GSM TELEPHONE

SGH-E890

SERVICE Manual

GSM TELEPHONE

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SAMSUNG ELECTRONICS

2006. 12. Rev.1.0

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9. Flow Chart of Troubleshooting

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 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 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
5	33±3 dBm
6	31±3 dBm
7	29±3 dBm
8	27±3 dBm
9	25±3 dBm
10	23±3 dBm
11	21±3 dBm
12	19±3 dBm
13	17±3 dBm
14	15±3 dBm
15	13±3 dBm
16	11±5 dBm
17	9±5 dBm
18	7±5 dBm
19	5±5 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±4dBm
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±4dBm
12	6±4 dBm
13	4±4 dBm
14	2±5 dBm
15	0±5 dBm

3. Product Function

Main Function

- 1.3 Megapixel Camera
- 262K Color TFT Screen (240×320)
- Video Recording & Messaging
- Music Player(MP3/AAC/AAC+)
- Bluetooth Wireless Technology
- Multimedia Message Service (MMS)
- E-mail
- Voice recorder
- Java / WAP2.0
- Tri-band(900/1800/1900MHz)

4. Array course control

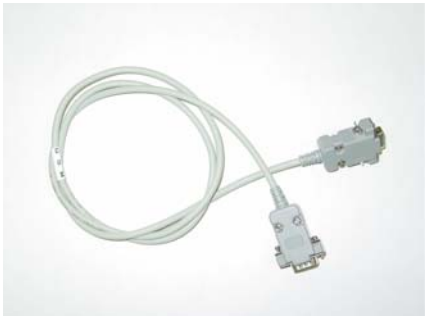
4-1. Software Adjustments

Test Jig (GH80-03306A)

RF Test Cable (GH39-00283A)

Test Cable (GH39-00499B)

Serial Cable



Power Supply Cable

DATA CABLE (GH39-00482B]

TA (GH44-01116B)

TV-OUT Cable (GH39-00410A)

4-2. Software Downloading

4-2-1. Pre-requsite for Downloading

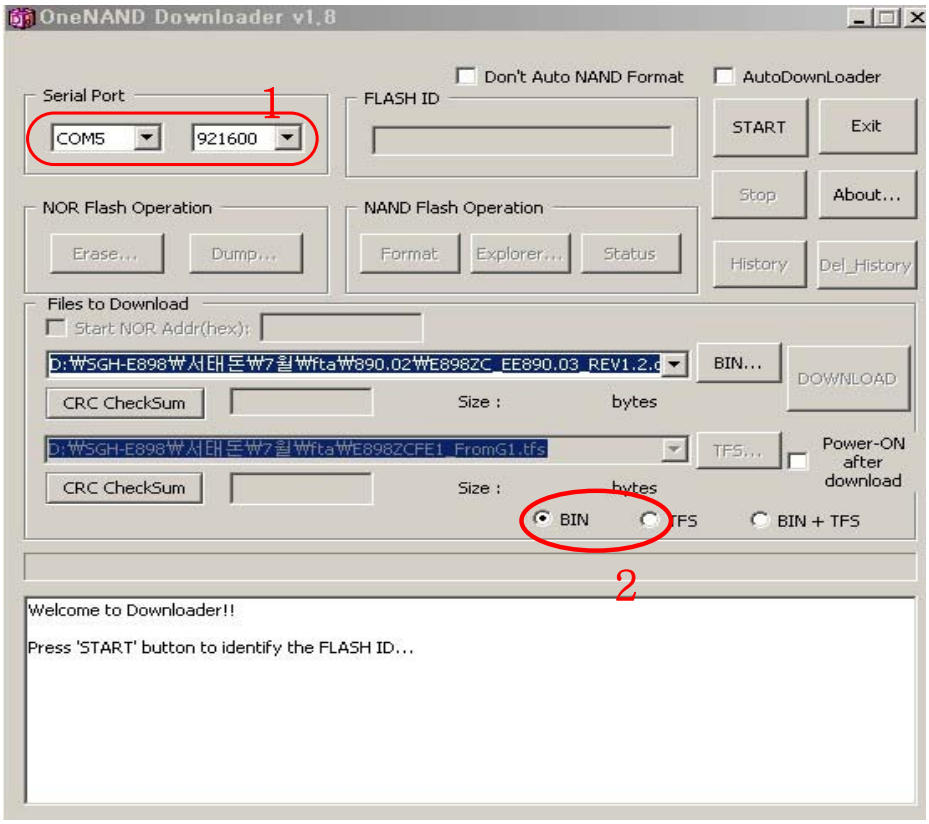
- Downloader Program(OneNAND_Downloder_1.8.exe)
- E890 Mobile Phone
- Data Cable
- Binary file, TFS file

4-2-2. S/W Downloader Program

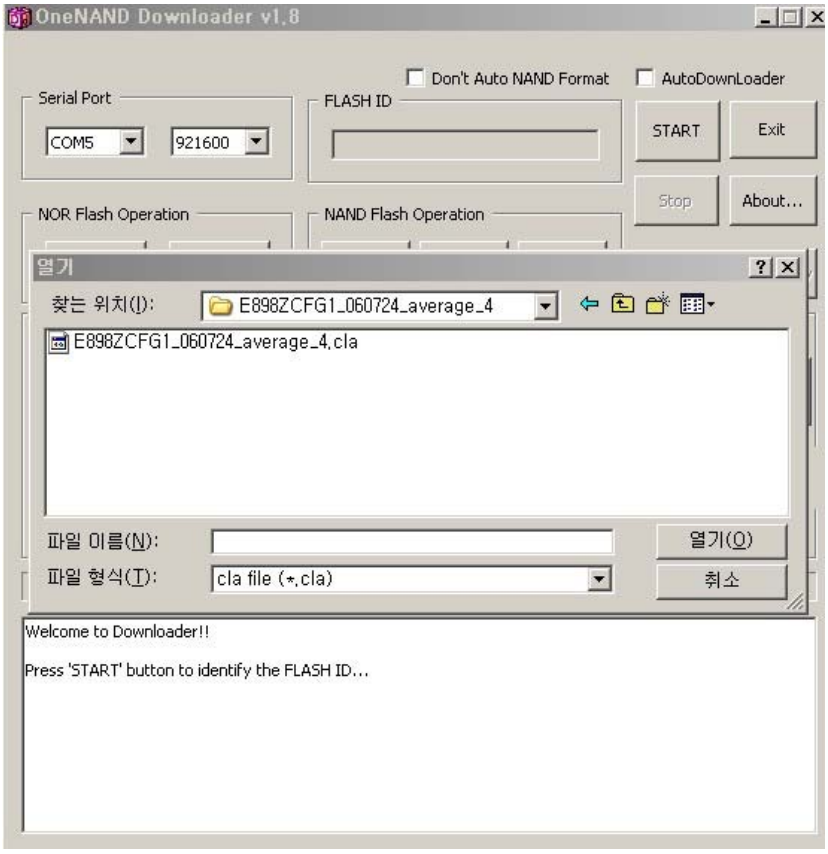
■ Load the binary download program♪by executing the "OneNAND_Downloder_1.8.exe"

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'

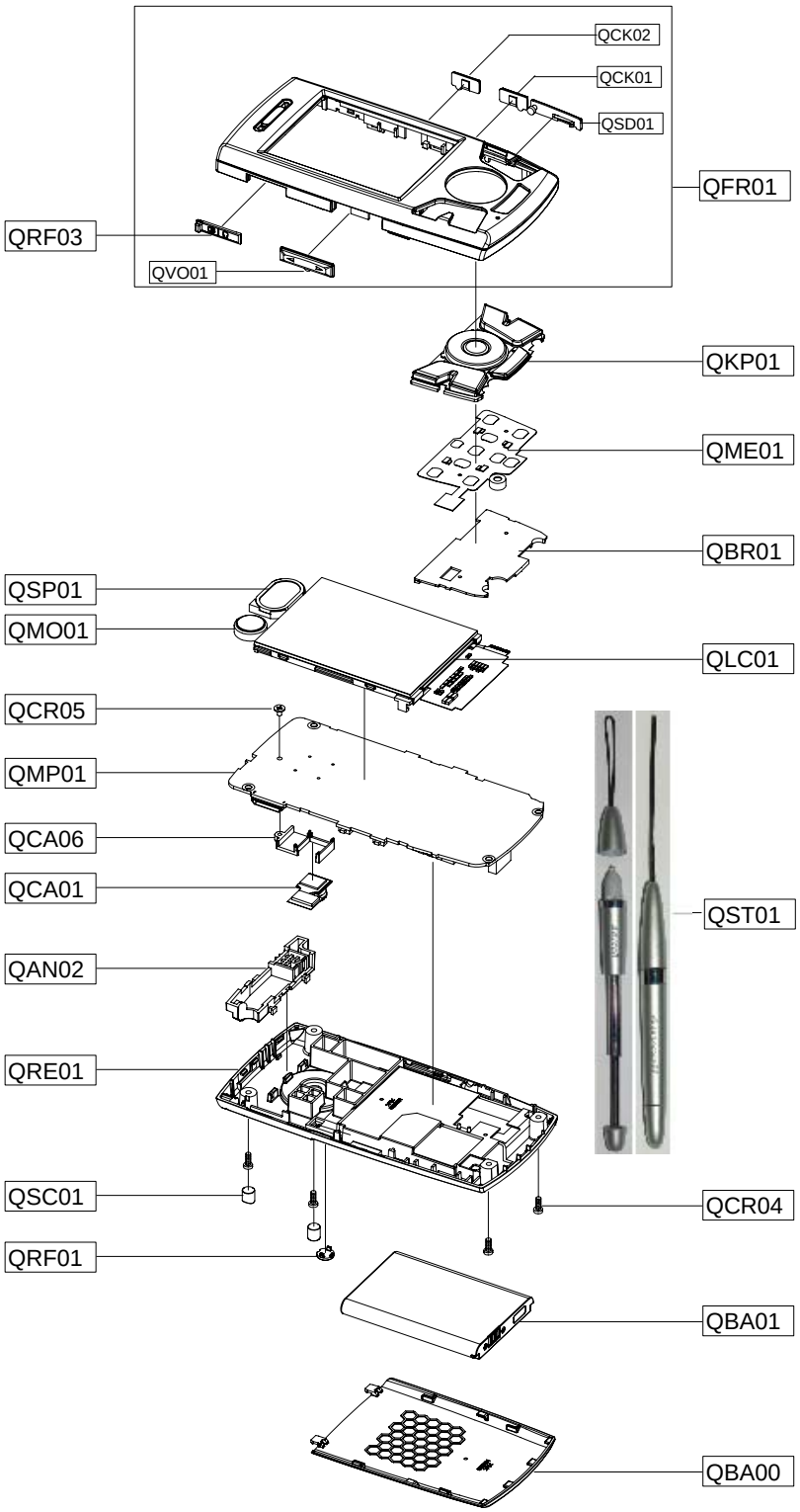


3. Select the file(s) what you want to download



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-SGHE898	GH42-00955A
QBA00		PMO-COVER BATT	GH72-33166A
QBA01		INNER BATTERY PACK-880MAH,BLK,	GH43-02323A
QBR01		NDC-BRAKET DOMESHEET	GH71-06759A
QCA01		UNIT-CAMERA	GH59-03358A
QCA06		NDC-BRAKET CAMERA	GH71-06760A
QCR04		SCREW-MACHINE	6001-001479
QCR05		SCREW-MACHINE	6001-001478
QKP01		ASSY KEYPAD-(TIY/SIL)	GH98-01807A
QLC01		LCD-SGH-E898	GH07-00969A
QME01		UNIT-MAIN KEY FPCB	GH59-03373A
QMO01		MOTOR DC-SGHE898	GH31-00273A
QMP01		PBA MAIN-SGHE890S	GH92-03152A
QRE01		ASSY CASE-REAR	GH98-01806A
QRF01		PMO-COVER RF	GH72-32726A
QRF03		PMO-COVER EAR JACK	GH72-32714A
QSC01		RMO-COVER SCREW	GH73-07720A
QSP01		SPEAKER	3001-002028
QST01		ASSY ACCE-STYLUS PEN(SIL_SAM)	GH98-02835F
QFR01		ASSY CASE-FRONT	GH98-02838A
	QCK01	PMO-CAMERA KEY	GH72-33664A
	QCK02	PMO-HOLD KEY	GH72-33666A
	QSD01	PMO-COVER SD	GH72-32715A
	QVO01	PMO-VOLUME KEY	GH72-33665A

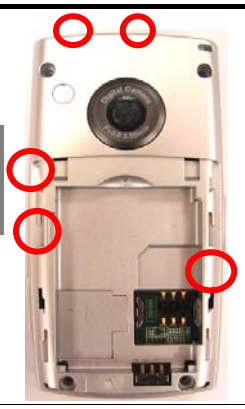
Description	Sec Code
BAG PE	6902-000634
ADAPTOR-SGHE690,SIL,EU,A_TYPE	GH44-01361B
UNIT-EARPHONE	GH59-02499B
LABEL(P)-IMEI	GH68-01335D
LABEL(P)-WATER SOAK	GH68-02026A
LABEL(P)-WATER SOAK	GH68-02026A
MANUAL USERS-SEA ENGLISH	GH68-12558A
LABEL(R)-MAIN(EU)	GH68-12864A
CUSHION-CASE(EU)	GH69-04624A
BOX-UNIT(SEA)	GH69-04625A
RMO-CUSHION ANTENNA PIN	GH73-07718A
MPR-CUSHION PBA FRONT	GH74-25664A
MPR-TAPE DOME SHEET ESD	GH74-25682A
MPR-TAPE PBA FRONT	GH74-25684A
MPR-TAPE PBA BACK	GH74-25685A
MPR-TAPE PBA SIM	GH74-26193A
MPR-TAPE PBA LCD	GH74-26194A
MPR-VINYL BOHO FRONT	GH74-27684A
MPR-VINYL BOHO FRONT	GH74-27684A
MPR-TAPE	GH74-27758A
MPR-TAPE	GH74-27758A
MPR-VINYL BOHO LCD	GH74-28057A
MPR-TAPE	GH74-28229A

5-3. Disassembly and Assembly Instructions

– Disassembly

1

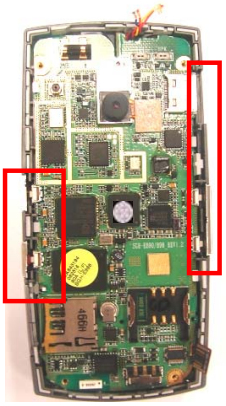
The location of the hook



1) Unscrew, and remove the REAR from the FRONT
2) Confirm the location of the hook, and remove the rear without demage.

1) When you dismantle a mobile phone, be careful about the warp of the framework or damage of the hook.

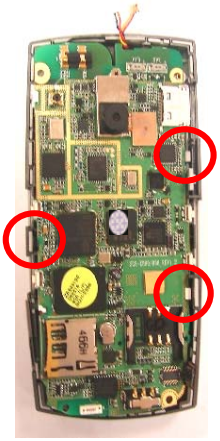
2



1) Remove the side keys and the ear cover from the PBA.
2) Detach the key connector from the PBA.

1) Be careful about the damage of the hook and connector.

3



1) Remove the PBA from the FRONT.
2) Widen the part of hook to the outside, and push up PBA at the backside(LCD).

1) Be careful about the damage of the hook.
2) Be careful about the warp of the PBA or damage of the componets

4

1) The figure of the disjoined FRONT and PBA.

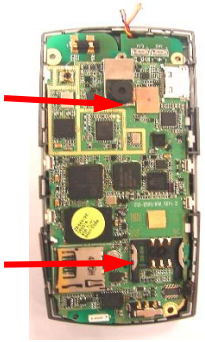
– Assembly

1

1) The wire of motor and speaker have to maintain the twisted state.
2) If the wire is dispersed, twist the wires to the right side. At this time, put the motor wire upside thespeaker wire.

1) Be careful about the damage of wire

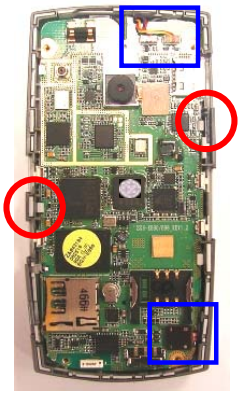
2



1) Assemble the PBA from right side(arrow mark) to the front.
2) Put the Wire like figure.

1) Be careful that the key connector is placed down the pba.
2) WIRE must be at the fixed location.

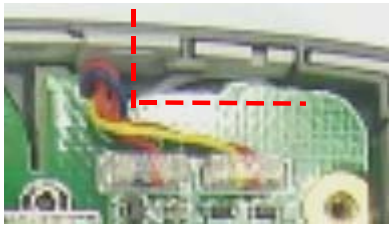
3



1) when assemble PBA, push the hook and four screw boss holes and recheck PBA assembling with accuracy.
2) Attach the motor, speaker, key connector.

1) The connector with blue wire connect to VIB position.
2) The connector with yellow wire connect to SPK position.

4



1) Arrage the WIRE like the figure.

1) Recheck connection part not to get loose.

5

1) Adhere the side keys like figure.

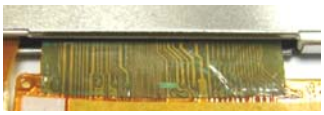
1) Then, put the projection of key upside side switch

6

1) Assemble the REAR with the marked hook.
2) Assemble with accuracy, and screw.

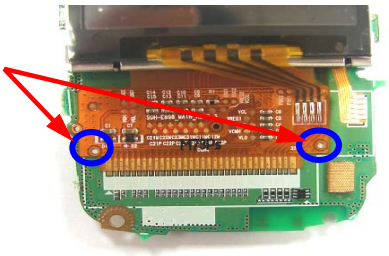
– LCD F-PCB KIT Assembly

1



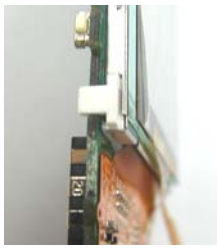
1) At LCD backside, detach the release paper of the both-sided tape
2) Like figure, attach the insulation tape at FPCB backside. - Using cotton stick, rub down the insulation tape to be tight.

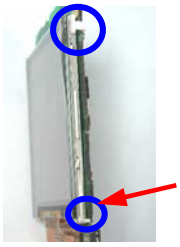
2



1) At attaching, align two FPCB HOLEs and two silk points.
2) Attach and start the soldering.
※ Caution : At soldering, be careful about getting loose and recheck alignment of silk points and pads.

3





1) Assemble the LCD hook.
※ Caution
First, assemble the left downside and then assemble the right upside.

4

1) Align the right side EL FPCB and PBA Land and start the soldering..
※ Caution Then, be careful about "short" of the soldering part.

5

1) After soldering, attach the insulation tape along the silk line.
- Using cotton stick, rub down the folded part not to get loose.
※ caution : Be careful about "short" of soldering part.
Recheck attaching part not to get loose.

6

1) Wrap up and attach the left side insulation tape to the PBA backside.(like figure)
※ caution : Recheck attaching part not to get loose.

