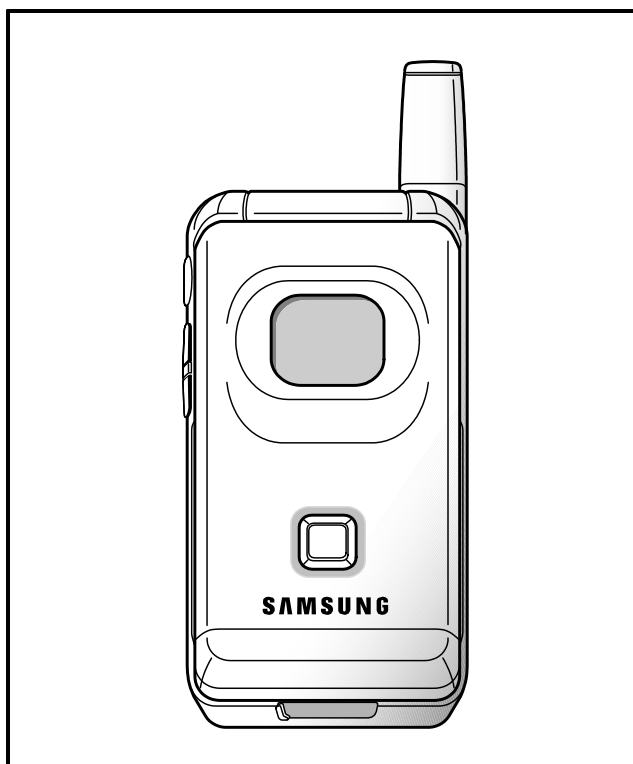


SAMSUNG

GSM TELEPHONE SGH-X400

SERVICE *Manual*

GSM TELEPHONE



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1. SGH-X400 Specification

1. GSM General Specification

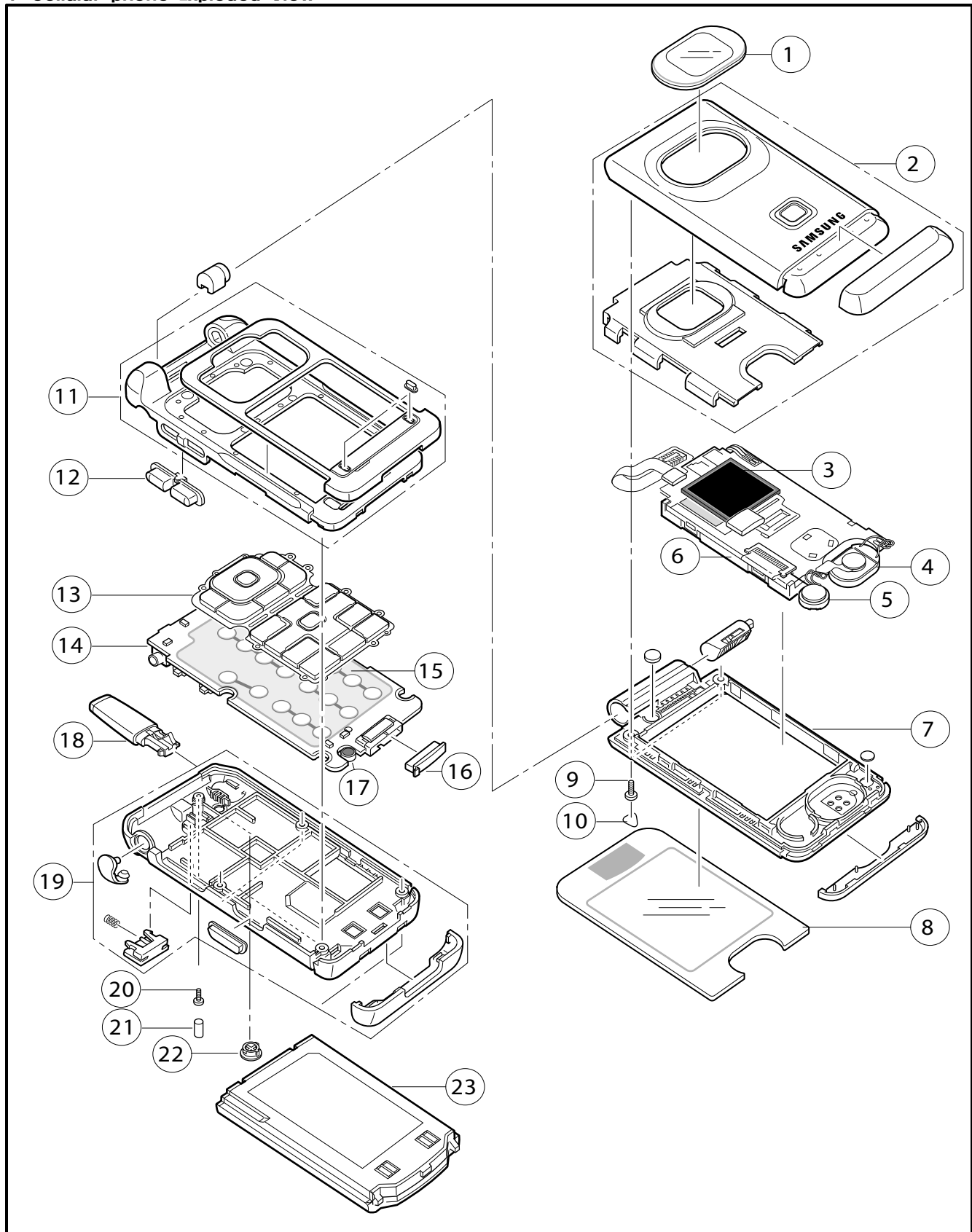
	GSM900 Phase 1	EGSM 900 Phase 2	DCS1800 Phase 1	PCS1900
Freq. Band[MHz] Uplink/Downlink	890~915 935~960	880~915 925~960	1710~1785 1805~1880	1850~1910 1930~1990
ARFCN range	1~124	0~124 & 975~1023	512~885	512~810
Tx/Rx spacing	45MHz	45MHz	95MHz	80MHz
Mod. Bit rate/ Bit Period	270.833kbps 3.692us	270.833kbps 3.692us	270.833kbps 3.692us	270.833kbps 3.692us
Time Slot Period/Frame Period	576.9us 4.615ms	576.9us 4.615ms	576.9us 4.615ms	576.9us 4.615ms
Modulation	0.3GMSK	0.3GMSK	0.3GMSK	0.3GMSK
MS Power	33dBm~13dBm	33dBm~5dBm	30dBm~0dBm	30dBm~0dBm
Power Class	5pcl ~ 19pcl	5pcl ~ 19pcl	0pcl ~ 15pcl	0pcl ~ 15pcl
Sensitivity	-102dBm	-102dBm	-100dBm	-100dBm
TDMA Mux	8	8	8	8
Cell Radius	35Km	35Km	2Km	-

2. GSM TX power class

TX Power control level	GSM900	TX Power control level	DCS1800	TX Power control level	PCS1900
5	33±2 dBm	0	30±2 dBm	0	30±2 dBm
6	31±3 dBm	1	28±3 dBm	1	28±3 dBm
7	29±3 dBm	2	26±3 dBm	2	26±3 dBm
8	27±3 dBm	3	24±3 dBm	3	24±3 dBm
9	25±3 dBm	4	22±3 dBm	4	22±3 dBm
10	23±3 dBm	5	20±3 dBm	5	20±3 dBm
11	21±3 dBm	6	18±3 dBm	6	18±3 dBm
12	19±3 dBm	7	16±3 dBm	7	16±3 dBm
13	17±3 dBm	8	14±3 dBm	8	14±3 dBm
14	15±3 dBm	9	12±4 dBm	9	12±4 dBm
15	13±3 dBm	10	10±4 dBm	10	10±4 dBm
16	11±5 dBm	11	8±4dBm	11	8±4dBm
17	9±5 dBm	12	6±4 dBm	12	6±4 dBm
18	7±5 dBm	13	4±4 dBm	13	4±4 dBm
19	5±5 dBm	14	2±5 dBm	14	2±5 dBm
		15	0±5 dBm	15	0±5 dBm

2. SGH-X400 Exploded View and its Parts list

1. Cellular phone Exploded View



2. Cellular phone Parts list

NO	Description	SEC.CODE	REMARK
1	DUAL WINDOW LCD	GH75-03088A	
2	FOLDER UPPER	GH75-02636B	
3	DUAL LCD	GH07-00319A	
4	SPEAKER	3001-001393	
5	MOTOR	3101-001351	
6	MAIN LCD	GH07-00247A	
7	FOLDER LOWER	GH75-02635B	
8	MAIN WINDOW LCD	GH72-07620A	
9	SCREW	6001-001155	
10	HOLE SHEET(A)	GH74-04896B	
	HOLE SHEET(B)	GH74-04897B	
11	FRONT COVER	GH75-02633B	
12	SIDE KEY	GH75-02632A	
13	KEYPAD	GH75-03162A	
14	MAIN PBA	GH92-01422A	
15	DOME SHEET	GH59-00745A	
16	IF COVER	GH73-01688B	
17	MIC	GH30-00015A	
18	ANTENNA	GH42-00285A	
19	REAR COVER	GH75-02634B	
20	SCREW	6001-001478	
21	SCREW CAP	GH73-01692B	
22	RF COVER	GH73-01743B	
23	BATTERY	GH43-00830B	900MAH
		GH43-00853B	620MAH

3. Test Jig (GH80-00865A)



3-1. RF Test Cable (GH39-00090A)



3-2. Test Cable (GH00-00127A)



3-3. Serial Cable



3-4. Power Supply Cable



3-5. DATA CABLE (GH39-00159A)



3. SGH-X400 MAIN Electrical Parts List

Design LOC	SEC Code
GH92-01553A	PBA
GH41-00443A	PCB
2203-000995	C1003
2203-000233	C1004
2203-002677	C1005
2203-002677	C1006
2203-000233	C1007
2203-002677	C1008
2203-002677	C1009
2203-000812	C101
2203-000233	C1010
2203-005234	C1012
2203-005234	C1013
2203-000812	C1014
2203-000995	C1015
2203-000812	C1016
2404-001151	C1017
2203-000438	C1018
2203-000812	C1019
2203-005061	C102
2203-000812	C1020
2404-001151	C1021
2203-001598	C103
2203-000812	C104
2203-000812	C105
2404-001105	C106
2203-000254	C1063
2404-001268	C107
2203-005482	C108
2203-001652	C109
2203-001652	C110
2203-000438	C1101
2203-000679	C1102
2203-000995	C1103
2203-001405	C1104
2404-001105	C1105
2203-000885	C1106

Design LOC	SEC Code
2203-005512	C1107
2203-000254	C1108
2203-005065	C1109
2203-006053	C111
2203-001405	C1110
2203-005509	C1111
2203-001405	C1112
2203-001405	C1113
2203-005065	C1114
2203-005480	C1115
2203-005481	C1116
2203-005481	C1117
2203-005481	C1118
2203-005480	C1119
2203-006053	C112
2203-000438	C1120
2203-000278	C1121
2203-005050	C1122
2203-001405	C1123
2203-001405	C1124
2203-001652	C113
2203-001598	C114
2203-000254	C115
2203-006053	C116
2203-006053	C117
2203-000233	C118
2203-000812	C119
2203-005061	C120
2203-001598	C121
2203-000254	C201
2203-006113	C202
2203-006113	C203
2203-006113	C204
2203-006113	C205
2203-006113	C208
2203-006113	C209
2203-006257	C212

Design LOC	SEC Code
2203-005509	C213
2203-005061	C214
2203-005061	C215
2203-005682	C220
2203-005682	C221
2203-005682	C222
2203-005682	C223
2203-005682	C224
2203-005682	C225
2203-005682	C226
2203-005682	C227
2203-005061	C301
2203-005061	C302
2203-005061	C303
2203-005061	C304
2203-000812	C305
2203-000359	C401
2203-005061	C402
2203-001405	C403
2203-005061	C404
2404-001086	C405
2203-000995	C406
2203-000995	C407
2203-000885	C408
2203-005061	C409
2203-005065	C410
2404-001086	C413
2203-000438	C416
2203-005061	C417
2404-001151	C420
2404-001151	C421
2203-005061	C422
2203-005065	C423
2203-000438	C425
2203-000438	C426
2203-005682	C430
2203-005682	C431

Design LOC	SEC Code
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2203-005682	C433
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2203-005065	C705
2203-005061	C706
2203-000254	C707
2203-005480	C708
2203-005480	C709
2203-000254	C710
2203-000254	C711
2203-000254	C712
2203-000233	C801

