

# Trouble Shooting Guide, Mechanical

Applicable for Z320

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# 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 specific failure, this document should be used in conjunction with the Test Instructions, Mechanical and the Working Instructions, Mechanical.

## 1.1 Service functions in the software

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

⇒\*←←\*←\*

They are as follows:

**Service info**

**Service tests**

**Text labels**

The phones software has a built in service functionality that allows you to test some of the phones functions. (See point 2 above) It looks like this:

**Main display**

**LED/illumination**

**Keyboard**

**Speaker**

**Earphone**

**Microphone**

**Vibrator**

**Camera**

**Flash LED**

**Real time clock**

**Total call time**

**NOTE: Different names may occur depending on language setting and customization.**

## 1.2 Misuse and other no warranty issues

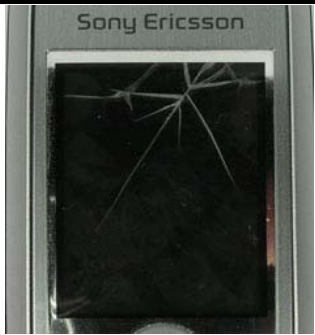




Misuse is not covered by warranty. This chapter will explain what's not covered by warranty. Phones that have been exposed to misuse will not be covered by warranty.


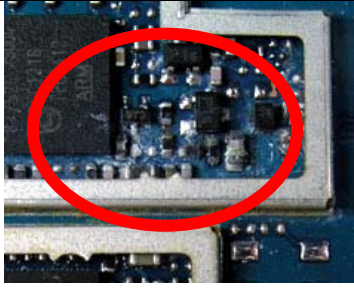
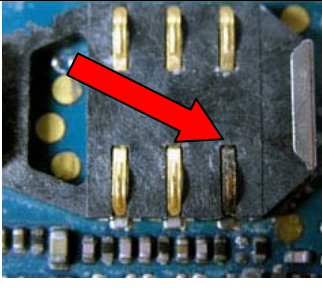
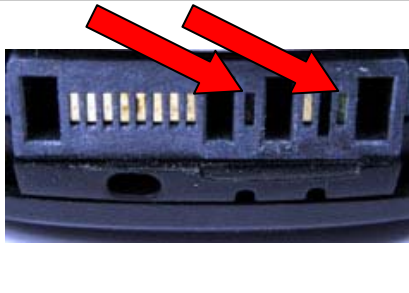
This means: if it is possible to repair the phone, the customer will have to pay for the repair. SEMC will not allow any of these phones to be claimed into WCMS. Some local perspectives may interfere with this. Please reference to local directives.

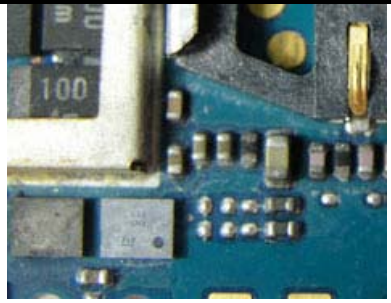
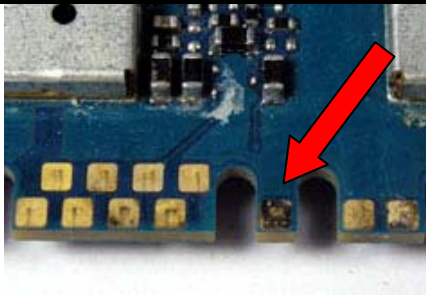
### 1.2.1 Action

Make a general visual inspection for misuse.

Below are some **examples** of what is not covered by warranty.

				
Front window broken due to misuse.	LCD cracked due to drop.	Clear scratches	Mark after drop	Corrosion components on the PCB.


