

# Trouble Shooting Guide, Mechanical

Applicable for K550i, K550c & K550im

## Contents

1	General .....	3
2	Power Problems.....	4
3	Network/Signal Problems.....	5
4	Audio Problems.....	6
	Microphone:.....	6
	Receiver:.....	6
	Rear Speaker:.....	8
5	Key Problems.....	10
	Keyboard: .....	10
	Navigation Key:.....	10
	Numeric Keyboard: .....	11
	Volume key:.....	11
	Music Player Key: .....	12
	Power Key: .....	13
	Camera Key:.....	14
6	Display Problems .....	15
7	Illumination Problems.....	17
	Keyboard Illumination: .....	17
	Navigation Key Illumination: .....	17
	Display Illumination:.....	17
8	Alert Problems.....	18
	Vibrator: .....	18
	Rear speaker: .....	19
9	Charging/Capacity Problems .....	21
10	Rear Camera Problems .....	22
11	IR Problems .....	25
12	SIM Problems.....	25
13	Data Transfer Problems using a Data Cable .....	26
14	Bluetooth Problems.....	26



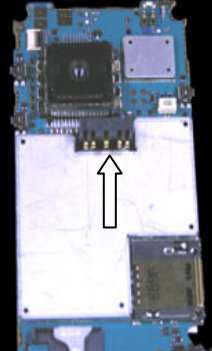
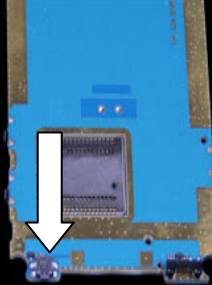
15	Memory Stick Problems .....	27
16	Hands-Free Problems .....	27
17	Revision History .....	28

# 1 General

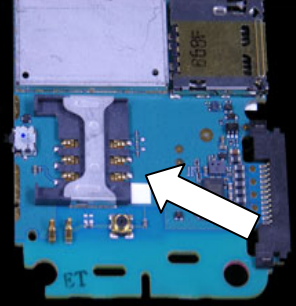
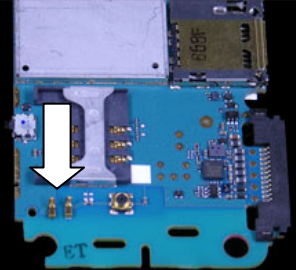

This document outlines the mechanical repairs that should be made in an attempt to fix the common failures that are seen in the field. To gain a complete understanding of how to test and repair a unit, this document should be used in conjunction with the Test Instructions, Mechanical and the Working Instructions, Mechanical.

- NOTE!** *A unit should always be inspected for liquid damage and flashed with latest software before using the Mechanical Trouble Shooting Guide. Refer the Mechanical Test Instructions for details regarding inspecting for liquid damage and upgrading software.*
- NOTE!** *The camera flash should always be discharged before performing any disassembly. Refer to the “General” section of the Mechanical Working Instructions for a detailed procedure for discharging the camera flash.*
- NOTE!** *If all of the repair actions listed in this document for addressing a problem have been preformed and a unit still is not working, handle the unit according to your local company directives*



## 2 Power Problems

Problem Area	Items to Inspect	Repair Action	Inspection Reference
Unit will not Power On	Check whether the keyboard illuminates 15 to 20 seconds after pressing the power key	If illumination of the keyboard is detected, refer to the "Display Problems" section	
	Inspect battery connector	<ul style="list-style-type: none"> <li>• If dirty or oxidized – Clean</li> <li>• If damaged – Send to an electrical repair location</li> </ul>	
	Inspect the power key and the power key's switch	<ul style="list-style-type: none"> <li>• Make sure the power key is properly positioned in the phone.</li> <li>• If dirt or debris is detected – Clean both the key and the switch</li> <li>• If the key is damaged – Replace it</li> <li>• If the switch is damaged – Escalate to an electrical repair level</li> </ul>	
	If the issue is still not resolved→	<ul style="list-style-type: none"> <li>• Escalate to an electrical repair level</li> </ul>	

