

Trouble shooting guide, Electrical

Applicable for Z1010

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1 Explanations

1.1 Service functions in the software

The service menu will be accessed with the following key combination. Use the Jog dial.

► * ◀ ◀ * ◀ *

They are as follows:

1. Service info
2. Service tests
3. Text labels

The service test menu looks like this:

1. Main screen
2. External display
3. Camera
4. Video call camera
5. LED/Illumination
6. Keyboard
7. Vibrator
8. Earphone
9. Microphone
10. Total call time

1.2 Liquid damage

1.2.1 Action

Make a general visual inspection for corrosion and oxidation caused by liquid damage. No further action should be taken for a liquid damaged phone. Handle the unit according to local company or GSP directives.

2 Appearance Problems

- Make a general visual inspection for corrosion and oxidation caused by liquid damage according to point 1.2
- Check the Upper Rear Cabinet (*Fig. 2.1*), the Upper Inside Cabinet (*Fig. 2.2*), the Lower Rear Cabinet (*Fig. 2.3*) and the Lower Inside Cabinet (*Fig. 2.4*) for damage, scratches and that the parts fits correctly. Replace the faulty components if necessary.
- Check the Keyboard (*Fig. 2.4*), the IMD plate (*Fig. 2.1*) and the SEMC Icon (*Fig. 2.1*) for damage, scratches and that the parts fit correct. Replace the faulty components if necessary.
- Check the screw covers, the hinge covers (*Fig.2.5*), the battery lid (*Fig. 2.3*), and the cover mirror camera (*Fig. 2.3*) for damage, scratches and that the parts fits correctly. Replace the faulty components if necessary.
- Check the cover audio jack (*Fig. 2.6*), the cover USB connector (*Fig. 2.7*), the cover MS duo connector (*Fig. 2.8*) and the cover ext. antenna connector (*Fig. 2.3*) for damage, scratches and that the parts fits correctly. Replace the faulty components if necessary.

If the failure still occurs, handle the unit according to the local company or the GSP directives.



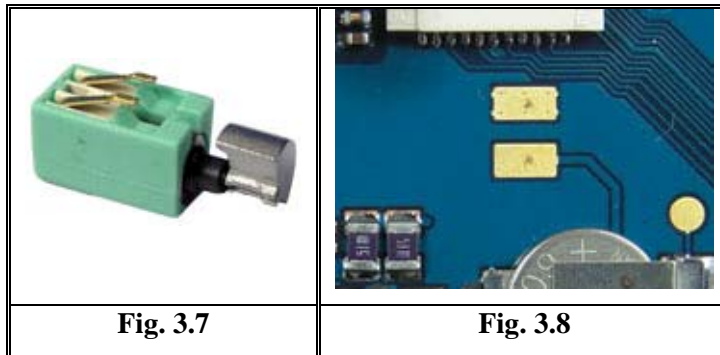
3 Alert Problems

- Make a general visual inspection for corrosion and oxidation caused by liquid damage according to point 1.2

3.1 Vibrator

- Turn on the phone. Go to the service test menu (1.1); choose “Vibrator”. Press any key to check that the vibrator works properly.
- Check if the vibrator (*Fig. 3.7*) is mechanically damaged, dirty or oxidized. Replace it if necessary.
- Check if the vibrator pads (*Fig. 3.8*) are dirty or oxidized. Clean them if necessary.

If the fault still occurs, try to update the phone with the latest available software version. If this does not solve the problem, handle the unit according to the local company or the GSP directives.



4 Audio Problems

- Make a general visual inspection for corrosion and oxidation caused by liquid damage according to point 1.2

4.1 Speaker

- Turn on the phone. Go to the service test menu (1.1); choose “Earphone”. Press any key to check the speaker.
- Check if the speaker (*Fig. 4.1*) is mechanically damaged, dirty or oxidized. Replace it if necessary.
- Check if the speaker gasket (*Fig. 4.2*) is mechanically damaged. Replace it if necessary.
- Check if the flex film (*Fig. 4.4*) is mechanically damaged. Replace it if necessary.
- Check if the FPC Connector 33pu 085 (*Fig. 4.5*) is closed and if it is mechanically damaged, dirty or oxidized. Replace it if necessary.
- Check if the Sub PCB assembly (*Fig. 4.6*) is mechanically damaged, dirty or oxidized. Replace it if necessary.
- If the fault still occurs, replace N2300 (Knatte 2).

