

Trouble Shooting Guide, Mechanical

Applicable for Z610

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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 navigation keys.

⇒*←←*←*

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

Video call camera

Memory Stick

Real time clock

Total call time

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

1.2 Misuse and other no warranty issues


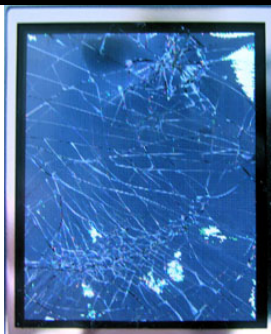


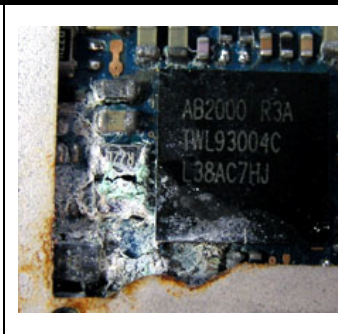
Misuse is not covered by warranty. This chapter will explain what's not covered by warranty. Phones that have been exposed to misuse will not be covered by warranty.


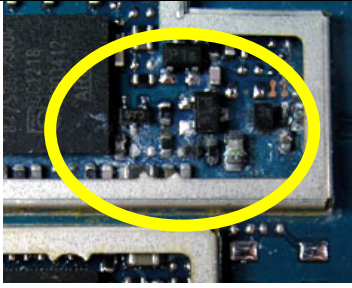
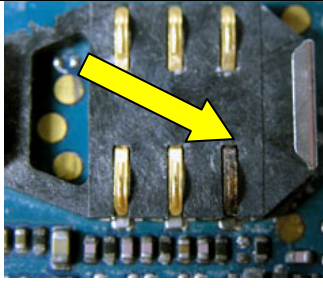
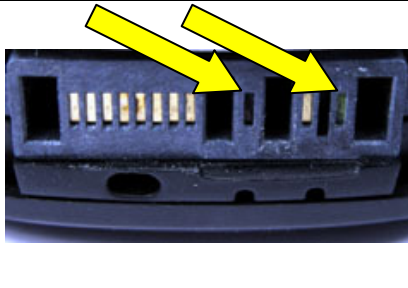
This means: if it is possible to repair the phone, the customer will have to pay for the repair. SEMC will not allow any of these phones to be claimed into WCMS. Some local perspectives may interfere with this. Please reference to local directives.

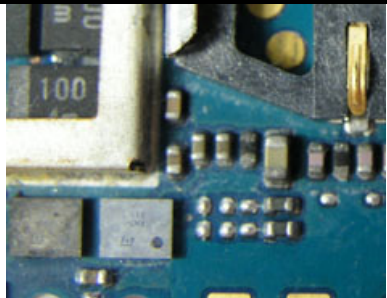
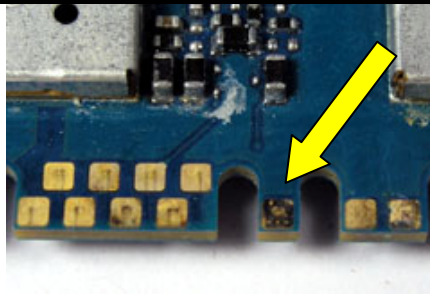
1.2.1 Action

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.

			
Corrosion components on the PCB.	Corrosion components on the PCB.	SIM reader damaged by liquid.	System connector damaged by liquid

	
Components around system connector damaged by liquid	System connector pad(s) damaged by liquid

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.

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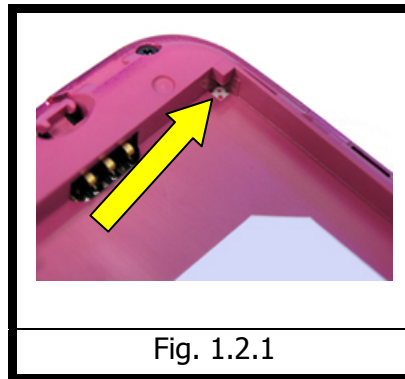
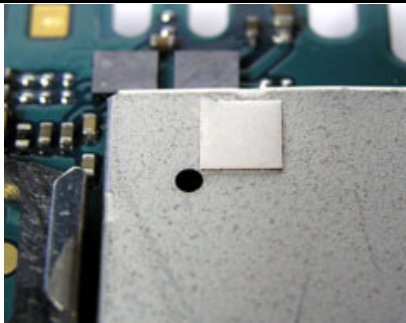
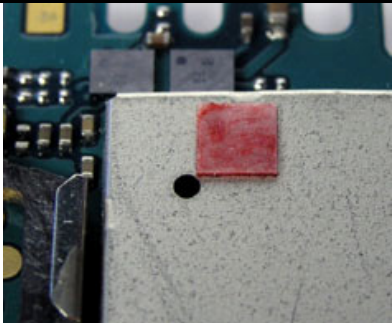