Design LOC	SEC Code
2203-000233	C802
2203-000233	C803
2203-000254	C804
2203-000254	C805
2203-000254	C806
2203-000995	C904
2203-001405	C905
2203-000812	C906
2203-000233	C908
2203-001405	C909
2203-000233	C910
2203-001405	C911
3705-001255	CN1001
3709-001187	CN101
3711-005078	CN201
3710-001816	CN300
3722-001715	CN401
0405-001110	D1101
0405-001110	D1102
2909-001191	F1001
2904-001450	F1002
2203-005234	L1001
2203-001195	L1002
2703-002602	L1003
2703-002603	L1004
2703-001734	L1005
2703-002608	L1006
2703-001409	L1007
2703-001794	L1101
2703-002102	L1102
2703-002102	L1103
2703-001235	L401
2703-001235	L402
2703-001235	L403
2703-001235	L490
2703-001751	L901
0601-001819	LED201

Design LOC	SEC Code
0601-001819	LED202
0601-001790	LED203
0601-001790	LED204
0601-001790	LED205
0601-001819	LED206
0601-001790	LED207
0601-001819	LED208
0601-001819	LED209
0601-001819	LED210
0601-001790	LED211
0601-001790	LED212
0601-001790	LED213
0601-001790	LED214
0601-001819	LED215
0601-001819	LED216
0604-001261	LED217
0601-001790	LED218
0601-001790	LED219
0601-001790	LED220
0601-001790	LED221
4302-001130	M101
2801-004189	OSC1101
2801-004025	OSC601
2809-001260	OSC801
0502-001201	Q101
0506-001052	Q102
0504-000168	Q103
0504-000168	Q104
0504-001012	Q1101
0501-000225	Q401
2007-001288	R1001
2007-001307	R1002
2007-007008	R1003
2007-007008	R1004
2007-001288	R1005
2007-001307	R1006
2007-007008	R1007

Design LOC	SEC Code
2007-007008	R1008
2007-007107	R1009
2007-000171	R101
2007-007142	R102
2007-007139	R103
2007-001323	R104
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2007-000171	R107
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2007-000172	R109
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2007-007135	R1102
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2007-000174	R1106
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2007-008587	R224
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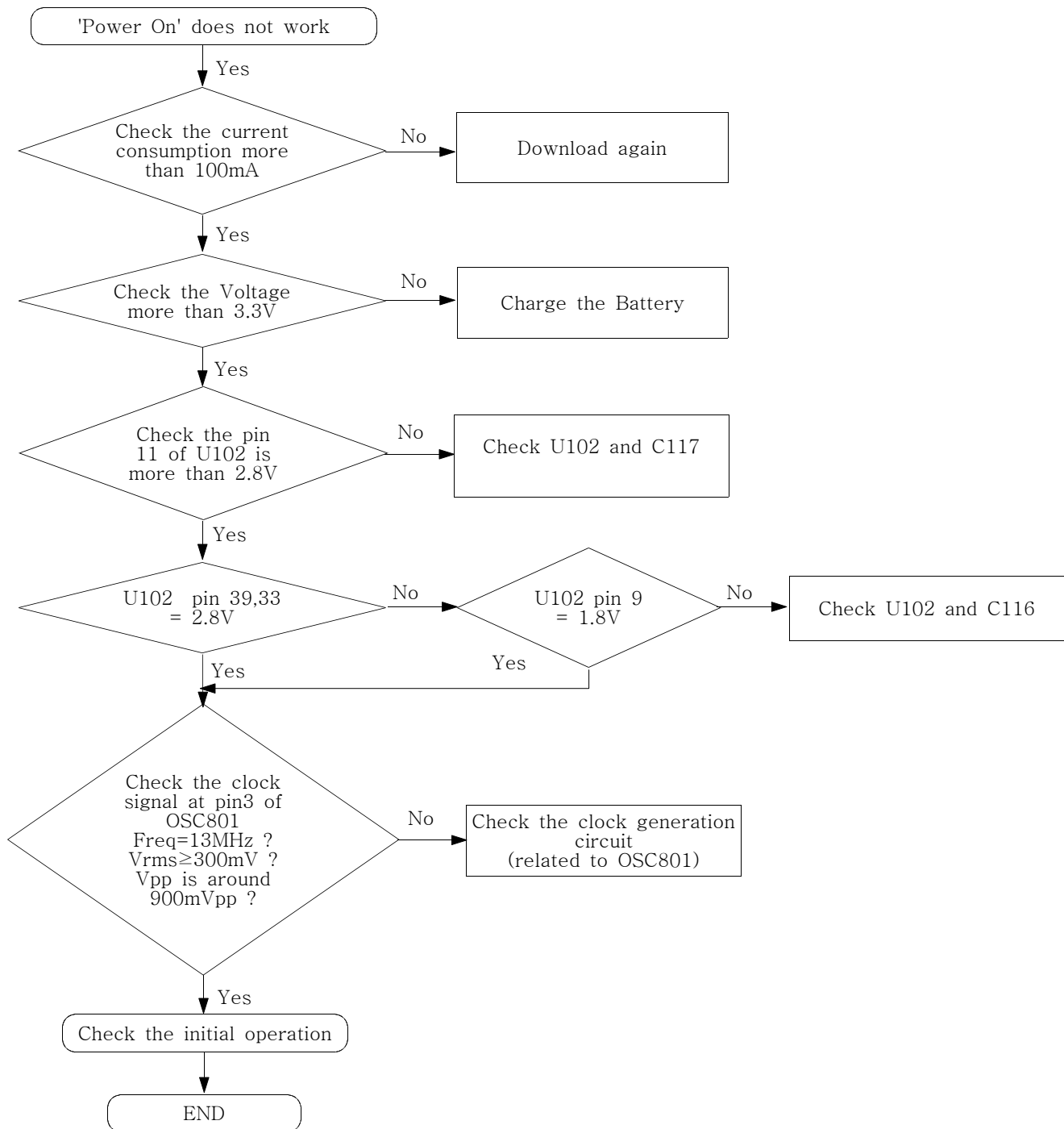
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2007-000171	R419
2007-000148	R421
2007-008587	R430
2007-008587	R431
2007-008587	R432
2007-008587	R433
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2007-008587	R435
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2007-008587	R437
2007-000171	R502

Design LOC	SEC Code
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2007-000160	R504
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2007-007142	R606
2007-007308	R607
2007-007308	R608
2007-000162	R609
2007-000157	R610
2007-000157	R611
2007-000162	R701
2007-007200	R702
2007-007200	R703
2007-000162	R704
2007-000162	R705
2007-000171	R710
2007-000172	R801
2007-000137	R802
2007-001313	R803
2007-000138	R804
1201-001889	U1001
GH71-01052A	U1002
1203-002127	U101
1203-002902	U102
1204-002023	U1101
1201-001951	U1102
1203-002054	U1103
1009-001010	U202
1001-001183	U401
1204-002161	U402
1001-001152	U403
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GH09-00023A	U601
1209-001219	U602
1204-001984	U701

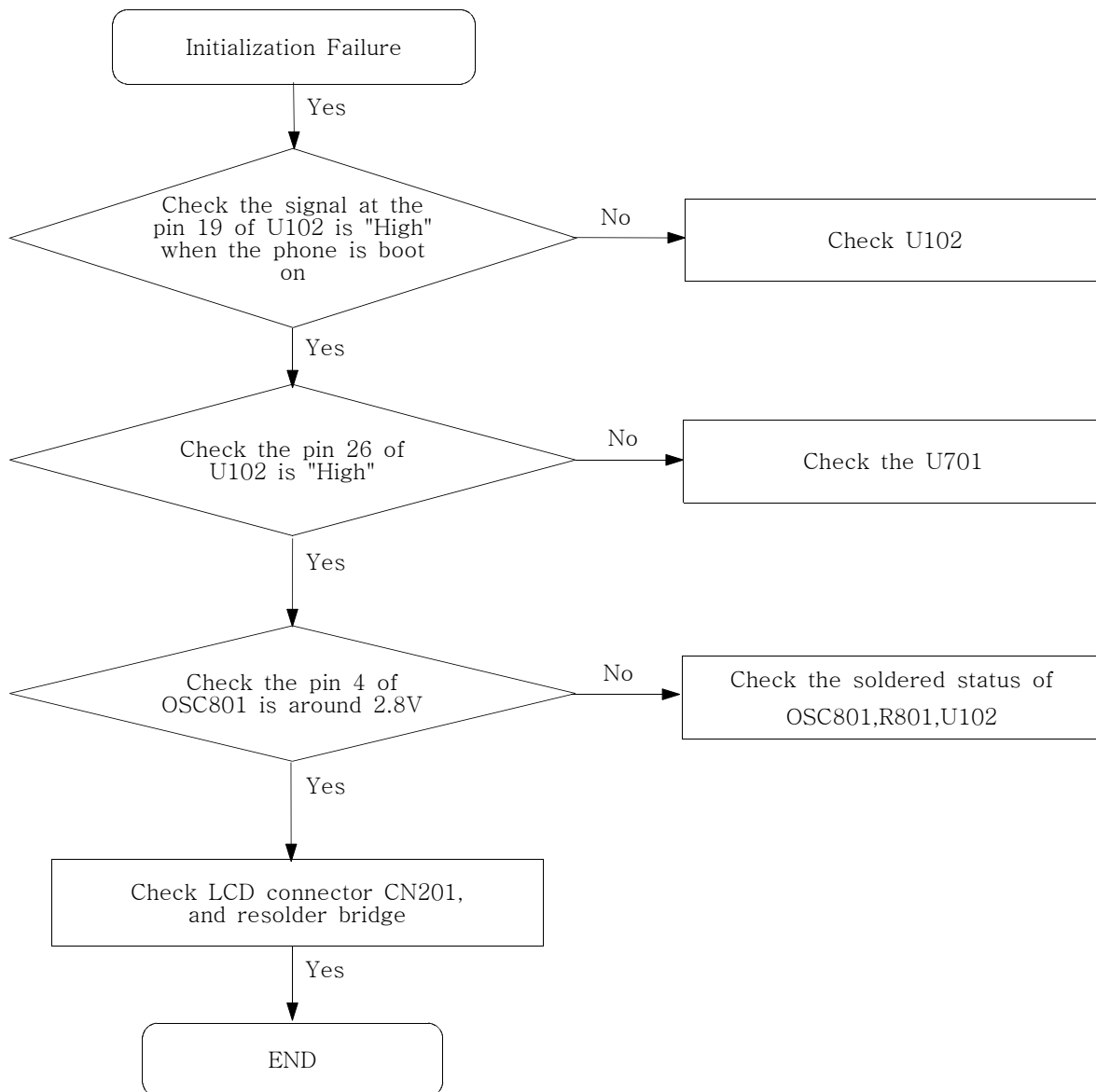
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1205-002268	U902
1209-001434	U903
3404-001152	VOL_DOWN
3404-001152	VOL_UP
0406-001150	ZD301
0403-001427	ZD302
0406-001150	ZD303
0406-001150	ZD304
0406-001150	ZD305
0406-001150	ZD306
0406-001150	ZD307
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0406-001150	ZD309
0406-001150	ZD310
0406-001150	ZD311
0406-001184	ZD312
0406-001150	ZD313
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4. SGH-X400 Flow Chart of Troubleshooting

