

**SAMSUNG**

# GSM TELEPHONE SGH-D100/D100A

# ***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

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# 1. SGH-D100/D100A Specification

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## 1. GSM General Specification

|                                    | GSM900<br>Phase 1      | EGSM 900<br>Phase 2    | DCS1800<br>Phase 1     | PCS1900                |
|------------------------------------|------------------------|------------------------|------------------------|------------------------|
| Freq. Band[MHz]<br>Uplink/Downlink | 890~915<br>935~960     | 880~915<br>925~960     | 1710~1785<br>1805~1880 | 1850~1910<br>1930~1990 |
| ARFCN range                        | 1~124                  | 0~124 &<br>975~1023    | 512~885                | 512~810                |
| Tx/Rx spacing                      | 45MHz                  | 45MHz                  | 95MHz                  | 80MHz                  |
| Mod. Bit rate/<br>Bit Period       | 270.833kbps<br>3.692us | 270.833kbps<br>3.692us | 270.833kbps<br>3.692us | 270.833kbps<br>3.692us |
| Time Slot<br>Period/Frame Period   | 576.9us<br>4.615ms     | 576.9us<br>4.615ms     | 576.9us<br>4.615ms     | 576.9us<br>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                    | -                      |

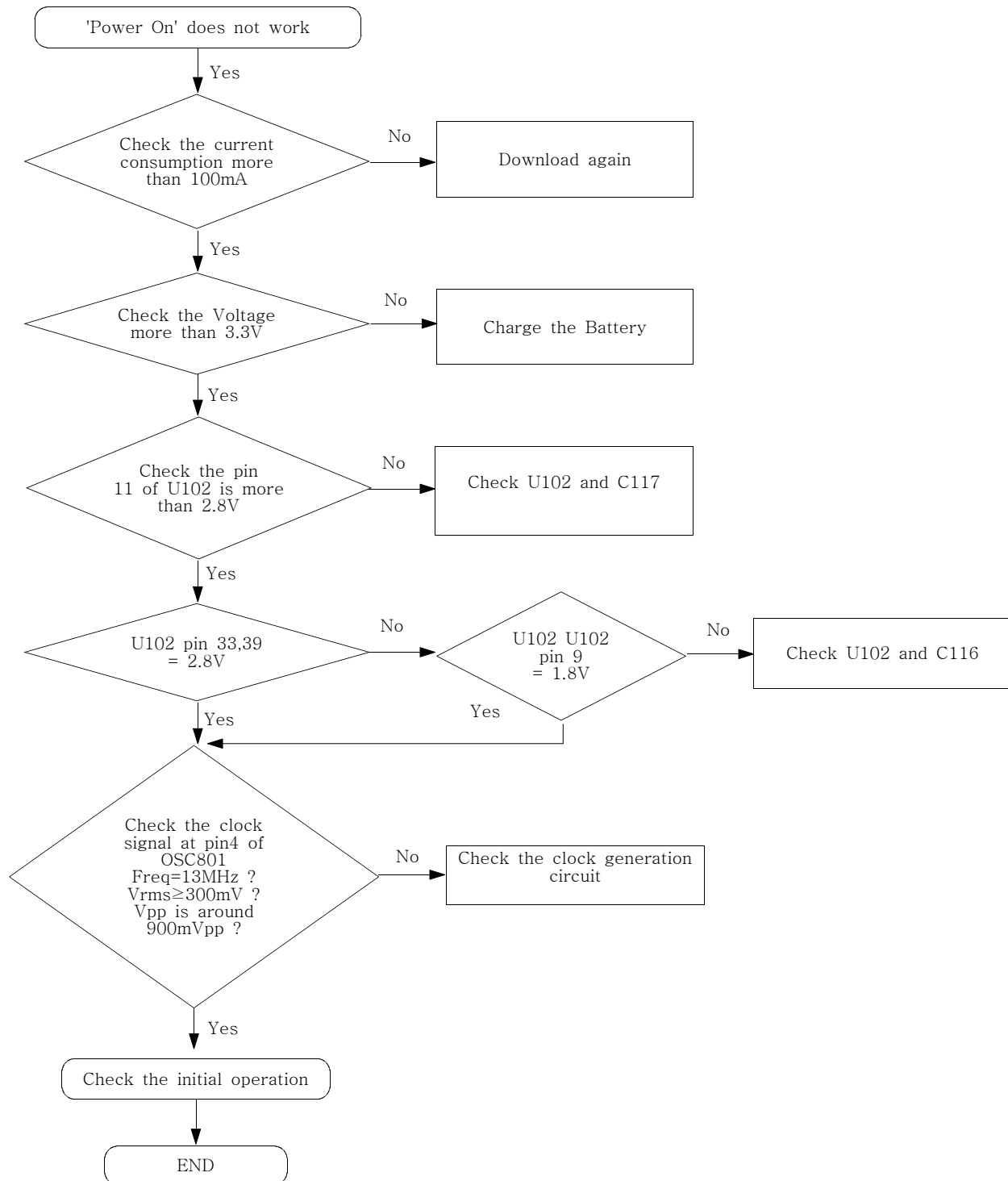
## 2. GSM TX power class

| <b>TX Power<br/>control level</b> | <b>GSM900</b> | <b>TX Power<br/>control level</b> | <b>DCS1800</b> | <b>TX Power<br/>control level</b> | <b>PCS1900</b> |
|-----------------------------------|---------------|-----------------------------------|----------------|-----------------------------------|----------------|
| 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        |

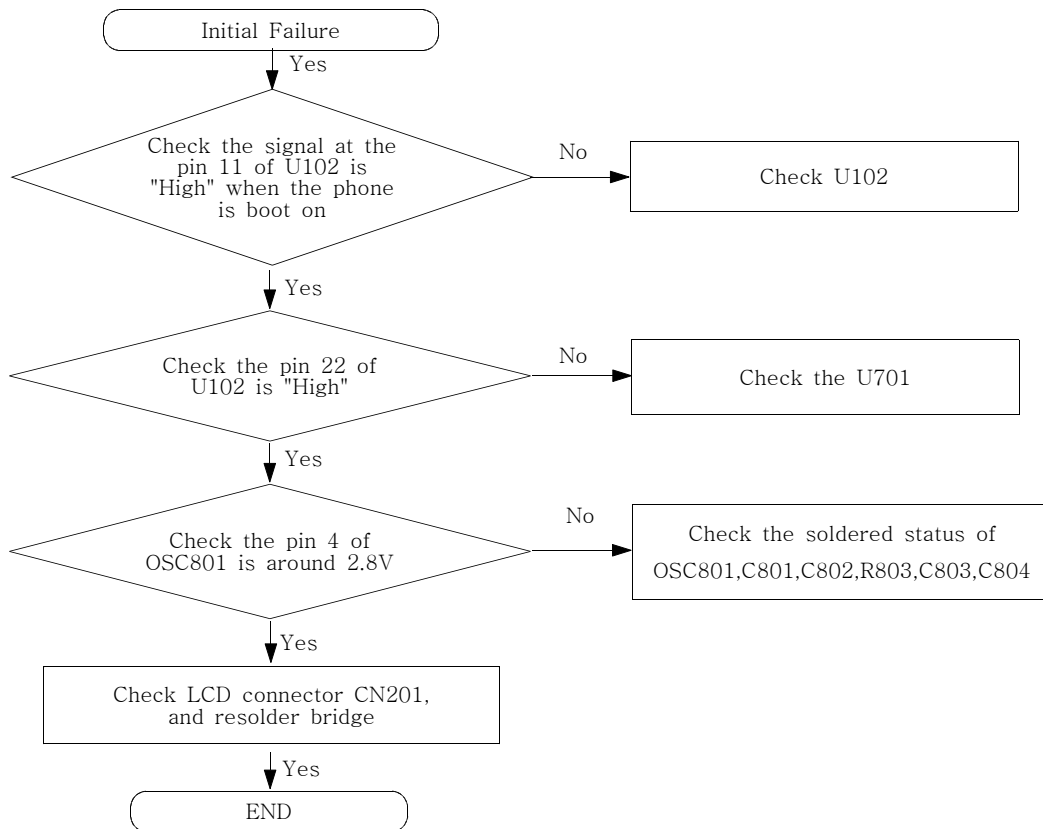
## 2. SGH-D100/D100A Flow Chart of Troubleshooting

