

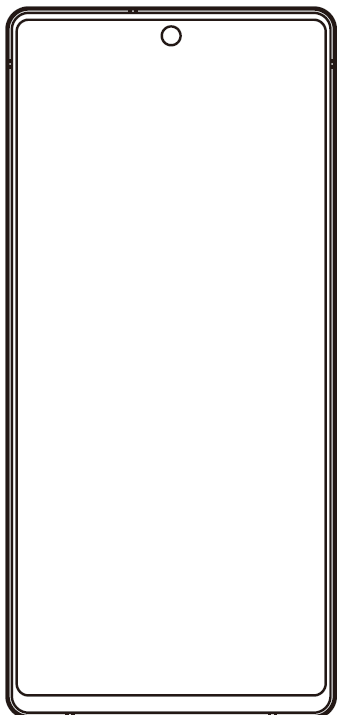
SAMSUNG

Mobile Device SM-G780F Common

SERVICE ***Manual***

Mobile Device

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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 antistatic glove and strape.)
- Do not touch metallic parts or circuits with your bare hands as device(parts, circuits, etc) may be corroded.
- 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. Safety Precautions

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

Item		GSM 850	EGSM 900	DCS1800	PCS1900
Freq. Band[MHz] Uplink/Downlink		824~849	880~915	1710~1785	1850~1910
		869~894	925~960	1805~1880	1930~1990
ARFCN range		128~251	0~124 & 975~1023	512~885	512~810
Tx/Rx spacing		45MHz	45MHz	95MHz	80MHz
Mod. Bit rate/ Bit Period		270.833kbps	270.833kbps	270.833kbps	270.833kbps
		3.692us	3.692us	3.692us	3.692us
Time Slot Period/ Frame Period		576.9us	576.9us	576.9us	576.9us
		4.615ms	4.615ms	4.615ms	4.615ms
Modulation	GSM/ EGPRS	GMSK/ 8PSK	GMSK/ 8PSK	GMSK/ 8PSK	GMSK/ 8PSK
MS Power (dBm)		33dBm~5dBm	33dBm~5dBm	30dBm~0dBm	30dBm~0dBm
Power Class		4(GMSK) E2(8PSK)	4(GMSK) E2(8PSK)	1(GMSK) E2(8PSK)	1(GMSK) E2(8PSK)
Sensitivity (QPSK, BW 10MHz) (dBm)		-102dBm	-102dBm	-100dBm	-100dBm
TDMA Mux		8	8	8	8

2. Specification

2-2. WCDMA General Specification

Item	WCDMA 2100(B1)	WCDMA 1900(B2)	WCDMA AWS(B4)	WCDMA 850(B5)	WCDMA 900(B8)
Freq. Band[MHz] Uplink/Downlink	1920~1980 2110~2170	1850~1910 1930~1990	1710~1755 2110~2155	824~849 869~894	880~915 925~960
ARFCN range	UL: 9612~9888 DL: 10562~10838	UL: 9262~9538 DL: 9662~9938	UL: 1312~1513 DL: 1537~1738	UL: 4132~4233 DL: 4357~4458	UL: 2712~2868 DL: 2937~3088
Tx/Rx spacing	190MHz	80MHz	400MHz	45MHz	45MHz
Mod. Bit rate/ Bit Period	42.2Mbps(DL) 5.42Mbps(UL)	42.2Mbps(DL) 5.42Mbps(UL)	42.2Mbps(DL) 5.42Mbps(UL)	42.2Mbps(DL) 5.42Mbps(UL)	42.2Mbps(DL) 5.42Mbps(UL)
Time Slot Period/ Frame Period	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	WCDMA 10ms/0.667ms HSPA 2ms/0.667ms
Modulation	QPSK 16QAM 64QAM	QPSK 16QAM 64QAM	QPSK 16QAM 64QAM	QPSK 16QAM 64QAM	QPSK 16QAM 64QAM
MS Power (dBm)	25.7 ~ -49(↓)	25.7 ~ -49(↓)	25.7 ~ -49(↓)	25.7 ~ -49(↓)	25.7 ~ -49(↓)
Power Class	3(max+24dBm)	3(max+24dBm)	3(max+24dBm)	3(max+24dBm)	3(max+24dBm)
Sensitivity (QPSK, BW 10MHz) (dBm)	-106dBm	-104dBm	-106dBm	-104dBm	-103dBm

2. Specification

2-3. LTE General Specification

Item	LTE Band1	LTE Band2	LTE Band3	LTE Band4
Freq. Band[MHz] Uplink/Downlink	1920~1980 2110~2170	1850~1910 1930~1990	1710~1785 1805~1880	1710~1755 2110~2155
ARFCN range	UL:18000~18599 DL:0~599	UL:18600~19199 DL:600~1199	UL:19200~19949 DL:1200~1949	UL:19950~20399 DL:1950~2399
Tx/Rx spacing (MHz)	190	80	95	400
Channel Bandwidth (MHz)	5/10/15/20	1.4/3/5/10/15/20	1.4/3/5/10/15/20	1.4/3/5/10/15/20
Modulation	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)
MS Power (dBm)	25.7~-39(↓)	25.7~-39(↓)	25.7~-39(↓)	25.7~-39(↓)
Sensitivity (QPSK, BW 10MHz) (dBm)	-96.3	-94.3	-93.3	-96.3

Item	LTE Band5	LTE Band7	LTE Band8	LTE Band12
Freq. Band[MHz] Uplink/Downlink	824~849 869~894	2500~2570 2620~2690	880~915 925~960	699~716 729~746
ARFCN range	UL:20400~20649 DL:2400~2649	UL:20750~21449 DL:2750~3449	UL:21450~21799 DL:3450~3799	UL:23010~23179 DL:5010~5179
Tx/Rx spacing (MHz)	45	120	45	30
Channel Bandwidth (MHz)	1.4/3/5/10	5/10/15/20	1.4/3/5/10	1.4/3/5/10
Modulation	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)
MS Power (dBm)	25.7~-39(↓)	25.7~-39(↓)	25.7~-39(↓)	25.7~-39(↓)
Sensitivity (QPSK, BW 10MHz) (dBm)	-94.3	-94.3	-93.3	-93.3

2. Specification

Item	LTE Band13	LTE Band17	LTE Band20	LTE Band26	LTE Band28
Freq. Band[MHz] Uplink/Downlink	777~787 746~756	704~716 734~746	832~862 791~821	814~849 859~894	703~748 758~803
ARFCN range	UL:23180~23279 DL:5180~5279	UL:23730~23849 DL:5730~5849	UL:24150~24449 DL:6150~6449	UL:26690~27039 DL:8690~9039	UL:27210~27659 DL:9210~9659
Tx/Rx spacing (MHz)	-31	30	-41	45	55
Channel Bandwidth(MHz)	5/10	5/10	5/10/15/20	1.4/3/5/10/15	3/5/10/15/20
Modulation	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)
MS Power(dBm)	25.7~-39(↓)	25.7~-39(↓)	25.7~-39(↓)	25.7~-39(↓)	25.7~-39(↓)
Sensitivity (QPSK, BW 10MHz)(dBm)	-93.3	-93.3	-93.3	-93.8	-94.8

Item	LTE Band32	LTE Band38	LTE Band40	LTE Band41	LTE Band66
Freq. Band[MHz] Uplink/Downlink	N/A 1452~1496	2570~2620	2300~2400	2496~2690	1710~1780 2110~2200
ARFCN range	DL:9920~10359	UL/DL:37750 ~ 38249	UL/DL:38650 ~ 39649	UL/DL:39650 ~ 41589	UL:131972 ~ 132671 DL:66436 ~ 67335
Tx/Rx spacing (MHz)	N/A	0	0	0	400
Channel Bandwidth(MHz)	5/10/15/20	5/10/15/20	5/10/15/20	5/10/15/20	1.4/3/5/10/15/20
Modulation	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)	QPSK,16/64QAM 256QAM(DL only)
MS Power (dBm)	25.7~-39(↓)	25.7~-39(↓)	25.7~-39(↓)	25.7~-39(↓)	25.7~-39(↓)
Sensitivity (QPSK, BW 10MHz)(dBm))	-96.3	-96.3	-96.3	-94.3	-95.8

2. Specification

2-4. 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

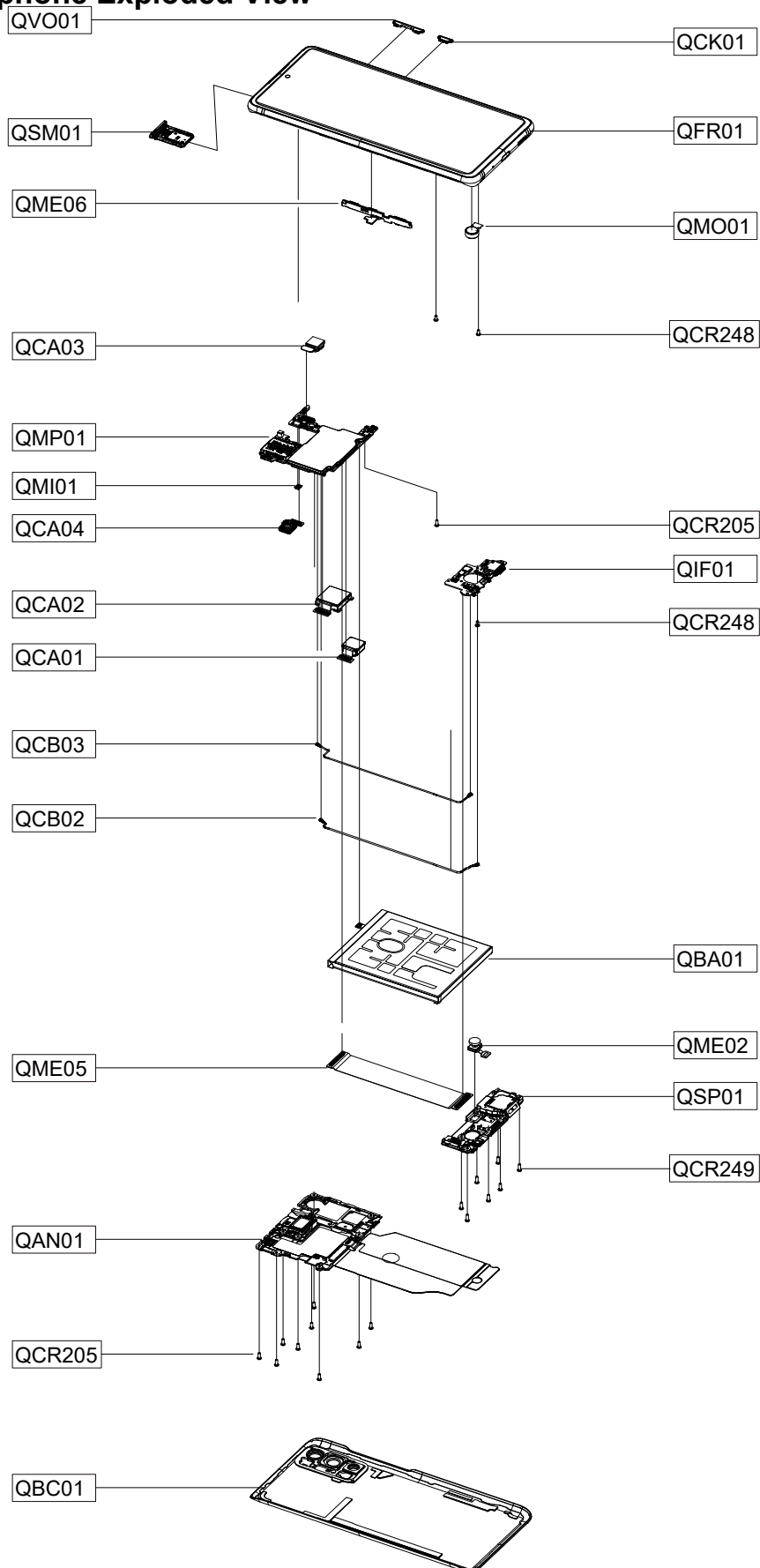
3. Product Function

Specification

Item	Description
OS	Android V10.0
Network	2G GSM : GSM850 / GSM900 / DCS1800 / PCS1900 3G WCDMA : B1 / B2 / B4 / B5 / B8 4G LTE - FDD : B1 / B2 / B3 / B4 / B5 / B7 / B8 / B12 / B13 / B17 / B20 / B26 / B28 / B32 / B66 - TDD : B38 / B40 / B41
Battery	Typ : 4,500 mAh
Processor	EXYNOS990 Quad 2.73GHz(2x), 2.5GHz(2x), 2.0GHz(4x)
Connectivity	GPS, GLONASS, BEIDOU, Galileo, BT5.0, USB 3.1 Type-C, Wi-Fi 802.11 a/b/g/n/ac/ax MIMO, NFC, MST
Camera	Rear : - Wide : 12M, A/F, OIS, F1.8 - Tele : 8MP, A/F, OIS, F2.4 - Ultra Wide : 12M, F2.2 Front : 32M, F2.2
Display	6.5" FHD+, Super AMOLED
RAM	6 GB
ROM	128 GB
Sensor	Accelerometer, Fingerprint Sensor, Gyro Sensor, Geomagnetic Sensor, Hall Sensor, Light Sensor, Virtual Proximity Sensing

4. Exploded View and Parts List

4-1. Cellular phone Exploded View



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5. MAIN Electrical Parts List

Parts Code	Design LOC	Description
0401-001110	ZD4500	DIODE
0404-001250	D10000,D10001,D10002	DIODE
0404-001250	D10003	DIODE
0404-001863	ZD7003	DIODE
0406-001805	ZD4001	DIODE
0406-001809	ZD10000,ZD10001	DIODE
0406-001829	ZD1000	DIODE
0406-001866	ZD4501,ZD4502	DIODE
0601-003888	U7006	LED
1001-001755	U10003	IC
1001-002045	U4510	IC
1001-002046	SW2000	IC
1001-002065	U2004,U3002	IC
1003-002817	U12027	IC
1009-001078	U4006	IC
1107-002671	UME4000	IC
1109-001604	PAM5000	IC
1201-003869	U4004	IC
1201-004109	PAM1001	IC
1201-004178	U8000,U8001	IC
1201-004224	U1001	IC
1201-004241	PAM1000	IC
1203-007941	U9013	IC
1203-008250	U4005	IC
1203-008693	U2000	IC
1203-008747	U3003	IC
1203-008864	U9004	IC
1203-008865	U9007,U9011	IC
1203-008867	U10001,U8002	IC
1203-008872	U10002,U10004	IC
1203-009080	U10006	IC
1203-009154	U9002	IC
1203-009156	U7025	IC
1203-009168	U4507	IC
1203-009169	U9010	IC
1203-009221	U10005	IC
1203-009234	U7005	IC
1203-009271	U4003	IC

5. MAIN Electrical Parts List

1203-009360	U10000	IC
1203-009361	U7009	IC
1203-009362	U7000	IC
1203-009364	U12016	IC
1203-009419	U9000	IC
1203-009461	U9008	IC
1205-006142	U4002	IC
1205-006206	U2001	IC
1205-006213	UCP5000	IC
1205-006251	U12022	IC
1205-006279	U4009	IC
1205-006338	U3005	IC
1209-002513	U4013	IC
1209-002733	U4000	IC
1209-002737	U4007	IC
1404-001724	TH1000,TH12000	THERMISTOR
1404-001724	TH3000,TH5006,TH7001	THERMISTOR
1404-001724	TH7024	THERMISTOR
2007-000171	L9000	R-CHIP
2007-007193	R10023,R10024	R-CHIP
2007-007310	R5027	R-CHIP
2007-007529	R3012	R-CHIP
2007-007573	R12007,R5056	R-CHIP
2007-007698	R4501	R-CHIP
2007-007741	R12002,R4502,R9020	R-CHIP
2007-007766	R9000	R-CHIP
2007-007942	R1010	R-CHIP
2007-007946	R1007	R-CHIP
2007-008045	R3026	R-CHIP
2007-008052	R10002,R9006	R-CHIP
2007-008055	R10017,R3005,R7034	R-CHIP
2007-008055	R7035	R-CHIP
2007-008167	R12012,R5061	R-CHIP
2007-008403	R7029	R-CHIP
2007-008419	R4009,R4010,R4020	R-CHIP
2007-008419	R4021,R5060,R5062	R-CHIP
2007-008420	R12026,R12027	R-CHIP
2007-008478	R5025,R5026	R-CHIP
2007-008486	R7000,R7024,R7036	R-CHIP

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2007-008486	R9007	R-CHIP
2007-008516	R12043,R12066,R4014	R-CHIP
2007-008516	R4017,R4506,R4508	R-CHIP
2007-008516	R7003,R8001,R9009	R-CHIP
2007-008516	R9010	R-CHIP
2007-008531	R10022,R3019,R7012	R-CHIP
2007-008531	R7015,R7016	R-CHIP
2007-008542	L9001,R10004,R10005	R-CHIP
2007-008647	R1002,R1005	R-CHIP
2007-008774	R10000,R10001,R10008	R-CHIP
2007-008774	R10009,R10013,R10014	R-CHIP
2007-008774	R10015,R10016	R-CHIP
2007-008806	R1009,R12070,R3016	R-CHIP
2007-009111	R4006	R-CHIP
2007-009157	R1006,R12017,R3000	R-CHIP
2007-009157	R5050,R5058,R5059	R-CHIP
2007-009157	R7042	R-CHIP
2007-009182	R3011,R4504	R-CHIP
2007-009201	R5044,R5045,R8011	R-CHIP
2007-009212	R4015	R-CHIP
2007-009314	R3018	R-CHIP
2007-009354	R9001	R-CHIP
2007-009361	R1000,R1004	R-CHIP
2007-009408	R10025	R-CHIP
2007-009920	R12005,R12006	R-CHIP
2007-009954	R4033	R-CHIP
2007-009969	R4001,R4012	R-CHIP
2007-010202	R7009	R-CHIP
2007-010685	R10020,R10021	R-CHIP
2007-011040	R10026,R10027,R12013	R-CHIP
2007-011040	R12014,R12015,R12016	R-CHIP
2007-011040	R12071,R3001	R-CHIP
2007-011043	R5000	R-CHIP
2007-011262	R4011,R4019,R5052	R-CHIP
2007-011262	R5064,R5065,R5066	R-CHIP
2007-011262	R5067	R-CHIP
2007-011378	R3002,R3003,R3004	R-CHIP
2007-011378	R3007,R3008,R3010	R-CHIP
2007-011378	R3013,R3014,R3015	R-CHIP

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2007-011378	R3021,R3022,R3027	R-CHIP
2007-011378	R3028,R3029,R3030	R-CHIP
2007-011378	R3031,R3032,R3033	R-CHIP
2007-011542	R10010	R-CHIP
2007-011546	R5047,R5048,R5051	R-CHIP
2007-011546	R5212	R-CHIP
2007-011591	R10003,R4002,R4003	R-CHIP
2007-011591	R4004,R4005,R5004	R-CHIP
2007-011591	R5005,R5006,R5007	R-CHIP
2007-011591	R5008,R5009,R5010	R-CHIP
2007-011591	R5011,R5034,R5035	R-CHIP
2007-011591	R5036,R5037,R5042	R-CHIP
2007-011591	R5043,R7023,R7025	R-CHIP
2007-011594	R5013,R5014,R5015	R-CHIP
2007-011594	R5016,R5021,R5022	R-CHIP
2007-011594	R5028,R5029,R5038	R-CHIP
2007-011594	R5039,R5040,R5041	R-CHIP
2007-011594	R5205	R-CHIP
2007-011648	R1001,R12035,R12038	R-CHIP
2007-011648	R12039,R12040,R12041	R-CHIP
2007-011648	R12042,R12058	R-CHIP
2007-012197	R7022	R-CHIP
2007-012202	R10018,R10019	R-CHIP
2203-000138	C4508,C4544	C-CERAMIC,CHIP
2203-000233	C4048,C4050,C4054	C-CERAMIC,CHIP
2203-000438	C4503	C-CERAMIC,CHIP
2203-000489	C4058	C-CERAMIC,CHIP
2203-000679	C7104,C7105	C-CERAMIC,CHIP
2203-000725	C4502,C7003	C-CERAMIC,CHIP
2203-001033	C7100,C9006	C-CERAMIC,CHIP
2203-001153	C4507,C4525	C-CERAMIC,CHIP
2203-002285	C7075	C-CERAMIC,CHIP
2203-005288	C3103	C-CERAMIC,CHIP
2203-005682	C1085,C1099,C3029	C-CERAMIC,CHIP
2203-005682	C4041,C5005,C5012	C-CERAMIC,CHIP
2203-005682	L1013	C-CERAMIC,CHIP
2203-005683	C3114	C-CERAMIC,CHIP
2203-005725	C1015	C-CERAMIC,CHIP
2203-005726	C5013,C5014,C8034	C-CERAMIC,CHIP

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2203-005727	C3113	C-CERAMIC,CHIP
2203-005731	C1161,C3042,C3043	C-CERAMIC,CHIP
2203-005731	C3044,C3063,C3073	C-CERAMIC,CHIP
2203-005731	C3074,C3112,L1021	C-CERAMIC,CHIP
2203-005734	C1031	C-CERAMIC,CHIP
2203-005736	C1014,C1022,C1038	C-CERAMIC,CHIP
2203-005736	C1046,C1057,C1091	C-CERAMIC,CHIP
2203-005736	C1098,C1160,C2000	C-CERAMIC,CHIP
2203-005736	C2003,C2019,C2024	C-CERAMIC,CHIP
2203-005736	C2117,C2119,C3069	C-CERAMIC,CHIP
2203-005736	C7092,C8028,C8033	C-CERAMIC,CHIP
2203-005736	L1007,L1031,L1043	C-CERAMIC,CHIP
2203-005736	L2024,L4023,R1003	C-CERAMIC,CHIP
2203-005777	C1009,C1162,C2004	C-CERAMIC,CHIP
2203-005777	L1000	C-CERAMIC,CHIP
2203-005779	C9033,C9040,C9044	C-CERAMIC,CHIP
2203-005779	C9049	C-CERAMIC,CHIP
2203-005789	C1002,C1005,C1020	C-CERAMIC,CHIP
2203-005789	C1026,C1037,C1039	C-CERAMIC,CHIP
2203-005789	C1045,C1093,C1125	C-CERAMIC,CHIP
2203-005789	C2030,C2034,L1022	C-CERAMIC,CHIP
2203-005789	L2010,L2012,L3034	C-CERAMIC,CHIP
2203-005792	C1036,C2017,L1041	C-CERAMIC,CHIP
2203-006123	C3068	C-CERAMIC,CHIP
2203-006194	C1059,C1067,C12079	C-CERAMIC,CHIP
2203-006194	C12080,C3031,C5006	C-CERAMIC,CHIP
2203-006194	C5008	C-CERAMIC,CHIP
2203-006305	C3091,L1058,L3022	C-CERAMIC,CHIP
2203-006318	C1106,C1119,C1124	C-CERAMIC,CHIP
2203-006318	C2037,L2009	C-CERAMIC,CHIP
2203-006379	C3023	C-CERAMIC,CHIP
2203-006400	C1016,C1103,C12105	C-CERAMIC,CHIP
2203-006400	C12106,C12107,C12108	C-CERAMIC,CHIP
2203-006400	C12111,C12112,C12115	C-CERAMIC,CHIP
2203-006400	C2002,C2032,C4033	C-CERAMIC,CHIP
2203-006400	C4044,C4055,C5007	C-CERAMIC,CHIP
2203-006400	C7126,C7134	C-CERAMIC,CHIP
2203-006410	L1030,L1067	C-CERAMIC,CHIP
2203-006423	C1006,C1007,C1024	C-CERAMIC,CHIP

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2203-006423	C1082,C2001,C2021	C-CERAMIC,CHIP
2203-006423	C2033,C3033,C3035	C-CERAMIC,CHIP
2203-006423	C4009,C4013,C4014	C-CERAMIC,CHIP
2203-006423	C4042,C4532,C5010	C-CERAMIC,CHIP
2203-006423	C7091,C7118,C8031	C-CERAMIC,CHIP
2203-006556	C1086,C7082	C-CERAMIC,CHIP
2203-006562	C10000,C10001,C10013	C-CERAMIC,CHIP
2203-006604	C2038	C-CERAMIC,CHIP
2203-006642	C4057	C-CERAMIC,CHIP
2203-006665	C3094,L1033	C-CERAMIC,CHIP
2203-006668	C1011,C5009	C-CERAMIC,CHIP
2203-006674	C2090	C-CERAMIC,CHIP
2203-006707	C2023	C-CERAMIC,CHIP
2203-006839	C10002,C10003,C10004	C-CERAMIC,CHIP
2203-006839	C10005,C1023,C4533	C-CERAMIC,CHIP
2203-006839	C7095,C7127,C7154	C-CERAMIC,CHIP
2203-006839	C8010,C8012	C-CERAMIC,CHIP
2203-006841	C4021	C-CERAMIC,CHIP
2203-006872	C12012,C4006	C-CERAMIC,CHIP
2203-006968	C2006	C-CERAMIC,CHIP
2203-006979	C3086,C3105,C3107	C-CERAMIC,CHIP
2203-006979	C3111	C-CERAMIC,CHIP
2203-007194	C4007	C-CERAMIC,CHIP
2203-007210	C12117,C12118,C12119	C-CERAMIC,CHIP
2203-007210	C12120,C2005,C2007	C-CERAMIC,CHIP
2203-007210	C2013,C2014,C2015	C-CERAMIC,CHIP
2203-007210	C2022,C2026,C5002	C-CERAMIC,CHIP
2203-007210	C5003,C5004,C5011	C-CERAMIC,CHIP
2203-007210	C6106,C6107,C6109	C-CERAMIC,CHIP
2203-007210	C6110,C6111	C-CERAMIC,CHIP
2203-007270	C10039	C-CERAMIC,CHIP
2203-007279	C7027	C-CERAMIC,CHIP
2203-007317	C12046,C12064,C12071	C-CERAMIC,CHIP
2203-007317	C12073,C12074,C12075	C-CERAMIC,CHIP
2203-007317	C12081,C3030,C4015	C-CERAMIC,CHIP
2203-007317	C4024,C6072,C6088	C-CERAMIC,CHIP
2203-007317	C7021,C7033,C7052	C-CERAMIC,CHIP
2203-007317	C7068,C7072,C7076	C-CERAMIC,CHIP
2203-007317	C7081,C7145	C-CERAMIC,CHIP

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2203-007391	C2011,C2016,C8007	C-CERAMIC,CHIP
2203-007391	C8008	C-CERAMIC,CHIP
2203-007392	C4526	C-CERAMIC,CHIP
2203-007393	C10038,C1012,C1021	C-CERAMIC,CHIP
2203-007393	C12019,C2029,C3002	C-CERAMIC,CHIP
2203-007393	C3106,C4016,C4018	C-CERAMIC,CHIP
2203-007393	C4038,C7113,C9000	C-CERAMIC,CHIP
2203-007393	C9007,C9018,C9028	C-CERAMIC,CHIP
2203-007393	C9031,C9034,C9041	C-CERAMIC,CHIP
2203-007393	C9045,C9047,C9050	C-CERAMIC,CHIP
2203-007425	C7088	C-CERAMIC,CHIP
2203-007544	C4511,C4516,C4517	C-CERAMIC,CHIP
2203-007544	C4519,C4523,C4524	C-CERAMIC,CHIP
2203-007544	C4545	C-CERAMIC,CHIP
2203-007621	C10048,C10049,C3051	C-CERAMIC,CHIP
2203-007621	C3053,C3055,C3065	C-CERAMIC,CHIP
2203-007621	C3089,C3090,C4012	C-CERAMIC,CHIP
2203-007621	C4036,C4538,C5000	C-CERAMIC,CHIP
2203-007621	C5001,C7009,C7018	C-CERAMIC,CHIP
2203-007621	C7039,C7040	C-CERAMIC,CHIP
2203-007781	C7065,C7085,C7141	C-CERAMIC,CHIP
2203-007796	C10008,C10009,C10011	C-CERAMIC,CHIP
2203-007796	C10025,C10040,C10041	C-CERAMIC,CHIP
2203-007796	C1025,C1053,C1056	C-CERAMIC,CHIP
2203-007796	C12000,C12001,C12007	C-CERAMIC,CHIP
2203-007796	C12008,C12009,C12021	C-CERAMIC,CHIP
2203-007796	C12022,C12025,C12027	C-CERAMIC,CHIP
2203-007796	C12028,C12029,C12030	C-CERAMIC,CHIP
2203-007796	C12031,C12034,C12035	C-CERAMIC,CHIP
2203-007796	C12036,C12041,C12042	C-CERAMIC,CHIP
2203-007796	C12043,C12044,C12047	C-CERAMIC,CHIP
2203-007796	C12048,C12049,C12050	C-CERAMIC,CHIP
2203-007796	C12057,C12061,C12082	C-CERAMIC,CHIP
2203-007796	C12121,C2012,C2027	C-CERAMIC,CHIP
2203-007796	C2031,C2071,C4000	C-CERAMIC,CHIP
2203-007796	C4001,C4002,C4003	C-CERAMIC,CHIP
2203-007796	C4004,C4010,C4023	C-CERAMIC,CHIP
2203-007796	C4037,C4039,C4043	C-CERAMIC,CHIP
2203-007796	C4045,C4046,C4518	C-CERAMIC,CHIP

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2203-007796	C6013,C6021,C6022	C-CERAMIC,CHIP
2203-007796	C6023,C6025,C6026	C-CERAMIC,CHIP
2203-007796	C6027,C6036,C6038	C-CERAMIC,CHIP
2203-007796	C6039,C6042,C6047	C-CERAMIC,CHIP
2203-007796	C6050,C6051,C6054	C-CERAMIC,CHIP
2203-007796	C6055,C6056,C6057	C-CERAMIC,CHIP
2203-007796	C6058,C6059,C6061	C-CERAMIC,CHIP
2203-007796	C6062,C6063,C6064	C-CERAMIC,CHIP
2203-007796	C6065,C6066,C6067	C-CERAMIC,CHIP
2203-007796	C6068,C6069,C6075	C-CERAMIC,CHIP
2203-007796	C6076,C6077,C6079	C-CERAMIC,CHIP
2203-007796	C6080,C6081,C6082	C-CERAMIC,CHIP
2203-007796	C6083,C6084,C6085	C-CERAMIC,CHIP
2203-007796	C6086,C6095,C6096	C-CERAMIC,CHIP
2203-007796	C6097,C6098,C6104	C-CERAMIC,CHIP
2203-007796	C6108,C7001,C7048	C-CERAMIC,CHIP
2203-007796	C7060,C7070,C7077	C-CERAMIC,CHIP
2203-007796	C7083,C7089,C7120	C-CERAMIC,CHIP
2203-007796	C7123,C7130,C7133	C-CERAMIC,CHIP
2203-007796	C8003,C8006,C8009	C-CERAMIC,CHIP
2203-007796	C8011,C9005,C9009	C-CERAMIC,CHIP
2203-007796	C9015,C9020,C9021	C-CERAMIC,CHIP
2203-007796	C9023,C9032,C9039	C-CERAMIC,CHIP
2203-007796	C9042,C9046,C9056	C-CERAMIC,CHIP
2203-007809	C4500	C-CERAMIC,CHIP
2203-008095	C7078	C-CERAMIC,CHIP
2203-008097	C12020,C4506,C4529	C-CERAMIC,CHIP
2203-008097	C7007,C7013,C8000	C-CERAMIC,CHIP
2203-008097	C8004	C-CERAMIC,CHIP
2203-008158	C4509,C4510,C4520	C-CERAMIC,CHIP
2203-008158	C4521	C-CERAMIC,CHIP
2203-008242	C10007,C12010,C12011	C-CERAMIC,CHIP
2203-008242	C12013,C12014,C12015	C-CERAMIC,CHIP
2203-008242	C12038,C12060,C12103	C-CERAMIC,CHIP
2203-008242	C2010,C2025,C2502	C-CERAMIC,CHIP
2203-008242	C2506,C3017,C3021	C-CERAMIC,CHIP
2203-008242	C3025,C3047,C3048	C-CERAMIC,CHIP
2203-008242	C3049,C3050,C3052	C-CERAMIC,CHIP
2203-008242	C3054,C3056,C3058	C-CERAMIC,CHIP

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2203-008242	C3060,C3064,C3066	C-CERAMIC,CHIP
2203-008242	C3067,C3070,C3075	C-CERAMIC,CHIP
2203-008242	C3077,C3081,C3082	C-CERAMIC,CHIP
2203-008242	C3095,C3097,C4005	C-CERAMIC,CHIP
2203-008242	C4008,C4022,C4530	C-CERAMIC,CHIP
2203-008242	C6024,C6073,C6074	C-CERAMIC,CHIP
2203-008242	C6087,C6114,C7006	C-CERAMIC,CHIP
2203-008242	C7011,C7012,C7023	C-CERAMIC,CHIP
2203-008242	C7024,C7025,C7028	C-CERAMIC,CHIP
2203-008242	C7059,C7067,C7086	C-CERAMIC,CHIP
2203-008242	C7097,C7098,C9011	C-CERAMIC,CHIP
2203-008242	C9019,C9024,C9026	C-CERAMIC,CHIP
2203-008242	C9027,C9030,C9036	C-CERAMIC,CHIP
2203-008242	C9037	C-CERAMIC,CHIP
2203-008243	C3001	C-CERAMIC,CHIP
2203-008394	L1012	C-CERAMIC,CHIP
2203-008400	C3057,C3059	C-CERAMIC,CHIP
2203-008466	C3108,C3110,C4031	C-CERAMIC,CHIP
2203-008466	C4032,C4034,C4035	C-CERAMIC,CHIP
2203-008466	C4092,C8002	C-CERAMIC,CHIP
2203-008529	C10037,C9051	C-CERAMIC,CHIP
2203-008572	C10036,C7050,C7064	C-CERAMIC,CHIP
2203-008572	C7093,C7094,C7108	C-CERAMIC,CHIP
2203-008749	C7125	C-CERAMIC,CHIP
2203-008860	C10010,C10024,C10047	C-CERAMIC,CHIP
2203-008860	C10051,C1018,C1097	C-CERAMIC,CHIP
2203-008860	C1100,C12104,C3061	C-CERAMIC,CHIP
2203-008860	C4019,C7084,C7112	C-CERAMIC,CHIP
2203-008860	C7150,C9001,C9004	C-CERAMIC,CHIP
2203-008860	C9008,C9014,C9016	C-CERAMIC,CHIP
2203-008860	C9022	C-CERAMIC,CHIP
2203-008876	C1061,C12016,C12017	C-CERAMIC,CHIP
2203-008876	C12018,C12024,C12033	C-CERAMIC,CHIP
2203-008876	C12037,C12040,C12051	C-CERAMIC,CHIP
2203-008876	C12052,C12053,C12055	C-CERAMIC,CHIP
2203-008876	C12059,C12062,C12065	C-CERAMIC,CHIP
2203-008876	C12067,C12069,C12083	C-CERAMIC,CHIP
2203-008876	C2521,C3000,C3062	C-CERAMIC,CHIP
2203-008876	C3071,C3087,C3100	C-CERAMIC,CHIP

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2203-008876	C4030,C6014,C6015	C-CERAMIC,CHIP
2203-008876	C6046,C7002,C7005	C-CERAMIC,CHIP
2203-008876	C7008,C7010,C7014	C-CERAMIC,CHIP
2203-008876	C7015,C7017,C7020	C-CERAMIC,CHIP
2203-008876	C7022,C7032,C7035	C-CERAMIC,CHIP
2203-008876	C7036,C7037,C7038	C-CERAMIC,CHIP
2203-008876	C7041,C7042,C7043	C-CERAMIC,CHIP
2203-008876	C7044,C7045,C7046	C-CERAMIC,CHIP
2203-008876	C7047,C7049,C7058	C-CERAMIC,CHIP
2203-008876	C7069,C7079,C7090	C-CERAMIC,CHIP
2203-008876	C7110,C9012,C9013	C-CERAMIC,CHIP
2203-008876	C9017,C9029,C9038	C-CERAMIC,CHIP
2203-009025	C3016,C3018,C3019	C-CERAMIC,CHIP
2203-009025	C3020,C3022,C3024	C-CERAMIC,CHIP
2203-009025	C3026,C3027,C3028	C-CERAMIC,CHIP
2203-009025	C3032,C3034,C3037	C-CERAMIC,CHIP
2203-009025	C3072,C3078,C3079	C-CERAMIC,CHIP
2203-009025	C3083,C3092,C3093	C-CERAMIC,CHIP
2203-009025	C3098,C3109	C-CERAMIC,CHIP
2203-009064	C12005,C6001,C6002	C-CERAMIC,CHIP
2203-009064	C6003,C6010,C6016	C-CERAMIC,CHIP
2203-009064	C6018,C6019,C6115	C-CERAMIC,CHIP
2203-009167	C4049,C4053	C-CERAMIC,CHIP
2203-009444	C7087	C-CERAMIC,CHIP
2203-009537	C12072,C12078,C12090	C-CERAMIC,CHIP
2203-009537	C6040	C-CERAMIC,CHIP
2203-009618	C10016,C10053,C12063	C-CERAMIC,CHIP
2203-009618	C12066,C12068,C7096	C-CERAMIC,CHIP
2203-009618	C7142,C7143,C7160	C-CERAMIC,CHIP
2203-009733	C4029,C6052,C7026	C-CERAMIC,CHIP
2203-009733	C7051,C7071	C-CERAMIC,CHIP
2203-009735	C12002,C12003,C12004	C-CERAMIC,CHIP
2203-009735	C12032,C12056,C6005	C-CERAMIC,CHIP
2203-009735	C6008,C6009,C6020	C-CERAMIC,CHIP
2203-009735	C6028,C6044,C6045	C-CERAMIC,CHIP
2203-009735	C6089,C6113	C-CERAMIC,CHIP
2203-009736	C6012,C6017,C6099	C-CERAMIC,CHIP
2203-009736	C7030,C7034,C7053	C-CERAMIC,CHIP
2203-009736	C7073,C7074,C7099	C-CERAMIC,CHIP

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2203-009736	C9002,C9003,C9025	C-CERAMIC,CHIP
2203-009969	C8001,C8005,C8013	C-CERAMIC,CHIP
2203-009969	C8015	C-CERAMIC,CHIP
2203-009970	C10017,C10018,C10019	C-CERAMIC,CHIP
2203-009970	C10020,C10021,C10022	C-CERAMIC,CHIP
2203-009970	C10023,C10028,C10029	C-CERAMIC,CHIP
2203-009970	C10030,C10032,C10034	C-CERAMIC,CHIP
2203-009970	C12122,C2028,C4025	C-CERAMIC,CHIP
2203-009970	C4026,C4539,C7000	C-CERAMIC,CHIP
2203-009970	C7004,C7080,C7101	C-CERAMIC,CHIP
2203-009970	C7102,C7119,C7137	C-CERAMIC,CHIP
2203-009970	C7153,C8014,C8016	C-CERAMIC,CHIP
2203-010066	C4027,C4028,C7061	C-CERAMIC,CHIP
2203-010066	C7062,C7063,C7140	C-CERAMIC,CHIP
2203-010134	C10043,C10044,C10045	C-CERAMIC,CHIP
2203-010134	C10046	C-CERAMIC,CHIP
2203-010141	C10014	C-CERAMIC,CHIP
2409-001400	TA4506,TA7001,TA7002	C-CERAMIC,CHIP
2409-001400	U12029	C-CERAMIC,CHIP
2409-001404	TA4500,TA4501,TA4502	C-CERAMIC,CHIP
2409-001404	TA4503,TA4504	C-CERAMIC,CHIP
2703-002649	L1017,L1035,L2042	INDUCTOR
2703-002649	L2045	INDUCTOR
2703-002901	C1004,L1016	INDUCTOR
2703-002953	L1024,L1100,L2041	INDUCTOR
2703-002959	L3014,R9002,R9003	INDUCTOR
2703-002959	R9004,R9005	INDUCTOR
2703-002999	C1048	INDUCTOR
2703-004001	L2006	INDUCTOR
2703-004012	C1029,L1008,L2014	INDUCTOR
2703-004012	L2017,L3024	INDUCTOR
2703-004013	C1042,L1011,L1037	INDUCTOR
2703-004013	L2043,L2044	INDUCTOR
2703-004014	L2004,L3017,L3025	INDUCTOR
2703-004032	C1000,L1009,L4022	INDUCTOR
2703-004033	C1087,L1025	INDUCTOR
2703-004034	C1096,C3038,C3039	INDUCTOR
2703-004034	L1019,L1040,L1042	INDUCTOR
2703-004034	L2002,L2013,L2016	INDUCTOR

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2703-004035	L1002,L2039	INDUCTOR
2703-004036	L2000	INDUCTOR
2703-004037	L1004,L1052,L1060	INDUCTOR
2703-004037	L2015	INDUCTOR
2703-004038	C3005,L3015	INDUCTOR
2703-004171	C3084,L3032,L3033	INDUCTOR
2703-004286	C3080,L1036	INDUCTOR
2703-004295	C1034,L1003	INDUCTOR
2703-004300	C2008,L2018,L2019	INDUCTOR
2703-004300	L2020	INDUCTOR
2703-004301	C1157,L1059	INDUCTOR
2703-004302	L3018	INDUCTOR
2703-004317	C1088,C1094,C3040	INDUCTOR
2703-004317	C3041,L1005,L2026	INDUCTOR
2703-004328	C1044,L1001,L1018	INDUCTOR
2703-004328	L1049,L1050	INDUCTOR
2703-004366	C4040	INDUCTOR
2703-004367	C3076	INDUCTOR
2703-004703	C2064,L2011	INDUCTOR
2703-004764	C1051,L1006,L1044	INDUCTOR
2703-004764	L4020	INDUCTOR
2703-004841	L4500,L4501	INDUCTOR
2703-004853	L1020,L1029,L4005	INDUCTOR
2703-004853	L4006,L4007	INDUCTOR
2703-004911	L1028	INDUCTOR
2703-004947	L9003	INDUCTOR
2703-005066	L2021	INDUCTOR
2703-005201	L7025	INDUCTOR
2703-005225	L4004	INDUCTOR
2703-005226	L12002,L12013,L7001	INDUCTOR
2703-005226	L7007,L7010	INDUCTOR
2703-005233	R8000,R8002	INDUCTOR
2703-005295	L1026	INDUCTOR
2703-005418	L10001	INDUCTOR
2703-005419	L10002	INDUCTOR
2703-005505	L3036,L8000,L8001	INDUCTOR
2703-005555	L4002,L4003	INDUCTOR
2703-005577	L12000,L12003,L12004	INDUCTOR
2703-005577	L12006,L12007,L7002	INDUCTOR

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2703-005577	L7008,L7012,L7014	INDUCTOR
2703-005577	L7015,L7016,L7018	INDUCTOR
2703-005577	L7019,L7021	INDUCTOR
2703-005581	L12001,L12005,L7000	INDUCTOR
2703-005581	L7003,L7004,L7005	INDUCTOR
2703-005581	L7006,L7009,L7011	INDUCTOR
2703-005581	L7013,L7017,L7020	INDUCTOR
2703-005731	L10004	INDUCTOR
2801-005393	OSC7000	CRYSTAL
2801-005544	OSC3000	CRYSTAL
2805-001118	TCX2500	OSCILLATOR
2805-001128	TCX1000	OSCILLATOR
2901-001635	F10000	FILTER
2901-001690	C12039,C12058,C6000	FILTER
2901-001690	C6004,C6007,C6011	FILTER
2901-001690	C6032,C6033,C6034	FILTER
2901-001690	C6048,C6049,C6053	FILTER
2901-001690	C6060,C6094,C6116	FILTER
2901-001690	C6117,C6118,C6119	FILTER
2903-001576	F3001,F3003	FILTER
2904-002366	F1001,F2002	FILTER
2904-002391	F4004	FILTER
2904-002409	F3000	FILTER
2904-002417	F4000	FILTER
2910-000417	F1004	FILTER
2911-000487	U2002	FILTER
2911-000491	U3000	FILTER
2911-000492	U3001	FILTER
2911-000494	U1000	FILTER
2911-000495	U1002	FILTER
2911-000496	U2003	FILTER
3003-001258	MIC8000	MIC
3301-002122	L2022,L2023	BEAD
3301-002223	L9002,L9004	BEAD
3301-002235	L4000,L4001	BEAD
3301-002237	L1032,L1068,L1069	BEAD
3301-002237	L2001,L2007,L4017	BEAD
3301-002237	L4018	BEAD
3301-002238	L3010	BEAD

5. MAIN Electrical Parts List

3301-002242	L12008	BEAD
3301-002312	L10000,L10003,L10005	BEAD
3301-002331	L7023,L7024	BEAD
3705-001937	RFS1000,RFS1001	CONNECTOR
3709-001947	SIM3002	CONNECTOR
3710-003871	SOC9001	CONNECTOR
3710-004008	SOC7000	CONNECTOR
3710-004027	SOC9002,SOC9003	CONNECTOR
3710-004285	HDC10000	CONNECTOR
3710-004344	SOC9000	CONNECTOR
3710-004424	SOC4000	CONNECTOR
3712-001604	ANT8001,ANT8003	CONNECTOR
3712-001626	ANT2008,ANT3001	CONNECTOR
3712-001626	ANT4000,ANT4001	CONNECTOR
3712-001626	ANT4002,ANT4003	CONNECTOR
3712-001626	ANT4004	CONNECTOR
3712-001634	ANT2010	CONNECTOR
3712-001666	ANT2000	CONNECTOR
3712-001694	ANT2001,ANT2004	CONNECTOR
3712-001694	ANT3000	CONNECTOR
3712-001731	ANT2002,ANT2003	CONNECTOR
3712-001969	CN2000	CONNECTOR
4709-002387	F1000	RF-MODULE
GH63-19101A	SC7000	SHILDCAN
GH63-19102A	SC7004	SHILDCAN
GH63-19106A	SC7002	SHILDCAN
GH98-46055A	SC7003	SHILDCAN
RF-Tape-AP	SC7003SP	NANOTIM

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

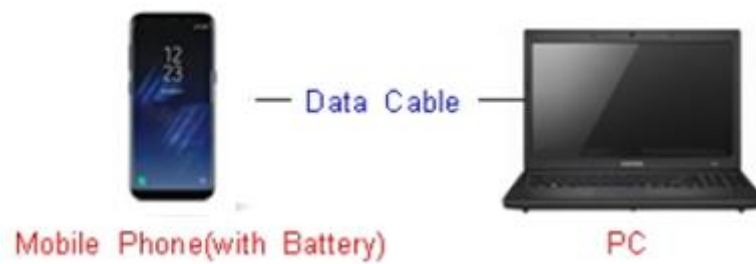
6. Level 1 Repair

6-1. S/W Update

6-1-1. Preparation

- S/W Update program: [Fenrir 5.19.xxxx](#)
- Mobile Phone
- Data Cable

※ Settings



Data Cable :
[GH39-02023A](#)
[GH39-02025A](#)
[GH39-02031A](#)
[GH39-02033A](#)

6. Level 1 Repair

6-1-2. How to use 'Fenrir' S/W update program.



