

Trouble Shooting Guide, Mechanical

Applicable for R306

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1 General

This document outlines the mechanical repairs that should be made in an attempt to fix the common failures that are seen in the field. To gain a complete understanding of how to test and repair a specific failure, this document should be used in conjunction with the Test Instructions, Mechanical and the Working Instructions, Mechanical.

1.1 Service functions in the software

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

⇒*←←*←*

They are as follows:

Service info

Service tests

Text labels

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

Main display

LED/illumination

Keyboard

Speaker

Earphone

Microphone

Vibrator

Camera

Flash LED

Real time clock

Total call time

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

1.2 Misuse and other no warranty issues






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


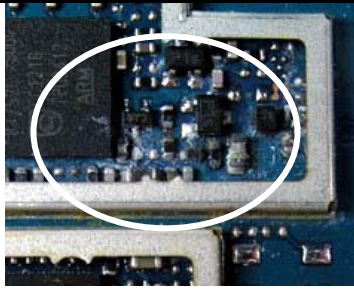
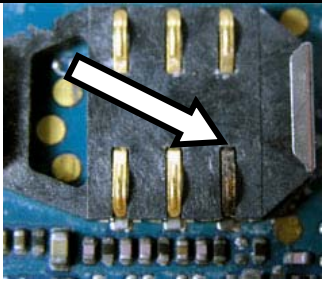
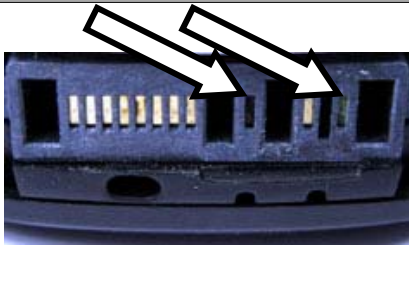
This means: if it is possible to repair the phone, the customer will have to pay for the repair. SEMC will not allow any of these phones to be claimed into WCMS. Some local perspectives may interfere with this. Please reference to local directives.

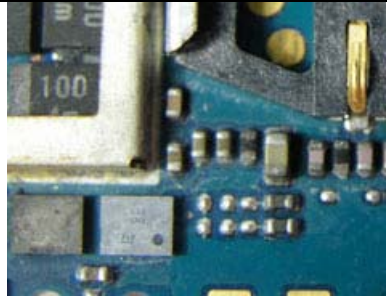
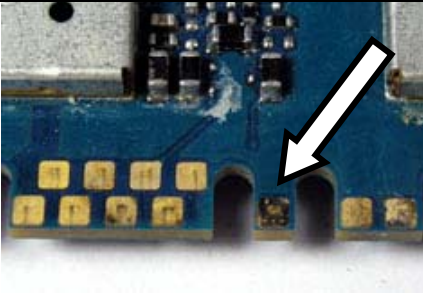
1.2.1 Action

Make a general visual inspection for misuse.

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

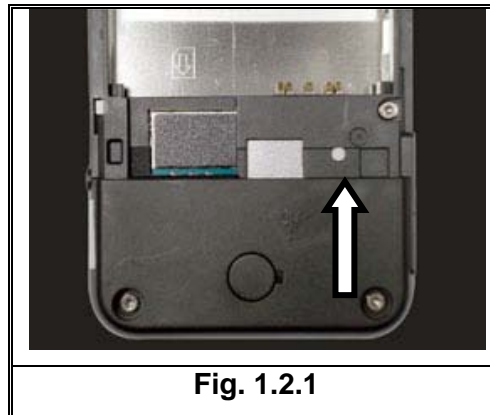
				
Front window broken due to misuse.	LCD cracked due to drop.	Clear scratches	Mark after drop	Corrosion components on the PCB.

