

# Trouble Shooting Guide, Mechanical

Applicable for Z550i, Z550c, Z550a, Z558i & Z558c

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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**

**External display**

**LED/illumination**

**Keyboard**

**Speaker**

**Earphone**

**Microphone**

**Vibrator**

**Camera**

**Memory stick**

**FM radio**

**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


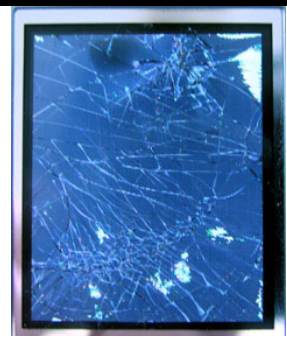


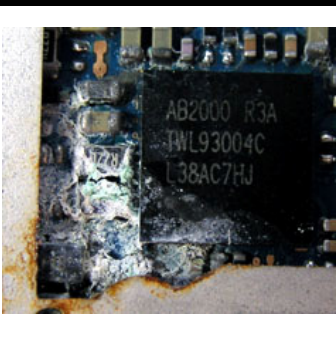
Misuse is not covered by warranty. This chapter will explain what's not covered by warranty. Phones that have been exposed to misuse will not be covered by warranty.

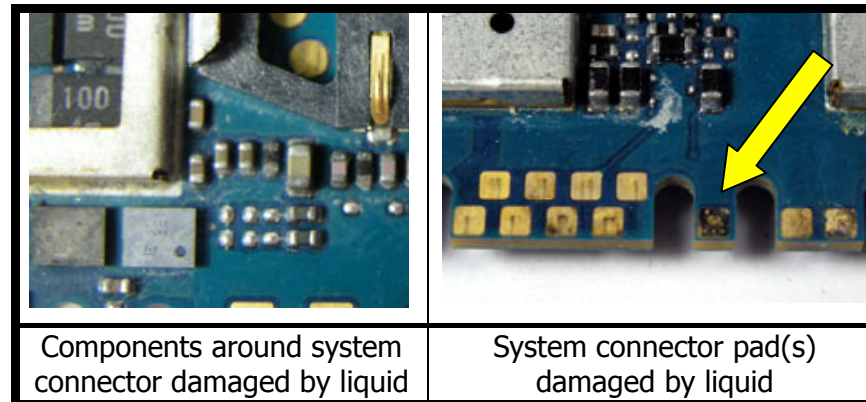
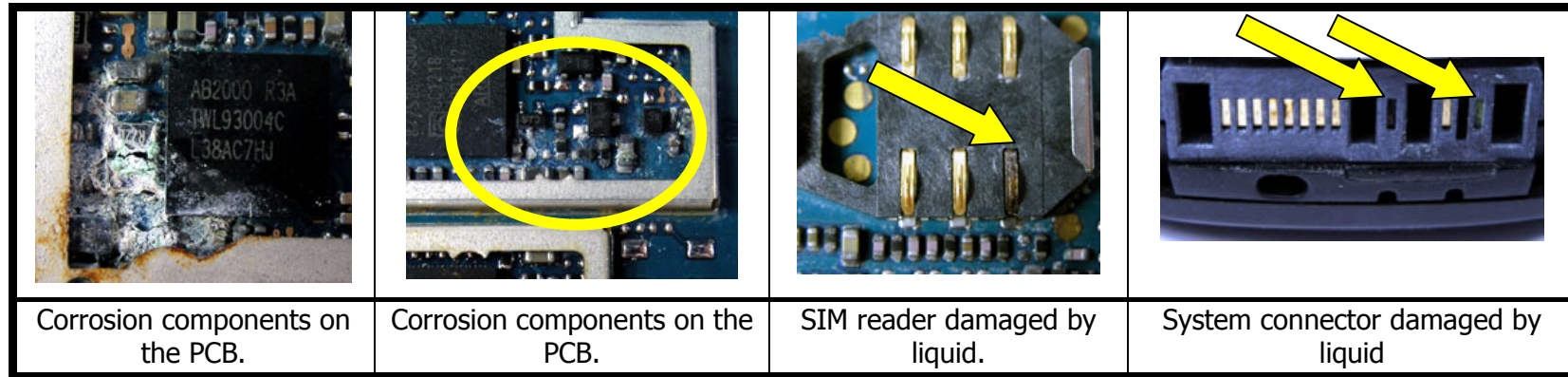
This means: if it is possible to repair the phone, the customer will have to pay for the repair. SEMC will not allow any of these phones to be claimed into WCMS. Some local perspectives may interfere with this. Please reference to local directives.

