
1. Specification

1-1. GSM/DCS1800/PCS1900 General Specification

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

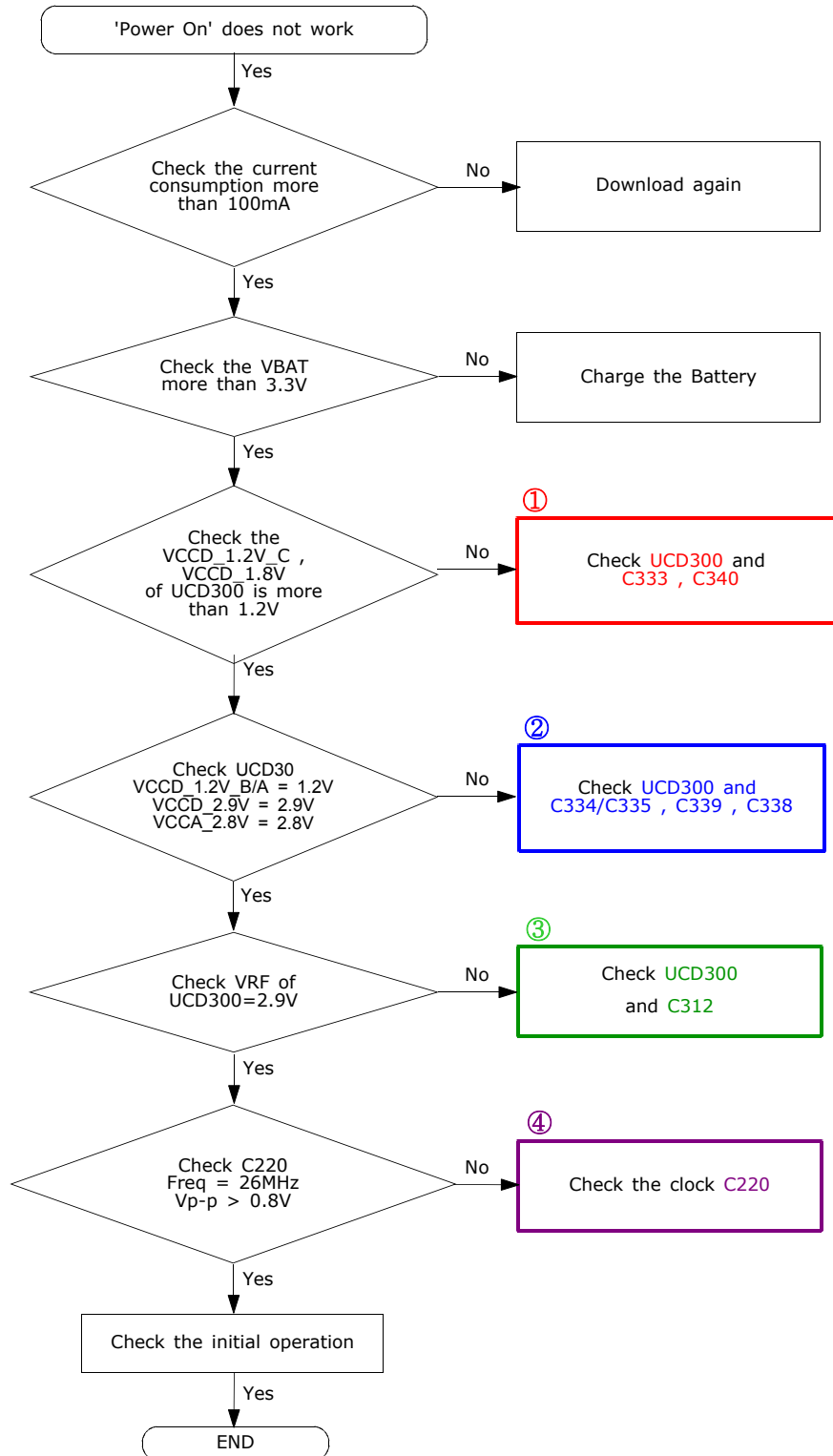
1-2. GSM TX power class

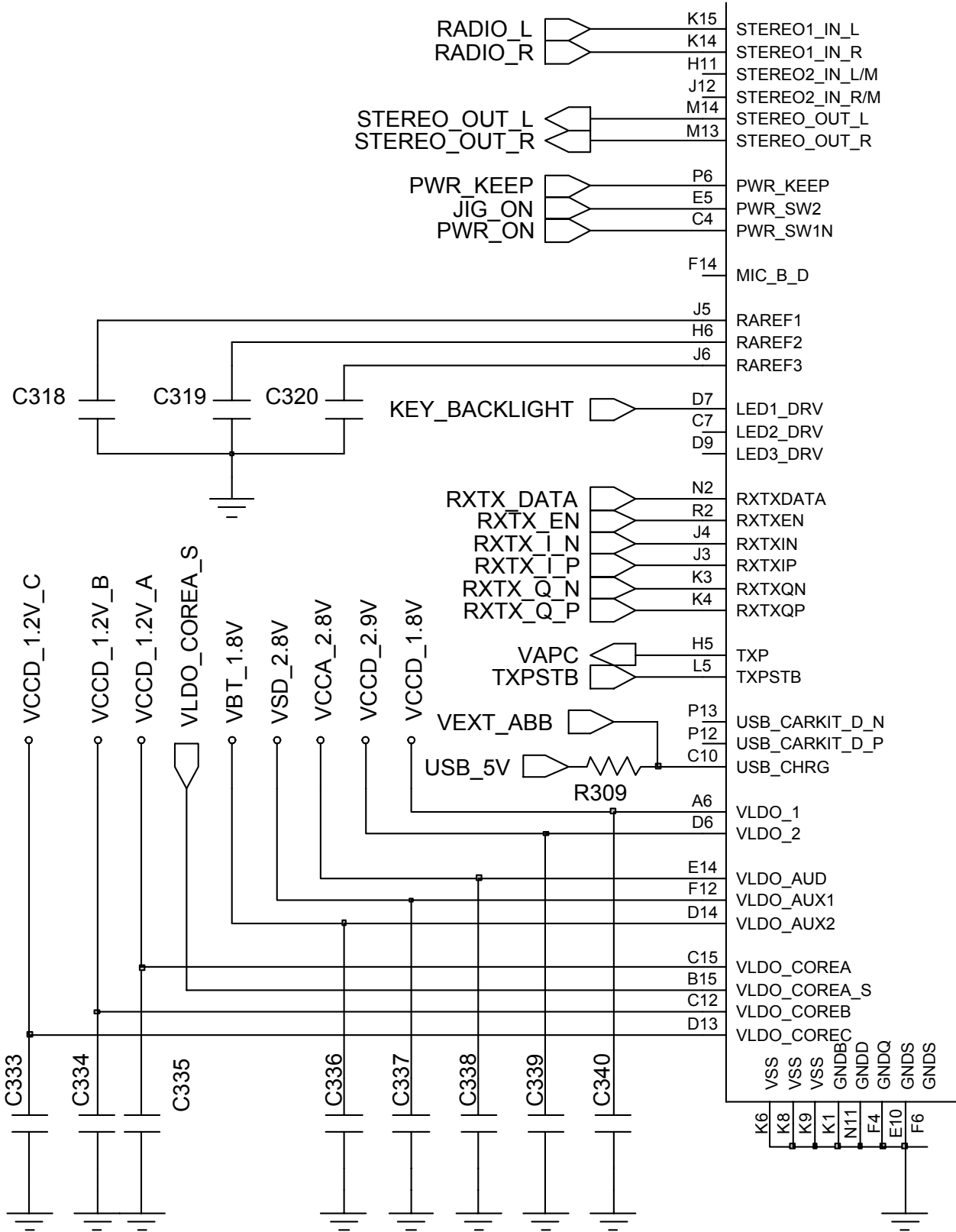
TX Power control level	EGSM900	TX Power control level	DCS1800	TX Power control level	PCS1900
5	33±2 dBm	0	30±3 dBm	0	30±3 dBm
6	31±2 dBm	1	28±3 dBm	1	28±3 dBm
7	29±2 dBm	2	26±3 dBm	2	26±3 dBm
8	27±2 dBm	3	24±3 dBm	3	24±3 dBm
9	25±2 dBm	4	22±3 dBm	4	22±3 dBm
10	23±2 dBm	5	20±3 dBm	5	20±3 dBm
11	21±2 dBm	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±4 dBm	11	8±4 dBm
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

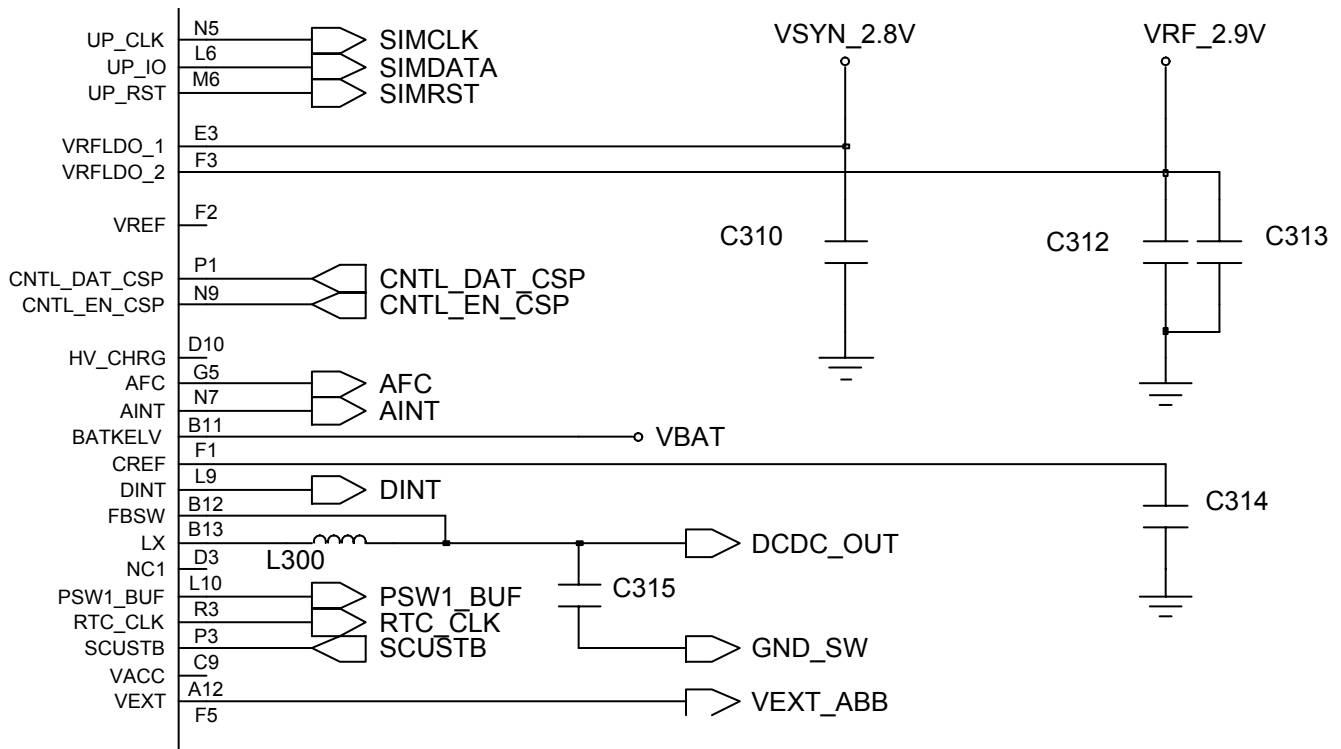
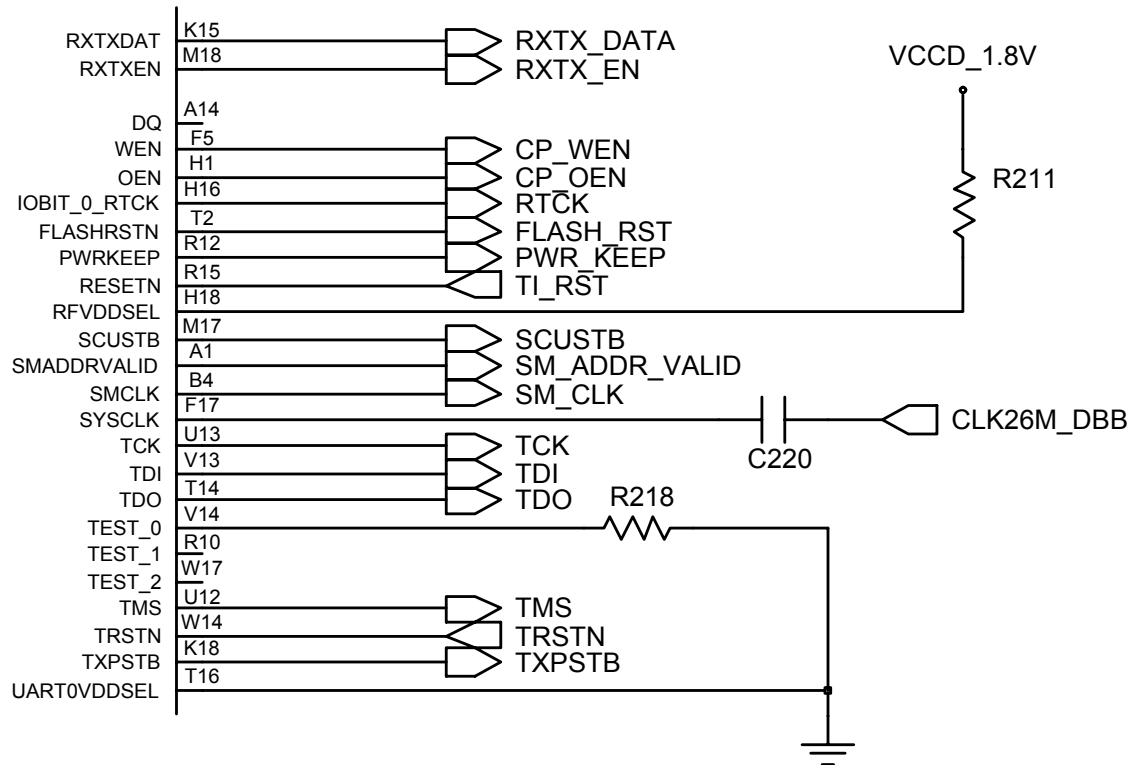
3. Flow Chart of Troubleshooting