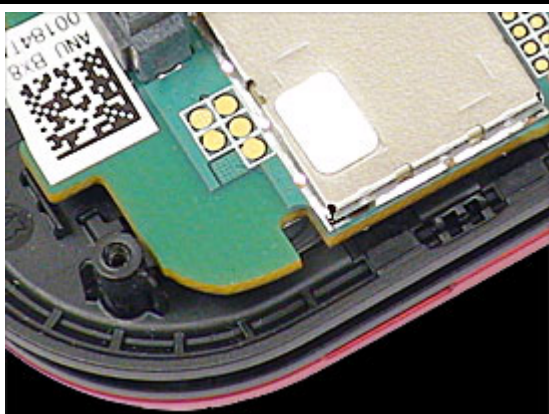
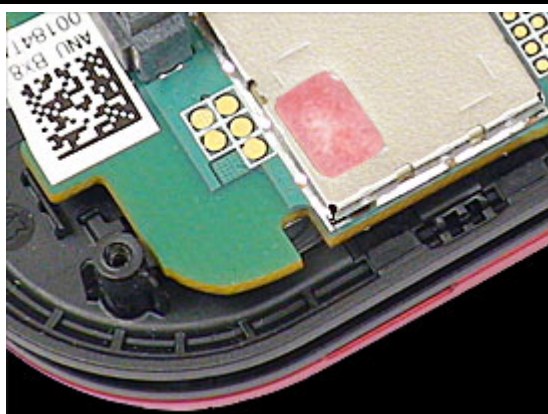
			
<p>Corrosion components on the PCB.</p>	<p>Corrosion components on the PCB.</p>	<p>SIM reader damaged by liquid.</p>	<p>System connector damaged by liquid</p>

	
<p>Components around system connector damaged by liquid</p>	<p>System connector pad(s) damaged by liquid</p>

## 1.2.2 Liquid damage sticker

In the phone there is placed a sticker that can give you a hint to see if the phone is damaged by liquid or not. This sticker is located Battery housing lower-right (Fig. 1.2.1) and it is possible to see it without disassemble the phone.

On the other pictures below you will see the different between a sticker that has been in contact with liquid (Fig. 1.2.3) and with one that hasn't (Fig. 1.2.2).

Location of sticker	This sticker is ok	This sticker <u>is not</u> ok
		
Fig. 1.2.1	Fig. 1.2.2	Fig. 1.2.3




If the white sticker has been in contact with liquid, it turn into a red or pink sticker. In this case you should check the phone for liquid damage (see point 1.2.1).

**NOTE!** There must be clear marks after liquid on the PCB before rejecting the phone for repair.

## 1.2.3 Action


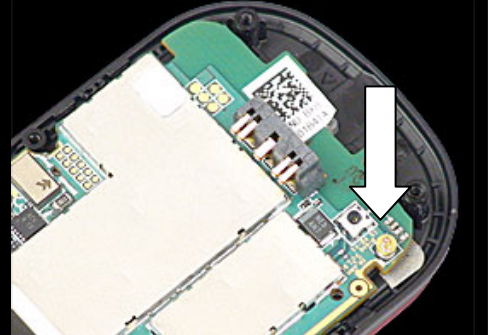
Make a general visual inspection for misuse, corrosion or oxidation from liquid damage. No further action should be taken for a liquid damaged phone. Handle the unit according to local directives.

## 2 Appearance Problems

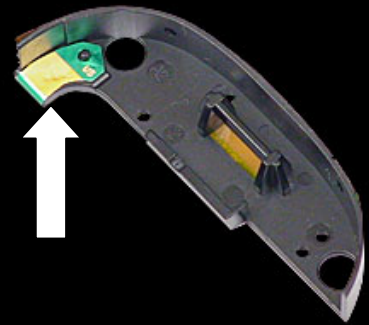

Problem Area	Items to Check	Repair Action	Reference Image
<i>Appearance</i>	<p>Visually inspect the cosmetic quality of all user viewable surfaces:</p> <ul style="list-style-type: none"> <li><b>Style-Up Cover, Battery Cover, Front Lens, Camera Lens, Lower</b></li> </ul>	<ul style="list-style-type: none"> <li>If dirty –Clean parts as necessary.</li> <li>If unacceptable scratched or damaged – Replace damage parts as necessary.</li> </ul>	
	<ul style="list-style-type: none"> <li>Visually inspect for improper gap between seams</li> <li><b>Volume Key, IrDA window</b></li> </ul>		
	<ul style="list-style-type: none"> <li><b>Keypad, Main Lens, Co-brand, Receiver Plate</b></li> </ul>		



