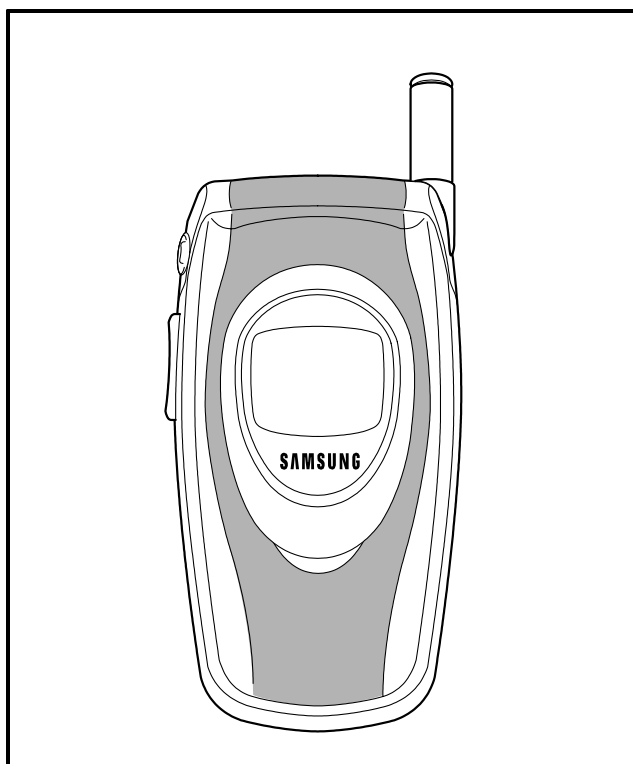


SAMSUNG

GSM TELEPHONE SGH-E400

SERVICE *Manual*

GSM TELEPHONE



CONTENTS

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

1. SGH-E400 Specification

1. GSM General Specification

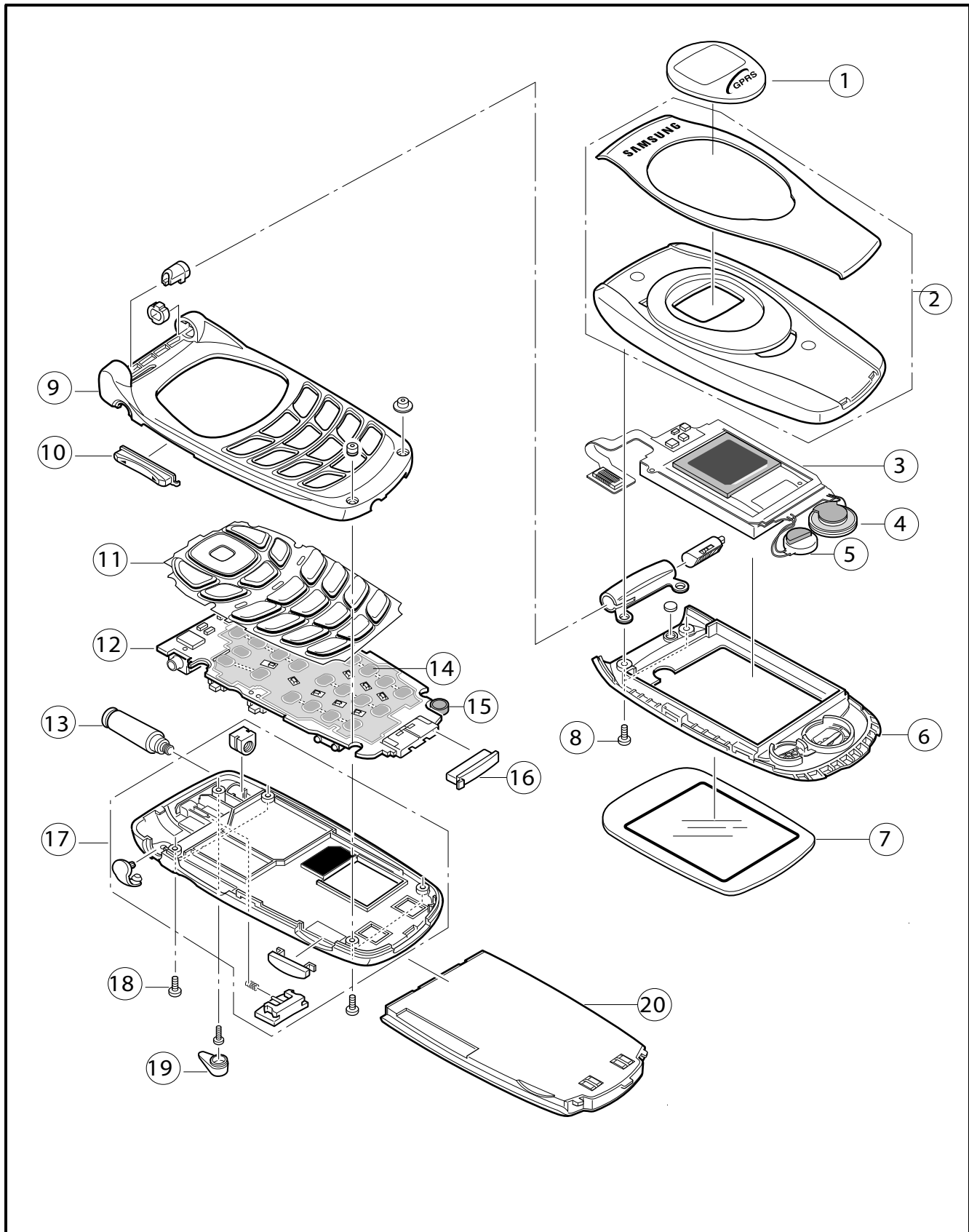
	GSM900 Phase 1	EGSM 900 Phase 2	DCS1800 Phase 1	PCS1900
Freq. Band[MHz] Uplink/Downlink	890~915 935~960	880~915 925~960	1710~1785 1805~1880	1850~1910 1930~1990
ARFCN range	1~124	0~124 & 975~1023	512~885	512~810
Tx/Rx spacing	45MHz	45MHz	95MHz	80MHz
Mod. Bit rate/ Bit Period	270.833kbps 3.692us	270.833kbps 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	TX Power control level	DCS1800	TX Power control level	PCS1900
5	33±2 dBm	0	30±3 dBm	0	30±3 dBm
6	31±2 dBm	1	28±3 dBm	1	28±3 dBm
7	29±2 dBm	2	26±3 dBm	2	26±3 dBm
8	27±2 dBm	3	24±3 dBm	3	24±3 dBm
9	25±2 dBm	4	22±3 dBm	4	22±3 dBm
10	23±2 dBm	5	20±3 dBm	5	20±3 dBm
11	21±2 dBm	6	18±3 dBm	6	18±3 dBm
12	19±2 dBm	7	16±3 dBm	7	16±3 dBm
13	17±2 dBm	8	14±3 dBm	8	14±3 dBm
14	15±2 dBm	9	12±4 dBm	9	12±4 dBm
15	13±2 dBm	10	10±4 dBm	10	10±4 dBm
16	11±3 dBm	11	8±4dBm	11	8±4dBm
17	9±3dBm	12	6±4 dBm	12	6±4 dBm
18	7±3 dBm	13	4±4 dBm	13	4±4 dBm
19	5±3 dBm	14	2±5 dBm	14	2±5 dBm
		15	0±5 dBm	15	0±5 dBm

2. SGH-E400 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	GH72-07016A	
2	FOLDER UPPER	GH75-02792D	
3	LCD	GH07-00303A	
4	SPEAKER	3001-001402	
5	MOTOR	GH31-00051A	
6	FOLDER LOWER	GH75-02791A	
7	MAIN WINDOW LCD	GH72-07015A	
8	SCREW	6001-001478	
9	FRONT COVER	GH75-02790E	
10	VOLUME KEY	GH75-02795A	
11	KEYPAD	GH75-02794A	
12	MAIN PBA	GH92-01465A	
13	ANTENNA	GH42-00274A	
14	DOME SHEET	GH59-00724A	
15	MIC	GH30-00047A	
16	CONNECTOR COVER	GH72-07032A	
17	REAR COVER	GH75-02796A	
18	SCREW	6001-001478	
19	RF COVER	GH73-01819A	
20	BATTERY	GH43-00826A	900MAH
		GH43-00827A	700MAH

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)



3-6. TA (GH44-00184A)



3. SGH-E400 MAIN Electrical Parts List

SEC Code	Design LOC	SEC Code	Design LOC	SEC Code	Design LOC
GH71-00734A	ANT1	2203-005061	C125	2404-001105	C462
2203-002668	C1003	2404-001105	C126	2203-000386	C464
2203-002677	C1007	2404-001268	C127	2203-000679	C465
2203-001598	C101	2404-001105	C128	2203-000278	C490
2203-002677	C1011	2203-000995	C129	2203-000278	C492
2203-005552	C1012	2203-006093	C130	2404-001151	C494
2203-002677	C1014	2404-001268	C131	2203-000278	C495
2203-005234	C1015	2203-005480	C200	2203-005480	C504
2203-000812	C1016	2203-005061	C203	2203-005061	C512
2203-002677	C1017	2203-005065	C204	2203-005061	C513
2203-005234	C1019	2203-005509	C205	2203-005061	C517
2203-000654	C1026	2203-000233	C207	2203-005061	C518
2203-000438	C1027	2404-001087	C208	2203-005061	C519
2203-000812	C103	2203-005061	C302	2203-000254	C600
2203-000254	C1038	2203-005509	C400	2203-005496	C601
2203-005061	C104	2203-000654	C401	2203-005496	C602
2404-001134	C1043	2203-005061	C402	2203-000254	C603
2404-001087	C1044	2203-001405	C403	2203-000254	C604
2404-001087	C1045	2404-001086	C404	2203-000254	C605
2203-001598	C105	2203-005061	C408	2203-000254	C606
2203-000812	C106	2404-001151	C409	2203-000254	C607
2203-000812	C107	2404-001268	C410	2203-000254	C608
2203-005061	C108	2203-000438	C411	2203-000254	C609
2203-005481	C109	2203-005061	C412	2203-000254	C610
2203-001598	C111	2203-005065	C414	2203-001405	C611
2203-001598	C112	2203-000233	C415	2203-005061	C612
2404-001268	C113	2203-000278	C416	2203-005061	C613
2203-001598	C114	2203-005056	C417	2203-000233	C614
2203-001598	C115	2203-000278	C450	2203-000628	C615
2203-001598	C116	2203-000812	C451	2203-000628	C616
2203-001598	C117	2203-000278	C452	2203-000679	C617
2203-000233	C118	2404-001105	C453	2203-005482	C618
2203-005061	C119	2203-000679	C457	2203-000995	C619
2203-001598	C120	2203-002668	C458	2203-005496	C709
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2203-005061	C124	2203-000854	C461	2203-005061	C711

