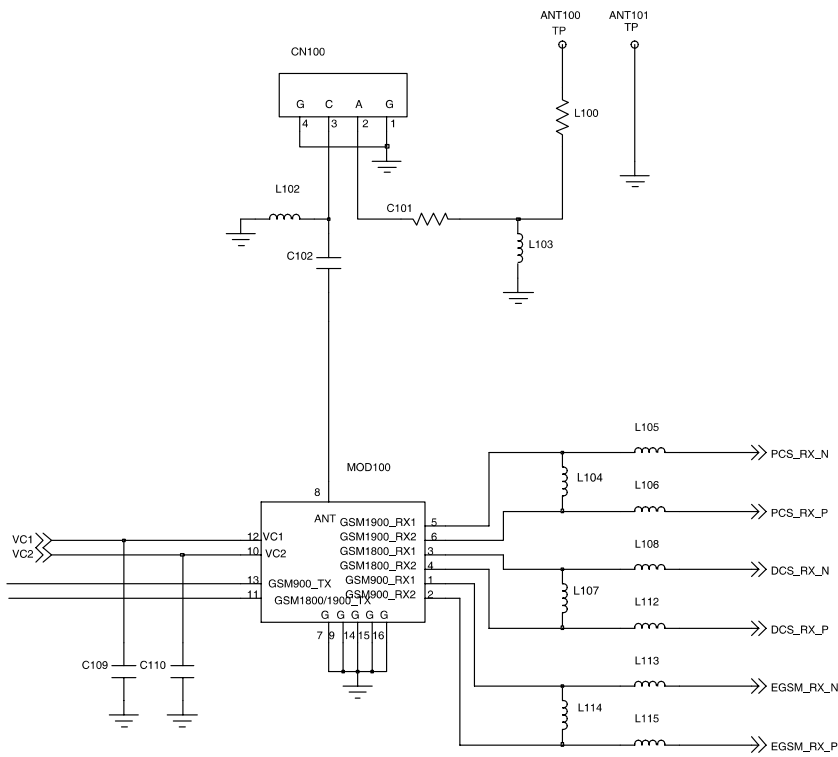
Flow Chart of Troubleshooting



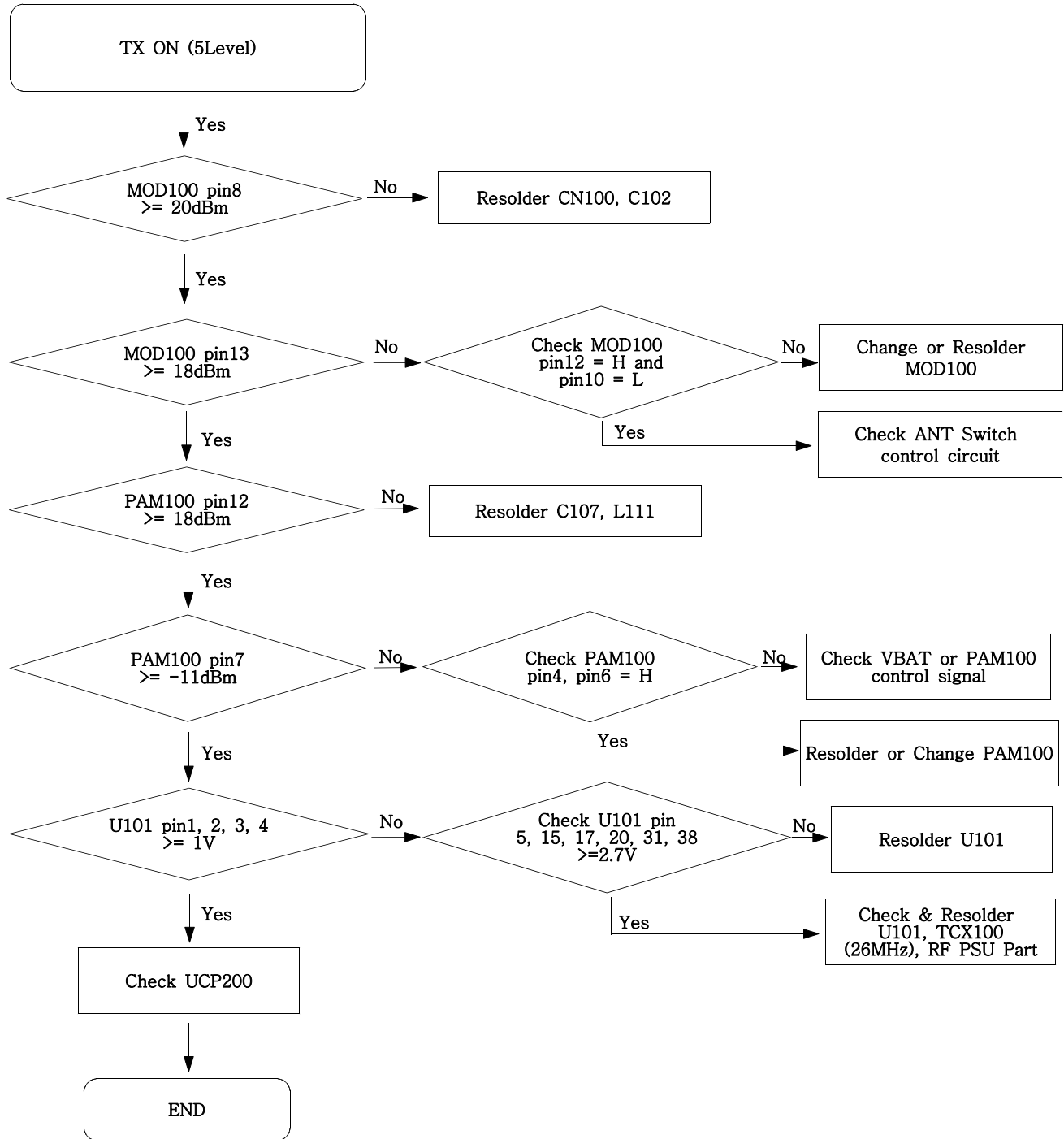
9-13. GSM Receiver



