

SAMSUNG

GSM TELEPHONE

SGH-D428

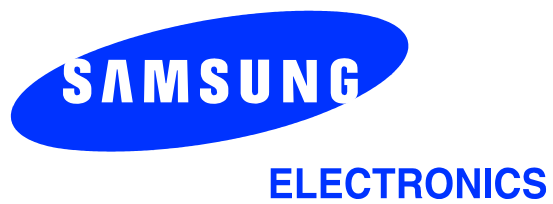
SERVICE *Manual*

GSM TELEPHONE



CONTENTS

1. Specification
2. Flow Chart of Troubleshooting
3. Exploded Views and Parts List
4. Electrical Parts List
5. Block Diagrams
6. PCB Diagrams



1. SGH-D428 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 ~ 15pcl	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
5	$33 \pm 2\text{dBm}$
6	$31 \pm 2\text{dBm}$
7	$29 \pm 2\text{dBm}$
8	$27 \pm 2\text{dBm}$
9	$25 \pm 2\text{dBm}$
10	$23 \pm 2\text{dBm}$
11	$21 \pm 2\text{dBm}$
12	$19 \pm 2\text{dBm}$
13	$17 \pm 2\text{dBm}$
14	$15 \pm 2\text{dBm}$
15	$13 \pm 2\text{dBm}$
16	$11 \pm 2\text{dBm}$
17	$9 \pm 2\text{dBm}$
18	$7 \pm 2\text{dBm}$
19	$5 \pm 2\text{dBm}$

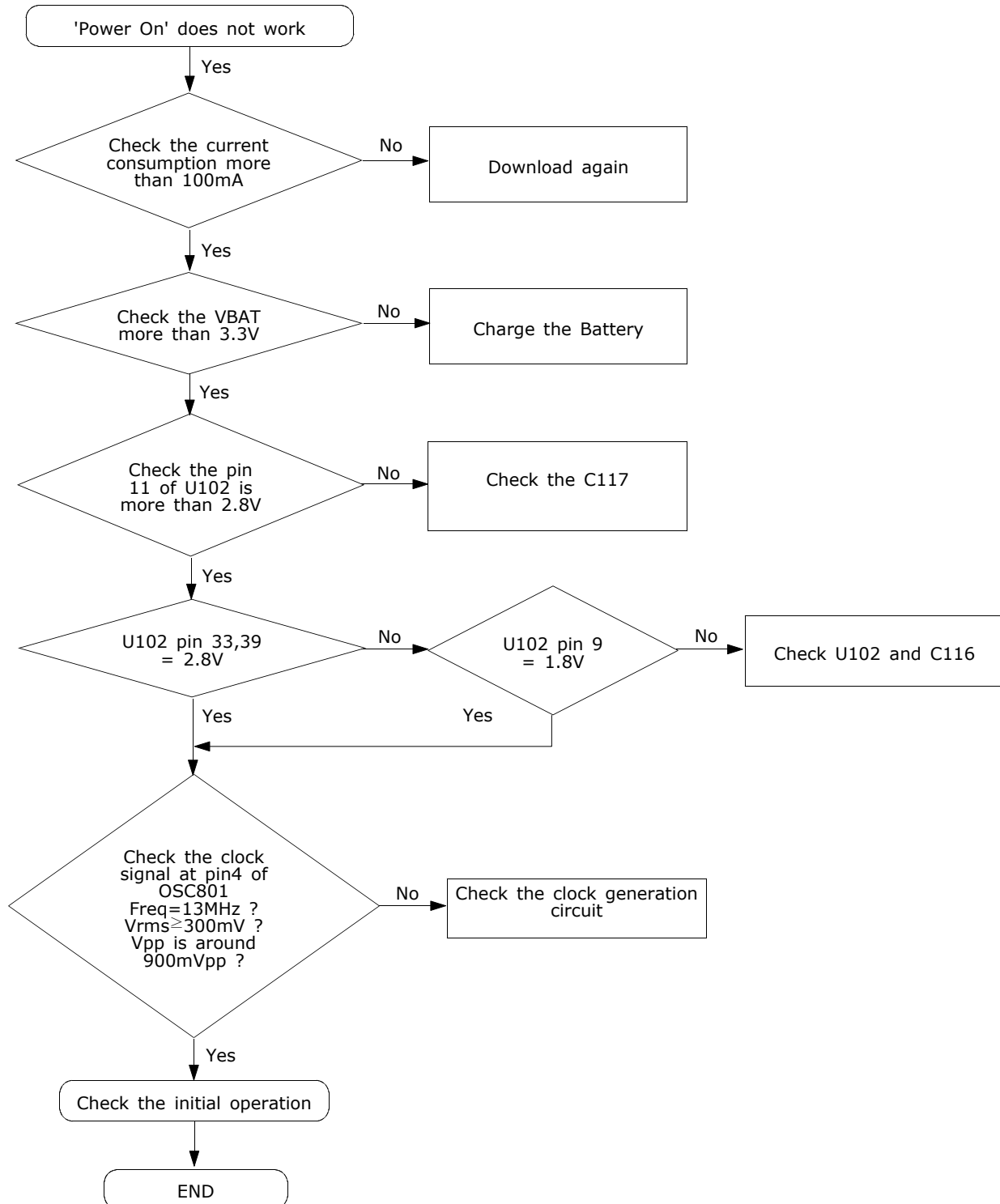
TX Power control level	DCS1800
0	$30 \pm 3\text{dBm}$
1	$28 \pm 3\text{dBm}$
2	$26 \pm 3\text{dBm}$
3	$24 \pm 3\text{dBm}$
4	$22 \pm 3\text{dBm}$
5	$20 \pm 3\text{dBm}$
6	$18 \pm 3\text{dBm}$
7	$16 \pm 3\text{dBm}$
8	$14 \pm 3\text{dBm}$
9	$12 \pm 4\text{dBm}$
10	$10 \pm 4\text{dBm}$
11	$8 \pm 4\text{dBm}$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

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

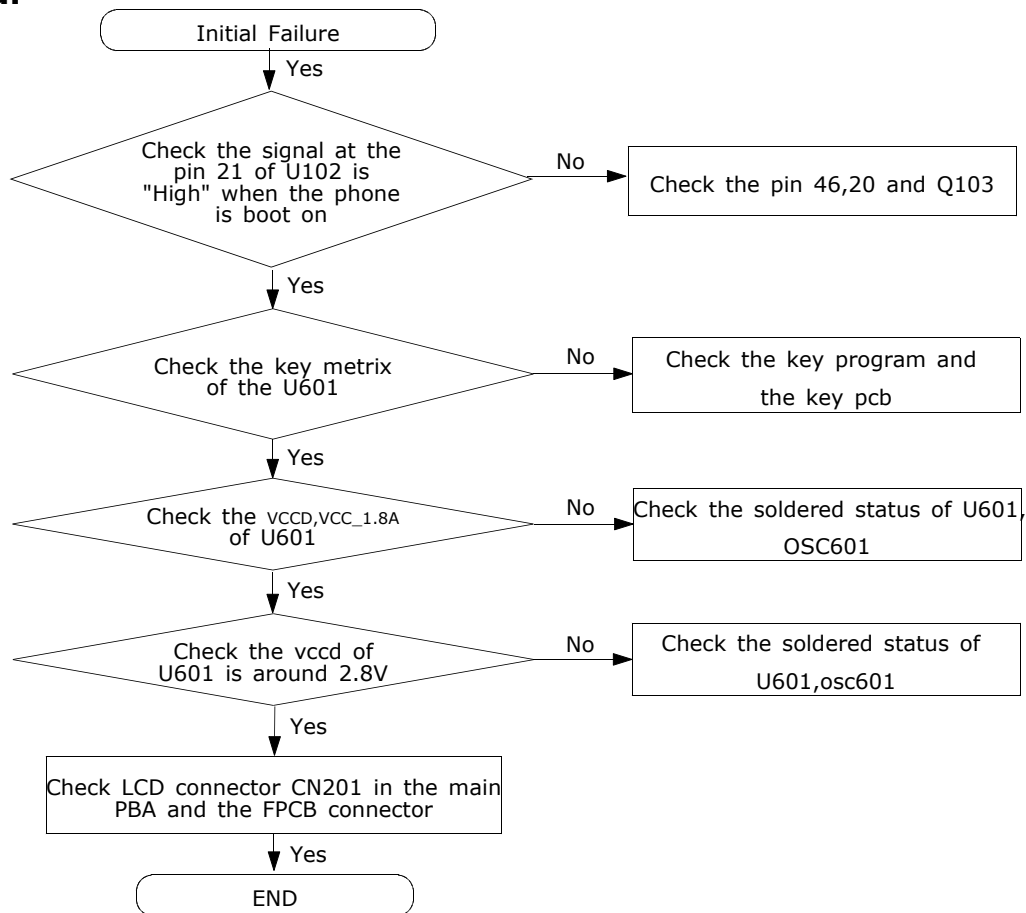
2. SGH-D428 Flow Chart of Troubleshooting