6. MAIN Electrical Parts List

Design LOC	Description	SEC Code	STATUS
ANT101	NPR-ANTENNA CONTACT	GH71-04302A	SA
ANT102	NPR-ANTENNA CONTACT	GH71-04302A	SA
ANT103	ANTENNA-CHIP	4202-001224	SA
BAT100	BATTERY-LI(2ND)	4302-001181	SA
BTC600	HEADER-BATTERY	3711-006250	SA
C102	R-CHIP	2007-000171	SA
C105	C-CER,CHIP	2203-000278	SA
C106	C-CER,CHIP	2203-000278	SA
C108	INDUCTOR-SMD	2703-002544	SA
C111	C-CER,CHIP	2203-001432	SA
C112	C-CER,CHIP	2203-005482	SA
C113	INDUCTOR-SMD	2703-002369	SA
C114	C-CER,CHIP	2203-005482	SA
C115	C-CER,CHIP	2203-001432	SA
C116	INDUCTOR-SMD	2703-002368	SA
C117	C-CER,CHIP	2203-000812	SA
C118	C-CER,CHIP	2203-006399	SA
C119	C-CER,CHIP	2203-006399	SA
C120	C-CER,CHIP	2203-005061	SA
C121	C-CER,CHIP	2203-001432	SA
C122	C-CER,CHIP	2203-005482	SA
C123	C-CER,CHIP	2203-005482	SA
C124	C-CER,CHIP	2203-005482	SA
C125	C-CER,CHIP	2203-005482	SA
C126	C-CER,CHIP	2203-005968	SA
C127	C-CER,CHIP	2203-000812	SA
C128	C-CER,CHIP	2203-006201	SA
C129	C-CER,CHIP	2203-006201	SA
C130	C-TA,CHIP	2404-001240	SA
C133	INDUCTOR-SMD	2703-002207	SA
C134	C-CER,CHIP	2203-000530	SNA
C135	C-CER,CHIP	2203-000696	SA
C136	C-CER,CHIP	2203-005288	SA
C138	C-CER,CHIP	2203-000278	SA
C139	C-CER,CHIP	2203-000233	SA
C141	C-TA,CHIP	2404-001474	SA
C142	C-CER,CHIP	2203-000254	SA
C143	C-CER,CHIP	2203-000438	SA
C144	C-CER,CHIP	2203-000812	SA
C150	C-CER,CHIP	2203-000278	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

Design LOC	Description	SEC Code	STATUS
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	2203-006048	SA
C302	C-CER,CHIP	2203-000254	SA
C303	C-CER,CHIP	2203-006423	SA
C304	C-CER,CHIP	2203-006423	SA
C305	C-CER,CHIP	2203-006423	SA
C306	C-CER,CHIP	2203-006423	SA
C307	C-CER,CHIP	2203-000330	SA
C308	C-CER,CHIP	2203-000330	SA
C309	C-CER,CHIP	2203-006048	SA
C321	C-CER,CHIP	2203-006562	SA
C325	C-CER,CHIP	2203-006048	SA
C326	C-CER,CHIP	2203-000233	SA
C401	C-CER,CHIP	2203-006562	SA
C402	C-CER,CHIP	2203-006838	SA
C403	C-CER,CHIP	2203-006824	SA
C405	C-CER,CHIP	2203-006048	SA
C406	C-CER,CHIP	2203-006257	SA
C407	C-CER,CHIP	2203-000628	SA
C408	C-CER,CHIP	2203-000628	SA
C411	C-CER,CHIP	2203-000812	SA
C412	C-CER,CHIP	2203-006824	SA
C413	C-CER,CHIP	2203-006257	SA
C414	C-CER,CHIP	2203-006824	SA
C416	C-CER,CHIP	2203-006562	SA
C417	C-CER,CHIP	2203-006562	SA
C418	C-CER,CHIP	2203-006562	SA
C419	C-CER,CHIP	2203-006562	SA
C420	C-CER,CHIP	2203-006838	SA
C421	C-CER,CHIP	2203-006562	SA
C422	C-CER,CHIP	2203-006824	SA
C423	C-CER,CHIP	2203-006824	SA
C424	C-CER,CHIP	2203-006257	SA
C425	C-CER,CHIP	2203-006257	SA
C426	C-CER,CHIP	2203-000233	SA
C427	C-CER,CHIP	2203-006562	SA
C428	C-CER,CHIP	2203-006838	SA
C429	C-CER,CHIP	2203-006257	SA
C430	C-CER,CHIP	2203-006708	SA
C431	C-CER,CHIP	2203-006562	SA
C433	C-CER,CHIP	2203-005482	SA
C501	C-CER,CHIP	2203-006048	SA
C503	C-CER,CHIP	2203-005390	SA
C505	C-CER,CHIP	2203-006048	SA
C514	C-CER,CHIP	2203-006048	SA
C520	C-CER,CHIP	2203-000870	SA
C521	C-CER,CHIP	2203-006048	SA
C522	C-CER,CHIP	2203-006648	SA
C538	C-CER,CHIP	2203-006562	SA
C539	C-CER,CHIP	2203-005344	SA
C541	C-CER,CHIP	2203-005344	SA

Design LOC	Description	SEC Code	STATUS
C542	C-CER,CHIP	2203-005344	SA
C545	C-CER,CHIP	2203-005344	SA
C550	C-CER,CHIP	2203-000438	SA
C551	C-CER,CHIP	2203-000438	SA
C556	C-CER,CHIP	2203-006048	SA
C563	C-CER,CHIP	2203-000854	SA
C564	C-CER,CHIP	2203-000854	SA
C566	C-CER,CHIP	2203-006048	SA
C567	C-CER,CHIP	2203-000812	SA
C568	C-CER,CHIP	2203-000812	SA
C569	C-CER,CHIP	2203-006562	SA
C570	C-CER,CHIP	2203-006562	SA
C600	C-CER,CHIP	2203-006423	SA
C601	C-CER,CHIP	2203-006562	SA
C602	C-CER,CHIP	2203-006626	SA
C604	C-CER,CHIP	2203-006048	SA
C605	C-CER,CHIP	2203-006048	SA
C606	C-CER,CHIP	2203-006048	SA
C609	C-CER,CHIP	2203-006562	SA
C610	C-CER,CHIP	2203-006048	SA
C611	C-CER,CHIP	2203-006048	SA
C617	C-CER,CHIP	2203-006562	SA
C618	C-CER,CHIP	2203-006562	SA
C620	C-CER,CHIP	2203-006048	SA
C621	C-CER,CHIP	2203-006324	SA
C622	C-CER,CHIP	2203-002487	SA
C623	C-CER,CHIP	2203-006048	SA
C624	C-CER,CHIP	2203-006048	SA
C630	C-CER,CHIP	2203-002709	SA
C631	C-CER,CHIP	2203-005482	SA
C632	C-CER,CHIP	2203-006562	SA
C633	C-TA,CHIP	2404-001225	SA
C634	C-CER,CHIP	2203-005482	SA
C705	C-CER,CHIP	2203-005682	SA
C706	C-CER,CHIP	2203-005682	SA
C707	C-CER,CHIP	2203-005682	SA
C708	C-CER,CHIP	2203-005682	SA
C709	C-CER,CHIP	2203-005682	SA
C712	C-CER,CHIP	2203-006562	SA
C714	C-CER,CHIP	2203-006562	SA
C715	C-CER,CHIP	2203-006562	SA
C716	C-CER,CHIP	2203-006562	SA
C717	C-CER,CHIP	2203-006324	SA
C719	C-CER,CHIP	2203-005682	SA
C720	C-CER,CHIP	2203-005682	SA
C721	C-CER,CHIP	2203-005682	SA
C722	C-CER,CHIP	2203-005682	SA
C723	C-CER,CHIP	2203-005682	SA
C724	C-CER,CHIP	2203-005682	SA
C725	C-CER,CHIP	2203-005682	SA
C726	C-CER,CHIP	2203-005682	SA
C727	C-CER,CHIP	2203-006423	SA
C728	C-CER,CHIP	2203-005682	SA

Design LOC	Description	SEC Code	STATUS
C729	C-CER,CHIP	2203-006423	SA
C730	C-CER,CHIP	2203-005682	SA
C731	C-CER,CHIP	2203-005682	SA
C732	C-CER,CHIP	2203-005682	SA
C733	C-CER,CHIP	2203-006423	SA
C736	C-CER,CHIP	2203-005682	SA
C738	C-CER,CHIP	2203-005682	SA
C740	C-CER,CHIP	2203-005682	SA
C755	C-CER,CHIP	2203-006048	SA
C756	C-CER,CHIP	2203-005682	SA
C757	C-CER,CHIP	2203-005682	SA
C758	C-CER,CHIP	2203-005682	SA
C759	C-CER,CHIP	2203-005682	SA
C760	C-CER,CHIP	2203-000254	SA
C761	C-CER,CHIP	2203-000254	SA
C762	C-CER,CHIP	2203-000254	SA
C763	C-CER,CHIP	2203-000254	SA
C766	C-CER,CHIP	2203-005682	SA
C767	C-CER,CHIP	2203-005682	SA
C772	C-CER,CHIP	2203-005682	SA
C773	C-CER,CHIP	2203-005682	SA
C774	C-CER,CHIP	2203-005682	SA
C781	C-CER,CHIP	2203-005682	SA
CD300	CONNECTOR-CARD EDGE	3709-001344	SA
CN701	SOCKET-BOARD TO BOARD	3710-002081	SA
CN702	SOCKET-BOARD TO BOARD	3710-002081	SA
D309	DIODE-TVS	0406-001200	SA
D400	DIODE-ARRAY	0407-001002	SA
D403	DIODE-SCHOTTKY	0404-001172	SA
D500	DIODE-SCHOTTKY	0404-001172	SA
D516	DIODE-TVS	0406-001208	SA
D517	DIODE-TVS	0406-001150	SA
F101	FILTER-EMI SMD	2901-001254	SA
F500	FILTER-EMI/ESD	2901-001322	SA
F600	FILTER-EMI SMD	2901-001254	SA
HDC700	HEADER-BOARD TO BOARD	3711-005659	SA
HDC701	HEADER-BOARD TO BOARD	3711-005643	SA
IFC500	SOCKET-INTERFACE	3710-002442	SA
L106	INDUCTOR-SMD	2703-002155	SA
L107	INDUCTOR-SMD	2703-002203	SA
L109	INDUCTOR-SMD	2703-002267	SA
L110	INDUCTOR-SMD	2703-002267	SA
L113	C-CER,CHIP	2203-000696	SA
L114	INDUCTOR-SMD	2703-002369	SA
L130	BEAD-SMD	3301-001534	SA
L133	INDUCTOR-SMD	2703-002365	SA
L134	INDUCTOR-SMD	2703-002544	SA
L135	INDUCTOR-SMD	2703-002368	SA
L136	INDUCTOR-SMD	2703-002369	SA
L401	BEAD-SMD	3301-001120	SA
L402	INDUCTOR-SMD	2703-002653	SA
L405	BEAD-SMD	3301-001729	SA
L500	INDUCTOR-SMD	2703-001723	SA

Design LOC	Description	SEC Code	STATUS
L501	INDUCTOR-SMD	2703-001723	SA
L502	BEAD-SMD	3301-001756	SA
L503	BEAD-SMD	3301-001756	SA
L504	BEAD-SMD	3301-001729	SA
L602	BEAD-SMD	3301-001729	SA
L603	BEAD-SMD	3301-001729	SA
L604	BEAD-SMD	3301-001729	SA
L702	BEAD-SMD	3301-001729	SA
OSC300	CRYSTAL-SMD	2801-004340	SA
OSC400	CRYSTAL-SMD	2801-004373	SA
PAM100	IC-POWER AMP	1201-002423	SA
R104	R-CHIP	2007-001284	SA
R105	R-CHIP	2007-000172	SA
R106	R-CHIP	2007-001316	SA
R107	R-CHIP	2007-000140	SA
R116	R-CHIP	2007-000140	SA
R120	R-CHIP	2007-000171	SA
R122	R-CHIP	2007-000171	SA
R123	R-CHIP	2007-000171	SA
R124	R-CHIP	2007-000171	SA
R125	R-CHIP	2007-000171	SA
R126	R-CHIP	2007-000140	SA
R127	R-CHIP	2007-000172	SA
R138	R-CHIP	2007-000171	SA
R200	R-CHIP	2007-000171	SA
R201	R-CHIP	2007-008516	SA
R202	R-CHIP	2007-000168	SA
R208	R-CHIP	2007-000758	SA
R210	R-CHIP	2007-008478	SA
R211	R-CHIP	2007-008478	SA
R219	R-CHIP	2007-008052	SA
R220	R-CHIP	2007-000148	SA
R223	R-CHIP	2007-000162	SA
R224	R-CHIP	2007-000162	SA
R261	R-CHIP	2007-000162	SA
R300	R-CHIP	2007-000162	SA
R301	R-CHIP	2007-008055	SA
R304	R-CHIP	2007-000148	SA
R305	R-CHIP	2007-000170	SA
R306	R-CHIP	2007-007136	SA
R307	R-CHIP	2007-000157	SA
R320	R-CHIP	2007-000162	SA
R322	R-CHIP	2007-000140	SA
R323	R-CHIP	2007-000162	SA
R324	R-CHIP	2007-000159	SA
R325	R-CHIP	2007-000162	SA
R327	R-CHIP	2007-000166	SA
R328	R-CHIP	2007-008055	SA
R333	R-CHIP	2007-000162	SA
R339	R-CHIP	2007-000171	SA
R340	R-CHIP	2007-008055	SA
R341	R-CHIP	2007-000171	SA
R342	R-CHIP	2007-000171	SA

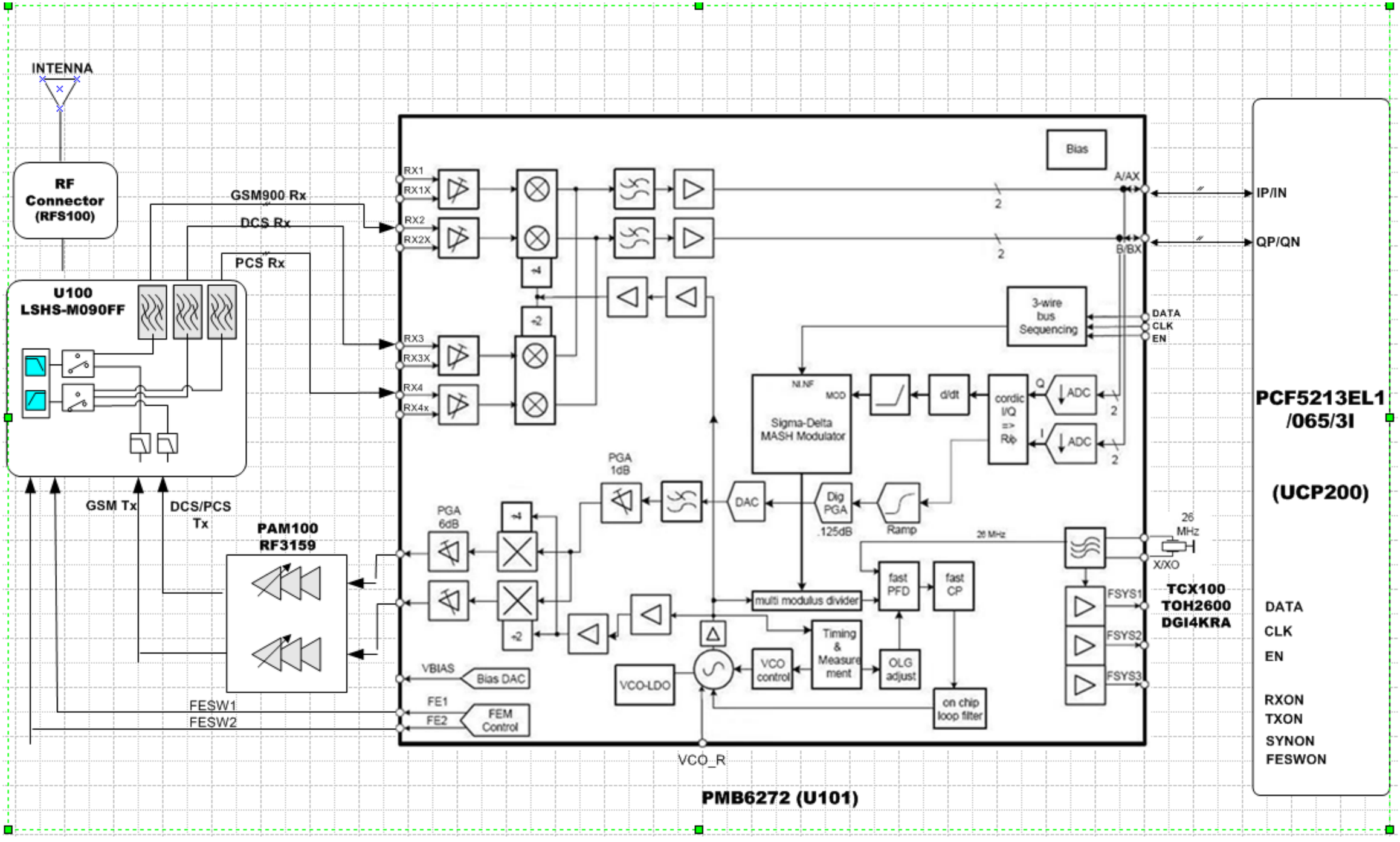
Design LOC	Description	SEC Code	STATUS
R343	R-CHIP	2007-000157	SA
R401	R-CHIP	2007-000162	SA
R402	R-CHIP	2007-000162	SA
R403	R-CHIP	2007-000162	SA
R404	R-CHIP	2007-000758	SA
R406	R-CHIP	2007-007100	SA
R500	R-CHIP	2007-002796	SA
R501	R-CHIP	2007-000140	SA
R504	R-CHIP	2007-007573	SA
R505	R-CHIP	2007-000140	SA
R506	R-CHIP	2007-002796	SA
R507	R-CHIP	2007-002796	SA
R508	R-CHIP	2007-000162	SA
R509	R-CHIP	2007-009170	SA
R511	R-CHIP	2007-008419	SA
R512	R-CHIP	2007-008419	SA
R513	R-CHIP	2007-002796	SA
R514	R-CHIP	2007-000171	SA
R515	R-CHIP	2007-000171	SA
R520	R-CHIP	2007-007009	SA
R522	R-CHIP	2007-001306	SA
R530	R-CHIP	2007-000171	SA
R531	R-CHIP	2007-000171	SA
R532	R-CHIP	2007-000171	SA
R533	R-CHIP	2007-000171	SA
R535	R-CHIP	2007-000162	SA
R537	R-CHIP	2007-007142	SA
R538	R-CHIP	2007-007334	SA
R550	R-CHIP	2007-000162	SA
R551	R-CHIP	2007-007132	SA
R558	R-CHIP	2007-007132	SA
R561	R-CHIP	2007-000162	SA
R565	R-CHIP	2007-008531	SA
R567	R-CHIP	2007-008531	SA
R568	R-CHIP	2007-000148	SA
R569	R-CHIP	2007-000148	SA
R600	R-CHIP	2007-008516	SA
R601	R-CHIP	2007-007107	SA
R603	R-CHIP	2007-000168	SA
R604	R-CHIP	2007-008483	SA
R605	R-CHIP	2007-007573	SA
R606	R-CHIP	2007-000142	SA
R607	R-CHIP	2007-007318	SA
R608	R-CHIP	2007-007588	SA
R609	R-CHIP	2007-007334	SA
R612	R-CHIP	2007-000170	SA
R613	R-CHIP	2007-000170	SA
R617	R-CHIP	2007-000148	SA
R618	R-CHIP	2007-000162	SA
R620	R-CHIP	2007-007312	SA
R621	R-CHIP	2007-000162	SA
R700	R-CHIP	2007-008275	SA
R701	R-CHIP	2007-000141	SA

Design LOC	Description	SEC Code	STATUS
R718	R-CHIP	2007-000141	SA
R834	R-CHIP	2007-000171	SA
RFS100	CONNECTOR-COAXIAL	3705-001358	SA
SIM400	CONNECTOR-CARD EDGE	3709-001400	SA
SW700	SWITCH-TACT	3404-001303	SA
SW701	SWITCH-TACT	3404-001303	SA
SW702	SWITCH-TACT	3404-001303	SA
SW703	SWITCH-TACT	3404-001303	SA
TA400	C-TA,CHIP	2404-001381	SA
TA410	C-TA,CHIP	2404-001381	SA
TA428	C-TA,CHIP	2404-001375	SA
TA500	C-TA,CHIP	2404-001422	SA
TA502	C-TA,CHIP	2404-001281	SA
TA534	C-TA,CHIP	2404-001381	SA
TA557	C-TA,CHIP	2404-001381	SA
TA560	C-TA,CHIP	2404-001377	SA
TA561	C-TA,CHIP	2404-001377	SA
TA562	C-TA,CHIP	2404-001281	SA
TA603	C-TA,CHIP	2404-001268	SA
TA700	C-TA,CHIP	2404-001339	SA
TCX100	OSCILLATOR-VCTCXO	2809-001281	SA
TR600	TR-DIGITAL	0504-001151	SA
U100	DUPLEXER-FEM	2911-000057	SA
U101	IC-TRANSCEIVER	1205-003057	SA
U102	IC-POSI.FIXED REG.	1203-003767	SA
U103	BLUETOOTH MODULE	4709-001445	SA
U201	IC-ANALOG SWITCH	1001-001231	SA
U305	IC-CMOS LOGIC	0801-002237	SA
U310	IC-POSI.FIXED REG.	1203-003829	SA
U311	IC-CMOS LOGIC	0801-002237	SA
U315	IC-CODEC	1205-003094	SA
U400	IC-POWER SUPERVISOR	1203-003882	SA
U401	IC-DC/DC CONVERTER	1203-003545	SA
U402	IC-POSI.FIXED REG.	1203-003754	SA
U403	IC-POSI.FIXED REG.	1203-003767	SA
U404	IC-POSI.FIXED REG.	1203-003767	SA
U405	IC-POSI.FIXED REG.	1203-003754	SA
U406	IC-POSI.FIXED REG.	1203-003754	SA
U407	IC-POSI.FIXED REG.	1203-003737	SA
U500	IC-ANALOG SWITCH	1001-001231	SA
U501	IC-ANALOG SWITCH	1001-001231	SA
U503	IC-VIDEO AMP	1201-002147	SA
U504	IC-AUDIO AMP	1201-002233	SA
U505	IC-ANALOG SWITCH	1001-001231	SA
U506	IC-ANALOG SWITCH	1001-001231	SA
U507	IC-ANALOG SWITCH	1001-001231	SA
U508	IC-ANALOG MULTIPLEX	1001-001349	SA
U601	FILTER-EMI SMD	2901-001316	SA
U603	IC-CODEC	1205-003046	SA
U605	IC-BATTERY	1203-003823	SA
U606	IC-LCD CONTROLLER	1003-001803	SA
U700	IC-DC/DC CONVERTER	1203-004372	SA
UCP200	IC-COMM. CONTROLLER	1205-002757	SA

