SAMSUNG

# GSM TELEPHONE
## SGH-E610/SGH-E610S

# SERVICE Manual

**GSM TELEPHONE**

**CONTENTS**

1. Specification
2. Flow Chart of Troubleshooting
3. Exploded Views and Parts List
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# 1. SGH-E610 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 | - |



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## 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 |

| TX Power control level | PCS1900 |
|---|---|
| 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 |



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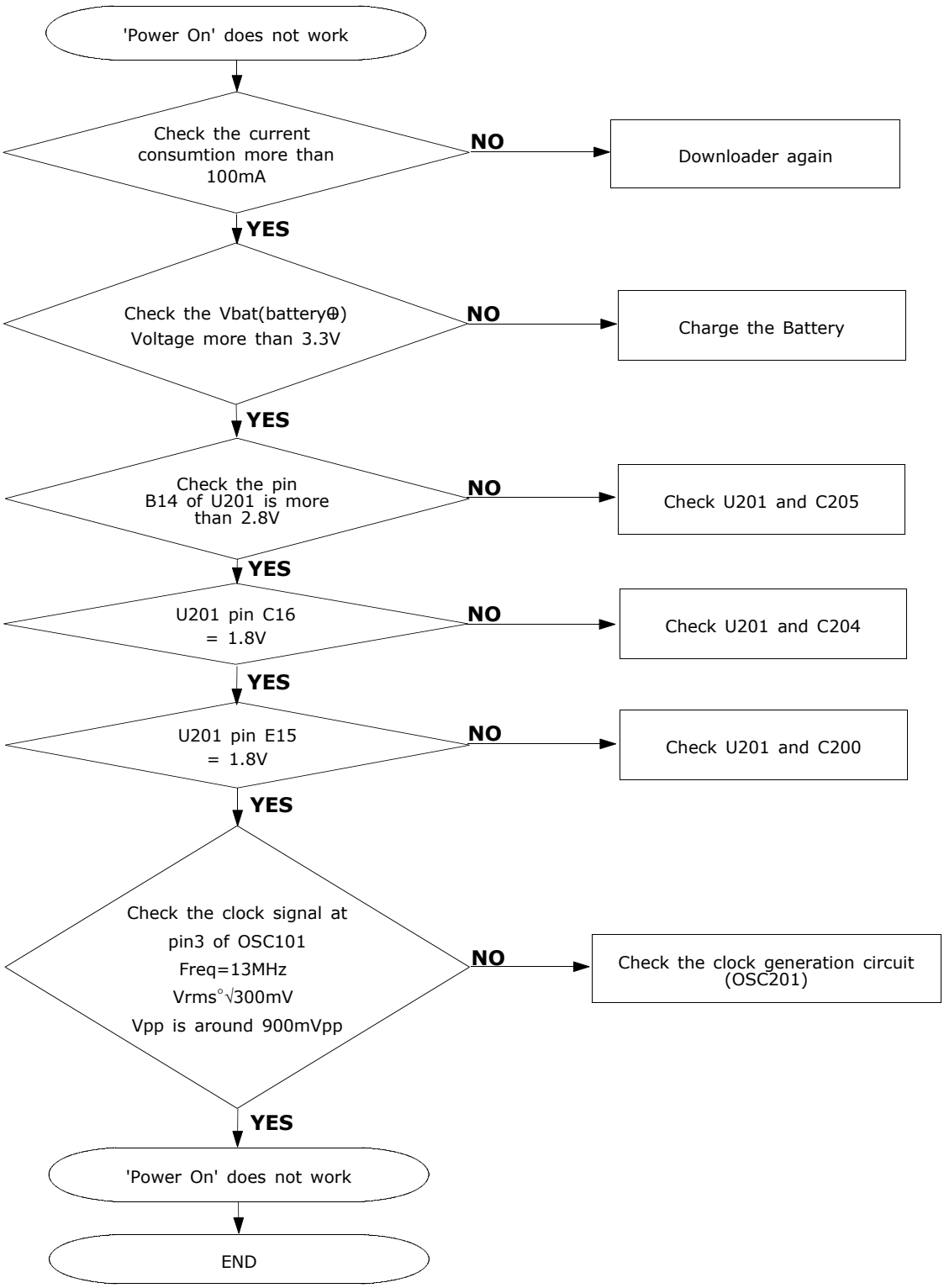
# 1.Baseband

## 1. Power ON



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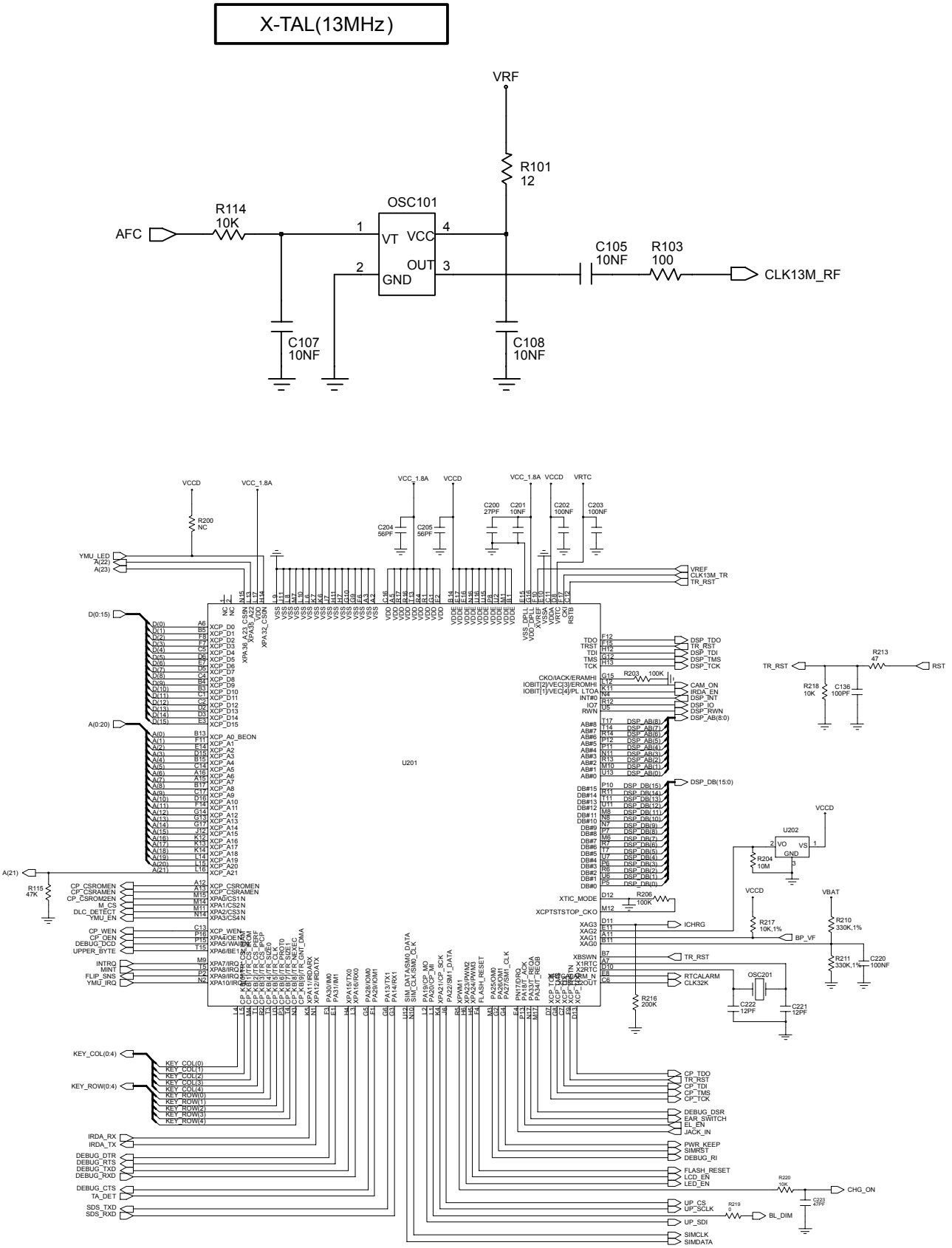




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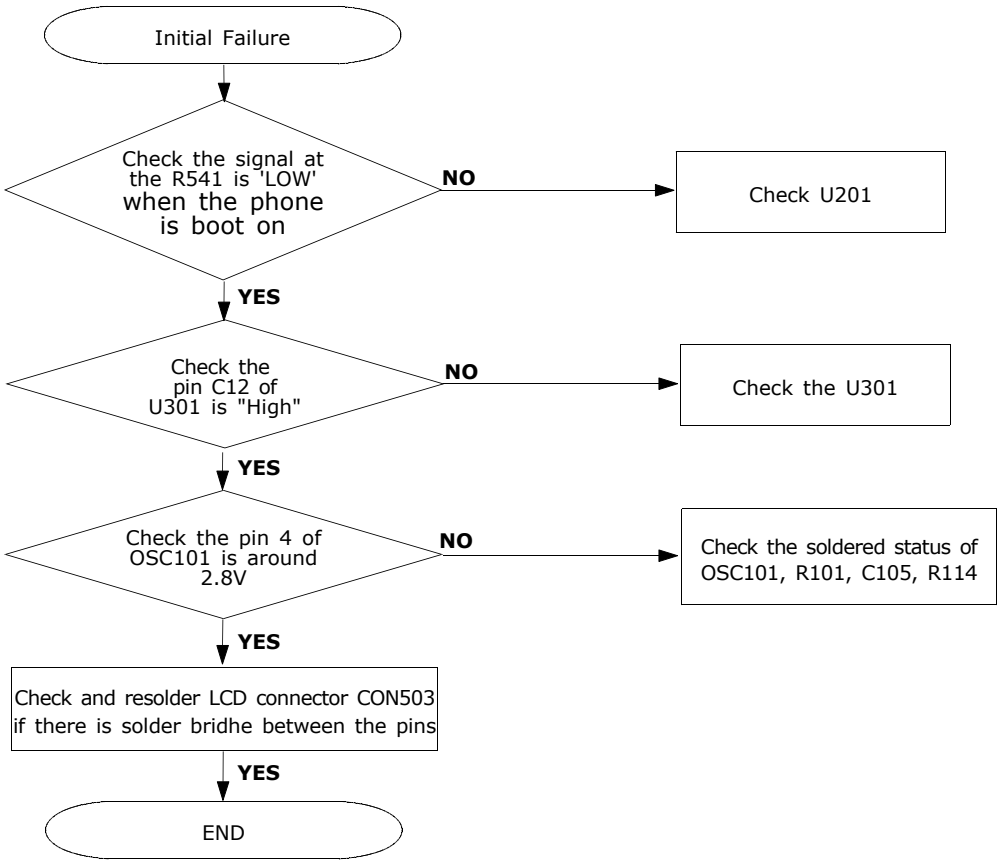
## 2. Initial