### 3 Network/Signal Problems


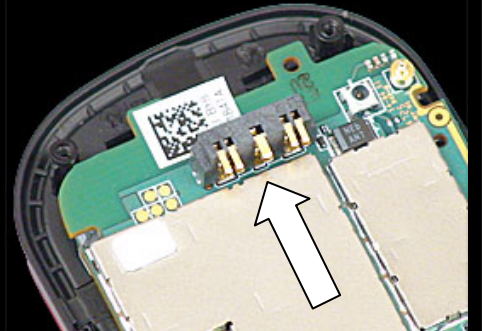
Problem Area	Items to Check	Repair Action	Reference Image
No Signal or Poor Signal	Before proceeding	<ul style="list-style-type: none"> <li>Perform a flash upgrade.</li> </ul>	
	Visually inspect SIM holder	<ul style="list-style-type: none"> <li>If dirty or oxidized – Clean it</li> <li>If damaged – Send to an electrical repair location.</li> </ul>	
	Visually inspect Antenna Pogo pin	<ul style="list-style-type: none"> <li>If dirty or oxidized – Clean it</li> <li>Trial the spring for elasticity. If locked – Send to an electrical repair location</li> </ul>	

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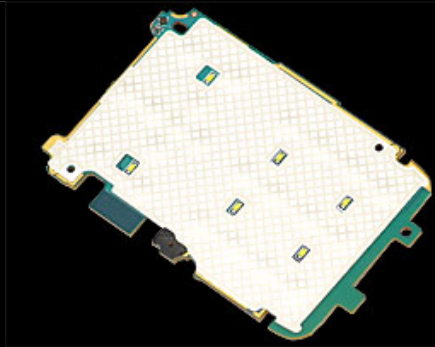
Problem Area	Items to Check	Repair Action	Reference Image
	Visually inspect antenna contact pad	<ul style="list-style-type: none"> <li>If dirty or oxidized – Clean it</li> <li>If damaged – Replace Antenna Assy.</li> </ul>	
	Visually inspect Hinge Spring Connector	<ul style="list-style-type: none"> <li>If dirty or clogged – Clean it.</li> <li>If damaged – Replace the Hinge Spring Connector</li> </ul>	
	If the issue has not been resolved	<ul style="list-style-type: none"> <li>Handle the unit according to local directives.</li> </ul>	





## 4 On/Off Problems

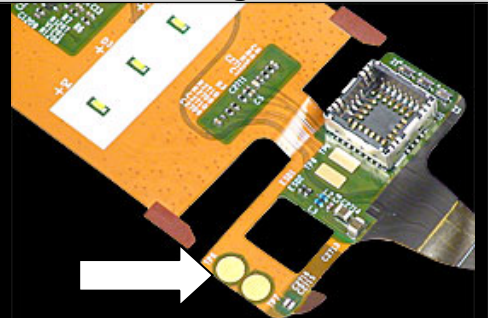
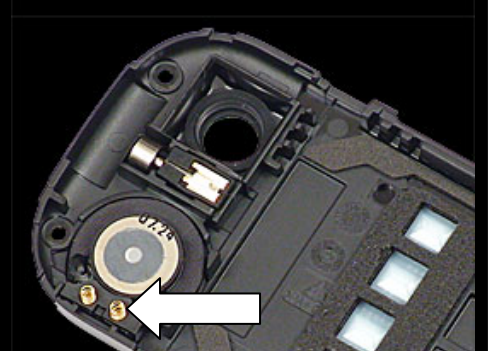
Problem Area	Items to Check	Repair Action	Reference Image
Power on problems	Check whether the phone vibrates after pressing the power key and whether the keypad illuminates	<ul style="list-style-type: none"> <li>If activation of the vibrator or keypad is detected – Refer to the “Display problem” in <b>Chapter 7</b>.</li> </ul>	
	Before proceeding	<ul style="list-style-type: none"> <li>Perform a flash upgrade</li> </ul>	
	Visually inspect contact pads on battery  <b>Note! Use new battery to check</b>	<ul style="list-style-type: none"> <li>If dirty or oxidized – Clean pads</li> <li>If damaged – Replace the battery</li> </ul>	
	Visually inspect Battery Connector	<ul style="list-style-type: none"> <li>If dirty or oxidized – Clean it.</li> <li>If damaged – Send to an electrical repair location.</li> </ul>	

