

# Trouble Shooting Guide, Mechanical

Applicable for K200 and K220

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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**

**Loudspeaker**

**Earphone**

**Microphone**

**Vibrator**

**Camera**

**Flash LED**

**Real time clock**

**FM radio (You need a headset to test)**

**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.


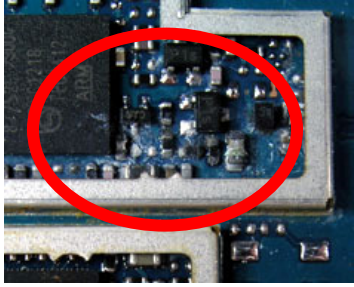
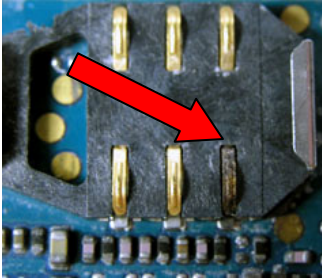
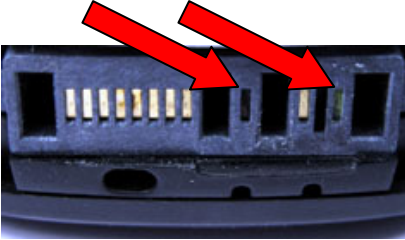
### 1.2.1 Action

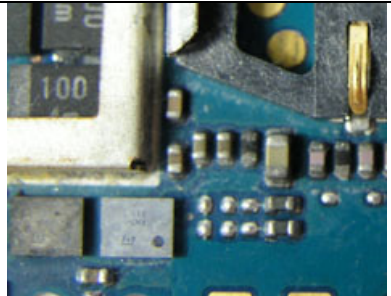
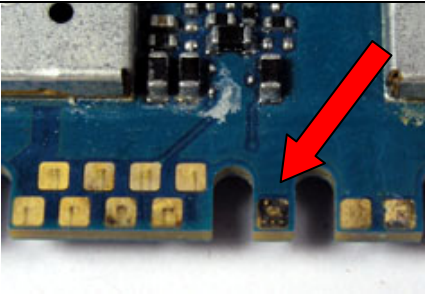
Make a general visual inspection for misuse.

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

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

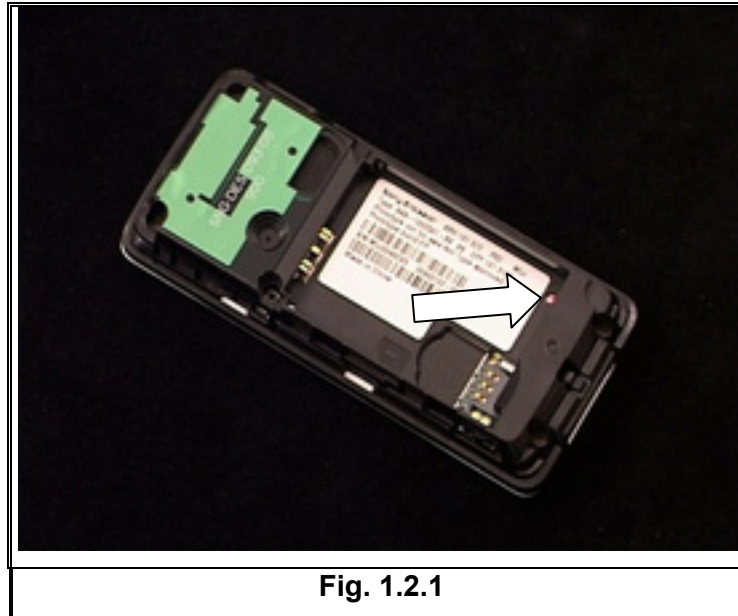
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<p>Corrosion components on the PCB.</p>	<p>Corrosion components on the PCB.</p>	<p>SIM reader damaged by liquid.</p>	<p>System connector damaged by liquid</p>

