



Trouble Shooting Guide, Mechanical

Applicable for P910a, P910c, and P910i

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1 General Information

The Mechanical Troubleshooting Guide outlines the mechanical repairs that can be made to try and fix the common failure areas that are seen in the field. The subsections under “General Information” are steps that apply to all phones that are being looked at for repair at a mechanical level. To gain a complete understanding of how to test and repair a specific failure, this document should be used in conjunction with the Test Instructions, Mechanical and the Working Instructions, Mechanical.

1.1 Liquid Damage

Before any repair is performed, an inspection of the water indicator label should be made. If the water indicator label is pink, red, or has a reddish tint to it, this is an indication of possible liquid exposure. If the water indicator label suggests possible liquid exposure, disassemble the unit and inspect the circuit board and its components for corrosion or oxidation from liquid damage. If evidence of liquid damage is present, no repair actions should be taken. Please consult your local company for additional handling instructions.

The following images show the location of the water indicator label and what an activated and non-activated water indicator label looks like.



1.2 Flashing

Before any repair is made, a phone should be flashed to see if that fixes the problem. If the first attempt at flashing a phone is unsuccessful, check whether the system connector is dirty, oxidized, or damaged. If the system connector is damaged, handle the unit according to your local company directives. If the system connector is dirty or oxidized, clean it and try reflashing the phone. If the second attempt at flashing is not successful, handle the unit according to your local company directives.

1.3 Unrepairable at the Mechanical Level

If the Mechanical Troubleshooting Guide is exhausted and the cause of the failure was not determined or the failure cannot be repaired at this level, handle the unit according to your local company directives.



2 Appearance Problems

Troubleshooting Steps

NOTE! The flip assembly is considered a user-removable part and may not be present on a phone when it comes in for repair. If the phone is going back to the original customer and the flip assembly was not present when the phone came in for repair, the flip assembly should not be replaced. Otherwise, if flip assembly is not on a unit, install one.

1. Check for cosmetic damage on the cosmetic surfaces of the phone. Make sure that the seams between the front cover and back cover fit together correctly.
2. Also check for cosmetic damage and fit issues with the keyboard flip, the keyboard's flip hinge cover, and the battery cover. Replace damaged components as necessary.





Troubleshooting Steps

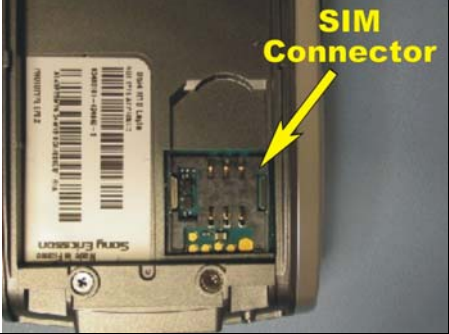
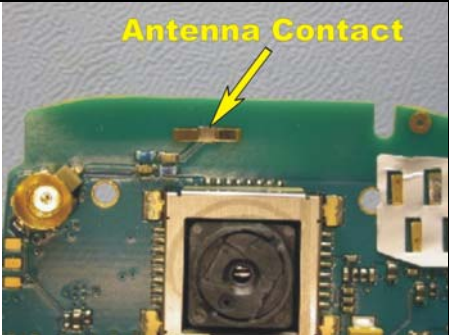
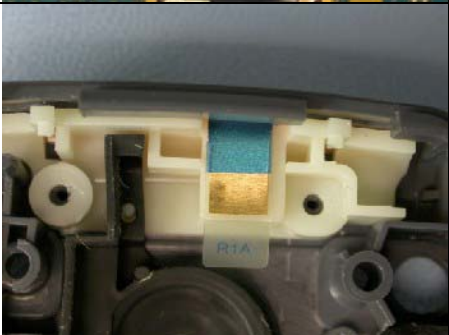

3. Check the side keys, the jog dial, the memory stick cover, the audio jack cover, the RF port cover, the cosmetic screw covers, the decorative camera window, and the IR window for damage, marks, and correct fit. Replace components as necessary.