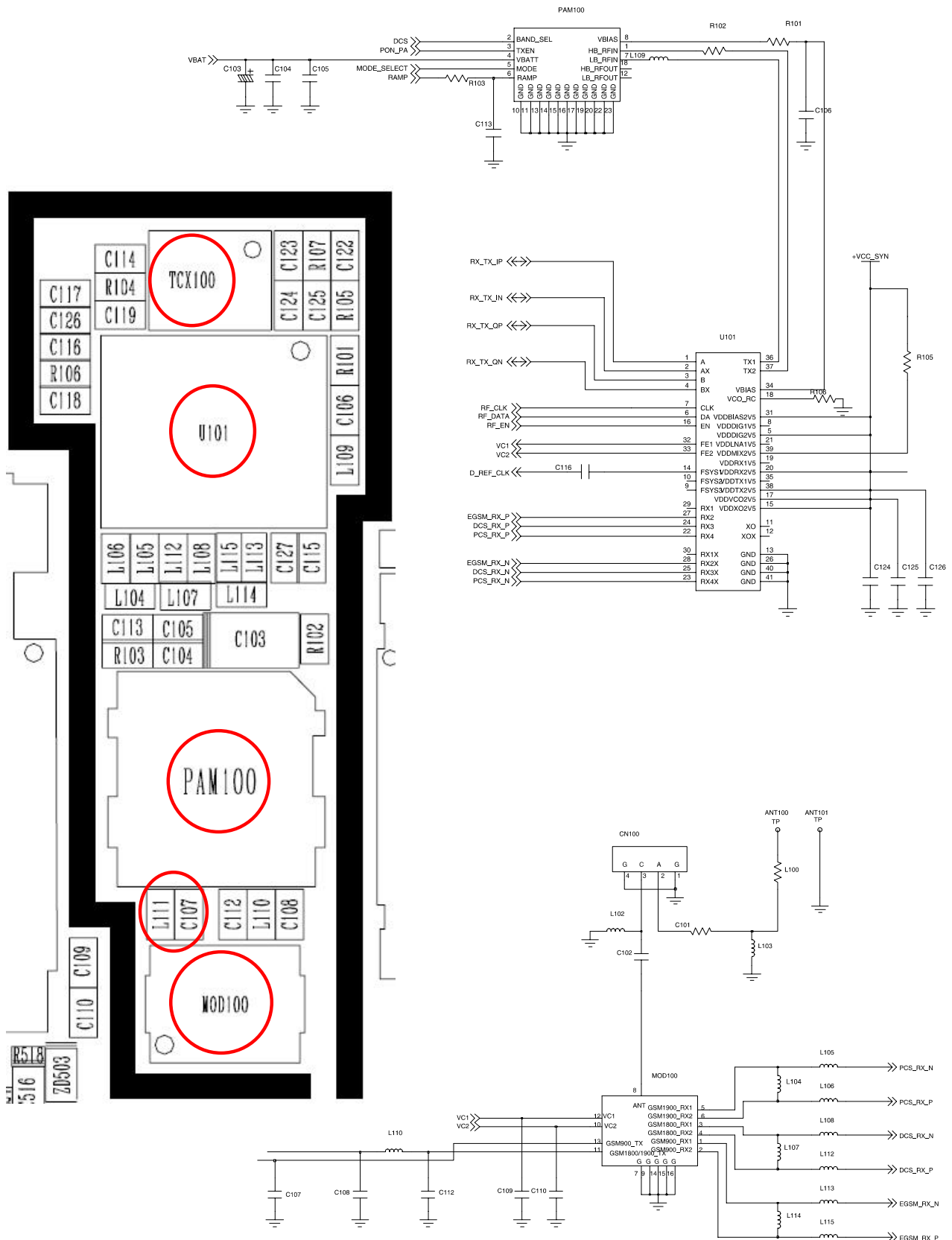
Flow Chart of Troubleshooting



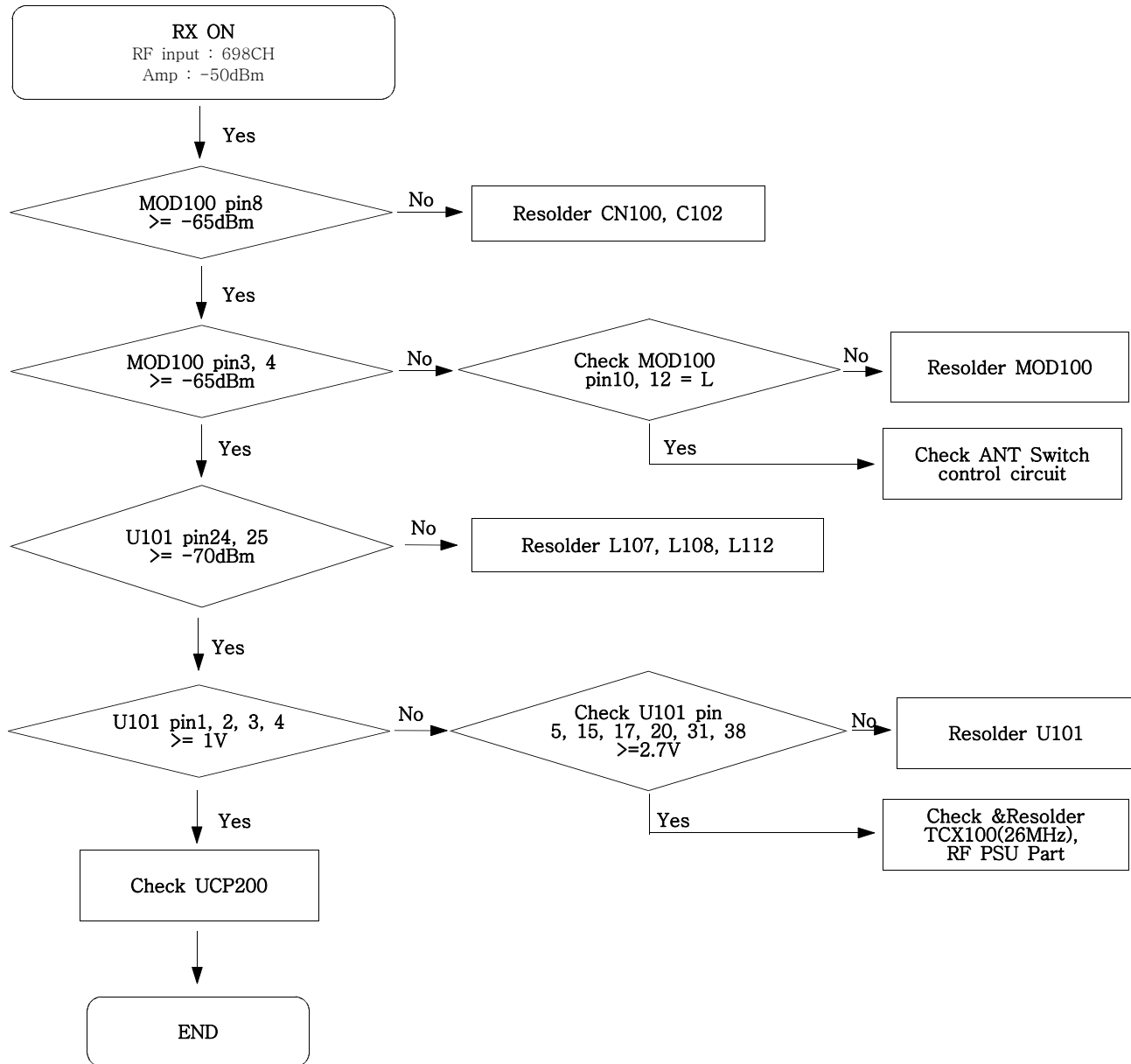
9-14. GSM Transmitter



