

NSM-3 differences in red

Internal audio faults

A: No audio from speaker

- Check resistance of speaker (30 Ohm), change speaker if bent or soiled.
- 1. Check connection between speakerpads on PCB and C291/292, if not ok, check L271,272. Check lines for shorts to GND (>1M0hm).
- 2. If fault persists, change COBBA (N250). Note that it is necessary to align RX / TX values and rewrite SIMlock-data after changing COBBA!

B: Microphone does not work

- Check impedance of microphone (0,5-1kOhm), change if necessary.
- 3. Check mechanical condition of connector X280/X300 (8850/8890 only).
- 4. Check MicBias at L287 (located on keyboard side, see page 4), 2.4V on active microphone (see Layout). If not ok, check values around V250 or change COBBA N250
- 5. Check connection from L287 to C263 (470 Ohm) and from L287 to C262 (2.2kOhm).
- 6. If fault remains, change COBBA (N250). Note that it is necessary to align RX / TX values and rewrite SIMlock-data after changing COBBA!

Clock time problems

A: Clock time has to be corrected in short periods

- 1. Check amplitude and frequency of sleepclock oscillator at J228, should be 3Vpp squarewave at 32.768kHz. If not ok, change B100 or check parts like R100, R102, R154 and C101, C102, C113.

B: Clock time is lost after removing battery

- Check contact springs of battery, bend them if nessecary (see also NSM-2 service bulletin 20) or change RTC-battery. Bending of springs should be always done, also with new batteries. If fault persists, probably CCONT (N100) or CHAPS (N101) faulty. Note that you have to run energy management calibration after changing CCONT.

Not charging

A: Nothing happens if charger is connected

- Check mechanical appearance of connector X110.
- 1. Check resistance of fuse F101.
- 2. Check resistance of Vcharge line to GND, value should be around 50kOhm. If not ok, check/change V100, C103/114.
- 3. Check / Change N101, N100.

B: "not charging" appears on LCD

- Run energy management calibration. If it works without failure message, try to charge after calibration.

C: Battery temperature failed

- 4. Check X101, R120/122 or change CCONT (N100).

D: Battery size failed

- 5. Check X101, R120/122 or change CCONT (N100).

E: Battery voltage failed

- Change CCONT (N100).

F: Charge current failed

- 6. Check / change R131, N101, N100.

G: Charge voltage failed

- 7. Check Vcharge at voltage divider R103/104. If ok change CCONT (N100).
- 8. If not ok, check parts like X110, V100, F101, L104 or change N101.

SIMcard faults

A: Insert SIM card

- Check X302 if bent or soiled, change if necessary.
- 1. Make sure that pads for SIMcard-reader on PCB are clean.
- 2. Check all SIMlines at pogo-pins of Service Jig if pulsed to 3/5Vpp.
- 3. Check resistance of SIMlines to GND, change V104, C127/128 if necessary.
- 4. Probably broken solderings under CCONT (N100). Remove CCONT if not underfilled, replace spare part with µBGA rework machine and run energy management calibration.
- If fault persists, probably Mad or PCB faulty.

B: SIMcard not accepted

- Use Wintesa to open quick/RF info window, compare shown SIMlock-data with the listed entries of the respective product code.
- If shown SIMlock-data is the same as in the list, SIMlock is ok. Probably Msin data field is closed to special IMSI number range can be opened only by operator! (refer to general SB 65).
- If shown SIMlock-data is not the same as in the list or somehow corrupted rewrite SIMlock-data with Nokia security password.
- If SIMlock is corrected or inactive but fault remains, probably broken solderings under COBBA (N250). Change COBBA, align RX / TX values and rewrite SIMlock-data once more.

UI faults

A: Backlight failure (Also see measurement points on page 4)

