

SAMSUNG

GSM TELEPHONE

SGH-E780

SERVICE *Manual*

GSM TELEPHONE



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1. Safety Precautions

1-1. Repair Precaution

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

1-2. ESD(Electrostatically Sensitive Devices) Precaution

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

You can prevent from ESD damage by static electricity.

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

2. Specification

2-1. GSM General Specification

	GSM900 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~13dBm	33dBm~5dBm	30dBm~0dBm	30dBm~0dBm
Power Class	5pcl ~ 15pcl	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

2-3. GSM EDGE Tx Power Class

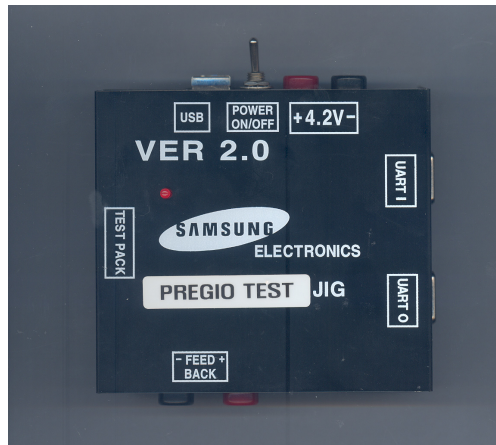
TX Power control level	GSM900	TX Power control level	DCS1800	TX Power control level	PCS1900
8	27±3 dBm	2	26 -4/+3 dBm	2	26 -4/+3 dBm
9	25±3 dBm	3	24±3 dBm	3	24±3 dBm
10	23±3 dBm	4	22±3 dBm	4	22±3 dBm
11	21±3 dBm	5	20±3 dBm	5	20±3 dBm
12	19±3 dBm	6	18±3 dBm	6	18±3 dBm
13	17±3 dBm	7	16±3 dBm	7	16±3 dBm
14	15±3 dBm	8	12±3 dBm	8	12±3 dBm
15	13±3 dBm	9	10±3 dBm	9	10±3 dBm
16	11±5 dBm	10	14±3 dBm	10	14±3 dBm
17	9±5 dBm	11	12±4 dBm	11	12±4 dBm
18	7±5 dBm	12	10±4 dBm	12	10±4 dBm
19	5±5 dBm	13	8±4dBm	13	8±4dBm
		14	6±4 dBm	14	6±4 dBm
		15	4±4 dBm	15	4±4 dBm

3. Product Function

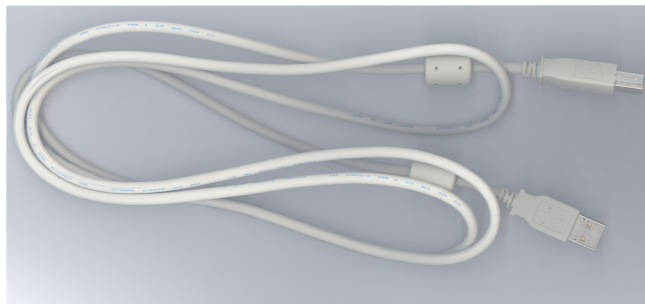
Main Function

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

4. Array course control



Test JIG BOX(GH80-03306A)



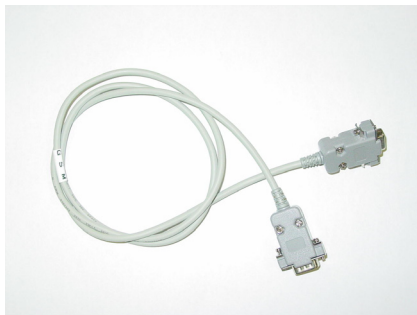
USB JIG Cable



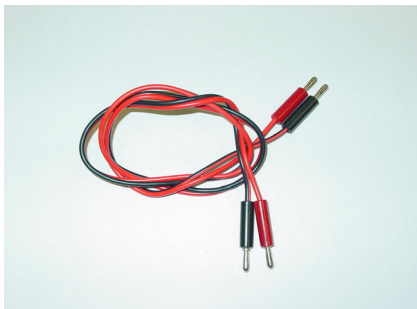
RF Test Cable (GH39-00283A)



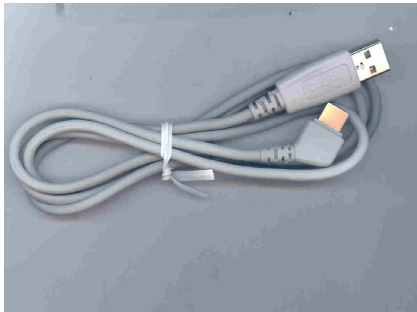
Test Cable (GH39-00499A)



Serial Cable



Power Supply Cable



Data Test Cable (GH39-00444A)



TA (GH44-01060A)

Software Downloading

4-1. Downloading Binary Files

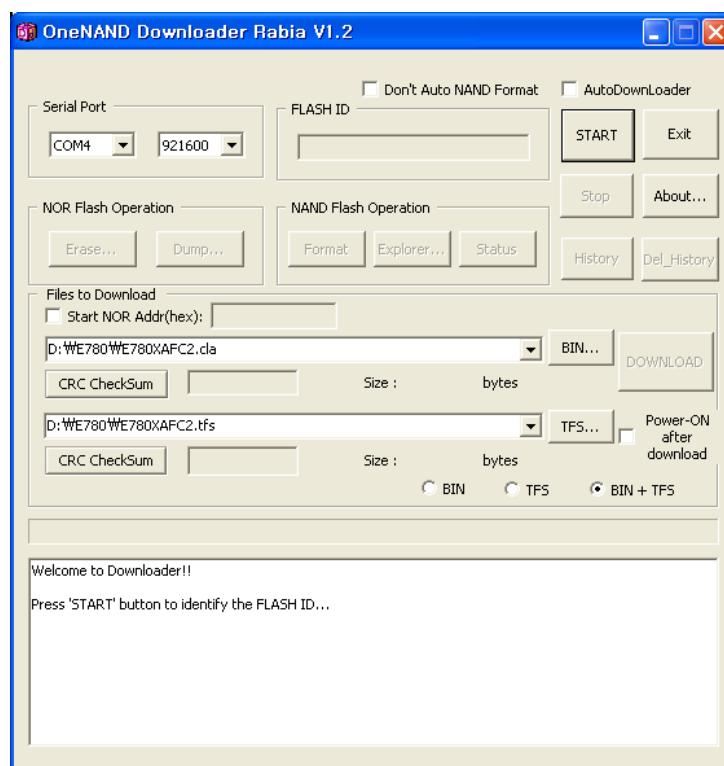
- Two files for downloading SGH-E780.
 - E780XXYY.cla : Main source binary code.
 - E780XXYY.tfs : Application code.

4-2. Pre-requisite for Downloading

- Downloader Program([Downloader_Rabia_V1.2_060216_MINI.exe](#))
- E780 Mobile Phone
- Data Cable
- Binary files
- Application files

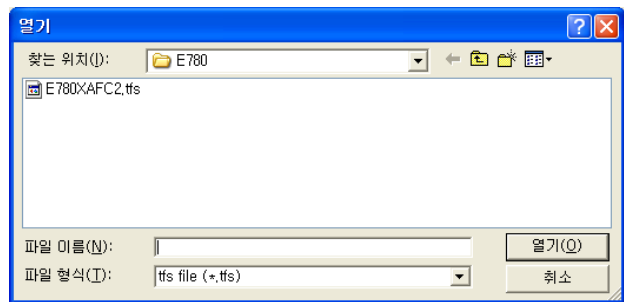
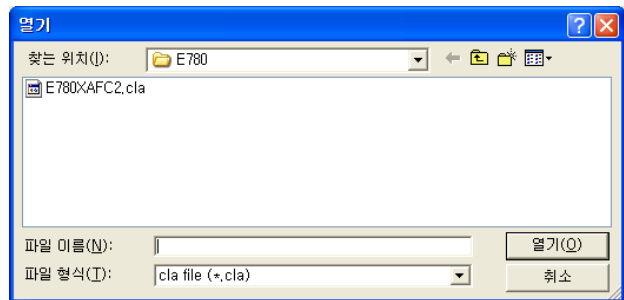
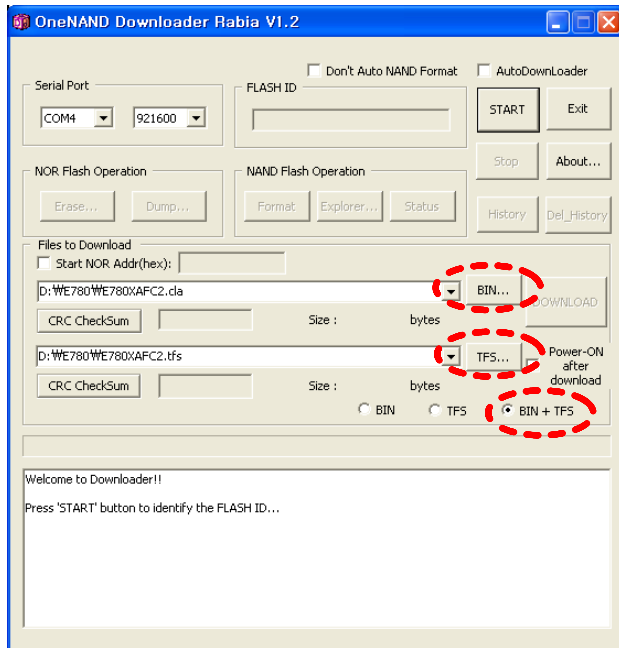
4-3. S/W Downloader Program

1. Load the binary download program by executing the "Downloader_Rabia_V1.2_060216_MINI.exe"

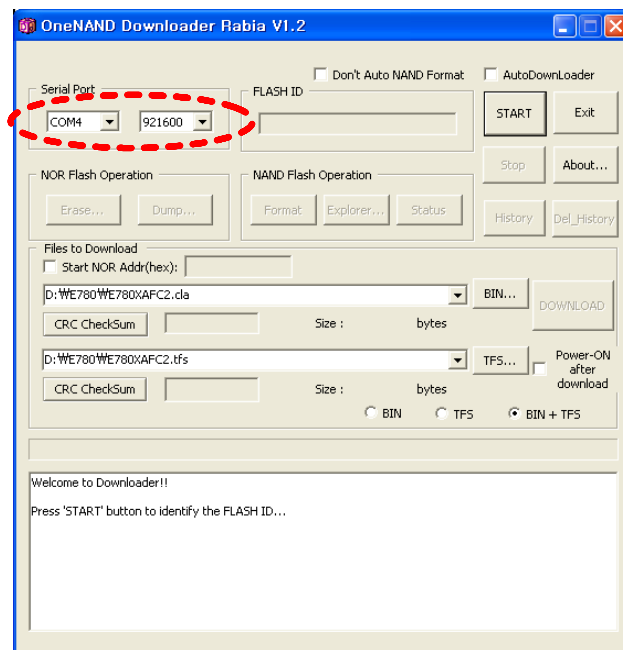


2. Select the "**BIN+TFS**" and

- Click the "**BIN...**" and select E780XXYY.cla file
- Click the "**TFS...**" and select E780XXYY.tfs file

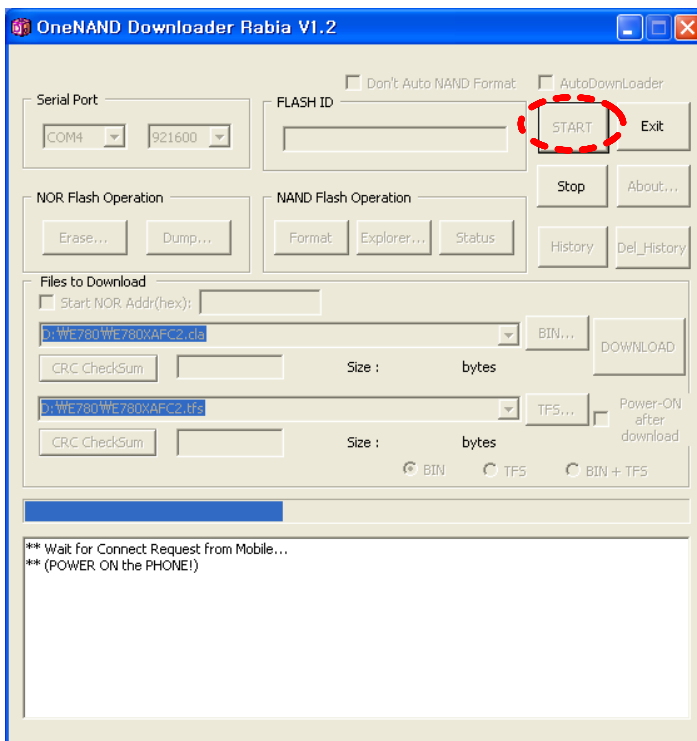


3. Select the **Serial Port** when the download cable is connected



Up to 51 ports are supported. Additionally you can select the maximum transfer speed OptiFlash will use to communicate with the phone. However, [Downloader_Rabia_V1.2_060216_MINI](#) will use a slower speed if either the PC's or the phone's serial hardware is incapable of handling the selected speed

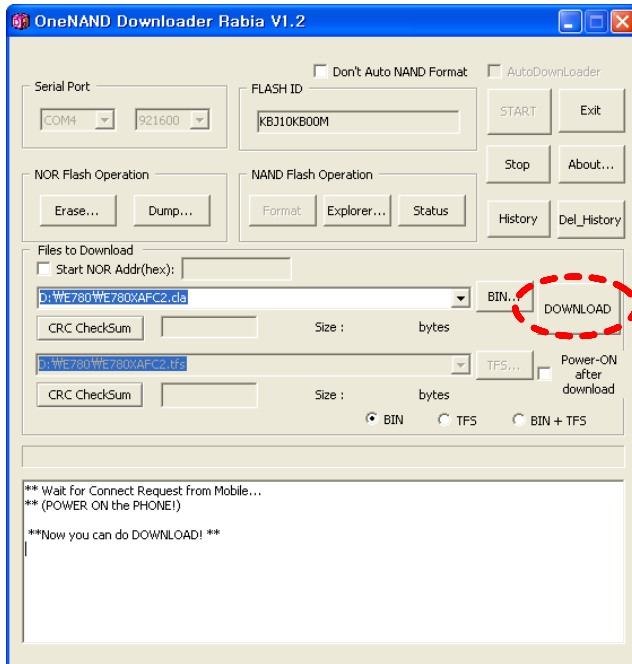
4. Select the "**START**" and Power on the Phone



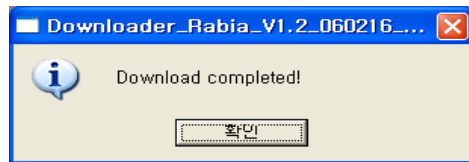
- Click the "확인" button.



5. Click "**DOWNLOAD**" and then start Downloading.



6. When downloading is finished successfully, there is a "Download completed" message.



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

8. Confirm the downloaded version name and etc. :♪

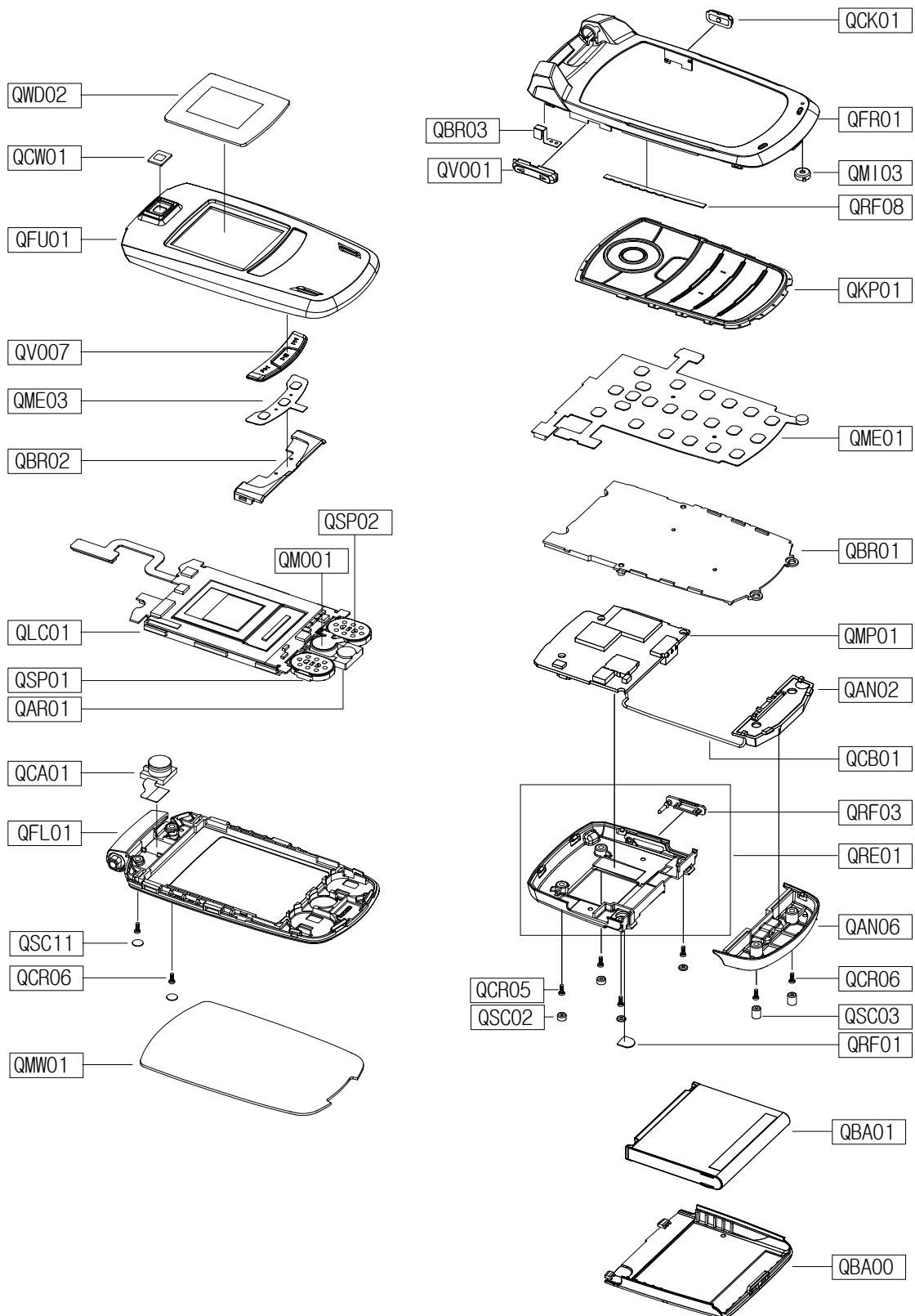
***#5002*8376263#**♪

Full Reset : ♪

***2767*3855#**

5. Exploded View and Parts List

5-1. Cellular phone Exploded View



5-2. Cellular phone Parts list

Design LOC		Discription	SEC CODE
QAN02		INTENNA-SGHE780	GH42-00754A
QAN06		MEC-CASE INTENNA	GH75-09016A
QAR01		AUDIO-RECEIVER	3009-001180
QBA00		MEC-CASE BATTERY	GH75-09553A
QBA01		INNER BATTERY PACK-800MAH BLK	GH43-02371A
QBR01		MEC-BRACKET KEY DOME	GH75-09020A
QBR02		ASSY-BRACKET-KEY FOLD MP3	GH98-00991A
QCA01		UNIT-CAMERA	GH59-02885A
QCB01		CBF COAXIAL CABLE	GH39-00535A
QCK01		PMO-CAMERA KEY	GH72-28406A
QCR05		SCREW-MACHINE	6001-001478
QCR06		SCREW-MACHINE	6001-001155
QCW01		PCT-CAMERA WINDOW	GH72-28410A
QFL01		MEC-CASE LOWER FOLDER	GH75-09014A
QKP01		MEC-KEYPAD MAIN(XET/BLK)	GH75-09019A
QLC01		LCD-LCD MODULE	GH07-00847A
QME01		UNIT-EL KEY PBA	GH59-02884A
QME03		UNIT-MP3 KEY FPCB	GH59-02883A
QMO01		MOTOR DC-SGHE780	GH31-00219A
QMP01		PBA MAIN-SGHE780	GH92-02714A
QMW01		MEC-MAIN WINDOW	GH75-09022A
QRF01		MPR-TAPE RF JACK	GH74-21935A
QRF08		MPR-TAPE RF CABLE	GH74-21934A
QSC02		RMO-COVER SCREW TOP	GH73-06257A
QSC03		RMO-COVER SCREW BTM	GH73-06259A
QSC11		MPR-TAPE LOWER SCREW	GH74-21928A
QSP01		SPEAKER	3001-001914
QSP02		SPEAKER	3001-001917
QVO01		PMO-VOLUME KEY	GH72-28405A
QWD02		PCT-DUAL WINDOW	GH72-28408A
QRE01		MEC-CASE REAR	GH75-09017A
	QRF03	PMO-COVER EAR IF	GH72-28404A
QFR01		MEC-CASE FRONT	GH75-09015A
	QBR03	ASSY-BRACKET-FRONT CONT PIN	GH98-00951A
	QMI03	RMO-COVER MIC	GH73-06734A
QFU01		MEC-CASE UPPER FOLDER	GH75-09013A
	QVO07	MEC-KEY FOLD(MP3)	GH75-09018A