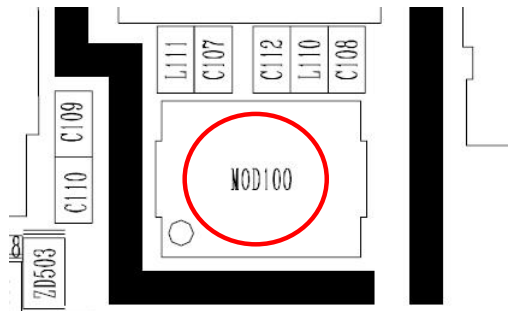
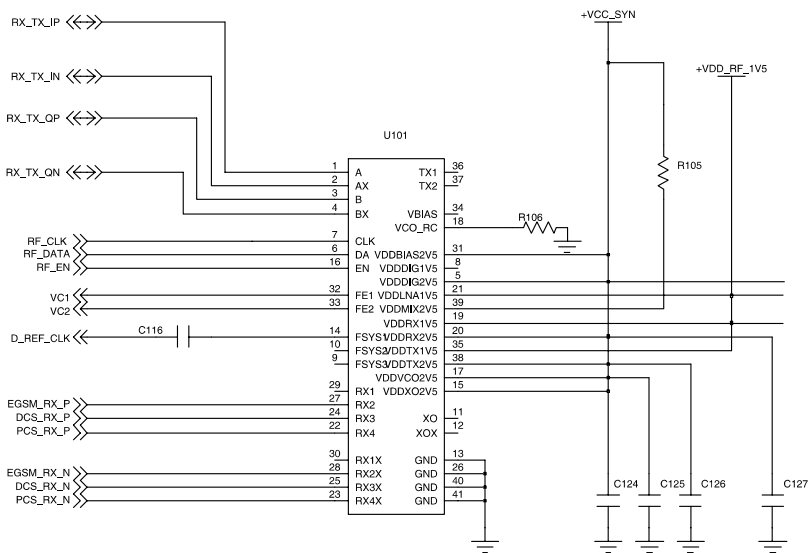
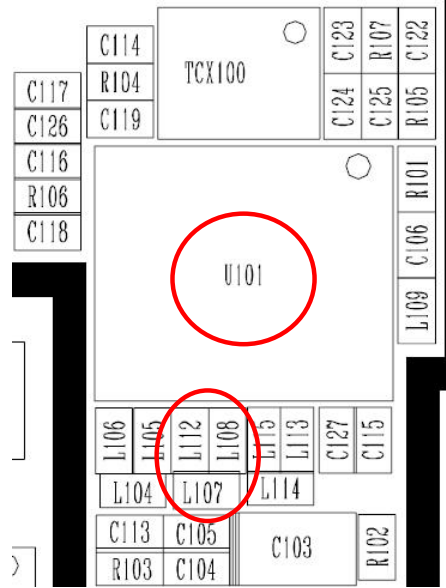
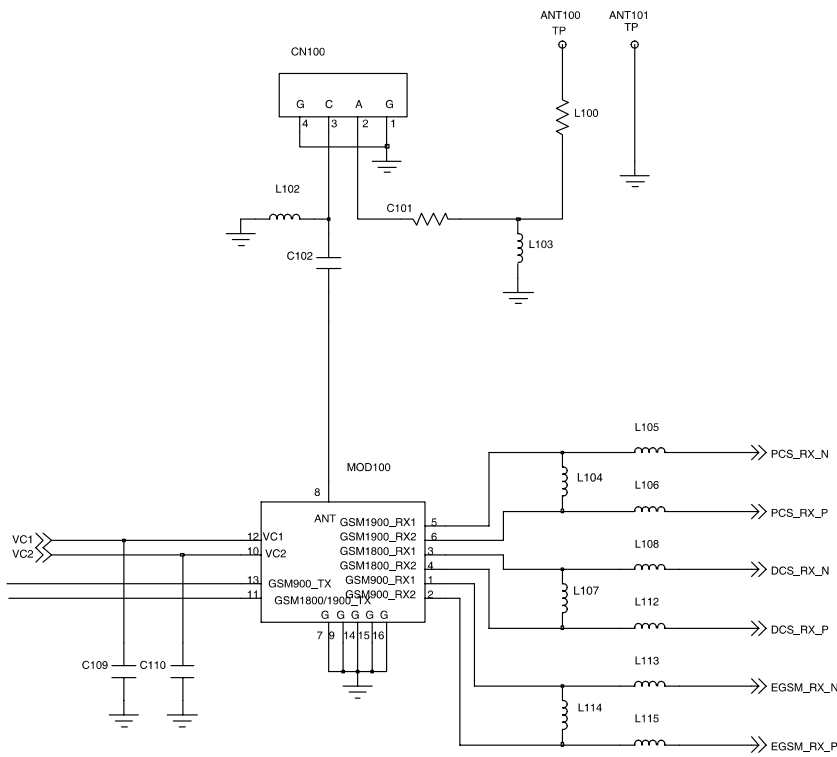
