

Trouble Shooting Guide, Mechanical

Applicable for Z770i

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

Main display

LED/Illumination

Keyboard

Speaker

Earphone

Microphone

Vibrator

Camera

Flash LED

Memory Stick

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




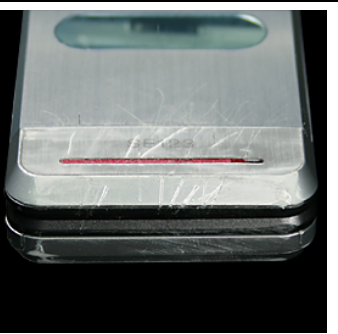

Phones that have been exposed to misuse will not be covered by warranty. This chapter will explain what is not covered by warranty.


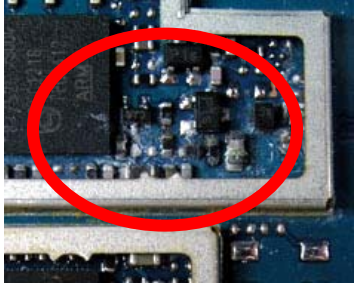
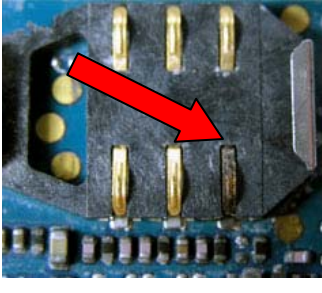
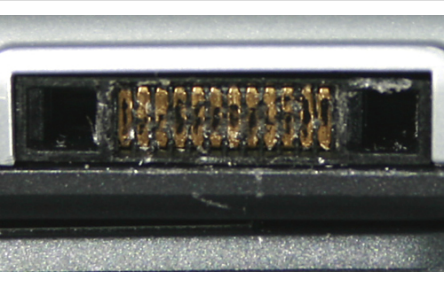
This means: if it is possible to repair the phone, the customer will have to pay for the repair. SEMC will not allow any of these phones to be claimed into WCMS. Some local perspectives may interfere with this. Please refer to the local directives.

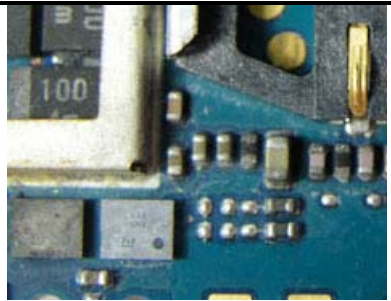
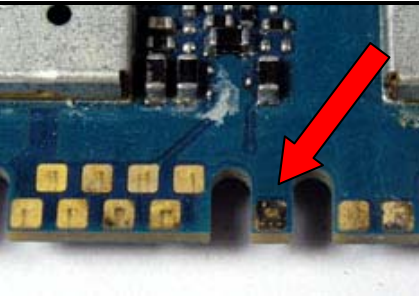
1.2.1 Action

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>

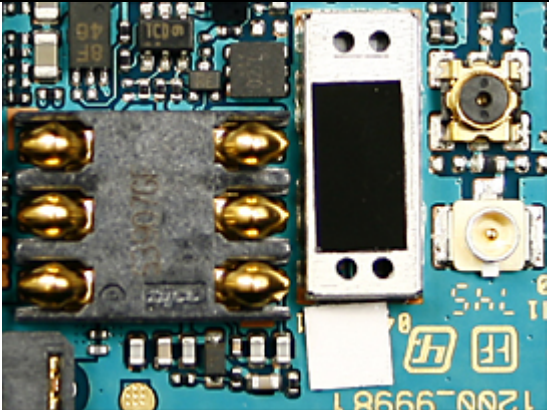
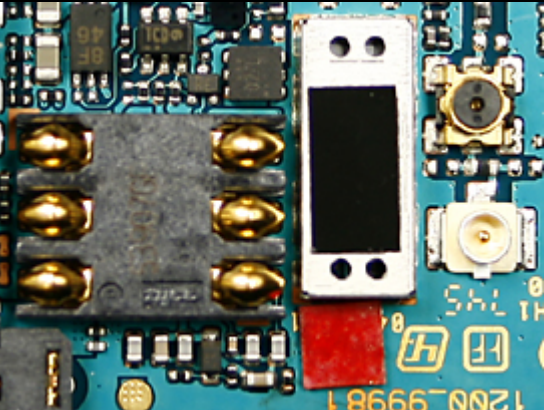
1.2.2 Liquid damage sticker

In the phone there are two stickers that identify if the phone has been exposed to liquid. These stickers are located near the SIM reader and it is possible to see them without disassembling the phone.



Fig. 1.2.1


On the pictures below you will see the difference between a sticker that has been in contact with liquid (Fig. 1.2.3) and one that has not (Fig. 1.2.2).