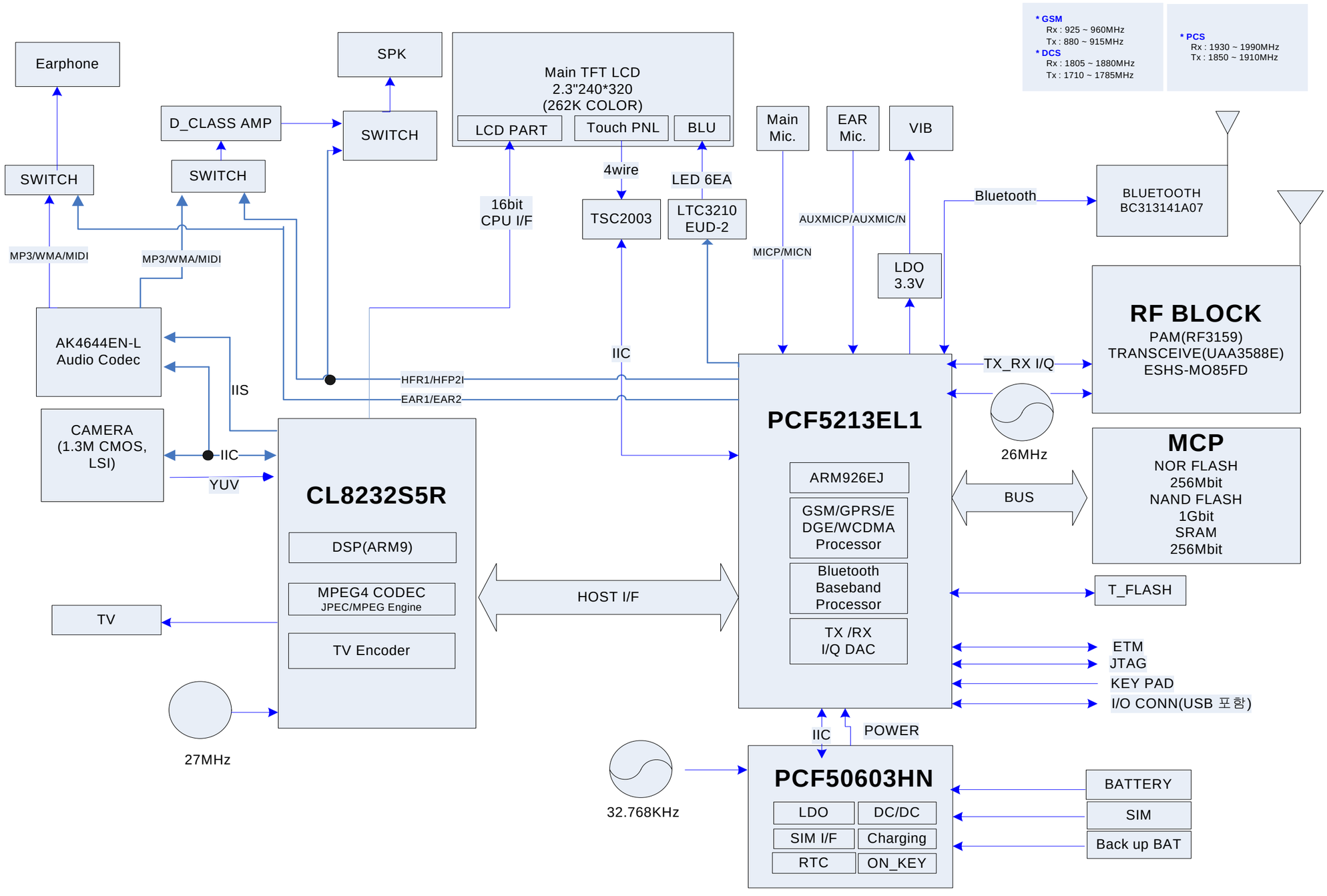
Design LOC	Description	SEC Code	STATUS
UME307	IC-MCP	1108-000076	SA
V400	VARISTOR	1405-001082	SA
V401	VARISTOR	1405-001082	SA
VR300	DIODE-TVS	0406-001201	SA
VR301	VARISTOR	1405-001082	SA
VR302	DIODE-TVS	0406-001201	SA
VR303	VARISTOR	1405-001082	SA
VR304	VARISTOR	1405-001082	SA
VR305	VARISTOR	1405-001082	SA
VR400	VARISTOR	1405-001082	SA
VR500	VARISTOR	1405-001082	SA
VR501	VARISTOR	1405-001082	SA
VR600	THERMISTOR-NTC	1404-001221	SA
ZD600	DIODE-ZENER	0403-001547	SA
ZD601	DIODE-TVS	0406-001201	SA
ZD605	DIODE-ZENER	0403-001427	SA
ZD700	DIODE-TVS	0406-001201	SA
ZD701	DIODE-TVS	0406-001201	SA
ZD702	DIODE-TVS	0406-001201	SA
ZD703	DIODE-TVS	0406-001201	SA
ZD704	DIODE-TVS	0406-001201	SA
ZD705	DIODE-TVS	0406-001201	SA
ZD706	DIODE-TVS	0406-001201	SA
ZD707	DIODE-TVS	0406-001201	SA
ZD708	DIODE-TVS	0406-001201	SA
ZD709	DIODE-TVS	0406-001201	SA
ZD710	DIODE-TVS	0406-001201	SA
ZD711	DIODE-TVS	0406-001201	SA
ZD712	DIODE-TVS	0406-001201	SA
ZD713	DIODE-TVS	0406-001254	SA
ZD714	DIODE-TVS	0406-001254	SA
ZD715	DIODE-TVS	0406-001254	SA
ZD716	DIODE-TVS	0406-001254	SA
ZD717	DIODE-TVS	0406-001254	SA
ZD718	DIODE-TVS	0406-001254	SA
ZD719	DIODE-TVS	0406-001201	SA
ZD720	DIODE-TVS	0406-001201	SA
ZD721	DIODE-TVS	0406-001208	SA