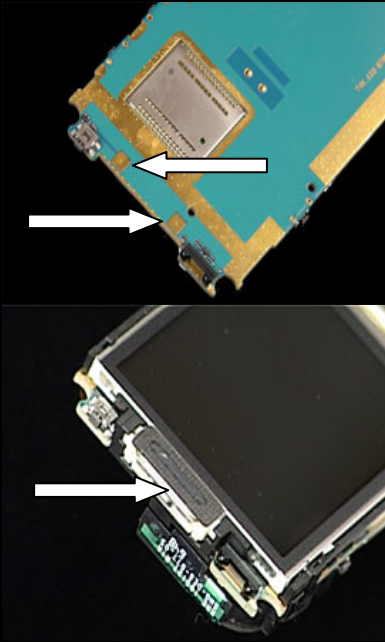
### 3 Network/Signal Problems

Problem Area	Items to Inspect	Repair Action	Inspection Reference
No Signal or Poor Signal	Inspect SIM holder	<ul style="list-style-type: none"> <li>• If dirty or oxidized – Clean</li> <li>• If damaged – Escalate to an electrical repair level</li> </ul>	
	If the issue has not been resolved→	<ul style="list-style-type: none"> <li>• Clean the antenna-to-board connectors on the circuit board and replace the antenna/speaker box assembly</li> </ul>	
	If the issue is still not resolved→	<ul style="list-style-type: none"> <li>• Escalate to an electrical repair level</li> </ul>	

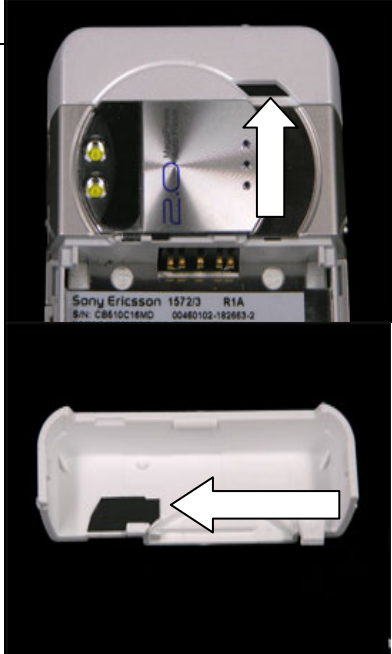
## 4 Audio Problems

Problem Area	Items to Inspect	Repair Action	Inspection Reference
<b>Microphone:</b>	Before proceeding →	<ul style="list-style-type: none"> <li>Perform a setting reset</li> </ul>	
	Inspect the microphone's external port	<ul style="list-style-type: none"> <li>If clogged – Clean the microphone port in the board frame or replace the board frame as determined necessary.</li> </ul>	
	If the issue is still not resolved→	<ul style="list-style-type: none"> <li>Escalate to an electrical repair level</li> </ul>	
<b>Receiver:</b> No sound or poor quality sound	Before proceeding →	<ul style="list-style-type: none"> <li>Perform a setting reset</li> </ul>	
	Check if the receiver's external ports are clogged	<ul style="list-style-type: none"> <li>If clogged – Clean the external ports in the front cover or replace the front cover and/or receiver as determined necessary</li> </ul>	



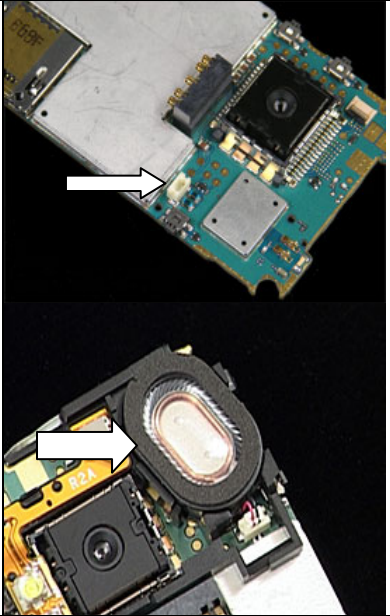
Problem Area	Items to Inspect	Repair Action	Inspection Reference
<b>Receiver:</b> No sound or poor quality sound (Cont.)	If the issue has not been resolved→	<ul style="list-style-type: none"><li>• Clean the receiver's contact pads on the circuit board and replace receiver</li></ul>	
	If the issue is still not resolved→	<ul style="list-style-type: none"><li>• Escalate to an electrical repair level</li></ul>	