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2203-000254	C712
2203-000254	C713
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2203-000254	C718
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2203-000233	C721
2203-000233	C722
2203-000278	C800
2203-000438	C802
2203-000438	C803
2203-000254	C805
2203-000438	C806
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2203-000254	C808
2203-000254	C809
2203-001405	C903
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2203-001405	C908
2203-001405	C910
2203-000233	C911
2203-000278	C914
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2203-000233	C916
2203-000278	C917
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2203-000812	C923
2203-000233	C924
3709-001244	CN100
3705-001226	CN1001
3711-005078	CN200

SEC Code	Design LOC
3710-001816	CN302
3722-001715	CN401
1405-001018	D300
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2909-001191	F1002
2904-001410	F1005
2901-001193	F200
2901-001193	F201
2901-001193	F202
2901-001193	F203
2901-001193	F204
2703-001907	L1001
2703-002165	L1002
2703-002547	L1006
2703-001543	L1007
2203-005056	L1011
2703-001730	L1013
2703-001992	L1014
2703-001751	L1016
2703-002313	L400
3301-001105	L801
2703-001751	L900
0604-001261	LED200
0601-001547	LED201
0601-001547	LED202
0601-001547	LED203
0601-001547	LED204
0601-001547	LED205
0601-001547	LED206
0601-001547	LED207
0601-001547	LED208
0601-001547	LED209
0601-001547	LED210
0601-001547	LED211
0601-001547	LED212
0601-001547	LED213

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0601-001547	LED215
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0601-001547	LED217
0601-001547	LED218
4302-001130	M1
2801-004025	OSC601
2809-001260	OSC801
0504-001113	Q100
0502-001201	Q101
0504-000168	Q400
0504-000167	Q700
0504-000167	Q701
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2007-000758	R110
2007-000171	R111
2007-007139	R112
2007-001323	R113
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2007-000174	R231
2007-000174	R232
2007-001301	R233
2007-002970	R234
2007-000140	R303
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2007-000140	R307
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2007-000159	R421
2007-007529	R422
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2007-000171	R606
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2007-000170	R610
2007-007142	R611
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2007-000242	R801
2007-002797	R802
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02007-000138	R805
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2007-000171	R999
3404-001152	SW201
3404-001152	SW202
1203-002568	U100
1201-001889	U1001
1109-001273	U1003
0504-001042	U1004
1009-001010	U1009
1203-001720	U1017
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1203-002127	U102
0506-001052	U103
1204-002161	U401
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1209-001219	U602
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0504-001042	U701
0504-001042	U702
0504-001042	U703
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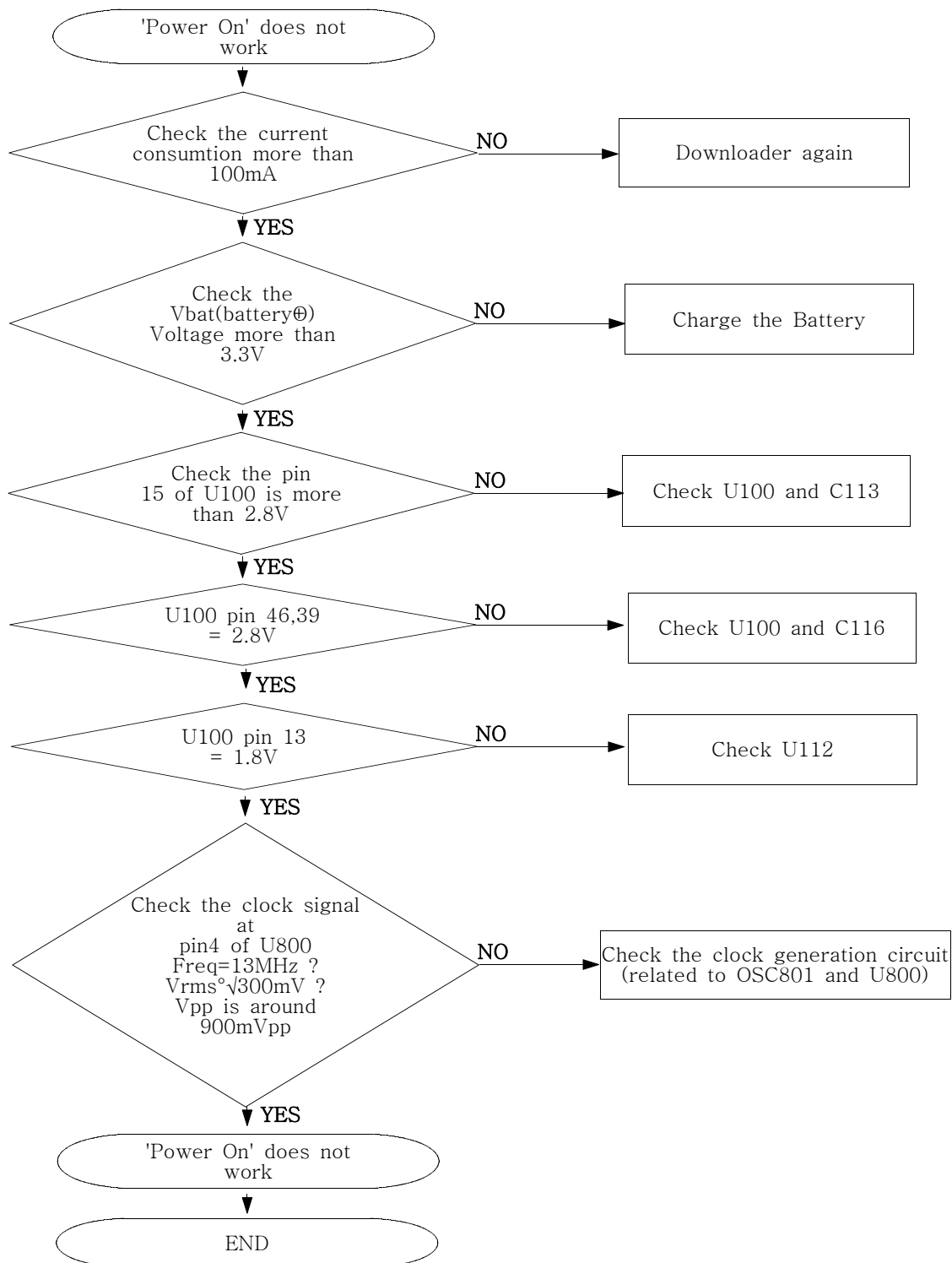
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GH74-05307A	
GH99-03311A	
6902-000295	
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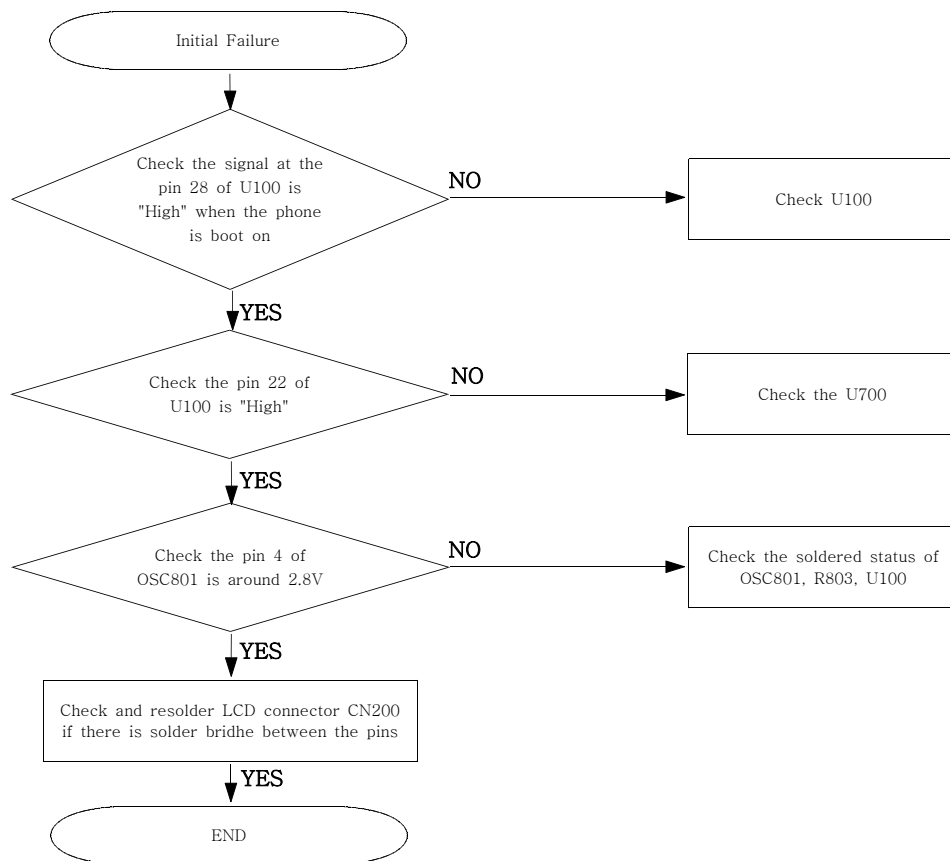
4. SGH-E400 Flow Chart of Troubleshooting and Circuit Diagrams