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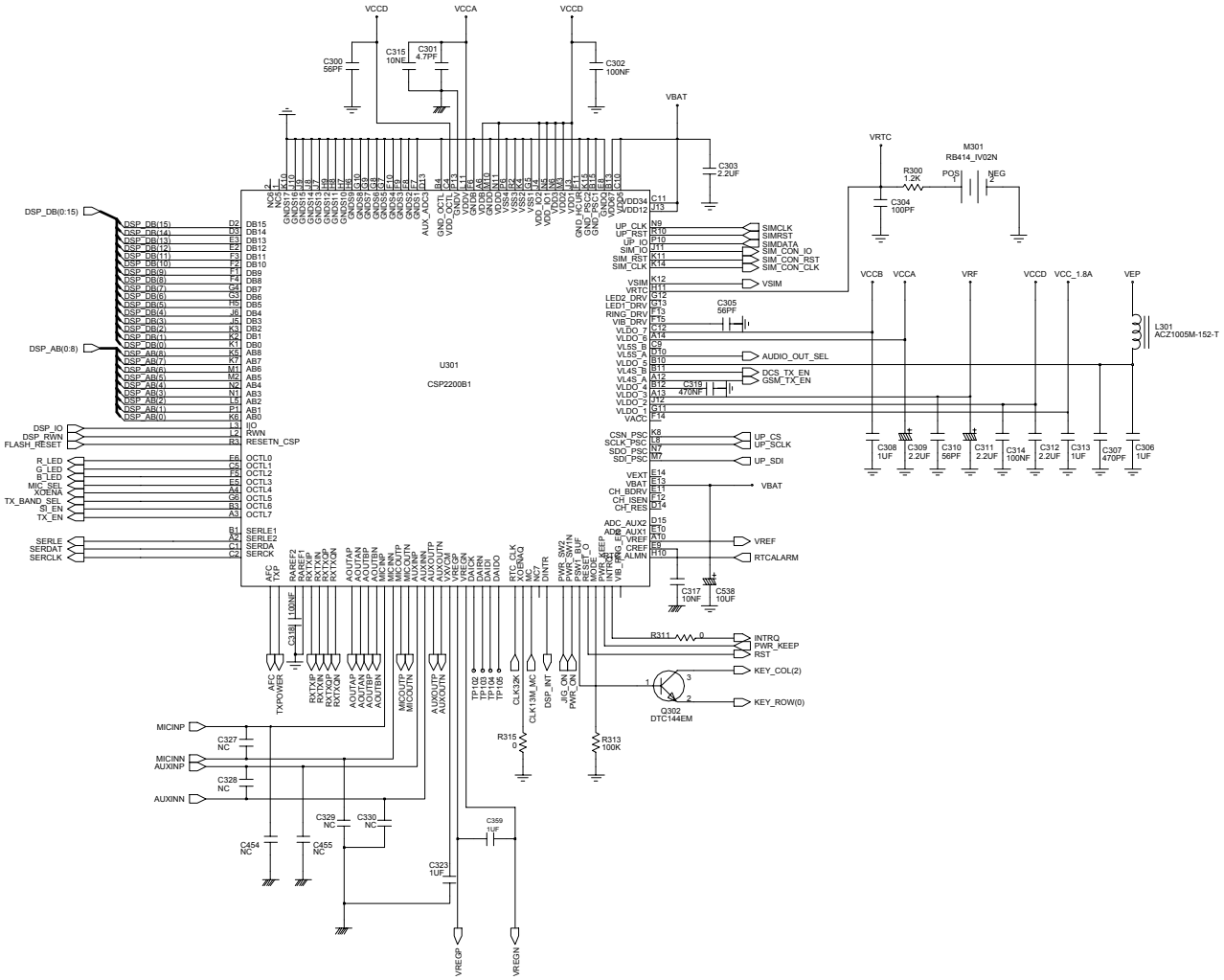




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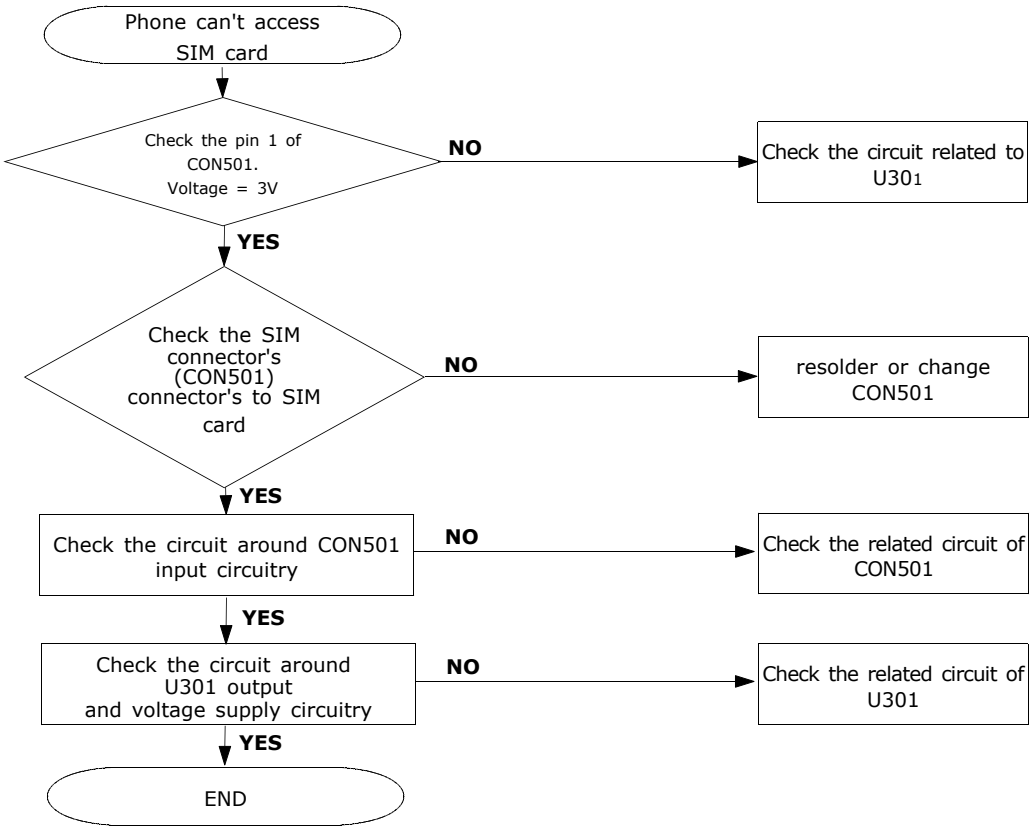
## 3. Sim Part



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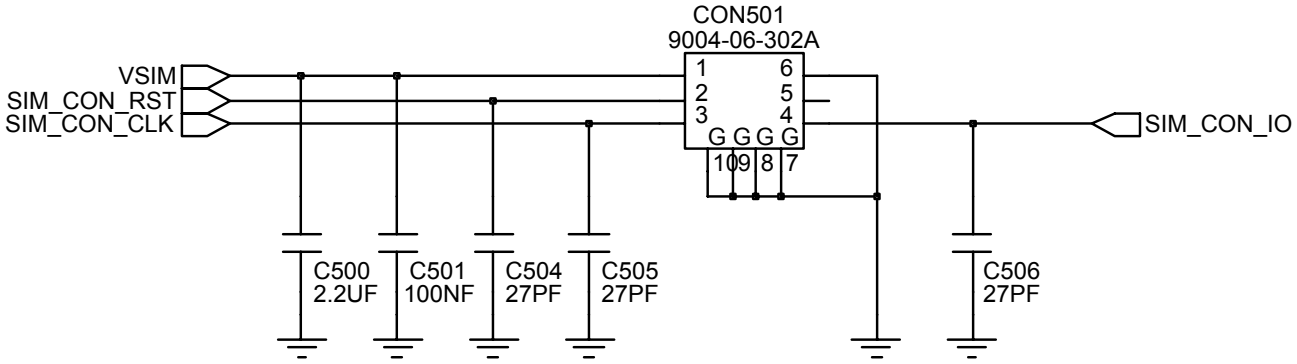


SIM CARD



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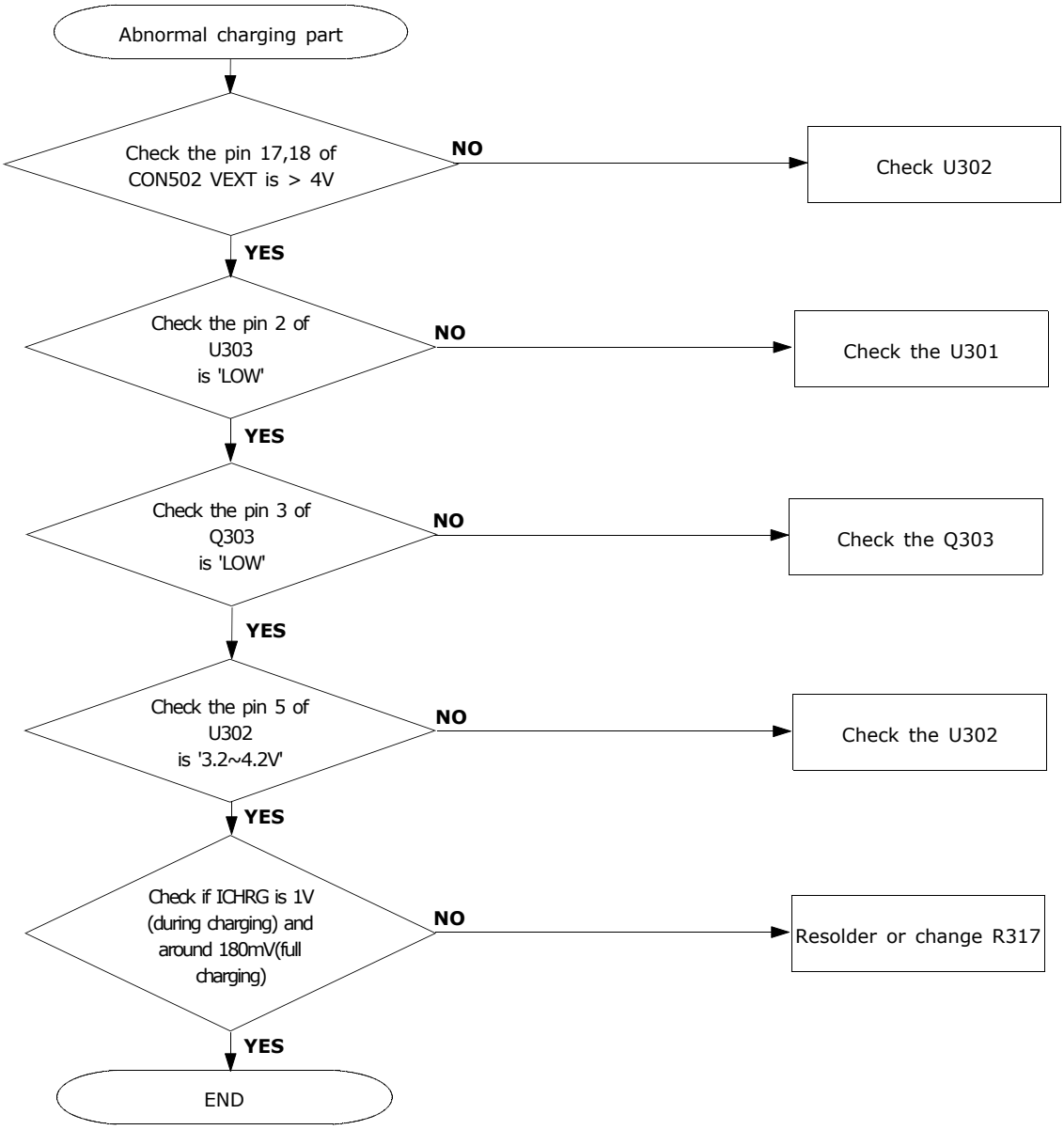
# 4. Charging Part



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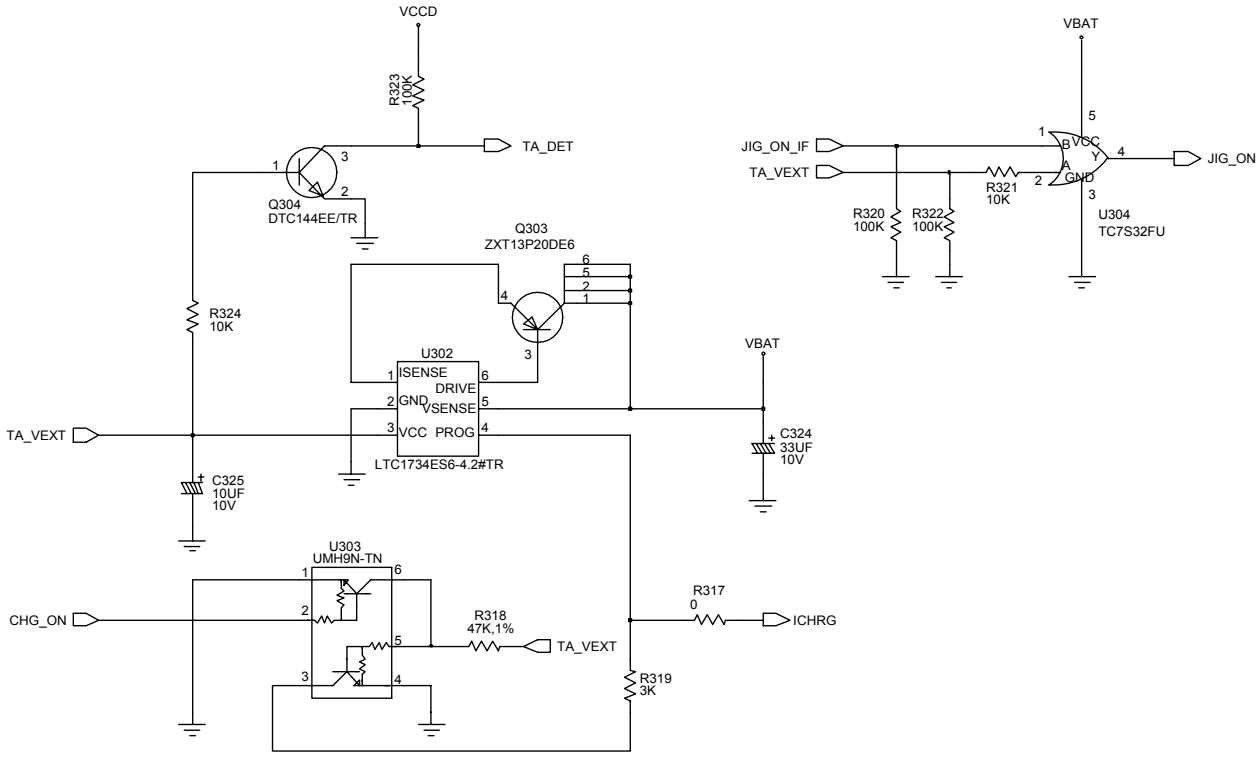