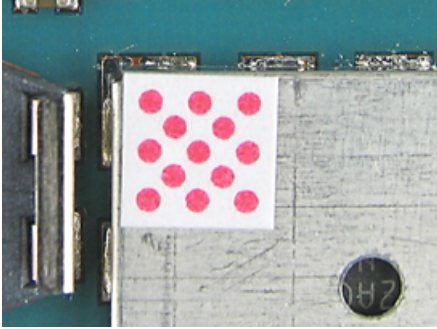
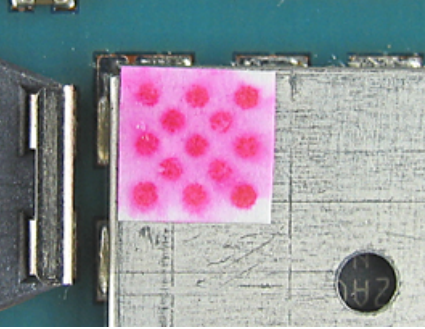
	
<p>Components around system connector damaged by liquid</p>	<p>System connector pad(s) damaged by liquid</p>

## 1.2.2 Liquid intrusion indicator

In the phone there is one indicator that can give you a hint to see if the phone is damage by liquid or not. This indicator is located at the lower right corner, which is possible to see without disassemble the phone.




On the pictures below you will see the difference between an indicator that has been in contact with liquid (Fig. 1.2.3) and with one that hasn't (Fig. 1.2.2).

This sticker is ok	This sticker is <u>not</u> ok	
		<p>The white indicator that has been in contact with liquid turns into a red or pink sticker. In this case you should check the phone for liquid damage.</p> <p>Note: There must be clear marks after liquid on the PCB before rejecting the phone for repair.</p>
<p><b>Fig. 1.2.2</b></p>	<p><b>Fig. 1.2.3</b></p>	


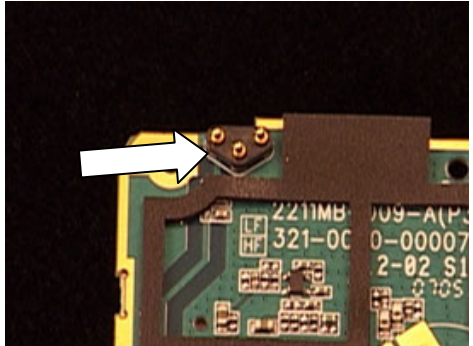
### 1.2.3 Action

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


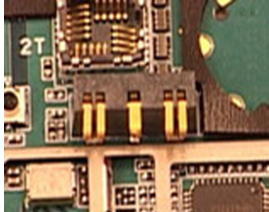
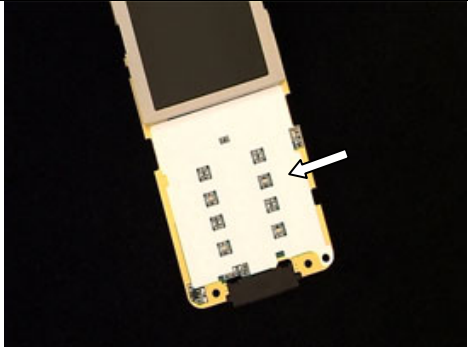
Problem Area	Items to Check	Repair Action	Reference Image
Appearance	Visually inspect the cosmetic quality of all user viewable surfaces	<ul style="list-style-type: none"> <li>▪ If dirty – Clean</li> </ul> <p>Note: Misuse is not covered by warranty. Refer to chapter 1.2.</p>	
	Visually inspect for improper gap between seams	<ul style="list-style-type: none"> <li>▪ Reassemble or replace parts if necessary</li> </ul>	
	Visually inspect all keys	<ul style="list-style-type: none"> <li>▪ If dirty – Clean</li> <li>▪ If unacceptable damaged - Replace</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>	

