SAMSUNG

GSM TELEPHONE

GT-i9100

SERVICE Manual

GSM TELEPHONE

CONTENTS

SAMSUNG
ELECTRONICS

2011. 04. Rev.1.0

1. Safety Precautions

1-1. Repair Precaution

- Repair in shield box during detailed tuning.
  Take specially care of tuning or test because the specification of mobile 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 the magnetic force.

- Surely use a standard screwdriver when you disassemble this product.

- Use a thicken twisted wire when you measure level because a thicken twisted wire has low resistance.

- Repair after separate test pack and set because of short danger (for example an overcurrent and furious flames of parts etc) when you repair the board in condition of connecting Test Pack and tuning on.

- Take specially care of soldering iron because the board of the 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 the charger.

- Don't use the unauthorised materials except for the replacement registered on SEC System.
  Otherwise the engineer isn't charged with issues that you don't keep.

1-2. ESD(Electrostatically Sensitive Devices) Precaution

Several semiconductors 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.
Protect you from ESD damage by static electricity.

- Remove electrical charges emitted by the human body before you touch semiconductors or parts. There are ways that you touch an earthed place or wear static electricity prevention string on wrist to prevent these problems.

- Use a earthed soldering steel when you connect or disconnect ESD.

- Use a soldering removing tool equipped with static electricity isolation. Otherwise ESD will be damaged by static electricity.

- Don't unpack product until you set up ESD in the product. Because most of the ESD is packed by box and aluminum plate to have conductive power, it is prevented from static electricity.

- You must maintain electric contact between ESD and a part to be set up until ESD is connected completely to the proper place or a circuit board.

2. Specification

2-1. GSM General Specification

	GSM850	EGSM 900	DCS1800	PCS1900	WCDMA 2100	WCDMA 1900	WCDMA 900	WCMDA 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	880~915 925~960	824~849 869~894
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	270.833kbps 3.692us	270.833kbps 3.692us	270.833kbps 3.692us	270.833kbps 3.692us	3.84Mcps	3.84Mcps	3.84Mcps	3.84Mcps
Time Slot Period/ Frame Period	576.9us 4.615ms	576.9us 4.615ms	576.9us 4.615ms	576.9us 4.615ms	FrameLength: 10ms Slotlength: 0.667ms	FrameLength: 10ms Slotlength: 0.667ms	FrameLength: 10ms Slotlength: 0.667ms	FrameLength: 10ms Slotlength: 0.667ms
Modulation	0.3GMSK	0.3GMSK	0.3GMSK	0.3GMSK	QPSKHQPSK	QPSKHQPSK	QPSKHQPSK	QPSKHQPSK
MS Power	33dBm~5dBm	33dBm~5dBm	30dBm~0dBm	30dBm~0dBm	24dBm~ -50dBm	24dBm~ -50dBm	24dBm~ -50dBm	24dBm~ -50dBm
Power Class	5pcl ~ 19pcl	5pcl ~ 19pcl	0pcl ~ 15pcl	0pcl ~ 15pcl	3(max+24dBm)	3(max+24dBm)	3(max+24dBm)	3(max+24dBm)
Sensitivity	-102dBm	-102dBm	-100dBm	-100dBm	-106.7dBm	-106.7dBm	-106.7dBm	-106.7dBm
TDMA Mux	8	8	8	8	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
5	33±2 dBm
6	31±2 dBm
7	29±2 dBm
8	27±2 dBm
9	25±2 dBm
10	23±2 dBm
11	21±2 dBm
12	19±2 dBm
13	17±2 dBm
14	15±2 dBm
15	13±2 dBm
16	11±3 dBm
17	9±3dBm
18	7±3 dBm
19	5±3 dBm

TX Power control level	EGSM900
5	33±2 dBm
6	31±2 dBm
7	29±2 dBm
8	27±2 dBm
9	25±2 dBm
10	23±2 dBm
11	21±2 dBm
12	19±2 dBm
13	17±2 dBm
14	15±2 dBm
15	13±2 dBm
16	11±3 dBm
17	9±3dBm
18	7±3 dBm
19	5±3 dBm

TX Power control level	DCS1800
0	30±3 dBm
1	28±3 dBm
2	26±3 dBm
3	24±3 dBm
4	22±3 dBm
5	20±3 dBm
6	18±3 dBm
7	16±3 dBm
8	14±3 dBm
9	12±4 dBm
10	10±4 dBm
11	8±4 dBm
12	6±4 dBm
13	4±4 dBm
14	2±5 dBm
15	0±5 dBm

TX Power control level	PCS1900
0	30±3 dBm
1	28±3 dBm
2	26±3 dBm
3	24±3 dBm
4	22±3 dBm
5	20±3 dBm
6	18±3 dBm
7	16±3 dBm
8	14±3 dBm
9	12±4 dBm
10	10±4 dBm
11	8±4 dBm
12	6±4 dBm
13	4±4 dBm
14	2±5 dBm
15	0±5 dBm

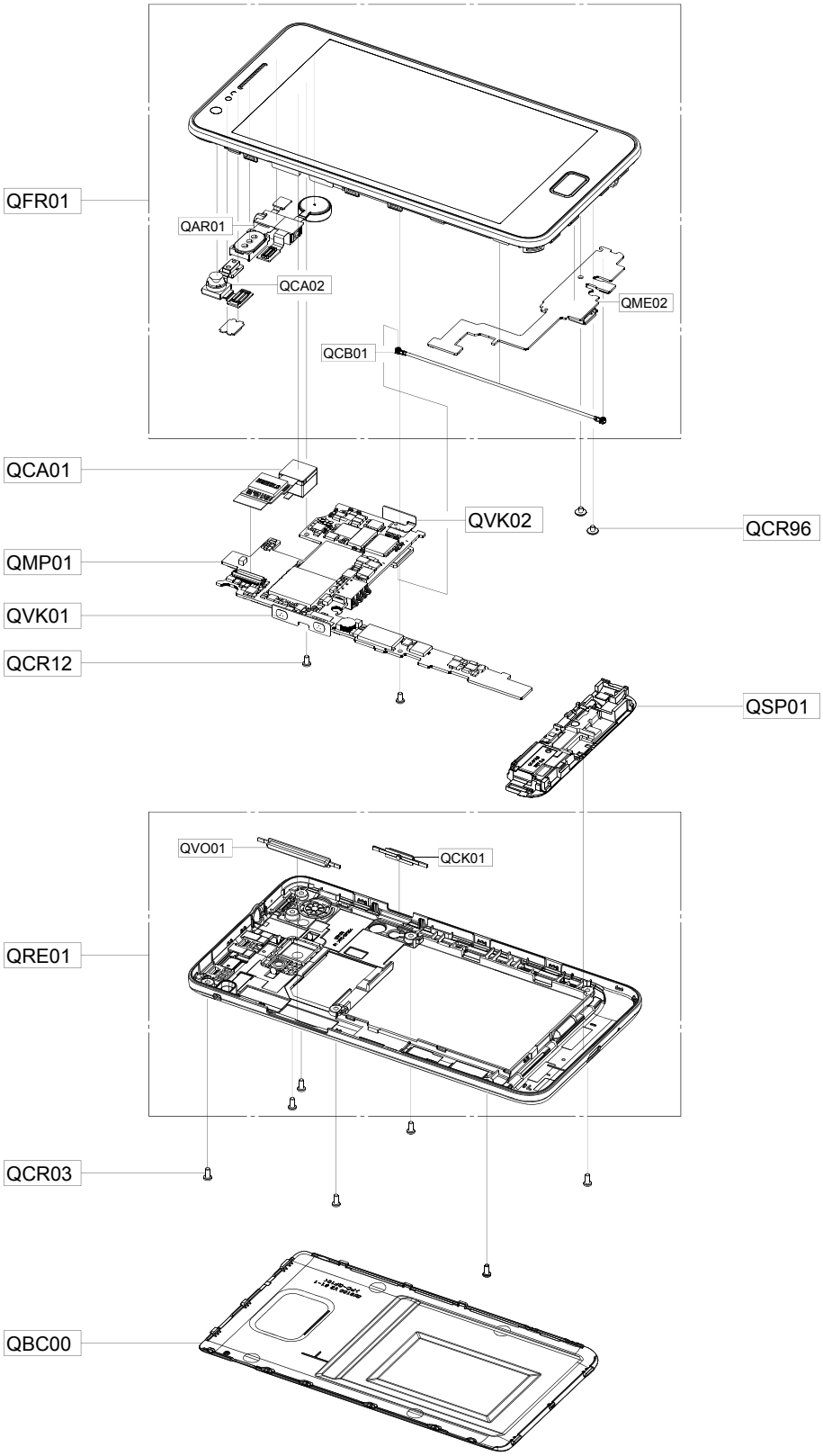
3. Operation Instruction and Installation

Main Function

- Android OS: Gingerbread
- HSPA+ 21Mbps / HSUPA 5.7Mbps
- 8MP AF with LED Flash
- 4.27 WVGA Super AMOLED Plus (C-Type)
- A-GPS / BT v3.0 USB v2.0 / WiFi (802.11 a/b/g/n) / OTG
- Recording 1080p / Playback 1080p
- Sensors: Acceleration, Magnetic, Gyro, Light, Proximity
- Additional :
  - 1.2GHz Dual Core CPU
  - Application store / Precise Motion UI
  - Seamless Sharing Experience.

4. Exploded View and Parts List

4-1. Cellular phone Exploded View



4-2. Cellular phone Parts list

Design LOC		Description	SEC CODE
QCR12		SCREW-MACHINE	6001-001530
QCR03		SCREW-MACHINE	6001-001811
QCR96		SCREW-MACHINE	6001-002259
QVK02		KEY FPCB-POWER KEY(GT_9100)	GH59-10916A
QSP01		MODULE-SPK+INT(GT_I9100)	GH59-10917A
QVK01		KEY FPCB-VOLUME KEY(GT_9100)	GH59-10921A
QMP01		A/S ASSY-PBA MAIN(COMM)GT_I9100	GH82-05732A
QCA01		ASSY CAMERA-MODULE,8M (GT_I9100)	GH96-05139A
QBC00		ASSY COVER-BATT	GH98-19595A
QFR01		MEA FRONT-OCTA LCD ASSY(OPEN)	GH97-12175A
	QCB01	CBF COAXIAL CABLE-75.5MM (GT_I9100)	GH39-01475A
	QAR01	MODULE-RCV+MOT+MIC+E/JACK FPCB(GT_I9100)	GH59-10935A
	QME02	ASSY ETC-SUB FPCB(GT_I9100)	GH59-10949A
	QCA02	CAMERA MODULE-GT-I9100_2M CAM	GH59-10986A
QRE01		ASSY CASE-REAR	GH98-19594A
	QVO01	ASSY KEY-VOL	GH98-19806A
	QCK01	ASSY KEY-PWR	GH98-19807A

5. MAIN Electrical Parts List

SEC CODE	Design LOC	Description
0403-001688	D500	DIODE-ZENER
0404-001245	D501	DIODE-SCHOTTKY
0406-001446	ZD700,ZD701	DIODE-TVS
0407-001002	D502	DIODE-ARRAY
0505-002388	Q500	FET-SILICON
0601-003079	LED500	LED
0801-003024	U300	IC
0801-003031	U400	IC
0908-002766	UCP400	IC
1001-001481	U502	IC
1001-001635	U600	IC
1001-001699	U709	IC
1003-002100	U203	IC
1108-000424	UME300	IC
1201-003139	PAM200	IC
1201-003217	PAM100	IC
1202-001068	U706	IC
1202-001118	U603	IC
1203-004339	U704	IC
1203-004802	U707	IC
1203-004819	U609,U610,U611,U703	IC
1203-004819	U711,U720	IC
1203-005044	U702	IC
1203-005244	U710	IC
1203-005574	U701	IC
1203-005580	U206	IC
1203-006651	U718	IC
1203-006794	U503	IC
1203-006801	U104	IC
1203-006802	U103	IC
1203-006847	U303	IC
1203-006851	U501	IC
1203-006884	U504	IC
1204-003167	U601	IC
1204-003171	U202	IC
1204-003176	U205	IC

SEC CODE	Design LOC	Description
1205-004174	U602	IC
1205-004195	U100	IC
1205-004213	UCP300	IC
1205-004233	U708	IC
1209-001997	U607	IC
1209-002041	U608	IC
1209-002045	U606	IC
1404-001221	TH300,TH400,TH401	THERMISTOR
1405-001183	VR600,VR602,VR603	VARISTOR
1405-001183	VR604,VR605,VR607	VARISTOR
2007-000143	R421,R422	R-CHIP
2007-007107	R322	R-CHIP
2007-007133	R529,R531	R-CHIP
2007-007137	R446	R-CHIP
2007-007312	R474,R475	R-CHIP
2007-007468	R527	R-CHIP
2007-007488	R525	R-CHIP
2007-007517	R425,R428,R472,R473	R-CHIP
2007-007741	R515,R516	R-CHIP
2007-007942	R625	R-CHIP
2007-008040	R603,R604	R-CHIP
2007-008045	R704	R-CHIP
2007-008048	R730,R731	R-CHIP
2007-008052	R312,R408,R409,R410	R-CHIP
2007-008052	R411,R464,R468,R469	R-CHIP
2007-008052	R517,R722	R-CHIP
2007-008055	R341,R429,R431,R432	R-CHIP
2007-008055	R434,R438,R456,R457	R-CHIP
2007-008055	R459,R460,R461,R501	R-CHIP
2007-008055	R528,R530,R546,R605,R619	R-CHIP
2007-008055	R711	R-CHIP
2007-008296	R524	R-CHIP
2007-008312	R348,R626	R-CHIP
2007-008391	R532	R-CHIP
2007-008403	R514	R-CHIP
2007-008419	R216,R308,R309,R423	R-CHIP

SEC CODE	Design LOC	Description
2007-008419	R424,R426,R427,R454	R-CHIP
2007-008419	R455,R466,R467,R477	R-CHIP
2007-008419	R478,R609,R611,R615	R-CHIP
2007-008419	R616	R-CHIP
2007-008420	R214,R215,R351,R479	R-CHIP
2007-008420	R480,R523,R600,R623	R-CHIP
2007-008420	R734,R735,R737	R-CHIP
2007-008465	R533	R-CHIP
2007-008483	R300,R301,R302,R303	R-CHIP
2007-008483	R305	R-CHIP
2007-008486	R710	R-CHIP
2007-008502	R526	R-CHIP
2007-008516	R203,R210,R211,R232	R-CHIP
2007-008516	R304,R323,R325,R404	R-CHIP
2007-008516	R405,R406,R448,R449	R-CHIP
2007-008516	R450,R463,R465,R508	R-CHIP
2007-008516	R509,R510,R511,R513	R-CHIP
2007-008516	R617,R618,R628,R702	R-CHIP
2007-008516	R715,R721,R725,R729	R-CHIP
2007-008516	R732	R-CHIP
2007-008531	R201,R420,R629,R630	R-CHIP
2007-008531	R703	R-CHIP
2007-008579	R208	R-CHIP
2007-008588	R337,R338,R339,R470	R-CHIP
2007-008588	R471	R-CHIP
2007-008800	R433,R440	R-CHIP
2007-009084	R602,R709,R712,R713	R-CHIP
2007-009111	R346,R633,R634	R-CHIP
2007-009155	R350	R-CHIP
2007-009157	R349,R402,R403,R441	R-CHIP
2007-009157	R481,R482	R-CHIP
2007-009158	R727,R728	R-CHIP
2007-009171	R313,R314,R315,R316	R-CHIP
2007-009171	R317,R318,R319,R320	R-CHIP
2007-009212	R622	R-CHIP
2007-009315	R344	R-CHIP

SEC CODE	Design LOC	Description
2007-009408	R414,R415,R701	R-CHIP
2007-009801	R101,R102	R-CHIP
2007-009964	R442,R444	R-CHIP
2007-009969	R624	R-CHIP
2007-010029	R418	R-CHIP
2007-010202	R204,R205,R206,R207	R-CHIP
2007-010233	R330	R-CHIP
2203-000233	C219	C-CERAMIC,CHIP
2203-000725	C557	C-CERAMIC,CHIP
2203-005138	C441,C447	C-CERAMIC,CHIP
2203-005281	C223	C-CERAMIC,CHIP
2203-005446	C201	C-CERAMIC,CHIP
2203-005682	C107,C124,C125,C126	C-CERAMIC,CHIP
2203-005682	C181,C346,C347,C348	C-CERAMIC,CHIP
2203-005682	L102	C-CERAMIC,CHIP
2203-005717	C102,C752,C758,C759	C-CERAMIC,CHIP
2203-005725	C439,C440	C-CERAMIC,CHIP
2203-005726	C100,C101,C129	C-CERAMIC,CHIP
2203-005729	C355,C520,C529,C613	C-CERAMIC,CHIP
2203-005729	C614,C639	C-CERAMIC,CHIP
2203-005731	C354	C-CERAMIC,CHIP
2203-005734	C637,C640	C-CERAMIC,CHIP
2203-005736	C220,C265	C-CERAMIC,CHIP
2203-005779	C217,C218	C-CERAMIC,CHIP
2203-005789	L106	C-CERAMIC,CHIP
2203-005806	C113	C-CERAMIC,CHIP
2203-006048	C448,C644	C-CERAMIC,CHIP
2203-006194	C121,C302,C305,C641	C-CERAMIC,CHIP
2203-006208	C531,C533,C534,C535	C-CERAMIC,CHIP
2203-006260	C162	C-CERAMIC,CHIP
2203-006305	C442	C-CERAMIC,CHIP
2203-006324	C567	C-CERAMIC,CHIP
2203-006348	C504,C566	C-CERAMIC,CHIP
2203-006379	C109	C-CERAMIC,CHIP
2203-006399	C656	C-CERAMIC,CHIP
2203-006423	C136,C137,C140,C141	C-CERAMIC,CHIP

SEC CODE	Design LOC	Description
2203-006423	C142,C144,C145,C146	C-CERAMIC,CHIP
2203-006423	C147,C148,C163,C215	C-CERAMIC,CHIP
2203-006423	C216,C300,C303,C306	C-CERAMIC,CHIP
2203-006423	C307,C313,C314,C326	C-CERAMIC,CHIP
2203-006423	C328,C329,C330,C331	C-CERAMIC,CHIP
2203-006423	C334,C335,C337,C338	C-CERAMIC,CHIP
2203-006423	C339,C342,C343,C344	C-CERAMIC,CHIP
2203-006423	C359,C405,C409,C412	C-CERAMIC,CHIP
2203-006423	C414,C416,C419,C424	C-CERAMIC,CHIP
2203-006423	C443,C445,C446,C540	C-CERAMIC,CHIP
2203-006423	C559,C607,C610,C643	C-CERAMIC,CHIP
2203-006423	C647,C715,C716,C727	C-CERAMIC,CHIP
2203-006423	C728,C731,C734,C737	C-CERAMIC,CHIP
2203-006423	C741	C-CERAMIC,CHIP
2203-006474	C351,C353	C-CERAMIC,CHIP
2203-006556	C760,C761	C-CERAMIC,CHIP
2203-006562	C135,C173,C211,C213	C-CERAMIC,CHIP
2203-006562	C254,C356,C357,C358	C-CERAMIC,CHIP
2203-006562	C501,C502,C516,C518	C-CERAMIC,CHIP
2203-006562	C713,C723,C746,C757	C-CERAMIC,CHIP
2203-006562	C764	C-CERAMIC,CHIP
2203-006611	C120	C-CERAMIC,CHIP
2203-006642	C404,C407	C-CERAMIC,CHIP
2203-006647	C143,C149,C150,C151	C-CERAMIC,CHIP
2203-006647	C166,C624,C626	C-CERAMIC,CHIP
2203-006648	C122,C621,C622	C-CERAMIC,CHIP
2203-006668	C410,C411,C611,C612	C-CERAMIC,CHIP
2203-006707	C127	C-CERAMIC,CHIP
2203-006815	C112,C114	C-CERAMIC,CHIP
2203-006824	C179,C180	C-CERAMIC,CHIP
2203-006839	C117,C138,C157,C158	C-CERAMIC,CHIP
2203-006839	C208,C253,C255,C517	C-CERAMIC,CHIP
2203-006839	C519,C562,C605,C655	C-CERAMIC,CHIP
2203-006839	C657,C659	C-CERAMIC,CHIP
2203-006841	C571	C-CERAMIC,CHIP
2203-006872	C139,C159,C160,C175	C-CERAMIC,CHIP

SEC CODE	Design LOC	Description
2203-006872	C202,C209,C210,C266	C-CERAMIC,CHIP
2203-006872	C301,C308,C542,C545	C-CERAMIC,CHIP
2203-006872	C547,C548,C551,C552	C-CERAMIC,CHIP
2203-006872	C553,C623,C704,C718	C-CERAMIC,CHIP
2203-006872	C719,C726,C730,C733	C-CERAMIC,CHIP
2203-006872	C736	C-CERAMIC,CHIP
2203-006890	C530,C645,C646	C-CERAMIC,CHIP
2203-006979	C103,C116,C214,C318	C-CERAMIC,CHIP
2203-006979	C558,C627,C630	C-CERAMIC,CHIP
2203-007133	C720,C753,C754	C-CERAMIC,CHIP
2203-007194	C241	C-CERAMIC,CHIP
2203-007210	C164,C176,C304,C310	C-CERAMIC,CHIP
2203-007210	C315,C319,C324,C327	C-CERAMIC,CHIP
2203-007210	C332,C336,C340,C341	C-CERAMIC,CHIP
2203-007210	C345,C360,C511,C632	C-CERAMIC,CHIP
2203-007210	C633	C-CERAMIC,CHIP
2203-007270	C155,C156,C262,C724	C-CERAMIC,CHIP
2203-007270	C725	C-CERAMIC,CHIP
2203-007271	C167,C408,C413,C415	C-CERAMIC,CHIP
2203-007271	C418,C430,C438,C601	C-CERAMIC,CHIP
2203-007271	C706,C707,C708,C717	C-CERAMIC,CHIP
2203-007279	C309,C320,C539	C-CERAMIC,CHIP
2203-007317	C172,C178,C417,C420	C-CERAMIC,CHIP
2203-007317	C425,C427,C435	C-CERAMIC,CHIP
2203-007391	C573,C642	C-CERAMIC,CHIP
2203-007393	C134,C169,C506,C507	C-CERAMIC,CHIP
2203-007393	C508,C509,C510,C521	C-CERAMIC,CHIP
2203-007393	C522,C523,C524,C525	C-CERAMIC,CHIP
2203-007393	C526,C527,C537,C701	C-CERAMIC,CHIP
2203-007393	C762	C-CERAMIC,CHIP
2203-007449	C174,C321,C322,C323	C-CERAMIC,CHIP
2203-007449	C325,C333,C349,C350	C-CERAMIC,CHIP
2203-007449	C400,C401,C402,C403	C-CERAMIC,CHIP
2203-007449	C406,C421,C422,C423	C-CERAMIC,CHIP
2203-007449	C426,C428,C429,C432	C-CERAMIC,CHIP
2203-007449	C433,C436,C437,C500	C-CERAMIC,CHIP

SEC CODE	Design LOC	Description
2203-007449	C541,C543,C544,C546	C-CERAMIC,CHIP
2203-007449	C549,C550,C554,C555	C-CERAMIC,CHIP
2203-007449	C556,C572,C600,C602	C-CERAMIC,CHIP
2203-007449	C603,C604,C606,C608	C-CERAMIC,CHIP
2203-007449	C609,C615,C617,C618	C-CERAMIC,CHIP
2203-007449	C625,C628,C629,C631	C-CERAMIC,CHIP
2203-007449	C658,C660,C703,C705	C-CERAMIC,CHIP
2203-007449	C709,C710,C711,C712	C-CERAMIC,CHIP
2203-007449	C714,C739,C742,C744	C-CERAMIC,CHIP
2203-007449	C747,C748,C755,C756	C-CERAMIC,CHIP
2203-007449	C763,C765	C-CERAMIC,CHIP
2203-007701	C171,C311,C312,C431	C-CERAMIC,CHIP
2203-007701	C505,C532,C538	C-CERAMIC,CHIP
2203-007781	C564,C565	C-CERAMIC,CHIP
2203-007840	C206	C-CERAMIC,CHIP
2404-001496	TA600	C-TA,CHIP
2404-001506	TA501,TA502,TA503	C-TA,CHIP
2409-001127	C168	C-POLYMER,CHIP
2409-001166	BAT500	C-EDL
2703-000213	L201	INDUCTOR-SMD
2703-001231	L509	INDUCTOR-SMD
2703-001285	L606	INDUCTOR-SMD
2703-001750	C104	INDUCTOR-SMD
2703-002199	L206	INDUCTOR-SMD
2703-002313	C203	INDUCTOR-SMD
2703-002596	L120,L127	INDUCTOR-SMD
2703-002901	C132	INDUCTOR-SMD
2703-002907	L114	INDUCTOR-SMD
2703-002955	C118	INDUCTOR-SMD
2703-002958	C130,C133,L113	INDUCTOR-SMD
2703-002961	L200,L205	INDUCTOR-SMD
2703-003004	L207	INDUCTOR-SMD
2703-003476	L211	INDUCTOR-SMD
2703-003545	L202	INDUCTOR-SMD
2703-003686	L503	INDUCTOR-SMD
2703-003755	L119,L121,L122	INDUCTOR-SMD

SEC CODE	Design LOC	Description
2703-003770	L703	INDUCTOR-SMD
2703-003869	L302,L303	INDUCTOR-SMD
2703-003892	L504	INDUCTOR-SMD
2703-003897	L704	INDUCTOR-SMD
2703-003909	L501,L502,L506	INDUCTOR-SMD
2703-003911	L118,L500,L508	INDUCTOR-SMD
2703-004000	L107	INDUCTOR-SMD
2703-004012	C128,L110	INDUCTOR-SMD
2703-004034	L103,L104	INDUCTOR-SMD
2703-004035	L109	INDUCTOR-SMD
2703-004038	C111	INDUCTOR-SMD
2703-004039	L117	INDUCTOR-SMD
2703-004052	L507	INDUCTOR-SMD
2801-004339	OSC300,OSC500	CRYSTAL-SMD
2801-004458	OSC400	CRYSTAL-SMD
2801-005051	OSC201	CRYSTAL-SMD
2809-001348	OSC200	OSCILLATOR-VCTCXO
2809-001369	OSC100	OSCILLATOR-VCTCXO
2901-001413	F700,F701,F702,F704	FILTER-EMI SMD
2901-001413	F707,F709	FILTER-EMI SMD
2901-001625	F706	FILTER-EMI SMD
2901-001647	F703,F705	FILTER-EMI SMD
2910-000125	F100	DUPLEXER-SAW
2911-000166	U101	DUPLEXER-SAW
3301-001729	L705,L706,L707,L708	BEAD-SMD
3301-001876	L209,L210	BEAD-SMD
3301-001885	L213	BEAD-SMD
3301-001912	L212	BEAD-SMD
3301-001929	L601	BEAD-SMD
3301-001956	L300,L301	BEAD-SMD
3301-002062	L116	BEAD-SMD
3301-002065	L204,L600,L607,L608	BEAD-SMD
3301-002065	L609,L614	BEAD-SMD
3301-002066	L700,L701,L702	BEAD-SMD
3301-002078	L602,L604	BEAD-SMD
3705-001448	ANT100	CONNECTOR-COAXIAL

SEC CODE	Design LOC	Description
3705-001731	RFS100	CONNECTOR-COAXIAL
3708-002162	HDC700	CONNECTOR-FPC
3709-001575	CD300	CONNECTOR-CARD EDGE
3709-001626	SIM300	CONNECTOR-CARD EDGE
3711-006483	HDC701	HEADER-BOARD TO BOARD
3711-006925	HDC704	HEADER-BOARD TO BOARD
3711-007173	HDC702	HEADER-BOARD TO BOARD
3711-007295	HDC703	HEADER-BOARD TO BOARD
3711-007806	BTC500	HEADER-BATTERY
3711-007810	HDC600	HEADER-BOARD TO BOARD
3712-001348	ANT200,ANT201	CONNECTOR-TERMINAL
4709-001987	MOD201	IC
GH62-00015A	PORON202	PAD GAP-PCB GASKET
GH70-07467A	SC100,SC101,SC102	ICT SHIELD-CAN CLIP
GH70-07467A	SC103,SC104,SC105	ICT SHIELD-CAN CLIP
GH70-07467A	SC107,SC109,SC110	ICT SHIELD-CAN CLIP
GH70-07467A	SC111,SC112,SC113	ICT SHIELD-CAN CLIP
GH70-07467A	SC114,SC115,SC116	ICT SHIELD-CAN CLIP
GH70-07467A	SC117,SC118,SC119	ICT SHIELD-CAN CLIP
GH70-07467A	SC120,SC121,SC122	ICT SHIELD-CAN CLIP
GH80-03320A	R353	Solder Bridge PAD
GH80-03321A	C651,R212,R310,R328	Solder Bridge PAD
GH80-03321A	R329,R331,R719,R720	Solder Bridge PAD
GH80-03321A	R741	Solder Bridge PAD

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

6. Level 1 Repair

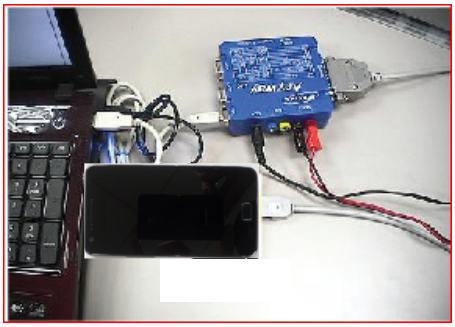
6-1. S/W Download

6-1-1. Pre-requisite for S/W Downloading

- Downloader Program (**Odin3 v1.83.exe**)
- GT-I9100 Mobile Phone
- Data Cable
- JIG BOX (GH99-36900A)
- JIG Cable (GH39-01339A)
- Adapter (GH99-38251A)
- Serial Cable
- Binary files

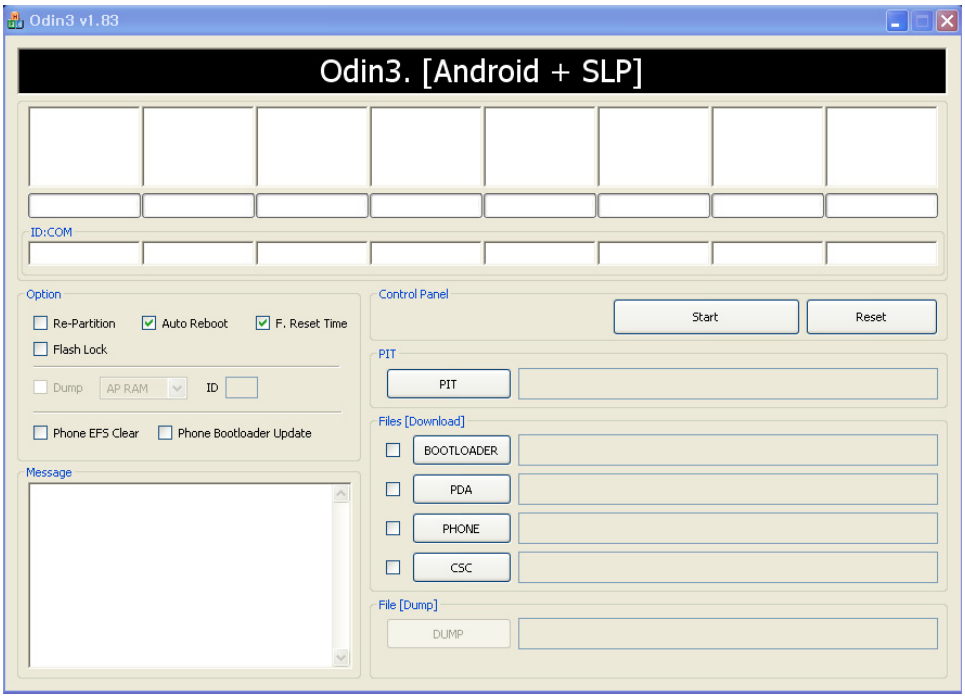
※ Settings

Connect to ANYWAY JIG BOX
& JIG CABLE (Phone to JIG)
Or PC to Phone Using Data Cable



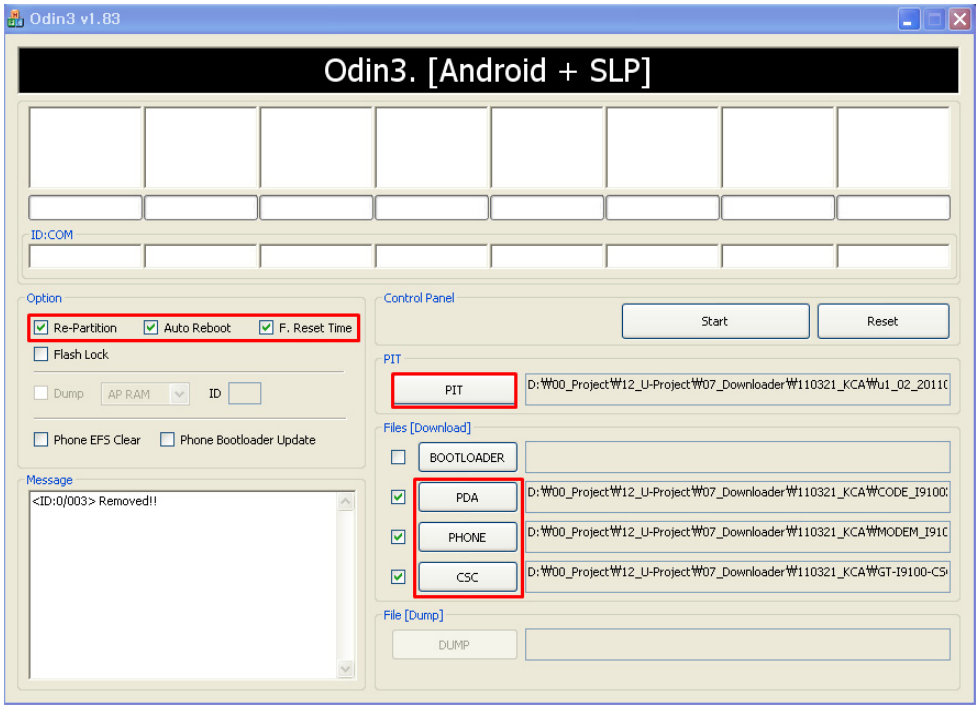
6-1-2. S/W Downloader Program

■ Load the binary download program by executing the **"Odin3 v1.83.exe"** ← **Run this file.**



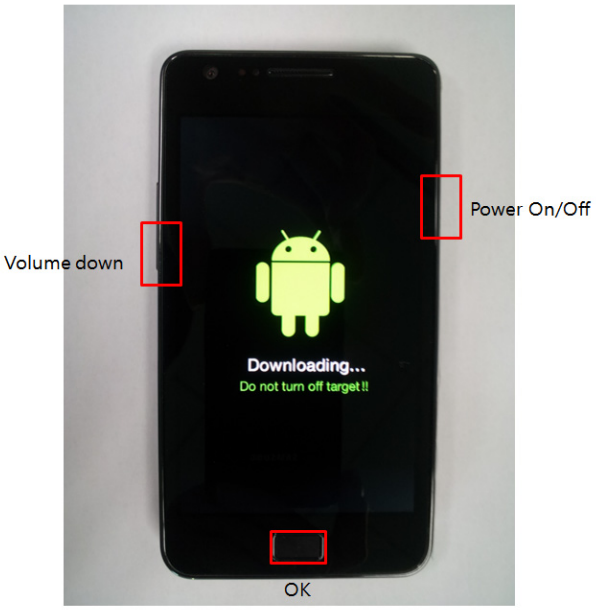
1. Option Selection

- Check Re-Partition, Auto Reboot and F. Reset Time, then select PIT, PDA, PHONE and CSC Files.



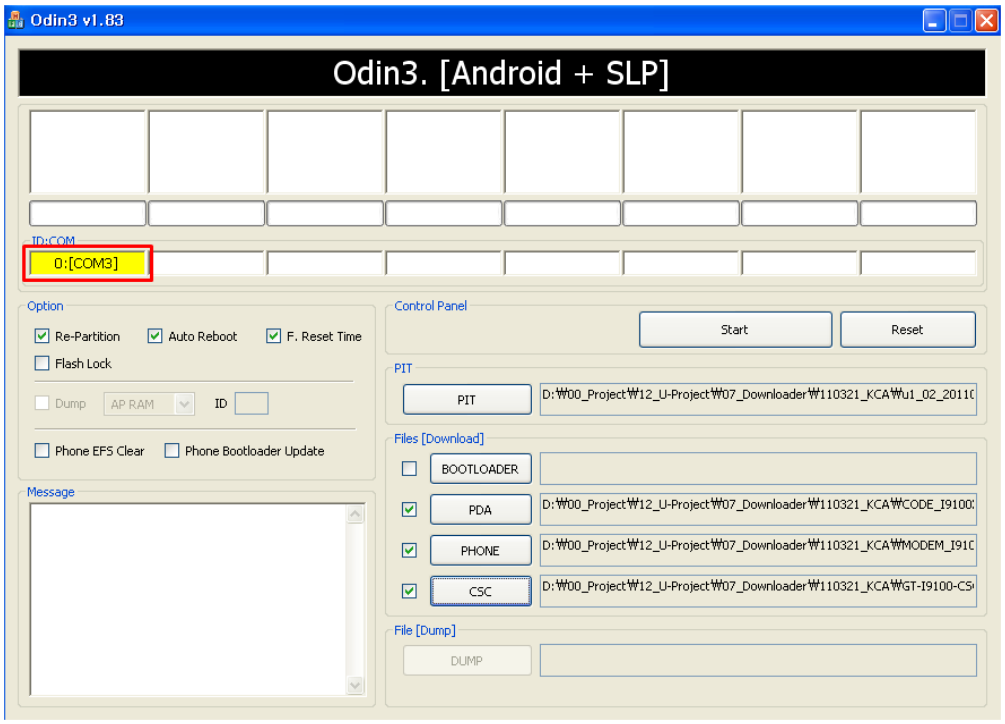
2. Enter Device into Download Mode

- Enter the device into Download Mode by pressing down on Volume Down button and OK button, and pressing down on Power ON/OFF Button.

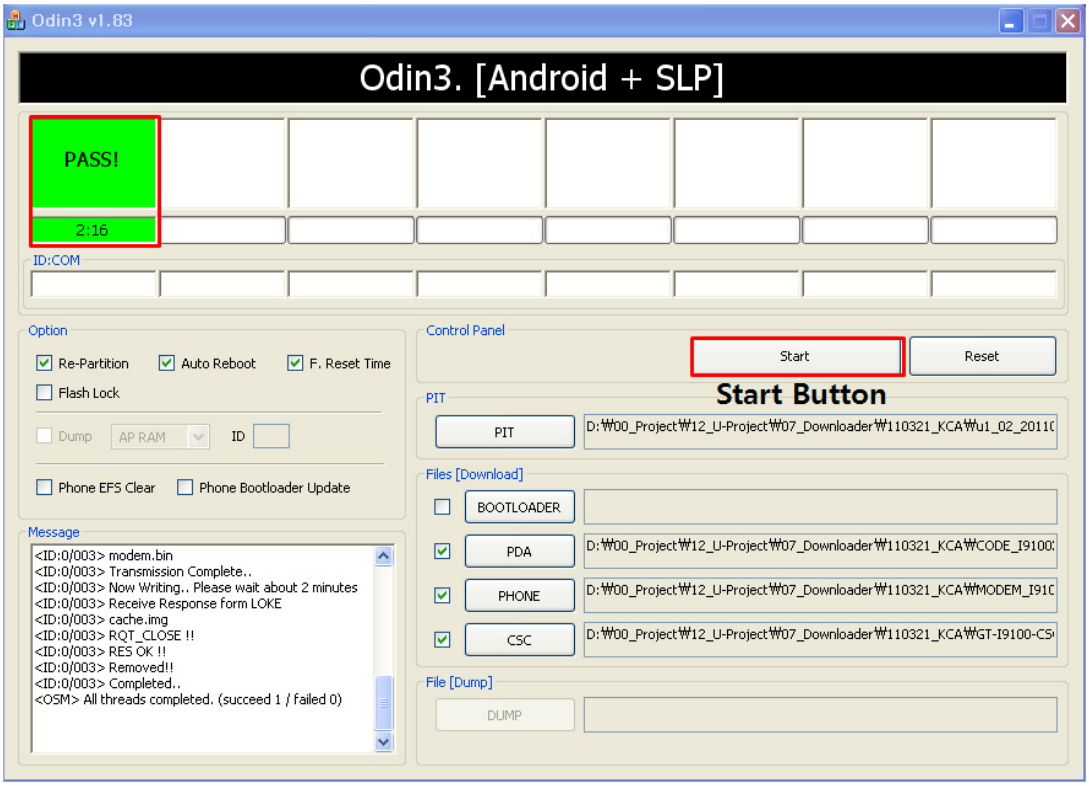


3. Connect the Handset to PC via Data Cable.

Make sure ID:COM box highlighted yellow that the Handset is connected to the PC.