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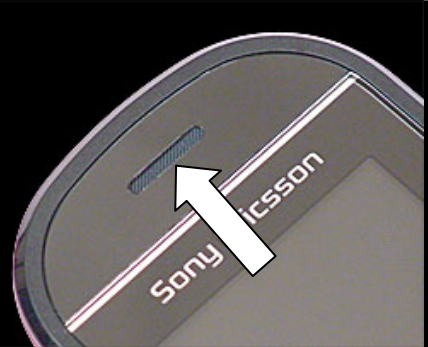
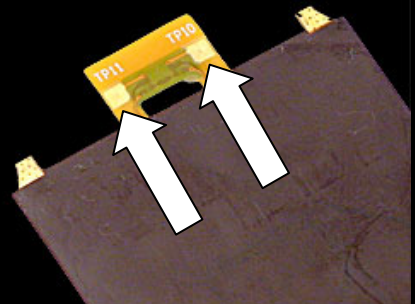

Problem Area	Items to Check	Repair Action	Reference Image
	Visually inspect keypad outer	<ul style="list-style-type: none"> <li>If power key damaged – Replace keypad.</li> </ul>	
	Visually inspect dome sheet	<ul style="list-style-type: none"> <li>If dirty or oxidized – Clean dome sheet.</li> <li>If damaged – Replace the dome sheet.</li> </ul>	
	If this issue has not been resolved	<ul style="list-style-type: none"> <li>Send to an electrical repair location.</li> </ul>	

## 5 Audio Problems



Problem Area	Items to Check	Repair Action	Reference Image
Loudspeaker  No sound or poor quality sound	Before proceeding	<ul style="list-style-type: none"> <li>Perform a flash upgrade and a setting reset</li> </ul>	
	Visually inspect the loudspeaker external port	<ul style="list-style-type: none"> <li>If dirty or clogged –Clean it.</li> </ul>	
	Visually inspect the speaker mesh	<ul style="list-style-type: none"> <li>If dirty or clogged –Clean it.</li> <li>If damaged – Replace the Upper Frame Assy and clean all parts from dust.</li> </ul>	

Problem Area	Items to Check	Repair Action	Reference Image
	Visually inspect the loudspeaker springs, speaker body, main FPC pads, upper frame structure	<ul style="list-style-type: none"> <li>• If spring on the Speaker or the pads on the Flex Assy are dirty or oxidized – Clean parts.</li> <li>• If speaker body is damaged – Replace the Speaker.</li> <li>• If spring is damaged – Replace the Speaker.</li> <li>• If Upper frame is damaged – Replace upper frame.</li> <li>• If main FPC damaged – Replace Flex Assy.</li> </ul>	 
	If this issue has not been resolved	<ul style="list-style-type: none"> <li>• Send to an electrical repair location.</li> </ul>	

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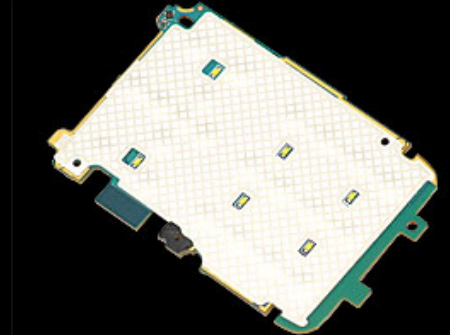
Problem Area	Items to Check	Repair Action	Reference Image
Receiver:  No sound or poor quality sound`	Before proceeding	<ul style="list-style-type: none"> <li>Perform a flash upgrade and a setting reset.</li> </ul>	
	Visually inspect receiver's external port	<ul style="list-style-type: none"> <li>If clogged <ul style="list-style-type: none"> <li>– Clean or replace Receiver Plate or Upper Inner Cover.</li> </ul> </li> </ul>	
	Visually inspect receiver's inner pads	<ul style="list-style-type: none"> <li>If dirty or oxidized <ul style="list-style-type: none"> <li>– Clean the pads.</li> </ul> </li> <li>If damaged <ul style="list-style-type: none"> <li>– Replace Flex Assy</li> </ul> </li> </ul>	
	<ul style="list-style-type: none"> <li>Visually inspect the Receiver</li> <li>Perform a test with a new Receiver for verification</li> </ul>	<ul style="list-style-type: none"> <li>If dirty or oxidized <ul style="list-style-type: none"> <li>– Clean the springs.</li> </ul> </li> <li>If 'old' Receiver is not working <ul style="list-style-type: none"> <li>– Replace Receiver</li> </ul> </li> </ul>	