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

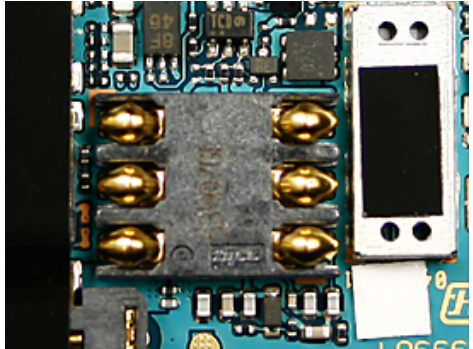

1.2.3 Action

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 the local directives.

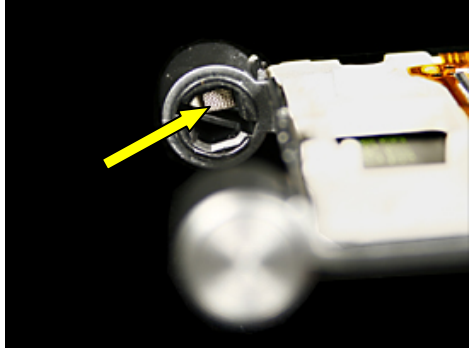
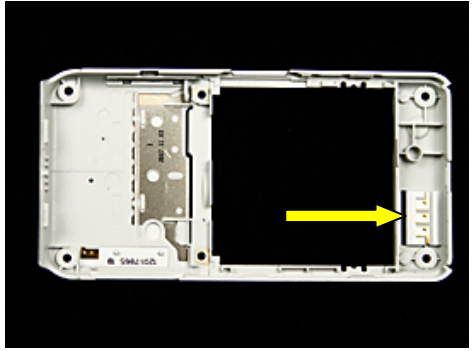
2 Appearance Problems

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"> • If dirty – Clean parts as necessary. • If unacceptably scratched or damaged – Replace damaged parts as necessary. <p>Note: Misuse is not covered by warranty. Refer to chapter 1.2.</p>	
	Visually inspect all keys.	<ul style="list-style-type: none"> • If dirty – Clean parts as necessary. • If unacceptably scratched or damaged – Replace damaged parts as necessary. <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"> • Reassemble or replace damaged parts as necessary. 	


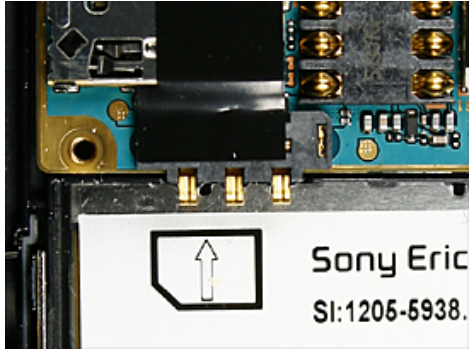
3 Network/Signal Problems


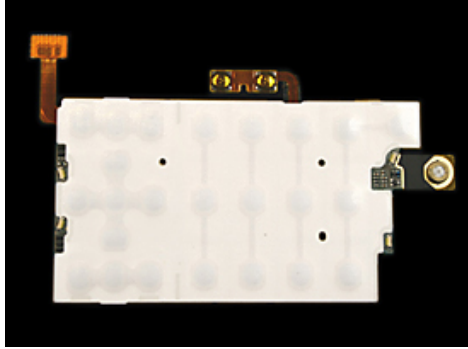
Problem Area	Items to Check	Repair Action	Reference Image
No Signal or Poor Signal.	Before proceeding →	Perform an update content refresh.	
	Visually inspect SIM Card Connector.	<ul style="list-style-type: none"> If damaged – Send it to an electrical repair location. 	
	Visually inspect Antenna Sub PCBA and its connector, cable.	<ul style="list-style-type: none"> If dirty or oxidized – Clean it. If damaged – Replace it. 	

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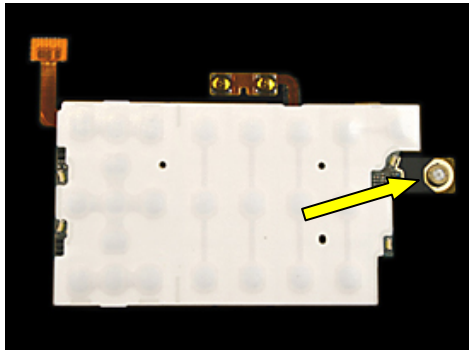
Problem Area	Items to Check	Repair Action	Reference Image
	Visually inspect the Gasket on Display frame.	<ul style="list-style-type: none"> If missing, wrongly positioned or not conductive - Replace it. 	
	Visually inspect main antenna on Lower Outer Assembly.	<ul style="list-style-type: none"> If dirty or oxidized – Clean it. If damaged – Replace Lower Outer Assembly. 	