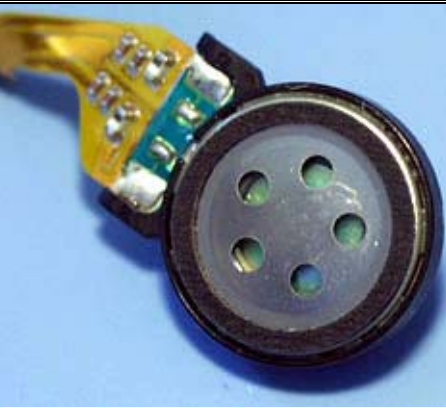


Fig. 4.1

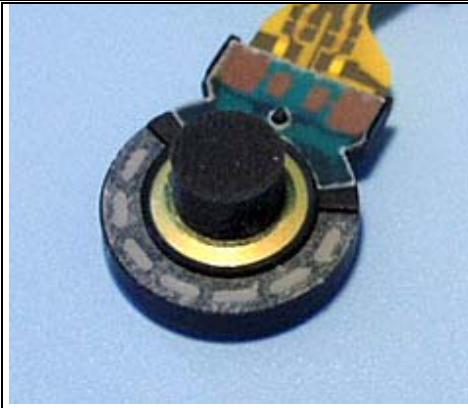


Fig. 4.2



Fig. 4.4

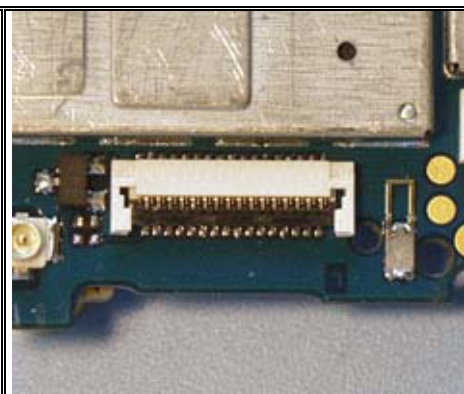
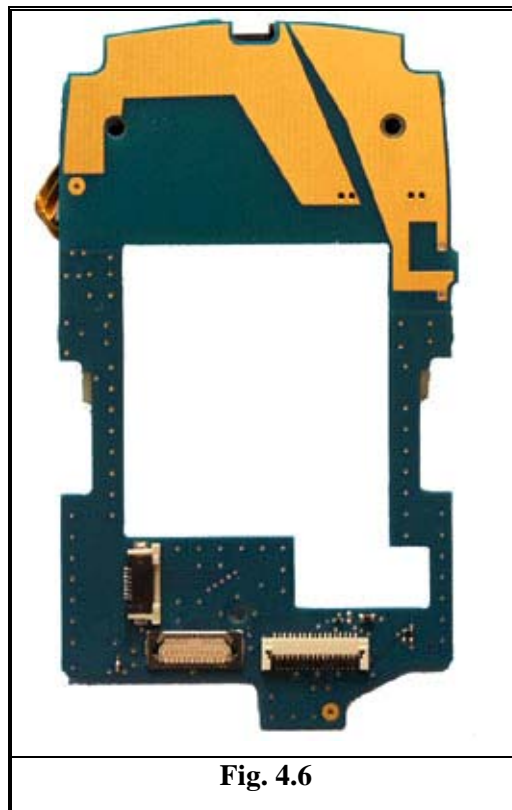


Fig. 4.5

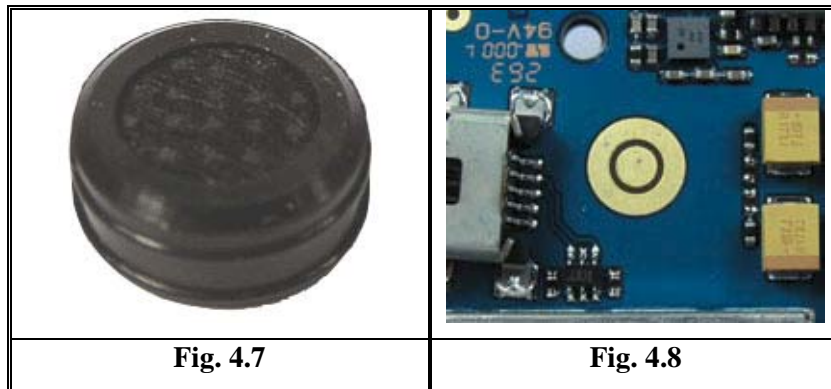
If the fault still occurs, try to update the phone with the latest available software version. If this does not solve the problem, handle the unit according to the local company or the GSP directives.



4.2 Microphone

- Insert a working SIM card into the Z1010 and turn it on; make a call to the phone.
- Check if the microphone (*Fig. 4.7*) is mechanically damaged, dirty or oxidized. Replace it if necessary.
- Check if the microphone pads (*Fig.4.8*) are dirty or oxidized. Clean them if necessary.
- If the fault still occurs, replace N2300 (Knatte 2).

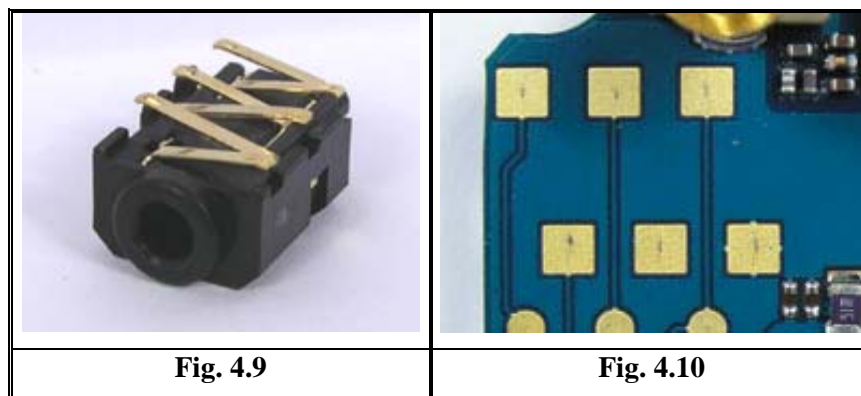
If the fault still occurs, try to update the phone with the latest available software version. If this does not solve the problem, handle the unit according to the local company or the GSP directives.