### 1. Baseband

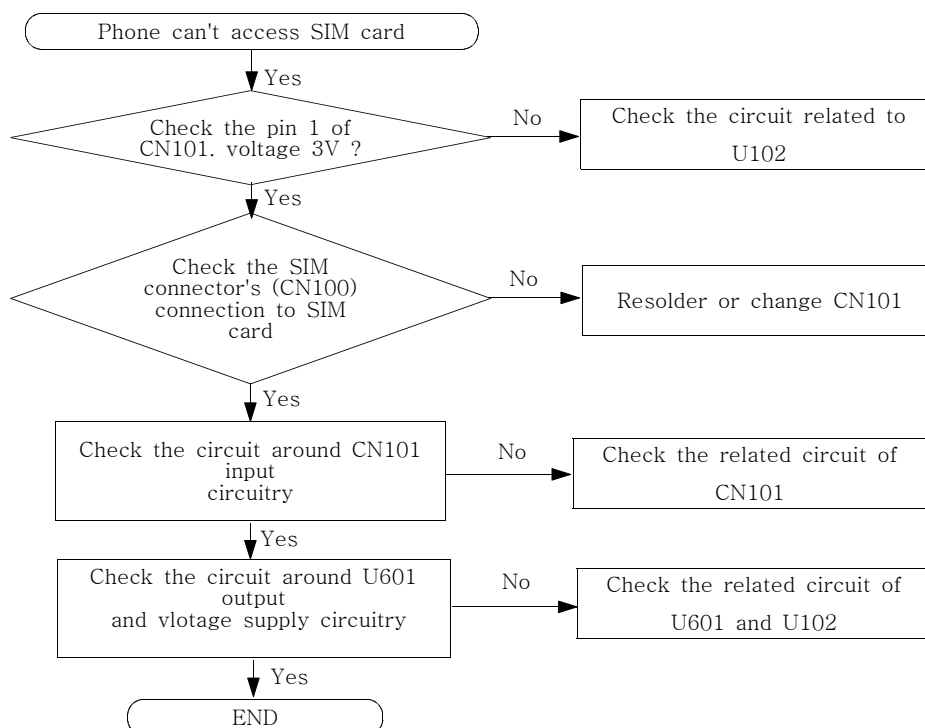
#### 1. Power ON



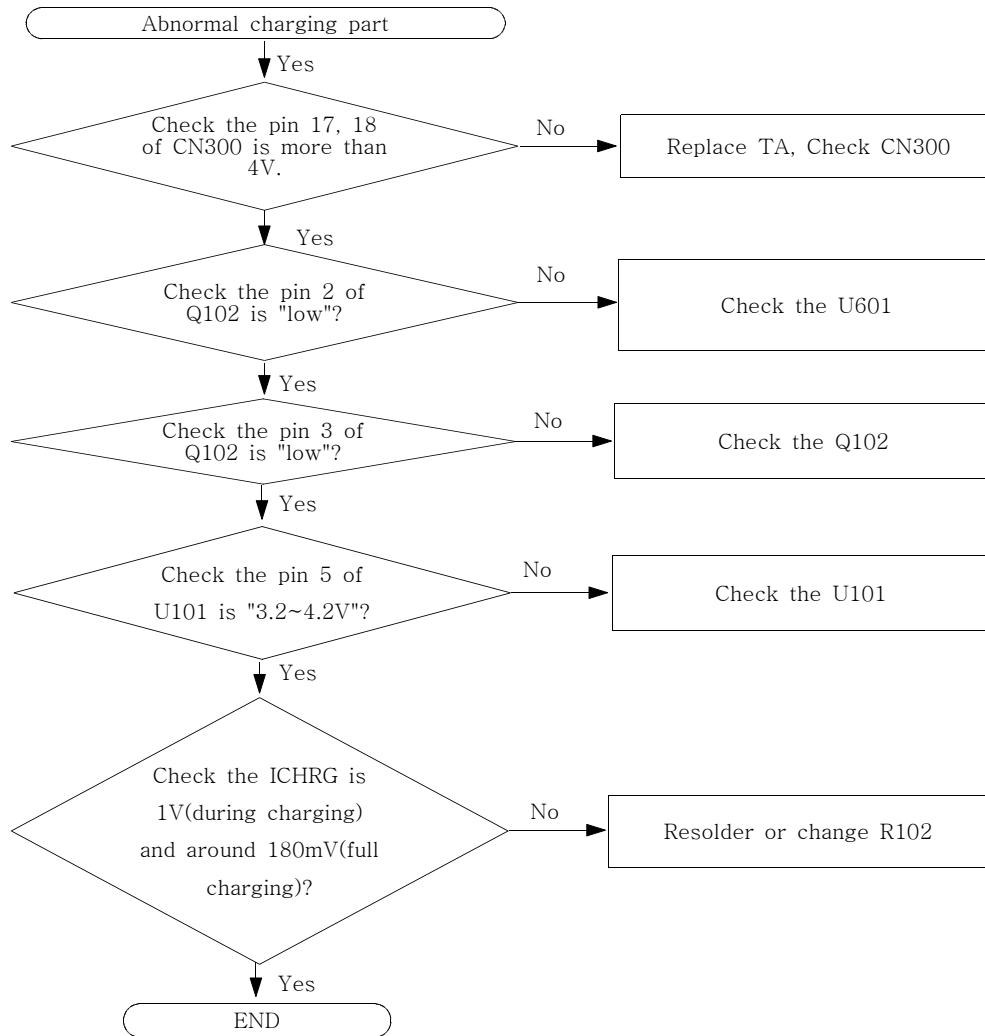
## 2. Initial

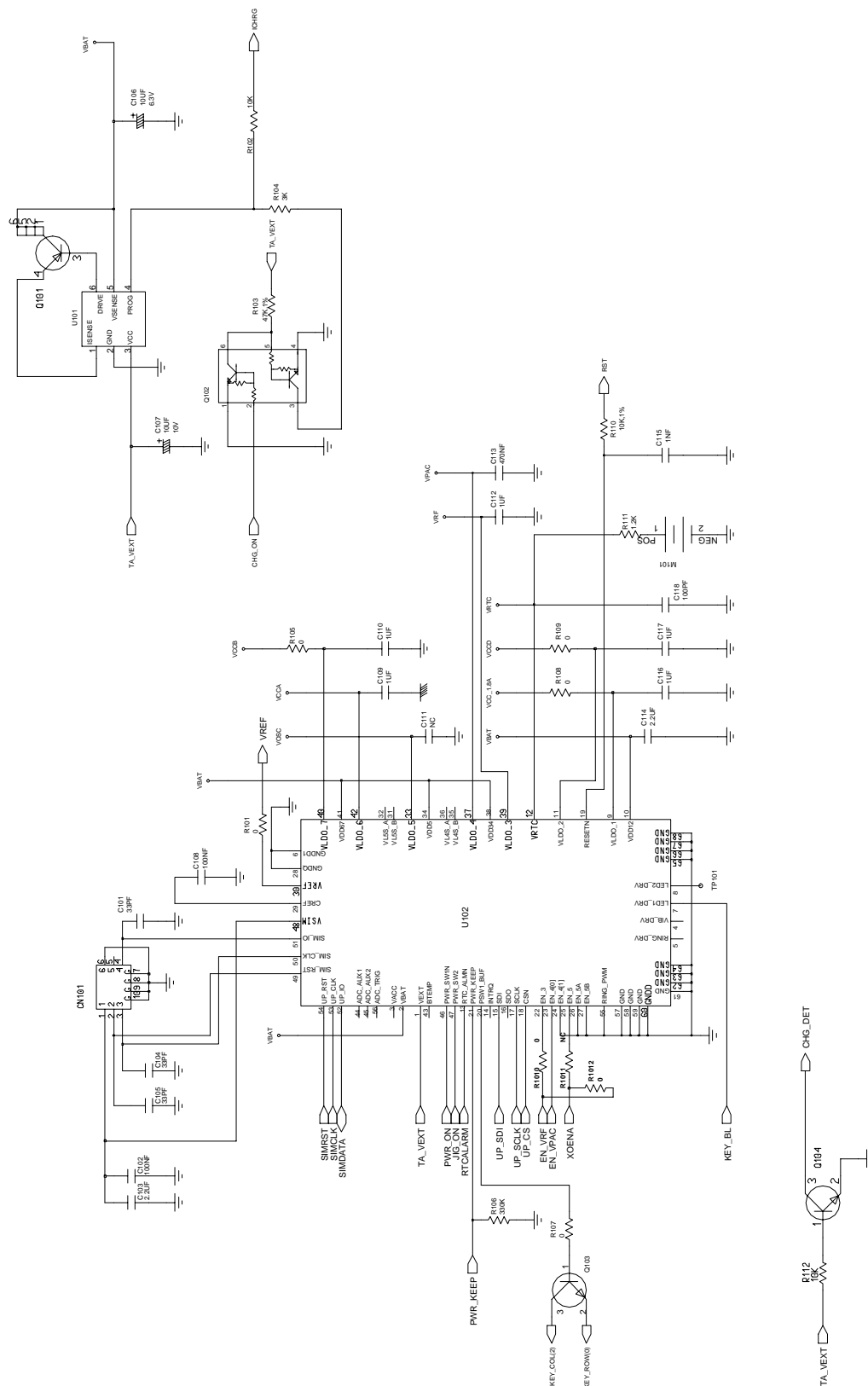


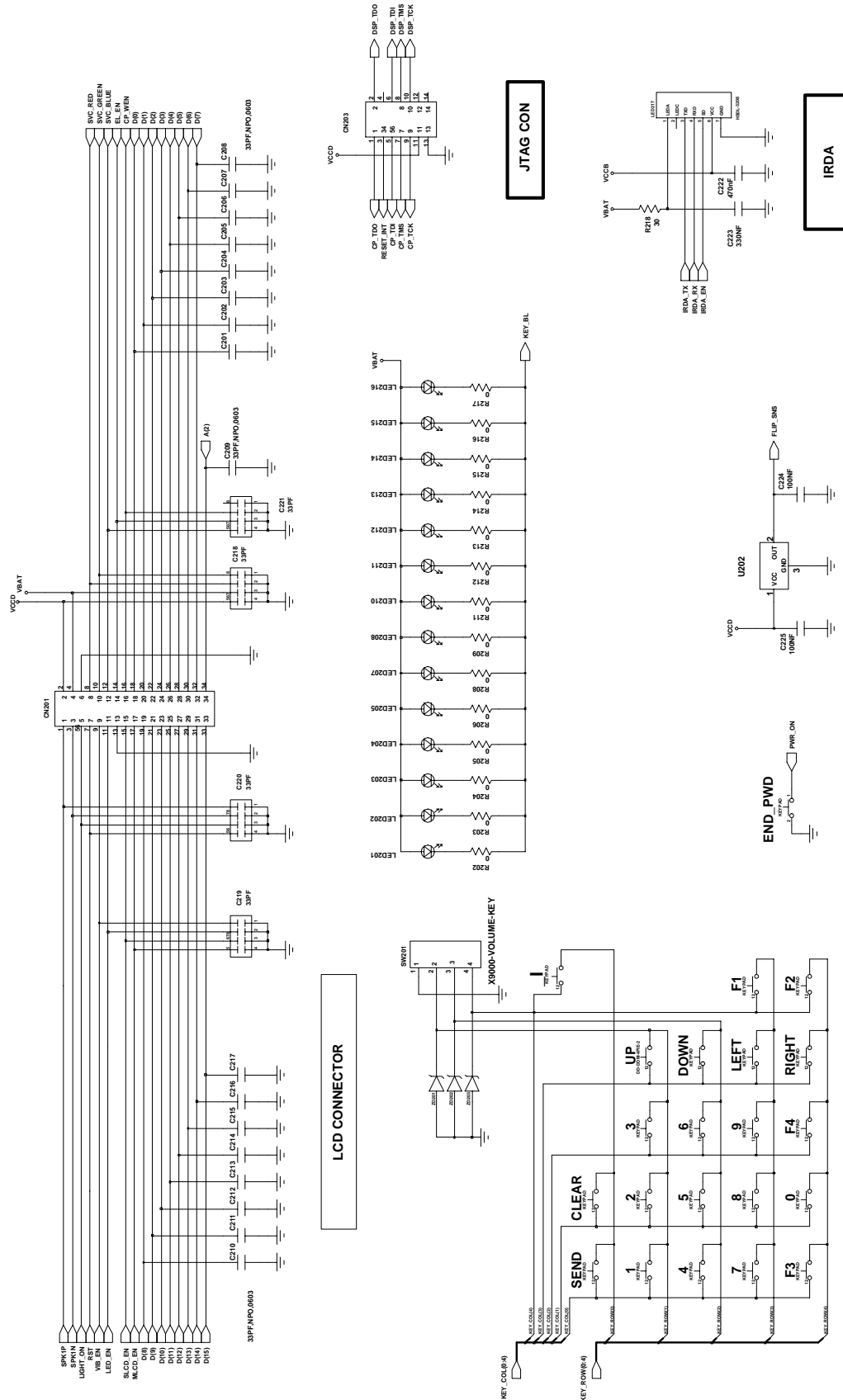