3 Network Problems

- Perform sections 1.1 (Liquid Damage) and 1.2 (Flashing) before proceeding

Troubleshooting Steps	
1. If a network problem exists, check whether the SIM connector is damaged, dirty, or oxidized. If the SIM connector is dirty or oxidized, clean it. If the SIM connector is damaged, send the unit to a location approved to perform electrical repairs.	 A photograph of the SIM card slot in a mobile phone. A yellow arrow points to the gold-colored contacts inside the slot, which are labeled "SIM Connector" in yellow text.
2. Check whether the spring fingers of the antenna contact on the circuit board are damaged, dirty, or oxidized. If the spring fingers are dirty or oxidized, clean them. If the antenna contact is damaged, send the unit to a location approved to perform electrical repairs.	 A photograph of the internal circuit board of a mobile phone. A yellow arrow points to a small, rectangular, gold-colored contact pad, which is labeled "Antenna Contact" in yellow text.
3. Check whether the contact pad on the antenna is damaged, dirty, or oxidized. Clean the antenna's contact pad or replace the antenna as necessary.	 A photograph of the antenna assembly of a mobile phone. A yellow arrow points to a small, rectangular, gold-colored contact pad on the antenna, which is labeled "Antenna Contact" in yellow text.
4. Check whether the external RF port is damaged, dirty, or oxidized. If the RF port is dirty or oxidized, clean it. If the RF port is damaged, send the unit to a location approved to perform electrical repairs.	 A photograph of the external RF port on the circuit board of a mobile phone. A yellow arrow points to a small, circular, gold-colored port, which is labeled "External RF Port" in yellow text.

- Refer to section 1.3 (Unrepairable at the Mechanical Level)

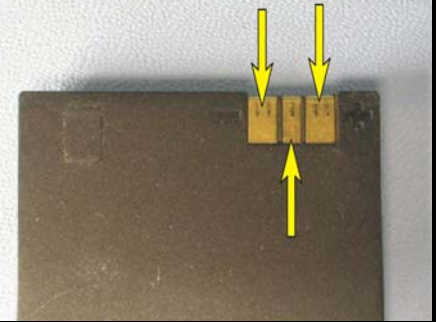


4 On/Off Problems

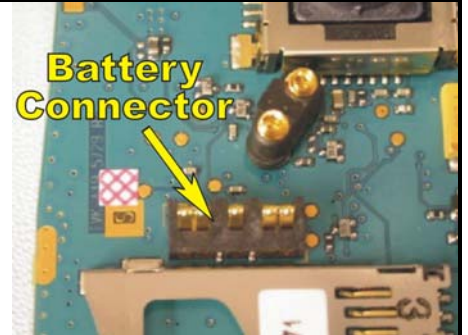
- Perform sections 1.1 (Liquid Damage) and 1.2 (Flashing) before proceeding

Troubleshooting Steps

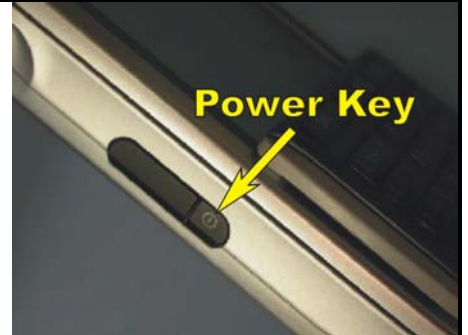
1. If the display is not illuminated and the customer's battery is present with the phone, check that the contact pads on the battery are not damaged, dirty, or oxidized. Clean the contact pads or replace the battery as necessary.



2. Check whether the phone's battery connector is damaged, dirty, or oxidized. If the battery connector is dirty or oxidized, clean it. If the battery connector is damaged, send the unit to a location approved to perform electrical repairs.



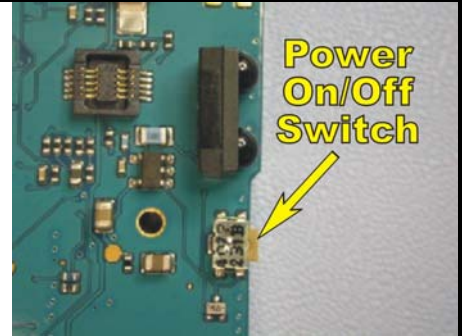
3. Check the tactile response of the power on/off key. The key should feel like it is clicking when it is depressed (most likely a click will **not** be heard). If the power on/off key does not feel like it is correctly responding when depressed, disassemble the phone, pull the power key out of its hole in the frame, and check for debris around the key (the key can be pulled back out of its hole, but it cannot be removed from the back cover). If necessary, clean the key hole and around the key. If the key is damaged, replace the back cover.





Troubleshooting Steps

4. Check that the power on/off key's switch has a tactile response. The switch should feel like it is clicking when it is depressed (most likely a click will **not** be heard). If the power key does not feel like it is correctly responding when depressed, clean the switch and test its responsiveness again. . If the switch is still not responding correctly or damage to the switch is visible, send the unit to a location approved to perform electrical repairs.