1.Baseband

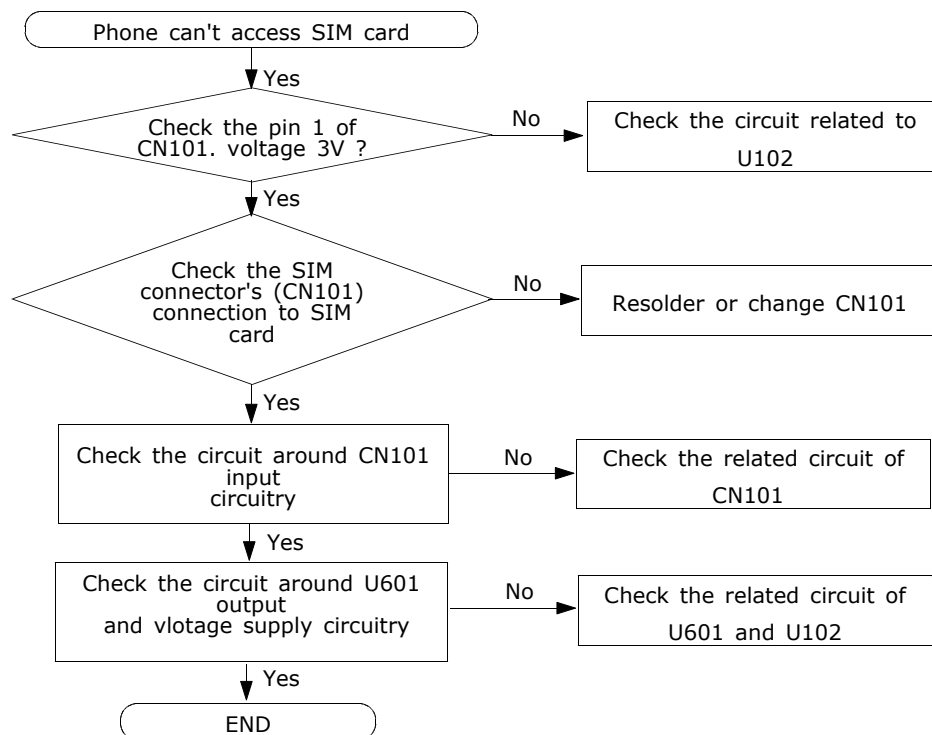
1. Power ON



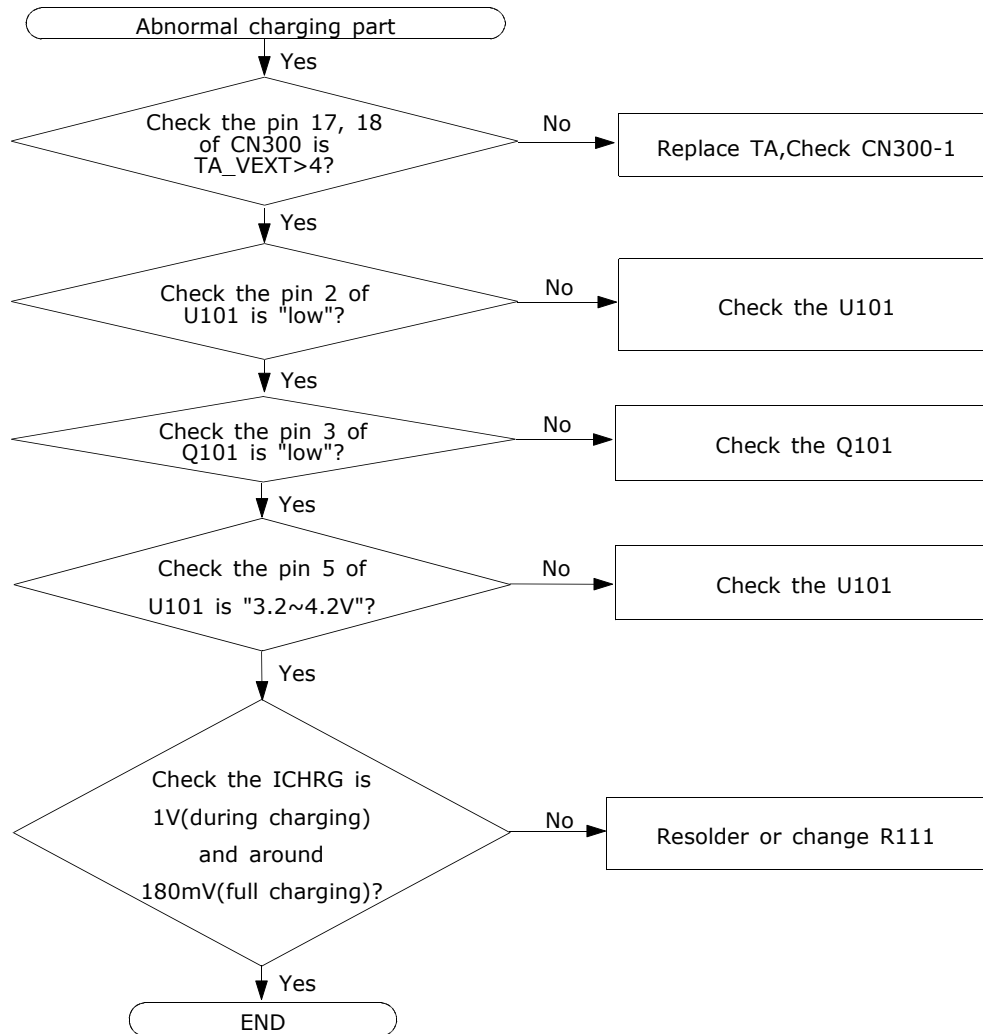
2. Initial



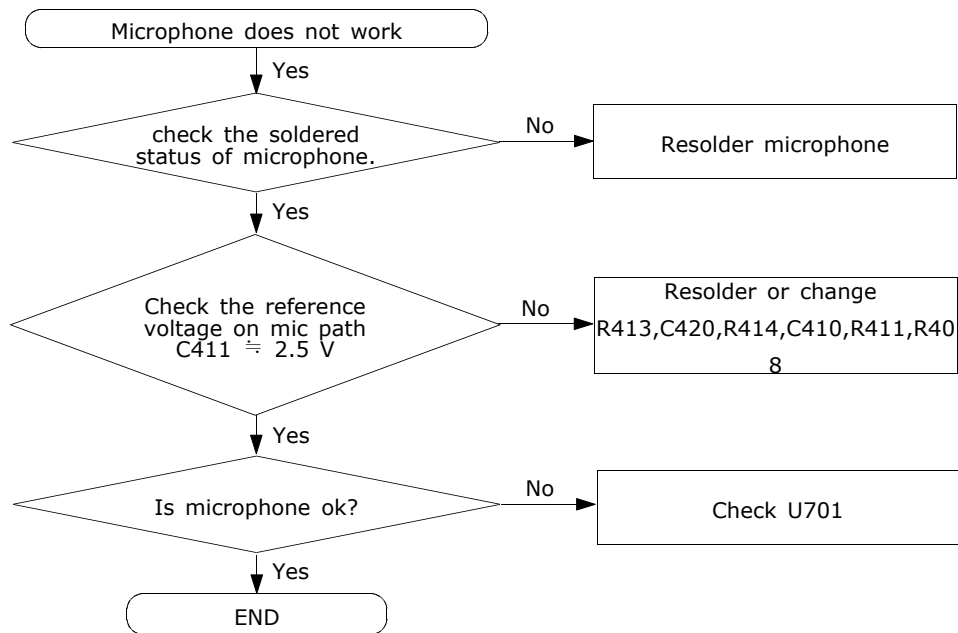
3. Sim Part



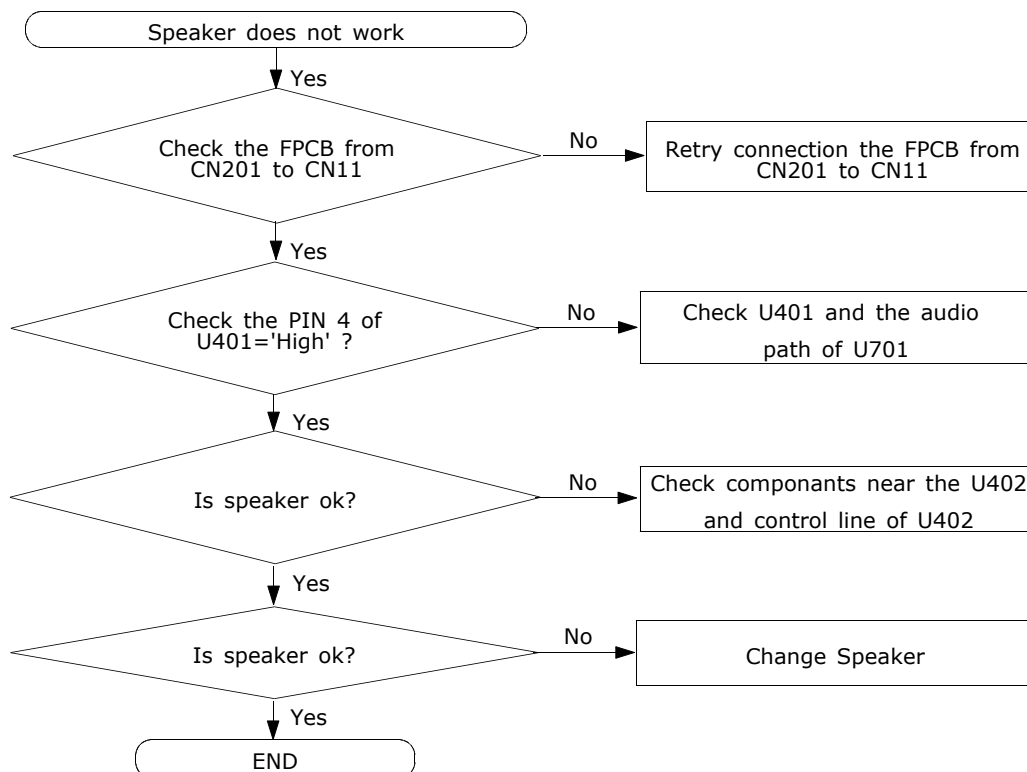
4. Charging Part



