

SAMSUNG

GSM TELEPHONE

GT-I9500

SERVICE *Manual*

GSM TELEPHONE

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**SAMSUNG
ELECTRONICS**



1. Safety Precautions

1-1. Repair Precaution

Before attempting any repair or detailed tuning, shield the device from RF noise or static electricity discharges.

Use only demagnetized tools that are specifically designed for small electronic repairs, as most electronic parts are sensitive to electromagnetic forces.

Use only high quality screwdrivers when servicing products. Low quality screwdrivers can easily damage the heads of screws.

Use only conductor wire of the properly gauge and insulation for low resistance, because of the low margin of error of most testing equipment.

We recommend 22-gauge twisted copper wire.

Hand-soldering is not recommended, because printed circuit boards (PCBs) can be easily damaged, even with relatively low heat. Never use a soldering iron with a power rating of more than 100 watts and use only lead-free solder with a melting point below 250°C (482°F).

Prior to disassembling the battery charger for repair, ensure that the AC power is disconnected. Always use the replacement parts that are registered in the SEC system. Third-party replacement parts may not function properly.

1-2. ESD(Electrostatically Sensitive Devices) Precaution

Many semiconductors and ESDs in electronic devices are particularly sensitive to static discharge and can be easily damaged by it. We recommend protecting these components with conductive anti-static bags when you store or transport them.

Always use an anti-static strap or wristband and remove electrostatic buildup or dissipate static electricity from your body before repairing ESDs.

Ensure that soldering irons have AC adapter with ground wires and that the ground wires are properly connected.

Use only desoldering tools with plastic tips to prevent static discharge.

Properly shield the work environment from accidental electrostatic discharge before opening packages containing ESDs.

The potential for static electricity discharge may be increased in low humidity environments, such as air-conditioned rooms. Increase the airflow to the working area to decrease the chance of accidental static electricity discharges.

2. Specification

2-1. GSM General Specification

	GSM850	EGSM 900	DCS1800	PCS1900	WCDMA 2100	WCDMA 1900	WCDMA 900	WCDMA 850
Freq. Band[MHz] Uplink/ Downlink	824~849 869~894	880~915 925~960	1710~1785 1805~1880	1850~1910 1930~1990	1922~1977 2112~2167	1852~1907 1932~1987	882~912 927~957	826~846 871~891
ARFCN range	128~251	0~124 & 975~1023	512~885	512~810	UL: 9612~9888 DL: 10562~10838	UL: 9262~9538 DL: 9662~9938	UL: 2712~2863 DL: 2937~3088	UL: 4132~4233 DL: 4357~4458
Tx/Rx spacing	45MHz	45MHz	95MHz	80MHz	190MHz	80MHz	45MHz	45MHz
Mod. Bit rate/ Bit Period	236.8kbps	236.8kbps	236.8kbps	236.8kbps	42.2Mbps(DL) 5.76Mbps(UL)	42.2Mbps(DL) 5.76Mbps(UL)	42.2Mbps(DL) 5.76Mbps(UL)	42.2Mbps(DL) 5.76Mbps(UL)
Time Slot Period/ Frame Period	576.9us 4.615ms	576.9us 4.615ms	576.9us 4.615ms	576.9us 4.615ms	WCDMA 10ms/0.667ms HSPA 2ms/0.667ms	WCDMA 10ms/0.667ms HSPA 2ms/0.667ms	WCDMA 10ms/0.667ms HSPA 2ms/0.667ms	WCDMA 10ms/0.667ms HSPA 2ms/0.667ms
Modulation	GMSK 8PSK	GMSK 8PSK	GMSK 8PSK	GMSK 8PSK	QPSK HPSK 16QAM 64QAM	QPSK HPSK 16QAM 64QAM	QPSK HPSK 16QAM 64QAM	QPSK HPSK 16QAM 64QAM
MS Power	33dBm~5dBm	33dBm~5dBm	30dBm~0dBm	30dBm~0dBm	24dBm~ -50dBm	24dBm~ -50dBm	24dBm~ -50dBm	24dBm~ -50dBm
Power Class	4(GMSK) E2(8PSK)	4(GMSK) E2(8PSK)	1(GMSK) E2(8PSK)	1(GMSK) E2(8PSK)	3	3	3	3
Sensitivity	-102dBm	-102dBm	-100dBm	-100dBm	-106.7dBm	-104.7dBm	-103.7dBm	-104.7dBm
TDMA Mux	8	8	8	8	-	-	-	-
Cell Radius	35Km	35Km	2Km	2Km	2Km	2Km	2Km	2Km

2-2. GSM Tx Power Class

TX Power control level	GSM850	TX Power control level	EGSM900	TX Power control level	DCS1800	TX Power control level	PCS1900
5	33±2 dBm	5	33±2 dBm	0	30±3 dBm	0	30±3 dBm
6	31±2 dBm	6	31±2 dBm	1	28±3 dBm	1	28±3 dBm
7	29±2 dBm	7	29±2 dBm	2	26±3 dBm	2	26±3 dBm
8	27±2 dBm	8	27±2 dBm	3	24±3 dBm	3	24±3 dBm
9	25±2 dBm	9	25±2 dBm	4	22±3 dBm	4	22±3 dBm
10	23±2 dBm	10	23±2 dBm	5	20±3 dBm	5	20±3 dBm
11	21±2 dBm	11	21±2 dBm	6	18±3 dBm	6	18±3 dBm
12	19±2 dBm	12	19±2 dBm	7	16±3 dBm	7	16±3 dBm
13	17±2 dBm	13	17±2 dBm	8	14±3 dBm	8	14±3 dBm
14	15±2 dBm	14	15±2 dBm	9	12±4 dBm	9	12±4 dBm
15	13±2 dBm	15	13±2 dBm	10	10±4 dBm	10	10±4 dBm
16	11±3 dBm	16	11±3 dBm	11	8±4 dBm	11	8±4 dBm
17	9±3dBm	17	9±3dBm	12	6±4 dBm	12	6±4 dBm
18	7±3 dBm	18	7±3 dBm	13	4±4 dBm	13	4±4 dBm
19	5±3 dBm	19	5±3 dBm	14	2±5 dBm	14	2±5 dBm
				15	0±5 dBm	15	0±5 dBm

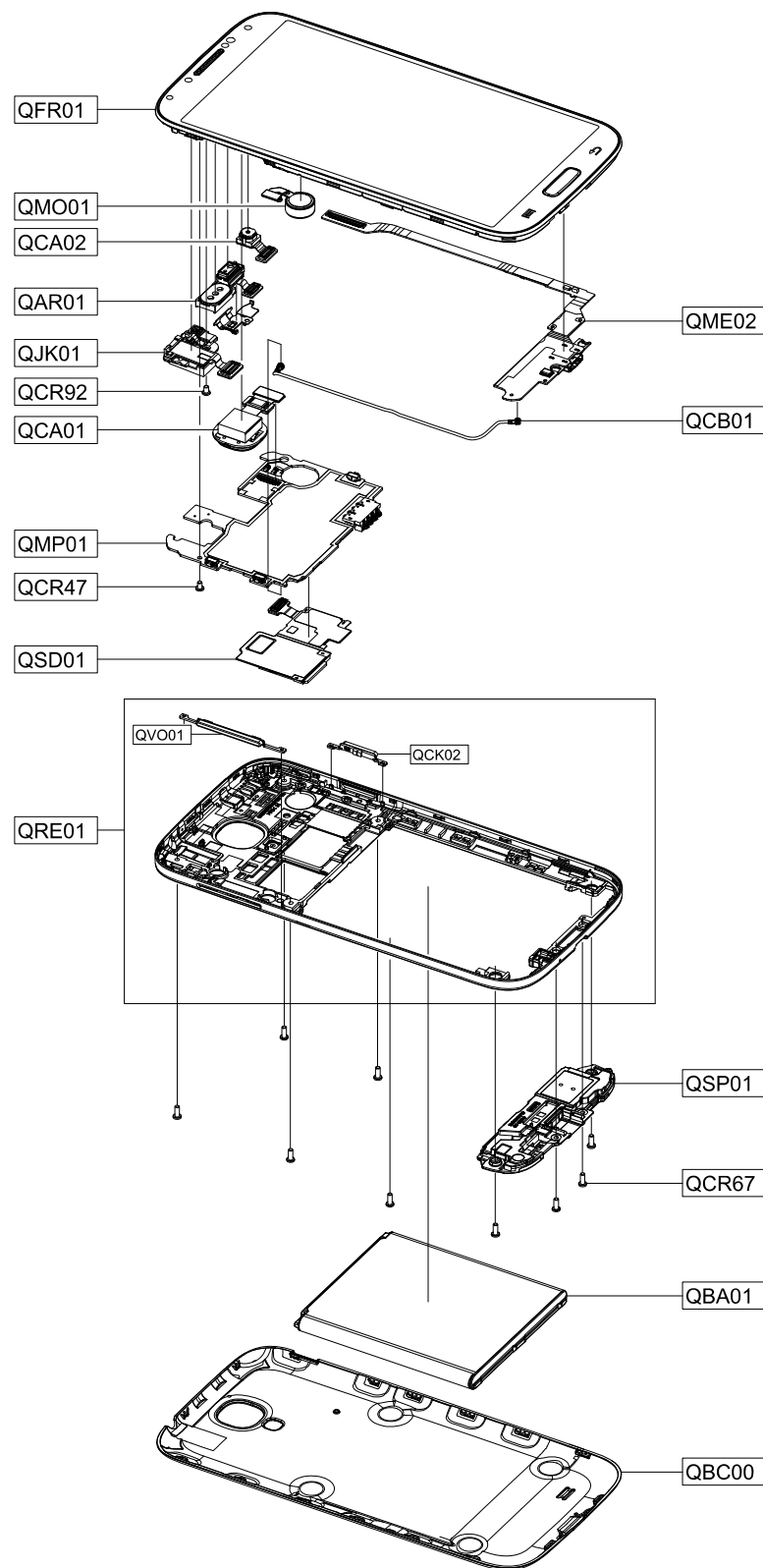
3. Operation Instruction and Installation

Main Function

- Android OS: Android 4.2.2 (Jelly Bean)
- AP : ADONIS(1.8GHz&1.2GHz Quad)
- 16/32/64eMMC5.0 (400MHz), 2GB LPDDR3
- HSPA+ 42Mbps, HSUPA 5.76Mbps
- 13MP AF + 2M FHD
- 5" FHD Super AMOLED OCTA(1920 x 1080, 441PPI)
- WiFi802.11a/b/g/n/ac HT80
- Sensors: Accelerometer, Magnetic, Pressure, Gyro, RGB Light, Proximity, Gesture, Humid, Sensor HUB,
- MHL 2.0

4. Exploded View and Parts List

4-1. Cellular phone Exploded View



5. MAIN Electrical Parts List

SEC-CODE	Design LOC	Description
0403-001870	D1001	DIODE-ZENER
0406-001235	ZD600	DIODE-TVS
0406-001267	ZD1003,ZD1004,ZD1010	DIODE-TVS
0406-001267	ZD1011	DIODE-TVS
0406-001413	ZD1005,ZD1012	DIODE-TVS
0406-001459	ZD1008,ZD1009,ZD700	DIODE-TVS
0406-001459	ZD900,ZD901,ZD902	DIODE-TVS
0406-001506	ZD903,ZD904	DIODE-TVS
0505-001518	Q700,Q701	FET
0505-003234	Q702,Q900,Q901	FET
0601-003322	LED600	LED
0902-002999	UCP5000	IC-AP
0903-001886	U805	IC
1001-001736	U104	IC
1003-002563	U901	IC
1009-001058	U911	IC
1108-000504	UME300	IC-MEMORY
1201-003524	U801	IC
1201-003565	U102	IC
1202-001120	U912	IC
1203-004819	U702,U900	IC
1203-007513	U707	IC
1203-007765	U1002	IC
1203-007766	U101	IC
1203-007776	U601	IC
1203-007794	U600	IC
1203-007795	U1003	IC
1204-003467	U910	IC
1205-004535	U1004	IC
1205-004753	U708	IC
1205-004757	U300	IC-CP
1205-004758	U103	IC
1205-004764	U810	IC
1205-004767	U800	IC
1205-004772	U902	IC
1209-002124	U806	IC

SEC-CODE	Design LOC	Description
1209-002167	U804	IC
1209-002209	U807	IC
1301-002097	U1001	IC
1404-001728	TH300,TH5000,TH5001	THERMISTOR
1404-001728	TH5002	THERMISTOR
1405-001183	V700,V701,V702,V703	VARISTOR
1405-001346	V900,V901	VARISTOR
2007-000141	R918,R919	R-CHIP
2007-001295	R104	R-CHIP
2007-001308	R5072,R5115	R-CHIP
2007-007107	R332	R-CHIP
2007-007136	R5088	R-CHIP
2007-007312	R5058,R5059,R5061	R-CHIP
2007-007312	R5062	R-CHIP
2007-007517	R5064,R5065,R5066	R-CHIP
2007-007517	R5067	R-CHIP
2007-007741	R1010,R5086,R730	R-CHIP
2007-007942	R5008	R-CHIP
2007-008015	R747,R748,R749,R750	R-CHIP
2007-008045	R102,R103	R-CHIP
2007-008048	R846	R-CHIP
2007-008052	R1000,R1001,R5025	R-CHIP
2007-008052	R5026,R5055,R5056	R-CHIP
2007-008052	R5060,R611,R731,R741	R-CHIP
2007-008052	R742,R743,R844	R-CHIP
2007-008055	R1011,R5033,R5037	R-CHIP
2007-008055	R5038,R5040,R5041	R-CHIP
2007-008055	R5042,R5044,R5081	R-CHIP
2007-008055	R602,R617	R-CHIP
2007-008057	R105,R106	R-CHIP
2007-008403	R603	R-CHIP
2007-008419	R345,R346,R347,R618	R-CHIP
2007-008419	R847,R905,R906	R-CHIP
2007-008420	R1045,R937	R-CHIP
2007-008478	R5015,R5016,R5045	R-CHIP
2007-008478	R5046	R-CHIP

SEC-CODE	Design LOC	Description
2007-008483	R1012,R1013,R1014	R-CHIP
2007-008483	R1015,R809,R810,R811	R-CHIP
2007-008483	R812,R813	R-CHIP
2007-008486	R605,R606,R616	R-CHIP
2007-008516	R1002,R1003,R1004	R-CHIP
2007-008516	R1009,R1016,R1046	R-CHIP
2007-008516	R5000,R5003,R5005	R-CHIP
2007-008516	R5007,R5028,R5032	R-CHIP
2007-008516	R5063,R5087,R5098	R-CHIP
2007-008516	R5099,R5100,R5102	R-CHIP
2007-008516	R5103,R5118,R5129	R-CHIP
2007-008516	R703,R709,R725,R841	R-CHIP
2007-008516	R926,R927	R-CHIP
2007-008531	R350,R351,R5107	R-CHIP
2007-008531	R5140	R-CHIP
2007-008588	R336,R337,R338,R5009	R-CHIP
2007-008588	R5010,R818,R819,R820	R-CHIP
2007-008588	R901,R902	R-CHIP
2007-008672	R716,R717,R718,R719	R-CHIP
2007-008672	R720,R721,R722,R723	R-CHIP
2007-008672	R726	R-CHIP
2007-008774	R1006,R1007,R1008	R-CHIP
2007-008774	R619	R-CHIP
2007-008798	R608	R-CHIP
2007-008806	R107,R112	R-CHIP
2007-009084	R1017,R604,R924,R925	R-CHIP
2007-009084	R939	R-CHIP
2007-009111	R5130	R-CHIP
2007-009155	R1023	R-CHIP
2007-009157	R1049,R5068,R5069	R-CHIP
2007-009157	R5070,R5071,R5089	R-CHIP
2007-009157	R5090,R5091,R5092	R-CHIP
2007-009157	R5134,R5135,R5136	R-CHIP
2007-009157	R5137	R-CHIP
2007-009171	R5120,R5121,R5122	R-CHIP
2007-009171	R5123,R5124,R5125	R-CHIP

SEC-CODE	Design LOC	Description
2007-009171	R5126,R5127,R5128	R-CHIP
2007-009199	R1042,R1052,R1053	R-CHIP
2007-009199	R1054	R-CHIP
2007-009212	R920	R-CHIP
2007-009223	R938	R-CHIP
2007-009233	R305	R-CHIP
2007-009398	R849	R-CHIP
2007-009408	R5011,R5012,R5013	R-CHIP
2007-009408	R5014,R5019,R5020	R-CHIP
2007-009408	R5021,R5022,R5047	R-CHIP
2007-009408	R5048,R822,R823	R-CHIP
2007-009969	R921	R-CHIP
2007-010233	R327	R-CHIP
2203-000254	C848	C-CERAMIC,CHIP
2203-000311	C880,U1012	C-CERAMIC,CHIP
2203-000489	C5073,C5074,C5075	C-CERAMIC,CHIP
2203-000725	C681	C-CERAMIC,CHIP
2203-001101	C1017	C-CERAMIC,CHIP
2203-001239	C1016	C-CERAMIC,CHIP
2203-005249	C1030	C-CERAMIC,CHIP
2203-005659	C876,C878	C-CERAMIC,CHIP
2203-005682	C1005,C103,C156,C158	C-CERAMIC,CHIP
2203-005682	C159,C5097,C862,C948	C-CERAMIC,CHIP
2203-005683	C1027,C867,C868,L117	C-CERAMIC,CHIP
2203-005717	C653	C-CERAMIC,CHIP
2203-005725	C622,C700,C701,C872	C-CERAMIC,CHIP
2203-005725	U1010	C-CERAMIC,CHIP
2203-005726	C932,C934	C-CERAMIC,CHIP
2203-005727	C826	C-CERAMIC,CHIP
2203-005729	C823,C929,C933,C935	C-CERAMIC,CHIP
2203-005729	C936	C-CERAMIC,CHIP
2203-005731	C5000,C5001,C944	C-CERAMIC,CHIP
2203-005731	C945	C-CERAMIC,CHIP
2203-005734	C1013,C941,C942,C949	C-CERAMIC,CHIP
2203-005736	C102,C127,C136,C157	C-CERAMIC,CHIP
2203-005736	C164,C174,C813,C815	C-CERAMIC,CHIP

SEC-CODE	Design LOC	Description
2203-005736	C873,C874,C875	C-CERAMIC,CHIP
2203-005789	C154	C-CERAMIC,CHIP
2203-005806	C104,C171,C884,C887	C-CERAMIC,CHIP
2203-006048	C5071,C5072,C5085	C-CERAMIC,CHIP
2203-006121	C1008,C1009	C-CERAMIC,CHIP
2203-006187	C170,C178,C179	C-CERAMIC,CHIP
2203-006194	C160,C163,C5088	C-CERAMIC,CHIP
2203-006194	C5091,C885	C-CERAMIC,CHIP
2203-006305	C143,C938	C-CERAMIC,CHIP
2203-006399	C5089,C618,C911	C-CERAMIC,CHIP
2203-006400	C125,C166,C167,C168	C-CERAMIC,CHIP
2203-006400	C169	C-CERAMIC,CHIP
2203-006410	C177	C-CERAMIC,CHIP
2203-006423	C1001,C1002,C1003	C-CERAMIC,CHIP
2203-006423	C110,C111,C114,C118	C-CERAMIC,CHIP
2203-006423	C119,C120,C122,C123	C-CERAMIC,CHIP
2203-006423	C124,C126,C133,C134	C-CERAMIC,CHIP
2203-006423	C135,C176,C301,C307	C-CERAMIC,CHIP
2203-006423	C308,C309,C311,C316	C-CERAMIC,CHIP
2203-006423	C321,C324,C325,C326	C-CERAMIC,CHIP
2203-006423	C330,C334,C335,C336	C-CERAMIC,CHIP
2203-006423	C339,C342,C343,C344	C-CERAMIC,CHIP
2203-006423	C347,C348,C349,C5007	C-CERAMIC,CHIP
2203-006423	C5012,C5017,C5019	C-CERAMIC,CHIP
2203-006423	C5022,C5025,C5029	C-CERAMIC,CHIP
2203-006423	C5031,C5033,C5035	C-CERAMIC,CHIP
2203-006423	C5037,C5039,C5041	C-CERAMIC,CHIP
2203-006423	C5043,C5045,C5050	C-CERAMIC,CHIP
2203-006423	C5056,C5060,C5064	C-CERAMIC,CHIP
2203-006423	C5068,C5070,C5086	C-CERAMIC,CHIP
2203-006423	C5087,C5090,C5092	C-CERAMIC,CHIP
2203-006423	C617,C619,C678,C690	C-CERAMIC,CHIP
2203-006423	C692,C724,C725,C728	C-CERAMIC,CHIP
2203-006423	C729,C730,C732,C733	C-CERAMIC,CHIP
2203-006423	C736,C737,C738,C822	C-CERAMIC,CHIP
2203-006423	C824,C825,C855,C856	C-CERAMIC,CHIP

SEC-CODE	Design LOC	Description
2203-006423	C903,C904,C905,C906	C-CERAMIC,CHIP
2203-006423	C924,C943,C947,C951	C-CERAMIC,CHIP
2203-006562	C674,C679,C749	C-CERAMIC,CHIP
2203-006626	C883,C893	C-CERAMIC,CHIP
2203-006648	C161	C-CERAMIC,CHIP
2203-006665	L800	C-CERAMIC,CHIP
2203-006824	C129	C-CERAMIC,CHIP
2203-006839	C1025,C676,C805,C837	C-CERAMIC,CHIP
2203-006839	C840,C882,C890,C894	C-CERAMIC,CHIP
2203-006872	C128,C5005,C5010	C-CERAMIC,CHIP
2203-006872	C5015,C5020,C5023	C-CERAMIC,CHIP
2203-006872	C5048,C5054,C5058	C-CERAMIC,CHIP
2203-006872	C5062,C5066,C5093	C-CERAMIC,CHIP
2203-006872	C623,C624,C625,C626	C-CERAMIC,CHIP
2203-006872	C627,C631,C632,C633	C-CERAMIC,CHIP
2203-006872	C636,C642,C644,C646	C-CERAMIC,CHIP
2203-006872	C649,C726,C727,C731	C-CERAMIC,CHIP
2203-006872	C734,C735,C871	C-CERAMIC,CHIP
2203-006896	C175	C-CERAMIC,CHIP
2203-007210	C310,C312,C319,C328	C-CERAMIC,CHIP
2203-007210	C333,C337,C338,C340	C-CERAMIC,CHIP
2203-007210	C351,C355,C620	C-CERAMIC,CHIP
2203-007240	C5002,C654,C655,C656	C-CERAMIC,CHIP
2203-007240	C657,C658,C662,C663	C-CERAMIC,CHIP
2203-007240	C664	C-CERAMIC,CHIP
2203-007269	C352,C353,C673	C-CERAMIC,CHIP
2203-007270	C752	C-CERAMIC,CHIP
2203-007271	C300,C680,C917	C-CERAMIC,CHIP
2203-007295	C140	C-CERAMIC,CHIP
2203-007317	C5004,C5009,C5014	C-CERAMIC,CHIP
2203-007317	C5027,C5047,C5051	C-CERAMIC,CHIP
2203-007317	C5053,C5057,C5061	C-CERAMIC,CHIP
2203-007317	C5065,C611,C612,C613	C-CERAMIC,CHIP
2203-007317	C614,C615,C616,C812	C-CERAMIC,CHIP
2203-007369	C320	C-CERAMIC,CHIP
2203-007385	C5003,C5008,C5013	C-CERAMIC,CHIP

SEC-CODE	Design LOC	Description
2203-007385	C5026,C5046,C5052	C-CERAMIC,CHIP
2203-007385	C5095,C841	C-CERAMIC,CHIP
2203-007391	C313,C317,C341,C921	C-CERAMIC,CHIP
2203-007393	C100,C101,C106,C107	C-CERAMIC,CHIP
2203-007393	C108,C115,C117,C121	C-CERAMIC,CHIP
2203-007393	C131,C132,C350,C5084	C-CERAMIC,CHIP
2203-007393	C691,C891,C892	C-CERAMIC,CHIP
2203-007449	C1004,C1006,C1007	C-CERAMIC,CHIP
2203-007449	C1021,C345,C5006	C-CERAMIC,CHIP
2203-007449	C5011,C5016,C5018	C-CERAMIC,CHIP
2203-007449	C5021,C5024,C5028	C-CERAMIC,CHIP
2203-007449	C5030,C5032,C5034	C-CERAMIC,CHIP
2203-007449	C5036,C5038,C5040	C-CERAMIC,CHIP
2203-007449	C5042,C5044,C5049	C-CERAMIC,CHIP
2203-007449	C5055,C5059,C5063	C-CERAMIC,CHIP
2203-007449	C5069,C5081,C5098	C-CERAMIC,CHIP
2203-007449	C600,C621,C629,C634	C-CERAMIC,CHIP
2203-007449	C635,C637,C638,C640	C-CERAMIC,CHIP
2203-007449	C643,C652,C677,C683	C-CERAMIC,CHIP
2203-007449	C710,C711,C712,C713	C-CERAMIC,CHIP
2203-007449	C881,C909,C910,C912	C-CERAMIC,CHIP
2203-007449	C913,C914,C915,C916	C-CERAMIC,CHIP
2203-007449	C918,C923,C926,C927	C-CERAMIC,CHIP
2203-007449	C937,C939,C950	C-CERAMIC,CHIP
2203-007456	C605,C668,C669	C-CERAMIC,CHIP
2203-007474	C659,C660,C661,C665	C-CERAMIC,CHIP
2203-007775	C5094	C-CERAMIC,CHIP
2203-007781	C1010	C-CERAMIC,CHIP
2203-007795	C354,C670,C671,C755	C-CERAMIC,CHIP
2203-007795	C889	C-CERAMIC,CHIP
2203-007796	C1029,C346,C666,C707	C-CERAMIC,CHIP
2203-007796	C708,C709,C714,C715	C-CERAMIC,CHIP
2203-007796	C753,C754,C756,C842	C-CERAMIC,CHIP
2203-007796	C843,C845,C847,C852	C-CERAMIC,CHIP
2203-007796	C853,C886,C928,C940	C-CERAMIC,CHIP
2203-008095	C1028,C112	C-CERAMIC,CHIP

SEC-CODE	Design LOC	Description
2203-008097	C1000,U1006	C-CERAMIC,CHIP
2203-008126	C675	C-CERAMIC,CHIP
2203-008243	C1019,C846	C-CERAMIC,CHIP
2203-008527	C1018,C116,C302,C303	C-CERAMIC,CHIP
2203-008527	C306,C601,C603,C606	C-CERAMIC,CHIP
2203-008527	C607,C687,C747,C750	C-CERAMIC,CHIP
2203-008528	C1011,C609,C610,C746	C-CERAMIC,CHIP
2203-008528	C748,C751	C-CERAMIC,CHIP
2203-008529	C109,C604,C608,C667	C-CERAMIC,CHIP
2203-008529	C686,C688,C801,C888	C-CERAMIC,CHIP
2203-008529	C900,C901,C902,C907	C-CERAMIC,CHIP
2203-008529	C908,C919,C920,C922	C-CERAMIC,CHIP
2404-001516	TA900	C-TA,CHIP
2404-001652	TA1000	C-TA,CHIP
2409-001243	BTC600	CAPACITOR
2703-001231	L1004	INDUCTOR-SMD
2703-002309	L1005	INDUCTOR-SMD
2703-002596	L100,L104	INDUCTOR-SMD
2703-002900	C153	INDUCTOR-SMD
2703-002960	L614,L615	INDUCTOR-SMD
2703-003545	L802	INDUCTOR-SMD
2703-003686	L110	INDUCTOR-SMD
2703-003755	L106,L107,L109	INDUCTOR-SMD
2703-003873	L303,L304,L305	INDUCTOR-SMD
2703-003897	L709,L711	INDUCTOR-SMD
2703-004000	L102,L111	INDUCTOR-SMD
2703-004018	L816	INDUCTOR-SMD
2703-004032	L803	INDUCTOR-SMD
2703-004037	C802	INDUCTOR-SMD
2703-004286	L118	INDUCTOR-SMD
2703-004288	C165	INDUCTOR-SMD
2703-004297	L617	INDUCTOR-SMD
2703-004299	L113	INDUCTOR-SMD
2703-004300	C142,C816	INDUCTOR-SMD
2703-004328	L806	INDUCTOR-SMD
2703-004363	L116	INDUCTOR-SMD

SEC-CODE	Design LOC	Description
2703-004366	C144,U802	INDUCTOR-SMD
2703-004368	C151	INDUCTOR-SMD
2703-004373	L603,L604,L605,L610	INDUCTOR-SMD
2703-004373	L611,L612	INDUCTOR-SMD
2703-004501	L812,L813	INDUCTOR-SMD
2703-004543	L710	INDUCTOR-SMD
2703-004590	L602,L606,L607,L608	INDUCTOR-SMD
2703-004590	L609	INDUCTOR-SMD
2801-004339	OSC800	CRYSTAL-UNIT
2801-004931	OSC801	CRYSTAL-UNIT
2801-005163	OSC5000	CRYSTAL-UNIT
2801-005264	OSC600	CRYSTAL-UNIT
2805-001098	OSC802	CRYSTAL-UNIT
2809-001376	OSC100	CRYSTAL-UNIT
2904-001959	F802	FILTER-SAW
2904-002085	F801,F803	FILTER-SAW
2911-000245	U100	FILTER
2911-000249	F101	FILTER
3003-001199	MIC900,MIC901	MICROPHONE-UNIT
3301-001534	L900	CORE-FERRITE BEAD
3301-001729	L600,L601,L700,L701	CORE-FERRITE BEAD
3301-001729	L703,L704,L706,L713	CORE-FERRITE BEAD
3301-001789	L707,L708,L712	CORE-FERRITE BEAD
3301-001812	L119,L911	CORE-FERRITE BEAD
3301-001885	L902,L903,L904,L906	CORE-FERRITE BEAD
3301-001885	L907,L910	CORE-FERRITE BEAD
3301-002037	L616	CORE-FERRITE BEAD
3301-002078	L908,L909	CORE-FERRITE BEAD
3301-002122	L108	CORE-FERRITE BEAD
3301-002228	L300,L301,L302,L912	CORE-FERRITE BEAD
3301-002237	L804	CORE-FERRITE BEAD
3301-002254	L1006,L105	CORE-FERRITE BEAD
3404-001487	TAC1000,TAC300	SWITCH-TACT
3404-001487	TAC301	SWITCH-TACT
3705-001448	RFS101	CONNECTOR-COAXIAL
3705-001866	RFS100	CONNECTOR-COAXIAL

SEC-CODE	Design LOC	Description
3711-007188	HDC900	CONNECTOR-HEADER
3711-007467	HEA300	CONNECTOR-HEADER
3711-007746	HEA700	CONNECTOR-HEADER
3711-008151	HDC702	CONNECTOR-HEADER
3711-008485	BTC1000	CONNECTOR-HEADER
3711-008490	HEA1001	CONNECTOR-HEADER
3711-008508	HDC701	CONNECTOR-HEADER
3711-008509	HDC700	CONNECTOR-HEADER
3711-008511	HEA1000	CONNECTOR-HEADER
3712-001373	CONTACT602	CONNECTOR
3712-001373	CONTACT603	CONNECTOR
3712-001458	ANT100,ANT101,ANT800	CONNECTOR
3712-001458	ANT801,CONTACT600	CONNECTOR
3712-001458	CONTACT601	CONNECTOR
4709-002177	U803	RF-MODULE
4709-002178	F100	RF-MODULE
GH63-02803A	SC102	SHEILD CAN
GH98-26897A	SC100	SHEILD CAN
GH98-26903A	SC101	SHEILD CAN

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

6. Level 1 Repair

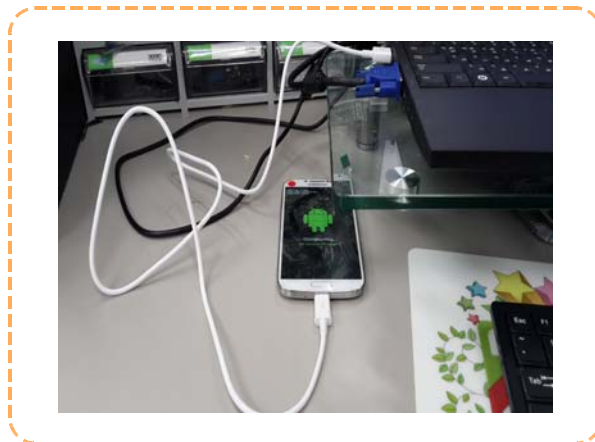
6-1. S/W installation

6-1-1. Required items in order to install S/W

- Installation program: Downloader Program (**Odin3 v3.07.exe**)
- GT-I8730 Mobile Phone
- Data Cable (GH39-01578B)
- Mobile device specific S/W: Binary files

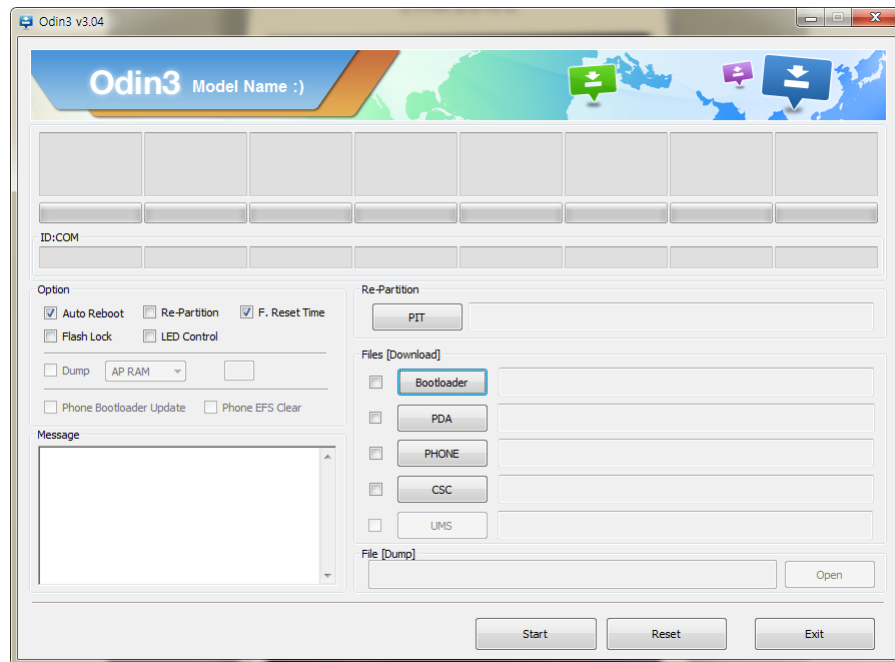
※ Settings

Connect PC to Phone Using Data Cable

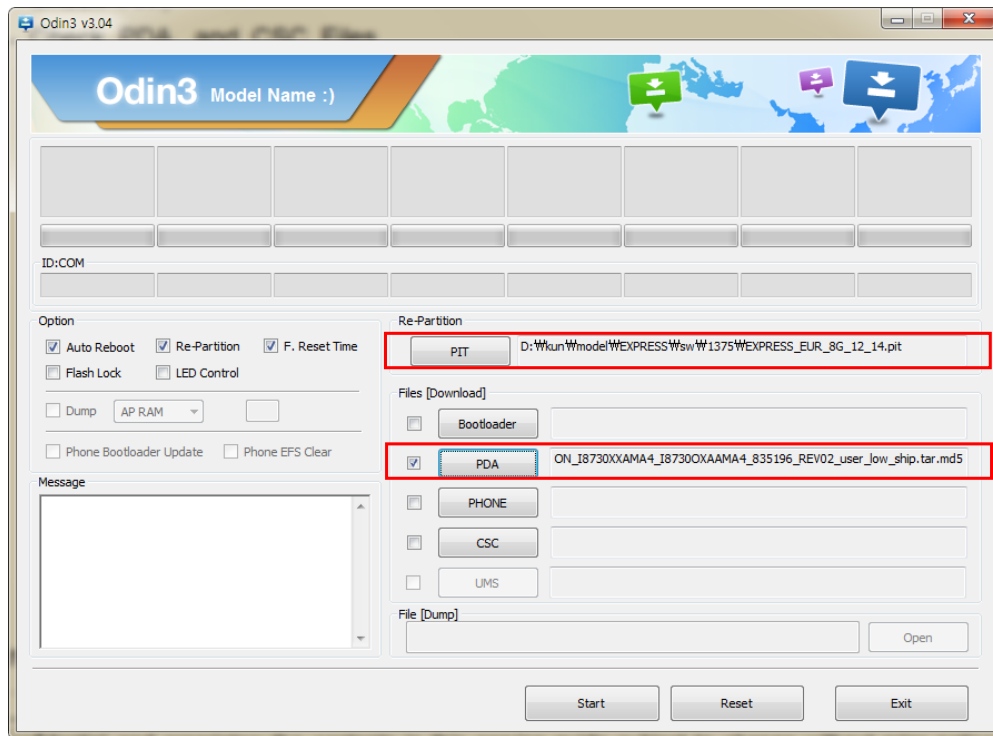


6-1-2. S/W Installation Program (Downloader program)

- Open up the S/W Installation Program by executing the **"Odin3 v3.07.exe"**

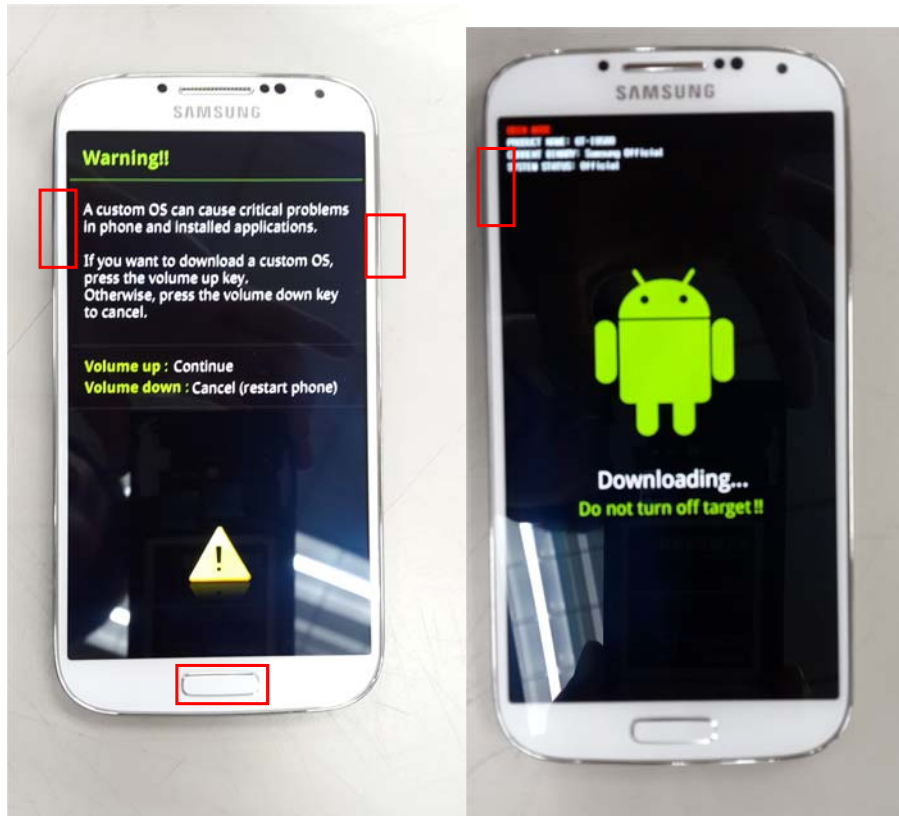


1. Enable the check mark by click on the following options,
 - Check Re-Partition, Auto Reboot
 - Check PIT
 - Check PDA File



2. Enter into Download Mode

- Enter into Download Mode by pressing Volume Down button, OK button, and ON/OFF Button simultaneously.
- Press volume up key to enter Download Mode

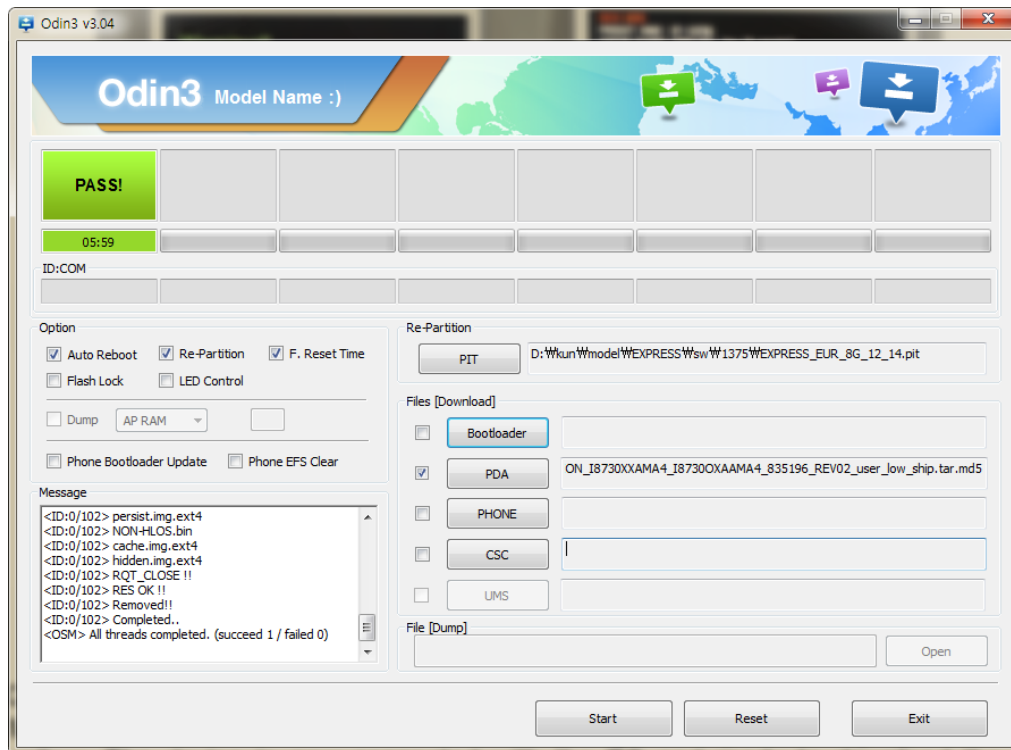


3. Connect the device to PC via Data Cable.

Make sure that the one of communication port [ID:COM] box is highlighted in yellow. The device is now connected with the PC and ready to download the binary file into the device.