Discription	SEC CODE
BAG PE	6902-000634
ADAPTOR-SGHD800 TA(EU)	GH44-01060A
UNIT-EARPHONE(BLK)	GH59-02499A
LABEL(P)-WATER SOAK	GH68-02026A
MANUAL USERS-EU FRENCH	GH68-09842A
LABEL(R)-MAIN(FRAN)	GH68-09861D
LABEL(P)-OPEN MP3	GH68-11246A
CUSHION-CASE(EU)	GH69-03845A
BOX-UNIT(EU)	GH69-03890A
MPR-BOHO VINYL LCD CONN	GH74-14737A
MPR-CUSHION LCD SUB LDI	GH74-21911A
MPR-CUSHION DUAL WINDOW	GH74-21912A
MPR-TAPE CAMERA CONN	GH74-21929A
MPR-TAPE FRONT ANTI DUST	GH74-21930A
MPR-TAPE PCB MASKING	GH74-21931A
MPR-VINYL BOHO UPPER OUT	GH74-21937A
MPR-VINYL BOHO LOWER OUT	GH74-21938A
MPR-VINYL BOHO UPPER IN	GH74-21939A
MPR-TAPE LCD COND 1	GH74-21944A
MPR-VINYL BOHO UPPER OUT INSID	GH74-22864A
MPR-VINYL BOHO LOWER OUT INSID	GH74-22865A
MPR-TAPE SOLDERING	GH74-22866A
MPR-VINYL BOHO CASE INTENNA	GH74-23671A
MPR-TAPE DC/DC	GH74-23672A
MPR-TAPE SPK	GH74-23673A

6. MAIN Electrical Parts List

Design LOC	Description	SEC Code	STATUS
ANT300	ANTENNA-CHIP	4202-001123	SA
BAT400	BATTERY-LI(2ND)	4302-001181	SA
BTC500	CONNECTOR-BATTERY	3711-006003	SA
C101	C-CER,CHIP	2203-000812	SA
C102	C-CER,CHIP	2203-000438	SA
C105	C-CER,CHIP	2203-005050	SA
C106	C-CER,CHIP	2203-000278	SA
C111	C-CER,CHIP	2203-000812	SA
C112	C-CER,CHIP	2203-000278	SA
C113	C-CER,CHIP	2203-000278	SA
C115	C-CER,CHIP	2203-000812	SA
C116	C-CER,CHIP	2203-000233	SA
C117	C-CER,CHIP	2203-000278	SA
C119	C-CER,CHIP	2203-000812	SA
C120	C-CER,CHIP	2203-000233	SA
C121	C-CER,CHIP	2203-000812	SA
C123	C-CER,CHIP	2203-000254	SA
C124	C-CER,CHIP	2203-000812	SA
C125	C-CER,CHIP	2203-000812	SA
C126	C-CER,CHIP	2203-005682	SA
C127	C-CER,CHIP	2203-006260	SA
C130	C-CER,CHIP	2203-000233	SA
C131	C-CER,CHIP	2203-005444	SA
C133	C-CER,CHIP	2203-000854	SA
C134	C-CER,CHIP	2203-000679	SA
C137	C-CER,CHIP	2203-000466	SA
C140	C-CER,CHIP	2203-000254	SA
C143	C-CER,CHIP	2203-000530	SA
C147	C-CER,CHIP	2203-000278	SA
C149	C-CER,CHIP	2203-000425	SA
C150	C-CER,CHIP	2203-005057	SA
C151	C-CER,CHIP	2203-006562	SA
C152	C-CER,CHIP	2203-005482	SA
C153	C-CER,CHIP	2203-000278	SA
C200	C-CER,CHIP	2203-006562	SA
C201	C-CER,CHIP	2203-006423	SA
C202	C-CER,CHIP	2203-006194	SA
C203	C-CER,CHIP	2203-006423	SA
C204	C-CER,CHIP	2203-006423	SA
C205	C-CER,CHIP	2203-005682	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	2203-006423	SA
C211	C-CER,CHIP	2203-006423	SA
C212	C-CER,CHIP	2203-006423	SA
C213	C-CER,CHIP	2203-005682	SA
C214	C-CER,CHIP	2203-006423	SA
C217	C-CER,CHIP	2203-005482	SA

Electrical Parts List

Design LOC	Description	SEC Code	STATUS
C305	C-CER,CHIP	2203-005482	SA
C306	C-CER,CHIP	2203-005482	SA
C307	C-CER,CHIP	2203-000254	SA
C312	C-CER,CHIP	2203-000233	SA
C317	C-CER,CHIP	2203-000679	SA
C318	C-CER,CHIP	2203-005482	SA
C319	C-CER,CHIP	2203-006562	SA
C320	C-CER,CHIP	2203-005482	SA
C321	C-CER,CHIP	2203-005482	SA
C323	C-CER,CHIP	2203-005482	SA
C325	C-CER,CHIP	2203-006562	SA
C326	C-CER,CHIP	2203-006562	SA
C401	C-CER,CHIP	2203-006208	SA
C402	C-CER,CHIP	2203-006562	SA
C403	C-CER,CHIP	2203-006562	SA
C404	C-CER,CHIP	2203-006324	SA
C405	C-CER,CHIP	2203-000425	SA
C406	C-CER,CHIP	2203-005482	SA
C407	C-CER,CHIP	2203-000628	SA
C408	C-CER,CHIP	2203-006257	SA
C409	C-CER,CHIP	2203-000233	SA
C411	C-CER,CHIP	2203-000812	SA
C412	C-CER,CHIP	2203-006208	SA
C413	C-CER,CHIP	2203-006562	SA
C414	C-CER,CHIP	2203-006208	SA
C415	C-CER,CHIP	2203-006257	SA
C416	C-CER,CHIP	2203-006257	SA
C418	C-CER,CHIP	2203-006208	SA
C419	C-CER,CHIP	2203-005482	SA
C422	C-CER,CHIP	2203-006208	SA
C423	C-CER,CHIP	2203-006208	SA
C424	C-CER,CHIP	2203-006257	SA
C425	C-CER,CHIP	2203-006257	SA
C501	C-CER,CHIP	2203-000812	SA
C502	C-CER,CHIP	2203-005482	SA
C503	C-CER,CHIP	2203-005482	SA
C504	C-CER,CHIP	2203-003054	SA
C505	C-CER,CHIP	2203-005482	SA
C506	C-CER,CHIP	2203-006562	SA
C508	C-CER,CHIP	2203-001437	SA
C509	C-CER,CHIP	2203-001259	SA
C510	C-CER,CHIP	2203-000995	SA
C511	C-CER,CHIP	2203-001437	SA
C513	C-CER,CHIP	2203-003054	SA
C514	C-CER,CHIP	2203-000254	SA
C515	C-TA,CHIP	2404-001381	SA
C516	C-CER,CHIP	2203-003054	SA
C601	C-CER,CHIP	2203-000278	SA
C603	C-CER,CHIP	2203-005482	SA
C604	C-CER,CHIP	2203-000696	SA

Design LOC	Description	SEC Code	STATUS
C605	C-CER,CHIP	2203-000995	SA
C606	C-CER,CHIP	2203-005482	SA
C607	C-CER,CHIP	2203-000278	SA
C700	C-CER,CHIP	2203-006208	SA
C701	C-CER,CHIP	2203-005061	SA
C702	C-CER,CHIP	2203-006562	SA
C703	C-CER,CHIP	2203-006562	SA
C704	C-CER,CHIP	2203-000812	SA
C705	C-CER,CHIP	2203-000812	SA
C706	C-CER,CHIP	2203-005683	SA
C707	C-CER,CHIP	2203-005683	SA
C708	C-CER,CHIP	2203-005683	SA
C709	C-CER,CHIP	2203-005683	SA
C710	C-CER,CHIP	2203-005683	SA
C711	C-CER,CHIP	2203-005683	SA
C712	C-CER,CHIP	2203-005683	SA
C713	C-CER,CHIP	2203-005683	SA
C714	C-CER,CHIP	2203-005683	SA
C715	C-CER,CHIP	2203-005683	SA
C716	C-CER,CHIP	2203-005683	SA
C717	C-CER,CHIP	2203-005683	SA
C718	C-CER,CHIP	2203-005683	SA
C719	C-CER,CHIP	2203-005683	SA
C720	C-CER,CHIP	2203-005683	SA
C721	C-CER,CHIP	2203-005683	SA
C722	C-CER,CHIP	2203-005683	SA
C723	C-CER,CHIP	2203-005683	SA
C724	C-CER,CHIP	2203-005683	SA
C725	C-CER,CHIP	2203-005683	SA
C726	C-CER,CHIP	2203-005683	SA
C727	C-CER,CHIP	2203-005683	SA
C728	C-CER,CHIP	2203-005683	SA
C729	C-CER,CHIP	2203-005683	SA
C730	C-CER,CHIP	2203-005683	SA
C731	C-CER,CHIP	2203-005683	SA
C732	C-CER,CHIP	2203-005683	SA
C733	C-CER,CHIP	2203-005683	SA
C744	C-CER,CHIP	2203-005683	SA
C745	C-CER,CHIP	2203-005683	SA
C746	C-CER,CHIP	2203-005683	SA
C747	C-CER,CHIP	2203-005683	SA
C748	C-CER,CHIP	2203-005683	SA
C749	C-CER,CHIP	2203-005683	SA
C750	C-CER,CHIP	2203-005683	SA
C751	C-CER,CHIP	2203-000812	SA
C752	C-CER,CHIP	2203-000812	SA
C753	C-CER,CHIP	2203-000812	SA
C754	C-CER,CHIP	2203-006562	SA
C755	C-CER,CHIP	2203-005482	SA
C756	C-CER,CHIP	2203-000627	SNA

Design LOC	Description	SEC Code	STATUS
C757	C-CER,CHIP	2203-003019	SNA
C758	C-CER,CHIP	2203-000995	SA
C759	C-CER,CHIP	2203-000995	SA
CN700	HEADER-BOARD TO BOARD	3711-005456	SA
D400	DIODE-TVS	0406-001231	SA
D500	DIODE-SCHOTTKY	0404-001172	SA
D600	DIODE-TVS	0406-001231	SA
D601	DIODE-TVS	0406-001231	SA
F101	DUPLEXER-ASM	2911-000018	SA
F102	FILTER-EMI SMD	2901-001254	SA
F103	FILTER-SAW	2904-001553	SA
F500	FILTER-EMI/ESD	2901-001376	SA
F501	FILTER-EMI SMD	2901-001316	SA
HDC700	HEADER-BOARD TO BOARD	3711-005918	SA
IFC500	SOCKET-INTERFACE	3710-002306	SA
L102	INDUCTOR-SMD	2703-002367	SA
L103	INDUCTOR-SMD	2703-002314	SA
L104	INDUCTOR-SMD	2703-002207	SA
L105	INDUCTOR-SMD	2703-002313	SA
L108	INDUCTOR-SMD	2703-002314	SA
L109	INDUCTOR-SMD	2703-002313	SA
L113	INDUCTOR-SMD	2703-002267	SA
L114	INDUCTOR-SMD	2703-001752	SA
L115	BEAD-SMD	3301-001729	SA
L116	INDUCTOR-SMD	2703-002281	SA
L118	INDUCTOR-SMD	2703-002268	SA
L125	INDUCTOR-SMD	2703-001723	SA
L126	INDUCTOR-SMD	2703-002313	SA
L127	INDUCTOR-SMD	2703-002281	SA
L200	BEAD-SMD	3301-001789	SA
L300	INDUCTOR-SMD	2703-001752	SA
L400	BEAD-SMD	3301-001120	SA
L401	INDUCTOR-SMD	2703-002962	SA
L600	BEAD-SMD	3301-001438	SA
L601	BEAD-SMD	3301-001438	SA
L700	INDUCTOR-SMD	2703-002967	SA
OSC400	CRYSTAL-SMD	2801-004466	SA
R102	R-CHIP	2007-000171	SA
R103	R-CHIP	2007-000148	SA
R105	R-CHIP	2007-000566	SA
R106	R-CHIP	2007-000566	SA
R107	R-CHIP	2007-000171	SA
R110	R-CHIP	2007-000171	SA
R115	R-CHIP	2007-000140	SA
R116	R-CHIP	2007-000171	SA
R117	R-CHIP	2007-000171	SA
R118	R-CHIP	2007-000171	SA
R119	R-CHIP	2007-000171	SA
R120	R-CHIP	2007-000172	SA
R200	R-CHIP	2007-000171	SA

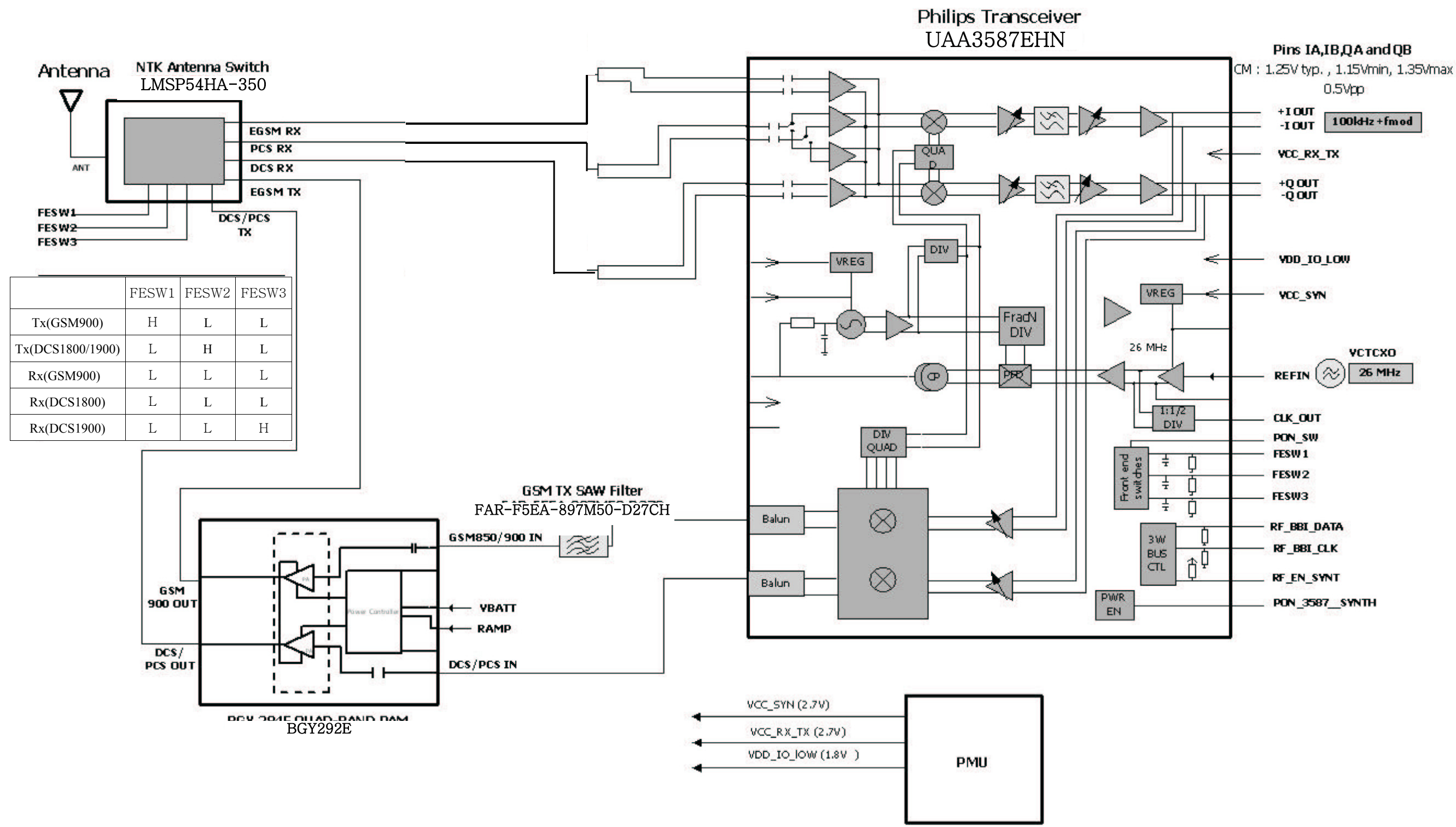
Design LOC	Description	SEC Code	STATUS
R201	R-CHIP	2007-008516	SA
R203	R-CHIP	2007-000162	SA
R204	R-CHIP	2007-000171	SA
R206	R-CHIP	2007-000171	SA
R214	R-CHIP	2007-007137	SA
R215	R-CHIP	2007-007137	SA
R217	R-NET	2011-001394	SA
R218	R-CHIP	2007-008052	SA
R220	R-CHIP	2007-000148	SA
R301	R-CHIP	2007-000162	SA
R302	R-CHIP	2007-008542	SA
R303	R-CHIP	2007-008542	SA
R304	R-CHIP	2007-000148	SA
R306	R-CHIP	2007-000171	SA
R307	R-CHIP	2007-000162	SA
R310	R-CHIP	2007-000141	SA
R311	R-CHIP	2007-000141	SA
R313	R-CHIP	2007-007014	SA
R314	R-CHIP	2007-001303	SA
R315	R-CHIP	2007-000157	SA
R318	R-CHIP	2007-000171	SA
R327	R-CHIP	2007-000171	SA
R328	R-CHIP	2007-000171	SA
R401	R-CHIP	2007-000171	SA
R402	R-CHIP	2007-007100	SA
R405	R-CHIP	2007-000162	SA
R406	R-CHIP	2007-002796	SA
R504	R-CHIP	2007-000148	SA
R505	R-CHIP	2007-000162	SA
R506	R-CHIP	2007-000152	SA
R508	R-CHIP	2007-000170	SA
R509	R-CHIP	2007-000170	SA
R510	R-CHIP	2007-007573	SA
R511	R-CHIP	2007-000137	SA
R512	R-CHIP	2007-007334	SA
R513	R-CHIP	2007-000162	SA
R514	R-CHIP	2007-008297	SA
R515	R-CHIP	2007-007489	SA
R517	R-CHIP	2007-000162	SA
R518	R-CHIP	2007-000162	SA
R519	R-CHIP	2007-001339	SA
R520	R-CHIP	2007-000758	SA
R521	R-CHIP	2007-007142	SA
R522	R-CHIP	2007-007334	SA
R523	R-CHIP	2007-000162	SA
R524	R-CHIP	2007-000171	SA
R525	R-CHIP	2007-000171	SA
R601	R-CHIP	2007-000242	SA
R602	R-CHIP	2007-000148	SA
R603	R-CHIP	2007-000242	SA