5. Microphone Part

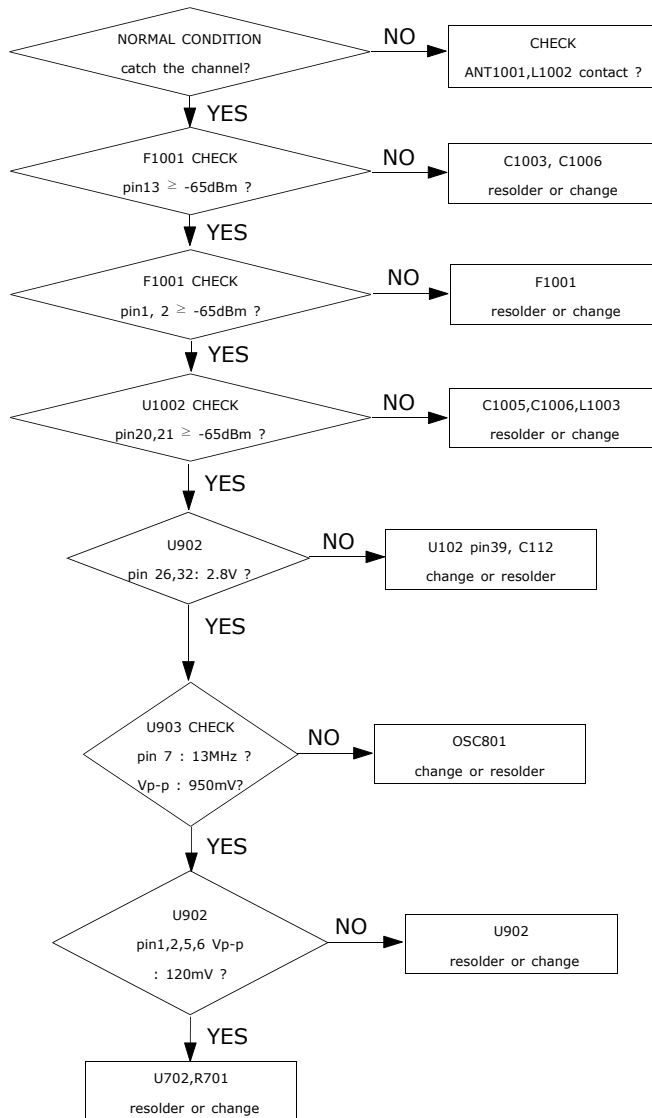


6. Speaker Part



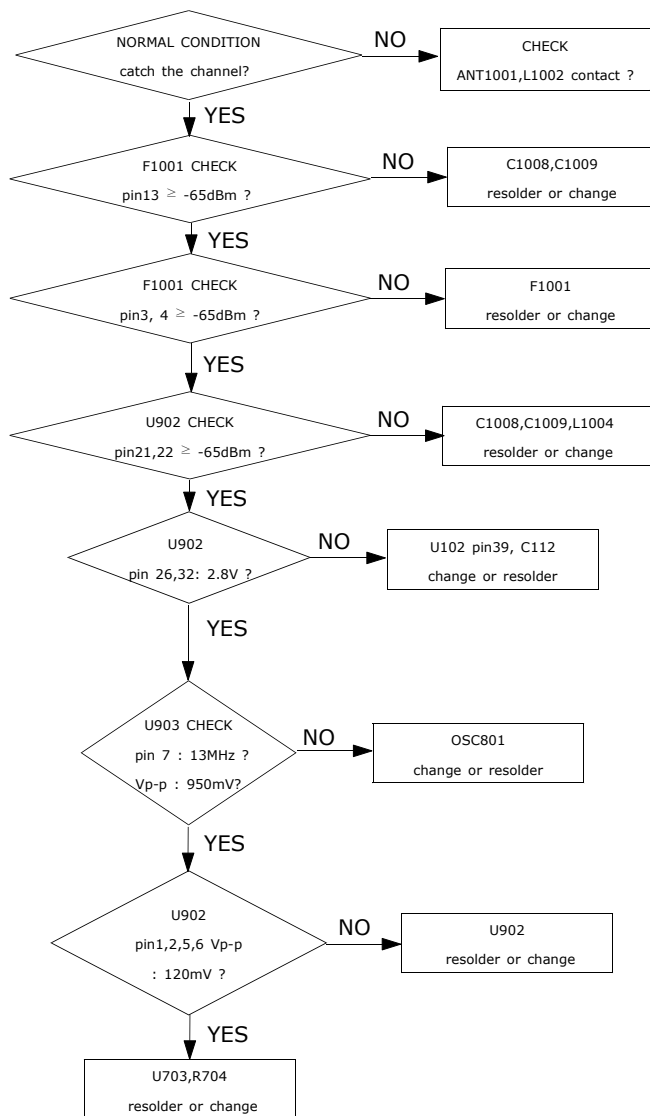
2.RF

1. EGSM RX



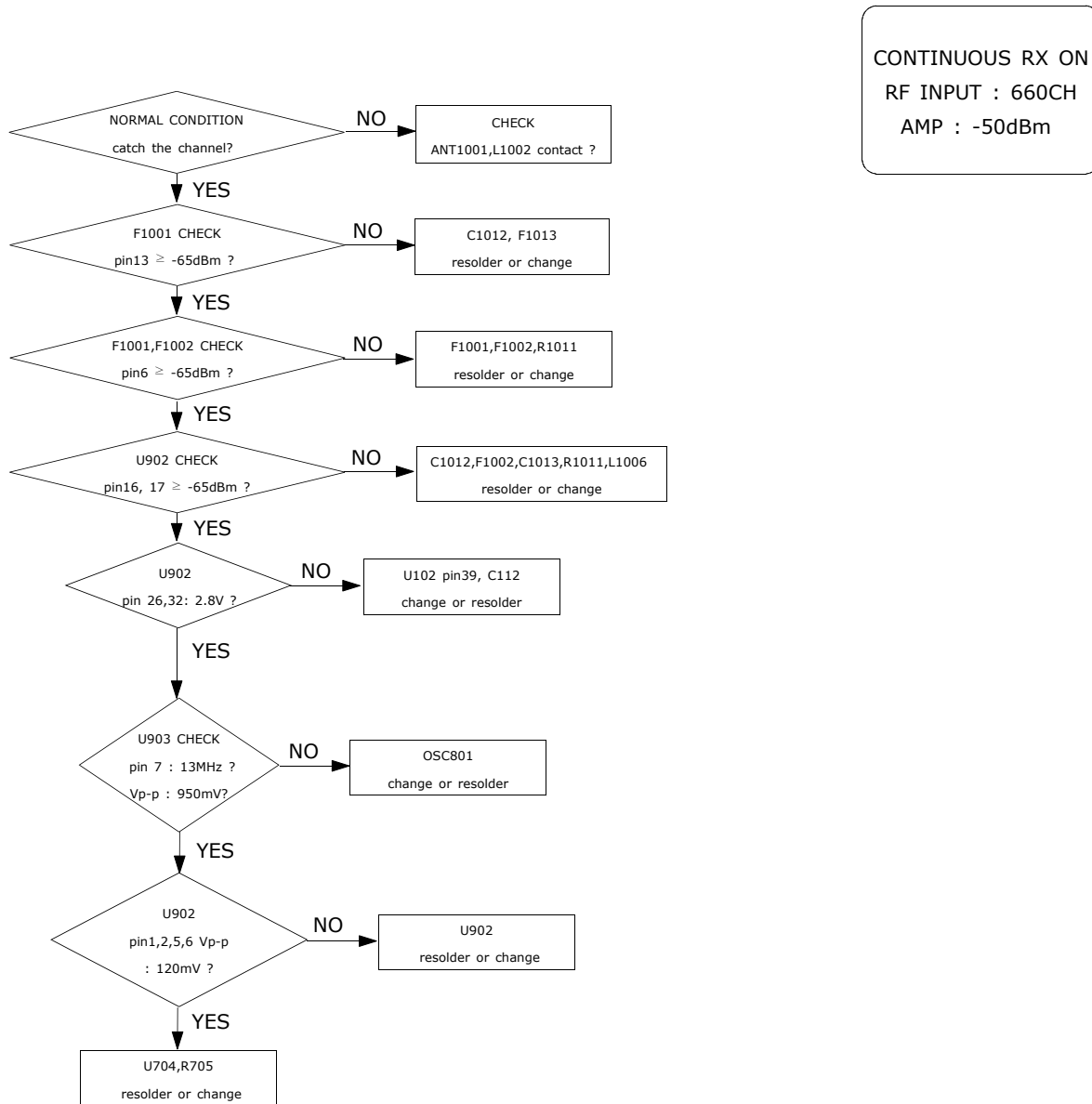
CONTINUOUS RX ON
RF INPUT : 62CH
AMP : -50dBm