Fig. 1.2.1





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>
Fig. 1.2.2	Fig. 1.2.3	

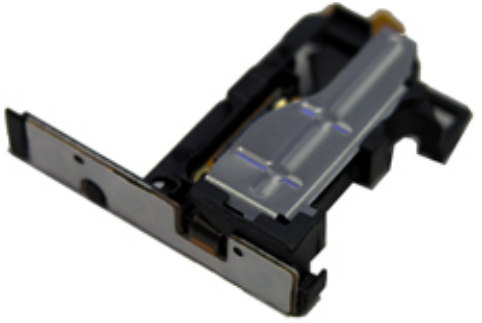
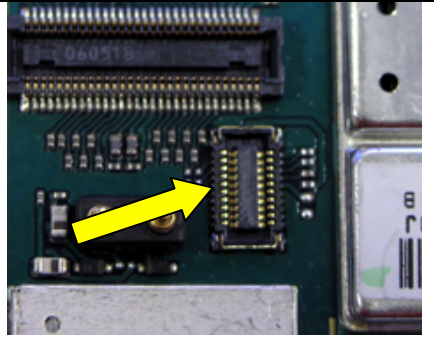
1.2.3 Action

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 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 damage 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. 	

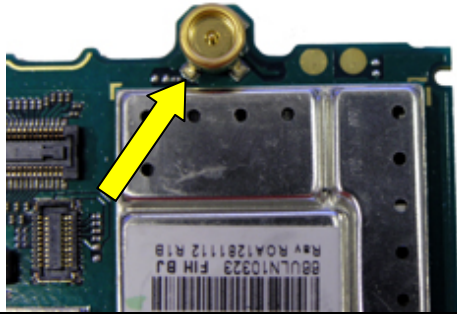
3 Network/Signal Problems

Problem Area	Items to Check	Repair Action	Reference Image
	Before proceeding →	<ul style="list-style-type: none"> Do software update content refresh. <p>Note: this problem will not be solved by a regular software update.</p> <p>Note: Software Update Content Refresh will erase all user data.</p>	
No Signal or Poor Signal	Visually inspect SIM holder	<ul style="list-style-type: none"> If dirty, oxidized or damaged – Replace it. 	
	Visually inspect whether the SIM flex film is properly connected to its connector on the PCB	<ul style="list-style-type: none"> If improperly connected – Re-establish proper connection. 	


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Problem Area	Items to Check	Repair Action	Reference Image
	Visually inspect antenna contact pads	<ul style="list-style-type: none"> If dirty or oxidized – Clean the pads and replace the antenna assembly. 	
	Visually inspect antenna	<ul style="list-style-type: none"> If dirty, oxidized or damaged – Replace it. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Handle the unit according to local directives. 	


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Problem Area	Items to Check	Repair Action	Reference Image
No signal when using external antenna (ex. Hands free in car).	Connect the phone to a handsfree car kit connected with external antenna. Visually inspect the antenna bar on the phone.	<ul style="list-style-type: none"> If no or only very less signal – Push the middle pin of the ext. antenna connector a few times 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Handle the unit according to local directives. 	