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

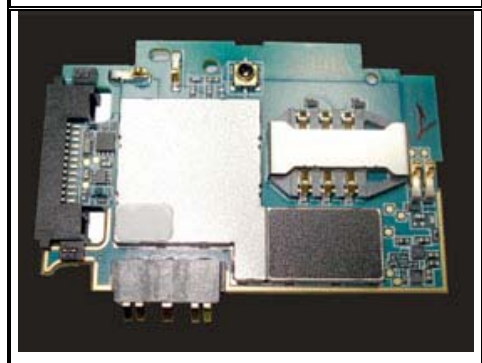
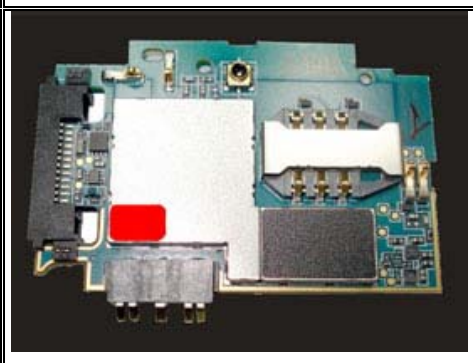
	
<p>Components around system connector damaged by liquid</p>	<p>System connector pad(s) damaged by liquid</p>

1.2.2 Liquid damage (Label Water Indication)

In the phone there is placed a Label Water Indication that can give you a hint to see if the phone is damaged by liquid or not. It is located on Bottom Rear Frame lower-right(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 Label Water Indication 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 <u>is not</u> ok	
		<p>The white Label Water Indication that has been in contact with liquid turn into a red or pink color.</p> <p>In this case you should check the phone for liquid damage (see point 1.2.1).</p> <p>Notes: 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	

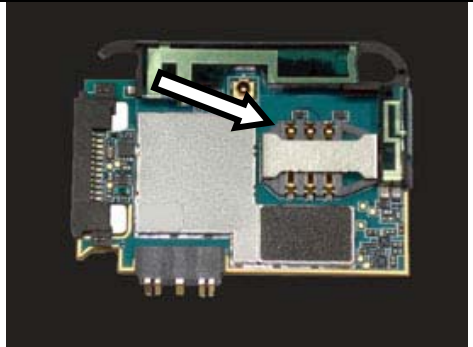
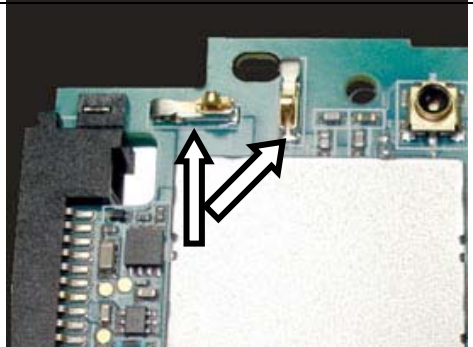
1.2.3 Action




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


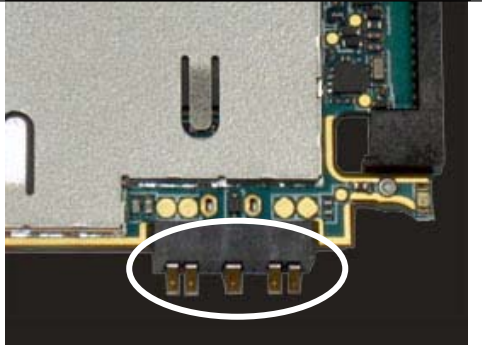
Problem Area	Items to Check	Repair Action	Reference Image
Appearance	Inspect the cosmetic quality of all user visible surface	<ul style="list-style-type: none"> • If dirty –Clean parts as necessary. • If unacceptable scratched or damaged –Replace damage parts as necessary. 	
	Inspect all keys	<ul style="list-style-type: none"> • If dirty – Clean parts as necessary. 	
	Inspect for improper gap between seams	<ul style="list-style-type: none"> • If unacceptable gap – Replace damaged parts as necessary. 	


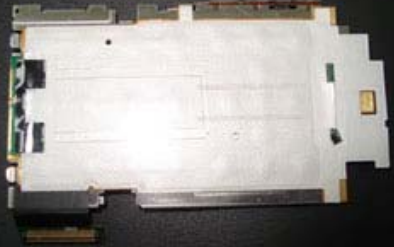
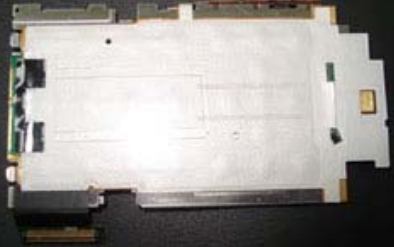
3 Network/Signal Problems