2. DCS RX

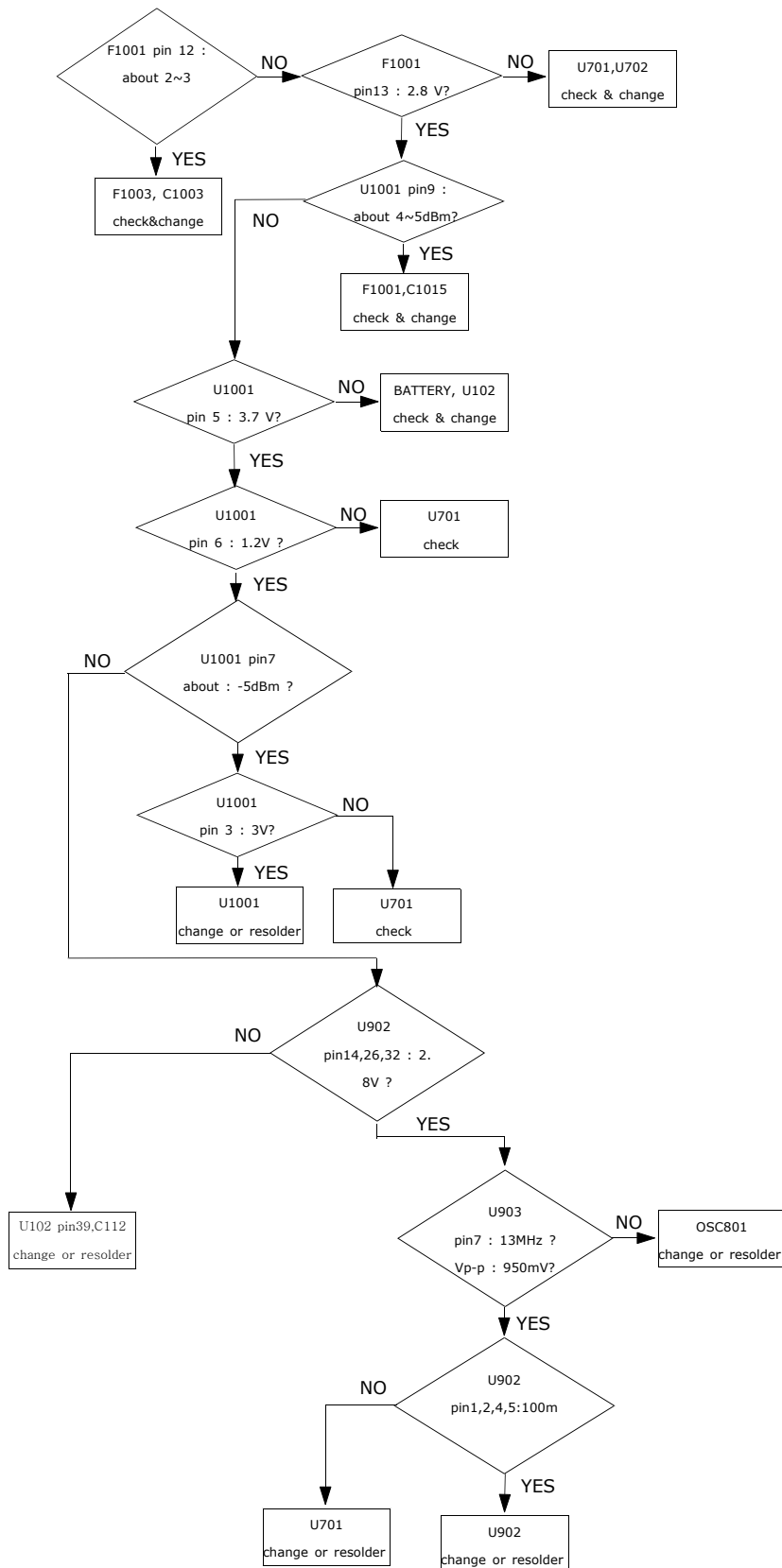


CONTINUOUS RX ON
RF INPUT : 698CH
AMP : -50dBm

3. PCS RX



4. EGSM TX



CONTINUS TX ON CONDITION

TX POWER DAC: 550 CODE APPLIED

CH : 62

RBW : 100KHz

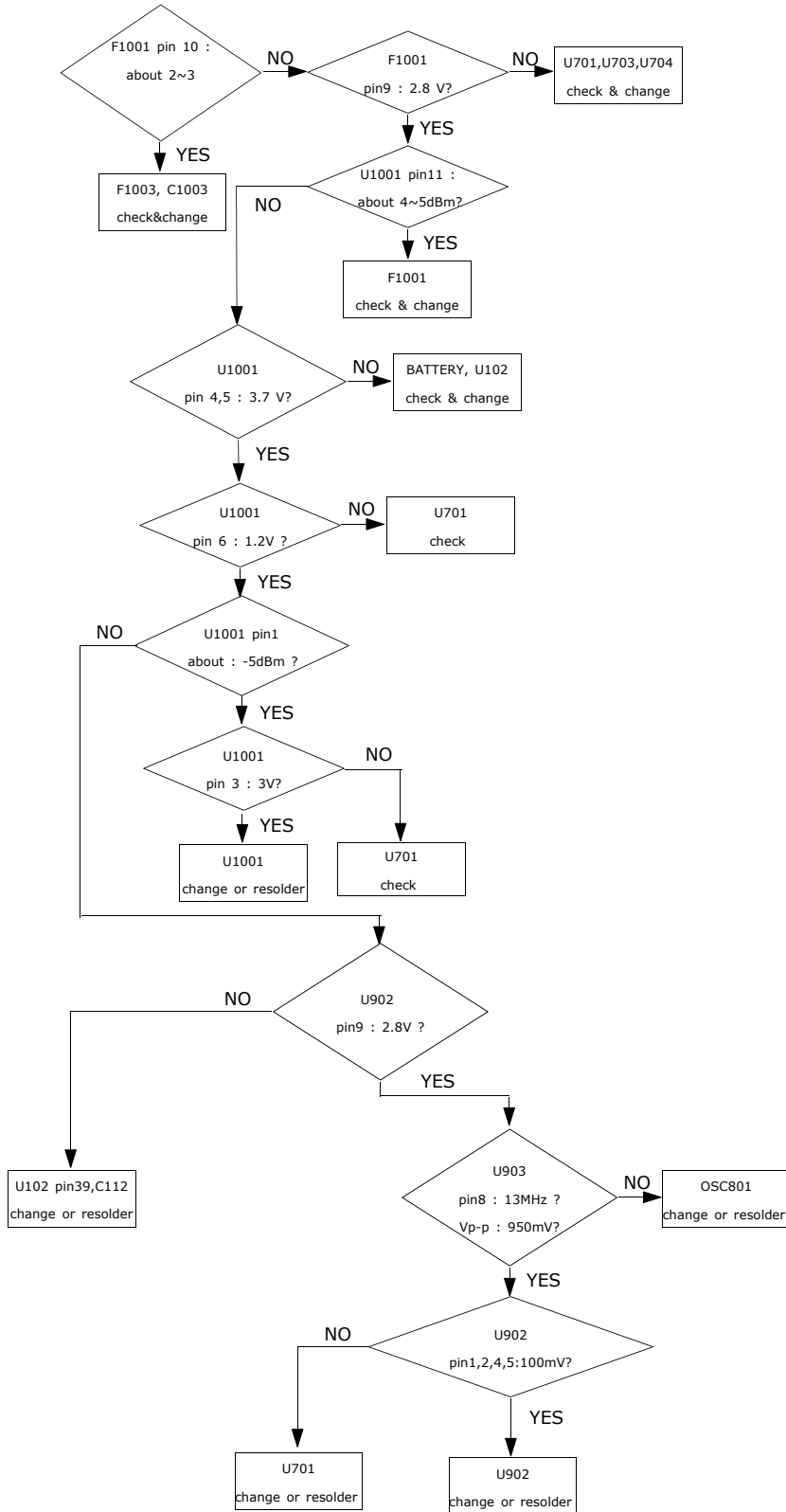
VBW : 100KHz

SPAN : 10MHz

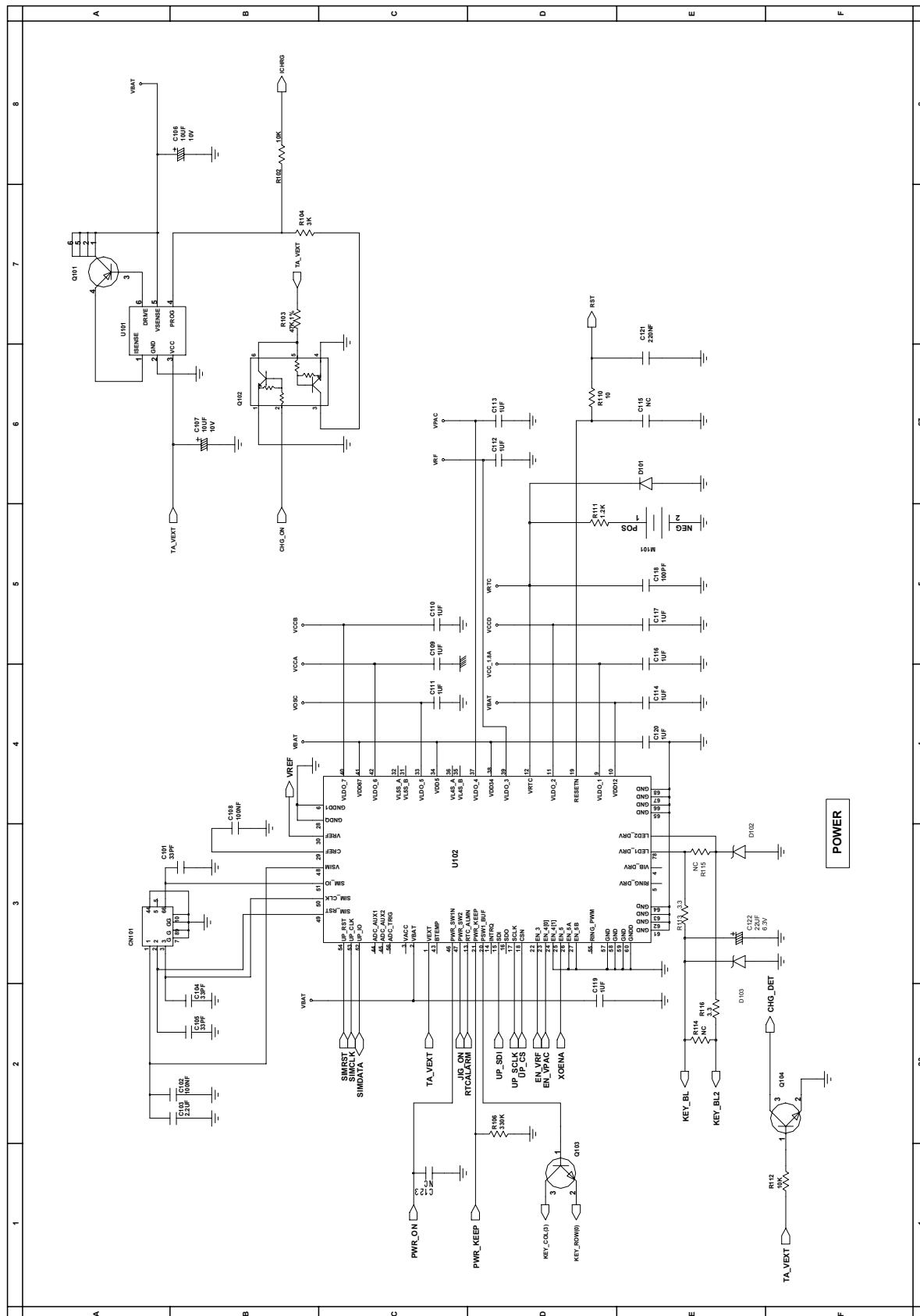
REF LEV. : 10dBm