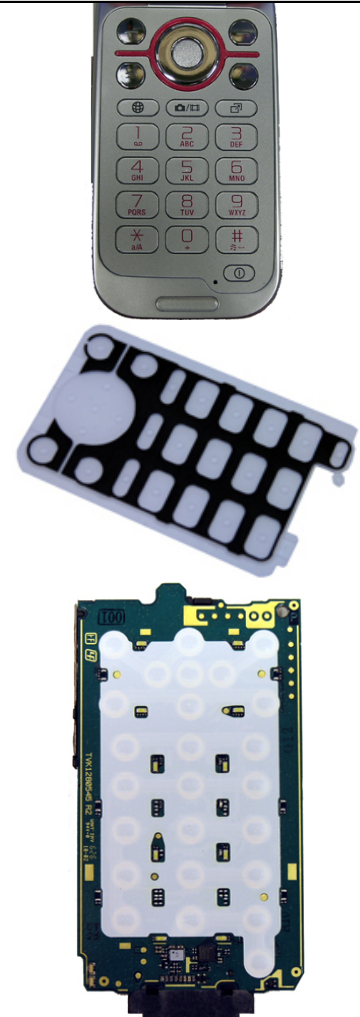
4 On/Off Problems

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"> If activation of the vibrator or keypad are detected, refer to the “Display Problems” chapter 7 	
	Before proceeding →	<ul style="list-style-type: none"> Do software update content refresh. <p>Note: this problem will not be solved by a regular software update.</p> <p>Note: Software Update Content Refresh will erase all user data.</p>	
	Cannot be power on, Cannot be detected on USB cable on EMMA III.	<ol style="list-style-type: none"> Log on to EMMA as usual. Use SEPI A1 with power charger attached. Press keys 2 and 5 when you connect the phone 	
	Visually inspect contact pads on battery	<ul style="list-style-type: none"> If dirty or oxidized – Clean pads. If damaged – Replace the battery. 	 <p>Sony Ericsson Standard Battery BST-33 Li-Polymer 3.6 V Type CBA-0001003 BKB 19J 200 /1 R2A 950mAh S/N 930830SWLBLT 08W29</p> <p>REFER TO USER'S GUIDE • BEACHTEN SIE DIE BENUTZUNGSANLEITUNG • REPORTEZ-VOUS AU GUIDE DE L'UTILISATEUR • CONSULTE LA GUÍA DEL USUARIO • CONSULTE O MANUAL DO USUÁRIO • 請參閱用戶手冊</p> <p>Made in China Finished in China</p>


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Problem Area	Items to Check	Repair Action	Reference Image
	Visually inspect battery connector	<ul style="list-style-type: none"> If dirty or oxidized – Clean it. <p>Note: Take care not to bend the connector pin's</p> <ul style="list-style-type: none"> If damaged – Send to an electrical repair location. 	



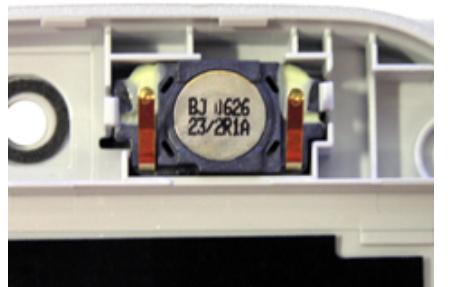
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Problem Area	Items to Check	Repair Action	Reference Image
	Visually inspect the power key	<ul style="list-style-type: none"> If damaged – Replace keyboard and the rubber keys. 	
	If the issue has not been resolved →	<ul style="list-style-type: none">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



5 Audio Problems

Problem Area	Items to Check	Repair Action	Reference Image
Microphone:	Before proceeding →	<ul style="list-style-type: none"> Do software update content refresh. <p>Note: this problem will not be solved be a regular software update.</p> <p>Note: Software Update Content Refresh will erase all user data.</p>	
	Visually inspect the microphone's external port	<ul style="list-style-type: none"> If clogged – Clean. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Handle the unit according to local directives. 	
Receiver (earphone): No sound or poor quality sound	Before proceeding →	<ul style="list-style-type: none"> Do software update content refresh. <p>Note: this problem will not be solved be a regular software update.</p> <p>Note: Software Update Content Refresh will erase all user data.</p>	