### 1.2.1 Action

Make a general visual inspection for misuse.

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

				
<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>



## 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 damage by liquid or not. This sticker is located near the SIM reader (Fig. 1.2.1) and it is possible to see it without disassemble the phone.

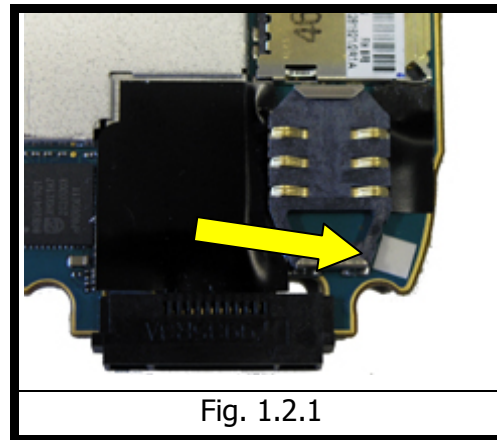
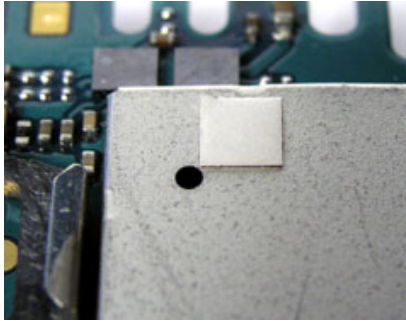
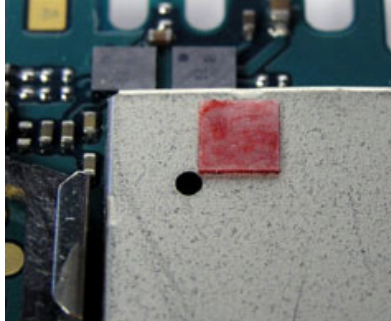


Fig. 1.2.1


On the 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).

This sticker is ok	This sticker is <u>not</u> ok	
		<p>The white sticker 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 (See point 1.1.1).</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

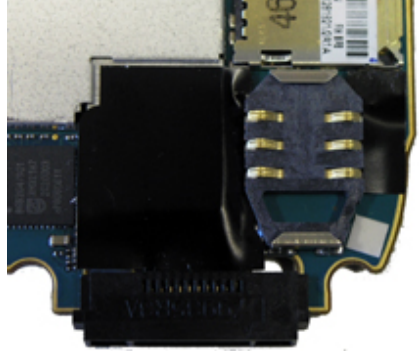
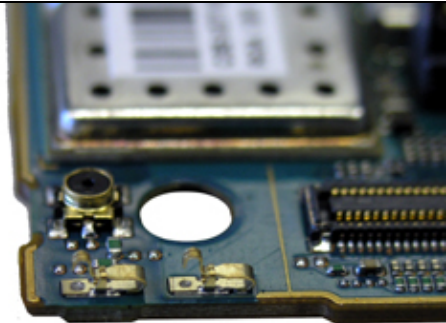
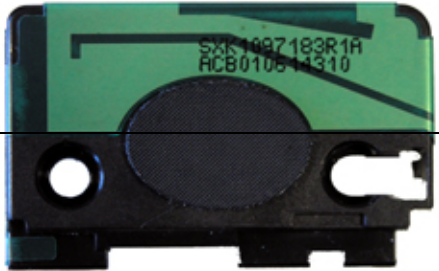
Make a general visual inspection for misuse, corrosion or oxidation from liquid damage. No further action should be taken for a liquid damaged phone. Handle the unit according to local directives.

## 2 Appearance Problems

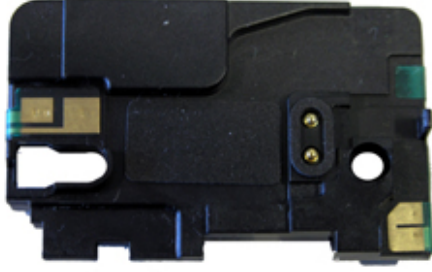
Problem Area	Items to Check	Repair Action	Reference Image
Appearance	Visually inspect the cosmetic quality of all user viewable surfaces	<ul style="list-style-type: none"> <li>If dirty – Clean parts as necessary.</li> <li>If unacceptably scratched or damaged – Replace damage parts as necessary.</li>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