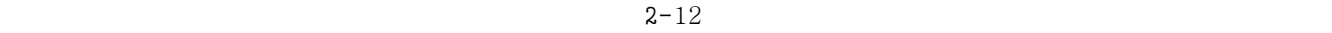
ATT. : 20dB

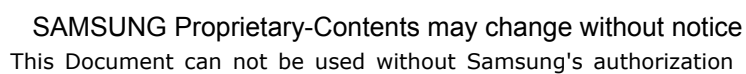
5. DCS/PCS TX

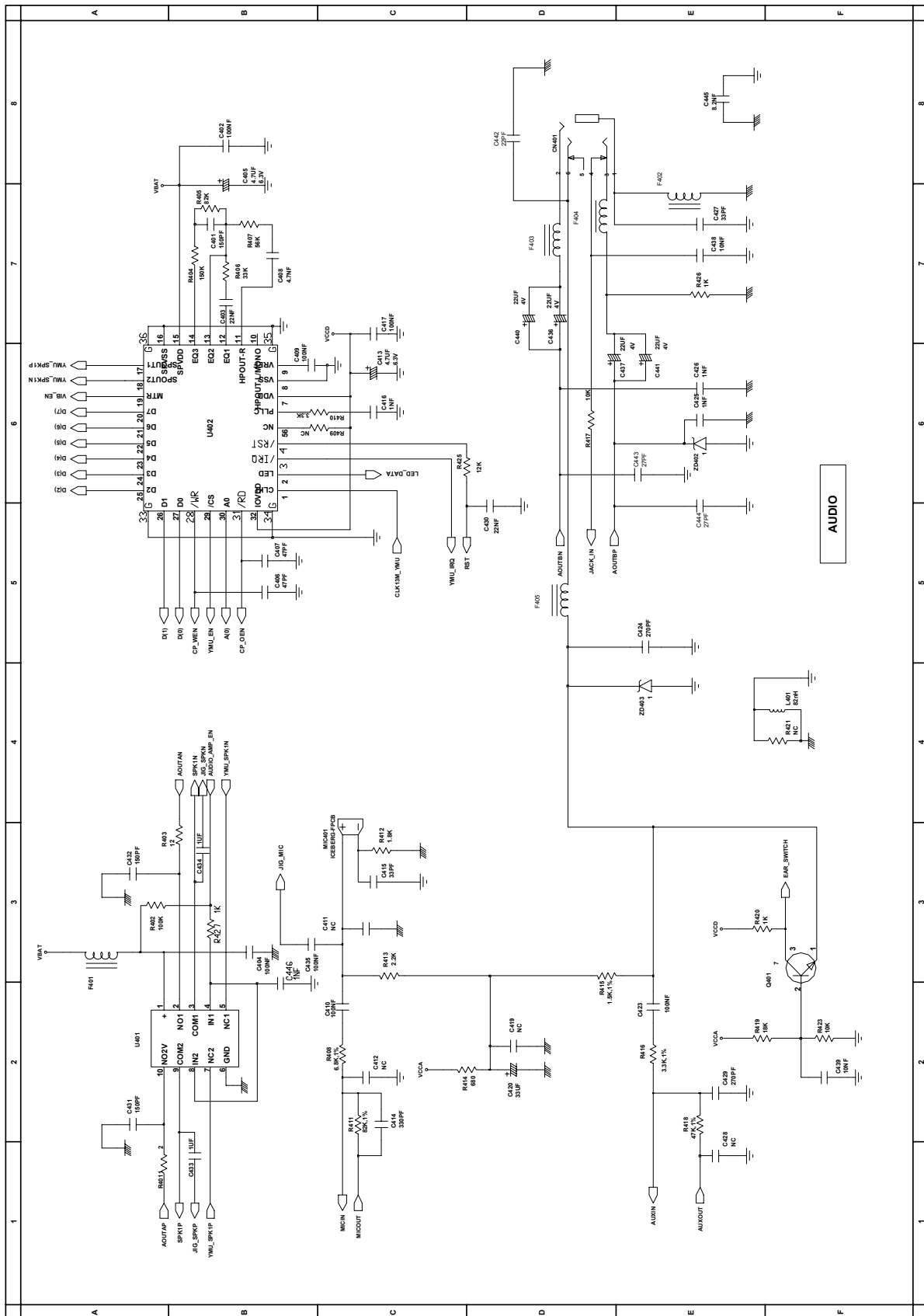


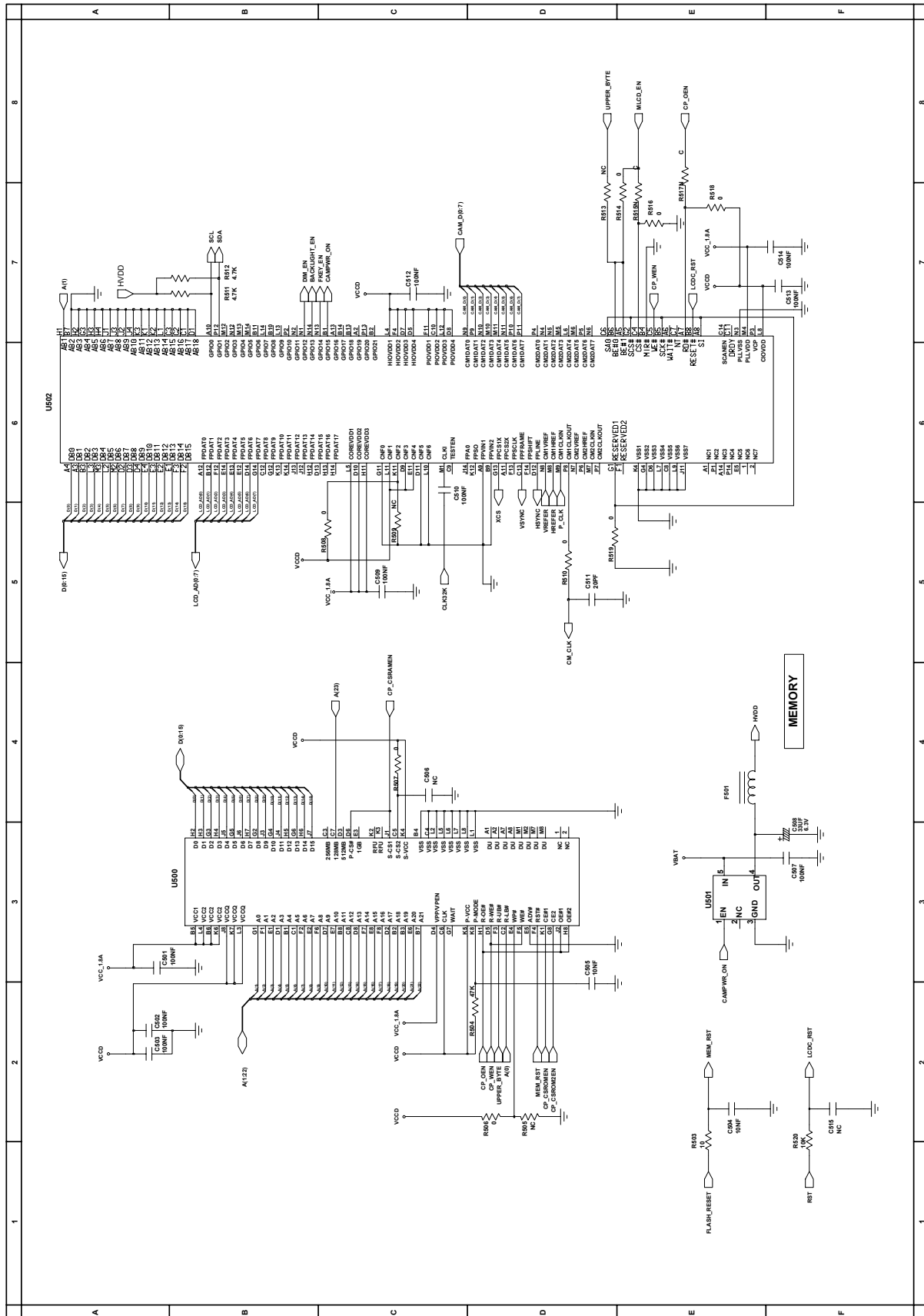
CONTINUOUS TX ON CONDITION
 CH : 698CH(DCS),660CH(PCS)
 TX POWER CODE: 350 CODE Aplied
 RBW : 100KHz
 VBW : 100KHz
 SPAN : 10MHz
 REF LEV. : 10dBm
 ATT. : 20dB