4.3 Headset

- Insert a working headset to the Audio jack connector.
- Insert a working SIM card into the Z1010 and turn it on; make a call to the phone.
- Check if there is sound from the earphone and microphone is working. Replace the Audio jack connector (*Fig. 4.9*) if necessary.
- Check if the Audio jack connector pads on the Main PCB (*Fig. 4.10*) are dirty or oxidized. Clean them if necessary.

If the fault still occurs, try to update the phone with the latest available software version. If this does not solve the problem, handle the unit according to the local company or the GSP directives.



5 Charging/Capacity Problems

- Make a general visual inspection for corrosion and oxidation caused by liquid damage according to point 1.2
- If neither one of the mentioned suggestions works successfully (in chapter 5.1 or 5.2). Replace N1300 (PA GSM). **Note! Replacement of N1300 requires RF-Calibration (SERP).** See Working Instruction Electrical for Z1010 how perform this replacement of this component.

5.1 Charging

- With a working battery connect a working charger to the phone, if the battery voltage is too low the phone will charge the battery without turning on the phone (this will usual not take more than 10 minutes) and when the battery voltage is high enough the phone will be able to turn on and show charging in the LCD.
- Check if the system connector X2302 (*Fig. 6.1*) is mechanically damaged, dirty or oxidized. Replace it if necessary.
- If the fault still occurs, try to replace N2300 (Knatte2)

If the fault still occurs, try to update the phone with the latest available software version. If this does not solve the problem, handle the unit according to the local company or the GSP directives.

5.2 Capacity

- The standby time will be reduced if, the light is turned on all the time, the bluetooth is turned on, or if the infrared is turned on

If the fault still occurs, try to update the phone with the latest available software version. If this does not solve the problem, handle the unit according to the local company or the GSP directives.

6 Data Communication Problems

Make a general visual inspection for corrosion and oxidation caused by liquid damage according to point 1.2

If no communication is accomplished with the system connector:

- Check if the system connector X2302 (*Fig. 6.1*) is mechanically damaged, dirty or oxidized. Replace it if necessary
- If the fault still occurs, try to replace N2300 (Knatte2)

If no communication is accomplished with the USB connector:

- Check if the USB connector X2500 (*Fig. 6.2*) is mechanically damaged, dirty or oxidized. Replace it if necessary.

If no communication is accomplished via bluetooth or infrared, try to master reset the phone.

If the fault still occurs, try to update the phone with the latest available software version. If this does not solve the problem, handle the unit according to the local company or the GSP directives.

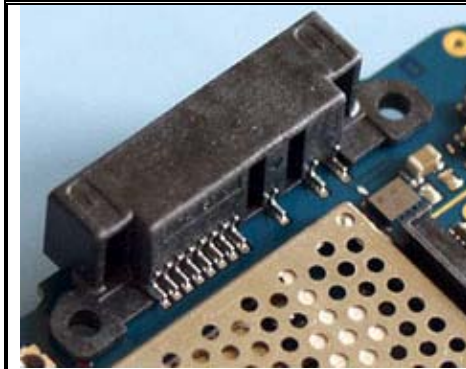


Fig. 6.1

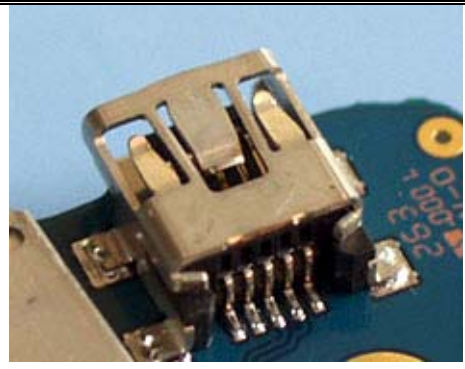


Fig. 6.2

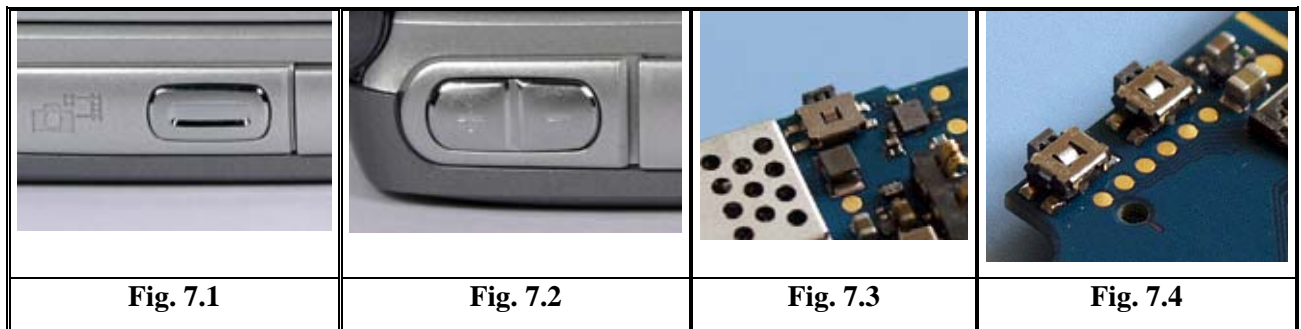
7 Key/Flip problems

- Make a general visual inspection for corrosion and oxidation caused by liquid damage according to point 1.2

7.1 Side Keys

- Turn on the phone. Go to the service test menu (1.1); choose “Keyboard”. The pressed key will be indicated in the LCD.
- Check if the camera key (*Fig. 7.1*) and the volume keys (*Fig. 7.2*) are working properly and that the mechanical response feels normal. Replace keyboard (*Fig. 7.5*) if necessary.
- Check if the cameras switch (*Fig. 7.3*) and the volume switches (*Fig. 7.4*) are working properly and that the mechanical response feels normal. Replace the faulty switch if necessary.