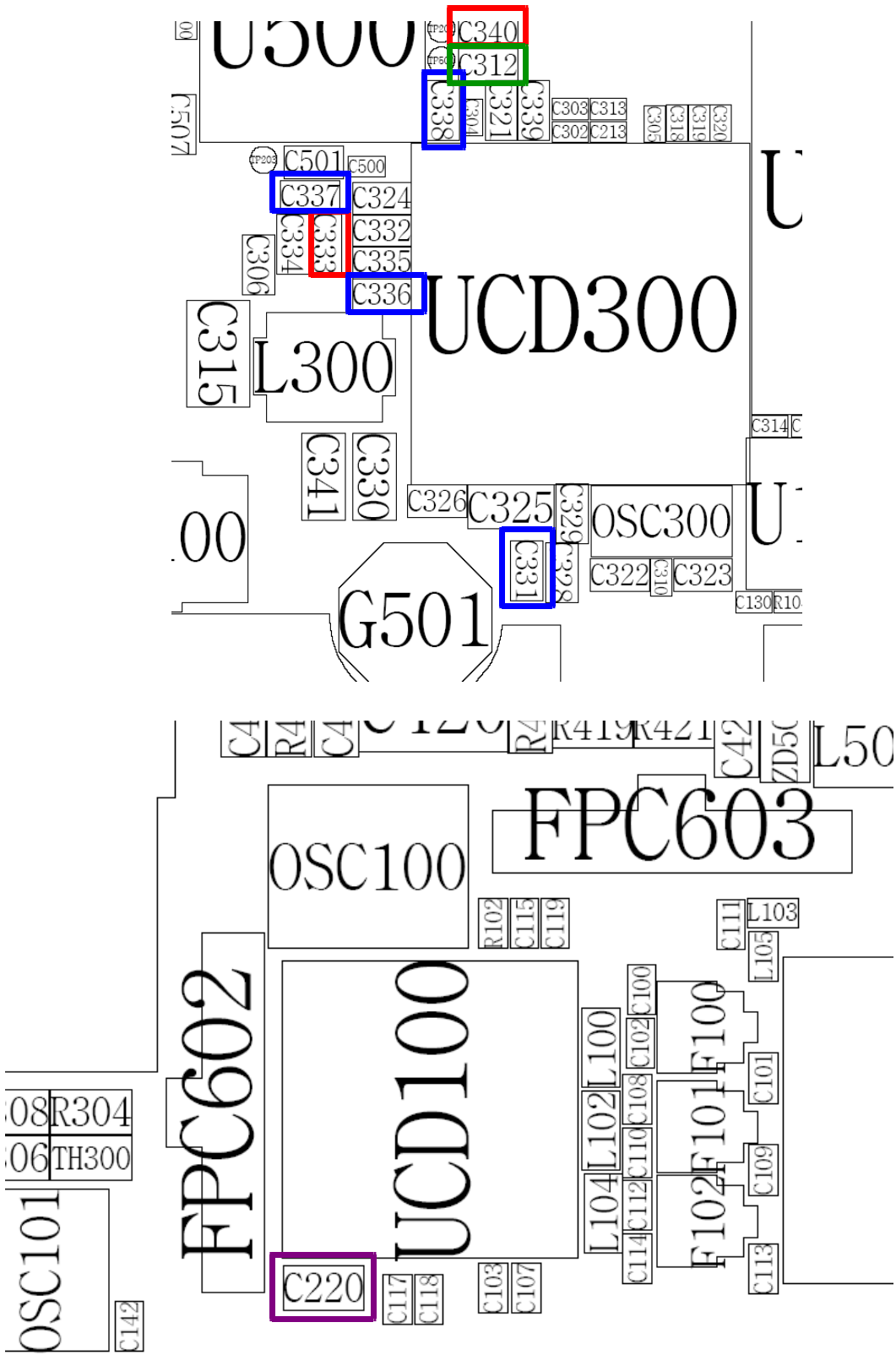
3-1 BASEBAND

3-1-1. Power ON

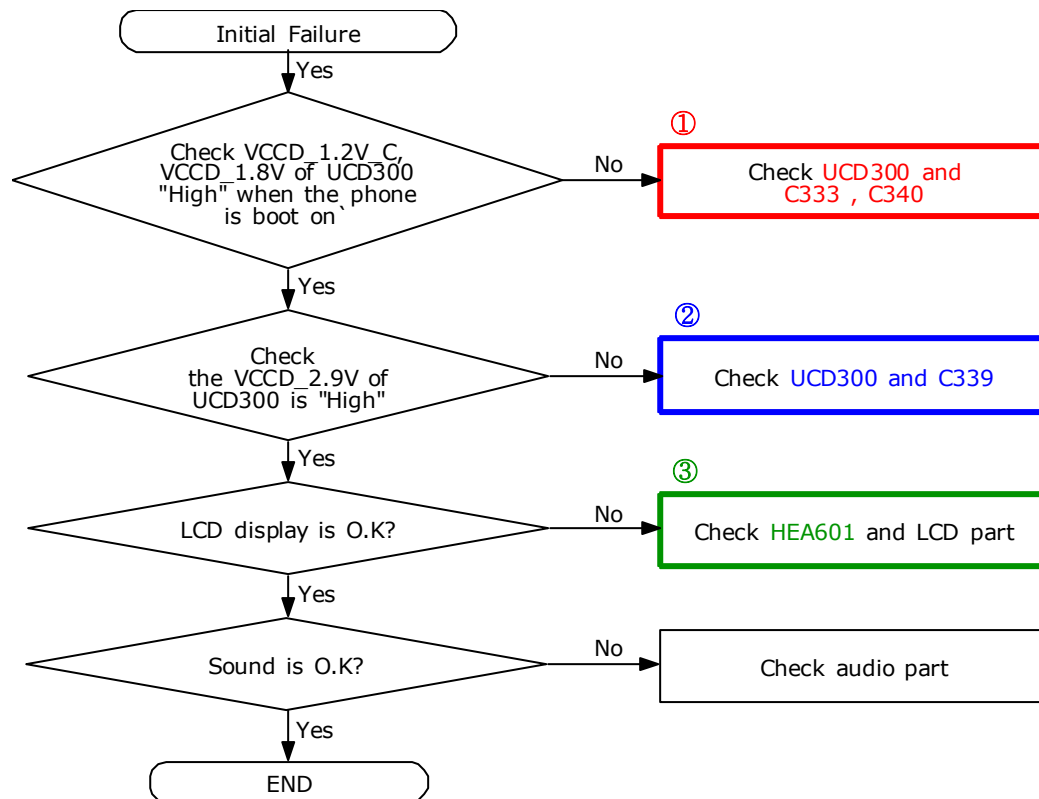


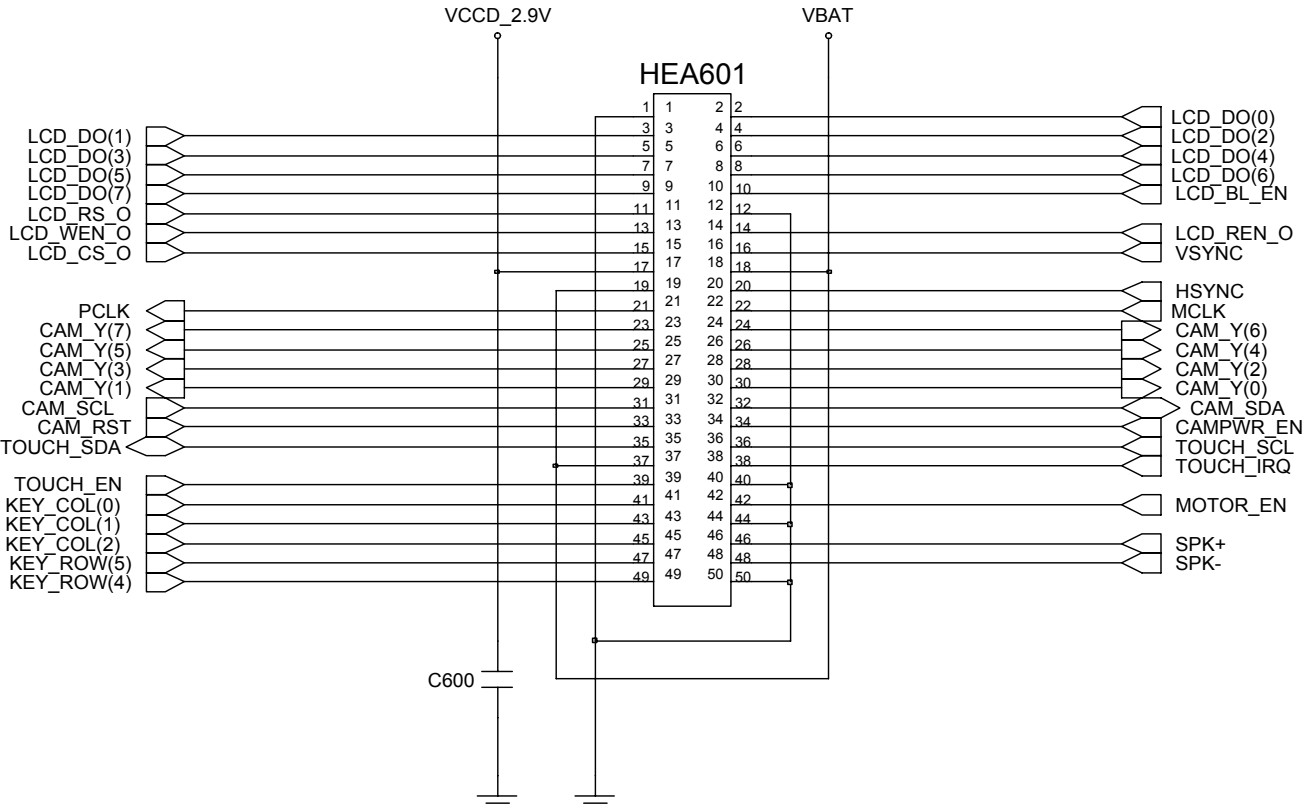
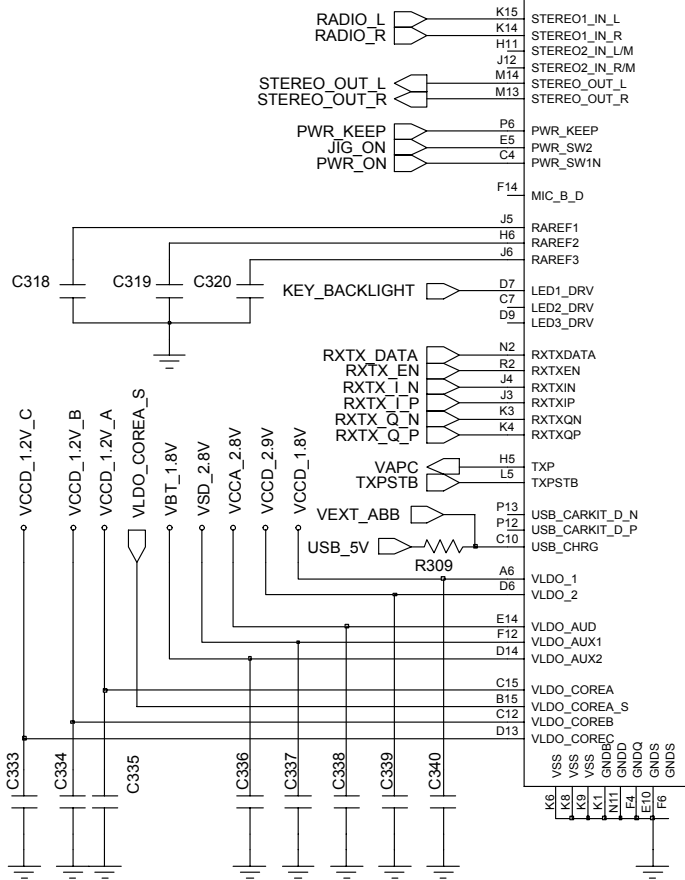


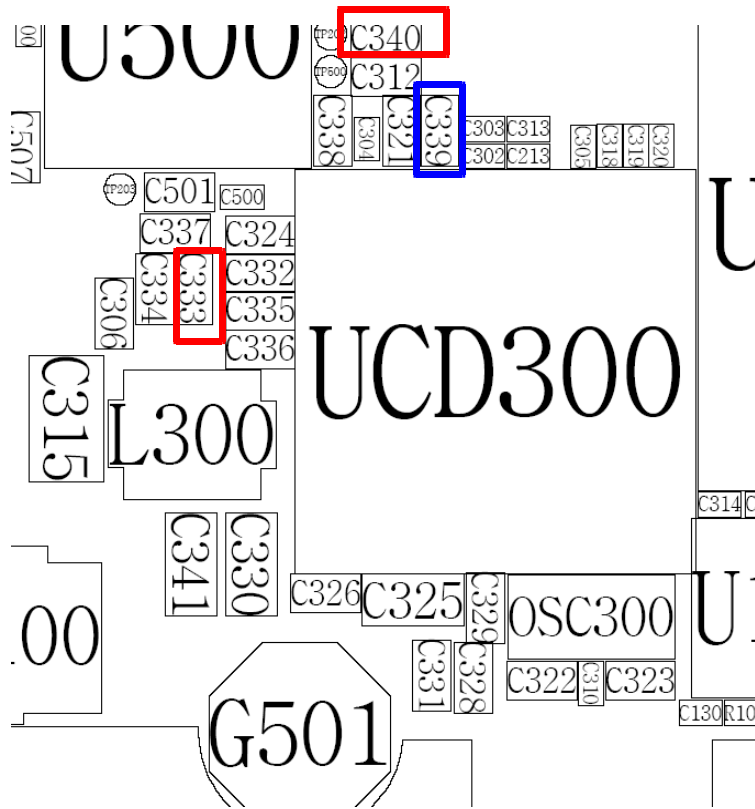




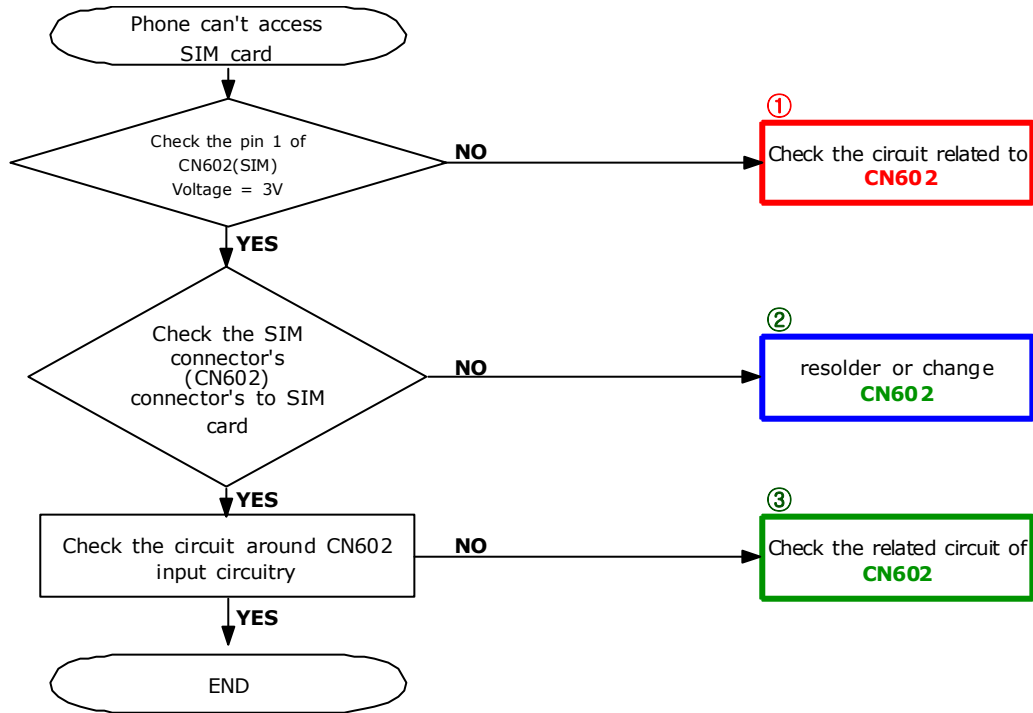
3-1-2. Initial

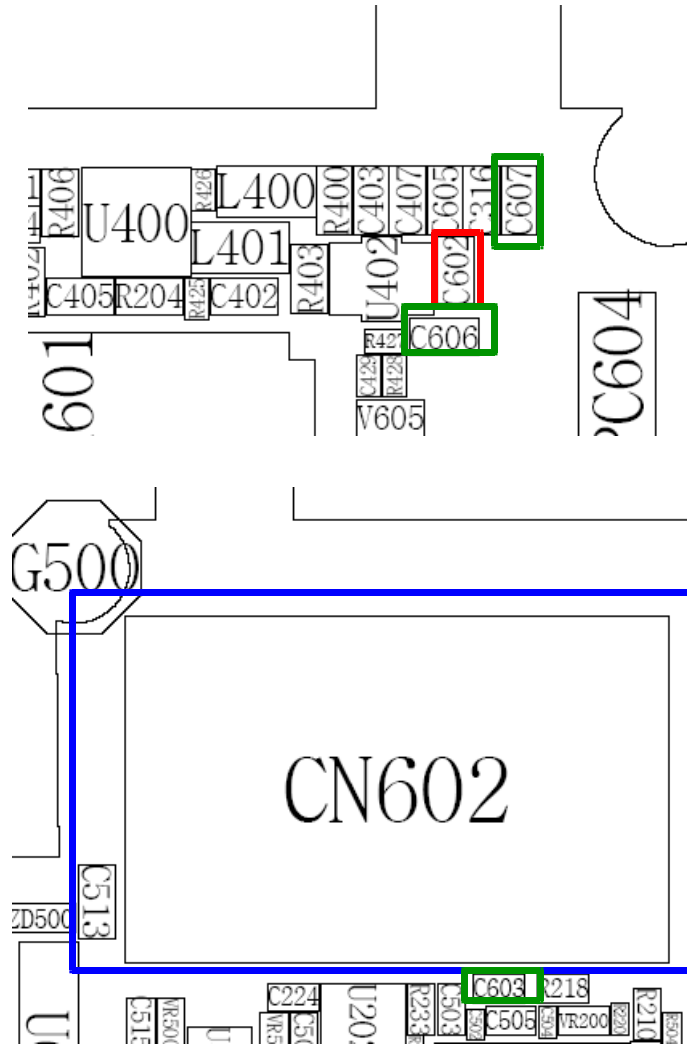
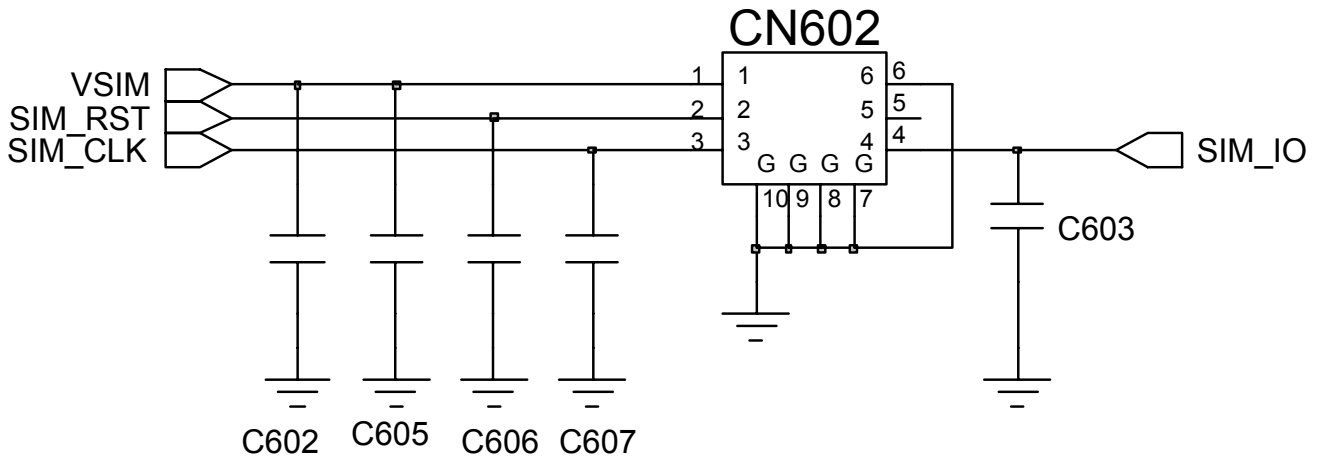




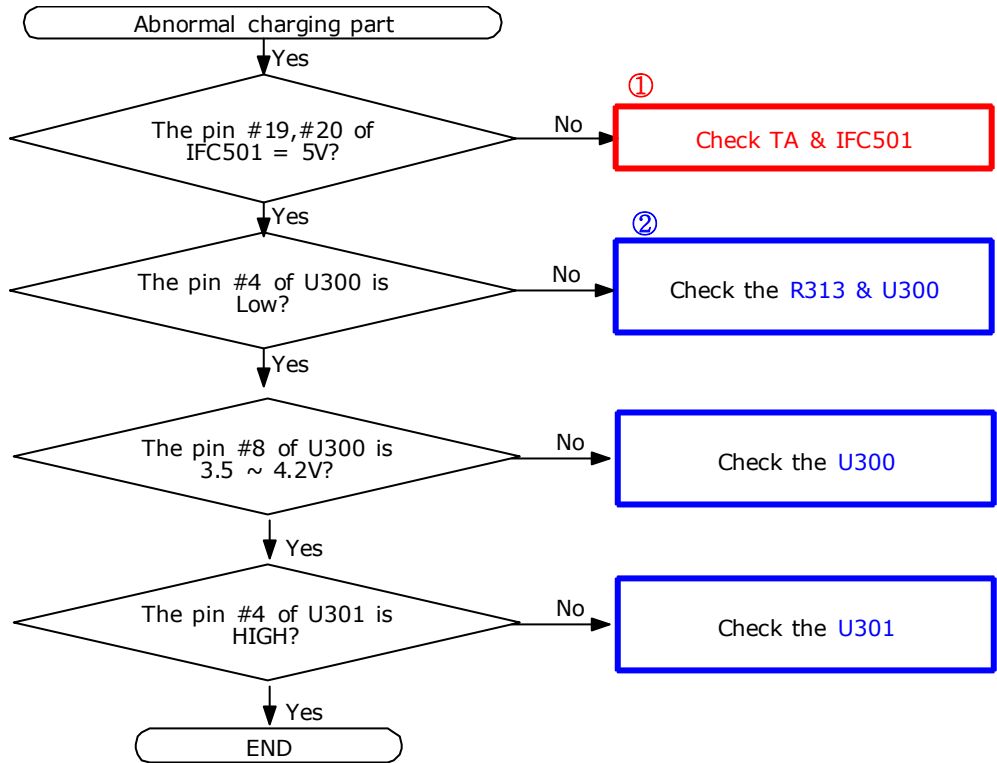


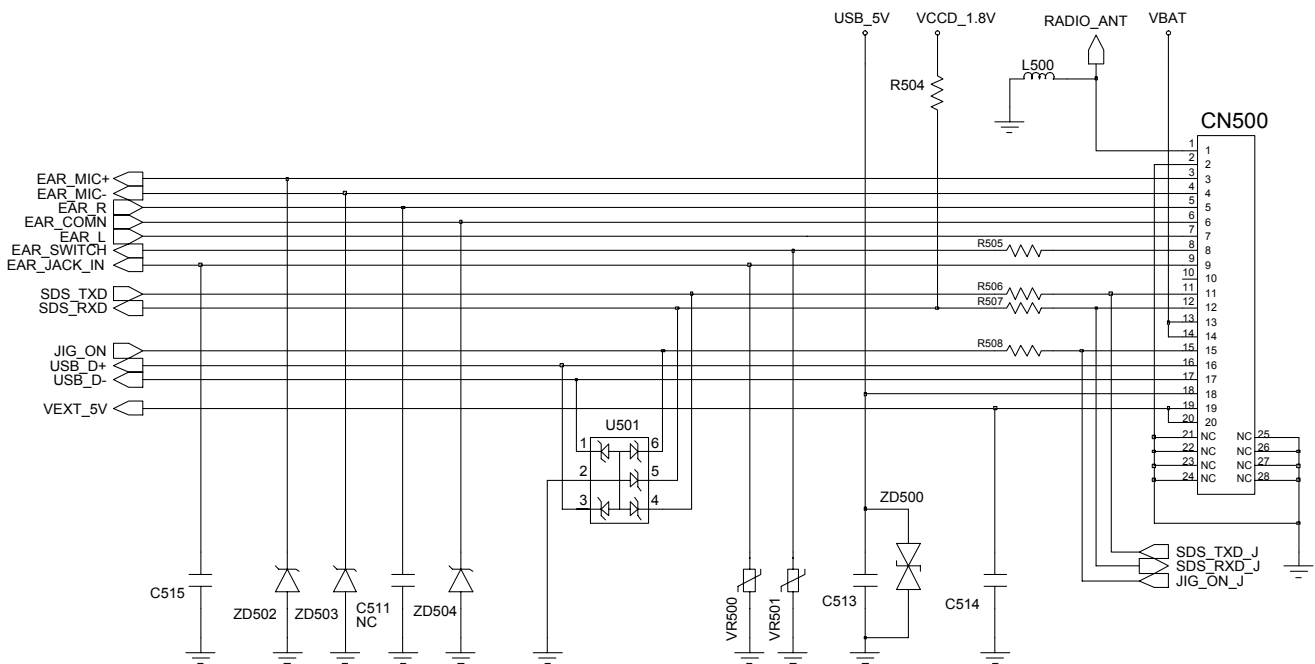
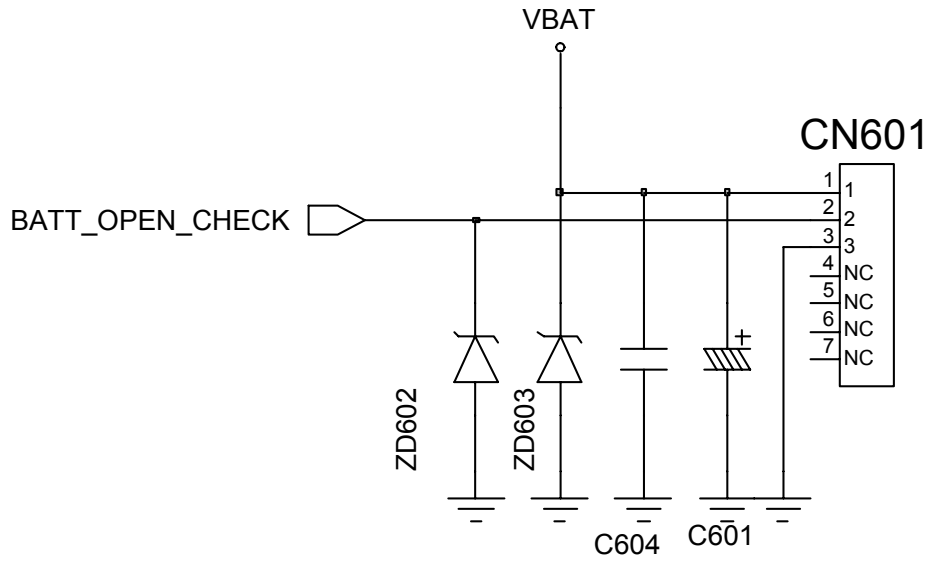
3-1-3. Sim Part