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Problem Area	Items to Check	Repair Action	Reference Image
	Perform a test with a new Flex Assy for verification	<ul style="list-style-type: none"> <li>If 'old' Flex Assy is not working – Replace the FPC</li> </ul>	
	If this issue has not been resolved	<ul style="list-style-type: none"> <li>Send to an electrical repair location.</li> </ul>	
Microphone	Before proceeding	<ul style="list-style-type: none"> <li>Perform a flash upgrade and a setting reset</li> </ul>	
	Visually inspect the microphone's external port	<ul style="list-style-type: none"> <li>If clogged – Clean or replace Lower Inner Cover.</li> </ul>	






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Problem Area	Items to Check	Repair Action	Reference Image
	Visually inspect the microphone's sponge	<ul style="list-style-type: none"> <li>If damaged <ul style="list-style-type: none"> <li>– Replace the sponge.</li> </ul> </li> </ul>	
	If the issue has not been resolved	<ul style="list-style-type: none"> <li>Send to an electrical repair location.</li> </ul>	



## 6 Key Problems

Problem Area	Items to Check	Repair Action	Reference Image
<b>Keypad:</b>  A key on the keyboard is not functioning or is intermittent	Visually inspect for debris between keypad and dome sheet and for damage to the keypad and the dome sheet	<ul style="list-style-type: none"> <li>• If dirty or clogged – Clean both parts.</li> <li>• If damaged – Replace the keypad and/or dome sheet as necessary.</li> </ul>	
	Visually inspect the Operator key	<ul style="list-style-type: none"> <li>• If damaged – Replace the Operator Key</li> </ul>	
	If the issue has not been resolved	Send to an electrical repair location	


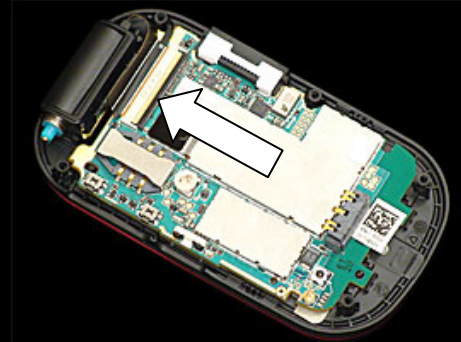
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Problem Area	Items to Check	Repair Action	Reference Image
Volume Key	Visually inspect the Volume Key	<ul style="list-style-type: none"> <li>If dirty or clogged – Clean it.</li> <li>If damaged – Replace the Volume Key.</li> </ul>	
	If the issue has not been resolved	<ul style="list-style-type: none"> <li>Send to an electrical repair location</li> </ul>	
Flip problem	Inspect if the phone open and close properly	<ul style="list-style-type: none"> <li>If any problem: Try and replace components in corresponding order to trouble shoot the problem:</li> </ul> <ol style="list-style-type: none"> <li>Replace the hinge</li> </ol>	
		<ol style="list-style-type: none"> <li>Replace Rotation Lock</li> </ol>	