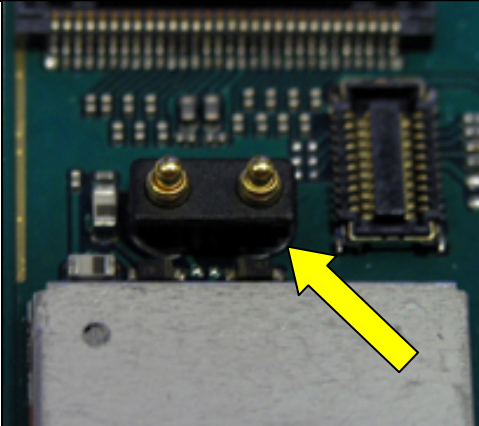

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Problem Area	Items to Check	Repair Action	Reference Image
	Visually inspect receiver's external port	<ul style="list-style-type: none"> If clogged – Clean or replace front. 	
	Visually inspect whether the main flex film is properly connected to its connector on both PCB's	<ul style="list-style-type: none"> If improperly connected – Re-establish proper connection. If main flex is damage – replace it. If any of the BtB connectors are damaged – replace upper PCB assembly. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace receiver 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Handle the unit according to local directives. 	

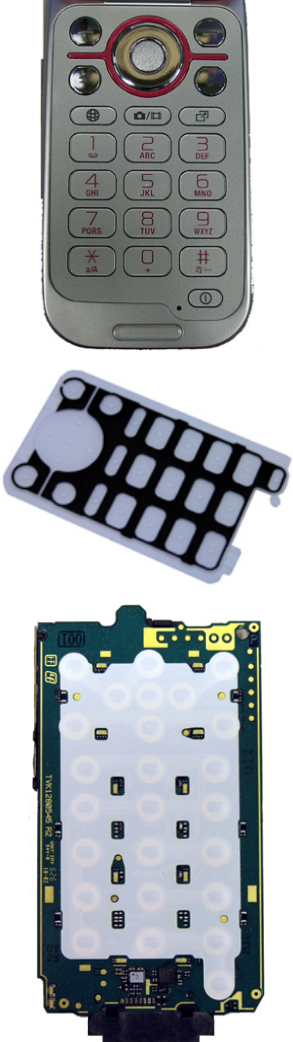
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Problem Area	Items to Check	Repair Action	Reference Image
Loudspeaker: No sound or poor quality sound	Before proceeding →	<ul style="list-style-type: none"> Do software update content refresh. <p>Note: this problem will not be solved by a regular software update.</p> <p>Note: Software Update Content Refresh will erase all user data.</p>	
	Visually inspect loudspeaker's external port	<ul style="list-style-type: none"> If clogged – Clean it. 	
	Visually inspect the loudspeaker's dust cloth	<ul style="list-style-type: none"> If dirty or damaged – Replace cushion (loudspeaker) 	


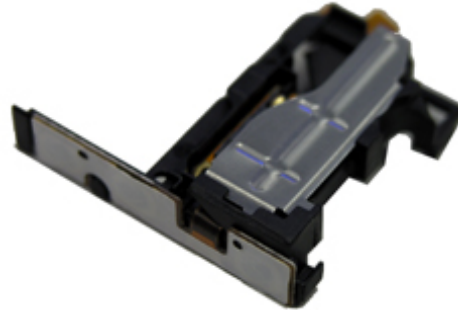
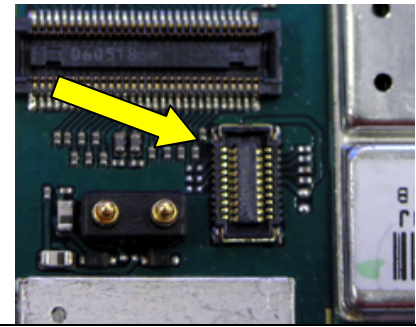
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Problem Area	Items to Check	Repair Action	Reference Image
	Visually inspect the loudspeaker pins	<ul style="list-style-type: none"> • If dirty or oxidized – Clean pins. • If damaged send to electrical repair 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> • Replace loudspeaker. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> • Handle the unit according to local directives. 	