4. Start Downloading binary files by clicking Start Button. Then wait for "Pass" to be appear on the screen.



5. Disconnect the Handset to Data cable.

6. Once the device boots up, confirm the downloaded version name and etc. :
***#1234#**

Full Reset :
***2767*3855#**

7. Level 2 Repair

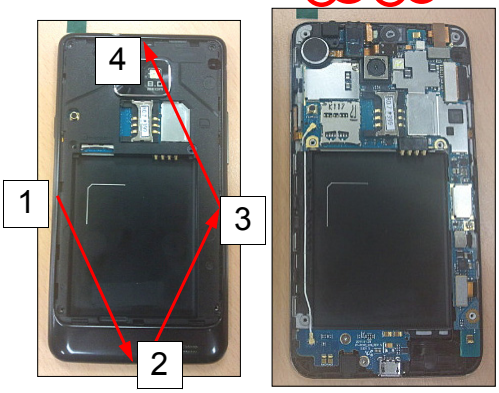
7-1. Disassembly

1

Release the screws at 7 points.
(Torque: 1.1±0.1 kgf.cm) (Size: M1.4*L3)

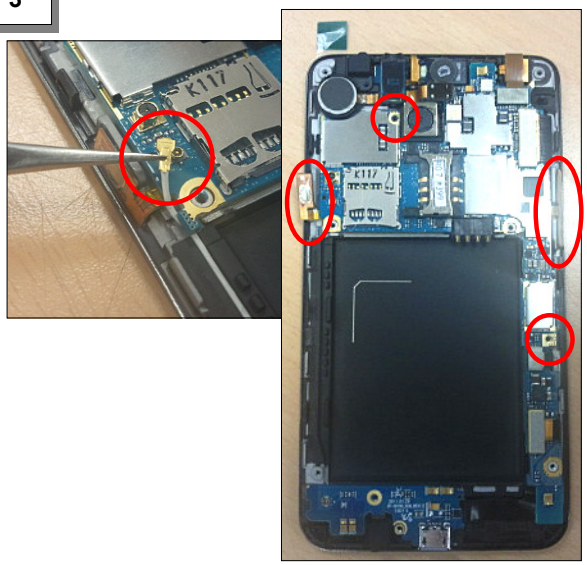
Be careful not to scratch rear cover.

2



Disjoint hook 12 points at the rear
(Follow the order)

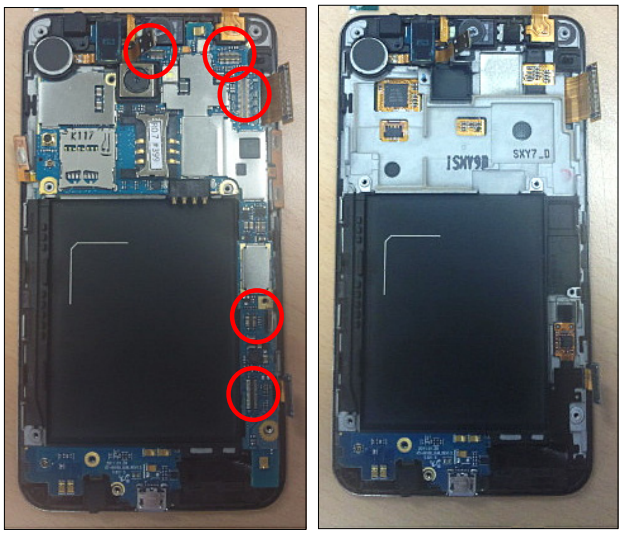
3



Separate the cable from the PBA.
Release the screw 2point(Size: M1.4*L3)
(Torque: 1.1±0.1 kgf.cm)
Detach the side FPCBs from the Bracket.

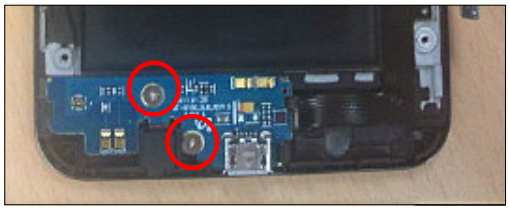
Be careful not to damage the FPCBs.

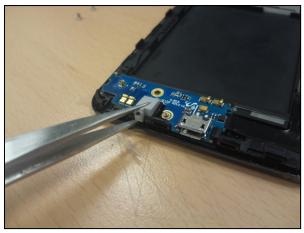
4

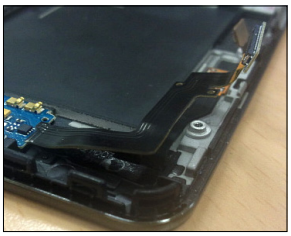


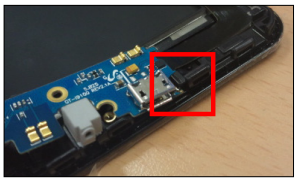
Separate all connectors from the PBA.
Separete the PBA fromt the Front.

5



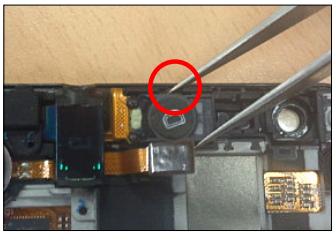


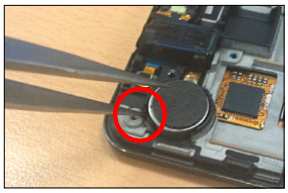


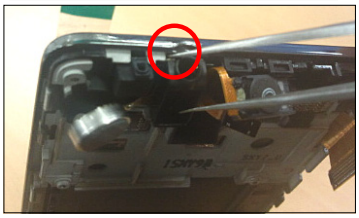


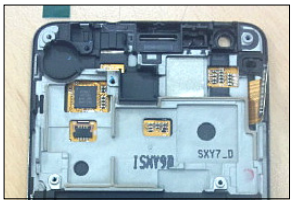
Release the screw 2point(Size: M1.4*L2)
(Torque: 1.1±0.1 kgf.cm)
Separate the sub PBA from the PBA.

6







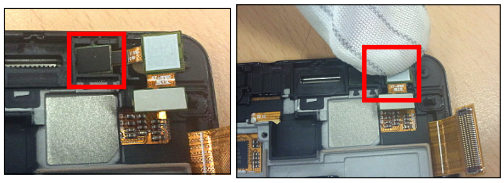


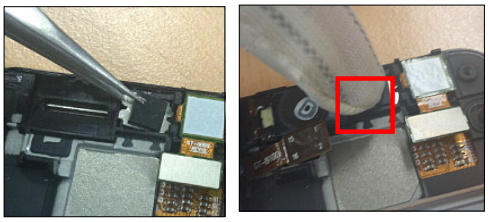
Separate the Receiver Ass'y from the Front.
(Insert a tool into the holes.)

Be careful not to damage the FPCBs.

7-2. Assembly

1

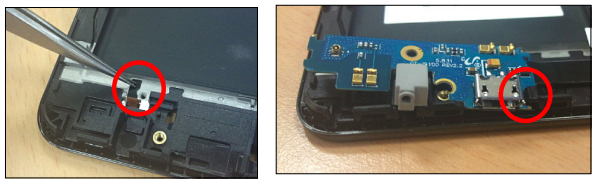


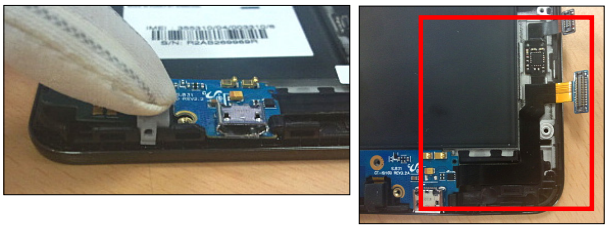


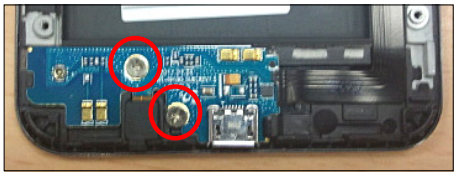
Insert the VGA Ass'y in the Front.
Put the chassis on the sensor.

Be careful not to damage the camera FPCB.

2

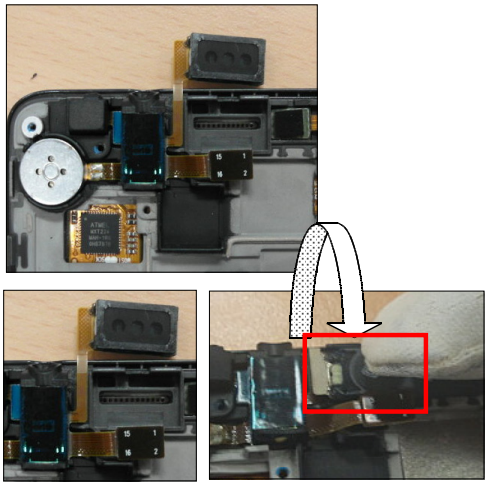






Attach the FPCB on the Front.
Insert the sub PBA in the hook.
Attach the FPCB on the Front.
Screw 2 points.(Size: M1.4*L2)
(Torque: 1.1±0.1 kgf.cm)

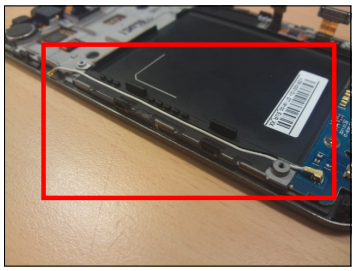
3



Put the Receiver Ass'y on the Front.
Furl the Receiver and put it on the Front.

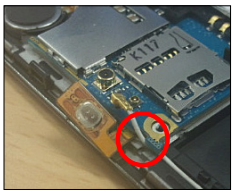
Be careful to damage the FPCB.

4



Connect the cable on the sub PBA.
Organize the cable on the Front

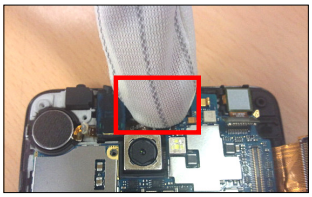
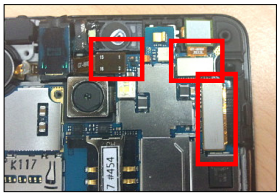
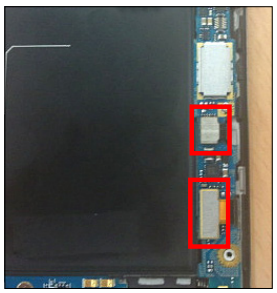
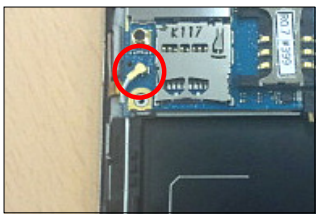
5



Put the PBA on the Front.
Attach the side FPCBs on the Bracket.

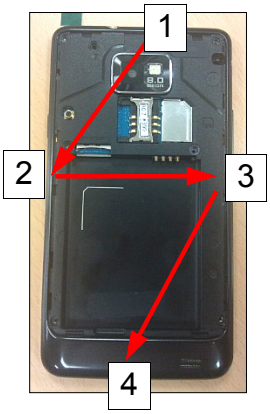
Be careful to damage the cable.

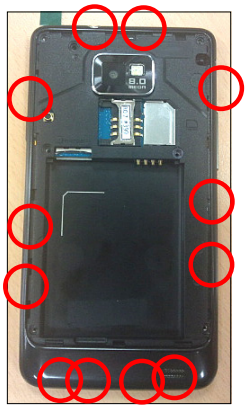
6

Connect all the connector on the PBA.
Connect the cable on the PBA.

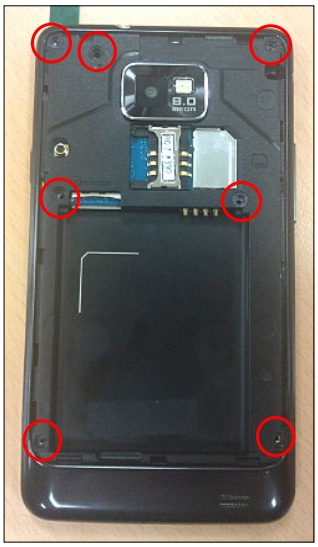
7



Joint the Rear and the Front.
(Follow the order)
Hook at the 12 points.

8

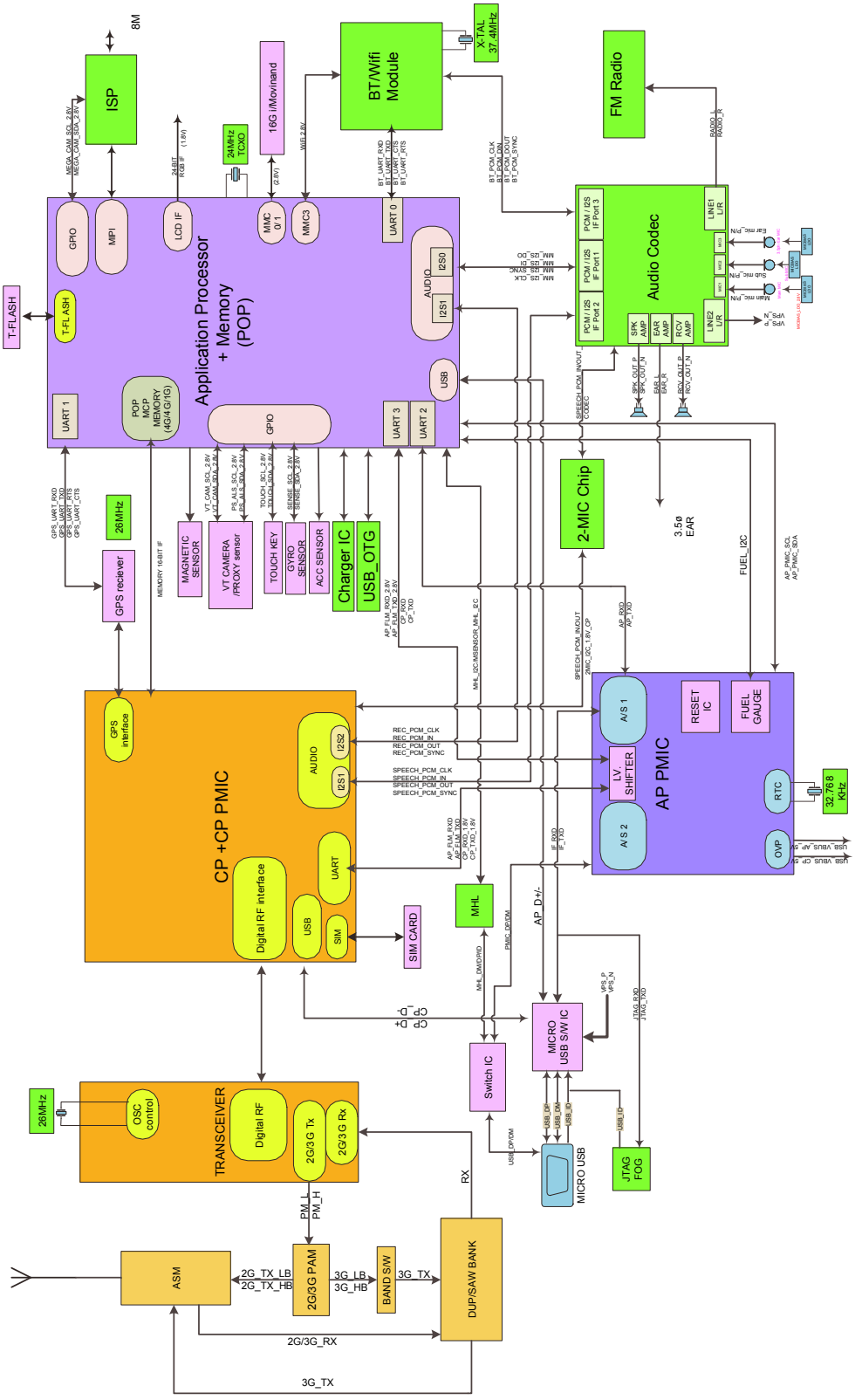


Screws at 7 points.
(Torque: 1.1±0.1 kgf.cm)
(Size: M1.4*L3)

Be careful not to scratch rear cover.