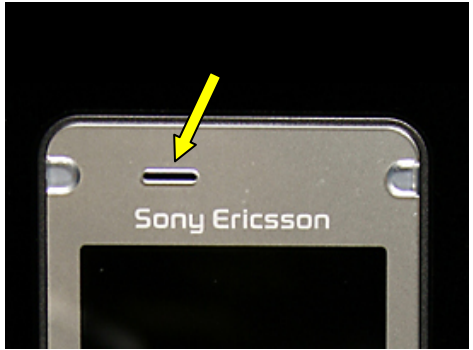
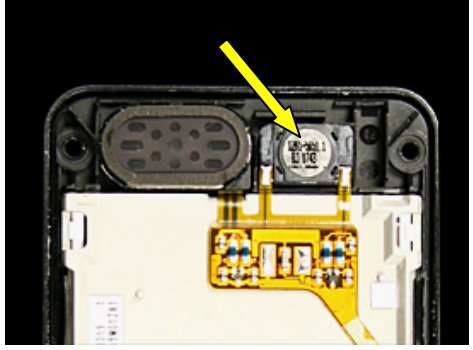
4 On/Off Problems

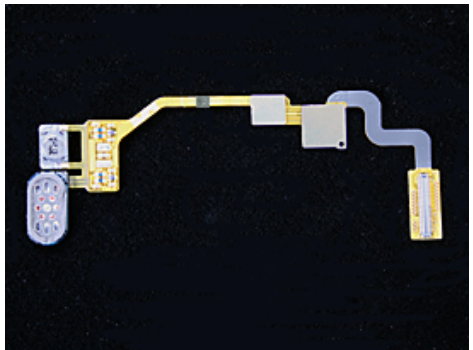
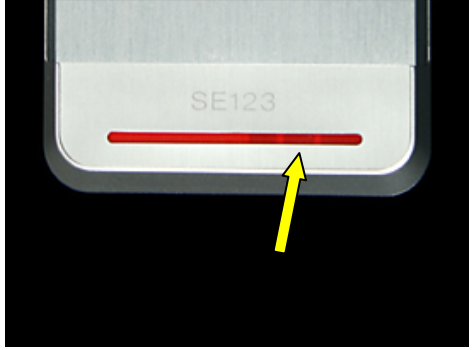
Problem Area	Items to Check	Repair Action	Reference Image
	Check whether the phone vibrates, 10 to 15 seconds after pressing the power key, and whether the keypad illuminates.	<ul style="list-style-type: none"> If the phone vibrates or the keypad is illuminated, refer to the “Display Problems”, chapter 7. 	
	Before proceeding →	<ul style="list-style-type: none"> Perform an update content refresh. 	
	Visually inspect the contact pads on the Battery.	<ul style="list-style-type: none"> If dirty or oxidized – Clean them. If damaged – Replace the Battery. 	
	Visually inspect the Battery connector.	<ul style="list-style-type: none"> If dirty or oxidized – Clean it. <p>Note: Be careful not to damage the connector pins.</p> <ul style="list-style-type: none"> If damaged – Send the unit to an electrical repair location. 	

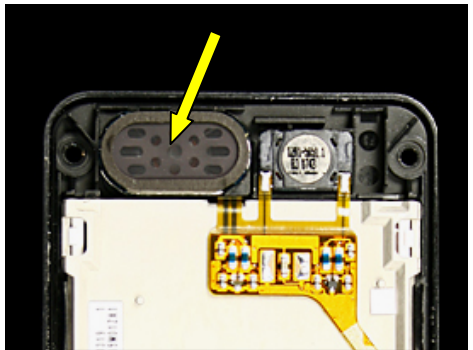
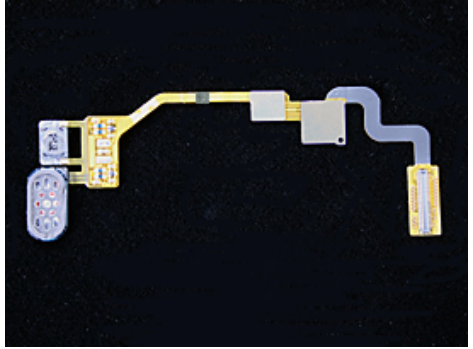
Problem Area	Items to Check	Repair Action	Reference Image
	Visually inspect the power key.	<ul style="list-style-type: none"> If damaged – Replace the keypad. 	
	Visually inspect the Main Keyboard FPC.	<ul style="list-style-type: none"> If damaged – Replace it. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Handle the unit according to the local directives. 	

5 Audio Problems

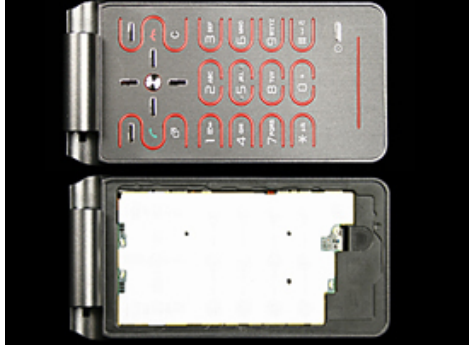

Problem Area	Items to Check	Repair Action	Reference Image
Microphone	Before proceeding →	<ul style="list-style-type: none"> Perform an update content refresh. 	
	Visually inspect the microphone external port.	<ul style="list-style-type: none"> If clogged – Clean or replace the Keypad (with MIC mesh). 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the Main Keyboard FPC (Microphone soldered on). 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Handle the unit according to the local directives. 	