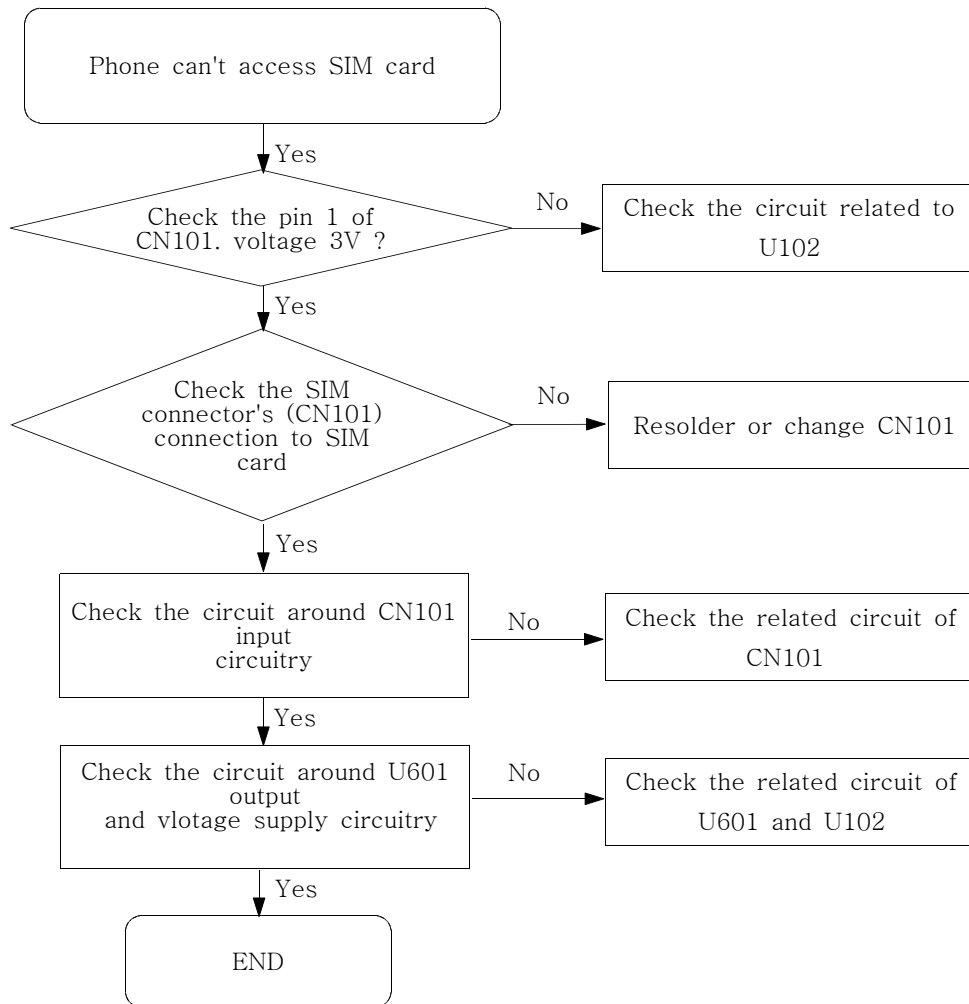
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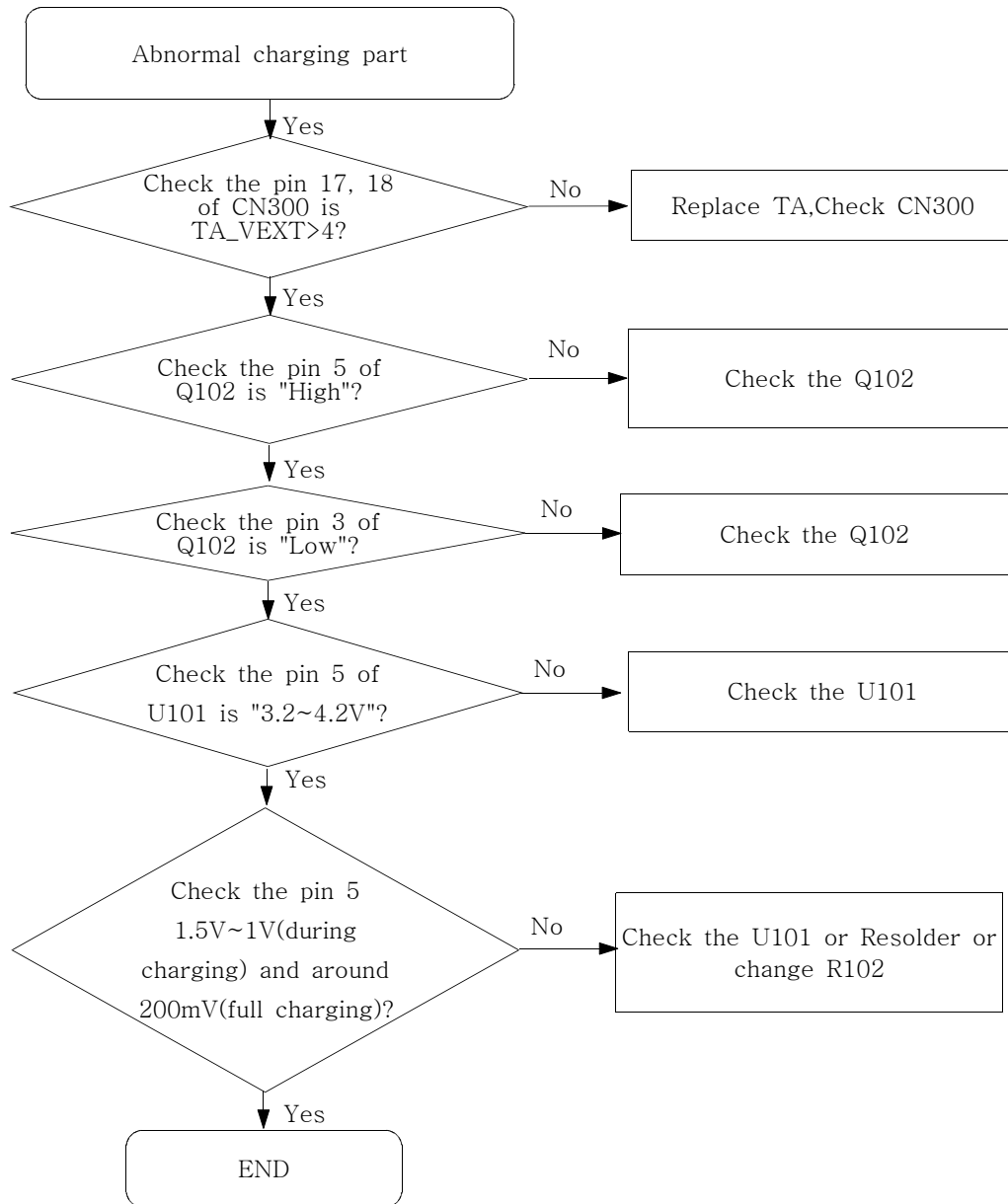
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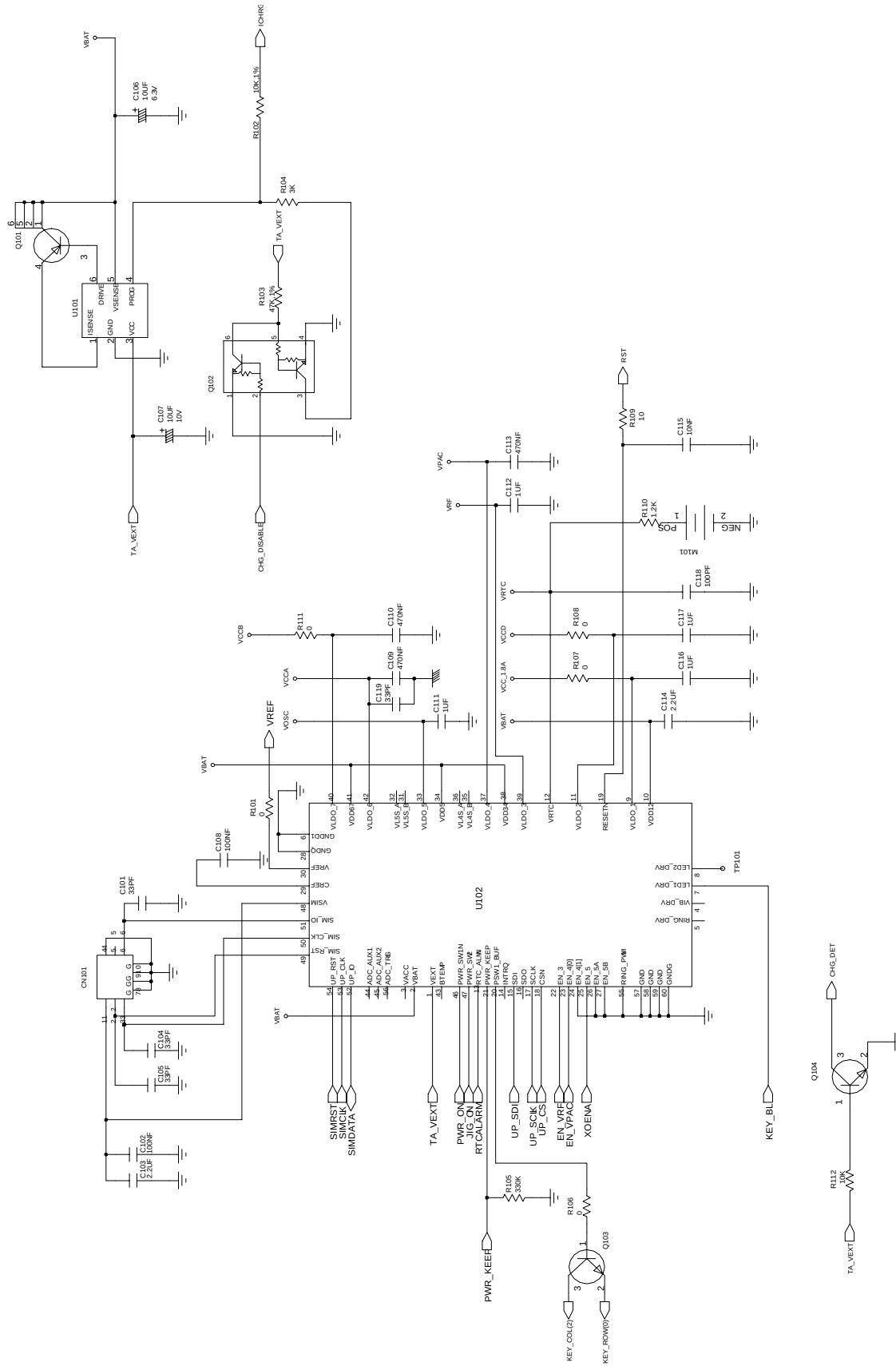