- 4. Start downloading binary file into the device by clicking Start Button on the screen.**
the green colored "PASS!" sign will appear on the upper-left box if the binary file has been successfully downloaded into the device.

5. Disconnect the device from the Data cable.



6. Once the device boots up, you can check the version of the binary file or name by pressing the following code in sequence;

***#1234#**

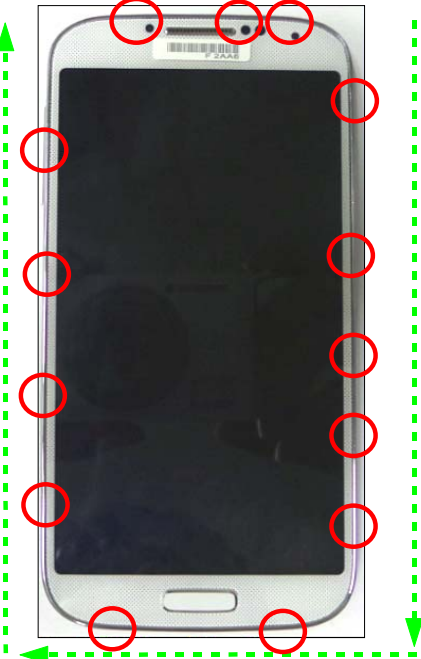
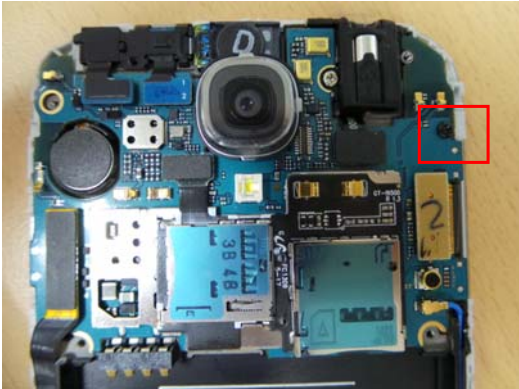
You can perform factory reset by pressing the following code in sequence;

***#87976633#**

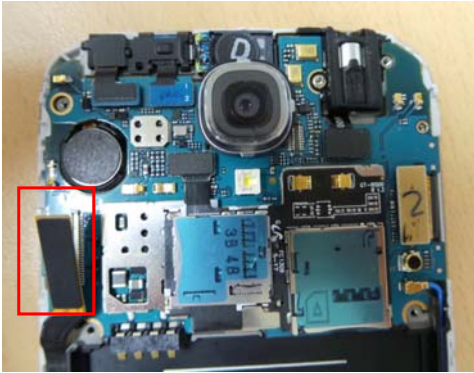
7. Level 2 Repair

7-1. Disassembly and Assembly Instructions

7-1-1. Disassembly

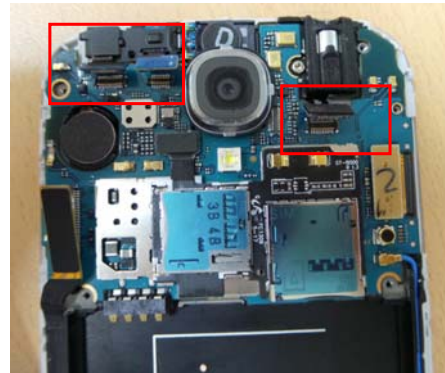
1 	2 
1) Unscrew the 9 points of the REAR.	1) Disassmble the rear in the direction as picture.
3 	4 
1) Necessarily disassmble hook 1 point from Front.	1) Unscrew the 1 point from the board

5



1) Detach Sub PBA Connector from the board.

6



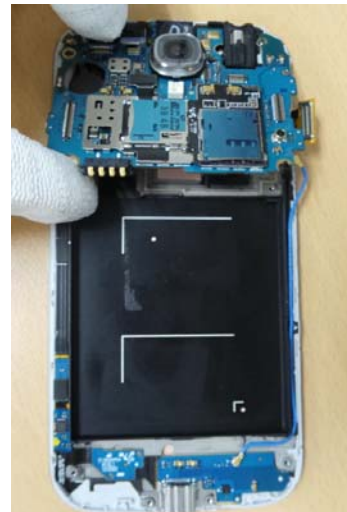
1) Detach the IR LED, Front CAM, Ear jack connector from the board.

7



1) Detach the OCTA connector from the board
2) Detach the Coaxial Cable from board

8



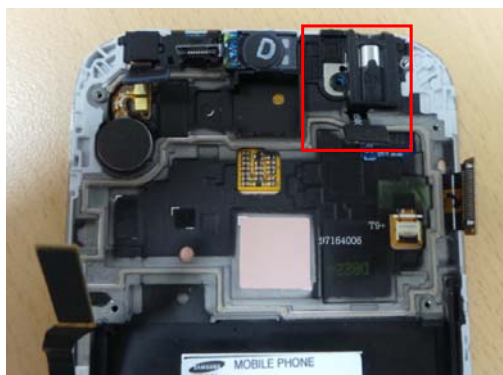
1) Detach the PBA from the board.

9



1) Unscrew 1 point from the Bracket.

10



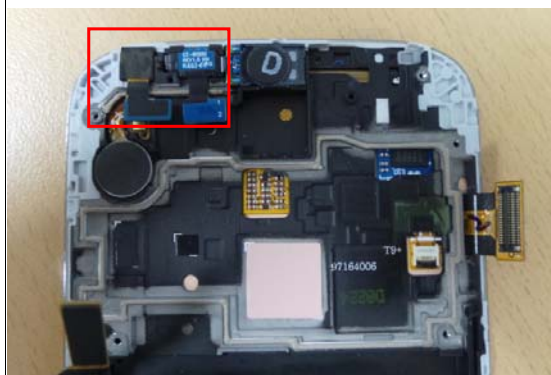
1) Detach the Earjack Module from the Bracket.

11



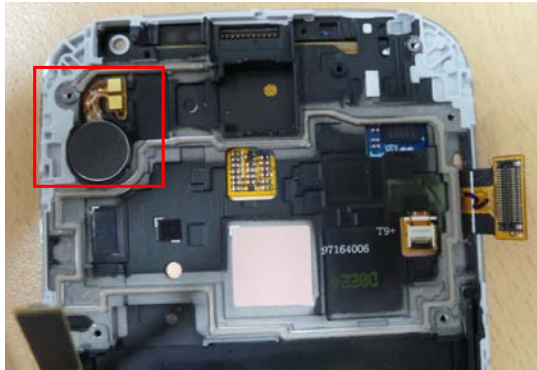
1) Detach SUS from the Front Ass'y

12



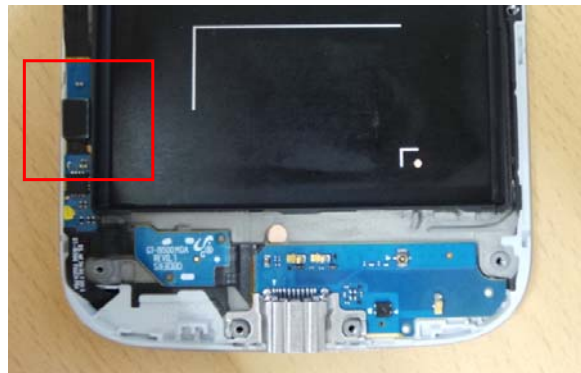
1) Detach the IR LED, Front CAM from the Bracket.

13



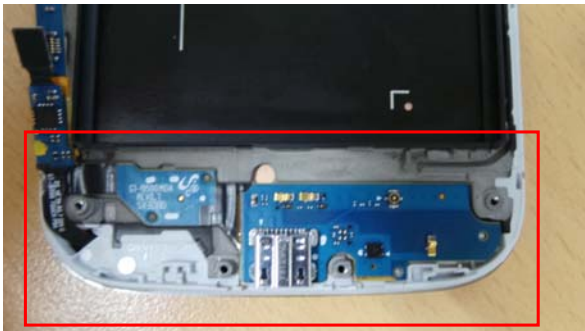
1) Detach Motor from the Bracket.

14



1) Detach the Touch key connector from the Sub PBA.

15

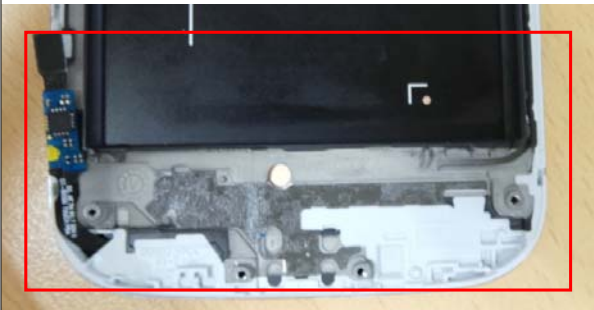


1) Detach the SUB PBA from the Bracket

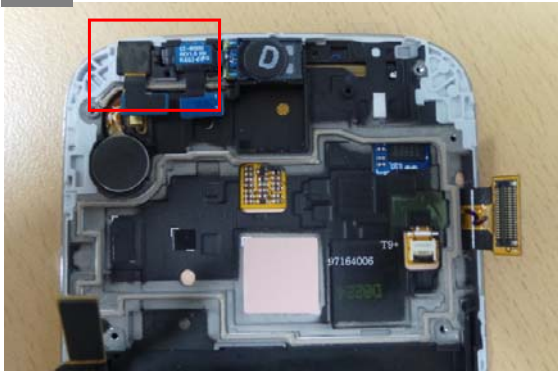
16



7-1-1. Assembly

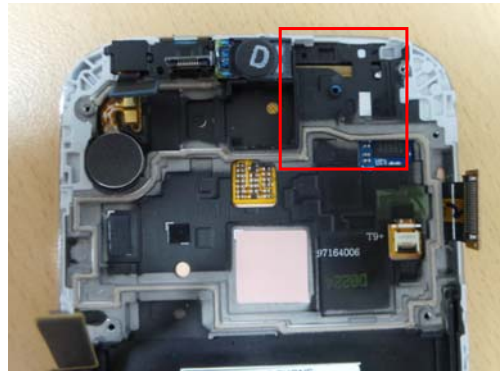
1 	2 
1) Attach Sub PBA to the board.	1) Connect Touch Key Connector to Sub PBA.
3 	4 
1) Attach the Motor to the board.	1) Attach IR LED, Front CAM to the board.

5



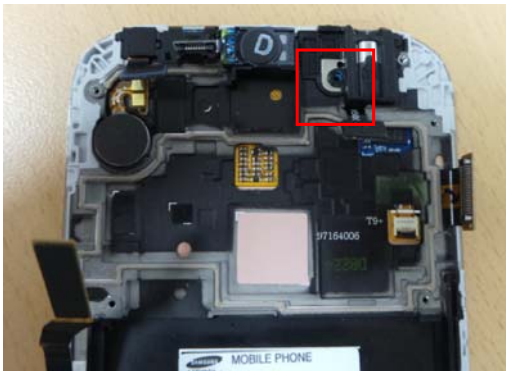
1) Attach SUS to the board.

6



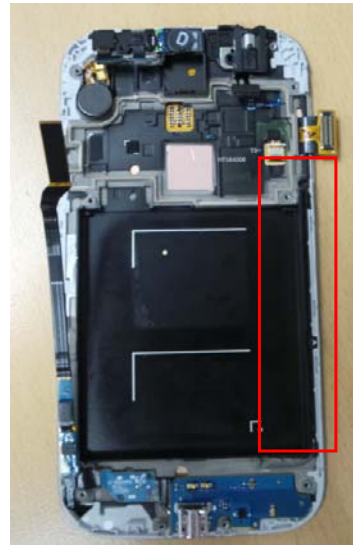
1) Attach Ear Jack Module to the Board.

7



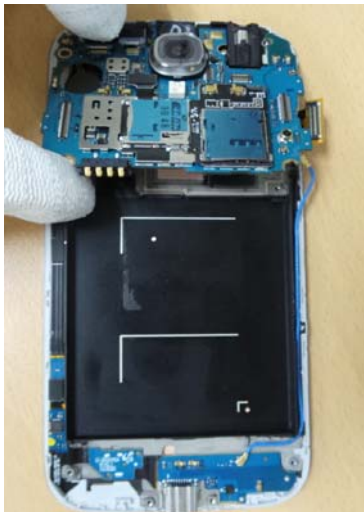
1) Screw 1 Point to the Board

8



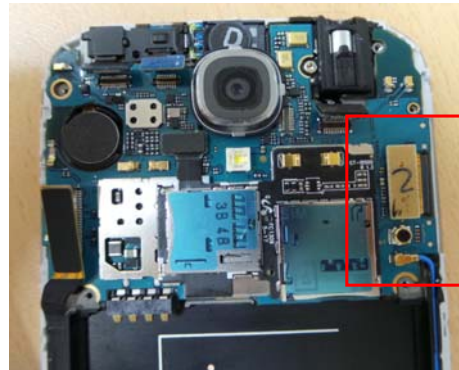
1) Attach the Coxial Cable to the board.

9



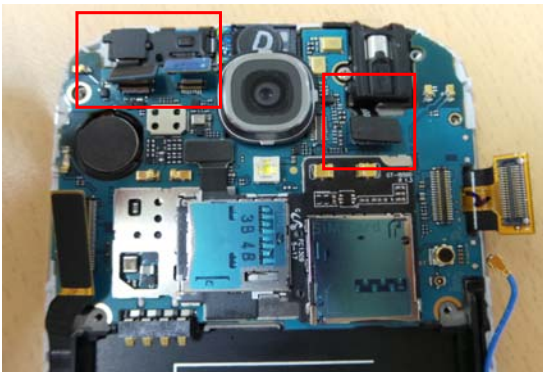
1) Attach RCV module to the board.

10



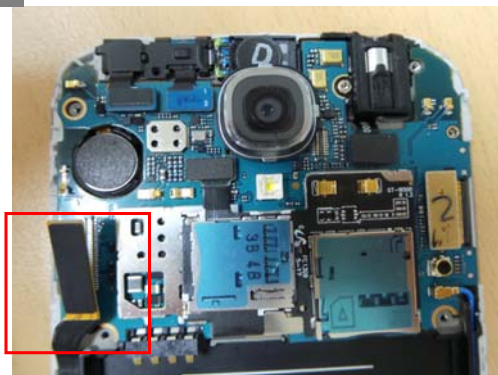
1) Attach Coaxial Cable to PBA
2) Attach the OCTA Connector to the PBA.

11



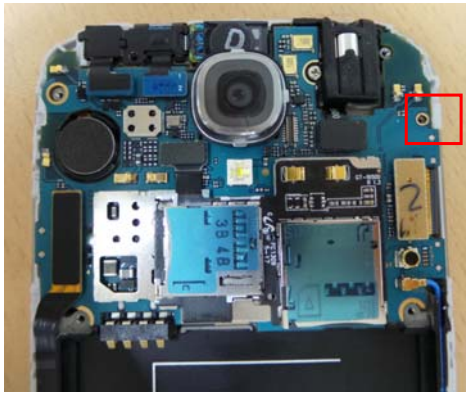
1) Attach the Front CAM, IR LED, Earjack connector to the board.

12



1) Attach the Sub PBA Connector to the board.

13



1) Screw the 1 point from the board

14



1) Necessarily disassemble hook 1 point from Front.

15



1) Assembled from the rear when assembling the left-hand side

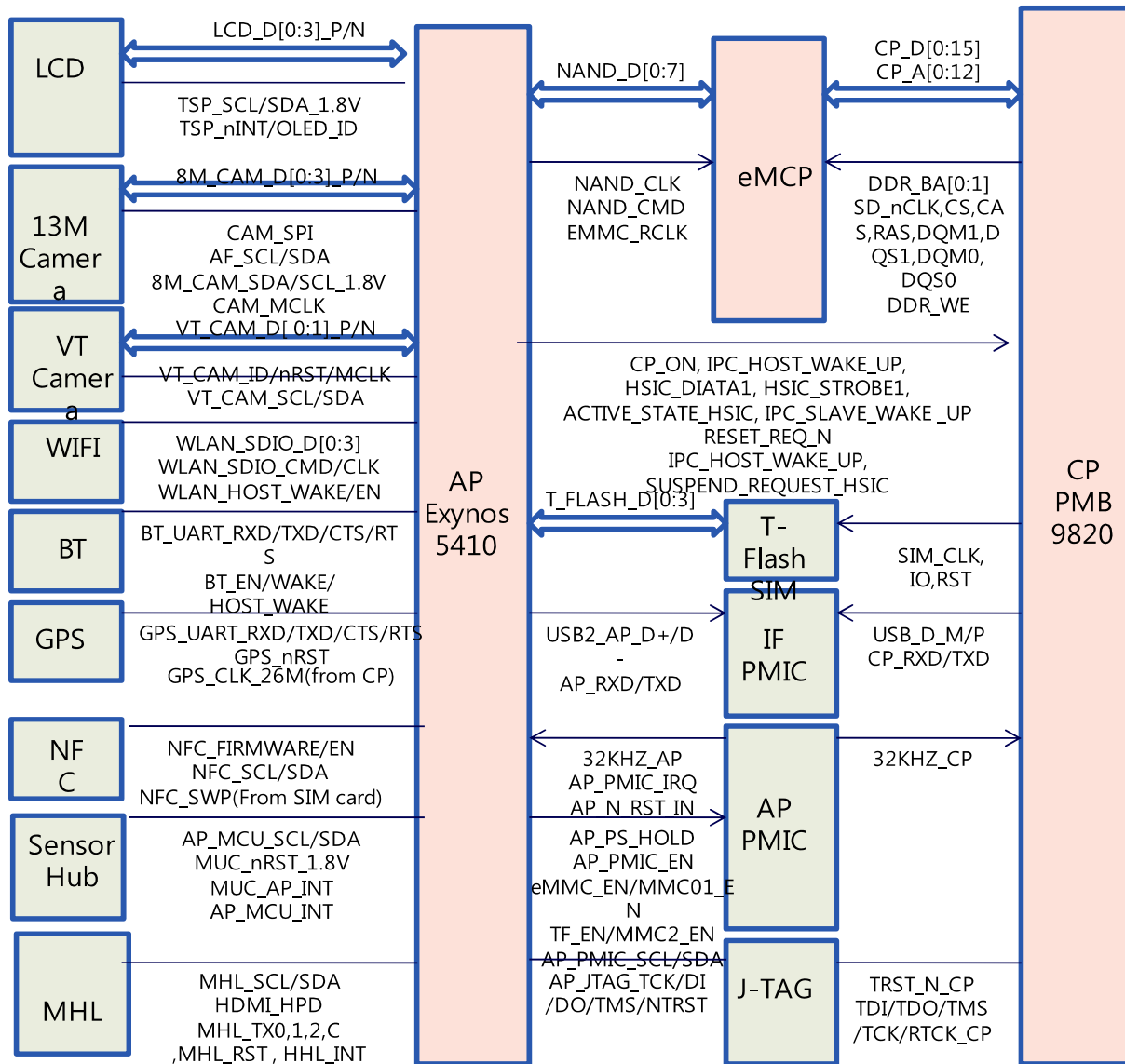
16



1) Screw 9 points to the board.

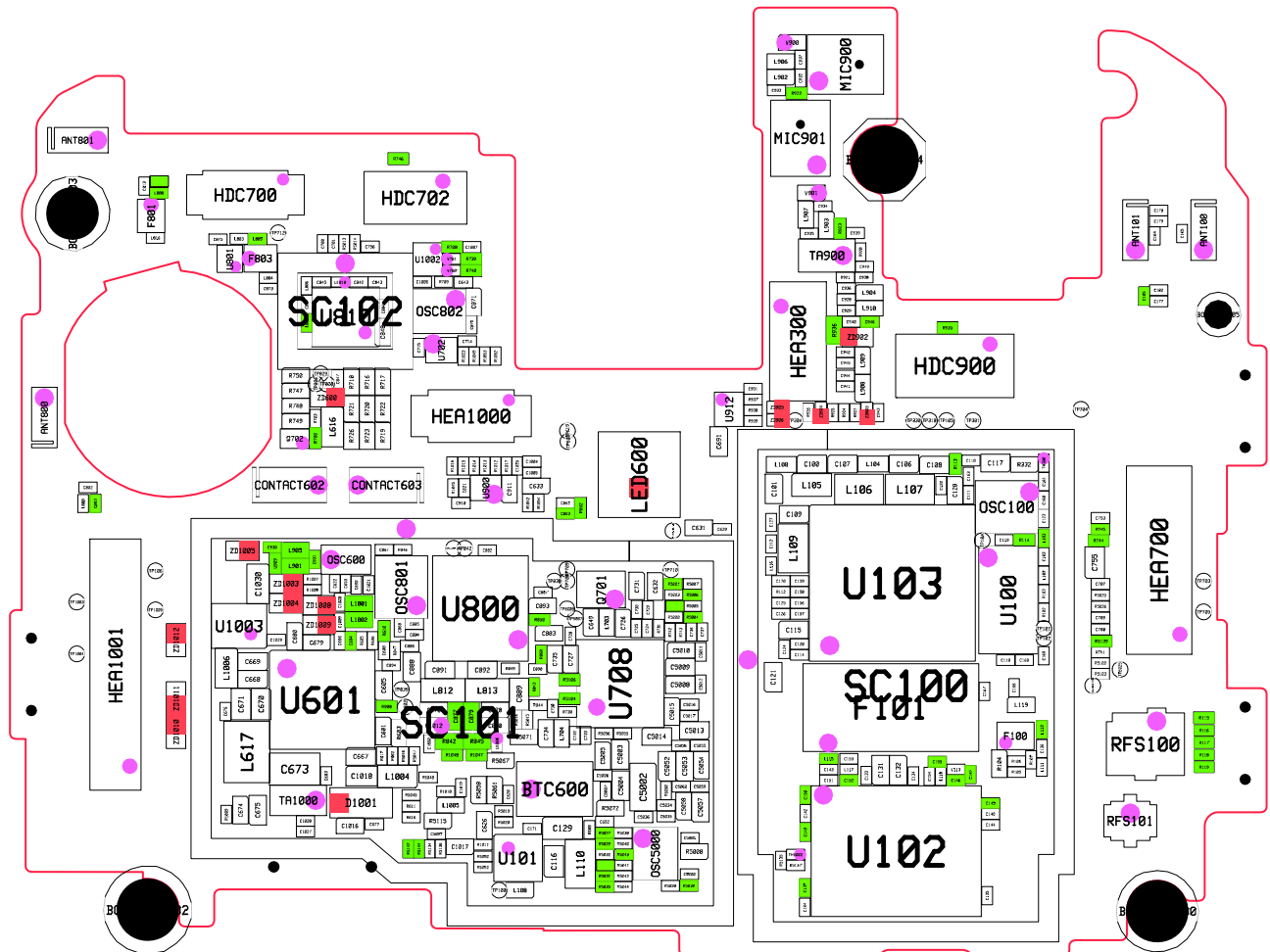
8. Level 3 Repair

8-1. Block Diagram



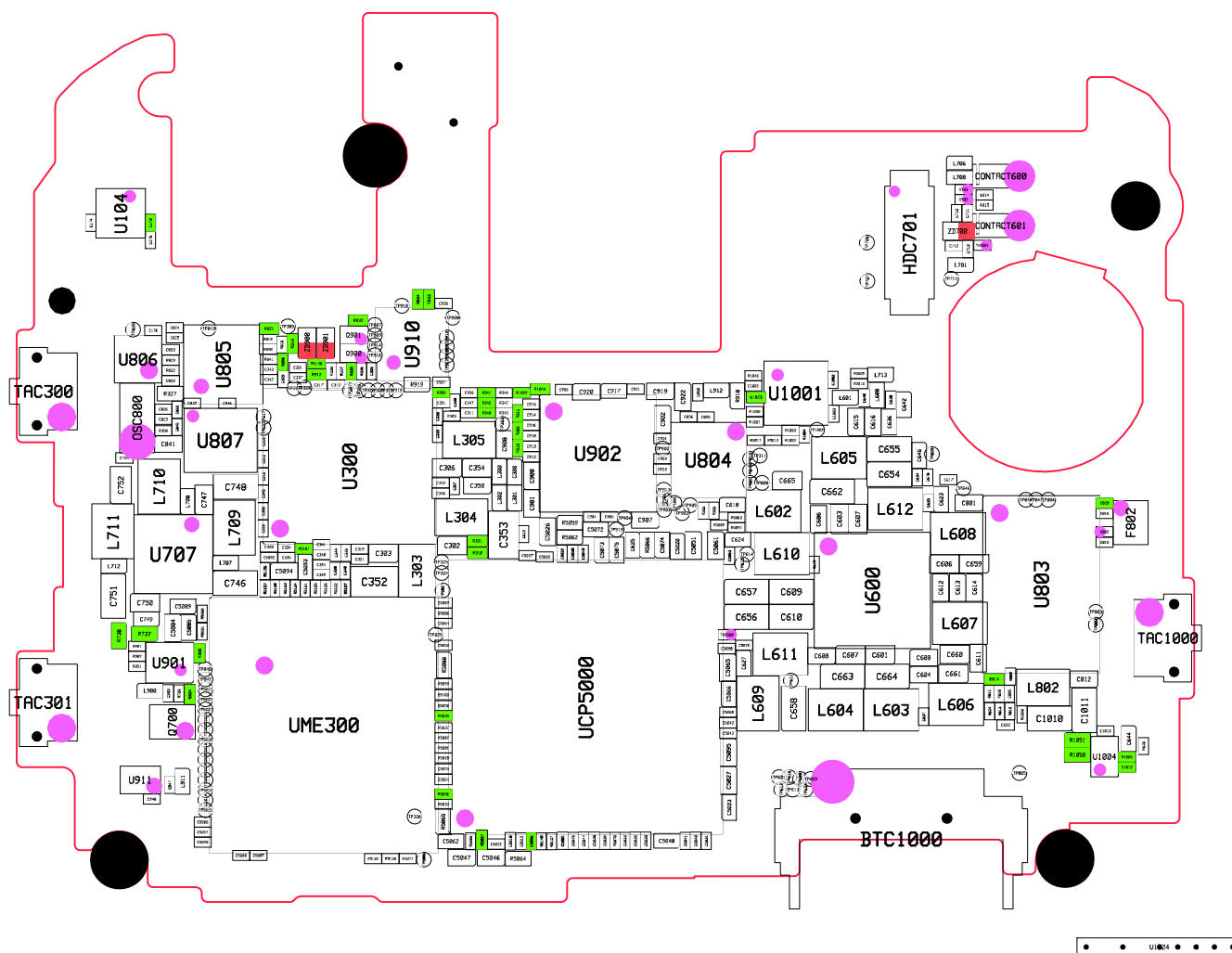
8-2. PCB Diagrams

8-2-1. Top



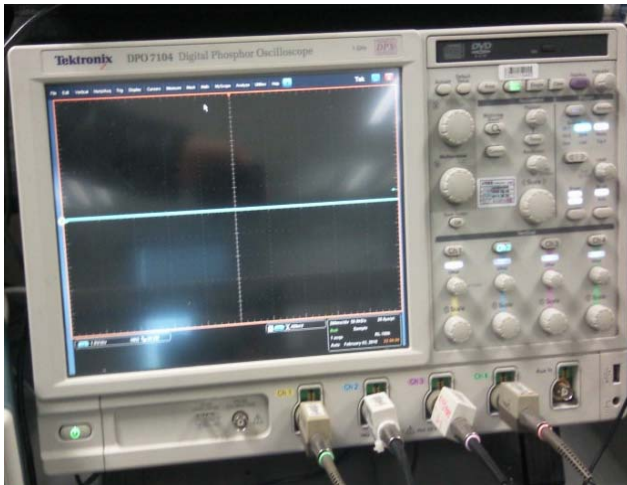
.....