Flow Chart of Troubleshooting



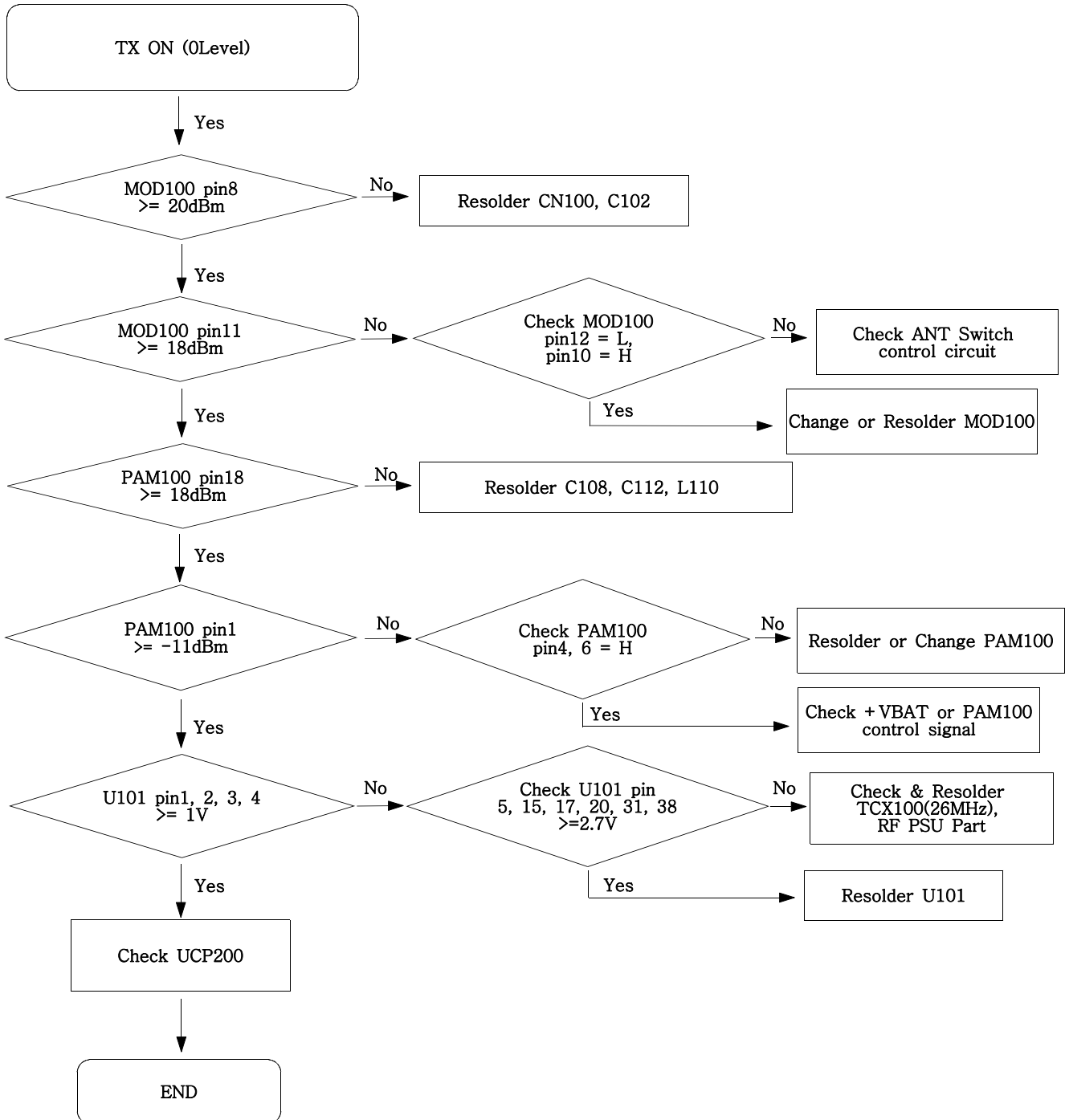
9-15. DCS Receiver



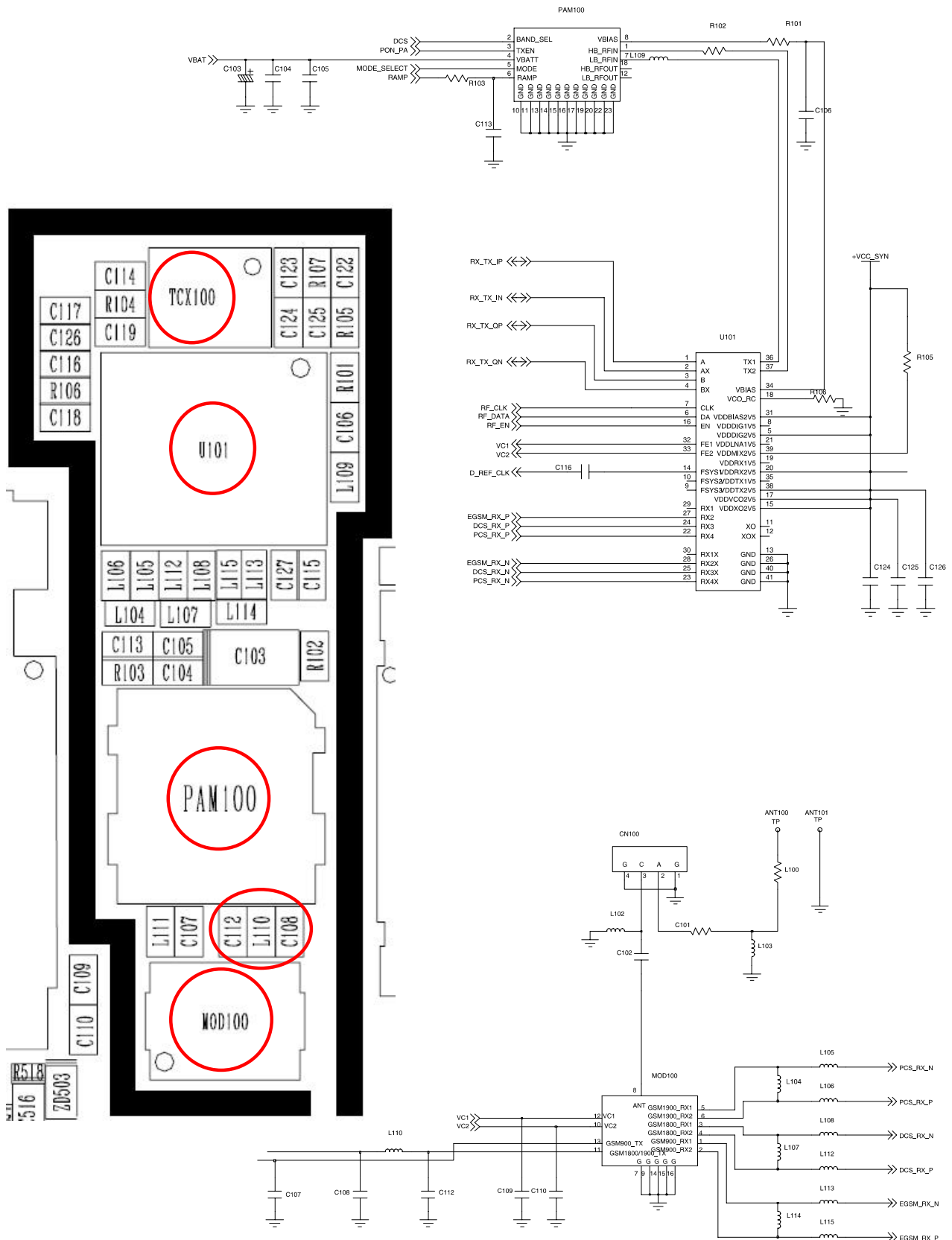