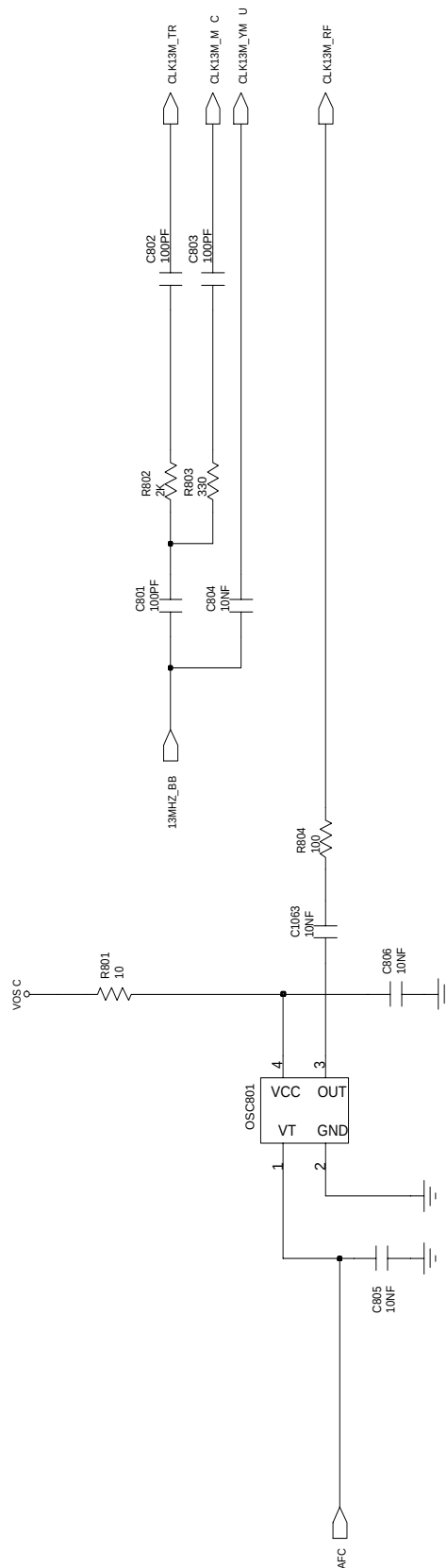
3. Sim Part

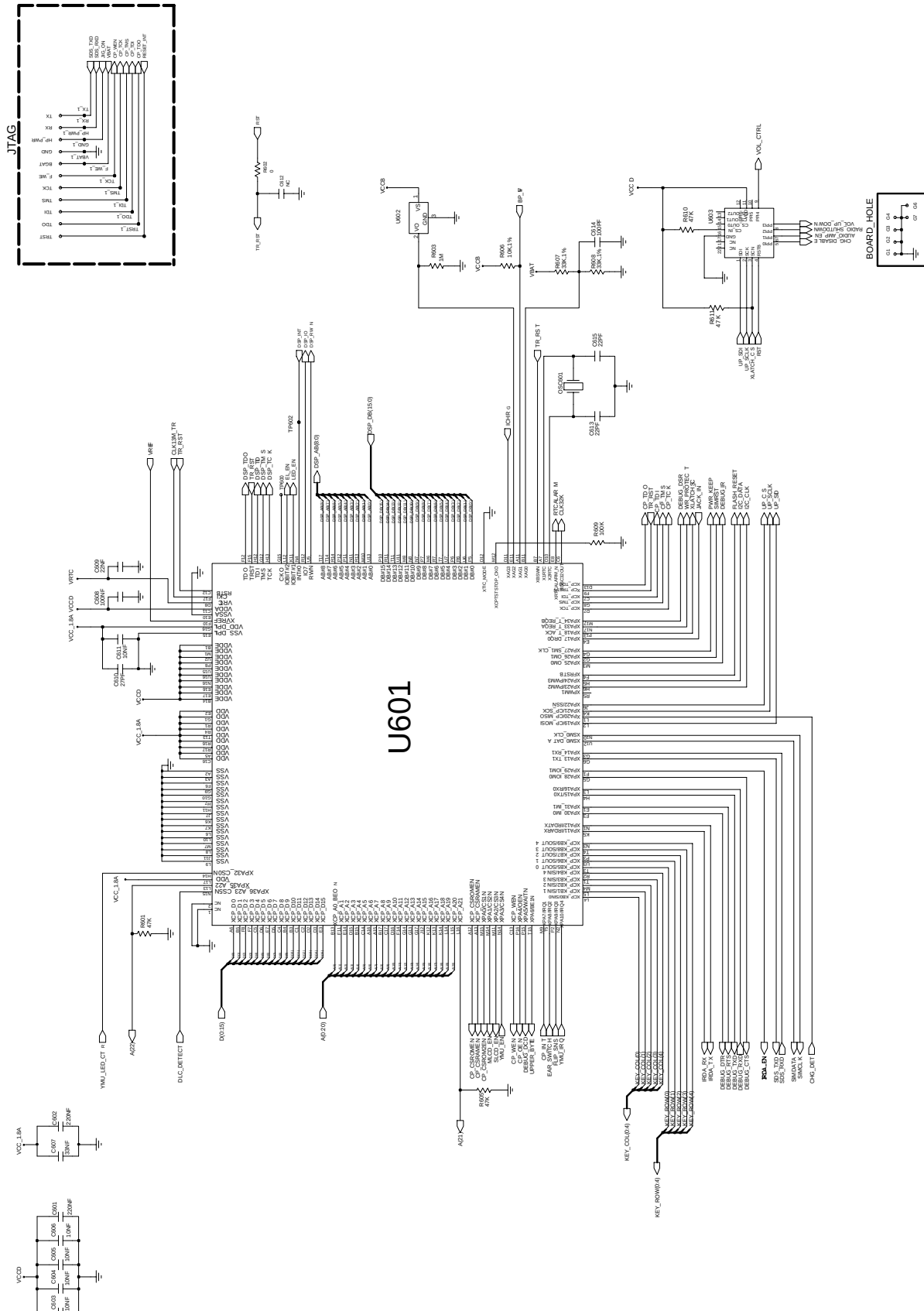


4. Charging Part

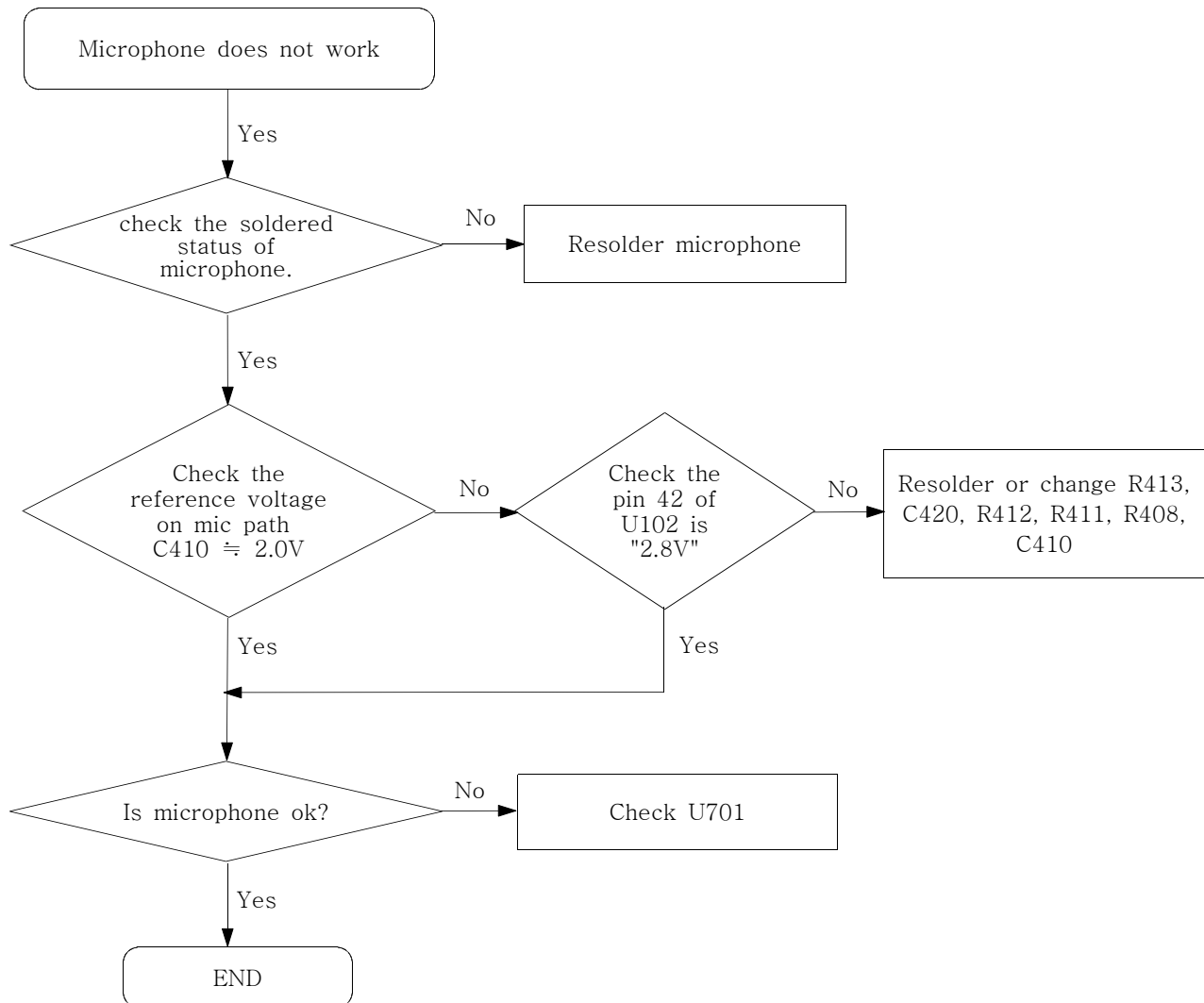




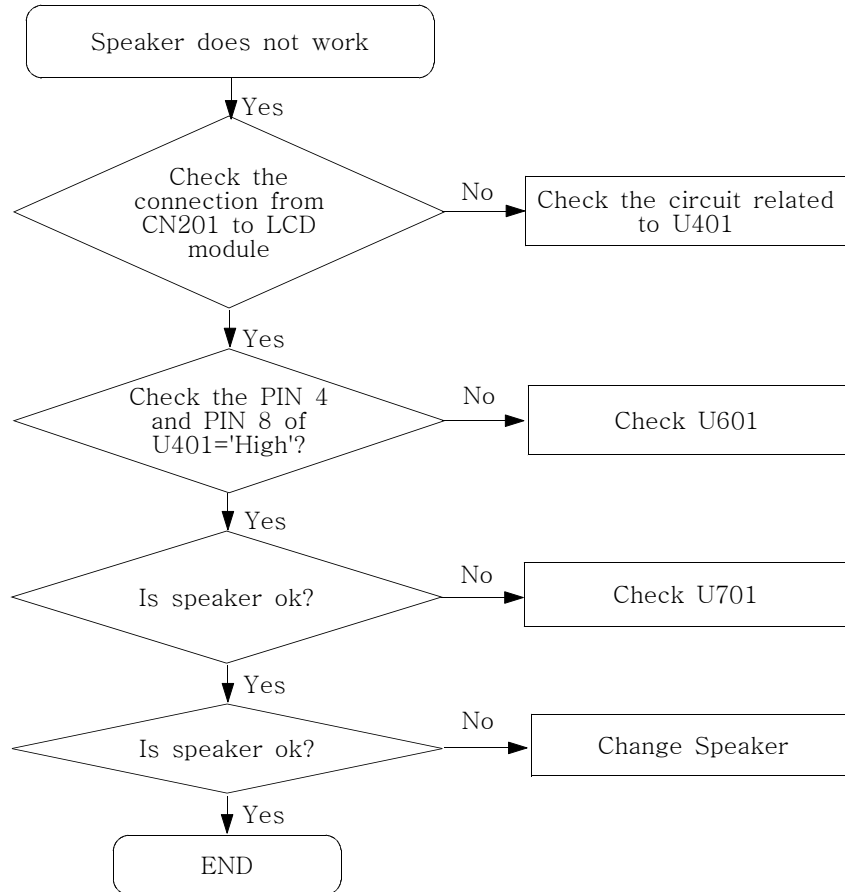


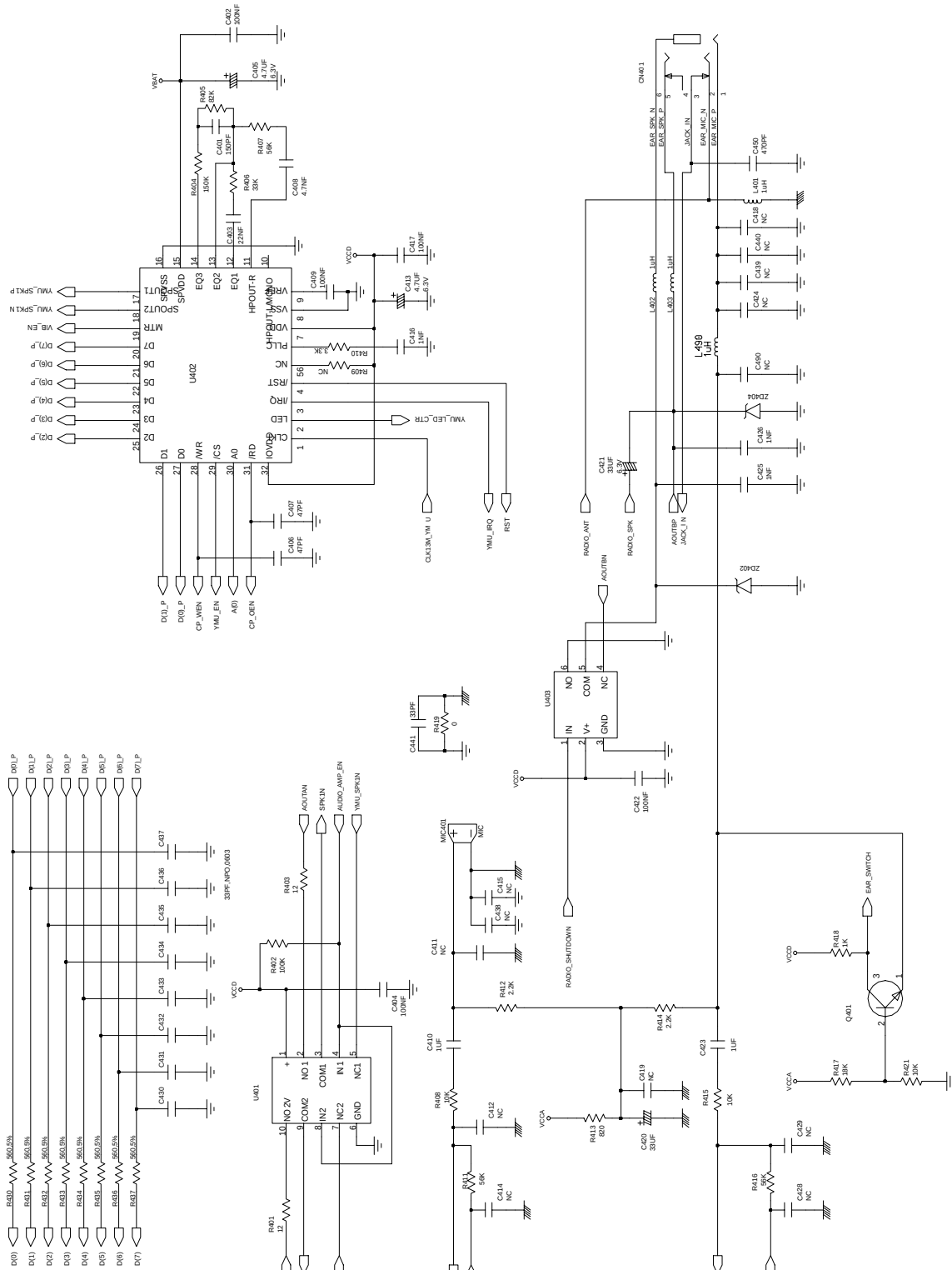


5. Microphone Part