1) Launch Fenrir by clicking on the icon on the desktop

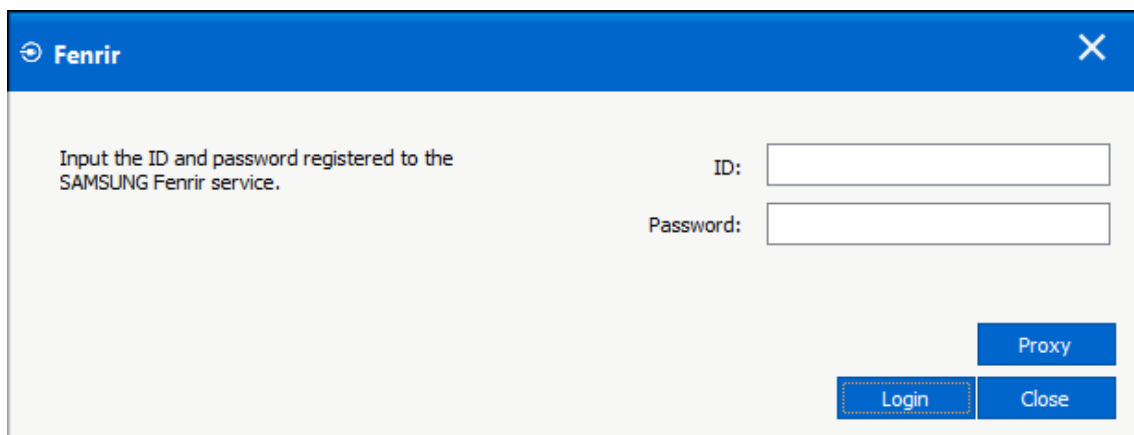
- SVH (Fenrir_Home) : It uses Home binary which does not have user data area in the memory when flashed to a device. (Keep user data)

- SVC (Fenrir_Factory) : It uses Factory binary which erases all user data in the memory when flashed to a device. (Clear user data)

- SVA (Fenrir_All) : It uses Factory and Home binaries. you can download Home and Factory binary in a PC. (but requires double HDD storage and NW traffic)

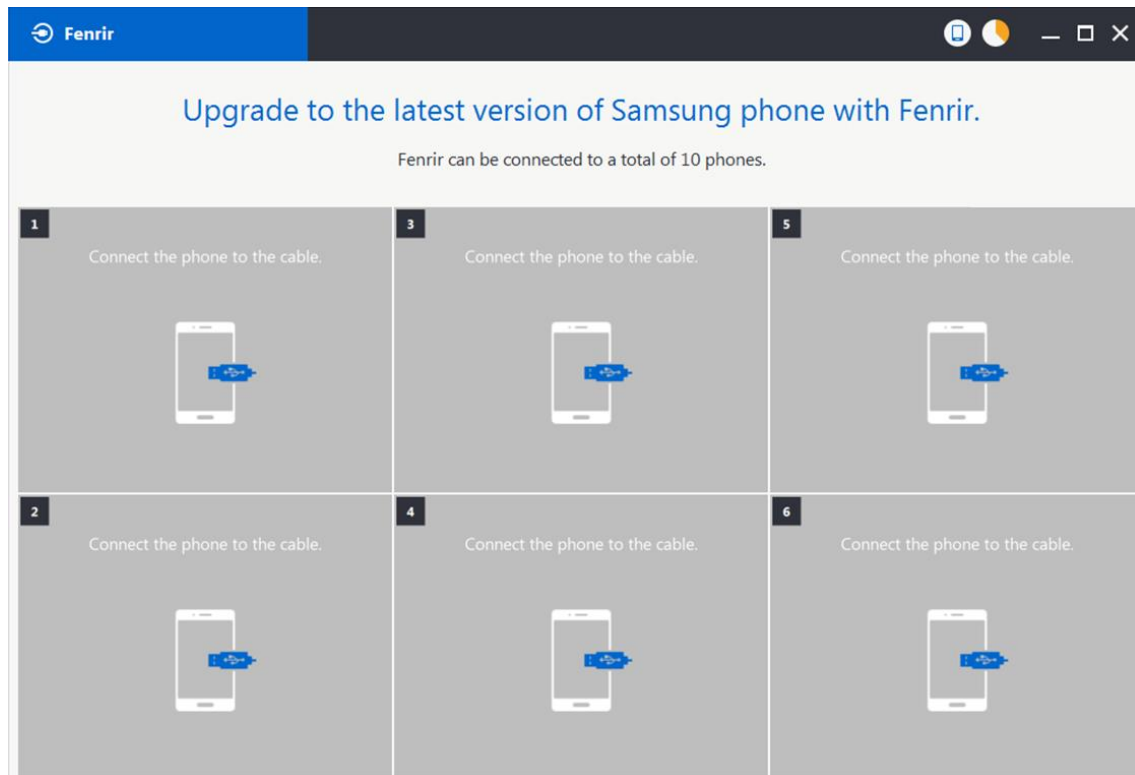
2) Input ID & password

※ You need to reset the ID information in case of PC change and format and repair, hard disk change.

A screenshot of the Fenrir software interface. It has a blue header bar with the 'Fenrir' logo and a close button (X). The main area is light gray. On the left, it says 'Input the ID and password registered to the SAMSUNG Fenrir service.' On the right, there are two input fields: 'ID:' and 'Password:'. Below these fields are three buttons: 'Proxy' (blue), 'Login' (blue with a dashed border), and 'Close' (blue).

6. Level 1 Repair

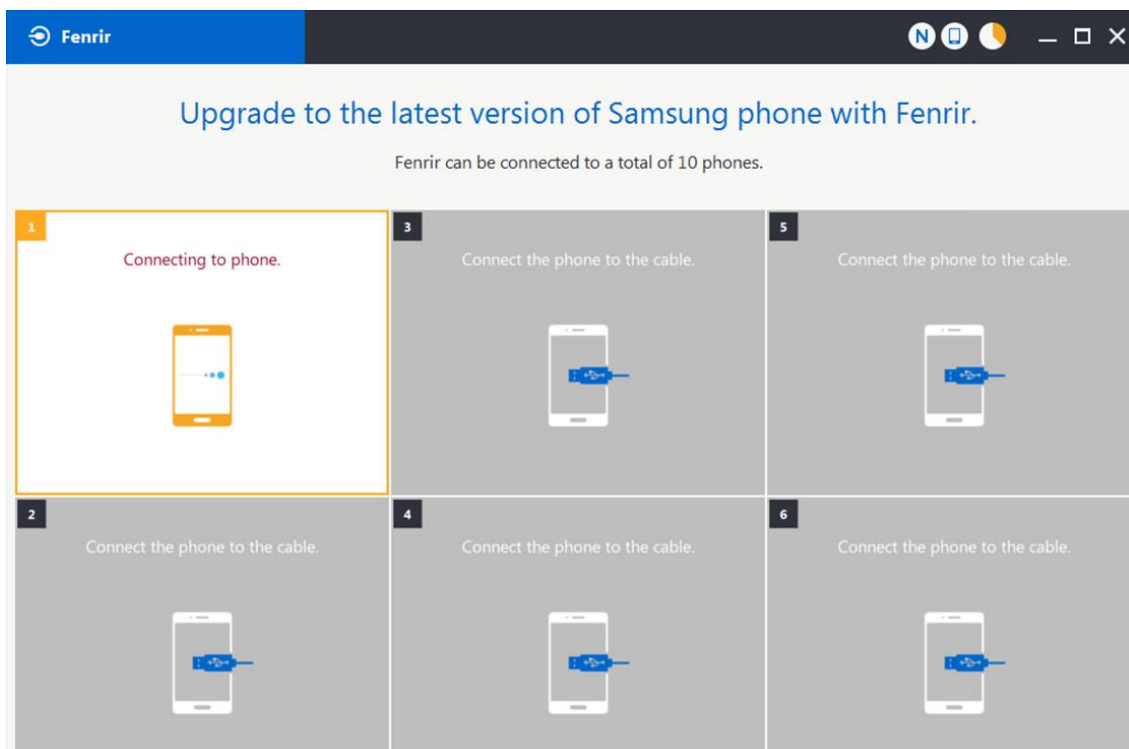
3) Ensure device has sufficient charge (at least 20%) to start firmware update.



4) Connect the device to PC via data cable.

6. Level 1 Repair

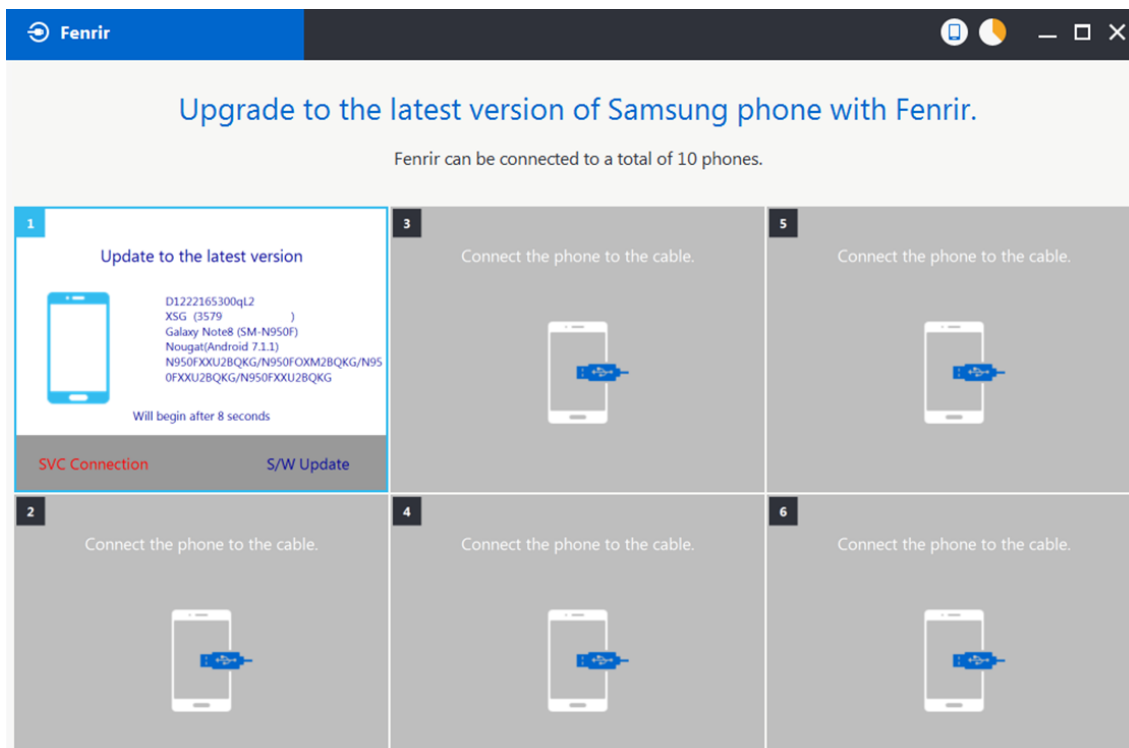
5) Upon USB connection, you will be presented with below screen.



6) Once device is detected, you will be presented with below screen.

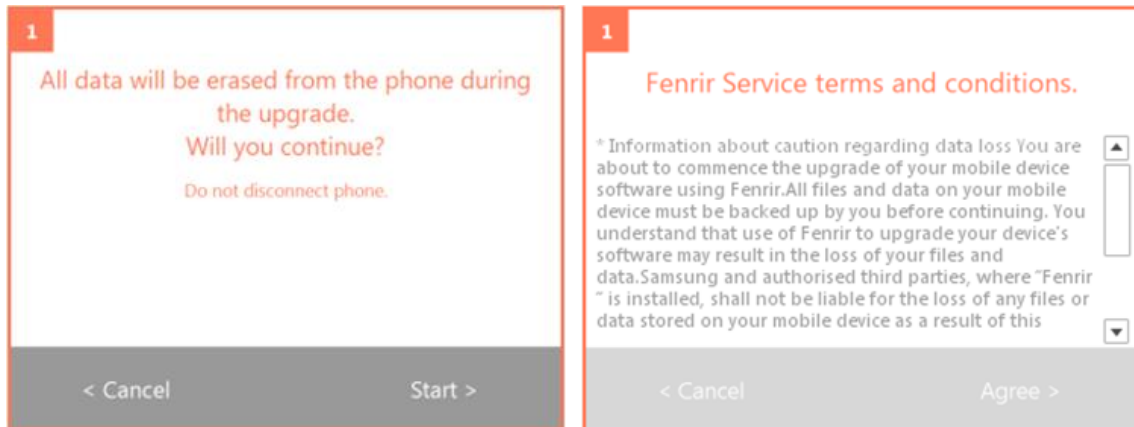
To update S/W, select “S/W Update” or to exit select “SVC Connection”.

If you select “SVC Connection”, only Fenrir connection history (record) will be stored in the FUS server to support warranty validation. (This is known as “Service Connection” history)

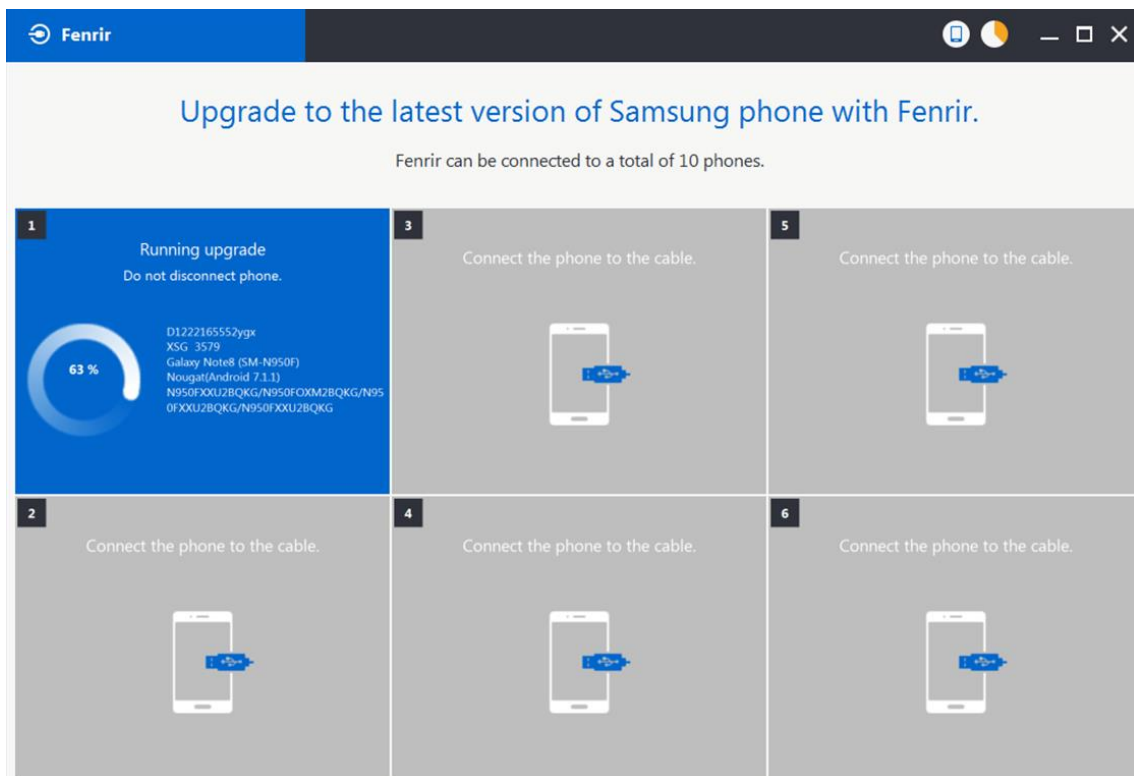


6. Level 1 Repair

7) Once Fenrir starts, application will display the below screen. And select the Start button & Agree button.

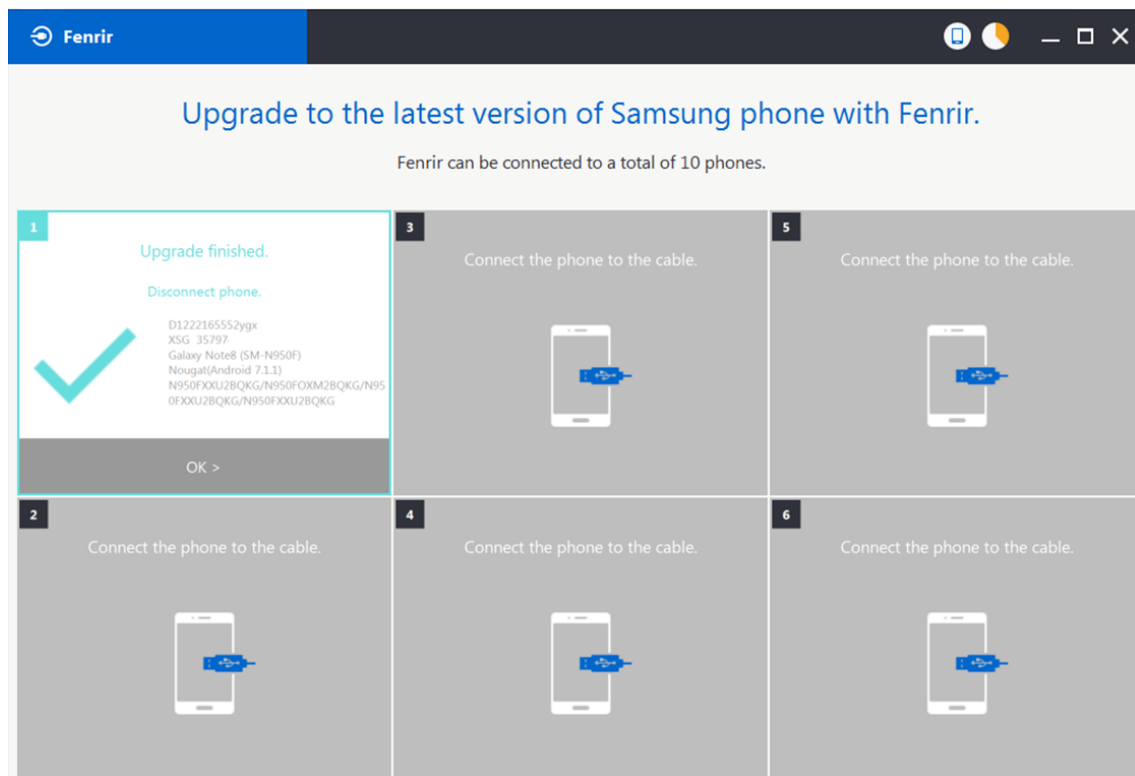


8) The status circle increases as the update installs.
The update process takes approximately 5-10 minutes to complete.
Do not disconnect the device from USB during processing.



6. Level 1 Repair

9) Once complete, application will present the below screen indicating update complete. Click Ok and detach device from USB.



6. Level 1 Repair

6-2. How to use 'Odin' program

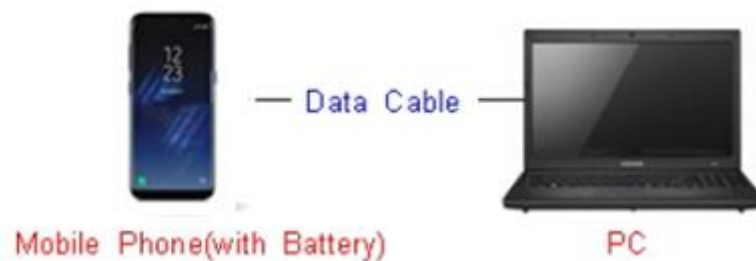
※ S/W Update via Fenrir is mandatory.

Below is the method to use 'Odin' program in any specific case.

6-2-1. Preparation

- Installation program: **Odin3 v3.14.6.exe**
- Mobile Phone
- Data Cable
- S/W Binary files (downloaded from GSPN)

※ Settings

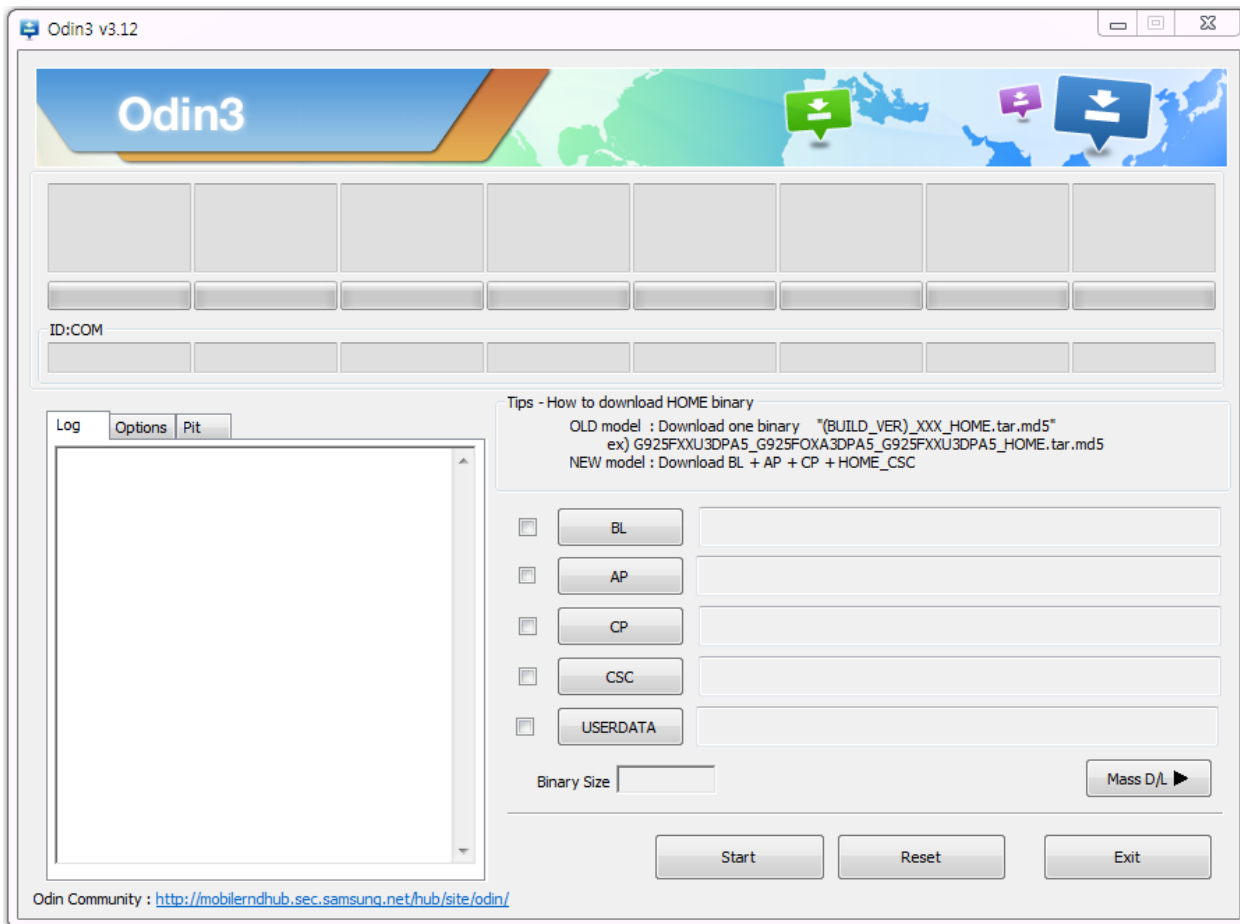


Data Cable :
GH39-02023A
GH39-02025A
GH39-02031A
GH39-02033A

6. Level 1 Repair

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

Open up the S/W Installation Program by executing the "**Odin3 v3.14.6.exe**"

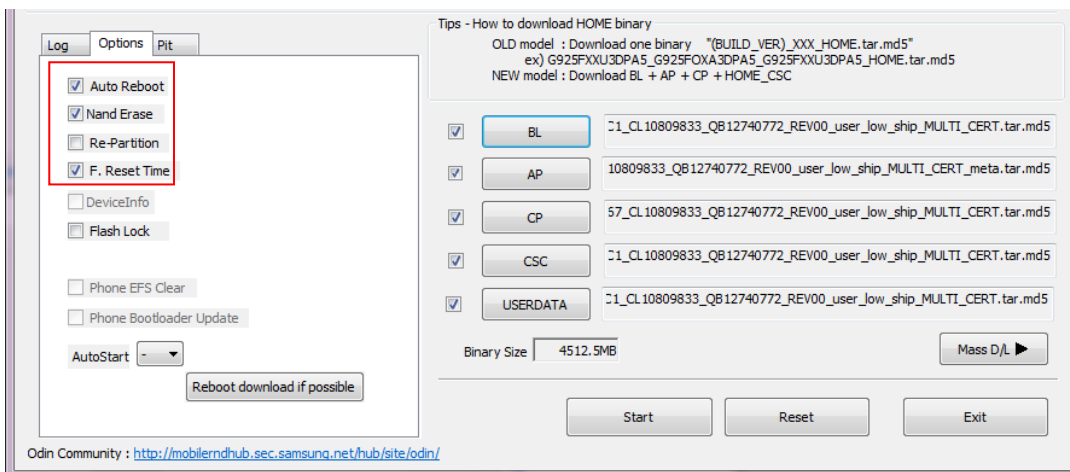
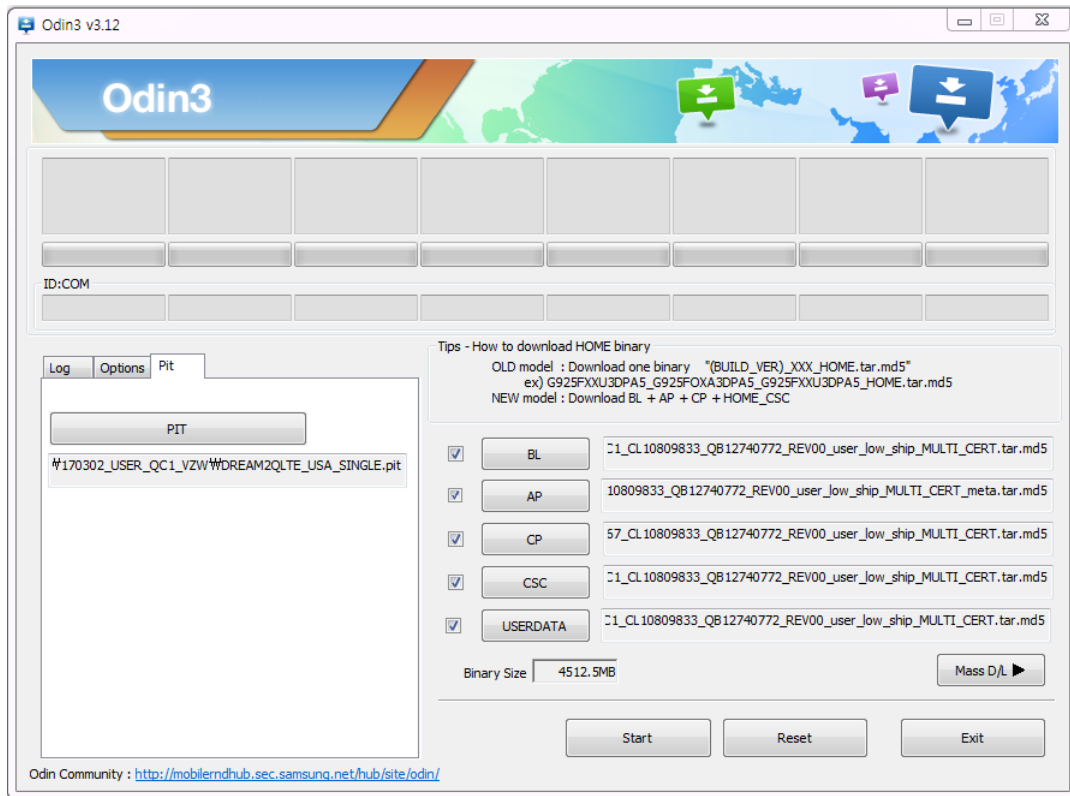


6. Level 1 Repair

1. Enable the check mark by click on the following options

- Check Auto Reboot, F. Reset Time, Nand Erase
- Check PIT
- Check BOOTLOADER, PDA, PHONE, CSC and USERDATA Files

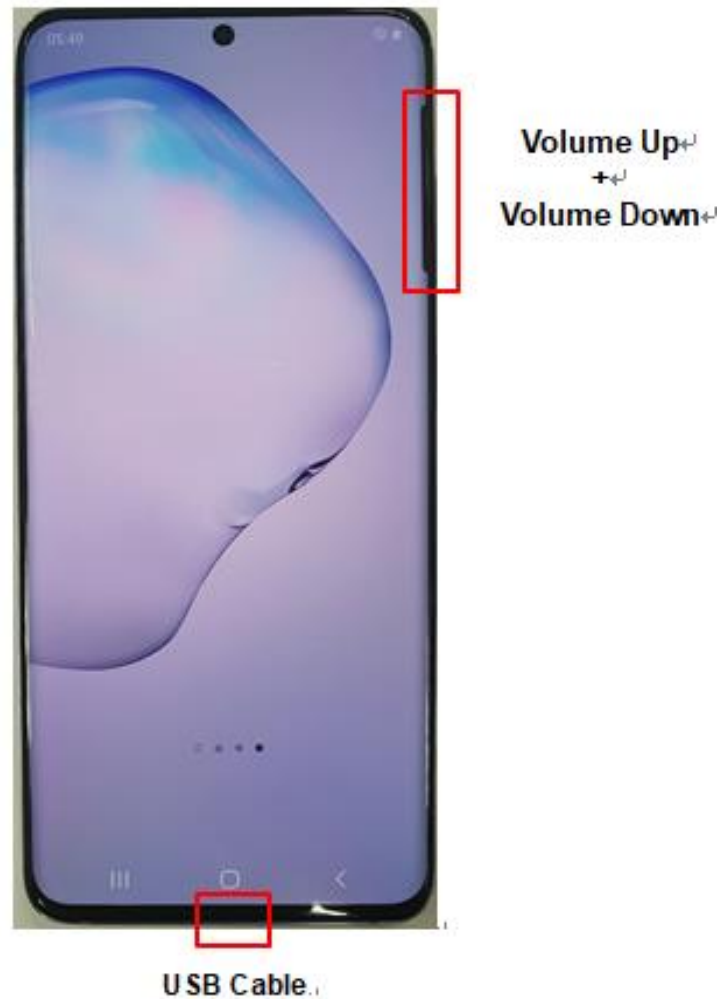
* Note : "Odin v3.14.6 or above" checks MD5 checksum just after file selection.



6. Level 1 Repair

2. Enter into Download Mode

- Enter into Download Mode by pressing 2 button(Volume Up button + Volume Down) simultaneously and connect USB cable.
- Press volume up button after 'Warning' message and 'Downloading' message is displayed.

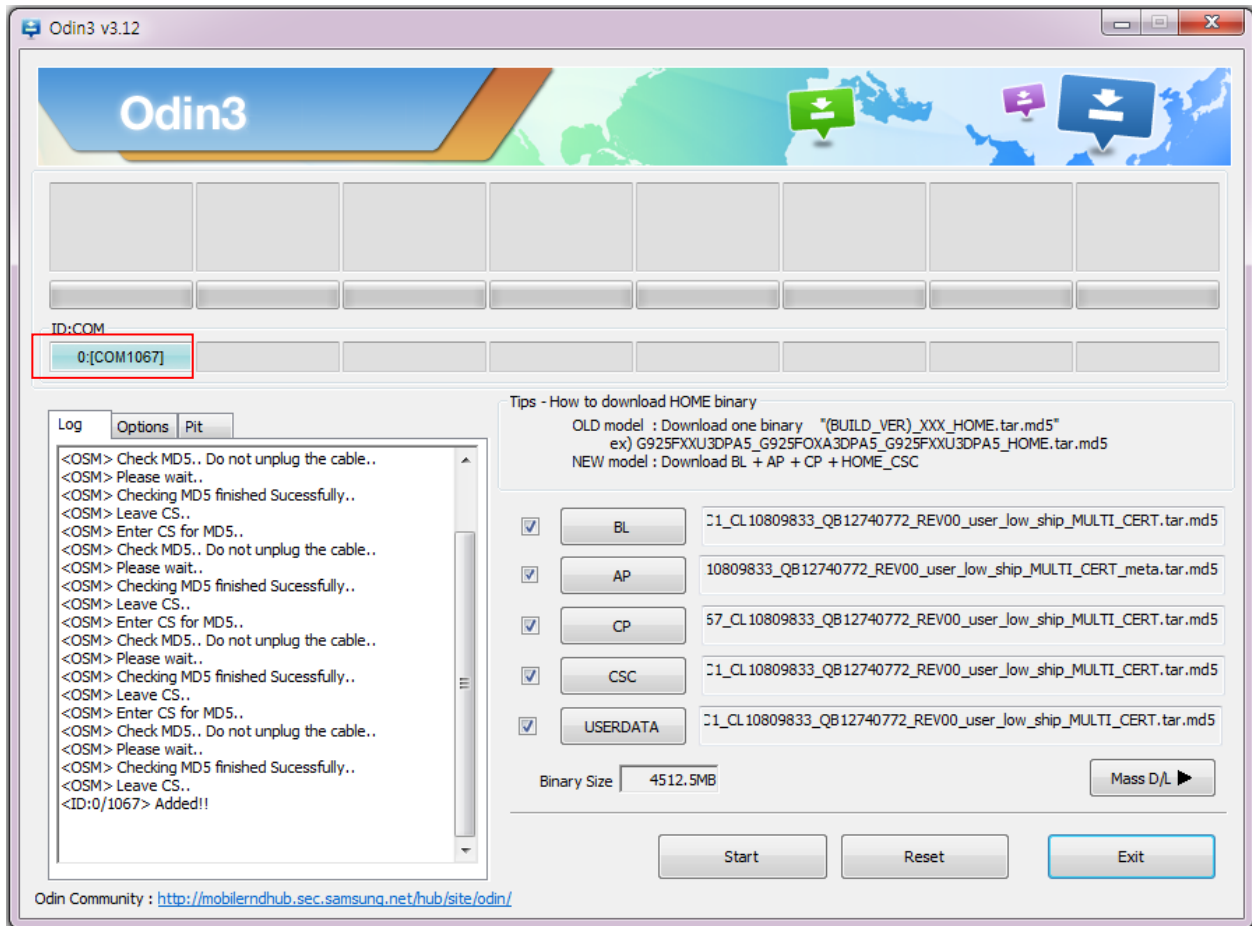


6. Level 1 Repair

3. Connect the device to PC via Data Cable.

Make sure that the one of communication ports [ID:COM] box is highlighted in sky blue.

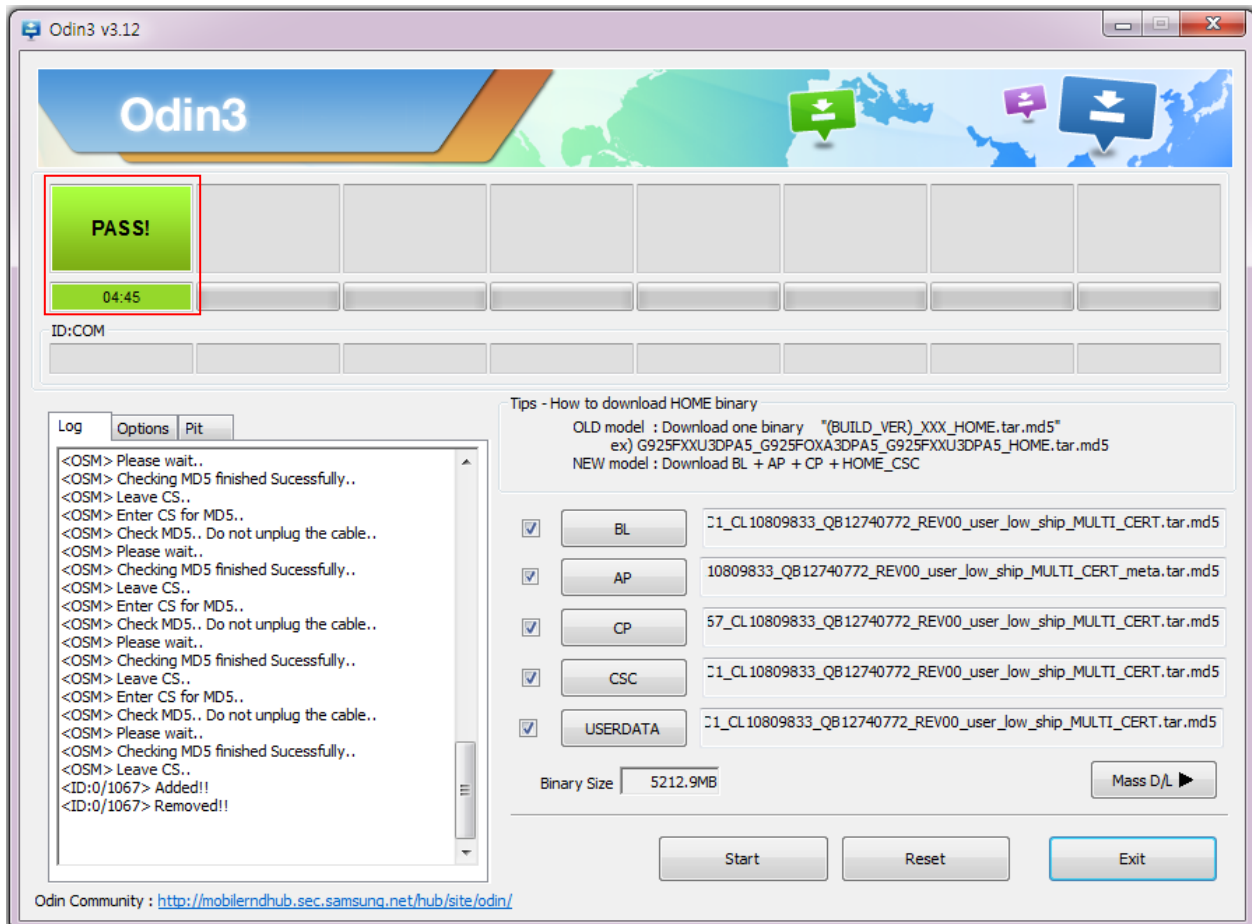
The device is now connected with the PC and ready to download the binary files in it.



6. Level 1 Repair

4. Start downloading the binary files 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 files have 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 data Reset by Settings → General Management → Reset

※ Caution. Never disconnect during the S/W downloading.