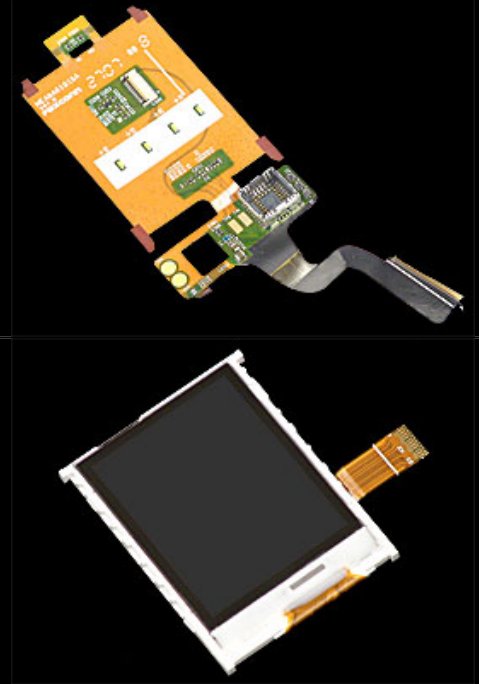
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Problem Area	Items to Check	Repair Action	Reference Image
		3. Replace Upper Inner Cover	
		4. Replace Dummy Hinge	
	If the issue has not been resolved	<ul style="list-style-type: none"> <li>Handle the unit according to local directives.</li> </ul>	

## 7 Display Problems


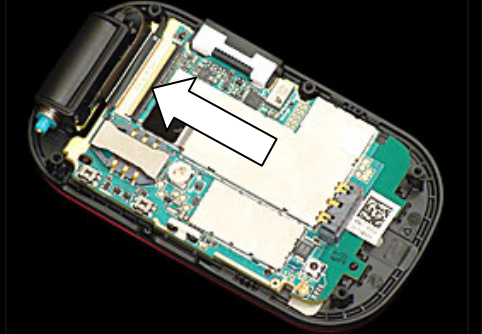
Problem Area	Items to Check	Repair Action	Reference Image
LCD module	Check whether the phone vibrators 10 to 15 seconds after pressing the power key and whether the keypad illuminates	<ul style="list-style-type: none"> <li>If activation of the vibrator are not detected <ul style="list-style-type: none"> <li>– Refer to the On/Off problems in Chapter 4</li> </ul> </li> </ul>	
	Before proceeding	<ul style="list-style-type: none"> <li>Perform a flash upgrade and a setting reset.</li> </ul>	
	Visually inspect the LCD connector	<ul style="list-style-type: none"> <li>If improperly connected <ul style="list-style-type: none"> <li>– Re-insert the LCD FPC into the connector</li> </ul> </li> </ul>	
	Visually inspect the ZIF Connector.	<ul style="list-style-type: none"> <li>If improperly connected <ul style="list-style-type: none"> <li>– Re-insert the Flex Assy into the ZIF connector</li> </ul> </li> </ul>	

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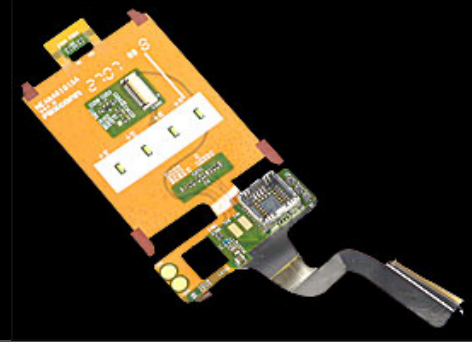
Problem Area	Items to Check	Repair Action	Reference Image
	Check the FPC and LCM module	<ul style="list-style-type: none"> <li>If damaged <ul style="list-style-type: none"> <li>– Replace the main FPC or LCM</li> </ul> </li> </ul>	
	If the issue has not been resolved	<ul style="list-style-type: none"> <li>Send to an electrical repair location.</li> </ul>	