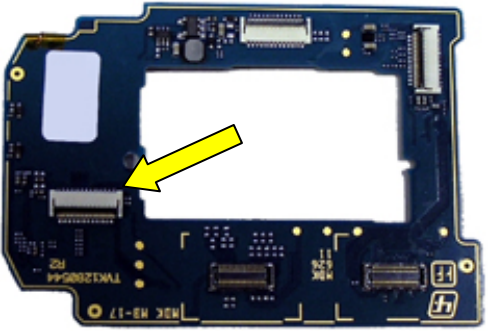

6 Key Problems


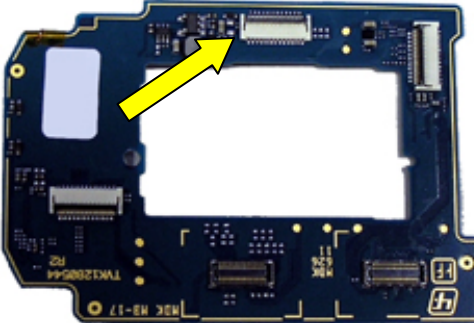

Problem Area	Items to Check	Repair Action	Reference Image
Keyboard: A key on the keyboard is not functioning or is intermittent	Visually inspect for debris between rubber key and sheet key, and for damage to the rubber key and the sheet key.	<ul style="list-style-type: none"> If damaged - Replace rubber key and/or sheet key as necessary. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace rubber key, sheet key and dome sheet, if it has not already been replaced. 	

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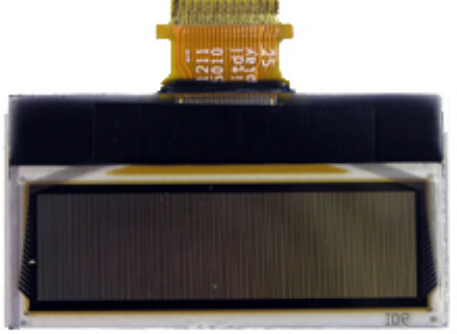
Problem Area	Items to Check	Repair Action	Reference Image
	If the issue has not been resolved →	<ul style="list-style-type: none"> Handle the unit according to local directives. 	
Side keys/Camera key	Visually inspect for damage to the side keys	<ul style="list-style-type: none"> If damaged – Replace them. 	
	Visually inspect for damage to the dome sheet on the SIM assembly.	<ul style="list-style-type: none"> If damaged – Replace SIM assembly. 	
	Visually inspect whether the SIM flex film is properly connected to its connector on the PCB	<ul style="list-style-type: none"> If improperly connected – Re-establish proper connection. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Handle the unit according to local directives. 	

7 Display Problems

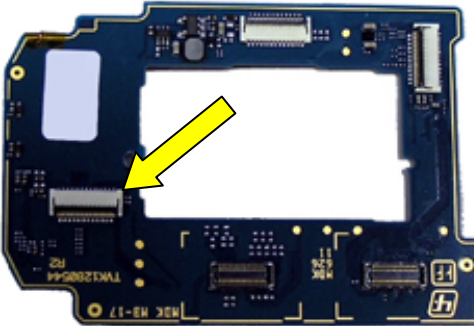

Problem Area	Items to Check	Repair Action	Reference Image
LCD problem Main & Sub LCD	Check whether the phone vibrates 10 to 15 seconds after pressing the power key and whether the keypad illuminates	<ul style="list-style-type: none"> If activation of the vibrator are not detected, refer to the On/Off Problems” chapter 4 	
	Before proceeding →	<ul style="list-style-type: none"> Do software update content refresh. <p>Note: this problem will not be solved be a regular software update.</p> <p>Note: Software Update Content Refresh will erase all user data.</p>	
Main LCD only	Visually inspect whether the main LCD flex film is properly connected to its connector on the PCB	<ul style="list-style-type: none"> If improperly connected – Re-establish proper connection. 	
	Visually inspect whether the main flex film is properly connected to its connector on both PCB's	<ul style="list-style-type: none"> If improperly connected – Re-establish proper connection. If main flex is damage – replace it. If any of the BtB connectors are damaged – replace upper PCB assembly. 	



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 LCD. <p>NOTE: Misuse is not covered by warranty. Refer to chapter 1.2</p>	
Sub LCD only	Visually inspect whether the sub LCD flex film is properly connected to its connector on the PCB	<ul style="list-style-type: none"> If improperly connected – Re-establish proper connection. 	
	Visually inspect whether the main flex film is properly connected to its connector on both PCB's	<ul style="list-style-type: none"> If improperly connected – Re-establish proper connection. If main flex is damage – replace it. If any of the BtB connectors are damaged – replace upper PCB assembly. 	