## 3. Sim Part



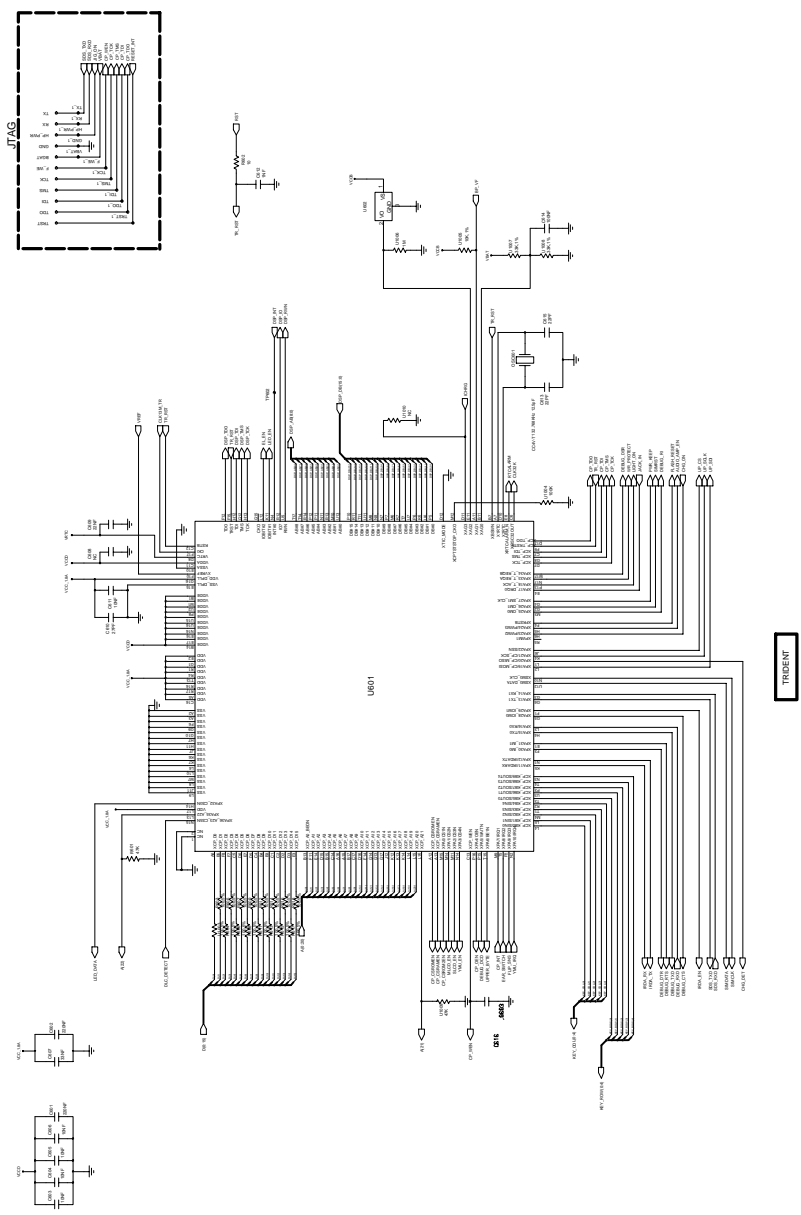
## 4. Charging Part



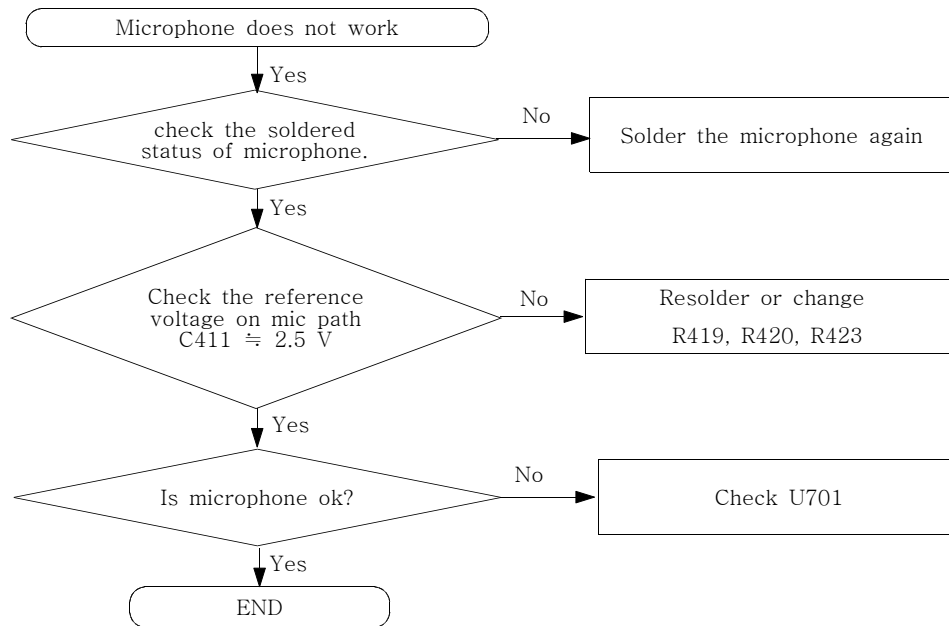




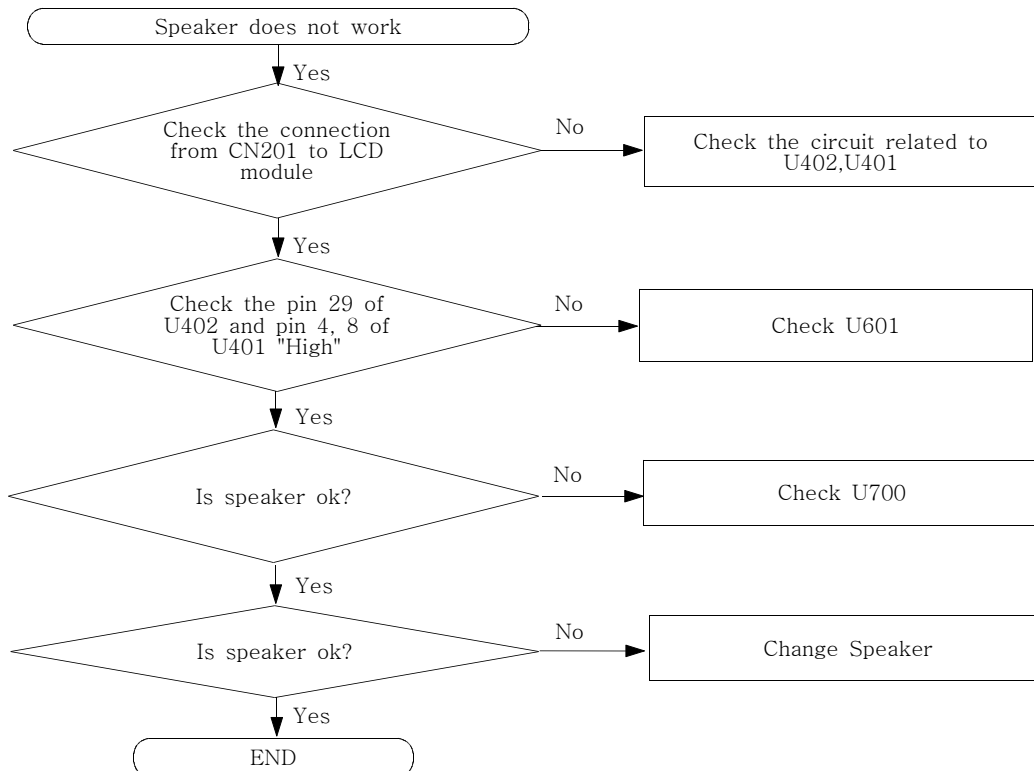


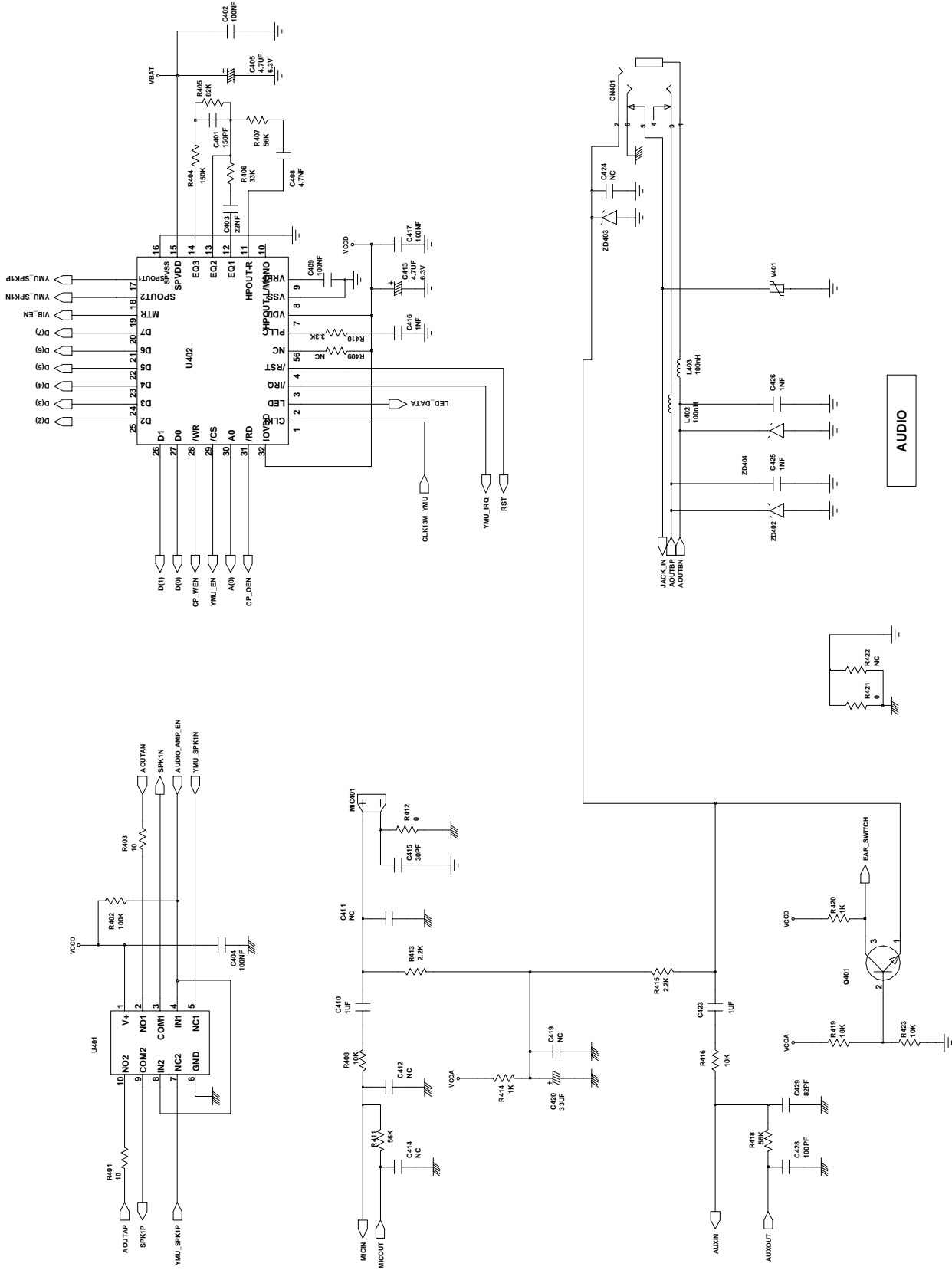


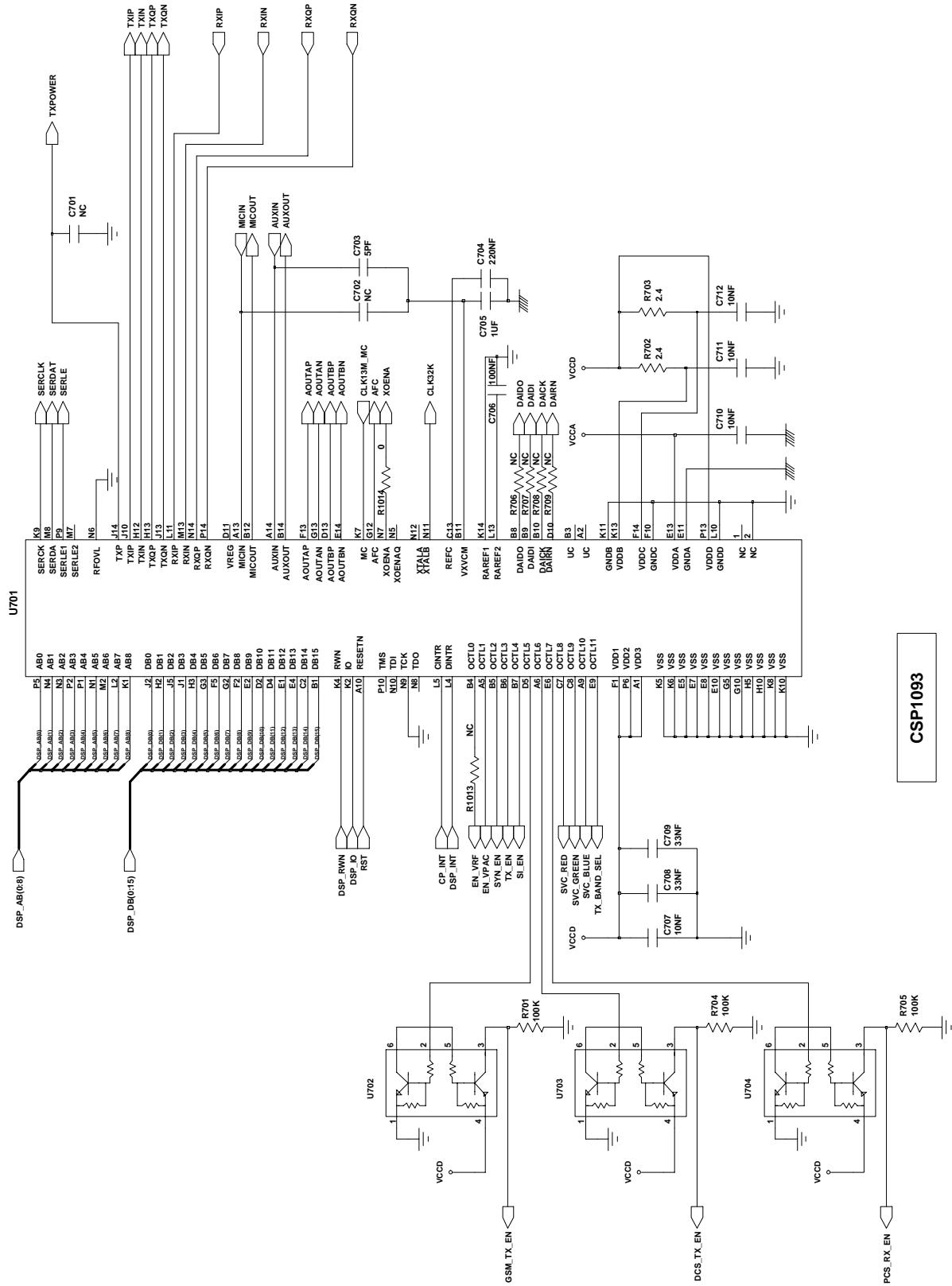
