



Service Manual

# Service Manual

## GT365



Model : GT365



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## REVISED HISTORY

| Editor  | Date          | Issue | Contents of Changes | S/W Version |
|---------|---------------|-------|---------------------|-------------|
| J.P.Kim | Jul. 18. 2008 | 0.1   | -                   |             |

\* The information in this manual is subject to change without notice and should not be construed as a commitment by LGE Inc. Furthermore, LGE Inc. reserves the right, without notice, to make changes to equipment design as advances in engineering and manufacturing methods warrant.

\* This manual provides the information necessary to install, program, operate and maintain the GT365 Series.



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# Table Of Contents

|                                              |           |                                                |            |
|----------------------------------------------|-----------|------------------------------------------------|------------|
| <b>1. INTRODUCTION .....</b>                 | <b>7</b>  | <b>5. Trouble shooting.....</b>                | <b>66</b>  |
| 1.1 Purpose .....                            | 7         | 5.1 Trouble shooting test setup.....           | 66         |
| 1.2 Regulatory Information.....              | 7         | 5.2 Power on Trouble.....                      | 67         |
| 1.3 ABBREVIATION .....                       | 9         | 5.3 Charging trouble .....                     | 70         |
| <b>2. PERFORMANCE .....</b>                  | <b>11</b> | 5.4 LCD display trouble.....                   | 72         |
| 2.1 H/W Features.....                        | 11        | 5.5 Camera Trouble .....                       | 74         |
| 2.2 Technical specification.....             | 12        | 5.6 Receiver & Speaker trouble .....           | 76         |
| <b>3. TECHNICAL BRIEF .....</b>              | <b>19</b> | 5.7 Microphone trouble .....                   | 78         |
| 3.1 GT365 series Component                   |           | 5.8 Ear-Mlc Jack Detection trouble.....        | 79         |
| Block diagram.....                           | 19        | 5.9 Vibrator trouble .....                     | 80         |
| 3.2 Baseband Processor (BBP)                 |           | 5.10 Keypad back light trouble.....            | 82         |
| Introduction .....                           | 20        | 5.11 SIM & USD trouble.....                    | 84         |
| 3.3 Power management IC .....                | 28        | 5.12 Touch trouble .....                       | 88         |
| 3.4 Power ON/OFF .....                       | 32        | 5.13 Qwerty Key trouble .....                  | 90         |
| 3.5 SIM interface.....                       | 33        | 5.14 Trouble Shooting of Receiver Part.....    | 92         |
| 3.6 Micro SD external memory Interface ..... | 34        | 5.15 Trouble Shooting of Transmitter Part..... | 96         |
| 3.7 Memory .....                             | 35        |                                                |            |
| 3.8 LCD Display .....                        | 36        | <b>6. Download &amp; S/W upgrade.....</b>      | <b>103</b> |
| 3.9 Keypad Switching & Scanning .....        | 39        | 6.1 S/W download setup .....                   | 103        |
| 3.10 Touch KEY.....                          | 41        | 6.2 Download program user guide.....           | 104        |
| 3.11 Keypad back-light illumination .....    | 43        | 6.3 Multi-Download Program Setting .....       | 105        |
| 3.12 LCD back light illumination.....        | 44        | <b>7. CIRCUIT DIAGRAM .....</b>                | <b>107</b> |
| 3.13 ISP(Image Signal Processor).....        | 45        | <b>8. BGM PIN MAP.....</b>                     | <b>117</b> |
| 3.14 JTAG & ETM interface connector .....    | 46        | <b>9. PCB LAYOUT .....</b>                     | <b>121</b> |
| 3.15 Audiot.....                             | 47        | <b>10. RF Calibration .....</b>                | <b>127</b> |
| 3.16 Charging circuit .....                  | 49        | 10.1 Test Equipment Setup .....                | 127        |
| 3.17 BLUETOOTH .....                         | 50        | 10.2 Calibration Step .....                    | 127        |
| 3.18 FM Radio .....                          | 52        | <b>11. Stand-alone Test .....</b>              | <b>133</b> |
| 3.19 18pin Multi Media Interface             |           | 11.1 Test Program Setting .....                | 133        |
| connector .....                              | 53        | 11.2 Tx Test .....                             | 135        |
| 3.20 General Description .....               | 55        | 11.3 Rx Test.....                              | 136        |
| 3.21 Receiver part.....                      | 57        | <b>12. ENGINEERING MODE .....</b>              | <b>137</b> |
| 3.22 Transmitter part.....                   | 58        | <b>13. EXPLODED VIEW &amp;</b>                 |            |
| 3.23 RF synthesizer .....                    | 59        | <b>REPLACEMENT PART LIST .....</b>             | <b>139</b> |
| 3.24 DCXO.....                               | 60        | 13.1 Exploded View .....                       | 139        |
| 3.25 Front End Module control.....           | 60        | 13.2 Replacement Parts .....                   | 141        |
| 3.26 Power Amplifier Module .....            | 61        | 13.3 Accessory .....                           | 164        |
| <b>4. PCB layout.....</b>                    | <b>62</b> |                                                |            |
| 4.1 Main PCB component placement .....       | 62        |                                                |            |



# 1. INTRODUCTION

## 1.1 Purpose

This manual provides the information necessary to repair, calibration, description and download the features of the GT365 Series.

## 1.2 Regulatory Information

### A. Security

Toll fraud, the unauthorized use of telecommunications system by an unauthorized part (for example, persons other than your company's employees, agents, subcontractors, or person working on your company's behalf) can result in substantial additional charges you're your telecommunications services. System users are responsible for the security of own system. There are may be risks of toll fraud associated with your telecommunications system. System users are responsible for programming and configuring the equipment to prevent unauthorized use. LGE does not warrant that this product is immune from the above case but will prevent unauthorized use of common-carrier telecommunication service of facilities accessed through or connected to it. LGE will not be responsible for any charges that result from such unauthorized use.

### B. Incidence of Harm

If a telephone company determines that the equipment provided to customer is faulty and possibly causing harm or interruption in service to the telephone network, it should disconnect telephone service until repair can be done. A telephone company may temporarily disconnect service as long as repair is not done.

### C. Changes in Service

A local telephone company may make changes in its communications facilities or procedure. If these changes could reasonably be expected to affect the use of the GT365 Series or compatibility with the network, the telephone company is required to give advanced written notice to the user, allowing the user to take appropriate steps to maintain telephone service.

### D. Maintenance Limitations

Maintenance limitations on the GT365 Series must be performed only at the LGE or its authorized agents. The user may not make any changes and/or repairs except as specifically noted in this manual. Therefore, note that unauthorized alternations or repair may affect the regulatory status of the system and may void any remaining warranty.

# 1. INTRODUCTION

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## **E. Notice of Radiated Emissions**

The GT365 Series complies with rules regarding radiation and radio frequency emission as defined by local regulatory agencies. In accordance with these agencies, you may be required to provide information such as the following to the end user.

## **F. Pictures**

The pictures in this manual are for illustrative purposes only; your actual hardware may look slightly different.

## **G. Interference and Attenuation**

An GT365 Series may interfere with sensitive laboratory equipment, medical equipment, etc. Interference from unsuppressed engines or electric motors may cause problems.

## **H. Electrostatic Sensitive Devices**

### **ATTENTION**

Boards, which contains Electrostatic Sensitive Device(ESD), are indicated by the sign.

Following information is ESD handling: Service personnel should ground themselves by using a wrist strap when exchange system boards.

When repairs are made to a system board, they should spread the floor with anti-static mat which is also grounded. Use a suitable, grounded soldering iron. Keep sensitive parts in these protective packages until these are used. When returning system boards or parts such as EEPROM to the factory, use the protective package as described.

### 1.3 ABBREVIATION

For the purposes of this manual, following abbreviations apply:

|        |                                                   |
|--------|---------------------------------------------------|
| APC    | Automatic Power Control                           |
| BB     | Baseband                                          |
| BER    | Bit Error Ratio                                   |
| CC-CV  | Constant Current - Constant Voltage               |
| CLA    | Cigar Lighter Adapter                             |
| DAC    | Digital to Analog Converter                       |
| DCS    | Digital Communication System                      |
| dBm    | dB relative to 1 milli-watt                       |
| DSP    | Digital Signal Processing                         |
| EEPROM | Electrical Erasable Programmable Read-Only Memory |
| EGPRS  | Enhanced General Packet Radio Service             |
| EL     | Electroluminescence                               |
| ESD    | Electrostatic Discharge                           |
| FPCB   | Flexible Printed Circuit Board                    |
| GMSK   | Gaussian Minimum Shift Keying                     |
| GPIO   | General Purpose Interface Bus                     |
| GPRS   | General Packet Radio Service                      |
| GSM    | Global System for Mobile Communications           |
| IPUI   | International Portable User Identity              |
| IF     | Intermediate Frequency                            |
| LCD    | Liquid Crystal Display                            |
| LDO    | Low Drop Output                                   |
| LED    | Light Emitting Diode                              |

# 1. INTRODUCTION

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|        |                                                            |
|--------|------------------------------------------------------------|
| LGE    | LG Electronics                                             |
| OPLL   | Offset Phase Locked Loop                                   |
| PAM    | Power Amplifier Module                                     |
| PCB    | Printed Circuit Board                                      |
| PGA    | Programmable Gain Amplifier                                |
| PLL    | Phase Locked Loop                                          |
| PSTN   | Public Switched Telephone Network                          |
| RF     | Radio Frequency                                            |
| RLR    | Receiving Loudness Rating                                  |
| RMS    | Root Mean Square                                           |
| RTC    | Real Time Clock                                            |
| SAW    | Surface Acoustic Wave                                      |
| SIM    | Subscriber Identity Module                                 |
| SLR    | Sending Loudness Rating                                    |
| SRAM   | Static Random Access Memory                                |
| STMR   | Side Tone Masking Rating                                   |
| TA     | Travel Adapter                                             |
| TDD    | Time Division Duplex                                       |
| TDMA   | Time Division Multiple Access                              |
| UART   | Universal Asynchronous Receiver/Transmitter                |
| VCO    | Voltage Controlled Oscillator                              |
| VCTCXO | Voltage Control Temperature Compensated Crystal Oscillator |
| WAP    | Wireless Application Protocol                              |
| 8PSK   | 8 Phase Shift Keying                                       |

## 2. GENERAL PERFORMANCE

### 2.1 H/W Feature

| Item               | Feature                                                                                                                                                                                                               | Comment |
|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Standard Battery   | Li-Polymer, 800mAh                                                                                                                                                                                                    |         |
| AVG TCVR Current   | 250mA typ                                                                                                                                                                                                             | @PL5    |
| Standby Current    | 1.85 mA typ                                                                                                                                                                                                           | @PP9    |
| Talk time          | 5.6 hours (GSM TX Level 10)                                                                                                                                                                                           |         |
| Standby time       | Over 430 hours (Paging Period:9, RSSI: -85dBm)                                                                                                                                                                        |         |
| Charging time      | Under 3 hours                                                                                                                                                                                                         |         |
| RX Sensitivity     | EGSM: -105dBm↓, DCS/PCS: -105dBm↓                                                                                                                                                                                     |         |
| TX output power    | EGSM : 32.5dBm (@PL 5)<br>DCS/PCS: 29.5/29.5dBm (@PL 0)                                                                                                                                                               |         |
| GPRS compatibility | Class 12                                                                                                                                                                                                              |         |
| SIM card type      | 3V Small                                                                                                                                                                                                              |         |
| Display            | Main 240x320 262K TFT 2.4"                                                                                                                                                                                            |         |
| Status Indicator   | Dial keys are implemented by touchpad.<br>Navi, Send, Call End, Back, Volume Up, Volume Down,<br>Camera, Touch hot Key and CLEAR<br>Number key, Alphabet, OK, space bar,<br>Function key are implemented by Qwertykey |         |
| ANT                | Built in antenna                                                                                                                                                                                                      |         |
| EAR Phone Jack     | - 18pin multi port Headset jack (Call/Music)                                                                                                                                                                          |         |
| PC Synchronization | Yes                                                                                                                                                                                                                   |         |
| Speech coding      | HR/EFR/FR/AMR                                                                                                                                                                                                         |         |
| Data and Fax       | Yes                                                                                                                                                                                                                   |         |
| Vibrator           | Yes                                                                                                                                                                                                                   |         |
| Buzzer             | No                                                                                                                                                                                                                    |         |
| Voice Recoding     | Yes                                                                                                                                                                                                                   |         |
| C-Mic              | Yes                                                                                                                                                                                                                   |         |
| Receiver           | Yes                                                                                                                                                                                                                   |         |
| Travel Adapter     | Yes                                                                                                                                                                                                                   |         |
| Options            | Bluetooth hands-free kit, Data Kit                                                                                                                                                                                    |         |

## 2. GENERAL PERFORMANCE

### 2.2 Technical specification

| Item  | Description                    | Specification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |       |        |        |       |       |        |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |       |       |    |        |       |    |       |       |    |        |       |    |       |       |    |        |       |  |  |  |       |       |        |       |       |        |   |        |       |   |        |       |   |        |       |   |        |       |   |        |       |    |        |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |
|-------|--------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|--------|-------|-------|--------|---|--------|-------|----|--------|-------|---|--------|-------|----|--------|-------|---|--------|-------|----|--------|-------|---|--------|-------|----|--------|-------|---|--------|-------|----|-------|-------|----|--------|-------|----|-------|-------|----|--------|-------|----|-------|-------|----|--------|-------|--|--|--|-------|-------|--------|-------|-------|--------|---|--------|-------|---|--------|-------|---|--------|-------|---|--------|-------|---|--------|-------|----|--------|-------|---|--------|-------|----|-------|-------|---|--------|-------|----|-------|-------|---|--------|-------|----|-------|-------|---|--------|-------|----|-------|-------|---|--------|-------|----|-------|-------|
| 1     | Frequency Band                 | <div>GSM850<br/>TX: 890 + (n-1024)    0.2 MHz<br/>RX: 935 + (n-1024)    0.2 MHz (n=975~1024)</div> <div>DCS1800<br/>TX: 1710 + (n-512)    0.2 MHz<br/>RX: 1805 + (n-512)    0.2 MHz (n=512~885)</div> <div>PCS1900<br/>TX: 1810 + (n-512)    0.2 MHz<br/>RX: 1905 + (n-512)    0.2 MHz (n=512~885)</div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |        |        |       |       |        |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |       |       |    |        |       |    |       |       |    |        |       |    |       |       |    |        |       |  |  |  |       |       |        |       |       |        |   |        |       |   |        |       |   |        |       |   |        |       |   |        |       |    |        |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |
| 2     | Phase Error                    | RMS < 5 degrees<br>Peak < 20 degrees                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |       |        |        |       |       |        |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |       |       |    |        |       |    |       |       |    |        |       |    |       |       |    |        |       |  |  |  |       |       |        |       |       |        |   |        |       |   |        |       |   |        |       |   |        |       |   |        |       |    |        |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |
| 3     | Frequency Error                | < 0.1ppm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |        |        |       |       |        |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |       |       |    |        |       |    |       |       |    |        |       |    |       |       |    |        |       |  |  |  |       |       |        |       |       |        |   |        |       |   |        |       |   |        |       |   |        |       |   |        |       |    |        |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |
| 4     | Power Level                    | <div>GSM850</div> <table><tr><th>Level</th><th>Power</th><th>Toler.</th><th>Level</th><th>Power</th><th>Toler.</th></tr><tr><td>5</td><td>33 dBm</td><td>± 2dB</td><td>13</td><td>17 dBm</td><td>± 3dB</td></tr><tr><td>6</td><td>31 dBm</td><td>± 3dB</td><td>14</td><td>15 dBm</td><td>± 3dB</td></tr><tr><td>7</td><td>29 dBm</td><td>± 3dB</td><td>15</td><td>13 dBm</td><td>± 3dB</td></tr><tr><td>8</td><td>27 dBm</td><td>± 3dB</td><td>16</td><td>11 dBm</td><td>± 5dB</td></tr><tr><td>9</td><td>25 dBm</td><td>± 3dB</td><td>17</td><td>9 dBm</td><td>± 5dB</td></tr><tr><td>10</td><td>23 dBm</td><td>± 3dB</td><td>18</td><td>7 dBm</td><td>± 5dB</td></tr><tr><td>11</td><td>21 dBm</td><td>± 3dB</td><td>19</td><td>5 dBm</td><td>± 5dB</td></tr><tr><td>12</td><td>19 dBm</td><td>± 3dB</td><td></td><td></td><td></td></tr></table> <div>DCS / PCS</div> <table><tr><th>Level</th><th>Power</th><th>Toler.</th><th>Level</th><th>Power</th><th>Toler.</th></tr><tr><td>0</td><td>30 dBm</td><td>± 2dB</td><td>8</td><td>14 dBm</td><td>± 3dB</td></tr><tr><td>1</td><td>28 dBm</td><td>± 3dB</td><td>9</td><td>12 dBm</td><td>± 4dB</td></tr><tr><td>2</td><td>26 dBm</td><td>± 3dB</td><td>10</td><td>10 dBm</td><td>± 4dB</td></tr><tr><td>3</td><td>24 dBm</td><td>± 3dB</td><td>11</td><td>8 dBm</td><td>± 4dB</td></tr><tr><td>4</td><td>22 dBm</td><td>± 3dB</td><td>12</td><td>6 dBm</td><td>± 4dB</td></tr><tr><td>5</td><td>20 dBm</td><td>± 3dB</td><td>13</td><td>4 dBm</td><td>± 4dB</td></tr><tr><td>6</td><td>18 dBm</td><td>± 3dB</td><td>14</td><td>2 dBm</td><td>± 5dB</td></tr><tr><td>7</td><td>16 dBm</td><td>± 3dB</td><td>15</td><td>0 dBm</td><td>± 5dB</td></tr></table> | Level | Power  | Toler. | Level | Power | Toler. | 5 | 33 dBm | ± 2dB | 13 | 17 dBm | ± 3dB | 6 | 31 dBm | ± 3dB | 14 | 15 dBm | ± 3dB | 7 | 29 dBm | ± 3dB | 15 | 13 dBm | ± 3dB | 8 | 27 dBm | ± 3dB | 16 | 11 dBm | ± 5dB | 9 | 25 dBm | ± 3dB | 17 | 9 dBm | ± 5dB | 10 | 23 dBm | ± 3dB | 18 | 7 dBm | ± 5dB | 11 | 21 dBm | ± 3dB | 19 | 5 dBm | ± 5dB | 12 | 19 dBm | ± 3dB |  |  |  | Level | Power | Toler. | Level | Power | Toler. | 0 | 30 dBm | ± 2dB | 8 | 14 dBm | ± 3dB | 1 | 28 dBm | ± 3dB | 9 | 12 dBm | ± 4dB | 2 | 26 dBm | ± 3dB | 10 | 10 dBm | ± 4dB | 3 | 24 dBm | ± 3dB | 11 | 8 dBm | ± 4dB | 4 | 22 dBm | ± 3dB | 12 | 6 dBm | ± 4dB | 5 | 20 dBm | ± 3dB | 13 | 4 dBm | ± 4dB | 6 | 18 dBm | ± 3dB | 14 | 2 dBm | ± 5dB | 7 | 16 dBm | ± 3dB | 15 | 0 dBm | ± 5dB |
| Level | Power                          | Toler.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Level | Power  | Toler. |       |       |        |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |       |       |    |        |       |    |       |       |    |        |       |    |       |       |    |        |       |  |  |  |       |       |        |       |       |        |   |        |       |   |        |       |   |        |       |   |        |       |   |        |       |    |        |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |
| 5     | 33 dBm                         | ± 2dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 13    | 17 dBm | ± 3dB  |       |       |        |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |       |       |    |        |       |    |       |       |    |        |       |    |       |       |    |        |       |  |  |  |       |       |        |       |       |        |   |        |       |   |        |       |   |        |       |   |        |       |   |        |       |    |        |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |
| 6     | 31 dBm                         | ± 3dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 14    | 15 dBm | ± 3dB  |       |       |        |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |       |       |    |        |       |    |       |       |    |        |       |    |       |       |    |        |       |  |  |  |       |       |        |       |       |        |   |        |       |   |        |       |   |        |       |   |        |       |   |        |       |    |        |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |
| 7     | 29 dBm                         | ± 3dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 15    | 13 dBm | ± 3dB  |       |       |        |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |       |       |    |        |       |    |       |       |    |        |       |    |       |       |    |        |       |  |  |  |       |       |        |       |       |        |   |        |       |   |        |       |   |        |       |   |        |       |   |        |       |    |        |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |
| 8     | 27 dBm                         | ± 3dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 16    | 11 dBm | ± 5dB  |       |       |        |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |       |       |    |        |       |    |       |       |    |        |       |    |       |       |    |        |       |  |  |  |       |       |        |       |       |        |   |        |       |   |        |       |   |        |       |   |        |       |   |        |       |    |        |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |
| 9     | 25 dBm                         | ± 3dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 17    | 9 dBm  | ± 5dB  |       |       |        |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |       |       |    |        |       |    |       |       |    |        |       |    |       |       |    |        |       |  |  |  |       |       |        |       |       |        |   |        |       |   |        |       |   |        |       |   |        |       |   |        |       |    |        |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |
| 10    | 23 dBm                         | ± 3dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 18    | 7 dBm  | ± 5dB  |       |       |        |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |       |       |    |        |       |    |       |       |    |        |       |    |       |       |    |        |       |  |  |  |       |       |        |       |       |        |   |        |       |   |        |       |   |        |       |   |        |       |   |        |       |    |        |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |
| 11    | 21 dBm                         | ± 3dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 19    | 5 dBm  | ± 5dB  |       |       |        |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |       |       |    |        |       |    |       |       |    |        |       |    |       |       |    |        |       |  |  |  |       |       |        |       |       |        |   |        |       |   |        |       |   |        |       |   |        |       |   |        |       |    |        |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |
| 12    | 19 dBm                         | ± 3dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |       |        |        |       |       |        |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |       |       |    |        |       |    |       |       |    |        |       |    |       |       |    |        |       |  |  |  |       |       |        |       |       |        |   |        |       |   |        |       |   |        |       |   |        |       |   |        |       |    |        |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |
| Level | Power                          | Toler.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Level | Power  | Toler. |       |       |        |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |       |       |    |        |       |    |       |       |    |        |       |    |       |       |    |        |       |  |  |  |       |       |        |       |       |        |   |        |       |   |        |       |   |        |       |   |        |       |   |        |       |    |        |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |
| 0     | 30 dBm                         | ± 2dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 8     | 14 dBm | ± 3dB  |       |       |        |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |       |       |    |        |       |    |       |       |    |        |       |    |       |       |    |        |       |  |  |  |       |       |        |       |       |        |   |        |       |   |        |       |   |        |       |   |        |       |   |        |       |    |        |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |
| 1     | 28 dBm                         | ± 3dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 9     | 12 dBm | ± 4dB  |       |       |        |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |       |       |    |        |       |    |       |       |    |        |       |    |       |       |    |        |       |  |  |  |       |       |        |       |       |        |   |        |       |   |        |       |   |        |       |   |        |       |   |        |       |    |        |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |
| 2     | 26 dBm                         | ± 3dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 10    | 10 dBm | ± 4dB  |       |       |        |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |       |       |    |        |       |    |       |       |    |        |       |    |       |       |    |        |       |  |  |  |       |       |        |       |       |        |   |        |       |   |        |       |   |        |       |   |        |       |   |        |       |    |        |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |
| 3     | 24 dBm                         | ± 3dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 11    | 8 dBm  | ± 4dB  |       |       |        |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |       |       |    |        |       |    |       |       |    |        |       |    |       |       |    |        |       |  |  |  |       |       |        |       |       |        |   |        |       |   |        |       |   |        |       |   |        |       |   |        |       |    |        |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |
| 4     | 22 dBm                         | ± 3dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 12    | 6 dBm  | ± 4dB  |       |       |        |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |       |       |    |        |       |    |       |       |    |        |       |    |       |       |    |        |       |  |  |  |       |       |        |       |       |        |   |        |       |   |        |       |   |        |       |   |        |       |   |        |       |    |        |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |
| 5     | 20 dBm                         | ± 3dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 13    | 4 dBm  | ± 4dB  |       |       |        |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |       |       |    |        |       |    |       |       |    |        |       |    |       |       |    |        |       |  |  |  |       |       |        |       |       |        |   |        |       |   |        |       |   |        |       |   |        |       |   |        |       |    |        |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |
| 6     | 18 dBm                         | ± 3dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 14    | 2 dBm  | ± 5dB  |       |       |        |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |       |       |    |        |       |    |       |       |    |        |       |    |       |       |    |        |       |  |  |  |       |       |        |       |       |        |   |        |       |   |        |       |   |        |       |   |        |       |   |        |       |    |        |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |
| 7     | 16 dBm                         | ± 3dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 15    | 0 dBm  | ± 5dB  |       |       |        |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |       |       |    |        |       |    |       |       |    |        |       |    |       |       |    |        |       |  |  |  |       |       |        |       |       |        |   |        |       |   |        |       |   |        |       |   |        |       |   |        |       |    |        |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |
| 5     | EDGE<br>Max. Power             | 27dBm± 2dB @GSM900<br>26dBm± 2dB @DCS/PCS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       |        |        |       |       |        |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |       |       |    |        |       |    |       |       |    |        |       |    |       |       |    |        |       |  |  |  |       |       |        |       |       |        |   |        |       |   |        |       |   |        |       |   |        |       |   |        |       |    |        |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |
| 6     | EDGE<br>Modulation<br>Accuracy | RMS EVM : < 9 %<br>Peak EVM : < 30 %<br>95:th percentile : < 15 %<br>Origin Offset Suppression(Carrier Suppression) : > 30dB                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |        |        |       |       |        |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |        |       |   |        |       |    |       |       |    |        |       |    |       |       |    |        |       |    |       |       |    |        |       |  |  |  |       |       |        |       |       |        |   |        |       |   |        |       |   |        |       |   |        |       |   |        |       |    |        |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |   |        |       |    |       |       |

## 2. GENERAL PERFORMANCE

| Item | Description                               | Specification               |            |
|------|-------------------------------------------|-----------------------------|------------|
| 7    | Output RF Spectrum<br>(Due to Modulation) | GSM850                      |            |
|      |                                           | Offset from Carrier (kHz).  | Max. [dBc] |
|      |                                           | 100                         | 0.5        |
|      |                                           | 200                         | -30        |
|      |                                           | 250                         | -33        |
|      |                                           | 400                         | -60        |
|      |                                           | 600 ~ 1,200                 | -60        |
|      |                                           | 1,200 ~ 1,800               | -60        |
|      |                                           | 1,800 ~ 3,000               | -63        |
|      |                                           | 3,000 ~ 6,000               | -65        |
|      |                                           | 6,000                       | -71        |
|      |                                           | DCS / PCS                   |            |
|      |                                           | Offset from Carrier (kHz).  | Max. [dBc] |
|      |                                           | 100                         | 0.5        |
|      |                                           | 200                         | -30        |
|      |                                           | 250                         | -33        |
|      |                                           | 400                         | -60        |
|      |                                           | 600 ~ 1,200                 | -60        |
|      |                                           | 1,200 ~ 1,800               | -60        |
|      |                                           | 1,800 ~ 3,000               | -65        |
|      |                                           | 3,000 ~ 6,000               | -65        |
|      |                                           | 6,000                       | -73        |
| 8    | Output RF Spectrum<br>(Due to Switching)  | GSM850                      |            |
|      |                                           | Offset from Carrier (kHz)   | Max. [dBm] |
|      |                                           | 400                         | -19        |
|      |                                           | 600                         | -21        |
|      |                                           | 1,200                       | -21        |
|      |                                           | 1,800                       | -24        |
|      |                                           | DCS / PCS                   |            |
|      |                                           | Offset from Carrier (kHz)   | Max. [dBm] |
|      |                                           | 400                         | -22        |
|      |                                           | 600                         | -24        |
|      |                                           | 1,200                       | -24        |
|      |                                           | 1,800                       | -27        |
| 9    | Spurious Emissions                        | Conduction, Emission Status |            |
|      |                                           | Radiation, Emission Status  |            |

## 2. GENERAL PERFORMANCE

| Item | Description              | Specification                                                                                                 |          |          |
|------|--------------------------|---------------------------------------------------------------------------------------------------------------|----------|----------|
| 10   | Bit Error Ratio          | <b>EGSM</b><br>BER (Class II) < 2.439% @-102dBm<br><b>DCS1800/PCS1900</b><br>BER (Class II) < 2.439% @-100dBm |          |          |
| 11   | Rx Level Report accuracy | ± 3 dB                                                                                                        |          |          |
| 12   | SLR                      | 8 ± 3 dB                                                                                                      |          |          |
| 13   | Sending Response         | Frequency (Hz)                                                                                                | Max.(dB) | Min.(dB) |
|      |                          | 100                                                                                                           | -12      | -        |
|      |                          | 200                                                                                                           | 0        | -        |
|      |                          | 300                                                                                                           | 0        | -12      |
|      |                          | 1,000                                                                                                         | 0        | -6       |
|      |                          | 2,000                                                                                                         | 4        | -6       |
|      |                          | 3,000                                                                                                         | 4        | -6       |
|      |                          | 3,400                                                                                                         | 4        | -9       |
|      |                          | 4,000                                                                                                         | 0        | -        |
| 14   | RLR                      | 2 ±3 dB                                                                                                       |          |          |
| 15   | Receiving Response       | Frequency (Hz)                                                                                                | Max.(dB) | Min.(dB) |
|      |                          | 100                                                                                                           | -12      | -        |
|      |                          | 200                                                                                                           | 0        | -        |
|      |                          | 300                                                                                                           | 2        | -7       |
|      |                          | 500                                                                                                           | *        | -5       |
|      |                          | 1,000                                                                                                         | 0        | -5       |
|      |                          | 3,000                                                                                                         | 2        | -5       |
|      |                          | 3,400                                                                                                         | 2        | -10      |
|      |                          | 4,000                                                                                                         | 2        |          |
|      |                          | * Mean that Adopt a straight line in between 300 Hz and 1,000 Hz to be Max. level in the range.               |          |          |

## 2. GENERAL PERFORMANCE

| Item | Description                            | Specification                    |                  |
|------|----------------------------------------|----------------------------------|------------------|
| 16   | STMR                                   | 13 ±5 dB                         |                  |
| 17   | Stability Margin                       | > 6 dB                           |                  |
| 18   | Distortion                             | dB to ARL (dB)                   | Level Ratio (dB) |
|      |                                        | -35                              | 17.5             |
|      |                                        | -30                              | 22.5             |
|      |                                        | -20                              | 30.7             |
|      |                                        | -10                              | 33.3             |
|      |                                        | 0                                | 33.7             |
|      |                                        | 7                                | 31.7             |
|      |                                        | 10                               | 25.5             |
| 19   | Side Tone Distortion                   | Three stage distortion < 10%     |                  |
| 20   | System frequency<br>(26 MHz) tolerance | ≤ 2.5ppm                         |                  |
| 21   | 32.768KHz tolerance                    | ≤ 30ppm                          |                  |
| 22   | Power consumption                      | Standby<br>- Normal ≤ 2 mA(@PP9) |                  |

## 2. GENERAL PERFORMANCE

| Item | Description              | Specification                                                                                                                                                                                    |                     |
|------|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| 23   | Talk Time                | 3.0 hr., Min.@GSM850, PL=5<br>6.0 hr., Min.@GSM900, PL=12<br>3.5 hr., Min.@DCS, PL=0<br>6.0 hr., Min.@DCS, PL=10                                                                                 |                     |
| 24   | Standby Time             | 450 hr., Min.@PP9<br>410 hr., Min.@PP5<br>- Full charge, no receive/send and keep GSM in idle mode. Broadcast set off. Signal strength display set at 3 level above. Backlight of phone set off. |                     |
| 25   | Ringer Volume(TBD)       | At least 55 dB under below conditions:<br>1. Ringer set as ringer.<br>2. Test distance set as 1 m.                                                                                               |                     |
| 26   | Charge Current           | Fast Charge : < 500 mA<br>Slow Charge : < 120 mA                                                                                                                                                 |                     |
| 27   | Charging Time            | Under 3 hr.                                                                                                                                                                                      |                     |
| 28   | Antenna Display          | Antenna Bar Number                                                                                                                                                                               | Power               |
|      |                          | 7                                                                                                                                                                                                | ~ -93dBm            |
|      |                          | 7 → 5                                                                                                                                                                                            | -93 dBm ~ -98 dBm   |
|      |                          | 5 → 4                                                                                                                                                                                            | -98 dBm ~ -101 dBm  |
|      |                          | 4 → 2                                                                                                                                                                                            | -101 dBm ~ -104 dBm |
|      |                          | 2 → 1                                                                                                                                                                                            | -104 dBm ~ -106 dBm |
|      |                          | 1 → 0                                                                                                                                                                                            | -106 dBm ~          |
| 29   | Battery Indicator(TBD)   | Batter Bar Number                                                                                                                                                                                | Voltage             |
|      |                          | 1 → 0                                                                                                                                                                                            | 3.45V ± 0.05 V      |
|      |                          | 2 → 1                                                                                                                                                                                            | 3.64V ± 0.05 V      |
|      |                          | 3 → 2                                                                                                                                                                                            | 3.74V ± 0.05 V      |
|      |                          | 3                                                                                                                                                                                                | 3.74V ± 0.05 V ~    |
| 30   | Low Voltage Warning(TBD) | 3.57 ± 0.05 V (Call)                                                                                                                                                                             |                     |
|      |                          | 3.45 ± 0.05 V (Standby)                                                                                                                                                                          |                     |
| 31   | Forced shut down Voltage | 3.35 ± 0.05V                                                                                                                                                                                     |                     |
| 32   | Battery Type             | Main Battery : Li-ion, 800mAh, Hard pack<br>Back-up Battery : Lithium, 1mAh                                                                                                                      |                     |
| 33   | Travel Charger           | Input: 100 ~ 240 V, 50/60Hz<br>Output: 5.5V, 400mA                                                                                                                                               |                     |

## 2. GENERAL PERFORMANCE

\* EDGE RF Specification (Option: is not serviced for “EDGE mode”)

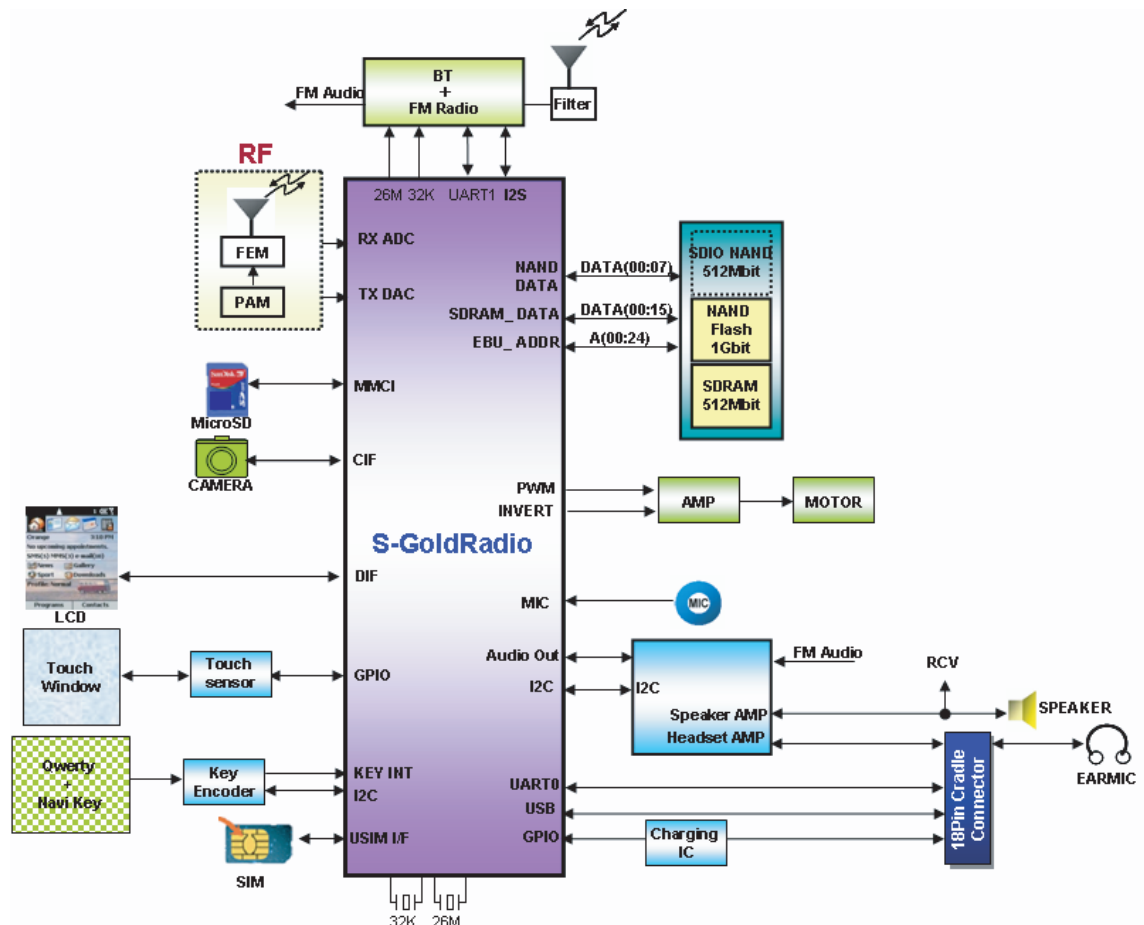
| Item | Description                               | Specification            |          |                  |          |        |                  |
|------|-------------------------------------------|--------------------------|----------|------------------|----------|--------|------------------|
| 1    | RMS EVM                                   | $\leq 9\%$               |          |                  |          |        |                  |
| 2    | Peak EVM                                  | $\leq 30\%$              |          |                  |          |        |                  |
| 3    | 95 <sup>th</sup> Percentile EVM           | $\leq 15\%$              |          |                  |          |        |                  |
| 4    | Origin Offset Suppression                 | $\geq 30\text{dB}$       |          |                  |          |        |                  |
| 5    | Power Level                               | <b>GSM850</b>            |          |                  |          |        |                  |
|      |                                           | Level                    | Power    | Toler.           | Level    | Power  | Toler.           |
|      |                                           | 5                        | 27dBm    | $\pm 3\text{dB}$ | 13       | 17dBm  | $\pm 3\text{dB}$ |
|      |                                           | 6                        | 27dBm    | $\pm 3\text{dB}$ | 14       | 15dBm  | $\pm 3\text{dB}$ |
|      |                                           | 7                        | 27dBm    | $\pm 3\text{dB}$ | 15       | 13dBm  | $\pm 3\text{dB}$ |
|      |                                           | 8                        | 27dBm    | $\pm 3\text{dB}$ | 16       | 11dBm  | $\pm 5\text{dB}$ |
|      |                                           | 9                        | 25dBm    | $\pm 3\text{dB}$ | 17       | 9dBm   | $\pm 5\text{dB}$ |
|      |                                           | 10                       | 23dBm    | $\pm 3\text{dB}$ | 18       | 7dBm   | $\pm 5\text{dB}$ |
|      |                                           | 11                       | 21dBm    | $\pm 3\text{dB}$ | 19       | 5dBm   | $\pm 5\text{dB}$ |
|      |                                           | 12                       | 19dBm    | $\pm 3\text{dB}$ |          |        |                  |
|      |                                           | <b>DCS1800, PCS1900</b>  |          |                  |          |        |                  |
|      |                                           | Level                    | Power    | Toler.           | Level    | Power  | Toler.           |
|      |                                           | 0                        | 26/25dBm | $\pm 3\text{dB}$ | 8        | 14 dBm | $\pm 3\text{dB}$ |
|      |                                           | 1                        | 26/25dBm | $\pm 3\text{dB}$ | 9        | 12 dBm | $\pm 4\text{dB}$ |
|      |                                           | 2                        | 26/25dBm | $\pm 3\text{dB}$ | 10       | 10 dBm | $\pm 4\text{dB}$ |
|      |                                           | 3                        | 24 dBm   | $\pm 3\text{dB}$ | 11       | 8 dBm  | $\pm 4\text{dB}$ |
|      |                                           | 4                        | 22 dBm   | $\pm 3\text{dB}$ | 12       | 6 dBm  | $\pm 4\text{dB}$ |
|      |                                           | 5                        | 20 dBm   | $\pm 3\text{dB}$ | 13       | 4 dBm  | $\pm 4\text{dB}$ |
|      |                                           | 6                        | 18 dBm   | $\pm 3\text{dB}$ | 14       | 2 dBm  | $\pm 5\text{dB}$ |
|      |                                           | 7                        | 16 dBm   | $\pm 3\text{dB}$ | 15       | 0 dBm  | $\pm 5\text{dB}$ |
| 6    | Output RF Spectrum<br>(due to modulation) | <b>GSM850</b>            |          |                  |          |        |                  |
|      |                                           | Offset from carrier(kHz) |          |                  | Max. dBc |        |                  |
|      |                                           | 100                      |          |                  | +0.5     |        |                  |
|      |                                           | 200                      |          |                  | -30      |        |                  |
|      |                                           | 250                      |          |                  | -33      |        |                  |
|      |                                           | 400                      |          |                  | -54      |        |                  |
|      |                                           | 600 ~ <1,200             |          |                  | -60      |        |                  |
|      |                                           | 1,200 ~ <1,800           |          |                  | -60      |        |                  |
|      |                                           | 1,800 ~ <3,000           |          |                  | -63      |        |                  |
|      |                                           | 3,000 ~ <6,000           |          |                  | -65      |        |                  |
|      |                                           | 6,000                    |          |                  | -71      |        |                  |

## 2. GENERAL PERFORMANCE

| Item | Description                                        | Specification            |          |
|------|----------------------------------------------------|--------------------------|----------|
| 6    | Output RF Spectrum<br>(due to modulation)          | <b>DCS1800, PCS1900</b>  |          |
|      |                                                    | Offset from carrier(kHz) | Max. dBc |
|      |                                                    | 100                      | +0.5     |
|      |                                                    | 200                      | -30      |
|      |                                                    | 250                      | -33      |
|      |                                                    | 400                      | -54      |
|      |                                                    | 600 ~ <1,200             | -60      |
|      |                                                    | 1,200 ~ <1,800           | -60      |
|      |                                                    | 1,800 ~ <3,000           | -63      |
|      |                                                    | 3,000 ~ <6,000           | -65      |
|      |                                                    | 6,000                    | -71      |
| 7    | Output RF Spectrum<br>(due to switching transient) | <b>GSM850</b>            |          |
|      |                                                    | Offset from carrier(kHz) | Max. dBm |
|      |                                                    | 400                      | -23      |
|      |                                                    | 600                      | -26      |
|      |                                                    | 1,200                    | -27      |
|      |                                                    | 1,800                    | --30     |
|      |                                                    | <b>DCS1800, PCS1900</b>  |          |
|      |                                                    | Offset from carrier(kHz) | Max. dBm |
|      |                                                    | 400                      | -23      |
|      |                                                    | 600                      | -26      |
|      |                                                    | 1,200                    | -27      |
|      |                                                    | 1,800                    | -30      |

## 3. TECHNICAL BRIEF

### 3.1 GT365 series Component Block diagram



**Figure 1. GT365 series Functional Block Diagram**

### 3. TECHNICAL BRIEF

#### 3.2 Baseband Processor (BBP) Introduction

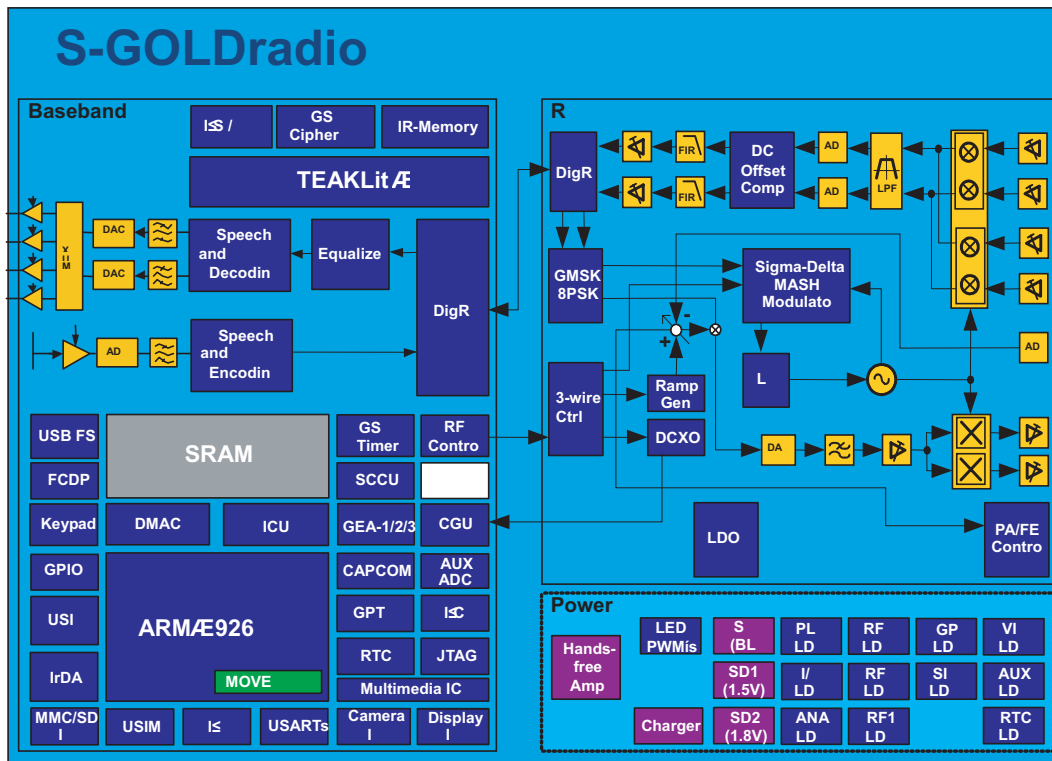


Figure 2. Top level block diagram of the S-GOLDRadio™ (PMB8888)

##### 3.2.1 General Description

S-GOLDRadio™ is a GSM/EDGE single chip mixed signal Single Chip Radio IC containing all analog and digital functionality of a cellular radio. Additionally S-GOLDRadio™ Provides multimedia extensions such as camera, software MIDI, MP3 sound. It is designed as a single chip solution, integrating the digital and mixed signal portions of the base band in 0.13um, 1.5V technology.

The chip will fully support the FR/HR/EFR/NB-AMR speech codec.

S-GOLDRadio™ support multi-slot operation modes CSD/GPRS/EGPRS (up to class 12) without additional external hardware.

### 3.2.2 Block Description

- Processing core ARM926EJ-S 32 bit processor core for controller functions. The ARM926EJ-S includes an MMU, and the Jazelle Java extension for Java acceleration.
  - TEAKLite DSP core
- ARM-Memory
  - 32k Byte Boot ROM on the AHB
  - 96k Byte SRAM on the AHB, flexibly usable as program or data RAM
  - 16k Byte Cache for Program (internal)
  - 8k Byte tightly coupled memory for Program(internal)
  - 8k Byte Cache for Data(internal)
  - 8k Byte tightly coupled memory for Data(internal)
- DSP-Memory
  - 104K x 16bit Program ROM
  - 8k x 16bit Program RAM
  - 60k x 16bit Data ROM
  - 37k x 16bit Data RAM
  - Incremental Redundancy(IR) Memory of 35904 words of 16bit
- Shared Memory Block
  - 1.5K x 32bit Shared RAM(dual ported) between controller system and TEAKLite.
- Controller Bus system

The processor cores and their peripherals are connected by powerful buses. Multi-layer AHB for connecting the ARM and the other master capable building blocks with the internal and external memories and with the peripheral buses.
- Clock system

The clock system allows widely independent selection of frequencies for the essential parts of the S-GOLD3. Thus power consumption and performance can be optimized for each application.
- Functional Hardware block
  - CPU and DSP Timers
  - MOVE coprocessor performing motion estimation for video encoding algorithms (H.263, MPEG-4)
  - Programmable PLL with additional phase shifters for system clock generation
  - GSM Timer Module that off-loads the CPU from radio channel timing
  - GMSK / 8-PSK Modulator according to GSM-standard 05.04 (5/2000)
  - GMSK Modulator: gauss-filter with  $B \cdot T = 0.3$
  - EDGE Modulator: 8PSK-modulation with linearized GMSK-Pulse-Filter
  - Hardware accelerators for equalizer and channel decoding.
  - Incremental Redundancy memory for EDGE class 12 support
  - A5/1, A5/2, A5/3 Cipher unit
  - GEA1, GEA2, GEA3 Cipher Unit to support GPRS data transmission
  - Advanced static and dynamic power management features including TDMA-Frame synchronous low power mode and enhanced CPU modes(idle and sleep modes)
  - Pulse Number Modulation output for Automatic Frequency Correction(AFC)

### 3. TECHNICAL BRIEF

- Serial RF Control interface: support of direct conversion RF
- A Universal Serial Interface(USIF) enabling asynchronous (UART) or synchronous (SPI) serial data transmission
- 1 Serial Synchronous SPI compatible interfaces in the controller domain
- 1 Serial Synchronous SPI compatible interface in the TEAKLite domain
- 2 USART with autobaud detection, hardware flow control and integrated IrDA controller supporting IrDA's SIR standard (up to 115.2Kbps)
- A dedicated Fast IrDA Controller supporting IrDA's SIR, MIR and FIR standards (up to 4Mbps)
- I2C-bus interface (e.g. connection to S/M power)
- A fast display interface supporting serial and parallel interconnection
- An ITU-R BT.656 compatible Camera interface.
- Programmable clock output for a camera
- An multimedia/Secure Digital Card Interface (MMC/SD: SDIO capable)

#### 3.2.3 External Devices connected to memory interface

Table 1. Memory interface

| Device     | Name            | Maker   | Remark                          |
|------------|-----------------|---------|---------------------------------|
| NAND FLASH | K5D1G12ACD-D075 | Samsung | Synchronous / A synchronous     |
| SDRAM      | K5D1G12ACD-D075 | Samsung | Synchronous 133MHz              |
| LCD        | IM200DBN7A      | LGIT    | 8bit access 2times transmission |

#### 3.2.4 RF Interface

S-GOLDRadio uses this interface to control RF IC and Peripherals. 13 signals are provided switch on/off RF ICs Periodically each TDMA frame.

Table 2. RF Interface Spec.

| Resource  | Interconnection          | Description                          |
|-----------|--------------------------|--------------------------------------|
| TX2       | TXHB                     | Output High band(DCS/PCS) Tx         |
| TX1       | TXLB                     | Output Low band(850/900) Tx          |
| RX1, RX1X | GSM850_RXP, GSM850_RXN   | Input of GSM850 LNA                  |
| RX2, RX2X | GSM900_RXP, GSM900_RXN   | Input of GSM900 LNA                  |
| RX3, RX3X | DCS1800_RXP, DCS1800_RXN | Input of DCS1800 LNA                 |
| RX4, RX4X | PCS1900_RXP, PCS1900_RXN | Input of PCS1900 LNA                 |
| PABS      | PA_BAND                  | Select PAM operation band.           |
| FE1, FE2  | VC1, VC2                 | Control FEM operation band & mode    |
| PAEN      | PA_EN                    | PAM Enable                           |
| VRAMP     | TX_RAMP                  | Tx Ramp signal                       |
| T_OUT6    | PA_MODE                  | Select PAM operation mode (GSM/EDGE) |

### 3.2.5 USART Interface

GT365 have two UART Drivers as follow :

- USART0 : SW upgrade / Calibration
- USIF : BT Interface.

Table 3. USIF Interface Spec.

| Resource     | Name        | Remark              |
|--------------|-------------|---------------------|
| <b>UART0</b> |             |                     |
| UART0_TXD    | UART_TX     | Transmit Data       |
| UART0_RXD    | UART_RX     | Receive Data        |
| <b>USIF</b>  |             |                     |
| USIF_TXD     | UART_BT_TX  | Transmit Data       |
| USIF_RXD     | UART_BT_RX  | Receive Data        |
| T_OUT3       | UART_BT_RTS | Flow Control Signal |
| T_OUT4       | UART_BT_CTS | Flow Control Signal |

### 3.2.6 ADC channel

BBP ADC block is composed of 7 external ADC channel. This block operates charging process and other related process by reading battery voltage and other analog values.

Table 4. S-GOLDRadio ADC channel usage

| <b>ADC channel</b> |                 |                                     |
|--------------------|-----------------|-------------------------------------|
| Resource           | Interconnection | Description                         |
| M0                 | BAT_ID          | Battery temperature measure         |
| M1                 | RF_TEMP         | RF block temperature measure        |
| M2                 | LCD_ID          | LCD ID measure (Hitachi LCD_ID = 0) |
| M7                 | GND             |                                     |
| M8                 | VBAT            | Battery supply voltage measure      |
| M9                 | N.C             |                                     |
| M10                | JACK_TYPE       | JACK type measure (Not used)        |

### 3. TECHNICAL BRIEF

#### 3.2.7 GPIO map

Over a hundred allowable resources, GT365 is using as follows except dedicated to SIM and Memory. GT365 GPIO(General Purpose Input/Output) Map, describing application, I/O state, and enable level, is shown in below table.

Table 5 S-GOLDradio GPIO pin Map

| Port Function<br>#Keypad | Net Name    | Description                              |
|--------------------------|-------------|------------------------------------------|
| KP_IN1                   | KEY_I2C_SCL | Key coder IC control                     |
| KP_IN2                   | KEY_I2C_SDA | Key coder IC control                     |
| KP_IN3                   | DIF_RESET   | LCD reset                                |
| KP_IN4                   | BT_RESET    | BT reset                                 |
| KP_IN5                   | IF_MODE3    | LCD interface mode (Hitachi LCD => High) |
| KP_IN6                   | VIB_PWR_EN  | Motor LDO enable                         |
| KP_OUT0                  | CAM_PWR_EN  | Camera LDO enable                        |
| KP_OUT1                  | LIN_INVERT  | Motor control                            |
| KP_OUT2                  | TOUCH_SCL   | Touch IC control                         |
| KP_OUT3                  | TOUCH_SDA   | Touch IC control                         |
| #USART0                  |             |                                          |
| USART0_RXD               | UART_RX     | UART, RS232 data                         |
| USART0_TXD               | UART_TX     | UART, RS232 data                         |
| USART0_RTS_N             | MMC_DET     | Micro SD card Detect                     |
| USART0_CTS_N             | HOOK_DETECT | Earmic hook key Detect                   |
| DSPOUT0                  | JACK_DET    | Earmic Detect                            |
| #USB                     |             |                                          |
| USB_DPLUS                | USB_DP      | USB +                                    |
| USB_DMINUS               | USB_DM      | USB -                                    |
| #CIF:Camera Interface    |             |                                          |
| CIF_D0                   | CAM_D(0)    | Camera DATA(0)                           |
| CIF_D1                   | CAM_D(1)    | Camera DATA(1)                           |
| CIF_D2                   | CAM_D(2)    | Camera DATA(2)                           |
| CIF_D3                   | CAM_D(3)    | Camera DATA(3)                           |
| CIF_D4                   | CAM_D(4)    | Camera DATA(4)                           |
| CIF_D5                   | CAM_D(5)    | Camera DATA(5)                           |
| CIF_D6                   | CAM_D(6)    | Camera DATA(6)                           |

### 3. TECHNICAL BRIEF

|                           |           |                               |
|---------------------------|-----------|-------------------------------|
| CIF_D7                    | CAM_D(7)  | Camera DATA(7)                |
| CIF_PCLK                  | CAM_PCLK  | Camera pixel clock            |
| CIF_HSYNC                 | CAM_HS    | Camera H sync                 |
| CIF_VSYNC                 | CAM_VS    | Camera V sync                 |
| CLKOUT2                   | CAM_MCLK  | Camera main clock             |
| CIF_PD_GPIO               | CAM_PWDN  | Camera sensor power down      |
| CIF_RESET_GPIO            | CAM_RST   | Camera reset                  |
| #Display_Interface        |           |                               |
| DIF_D0                    | DIF_D(0)  | LCD DATA(0)                   |
| DIF_D1                    | DIF_D(1)  | LCD DATA(1)                   |
| DIF_D2                    | DIF_D(2)  | LCD DATA(2)                   |
| DIF_D3                    | DIF_D(3)  | LCD DATA(3)                   |
| DIF_D4                    | DIF_D(4)  | LCD DATA(4)                   |
| DIF_D5                    | DIF_D(5)  | LCD DATA(5)                   |
| DIF_D6                    | DIF_D(6)  | LCD DATA(6)                   |
| DIF_D7                    | DIF_D(7)  | LCD DATA(7)                   |
| DIF_CS1                   | DIF_CS    | LCD chip select               |
| DIF_CS2                   | BT_INT    | BT interrupt                  |
| DIF_CD                    | DIF_CD    | LCD command/data switch       |
| DIF_WR                    | DIF_WR    | LCD write                     |
| DIF_RD                    | DIF_RD    | LCD read                      |
| DIF_HD                    | EOC       | Indicating End of charging    |
| DIF_VD                    | DIF_VSYNC | LCD V sync                    |
| DIF_RESET1_GPIO           | KEY_INT   | Key coder IC interrupt        |
| #I2C                      |           |                               |
| I2C_SCL                   | I2C_SCL   | For Sub-PMIC/Audio DAC/Camera |
| I2C_SDA                   | I2C_SDA   | For Sub-PMIC/Audio DAC/Camera |
| #Chip Card (USIM1)        |           |                               |
| CC_IO                     | SIM_DATA  | SIM card I/O                  |
| CC_CLK                    | SIM_CLK   | SIM card CLOCK                |
| CC_RST                    | SIM_RST   | SIM card RESET                |
| #MMCI: Multimedia Card IF |           |                               |
| MMCI_CMD                  | MMC_CMD   | uSD Card command/response     |
| MMCI_DAT0                 | MMC_D0    | uSD Card Data (0)             |
| MMCI_CLK                  | MMC_CLK   | uSD Card Clock                |

### 3. TECHNICAL BRIEF

|                              |                |                                     |
|------------------------------|----------------|-------------------------------------|
| #USIF: Universal Serial IF   |                |                                     |
| USIF_TXD_MTSR                | UART_BT_TX     | BT UART data output                 |
| USIF_RXD_MRST                | UART_BT_RX     | BT UART data input                  |
| USIF_SCLK                    | BT_VC XO_EN    | BT vcxo (26MHz) enable              |
| #I2S1: DAI-PCM               |                |                                     |
| I2S1_CLK0                    | I2S1_CLK       | BT synchronous data clock           |
| I2S1_RX                      | I2S1_RX        | BT synchronous data input           |
| I2S1_TX                      | I2S1_TX        | BT synchronous data output          |
| I2S1_WA0                     | I2S1_WA0       | BT synchronous data sync            |
| #MMCI: SD-Extension          |                |                                     |
| MMCI_DAT1                    | MMC_D1         | uSD Card Data (1)                   |
| MMCI_DAT2                    | MMC_D2         | uSD Card Data (2)                   |
| MMCI_DAT3                    | MMC_D3         | uSD Card Data (3)                   |
| #Voiceband: Analog Interface |                |                                     |
| EP_N                         | BB_SND_L       | For Speaker                         |
| EP_P                         | BB_SND_R       | For Speaker                         |
| HS_N                         | RCV_N          | For Receiver                        |
| EP_CM                        | NA             |                                     |
| HS_P                         | RCV_P          | For Receiver                        |
| MIC1_N                       | MIC_N          | For Mic                             |
| MIC1_P                       | MIC_P          | For Mic                             |
| MIC2_N                       | HS_MIC_N       | For Headset Mic                     |
| MIC2_P                       | HS_MIC_P       | For Headset Mic                     |
| VMIC                         | MICBIAS        | Power for MIC                       |
| #Measurement                 |                |                                     |
| M0                           | BAT_ID         | Battery temperature measure         |
| M1                           | RF_TEMP        | RF block temperature measure        |
| M2                           | LCD_ID         | LCD ID measure (Hitachi LCD_ID = 0) |
| M7                           | GND            |                                     |
| M8                           | VBAT           | Battery voltage measure             |
| M9                           | NA             |                                     |
| M10                          | JACK_TYPE JACK | type measure (Not used)             |
| #JTAG                        |                |                                     |
| TDO                          | TDO            | JTAG                                |
| TDI                          | TDI            | JTAG                                |
| TMS                          | TMS            | JTAG                                |

### 3. TECHNICAL BRIEF

|                                 |               |                         |
|---------------------------------|---------------|-------------------------|
| #FCDP:Flash Controller DMA Port |               |                         |
| FCDP_RBN                        | FCDP          |                         |
| #GSM TDMA Timer: GSM Control    |               |                         |
| T_OUT3                          | UART_BT_RTS   | BT UART request to send |
| T_OUT4                          | UART_BT_CTS   | BT UART clear to send   |
| T_OUT5                          | TOUCH_INT     | Touch IC interrupt      |
| T_OUT6                          | PA_MODE       | PAM                     |
| T_OUT7                          | RPWRON        | Remote Power On         |
| T_OUT8                          | LIN_PWM_FRQ   | Motor control           |
| #Other Functional Pins:         |               |                         |
| Clocks and control              |               |                         |
| CLKOUT0                         | CHG_EN        | Charging enable         |
| F32K                            |               | To 32KHz crystal        |
| OSC32K                          |               | To 32KHz crystal        |
| RESET_N                         | nRESET        |                         |
| #Extra I/Os & Interrupt Inputs  |               |                         |
| DSPIN0                          | CLK32K        | BT 32kHz sleep clock    |
| DSPIN1                          | SLIDE_OPEN    | Slide open/close detect |
| #Baseband I/O                   |               |                         |
| FSYS3                           | NA            |                         |
| FSYS2                           | 26MHZ_BT      | BT Main clock           |
| #Reference Oscillator / PLL     |               |                         |
| REFR                            | NA            |                         |
| XOX                             | 26MHz         | 26MHz Main clock        |
| XO                              | 26MHz         | 26MHz Main clock        |
| #LED's                          |               |                         |
| BL1_PWM / VSENSE1               | DBB_BL_PWM    | Not used                |
| BL2_PWM                         | LIN_PWM_MAG   | Motor control           |
| BL3_PWM                         | SUB_KEY_BL    | Sub Key LED control     |
| VSS_FLASH                       | GND           |                         |
| FLASH_SINK                      | QWERTY_KEY_BL | Qwerty Key LED control  |
| #Control Logic                  |               |                         |
| LPBCL_ECHO                      | GND           |                         |
| ON_OFF / SCAN_RESET             | PWRON         |                         |
| RESET2_N / VSENSE2              | M_RESET       | Memory reset            |
| PO_RESET_N / SCAN_OUT2          | PO_RESET      |                         |

## 3. TECHNICAL BRIEF

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### 3.3 Power management IC

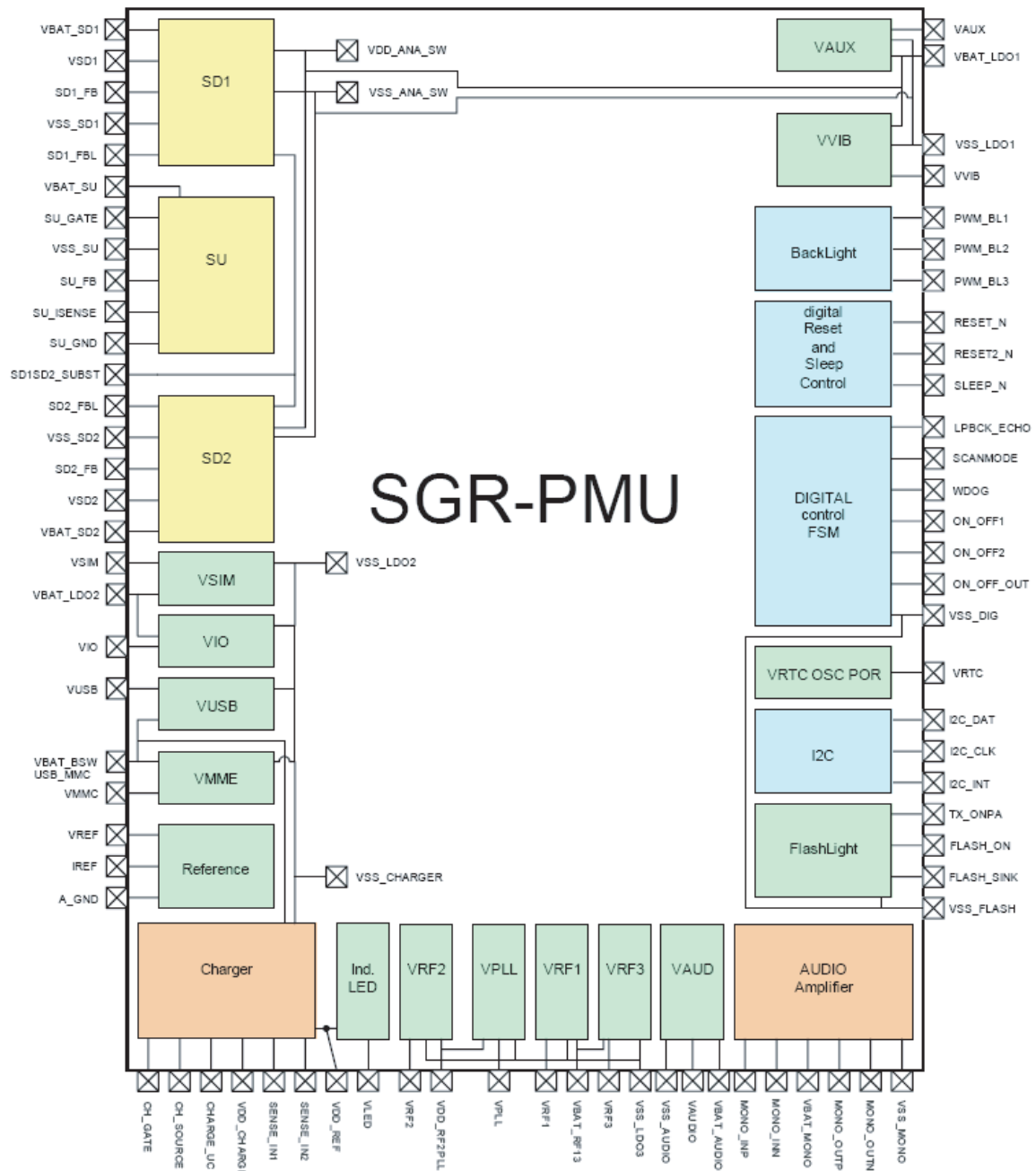
#### 3.3.1 General Description

S-GOLDRadio has a highly integrated Power and Battery Management block for mobile handsets.