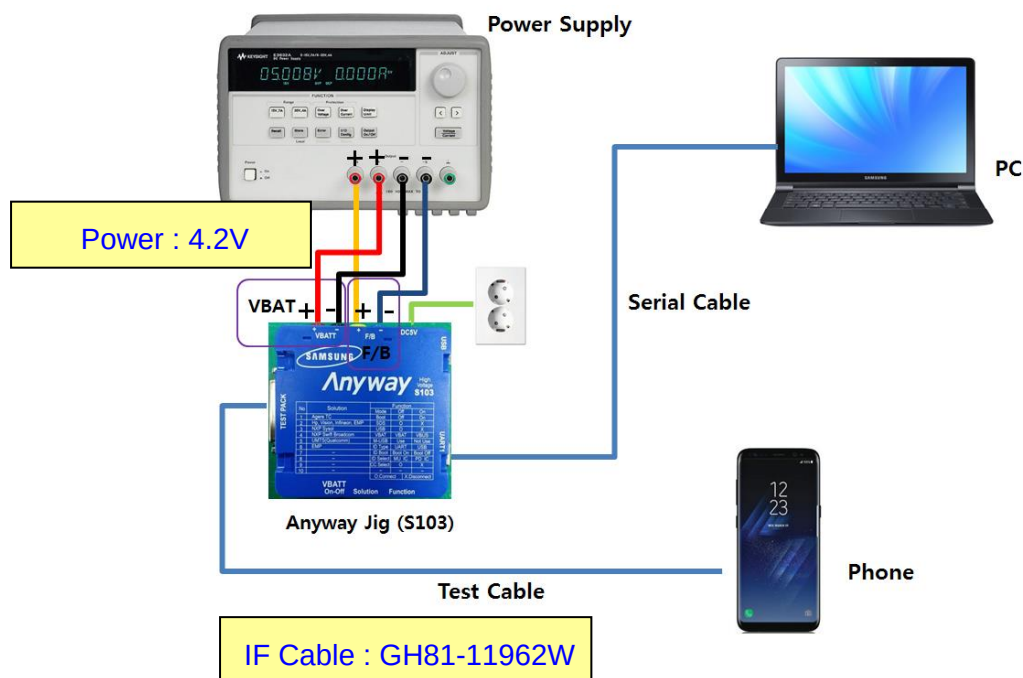
6. Level 1 Repair

6-3. IMEI writing

6-3-1. Preparation

- New IMEI writing Program has been released.
- Supported Model : Models which CAB files are uploaded on HHPsvc INI File category, instead of ini file.
- Refer to below IMEI writing procedure.

- H/W



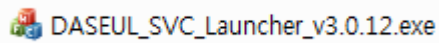
- S/W

① Library Install	To use Daseul, library files should be installed. Refer to SVC Bulletin “(11-82) Daseul (New IMEI writing Program) Library Install guide_rev1.0”
② Launcher	DASEUL SVC Launcher v3.0.12 or higher -Uploaded on HHPsvc Notice
③ Runtime File	1. DASEUL_IMEI_ALL_Runtime_3.1.281.0_r00405.CAB or higher -Uploaded on HHPsvc Notice 2. Make 'ModelName' folder at the same position with launcher & Runtime file.
④ Model File	Copy Model File under the 'Model Name' folder

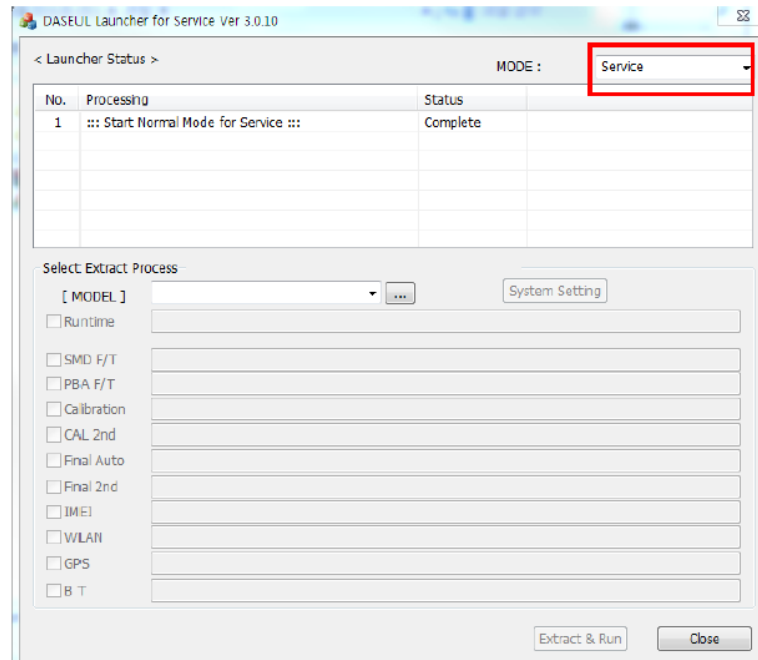
6. Level 1 Repair

6-3-2. IMEI writing Process

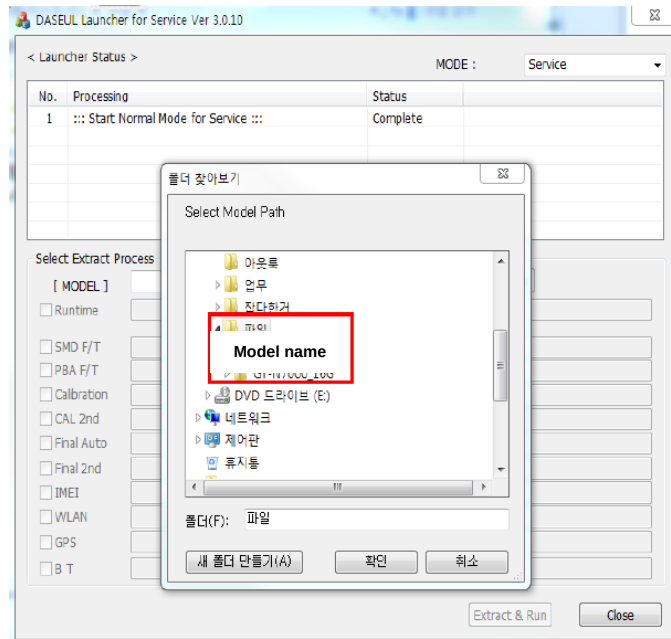
1. Run DASEUL_SVC_Launcher_v3.0.12.exe



2. Select Service Mode

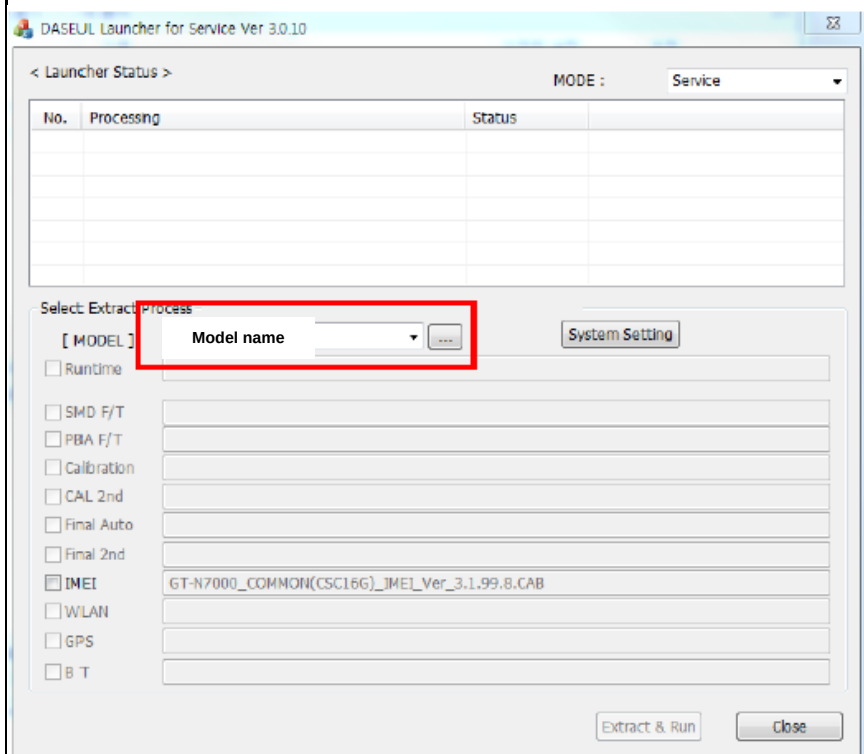


3. Click  and Select folder where the Launcher exists



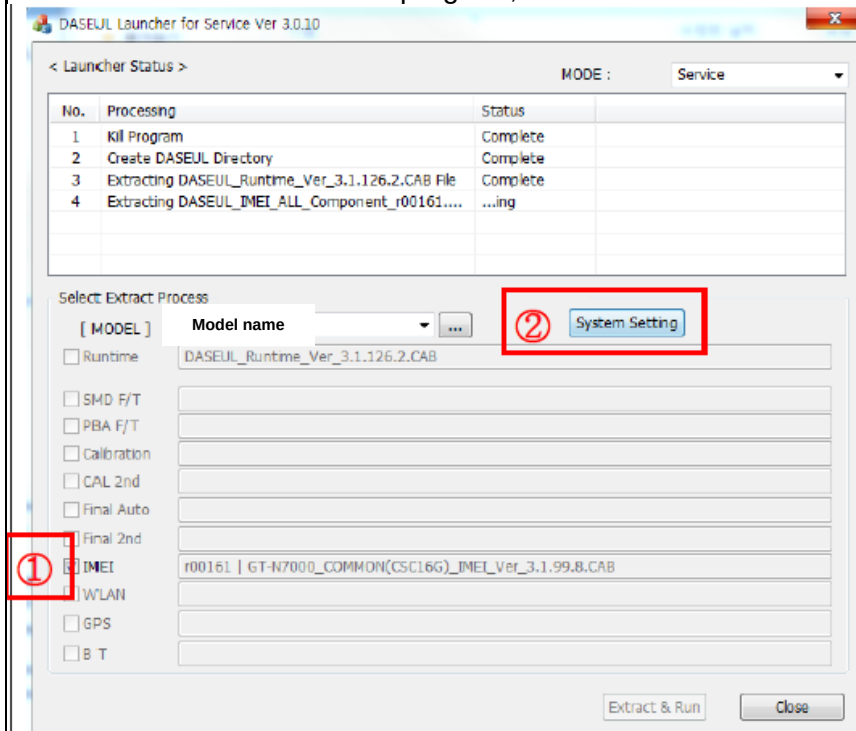
6. Level 1 Repair

4. Select Model



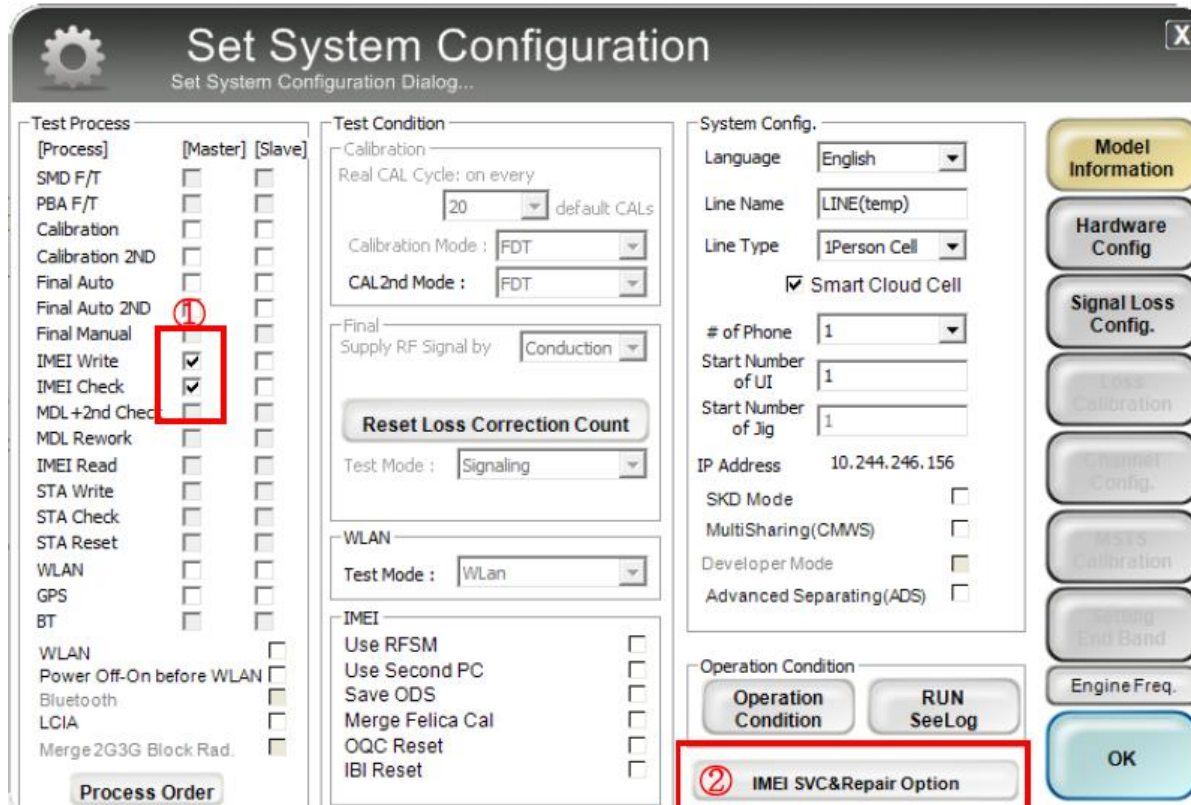
5. Check IMEI and click System Setting

※ Once you setup the setting, you don't have to do it again, unless there is change.
From second run of the IMEI program, check IMEI and click Extract & Run.



6. Level 1 Repair

6. Check IMEI Write / IMEI Check and click IMEI SVC & Repair Option.



The 'Set System Configuration' dialog box is shown. It has a title bar with a gear icon and a close button. The main area is divided into several sections: 'Test Process' with a table of checkboxes for various tests; 'Test Condition' with dropdowns for calibration and RF signal; 'System Config.' with various settings like language, line name, and IP address; and a right sidebar with buttons for 'Model Information', 'Hardware Config', 'Signal Loss Config.', 'Loss Calibration', 'Channel Config.', 'MMS Calibration', 'Setting End Band', and 'Engine Freq.'. At the bottom, there are buttons for 'Operation Condition', 'RUN SeeLog', and 'IMEI SVC&Repair Option' (which is circled in red with a '2'). A red box with a '1' highlights the 'IMEI Write' and 'IMEI Check' checkboxes in the 'Test Process' table.

[Process]	[Master]	[Slave]
SMD F/T	☐	☐
PBA F/T	☐	☐
Calibration	☐	☐
Calibration 2ND	☐	☐
Final Auto	☐	☐
Final Auto 2ND	☐	☐
Final Manual	☐	☐
IMEI Write	☒	☐
IMEI Check	☒	☐
MDL+2nd Check	☐	☐
MDL Rework	☐	☐
IMEI Read	☐	☐
STA Write	☐	☐
STA Check	☐	☐
STA Reset	☐	☐
WLAN	☐	☐
GPS	☐	☐
BT	☐	☐
WLAN	☐	☐
Power Off-On before WLAN	☐	☐
Bluetooth	☐	☐
LCIA	☐	☐
Merge 2G3G Block Rad.	☐	☐

Test Condition

Calibration
Real CAL Cycle: on every 20 default CALs
Calibration Mode: FDT
CAL2nd Mode: FDT

Final
Supply RF Signal by: Conduction
Reset Loss Correction Count
Test Mode: Signaling

WLAN
Test Mode: WLAN

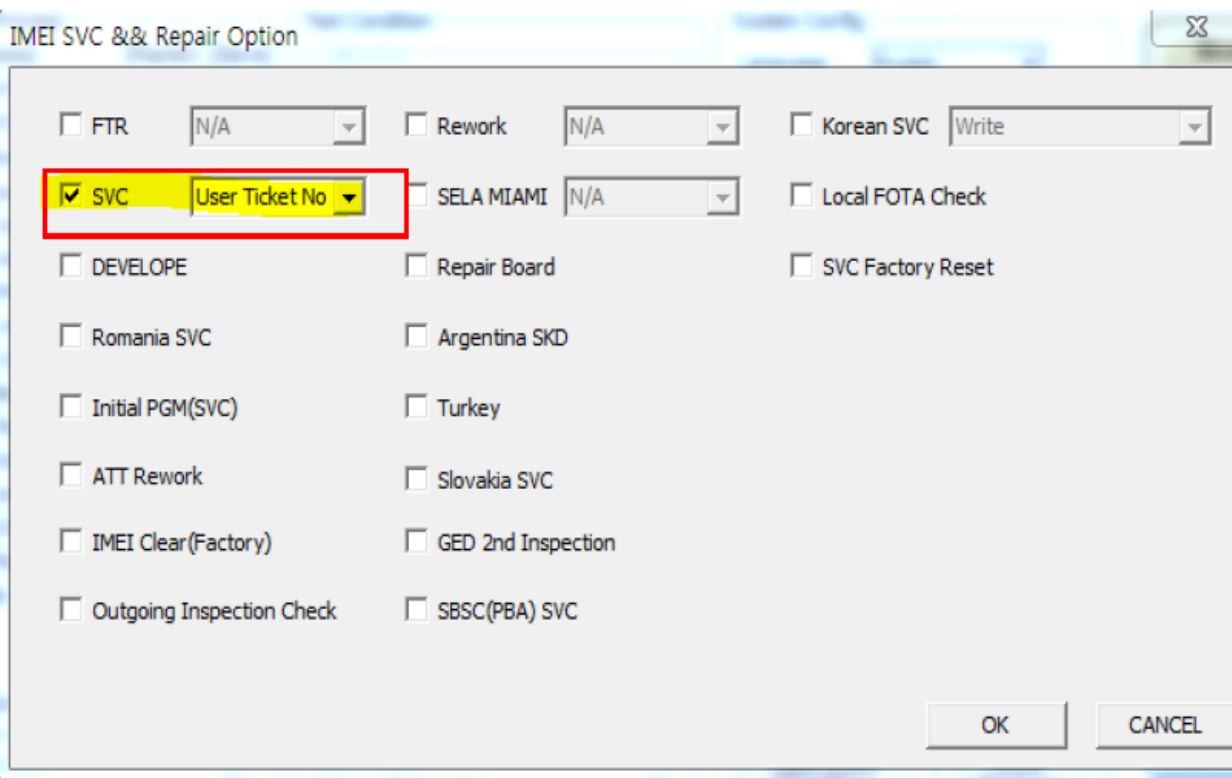
IMEI
Use RFSM
Use Second PC
Save ODS
Merge Felica Cal
OQC Reset
IBI Reset

System Config.
Language: English
Line Name: LINE(temp)
Line Type: 1Person Cell
☒ Smart Cloud Cell
of Phone: 1
Start Number of UI: 1
Start Number of Jlg: 1
IP Address: 10.244.246.156
SKD Mode
MultiSharing(CMWS)
Developer Mode
Advanced Separating(ADS)

Operation Condition
Operation Condition
RUN SeeLog
IMEI SVC&Repair Option

Model Information
Hardware Config
Signal Loss Config.
Loss Calibration
Channel Config.
MMS Calibration
Setting End Band
Engine Freq.
OK

7. Check 'SVC , User Ticket No' and click OK



The 'IMEI SVC && Repair Option' dialog box is shown. It has a title bar with a close button. The main area contains various checkboxes and dropdown menus for different service options. A red box highlights the 'SVC' checkbox and the 'User Ticket No' dropdown menu. At the bottom, there are 'OK' and 'CANCEL' buttons.

IMEI SVC && Repair Option

☐ FTR N/A ☐ Rework N/A ☐ Korean SVC Write

☒ SVC User Ticket No ☐ SELA MIAMI N/A ☐ Local FOTA Check

☐ DEVELOPE ☐ Repair Board ☐ SVC Factory Reset

☐ Romania SVC ☐ Argentina SKD

☐ Initial PGM(SVC) ☐ Turkey

☐ ATT Rework ☐ Slovakia SVC

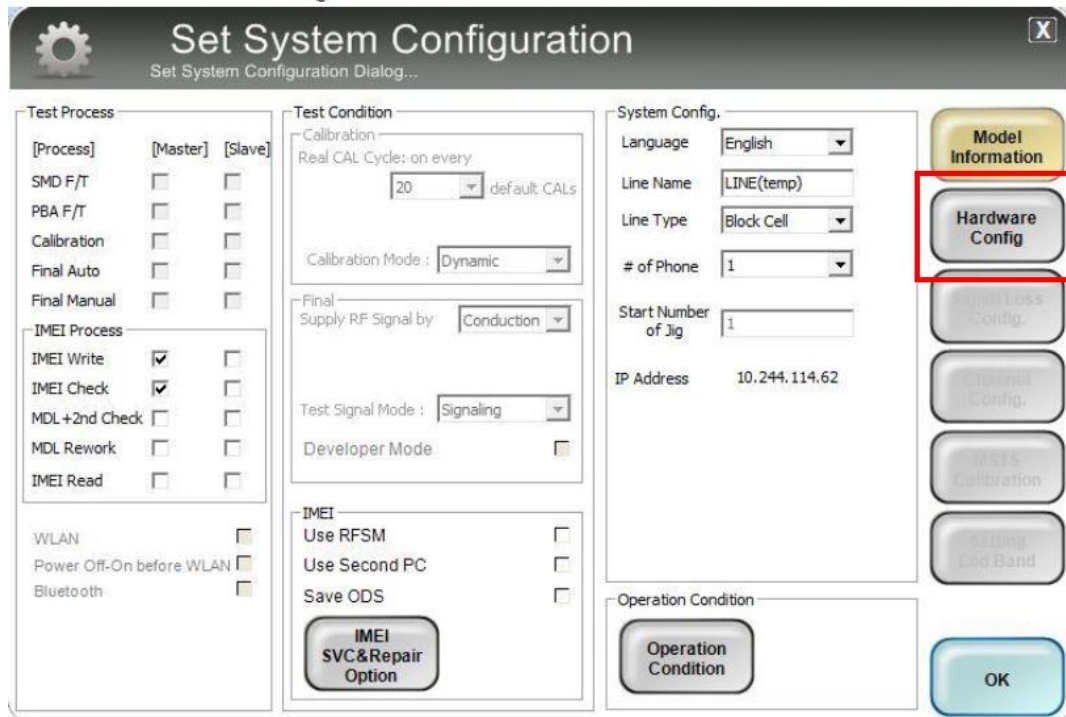
☐ IMEI Clear(Factory) ☐ GED 2nd Inspection

☐ Outgoing Inspection Check ☐ SBSC(PBA) SVC

OK CANCEL

6. Level 1 Repair

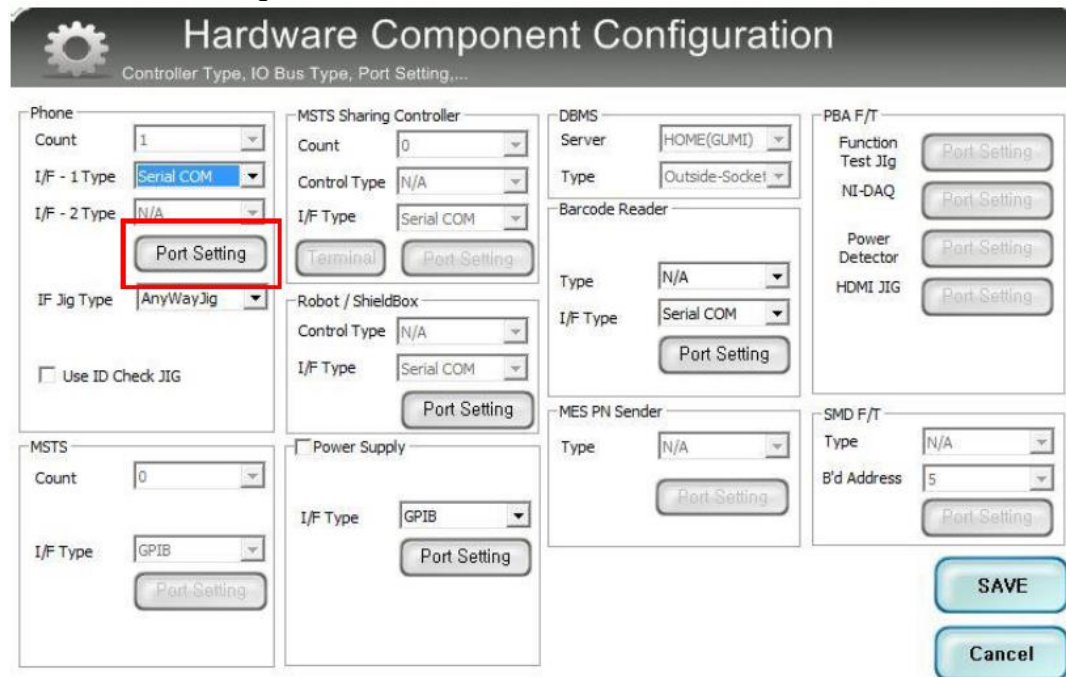
8. Click 'Hardware Config'



The 'Set System Configuration' dialog box is shown. It has a title bar with a gear icon and the text 'Set System Configuration Dialog...'. The dialog is divided into several sections:

- Test Process:** Includes checkboxes for [Process], [Master], [Slave], SMD F/T, PBA F/T, Calibration, Final Auto, Final Manual, IMEI Process, IMEI Write, IMEI Check, MDL+2nd Check, MDL Rework, IMEI Read, WLAN, Power Off-On before WLAN, and Bluetooth.
- Test Condition:** Includes Calibration (Real CAL Cycle: on every 20 default CALs), Calibration Mode (Dynamic), Final Supply RF Signal by (Conduction), Test Signal Mode (Signaling), Developer Mode, IMEI Use RFSM, Use Second PC, and Save ODS.
- System Config:** Includes Language (English), Line Name (LINE(temp)), Line Type (Block Cell), # of Phone (1), Start Number of Jig (1), IP Address (10.244.114.62), and Operation Condition.
- Model Information:** A vertical sidebar on the right with buttons for Model Information, Hardware Config (highlighted with a red box), Signal Loss Config, Channel Config, MSTS Calibration, Setting End Band, and OK.

9. Click 'Port Setting'



The 'Hardware Component Configuration' dialog box is shown. It has a title bar with a gear icon and the text 'Controller Type, IO Bus Type, Port Setting,...'. The dialog is divided into several sections:

- Phone:** Includes Count (1), I/F - 1 Type (Serial COM), I/F - 2 Type (N/A), IF Jig Type (AnyWayJig), and a checkbox for Use ID Check JIG.
- MSTS Sharing Controller:** Includes Count (0), Control Type (N/A), I/F Type (Serial COM), and buttons for Terminal and Port Setting.
- Robot / ShieldBox:** Includes Control Type (N/A), I/F Type (Serial COM), and a Port Setting button.
- Power Supply:** Includes I/F Type (GPIO) and a Port Setting button.
- DBMS:** Includes Server (HOME(GUMI)), Type (Outside-Socket), Barcode Reader (Type: N/A, I/F Type: Serial COM, Port Setting), and MES PN Sender (Type: N/A, Port Setting).
- PBA F/T:** Includes Function Test Jig, NI-DAQ, Power Detector, and HDMI JIG, each with a Port Setting button.
- SMD F/T:** Includes Type (N/A), B'd Address (5), and a Port Setting button.
- MSTS:** Includes Count (0), I/F Type (GPIO), and a Port Setting button.
- Buttons:** SAVE and Cancel buttons at the bottom right.

6. Level 1 Repair

10. Select Port Number and SAVE

Set IO BUS Configuration

Phone IO Bus Setting

Common

BaudRate: 115200
Data Bit: 8
Parity: No
Stop Bit: 1

No.	Port #1
1	1

SAVE

Cancel

11. Click OK to proceed

Set System Configuration

Set System Configuration Dialog...

Test Process

[Process]	[Master]	[Slave]
SMD F/T	☐	☐
PBA F/T	☐	☐
Calibration	☐	☐
Final Auto	☐	☐
Final Manual	☐	☐

IMEI Process

IMEI Write	☒	☐
IMEI Check	☒	☐
MDL +2nd Check	☐	☐
MDL Rework	☐	☐
IMEI Read	☐	☐

WLAN ☐
Power Off-On before WLAN ☐
Bluetooth ☐

Test Condition

Calibration
Real CAL Cycle: on every 20 default CALs
Calibration Mode: Dynamic

Final
Supply RF Signal by: Conduction

Test Signal Mode: Signaling

Developer Mode ☐

IMEI
Use RFSM ☐
Use Second PC ☐
Save ODS ☐

IMEI SVC&Repair Option

System Config.

Language: English
Line Name: LINE(temp)
Line Type: Block Cell
of Phone: 1
Start Number of Jig: 1
IP Address: 10.244.114.62

Operation Condition

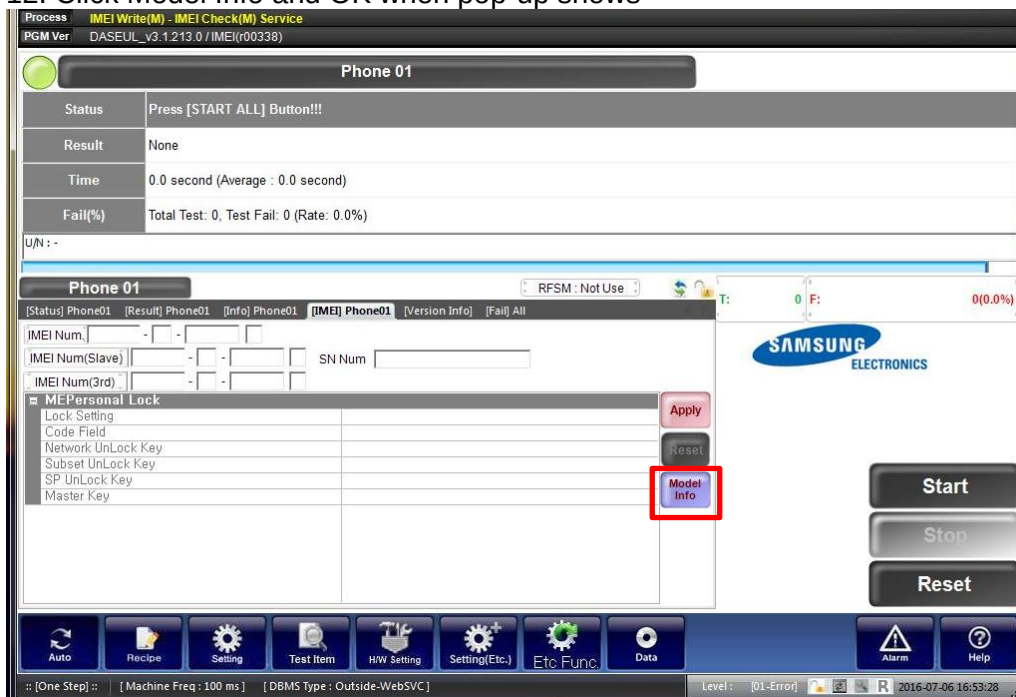
Operation Condition

Model Information
Hardware Config
Signal Loss Config.
Channel Config.
Auto Calibration
Setting End Band

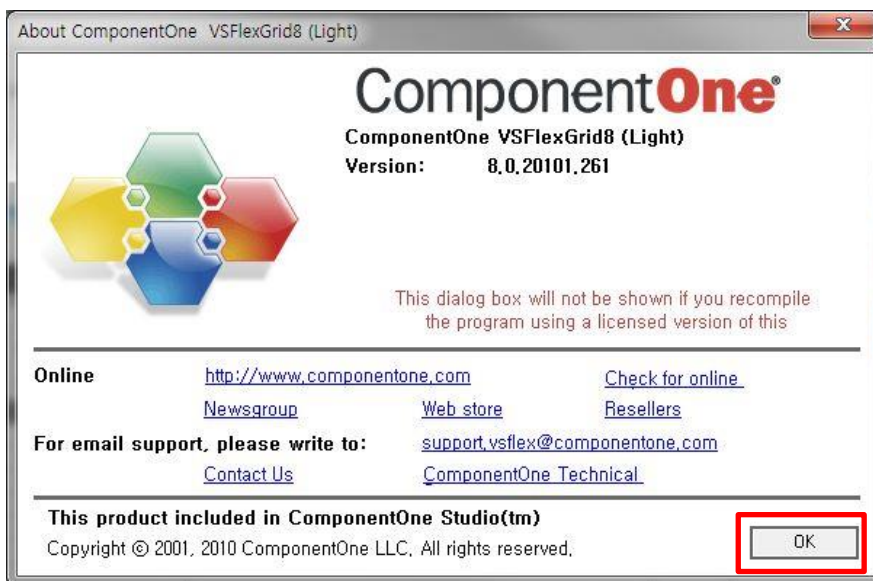
OK

6. Level 1 Repair

12. Click Model Info and OK when pop-up shows



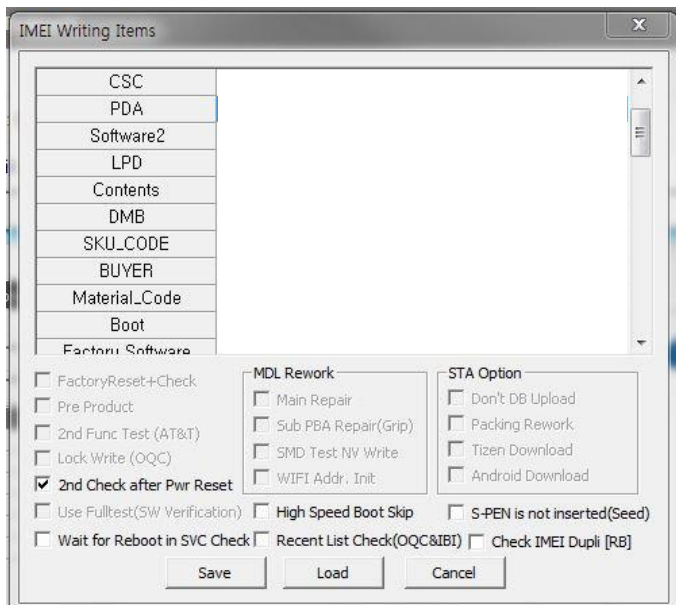
13. Click OK



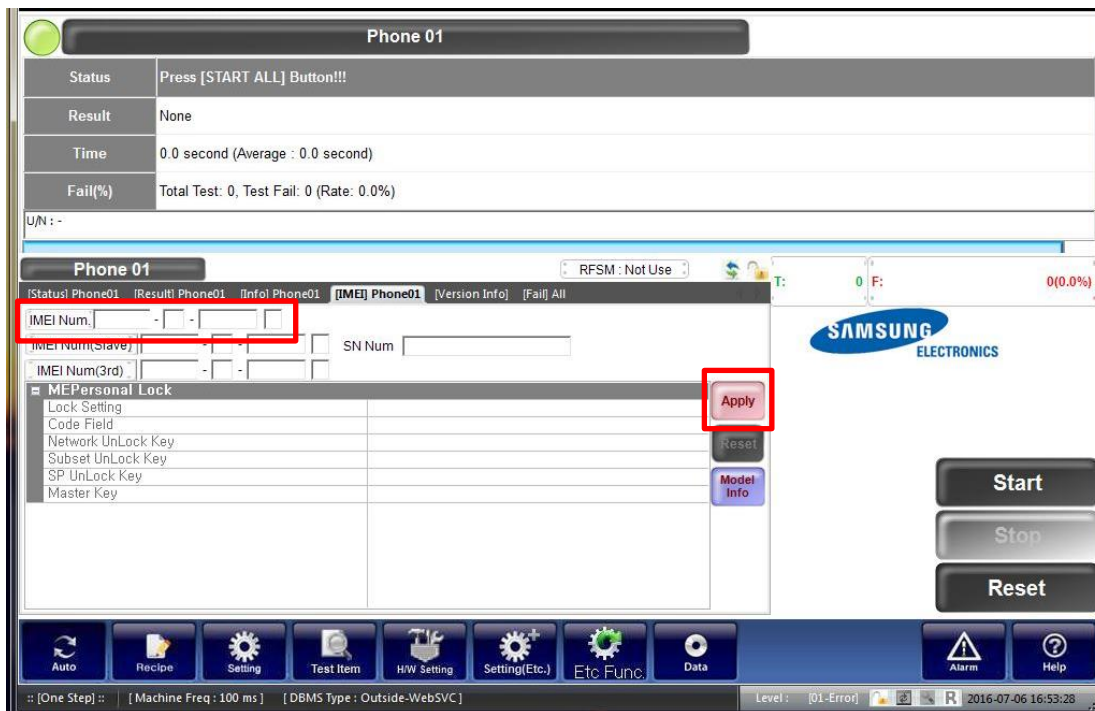
6. Level 1 Repair

14. Input SKU_CODE and BUYER, then click Save button.

※ Refer to HHPsvc→IMEI Review to check SKU Code and buyer

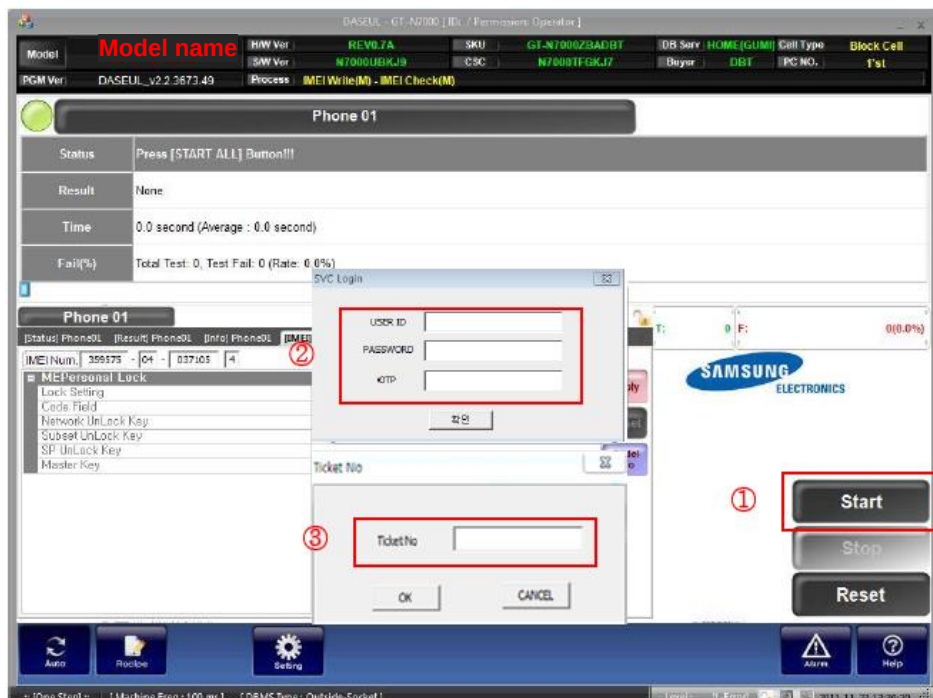


15. Input IMEI Number and click Apply



6. Level 1 Repair

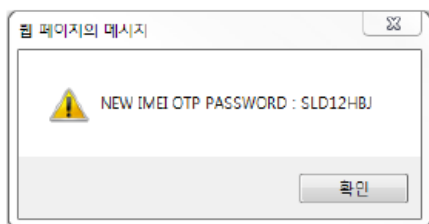
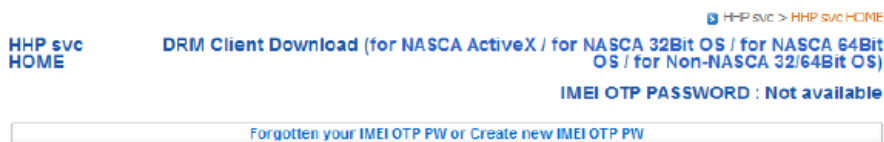
16. ① Click Start → ② Input IMEI writing ID and Password & OTP → ③ Input Ticket No



※ OTP(One time Password) : OTP is valid for 6 hours.

After that, you can get new OTP by click the “Forgotten your IMEI OTP PW or Create new IMEI OTP PW” button.

☞ OTP Location : GSPN → Knowledge → HHP svc → Home

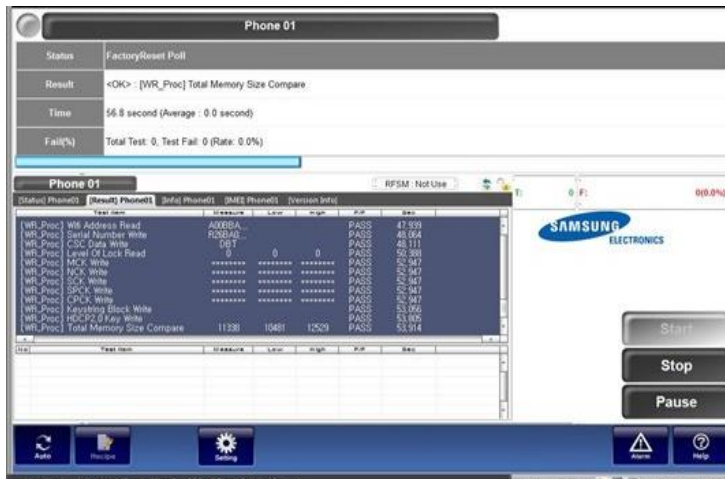


6. Level 1 Repair

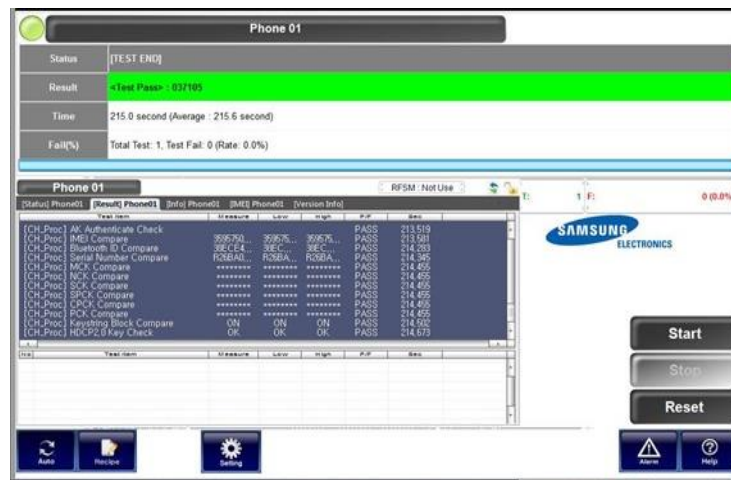
17. Connect the phone to Anyway JIG

- ※ When you connect the phone, the phone should be turned off.
After connecting the phone, the phone will be booted automatically.