7. Block Diagrams

7-1. RF Solution Block Diagram

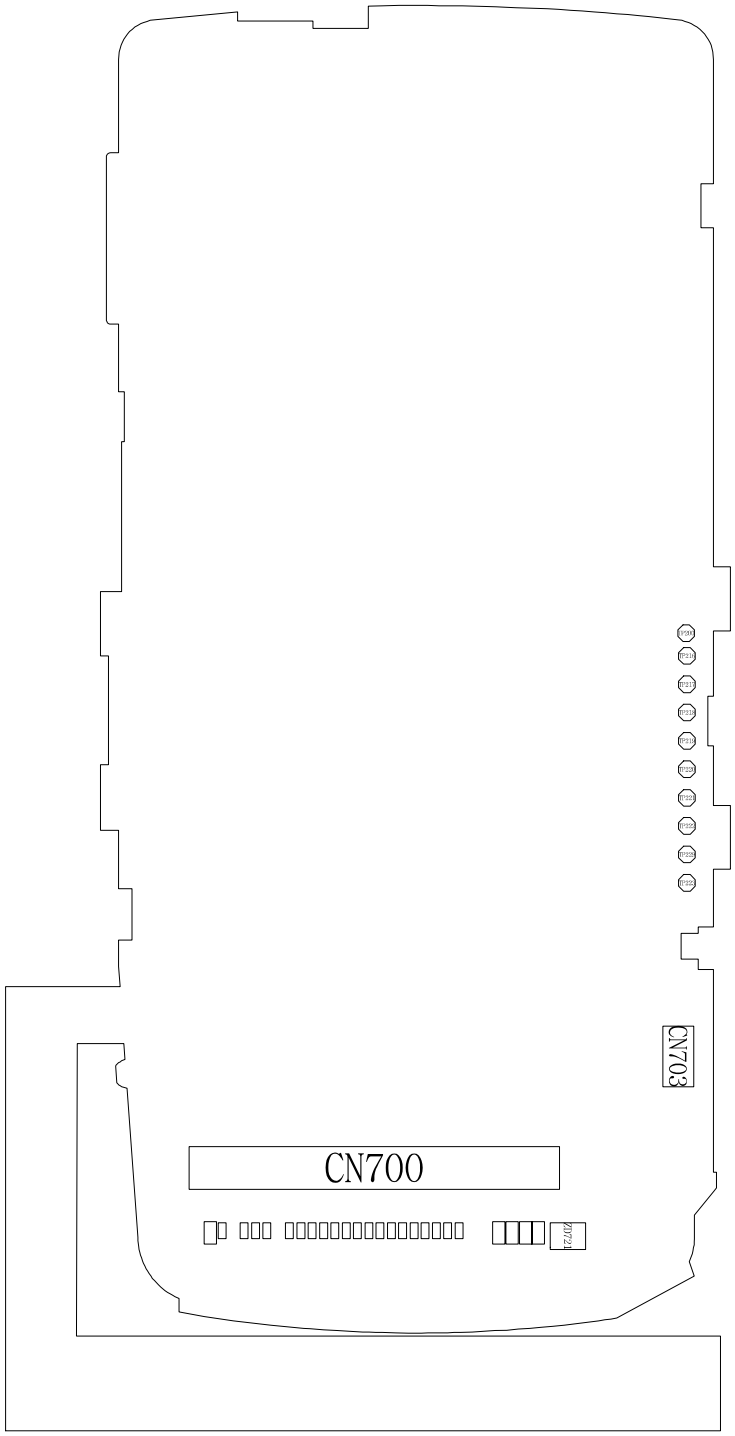


7-2. Base Band Solution Block Diagram

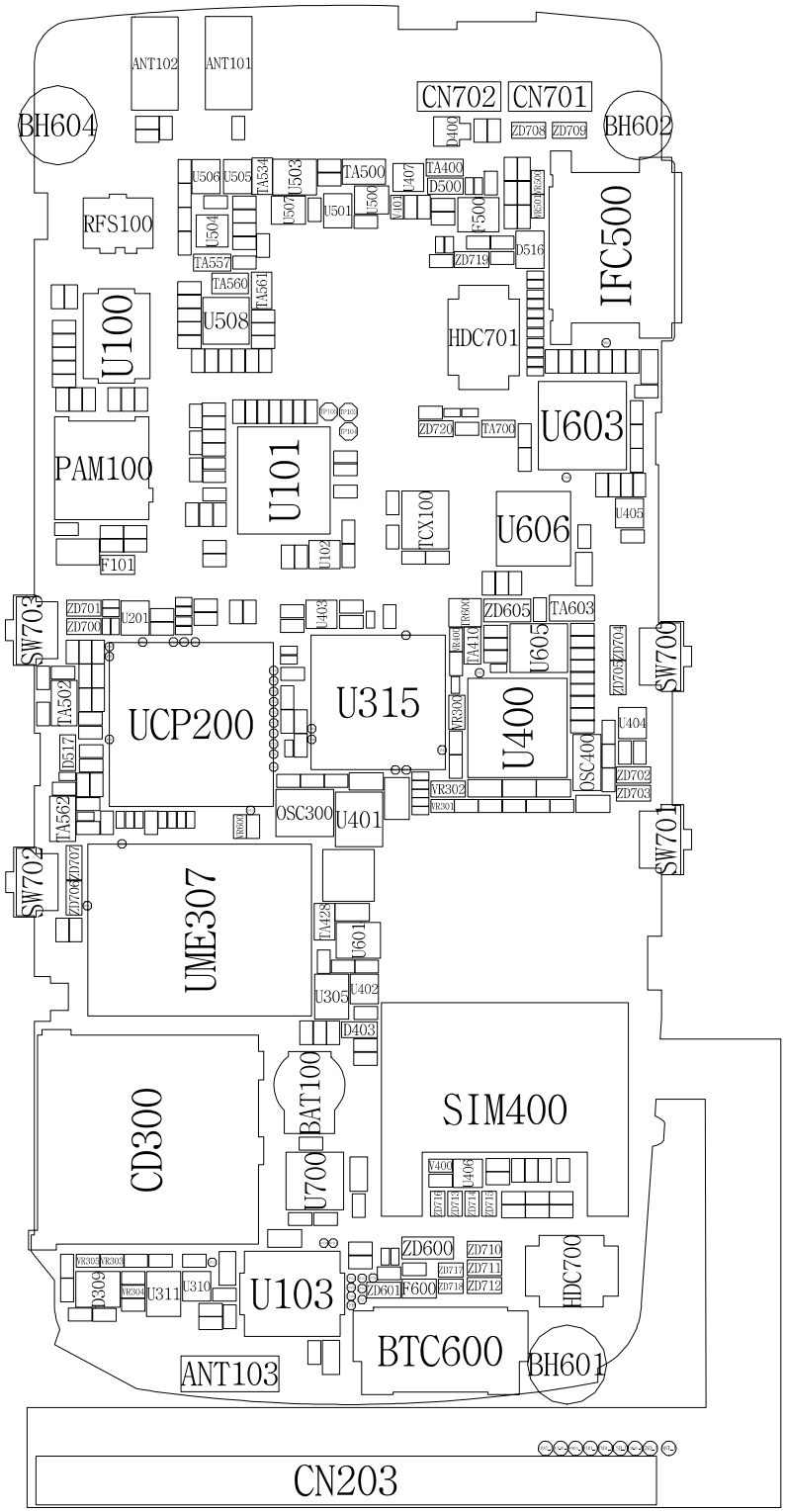


8. PCB Diagrams

Top

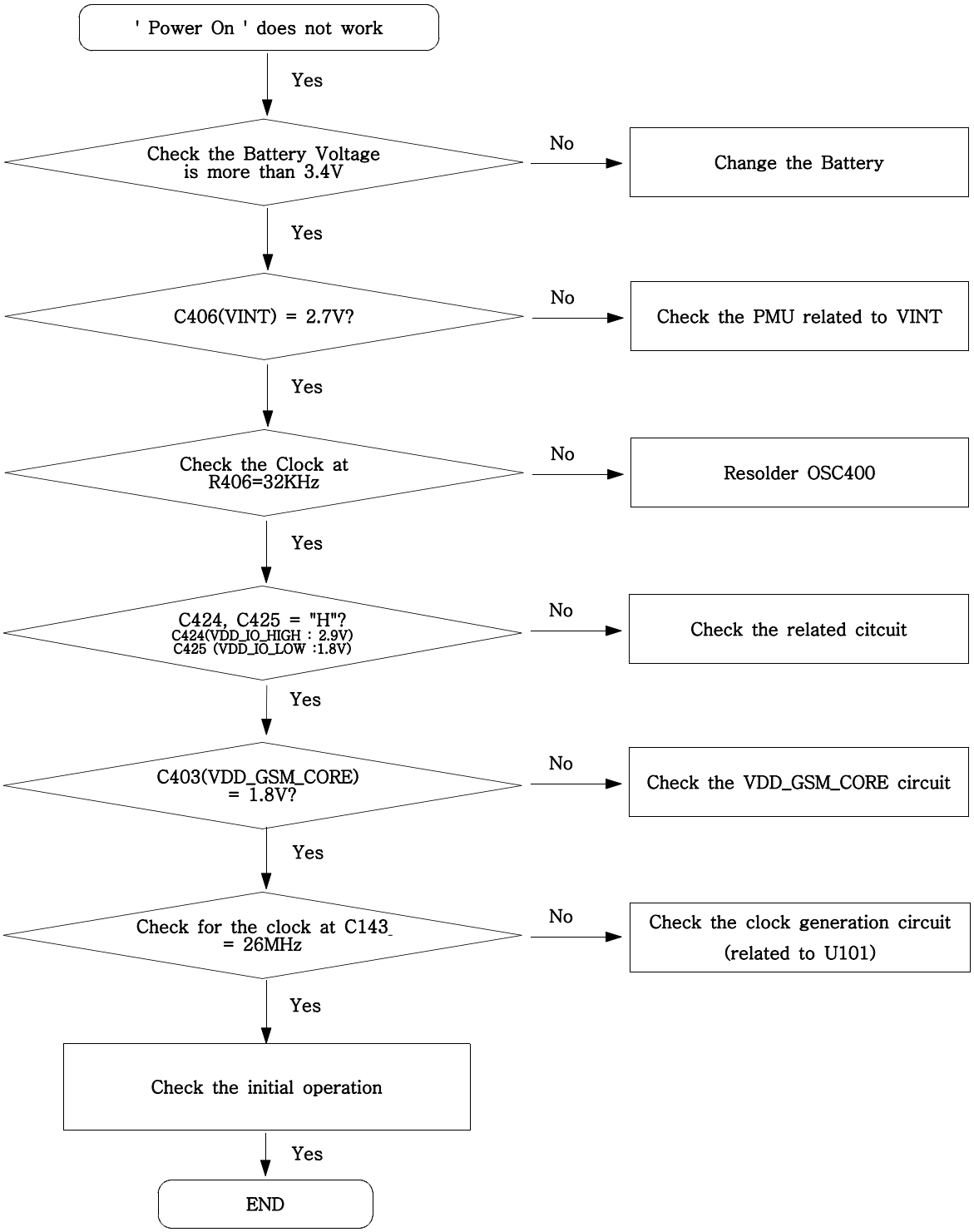


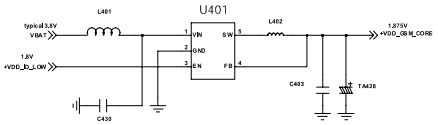
Bottom



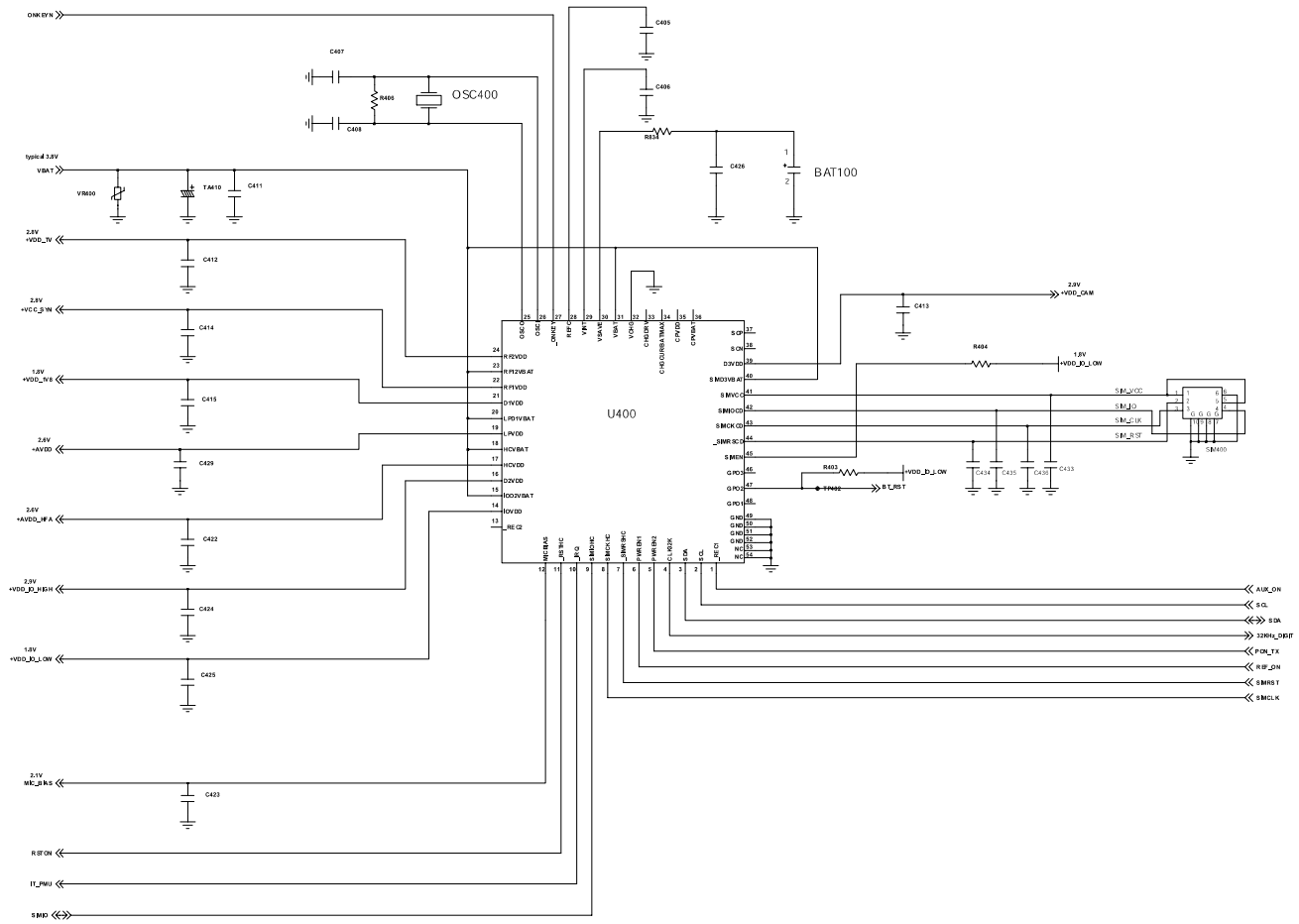
9. Flow Chart of Troubleshooting