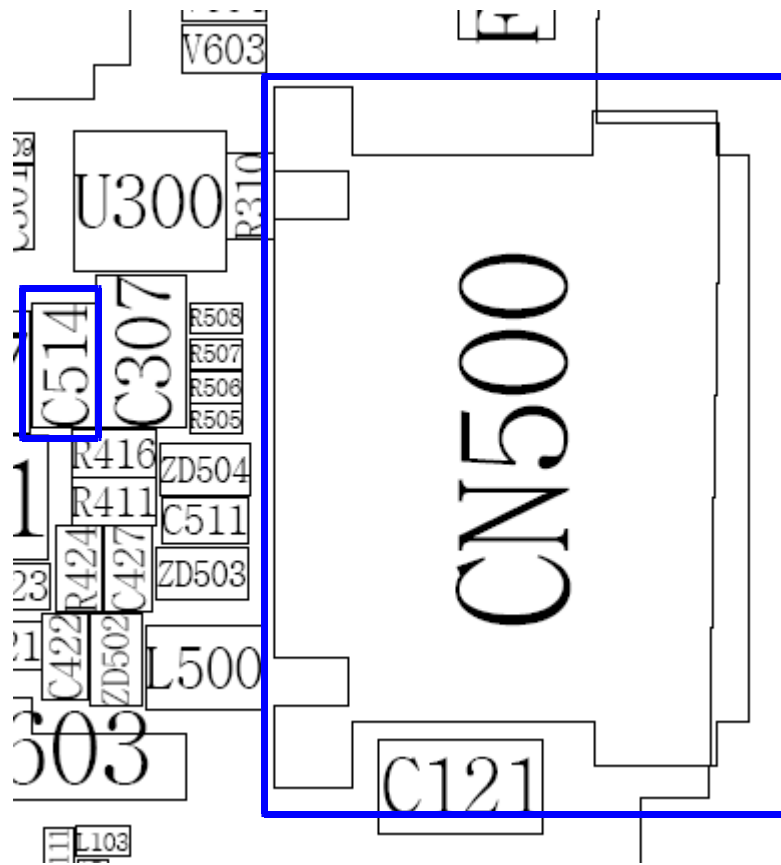
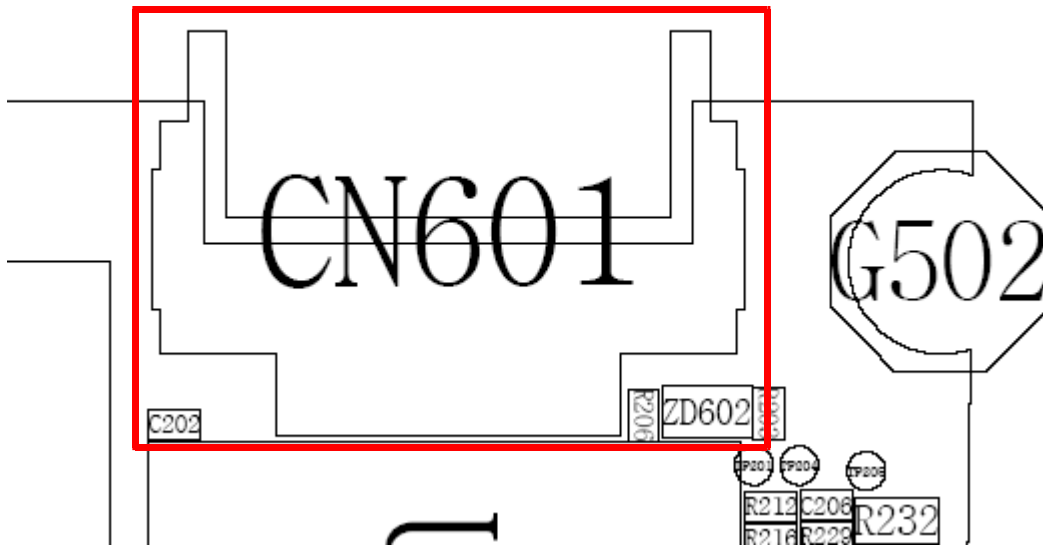




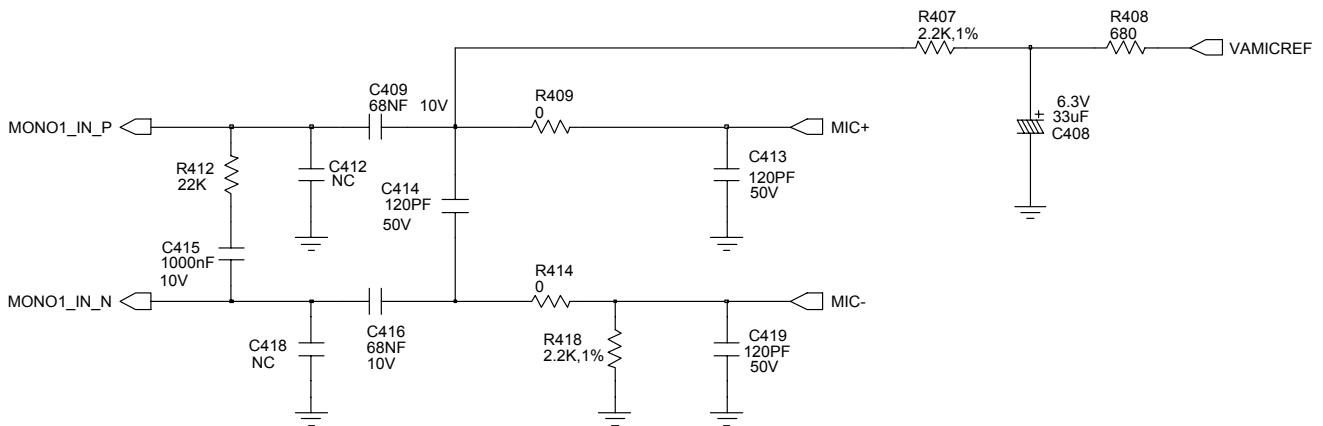
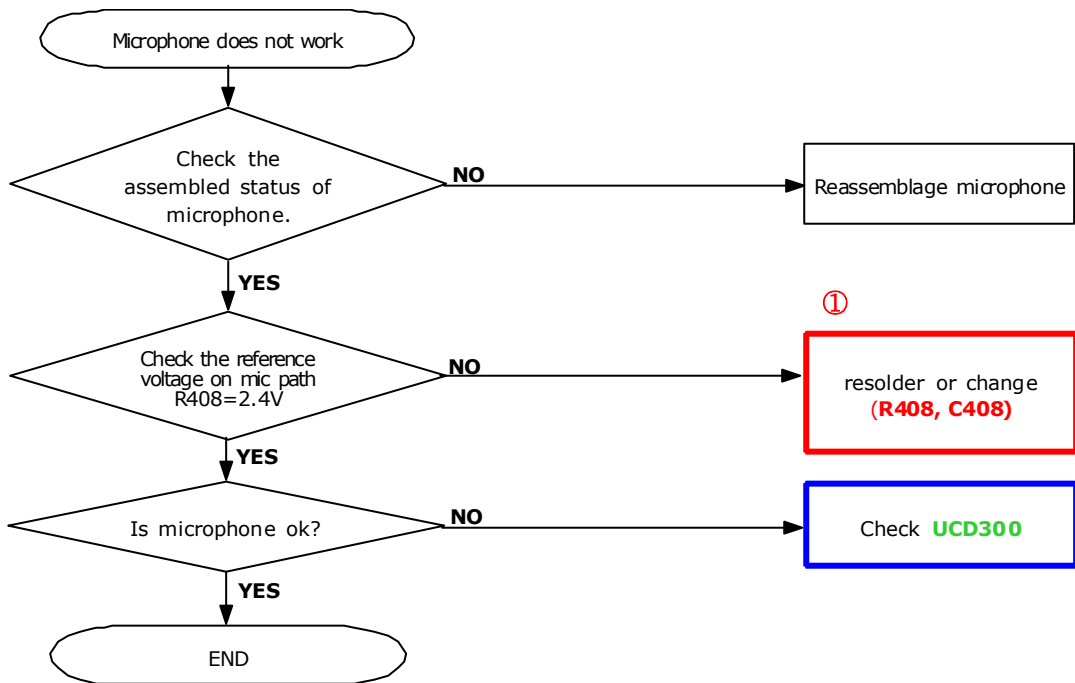
3-1-4. Charging Part

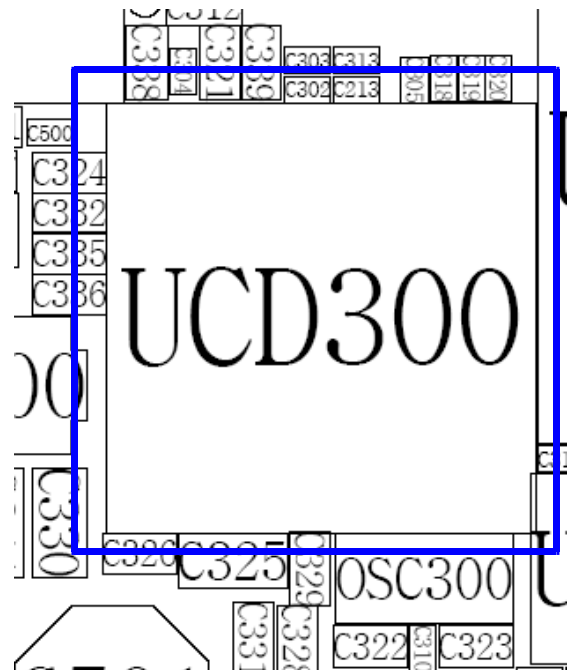
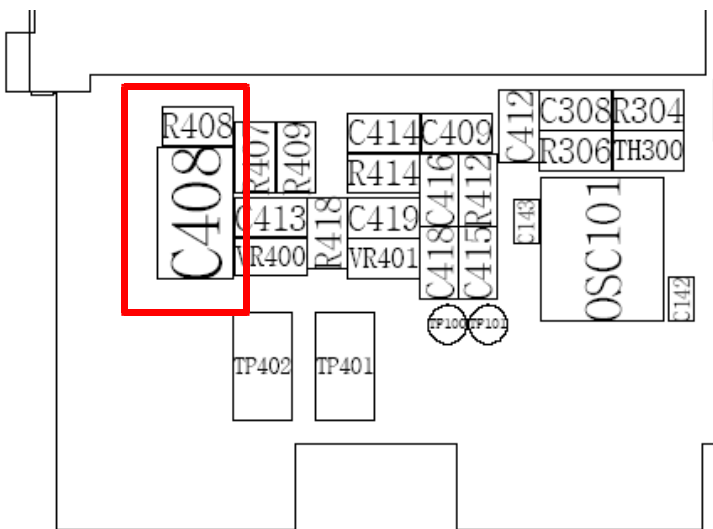
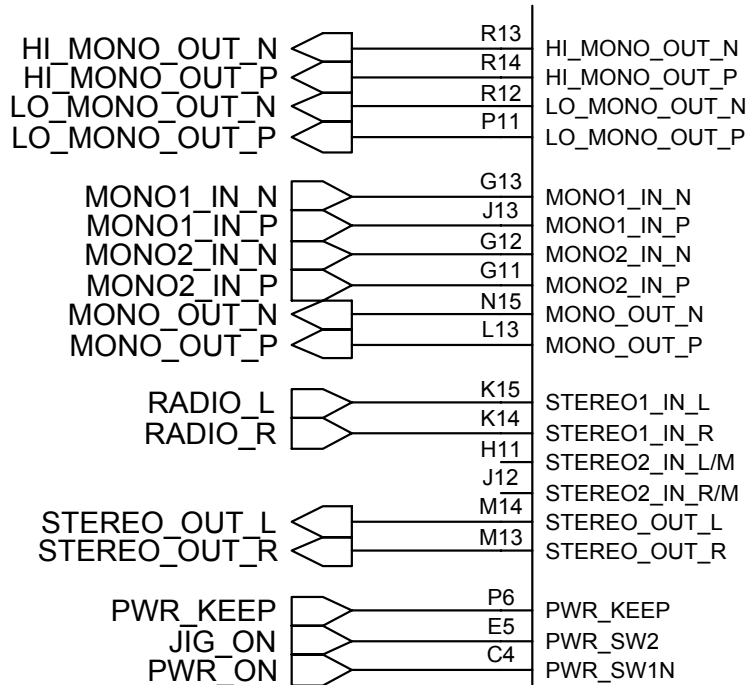




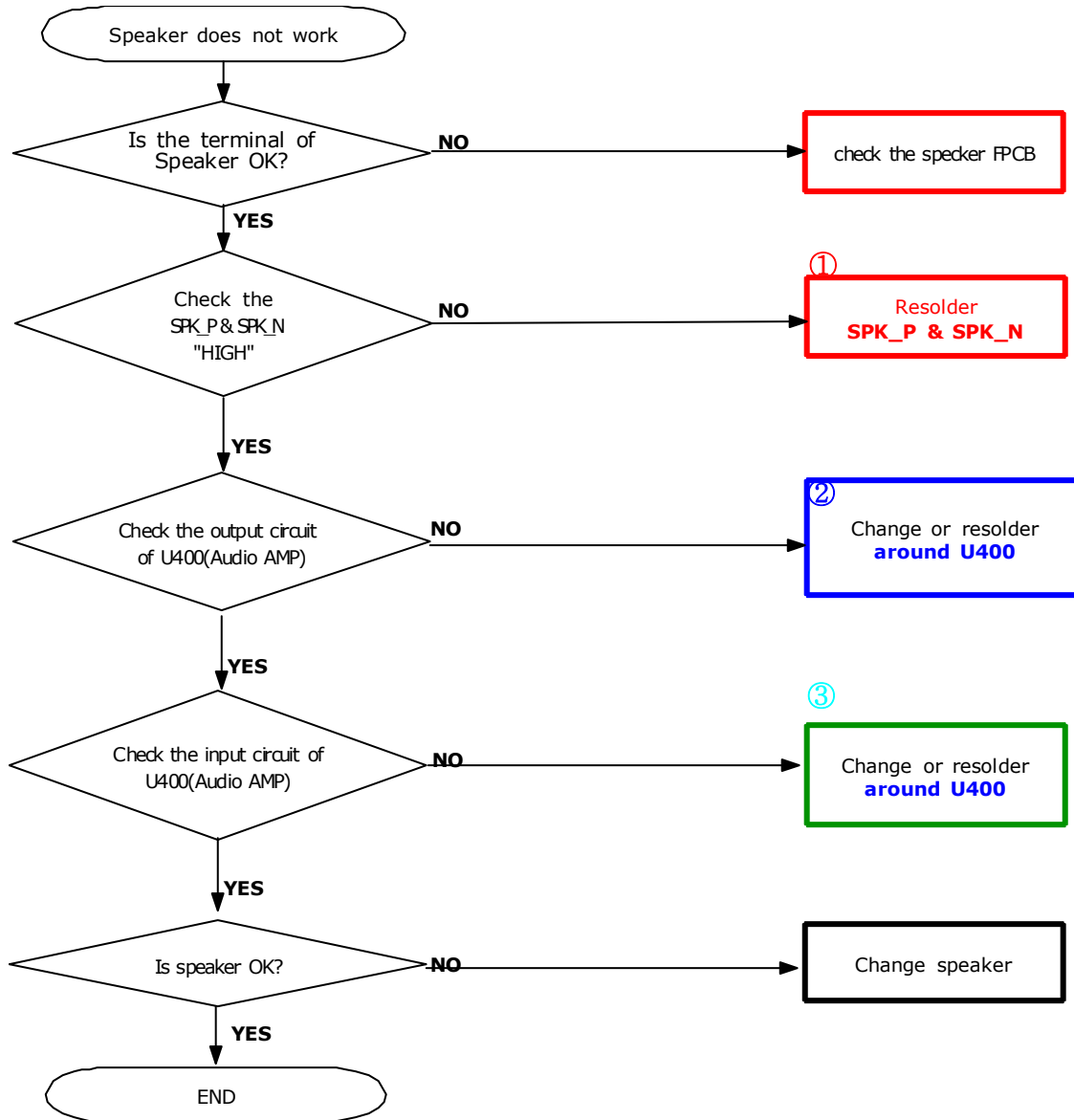


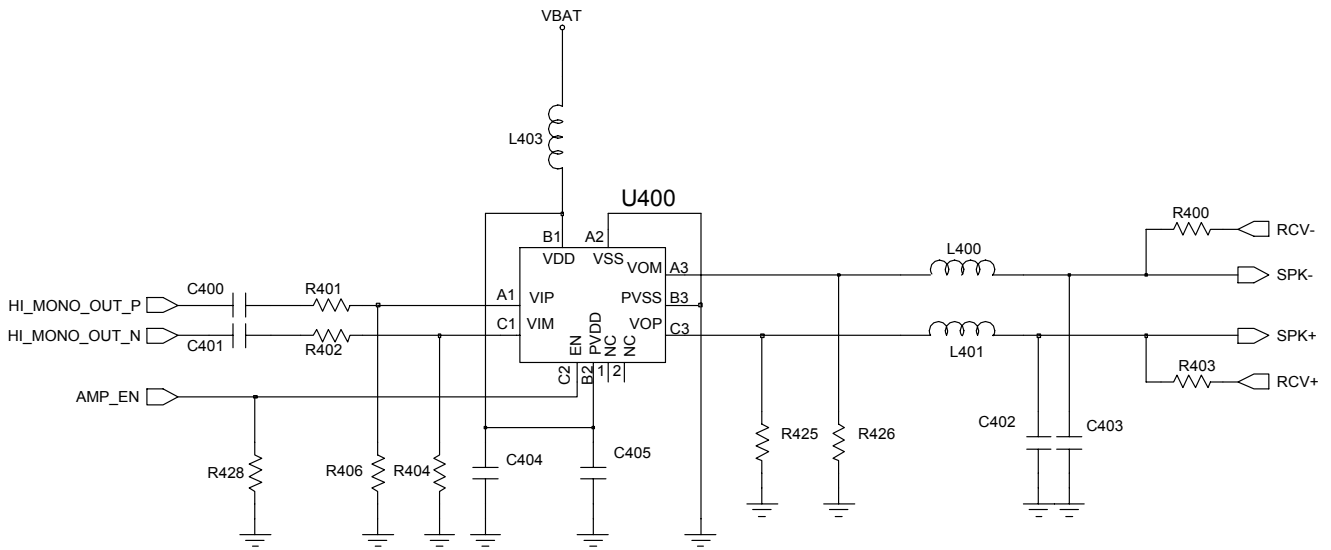
3-1-5. Microphone Part

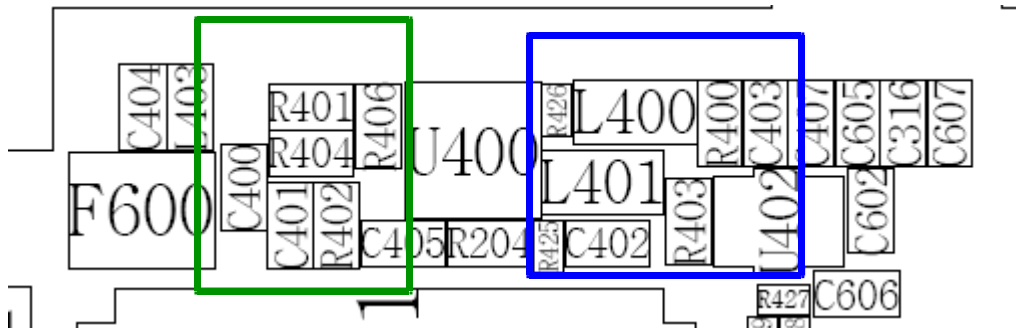
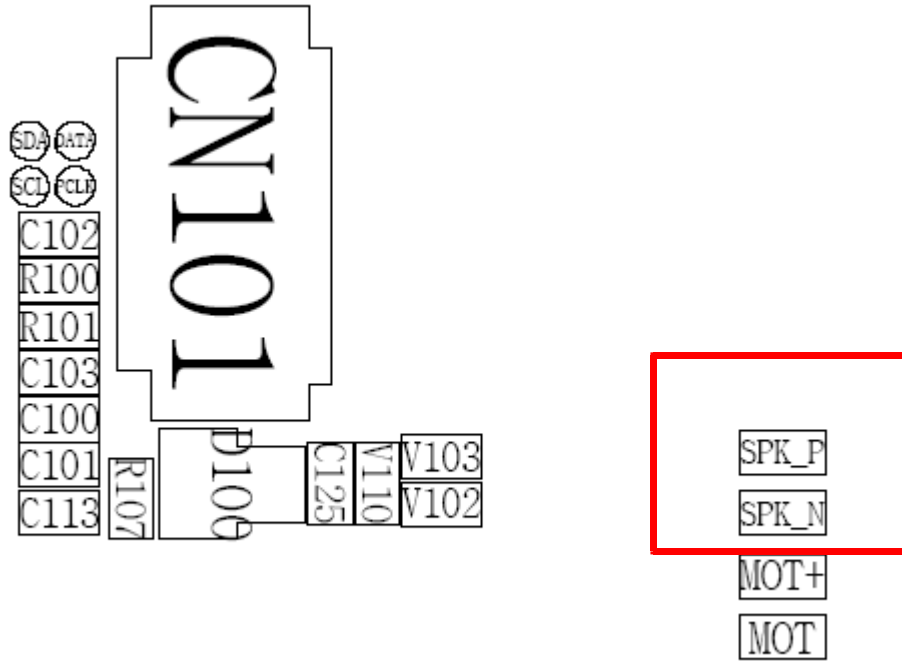