### 3 Network/Signal Problems

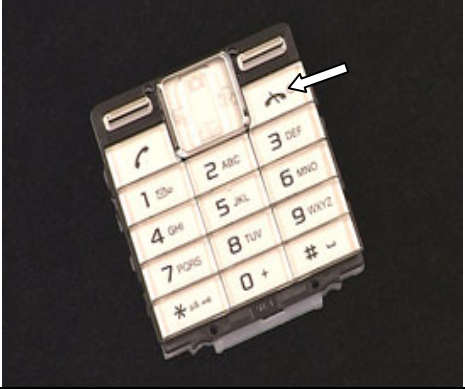
Problem Area	Items to Check	Repair Action	Reference Image
No signal or poor network	Before proceeding →	<ul style="list-style-type: none"> <li>Perform a software update or update content refresh.</li> </ul>	
	Antenna film	<ul style="list-style-type: none"> <li>If dirty/oxidize clean</li> <li>If damage replace</li> </ul>	
	Pogo pin	<ul style="list-style-type: none"> <li>If dirty/oxidize clean</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
On Off problem	Before proceeding → Visually inspect the contact pads of the battery	<ul style="list-style-type: none"> <li>▪ Perform a update content refresh.</li> <li>▪ If dirty or oxidized – Clean.</li> <li>▪ If damaged – Replace battery.</li> </ul>	
	Visually inspect the battery connector.	<ul style="list-style-type: none"> <li>▪ If dirty or oxidized – Clean.</li> </ul>	
On/Off problem	Visually inspect the dome foil.	<ul style="list-style-type: none"> <li>▪ If damaged replaced.</li> </ul>	



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Problem Area	Items to Check	Repair Action	Reference Image
	Visually inspect the key pad	<ul style="list-style-type: none"> <li>▪ If damaged replaced.</li> </ul>	
	If the issue has not been resolved →	Handle the unit according to local directives	


## 5 Audio Problem

Problem Area	Items to Check	Repair Action	Reference Image
Microphone	Before proceeding →	Perform a software update or update content refresh.	
	Visually inspect the microphone external port	If clogged – Clean or replace the battery cover.	
	If the issue has not been resolved →	Replace the Microphone.	
	If the issue has not been resolved →	Handle the unit according to local directives	

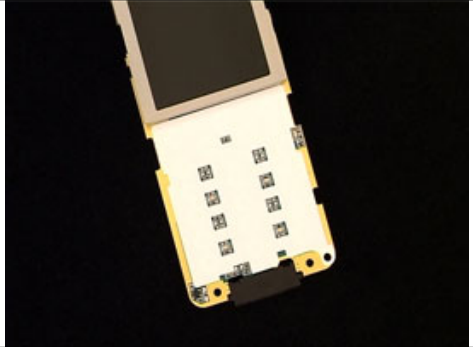

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Problem Area	Items to Check	Repair Action	Reference Image
	Visually inspect Earphone external port	<ul style="list-style-type: none"> <li>▪ If dirty or damaged – Replace Upper Front.</li> </ul>	
	If the issue has not been resolved →	<ul style="list-style-type: none"> <li>▪ Replace the Earphone.</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>	

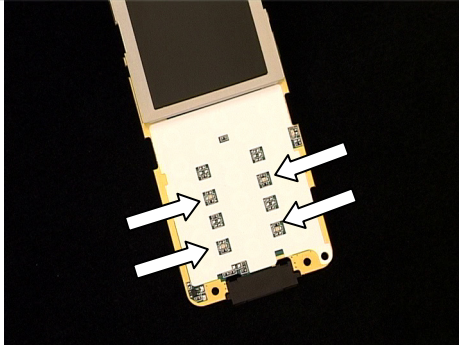
<b>Problem Area</b>	<b>Items to Check</b>	<b>Repair Action</b>	<b>Reference Image</b>
Loudspeaker	Before proceeding →	<ul style="list-style-type: none"> <li>Perform a software update or update content refresh.</li> </ul>	
	Visually inspect the Loudspeaker external port	<ul style="list-style-type: none"> <li>If clogged – Clean or replace it.</li> </ul>	
	If the issue has not been resolved	<ul style="list-style-type: none"> <li>Change the loudspeaker.</li> </ul>	