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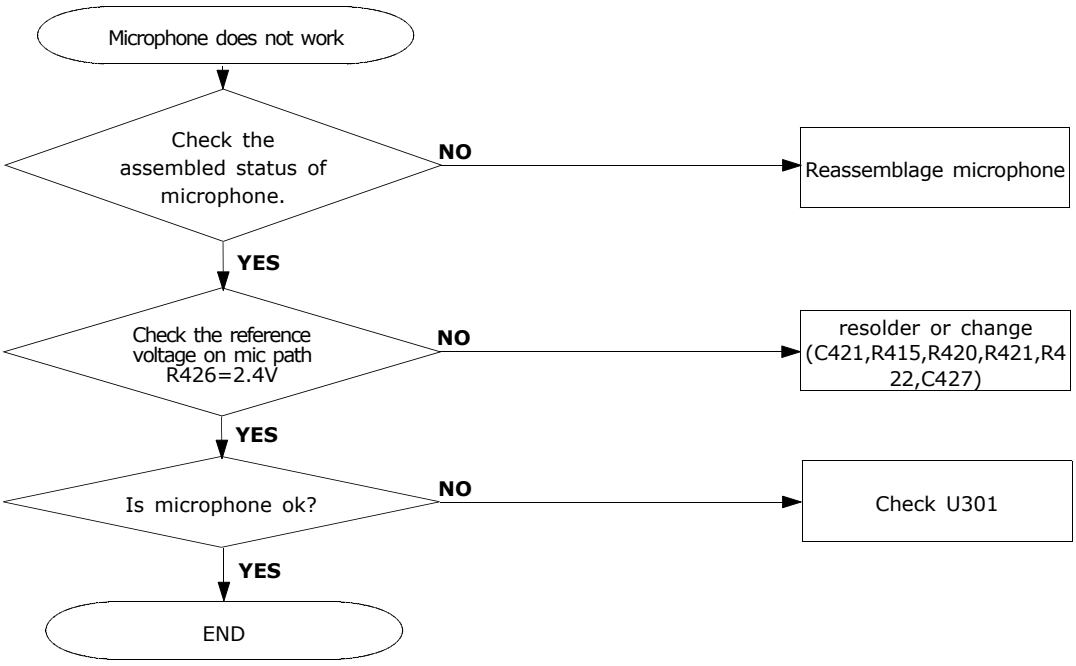
## 5. Microphone Part



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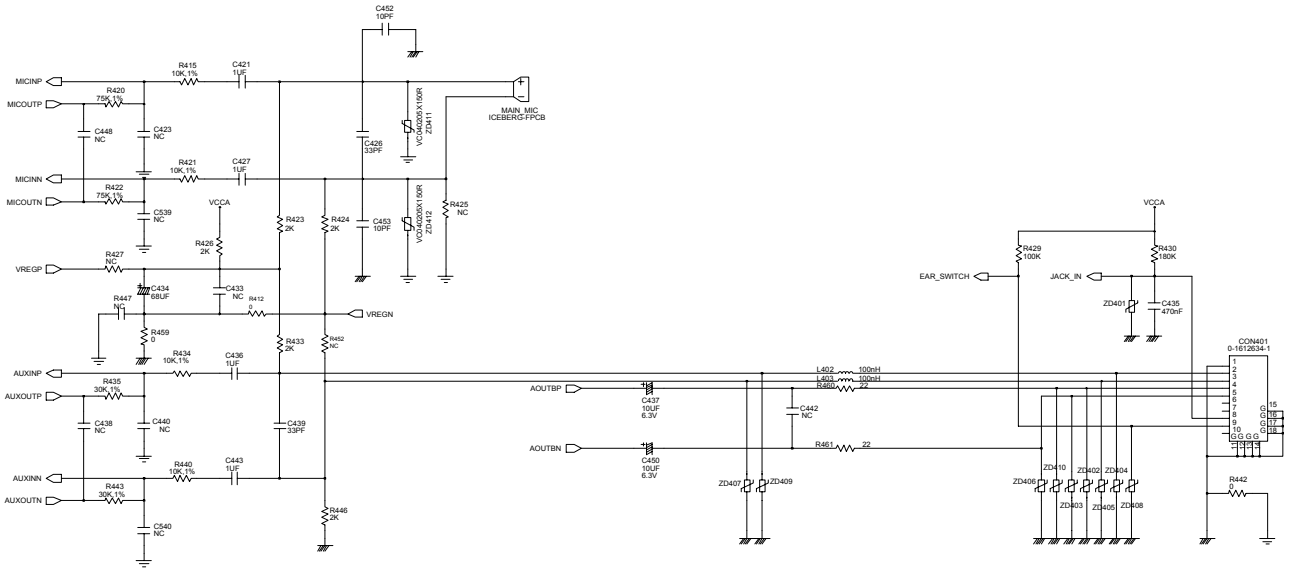




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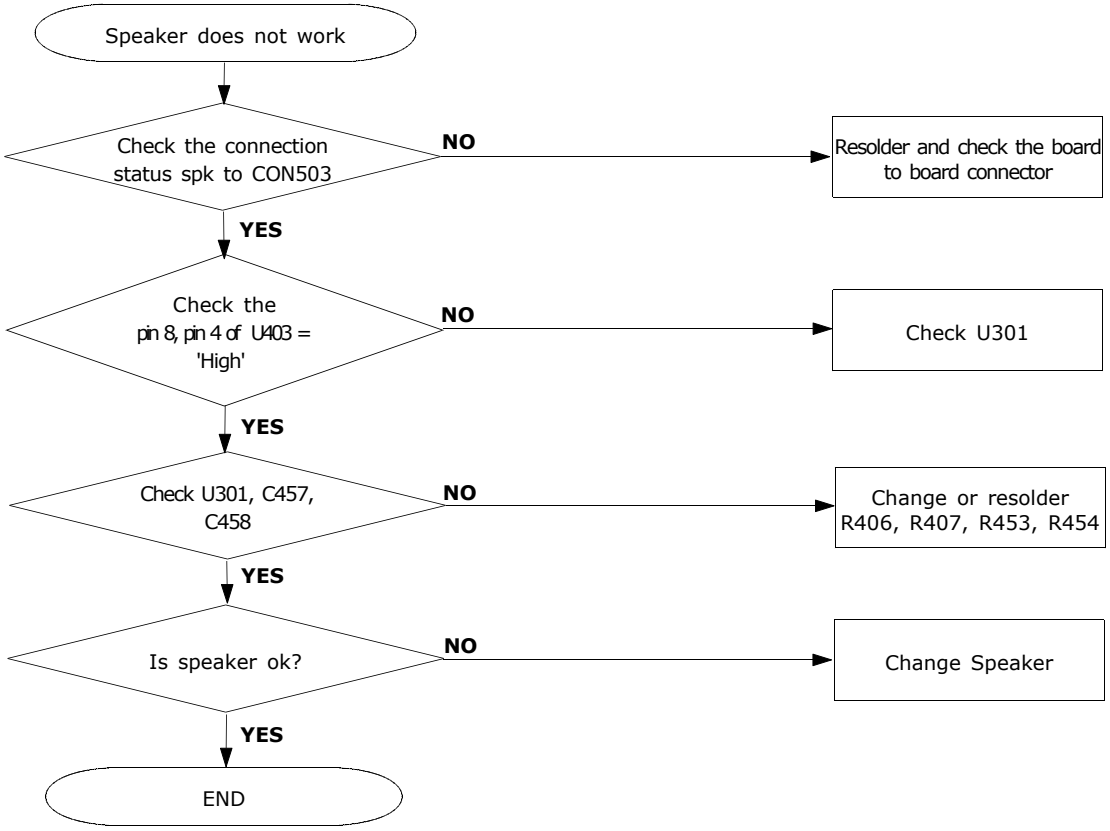
## 6. Speaker Part



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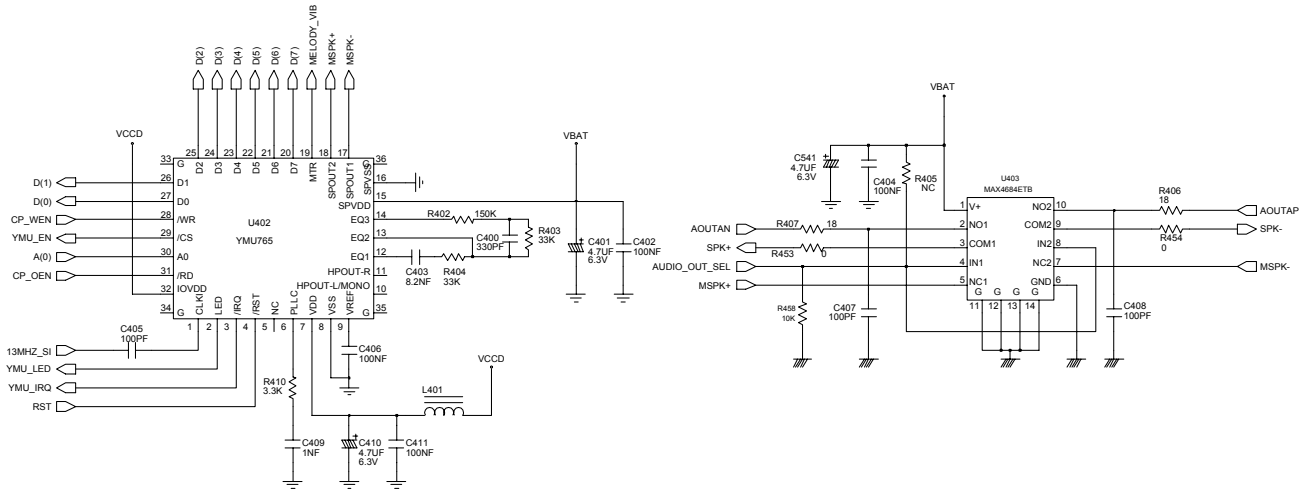




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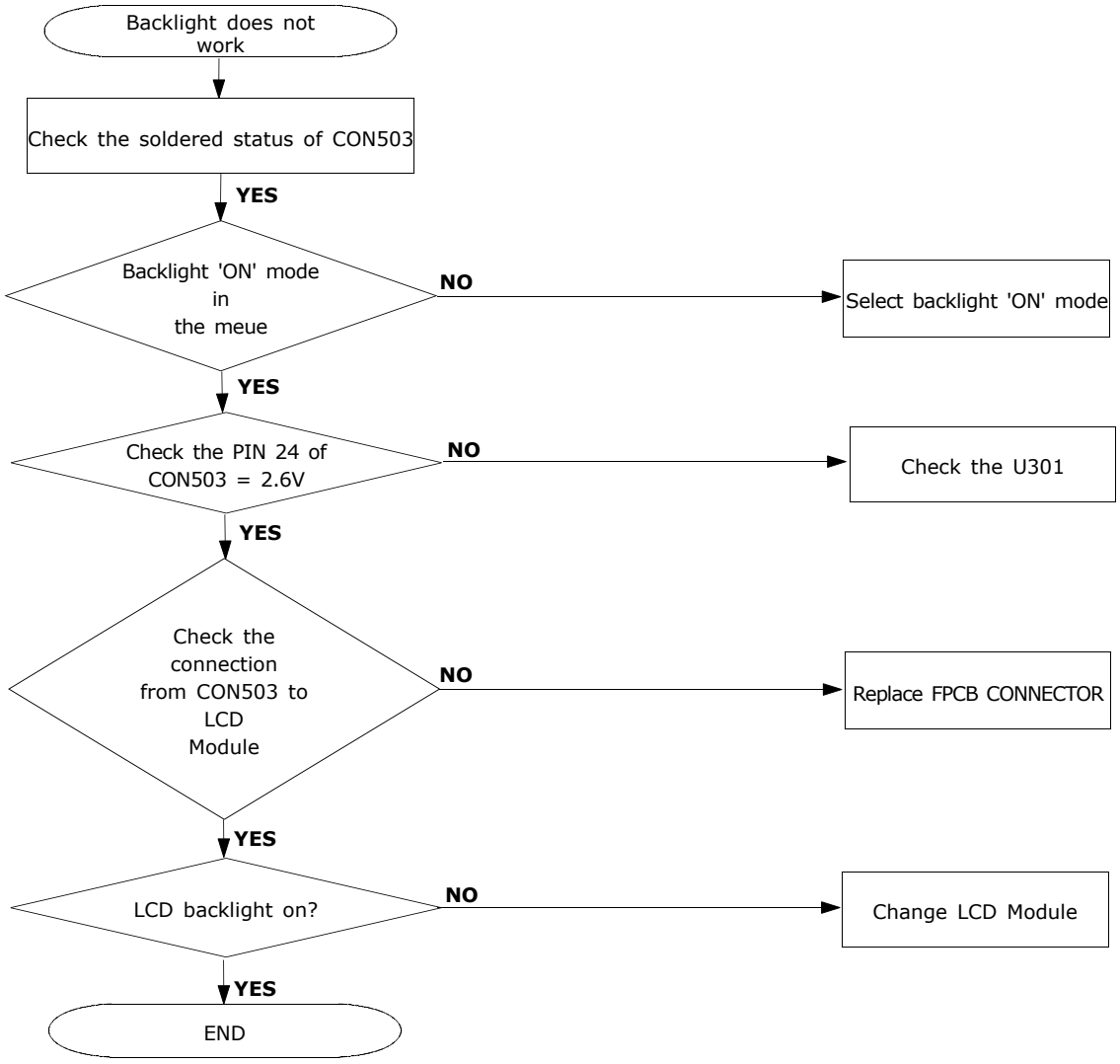
# 7. Back Light