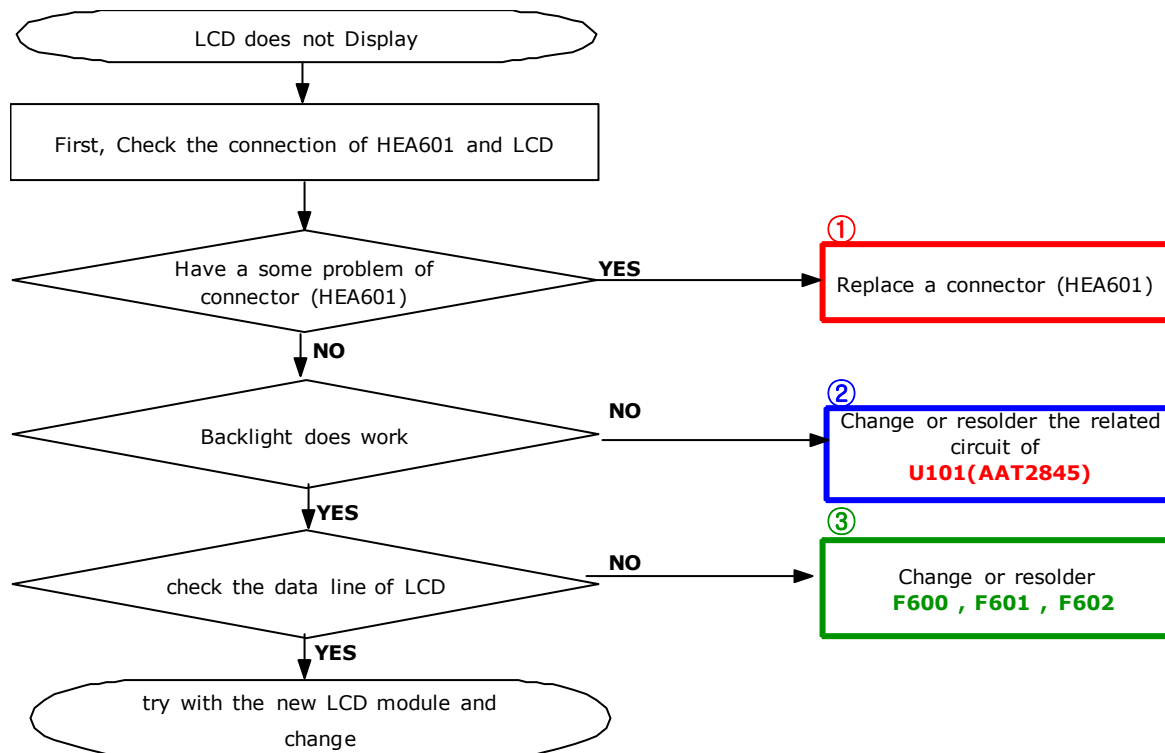
3-1-6. Speaker Part

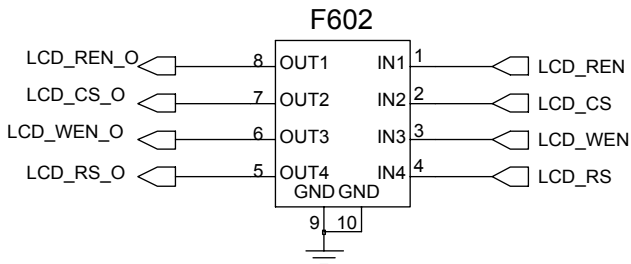
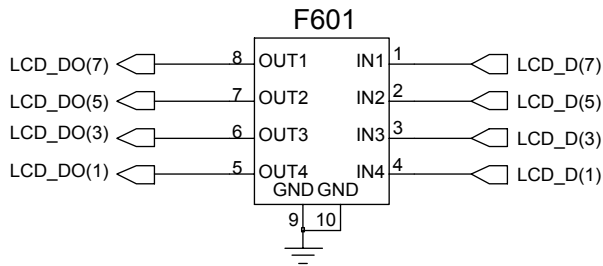
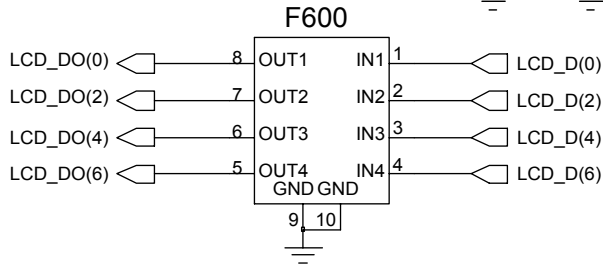
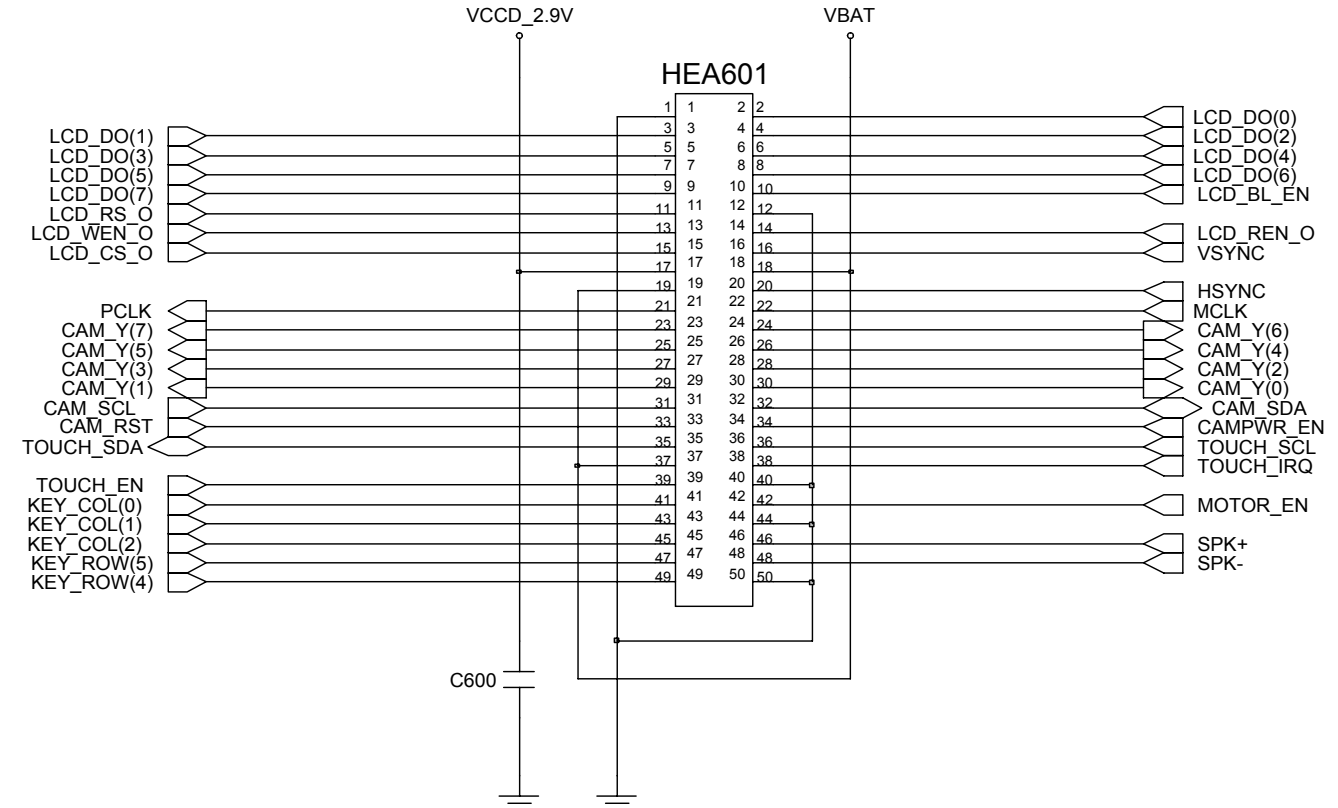


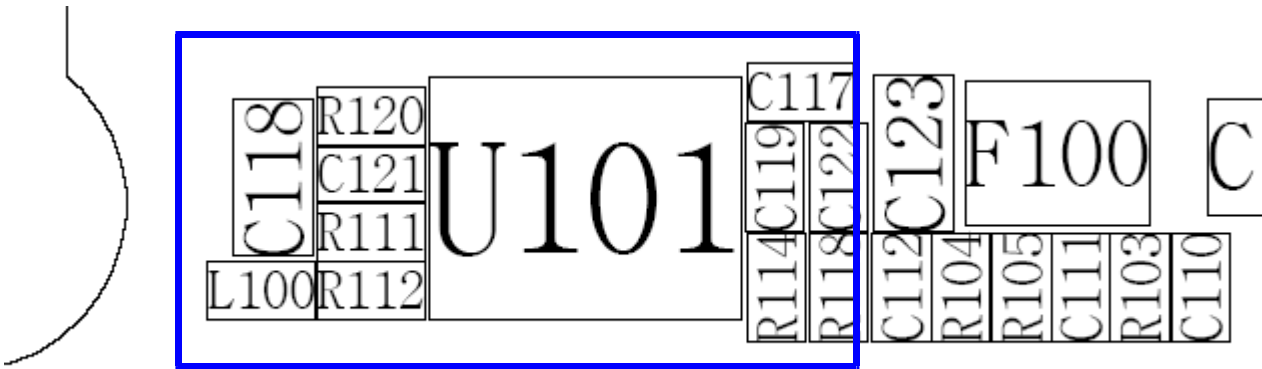
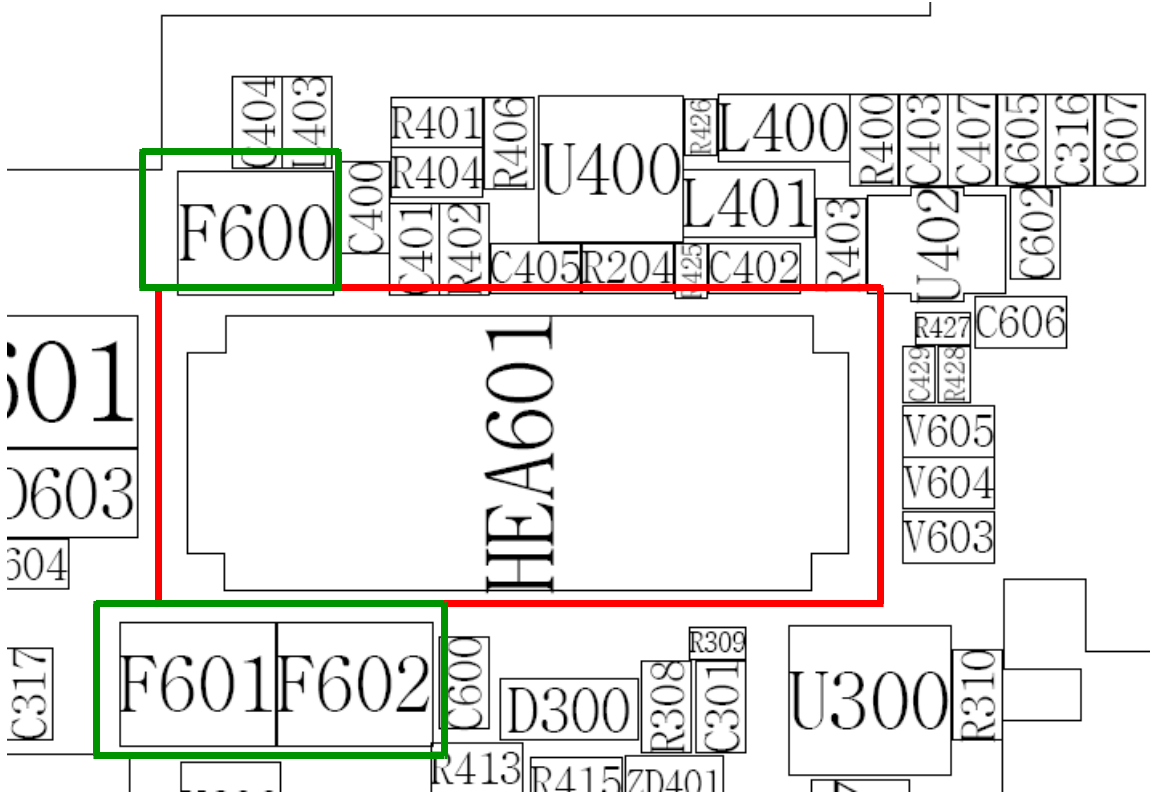




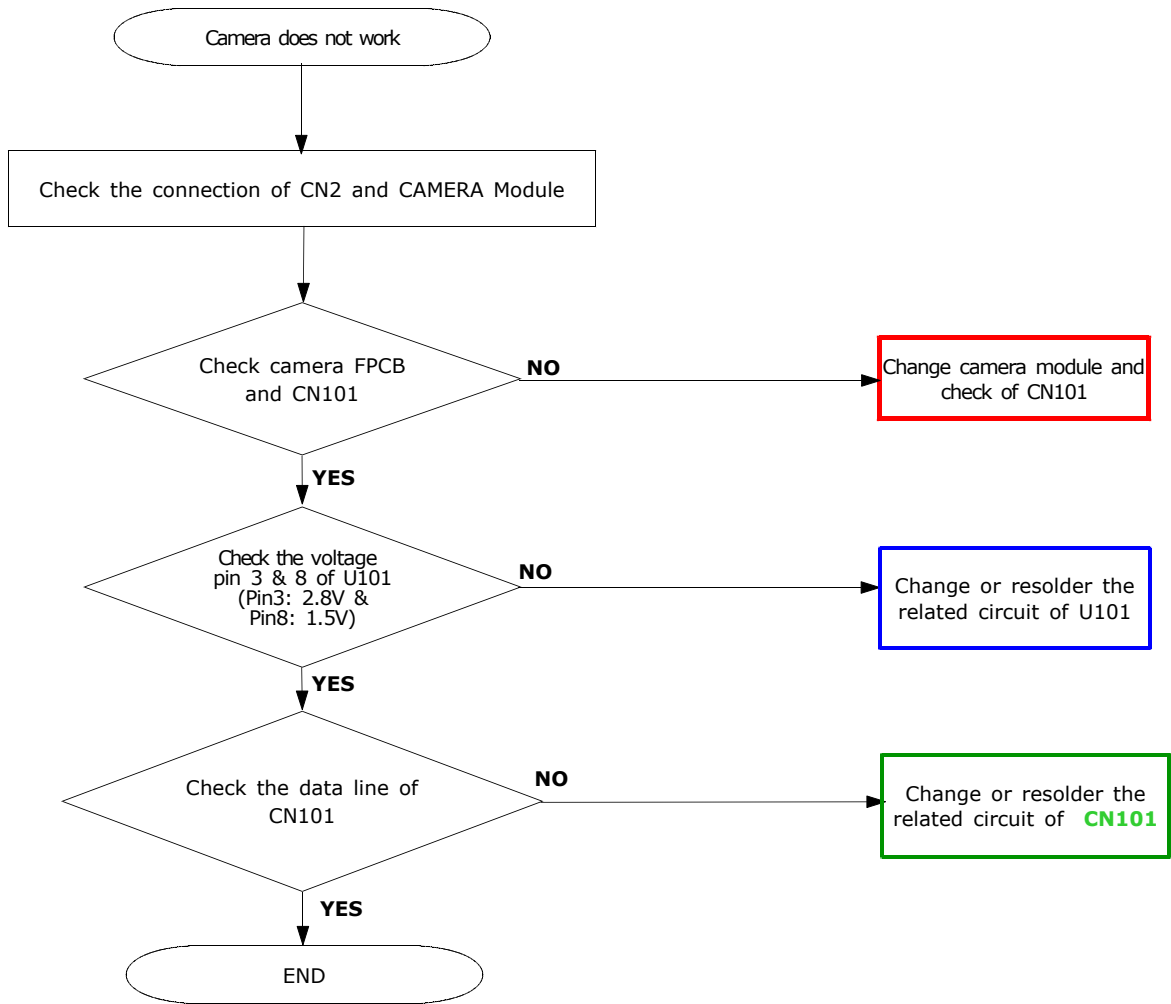
3-1-7. LCD

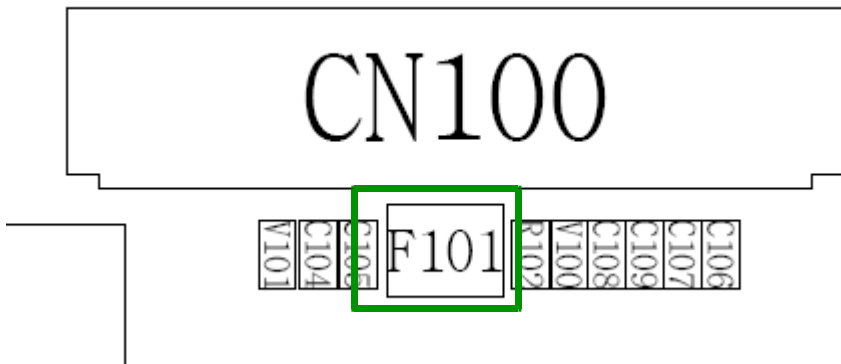
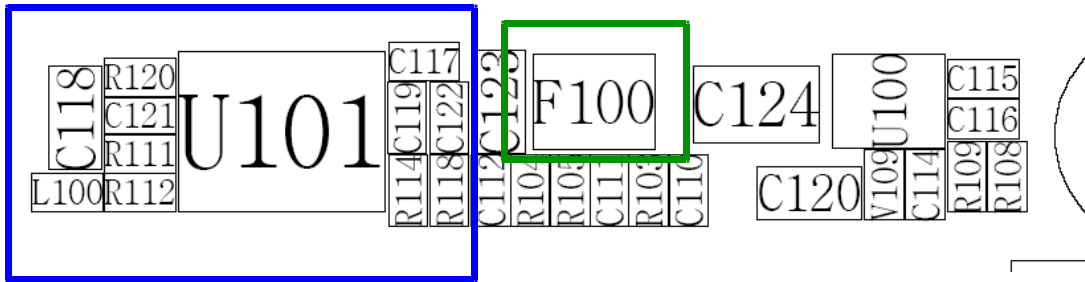
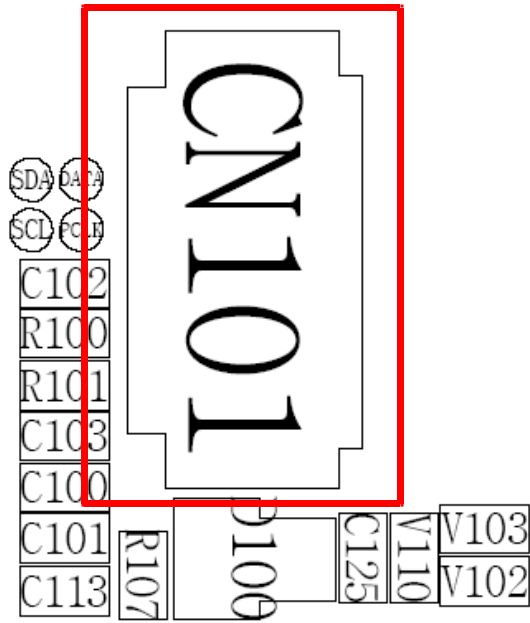