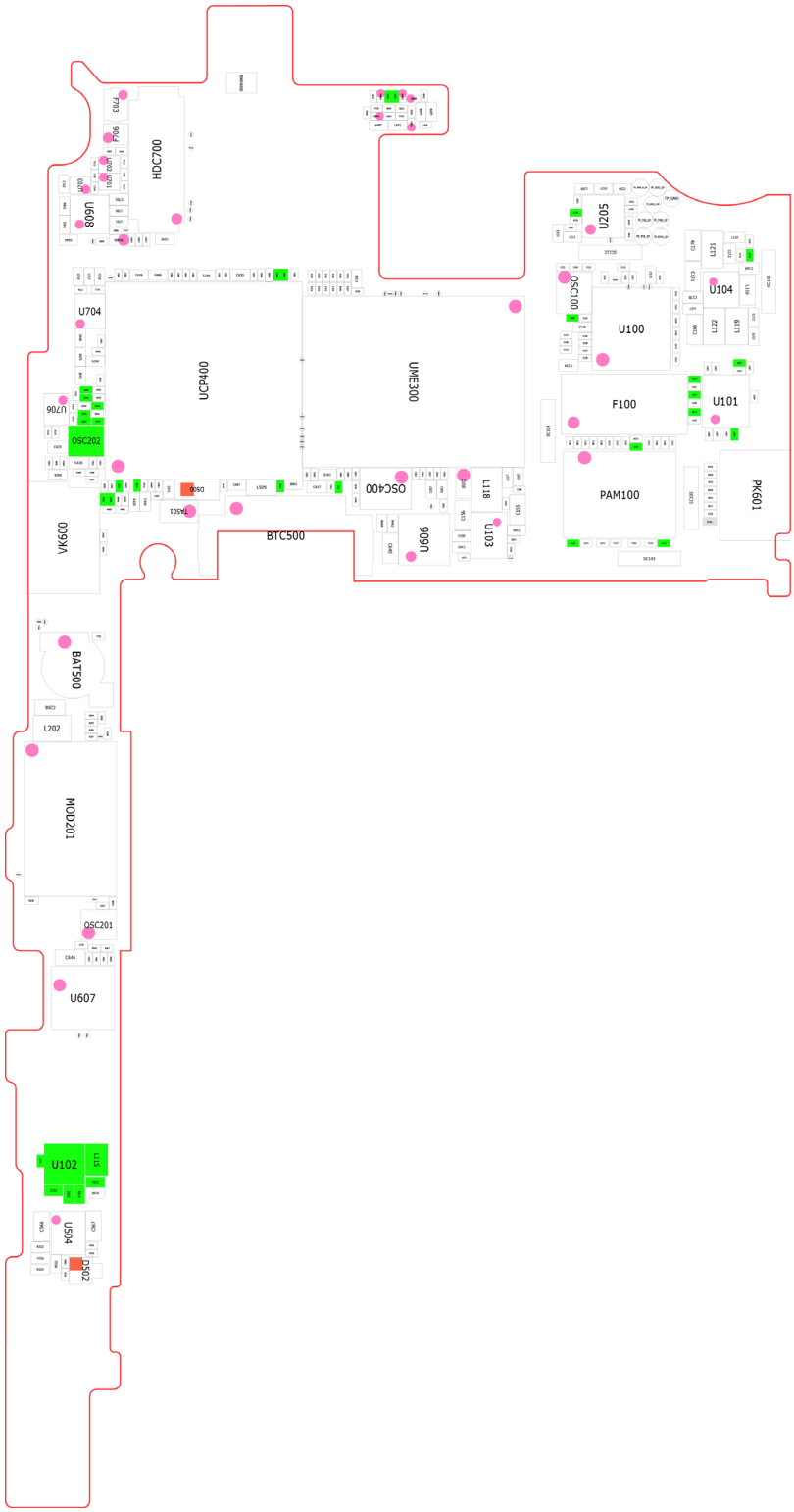
8. Level 3 Repair

8-1. Block Diagram

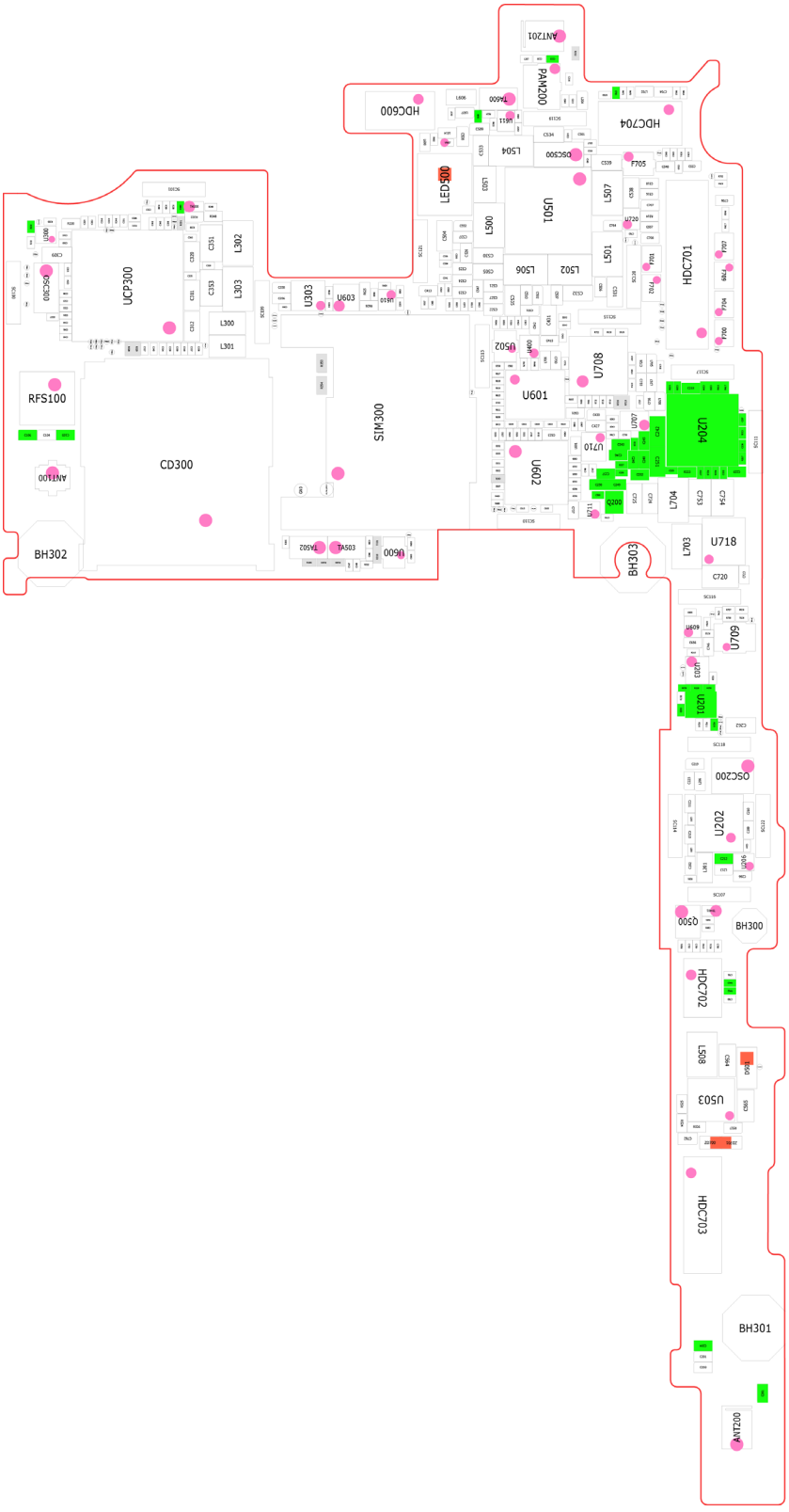


8-2. PCB Diagrams

8-2-1. Top

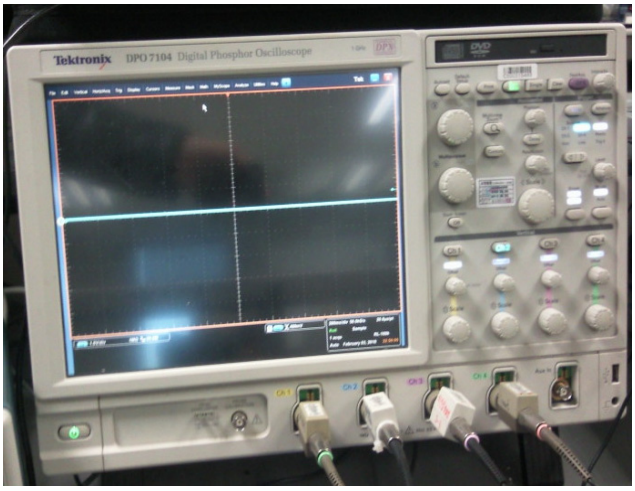


8-2-2. Bottom



8-3. Flow Chart of Troubleshooting

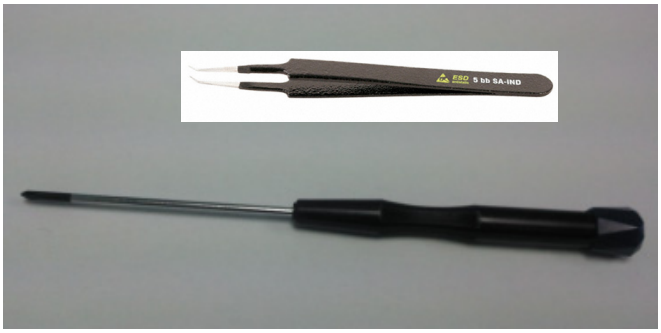
Equipments



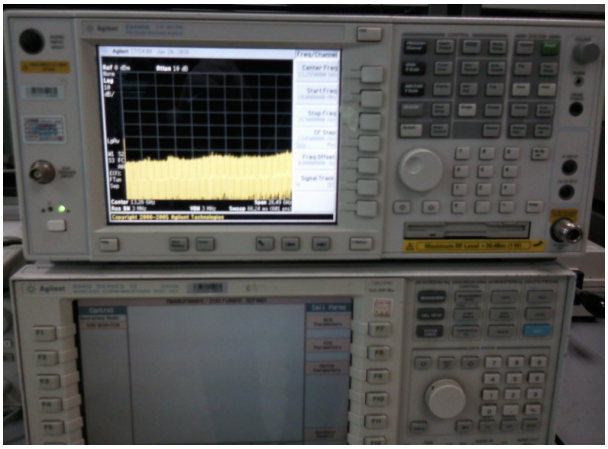
↑ Oscilloscope

á Digital Multimeter

á Power Supply



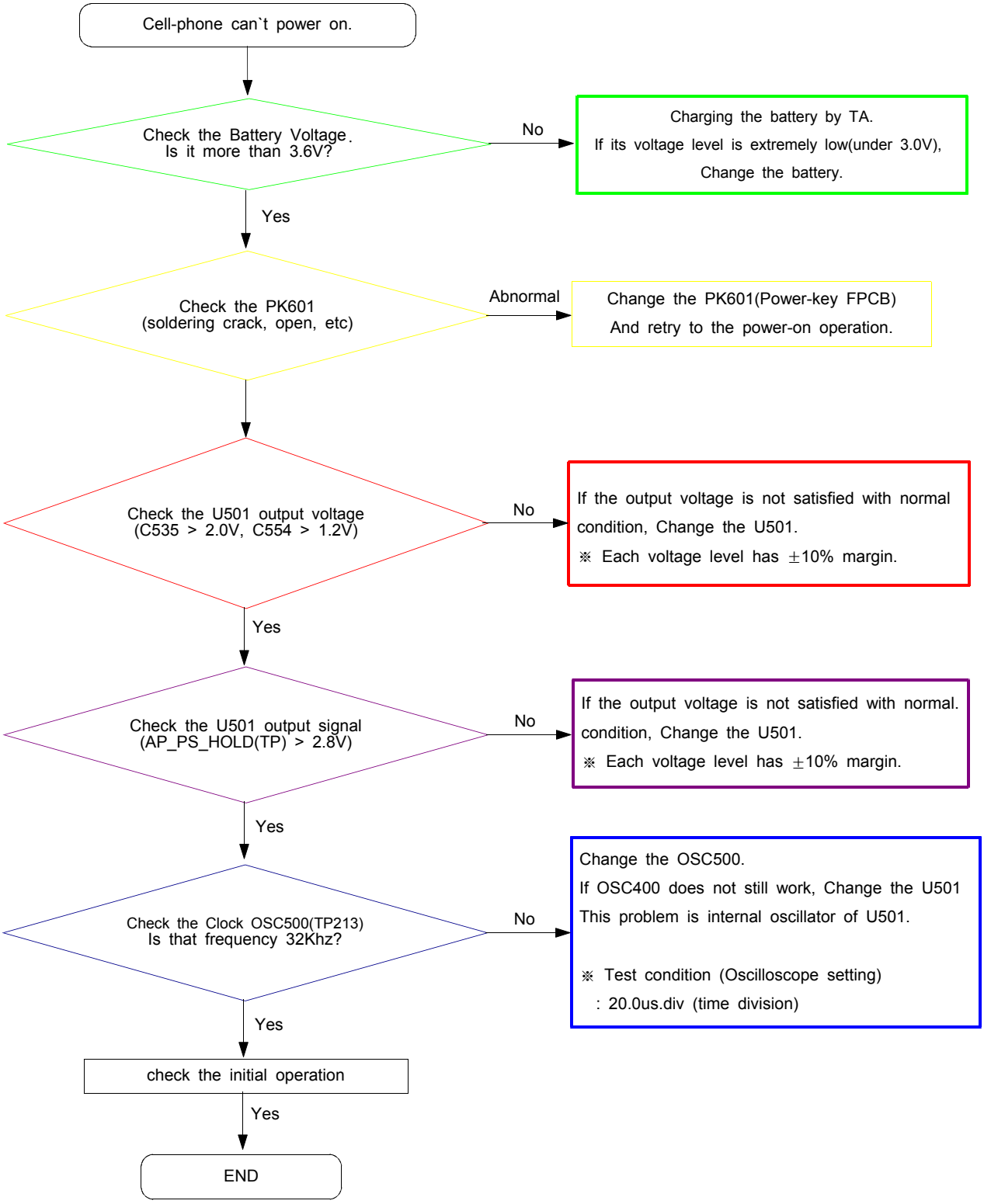
á + driver, ESD Safe Tweezer

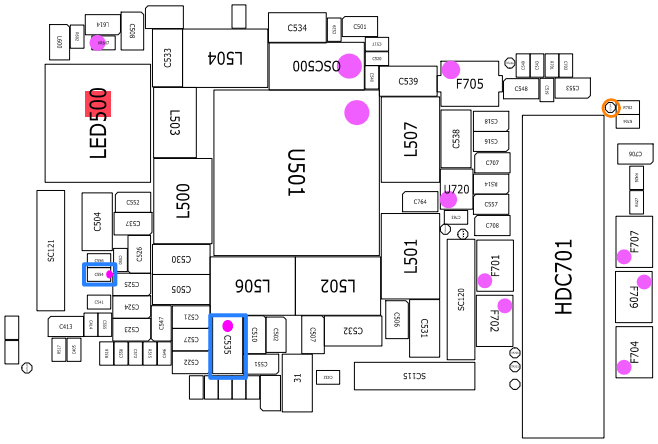


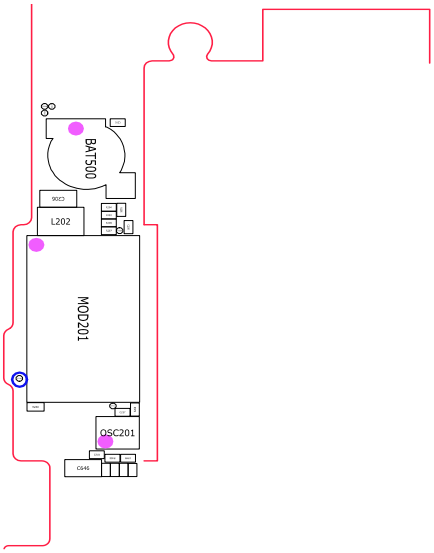
↑ 8960 & Spectrum Analyzer

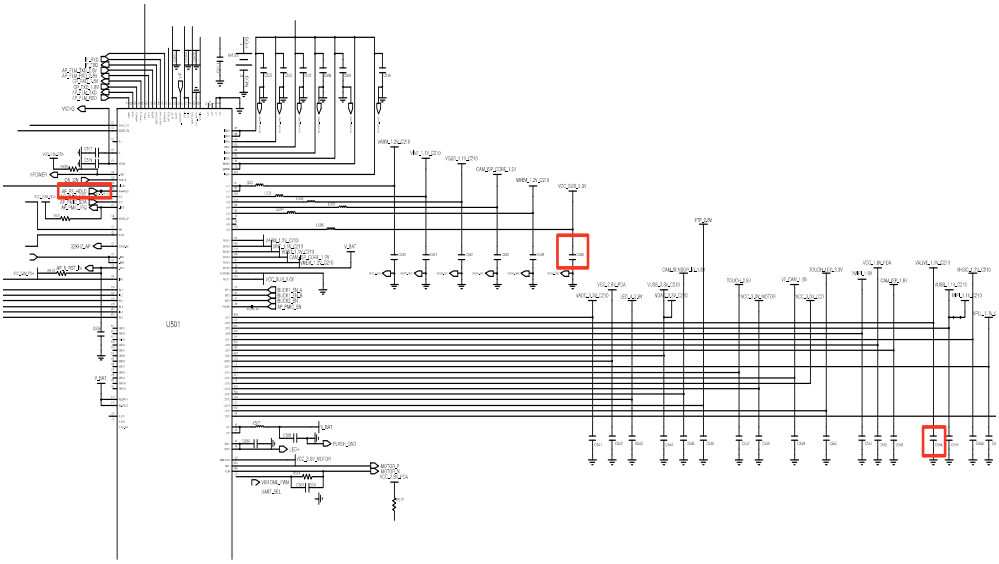
á Soldering iron

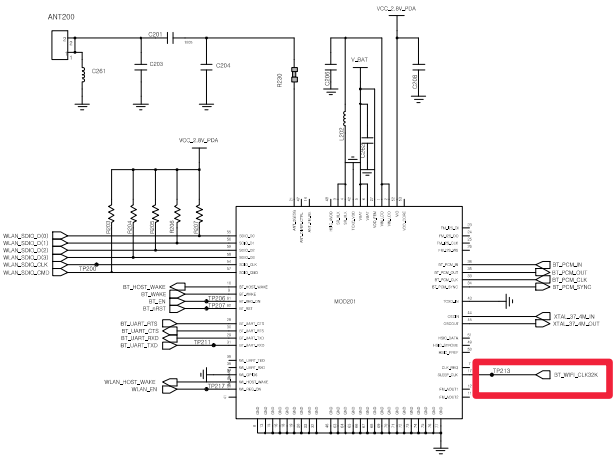
8-3-1. Power On



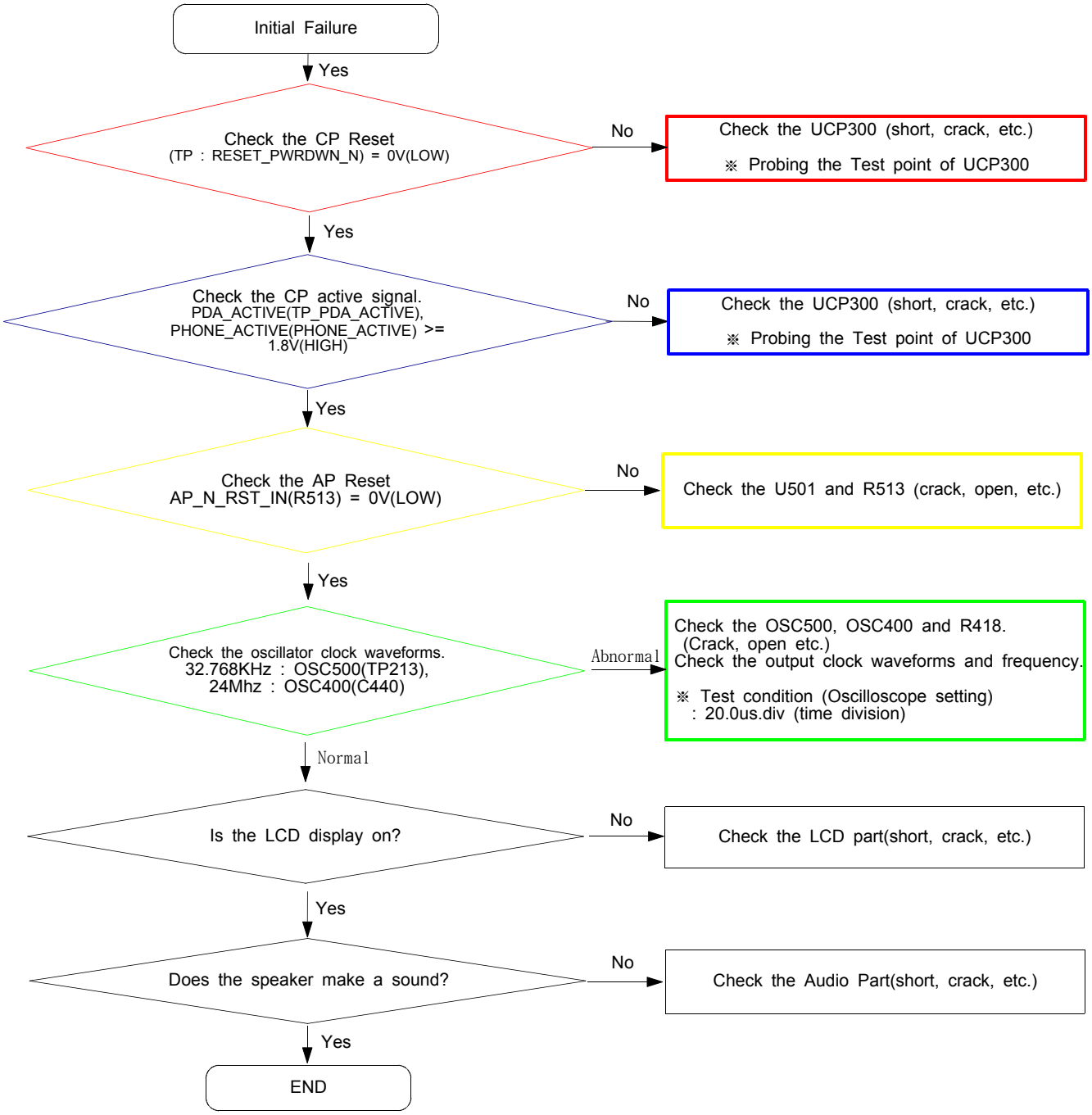


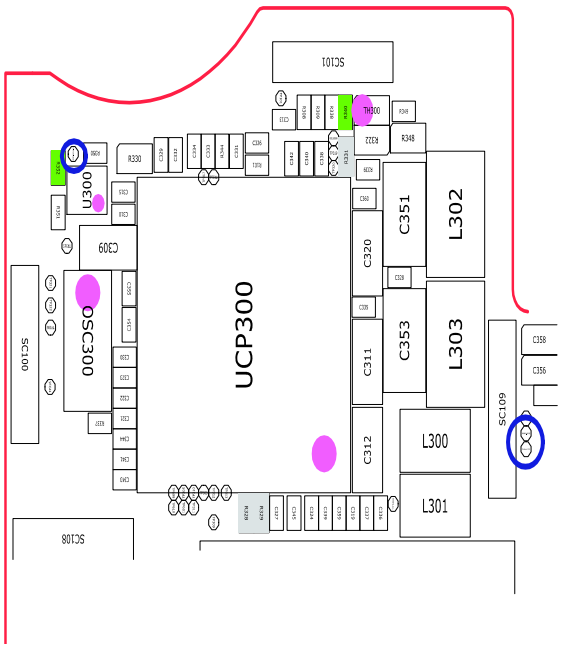


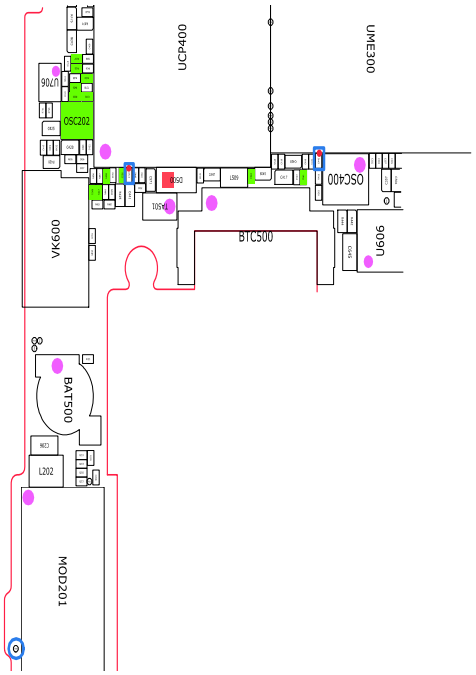


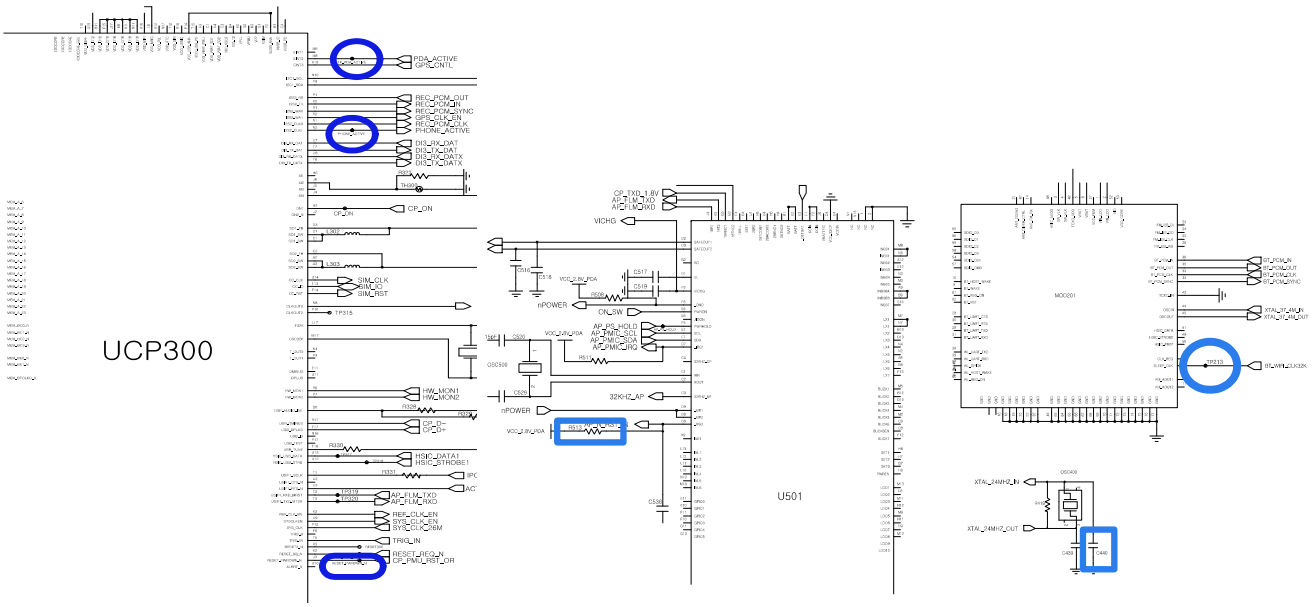


8-3-2. Initial

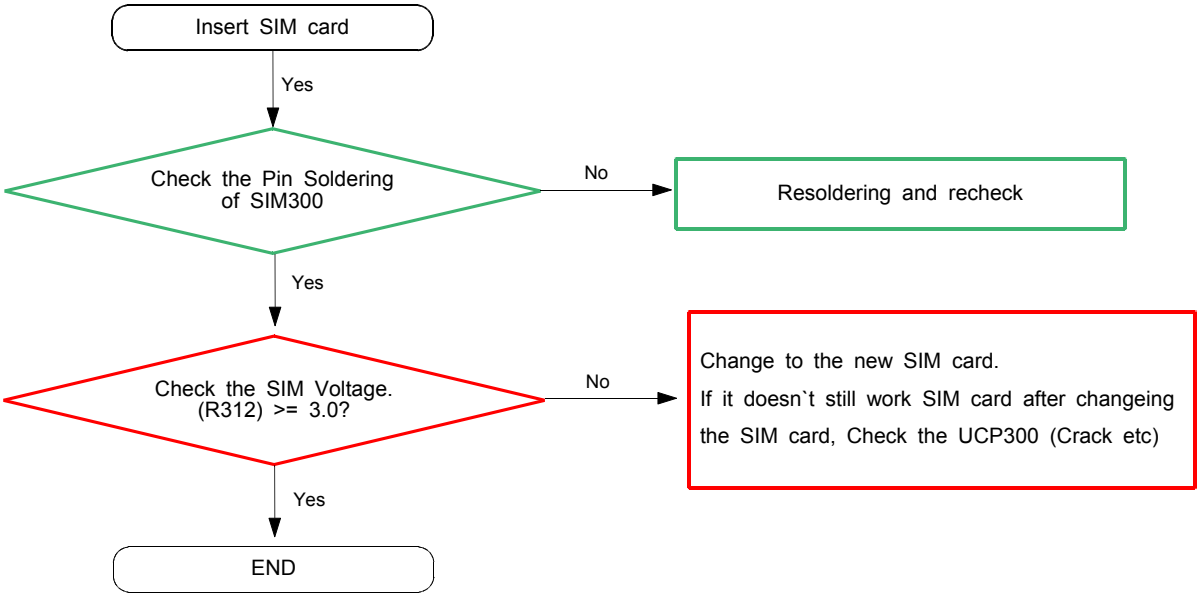


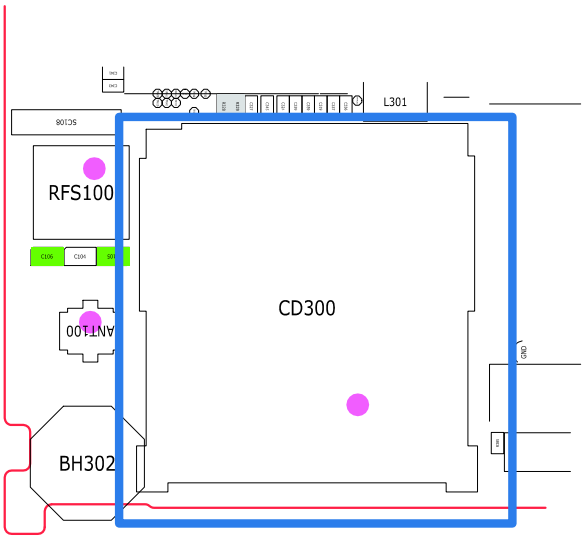


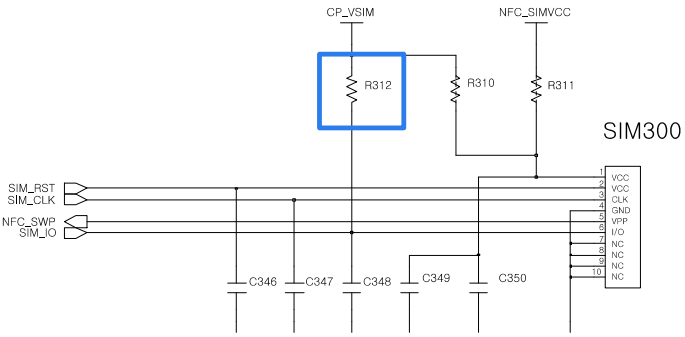




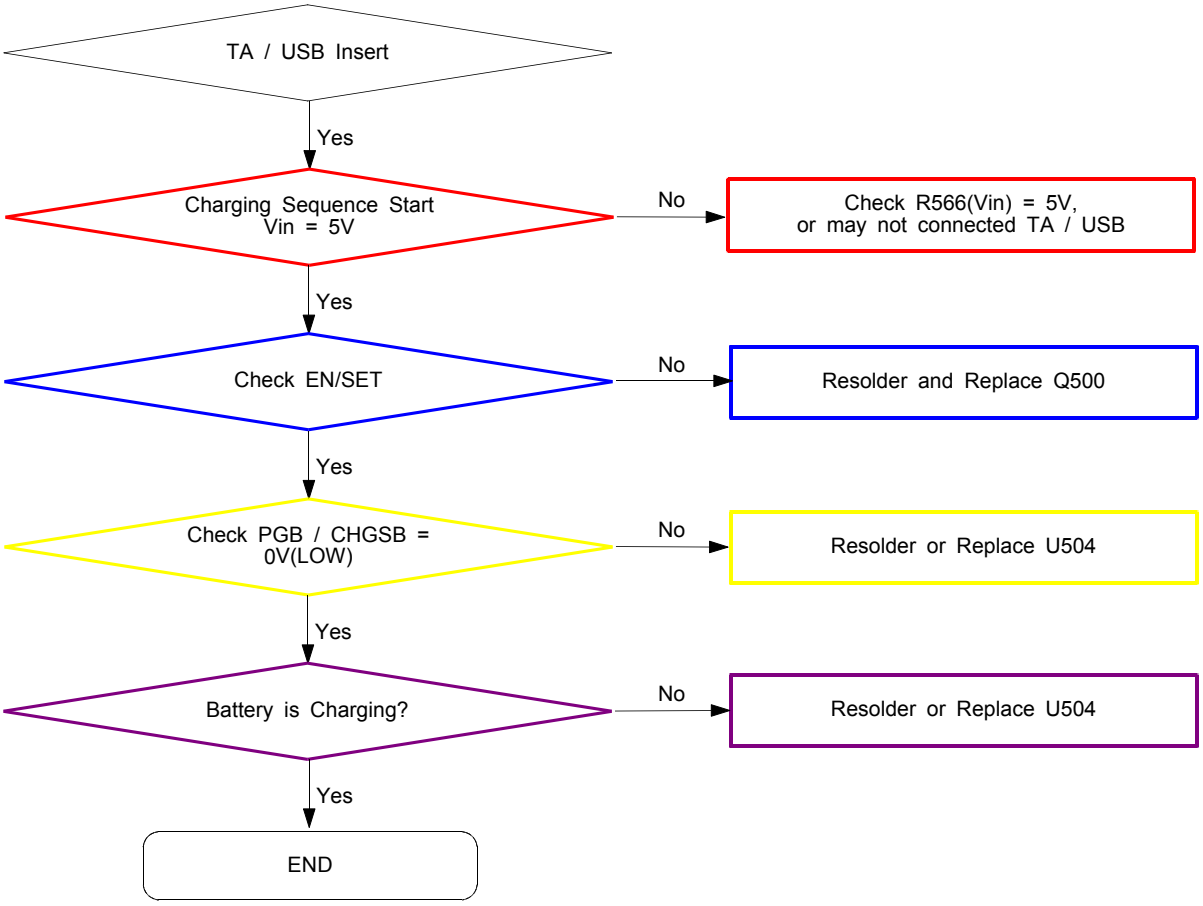
8-3-3. Sim Part

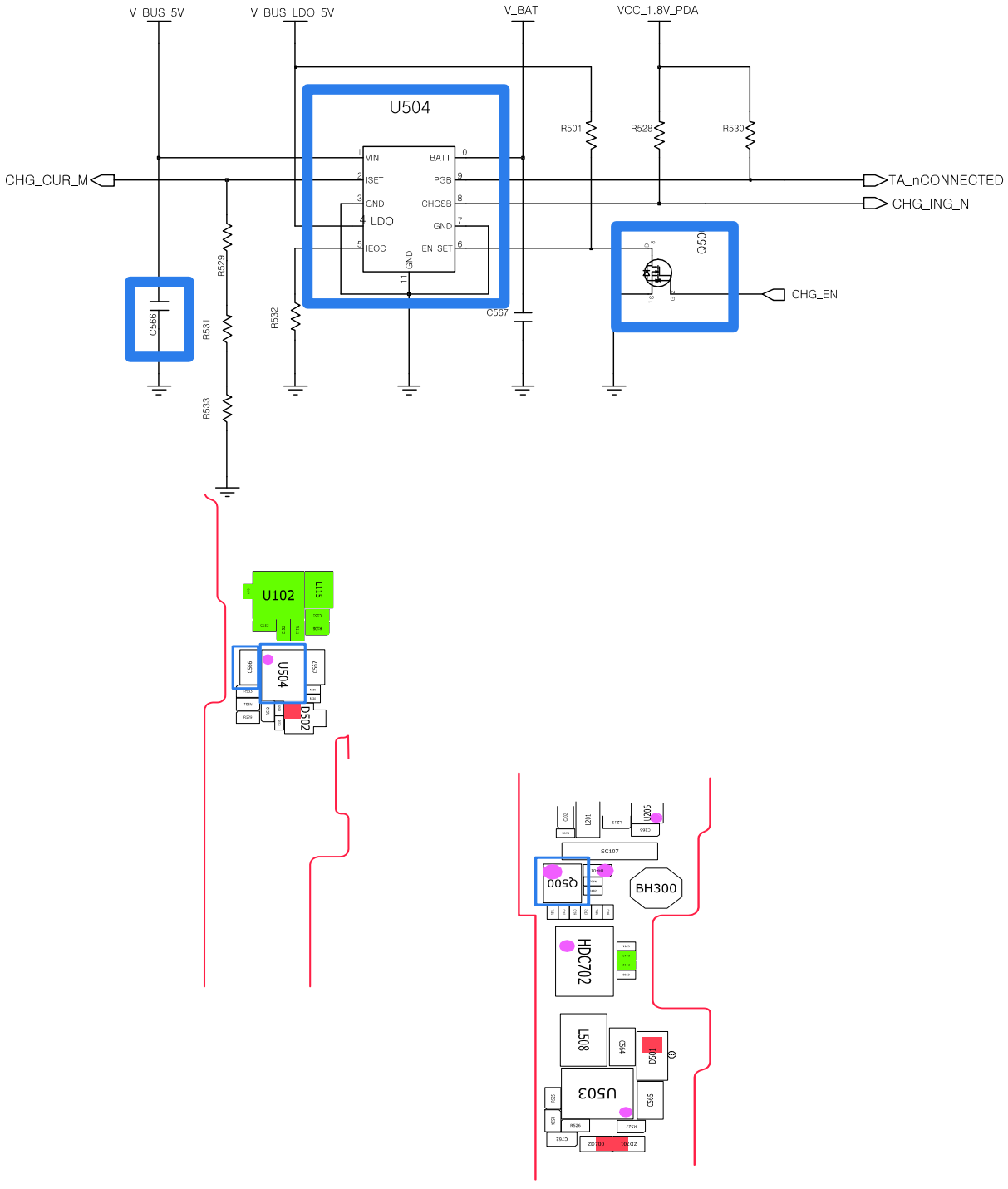




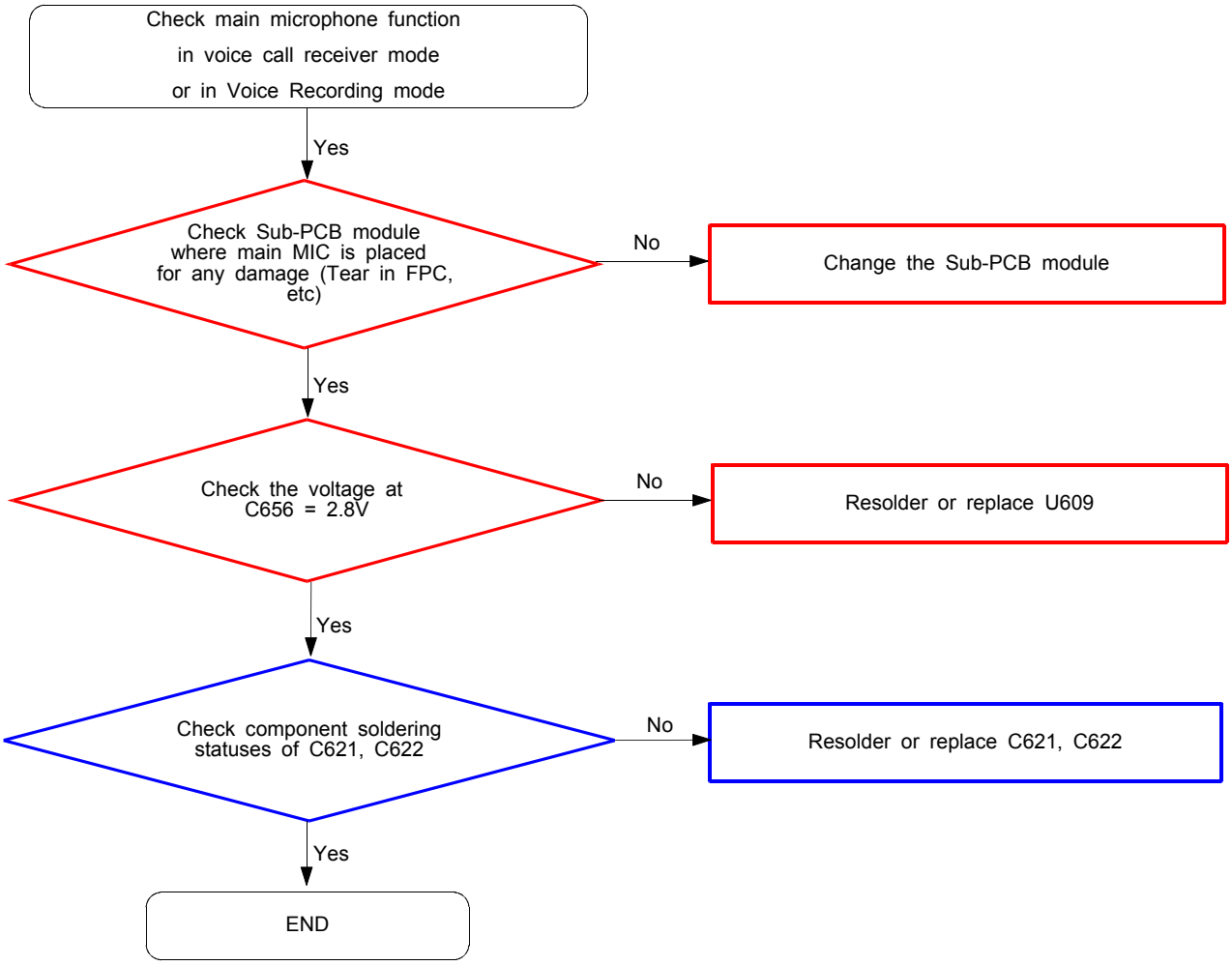


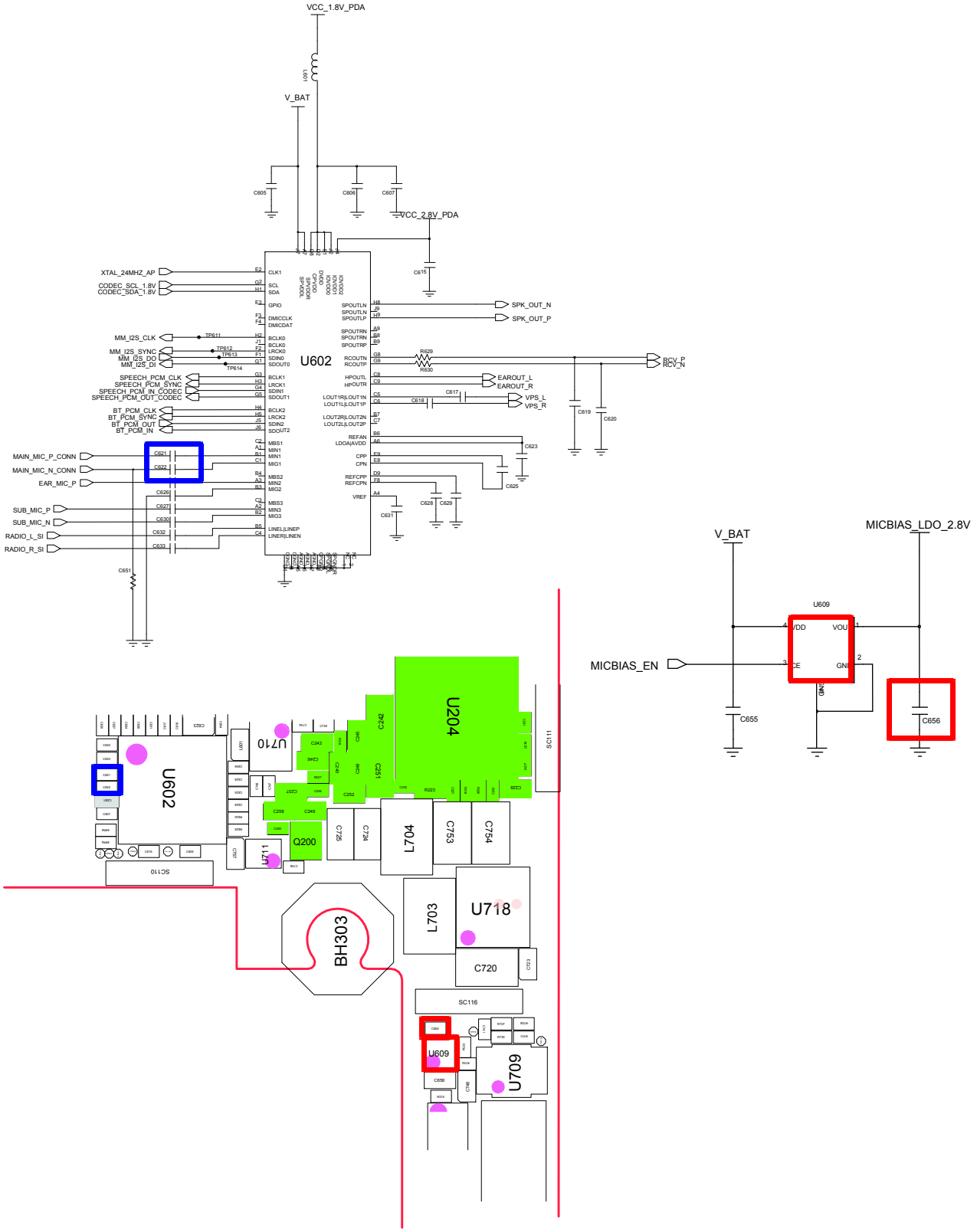
8-3-4. Charging Part



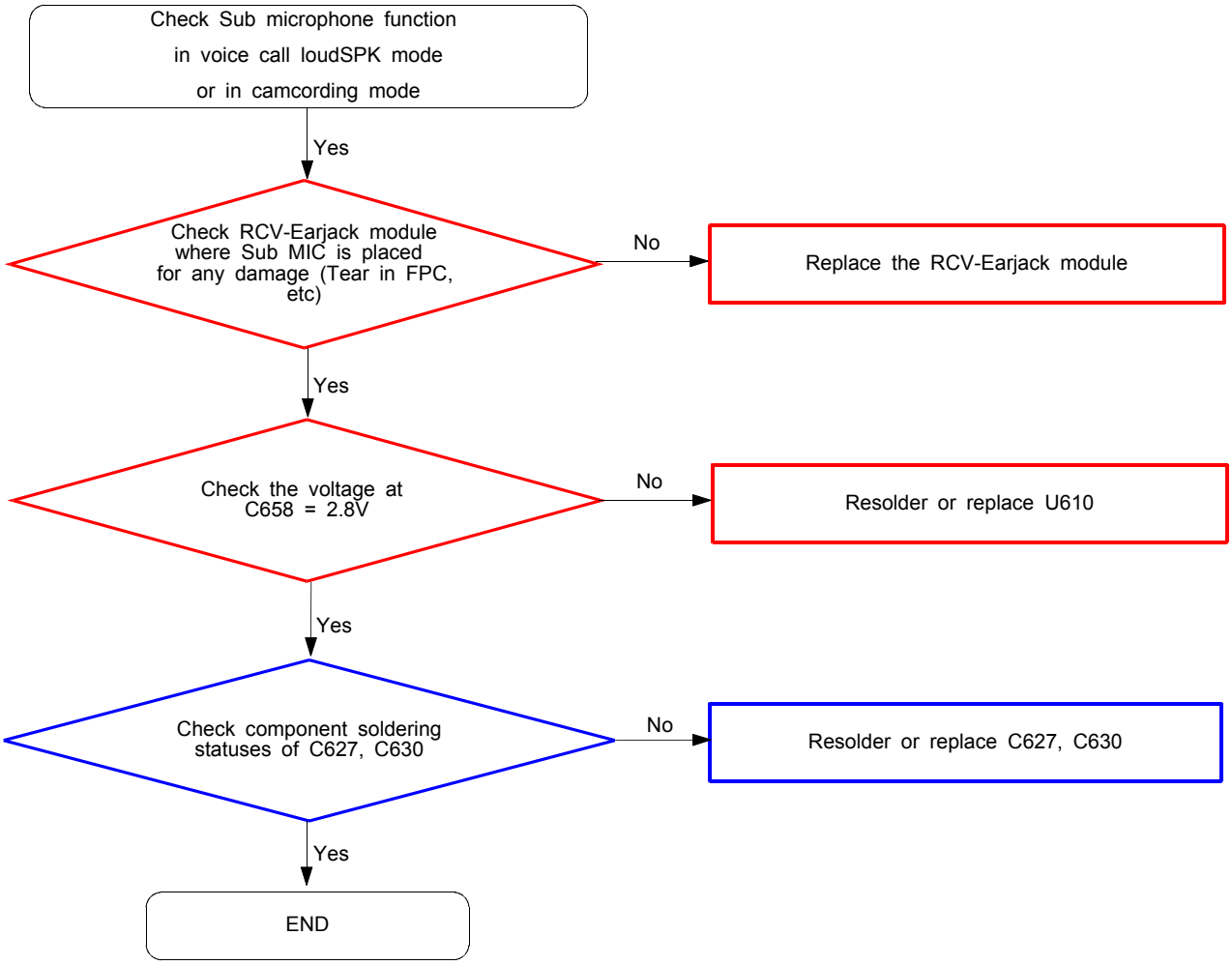


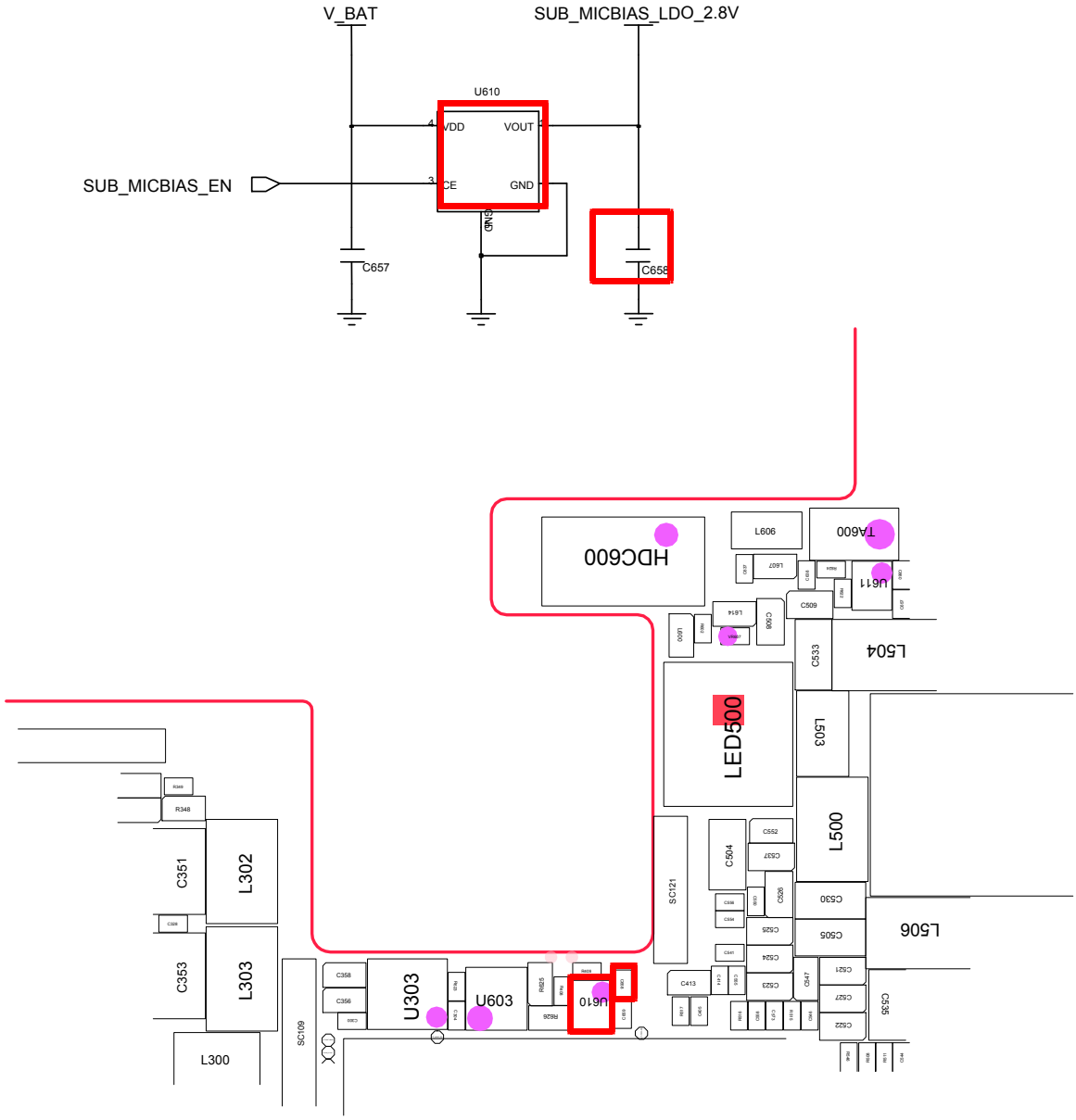
8-3-5. Microphone Part (Main MIC)

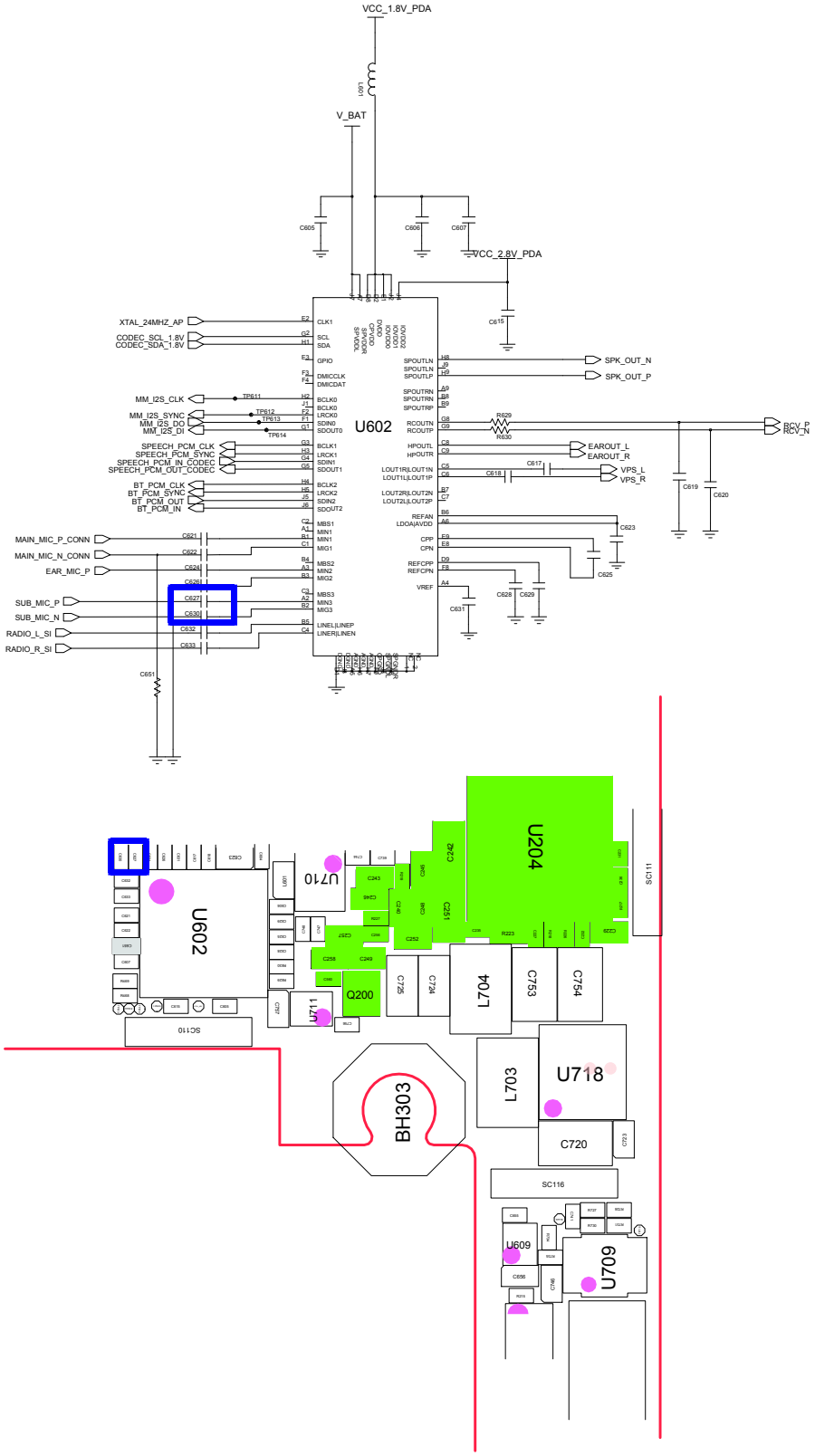




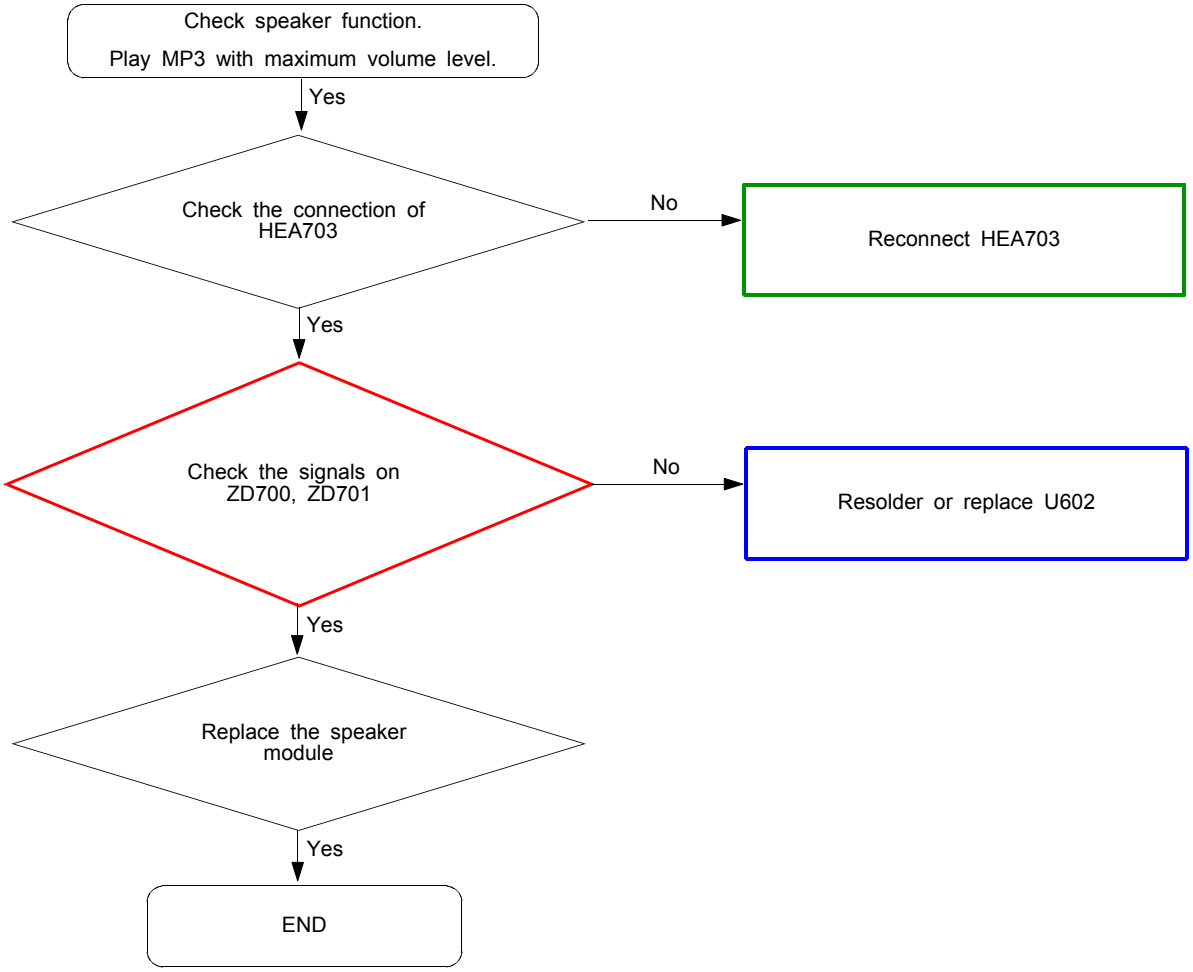
8-3-5-1. Microphone Part (Sub MIC)