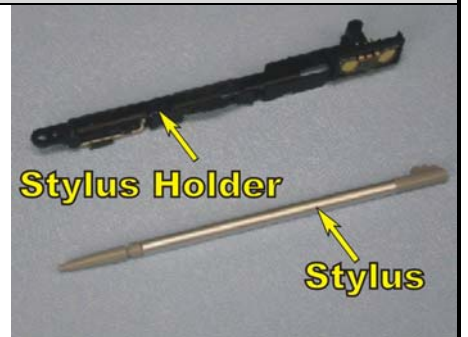
- Refer to section 1.3 (Unrepairable at the Mechanical Level)

5 Stylus Problems

- Perform sections 1.1 (Liquid Damage) and 1.2 (Flashing) before proceeding

Troubleshooting Steps

1. Check that the stylus is not damaged and does not fall out of the stylus holder. Replace the stylus and the stylus holder as necessary.



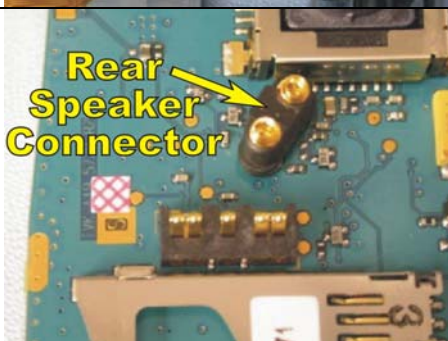


Refer to section 1.3 (Unrepairable at the Mechanical Level)

6 Audio Problems

6.1 Rear Speaker

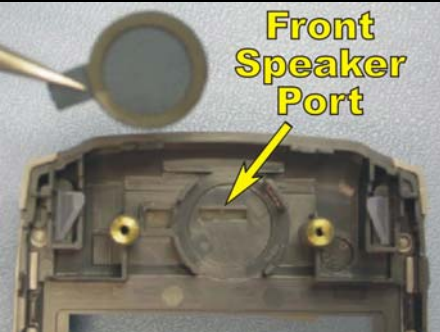

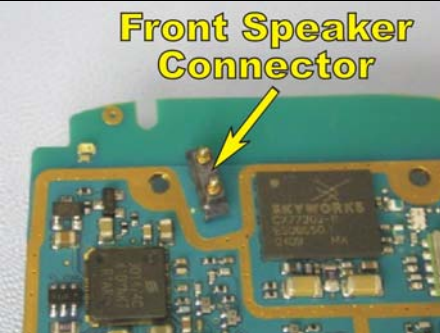
- Perform sections 1.1 (Liquid Damage) and 1.2 (Flashing) before proceeding

Troubleshooting Steps	
1. If an audio problem is determined to be with the rear speaker, check that the rear speaker's external port is not clogged. Clean the port and replace the rear speaker's speaker cloth as necessary.	
2. Check whether the rear speaker's holder is damaged. If damaged, replace the rear speaker's holder. 3. Check whether the rear speaker is damaged or dirty. Clean or replace the rear speaker as necessary.	
4. Check whether the rear speaker's board connection is dirty, oxidized, or damaged. If the connector is dirty or oxidized, clean it. If the connector is damaged, send the unit to a location approved to perform electrical repairs.	

- Refer to section 1.3 (Unrepairable at the Mechanical Level)

6.2 Front Speaker



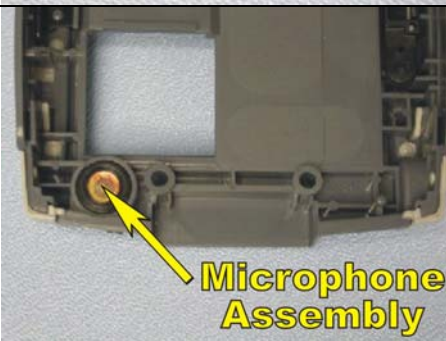
- Perform sections 1.1 (Liquid Damage) and 1.2 (Flashing) before proceeding

Troubleshooting Steps	
<ol style="list-style-type: none"> 1. If an audio problem is determined to be with the front speaker, check that the front speaker's external port is not clogged (The port must be checked from the inside of the front cover). Replace the front speaker's speaker cloth and clean the port as necessary. 	
<ol style="list-style-type: none"> 2. Check whether the front speaker's holder or the holder's mating latches on the front cover are damaged. If the front speaker's holder or the front cover is damaged, replace the appropriate part. 3. Check whether the front speaker is damaged or dirty. Clean or replace the front speaker as necessary. <p>NOTE! If the front speaker is replaced, the front speaker audio reset software must be run on the phone. Instructions for running the front speaker audio reset can be found in the Test Instruction, Mechanical.</p>	
<ol style="list-style-type: none"> 4. Check whether the front speaker's board connection is dirty, oxidized, or damaged. If the connector is dirty or oxidized, clean it. If the connector is damaged, the send the unit to a location approved to perform electrical repairs. 	