## 5. Microphone Part



## 6. Speaker Part

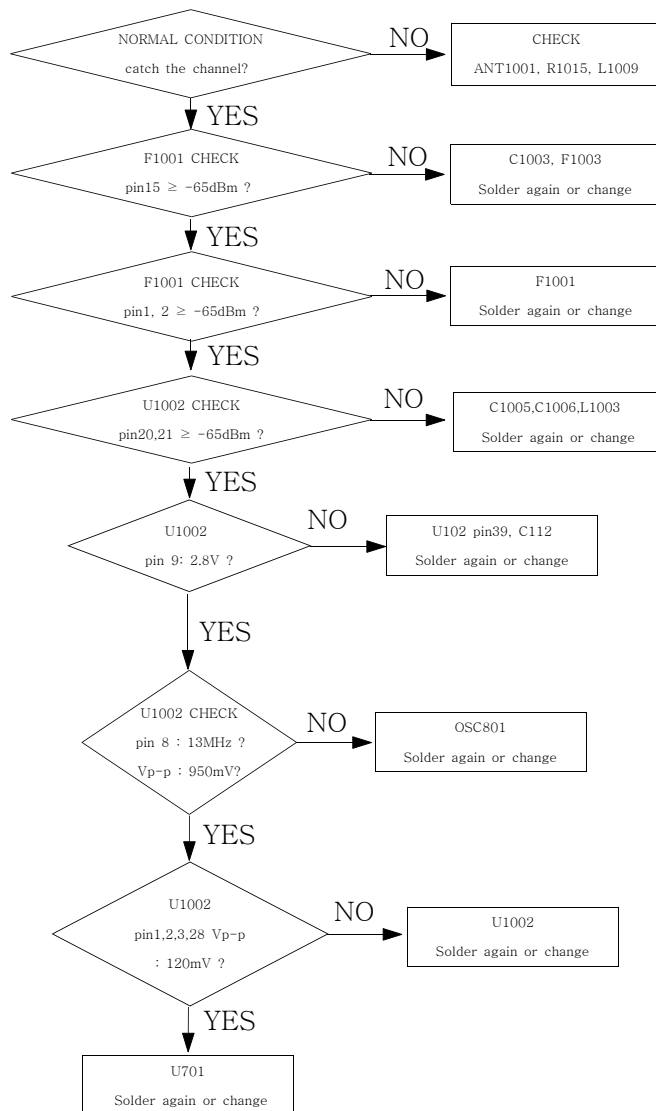






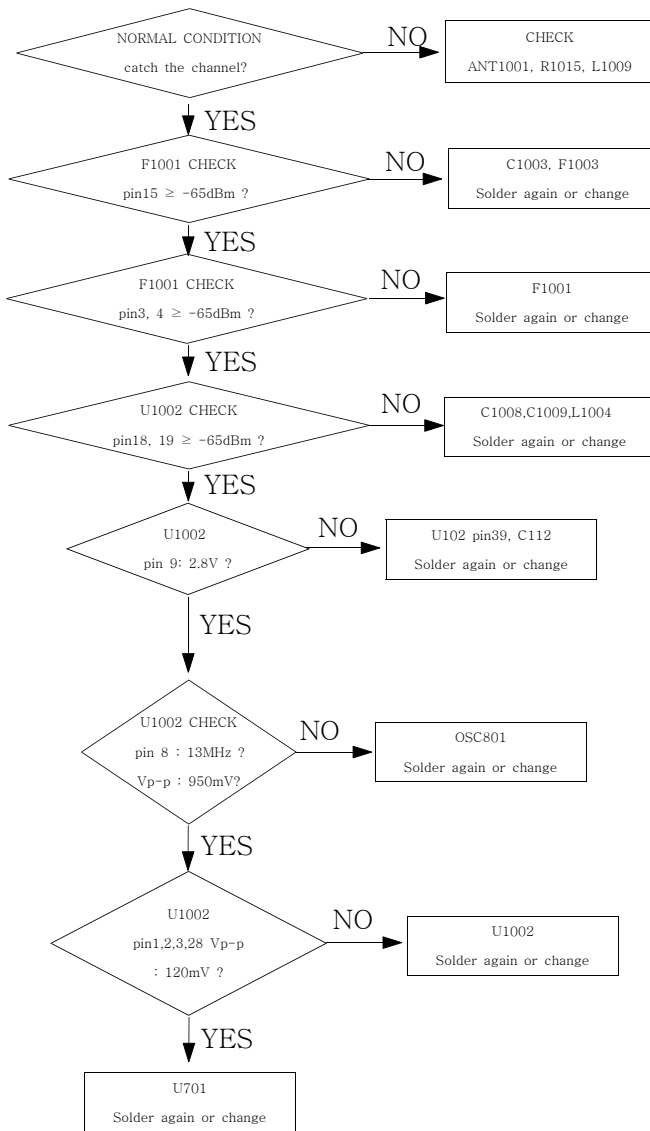
## 2.RF

### 1. EGSM RX



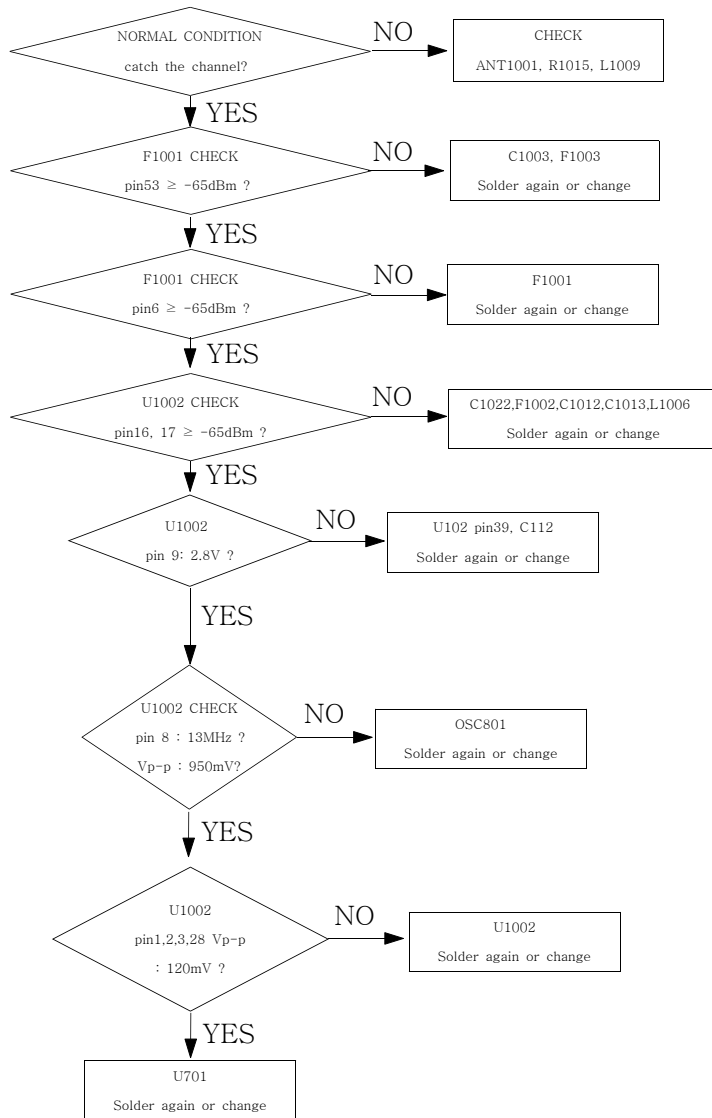
CONTINUOUS RX ON  
RF INPUT : 62CH  
AMP : -50dBm