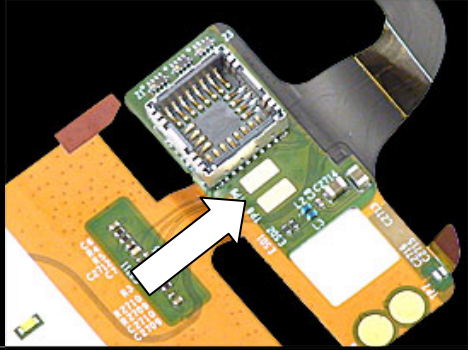

## 8 Illumination Problems

Problem Area	Items to Check	Repair Action	Reference Image
<b>Keys:</b>  The entire keypad or a portion of the keypad does not illuminate	Before proceeding	<ul style="list-style-type: none"> <li>Perform a flash upgrade and a setting reset.</li> </ul>	
	Visually inspect the keypad	<ul style="list-style-type: none"> <li>If dirty or clogged –Clean the keypad.</li> </ul>	
	If the issue has not been resolved	<ul style="list-style-type: none"> <li>Send to an electrical repair location.</li> </ul>	
LCD	Visually inspect the ZIF Connector.	<ul style="list-style-type: none"> <li>If improperly connected – Re-insert the Flex Assy into the ZIF connector</li> </ul>	


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Problem Area	Items to Check	Repair Action	Reference Image
	Visually inspect if the LCD connector is properly connected to the Flex Assy connector	<ul style="list-style-type: none"> <li>If improperly connected – Re-insert the LCD FPC into the connector</li> </ul>	
	If the issue has not been resolved	<ul style="list-style-type: none"> <li>Send to an electrical repair location</li> </ul>	
Icon	Visually inspect the four LED component of FPC.	<ul style="list-style-type: none"> <li>If the LED have burned or damaged – Replace the main FPC.</li> </ul>	
	If the issue has not been resolved	<ul style="list-style-type: none"> <li>Send to an electrical repair location</li> </ul>	



## 9 Alert Problems

Problem Area	Items to Check	Repair Action	Reference Image
Vibrator	Before proceeding	<ul style="list-style-type: none"> <li>Perform a flash upgrade and a setting reset.</li> </ul>	
	Visually inspect the vibrator pads on the main FPC	<ul style="list-style-type: none"> <li>If dirty or oxidized – Clean the pads</li> <li>If damaged – Replace main FPC</li> </ul>	
	Visually inspect the vibrator	<ul style="list-style-type: none"> <li>If dirty, oxidized or damaged – Replace it</li> </ul>	
Speaker	Refer to “Speaker” section under “Audio Problem”		

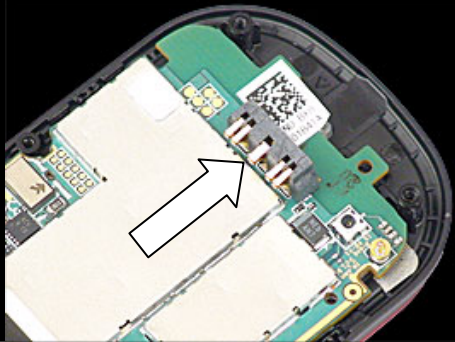

## 10 SIM Problems

Problem Area	Items to Check	Repair Action	Reference Image
SIM undetected (Insert SIM)	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>Handle the unit according to local directives.</li> </ul>	
Unit indicates an incorrect SIM is inserted (Insert correct SIM)	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>Send to an electrical repair location.</li> </ul>	

## 11 Charging/Capacity Problems


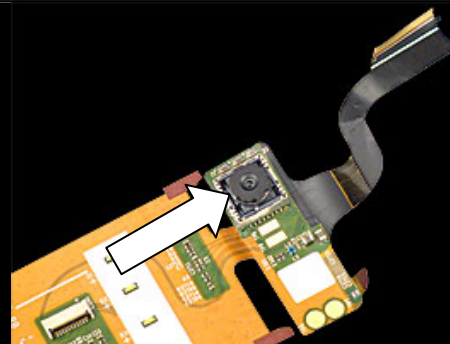
Problem Area	Items to Check	Repair Action	Reference Image
Battery will not charge	Visually inspect the contact pads of the battery	<ul style="list-style-type: none"> <li>• If dirty or oxidized –Clean</li> <li>• If damaged –Replace battery</li> </ul>	
	Visually inspect the system connector	<ul style="list-style-type: none"> <li>• If dirty or oxidized –Clean it</li> <li>• If damaged –Send to an electrical repair location</li> </ul>	