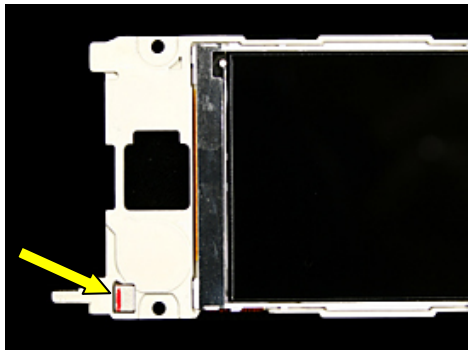
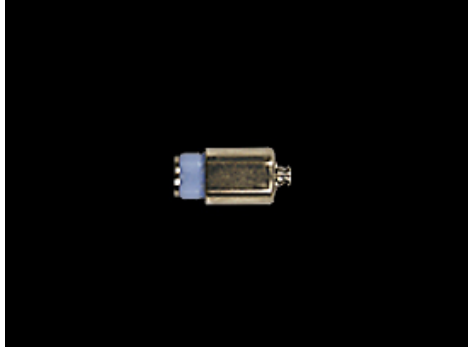
Problem Area	Items to Check	Repair Action	Reference Image
Ear Speaker	Before proceeding →	<ul style="list-style-type: none"> Perform an update content refresh. 	
	Visually inspect the Ear Speaker external port.	<ul style="list-style-type: none"> If dirty or damaged – Replace the Upper Inner Cover. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Send the unit to a repair station to replace the Ear Speaker. 	

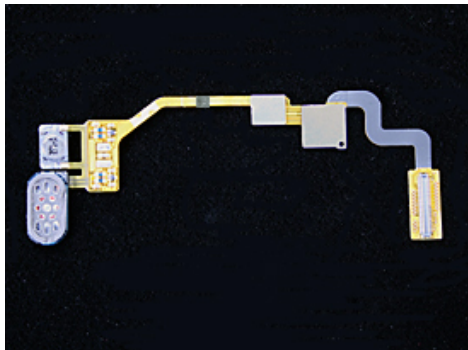
Problem Area	Items to Check	Repair Action	Reference Image
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the Main Hinge FPC. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Handle the unit according to the local directives. 	
Loudspeaker: No sound or poor quality sound.	Before proceeding →	<ul style="list-style-type: none"> Perform an update content refresh. 	
	Visually inspect the Loudspeaker dust cloth.	<ul style="list-style-type: none"> If dirty or damaged – Replace Upper Outer Cover Assy. (with speaker mesh). 	

Problem Area	Items to Check	Repair Action	Reference Image
	If the issue has not been resolved →	<ul style="list-style-type: none"> Send the unit to a repair station to replace the Loudspeaker. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the Main Hinge FPC. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Handle it according to the local directives. 	

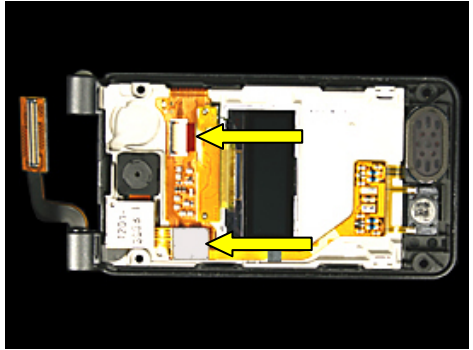
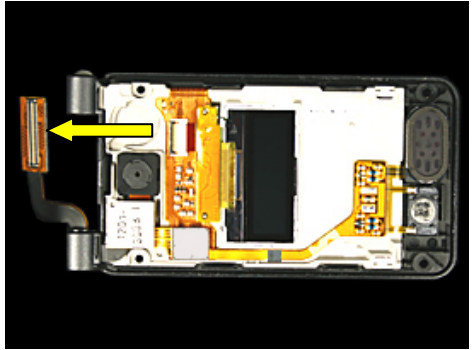
6 Key Problems

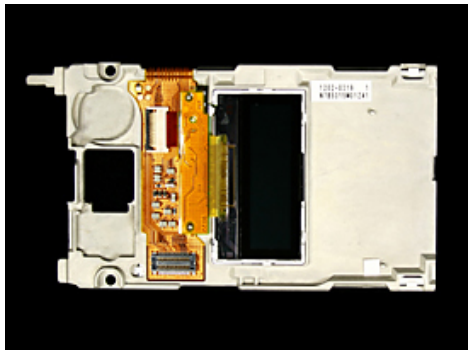
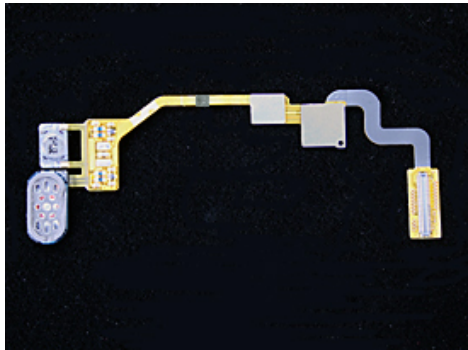
Problem Area	Items to Check	Repair Action	Reference Image
Keyboard/Flip problems.	Visually inspect for debris or damage between the Keypad and the Main Keyboard FPC.	<ul style="list-style-type: none"> If dirty – Clean both parts. If damaged - Replace either the Keypad the Main Keyboard FPC or both. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Handle the unit according to the local directives. 	
	Visually inspect whether the Main Keyboard FPC connector is properly connected to its connectors on the PCBA.	<ul style="list-style-type: none"> If improperly connected – Re-establish a proper connection. 	

