

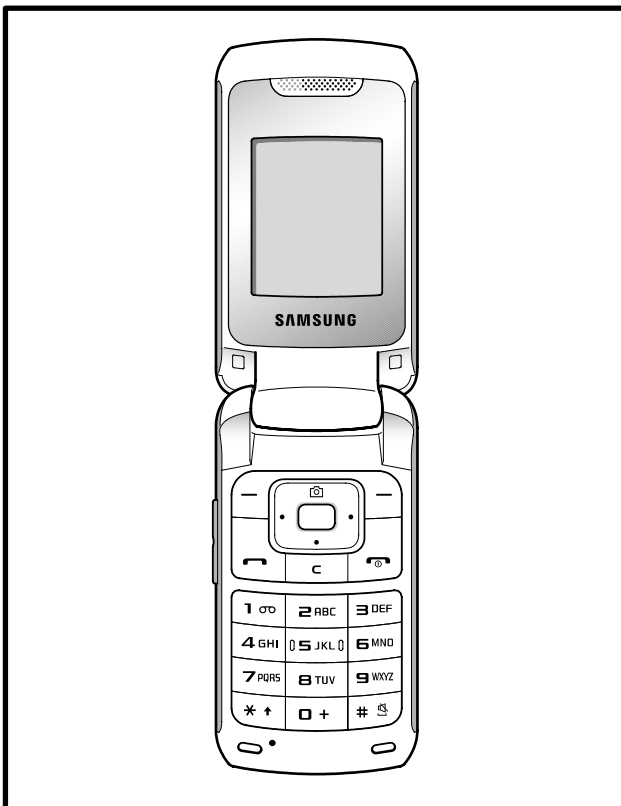
SAMSUNG

UMTS TELEPHONE

SGH-M310

SERVICE *Manual*

UMTS TELEPHONE



CONTENTS

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

**SAMSUNG
ELECTRONICS**



GSPN (Global Service Partner Network)

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

1. Safety Precautions

1-1. Repair Precaution

- Repair in Shield Box, during detailed tuning.
Take specially care of tuning or test,
because 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.

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/DCS1800/PCS1900 General Specification

	EGSM 850 Phase 2	EGSM 900 Phase 2	DCS1800 Phase 1	PCS1900
Freq. Band[MHz] Uplink/Downlink	824~849 869~894	880~915 925~960	1710~1785 1805~1880	1850~1910 1930~1990
ARFCN range	128 ~251	0~124 & 975~1023	512~885	512~810
Tx/Rx spacing	45 MHz	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	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	576.9 us 4.615 ms
Modulation	0.3 GMSK	0.3 GMSK	0.3 GMSK	0.3 GMSK
MS Power	33 dBm~5 dBm	33 dBm~5 dBm	30 dBm~0 dBm	30 dBm~0 dBm
Power Class	5 pcl ~ 19 pcl	5 pcl ~ 19 pcl	0 pcl ~ 15 pcl	0 pcl ~ 15 pcl
Sensitivity	-102 dBm	-102 dBm	-100 dBm	-100 dBm
TDMA Mux	8	8	8	8
Cell Radius	35 Km	35 Km	2 Km	-

2-2. GSM TX power class

TX Power control level	GSM850/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. Product Function

Main Function

- SDN (Service Dialling Numbers)
- Music player
- SOS message
- FM radio

4. Array course control

Test Jig (GH80-03312A)



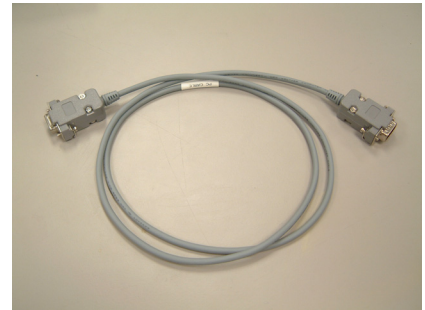
**RF Test Cable
(GH39-00985A)**



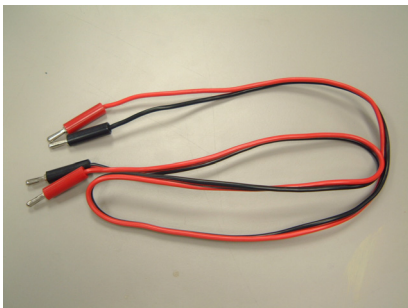
**Test Cable
(GH39-00895A / GH39-00892A)**



Serial Cable



Power Supply Cable



**DATA CABLE
(GH39-00859B)**



**TA
(GH44-01702A)**



Software Downloading

4-1. Downloading Binary Files

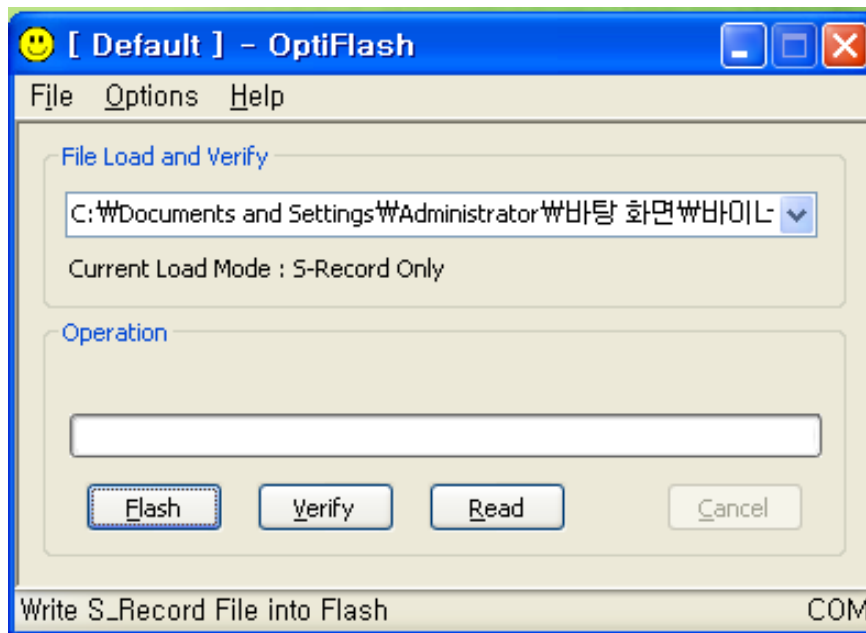
- Three binary files for downloading M310
 - M310XXYY.s3 : Main source code binary

4-2. Pre-requisite for Downloading

- Downloader Program([OptiFlash.exe](#))
- M310 Mobile Phone
- Data Cable
- Binary files

4-3. S/W Downloader Program

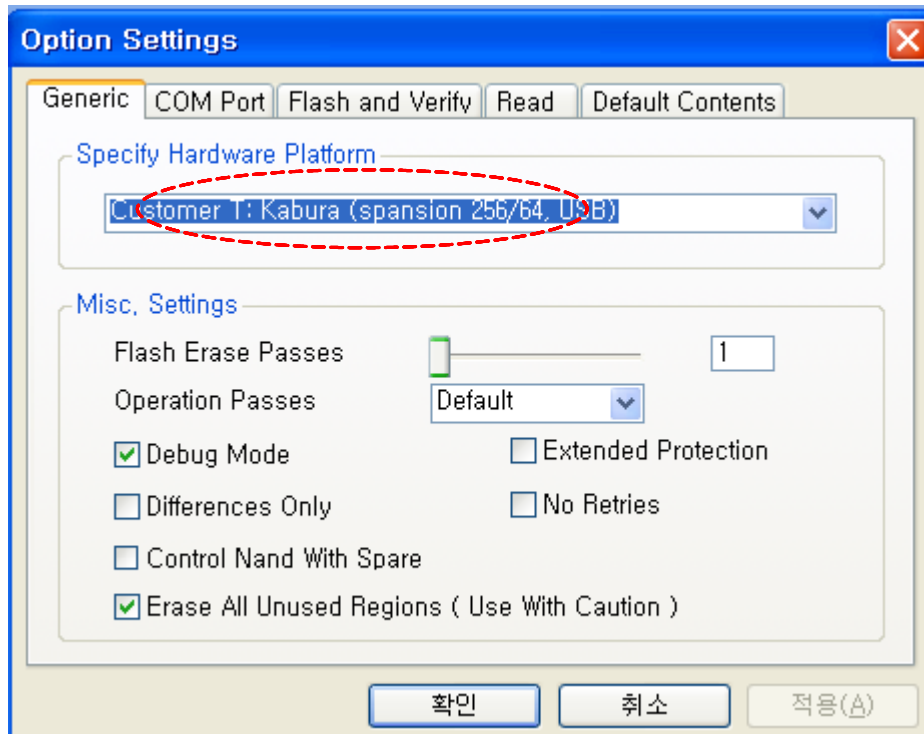
1. Load the binary download program by executing the "Optiflash.exe"



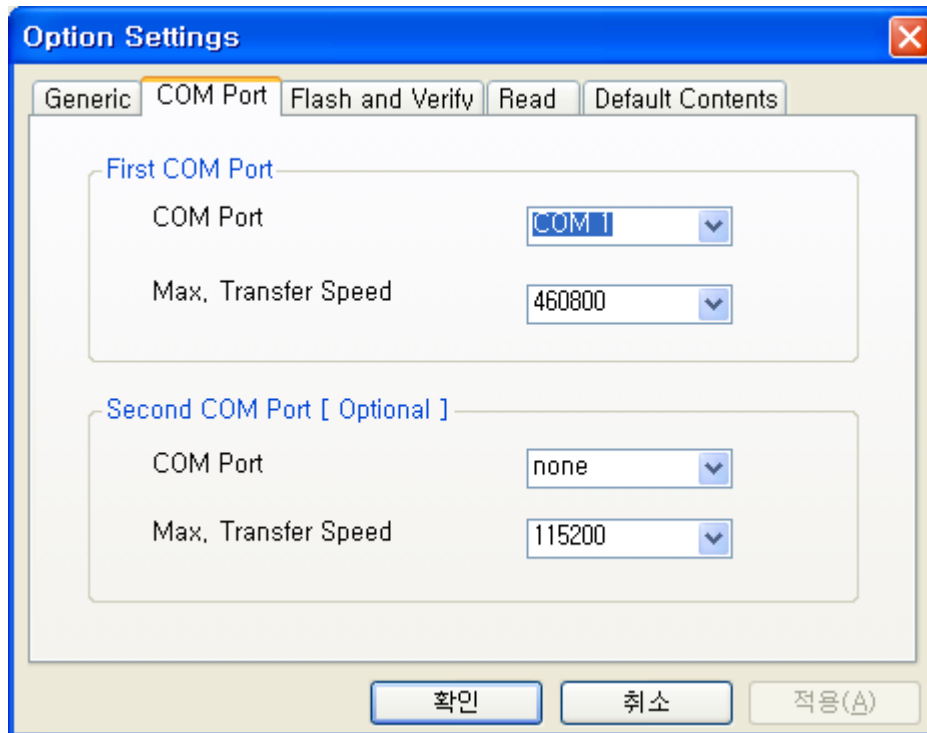
2. Select the "Options" → "Settings" → "Generic" → "Specify hardware platform".

Choose hardware platform for the downloader file setting.

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



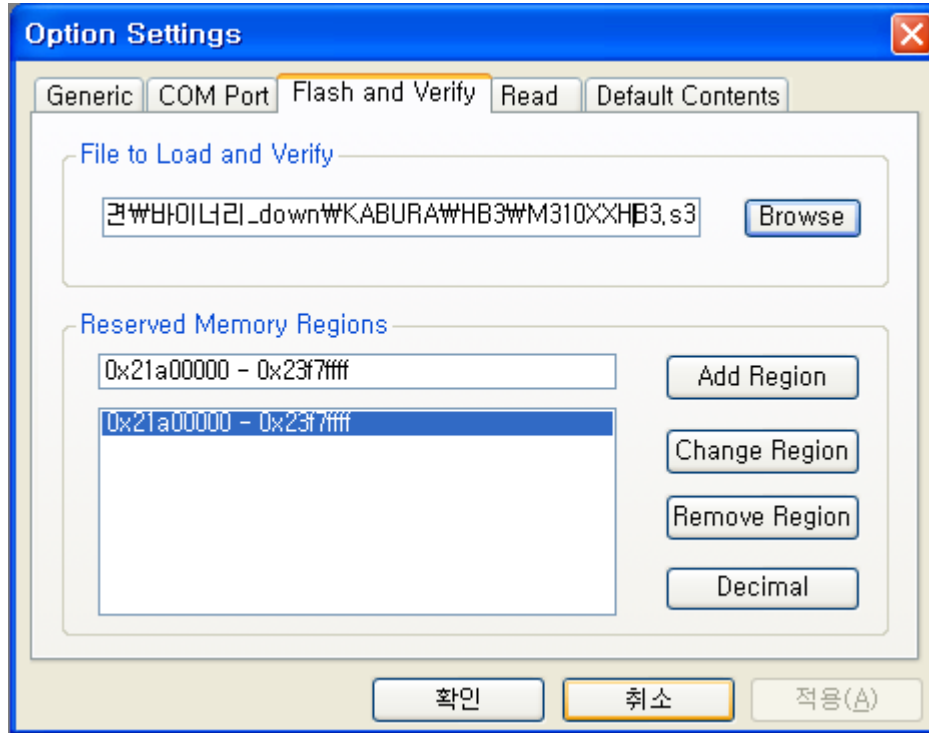
3. Select the **COM port** when the download cable is connected



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"

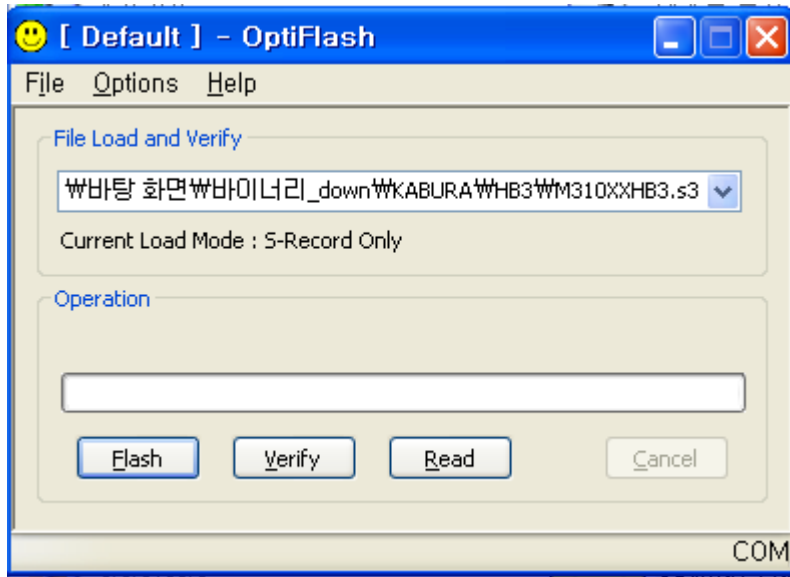
Set the directory path and choose the lastet s/w binary, for example "M3100XXYY.s3", for the downloader binary setting.



Make sure that not to change the reserved memory regions.
In case of M310 the reserved regions are :
- 0x21a00000 - 0x23f7ffff

- 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.



