

SAMSUNG

GSM TELEPHONE

SGH-X120

SERVICE *Manual*

GSM TELEPHONE



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1. SGH-X120 Specification

1. GSM General Specification

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

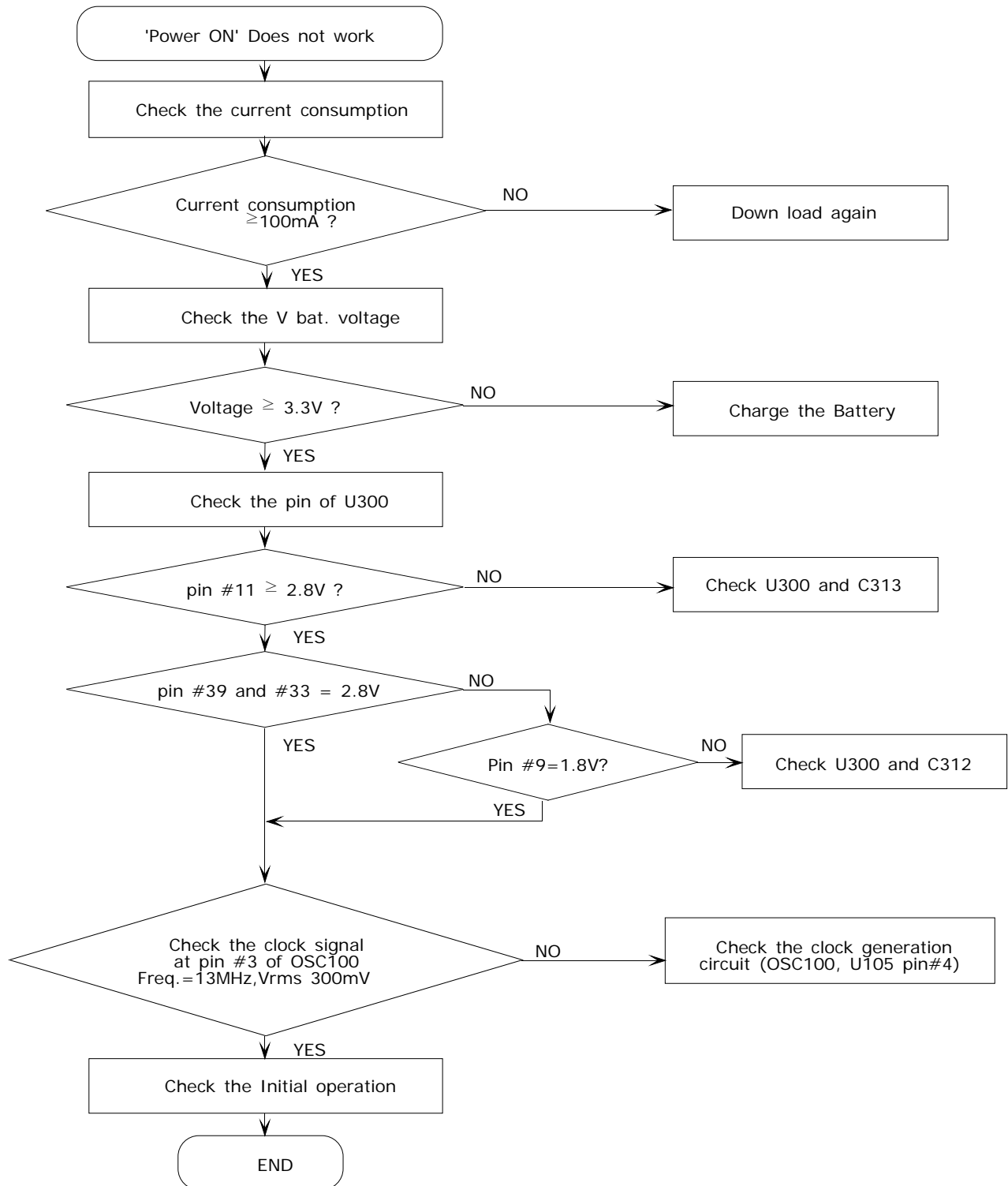
2. GSM TX power class

TX Power control level	GSM900
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

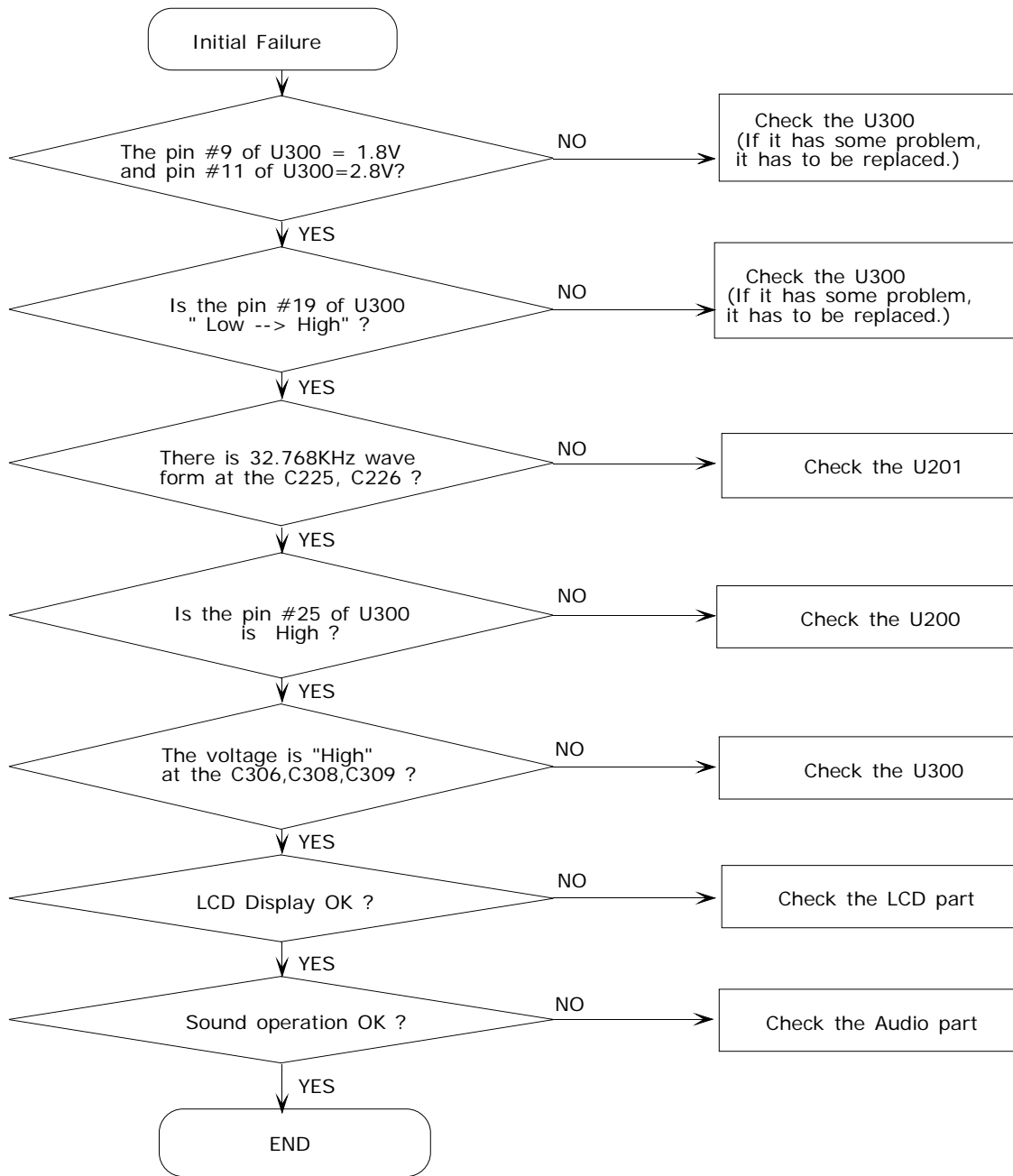
TX Power control level	DCS1800
0	30±3 dBm
1	28±3 dBm
2	26±3 dBm
3	24±3 dBm
4	22±3 dBm
5	20±3 dBm
6	18±3 dBm
7	16±3 dBm
8	14±3 dBm
9	12±4 dBm
10	10±4 dBm
11	8±4dBm
12	6±4 dBm
13	4±4 dBm
14	2±5 dBm
15	0±5 dBm