##### Block Description

- Highly efficient step-down converter for main digital baseband supply including Core, DSP and memory interface (External Bus Unit).
- Support of S-GOLD standby power-down concept
- Low-drop-out (LDO) regulators for Flash and mobile RAM memory devices
- Voltage independent switching of two SIM cards
- LDO regulators for baseband I/O supply
- LDO regulator for analog mixed-signal section of S-GOLD
- Low-noise LDO regulators for RF devices
- Supply for Bluemoon Single, Infineon's single chip solution for Bluetooth
- Audio amplifier 8 Ohms for handsfree operation and ringing
- Charge Control for charging Li-Ion/Polymer batteries under software control
- Pre-charge current generator with selectable current level
- RTC regulator with ultra-low quiescent current
- USB interface support for peripheral and mini-host mode
- Vibrator driver with adjustable voltage
- Fully controllable by software via I2C - Bus
- Temperature and battery voltage sensors
- Interrupt channels for peripherals

### 3. TECHNICAL BRIEF



**Figure 3. Top level block diagram of the PMU Block of PMB8888**

### 3. TECHNICAL BRIEF

Table 6. LDOs Output Table of PMU Block of PMB8888

| LDO    | Net name   | Output Voltage | Output Current | Usage           |
|--------|------------|----------------|----------------|-----------------|
| SD1    | VSD1_1V5   | 1.5V           | 400mA          | Core & for LDO  |
| SD2    | 1V8_VSD2   | 1.8V           | 300mA          | Memory          |
| VAUX   | 2V9_VAUX   | 2.9V           | 150mA          | BT Power        |
| VIO    | 2V62_VIO   | 2.62V          | 100mA          | Peripherals     |
| VSIM   | 2V9_VSIM   | 2.9V           | 22mA           | SIM card        |
| VMME   | 2V9_VMMC   | 2.9V           | 150mA          | SD Card         |
| VAUDIO | 2V5_VAUDIO | 2.5V           | 220mA          | Headset         |
| VUSB   | 3V1_VUSB   | 3.1V           | 40mA           | USB Switch      |
| VRF1   | 2V85_VRF1  | 2.85V          | 150mA          |                 |
| VRF2   | 1V5_VRF2   | 1.5V           | 80mA           |                 |
| VRF3   | 2V85_VRF3  | 2.85V          | 150mA          |                 |
| VPLL   | 1V5_VPLL   | 1.5V           | 20mA           | S-GOLDRadio PLL |
| VRTC   | 2V0_VRTC   | 2.0V           | 4mA            | RTC             |
| VVIB   | 2V8_VVIB   | 2.8V           | 140mA          | Touch           |

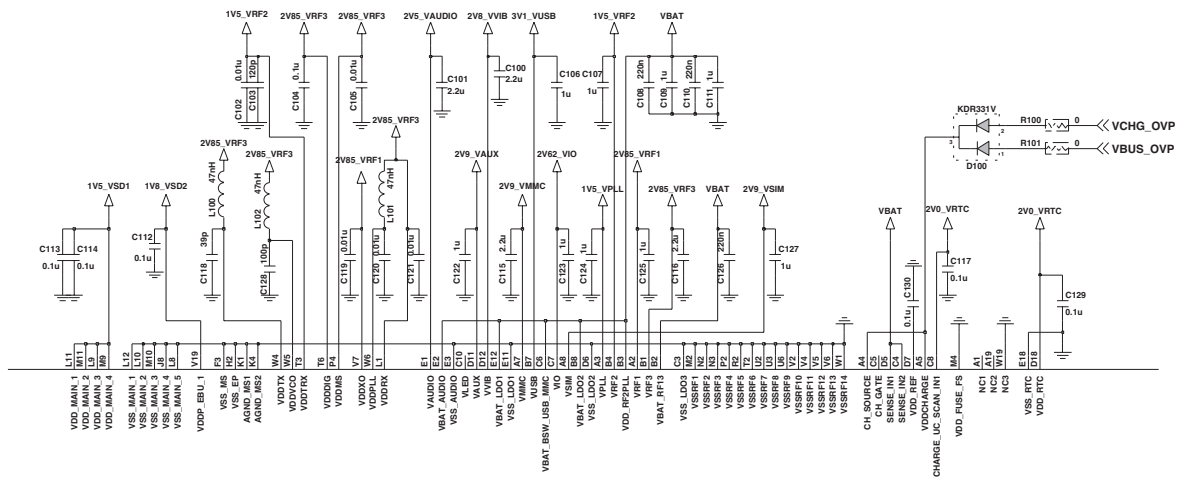
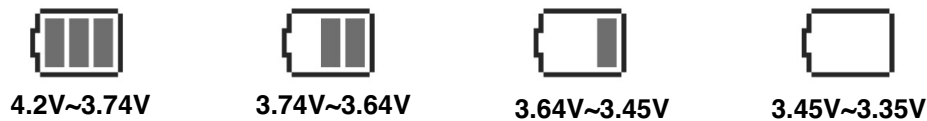


Figure 4. LDOs Circuit Diagram of GT365 series

### 3.3.2 Charging

GT365 charge the battery using an external charging IC of Intersil ISL9221 for Li-Polymer battery in 4.2 Volts level.



**Figure 5. Battery Block Indication**

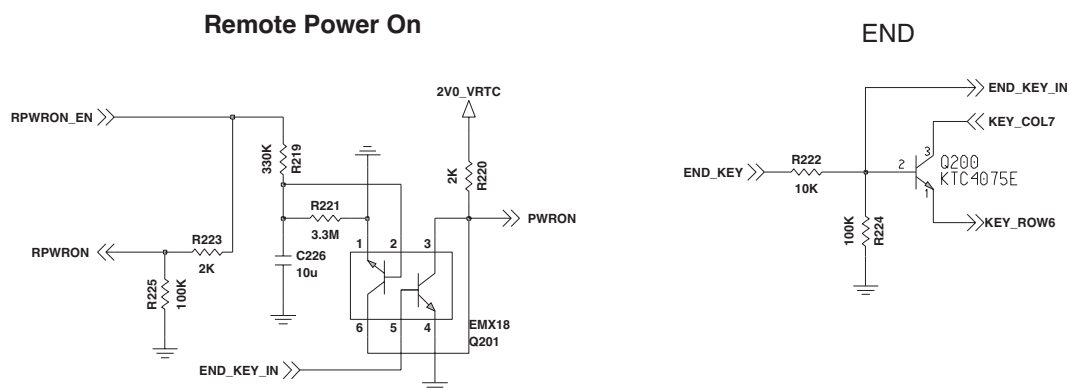
- 1 Charging method : CC-CV
- 2 Charger detect voltage : 4.0 V
- 3 Charging time : 2h 30m
- 4 Charging current : 400 mA
- 5 CV voltage : 4.2 V
- 6 Cutoff current : 110 mA
- 7 Full charge indication current (icon stop current) : 110 mA
- 8 Recharge voltage : 4.15 V
- 9 Low battery alarm
  - a. Idle : 3.45 V ~ 3.35 V
  - b. Dedicated : 3.45 V ~ 3.35 V
10. Low battery alarm interval
  - a. Idle : 3 min
  - b. Dedicated : 1 min
11. Switch-off voltage : 3.35 V
12. Charging temperature adc range
  - a. ~ -5 : low charging voltage operation (3.6 V ~ 3.9 V)
  - b. -5 ~ 50 : standard charging (up to 4.2 V)
  - c. 50 ~ : low charging voltage operation (3.6V ~ 3.9V)

### 3. TECHNICAL BRIEF

#### 3.4 Power ON/OFF

GT365 series Power State : Defined 3cases as follow

- ▶ Power-ON : Power key detect (S-GOLDradio PWRON port)
- ▶ Power-ON-charging : Charger or USB detect.



**Figure 6. Remote power on and End-key power on circuit.**

Input ON is a power-on input for S-GOLDradio with 2 active high levels (see Figure 6). It might be triggered by a push button. To detect if the push-button is pressed during system operation the logical level at pin ON or its change (if Bit 1 EION in INTCTRL2 is asserted) is recorded in bit LON of the ISF register. If the high level of voltage at pin ON does not reach VIHdet ( $V_{bat}-0.8 \sim V_{bat}-0.3$ ) the above-mentioned bit won't be set.

To support Remote power on function for factory mass production, applied an BJT as following figure. As monitoring the RPWRON and Key matrix KEY\_COL7 & KEY\_ROW6, GT365 series system recognize whether remote power on or End-key pushed

### 3.5 SIM interface

GT365 supports 1.8V & 3V plug in SIM, SIM interface scheme is shown in (Figure 7). SIM\_DATA, SIM\_CLK, SIM\_RST ports are used to communicate with BBP(S-GOLDRadio).

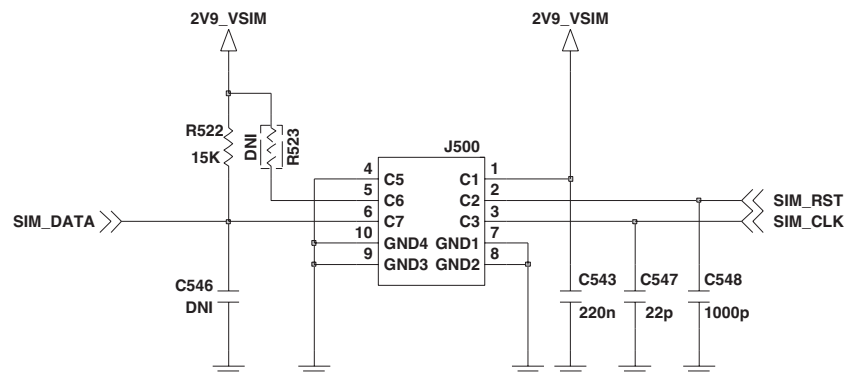
SIM Interface

SIM\_CLK : SIM card reference clock

SIM\_RST : SIM card Async /sync reset

SIM\_DATA : SIM card bidirectional data

### SIM CONNECTOR



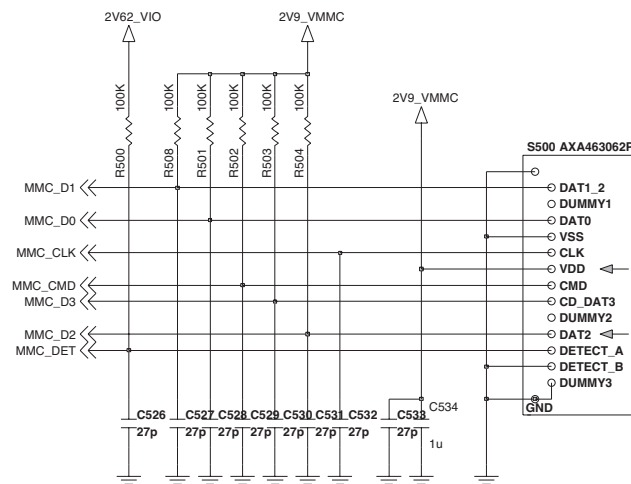
**Figure 7. SIM Circuit**

### 3. TECHNICAL BRIEF

## 3.6 Micro SD external memory Interface

In GT365 series a Micro SD slot for external Memory is connected to PMB8888.

**MICRO SD Connector**



**Figure 8. Micro SD Card Circuit**

Micro SD memory pad assign.

| SD mode  |          |       |                  |
|----------|----------|-------|------------------|
| Pin No.  | Name     | Type  | Description      |
| DAT1_2   | MMC_D1   | I/O   | Data bit [1]     |
| DUMMY1   | NC       |       |                  |
| DAT0     | MMC_D0   | I/O   | Data bit [0]     |
| VSS      | GND      | GND   | Ground           |
| CLK      | MMC_CLK  | I     | Clock            |
| VDD      | 2V9_VMMC | Power | Power            |
| CMD      | MMC_CMD  | I/O   | Command response |
| CD_DAT3  | MMC_D3   | I/O   | Data bit [1]     |
| DUMMY2   | NC       |       |                  |
| DAT2     | MMC_D2   | I/O   | Data bit [2]     |
| DETECT_A | MMC_DET  |       |                  |
| DETECT_B | GND      | GND   | Ground           |
| DUMMY3   | GND      | GND   | Ground           |

## 3.7 Memory

1Gbit NAND Flash & 512Mbit SDRAM employed on GT365 series with 8 bit bus for NAND and 16bit bus for SDRAM thru ADD(0) ~ ADD(24). The 1Gbit NAND Flash memory with SDRAM stacked device family offers multiple high-performance solutions.

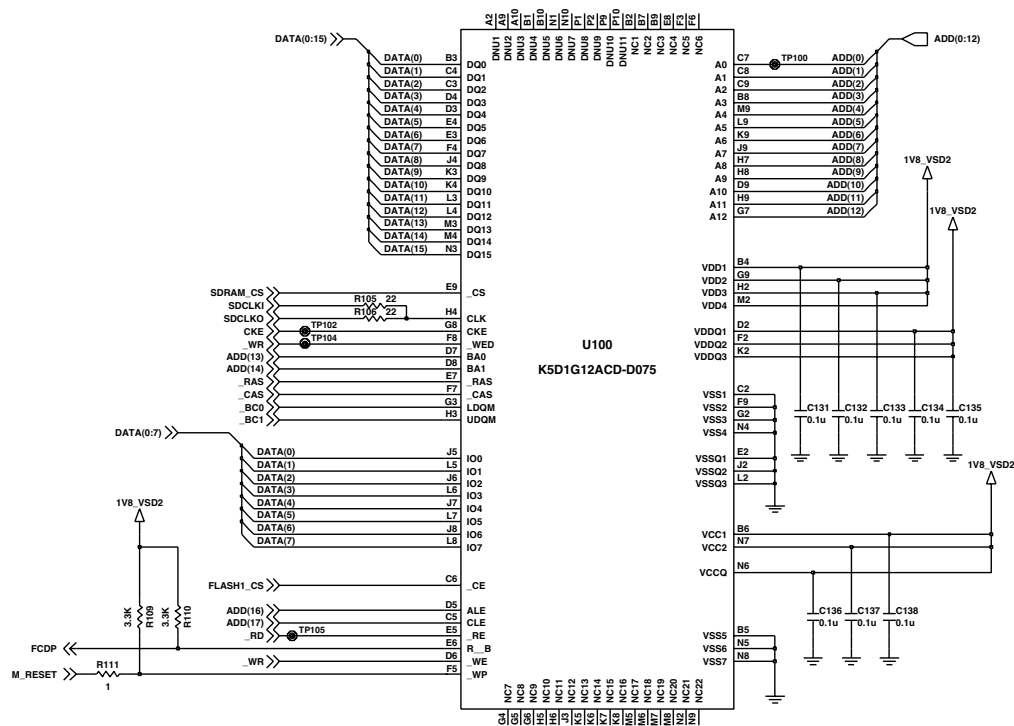


Figure 9. Memory Circuit

### 3. TECHNICAL BRIEF

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#### 3.8 LCD Display

LCD module include:

- Main LCD: 240x320 262K TFT 2.4"
- Backlight : 5 piece of white LED

LCD Connector Interface Spec:

Table 7. LCD Connector Interface Spec.

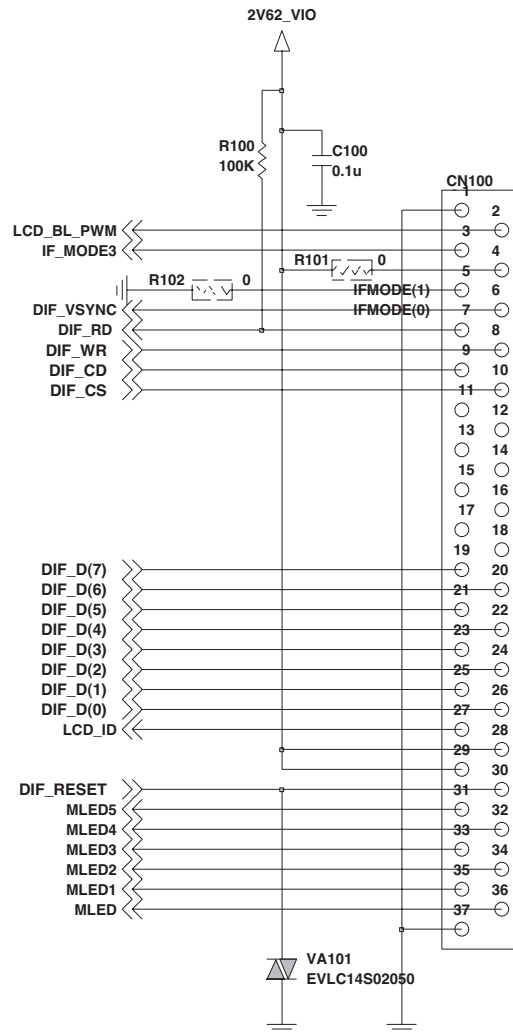
| Pin No. | Pin Name | I/O | Description                             |
|---------|----------|-----|-----------------------------------------|
| 1       | GND      |     | Ground                                  |
| 2       | PWM      | O   | PWM signal output for backlight control |
| 3       | DTX3     | I   | Interface Mode                          |
| 4       | DTX1     | I   | Interface Mode                          |
| 5       | DTX1     | I   | Interface Mode                          |
| 6       | VSYNC-O  | O   | Vsync Interface out                     |
| 7       | RD       | O   | Read                                    |
| 8       | WR       | I/O | Write                                   |
| 9       | RS       | I/O | Address/Data select                     |
| 10      | CS       | I/O | Chip Select                             |
| 11      | D15      | I/O | Data[15] for LCD                        |
| 12      | D14      | I/O | Data[14] for LCD                        |
| 13      | D13      | I/O | Data[13] for LCD                        |
| 14      | D12      | I/O | Data[12] for LCD                        |
| 15      | D11      | I/O | Data[11] for LCD                        |
| 16      | D10      | I/O | Data[10] for LCD                        |
| 17      | D9       | I/O | Data[9] for LCD                         |
| 18      | D8       | I/O | Data[8] for LCD                         |
| 19      | D7       | I/O | Data[7] for LCD                         |
| 20      | D6       | I/O | Data[6] for LCD                         |
| 21      | D5       | I/O | Data[5] for LCD                         |
| 22      | D4       | I/O | Data[4] for LCD                         |
| 23      | D3       | I/O | Data[3] for LCD                         |

### 3. TECHNICAL BRIEF

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| Pin No. | Pin Name | I/O | Description     |
|---------|----------|-----|-----------------|
| 24      | D2       | I/O | Data[2] for LCD |
| 25      | D1       | I/O | Data[1] for LCD |
| 26      | D0       | I/O | Data[0] for LCD |
| 27      | LCD-ID   | I   | Manufacture ID  |
| 28      | VCC1     | I   | Logic           |
| 29      | VCC1     | I   | Analog          |
| 30      | RESET    | I/O | LCD reset       |
| 31      | MLED5    | O   | LED Cathode     |
| 32      | MLED4    | O   | LED Cathode     |
| 34      | MLED3    | O   | LED Cathode     |
| 34      | MLED2    | O   | LED Cathode     |
| 35      | MLED1    | O   | LED Cathode     |
| 36      | MLED     | I   | LED Anode       |
| 37      | GND      | -   | Ground          |

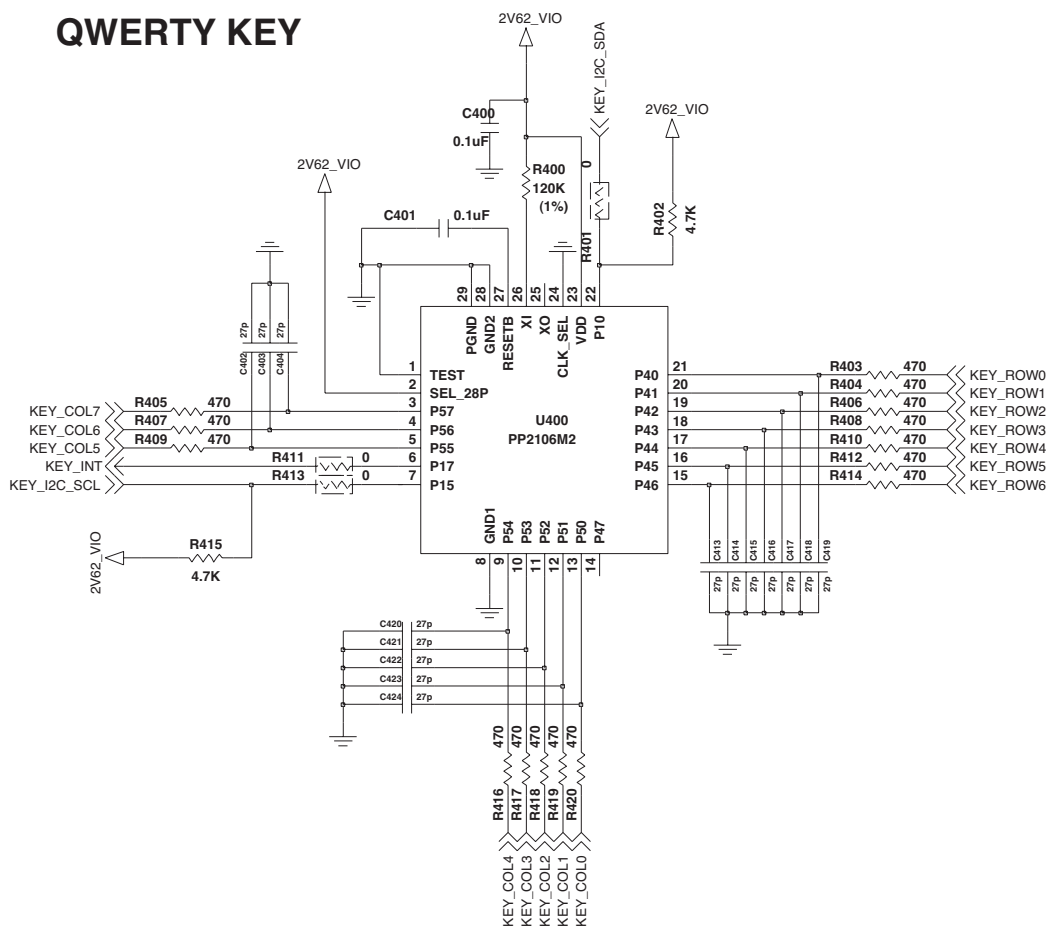
### 3. TECHNICAL BRIEF



**Figure 10. 37pin LCD connector circuit**

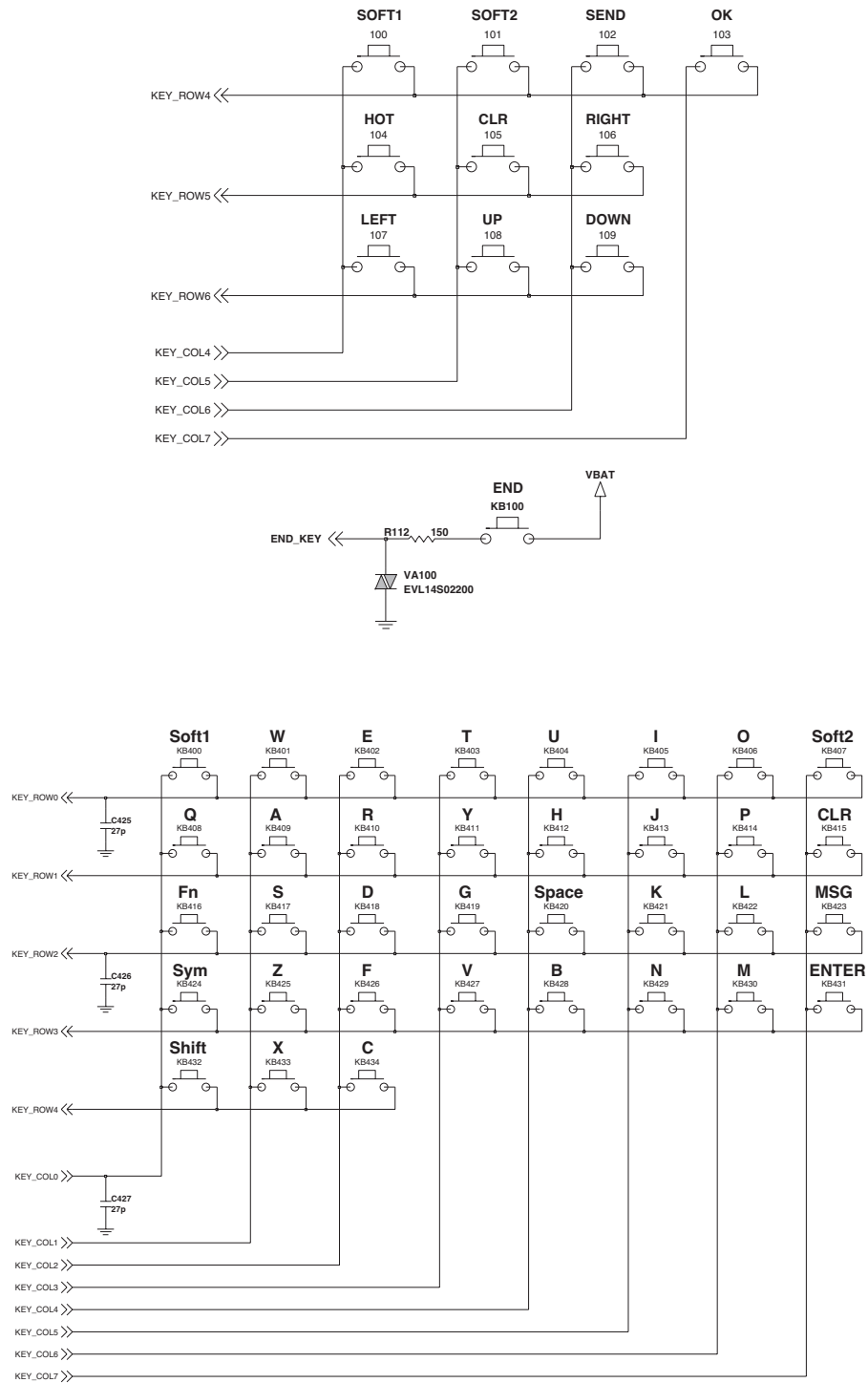
### 3.9 Keypad Switching & Scanning

The keypad is controlled by a Key code IC (PP2106M2). It can be used for scanning keypads up to 8 rows and 8 columns (max 64 keys). PMB8888 control PP2106M2 by KEY\_I2C\_SCL, KEY\_I2C\_SDA and KEY\_INT.



**Figure 11-1. Keypad Configuration Circuit**

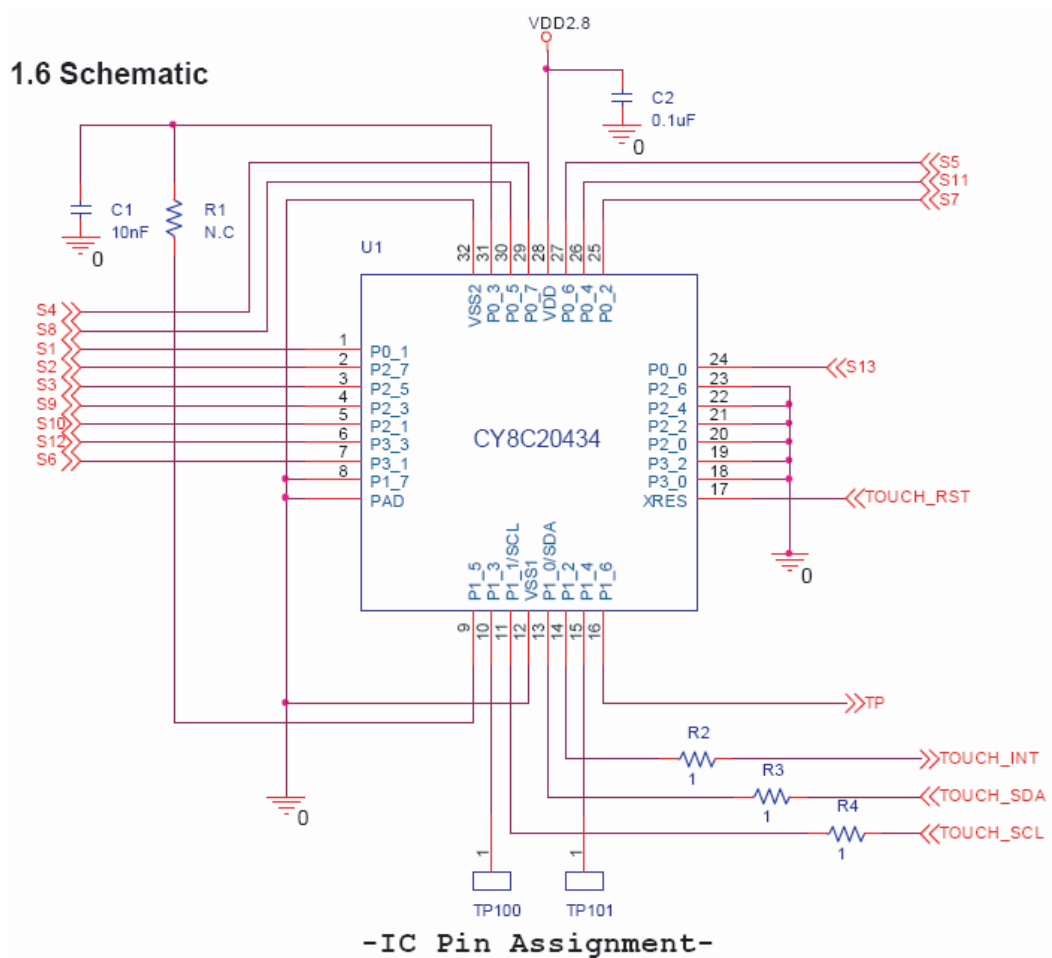
### 3. TECHNICAL BRIEF



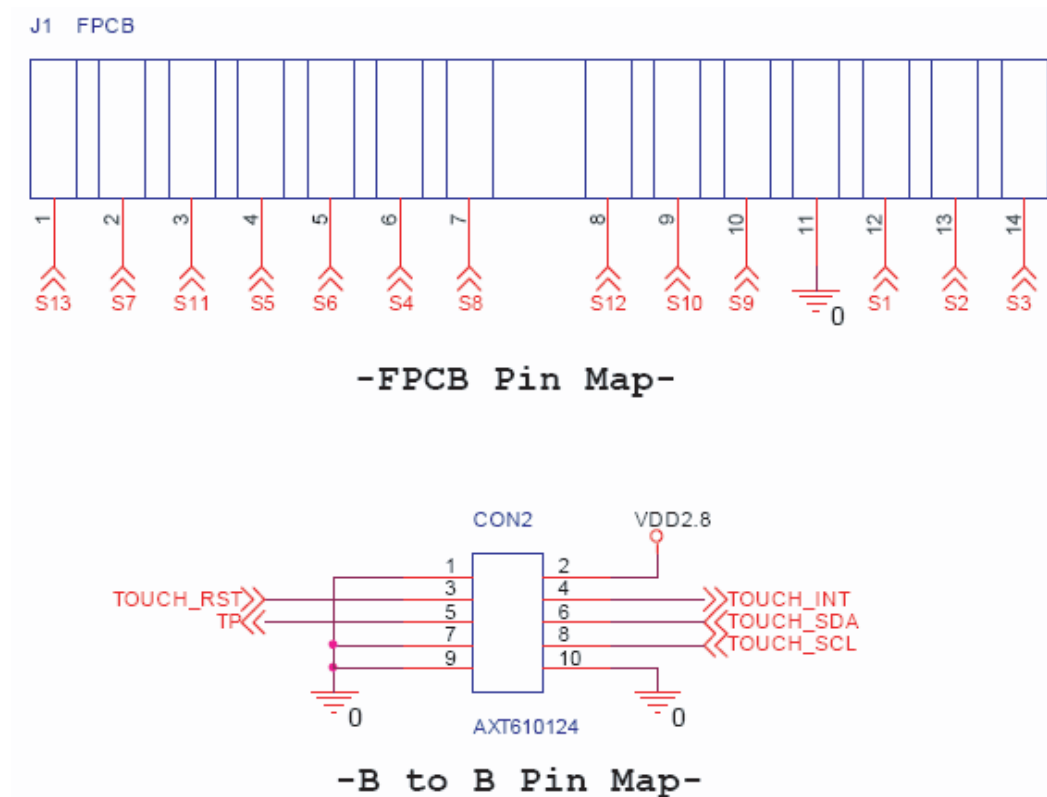
**Figure 11-2. Keypad Configuration Circuit**

### 3.10 Touch KEY

The Touch keypad is controlled by CY8C20434. PMB8888 control CY8C20434 by TOUCH\_SCL, TOUCH\_SDA and TOUCH\_INT.



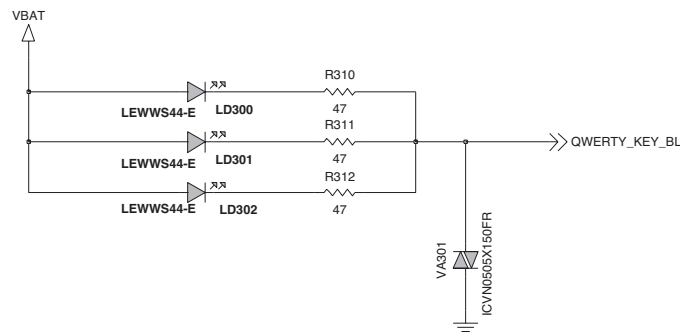
### 3. TECHNICAL BRIEF



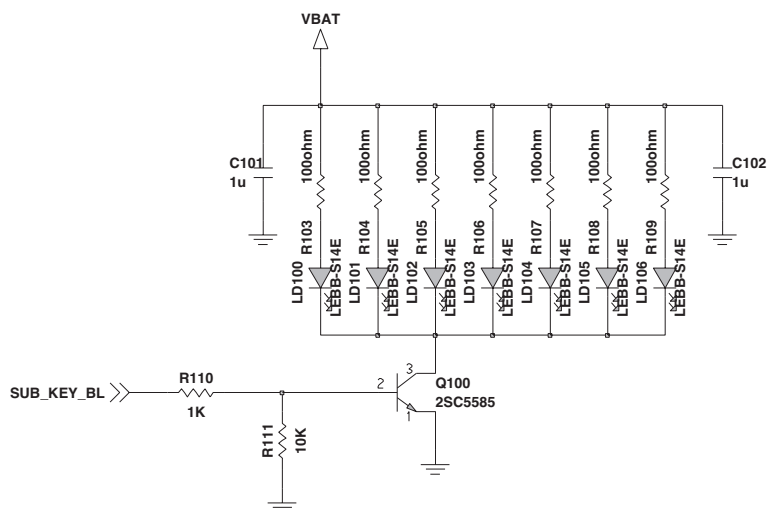
### 3.11 Keypad back-light illumination

There are 3 snow white color LEDs on Main PCB and 7 blue color LEDs on Sub PCB for keypad illumination. Sub Keypad Back-light is controlled by S-GOLDradio PWM port which has a duty control function. And Main Keypad Back-light is controlled by S-GOLDradio FLASH\_SINK port. The whole configuration of the S-GOLDradio Flash LED circuit is shown in below Figure12.

#### QWERTY\_KEY BACKLIGHT



#### MULTI\_KEY BACKLIGHT



**Figure 12. Qwerty + Multi Keypad Backlight Circuit**

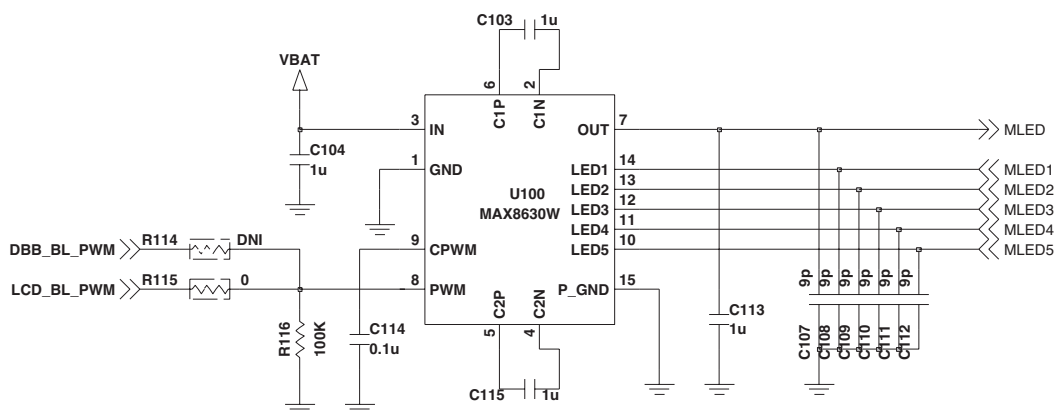
### 3. TECHNICAL BRIEF

#### 3.12 LCD back light illumination

MAX8630W is a charge pump designed to support PWM control mode. And MAX8630W supports 5 white LEDs. The MAX8630W is capable of driving up to 5 LEDs at a total of 100mA(MAX8630W 100mA).

The current sinks may be operated individually or in parallel for driving higher current LEDs. To maximize power efficiency, the charge pump operates in 1X, 1.5X, or 2X mode, where the mode of operation is automatically selected by comparing the forward voltage of each LED with the input voltage.

#### LCD BACKLIGHT



**Figure 13. Charge-Pump Circuit**

GT365 Series support Camera resolution up to 2M pixel. Camera Sensor I/F is integrated in the S-GOLDRadio(PMB8888).

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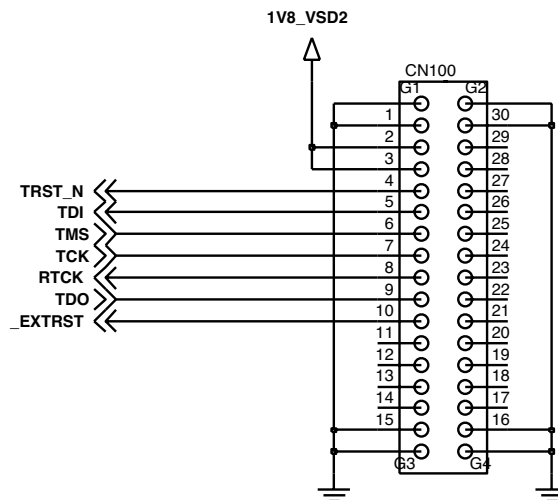
### 3. TECHNICAL BRIEF

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#### 3.14 JTAG & ETM interface connector

In case of GT365 series mass production, the JTAG interface connector will not be mount on board. That is only for developing and software debugging purpose.

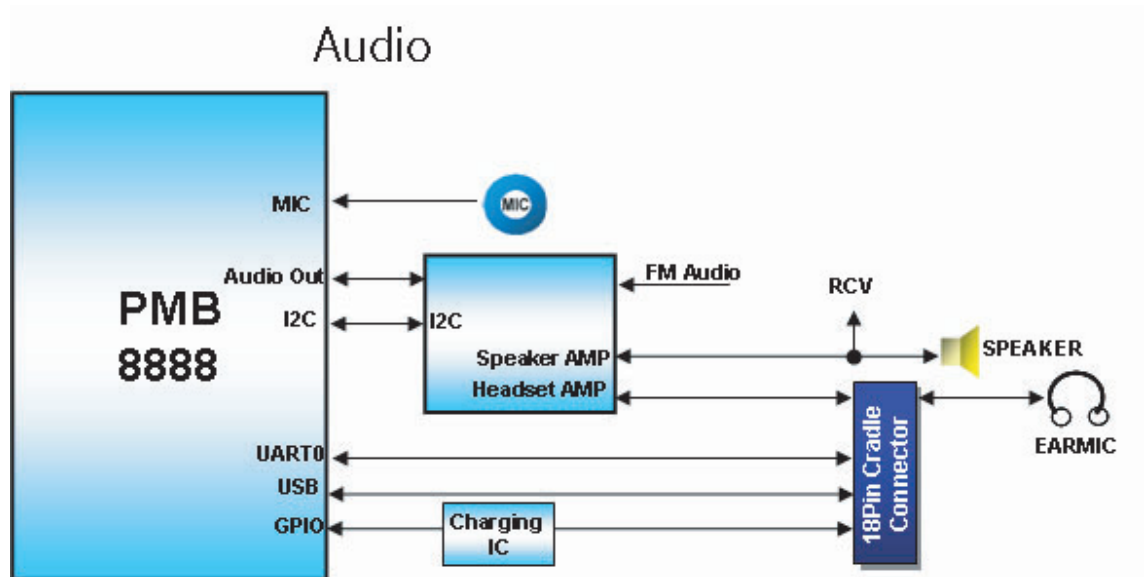
#### ON BOARD ARM9 JTAG & ETM INTERFACE



**Figure 15. JTAG & ETM Interface Circuit**

#### 3.15 Audio

GT365 series Audio signal flow diagram as following diagram.



**Figure 16. Audio Signal Flow Diagram**

### 3. TECHNICAL BRIEF

#### 3.15.1 Audio amplifier

We use MAX9877 Audio AMP, which have speaker & headphone amplifiers. An audio signal path can be selected by I2C command.

AUDIO AMP SUB SYSTEM & SIGNAL DISTRIBUTOR

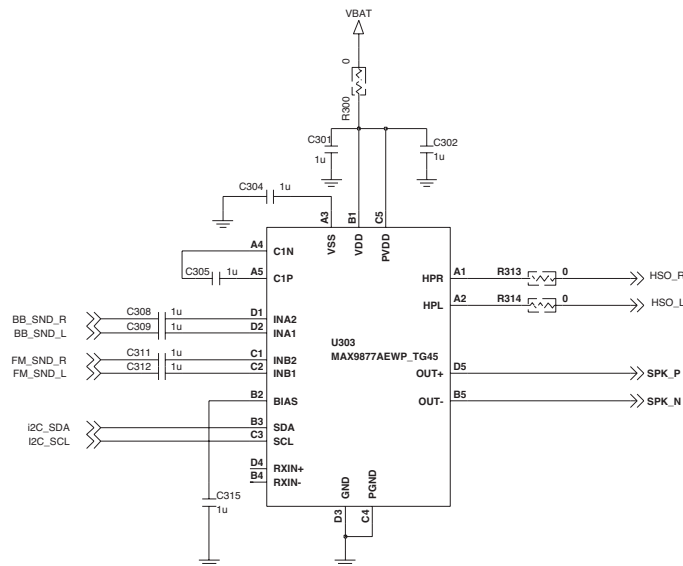


Figure 17. Audio AMP Circuit Diagram

#### 3.15.2 Microphone circuit

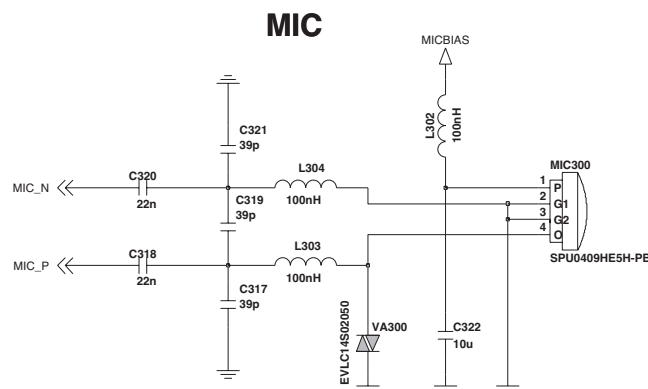


Figure 18. Microphone Circuit Diagram

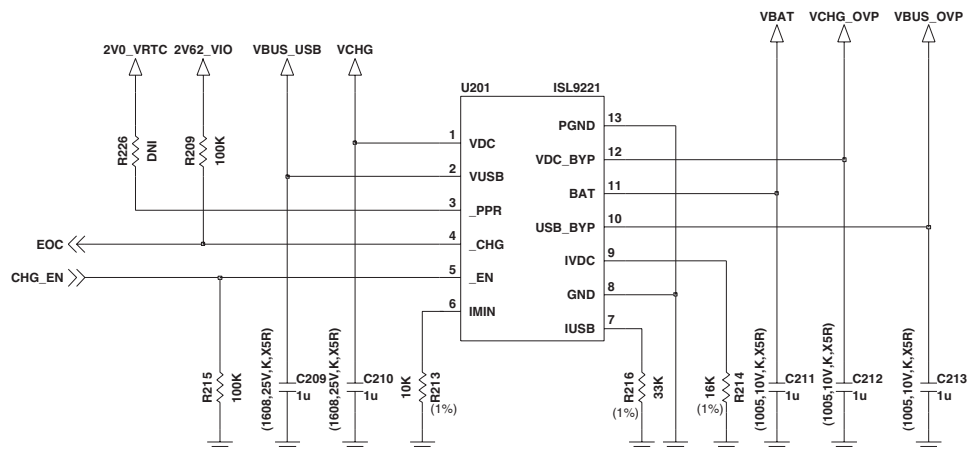
### 3.16 Charging circuit

ISL9221 accepts two power inputs, normally one from a USB (Universal Serial Bus) port and the other from a desktop cradle.

The ISL9221 features 28V and 7V maximum voltages for the cradle and the USB inputs respectively. Due to the 28V rating for the cradle input, low-cost, large output tolerance adapters can be used safely.

An over voltage protection functions are integrated in ISL9221 for USB & Charge

#### CHARGING IC OVP



**Figure 19. Charging Circuit Diagram**

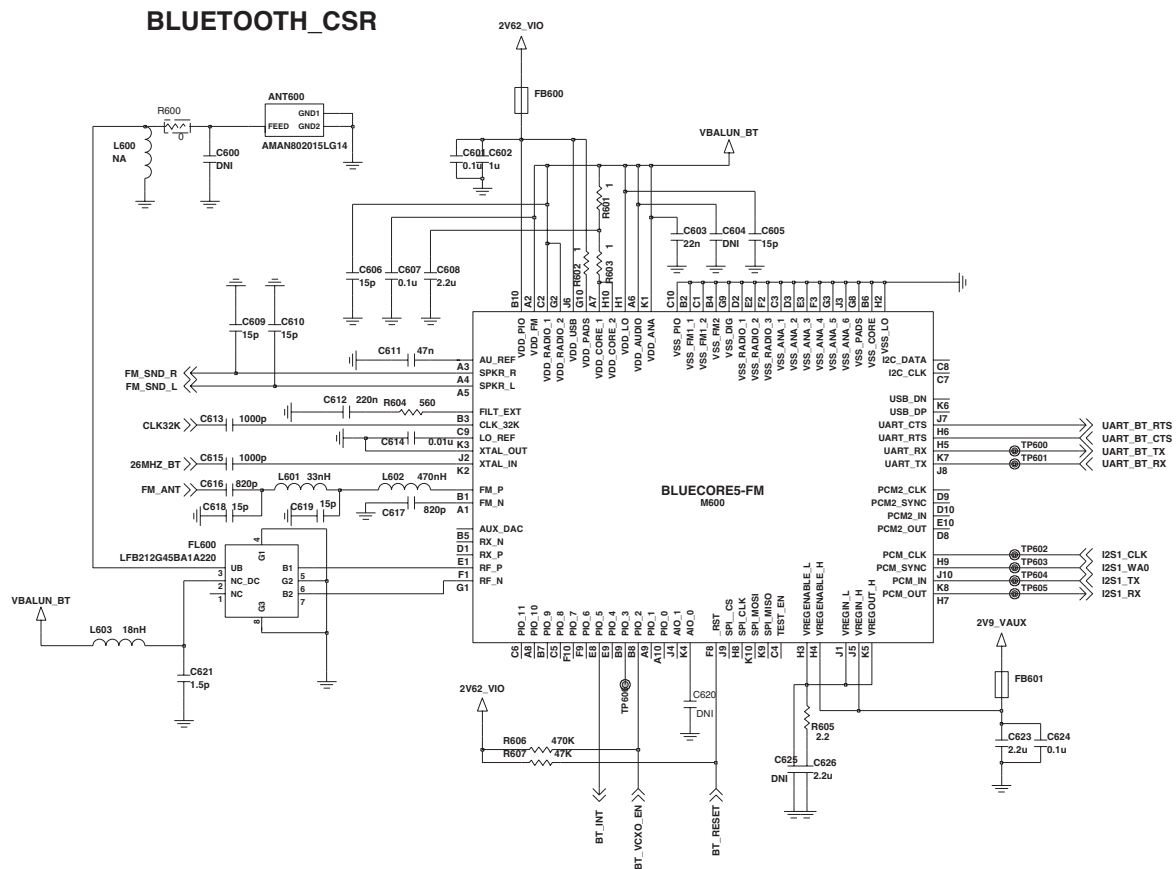
### 3. TECHNICAL BRIEF

#### 3.17 BLUETOOTH

##### General Features

The BlueCore 5-FM BGA is a single chip radio and baseband IC for Bluetooth 2.4 GHz systems including enhanced data rates (EDR) to 3Mbps/s. It includes an integrated FM receiver with stereo audio output stage and an RDS demodulator.

With the on-chip CSR Bluetooth software stack, it provides a fully compliant Bluetooth system to v2.0+EDR of the specification for data and voice communications.



**Figure 20. Bluetooth / FM Radio Circuit Diagram**

#### Bluetooth Radio

- Common TX/RX terminal simplifies external matching, eliminates external antenna switch
- No external trimming is required In production
- Bluetooth v2.0 + EDR Specification compliant

#### Bluetooth Transmitter

- +6 dBm RF Transmit power with level control from on-chip 6-bit DAC over a dynamic range > 30dB
- Class 2 and Class 3 support without the need for an external power amplifier or TX/RX switch.