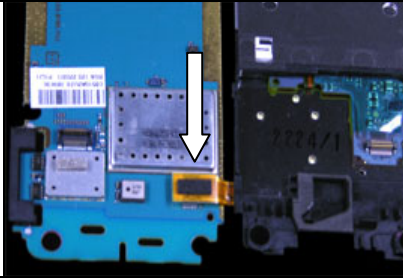
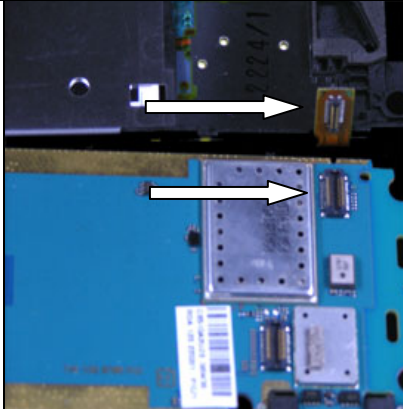
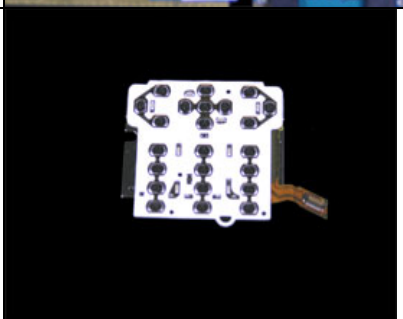
Problem Area	Items to Inspect	Repair Action	Inspection Reference
<b>Rear Speaker:</b>  No sound or poor quality sound	Before proceeding →  Inspect whether the rear speaker's external ports are clogged	<ul style="list-style-type: none"><li>• Perform a setting reset</li><li>• If clogged – Clean out the rear speaker's external ports and replace the rear speaker cloth</li></ul>	




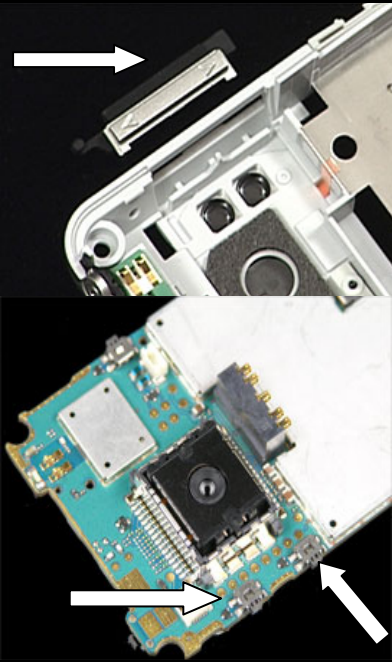


	<p>If the issue has not been resolved→</p>	<ul style="list-style-type: none"><li>• Clean the rear speaker's contact pads on the circuit board and replace antenna/speaker box assembly</li></ul>	
	<p>If the issue is still not resolved→</p>	<ul style="list-style-type: none"><li>• Escalate to an electrical repair level</li></ul>	

## 5 Key Problems

Problem Area	Items to Inspect	Repair Action	Inspection Reference
<b>Keyboard:</b> None of the keys on the keyboard are functioning (excluding the navigation key)	Inspect whether the keyfoil assembly is properly connected to the circuit board	<ul style="list-style-type: none"> <li>If improperly connected - Reestablish proper connection</li> </ul>	
	Inspect each half of the keyfoil to circuit board connection	<ul style="list-style-type: none"> <li>If dirty or oxidized – Clean both halves of the connection</li> <li>If the portion of the connection on the keyfoil assembly is damaged - Replace the keyfoil assembly</li> <li>If the portion of the connection on the circuit board is damaged – Send to an electrical repair location</li> </ul>	
	If the issue has not been resolved →	<ul style="list-style-type: none"> <li>Replace the keyfoil assembly, if it has not already been replaced</li> </ul>	
	If the issue is still not resolved →	<ul style="list-style-type: none"> <li>Escalate to an electrical repair level</li> </ul>	
<b>Navigation Key:</b>	Perform the following action →	Escalate to an electrical repair level	