2. SGH-X120 Flow Chart of Troubleshooting

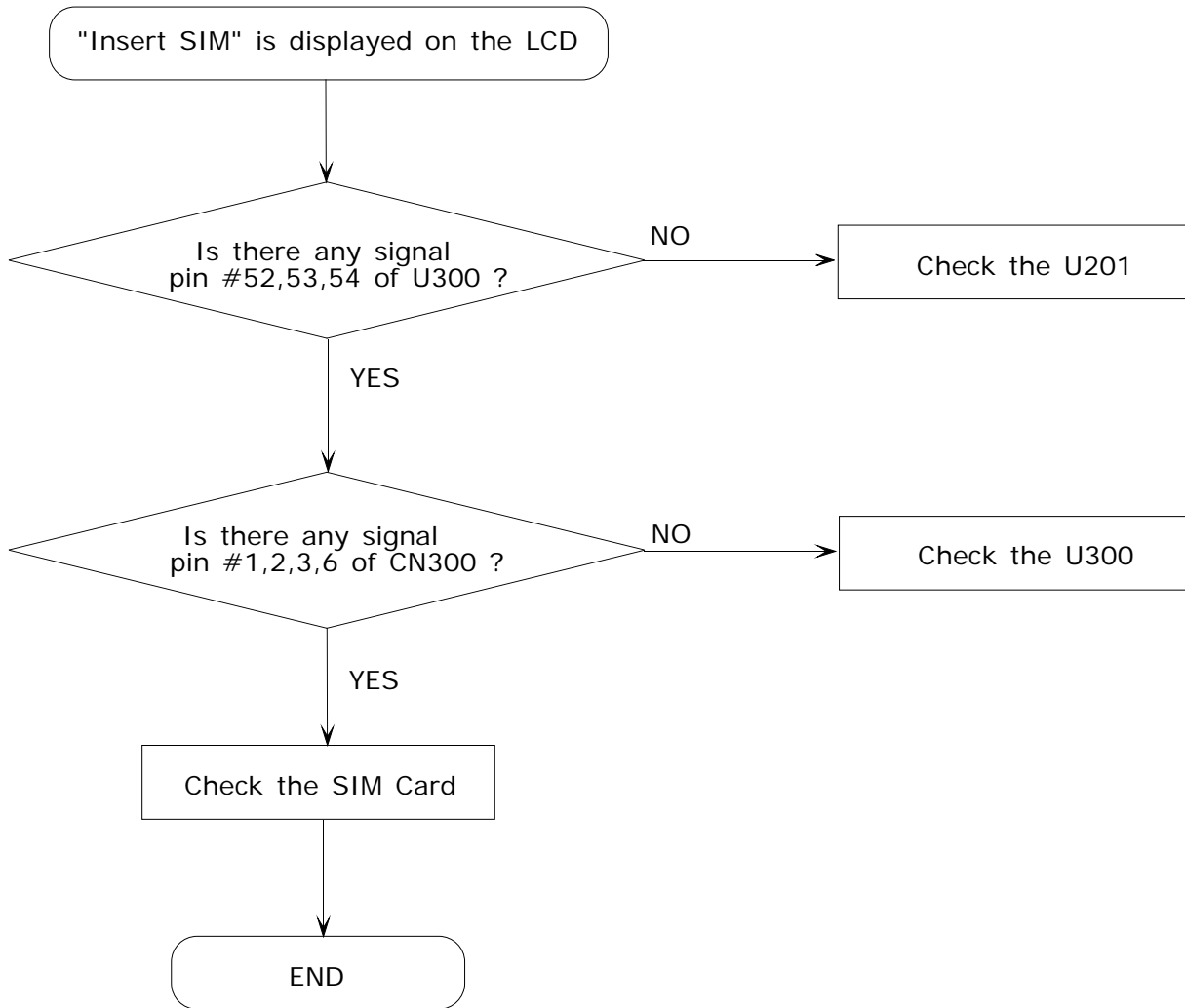
1. Power ON



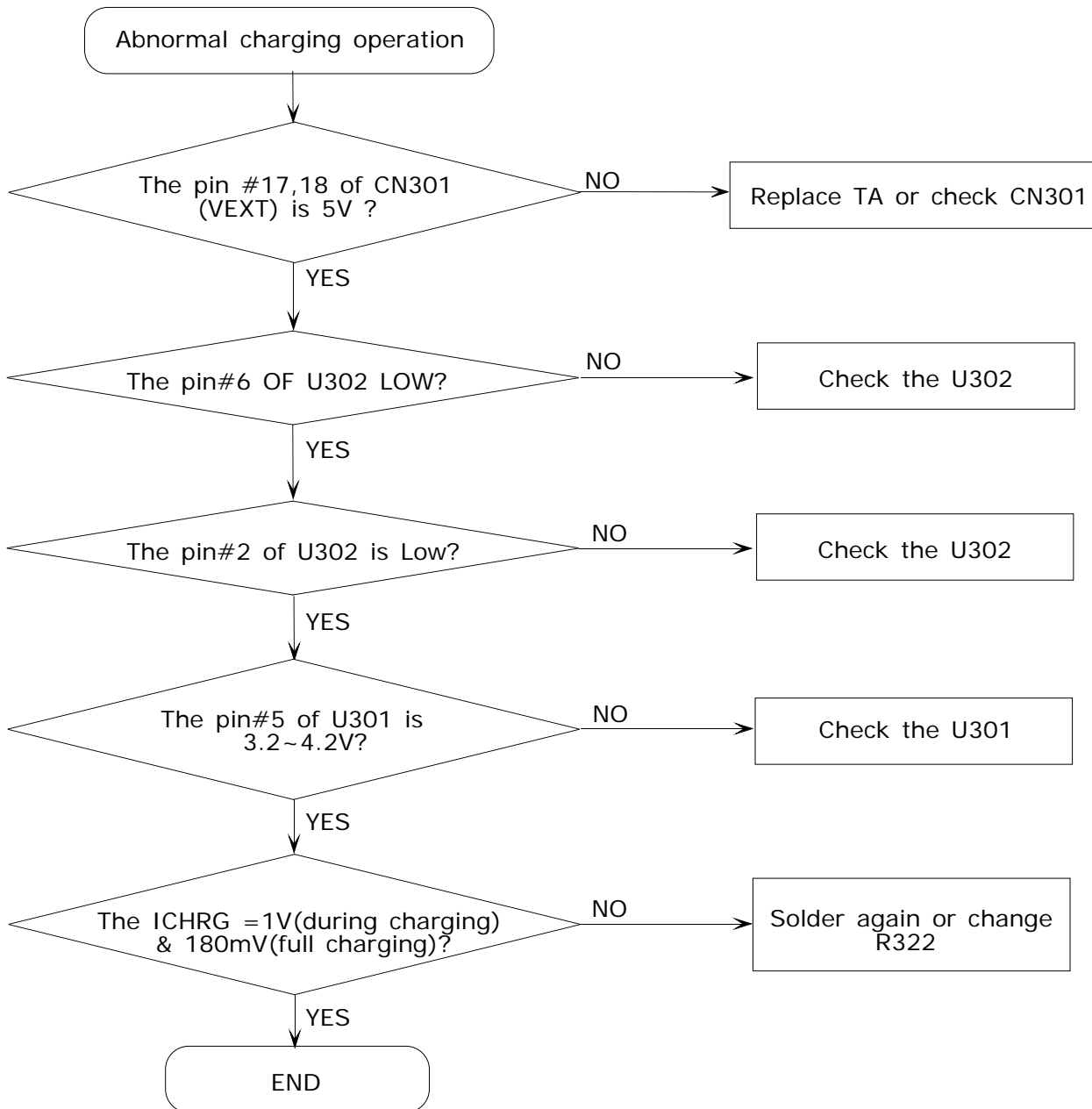
2. System Initial



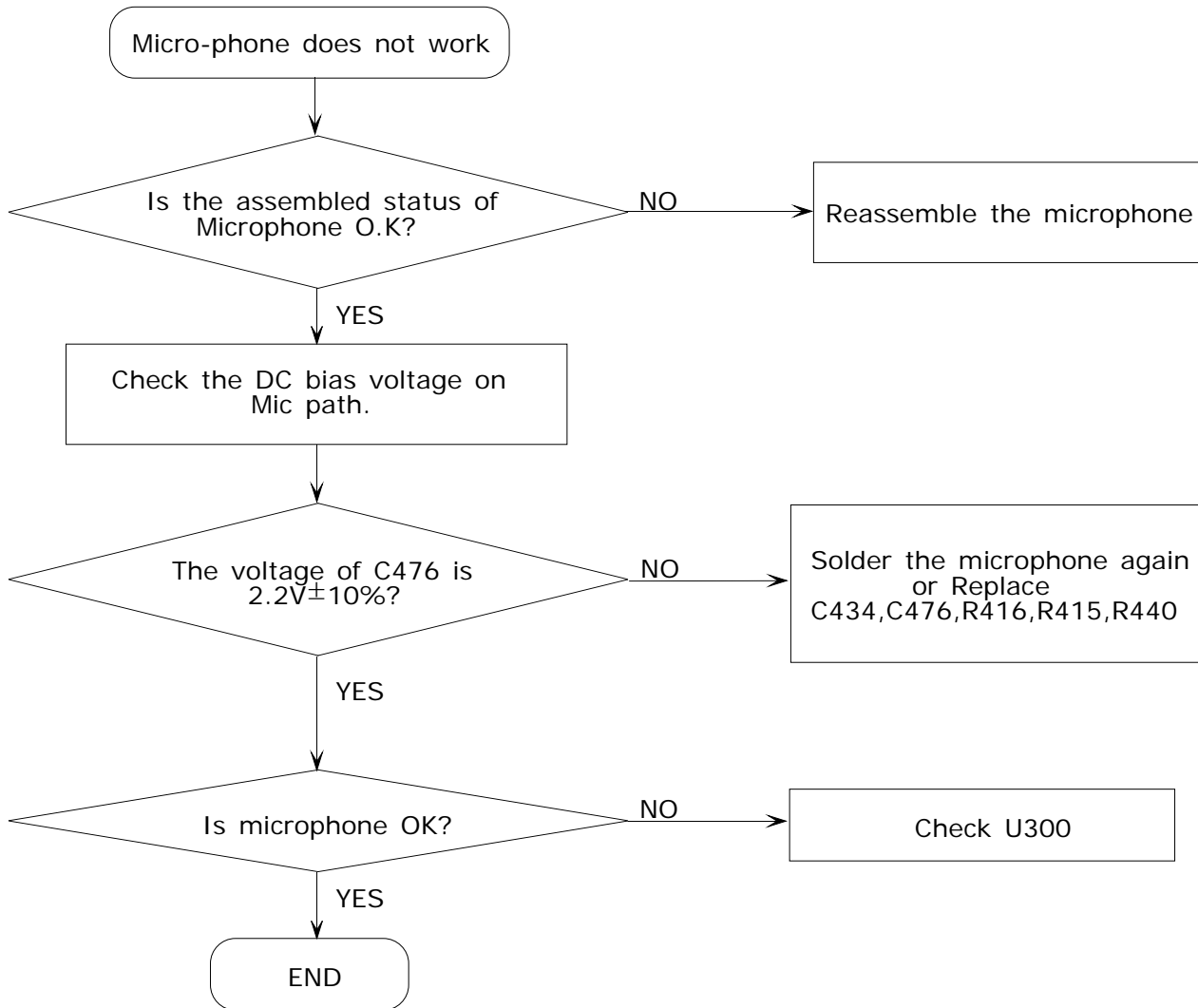
3. SIM Part