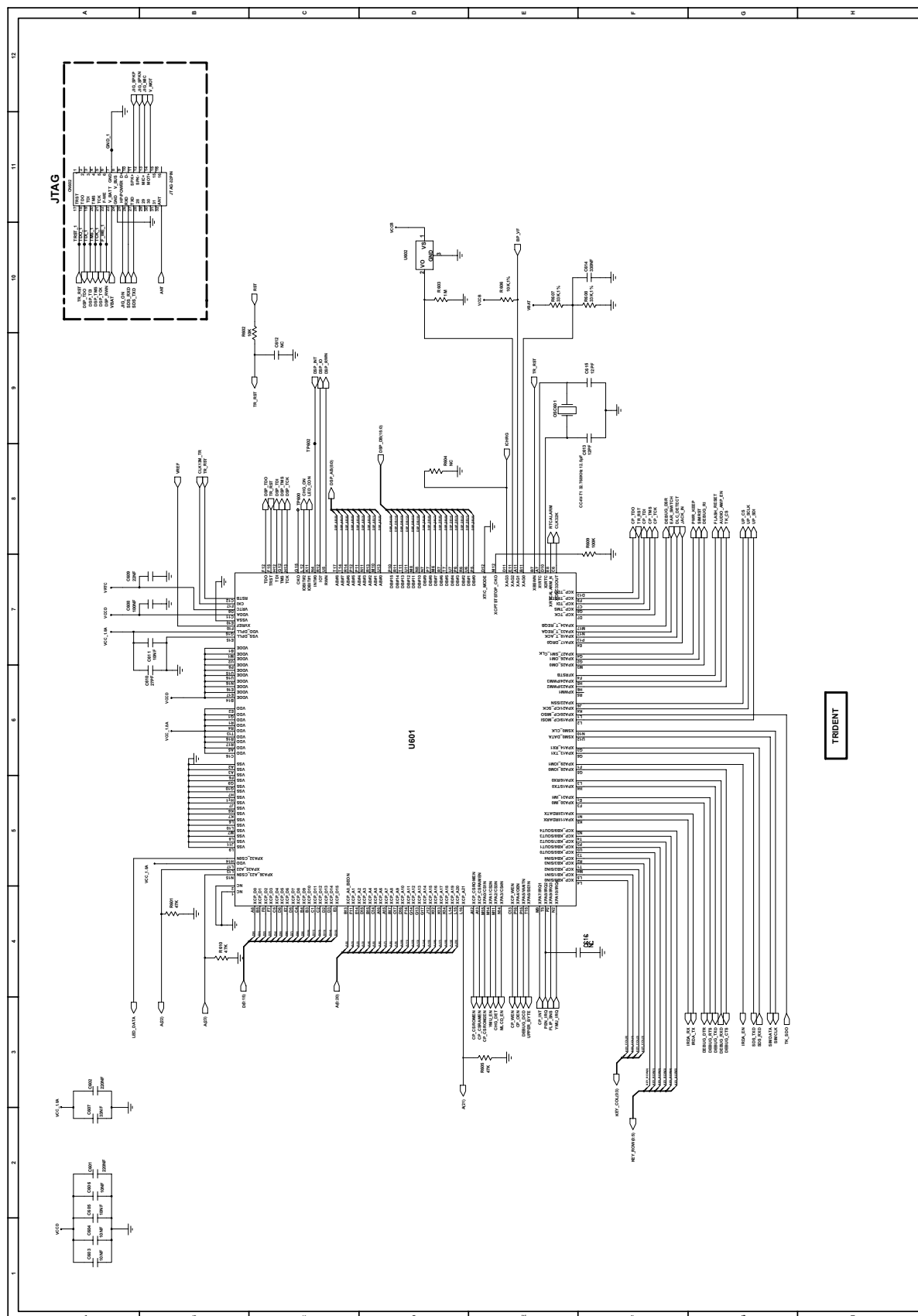


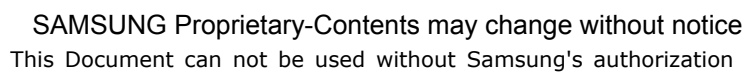


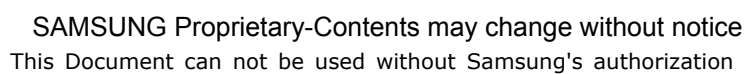


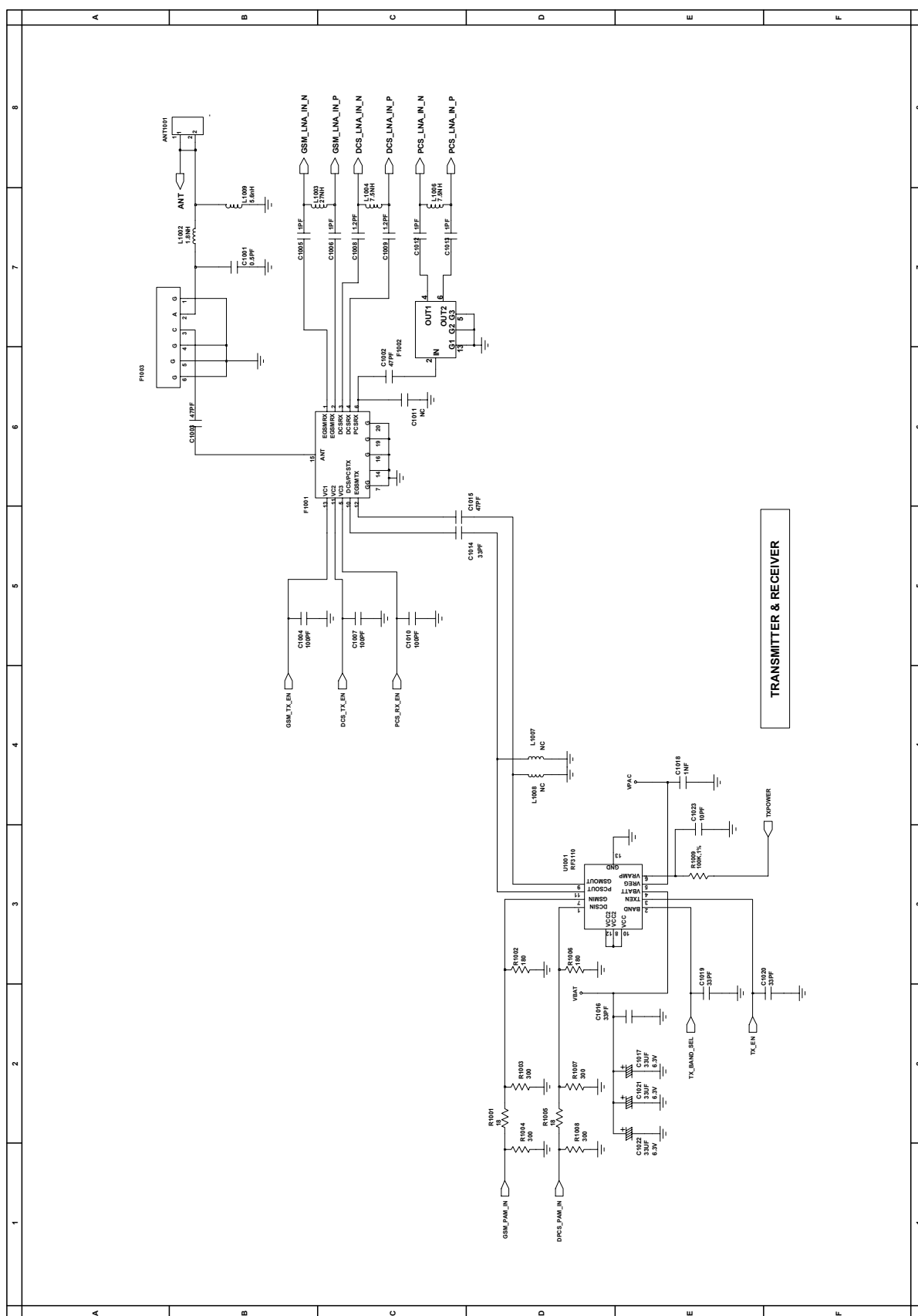






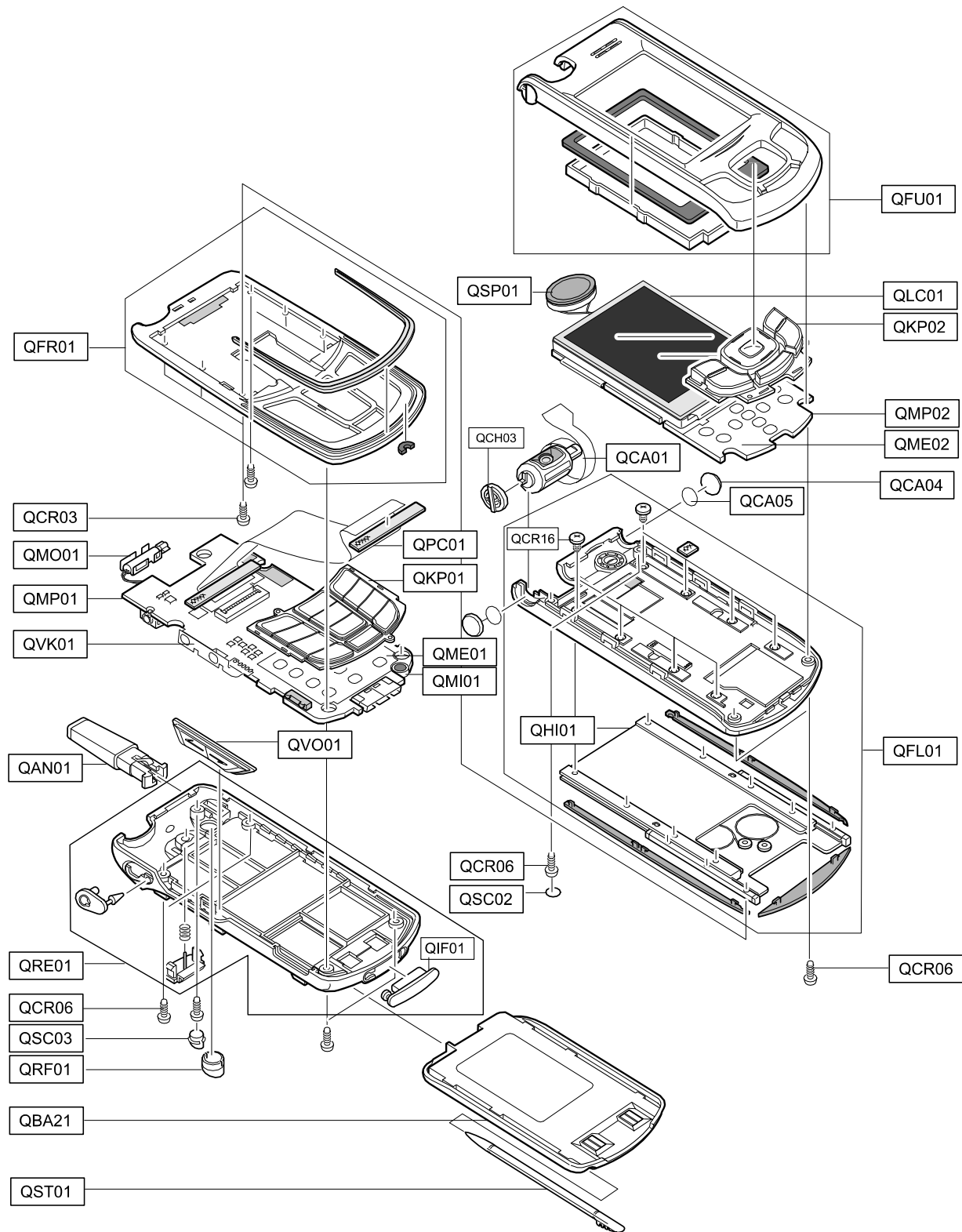






3. SGH-D428 Exploded View and its Parts list

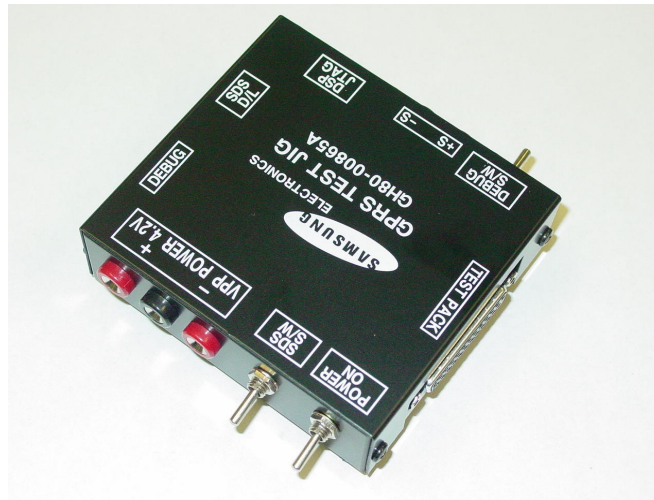
1. Cellular phone Exploded View



2. Cellular phone Parts list

Location NO.		Description	SEC CODE	Remark
QCR06		SCREW	6001-001155	
QBA21		BATTERY	GH43-01391A	
QRF01		RF COVER	GH72-12560A	
QSC03		SCREW HOLD COVER	GH73-03392A	
QVO01		VOLKEY ASSY	GH75-04340A	
QST01		STYLUS PEN	GH75-04341A	
QMP01		PBA MAIN	GH82-00847A	Hong Kong
QMP01		PBA MAIN	GH92-01835A	China
QMI01		MICROPHONE ASSY	GH30-00078A	
QVK01		UNIT SIDE KEY FPCB	GH59-00948A	
QME01		UNIT-METAL DOME	GH59-01453A	
QSP01		SPEAKER	3001-001560	
QCR06		SCREW	6001-001155	
QCR03		SCREW	6001-001811	
QLC01		LCD	GH07-00565A	
QMO01		MOTOR DC	GH31-00052A	
QPC01		PCB 55PIN FPCB	GH41-00629A	
QCA01		UNIT CAMERA	GH59-01465A	
QCA04		SIDE DECO	GH71-04444A	
QSC02		HINGE SCREW CAP	GH74-03847A	
QCA05		SIDE DECO COVER	GH74-11770A	
QCH03		CAMERA HINGE	GH75-03936A	
QFU01		SLIDER UPPER ASSY	GH75-04336A	
QFR01		FRONT COVER ASSY	GH75-04338A	
QKP01		KEYPAD MAIN	GH75-04342A	
QKP02		MENU KEY ASSY	GH75-04343A	
QFL01		S/LOWER ASSY	GH75-04626A	
	QCR16	SCREW	6001-001823	
	QHI01	HINGE ASSY	GH75-04143A	
QMP02		PBA LCD	GH92-01892A	
QME02		UNIT METAL DOME	GH59-01449A	
QAN01		ANTENNA	GH42-00428A	
QRE01		REAR COVER	GH75-04339A	
	QIF01	IF COVER	GH72-12562A	