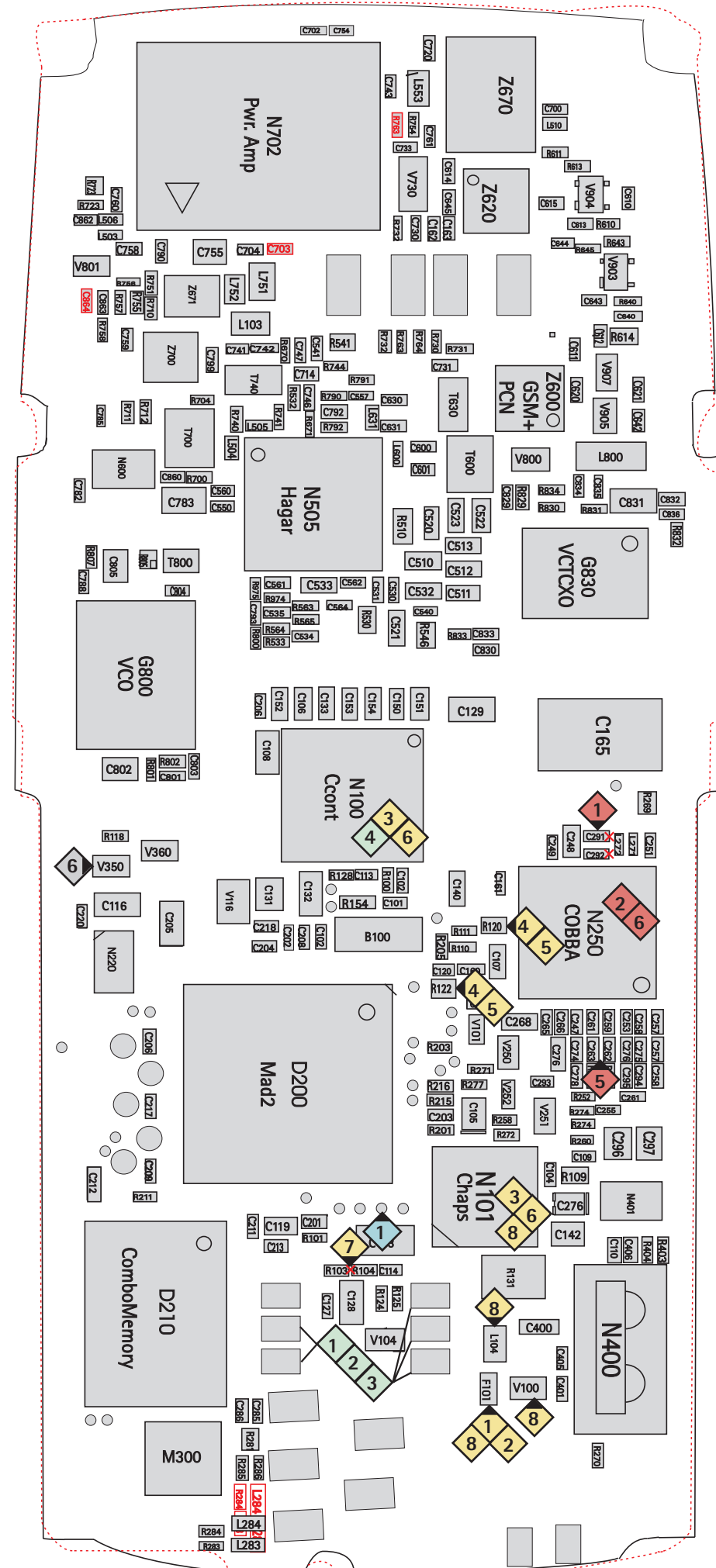
- 1. Check voltage at pin 7 and 15 of N310 (see layout)- should be 2.8V when lights are on. If not ok, there could be a break between D200 and N310, or Mad is faulty
- 2. Check VB 3.6V DC pin 1 of N310 and VBB 2.8V DC pin 2 of N310. (See layout)
- 3. Check resistance of R310 and R311. (See layout)
- 4. Check VB at LED's V320-325 and V331-340. (See layout)
- 5. If keypad backlight is not bright enough, change resistor R311 (see layout) from 39kOhm to 10kOhm (also see NSM 2 service bulletin 23).

B: Vibra failure

- Check version of vibramotor, add support tape if necessary (also see NSM-3 service bulletin 11).
- 6. Check VB 3.6V DC at V350.
- 7. Check VB 3.6V DC pin 1 and VBB 2.8V DC pin 2 of N310. (See layout)
- 8. Check vibra signal at pin 16 of N310. If not ok, check vibra_cnt at pin 19 of N310. (See layout) If signal is ok at pin19, change N310, else there is a break between D200 and N310, or MAD is faulty.

C: Display failure

- If line segments missing or no display function at all, check mechanical appearance of display, change it if necessary.