Problem Area	Items to Check	Repair Action	Reference Image
No Signal or Poor Signal	Before proceeding	Ensure the correct SIM (GSM) or USIM (UMTS) is installed. See Test Instruction for details	
	Inspect SIM holder	<ul style="list-style-type: none"> • If dirty or oxidized –Clean it • If damaged –Send to an electrical repair location. 	
	Inspect antenna spring	<ul style="list-style-type: none"> • If dirty or oxidized – Clean the antenna pogo pin • If damaged - Send to a repair location allowed to perform electrical repairs on this product 	


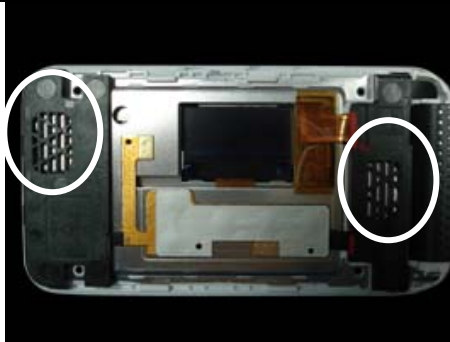
Problem Area	Items to Check	Repair Action	Reference Image
	Inspect Antenna Main 850/900 BT Assy contact pad	<ul style="list-style-type: none"> • If dirty or oxidized –Clean it • If damaged—Replace with Antenna Main 850/900 BT Assy. 	
	Inspect Hinge Lock	<ul style="list-style-type: none"> • If dirty or clogged, clean it. • If damaged – Replace the Hinge Lock 	 
	If the issue has not been resolved	<ul style="list-style-type: none"> • Handle the unit according to local directives 	

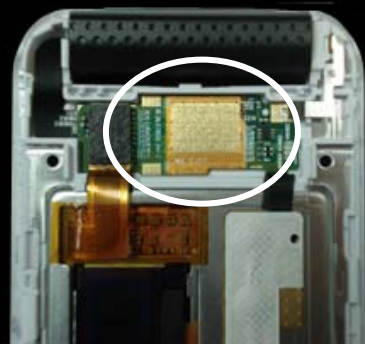
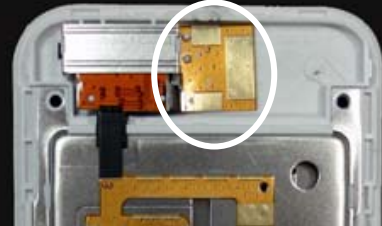


4 On/Off Problems


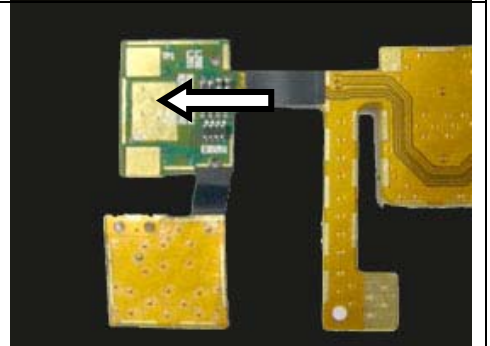
Problem Area	Items to Check	Repair Action	Reference Image
Power on problems	Check whether the phone vibrates after pressing the power key and whether the Keyboard illuminates	If activation of the vibrator or Keyboard is detected , refer to the “Display problem” chapter 7	N/A
	Before proceeding	<ul style="list-style-type: none"> Perform a flash upgrade 	
	Inspect contact pads on battery And use new battery to check	<ul style="list-style-type: none"> If dirty or oxidized –Clean pads If damaged –Replace the battery 	
	Inspect battery connector	<ul style="list-style-type: none"> If dirty or oxidized – Clean it. If damaged – Send to an electrical repair location. 	