- Refer to section 1.3 (Unrepairable at the Mechanical Level)

6.3 Microphone

- Perform sections 1.1 (Liquid Damage) and 1.2 (Flashing) before proceeding

Troubleshooting Steps	
1. If an audio problem is determined to be with the microphone, check that the microphone's external port is not clogged. Clean the port and replace the microphone cloth as necessary.	
2. Check whether the microphone's board connection is damaged, dirty, or oxidized. If the connection is dirty or oxidized, clean it. If damaged, handle according to local company directives.	
3. Check whether the microphone is damaged, dirty, or oxidized. Replace the microphone assembly as necessary.	




NOTE! If the microphone is replaced, the microphone audio reset software must be run on the phone. Instructions for running the microphone audio reset can be found in the Test Instruction, Mechanical.

- Refer to section 1.3 (Unrepairable at the Mechanical Level)



6.4 Audio Jack

- Perform sections 1.1 (Liquid Damage) and 1.2 (Flashing) before proceeding

Troubleshooting Steps	
<p>NOTE! Be aware that the device that was connected could be the cause of the problem.</p> <p>1. If an audio problem is determined to be with the audio jack, check that the jack's external port is not clogged. Replace the audio jack as necessary.</p>	
<p>2. Check whether the audio jack's board connection or its isolator tape is damaged, dirty, or oxidized. If the connection is dirty or oxidized, clean it. If isolator tape is damaged, replace it. If any of the board contacts are damaged, handle according to local company directives.</p>	
<p>3. Check whether the audio jack is damaged, dirty, or oxidized. Replace the audio jack as necessary.</p>	

- Refer to section 1.3 (Unrepairable at the Mechanical Level)

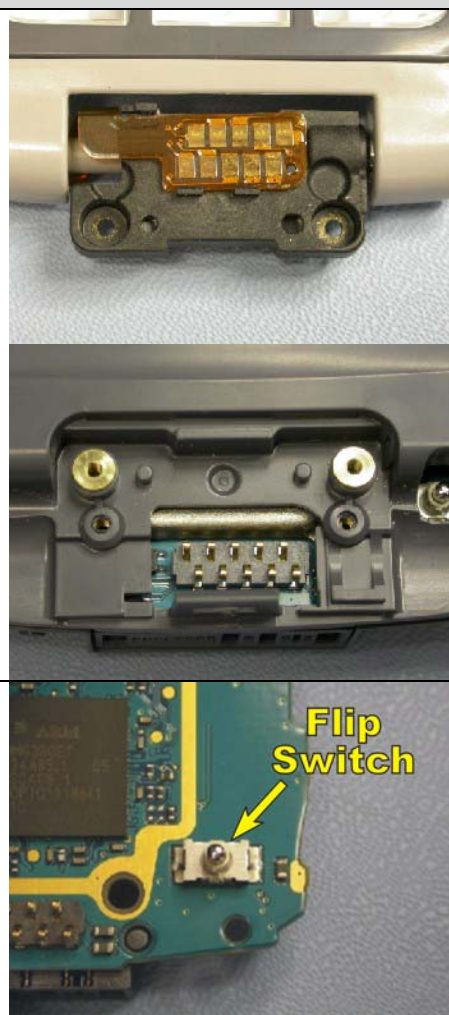
7 Key Problems

7.1 Flip Assembly

- Perform sections 1.1 (Liquid Damage) and 1.2 (Flashing) before proceeding

Troubleshooting Steps

1. If there is an issue with any of the keys on the flip assembly, check the contact pads on the flip assembly for damage, dirt, or oxidization. If any of the contact pads show signs of dirt or oxidization, clean the contacts. If any of the contact pads are damaged, replace the flip assembly.
2. Also check the flip assembly's board connection for damage, dirt, or oxidization. If the connection shows signs of dirt or oxidization, clean the connector. If connector is damaged, send the unit to a location approved to perform electrical repairs.
3. If the information in the display does not reduce to the visible display area when the flip assembly is closed, check the flip switch for dirt, oxidization, or damage. If the flip switch is dirty or oxidized, clean it. If the flip switch is damaged, send the unit to a location approved to perform electrical repairs.