NO TX GSM900

1. Check 26MHz REFCLK at C830(700mVpp), frequency deviation <100Hz.
2. Check TXIQ signals at R541/546. If ok, go to 4.
3. Check VBB 2.8V DC at C107 and VCOBBA 2.8V DC at C248, check COBBACKL at J252, probably COBBA (N250) faulty or broken soldered.
4. Check 902MHz at L504. If ok, go to 6.
5. Check supply voltages for HAGAR(N505) at C535 (1.35V), C550 (2.8V), C557 (2.8V), C560 (4.8V), C561 (2.8V).
6. Check SDATA at J237, SCLK at R205, SENA at R206, TXC at C792 and HAGARRESET at C793.
7. Check TXP at pad of not assembled R745 (between R791/541).
8. Check frequency of G800 (SHF) at C788 (TX-Ch.60-3608MHz) if possible, otherwise you can check VCC at C804(2.8V) and VC at C803 which varies between 0.7-3.8V. If VC =4.8V, the oscillator does not work. If values are OK but no TX signal at L504, probably HAGAR(N505) is faulty or broken soldered.
9. Check 902MHz at N702 pin 8. If not OK, check T700,Z700/671, V801.
10. Check 902MHz at L553 pin1. If not OK, check VBATT at pin 3 and 6 of N702, also check TXV_GSM 2.8Vpp squarewave at N702 pin2 and Vapc 1-1.6Vpp squarewave at N702 pin7 depending on TX powerlevel.
11. Check 902MHz at J600 (Antenna pad).If not, check L553 in/out, Z670 in/out, TXVGSM at R671.

NO TX GSM1800

1. Check 26MHz REFCLK at C830(700mVpp), frequency deviation <100Hz.
2. Check TXIQ signals at R541/546. If ok, go to 4.
3. Check VBB 2.8V DC at C107 and VCOBBA 2.8V DC at C248, check COBBACKL at J252, probably COBBA(N250) faulty or broken soldered.
4. Check 1747.8MHz at L505. If ok, go to 6.
5. Check supply voltages for HAGAR(N505) at C535 (1.35V), C550 (2.8V), C557 (2.8V), C560 (4.8V), C561 (2.8V).
6. Check SDATA at J237, SCLK at R205, SENA at R206, TXC at C792 and HAGARRESET at C793.
7. Check TXP at pad of not assembled R745 (between R791/541).
8. Check frequency of G800 at C788 (TX-Ch.700-3495.6MHz) if possible, otherwise you can check VCC at C804(2.8V) and VC at C803 which varies between 0.7-3.8V. If VC =4.8V, the oscillator does not work. If values are OK but no TX signal at L505, probably HAGAR(N505) is faulty or broken soldered.
9. Check 1747.8MHz at N702 pin 8. If not OK, check T740, Z671, V801.
10. Check 1747.8 MHz at L553 pin 3. If not OK, check VBATT at pin 3 and 6 of N702, also check TXVDCS 2.8Vpp squarewave at N702 pin1 and VAPC 1-1.6Vpp squarewave at N702 pin7 depending on TX powerlevel.
11. Check 1747.8MHz at J600 (Antenna pad).If not, check L553 in/out, Z670 in/out, TXVDCS at R670.