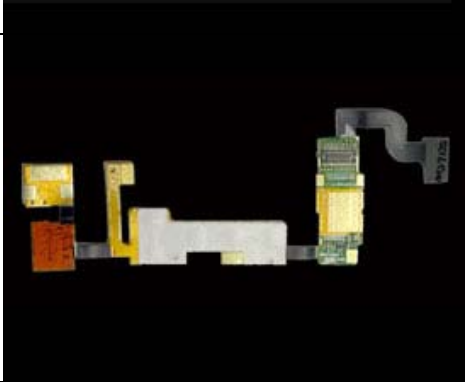
Problem Area	Items to Check	Repair Action	Reference Image
	Inspect Keyboard outer	<ul style="list-style-type: none"> If power key damaged, replace the Keyboard. 	
	Inspect dome sheet	<ul style="list-style-type: none"> If dirty or oxidized – Clean dome sheet. If damaged –replace the FPC Keyboard Metal Housing Assy 	
	Inspect Keyboard FPC under dome sheet	<ul style="list-style-type: none"> If damaged –replace the FPC Keyboard Metal Housing Assy 	
	If this issue has not been resolved	<ul style="list-style-type: none"> Send to an electrical repair location. 	


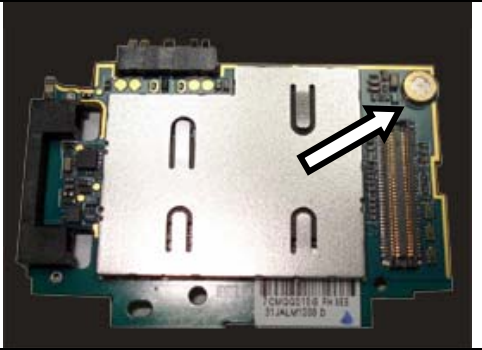
5 Audio Problems

Problem Area	Items to Check	Repair Action	Reference Image
Loudspeaker No sound or poor quality sound	Before proceeding	<ul style="list-style-type: none"> Perform a flash upgrade and a setting reset 	
	Inspect the Loudspeaker external port	<ul style="list-style-type: none"> If dirty or clogged –Clean it. 	
	Inspect the chambers	<ul style="list-style-type: none"> If dirty or clogged –Clean it. If mesh broken–Replace the mesh. 	

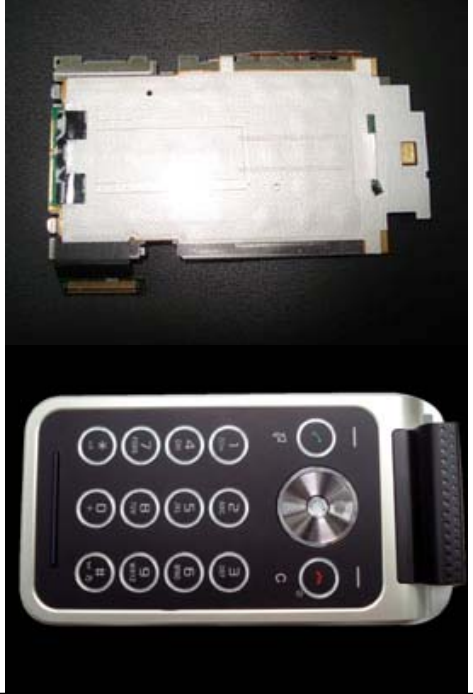
Problem Area	Items to Check	Repair Action	Reference Image
	Inspect the Loudspeaker springs, Loudspeaker body, pads on FPC Quick Key Assy and upper front structure.	<ul style="list-style-type: none"> • If FPC Quick Key Assy pads dirty or oxidized – Clean it. • If the Loudspeaker body damaged – Replace the Loudspeaker. • If Loudspeaker spring damaged – Replace the Loudspeaker. • If FPC Quick Key Assy damaged – Replace the FPC Quick Key Assy. 	   
	If this issue has not been resolved	<ul style="list-style-type: none"> • Send to an electrical repair location. 	