1. Baseband

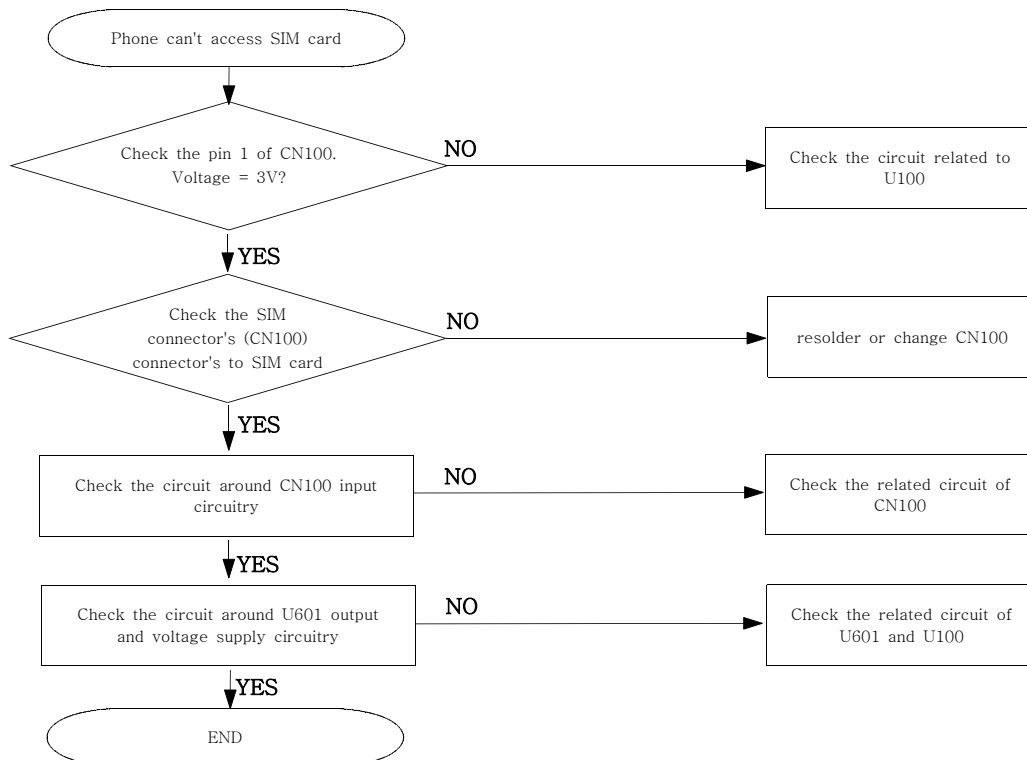
1. Power ON



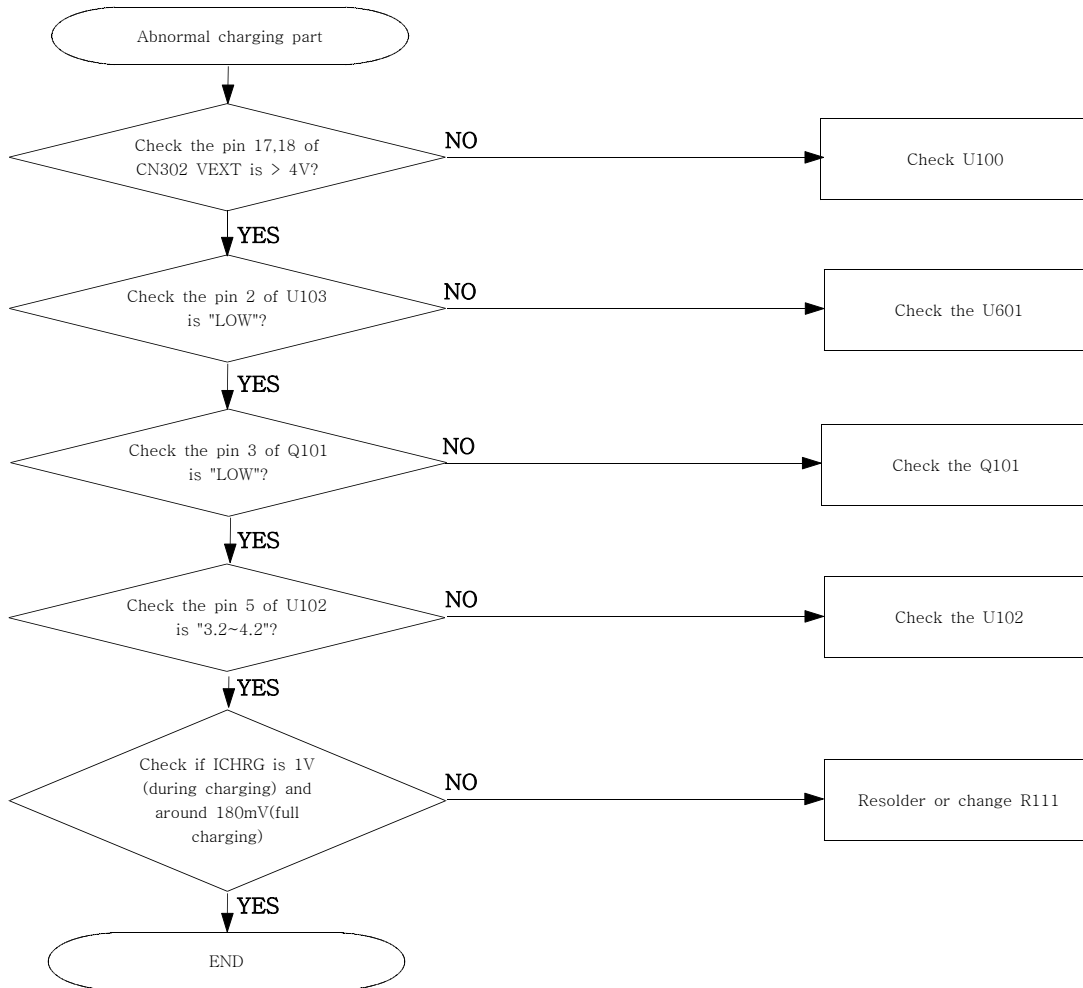
2. Initial

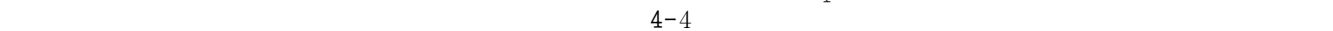


3. Sim Part

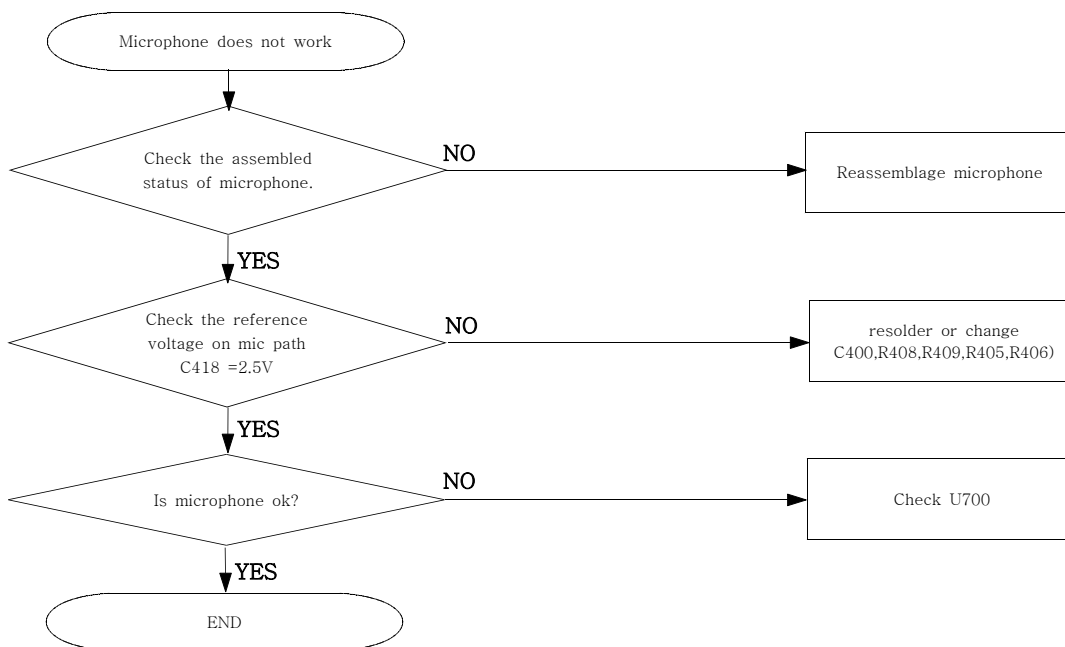