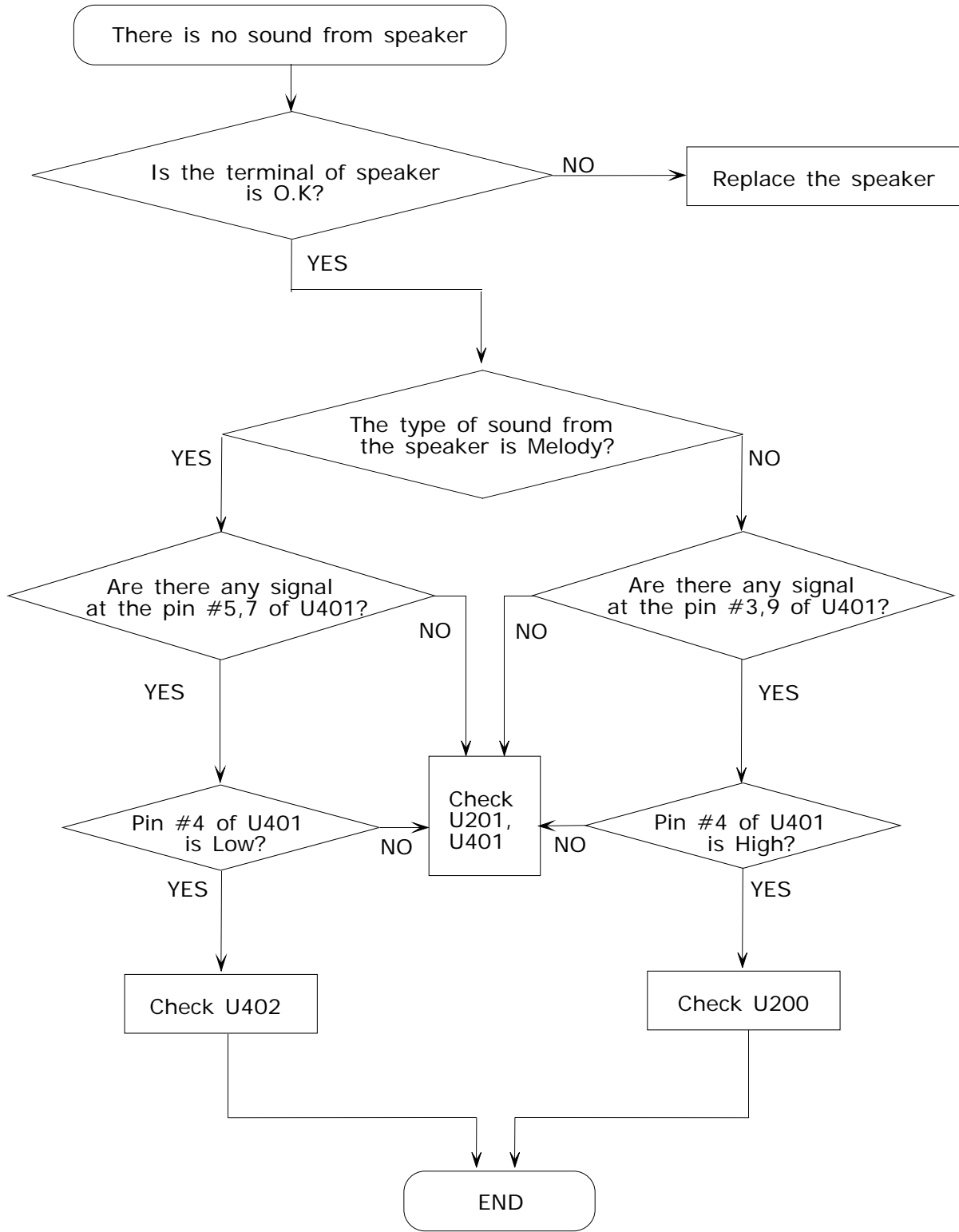
4. Charging Part



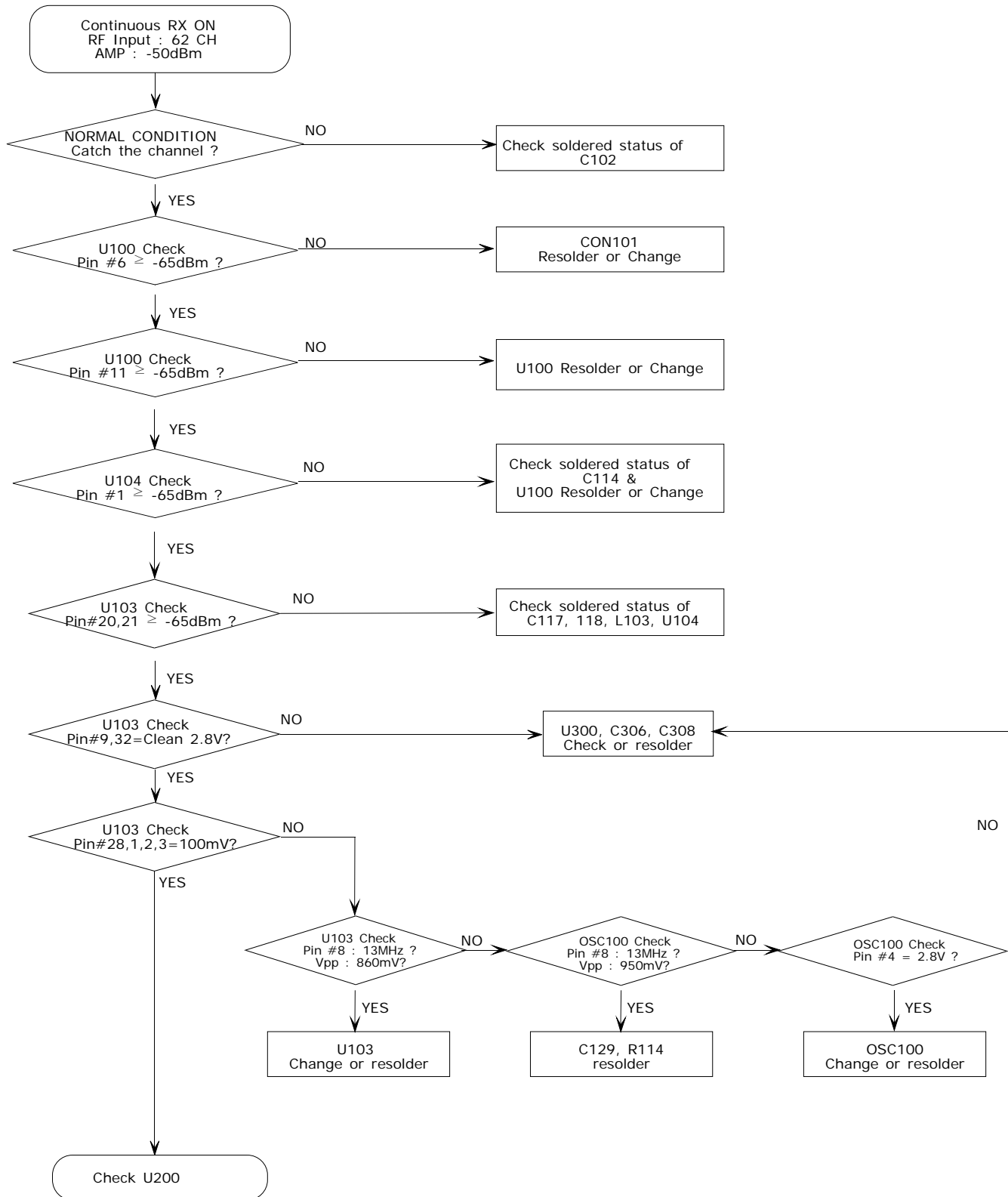
5. Microphone Part



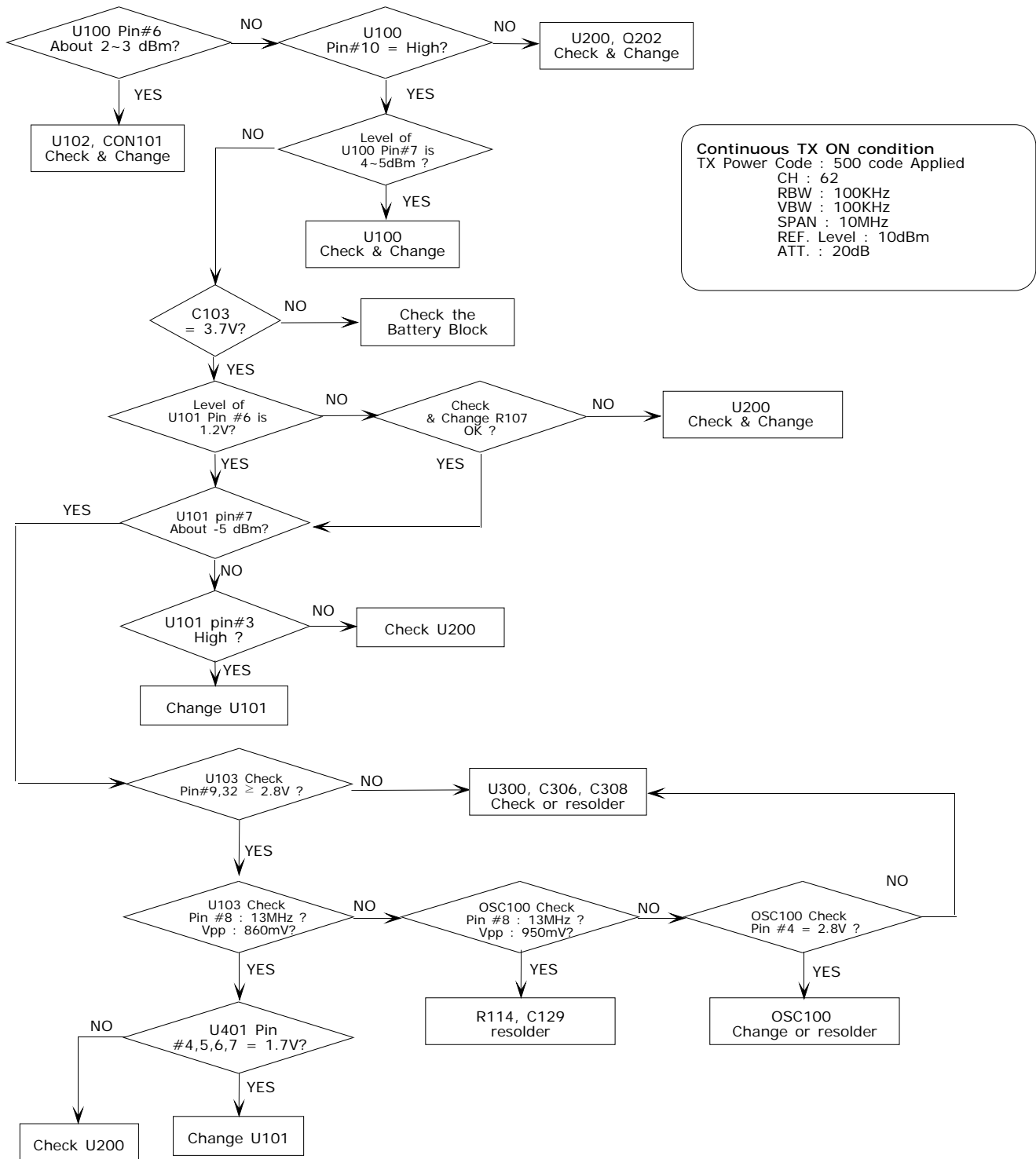
6. Speaker Part



7. EGSM Receiver

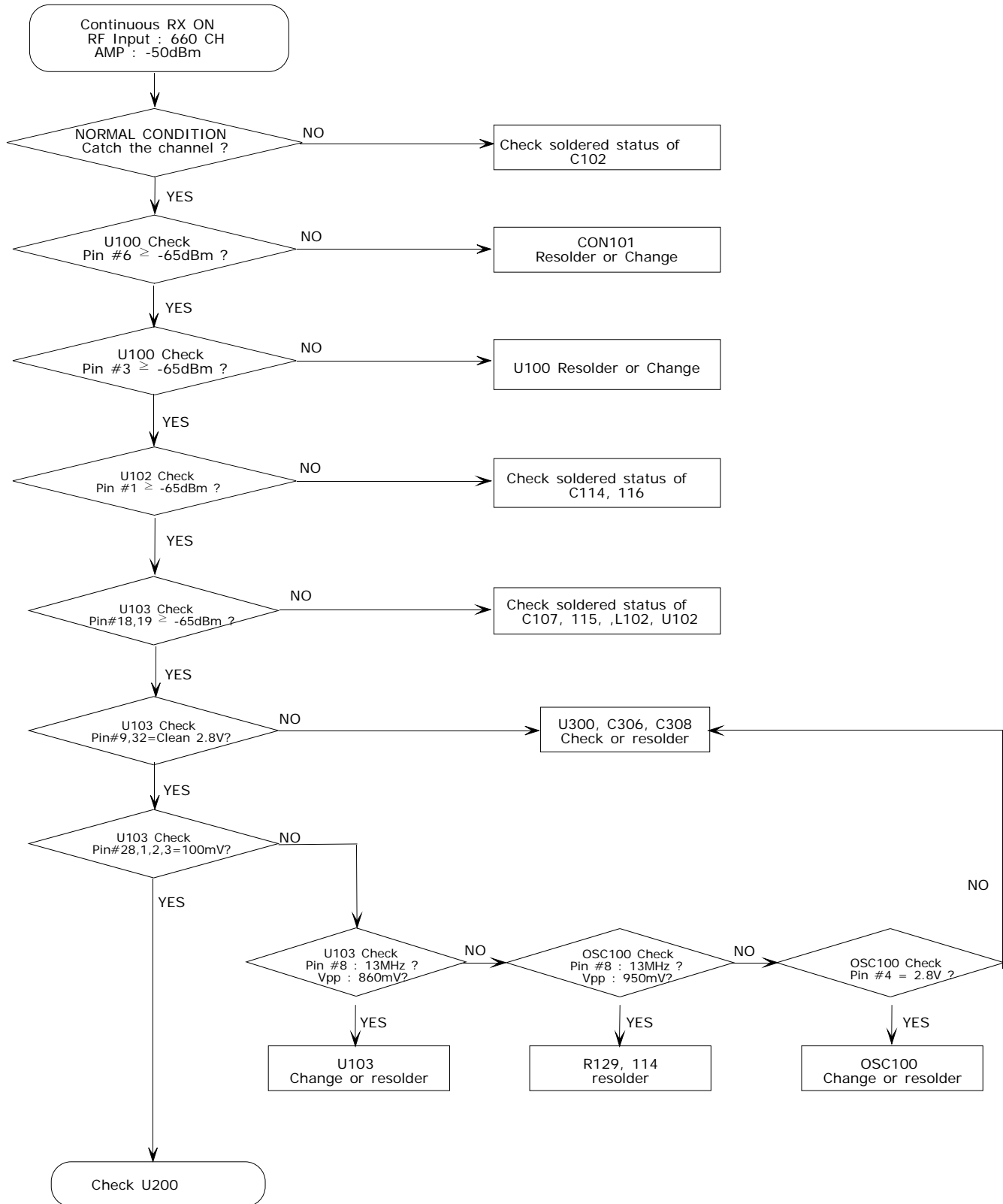