### 3 Network/Signal Problems


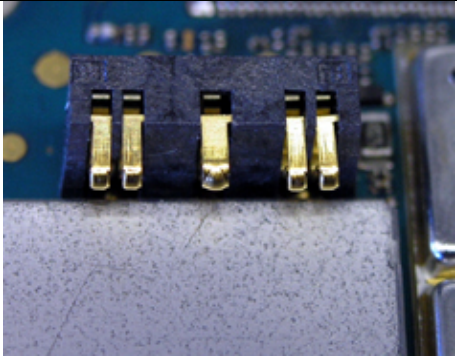

Problem Area	Items to Check	Repair Action	Reference Image
No Signal or Poor Signal	Before proceeding →	Perform a flash upgrade.	
	Visually inspect SIM holder	<ul style="list-style-type: none"> <li>• If dirty or oxidized – Clean it.</li> <li>• If damaged – Send to an electrical repair location.</li> </ul>	
	Visually inspect antenna contacts	<ul style="list-style-type: none"> <li>• If dirty or oxidized – Clean it.</li> <li>• If damaged send to electrical repair</li> </ul>	
	Visually inspect antenna	<ul style="list-style-type: none"> <li>• If dirty, oxidized or damaged – Replace it</li> <li>• <b>Note; if the side snap hooks are damaged on Speaker Box it can be re-used as it does not affect performance when phone is re-assembled.</b></li> </ul>	

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Problem Area	Items to Check	Repair Action	Reference Image
			
	<p>If the issue has not been resolved →</p>	<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 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 or keypad are detected, refer to the “Display Problems” <a href="#">chapter 7</a></li> </ul>	
	Before proceeding →	<ul style="list-style-type: none"> <li>Perform a flash upgrade.</li> </ul>	
	Visually inspect contact pads on battery	<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> </ul> <p><b>Note: Be gentle do not bend or damage the gold surface on connector pin's</b></p> <ul style="list-style-type: none"> <li>If damaged – Send to an electrical repair location.</li> </ul>	
	Visually inspect the power key	<ul style="list-style-type: none"> <li>If damaged – Replace keypad.</li> </ul>	

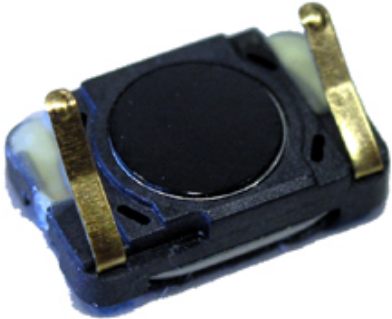

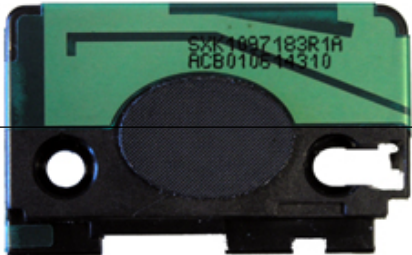
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<b>Problem Area</b>	<b>Items to Check</b>	<b>Repair Action</b>	<b>Reference Image</b>
	Visually inspect the dome array	<ul style="list-style-type: none"> <li>• If dirty, oxidized or damaged – Dome array.</li> </ul>	
	If the issue has not been resolved →	<ul style="list-style-type: none"> <li>• Handle the unit according to local directives.</li> </ul>	

## 5 Audio Problems

Problem Area	Items to Check	Repair Action	Reference Image
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 Assembly.</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>	
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 – Clean or replace Front cover.</li> </ul>	
	Visually inspect receiver's dust cloth	<ul style="list-style-type: none"> <li>If dirty or damaged – Replace front cover.</li> </ul>	

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Problem Area	Items to Check	Repair Action	Reference Image
	If the issue has not been resolved →	<ul style="list-style-type: none"> <li>Replace receiver.</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>	
Speaker: 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 speaker's external port	<ul style="list-style-type: none"> <li>If clogged – Clean it.</li> </ul>	
	Visually inspect the speaker's dust cloth	<ul style="list-style-type: none"> <li>If dirty or damaged – Replace speaker box.</li> <li><b>Note; if the snap hooks are damaged on Speaker Box it can be re-used as it does not affect performance when phone is re-assembled.</b></li> </ul>	



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Problem Area	Items to Check	Repair Action	Reference Image
	If the issue has not been resolved →	<ul style="list-style-type: none"><li>• Replace speaker box.</li><li>• <b>Note; if the side snap hooks are damaged on Speaker Box it can be re-used as it does not affect performance when phone is re-assembled.</b></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/Flip Problems