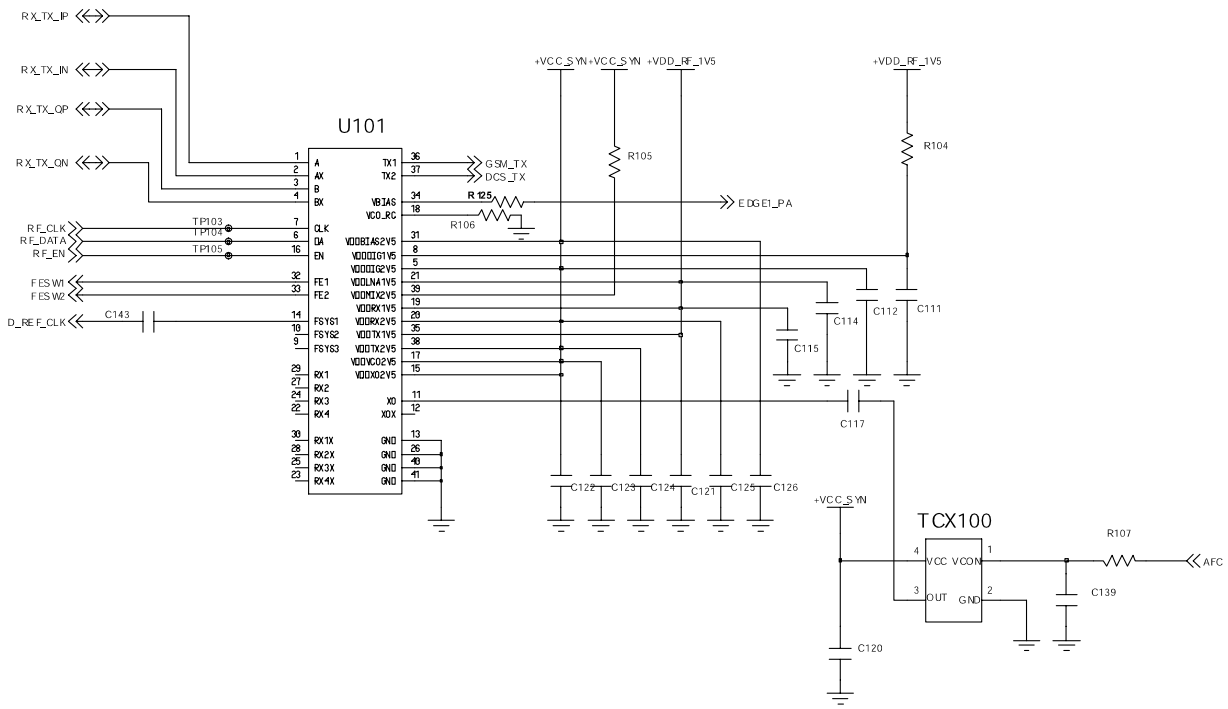
9-1. Power On



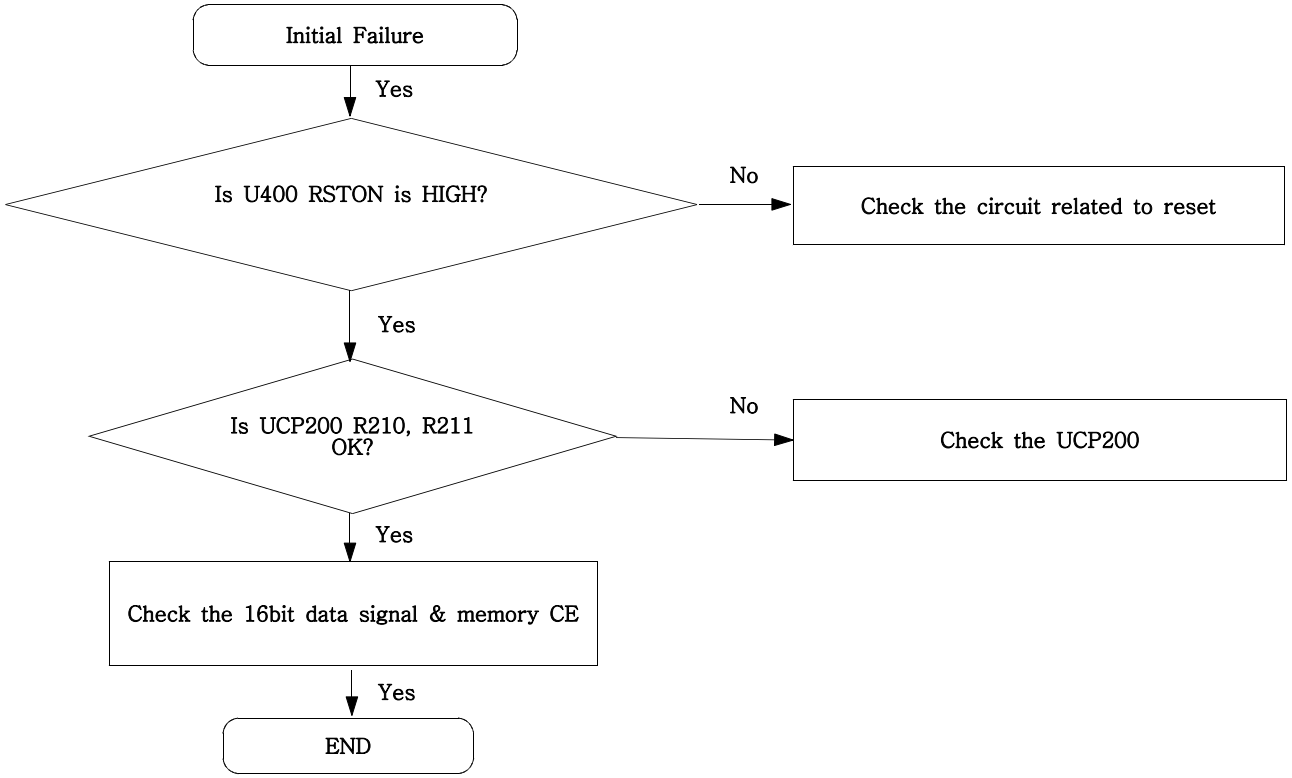


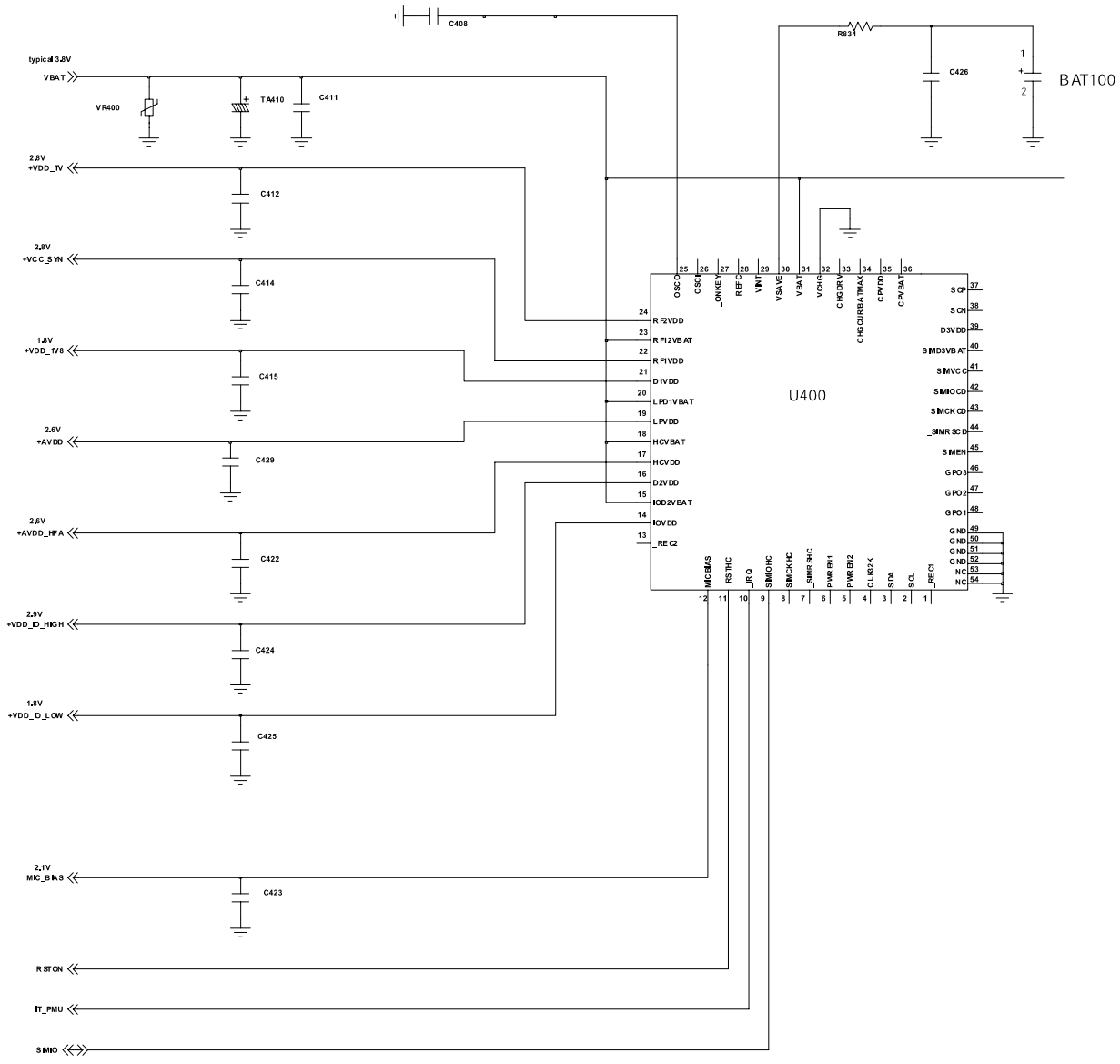
DC/DC Down Convete

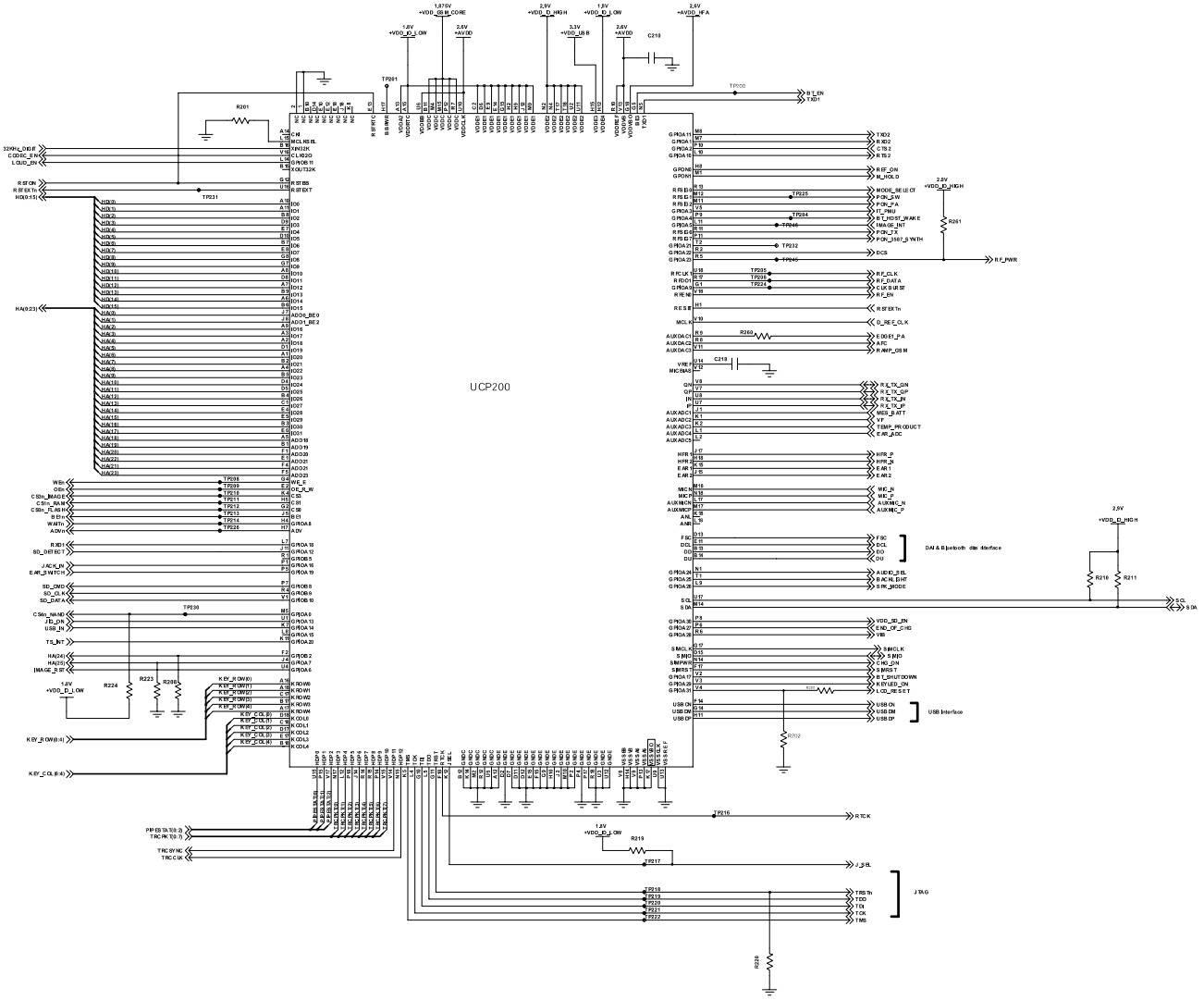




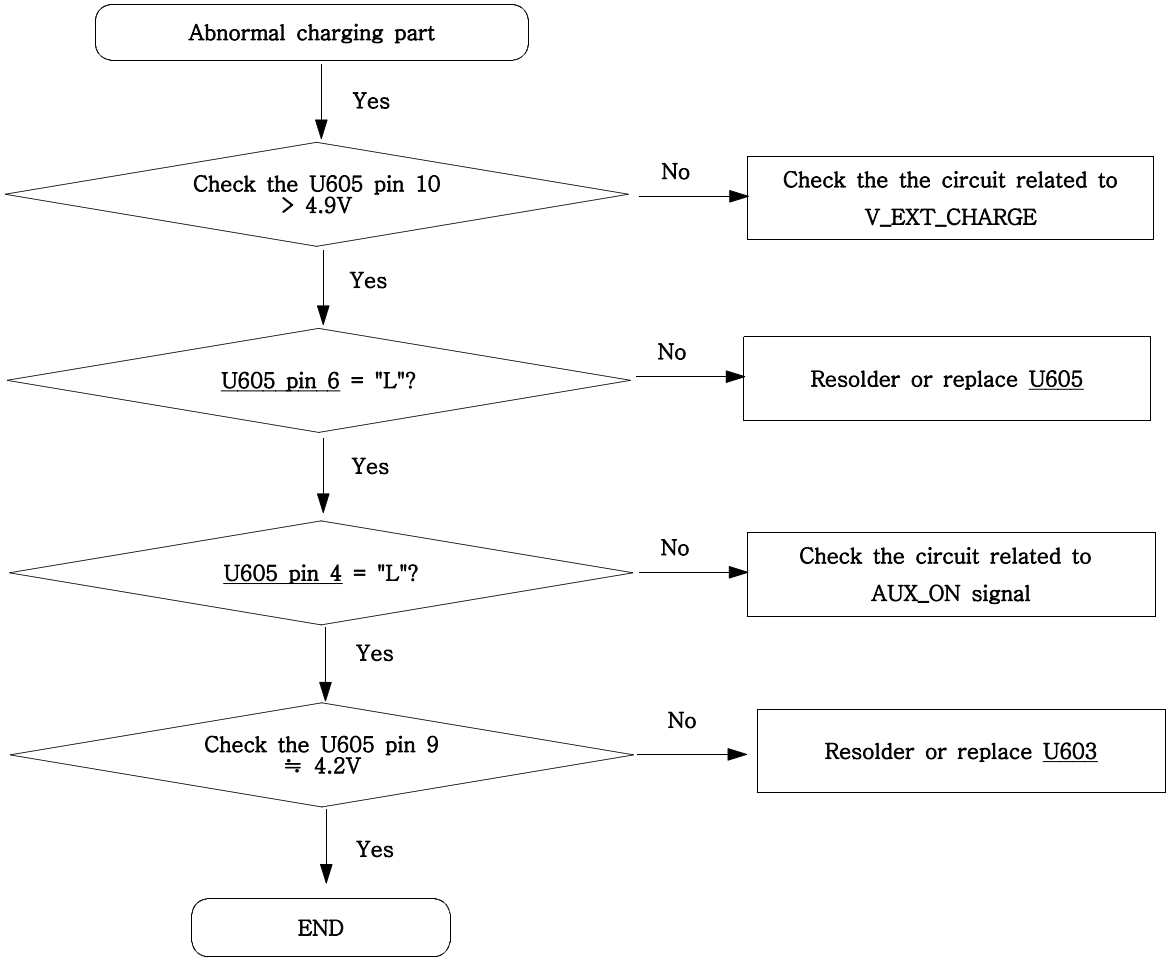
9-2. Initial

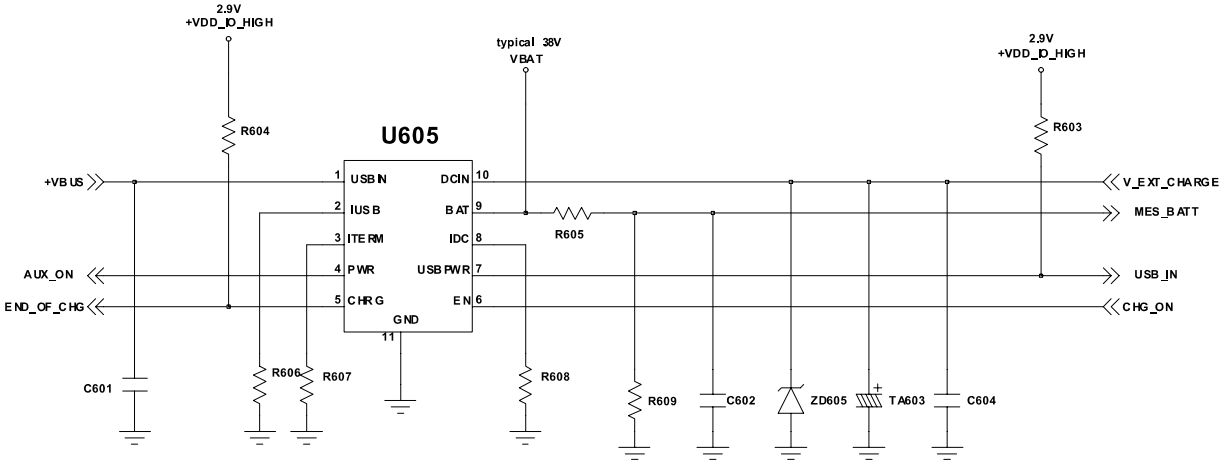






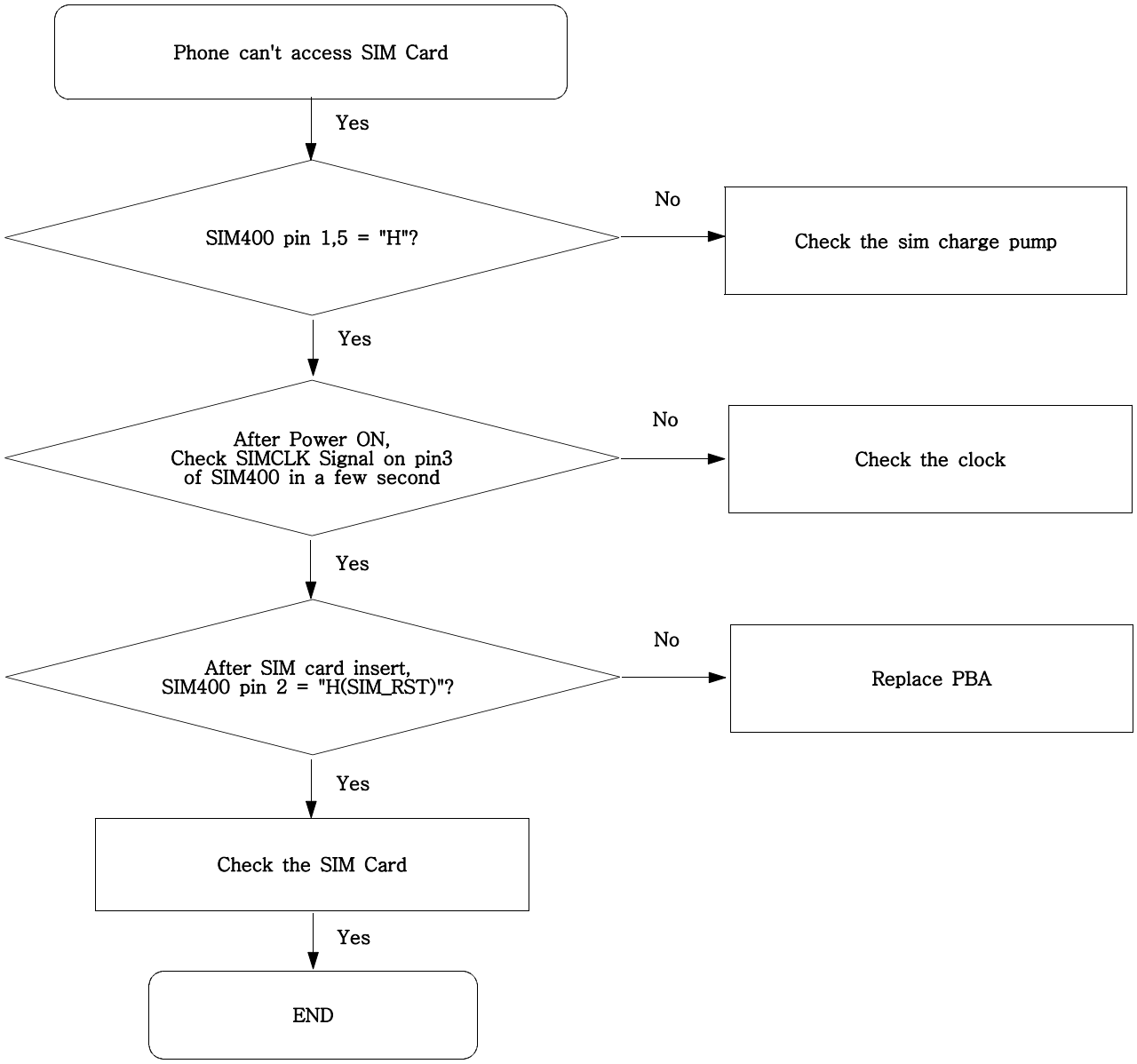
9-3. Charging Part