18. IMEI Writing Proceeding

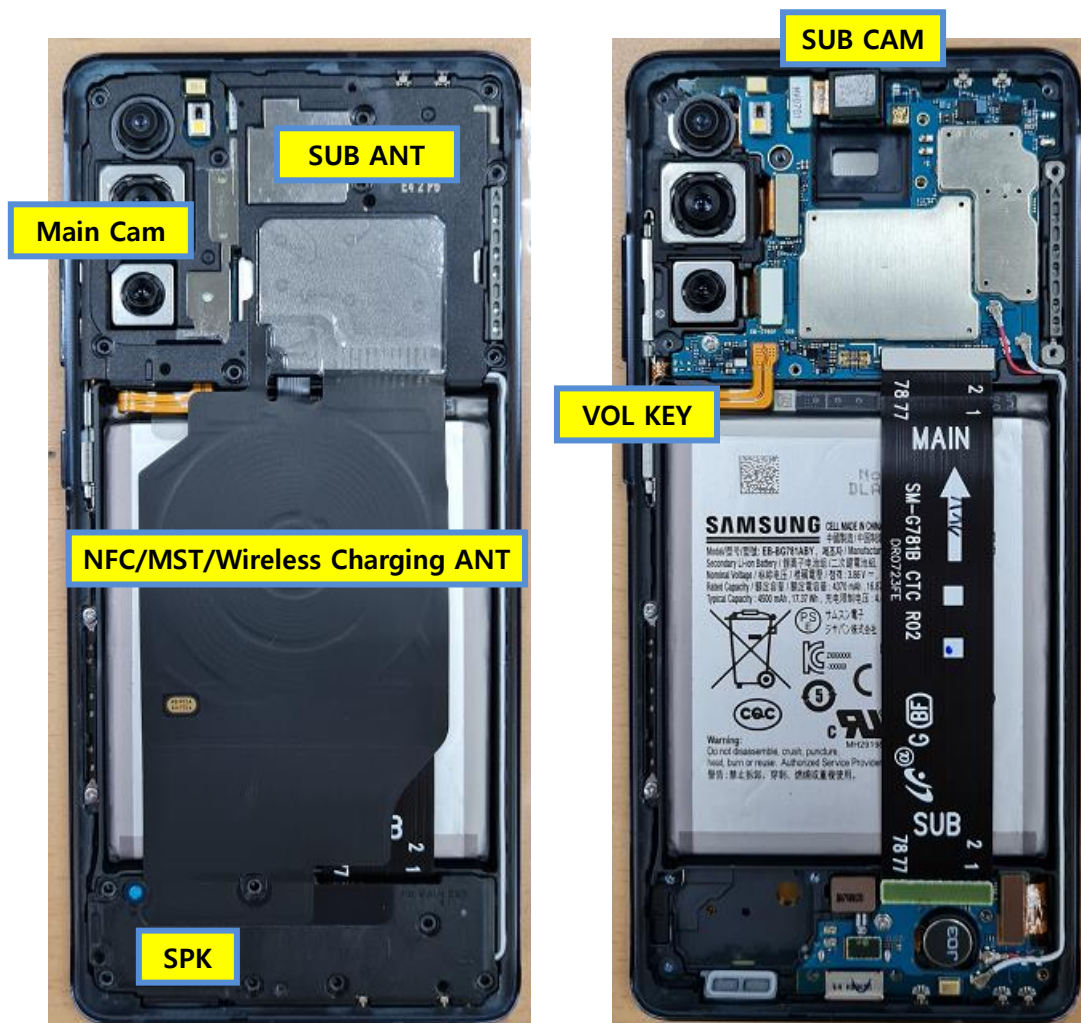


19. IMEI Writing Success



7. Level 2 Repair

7-1. Components on the Rear Case



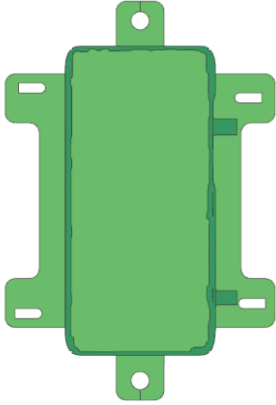
7. Level 2 Repair

7-2. Pre-requisite

	
Tweezers / Disass'y Stick / Screw Driver	Anti-static Gloves
	
Anti-static Mat	AOD
	
Ethyl Alcohol	Cotton Swab

7. Level 2 Repair

7-3. Parts which must be changed after repair

BOM description & part code	Image	Remarks
Backglass Outside tape [GH81-19848A]		Left items must be changed to the new one in case of disassembly.

7. Level 2 Repair

7-4. Disassembly

1

Put the device in the chamber as following below heating condition.

- SOC 68%↓: 70°C/ 5~10 minute

- SOC 68%↑: 60°C/ 5~10 minute

※ Please confirm the heating condition released lastly, and follow it.



2

Disassemble SD Card SIM Tray from device.
Unscrew 16Points.



SD Card/SIM Tray



※ Caution

Be care of scratch.

※ Caution

Be care of scratch and molding damage.

3

Disassemble the REAR. TOP and REAR SPK

- Rear TOP Right > TOP > Left

- Rear BTM Left > Right > TOP

By using guide hole disassemble Rear

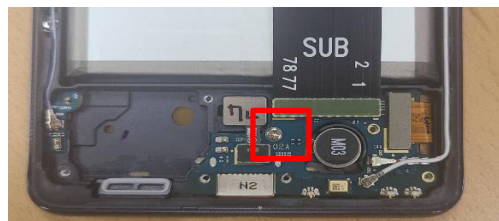
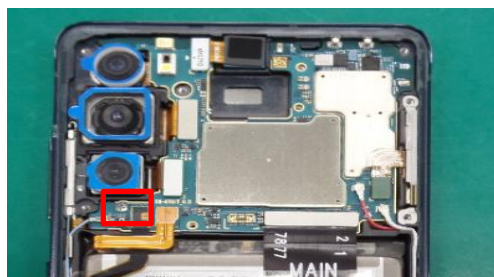
Disconnect the NFC connector.

Remove the Rear Top and Rear BTM



4

Unscrew 2 Points front PBA and SUB PBA
(Main PBA 1 Point, Sub PBA 1 Point)



※ Caution

Be care of damage to components.

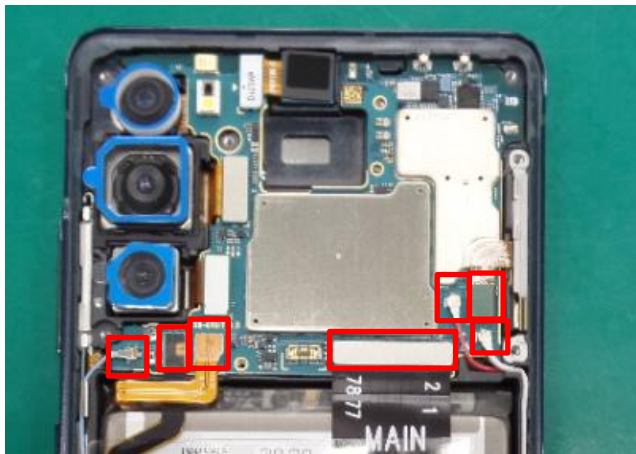
※ Caution

Be careful not to damage the PBA.

7. Level 2 Repair

5

Disassemble connector 7Points.
Disassemble Main PBA from Front.

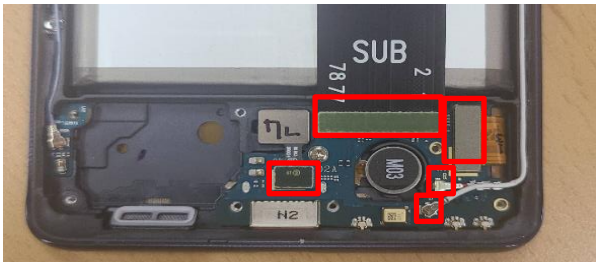


※ Caution

Be care of damage to connector

6

Disassemble connector 5Points.
Disassemble SUB PBA from Front.



※ Caution

Be care of damage to side contact point

7

Disassemble another items.



※ Caution

Be care of damage/ scratch

7. Level 2 Repair

7-5. Assembly

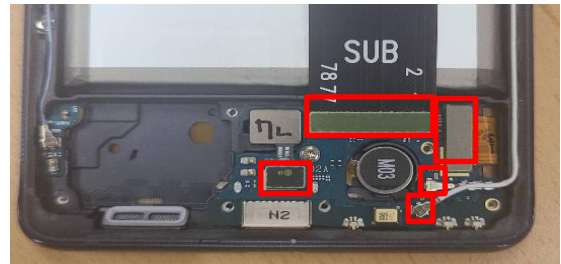
1

Assembly Ant, Motor,fingerprint sensor.



2

Assemble SUB PBA from Front.
Assemble screw 1 Points and connector 5 Points.



※ Caution

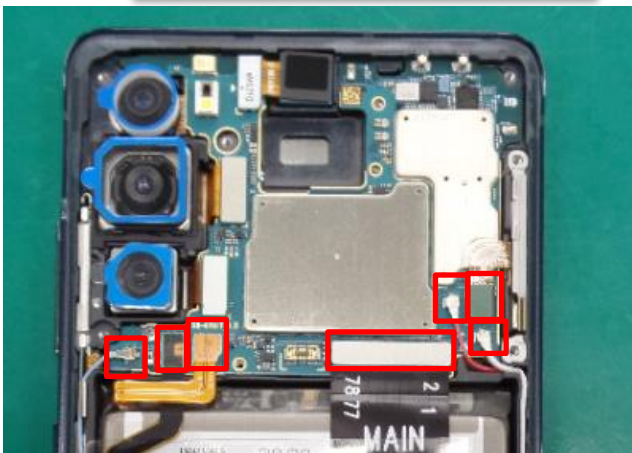
Be care of strong pushing

※ Caution

Be care of damage to side contact point

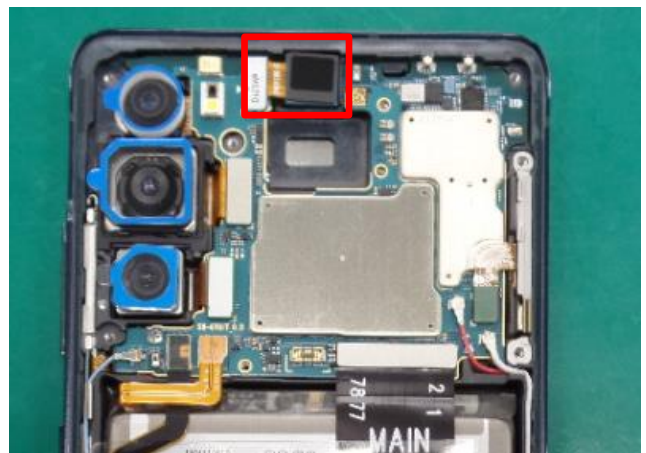
3

Assemble PBA on Front
Assemble connector 7 Points.



4

Assemble connector of sub CAM.



※ Caution

Be care of FPCB damage.PBA Damage

※ Caution

Be careful not to FPCB damage and tilt, strong pushing

7. Level 2 Repair

5

Assemble Screw 1Point.



6

Assemble NFC ANT connector and Rear
BTM, TOP.



※ Caution

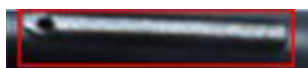
1) Be care of connector damage

※ Caution

Be care of PBA damage

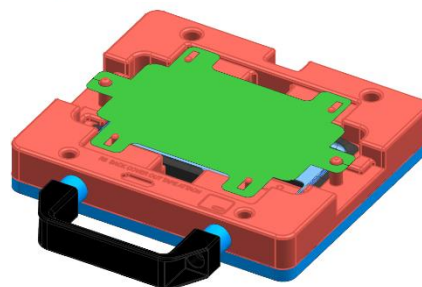
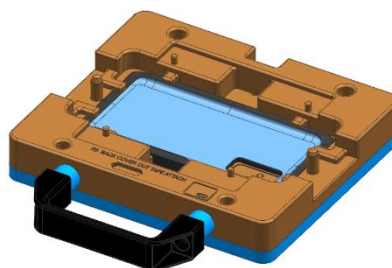
7

SCREW 16POINT.
* Torque value : 1.25 Kgf•cm
And assembling SIM socket



8

Attach the back-glass tape on the back-glass.
- Gently press all adhesive parts of tape using
disassembly stick or hands.



※ Caution

Be care of REAR damage

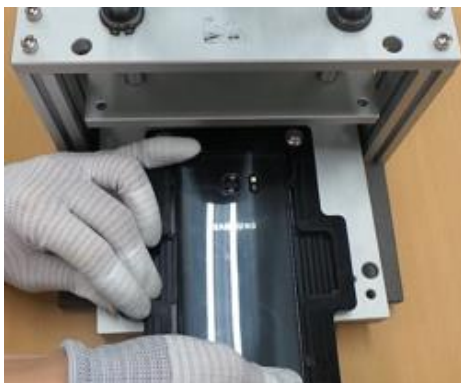
※ Caution

Be care of scratch and tilt.

7. Level 2 Repair

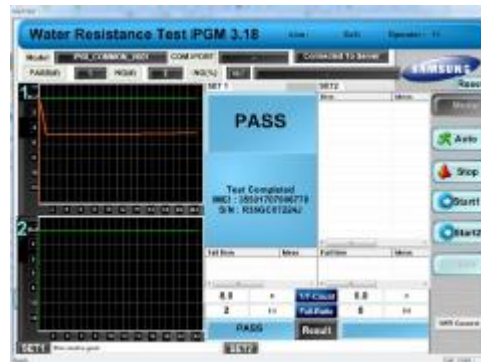
9

Press the back glass using pressing jig and pad.
Pressing force : 1N, Pressing time : 1 minute
※ SIM Tray must be separated before pressing the backglass or the LCD.



10

Test WRT.



※ Caution

Please confirm the pressing condition released lastly, and follow it.

※ Caution

Be care of REAR scratch

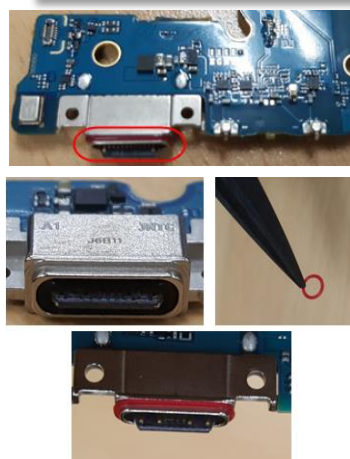
11

If WRT test happen fail, check the reason.
(sealing or etc)



12

The reason is IF connector,
Disassemble PBA from Front and change O-Ring



※ Caution

Be care of REAR scratch

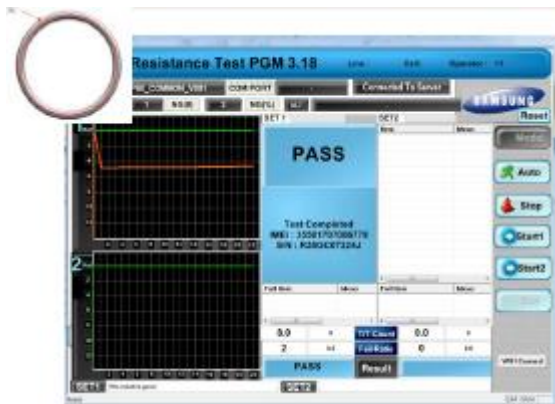
※ Caution

Be care of PBA damage

7. Level 2 Repair

13

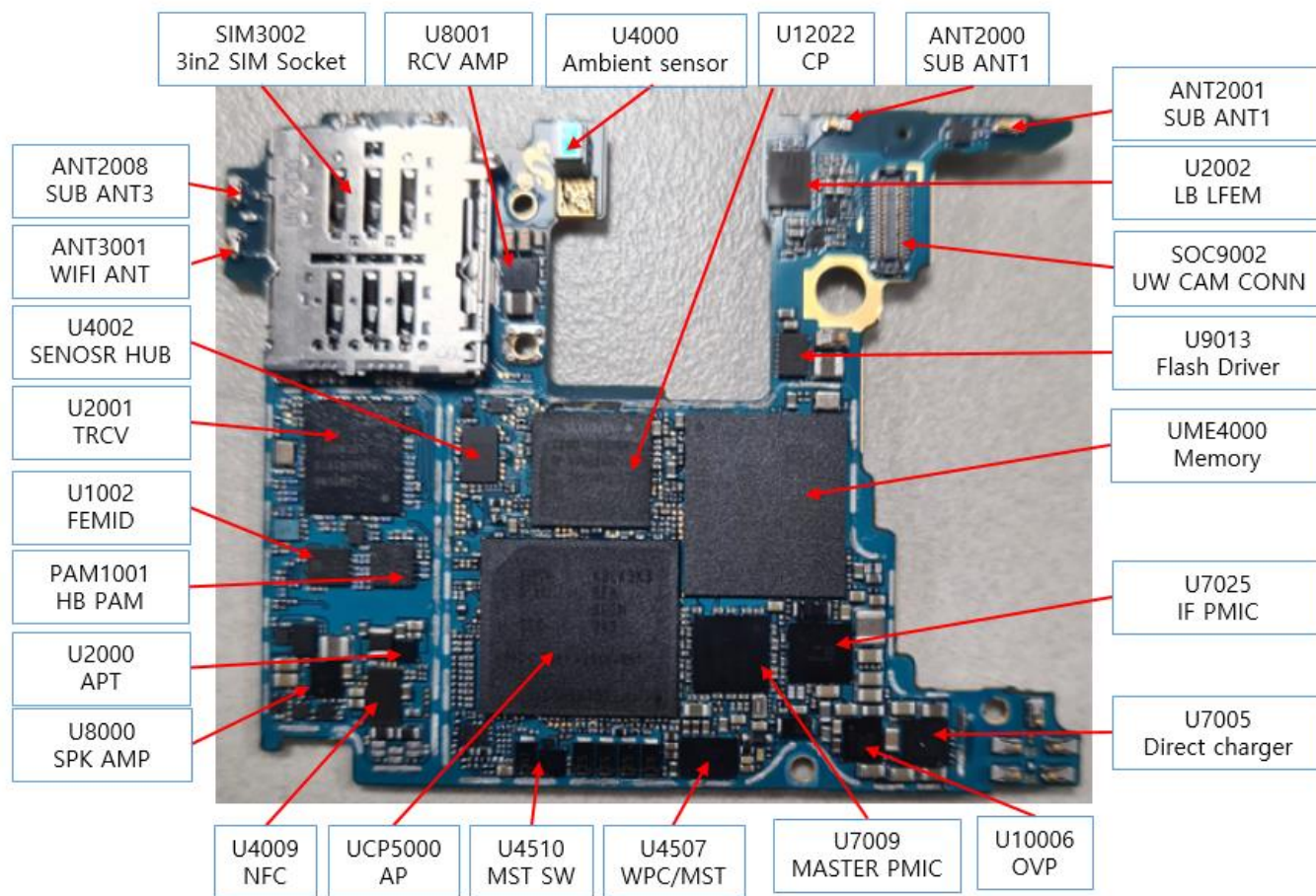
Test WRT.



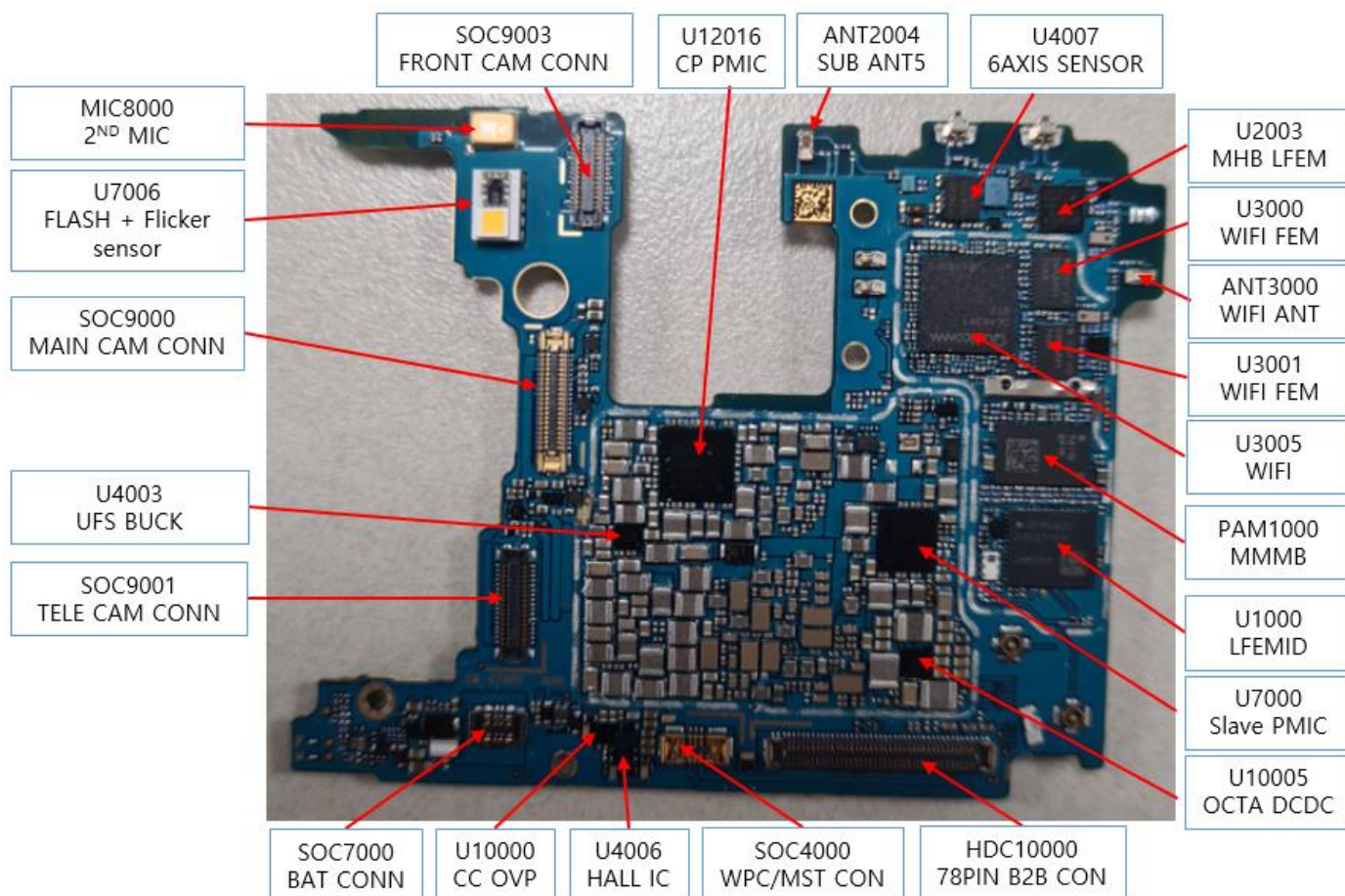
※ Caution
Be care of REAR scratch

8. Level 3 Repair

8-1. Components Layout

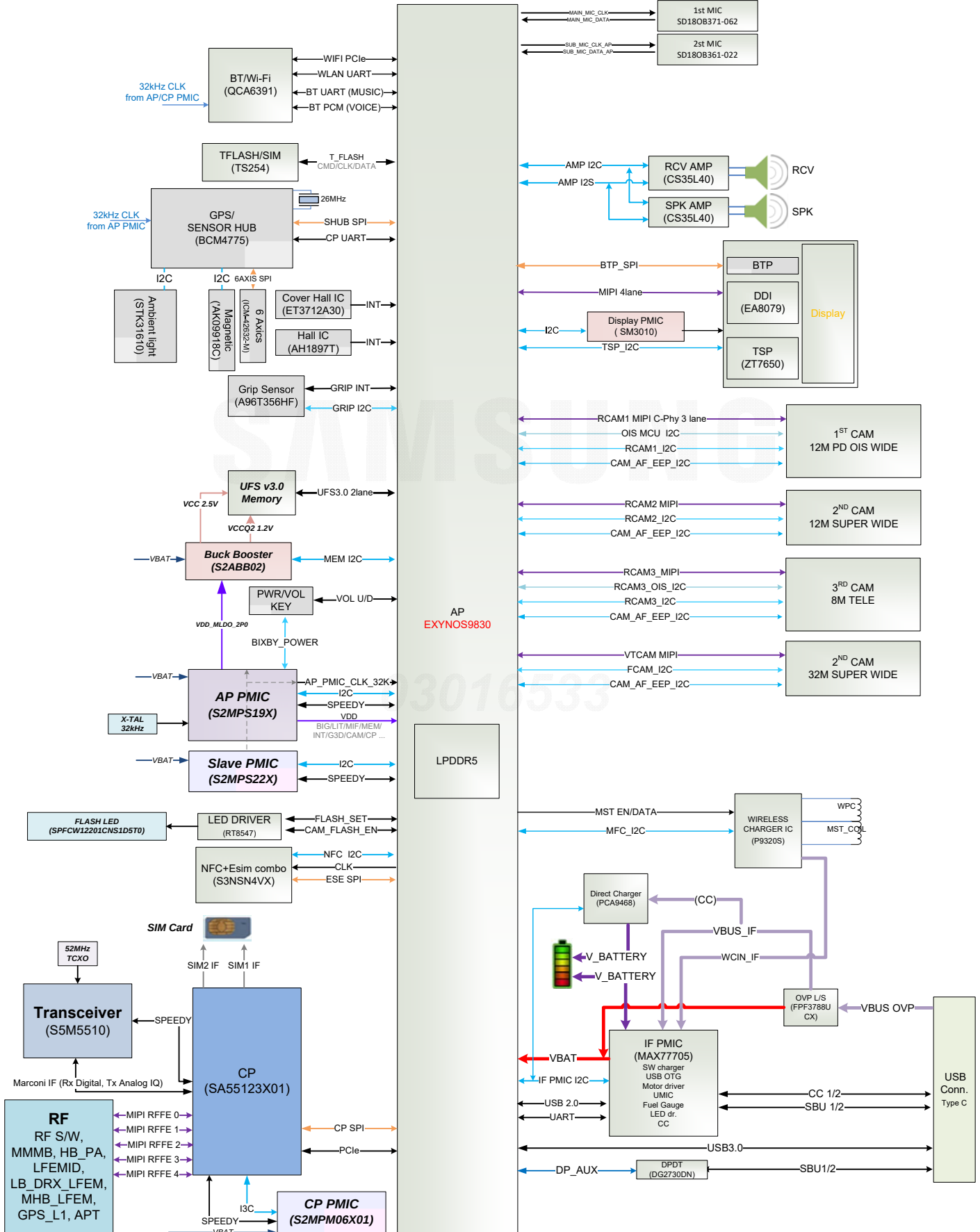


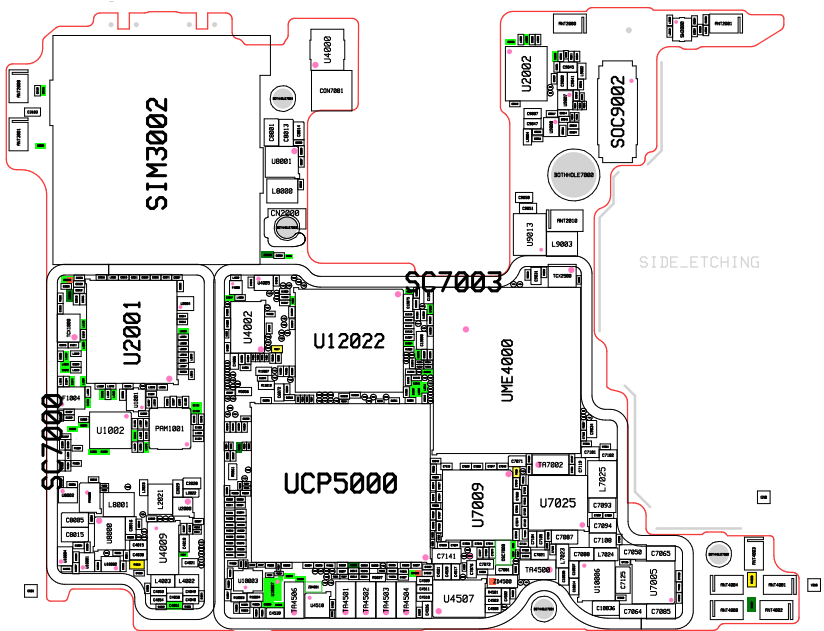
8. Level 3 Repair

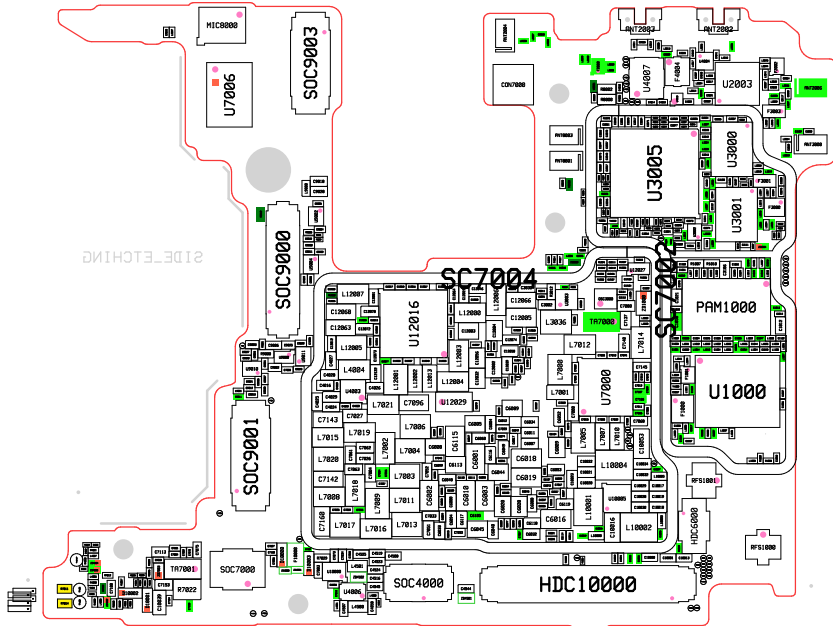


S20 FE LTE (R8_LTE) BlockDiagram

Confidential

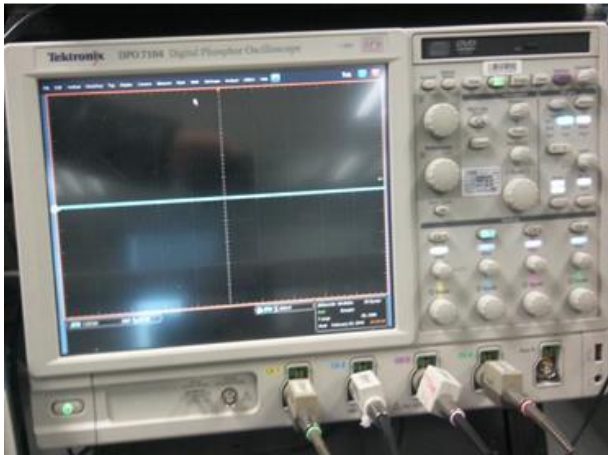






8. Level 3 Repair

8-3. Flow chart of Troubleshooting.