8. EGSM Transmitter

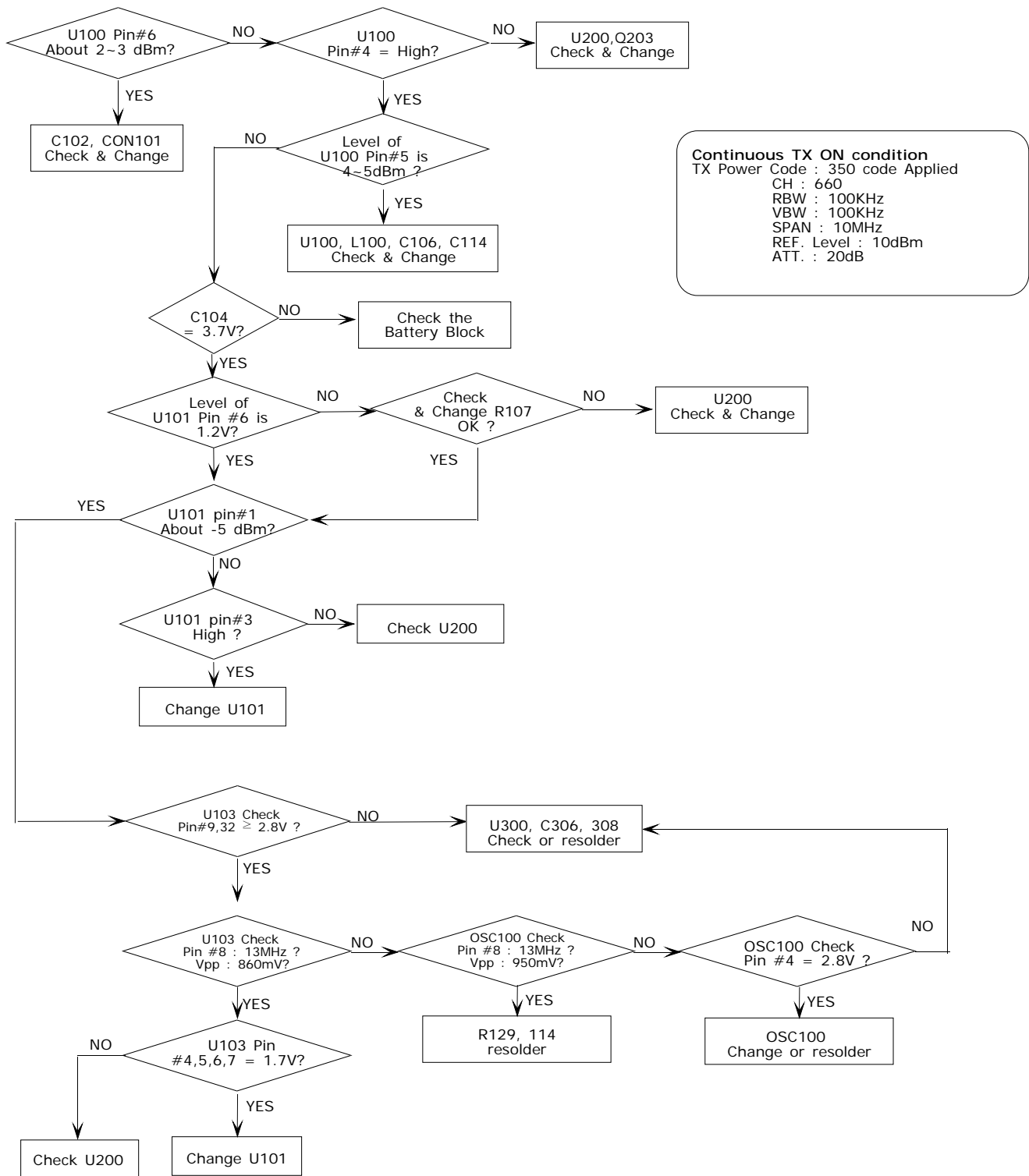


Continuous TX ON condition
 TX Power Code : 500 code Applied
 CH : 62
 RBW : 100KHz
 VBW : 100KHz
 SPAN : 10MHz
 REF. Level : 10dBm
 ATT. : 20dB