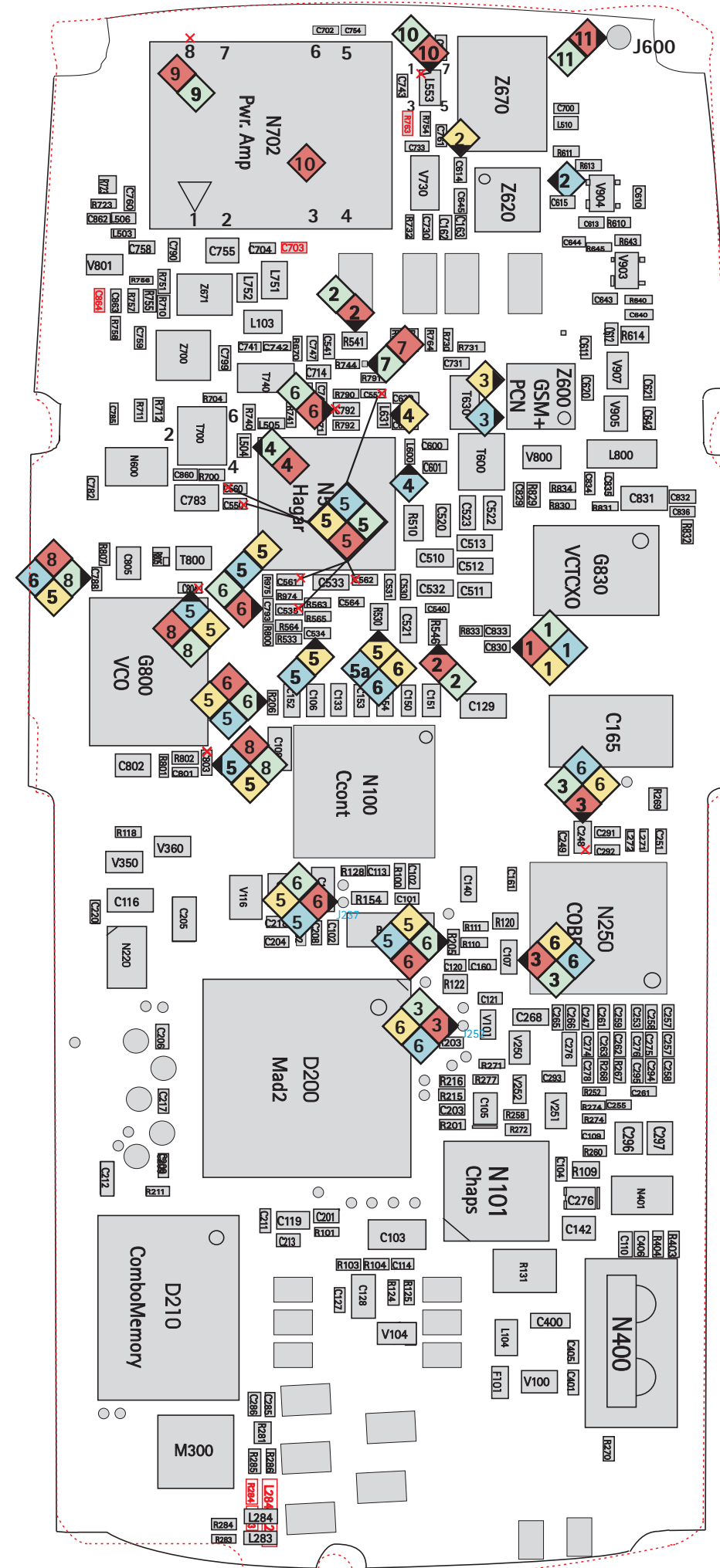
NO RX GSM900

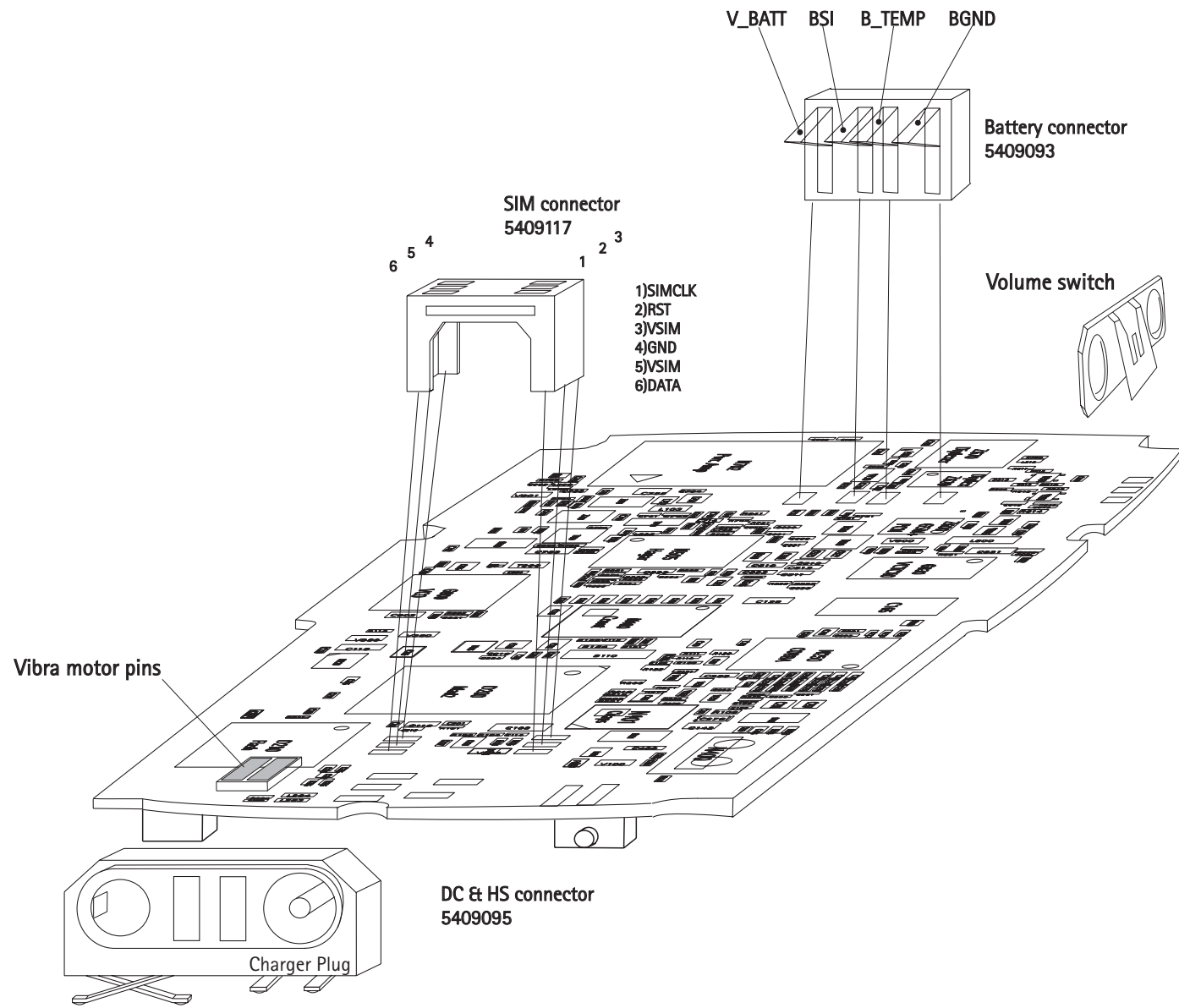
1. Check 26MHz reference oscillator at C830, 700mVpp,frequency deviation < 100Hz
2. Check 947MHz at Z620 GSM900 out. If not OK, check solderings of Z620/Z670 and C645.
3. Check 947MHz at Z600 GSM900 out. If not OK, check that LNA works, ,change V904/907 or Z600 if necessary.
4. Check 947MHz at L600. If not ok, check/change T600, C600/601 or L600.
5. Check RXIQ signal at R530 (A). If not ok, check values at HAGAR(N505) supply voltages at C535 (1.35V), C550 (2.8V), C557 (2.8V), C560 (4.8V), C561 (2.8V), C562 (2.8V), SDATA at J237, SCLK at R205 and SENA at R206, check RXREF 1.2V at C534 and HAGARRESET at C793.
 Check frequency of G800 at C788 (RX-Ch.60-3788MHz) if possible, otherwise you can check VCC at C804(2.8V) and VC at C803 which varies between 0.7-3.8V. If VC =4.8V, the oscillator does not work.
- If all values are ok but no RXIQ signal at R530, probably HAGAR(N505) is faulty or broken soldered.
6. If signal at R530 is ok, but still no RX-calibration possible, check values at COBBA(N250). Check VBB 2.8V DC at C107 and VCOBBA 2.8V DC at C248, also check COBBACKL at J252, if values are ok, probably COBBA solderings are broken.

NO RX GSM1800

1. Check 26MHz REFCLK at C830(700mVpp), frequency deviation <100Hz.