Problem Area	Items to Check	Repair Action	Reference Image
Loudspeaker	Visually inspect the contact pads on the PBA.	<ul style="list-style-type: none"> <li>▪ If dirty clean.</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>	

## 6 Key Problems


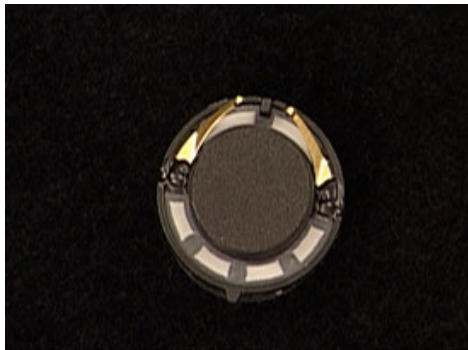
Problem Area	Items to Check	Repair Action	Reference Image
Key problems	Before proceeding →	<ul style="list-style-type: none"> <li>• Perform a software update or update content refresh.</li> </ul>	
	Visually inspect the dome foil.	<ul style="list-style-type: none"> <li>• If damaged replace the dome foil.</li> </ul>	
	Visually inspect the key pad	<ul style="list-style-type: none"> <li>• If damaged replace the key pad.</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>	


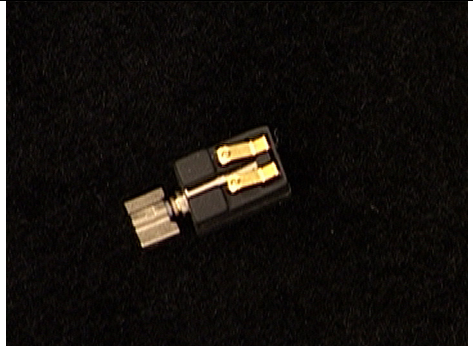
## 7 Illumination Problems

Problem Area	Items to Check	Repair Action	Reference Image
Keys: The entire keypad or a portion of the keypad does not illuminate	Before proceeding →	<ul style="list-style-type: none"> <li>▪ Perform a software update or update content refresh.</li> </ul>	
	Visually inspect the LED's on the PCB	<ul style="list-style-type: none"> <li>▪ If damaged – Send the unit 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>	

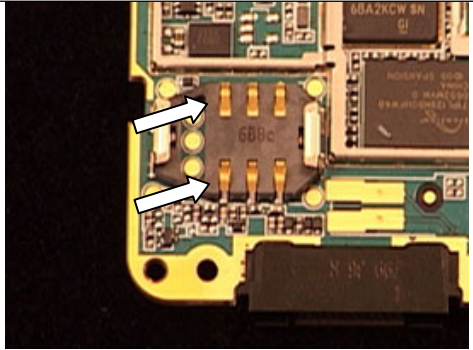


## 8 Alert Problems



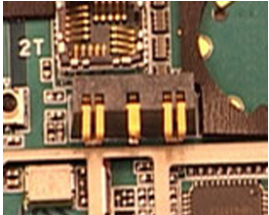
Problem Area	Items to Check	Repair Action	Reference Image
Loudspeaker	Before proceeding →	<ul style="list-style-type: none"> <li>Perform a software update or update content refresh.</li> </ul>	
	Visually inspect the Loudspeaker external port	<ul style="list-style-type: none"> <li>If clogged – Clean or replace it.</li> </ul>	
	If the issue has not been resolved	<ul style="list-style-type: none"> <li>Change the loudspeaker.</li> </ul>	

<b>Problem Area</b>	<b>Items to Check</b>	<b>Repair Action</b>	<b>Reference Image</b>
Loudspeaker	Visually inspect the contact pads on the PBA.	<ul style="list-style-type: none"> <li>▪ If dirty clean.</li> </ul>	
Vibrator not working	Visually inspect the contact springs on the Vibrator.  If the issue has not been resolved	<ul style="list-style-type: none"> <li>▪ If dirty clean.</li> <li>▪ Change the vibrator</li> </ul>	
	If the issue has not been resolved →	Handle the unit according to local directives.	