8-2-2. Bottom



8-3. Flow Chart of Troubleshooting

Equipments



↑ Oscilloscope



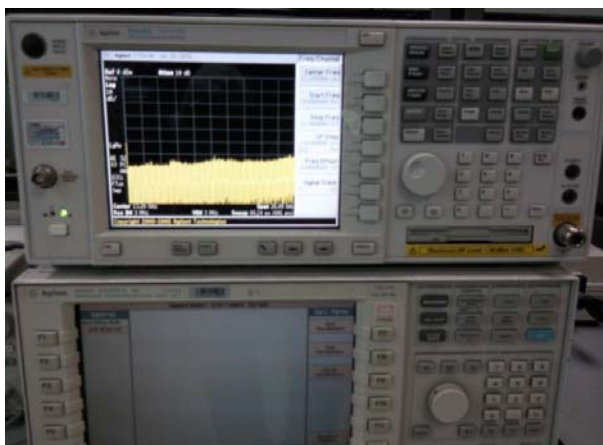
↑ Digital Multi-meter



↑ Power Supply



↑ + driver, ESD Safe Tweezer

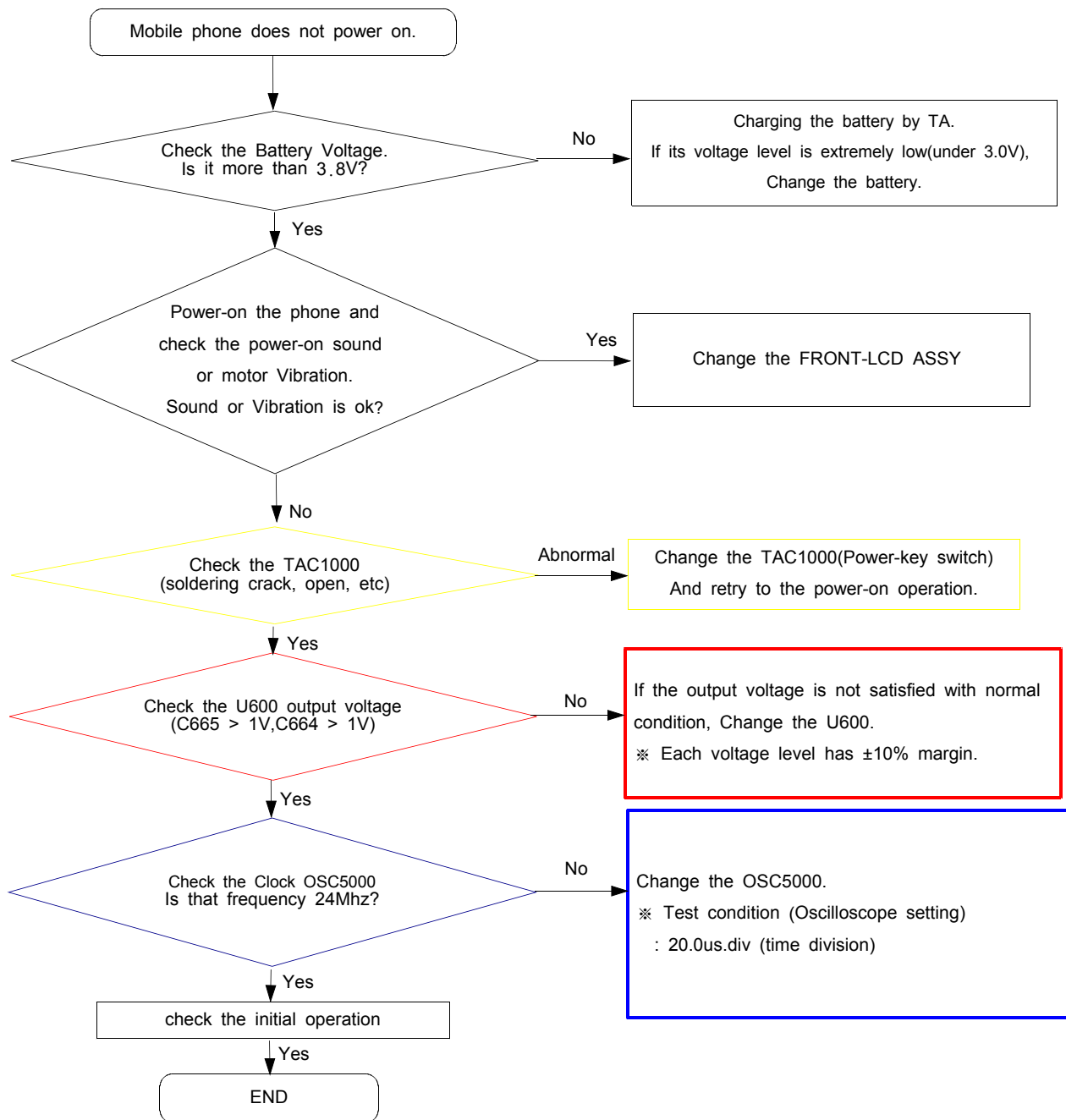


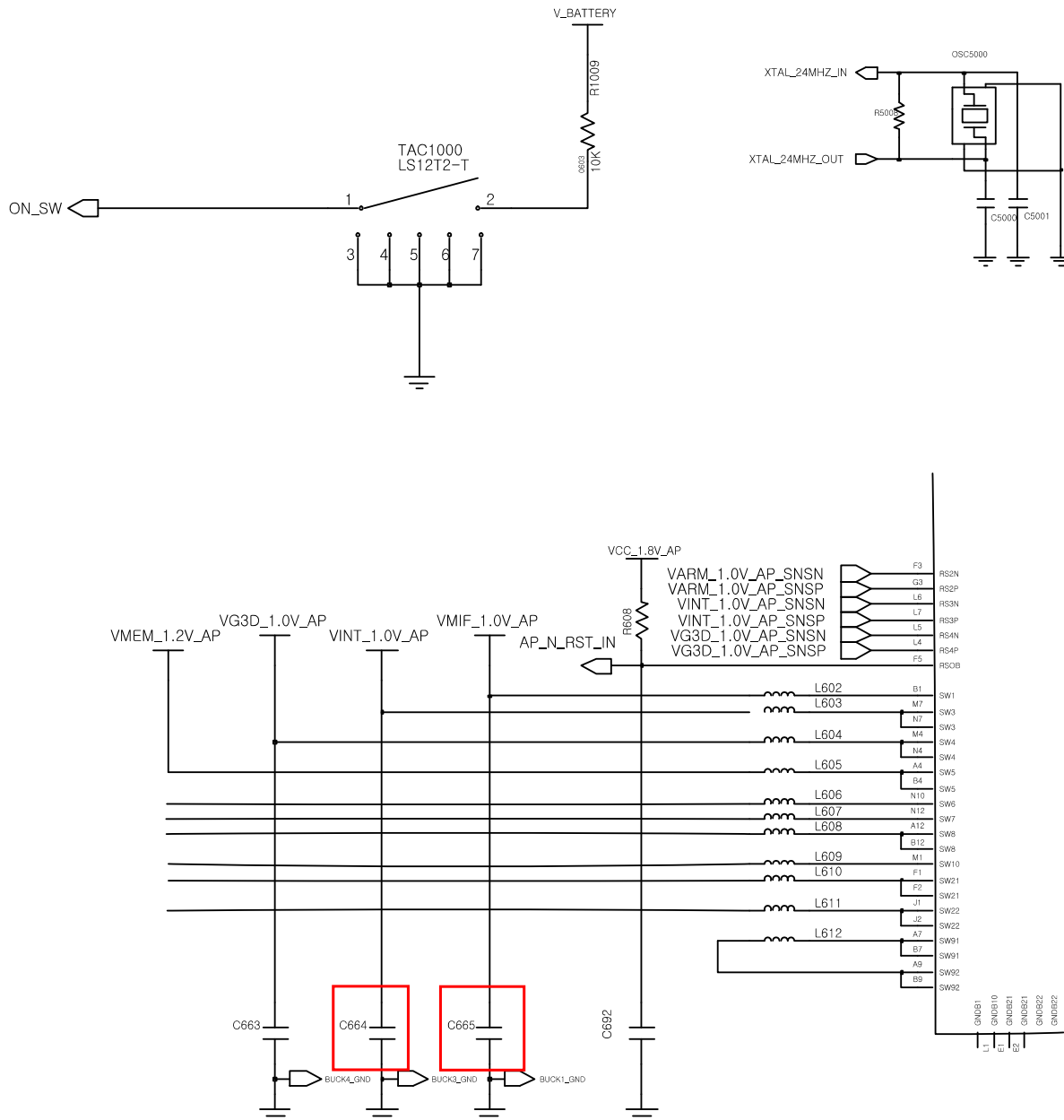
↑ 8960 & Spectrum Analyzer



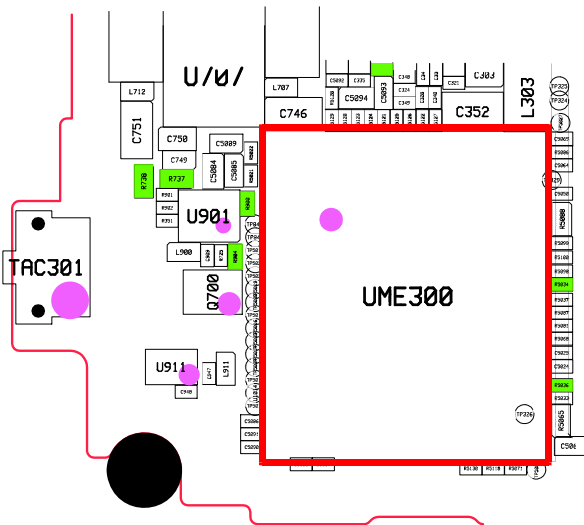
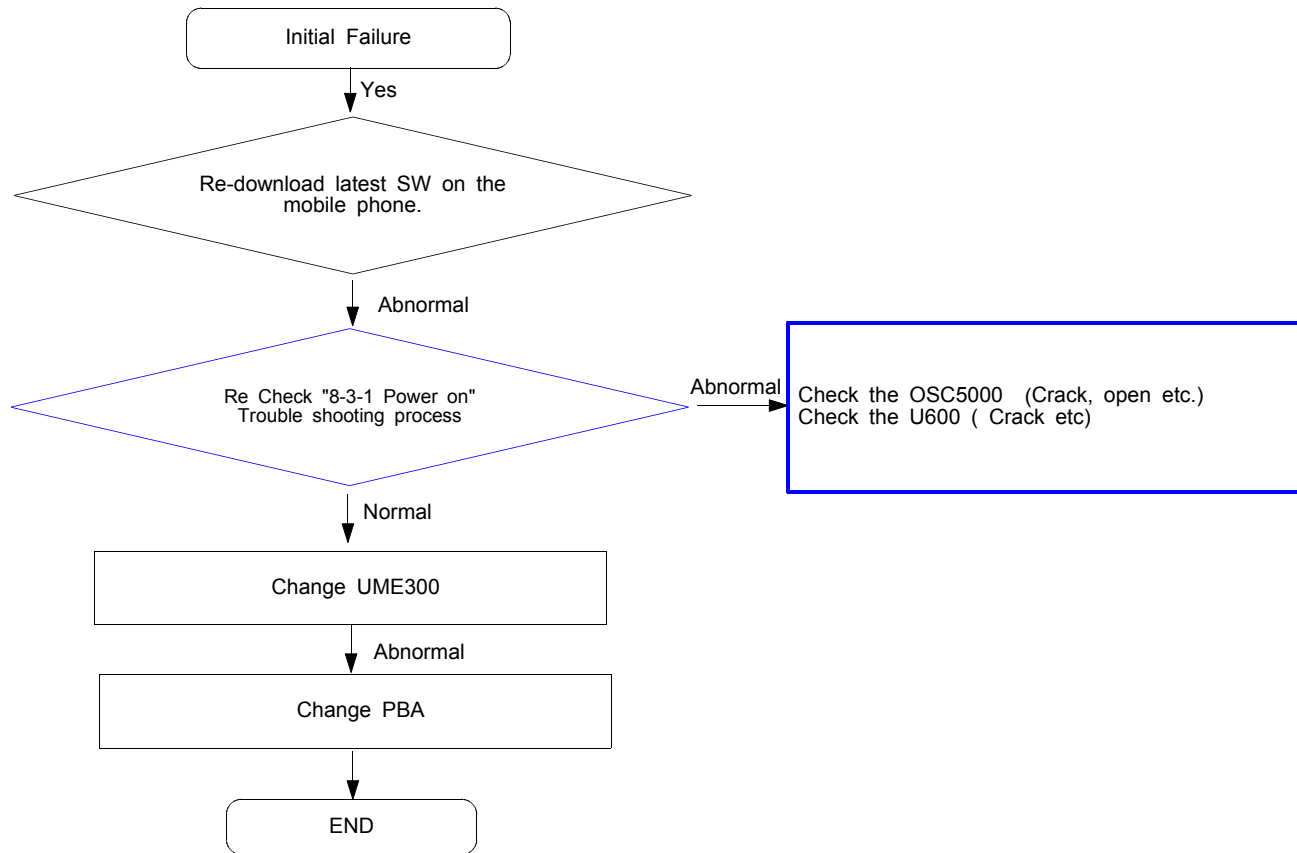
↑ Soldering iron

8-3-1. Power On

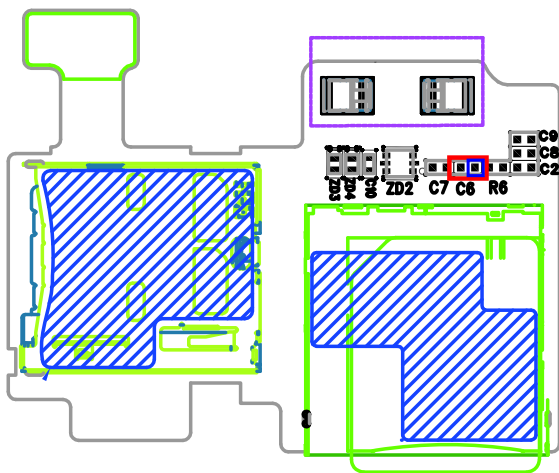
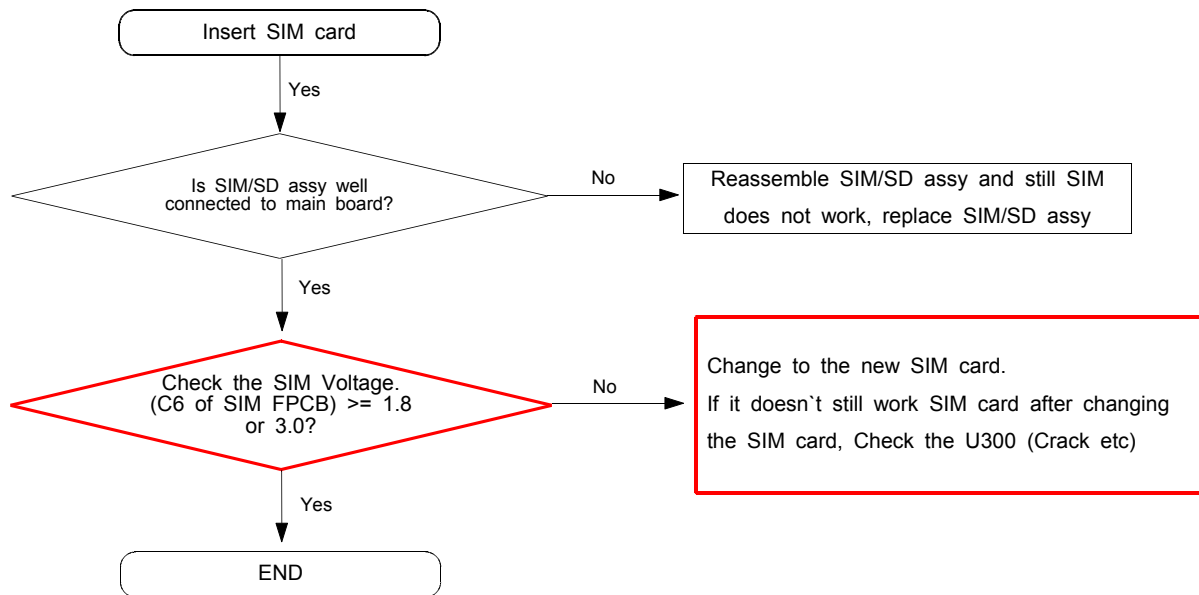




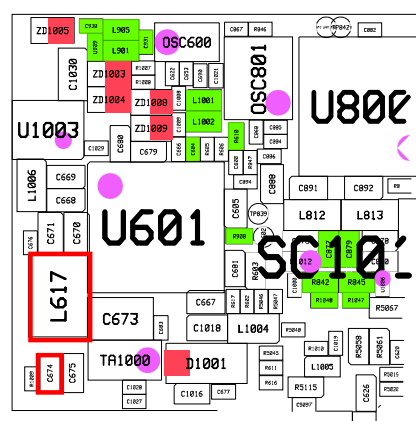
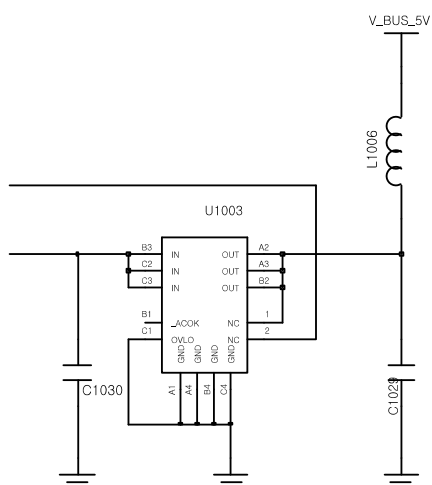
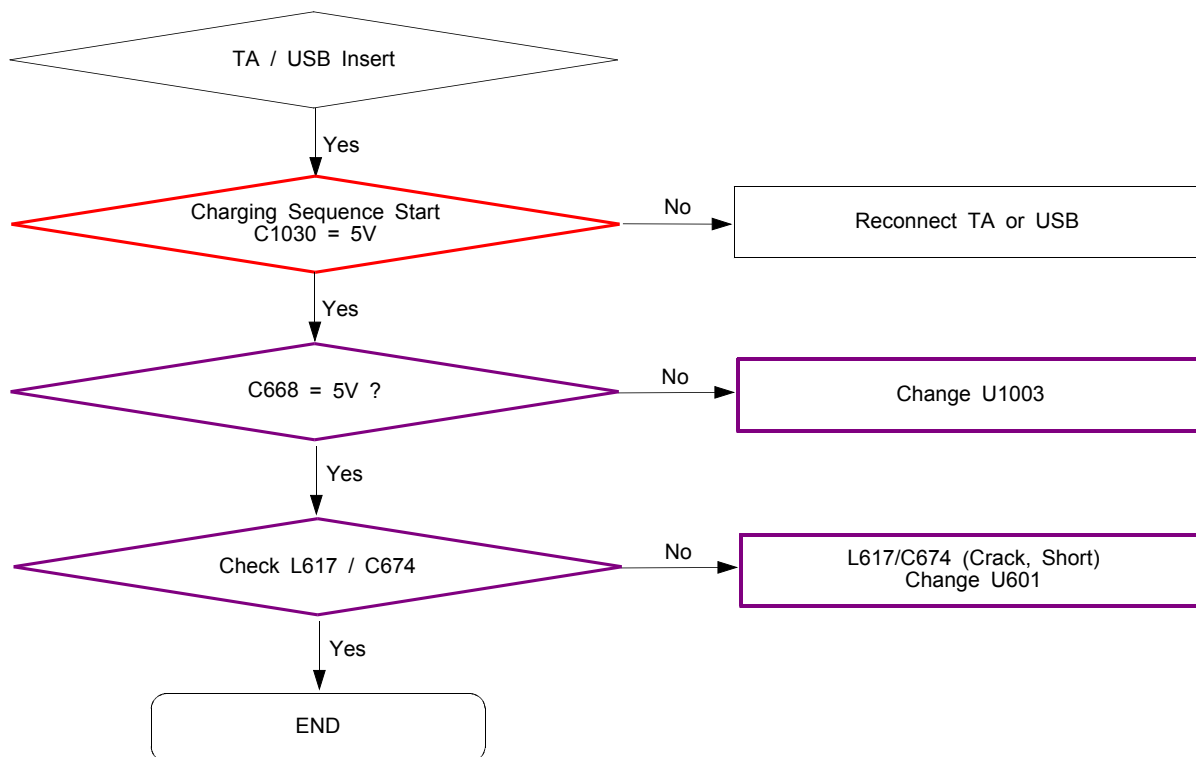
8-3-2. Initial



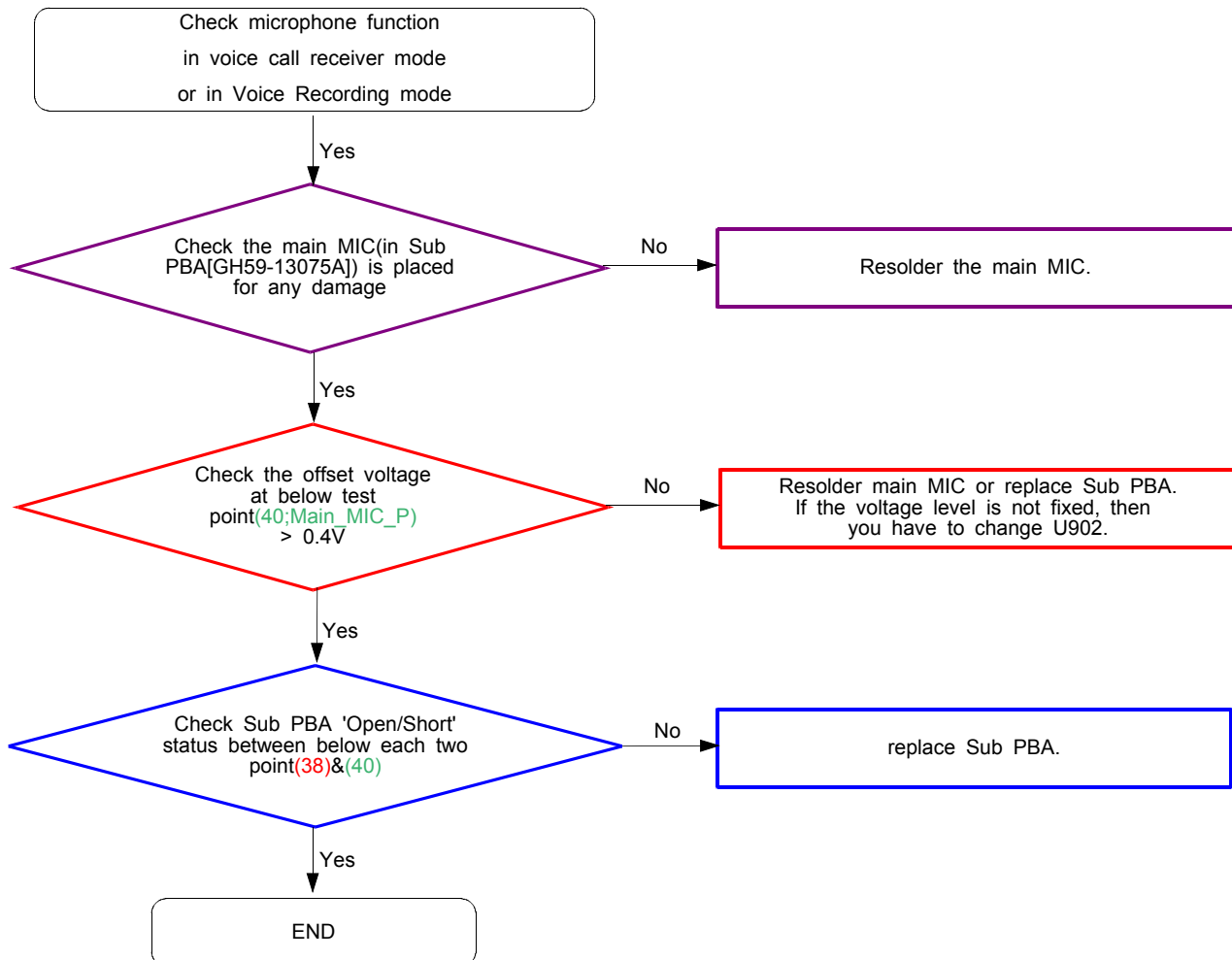
8-3-3. Sim Part

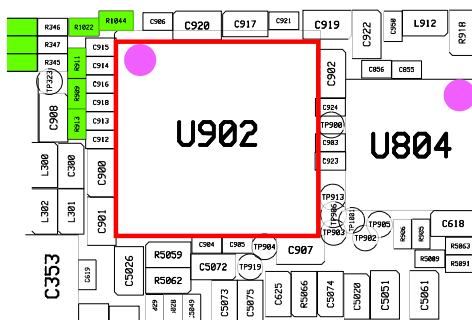
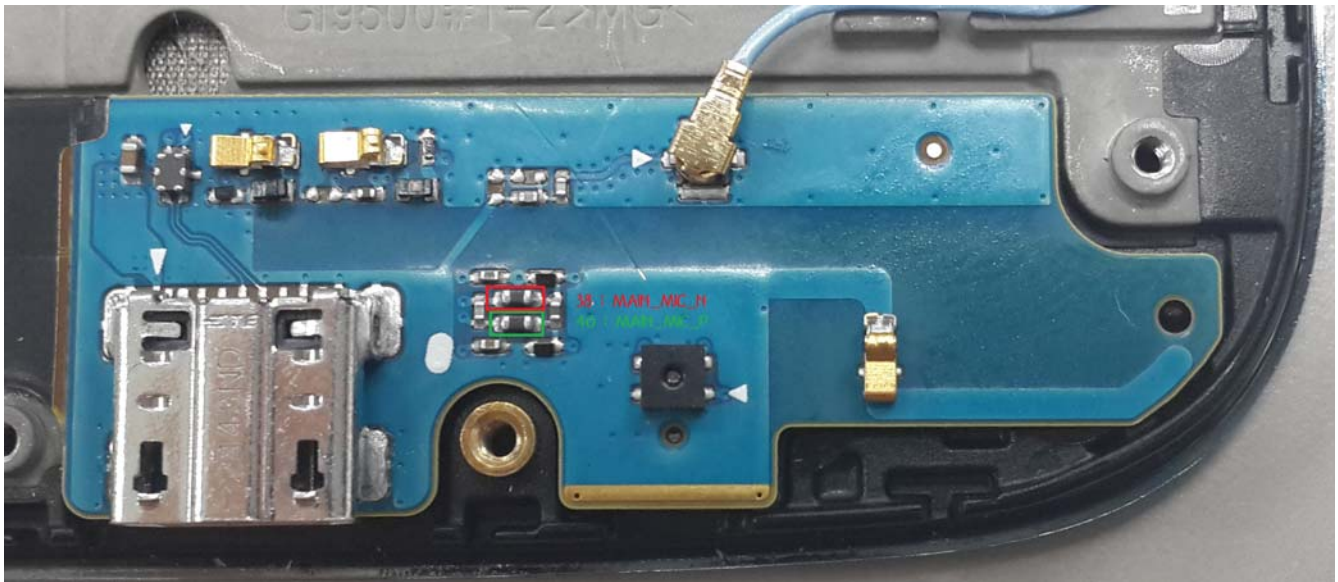


8-3-4. Charging Part

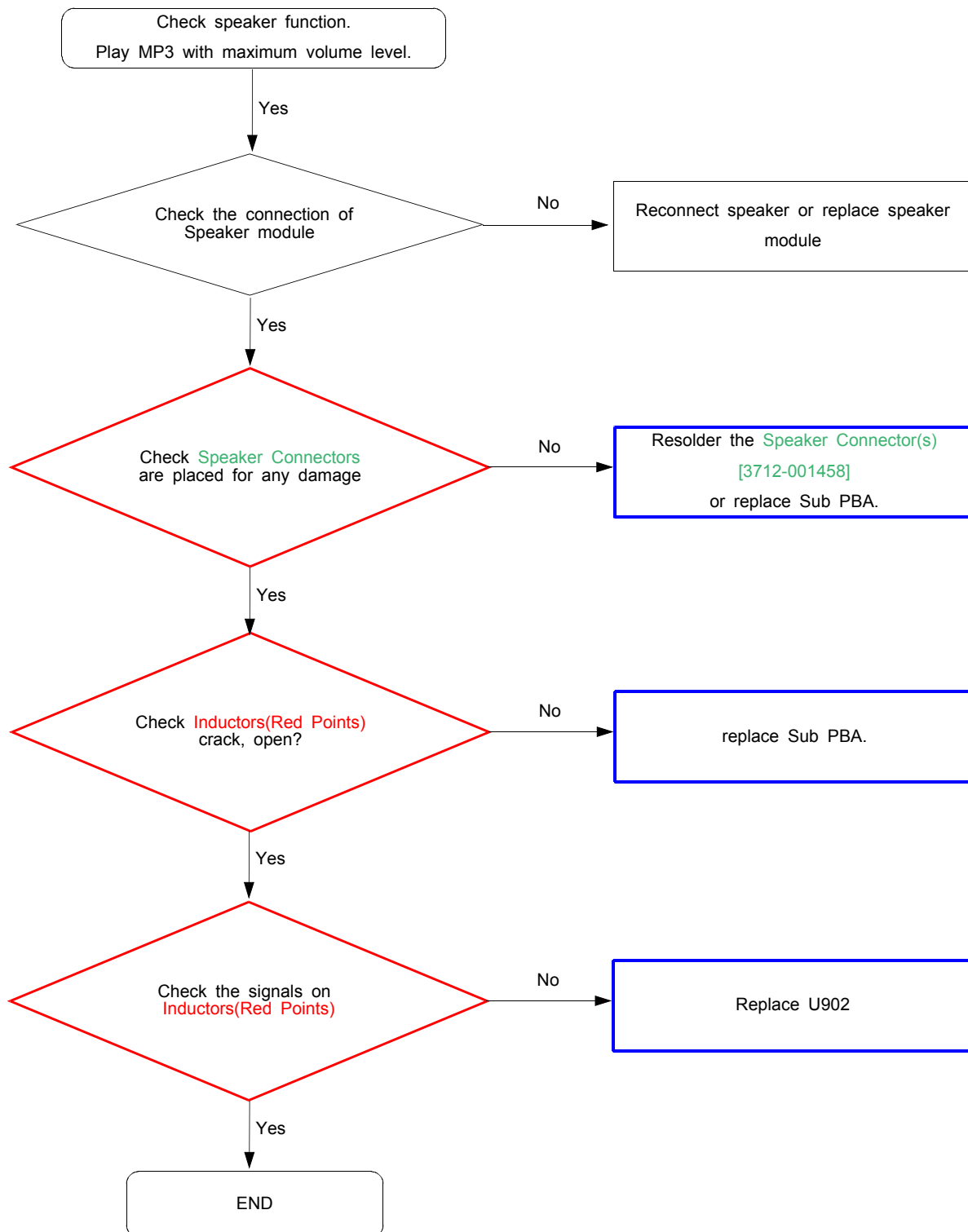


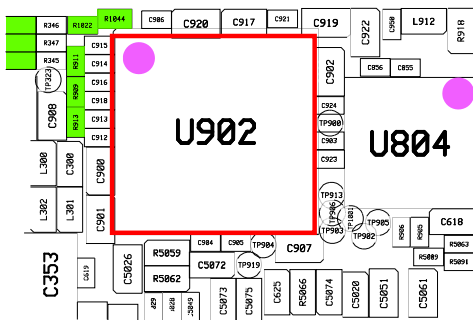
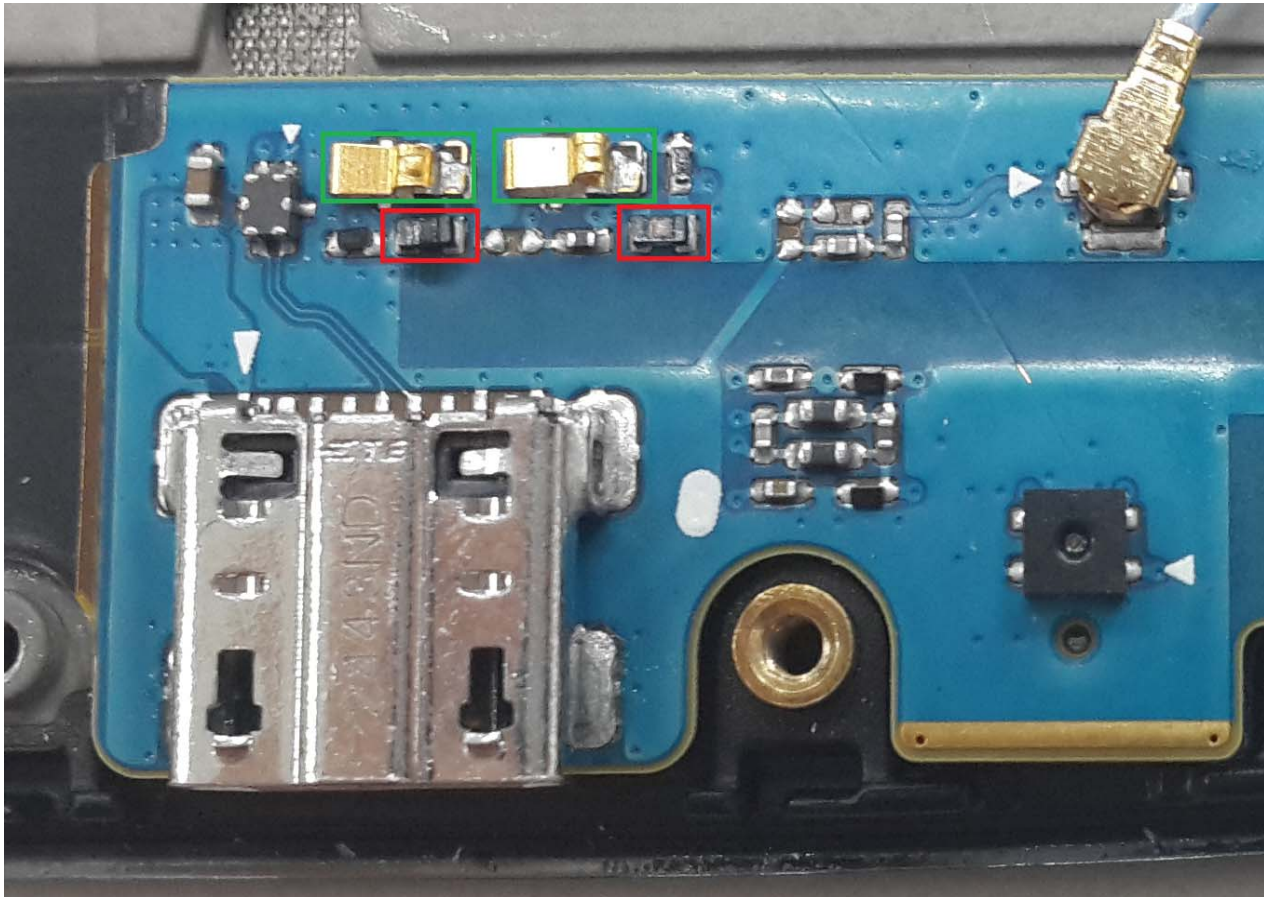
8-3-5. Microphone Part



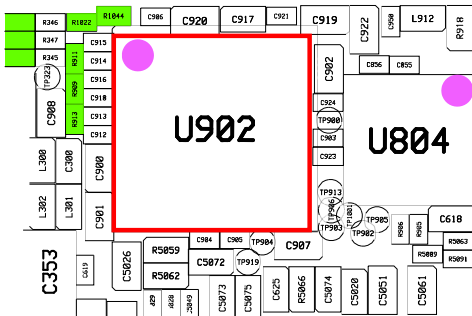
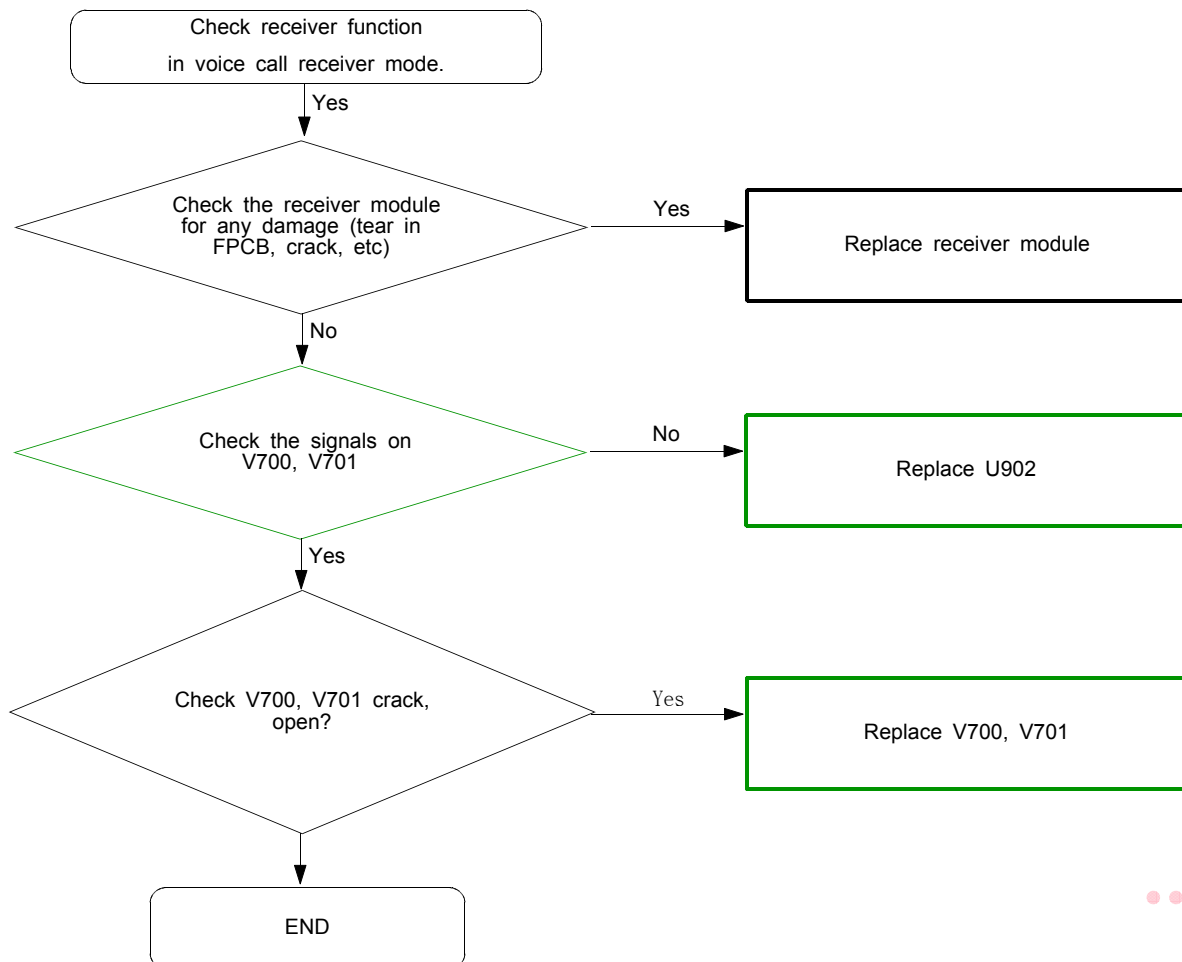


8-3-6. Speaker Part

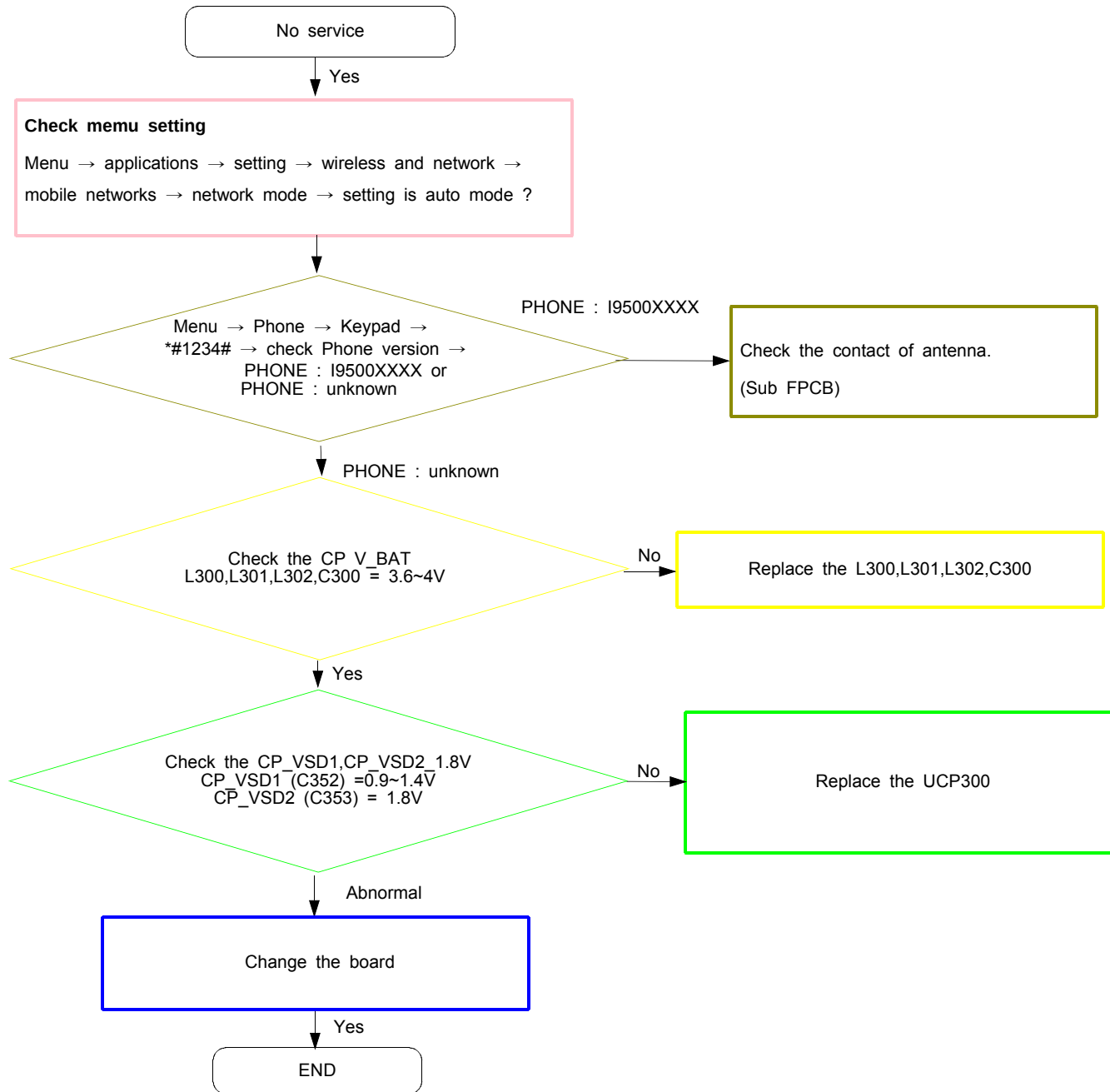


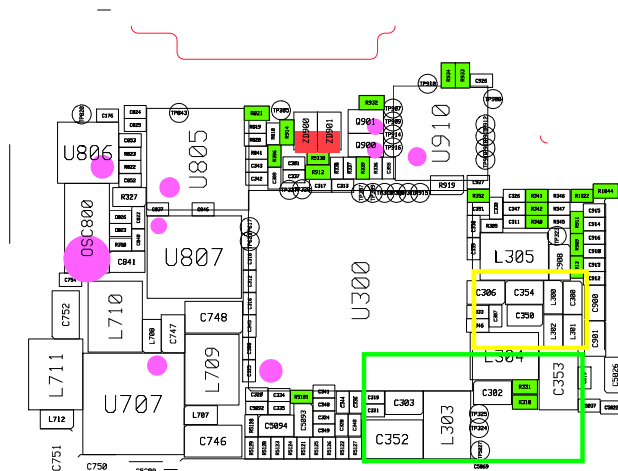
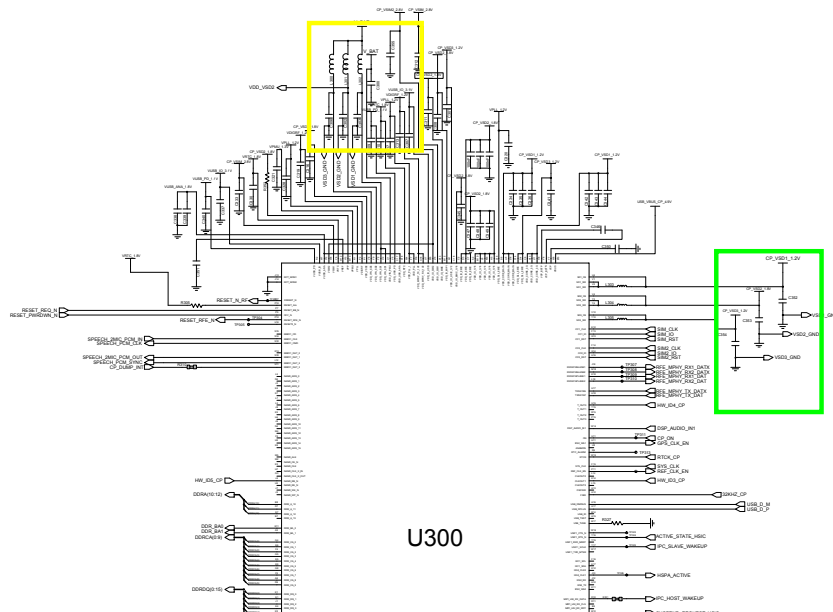