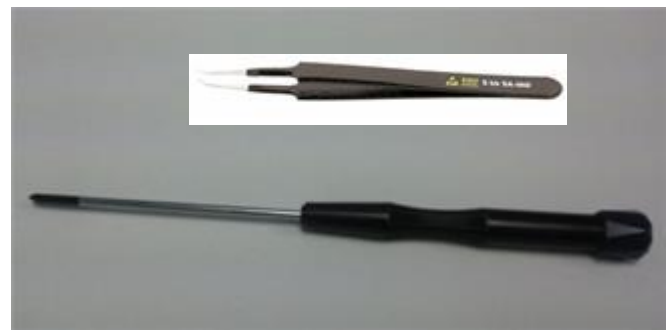
Oscilloscope



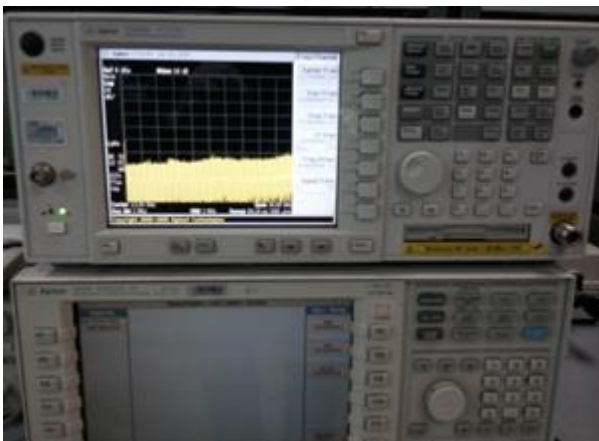
Digital Multimeter



Power Supply



+ driver, ESD Safe Tweezer



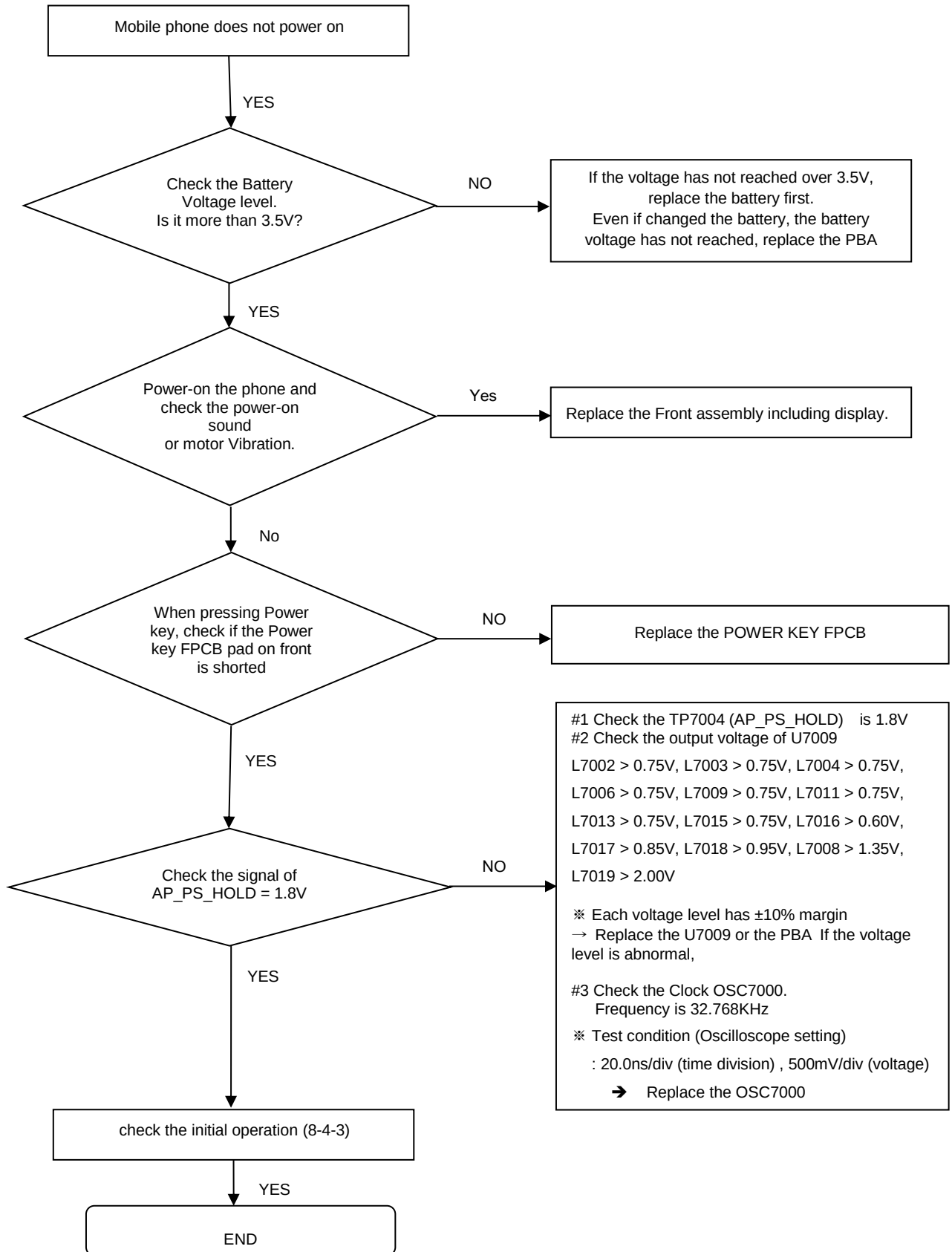
8960 & Spectrum Analyzer



Soldering iron

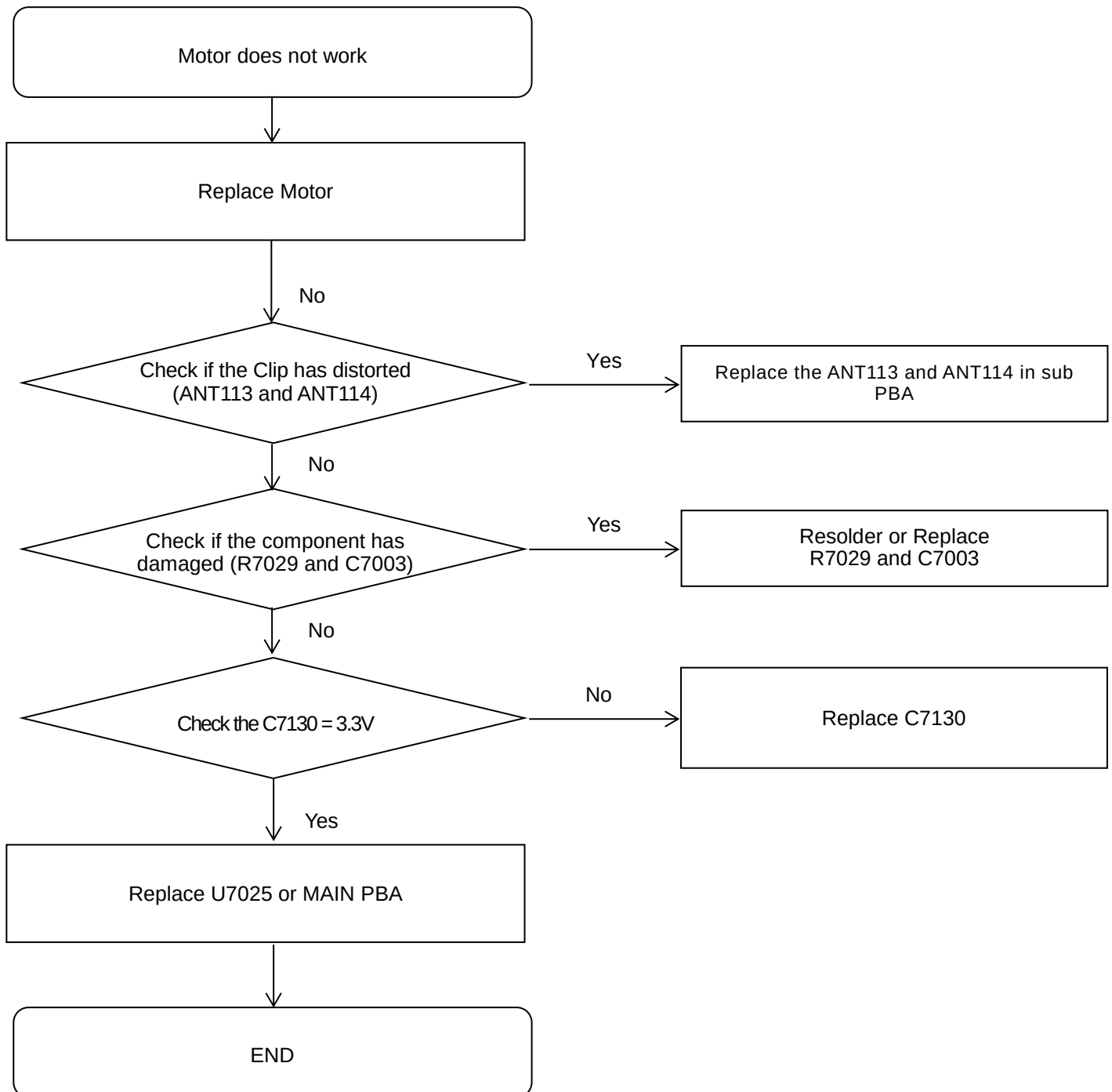
8. Level 3 Repair

8-4-1. Power on



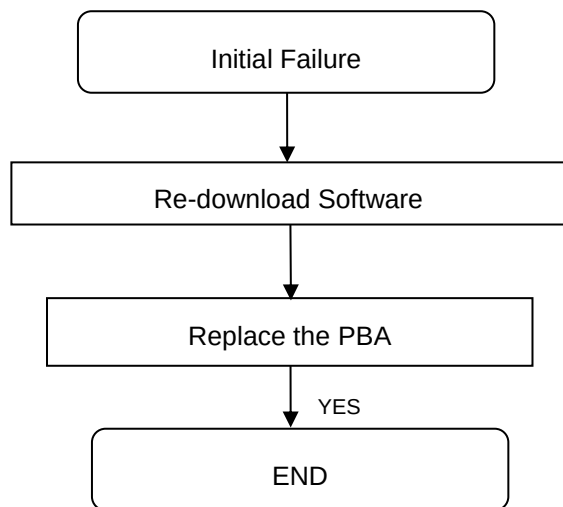
8. Level 3 Repair

8-4-2. MOT



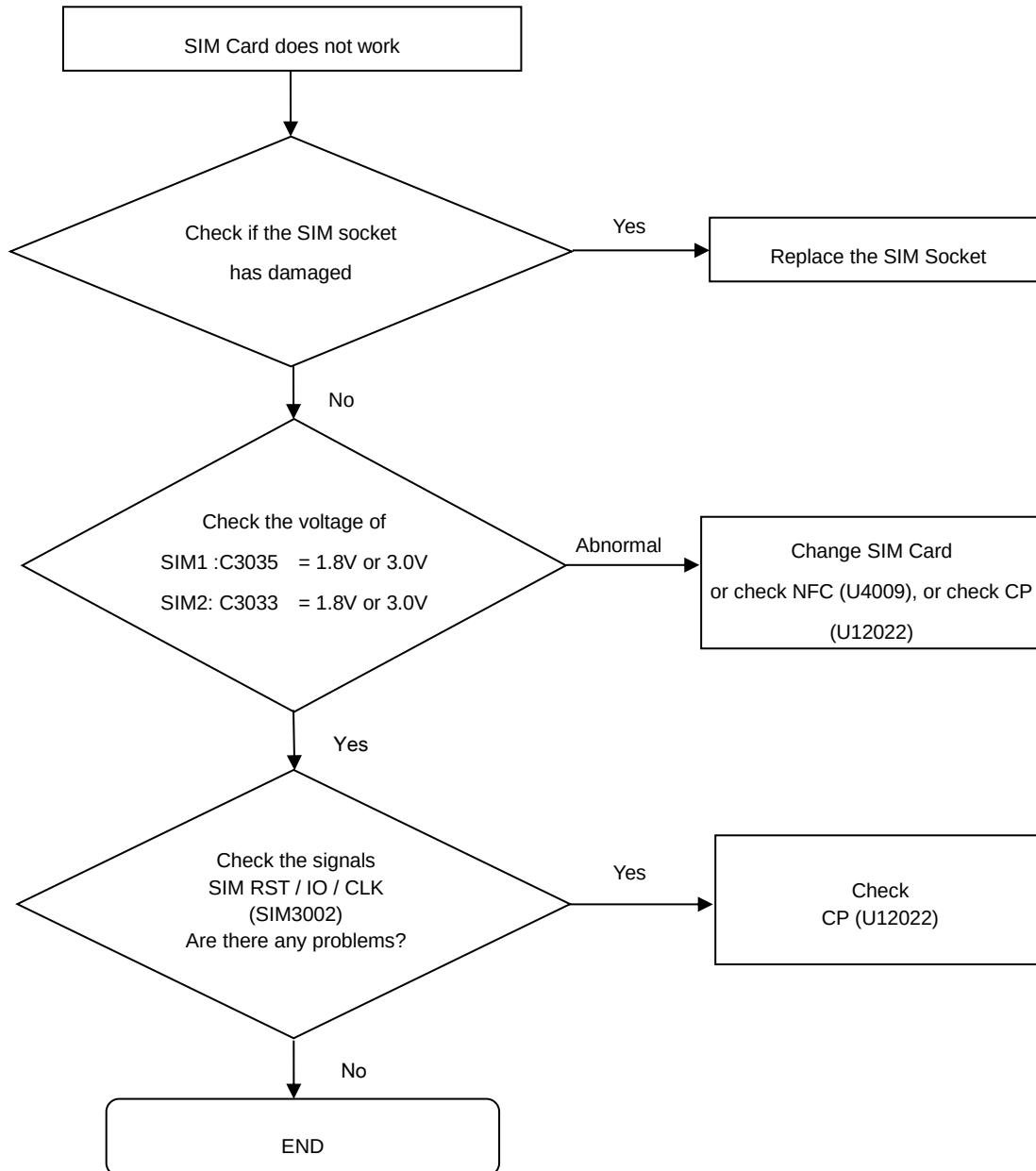
8. Level 3 Repair

8-4-3. initial



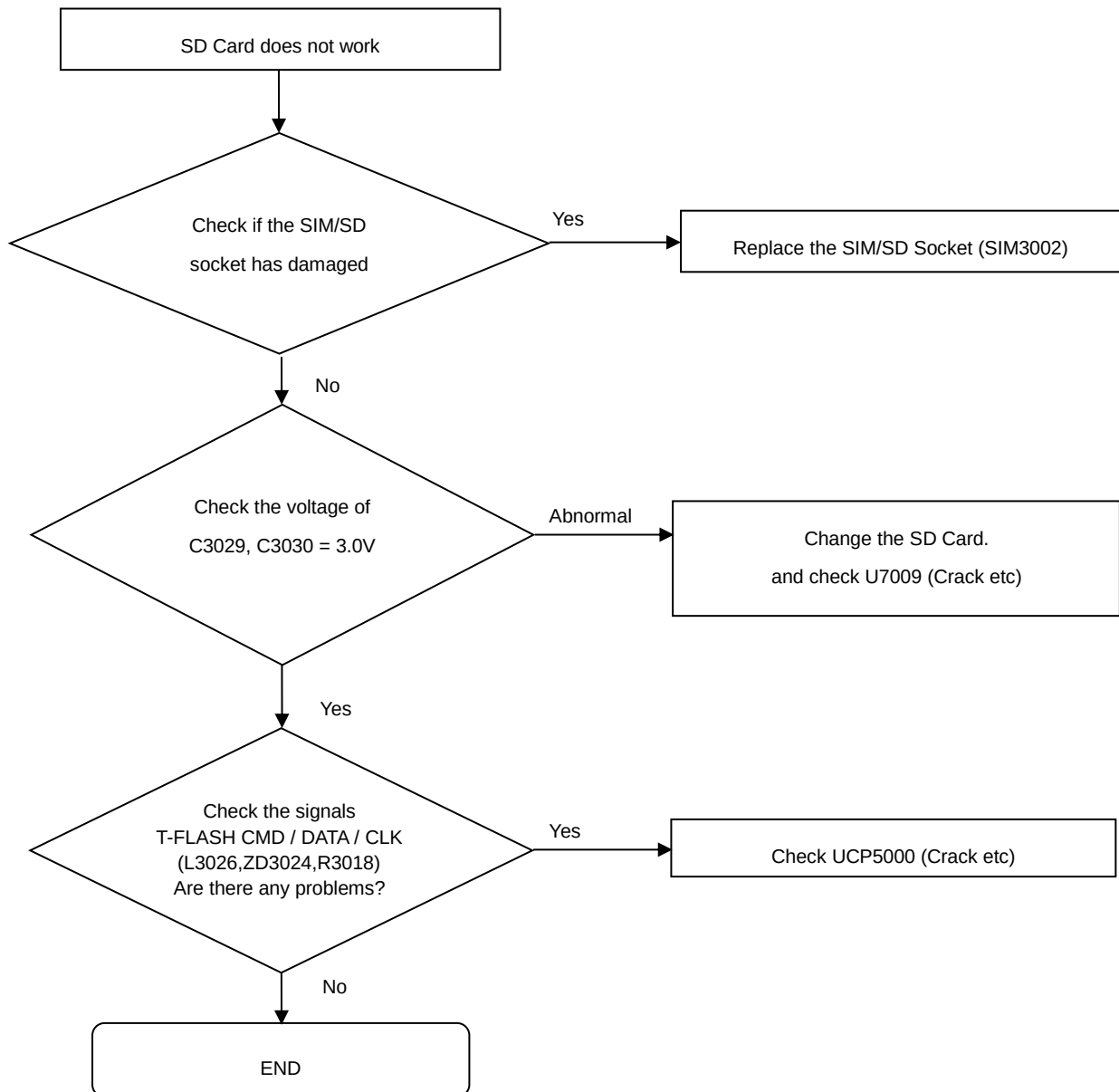
8. Level 3 Repair

8-4-4. SIM PART



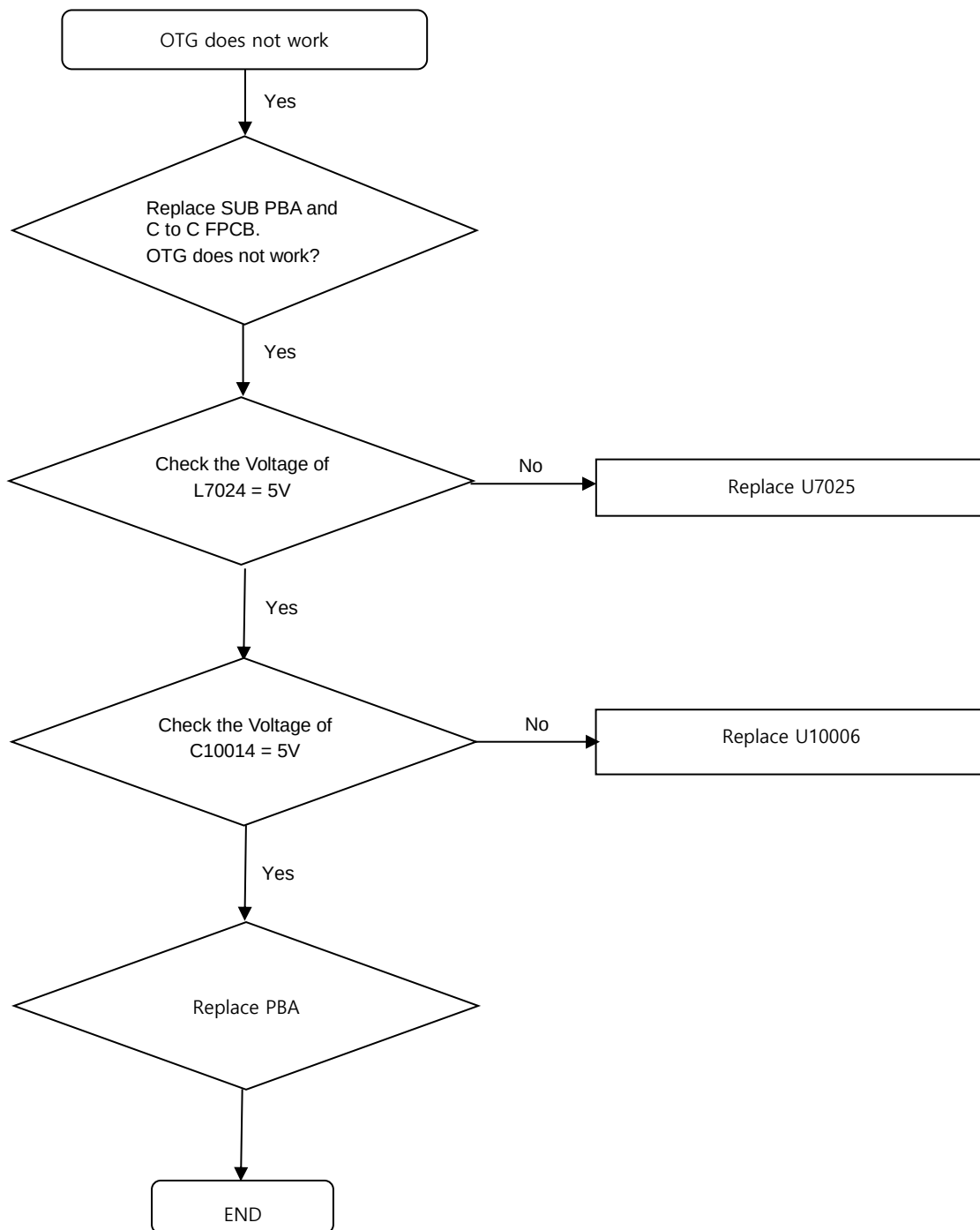
8. Level 3 Repair

8-4-5. SIM/SD PART



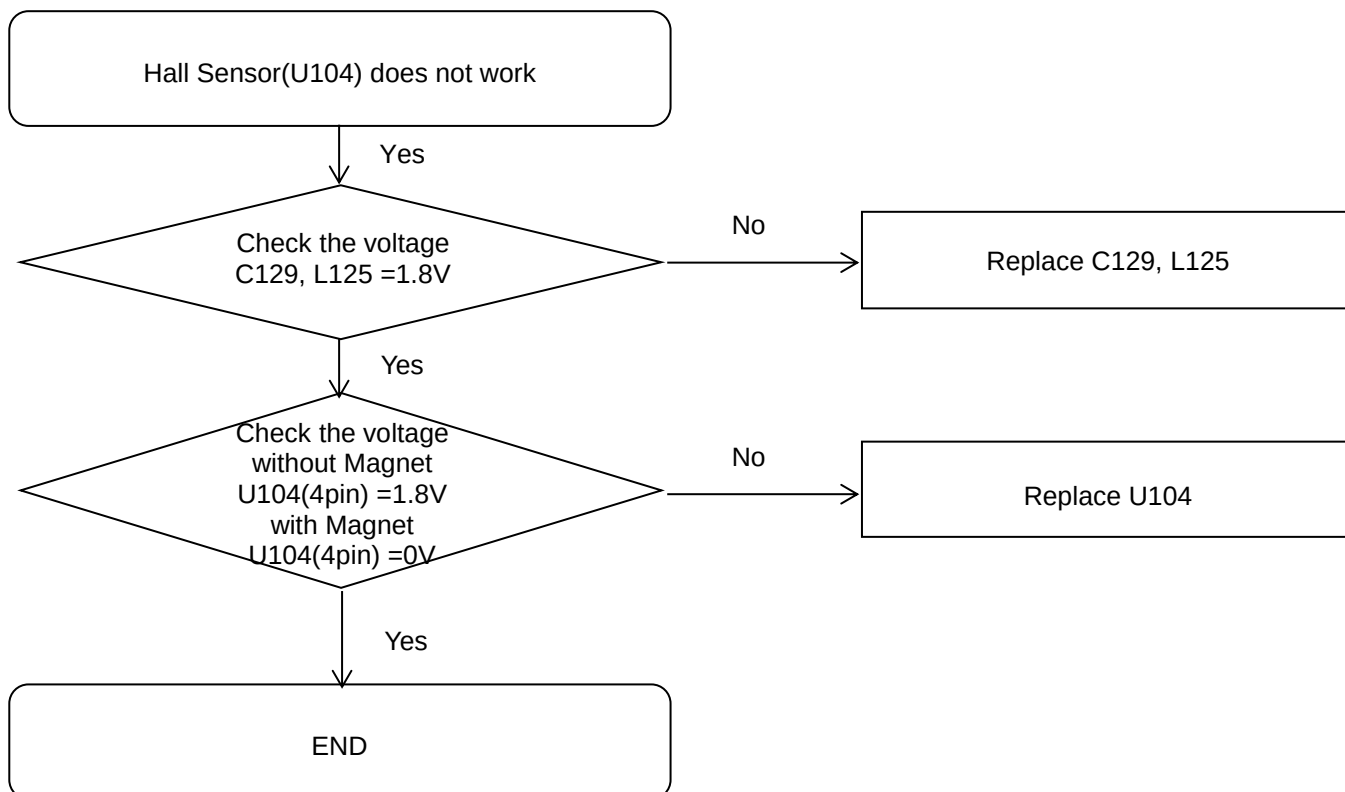
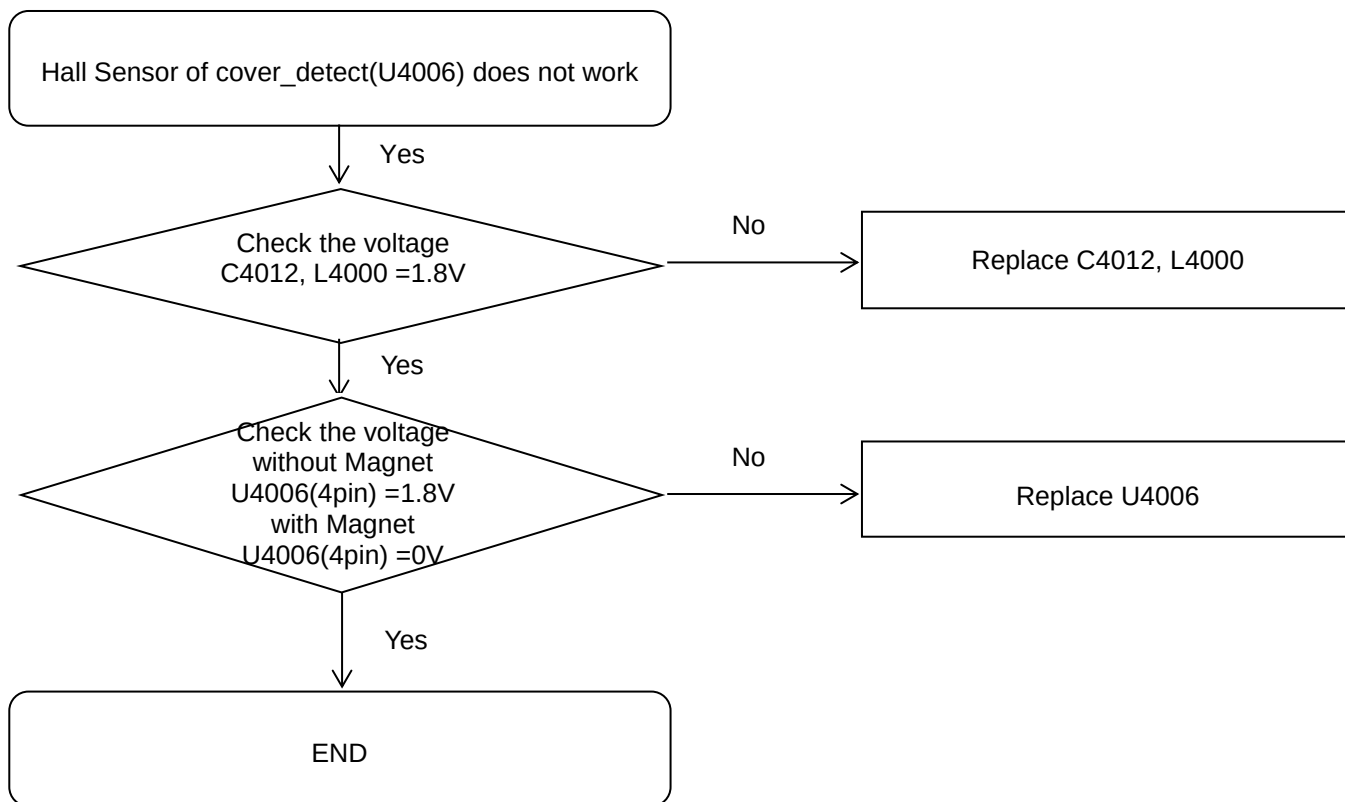
8. Level 3 Repair