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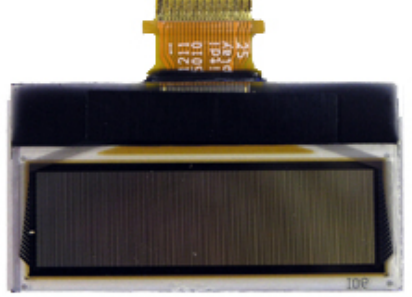
Problem Area	Items to Check	Repair Action	Reference Image
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the sub LCD. <p>NOTE: Misuse is not covered by warranty. Refer to chapter 1.2</p>	

8 Illumination Problems

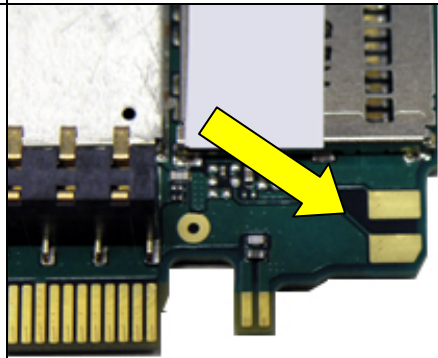
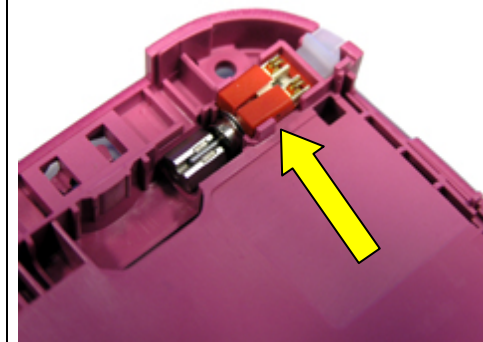
Problem Area	Items to Check	Repair Action	Reference Image
	Before proceeding →	<ul style="list-style-type: none"> Do software update content refresh. <p>Note: this problem will not be solved by a regular software update.</p> <p>Note: Software Update Content Refresh will erase all user data.</p>	
Main LCD illumination only	Visually inspect whether the main LCD flex film is properly connected to its connector on the PCB	<ul style="list-style-type: none"> If improperly connected – Re-establish proper connection. 	 
	Visually inspect whether the main flex film is properly connected to its connector on both PCB's	<ul style="list-style-type: none"> If improperly connected – Re-establish proper connection. If main flex is damage – replace it. If any of the BtB connectors are damaged – replace upper PCB assembly. 	

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 LCD. <p>NOTE: Misuse is not covered by warranty. Refer to chapter 1.2</p>	
Sub LCD illumination only	Visually inspect whether the sub LCD flex film is properly connected to its connector on the PCB	<ul style="list-style-type: none"> If improperly connected – Re-establish proper connection. 	
	Visually inspect whether the main flex film is properly connected to its connector on both PCB's	<ul style="list-style-type: none"> If improperly connected – Re-establish proper connection. If main flex is damage – replace it. If any of the BtB connectors are damaged – replace upper PCB assembly. 	

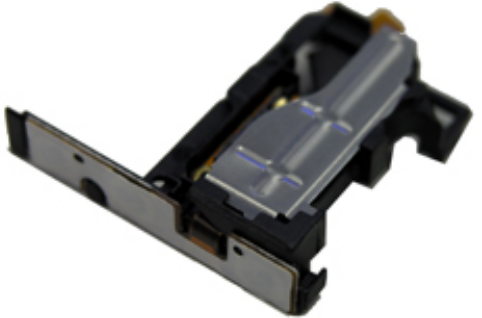
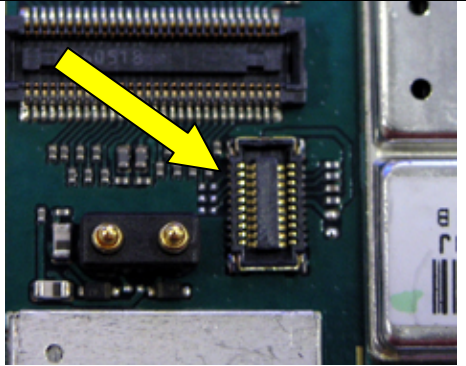
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Problem Area	Items to Check	Repair Action	Reference Image
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the sub LCD. <p>NOTE: Misuse is not covered by warranty. Refer to chapter 1.2</p>	