8-3-7 Receiver Part

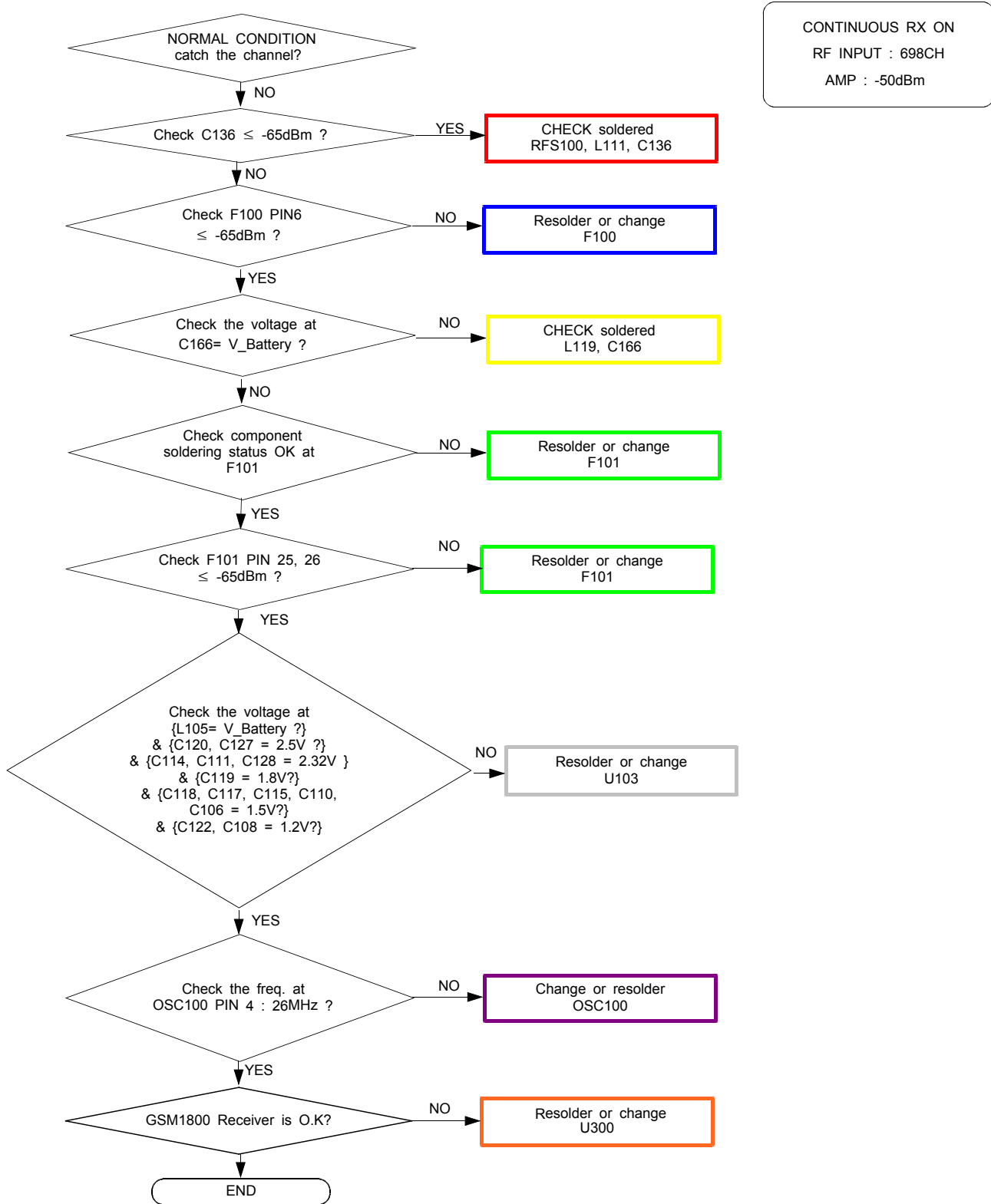


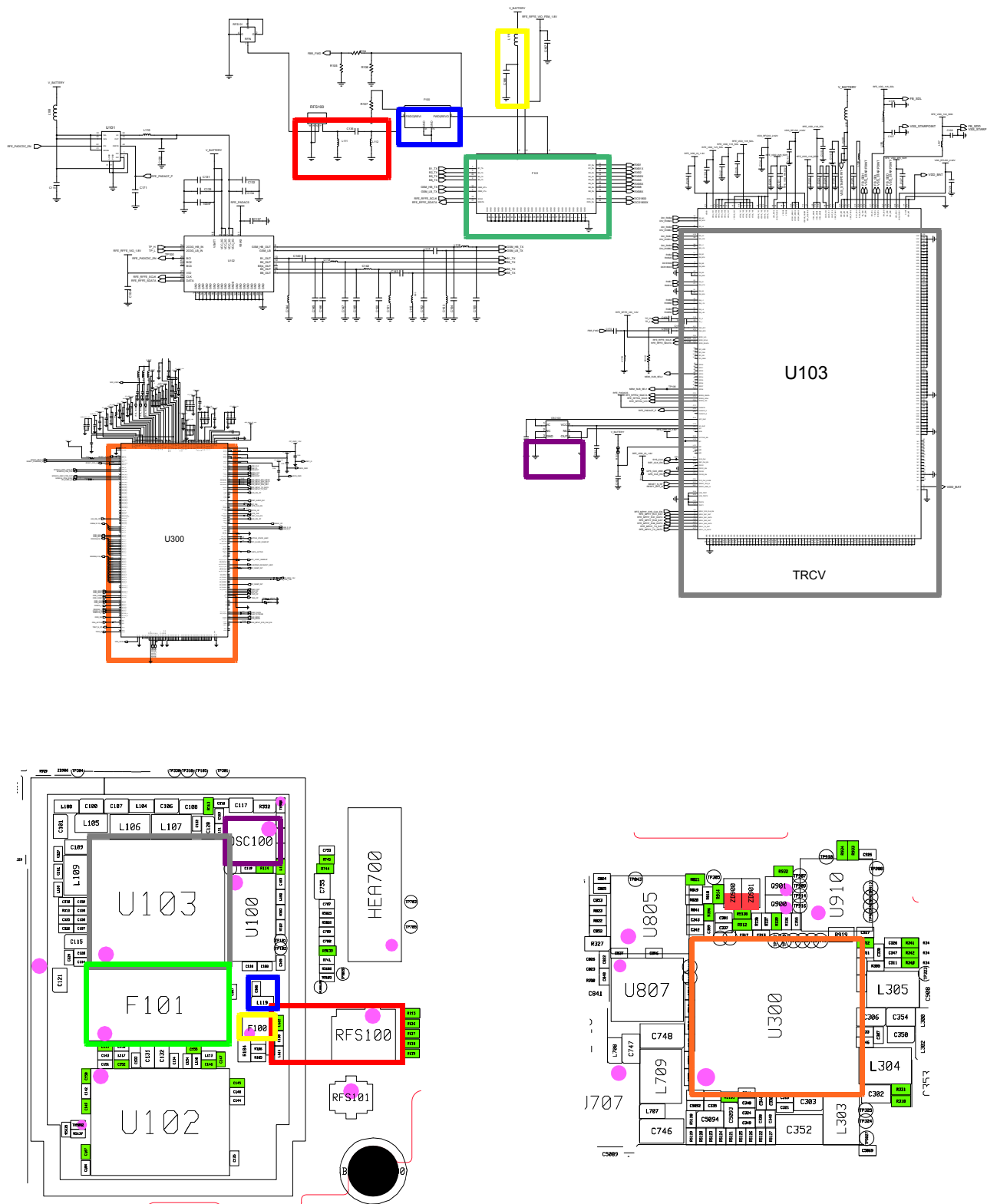
8-3-8. No Service



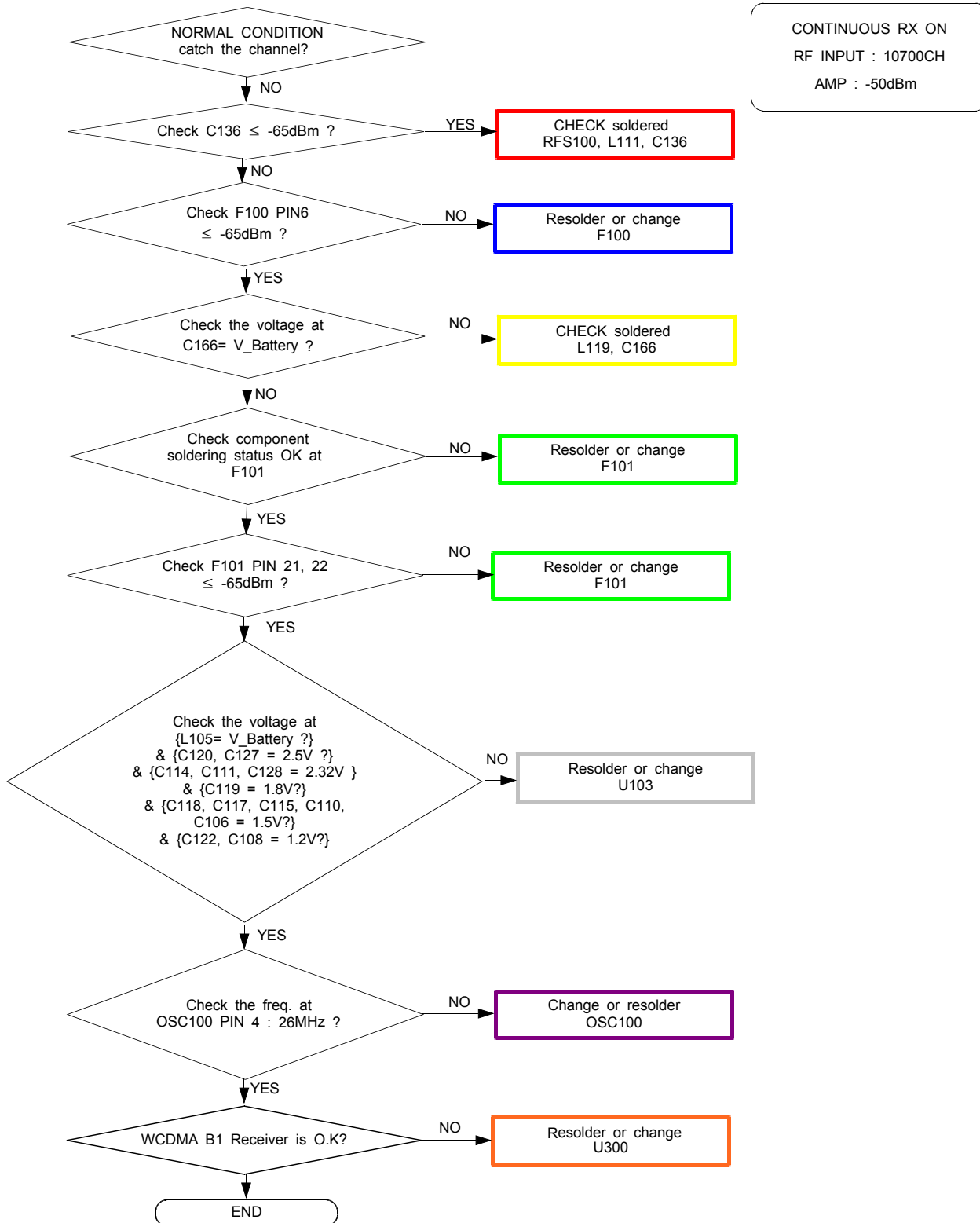


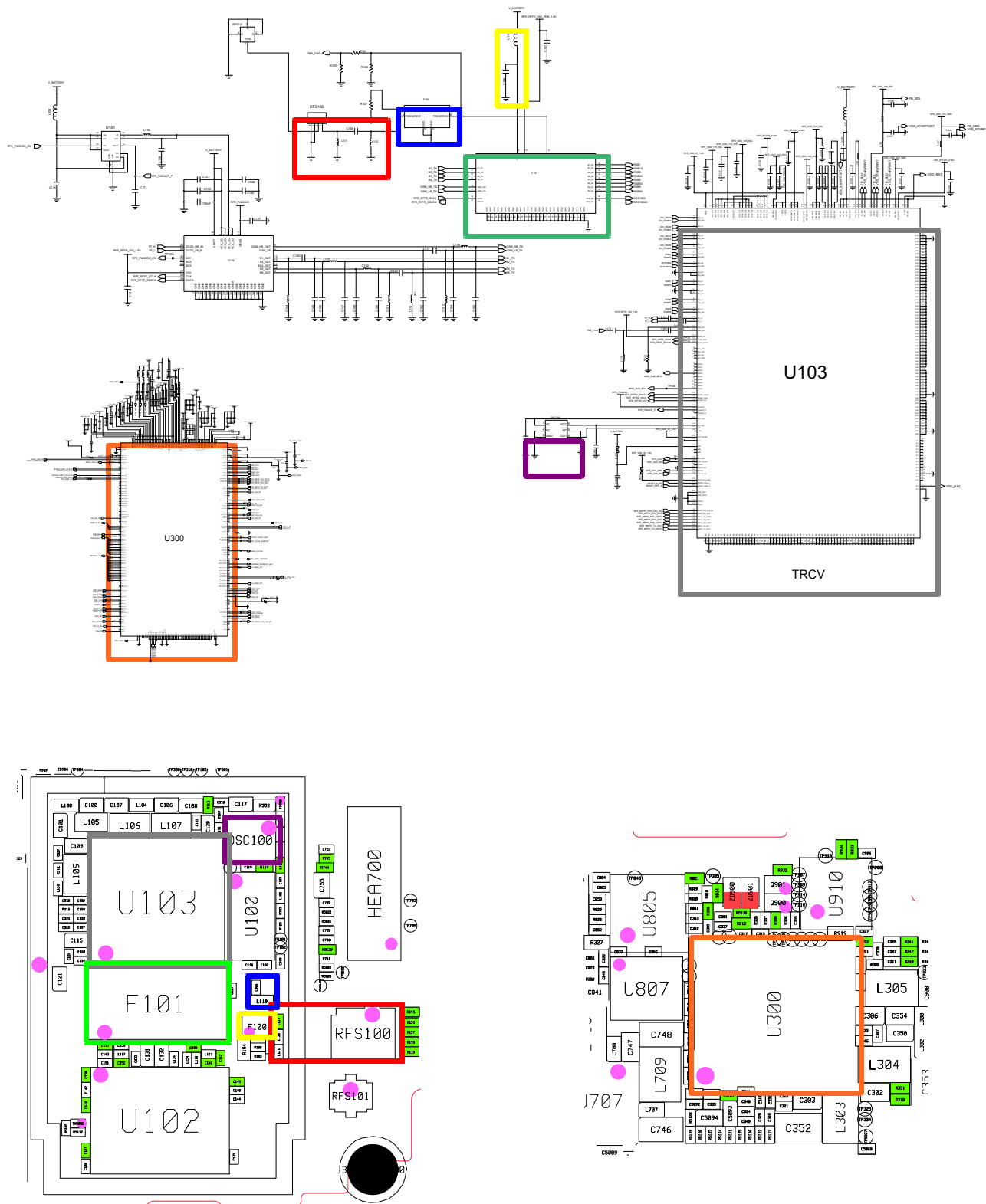
8-3-9. GSM1800 RX



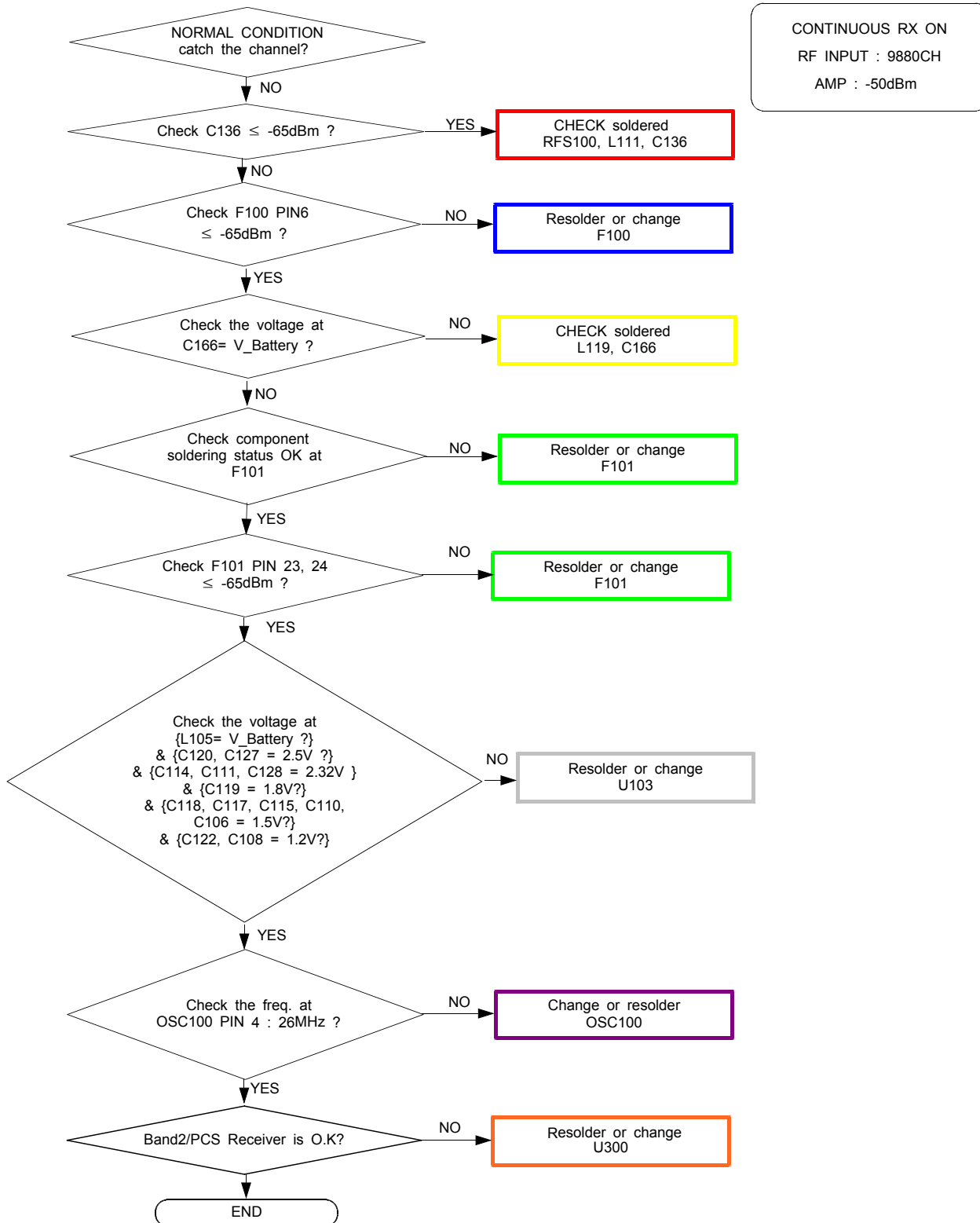


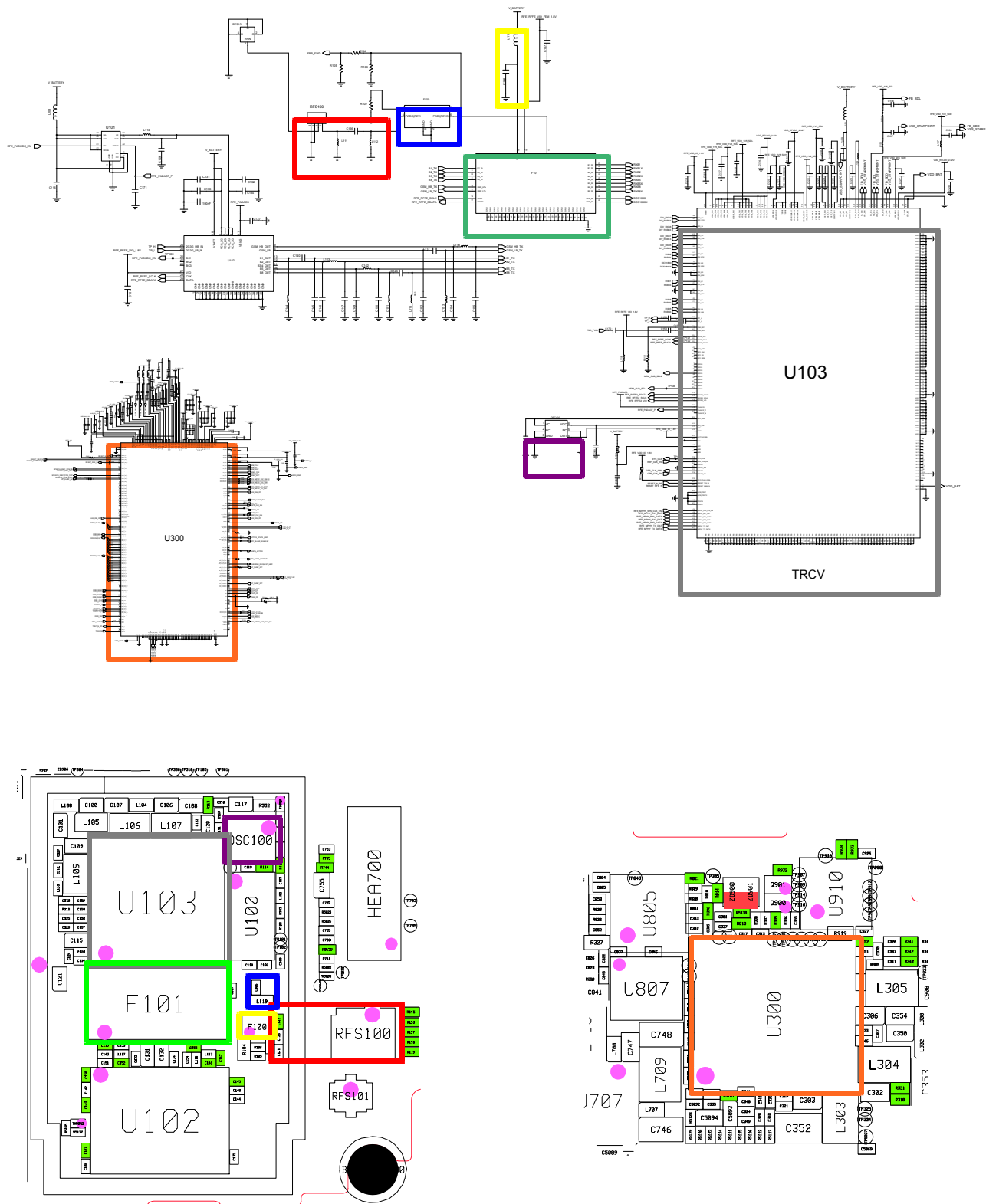
8-3-10. WCDMA Band1 RX



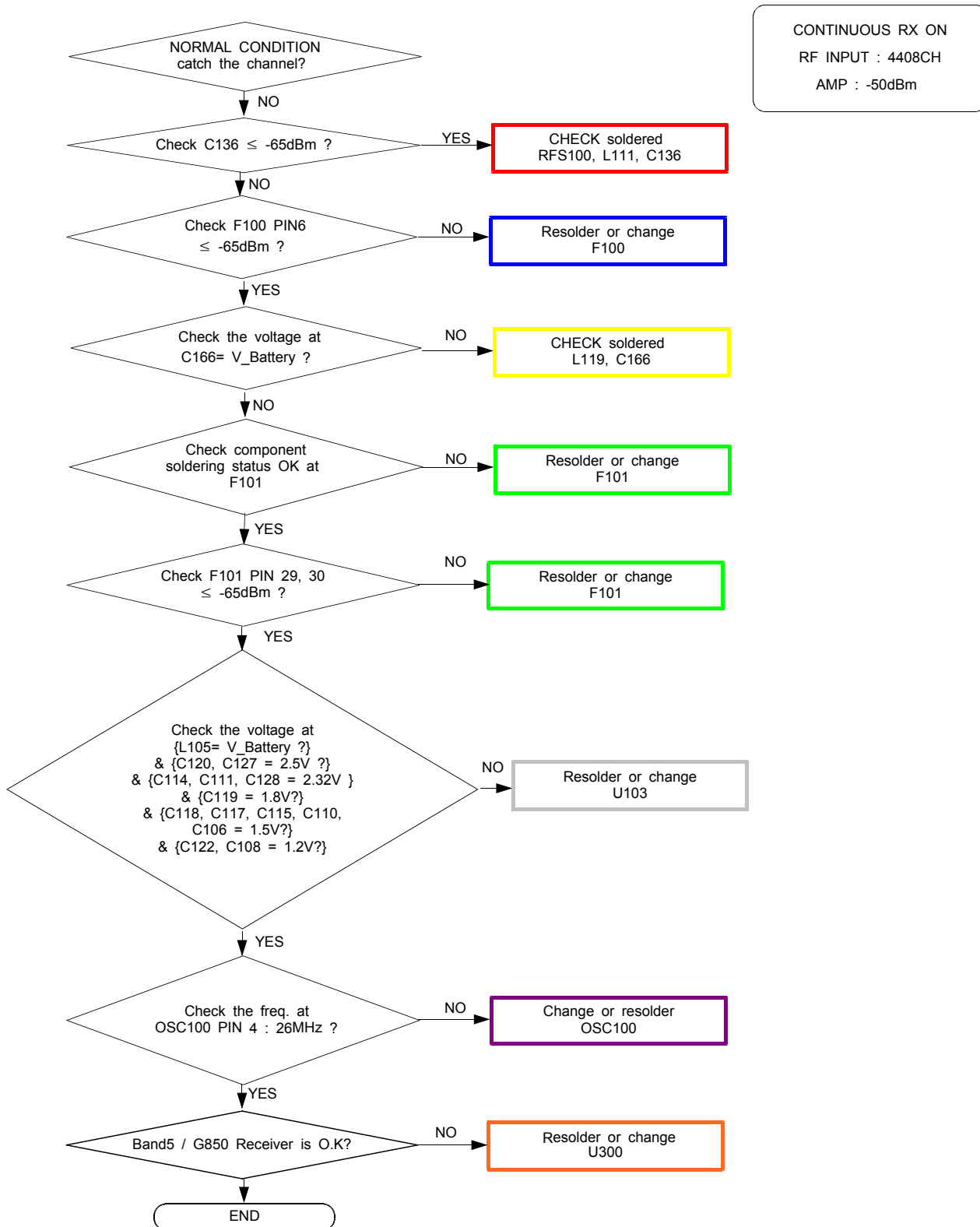


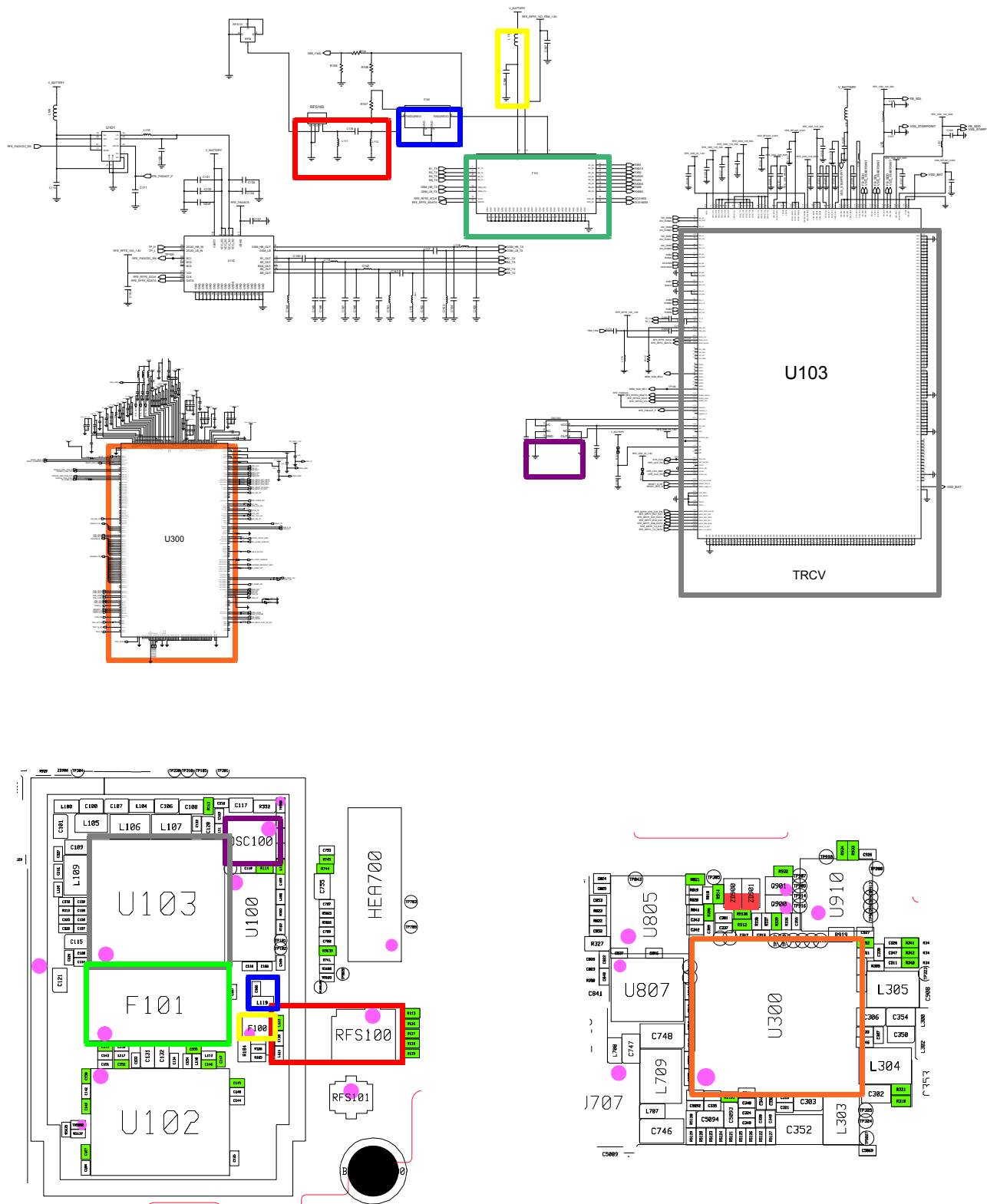
8-3-11. WCDMA Band2 / GSM1900 RX



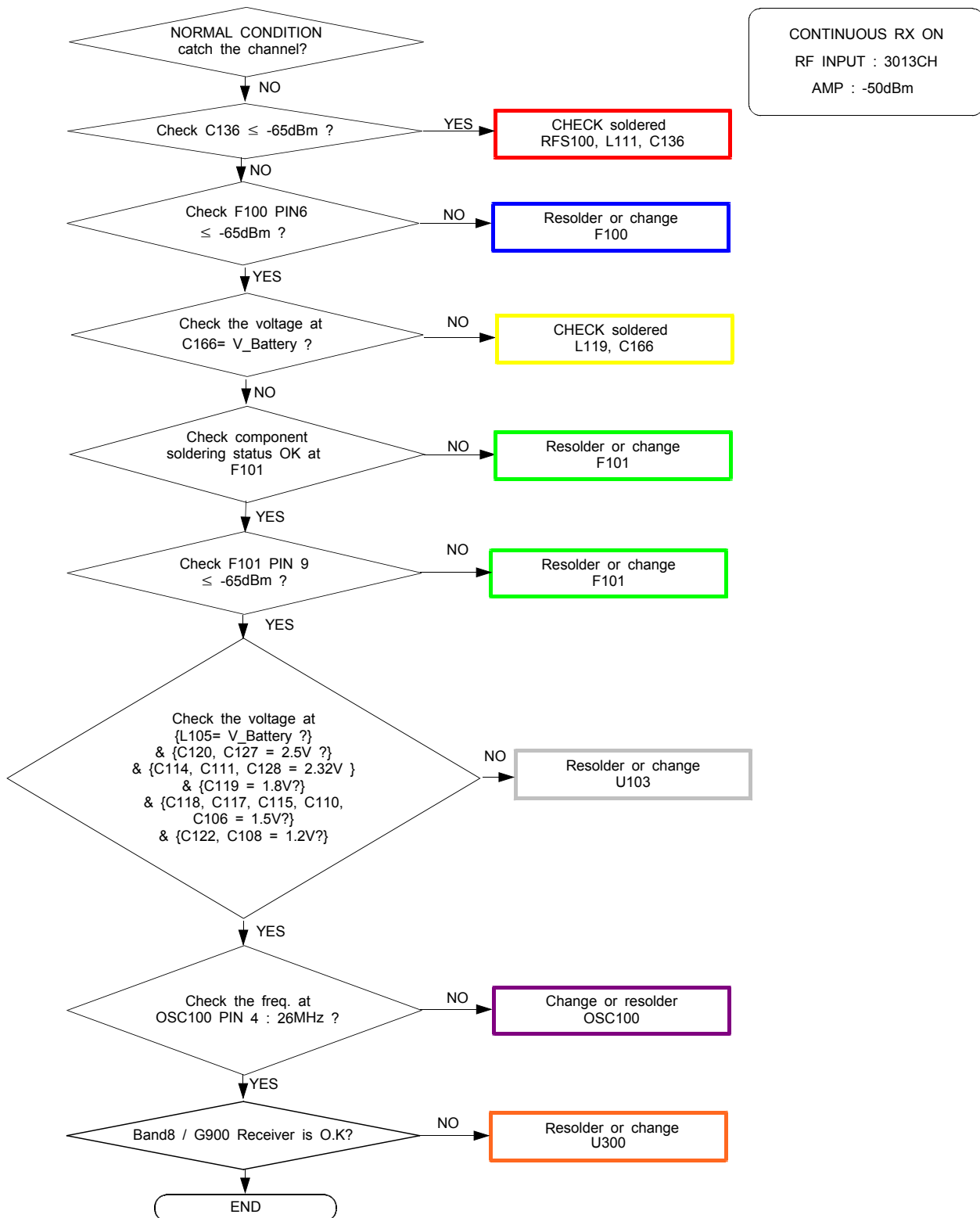


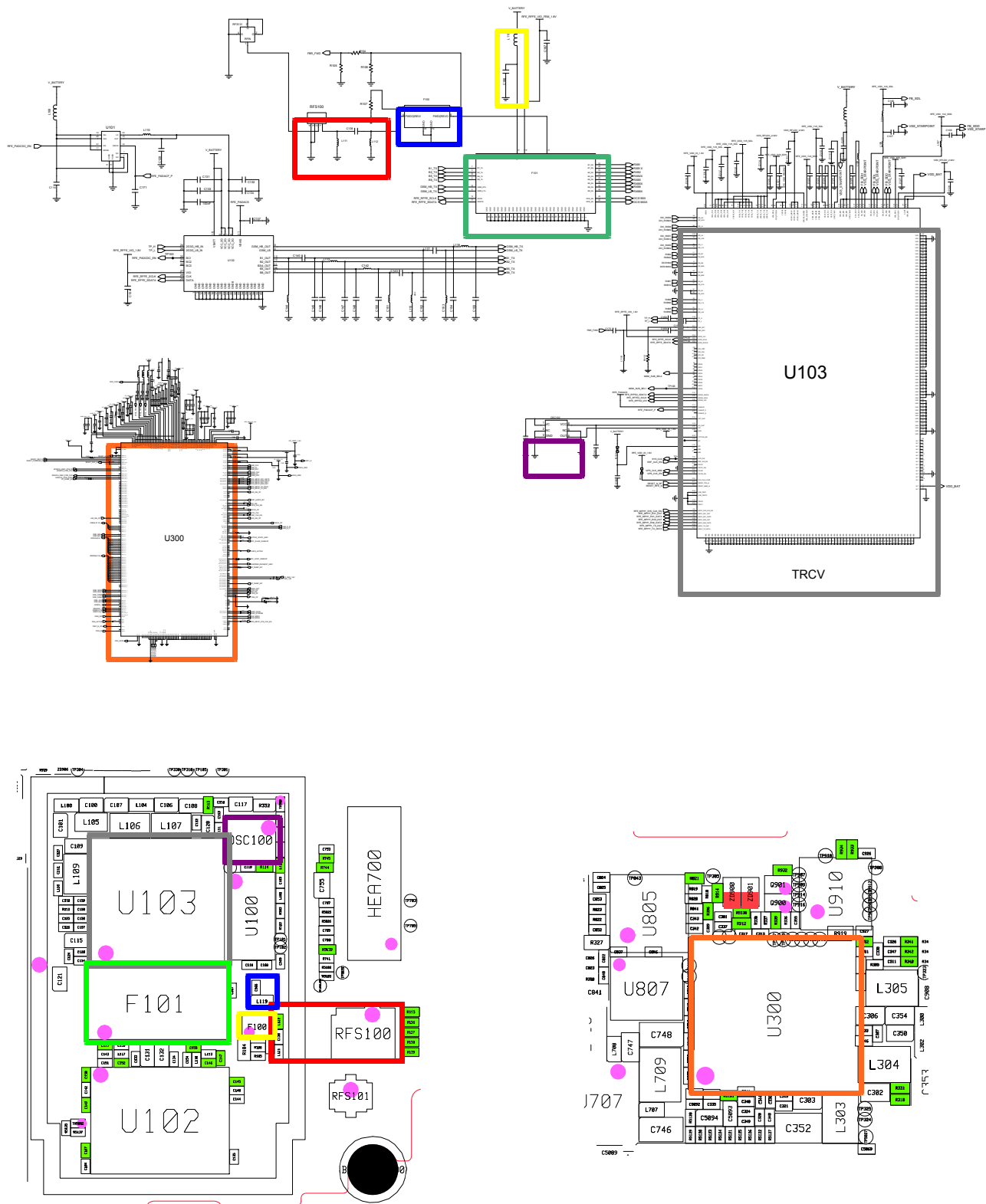
8-3-12. WCDMA Band5 / GSM 850 RX





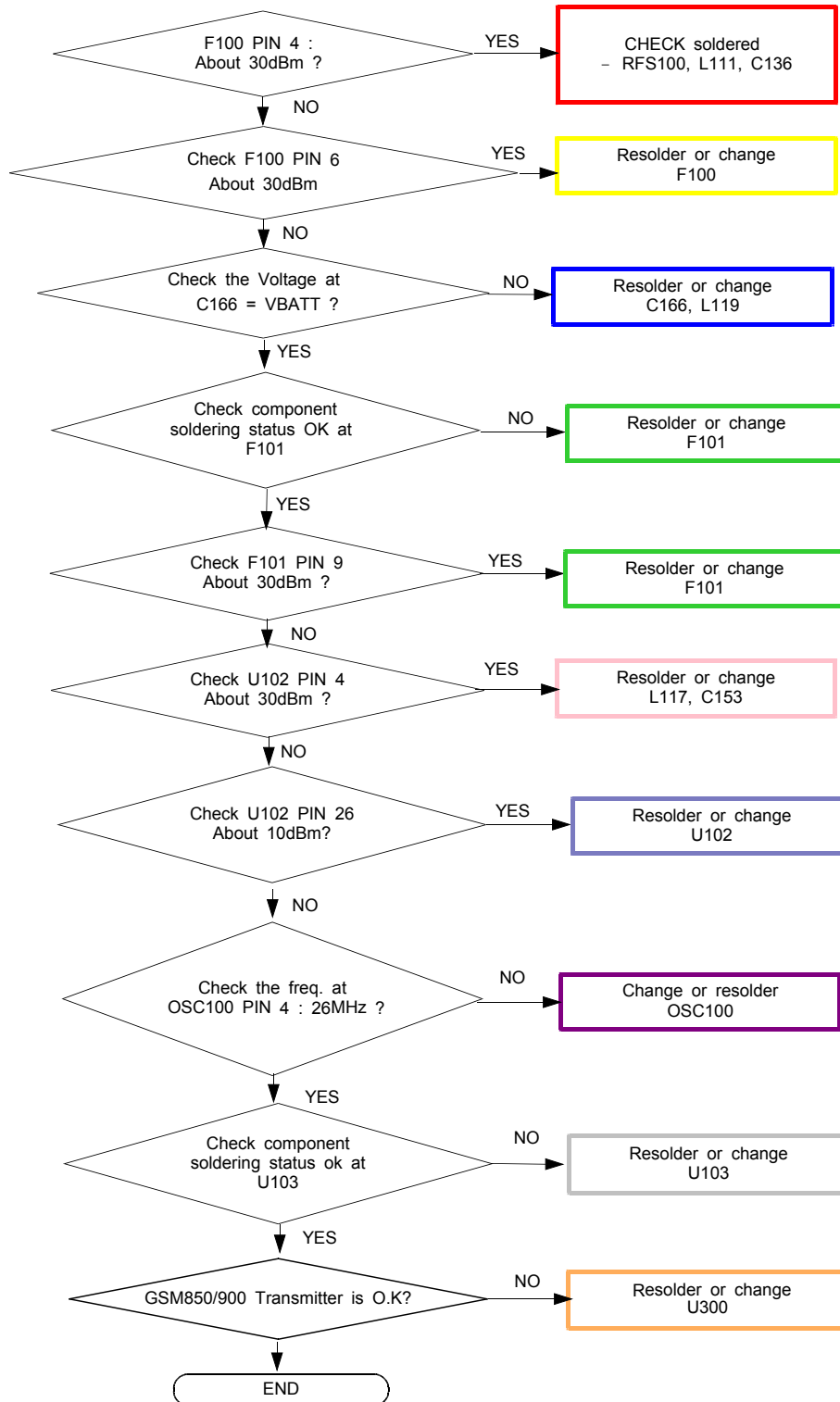
8-3-13. WCDMA Band8 / GSM900 RX

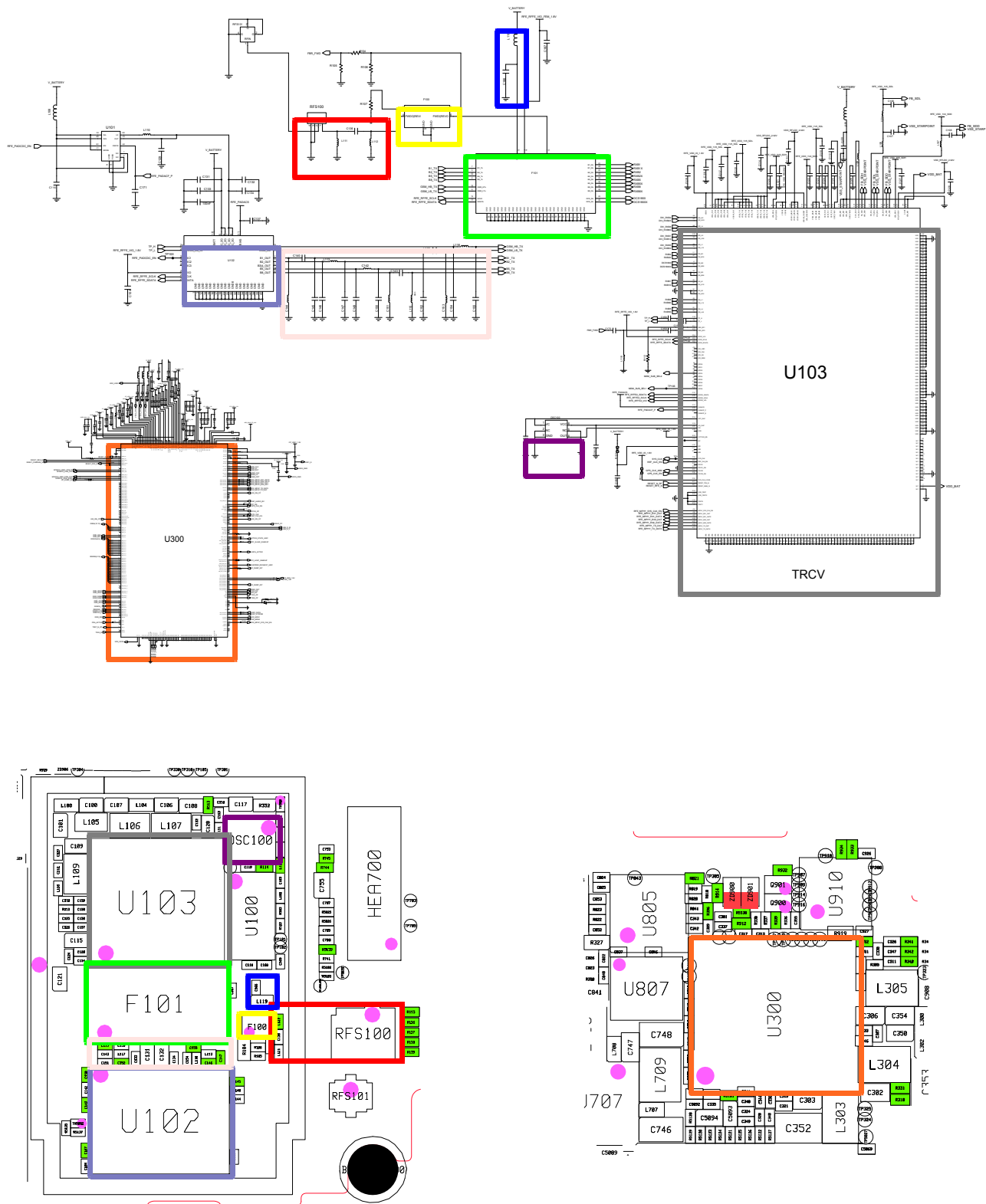




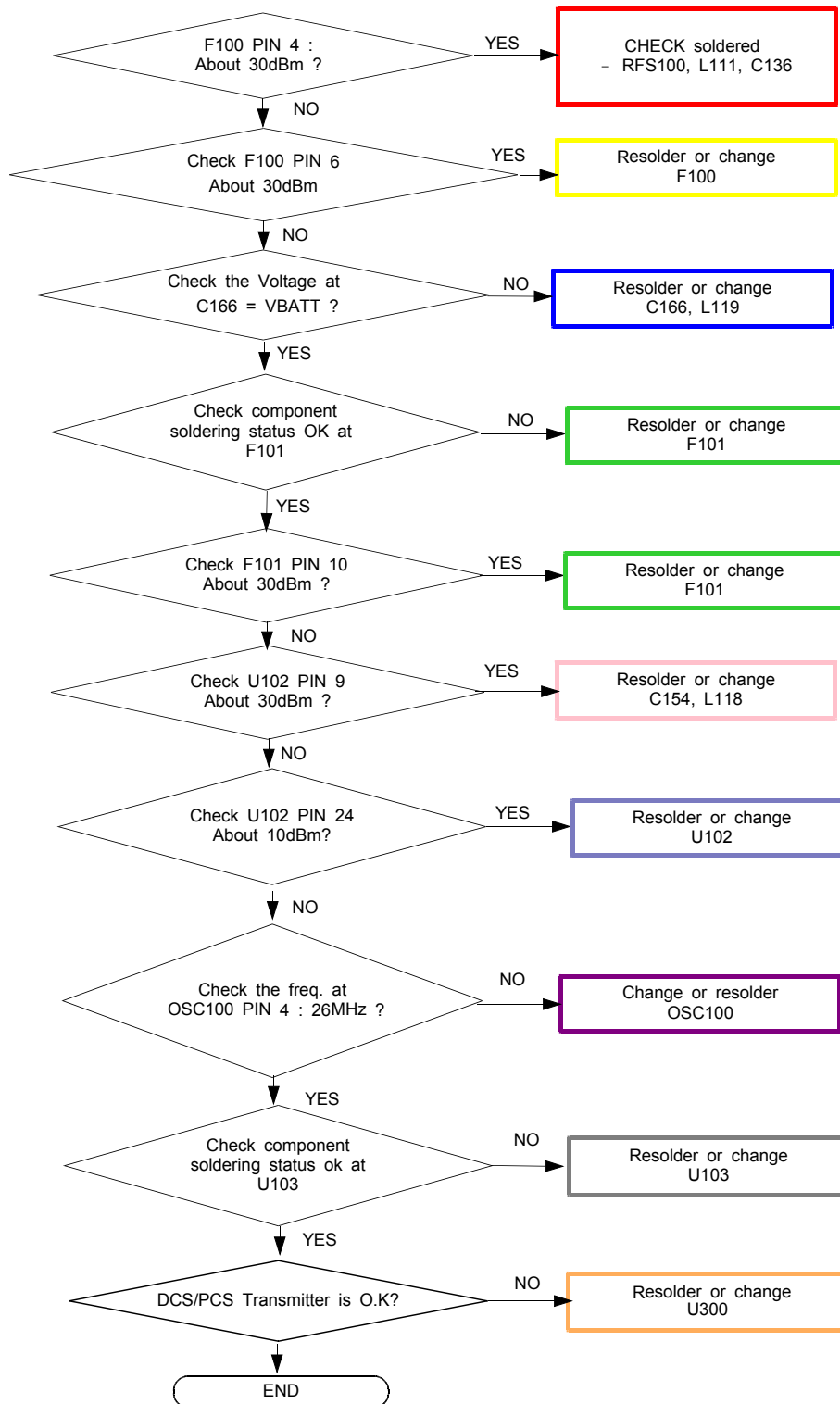
8-3-14. GSM850/GSM900 TX

CONTINUOUS TX ON CONDITION
TX POWER IDX1 APPLIED
GSM850 CH : 190
GSM900 CH : 62
RBW : 100KHz
VBW : 100KHz
SPAN : 10MHz
REF LEV : 10dBm
ATT : 20dB

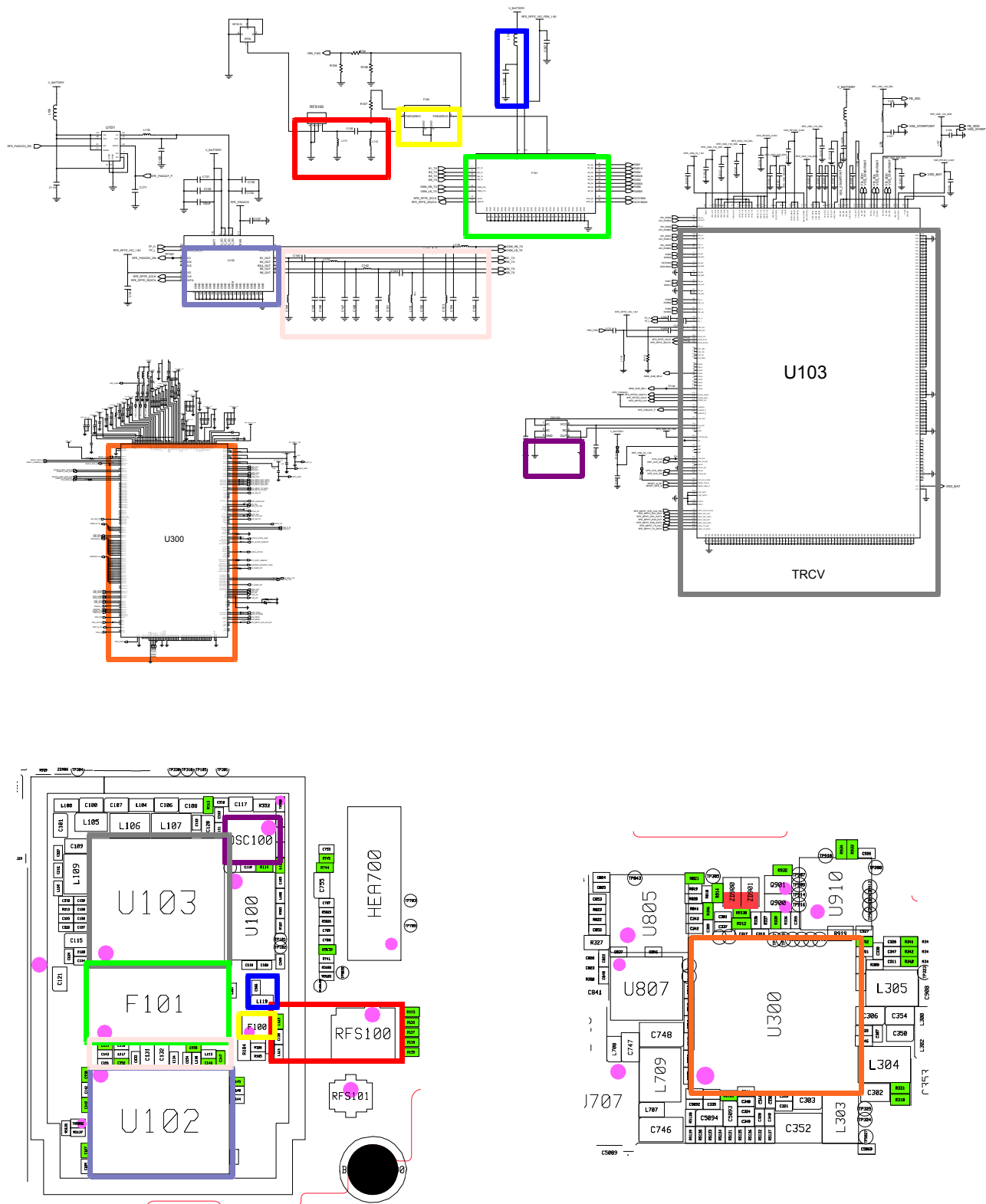