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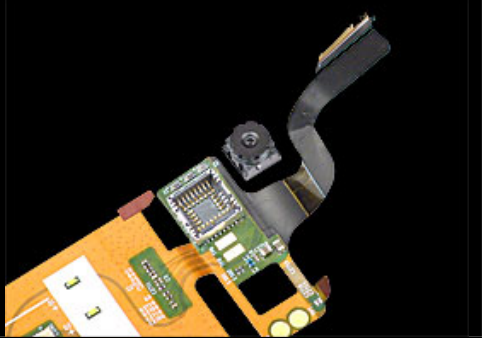
Problem Area	Items to Check	Repair Action	Reference Image
	Visually inspect the battery connector	<ul style="list-style-type: none"> <li>• If dirty or oxidized – Clean it</li> <li>• If damaged – Send to an electrical repair location</li> </ul>	
	If the issue has not been resolved	<ul style="list-style-type: none"> <li>• Send to an electrical repair location.</li> </ul>	
Battery loses charge quickly /standby time seems short	Before proceeding	<ul style="list-style-type: none"> <li>• Perform a flash upgrade and a setting reset</li> </ul>	
	Use new battery to check	<ul style="list-style-type: none"> <li>• If damaged – Replace the battery.</li> </ul>	
	If the problem still can't be resolved	<ul style="list-style-type: none"> <li>• Send it to an electrical repair.</li> </ul>	





## 12 Camera Problems

Problem Area	Items to Check	Repair Action	Reference Image
Camera	Visually inspect the camera lens and camera ring	<ul style="list-style-type: none"> <li>• If Camera lens is dirty – Clean it</li> <li>• If scratched or damaged – Replace the Camera Lens</li> </ul>	
	Visually inspect whether the camera is properly connected to its socket on the main FPC	<ul style="list-style-type: none"> <li>• If improperly connected – Re-insert the Flex Assy into the ZIF connector</li> <li>• If the socket is dirty or oxidized – Clean the socket</li> <li>• If Camera pads are dirty or oxidized – Clean the pads.</li> </ul>	


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Problem Area	Items to Check	Repair Action	Reference Image
	Perform a test with a new Camera or a new Flex Assy for verification	<ul style="list-style-type: none"> <li>• If the old Camera is damaged – Replace the Camera</li> <li>• If the old Flex Assy is damaged – Replace the Flex Assy</li> </ul>	
	If the issue has not been resolved	<ul style="list-style-type: none"> <li>• Send to an electrical repair location.</li> </ul>	

## 13 Data Communication Problems

Problem Area	Items to Check	Repair Action	Reference Image
Will not connect through the system connector	Before proceeding	<ul style="list-style-type: none"> <li>Perform a flash upgrade and a setting reset</li> </ul>	
	Visually inspect the system connector	<ul style="list-style-type: none"> <li>If dirty or oxidized – Clean it</li> <li>If damaged – Replace it</li> </ul>	
	Visually inspect the antenna	<ul style="list-style-type: none"> <li>If dirty or oxidized – Clean it</li> <li>If damaged – Replace it</li> </ul>	
	If the issue has not been resolved	<ul style="list-style-type: none"> <li>Send to an electrical repair location.</li> </ul>	

## 14 Hands-Free Problems

Problem Area	Items to Check	Repair Action	Reference Image
Will not connect with a functional Hands-Free Device	Before proceeding	<ul style="list-style-type: none"> <li>Perform a flash upgrade and a setting reset</li> </ul>	
	Visually inspect the system connector	<ul style="list-style-type: none"> <li>If dirty or oxidized – Clean it</li> <li>If damaged – Replace it</li> </ul>	
	If the issue has not been resolved	<ul style="list-style-type: none"> <li>Handle the unit according to local directives.</li> </ul>	

## 15 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, make a master reset and flash the phone with the latest software from EMMA III.
- 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 hasn't been upgraded.

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

## 16 Revision History

Rev.	Date	Changes / Comments
A	2007-09-24	1 <sup>st</sup> release