4. Charging Part

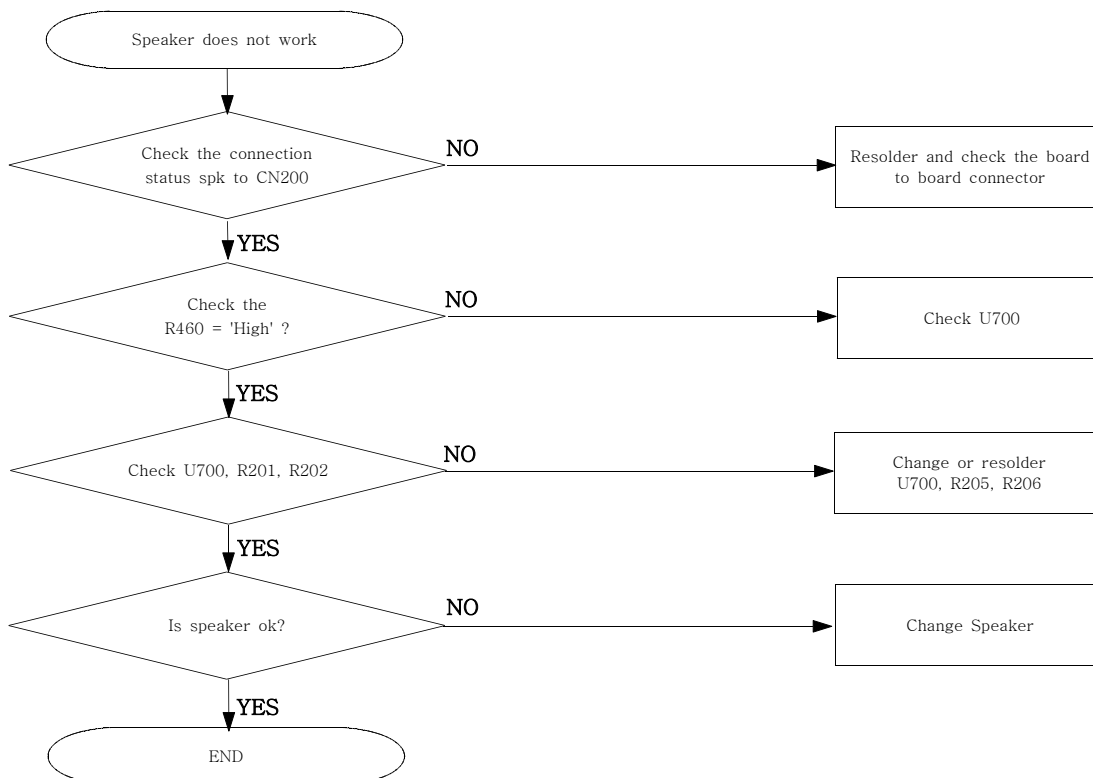


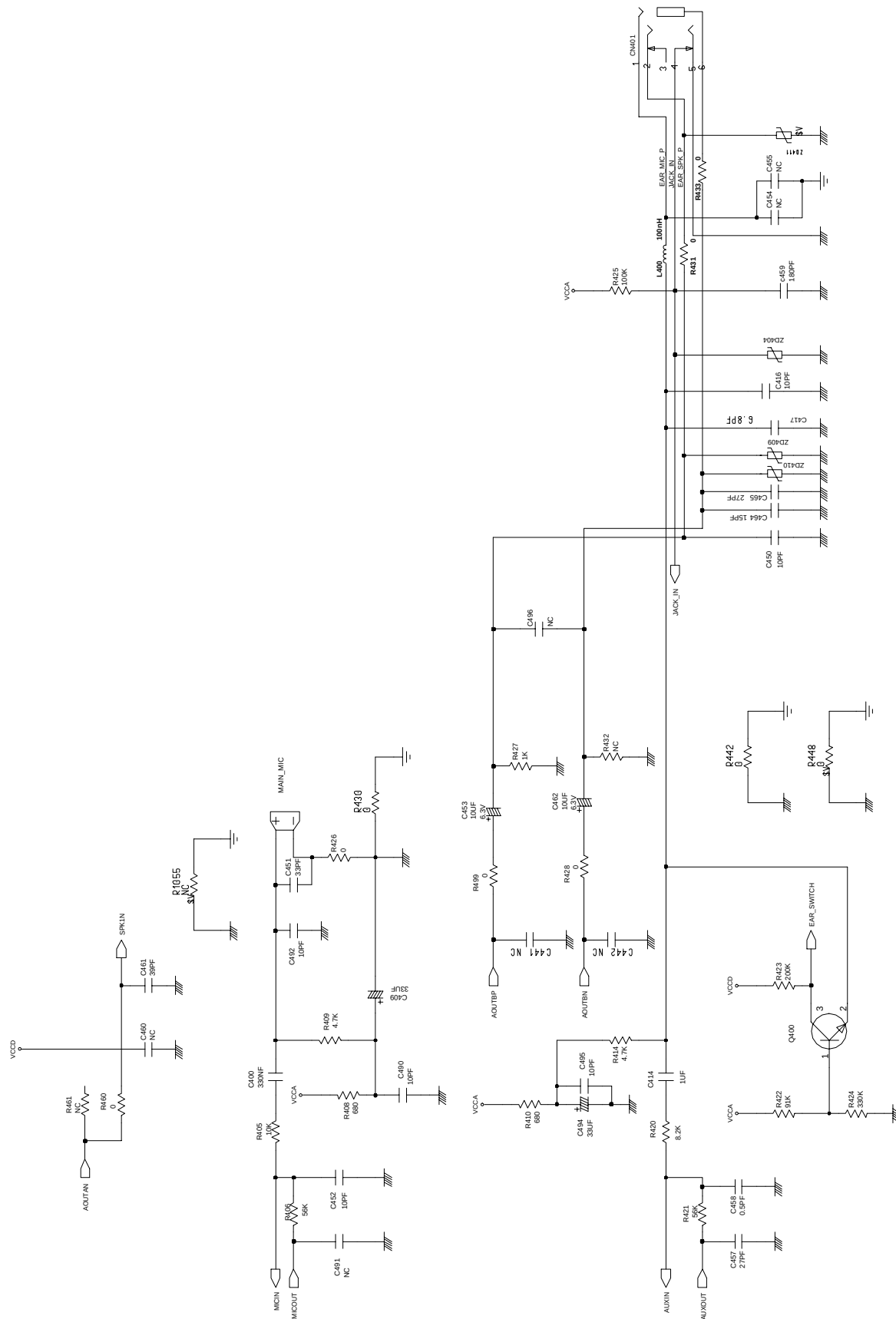


5. Microphone Part

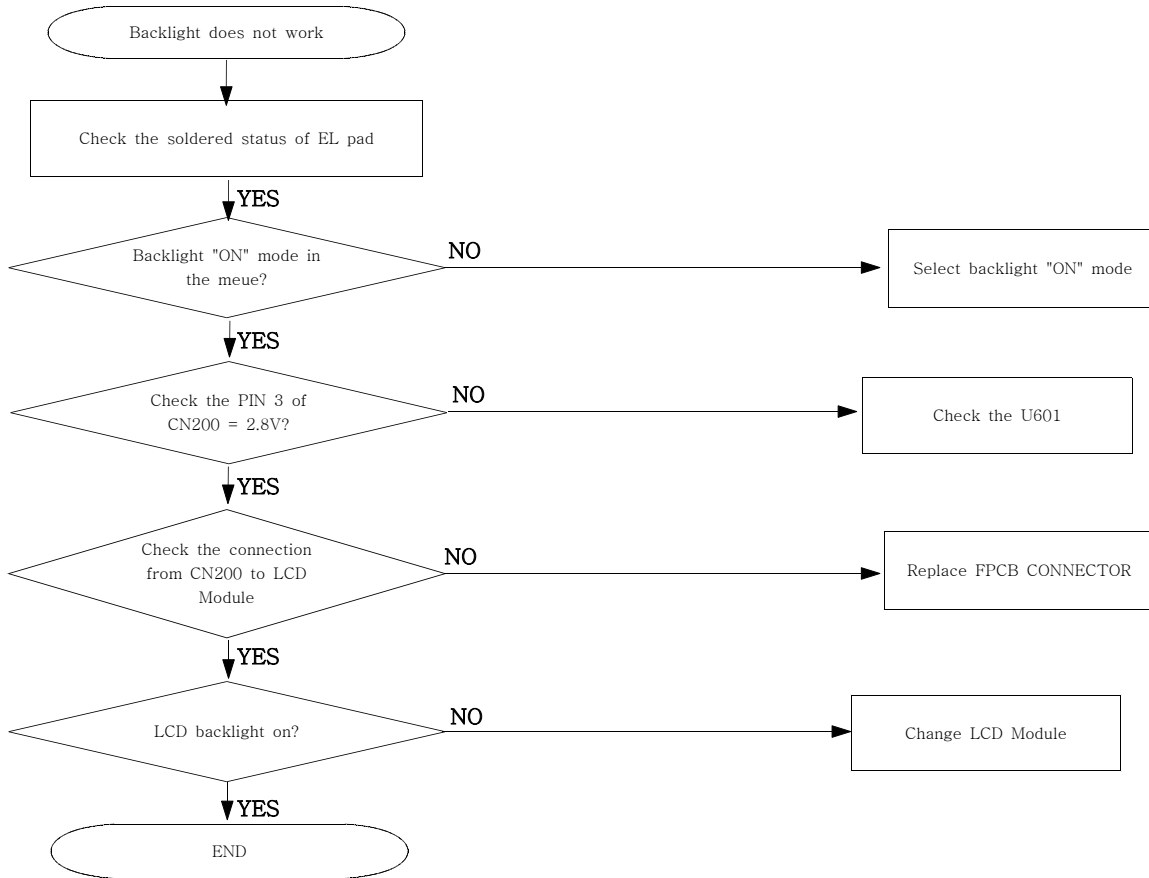


6. Speaker Part