## 2. DCS RX

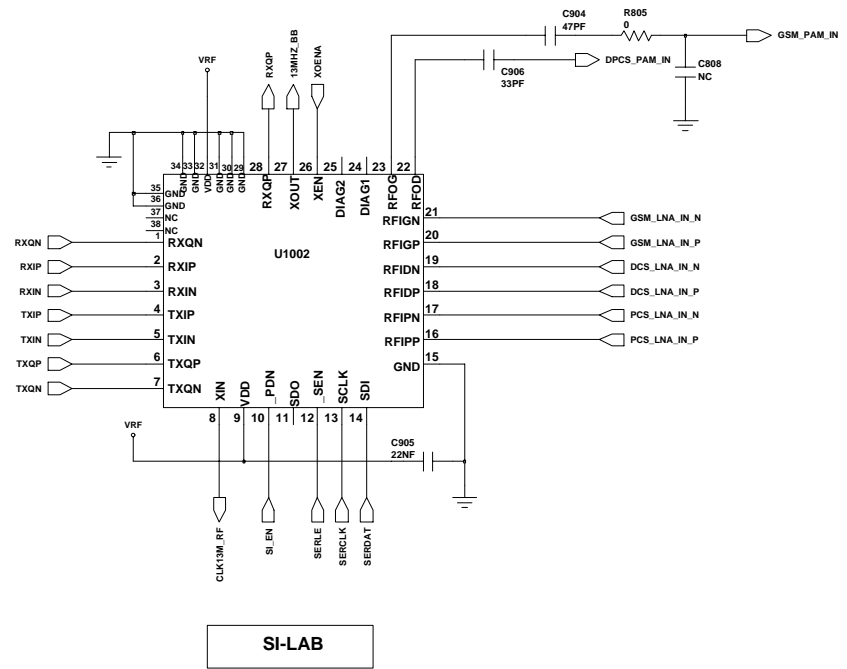


CONTINUOUS RX ON  
RF INPUT : 698CH  
AMP : -50dBm

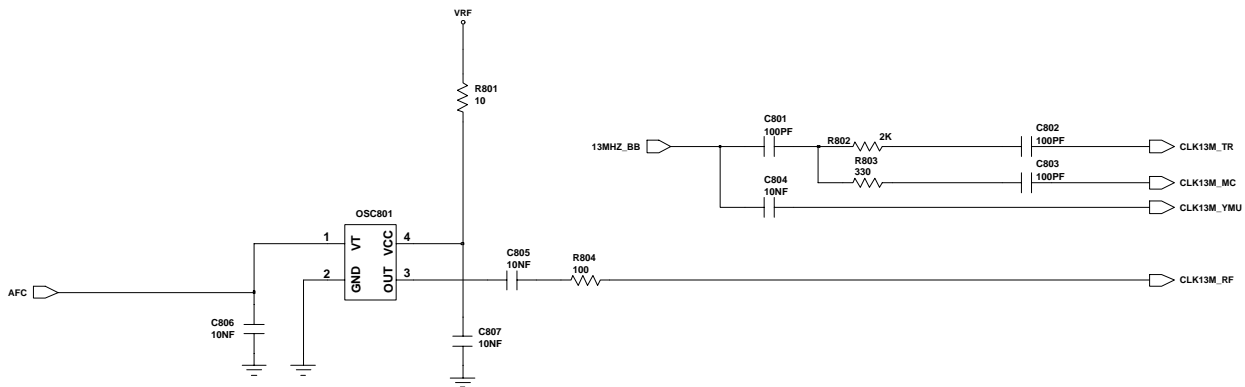
### 3. PCS RX



CONTINUOUS RX ON  
RF INPUT : 660CH  
AMP : -50dBm



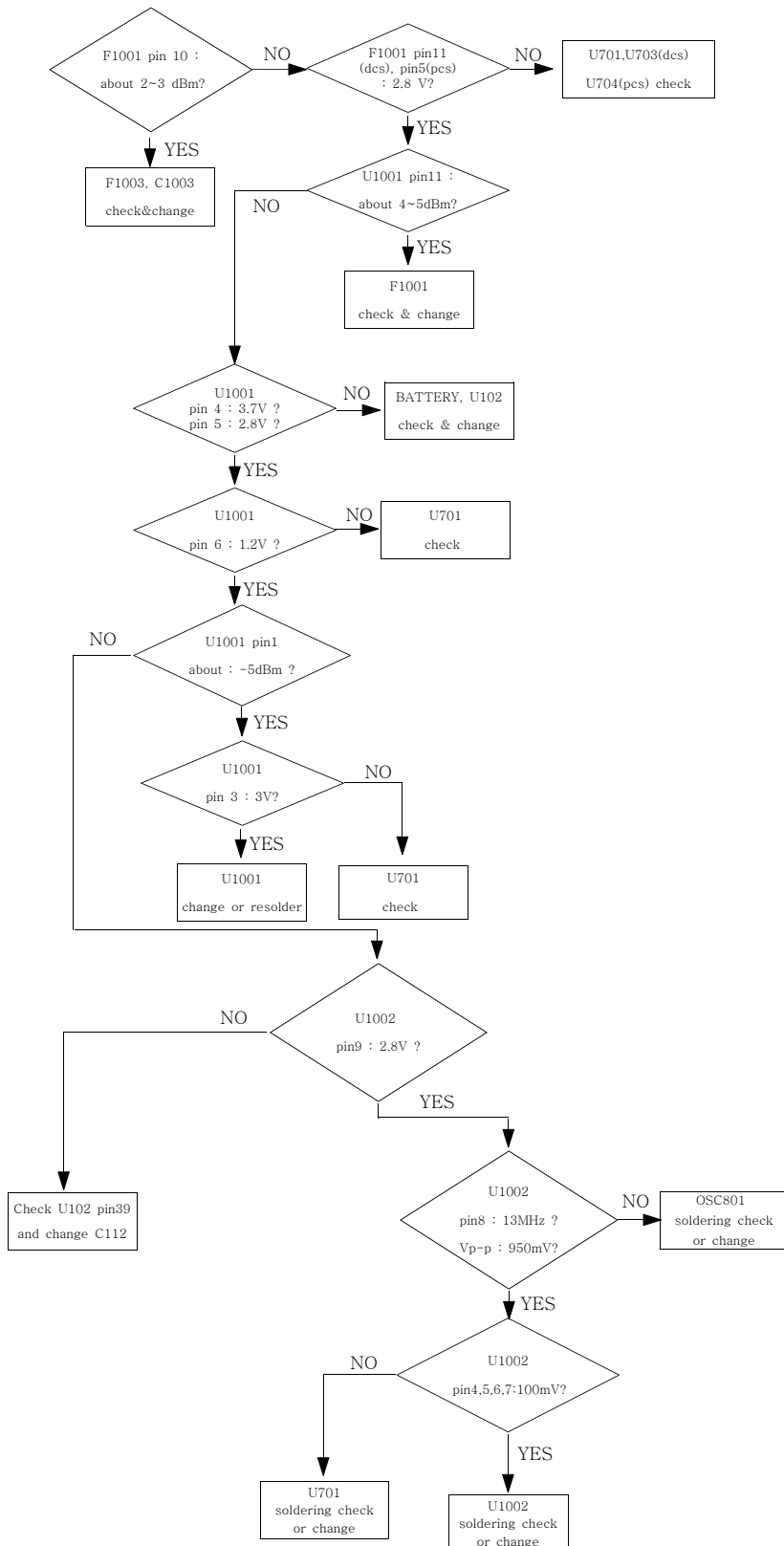
SI-LAB







## 5. DCS/PCS TX

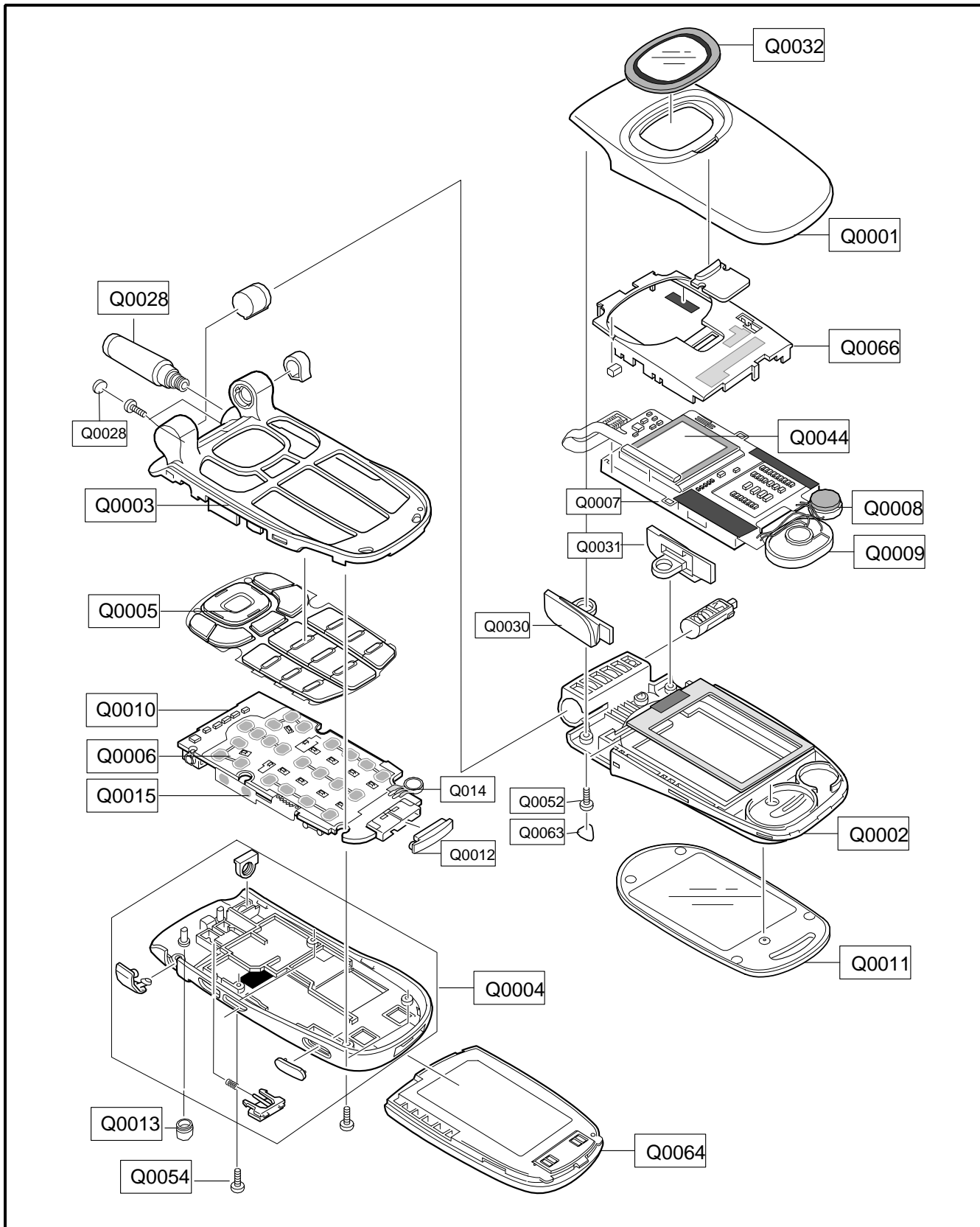


CONTINUOUS TX ON CONDITION  
 CH : 698CH(DCS), 660CH(PCS)  
 Tx Power DAC Value: 500 Code Applied(DCS)  
 550 Code Applied(PCS)  
 RBW : 100KHz  
 VBW : 100KHz  
 SPAN : 10MHz  
 REF LEV. : 10dBm  
 ATT. : 20dB



### 3. SGH-D100/D100A Exploded View and its Parts list

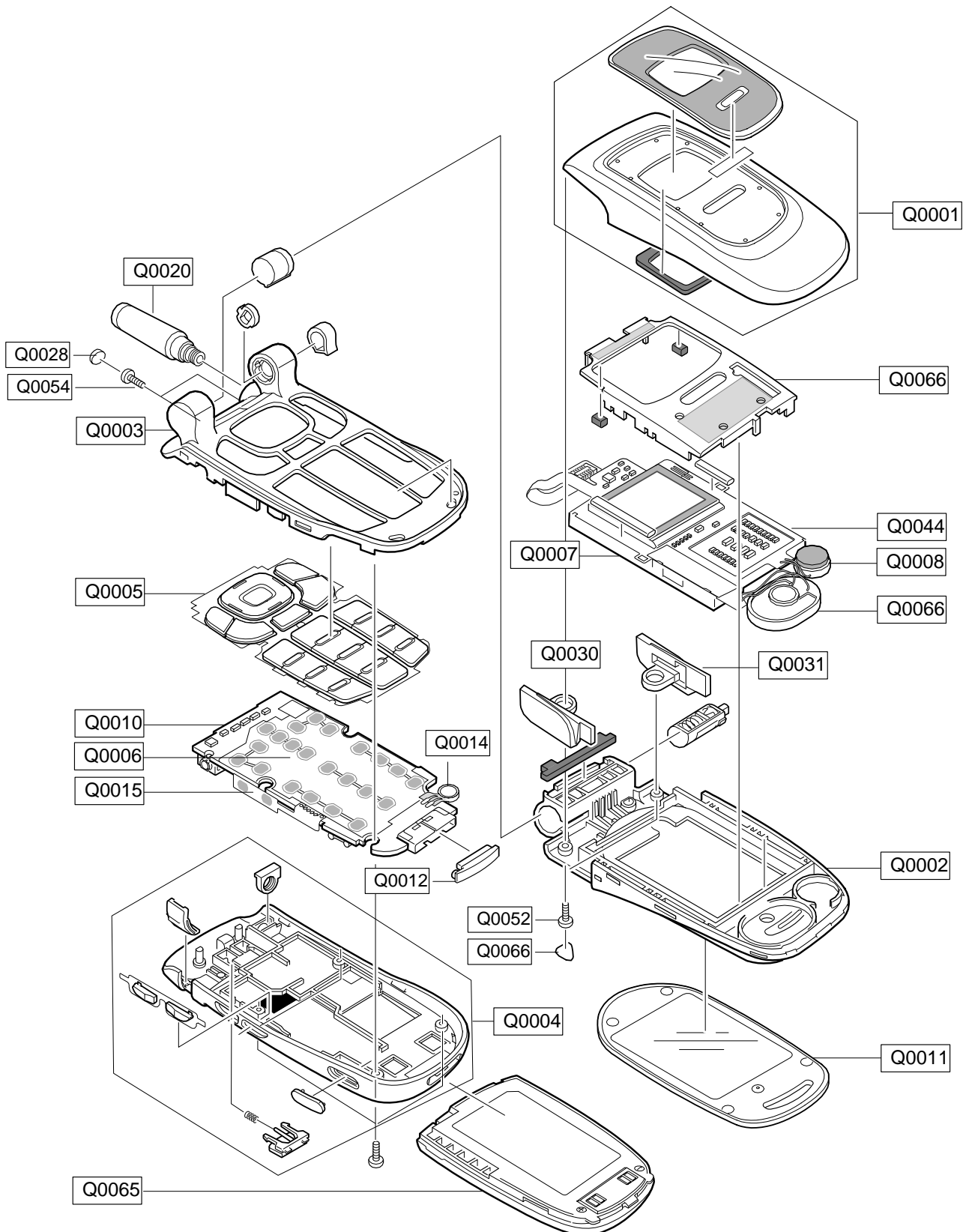
#### 1. Cellular phone Exploded View (SGH-D100)



## 2. Cellular phone Parts list (SGH-D100)

| Location NO. |  | Description                     | SEC CODE    | Remark |
|--------------|--|---------------------------------|-------------|--------|
| Q0001        |  | MEC-F/ UPPER                    | GH75-03165A |        |
| Q0002        |  | MEC-F/ LOWER                    | GH75-03164A |        |
| Q0003        |  | MEC-FRONT COVER                 | GH75-03163A |        |
| Q0004        |  | MEC-REAR COVER                  | GH75-03166A |        |
| Q0005        |  | MEC-KEYPAD                      | GH75-03246A |        |
| Q0006        |  | UNIT-METAL DOME                 | GH59-00897A |        |
| Q0007        |  | LCD                             | GH07-00190A |        |
| Q0008        |  | MOTOR DC                        | GH31-00036A |        |