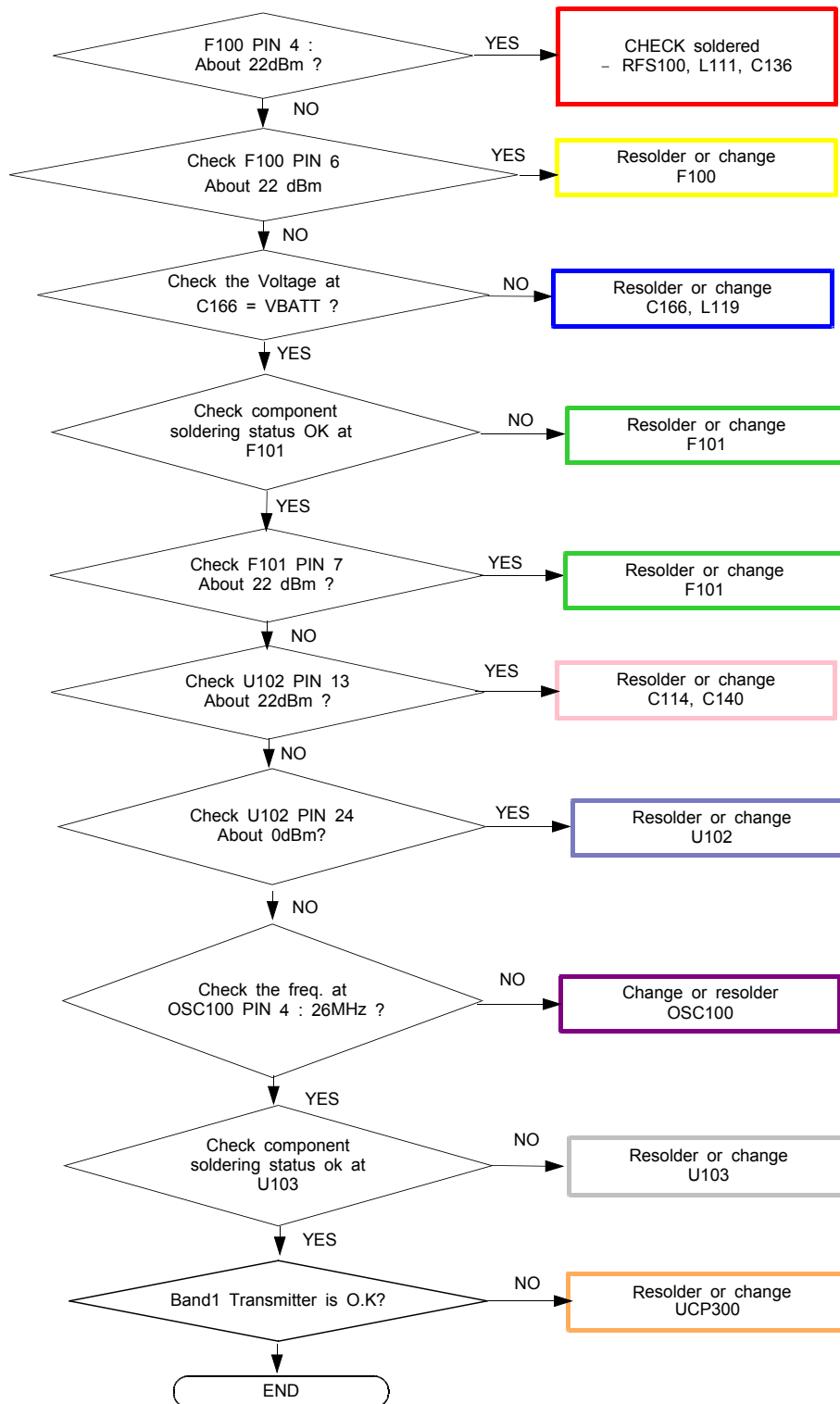
8-3-15. DCS/PCS TX



CONTINUOUS TX ON CONDITION
TX POWER IDX1 APPLIED
DCS CH : 685
PCS CH : 661
RBW : 100KHz
VBW : 100KHz
SPAN : 10MHz
REF LEV : 10dBm
ATT : 20dB

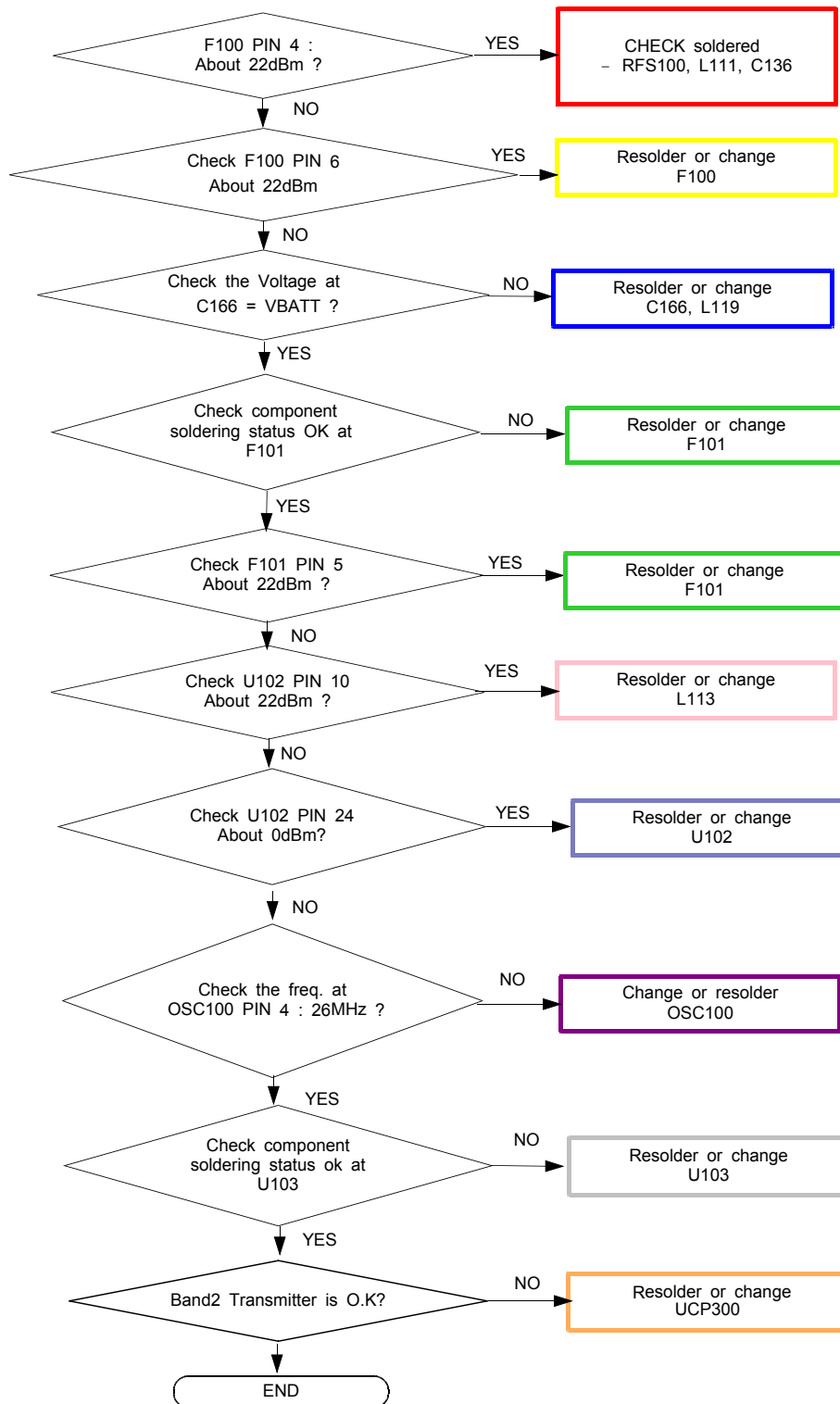


8-3-16. WCDMA BAND1 TX



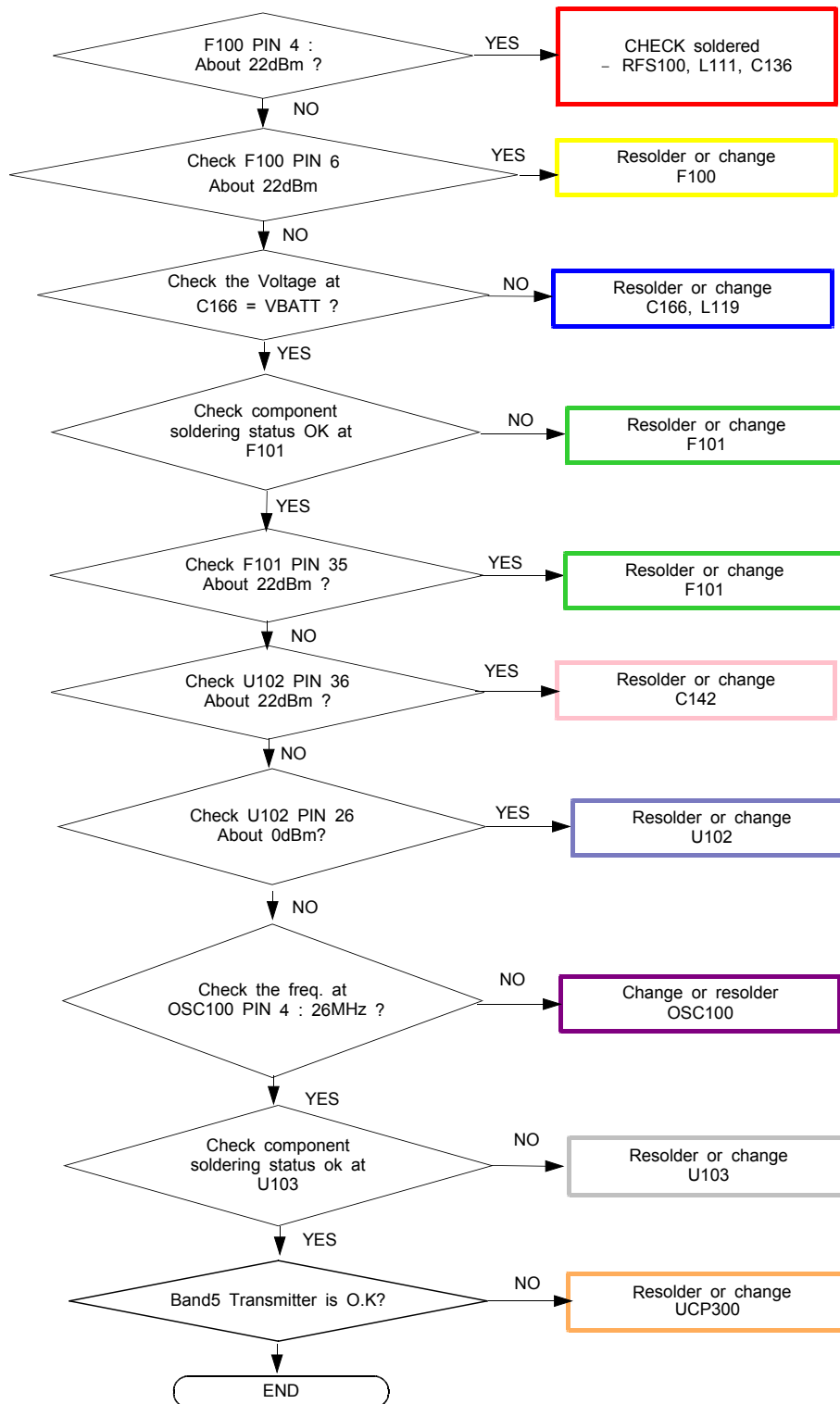
CONTINUOUS TX ON CONDITION
TX POWER DAC:14500 CODE
APPLIED
WCDMA Band1 CH : 20000
RBW : 100KHz
VBW : 100KHz
SPAN : 10MHz
REF LEV : 10dBm
ATT : 20dB

8-3-17. WCDMA BAND2 TX

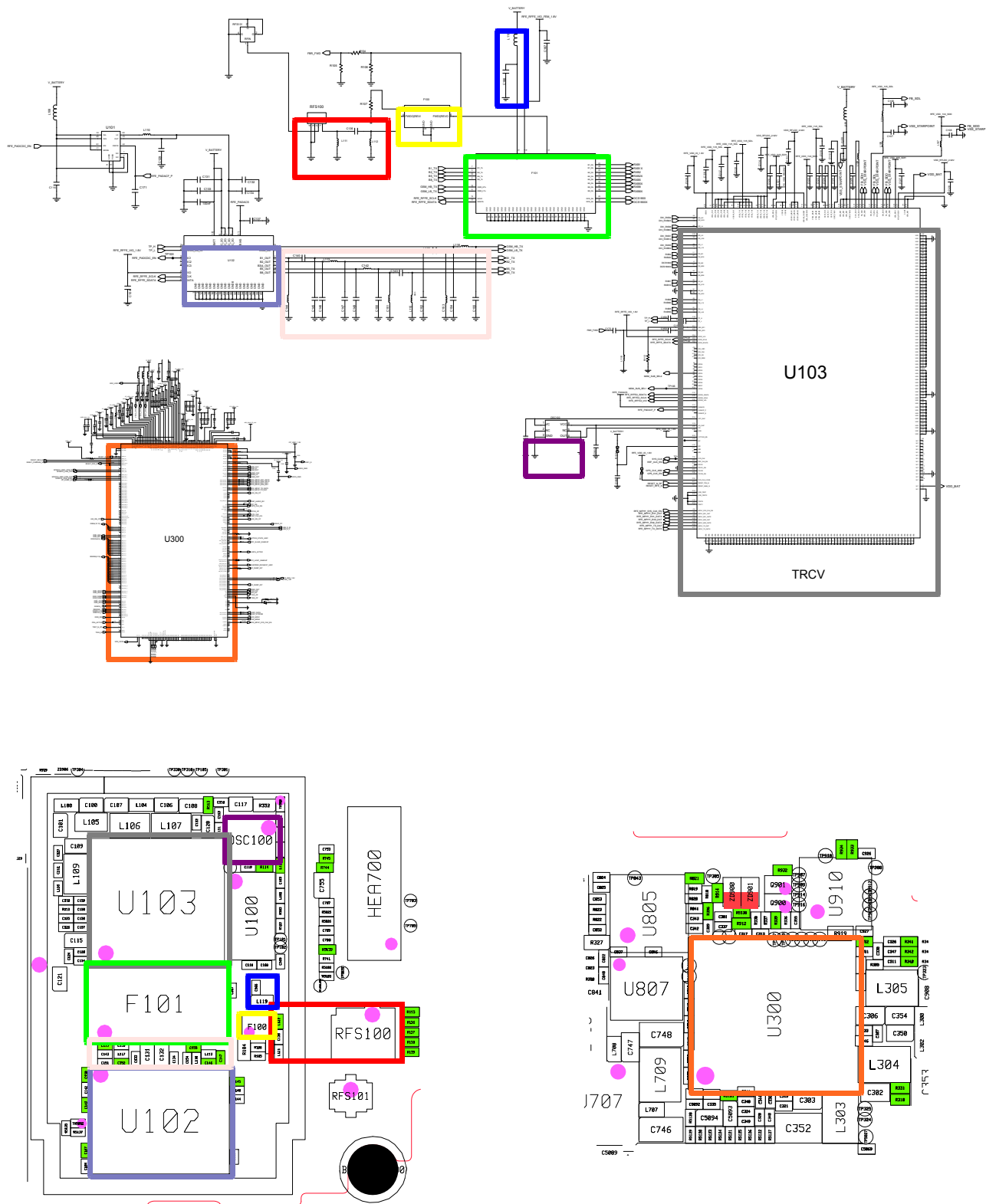


CONTINUOUS TX ON CONDITION
TX POWER DAC:23000 CODE
APPLIED
WCDMA Band2 CH : 9880
RBW : 100KHz
VBW : 100KHz
SPAN : 10MHz
REF LEV : 10dBm
ATT : 20dB

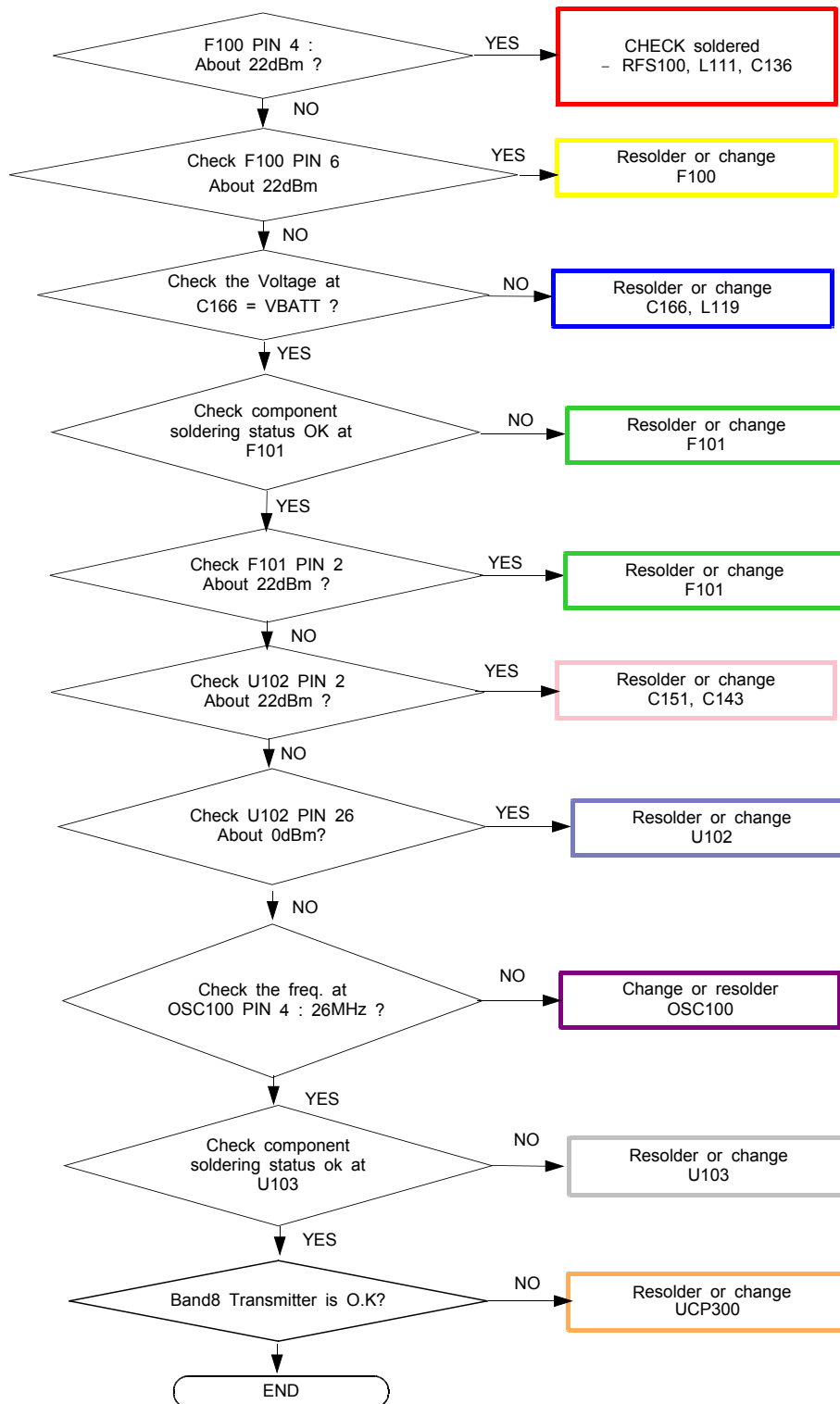
8-3-18. WCDMA BAND5 TX



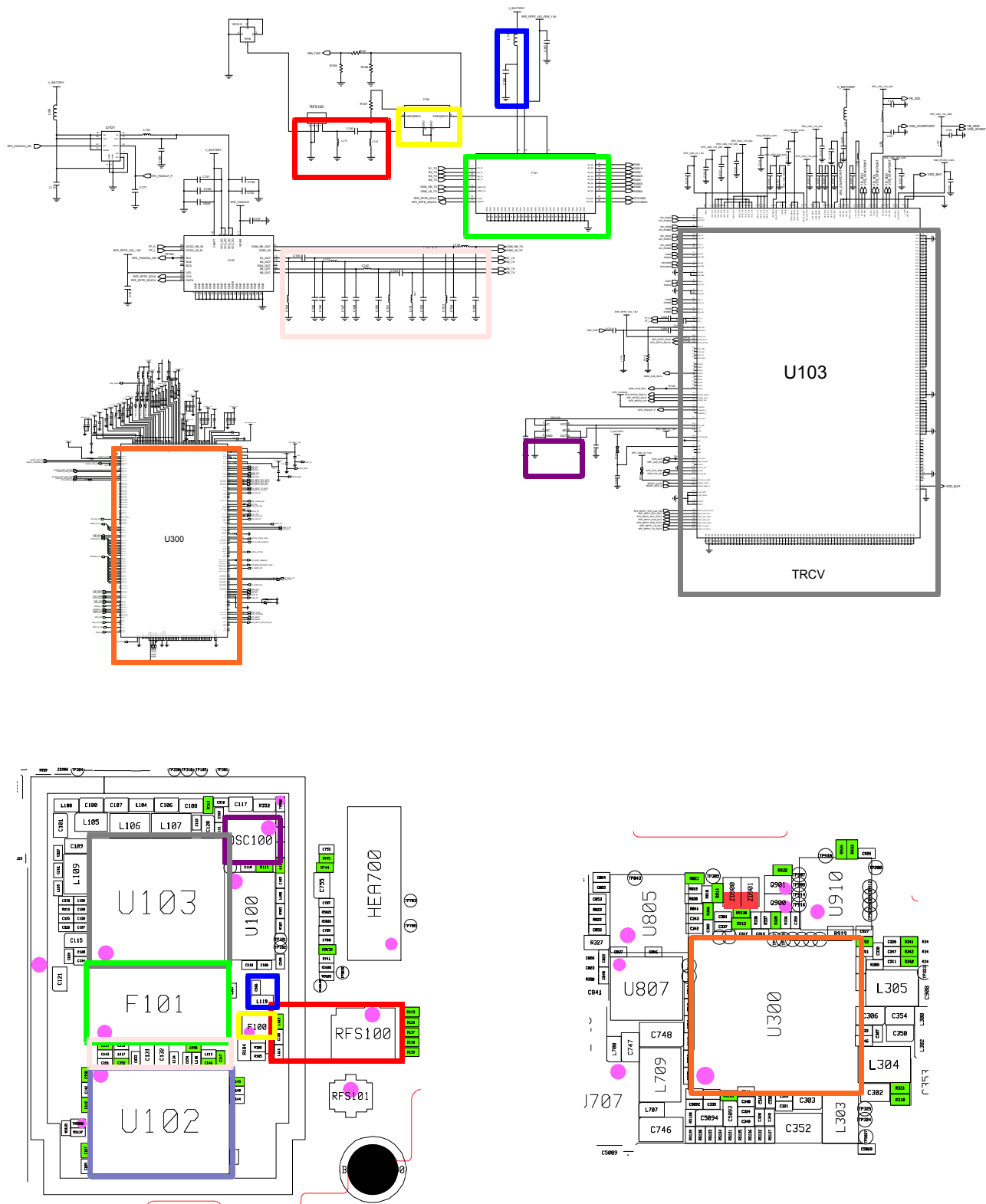
CONTINUOUS TX ON CONDITION
TX POWER DAC: 23000 CODE
APPLIED
WCDMA Band5 CH : 4408
RBW : 100KHz
VBW : 100KHz
SPAN : 10MHz
REF LEV : 10dBm
ATT : 20dB