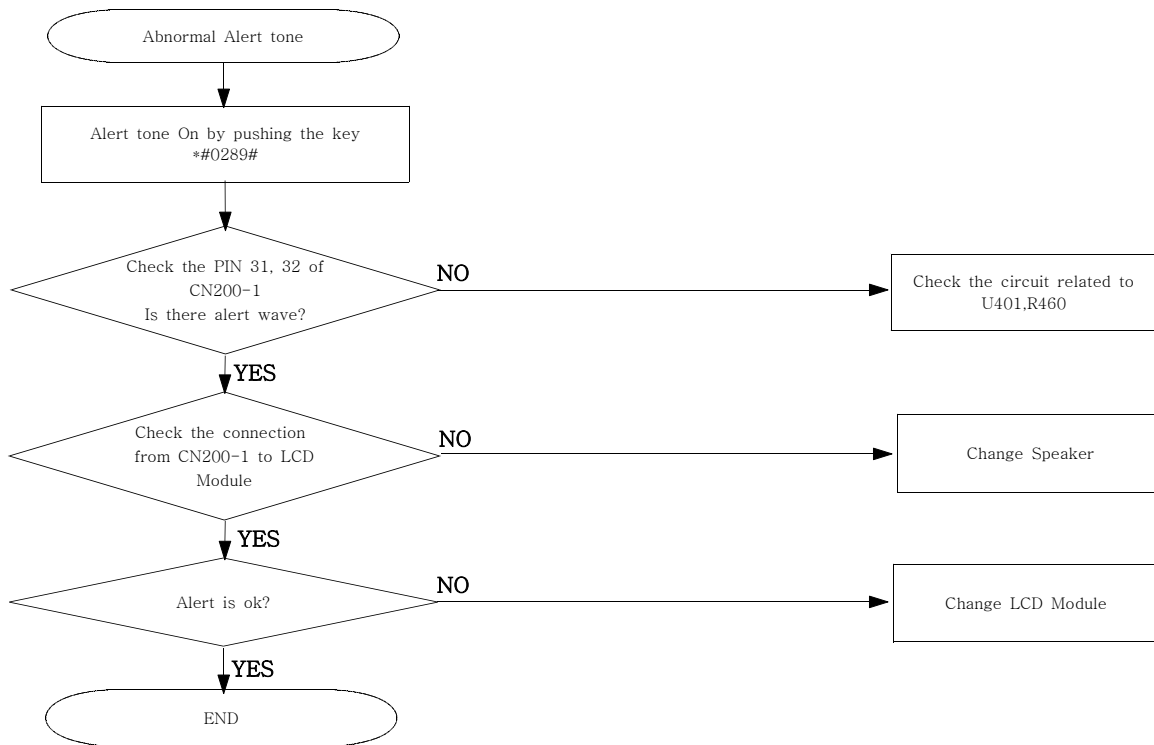


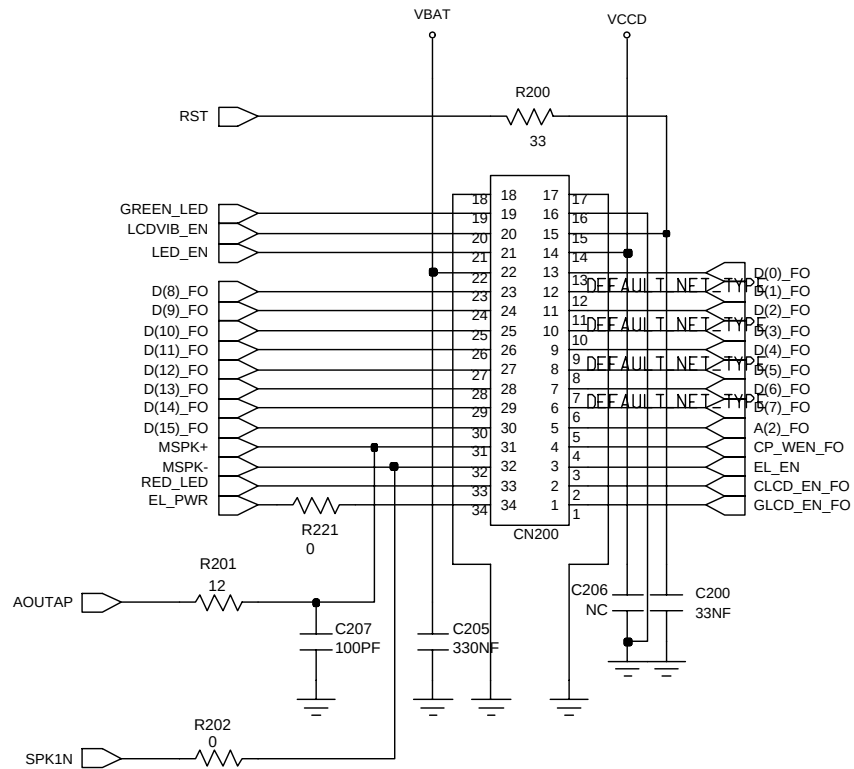


7. Back Light

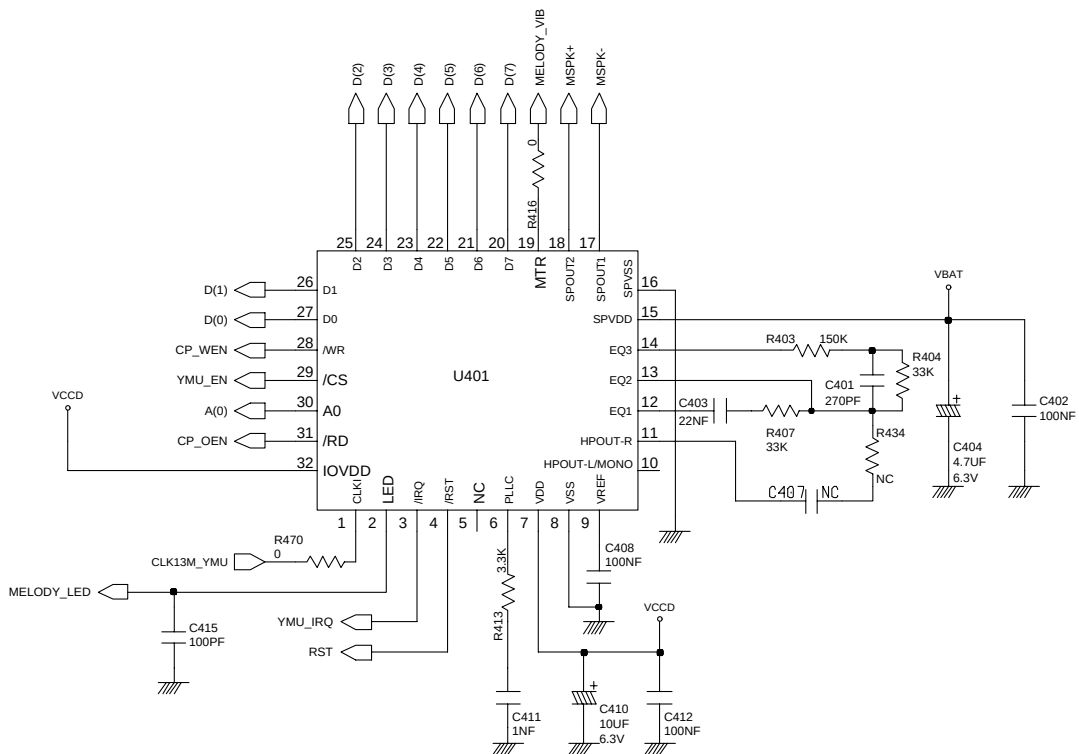


8.Alert Tone





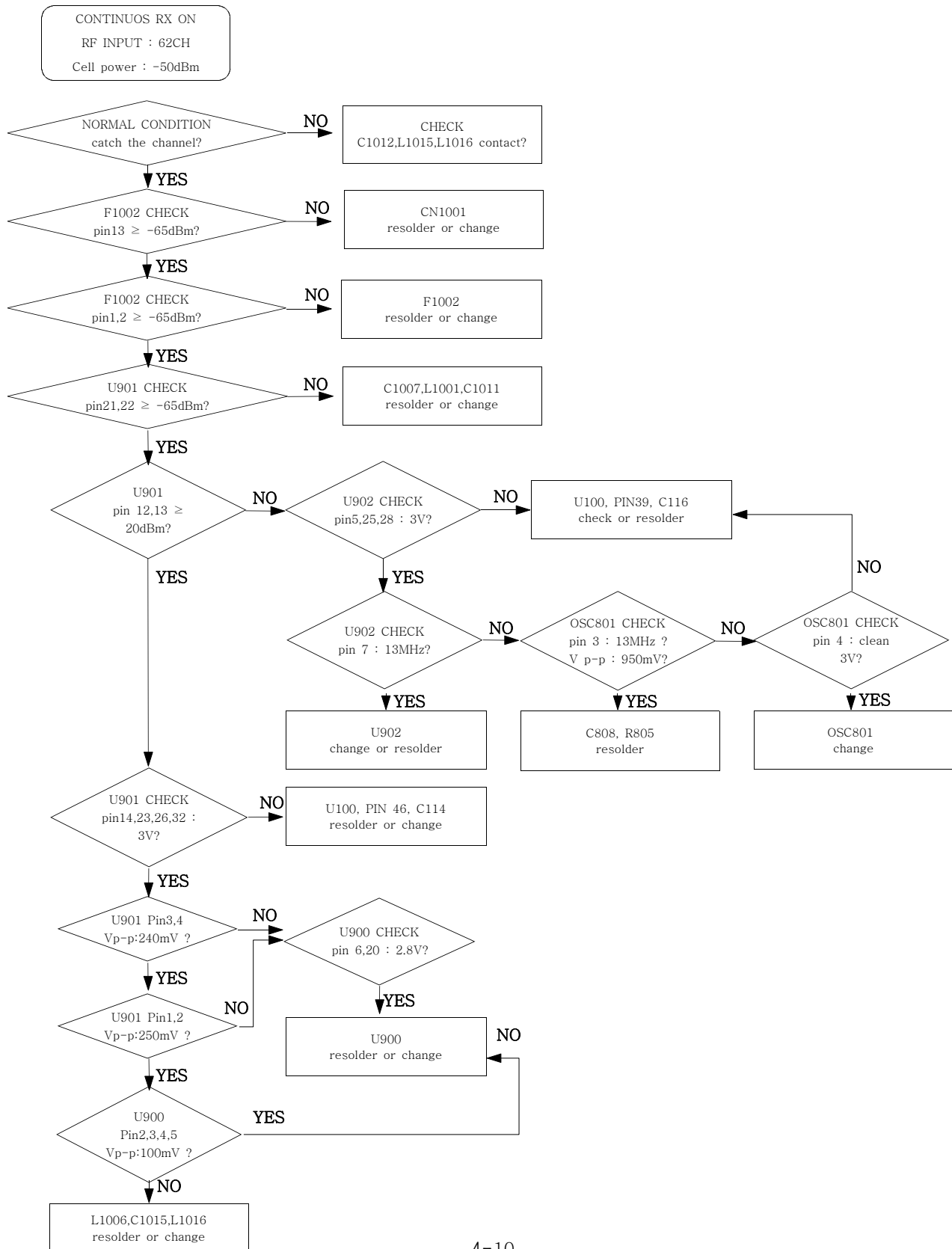
(Picture 1)



(Picture 2)