- Refer to section 1.3 (Unrepairable at the Mechanical Level)

7.2 Camera/Internet Keys

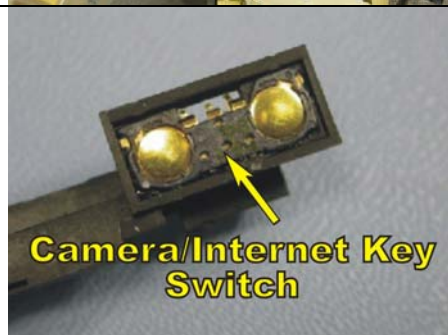
- Perform sections 1.1 (Liquid Damage) and 1.2 (Flashing) before proceeding

Troubleshooting Steps

1. If there is an issue with the internet key or the camera key, pull the key in question out of its hole in the back cover, and check for debris around the key (the key can be pulled out of its hole, but it cannot be removed from the back cover). If necessary, clean the key hole and around the key. If the key is damaged, replace the back cover.



2. Check the camera/internet key switch for damage, dirt, or oxidization. If the switch shows signs of dirt, oxidization, or damage, replace it.



- Refer to section 1.3 (Unrepairable at the Mechanical Level)

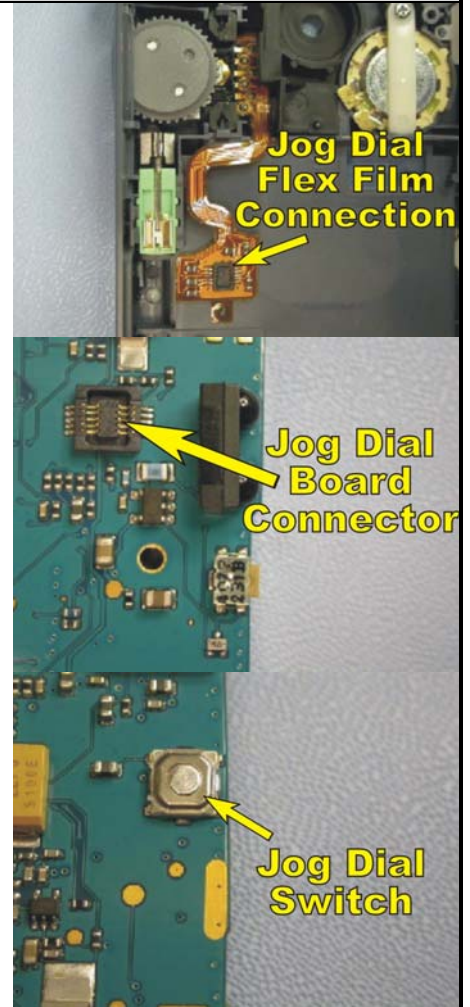


7.3 Jog Dial

- Perform sections 1.1 (Liquid Damage) and 1.2 (Flashing) before proceeding

Troubleshooting Steps

1. If there is an issue with the jog dial, inspect the connection between the jog dial and the circuit board for damage, dirt, or oxidation. If there are signs of dirt or oxidization on either half of the connection, clean both parts. If the part of the connector that is on the jog dial's flex film is damaged, replace the jog dial. If the part of the connection that is on the circuit board is damaged, send the unit to a location approved to perform electrical repairs.
2. If there is an issue with the jog dial when it is pushed backward, inward or rotated up or down, replace the jog dial.
3. If there is an issue with the jog dial when it is pulled forward, inspect the jog dial's switch on the circuit board for damage, dirt, or oxidation. If the switch shows signs of dirt or oxidization, clean it. If the switch is damaged, send the unit to a location approved to perform electrical repairs.



- Refer to section 1.3 (Unrepairable at the Mechanical Level)

7.4 Power On/Off Key

If a problem is suspected with the power on/off key, refer to the “On/Off Problems” section for instructions on evaluating the power on/off key and other possible causes of a unit not powering on or off.