Problem Area	Items to Check	Repair Action	Reference Image
	Visually inspect if the Magnet is incorrectly located or missing, on the Display frame.	<ul style="list-style-type: none"> If incorrectly located, missing or installed in the wrong direction – Replace the magnet. 	
	Check whether the flip opens and closes properly.	<ul style="list-style-type: none"> If the flip does not open or close properly – Replace the Hinge. 	

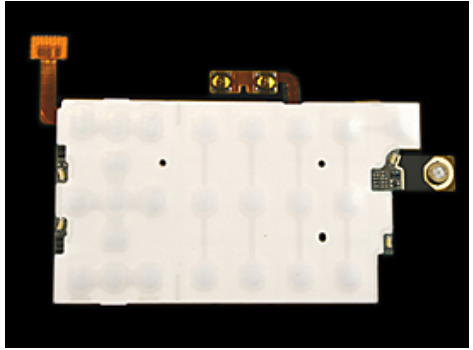
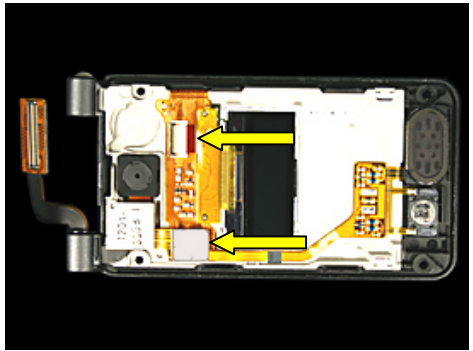
Problem Area	Items to Check	Repair Action	Reference Image
	If there is noise when opening and closing check the Main Hinge FPC.	<ul style="list-style-type: none"> Replace the Hinge or the Main Hinge FPC. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Handle the unit according to the local directives. 	

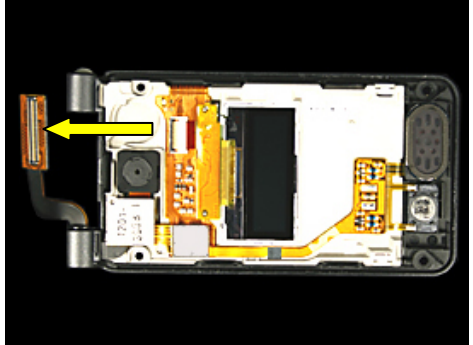
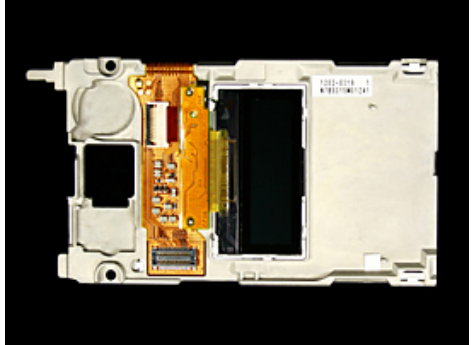
7 Display Problems

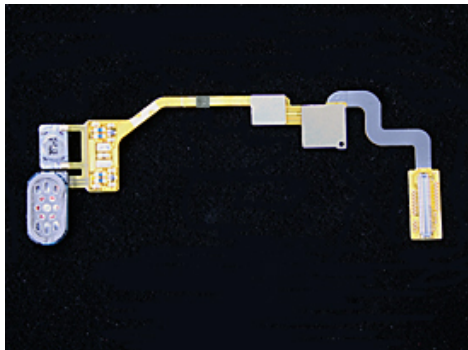
Problem Area	Items to Check	Repair Action	Reference Image
LCM, Main and Sub LCD.	Check whether the phone vibrates, 10 to 15 seconds after pressing the power key, and whether the keypad illuminates.	<ul style="list-style-type: none"> If the phone does not vibrate, refer to the "On/Off Problems", chapter 2. 	
	Before proceeding →	<ul style="list-style-type: none"> Perform an update content refresh. 	
	Visually inspect whether the LCM, Main and Sub LCD BtB is properly connected to its connector.	<ul style="list-style-type: none"> If improperly connected – Re-establish a proper connection. 	
	Visually inspect whether the Main Hinge FPC is properly connected to its connectors.	<ul style="list-style-type: none"> If improperly connected – Re-establish a proper connection. 	

Problem Area	Items to Check	Repair Action	Reference Image
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the LCM, Main and Sub LCD. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the Main Hinge FPC. 	