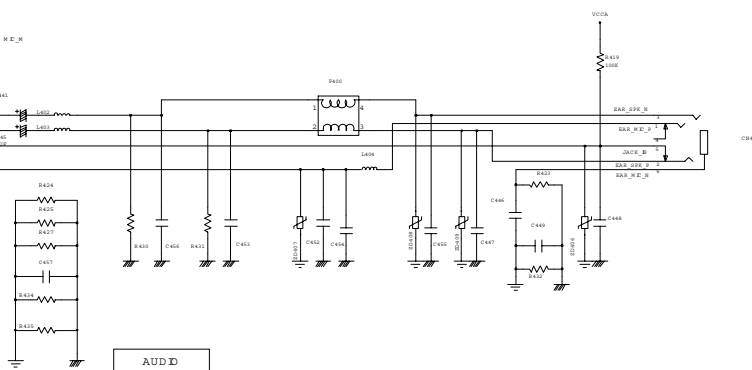
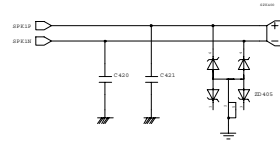
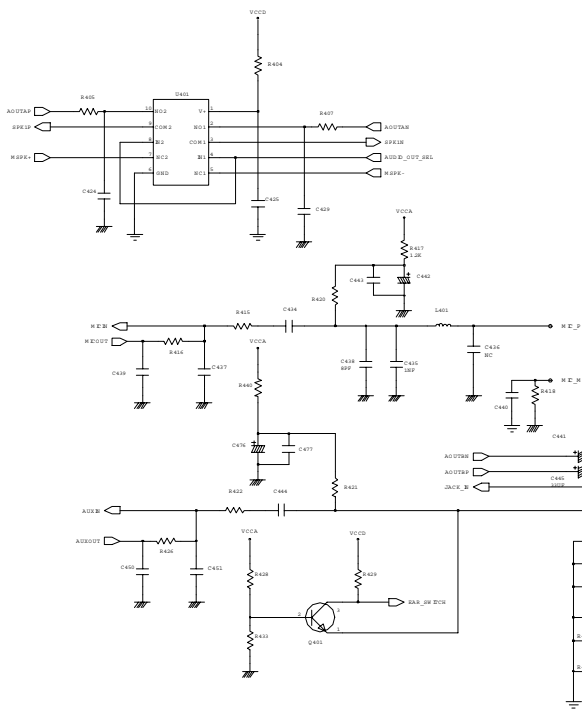
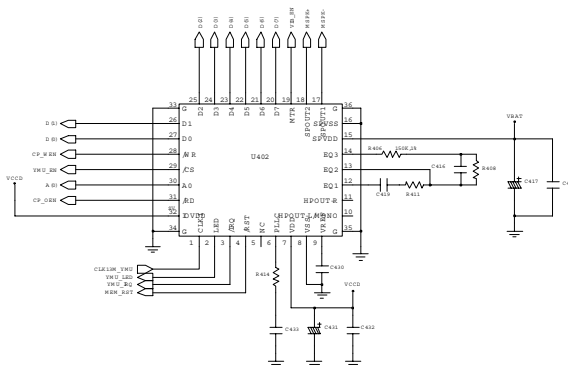
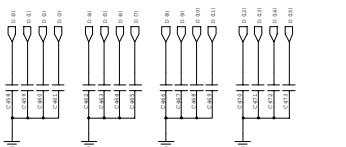
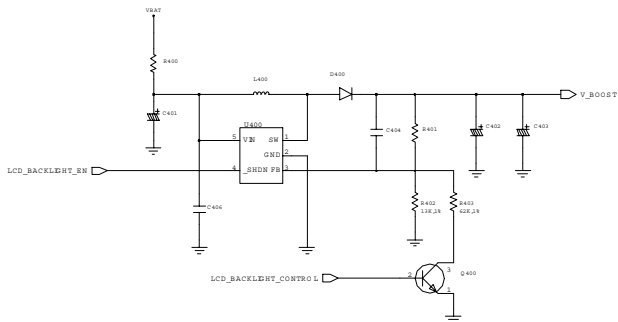
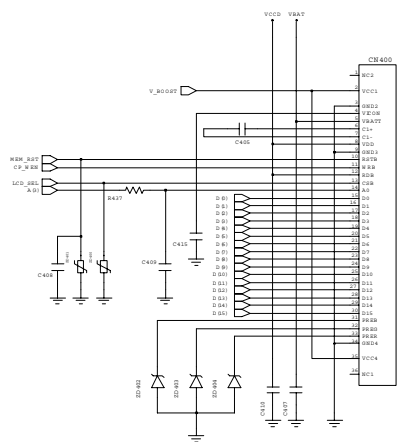
9. DCS Receiver



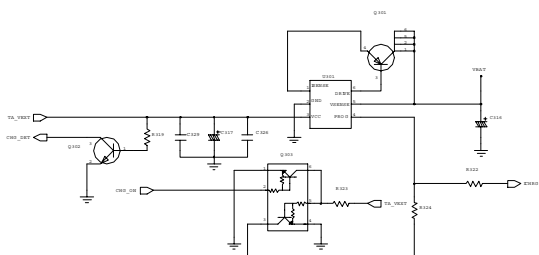
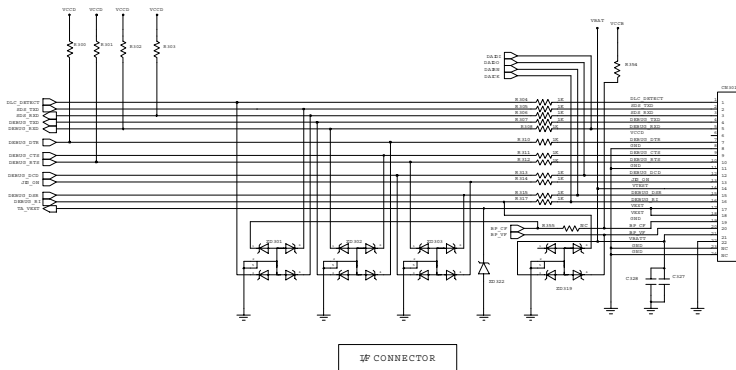
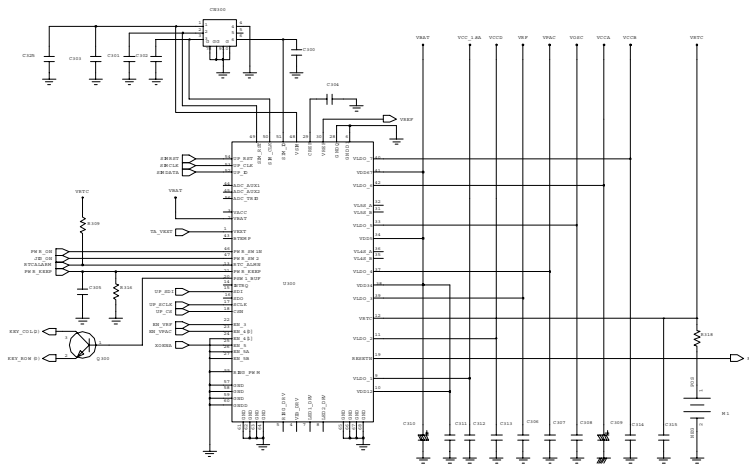
10. DCS Transmitter



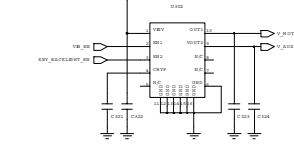
Continuous TX ON condition
 TX Power Code : 350 code Applied
 CH : 660
 RBW : 100KHz
 VBW : 100KHz
 SPAN : 10MHz
 REF. Level : 10dBm
 ATT. : 20dB



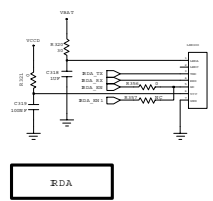
SGH-X120 Flow Chart of Troubleshooting and Circuit Diagrams