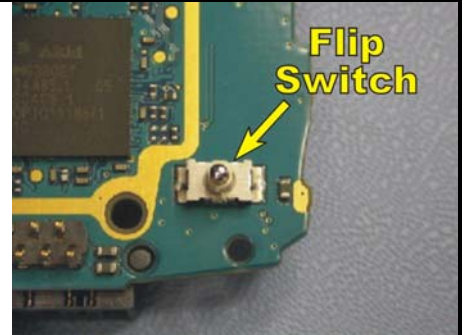


8 Display Problems

- Perform sections 1.1 (Liquid Damage) and 1.2 (Flashing) before proceeding

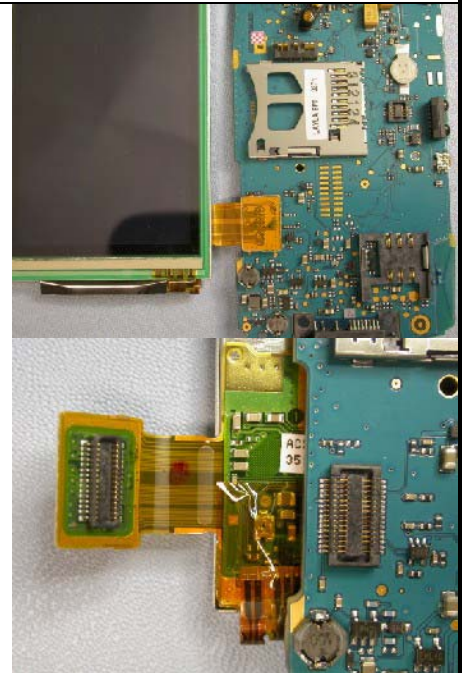
Troubleshooting Steps

1. If the information in the display does not reduce to the visible display area when the flip is closed, check the flip switch for dirt, oxidation, or damage. If the flip switch is dirty or oxidized, clean it. If the flip switch is damaged, send the unit to a location approved to perform electrical repairs.



2. If the area indicated on the display does not correspond to the location touched on the display, calibrate the touch screen.
3. If the area indicated on the display still does not correspond to the location touched on the display, replace the display.

4. If the display is not functioning properly, check whether the display is properly connected to the circuit board. Also inspect the connection between the display and the circuit board for damage, dirt, or oxidation. If there are signs of dirt or oxidation on either half of the connection, clean both parts. If the part of the connector that is on the display's flex film is damaged, replace the display. If the part of the connection that is on the circuit board is damaged, send the unit to a location approved to perform electrical repairs.
5. If there are no signs of damage and the display still is not functioning properly after the connection has been cleaned, try replacing the display if it has not already been replaced.



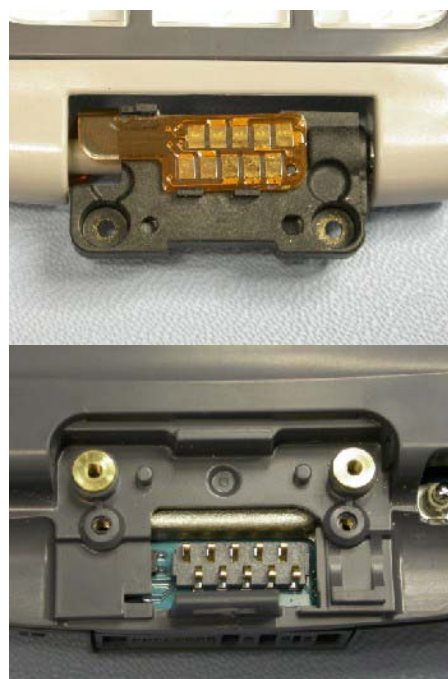
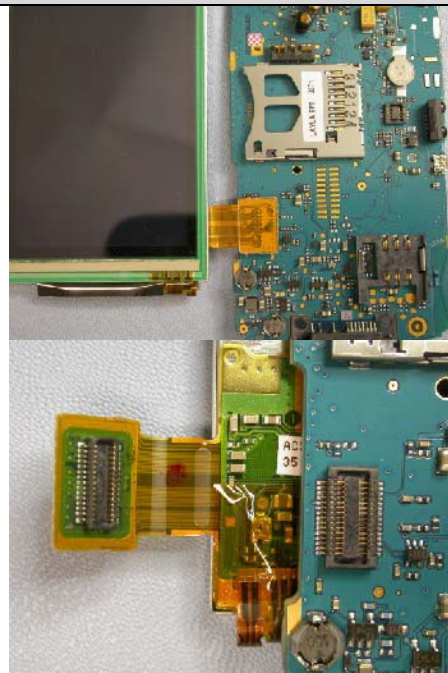
- Refer to section 1.3 (Unrepairable at the Mechanical Level)

9 Illumination Problems

- Perform sections 1.1 (Liquid Damage) and 1.2 (Flashing) before proceeding

Troubleshooting Steps

1. If the display is not illuminating properly, check whether the display is properly connected to the circuit board. Also inspect the connection between the display and the circuit board for damage, dirt, or oxidation. If there are signs of dirt or oxidization on either half of the connection, clean both parts. If the part of the connector that is on the display's flex film is damaged, replace the display. If the part of the connection that is on the circuit board is damaged, send the unit to a location approved to perform electrical repairs.
2. If there are no signs of damage and the display still is not illuminating properly after the connection has been cleaned, try replacing the display if it has not already been replaced.
3. If the display illuminates, but the flip assembly does not or if the flip assembly only partially illuminates, check the contact pads on the flip assembly for damage, dirt, or oxidization. If any of the contact pads show signs of dirt or oxidization, clean the contacts. If any of the contact pads are damaged, replace the flip assembly.
4. Also check the flip assembly's board connection for damage, dirt, or oxidization. If the connection shows signs of dirt or oxidization, clean the connector. If the connector is damaged, send the unit to a location approved to perform electrical repairs.
5. If there are no signs of damage and the flip assembly still is not illuminating properly after the connection has been cleaned, try replacing the flip if it has not already been replaced.