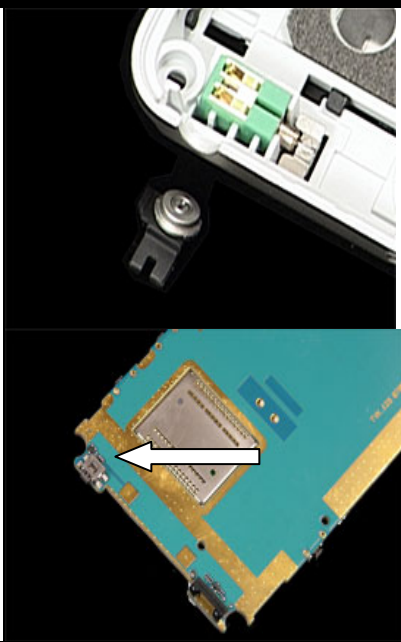


Problem Area	Items to Inspect	Repair Action	Inspection Reference
<p><b>Numeric Keyboard:</b> A key on the numeric keyboard is not functioning or is intermittent</p>	Inspect for debris between and/or damage to the numeric keyboard and the corresponding portion of the keyfoil assembly.	<ul style="list-style-type: none"> <li>• If debris is found – Clean both parts</li> <li>• If damage is seen – Replace the numeric keyboard and/or the keyfoil assembly as necessary</li> </ul>	
	If the issue has not been resolved →	<ul style="list-style-type: none"> <li>• Replace the numeric keyboard and the keyfoil assembly, if they have not already been replaced</li> </ul>	
	If the issue is still not resolved→	<ul style="list-style-type: none"> <li>• Escalate to an electrical repair level</li> </ul>	
<p><b>Volume key:</b> A direction of the key is not functioning or is intermittent</p>	Inspect the portion of the volume key that is not functioning and its corresponding switch.	<ul style="list-style-type: none"> <li>• Make sure the volume key is properly positioned in the front cover.</li> <li>• If dirt or debris is detected – Clean the volume key and both switches</li> <li>• If the key is damaged – Replace it</li> <li>• If the switch is damaged – Escalate to an electrical repair level</li> </ul>	
	If the issue has not been resolved →	<ul style="list-style-type: none"> <li>• Escalate to an electrical repair level</li> </ul>	

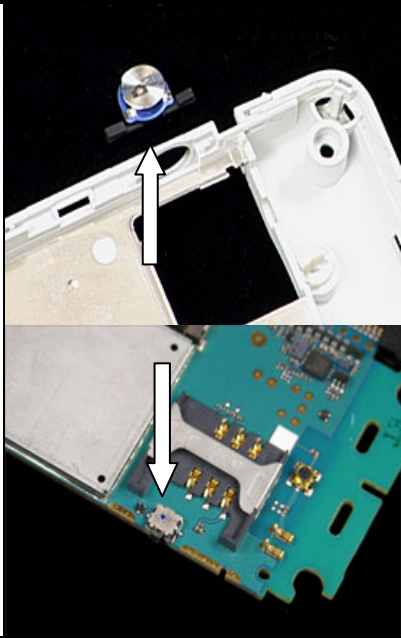


Problem Area	Items to Inspect	Repair Action	Inspection Reference
<b>Music Player Key:</b>	Inspect the music player key and its switch	<ul style="list-style-type: none"> <li>• Make sure the music player key is properly positioned in the front cover.</li> <li>• If dirt or debris is detected – Clean both the key and the switch</li> <li>• If the key is damaged – Replace it</li> <li>• If the switch is damaged – Escalate to an electrical repair level</li> </ul>	
	If the issue has not been resolved →	<ul style="list-style-type: none"> <li>• Escalate to an electrical repair level</li> </ul>	

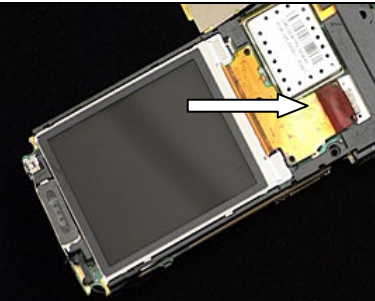
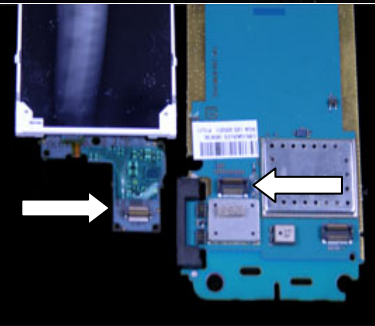
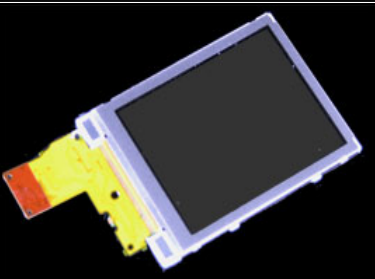


Problem Area	Items to Inspect	Repair Action	Inspection Reference
<b>Power Key:</b>	Inspect the power key and the power key's switch	<ul style="list-style-type: none"><li>• Make sure the power key is properly positioned in the phone.</li><li>• If dirt or debris is detected – Clean both the key and the switch</li><li>• If the key is damaged – Replace it</li><li>• If the switch is damaged – Escalate to an electrical repair level</li></ul>	
	If the issue has not been resolved →	<ul style="list-style-type: none"><li>• Escalate to an electrical repair level</li></ul>	