3-1-8. Camera

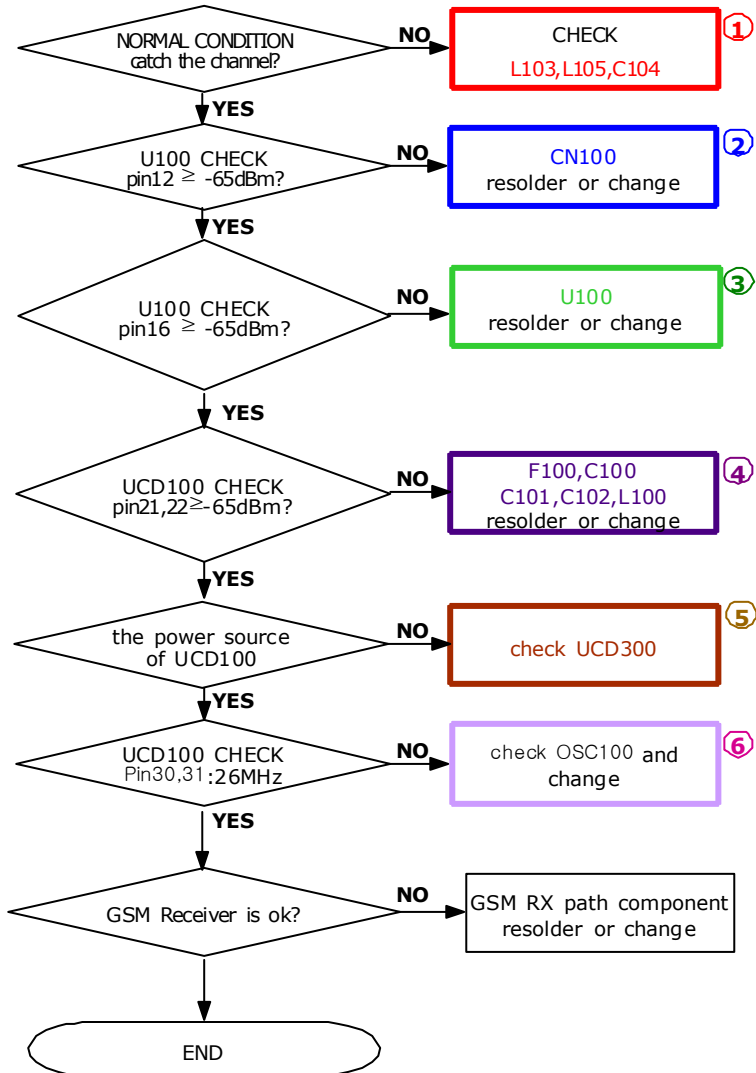




3-2. RF

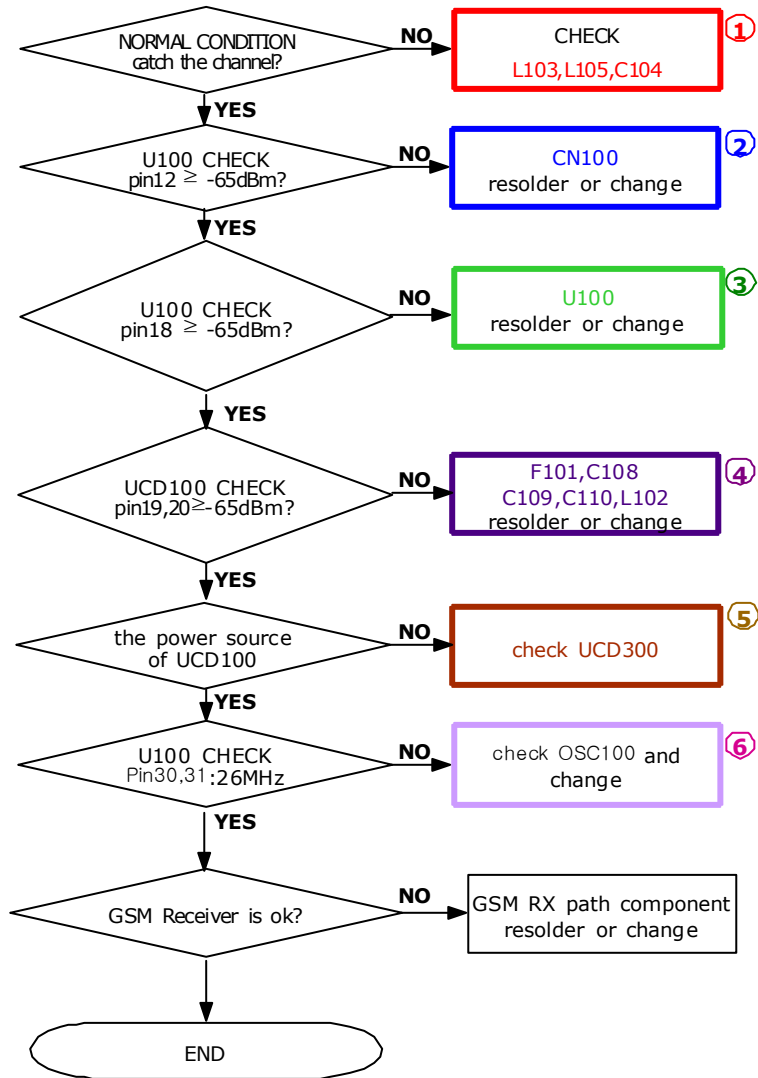
3-2-1. GSM900 Receiver

CONTINUOUS RX ON
RF INPUT : 62CH
Cell power : -50dBm



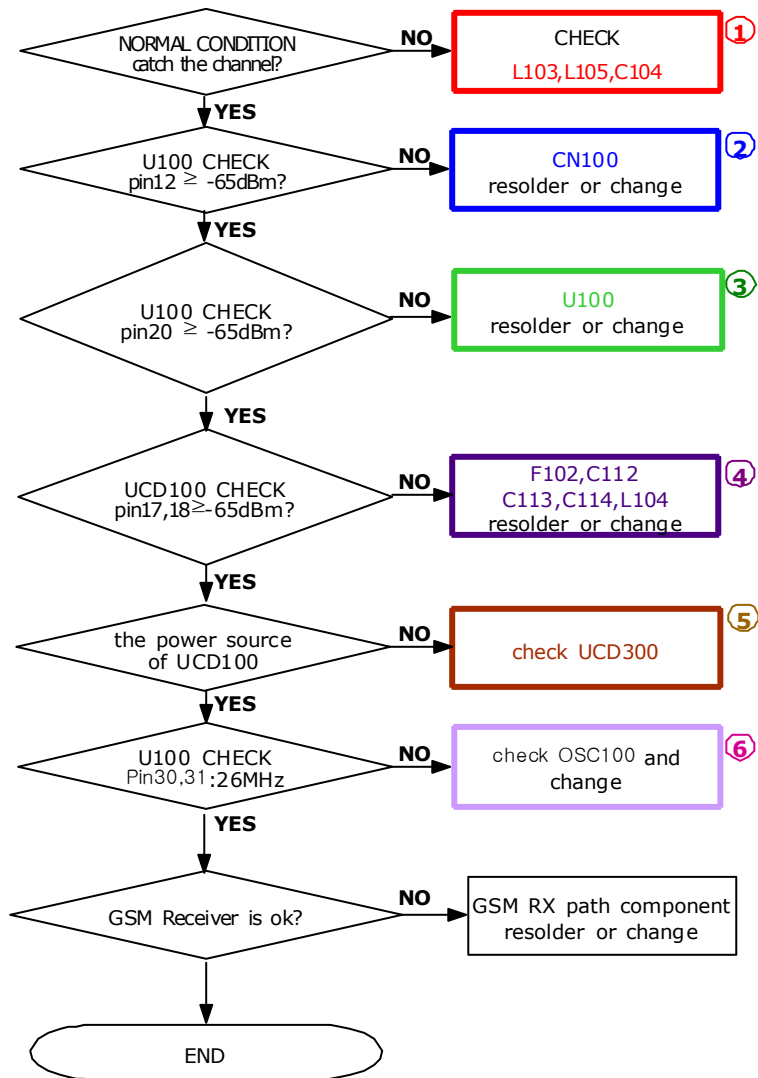
3-2-2. DCS Receiver

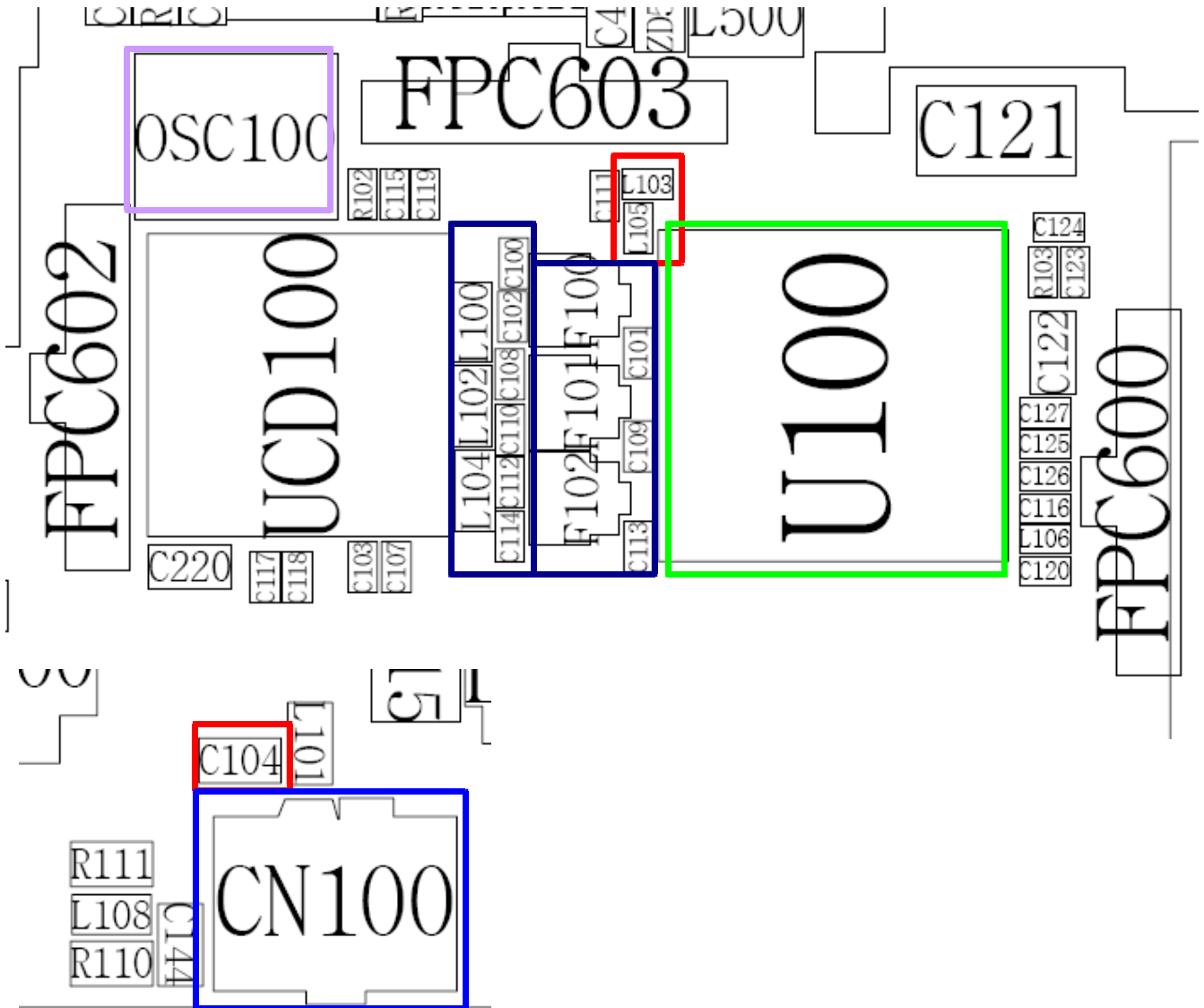
CONTINUOUS RX ON
 RF INPUT : 698CH
 Cell power : -50dBm