Design LOC	Description	SEC Code	STATUS
R604	R-CHIP	2007-002796	SA
R605	R-CHIP	2007-000831	SA
R606	R-CHIP	2007-000162	SA
R616	R-CHIP	2007-000138	SA
R617	R-CHIP	2007-000138	SA
R701	R-CHIP	2007-000171	SA
R702	R-CHIP	2007-000171	SA
R703	R-CHIP	2007-000690	SA
R704	R-CHIP	2007-000161	SA
R705	R-CHIP	2007-000171	SA
R706	R-CHIP	2007-000162	SA
R707	R-CHIP	2007-000171	SA
R708	R-CHIP	2007-000171	SA
R716	R-CHIP	2007-000162	SA
RFS100	CONNECTOR-COAXIAL	3705-001358	SA
RFS101	CONNECTOR-COAXIAL	3705-001225	SA
SIM400	CONNECTOR-CARD EDGE	3709-001357	SA
TA100	C-TA,CHIP	2404-001411	SA
TA400	C-TA,CHIP	2404-001381	SA
TA500	C-TA,CHIP	2404-001381	SA
TA600	C-TA,CHIP	2404-001402	SA
TCX100	OSCILLATOR-VCTCXO	2809-001281	SA
TR300	FET-SILICON	0505-001325	SA
TR500	TR-DIGITAL	0504-001151	SA
U102	IC-TRANSCEIVER	1205-002817	SA
U103	IC-POWER AMP	1201-002280	SA
U301	BLUETOOTH MODULE	4709-001426	SA
U302	IC-CMOS LOGIC	0801-003025	SA
U303	IC-CMOS LOGIC	0801-002237	SA
U305	IC ASIC	GH13-00032A	SA
U400	IC-POWER SUPERVISOR	1203-003882	SA
U401	IC-POSI.FIXED REG.	1203-003737	SA
U402	IC-DC/DC CONVERTER	1203-004261	SA
U500	DIODE-TVS	0406-001190	SA
U501	DIODE-TVS	0406-001237	SNA
U502	IC-BATTERY	1203-004024	SA
U503	DIODE-TVS	0406-001150	SA
U600	IC-ANALOG SWITCH	1001-001221	SA
U601	IC-ANALOG SWITCH	1001-001359	SA
U604	IC-ANALOG SWITCH	1001-001394	SA
U701	IC-ANALOG SWITCH	1001-001394	SA
U703	DIODE-TVS	0406-001190	SA
U704	DIODE-TVS	0406-001237	SNA
U707	IC-POSI.FIXED REG.	1203-003754	SA
U708	VARISTOR	1405-001082	SA
U709	IC-EL DRIVER	1003-001716	SA
UCP200	IC-COMM. CONTROLLER	1205-002757	SA
UME300	IC-MCP	1108-000030	SA
VR400	VARISTOR	1405-001082	SA
VR500	THERMISTOR-NTC	1404-001221	SA

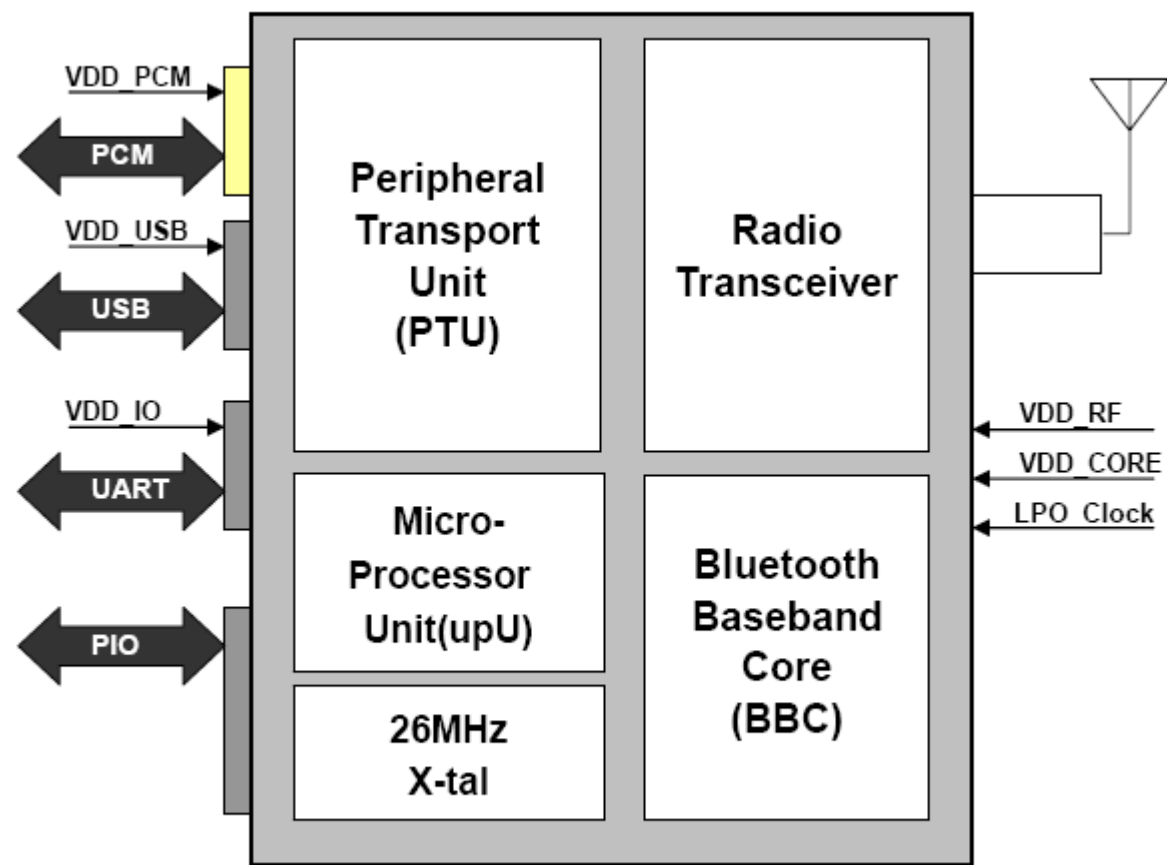
Design LOC	Description	SEC Code	STATUS
VR501	VARISTOR	1405-001082	SA
VR700	VARISTOR	1405-001082	SA
VR701	VARISTOR	1405-001082	SA
ZD400	DIODE-TVS	0406-001253	SA
ZD500	DIODE-ZENER	0403-001547	SA
ZD502	DIODE-ZENER	0403-001547	SA
ZD700	DIODE-ZENER	0403-001511	SA
ZD701	DIODE-TVS	0406-001201	SA