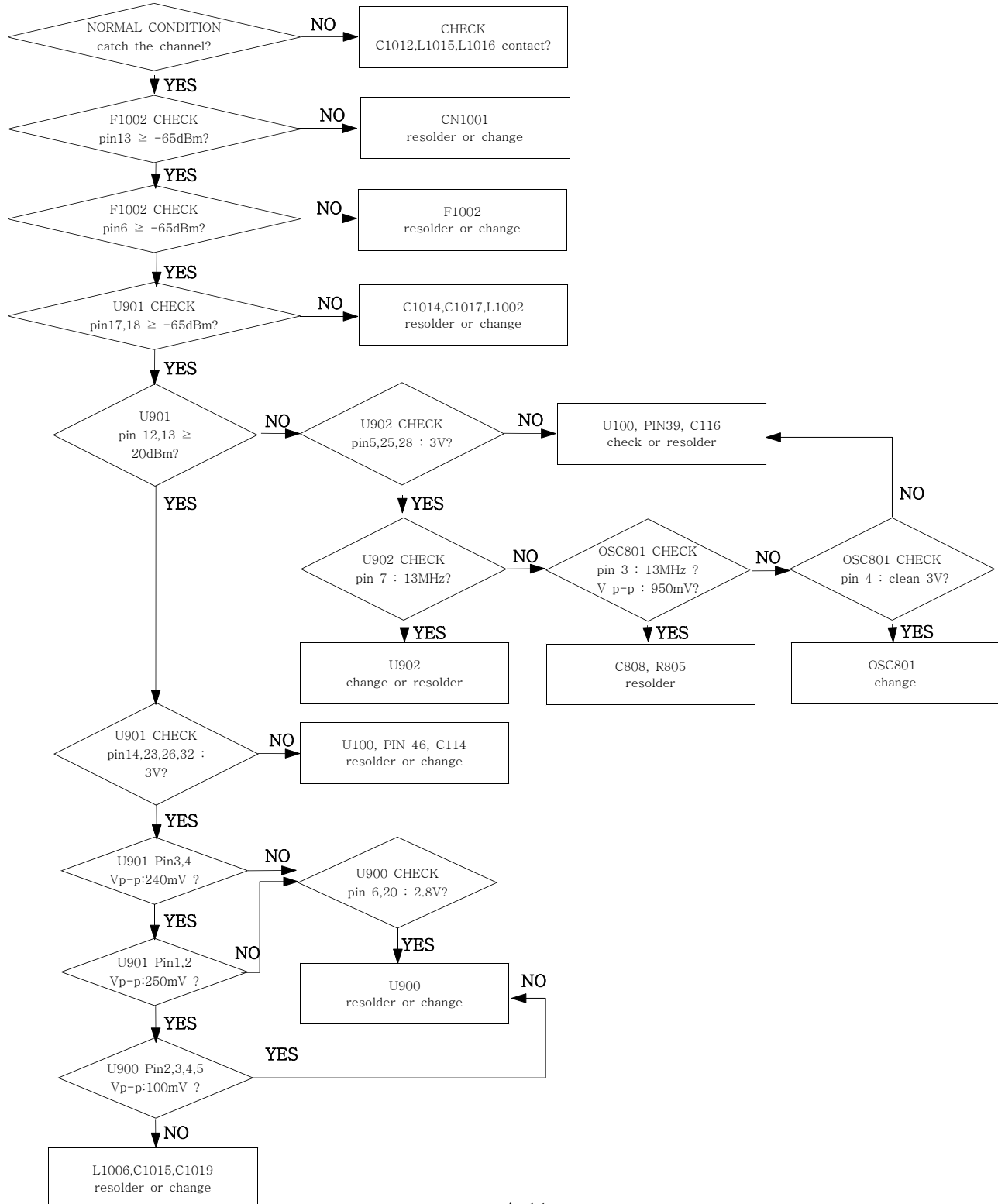
2.RF

1. GSM Receiver



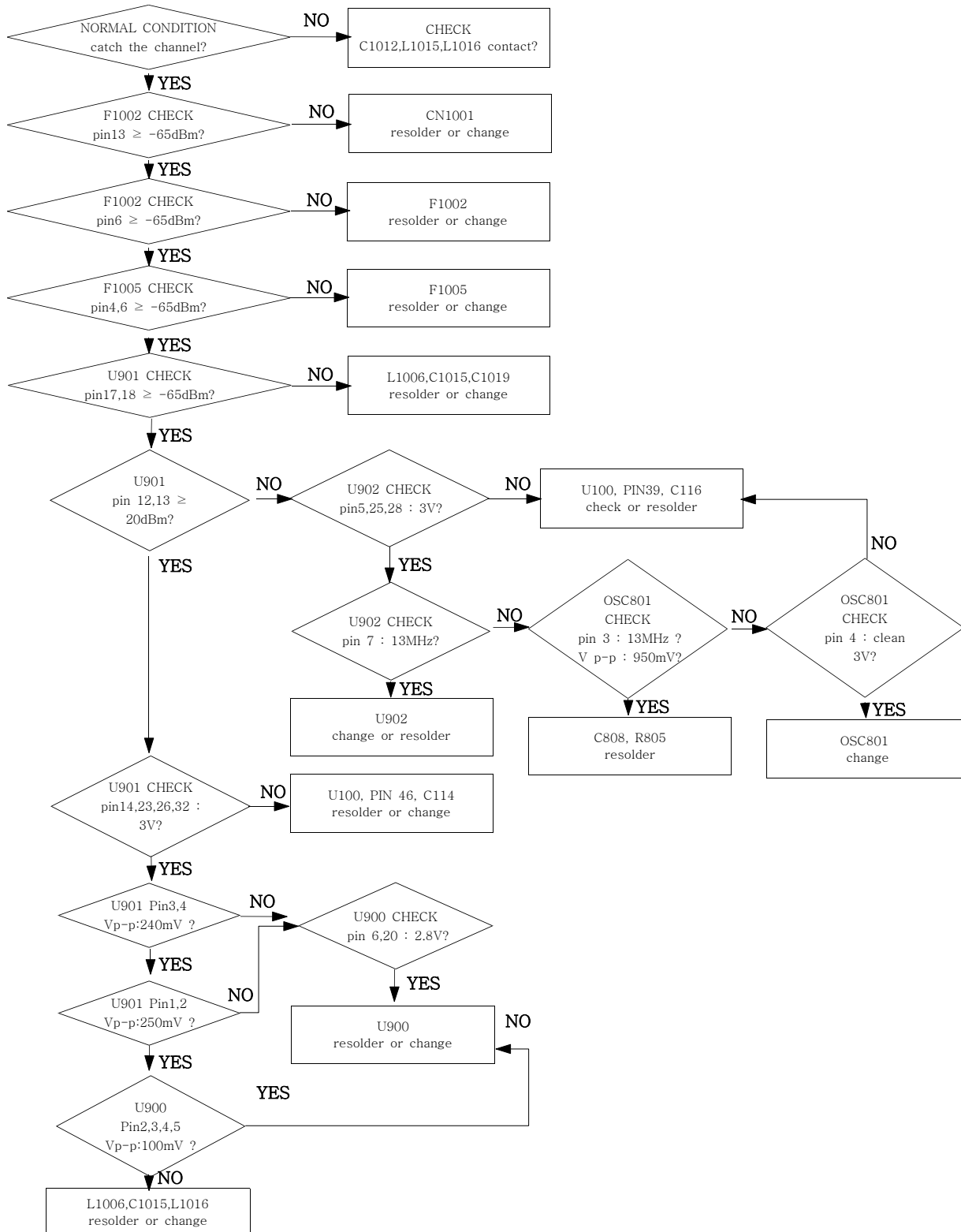
2. DCS Receiver

CONTINUOUS RX ON
RF INPUT : 698CH
Cell power : -50dBm

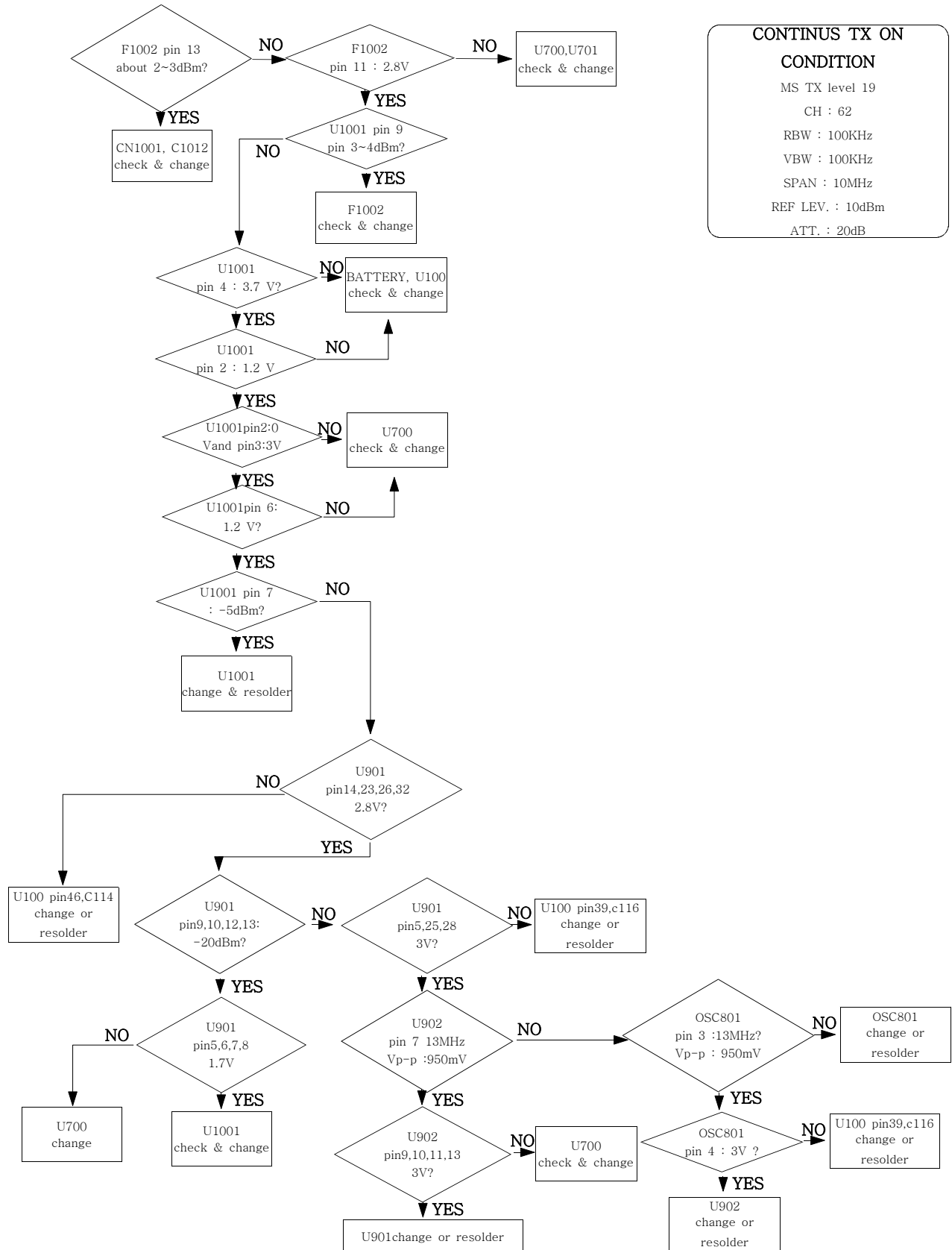


3. PCS Receiver

CONTINUOUS RX ON
RF INPUT : 698CH
Cell power : -50dBm