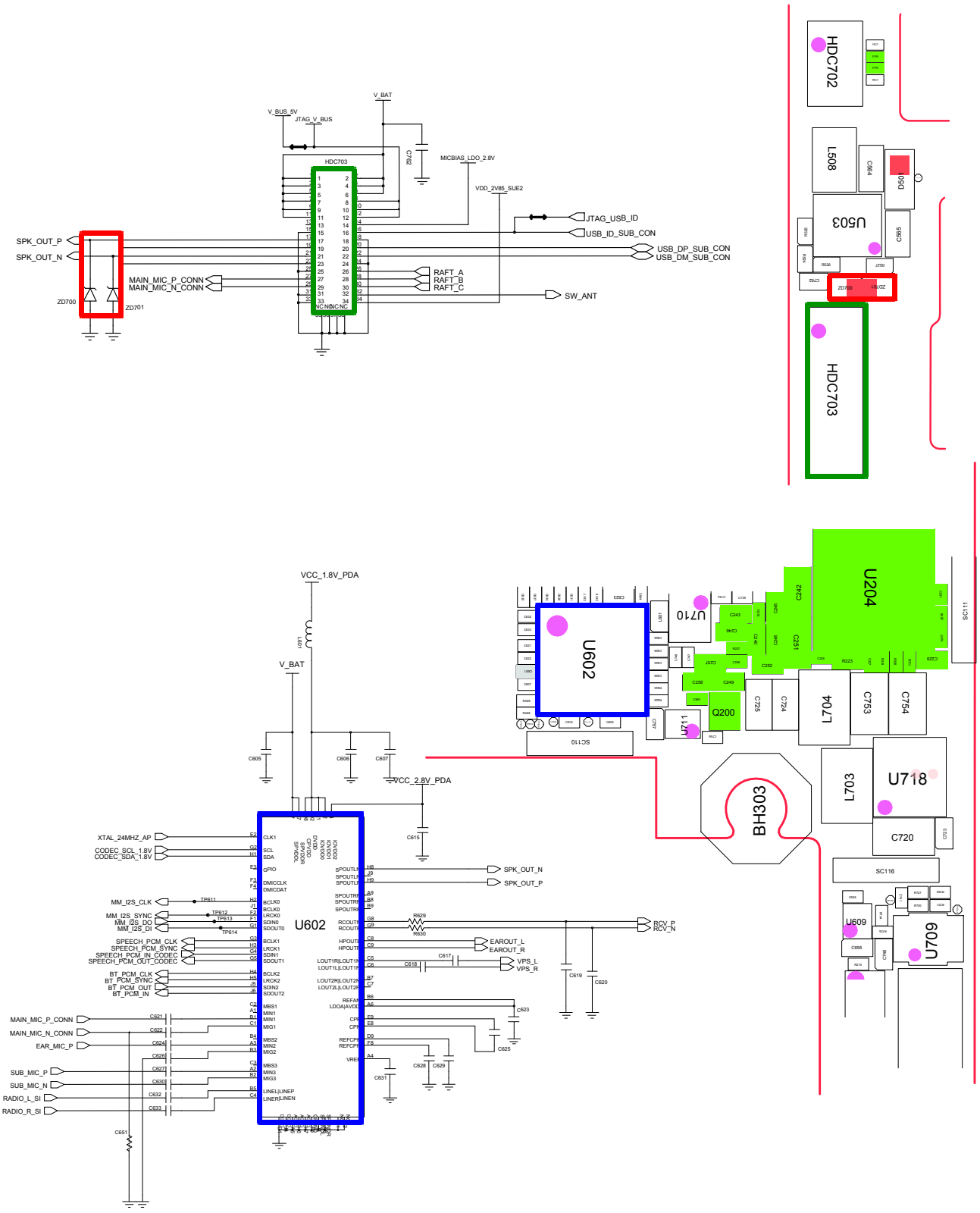




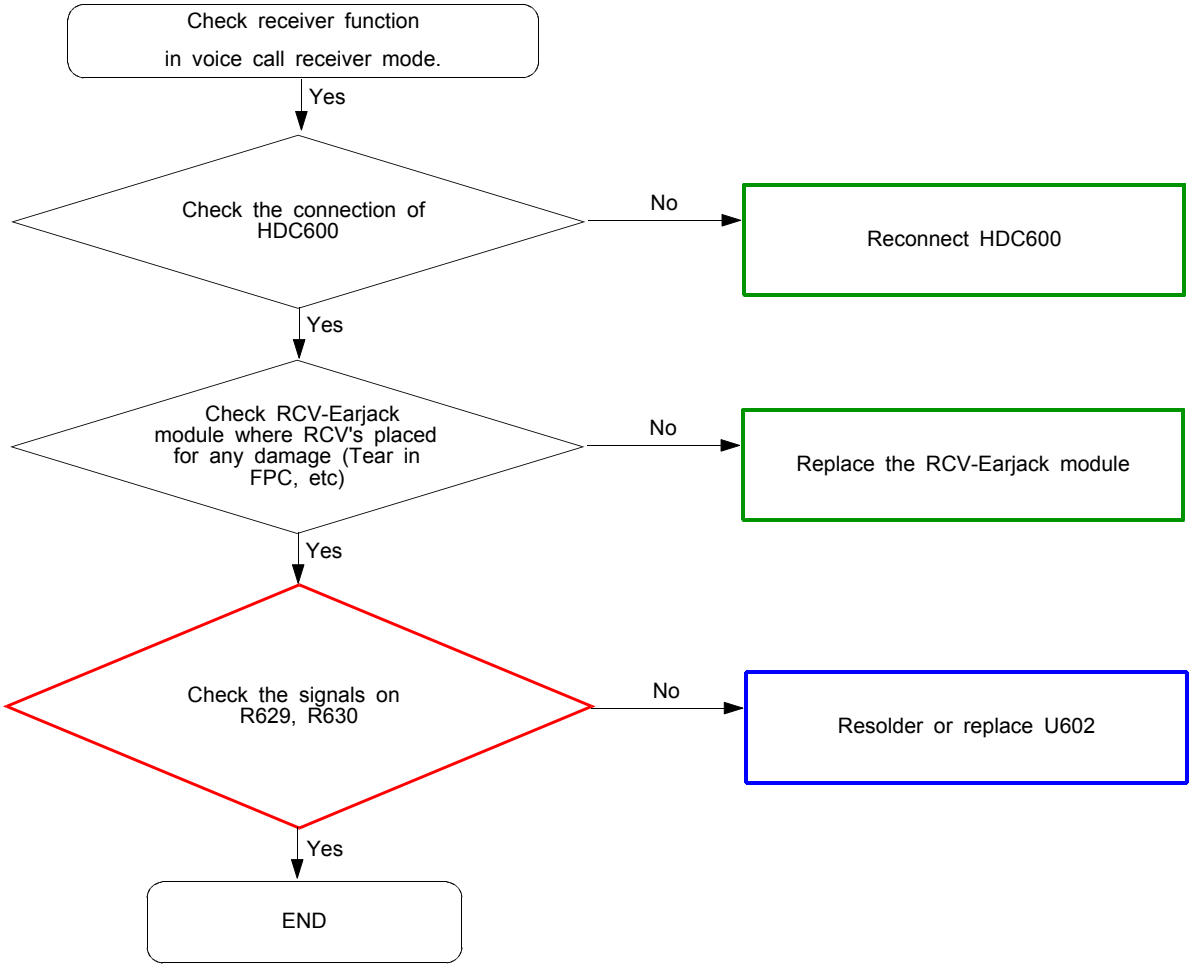


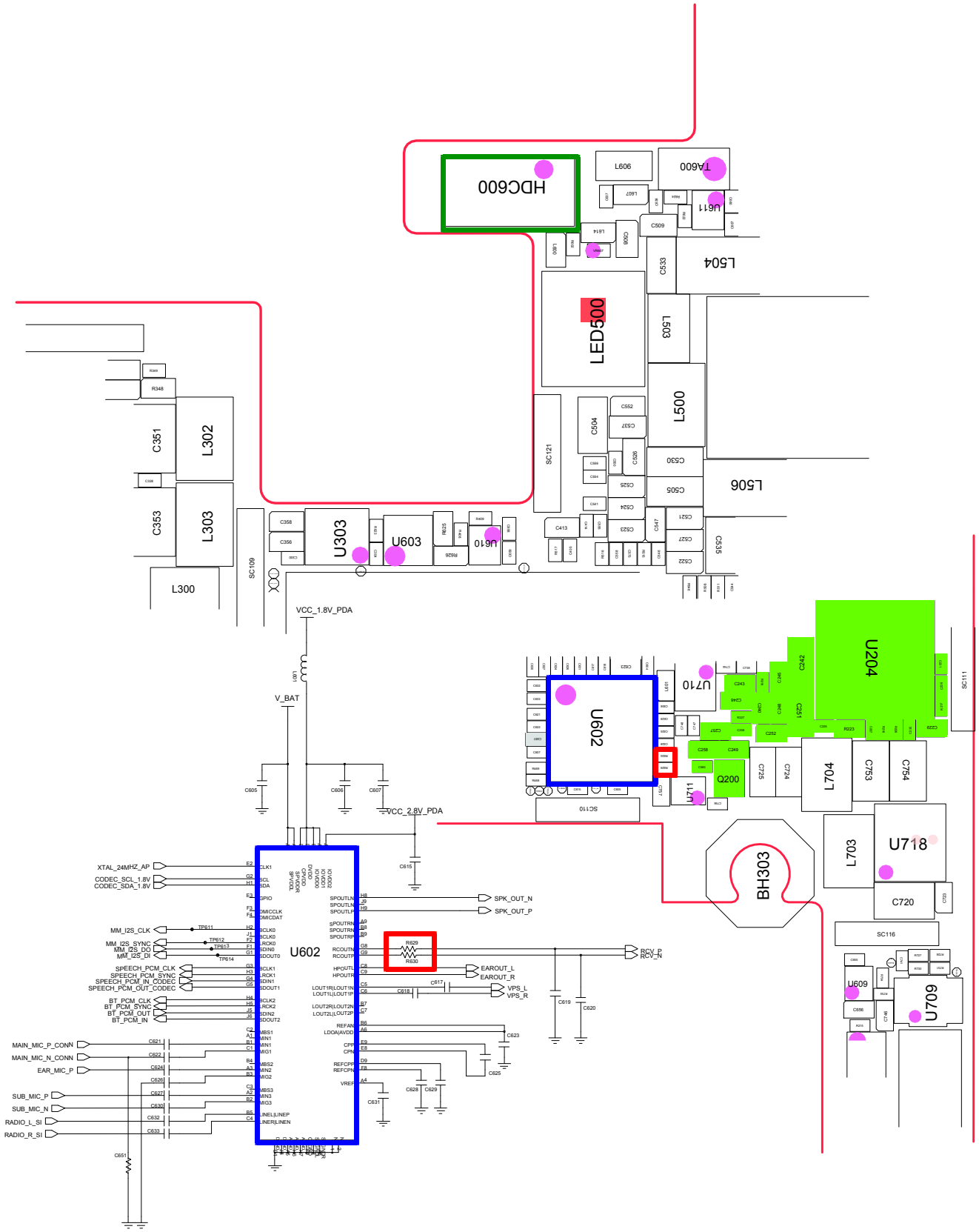
8-3-6. Speaker Part



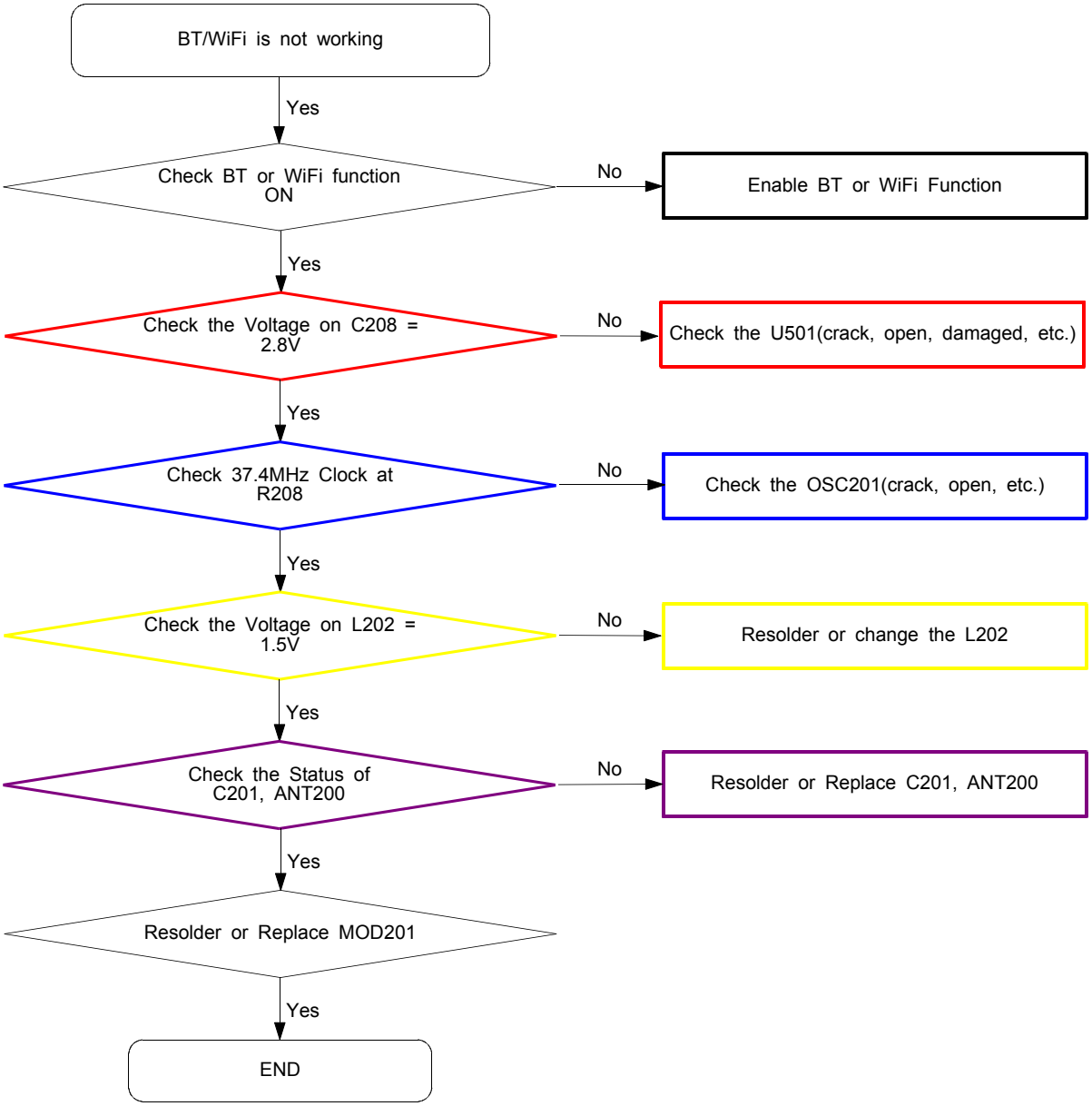


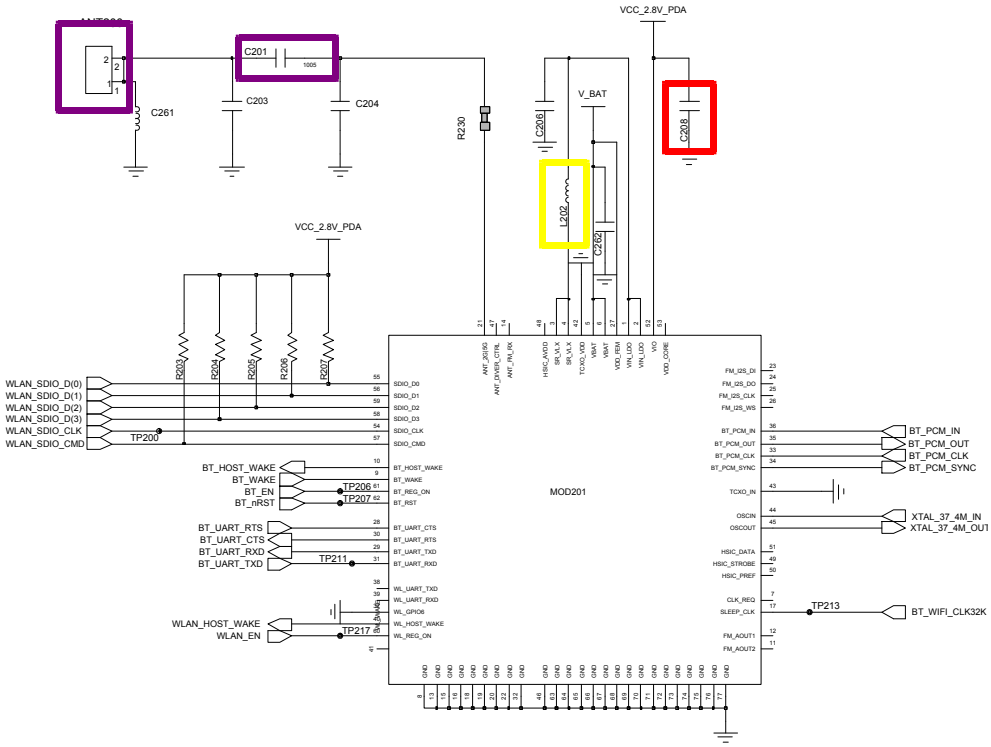
8-3-6. Receiver Part

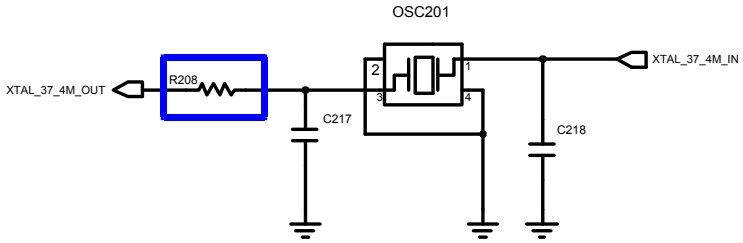


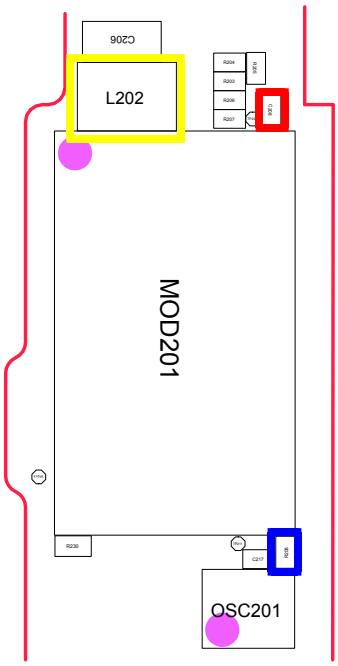


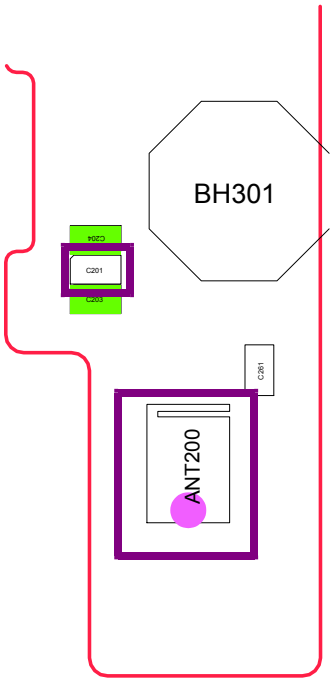
8-3-7. BT/WIFI



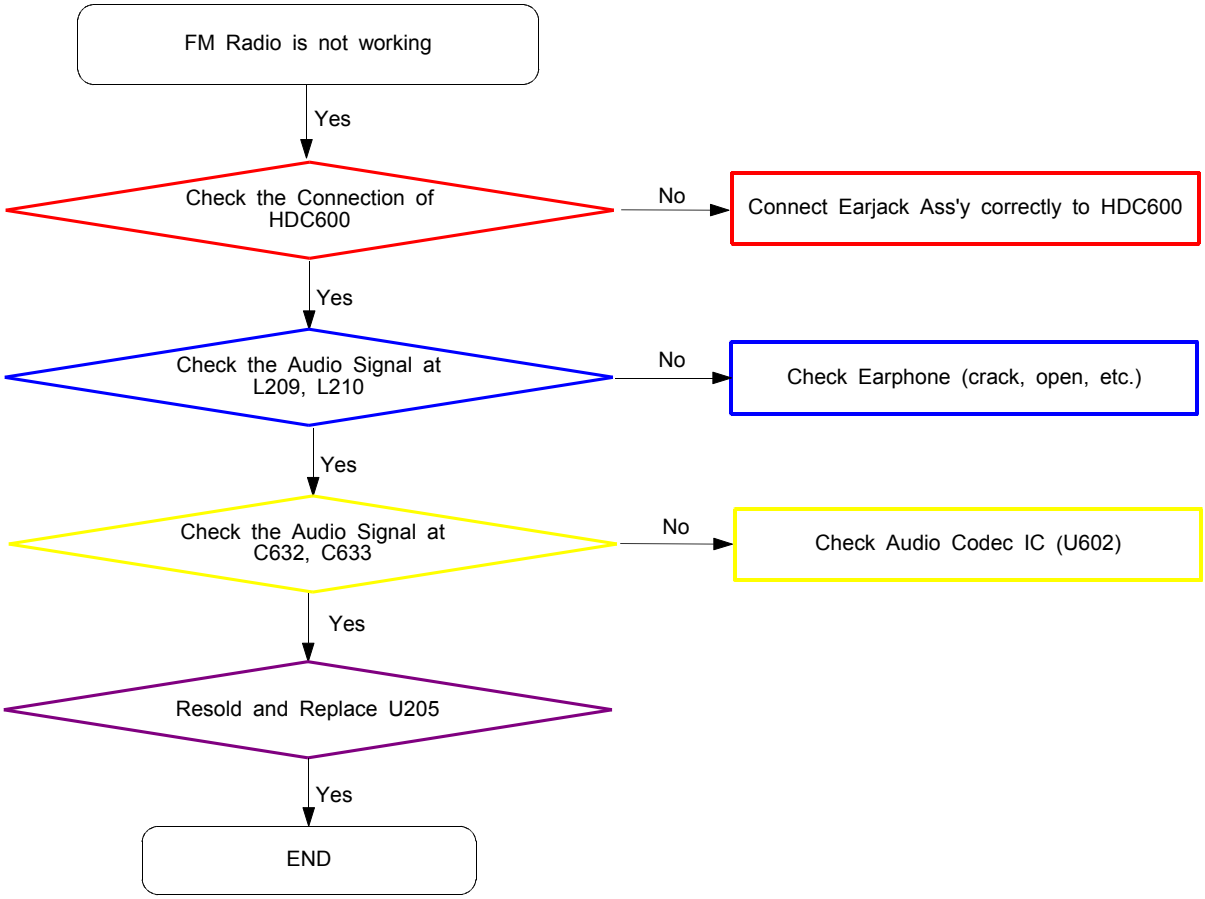


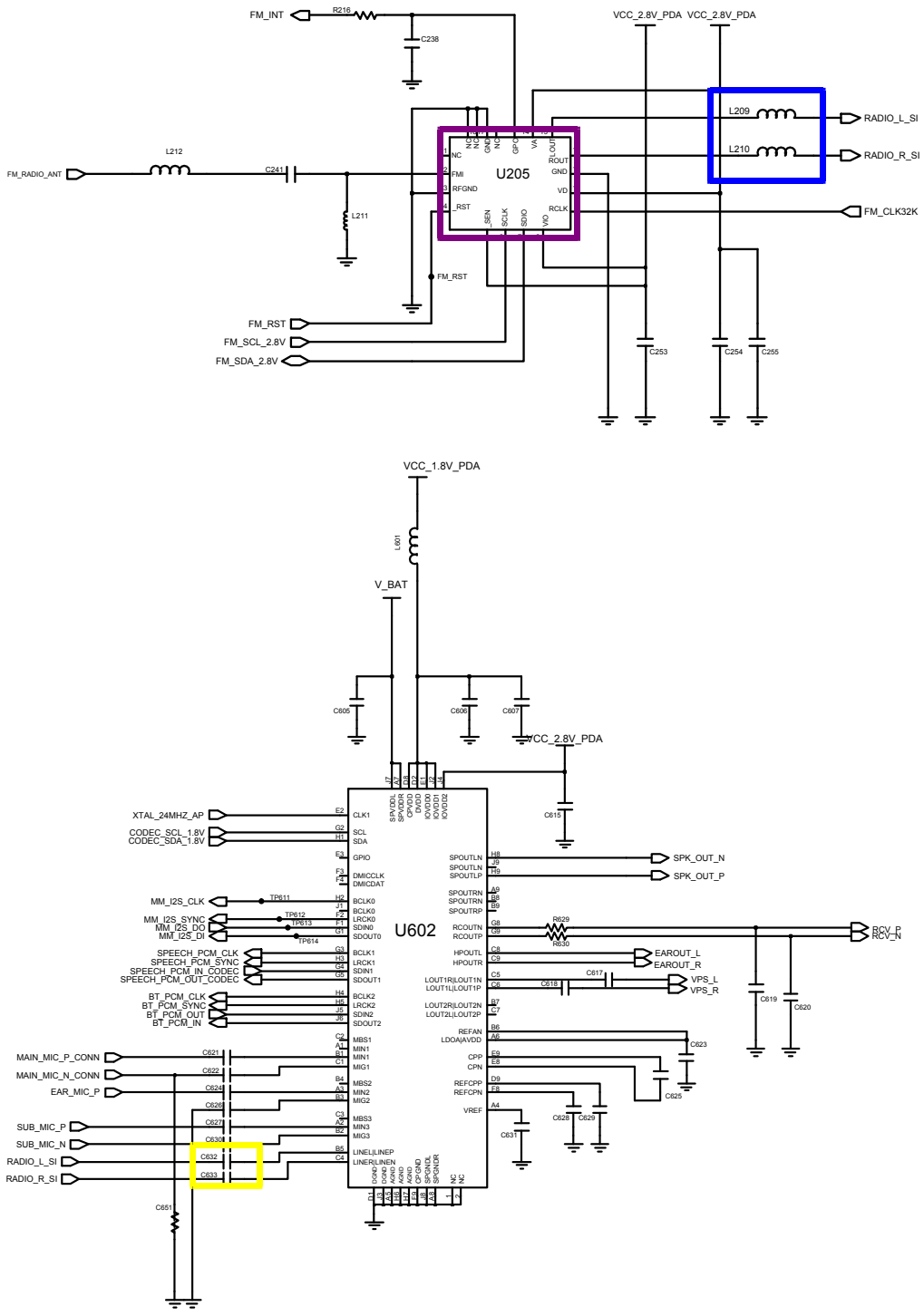




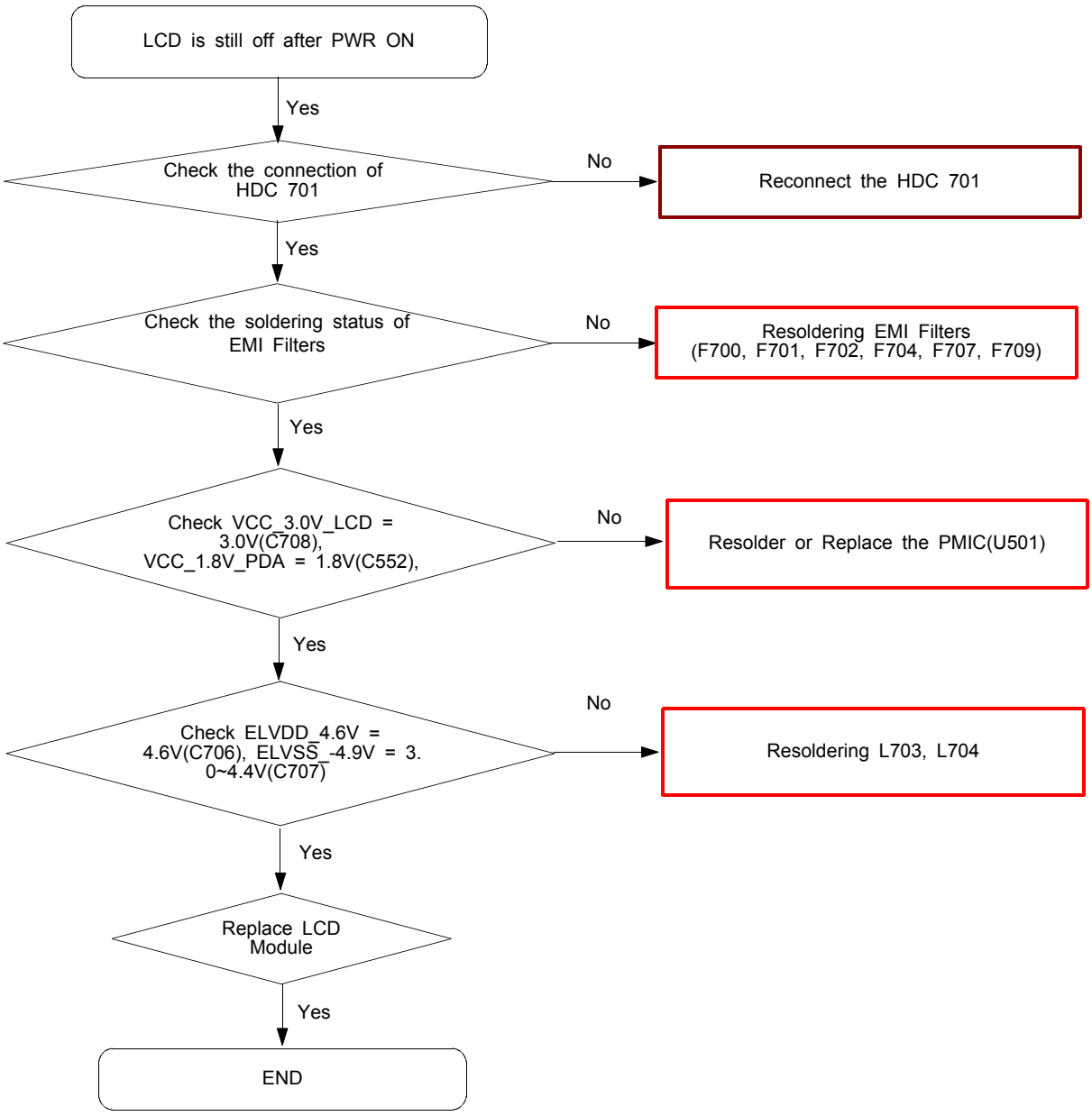


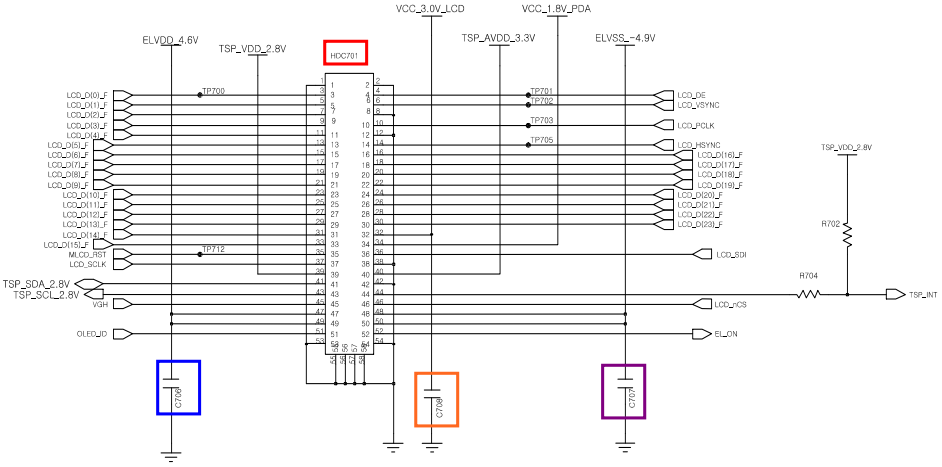
8-3-8. FM RADIO

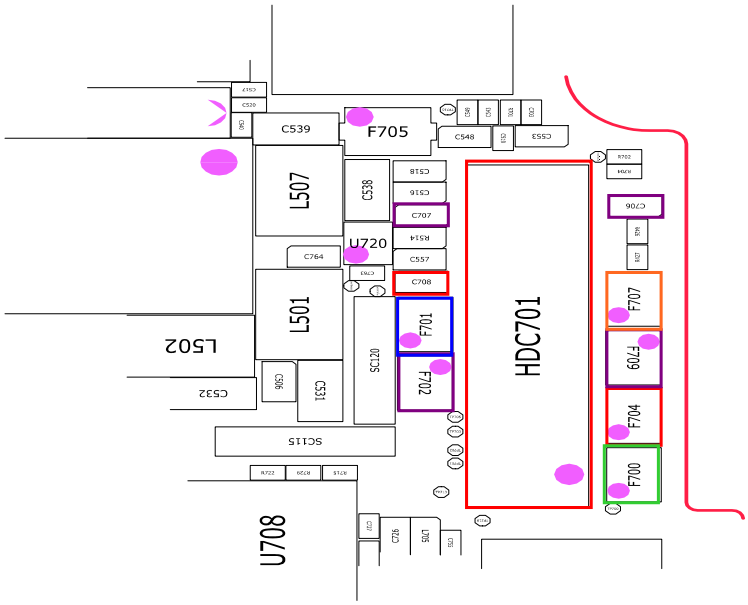


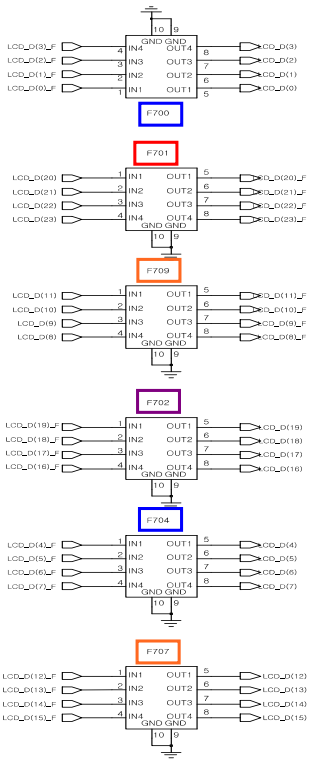


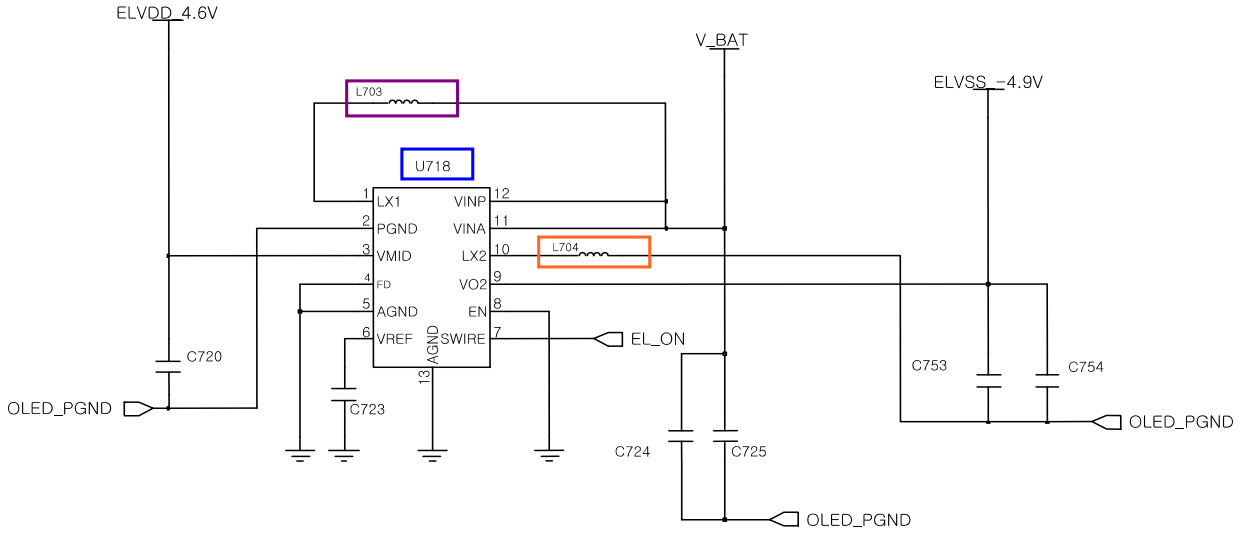
8-3-8. LCD

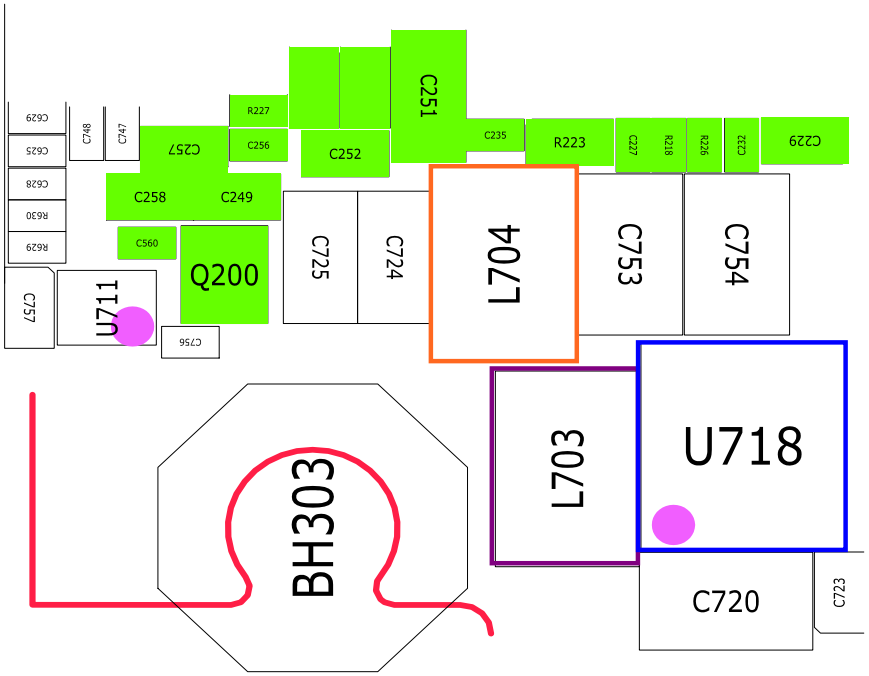




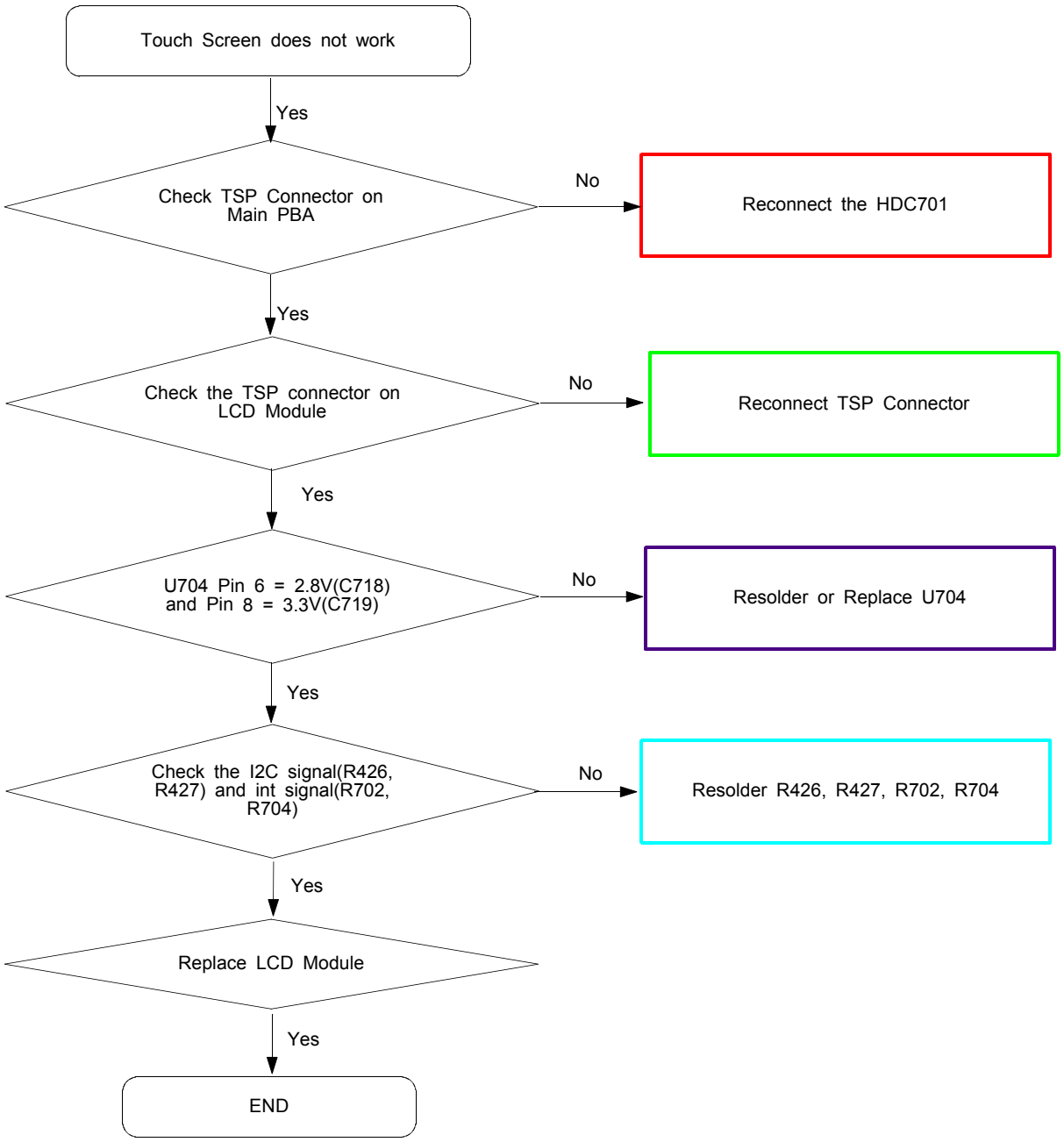


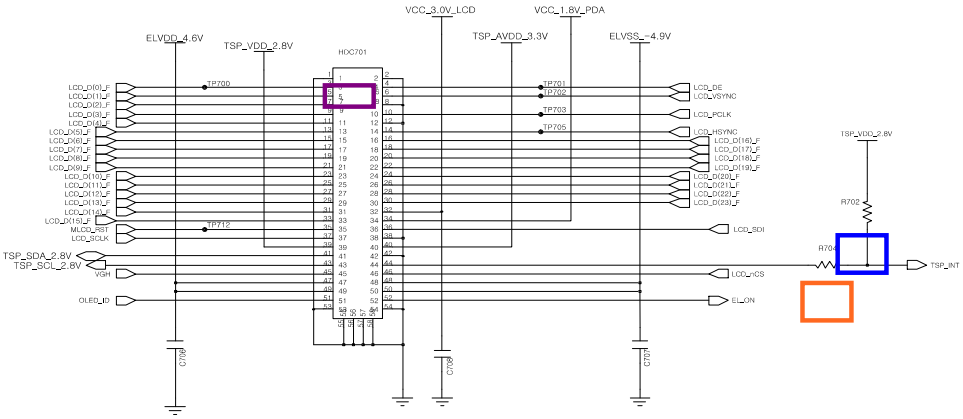


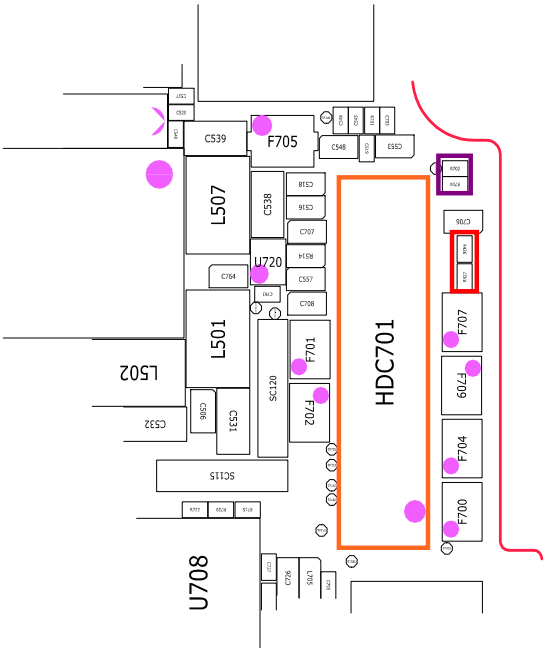




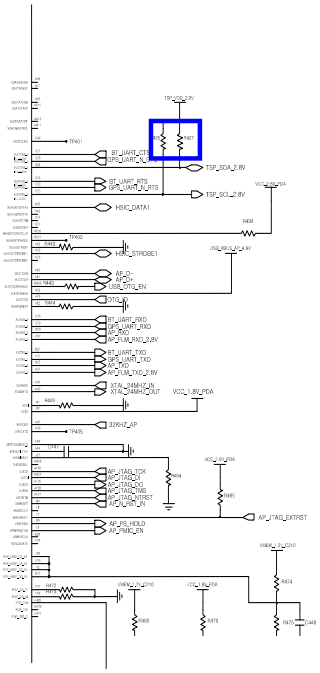