#### Bluetooth Receiver

- Integrated channel filters
- Digital demodulator for improved sensitivity and co-channel rejection
- Real time digitized RSSI available on HCI interface
- Fast AGC for enhanced dynamic range
- Channel classification for AFH

#### Synthesiser

- Fully integrated synthesizer requires no external VCO varactor diode, resonator or loop filter
- Compatible with crystals between 7.5 and 40MHz(in multiples of 250KHz) or an external clock

#### Audio

- Single-ended stereo analogue output
- 16-bit 48 kHz digital audio bit stream output

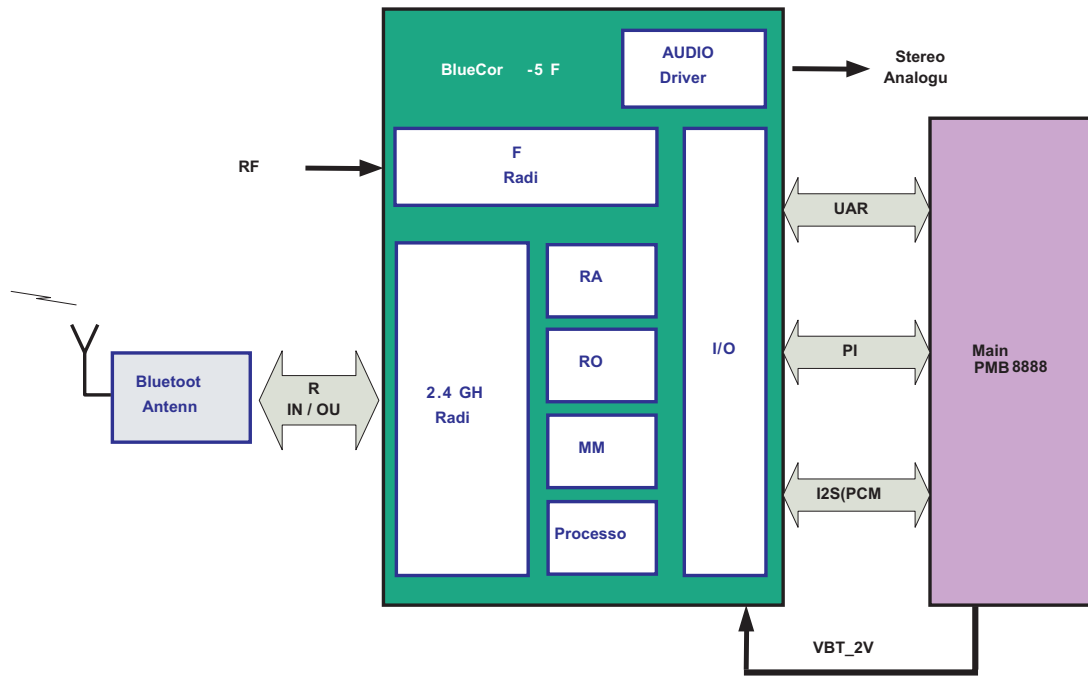
#### Baseband and Software

- Internal 48Kbyte RAM, allows full speed data transfer, mixed voice and data, and full piconet operation, including all medium rate packet types
- Logic for forward error correction, header error control, access code correlation. CRC, demodulation, encryption bit stream generation, whitening and transmit pulse shaping. Supports all Bluetooth v 2.0 + EDR features incl. ESCO and AFH
- Transcoders for A-law, u-law and linear voice from host and A-law, u-law and CVSD voice over air

#### Physical Interfaces

- Synchronous serial interface up to 4Mbits/s for system debugging
- UART interface with programmable baud rate up to 4Mbits/s with an optional bypass mode
- USB v1.1 interface
- I2C slave for FM
- Two audio PCM interfaces (input and output)
- Analogue stereo (output only)

### 3. TECHNICAL BRIEF



**Figure 21. Bluetooth / FM Radio Block Diagram**

#### 3.18 FM Radio

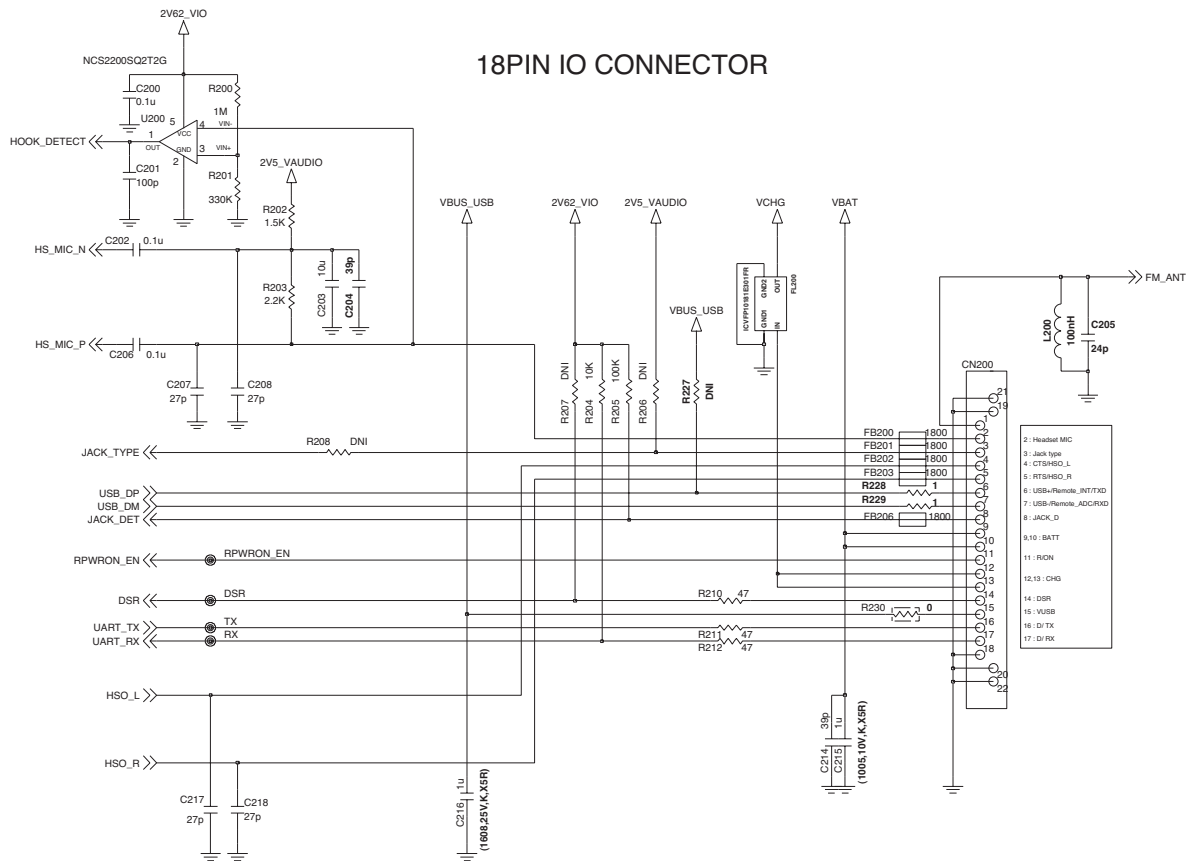
- Simultaneous operation with Bluetooth
- Support of US/Europe (87.5 to 108 MHz) and Japanese (76 to 90 MHz) FM band
- Wide dynamic range AGC
- Soft mute and stereo blend
- Adjustment-free stereo decoder and AFC
- Autonomous search tuning function (up/down) with programmability (threshold setting)
- RDS demodulator
- Audio output available over Bluetooth audio interface or dedicated audio output
- Control of FM via Bluetooth HCI or I2C
- Adaptive filter to suppress narrow band interference in the FM channel

### 3.19 18pin Multi Media Interface connector

Table 11. Multi media interface pin assign

| KM380 series MMI |              |                                     |
|------------------|--------------|-------------------------------------|
|                  | Pin Function | Description                         |
| 1                | FM_ANT       | FM radio antenna / Audio ground     |
| 2                | HS_MIC       | Headset microphone signal           |
| 3                | JACK_TYPE    | Not used                            |
| 4                | HS_OUT_L     | Headset left sound                  |
| 5                | HS_OUT_R     | Headset Right sound                 |
| 6                | USB_DP       | USB_DP                              |
| 7                | UDB_DM       | USB_DM                              |
| 8                | JACK_DET     | Headset detect (active low)         |
| 9                | VBAT         | Battery voltage                     |
| 10               | VBAT         | Battery voltage                     |
| 11               | RPWRON_EN    | Remote power on (active high. 2.8V) |
| 12               | VCHG         | Charger voltage                     |
| 13               | VCHG         | Charger voltage                     |
| 14               | DSR          | Not used                            |
| 15               | VBUS_USB     | USB VBUS                            |
| 16               | UART_Tx      | UART Tx                             |
| 17               | UART_Rx      | UART Rx                             |
| 18               | GND          | Power GND                           |

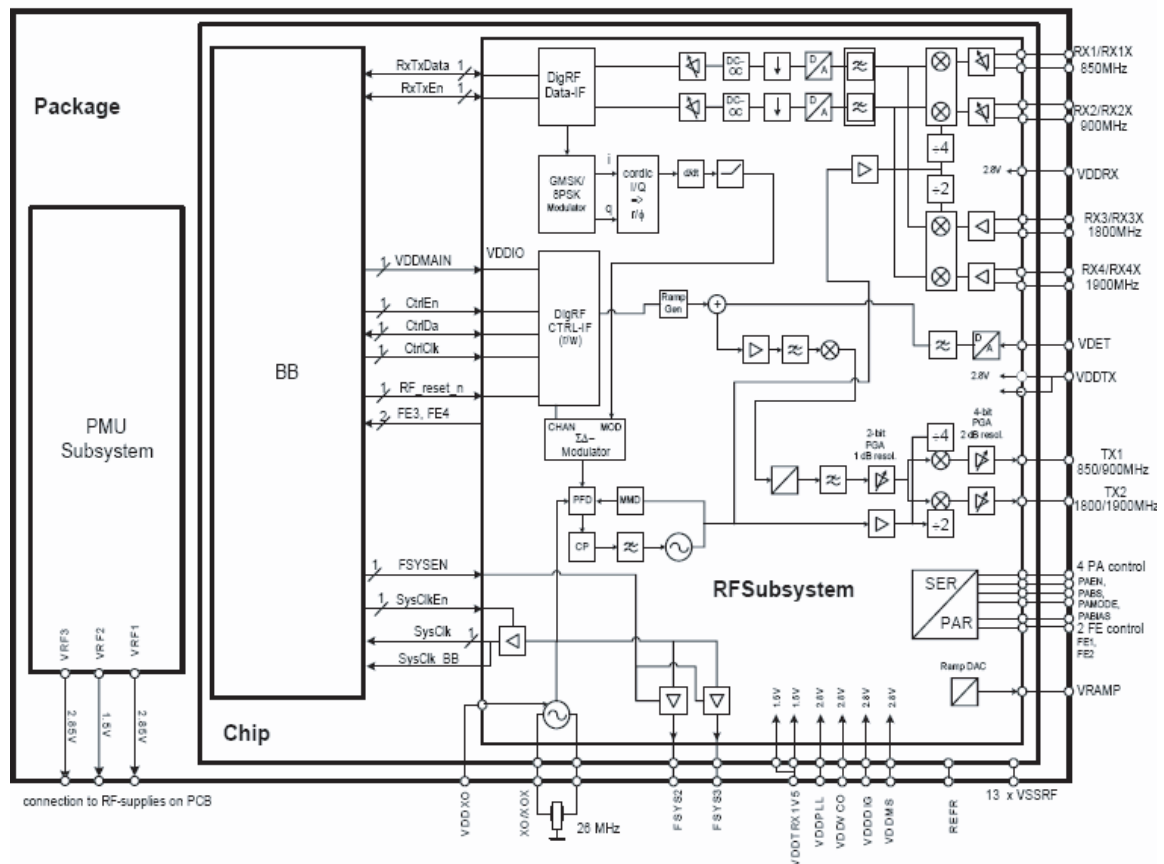
### 3. TECHNICAL BRIEF



**Figure 22. 18 Pin Multi port Circuit Diagram**

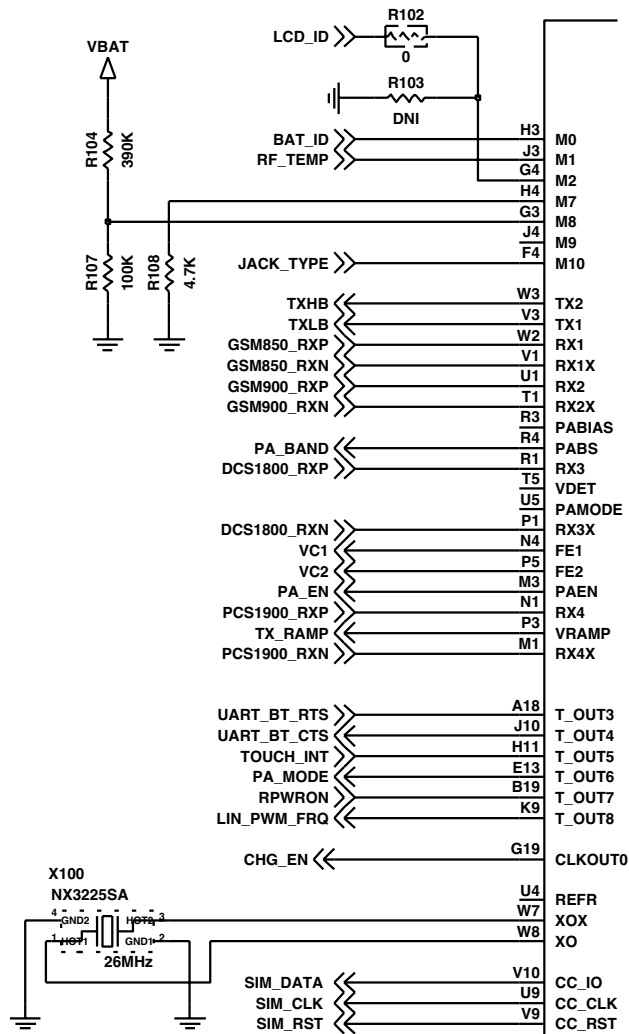
## 3.20 General Description

The RF transceiver is integrated in S-GOLDRadio(PMB8888),which supports quad-band operation for voice and data transfer applications. The whole transceiver function is integrated in main IC, PMB8888 provides 4 LNA inputs for RF receiving and two outputs for PAM input for High/Low band. A direct conversion receiver and a quad-band polar transmitter for GSM and EDGE with integrated PGA functionality.



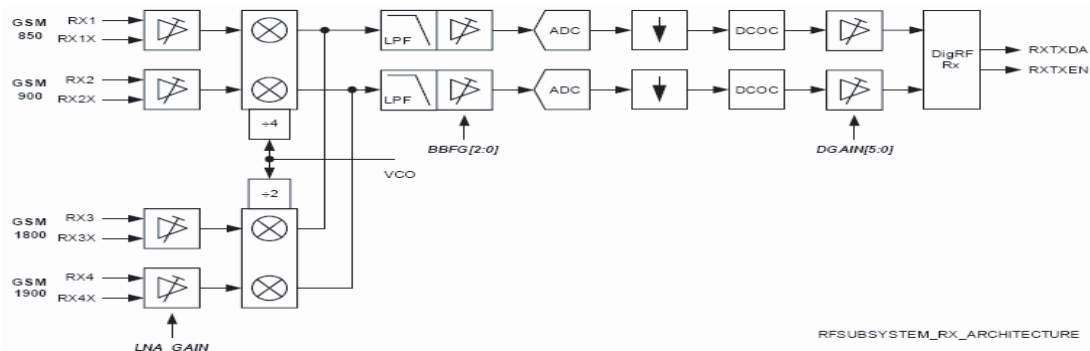
**Figure 23. PMB 8888 Function Block Diagram**

### 3. TECHNICAL BRIEF



**Figure 24. S-GOLD Radio Circuit Diagram**

## 3.21 Receiver part



**Figure 25. Receiver Block Diagram of S-GOLDradio**

The constant gain direct conversion receiver contains all active circuits for a complete receiver chain for GSM/GPRS/EDGE (see Figure 25). The GSM850/900/DCS1800/ PCS1900 LNAs with balanced inputs are fully integrated. No inter-stage filtering is needed. The orthogonal LO signals are generated by a divider-by-four for GSM850/900 band and a divider-by-two for the DCS1800/PCS1900 band. Down conversion to baseband domain is performed by low/high band quadrature direct down conversion mixers. The baseband chain contains a LNB (low noise buffer), channel filter, output buffer and DC-offset compensation. The 3rd order low pass filter is fully integrated and provides sufficient suppression of blocking signals as well as adjacent channel interferers and avoids anti-aliasing through the baseband ADC. The receive path is fully differential to suppress on-chip interferences. Several gain steps are implemented to cope with the dynamic range of the input signals. Depending on the baseband ADC dynamic range, single- or multiple gain step switching schemes are applicable. Furthermore an automatic DC-offset compensation can be used (depending on the gain setting) to reduce the DC-offset at baseband-output. A programmable gain correction can be applied to correct for front end- and receiver gain tolerances.

## 3. TECHNICAL BRIEF

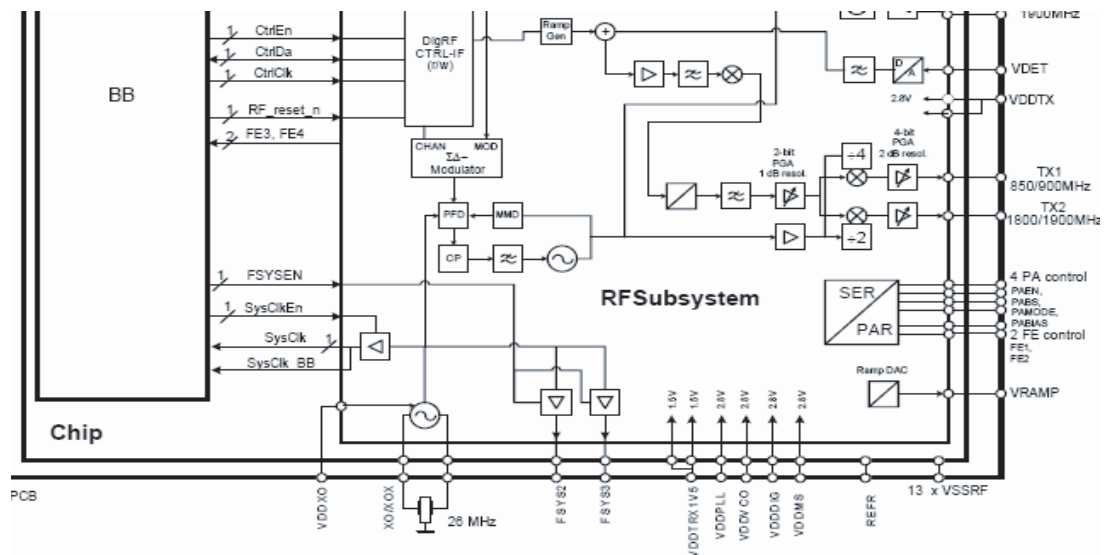
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### 3.22 Transmitter part

The GMSK transmitter supports power class 4 for GSM850 and GSM900 as well as power class 1 for DCS1800 and PCS1900. The digital transmitter architecture is based on a very low power fractional-N Sigma-Delta synthesizer without any external components (see Figure26). The analog I/Q modulation data from the baseband is converted to digital, filtered and transformed to polar coordinates. The phase/frequency signal is further on processed by the Sigma-Delta modulation loop. The output of its associated VCO is divided by four or two, respectively, and connected via an output buffer to the appropriate single ended output pin. This configuration ensures minimum noise level. The 8PSK transmitter supports power class E2 for GSM850 and GSM900 as well as for DCS1800 and PCS1900. The digital transmitter architecture is based on a polar modulation architecture, where the analog modulation data (rectangular I/Q coordinates) is converted to digital data stream and is subsequently transformed to polar coordinates by means of a CORDIC algorithm. The resulting amplitude information is fed into a digital multiplier for power ramping and level control. The ready processed amplitude signal is applied to a DAC followed by a low pass filter which reconstructs the analog amplitude information.

The phase signal from the CORDIC is applied to the Sigma-Delta fractional-N modulation loop. The divided output of its associated VCO is fed to a highly linear amplitude modulator, recombining amplitude and phase information. The output of the amplitude modulator is connected to a single ended output RF PGA for digitally setting the wanted transmit power. The PA interface of SMARTi-PM supports direct control of standard dual mode power amplifiers (PA's) which usually have a power control input VAPC and an optional bias control pin VBIAS for efficiency enhancement. In GMSK mode, the PA is in saturated high efficiency mode and is controlled via its VAPC pin directly by the baseband ramping DAC.

In this way both up- / down-ramping and output power level are set. In 8PSK mode, the ramping functionality is assured by an on-chip ramping generator, whereas output power is controlled by the PGA's as described above.



**Figure 26. Transmitter Architecture Block Diagram**

### 3.23 RF synthesizer

The transceiver contains a fractional-N sigma-delta synthesizer for the frequency synthesis in the RX operation mode. For TX operation mode the fractional-N sigma-delta synthesizer is used as Sigma-Delta modulation loop to process the phase/frequency signal. The 26MHz reference signal is provided by the internal crystal oscillator. This frequency serves as comparison frequency of the phase detector and as clock frequency for all digital circuitry. The divider in the feedback path of the synthesizer is carried out as a multi-modulus divider (MMD). The loop filter is fully integrated and the loop bandwidth is about 100 kHz to allow the transfer of the phase modulation. The loop bandwidth is automatically adjusted prior to each slot (OLGA<sup>2</sup>). To overcome the statistical spread of the loop filter element values an automatic loop filter adjustment (ALFA) is performed before each synthesizer startup.

The fully integrated quad-band VCO is designed for the four GSM bands (850, 900, 1800, 1900 MHz) and operates at double or four times transmit or receive frequency. To cover the wide frequency range the VCO is automatically aligned by a binary automatic band selection (BABS) before each synthesizer startup.

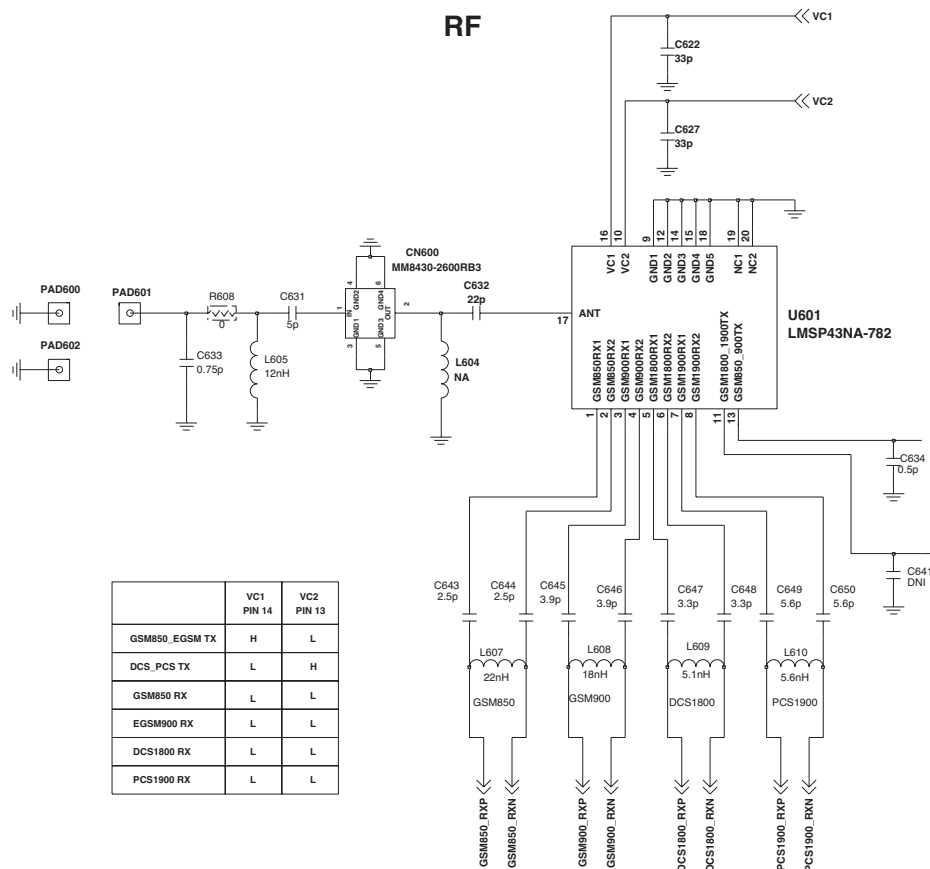
## 3. TECHNICAL BRIEF

### 3.24 DCXO

The transceiver contains a fully integrated 26MHz digitally controlled crystal oscillator (DCXO) with three outputs for the system clock, one output for the GSM baseband and two additional for other subsystems (GPS, Bluetooth, etc.). The only external part of the oscillator is the crystal itself. The overall pulling range of the DCXO consists of eight subranges. The subrange closest to the '0ppm' at the middle AFC-value is selected during the calibration process in the mobile's production and is used for the rest of the lifetime. The frequency tuning is performed along the selected subrange by programming the frequency control word (XO\_TUNE) via the three wire bus ("3Wbus").

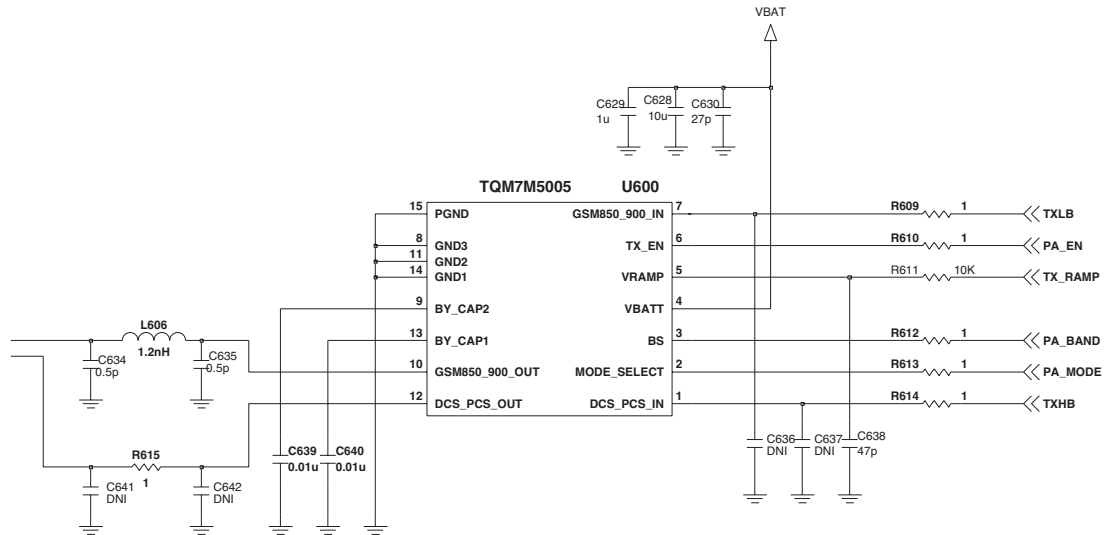
### 3.25 Front End Module control

Implemented in the Transceiver are two outputs for direct control of front end modules with two logic input pins to select RX- and TX-mode as well as low- and high band operation.



**Figure 27. FEM Circuit Diagram**

## 3.26 Power Amplifier Module



**Figure 28. Power Amplifier Circuit Diagram**

Table 10 PAM pin description

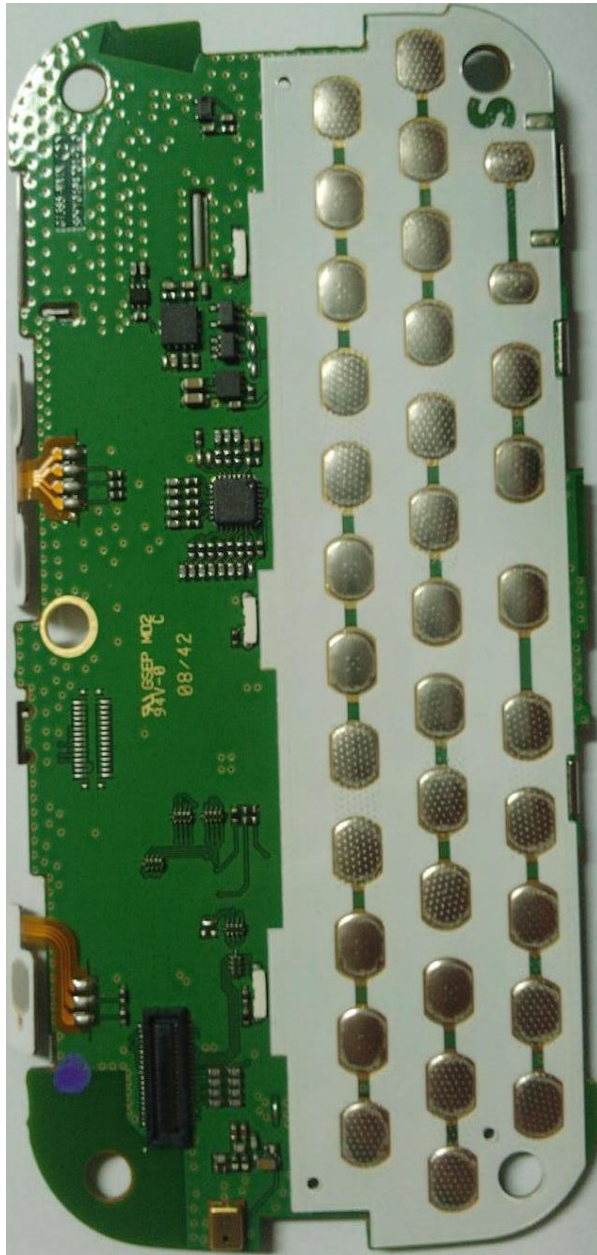
| Pin      | Mame         | Description                                                                                       |
|----------|--------------|---------------------------------------------------------------------------------------------------|
| 1        | MODE         | GMSK/EDGE Power control mode. L=GMSK, H=EDGE                                                      |
| 2        | DCS/PCS_IN   | RF input(DCS/PCS) DC Blocked                                                                      |
| 3        | BS           | Band Select                                                                                       |
| 4        | REVD1        | Reserved                                                                                          |
| 5        | VBATT        | DC Supply                                                                                         |
| 6        | VRAMP        | Analog PA Bias Control(All Bands, EDGE Mode)<br>Analog Output Power Control(All Bands, GMSK Mode) |
| 7        | GSM_IN       | RF input(EGSM) DC Blocked                                                                         |
| 9        | GSM_OUT      | RF Output(EGSM) DC Blocked                                                                        |
| 10,11    | GND          | Ground                                                                                            |
| 12       | REVD2        | Reserved                                                                                          |
| 13,14,15 | GND          | Ground                                                                                            |
| 16       | DCS/PCS_OUT  | RF Output(DCS/PCS) DC Blocked                                                                     |
| Pad      | GND PAD GRID | Ground pad grid is device underside.                                                              |

## 4. PCB layout

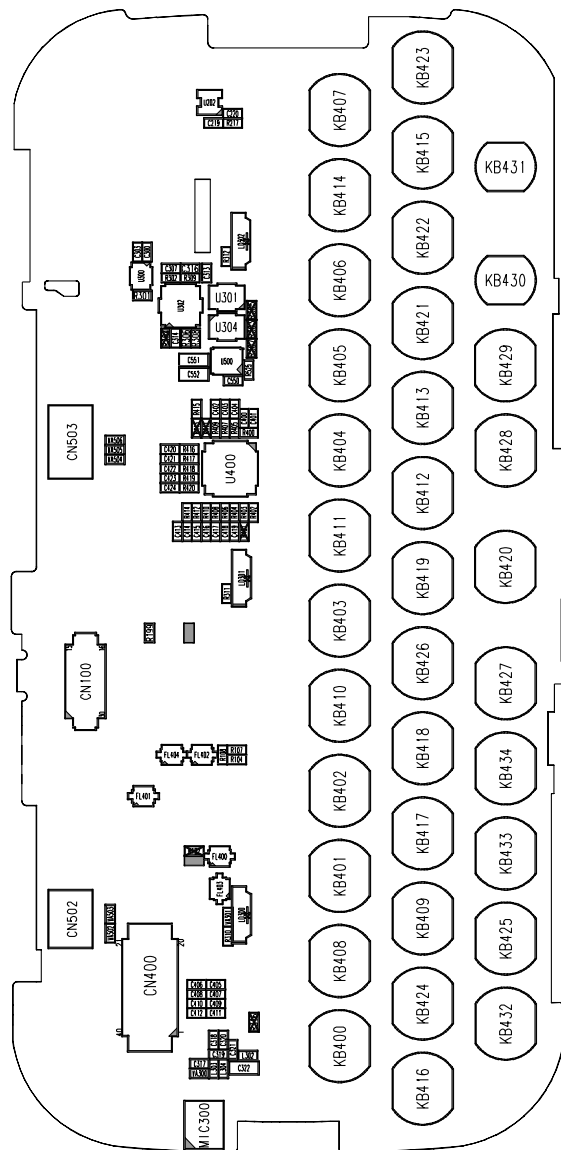
## 4. PCB layout

### 4.1 Main PCB component placement

Main PCB Top

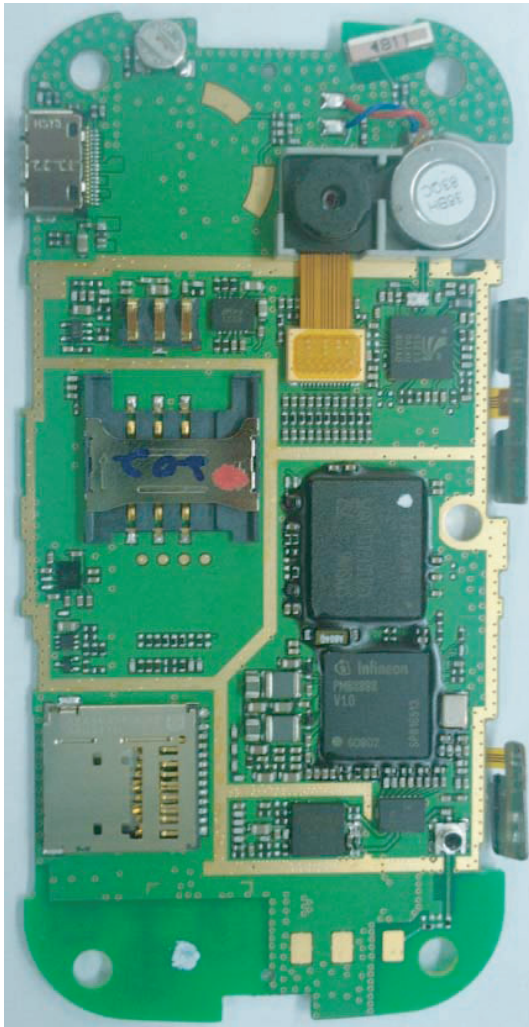


Main PCB Top placement

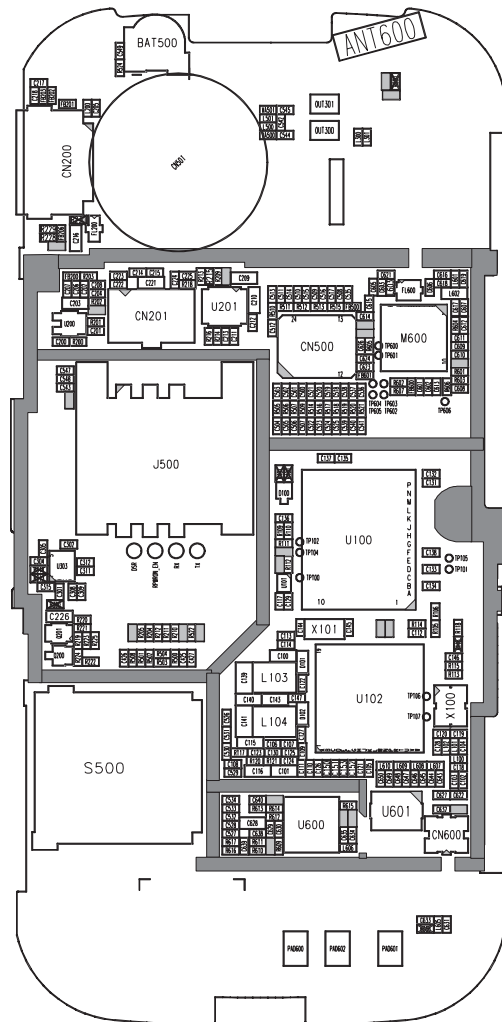


## 4. PCB layout

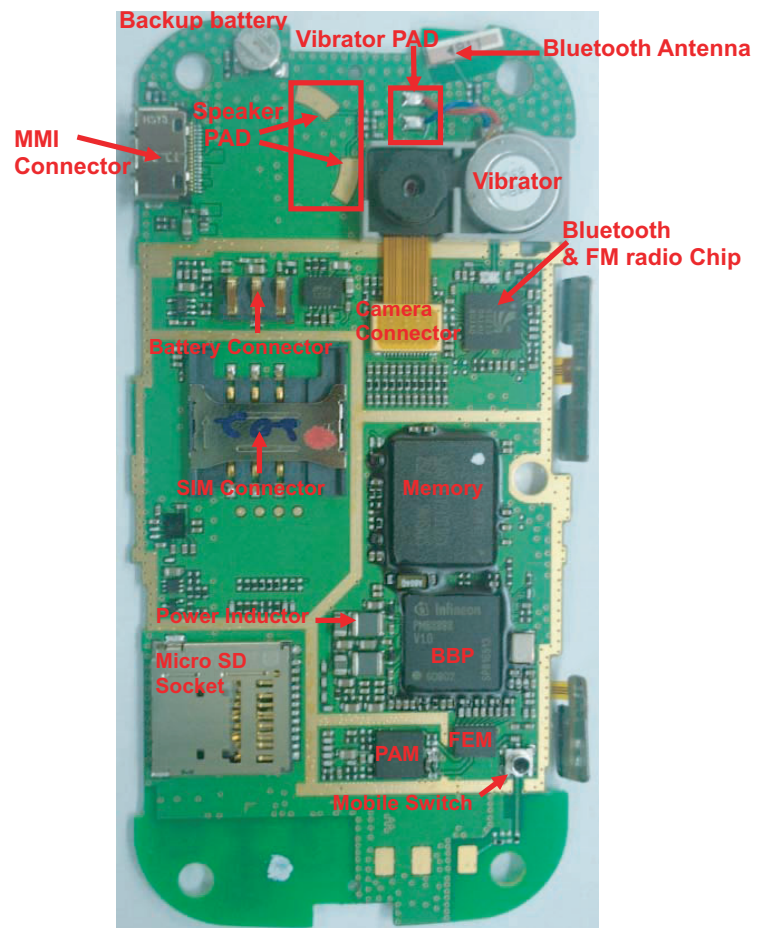
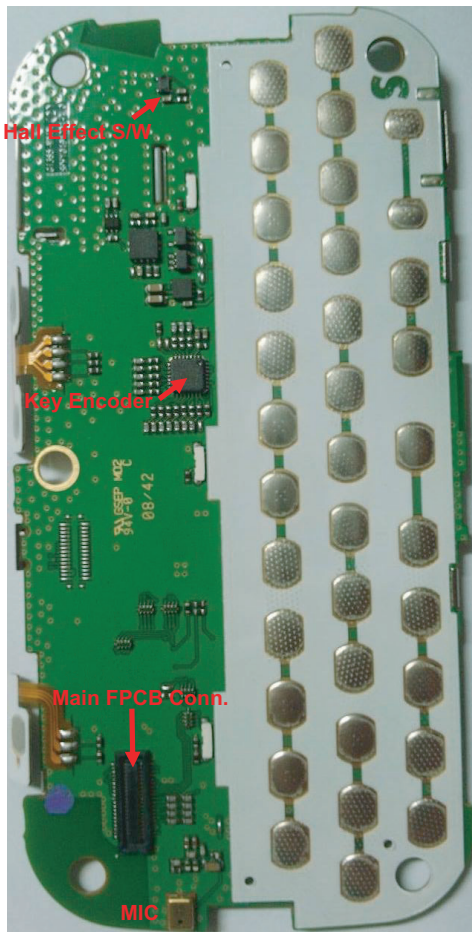
**Main PCB bottom**



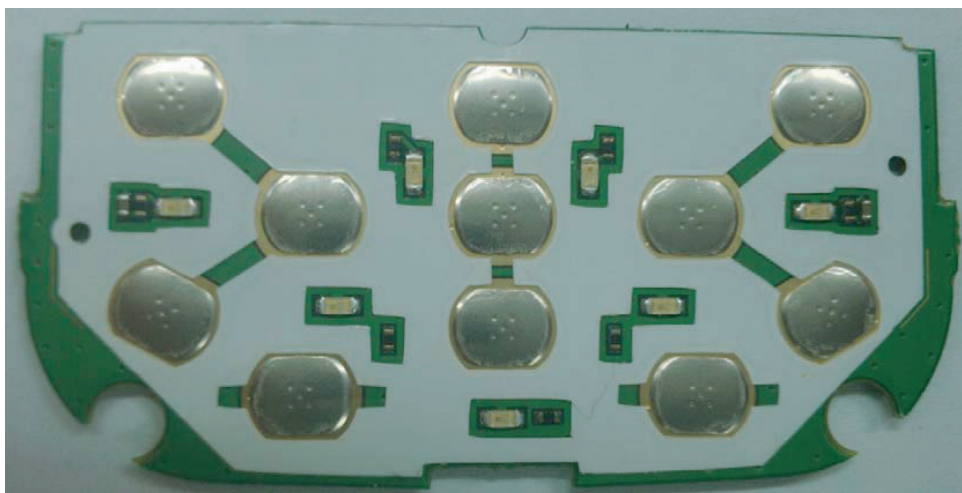
**Main PCB bottom placement**



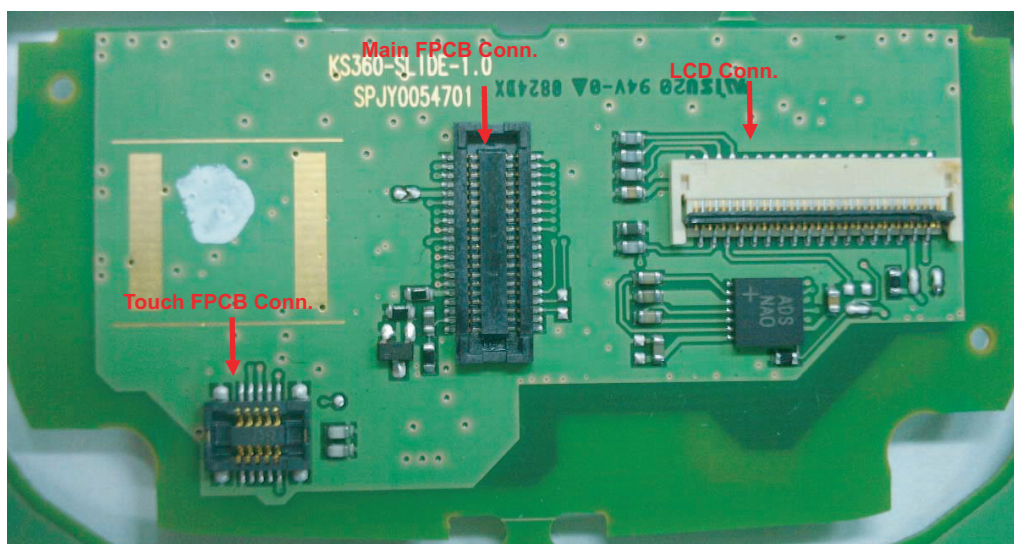
## 4. PCB layout



## 4. PCB layout



KEY PCB Top



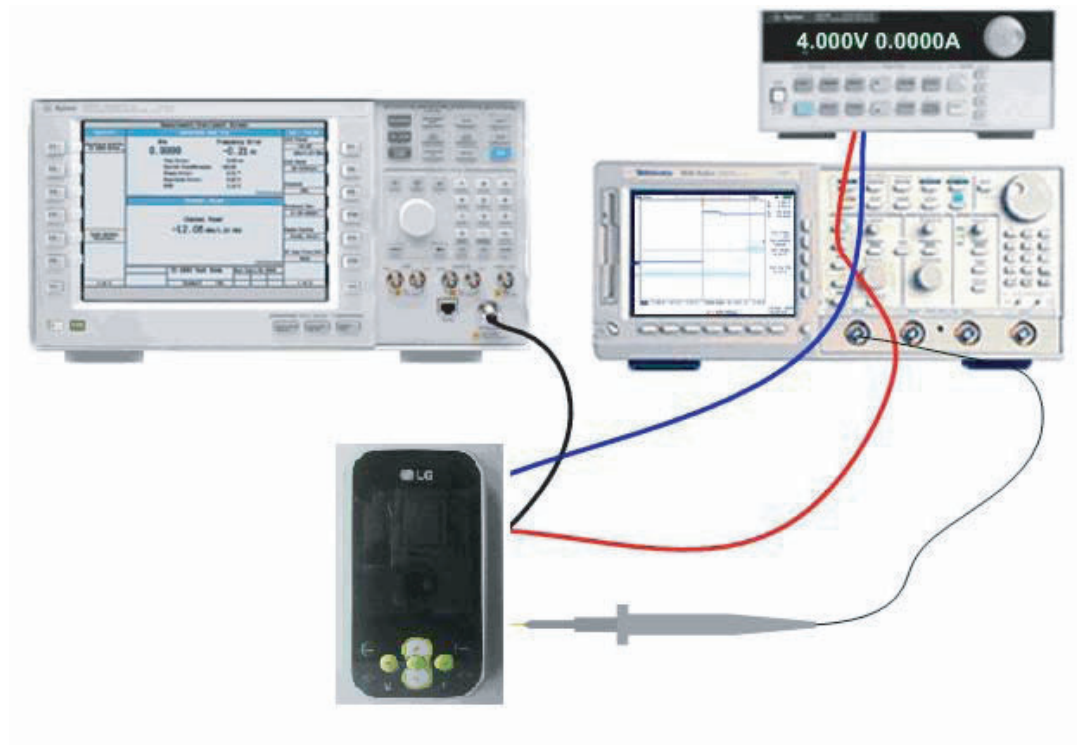
KEY PCB Bottom

## 5. Trouble shooting

---

## 5. Trouble shooting

### 5.1 Trouble shooting test setup



#### Equipment setup

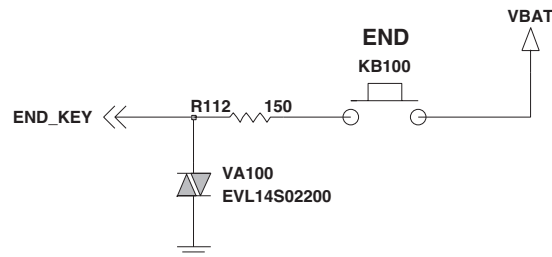
Power on all of test equipment

- Connect PIF-UNION JIG or dummy battery to the DUT for power up.
- Connect mobile switch cable between Communication test set and DUT when you need to make an phone call.
- Follow trouble shooting procedure

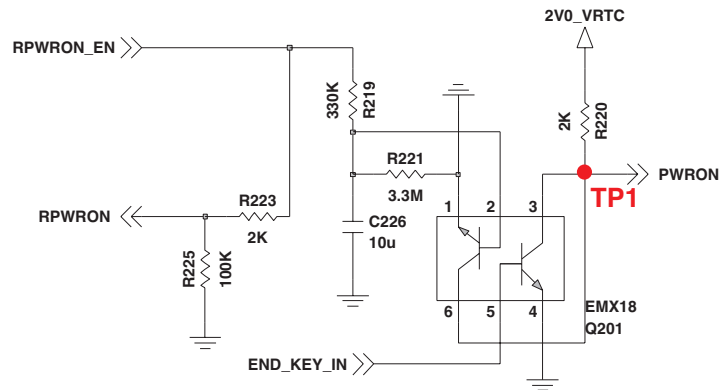
### 5.2 Power on Trouble

#### Check Points

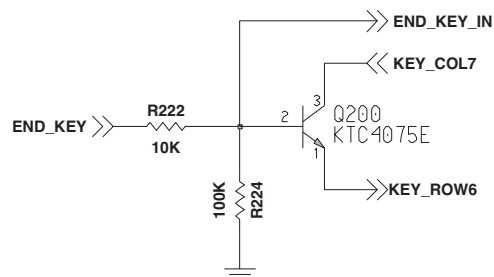
- Battery Voltage( Need to over 3.35V)
- Power-On Key detection (PWRON signal)



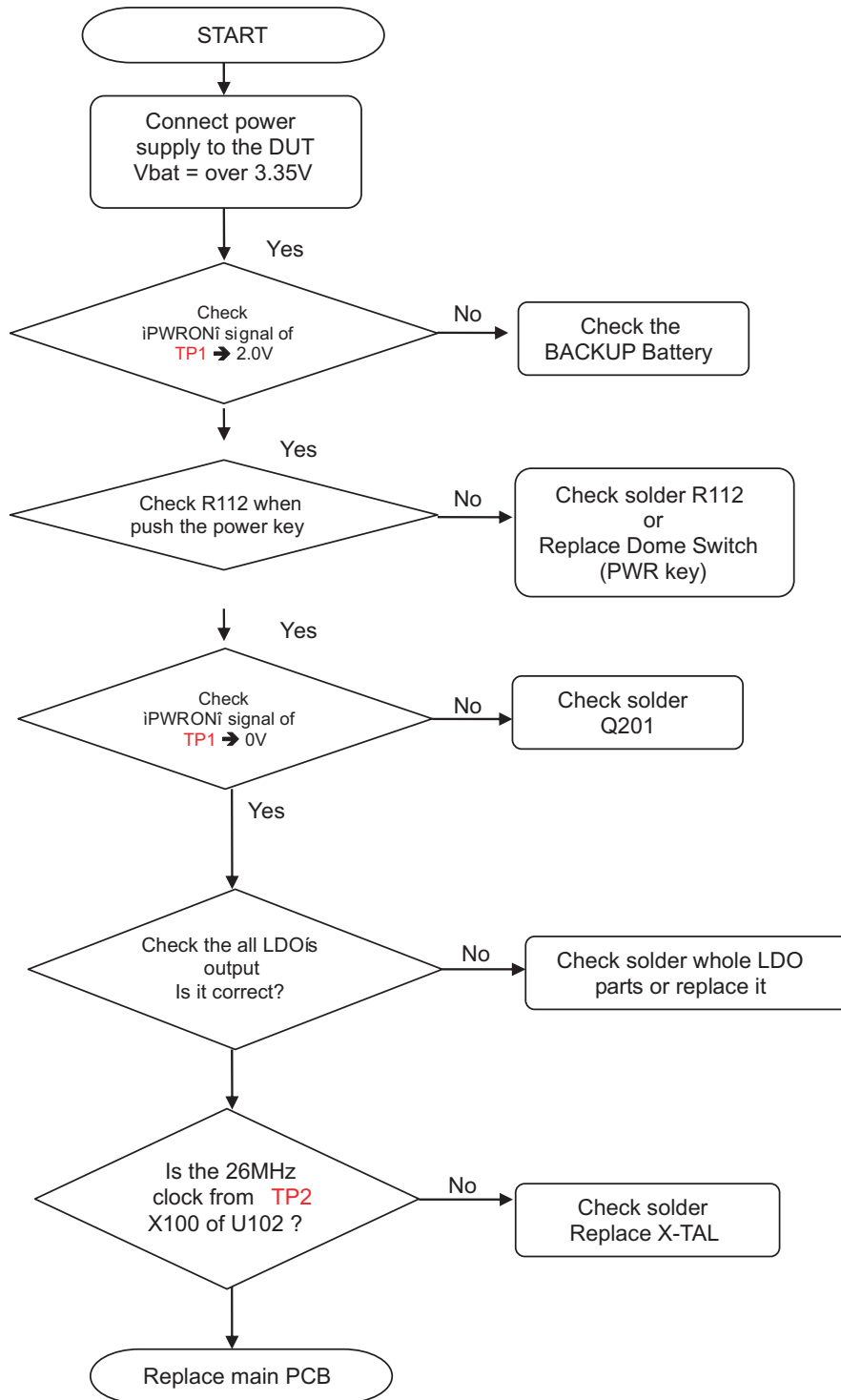
#### Remote Power On



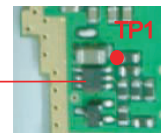
#### END



## 5. Trouble shooting



PWR key



Q201

### Linear Low Dropout (LDO) Regulators

- General Purpose LDOs:
  - 2.9 V, 150 mA, ultra low drop (VAUX)
  - 2.62 V, 100 mA (VIO)
  - 1.8 V / 2.9 V, 22 mA, ultra low drop (VSIM)
  - 1.8 V / 2.9 V, 150 mA, ultra low drop (VMME)
  - 2.8 V, 140 mA, ultra low drop (VIB)
  - 3.1 V, 40 mA, ultra low drop (VUSB)
- Low Noise LDOs:
  - 2.5 V, 220 mA (VAUDIOa)
  - 2.85 V, 20 mA (VRF1)
  - 1.5 V, 80 mA (VRF2)
  - 2.85 V, 150 mA (VRF3)

### Low Power LDOs

- 1.5 V, 20 mA (VPLL)
- 2.0 V, 4 mA (VRTC)



X100

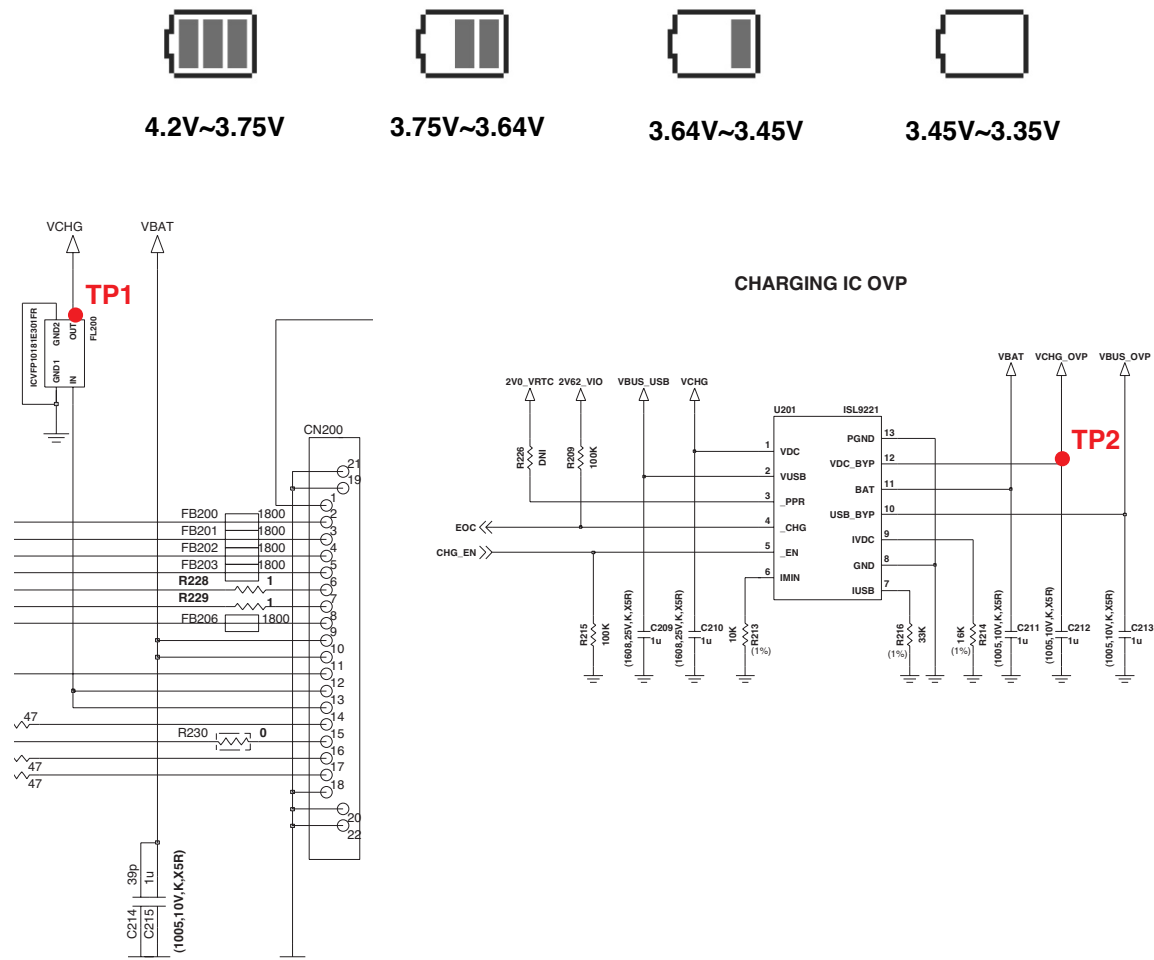
### Linear Low Dropout (LDO) Regulators

- General Purpose LDOs:
  - 2.9 V, 150 mA, ultra low drop (**VAUX**)
  - 2.62 V, 100 mA (**VIO**)
  - 1.8 V / 2.9 V, 22 mA, ultra low drop (**VSIM**)
  - 1.8 V / 2.9 V, 150 mA, ultra low drop (**VMME**)
  - 2.8 V, 140 mA, ultra low drop (**VVIB**)
  - 3.1 V, 40 mA, ultra low drop (**VUSB**)
- Low Noise LDOs:
  - 2.5 V, 220 mA (**VAUDIOa**)
  - 2.85 V, 20 mA (**VRF1**)
  - 1.5 V, 80 mA (**VRF2**)
  - 2.85 V, 150 mA (**VRF3**)

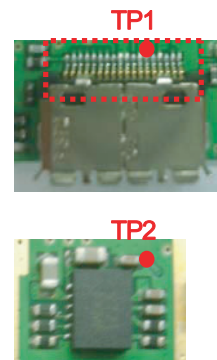
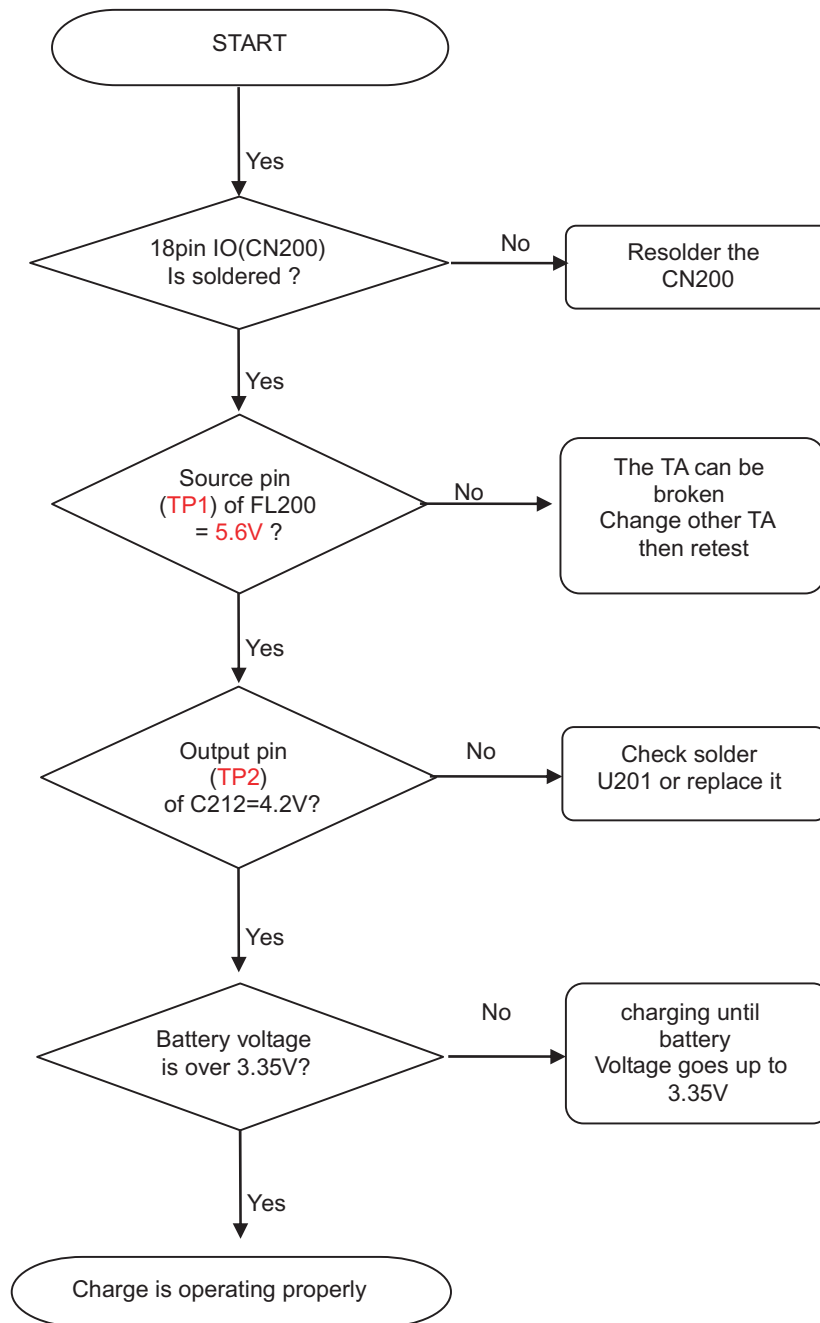
### Low Power LDOs

- 1.5 V, 20 mA (**VPLL**)
- 2.0 V, 4 mA (**VRTC**).