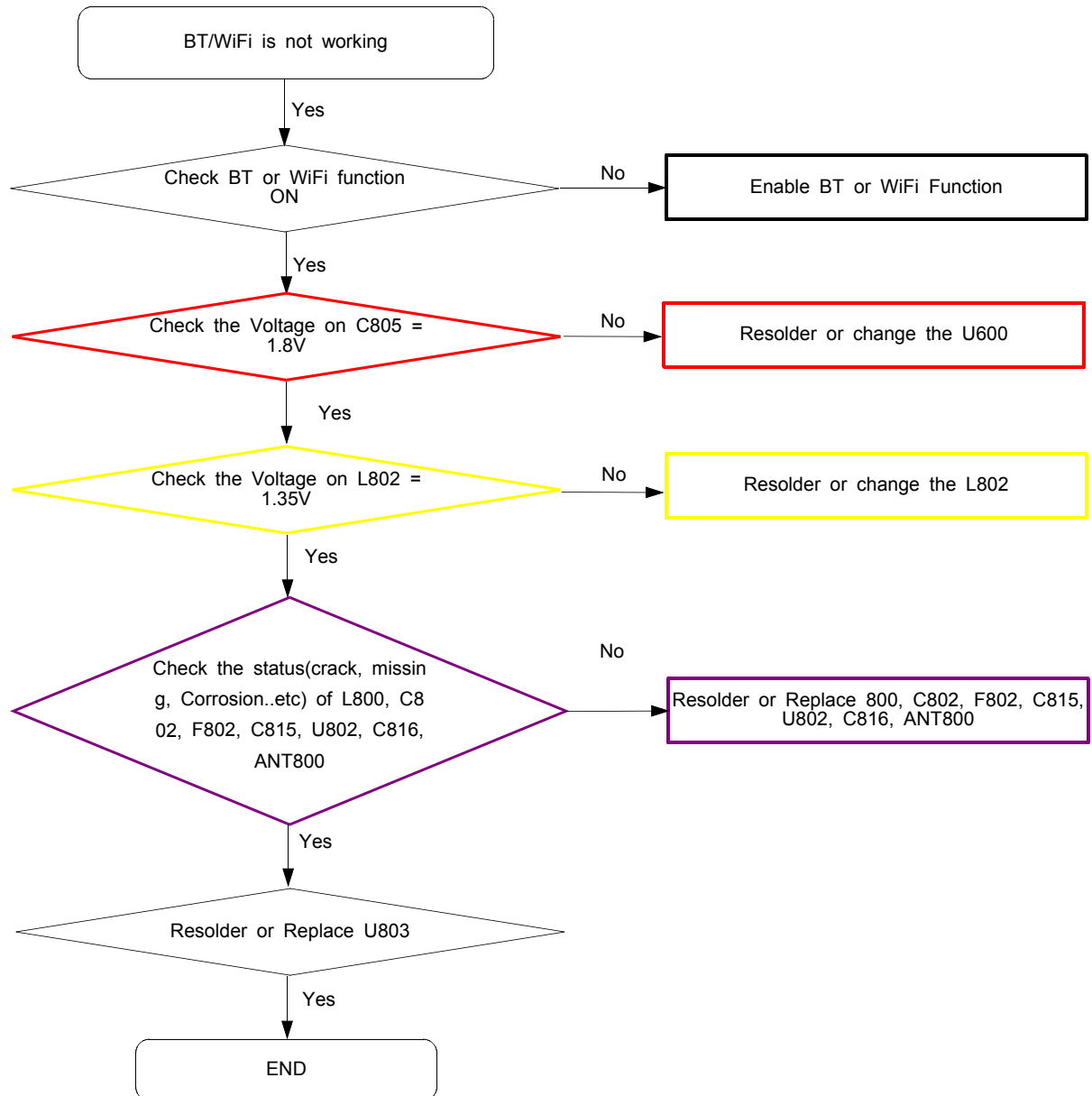
8-3-19. WCDMA BAND8 TX

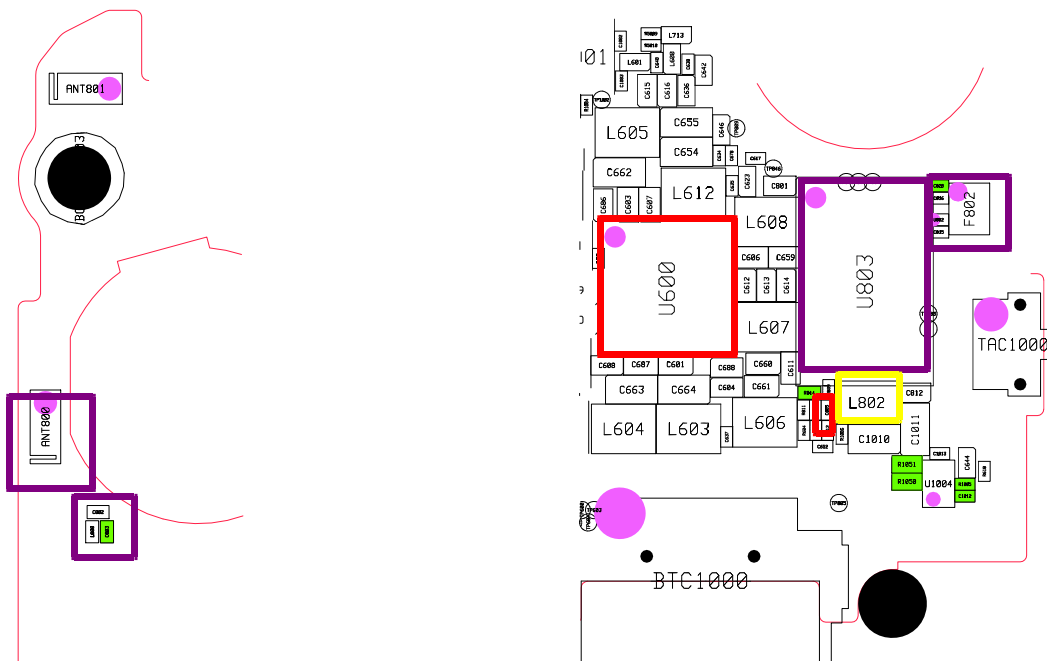
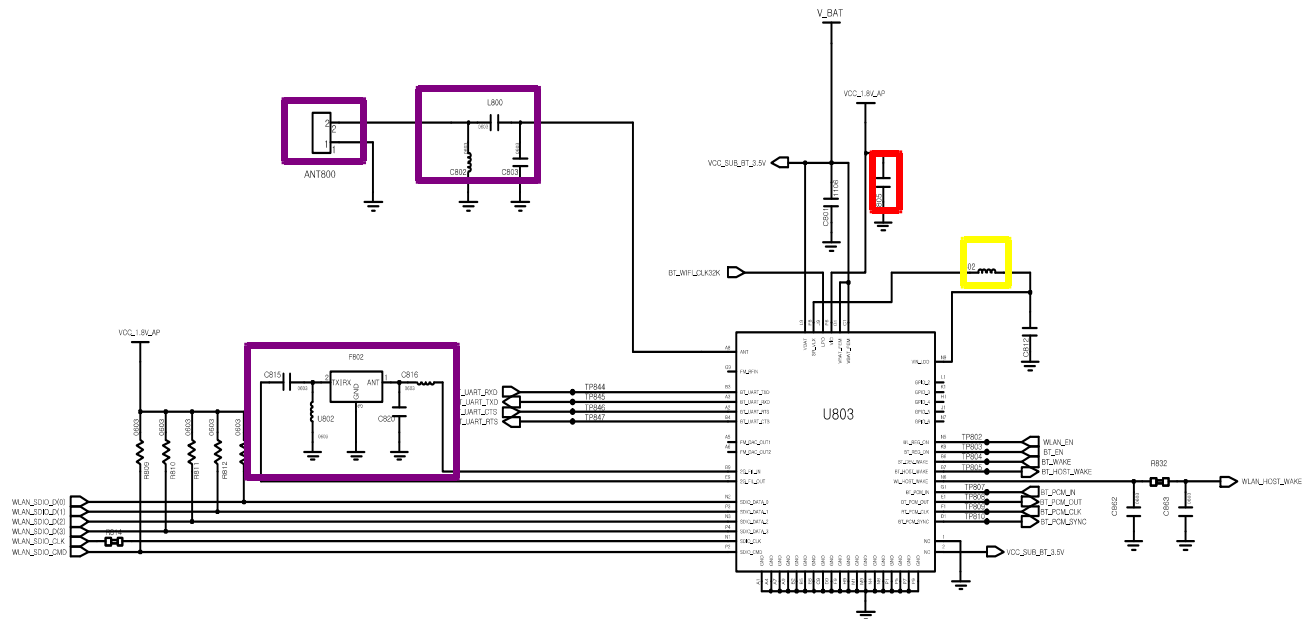


CONTINUOUS TX ON CONDITION
TX POWER DAC: 23000 CODE
APPLIED
WCDMA Band8 CH : 3013
RBW : 100KHz
VBW : 100KHz
SPAN : 10MHz
REF. LEV. : 10dBm
ATT. : 20dB

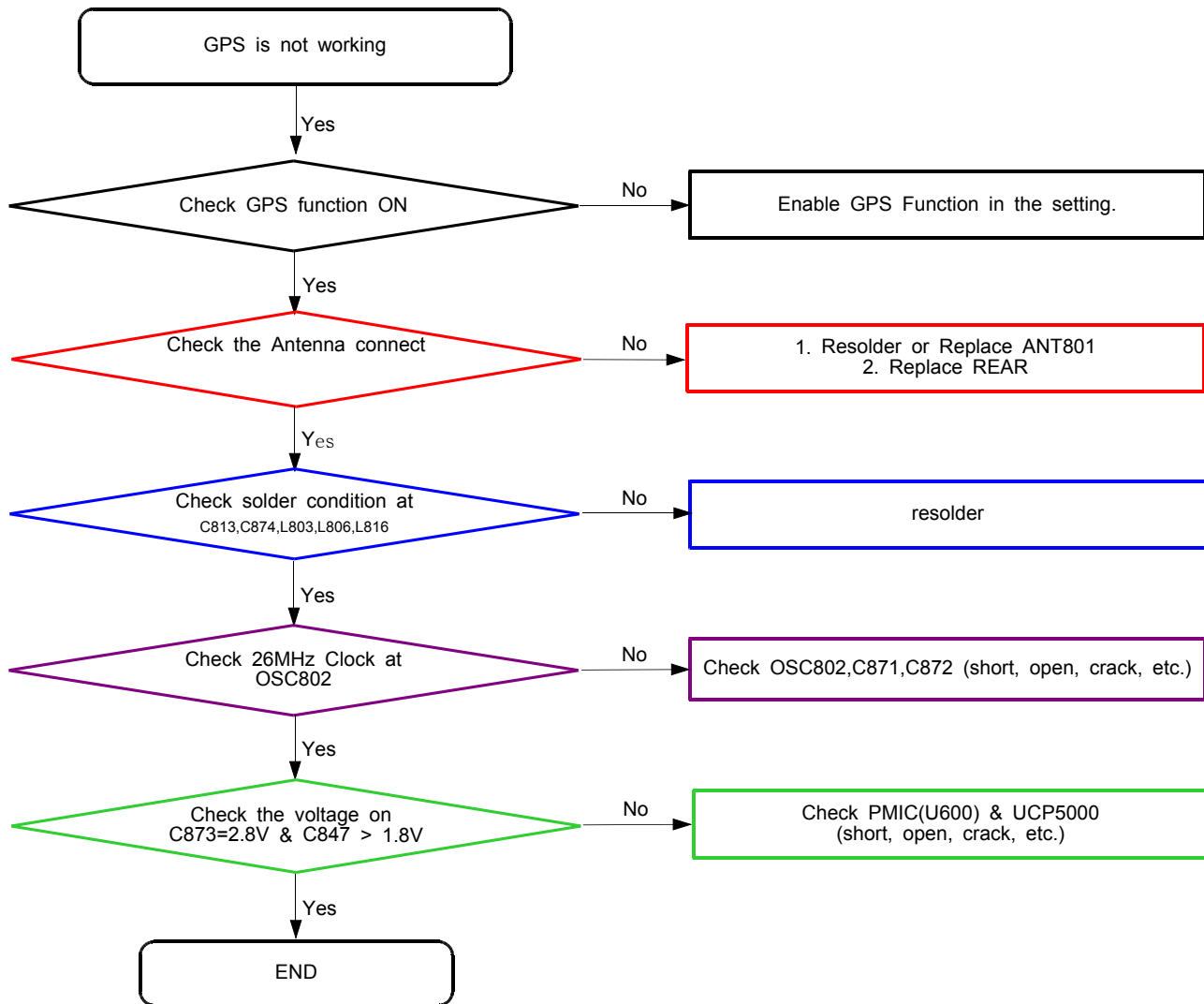


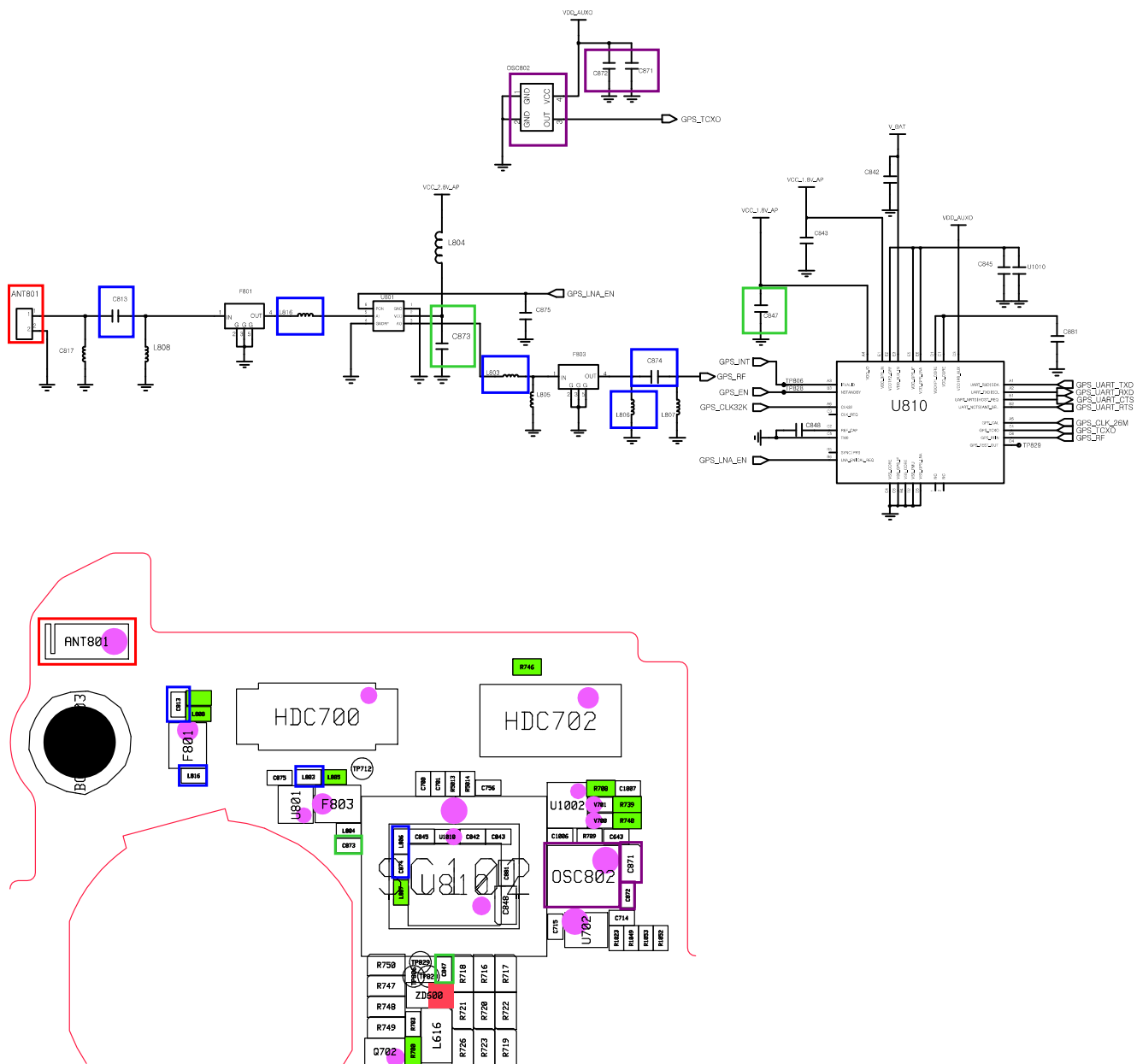
8-3-9. BT/WIFI



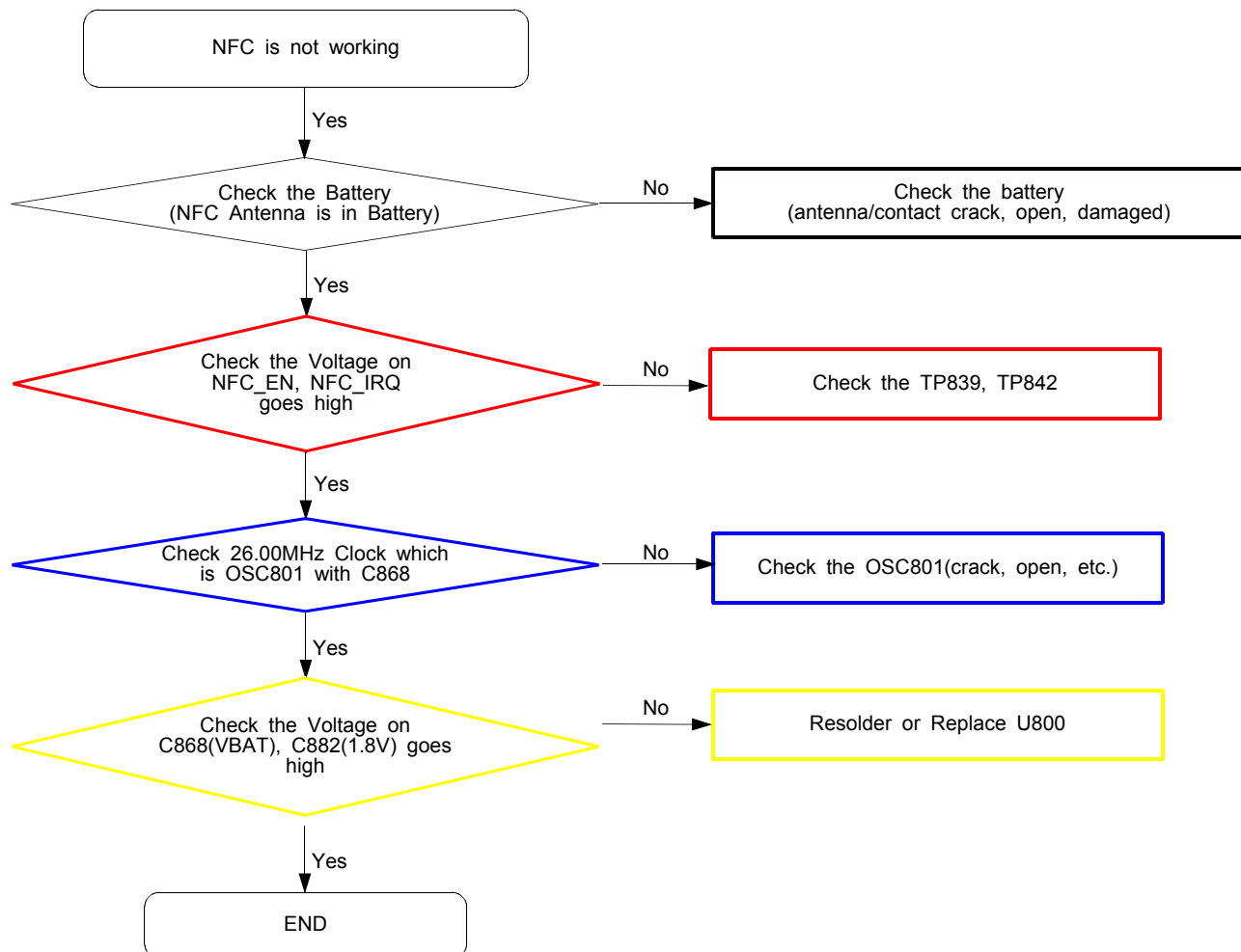


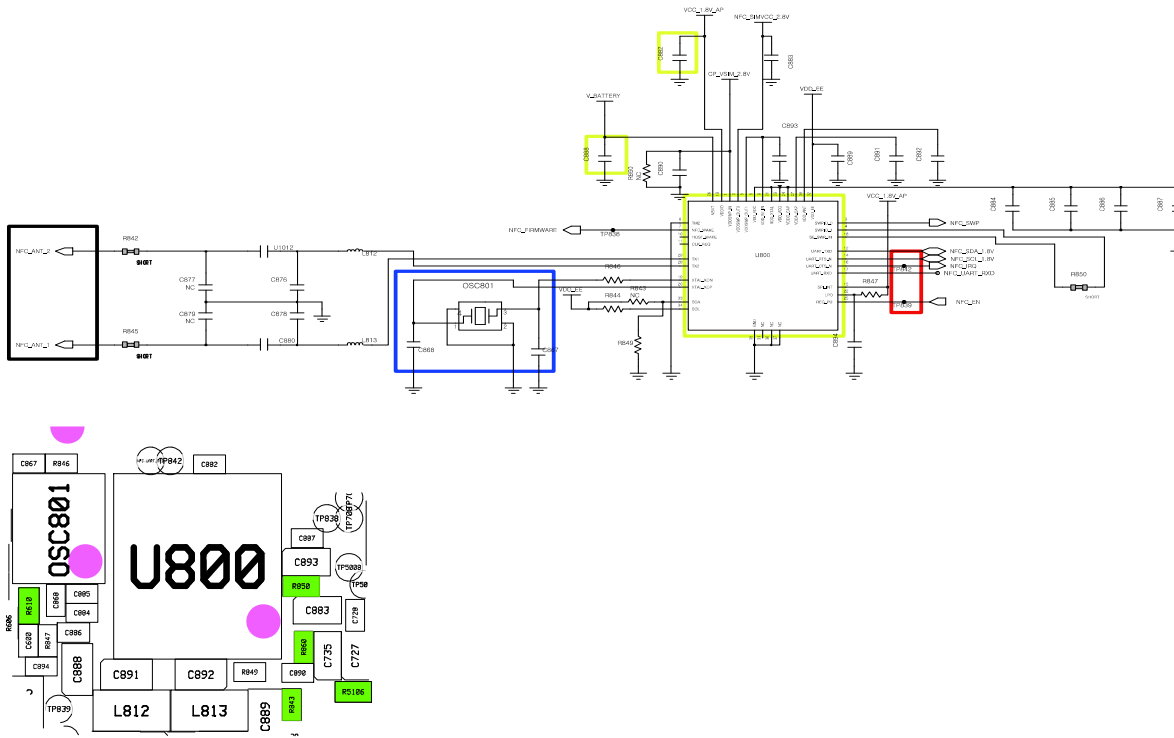
8-4-22. GPS





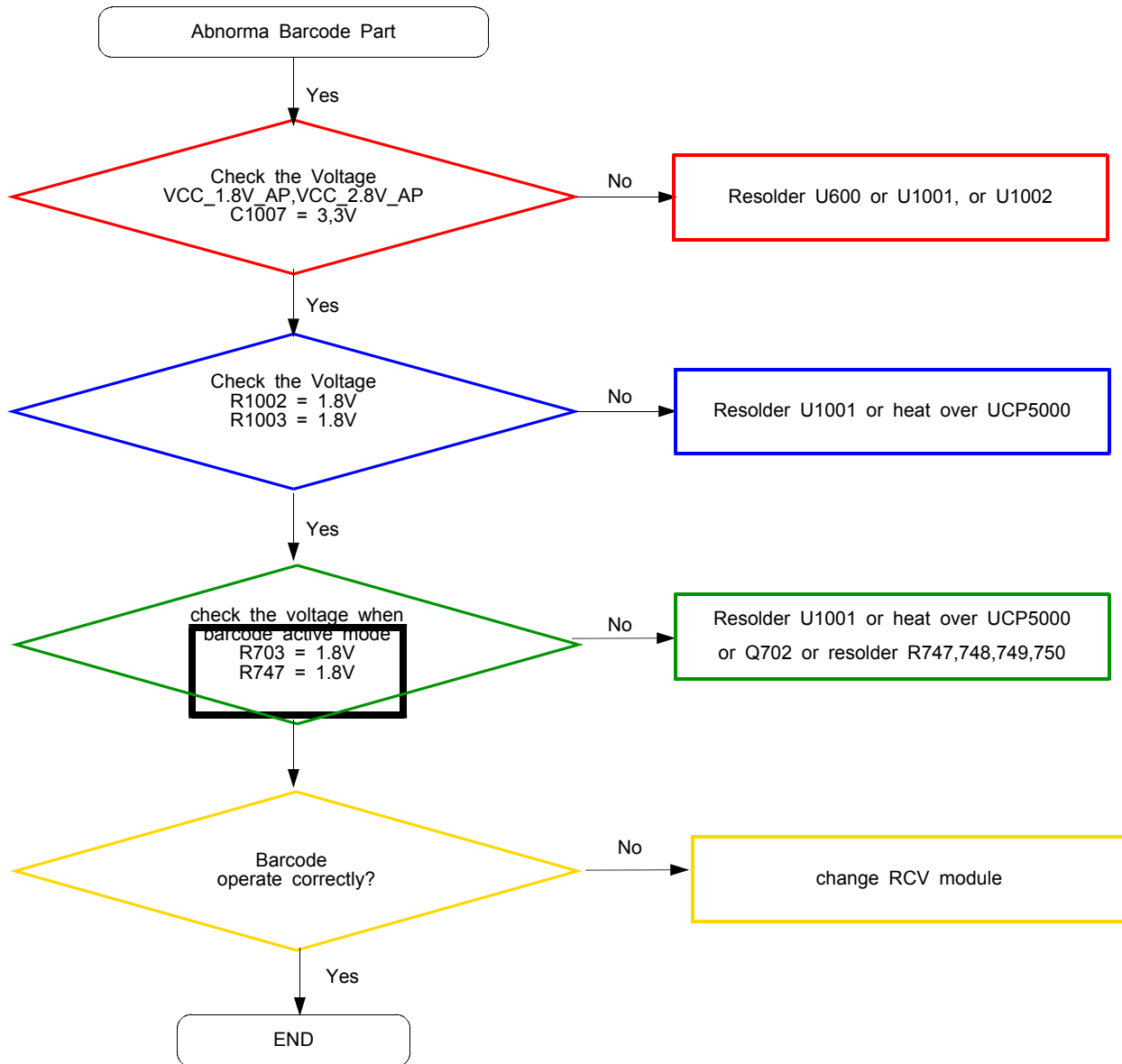
8-3-23. NFC

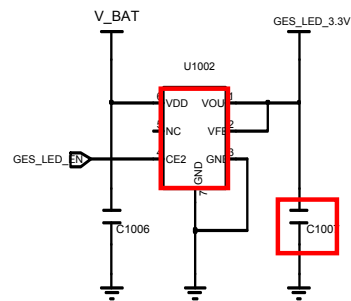
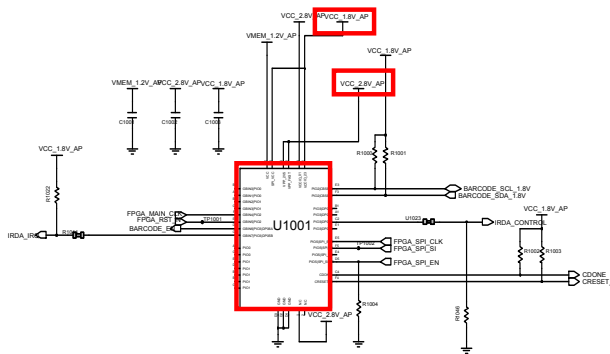




8-3-24.Sensor Part

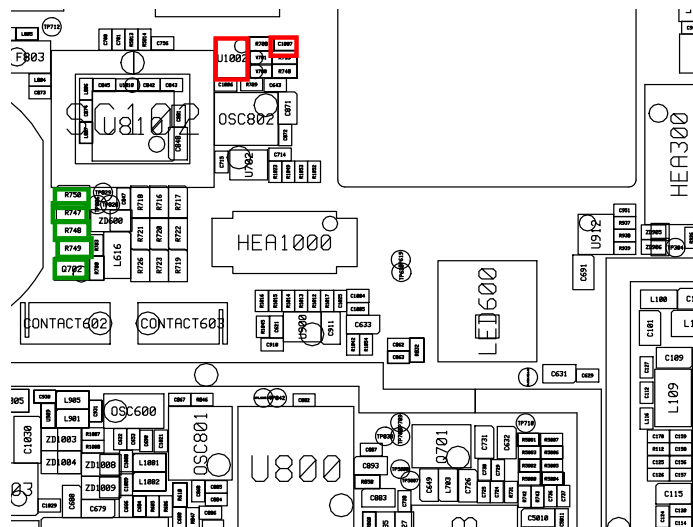
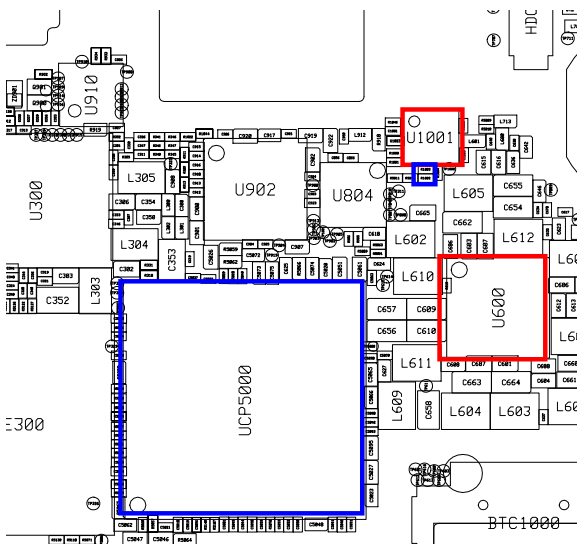
1. Barcode emulator



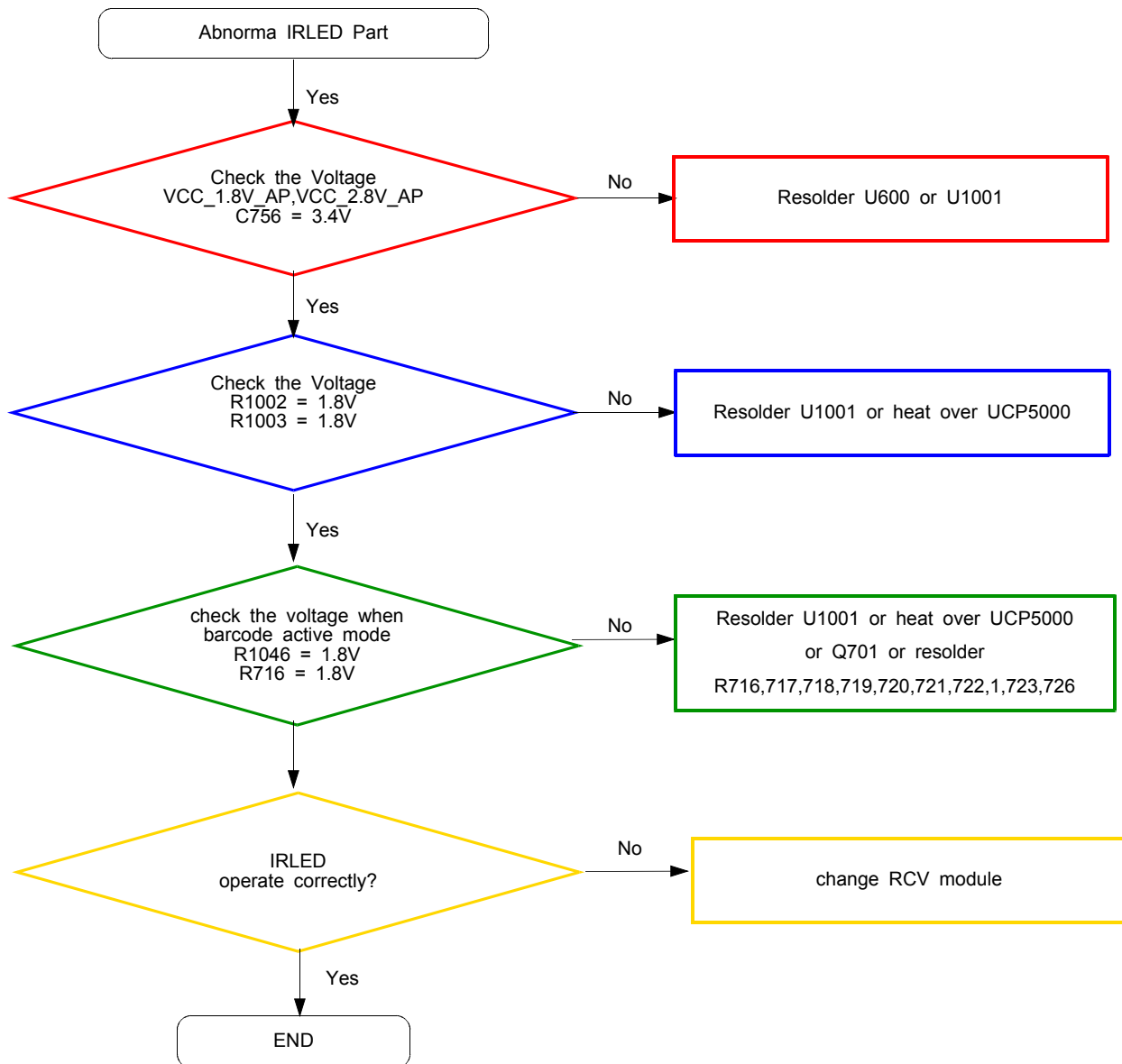


BAR CODER

Gesture Sensor

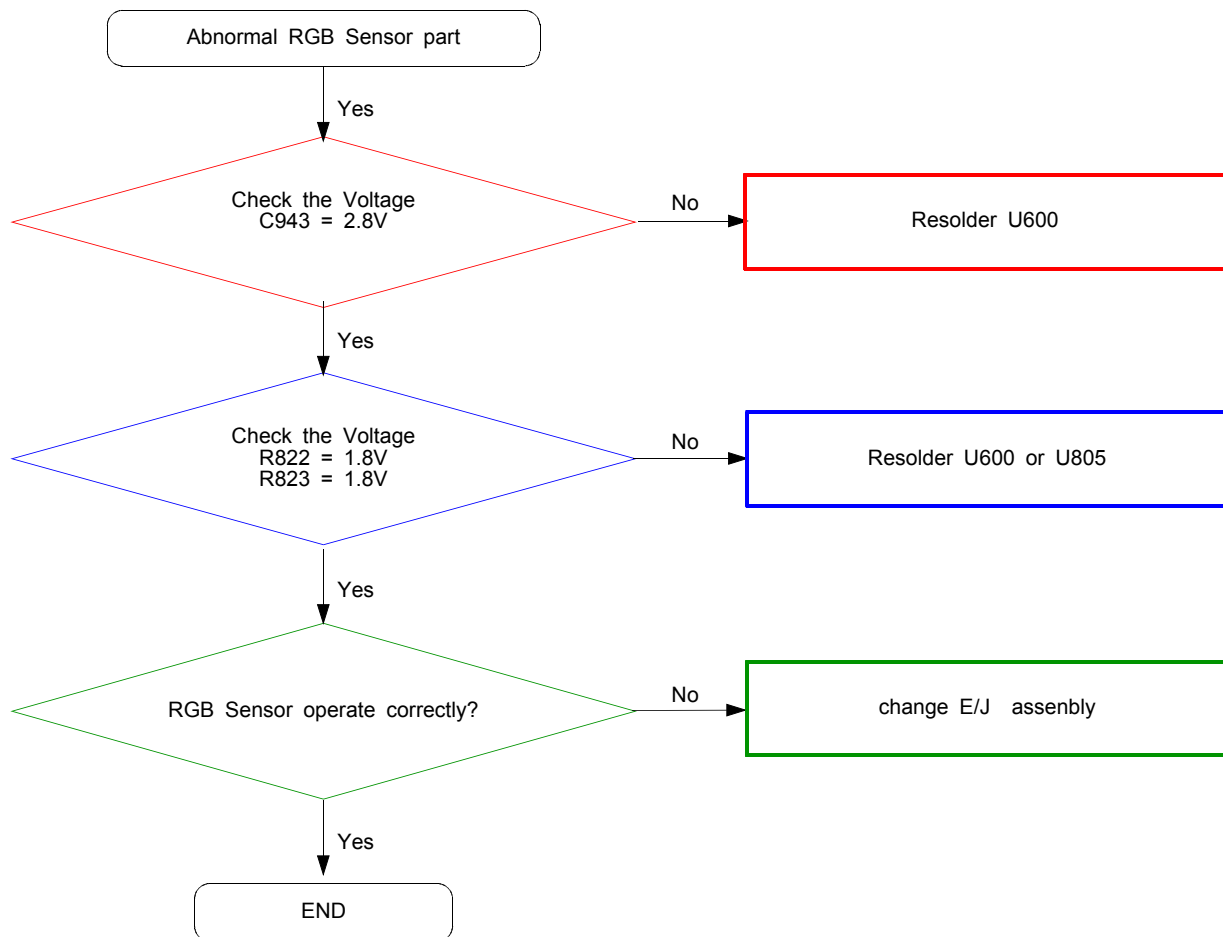


2. IR LED

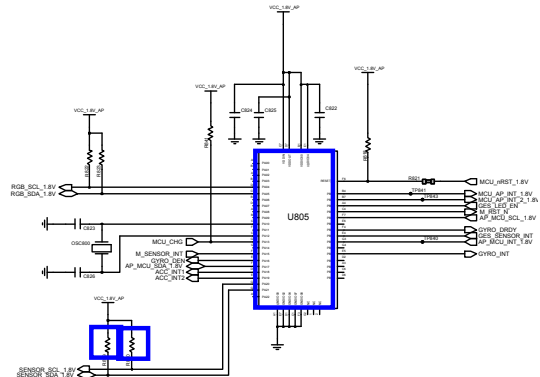
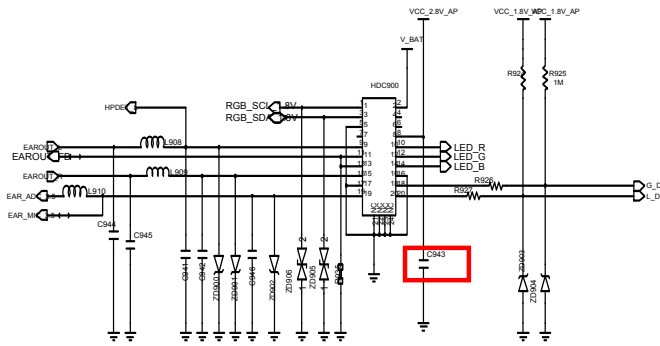