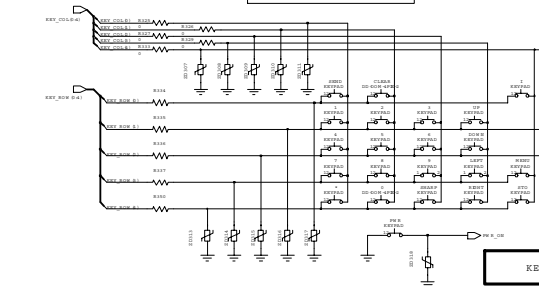
POWER



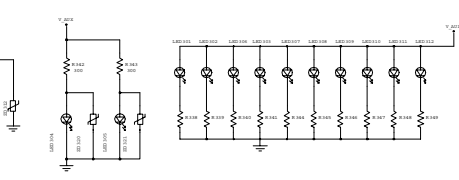
VOLUME



RDA

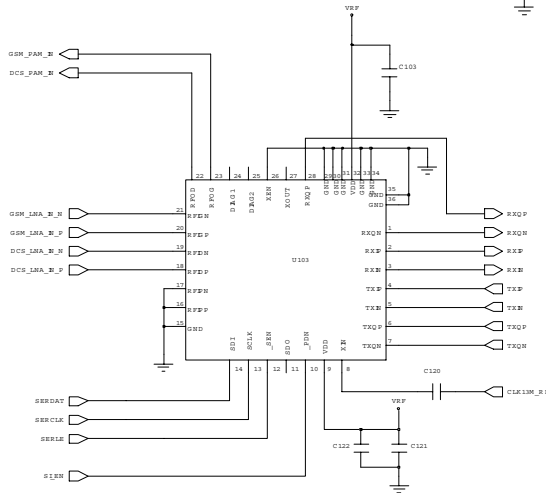
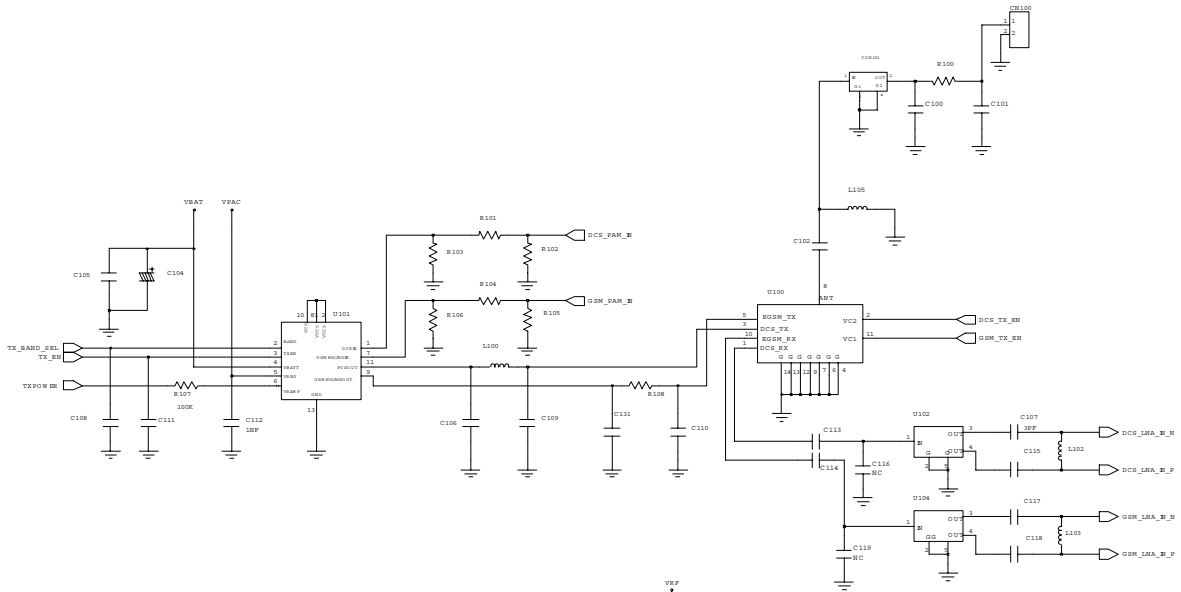