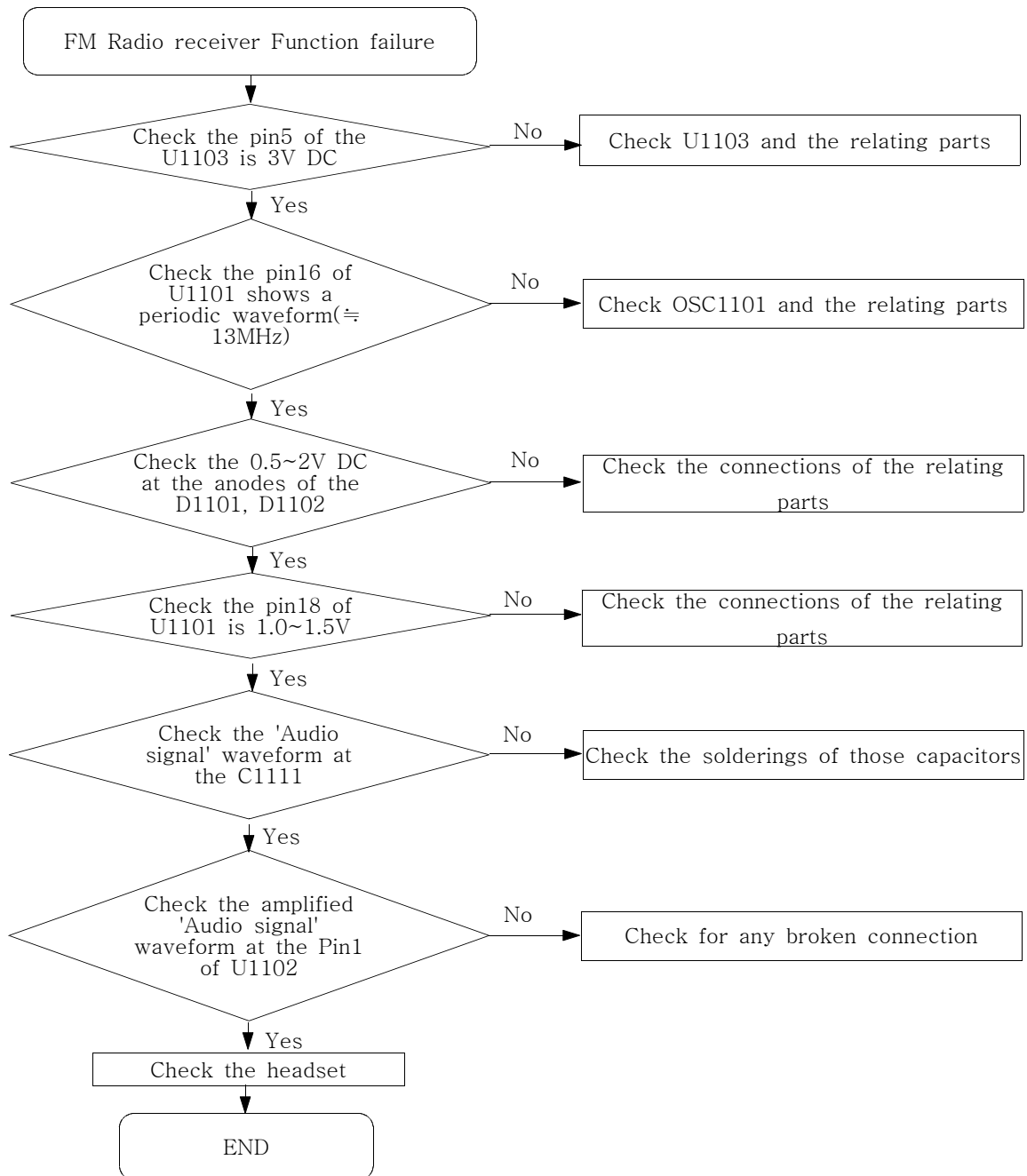


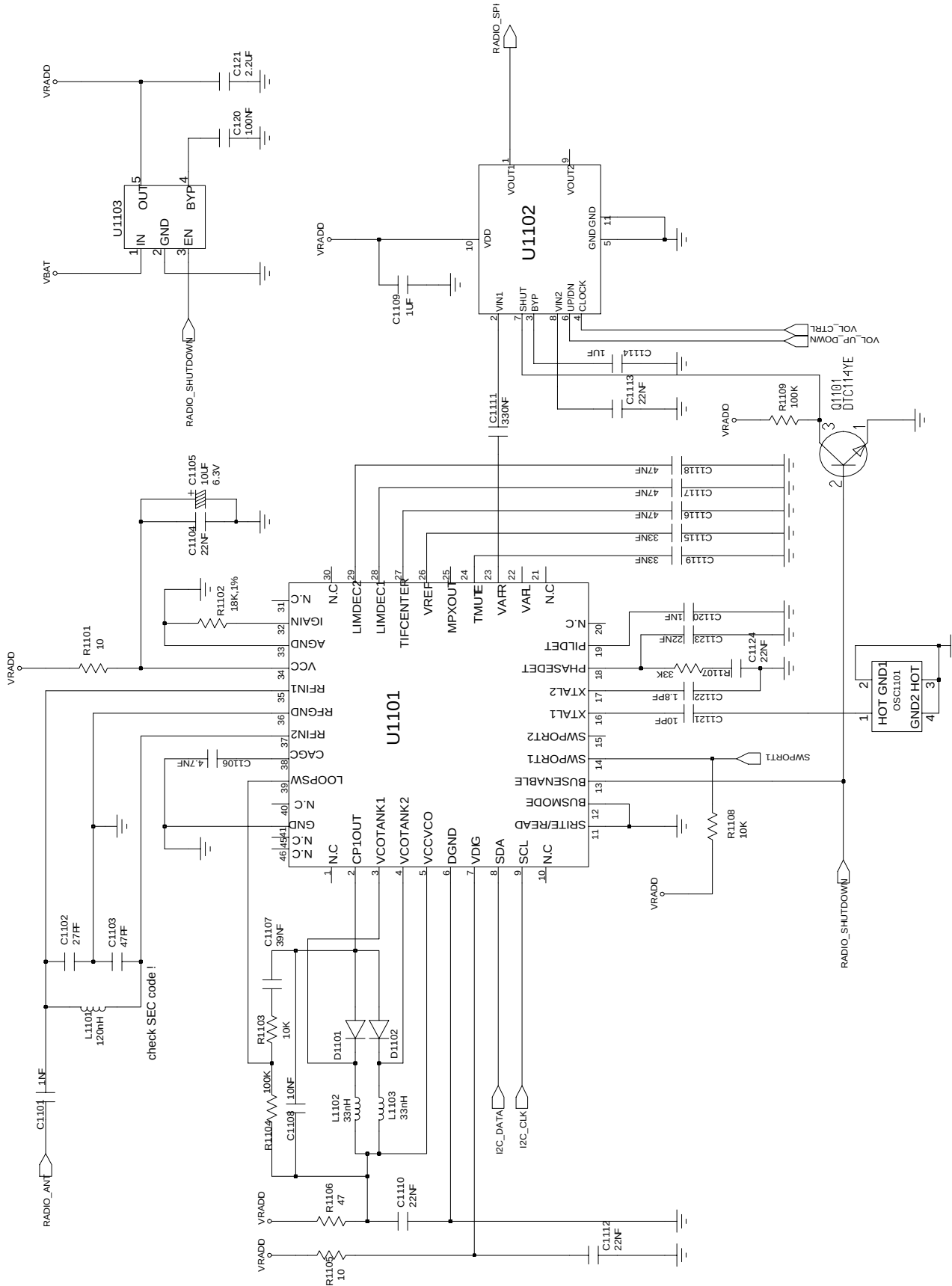
6. Speaker Part



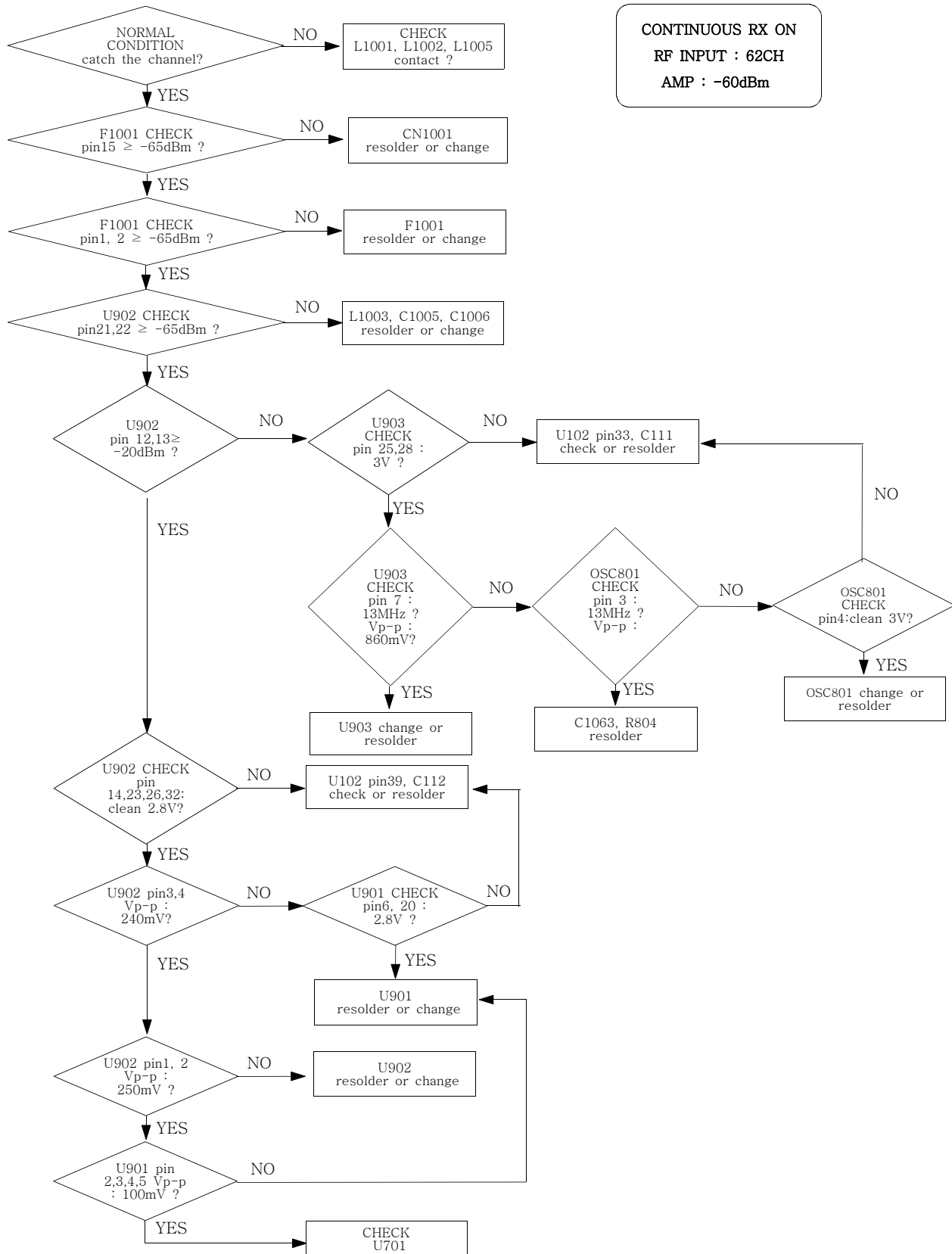


7. FM Radio part

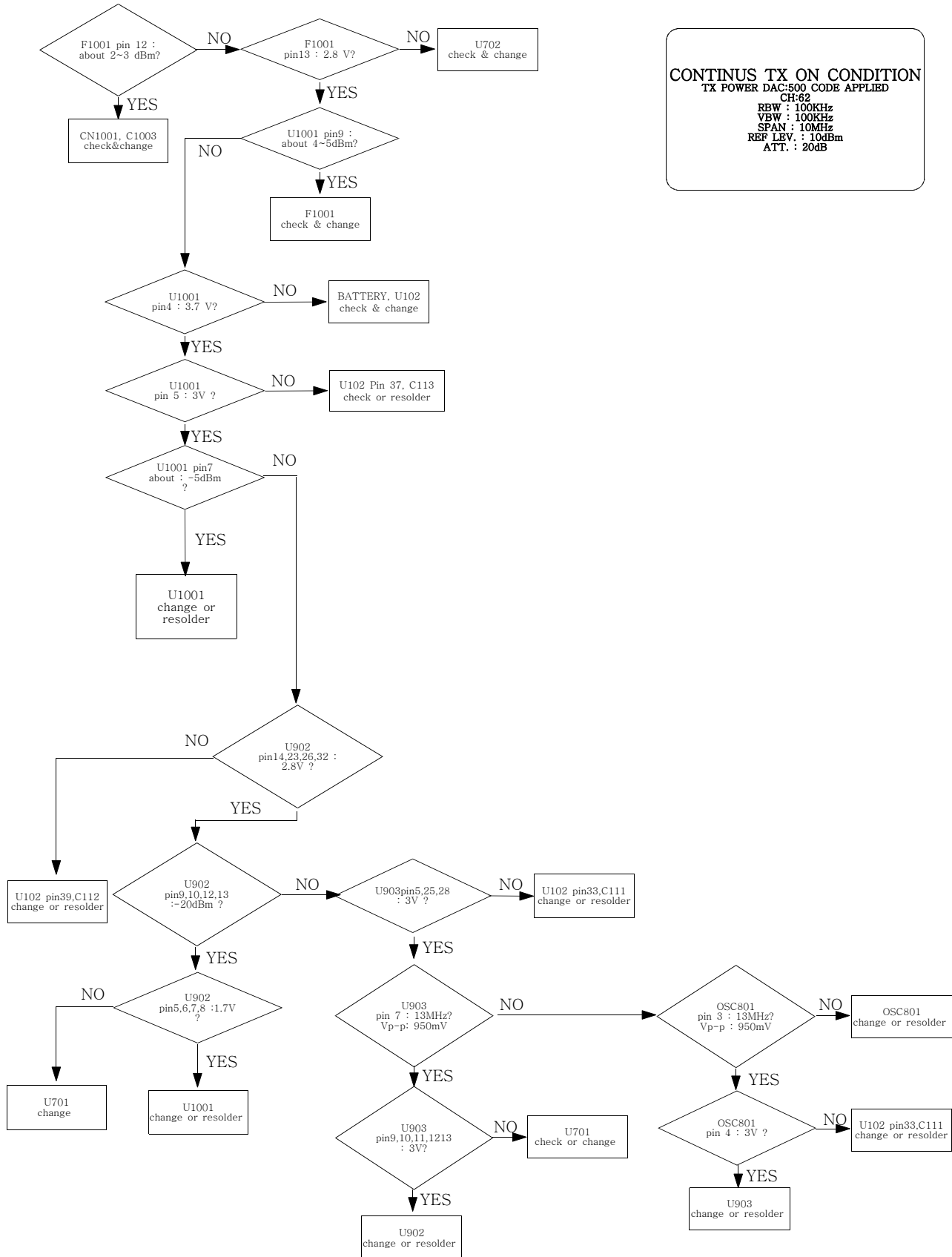




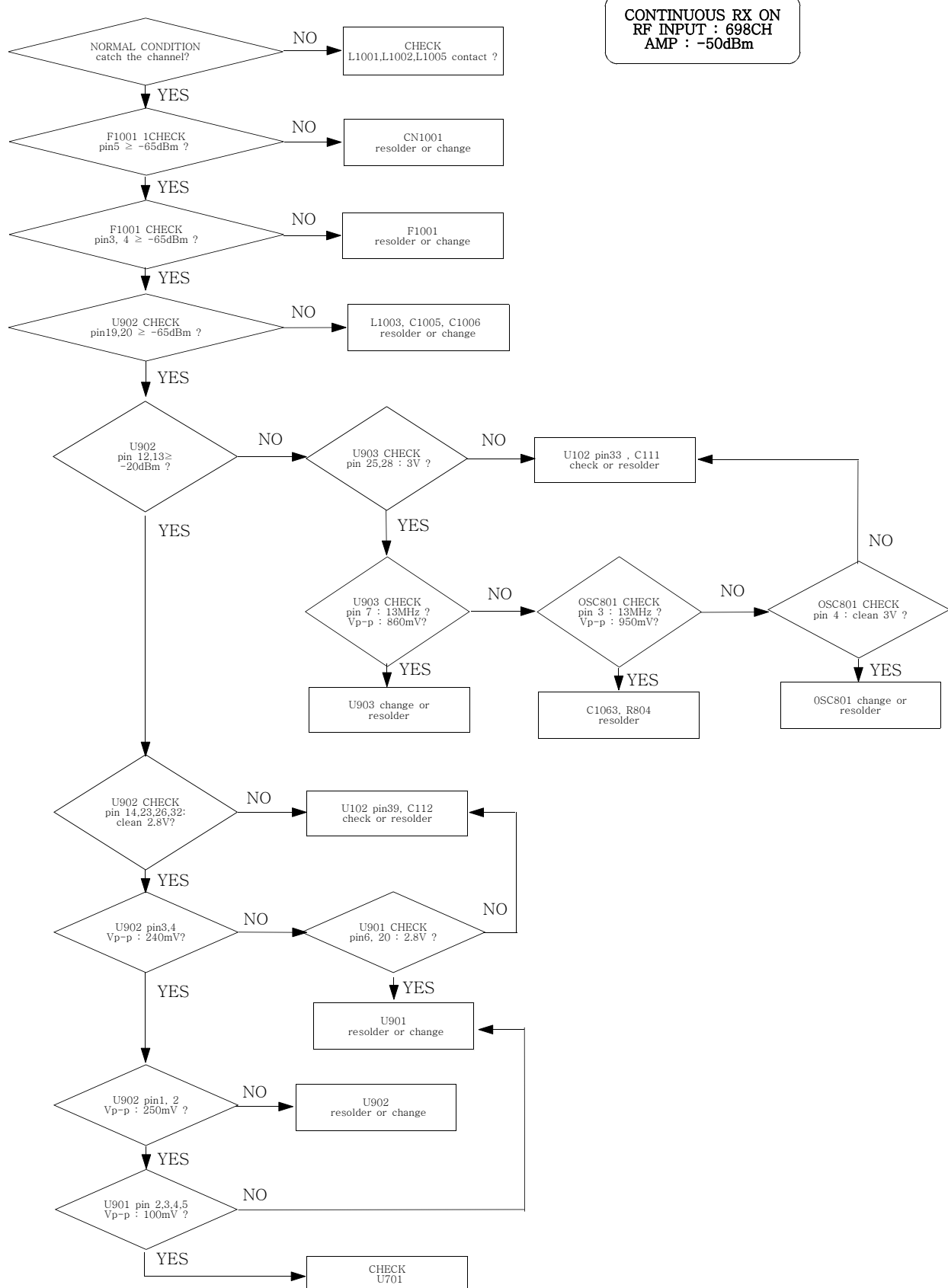