3. Test Jig (GH80-00865A)



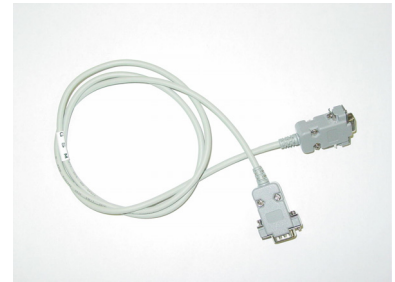
3-1. RF Test Cable (GH39-00090A)



3-2. Test Cable (GH39-00127A)



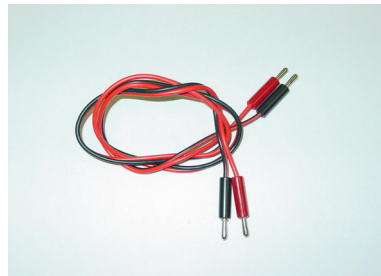
3-3. Serial Cable



3-4. Power Supply Cable



3-5. DATA CABLE (GH39-00201C)



3-6. TA (GH44-00483A):China



3-7. TA (GH44-00770A):Hong Kong



4. SGH-D428 MAIN Electrical Parts List

1. Main Parts List

SEC CODE	Design LOC
0403-001387	ZD305
0403-001427	ZD304
0404-001172	D101, D201
0406-001084	ZD301, D302, D303
0406-001150	D102, D103, ZD402, ZD403
0406-001190	ZD201, ZD202, ZD701
0501-000225	Q401
0502-001201	Q101
0504-001042	U702, U703, U704
0504-001113	Q103, Q104
0506-001052	Q102
0601-001790	LED201, LED202, LED203, LED204
0601-001790	LED206, LED207, LED208, LED209
0601-001790	LED211, LED212
0604-001261	LED217
0904-001784	U502
1001-001183	U401
1009-001010	U202
1109-001281	U500
1201-001889	U1001
1203-002127	U101
1203-002542	U203
1203-002851	U501
1203-002902	U102
1204-001984	U701
1204-002138	U402
1205-002185	U901
1205-002268	U902
1209-001219	U602
1209-001434	U903
1405-001019	V301, V302
1405-001082	V207, V210, V211, V212, V215
2007-000138	R203, R804
2007-000140	R304, R305, R306, R309, R310
2007-000140	R312, R313, R318, R319, R320
2007-000140	R321, R322, R420, R426, R427

SEC CODE	Design LOC
2007-000141	R413
2007-000143	R511, R512
2007-000148	R423, R520, R602, R102, R112, R417
2007-000149	R425
2007-000157	R216, R217, R301, R302, R303
2007-000157	R504, R601, R605, R610
2007-000159	R407
2007-000161	R405
2007-000162	R220, R221, R222, R233, R402
2007-000162	R609, R701, R704, R705
2007-000164	R404
2007-000170	R603
2007-000171	R201, R223, R224, R225, R506
2007-000171	R507, R508, R510, R514, R516
2007-000171	R518, R519
2007-000172	R110, R503, R799, R801
2007-000173	R211, R212
2007-000174	R226
2007-000758	R106
2007-000775	R406
2007-001119	R414
2007-001217	R202
2007-001288	R1001, R1005
2007-001295	R207
2007-001301	R214, R232
2007-001307	R1002, R1006
2007-001319	R111, R803
2007-001320	R802
2007-001323	R104
2007-001325	R410
2007-001333	R419
2007-003001	R401, R403
2007-007008	R1003, R1004, R1007, R1008
2007-007009	R204
2007-007107	R1009
2007-007139	R103, R418

SEC CODE	Design LOC
2007-007142	R606
2007-007197	R113,R116,R206,R208,R209
2007-007200	R702,R703
2007-007308	R607,R608
2007-007313	R408
2007-007316	R416
2007-007528	R415
2007-007590	R411
2007-008045	R228
2007-008549	R412
2007-008806	R229,R230
2007-008806	R231
2203-000233	C1004,C1007,C1010,C118
2203-000233	C908,C910
2203-000254	C438,C439,C504,C505,C603
2203-000254	C604,C605,C606,C611,C707
2203-000254	C710,C711,C712,C801,C803
2203-000254	C804,C805,C806,C807
2203-000278	C1023,C241,C244
2203-000330	C613,C615
2203-000359	C401,C431,C432
2203-000438	C1018,C416,C425,C426,C446
2203-000438	C802
2203-000550	C511
2203-000585	C242
2203-000628	C442
2203-000654	C424,C429
2203-000679	C443,C444
2203-000679	C610
2203-000812	C101,C1014,C1016,C1019
2203-000812	C1020,C104,C105,C305
2203-000812	C427,C906
2203-000885	C408
2203-000995	C1002,C1003,C1015,C243
2203-000995	C406,C407,C904
2203-001210	C445
2203-001405	C403,C430,C609,C905,907

SEC CODE	Design LOC
2203-001405	C909,C911,C912,C913,C914
2203-001405	C915
2203-001598	C103
2203-002443	C414
2203-002668	C1001,C251,C252
2203-005061	C102,C239,C240,C255,C301
2203-005061	C302,C303,C304,C402,C404
2203-005061	C409,C417,C501,C502,C503
2203-005061	C507,C509,C510,C512,C513
2203-005061	C514,C608,C706
2203-005065	C705
2203-005148	C410,C423
2203-005234	C1008,C1009
2203-005288	C1005,C1006,C1012,C1013
2203-005480	C607,C708,C709
2203-005482	C108,C435
2203-005496	C121,C601,C602,C704
2203-005509	C238,C614,C799
2203-005682	C415
2203-006053	C109,C110,C111,C112,C113
2203-006053	C114,C116,C117,C119,C120
2203-006093	C237,C433,C434
2203-006556	C247,C248,C249,C250
2404-001086	C405,C413
2404-001105	C202,C203
2404-001225	C254
2404-001268	C106,C107,C306
2404-001305	C1017,C1021,C1022,C420
2404-001305	C508
2404-001375	C436,C437,C440,C441
2703-001729	L1002
2703-001751	L901
2703-002281	L1009
2703-002309	L401
2703-002484	L1004,L1006
2703-002485	L1003
2801-003747	OSC601

SEC CODE	Design LOC
2809-001264	OSC801
2901-001260	F201,F202,F203,F204,F208
2904-001410	F1002
2909-001191	F1001
3301-001342	F209,F401,F402,F403,F404
3301-001342	F405,F501
3705-001255	F1003
3708-001982	CN201
3709-001187	CN101
3710-001105	CN205
3710-001673	CN300
3722-001880	CN401
4302-001130	M101
GH09-00025A	U601
GH71-01052A	ANT1001