9 Alert Problems

Problem Area	Items to Check	Repair Action	Reference Image
Vibrator:	Before proceeding →	<ul style="list-style-type: none"> Do software update content refresh. <p>Note: this problem will not be solved by a regular software update.</p> <p>Note: Software Update Content Refresh will erase all user data.</p>	
	Visually inspect the vibrator pads on the PCB	<ul style="list-style-type: none"> If dirty or oxidized – Clean them. 	
	Visually inspect the vibrator	<ul style="list-style-type: none"> If dirty or oxidized – Replace it. If damaged – Replace it. 	
Loudspeaker	Refer to “ loudspeaker ” section under “ Audio Problems ”		

10 SIM Problems


Problem Area	Items to Check	Repair Action	Reference Image
SIM undetected (Insert SIM)	Visually inspect SIM holder	<ul style="list-style-type: none"> If dirty, oxidized or damaged – Replace it. 	
	Visually inspect whether the SIM flex film is properly connected to its connector on the PCB	<ul style="list-style-type: none"> If improperly connected – Re-establish proper connection. 	
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"> Use Correct Carrier SIM or test SIM. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Handle the unit according to local directives. 	

11 Charging/Capacity Problems


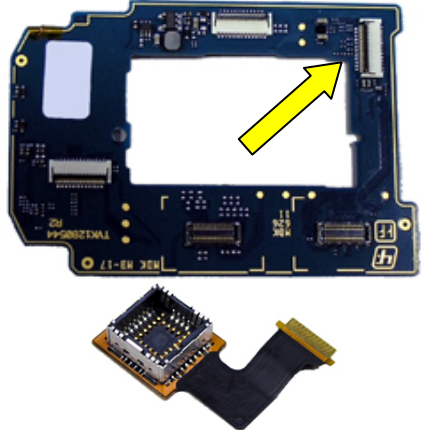

Problem Area	Items to Check	Repair Action	Reference Image
Battery will not charge	Visually inspect the contact pads of the battery	<ul style="list-style-type: none"> If dirty or oxidized – Clean. If damaged – Replace battery. 	
	Visually inspect the battery connector	<ul style="list-style-type: none"> If dirty or oxidized – Clean. If damaged – Send to an electrical repair location. 	
Battery loses charge quickly/standby time seems short	Before proceeding → Note: Some features noticeably reduce the amount of standby time if they are turned on. Some examples are the back light (when on all the time), Bluetooth and infrared.	<ul style="list-style-type: none"> Do software update content refresh. Note: this problem will not be solved by a regular software update. Note: Software Update Content Refresh will erase all user data.	




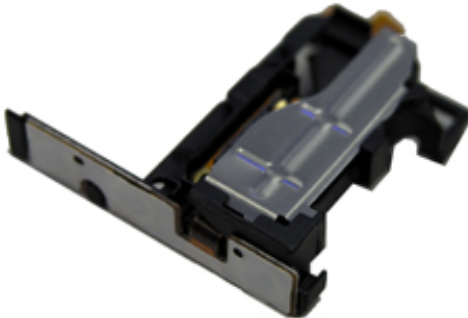
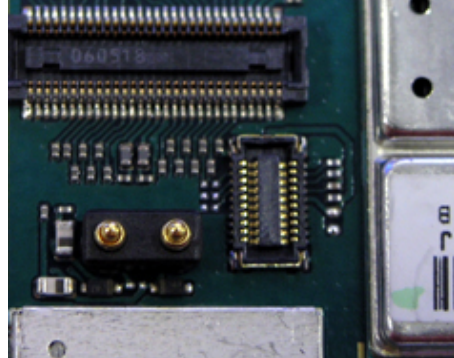
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<p>If the issue has not been resolved →</p>	<ul style="list-style-type: none"> • Replace battery. 	
<p>If the issue has not been resolved →</p>	<ul style="list-style-type: none"> • Handle the unit according to local directives. 	