8-4-6. OTG



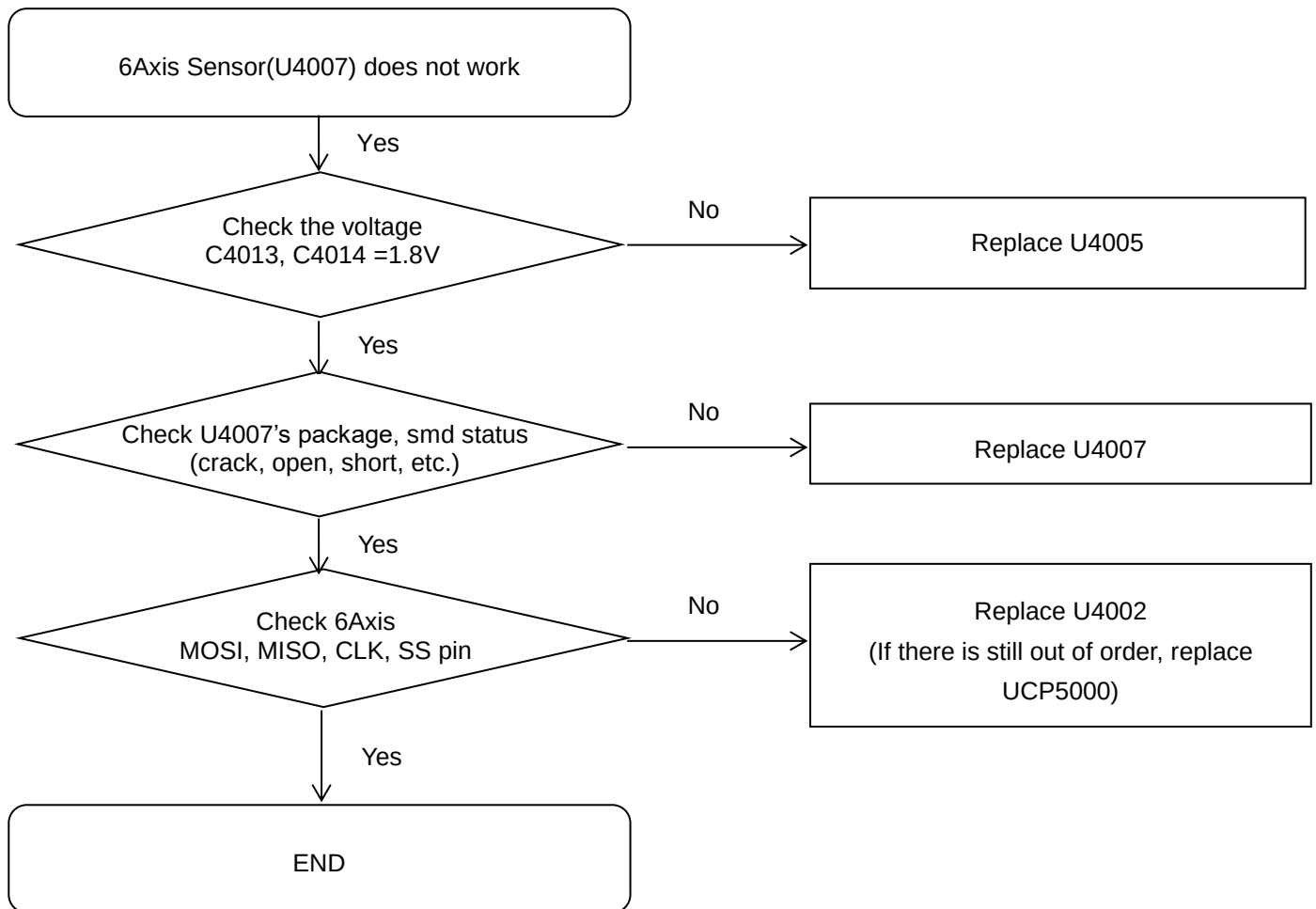
8. Level 3 Repair

8-4-7. Hall IC



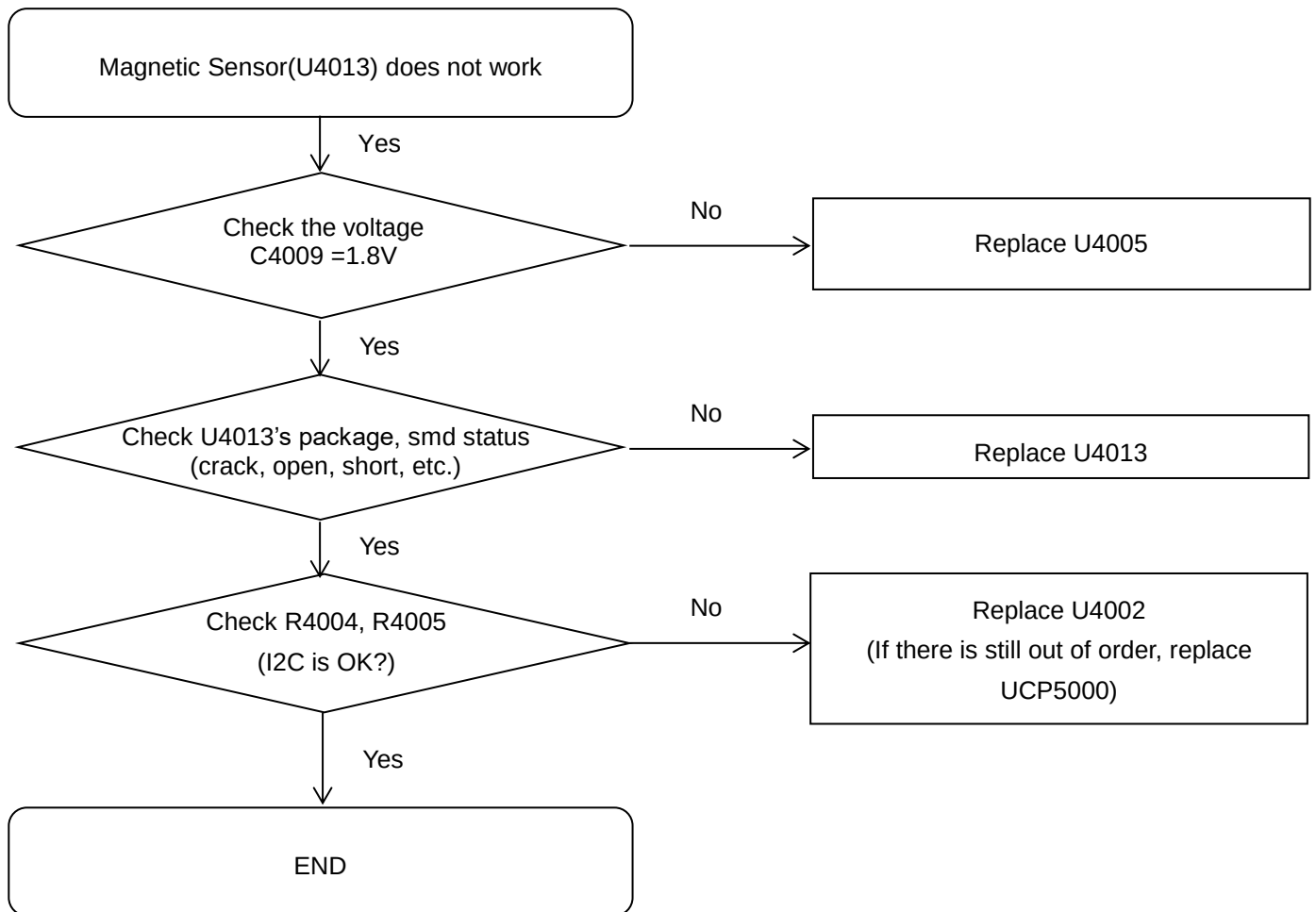
8. Level 3 Repair

8-4-8. 6Axis sensor



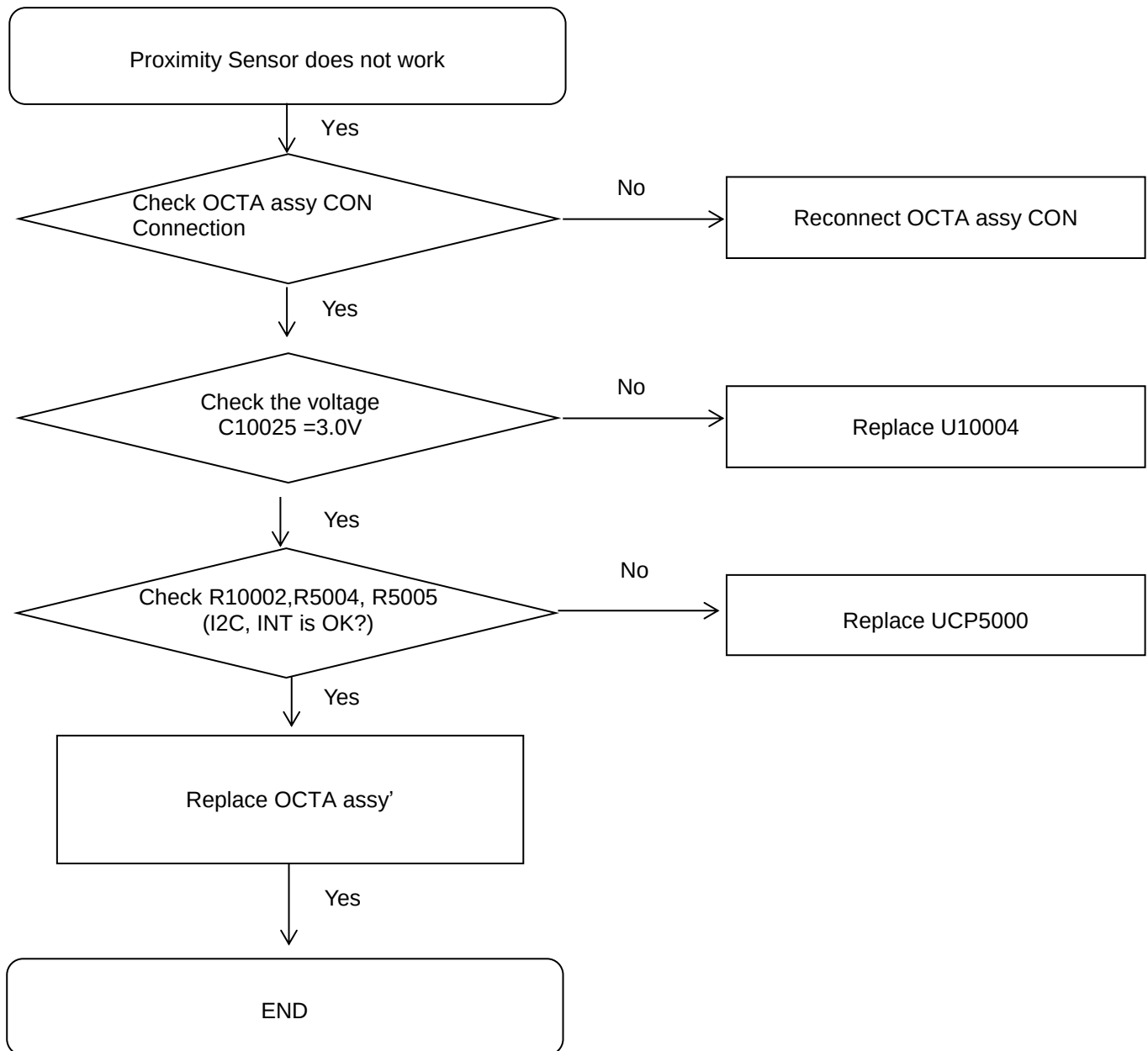
8. Level 3 Repair

8-4-9. Magnetic sensor



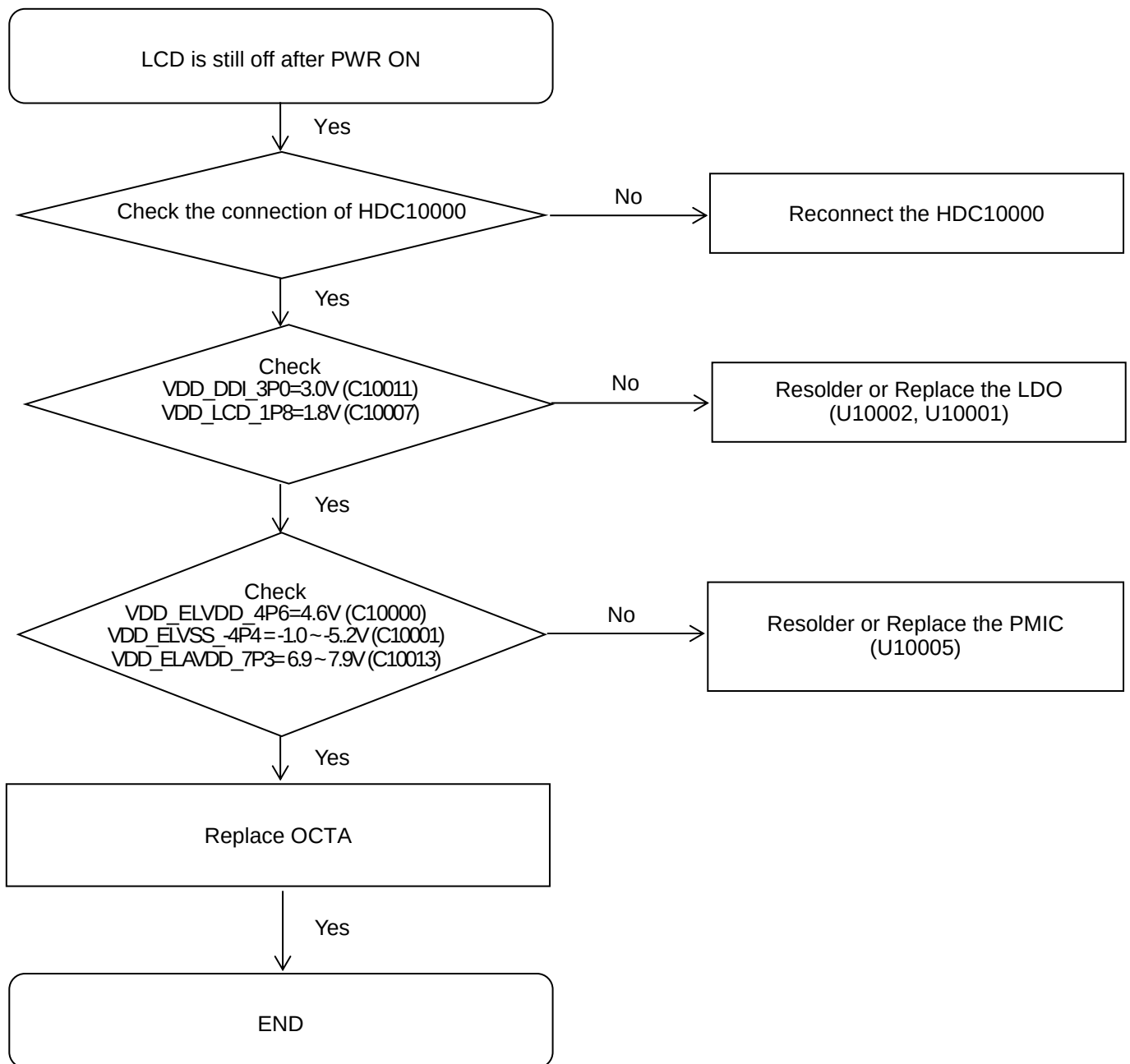
8. Level 3 Repair

8-4-10. Proximity Sensor



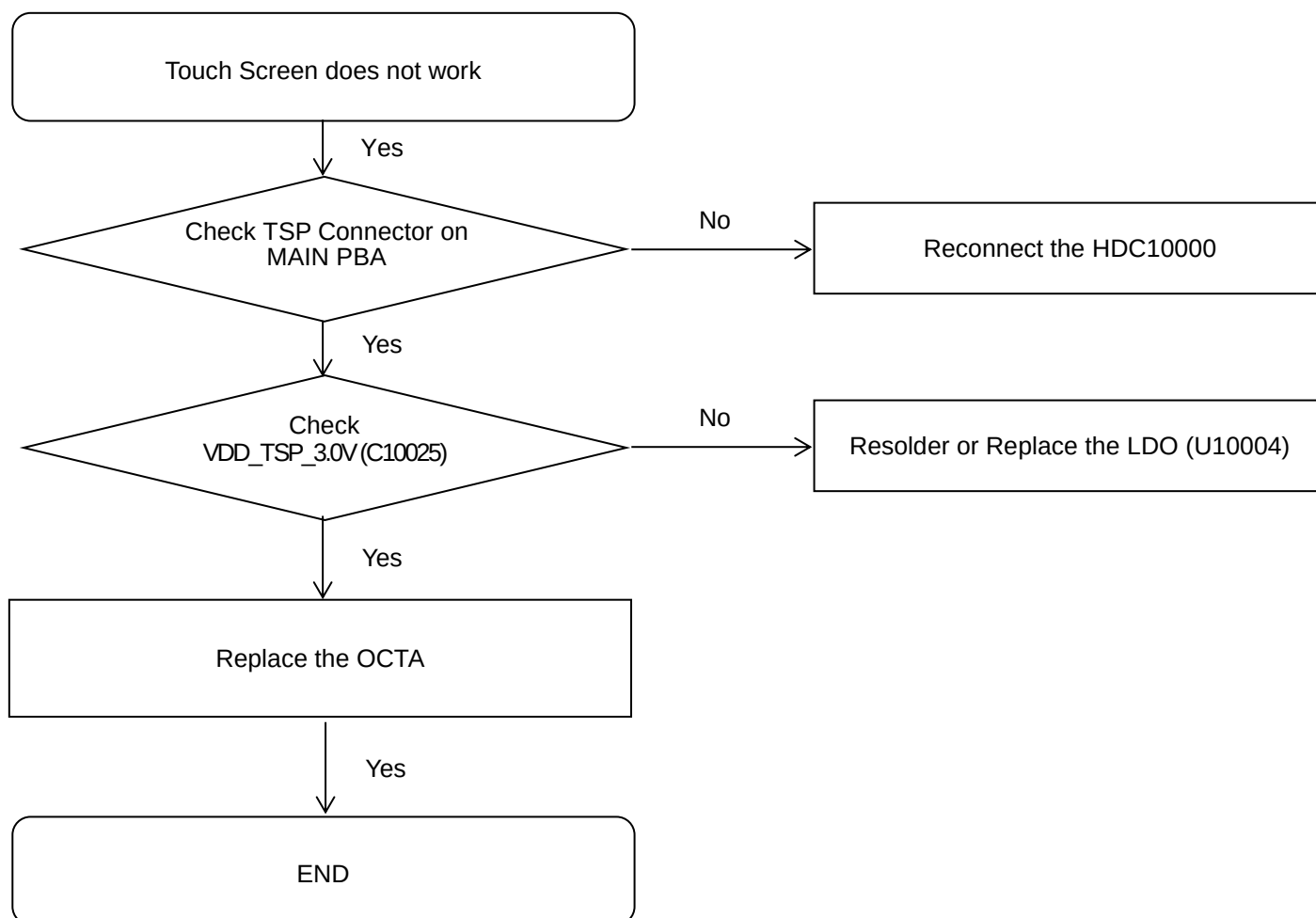
8. Level 3 Repair

8-4-11. Display



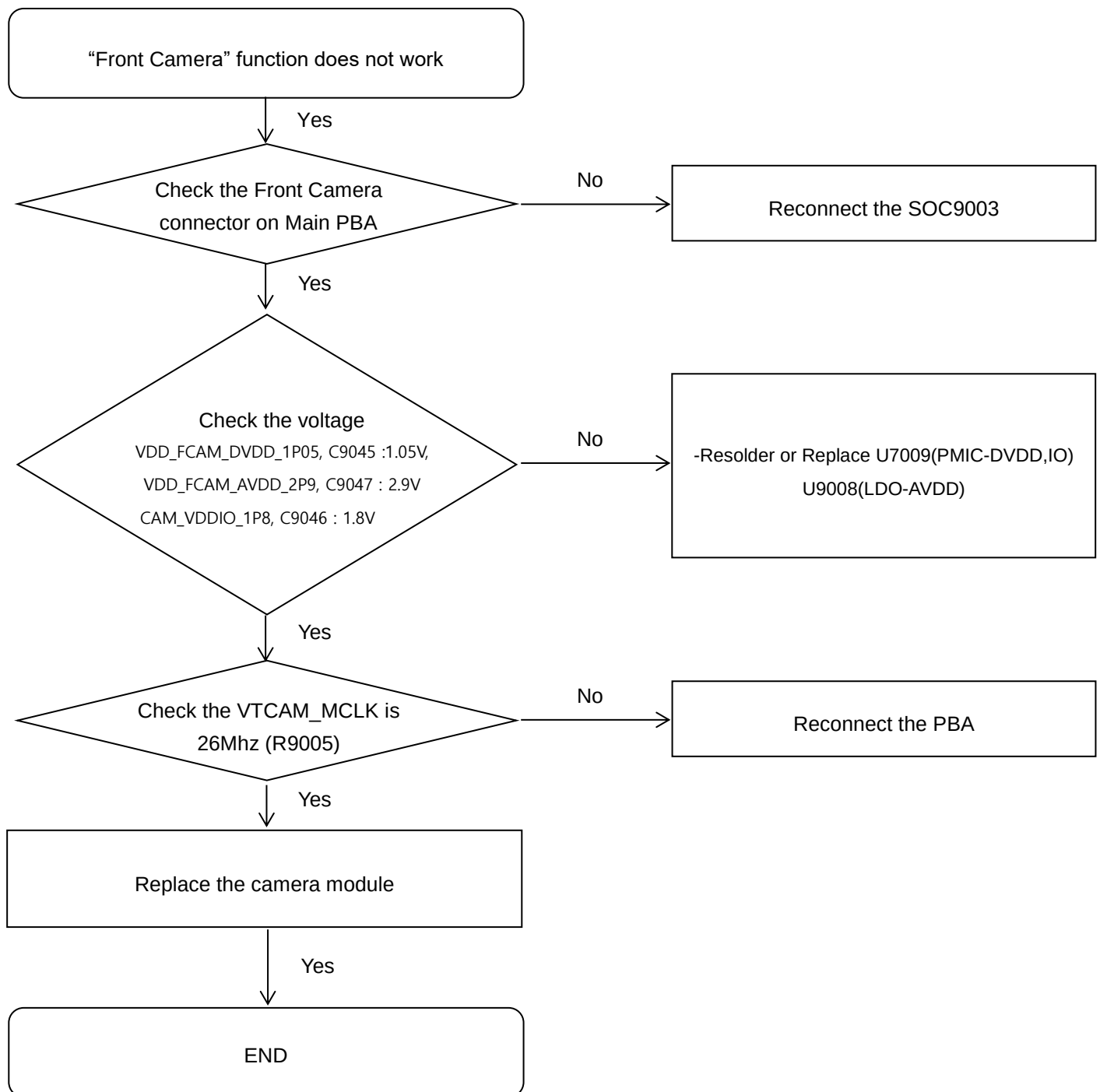
8. Level 3 Repair

8-4-12. TSP



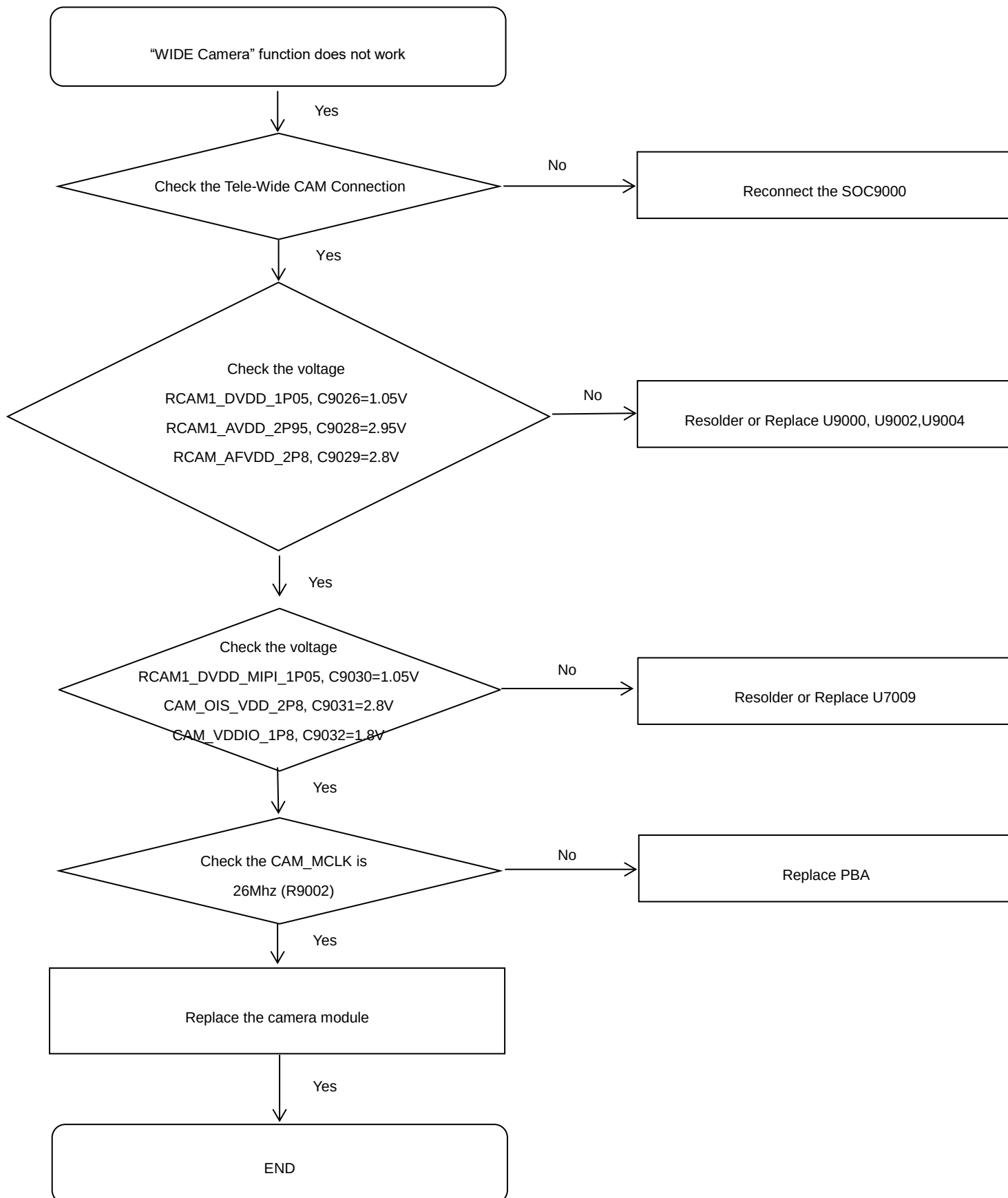
8. Level 3 Repair

8-4-13. VT CAMERA



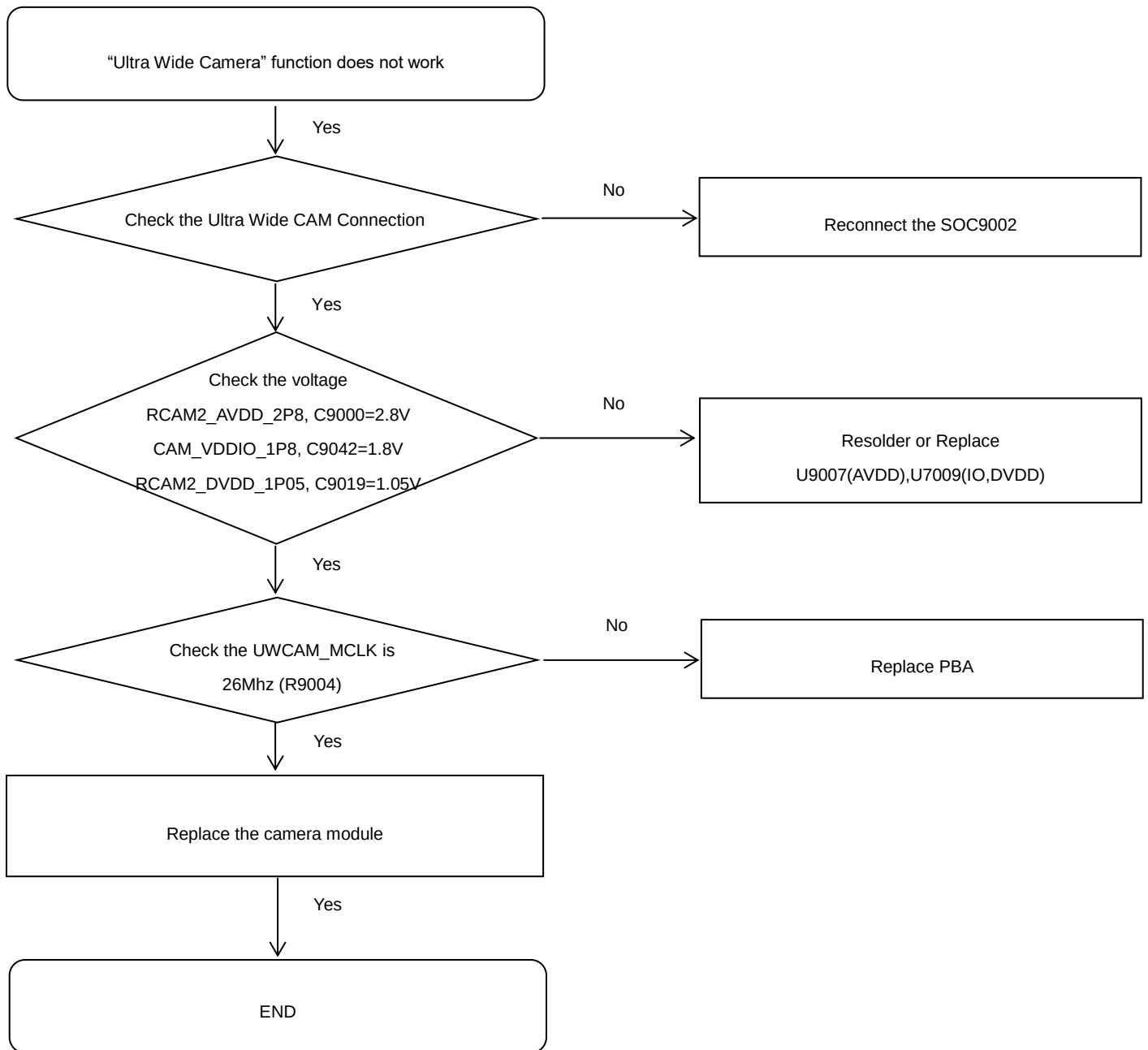
8. Level 3 Repair

8-4-14. WIDE CAMERA



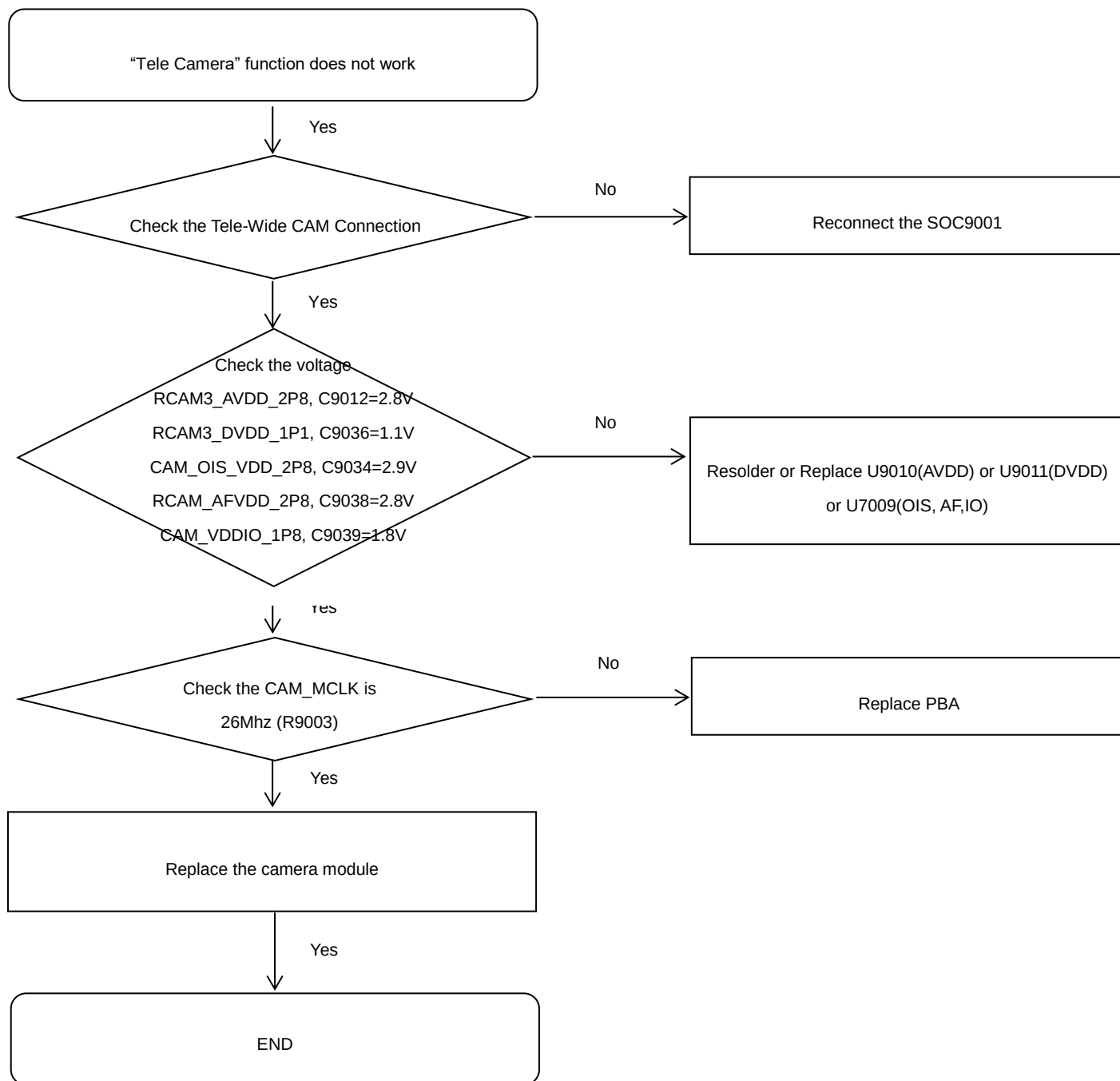
8. Level 3 Repair

8-4-15. 12M ULTRA WIDE CAMERA



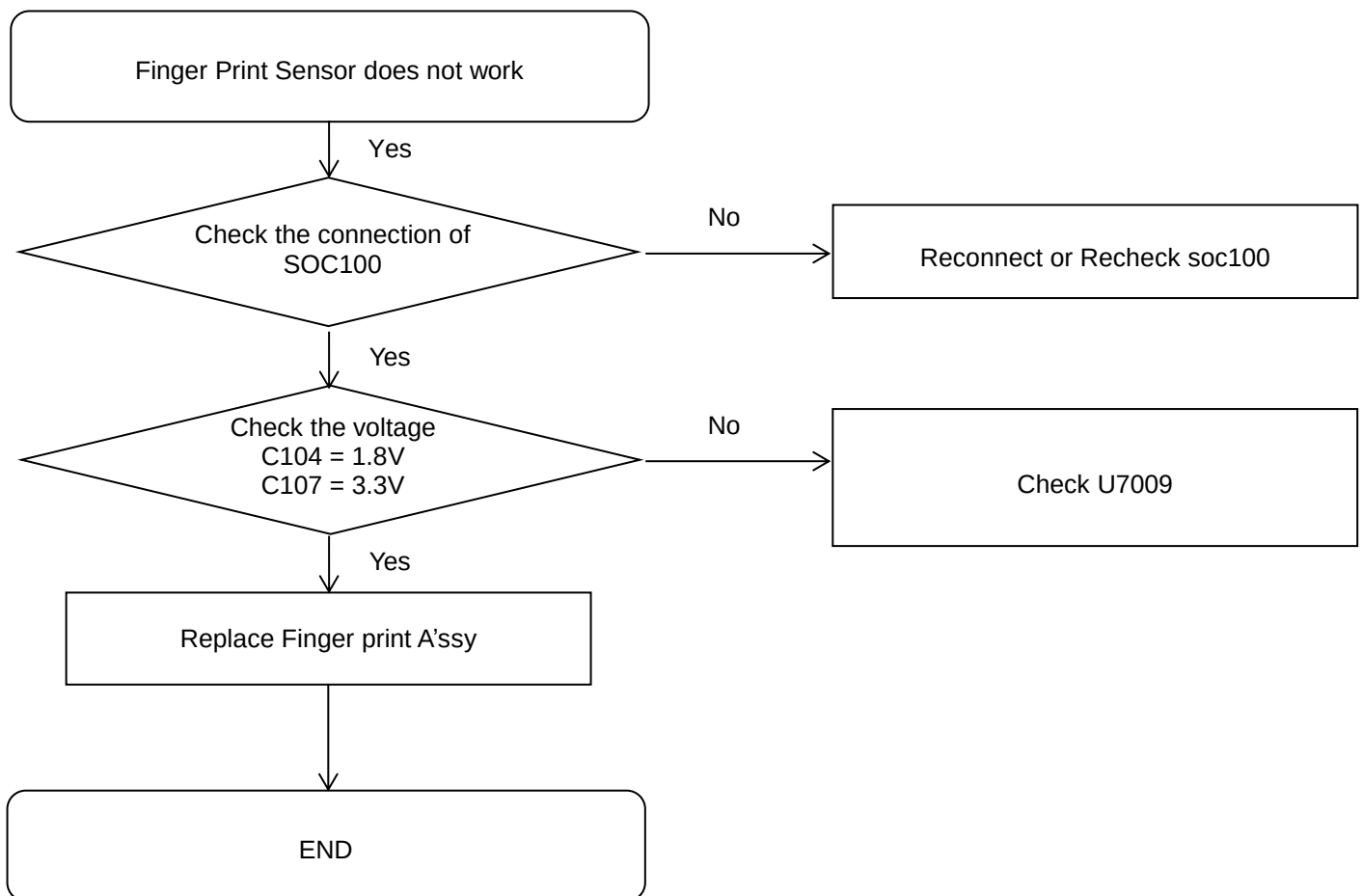
8. Level 3 Repair

8-4-16. 8M TELE CAMERA



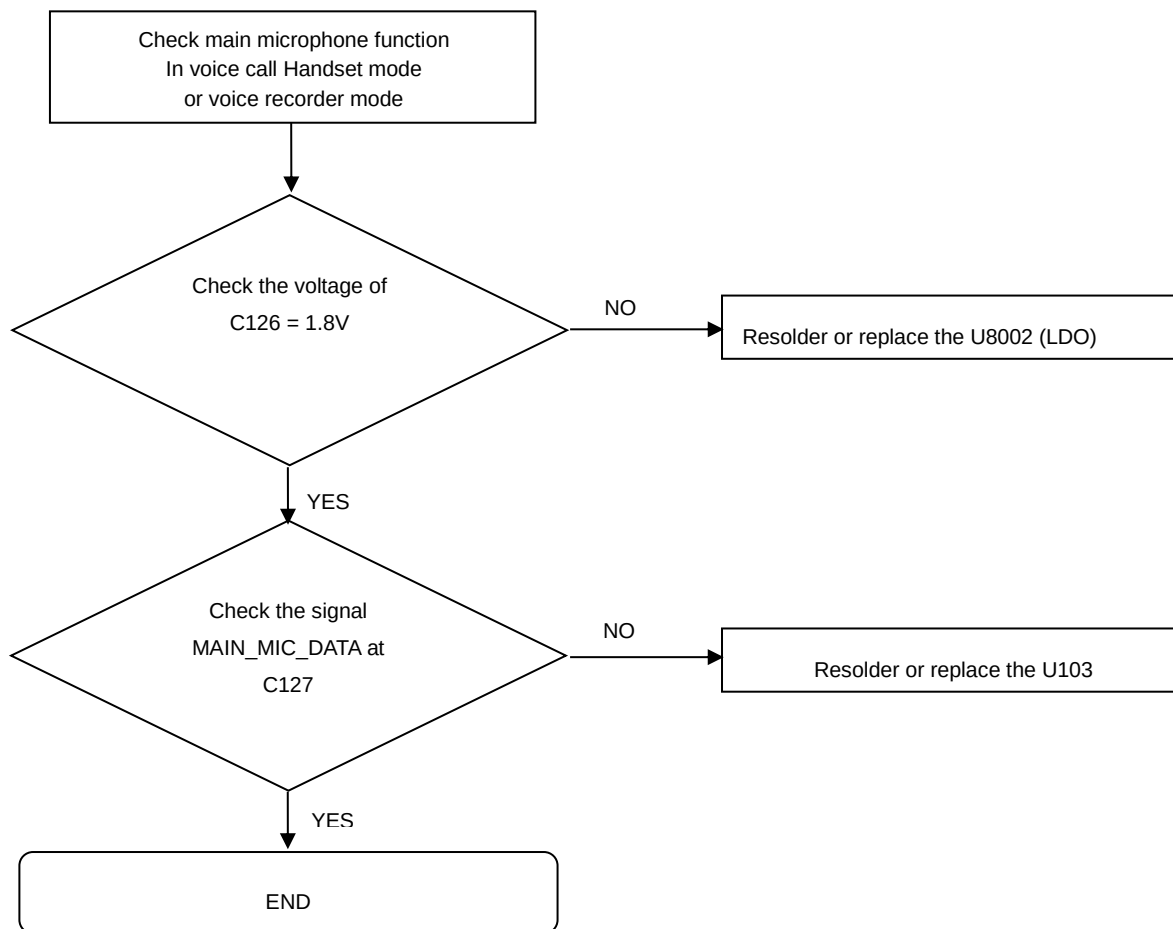
8. Level 3 Repair

8-4-17. Finger Print



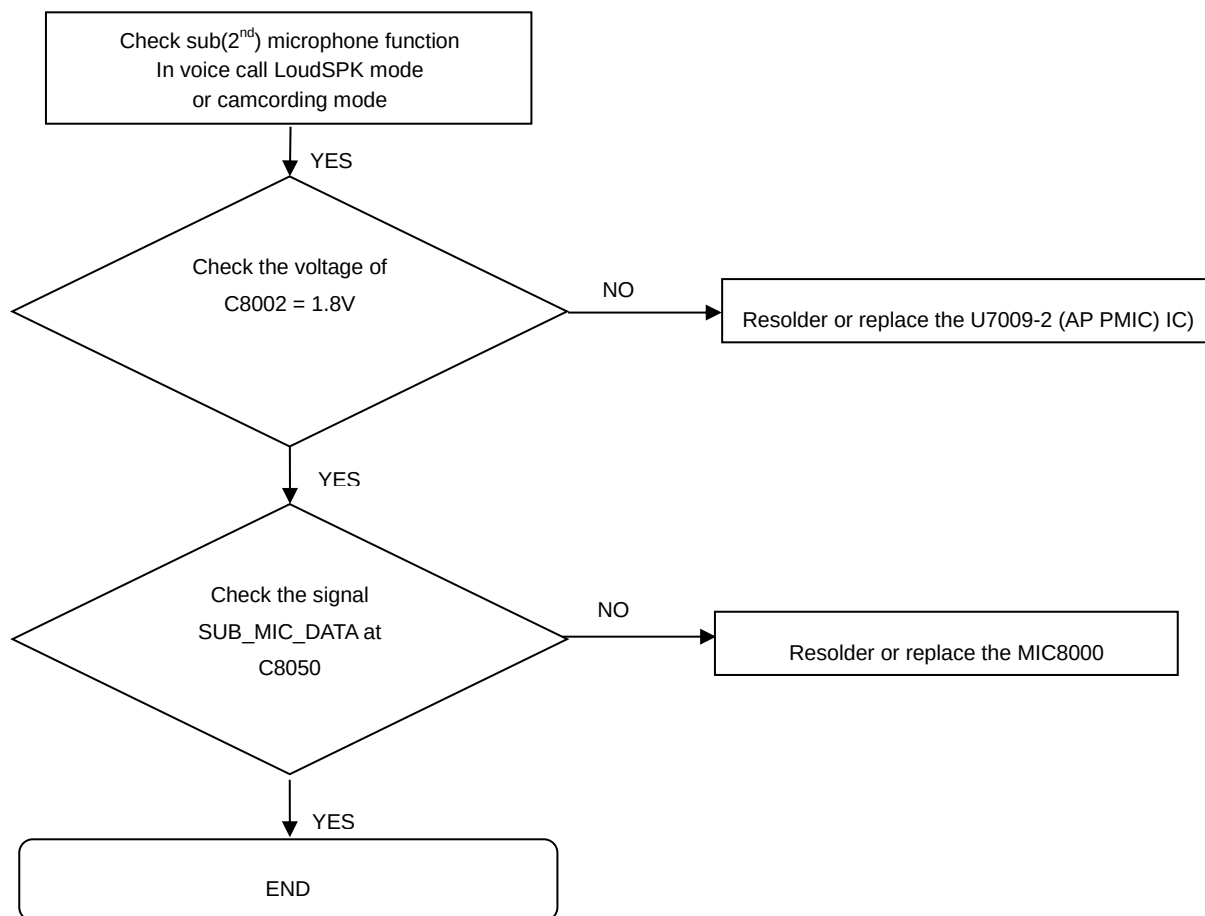
8. Level 3 Repair

8-4-18-1. Main MIC



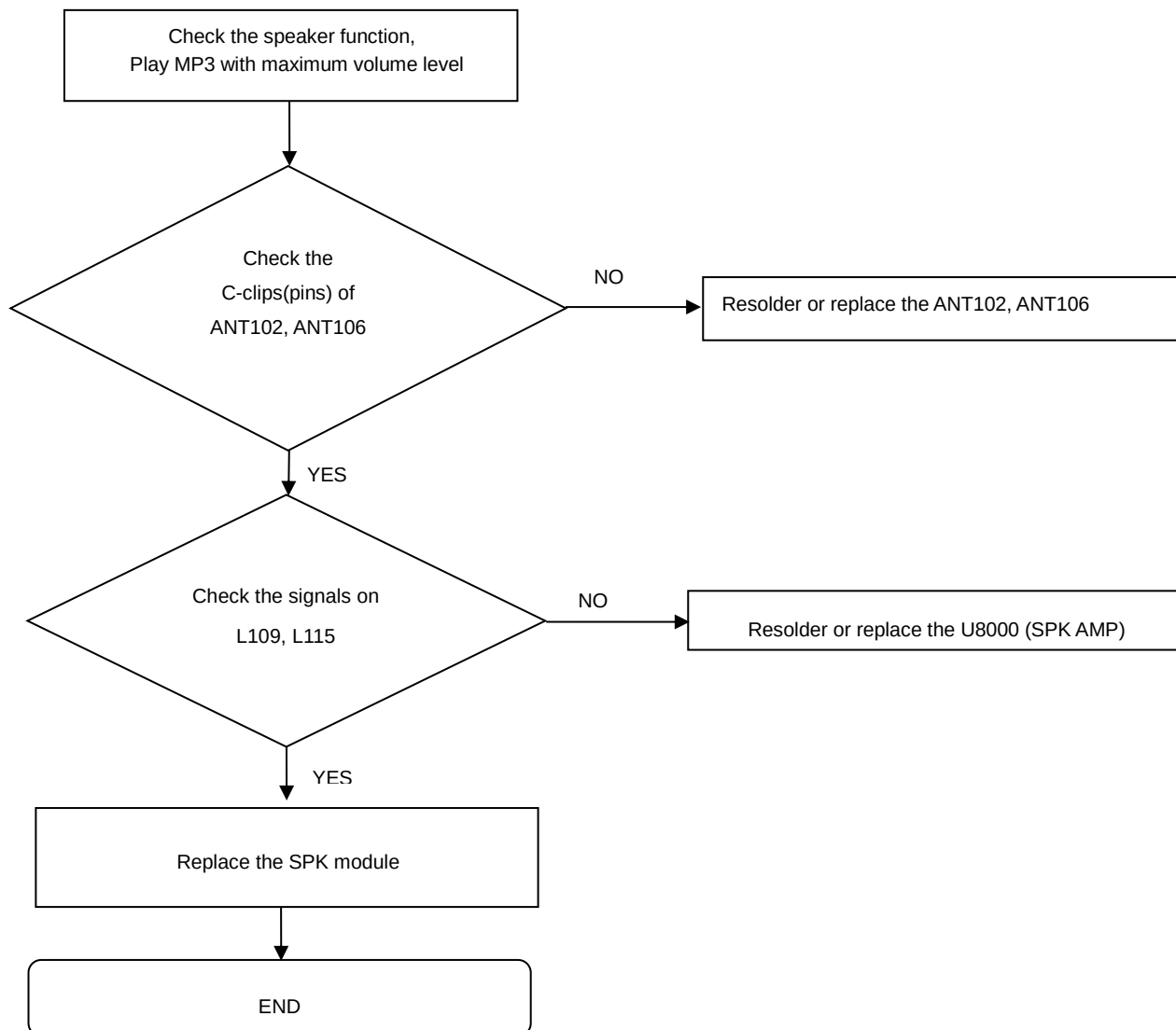
8. Level 3 Repair

8-4-18-2. Sub(2nd) MIC



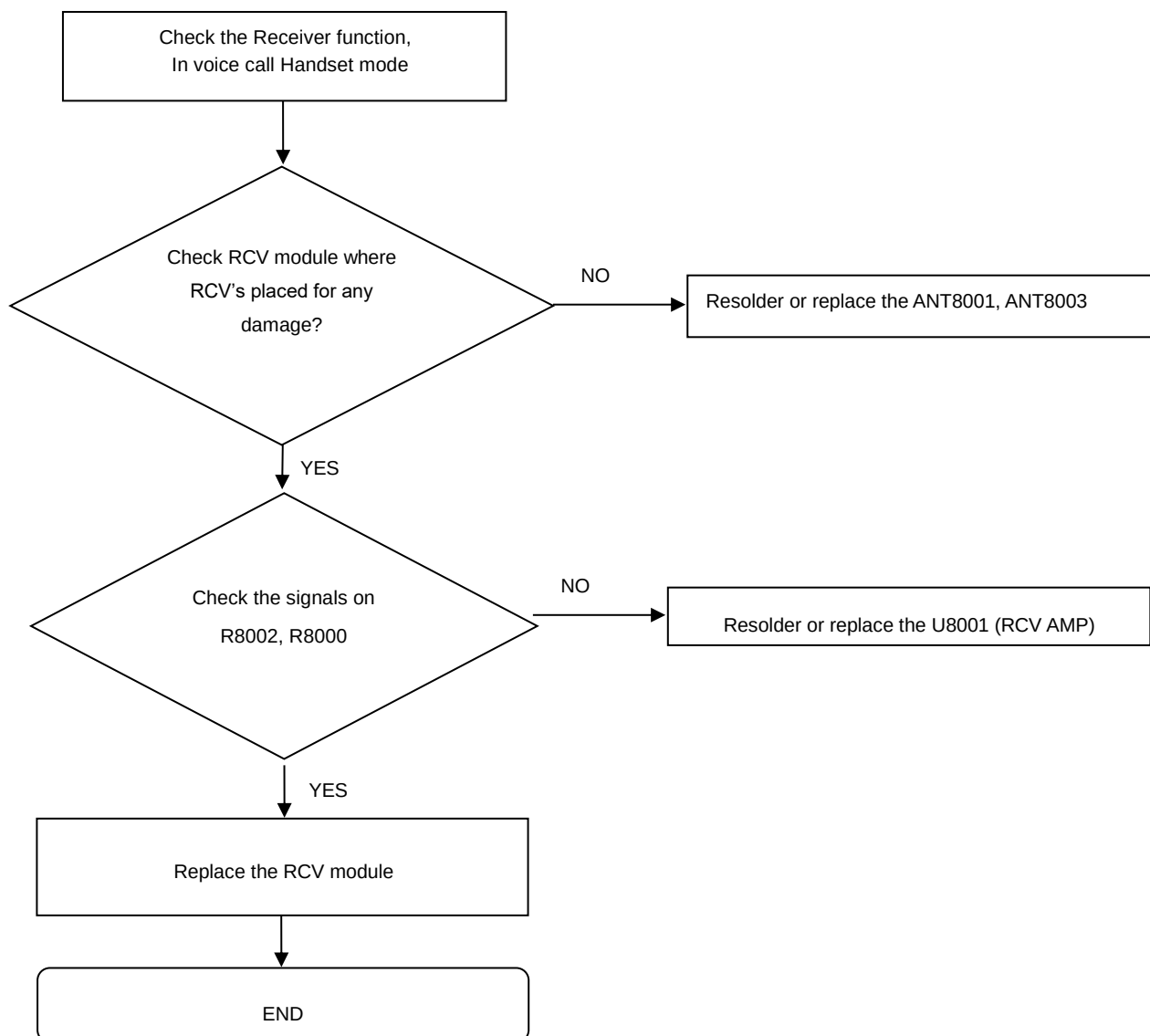
8. Level 3 Repair

8-4-19. Speaker part



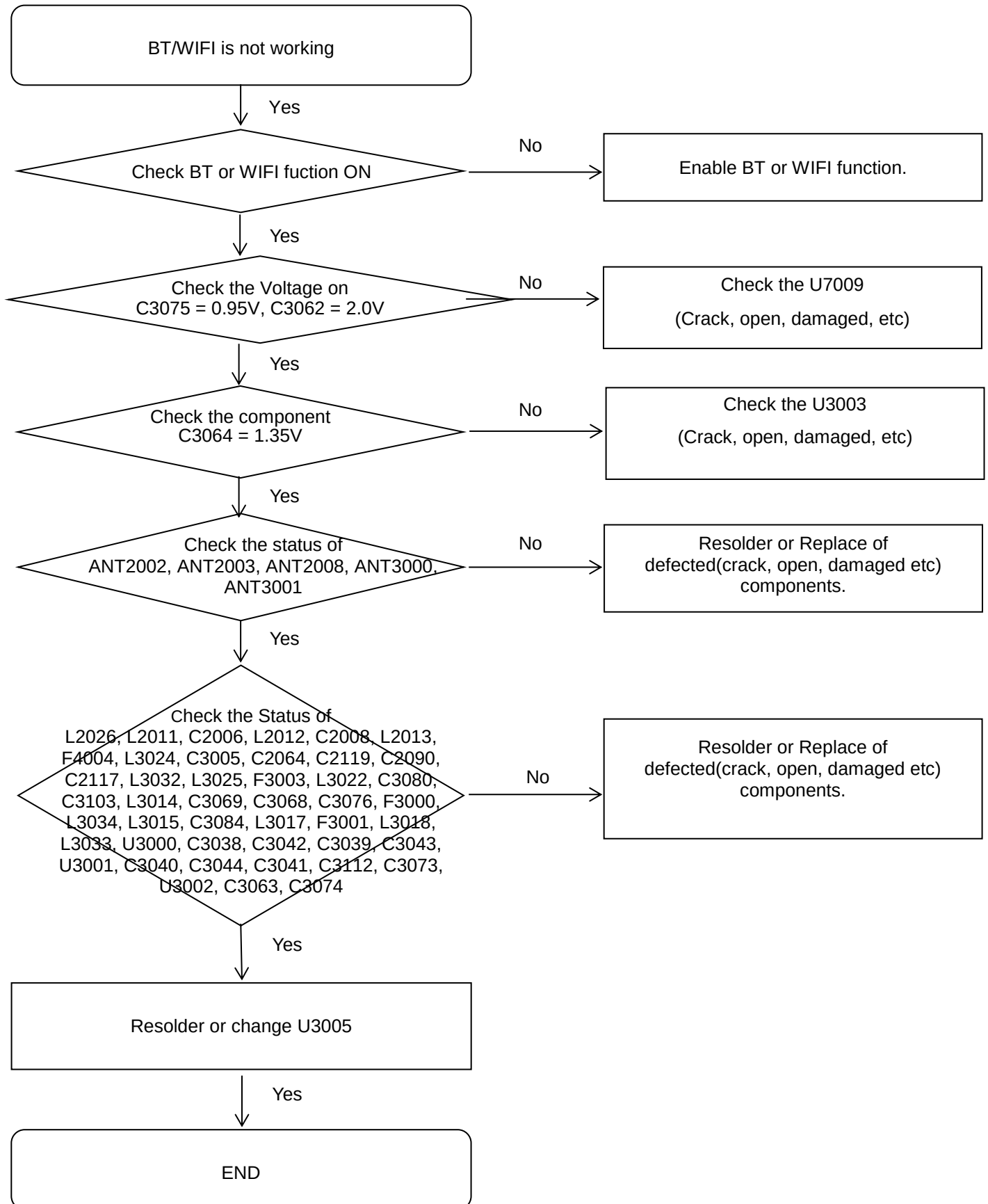
8. Level 3 Repair

8-4-20. Receiver part



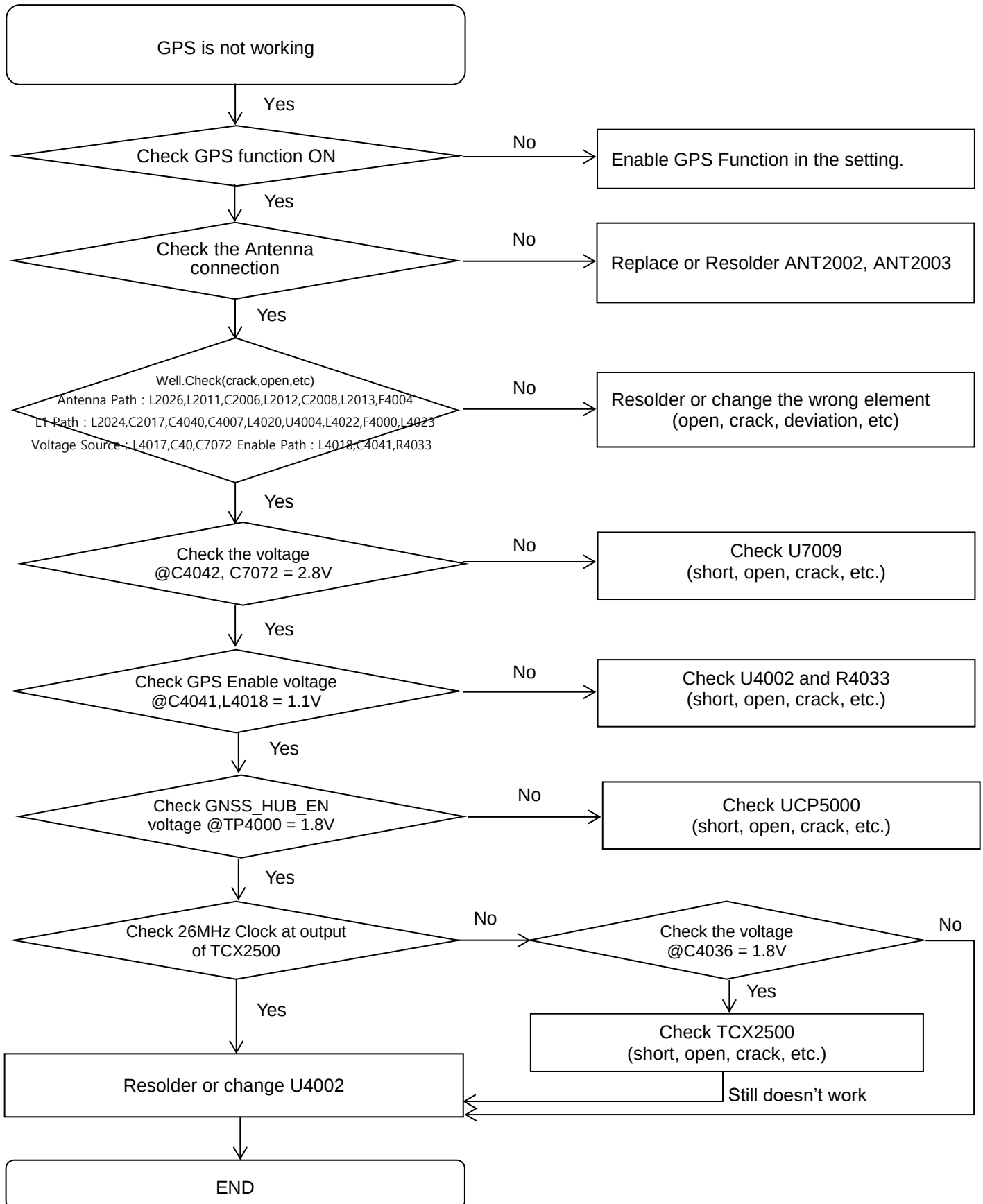
8. Level 3 Repair

8-4-21. BT/WIFI



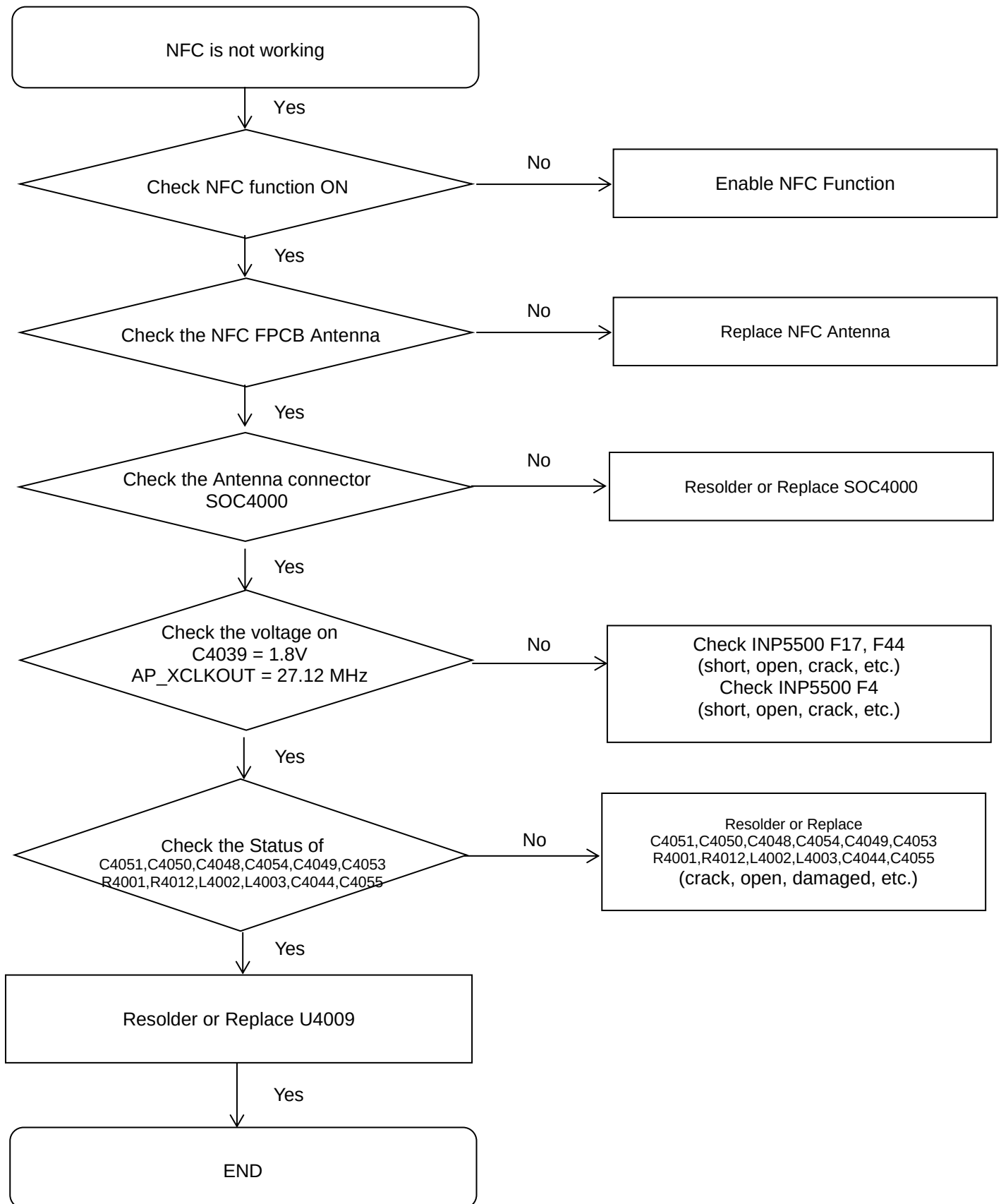
8. Level 3 Repair

8-4-22. GPS



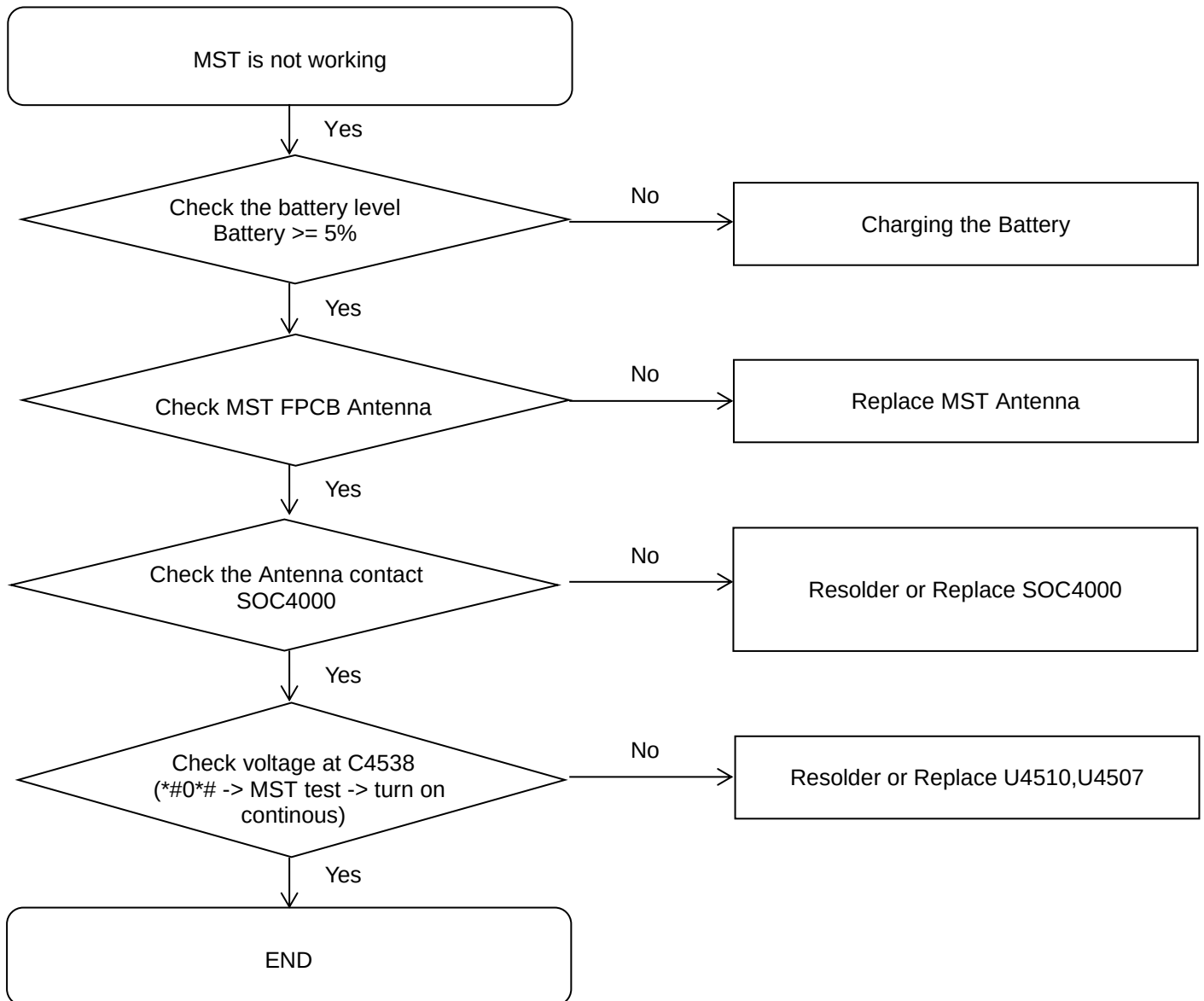
8. Level 3 Repair

8-4-23. NFC



8. Level 3 Repair

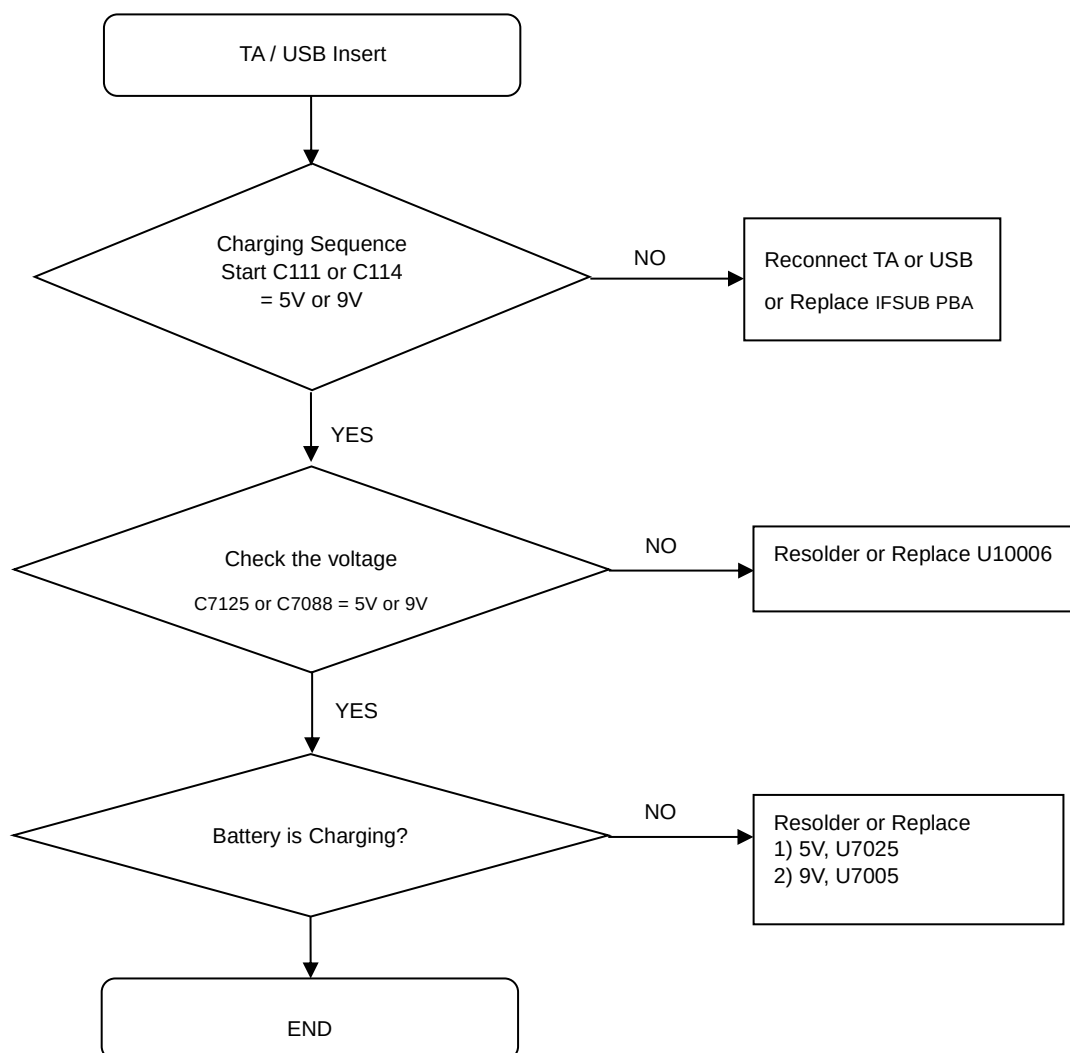
8-4-24. MST



8. Level 3 Repair

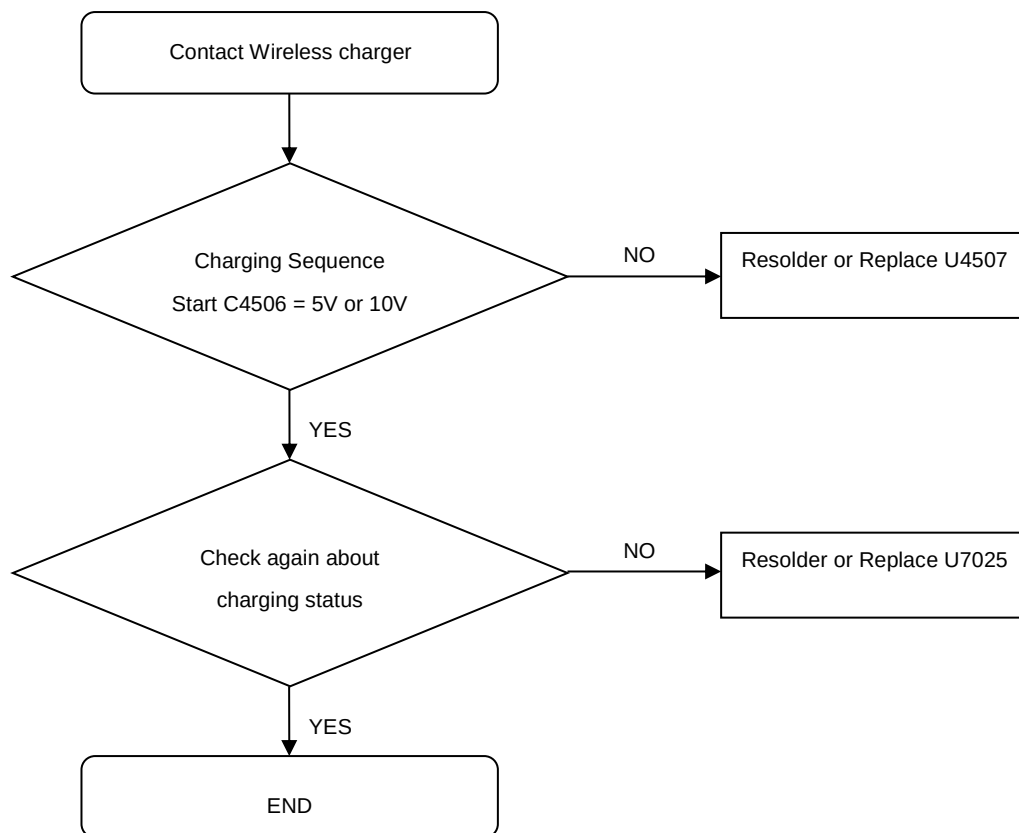
8-4-25. Charging Part

Wire Charging (Normal/Fast)