8-3-9. TSP

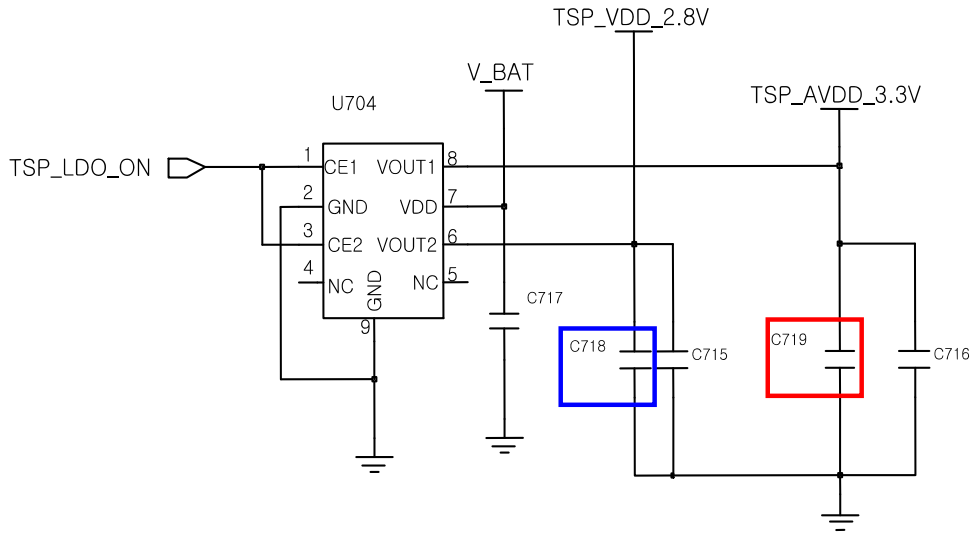


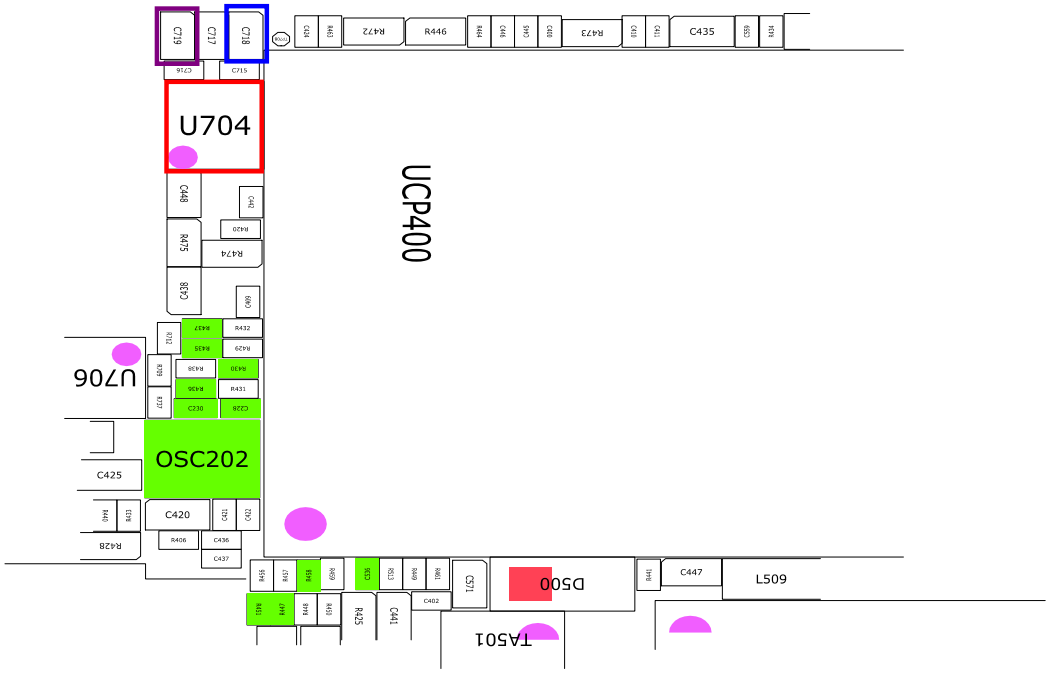




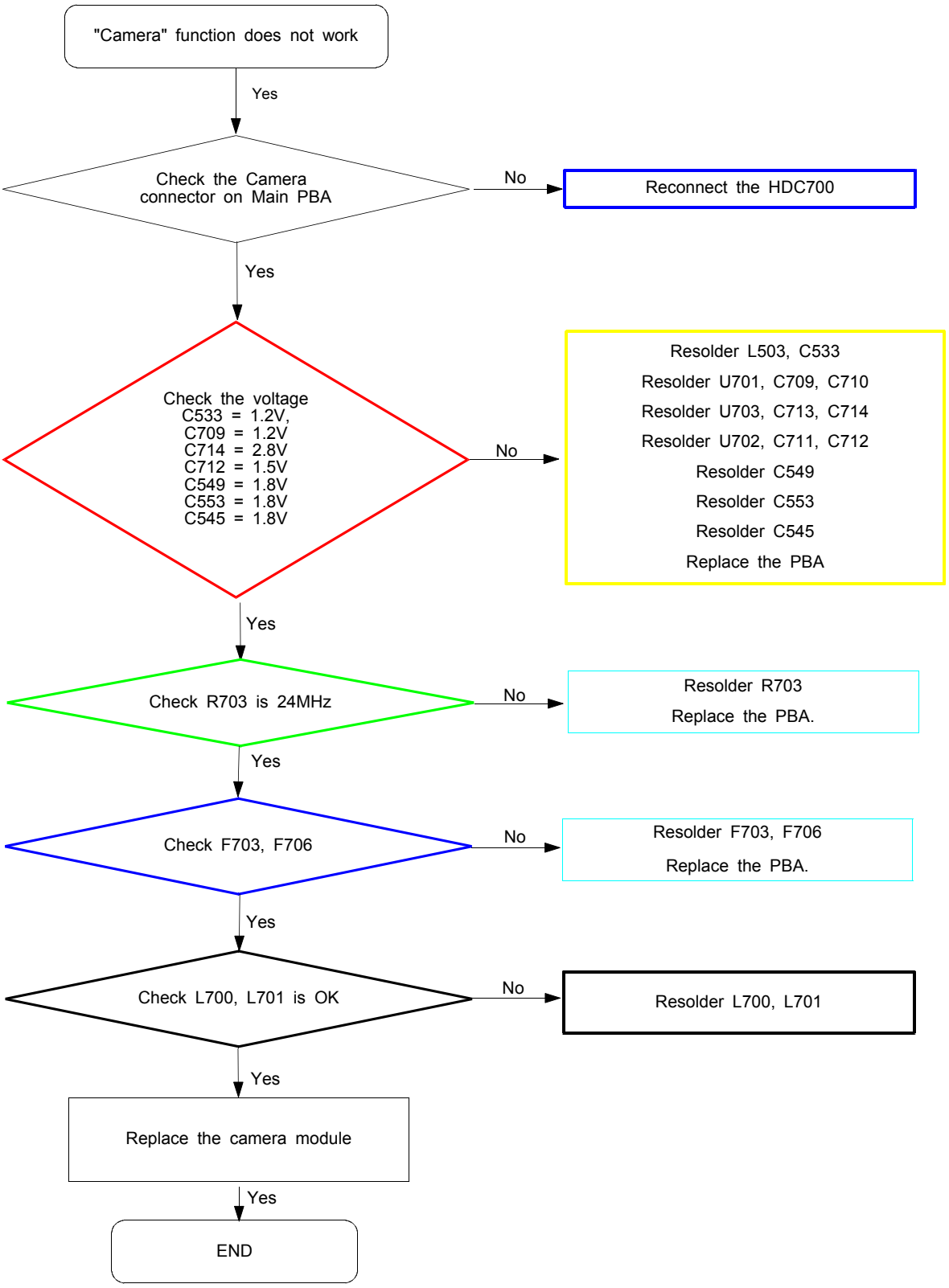
UCP400

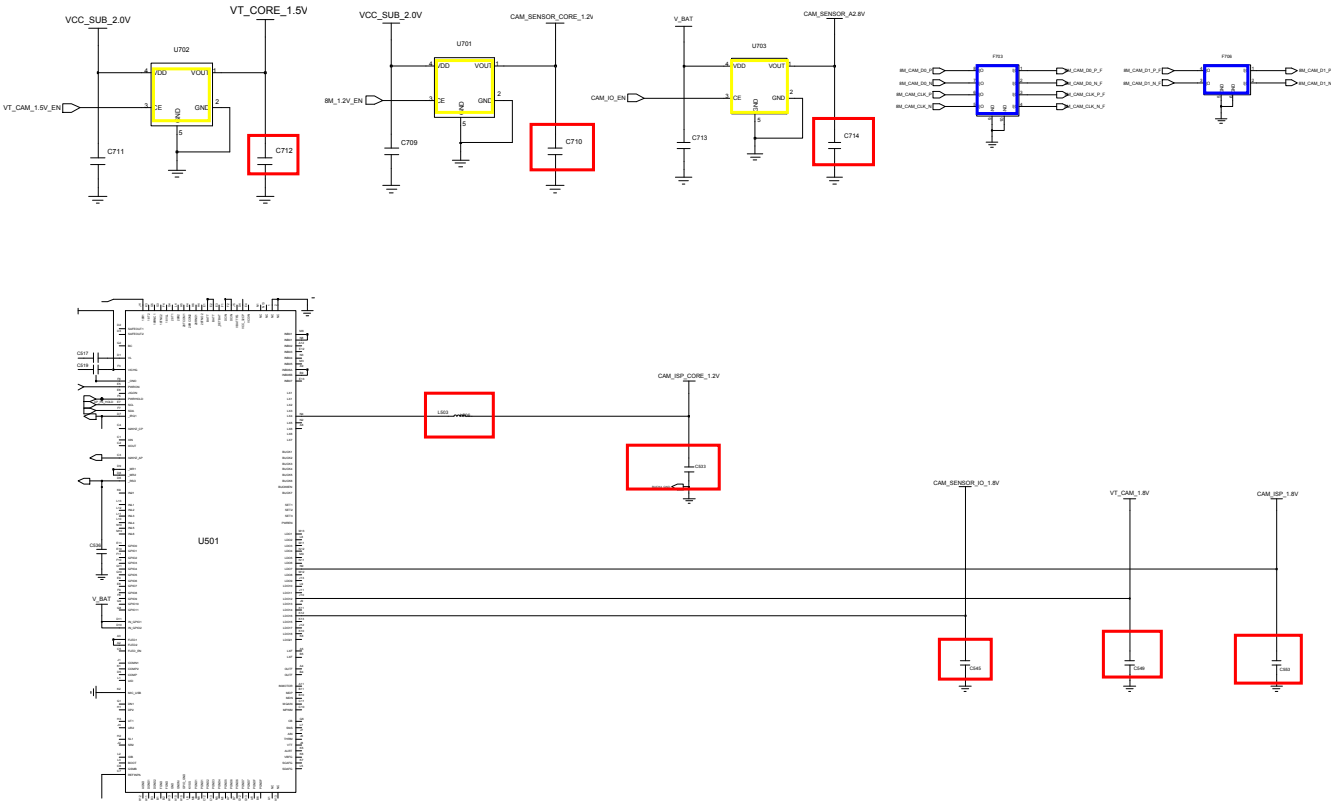


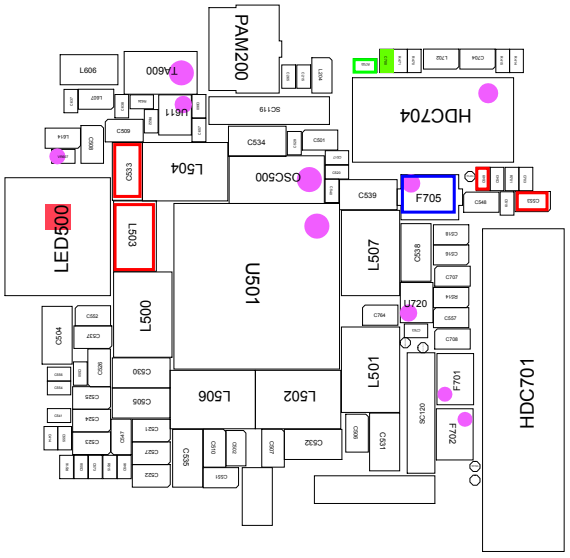


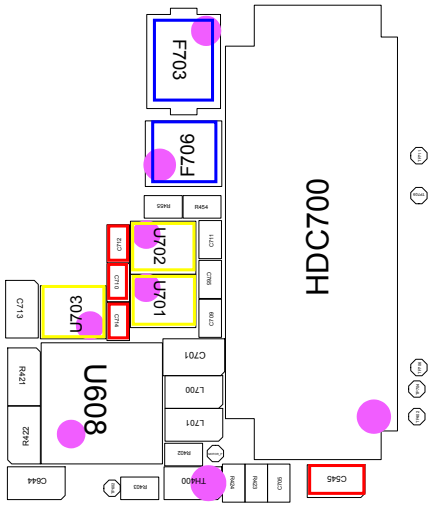


8-3-10. 8M CAM

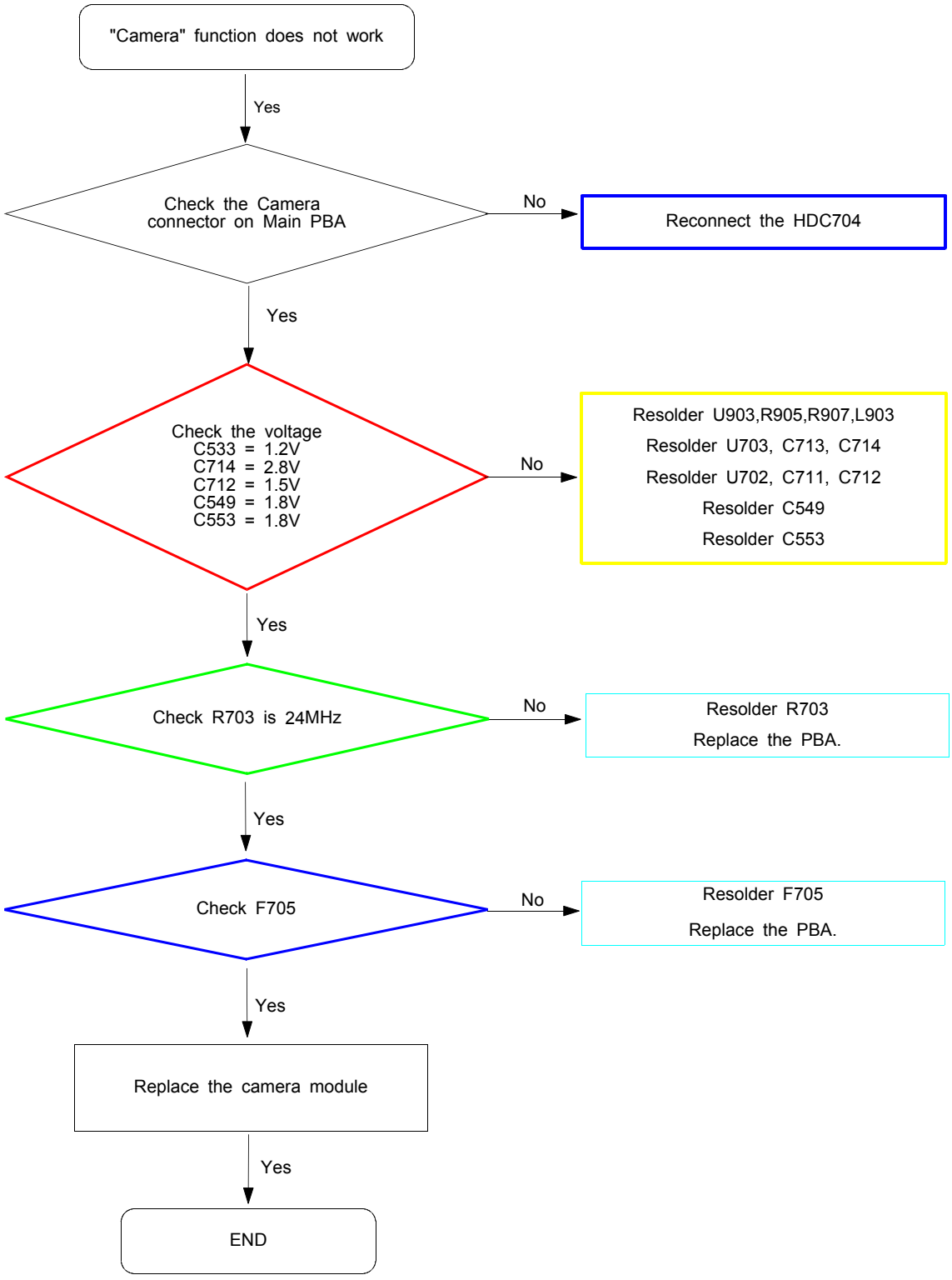


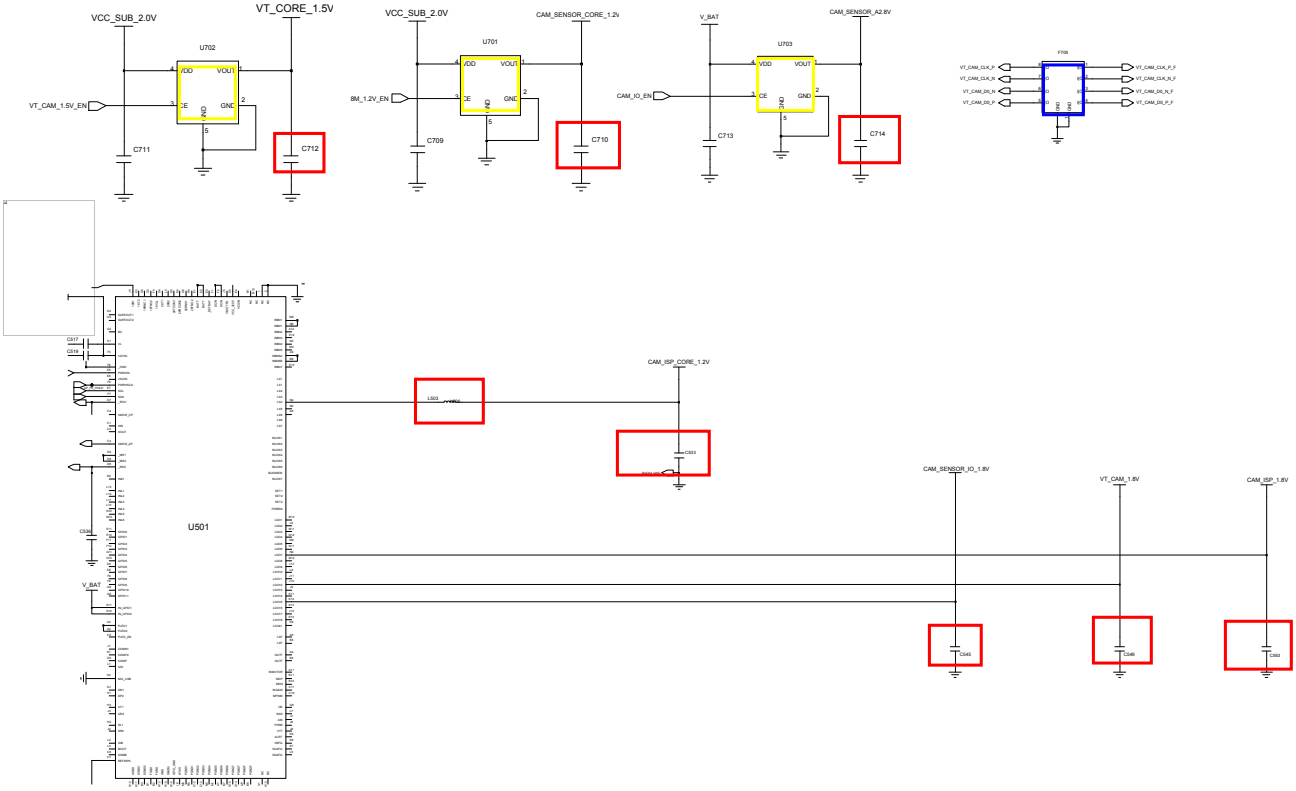


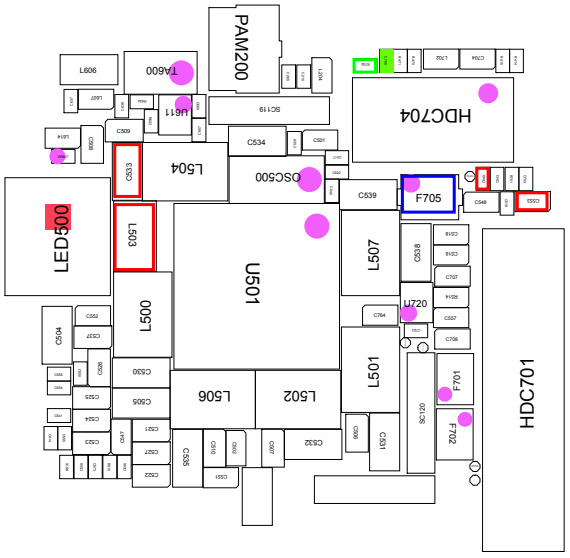


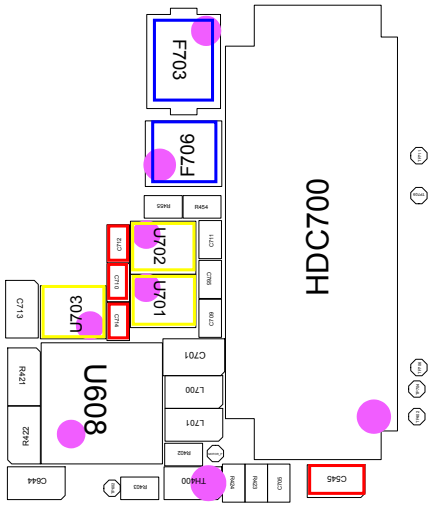


8-3-11. 2M CAM

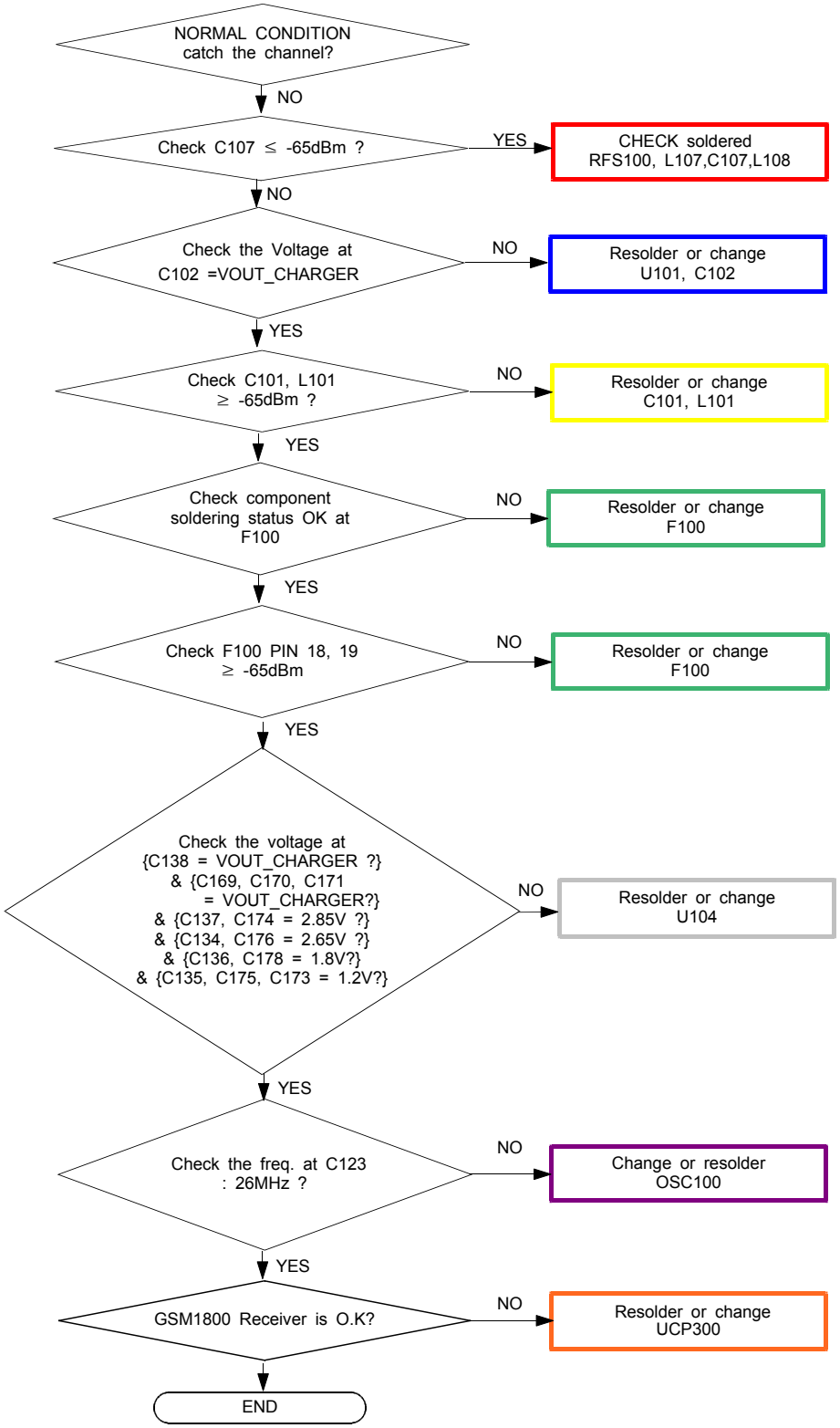


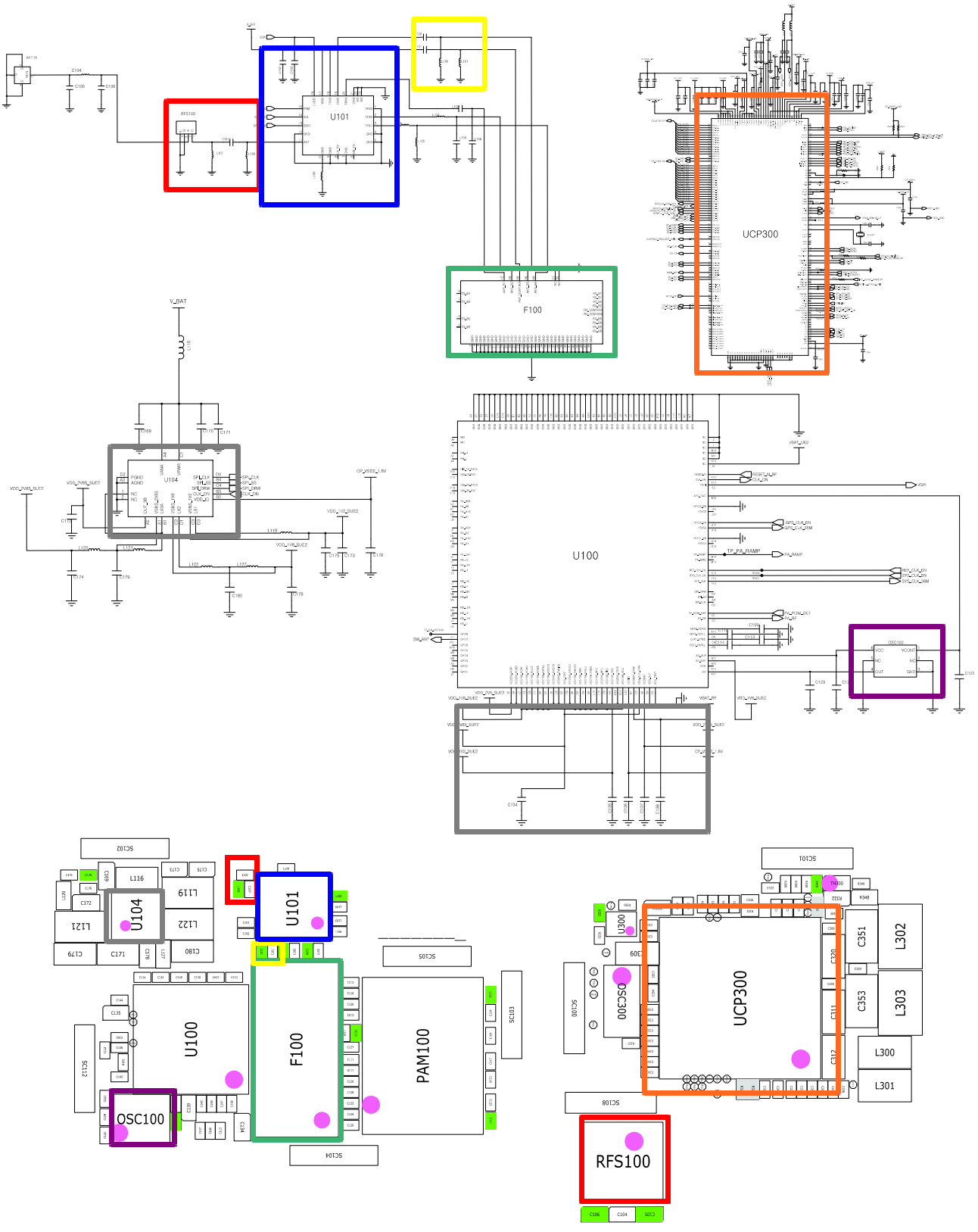




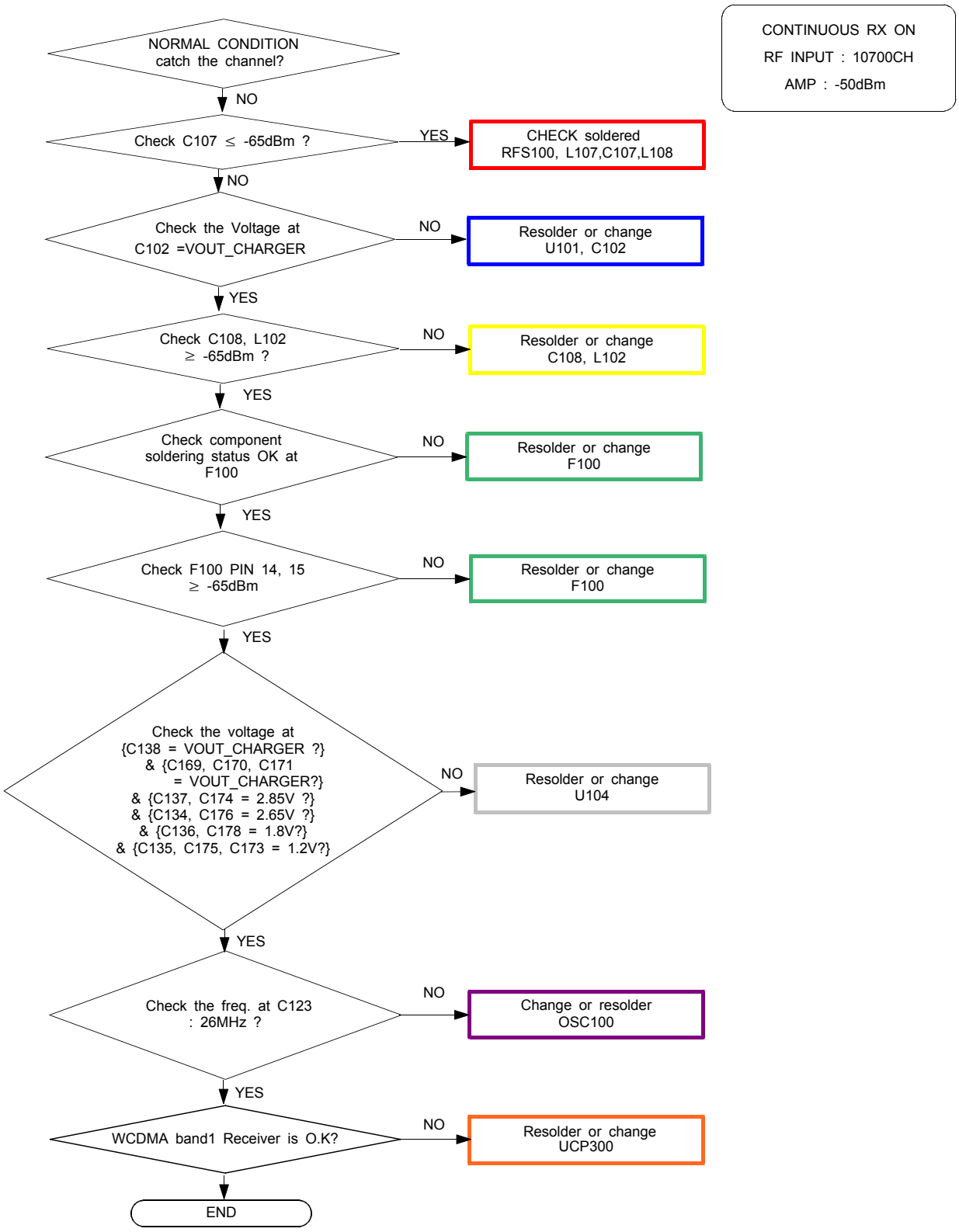


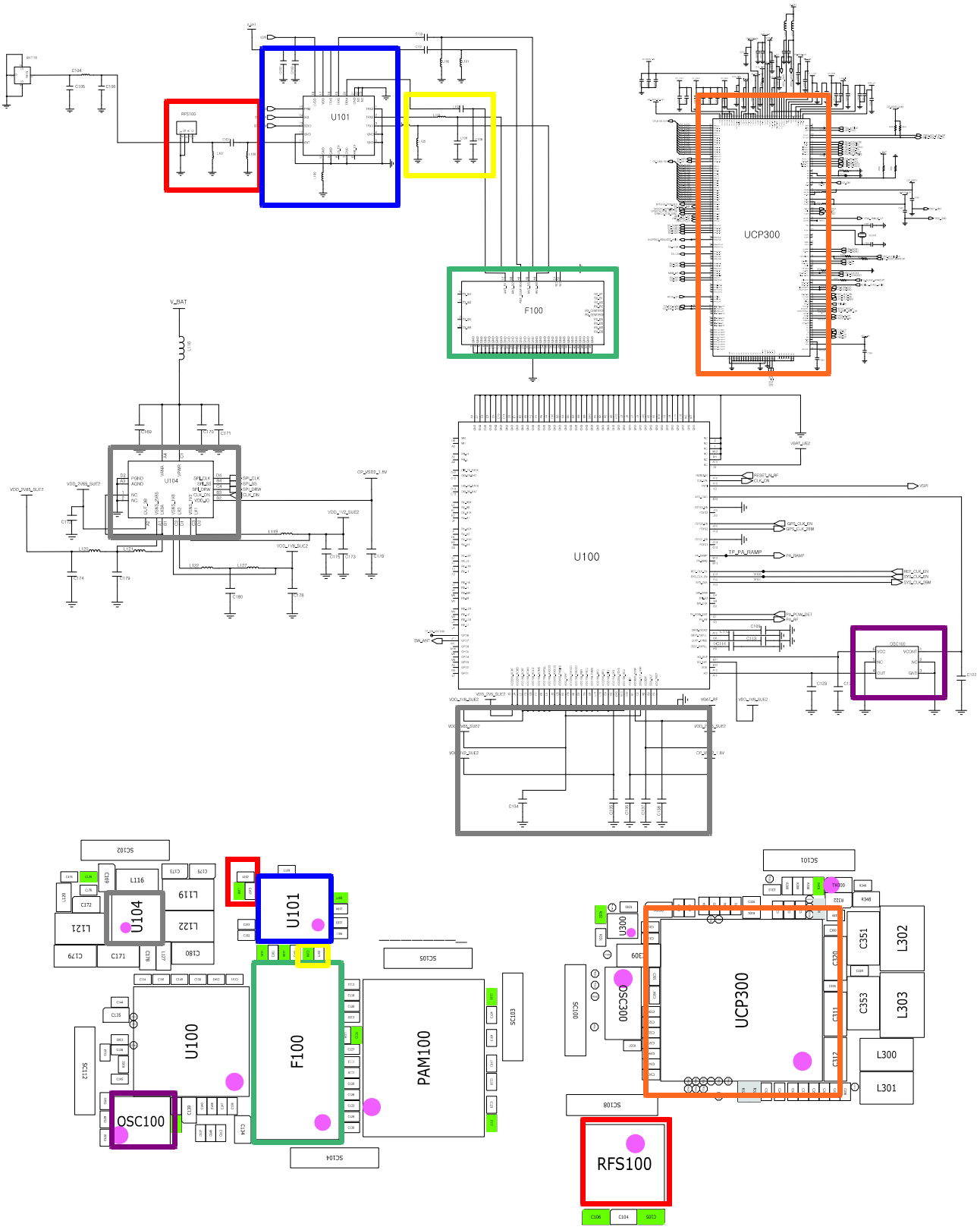
8-3-12. GSM1800 RX



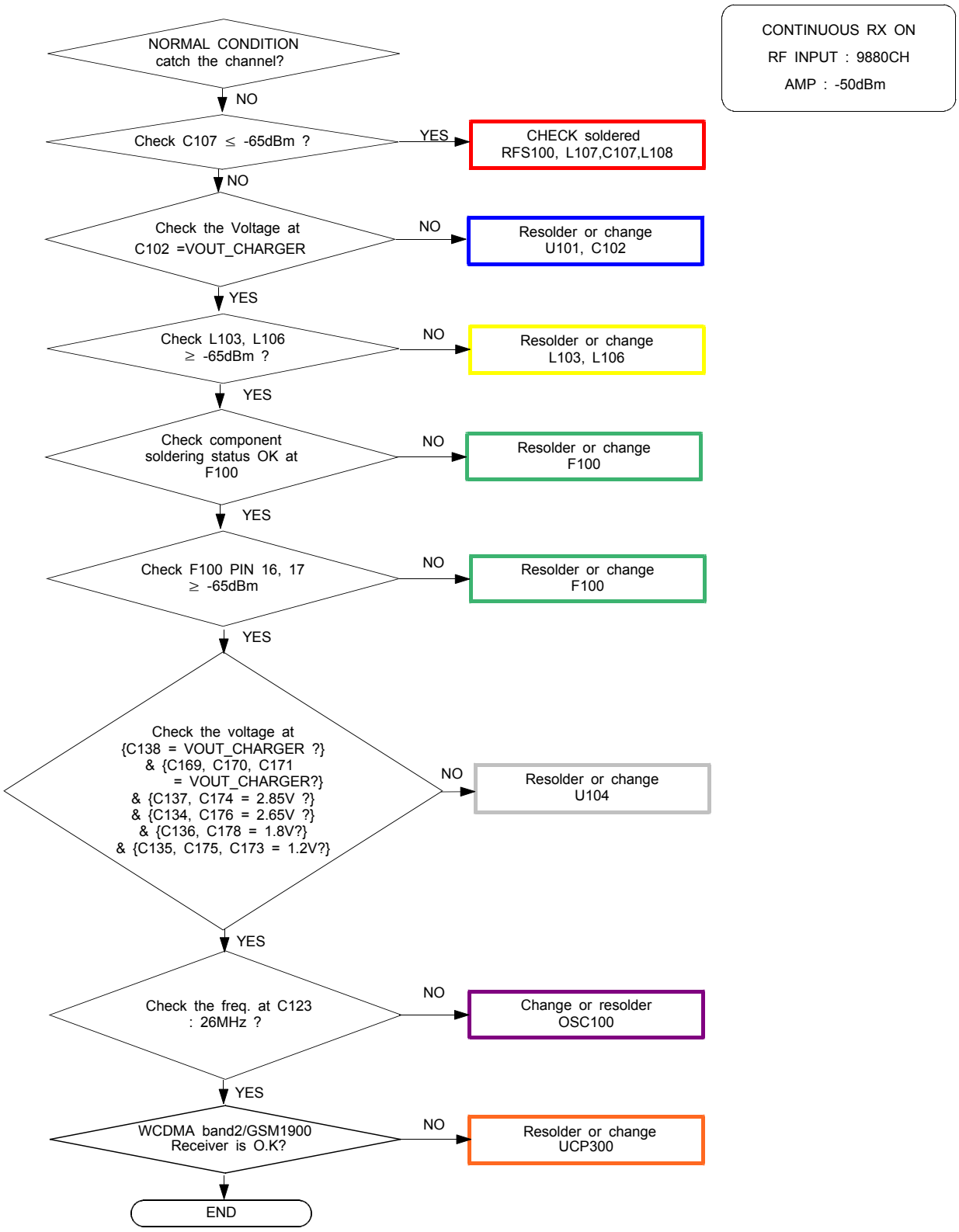


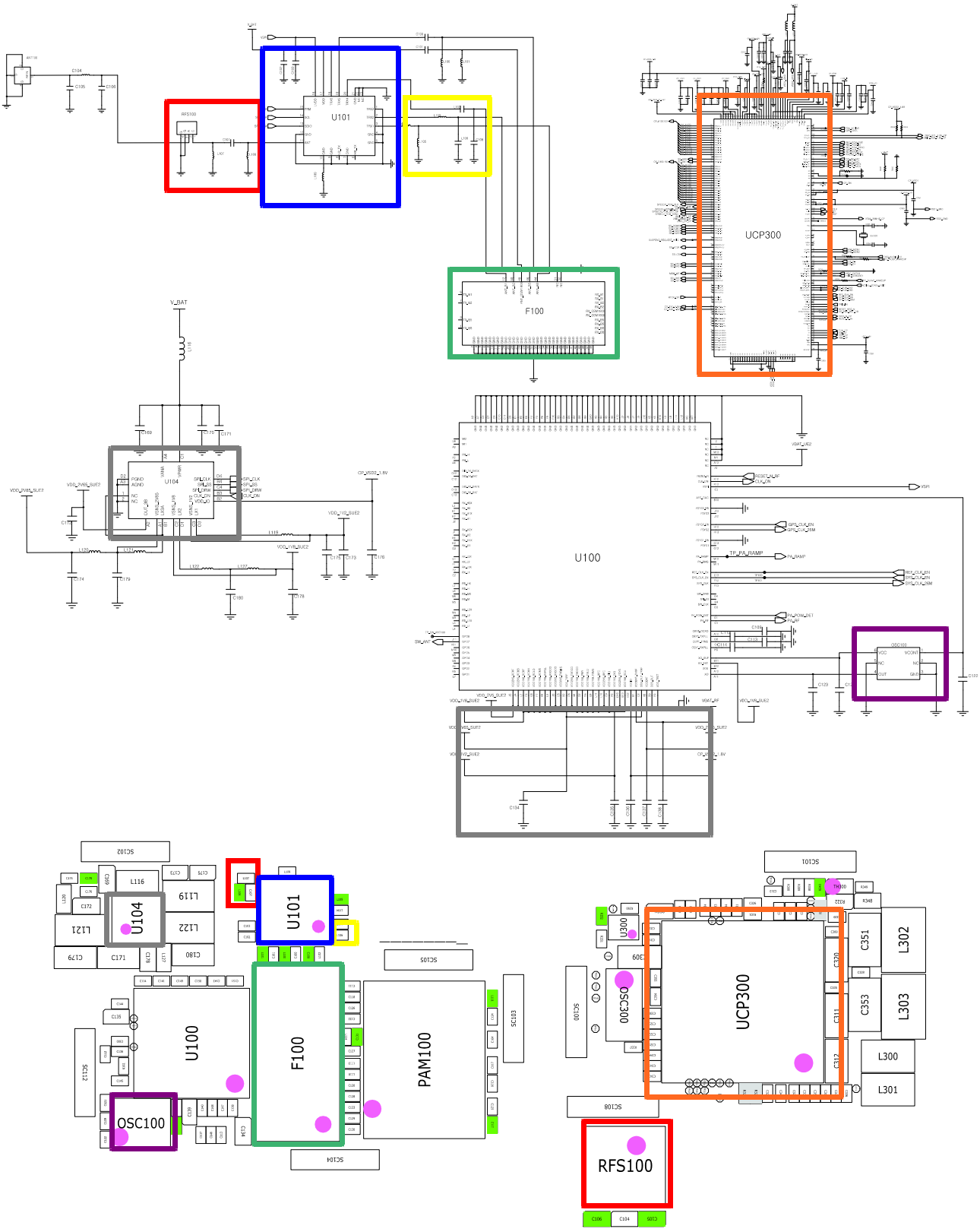
8-3-13. WCDMA Band1 RX



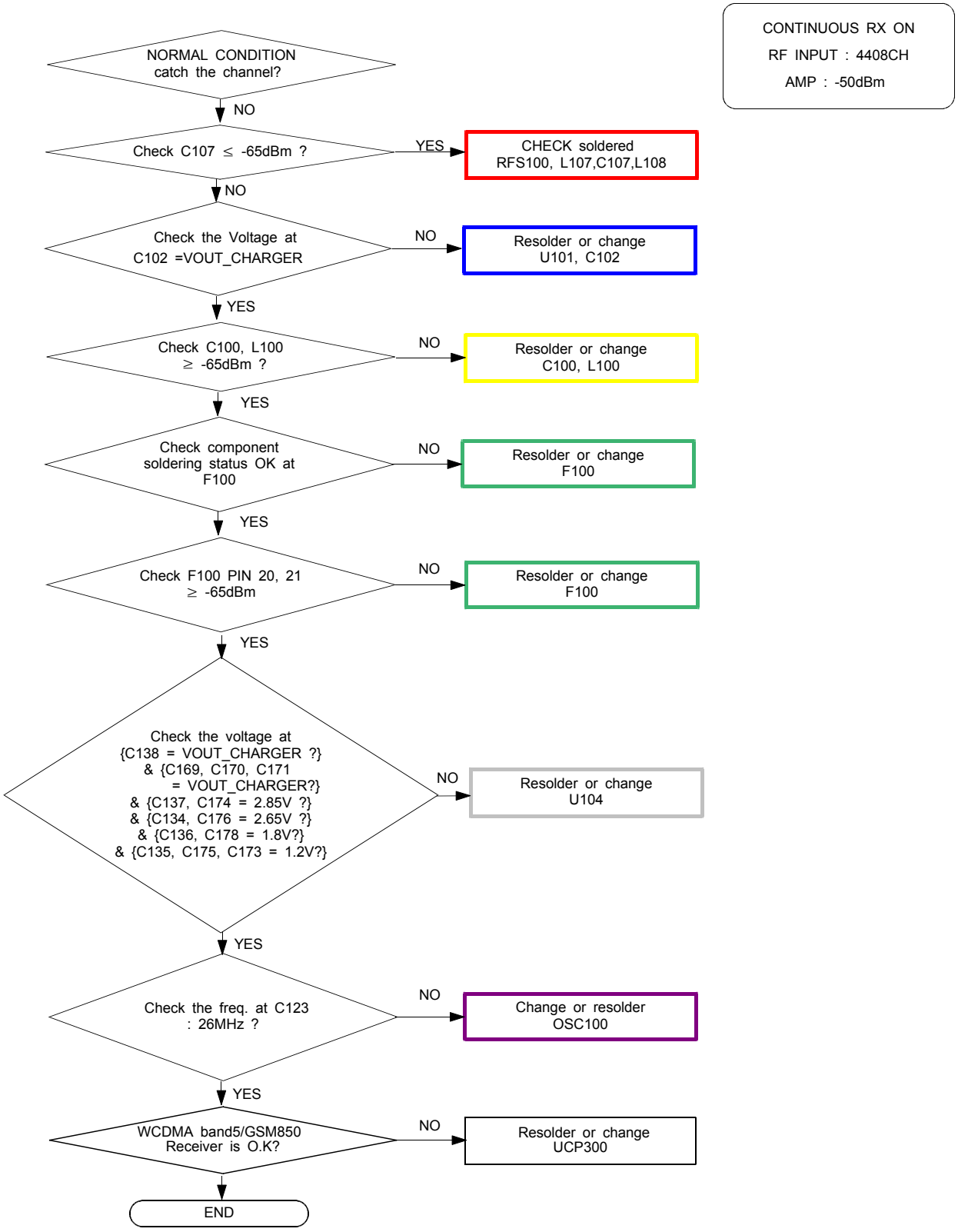


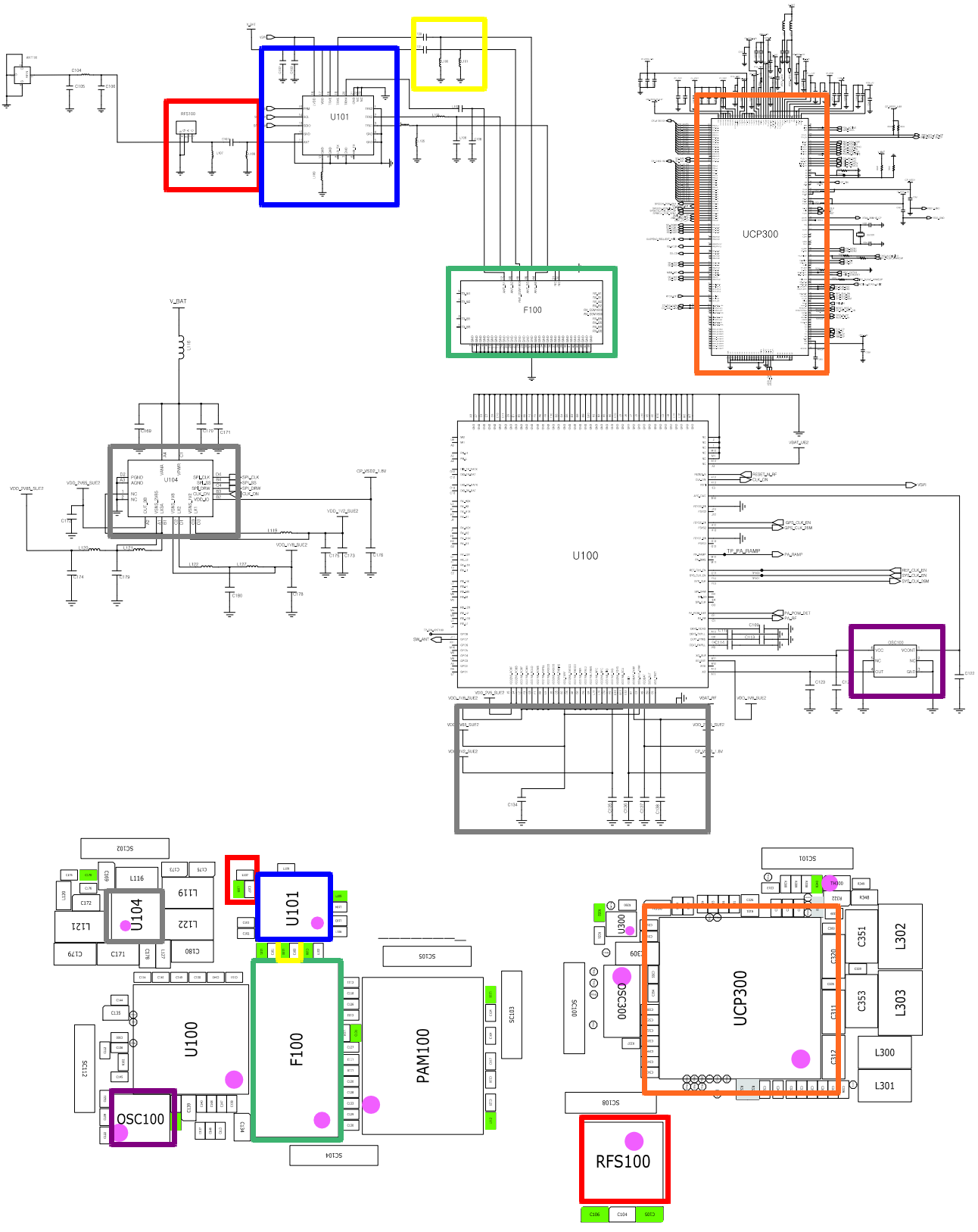
8-3-14. WCDMA Band2 / GSM1900 RX



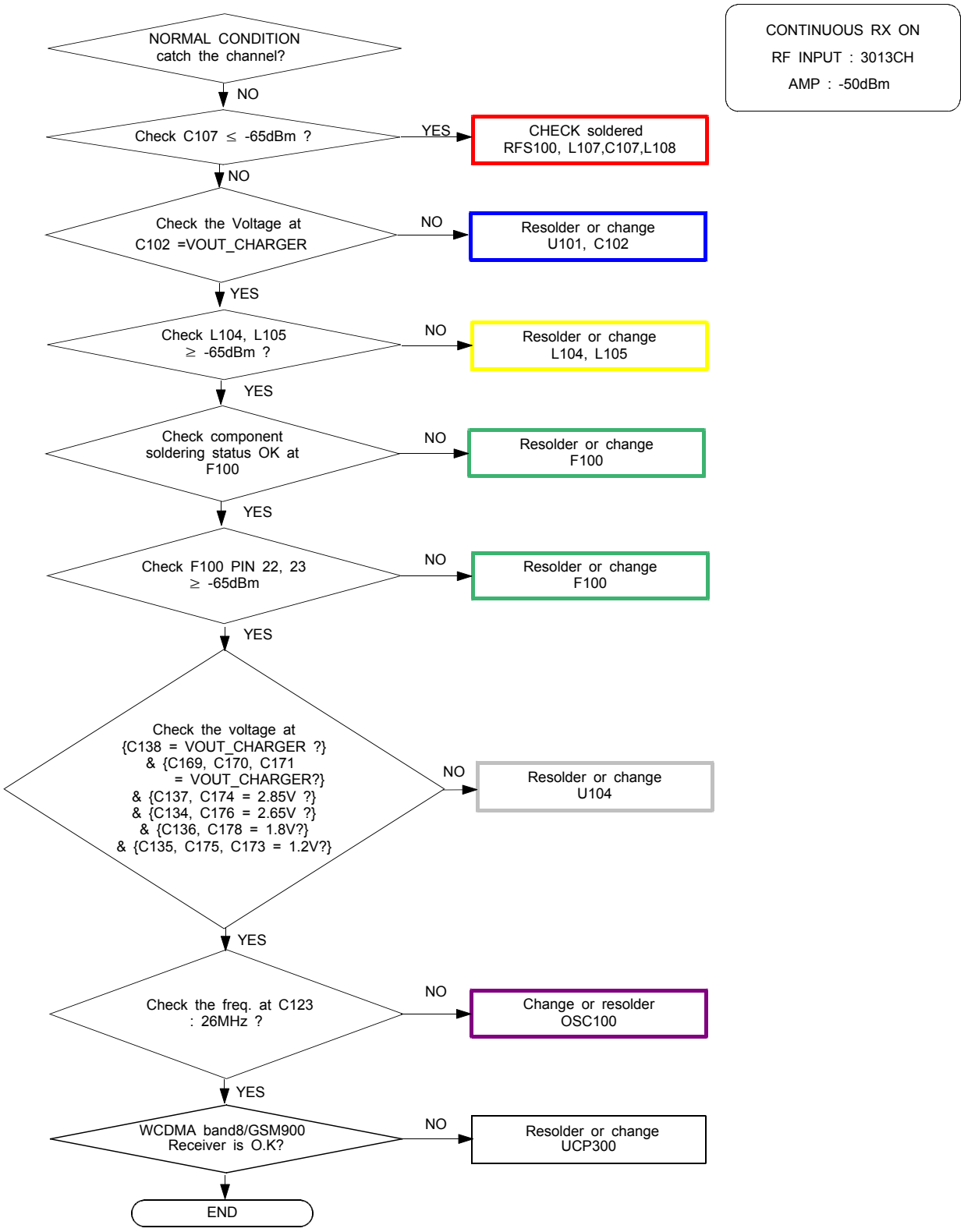