4. GSM Transmitter



CONTINUS TX ON

CONDITION

MS TX level 19

CH : 62

RBW : 100KHz

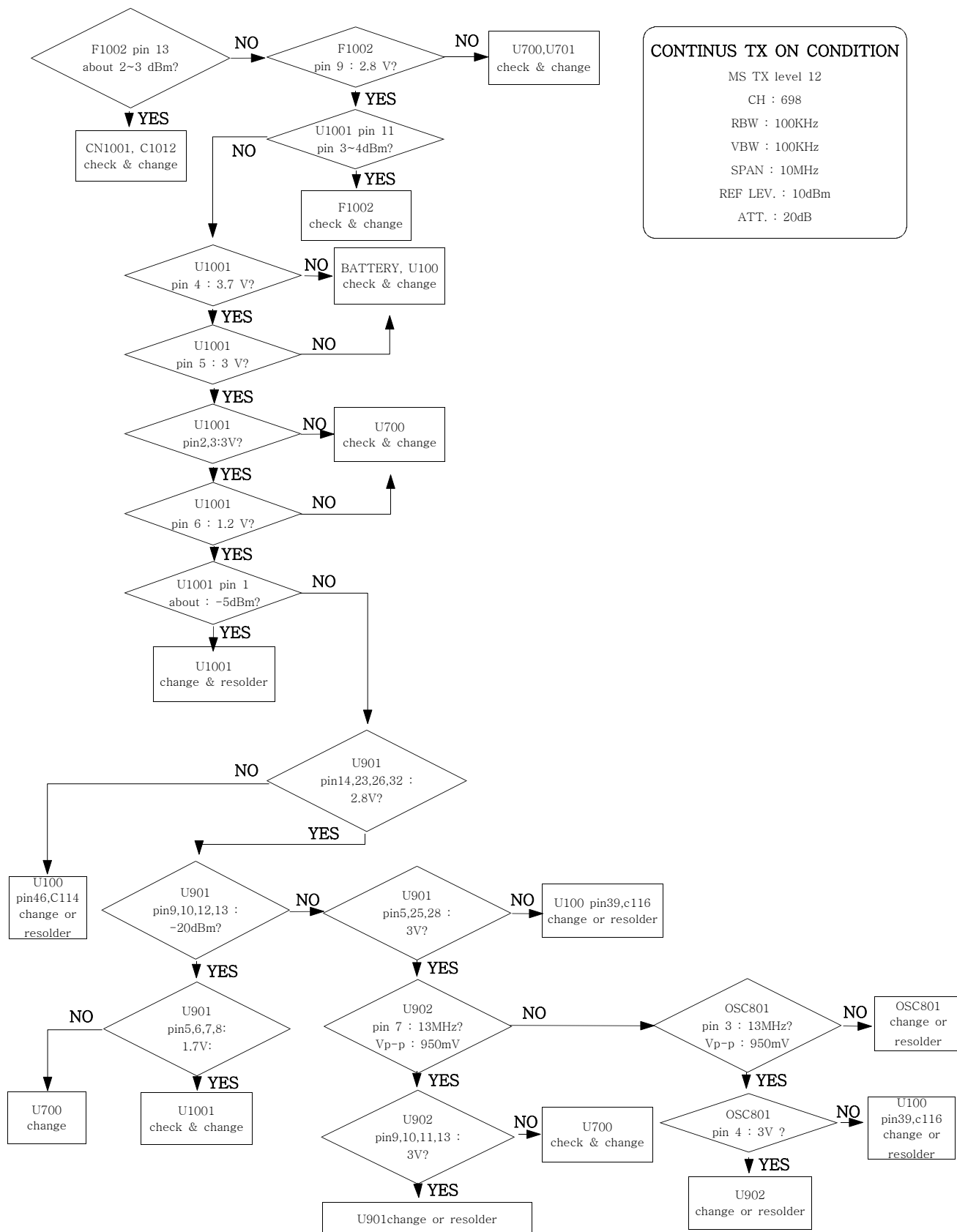
VBW : 100KHz

SPAN : 10MHz

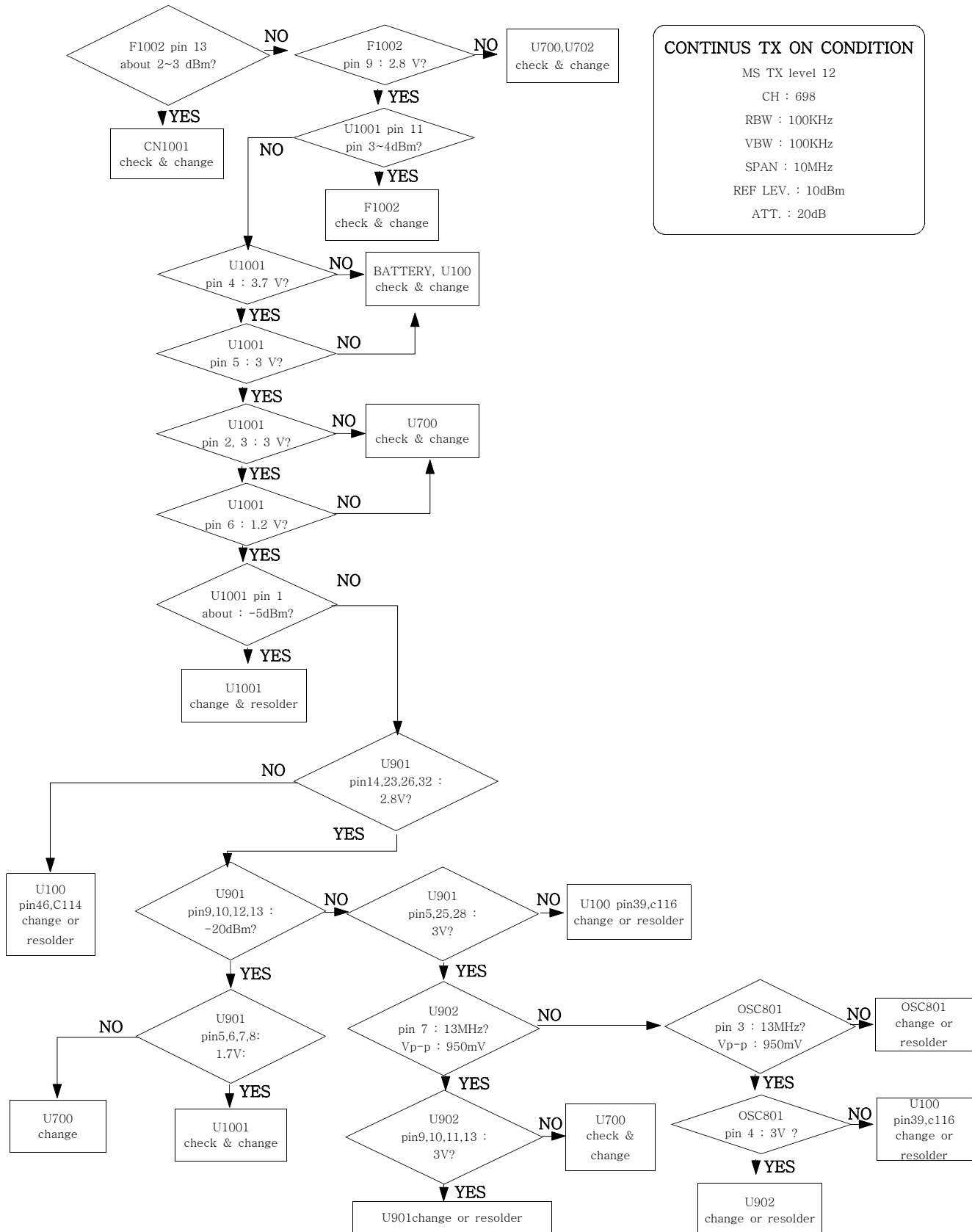
REF LEV. : 10dBm

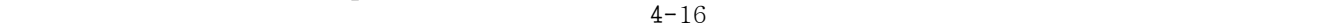
ATT. : 20dB