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

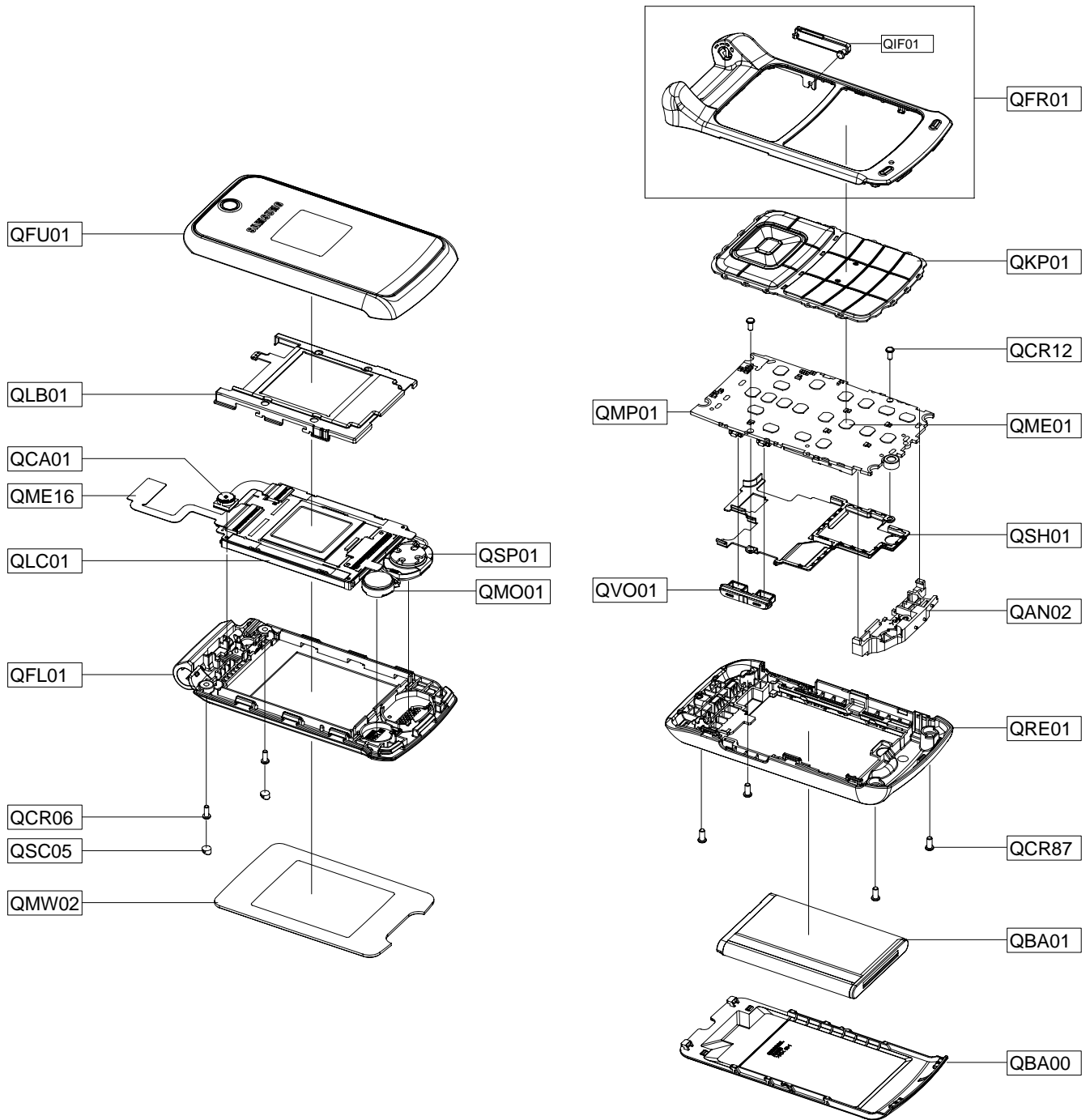
***#1234#**

Full Reset :

***2767*3855#**

5. Exploded View and Parts List

5-1. Cellular phone Exploded View



5-2. Cellular phone Parts list

Design LOC	Description	SEC CODE
QAN02	INTENNA-SGHM310	GH42-01525A
QBA00	PMO COVER-BATTERY	GH72-46950A
QBA01	INNER BATTERY PACK-800MAH,BLK,	GH43-02483A
QCA01	CAMERA MODULE-SGHM310	GH59-05522A
QCR06	SCREW-MACHINE	6001-001155
QCR12	SCREW-MACHINE	6001-001530
QCR87	SCREW-TAPPING	6002-001412
QFL01	ASSY CASE-LOWER	GH98-07903A
QFR01	ASSY CASE-FRONT	GH98-07901A
QFU01	ASSY CASE-UPPER_VODA	GH98-08065A
QIF01	PMO COVER-IF	GH72-46951A
QKP01	ASSY KEYPAD-(XEF/AAA)	GH98-07900A
QLB01	IPR BRACKET-LCD	GH70-03363A
QLC01	LCD-MODULE SGHM310	GH07-01264A
QME01	DOME SHEET-SGHM310	GH59-05523A
QME16	UNIT-SGHM310 CON TO CON	GH59-05524A
QMI01	MICROPHONE-ASSY-SGHM310	GH30-00471A
QMO01	MOTOR DC-SGHS342I	GH31-00119A
QMP01	PBA MAIN-SGHM310V	GH92-04554A
QMW02	PMO WINDOW-MAIN_VODA	GH72-47304A
QRE01	ASSY CASE-REAR	GH98-07904A
QSC05	RMO COVER-LOWER SCREW	GH73-11535A
QSH01	ASSY COVER-SHIELD CAN	GH98-07899A
QSP01	SPEAKER	3001-002351
QVO01	PMO KEY-VOL	GH72-46949A

6. MAIN Electrical Parts List

SEC CODE	Design LOC	Discription
0403-001547	ZD507	DIODE-ZENER
0406-001208	ZD202	DIODE-TVS
0406-001208	ZD508	DIODE-TVS
0406-001208	ZD601	DIODE-TVS
0406-001254	ZD200	DIODE-TVS
0406-001254	ZD201	DIODE-TVS
0406-001254	ZD400	DIODE-TVS
0406-001254	ZD401	DIODE-TVS
0406-001254	ZD600	DIODE-TVS
0601-002361	LED600	LED
0601-002361	LED601	LED
0601-002361	LED602	LED
0601-002361	LED603	LED
0601-002361	LED604	LED
0601-002361	LED605	LED
1009-001035	U201	IC-HALL EFFECT S/W
1108-000166	UME200	IC-MCP
1201-002356	U400	IC-AUDIO AMP
1201-002706	PAM100	IC-POWER AMP
1203-004340	U501	IC-MULTI REG.
1203-004819	U502	IC-POSI.FIXED REG.
1203-005005	U301	IC-BATTERY
1203-005205	UCD300	IC-POWER SUPERVISOR
1204-002746	U401	IC-TUNER
1205-002272	U200	IC-TRANSCEIVER
1205-003098	RFT100	IC-TRANSCEIVER
1205-003235	U100	IC-DATA COMM./GEN.
1205-003465	UCP200	IC-COMM. CONTROLLER
1404-001165	TH300	THERMISTOR-NTC
1405-001082	C216	VARISTOR
1405-001082	C217	VARISTOR
1405-001082	U607	VARISTOR
1405-001082	V1	VARISTOR
1405-001082	V2	VARISTOR
1405-001082	V4	VARISTOR
1405-001082	VR300	VARISTOR
1405-001082	VR400	VARISTOR

MAIN Electrical Parts List

1405-001082	VR401	VARISTOR
1405-001082	VR501	VARISTOR
1405-001082	VR502	VARISTOR
1405-001082	VR503	VARISTOR
1405-001082	VR504	VARISTOR
1405-001082	VR512	VARISTOR
1405-001110	VR301	VARISTOR
1405-001110	VR508	VARISTOR
1405-001110	VR509	VARISTOR
1405-001110	VR510	VARISTOR
1405-001110	VR511	VARISTOR
1405-001133	V3	VARISTOR
1405-001133	VR505	VARISTOR
1405-001133	VR507	VARISTOR
2007-000138	R515	R-CHIP
2007-000140	R507	R-CHIP
2007-000140	R508	R-CHIP
2007-000140	R509	R-CHIP
2007-000140	R511	R-CHIP
2007-000140	R522	R-CHIP
2007-000141	R600	R-CHIP
2007-000141	R602	R-CHIP
2007-000143	R206	R-CHIP
2007-000143	R214	R-CHIP
2007-000143	R510	R-CHIP
2007-000144	R309	R-CHIP
2007-000147	R209	R-CHIP
2007-000147	R212	R-CHIP
2007-000148	R102	R-CHIP
2007-000148	R110	R-CHIP
2007-000148	R222	R-CHIP
2007-000148	R300	R-CHIP
2007-000148	R313	R-CHIP
2007-000153	R412	R-CHIP
2007-000153	R418	R-CHIP
2007-000157	R122	R-CHIP
2007-000157	R201	R-CHIP
2007-000157	R223	R-CHIP

2007-000162	R120	R-CHIP
2007-000162	R202	R-CHIP
2007-000162	R215	R-CHIP
2007-000162	R317	R-CHIP
2007-000162	R321	R-CHIP
2007-000162	R402	R-CHIP
2007-000162	R403	R-CHIP
2007-000162	R518	R-CHIP
2007-000162	R601	R-CHIP
2007-000169	R111	R-CHIP
2007-000171	R113	R-CHIP
2007-000171	R207	R-CHIP
2007-000171	R216	R-CHIP
2007-000171	R227	R-CHIP
2007-000171	R228	R-CHIP
2007-000171	R229	R-CHIP
2007-000171	R230	R-CHIP
2007-000171	R324	R-CHIP
2007-000171	R326	R-CHIP
2007-000171	R327	R-CHIP
2007-000171	R328	R-CHIP
2007-000171	R329	R-CHIP
2007-000171	R427	R-CHIP
2007-000171	R516	R-CHIP
2007-000171	R603	R-CHIP
2007-000171	R604	R-CHIP
2007-000171	R614	R-CHIP
2007-000174	R105	R-CHIP
2007-000242	R203	R-CHIP
2007-000758	R224	R-CHIP
2007-000758	R225	R-CHIP
2007-000775	R318	R-CHIP
2007-000775	R517	R-CHIP
2007-001217	R116	R-CHIP
2007-001292	R204	R-CHIP
2007-001292	R205	R-CHIP
2007-001292	R505	R-CHIP
2007-001292	R506	R-CHIP

MAIN Electrical Parts List

2007-001298	R123	R-CHIP
2007-001339	R504	R-CHIP
2007-001339	R523	R-CHIP
2007-003001	R413	R-CHIP
2007-003001	R415	R-CHIP
2007-003015	R115	R-CHIP
2007-003015	R200	R-CHIP
2007-007193	R605	R-CHIP
2007-007193	R606	R-CHIP
2007-007193	R607	R-CHIP
2007-007193	R608	R-CHIP
2007-007193	R611	R-CHIP
2007-007193	R612	R-CHIP
2007-007308	R301	R-CHIP
2007-007314	R302	R-CHIP
2007-007317	R409	R-CHIP
2007-007317	R414	R-CHIP
2007-007317	R416	R-CHIP
2007-007317	R419	R-CHIP
2007-008275	R316	R-CHIP
2203-000233	C109	C-CER,CHIP
2203-000233	C140	C-CER,CHIP
2203-000233	C218	C-CER,CHIP
2203-000233	C220	C-CER,CHIP
2203-000233	C222	C-CER,CHIP
2203-000254	C124	C-CER,CHIP
2203-000254	C129	C-CER,CHIP
2203-000254	C141	C-CER,CHIP
2203-000254	C149	C-CER,CHIP
2203-000254	C150	C-CER,CHIP
2203-000254	C207	C-CER,CHIP
2203-000254	C210	C-CER,CHIP
2203-000254	C219	C-CER,CHIP
2203-000254	C322	C-CER,CHIP
2203-000254	C323	C-CER,CHIP
2203-000254	C324	C-CER,CHIP
2203-000254	C402	C-CER,CHIP
2203-000254	C403	C-CER,CHIP

2203-000278	C108	C-CER,CHIP
2203-000278	C112	C-CER,CHIP
2203-000330	C325	C-CER,CHIP
2203-000330	C326	C-CER,CHIP
2203-000386	C151	C-CER,CHIP
2203-000386	C601	C-CER,CHIP
2203-000386	C603	C-CER,CHIP
2203-000386	C605	C-CER,CHIP
2203-000386	C607	C-CER,CHIP
2203-000386	C608	C-CER,CHIP
2203-000386	C609	C-CER,CHIP
2203-000386	C610	C-CER,CHIP
2203-000386	C612	C-CER,CHIP
2203-000425	C106	C-CER,CHIP
2203-000425	C107	C-CER,CHIP
2203-000438	C308	C-CER,CHIP
2203-000438	C334	C-CER,CHIP
2203-000627	C122	C-CER,CHIP
2203-000627	C400	C-CER,CHIP
2203-000812	C110	C-CER,CHIP
2203-000812	C111	C-CER,CHIP
2203-000812	C113	C-CER,CHIP
2203-000812	C114	C-CER,CHIP
2203-000812	C127	C-CER,CHIP
2203-000812	C600	C-CER,CHIP
2203-000812	C602	C-CER,CHIP
2203-000812	C604	C-CER,CHIP
2203-000812	C606	C-CER,CHIP
2203-000812	C611	C-CER,CHIP
2203-000812	C613	C-CER,CHIP
2203-000812	C614	C-CER,CHIP
2203-000812	C615	C-CER,CHIP
2203-000812	C616	C-CER,CHIP
2203-000812	C617	C-CER,CHIP
2203-000812	C619	C-CER,CHIP
2203-000812	C620	C-CER,CHIP
2203-000812	C621	C-CER,CHIP
2203-000854	C116	C-CER,CHIP

MAIN Electrical Parts List

2203-000854	C123	C-CER,CHIP
2203-000854	C125	C-CER,CHIP
2203-000940	C630	C-CER,CHIP
2203-000995	C100	C-CER,CHIP
2203-000995	C133	C-CER,CHIP
2203-000995	C202	C-CER,CHIP
2203-000995	C632	C-CER,CHIP
2203-000995	C633	C-CER,CHIP
2203-000995	C634	C-CER,CHIP
2203-001124	C312	C-CER,CHIP
2203-002709	C135	C-CER,CHIP
2203-002709	C205	C-CER,CHIP
2203-002709	C214	C-CER,CHIP
2203-002709	C215	C-CER,CHIP
2203-002709	C223	C-CER,CHIP
2203-002709	C224	C-CER,CHIP
2203-002709	C301	C-CER,CHIP
2203-002709	C302	C-CER,CHIP
2203-002709	C303	C-CER,CHIP
2203-002709	C304	C-CER,CHIP
2203-002709	C306	C-CER,CHIP
2203-002709	C307	C-CER,CHIP
2203-002709	C314	C-CER,CHIP
2203-002709	C315	C-CER,CHIP
2203-002709	C316	C-CER,CHIP
2203-002709	C321	C-CER,CHIP
2203-002709	C337	C-CER,CHIP
2203-005050	C142	C-CER,CHIP
2203-005055	C130	C-CER,CHIP
2203-005055	C156	C-CER,CHIP
2203-005057	C131	C-CER,CHIP
2203-005249	C332	C-CER,CHIP
2203-005482	C104	C-CER,CHIP
2203-005482	C139	C-CER,CHIP
2203-005482	C200	C-CER,CHIP
2203-005482	C201	C-CER,CHIP
2203-005482	C206	C-CER,CHIP
2203-005482	C208	C-CER,CHIP

2203-005482	C209	C-CER,CHIP
2203-005482	C211	C-CER,CHIP
2203-005482	C212	C-CER,CHIP
2203-005482	C213	C-CER,CHIP
2203-005482	C521	C-CER,CHIP
2203-005483	C408	C-CER,CHIP
2203-005483	C411	C-CER,CHIP
2203-005483	C416	C-CER,CHIP
2203-005483	C421	C-CER,CHIP
2203-006047	C137	C-CER,CHIP
2203-006048	C117	C-CER,CHIP
2203-006048	C221	C-CER,CHIP
2203-006048	C328	C-CER,CHIP
2203-006048	C405	C-CER,CHIP
2203-006048	C406	C-CER,CHIP
2203-006048	C407	C-CER,CHIP
2203-006048	C515	C-CER,CHIP
2203-006048	C518	C-CER,CHIP
2203-006048	C627	C-CER,CHIP
2203-006137	C412	C-CER,CHIP
2203-006137	C413	C-CER,CHIP
2203-006137	C512	C-CER,CHIP
2203-006257	C329	C-CER,CHIP
2203-006257	C631	C-CER,CHIP
2203-006260	C136	C-CER,CHIP
2203-006324	C331	C-CER,CHIP
2203-006348	C335	C-CER,CHIP
2203-006361	C105	C-CER,CHIP
2203-006361	C300	C-CER,CHIP
2203-006361	C305	C-CER,CHIP
2203-006399	C330	C-CER,CHIP
2203-006474	C327	C-CER,CHIP
2203-006562	C309	C-CER,CHIP
2203-006562	C310	C-CER,CHIP
2203-006562	C313	C-CER,CHIP
2203-006562	C317	C-CER,CHIP
2203-006562	C318	C-CER,CHIP
2203-006562	C319	C-CER,CHIP

MAIN Electrical Parts List

2203-006562	C410	C-CER,CHIP
2203-006562	C420	C-CER,CHIP
2203-006562	C500	C-CER,CHIP
2203-006562	C504	C-CER,CHIP
2203-006562	C516	C-CER,CHIP
2203-006562	C517	C-CER,CHIP
2203-006626	C128	C-CER,CHIP
2203-006681	C138	C-CER,CHIP
2203-006681	C148	C-CER,CHIP
2203-006681	C422	C-CER,CHIP
2203-006681	C640	C-CER,CHIP
2203-006838	C203	C-CER,CHIP
2203-006838	C311	C-CER,CHIP
2203-006838	C320	C-CER,CHIP
2203-006838	C418	C-CER,CHIP
2203-006838	C503	C-CER,CHIP
2203-006838	C505	C-CER,CHIP
2203-006838	C506	C-CER,CHIP
2203-006838	C618	C-CER,CHIP
2203-006838	C623	C-CER,CHIP
2203-006838	C624	C-CER,CHIP
2203-006838	C625	C-CER,CHIP
2203-006838	C628	C-CER,CHIP
2203-006841	C333	C-CER,CHIP
2203-006841	C336	C-CER,CHIP
2203-006841	C401	C-CER,CHIP
2203-006841	C404	C-CER,CHIP
2203-006841	C513	C-CER,CHIP
2203-006841	C626	C-CER,CHIP
2404-001381	C417	C-TA,CHIP
2404-001406	C520	C-TA,CHIP
2404-001414	TA419	C-TA,CHIP
2703-001178	L105	INDUCTOR-SMD
2703-001236	L104	INDUCTOR-SMD
2709-002208	L103	INDUCTOR-SMD
2703-001701	L109	INDUCTOR-SMD
2703-001737	R117	INDUCTOR-SMD
2703-001938	L101	INDUCTOR-SMD

2703-002367	L111	INDUCTOR-SMD
2703-002557	L500	INDUCTOR-SMD
2703-003184	L300	INDUCTOR-SMD
2703-003186	L110	INDUCTOR-SMD
2801-004353	OSC300	CRYSTAL-SMD
2801-004587	OSC101	CRYSTAL-SMD
2904-001841	F100	FILTER-SAW
2909-001283	F102	FILTER-LC
3301-001342	L200	BEAD-SMD
3301-001729	L504	BEAD-SMD
3301-001729	L600	BEAD-SMD
3301-001729	L601	BEAD-SMD
3301-001812	R400	BEAD-SMD
3301-001812	R401	BEAD-SMD
3301-001885	L501	BEAD-SMD
3301-001885	L502	BEAD-SMD
3301-001885	L503	BEAD-SMD
3301-001885	L505	BEAD-SMD
3301-001885	L506	BEAD-SMD
3301-001912	R406	BEAD-SMD
3404-001152	VOL_DOWN	SWITCH-TACT
3404-001152	VOL_UP	SWITCH-TACT
3705-001503	RFS100	CONNECTOR-COAXIAL
3709-001384	SIM600	CONNECTOR-CARD EDGE
3710-002499	IFC500	SOCKET-INTERFACE
3711-006141	HEA600	HEADER-BOARD TO BOARD
3711-006228	BTC500	HEADER-BATTERY
4202-001414	ANT3	ANTENNA-CHIP
4302-001130	BAT300	BATTERY-LI(2ND)
GH13-00048A	U500	IC ASIC-SPH-M300

Please consult the GSPN website (Samsung Portal) for the most recent version of the product's part list.