- Refer to section 1.3 (Unrepairable at the Mechanical Level)



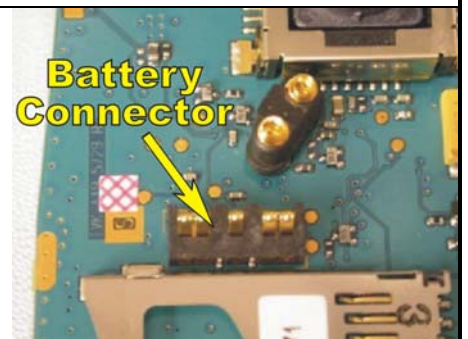
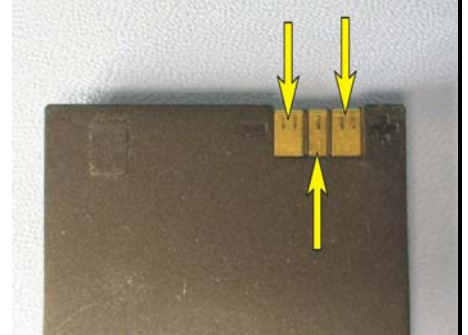
10 Charging/Capacity Problems

- Perform sections 1.1 (Liquid Damage) and 1.2 (Flashing) before proceeding

Troubleshooting Steps

NOTE! Some features will noticeably reduce the standby time of this product if they are turned on. Some examples are the back light (when on all the time), Bluetooth, and infrared.





1. If the phone will not charge and the customer's battery is present with the phone, check that the contact pads on the battery are not damaged, dirty, or oxidized. Clean the contact pads or replace the battery as necessary.
2. Also, check whether the phone's battery connector is damaged, dirty, or oxidized. If the battery connector is dirty or oxidized, clean it. If damaged, send the unit to a location approved to perform electrical repairs.
3. Check whether the system connector is damaged, dirty, or oxidized. If the system connector is dirty or oxidized, clean it. If the system connector is damaged, send the unit to a location approved to perform electrical repairs.



- Refer to section 1.3 (Unrepairable at the Mechanical Level)

11 Alert Problems

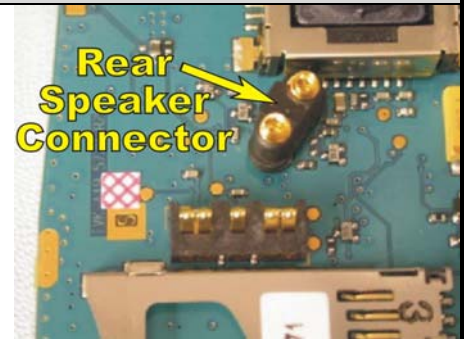
- Perform sections 1.1 (Liquid Damage) and 1.2 (Flashing) before proceeding

Troubleshooting Steps	
1. If the phone will not vibrate, disassemble the phone and check whether the vibrator contact pads on the circuit board are damaged, dirty, or oxidized. Clean the pads if necessary.	
2. Also, check whether the contacts on the vibrator are damaged, dirty, or oxidized. Replace the vibrator if necessary.	
<p>NOTE! If the ringer on a phone is not working, make sure the speaker is not set to silent mode.</p> <p>3. If the phone is not in silent mode and will not ring, check that the rear speaker's external port is not clogged. Clean the port and replace the rear speaker's speaker cloth as necessary.</p>	
<p>4. Check whether the rear speaker's holder is damaged. If damaged, replace the rear speaker's holder.</p> <p>5. Check whether the rear speaker is damaged or dirty. Clean or replace the rear speaker as necessary.</p>	



Troubleshooting Steps

6. Check whether the rear speaker's board connection is dirty, oxidized, or damaged. If the connector is dirty or oxidized, clean it. If the connector is damaged, send the unit to a location approved to perform electrical repairs.



- Refer to section 1.3 (Unrepairable at the Mechanical Level)

12 Camera Problems

- Perform sections 1.1 (Liquid Damage) and 1.2 (Flashing) before proceeding

Troubleshooting Steps

1. If a phone is having issues with lines or marks on pictures, check the camera window for dirt or scratches. Clean the camera window or replace it as necessary.
2. Disassemble the phone, check the positioning of the camera gasket, and inspect it for damage. Reposition or replace the camera gasket as necessary.