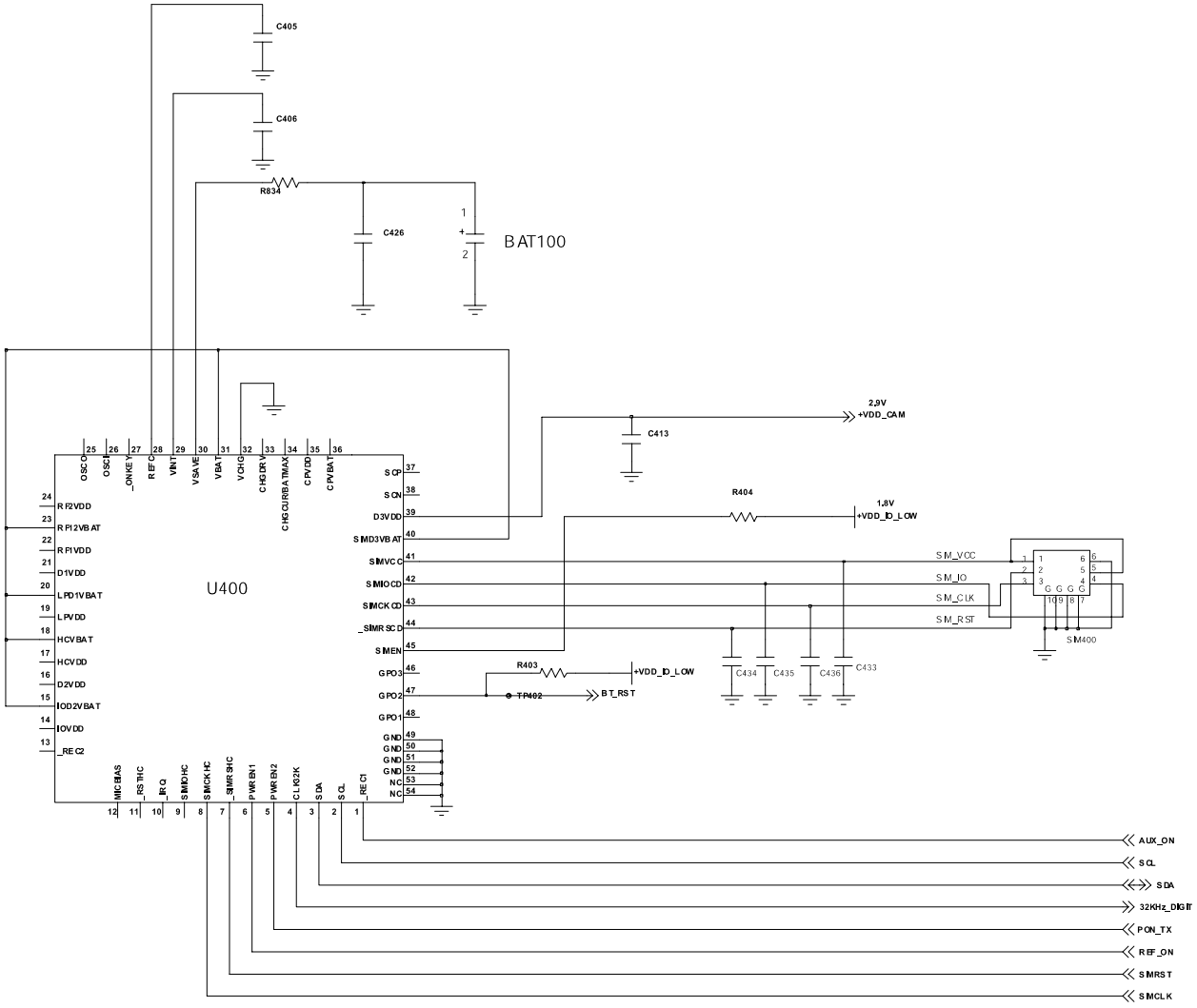




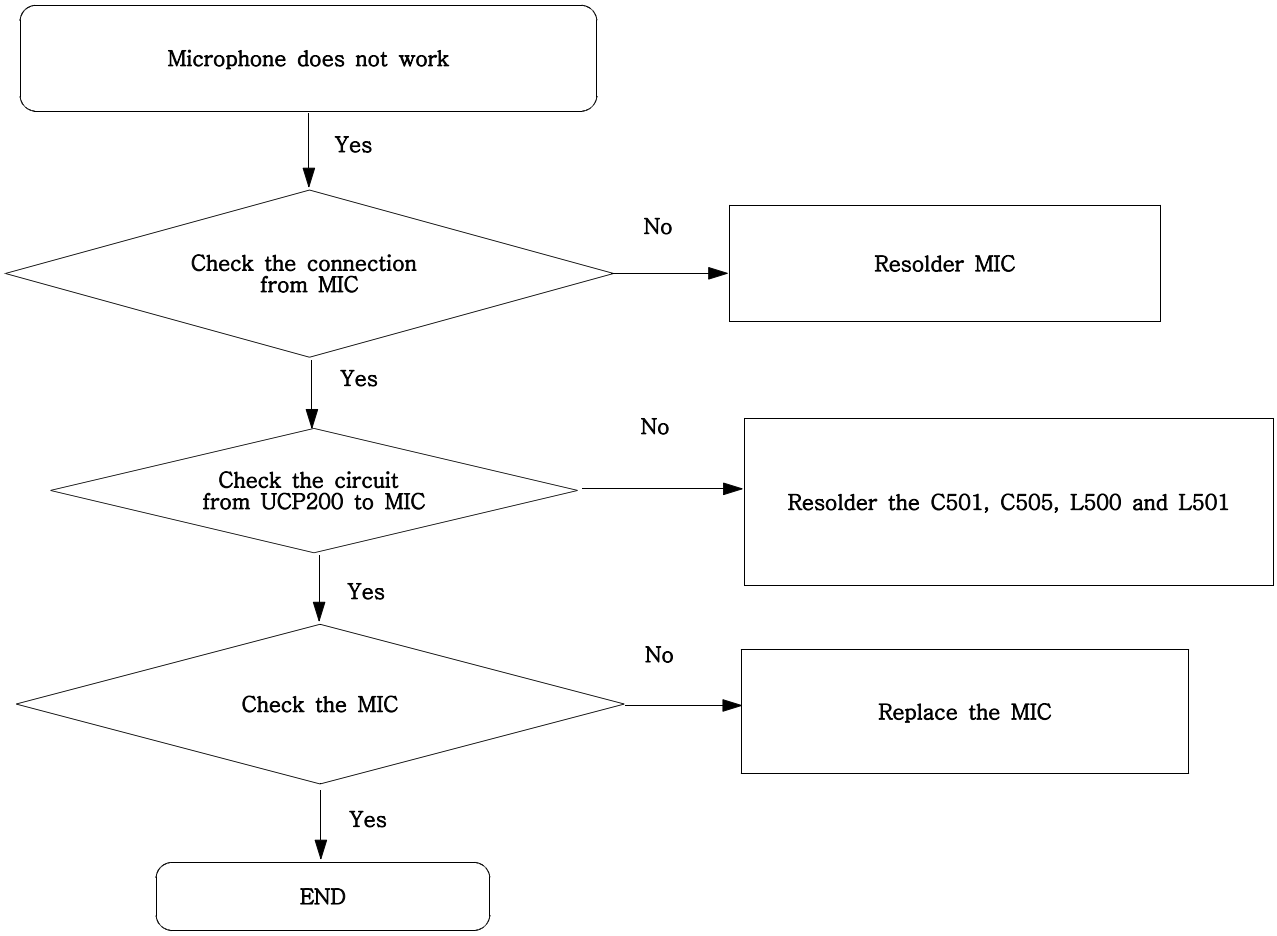
BATTERY CHARGING

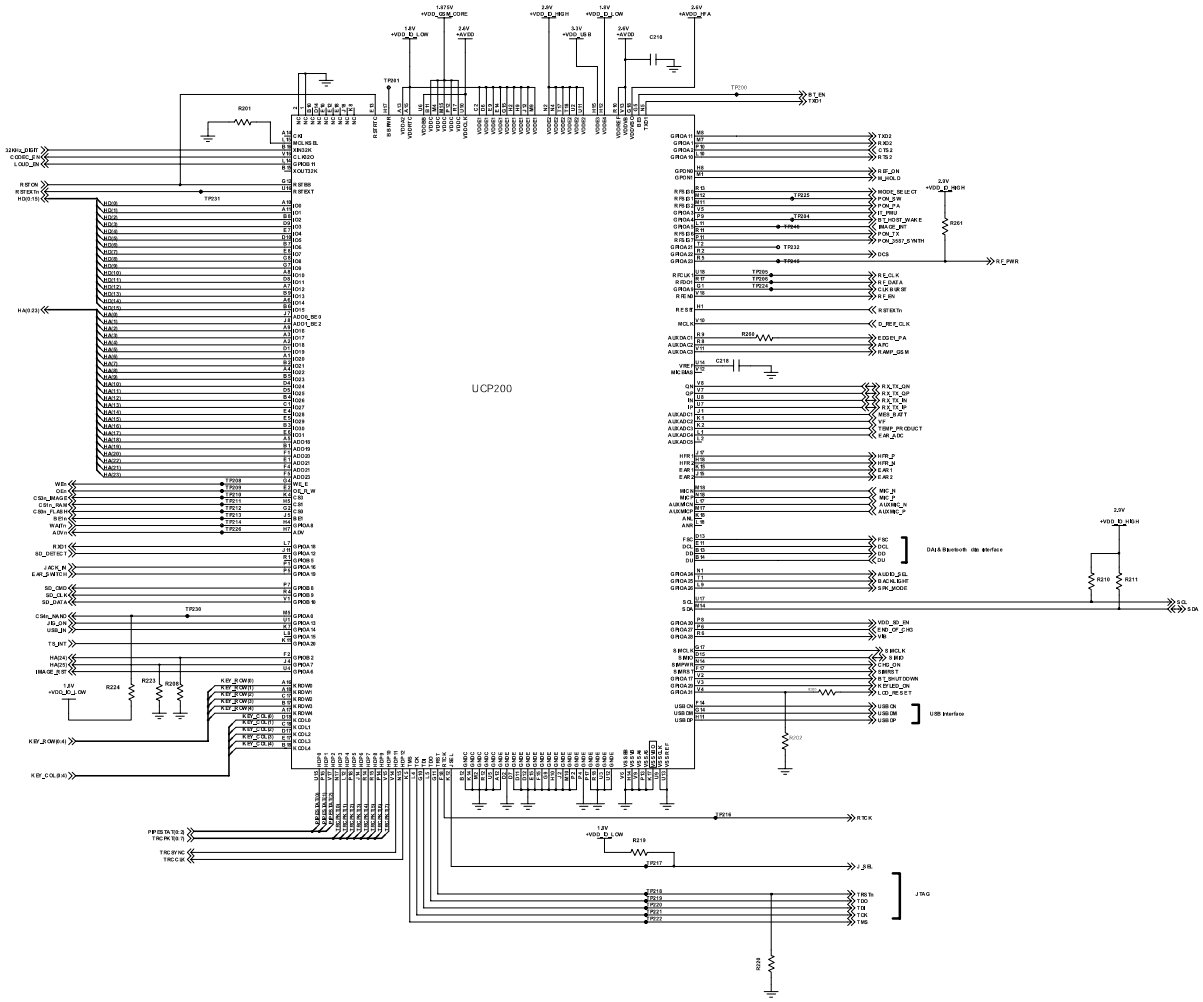
9-4. Sim Part

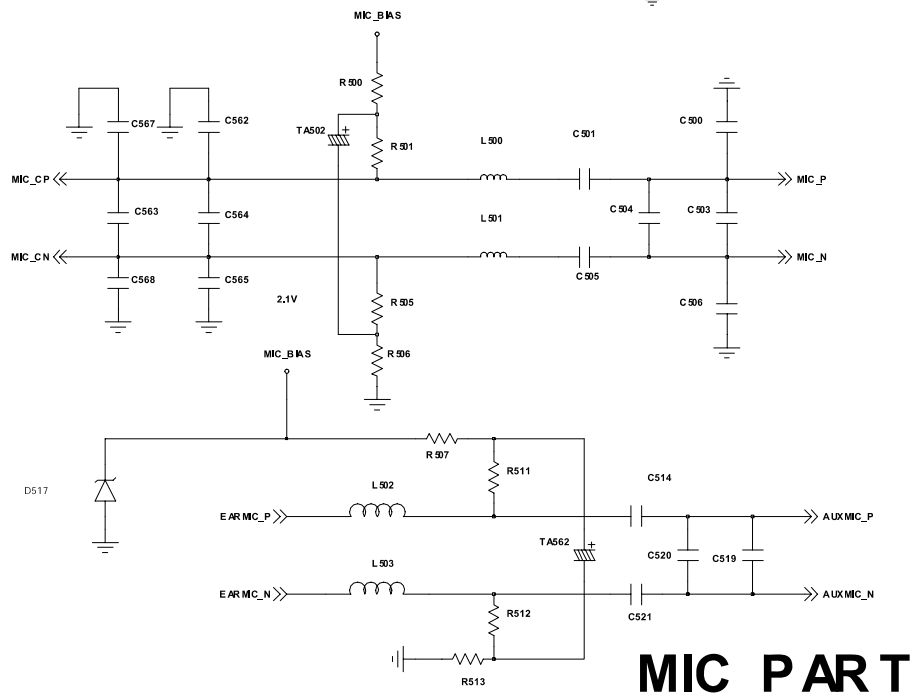




9-5. Microphone Part

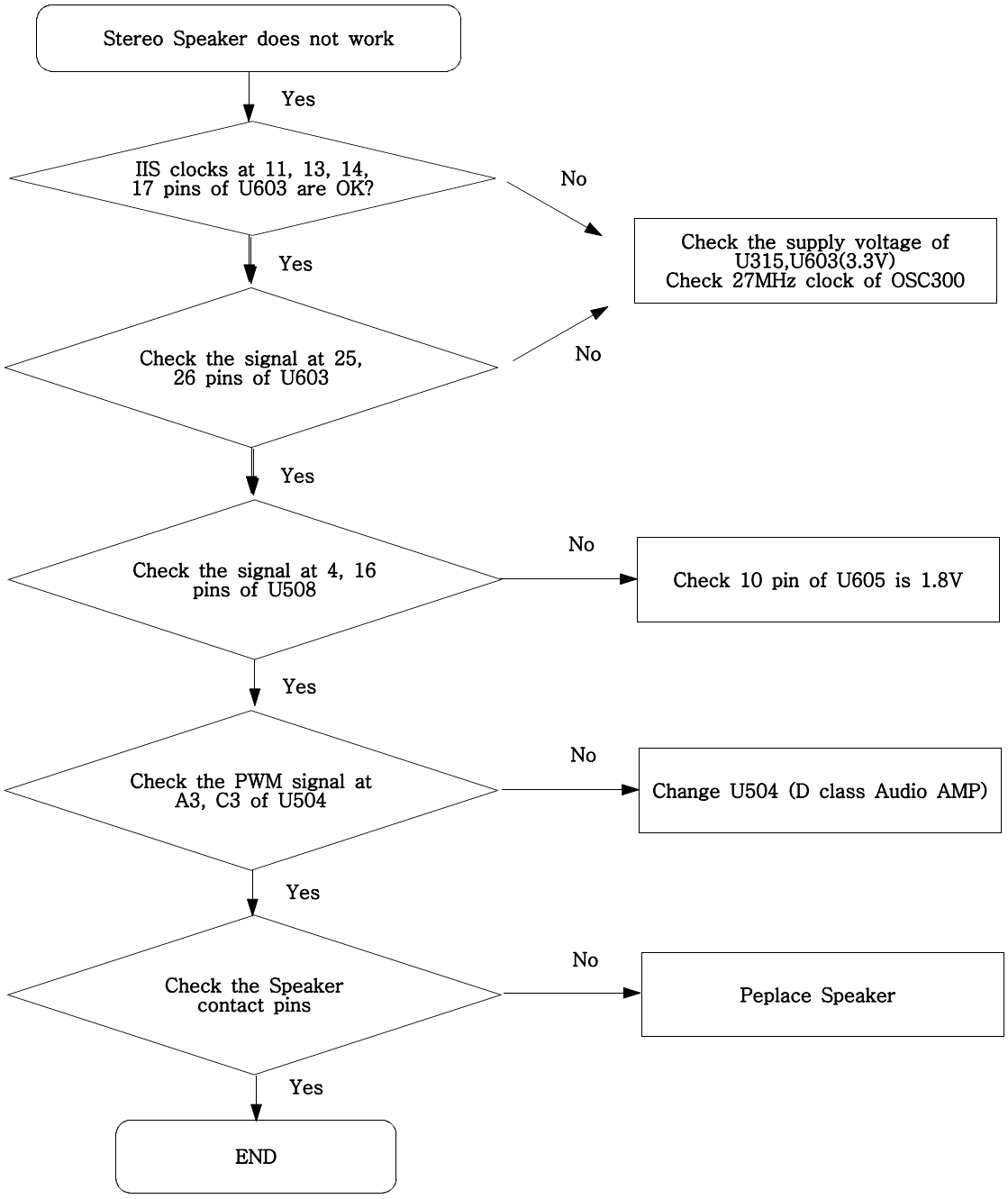


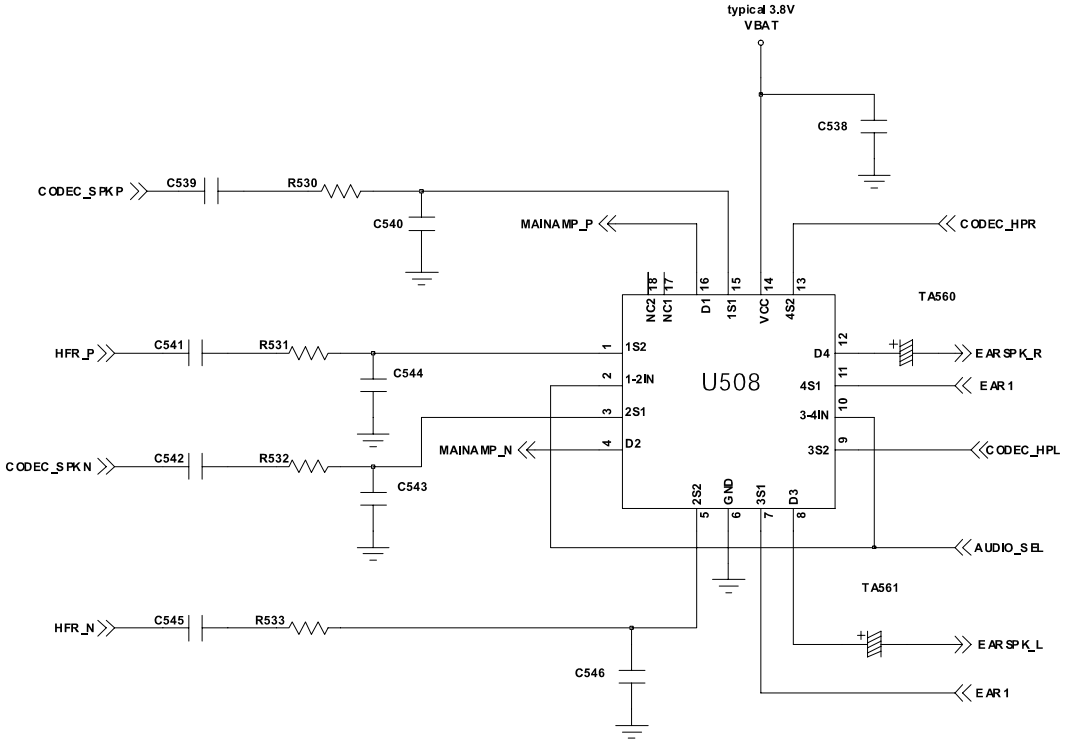


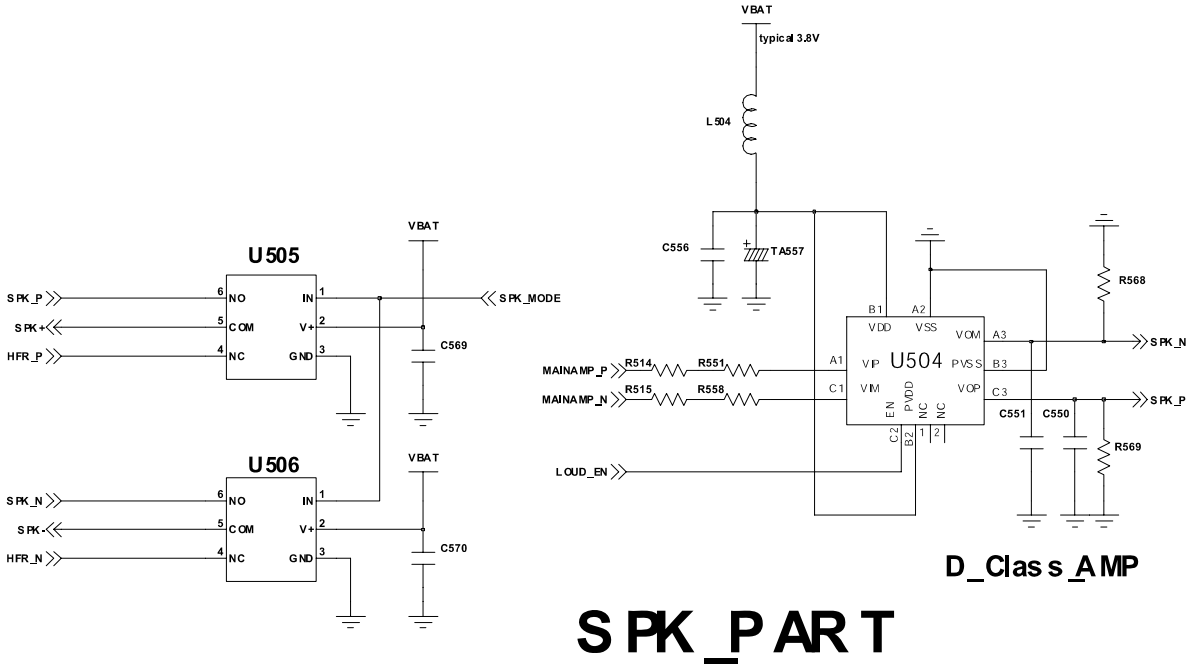


MIC_PART

9-6. Speaker Part(MP3/Spk)