- 1 Charging method : CC-CV
- 2 Charger detect voltage : 4.0 V
- 3 Charging time : 2h 30m
- 4 Charging current : 420 mA
- 5 CV voltage : 4.2 V
- 6 Cutoff current : 100 mA
- 7 Full charge indication current (icon stop current) : 100 mA
- 8 Recharge voltage : 4.15 V



## 5. Trouble shooting

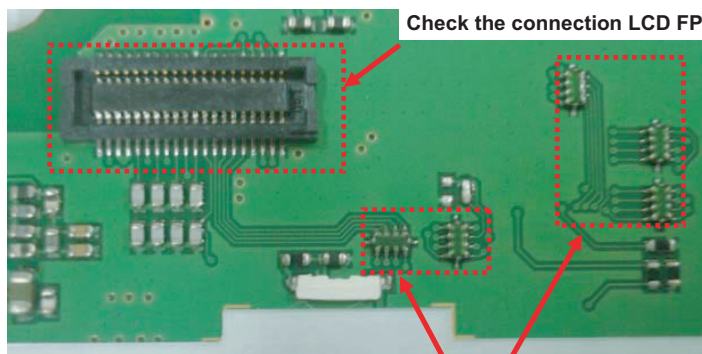
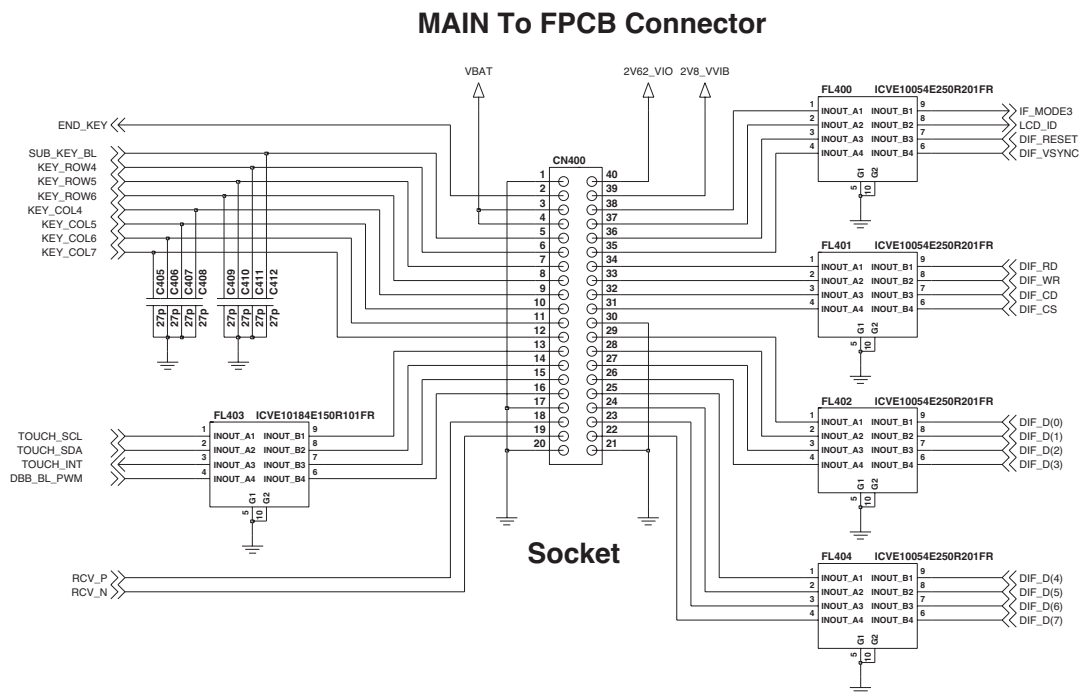


## 5. Trouble shooting

### 5.4 LCD display trouble

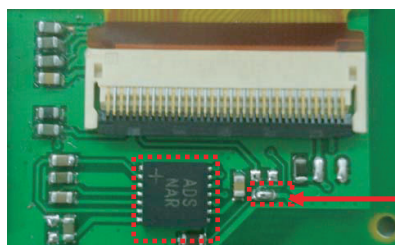
#### Check Points

- LCD assembly status ( LCD FPCB, Connector on FPCB)
- EMI filter soldering
- Connector combination



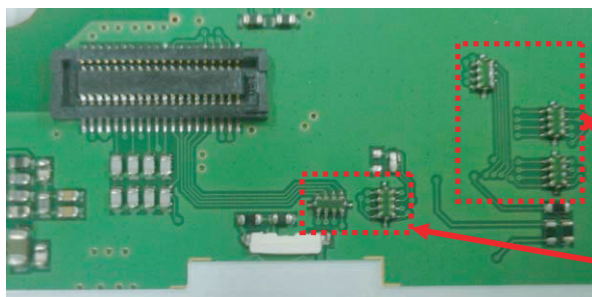
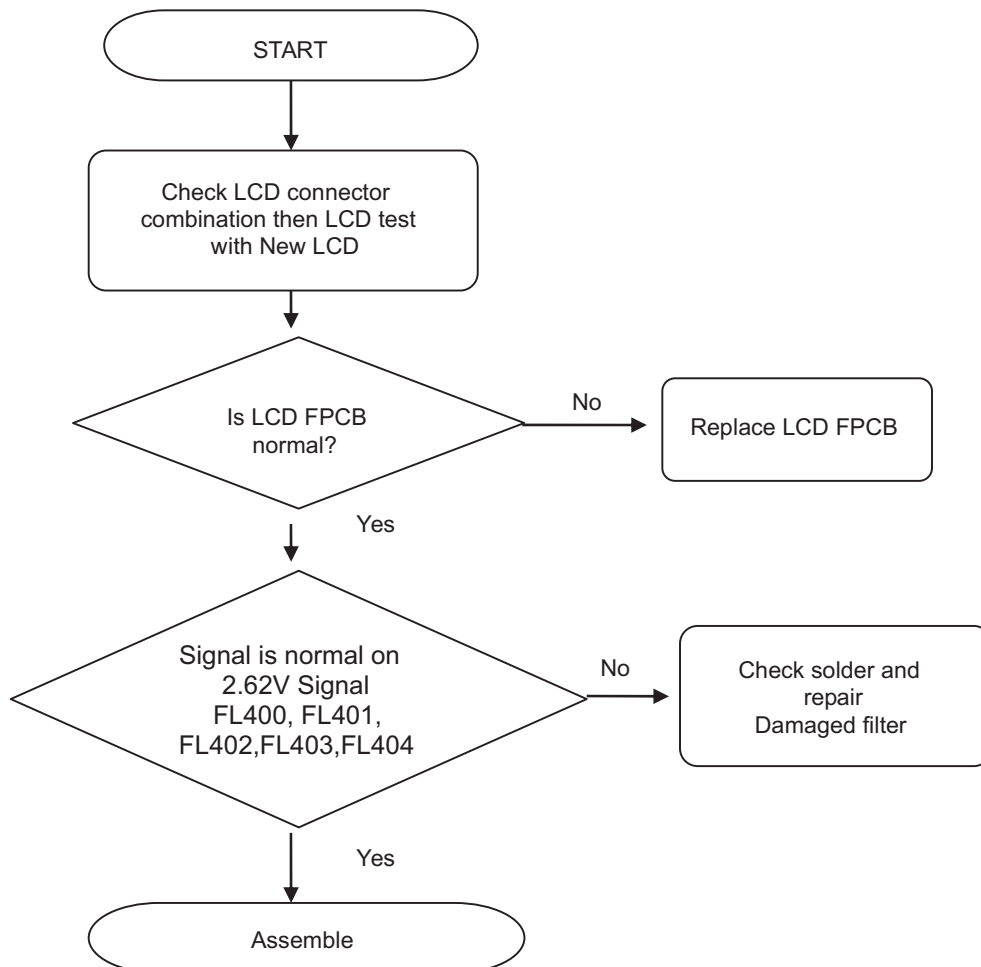
Check the connection LCD FPCB connector

Check signal flow via EMI filter



The LCD backlight enable signal  
(SUB PCB)

## 5. Trouble shooting



FL400,401,402,403,404

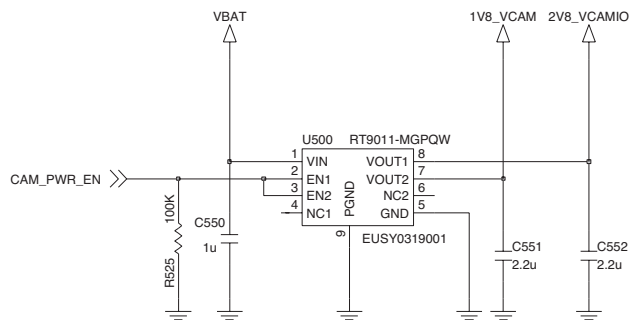
## 5. Trouble shooting

### 5.5 Camera Trouble

#### Check Points

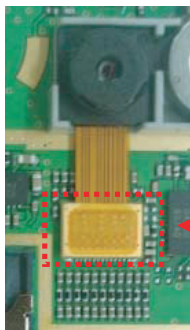
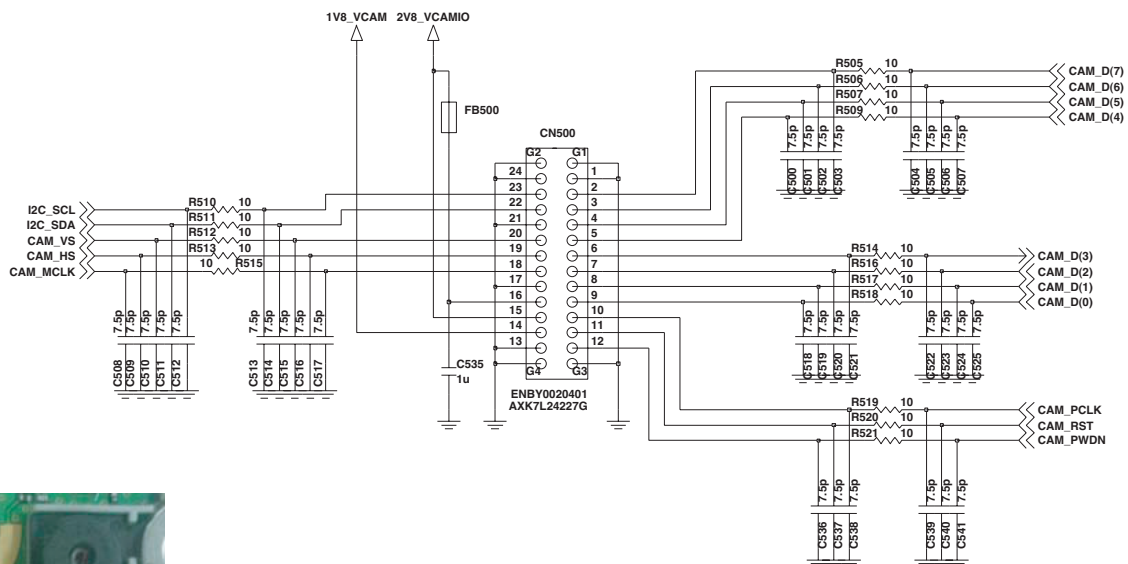
- Connectors combination
- FPCB status

#### CAMERA POWER

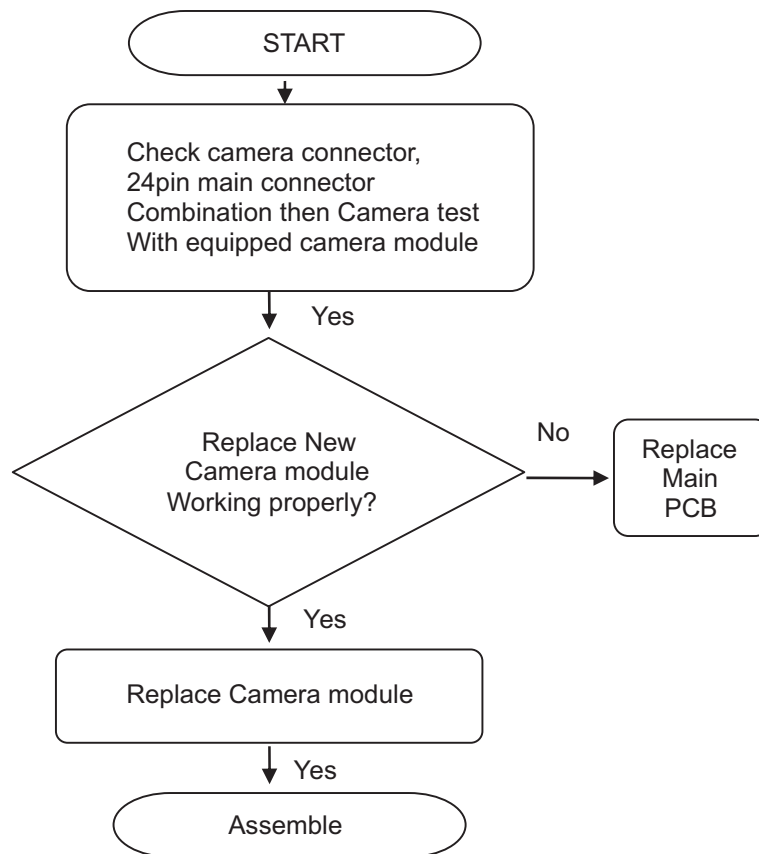


#### CAMERA CONNECTOR

(ENBY0020401, 24PIN, 0.9T, SOCKET, AXK7L24227G)



Check the connector combination

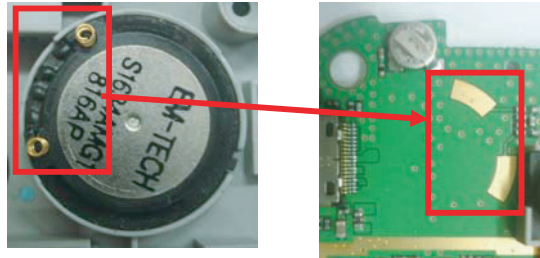


## 5. Trouble shooting

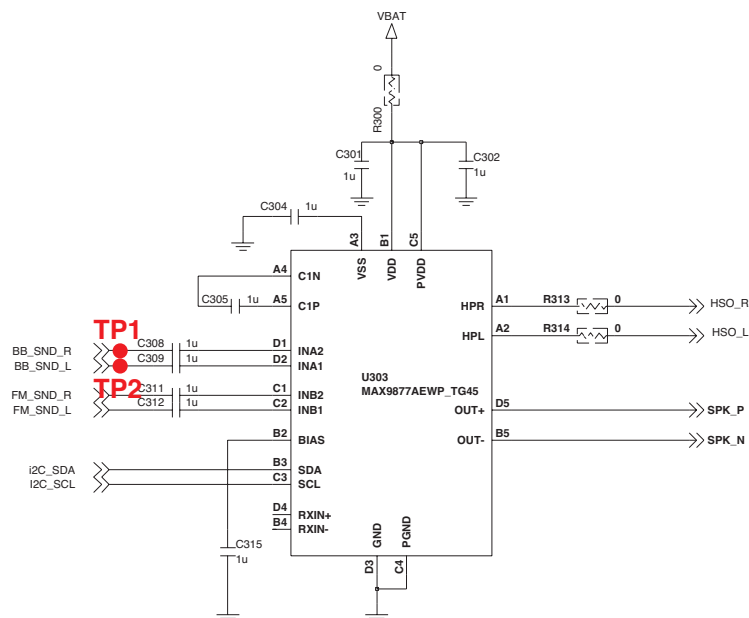
### 5.6 Receiver & Speaker trouble

#### Check Points

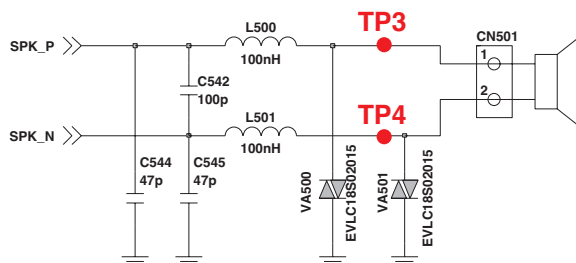
- Speaker pin contact
- Audio amp soldering
- SUB PMIC soldering



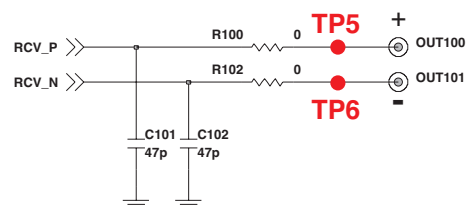
#### AUDIO AMP SUB SYSTEM & SIGNAL DISTRIBUTOR



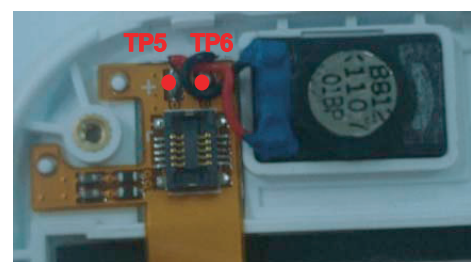
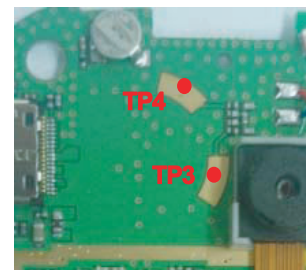
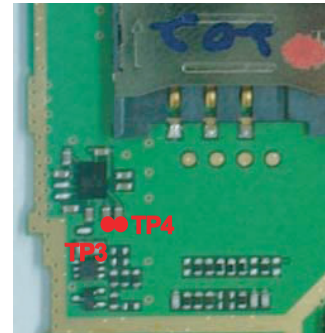
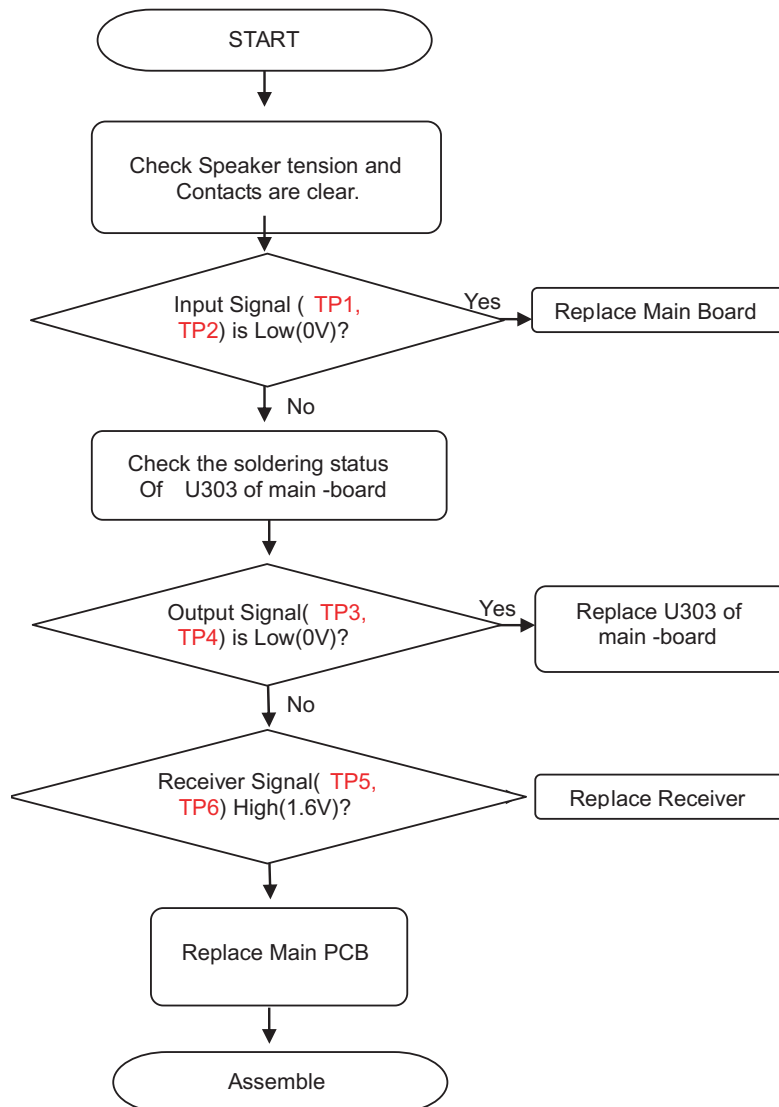
#### SPK



#### MAIN RECEIVER



## 5. Trouble shooting

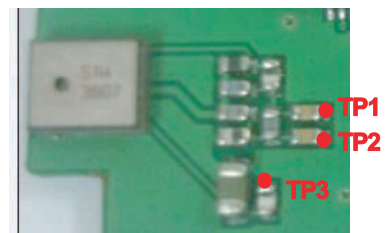
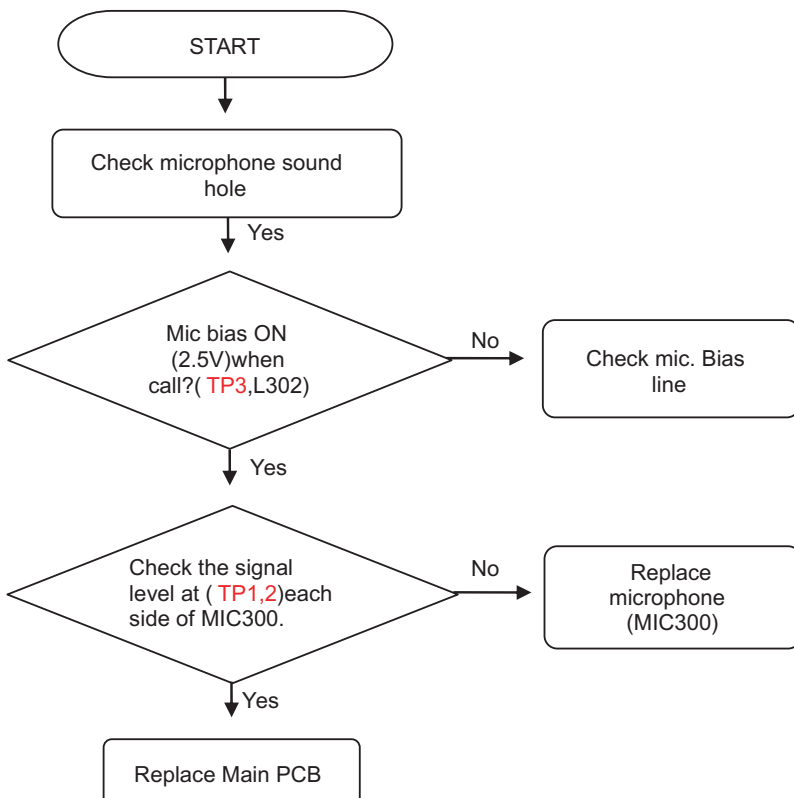
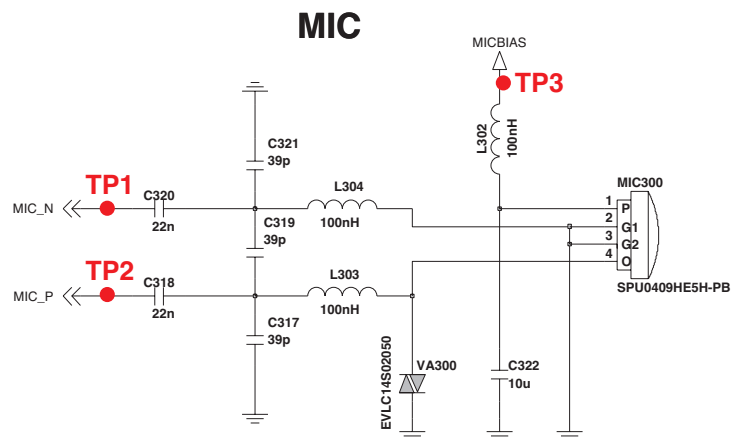


## 5. Trouble shooting

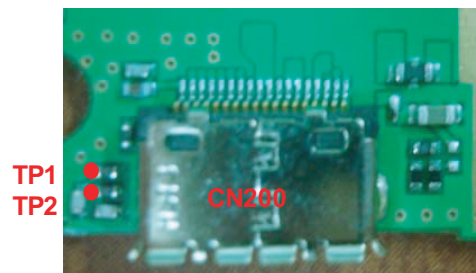
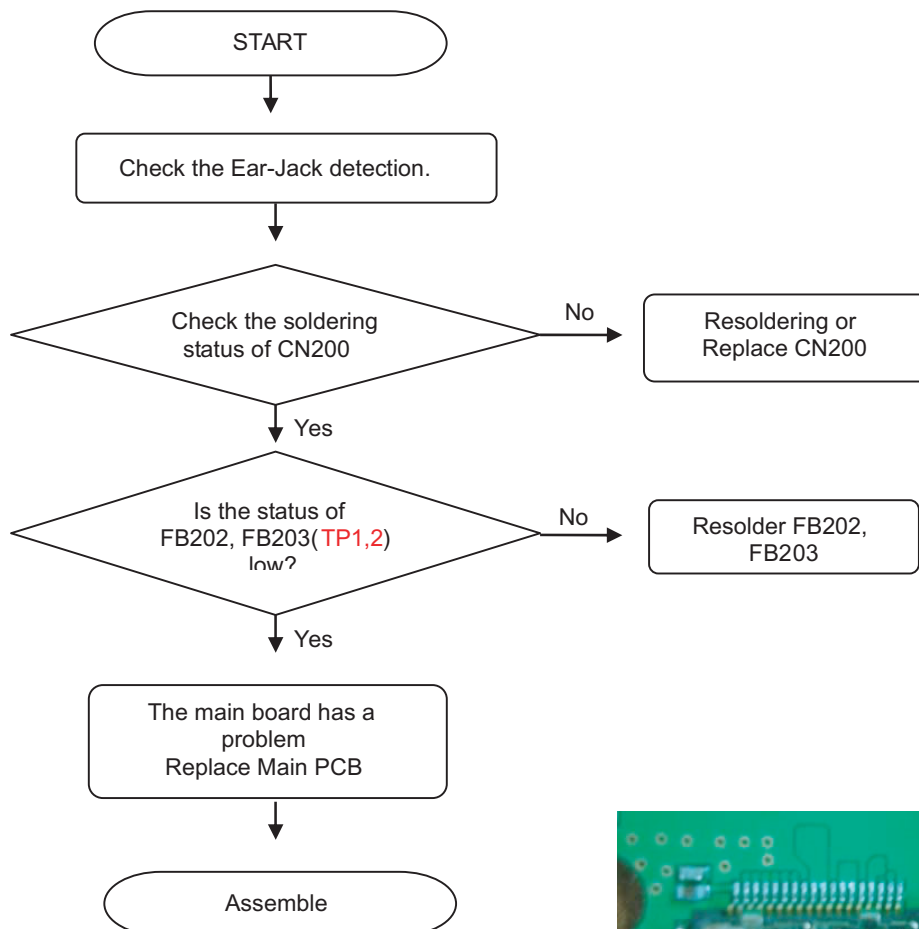
### 5.7 Microphone trouble

#### Check Points

- Microphone hole
- MICBIAS & Signal come from
- Audio signal level of the Microphone
- Soldering of components



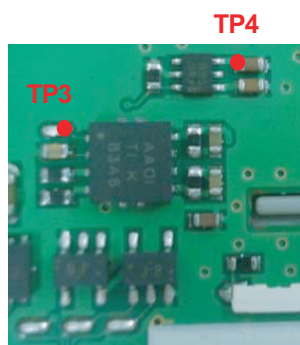
### 5.8 Ear-Mlc Jack Detection trouble



### -Connectors combination

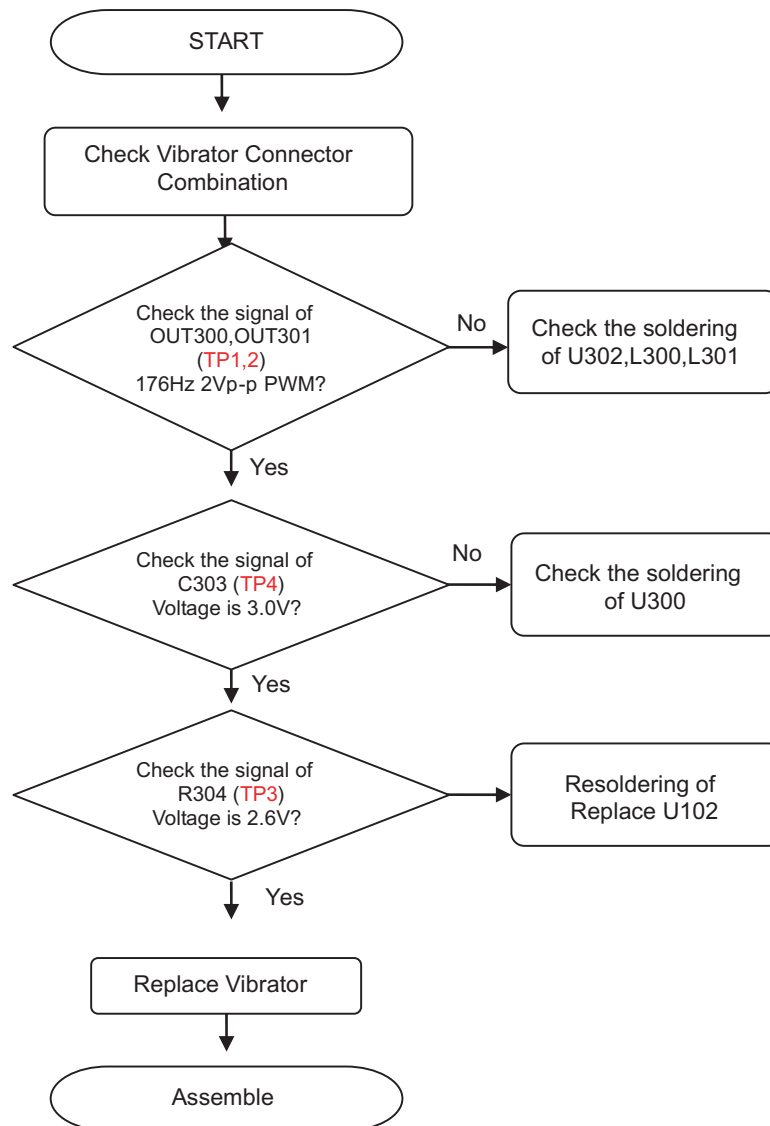
The schematic diagram illustrates the internal circuitry of the VIB module. Key components include:

- U300 (R1114D301D-TR-F):** A voltage detector monitoring VBAT and VIB\_PWR\_EN. It includes a 1uF capacitor (C300) and a 100K resistor (R301).
- U301 (TC7SZ86FU) and U304 (TC7SZ86FU):** Comparators for LIN\_INVERT, LIN\_PWM\_FRQ, and LIN\_PWM\_MAG signals. They are connected to 3V0\_VMOT and ground.
- U302 (TPA6205A1DRBR):** A Class D audio amplifier. It is powered by 3V0\_VMOT and 3V0\_VBAT. It includes feedback components (R302, R309, C307, C316) and output coupling capacitors (L300, L301).
- TP1, TP2, TP3, TP4:** Test points located at various nodes in the circuit, including the output of the amplifier (OUT300, OUT301) and the VIB\_PWR\_EN signal.



TP1 TP2

## 5. Trouble shooting



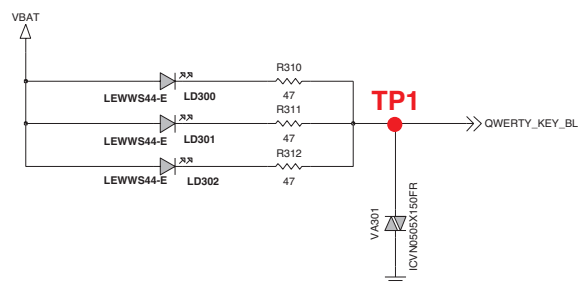
## 5. Trouble shooting

### 5.10 Keypad back light trouble

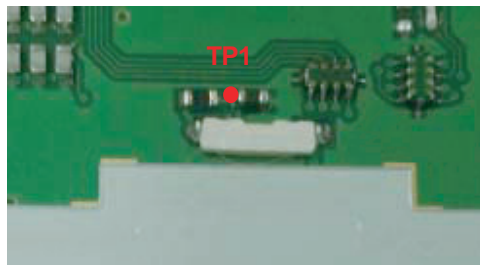
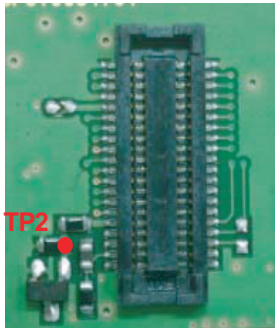
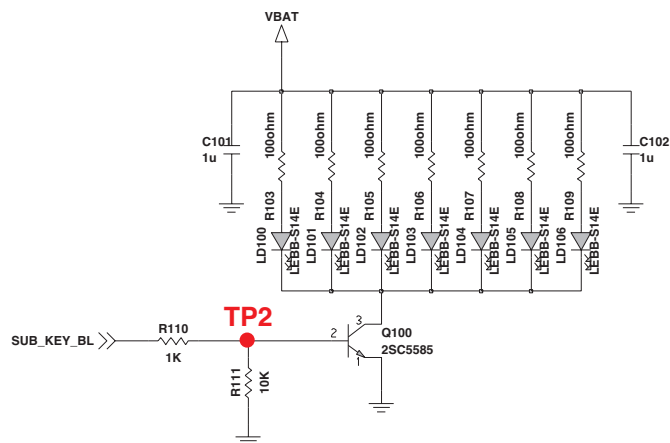
#### Check Points

- Signal path is connected well
- TR is working properly

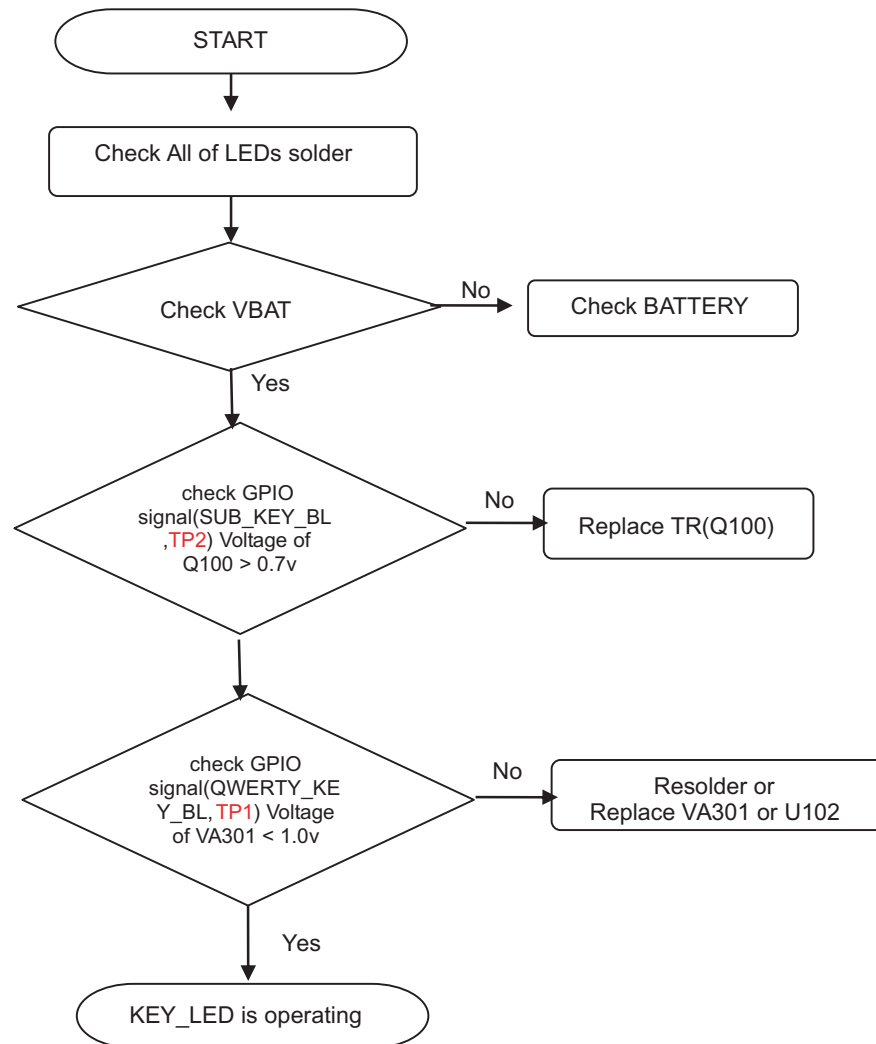
#### QWERTY\_KEY BACKLIGHT



#### MULTI\_KEY BACKLIGHT



## 5. Trouble shooting



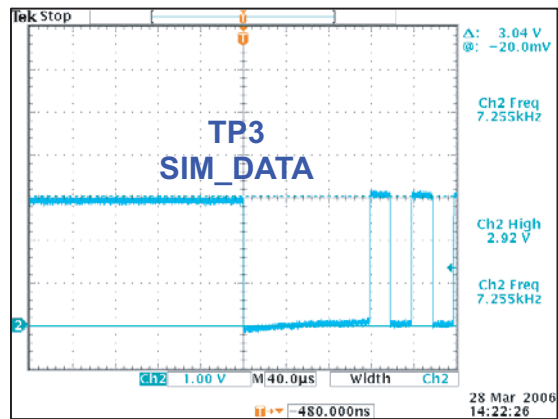
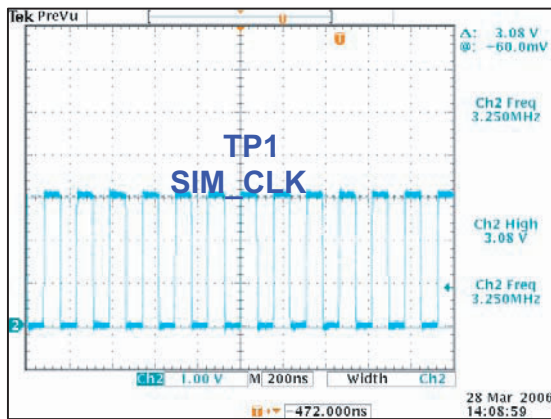
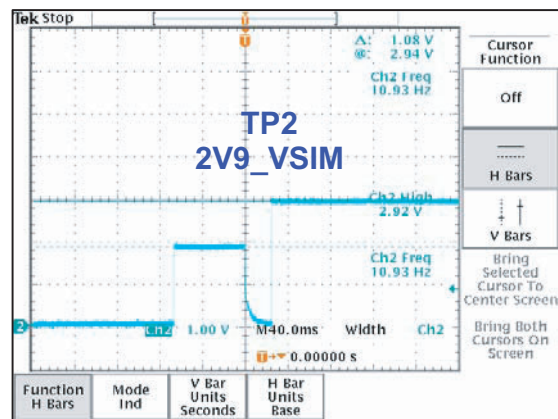
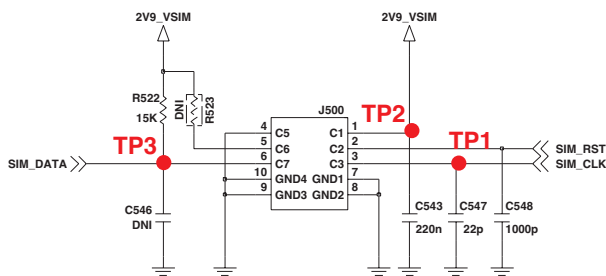
## 5. Trouble shooting

### 5.11 SIM & USD trouble

#### SIM Check Points

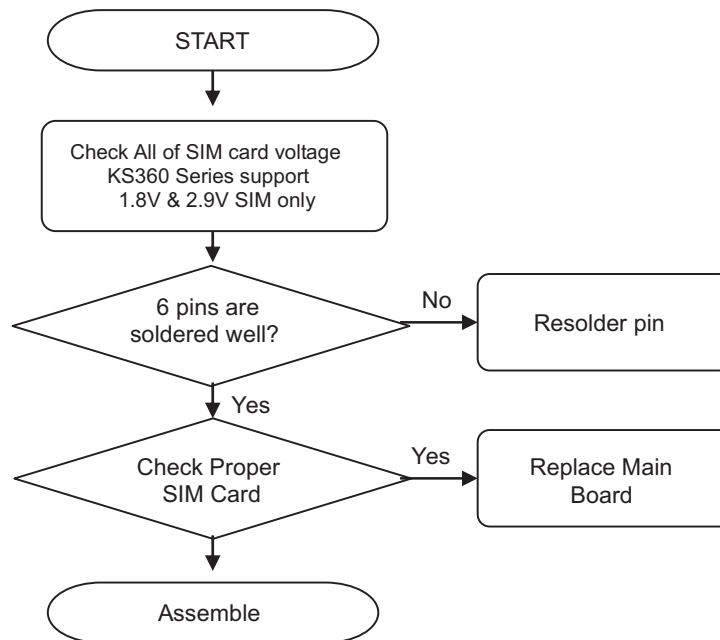
- Power is working
- Socket soldering
- Proper SIM is used

#### SIM CONNECTOR



## 5. Trouble shooting

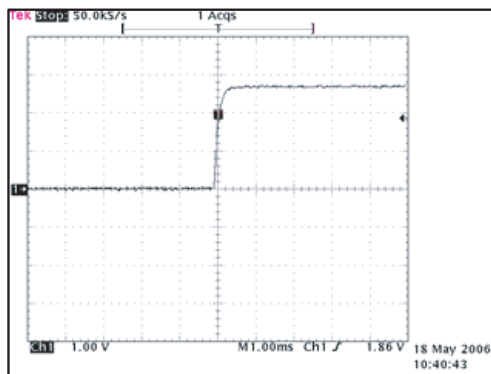
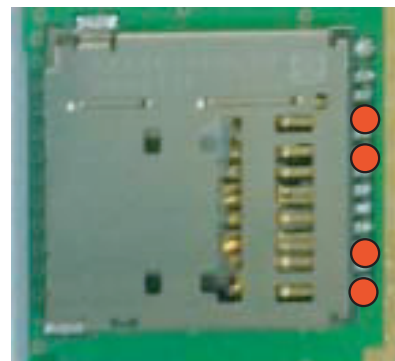
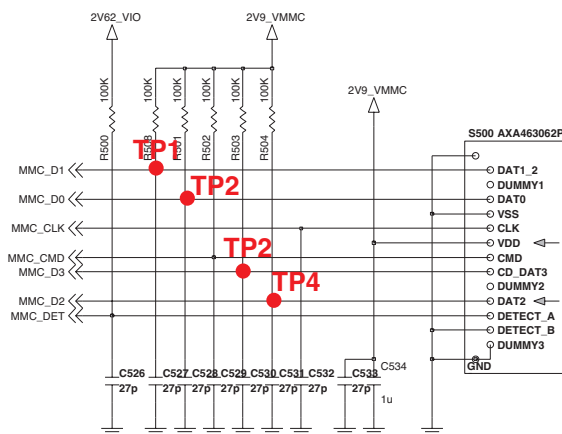
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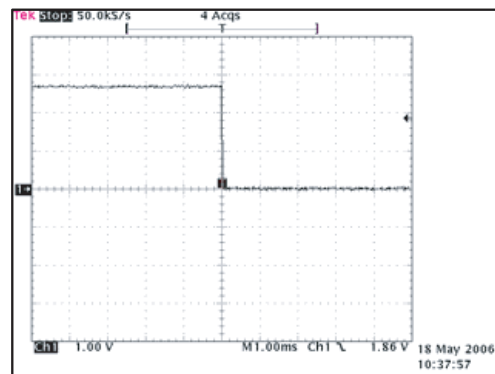
## 5. Trouble shooting

### uSD Check Points

- Power is working
- Socket soldering
- Card detect is working

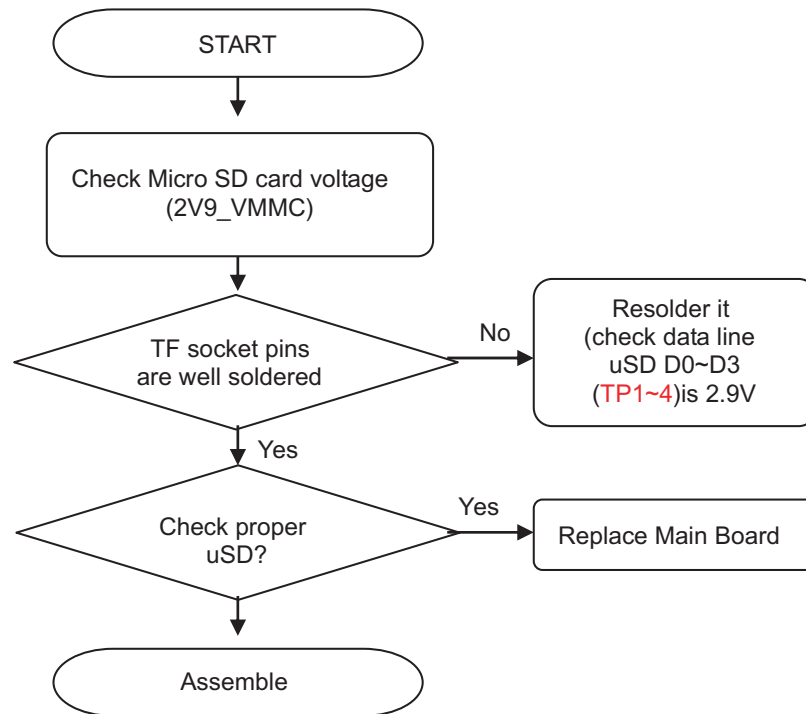


Card insert



Card eject

## 5. Trouble shooting



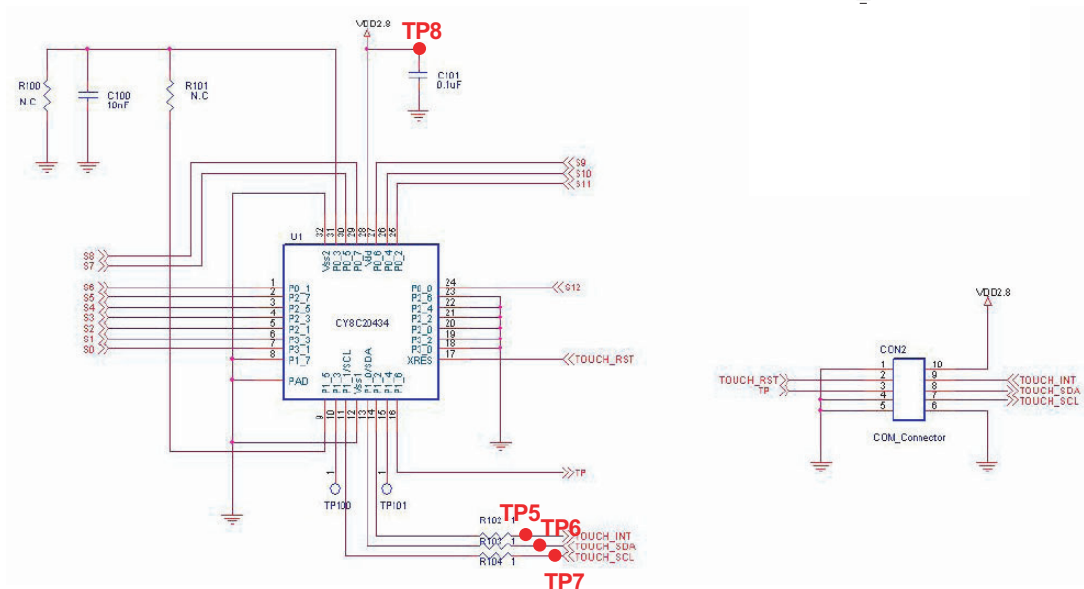
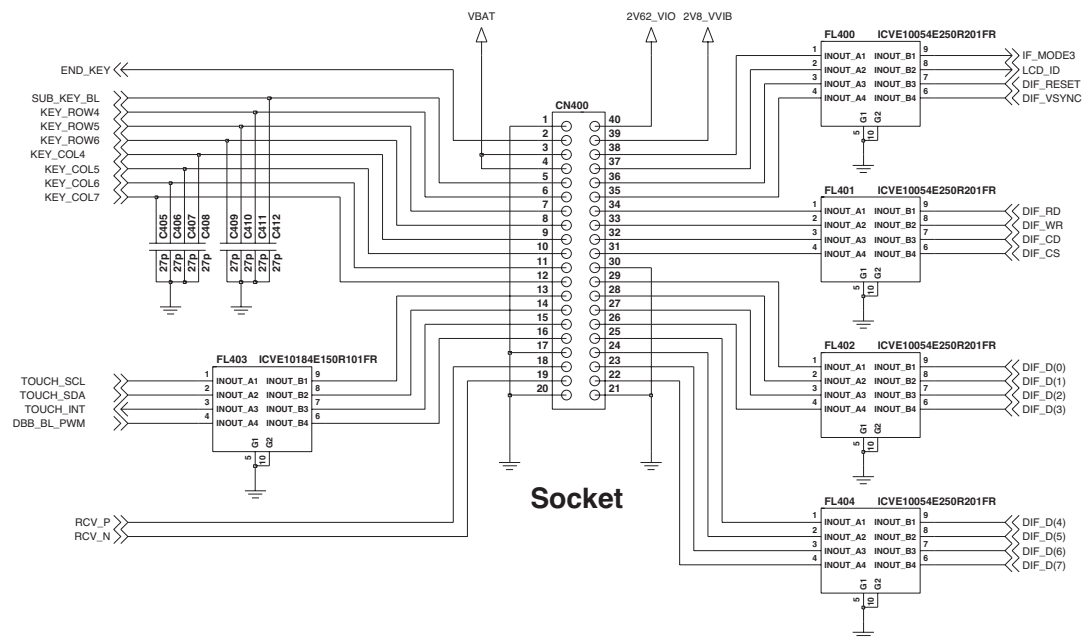
## 5. Trouble shooting

### 5.12 Touch trouble

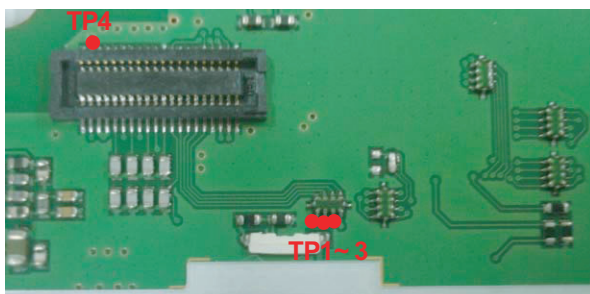
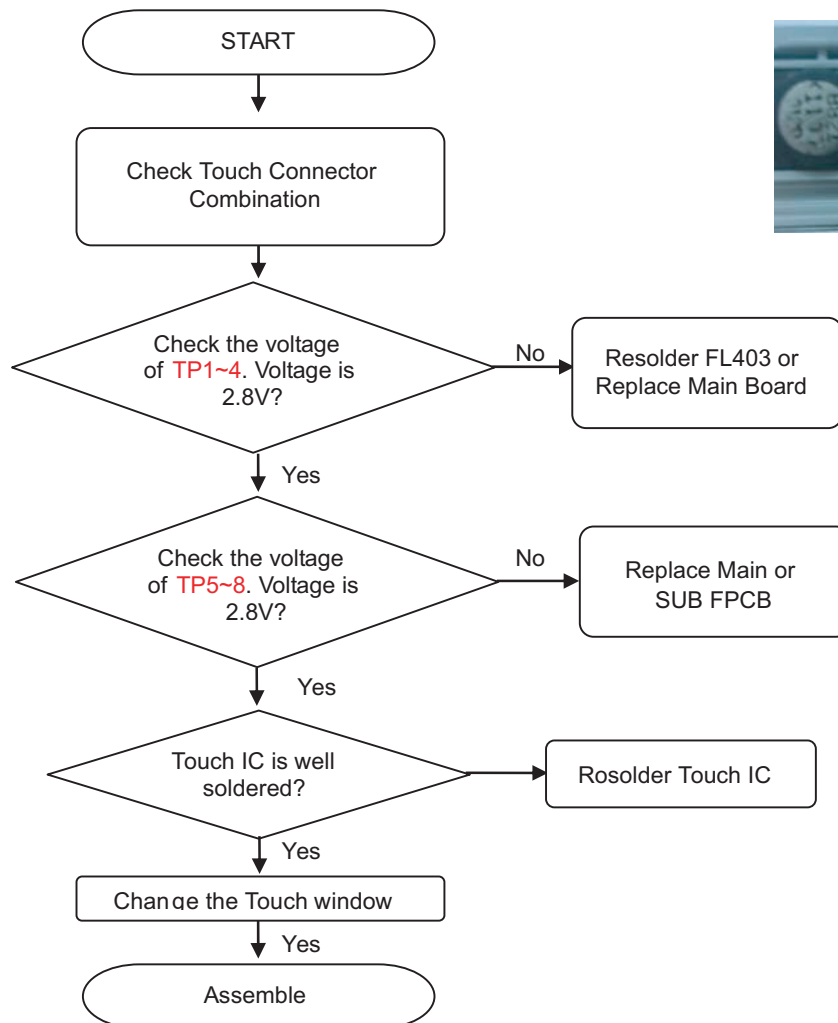
#### Touch Check Points

- Power is working
  - Connector soldering
  - Touch IC soldering
- (\* After press the touch hot key, Touch key will works )

#### MAIN To FPCB Connector



## 5. Trouble shooting

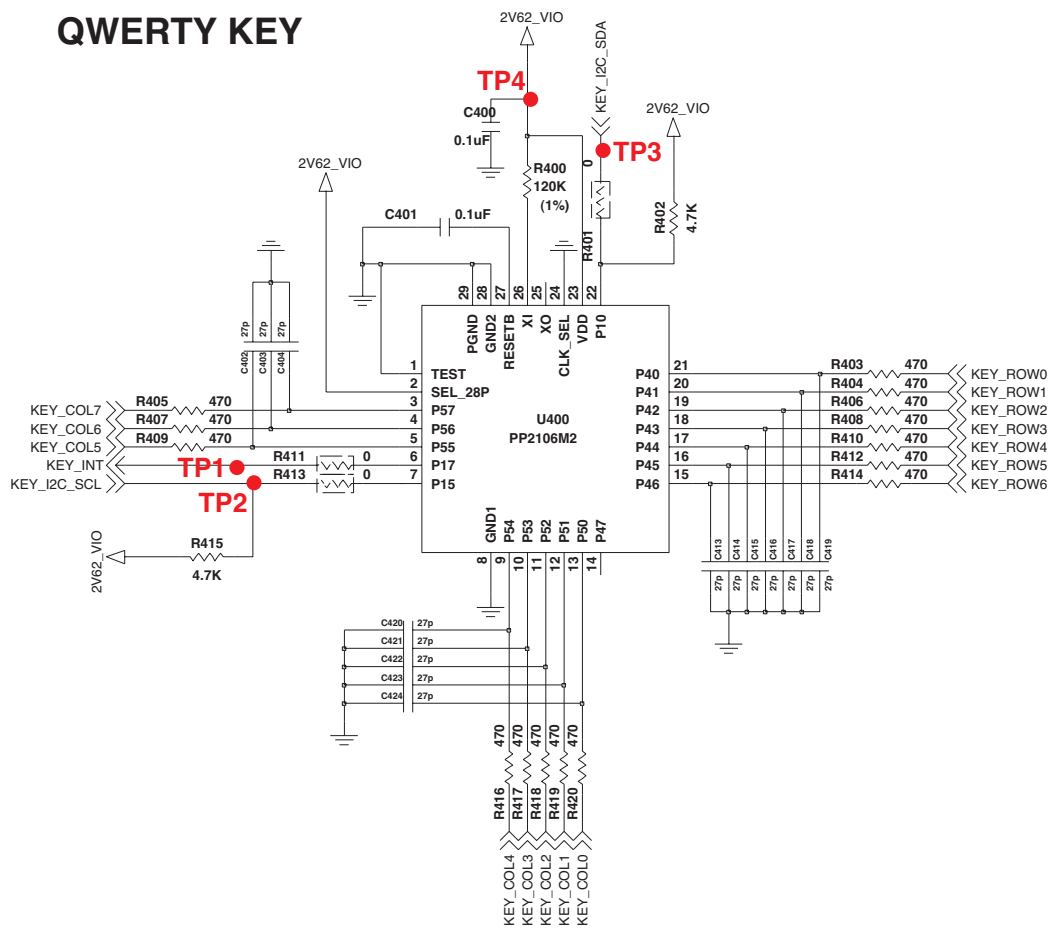


## 5. Trouble shooting

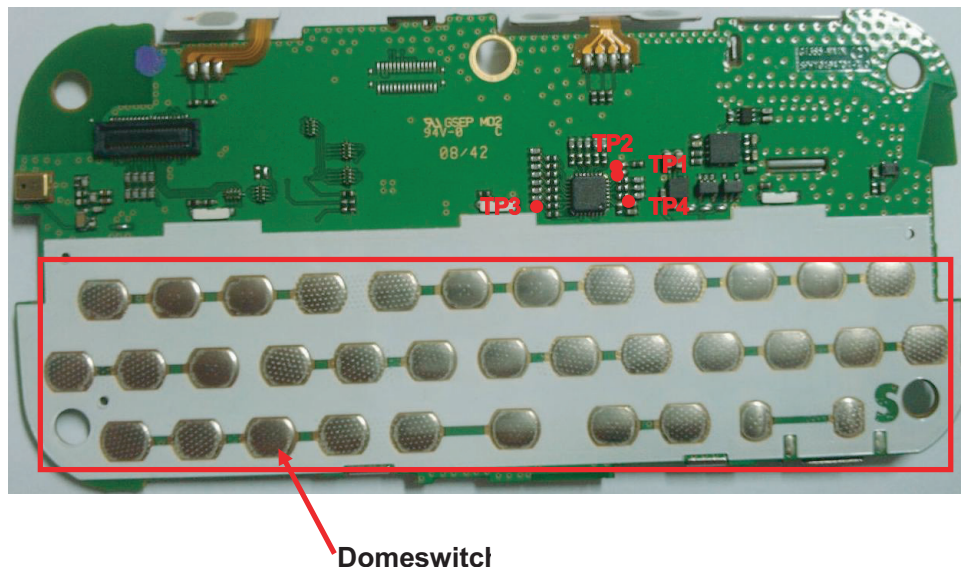
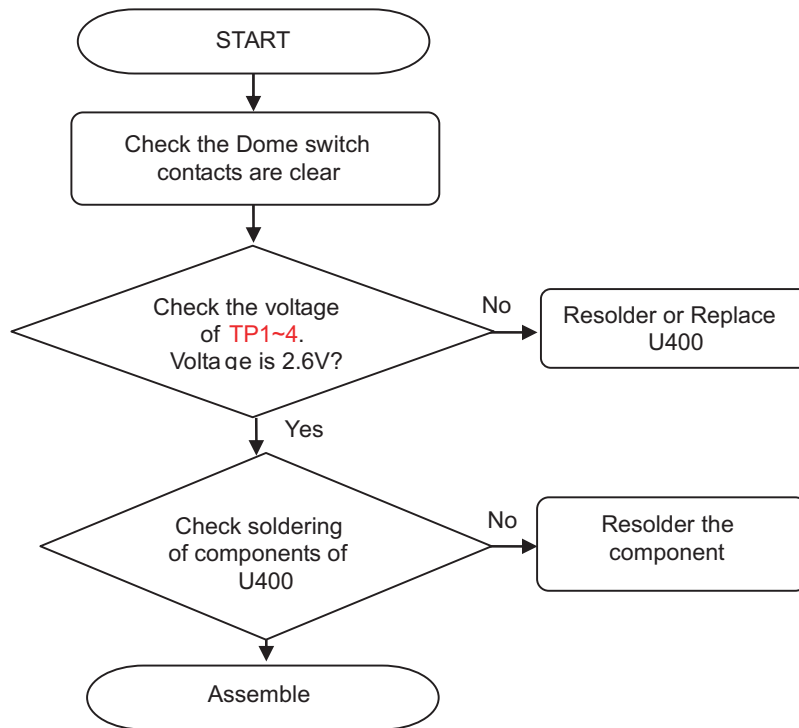
### 5.13 Qwerty Key trouble

#### Key Check Points

- Dome switch contacts
- Key coder IC soldering



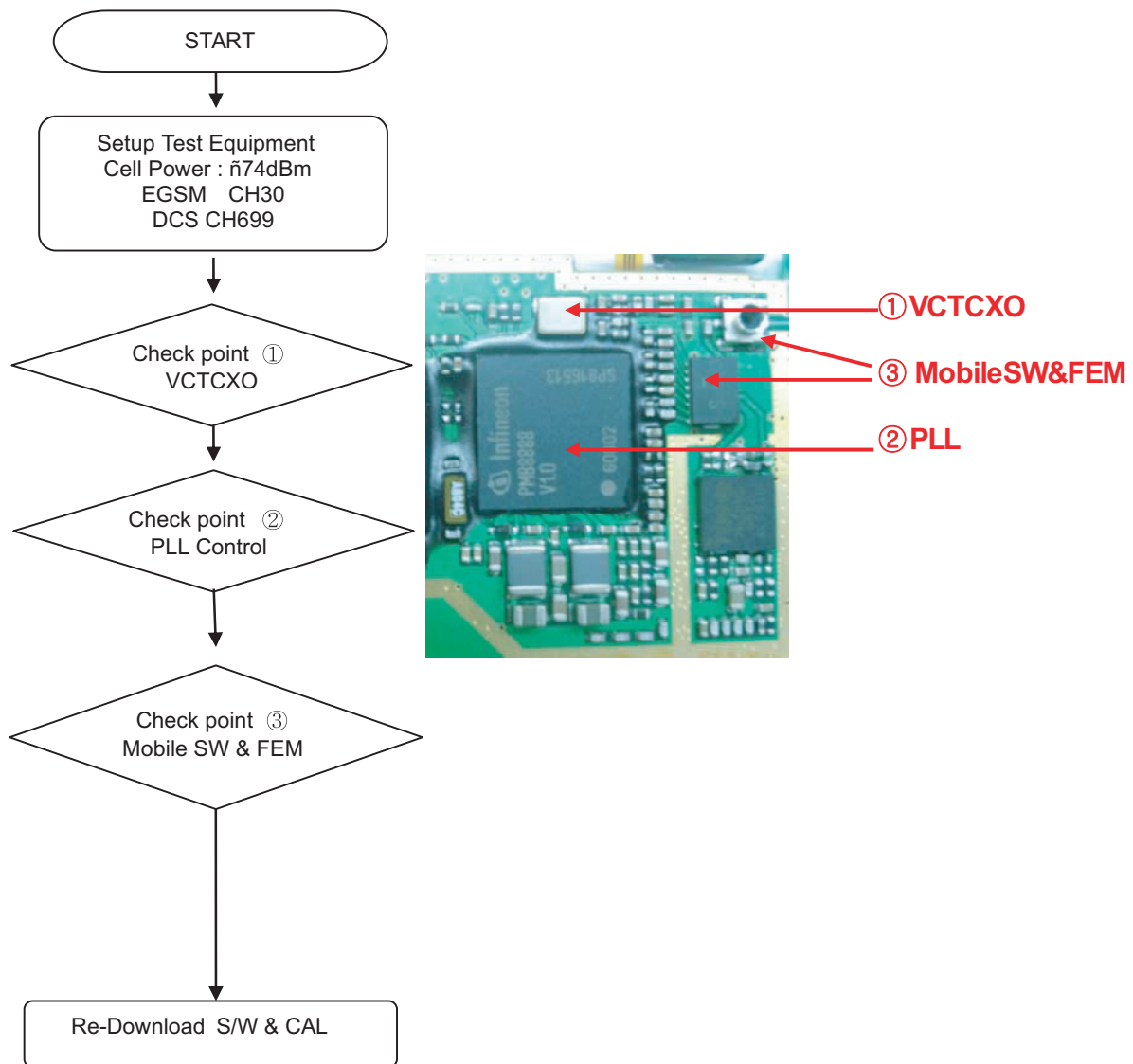
## 5. Trouble shooting



**Fig 6 Waveform of DCXO**

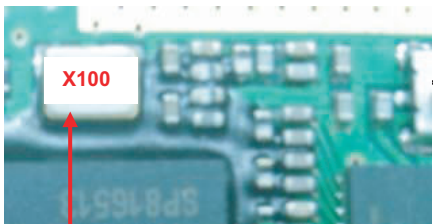
## 5. Trouble shooting

### 5.14 Trouble Shooting of Receiver Part



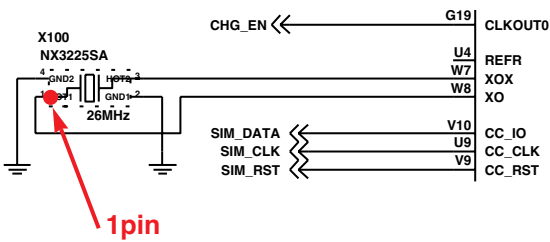
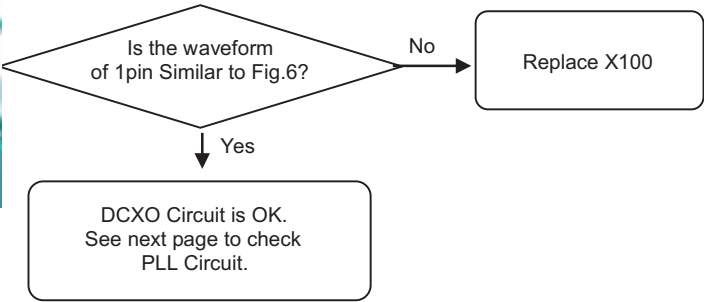
**Main PCB Bottom**