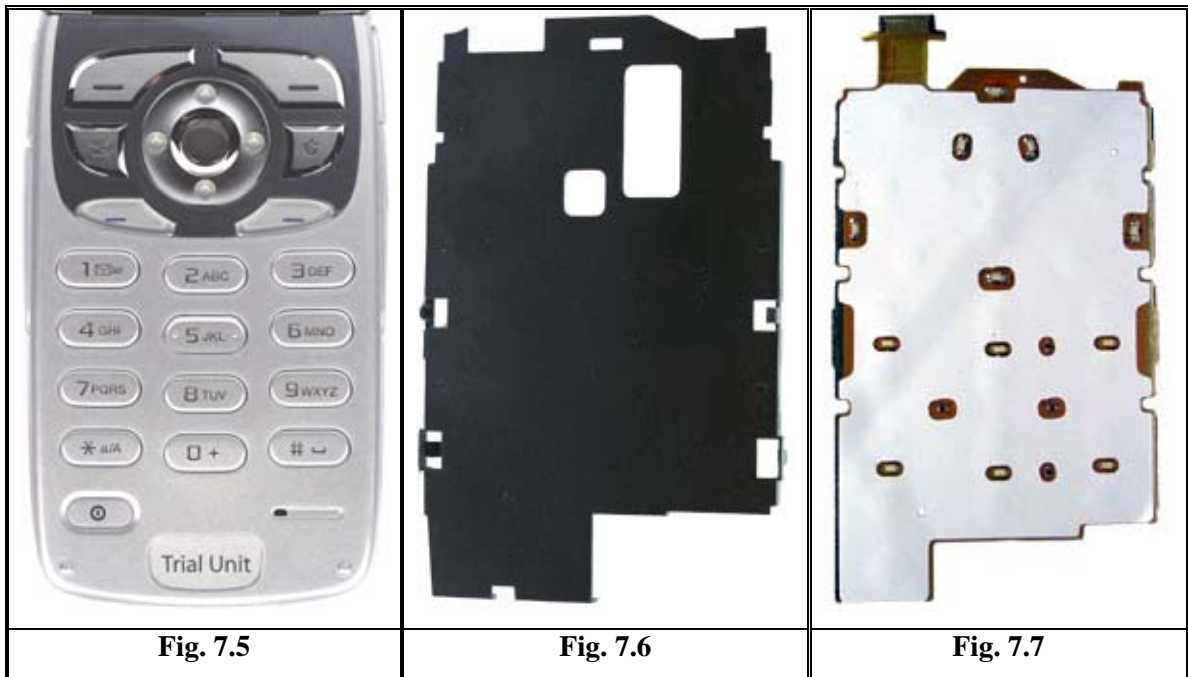
If the fault still occurs, try to update the phone with the latest available software version. If this does not solve the problem, handle the unit according to the local company or the GSP directives.



7.2 Keyboard

- Turn on the phone. Go to the service test menu (1.1); choose “Keyboard”. Press all the keys. The pressed key will be indicated in the LCD and a click will be heard.
- Check if the keyboard (*Fig. 7.5*) is working properly. Check if the mechanical response feels normal and that all the keys have been showed in the LCD. Replace the keyboard (*Fig. 7.5*), the keyboard support (*Fig. 7.6*) or the keyboard PCB (*Fig. 7.7*) if necessary.

If the fault still occurs, try to update the phone with the latest available software version. If this does not solve the problem, handle the unit according to the local company or the GSP directives.



7.3 Switch Flip

- Insert a working SIM card into the Z1010 and turn it on and close the flip.
- Check if the key lights turn off and the status LCD turns on. Replace the Upper inside Cabinet (*Fig. 7.8*) if necessary.
- Check if the upper and lower part of the phone fits tight together, when closing the flip. Replace the frame if necessary.

If the fault still occurs, try to update the phone with the latest available software version. If this does not solve the problem, handle the unit according to the local company or the GSP directives.





8 LCD/Illumination Problems

- Make a general visual inspection for corrosion and oxidation caused by liquid damage according to point 1.2

8.1 Main LCD

- Turn on the phone. Go to the service test menu (1.1); choose “Main screen”.
- Check if the main LCD (*Fig 8.1*) is working properly and if there are missing lines or discolours. Replace it if necessary.
- Check if the flex film (*Fig 8.4*) is mechanically damaged. Replace it if necessary.
- Check if the FPC Connector 33pu 085 (*Fig. 8.5*) is closed and if it is mechanically damaged, dirty or oxidized. Replace it if necessary.
- Check if the Sub PCB assembly (*Fig. 8.6*) is mechanically damaged, dirty or oxidized. Replace it if necessary.

If the fault still occurs, try to update the phone with the latest available software version. If this does not solve the problem, handle the unit according to the local company or the GSP directives.

8.2 Sub LCD

- Turn on the phone. Go to the service test menu (1.1); choose “Outside display”.
- Check if the Status LCD (*Fig 8.2*) is working properly and if there are missing lines or rows. Replace it if necessary.
- Check if the flex film (*Fig 8.4*) is mechanically damaged. Replace it if necessary.
- Check if the FPC Connector 33pu 085 (*Fig. 8.5*) is closed and if it is mechanically damaged, dirty or oxidized. Replace it if necessary.
- Check if the Sub PCB assembly (*Fig. 8.6*) is mechanically damaged, dirty or oxidized. Replace it if necessary.