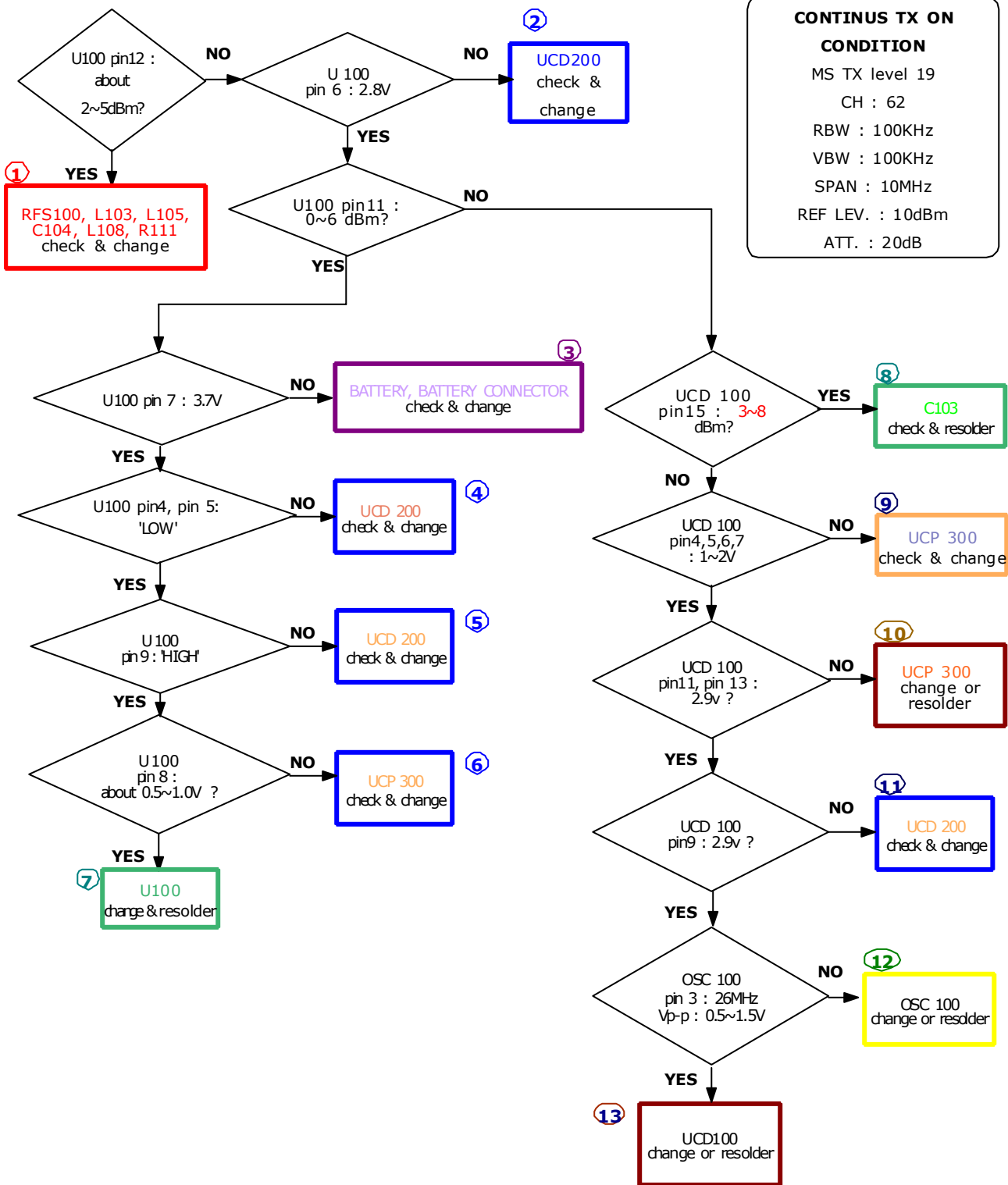
3-2-3. PCS Receiver

CONTINUOUS RX ON
RF INPUT : 698CH
Cell power : -50dBm



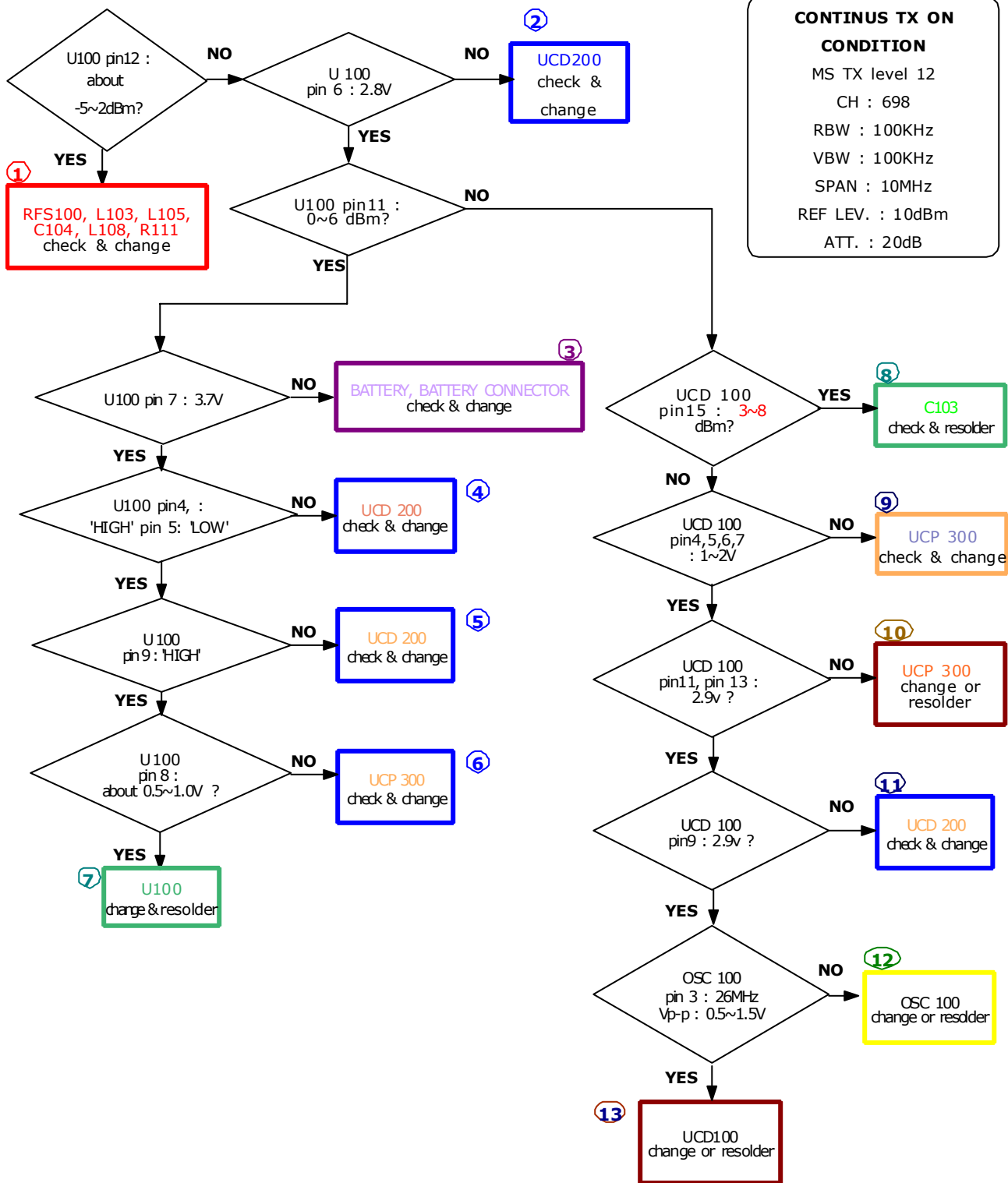


3-2-4. GSM900 Transmitter

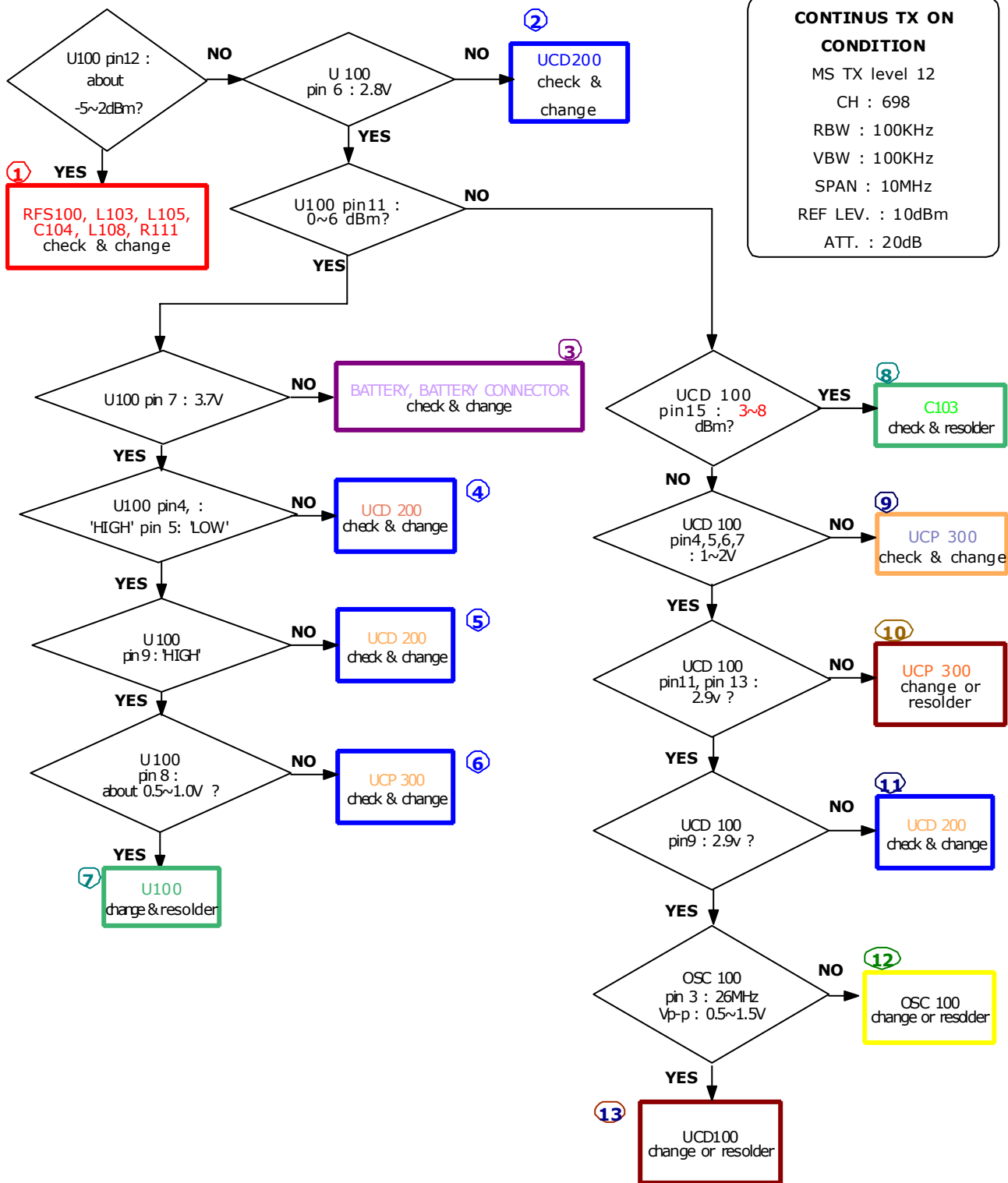


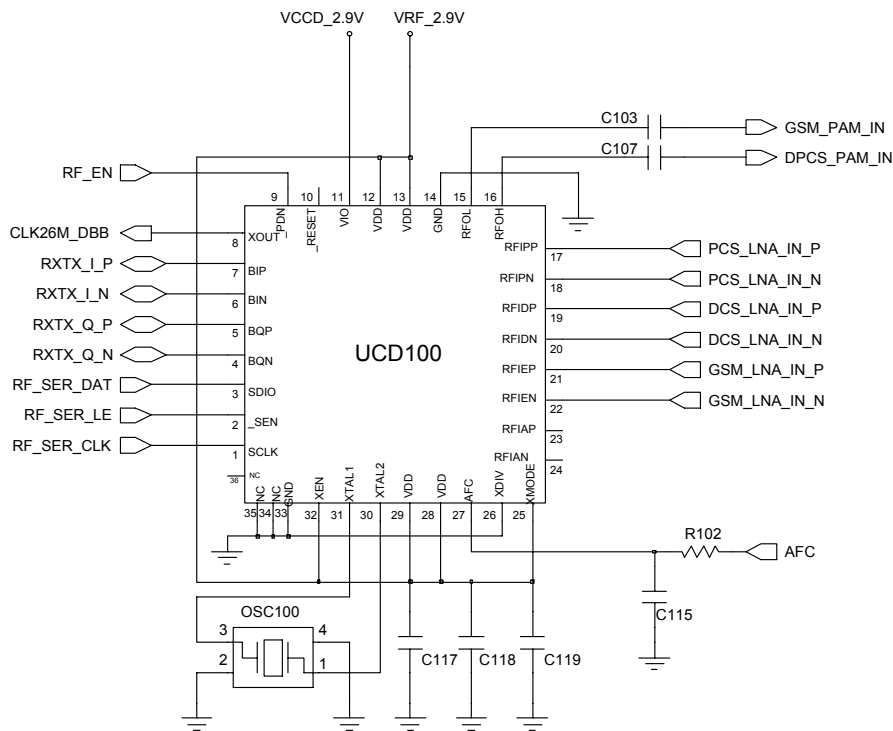
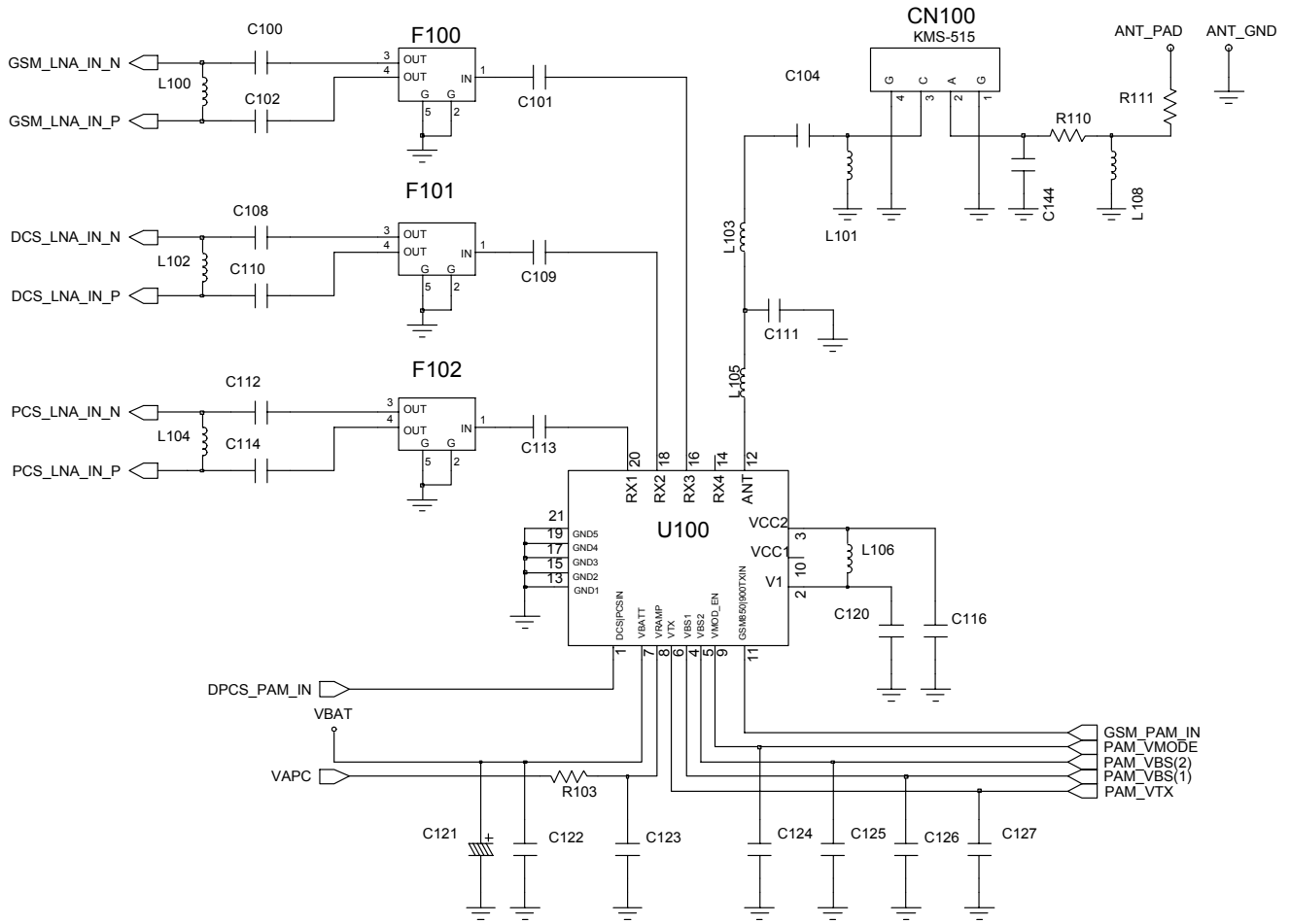
**CONTINUS TX ON
CONDITION**
 MS TX level 19
 CH : 62
 RBW : 100KHz
 VBW : 100KHz
 SPAN : 10MHz
 REF LEV. : 10dBm
 ATT. : 20dB

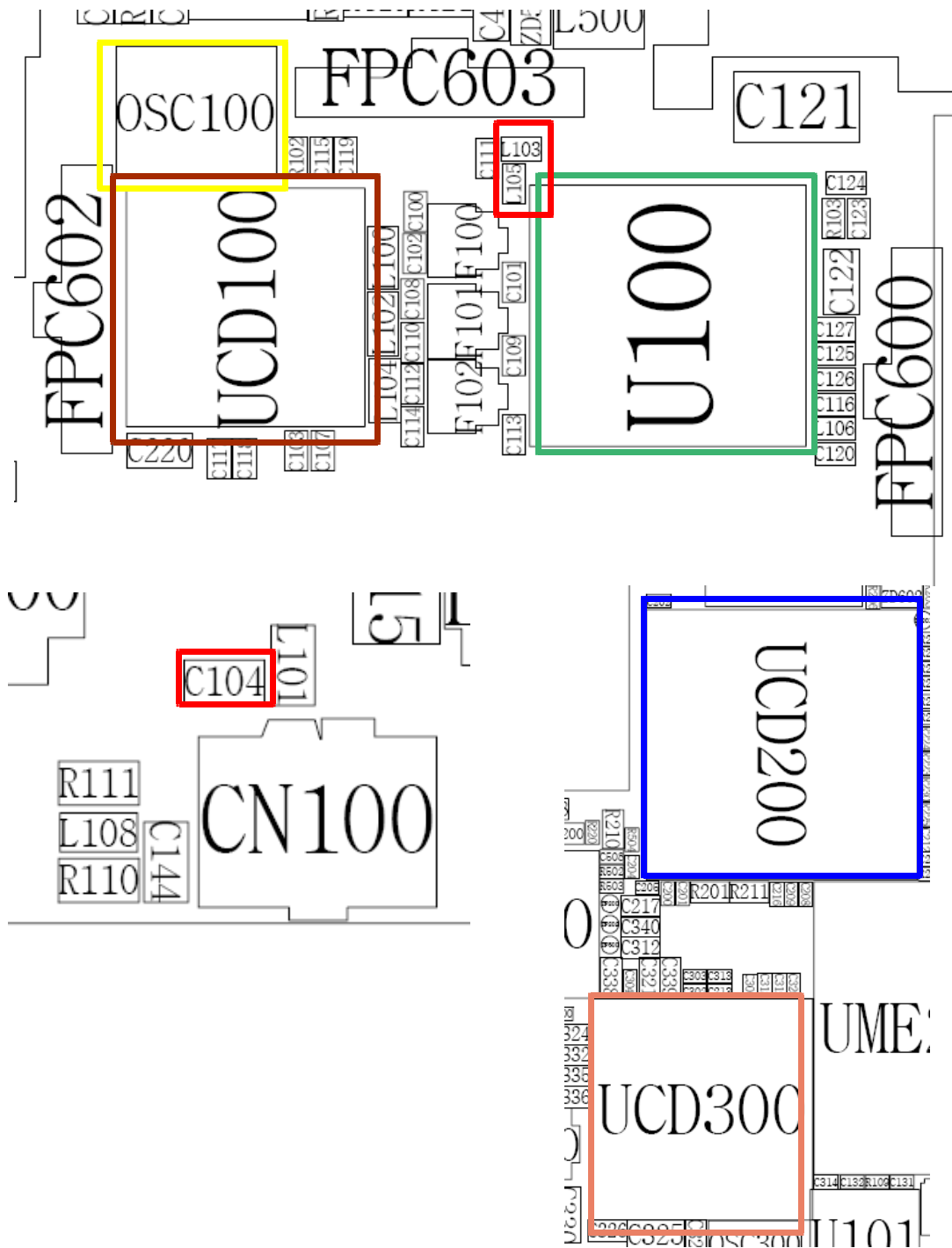
3-2-5. DCS Transmitter



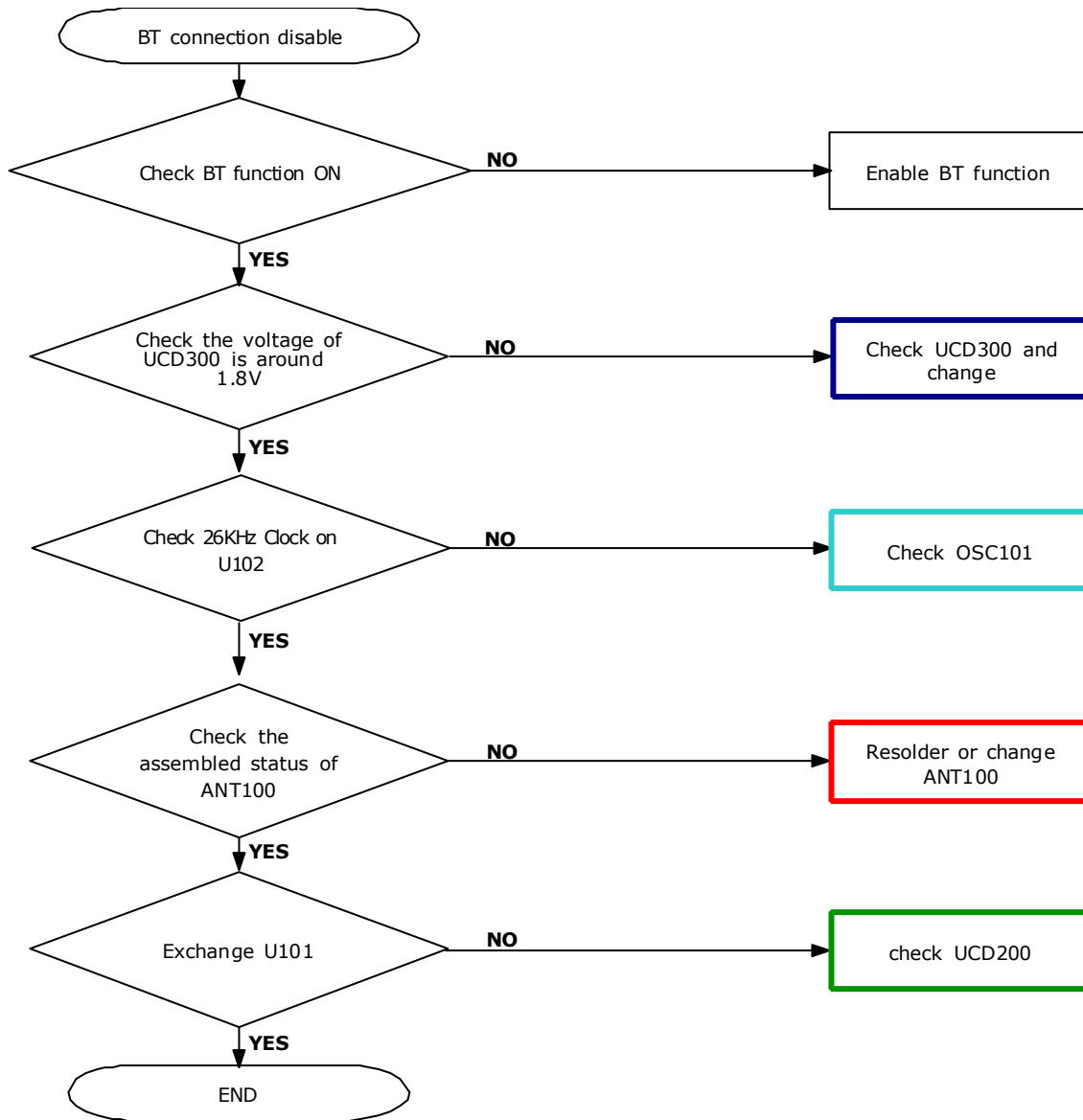
3-2-6. PCS Transmitter

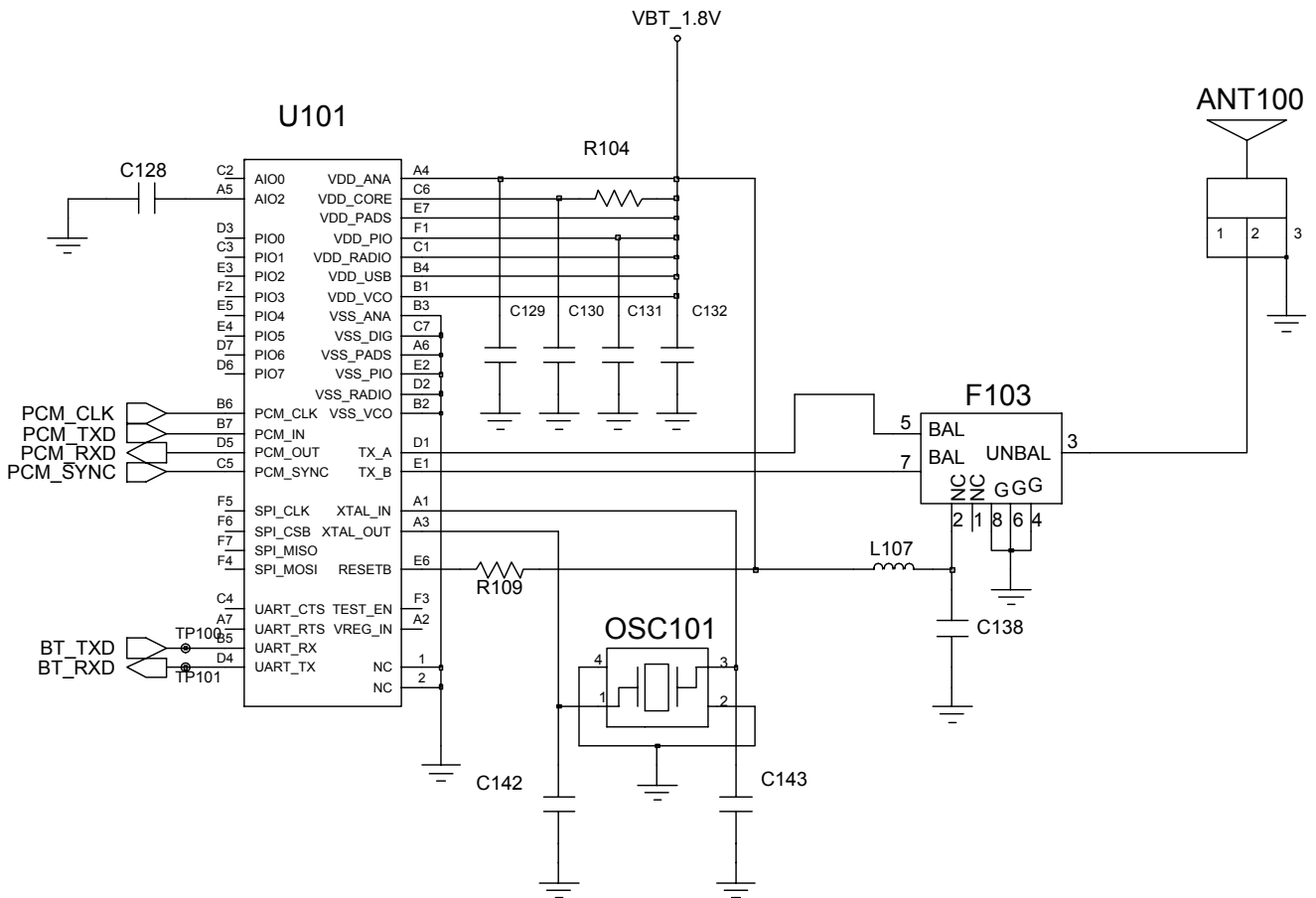


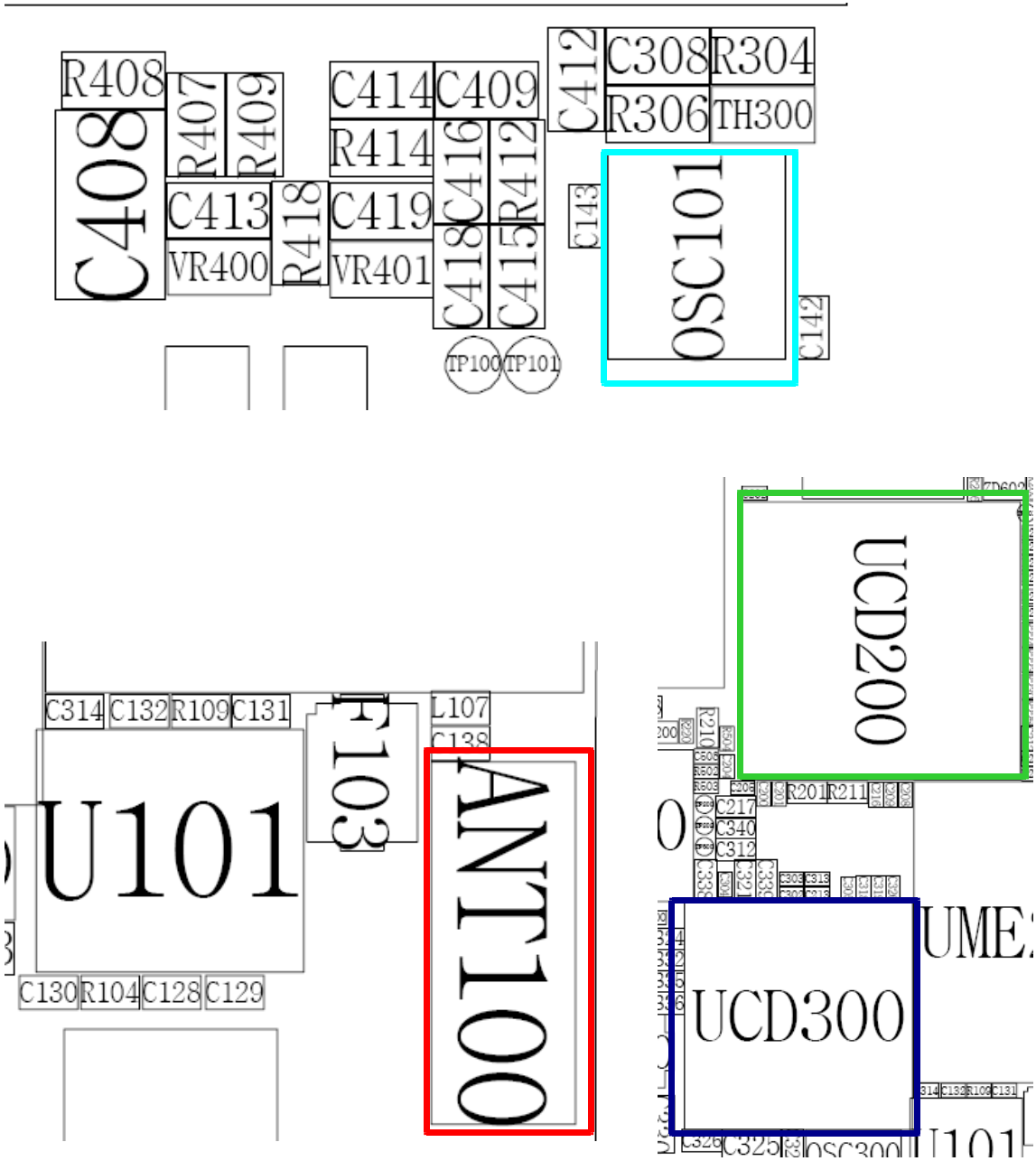




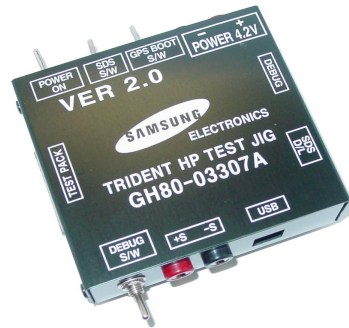
3-2-7. Bluetooth Part







4. Array course control



Test Jig (GH80-03307A)



Test Cable (GH39-00478A)



RF Test Cable (GH39-00182A)

Software Downloading

4-1. Downloading Binary Files

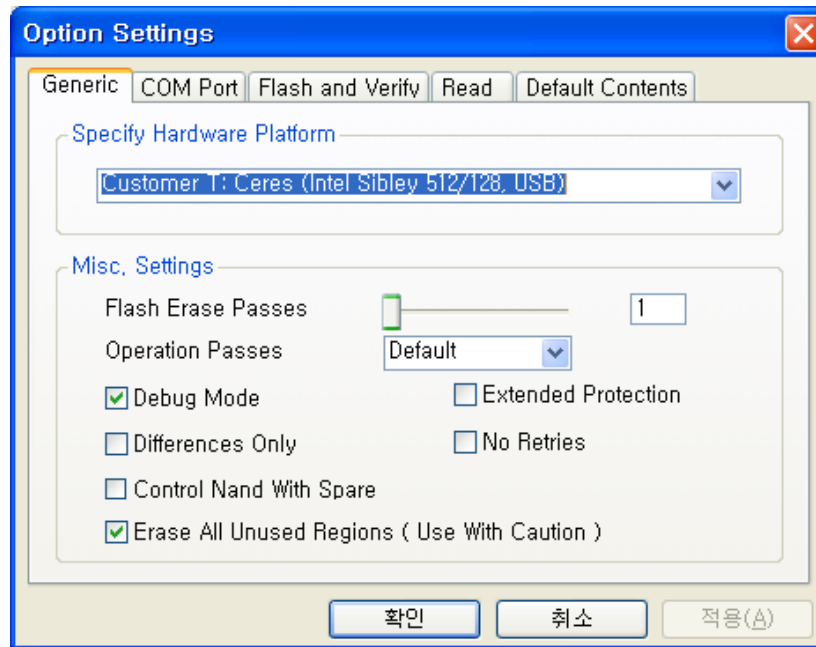
- Three binary files for downloading J600.
 - J600XXYY.s3 : Main source code binary.