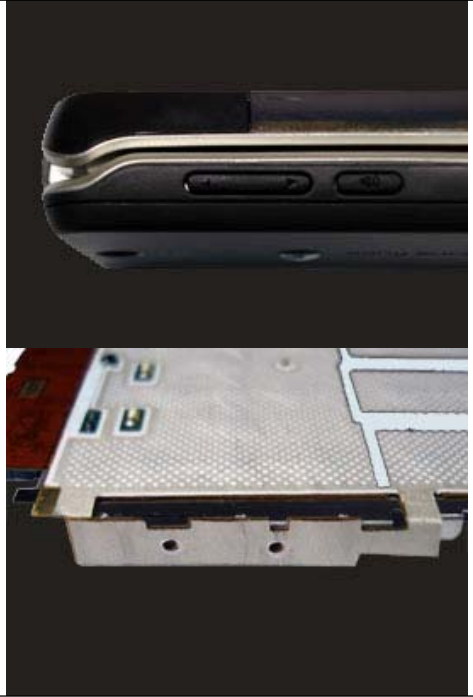
Problem Area	Items to Check	Repair Action	Reference Image
Ear Speaker No sound or poor quality sound	Before proceeding→	<ul style="list-style-type: none"> Perform a flash upgrade and a setting reset. 	
	Inspect Ear Speaker's external port	<ul style="list-style-type: none"> If clogged – Clean or replace the Ear Speaker Plate. 	
	Inspect Ear Speaker's inner	<ul style="list-style-type: none"> If dirty or oxidized –Clean the pads. 	

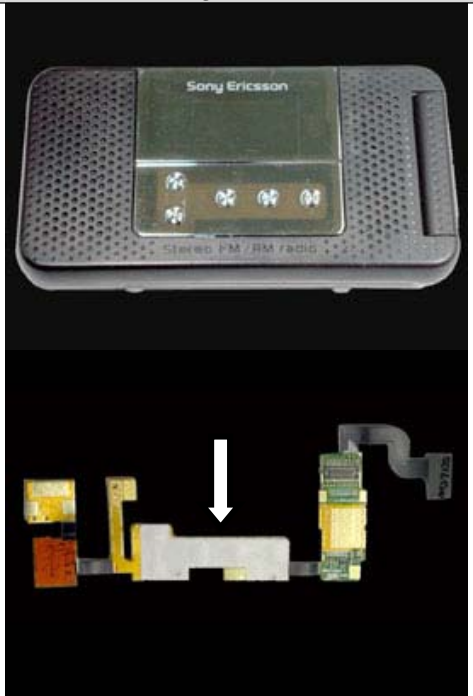
Problem Area	Items to Check	Repair Action	Reference Image
	Visually inspect and exchange a new Ear Speaker for verify	<ul style="list-style-type: none"> • If dirty or oxidized – Clean the springs. • If old Ear Speaker not work – Replace Ear Speaker 	
	Use a new FPC Quick Key Assy for verify	<ul style="list-style-type: none"> • If old FPC Quick Key Assy not work – Replace a new one. 	
	If this issue has not been resolved	<ul style="list-style-type: none"> • Send to an electrical repair location. 	

Problem Area	Items to Check	Repair Action	Reference Image
Microphone	Before proceeding	<ul style="list-style-type: none"> Perform a flash upgrade and a setting reset 	
	Inspect the microphone's external port	<ul style="list-style-type: none"> If clogged – Clean or replace a new Keyboard 	
	Inspect the Microphone	<ul style="list-style-type: none"> If clogged – Clean the Microphone 	
	If the issue has not been resolved	<ul style="list-style-type: none"> Handle the unit according to local directives 	


6 Key Problems


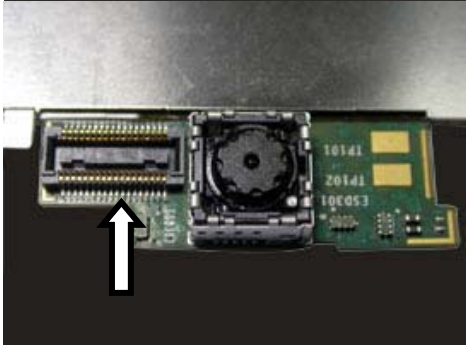
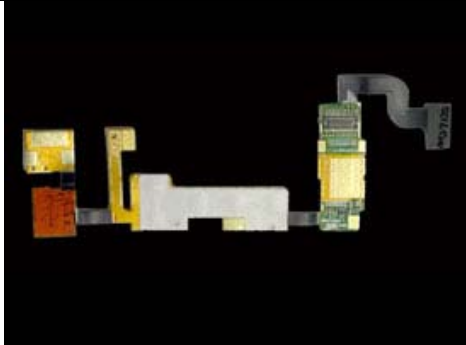
Problem Area	Items to Check	Repair Action	Reference Image
Keyboard: A key on the keyboard is not functioning or is intermittent	Inspect the area between the Keyboard and the dome sheet where the key is not functioning	<ul style="list-style-type: none"> • If dirty or clogged –Clean both parts. • If damaged – Replace the Keyboard and/or FPC Keyboard Metal Housing Assy as necessary. 	
	If the issue has not been resolved	<ul style="list-style-type: none"> • Send to an electrical repair location 	