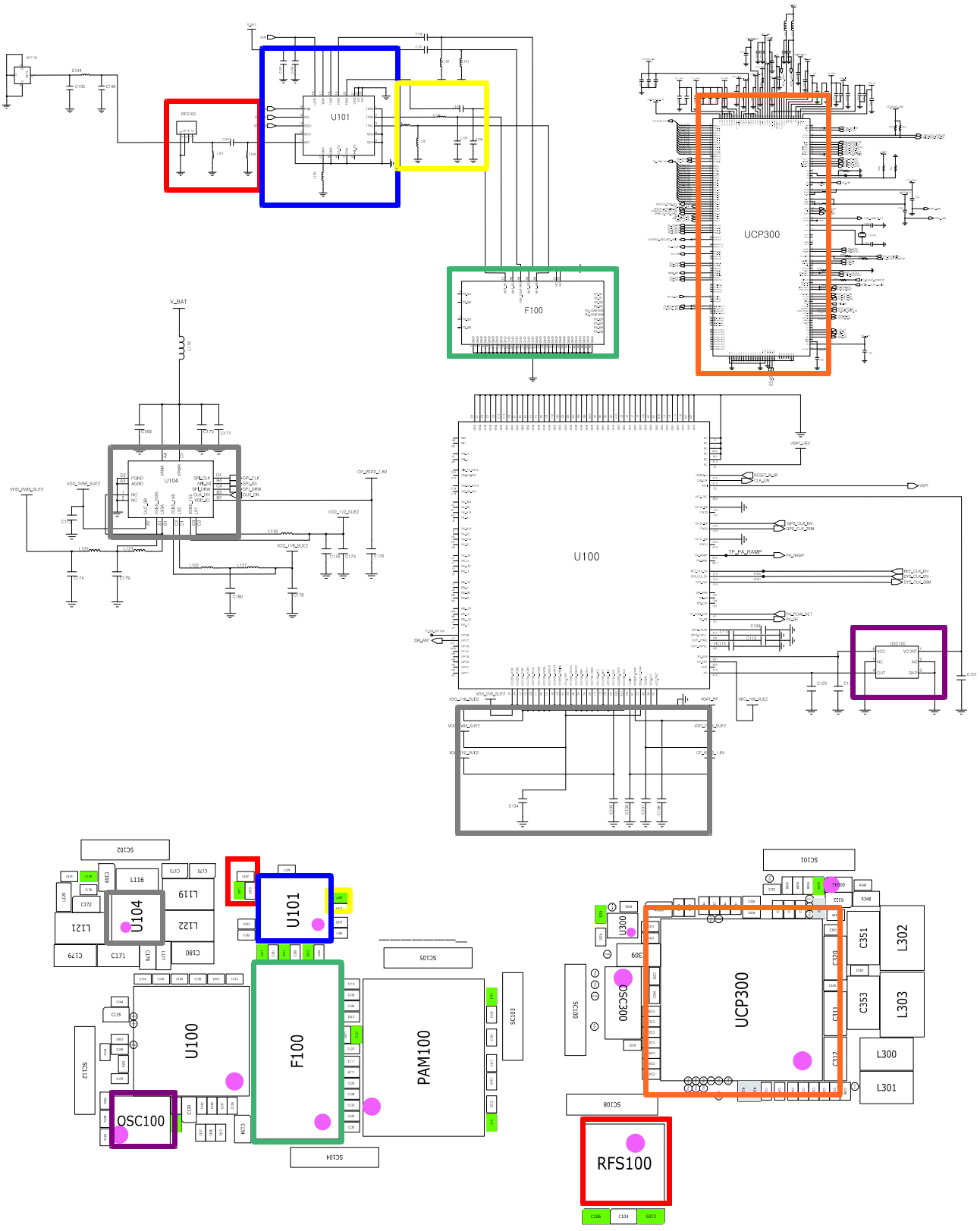
8-3-15. WCDMA Band5 / GSM 850 RX





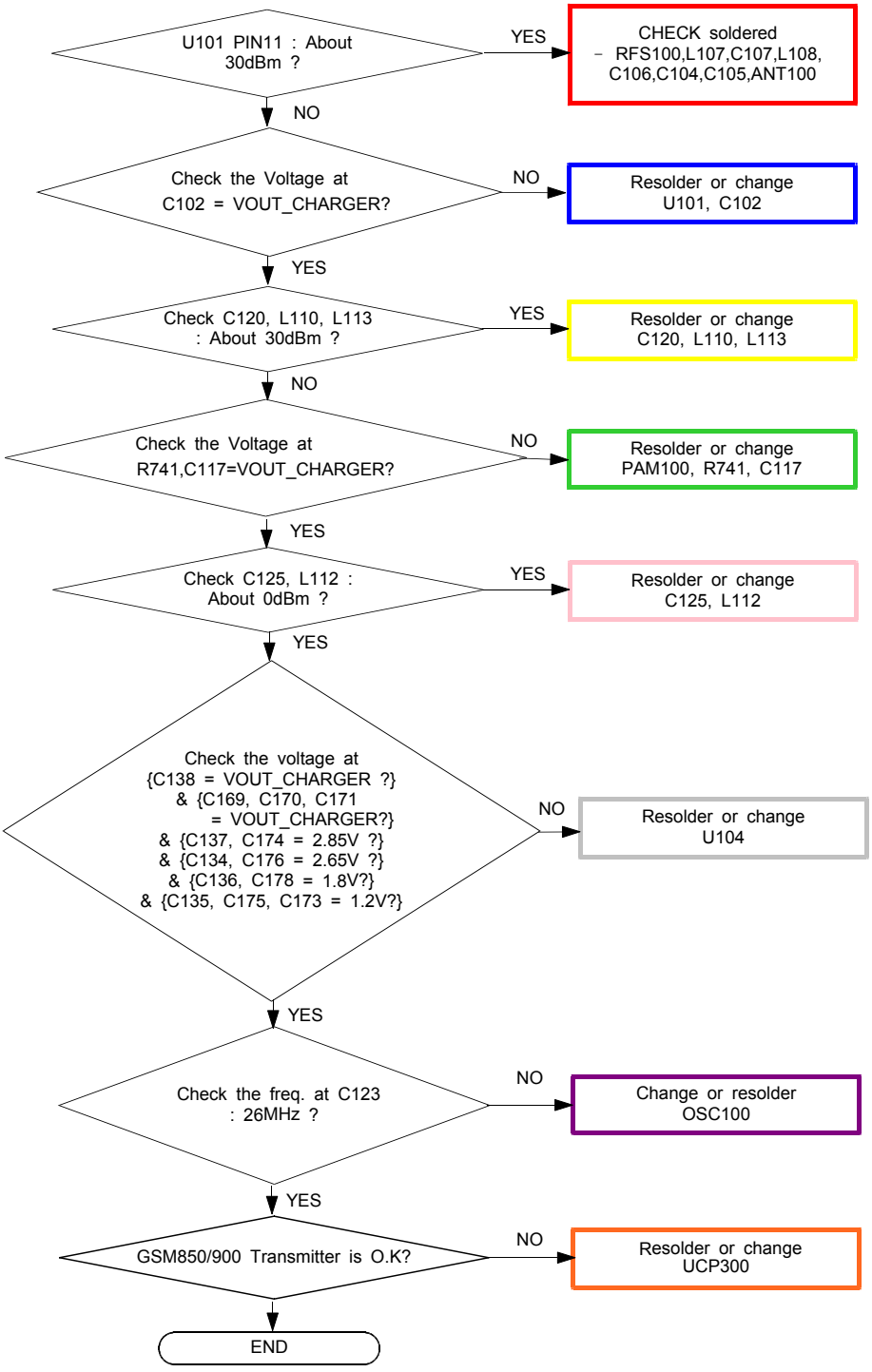
8-3-16. WCDMA Band8 / GSM900 RX

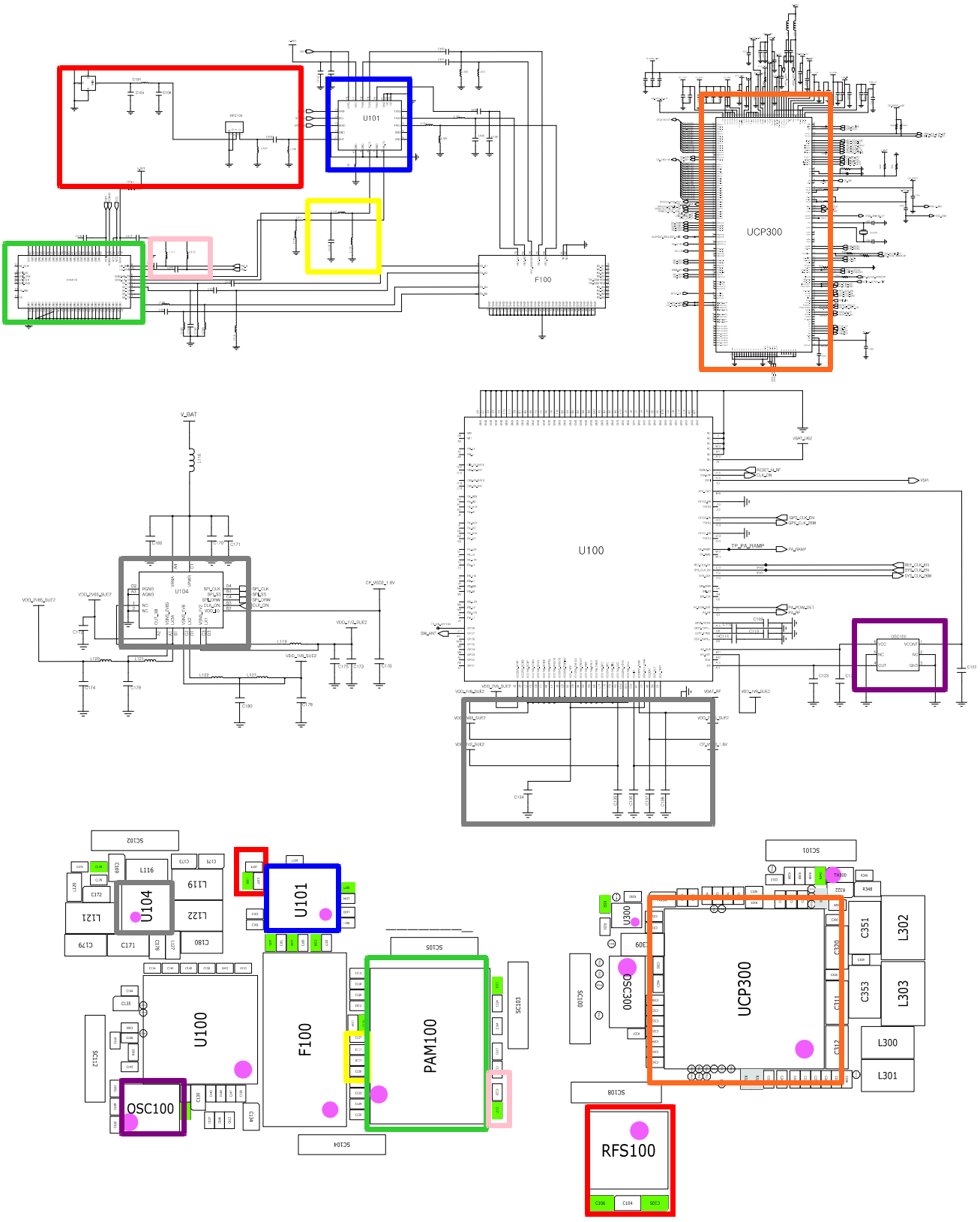




8-3-17. GSM850/GSM900 TX

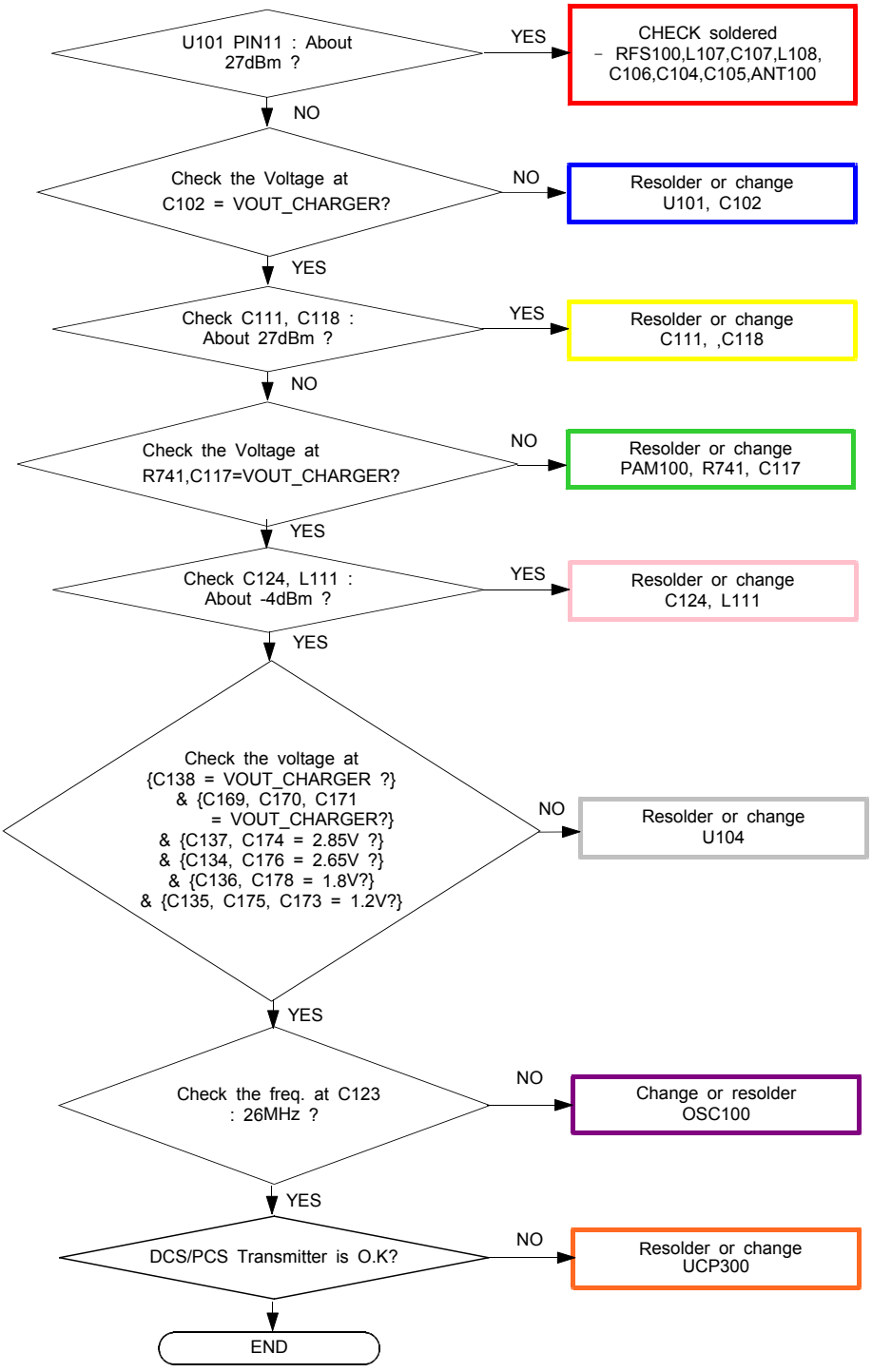
CONTINOUS TX ON CONDITION
TX POWER DAC:14500 CODE APPLIED
GSM850 CH : 190
GSM900 CH : 62
RBW : 100KHz
VBW : 100KHz
SPAN : 10MHz
REF LEV. : 10dBm
ATT. : 20dB

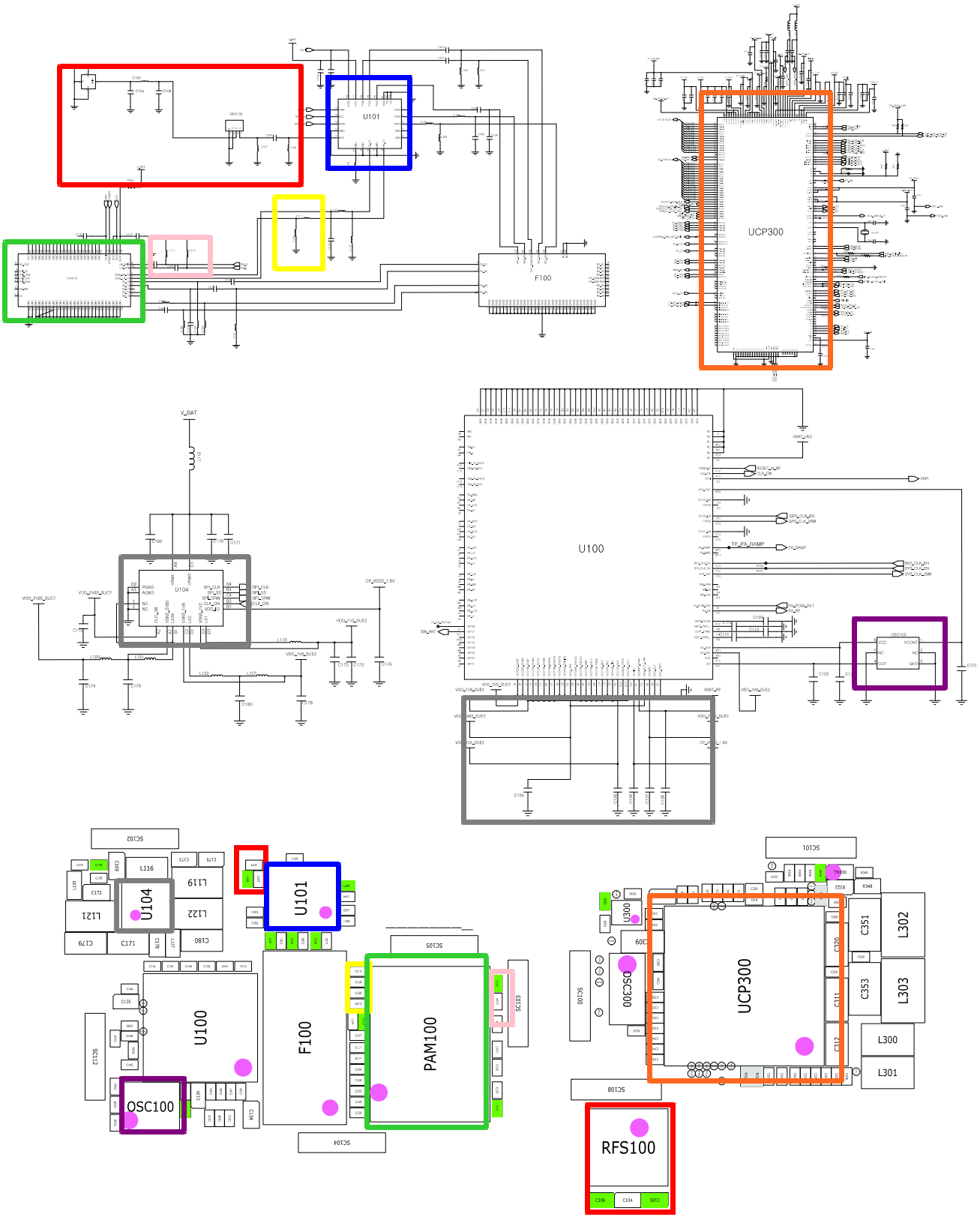




8-3-18. DCS/PCS TX

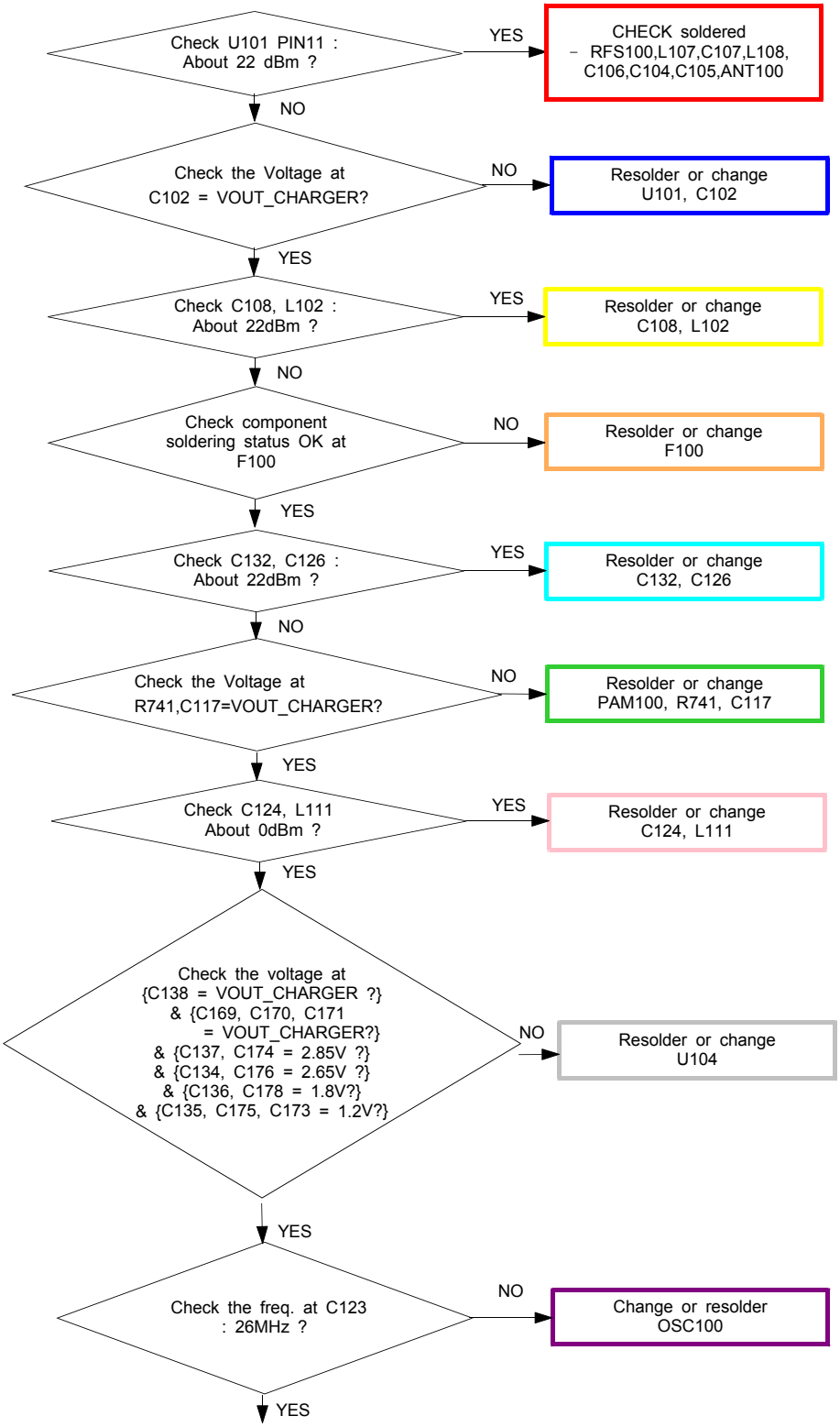
CONTINOUS TX ON CONDITION
TX POWER DAC:14500 CODE APPLIED
DCS CH : 685
PCS CH : 661
RBW : 100KHz
VBW : 100KHz
SPAN : 10MHz
REF LEV. : 10dBm
ATT. : 20dB

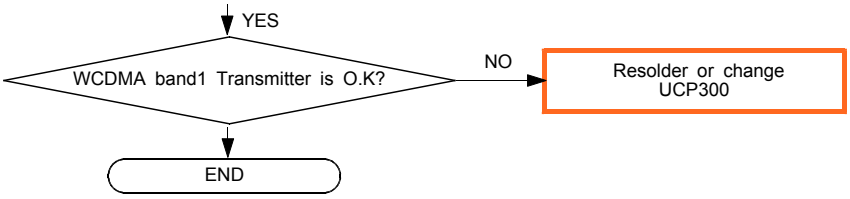


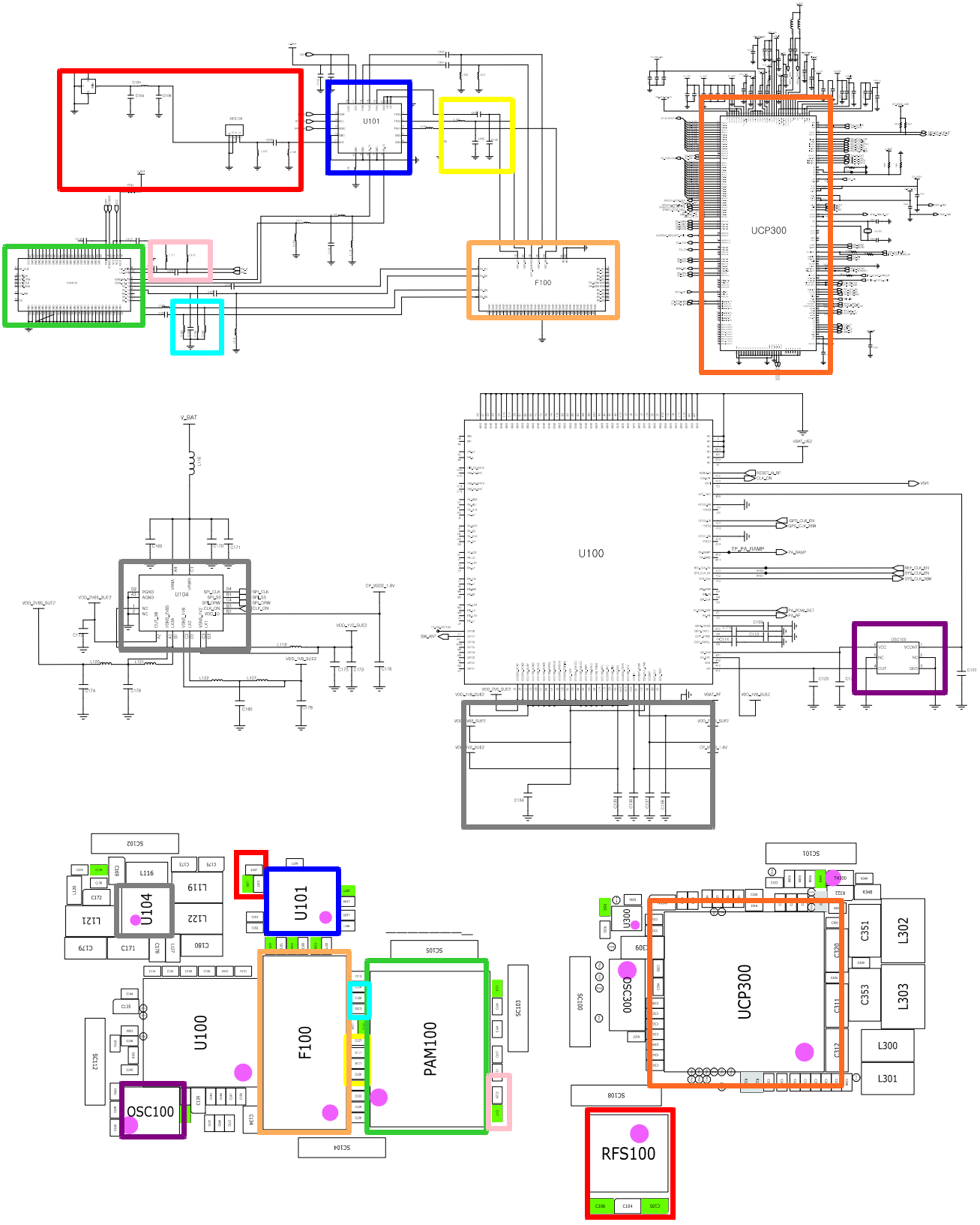


8-3-19. WCDMA BAND1 TX

CONTINOUS TX ON CONDITION
TX POWER DAC:14500 CODE APPLIED
WCDMA Band1 CH : 10700
RBW : 100KHz
VBW : 100KHz
SPAN : 10MHz
REF LEV. : 10dBm
ATT. : 20dB