4-2. Pre-requisite for Downloading

- Downloader Program([OptiFlash.exe](#))
- J600 Mobile Phone
- Data Cable
- Binary files

4-3. S/W Downloader Program

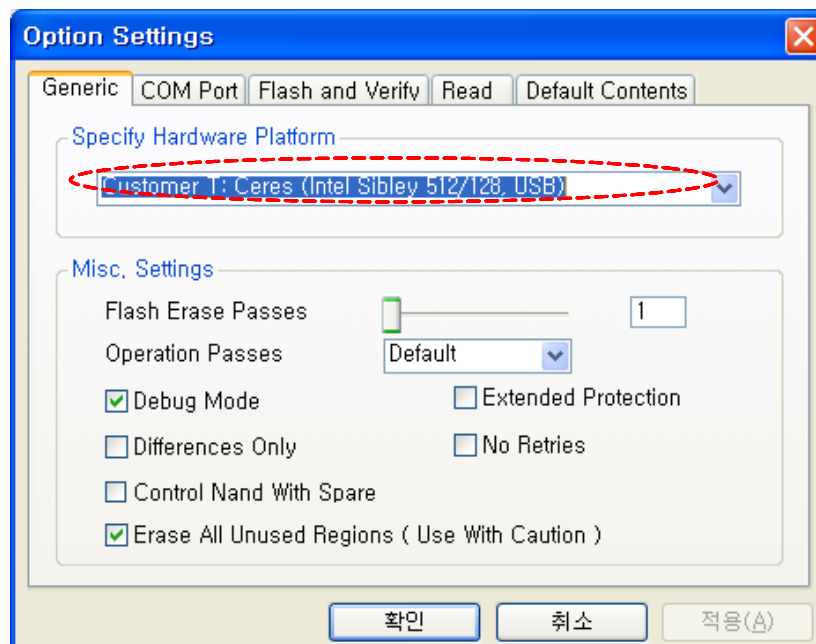
1. Load the binary download program by executing the "OptiFlash.exe"



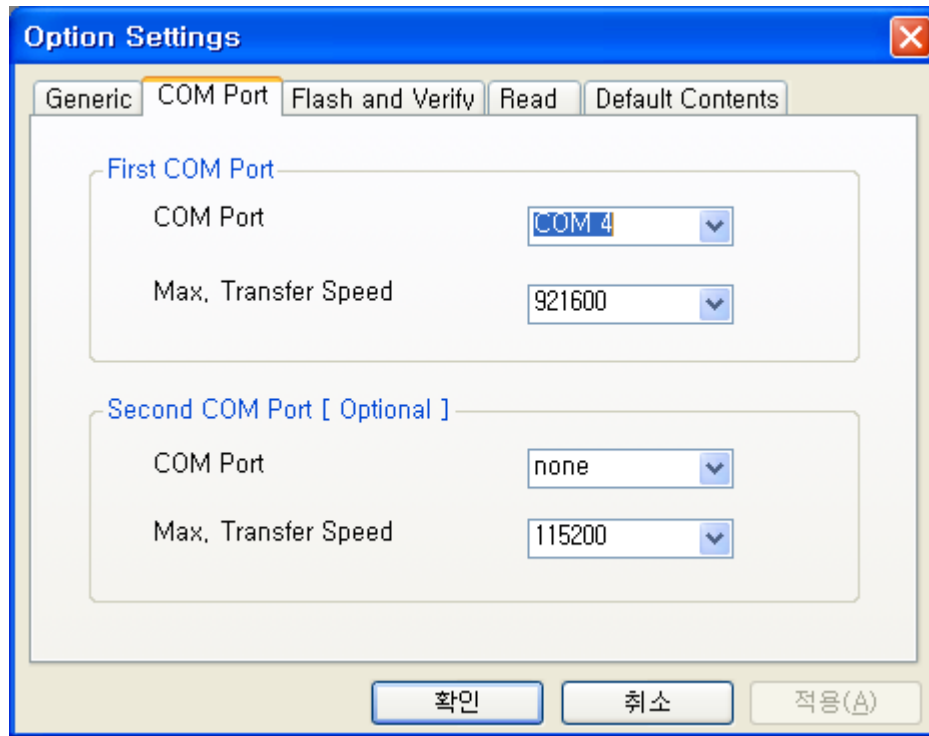
2. Select the "Options" -> "Settings" -> "Generic" -> "Specify hardware platform".

Choose hardware platform for the downloader file setting.

Set the everything else as the default values which are shown below



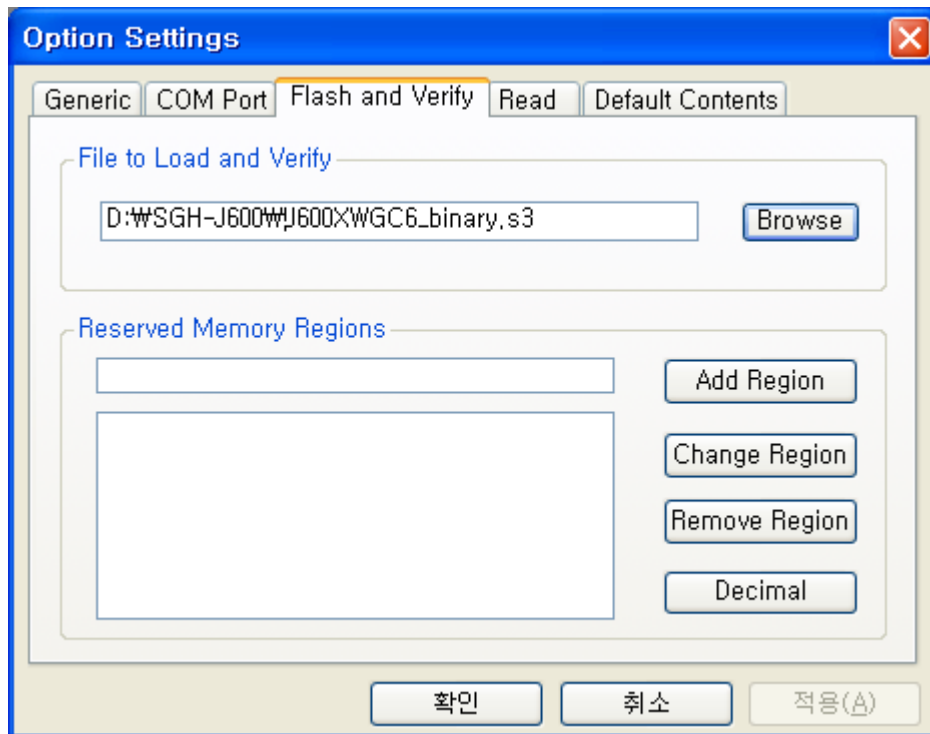
3. Select the **COM port** when the download cable is connected



Up to twelve ports are supported. Additionally you can select the maximum transfer speed OptiFlash will use to communicate with the phone. However, OptiFlash 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 "Flash&Verify" -> "Browse"

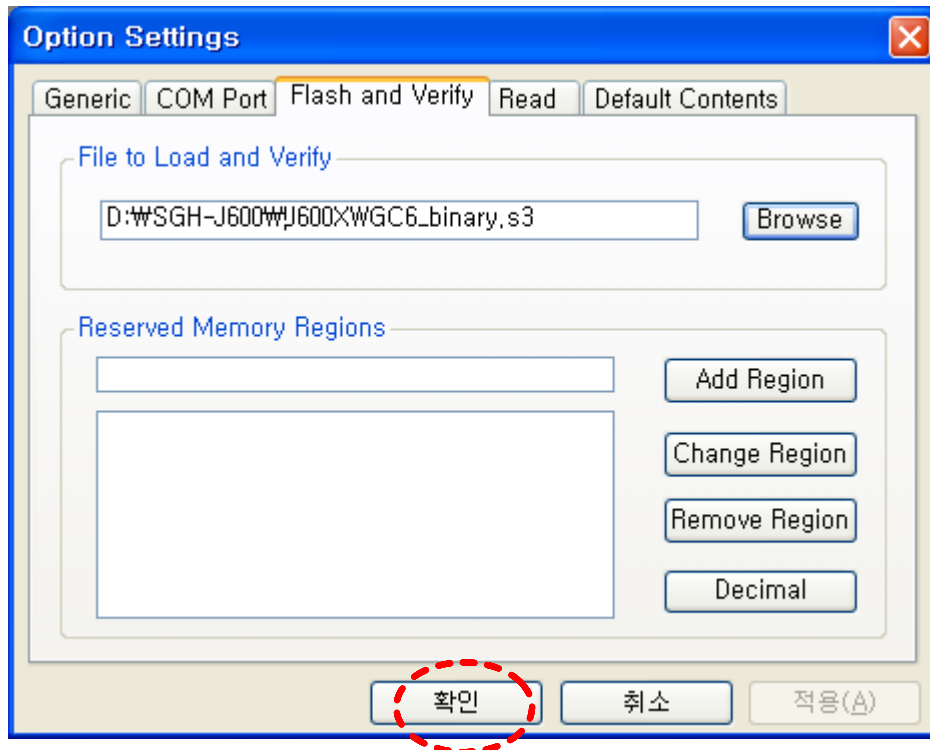
Set the directory path and choose the latest s/w binary, for example "J600XXYY.s3", for the downloader binary setting.



The reserved memory regions are included in optiflash program, platform.def.

5. Click "OK" button then press "Flash".
(Before pressing 'Flash' button, push the button '*and 'END' at the same time. Then press 'Flash'.)

Downloader will upload the binary file as below for the downloading.



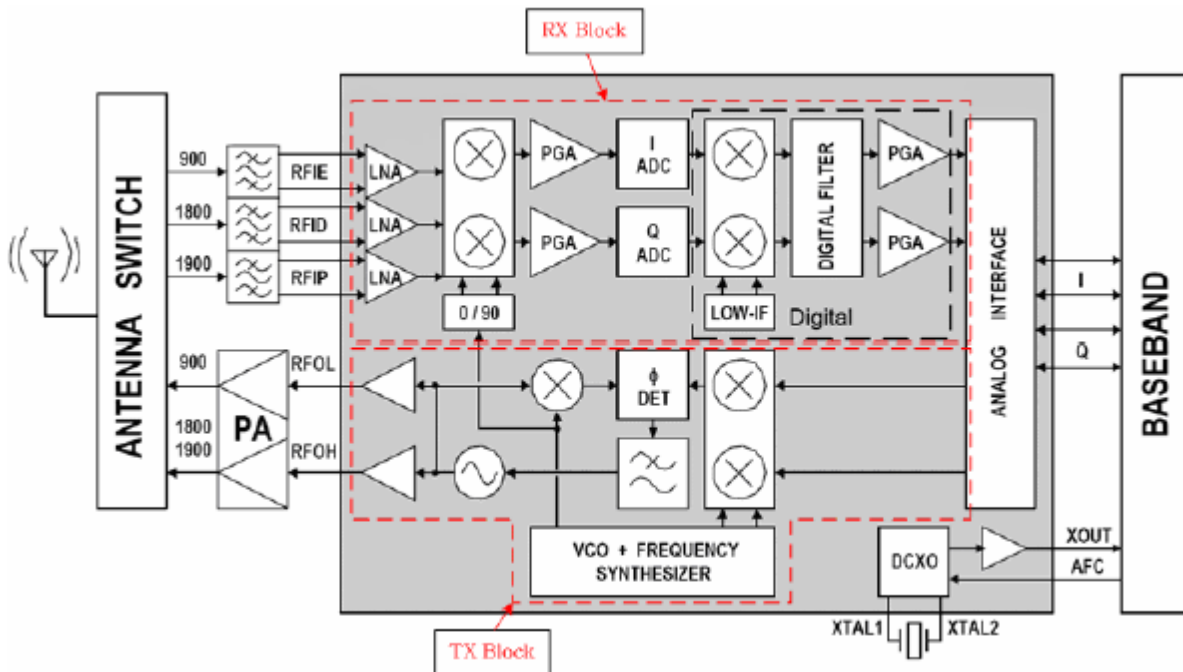
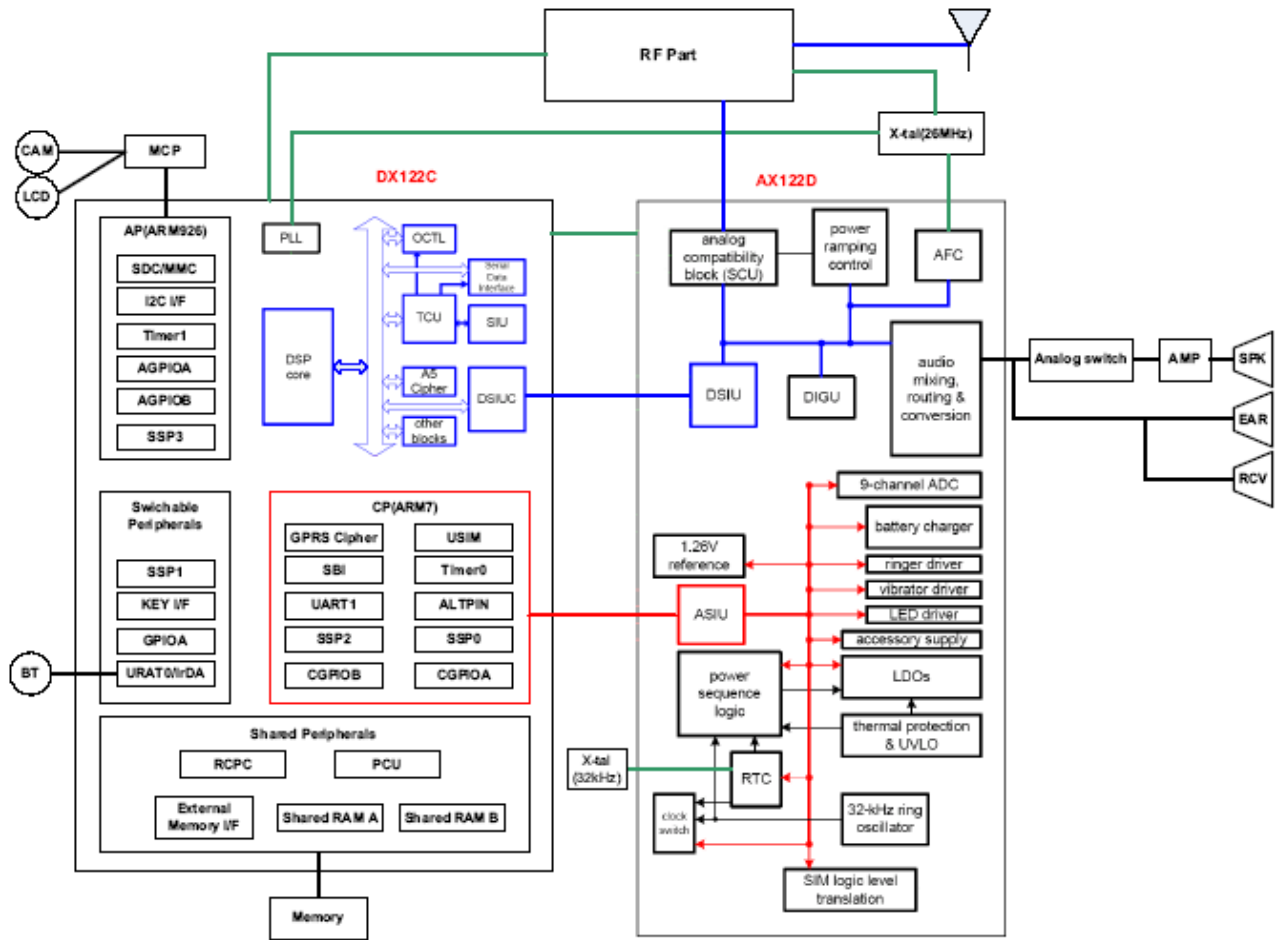
6. When downloading is finished successfully, there is a "All is well" message.
7. After finishing downloading, Certain memory resets should be done to guarantee the normal performance.
8. Confirm the downloaded version name and etc. :

***#1234#**

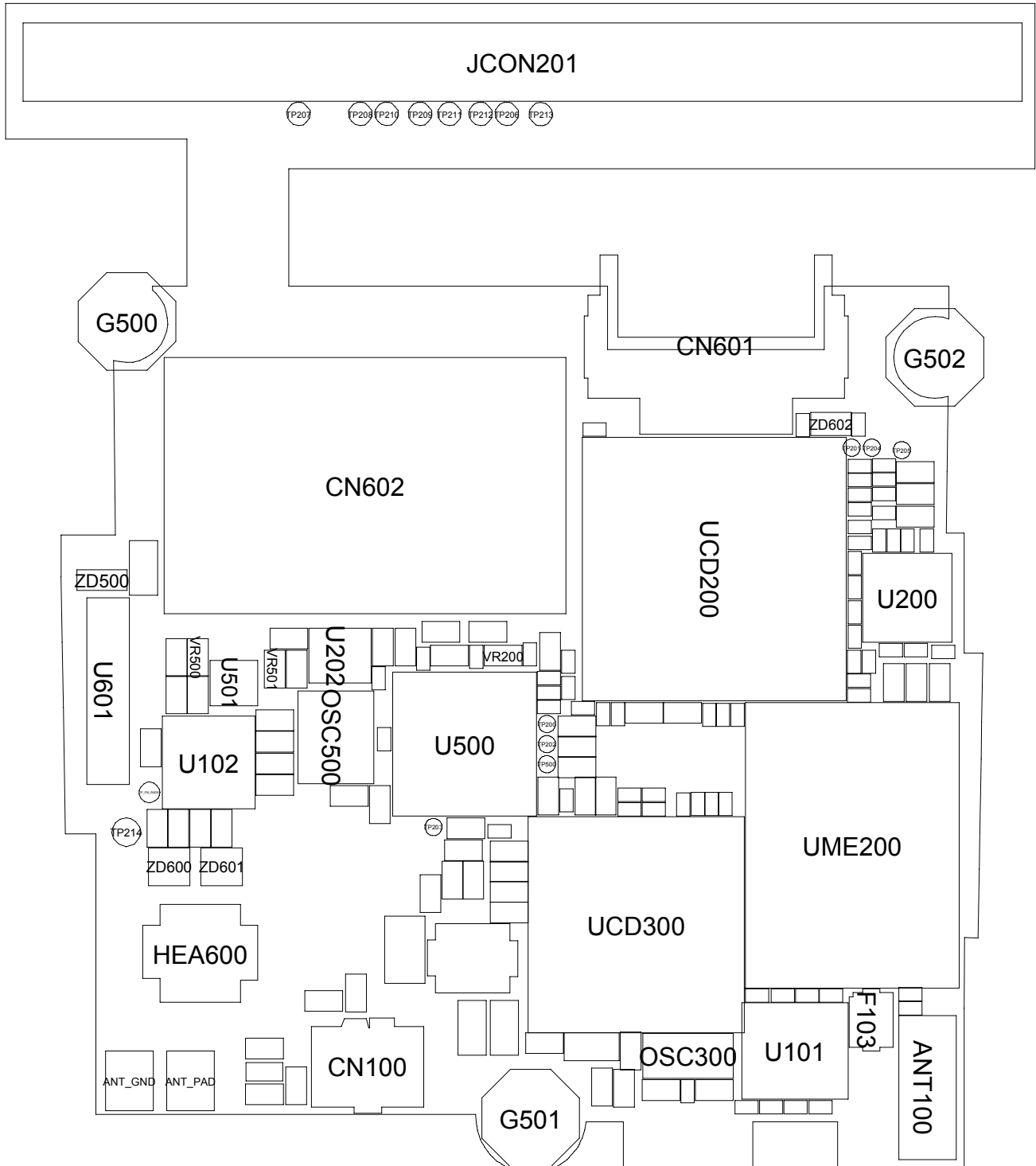
Full Reset :