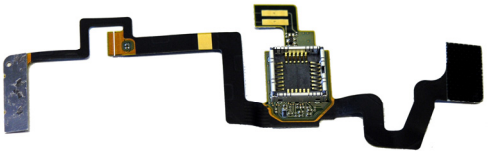

Problem Area	Items to Check	Repair Action	Reference Image
<b>Keyboard:</b> A key on the keyboard is not functioning or is intermittent	Visually inspect for debris between keypad and dome array and for damage to the keypad and the dome array.	<ul style="list-style-type: none"> <li>If dirty – Clean both parts.</li> <li>If damaged – Replace keypad and/or dome array as necessary.</li> </ul>	
	If the issue has not been resolved →	<ul style="list-style-type: none"> <li>Replace the dome array, if it has not already been replaced.</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>Side keys</b>	Visually inspect for damage to the side keys	<ul style="list-style-type: none"> <li>If damaged – Replace them</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>	



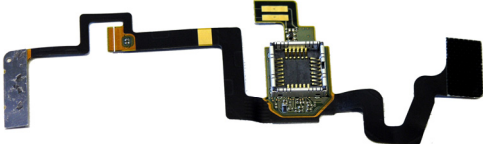

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Problem Area	Items to Check	Repair Action	Reference Image
Flip problems	Inspect when ever the phone open and close properly	<ul style="list-style-type: none"> <li>If any problem – Replace the hinge</li> </ul>	


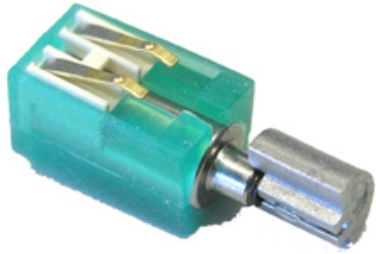
## 7 Display Problems

Problem Area	Items to Check	Repair Action	Reference Image
LCD module Sub and main LCD and Touch screen for Z558	Check whether the phone vibrates 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 <b>not detected</b>, refer to the On/Off Problems <a href="#">chapter 4</a></li> </ul>	
	Before proceeding →	<ul style="list-style-type: none"> <li>Perform a flash upgrade and a setting reset.</li> </ul>	
	Visually inspect whether the main FPC is properly connected to its connector on the display	<ul style="list-style-type: none"> <li>If improperly connected – Re-establish proper connection.</li> </ul>	
	If the issue has not been resolved →	<ul style="list-style-type: none"> <li>Replace the LCD or Touch Screen on Z558</li> </ul>	

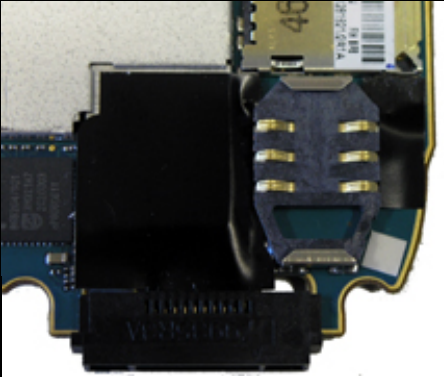
## 8 Illumination Problems

Problem Area	Items to Check	Repair Action	Reference Image
LCD module Sub and main LCD	Before proceeding →	<ul style="list-style-type: none"> <li>Perform a flash upgrade and a setting reset.</li> </ul>	
	Visually inspect whether the main FPC is properly connected to its connector on the display	<ul style="list-style-type: none"> <li>If improperly connected – Re-establish proper connection.</li> </ul>	
	If issue has not been resolved →	<ul style="list-style-type: none"> <li>Replace the LCD.</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>	



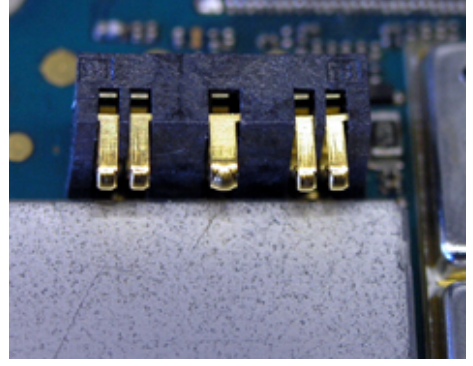
## 9 Alert Problems

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, oxidized or 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 <b>“Speaker”</b> section under <a href="#">“Audio Problems”</a>		

## 10 SIM Problems


Problem Area	Items to Check	Repair Action	Reference Image
SIM undetected <b>(Insert SIM)</b>	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 <b>(Insert correct SIM)</b>	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>• Handle the unit according to local directives.</li> </ul>	

