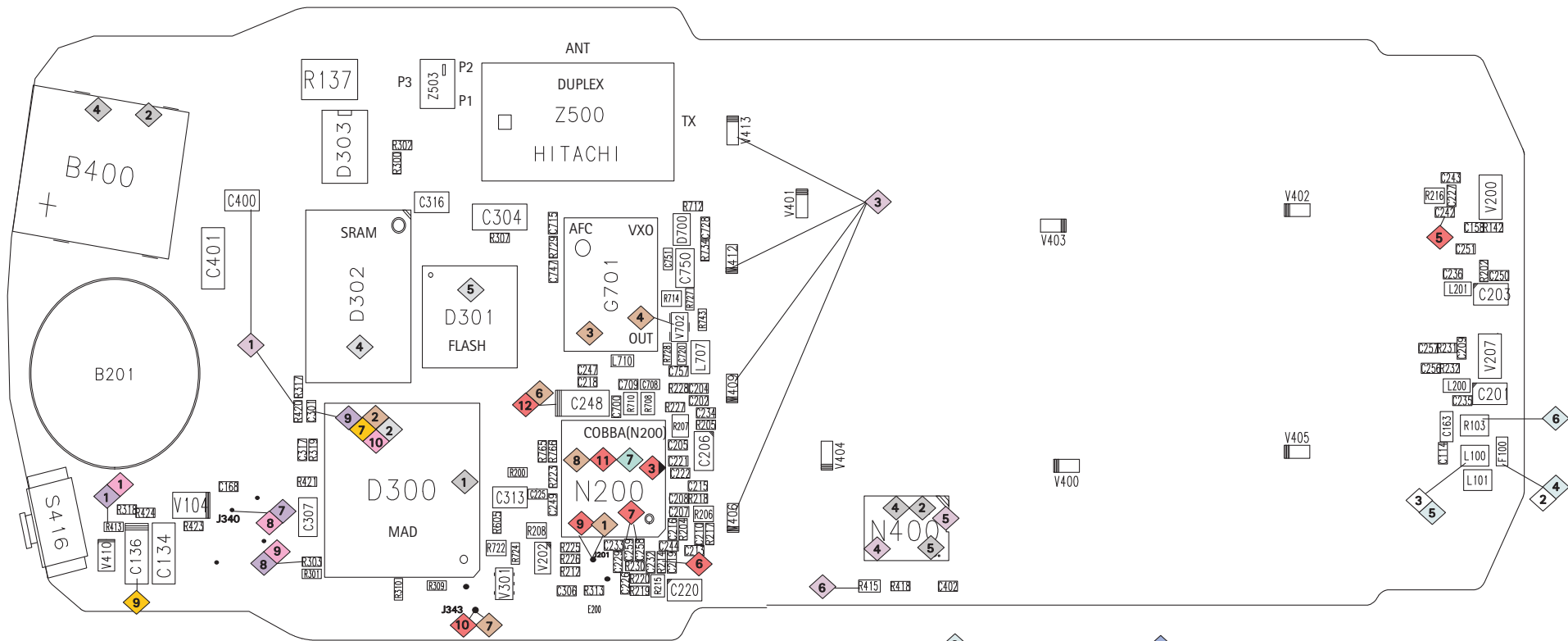
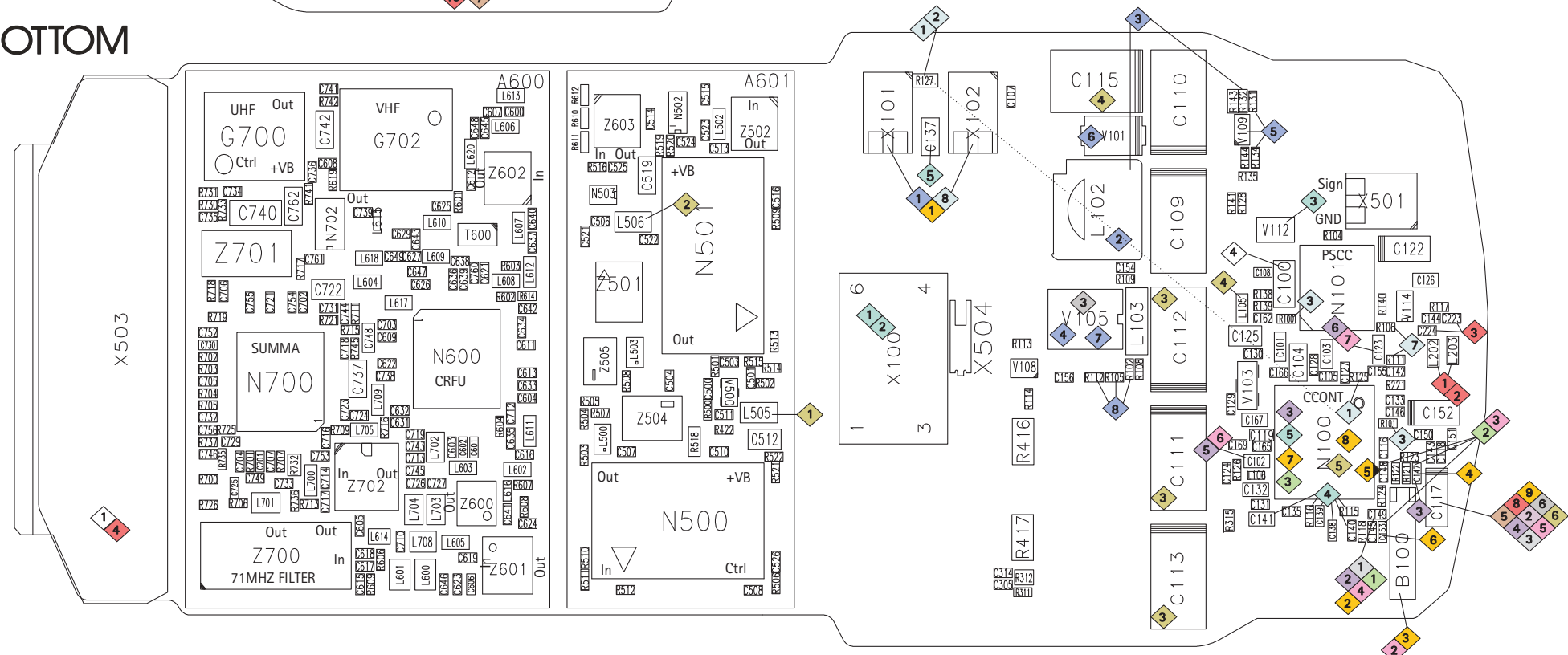