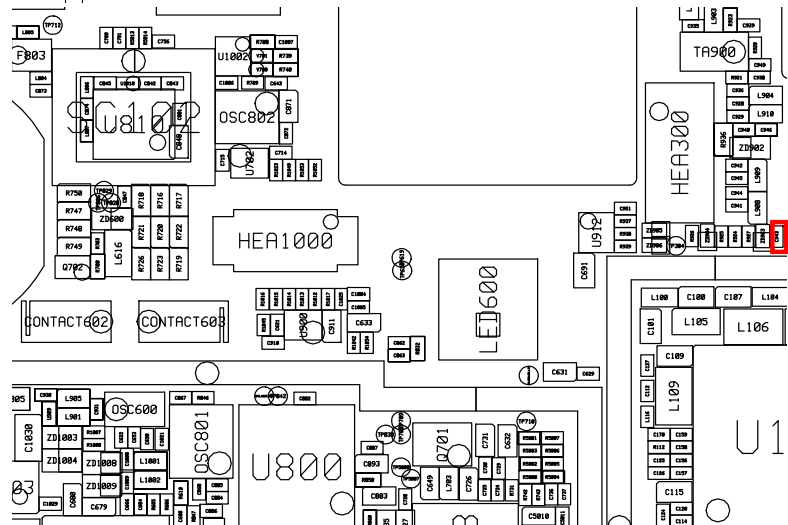
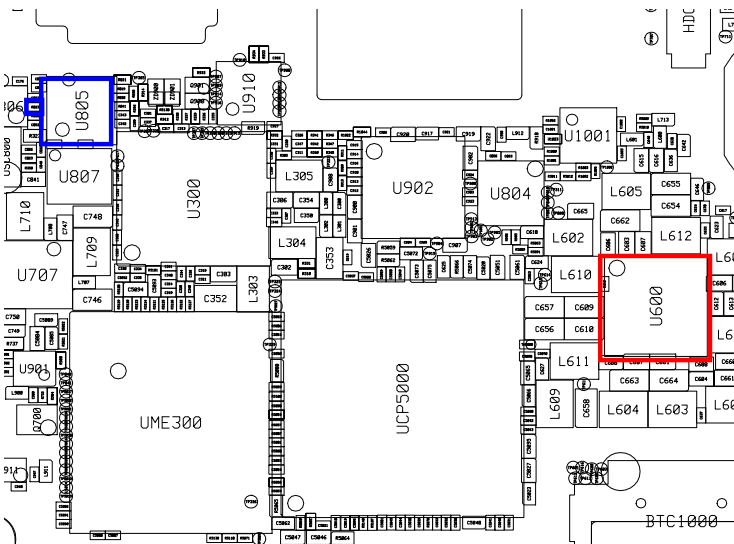
3. RGB Sensor



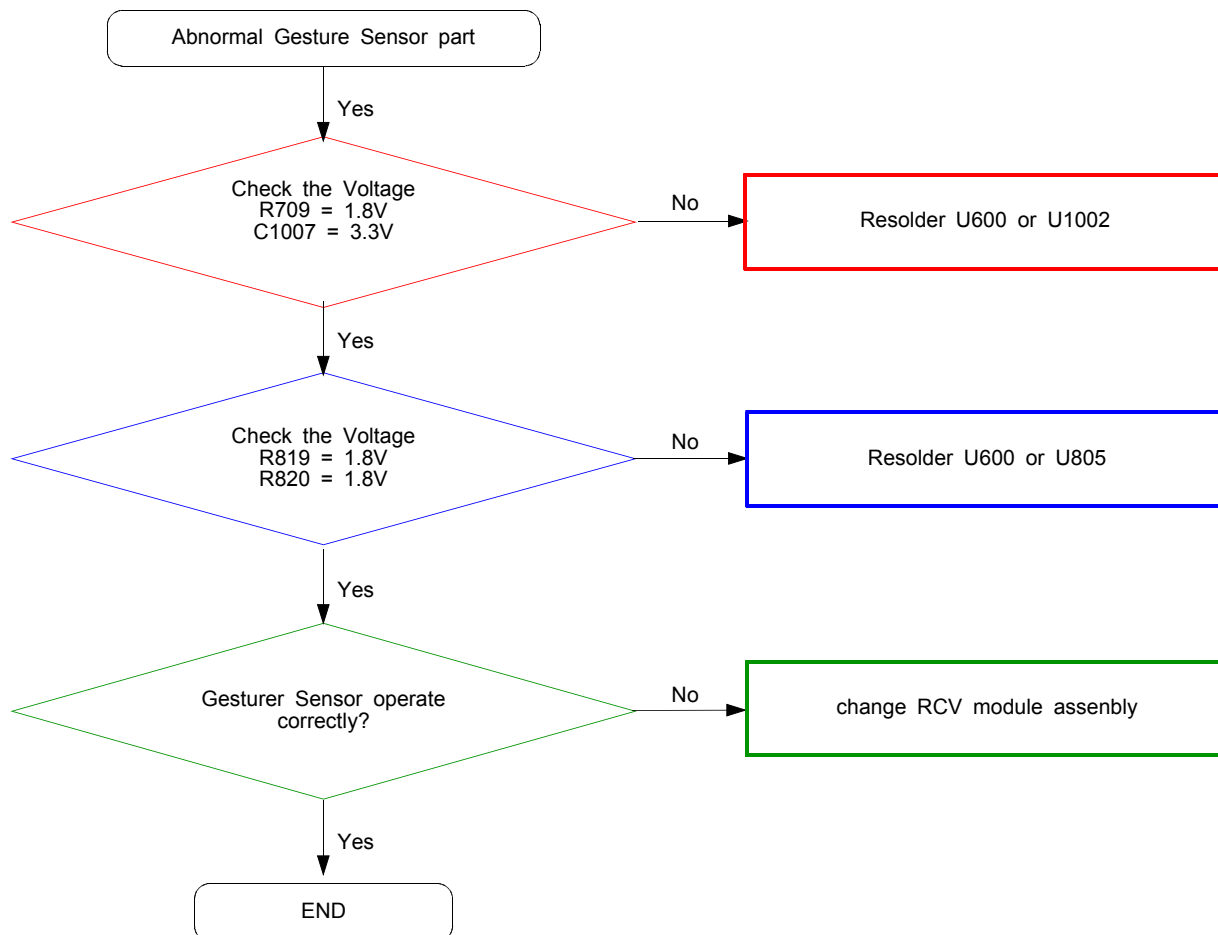
SENSOR HUB

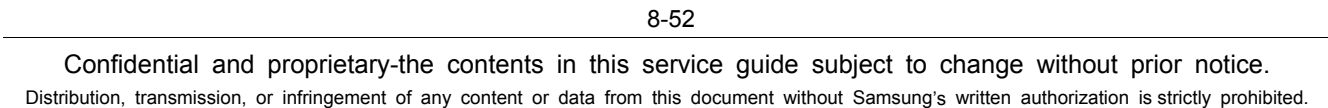
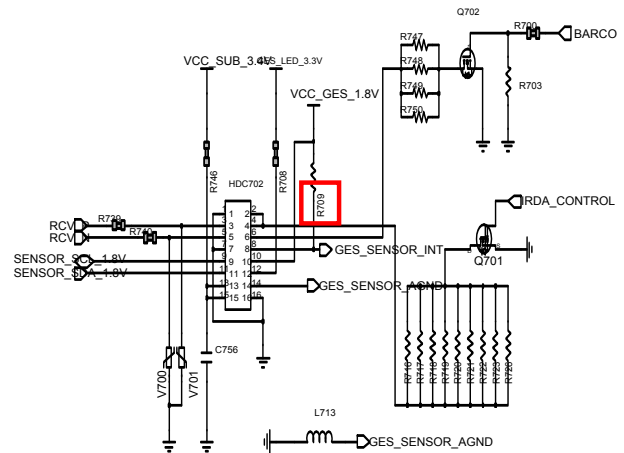


E/J + RGB + S\

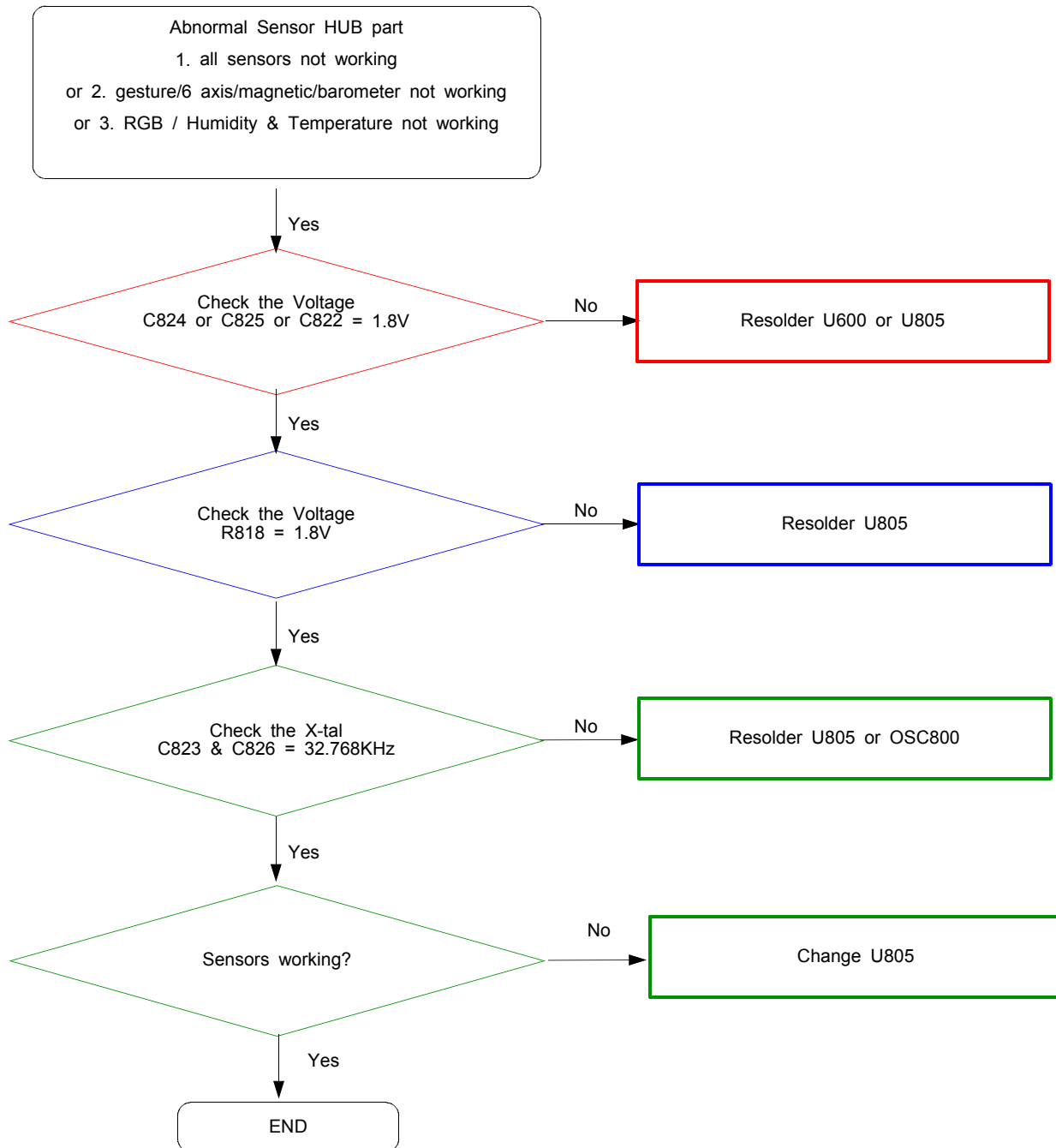


4. GESTURE Sensor

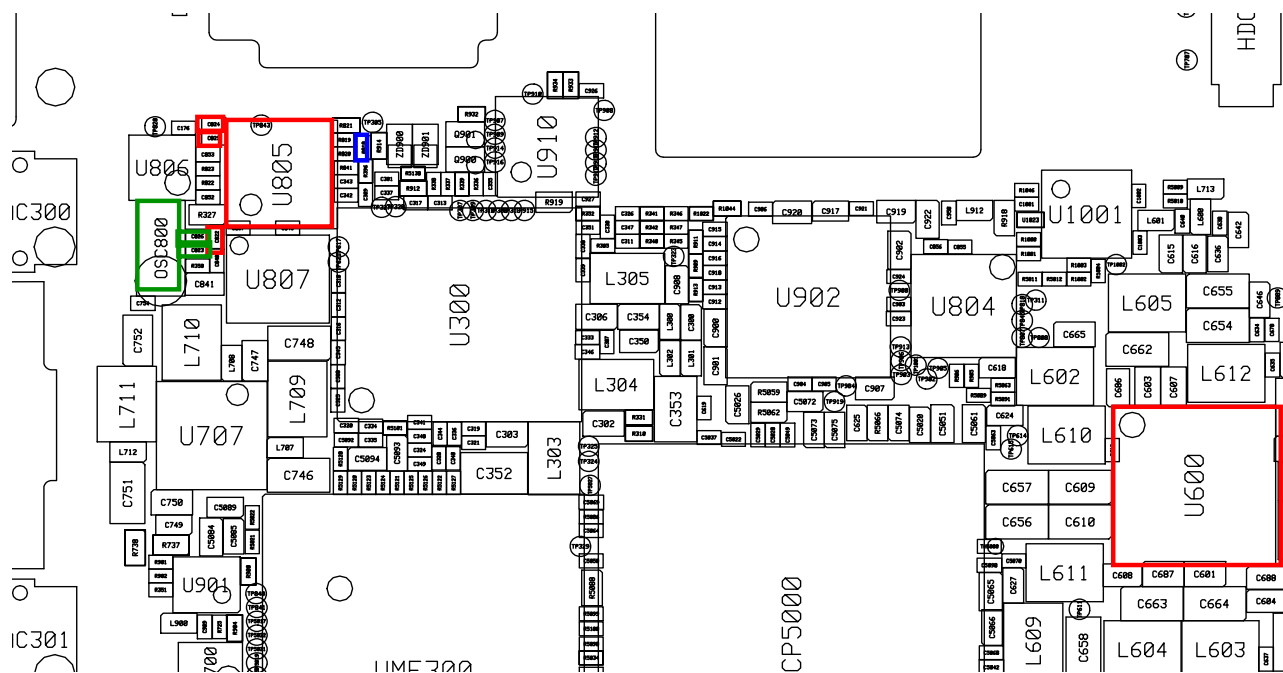
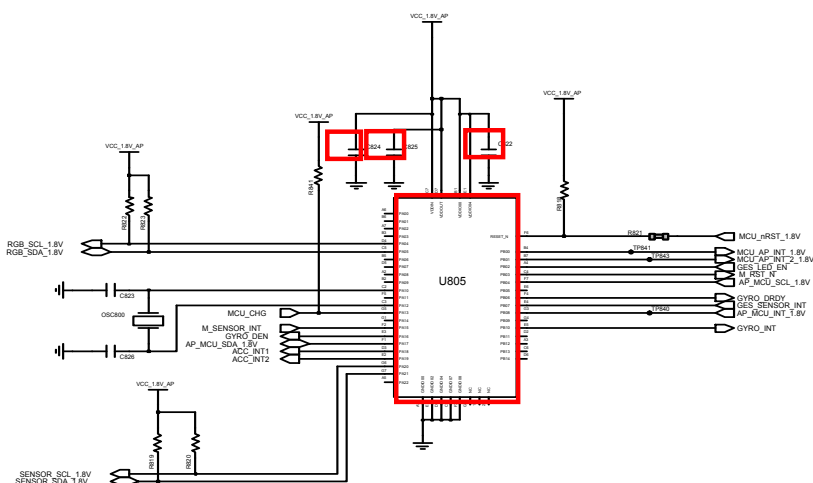




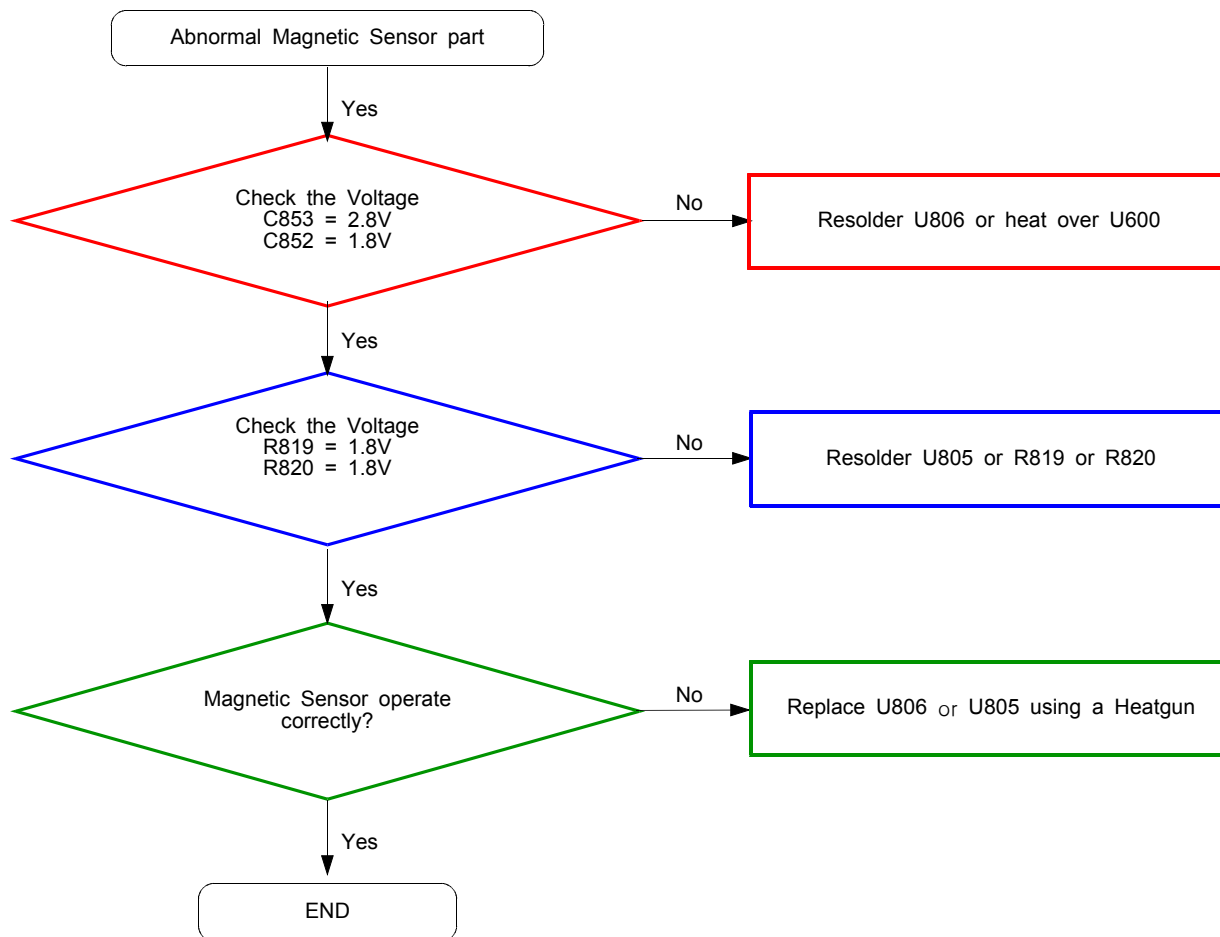
5. Sensor HUB part

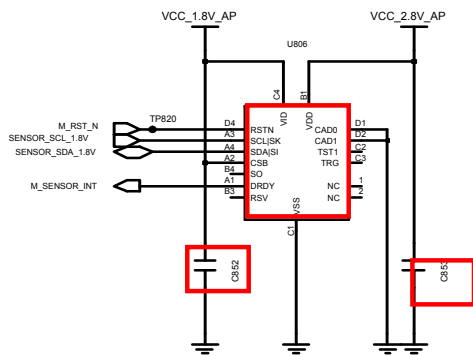


SENSOR HUB



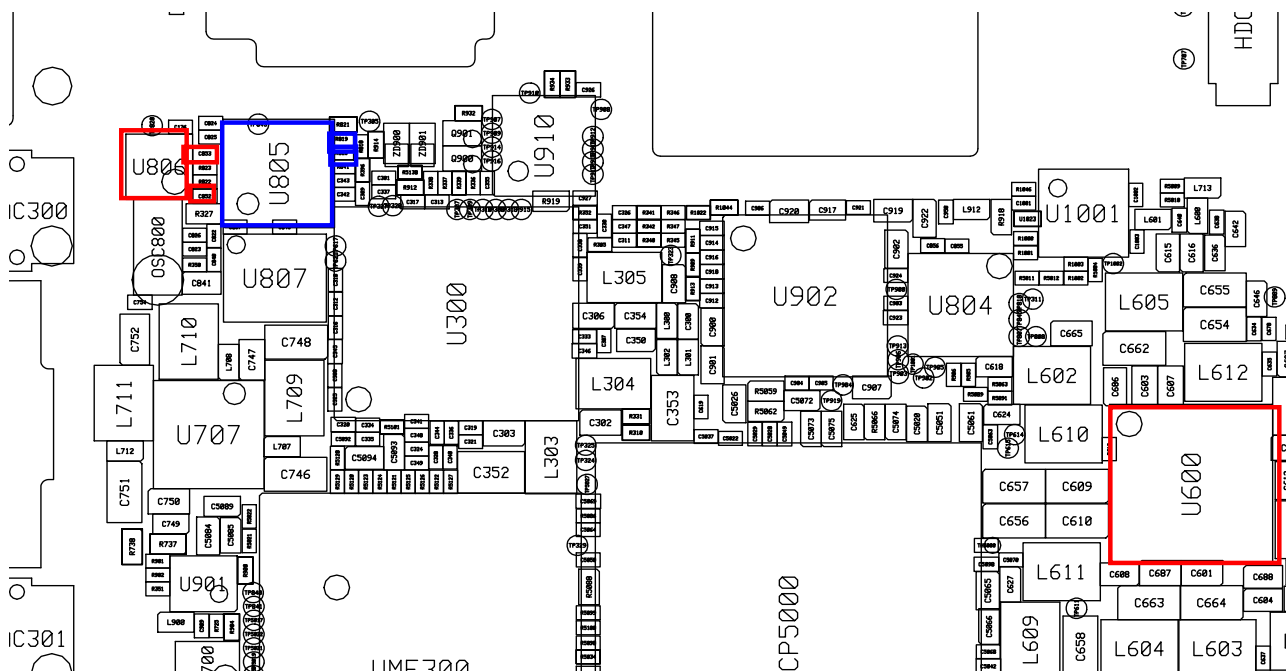
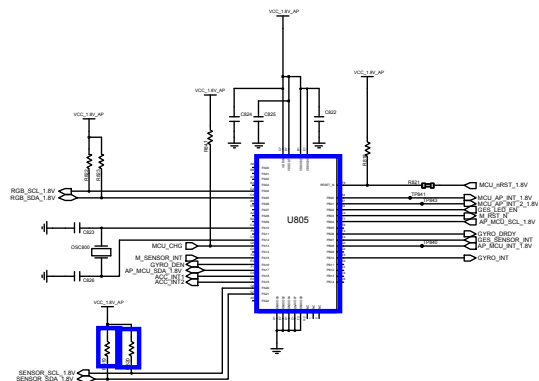
6. Magnetic Sensor



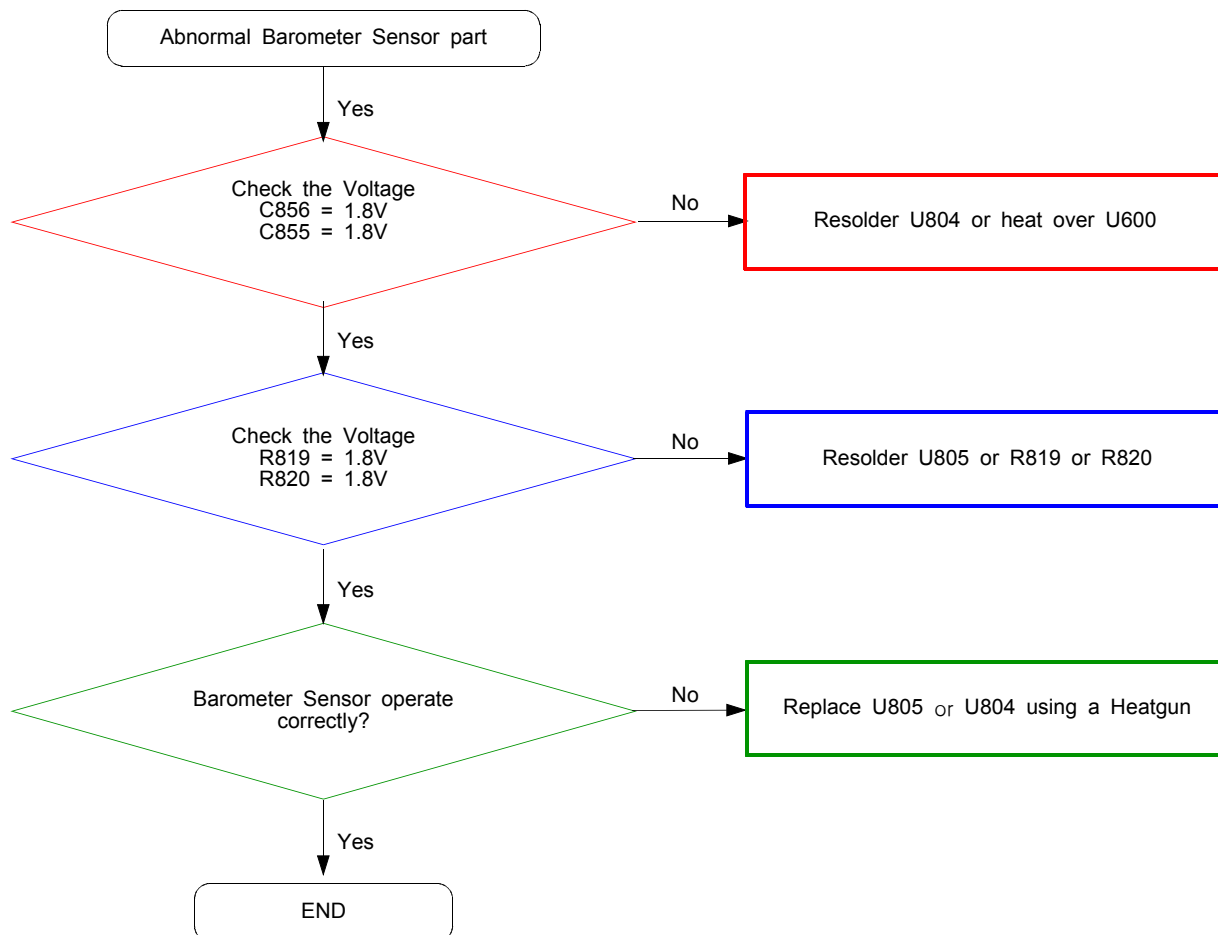


Magnetic Sensor

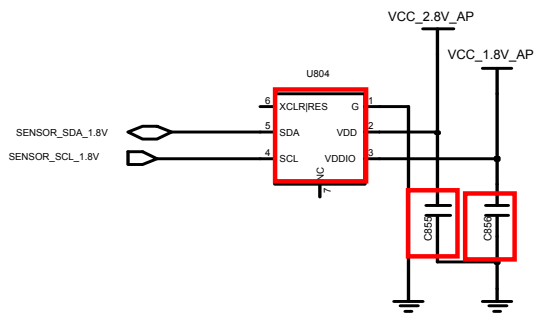
SENSOR HUB



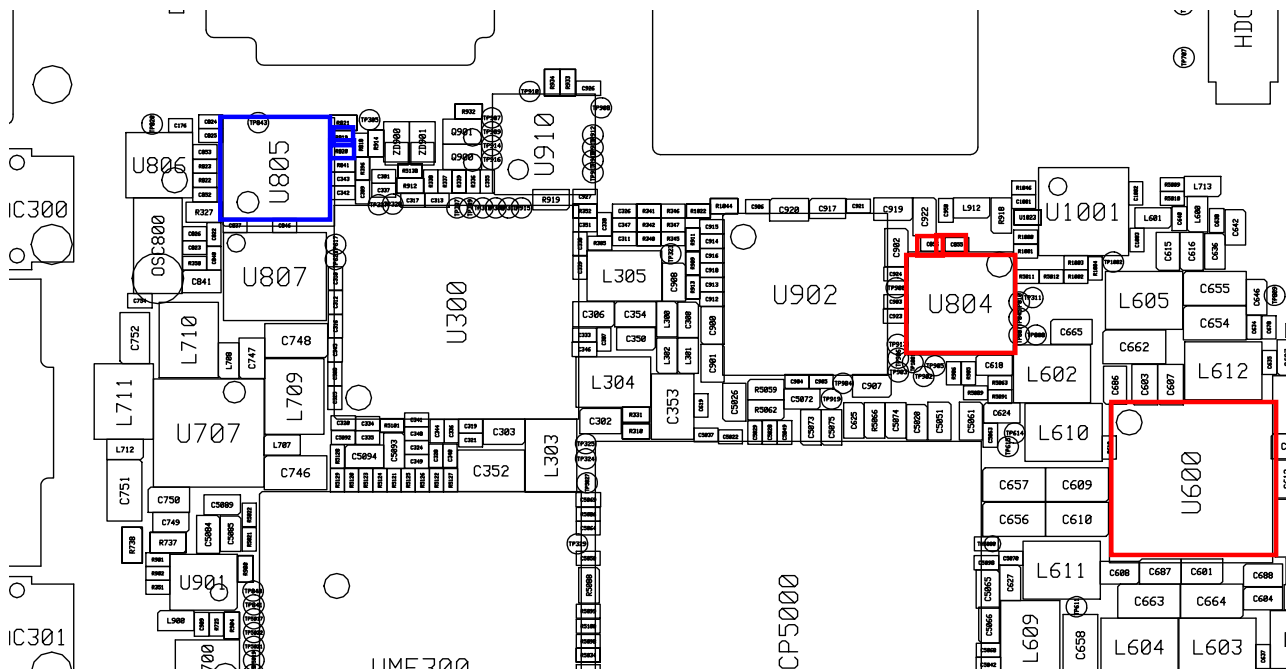
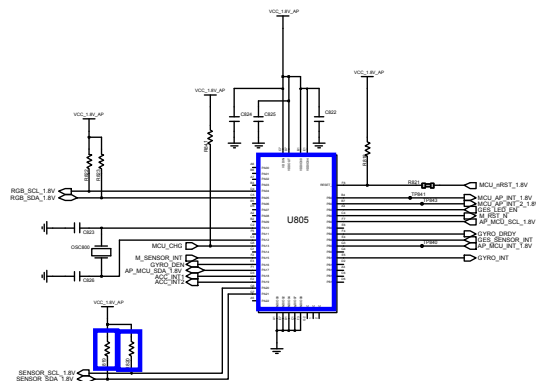
7. Barometer Sensor



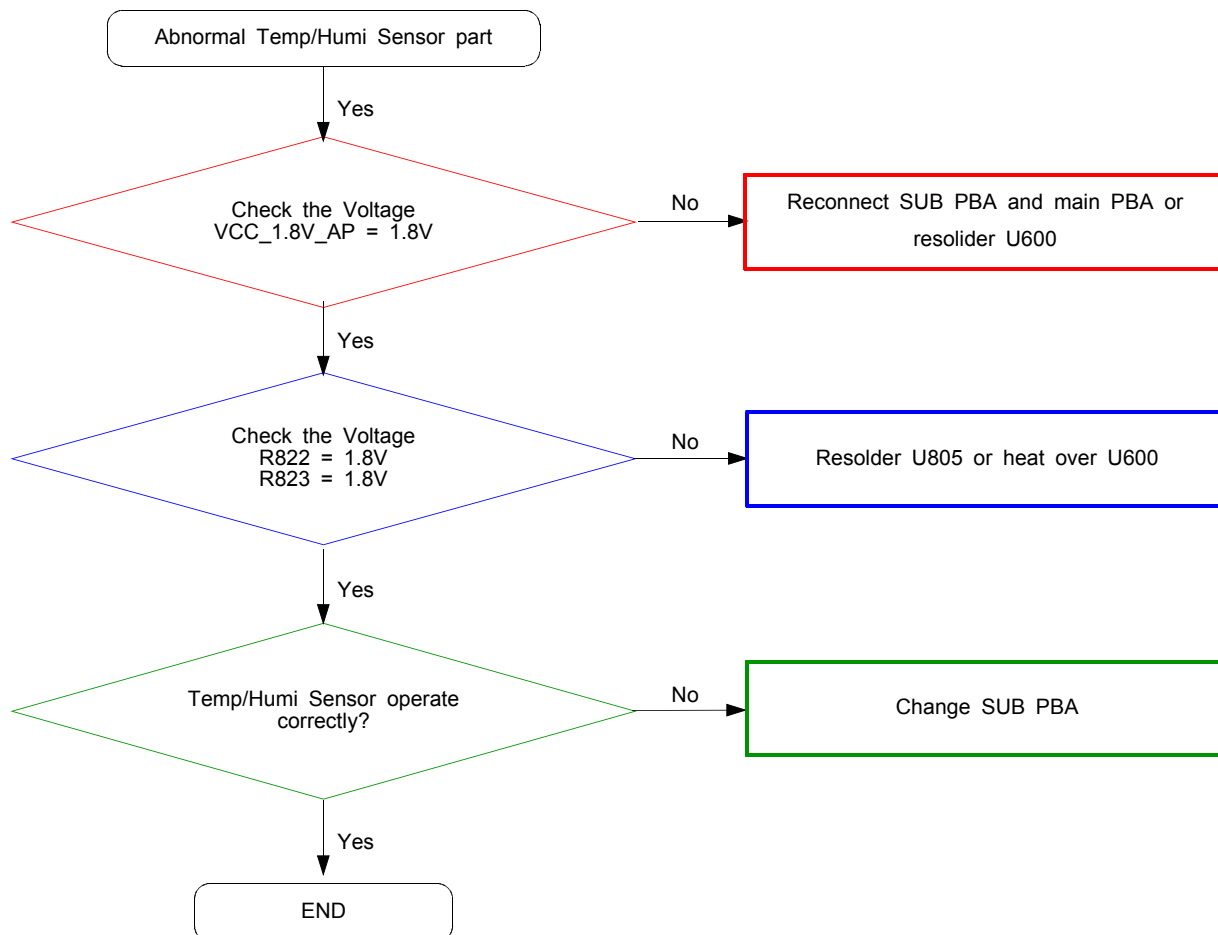
SENSOR HUB



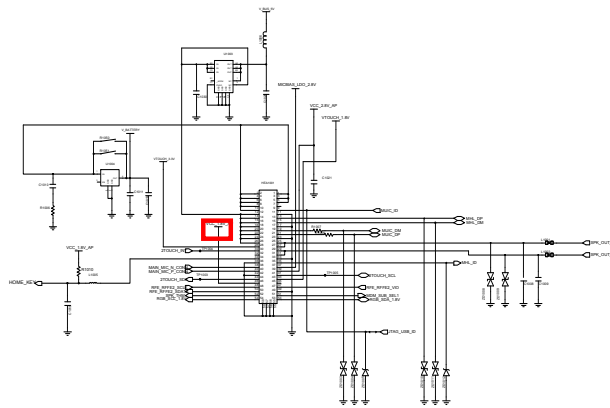
Barometer Sensor



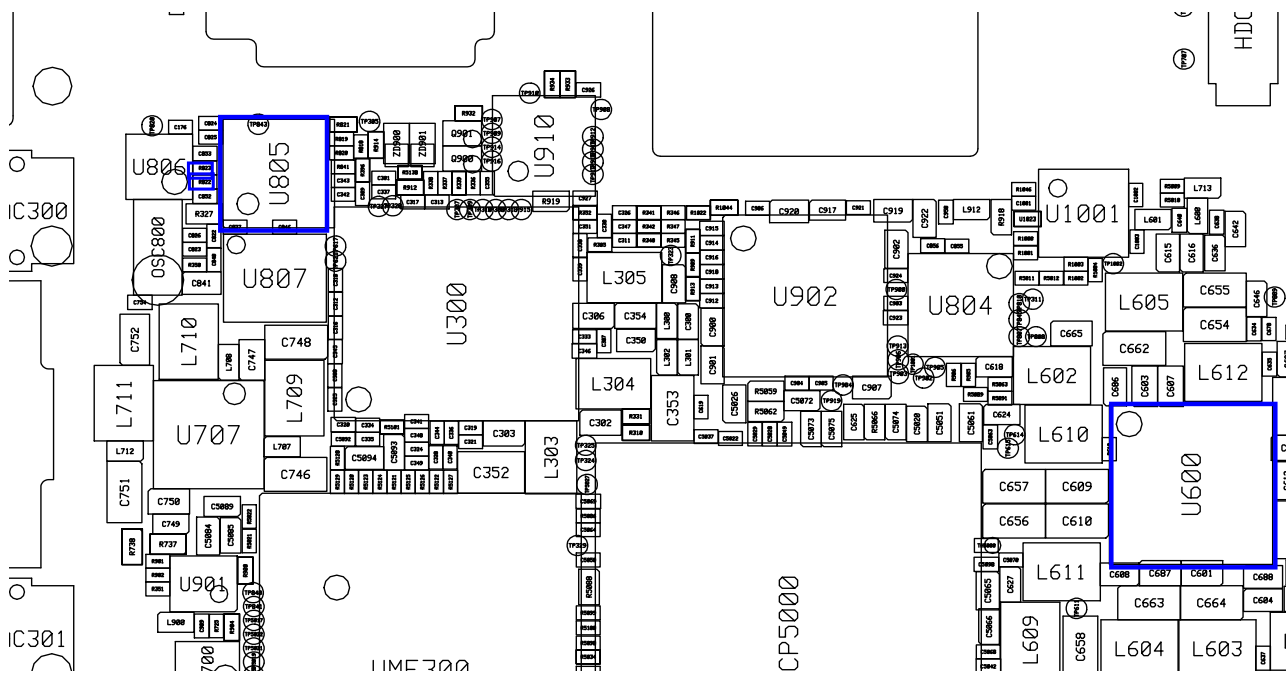
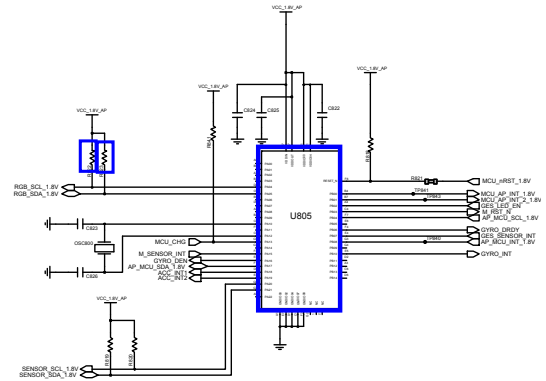
8. TEMP/Humidity sensor



SENSOR HUB

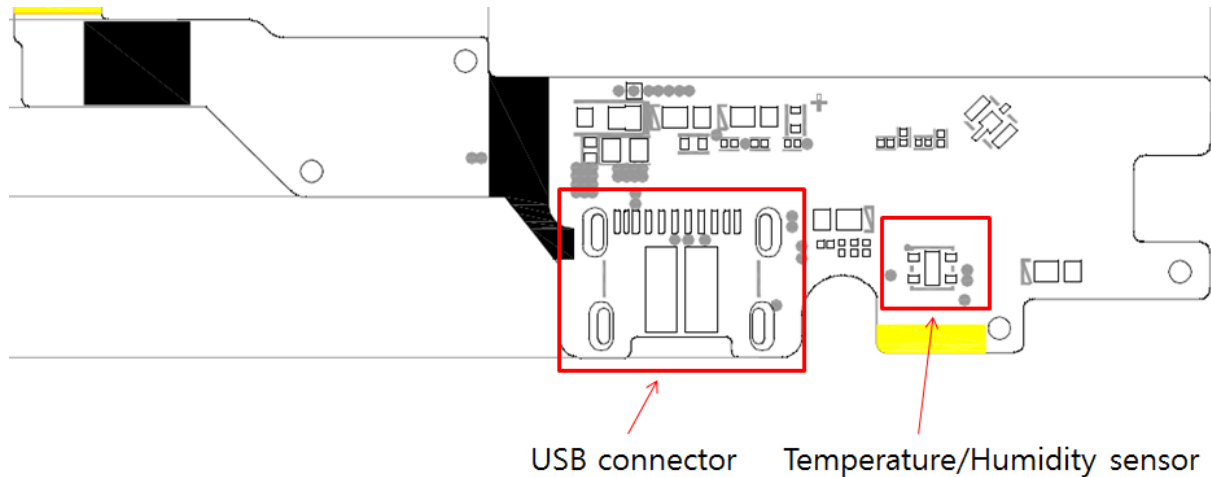


SUB PCB CON.