8. EGSM Reciever



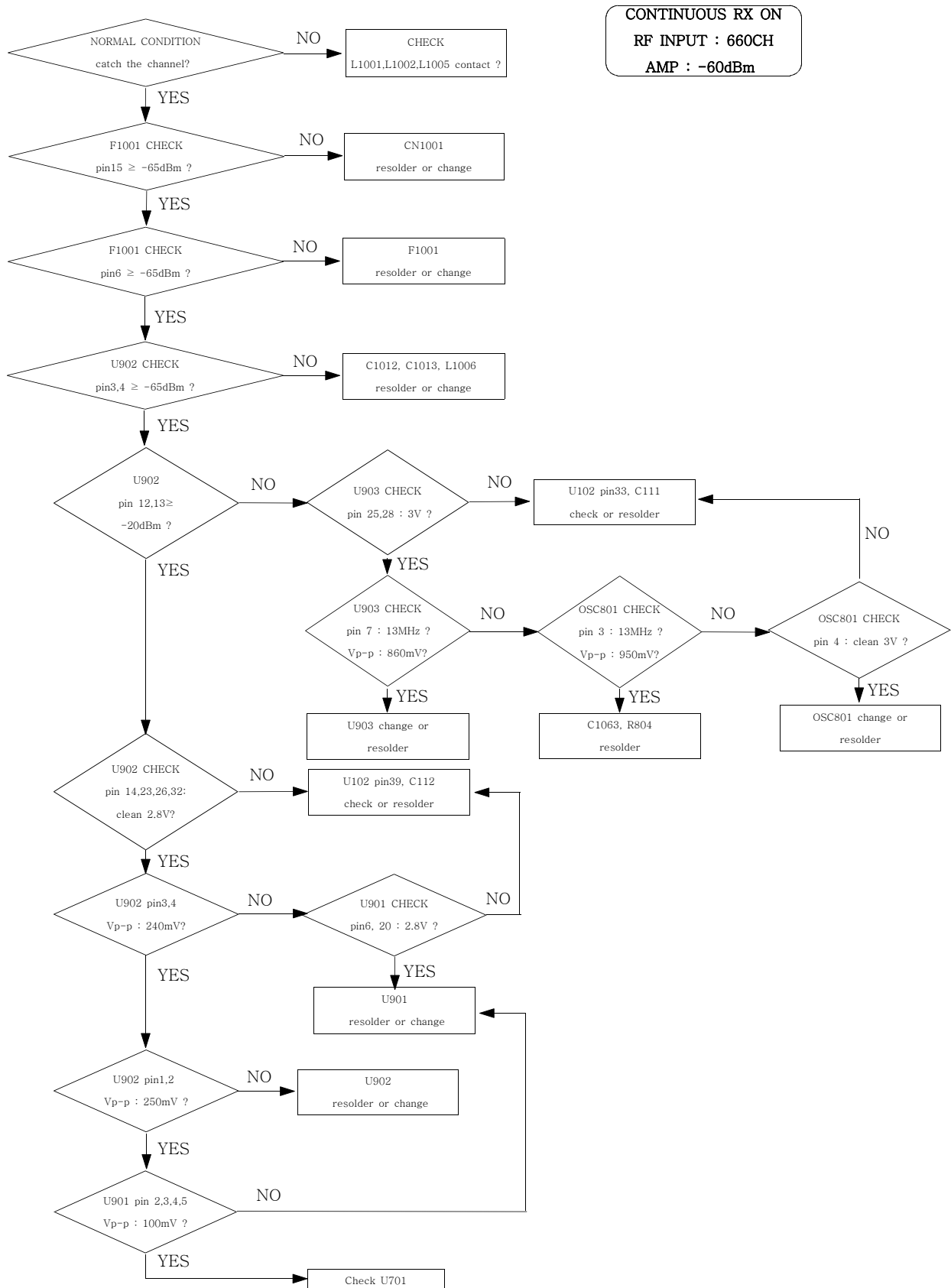
9. EGSM transmitter



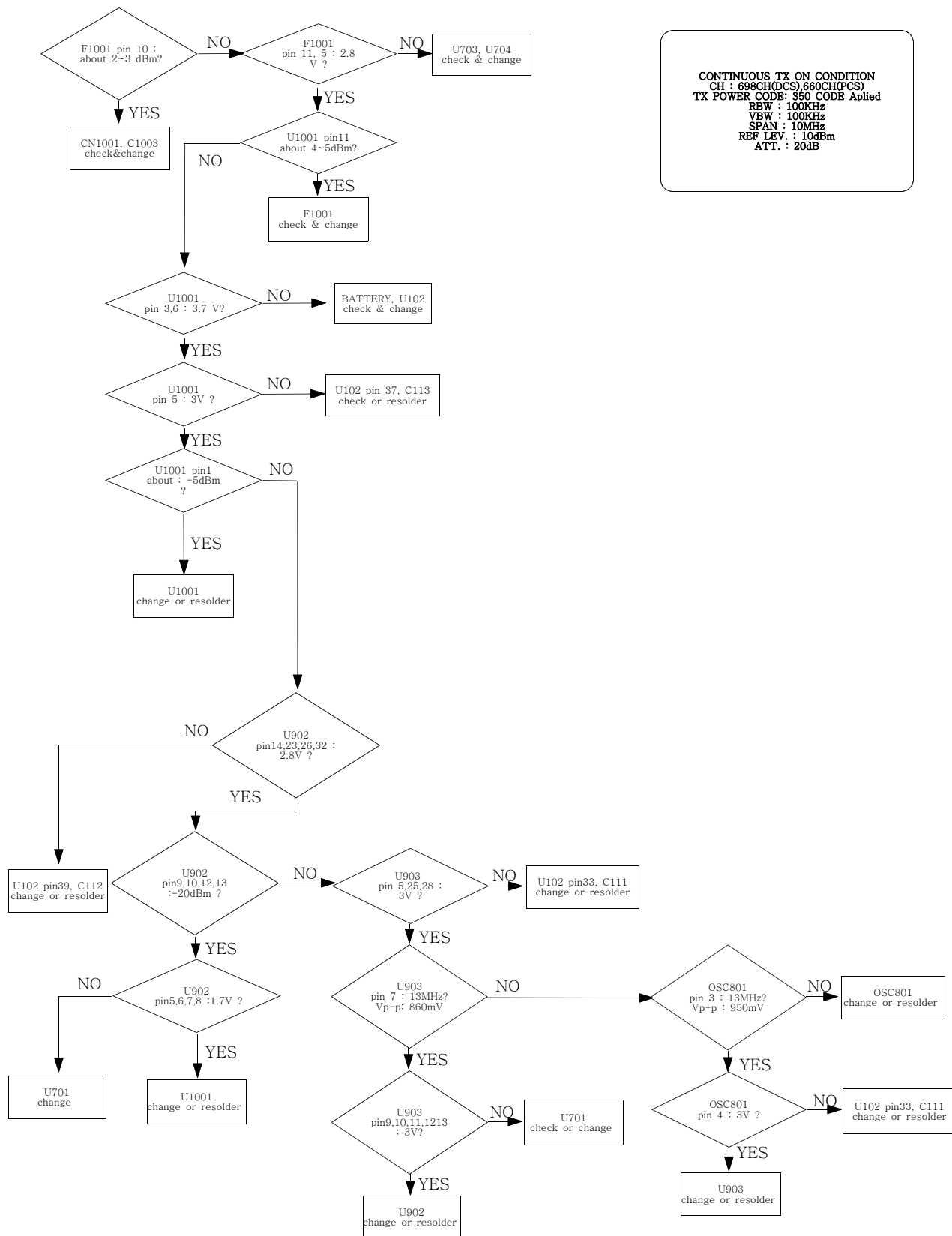
10. DCS Reciever

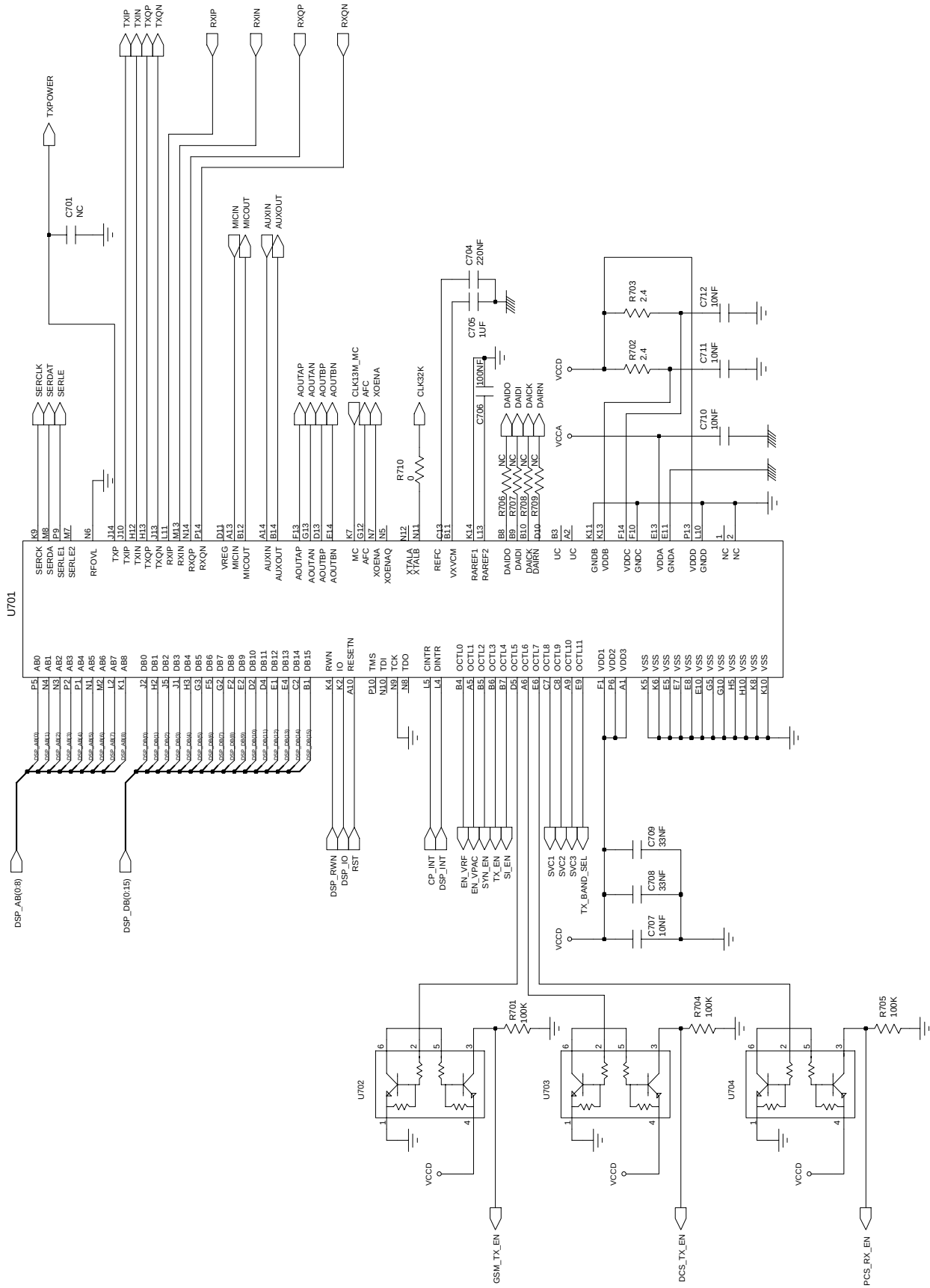


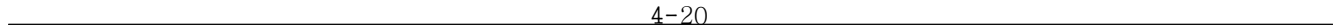
11. PCS Reciever