7. Block Diagrams

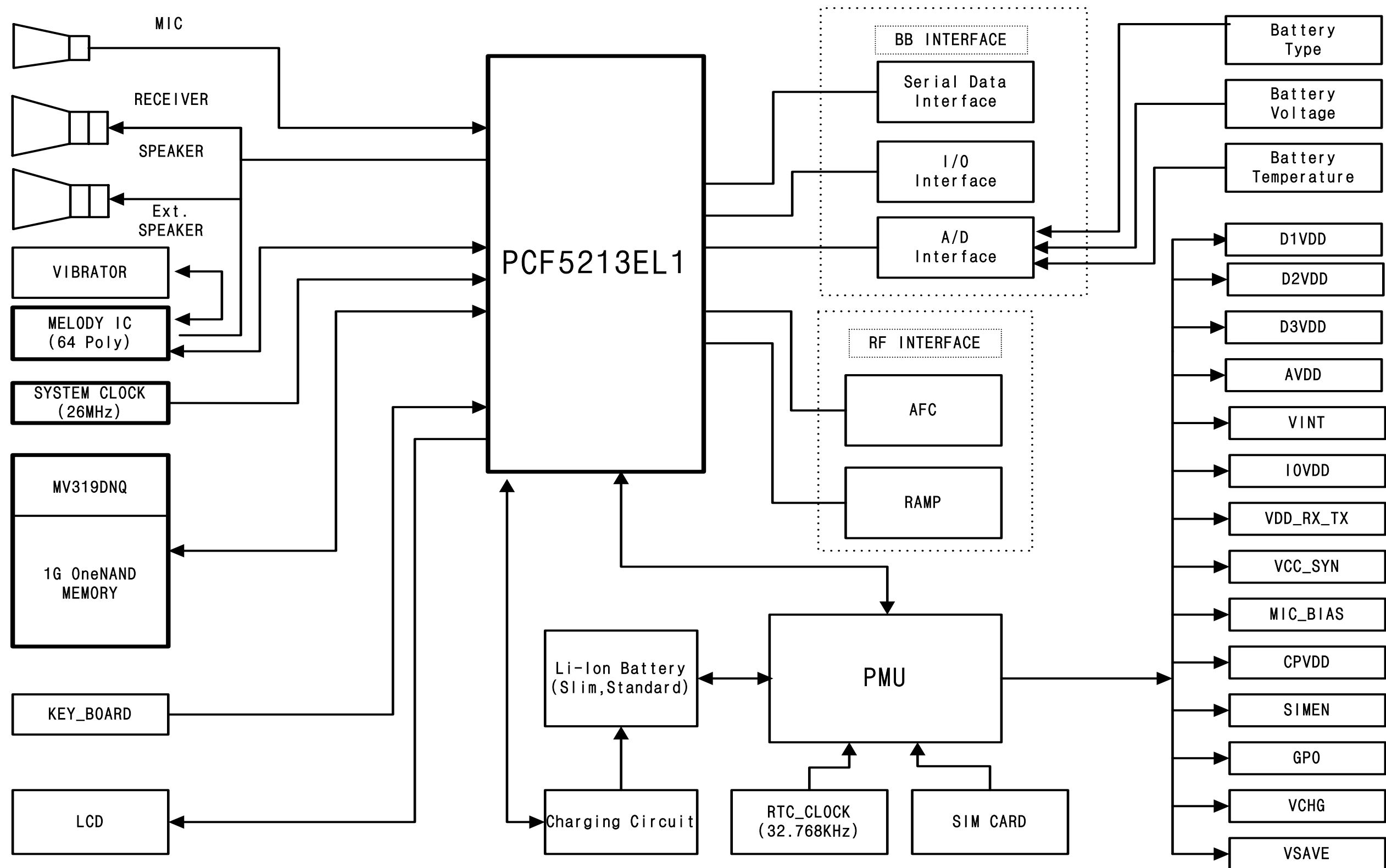
7-1. RF Solution Block Diagram



7-2. BT Solution Block Diagram

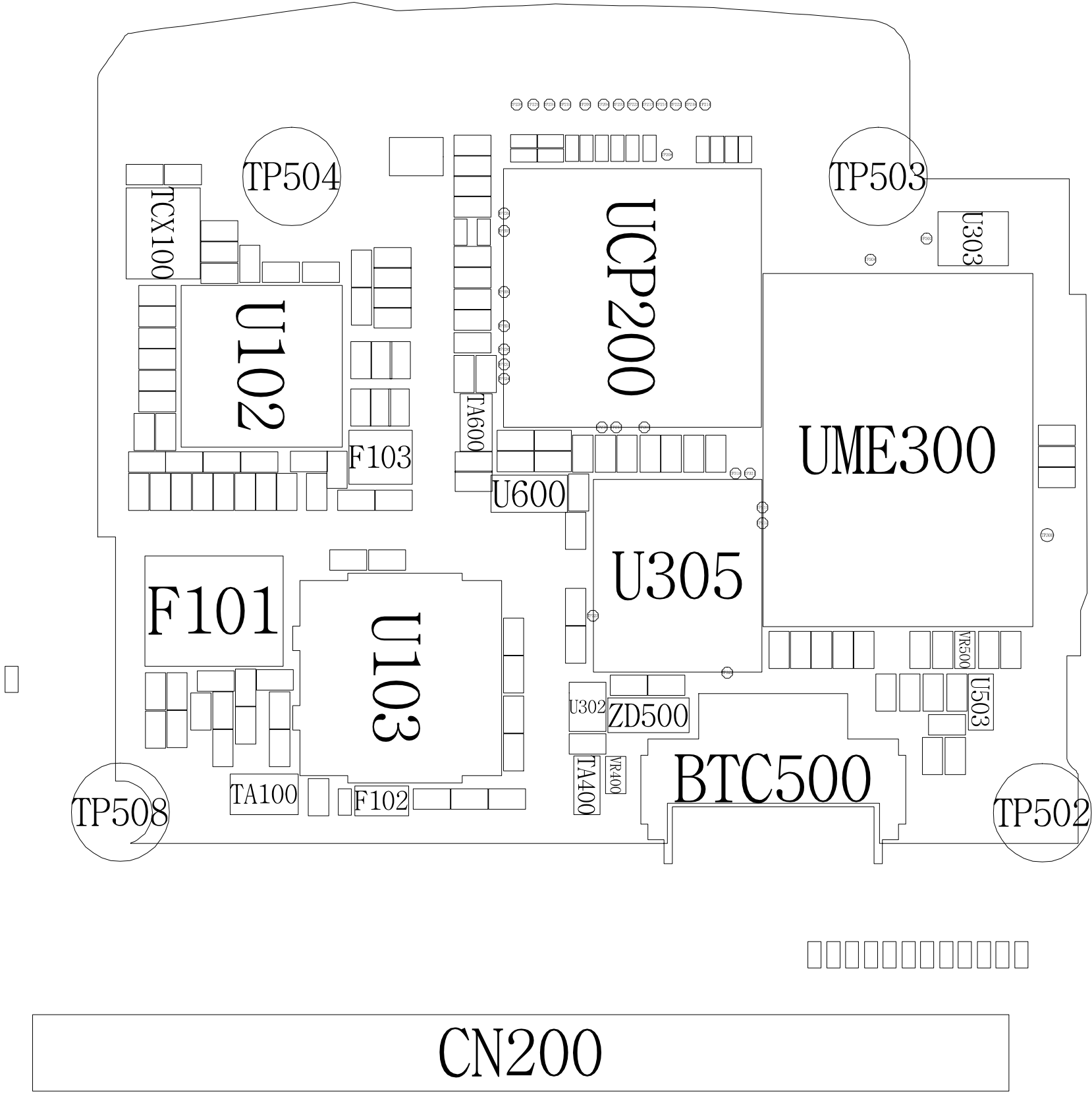


7-3. Base Band Solution Block Diagram

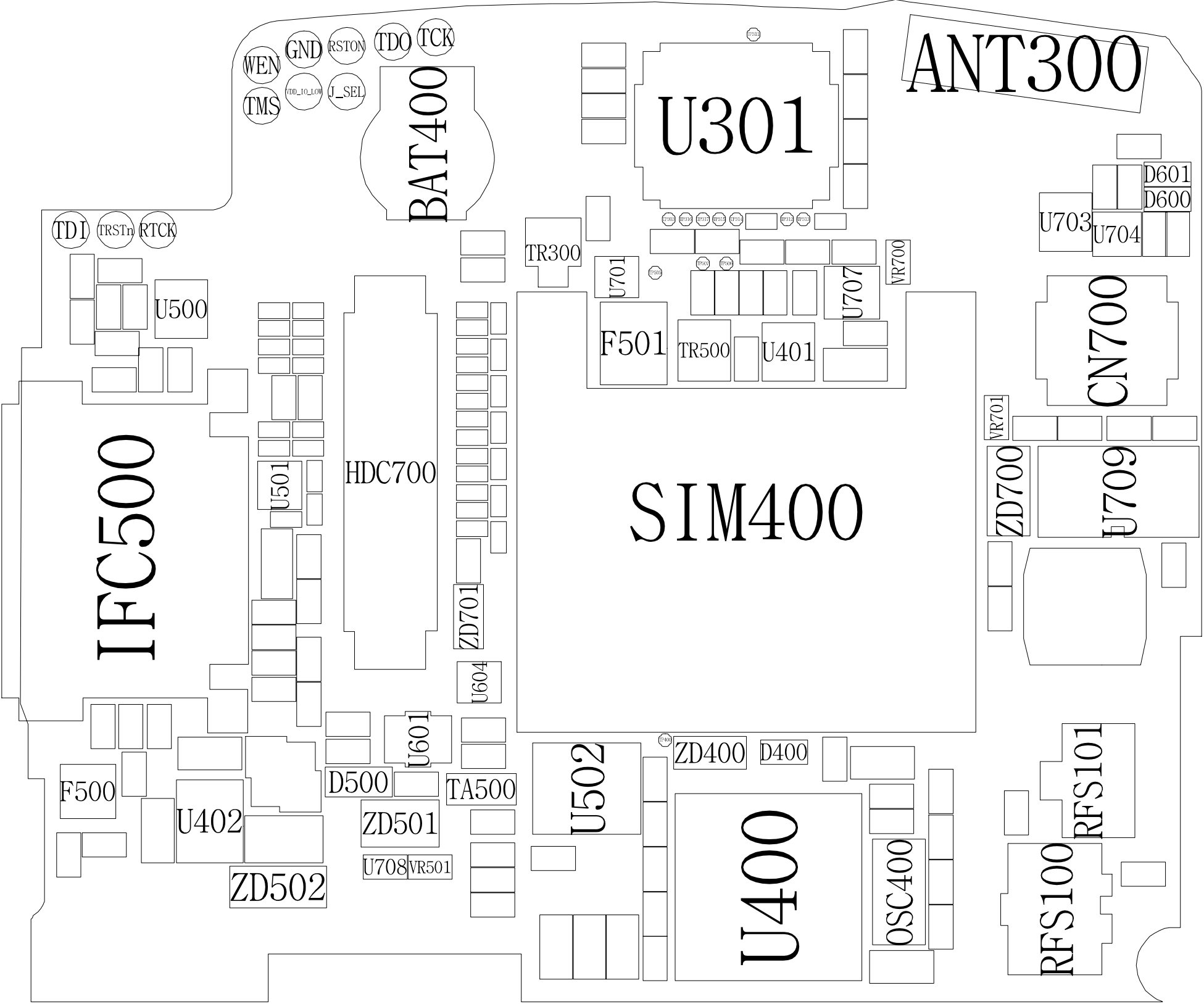


8. PCB Diagrams

8-1. PCB Top Diagram

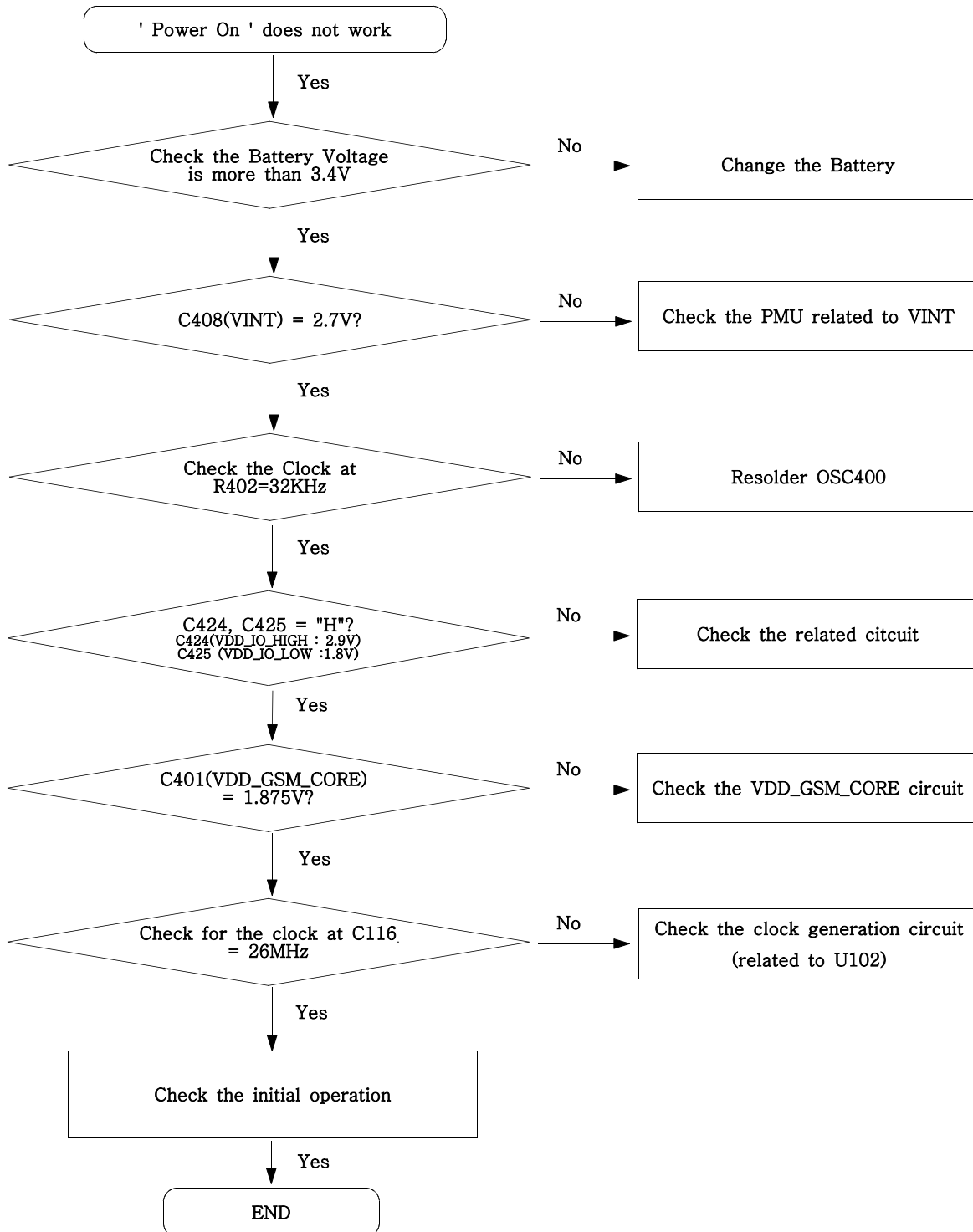


8-2. PCB Bottom Diagram



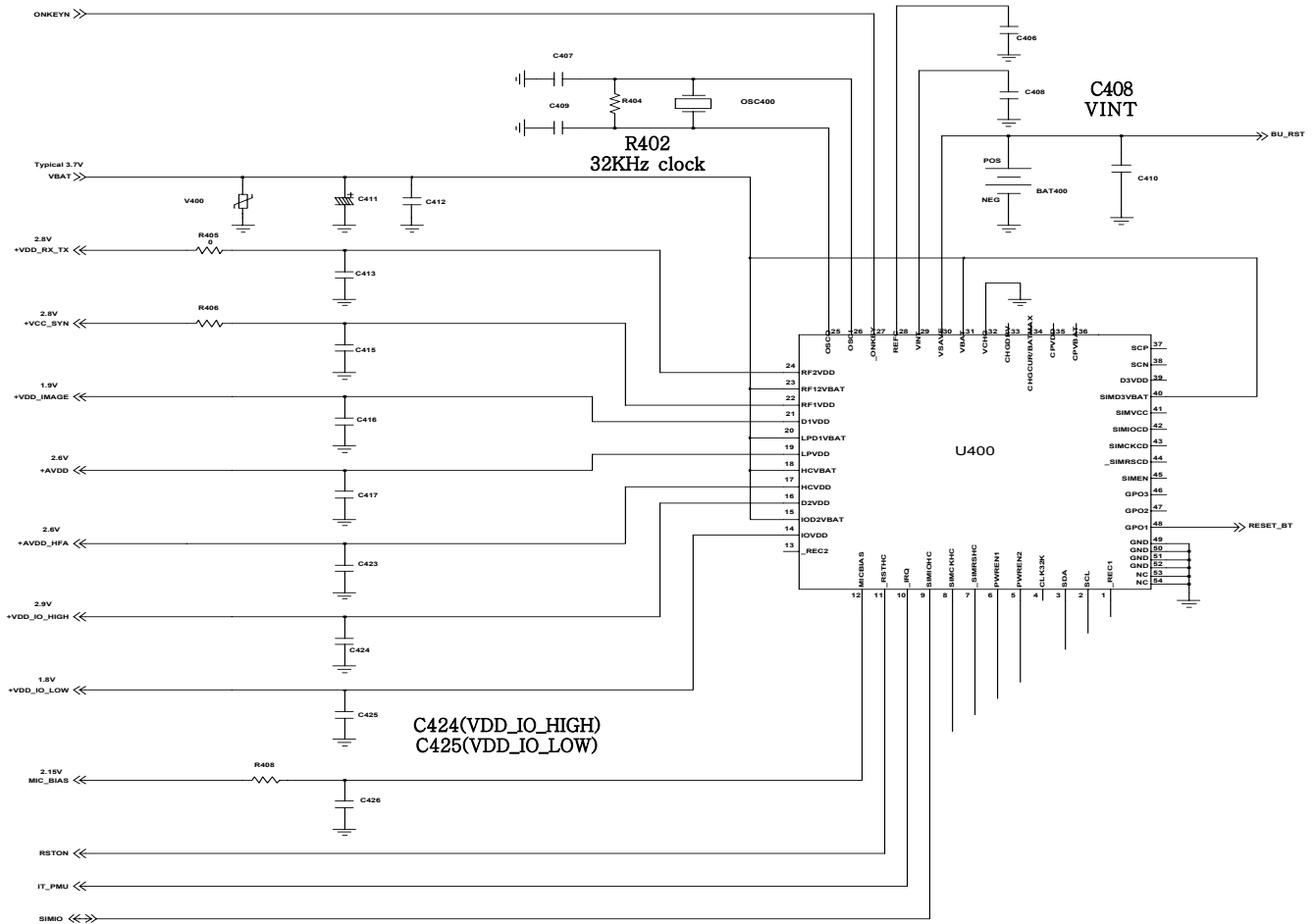
9. Flow Chart of Troubleshooting

9-1. Power On

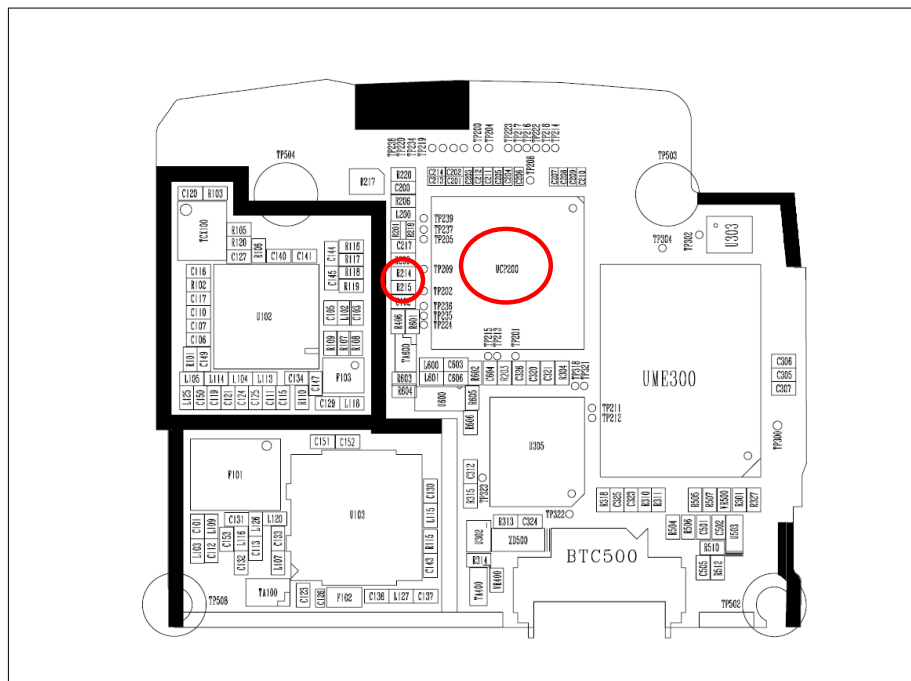
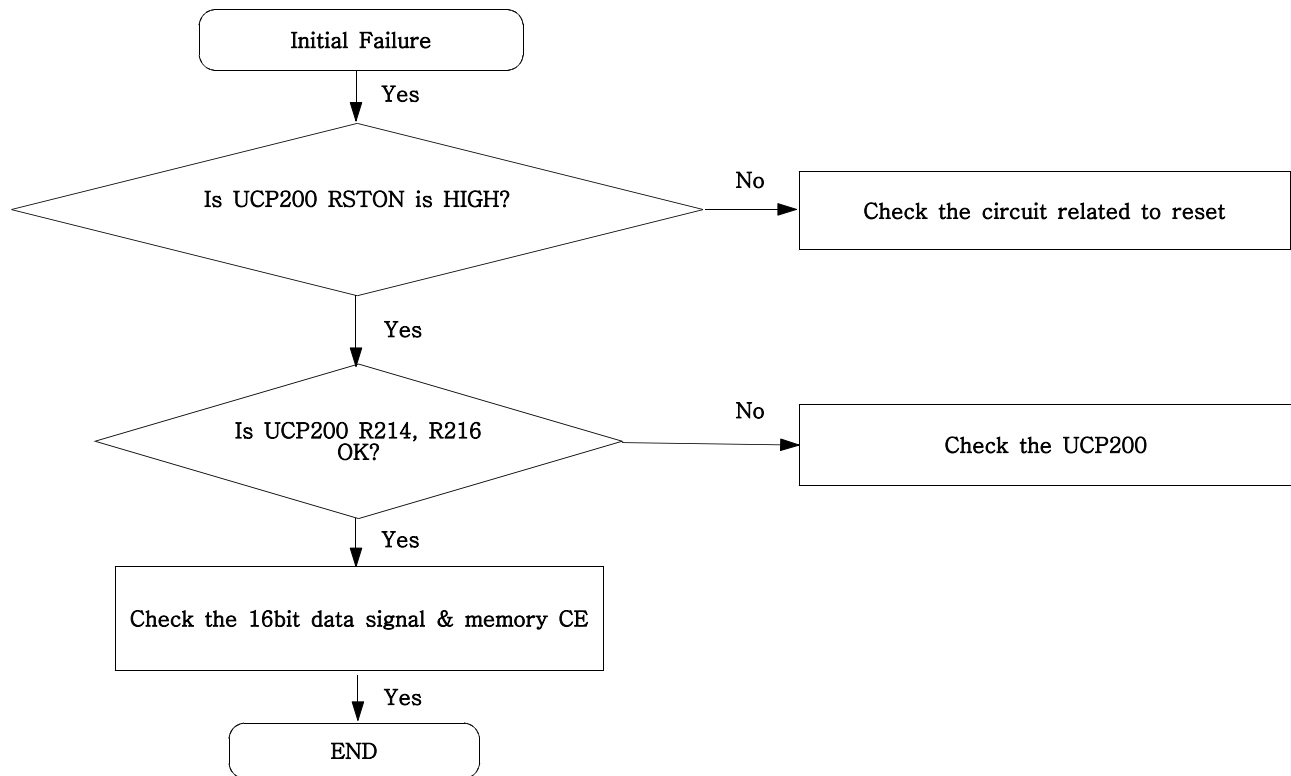