If the fault still occurs, try to update the phone with the latest available software version. If this does not solve the problem, handle the unit according to the local company or the GSP directives.

8.3 Illumination

- Turn on the phone. Go to the service test menu (1.1); choose “LED/Illumination”.
- Check if the illumination is balanced all over the Main LCD (*Fig. 8.1*). Replace the Main LCD if necessary.
- Check if the illumination is balanced all over the Sub LCD (*Fig 8.2*). Replace the Sub LCD if necessary.
- Check if the flex film (*Fig 8.4*) is mechanically damaged. Replace it if necessary.
- Check if the FPC Connector 33pu 085 (*Fig. 8.5*) is closed and if it is mechanically damaged, dirty or oxidized. Replace it if necessary.

- Check if the Sub PCB assembly (*Fig. 8.6*) is mechanically damaged, dirty or oxidized. Replace it if necessary.
- Check if the illumination is balanced in all the keys. Replace the keyboard PCB (*Fig. 8.3*) if necessary.

If the fault still occurs, try to update the phone with the latest available software version. If this does not solve the problem, handle the unit according to the local company or the GSP directives.

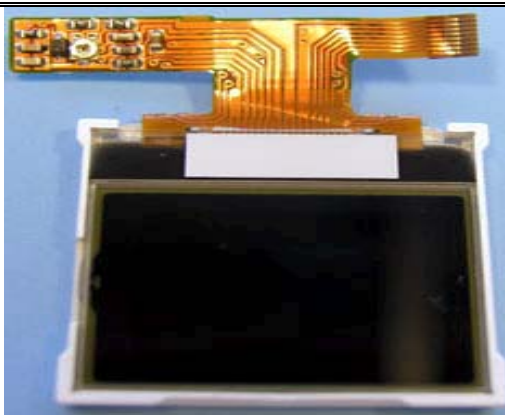
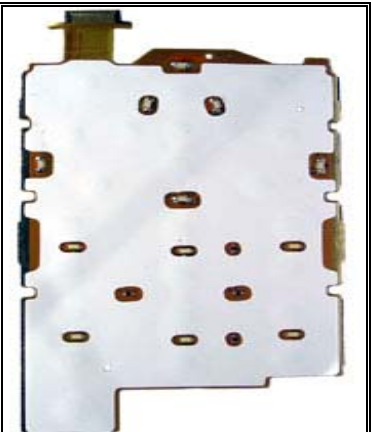
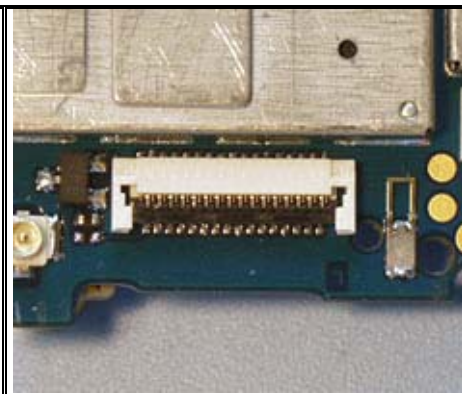
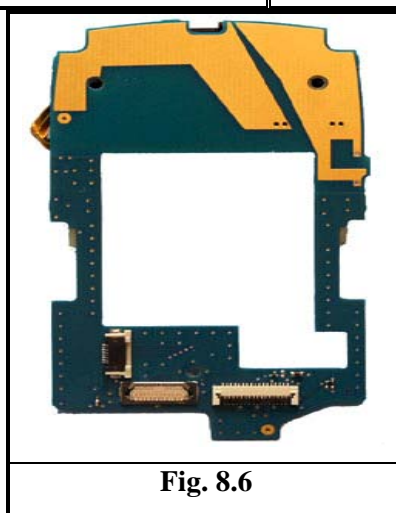
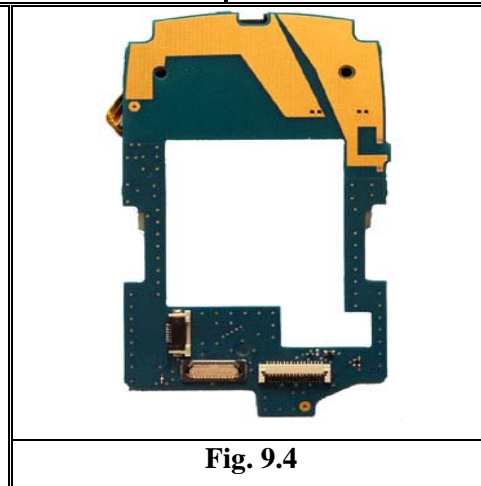
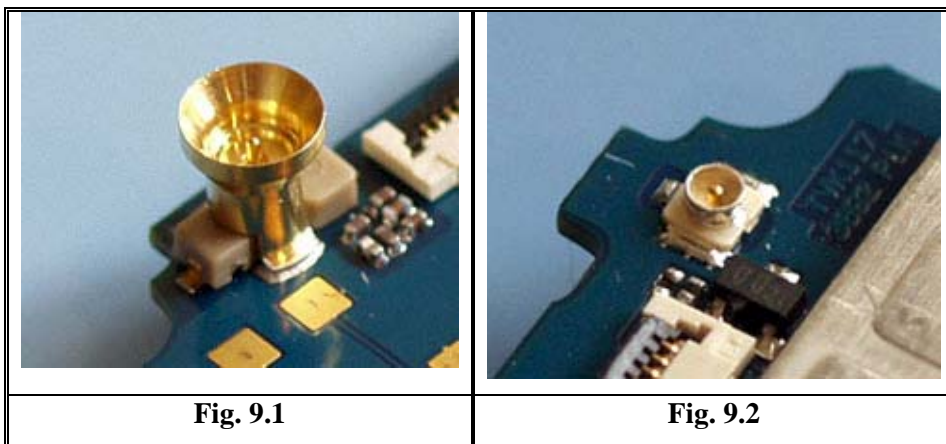