7. Disassembly and Assembly Instructions

7-1. Disassembly

<p>1</p> 	<p>2</p>  <p>1) Release SCREW 4 POINT at REAR</p>
<p>1) Remove the SIM CARD & BATTERY.</p>	<p>1) Be careful not to make scratch.</p>
<p>3</p>  <p>1) Raises jig for dissolution on REAR CASE earjack right side and disjoints REAR HOOK.</p>	<p>4</p>  <p>1) Raises jig for dissolution on REAR CASE earjack right side and disjoints REAR HOOK.</p>
<p>1) Be careful Locker damage when you Disjoint a REAR.</p>	<p>1) Be careful Locker damage when you Disjoint a REAR.</p>

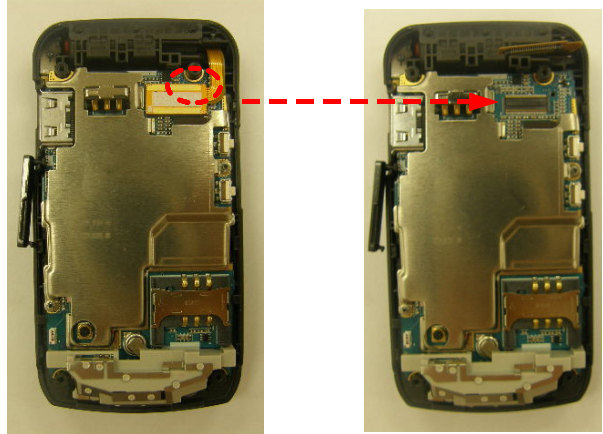
5



1) After catch the REAR and press the PBA SHIELD CAN, lift REAR.

1) Be careful REAR damage when you Disjoint a REAR.

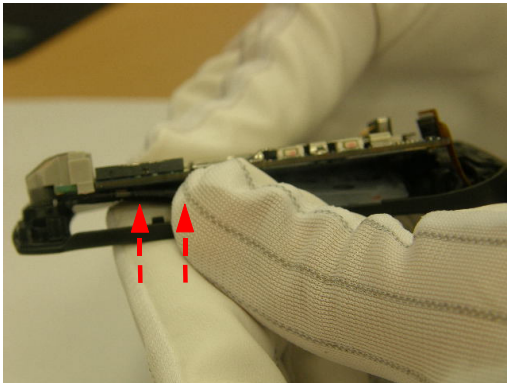
6



1) Lift below the SCREW BOSS HOLE part.

1) When disjoint CONNECTOR, be careful approximately parts damage.

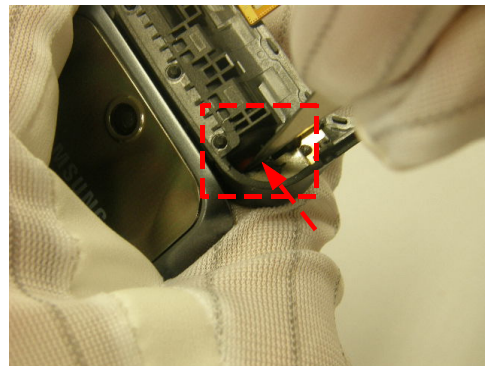
7



1) After open the folder and catch the FRONT, press KEYPAD part and softly lift PBA.
2) Disjoint PBA and KEYPAD.

1) Be careful FRONT LOCKER damage.

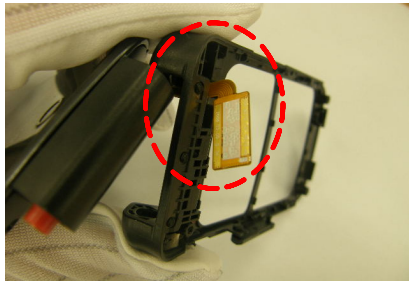
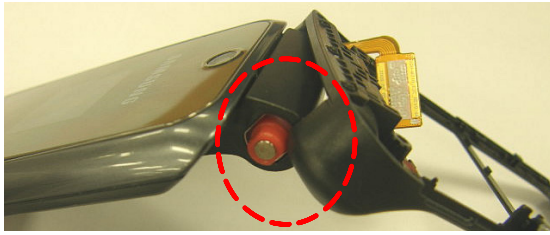
8



1) Disjoint in Front with picture pressing top portion FRONT's Hinge by tweezers.

1) Be careful FRONT plastic, FRONT SUS and Hinge damage.

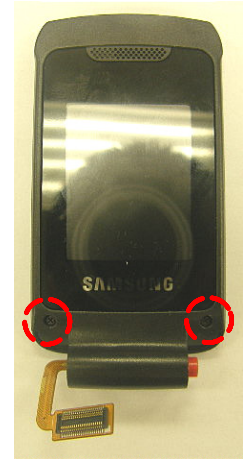
9



1) When disjoint Front, disjoint CON TO CON part after disjoint HINGE part.

1) Be careful LCD CON TO CON damage.

10



1) Remove SCREW CAP using tweezers.(2POINT)
2) Release SCREW.

1) Be careful not to make scratch and LOCKER damage!

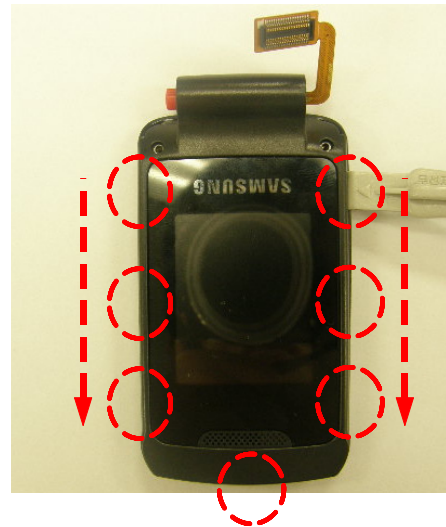
11



1) Push to back HINGE part of folder, disjoints top portion of HOOK.

1) Be careful LOWER plastic damage.

12



1) Release UPPER and LOWER's LOCKER portion using plastic dissolution jig.

1) Be careful not to make scratch and LOCKER damage!

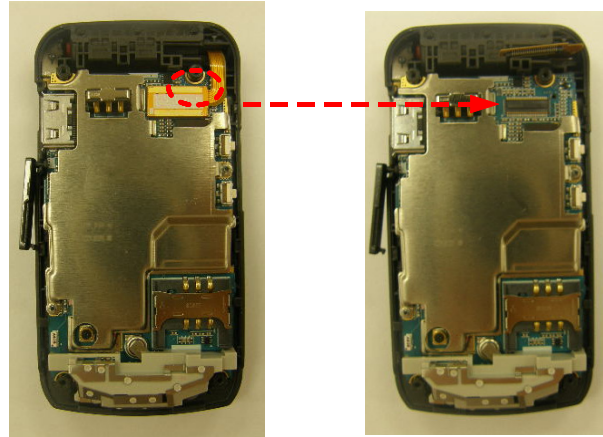
5



1) After catch the REAR and press the PBA SHIELD CAN, lift REAR.

1) Be careful REAR damage when you Disjoint a REAR.

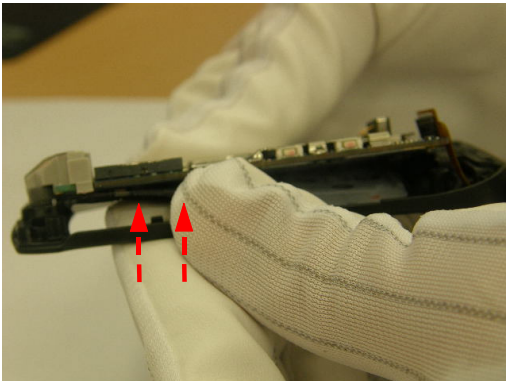
6



1) Lift below the SCREW BOSS HOLE part.

1) When disjoint CONNECTOR, be careful approximately parts damage.

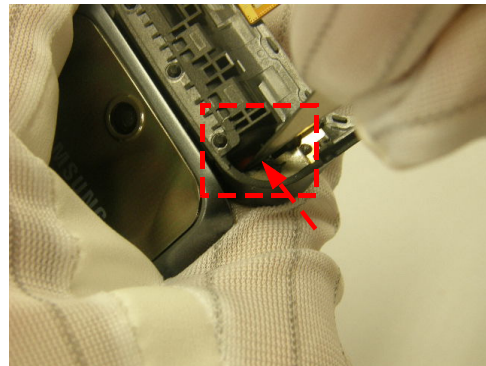
7



1) After open the folder and catch the FRONT, press KEYPAD part and softly lift PBA.
2) Disjoint PBA and KEYPAD.

1) Be careful FRONT LOCKER damage.

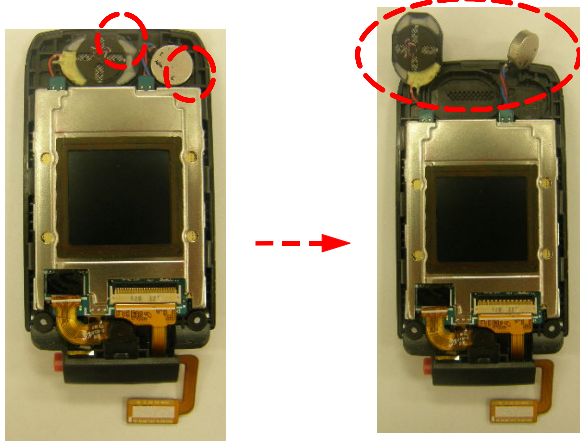
8



1) Disjoint in Front with picture pressing top portion FRONT's Hinge by tweezers.

1) Be careful FRONT plastic, FRONT SUS and Hinge damage.

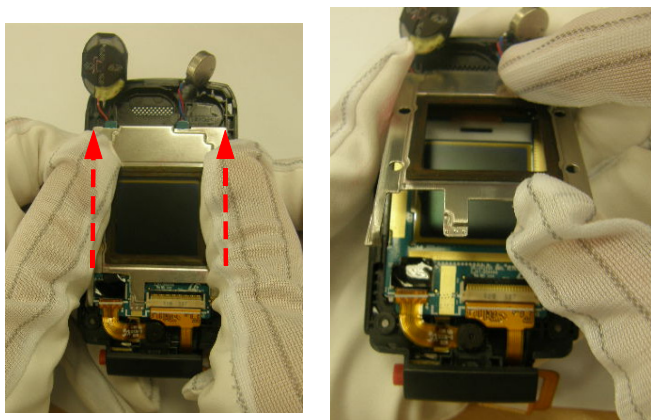
13



1) Separate SPEAKER and MOTOR in LOWER after insertion in the decomposition groove using tweezers.

1) Be careful not to make scratch and LOCKER damage!

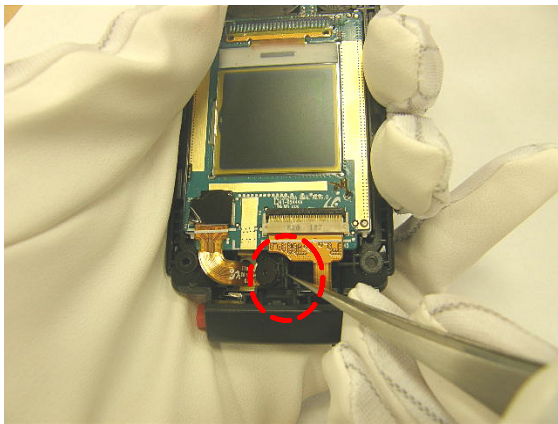
14



1) Enter upward after push LCD Bracket to the top portion and disjoints.

1) Be careful not to inflow stem in SUB LCD and LCD damage.

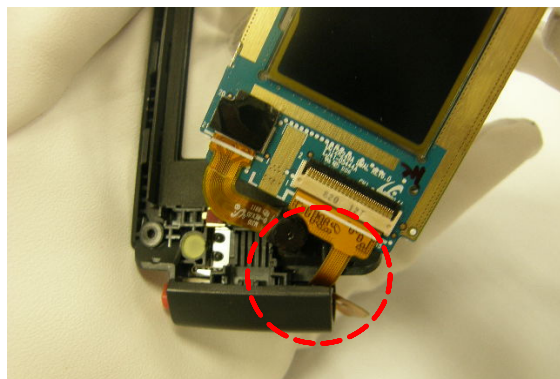
15



1) Separate CAMERA in LOWER by tweezers.

1) Be careful CAMERA damage at CAMERA separation by tweezers.

16



1) Separate LCD ASS'Y in Lower.

1) Be carefule LCD CON TO CON damage.
2) Beware not to remain stem or fingerprint in MAIN/SUB LCD.

17

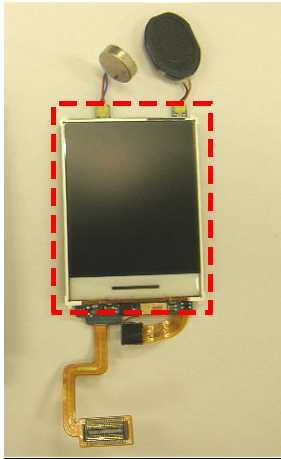


1) Disassembly completion.

1) Be careful not to remain stem or fingerprint in LCD and WINDOW.

7-2. Assembly

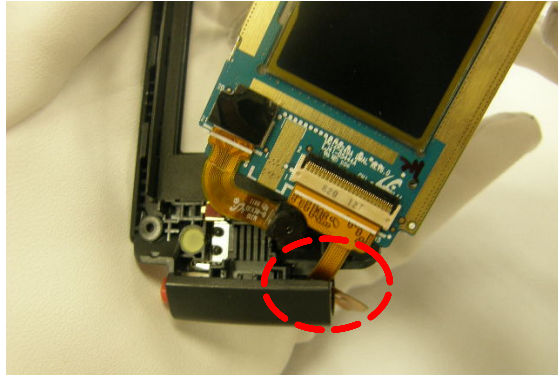
1



1) LCD Ass'y

1) Be careful not to remain stem or fingerprint in MAIN LCD.

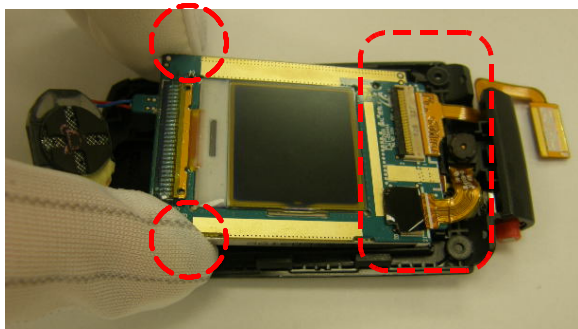
2



1) Insert LCD CON TO CON in the Lower hall.

1) When insert the LCD CON TO CON, beware to crack.

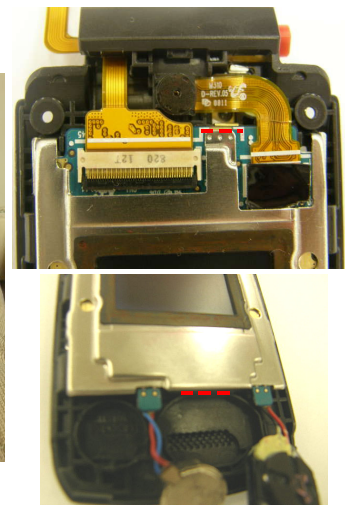
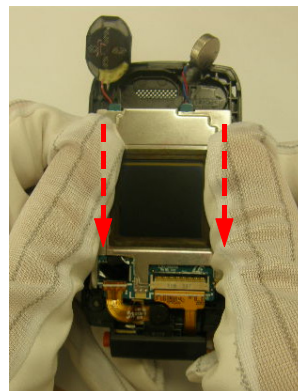
3



1) Catches LCD Ass'y left/right side and puts in Lower.