Flow Chart of Troubleshooting



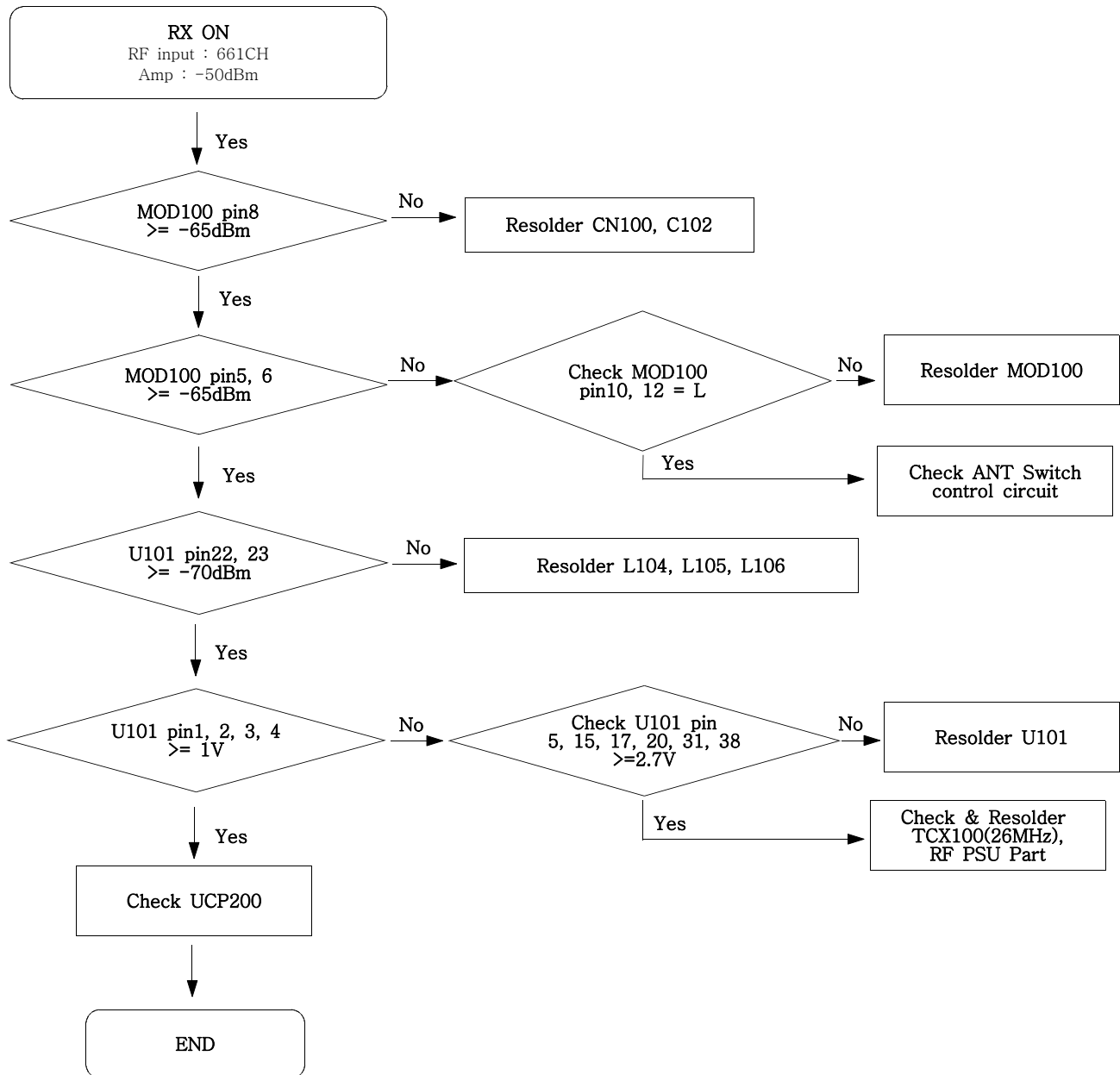
9-16. DCS Transmitter



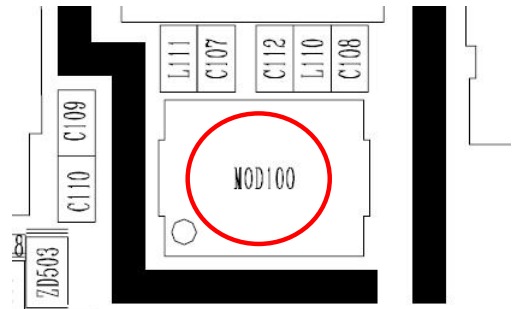