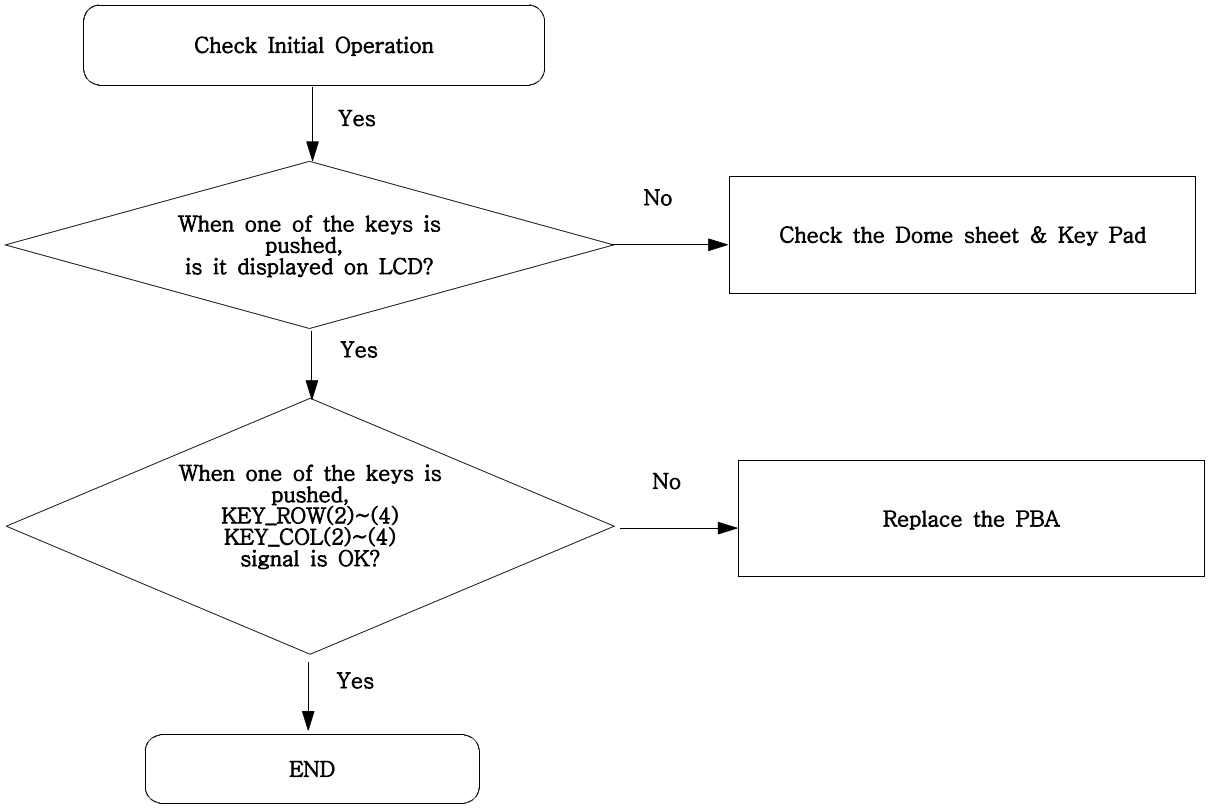




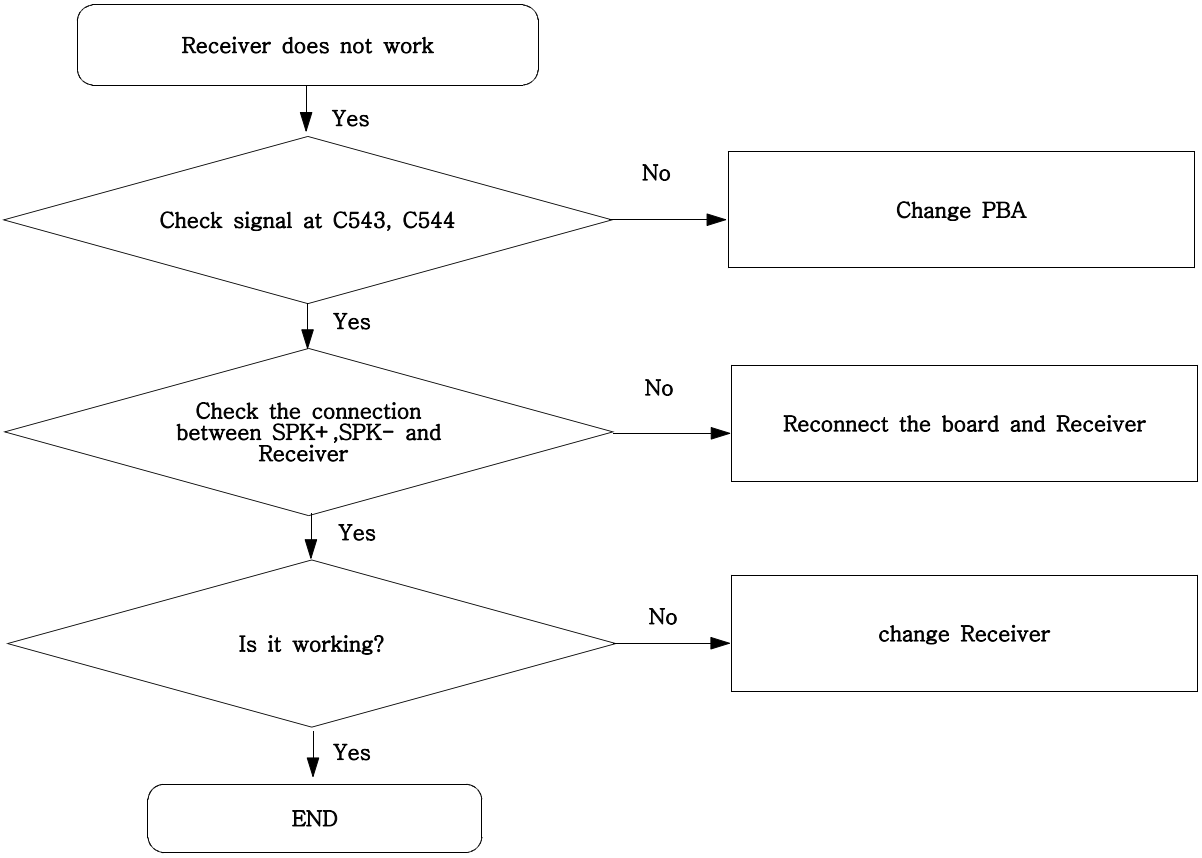


SPK_PART

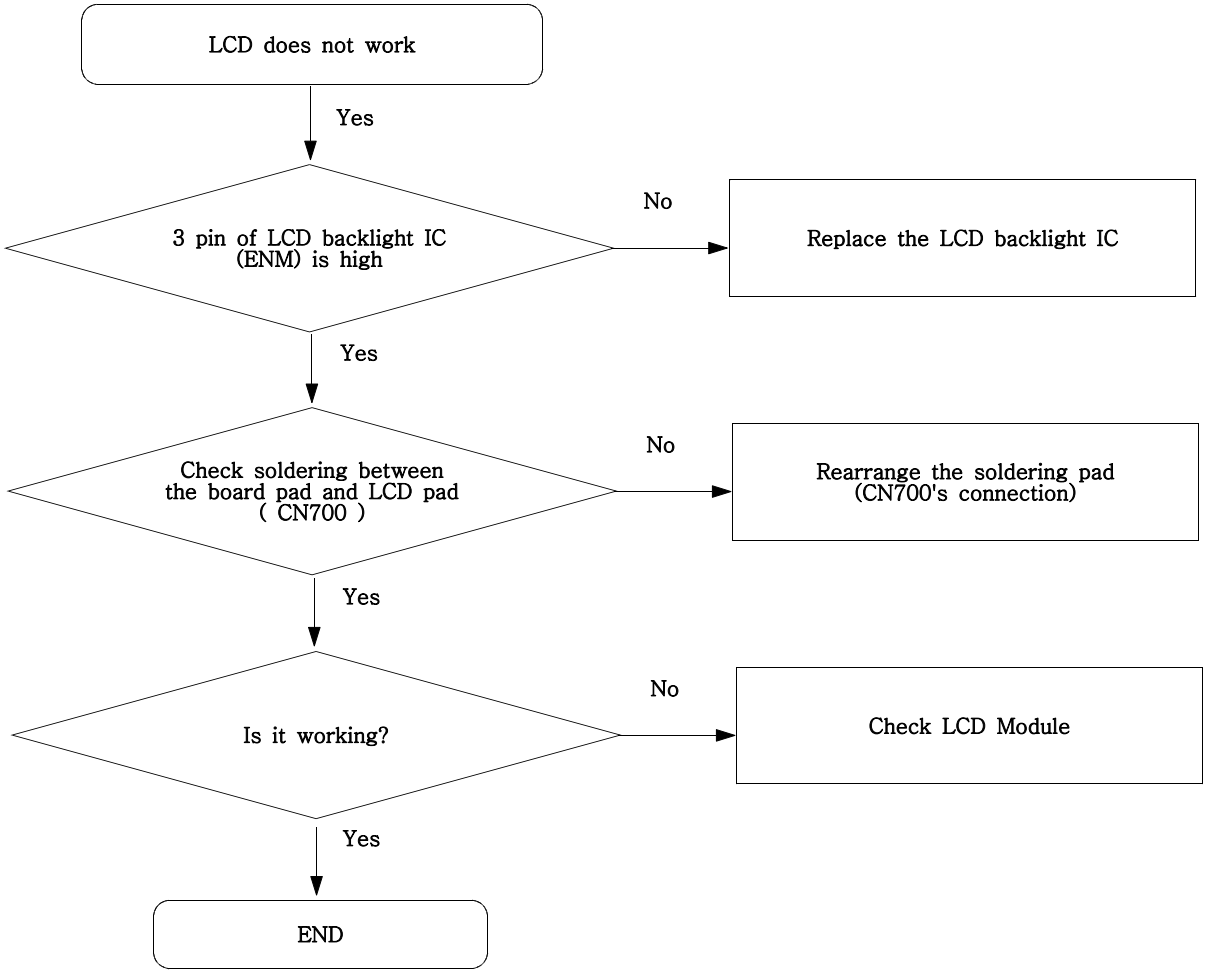
9-7. Key Data Input

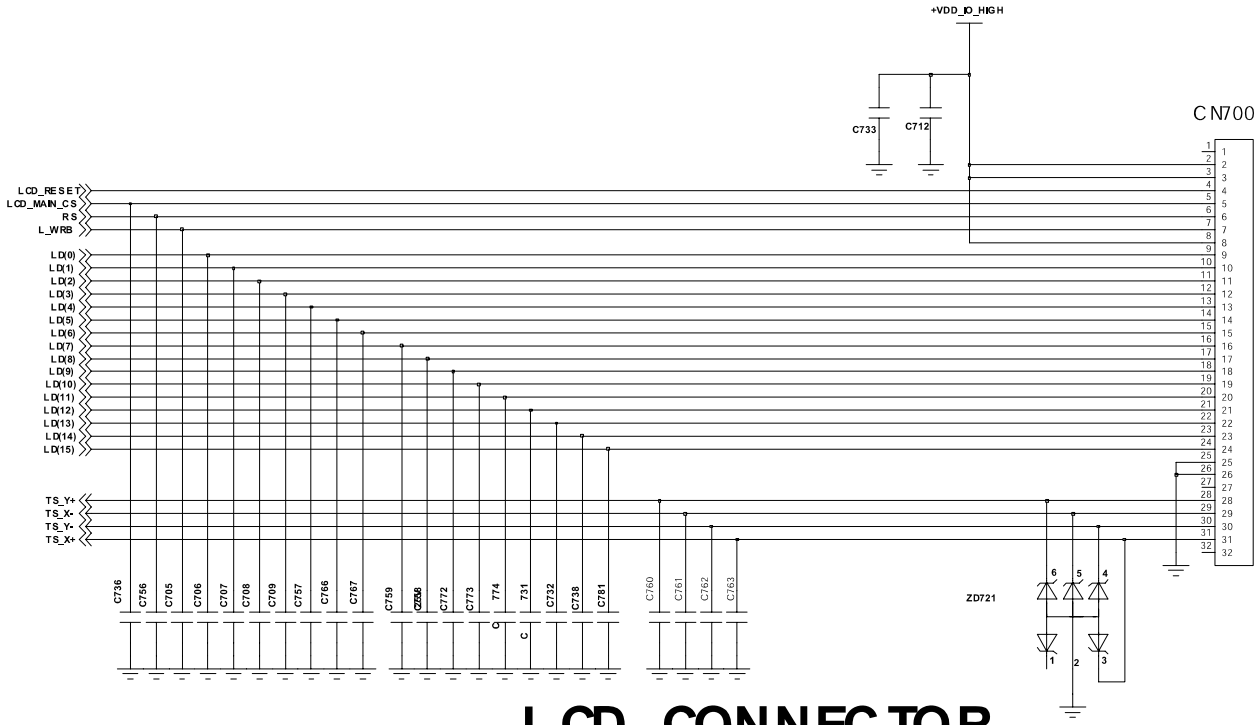


9-8. Receiver Part



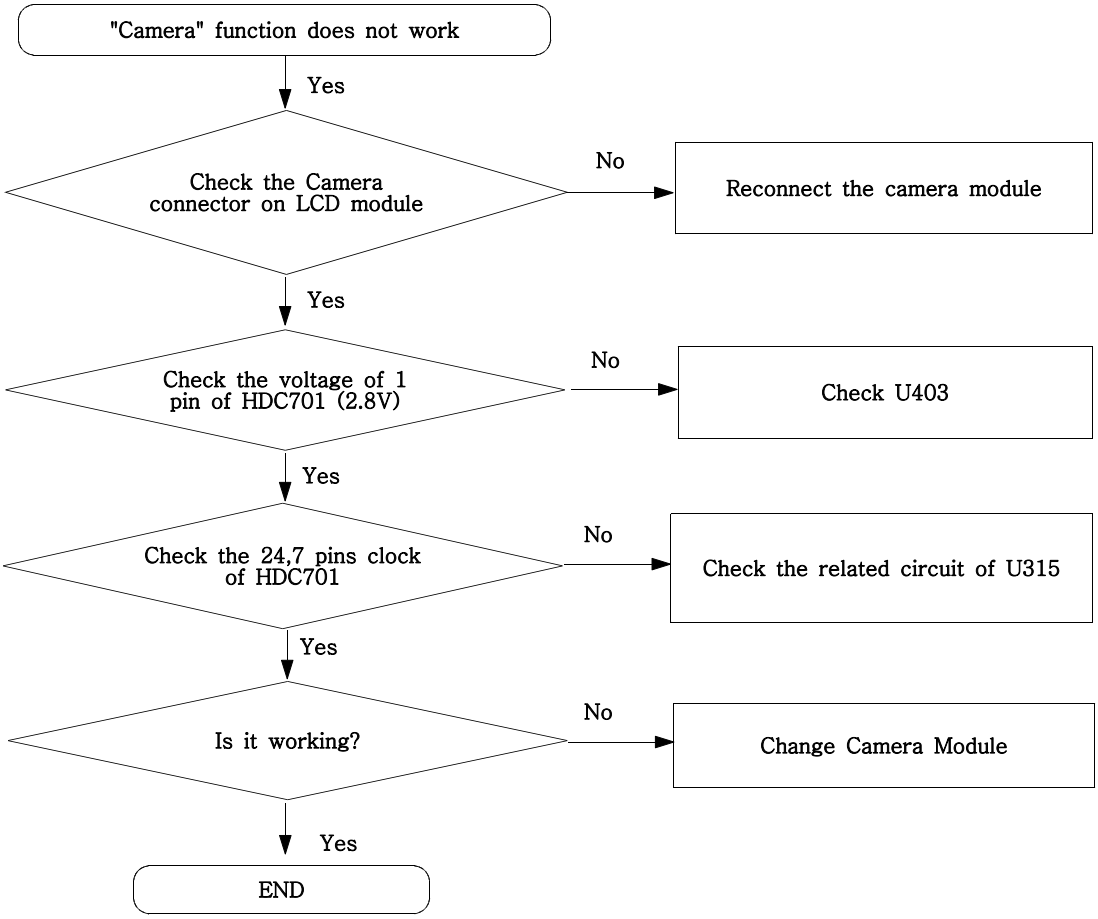
9-9. LCD Part

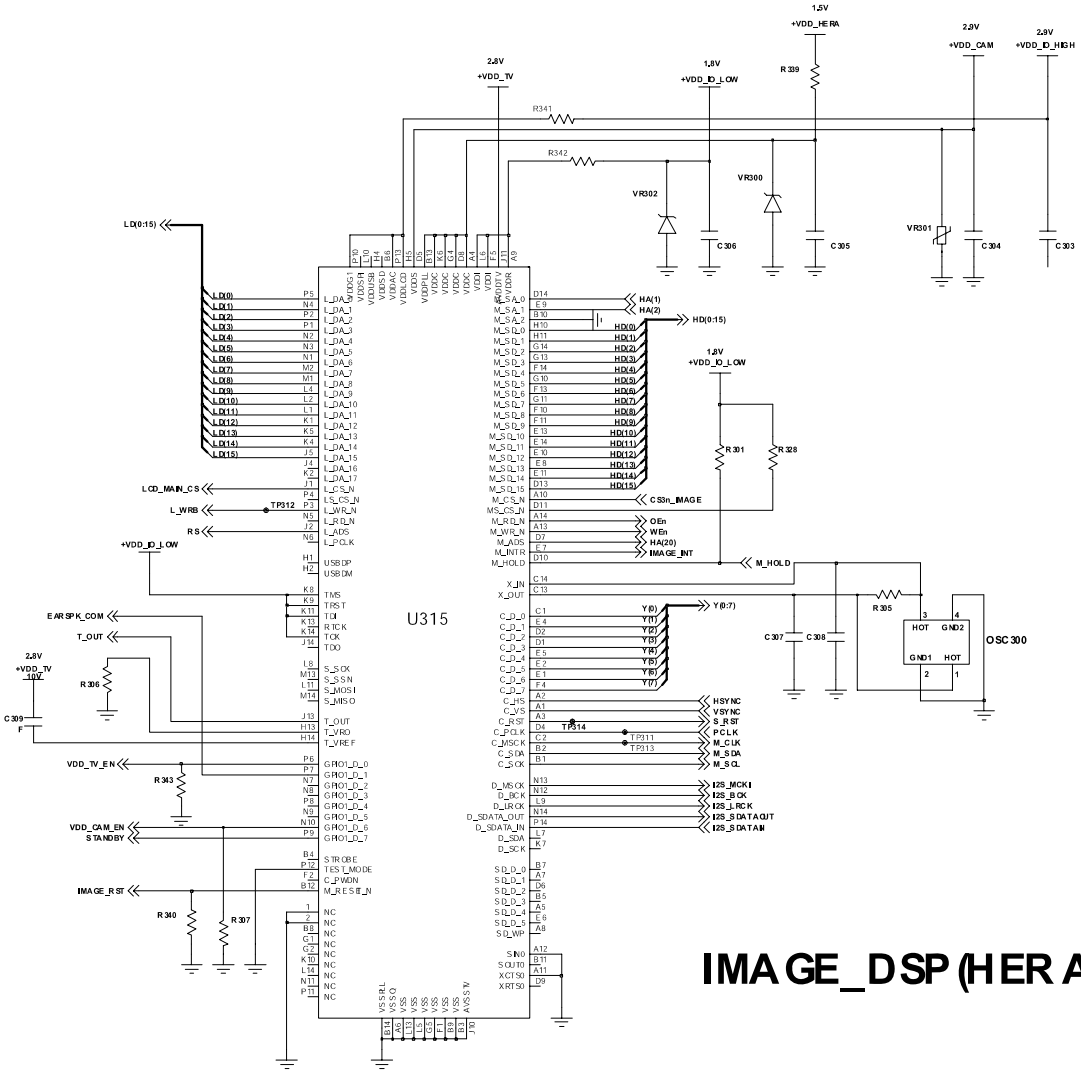




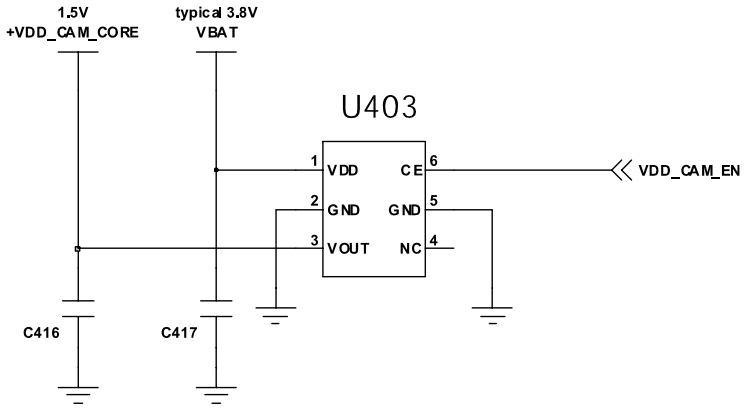
LCD_CONNECTOR

9-10. Camera part



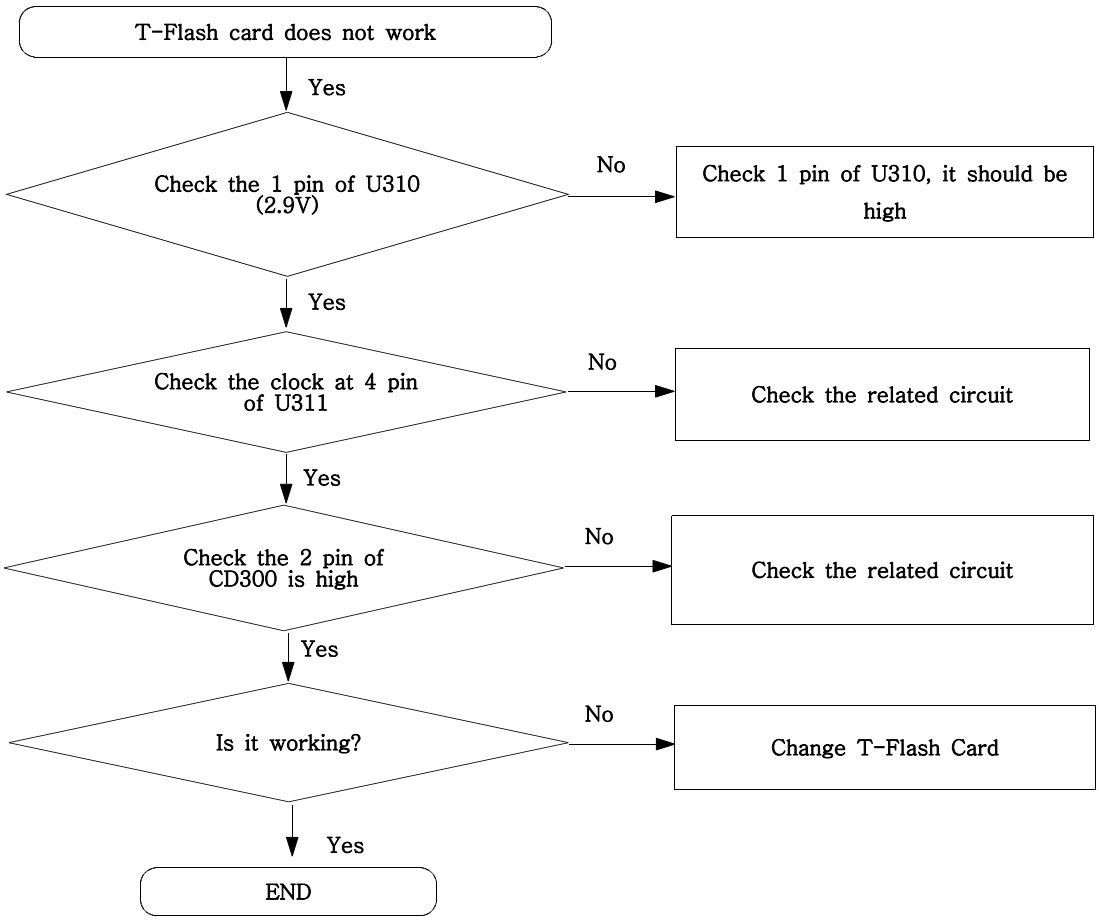


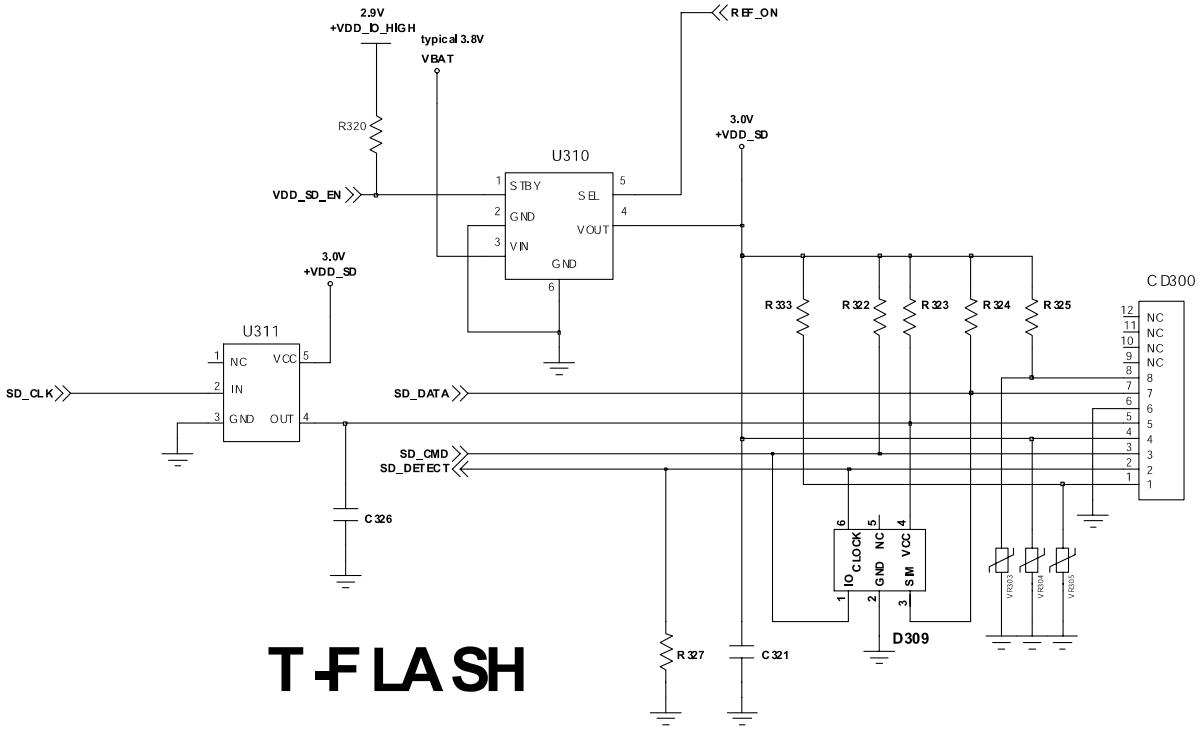
IMAGE_DSP(HERA_NEO)



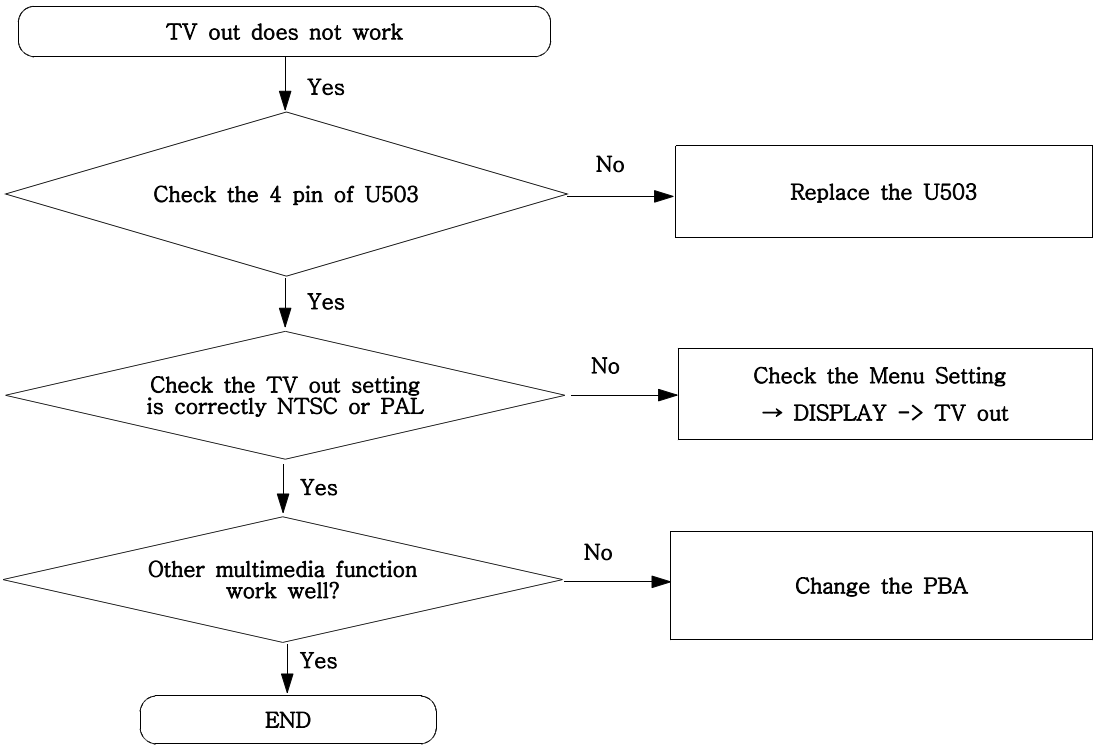
CAM_LDO(1.5V)