KEY

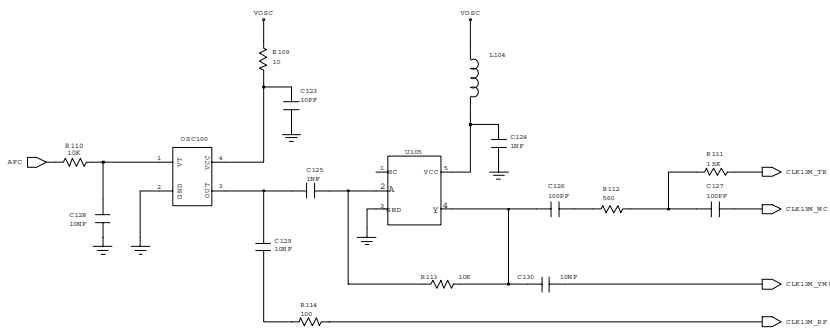


CIRCUIT

SGH-X120 Flow Chart of Troubleshooting and Circuit Diagrams

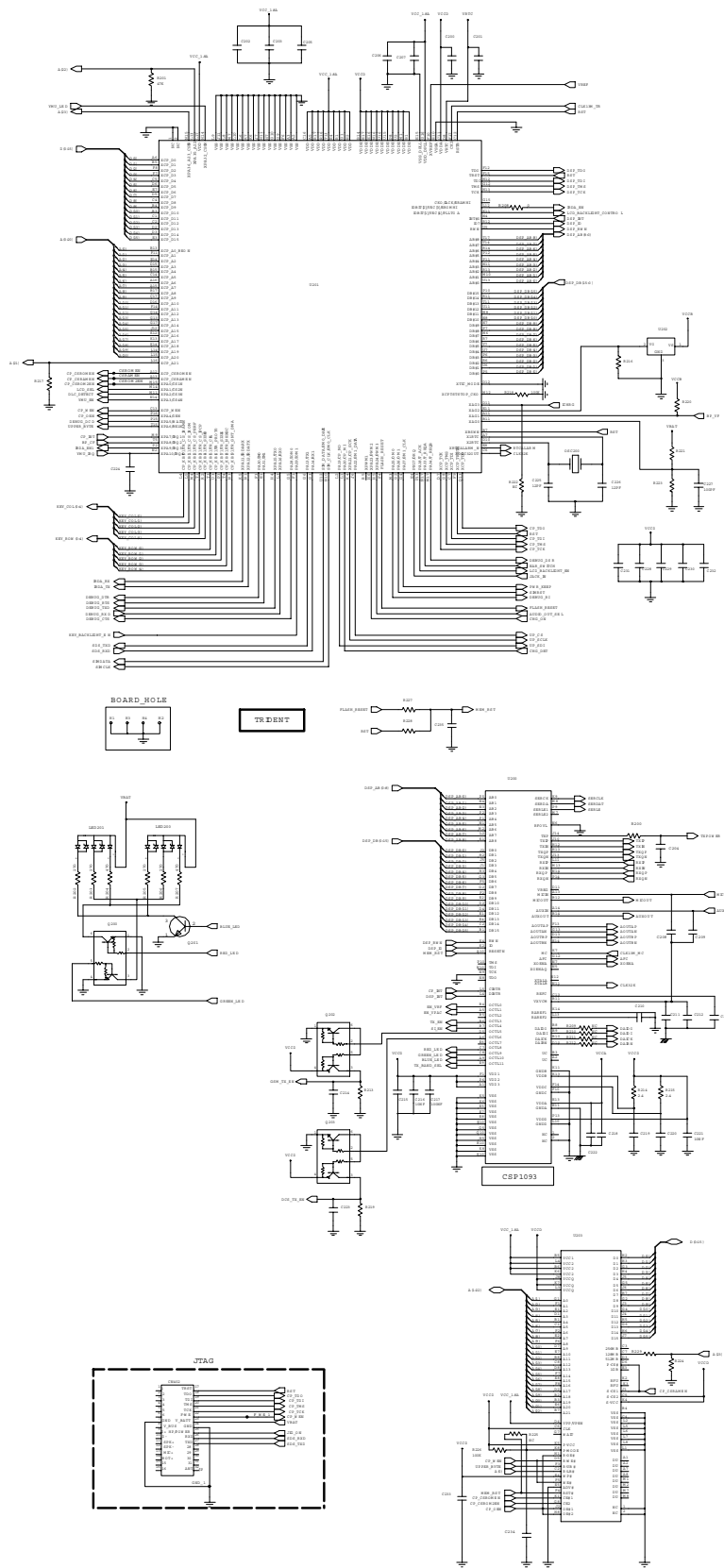


TRANSMITTER & RECEIVER



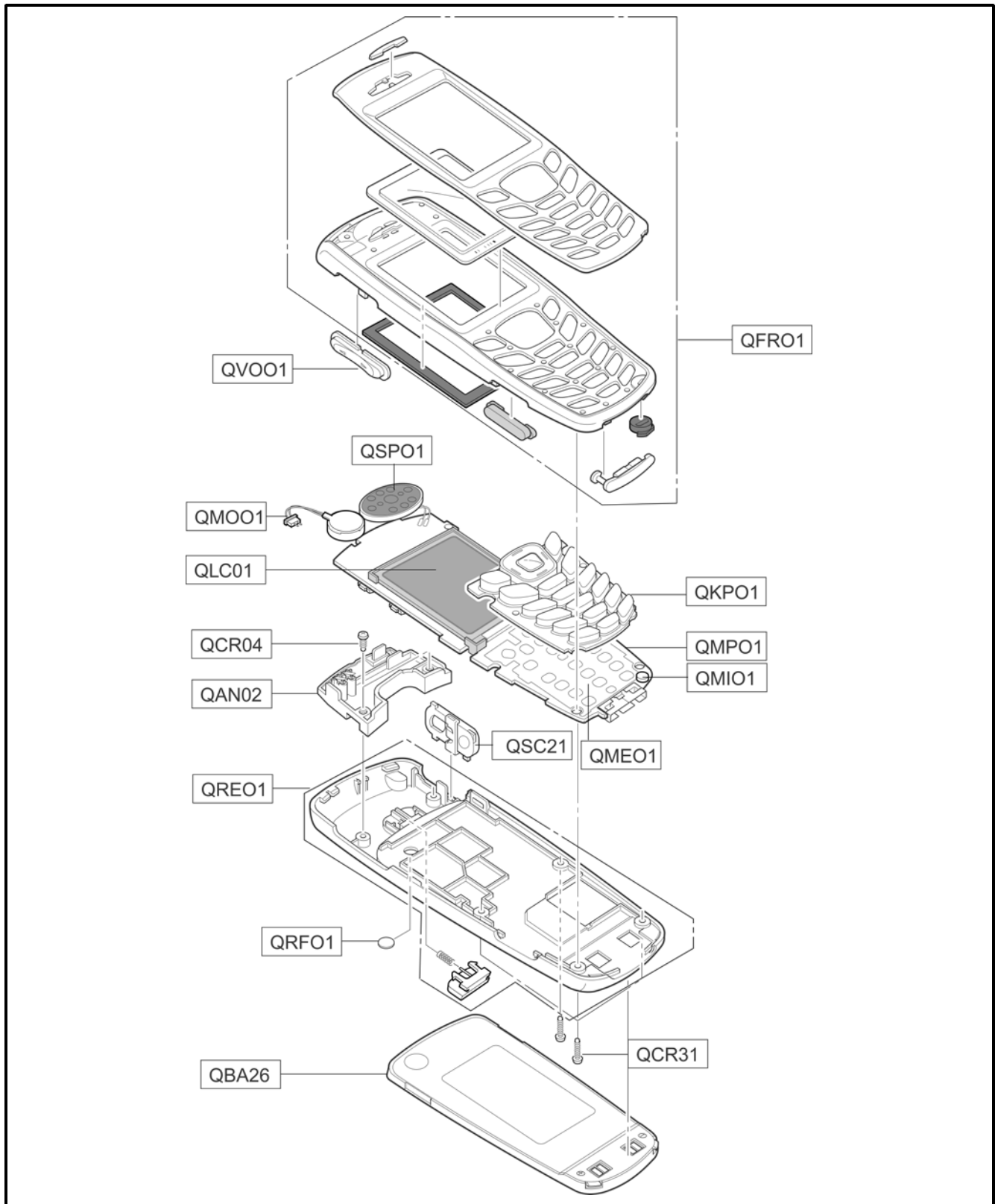
X-TAL (1.3MHz)

SGH-X120 Flow Chart of Troubleshooting and Circuit Diagrams



3. SGH-X120 Exploded View and its Parts list

1. Cellular phone Exploded View



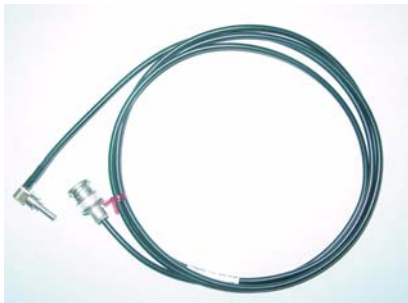
2. Cellular phone Parts list

Location NO.		Description	SEC CODE	Remark
QLC01		LCD	GH07-00547A	
QSP01		SPEAKER	3001-001551	
QMO01		MOTOR	GH31-00086A	
QMI01		MICROPHONE ASSY	GH30-00136A	
QFR01		FRONT COVER	GH75-04428A	
QVO01		VOLUME KEY	GH75-04433A	
QKP01		KEYPAD	GH75-04432A	
QMP01		MAIN PBA	GH92-01798A	
QAN02		INTENNA	GH42-00406A	
QME01		METAL DOME	GH59-01375A	
QRE01		REAR COVER	GH75-04430A	
QRF01		RF COVER TAPE	GH74-09282A	
QCR04		SCREW	6001-001479	
QBA26		BATTERY	GH43-01310A	
QSC21		EAR JACK COVER ASSY	GH75-04431A	

3. Test Jig [GH80-00865A]



**3-1. RF Test Cable
[GH39-00182A]**



**3-2. Test Cable
[GH39-00127A]**



3-3. Serial Cable



3-4. Power Supply Cable



**3-5. DATA CABLE
[GH39-00159A]**



**3-6. TA
[GH44-00482A]**



4. SGH-X120 MAIN Electrical Parts List

SEC Code	Design LOC
2203-000995	C102
2203-005061	C103
2404-001134	C104
2203-000254	C105
2203-002668	C106
2203-000870	C107
2203-000654	C108
2203-002668	C109
2203-000466	C110
2203-000812	C111
2203-000438	C112
2203-000550	C113
2203-000425	C114
2203-000870	C115
2203-005288	C117
2203-005288	C118
2203-000233	C120
2203-006093	C121
2203-006137	C122
2203-000278	C123
2203-000438	C124
2203-000438	C125
2203-000233	C126
2203-000233	C127
2203-000254	C128
2203-000254	C129
2203-000254	C130
2203-005061	C200
2203-001405	C201
2203-000254	C202
2203-000254	C203
2203-000233	C204
2203-005496	C205
2203-000679	C206
2203-000254	C207
2203-000679	C208

SEC Code	Design LOC
2203-000679	C209
2203-005061	C210
2203-006093	C211
2203-005450	C212
2203-005496	C213
2203-000233	C214
2203-000254	C215
2203-000254	C216
2203-005061	C217
2203-000254	C218
2203-000254	C219
2203-000254	C220
2203-000254	C221
2203-005052	C222
2203-000233	C223
2203-000233	C224
2203-000628	C225
2203-000628	C226
2203-000233	C227
2203-000254	C228
2203-005061	C229
2203-000254	C230
2203-005061	C231
2203-005496	C232
2203-000940	C233
2203-005061	C234
2203-005480	C235
2203-000812	C300
2203-000812	C301
2203-000812	C302
2203-005482	C303
2203-005061	C304
2203-005061	C305
2203-006201	C306
2203-005796	C307
2203-006201	C308

SEC Code	Design LOC
2404-001268	C309
2404-001268	C310
2203-001652	C311
2203-006201	C312
2203-006201	C313
2203-006201	C314
2203-000233	C315
2404-001268	C316
2404-001268	C317
2203-005065	C318
2203-005061	C319
2203-000812	C320
2203-000254	C321
2203-006053	C322
2203-006090	C323
2203-006053	C324
2203-006053	C325
2203-005482	C326
2203-000233	C327
2203-005148	C328
2203-000812	C329
2203-005482	C330
2404-001105	C401
2404-001299	C402
2404-001299	C403
2203-000585	C404
2203-001598	C405
2203-005482	C406
2203-001598	C407
2203-000438	C408
2203-000812	C409
2203-005061	C410
2203-001598	C415
2203-000654	C416
2404-001086	C417
2203-005061	C418

SEC Code	Design LOC
2203-001405	C419
2203-000812	C420
2203-000812	C421
2203-000854	C424
2203-005494	C425
2203-000854	C429
2203-005061	C430
2404-001086	C431
2203-005061	C432
2203-000438	C433
2203-006093	C434
2203-000438	C435
2203-000854	C437
2203-001259	C438
2203-000854	C439
2203-000812	C440
2404-001151	C441
2404-001151	C442
2203-006257	C443
2203-005065	C444
2404-001151	C445
2203-002525	C446
2203-000812	C447
2203-005503	C448
2203-000812	C449
2203-000854	C450
2203-000854	C451
2203-001239	C452
2203-000438	C453
2203-000438	C454
2203-000812	C455
2203-000438	C456
2203-001221	C457
2203-000812	C458
2203-000812	C459
2203-000812	C460

SEC Code	Design LOC
2203-000812	C461
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2203-000812	C467
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2203-000812	C470
2203-000812	C471
2203-000812	C472
2203-000812	C473
2404-001151	C476
2203-006257	C477
3709-001187	CN300
3710-002034	CN301
3710-001436	CN302
3722-002067	CN401
3705-001287	CON101
2007-000029	D300
0404-001172	D400
2007-000171	E336
2007-001311	ER202
2901-001271	F400
2703-001751	L100
2703-001257	L102
2703-002415	L103
3301-001105	L104
2703-002269	L105
2703-002524	L400
2703-002313	L401
2703-002313	L402
2703-002313	L403
2703-002313	L404
0601-001823	LED200

SEC Code	Design LOC
0601-001823	LED201
0604-001261	LED300
0601-001897	LED301
0601-001897	LED302
0601-001897	LED303
0601-001819	LED304
0601-001819	LED305
0601-001897	LED306
0601-001897	LED307
0601-001897	LED308
0601-001897	LED309
0601-001897	LED310
0601-001897	LED311
0601-001897	LED312
4302-001130	M1
2809-001260	OSC100
2801-003747	OSC200
0504-001162	Q200
0504-001012	Q201
0504-001042	Q202
0504-001042	Q203
0504-001113	Q300
0502-001201	Q301
0504-001113	Q302
0506-001052	Q303
0504-001012	Q400
0501-000225	Q401
2007-000070	R100
2007-000172	R101
2007-001316	R102
2007-001316	R103
2007-002965	R104
2007-000139	R105
2007-001311	R106
2007-000162	R107
2007-000171	R108

SGH-X120 Electrical Parts List

SEC Code	Design LOC
2007-000172	R109
2007-000148	R110
2007-000242	R111
2007-002797	R112
2007-000148	R113
2007-000138	R114
2007-000144	R200
2007-000157	R201
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2007-001311	R203
2007-000932	R204
2007-001311	R205
2007-001311	R206
2007-000932	R207
2007-000171	R208
2007-000162	R213
2007-007200	R214
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2007-000170	R216
2007-000157	R217
2007-000162	R218
2007-000162	R219
2007-007142	R220
2007-007573	R221
2007-007573	R223
2007-007139	R224
2007-000162	R226
2007-000171	R227
2007-000171	R229
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2007-000157	R302
2007-000157	R303
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2007-000140	R305
2007-000140	R306