| Q0009        |  | MICRO SPEAKER                   | 3001-001429 |        |
| Q0010        |  | PBA MAIN                        | GH92-01486A |        |
| Q0011        |  | PMO WINDOW MAIN                 | GH72-06272A |        |
| Q0012        |  | RMO NEW IF CONN COVER           | GH72-02504A |        |
| Q0013        |  | PMO NEW RF JACK COVER           | GH72-09753A |        |
| Q0014        |  | MICROPHONE-ASSY                 | GH30-00033A |        |
| Q0015        |  | UNIT-VOL KEY                    | GH59-01025A |        |
| Q0020        |  | ANTENNA                         | GH42-00305A |        |
| Q0028        |  | MPR FRONT SCREW CAP             | GH74-06303A |        |
| Q0030        |  | PMO SIDE DUMMY L                | GH72-08210A |        |
| Q0031        |  | PMO SIDE DUMMY R                | GH72-08209A |        |
| Q0032        |  | PMO DUAL WINDOW                 | GH72-08492A |        |
| Q0044        |  | SUB LCD                         | GH07-00447A |        |
| Q0052        |  | SCREW-MACHINE;PH,+ ,M1.4,L5     | 6001-001633 |        |
| Q0054        |  | SCREW-MACHINE;PH(P12.5),+ ,M1.4 | 6001-001155 |        |
| Q0063        |  | MPR F/LOWER SCREW CAP           | GH74-05770A |        |
| Q0064        |  | BATTERY-600MA                   | GH43-00955A |        |
| Q0065        |  | BATTERY-800MAH                  | GH43-00956A |        |
| Q0066        |  | MEC-FOLDER BRACKET              | GH75-03247A |        |