2. Check 1842.8MHz at Z620 GSM1800 out. If not OK, check solderings of Z620, Z670 and C614.
3. Check 1842.8MHz at Z600 GSM1800 out. If not OK, check that LNA works, change V903/905 or Z600 if necessary.
4. Check 1842.8MHz at L631. If not OK, check/change T630, C630/631 and L630/631..
5. Check RXIQ signal at R530. If not ok, check values at HAGAR(N505) like supply voltages at C535 (1.35V), C550 (2.8V), C557 (2.8V), C560 (4.8V), C561 (2.8V), C562 (2.8V), check SDATA at J237, SCLK at R205, SENA at R206, RXREF 1.2V at C534 and HAGARRESET at C793.
 Check frequency of G800 at C788 (RX-Ch.700, 3685.6MHz) if possible, otherwise you can check VCC at C804(2.8V) and VC at C803 which varies between 0.7-3.8V. If VC =4.8V, the oscillator does not work.
- If all values are ok but no RXIQ signal at R530, probably HAGAR(N505) is faulty or broken soldered.
6. If signal at R530 is ok, but still no RX-calibration possible, check values at COBBA(N250). Check VBB 2.8V DC at C107 and VCOBBA 2.8V DC at C248, check also COBBACKL at J252, if values are ok, probably COBBAsolderings are broken.

NSM-3 differences in red





- 300-399 UI
- 400-420 Infrared
- 200-220 Baseband
- 221-299 Audio
- 400-900 RF-Part
- 100-199 Power Supply

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