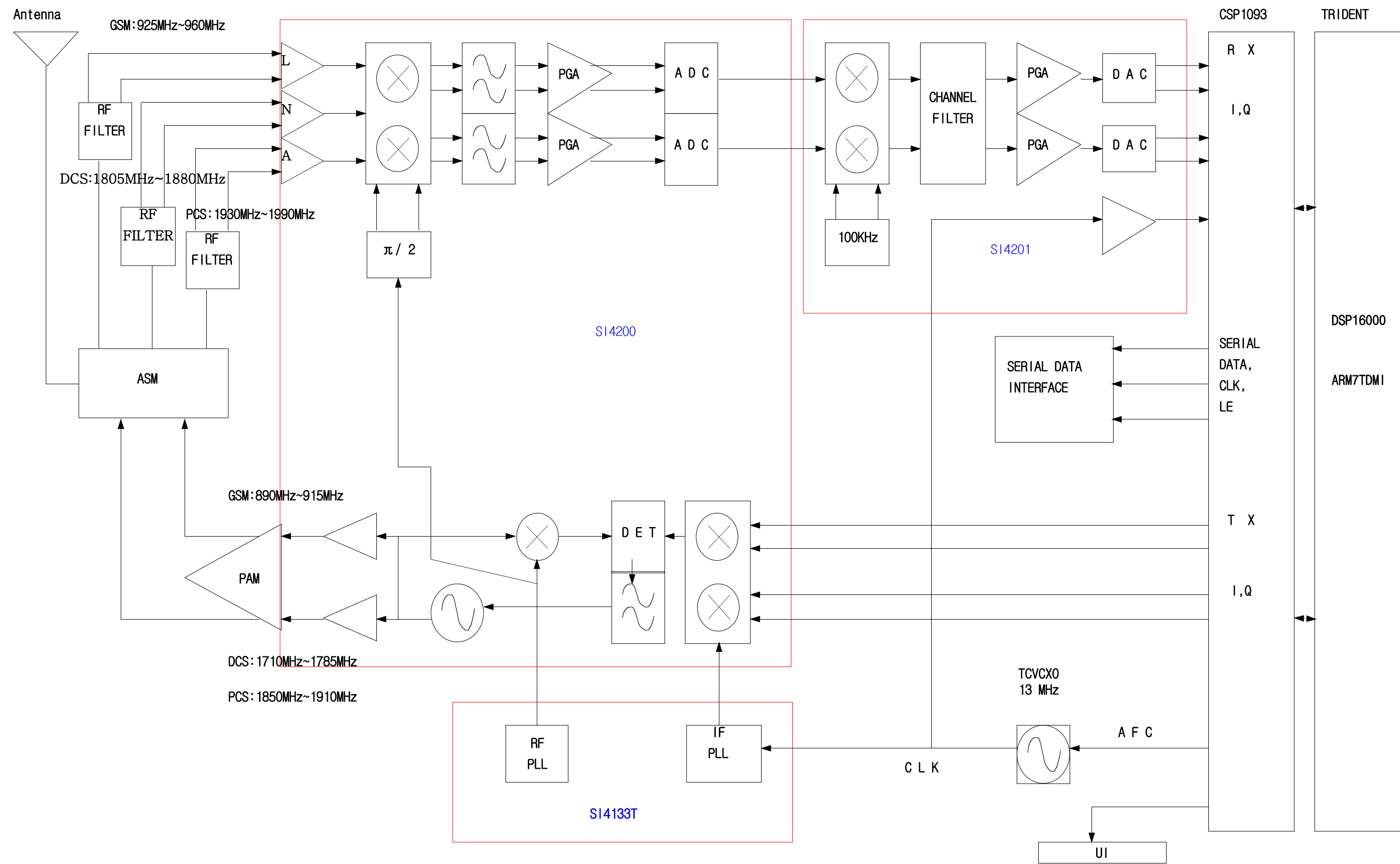
2.LCD Parts List

SEC CODE	Design LOC
0403-001446	ZD102
0404-001110	ZD114,ZD117
0404-001172	D100,ZD101
0406-001150	ZD105
0406-001190	ZD103,ZD104,ZD107,ZD108
0406-001190	ZD109,ZD111,ZD115,ZD116
0406-001190	ZD118
0406-001197	ZD110,ZD112
0504-001088	Q102
0504-001113	Q104,Q105,Q106,Q107,Q108
0504-001113	Q109
0505-001518	Q101
0601-001966	LED105,LED106,LED107,LED108
0801-002896	U106
1003-001760	U102
1203-002633	U101
1203-002690	U103
1405-001082	V107,V108
2007-000138	R128,R131,R152,R153,R175
2007-000140	R124,R165,R176
2007-000151	R134,R135,R148
2007-000157	R118
2007-000162	R101,R102,R140
2007-000171	F102,R137,R139,R144,R147
2007-000171	R174
2007-000775	R119,R138
2007-001292	R104
2007-001306	R127,R130,R151,R164
2007-007192	R103
2007-007195	R129,R132,R149,R150
2007-008045	R154,R155,R156,R157,R158
2007-008045	R159
2007-008806	R166,R167,R168,R169,R170
2007-008806	R171,R172,R173
2203-000278	C119,C126,C129,C130,C131
2203-000438	C114

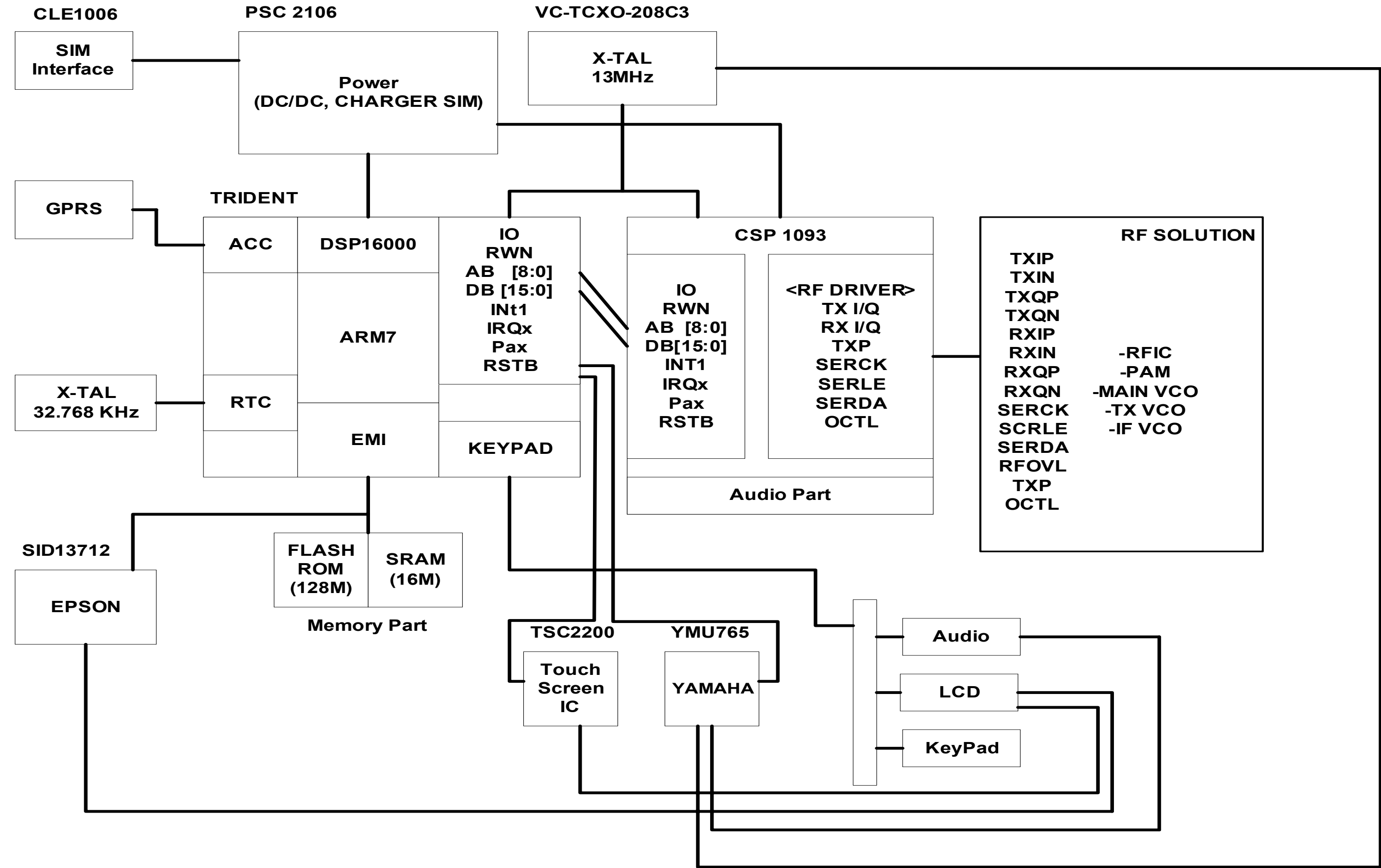
SEC CODE	Design LOC
2203-000854	C138
2203-000995	C111,C112,C113,C121,C122
2203-000995	C123
2203-001598	C100
2203-002443	C101
2203-005061	C128,C137
2203-005482	C104,C116,C120
2203-005496	C107
2203-006053	C115
2203-006093	C108,C124
2703-002339	L101
2901-001260	F104,F108,F109
3301-001342	F101,F106,F107,U107
3708-001852	CN101
3708-001949	CN105
3708-001982	CN102

5. SGH-D428 Block Diagrams

1. RF Solution Block Diagram

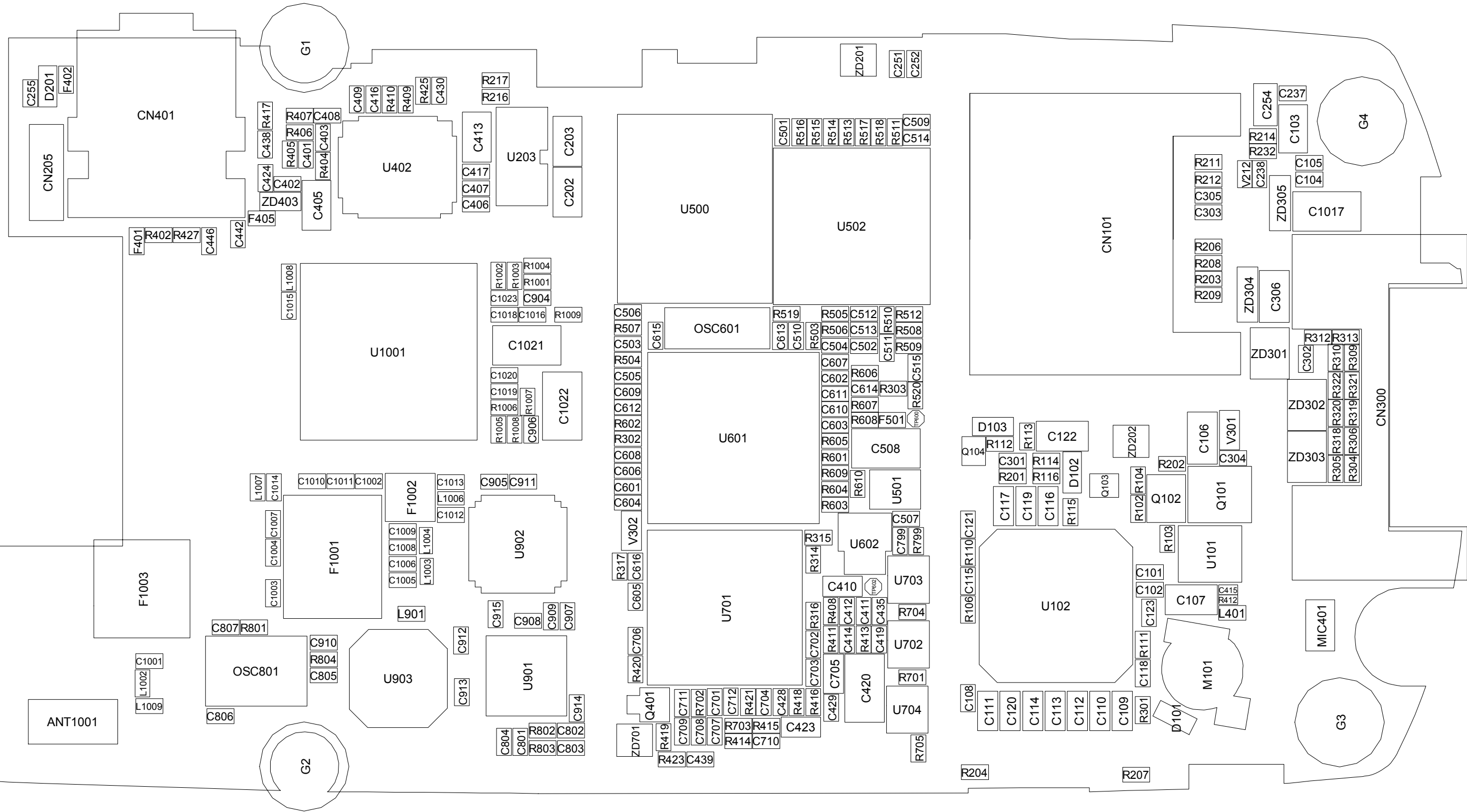


2. Base Band Solution Block Diagram



6. SGH-D428 PCB Diagrams

1.Main



2. LCD
※