Flow Chart of Troubleshooting

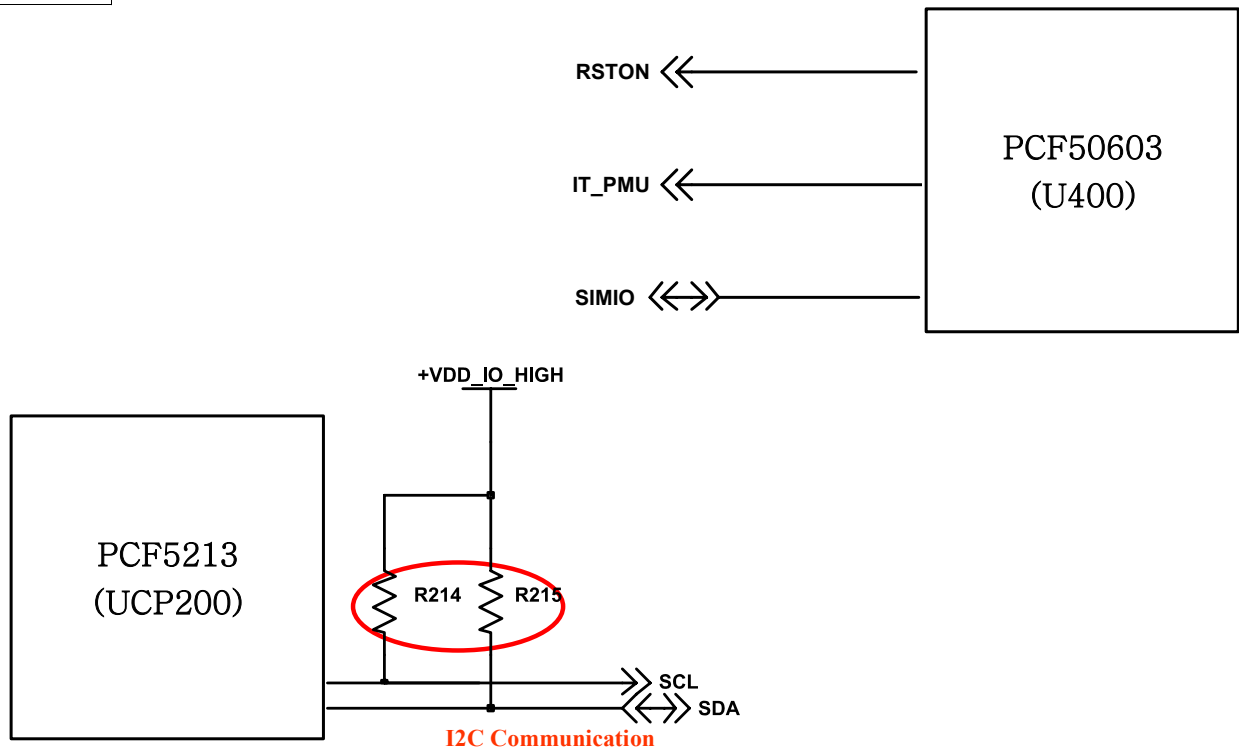
Power On



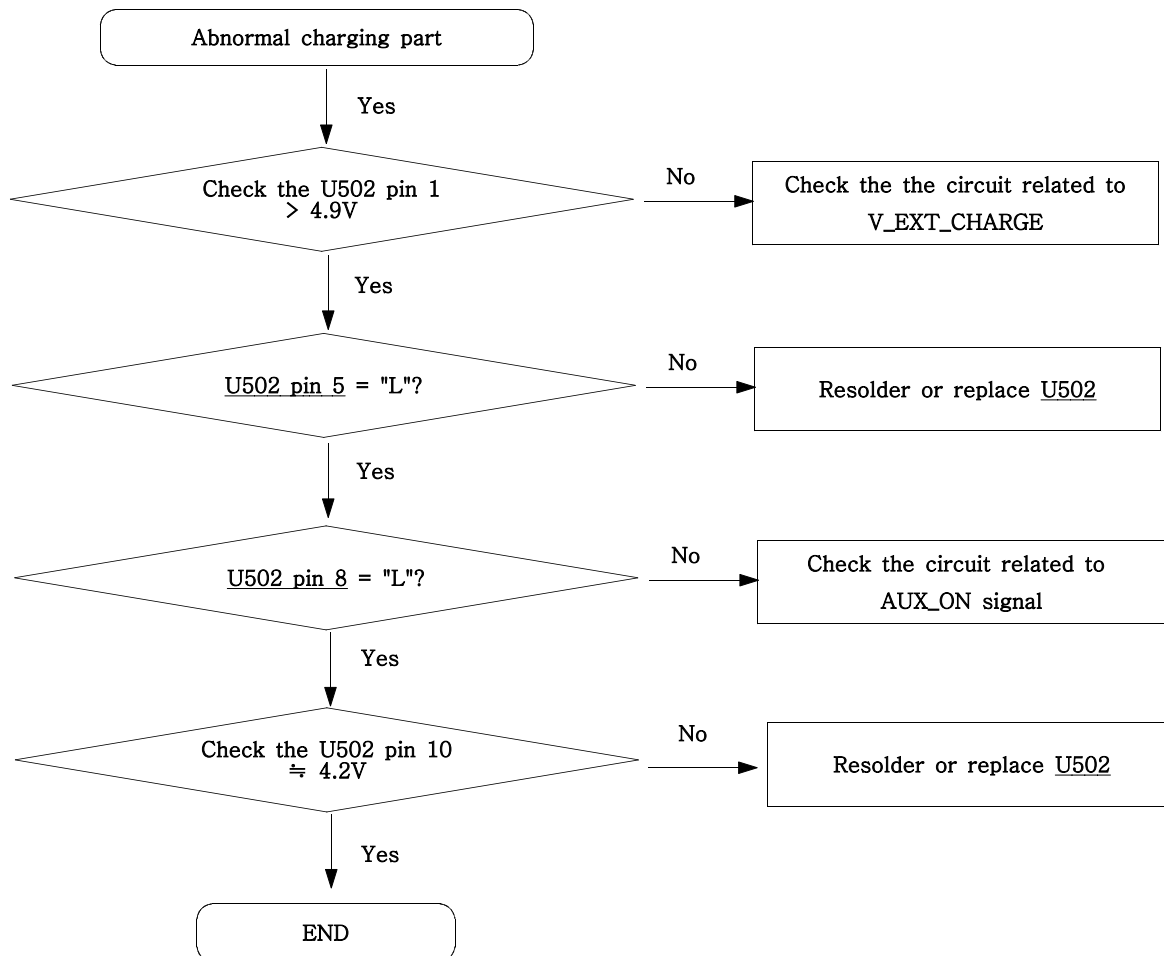
9-2. Initial



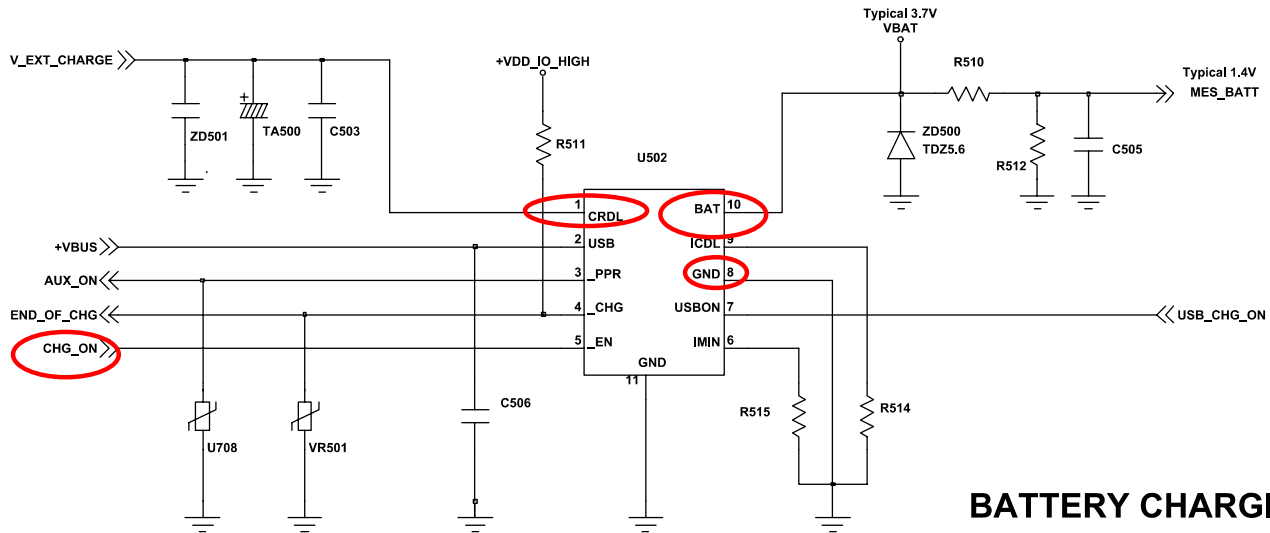
Initial



9-3. Charging Part

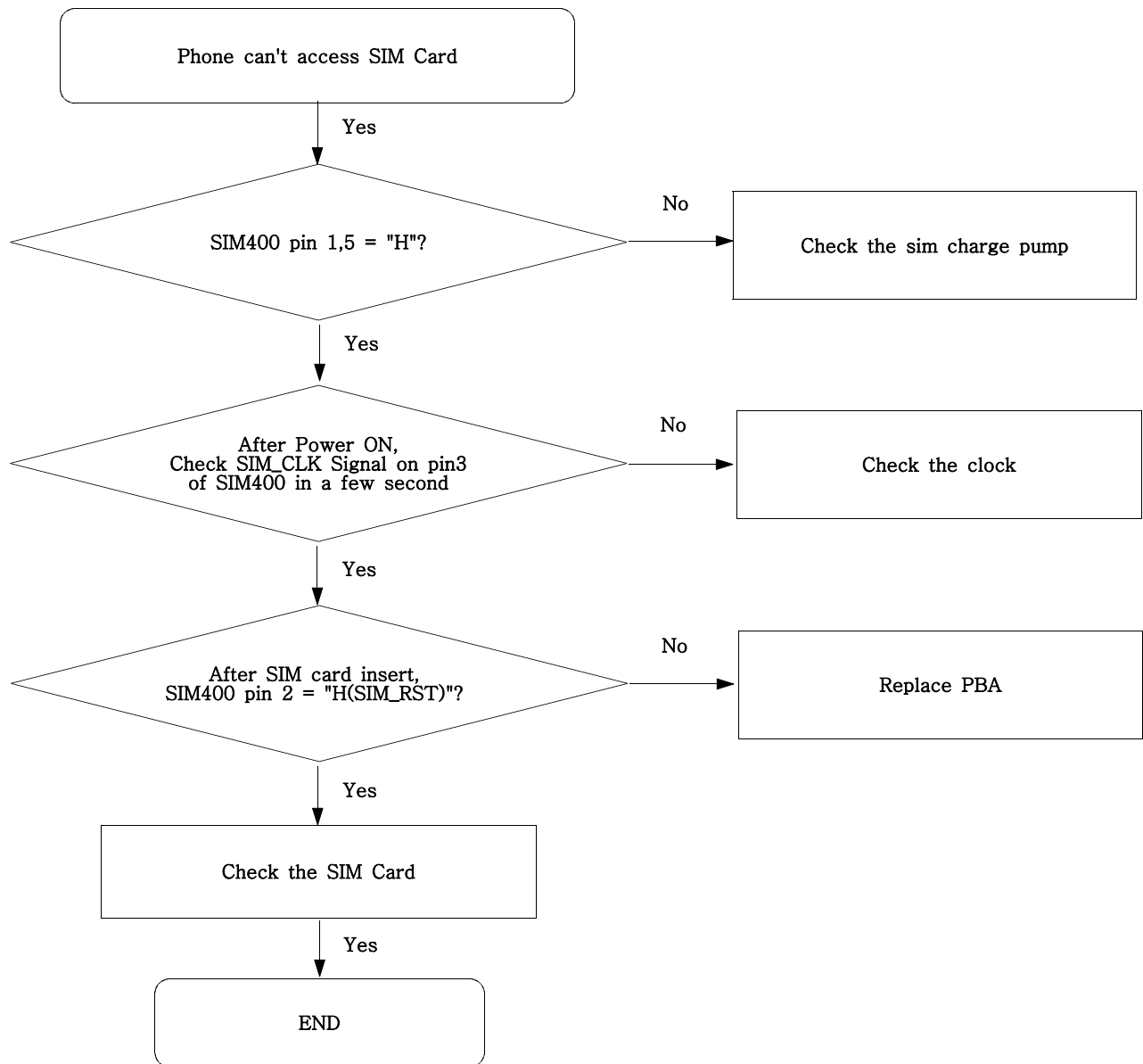


Charging

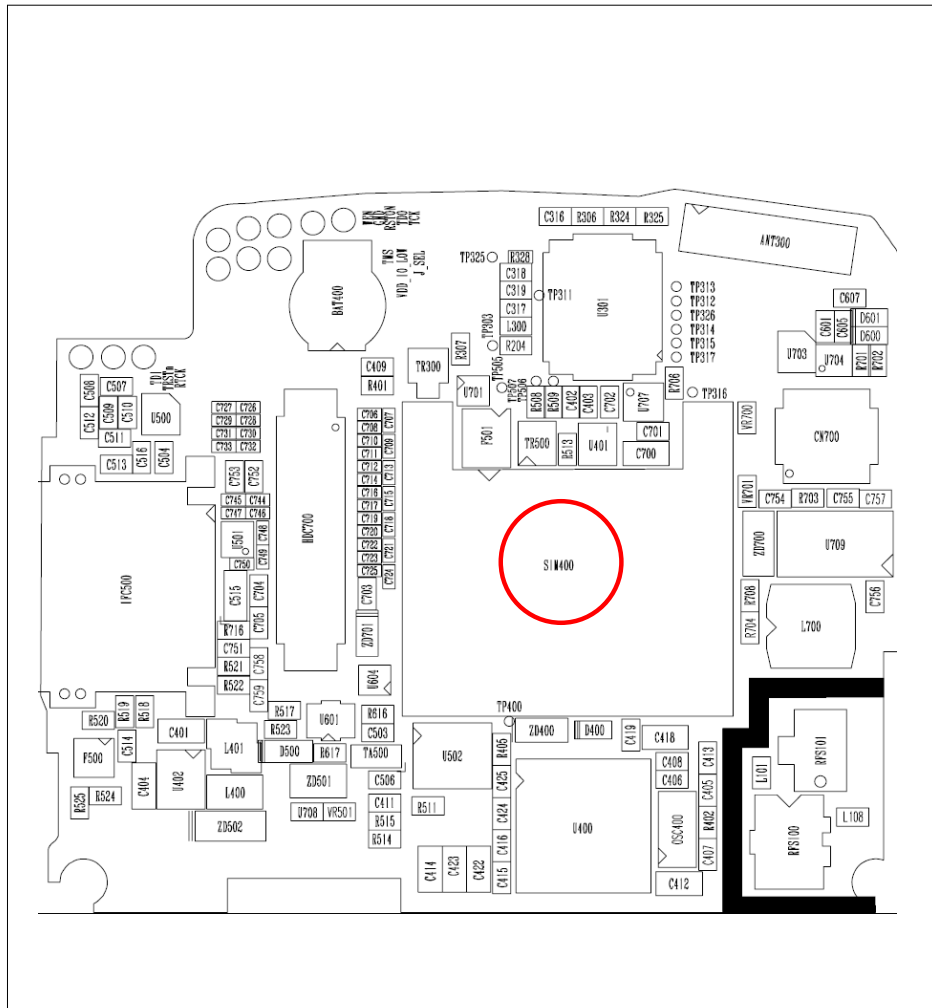
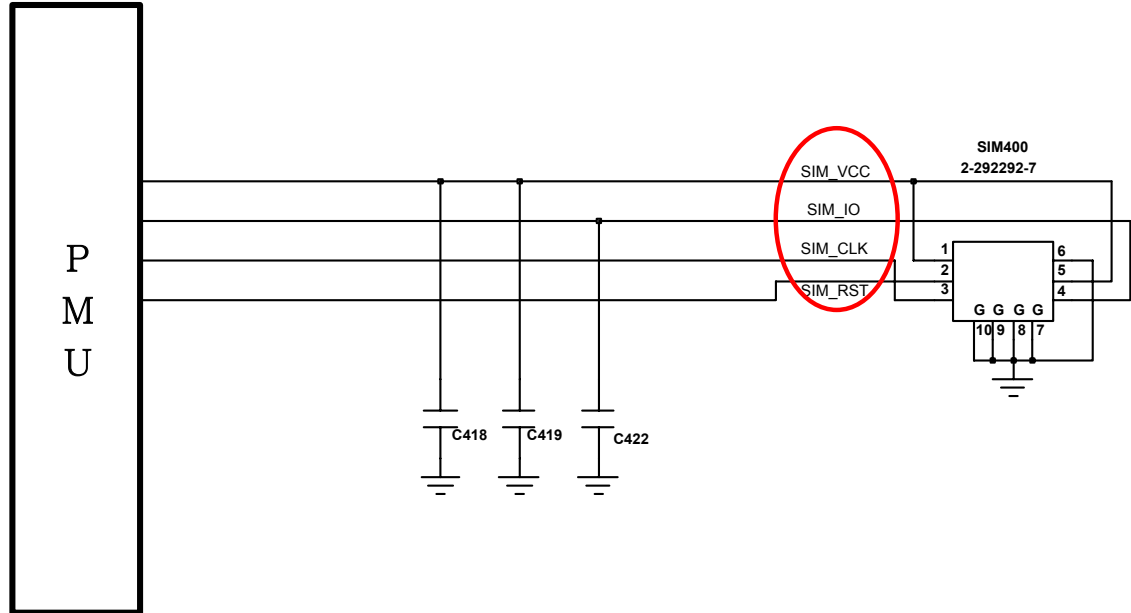