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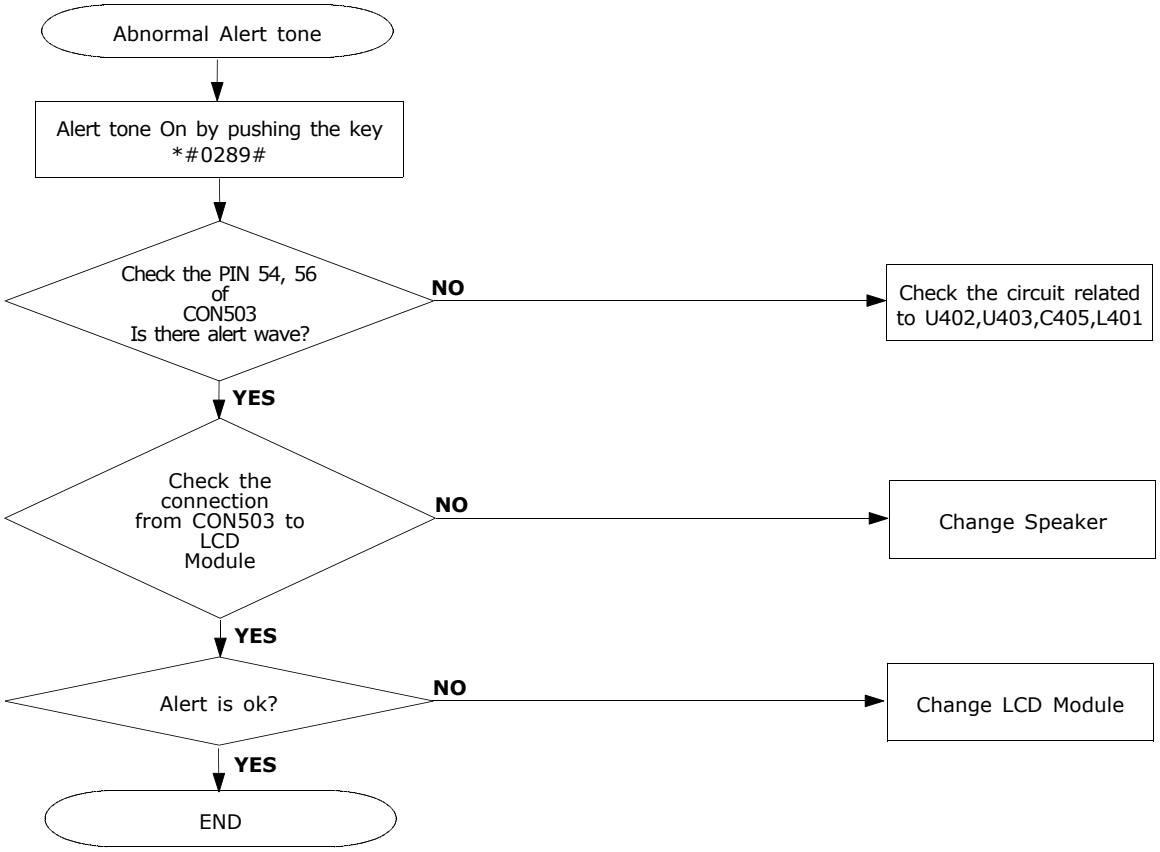
## 8.Alert Tone



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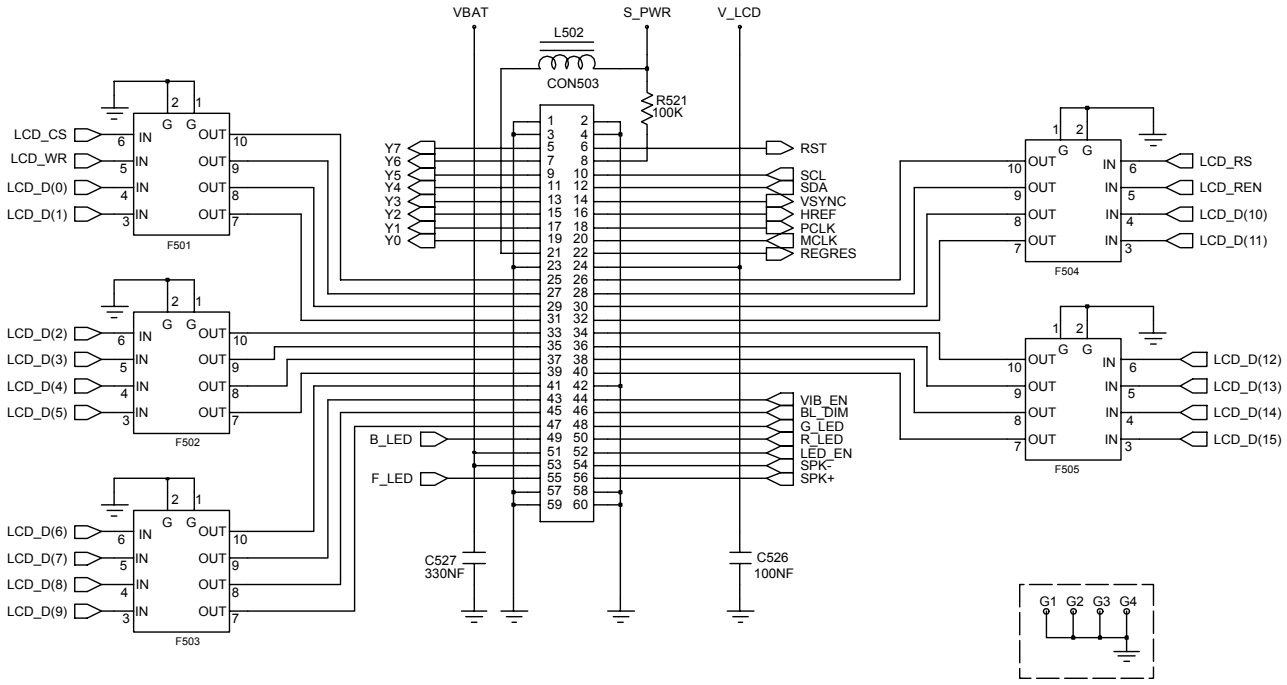




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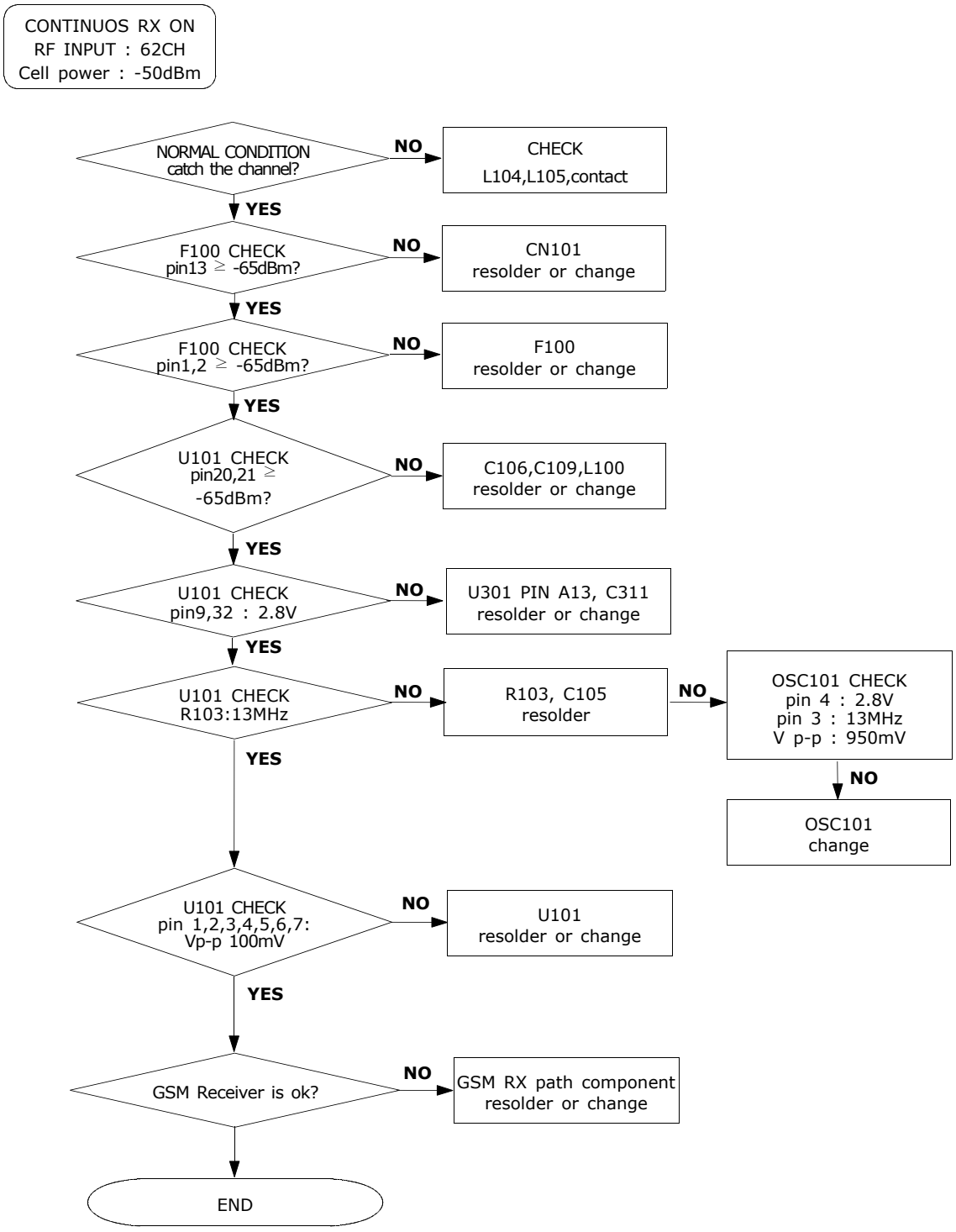
# 2.RF
## 1. GSM Receiver