### 3. Cellular phone Exploded View (SGH-D100A)



## 4.Cellular phone Parts list (SGH-D100A)

| Location NO. |  | Description                     | SEC CODE    | Remark |
|--------------|--|---------------------------------|-------------|--------|
| Q0001        |  | MEC-F/ UPPER                    | GH75-04126A |        |
| Q0002        |  | MEC-F/ LOWER ASS'Y              | GH75-04434A |        |
| Q0003        |  | MEC-FRONT COVER                 | GH75-03163A |        |
| Q0004        |  | MEC-REAR COVER                  | GH75-03166A |        |
| Q0005        |  | MEC-KEYPAD                      | GH75-03246A |        |
| Q0006        |  | UNIT-METAL DOME                 | GH59-00897A |        |
| Q0007        |  | LCD                             | GH07-00190A |        |
| Q0008        |  | MOTOR DC                        | GH31-00036A |        |
| Q0009        |  | MICRO SPEAKER                   | 3001-001429 |        |
| Q0010        |  | PBA MAIN                        | GH92-01486A |        |
| Q0011        |  | PMO WINDOW MAIN                 | GH72-06272A |        |
| Q0012        |  | RMO NEW IF CONN COVER           | GH72-02504A |        |
| Q0013        |  | PMO NEW RF JACK COVER           | GH72-09753A |        |
| Q0014        |  | MICROPHONE-ASSY                 | GH30-00033A |        |
| Q0015        |  | UNIT-VOL KEY                    | GH59-01025A |        |
| Q0020        |  | ANTENNA                         | GH42-00305A |        |
| Q0028        |  | MPR FRONT SCREW CAP             | GH74-06303A |        |
| Q0030        |  | PMO SIDE DUMMY L                | GH72-08210A |        |
| Q0031        |  | PMO SIDE DUMMY R                | GH72-08209A |        |
| Q0044        |  | SUB LCD                         | GH07-00447A |        |
| Q0052        |  | SCREW-MACHINE;PH,+ ,M1.4,L5     | 6001-001633 |        |
| Q0054        |  | SCREW-MACHINE;PH(P12.5),+ ,M1.4 | 6001-001155 |        |
| Q0063        |  | MPR F/LOWER SCREW CAP           | GH74-05770A |        |
| Q0064        |  | BATTERY-600MA                   | GH43-00955A |        |
| Q0065        |  | BATTERY-800MAH                  | GH43-00956A |        |
| Q0066        |  | MEC-FOLDER BRACKET              | GH75-04127A |        |

## 5.. 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  
[GH44-00184A]





## 4. SGH-D100/D100A MAIN Electrical Parts List

| SEC Code    | Design LOC           |
|-------------|----------------------|
| GH71-00734A | ANT1001              |
| 2203-000995 | C1003,C904           |
| 2203-000233 | C1004,C1007,C1010    |
| 2203-002677 | C1005,C1006,C1008    |
| 2203-002677 | C1009,C1012,C1013    |
| 2203-000812 | C101,C1014,C1016     |
| 2703-002207 | C1015                |
| 2404-001151 | C1017,C1021,C420     |
| 2203-000438 | C1018,C416,C425,C426 |
| 2203-000812 | C1019,C1020,C104     |
| 2203-005061 | C102,C224,C225,C301  |
| 2203-005446 | C1022                |
| 2203-001598 | C103,C114            |
| 2203-000278 | C1039                |
| 2203-000812 | C105,C305,C906       |
| 2404-001105 | C106                 |
| 2404-001268 | C107                 |
| 2203-005482 | C108                 |
| 2203-005065 | C110,C116,C117       |
| 2203-006053 | C112                 |
| 2203-001652 | C113                 |
| 2203-000438 | C115,C612            |
| 2203-000233 | C118,C428,C801       |
| 2203-005682 | C201,C202,C203,C204  |
| 2203-005682 | C205,C206,C207,C208  |
| 2203-005682 | C209,C210,C211,C212  |
| 2203-005682 | C213,C214,C215,C216  |
| 2203-005682 | C217                 |
| 2203-006113 | C218,C219,C220,C221  |
| 2203-006257 | C222                 |
| 2203-005509 | C223,C501,C502,C503  |
| 2203-005061 | C302,C303,C304,C402  |
| 2203-000359 | C401                 |
| 2203-001405 | C403,C609,C905       |
| 2203-005061 | C404,C409,C417,C505  |
| 2404-001086 | C405,C413            |
| 2203-000885 | C408                 |

| SEC Code    | Design LOC           |
|-------------|----------------------|
| 2203-005065 | C410,C423,C705,C109  |
| 2203-001412 | C415                 |
| 2203-001239 | C429                 |
| 2203-005509 | C504                 |
| 2203-000254 | C506,C603,C604       |
| 2203-005496 | C601,C602,C704       |
| 2203-000254 | C605,C606,C611,C707  |
| 2203-005480 | C607,C708,C709       |
| 2203-000679 | C610                 |
| 2203-000628 | C613,C615            |
| 2203-005482 | C614                 |
| 2203-005393 | C703                 |
| 2203-005061 | C706                 |
| 2203-000254 | C710,C711,C712,C804  |
| 2203-000233 | C802,C803            |
| 2203-000254 | C805,C806,C807       |
| 3709-001229 | CN101                |
| 3711-005078 | CN201                |
| 3710-001673 | CN300                |
| 3722-001880 | CN401                |
| 2909-001191 | F1001                |
| 2904-001410 | F1002                |
| 3705-001287 | F1003                |
| 2703-002485 | L1003                |
| 2703-002484 | L1004                |
| 2703-002608 | L1006                |
| 2703-002170 | L1007                |
| 2203-005234 | L1008                |
| 2703-002200 | L1009                |
| 2703-001513 | L402,L403            |
| 0601-001790 | LED201,LED202,LED203 |
| 0601-001790 | LED204,LED205,LED207 |
| 0601-001790 | LED208,LED210,LED211 |
| 0601-001790 | LED212,LED213,LED214 |
| 0601-001790 | LED215,LED216        |
| 0604-001261 | LED217               |
| 4302-001130 | M101                 |

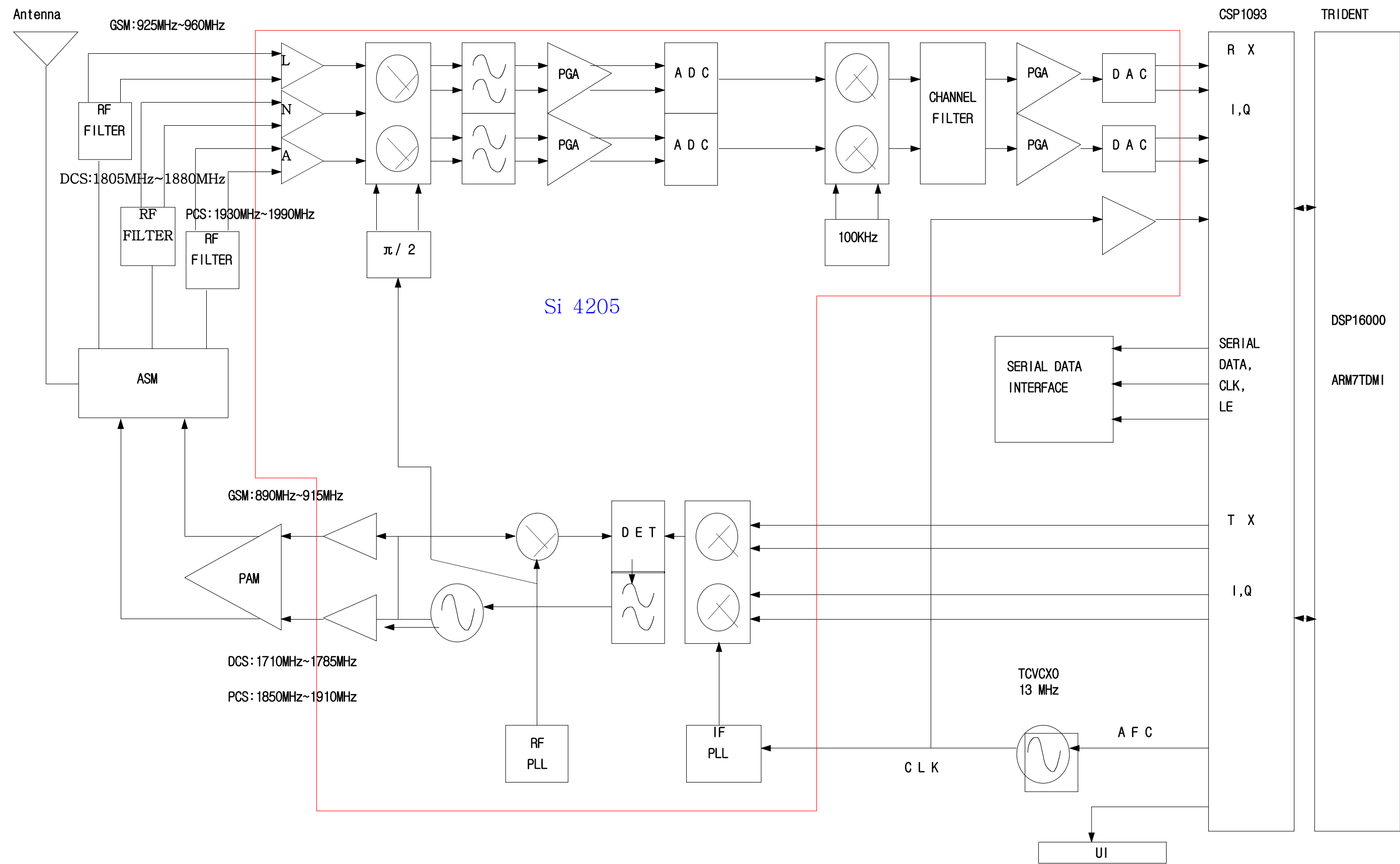
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|-------------|---------------------|
| 2801-004025 | OSC601              |
| 2809-001260 | OSC801              |
| 0502-001201 | Q101                |
| 0506-001052 | Q102                |
| 0504-000168 | Q103,Q104           |
| 0501-000225 | Q401                |
| 2007-001288 | R1001,R1005         |
| 2007-001307 | R1002,R1006         |
| 2007-007008 | R1003,R1004,R1007   |
| 2007-007008 | R1008               |
| 2007-000162 | R1009,R402,R701     |
| 2007-000171 | R101,R1010          |
| 2007-000171 | R1012,R1014         |
| 2007-000070 | R1015               |
| 2007-007139 | R103                |
| 2007-001323 | R104                |
| 2007-000171 | R105,R107,R108      |
| 2007-000758 | R106                |
| 2007-000171 | R109,R202,R203,R204 |
| 2007-001319 | R111                |
| 2007-000148 | R112,R408,R416,R423 |
| 2007-000171 | R205,R206,R208,R209 |
| 2007-000171 | R211,R212,R213,R214 |
| 2007-000171 | R215,R216,R217,R412 |
| 2007-001291 | R218                |
| 2007-000157 | R301,R302,R303,R601 |
| 2007-000140 | R304,R305,R306,R307 |
| 2007-000140 | R308,R309,R310,R312 |
| 2007-000140 | R313,R414,R420,R314 |
| 2007-000140 | R315                |
| 2007-000172 | R401,R403,R504      |
| 2007-000164 | R404                |
| 2007-000161 | R405                |
| 2007-000775 | R406                |
| 2007-000159 | R407,R411,R418      |
| 2007-001325 | R410                |
| 2007-000141 | R413,R415           |