BATTERY CHARGING

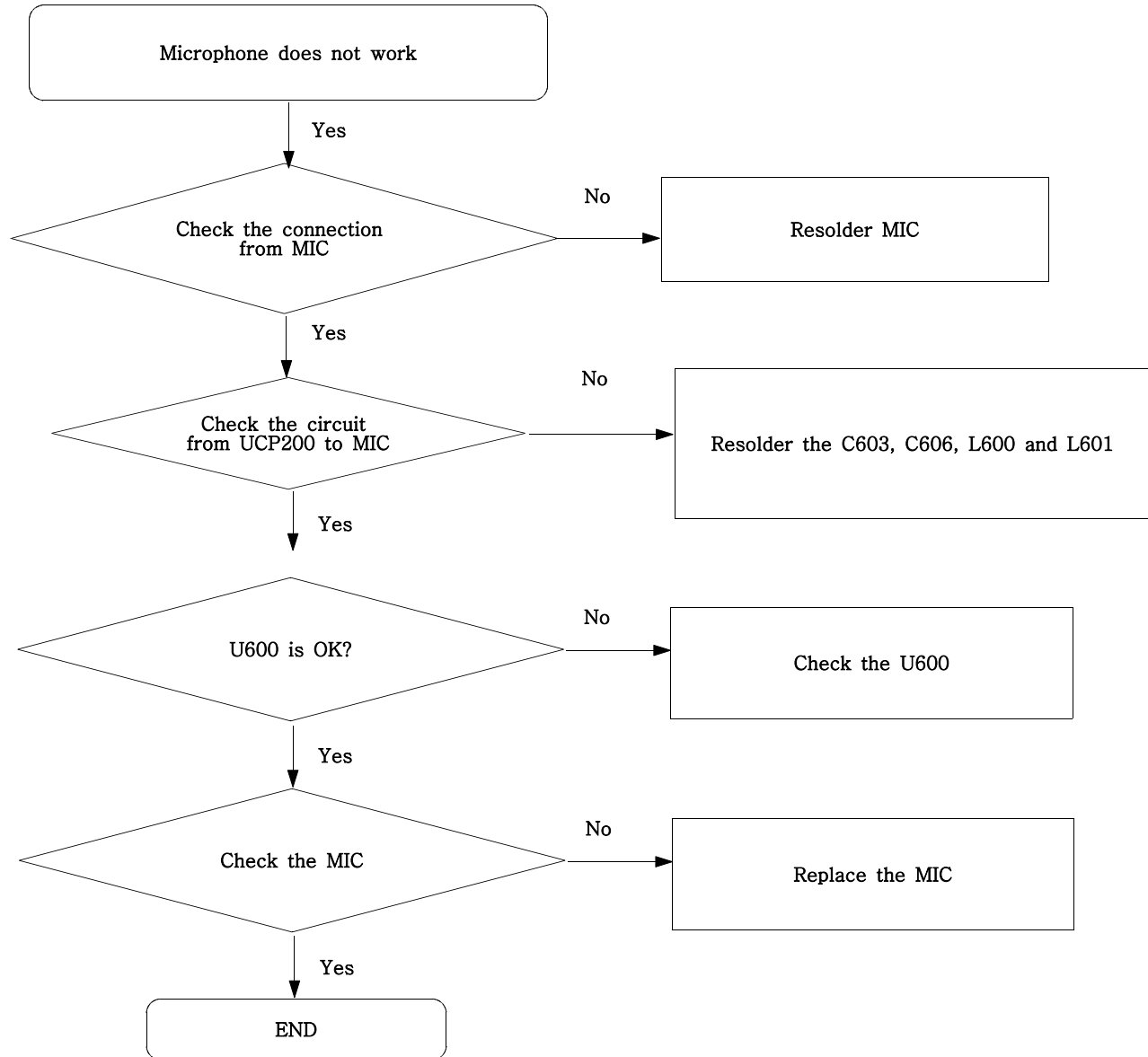
9-4. Sim Part

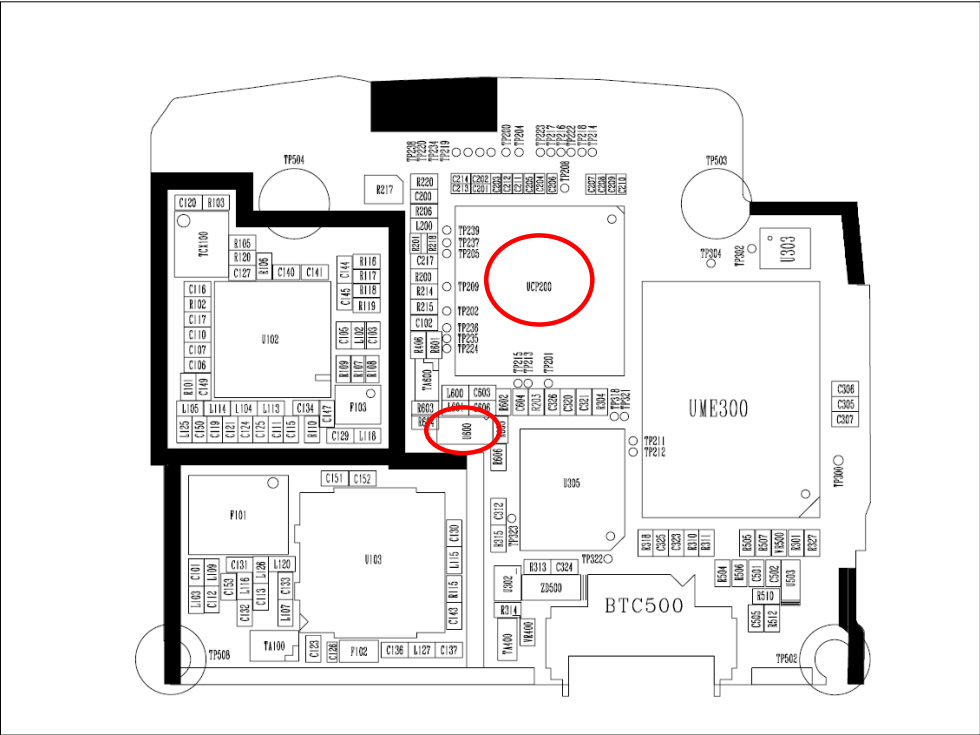


SIM

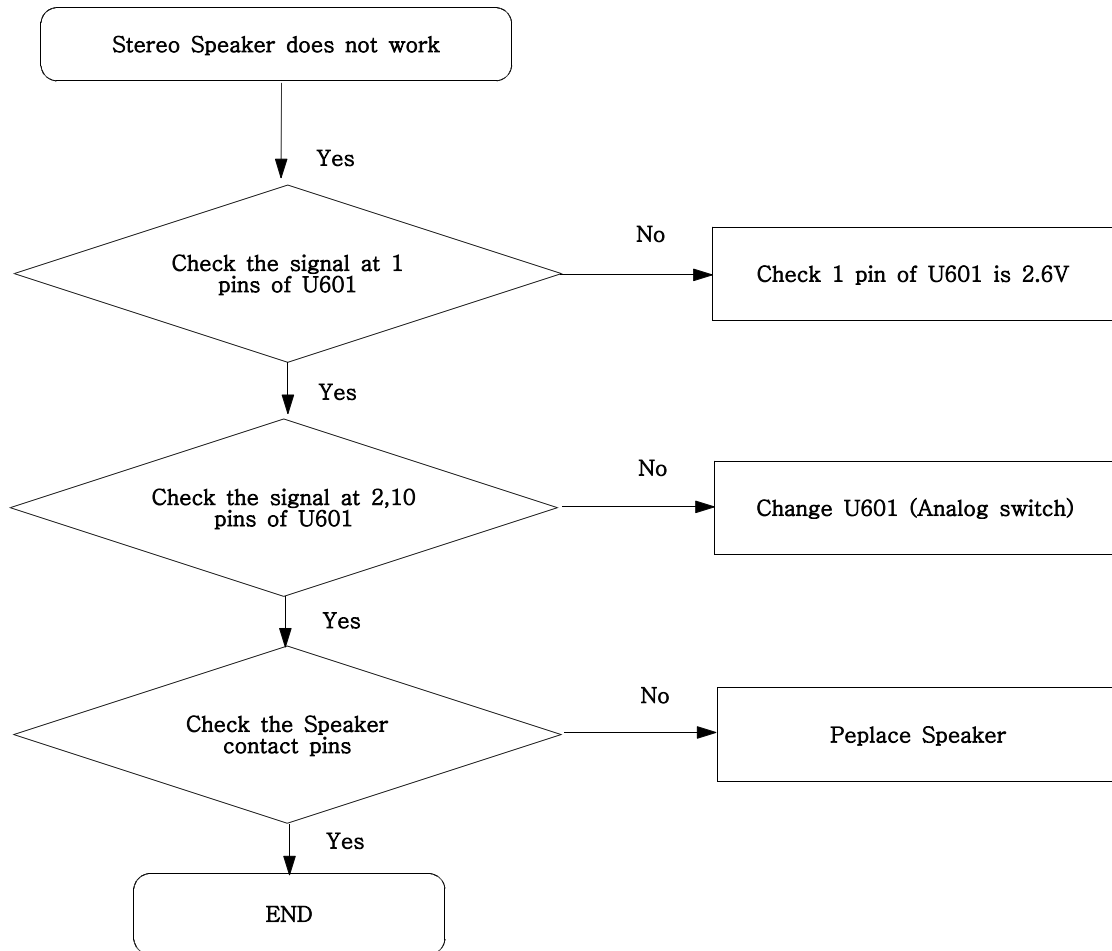


9-5. Microphone Part

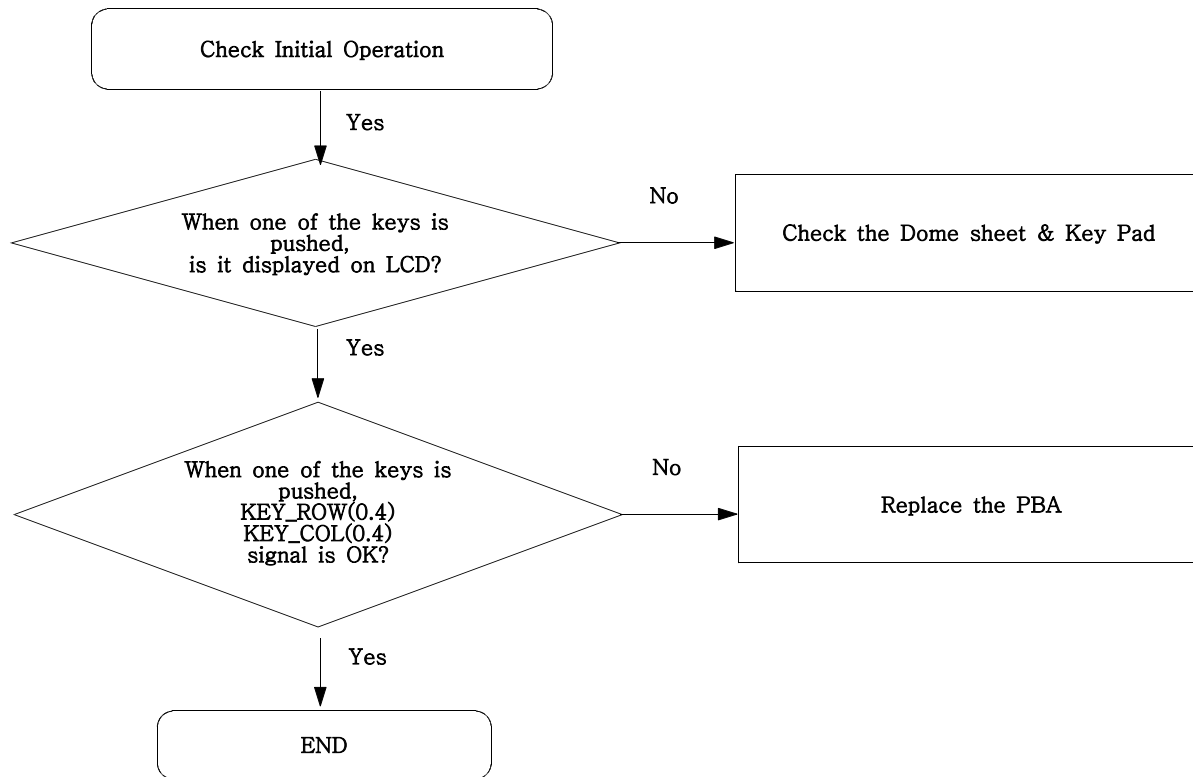




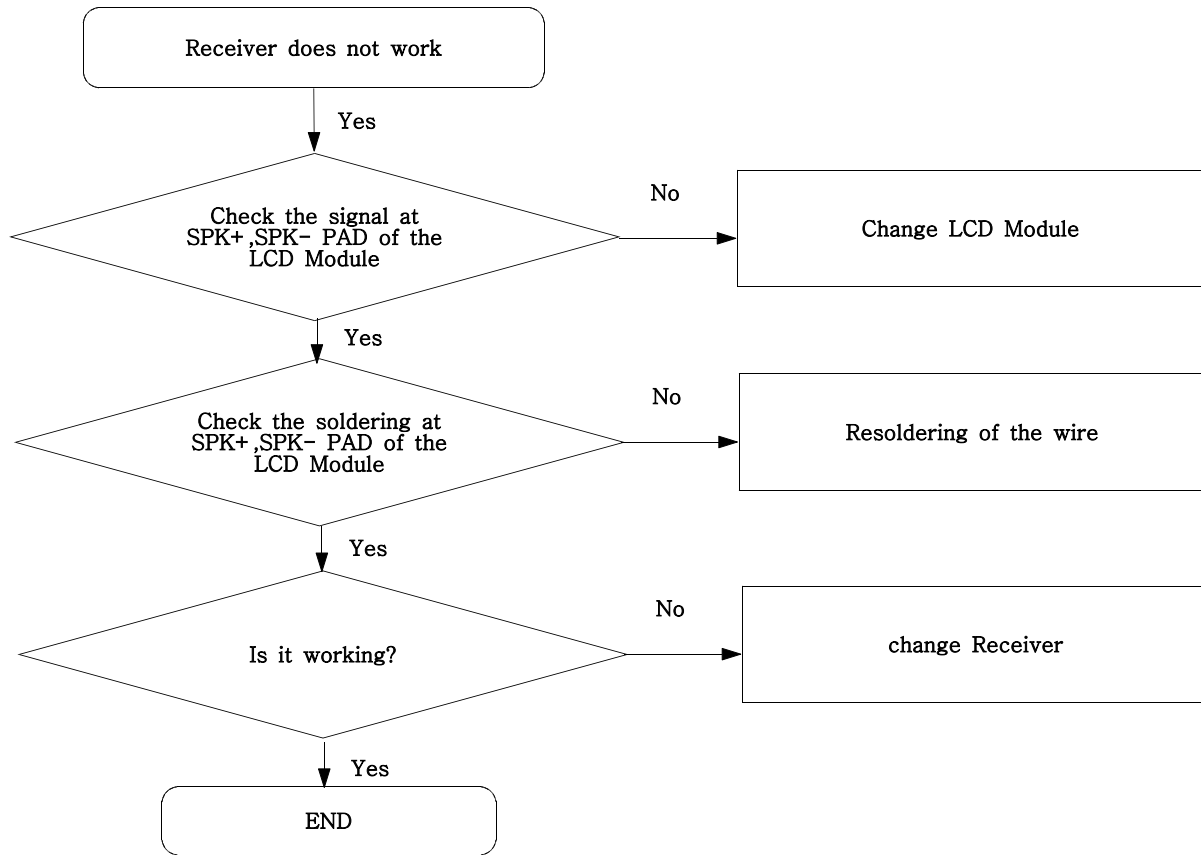
9-6. Speaker Part(MP3/Spk)