TOP



BOTTOM



**Phone doesn't switch on DC / DC converter**

Note: If power-consumption is >500mA, continue with section "Low standby/operation mode time"

- Check connector X101 and X102.
- Check VB at L102 (check soldering and resistance).
- Check the connection between L102 and R132. No connection-PCB faulty.
- Check value from V105, pin 3, (OV) - OK, goto No. 6.
- Check V109 and R131,132,134,143,144.
- Check the voltage at V101 anode 2.6V; cathode 3.2V. OK continue with CCONT.
- Check 600kHz switching frequency at Pin 4,5,12,13 of V105 (No,change V105).
- Check 1.2V operation voltage at Pin 15 of V105 and check soldering.
- Check R102, R105 and R112.
- DC / DC converter is OK, continue with CCONT-part.

**Phone doesn't switch on (CCONT- part)**

- Check if PWRON (3.2V DC) on R413 drops to 0V during pressing S416.
- Check 32,768 kHz square wave at B100. Yes, go to No. 4.
- Change B100 if frequency of the signal is not OK.
- Check C147, C148, C153.
- Check 32,768 kHz square wave signal at C149. No, change N100.
- Check Vbb (2.8V DC) at C117. No, change N100.
- Check VXO (2.8V DC) at C102. No, change N100.
- Check Vref (1.5V DC) at C123. No, change N100.
- Check VXO PWR (2.8V DC) at J340. No, MAD is faulty. Swap, because Mad is not changeable.
- Check PURX (2.8V DC) at R303 after pressing S416. No, change N100.
- Check 13 Mhz RFCLK-(masterclk) frequency at C301. No, check G701.
- Try to flash the phone. If not possible, see next section.