1) Be careful not to remain stem or fingerprint in LCD.

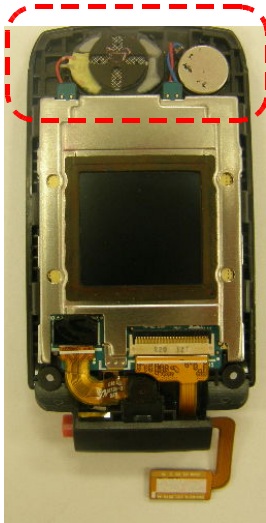
4



1) Drop to lower LCD bracket, assembly to Lower.
2) Confirm again whether assembled according to base line with right side picture after conclusion.

1) Be careful not to inflow stem in SUB LCD.
2) Assembly to base line again if was not assembled to base line.

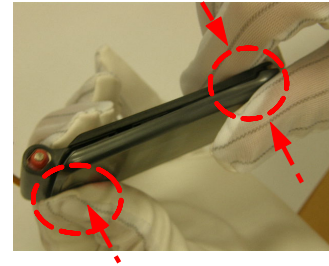
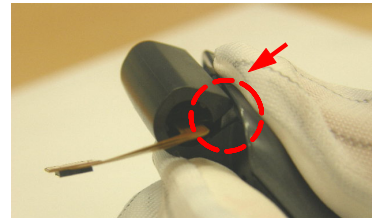
5



- 1) Put speaker in the LOWER groove.
- 2) Put motor in the LOWER groove after once turning.

1) When put the motor, Speaker, beware that you not to cut wire.

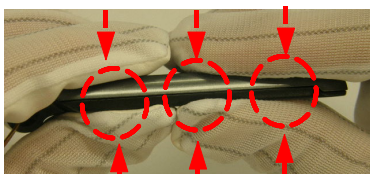
6



- 1) In state put UPPER in the LCD CON TO CON insertion groove, assembly HOOK of diagonal line direction.

1) Be careful HOOK damage.

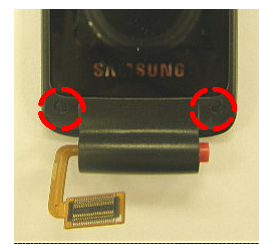
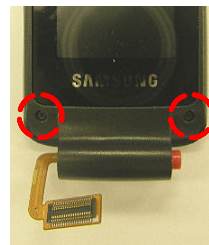
7



- 1) Assembly UPPER's right side HOOK.
- 2) Assembly a HOOK which located lower first.

1) Be careful HOOK damage.

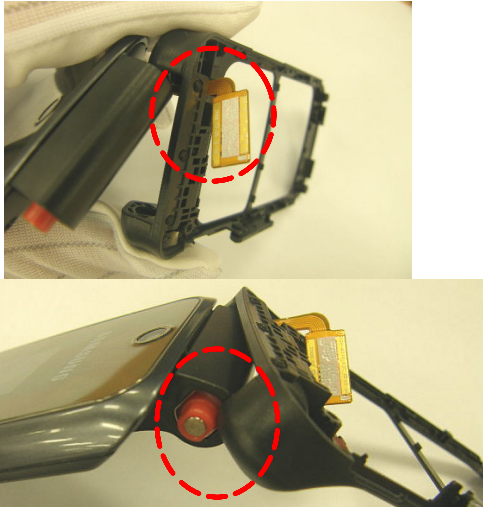
8



- 1) Assembly UPPER's top portion HOOK and LOWER.
- 2) Screw up two screws at FOLDER LOWER and put in screw caps.

1) 1) Be careful not to make scratch and molding damage!

9



- 1) Insert LCD CON TO CON in the FRONT hall.
- 2) Push the Hinge portion and insert in FRONT hall.

- 1) Be careful not to crack LCD CON TO CON.
- 2) Be careful Hinge and Front damage.

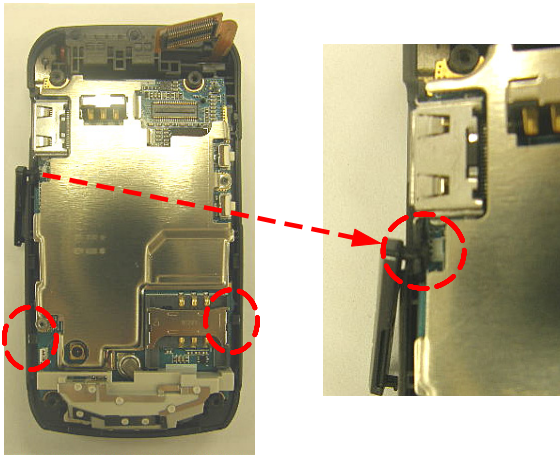
10



- 1) Set KEYPAD on the FRONT.

- 1) KEYPAD takes care so that do not insert to FRONT rib.

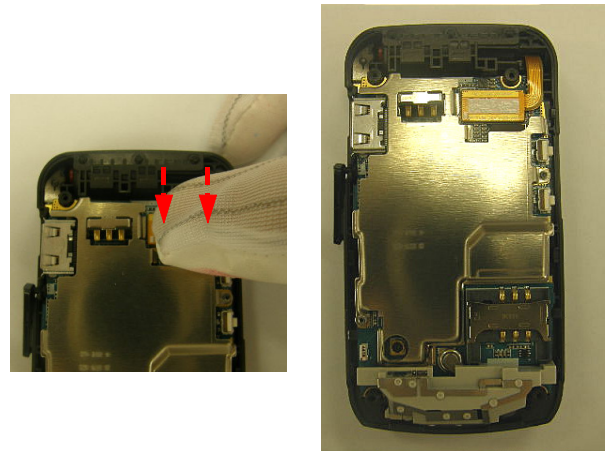
11



- 1) Earjack cover projection is assembled on PBA with right side picture.
- 2) Set a PBA.

- 1) Check the earjack cover.

12



- 1) Assembly LCD CONNECTOR.

- 1) Press until Connector is sonant "Click"
- 2) When joint LCD CONNECTOR, be careful approximately parts damage.

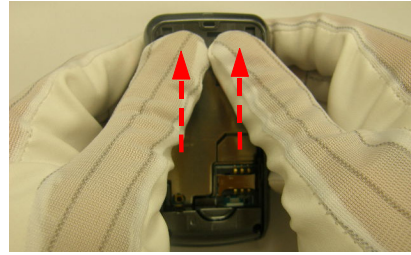
13



1) Set volume key.

1) Be careful not to fall volume key before assembling REAR.

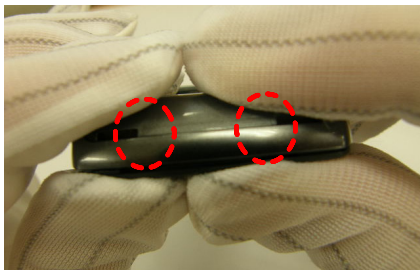
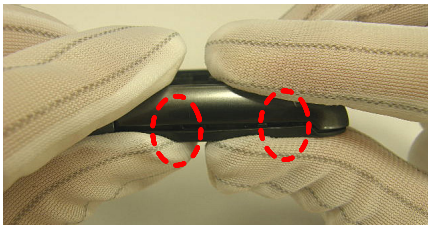
14



1) Assembly right side portion after assembly REAR's top portion first.

1) Be careful REAR damage.

15



1) Assembly lower side after assembly REAR's left side first.

1) Be careful REAR damage.

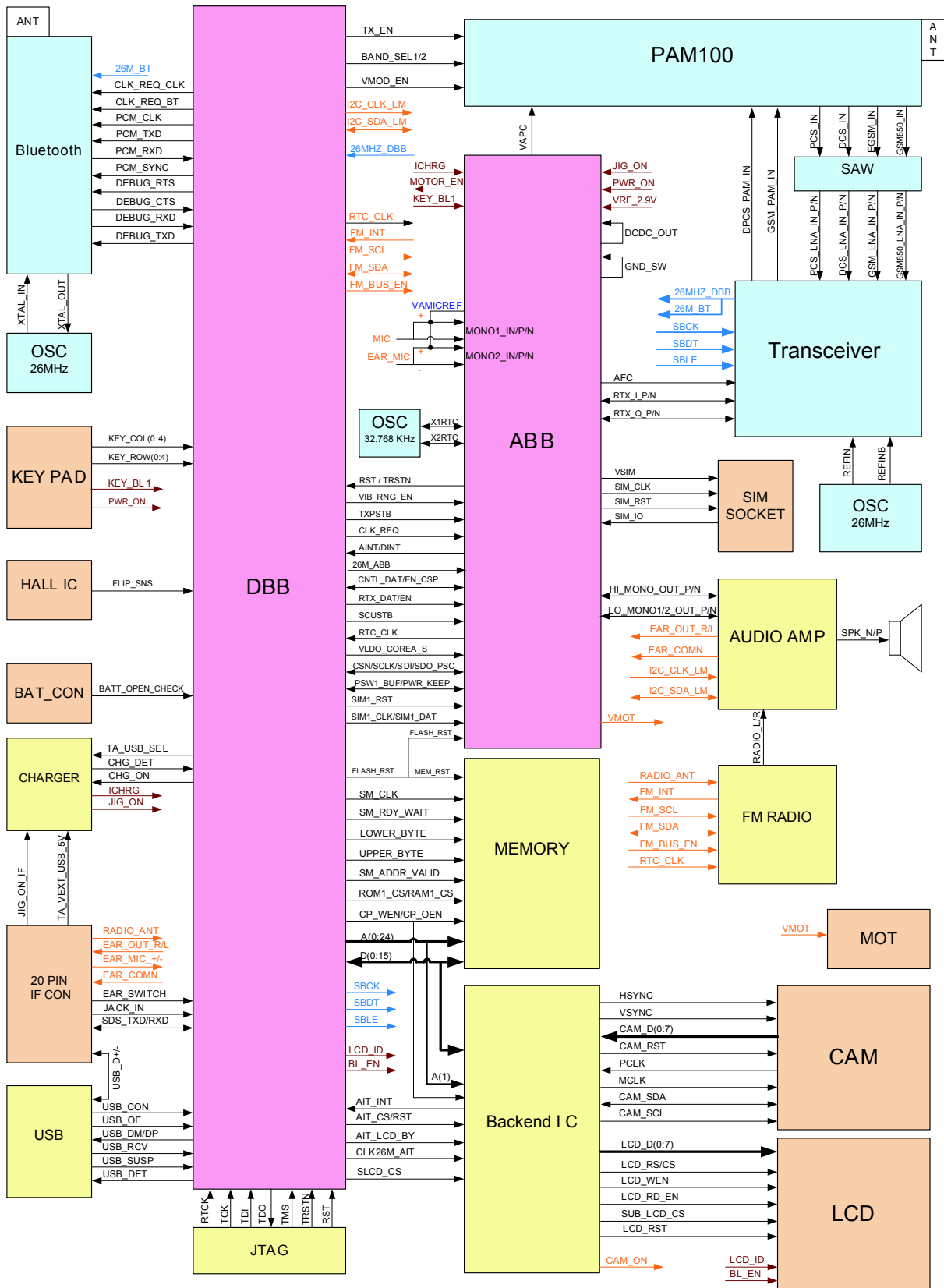
16



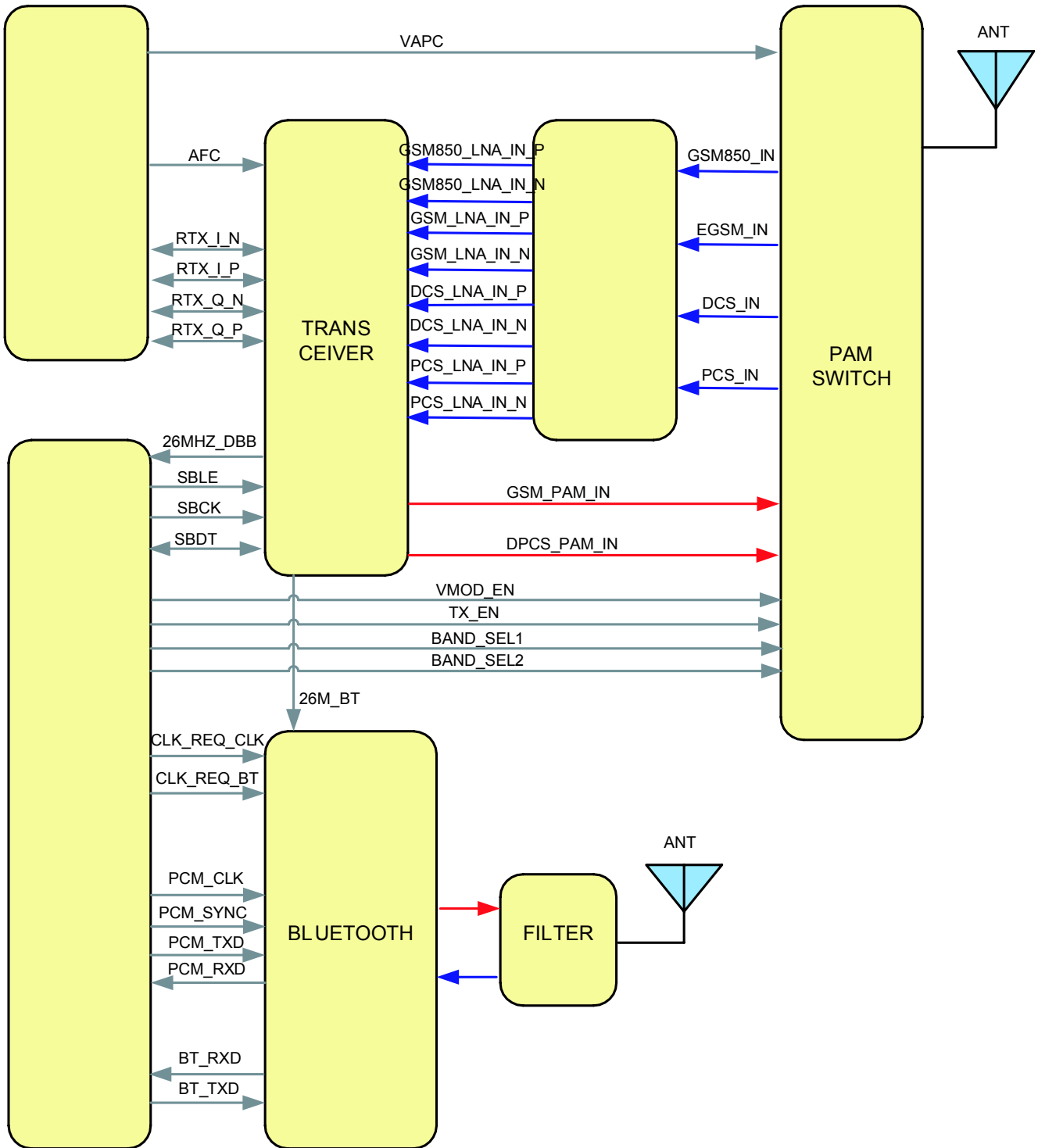
1) Drivers 4 screws on the REAR.

1) Be careful not to make scratch and REAR damage!