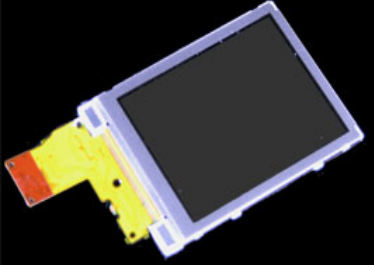


Problem Area	Items to Inspect	Repair Action	Inspection Reference
<b>Camera Key:</b>	Inspect the camera key and its switch	<ul style="list-style-type: none"><li>• Make sure the camera key is properly positioned in the front cover.</li><li>• Make sure the camera switch is properly positioned in the board frame.</li><li>• If dirt or debris is detected – Clean both the camera key and its switch</li><li>• If the camera key is damaged – Replace it</li></ul>	
	If the issue is still not resolved→	<ul style="list-style-type: none"><li>• Escalate to an electrical repair level</li></ul>	

## 6 Display Problems

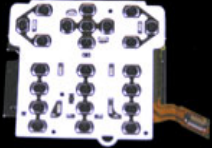
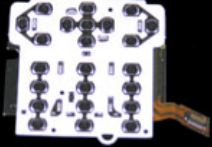
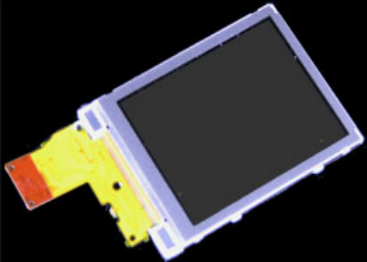
Problem Area	Items to Inspect	Repair Action	Inspection Reference
If a display is not functioning	Check whether the keyboard illuminates 15 to 20 seconds after pressing the power key	<ul style="list-style-type: none"> <li>If the keyboard <b>does not illuminate</b>, refer to the “Power Problems” section</li> </ul>	
	Inspect whether the LCD assembly’s flex film is properly connected to the circuit board	<ul style="list-style-type: none"> <li>If improperly connected - Reestablish proper connection</li> </ul>	
	Inspect each half of the LCD to circuit board connection	<ul style="list-style-type: none"> <li>If dirty or oxidized – Clean both halves of the connection</li> <li>If the portion of the connector on the LCD assembly is damaged - Replace the LCD assembly</li> <li>If the portion of the connector on the circuit board is damaged – Escalate to an electrical repair level</li> </ul>	
	If the issue has not been resolved →	<ul style="list-style-type: none"> <li>Replace the LCD assembly if it has not been replaced</li> </ul>	
	If the issue is still not resolved →	<ul style="list-style-type: none"> <li>Escalate to an electrical repair level</li> </ul>	



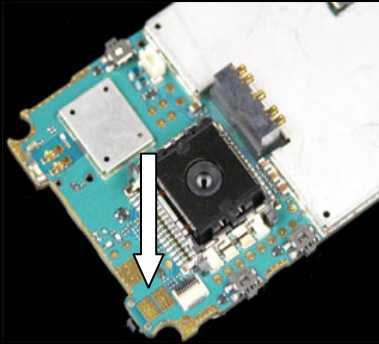
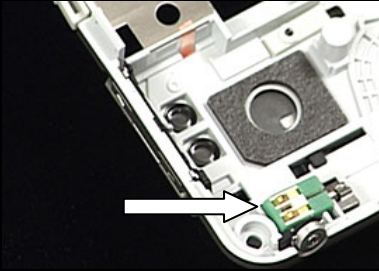
Problem Area	Items to Inspect	Repair Action	Inspection Reference
If a display has lines or missing pixels	Perform the following action →	<ul style="list-style-type: none"><li>• Replace the LCD assembly</li></ul>	 A photograph of a mobile phone LCD assembly, showing the screen, bezel, and flexible ribbon cable with a red and yellow connector.
	If the issue is still not resolved →	<ul style="list-style-type: none"><li>• Escalate to an electrical repair level</li></ul>	




## 7 Illumination Problems

Problem Area	Items to Inspect	Repair Action	Inspection Reference
<b>Keyboard Illumination:</b> Neither the numeric or the functional keyboard illuminates	Perform the following action →	<ul style="list-style-type: none"> <li>Replace the keyfoil assembly</li> </ul>	
	If the issue is still not resolved→	<ul style="list-style-type: none"> <li>Escalate to an electrical repair level</li> </ul>	
<b>Keyboard Illumination:</b> A portion of the numeric or functional keyboard does not illuminate	Perform the following action →	<ul style="list-style-type: none"> <li>Replace the keyfoil assembly</li> </ul>	
	If the issue is still not resolved→	<ul style="list-style-type: none"> <li>Escalate to an electrical repair level</li> </ul>	
<b>Navigation Key Illumination:</b>	Refer to the “ <b>Keyboard</b> ” sections under “ <b>Illumination Problems</b> ”		
<b>Display Illumination:</b>	Before proceeding →	<ul style="list-style-type: none"> <li>Perform a setting reset</li> </ul>	
	Perform the following action →	<ul style="list-style-type: none"> <li>Replace the LCD assembly</li> </ul>	
	If the issue is still not resolved →	<ul style="list-style-type: none"> <li>Escalate to an electrical repair level</li> </ul>	