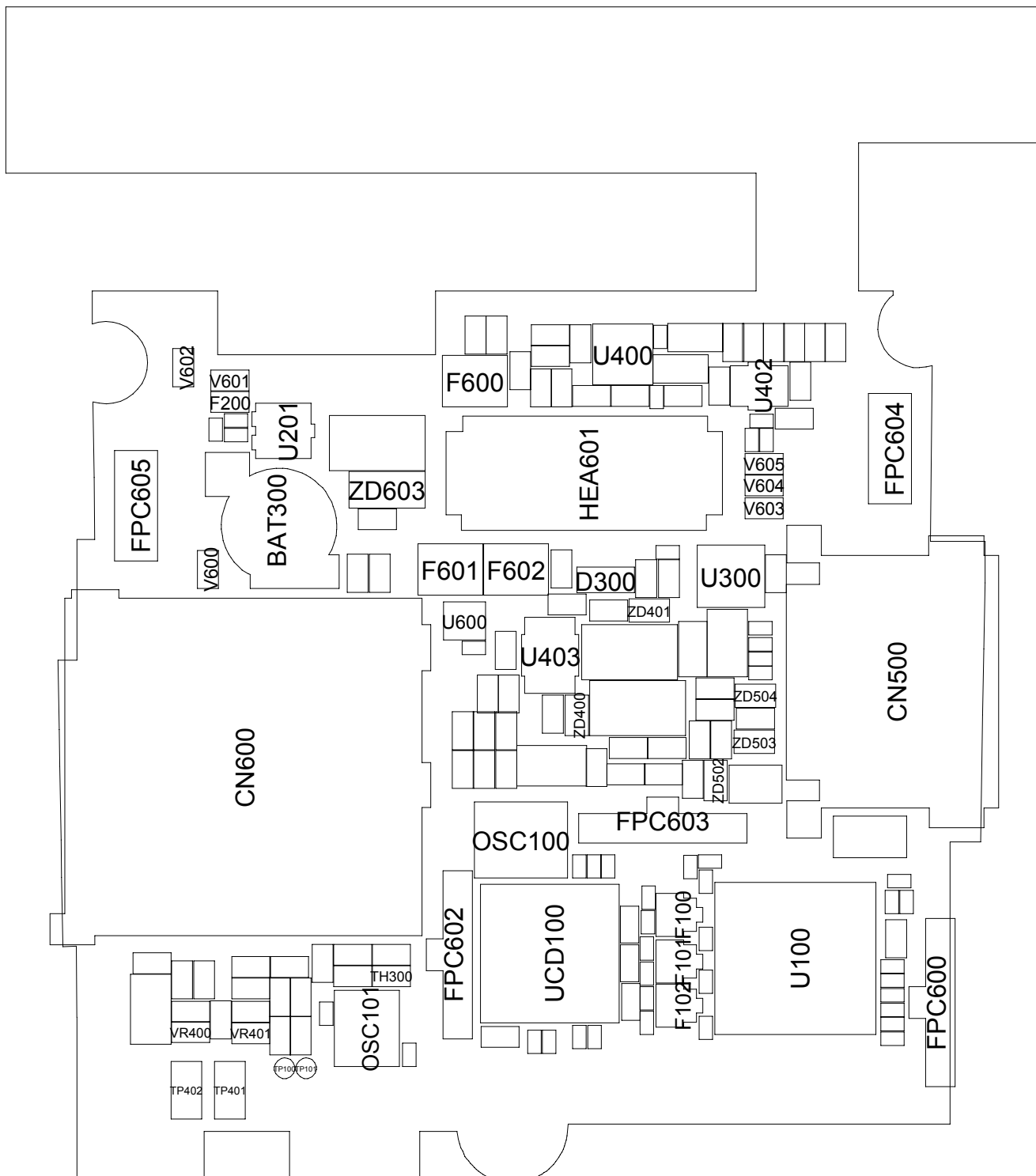
***2767*3855#**

5. Block Diagrams



6. PCB Diagrams





7. MAIN Electrical Parts List

SEC CODE	Design LOC	Discription	STATUS
0403-001411	ZD506	DIODE-ZENER	SA
0406-001210	ZD500	DIODE-TVS	SA
0406-001237	U600	DIODE-TVS	SNA
0406-001237	ZD600	DIODE-TVS	SNA
0406-001237	ZD601	DIODE-TVS	SNA
0406-001241	U501	DIODE-TVS	SA
0406-001254	ZD400	DIODE-TVS	SA
0406-001254	ZD401	DIODE-TVS	SA
0406-001254	ZD502	DIODE-TVS	SA
0406-001254	ZD503	DIODE-TVS	SA
0406-001254	ZD504	DIODE-TVS	SA
0406-001254	ZD505	DIODE-TVS	SA
0801-002995	U301	IC-CMOS LOGIC	SA
1001-001408	U402	IC-ANALOG SWITCH	SA
1001-001410	U401	IC-ANALOG SWITCH	SA
1009-001032	U201	IC-HALL EFFECT S/W	SA
1108-000046	UME200	IC-MCP	SA
1201-002278	U100	IC-POWER AMP	SA
1201-002304	U400	IC-AUDIO AMP	SA
1203-003663	U300	IC-BATTERY	SA
1203-004663	UCP300	IC-POWER SUPERVISOR	SA
1204-002746	U403	IC-TUNER	SA
1205-002272	U200	IC-TRANSCEIVER	SA
1205-003064	U102	IC-DATA COMM./GEN.	SA
1205-003116	UCD100	IC-TRANSCEIVER	SA
1205-003224	UCD200	IC-DATA COMM./GEN.	SA
1404-001165	TH300	THERMISTOR-NTC	SA
1405-001082	VR200	VARISTOR	SA
1405-001082	VR400	VARISTOR	SA
1405-001082	VR401	VARISTOR	SA
1405-001082	VR500	VARISTOR	SA
1405-001082	VR501	VARISTOR	SA
1405-001133	V600	VARISTOR	SA
1405-001133	V601	VARISTOR	SA
1405-001133	V602	VARISTOR	SA
1405-001133	V603	VARISTOR	SA

SEC CODE	Design LOC	Discription	STATUS
1405-001133	V604	VARISTOR	SA
1405-001133	V605	VARISTOR	SA
1405-001177	R210	VARISTOR	SA
2007-000144	R307	R-CHIP	SA
2007-000148	R204	R-CHIP	SA
2007-000153	R412	R-CHIP	SA
2007-000153	R422	R-CHIP	SA
2007-000154	R401	R-CHIP	SA
2007-000154	R402	R-CHIP	SA
2007-000157	R435	R-CHIP	SA
2007-000162	R433	R-CHIP	SA
2007-000162	R434	R-CHIP	SA
2007-000170	R404	R-CHIP	SA
2007-000170	R406	R-CHIP	SA
2007-000171	R308	R-CHIP	SA
2007-000171	R409	R-CHIP	SA
2007-000171	R411	R-CHIP	SA
2007-000171	R414	R-CHIP	SA
2007-000171	R416	R-CHIP	SA
2007-000171	R430	R-CHIP	SA
2007-000171	R432	R-CHIP	SA
2007-000173	R410	R-CHIP	SA
2007-000173	R415	R-CHIP	SA
2007-000174	R413	R-CHIP	SA
2007-000174	R417	R-CHIP	SA
2007-001119	R420	R-CHIP	SA
2007-001290	R501	R-CHIP	SA
2007-003006	R400	R-CHIP	SA
2007-003006	R403	R-CHIP	SA
2007-007308	R304	R-CHIP	SA
2007-007314	R306	R-CHIP	SA
2007-007317	R424	R-CHIP	SA
2007-007318	R408	R-CHIP	SA
2007-007528	R419	R-CHIP	SA
2007-007741	R103	R-CHIP	SA
2007-007766	R407	R-CHIP	SA

SEC CODE	Design LOC	Discription	STATUS
2007-007766	R418	R-CHIP	SA
2007-008045	R221	R-CHIP	SA
2007-008045	R222	R-CHIP	SA
2007-008045	R223	R-CHIP	SA
2007-008045	R224	R-CHIP	SA
2007-008045	R225	R-CHIP	SA
2007-008045	R226	R-CHIP	SA
2007-008045	R227	R-CHIP	SA
2007-008045	R228	R-CHIP	SA
2007-008045	R229	R-CHIP	SA
2007-008045	R230	R-CHIP	SA
2007-008055	R205	R-CHIP	SA
2007-008055	R235	R-CHIP	SA
2007-008055	R428	R-CHIP	SA
2007-008055	R503	R-CHIP	SA
2007-008137	R312	R-CHIP	SA
2007-008419	R505	R-CHIP	SA
2007-008419	R506	R-CHIP	SA
2007-008419	R507	R-CHIP	SA
2007-008419	R508	R-CHIP	SA
2007-008420	R217	R-CHIP	SA
2007-008420	R219	R-CHIP	SA
2007-008478	R209	R-CHIP	SA
2007-008483	R109	R-CHIP	SA
2007-008483	R208	R-CHIP	SA
2007-008483	R309	R-CHIP	SA
2007-008483	R315	R-CHIP	SA
2007-008483	R504	R-CHIP	SA
2007-008516	R102	R-CHIP	SA
2007-008516	R220	R-CHIP	SA
2007-008516	R425	R-CHIP	SA
2007-008516	R426	R-CHIP	SA
2007-008531	R502	R-CHIP	SA
2007-008542	R310	R-CHIP	SA
2007-008542	R427	R-CHIP	SA
2007-008542	R429	R-CHIP	SA

SEC CODE	Design LOC	Discription	STATUS
2007-008542	R431	R-CHIP	SA
2007-008579	R206	R-CHIP	SA
2007-008774	R104	R-CHIP	SA
2007-008774	R201	R-CHIP	SA
2007-008816	R214	R-CHIP	SA
2007-008816	R215	R-CHIP	SA
2007-008816	R313	R-CHIP	SA
2007-009084	R500	R-CHIP	SA
2007-009155	R608	R-CHIP	SNA
2007-009157	R316	R-CHIP	SA
2007-009160	R311	R-CHIP	SA
2007-009168	R314	R-CHIP	SA
2007-009849	R609	R-CHIP	SA
2203-000189	C513	C-CER,CHIP	SA
2203-000233	C431	C-CER,CHIP	SA
2203-000254	C308	C-CER,CHIP	SA
2203-000311	C413	C-CER,CHIP	SA
2203-000311	C414	C-CER,CHIP	SA
2203-000311	C419	C-CER,CHIP	SA
2203-000425	C104	C-CER,CHIP	SA
2203-000425	C506	C-CER,CHIP	SA
2203-000425	C507	C-CER,CHIP	SA
2203-000438	C402	C-CER,CHIP	SA
2203-000438	C403	C-CER,CHIP	SA
2203-000812	C603	C-CER,CHIP	SA
2203-000812	C606	C-CER,CHIP	SA
2203-000812	C607	C-CER,CHIP	SA
2203-002668	C106	C-CER,CHIP	SA
2203-002709	C433	C-CER,CHIP	SA
2203-002709	C435	C-CER,CHIP	SA
2203-005444	R111	C-CER,CHIP	SA
2203-005450	C412	C-CER,CHIP	SA
2203-005450	C418	C-CER,CHIP	SA
2203-005481	C400	C-CER,CHIP	SA
2203-005481	C401	C-CER,CHIP	SA
2203-005482	C122	C-CER,CHIP	SA

SEC CODE	Design LOC	Discription	STATUS
2203-005482	C332	C-CER,CHIP	SA
2203-005482	C517	C-CER,CHIP	SA
2203-005482	C605	C-CER,CHIP	SA
2203-005483	C409	C-CER,CHIP	SA
2203-005483	C417	C-CER,CHIP	SA
2203-005483	C421	C-CER,CHIP	SA
2203-005483	C426	C-CER,CHIP	SA
2203-005682	C107	C-CER,CHIP	SA
2203-005682	C124	C-CER,CHIP	SA
2203-005682	C125	C-CER,CHIP	SA
2203-005682	C126	C-CER,CHIP	SA
2203-005682	C127	C-CER,CHIP	SA
2203-005727	C322	C-CER,CHIP	SA
2203-005727	C323	C-CER,CHIP	SA
2203-005729	C129	C-CER,CHIP	SA
2203-005731	C101	C-CER,CHIP	SA
2203-005736	C109	C-CER,CHIP	SA
2203-005736	C113	C-CER,CHIP	SA
2203-005736	C123	C-CER,CHIP	SA
2203-005736	C220	C-CER,CHIP	SA
2203-005792	C100	C-CER,CHIP	SA
2203-005792	C102	C-CER,CHIP	SA
2203-005792	C138	C-CER,CHIP	SA
2203-006048	C219	C-CER,CHIP	SA
2203-006048	C306	C-CER,CHIP	SA
2203-006048	C407	C-CER,CHIP	SA
2203-006137	C515	C-CER,CHIP	SA
2203-006194	C115	C-CER,CHIP	SA
2203-006194	C116	C-CER,CHIP	SA
2203-006194	C318	C-CER,CHIP	SA
2203-006194	C319	C-CER,CHIP	SA
2203-006194	C320	C-CER,CHIP	SA
2203-006194	C508	C-CER,CHIP	SA
2203-006257	C317	C-CER,CHIP	SA
2203-006305	C142	C-CER,CHIP	SA
2203-006318	C108	C-CER,CHIP	SA

SEC CODE	Design LOC	Discription	STATUS
2203-006318	C110	C-CER,CHIP	SA
2203-006318	C111	C-CER,CHIP	SA
2203-006318	C112	C-CER,CHIP	SA
2203-006318	C114	C-CER,CHIP	SA
2203-006324	C342	C-CER,CHIP	SA
2203-006348	C343	C-CER,CHIP	SA
2203-006423	C117	C-CER,CHIP	SA
2203-006423	C119	C-CER,CHIP	SA
2203-006423	C120	C-CER,CHIP	SA
2203-006423	C130	C-CER,CHIP	SA
2203-006423	C132	C-CER,CHIP	SA
2203-006423	C200	C-CER,CHIP	SA
2203-006423	C202	C-CER,CHIP	SA
2203-006423	C204	C-CER,CHIP	SA
2203-006423	C207	C-CER,CHIP	SA
2203-006423	C208	C-CER,CHIP	SA
2203-006423	C212	C-CER,CHIP	SA
2203-006423	C213	C-CER,CHIP	SA
2203-006423	C214	C-CER,CHIP	SA
2203-006423	C216	C-CER,CHIP	SA
2203-006423	C221	C-CER,CHIP	SA
2203-006423	C222	C-CER,CHIP	SA
2203-006423	C223	C-CER,CHIP	SA
2203-006423	C302	C-CER,CHIP	SA
2203-006423	C303	C-CER,CHIP	SA
2203-006423	C304	C-CER,CHIP	SA
2203-006423	C305	C-CER,CHIP	SA
2203-006423	C310	C-CER,CHIP	SA
2203-006423	C314	C-CER,CHIP	SA
2203-006423	C344	C-CER,CHIP	SA
2203-006423	C500	C-CER,CHIP	SA
2203-006423	C502	C-CER,CHIP	SA
2203-006423	C504	C-CER,CHIP	SA
2203-006426	C313	C-CER,CHIP	SNA
2203-006474	C315	C-CER,CHIP	SA
2203-006556	C103	C-CER,CHIP	SA

SEC CODE	Design LOC	Discription	STATUS
2203-006556	C206	C-CER,CHIP	SA
2203-006556	C218	C-CER,CHIP	SA
2203-006562	C316	C-CER,CHIP	SA
2203-006562	C321	C-CER,CHIP	SA
2203-006562	C324	C-CER,CHIP	SA
2203-006562	C329	C-CER,CHIP	SA
2203-006562	C336	C-CER,CHIP	SA
2203-006562	C337	C-CER,CHIP	SA
2203-006562	C338	C-CER,CHIP	SA
2203-006562	C339	C-CER,CHIP	SA
2203-006562	C405	C-CER,CHIP	SA
2203-006562	C410	C-CER,CHIP	SA
2203-006562	C415	C-CER,CHIP	SA
2203-006562	C425	C-CER,CHIP	SA
2203-006562	C430	C-CER,CHIP	SA
2203-006562	C432	C-CER,CHIP	SA
2203-006562	C434	C-CER,CHIP	SA
2203-006562	C501	C-CER,CHIP	SA
2203-006562	C503	C-CER,CHIP	SA
2203-006562	C600	C-CER,CHIP	SA
2203-006648	C118	C-CER,CHIP	SA
2203-006674	C143	C-CER,CHIP	SNA
2203-006824	C325	C-CER,CHIP	SA
2203-006824	C330	C-CER,CHIP	SA
2203-006824	C341	C-CER,CHIP	SA
2203-006838	C215	C-CER,CHIP	SA
2203-006838	C312	C-CER,CHIP	SA
2203-006838	C333	C-CER,CHIP	SA
2203-006838	C334	C-CER,CHIP	SA
2203-006838	C335	C-CER,CHIP	SA
2203-006838	C340	C-CER,CHIP	SA
2203-006838	C505	C-CER,CHIP	SA
2203-006842	C602	C-CER,CHIP	SA
2203-006979	C128	C-CER,CHIP	SA
2203-006979	C131	C-CER,CHIP	SA
2203-006979	C201	C-CER,CHIP	SA

SEC CODE	Design LOC	Discription	STATUS
2203-006979	C209	C-CER,CHIP	SA
2203-006979	C331	C-CER,CHIP	SA
2404-001225	TA401	C-TA,CHIP	SA
2404-001225	TA403	C-TA,CHIP	SA
2404-001374	TA100	C-TA,CHIP	SA
2404-001406	TA500	C-TA,CHIP	SA
2404-001414	TA404	C-TA,CHIP	SA
2404-001414	TA405	C-TA,CHIP	SA
2404-001478	TA400	C-TA,CHIP	SA
2404-001478	TA402	C-TA,CHIP	SA
2703-001752	L101	INDUCTOR-SMD	SA
2703-002368	L108	INDUCTOR-SMD	SA
2703-002485	L100	INDUCTOR-SMD	SA
2703-002603	L102	INDUCTOR-SMD	SA
2703-002603	L104	INDUCTOR-SMD	SA
2703-002782	L300	INDUCTOR-SMD	SA
2703-002795	L107	INDUCTOR-SMD	SNA
2703-002900	L106	INDUCTOR-SMD	SA
2703-002906	L103	INDUCTOR-SMD	SA
2703-002906	L105	INDUCTOR-SMD	SA
2703-003196	L500	INDUCTOR-SMD	SA
2801-004455	OSC100	CRYSTAL-SMD	SA
2801-004466	OSC300	CRYSTAL-SMD	SA
2801-004560	OSC101	CRYSTAL-SMD	SA
2801-004573	OSC500	CRYSTAL-SMD	SA
2901-001286	F600	FILTER-EMI SMD	SA
2901-001286	F601	FILTER-EMI SMD	SA
2901-001286	F602	FILTER-EMI SMD	SA
2904-001592	F100	FILTER-SAW	SA
2904-001599	F101	FILTER-SAW	SA
2904-001600	F102	FILTER-SAW	SA
2909-001283	F103	FILTER-LC	SA
3301-001208	L400	BEAD-SMD	SA
3301-001208	L401	BEAD-SMD	SA
3301-001342	F200	BEAD-SMD	SA
3301-001659	L402	BEAD-SMD	SA

SEC CODE	Design LOC	Discription	STATUS
3301-001659	L403	BEAD-SMD	SA
3301-001659	L404	BEAD-SMD	SA
3301-001912	L405	BEAD-SMD	SA
3301-001912	L406	BEAD-SMD	SA
3301-001912	L407	BEAD-SMD	SA
3301-001913	L600	BEAD-SMD	SA
3705-001421	RFS100	CONNECTOR-COAXIAL	SA
3709-001344	CD600	CONNECTOR-CARD EDGE	SA
3709-001487	SIM602	CONNECTOR-CARD EDGE	SA
3710-002465	IFC501	SOCKET-INTERFACE	SA
3711-005550	HEA600	HEADER-BOARD TO BOARD	SA
3711-006508	HEA601	HEADER-BOARD TO BOARD	SA
3711-006514	BTC500	HEADER-BATTERY	SA
4202-001310	ANT100	ANTENNA-CHIP	SA
4302-001130	BAT300	BATTERY-LI(2ND)	SA
GH13-00044A	U500	IC ASIC-SGHE490	SA
GH70-02367A	FPC600	ICT-ON-BOARD CLIP	SA
GH70-02367A	FPC602	ICT-ON-BOARD CLIP	SA
GH70-02367A	FPC603	ICT-ON-BOARD CLIP	SA

8. Reference data

8-1. 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

9. Safety Precautions

9-1. Repair Precaution

- Repair in Shield Box, during detailed tuning.
Take specially care of tuning or test,
because specipcty of cellular phone is sensitive for surrounding interference(RF noise).
- Be careful to use a kind of magnetic object or tool,
because performance of parts is damaged by the influence of 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.

9-2. 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.

10. Product Function

Main Function

- Camera and camcorder
- Music player
- FM radio
- Java
- Offline mode
- Bluetooth
- Web browser
- Multimedia Message Service
- SOS message