Fig 8.1

Fig 8.2

Fig 8.3

Fig. 8.4

Fig. 8.5

Fig. 8.6

9 Network Problems

- Make a general visual inspection for corrosion and oxidation caused by liquid damage according to point 1.2
- If neither one of the mentioned suggestions works successfully (in chapter 9). Replace N1300 (PA GSM). **Note! Replacement of N1300 requires RF-Calibration (SERP).** See Working Instruction Electrical for Z1010 how perform this replacement of this component.
- Insert a correct working SIM-card into the phone and turn it on. Check if the phone gets service and if the signal indicator shows a correct value at the display. Compare the value with a working phone.
- Check if the external antenna connector W1001 (*Fig. 9.1*) is mechanically damaged, dirty or oxidized. Measure the resistance of the external antenna connector W1001; it should be less than 1Ω. Replace it is necessary.
- Check if the coax connector (*Fig. 9.2*) is mechanically damaged, dirty or oxidized. Replace it if necessary.
- Check if the antenna switch is mechanically damaged, dirty or oxidized. Replace it if necessary.
- Check if the Sub PCB assembly (*Fig. 9.4*) is mechanically damaged, dirty or oxidized. Replace it if necessary.



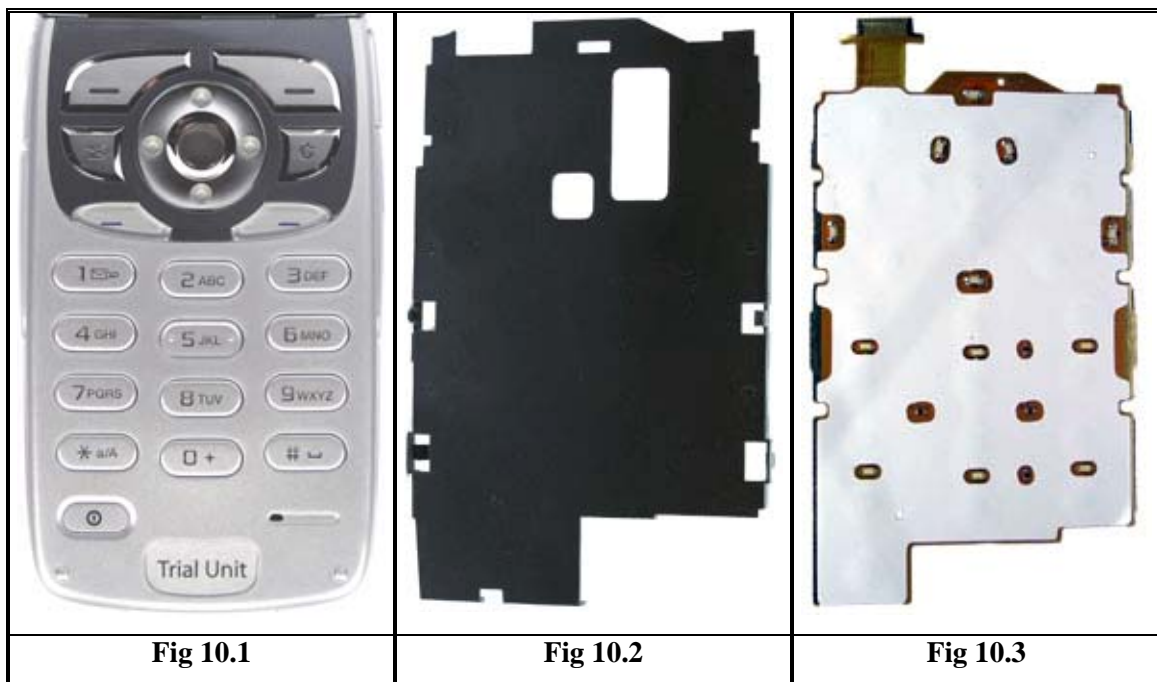
10 On/Off Problems

- Make a general visual inspection for corrosion and oxidation caused by liquid damage according to point 1.2
- If neither one of the mentioned suggestions works successfully (in chapter 10.1 or 10.2). Replace N1300 (PA GSM). **Note! Replacement of N1300 requires RF-Calibration (SERP).** See Working Instruction Electrical for Z1010 how perform this replacement of this component.

10.1 On/Off key or On/Off switch

- Turn on the phone using a working battery. If it fails;
- Check if the On/Off key (*Fig. 10.1*) is working properly. Check if the mechanical response feels normal. Replace the keyboard (*Fig. 10.1*), the keyboard support (*Fig. 10.2*) or the keyboard PCB (*Fig. 10.3*) if necessary.