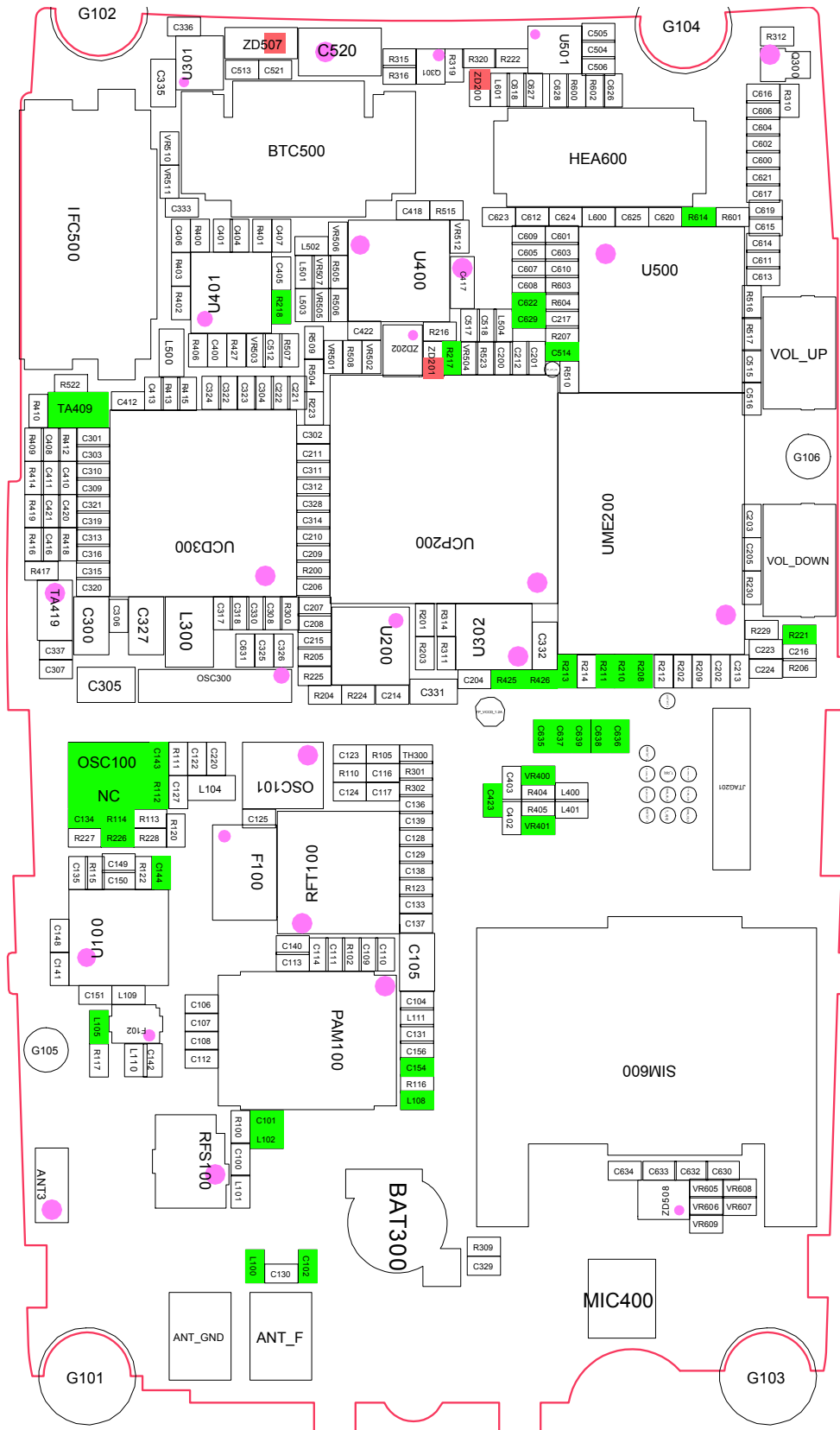
8. Block Diagrams

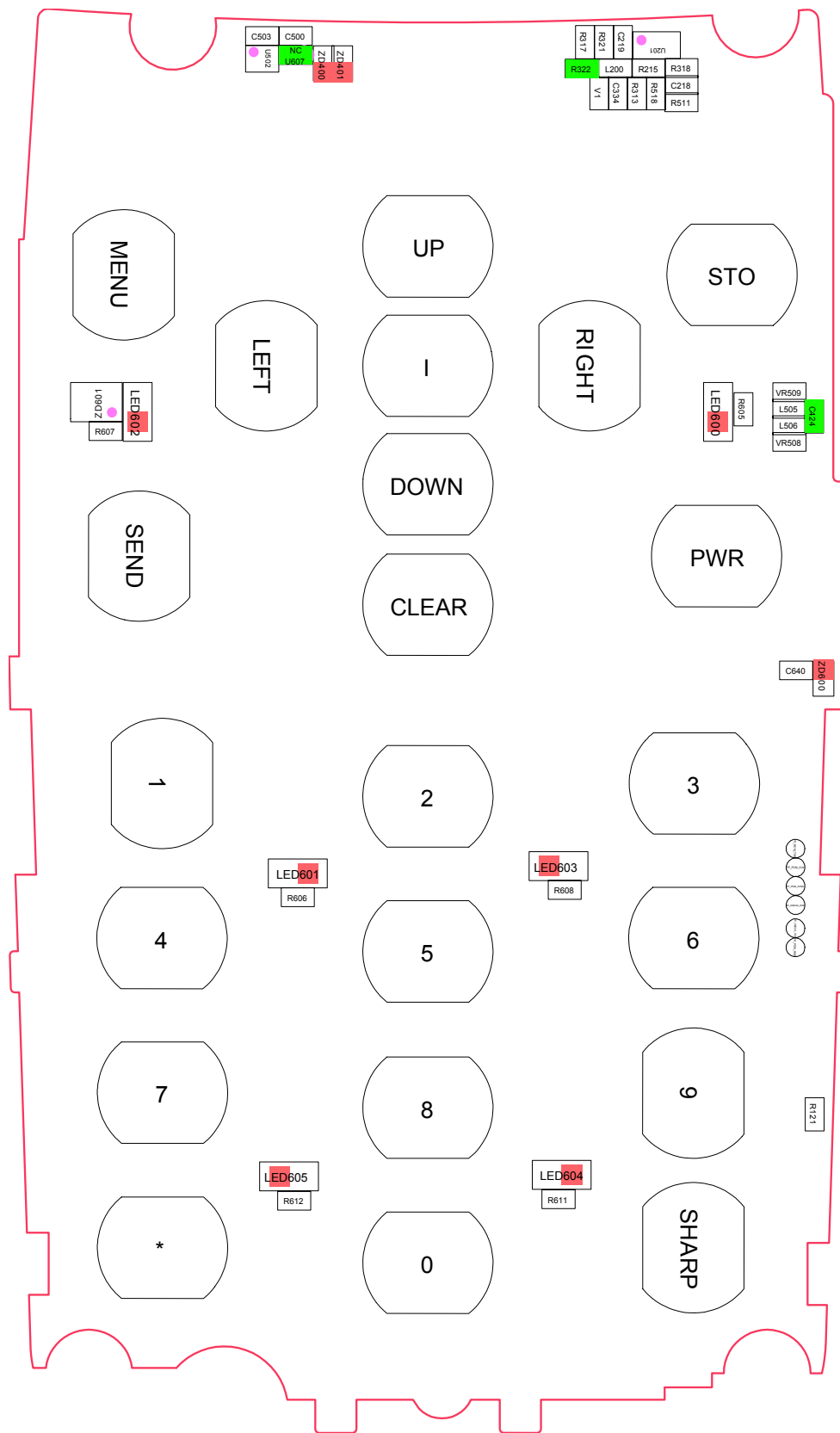


RF block



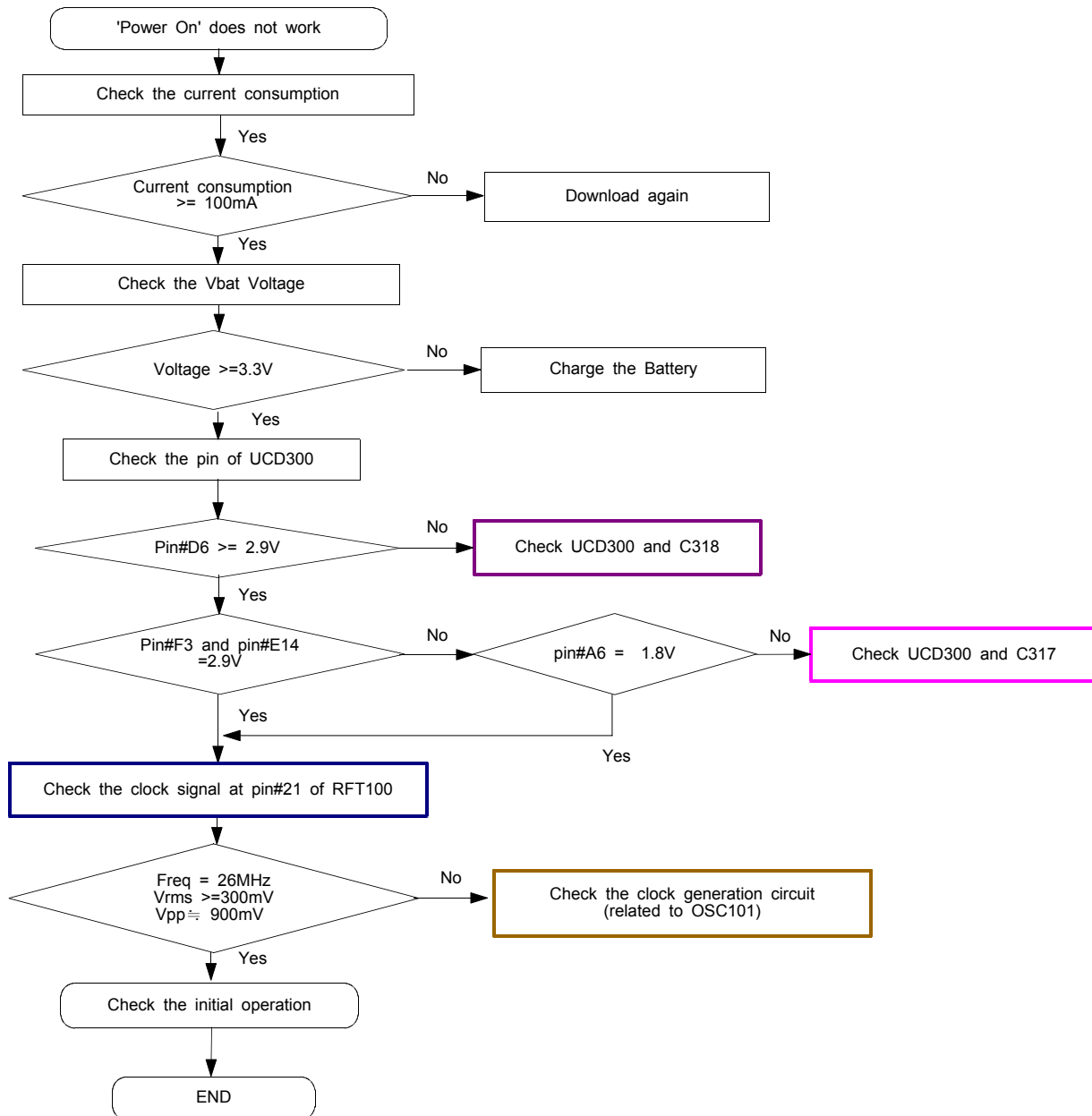
9. PCB Diagrams



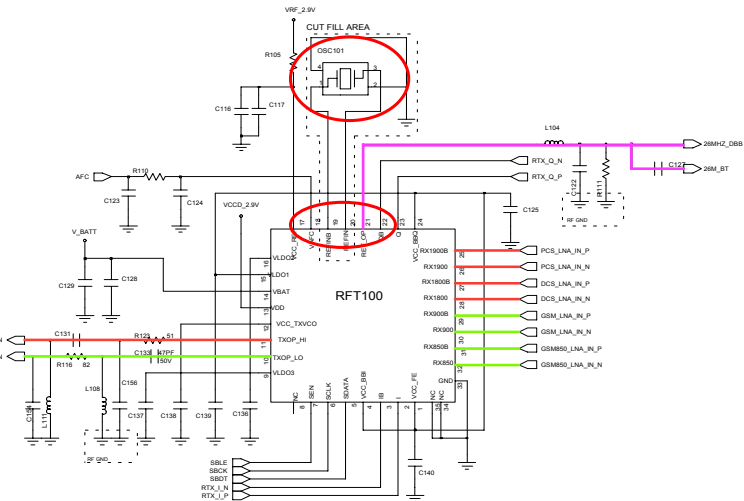
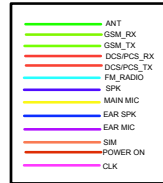
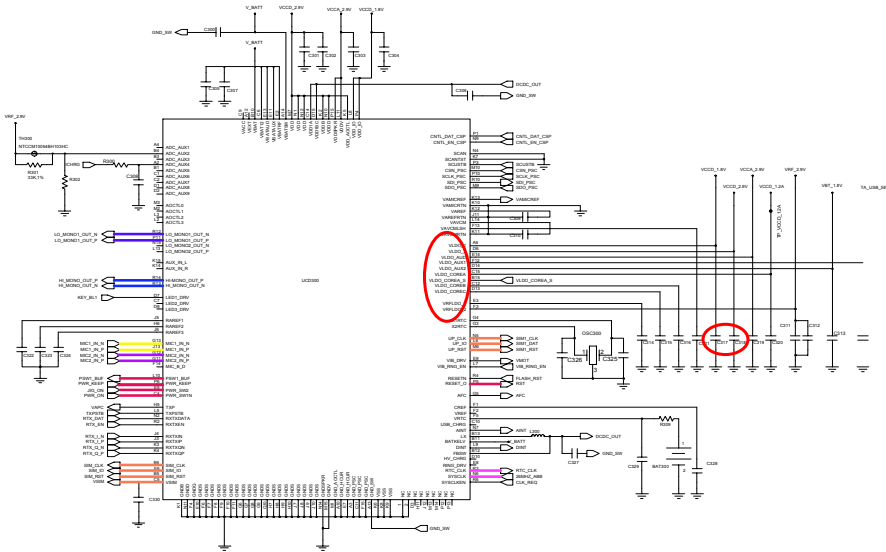
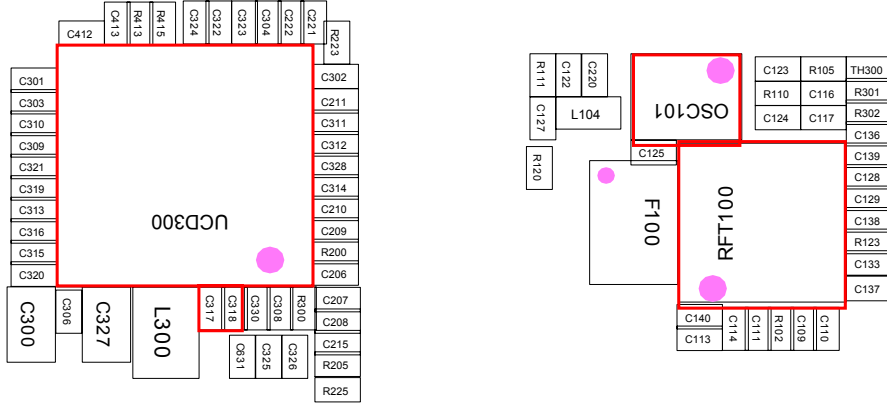