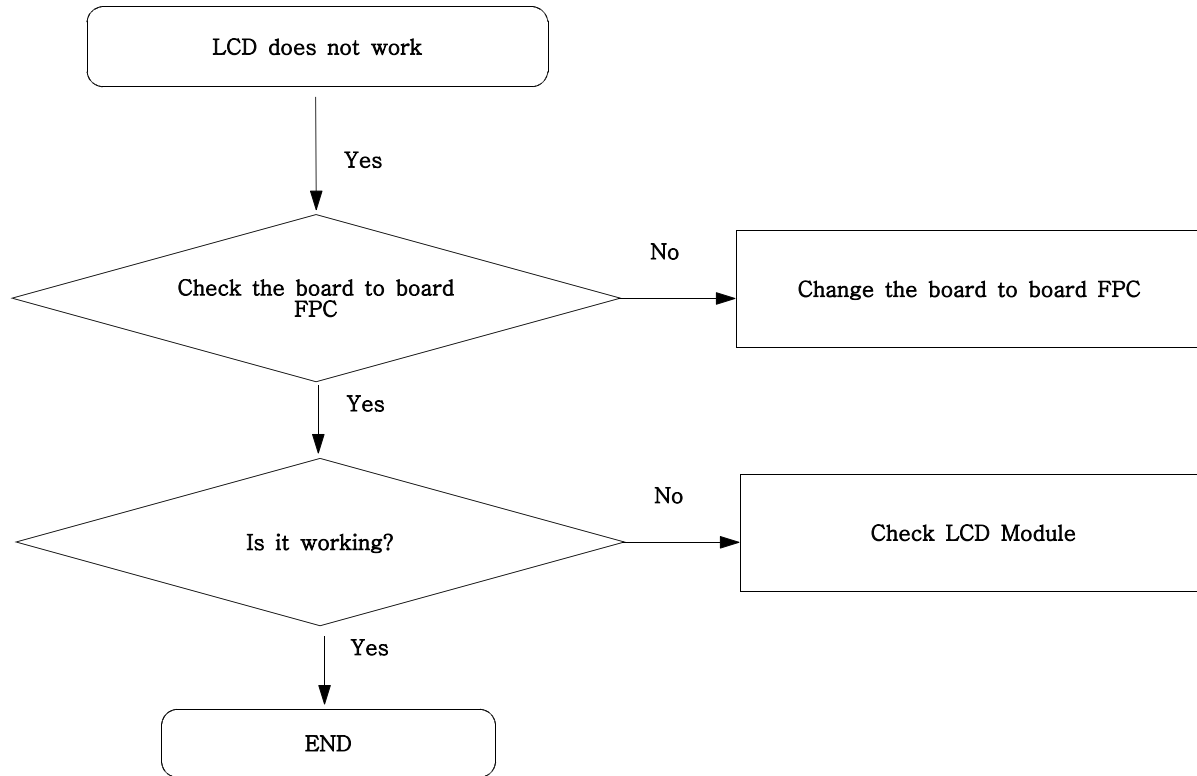
9-7. Key Data Input



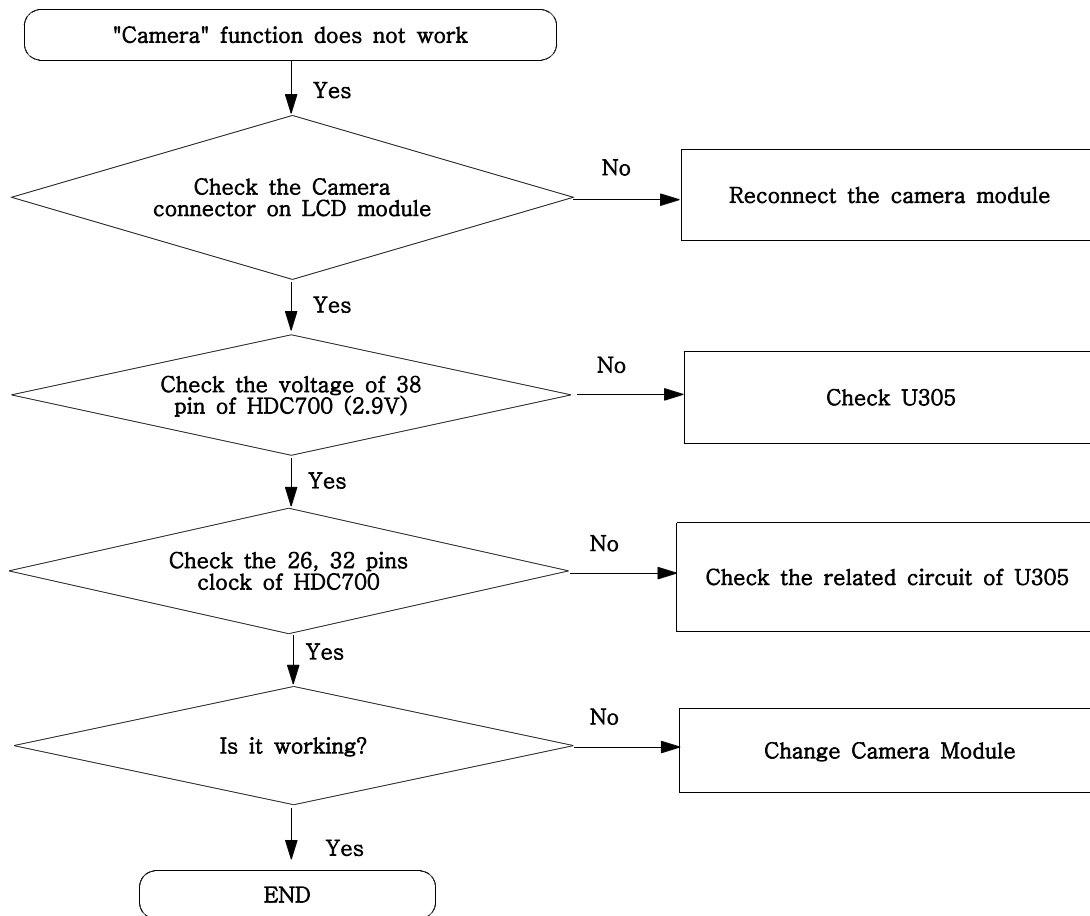
9-8. Receiver Part



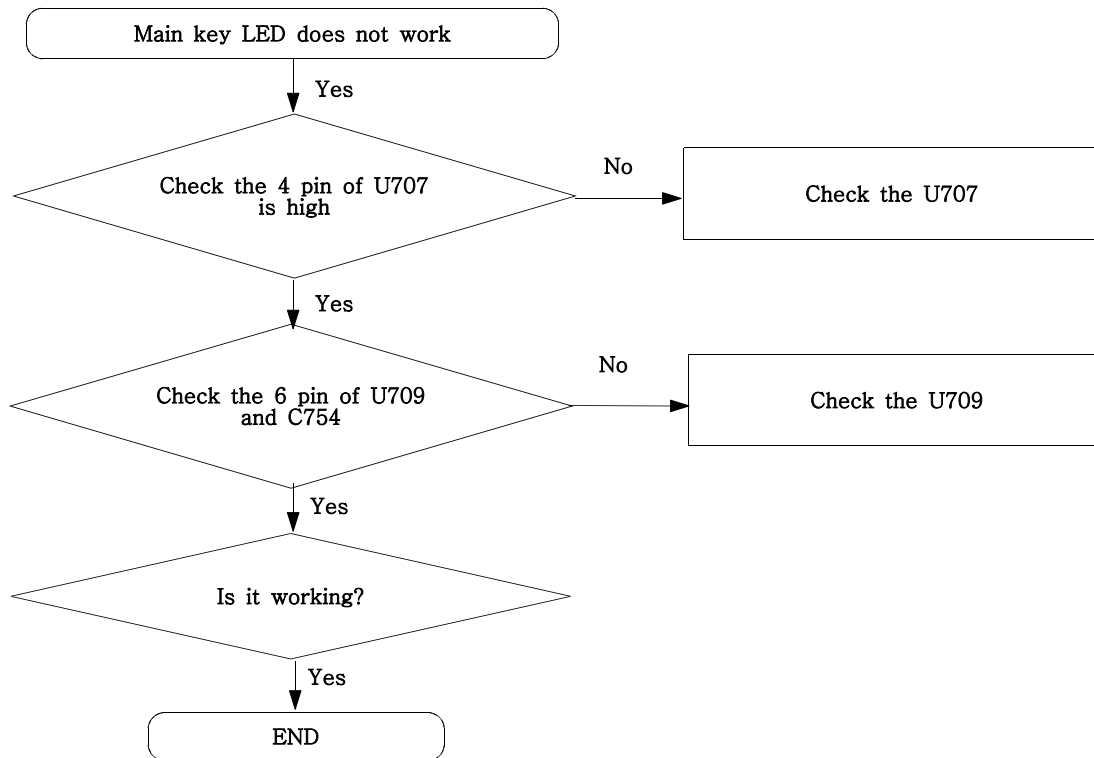
9-9. LCD Part



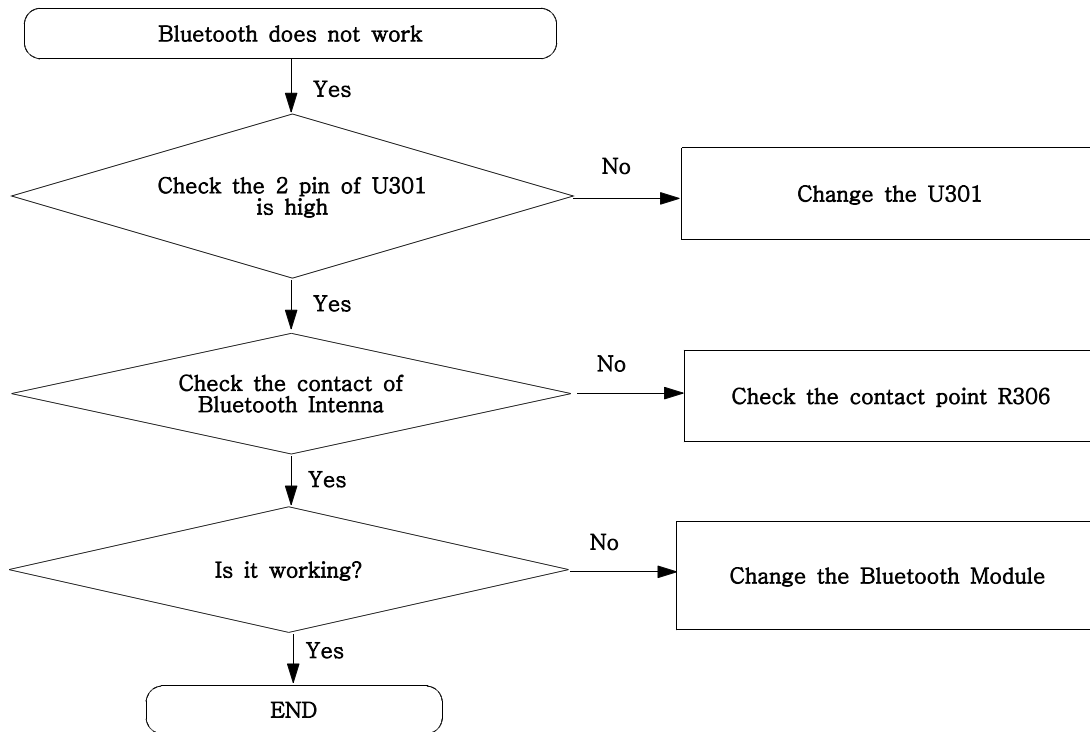
9-10. Camera part

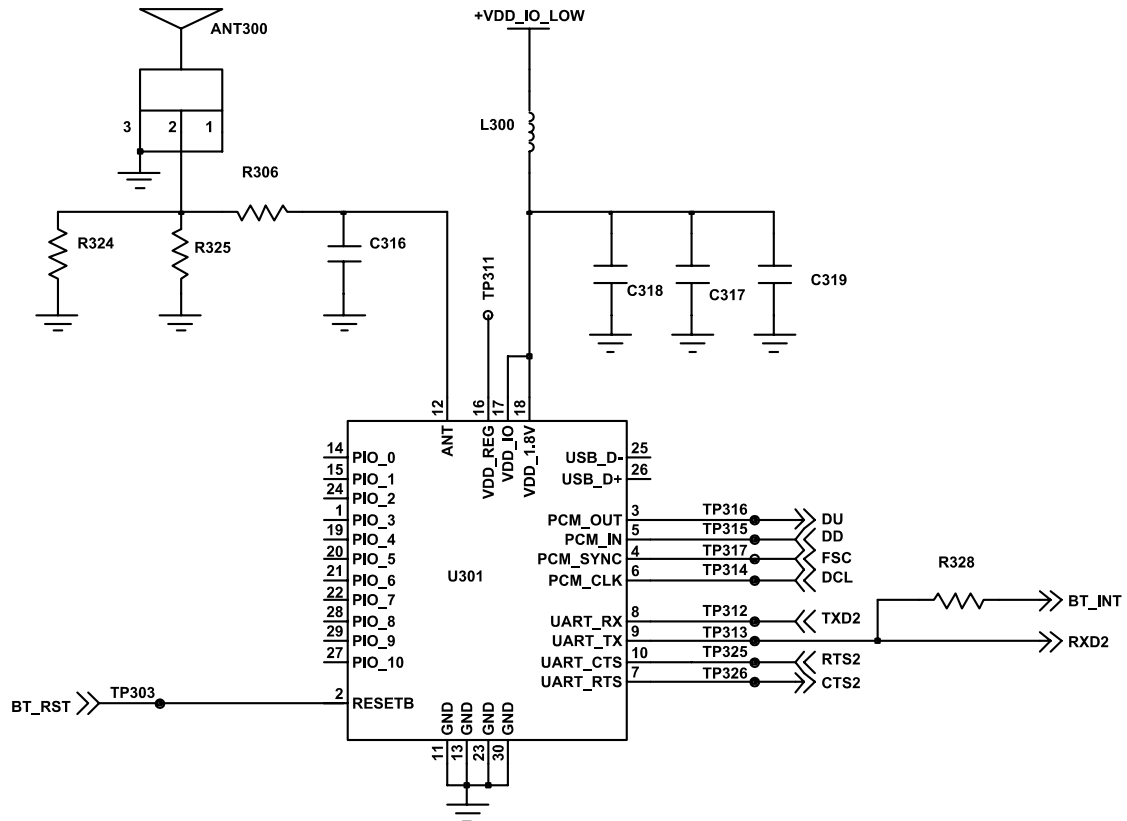


9-11. Main Key EL sheet part

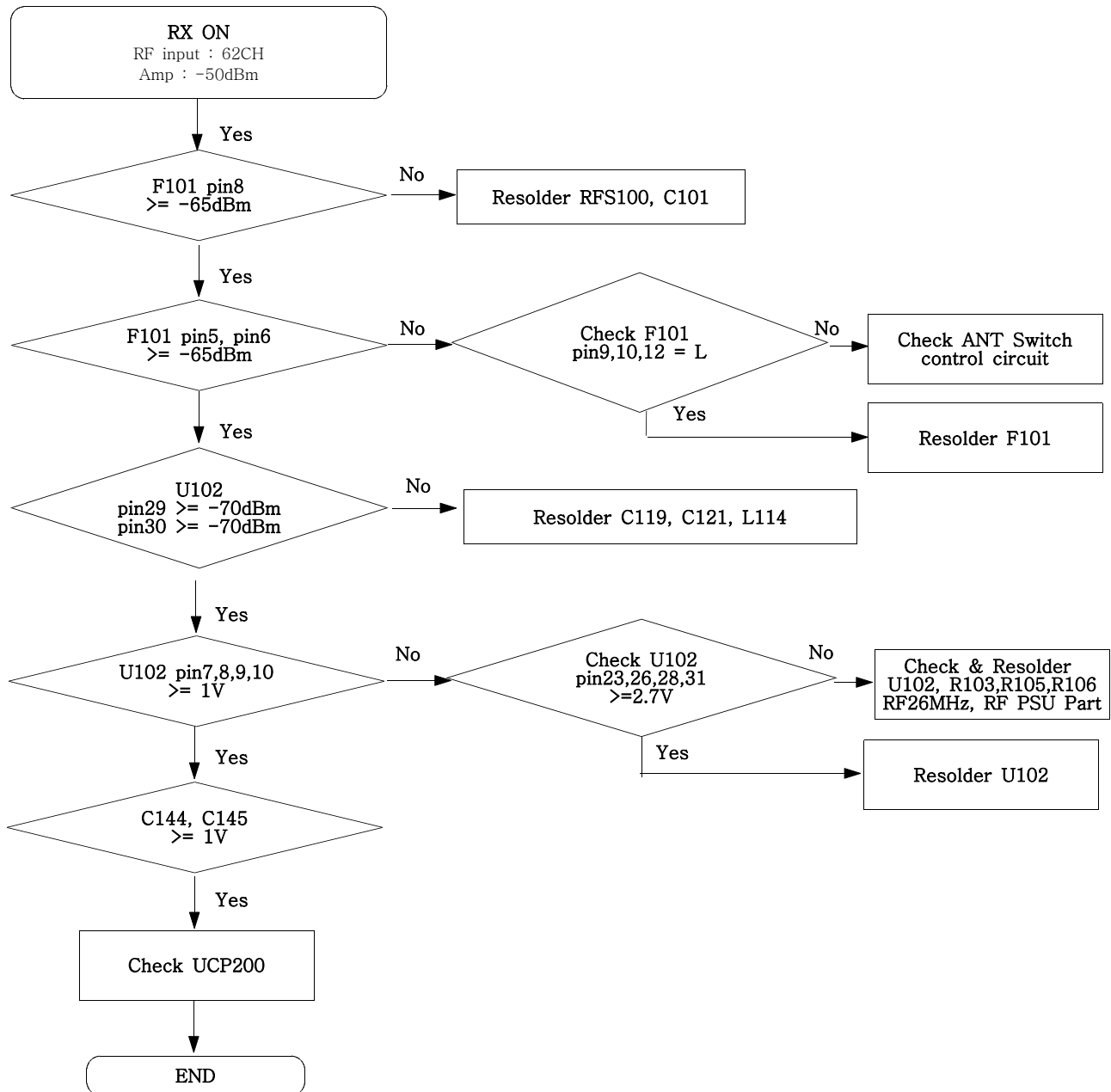


9-12. Bluetooth part

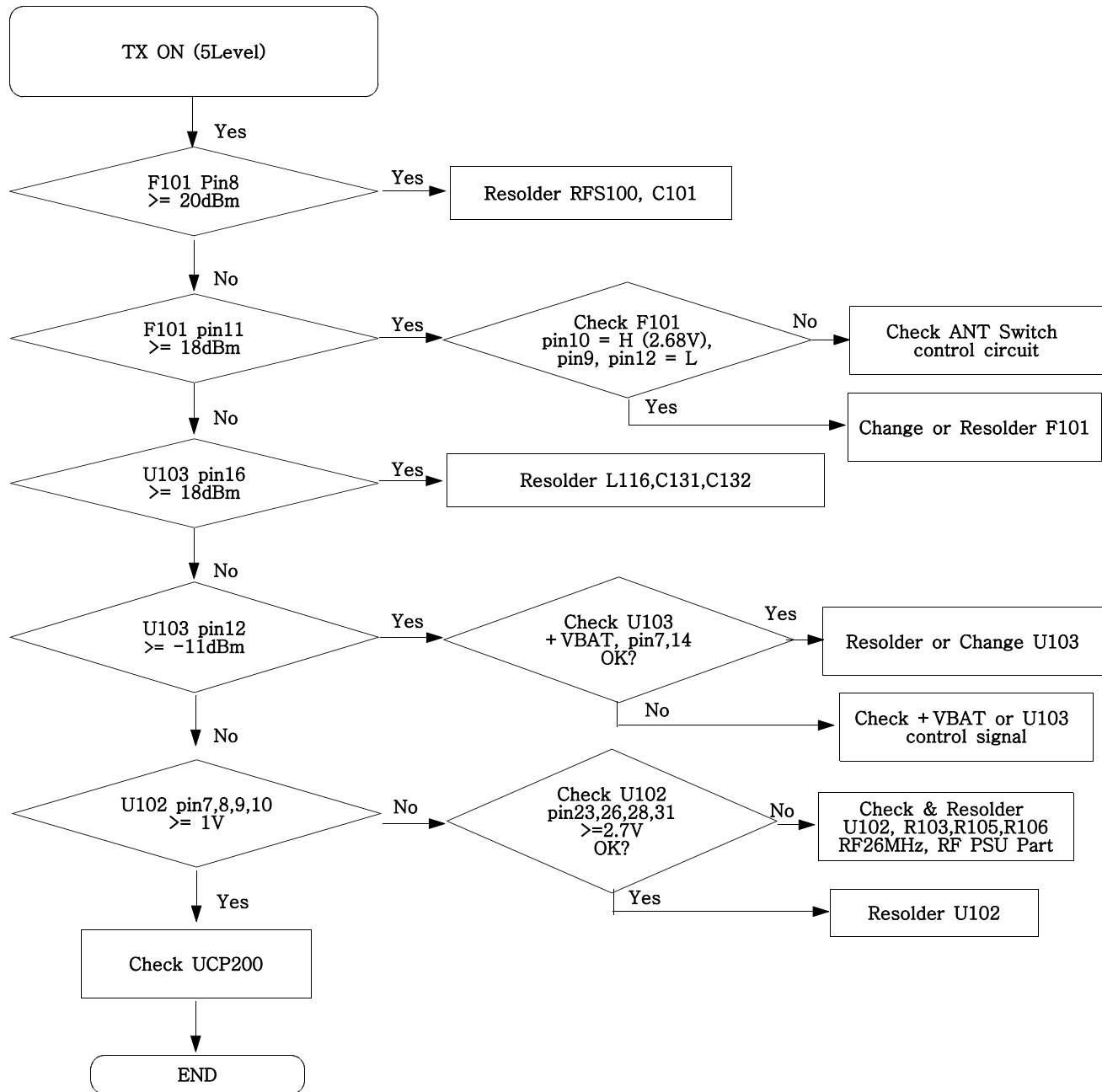




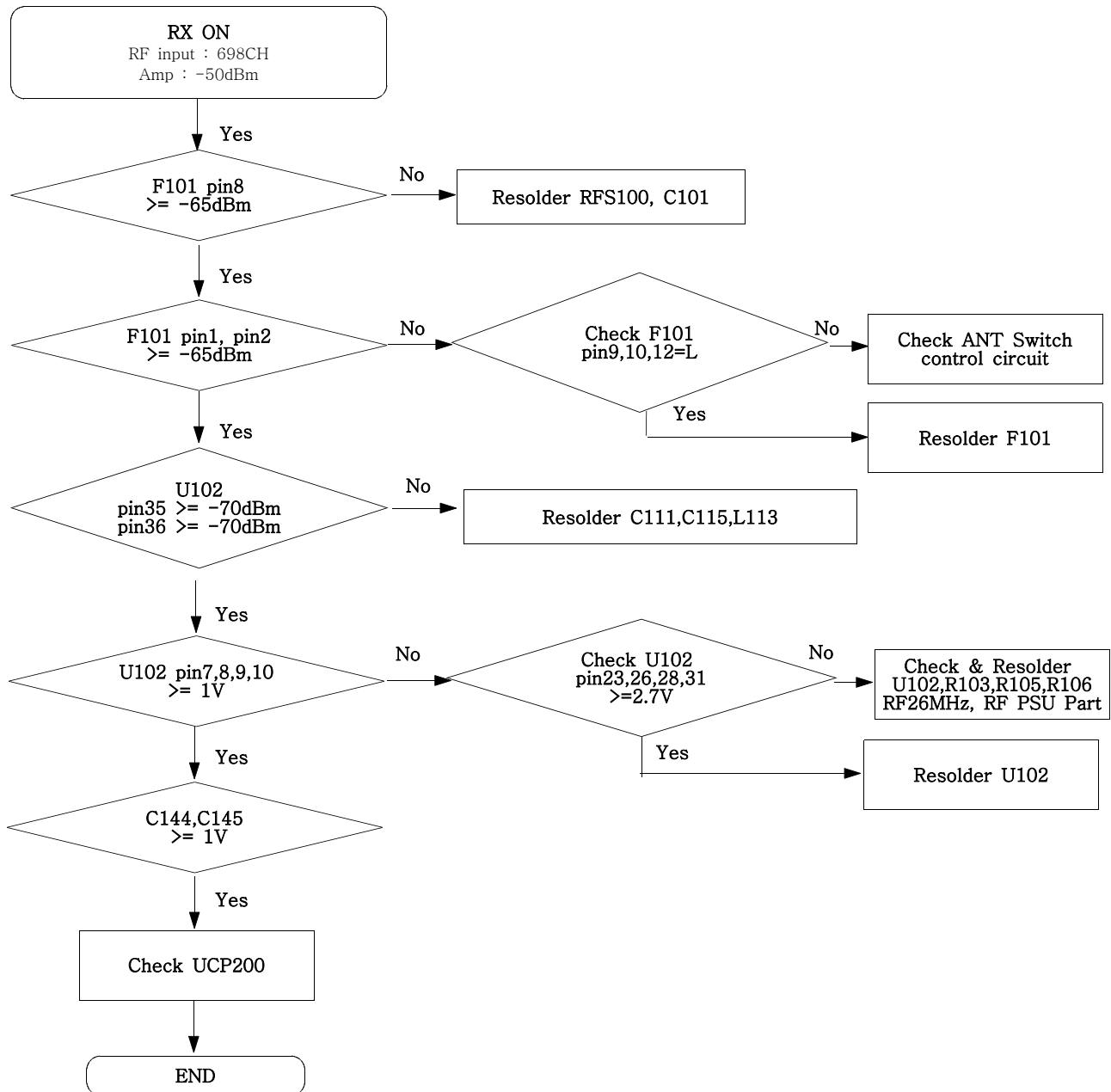
9-13. EGSM Receiver



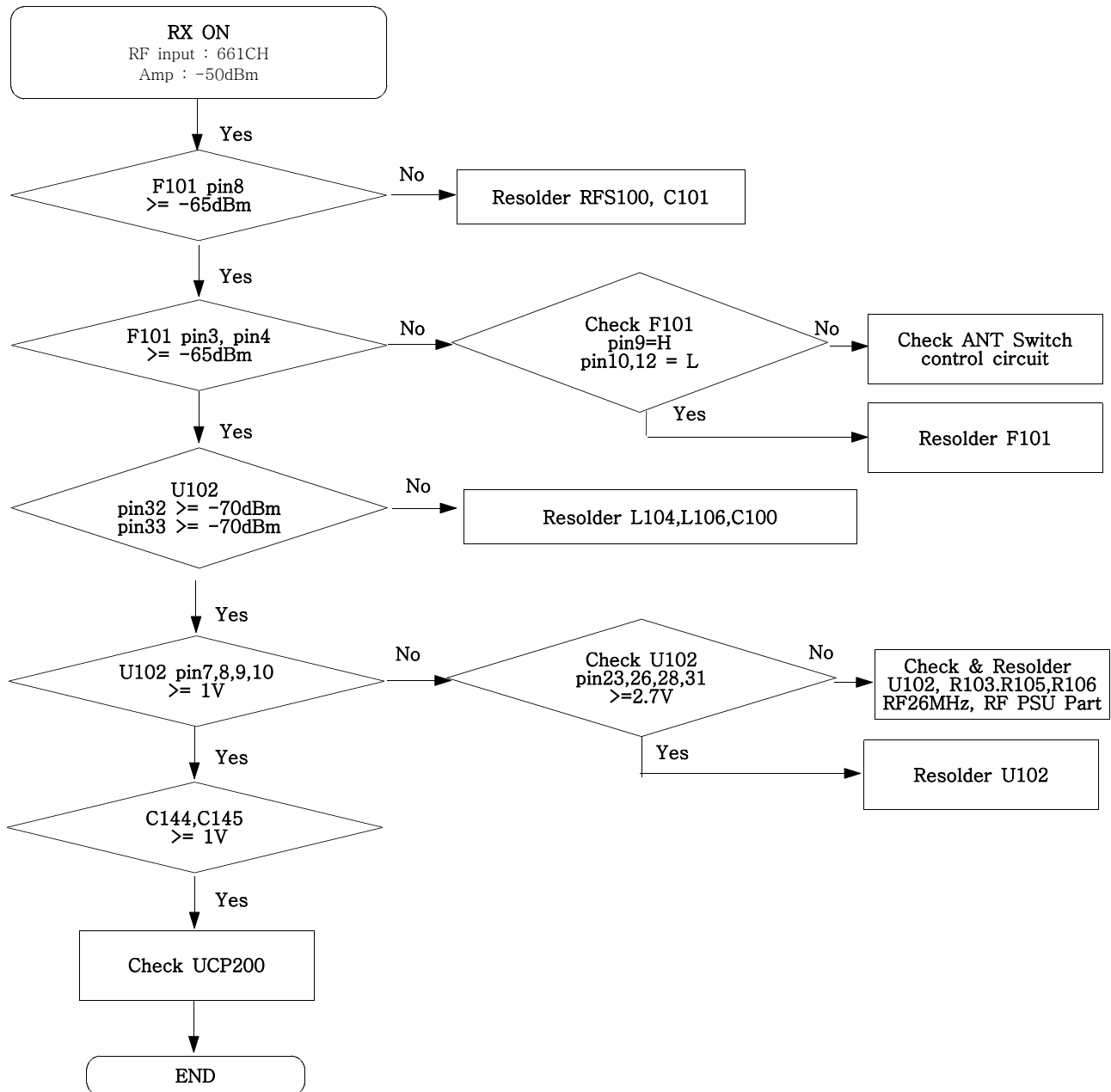
9-14. EGSM Transmitter



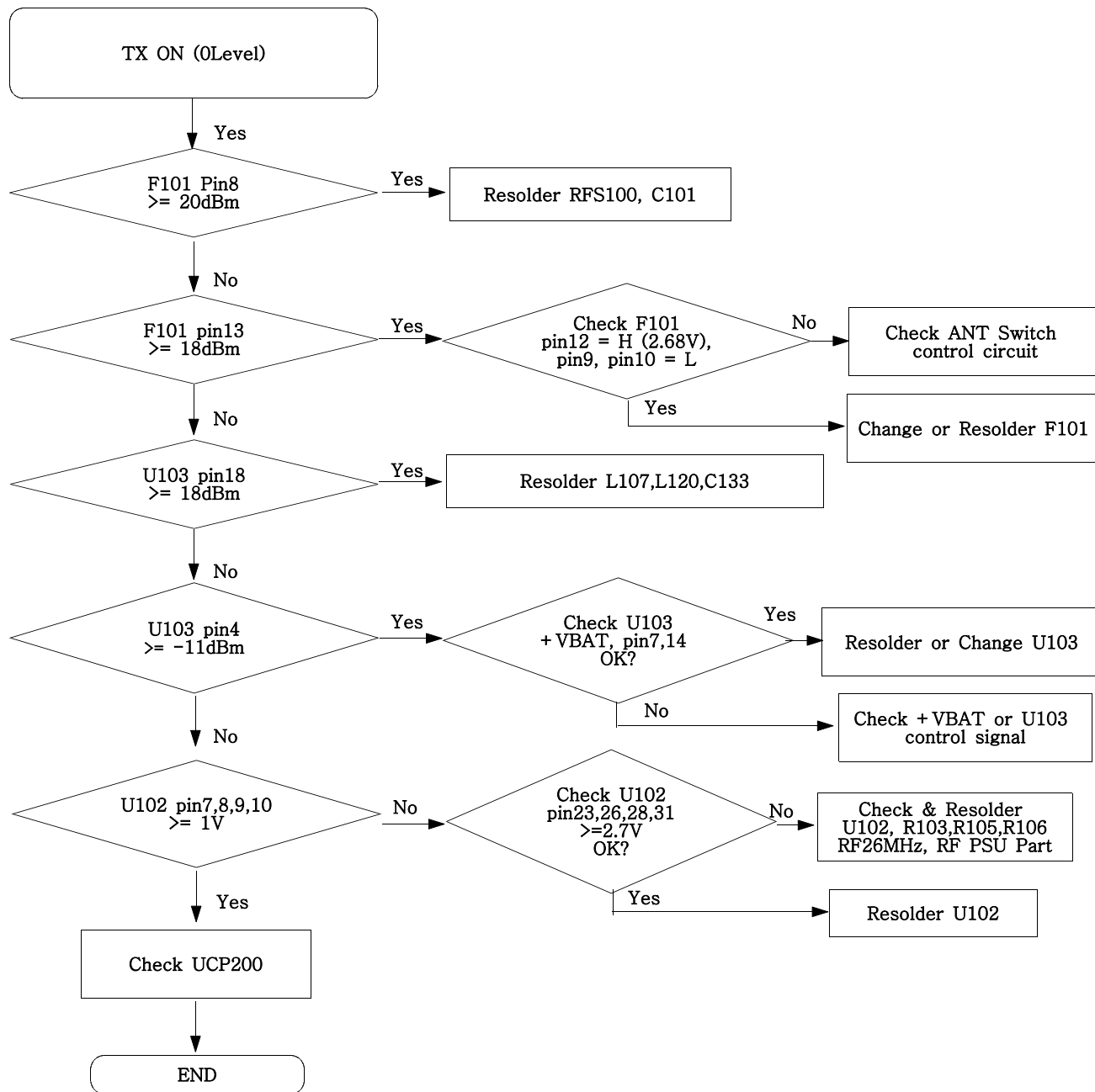
9-15. DCS Receiver

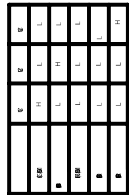


9-16. PCS Receiver



9-17. DCS/PCS Transmitter





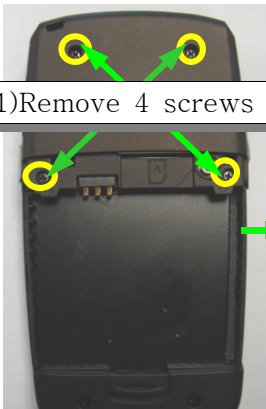
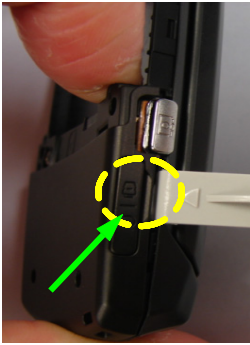
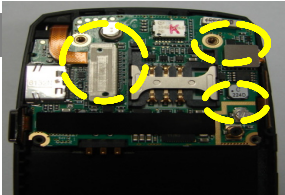
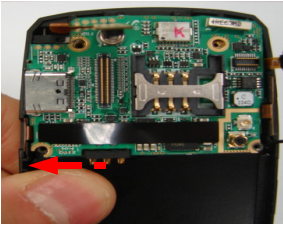
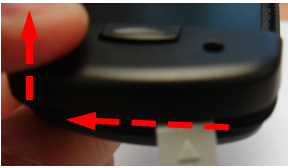
10. Reference data

10-1. Reference Abbreviate

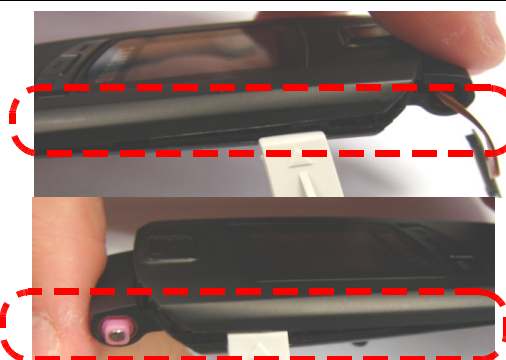
AAC: Advanced Audio Coding.
AVC : Advanced Video Coding.
BER : Bit Error Rate
BPSK: Binary Phase Shift Keying
CA : Conditional Access
CDM : Code Division Multiplexing
C/I : Carrier to Interference
DMB : Digital Multimedia Broadcasting
EN : European Standard
ES : Elementary Stream
ETSI: European Telecommunications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

11. Disassembly and Assembly instructions

11-1. Disassembly

1  1) Remove 4 screws  2) Remove the COAXIAL CABLE TAPE	2  1) Use disassembling JIG to remove REAR COVER.  2) refer to the picture guideline  3) After remove left, right HOOK, unlock lower HOOK.
1) In removing screws, notice scratch and damage of the external appearance.	1) Notice damage and scratch of cellular phone (pay attention to bad product cause scratch and bend)
3  1) Remove LCD CON 2) Remove KEY CON 3) Remove ANT CABLE  1) Unlock HOOK and then remove the PBA..	4  1) Remove 2 screws of INT COVER. 2) Use disassembling JIG to remove INT COVER. 
1) Notice damage of CON	1) In removing COVER, pay attention to bond condition and transformation of HOOK.
5  1) Remove a prevention tape of leak 2) After insert Hinge like reference picture, disassemble FOLDER.  1) In disassembling FOLDER, notice that FPCB isn't torn and folded.	6  1) Remove the SCREW SHEET. 2) Remove 2 screws.

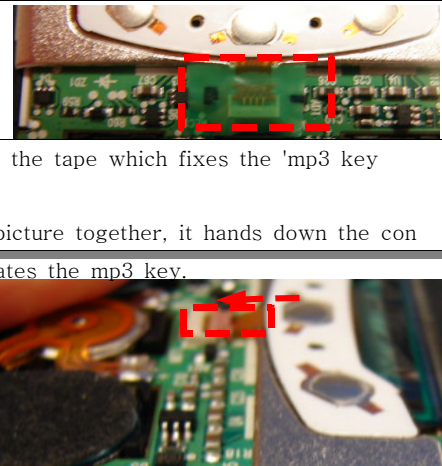
7



1) It uses the 'disassembly jig', it removes the hook of folder right and left side.

1) The appliance when executing a disassembly, in order it is scratched and the damage not to get, it pays attention.

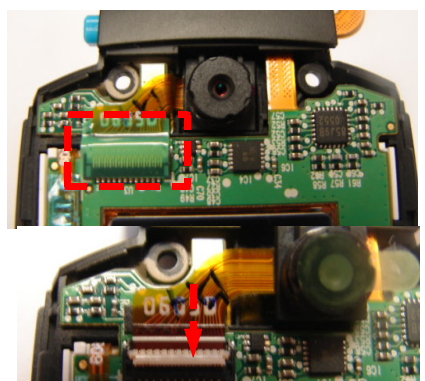
8



1) It removes the tape which fixes the 'mp3 key connector'.
2) With the picture together, it hands down the con and it separates the mp3 key.

1) In order for the CONNECTOR not to be damaged.

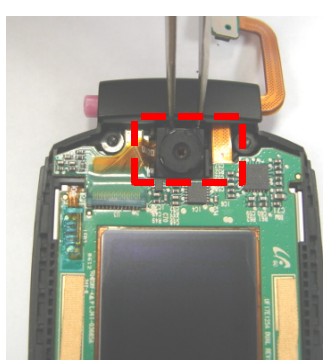
9



1) It removes the tape which fixes the 'camera module connector'.
2) With the picture together, it hands down the con and it separates the FPCB.

1) When separating the FPCB, in order not to be cut, it pays attention.

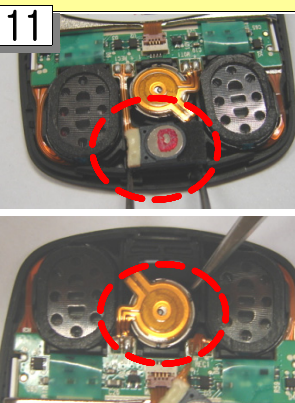
10