If the fault still occurs, try to update the phone with the latest available software version. If this does not solve the problem, handle the unit according to the local company or the GSP directives.



10.2 Battery or battery connector

- Turn on the phone with the customer's battery. If it fails, connect a charger to the phone, if the battery voltage is too low the phone will charge the battery without turning on the phone (this will usual not take more than 10 minutes) and when the battery voltage is high enough the phone will be able to turn on and show charging in the LCD. If it still fails to turn on;
- Check if the battery (*Fig. 10.4*) is working properly. Replace it if necessary.
- Check if the battery connector X2200 (*Fig. 10.5*) is mechanically damaged, dirty or oxidized. Replace it if necessary.

If the fault still occurs, try to update the phone with the latest available software version. If this does not solve the problem, handle the unit according to the local company or the GSP directives.



Fig 10.4

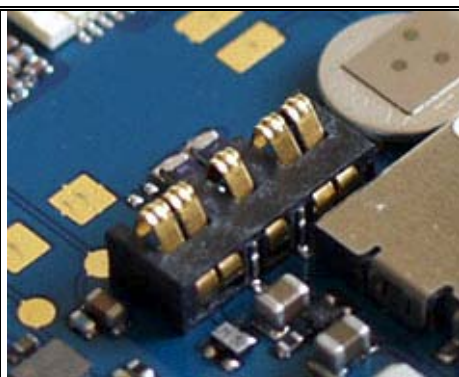


Fig 10.5

11 Other Problems

11.1 Camera

- Make a general visual inspection for corrosion and oxidation caused by liquid damage according to point 1.2
- Turn on the phone. Go to the service test menu (1.1); choose “Camera”.
- Check if the FPC Connector 23pu 085 (*Fig. 11.1*) is closed and if it is mechanically damaged, dirty or oxidized. Replace it if necessary.
- Check if the VGA camera module (*Fig. 11.2*) works properly; verify the viewfinder functionality in the LCD and check if the picture can be saved. Replace it if necessary.
- Check if the VGA camera gasket (*Fig. 11.3*) is mechanically damaged. Replace it if necessary

Note: Do not touch the camera lens, when replacing the camera.

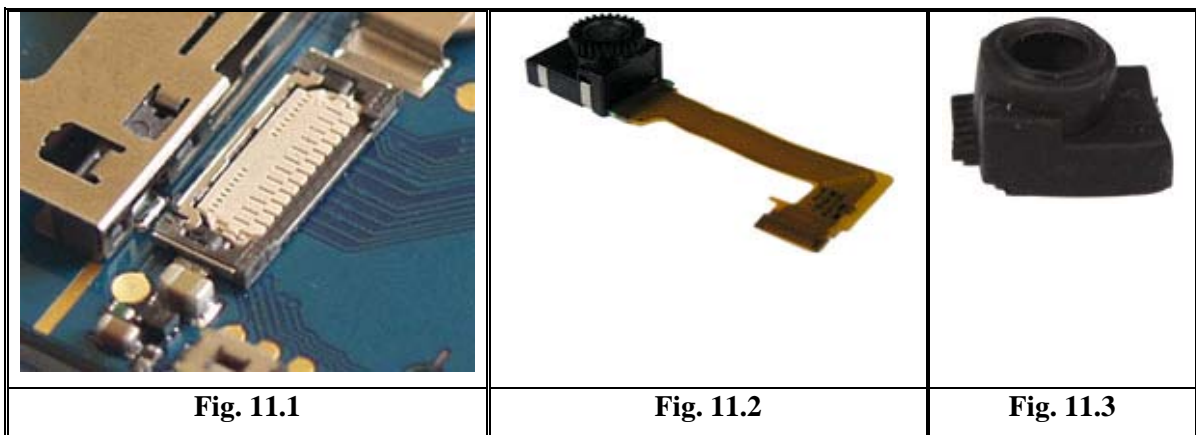
Note: The VGA camera is the camera used to capture pictures or to record videos. It is placed on the back side of the phone.

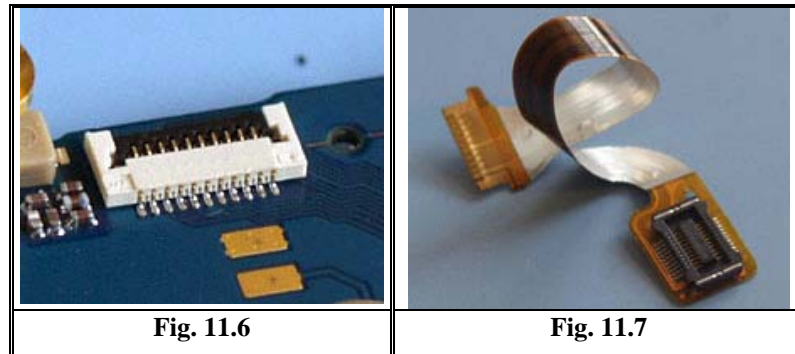
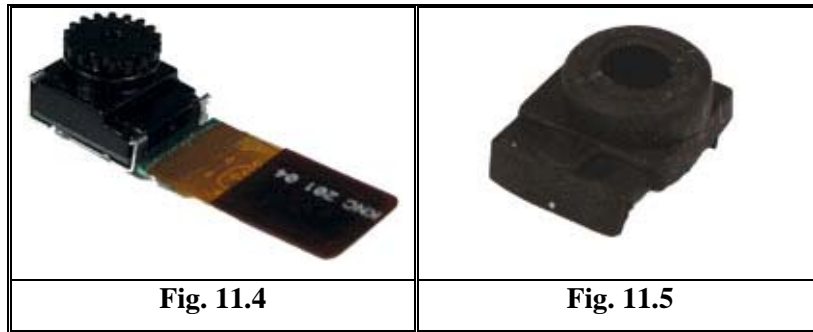
- Turn on the phone. Go to the service test menu (1.1); choose “Video call camera”.
- Check if the CIF camera module (*Fig. 11.4*) works properly; verify the viewfinder functionality in the LCD. Replace it if necessary.
- Check if the CIF camera gasket (*Fig. 11.5*) is mechanically damaged. Replace it if necessary.
- Check if the FPC Connector 21 pin lower cont (*Fig. 11.6*) is closed and if it is mechanical damaged, dirty or oxidized. Replace it if necessary.
- Check if the PCB assembly (*Fig. 11.7*) is mechanically damaged or oxidized. Replace it if necessary.