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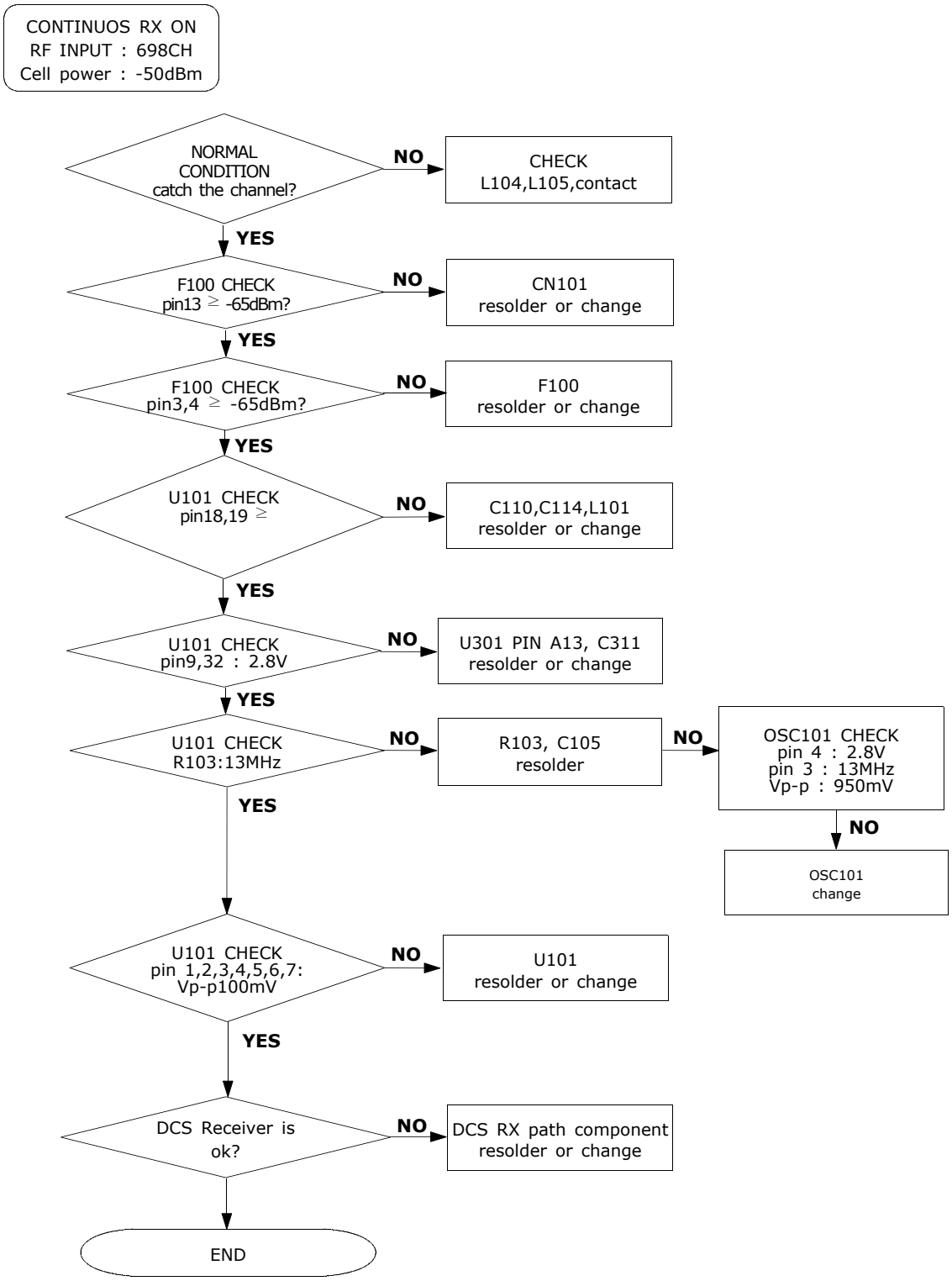
## 2. DCS Receiver



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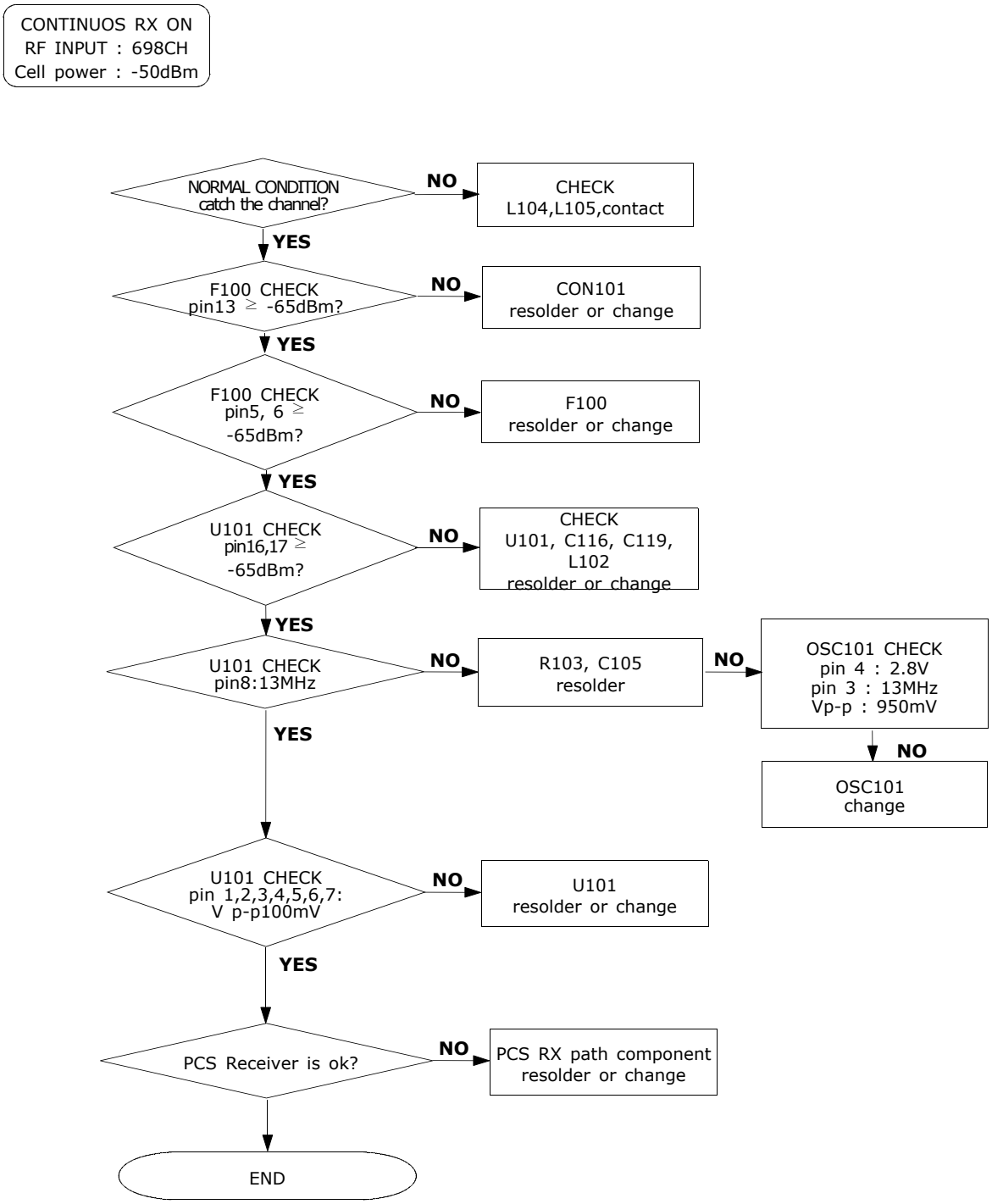
## 3. PCS Receiver



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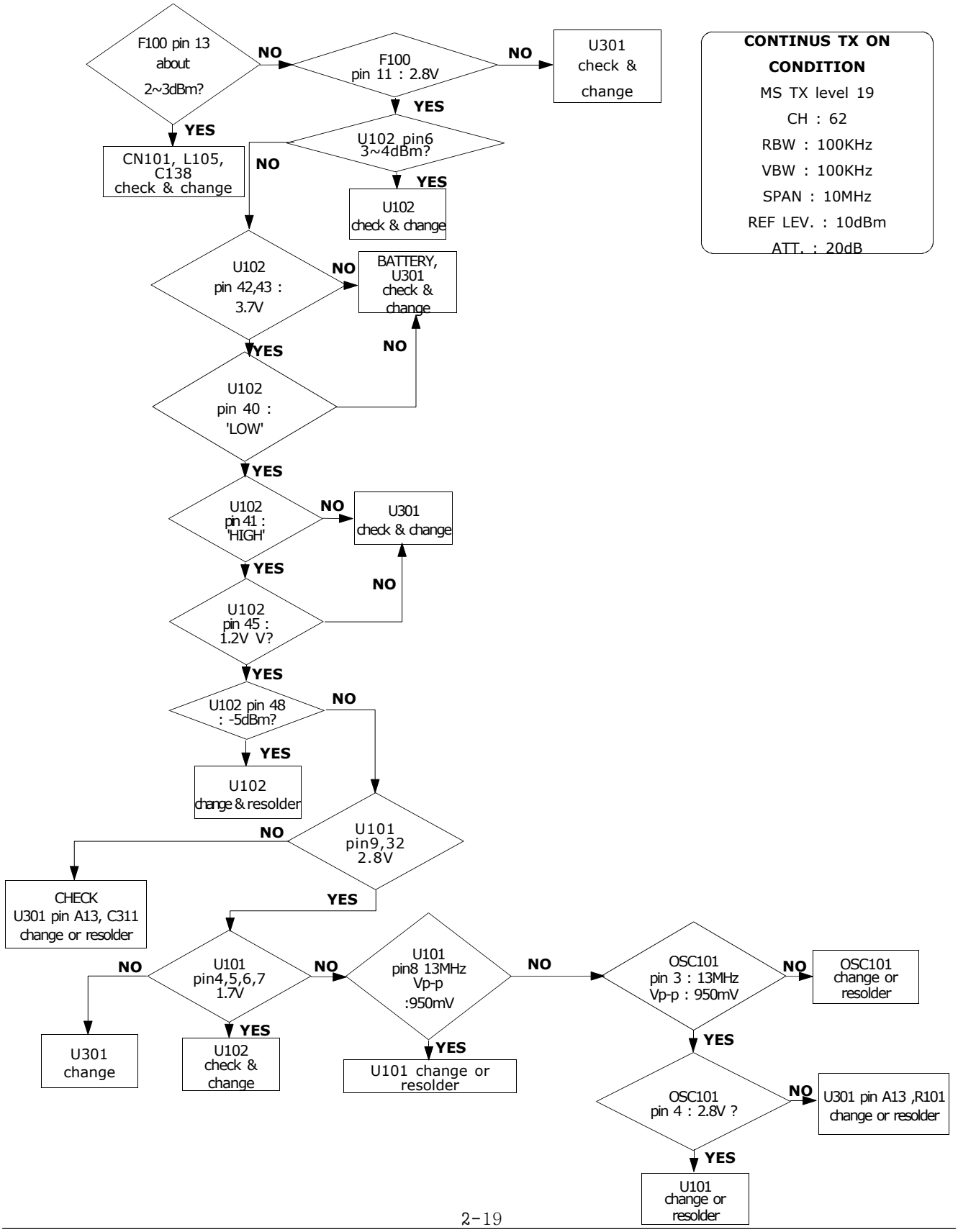
## 4. GSM Transmitter



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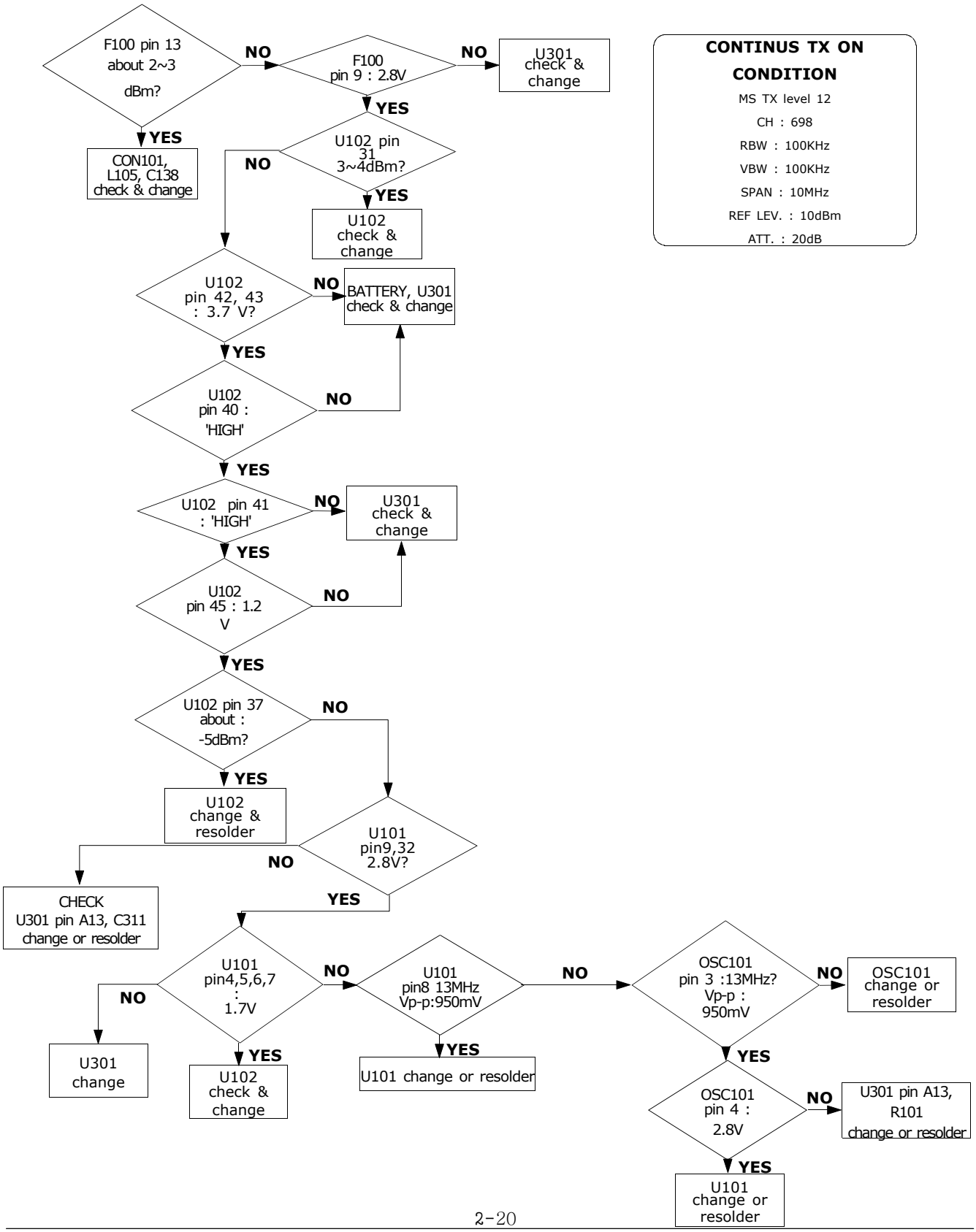
## 5. DCS Transmitter