5.14.1 Checking DCXO Circuit

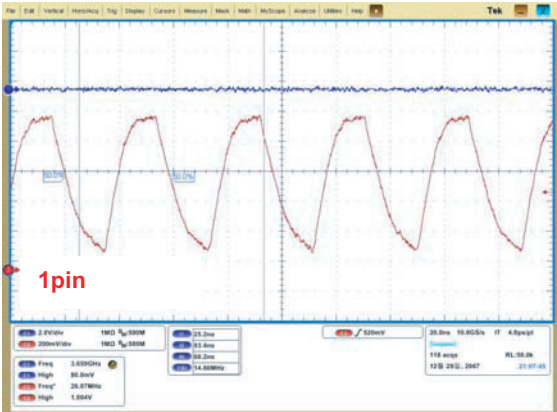


1pin : 26MHz

DCXO



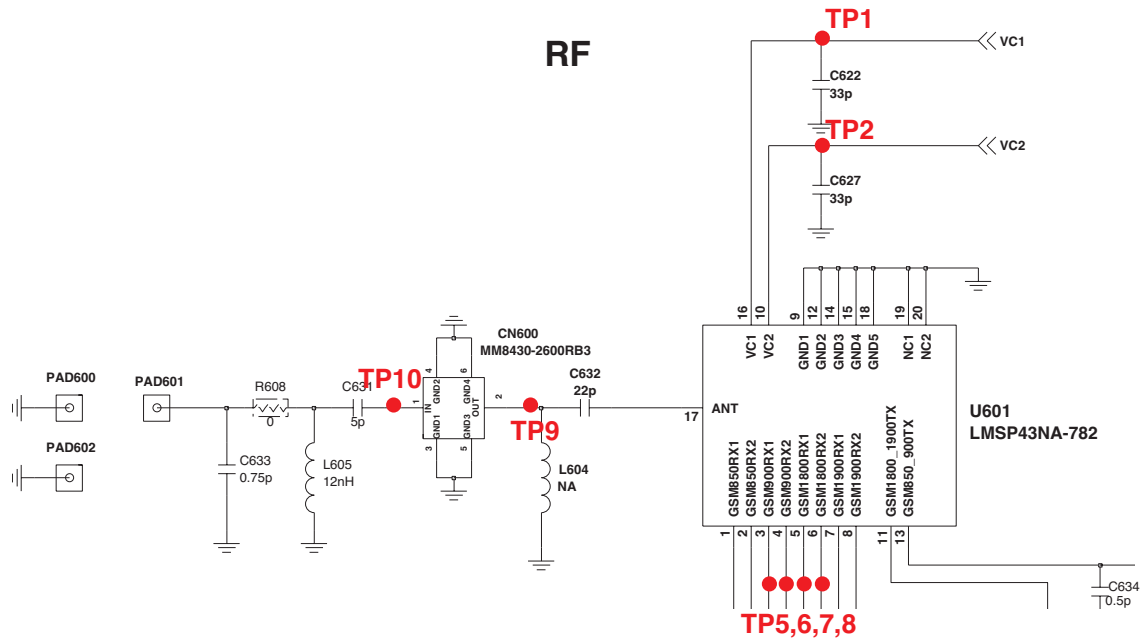
DCXO Cicuit



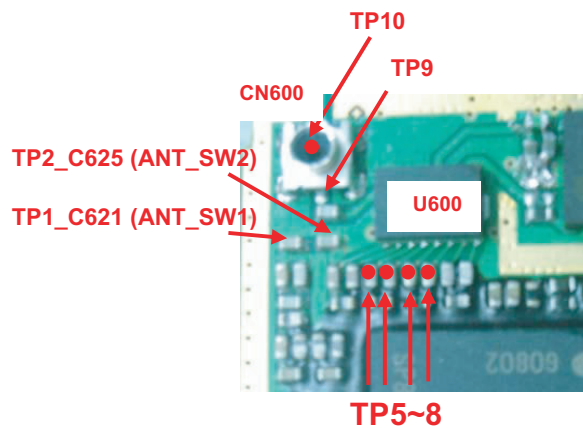
DCXO Waveform

## 5. Trouble shooting

### 5.14.2 Checking Mobile SW & FEM



**Mobile SW & FEM Circuit**

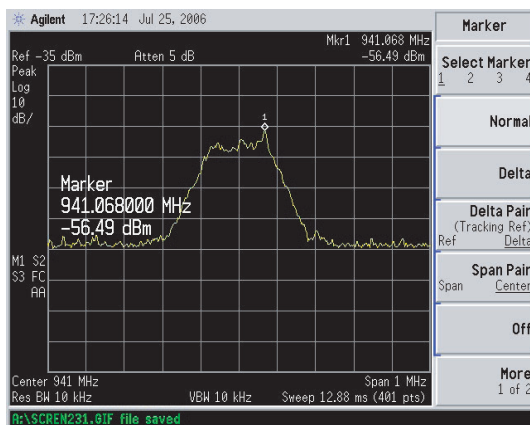
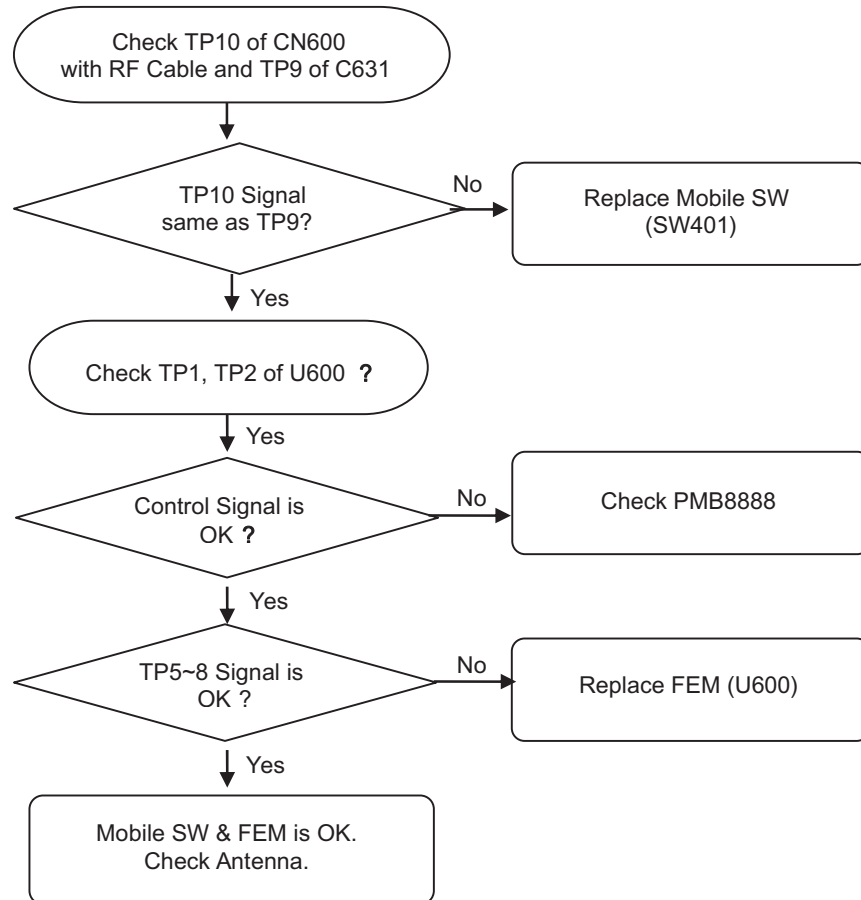


**Mobile SW & FEM Check Points**

| RX Mode | EGSM | DCS | PCS |
|---------|------|-----|-----|
| ANT_SW1 | Off  | Off | Off |
| ANT_SW2 | Off  | Off | Off |

**FEM RX Control Logic**

## 5. Trouble shooting



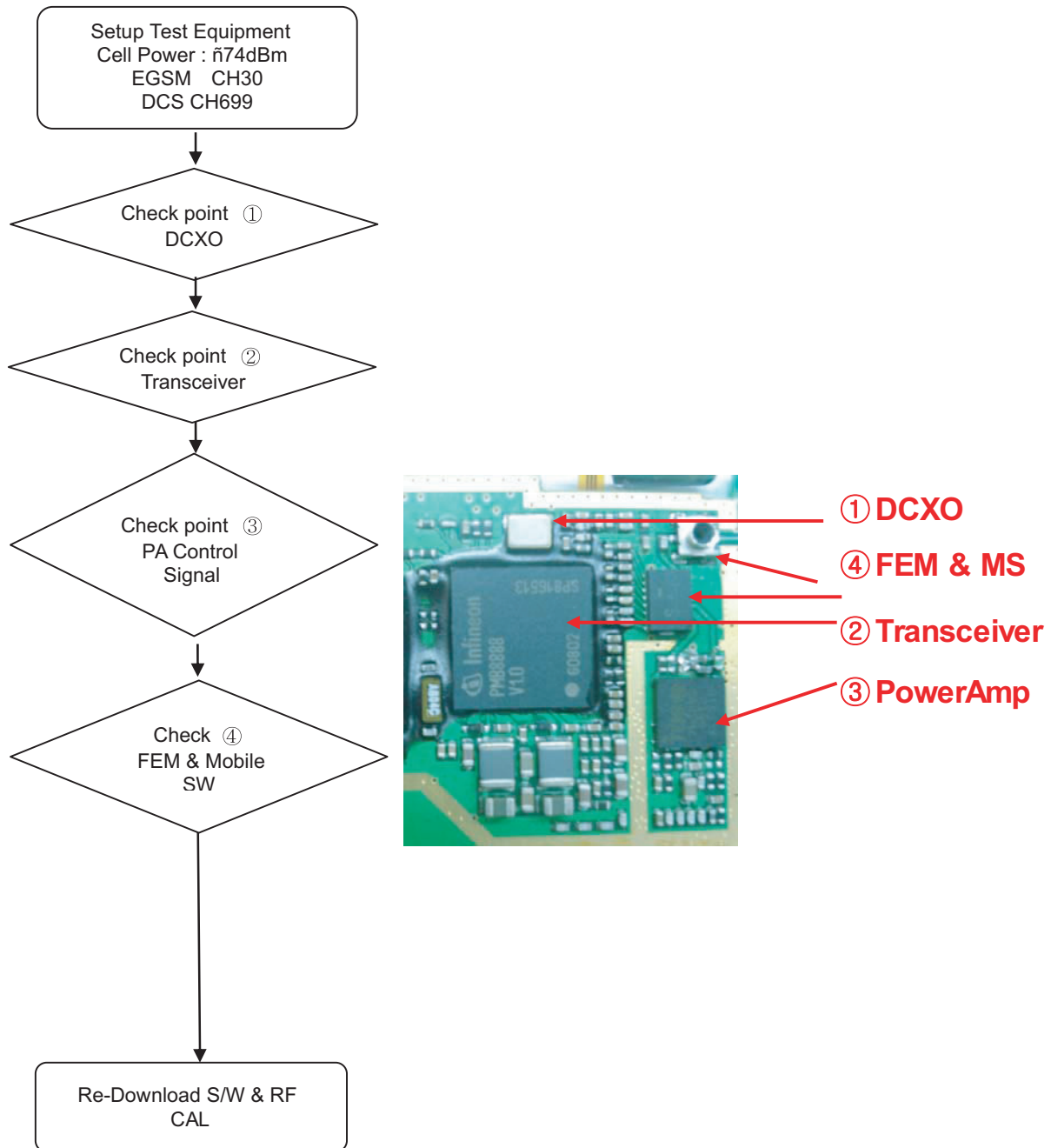
**Mobile SW**



**FEM Control Signals**

## 5. Trouble shooting

### 5.15 Trouble Shooting of Transmitter Part

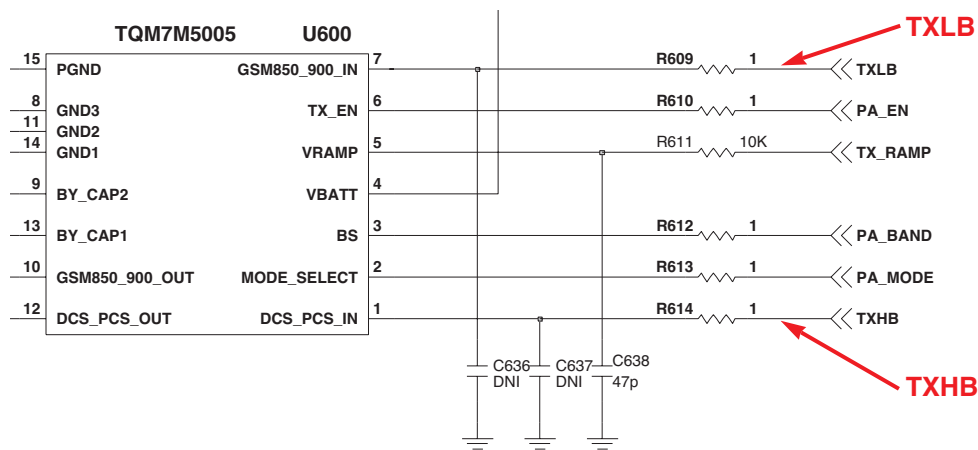


**Main PCB Bottom**

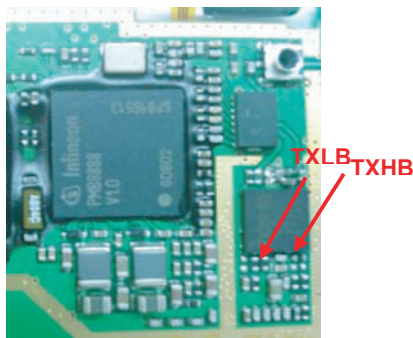
#### 5.15.1 Checking DCXO Circuit

See RX Part “1. Checking DCXO Circuit”

5.15.2 Checking Transceiver Output Signals



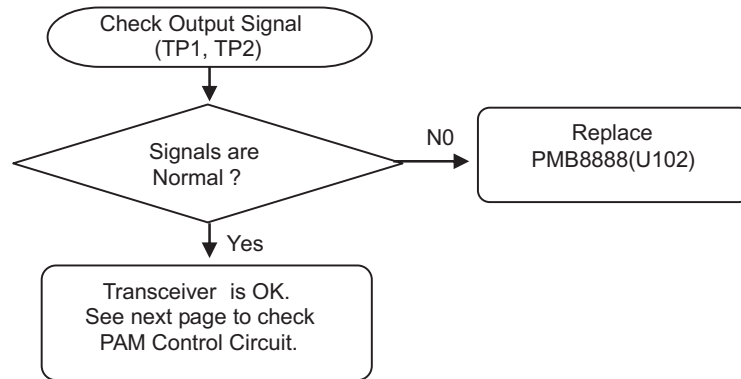
Transceiver Output Circuit



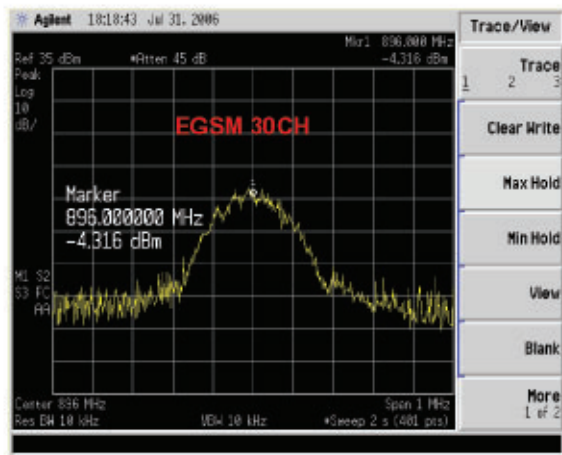
| MODE | Transceiver Output |
|------|--------------------|
| GSMK | Fixed              |
| 8PSK | Ramp Burst Control |

Transceiver Output Operation

## 5. Trouble shooting

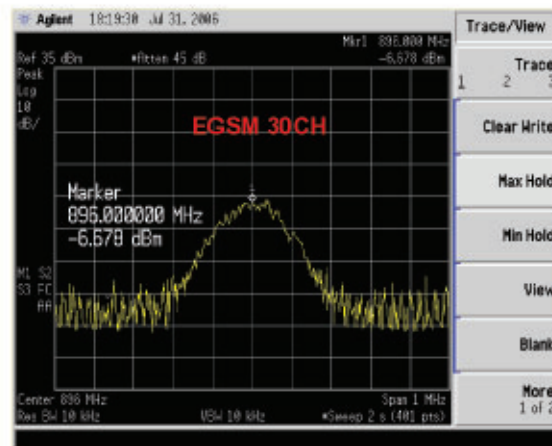


**TXLB (MODE: GMSK) : TP1**



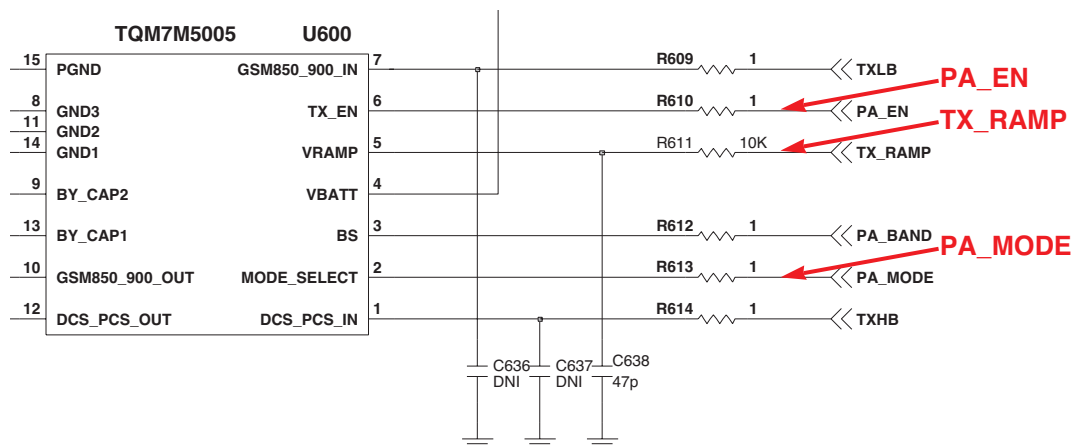
**Transceiver Output (GMSK)**

**TXLB (MODE: 8PSK) : TP1**

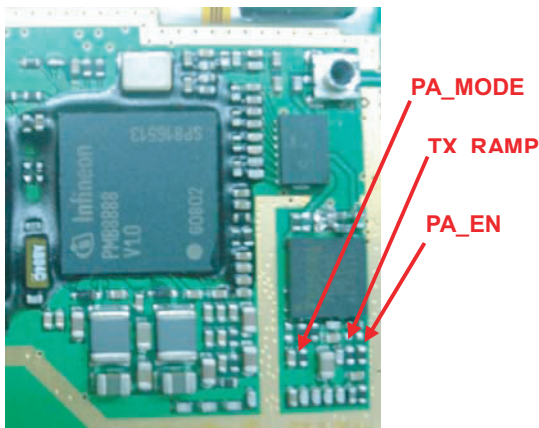


**Transceiver Output (8PSK)**

5.15.3 Checking PAM Control Signals



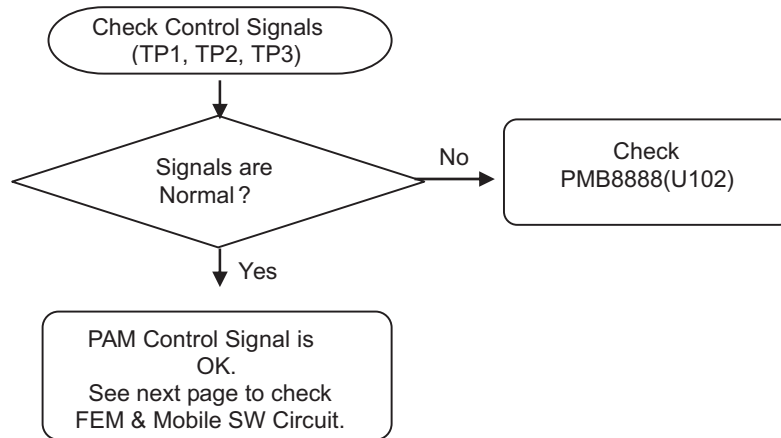
PAM Control Signals



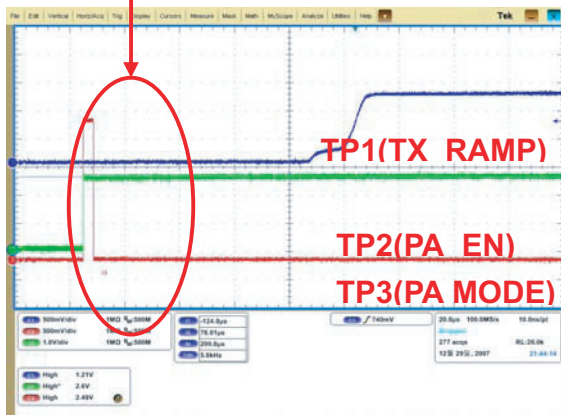
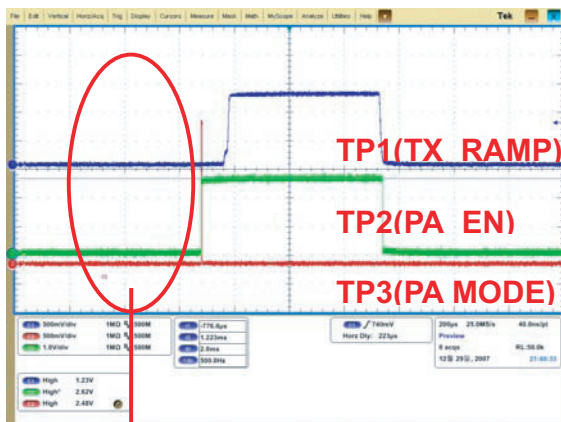
Transceiver Output

| MODE | MODE | PA_LEVEL           | TXON_PA |
|------|------|--------------------|---------|
| GMSK | LOW  | Ramp Burst Control | HIGH    |
| 8PSK | HIGH | Control Amp bias   | HIGH    |

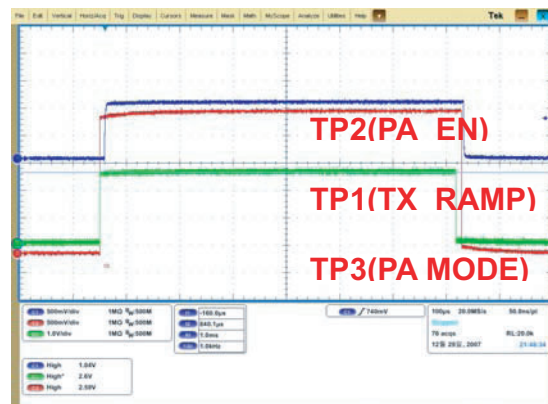
PAM Mode Operation



### GSMK Control Signal



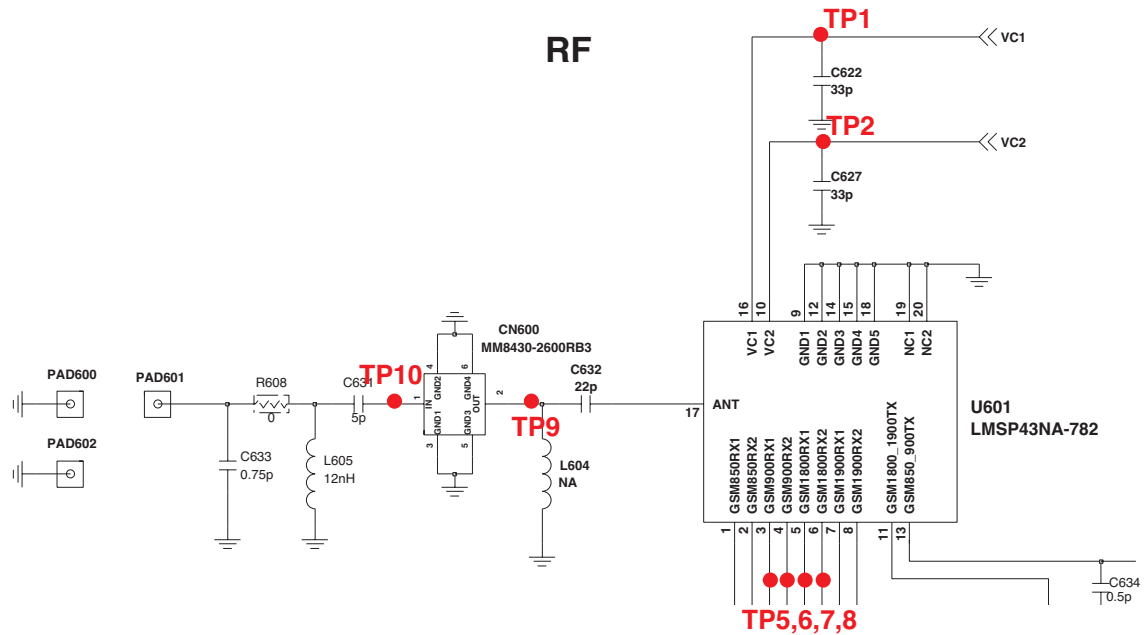
### 8PSK Control Signal



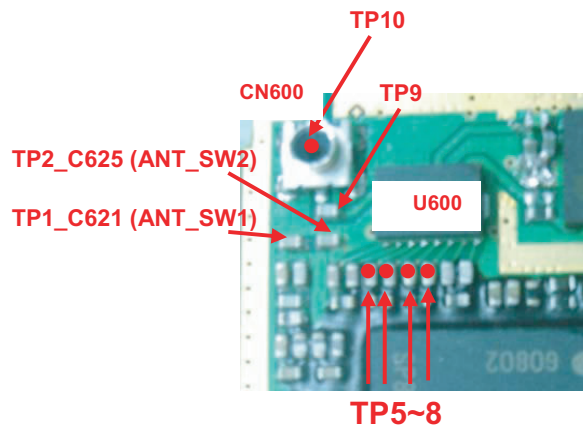
TP3(PA\_MODE) : R616  
TP1(TX\_RAMP) : R612  
TP2(PA\_EN) : R614

## 5. Trouble shooting

### 5.15.4 Checking FEM & Mobile SW



**Mobile SW & FEM Circuit**

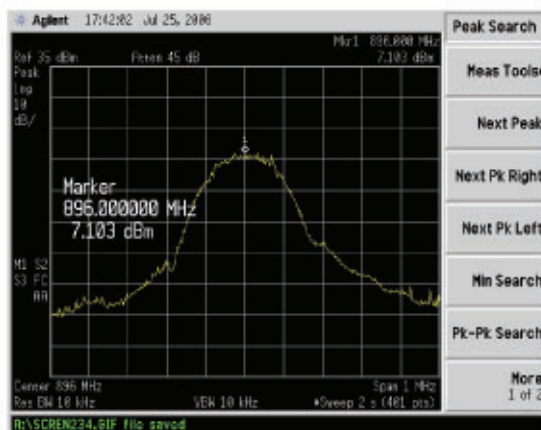
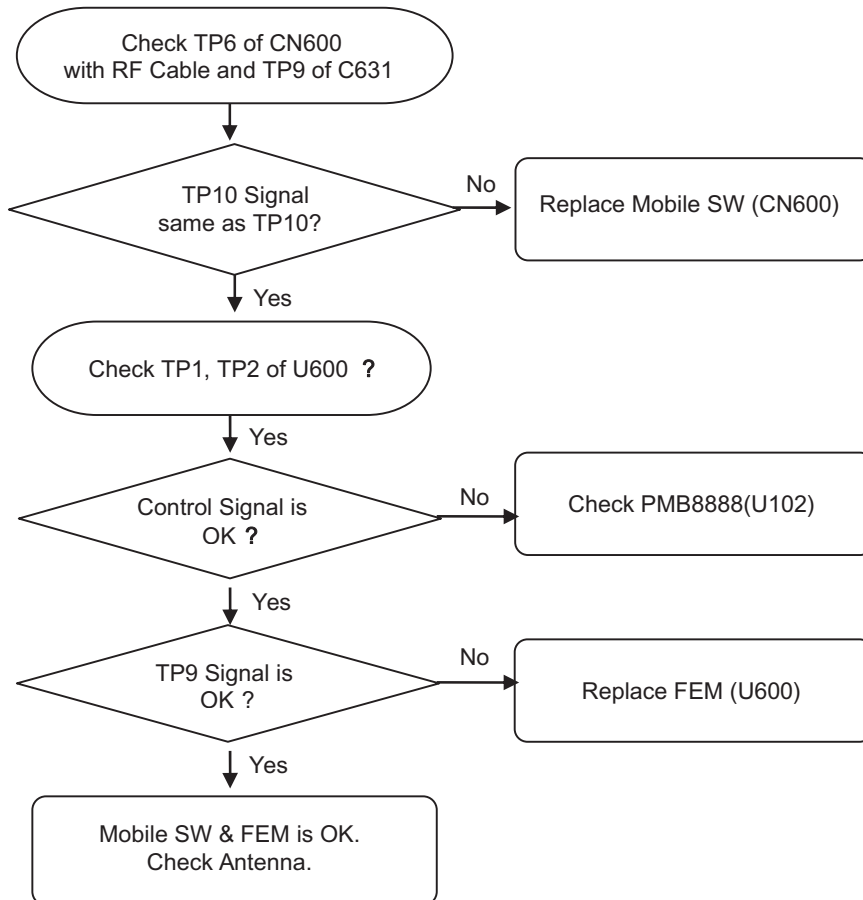


**Mobile SW & FEM Checking Points**

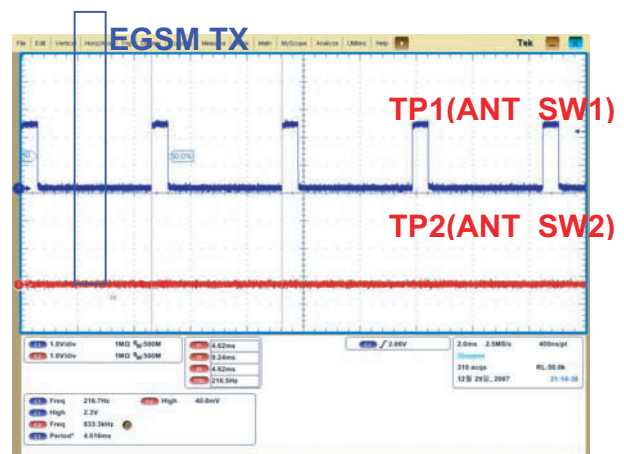
| TX Mode | EGSM | DCS | PCS |
|---------|------|-----|-----|
| ANT_SW1 | On   | Off | Off |
| ANT_SW2 | Off  | On  | On  |

**FEM TX Control Logic**

## 5. Trouble shooting



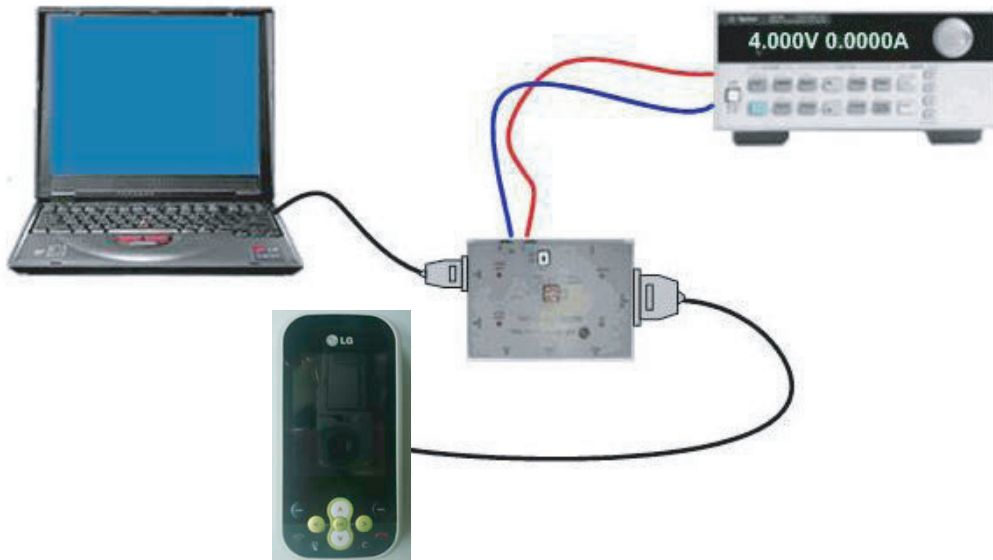
**Mobile SW**



**FEM Control Signals**

## 6. Download & S/W upgrade

### 6.1 S/W download setup



**S/W download & upgrade setup**

#### **Preparation**

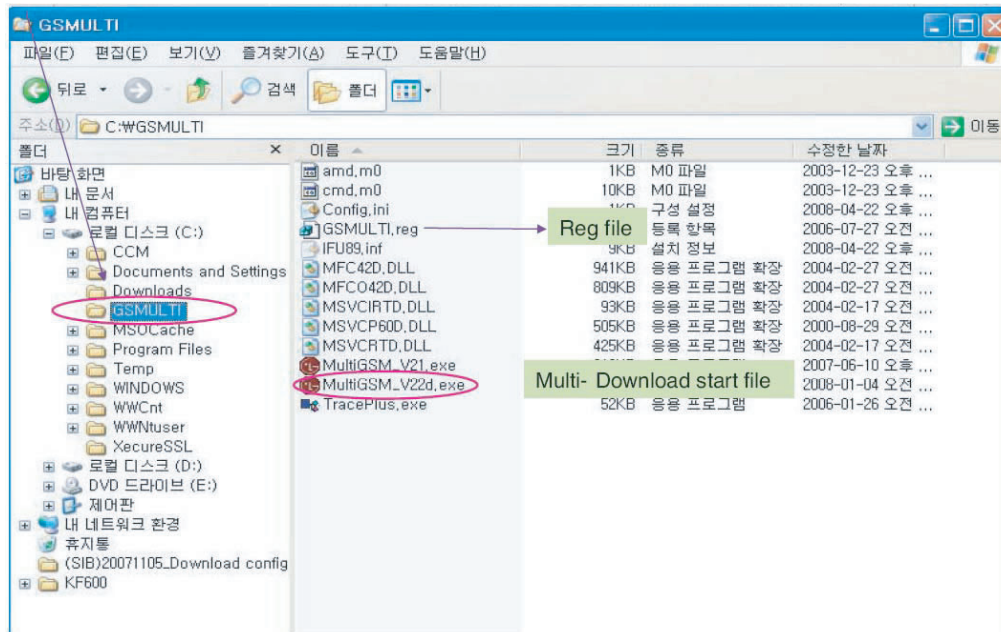
- Target terminal
- PIF-Union
- RS-232 Cable and PIF-UNION to Phone interface Cable
- Power Supply or Battery
- PC supporting RS-232 with Windows 2000 or newer.

If you are going to use battery, the voltage of the battery should be over 3.7V for stable power supplying during S/W download.

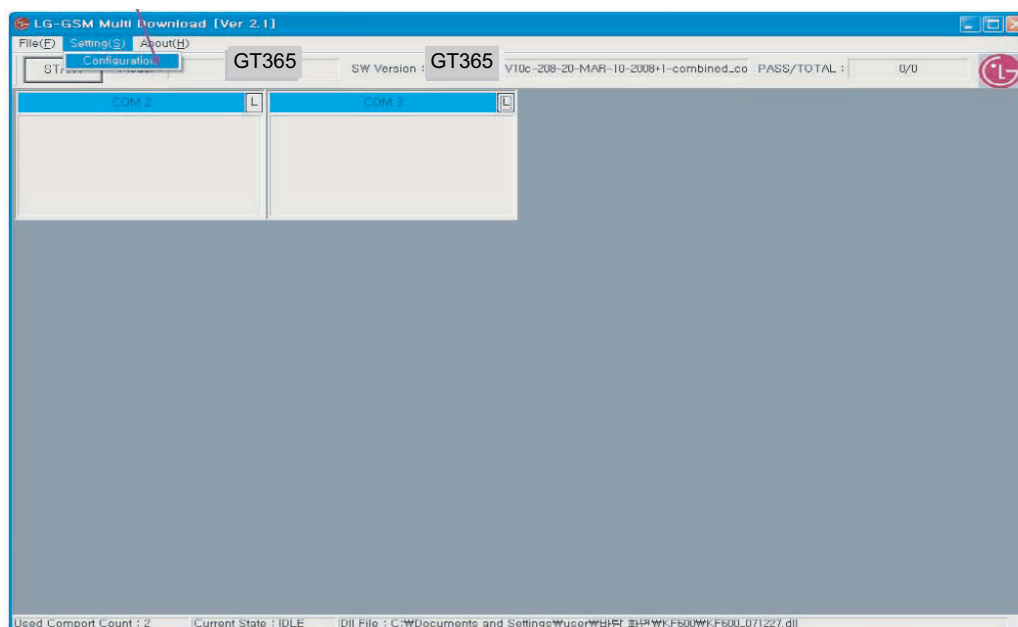
## 6. Download & S/W upgrade

### 6.2 Download program user guide

#### 6.2.1 After “GSMULTI” folder copy, paste C:\

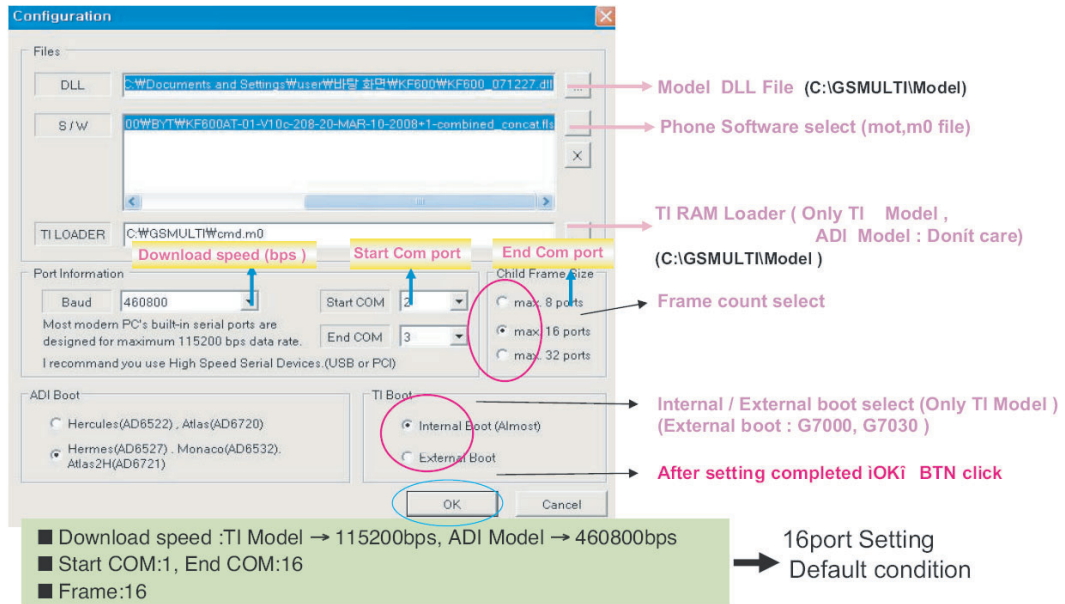


#### 6.2.2 “MultiGSM.exe” execution file execute

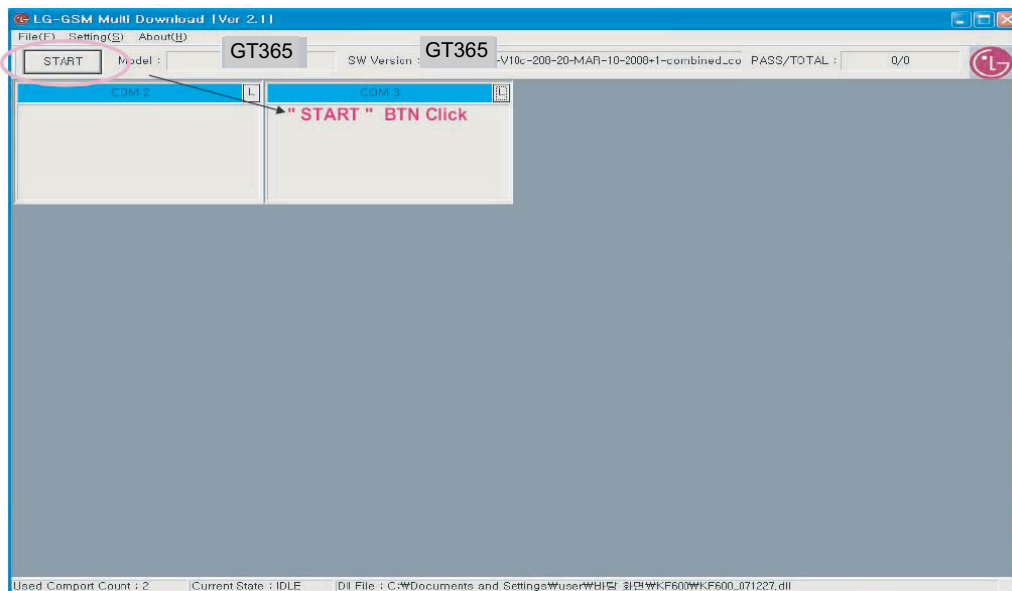


### 6.3 Multi-Download Program Setting(Model-Base)

#### ■ Multi-Download Program Execution → Setting : Configuration

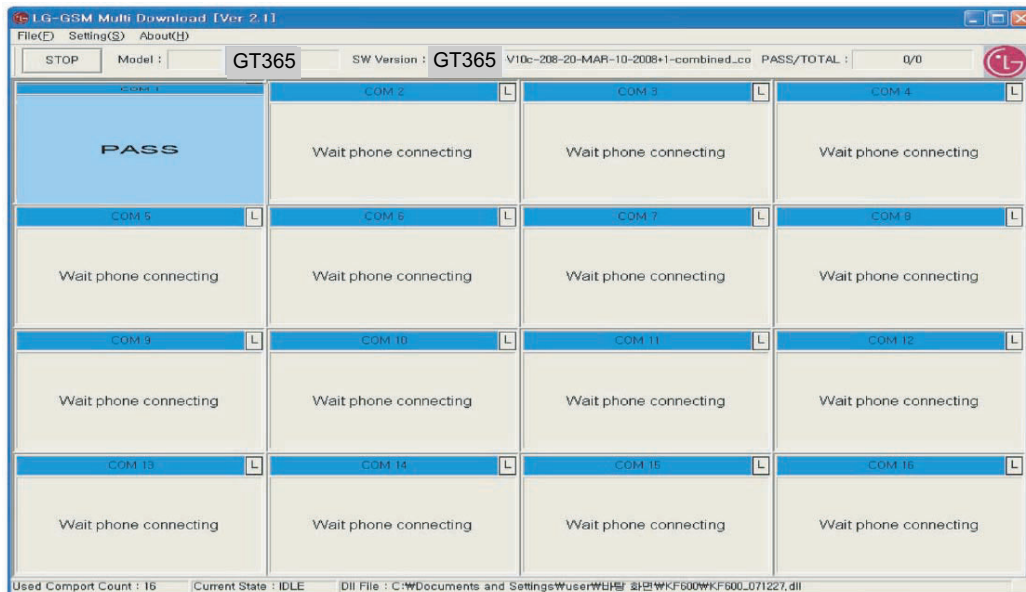


#### ■ Setting Completed

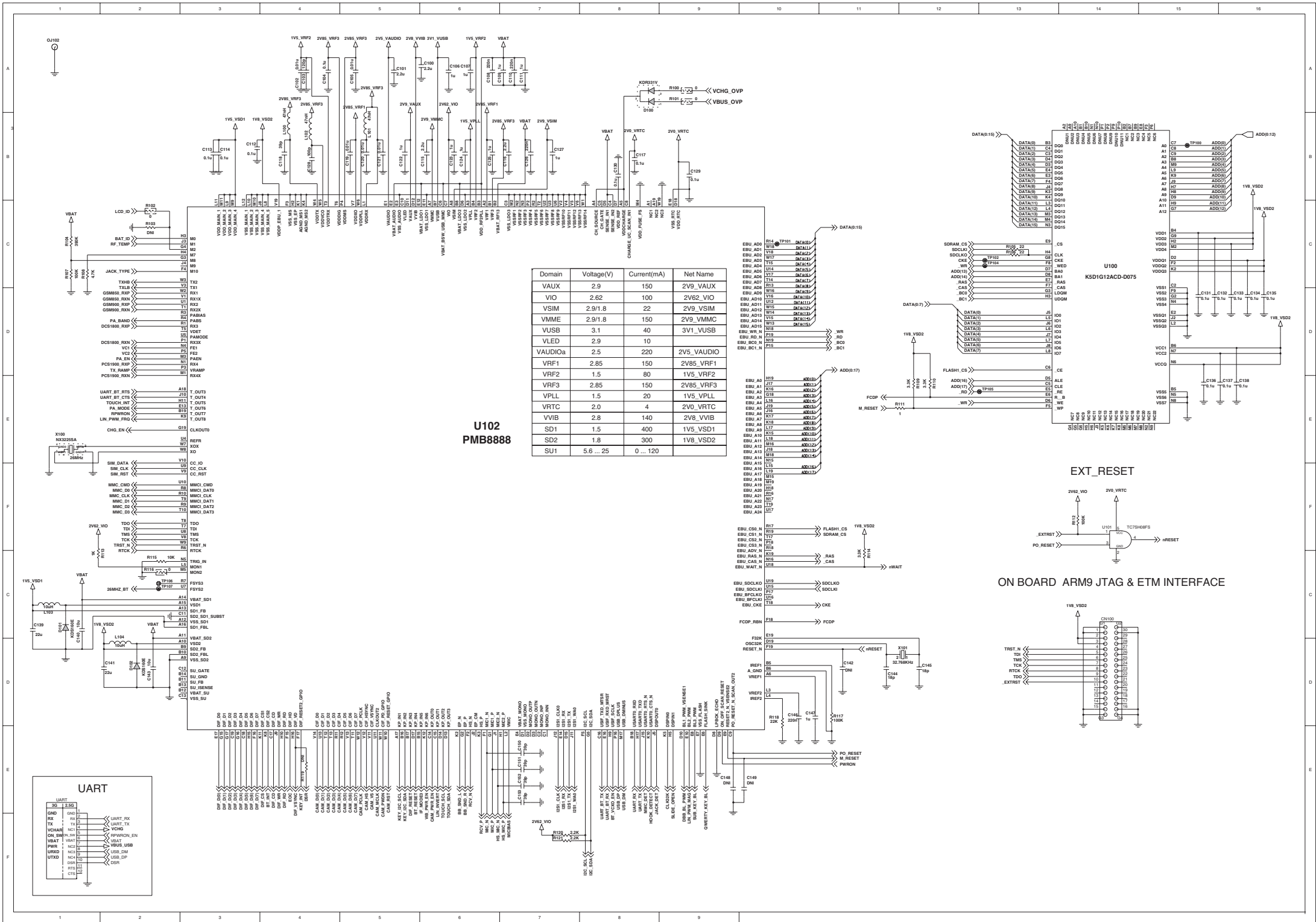


## 6. Download & S/W upgrade

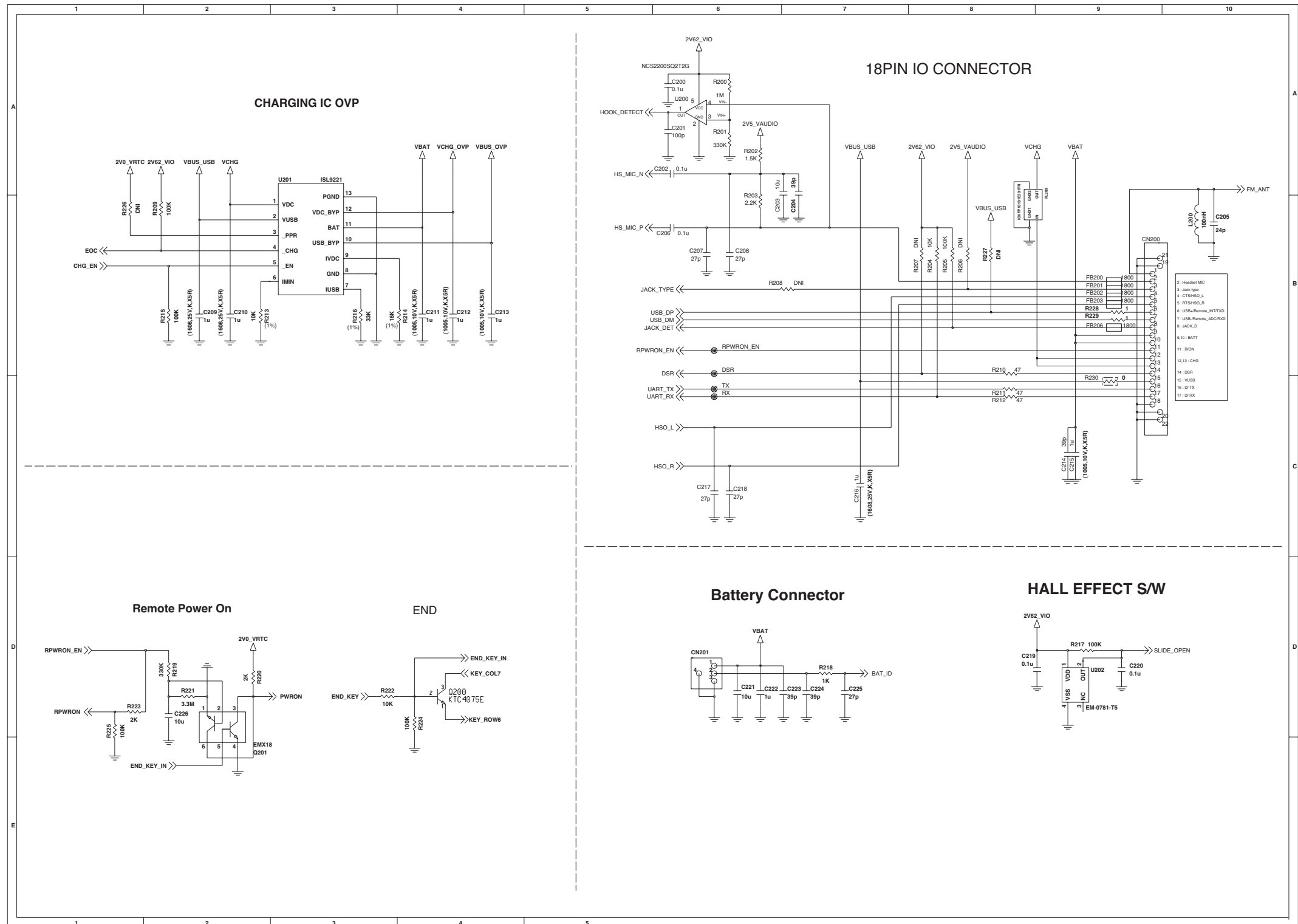
### ■ Stand-by Condition: “Wait phone connecting” confirm → Phone connection