1) With the picture together, it uses the tweezers in the top groove and it removes the camera.

1) When removing the camera module, to give the force which is unreasonable and in order not to be damaged.

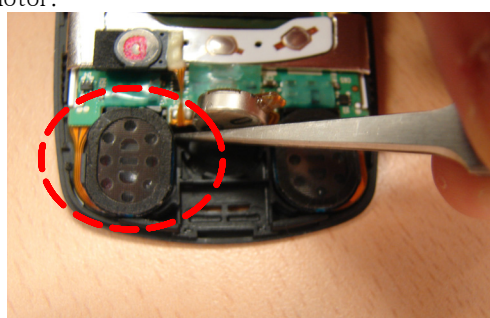
11



1) It uses the tweezers in the dissolution groove of the receiver and it removes the receiver.
1) It uses the tweezers in the dissolution groove of the motor, it removes the motor.

1) When removing the motor and the receiver, in order for the damage not to get, it pays attention.

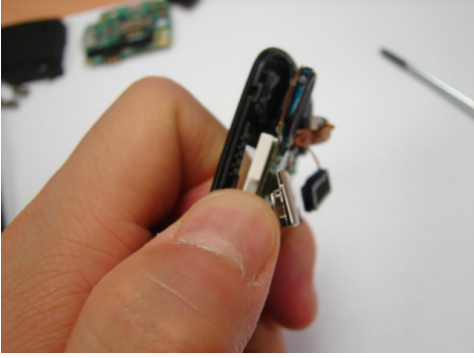
12



1) It uses the tweezers in the dissolution groove of the speaker, it removes the motor.

1) When removing the speaker, in order for the duplex tape of the rear not to fall separately, it pays attention.
2) In order for the speaker FPCB not to become the cut, it pays attention.

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- 1) It catches the both sides end of the folder loser, it separates the lcd slowly.
- 2) The LCD broke and the LDI shade TAPE should have come to come off, it confirms.

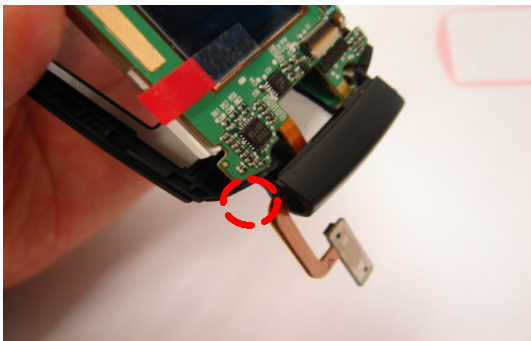
1) Warning : LCD CRACK

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11-2.Assembly

1



1) Put the lcd ass'y on the folder lower safely.

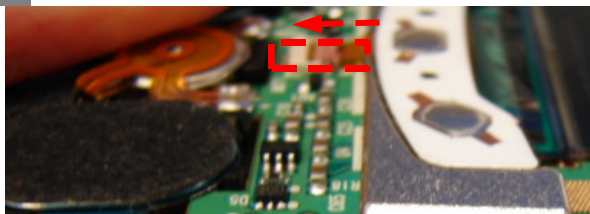
2



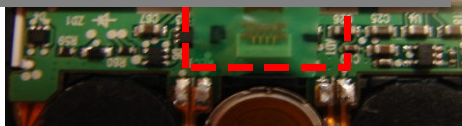
1) Put speaker, motor and receiver on the folder.

1) Be careful when you insert FPCB not to damage it.

3

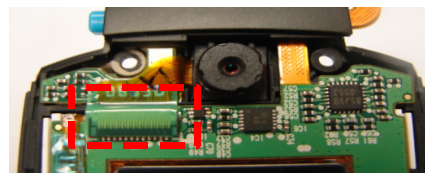
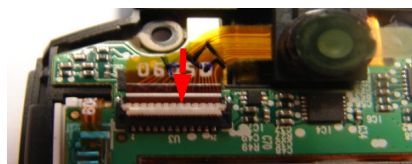


1) After inserting the mp3 FPCB on CON, stick a sticker on it.



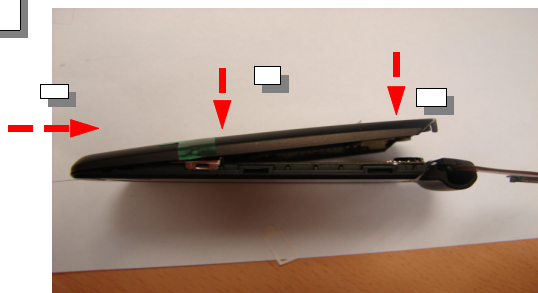
1) Push it after sticking the tape.

4



1) First insert the camera FPCB on the CON then put the camera on the folder. Stick a tape on the CON.

5



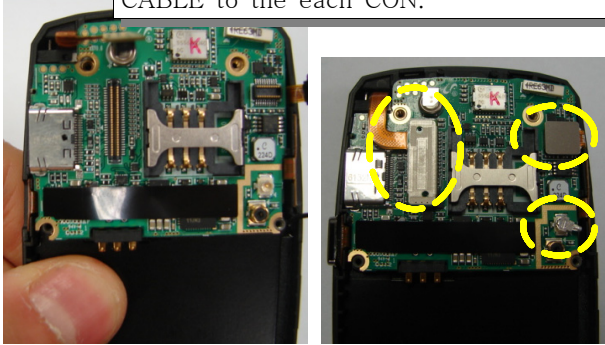
1) Assemble the FOLDER UPPER as the picture.

6



1) Turn the folder upper screw to the right, and put the SHEET on it.

7 1) Insert FRONT FPCB on the connector carefully not to damage the FPCB. 2) Push the hinge to connect folder and front after checking the connection condition.	8 1) Put the EL KEY ASS'Y to the front safely.
	1) When the SHIELD COVER of the KEY ASS'Y arrive safely, to be caught to the SCREW BOSS not to damage it.
9 1)Affix the light shut out SHEET. And combine an ANTENNA.	10 1) Combine the coxial cable as the picture.
	1) Confirm that the direction of cable is same as the picture.
11 1) Combine an ANTENNA COVER. After combination, Confirm the condition of the cover place.	12 1) Stick the CABLE SHEET.
1) Confirm the CABLE is pushed or the appliance are pressing it.	

13 1)As the picture, put the PBA safely. 2)And then combine the LCD, KEY and CABLE to the each CON. 	14  1) After removing the shell of the CAMERA and KEY/VOLUME KEY, with the picture it arrives safely together.
1) When you put the PBA on the front, check that the connectors not be pushed under the PBA.	
15  1) After removing the shell of the CAMERA and KEY/VOLUME KEY, with the picture it arrives safely together.	16  2) Top SCREW 4POINT it tightens.

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