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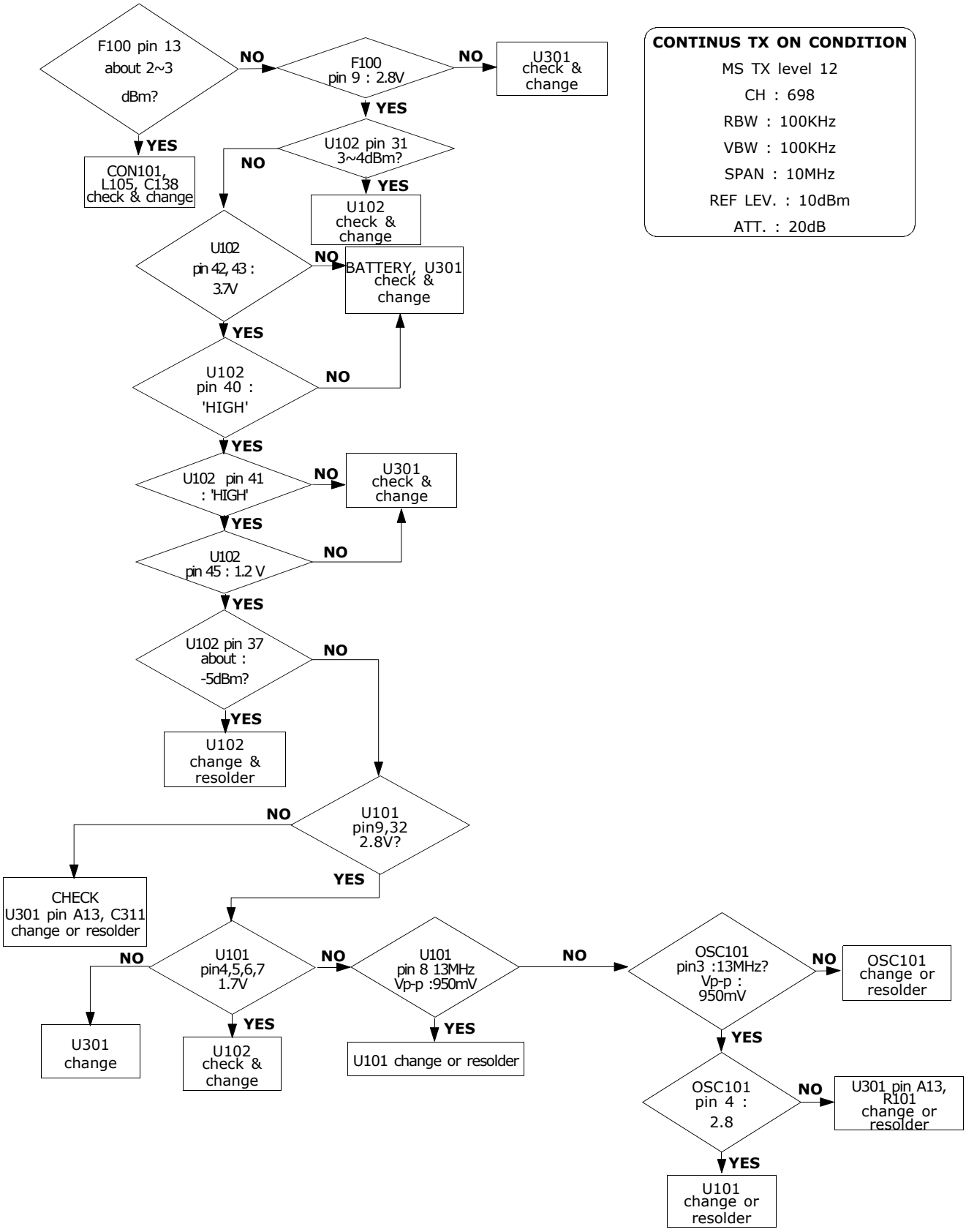
## 6. PCS Transmitter



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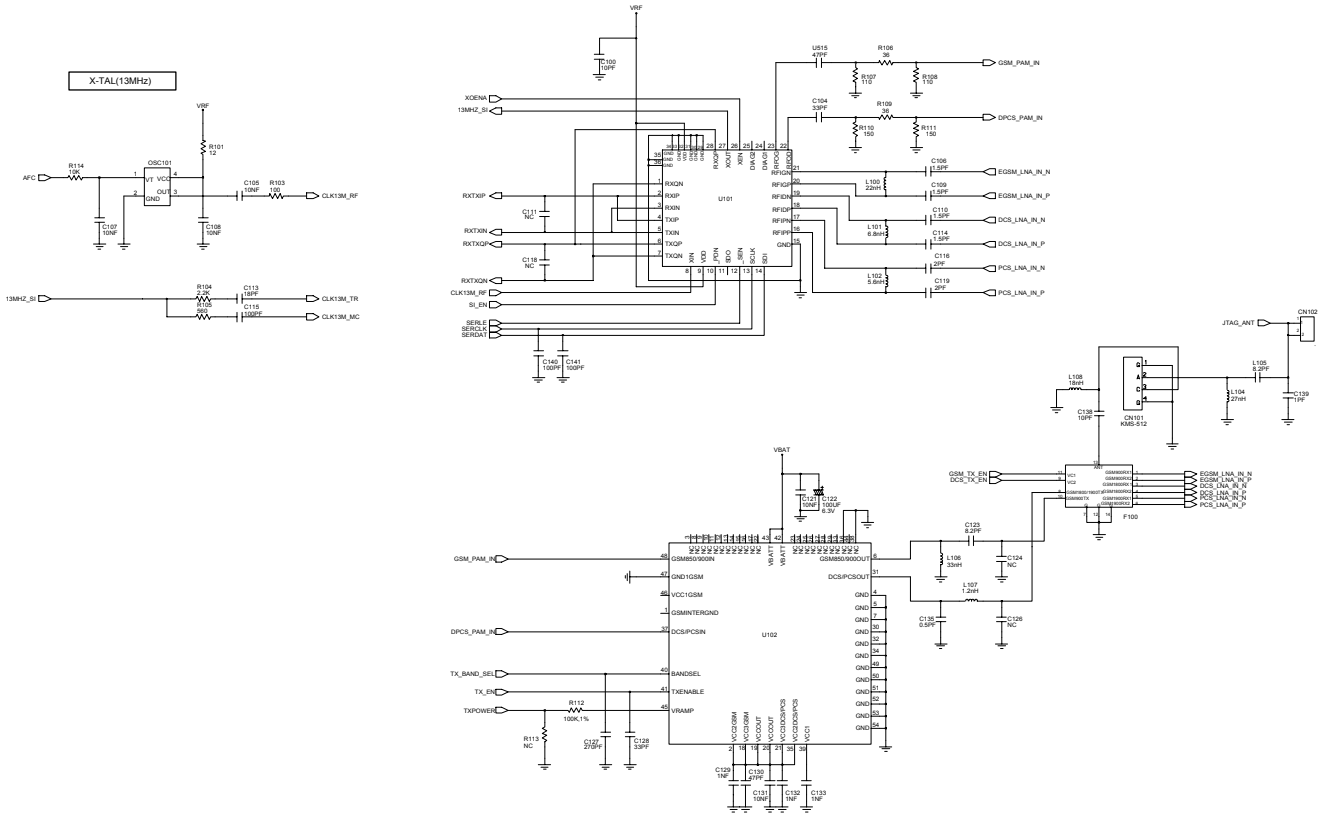




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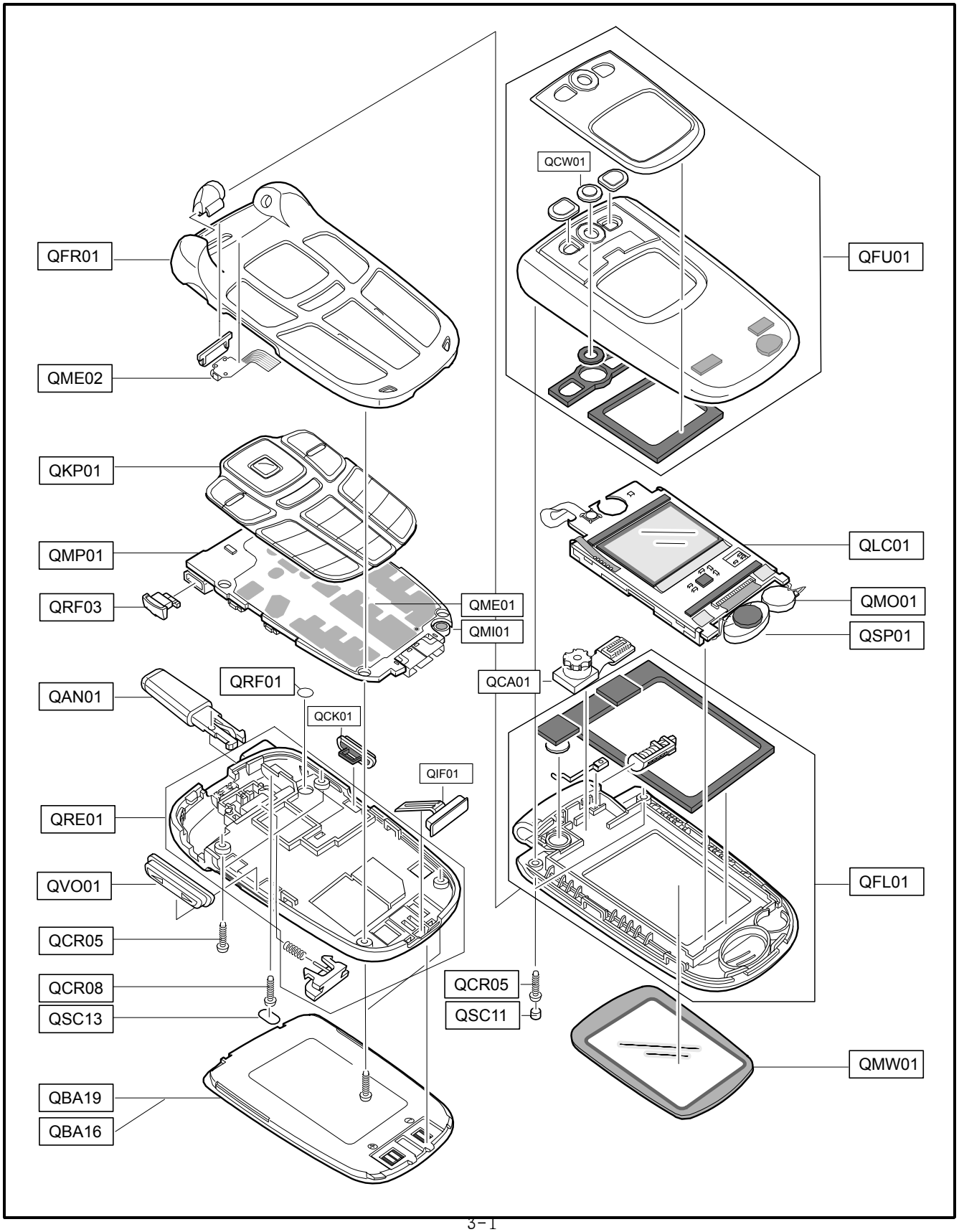
# 3. SGH-E610 Exploded View and its Parts list