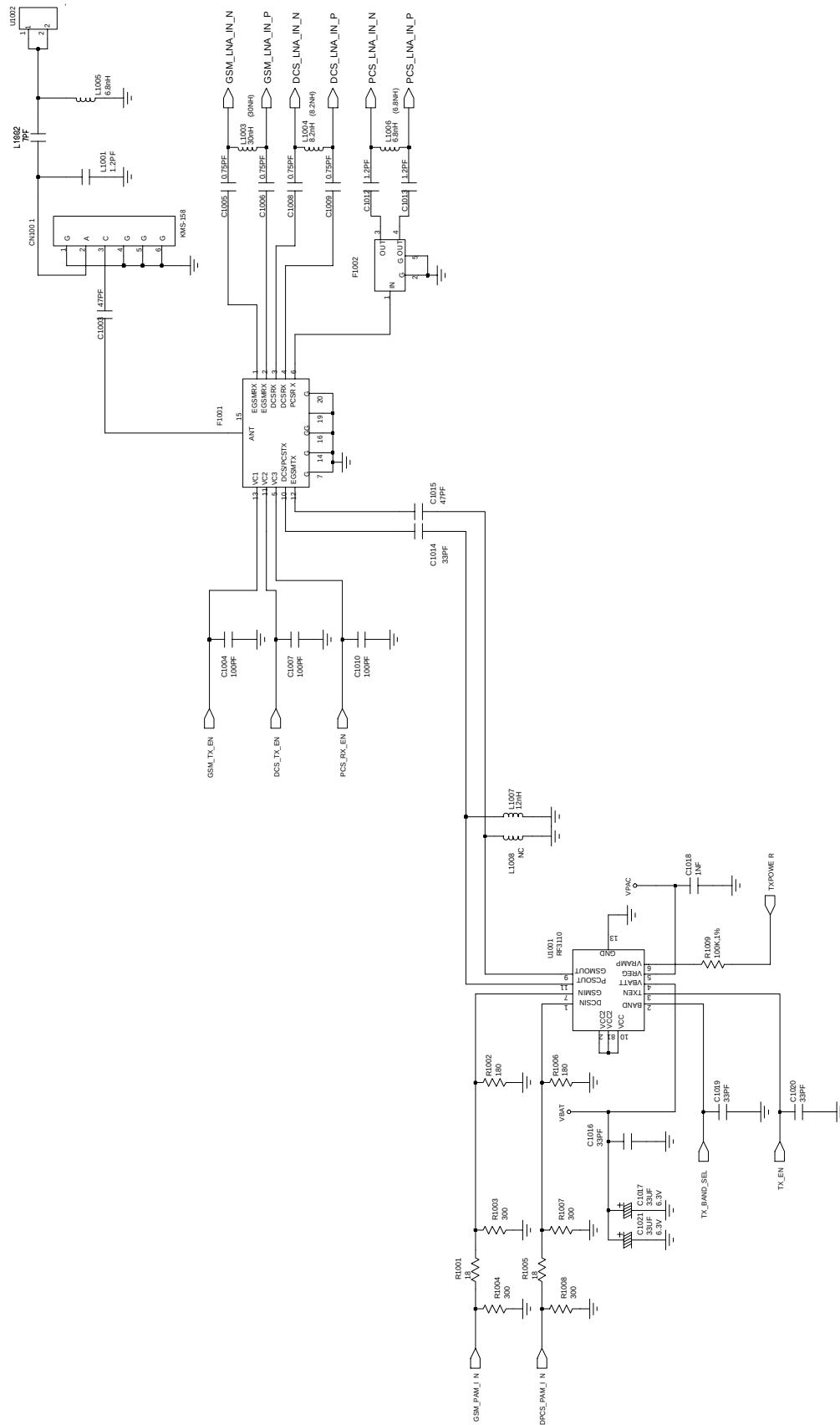


12. DPCS transmitter





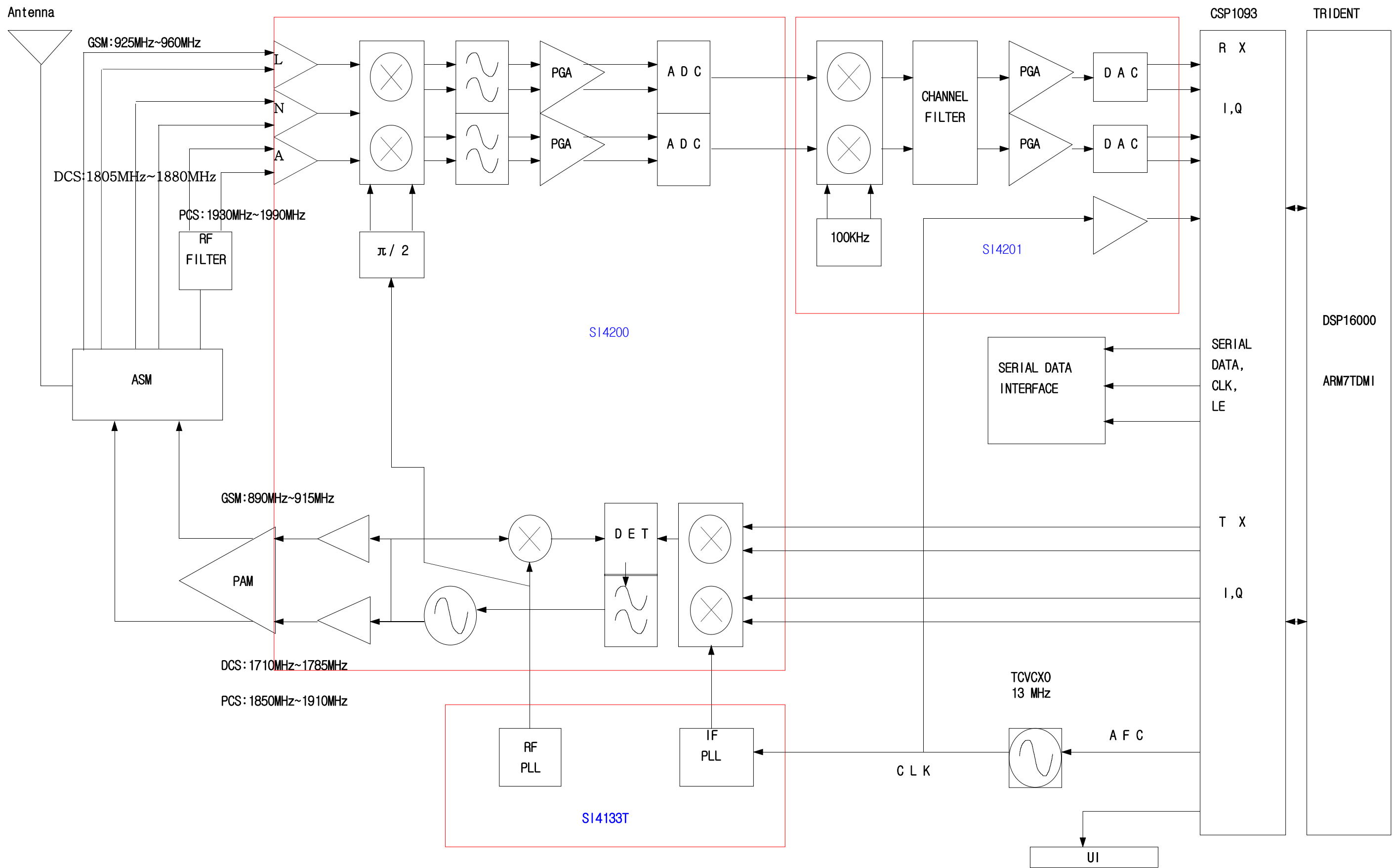




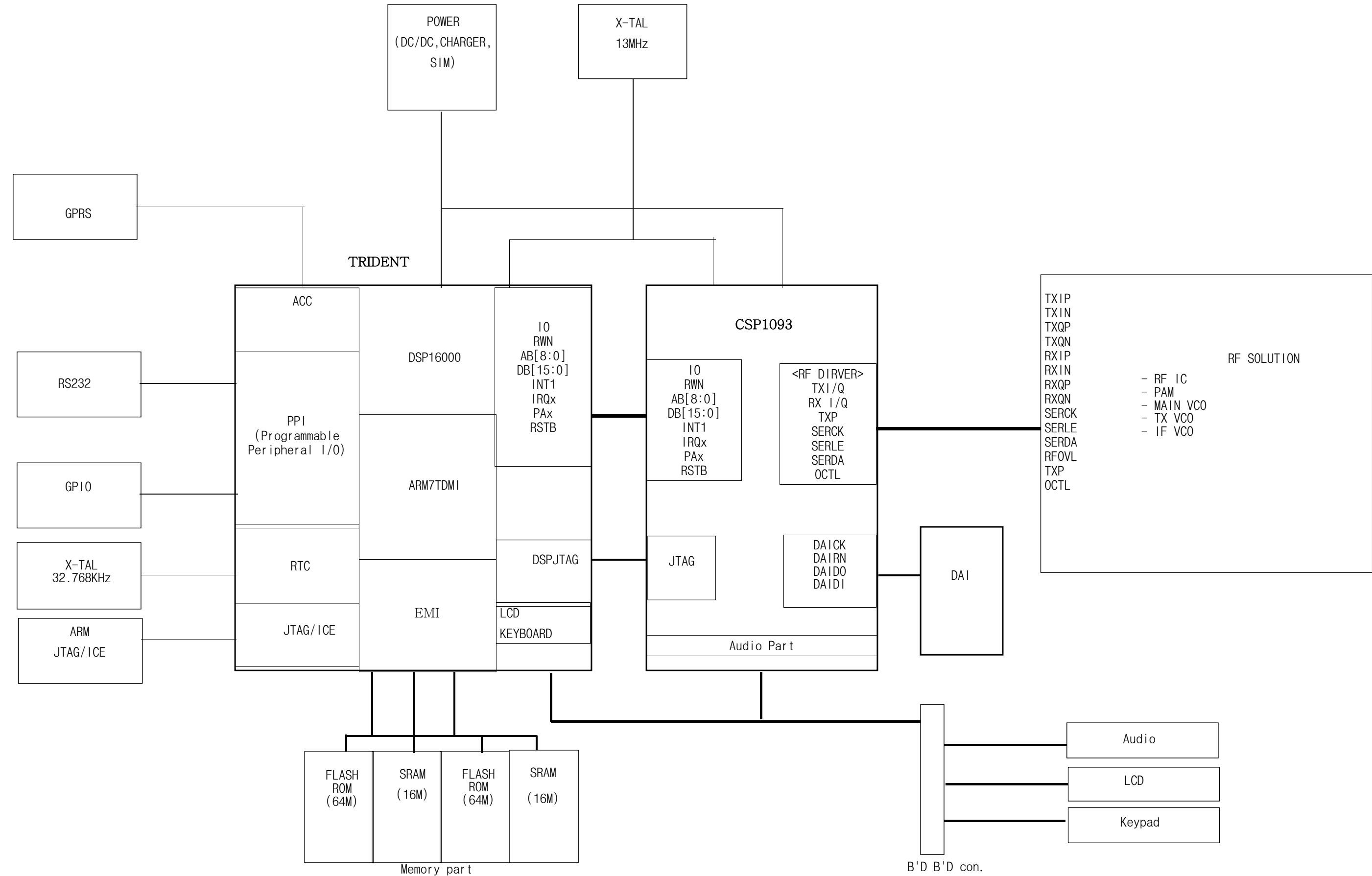
MEMO

5. SGH-X400 Block Diagrams

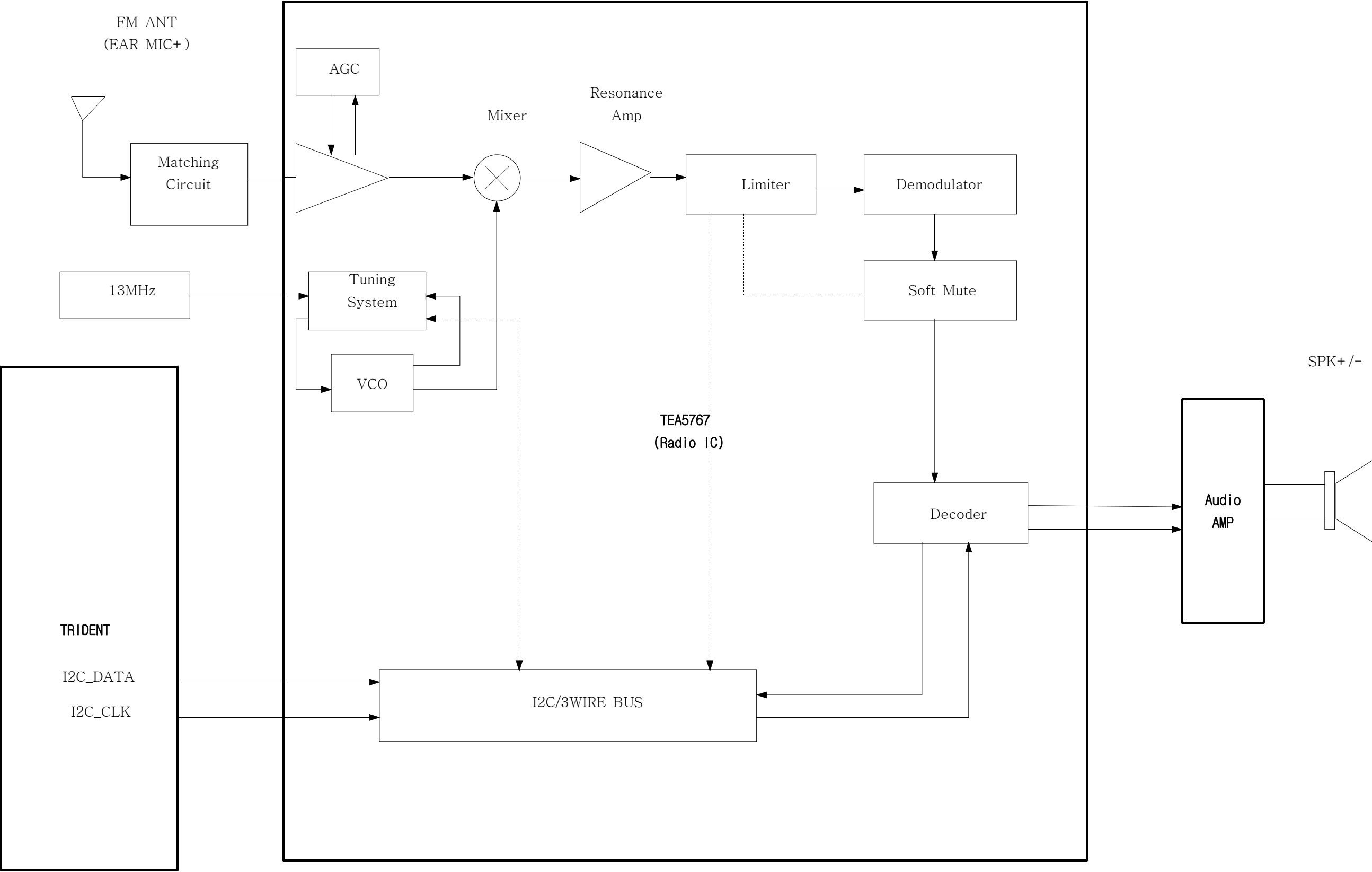
1. RF Solution Block Diagram