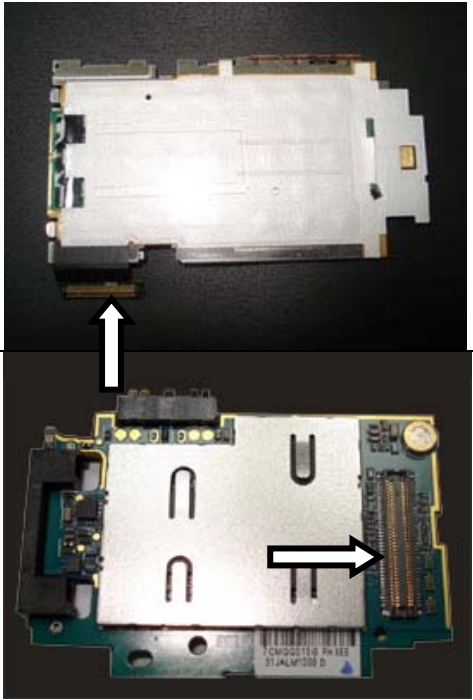
Problem Area	Items to Check	Repair Action	Reference Image
Side key	Inspect the area between the Side Key and the dome sheet where the key is not functioning	<ul style="list-style-type: none"> • If dirty or clogged –Clean it. • If damaged – Replace the Side Key and/or FPC Keyboard Metal Housing Assy. 	
	If the issue has not been resolved	<ul style="list-style-type: none"> • Send to an electrical repair location 	

Problem Area	Items to Check	Repair Action	Reference Image
Quick key	Inspect the area between the Quick Key and the dome sheet where the key is not functioning	<ul style="list-style-type: none"> • If dirty or clogged –Clean both parts. • If damaged – Replace the Quick Key and/or FPC Quick Key Assy as necessary. 	
	If the issue has not been resolved	<ul style="list-style-type: none"> • Send to an electrical repair location 	


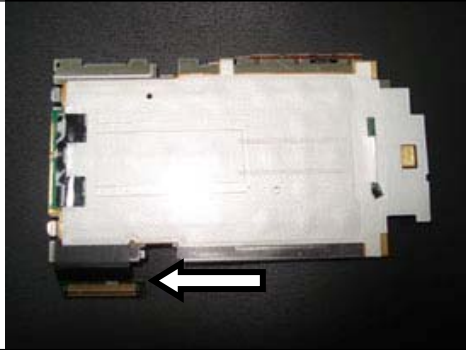
7 Display Problems

Problem Area	Items to Check	Repair Action	Reference Image
LCD module	Check whether the phone vibrates 10 to 15 seconds after pressing the power key and whether the Keyboard illuminates	<ul style="list-style-type: none"> If the vibrator not been activated, refer to the On/Off problems chapter 4 	
	Before proceeding	<ul style="list-style-type: none"> Perform a flash upgrade and a setting reset. 	
	Inspect connector on FPC.	<ul style="list-style-type: none"> If improperly connected – Re-mount the connector on upper FPC. If dirty or oxidized – Clean both sides of the connector. 	