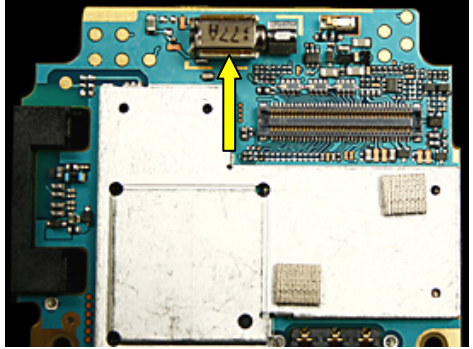
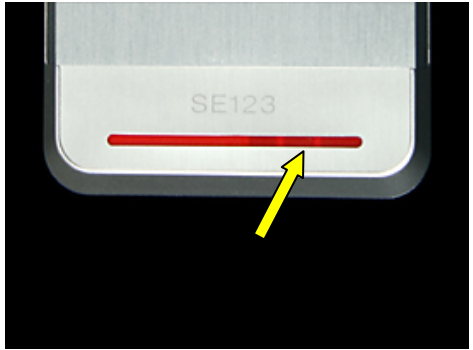
8 Illumination Problems

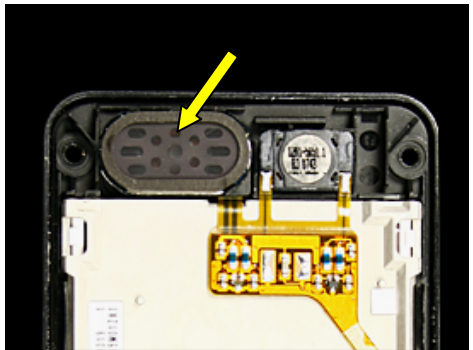
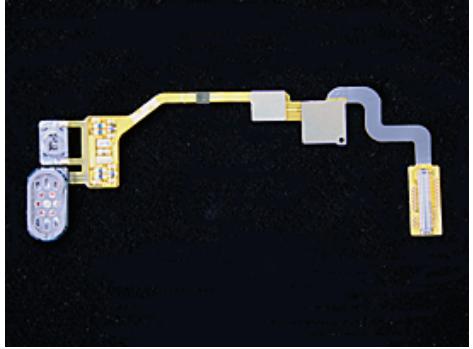
Problem Area	Items to Check	Repair Action	Reference Image
Keys: The entire keypad or a portion of the keypad does not illuminate.	Before proceeding →	<ul style="list-style-type: none"> Perform an update content refresh. 	
	Visually inspect the LED on the Main Keyboard FPC.	<ul style="list-style-type: none"> If damaged – Replace the Main Keyboard FPC. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Handle the unit according to the local directives. 	
LCM, Main and Sub LCD	Before proceeding →	<ul style="list-style-type: none"> Perform an update content refresh. 	
	Visually inspect whether the LCM, Main and Sub LCD BtB is properly connected to its connector on the Main Hinge FPC.	<ul style="list-style-type: none"> If improperly connected – Re-establish a proper connection. 	

Problem Area	Items to Check	Repair Action	Reference Image
	Visually inspect whether the Main Hinge FPC is properly connected to its connectors.	<ul style="list-style-type: none"> If improperly connected – Re-establish a proper connection. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the LCM, Main and the Sub LCD. 	

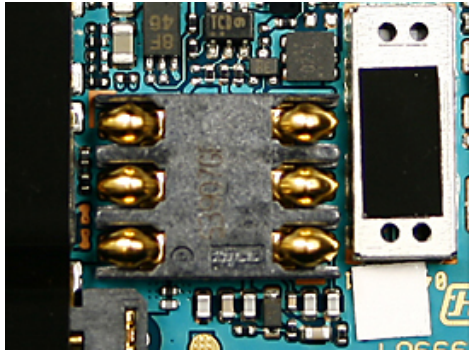
Problem Area	Items to Check	Repair Action	Reference Image
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the Main Hinge FPC. 	

9 Alert Problems


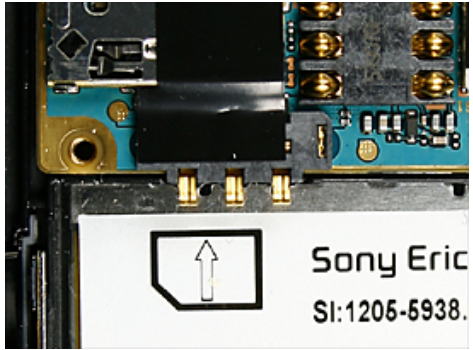
Problem Area	Items to Check	Repair Action	Reference Image
Vibrator	Before proceeding →	<ul style="list-style-type: none"> Perform an update content refresh. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Handle it according to the local directives. 	
Loudspeaker	Before proceeding →	<ul style="list-style-type: none"> Perform an update content refresh. 	
	Visually inspect the loudspeaker dust cloth.	<ul style="list-style-type: none"> If dirty or damaged – Replace the Upper Outer Cover Assy. 	

Problem Area	Items to Check	Repair Action	Reference Image
	If the issue has not been resolved →	<ul style="list-style-type: none"> Send the unit to a repair station to replace the Loudspeaker. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the Main Hinge FPC. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Handle it according to the local directives. 	