1. Cellular phone Exploded View



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## 2. Cellular phone Parts list

| Location NO. | | Description | SEC CODE | Remark |
|---|---|---|---|---|
| QFU01 | | SUB F/UPPER | GH75-04262D | |
| | QCW01 | CAMERA WINDOW | GH75-05475A | |
| QLC01 | | LCD | GH07-00538A | |
| QMO01 | | MOTOR DC | GH31-00079A | |
| QSP01 | | SPEAKER | 3001-001625 | |
| QCA01 | | CAMERA | GH59-01294A | |
| QFL01 | | F/LOWER ASSY | GH75-04261A | |
| QCR05 | | SCREW | 6001-001478 | |
| QSC11 | | F/L SCREW CAP | GH73-02767A | |
| QMW01 | | WINDOW DUMMY ASSY | GH75-04260A | |
| QFR01 | | FRONT COVER ASSY | GH75-04257A | |
| QKP01 | | KEYPAD | GH75-04259A | |
| QMP01 | | PBA MAIN | GH92-01706A | |
| QME01 | | UNIT EL DOME SWITCH | GH59-01620A | |
| QMI01 | | MICROPHONE ASSY | GH30-00095A | |
| QME02 | | UNIT IRDA FPCB | GH59-01393A | |
| QAN01 | | ANTENNA | GH42-00466A | |
| QCK01 | | CAMKEY | GH75-04086A | |
| QIF01 | | IF COVER | GH72-12309A | |
| QRE01 | | REAR COVER | GH75-04258A | |
| QVO01 | | KEYVOL | GH75-05525A | |
| QCR05 | | SCREW | 6001-001478 | |
| QCR08 | | SCREW | 6001-001611 | |
| QSC13 | | RE SCREW BOHO SHEET | GH74-07279A | |
| QBA19 | | BATTERY 800MAH | GH43-01462A | |
| QBA16 | | BATTERY 720MAH | GH43-01463A | |
| QRF03 | | EAR JACK COVER | GH72-11645A | |
| QRF01 | | RF COVER | GH73-03378A | |



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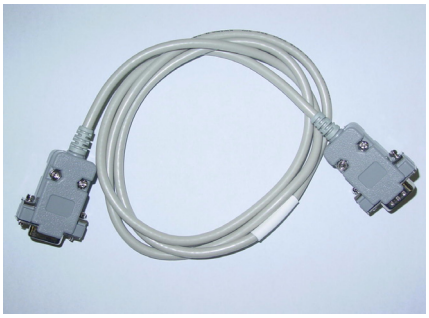
3. Test Jig (GH80-00865A)

3-1. RF Test Cable (GH39-00283A)

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)

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# 4. SGH-E618 MAIN Electrical Parts List

| SEC Code | Design LOC |
|---|---|
| 0403-001427 | ZD512 |
| 0403-001511 | ZD517 |
| 0406-001084 | ZD514,ZD515,ZD516 |
| 0406-001152 | ZD513 |
| 0501-000481 | Q501 |
| 0502-001201 | Q303 |
| 0504-000168 | Q304 |
| 0504-001113 | Q302 |
| 0506-001052 | U303 |
| 0801-000796 | U304 |
| 1001-001261 | U403 |
| 1003-001395 | U518 |
| 1009-001010 | U503 |
| 1109-001281 | U203 |
| 1201-002075 | U102 |
| 1203-001518 | U502 |
| 1203-002127 | U302 |
| 1203-002861 | U407 |
| 1203-003046 | U406 |
| 1203-003130 | U405 |
| 1203-003304 | U301 |
| 1204-002138 | U402 |
| 1205-002433 | U101 |
| 1209-001219 | U202 |
| 1405-001019 | V500 |
| 1405-001082 | U516,U517,ZD401 |
| 1405-001082 | ZD402,ZD403,ZD404 |
| 1405-001082 | ZD405,ZD406,ZD407 |
| 1405-001082 | ZD408,ZD409,ZD410 |
| 1405-001082 | ZD411,ZD412,ZD503 |
| 1405-001082 | ZD504,ZD505,ZD506 |
| 1405-001082 | ZD507,ZD508,ZD509 |
| 1405-001082 | ZD510,ZD511 |
| 2007-000137 | R423,R424,R426,R433 |
| 2007-000137 | R446 |
| 2007-000138 | R103 |
| 2007-000140 | R526,R527,R528,R529 |

| SEC Code | Design LOC |
|---|---|
| 2007-000140 | R530,R531,R532,R533 |
| 2007-000140 | R534,R535,R537,R538 |
| 2007-000141 | R104 |
| 2007-000143 | R400,R401 |
| 2007-000148 | R114,R218,R220,R321 |
| 2007-000148 | R324,R458 |
| 2007-000157 | R115,R524,R525 |
| 2007-000162 | R203,R205,R206,R313 |
| 2007-000162 | R320,R322,R323,R411 |
| 2007-000162 | R413,R414,R417,R429 |
| 2007-000162 | R450,R514,R521 |
| 2007-000164 | R402 |
| 2007-000165 | R216 |
| 2007-000171 | R219,R311,R315,R317 |
| 2007-000171 | R412,R442,R448,R449 |
| 2007-000171 | R453,R454,R456,R459 |
| 2007-000171 | R540,R548,R550 |
| 2007-000173 | R460,R461 |
| 2007-000174 | R209,R213,R500,R501 |
| 2007-000174 | R502,R503,R504,R508 |
| 2007-000174 | R509,R510,R511,R513 |
| 2007-000174 | R541 |
| 2007-000249 | R547 |
| 2007-000775 | R403,R404 |
| 2007-001288 | R406,R407 |
| 2007-001294 | R106,R109 |
| 2007-001303 | R107,R108 |
| 2007-001306 | R110,R111 |
| 2007-001319 | R300 |
| 2007-001323 | R319 |
| 2007-001325 | R410 |
| 2007-001339 | R430 |
| 2007-002797 | R105 |
| 2007-003001 | R101 |
| 2007-003006 | R505,R507 |
| 2007-007100 | R204 |
| 2007-007107 | R112 |



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| SEC Code | Design LOC |
|---|---|
| 2007-007139 | R318 |
| 2007-007142 | R217,R415,R421,R434 |
| 2007-007142 | R440 |
| 2007-007308 | R435,R443 |
| 2007-007573 | R210,R211 |
| 2007-007590 | R420,R422 |
| 2203-000233 | C115,C136,C137,C304 |
| 2203-000233 | C405,C407,C408,C414 |
| 2203-000254 | C105,C107,C108,C121 |
| 2203-000254 | C131,C201,C206,C207 |
| 2203-000254 | C208,C209,C210,C211 |
| 2203-000254 | C212,C315,C317,C413 |
| 2203-000254 | C416,C420,C459,C518 |
| 2203-000278 | C100,C138,C451,C452 |
| 2203-000278 | C453 |
| 2203-000330 | C221,C222 |
| 2203-000425 | C113 |
| 2203-000438 | C129,C132,C133,C218 |
| 2203-000438 | C409 |
| 2203-000466 | C139 |
| 2203-000654 | C127 |
| 2203-000679 | C200,C504,C505,C506 |
| 2203-000696 | C116,C119 |
| 2203-000812 | C104,C128,C426,C439 |
| 2203-000940 | C307,C511 |
| 2203-000995 | C130,C223,C508,U515 |
| 2203-001033 | C512 |
| 2203-001072 | C204,C205,C300,C305 |
| 2203-001072 | C310 |
| 2203-001210 | C403 |
| 2203-001383 | C135 |
| 2203-001385 | C106,C109,C110,C114 |
| 2203-001598 | C303,C312,C500 |
| 2203-001652 | C319 |
| 2203-002443 | C400 |
| 2203-005054 | C301 |
| 2203-005057 | C123,L105 |

| SEC Code | Design LOC |
|---|---|
| 2203-005061 | C202,C203,C214,C215 |
| 2203-005061 | C216,C217,C220,C302 |
| 2203-005061 | C314,C318,C402,C404 |
| 2203-005061 | C406,C411,C412,C417 |
| 2203-005061 | C501,C520,C521,C526 |
| 2203-005065 | C323 |
| 2203-005482 | C509 |
| 2203-005496 | C213 |
| 2203-005509 | C527 |
| 2203-005736 | C140,C141 |
| 2203-006053 | C306,C308,C313 |
| 2203-006093 | C359,C419,C421,C422 |
| 2203-006093 | C424,C427,C436,C441 |
| 2203-006093 | C443,C507,C530,C531 |
| 2203-006093 | C532 |
| 2203-006257 | C435 |
| 2404-001086 | C401,C410,C541 |
| 2404-001088 | C309,C311 |
| 2404-001105 | C425,C437,C450,C456 |
| 2404-001105 | C458,C510 |
| 2404-001134 | C122 |
| 2404-001268 | C325,C415,C503,C538 |
| 2404-001274 | C324 |
| 2404-001306 | C434 |
| 2404-001393 | C418 |
| 2703-001189 | L108 |
| 2703-001724 | L107 |
| 2703-002201 | L106 |
| 2703-002202 | L104 |
| 2703-002320 | L402,L403 |
| 2703-002547 | L101 |
| 2703-002587 | L100 |
| 2703-002665 | L102 |
| 2703-002805 | L501 |
| 2801-003747 | OSC201 |
| 2804-001577 | OSC401 |
| 2809-001260 | OSC101 |



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| SEC Code | Design LOC |
|---|---|
| 2901-001286 | F501,F502,F503,F504 |
| 2901-001286 | F505 |
| 2909-001249 | F100 |
| 3301-001342 | L301,L401,L502 |
| 3404-001152 | SW501,SW502,SW503 |
| 3705-001358 | CN101 |
| 3708-001912 | CN505 |
| 3708-001956 | CN504 |
| 3709-001321 | CON501 |
| 3710-002086 | CON502 |
| 3711-005462 | CON503 |
| 3722-002082 | CON401 |
| 4302-001130 | M301 |
| GH09-00029A | U201 |
| GH13-00020A | U401 |
| GH71-01810A | CN102 |



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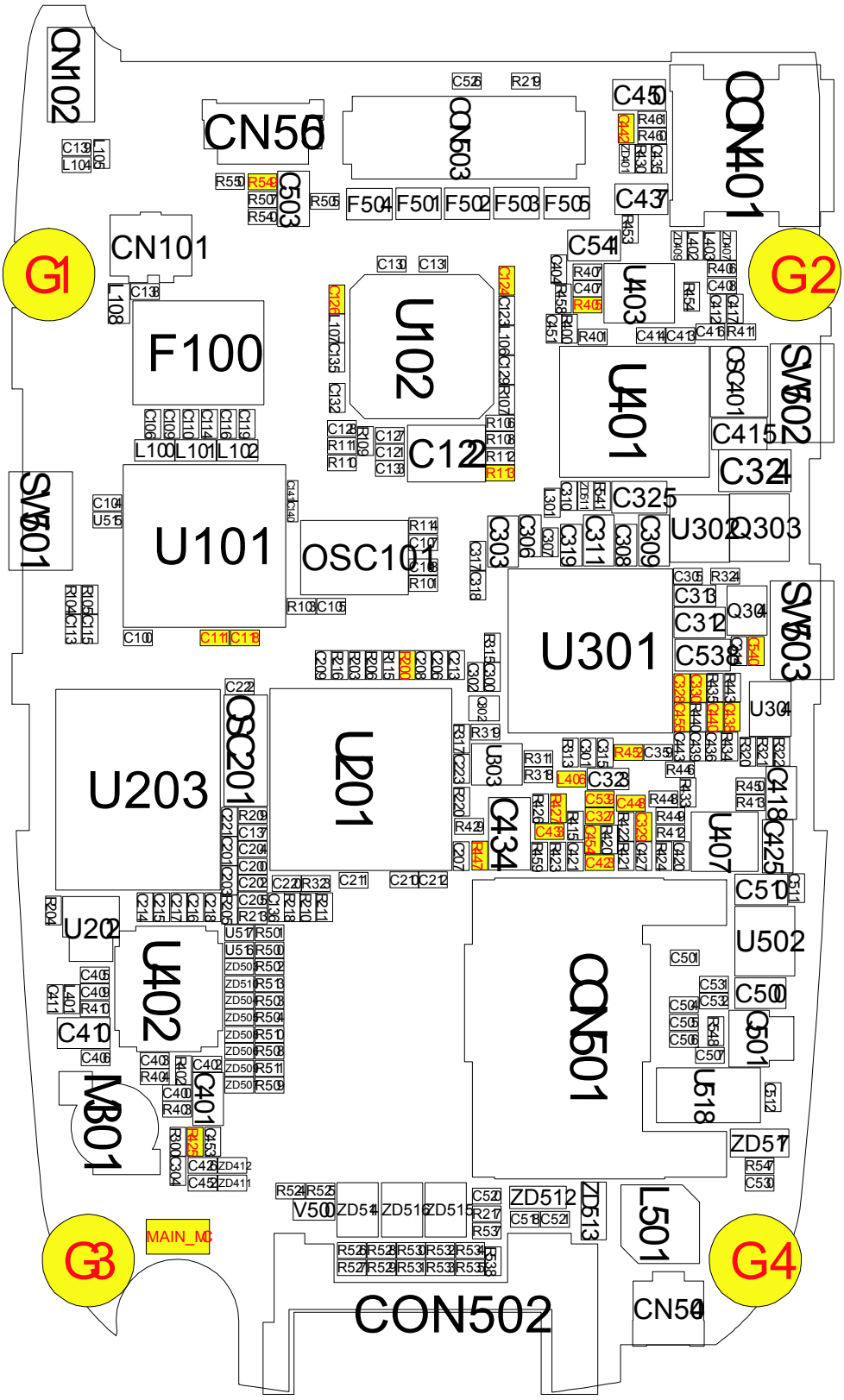
# 5. SGH-E610 PCB Diagrams