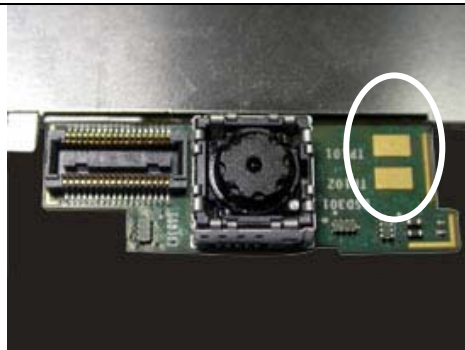
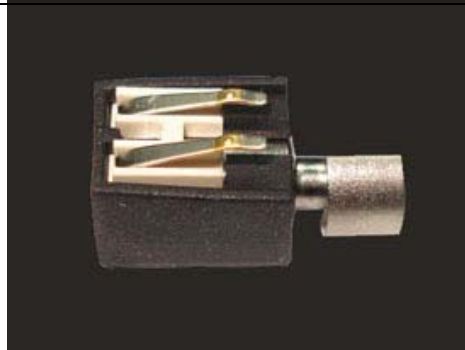
Problem Area	Items to Check	Repair Action	Reference Image
	Visually inspect the connection of FPC.	<ul style="list-style-type: none"> If improperly connected – Re-mount the connector on FPC Keyboard Metal Housing Assy. If dirty or oxidized – Clean both sides of connector. 	 
	Check the FPC Quick Key Assy.	<ul style="list-style-type: none"> If damaged---Replace the FPC Quick Key Assy 	

Problem Area	Items to Check	Repair Action	Reference Image
	Check FPC Keyboard Metal Housing Assy	<ul style="list-style-type: none"> Verify with new FPC Keyboard Metal Housing Assy, if damage detected, replace a new FPC Keyboard Metal Housing Assy. 	
	Check PCBA board to board connector.	<ul style="list-style-type: none"> If improperly connected – Re-mount the connector.. If dirty or oxidized – Clean both sides of connector. 	
	If the issue has not been resolved	<ul style="list-style-type: none"> Send to an electrical repair location. 	

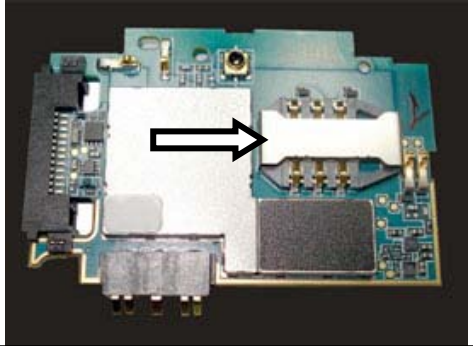
8 Illumination Problems

Problem Area	Items to Check	Repair Action	Reference Image
Keys: The entire Keyboard or a portion of the Keyboard does not illuminate	Before proceeding	<ul style="list-style-type: none"> Perform a flash upgrade and a setting reset. 	
	Inspect the Keyboard	<ul style="list-style-type: none"> If dirty or clogged –Clean the Keyboard. 	
	Inspect the Keyboard Inspect whether the main key FPC is properly connected to PCB connector	<ul style="list-style-type: none"> If improperly connected ---Re-mount proper connection. If damaged---Replace the FPC Keyboard Metal Housing Assy. 	
	If the issue has not been resolved	<ul style="list-style-type: none"> Send to an electrical repair location. 	


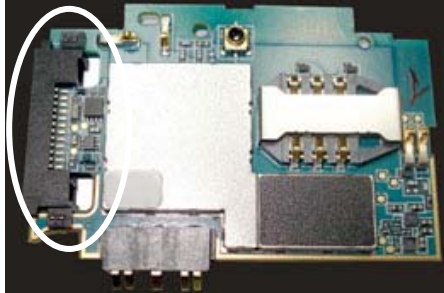
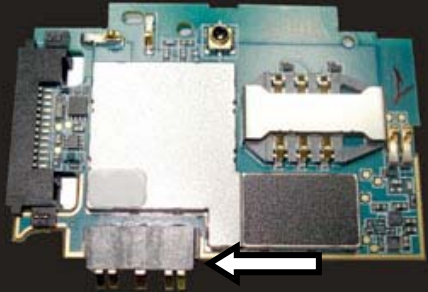
9 Alert Problems