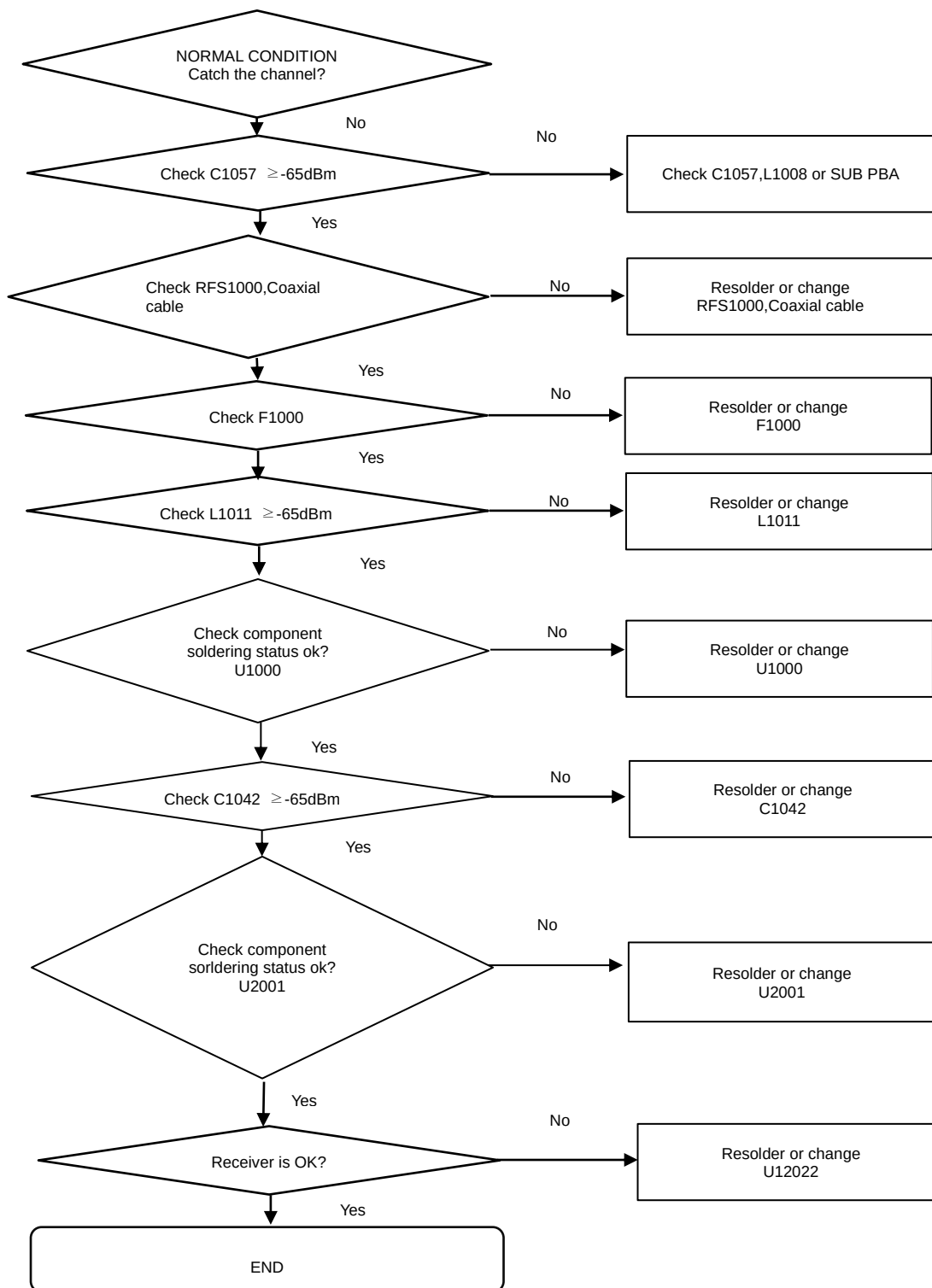
8. Level 3 Repair

8-4-26. Charging Part Wireless Charging (Normal/Fast)