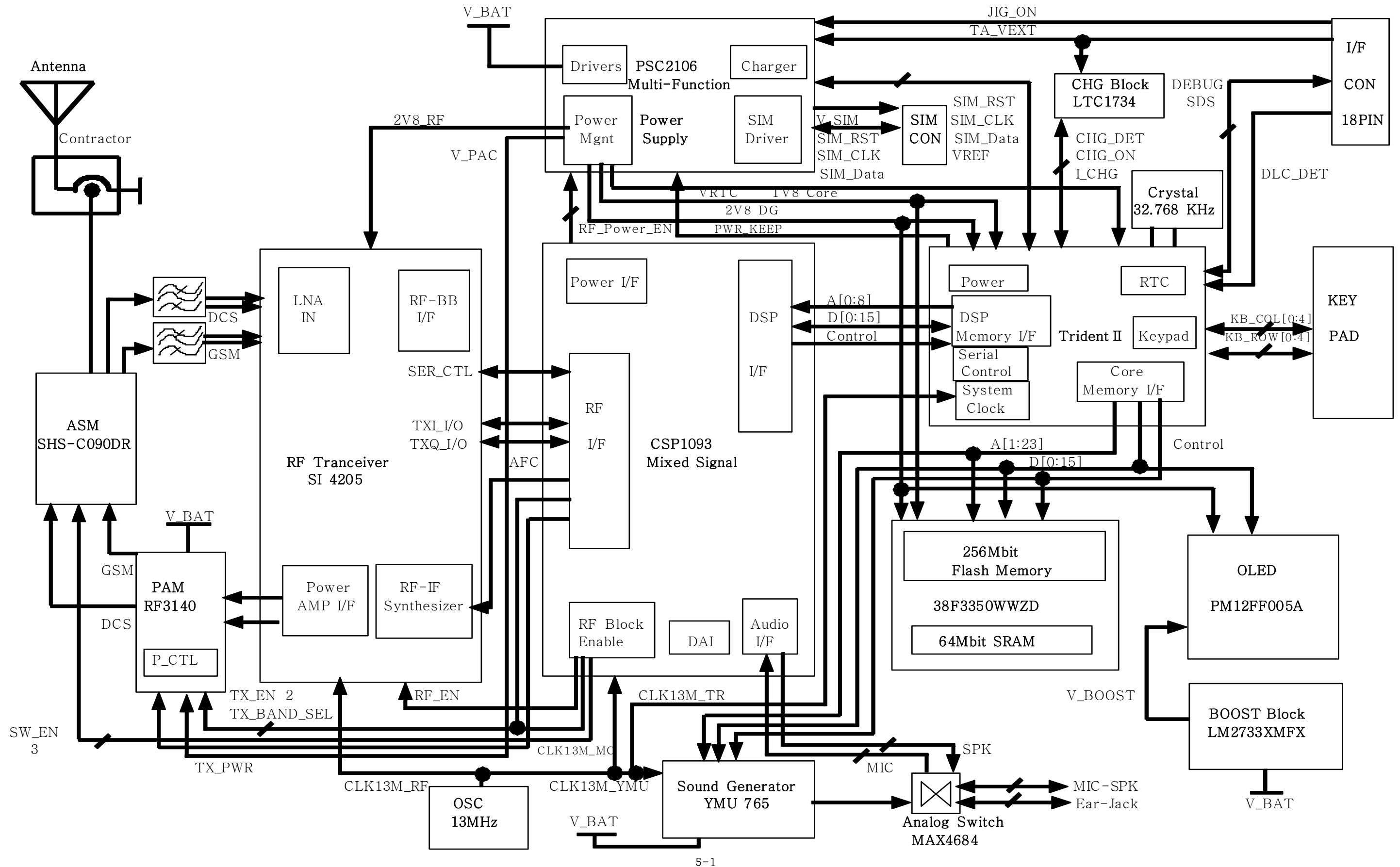
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2007-000140	R307
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2007-000167	R309
2007-000140	R310
2007-000140	R311
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2007-000140	R315
2007-000758	R316
2007-000140	R317
2007-001319	R318
2007-007142	R319
2007-001291	R320
2007-000171	R321
2007-007142	R322
2007-007139	R323
2007-008263	R324
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2007-000171	R326
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2007-000171	R333
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2007-000171	R337
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2007-007008	R339
2007-007008	R340
2007-007008	R341
2007-007008	R342
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2007-007008	R345
2007-007008	R346

SEC Code	Design LOC
2007-007008	R347
2007-007008	R348
2007-007008	R349
2007-000171	R350
2007-000162	R354
2007-000171	R356
2007-007197	R400
2007-007480	R401
2007-007131	R402
2007-007861	R403
2007-000171	R404
2007-000172	R405
2007-007489	R406
2007-000172	R407
2007-000775	R408
2007-000775	R411
2007-001325	R414
2007-000148	R415
2007-007590	R416
2007-001319	R417
2007-000171	R418
2007-000162	R419
2007-000143	R420
2007-000143	R421
2007-000148	R422
2007-000171	R423
2007-007861	R426
2007-000171	R427
2007-007590	R428
2007-000140	R429
2007-000140	R430
2007-000140	R431
2007-007014	R433
2007-000171	R437
2007-001319	R440
3404-001152	SW1

SEC Code	Design LOC
3404-001152	SW2
2909-001193	U100
1201-001954	U101
2904-001514	U102
1205-002433	U103
2904-001520	U104
0801-000306	U105
1204-001984	U200
GH09-00025A	U201
1209-001219	U202
1109-001281	U203
1203-002902	U300
1203-002127	U301
1203-002860	U302
1203-002940	U400
1001-001183	U401
1204-002138	U402
0406-001169	ZD301
0406-001169	ZD302
0406-001169	ZD303
0407-000115	ZD306
1405-001082	ZD307
1405-001082	ZD308
1405-001082	ZD309
1405-001082	ZD310
1405-001082	ZD311
1405-001082	ZD312
1405-001082	ZD313
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1405-001082	ZD316
1405-001082	ZD317
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0406-001169	ZD319
1405-001082	ZD320
1405-001082	ZD321

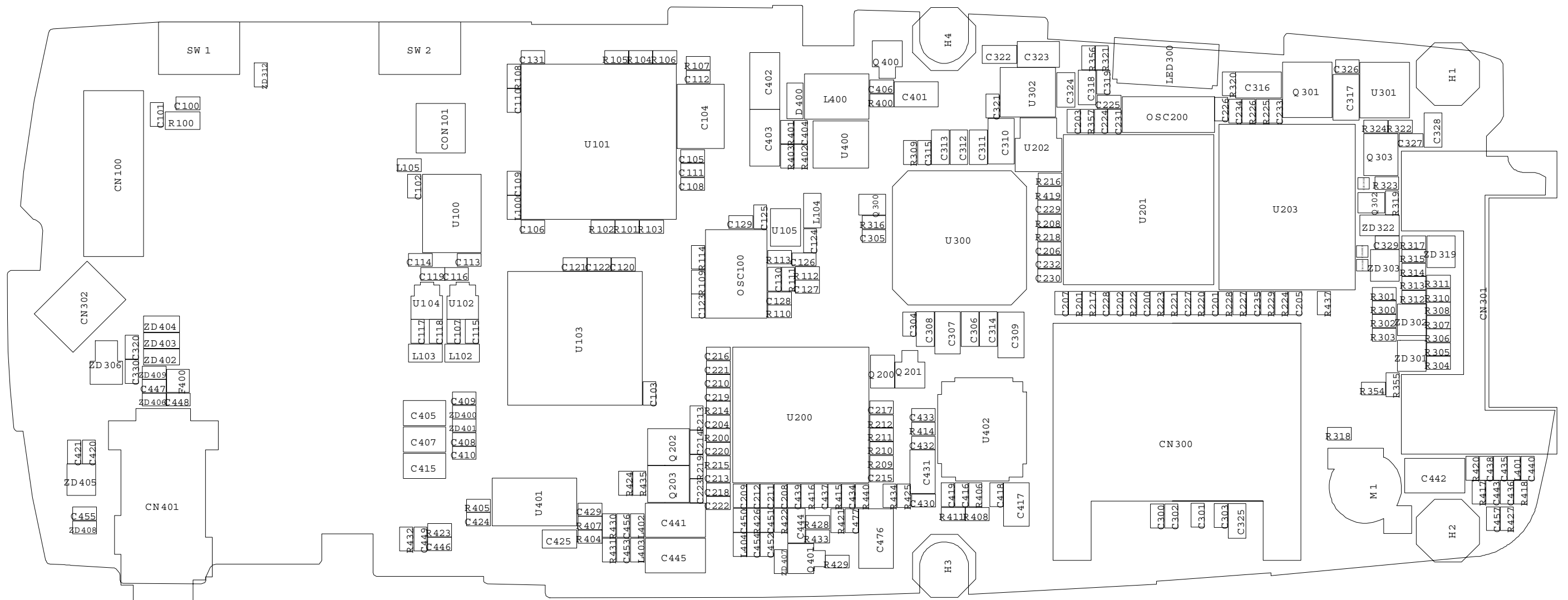
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0403-001427	ZD322
1405-001082	ZD400
1405-001082	ZD401
0403-001518	ZD402
0403-001518	ZD403
0403-001518	ZD404
0406-001169	ZD405
1405-001082	ZD406
1405-001082	ZD407
1405-001082	ZD408
1405-001082	ZD409

5. SGH-X120 Block Diagram



6. SGH-X120 PCB Diagrams

1. Main Top Diagram



2. Main Bottom Diagram