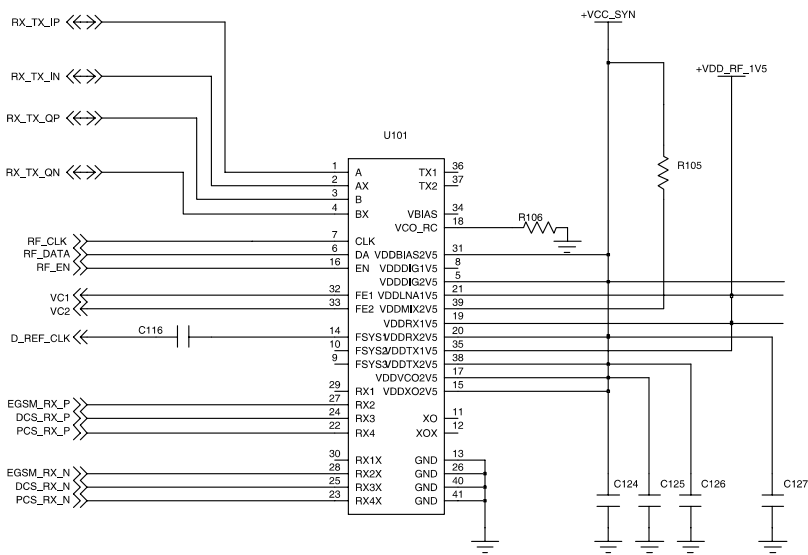
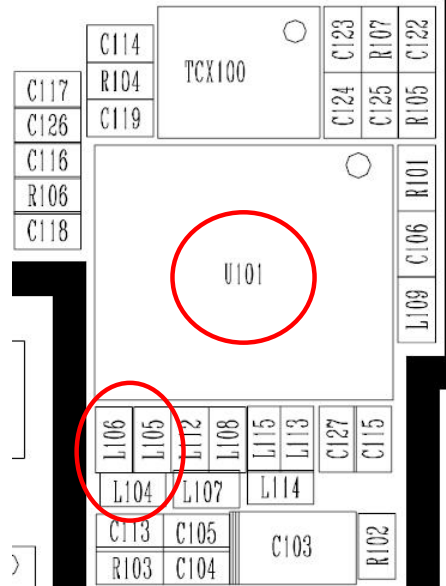
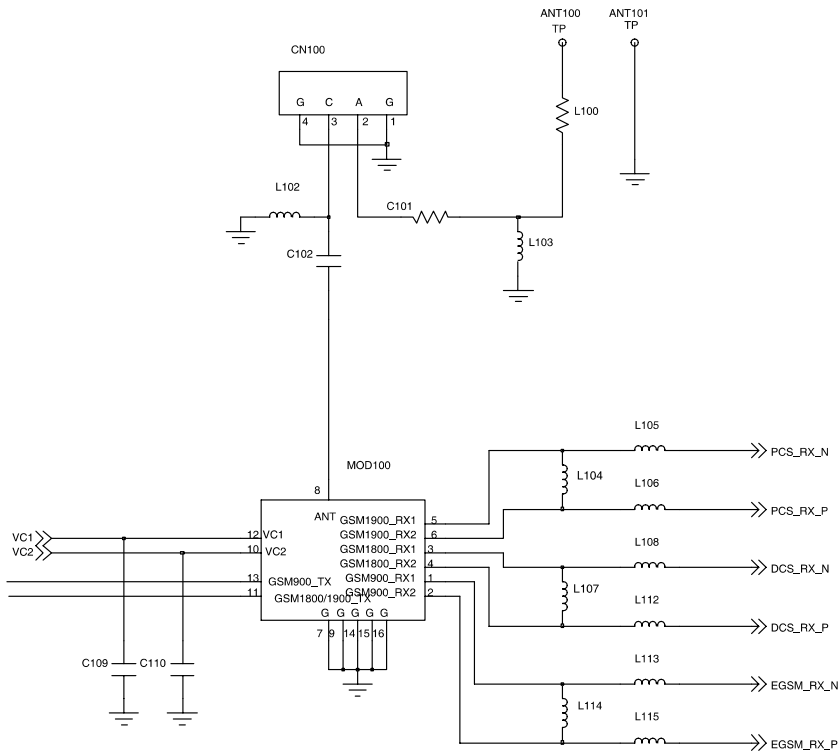