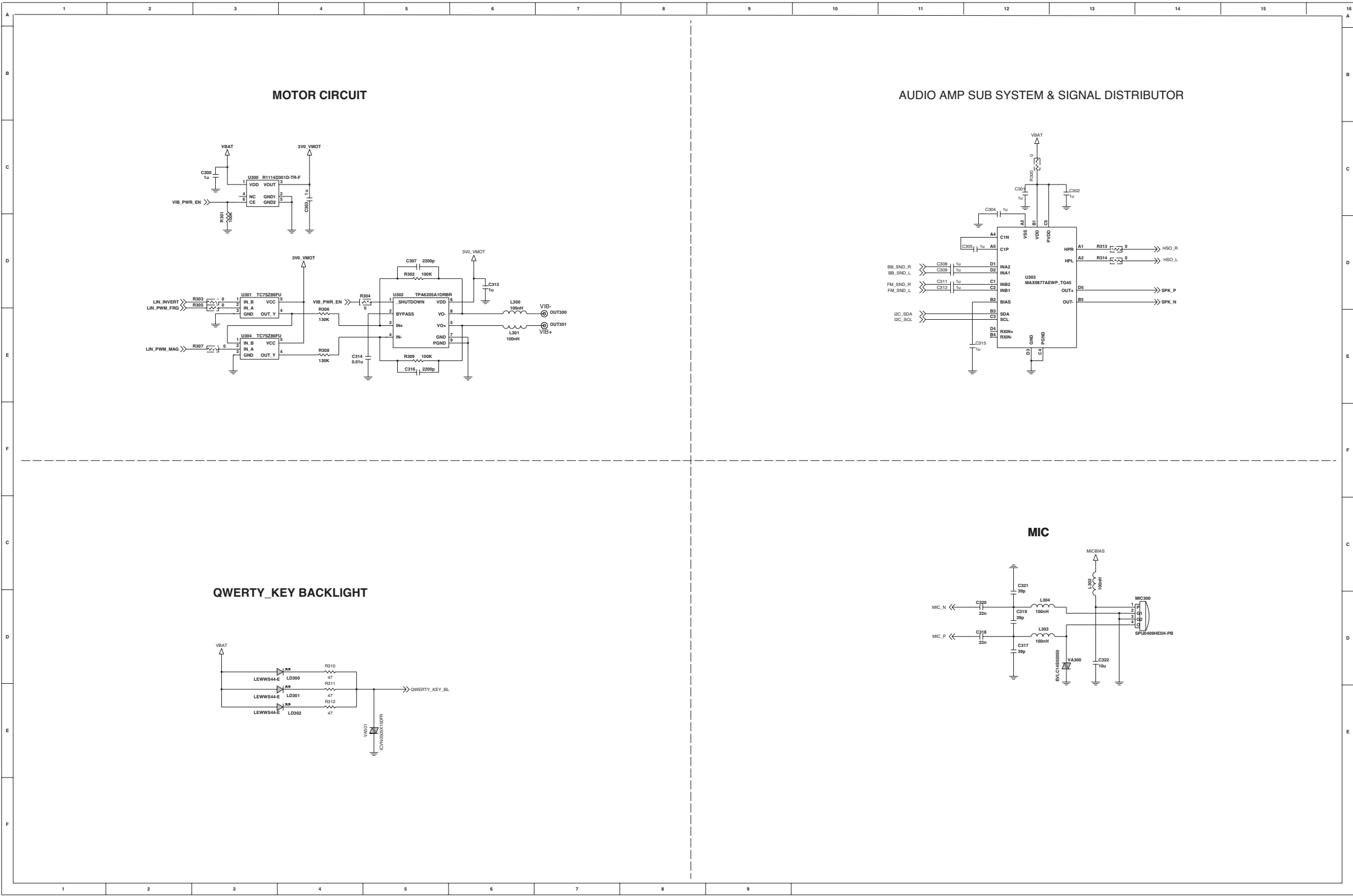
7. CIRCUIT DIAGRAM



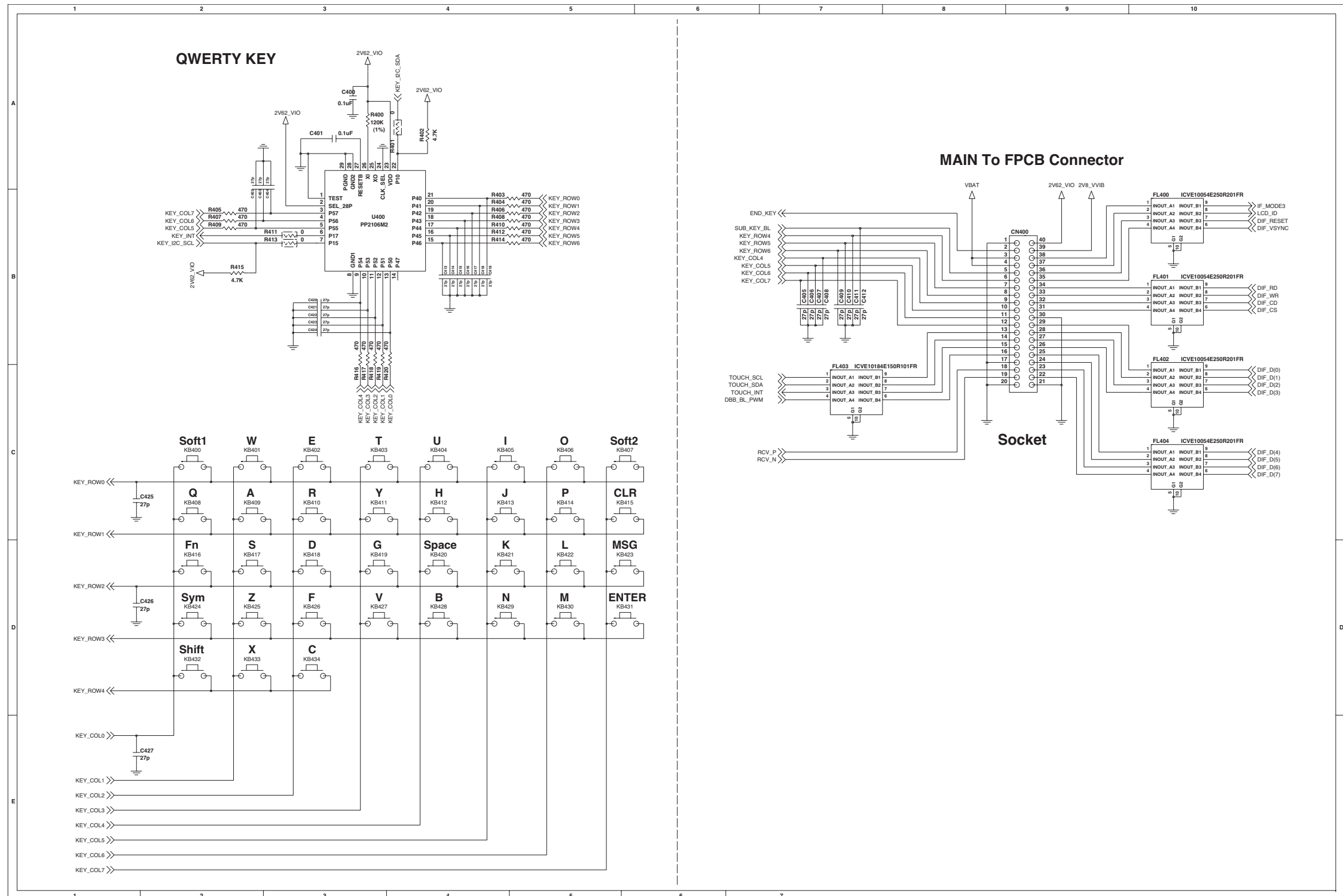
## 7. CIRCUIT DIAGRAM



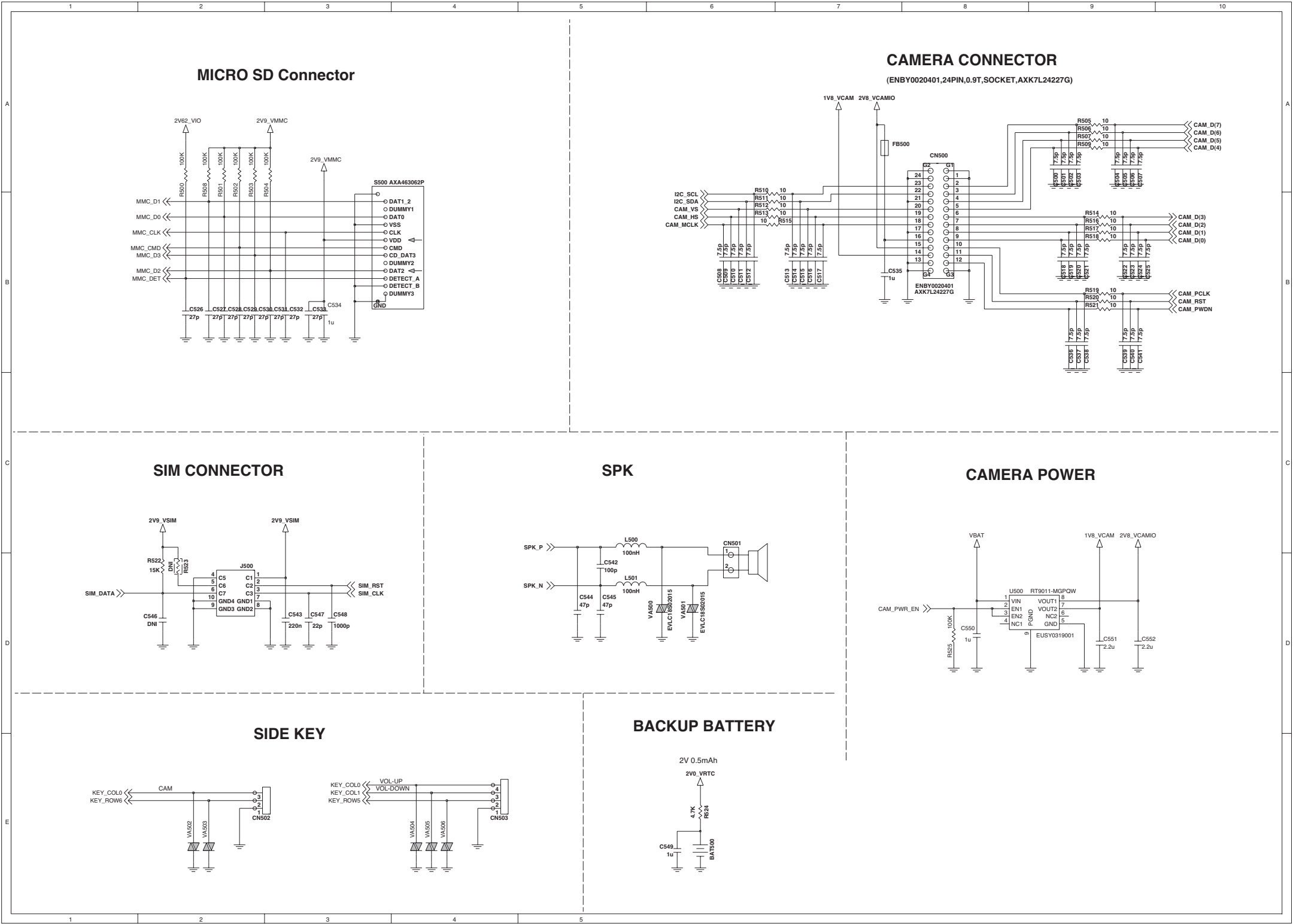
7. CIRCUIT DIAGRAM



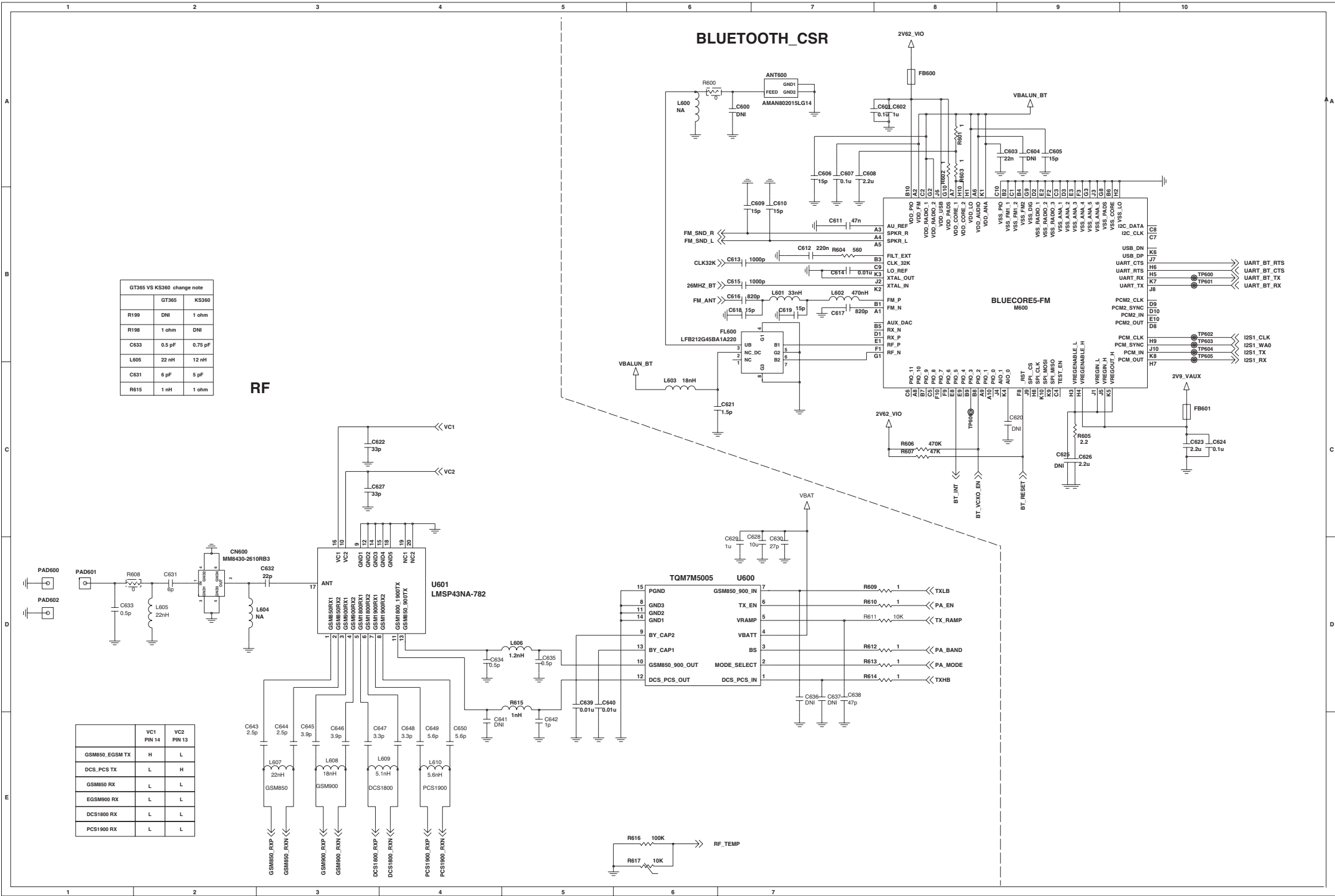
## 7. CIRCUIT DIAGRAM



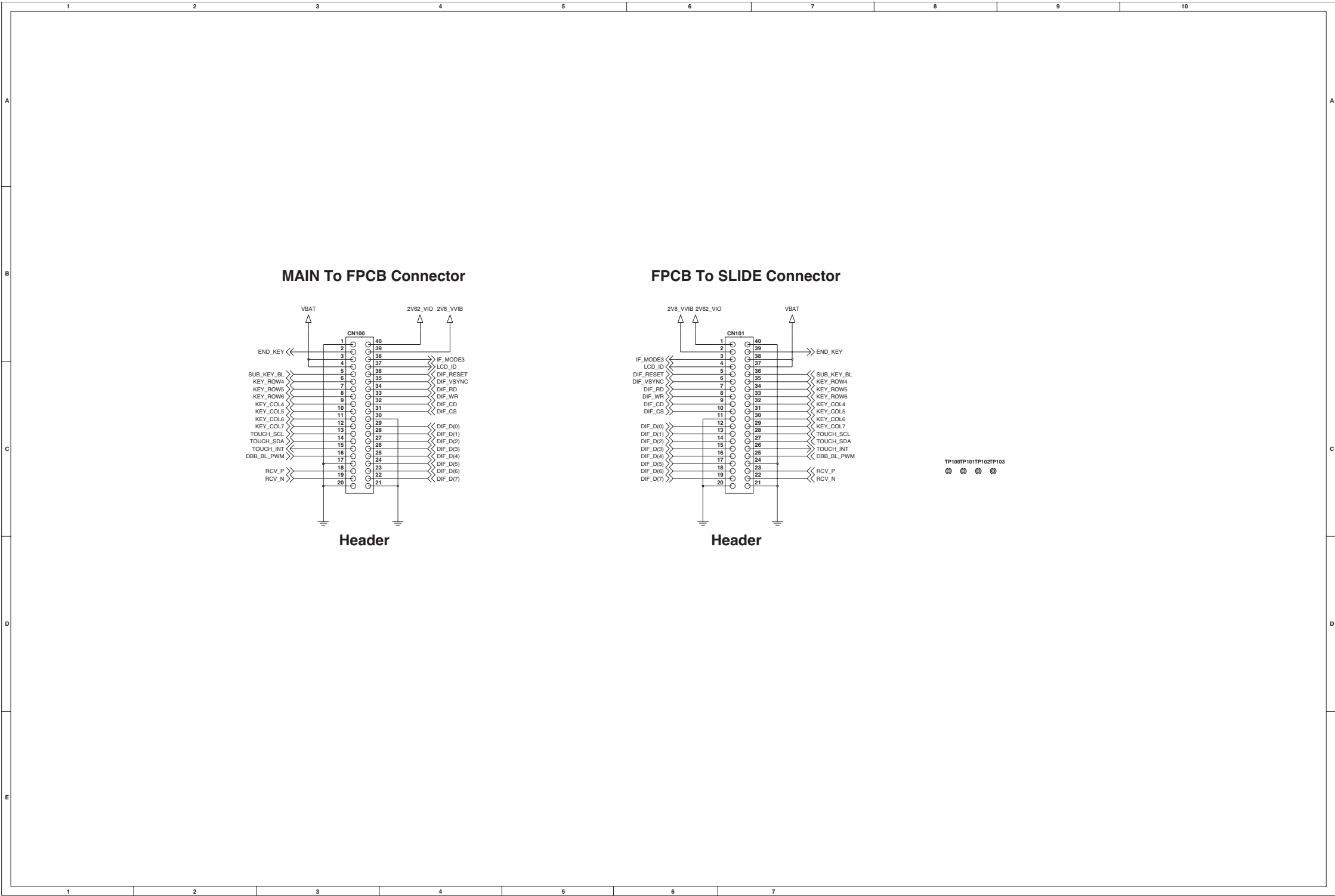
7. CIRCUIT DIAGRAM



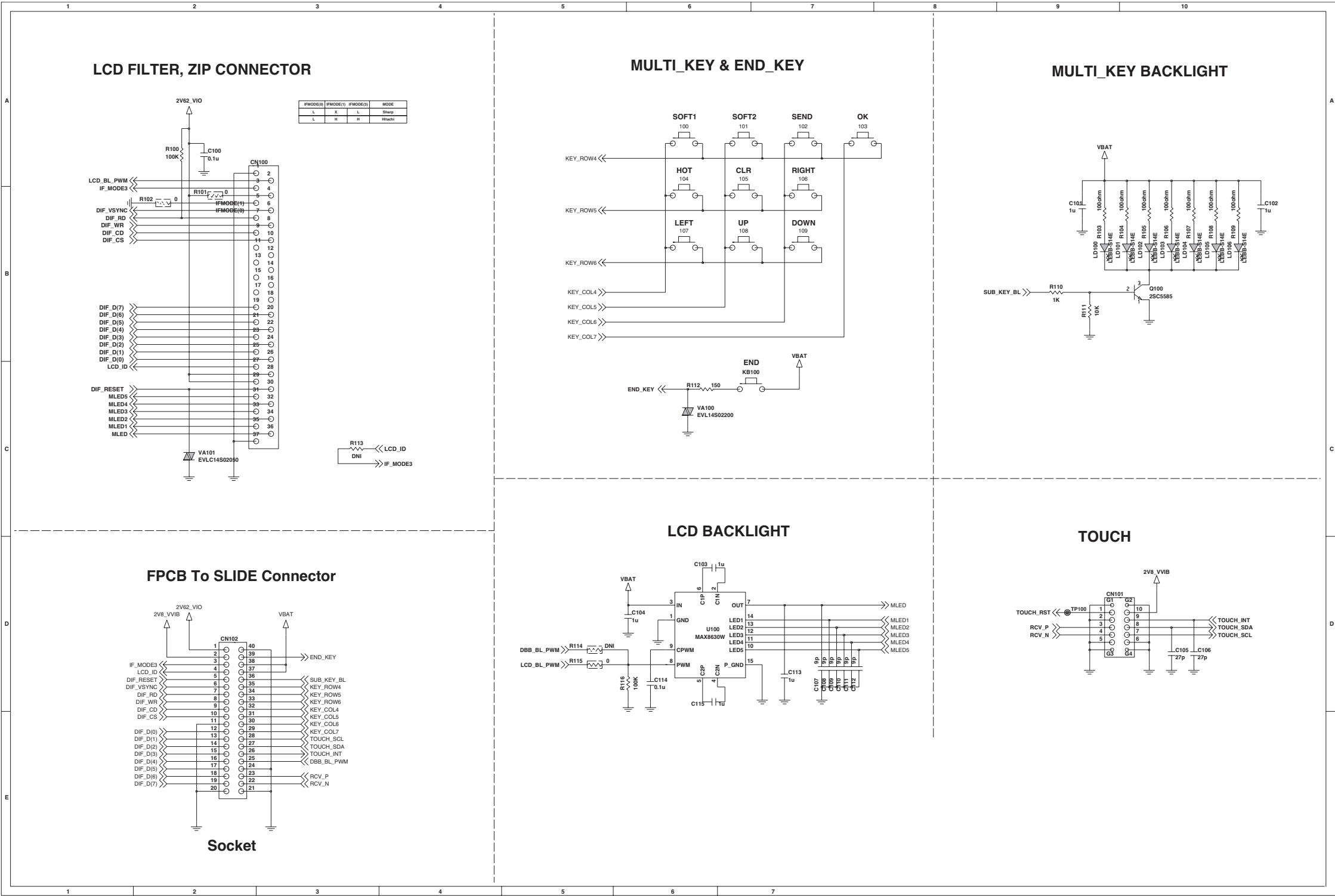
7. CIRCUIT DIAGRAM



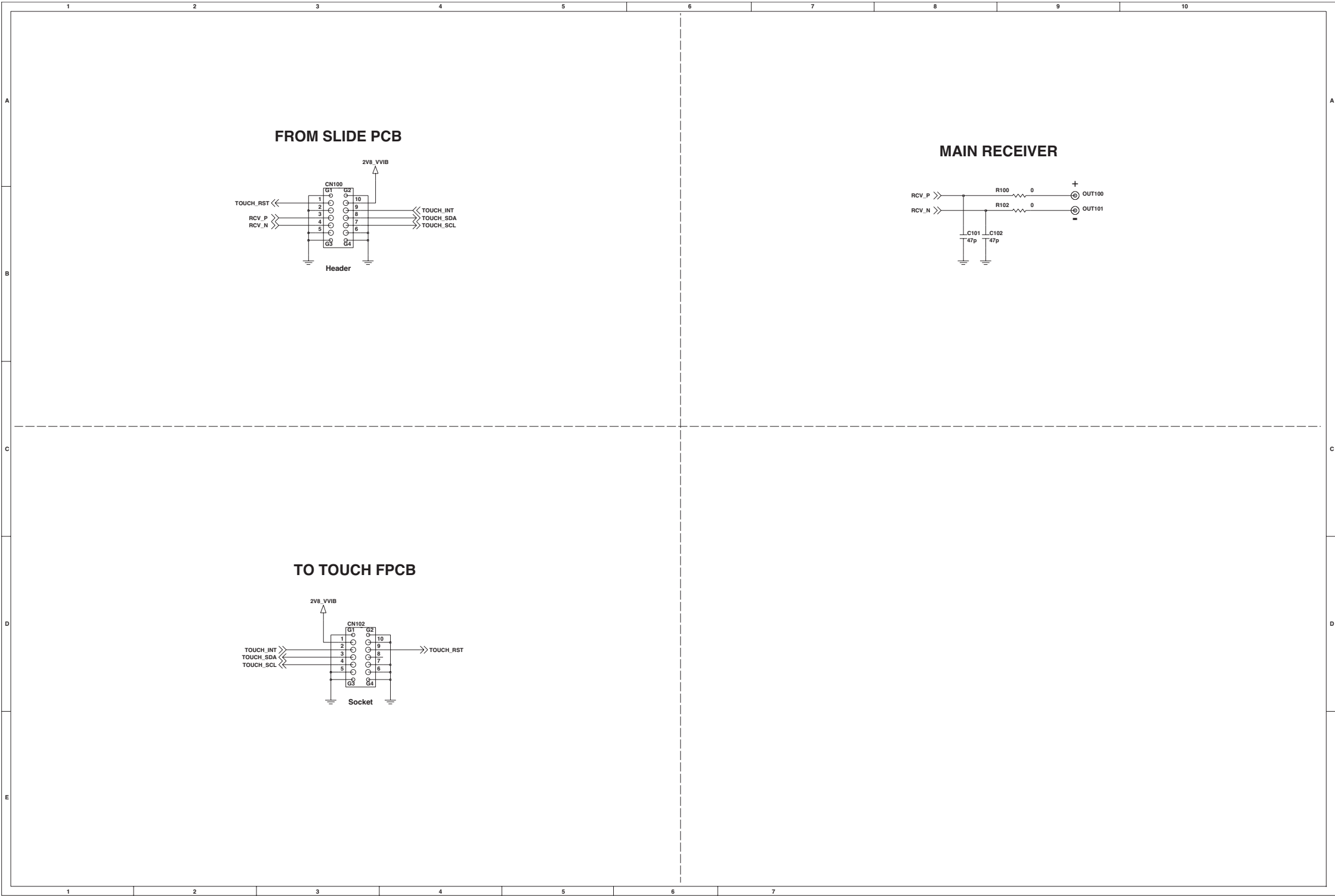
7. CIRCUIT DIAGRAM



7. CIRCUIT DIAGRAM



7. CIRCUIT DIAGRAM





## 8. BGM Pin Map

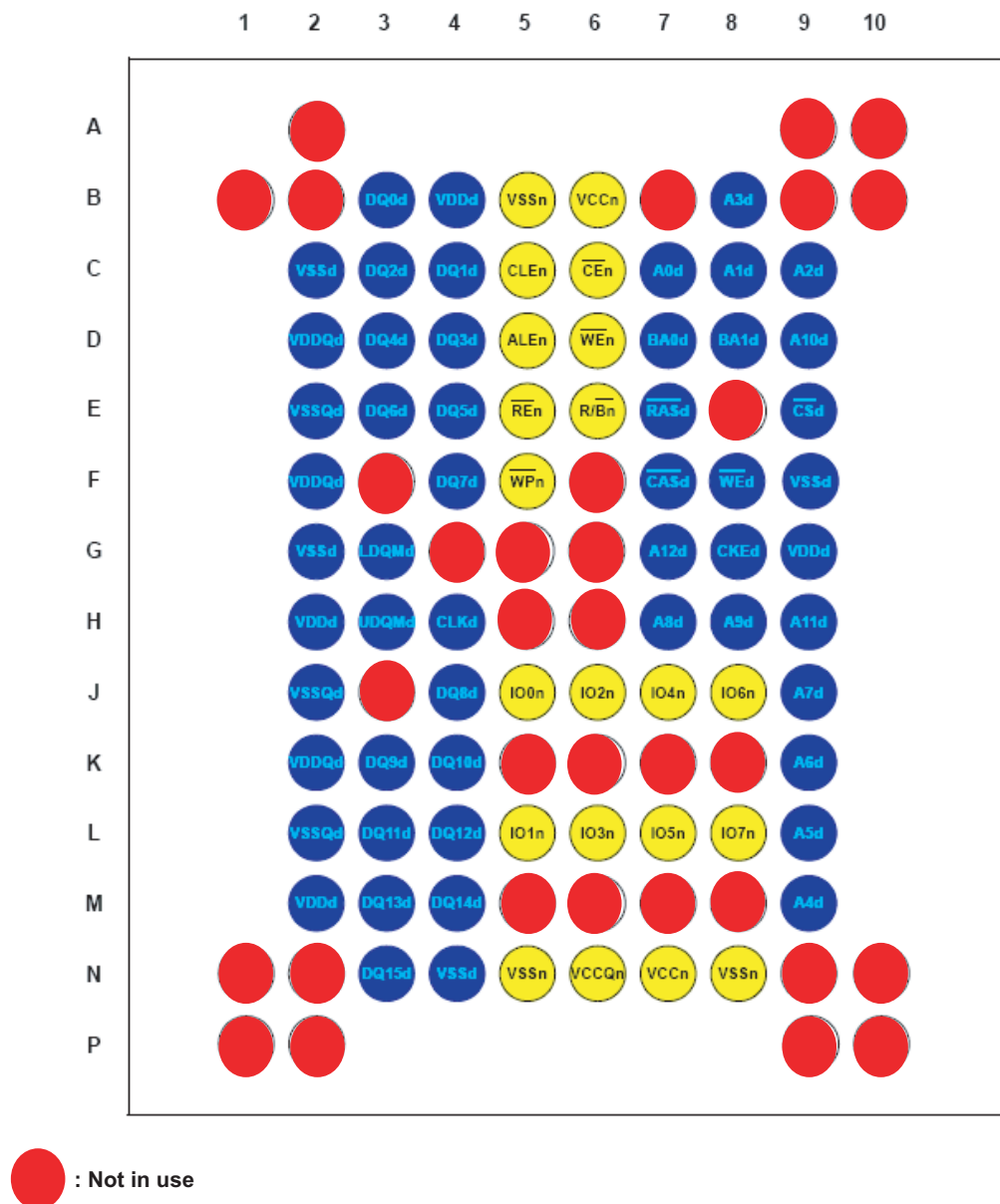
### BGA IC pin check (U102, PMB8888)

|   | 1     | 2     | 3    | 4            | 5     | 6     | 7    | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    |      |   |
|---|-------|-------|------|--------------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|---|
| A |       | VRF1  | VPLL | CHAR<br>GE_S | VDD_  | VREF  | VMM  | VSIM  | VSS_  | VSD2  | VBAT_ | VSS_  | SD1_  | VBAT_ | VSD1  | SD1_  | KP_IN | T_OU  |       | A    |   |
| B | VRF3  | VBAT_ | VDD_ | VRF2         | IREF  | A_GN  | VUSB | VBAT_ | SD2_  | SD2_  |       |       |       |       | KP_IN | KP_IN | KP_IN | USAR  | T_OU  | B    |   |
| C |       |       | VSSR | SENS         |       | VBAT_ | VIO  | VRTC  | PO_R  |       | SD2_  |       |       | KP_O  | KP_O  | USIF_ | DIF_C | DIF_D | DIF_D | C    |   |
| D |       |       |      |              | SENS  | VSS_  | VDD_ | LPBC  | ON_O  | PWM   | V4UX  | VVIB  | KP_O  | KP_O  | I2S1_ |       | KP_IN | VDD_  | OSC3  | D    |   |
| E | V4UD  | VBAT_ | VSS_ |              |       | FLAS  | VSS_ | PWM   | RESE  | PWM   | VSS_  | VBAT_ | T_OU  | I2S1_ |       | USIF_ | DIF_D | VSS_  | F32K  | E    |   |
| F | MIC1_ | HS_N  | VSS_ | M10          | I2C_S |       |      |       |       |       |       |       |       |       |       | DIF_H | DIF_D | DIF_D | FCDP  | RESE | F |
| G | MIC1_ | EP_P  | M8   | M2           | I2C_S |       |      |       |       |       |       |       |       |       |       | DIF_D | DIF_D | DIF_D | EBU_  | CLKO | G |
| H | MIC2_ | VSS_  | M0   | M7           | DSPI  |       |      |       | USIF_ | DIF_R | T_OU  |       |       |       |       | DIF_D | DIF_V | USAR  |       | EBU_ | H |
| J | MIC2_ |       | M1   |              | DSPO  |       |      |       | VSS_  | DIF_  | T_OU  | I2S1_ | I2S1_ |       |       | USAR  | EBU_  | EBU_  | EBU_  | EBU_ | J |
| K | VSS_  | EP_N  | HS_P | VSS_         | DSPI  |       |      |       | DIF_C | T_OU  | USAR  | DIF_C | KP_IN |       |       | EBU_  | EBU_  | EBU_  | EBU_  | EBU_ | K |
| L | VDDR  | VMIC  | VREF | IREF         | MON1  |       |      |       | VSS_  | VDD_  | VSS_  | VDD_  | VSS_  |       |       | EBU_  | EBU_  | EBU_  | EBU_  | EBU_ | L |
| M | RX4X  | VSSR  | PAEN | VDD_         | MON2  |       |      |       | VDD_  | VSS_  | VDD_  | VSS_  |       |       |       |       | EBU_  | USB_  | EBU_  |      | M |
| N | RX4   | VSSR  | VSSR | FE1          | TRIG_ |       |      |       |       |       |       |       |       |       |       |       | EBU_  |       | EBU_  | EBU_ | N |
| P | RX3X  | VSSR  | VR4M | VDDM         | FE2   |       |      |       |       |       |       |       |       |       |       |       | EBU_  | USB_  |       | EBU_ | P |
| R | RX3   | VSSR  |      | PAB3         |       | RTCK  |      | MMCI_ | MMCI_ | MMCI_ | CIF_D | CIF_D | EBU_  | EBU_  |       |       | EBU_  |       | EBU_  |      | R |
| T | RX2X  | VSSR  | VDDT |              | VDDO  | TDI   | TDO  | MMCI_ | MMCI_ | CIF_D | CIF_D | CIF_D | EBU_  | EBU_  |       |       | EBU_  |       | EBU_  |      | T |
| U | RX2   | VSSR  | VSSR |              | VSSR  | F8YS  | TMS  | CC_C  | MMCI_ | CLKO  | EBU_  | CIF_D | EBU_  | EBU_  |       |       | EBU_  |       | EBU_  |      | U |
| V | RX1X  | VSSR  | TX1  | VSSR         | VSSR  | VDDX  | TCK  | CC_R  | CC_I  | CIF_V | CIF_H | CIF_D | CIF_D | EBU_  | EBU_  |       | EBU_  |       | EBU_  |      | V |
| W | VSSR  | RX1   | TX2  | VDDT         | VDDV  | VDDP  | XOX  | XO    | TRST  | CIF_R | CIF_P | CIF_P | EBU_  | EBU_  | EBU_  | EBU_  | EBU_  | EBU_  | NC    |      | W |

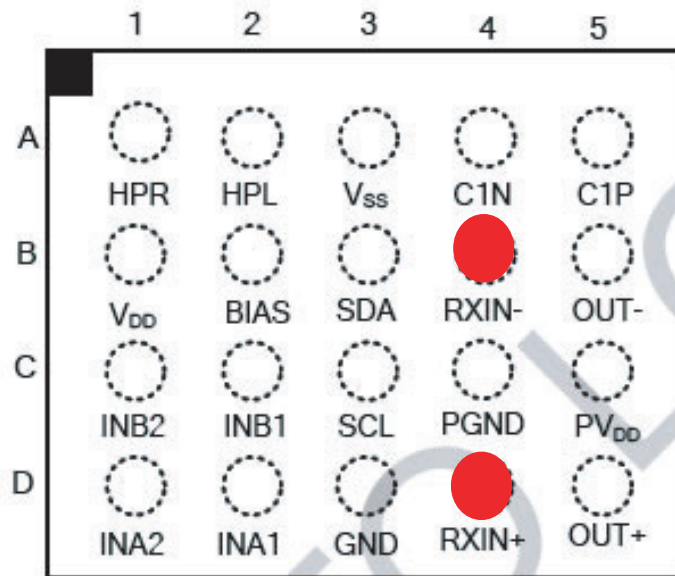
 : Not in use

## 8. BGM Pin Map

### BGA IC pin check (U100, K5D1G12ACD-D075)



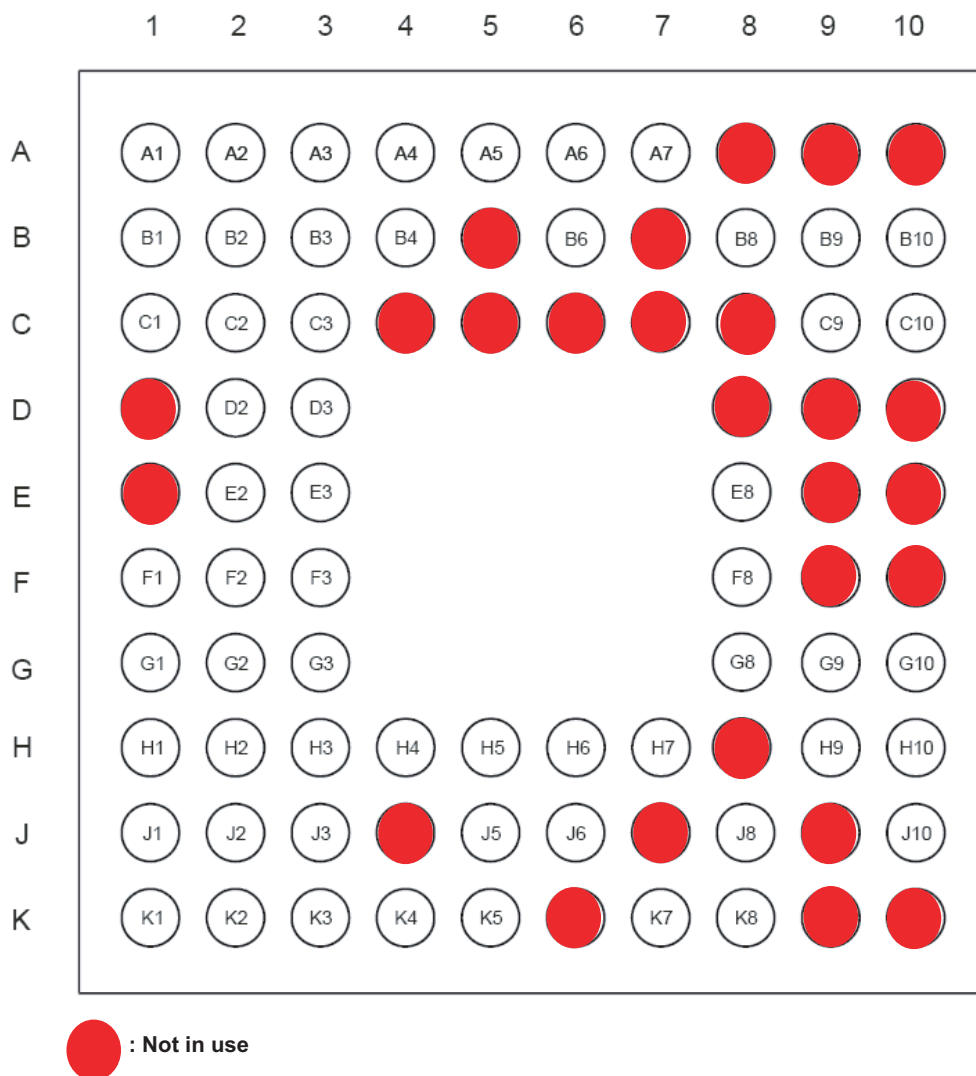
### BGA IC pin check (U303, MAX9877)



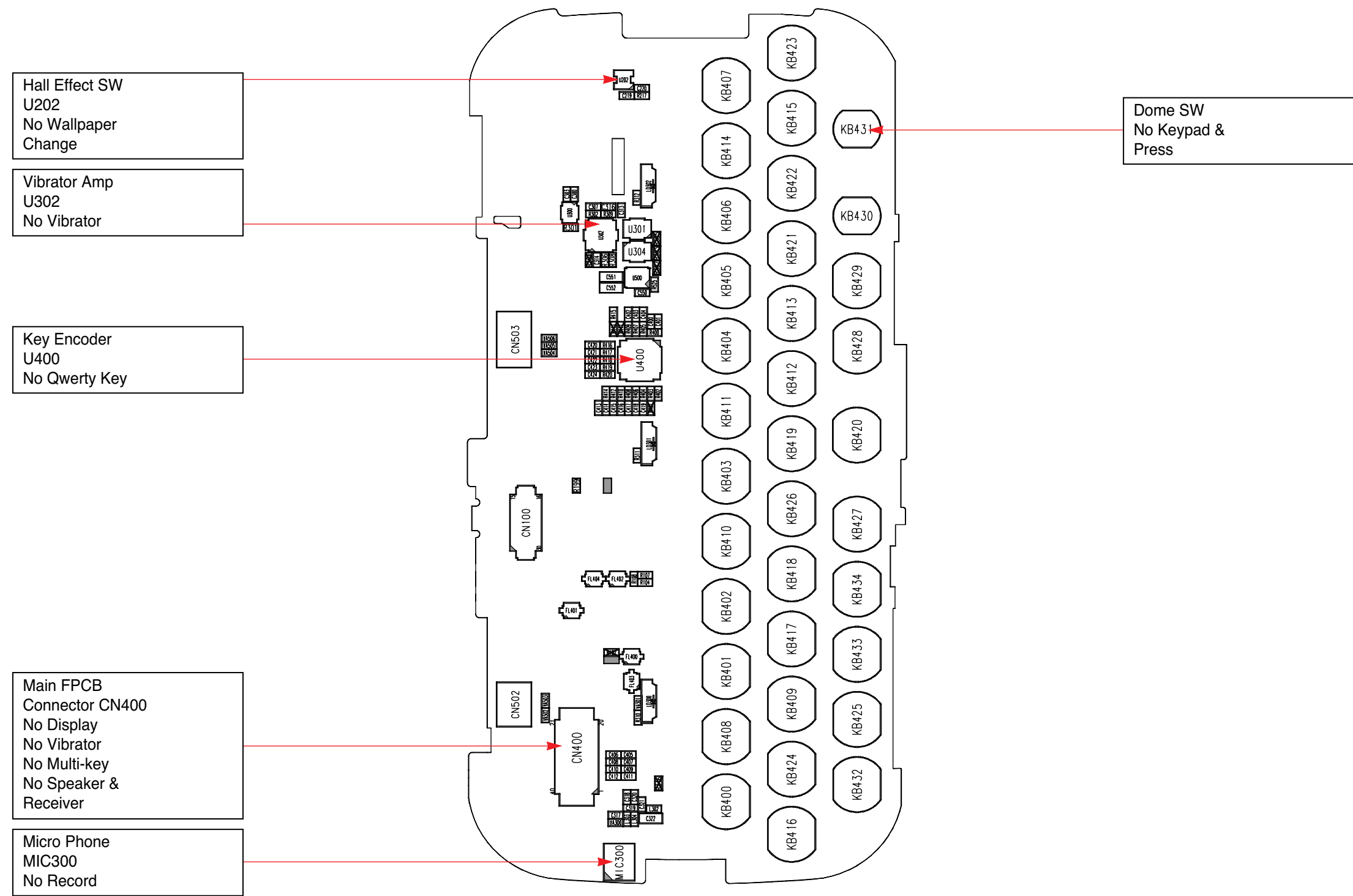
● : Not in use

## 8. BGM Pin Map

### BGA IC pin check (M600, BC5FM)

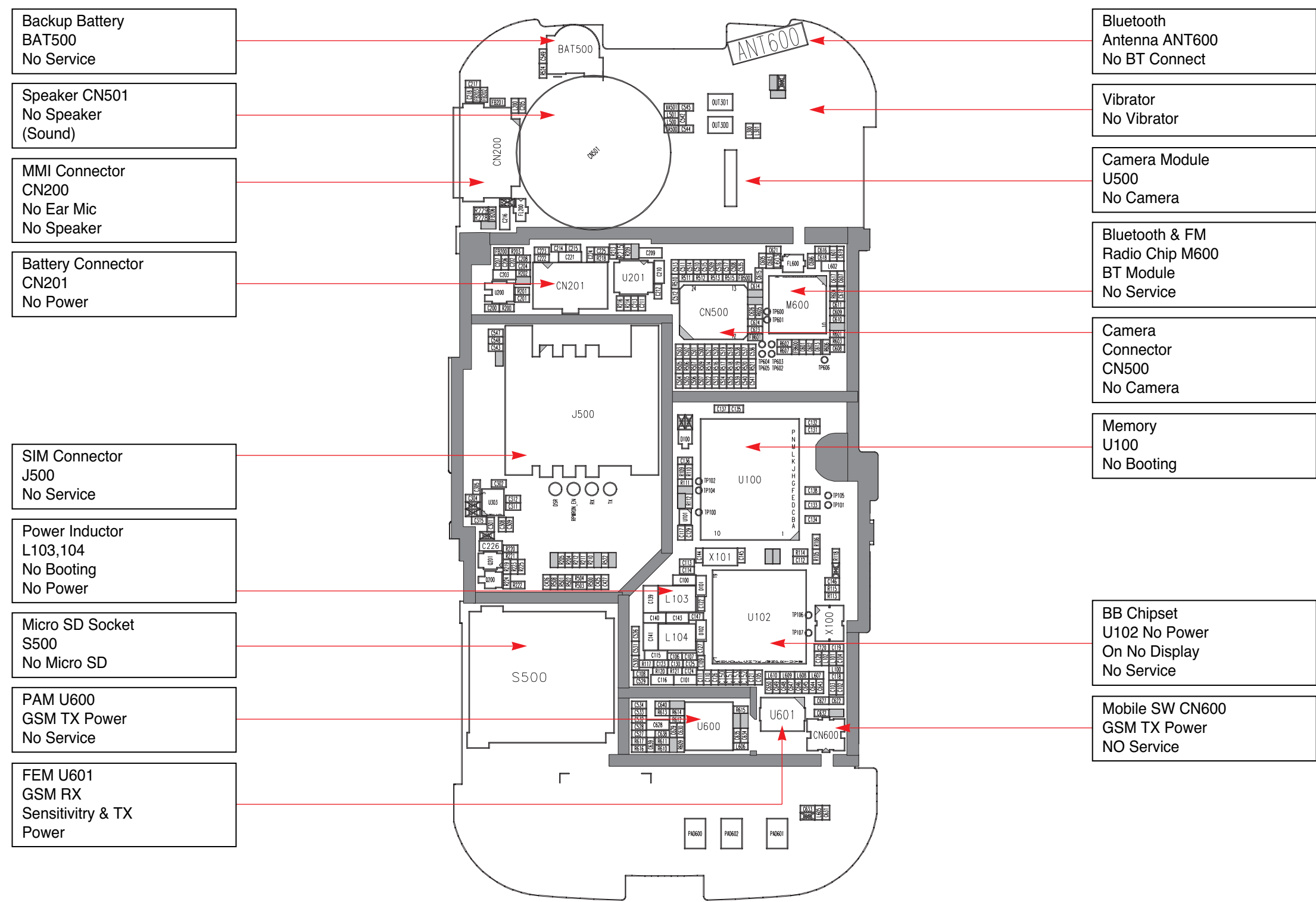


9. PCB LAYOUT



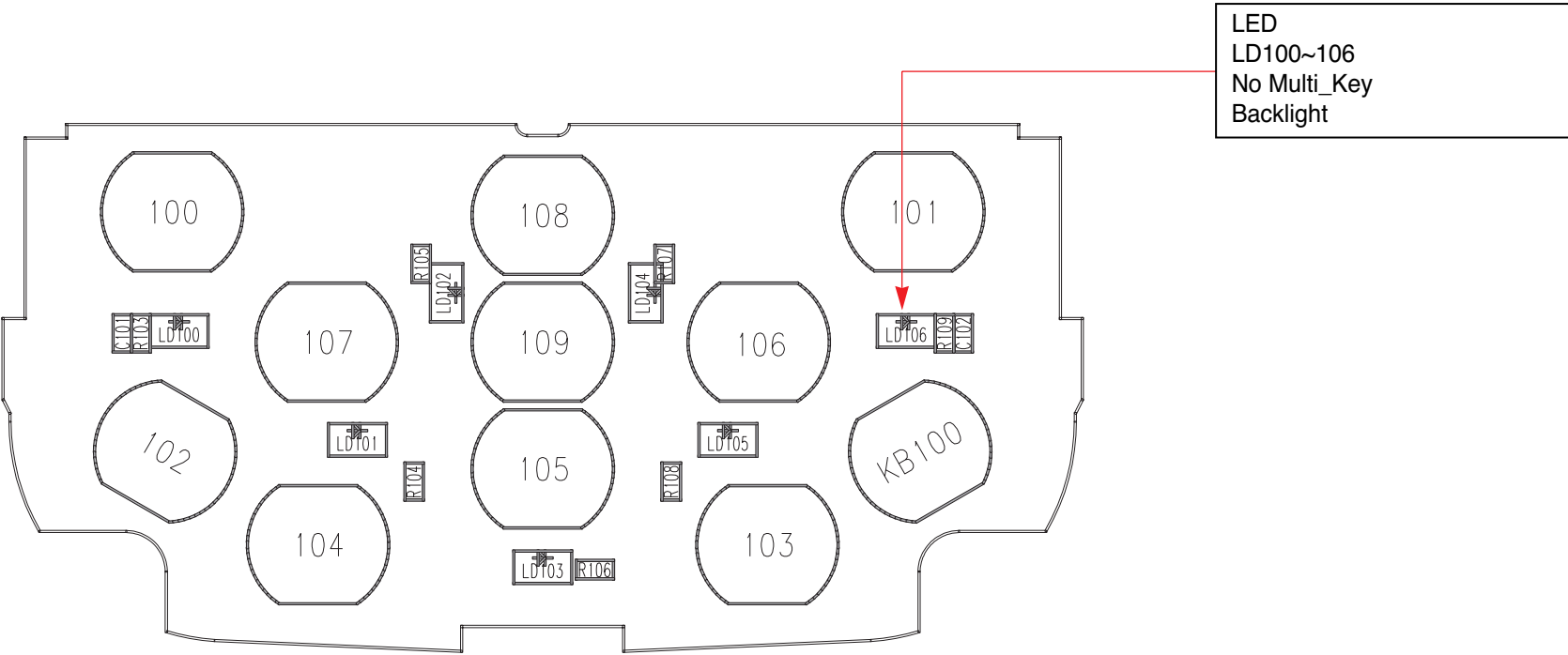
GT365 -MAIN-SPFY0178401-1.1-TOP

9. PCB LAYOUT



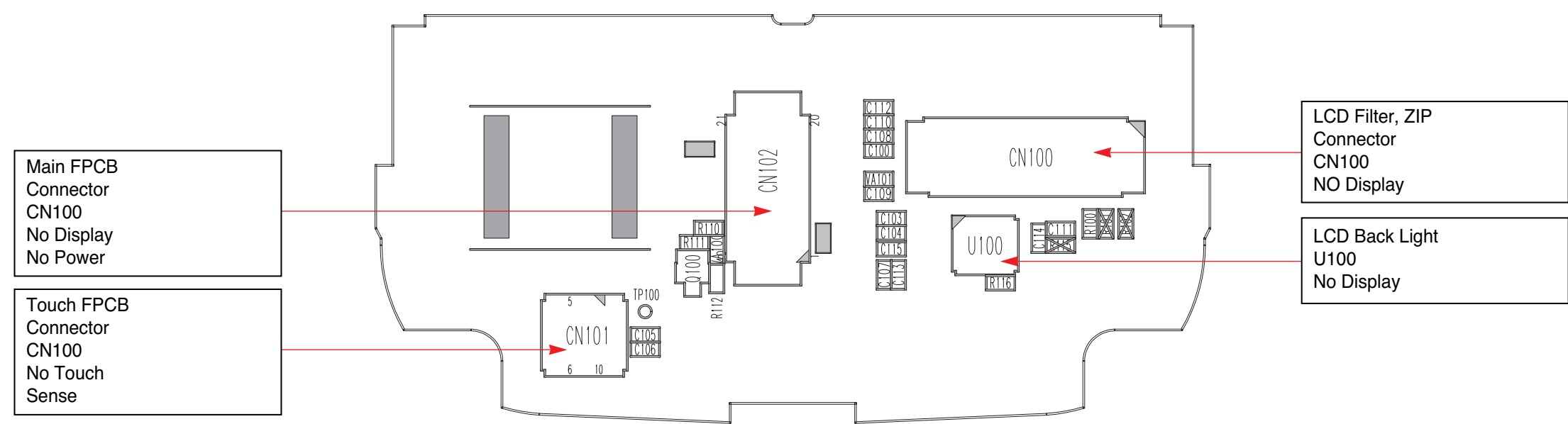
GT365-MAIN-SPFY0178401-1.0-B0T

9. PCB LAYOUT



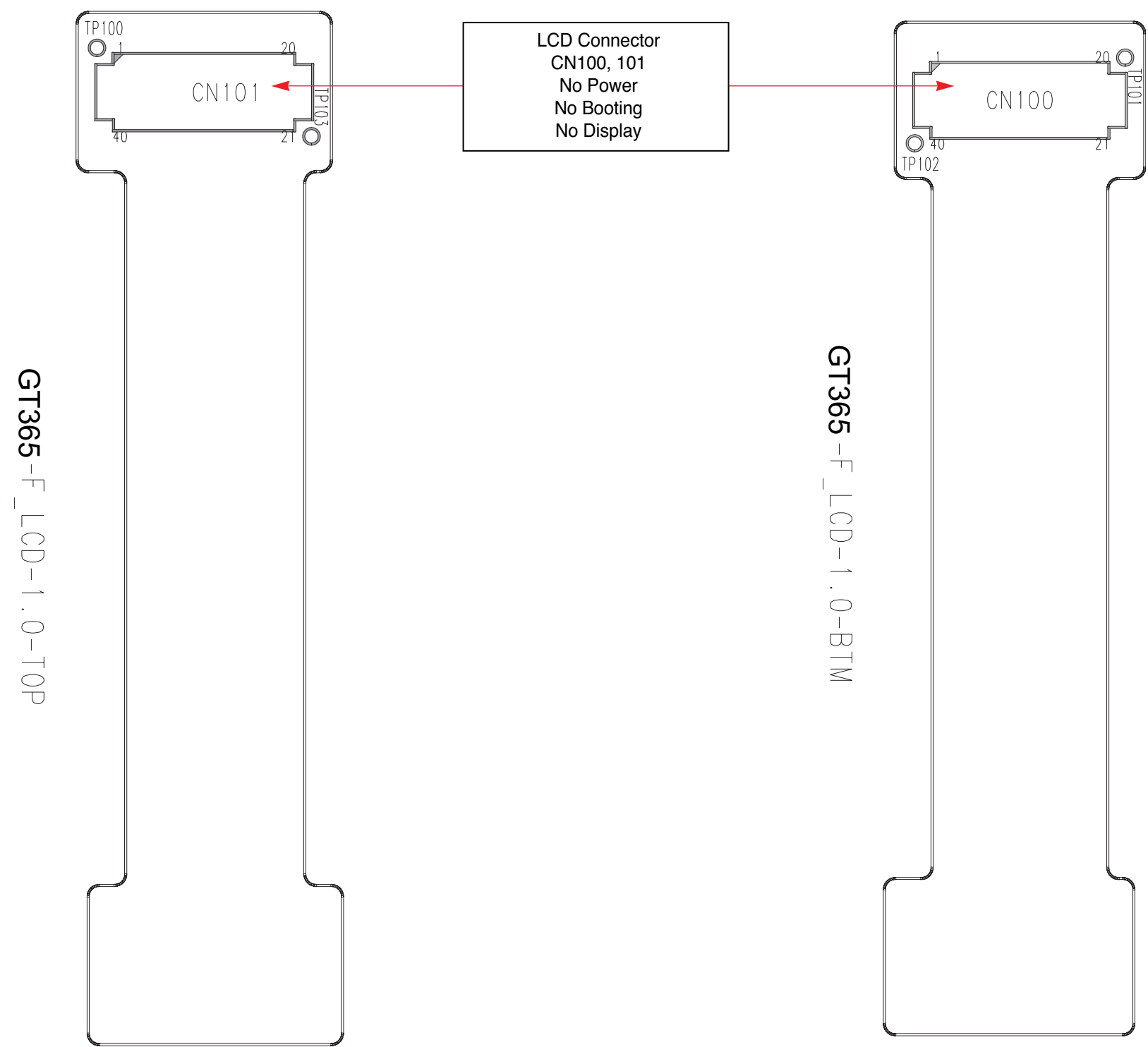
GT365-SLIDE-1.0-TOP

9. PCB LAYOUT

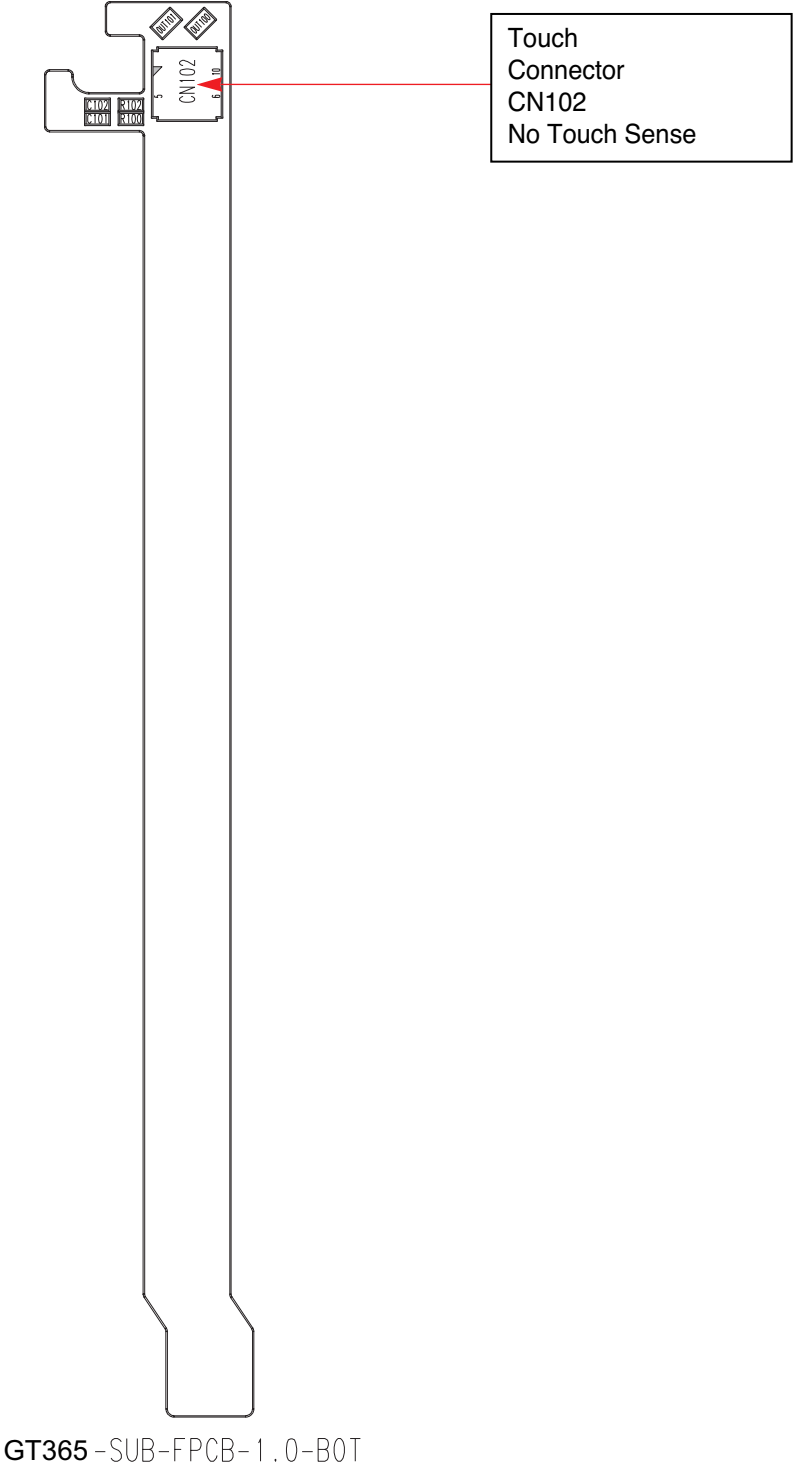
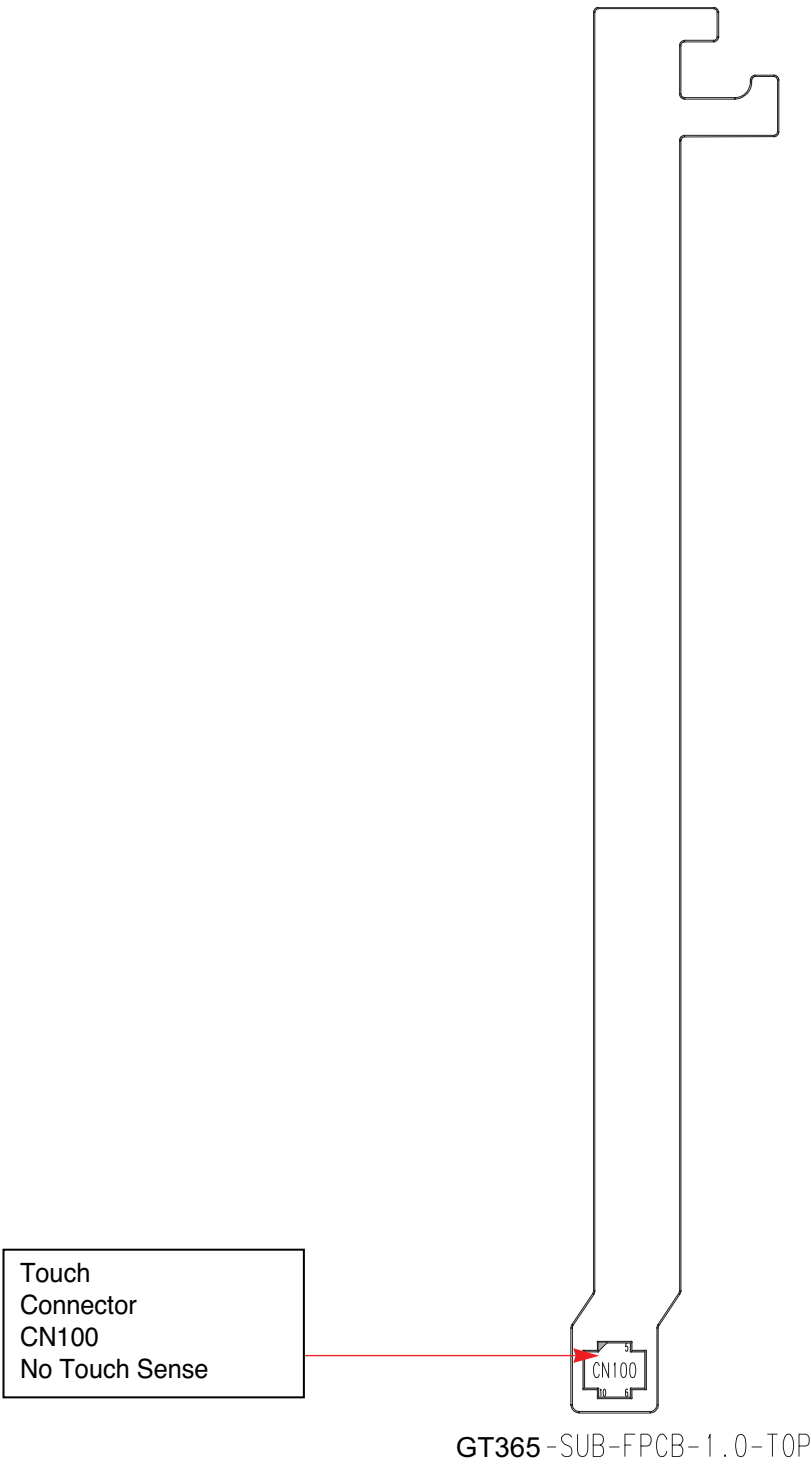


GT365-SLIDE-1.0-BTM

9. PCB LAYOUT

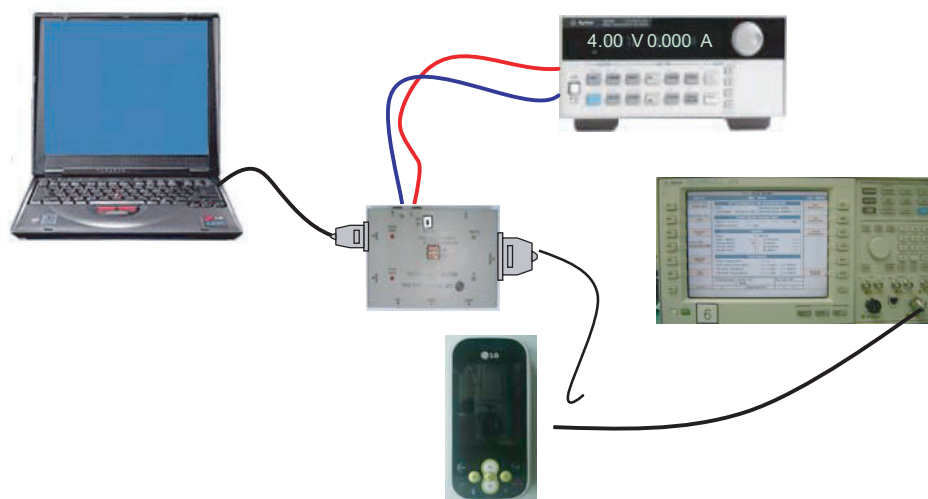


9. PCB LAYOUT



## 10. RF Calibration

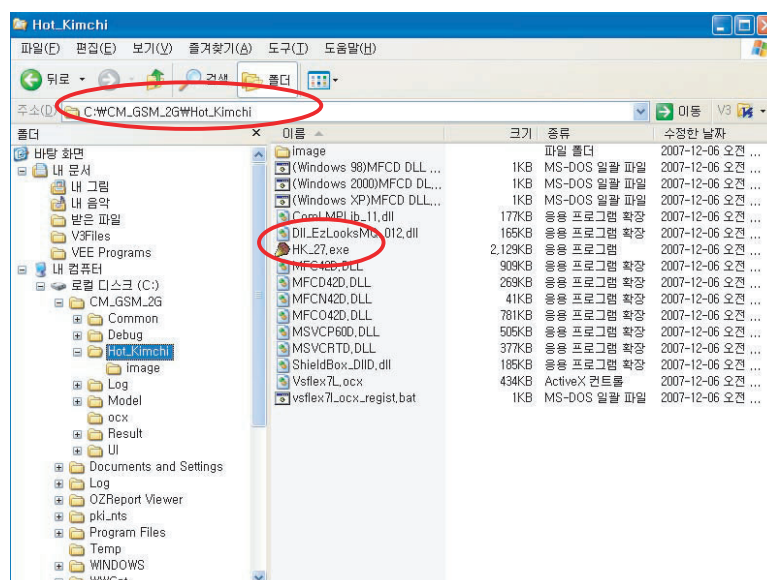
### 10.1 Test Equipment Setup



### 10.2 Calibration Step

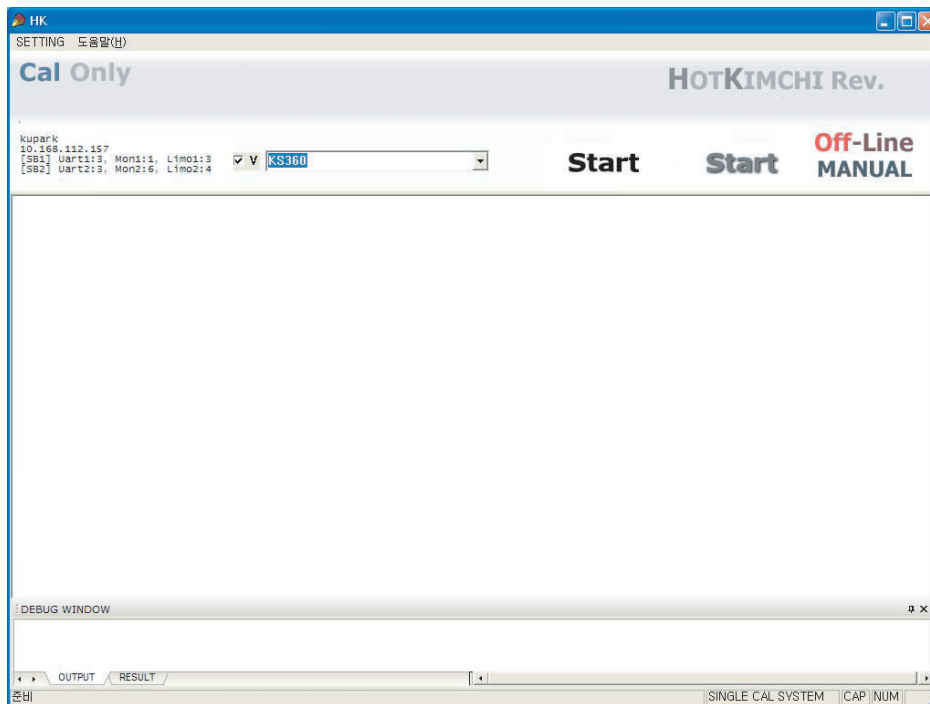
#### 10.2.1 Turn on the Phone

#### 10.2.2 Execute “HK\_27.exe”

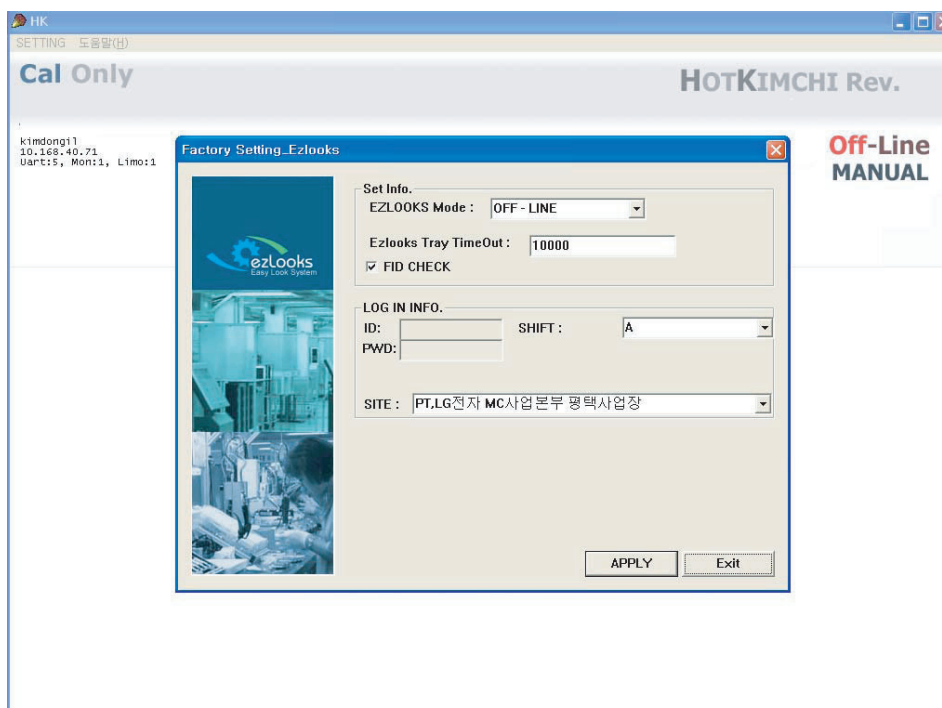


## 10. RF Calibration

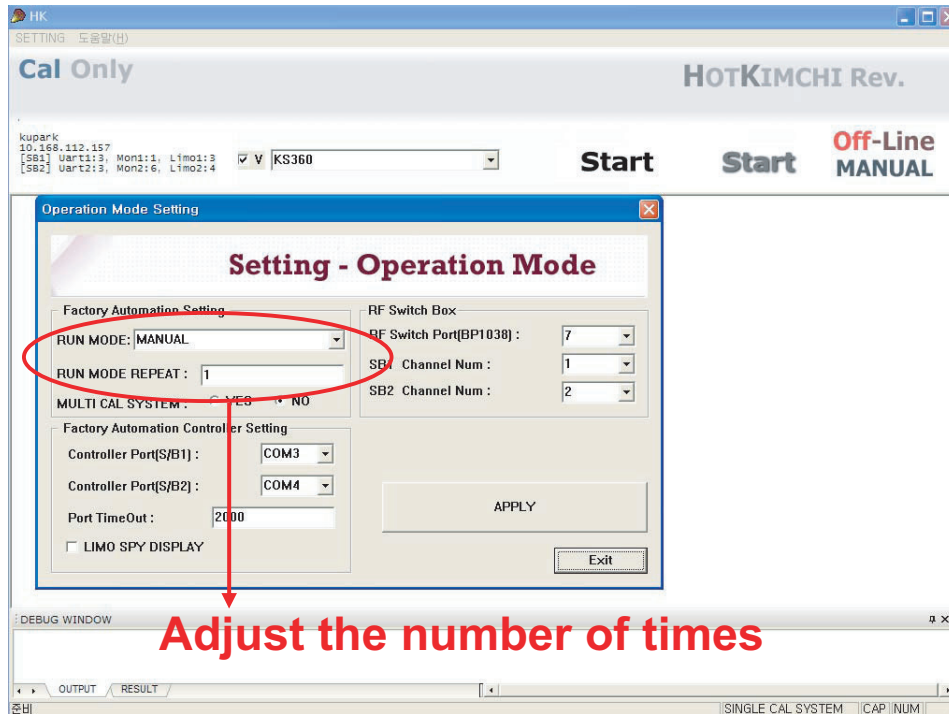
### 10.2.3 Click “SETTING” Menu



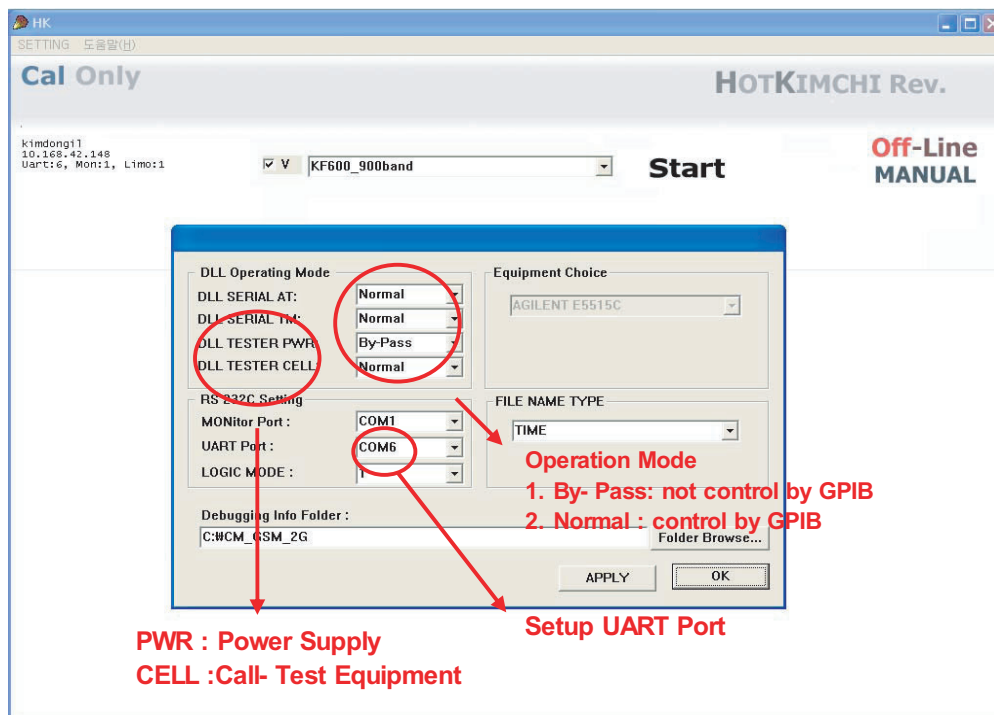
### 10.2.4 Setup “Ezlooks” menu such as the following figure