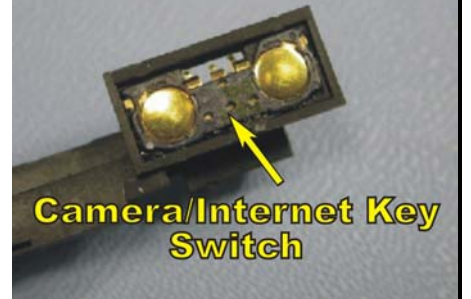


Troubleshooting Steps

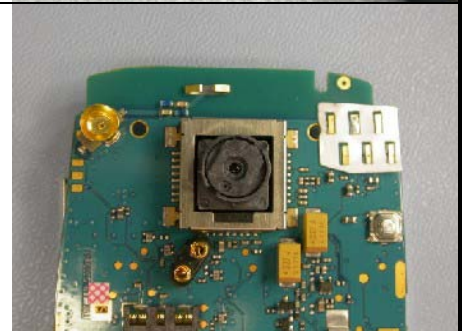
3. If a phone will not capture an image, pull the camera key out of its hole in the frame and check for debris around the key (the key can be pulled out of its hole, but it cannot be removed from the back cover). If necessary, clean the key hole and around the key. If the key is damaged, replace the back cover.



4. Check the camera/internet key switch for damage, dirt, or oxidization. If the switch shows signs of dirt, oxidization, or damage, replace it.



5. If the camera is not functioning properly or is still having issues with lines or marks on pictures, disassemble the phone and check whether the camera assembly is properly seated in the camera connector.



6. Check the connections on the camera assembly and the mating connector on the board for damage, dirt, or oxidization. If either of the components shows signs of dirt or oxidization, clean both components. If damage is detected to any of the connections on the camera assembly, replace it. If the camera's mating connector on the board is damaged, send the unit to a location approved to perform electrical repairs.





7. If no issues with the connections on the camera assembly and the mating connector are observed and the camera assembly has not been replaced, try replacing the camera assembly to solve the issue.

- Refer to section 1.3 (Unrepairable at the Mechanical Level)

13 IR Problems

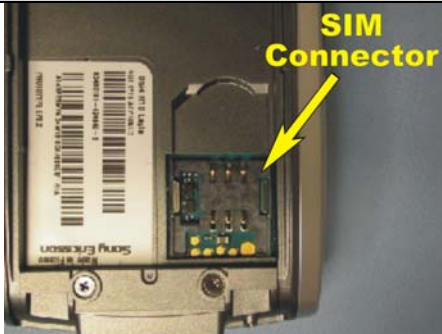
- Perform sections 1.1 (Liquid Damage) and 1.2 (Flashing) before proceeding

Troubleshooting Steps	
1. Check the IR window adjacent to the power button for dirt, scratches, or other damage that may interfere with the signal. Clean the IR window or replace the back cover as necessary.	
2. Check the IR transceiver on the circuit board for dirt, oxidation, or damage. If the IR transceiver is dirty or oxidized, clean it. If the IR transceiver is damaged, send the unit to a location approved to perform electrical repairs.	

- Refer to section 1.3 (Unrepairable at the Mechanical Level)

14 SIM Problems

- Perform sections 1.1 (Liquid Damage) and 1.2 (Flashing) before proceeding

Troubleshooting Steps	
1. If a SIM problem exists, check whether the SIM connector is damaged, dirty, or oxidized. If the SIM connector is dirty or oxidized, clean it. If the SIM connector is damaged, send the unit to a location approved to perform electrical repairs.	

- Refer to section 1.3 (Unrepairable at the Mechanical Level)

15 Data Communication Problems

- Perform sections 1.1 (Liquid Damage) and 1.2 (Flashing) before proceeding

Troubleshooting Steps

1. If there are communication issues when a device is connected to the system connector, check whether the system connector is damaged, dirty, or oxidized. If the system connector is dirty or oxidized, clean it. If the system connector is damaged, send the unit to a location approved to perform electrical repairs.

NOTE! Be aware that the device that was connected could be the cause of the problem.



2. For communication problems with Bluetooth and infrared, refer to the specific sections that address these items.

- Refer to section 1.3 (Unrepairable at the Mechanical Level)

16 Memory Stick Problems

- Perform sections 1.1 (Liquid Damage) and 1.2 (Flashing) before proceeding

If a problem with the memory stick is determined to be with the memory stick connector, the unit must be sent to a location approved to perform electrical repairs.

17 Bluetooth Problems

- Perform sections 1.1 (Liquid Damage) and 1.2 (Flashing) before proceeding

If a problem with Bluetooth is detected, the unit must be sent to a location approved to perform electrical repairs.

18 Revision History

Rev.	Date	Changes / Comments
A	2004-08-13	Initial Release