**Doesn't switch on, section: FLASH (update not possible)**

- Check 32,768 kHz sleep clock at C149. No-see section CCONT.
- Check 13MHz RFCLK (masterclk) at C301. No- see section CCONT.
- Check VBB 2.8V at C117. No- see section CCONT.
- External RAM failure.
- Change RAM or resolder. ( D 302 ).
- MCU boot failure.
- Change FLASH. ( D 301 ).
- Swap phone, because MAD or PCB should be the reason.

**Contact Service, CCONT(N100) interface failed**

- Check if PWRON 3.2V drops to 0V at R413 during pressing S416.If not, check R413,S416.
- Check 32,768 kHz square wave at C149 (OK go to No. 4).
- Check/change B100, C147, C148, C153, N100.
- Check if VBB rise up to 2.8V DC at C117 (No, change N100).
- Check if VXO rise up to 2.8V DC at C102 (No change N100).
- Check if VREF rise up to 1.5V DC at C123 (No, change N100).
- Check if VXOPWR rise up to 2.8V DC at J340 (No, MAD or PCB should be the reason).
- Check if PURX rise up to 2.8V DC at R303. No,change N100.
- Check if RFCLK (masterclk) 13MHz at C301 (2.8Vpp). No, change or check soldering of G701,V702.

**Contact Service, COBBA(N200) parallel / serial bus failed**

- Check COBBA\_CLK 13MHz / 3.2 Vpp at J201 (OK go to No.5).
- Check 13MHz RFCLK (masterclk) at C301, if OK- swap,because MAD or PCB should be the reason.
- Check soldering of G701.Change if necessary.
- Check soldering of V702.Change if necessary.
- Check VBB 2.8V at C117 (not OK, change N100 and C117).
- Check VCOBBA 2.8V DC at C248 (not OK, change N100 and C248).
- Check COBBA\_RESET at J343 (not OK-swap, because MAD(D300) or PCB should be the reason).
- Change COBBA(N200).\*

**Phone switches off intermittent**

- Check if this happens only with 5V SIM-cards. If the phone works properly with 3V SIM's, goto No.9

- Check X101 and X102 ( poor soldered, bend or soiled ? ).
- Check amplitude of 32,768 kHz square wave at C149 .OK , goto No. 9.
- Check B100.( Solderings OK ? ).
- Check C147.( Solderings OK ? ).
- Check C148.( Solderings OK ? ).
- Check C153.( Solderings OK ? ).
- Check amplitude of 13 Mhz, RF CLK C301- 2.8Vpp. Not OK change G701, V702.
- Change Ccont (N100), probably poor soldered.
- Check the 5V supply voltage at C136 with an oscilloscope.
- Change C136 if the noise is higher than 350mVpp.

**Display failure**

A. Missing line segments or no Display function.

- Check the display of mechanical appearance. Not OK, change Display.
- Check VBB 2.8V DC at C400 and R420 . OK, change Display.
- Check VBB 2.8V at C117 . OK-PCB is faulty.

B. No display back light

- Check VDC\_OUT 3.2V at V406, V409, V412, V413. Not OK -PCB faulty .
- Check the LCD\_LED line -N400.pin9 to V406, V409, V412, V413 "on"=1.2V, "off"=1.9V.
- Check N400-pin1: VDC\_OUT, pin2: VBB, pin7: LCD\_LIGHT "on"=2.8V.
- Check R415 (12k) pin8 to GND.