10. Flow Chart of Troubleshooting

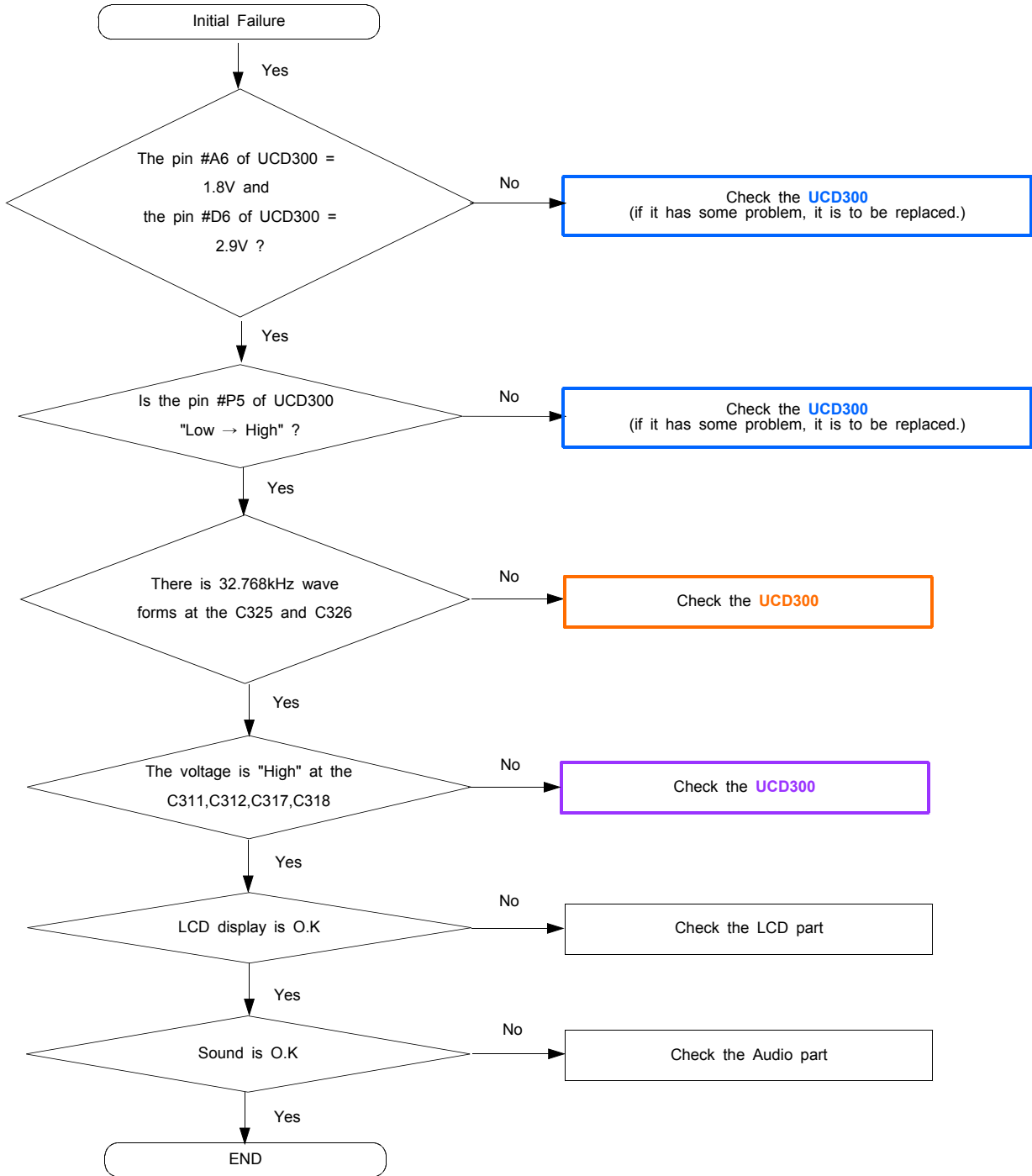
10-1-1. Power ON

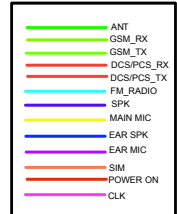
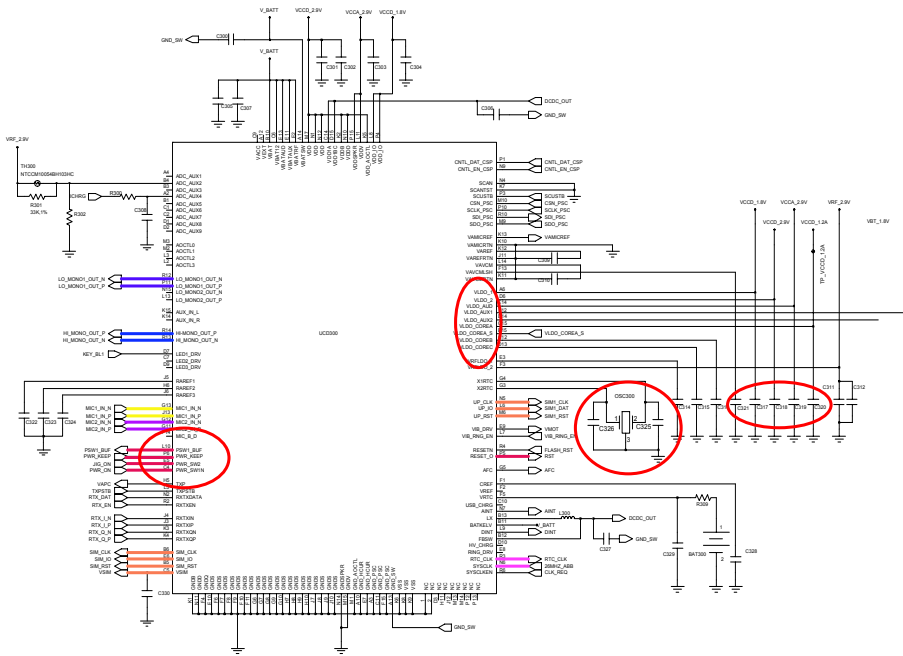
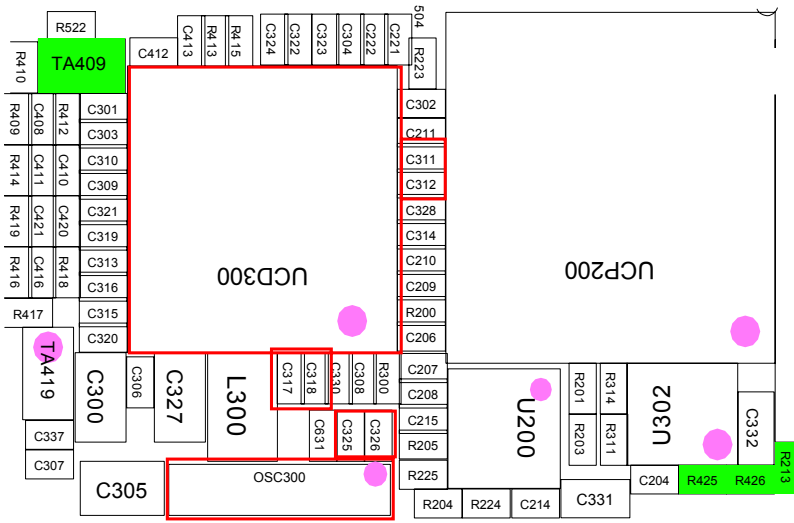


Flow Chart of Troubleshooting

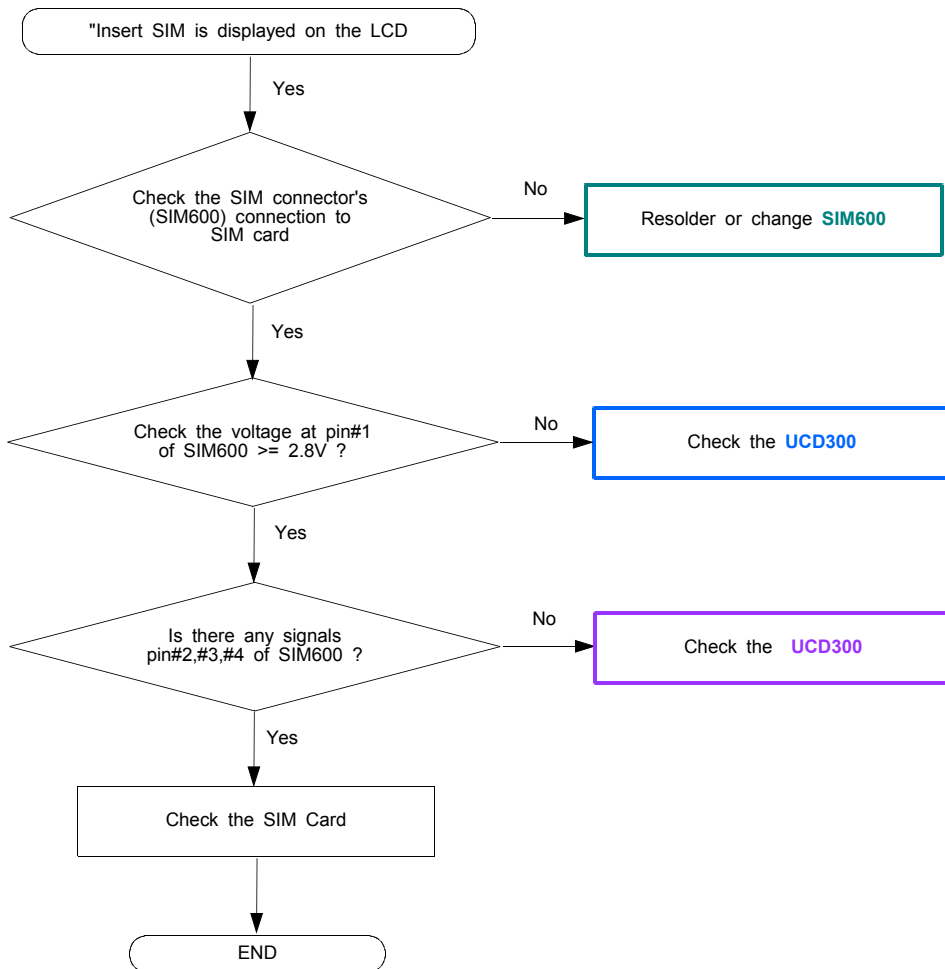


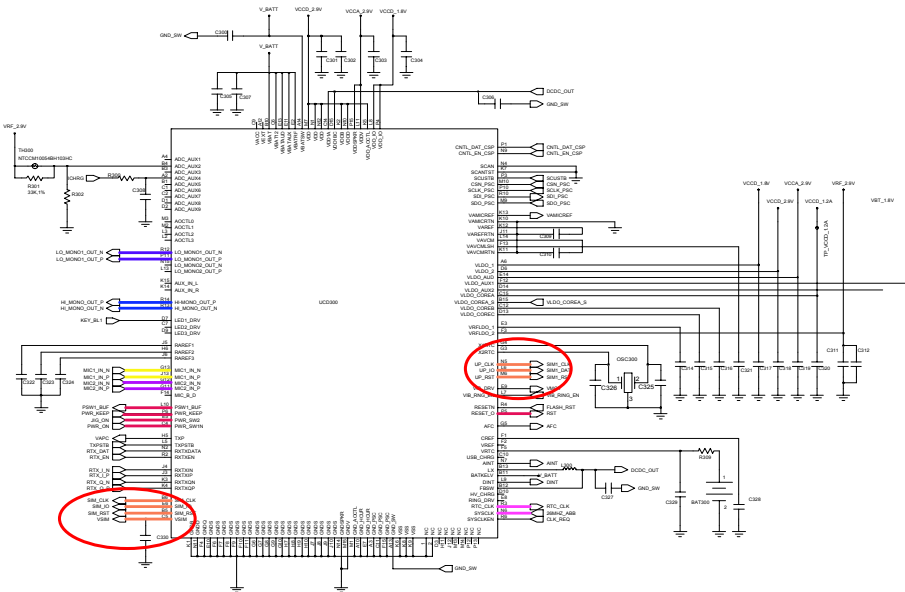
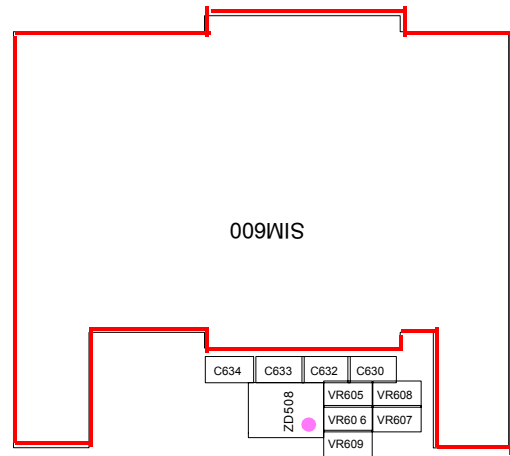
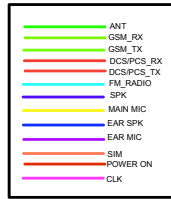
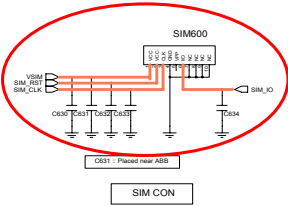
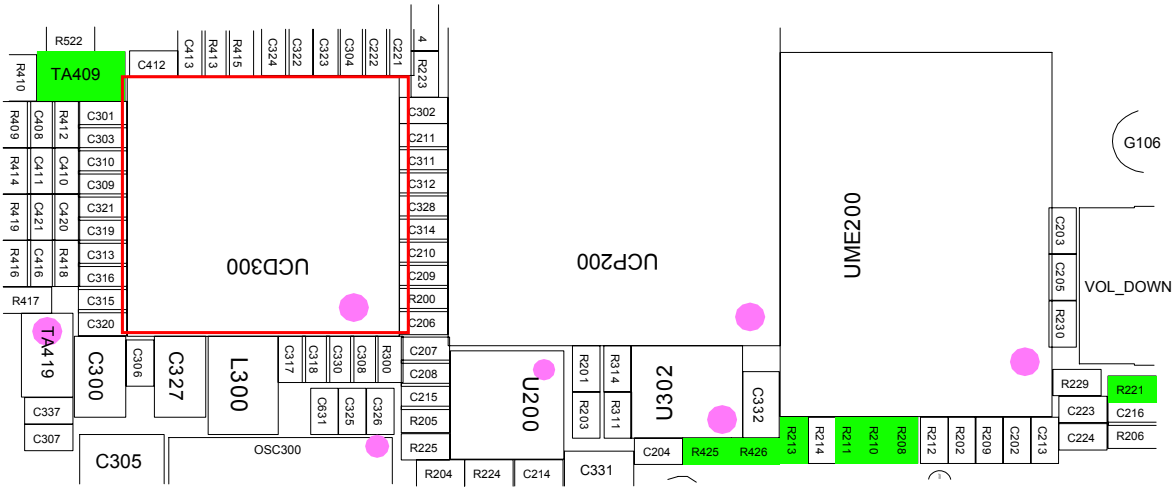
10-1-2. Initial