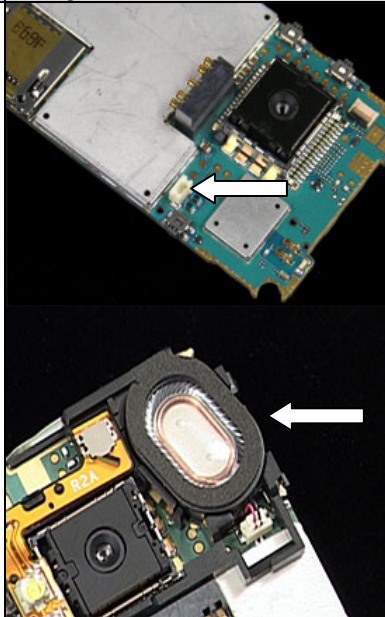
## 8 Alert Problems

Problem Area	Items to Inspect	Repair Action	Inspection Reference
Vibrator:	Before proceeding →	<ul style="list-style-type: none"> <li>Perform a setting reset</li> </ul>	
	Inspect the vibrator contact pads on the circuit board	<ul style="list-style-type: none"> <li>If dirty – Clean</li> </ul>	
	Perform the following action →	<ul style="list-style-type: none"> <li>Replace the vibrator</li> </ul>	
	If the issue is still not resolved →	<ul style="list-style-type: none"> <li>Escalate to an electrical repair level</li> </ul>	

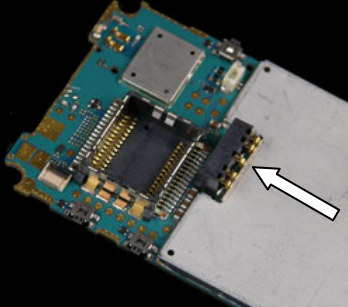


Problem Area	Items to Inspect	Repair Action	Inspection Reference
<b>Rear speaker:</b> No sound or poor quality sound	Before proceeding → Inspect whether the rear speaker's external port is clogged	<ul style="list-style-type: none"><li>• Perform a setting reset</li><li>• If clogged – Clean out the rear speaker's external ports and replace the rear speaker cloth</li></ul>	

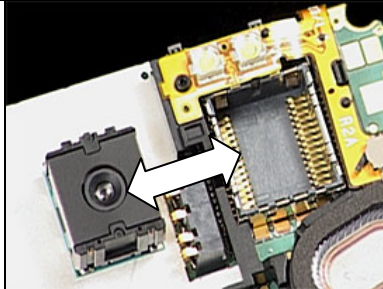
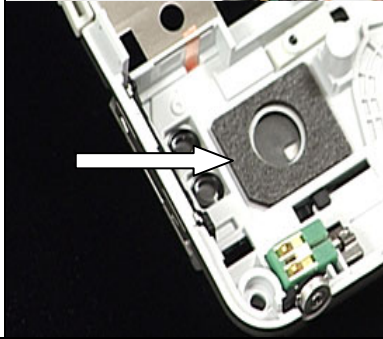
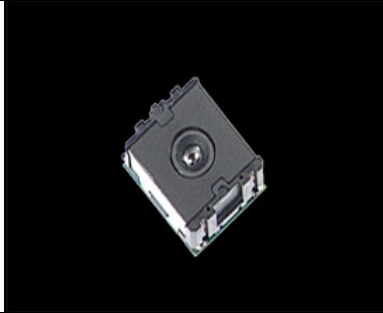


Problem Area	Items to Inspect	Repair Action	Inspection Reference
	If the issue has not been resolved→	<ul style="list-style-type: none"><li>• Clean the rear speaker's contact pads on the circuit board and replace antenna/speaker box assembly</li></ul>	
	If the issue is still not resolved→	<ul style="list-style-type: none"><li>• Escalate to an electrical repair level</li></ul>	