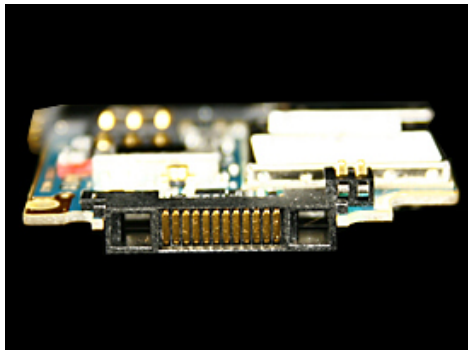

10 SIM Problems

Problem Area	Items to Check	Repair Action	Reference Image
SIM undetected (Insert SIM).	Before proceeding →	<ul style="list-style-type: none"> Perform an update content refresh. 	
	Visually inspect SIM Card Connector.	<ul style="list-style-type: none"> If dirty or oxidized – Clean it. If damaged – Send it to an electrical repair location. Check the shield can insulation film. 	
Unit indicates an incorrect SIM is inserted (Insert correct SIM).	Before proceeding →	<ul style="list-style-type: none"> Perform an update content refresh. 	
	Check whether the phone is locked to a particular carrier and whether the correct carrier's SIM is being used. Go to the service menu, service info and SIM lock to see the status of the SIM lock.	<ul style="list-style-type: none"> Use correct carrier SIM or test SIM. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Handle it according to the local directives. 	

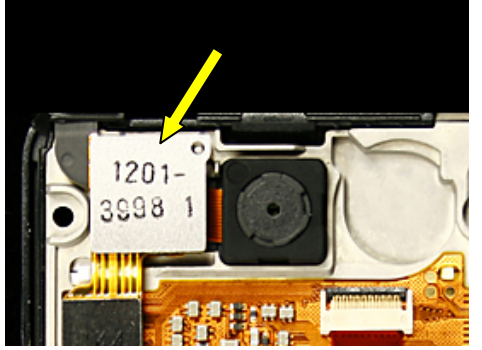
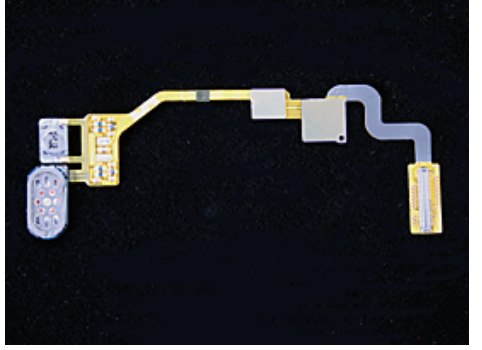
11 Charging/Capacity Problems

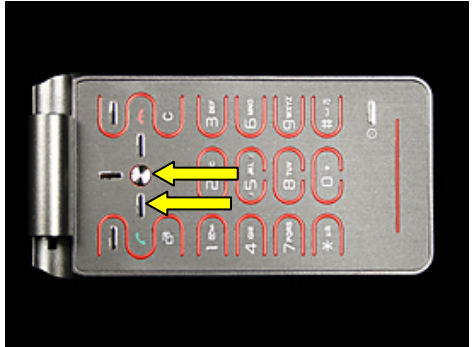
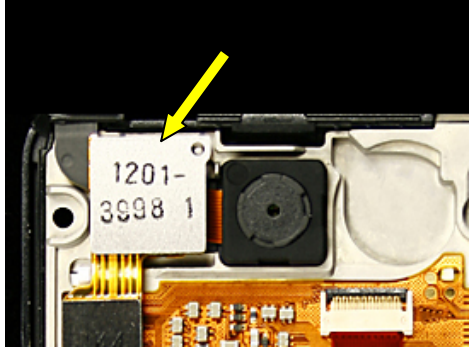
Problem Area	Items to Check	Repair Action	Reference Image
Battery will not charge.	Before proceeding →	<ul style="list-style-type: none"> Perform an update content refresh. 	
	Visually inspect the contact pads on the Battery.	<ul style="list-style-type: none"> If dirty or oxidized – Clean them. If damaged – Replace the Battery. 	
	Visually inspect the Battery connector.	<ul style="list-style-type: none"> If dirty or oxidized – Clean it. <p>Note: Be careful not to damage the connector pins.</p> <ul style="list-style-type: none"> If damaged – Send the unit to an electrical repair location. 	

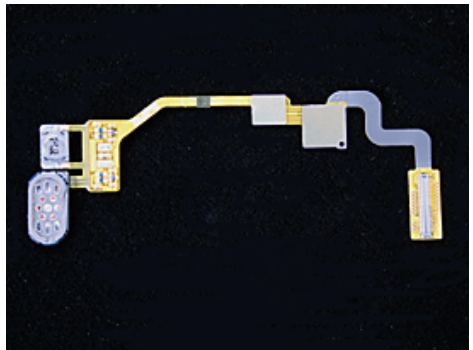
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Problem Area	Items to Check	Repair Action	Reference Image
	Visually inspect the System Connector.	<ul style="list-style-type: none"> If dirty – Clean it. If damaged – Send the unit to an electrical repair location. 	
Battery loses charge quickly and standby time seems short.	Before proceeding → Note: Some features noticeably reduce the amount of standby time if they are turned on. Some examples are if the IR, back light and Bluetooth turned on all the time.	<ul style="list-style-type: none"> Perform an update content refresh. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the Battery. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Handle the unit according to the local directives. 	