## 11 Charging/Capacity Problems

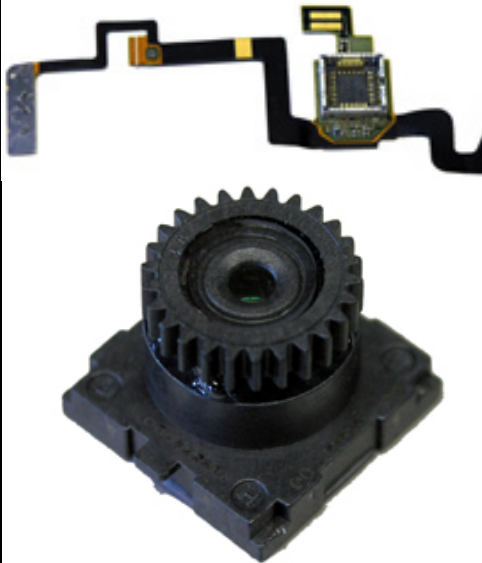
Problem Area	Items to Check	Repair Action	Reference Image
Battery will not charge	Visually inspect the contact pads of the battery	<ul style="list-style-type: none"> <li>If dirty or oxidized – Clean.</li> <li>If damaged – Replace battery.</li> </ul>	
	Visually inspect the system connector	<ul style="list-style-type: none"> <li>If dirty, oxidized or damaged – Clean or replace.</li> </ul> <p><b>NOTE: Misuse is not covered by warranty. Refer to <a href="#">chapter 1.2</a></b></p>	
	Visually 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>	



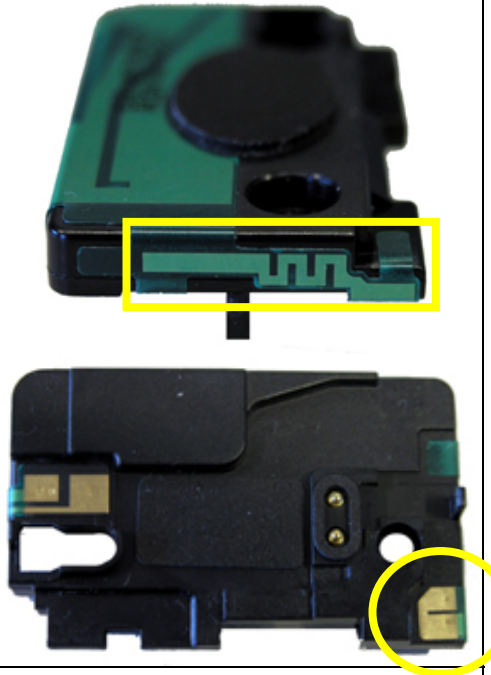
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Battery loses charge quickly/ standby time seems short	Before proceeding →	<ul style="list-style-type: none"> <li>Perform a flash upgrade and a setting reset.</li> </ul>	
	If the issue has not been resolved →	<ul style="list-style-type: none"> <li>Replace battery.</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>	


## 12 Camera Problems

Problem Area	Items to Check	Repair Action	Reference Image
Camera	Visually inspect the camera lens	<ul style="list-style-type: none"> <li>• If scratched or damaged – Replace the camera</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-establish proper connection.</li> </ul>	
	If the issue has not been resolved →	<ul style="list-style-type: none"> <li>• Replace the camera and main FPC.</li> </ul>	

### 13 Data Communication Problems

Problem Area	Items to Check	Repair Action	Reference Image
Will not connect with a functional bluetooth device	Before proceeding →	Perform a flash upgrade.	
	Visually inspect bluetooth antenna	<ul style="list-style-type: none"> <li>• If dirty or damaged – replace .</li> <li>• <b>Note; if the snap hooks are damaged on Speaker Box it can be re-used as it does not affect performance when phone is re-assembled.</b></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>	

## 14 Noise from Hinge Area

Problem Area	Items to Check	Repair Action	Reference Image
Squeaking or noise from hinge area	Visually inspect Hinge Area	<ul style="list-style-type: none"> <li>• If dirty or damaged – replace.</li> <li>• Replace Lower Inner Cover Assembly Only with latest revision</li> <li>• <b>Note; if the snap hooks are damaged on Speaker Box it can be re-used as it does not affect performance when phone is re-assembled.</b></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 II or 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

<b>Rev.</b>	<b>Date</b>	<b>Changes / Comments</b>
A	2006-07-03	First release
B	2006-09-28	Z550a Released
C	2006-10-12	Z558 Released
D	2006-10-17	Hinge Noise Added