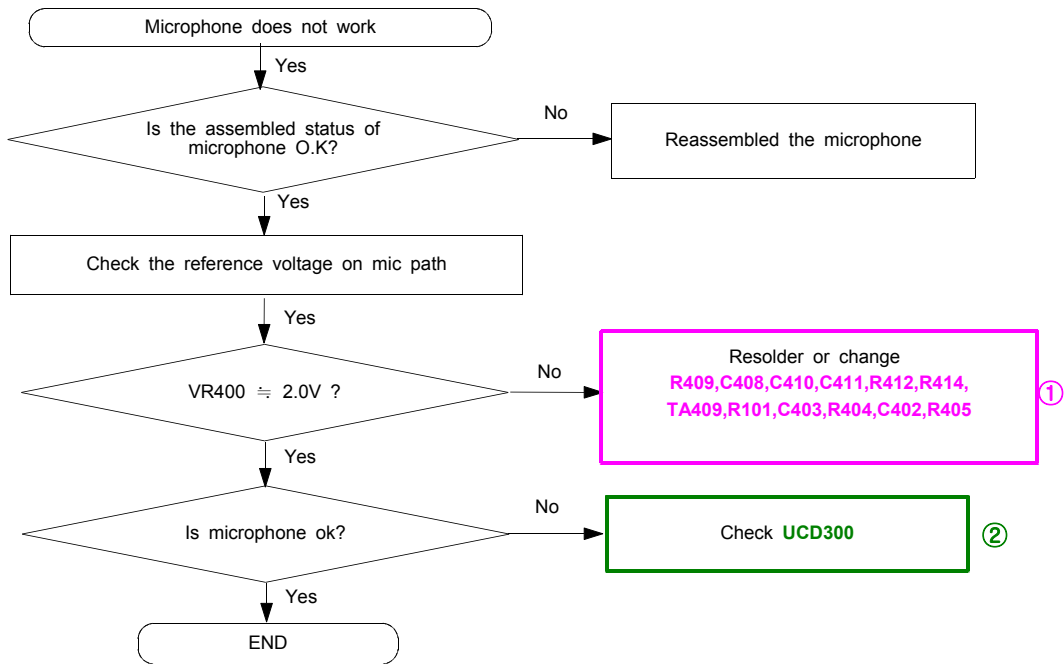


10-1-3. Sim Part

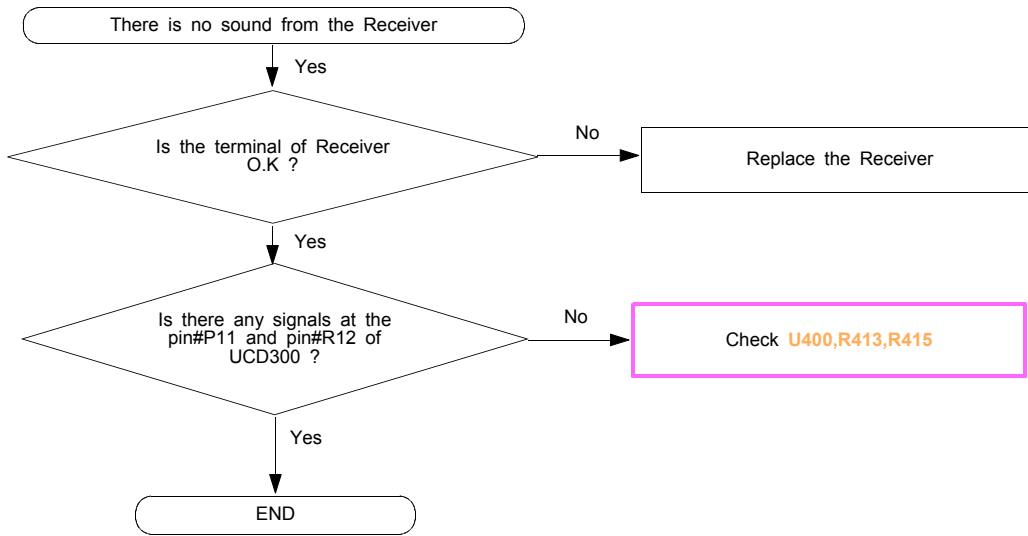




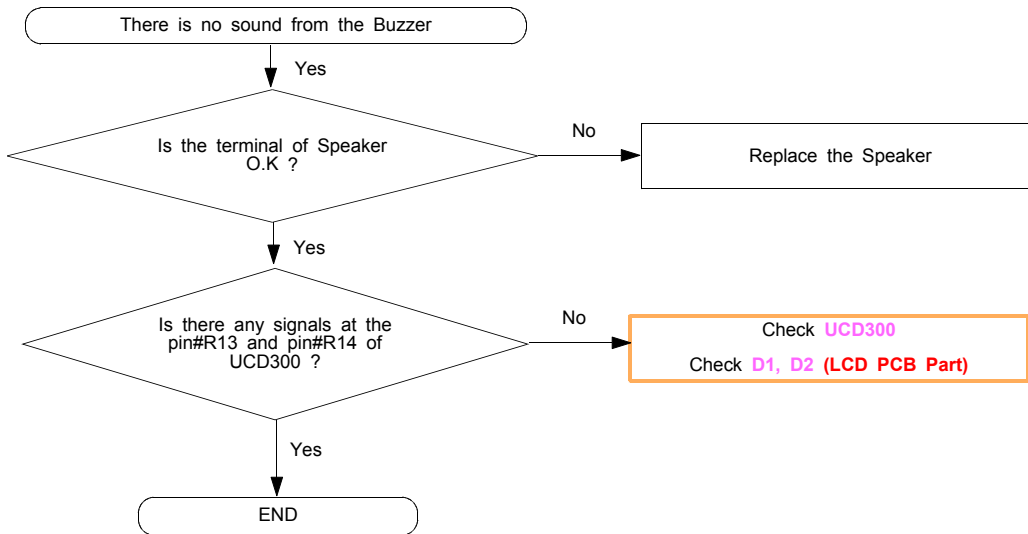
10-1-4. Microphone Part



10-1-5. Receiver Part

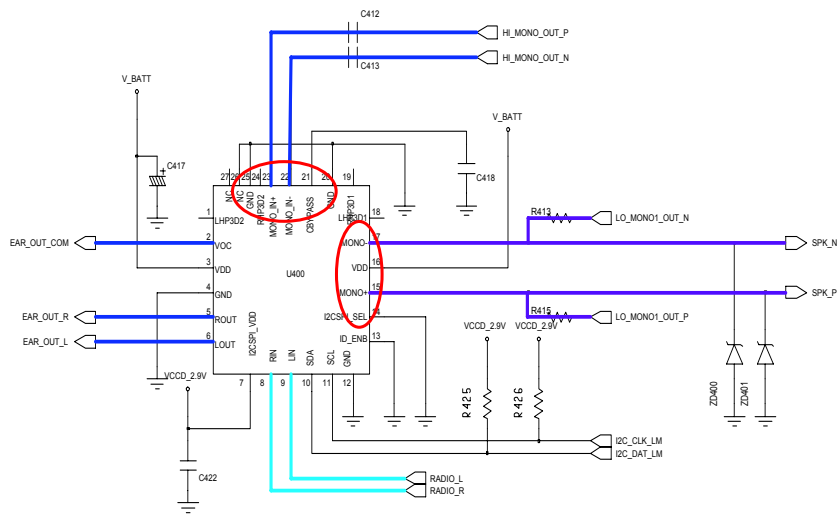
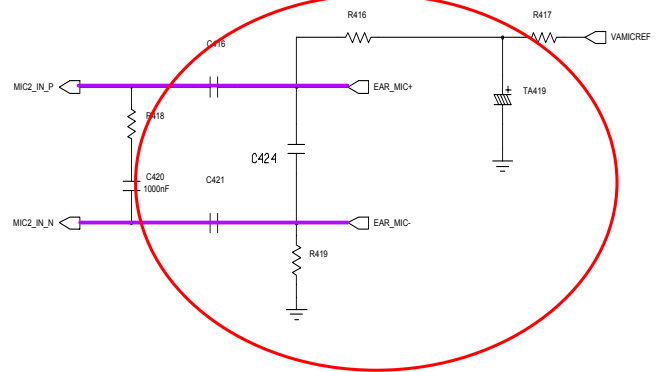
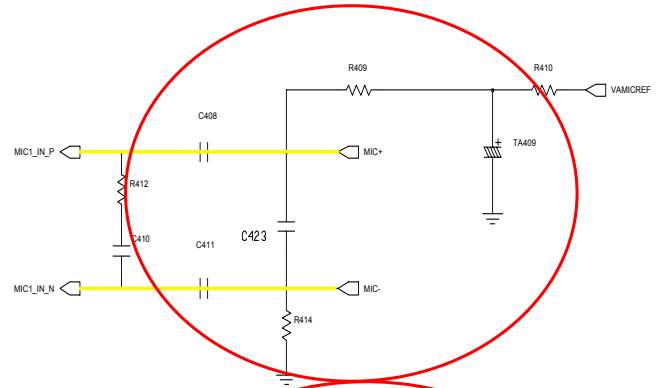
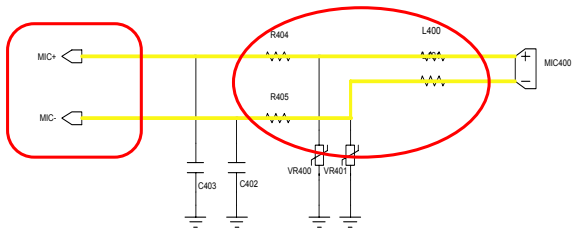


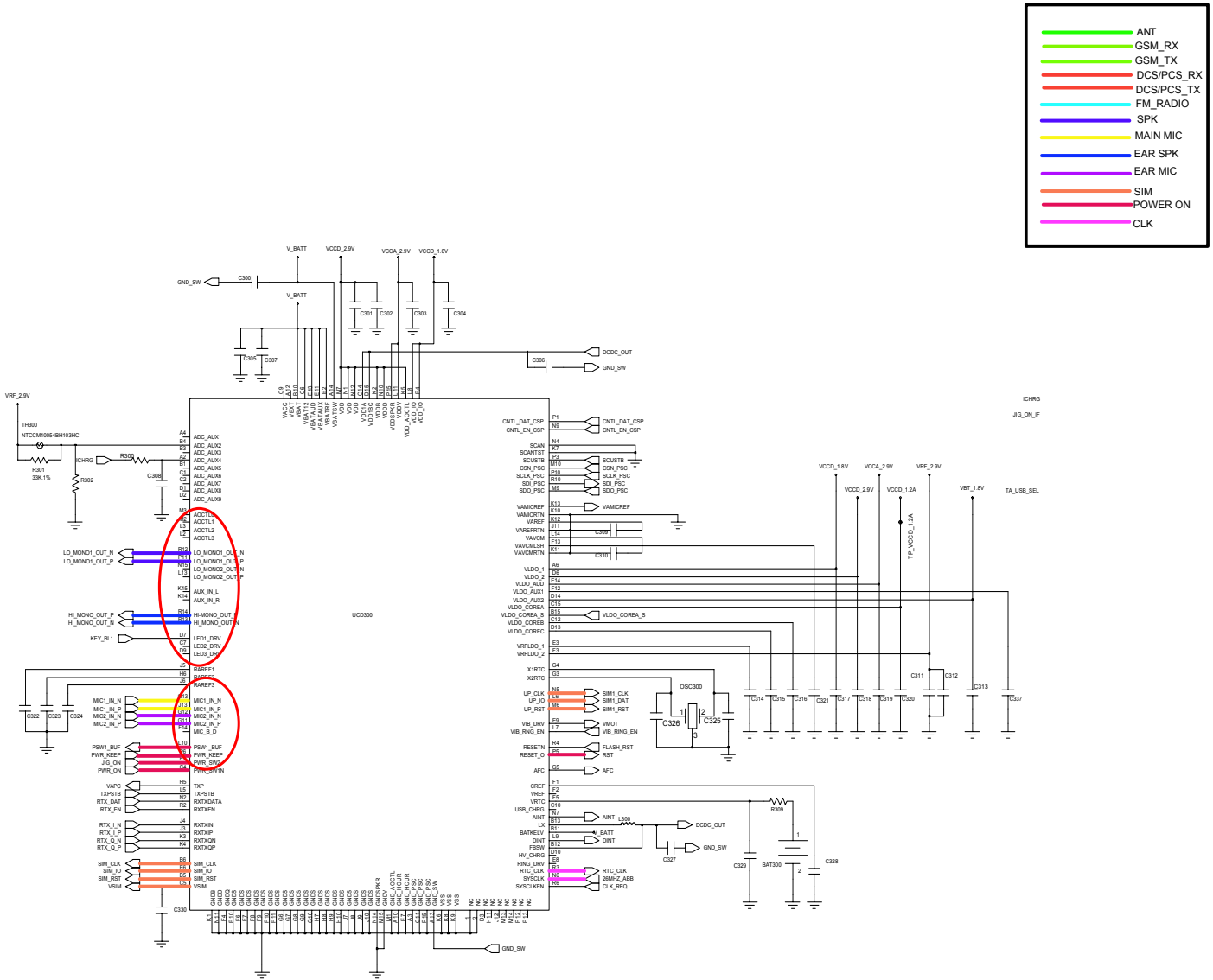
10-1-6. SPK Part



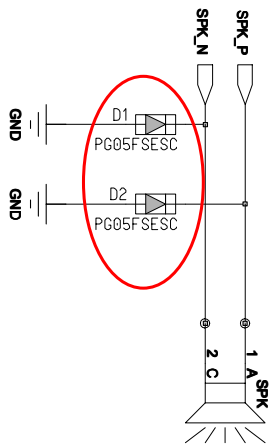
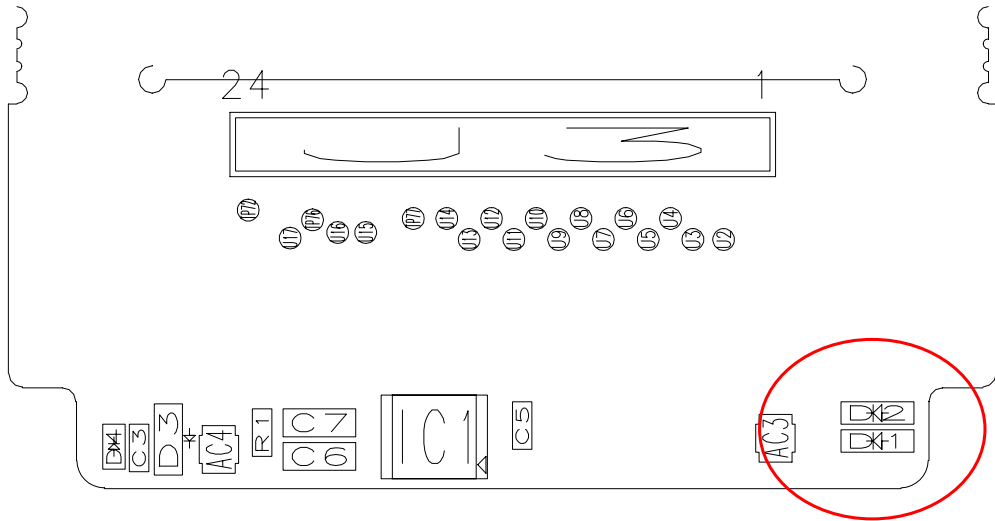