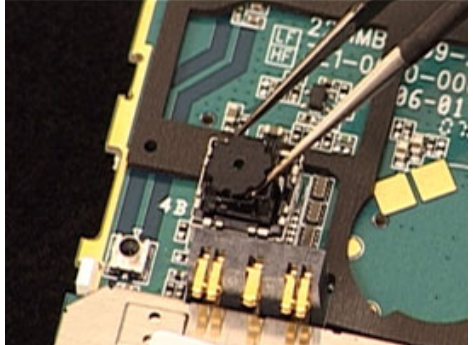

## 9 SIM Problems

Problem Area	Items to Check	Repair Action	Reference Image
Problem area	Before proceeding →	<ul style="list-style-type: none"> <li>Perform a software update or update content refresh.</li> </ul>	
	Visually inspect the contacts springs on the SIM holder.	<ul style="list-style-type: none"> <li>If dirty clean</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>	

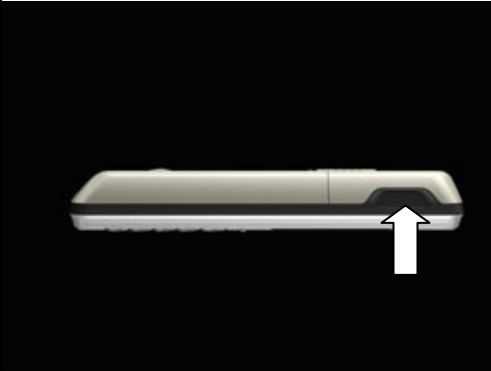

## 10 Charging/Capacity Problems

Problem Area	Items to Check	Repair Action	Reference Image
Battery will not charge	Before proceeding →	<ul style="list-style-type: none"> <li>Perform a software update or update content refresh.</li> </ul>	
	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, oxidized – Clean</li> <li>If damaged – Replace system connector.</li> </ul>	
	Visually inspect the battery connector.	<ul style="list-style-type: none"> <li>If dirty or oxidized – Clean.</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>	


## 11 Camera Problems

Problem Area	Items to Check	Repair Action	Reference Image
VGA camera	Before proceeding →	<ul style="list-style-type: none"> <li>Perform a software update or update content refresh.</li> </ul>	
	Visually inspect the VGA camera.	<ul style="list-style-type: none"> <li>If the lens opening is clogged – Clean.</li> </ul>	
	If the issue has not been resolved →	Change the camera	
	If the issue has not been resolved →	<ul style="list-style-type: none"> <li>Handle the unit according to local directives</li> </ul>	

## 12 Data Communication Problems

Problem Area	Items to Check	Repair Action	Reference Image
Will not connect with a functional IR device	Before proceeding →	Perform a software update or update content refresh.	
	Visually inspect the IrDA window for dirt, scratches and damage	If dirty – Clean it. If damaged – Replace it.	
Will not connect through the System Connector	Before proceeding →	Perform a software update or update content refresh.	
	Visually inspect the System Connector	If dirty – Clean it. If damaged – Replace it.	
	If the issue has not been resolved →	Handle the unit according to local directives.	

## 13 Hands-Free Problems

<b>Problem Area</b>	<b>Items to Check</b>	<b>Repair Action</b>	<b>Reference Image</b>
Will not connect with a functional Hands-Free device	Before proceeding →	Perform a software update or update content refresh.	
	Visually inspect the System Connector	If dirty – Clean it. If damaged – Replace it.	
	If the issue has not been resolved →	Handle the unit according to local directives.	

## 14 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 or do a software update content refresh.
- 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 / content update refresh before sending the unit to a higher level. Do **not** scrap a phone that hasn't been upgraded or a content refresh.

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



## 15 Revision History

<b>Rev.</b>	<b>Date</b>	<b>Changes / Comments</b>
A	2007-04-30	First release