### 10.2.5 Setup “Line System” menu such as the following figure



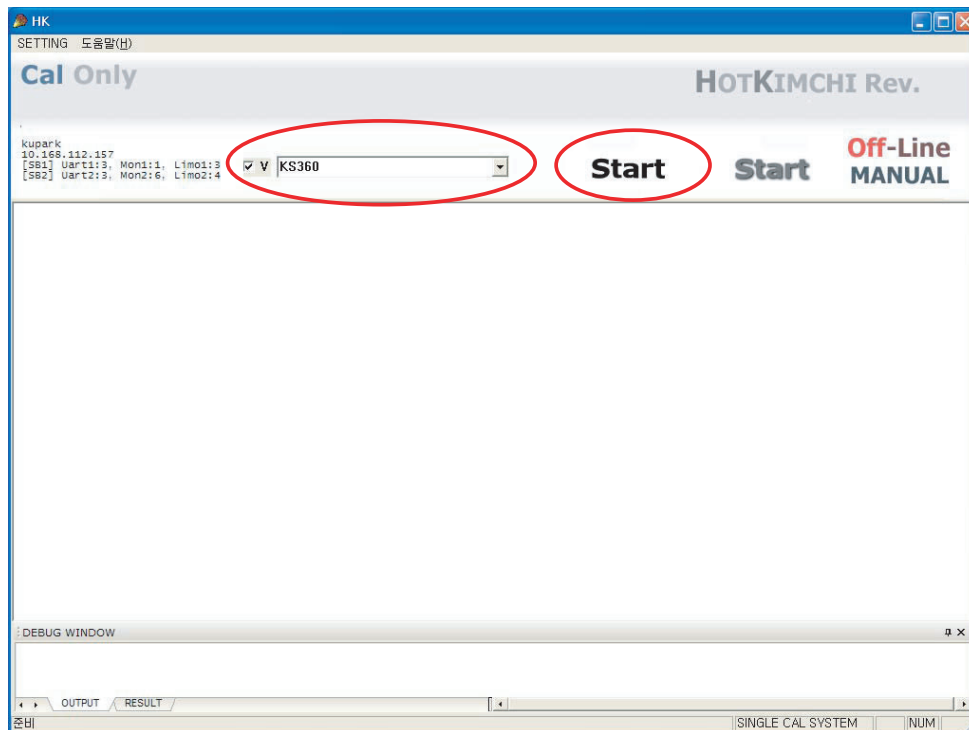
### 10.2.6 Setup Logic operation such as the following figure



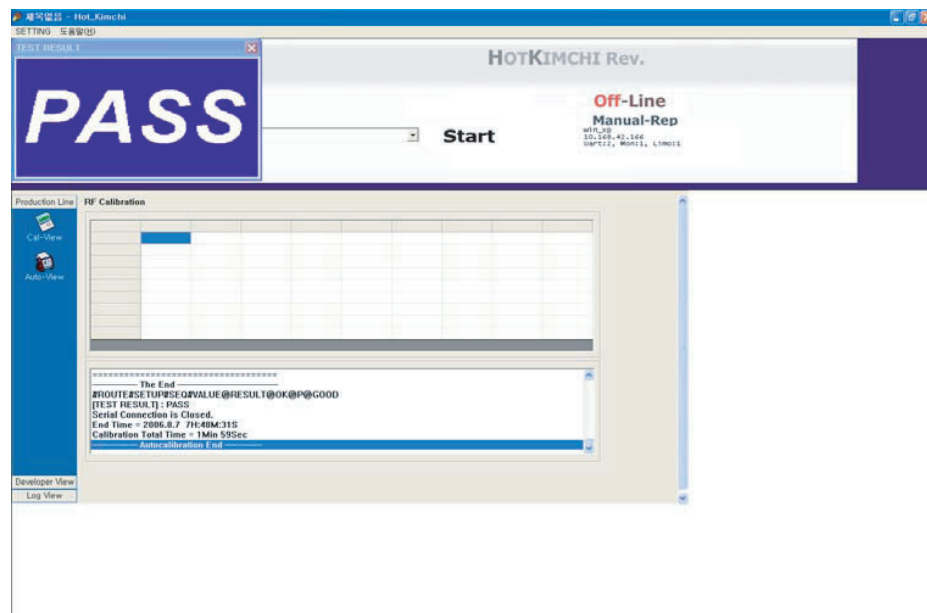
## 10. RF Calibration

### 10.2.7 Select “MODEL”

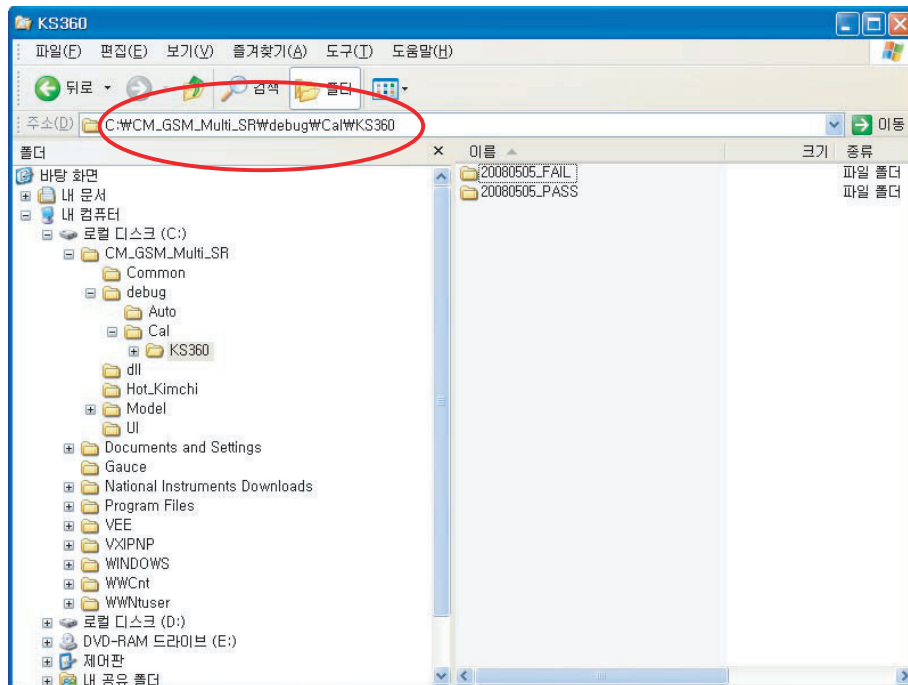
### 10.2.8 Click “START” for RF calibration



### 10.2.9 RF Calibration finishes.



### 10.2.10 Calibration data will be saved to the following folder



## 10. RF Calibration

---

### Notices:

1. The state of Phone is "test mode" during the CALIBRATION.
2. Calibration program automatically changes either "normal mode" or "ptest mode".
3. RF Calibration steps as follow:  
TX Channel compensation: EGSM->DCS->PCS->EDGE EGSM->EDGE DCS->EDGE PCS  
RX Channel compensation: EGSM->DCS->PCS
4. Phone Operation Mode



**Normal Mode**

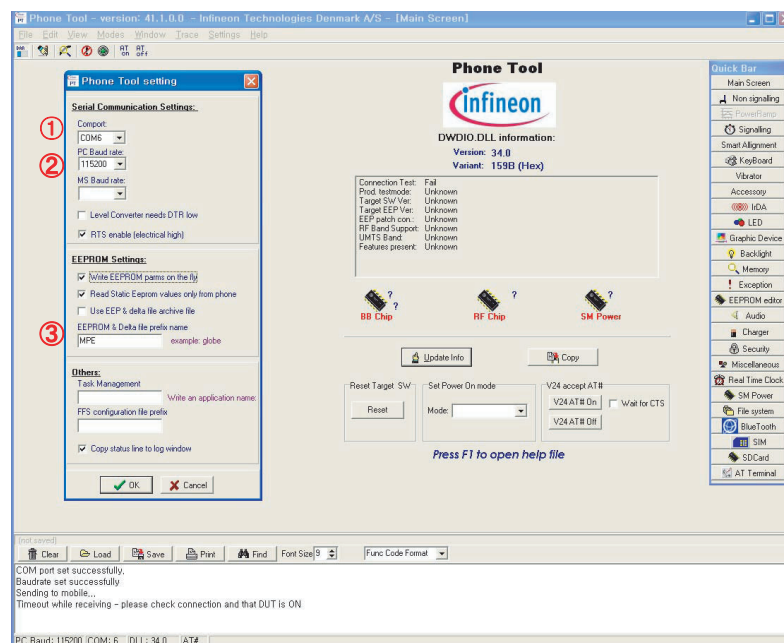


**ptest Mode**

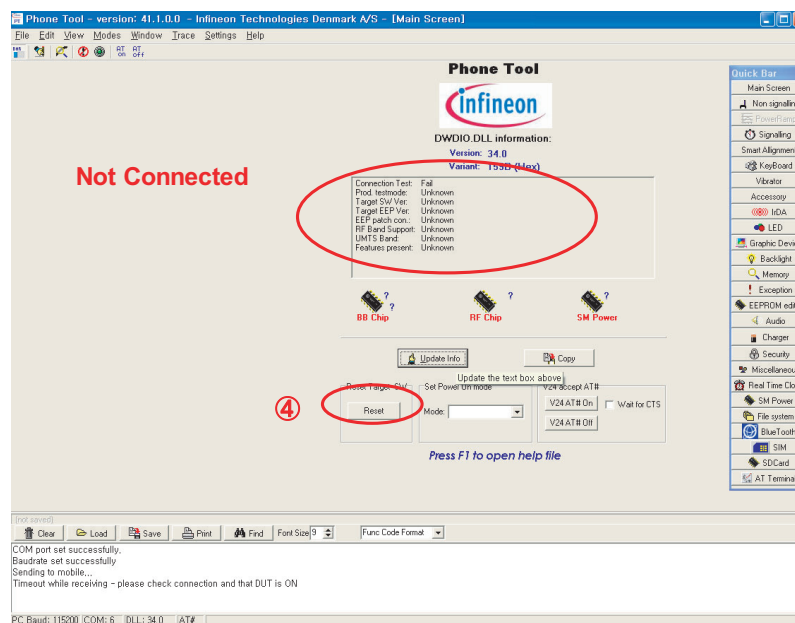
# 11. Stand-alone Test

## 11.1 Test Program Setting

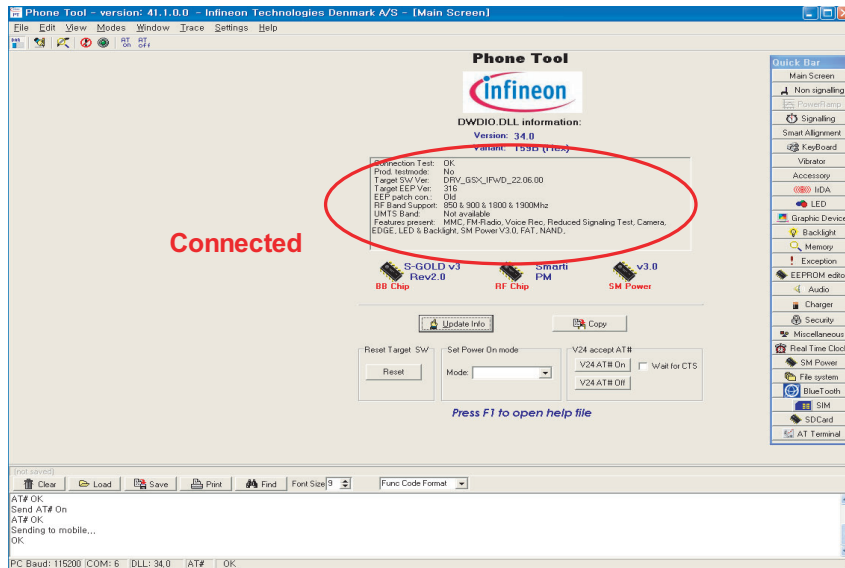
- ① Set COM Port.
- ② Check PC Baud rate.
- ③ Confirm EEPROM & Delta file prefix name.



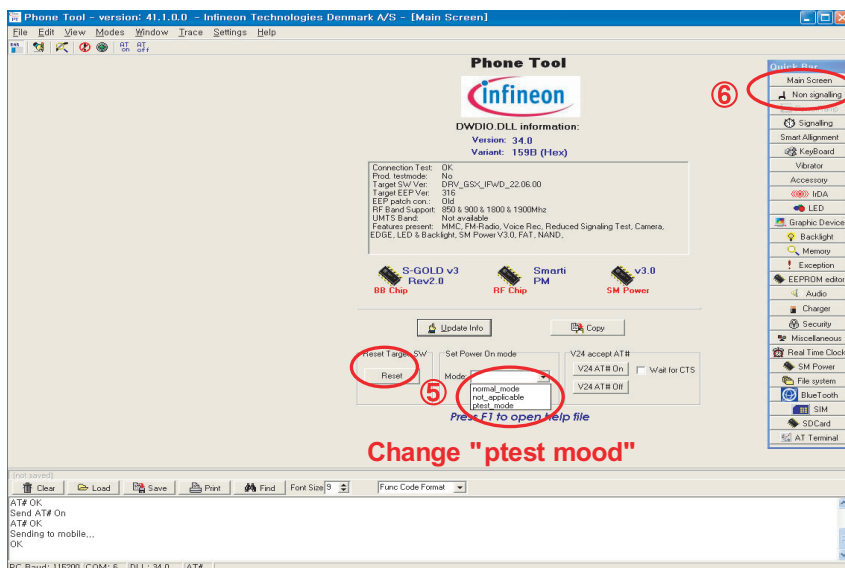
- ④ Click "Update Info" for communicating Phone and Test-Program.



## 11. Stand-alone Test



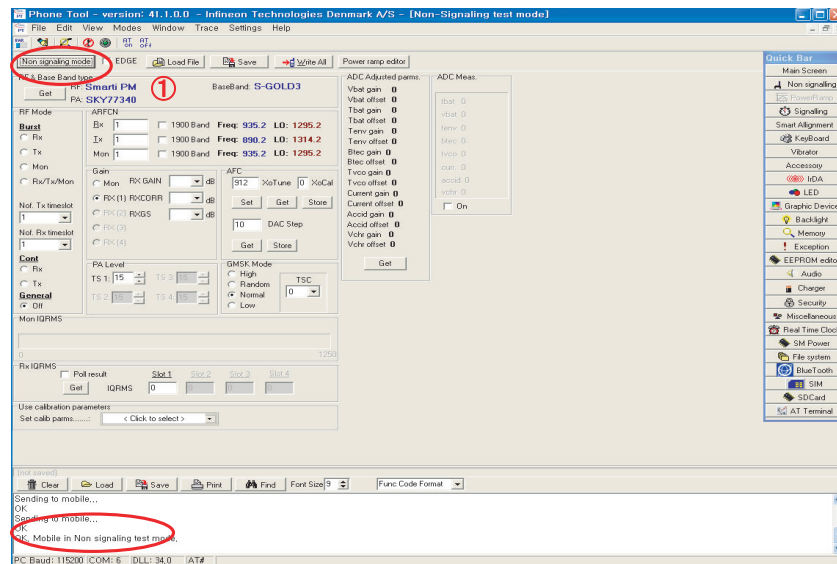
- ⑤ For the purpose of the Standalone Test, Change the Phone to “ptest mode” and then Click the “Reset” bar.
- ⑥ Select “Non signaling” in the Quick Bar menu. Then Standalone Test setup is finished.



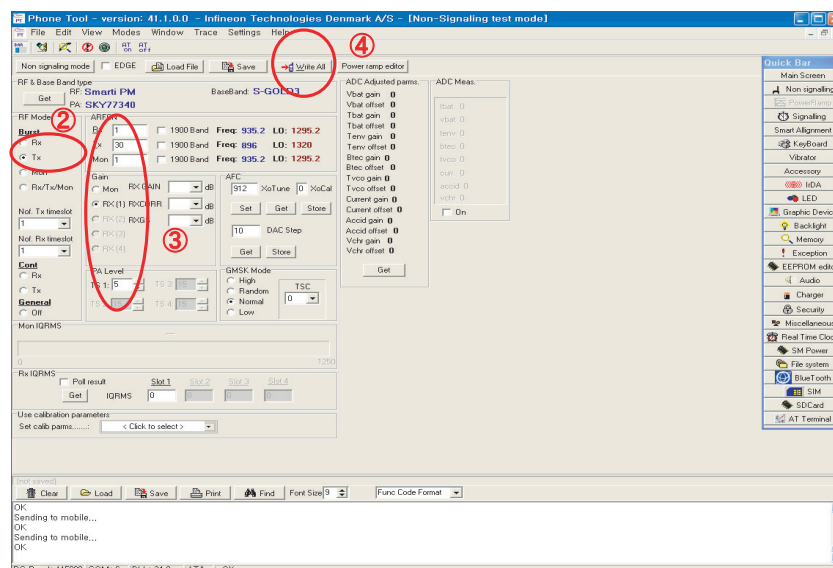
## 11. Stand-alone Test

### 11.2 Tx Test

- ① Click “Non signaling mode” bar and then confirm “OK” text in the command line.



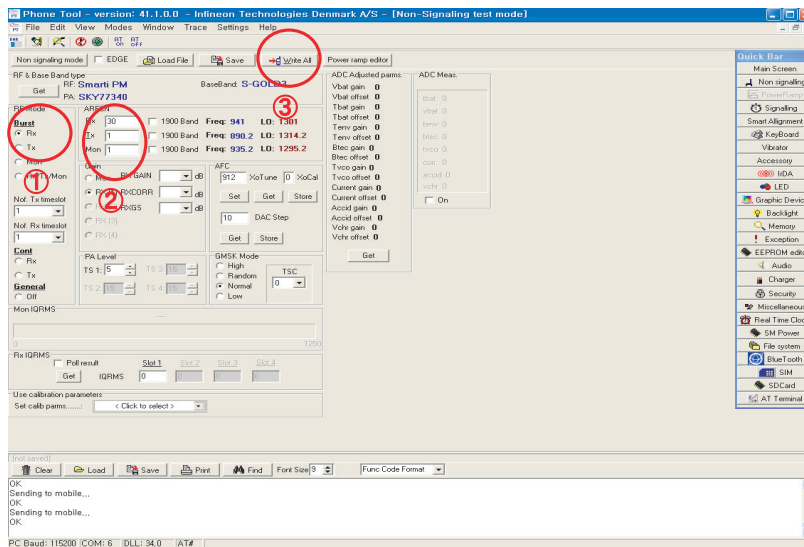
- ② Put the number of TX Channel in the ARFCN.
- ③ Select “Tx” in the RF mode menu and “PCL” in the PA Level menu.
- ④ Finally, Click “Write All” bar and try the efficiency test of Phone.



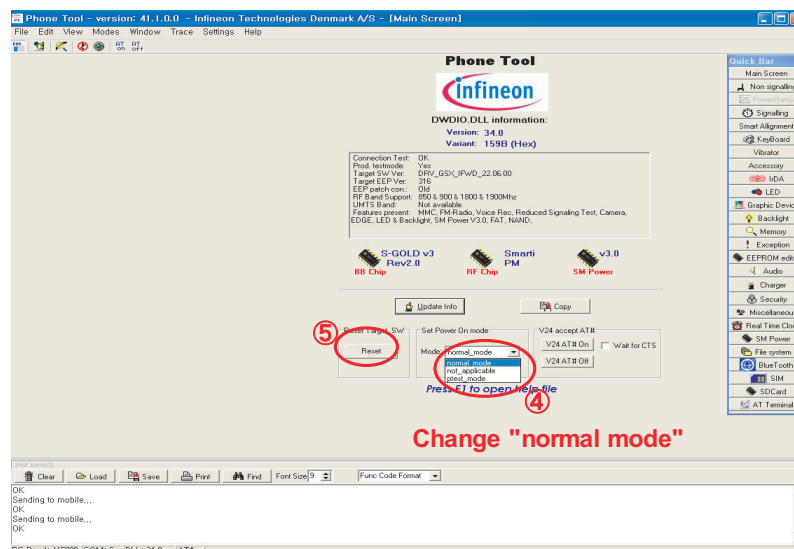
## 11. Stand-alone Test

### 11.3 Rx Test

- ① Put the number of RX Channel in the ARFCN.
- ② Select "Rx" in the RF mode menu.
- ③ Finally, Click "Write All" bar and try the efficiency test of Phone.



- ④ The Phone must be changed "normal mode" after finishing Test.
- ⑤ Change the Phone to "normal mode" and then Click the "Reset" bar.



## 12. ENGINEERING MODE

Engineering mode is designed to allow a service man/engineer to view and test the basic functions provided by a handset. The key sequence for switching the engineering mode on is "1809#\*360#" "Select. Pressing END will switch back to non-engineering mode operation. Use Up and Down key to select a menu and press 'select' key to progress the test. Pressing 'back key will switch back to the original test menu.

### **[1] Device Test**

- [1-1] Function Test
- [1-2] Main LCD
- [1-3] Sub LCD
- [1-4] LCD Backlight
- [1-5] Key Backlight
- [1-6] Speaker
- [1-7] Vibrator
- [1-8] Camera
- [1-9] Mic Rcv
- [1-10] Key Pad

### **[2] ELT Mode**

### **[3] Version**

### **[4] Factory rese**

### **[5] Call Timer**

### **[6] Eng Mode**

- [6-1] Band Selection
- [6-2] Battery Info
- [6-3] Audio Tuning
  - [6-3-1] Handset
    - [6-3-1-1] Uplink Gain
    - [6-3-1-2] Downlink Gain
    - [6-3-1-3] Sidetone Gain
    - [6-3-1-4] Filter tables
    - [6-3-1-5] Echo Cancellor
  - [6-3-2] Headset
    - [6-3-2-1] Uplink Gain
    - [6-3-2-2] Downlink Gain
    - [6-3-2-3] Sidetone Gain
    - [6-3-2-4] Filter tables
    - [6-3-2-5] Echo Cancellor
  - [6-3-3] Speakerphone
    - [6-3-3-1] Uplink Gain
    - [6-3-3-2] Downlink Gain
    - [6-3-3-3] Sidetone Gain
    - [6-3-3-4] Filter tables
    - [6-3-3-5] Echo Cancellor
  - [6-3-4] Bluetooth headset
    - [6-3-4-1] Uplink Gain
    - [6-3-4-2] Downlink Gain
    - [6-3-4-3] Sidetone Gain
    - [6-3-4-4] Filter tables
    - [6-3-4-5] Echo Cancellor
  - [6-3-5] Info
  - [6-3-6] Default
- [6-4] BT Test
- [6-5] Versions

### **[7] Network Info**

### **[8] Others**

- [8-1] FM Radio Test
- [8-2] Touchpad Test
- [8-3] Touchpad Download
- [8-4] SMS memory full
- [8-5] IM Eng Mode
- [8-6] Lab Test



13. EXPLODED VIEW & REPLACEMENT PART LIST

13.1 EXPLODED VIEW

UPPER, ASSY

FRONT, ASSY

LOWER, ASSY

REAR, ASSY

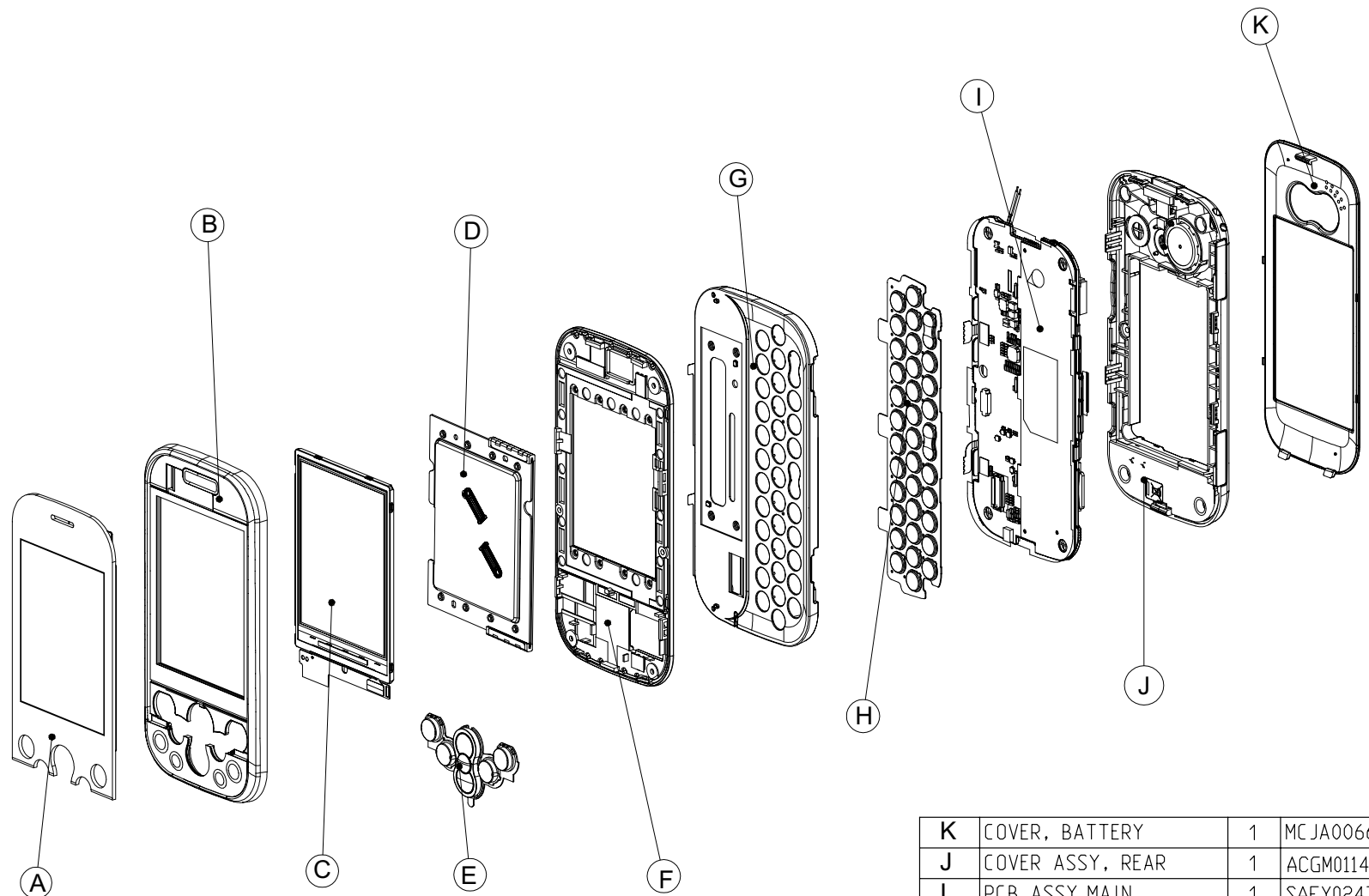
SLIDE, ASSY

TOTAL, ASSY

ADDITION

|     |                            |      |             |        |
|-----|----------------------------|------|-------------|--------|
| 54  | COVER, BATTERY             | 1    | MCJA0066901 |        |
| 53  | TAPE, PROTECTION (REAR)    | 1    | MTAB0239701 |        |
| 52  | WINDOW, CAMERA             | 1    | MWAE0036401 |        |
| 51  | TAPE, CAMERA(W/D)          | 1    | MTAK0012201 |        |
| 50  | DECO, REAR                 | 1    | MDAK0015501 |        |
| 49  | TAPE, DECO                 | 1    | MTAA0161601 |        |
| 48  | CAP, MULTIMEDIA CARD       | 1    | MCCG0013305 |        |
| 47  | CAP, EARPHONE JACK         | 1    | MCCC0056105 |        |
| 46  | PAD, SPEAKER               | 1    | MPBN0056601 |        |
| 45  | ANTENNA, GSM, FIXED        | 1    | SNGF0043301 |        |
| 44  | SPRING, COIL               | 1    | MSDB0001704 |        |
| 43  | PAD (SPEAKER ADD)          | 1    | MPBZ0206803 |        |
| 42  | LOCKER, BATTERY            | 1    | MLEA0046101 |        |
| 41  | SPEAKER                    | 1    | SUSY0024802 |        |
| 40  | PAD, MOTOR                 | 1    | MPBJ0054901 |        |
| 39  | PAD, CAMERA                | 1    | MPBT0059301 |        |
| 38  | COVER, REAR                | 1    | MCJN0086401 |        |
| 37  | SCREW MACHINE, BIND        | 5    | GMEY0009201 |        |
| 36  | PCB ASSY, MAIN             | 1    | SAFY0247502 |        |
| 35  | BUTTON ASSY, MAIN          | 1    | ABGF0005307 |        |
| 34  | CAP, SCREW                 | 3    | MCCO130601  |        |
| 33  | SCREW MACHINE(FOLDER)      | 6    | GMEY0010601 |        |
| 32  | SCREW MACHINE(HINGE)       | 8    | GMZZ0023501 |        |
| 31  | RAIL ASSY, SLIDE           | 1    | ARDY0006105 |        |
| 30  | PCB ASSY, FLEXIBLE(MAIN)   | 1    | SACY0079901 |        |
| 29  | TAPE, PROTECTION(FPCB)     | 1    | MTAB0239601 |        |
| 28  | PCB ASSY, FLEXIBLE(SUB)    | 1    | SACY0079902 |        |
| 27  | BUTTON ASSY, SUB           | 1    | ABGG0004406 |        |
| 26  | PCB ASSY, KEYPAD           | 1    | SAEY0060403 |        |
| 25  | WINDOW, LCD                | 1    | MWAC0101407 |        |
| 24  | TAPE, PROTECTION(W/D)      | 1    | MTAB0239301 |        |
| 23  | FILTER, MIKE               | 1    | MFB00031301 |        |
| 22  | SCREW MACHINE(FOLDER)      | 4    | GMZZ0019001 |        |
| 21  | TAPE, PROTECTION(SIDE BTN) | 1    | MTAB0239101 |        |
| 20  | BUTTON, SIDE(CAMERA)       | 1    | MBJL0060801 |        |
| 19  | BUTTON, SIDE(VOLUME)       | 1    | MBJL0060701 |        |
| 18  | COVER, FRONT               | 1    | MCJK0089501 |        |
| 17  | PAD, SUB CNT.              | 1    | MPBZ0211501 |        |
| 16  | MAGNET                     | 1    | MMAA0000901 |        |
| 15  | PAD, SUB FPCB CNT.         | 1    | MPBZ0206802 |        |
| 14  | PAD, MAGNET                | 1    | MPBZ0206801 |        |
| 13  | STOPPER                    | 4    | MSGY0024601 |        |
| 12  | GUIDE, LEFT                | 1    | MGDA0013901 |        |
| 11  | GUIDE, RIGHT               | 1    | MGDB0008701 |        |
| 10  | COVER, SLIDE(LOWER)        | 1    | MCJV0016401 |        |
| 9   | PAD, LCD                   | 1    | MPBG0079501 |        |
| 8   | TAPE, FLEXIBLE PCB         | 1    | MTAJ0007801 |        |
| 7   | TAPE (RECEIVER)            | 1    | MTAZ0217901 |        |
| 6   | TAPE, PROTECTION(CHIP)     | 1    | MTAB0239302 |        |
| 5   | BUTTON ASSY, SUB           | 1    | ABGG0004904 |        |
| 4   | FILTER, RECEIVER           | 1    | MFB00026701 |        |
| 3   | TAPE, BUTTON               | 1    | MTAG0008101 |        |
| 2   | TAPE, WINDOW               | 1    | MTAD0088901 |        |
| 1   | COVER, SLIDE(UPPER)        | 1    | MCJW0019901 |        |
| NO. | DESCRIPTION                | Q'TY | DRAWING NO. | REMARK |

ASS'Y EXPLODED VIEW



|     |                         |      |             |        |
|-----|-------------------------|------|-------------|--------|
| K   | COVER, BATTERY          | 1    | MCJA0066901 |        |
| J   | COVER ASSY, REAR        | 1    | ACGM0114306 |        |
| I   | PCB ASSY,MAIN           | 1    | SAFY0247555 |        |
| H   | BUTTON ASSY,MAIN        | 1    | ABGF0005307 |        |
| G   | COVER ASSY, FRONT       | 1    | ACGK0114301 |        |
| F   | COVER ASSY, LOWER       | 1    | ACGR0016601 |        |
| E   | BUTTON ASSY,SUB         | 1    | ABGG0004406 |        |
| D   | RAIL ASSY,SLIDE         | 1    | ARDY0006101 |        |
| C   | LCD MODULE              | 1    | SVLM0027802 |        |
| B   | COVER ASSY,SLIDE(UPPER) | 1    | ACGS0027801 |        |
| A   | WINDOW,LCD              | 1    | MWAC0101407 |        |
| NO. | DESCRIPTION             | Q'TY | DRAWING NO. | REMARK |

## 13. EXPLODED VIEW & REPLACEMENT PART LIST

### 13.2 Replacement Parts <Mechanic component>

**Note:** This Chapter is used for reference, Part order is ordered by SBOM standard on GCSC

| Level | Location No. | Description           | Part Number | Spec                                           | Color         | Remark |
|-------|--------------|-----------------------|-------------|------------------------------------------------|---------------|--------|
| 2     | AAAY         | ADDITION              | AAAY0361203 |                                                |               |        |
| 3     | AMBA00       | MANUAL ASSY,OPERATION | AMBA0149202 | GT365 manual assy for ATT                      | WITHOUT COLOR |        |
| 3     | MCJA00       | COVER,BATTERY         | MCJA0066909 | MOLD, PC LUPOY SC-1004A, , , ,                 | Black         | K, 54  |
| 2     | APAY00       | PACKAGE               | APAY0091537 | GT365 BK_ATT new_10EA                          | WITHOUT COLOR |        |
| 3     | APLY00       | PALLET ASSY           | APLY0003703 | TR10_AT&T(10EA)_800EA_Horizontal_Pin Wheel     | WITHOUT COLOR |        |
| 4     | MCJZ00       | COVER                 | MCJZ0059303 | COMPLEX, (empty), , , ,                        | WITHOUT COLOR |        |
| 4     | MPCY00       | PALLET                | MPCY0021101 | COMPLEX, (empty), , , ,                        | Without Color |        |
| 3     | MBAD00       | BAG,VINYL(PE)         | MBAD0005201 | COMPLEX, (empty), , , ,                        | DARK BLUE     |        |
| 3     | MLAJ00       | LABEL,MASTER BOX      | MLAJ0004402 | LABEL,MASTER BOX(for CGR TDR 2VER. mbox_label) | Without Color |        |
| 3     | MLAQ00       | LABEL,UNIT BOX        | MLAQ0012811 | PRINTING, (empty), , , ,                       | METAL SILVER  |        |
| 3     | MLAZ00       | LABEL                 | MLAZ0050901 | PRINTING, (empty), , , ,                       | WITHOUT COLOR |        |
| 2     | APEY         | PHONE                 | APEY0623325 |                                                | Black         |        |
| 3     | ACGM         | COVER ASSY,REAR       | ACGM0114304 | KS360 ORFBK                                    | Black         | J      |
| 4     | MCCC00       | CAP,EARPHONE JACK     | MCCC0056104 | MOLD, Urethane Rubber S190A, , , ,             | Black         | 47     |
| 4     | MCCG00       | CAP,MULTIMEDIA CARD   | MCCG0013304 | MOLD, Urethane Rubber S190A, , , ,             | Black         | 48     |
| 4     | MCJN00       | COVER,REAR            | MCJN0086404 | MOLD, PC LUPOY SC-1004A, , , ,                 | Black         | 38     |
| 4     | MDAK00       | DECO,REAR             | MDAK0015504 | COMPLEX, (empty), , , ,                        | Gray          | 50     |
| 4     | MLAB00       | LABEL,A/S             | MLAB0001102 | C2000 USASV DIA 4.0                            | WHITE         |        |
| 4     | MLEA00       | LOCKER,BATTERY        | MLEA0046104 | MOLD, PC LUPOY SC-1004A, , , ,                 | Black         | 42     |
| 4     | MPBJ00       | PAD,MOTOR             | MPBJ0054901 | COMPLEX, (empty), , , ,                        | Black         | 40     |
| 4     | MPBN00       | PAD,SPEAKER           | MPBN0056601 | COMPLEX, (empty), , , ,                        | Black         | 46     |
| 4     | MPBT00       | PAD,CAMERA            | MPBT0059301 | COMPLEX, (empty), , , ,                        | Black         | 39     |
| 4     | MPBZ00       | PAD                   | MPBZ0206803 | COMPLEX, (empty), , , ,                        | Without Color | 43     |
| 4     | MPBZ01       | PAD                   | MPBZ0206804 | COMPLEX, (empty), , , ,                        | Without Color |        |
| 4     | MSDB00       | SPRING,COIL           | MSDB0001704 | PRESS, STS, , , ,                              | Pearl White   | 44     |

## 13. EXPLODED VIEW & REPLACEMENT PART LIST

| Level | Location No. | Description             | Part Number | Spec                               | Color         | Remark |
|-------|--------------|-------------------------|-------------|------------------------------------|---------------|--------|
| 4     | MTAA00       | TAPE,DECO               | MTAA0161601 | COMPLEX, (empty), , , ,            | Without Color | 49     |
| 4     | MTAB00       | TAPE,PROTECTION         | MTAB0239701 | COMPLEX, (empty), , , ,            | Without Color | 53     |
| 4     | MTAK00       | TAPE,CAMERA             | MTAK0012201 | COMPLEX, (empty), , , ,            | Without Color | 51     |
| 4     | MWAE00       | WINDOW,CAMERA           | MWAE0036401 | CUTTING, PMMA MR 200, , , ,        | Without Color | 52     |
| 3     | ACGQ00       | COVER ASSY,SLIDE        | ACGQ0034404 | QWERTY SLIDE BK                    | BLACK         |        |
| 4     | ABGF00       | BUTTON ASSY,MAIN        | ABGF0005304 | QWERTY ENGLISH BK                  | Black         | H, 35  |
| 4     | ABGG00       | BUTTON ASSY,SUB         | ABGG0004404 | KS360 ORFBK                        | Black         | E, 27  |
| 4     | ACGK00       | COVER ASSY,FRONT        | ACGK0114304 | KS360 ORFBK                        | Black         | G      |
| 5     | MBJL00       | BUTTON,SIDE             | MBJL0060704 | COMPLEX, (empty), , , ,            | Black         | 19     |
| 5     | MBJL01       | BUTTON,SIDE             | MBJL0060804 | COMPLEX, (empty), , , ,            | Black         | 20     |
| 5     | MCJK00       | COVER,FRONT             | MCJK0089504 | MOLD, PC LUPOY SC-1004A, , , ,     | Gray          | 18     |
| 5     | MFBD00       | FILTER,MIKE             | MFBD0031301 | COMPLEX, (empty), , , ,            | Black         | 23     |
| 5     | MTAB01       | TAPE,PROTECTION         | MTAB0239101 | COMPLEX, (empty), , , ,            | Green         | 21, 22 |
| 4     | ACGR00       | COVER ASSY,SLIDE(LOWER) | ACGR0016604 | KS360 ORFBK                        | Black         | F      |
| 5     | MCJV00       | COVER,SLIDE(LOWER)      | MCJV0016404 | COMPLEX, (empty), , , ,            | Gray          | 10     |
| 5     | MGDA00       | GUIDE,LEFT              | MGDA0013904 | MOLD, POM LUCEL N109-LD, , , ,     | Gray          | 12     |
| 5     | MGDB00       | GUIDE,RIGHT             | MGDB0008704 | MOLD, POM LUCEL N109-LD, , , ,     | Gray          | 11     |
| 5     | MMAA00       | MAGNET,SWITCH           | MMAA0000901 | G7000 12x2x0.7t                    | Metal Silver  | 16     |
| 5     | MPBZ00       | PAD                     | MPBZ0206801 | COMPLEX, (empty), , , ,            | Without Color | 14     |
| 5     | MPBZ008      | PAD                     | MPBZ0211501 | PRESS, NS, , , ,                   | Black         | 17     |
| 5     | MPBZ01       | PAD                     | MPBZ0206802 | COMPLEX, (empty), , , ,            | Without Color | 15     |
| 5     | MSGY00       | STOPPER                 | MSGY0024604 | MOLD, Urethane Rubber S190A, , , , | Gray          | 13     |
| 4     | ACGS00       | COVER ASSY,SLIDE(UPPER) | ACGS0020604 | KS360 ORFBK                        | Black         | B      |
| 5     | ABGG00       | BUTTON ASSY,SUB         | ABGG0004902 | KS360 SFRAQ :SEND,END KEY          | Black         | 5      |
| 5     | MCJW00       | COVER,SLIDE(UPPER)      | MCJW0019904 | MOLD, PC LUPOY SC-1004A, , , ,     | Black         | 1      |
| 5     | MFBB00       | FILTER,RECEIVER         | MFBB0026701 | COMPLEX, (empty), , , ,            | Black         | 4      |
| 5     | MPBG00       | PAD,LCD                 | MPBG0079501 | COMPLEX, (empty), , , ,            | Black         | 9      |
| 5     | MTAD00       | TAPE,WINDOW             | MTAD0088901 | COMPLEX, (empty), , , ,            | Without Color | 2      |

### 13. EXPLODED VIEW & REPLACEMENT PART LIST

| Level | Location No. | Description        | Part Number | Spec                                                                                           | Color         | Remark |
|-------|--------------|--------------------|-------------|------------------------------------------------------------------------------------------------|---------------|--------|
| 5     | MTAG00       | TAPE,BUTTON        | MTAG0008101 | COMPLEX, (empty), , , , ,                                                                      | Without Color | 3      |
| 5     | MTAJ00       | TAPE,FLEXIBLE PCB  | MTAJ0007801 | COMPLEX, (empty), , , , ,                                                                      | Without Color | 8      |
| 5     | MTAZ00       | TAPE               | MTAZ0217901 | PRESS, NS, , , , ,                                                                             | Without Color | 7      |
| 4     | ARDY00       | RAIL ASSY,SLIDE    | ARDY0006104 | KS360 ORFBK                                                                                    | Gray          | D, 31  |
| 4     | GMEY00       | SCREW MACHINE,BIND | GMEY0010601 | 1.4 mm,2.5 mm,MSWR3(BK) ,N ,+ ,NYLOK                                                           | Black         | 33     |
| 4     | GMZZ00       | SCREW MACHINE      | GMZZ0019001 | 3.5 mm,1.5 mm,MSWR3 ,N ,+ ,-,NYLOK Coating                                                     | Silver        |        |
| 4     | GMZZ01       | SCREW MACHINE      | GMZZ0023501 | 1.4 mm,1.5 mm,MSWR3(FN) ,B ,+ ,-, , , ,[empty] ,[empty] , , ,[empty] ,SILVER ,[empty] ,[empty] | Silver        | 32     |
| 4     | MCCH00       | CAP,SCREW          | MCCH0130604 | MOLD, PC LUPOY SC-1004A, , , , ,                                                               | Gray          | 34     |
| 4     | MPBF00       | PAD,FLEXIBLE PCB   | MPBF0041801 | COMPLEX, (empty), , , , ,                                                                      | WITHOUT COLOR |        |
| 4     | MTAB00       | TAPE,PROTECTION    | MTAB0239301 | COMPLEX, (empty), , , , ,                                                                      | Without Color | 6, 24  |
| 4     | MTAB01       | TAPE,PROTECTION    | MTAB0239601 | COMPLEX, (empty), , , , ,                                                                      | Green         | 29     |
| 4     | MTAZ00       | TAPE               | MTAZ0214201 | COMPLEX, (empty), , , , ,                                                                      | Green         |        |
| 4     | MWAC00       | WINDOW,LCD         | MWAC0101401 | CUTTING, PMMA MR 200, 1.2, , , ,                                                               | Without Color | A, 25  |
| 6     | ADCA00       | DOME ASSY,METAL    | ADCA0082001 |                                                                                                | White         |        |
| 3     | GMEY00       | SCREW MACHINE,BIND | GMEY0009201 | 1.4 mm,3.5 mm,MSWR3(BK) ,B ,+ ,HEAD D=2.7mm                                                    | Black         | 37     |
| 3     | MLAK00       | LABEL,MODEL        | MLAK0018616 | PRINTING, (empty), , , , ,                                                                     | WITHOUT COLOR |        |
| 5     | ACKA00       | CAN ASSY,SHIELD    | ACKA0009101 |                                                                                                | Without Color |        |
| 6     | MCBA00       | CAN,SHIELD         | MCBA0033101 | PRESS, STS, , , , ,                                                                            | Silver        |        |
| 6     | MGAD00       | GASKET,SHIELD FORM | MGAD0171801 | COMPLEX, (empty), , , , ,                                                                      | Silver        |        |
| 6     | MIDZ00       | INSULATOR          | MIDZ0178701 | COMPLEX, (empty), , , , ,                                                                      | Without Color |        |
| 5     | ACMY00       | CAMERA ASSY        | ACMY0006403 |                                                                                                | Without Color |        |
| 6     | ABFZ         | BRACKET ASSY       | ABFZ0014401 |                                                                                                | Without Color |        |
| 7     | MBFP00       | BRACKET,CAMERA     | MBFP0009201 | MOLD, PC LUPOY SC-1004A, , , , ,                                                               | Gray          |        |
| 7     | MTAK00       | TAPE,CAMERA        | MTAK0012601 | COMPLEX, (empty), , , , ,                                                                      | Without Color |        |
| 7     | MTAZ00       | TAPE               | MTAZ0214701 | COMPLEX, (empty), , , , ,                                                                      | Without Color |        |
| 5     | ADCA         | DOME ASSY,METAL    | ADCA0082102 | GT365 difference force dome                                                                    | WHITE         |        |

## 13. EXPLODED VIEW & REPLACEMENT PART LIST

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| Level | Location No. | Description | Part Number | Spec              | Color         | Remark |
|-------|--------------|-------------|-------------|-------------------|---------------|--------|
| 5     | MLAZ00       | LABEL       | MLAZ0038301 | PID Label 4 Array | WITHOUT COLOR |        |

## 13. EXPLODED VIEW & REPLACEMENT PART LIST

### <Main component>

**Note:** This Chapter is used for reference, Part order is ordered by SBOM standard on GCSC

| Level | Location No. | Description                  | Part Number | Spec                                                                                 | Color | Remark |
|-------|--------------|------------------------------|-------------|--------------------------------------------------------------------------------------|-------|--------|
| 1     |              | GSM(SLIDE)                   | TGLL0022301 |                                                                                      | BLACK |        |
| 4     | SNGF00       | ANTENNA,GSM,FIXED            | SNGF0036402 | 3.0 ,-2.0 dBd,, ,internal, GSM900/1800/1900 , , TRIPLE , - 2.0 ,50 ,3.0              |       | 45     |
| 4     | SUSY00       | SPEAKER                      | SUSY0024802 | PIN ,8 ohm,91 dB,16 mm,3.4T spring contact , , , , , , , , , [empty]                 |       | 41     |
| 4     | SACY         | PCB ASSY,FLEXIBLE            | SACY0079903 |                                                                                      |       | 28     |
| 5     | SACE00       | PCB ASSY,FLEXIBLE,SMT        | SACE0074401 |                                                                                      |       |        |
| 6     | SACC00       | PCB ASSY,FLEXIBLE,SMT BOTTOM | SACC0050201 |                                                                                      |       |        |
| 7     | ENBY00       | CONNECTOR,BOARD TO BOARD     | ENBY0035901 | 40 PIN,0.4 mm,ETC , , H=1.0, Plug                                                    |       |        |
| 6     | SACD00       | PCB ASSY,FLEXIBLE,SMT TOP    | SACD0063201 |                                                                                      |       |        |
| 7     | ENBY00       | CONNECTOR,BOARD TO BOARD     | ENBY0035901 | 40 PIN,0.4 mm,ETC , , H=1.0, Plug                                                    |       |        |
| 6     | SPCY         | PCB,FLEXIBLE                 | SPCY0136801 | POLYI ,2 mm,MULTI-2 , , , , , , , , , ,                                              |       |        |
| 4     | SACY01       | PCB ASSY,FLEXIBLE            | SACY0079902 |                                                                                      |       | 30     |
| 5     | SACE00       | PCB ASSY,FLEXIBLE,SMT        | SACE0074402 |                                                                                      |       |        |
| 6     | SACC00       | PCB ASSY,FLEXIBLE,SMT BOTTOM | SACC0050202 |                                                                                      |       |        |
| 7     | ECCH         | CAP,CERAMIC,CHIP             | ECCH0000122 | 47 pF,50V,J,NP0,TC,1005,R/TP                                                         |       |        |
| 7     | ECCH00       | CAP,CERAMIC,CHIP             | ECCH0000122 | 47 pF,50V,J,NP0,TC,1005,R/TP                                                         |       |        |
| 7     | ENBY         | CONNECTOR,BOARD TO BOARD     | ENBY0045301 | 10 PIN,0.4 mm,STRAIGHT , , , , , , , , , ,0.40MM ,STRAIGHT ,FEMALE ,SMD ,[empty] , , |       |        |
| 7     | ERHZ         | RES,CHIP,MAKER               | ERHZ0000401 | 0 ohm,1/16W ,J ,1005 ,R/TP                                                           |       |        |
| 7     | ERHZ00       | RES,CHIP,MAKER               | ERHZ0000401 | 0 ohm,1/16W ,J ,1005 ,R/TP                                                           |       |        |
| 6     | SACD00       | PCB ASSY,FLEXIBLE,SMT TOP    | SACD0063202 |                                                                                      |       |        |
| 7     | ENBY00       | CONNECTOR,BOARD TO BOARD     | ENBY0045201 | 10 PIN,0.4 mm,STRAIGHT , , , , , , , , , ,0.40MM ,STRAIGHT ,MALE ,SMD ,[empty] , ,   |       |        |
| 6     | SPCY         | PCB,FLEXIBLE                 | SPCY0143101 | POLYI ,0.2 mm,MULTI-2 , , , , , , , , , ,                                            |       |        |
| 4     | SAEY00       | PCB ASSY,KEYPAD              | SAEY0060403 |                                                                                      |       | 26     |
| 5     | SAEB00       | PCB ASSY,KEYPAD,INSERT       | SAEB0023502 |                                                                                      |       |        |
| 5     | SAEE00       | PCB ASSY,KEYPAD,SMT          | SAEE0027603 |                                                                                      |       |        |

## 13. EXPLODED VIEW & REPLACEMENT PART LIST

| Level | Location No. | Description                | Part Number | Spec                                                                                     | Color         | Remark |
|-------|--------------|----------------------------|-------------|------------------------------------------------------------------------------------------|---------------|--------|
| 6     | SAEC00       | PCB ASSY,KEYPAD,SMT BOTTOM | SAEC0026103 |                                                                                          |               |        |
| 7     | C100         | CAP,CHIP,MAKER             | ECZH0003103 | 0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP                                                       |               |        |
| 7     | C103         | CAP,CERAMIC,CHIP           | ECCH0004904 | 1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP                                                        |               |        |
| 7     | C104         | CAP,CHIP,MAKER             | ECZH0001215 | 1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP                                                         |               |        |
| 7     | C105         | CAP,CERAMIC,CHIP           | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                             |               |        |
| 7     | C106         | CAP,CERAMIC,CHIP           | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                             |               |        |
| 7     | C107         | NOT ASSEMBLE               | 99999999999 | NOT ASSEMBLE                                                                             | Color Unfixed |        |
| 7     | C108         | CAP,CERAMIC,CHIP           | ECCH0000120 | 39 pF,50V,J,NP0,TC,1005,R/TP                                                             |               |        |
| 7     | C109         | CAP,CERAMIC,CHIP           | ECCH0000120 | 39 pF,50V,J,NP0,TC,1005,R/TP                                                             |               |        |
| 7     | C110         | CAP,CERAMIC,CHIP           | ECCH0000120 | 39 pF,50V,J,NP0,TC,1005,R/TP                                                             |               |        |
| 7     | C111         | NOT ASSEMBLE               | 99999999999 | NOT ASSEMBLE                                                                             | Color Unfixed |        |
| 7     | C112         | CAP,CERAMIC,CHIP           | ECCH0000120 | 39 pF,50V,J,NP0,TC,1005,R/TP                                                             |               |        |
| 7     | C113         | CAP,CHIP,MAKER             | ECZH0001215 | 1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP                                                         |               |        |
| 7     | C114         | CAP,CHIP,MAKER             | ECZH0003103 | 0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP                                                       |               |        |
| 7     | C115         | CAP,CERAMIC,CHIP           | ECCH0004904 | 1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP                                                        |               |        |
| 7     | CN100        | CONNECTOR,FFC/FPC          | ENQY0014301 | 37 PIN,0.3 mm,STRAIGHT , , , , ,0.30MM ,FFC/FPC ,STRAIGHT ,BOTH ,SMD ,[empty] ,[empty] , |               |        |
| 7     | CN101        | CONNECTOR,BOARD TO BOARD   | ENBY0045301 | 10 PIN,0.4 mm,STRAIGHT , , , , ,0.40MM ,STRAIGHT ,FEMALE ,SMD ,[empty] , ,               |               |        |
| 7     | CN102        | CONNECTOR,BOARD TO BOARD   | ENBY0036001 | 40 PIN,0.4 mm,ETC , , H=1.0, Socket                                                      |               |        |
| 7     | Q100         | TR,BJT,NPN                 | EQBN0007101 | EMT3 ,0.15 W,R/TP ,LOW FREQUENCY                                                         |               |        |
| 7     | R100         | RES,CHIP,MAKER             | ERHZ0000406 | 100 Kohm,1/16W ,J ,1005 ,R/TP                                                            |               |        |
| 7     | R101         | PCB ASSY,MAIN,PAD SHORT    | SAFP0000501 |                                                                                          |               |        |
| 7     | R102         | PCB ASSY,MAIN,PAD SHORT    | SAFP0000501 |                                                                                          |               |        |
| 7     | R110         | RES,CHIP,MAKER             | ERHZ0000404 | 1 Kohm,1/16W ,J ,1005 ,R/TP                                                              |               |        |
| 7     | R111         | RES,CHIP,MAKER             | ERHZ0000405 | 10 Kohm,1/16W ,J ,1005 ,R/TP                                                             |               |        |
| 7     | R112         | RES,CHIP,MAKER             | ERHZ0000420 | 150 ohm,1/16W ,J ,1005 ,R/TP                                                             |               |        |
| 7     | R114         | PCB ASSY,MAIN,PAD OPEN     | SAFO0000501 | 0OHM_1005_DNI                                                                            |               |        |
| 7     | R115         | PCB ASSY,MAIN,PAD SHORT    | SAFP0000501 |                                                                                          |               |        |
| 7     | R116         | RES,CHIP,MAKER             | ERHZ0000406 | 100 Kohm,1/16W ,J ,1005 ,R/TP                                                            |               |        |