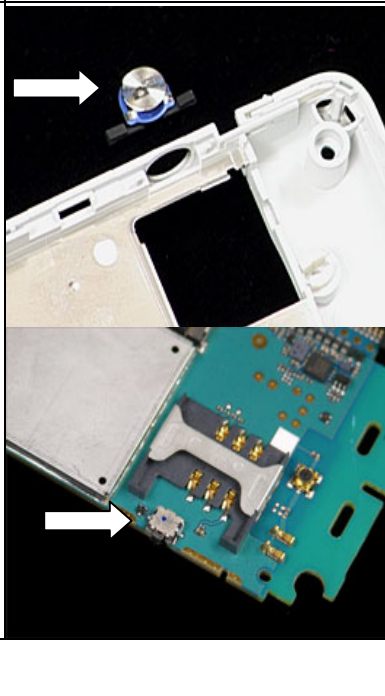
## 9 Charging/Capacity Problems

Problem Area	Items to Inspect	Repair Action	Inspection Reference
Phone is not charging properly	Inspect the battery connector	<ul style="list-style-type: none"> <li>• If dirty or oxidized – Clean</li> <li>• If damaged – Send to an electrical repair location</li> </ul>	
	If the issue has not been resolved →	<ul style="list-style-type: none"> <li>• Replace the system connector</li> </ul>	
	If the issue is still not resolved →	<ul style="list-style-type: none"> <li>• Escalate to an electrical repair level</li> </ul>	



## 10 Rear Camera Problems

Problem Area	Items to Inspect	Repair Action	Inspection Reference
Lines or marks in picture	Visually inspect the rear camera's lens	<ul style="list-style-type: none"> <li>• If dirty – Clean the rear camera's lens</li> <li>• If scratched or damaged – Replace the rear camera module</li> </ul>	 
	If the issue has not been resolved →	<ul style="list-style-type: none"> <li>• Replace the rear camera module, if it has not yet been replaced</li> </ul>	
	If the issue is still not resolved →	<ul style="list-style-type: none"> <li>• Escalate to an electrical repair level</li> </ul>	



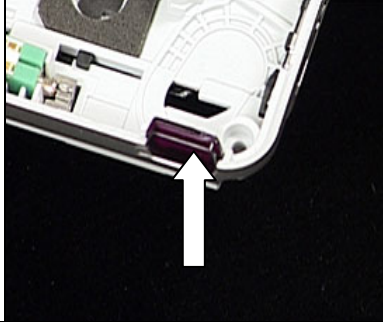
Problem Area	Items to Inspect	Repair Action	Inspection Reference
Will not capture an image when pressing the camera key	To determine whether or not the problem is with the camera button, try capturing an image by pressing the navigation key	<ul style="list-style-type: none"> <li>• If pressing the navigation key <b>does not take a picture</b> - Send to an electrical repair location</li> <li>• If pressing the navigation key <b>does take a picture</b> – Perform the remaining inspect/repair procedures in this section</li> </ul>	
	Inspect the camera key and its switch	<ul style="list-style-type: none"> <li>• Make sure the camera key is properly positioned in the front cover.</li> <li>• Make sure the camera switch is properly positioned in the board frame.</li> <li>• If dirt or debris is detected – Clean both the camera key and its switch</li> <li>• If the key is damaged – Replace it</li> </ul>	
If the issue is still not resolved →		<ul style="list-style-type: none"> <li>• Escalate to an electrical repair level</li> </ul>	



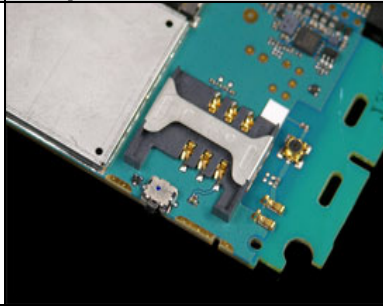
Problem Area	Items to Inspect	Repair Action	Inspection Reference
Receives a message instructing you to open the lens cover when the lens cover is already open	Perform the following action →	<ul style="list-style-type: none"> <li>Replace the flash assembly</li> </ul>	
	If the issue has not been resolved →	<ul style="list-style-type: none"> <li>Escalate to an electrical repair level</li> </ul>	
Camera flash does not work	Perform the following action →	<ul style="list-style-type: none"> <li>Replace the flash assembly</li> </ul>	
	If the issue has not been resolved →	<ul style="list-style-type: none"> <li>Escalate to an electrical repair level</li> </ul>	