Flow Chart of Troubleshooting



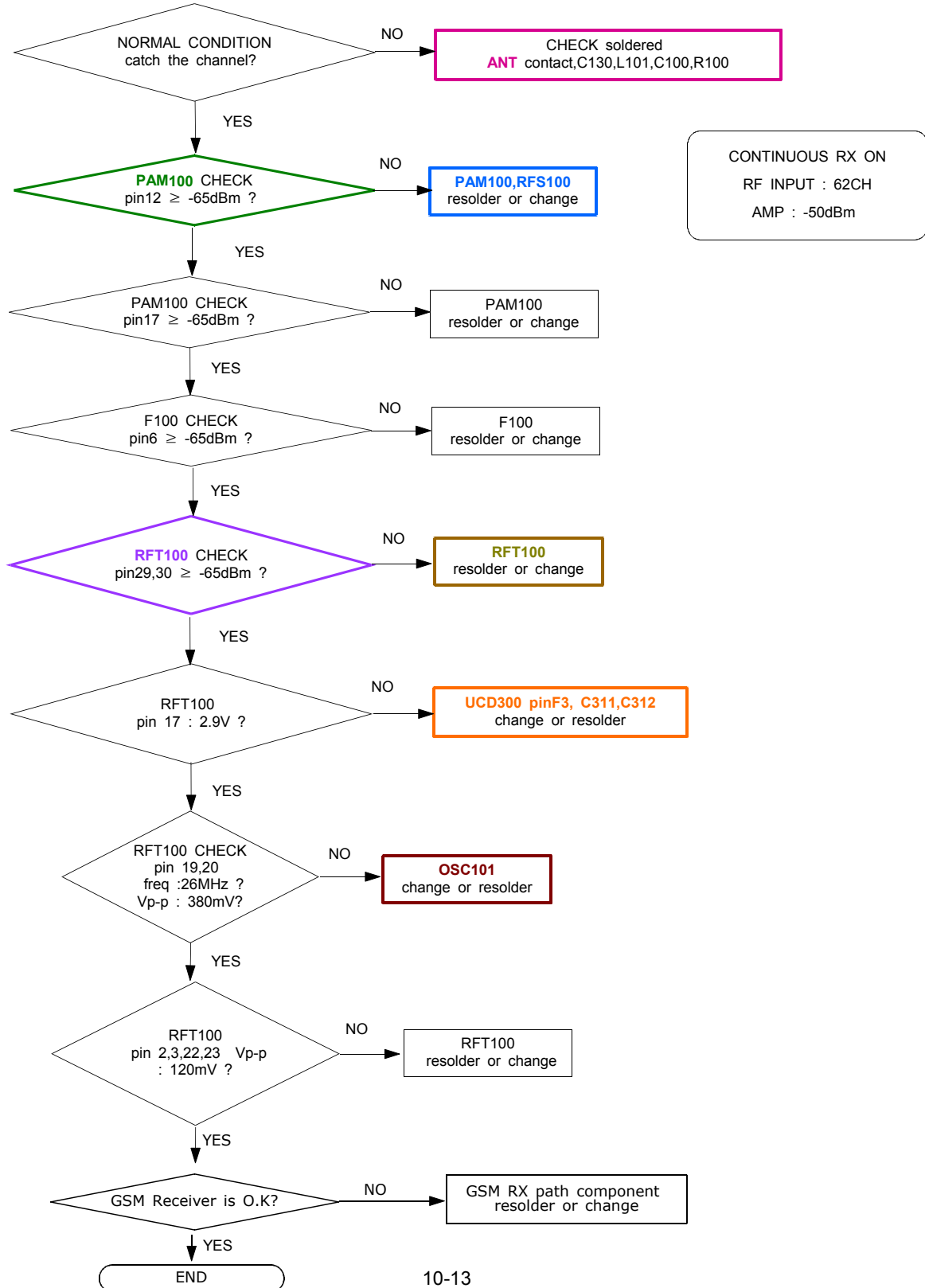


< LCD PCB Part >

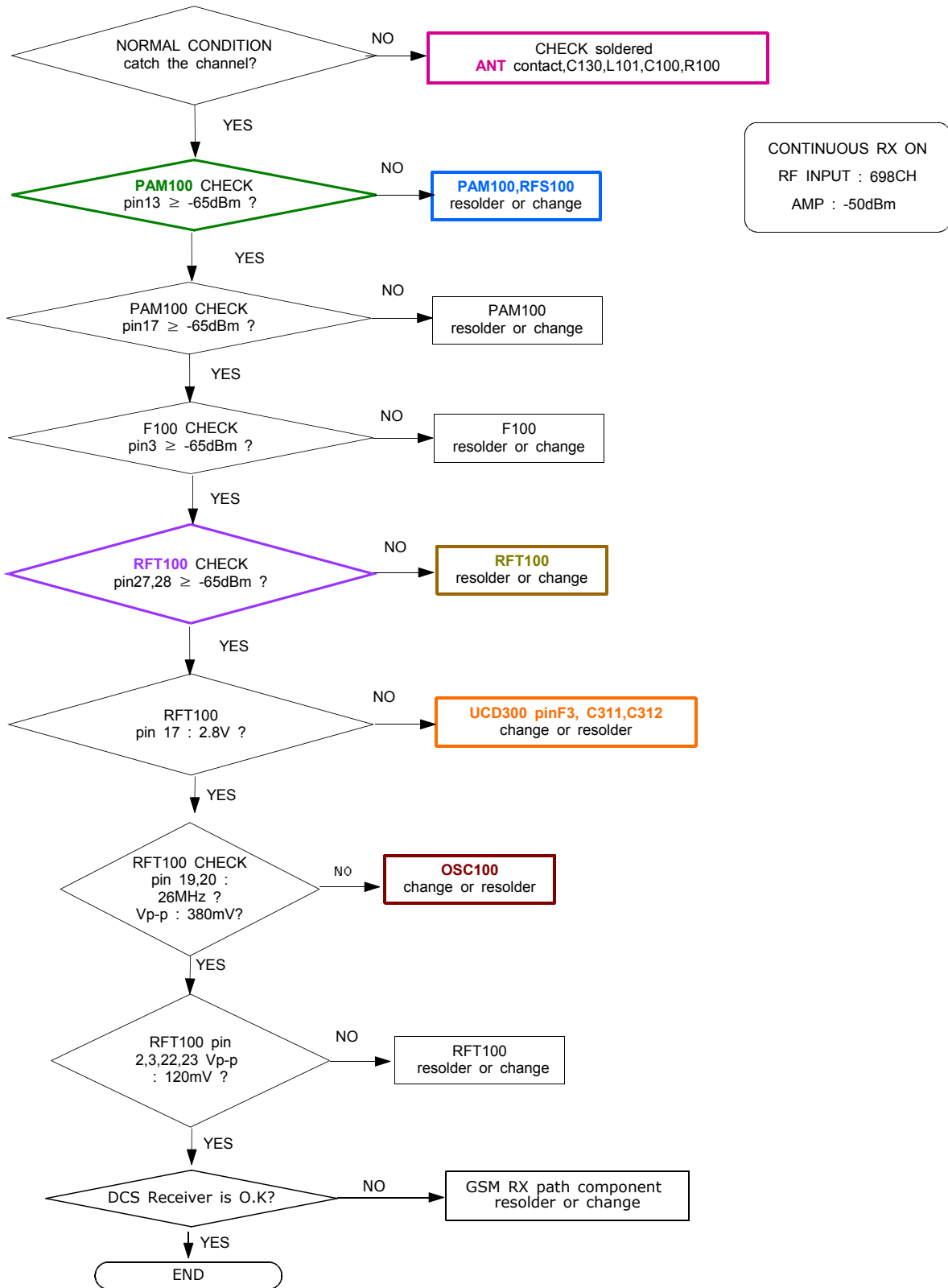


10-2.RF

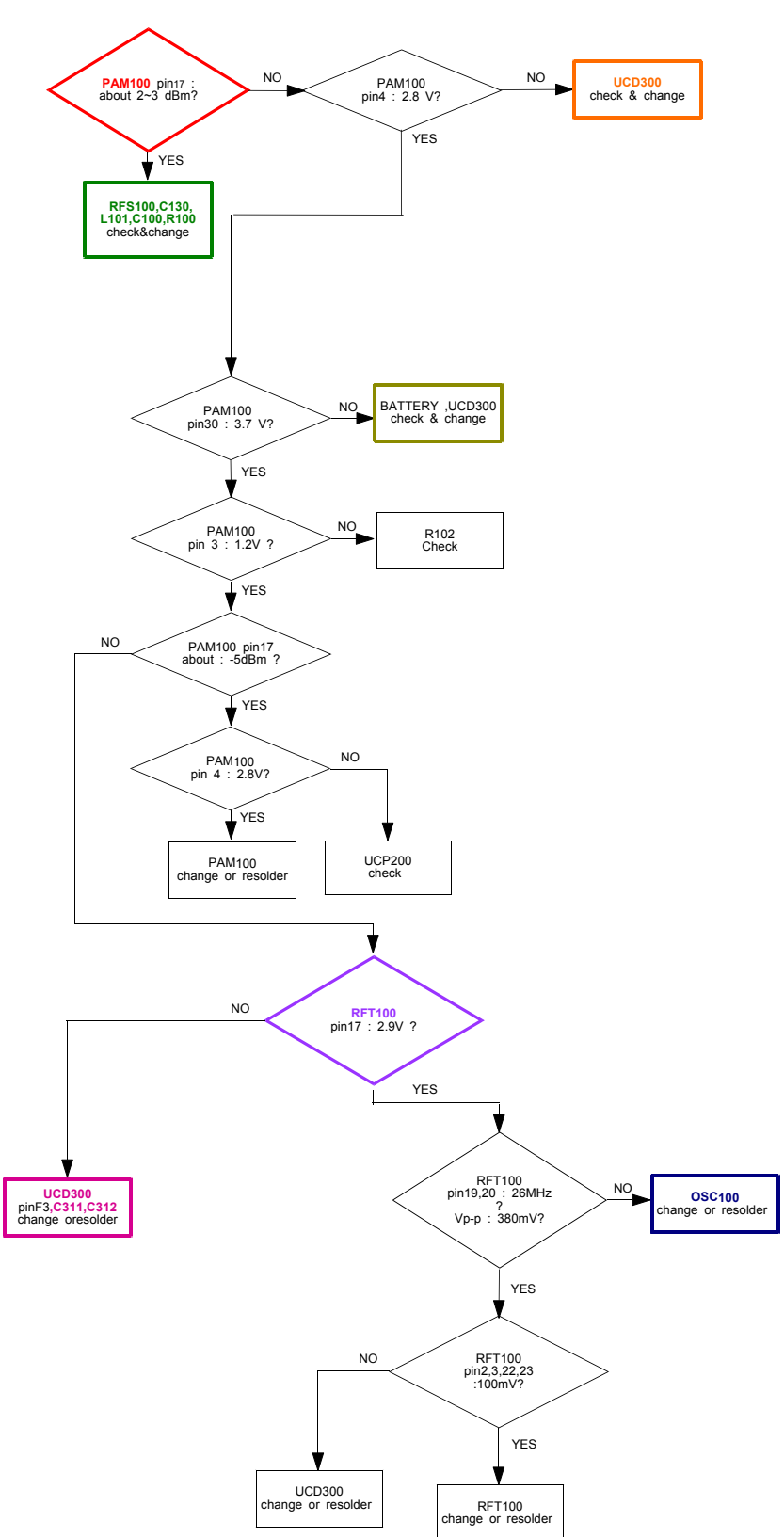
10-2-1. EGSM RX



10-2-2. DCS RX

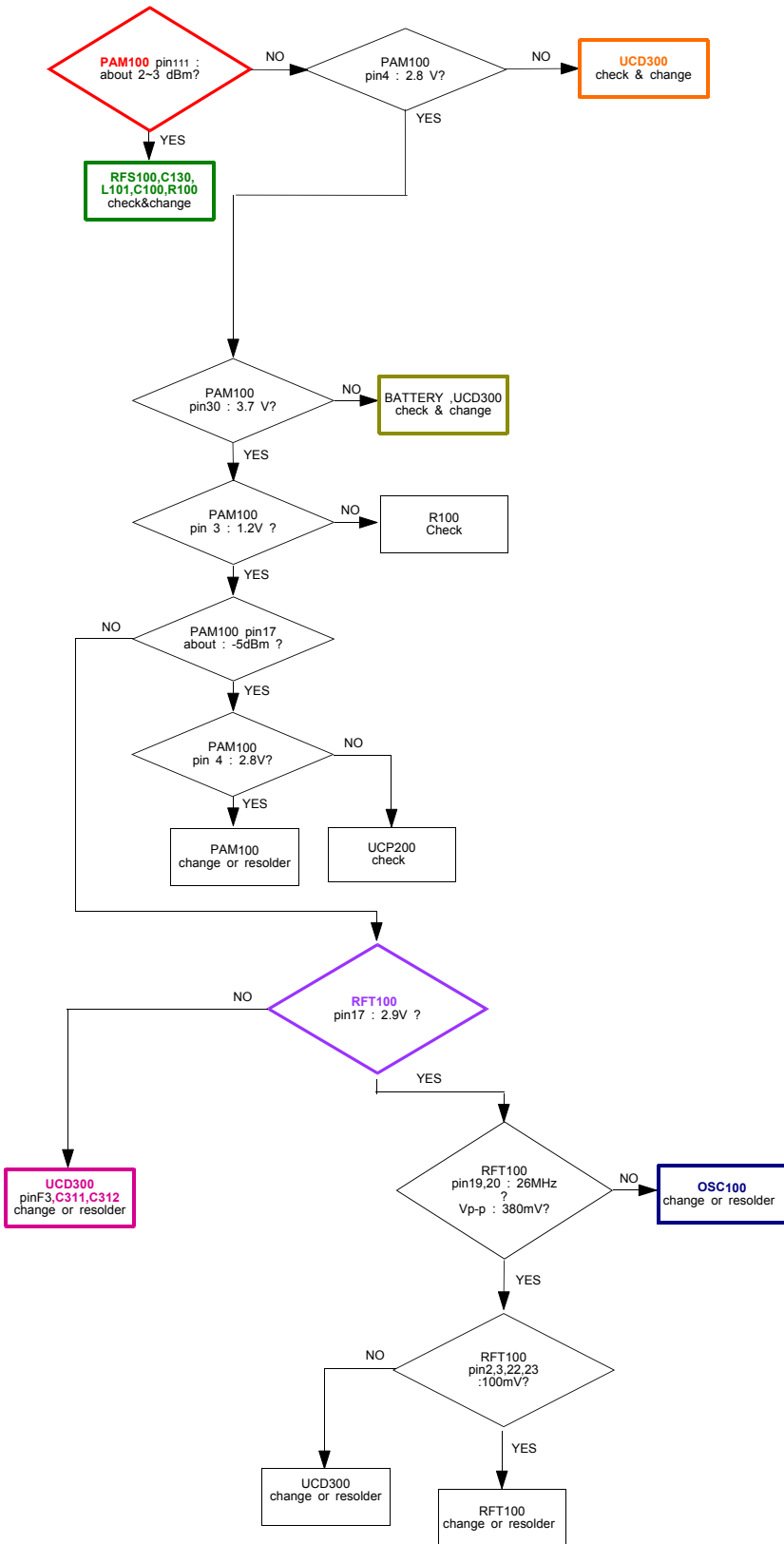


10-2-3. EGSM TX

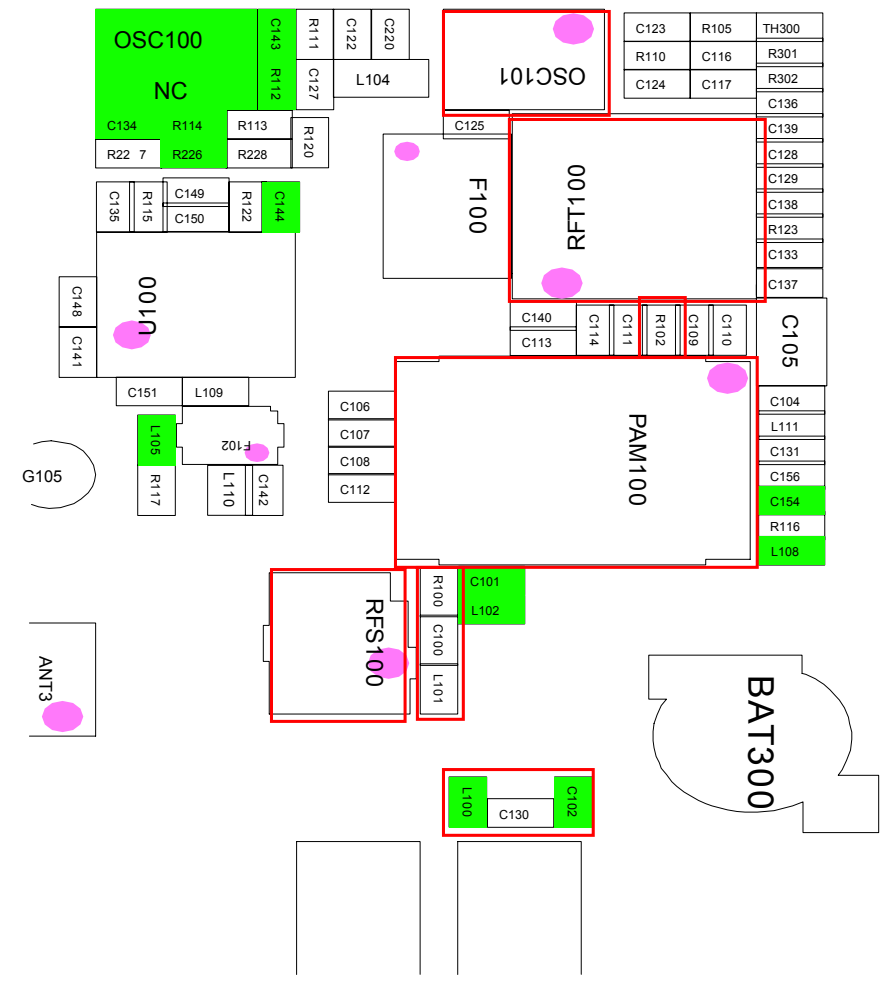
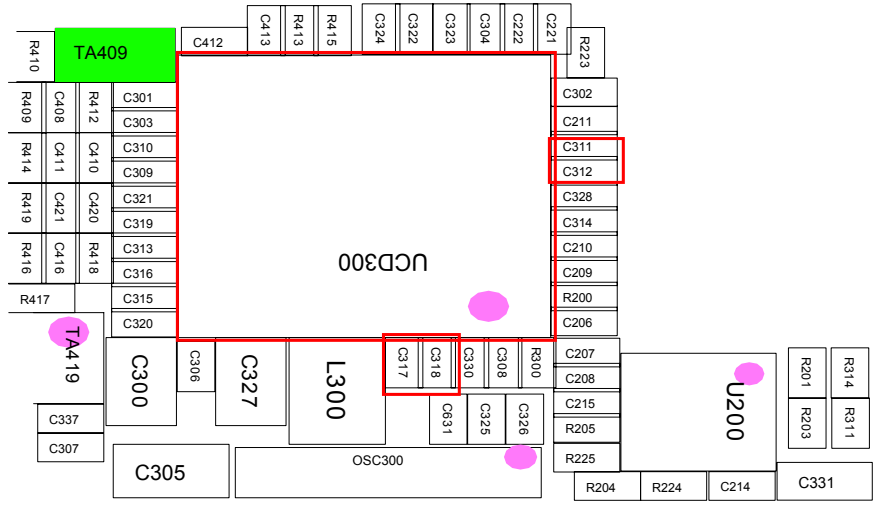


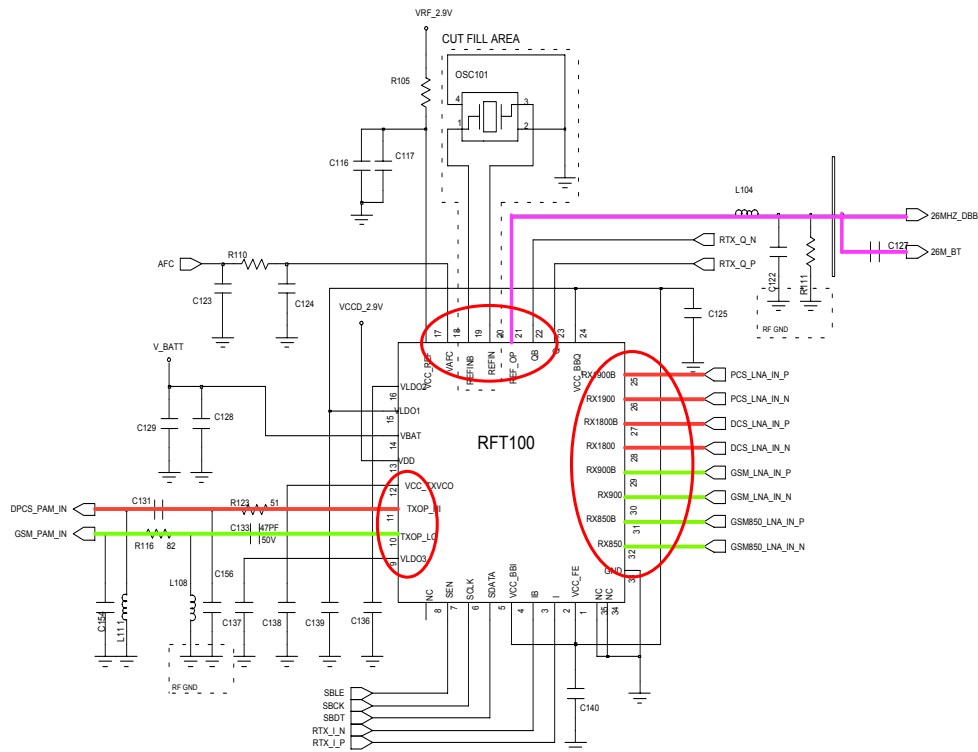
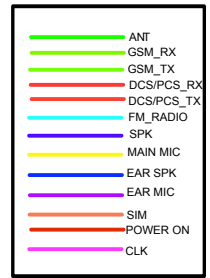
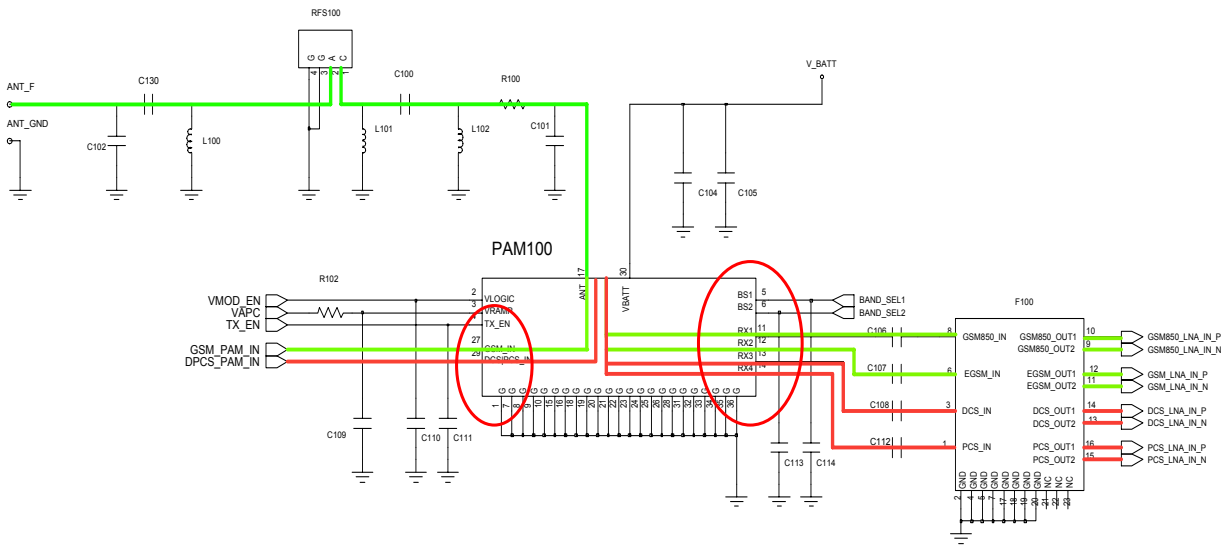
CONTINUOUS TX ON CONDITION
 TX POWER DAC: 600 CODE APPLIED
 CH : 62
 RBW : 100KHz
 VBW : 100KHz
 SPAN : 10MHz
 REF LEV : 10dBm
 ATT : 20dB

10-2-4. DCS TX



CONTINUOUS TX ON CONDITION
 CH : 698CH(DCS)
 TX POWER CODE: 520 CODE Applied
 RBW : 100KHz
 VBW : 100KHz
 SPAN : 10MHz
 REF LEV. : 10dBm
 ATT. : 20dB





11. Reference data

11-1. 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