5. DCS Transmitter



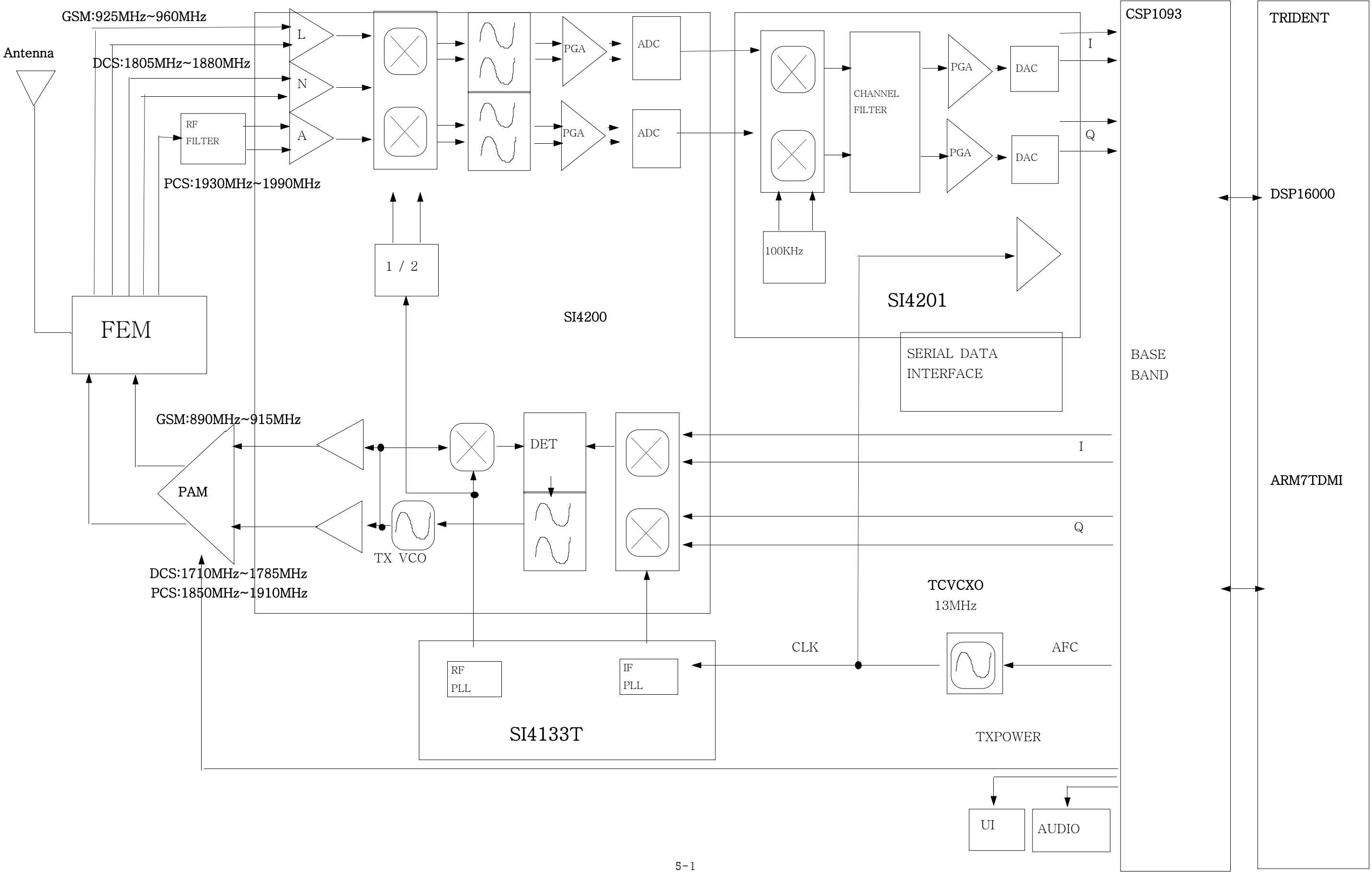
6. PCS Transmitter

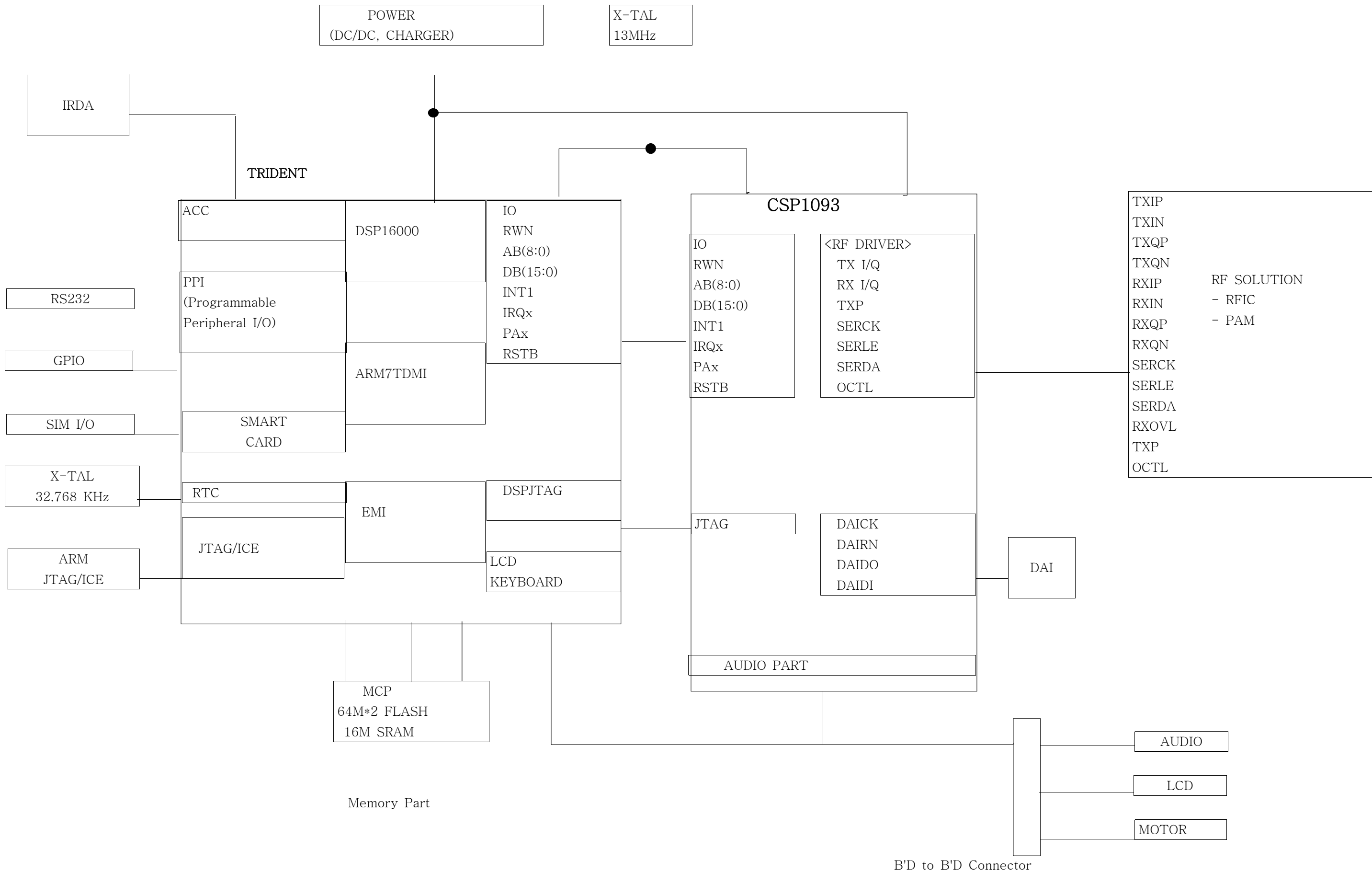




MEMO

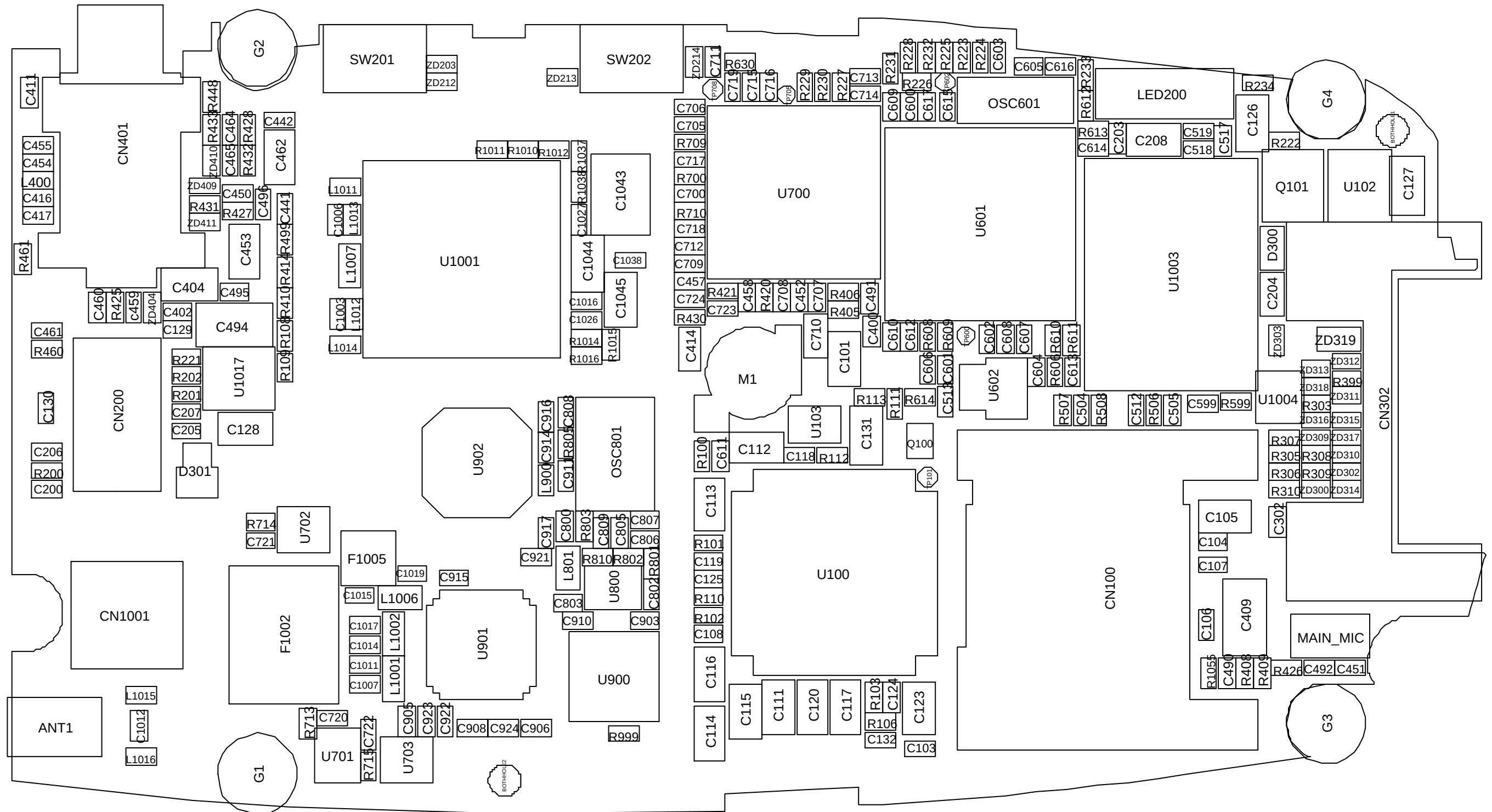
5. SGH-E400 Block Diagrams





6. SGH-E400 PCB Diagrams

1. Main PCB Top Diagram



2. Main PCB Bottom Diagram