| SEC Code    | Design LOC          |
|-------------|---------------------|
| 2007-001333 | R419                |
| 2007-000171 | R421                |
| 2007-000160 | R503                |
| 2007-008579 | R603,R604,R605,R606 |
| 2007-008579 | R607,R608,R609,R611 |
| 2007-008579 | R612,R613,R614,R615 |
| 2007-008579 | R616,R617,R618      |
| 2007-007200 | R702,R703           |
| 2007-000162 | R704,R705           |
| 2007-000172 | R801,R602           |
| 2007-000137 | R802                |
| 2007-001313 | R803                |
| 2007-000138 | R804                |
| 2007-000171 | R805                |
| 1201-001889 | U1001               |
| 1205-002433 | U1002               |
| 2007-008579 | U1003               |
| 2007-000162 | U1004               |
| 2007-007142 | U1005,R102,R110     |
| 2007-000170 | U1006               |
| 2007-007308 | U1007,U1008         |
| 2007-000157 | U1009               |
| 1203-002127 | U101                |
| 1203-002902 | U102                |
| 1009-001010 | U202                |
| 1001-001183 | U401                |
| 1204-002161 | U402                |
| 1109-001278 | U500                |
| GH09-00025A | U601                |
| 1209-001219 | U602                |
| 1204-001984 | U701                |
| 0504-001042 | U702,U703,U704      |
| 1405-001019 | V301                |
| 1405-001082 | V401                |
| 0406-001150 | ZD201,ZD202,ZD203   |
| 0406-001084 | ZD301,ZD302,ZD303   |
| 0406-001152 | ZD304               |

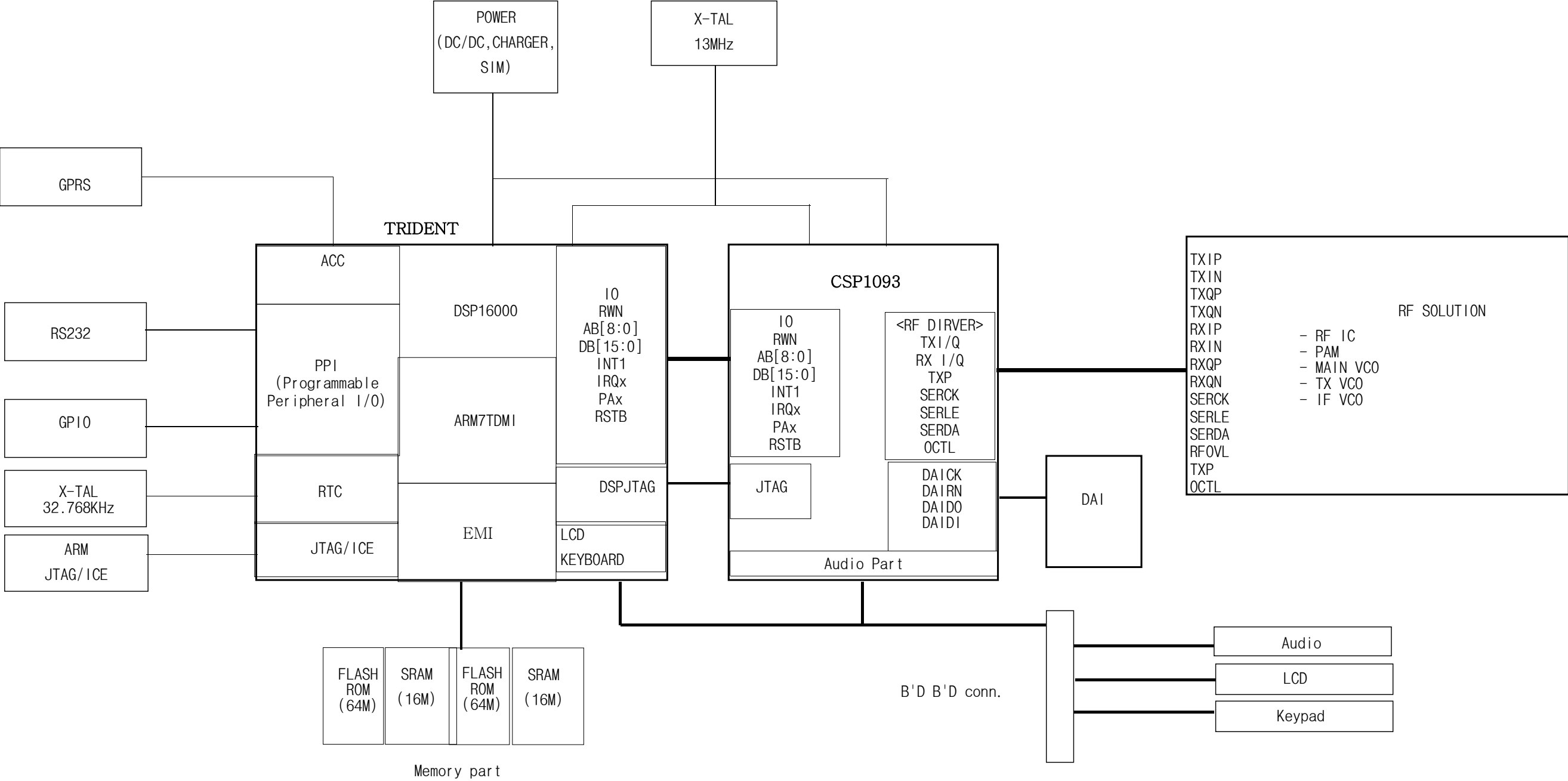
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|-------------|-------------------|
| 0403-001427 | ZD305             |
| 0406-001150 | ZD402,ZD403,ZD404 |

5. SGH-D100/D100A Block Diagrams

1. RF Solution Block Diagram



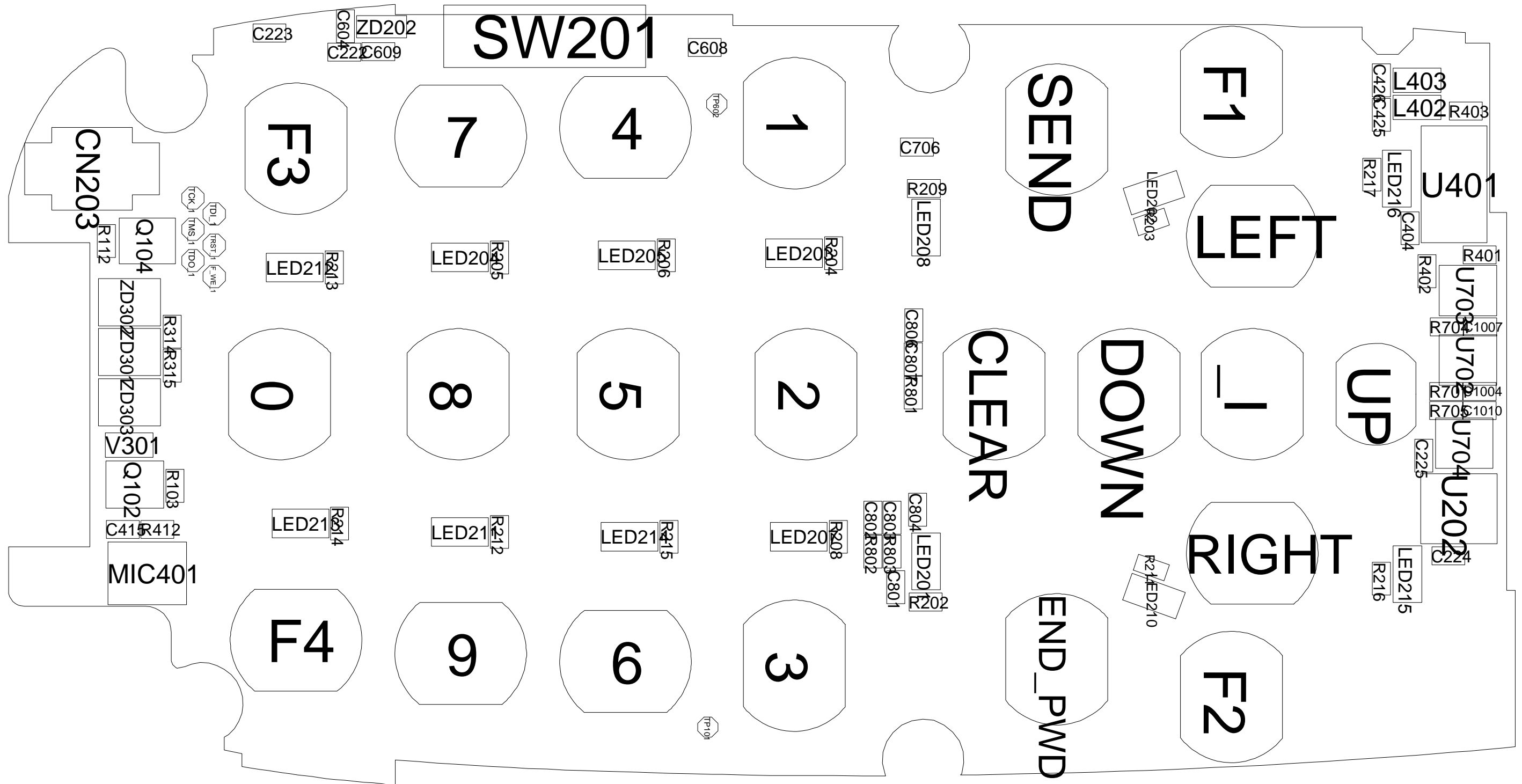
2. Base Band Solution Block Diagram



## 1. TOP Diagram



## 2. Bottom Diagram





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