※ CAUTION

Temperature/Humidity sensor should not be directly exposed to the heat-gun when you replace USB connector, because excessive heat can cause abnormal operation of the sensor. The temperature that Temperature/Humidity sensor sees should not exceed 260°C. Use proper heat-shielding material to protect Temperature/Humidity sensor.

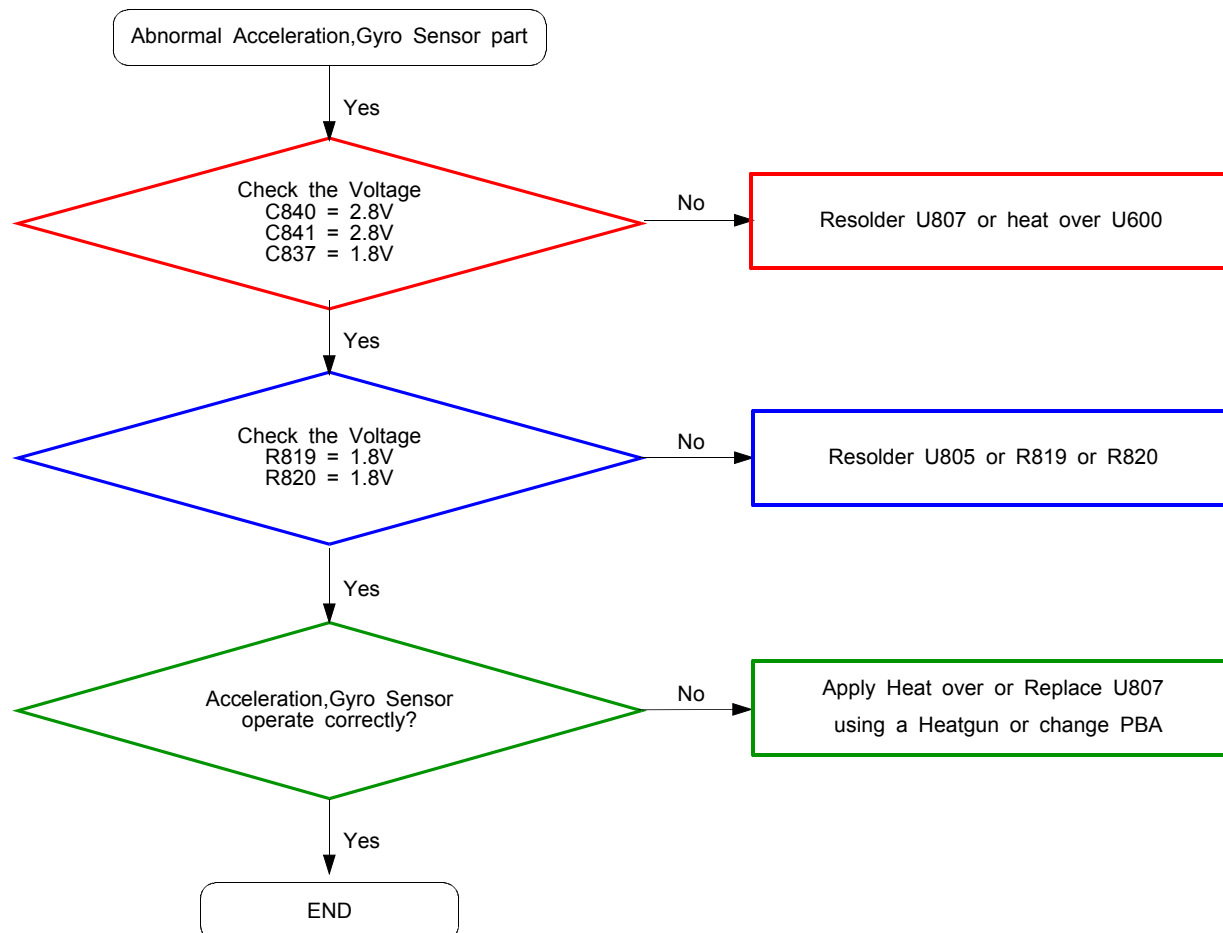


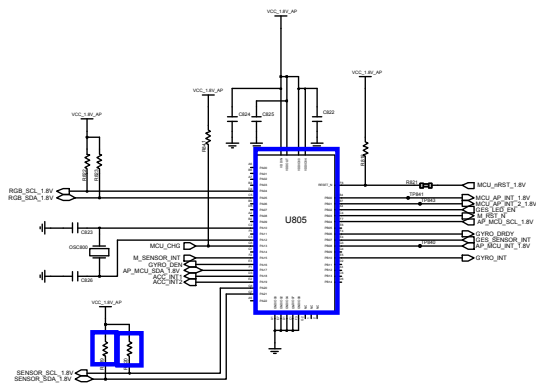
※ Temp/Humi Sensor After Repair

- 1) Keypad : press *#0*#
- 2) Select "Sensor"
- 3) Select "Temp-Humid"
- 4) Read the COMP data (ignore the RAW data)

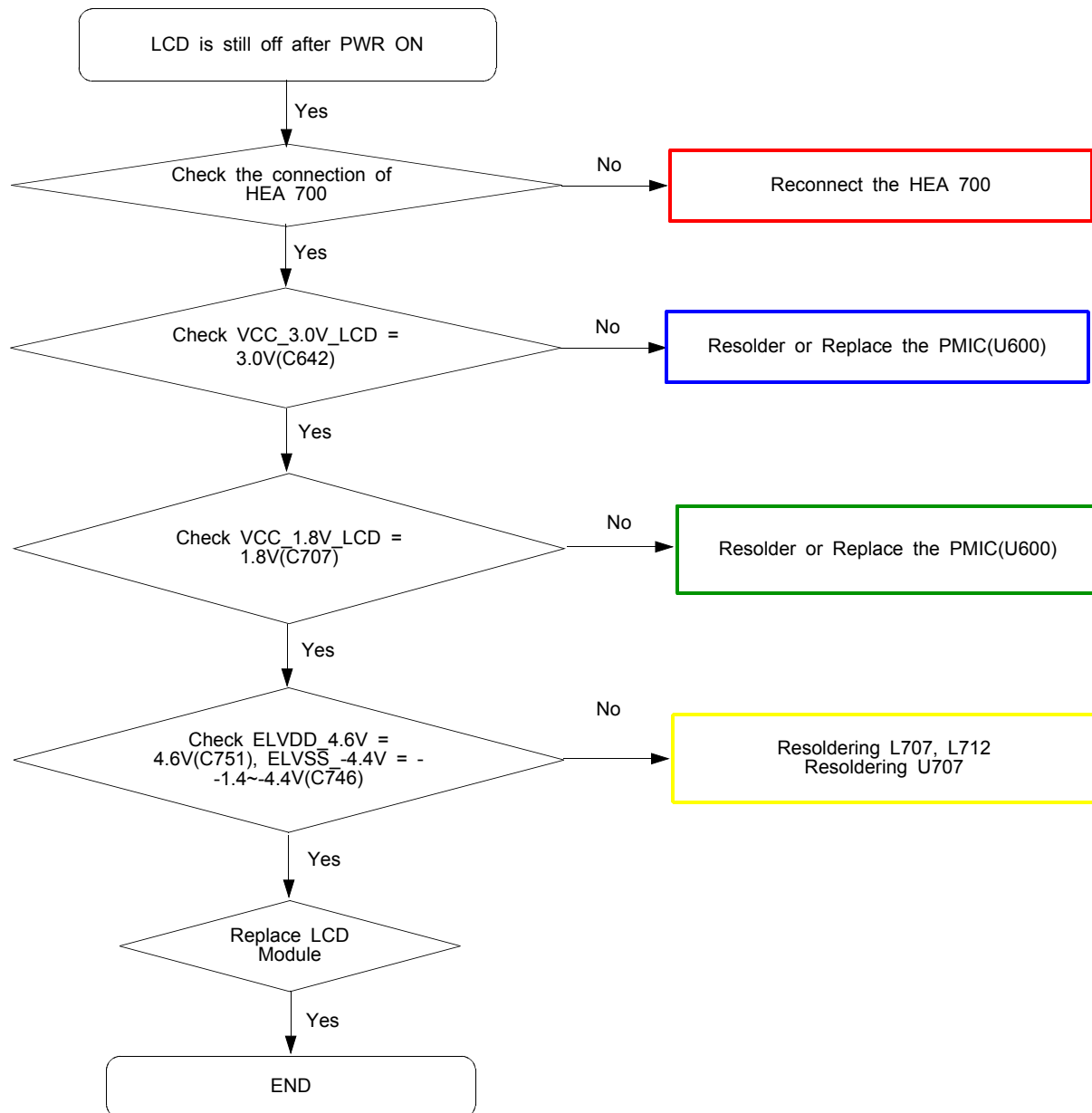


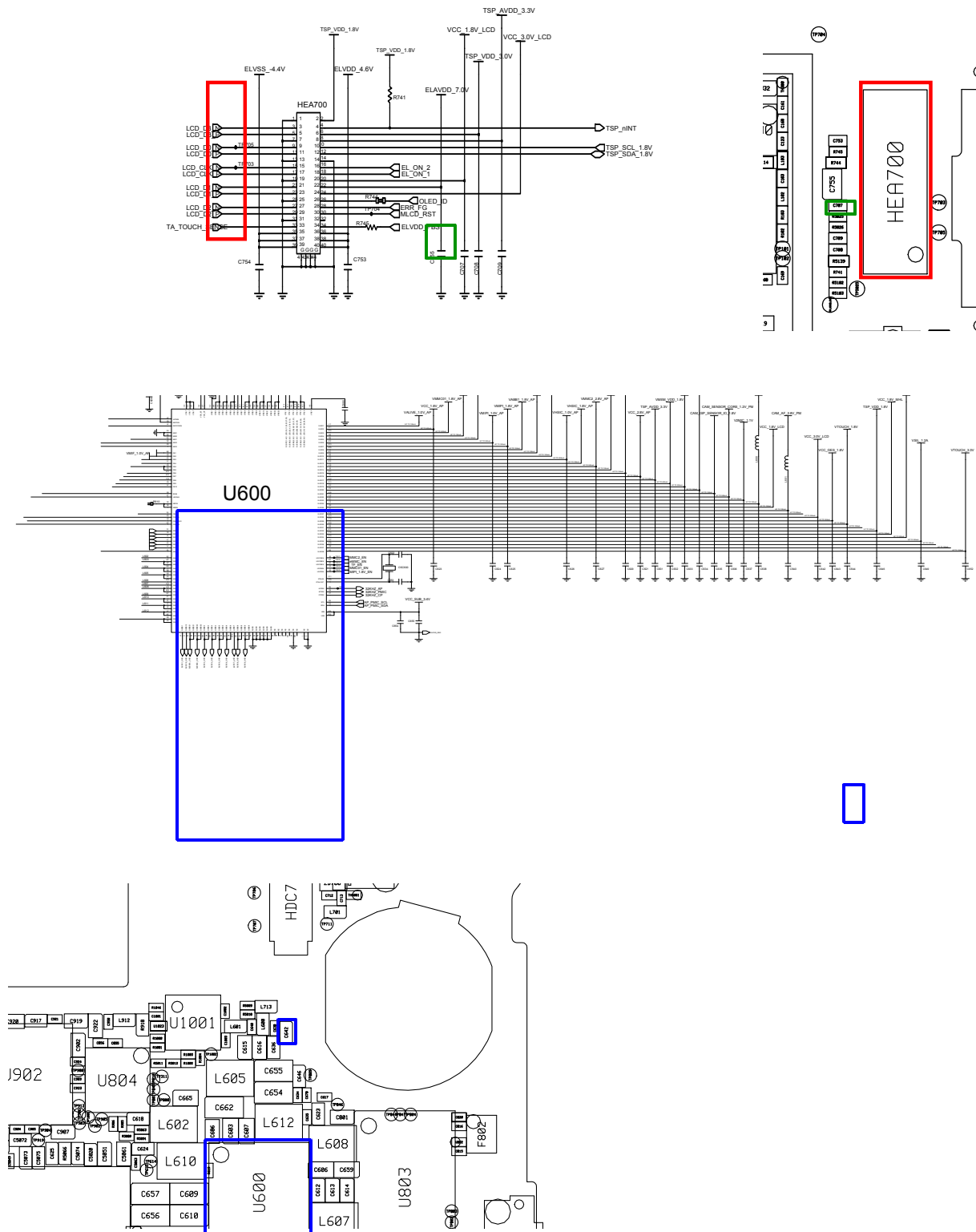
9. Acceleration , Gyro Sensor

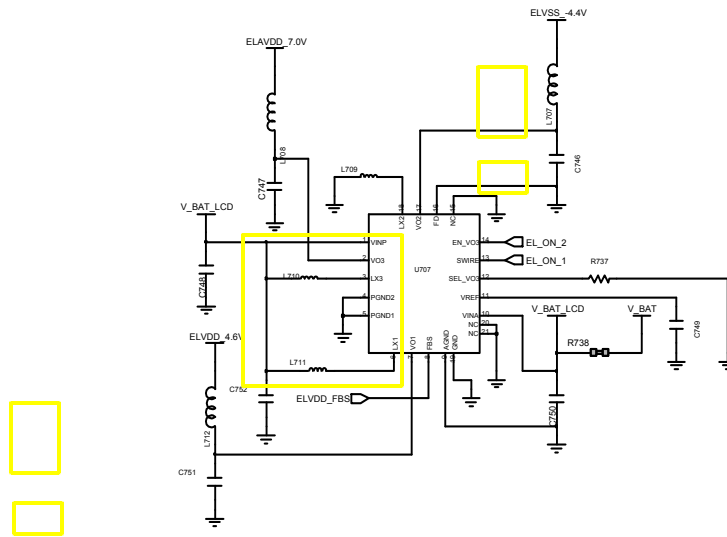


[illegible]

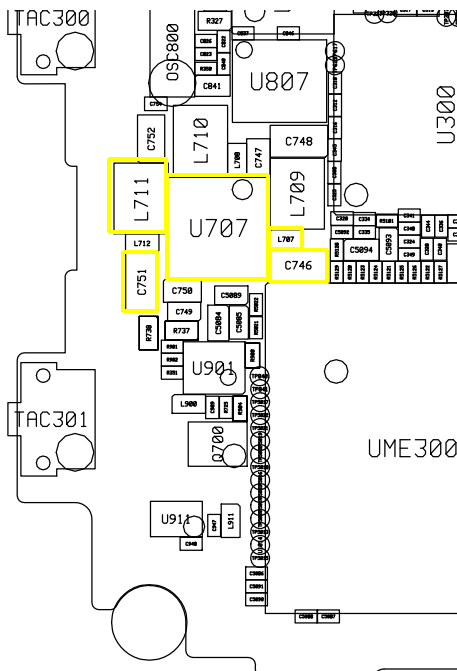
8-3-25. LCD



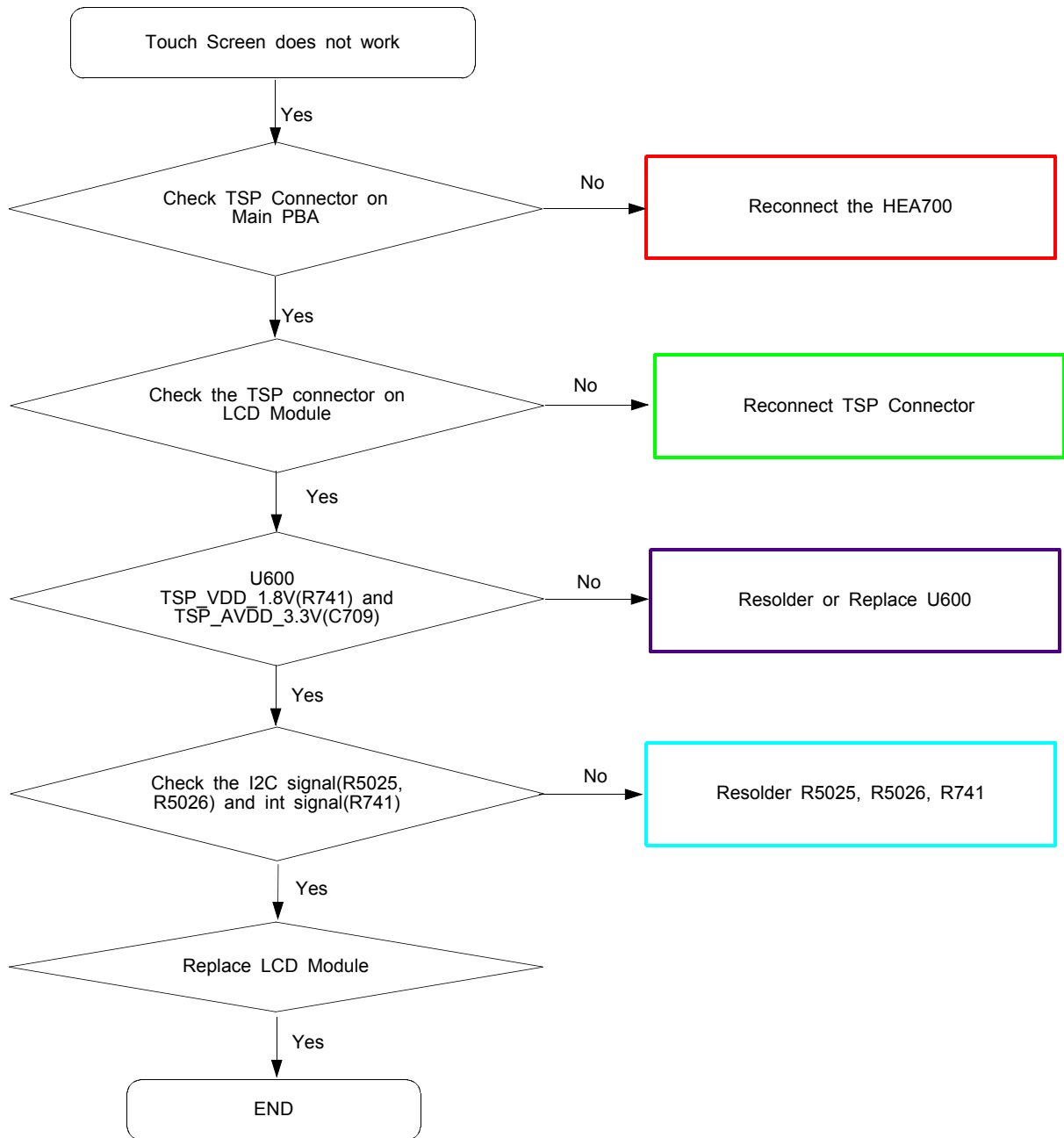


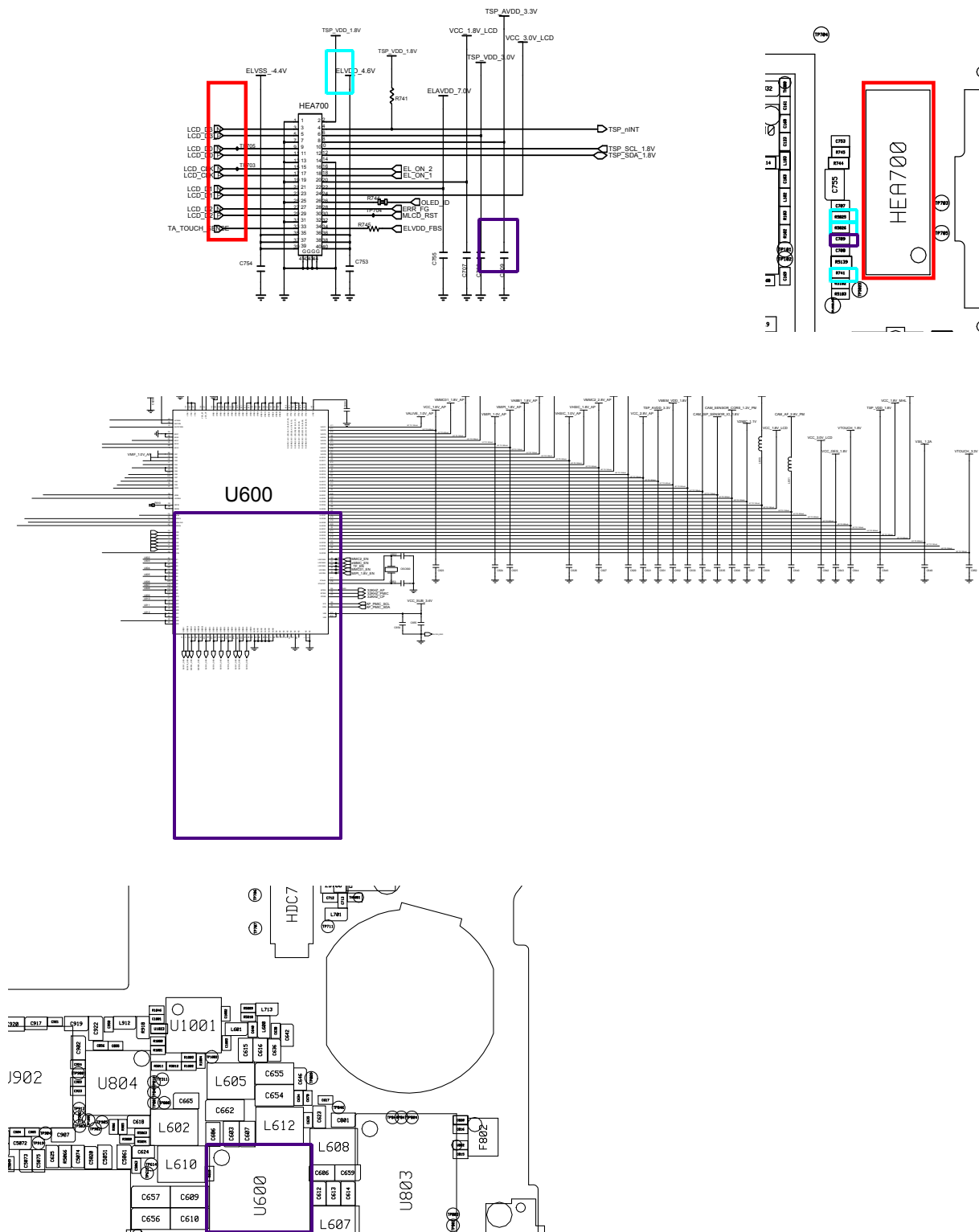


LCD DCDC

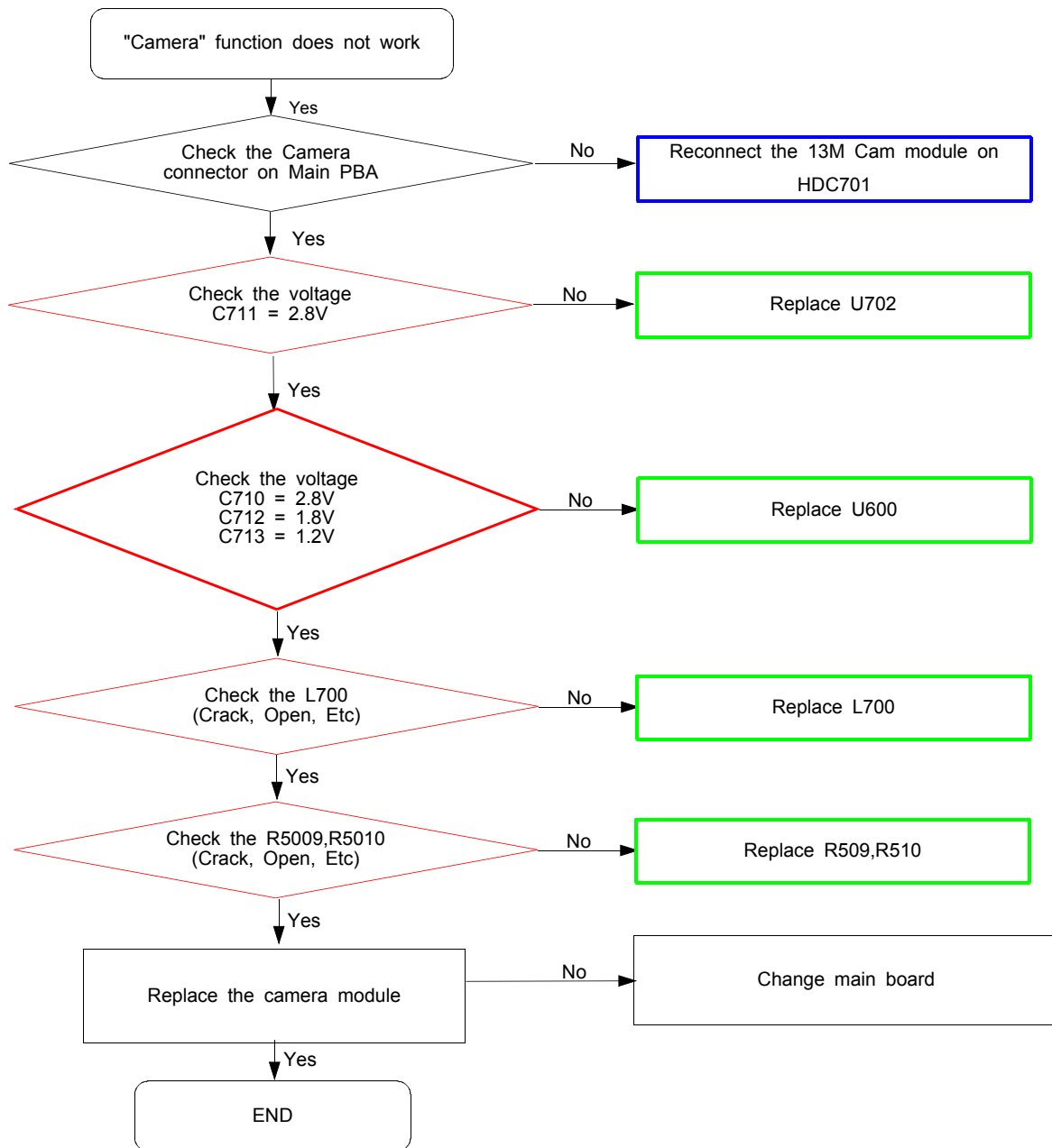


8-3-26. TSP

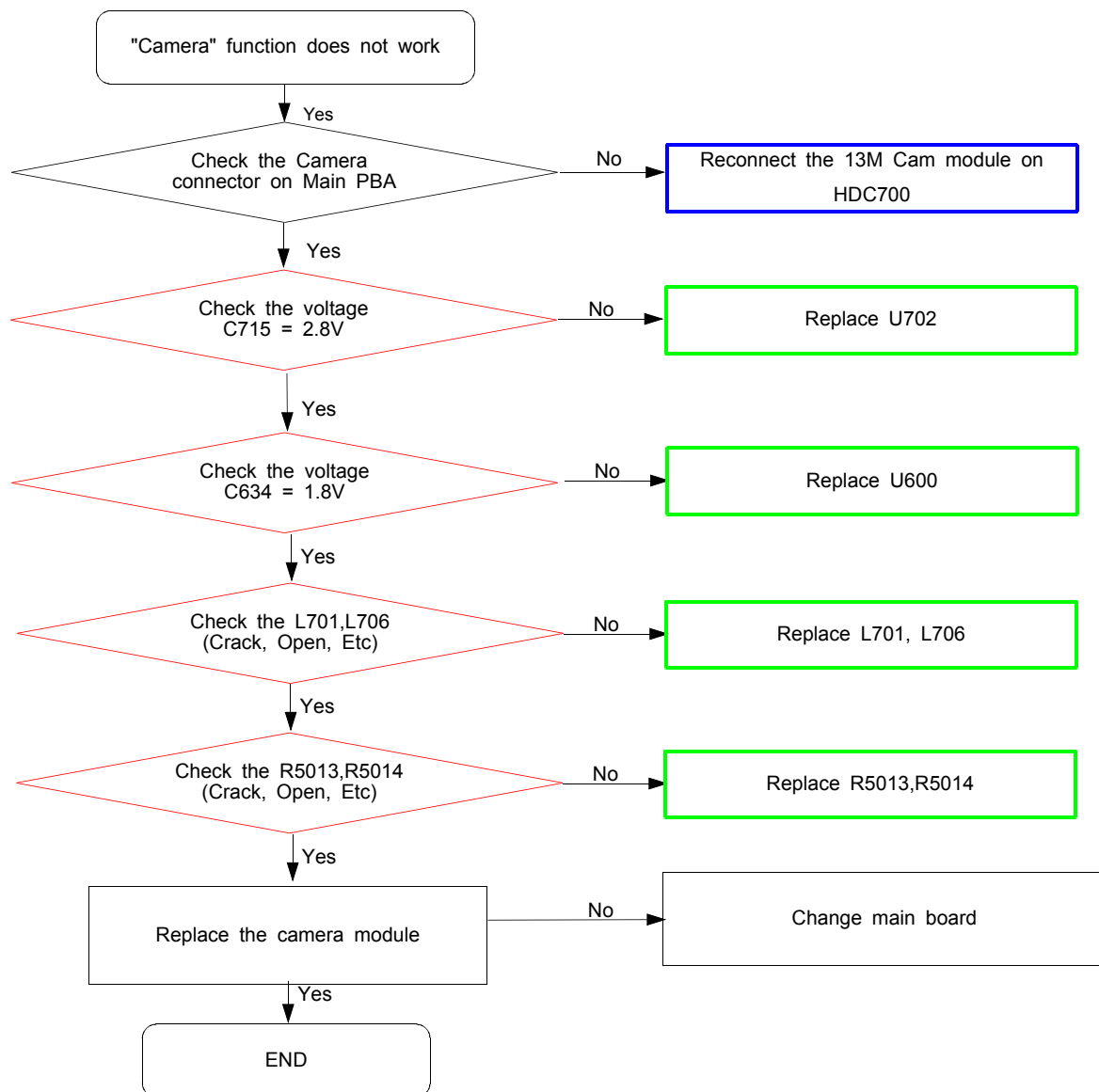


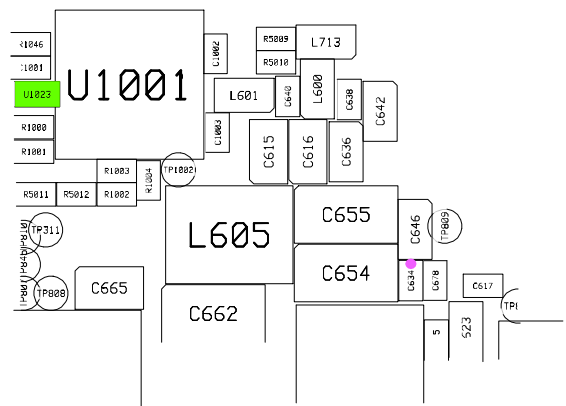
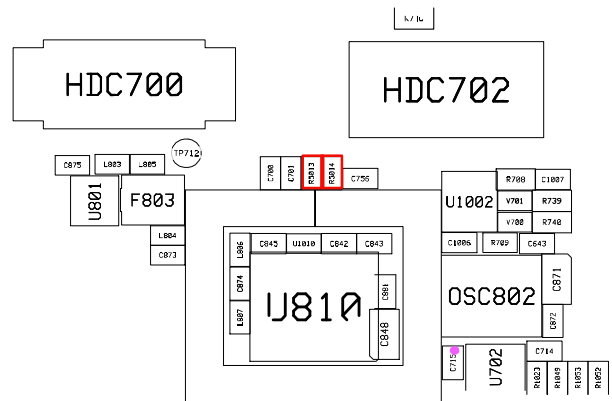
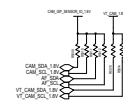


8-3-27. 13M CAM

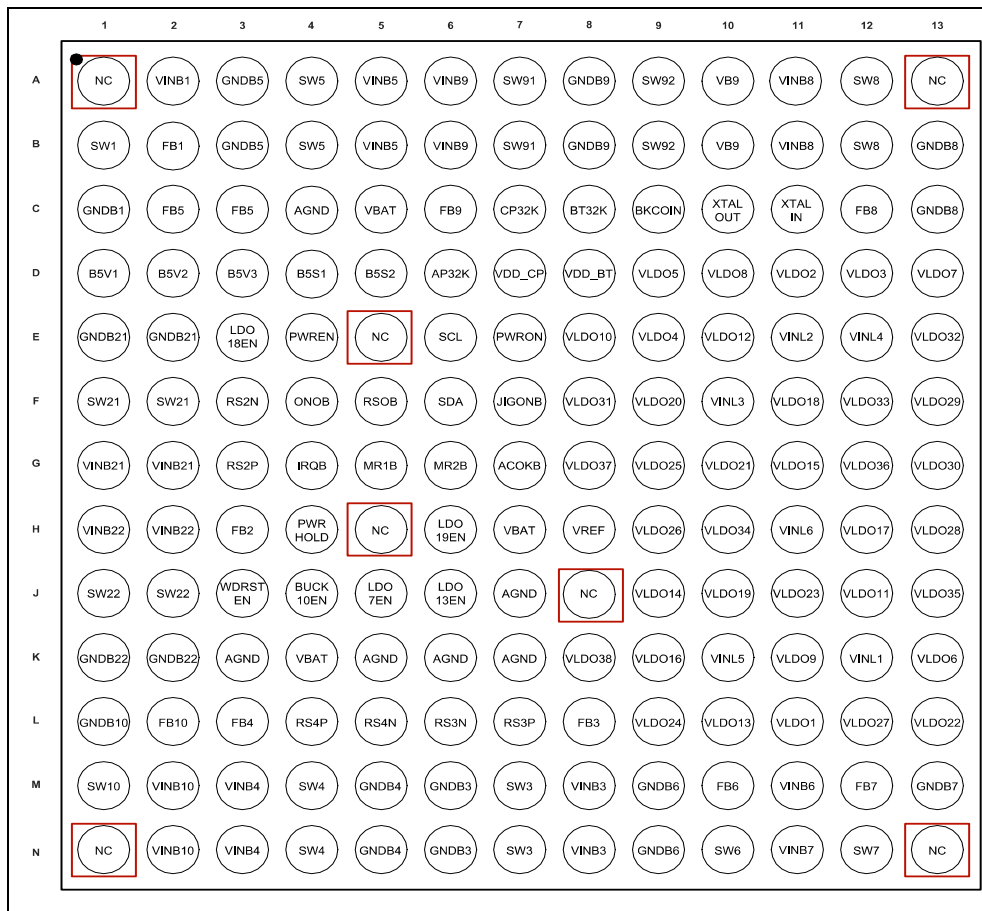


8-3-28. 2M CAM





U600(PMIC)



9. Reference Abbreviate

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