**Buzzer failure**

- Check buzzer control signal from MAD(D300).pin3, (2.8Vpp).
- Use WINTESLA / testing audio / level1 / 1000 Hz. No- swap the phone.
- Check 3.9V VDC\_OUT at N400.pin1 and "+" of B400. OK, goto No. 4.
- Check connection to VDC\_OUT at V105 pin 1/16.
- Check buzzer signal 5Vpp at N400, pin6 and "-" of B400. Ok,-change B400.
- Check VBB 2.8V DC at N400, pin2. OK change N400.
- Check connection to VBB 2.8V DC at C117.

**Not charging beep is not coming from phone if charger is plugged in**

- Check system connector, clean contacts & PCB or change if necessary.
- Check resistance of F100.
- Check resistance of L100.
- Check V\_CHARGE\_IN at C100. OK,- change N101.

**Not charging\_error message / beep is coming from phone if charger is plugged in**

- If B\_TEMP A/D is OK, goto No 3. If not, check connection between R125 and R127. No,-PCB is faulty.
- Check NTC resistor R127.
- Charge voltage failed (No,go to No 7)
- R100/ R101 = 0.8V ( OK, change N100 ).
- Check resistance of F100.
- Check resistance of L100.
- Check R103 ( bend or broken). Yes, change R103 and N101.
- Battery voltage failed
- Check R106/R111. OK change N100.

**Internal audio failure**

A. Speaker doesn't work (No-go to B)

- Check the mechanic and impedance of speaker (about 30 Ohm).
- Check L202, L203 and connection to speaker pads / bottom
- Not OK,-change L202 or L203
- Check the resistance between L202/203 to GND (>10m Ohm)
- Check C221-224. Ok, goto No.8.

B. Microphone doesn't work

- Check contacts and impedance of microphone ( 500R-1K )
- Change microphone, not OK,check the connection X503-->PCB for soiled.
- Check the microphone bias voltage 1.7V at C242 (OK goto No. 11).
- Check voltage on R214, check its connection to N200. Not OK, change N200.
- Check audio signal at C258/259. Not OK, check signal path from R214 to N200.
- Check VBB( 2.8V ) at C117 and VCOBBA (2.8V) on C248. Not OK, check CCONT(N100).
- Check COBBA\_CLK 13MHz/3.2Vpp at J201.Not OK, swap- MAD (D300) faulty.
- Check COBBA\_RESET at J343. Not OK, swap-MAD(D300) faulty.
- Change COBBA (N200)\*

**Clock time problems / wrong ringtone speed**

- Check 32.768 kHz squarewave at C149. No, change B100.
- Check/change C147, C148, C153.
- Check/change N100.