2. Base Band Solution Block Diagram



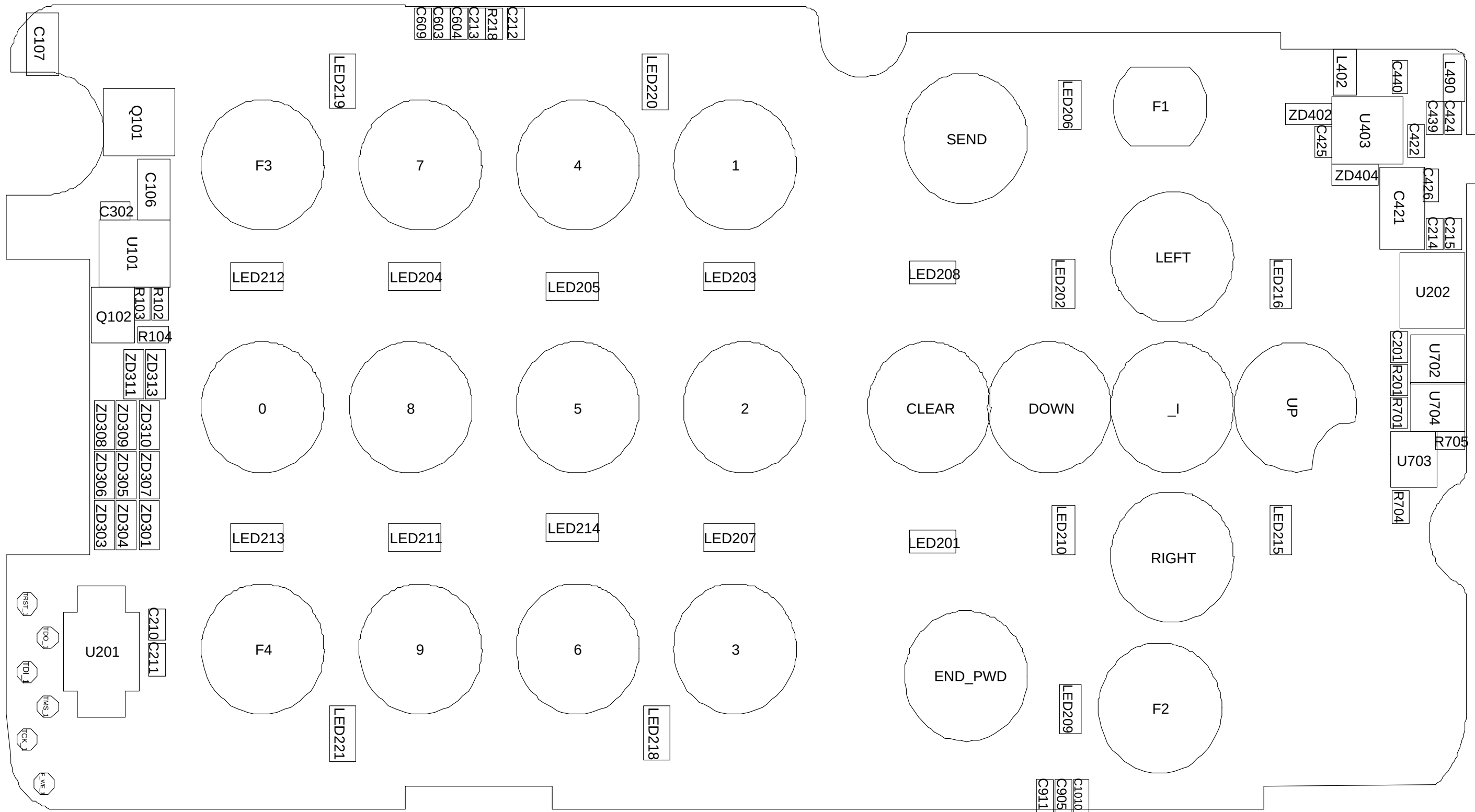
3. FM Radio Block Diagram

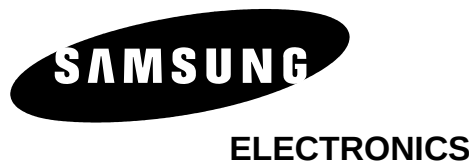


1. Main PCB Top Diagram



2. Main PCB Bottom Diagram





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