Note: Do not touch the camera lens, when replacing the camera.

Note: The CIF camera is the camera used during video calls. It is placed inside the phone.

If the fault still occurs, try to update the phone with the latest available software version. If this does not solve the problem, handle the unit according to the local company or the GSP directives.

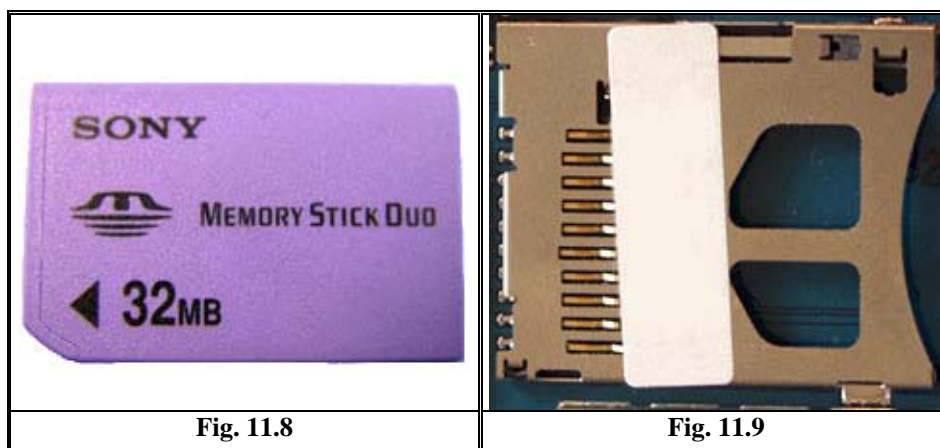




11.2 MS module

- Make a general visual inspection for corrosion and oxidation caused by liquid damage according to point 1.2
- Insert a working SIM card into the Z1010 and turn it on.
- Go to the file manager, check if it is possible to copy or move some content to the Memory Stick Duo.
- Check if the Memory Stick Duo fit correct into the MS module. Replace the Memory Stick Duo (*Fig. 11.8*) if necessary.
- Check if the Memory Stick Duo X2301 (*Fig. 11.9*) fit correct into MS module X761. Replace the MS module if necessary.

If the fault still occurs, try to update the phone with the latest available software version. If this does not solve the problem, handle the unit according to the local company or the GSP directives.



12 SIM problems

- Make a general visual inspection for corrosion and oxidation caused by liquid damage according to point 1.2
- Insert a working SIM card to the phone and turn it on.
- If the display shows “Insert card”, there is a SIM problem, if it shows “Insert correct card”, the phone might be SIM locked in this case try to use a test SIM card.
- Check if the SIM-reader X2300 (*Fig. 12.1*) is not mechanically damaged, dirty or oxidized. Replace it if necessary.

If the fault still occurs, try to update the phone with the latest available software version. If this does not solve the problem, handle the unit according to the local company or the GSP directives.

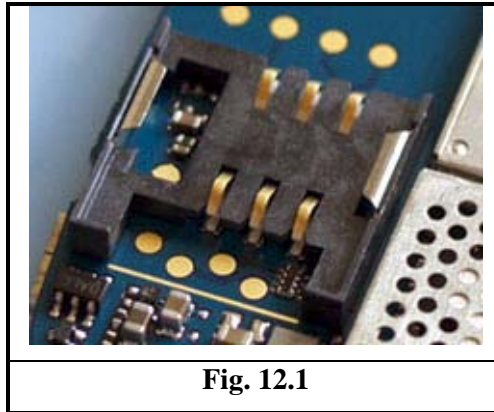


Fig. 12.1



13 Software Problems

- If there are problems with the response of the keypad commands, or spelling errors in the menu, if they are not related to mechanical damage, perform a master reset and flash the phone with the latest software from EMMA II.
- Checking the software revision can be done in the Service info, see chapter *Service functions in the software*.
Choose: Service info / SW information.
The Software revision and date will be shown in the display.

Note: Do a SW upgrade before sending the unit to a higher level. Do **not** scrap a phone that has not been upgraded.

If the failure still occurs, handle the unit according to the local company or the GSP directives.

14 Revision History

Rev.	Date	Changes / Comments
A	2004-04-26	First release
B	2005-07-20	Updated chapter 5, 9 and 10, added information regarding component N1300
C	2005-11-01	N2300 added