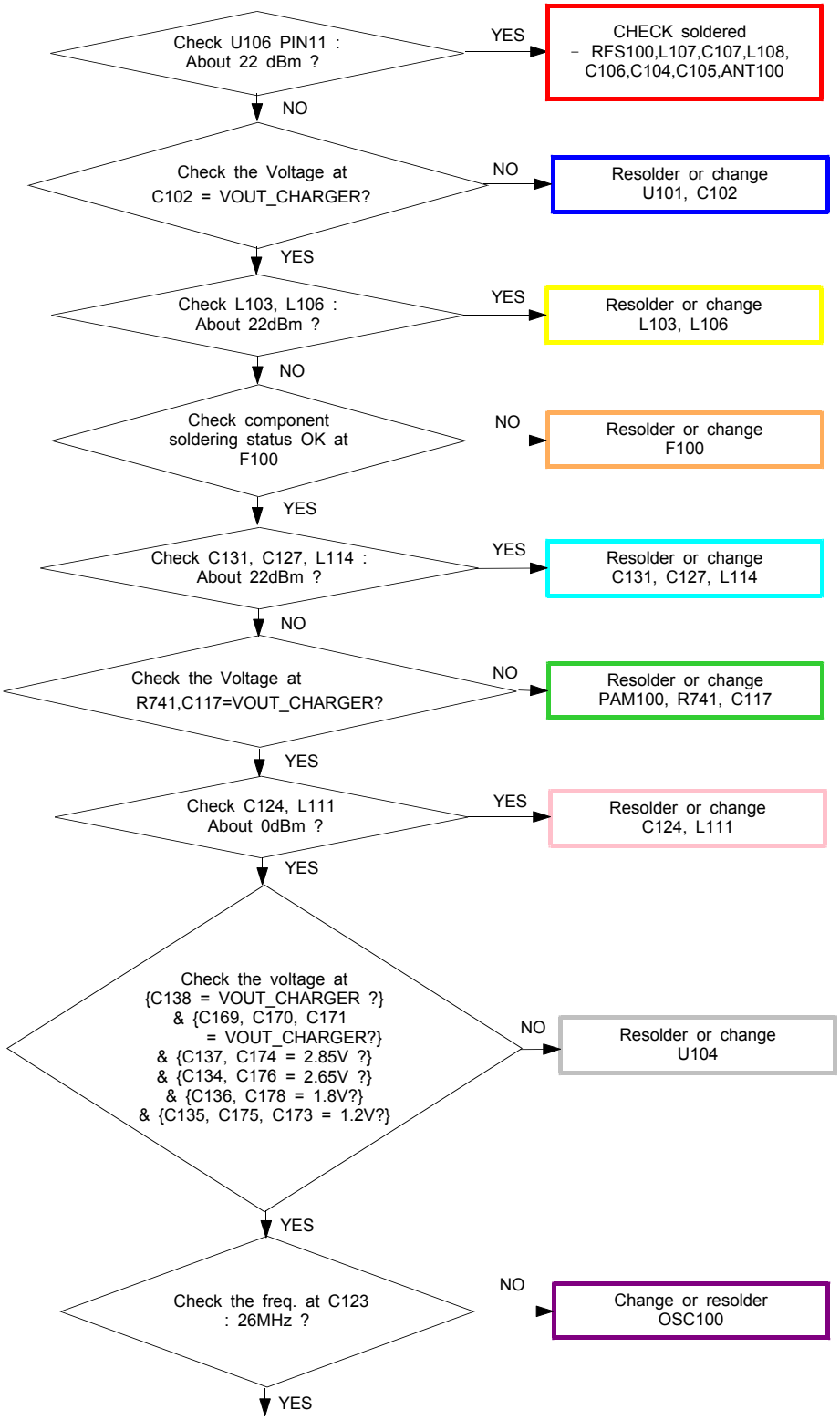


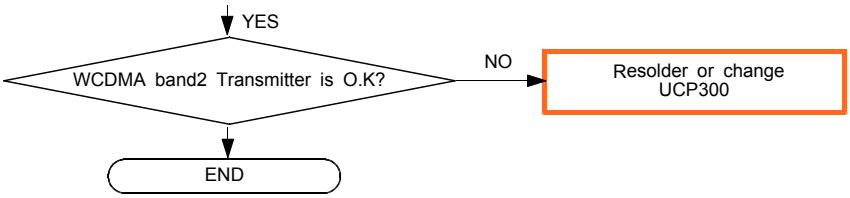


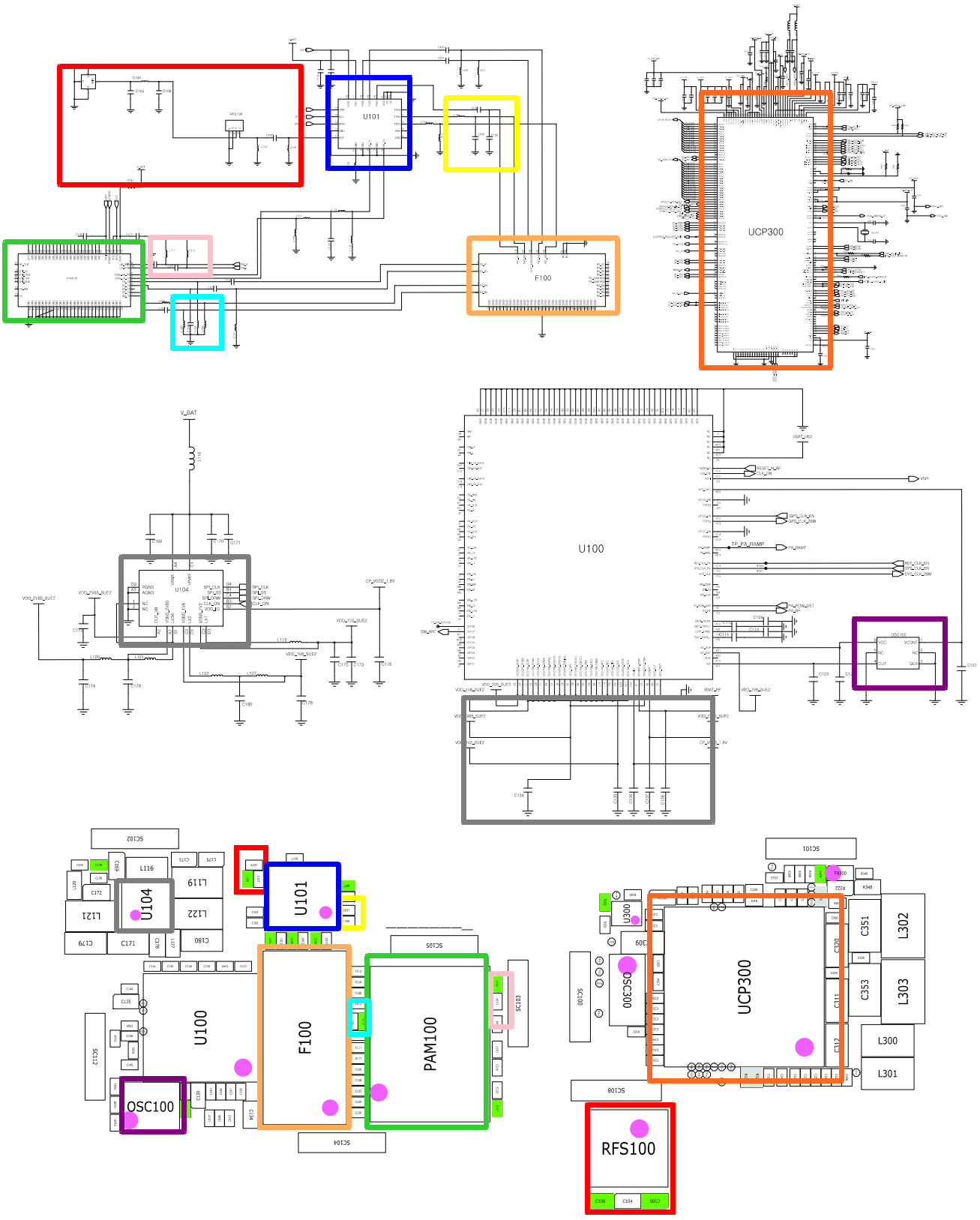


8-3-20. WCDMA BAND2 TX

CONTINOUS TX ON CONDITION
TX POWER DAC:14500 CODE APPLIED
WCDMA Band2 CH : 9880
RBW : 100KHz
VBW : 100KHz
SPAN : 10MHz
REF LEV. : 10dBm
ATT. : 20dB

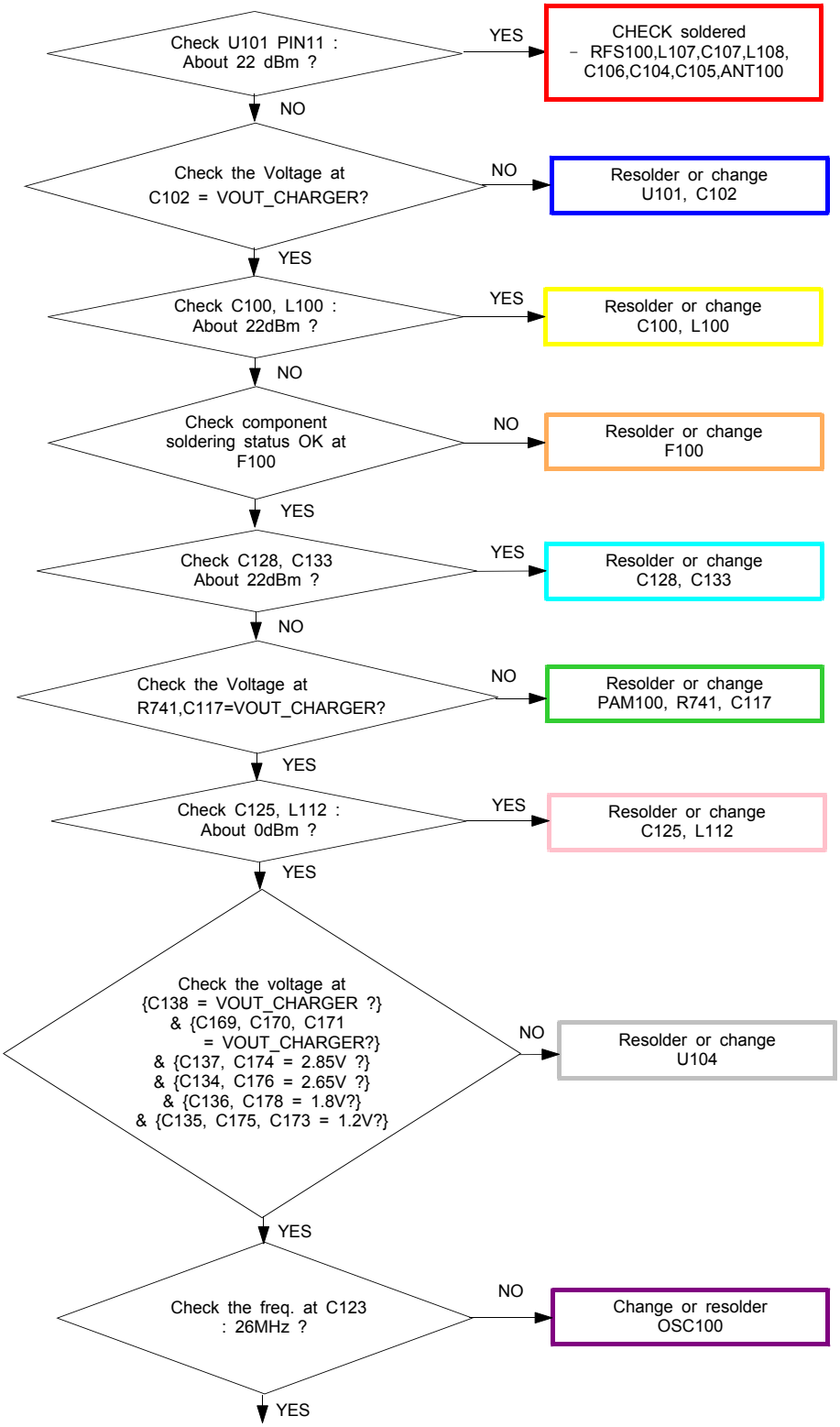


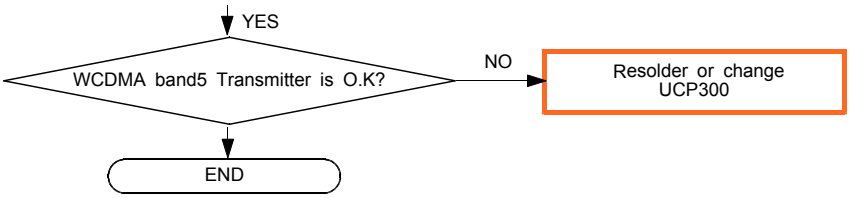


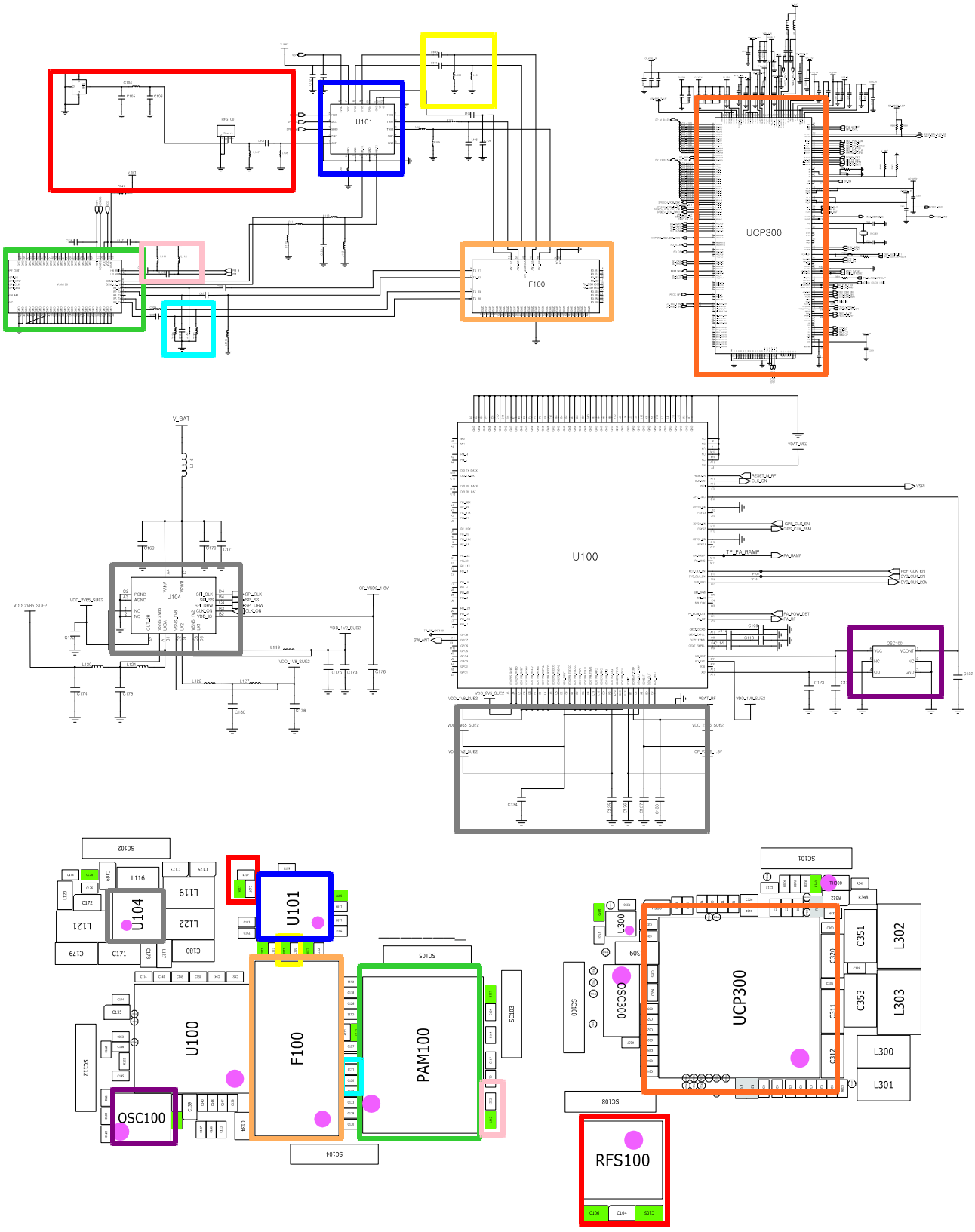


8-3-21. WCDMA BAND5 TX

CONTINOUS TX ON CONDITION
TX POWER DAC:14500 CODE APPLIED
WCDMA Band5 CH : 4408
RBW : 100KHz
VBW : 100KHz
SPAN : 10MHz
REF LEV. : 10dBm
ATT. : 20dB

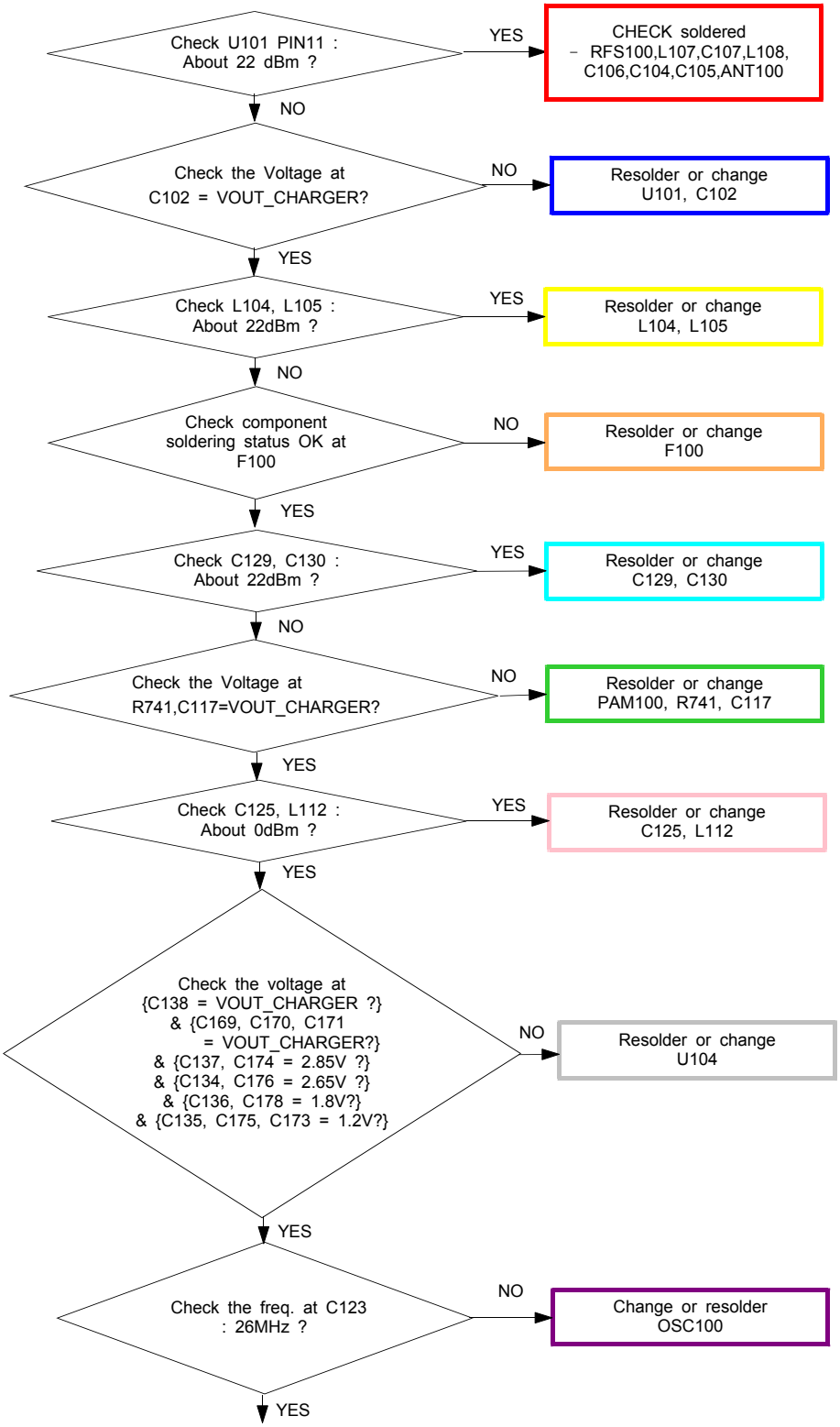


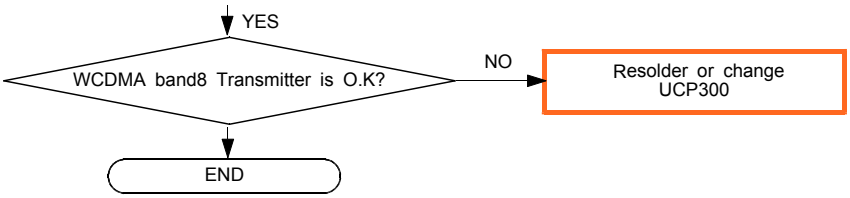


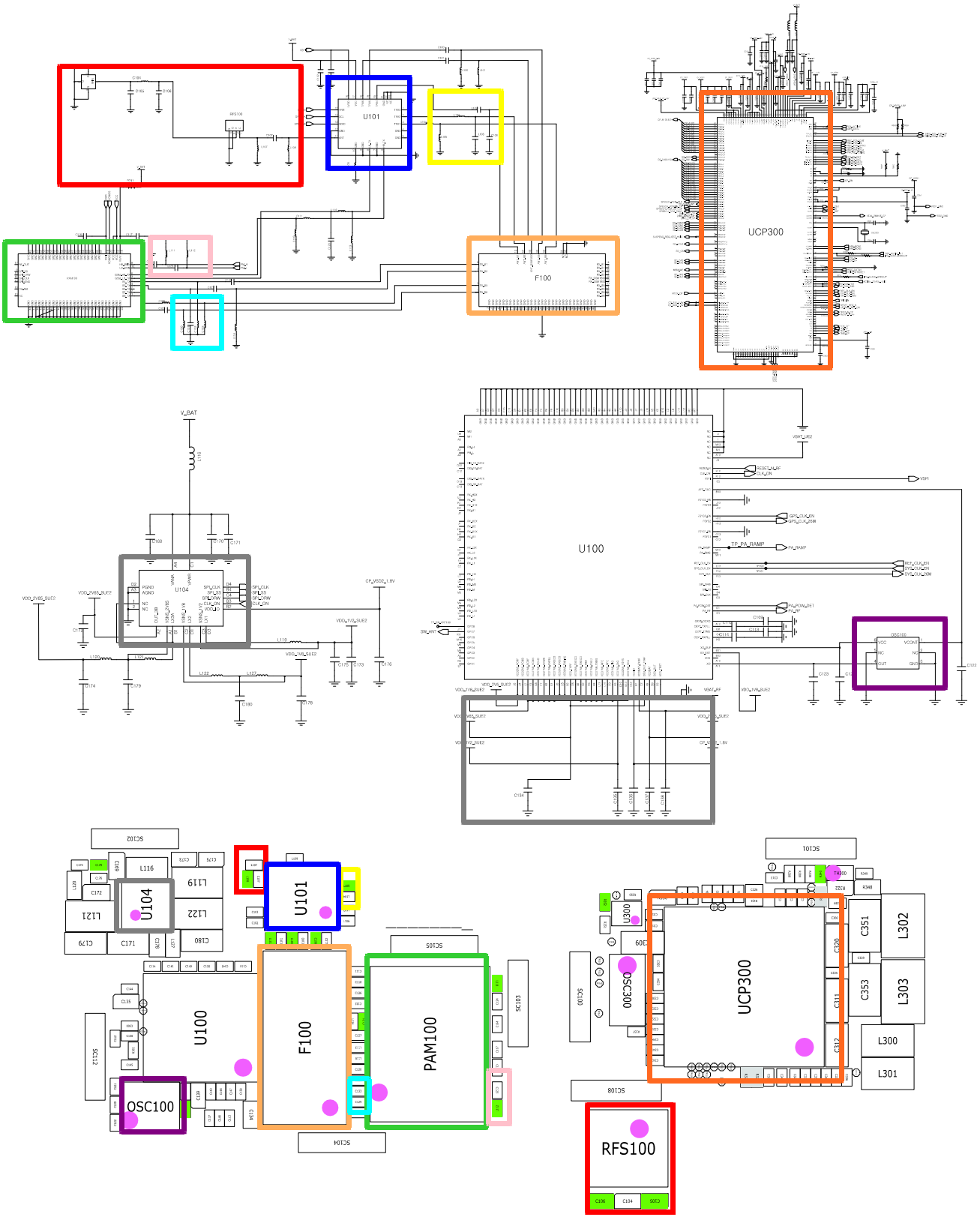


8-3-22. WCDMA BAND8 TX

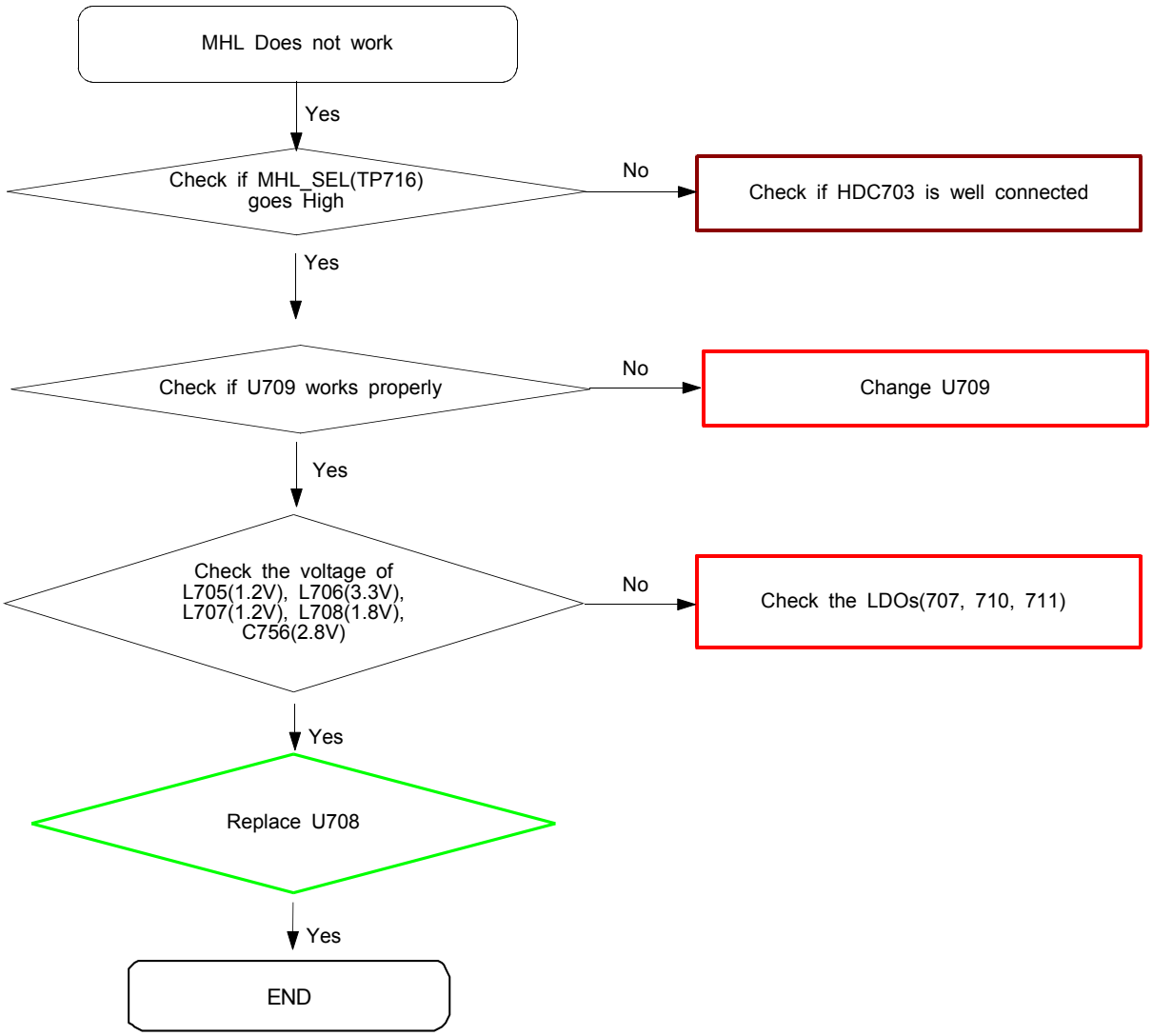
CONTINOUS TX ON CONDITION
TX POWER DAC:14500 CODE APPLIED
WCDMA Band2 CH : 3013
RBW : 100KHz
VBW : 100KHz
SPAN : 10MHz
REF LEV. : 10dBm
ATT. : 20dB



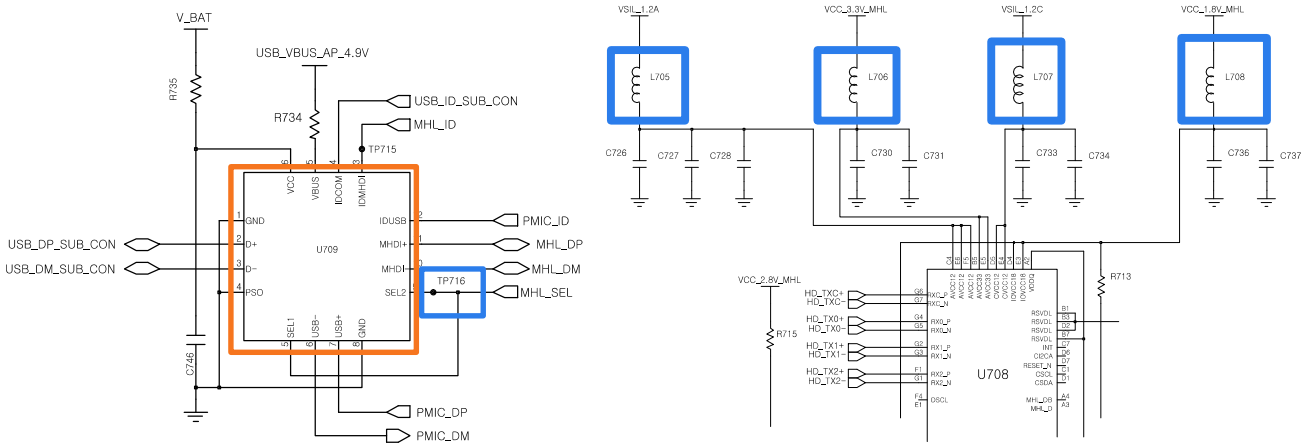


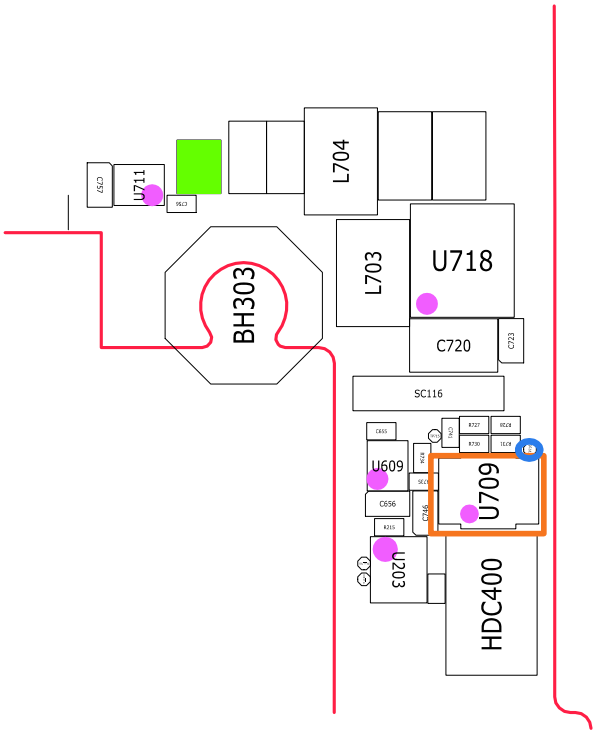


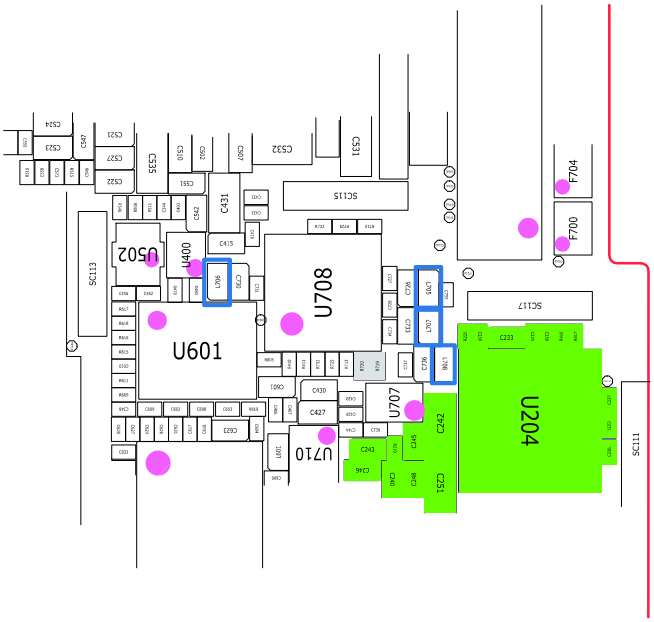
8-3-8. MHL



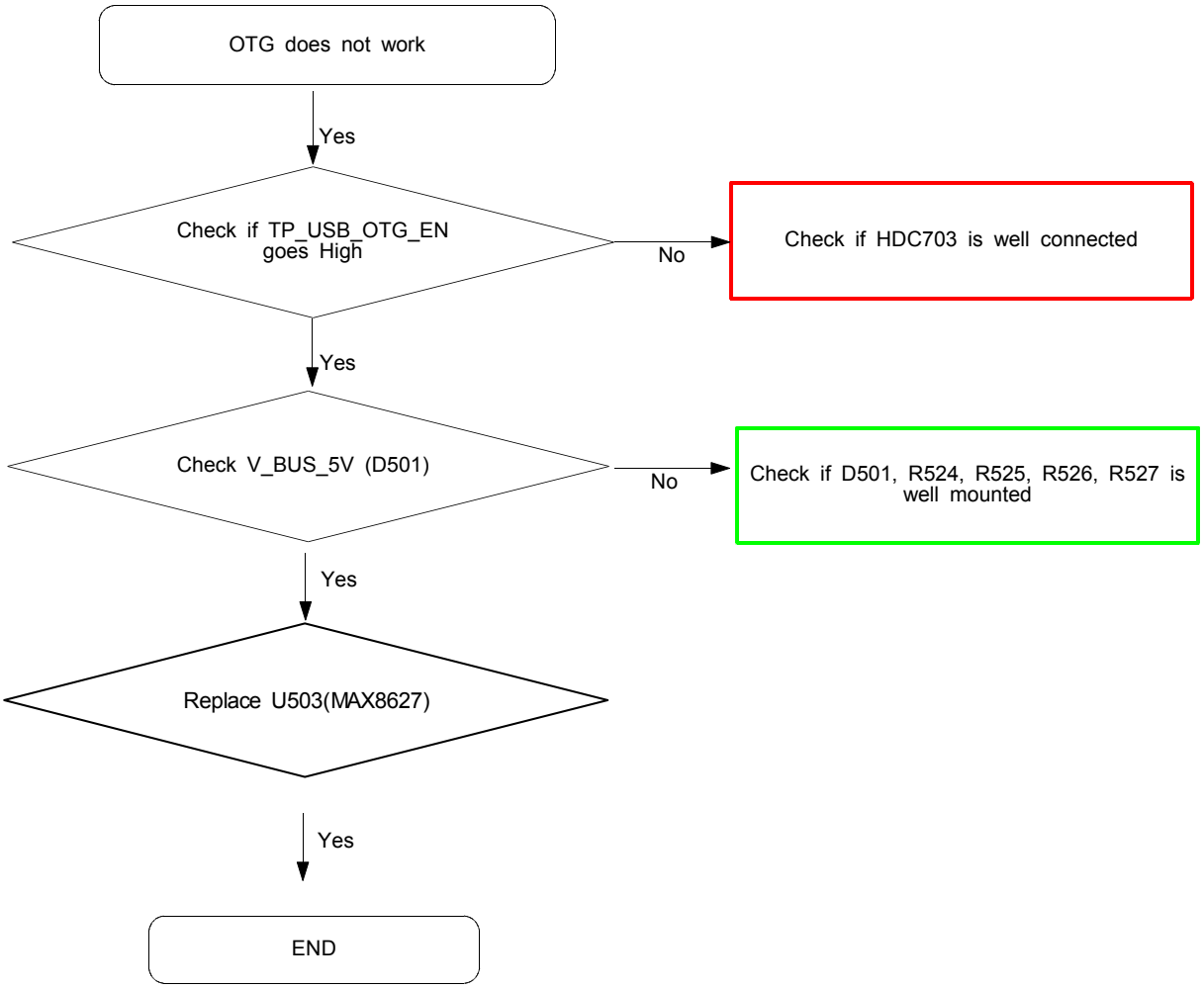
8-3-8. MHL



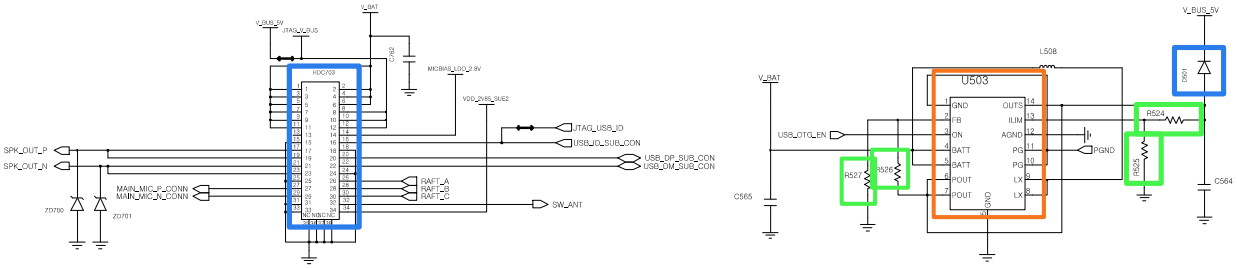


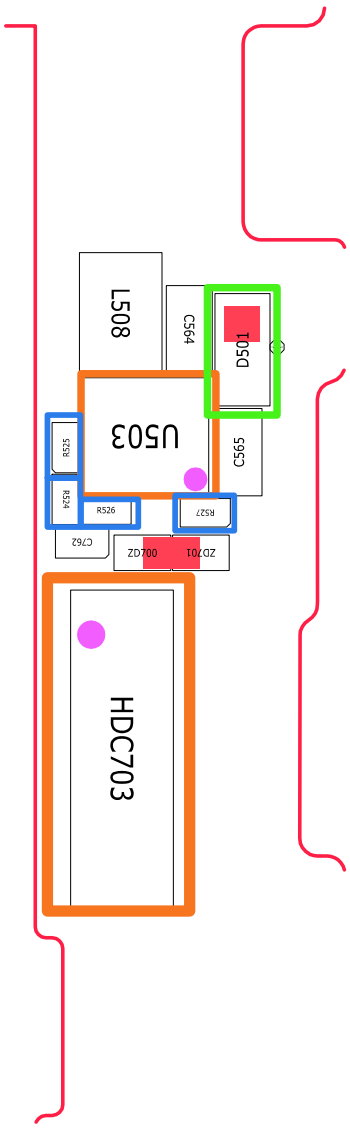


8-3-9. OTG



8-3-9. OTG





8-4. Service Schematics

- NC Point(Top View)