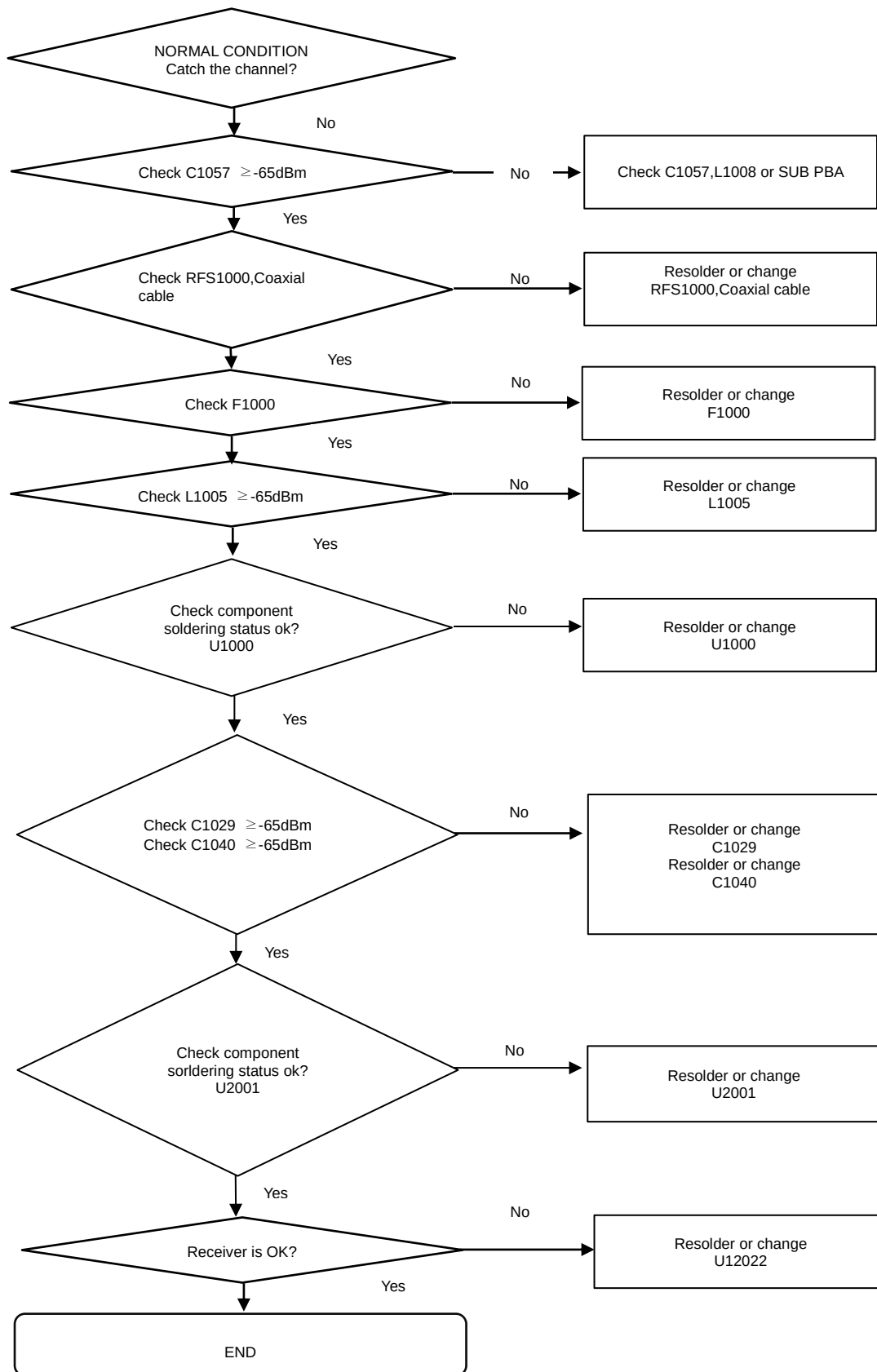
8. Level 3 Repair

8-4-27. GSM 850/900, WCDMA B5/8, LTE B5/8/12/13/17/20/26/28 RX



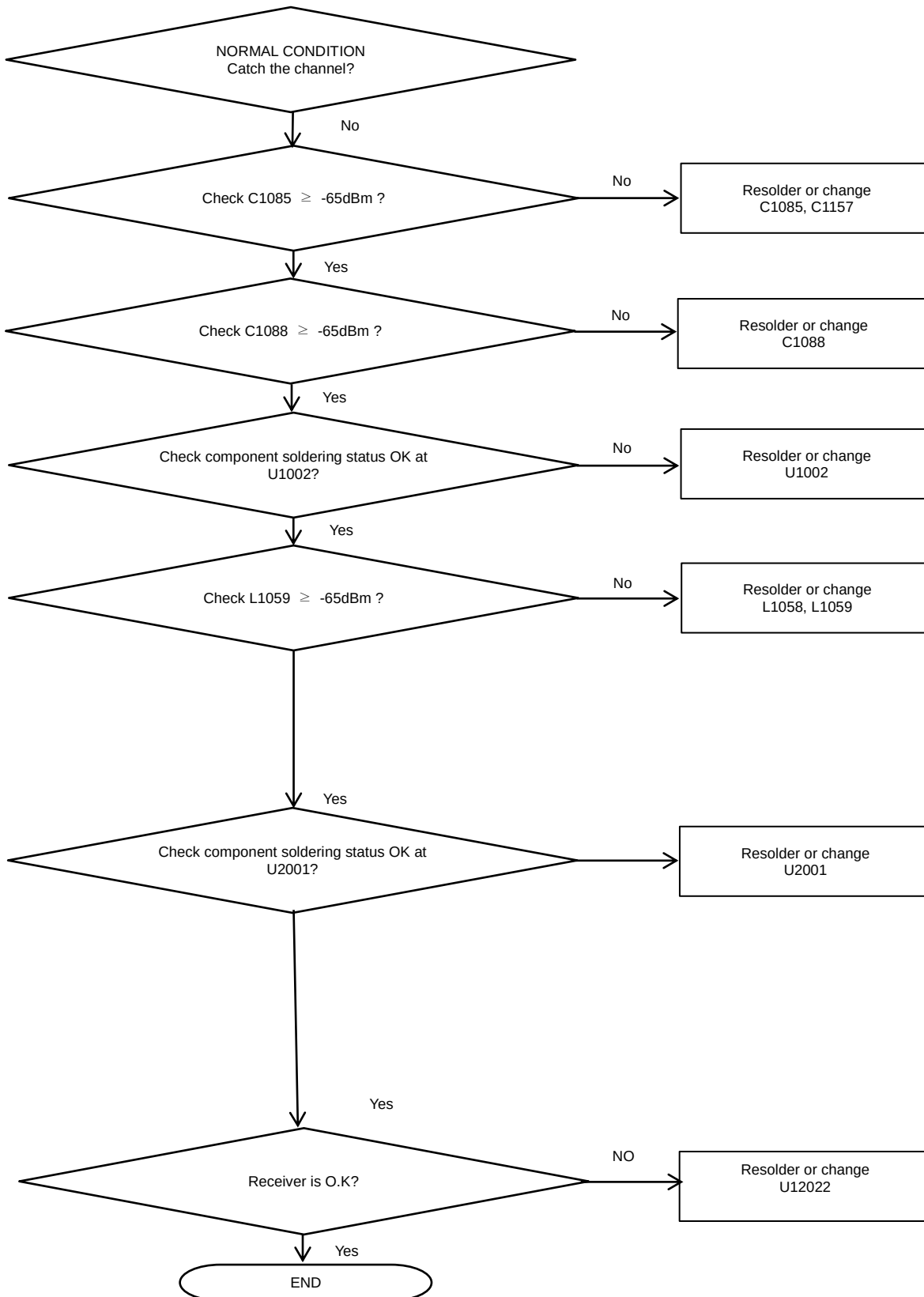
8. Level 3 Repair

8-4-28.GSM 1800/1900, WCDMA B1/2/4, LTE B1/2/3/4/66 RX



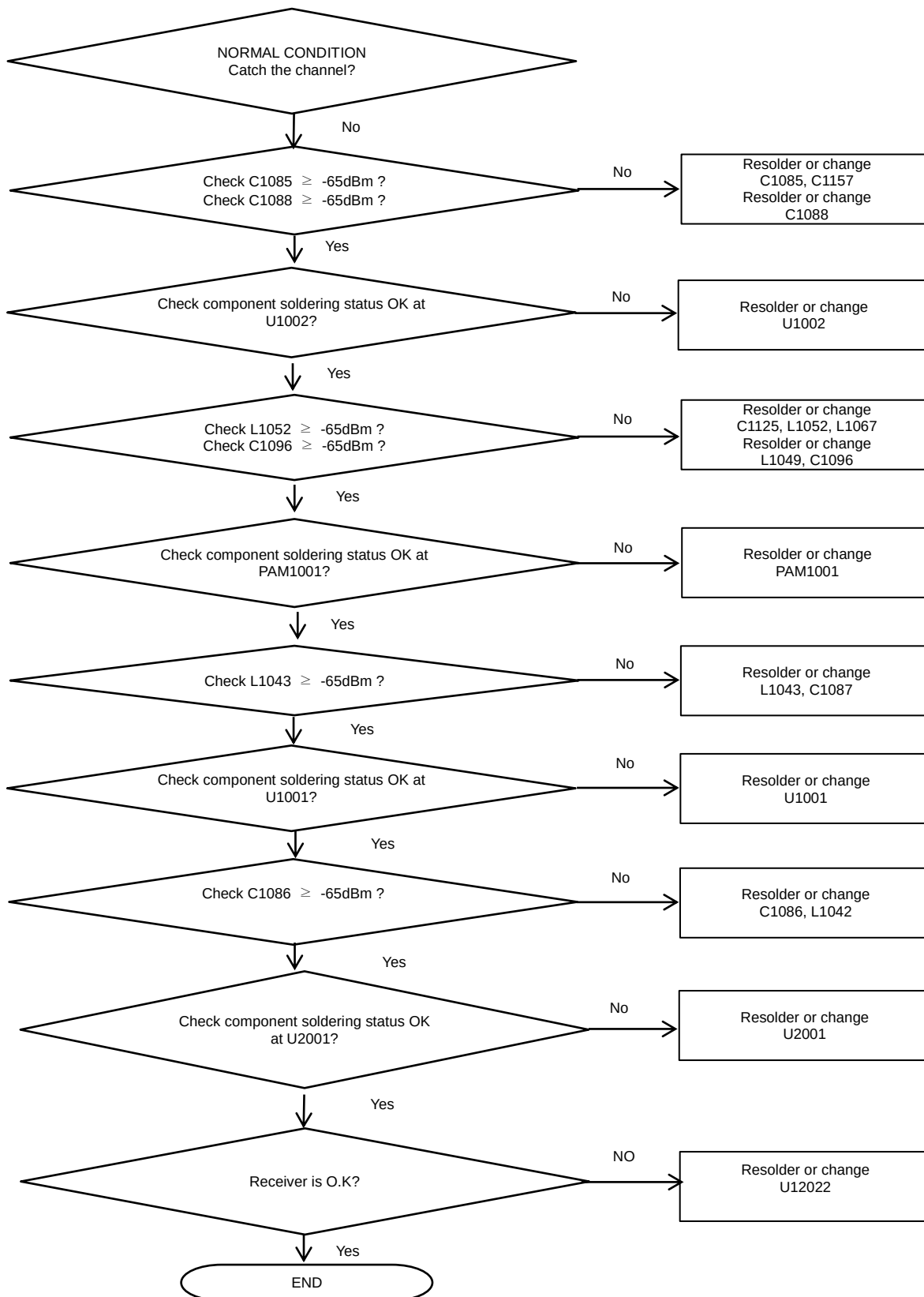
8. Level 3 Repair

8-4-29. LTE B7 RX



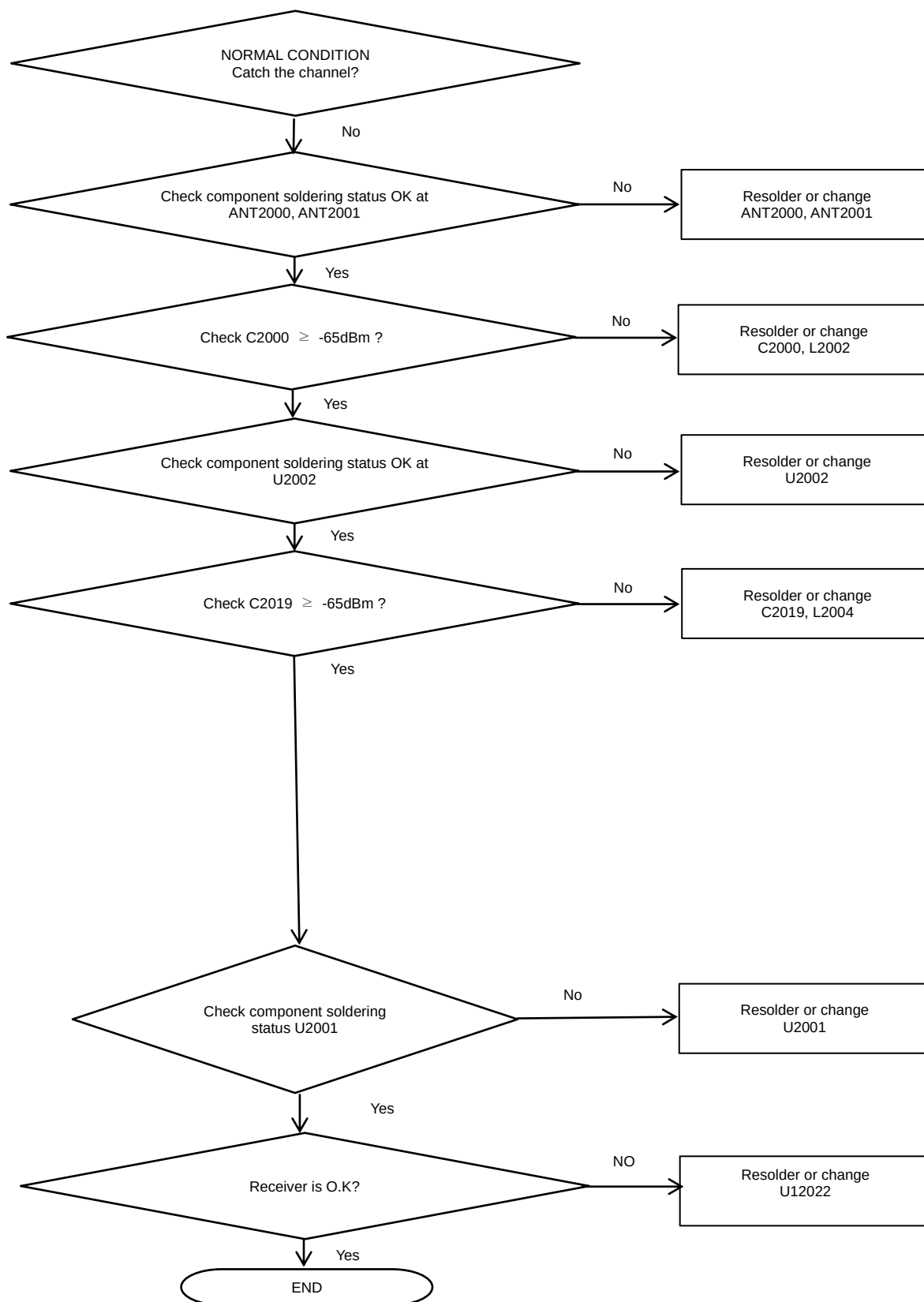
8. Level 3 Repair

8-4-30. LTE B38/40/41 RX



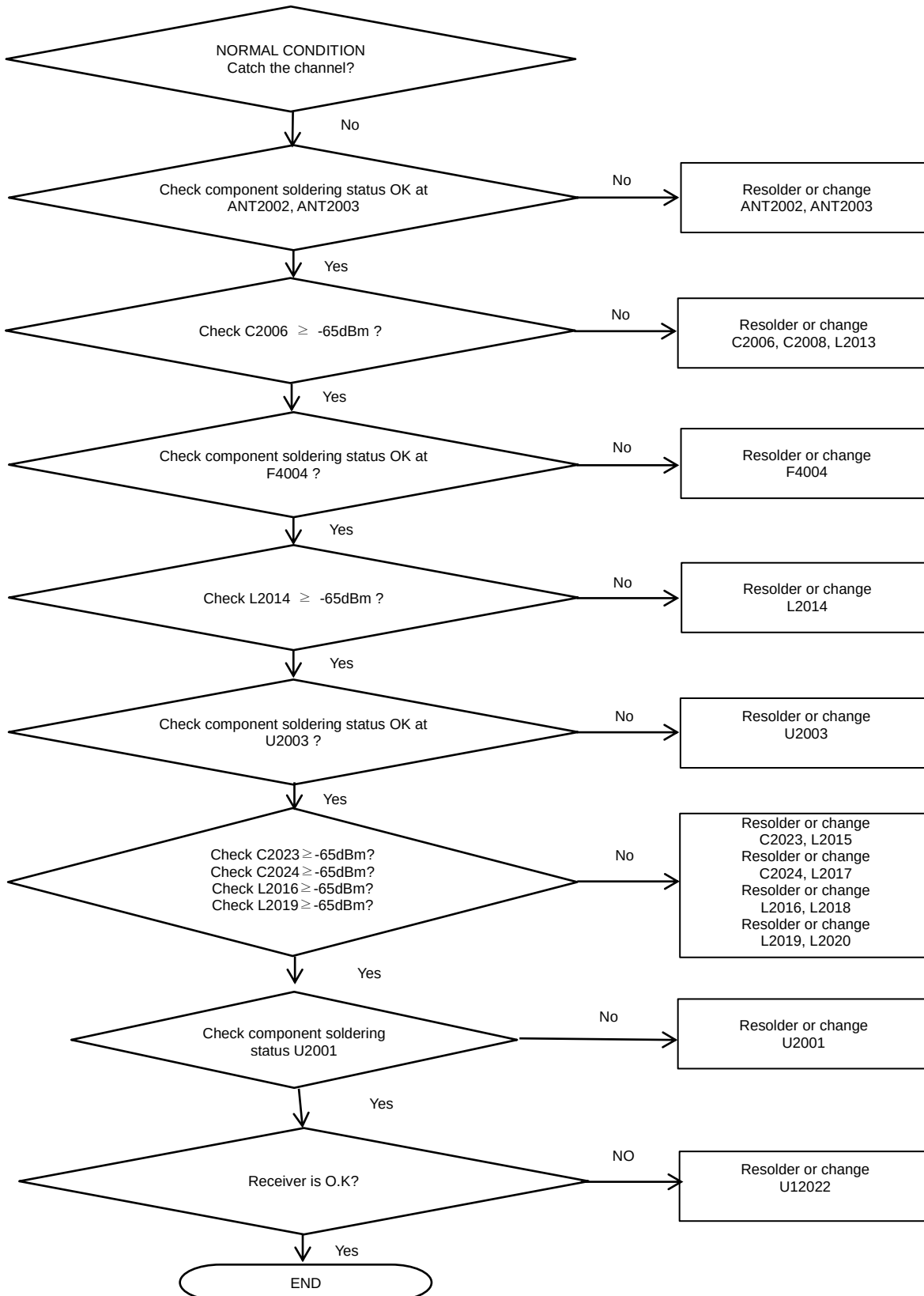
8. Level 3 Repair

8-4-31. GSM 850/900, WCDMA B5/8, LTE B5/8/12/13/17/20/26/28 DRX



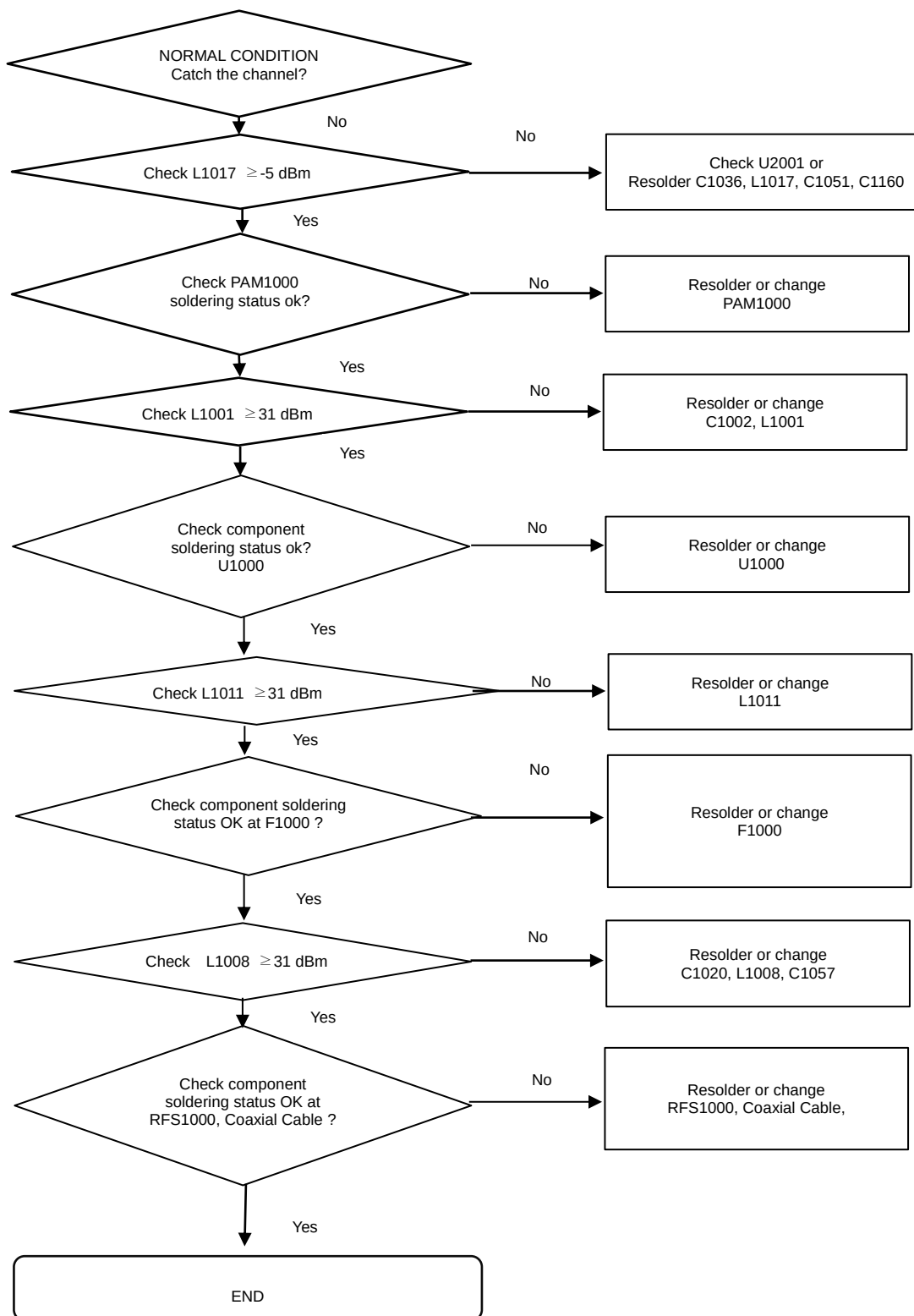
8. Level 3 Repair

8-4-32. GSM1800/1900, WCDMA 1/2/4, LTE B1/2/3/4/7/38/40/41/66 DRX



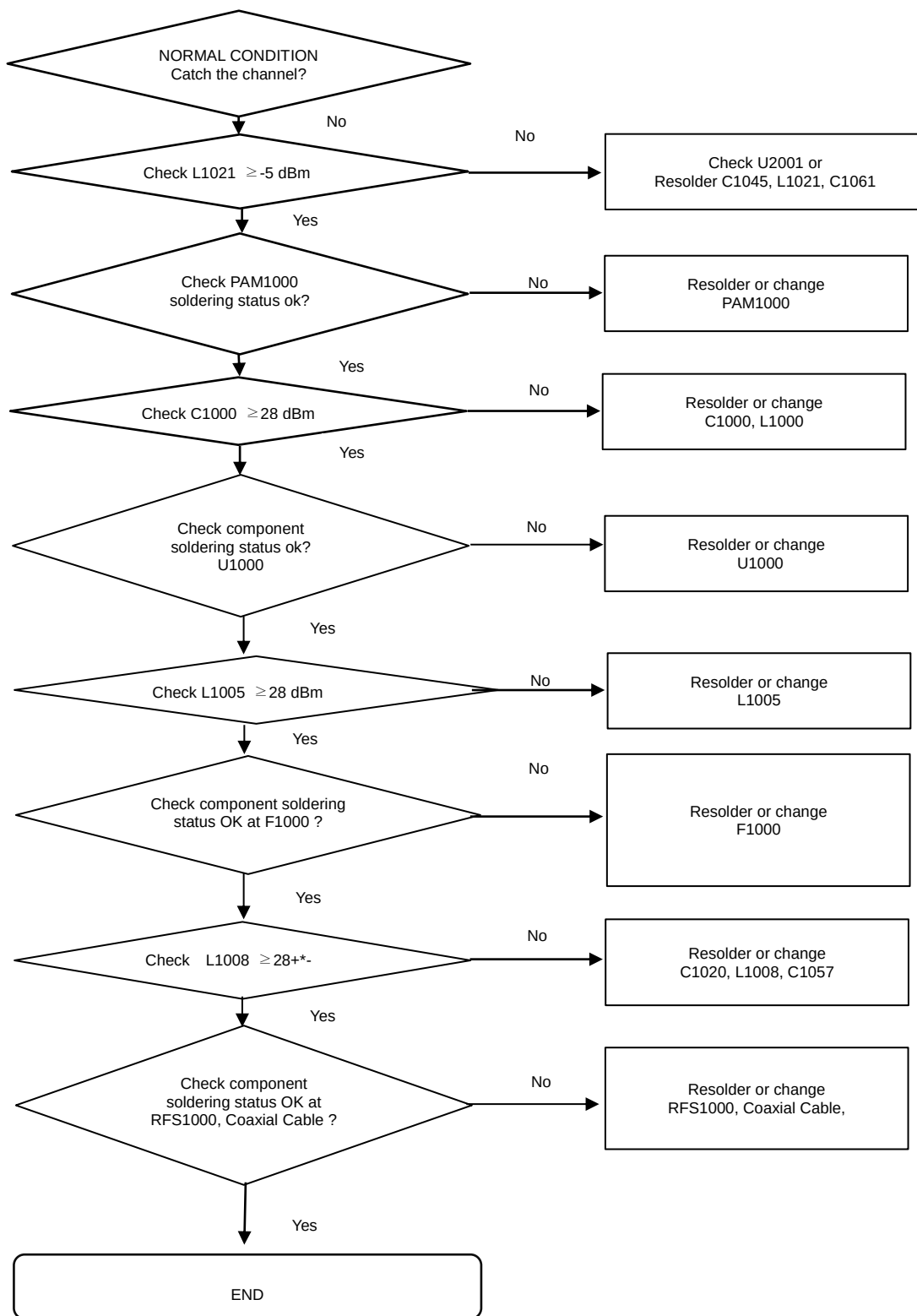
8. Level 3 Repair

8-4-33. GSM 850/900 TX



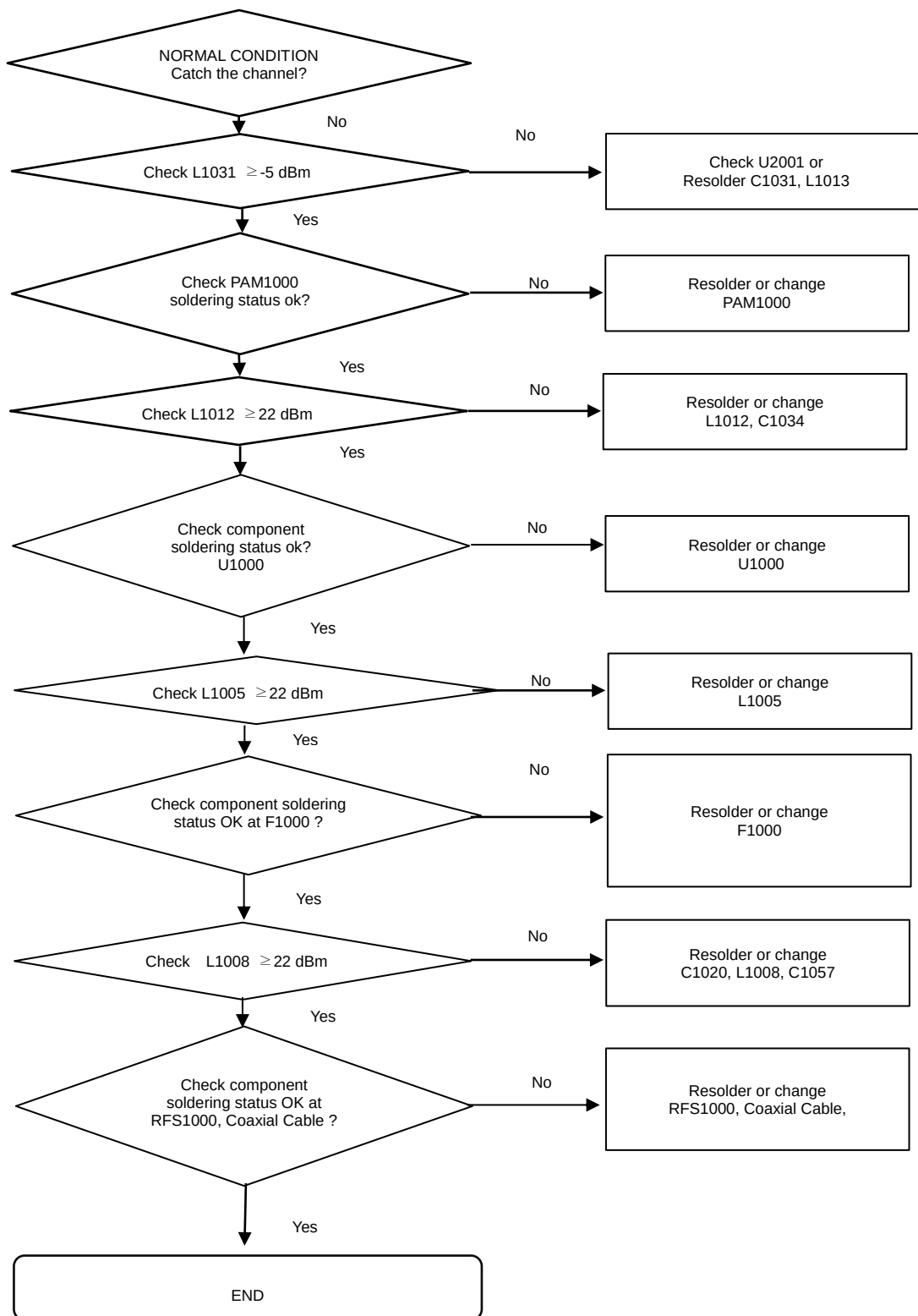
8. Level 3 Repair

8-4-34. GSM 1800/1900 TX



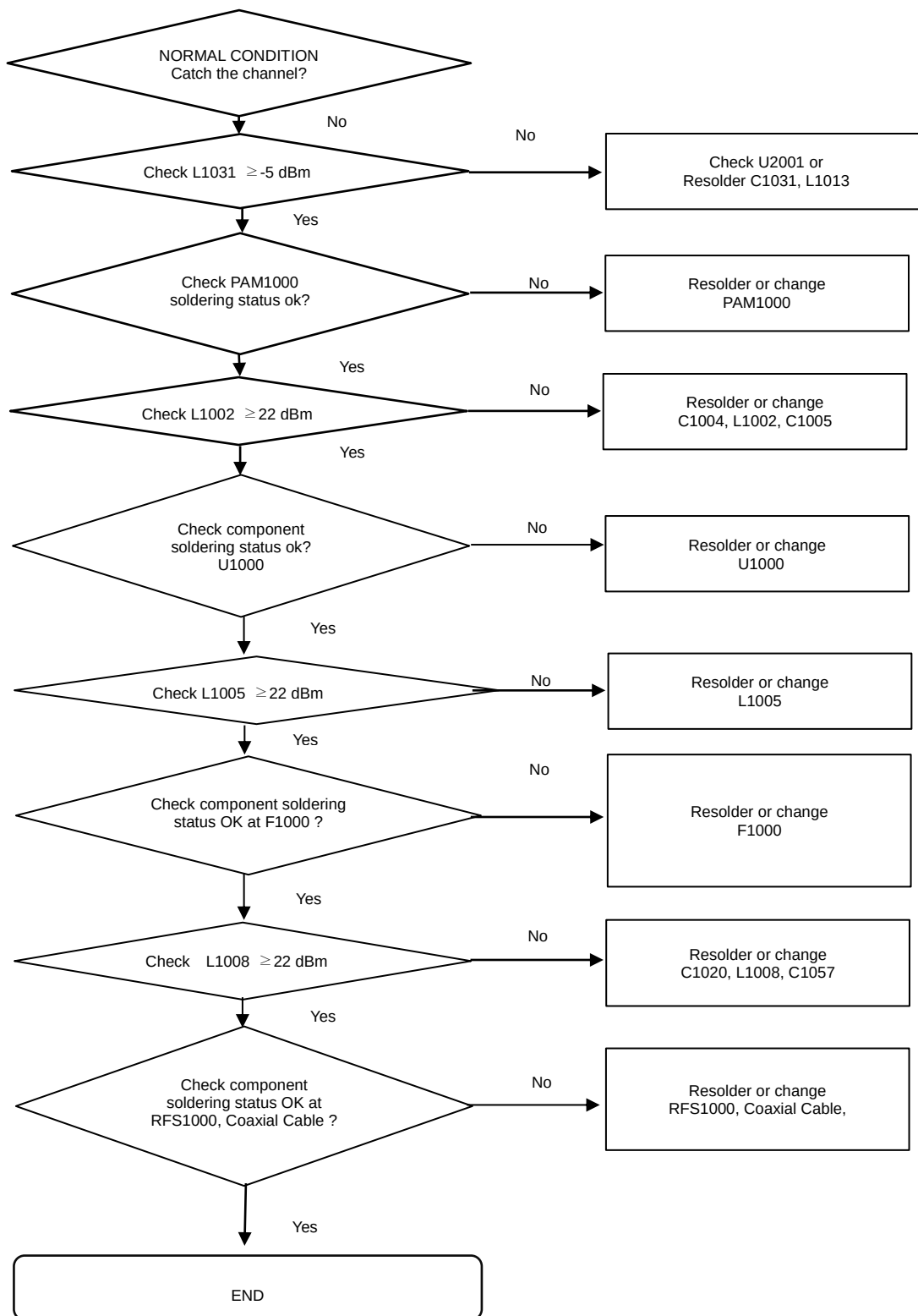
8. Level 3 Repair

8-4-35. WCDMA B1, LTE B1 TX



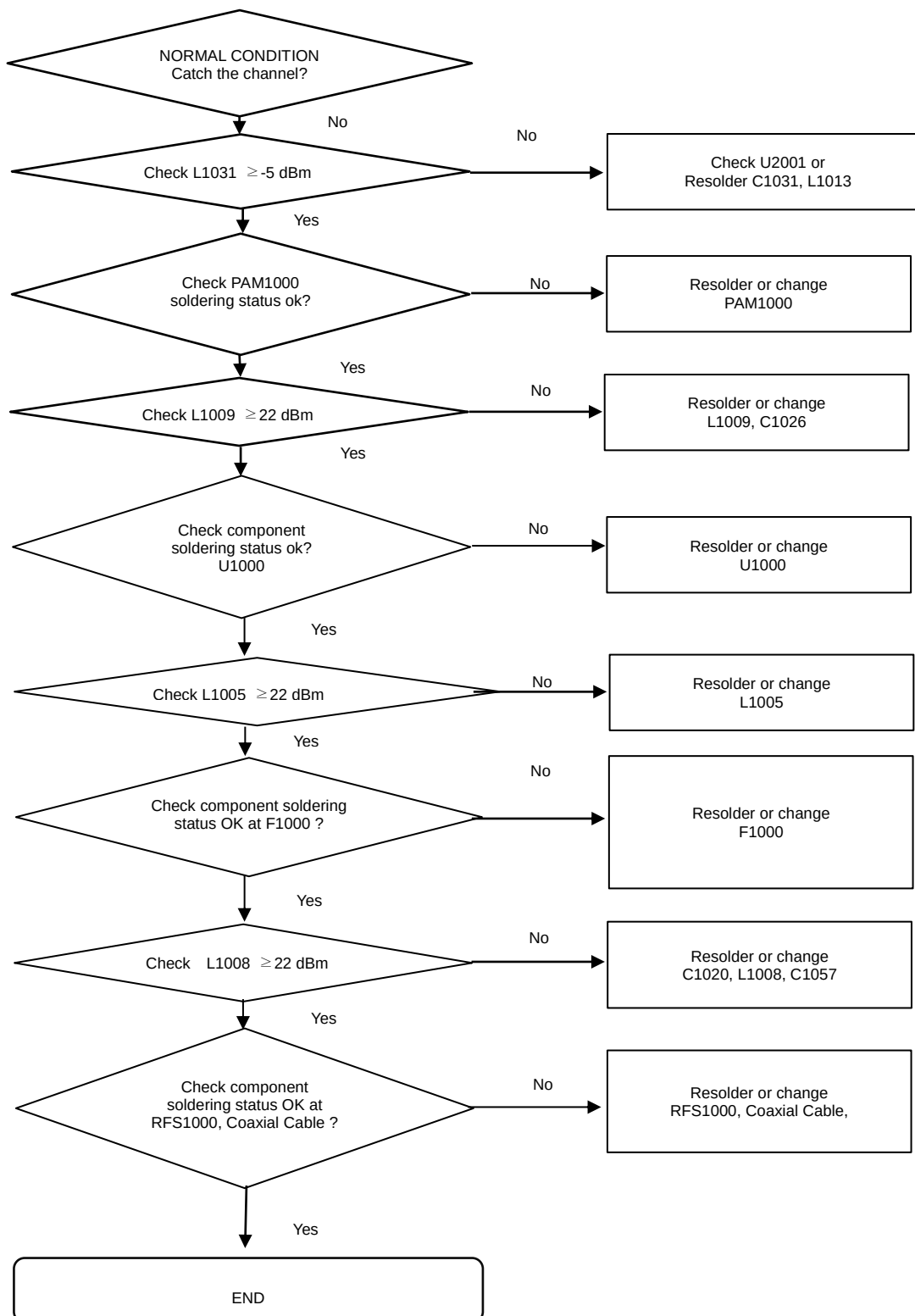
8. Level 3 Repair

8-4-36. WCDMA B2, LTE B2 TX



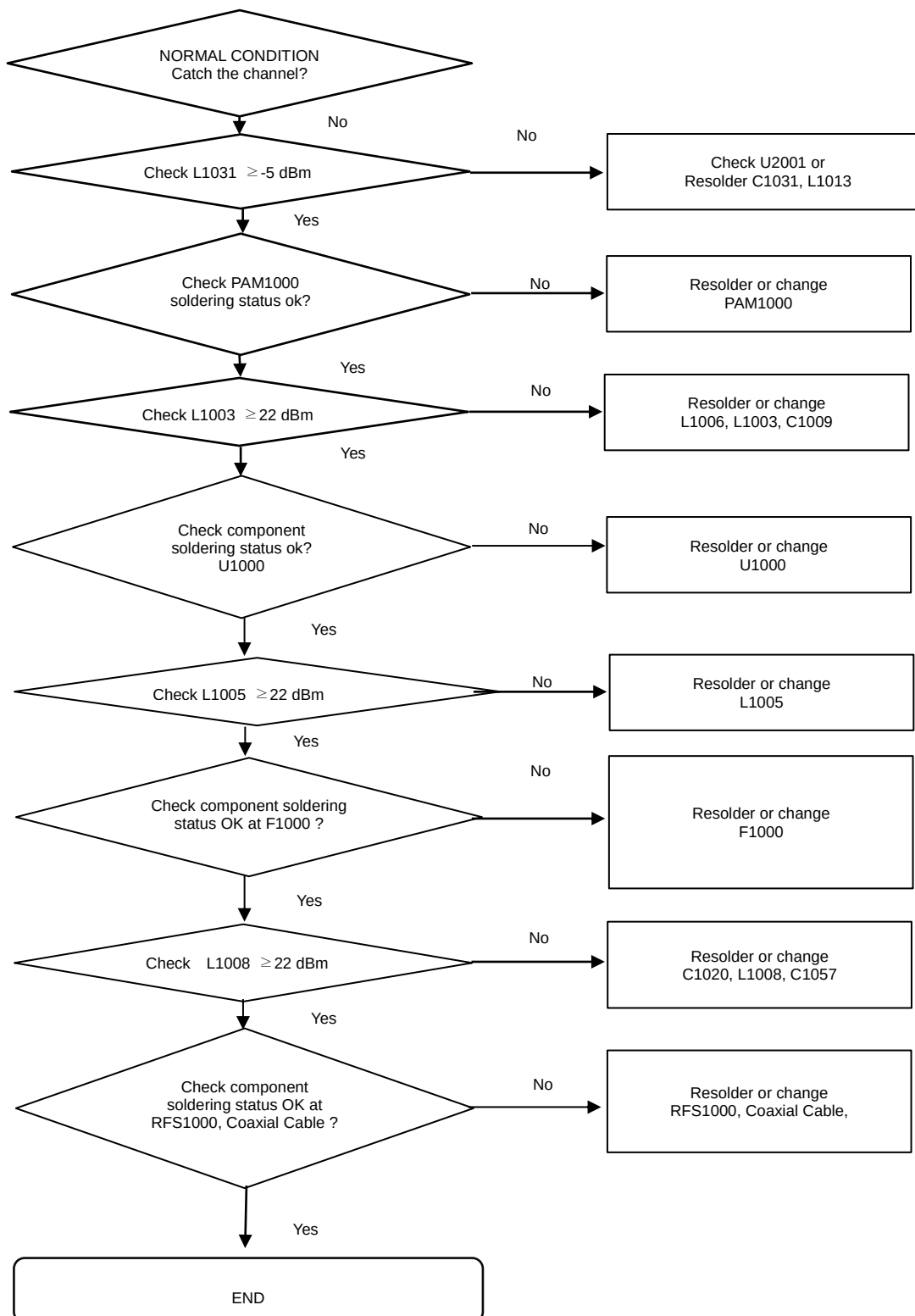
8. Level 3 Repair

8-4-37. LTE B3 TX



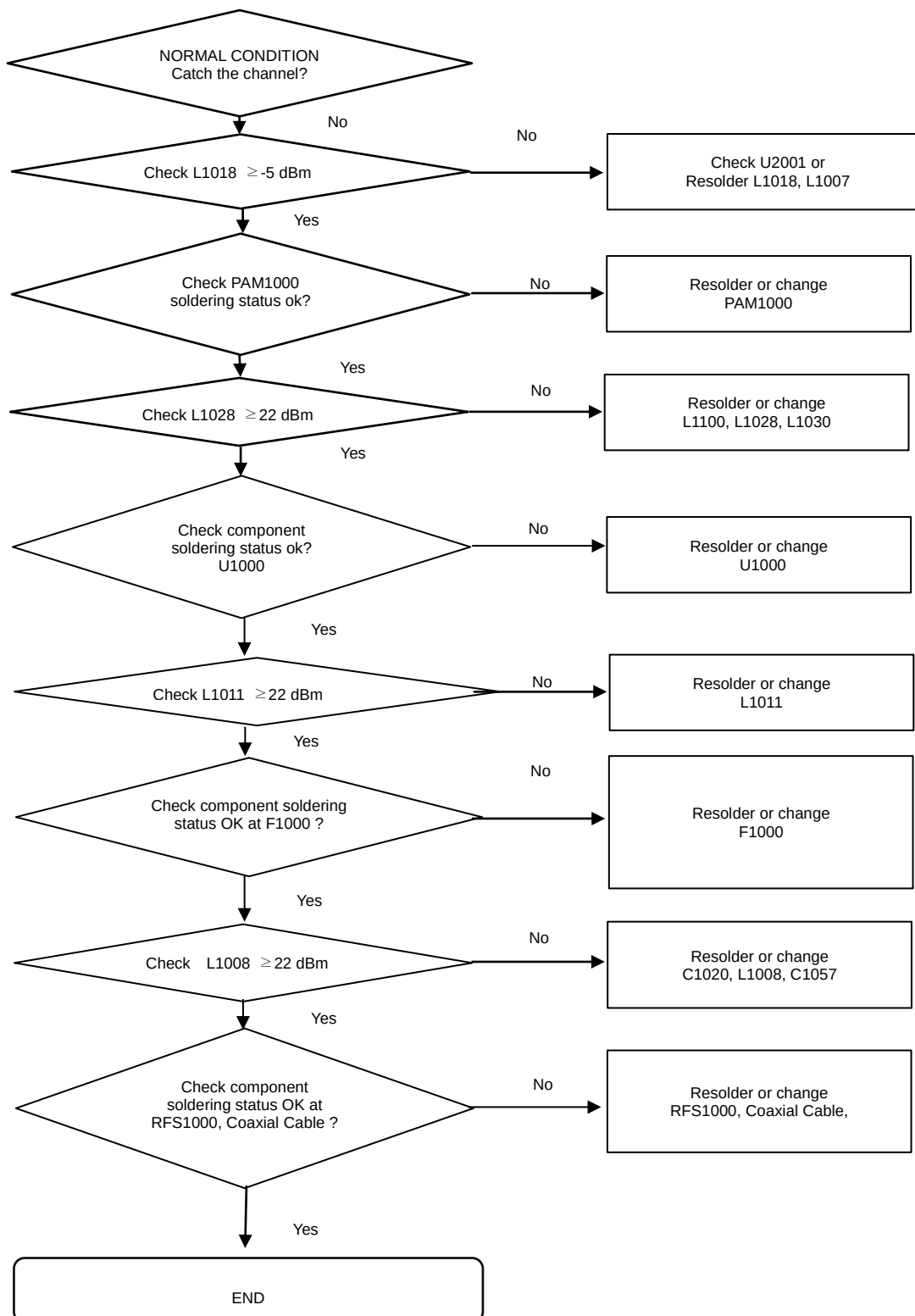
8. Level 3 Repair

8-4-38. WCDMA B4, LTE B4/66 TX



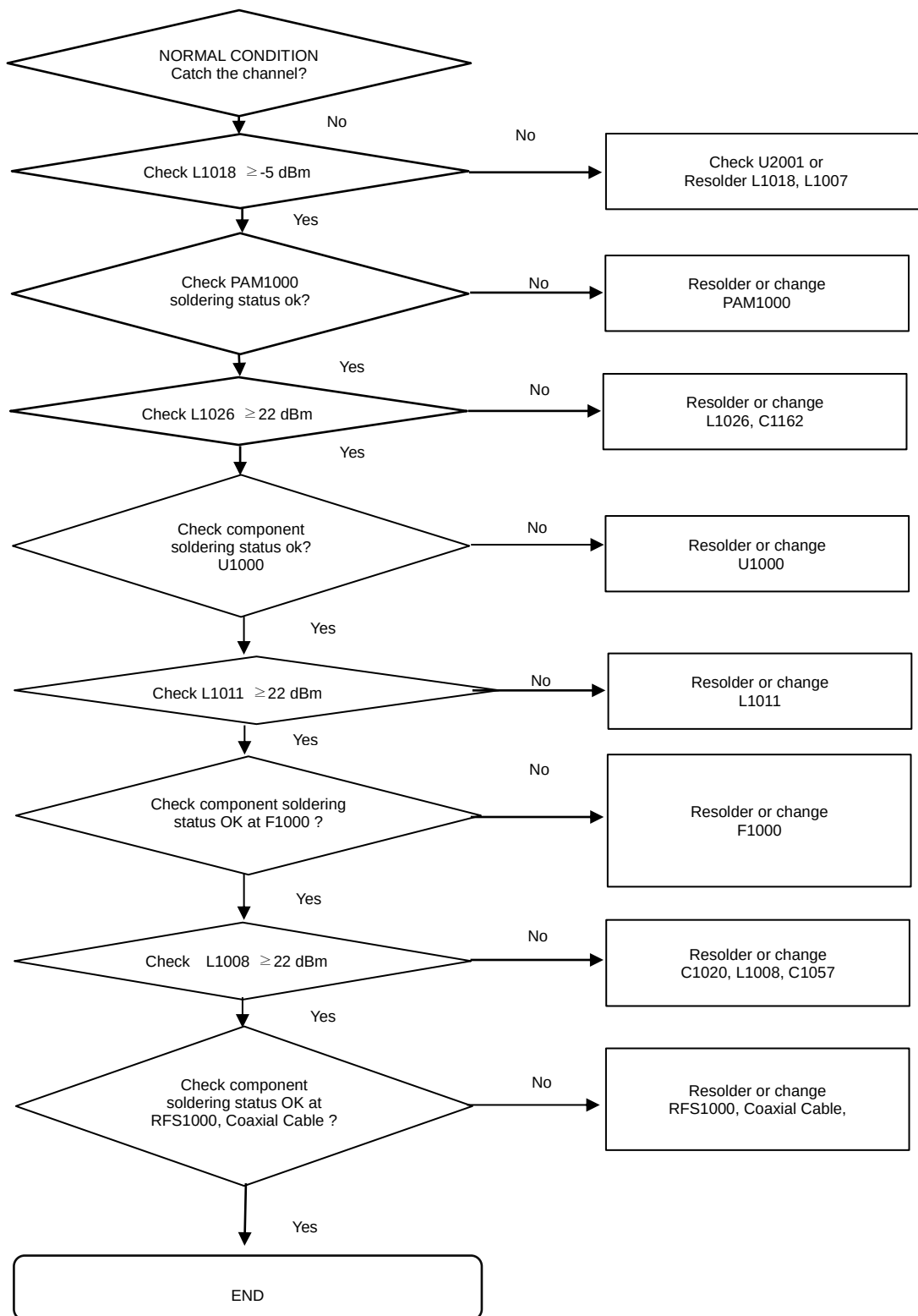
8. Level 3 Repair

8-4-39. WCDMA B5, LTE B5/26 TX



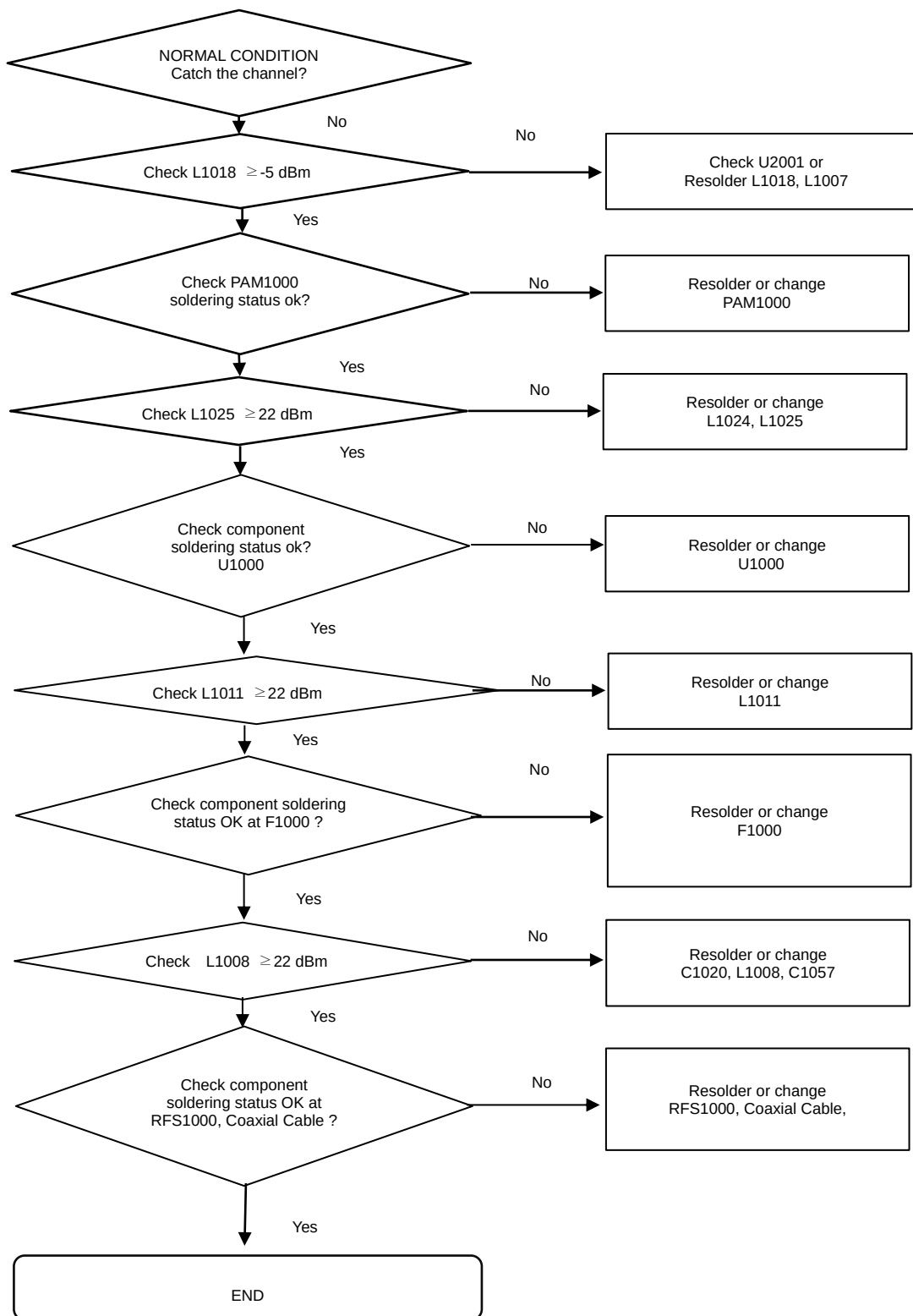
8. Level 3 Repair

8-4-40. WCDMA B8, LTE B8 TX



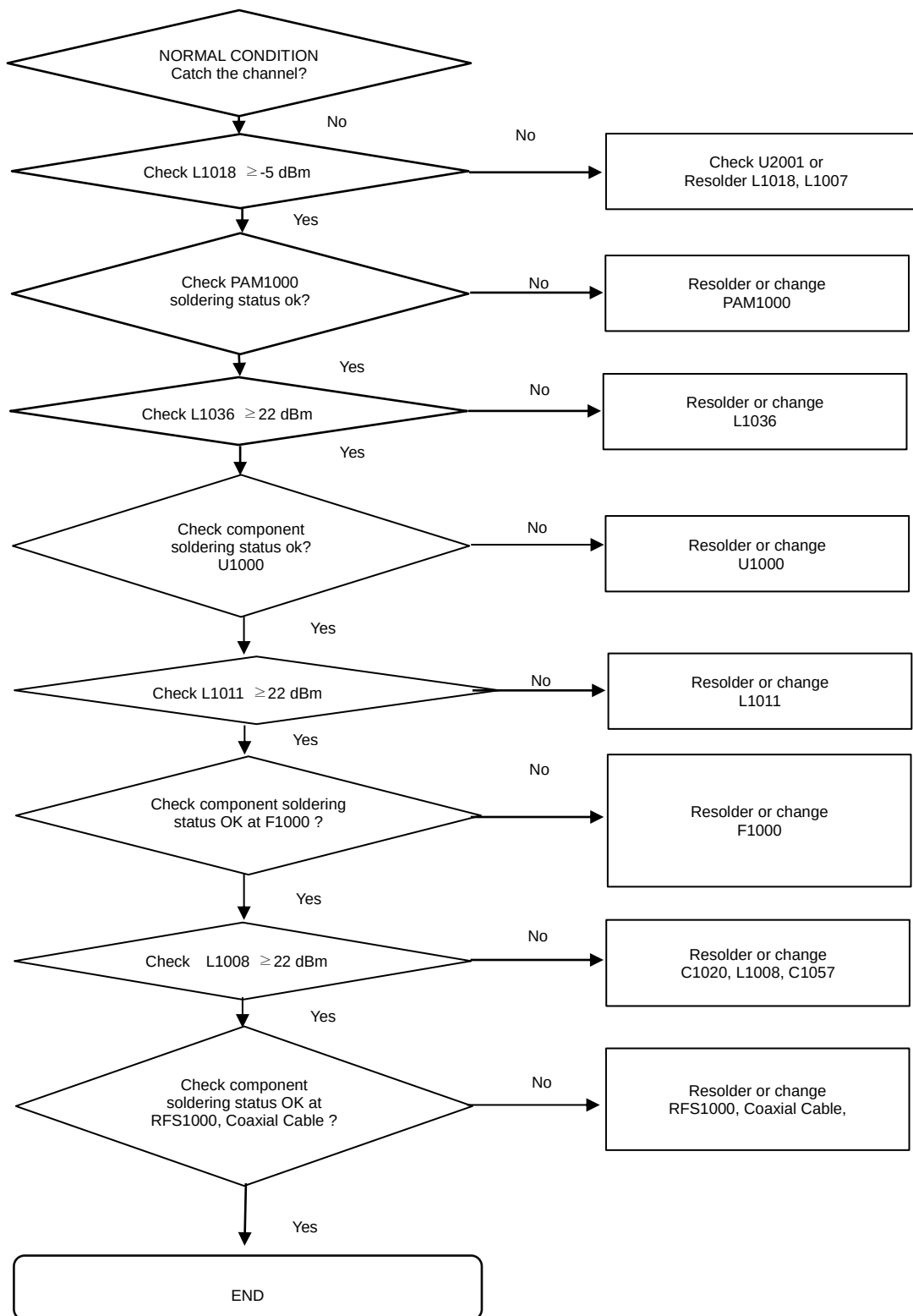
8. Level 3 Repair

8-4-41. LTE B12/17 TX



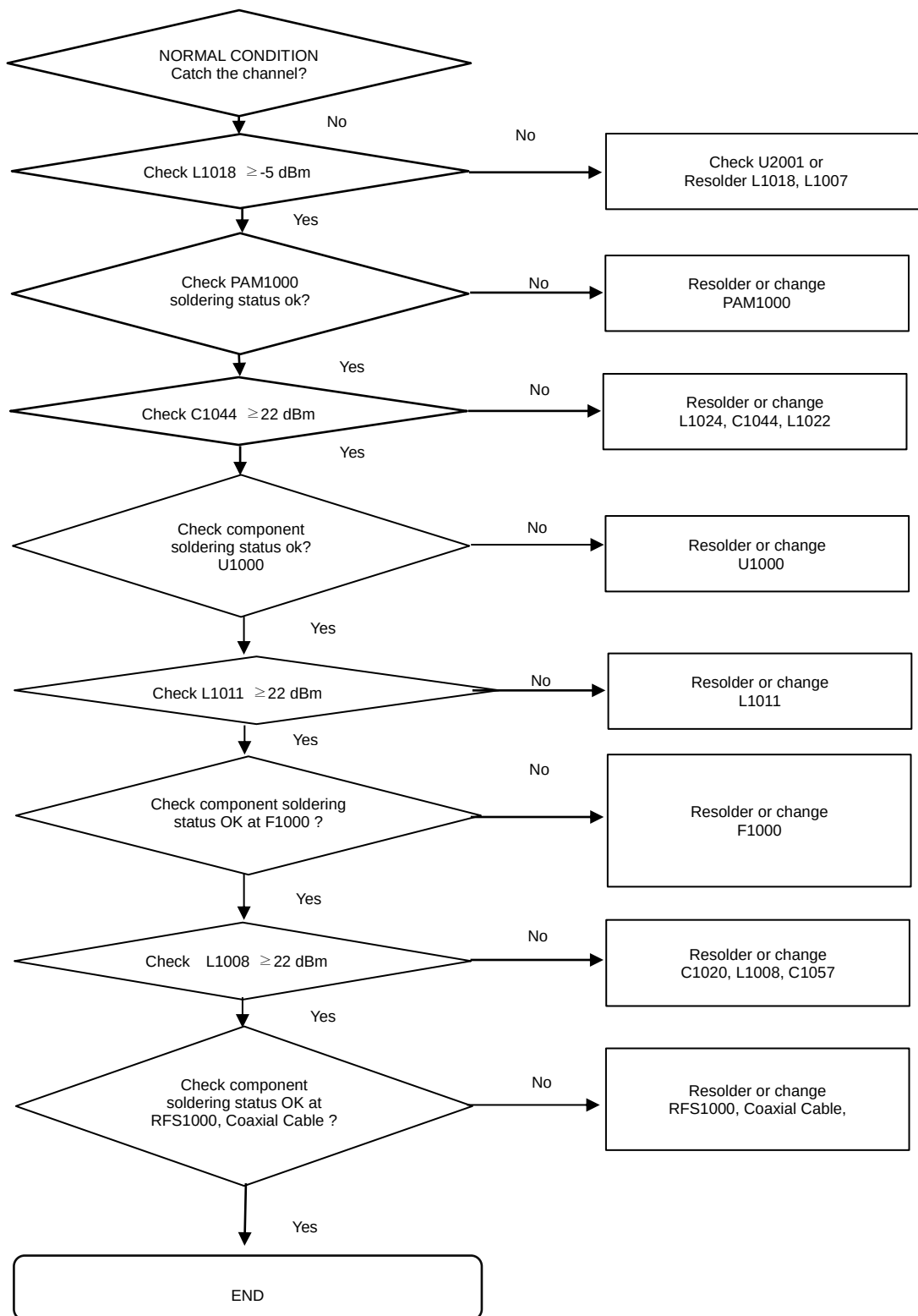
8. Level 3 Repair

8-4-42. LTE B13 TX



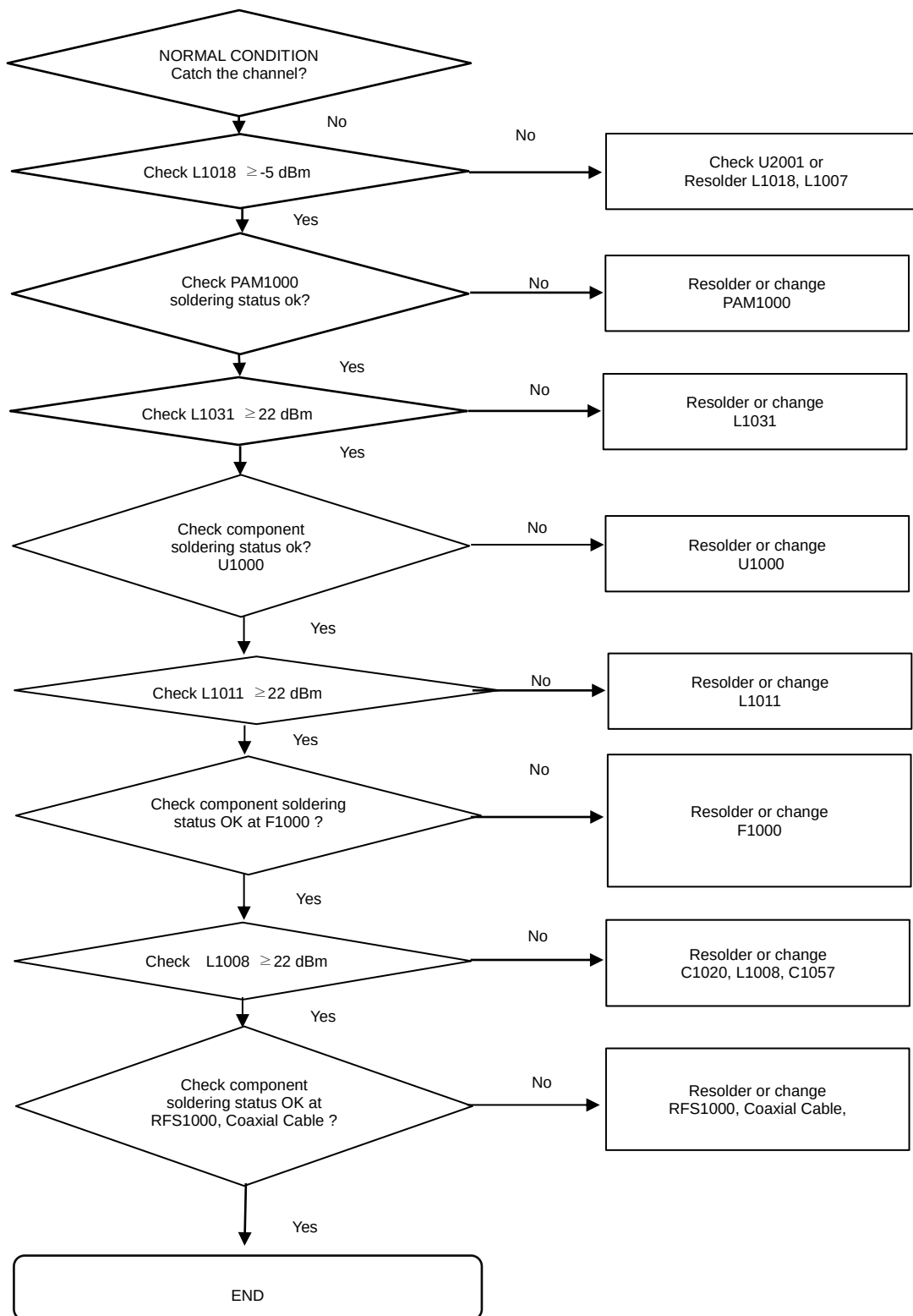
8. Level 3 Repair

8-4-43. LTE B20 TX



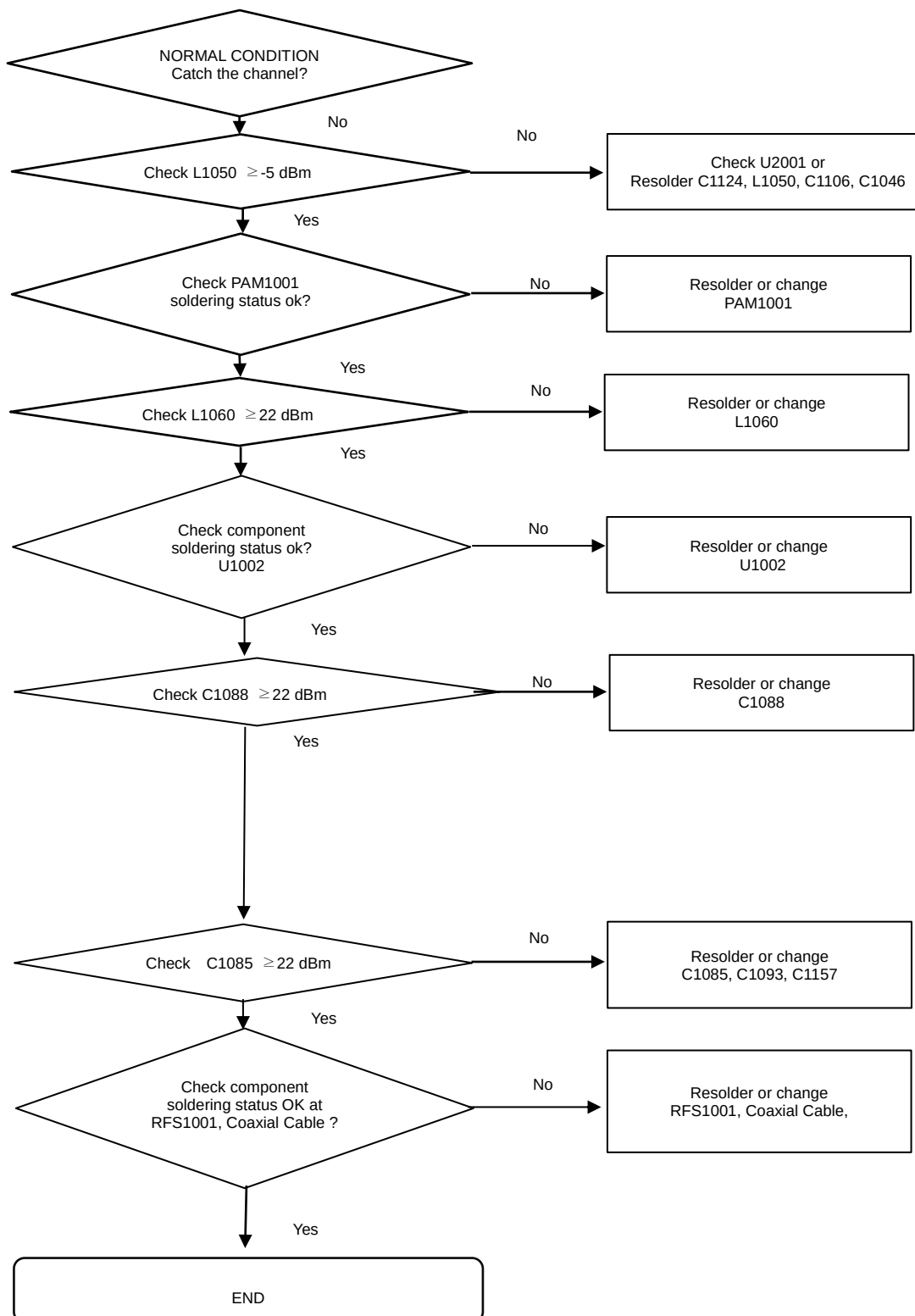
8. Level 3 Repair

8-4-44. LTE B28 TX



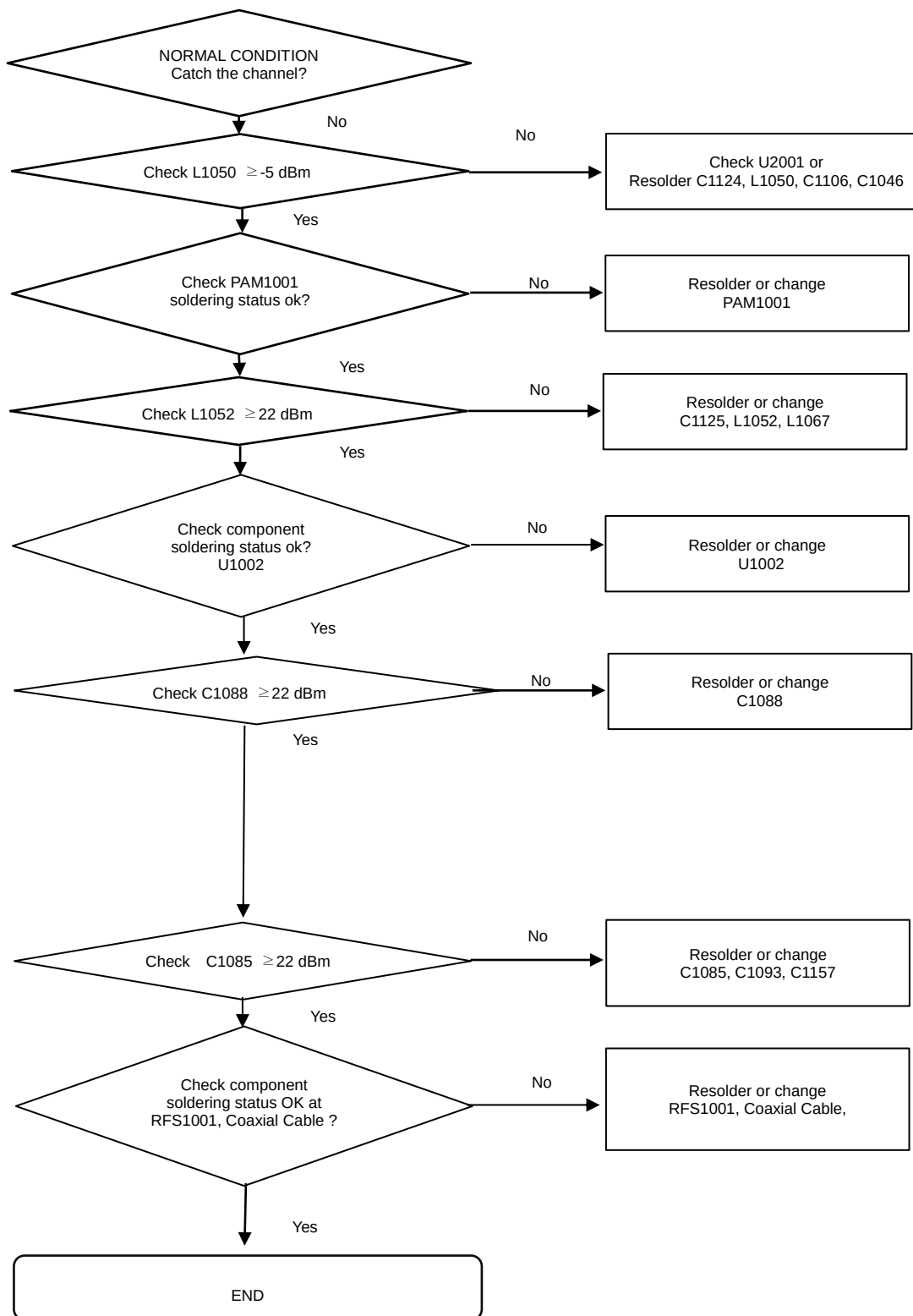
8. Level 3 Repair

8-4-45. LTE B7 TX



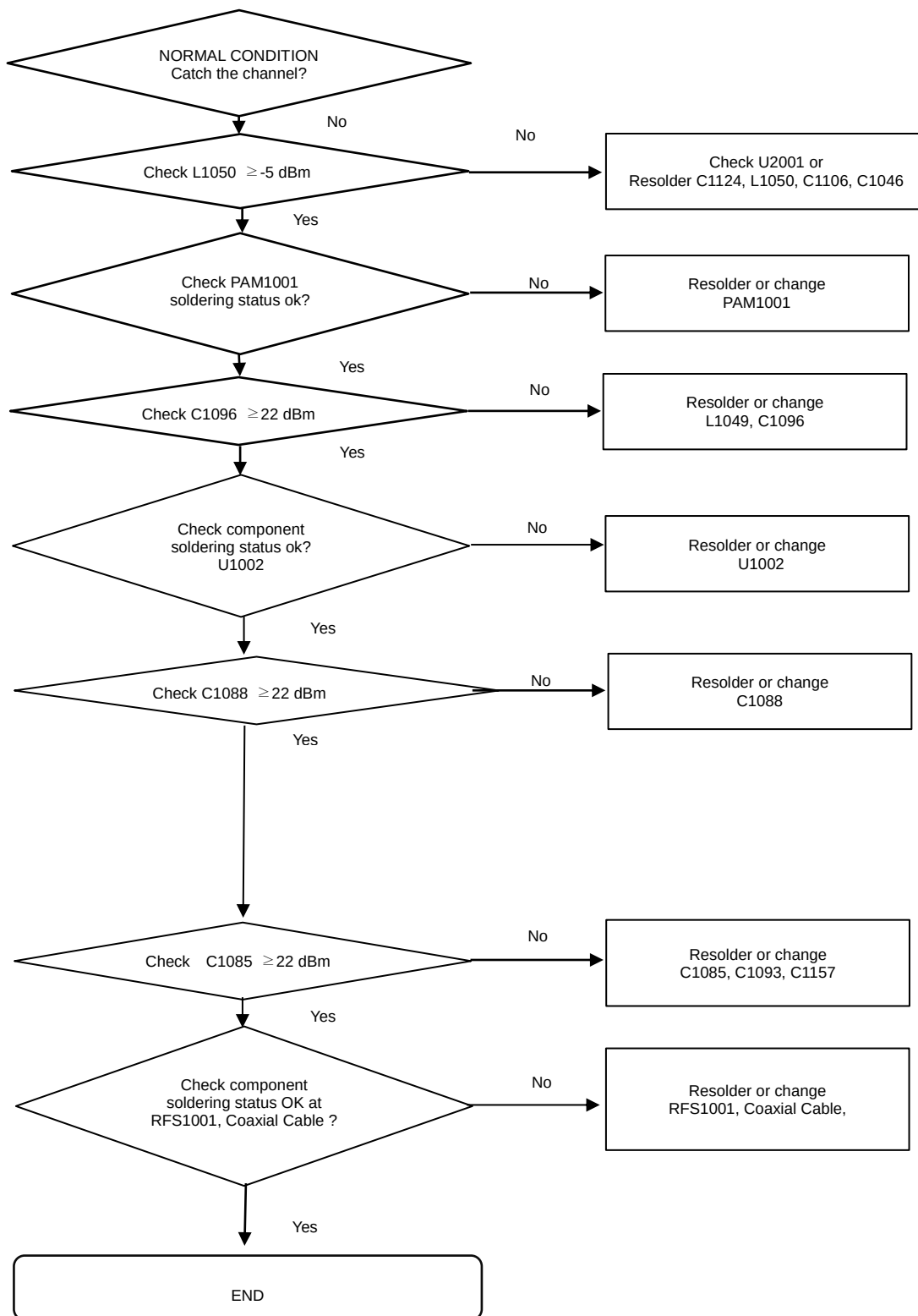
8. Level 3 Repair

8-4-46. LTE B38/41 TX



8. Level 3 Repair

8-4-47. LTE B40 TX



9. Reference Abbreviation

Reference Abbreviation

- **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

SAMSUNG