**Insert SIM card, SIM card not accepted**

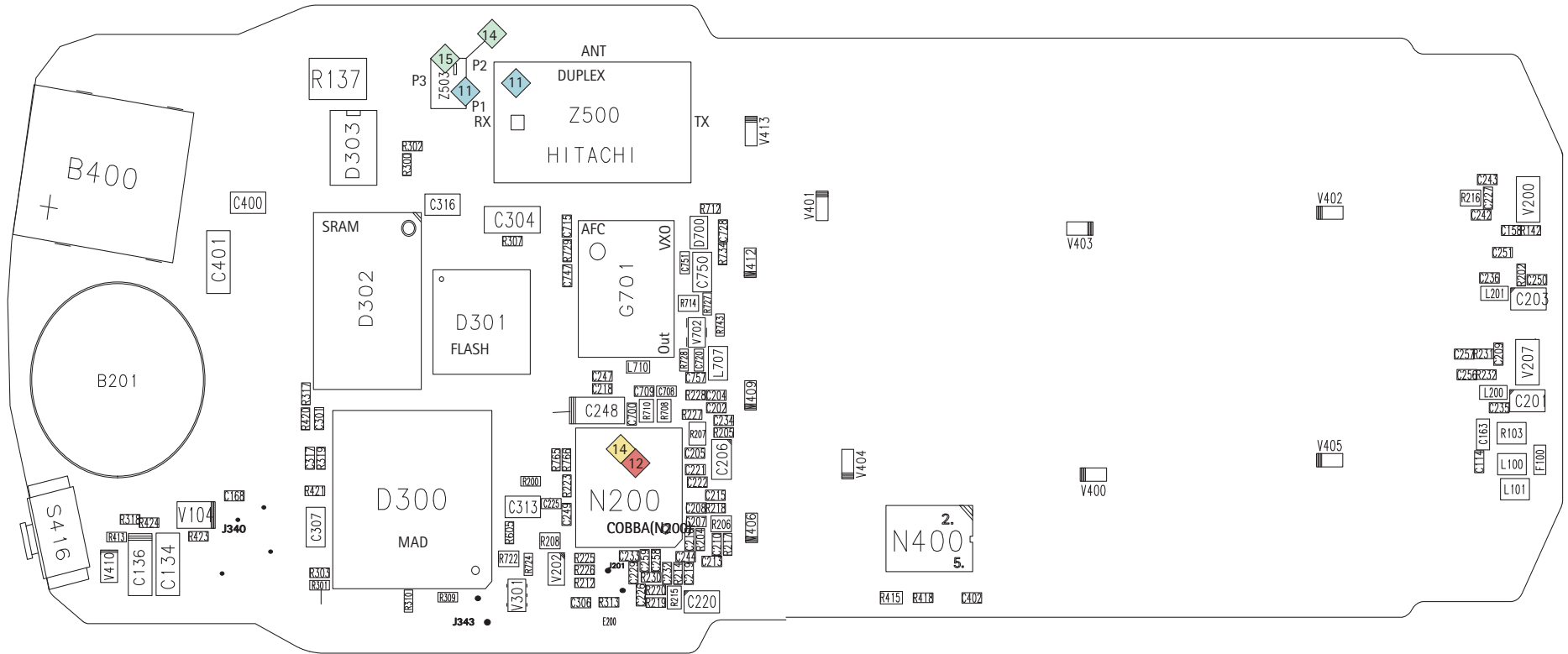
- Check solderings and contacts of X100.
- Check signals at SIM-CARD reader, see layout for pinouts.
- Change V112 if SIM\_DATA\_CLOCK\_RESET or VSIM is short circuited to GND.
- Check also R115, R116, C137, C138, C139, C140, C141.
- Check/change CCONT( N100).
- SIM card not accepted
- SIM LOCK active ( correct the SIM LOCK settings)
- Check/change COBBA(N200).\*

**Low standby / operation mode time**

- Check power consumption
- Off state current is >1mA
- Lift L103. If current is OK, goto 1.
- Lift C109/110/115; V105; R137/104; C122 one by one and check the current.
- If higher current persists- PCB is faulty.
- Lift L505 and check the current. Current ok- change N500.
- Lift L506 and check the current. Current ok- change N501.
- Lift C111-113 and check/check/change them if current is ok.
- Lift L105 and check the current.
- Lift/change N100, if high current persists- PCB is faulty.
- Sleepmode current is >2-8mA.
- Check resistance at C117 to GND. If resistance < 10k, check all Parts supplied by VBB (Flash(N301), COBBA(N200), RAM etc.). If high current persists after checking/desoldering these items, MAD or PCB is faulty.

\*Note : COBBA(N200) change :  
If COBBA(N200) was changed, it is necessary to rewrite IMEI & SIMLOCK data and realign RX/TX, esp. TX I/O

**TOP**



**BOTTOM**



**NO RX GSM900**

1. Check the 13MHz reference frequency at N700,pin15.
2. Check LNA GSM(947MHz) at N600,pin 27.
3. Check 947MHz on Z600 (in and out).
4. Check UHF frequency (2036MHz/Ch60) at N600,pin 4
5. Check 71MHz IF at C617/618. Not ok, change N600.
6. Check 71 MHz IF at N700,pin 37/38. Not ok- change Z700.  
Also check C701/704.
7. Check VHF-frequency 464MHz at N700,pin 8.
8. Check RXC at N700,pin 36. Not ok- change N200.
9. Check 13 MHz IF at N700,pin 30. Not ok- change N700.
10. Check 13MHz IF at N700,pin 25. Not ok- change Z701.
11. Check 13MHz IF at N700,pin 23;24. Not ok- change N700.
12. Change N200