Flow Chart of Troubleshooting



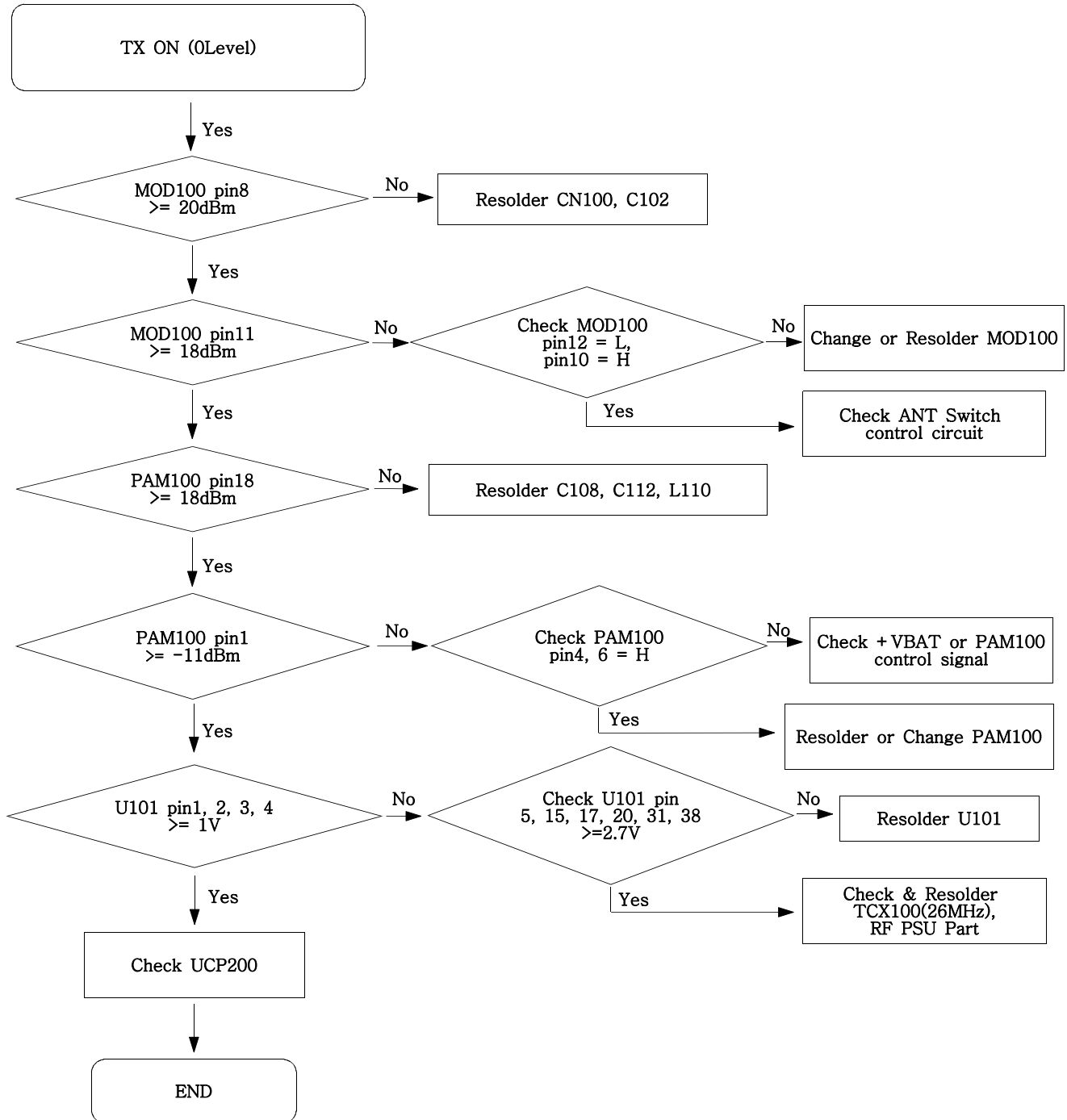
9-17. PCS Receiver



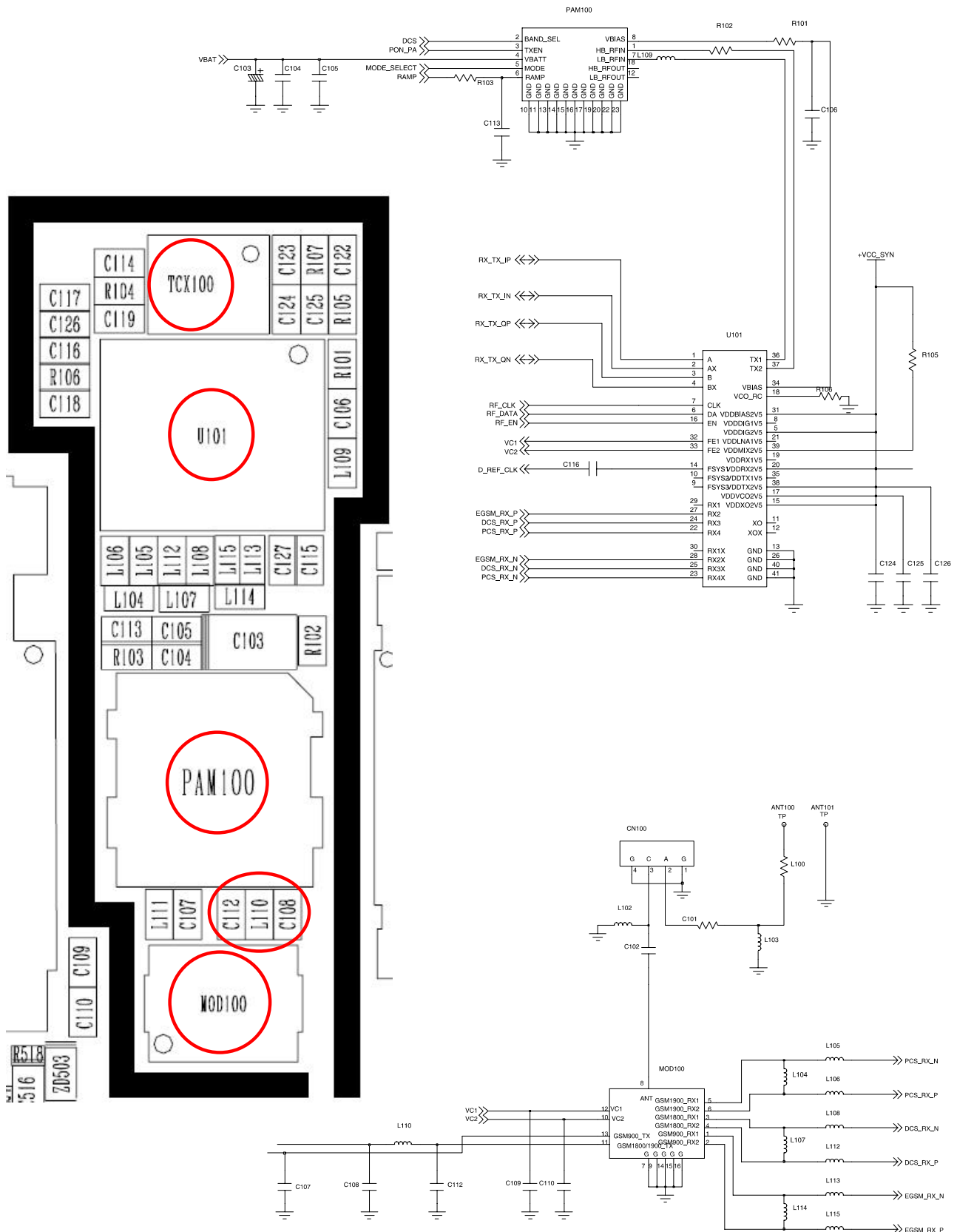
Flow Chart of Troubleshooting



9-18. PCS Transmitter



Flow Chart of Troubleshooting



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