UCP400

: **NC**

2.1 Pin Assignment Diagram

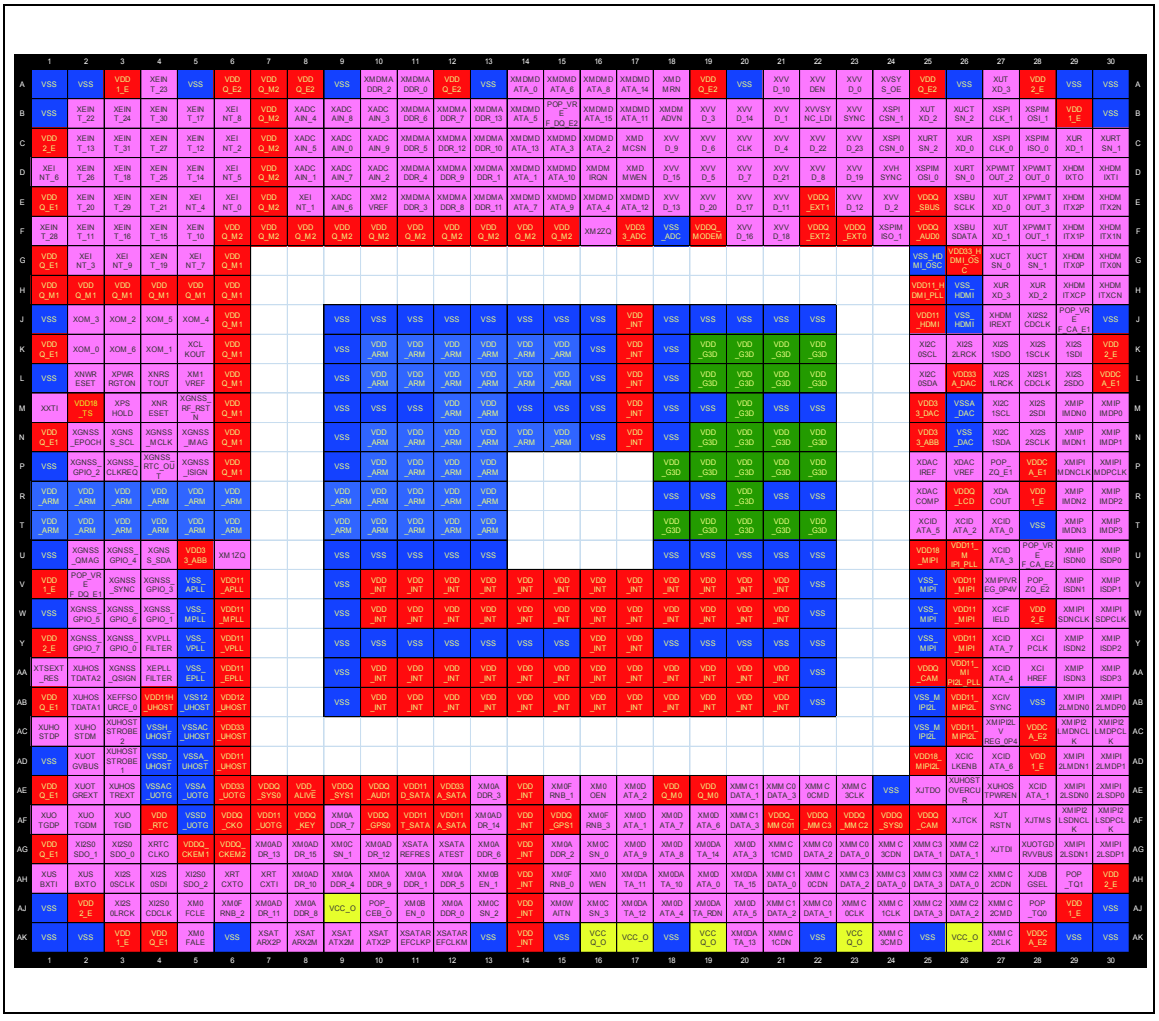


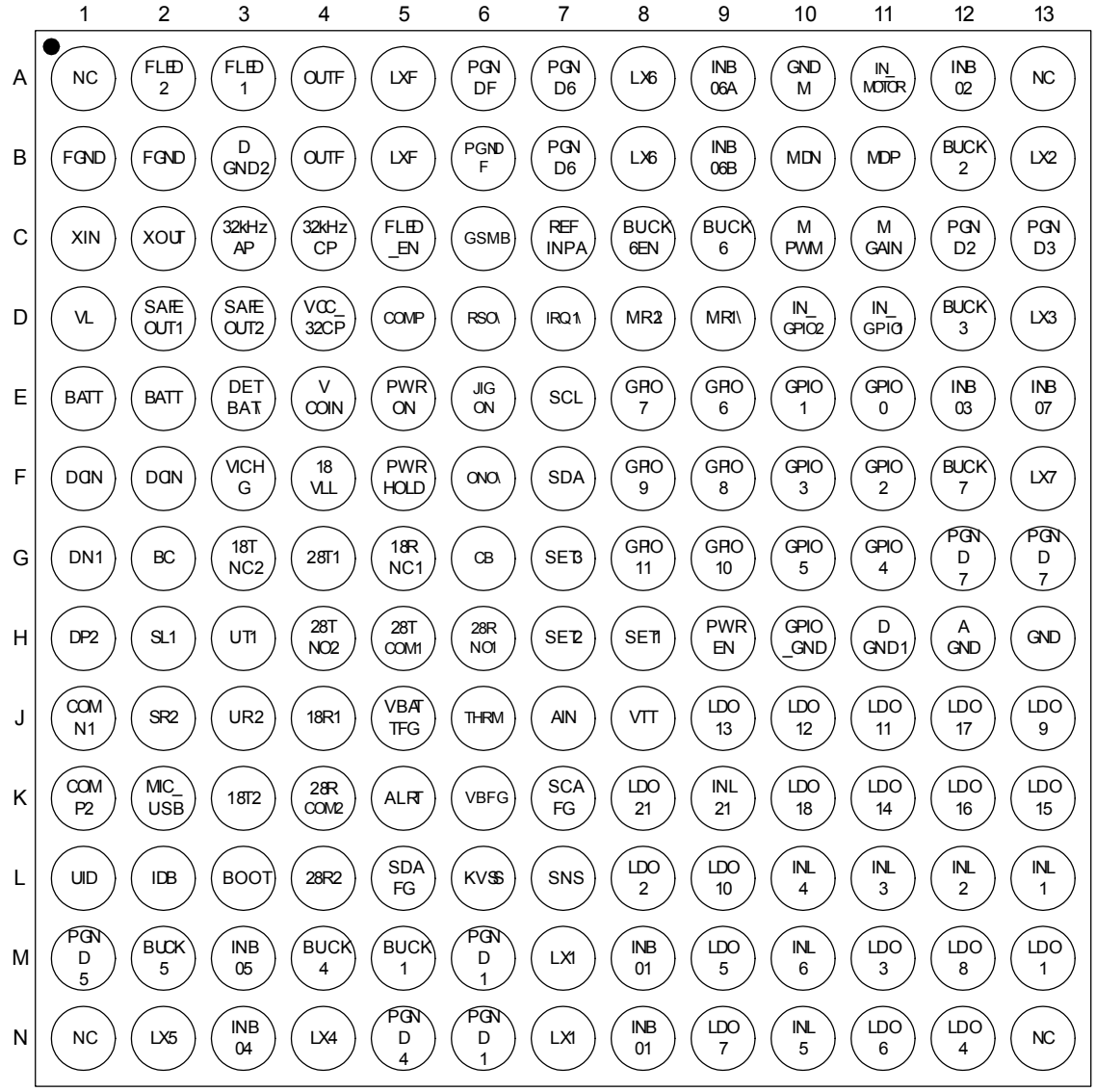
Figure 2-1 S5PC210 Pin Map(756-FCMSP) Top View

UCP300

XG626 Ball Map (Bottom View) 6 / 15/2010 7.5x7.5 FBGA

	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
A	NC	MEM_A_8	MEM_BFCLKO_1	MEM_SDCLKO	MEM_A_0	MEM_BC0_n	MEM_A_1	MEM_A_2	MEM_A_3	MEM_A_4	MEM_AD_9	FCDP_RBn	VPLL	VDD_VBAT_SD2	SD2_SW	SD2_SW	NC	A
B	MEM_A_9	MEM_A_23	MEM_BFCLKO_0	MEM_CKE	MEM_RD_n	MEM_WR_n	VDD_IO18	MEM_BC2_n	MEM_A_6	FWP	MEM_CAS_n	DSP_AUDIO_IN1	x	VIO_12	x	x	VSS_SD2	B
C	MEM_A_10	MEM_A_22	xx		x	MEM_A_5	x	x	MEM_A_7	x	x	x	x	VUSB_PD	VDD_VSD2	SD2_FB	VDD_VBAT_SD1	C
D	MEM_A_11	MEM_A_21	x	VSS	MEM_AD_13	MEM_AD_12	MEM_AD_11	MEM_AD_7	VSS	MEM_AD_3	x	x	x	ANAMON	SD1_FB	x	SD1_SW	D
E	MEM_A_12	MEM_A_20	x	MEM_RAS_n	VDDCORE	VDDCORE_EBU	MEM_AD_8	VDDCORE	MEM_AD_6	MEM_AD_5	x	x	x	VSS	FSS	x	SD1_SW	E
F	MEM_A_13	MEM_BC1_n	VDD_IO18	VSS	MEM_AD_15	xx		x	MEM_AD_4	x	x	TRIG_B	x	VRTC	VDD_VBAT_PMU	VUSB_ANA	VSS_SD1	F
G	MEM_A_14	MEM_BC3_n	MEM_A_19	MEM_BE0_n	MEM_BE1_n	x	MEM_AD_1	MEM_ADV_n	MEM_AD_2	VSS	x	xxx			x	VPMU	VSIM	G
H	MEM_A_15	MEM_A_17	x	MEM_CS2_n	MEM_CS3_n	x	MEM_AD_0	MEM_AD_10	VDDCORE	RESERVED	x	M1	x	x	AGND	ON1	VUSB_IO	H
J	VDD_IO18	MEM_A_16	MEM_A_18	MEM_CS0_n	MEM_CS1_n	MEM_AD_14	VSS	x	x	VSS	x	M2	M3	M4	RESET_PWRDWN_N	ON2_N	VREF	J
K	MEM_WAIT_n	VDD_MIPI	x	VDDCORE	VSS	x	VDD_IO18	EINT3	VDDCORE	VDD_IO18	ETM11_TRACECLK	x	ETM11_TRACEPKT4	TM_EN	REF_CLK_EN	RESET_BB_N	ETM11_TRACEPKT7	K
L	F32K	VSS	x	VSS	MIPI_HSI_RX_RDY	x	MIPI_HSI_TX_FLG	VSS	ETM11_TRACEPKT5	VDD_MMC	MMCI1_CMD	x	ETM11_TRACEPKT6	ETM11_TRACEPKT2	x	ETM11_TRACEPKT3	ETM11_TRACEPKT1	L
M	OSC32K	VSS	MIPI_HSI_TX_RDY	MIPI_HSI_RX_FLG	MIPI_HSI_TX_WAKE	xx		x	EINT1	EINT2	x	MMCI1_DAT_3	MMCI1_DAT_0	MMCI1_DAT_2	MMCI1_CLK	MMCI1_DAT_1	ETM11_TRACEPKT0	M
N	VDD_RTC	USB_ID	x	VSS_USB	MIPI_HSI_RX_DATA	MIPI_HSI_TX_DATA	VDD_IO18	I2C1_SCL	VPP	CLKOUT0	x	x	MMCI1_CD	T_OUT0	x	I2S2_CLK1	I2S2_CLK0	N
P	USB_TEST	VBUS	x	VDD_USB_ANA	MIPI_HSI_RX_WAKE	SYS_CLK	VSS_PLL	CLKOUT2	I2C1_SDA	VSS	HW_MON2	xx		x	T_OUT1	I2S2_TX	I2S2_RX	P
R	USB_DMINUS	VDD_USBIO	xx		x	VDD_PLL	x	x	VSS	VDDCORE	x	HW_MON1	RESET2_N	NC	x	I2S2_WA1	I2S2_WA0	R
T	USB_DPLUS	USB_TUNE	VDD_USB_PD	CC_RST	CC_IO	VDD_SIM	DMINUS	VDD_DIGRF	XRESET_N	Di3_TX_DATX	Di3_TX_DAT	TCK	TRIG_IN	TRST_n	USIF1_TXD_MTSR	USIF1_RXD_MRST	USIF1_SCLK	T
U	NC	VSS	VDD_IO12	CC_CLK	HSIC_USB_DATA	HSIC_USB_STRB	DPLUS	ALERT_N	SYSCLKEN	Di3_RX_DATX	Di3_RX_DAT	TMS	TDI	TDO	USIF1_RTS_N	USIF1_CTS_N	NC	U
	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

U501



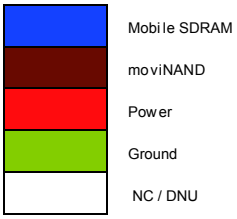
TOP VIEW

UME300

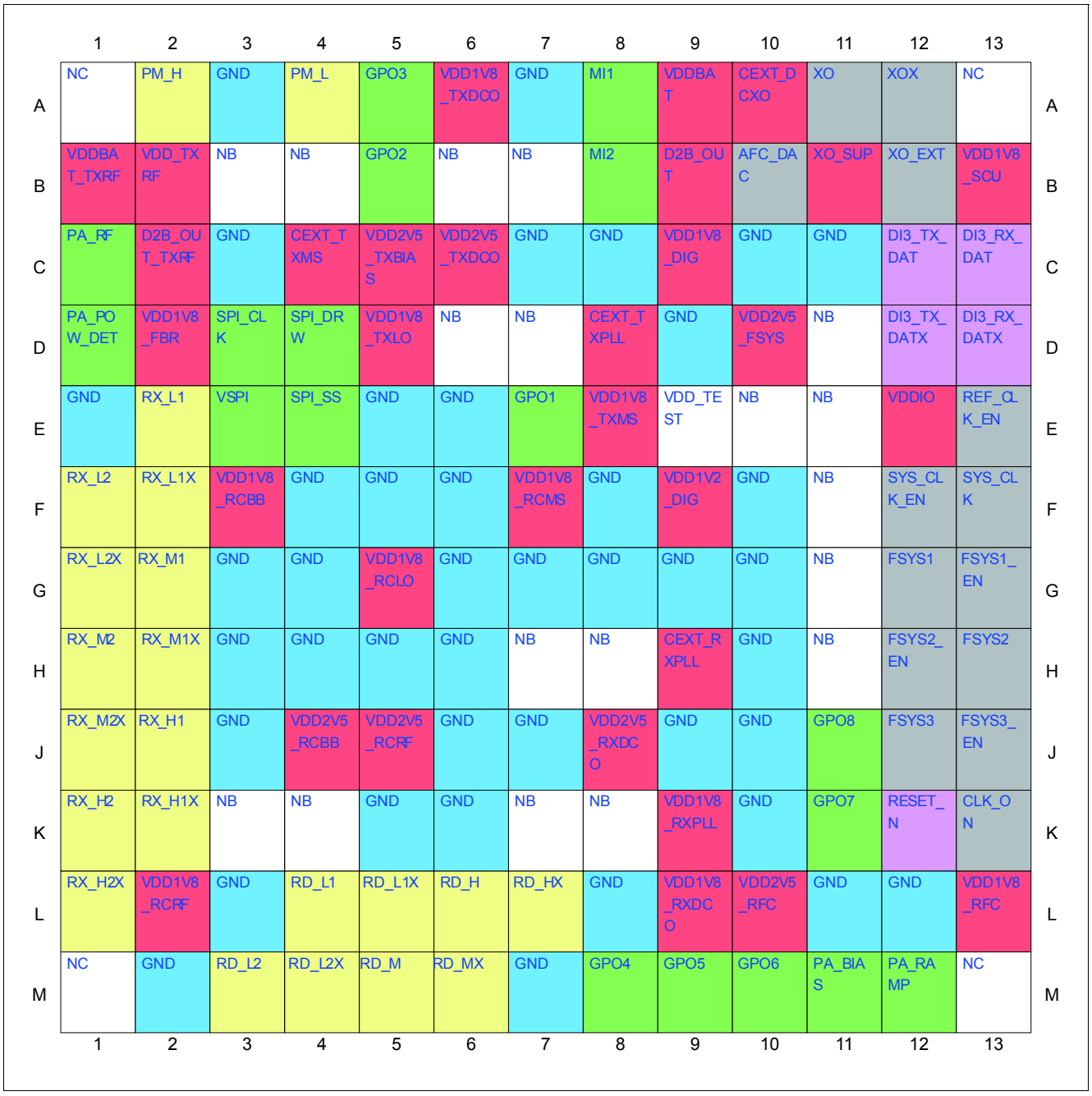
3. PIN CONFIGURATION

	1	2	3	4567				8	9	10	11	12	13	14
A				DNU		DNU			DNU		DNU			
B		DNU											DNU	
C														
D	DNU													DNU
E														
F														
G														
H	DNU	NC	DAT0m	DAT1m	DAT2m	NC	NC	VDDQd	VSSQd	VSSd	VDDd	VSSQd	NC	DNU
J	NC	DAT3m	DAT4m	DAT5m	DAT6m	DAT7m	NC	NC	NC	NC	NC	DQ15d	VDDQd	NC
K	VSSd	VDDIm	A4d	VSSQm	NC	VDDQm	NC	NC	NC	NC	NC	DQ14d	DQ13d	VDDQd
L	A5d	A6d	A7d	NC								DQ11d	DQ12d	VSSQd
M	A12d	A11d	A8d		NC	VDDm	VSSm	NC	NC	NC		DQ10d	DQ9d	DQ8d
N	VDDd	NC	A9d		VDDm					NC		UDQSd	UDMd	VSSQd
P	CKEd	/CSd	NC		VSSm					NC		CKd	VDDQd	VDDd
R	VDDQd	/RASd	/WEd		NC					VSSm		/CKd	VDDQd	VSSd
T	NC	/CASd	NC		NC					VDDm		LDQSd	LDMd	VSSQd
U	BA1d	VSSd	A10d		RSTm	NC	NC	VSSm	VDDm	NC		DQ5d	DQ6d	DQ7d
V	BA0d	A0d	A1d									DQ3d	DQ4d	VSSQd
W	VSSd	VDDd	A2d	VDDQm	CMDm	CLKm	NC	NC	NC	NC	NC	DQ1d	DQ2d	VDDQd
Y	NC	VSSQm	A3d	VDDQm	VSSQm	VSSQd	NC	NC	NC	NC	NC	DQ0d	VDDQd	NC
AA	DNU	NC	VDDQm	VSSQm	VDDQm	VSSQm	NC	VDDQd	VSSQd	NC	VDDd	VSSQd	NC	DNU
AB														
AC														
AD														
AE	DNU													DNU
AF														
AG		DNU											DNU	
AH				DNU		DNU			DNU		DNU			

169 FBGA: Top View (Ball Down)



U100

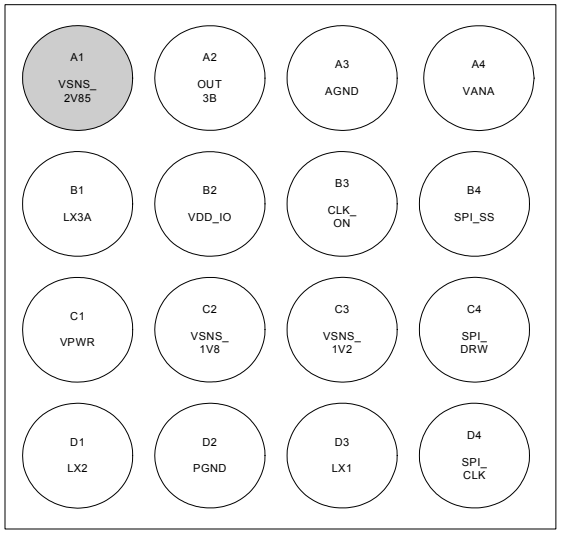


	1	2	3	4	5	6	7	8	9	10	11	12	13	
A	NC	PM_H	GND	PM_L	GPO3	VDD1V8_TXDCO	GND	MI1	VDDBAT	CEXT_DCXO	XO	XOX	NC	A
B	VDDBAT_TXRF	VDD_TXRF	NB	NB	GPO2	NB	NB	MI2	D2B_OUT	AFC_DAC	XO_SUP	XO_EXT	VDD1V8_SCU	B
C	PA_RF	D2B_OUT_TXRF	GND	CEXT_TXMS	VDD2V5_TXBIAS	VDD2V5_TXDCO	GND	GND	VDD1V8_DIG	GND	GND	DI3_TX_DAT	DI3_RX_DAT	C
D	PA_POW_DET	VDD1V8_FBR	SPI_CLK	SPI_DRW	VDD1V8_TXLO	NB	NB	CEXT_TXPLL	GND	VDD2V5_FSYS	NB	DI3_TX_DATX	DI3_RX_DATX	D
E	GND	RX_L1	VSPI	SPI_SS	GND	GND	GPO1	VDD1V8_TXMS	VDD_TEST	NB	NB	VDDIO	REF_CLK_EN	E
F	RX_L2	RX_L1X	VDD1V8_RCBB	GND	GND	GND	VDD1V8_RCMS	GND	VDD1V2_DIG	GND	NB	SYS_CLK_EN	SYS_CLK	F
G	RX_L2X	RX_M1	GND	GND	VDD1V8_RCLO	GND	GND	GND	GND	GND	NB	FSYS1	FSYS1_EN	G
H	RX_M2	RX_M1X	GND	GND	GND	GND	NB	NB	CEXT_RXPLL	GND	NB	FSYS2_EN	FSYS2	H
J	RX_M2X	RX_H1	GND	VDD2V5_RCBB	VDD2V5_RCRF	GND	GND	VDD2V5_RXDCO	GND	GND	GPO8	FSYS3	FSYS3_EN	J
K	RX_H2	RX_H1X	NB	NB	GND	GND	NB	NB	VDD1V8_RXPLL	GND	GPO7	RESET_N	CLK_ON	K
L	RX_H2X	VDD1V8_RCRF	GND	RD_L1	RD_L1X	RD_H	RD_HX	GND	VDD1V8_RXDCO	VDD2V5_RFC	GND	GND	VDD1V8_RFC	L
M	NC	GND	RD_L2	RD_L2X	RD_M	RD_MX	GND	GPO4	GPO5	GPO6	PA_BIAS	PA_RAMP	NC	M
	1	2	3	4	5	6	7	8	9	10	11	12	13	

Figure 2 Ball Diagram PG-WFWLB- 138- 2 (Top View)

U103

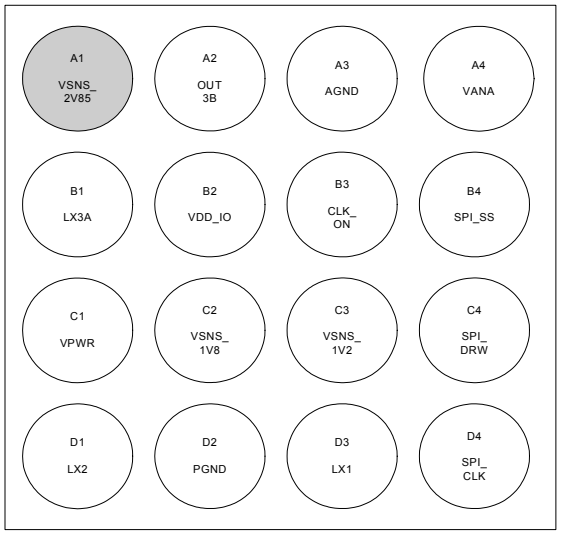
Pin Out



Bumps Down

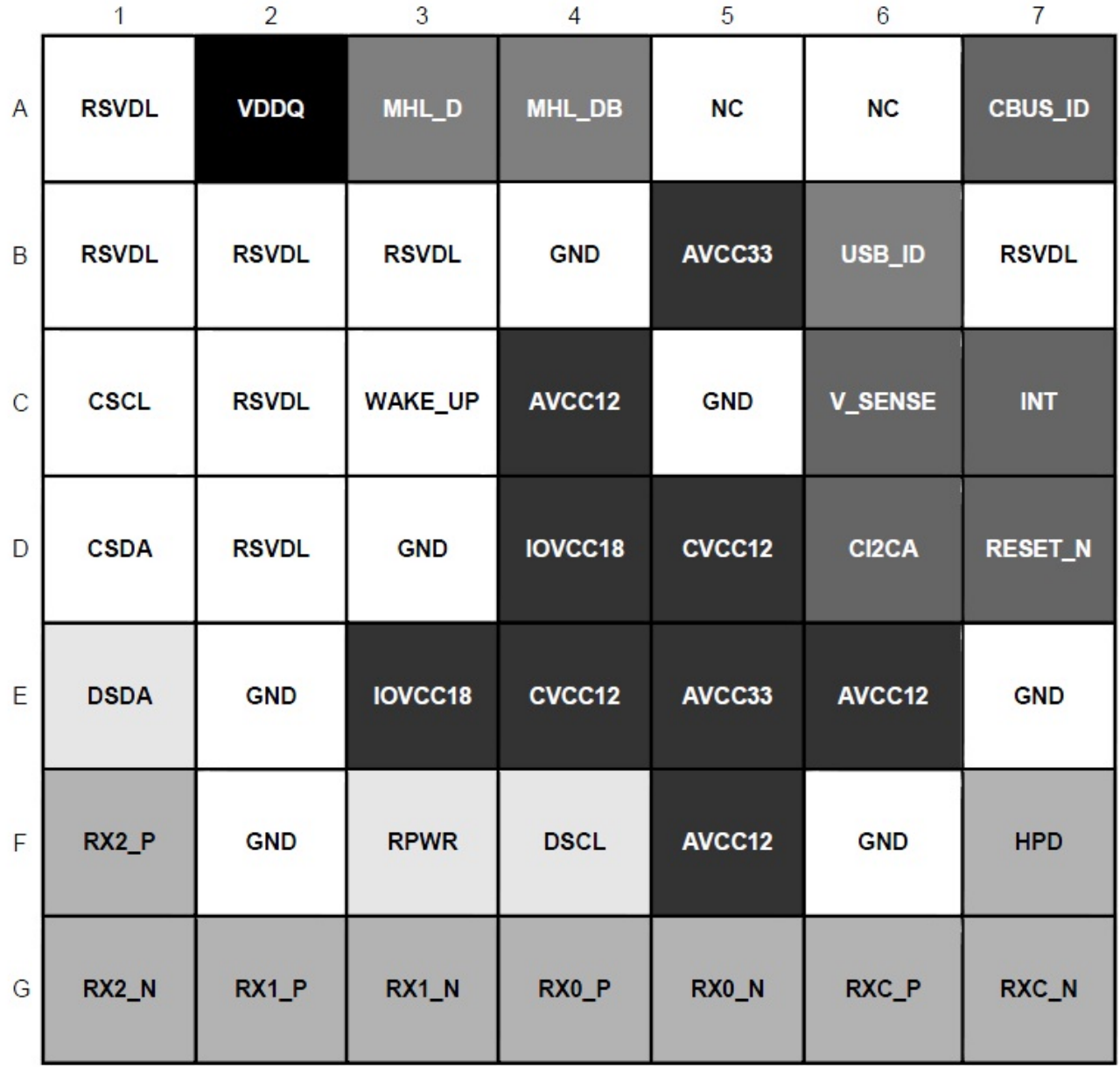
U104

Pin Out



Bumps Down

U708



	1	2	3	4	5	6	7
A	RSVDL	VDDQ	MHL_D	MHL_DB	NC	NC	CBUS_ID
B	RSVDL	RSVDL	RSVDL	GND	AVCC33	USB_ID	RSVDL
C	CSCL	RSVDL	WAKE_UP	AVCC12	GND	V_SENSE	INT
D	CSDA	RSVDL	GND	IOVCC18	CVCC12	CI2CA	RESET_N
E	DSDA	GND	IOVCC18	CVCC12	AVCC33	AVCC12	GND
F	RX2_P	GND	RPWR	DSCL	AVCC12	GND	HPD
G	RX2_N	RX1_P	RX1_N	RX0_P	RX0_N	RXC_P	RXC_N

Figure 2. Ball Diagram (Top View)

U601

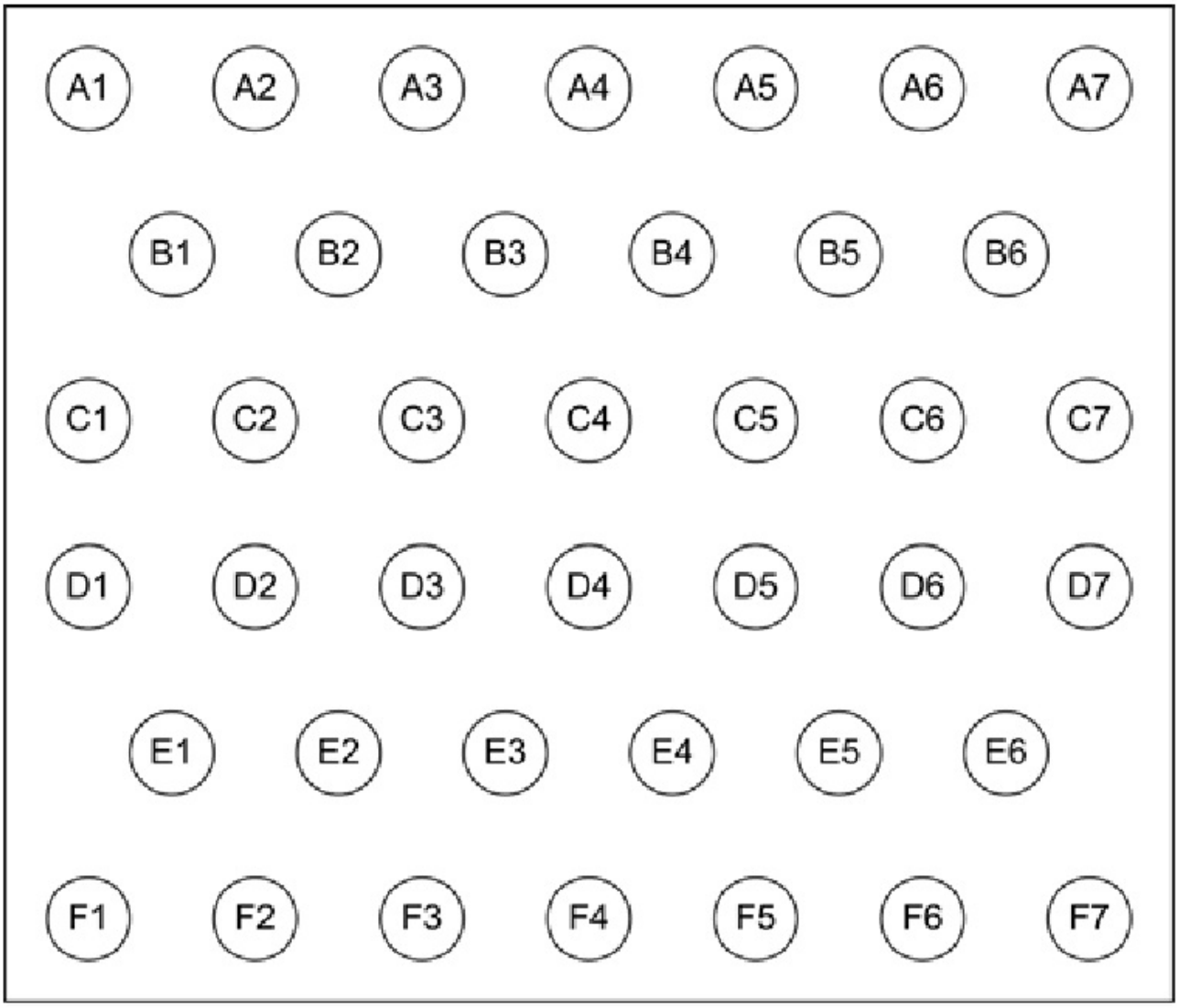
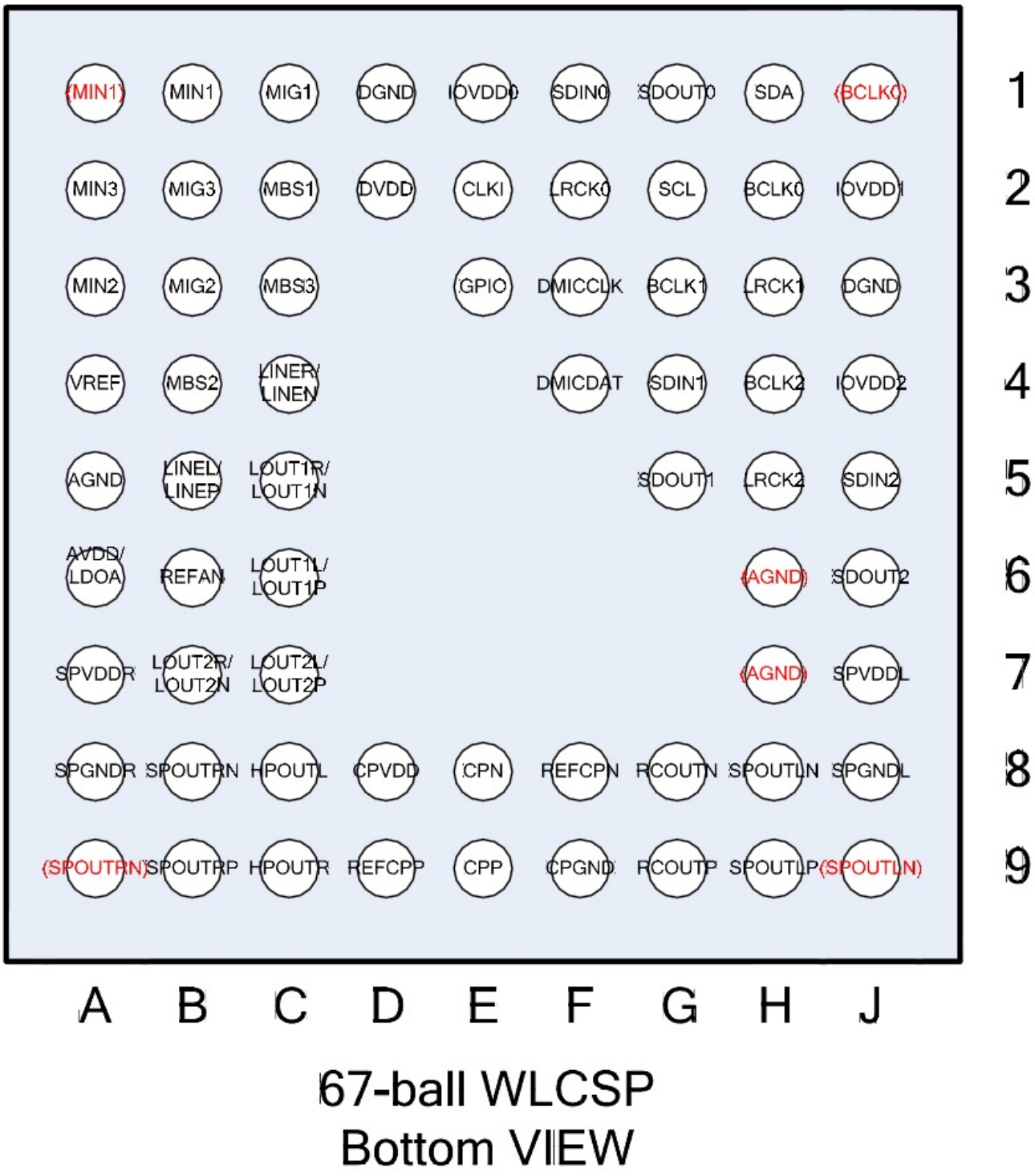


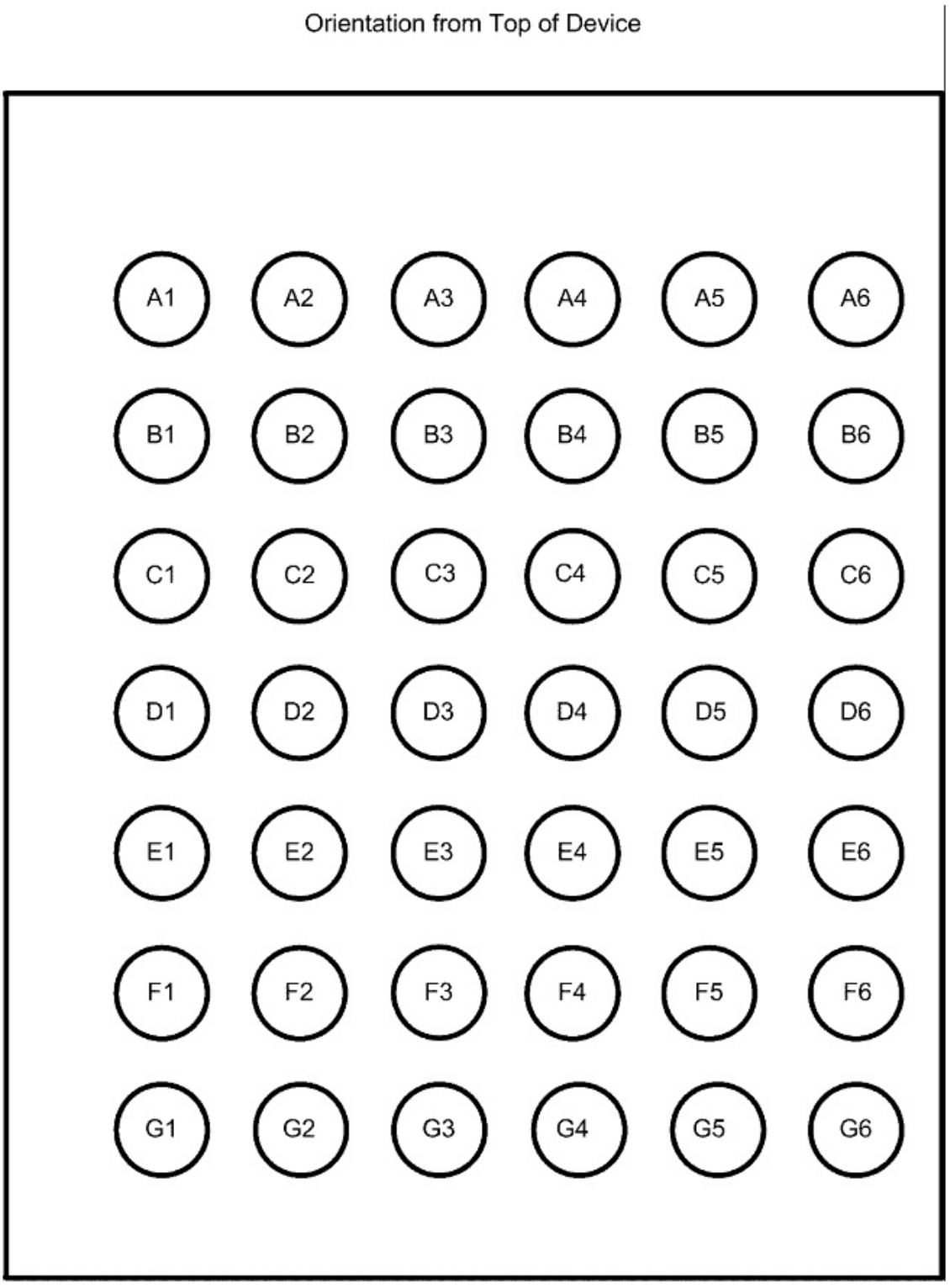
Figure 6 A1026 Ball Assignments (Top View)

U602



67-ball WLCSP
Bottom VIEW

U202



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