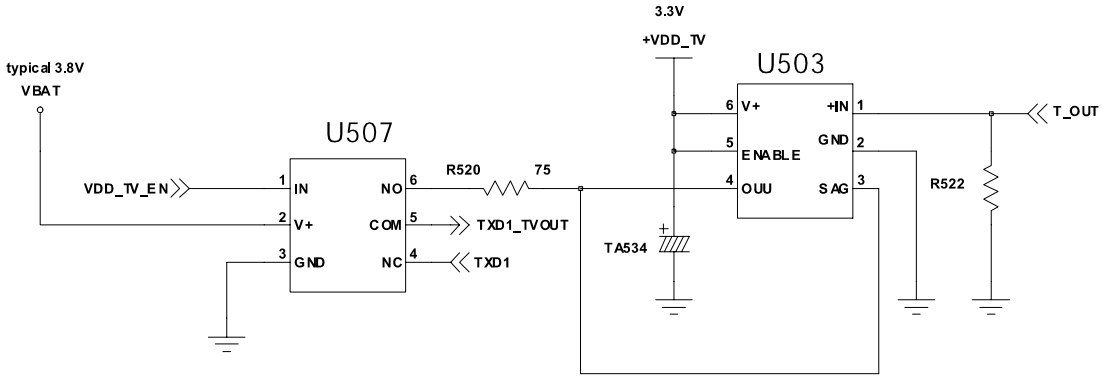
9-11. Trans Flash Card part





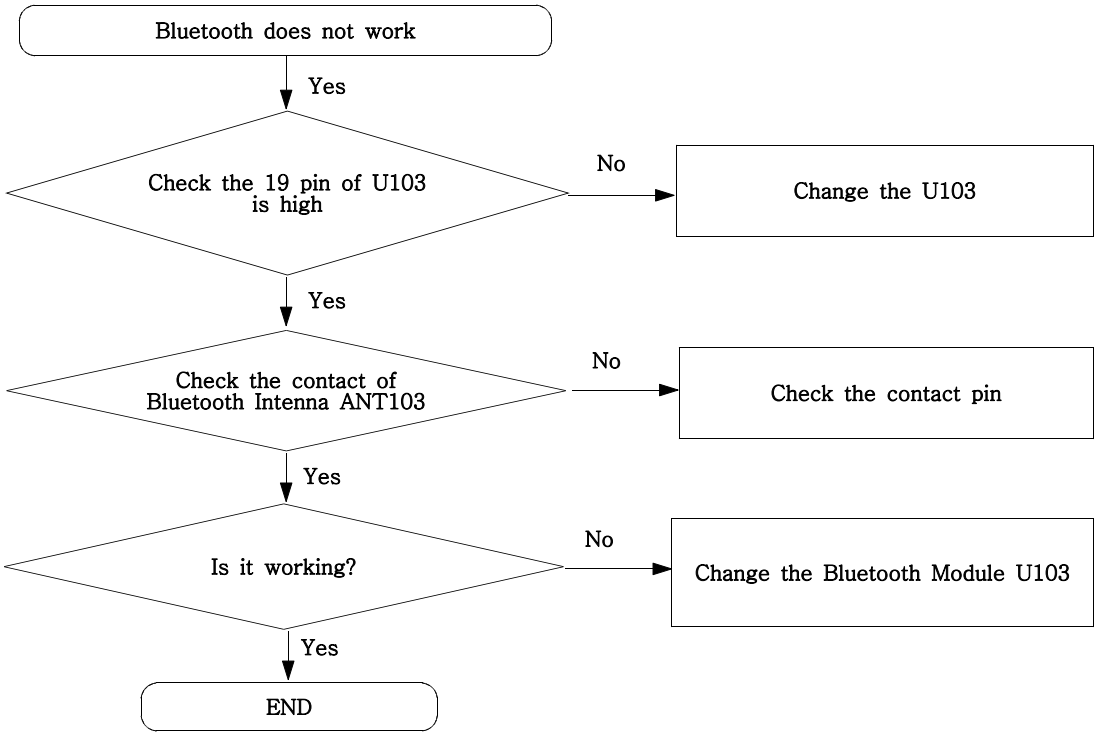
9-12. TV OUT

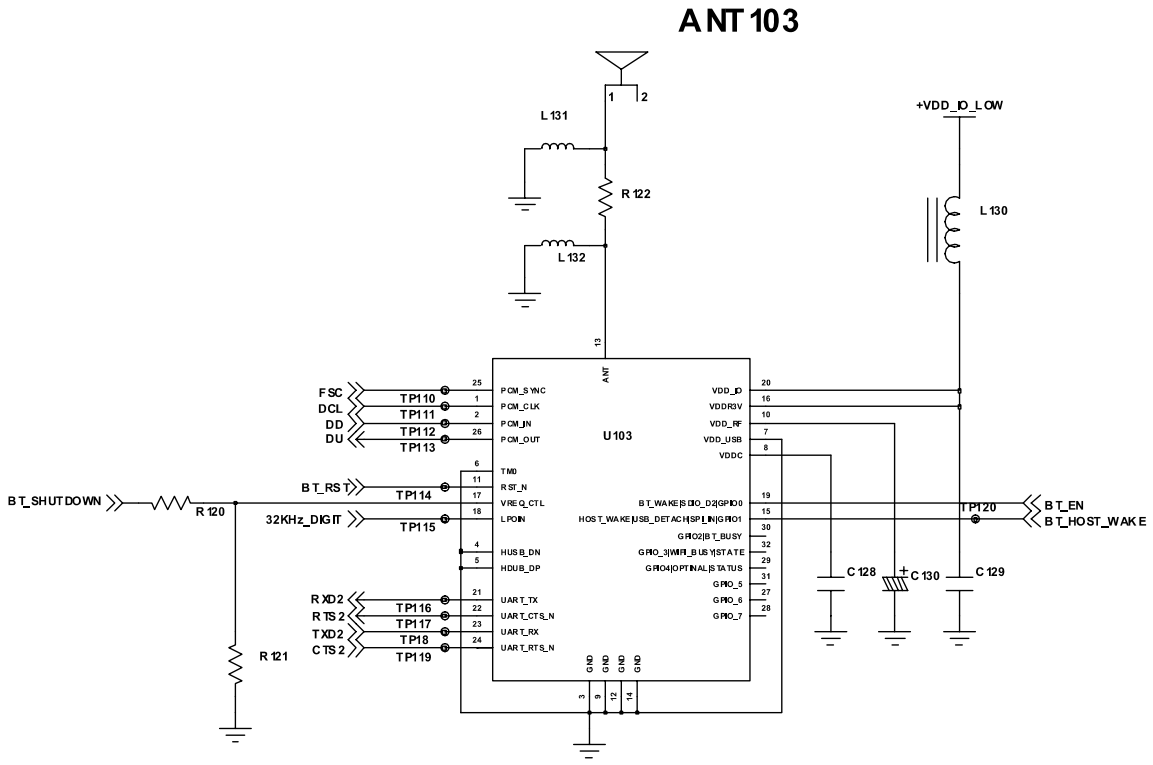




TV_OUT

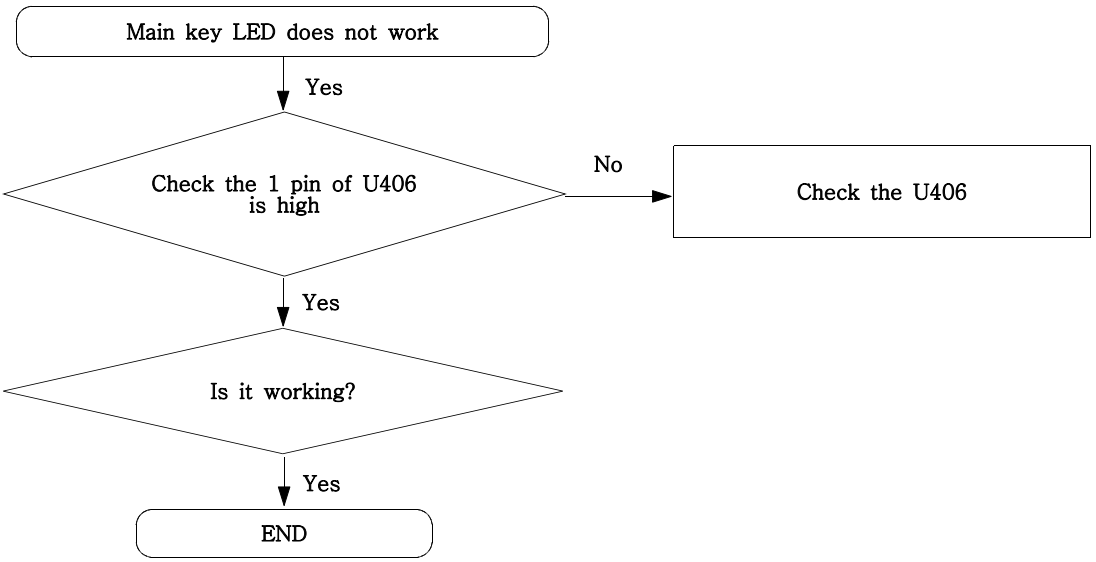
9-13. Bluetooth part

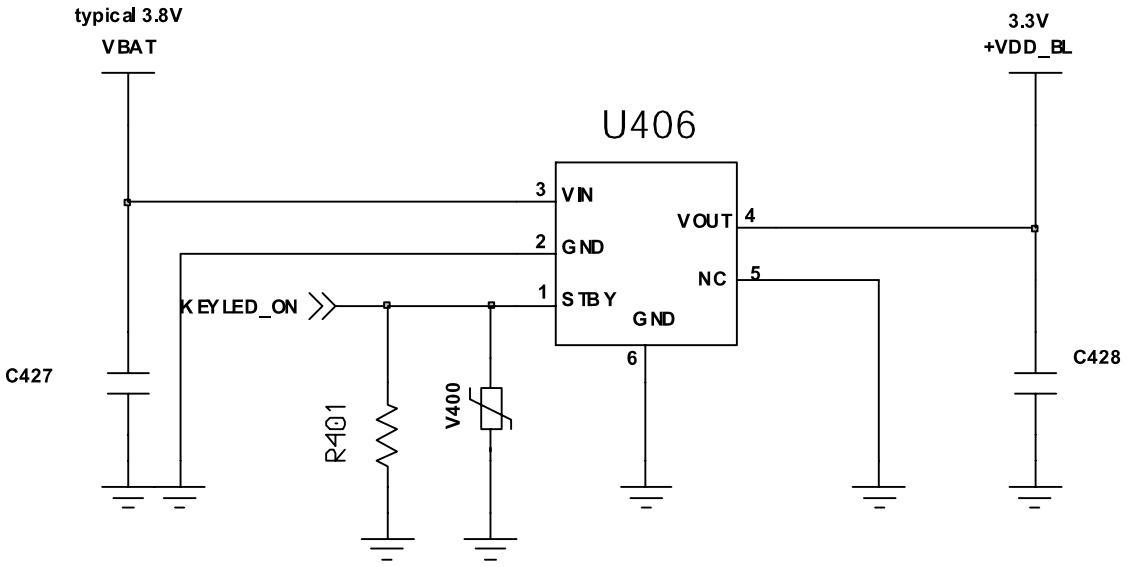




BLUETOOTH

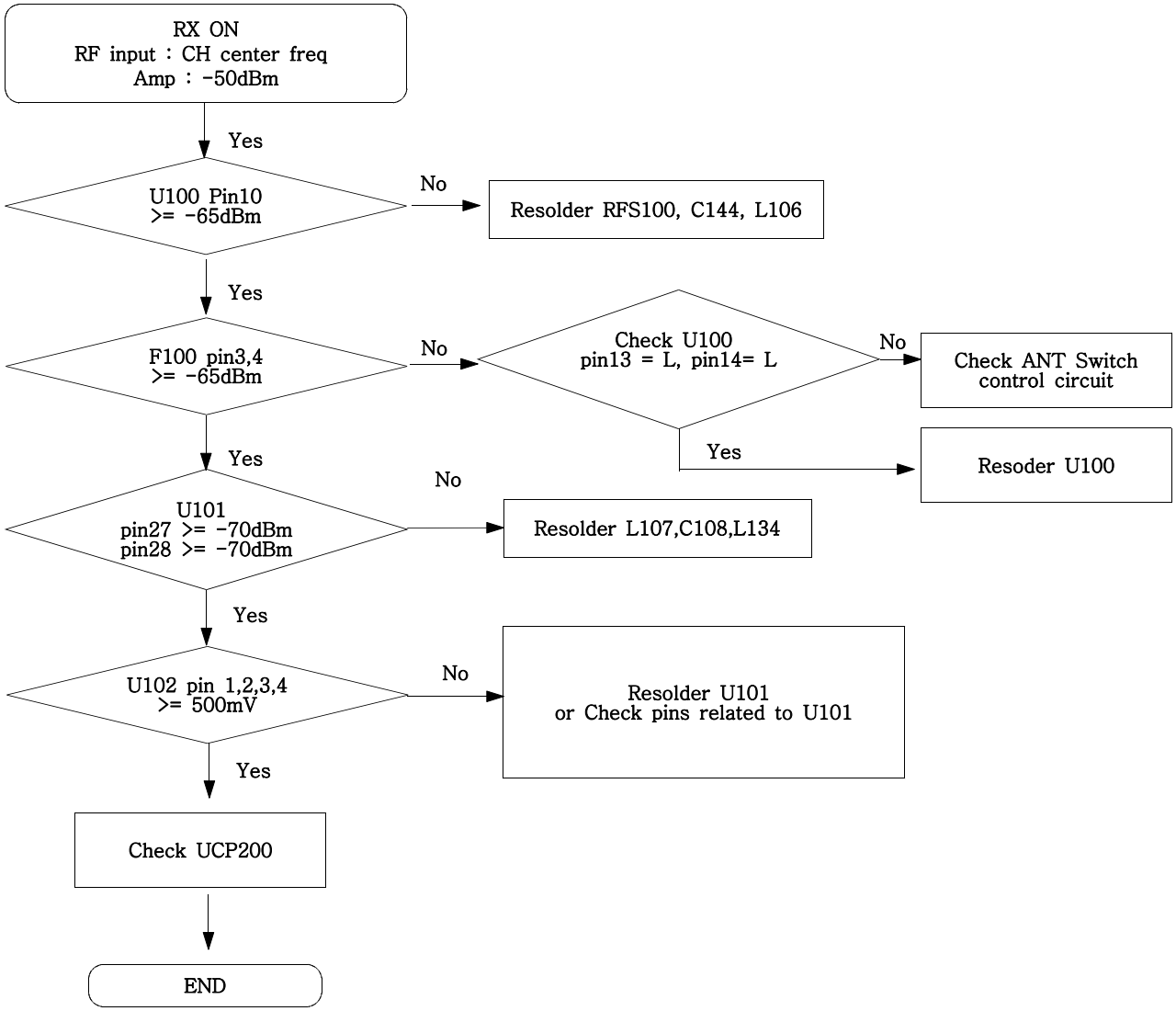
9-14. Main Key LED part



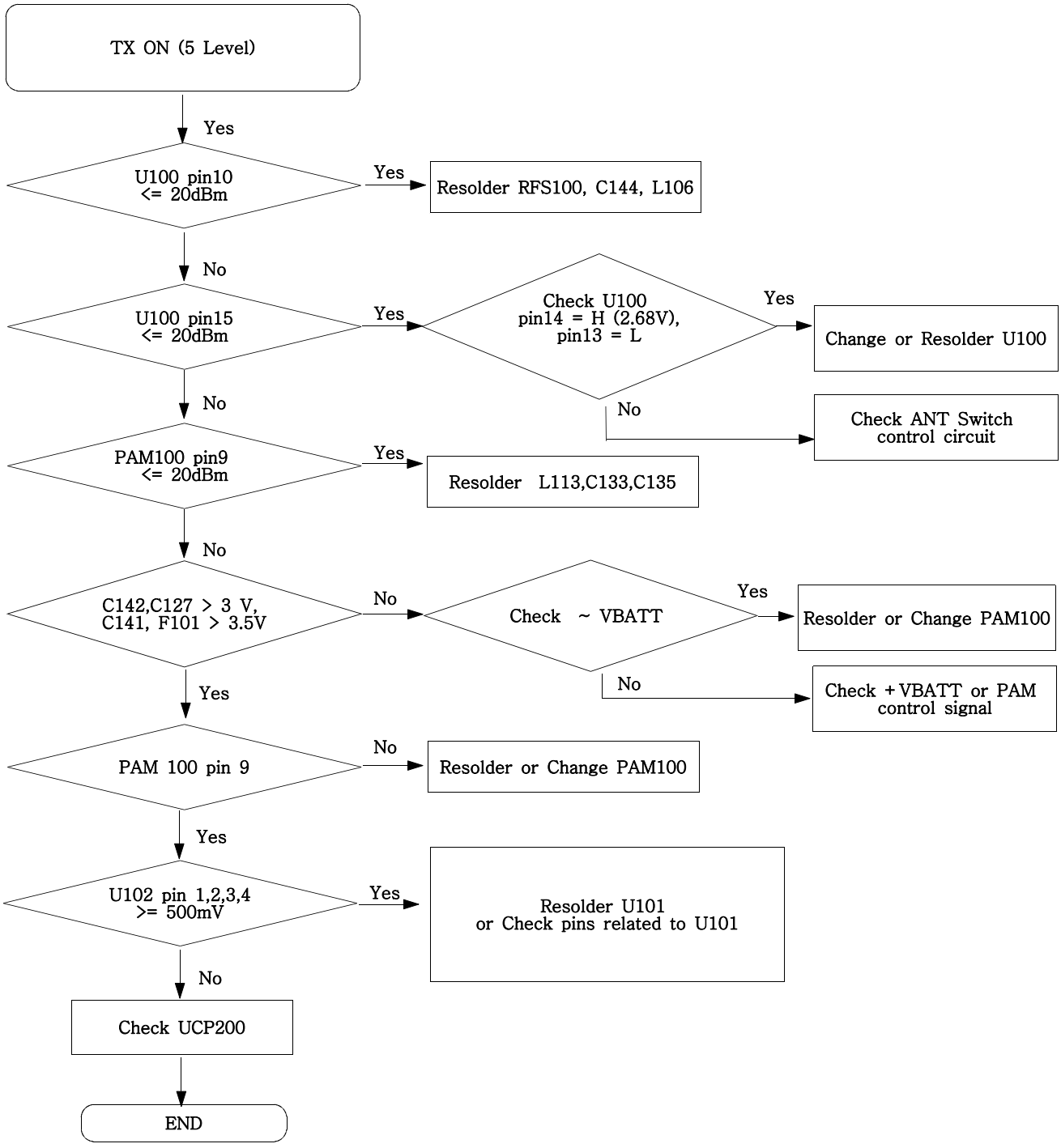


KEY_LED_LDO

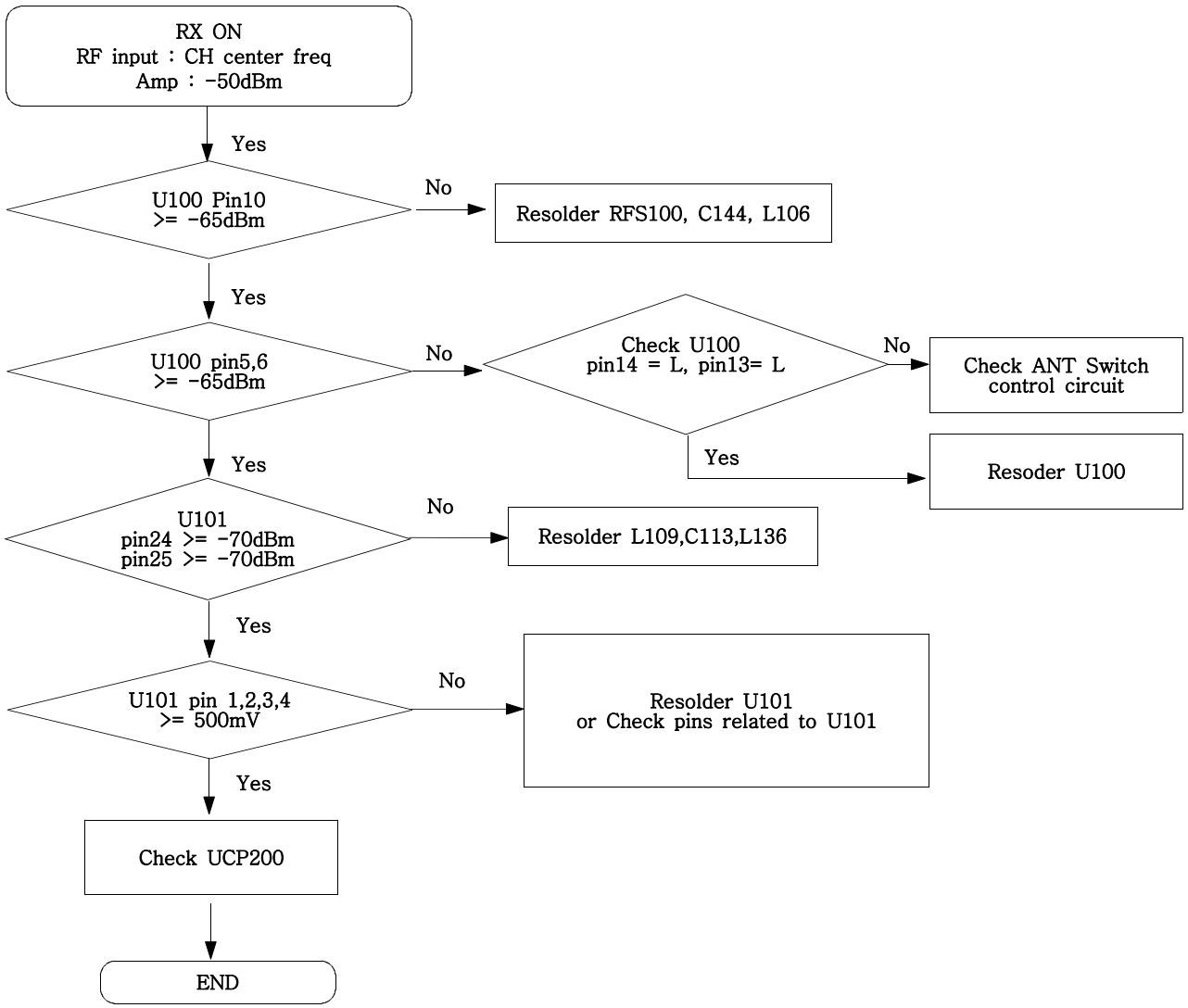
9-15. GSM900 Receiver



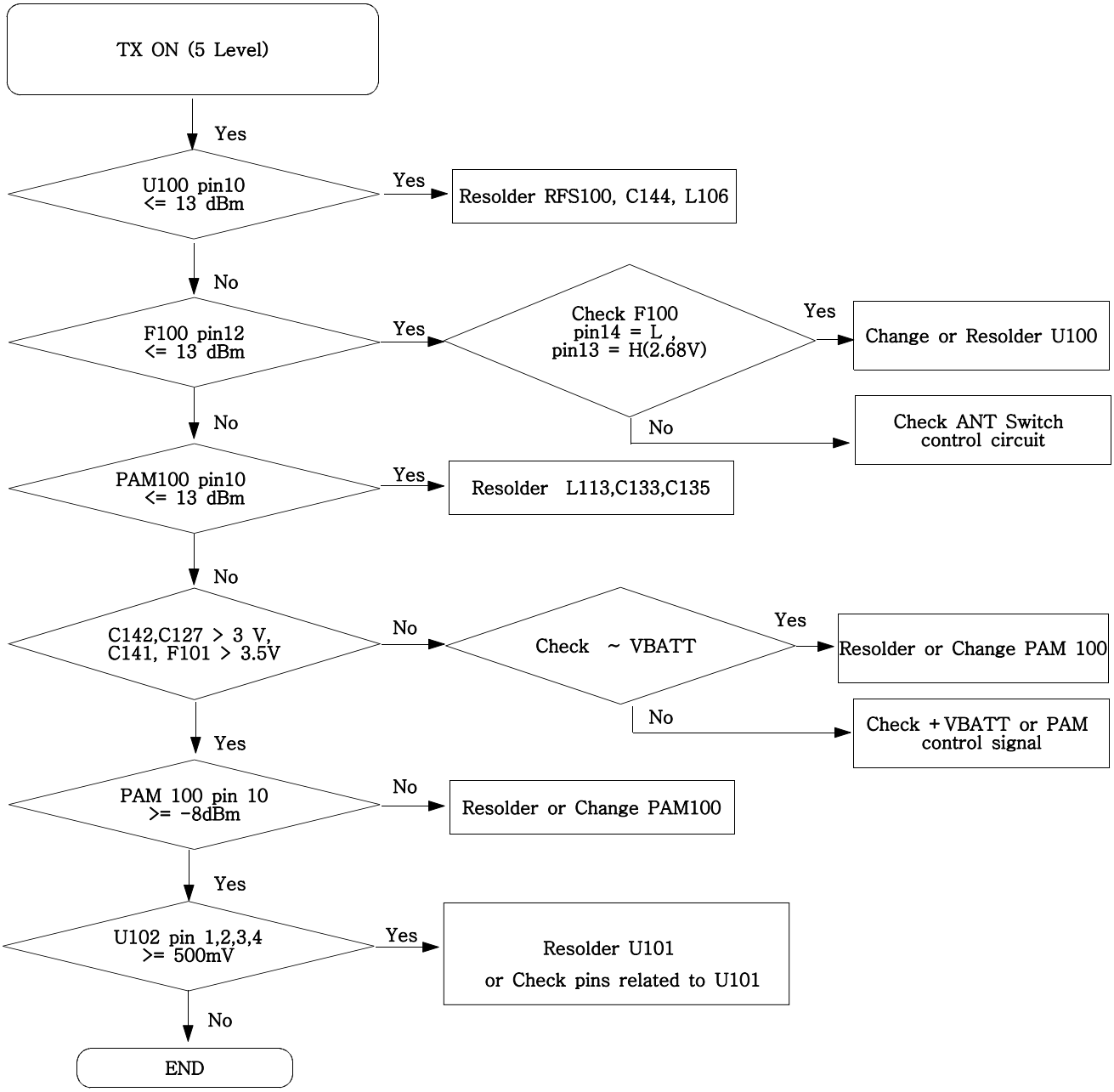
9-16. GSM900 Transmitter



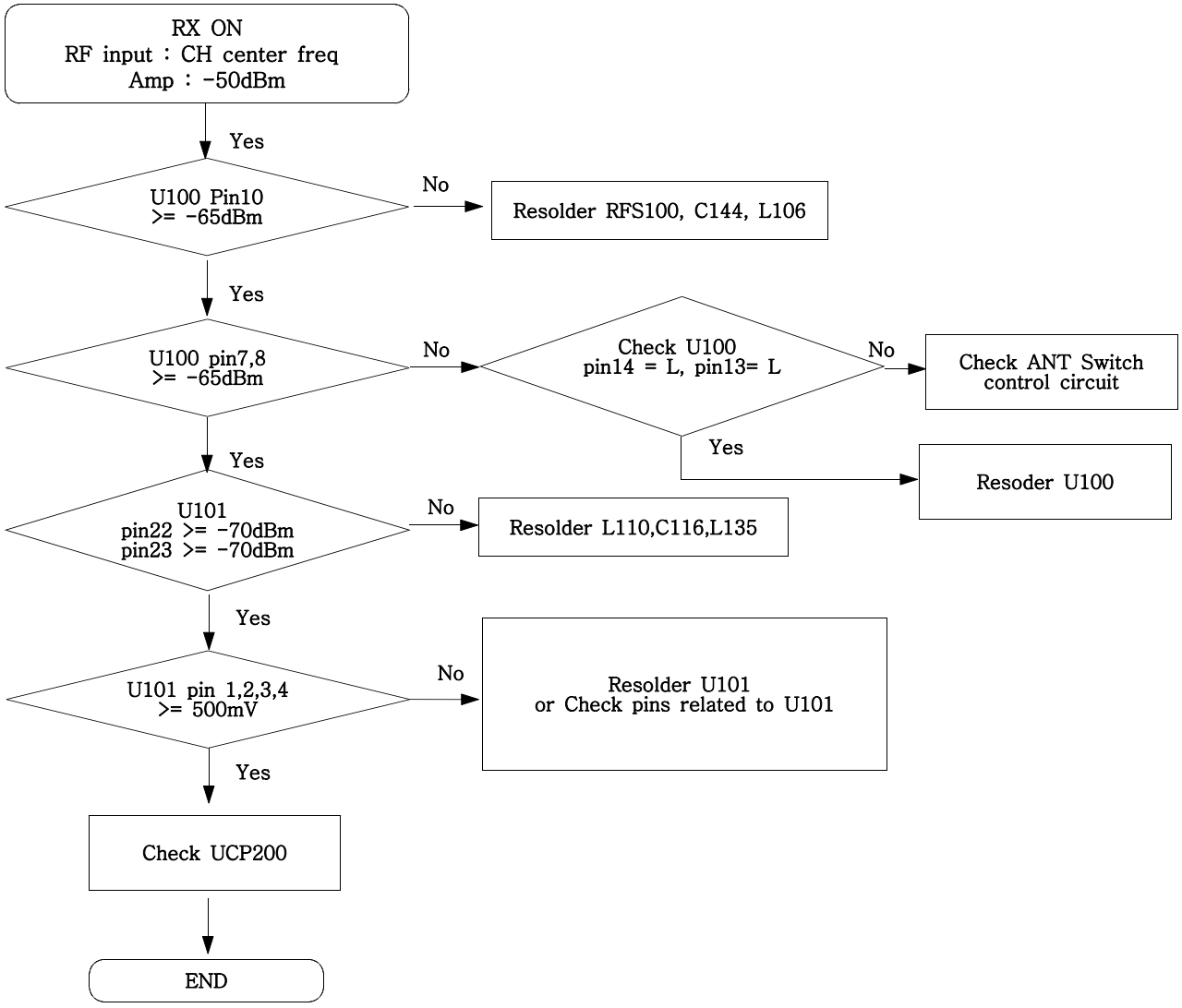
9-17. DCS Receiver

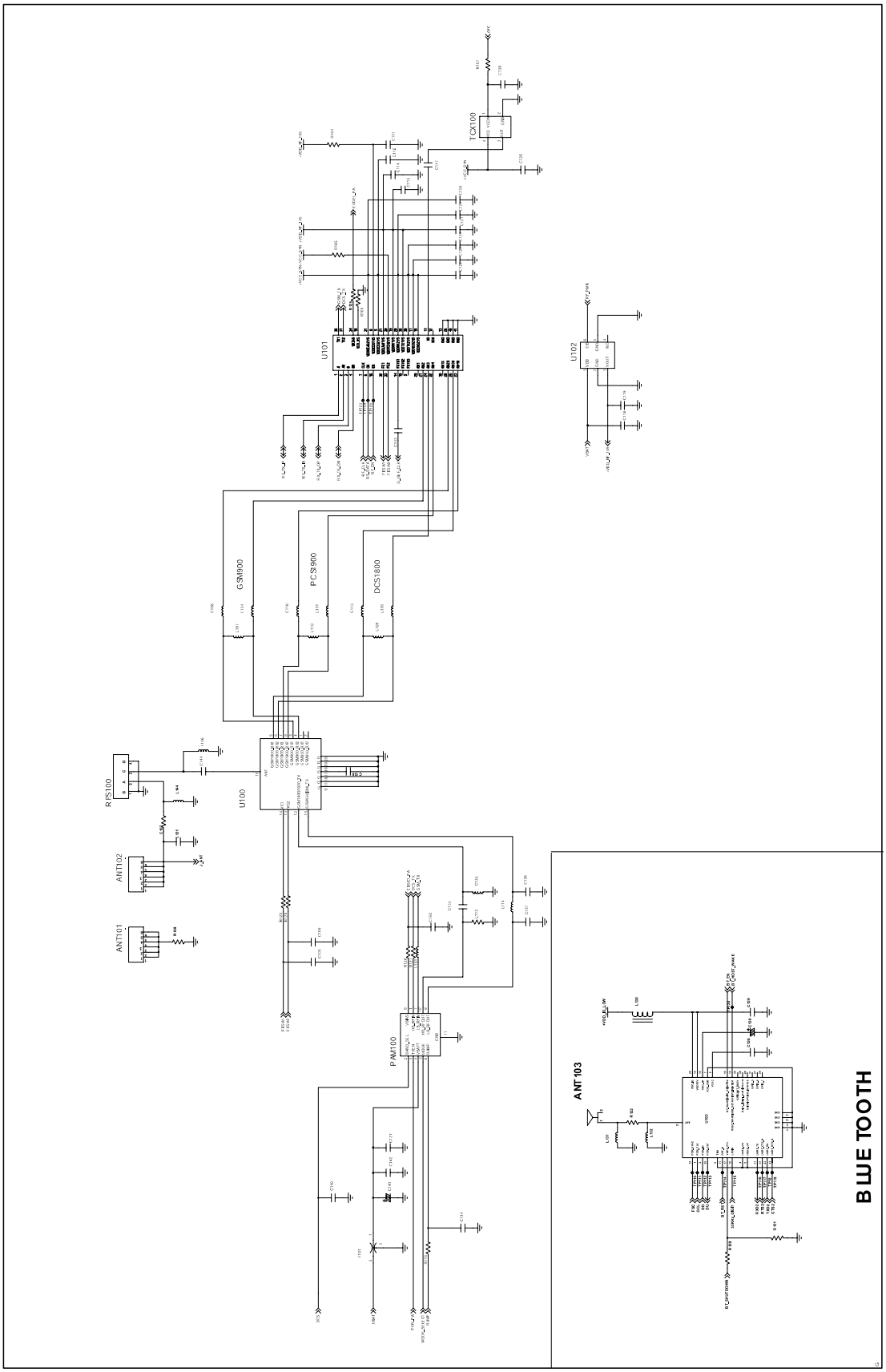


9-18. DCS/PCS Transmitter



9-19. 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