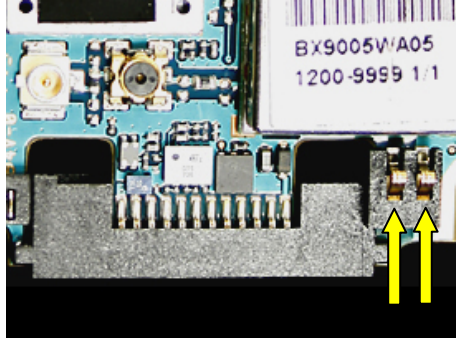
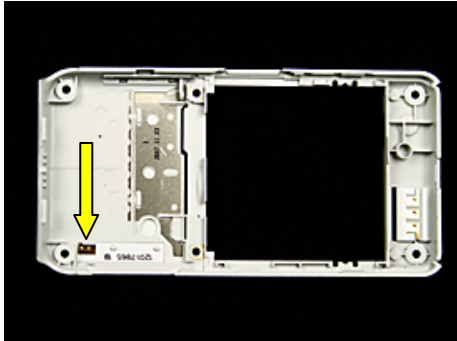
12 Camera Problems

Problem Area	Items to Check	Repair Action	Reference Image
Camera: Lines, marks, blurred or discolored picture.	Visually inspect whether the Camera is properly connected to its connectors.	<ul style="list-style-type: none"> If improperly connected – Re-establish a proper connection. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> If scratched or damaged – Replace the Camera. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> If scratched or damaged – Replace the Main Hinge FPC. 	

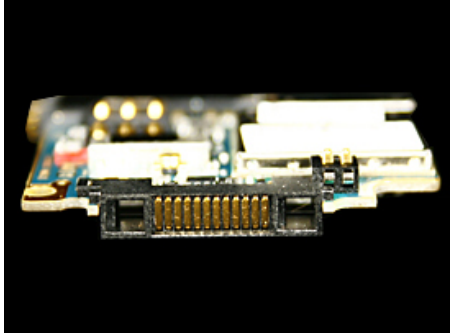
Problem Area	Items to Check	Repair Action	Reference Image
Will not capture an image.	Before proceeding →	<ul style="list-style-type: none"> Perform an update content refresh. 	
	Visually inspect for debris between or damage to the camera caption keys and the Main Keyboard FPC.	<ul style="list-style-type: none"> If dirty – Clean both parts. If damaged – Replace either the Keypad, the Main Keyboard FPC or both as necessary. 	
	Visually inspect whether the Camera is properly connected to its connectors.	<ul style="list-style-type: none"> If improperly connected – Re-establish a proper connection. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> If scratched or damaged - Replace the Camera. 	

Problem Area	Items to Check	Repair Action	Reference Image
	If the issue has not been resolved →	<ul style="list-style-type: none"> If scratched or damaged – Replace the Main Hinge FPC. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Handle the unit according to the local directives. 	

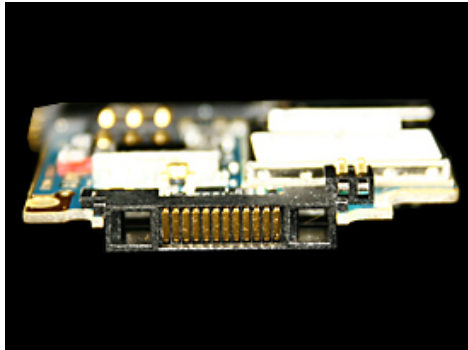
13 Data Communication Problems

Problem Area	Items to Check	Repair Action	Reference Image
Will not connect with a functional Bluetooth device.	Inspect the Bluetooth antenna spring on the system connector.	<ul style="list-style-type: none"> If dirty – Clean. If damaged – Send the unit to an electrical repair location. 	
	Inspect the Bluetooth antenna on Lower Outer Assembly.	<ul style="list-style-type: none"> If dirty – Clean. If missing or damaged – Replace the Lower Outer Assembly (with Bluetooth antenna). 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Send the unit to an electrical repair location. 	

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Problem Area	Items to Check	Repair Action	Reference Image
Will not connect through the system connector.	Before proceeding →	<ul style="list-style-type: none"> Perform an update content refresh. 	
	Visually inspect the system connector.	<ul style="list-style-type: none"> If dirty – Clean it. If damaged – Send the unit to an electrical repair location. 	

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"> Perform an update content refresh. 	
	Visually inspect the system connector.	<ul style="list-style-type: none"> If dirty – Clean it. If damaged – Send the unit to an electrical repair location. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Handle the unit according to the local directives. 	

15 Software Problems

- If there are problems with the response of the keypad commands, or spelling errors in the menu, and 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
1	2008-03-13	First release