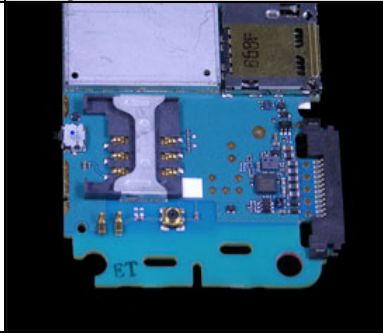
## 11 IR Problems

Problem Area	Items to Inspect	Repair Action	Inspection Reference
Will not connect with a functional IR device	Inspect the IR window	<ul style="list-style-type: none"> <li>If dirty – Clean</li> <li>If scratched or damaged – Replace front cover</li> </ul>	
	If the issue has not been resolved →	<ul style="list-style-type: none"> <li>Escalate to an electrical repair level</li> </ul>	

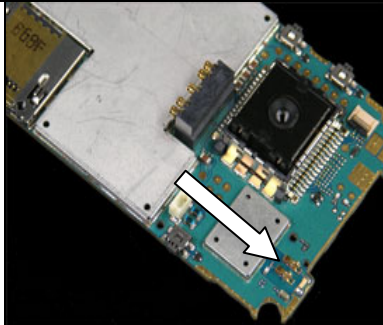
## 12 SIM Problems

Problem Area	Items to Inspect	Repair Action	Inspection Reference
SIM undetected	Inspect SIM holder	<ul style="list-style-type: none"> <li>If dirty or oxidized – Clean</li> <li>If damaged – Send to an electrical repair location</li> </ul>	
	If the issue has not been resolved →	<ul style="list-style-type: none"> <li>Escalate to an electrical repair level</li> </ul>	
Unit indicates the incorrect SIM is inserted	Check whether the phone is locked to a particular carrier and whether the correct carrier's SIM is being used	<ul style="list-style-type: none"> <li>Use correct carrier SIM or test SIM</li> </ul>	
	If the issue has not been resolved →	<ul style="list-style-type: none"> <li>Escalate to an electrical repair level</li> </ul>	

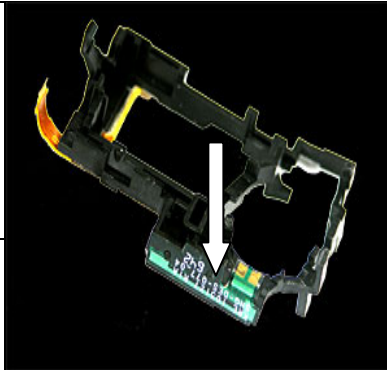
## 13 Data Transfer Problems using a Data Cable

Problem Area	Items to Inspect	Repair Action	Inspection Reference
Problem transferring data using a direct connection	Perform the following action →	<ul style="list-style-type: none"> <li>Clean System Connector.</li> </ul>	
	If the issue has not been resolved →	<ul style="list-style-type: none"> <li>Escalate to an electrical repair level</li> </ul>	

## 14 Bluetooth Problems

Problem Area	Items to Inspect	Repair Action	Inspection Reference
Will not connect with a functional Bluetooth device	Inspect the Bluetooth antenna's contact pads on the circuit board	<ul style="list-style-type: none"> <li>If dirty – Clean</li> </ul>	

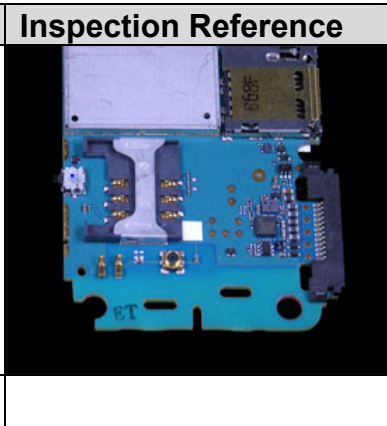


	Inspect the spring fingers of Bluetooth antenna	<ul style="list-style-type: none"> <li>If bent or damaged – Replace board frame</li> </ul>	
	If the issue has not been resolved →	<ul style="list-style-type: none"> <li>Escalate to an electrical repair level</li> </ul>	

### 15 Memory Stick Problems

Problem Area	Items to Inspect	Repair Action	Inspection Reference
Phone does not detect memory stick	Perform the following action →	<ul style="list-style-type: none"> <li>Escalate to an electrical repair level</li> </ul>	

### 16 Hands-Free Problems

Problem Area	Items to Inspect	Repair Action	Inspection Reference
Hands-free will not work	Perform the following action →	<ul style="list-style-type: none"> <li>Replace the system connector</li> </ul>	
	If the issue has not been resolved →	<ul style="list-style-type: none"> <li>Escalate to an electrical repair level</li> </ul>	

## 17 Revision History

Rev.	Date	Changes / Comments
A	2007-02-20	First release