## 13. EXPLODED VIEW & REPLACEMENT PART LIST

| Level | Location No. | Description              | Part Number | Spec                                                                | Color | Remark |
|-------|--------------|--------------------------|-------------|---------------------------------------------------------------------|-------|--------|
| 5     | SAFC         | PCB ASSY,MAIN,SMT BOTTOM | SAFC0104203 |                                                                     |       |        |
| 6     | ANT600       | ANTENNA,GSM,FIXED        | SNGF0036701 | 3.0 ,-2.0 dBd,, ,internal, bluetooth chip ,; ,SINGLE ,-2.0 ,50 ,3.0 |       |        |
| 6     | BAT500       | BATTERY,CELL,LITHIUM     | SBCL0001701 | 2 V,0.5 mAh,CYLINDER ,Reflow type BB, Max T 1.67, phi 4.8, Pb-Free  |       |        |
| 6     | C100         | CAP,CERAMIC,CHIP         | ECCH0005603 | 2.2 uF,10V ,K ,X5R ,TC ,1608 ,R/TP                                  |       |        |
| 6     | C101         | CAP,CERAMIC,CHIP         | ECCH0005603 | 2.2 uF,10V ,K ,X5R ,TC ,1608 ,R/TP                                  |       |        |
| 6     | C102         | CAP,CERAMIC,CHIP         | ECCH0000155 | 10 nF,16V,K,X7R,HD,1005,R/TP                                        |       |        |
| 6     | C103         | CAP,CERAMIC,CHIP         | ECCH0000129 | 120 pF,50V,J,NP0,TC,1005,R/TP                                       |       |        |
| 6     | C104         | CAP,CHIP,MAKER           | ECZH0003103 | 0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP                                  |       |        |
| 6     | C105         | CAP,CERAMIC,CHIP         | ECCH0000155 | 10 nF,16V,K,X7R,HD,1005,R/TP                                        |       |        |
| 6     | C106         | CAP,CERAMIC,CHIP         | ECCH0004904 | 1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP                                   |       |        |
| 6     | C107         | CAP,CERAMIC,CHIP         | ECCH0004904 | 1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP                                   |       |        |
| 6     | C108         | CAP,CHIP,MAKER           | ECZH0001216 | 220 nF,10V ,K ,X5R ,TC ,1005 ,R/TP                                  |       |        |
| 6     | C109         | CAP,CHIP,MAKER           | ECZH0001215 | 1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP                                    |       |        |
| 6     | C110         | CAP,CHIP,MAKER           | ECZH0001216 | 220 nF,10V ,K ,X5R ,TC ,1005 ,R/TP                                  |       |        |
| 6     | C111         | CAP,CHIP,MAKER           | ECZH0001215 | 1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP                                    |       |        |
| 6     | C112         | CAP,CHIP,MAKER           | ECZH0003103 | 0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP                                  |       |        |
| 6     | C113         | CAP,CHIP,MAKER           | ECZH0003103 | 0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP                                  |       |        |
| 6     | C114         | CAP,CHIP,MAKER           | ECZH0003103 | 0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP                                  |       |        |
| 6     | C115         | CAP,CERAMIC,CHIP         | ECCH0005603 | 2.2 uF,10V ,K ,X5R ,TC ,1608 ,R/TP                                  |       |        |
| 6     | C116         | CAP,CERAMIC,CHIP         | ECCH0005603 | 2.2 uF,10V ,K ,X5R ,TC ,1608 ,R/TP                                  |       |        |
| 6     | C117         | CAP,CHIP,MAKER           | ECZH0003103 | 0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP                                  |       |        |
| 6     | C118         | CAP,CERAMIC,CHIP         | ECCH0000120 | 39 pF,50V,J,NP0,TC,1005,R/TP                                        |       |        |
| 6     | C119         | CAP,CERAMIC,CHIP         | ECCH0000155 | 10 nF,16V,K,X7R,HD,1005,R/TP                                        |       |        |
| 6     | C120         | CAP,CERAMIC,CHIP         | ECCH0000155 | 10 nF,16V,K,X7R,HD,1005,R/TP                                        |       |        |
| 6     | C121         | CAP,CERAMIC,CHIP         | ECCH0000155 | 10 nF,16V,K,X7R,HD,1005,R/TP                                        |       |        |
| 6     | C122         | CAP,CERAMIC,CHIP         | ECCH0004904 | 1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP                                   |       |        |
| 6     | C123         | CAP,CERAMIC,CHIP         | ECCH0004904 | 1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP                                   |       |        |
| 6     | C124         | CAP,CERAMIC,CHIP         | ECCH0004904 | 1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP                                   |       |        |
| 6     | C125         | CAP,CERAMIC,CHIP         | ECCH0004904 | 1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP                                   |       |        |
| 6     | C126         | CAP,CHIP,MAKER           | ECZH0001216 | 220 nF,10V ,K ,X5R ,TC ,1005 ,R/TP                                  |       |        |

### 13. EXPLODED VIEW & REPLACEMENT PART LIST

| Level | Location No. | Description      | Part Number | Spec                                                                                                           | Color | Remark |
|-------|--------------|------------------|-------------|----------------------------------------------------------------------------------------------------------------|-------|--------|
| 6     | C127         | CAP,CERAMIC,CHIP | ECCH0004904 | 1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP                                                                              |       |        |
| 6     | C128         | CAP,CHIP,MAKER   | ECZH0000813 | 100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP                                                                             |       |        |
| 6     | C129         | CAP,CHIP,MAKER   | ECZH0003103 | 0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP                                                                             |       |        |
| 6     | C130         | CAP,CHIP,MAKER   | ECZH0003103 | 0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP                                                                             |       |        |
| 6     | C131         | CAP,CHIP,MAKER   | ECZH0003103 | 0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP                                                                             |       |        |
| 6     | C132         | CAP,CHIP,MAKER   | ECZH0003103 | 0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP                                                                             |       |        |
| 6     | C133         | CAP,CHIP,MAKER   | ECZH0003103 | 0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP                                                                             |       |        |
| 6     | C134         | CAP,CHIP,MAKER   | ECZH0003103 | 0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP                                                                             |       |        |
| 6     | C135         | CAP,CHIP,MAKER   | ECZH0003103 | 0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP                                                                             |       |        |
| 6     | C136         | CAP,CHIP,MAKER   | ECZH0003103 | 0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP                                                                             |       |        |
| 6     | C137         | CAP,CHIP,MAKER   | ECZH0003103 | 0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP                                                                             |       |        |
| 6     | C138         | CAP,CHIP,MAKER   | ECZH0003103 | 0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP                                                                             |       |        |
| 6     | C139         | CAP,CERAMIC,CHIP | ECCH0000393 | 22000000 pF,6.3V ,M ,X5R ,HD ,2012 ,R/TP , , ,[empty]<br>,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,1.25 mm |       |        |
| 6     | C140         | CAP,CERAMIC,CHIP | ECCH0005604 | 10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty]<br>,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm  |       |        |
| 6     | C141         | CAP,CERAMIC,CHIP | ECCH0000393 | 22000000 pF,6.3V ,M ,X5R ,HD ,2012 ,R/TP , , ,[empty]<br>,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,1.25 mm |       |        |
| 6     | C143         | CAP,CERAMIC,CHIP | ECCH0005604 | 10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty]<br>,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm  |       |        |
| 6     | C144         | CAP,CERAMIC,CHIP | ECCH0000113 | 18 pF,50V,J,NP0,TC,1005,R/TP                                                                                   |       |        |
| 6     | C145         | CAP,CERAMIC,CHIP | ECCH0000113 | 18 pF,50V,J,NP0,TC,1005,R/TP                                                                                   |       |        |
| 6     | C146         | CAP,CHIP,MAKER   | ECZH0001216 | 220 nF,10V ,K ,X5R ,TC ,1005 ,R/TP                                                                             |       |        |
| 6     | C147         | CAP,CERAMIC,CHIP | ECCH0004904 | 1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP                                                                              |       |        |
| 6     | C150         | CAP,CERAMIC,CHIP | ECCH0000120 | 39 pF,50V,J,NP0,TC,1005,R/TP                                                                                   |       |        |
| 6     | C151         | CAP,CERAMIC,CHIP | ECCH0000120 | 39 pF,50V,J,NP0,TC,1005,R/TP                                                                                   |       |        |
| 6     | C152         | CAP,CERAMIC,CHIP | ECCH0000120 | 39 pF,50V,J,NP0,TC,1005,R/TP                                                                                   |       |        |
| 6     | C153         | CAP,CERAMIC,CHIP | ECCH0000120 | 39 pF,50V,J,NP0,TC,1005,R/TP                                                                                   |       |        |
| 6     | C200         | CAP,CHIP,MAKER   | ECZH0003103 | 0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP                                                                             |       |        |
| 6     | C201         | CAP,CHIP,MAKER   | ECZH0000813 | 100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP                                                                             |       |        |
| 6     | C202         | CAP,CHIP,MAKER   | ECZH0003103 | 0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP                                                                             |       |        |
| 6     | C203         | CAP,CERAMIC,CHIP | ECCH0005604 | 10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , ,[empty]<br>,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,0.8 mm  |       |        |
| 6     | C204         | CAP,CERAMIC,CHIP | ECCH0000120 | 39 pF,50V,J,NP0,TC,1005,R/TP                                                                                   |       |        |
| 6     | C205         | CAP,CHIP,MAKER   | ECZH0000901 | 24 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP                                                                              |       |        |

## 13. EXPLODED VIEW & REPLACEMENT PART LIST

| Level | Location No. | Description      | Part Number | Spec                                                                                                                | Color | Remark |
|-------|--------------|------------------|-------------|---------------------------------------------------------------------------------------------------------------------|-------|--------|
| 6     | C206         | CAP,CHIP,MAKER   | ECZH0003103 | 0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP                                                                                  |       |        |
| 6     | C207         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                                        |       |        |
| 6     | C208         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                                        |       |        |
| 6     | C209         | CAP,CHIP,MAKER   | ECZH0003503 | 1 uF,25V ,K ,X5R ,HD ,1608 ,R/TP                                                                                    |       |        |
| 6     | C210         | CAP,CHIP,MAKER   | ECZH0003503 | 1 uF,25V ,K ,X5R ,HD ,1608 ,R/TP                                                                                    |       |        |
| 6     | C211         | CAP,CHIP,MAKER   | ECZH0001215 | 1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP                                                                                    |       |        |
| 6     | C212         | CAP,CHIP,MAKER   | ECZH0001215 | 1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP                                                                                    |       |        |
| 6     | C213         | CAP,CHIP,MAKER   | ECZH0001215 | 1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP                                                                                    |       |        |
| 6     | C214         | CAP,CERAMIC,CHIP | ECCH0000120 | 39 pF,50V,J,NP0,TC,1005,R/TP                                                                                        |       |        |
| 6     | C215         | CAP,CHIP,MAKER   | ECZH0001215 | 1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP                                                                                    |       |        |
| 6     | C216         | CAP,CHIP,MAKER   | ECZH0003503 | 1 uF,25V ,K ,X5R ,HD ,1608 ,R/TP                                                                                    |       |        |
| 6     | C217         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                                        |       |        |
| 6     | C218         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                                        |       |        |
| 6     | C221         | CAP,CERAMIC,CHIP | ECCH0005604 | 10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , , [empty]<br>,[empty] , [empty] , [empty] , [empty] , [empty] , 0.8 mm |       |        |
| 6     | C222         | CAP,CHIP,MAKER   | ECZH0001215 | 1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP                                                                                    |       |        |
| 6     | C223         | CAP,CERAMIC,CHIP | ECCH0000120 | 39 pF,50V,J,NP0,TC,1005,R/TP                                                                                        |       |        |
| 6     | C224         | CAP,CERAMIC,CHIP | ECCH0000120 | 39 pF,50V,J,NP0,TC,1005,R/TP                                                                                        |       |        |
| 6     | C225         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                                        |       |        |
| 6     | C226         | CAP,CERAMIC,CHIP | ECCH0005604 | 10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , , [empty]<br>,[empty] , [empty] , [empty] , [empty] , [empty] , 0.8 mm |       |        |
| 6     | C301         | CAP,CHIP,MAKER   | ECZH0001215 | 1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP                                                                                    |       |        |
| 6     | C302         | CAP,CHIP,MAKER   | ECZH0001215 | 1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP                                                                                    |       |        |
| 6     | C304         | CAP,CERAMIC,CHIP | ECCH0004904 | 1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP                                                                                   |       |        |
| 6     | C305         | CAP,CERAMIC,CHIP | ECCH0004904 | 1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP                                                                                   |       |        |
| 6     | C308         | CAP,CERAMIC,CHIP | ECCH0004904 | 1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP                                                                                   |       |        |
| 6     | C309         | CAP,CERAMIC,CHIP | ECCH0004904 | 1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP                                                                                   |       |        |
| 6     | C311         | CAP,CERAMIC,CHIP | ECCH0004904 | 1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP                                                                                   |       |        |
| 6     | C312         | CAP,CERAMIC,CHIP | ECCH0004904 | 1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP                                                                                   |       |        |
| 6     | C315         | CAP,CERAMIC,CHIP | ECCH0004904 | 1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP                                                                                   |       |        |
| 6     | C425         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                                        |       |        |
| 6     | C426         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                                        |       |        |
| 6     | C427         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                                        |       |        |

### 13. EXPLODED VIEW & REPLACEMENT PART LIST

| Level | Location No. | Description      | Part Number | Spec                                                                                                          | Color | Remark |
|-------|--------------|------------------|-------------|---------------------------------------------------------------------------------------------------------------|-------|--------|
| 6     | C500         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C501         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C502         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C503         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C504         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C505         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C506         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C507         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C508         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C509         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C510         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C511         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C512         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C513         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C514         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C515         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C516         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |

## 13. EXPLODED VIEW & REPLACEMENT PART LIST

| Level | Location No. | Description      | Part Number | Spec                                                                                                          | Color | Remark |
|-------|--------------|------------------|-------------|---------------------------------------------------------------------------------------------------------------|-------|--------|
| 6     | C517         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C518         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C519         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C520         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C521         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C522         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C523         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C524         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C525         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C526         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                                  |       |        |
| 6     | C527         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                                  |       |        |
| 6     | C528         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                                  |       |        |
| 6     | C529         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                                  |       |        |
| 6     | C530         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                                  |       |        |
| 6     | C531         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                                  |       |        |
| 6     | C532         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                                  |       |        |
| 6     | C533         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                                  |       |        |
| 6     | C534         | CAP,CERAMIC,CHIP | ECCH0004904 | 1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP                                                                             |       |        |
| 6     | C535         | CAP,CERAMIC,CHIP | ECCH0004904 | 1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP                                                                             |       |        |
| 6     | C536         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C537         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |

### 13. EXPLODED VIEW & REPLACEMENT PART LIST

| Level | Location No. | Description      | Part Number | Spec                                                                                                          | Color | Remark |
|-------|--------------|------------------|-------------|---------------------------------------------------------------------------------------------------------------|-------|--------|
| 6     | C538         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C539         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C540         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C541         | CAP,CERAMIC,CHIP | ECCH0010501 | 7.5 pF,50V ,D ,X7R ,TC ,1005 ,R/TP ,; ,C0G TYPE(No X7R) ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] ,[empty] |       |        |
| 6     | C542         | CAP,CHIP,MAKER   | ECZH0000813 | 100 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP                                                                            |       |        |
| 6     | C543         | CAP,CHIP,MAKER   | ECZH0001216 | 220 nF,10V ,K ,X5R ,TC ,1005 ,R/TP                                                                            |       |        |
| 6     | C544         | CAP,CERAMIC,CHIP | ECCH0000122 | 47 pF,50V,J,NP0,TC,1005,R/TP                                                                                  |       |        |
| 6     | C545         | CAP,CERAMIC,CHIP | ECCH0000122 | 47 pF,50V,J,NP0,TC,1005,R/TP                                                                                  |       |        |
| 6     | C547         | CAP,CERAMIC,CHIP | ECCH0000115 | 22 pF,50V,J,NP0,TC,1005,R/TP                                                                                  |       |        |
| 6     | C548         | CAP,CERAMIC,CHIP | ECCH0000143 | 1 nF,50V,K,X7R,HD,1005,R/TP                                                                                   |       |        |
| 6     | C549         | CAP,CERAMIC,CHIP | ECCH0004904 | 1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP                                                                             |       |        |
| 6     | C601         | CAP,CHIP,MAKER   | ECZH0003103 | 0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP                                                                            |       |        |
| 6     | C602         | CAP,CERAMIC,CHIP | ECCH0004904 | 1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP                                                                             |       |        |
| 6     | C603         | CAP,CERAMIC,CHIP | ECCH0000179 | 22 nF,16V ,K ,X5R ,HD ,1005 ,R/TP                                                                             |       |        |
| 6     | C605         | CAP,CERAMIC,CHIP | ECCH0000112 | 15 pF,50V,J,NP0,TC,1005,R/TP                                                                                  |       |        |
| 6     | C606         | CAP,CERAMIC,CHIP | ECCH0000112 | 15 pF,50V,J,NP0,TC,1005,R/TP                                                                                  |       |        |
| 6     | C607         | CAP,CHIP,MAKER   | ECZH0003103 | 0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP                                                                            |       |        |
| 6     | C608         | CAP,CERAMIC,CHIP | ECCH0000198 | 2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP                                                                           |       |        |
| 6     | C609         | CAP,CERAMIC,CHIP | ECCH0000112 | 15 pF,50V,J,NP0,TC,1005,R/TP                                                                                  |       |        |
| 6     | C610         | CAP,CERAMIC,CHIP | ECCH0000112 | 15 pF,50V,J,NP0,TC,1005,R/TP                                                                                  |       |        |
| 6     | C611         | CAP,CERAMIC,CHIP | ECCH0000163 | 47 nF,10V,K,X5R,HD,1005,R/TP                                                                                  |       |        |
| 6     | C612         | CAP,CHIP,MAKER   | ECZH0001216 | 220 nF,10V ,K ,X5R ,TC ,1005 ,R/TP                                                                            |       |        |
| 6     | C613         | CAP,CERAMIC,CHIP | ECCH0000143 | 1 nF,50V,K,X7R,HD,1005,R/TP                                                                                   |       |        |
| 6     | C614         | CAP,CERAMIC,CHIP | ECCH0000155 | 10 nF,16V,K,X7R,HD,1005,R/TP                                                                                  |       |        |
| 6     | C615         | CAP,CERAMIC,CHIP | ECCH0000143 | 1 nF,50V,K,X7R,HD,1005,R/TP                                                                                   |       |        |
| 6     | C616         | CAP,CHIP,MAKER   | ECZH0001126 | 820 pF,50V ,K ,X7R ,HD ,1005 ,R/TP                                                                            |       |        |
| 6     | C617         | CAP,CHIP,MAKER   | ECZH0001126 | 820 pF,50V ,K ,X7R ,HD ,1005 ,R/TP                                                                            |       |        |
| 6     | C618         | CAP,CERAMIC,CHIP | ECCH0000112 | 15 pF,50V,J,NP0,TC,1005,R/TP                                                                                  |       |        |

# 13. EXPLODED VIEW & REPLACEMENT PART LIST

| Level | Location No. | Description              | Part Number | Spec                                                                                                              | Color | Remark |
|-------|--------------|--------------------------|-------------|-------------------------------------------------------------------------------------------------------------------|-------|--------|
| 6     | C619         | CAP,CERAMIC,CHIP         | ECCH0000112 | 15 pF,50V,J,NP0,TC,1005,R/TP                                                                                      |       |        |
| 6     | C621         | CAP,CHIP,MAKER           | ECZH0000822 | 1.5 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP                                                                                |       |        |
| 6     | C622         | CAP,CHIP,MAKER           | ECZH0000830 | 33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP                                                                                 |       |        |
| 6     | C623         | CAP,CERAMIC,CHIP         | ECCH0000198 | 2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP                                                                               |       |        |
| 6     | C624         | CAP,CHIP,MAKER           | ECZH0003103 | 0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP                                                                                |       |        |
| 6     | C626         | CAP,CERAMIC,CHIP         | ECCH0000198 | 2.2 uF,6.3V ,M ,X5R ,TC ,1005 ,R/TP                                                                               |       |        |
| 6     | C627         | CAP,CHIP,MAKER           | ECZH0000830 | 33 pF,50V ,J ,NP0 ,TC ,1005 ,R/TP                                                                                 |       |        |
| 6     | C628         | CAP,CERAMIC,CHIP         | ECCH0005604 | 10000000 pF,6.3V ,M ,X5R ,TC ,1608 ,R/TP , , [empty]<br>,[empty] , [empty] , [empty] , [empty] , [empty] , 0.8 mm |       |        |
| 6     | C629         | CAP,CHIP,MAKER           | ECZH0001215 | 1 uF,10V ,K ,X5R ,TC ,1005 ,R/TP                                                                                  |       |        |
| 6     | C630         | CAP,CERAMIC,CHIP         | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                                      |       |        |
| 6     | C631         | CAP,CERAMIC,CHIP         | ECCH0000107 | 6 pF,50V,D,NP0,TC,1005,R/TP                                                                                       |       |        |
| 6     | C632         | CAP,CERAMIC,CHIP         | ECCH0000115 | 22 pF,50V,J,NP0,TC,1005,R/TP                                                                                      |       |        |
| 6     | C633         | CAP,CHIP,MAKER           | ECZH0001002 | 0.5 pF,50V ,B ,NP0 ,TC ,1005 ,R/TP                                                                                |       |        |
| 6     | C634         | CAP,CHIP,MAKER           | ECZH0001002 | 0.5 pF,50V ,B ,NP0 ,TC ,1005 ,R/TP                                                                                |       |        |
| 6     | C635         | CAP,CHIP,MAKER           | ECZH0001002 | 0.5 pF,50V ,B ,NP0 ,TC ,1005 ,R/TP                                                                                |       |        |
| 6     | C638         | CAP,CERAMIC,CHIP         | ECCH0000122 | 47 pF,50V,J,NP0,TC,1005,R/TP                                                                                      |       |        |
| 6     | C639         | CAP,CERAMIC,CHIP         | ECCH0000155 | 10 nF,16V,K,X7R,HD,1005,R/TP                                                                                      |       |        |
| 6     | C640         | CAP,CERAMIC,CHIP         | ECCH0000155 | 10 nF,16V,K,X7R,HD,1005,R/TP                                                                                      |       |        |
| 6     | C642         | CAP,CHIP,MAKER           | ECZH0000802 | 1 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP                                                                                  |       |        |
| 6     | C643         | CAP,CERAMIC,CHIP         | ECCH0004906 | 2.5 pF,50V ,C ,X7R ,TC ,1005 ,R/TP                                                                                |       |        |
| 6     | C644         | CAP,CERAMIC,CHIP         | ECCH0004906 | 2.5 pF,50V ,C ,X7R ,TC ,1005 ,R/TP                                                                                |       |        |
| 6     | C645         | CAP,CERAMIC,CHIP         | ECCH0000195 | 3.9 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP                                                                                |       |        |
| 6     | C646         | CAP,CERAMIC,CHIP         | ECCH0000195 | 3.9 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP                                                                                |       |        |
| 6     | C647         | CAP,CERAMIC,CHIP         | ECCH0000180 | 3.3 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP                                                                                |       |        |
| 6     | C648         | CAP,CERAMIC,CHIP         | ECCH0000180 | 3.3 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP                                                                                |       |        |
| 6     | C649         | CAP,CERAMIC,CHIP         | ECCH0000185 | 5.6 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP                                                                                |       |        |
| 6     | C650         | CAP,CERAMIC,CHIP         | ECCH0000185 | 5.6 pF,50V ,C ,NP0 ,TC ,1005 ,R/TP                                                                                |       |        |
| 6     | CN200        | CONNECTOR,I/O            | ENRY0006401 | 18 PIN,0.4 mm,ANGLE , ,H=2.5, Reverse Type                                                                        |       |        |
| 6     | CN201        | CONNECTOR,ETC            | ENZY0020401 | 3 PIN,2.5 mm,BOTTOM , ,                                                                                           |       |        |
| 6     | CN500        | CONNECTOR,BOARD TO BOARD | ENBY0020401 | 24 PIN,0.4 mm,ETC , ,H=0.9, Socket                                                                                |       |        |
| 6     | CN600        | CONN,RF SWITCH           | ENWY0001801 | STRAIGHT ,SMD ,2 dB,3000PCS/REEL                                                                                  |       |        |

### 13. EXPLODED VIEW & REPLACEMENT PART LIST

| Level | Location No. | Description        | Part Number | Spec                                                                                                                  | Color | Remark |
|-------|--------------|--------------------|-------------|-----------------------------------------------------------------------------------------------------------------------|-------|--------|
| 6     | D100         | DIODE,SWITCHING    | EDSY0017301 | VSM ,15 V,100 mA,R/TP ,PB-FREE                                                                                        |       |        |
| 6     | D101         | DIODE,SWITCHING    | EDSY0009901 | ESC ,80 V,300 A,R/TP ,1.6*0.8*0.6(t)                                                                                  |       |        |
| 6     | D102         | DIODE,SWITCHING    | EDSY0009901 | ESC ,80 V,300 A,R/TP ,1.6*0.8*0.6(t)                                                                                  |       |        |
| 6     | FB200        | FILTER,BEAD,CHIP   | SFBH0008102 | 1800 ohm,1005 ,Bead                                                                                                   |       |        |
| 6     | FB201        | FILTER,BEAD,CHIP   | SFBH0008102 | 1800 ohm,1005 ,Bead                                                                                                   |       |        |
| 6     | FB202        | FILTER,BEAD,CHIP   | SFBH0008102 | 1800 ohm,1005 ,Bead                                                                                                   |       |        |
| 6     | FB203        | FILTER,BEAD,CHIP   | SFBH0008102 | 1800 ohm,1005 ,Bead                                                                                                   |       |        |
| 6     | FB206        | FILTER,BEAD,CHIP   | SFBH0008102 | 1800 ohm,1005 ,Bead                                                                                                   |       |        |
| 6     | FB500        | FILTER,BEAD,CHIP   | SFBH0008101 | 600 ohm,1005 ,                                                                                                        |       |        |
| 6     | FB600        | FILTER,BEAD,CHIP   | SFBH0008101 | 600 ohm,1005 ,                                                                                                        |       |        |
| 6     | FB601        | FILTER,BEAD,CHIP   | SFBH0008101 | 600 ohm,1005 ,                                                                                                        |       |        |
| 6     | FL200        | FILTER,EMI/POWER   | SFEY0007101 | SMD ,1CH,1608Feedthru ESD/EMI filter for power Pb-free                                                                |       |        |
| 6     | FL600        | FILTER,DIELECTRIC  | SFDY0002601 | 2450 MHz,2.0*1.25*1.0 ,SMD ,2400M~2500M, IL 3.8, 8pin, U-B, 34.2_j95, BT (CSR BC41B143A) ; ,BPF ,2450 ,100 ,SMD ,R/TP |       |        |
| 6     | J500         | CONN,SOCKET        | ENSY0018701 | 6 PIN,ETC , ,2.54 mm,H=1.8                                                                                            |       |        |
| 6     | L100         | INDUCTOR,CHIP      | ELCH0004722 | 47 nH,J ,1005 ,R/TP ,                                                                                                 |       |        |
| 6     | L101         | INDUCTOR,CHIP      | ELCH0004722 | 47 nH,J ,1005 ,R/TP ,                                                                                                 |       |        |
| 6     | L102         | INDUCTOR,CHIP      | ELCH0004722 | 47 nH,J ,1005 ,R/TP ,                                                                                                 |       |        |
| 6     | L103         | INDUCTOR,SMD,POWER | ELCP0006703 | 10 uH,M ,3.2*2.6*1.0 ,R/TP ,                                                                                          |       |        |
| 6     | L104         | INDUCTOR,SMD,POWER | ELCP0006703 | 10 uH,M ,3.2*2.6*1.0 ,R/TP ,                                                                                          |       |        |
| 6     | L200         | INDUCTOR,CHIP      | ELCH0009114 | 100 nH,J ,1005 ,R/TP ,coil                                                                                            |       |        |
| 6     | L300         | INDUCTOR,CHIP      | ELCH0005009 | 100 nH,J ,1005 ,R/TP ,                                                                                                |       |        |
| 6     | L301         | INDUCTOR,CHIP      | ELCH0005009 | 100 nH,J ,1005 ,R/TP ,                                                                                                |       |        |
| 6     | L500         | INDUCTOR,CHIP      | ELCH0005009 | 100 nH,J ,1005 ,R/TP ,                                                                                                |       |        |
| 6     | L501         | INDUCTOR,CHIP      | ELCH0005009 | 100 nH,J ,1005 ,R/TP ,                                                                                                |       |        |
| 6     | L601         | INDUCTOR,CHIP      | ELCH0004730 | 33 nH,J ,1005 ,R/TP ,                                                                                                 |       |        |
| 6     | L602         | INDUCTOR,CHIP      | ELCH0003823 | 470 nH,K ,1608 ,R/TP ,chip coil,PBFREE                                                                                |       |        |
| 6     | L603         | INDUCTOR,CHIP      | ELCH0001402 | 18 nH,J ,1005 ,R/TP ,Pb Free                                                                                          |       |        |
| 6     | L605         | INDUCTOR,CHIP      | ELCH0001413 | 22 nH,J ,1005 ,R/TP ,PBFREE                                                                                           |       |        |
| 6     | L606         | INDUCTOR,CHIP      | ELCH0001411 | 1.2 nH,S ,1005 ,R/TP ,PBFREE                                                                                          |       |        |
| 6     | L607         | INDUCTOR,CHIP      | ELCH0001413 | 22 nH,J ,1005 ,R/TP ,PBFREE                                                                                           |       |        |

## 13. EXPLODED VIEW & REPLACEMENT PART LIST

| Level | Location No. | Description             | Part Number | Spec                                               | Color | Remark |
|-------|--------------|-------------------------|-------------|----------------------------------------------------|-------|--------|
| 6     | L608         | INDUCTOR,CHIP           | ELCH0001402 | 18 nH,J ,1005 ,R/TP ,Pb Free                       |       |        |
| 6     | L609         | INDUCTOR,CHIP           | ELCH0003814 | 5.1 nH,S ,1005 ,R/TP ,5.1nH,1005                   |       |        |
| 6     | L610         | INDUCTOR,CHIP           | ELCH0001036 | 5.6 nH,S ,1005 ,R/TP ,PBFREE                       |       |        |
| 6     | M600         | MODULE,ETC              | SMZY0015801 | 84 Ball 0.5pitch, BGA , Bluetooth+FM (6.0*6.0*1.0) |       |        |
| 6     | Q200         | TR,BJT,NPN              | EQBN0007601 | SOT-23 ,0.15 W,R/TP ,EMT3                          |       |        |
| 6     | Q201         | TR,BJT,NPN              | EQBN0013701 | EMT6 ,150 mW,R/TP ,DUAL TRANSISTORS                |       |        |
| 6     | R100         | PCB ASSY,MAIN,PAD SHORT | SAFP0000501 |                                                    |       |        |
| 6     | R101         | PCB ASSY,MAIN,PAD SHORT | SAFP0000501 |                                                    |       |        |
| 6     | R105         | RES,CHIP,MAKER          | ERHZ0000441 | 22 ohm,1/16W ,J ,1005 ,R/TP                        |       |        |
| 6     | R106         | RES,CHIP,MAKER          | ERHZ0000441 | 22 ohm,1/16W ,J ,1005 ,R/TP                        |       |        |
| 6     | R109         | RES,CHIP,MAKER          | ERHZ0000267 | 3300 ohm,1/16W ,F ,1005 ,R/TP                      |       |        |
| 6     | R110         | RES,CHIP,MAKER          | ERHZ0000267 | 3300 ohm,1/16W ,F ,1005 ,R/TP                      |       |        |
| 6     | R111         | RES,CHIP,MAKER          | ERHZ0000434 | 1 ohm,1/16W ,J ,1005 ,R/TP                         |       |        |
| 6     | R112         | RES,CHIP,MAKER          | ERHZ0000406 | 100 Kohm,1/16W ,J ,1005 ,R/TP                      |       |        |
| 6     | R113         | RES,CHIP,MAKER          | ERHZ0000404 | 1 Kohm,1/16W ,J ,1005 ,R/TP                        |       |        |
| 6     | R114         | RES,CHIP,MAKER          | ERHZ0000267 | 3300 ohm,1/16W ,F ,1005 ,R/TP                      |       |        |
| 6     | R115         | RES,CHIP,MAKER          | ERHZ0000405 | 10 Kohm,1/16W ,J ,1005 ,R/TP                       |       |        |
| 6     | R116         | PCB ASSY,MAIN,PAD SHORT | SAFP0000501 |                                                    |       |        |
| 6     | R117         | RES,CHIP,MAKER          | ERHZ0000406 | 100 Kohm,1/16W ,J ,1005 ,R/TP                      |       |        |
| 6     | R118         | RES,CHIP,MAKER          | ERHZ0000444 | 22 Kohm,1/16W ,J ,1005 ,R/TP                       |       |        |
| 6     | R120         | RES,CHIP,MAKER          | ERHZ0000443 | 2200 ohm,1/16W ,J ,1005 ,R/TP                      |       |        |
| 6     | R121         | RES,CHIP,MAKER          | ERHZ0000443 | 2200 ohm,1/16W ,J ,1005 ,R/TP                      |       |        |
| 6     | R200         | RES,CHIP,MAKER          | ERHZ0000407 | 1000 Kohm,1/16W ,J ,1005 ,R/TP                     |       |        |
| 6     | R201         | RES,CHIP,MAKER          | ERHZ0000467 | 330 Kohm,1/16W ,J ,1005 ,R/TP                      |       |        |
| 6     | R202         | RES,CHIP,MAKER          | ERHZ0000529 | 1.5 Kohm,1/16W ,J ,1005 ,R/TP                      |       |        |
| 6     | R203         | RES,CHIP,MAKER          | ERHZ0000443 | 2200 ohm,1/16W ,J ,1005 ,R/TP                      |       |        |
| 6     | R204         | RES,CHIP,MAKER          | ERHZ0000405 | 10 Kohm,1/16W ,J ,1005 ,R/TP                       |       |        |
| 6     | R205         | RES,CHIP,MAKER          | ERHZ0000406 | 100 Kohm,1/16W ,J ,1005 ,R/TP                      |       |        |
| 6     | R209         | RES,CHIP,MAKER          | ERHZ0000406 | 100 Kohm,1/16W ,J ,1005 ,R/TP                      |       |        |
| 6     | R210         | RES,CHIP,MAKER          | ERHZ0000483 | 47 ohm,1/16W ,J ,1005 ,R/TP                        |       |        |

### 13. EXPLODED VIEW & REPLACEMENT PART LIST

| Level | Location No. | Description             | Part Number | Spec                          | Color | Remark |
|-------|--------------|-------------------------|-------------|-------------------------------|-------|--------|
| 6     | R211         | RES,CHIP,MAKER          | ERHZ0000483 | 47 ohm,1/16W ,J ,1005 ,R/TP   |       |        |
| 6     | R212         | RES,CHIP,MAKER          | ERHZ0000483 | 47 ohm,1/16W ,J ,1005 ,R/TP   |       |        |
| 6     | R213         | RES,CHIP,MAKER          | ERHZ0000203 | 10 Kohm,1/16W ,F ,1005 ,R/TP  |       |        |
| 6     | R214         | RES,CHIP,MAKER          | ERHZ0000224 | 16 Kohm,1/16W ,F ,1005 ,R/TP  |       |        |
| 6     | R215         | RES,CHIP,MAKER          | ERHZ0000406 | 100 Kohm,1/16W ,J ,1005 ,R/TP |       |        |
| 6     | R216         | RES,CHIP,MAKER          | ERHZ0000268 | 33 Kohm,1/16W ,F ,1005 ,R/TP  |       |        |
| 6     | R218         | RES,CHIP,MAKER          | ERHZ0000404 | 1 Kohm,1/16W ,J ,1005 ,R/TP   |       |        |
| 6     | R219         | RES,CHIP,MAKER          | ERHZ0000467 | 330 Kohm,1/16W ,J ,1005 ,R/TP |       |        |
| 6     | R220         | RES,CHIP,MAKER          | ERHZ0000437 | 2 Kohm,1/16W ,J ,1005 ,R/TP   |       |        |
| 6     | R221         | RES,CHIP                | ERHY0000298 | 3.3M ohm,1/16W,J,1005,R/TP    |       |        |
| 6     | R222         | RES,CHIP,MAKER          | ERHZ0000405 | 10 Kohm,1/16W ,J ,1005 ,R/TP  |       |        |
| 6     | R223         | RES,CHIP,MAKER          | ERHZ0000437 | 2 Kohm,1/16W ,J ,1005 ,R/TP   |       |        |
| 6     | R224         | RES,CHIP,MAKER          | ERHZ0000406 | 100 Kohm,1/16W ,J ,1005 ,R/TP |       |        |
| 6     | R225         | RES,CHIP,MAKER          | ERHZ0000406 | 100 Kohm,1/16W ,J ,1005 ,R/TP |       |        |
| 6     | R228         | RES,CHIP,MAKER          | ERHZ0000434 | 1 ohm,1/16W ,J ,1005 ,R/TP    |       |        |
| 6     | R229         | RES,CHIP,MAKER          | ERHZ0000434 | 1 ohm,1/16W ,J ,1005 ,R/TP    |       |        |
| 6     | R230         | PCB ASSY,MAIN,PAD SHORT | SAFP0000501 |                               |       |        |
| 6     | R300         | PCB ASSY,MAIN,PAD SHORT | SAFP0000501 |                               |       |        |
| 6     | R313         | PCB ASSY,MAIN,PAD SHORT | SAFP0000501 |                               |       |        |
| 6     | R314         | PCB ASSY,MAIN,PAD SHORT | SAFP0000501 |                               |       |        |
| 6     | R500         | RES,CHIP,MAKER          | ERHZ0000406 | 100 Kohm,1/16W ,J ,1005 ,R/TP |       |        |
| 6     | R501         | RES,CHIP,MAKER          | ERHZ0000406 | 100 Kohm,1/16W ,J ,1005 ,R/TP |       |        |
| 6     | R502         | RES,CHIP,MAKER          | ERHZ0000406 | 100 Kohm,1/16W ,J ,1005 ,R/TP |       |        |
| 6     | R503         | RES,CHIP,MAKER          | ERHZ0000406 | 100 Kohm,1/16W ,J ,1005 ,R/TP |       |        |
| 6     | R504         | RES,CHIP,MAKER          | ERHZ0000406 | 100 Kohm,1/16W ,J ,1005 ,R/TP |       |        |
| 6     | R505         | RES,CHIP,MAKER          | ERHZ0000402 | 10 ohm,1/16W ,J ,1005 ,R/TP   |       |        |
| 6     | R506         | RES,CHIP,MAKER          | ERHZ0000402 | 10 ohm,1/16W ,J ,1005 ,R/TP   |       |        |
| 6     | R507         | RES,CHIP,MAKER          | ERHZ0000402 | 10 ohm,1/16W ,J ,1005 ,R/TP   |       |        |
| 6     | R508         | RES,CHIP,MAKER          | ERHZ0000406 | 100 Kohm,1/16W ,J ,1005 ,R/TP |       |        |
| 6     | R509         | RES,CHIP,MAKER          | ERHZ0000402 | 10 ohm,1/16W ,J ,1005 ,R/TP   |       |        |

## 13. EXPLODED VIEW & REPLACEMENT PART LIST

| Level | Location No. | Description             | Part Number | Spec                          | Color | Remark |
|-------|--------------|-------------------------|-------------|-------------------------------|-------|--------|
| 6     | R510         | RES,CHIP,MAKER          | ERHZ0000402 | 10 ohm,1/16W ,J ,1005 ,R/TP   |       |        |
| 6     | R511         | RES,CHIP,MAKER          | ERHZ0000402 | 10 ohm,1/16W ,J ,1005 ,R/TP   |       |        |
| 6     | R512         | RES,CHIP,MAKER          | ERHZ0000402 | 10 ohm,1/16W ,J ,1005 ,R/TP   |       |        |
| 6     | R513         | RES,CHIP,MAKER          | ERHZ0000402 | 10 ohm,1/16W ,J ,1005 ,R/TP   |       |        |
| 6     | R514         | RES,CHIP,MAKER          | ERHZ0000402 | 10 ohm,1/16W ,J ,1005 ,R/TP   |       |        |
| 6     | R515         | RES,CHIP,MAKER          | ERHZ0000402 | 10 ohm,1/16W ,J ,1005 ,R/TP   |       |        |
| 6     | R516         | RES,CHIP,MAKER          | ERHZ0000402 | 10 ohm,1/16W ,J ,1005 ,R/TP   |       |        |
| 6     | R517         | RES,CHIP,MAKER          | ERHZ0000402 | 10 ohm,1/16W ,J ,1005 ,R/TP   |       |        |
| 6     | R518         | RES,CHIP,MAKER          | ERHZ0000402 | 10 ohm,1/16W ,J ,1005 ,R/TP   |       |        |
| 6     | R519         | RES,CHIP,MAKER          | ERHZ0000402 | 10 ohm,1/16W ,J ,1005 ,R/TP   |       |        |
| 6     | R520         | RES,CHIP,MAKER          | ERHZ0000402 | 10 ohm,1/16W ,J ,1005 ,R/TP   |       |        |
| 6     | R521         | RES,CHIP,MAKER          | ERHZ0000402 | 10 ohm,1/16W ,J ,1005 ,R/TP   |       |        |
| 6     | R522         | RES,CHIP,MAKER          | ERHZ0000422 | 15 Kohm,1/16W ,J ,1005 ,R/TP  |       |        |
| 6     | R523         | PCB ASSY,MAIN,PAD OPEN  | SAFO0000501 | 0OHM_1005_DNI                 |       |        |
| 6     | R524         | RES,CHIP,MAKER          | ERHZ0000485 | 4700 ohm,1/16W ,J ,1005 ,R/TP |       |        |
| 6     | R600         | PCB ASSY,MAIN,PAD SHORT | SAFP0000501 |                               |       |        |
| 6     | R601         | RES,CHIP,MAKER          | ERHZ0000434 | 1 ohm,1/16W ,J ,1005 ,R/TP    |       |        |
| 6     | R602         | RES,CHIP,MAKER          | ERHZ0000434 | 1 ohm,1/16W ,J ,1005 ,R/TP    |       |        |
| 6     | R603         | RES,CHIP,MAKER          | ERHZ0000434 | 1 ohm,1/16W ,J ,1005 ,R/TP    |       |        |
| 6     | R604         | RES,CHIP,MAKER          | ERHZ0000496 | 560 ohm,1/16W ,J ,1005 ,R/TP  |       |        |
| 6     | R605         | RES,CHIP,MAKER          | ERHZ0000456 | 2.2 ohm,1/16W ,J ,1005 ,R/TP  |       |        |
| 6     | R606         | RES,CHIP,MAKER          | ERHZ0000487 | 470 Kohm,1/16W ,J ,1005 ,R/TP |       |        |
| 6     | R607         | RES,CHIP,MAKER          | ERHZ0000287 | 47 Kohm,1/16W ,F ,1005 ,R/TP  |       |        |
| 6     | R608         | PCB ASSY,MAIN,PAD SHORT | SAFP0000501 |                               |       |        |
| 6     | R609         | RES,CHIP,MAKER          | ERHZ0000434 | 1 ohm,1/16W ,J ,1005 ,R/TP    |       |        |
| 6     | R610         | RES,CHIP,MAKER          | ERHZ0000434 | 1 ohm,1/16W ,J ,1005 ,R/TP    |       |        |
| 6     | R611         | RES,CHIP,MAKER          | ERHZ0000405 | 10 Kohm,1/16W ,J ,1005 ,R/TP  |       |        |
| 6     | R612         | RES,CHIP,MAKER          | ERHZ0000434 | 1 ohm,1/16W ,J ,1005 ,R/TP    |       |        |
| 6     | R613         | RES,CHIP,MAKER          | ERHZ0000434 | 1 ohm,1/16W ,J ,1005 ,R/TP    |       |        |
| 6     | R614         | RES,CHIP,MAKER          | ERHZ0000434 | 1 ohm,1/16W ,J ,1005 ,R/TP    |       |        |

| Level | Location No. | Description           | Part Number | Spec                                                                                                                    | Color | Remark |
|-------|--------------|-----------------------|-------------|-------------------------------------------------------------------------------------------------------------------------|-------|--------|
| 6     | R615         | INDUCTOR,CHIP         | ELCH0001403 | 1 nH,S ,1005 ,R/TP ,PBFREE                                                                                              |       |        |
| 6     | R616         | RES,CHIP,MAKER        | ERHZ0000204 | 100 Kohm,1/16W ,F ,1005 ,R/TP                                                                                           |       |        |
| 6     | R617         | THERMISTOR            | SETY0006301 | NTC ,10000 ohm,SMD ,1005, 3350~3399k, J, R/T, PBFREE                                                                    |       |        |
| 6     | S500         | CONN,SOCKET           | ENSY0021001 | 8 PIN,ANGLE , Reverse , mm,                                                                                             |       |        |
| 6     | U100         | IC                    | EUSY0338204 | FBGA ,107 ,ETC ,FULLY 1.8V 1G(LB/128Mx8) NAND+512M(8Mx4x16) SDRAM , ; ,IC,MCP                                           |       |        |
| 6     | U101         | IC                    | EUSY0227901 | SON5-P-0.35(fSV) ,5 PIN,R/TP ,2-INPUT AND GATE, Pb Free                                                                 |       |        |
| 6     | U102         | IC                    | EUSY0347801 | BGA ,293 PIN,R/TP ,EDGE RF BB PM Onechip BB , ; ,IC,Digital Baseband Processor                                          |       |        |
| 6     | U200         | IC                    | EUSY0250501 | SC70 ,5 PIN,R/TP ,Comparator, pin compatible to EUSY0077701                                                             |       |        |
| 6     | U201         | IC                    | EUSY0351601 | DFN ,12 PIN,R/TP ,Dual Charger IC (Bypass) , ; ,IC,Charger                                                              |       |        |
| 6     | U303         | IC                    | EUSY0360201 | CSP ,20 ,R/TP ,Class D(mono) + Capless HP + A/S , ; ,IC,Audio Sub System                                                |       |        |
| 6     | U600         | PAM                   | SMPY0017901 | dBm, %, A, dBc, dB,5x5 ,SMD ,IFX Linear Edge , ; , , , , , , , ,R/TP ,R/TP ,                                            |       |        |
| 6     | U601         | FILTER,SEPARATOR      | SFAY0012001 | , , dB, dB, dB, dB,4532 ,IFX EDGE Quad Pin                                                                              |       |        |
| 6     | VA500        | VARISTOR              | SEVY0003801 | 18 V , ,SMD ,                                                                                                           |       |        |
| 6     | VA501        | VARISTOR              | SEVY0003801 | 18 V , ,SMD ,                                                                                                           |       |        |
| 6     | X100         | X-TAL                 | EXXY0018404 | 26 MHz,10 PPM,8 pF,40 ohm,SMD ,3.2*2.5*0.6 ,12ppm at -30'C ~ +85'C, C0 1.0pF, C1 3.6fF , ; ,26 ,10PPM ,8 , , ,SMD ,R/TP |       |        |
| 6     | X101         | X-TAL                 | EXXY0018701 | 32.768 KHz,20 PPM,12.5 pF,70 Kohm,SMD ,3.2*1.5*0.9 ,                                                                    |       |        |
| 5     | SAFD         | PCB ASSY,MAIN,SMT TOP | SAFD0102603 |                                                                                                                         |       |        |
| 6     | C219         | CAP,CHIP,MAKER        | ECZH0003103 | 0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP                                                                                      |       |        |
| 6     | C220         | CAP,CHIP,MAKER        | ECZH0003103 | 0.1 uF,10V ,K ,X7R ,HD ,1005 ,R/TP                                                                                      |       |        |
| 6     | C300         | CAP,CERAMIC,CHIP      | ECCH0004904 | 1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP                                                                                       |       |        |
| 6     | C303         | CAP,CERAMIC,CHIP      | ECCH0004904 | 1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP                                                                                       |       |        |
| 6     | C307         | CAP,CERAMIC,CHIP      | ECCH0000147 | 2.2 nF,50V,K,X7R,HD,1005,R/TP                                                                                           |       |        |
| 6     | C313         | CAP,CERAMIC,CHIP      | ECCH0004904 | 1 uF,6.3V ,K ,X5R ,TC ,1005 ,R/TP                                                                                       |       |        |
| 6     | C314         | CAP,CERAMIC,CHIP      | ECCH0000155 | 10 nF,16V,K,X7R,HD,1005,R/TP                                                                                            |       |        |
| 6     | C316         | CAP,CERAMIC,CHIP      | ECCH0000147 | 2.2 nF,50V,K,X7R,HD,1005,R/TP                                                                                           |       |        |
| 6     | C317         | CAP,CERAMIC,CHIP      | ECCH0000120 | 39 pF,50V,J,NP0,TC,1005,R/TP                                                                                            |       |        |
| 6     | C318         | CAP,CERAMIC,CHIP      | ECCH0000179 | 22 nF,16V ,K ,X5R ,HD ,1005 ,R/TP                                                                                       |       |        |

## 13. EXPLODED VIEW & REPLACEMENT PART LIST

| Level | Location No. | Description      | Part Number | Spec                                                                                             | Color | Remark |
|-------|--------------|------------------|-------------|--------------------------------------------------------------------------------------------------|-------|--------|
| 6     | C319         | CAP,CERAMIC,CHIP | ECCH0000120 | 39 pF,50V,J,NP0,TC,1005,R/TP                                                                     |       |        |
| 6     | C320         | CAP,CERAMIC,CHIP | ECCH0000179 | 22 nF,16V,K,X5R,HD,1005,R/TP                                                                     |       |        |
| 6     | C321         | CAP,CERAMIC,CHIP | ECCH0000120 | 39 pF,50V,J,NP0,TC,1005,R/TP                                                                     |       |        |
| 6     | C322         | CAP,CERAMIC,CHIP | ECCH0005604 | 10000000 pF,6.3V,M,X5R,TC,1608,R/TP,,,[empty]<br>,[empty],[empty],[empty],[empty],[empty],0.8 mm |       |        |
| 6     | C400         | CAP,CHIP,MAKER   | ECZH0004402 | 100000 pF,16V,Z,X7R,TC,1005,R/TP,,,[empty]<br>,[empty],[empty],[empty],[empty],[empty]           |       |        |
| 6     | C401         | CAP,CHIP,MAKER   | ECZH0004402 | 100000 pF,16V,Z,X7R,TC,1005,R/TP,,,[empty]<br>,[empty],[empty],[empty],[empty],[empty]           |       |        |
| 6     | C402         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                     |       |        |
| 6     | C403         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                     |       |        |
| 6     | C404         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                     |       |        |
| 6     | C405         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                     |       |        |
| 6     | C406         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                     |       |        |
| 6     | C407         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                     |       |        |
| 6     | C408         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                     |       |        |
| 6     | C409         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                     |       |        |
| 6     | C410         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                     |       |        |
| 6     | C411         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                     |       |        |
| 6     | C412         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                     |       |        |
| 6     | C413         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                     |       |        |
| 6     | C414         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                     |       |        |
| 6     | C415         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                     |       |        |
| 6     | C416         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                     |       |        |
| 6     | C417         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                     |       |        |
| 6     | C418         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                     |       |        |
| 6     | C419         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                     |       |        |
| 6     | C420         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                     |       |        |
| 6     | C421         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                     |       |        |
| 6     | C422         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                     |       |        |
| 6     | C423         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                     |       |        |
| 6     | C424         | CAP,CERAMIC,CHIP | ECCH0000117 | 27 pF,50V,J,NP0,TC,1005,R/TP                                                                     |       |        |
| 6     | C550         | CAP,CERAMIC,CHIP | ECCH0004904 | 1 uF,6.3V,K,X5R,TC,1005,R/TP                                                                     |       |        |

### 13. EXPLODED VIEW & REPLACEMENT PART LIST

| Level | Location No. | Description              | Part Number | Spec                                                                                    | Color | Remark |
|-------|--------------|--------------------------|-------------|-----------------------------------------------------------------------------------------|-------|--------|
| 6     | C551         | CAP,CHIP,MAKER           | ECZH0001421 | 2.2 uF,6.3V ,K ,X5R ,HD ,1608 ,R/TP                                                     |       |        |
| 6     | C552         | CAP,CHIP,MAKER           | ECZH0001421 | 2.2 uF,6.3V ,K ,X5R ,HD ,1608 ,R/TP                                                     |       |        |
| 6     | CN400        | CONNECTOR,BOARD TO BOARD | ENBY0036001 | 40 PIN,0.4 mm,ETC , ,H=1.0, Socket                                                      |       |        |
| 6     | FL400        | FILTER,EMI/POWER         | SFEY0012501 | SMD ,SMD ,18 V,4ch. EMI_ESD Filter (200 Ohm,25pF)                                       |       |        |
| 6     | FL401        | FILTER,EMI/POWER         | SFEY0012501 | SMD ,SMD ,18 V,4ch. EMI_ESD Filter (200 Ohm,25pF)                                       |       |        |
| 6     | FL402        | FILTER,EMI/POWER         | SFEY0012501 | SMD ,SMD ,18 V,4ch. EMI_ESD Filter (200 Ohm,25pF)                                       |       |        |
| 6     | FL403        | FILTER,EMI/POWER         | SFEY0010501 | SMD ,SMD ,18 V,4ch. EMI_ESD Filter (100Ohm,15pF), Pb-free                               |       |        |
| 6     | FL404        | FILTER,EMI/POWER         | SFEY0012501 | SMD ,SMD ,18 V,4ch. EMI_ESD Filter (200 Ohm,25pF)                                       |       |        |
| 6     | L302         | INDUCTOR,CHIP            | ELCH0004727 | 100 nH,J ,1005 ,R/TP ,                                                                  |       |        |
| 6     | L303         | INDUCTOR,CHIP            | ELCH0004727 | 100 nH,J ,1005 ,R/TP ,                                                                  |       |        |
| 6     | L304         | INDUCTOR,CHIP            | ELCH0004727 | 100 nH,J ,1005 ,R/TP ,                                                                  |       |        |
| 6     | LD300        | DIODE,LED,CHIP           | EDLH0013701 | WHITE ,ETC ,R/TP ,SIDEVIEW ,; ,[empty] ,2.9~3.75 ,30mA , , ,120mW ,[empty] ,[empty] ,2P |       |        |
| 6     | LD301        | DIODE,LED,CHIP           | EDLH0013701 | WHITE ,ETC ,R/TP ,SIDEVIEW ,; ,[empty] ,2.9~3.75 ,30mA , , ,120mW ,[empty] ,[empty] ,2P |       |        |
| 6     | LD302        | DIODE,LED,CHIP           | EDLH0013701 | WHITE ,ETC ,R/TP ,SIDEVIEW ,; ,[empty] ,2.9~3.75 ,30mA , , ,120mW ,[empty] ,[empty] ,2P |       |        |
| 6     | MIC300       | MICROPHONE               | SUMY0010609 | UNIT ,-42 dB,3.76*2.95*1.1 ,mems smd mic ,; , , ,OMNI ,[empty] , ,[empty]               |       |        |
| 6     | R102         | PCB ASSY,MAIN,PAD SHORT  | SAFP0000501 |                                                                                         |       |        |
| 6     | R104         | RES,CHIP                 | ERHY0000166 | 390 Kohm,1/16W ,F ,1005 ,R/TP                                                           |       |        |
| 6     | R107         | RES,CHIP,MAKER           | ERHZ0000204 | 100 Kohm,1/16W ,F ,1005 ,R/TP                                                           |       |        |
| 6     | R108         | RES,CHIP,MAKER           | ERHZ0000485 | 4700 ohm,1/16W ,J ,1005 ,R/TP                                                           |       |        |
| 6     | R198         | RES,CHIP,MAKER           | ERHZ0000434 | 1 ohm,1/16W ,J ,1005 ,R/TP                                                              |       |        |
| 6     | R217         | RES,CHIP,MAKER           | ERHZ0000406 | 100 Kohm,1/16W ,J ,1005 ,R/TP                                                           |       |        |
| 6     | R301         | RES,CHIP,MAKER           | ERHZ0000406 | 100 Kohm,1/16W ,J ,1005 ,R/TP                                                           |       |        |
| 6     | R302         | RES,CHIP,MAKER           | ERHZ0000406 | 100 Kohm,1/16W ,J ,1005 ,R/TP                                                           |       |        |
| 6     | R303         | PCB ASSY,MAIN,PAD SHORT  | SAFP0000501 |                                                                                         |       |        |
| 6     | R304         | PCB ASSY,MAIN,PAD SHORT  | SAFP0000501 |                                                                                         |       |        |
| 6     | R305         | PCB ASSY,MAIN,PAD SHORT  | SAFP0000501 |                                                                                         |       |        |
| 6     | R306         | RES,CHIP                 | ERHY0000283 | 130K ohm,1/16W,J,1005,R/TP                                                              |       |        |

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### 13. EXPLODED VIEW & REPLACEMENT PART LIST

| Level | Location No. | Description | Part Number | Spec                                                               | Color | Remark |
|-------|--------------|-------------|-------------|--------------------------------------------------------------------|-------|--------|
| 6     | U202         | IC          | EUSY0313401 | QFN ,4 PIN,R/TP , 1.8X1.2X0.5 size wide input voltage Hall Switch  |       |        |
| 6     | U300         | IC          | EUSY0232816 | SON1612-6 ,6 PIN,R/TP ,3.0V ,150mA,LDO                             |       |        |
| 6     | U301         | IC          | EUSY0140901 | SSOP5-P-0.65 ,5 PIN,R/TP ,XOR GATE, Pb Free                        |       |        |
| 6     | U302         | IC          | EUSY0335701 | QFN ,8 PIN,R/TP ,1.2W, Mono, Differential Audio AMP                |       |        |
| 6     | U304         | IC          | EUSY0140901 | SSOP5-P-0.65 ,5 PIN,R/TP ,XOR GATE, Pb Free                        |       |        |
| 6     | U400         | IC          | EUSY0300004 | QFN ,28 ,R/TP ,Keycoder ic, 28pin, 64keys , ,IC,Analog Multiplexer |       |        |
| 6     | U500         | IC          | EUSY0319001 | WDFN-8L ,8 PIN,R/TP ,300mA/300mA 2.8V/1.8V Dual LDO                |       |        |
| 6     | VA300        | VARISTOR    | SEVY0001001 | 14 V , ,SMD ,50pF, 1005                                            |       |        |
| 6     | VA301        | VARISTOR    | SEVY0004101 | 5.6 V , ,SMD ,360pF, 1005                                          |       |        |
| 6     | VA502        | VARISTOR    | SEVY0005201 | 5.5 V , ,SMD ,1005, 50pF                                           |       |        |
| 6     | VA503        | VARISTOR    | SEVY0005201 | 5.5 V , ,SMD ,1005, 50pF                                           |       |        |
| 6     | VA504        | VARISTOR    | SEVY0005201 | 5.5 V , ,SMD ,1005, 50pF                                           |       |        |
| 6     | VA505        | VARISTOR    | SEVY0005201 | 5.5 V , ,SMD ,1005, 50pF                                           |       |        |
| 6     | VA506        | VARISTOR    | SEVY0005201 | 5.5 V , ,SMD ,1005, 50pF                                           |       |        |

## 13. EXPLODED VIEW & REPLACEMENT PART LIST

### 13.3 Accessory

**Note:** This Chapter is used for reference, Part order is ordered by SBOM standard on GCSC

| Level | Location No. | Description             | Part Number | Spec                                                                                                                           | Color | Remark |
|-------|--------------|-------------------------|-------------|--------------------------------------------------------------------------------------------------------------------------------|-------|--------|
| 3     | SBPP00       | BATTERY PACK,LI-POLYMER | SBPP0026203 | 3.7 V,800 mAh,1 CELL,PRISMATIC ,383450,INNERPACK,SA , , , ,PRISMATIC , , ,BLACK ,                                              |       |        |
| 3     | SSAD00       | ADAPTOR,AC-DC           | SSAD0028101 | 100-240V ,5060 Hz,5.6 V,.4 A,UL, CSA ,AC-DC Adaptor ,; ,85Vac~264Vac ,5.6V +/-0.8V ,400mA ,5060 , ,WALL 2P ,I/O CONNECTOR ,    |       |        |
|       |              | ADAPTOR,AC-DC           | SSAD0028102 | 100-240V ,5060 Hz,5.6 V,0.4 A,UL, CSA ,AC-DC Adaptor ,; ,85Vac~264Vac ,5.6V (+/-0.8V) ,400mA ,5060 , ,WALL 2P ,I/O CONNECTOR , |       |        |
|       |              | ADAPTOR,AC-DC           | SSAD0028103 | 100-240V ,5060 Hz,5.6 V,.4 A,UL, CSA ,AC-DC Adaptor ,; ,85Vac~264Vac ,5.6V +/-0.8V ,400mA ,5060 , ,WALL 2P ,I/O CONNECTOR ,    |       |        |