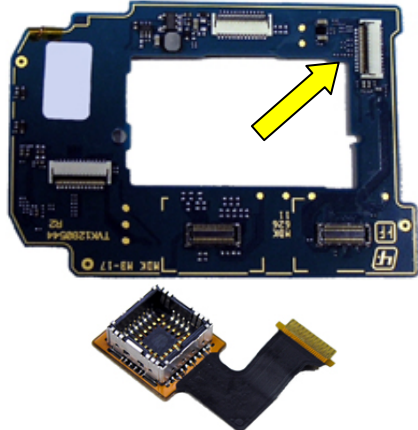

12 Camera Problems


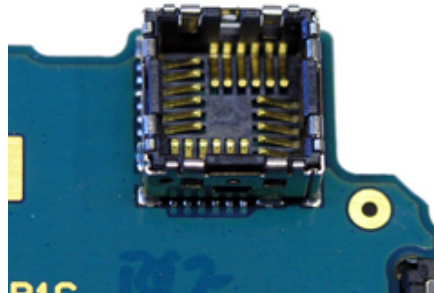

Problem Area	Items to Check	Repair Action	Reference Image
Camera rear (Mega pixels) Lines, marks, blurred or discolored picture/ Will not enter camera menu	Visually inspect the camera lens	<ul style="list-style-type: none"> If scratched or damaged – Replace upper case rear. 	
	Visually inspect whether the camera is properly connected to its socket on the flex and that the camera flex is properly connected to its connector on the sub PCB.	<ul style="list-style-type: none"> If improperly connected – Re-establish proper connection. If camera socket or camera flex is damaged – replace the camera socket flex module. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the camera rear. 	

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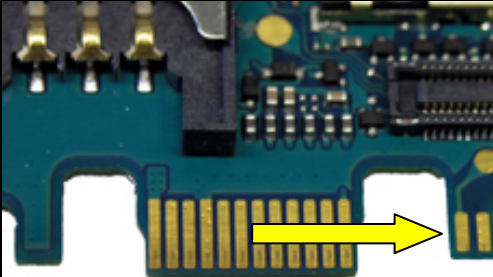

Problem Area	Items to Check	Repair Action	Reference Image
	If the issue has not been resolved →	<ul style="list-style-type: none"> Handle the unit according to local directives. 	
Will not capture an image	Visually inspect for damage to the side keys	<ul style="list-style-type: none"> If damaged – Replace them. 	
	Visually inspect for damage to the dome sheet on the SIM assembly.	<ul style="list-style-type: none"> If damaged – Replace SIM assembly. 	
	Visually inspect whether the SIM flex film is properly connected to its connector on the PCB	<ul style="list-style-type: none"> If improperly connected – Re-establish proper connection. 	

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Problem Area	Items to Check	Repair Action	Reference Image
	Visually inspect whether the camera is properly connected to its socket on the flex and that the camera flex is properly connected to its connector on the sub PCB.	<ul style="list-style-type: none"> • If improperly connected – Re-establish proper connection. • If camera socket or camera flex is damaged – replace the camera socket flex module. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> • Replace camera rear. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> • Replace the main flex film, upper PCB assembly and the camera if not always replaced. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> • Handle the unit according to local directives. 	

Problem Area	Items to Check	Repair Action	Reference Image
Camera Front (Video call camera)	Visually inspect the camera lens	<ul style="list-style-type: none"> If dirty – Clean camera lens. If scratched or damaged – Replace sheet (Screw) Upper. 	
	Visually inspect whether the camera is properly connected to its socket on the PCB.	<ul style="list-style-type: none"> If improperly connected – Re-establish proper connection. If the socket is damaged – Replace the upper PCB assembly. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the camera front. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the main flex film, upper PCB assembly and the camera if not always replaced. 	

13 Data Communication Problems

Problem Area	Items to Check	Repair Action	Reference Image
Will not connect with a functional Bluetooth device	Visually inspect the system connector pads for dirt.	<ul style="list-style-type: none"> If dirty – Clean it. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the system connector. <p>NOTE: The system connector includes the bluetooth antenna.</p>	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Handle the unit according to local directives. 	

14 Software Problems

- If there are problems with the response of the keypad commands, spelling errors in the menu or the phone hang, 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 **Software Update Content Refresh** before sending the unit to a higher level. Do not scrap a phone that hasn't been upgraded with Software Update Content Refresh.

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

15 Revision History

Rev.	Date	Changes / Comments
A	2006-09-06	Released Document