**NO TX GSM900**

1. Check the 13MHz reference frequency on pin 15 of N700.
2. Check VHF frequency ( 464 Mhz ) on pin 8 of N700. No, check/change G702.
3. Check IF ( 116MHz ) on pins 44&45 of N700. No, change N700.
4. Check IF ( 116MHz ) on pin 25&26 of N600.
5. Check UHF Lo frequency ( 2036Mhz / ch.60 ) on pin 4 of N600. Yes, go to No.7.
6. Check UHF frequency on C608. Check/change G700
7. Check PA\_GSM ( 902Mhz / ch.60 ) on pin 22 of N600. No, change N600.
8. Check PA\_GSM at C619
9. Check PA\_GSM at N500 pin4. OK, goto 11
10. Check CTL\_GSM at N700 pin 31 (0.7-1.7Vpp, depends on powerlevel). Yes, check/change N500 & Z601
11. Check PA\_GSM at L500; Z500; Z503; X501.

**NO RX GSM1800**

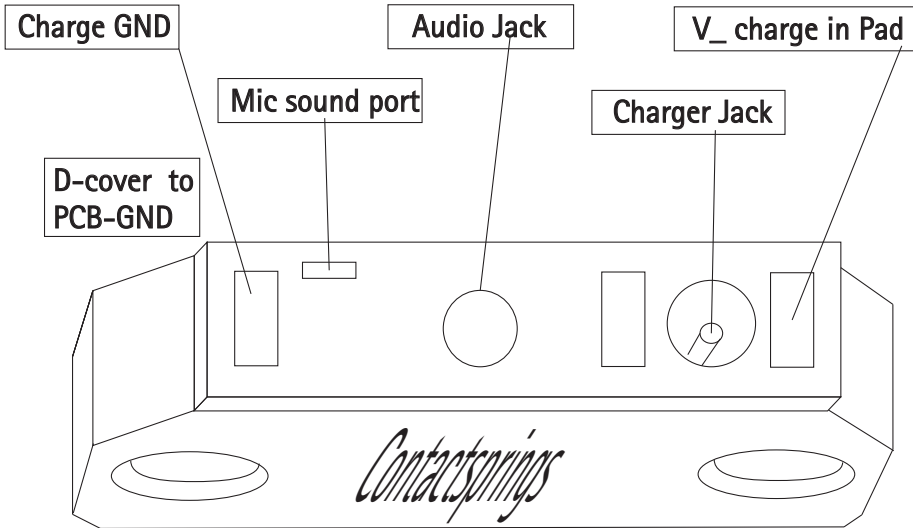
1. Check the 13MHz reference frequency on pin 15 of N700.
2. Check LNA\_PCN (1842,8 Mhz/ch.700 ) at N600,pin 34. Not ok- check/change Z501/503/504.
3. Check 1842,8MHz at N600 pin 42;43. Not ok-check/change parts around Z602.  
( C640;R602/603;L607/608)
4. Check UHF-frequency (2029,8MHz/Ch.700) at N600,pin 4
5. Check 187 MHz IF at N600,pin 11;12. Not ok- check/change N600, check parts around C627/629.  
(L604/609/610/618;C643/649)
6. Check 1/4 VHF-frequency 116 MHz at N600,pin 9. Not ok, check/change G702,N700, parts around L705.  
(C709/723/724/738;R709/716;L709)
7. Check 71 MHz IF at C617/618. Not ok- change N600.
8. Check 71 MHz IF at N700 pin 37; 38. Not ok, change Z700, check C701/704.
9. Check VHF frequency 464 MHz at N700 pin 8. Not ok, check Values around G702.
10. Check RXC at N700 pin 36. Not ok- change N200.
11. Check 13MHz IF at N700 pin 30. Not ok- change N700.
12. Check 13MHz IF at N700 pin 25. Not ok- change Z701.
13. Check 13MHz IF at N700 pin 23;24. Not ok- change N700.
14. Change N200.