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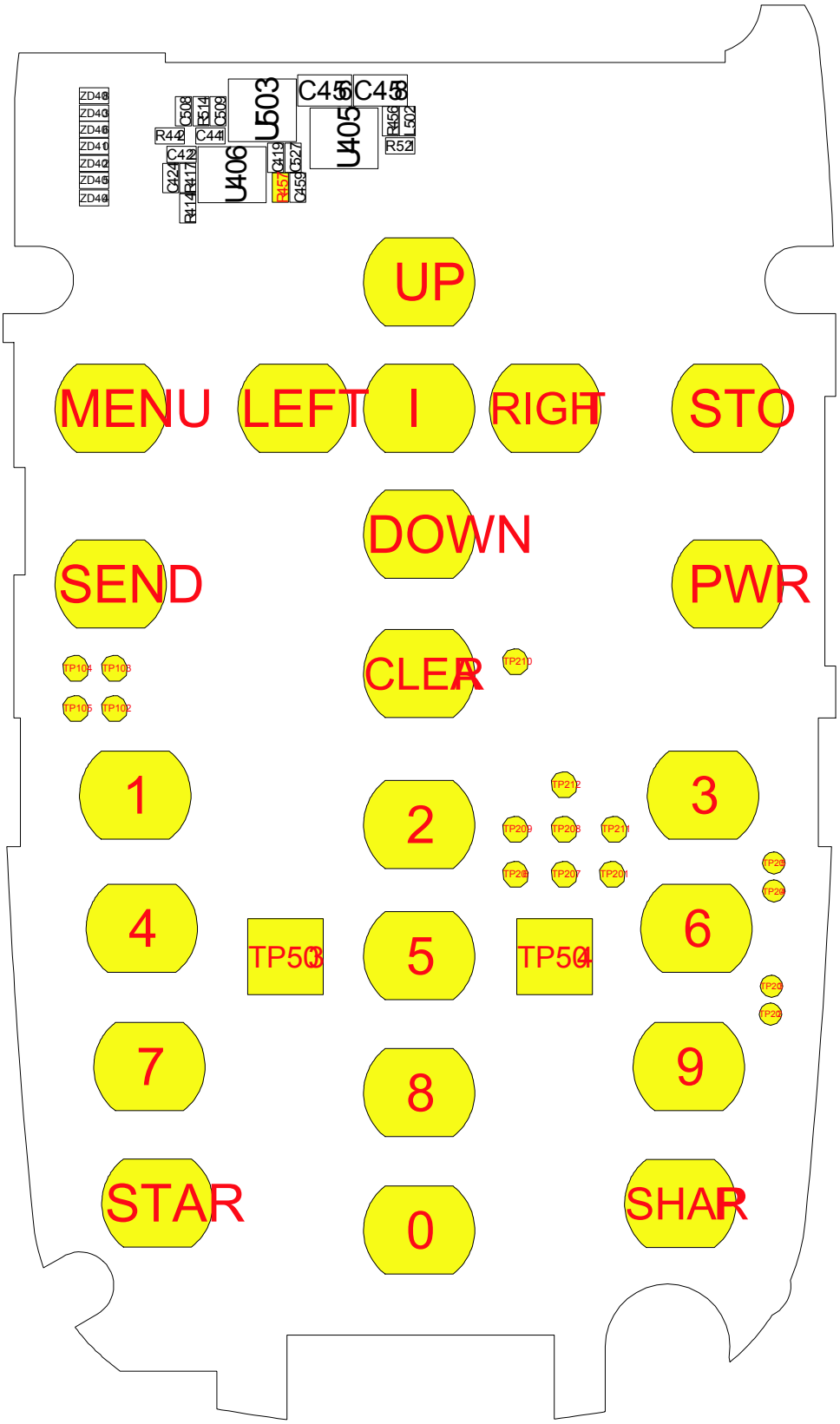




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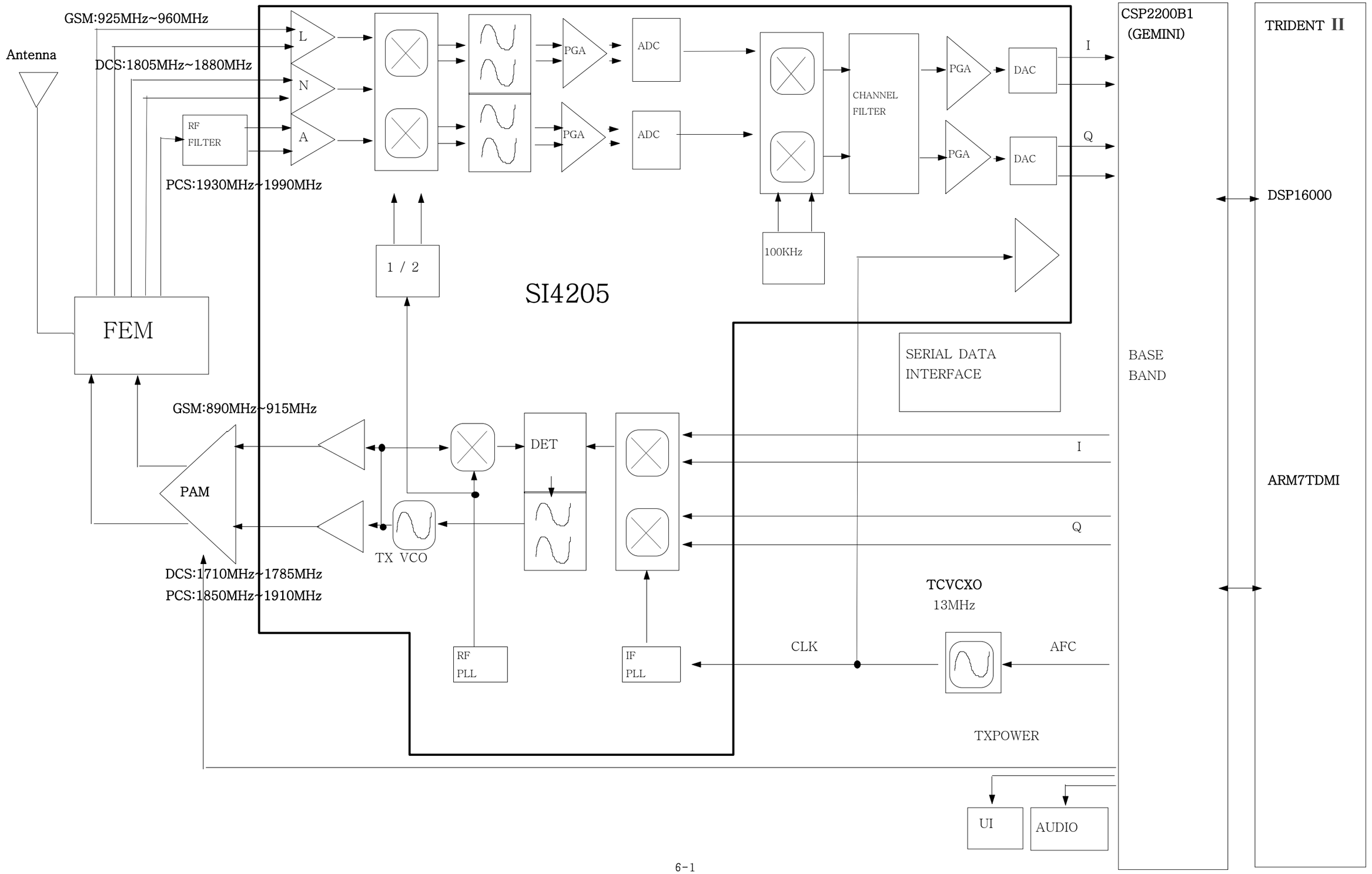
## 6. SGH-E610 Block Diagrams



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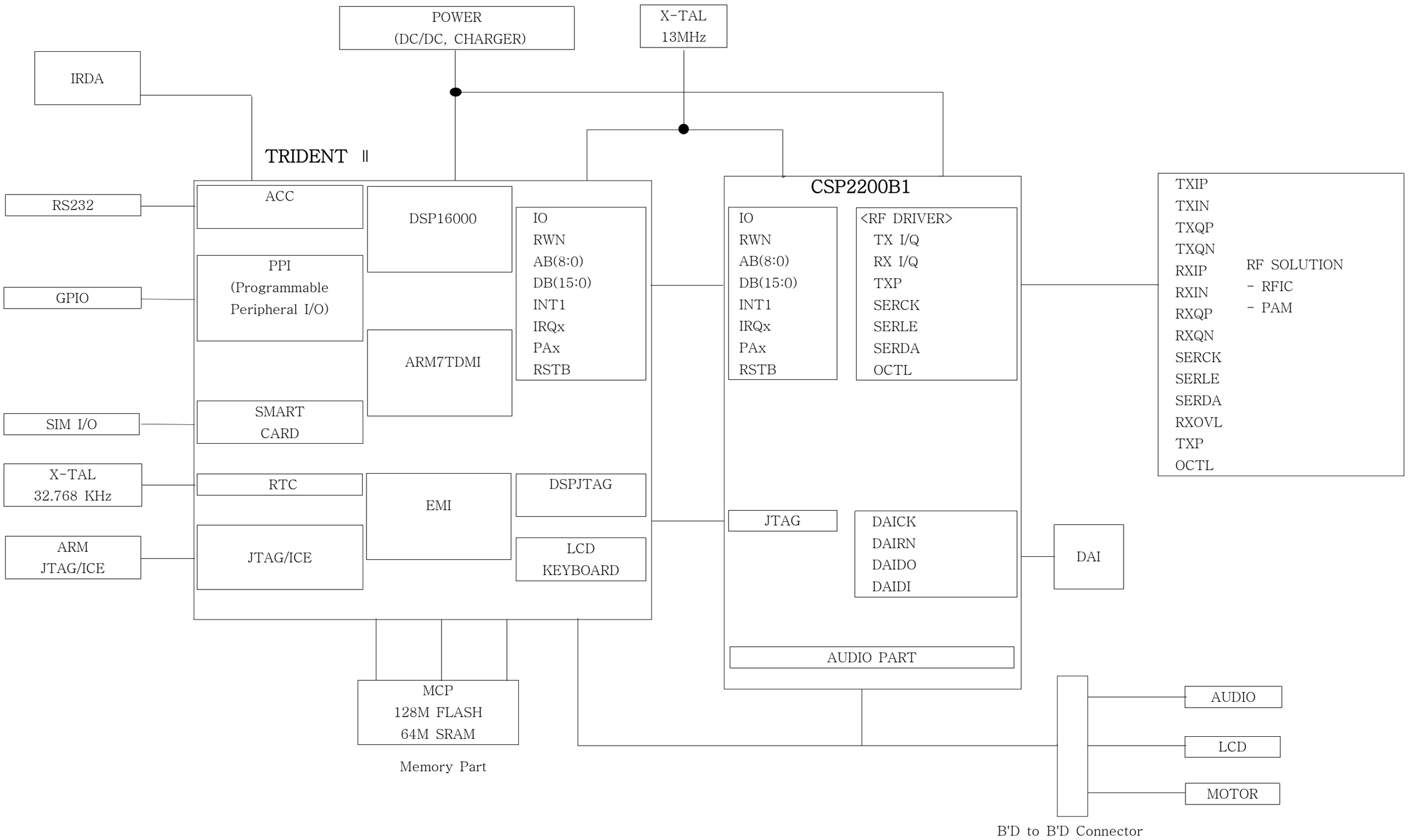




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