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

10 SIM Problems


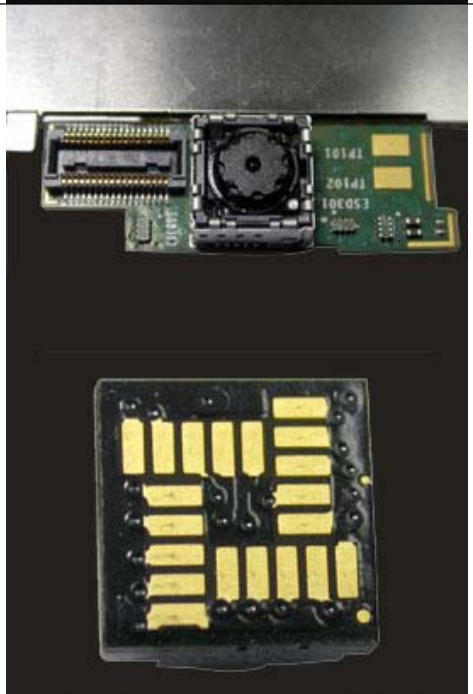
Problem Area	Items to Check	Repair Action	Reference Image
SIM undetected (Insert SIM)	Inspect SIM holder	<ul style="list-style-type: none"> If dirty or oxidized –Clean If damaged - Send to an electrical repair location. 	
	If the issue has not been resolved	<ul style="list-style-type: none"> Handle the unit according to local directives 	
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	Inspect the contact pads of the battery	<ul style="list-style-type: none"> If dirty or oxidized –Clean If damaged –Change a new battery 	
	Inspect the system connector	<ul style="list-style-type: none"> If dirty or oxidized –Clean it If damaged –Send to an electrical repair location 	
	Inspect the battery connector	<ul style="list-style-type: none"> If dirty or oxidized –Clean it If damaged – Send to an electrical repair location 	

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



12 Camera Problems

Problem Area	Items to Check	Repair Action	Reference Image
Camera	Visually inspect the camera lens	<ul style="list-style-type: none"> • If scratched or damaged –Replace the Battery Cover. • If Camera lens dirty---Clean it 	
	Visually inspect whether the camera is properly connected to its socket on the FPC Keyboard Metal Housing Assy.	<ul style="list-style-type: none"> • If improperly connected - Re-mount proper connection. • If the socket dirty or oxidized – Clean the socket • If Camera pads dirty or oxidized – Clean the pads. 	

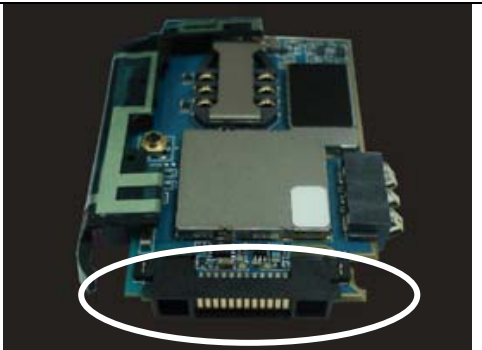


Problem Area	Items to Check	Repair Action	Reference Image
	Use a new FPC Keyboard Metal Housing Assy or new Camera to verify.	<ul style="list-style-type: none">If damaged – Replace the one or both.	
	If the issue has not been resolved	<ul style="list-style-type: none">Handle the unit according to local directives	

13 Flip Problems

Problem Area	Items to Check	Repair Action	Reference Image
Hinge	Inspect when ever the phone open and close properly	<ul style="list-style-type: none"> If any problem – Replace the hinge 	
	Inspect when ever the phone open and close properly	<ul style="list-style-type: none"> Replace Display TFT 1.9" Window Housing B Assy 	

14 Data Communication Problems

Problem Area	Items to Check	Repair Action	Reference Image
Will not connect through the system connector	Before proceeding	<ul style="list-style-type: none"> Perform a flash upgrade and a setting reset 	
	Visually inspect the system connector	<ul style="list-style-type: none"> If dirty or oxidized –Clean it If damaged –Send it to an electrical repair 	
	If the problem can't be resolve	<ul style="list-style-type: none"> Send it to an electrical repair 	

15 Software Problems

- If there are problems with the response of the Keyboard commands, or spelling errors in the menu, if they are not related to mechanical damage, make a master reset and flash the phone with the latest software from EMMA III.
- Checking the software revision can be done in the Service info, see chapter Service functions in the software.
Choose: Service info / SW information.
The Software revision and date will be shown in the display.

Note: Do a SW upgrade before sending the unit to a higher level. Do **not** scrap a phone that hasn't been upgraded.

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

16 Revision History

Rev.	Date	Changes / Comments
1	2008-08-15	1 st release