**NO TX GSM1800**

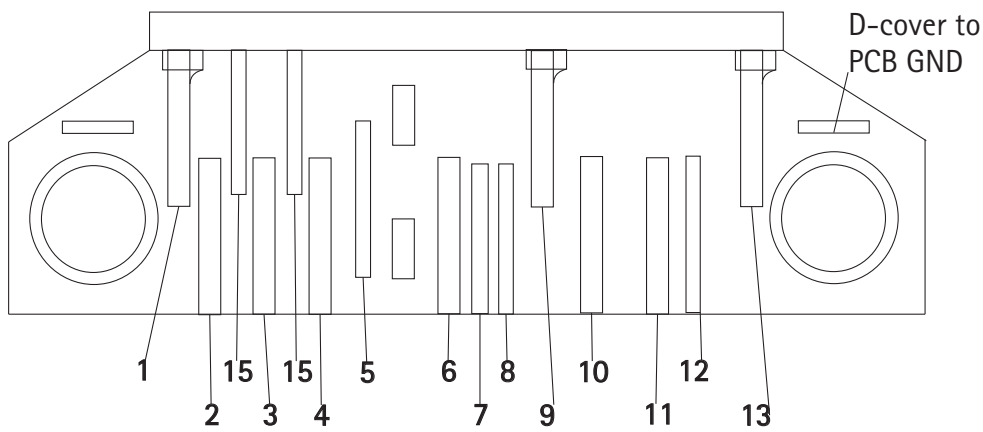
1. Check the 13MHz reference frequency on pin 15 of N700.
2. Check VHF frequency ( 464Mhz ) on pin 8 of N700. No, check/change G702.
3. Check IF ( 232MHz ) on pin 46 of N700. No, change N700.
4. Check IF ( 232MHz ) on pins 35&37 of N600. No, check/change Z702.
5. Check UHF frequency (1979,8MHz / ch.700 ) on pin 4 of N600. Yes, go to No.7.
6. Check UHF frequency on C608.
7. Check PA\_PCN on pin 40 of N600. No, change N600.
8. Check PA\_PCN at Z603 out.
9. Check PA\_PCN at N502 in&out.
10. Check PA\_PCN at R514, also check CTL\_PCN at N700 pin 28  
(0.5-1,5Vpp,depends on powerlevel).
11. Check PA\_PCN at N501 pin 4. Not ok, change N501.
12. Check PA\_PCN at Z504 pin TX. Not ok-check/change L503.
13. Check VC at C524(0.9VDC in PCN-TX mode).
14. Check PA\_PCN at Z504 pin 1. Not ok- check/change Z504.
15. Check/change Z503, X501.



**System Connector**



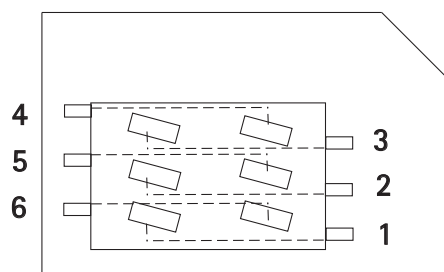
**System Connector**



1, 10	=Charge_GND	7	=XEAR_N
2	=IntMIC_P	8	=XMIC_P
3	=IntMIC_N	9,12	=Charge_Ctrl
4	=INT	11,13	=V_charge_IN
5	=XEAR_P	15	=Not connected
6	=XMIC_N		

**SIM-Connections**

**Service jig pins**



- Btemp
- FBUS TX
- GND
- MBUS
- FBUS RX
- VPP

1,5	=VSIM
2	=SIMreset
3	=SIMclk
4	=SIMDATA
6	=GND

Attention : Order of connecting pins is different to other mobiles