

Trouble Shooting Guide, Mechanical

Applicable for K850

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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 $\Rightarrow^* \leftarrow^* \leftarrow^* \leftarrow^*$

They are as follows:

Service info

Service settings

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

Video call camera

Memory Stick

FM Radio

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.

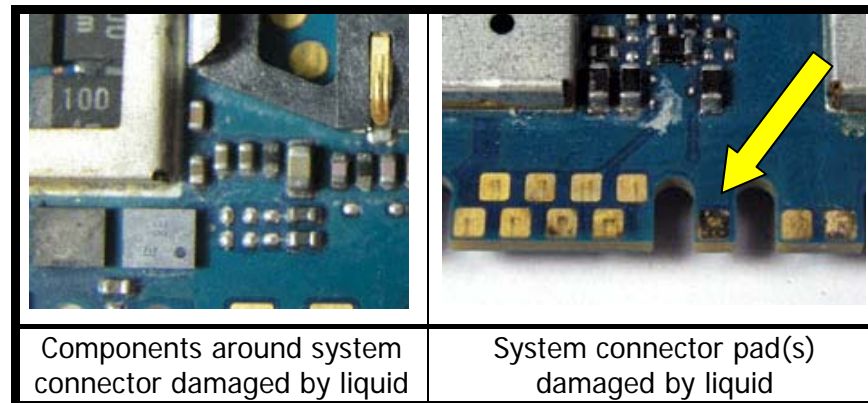
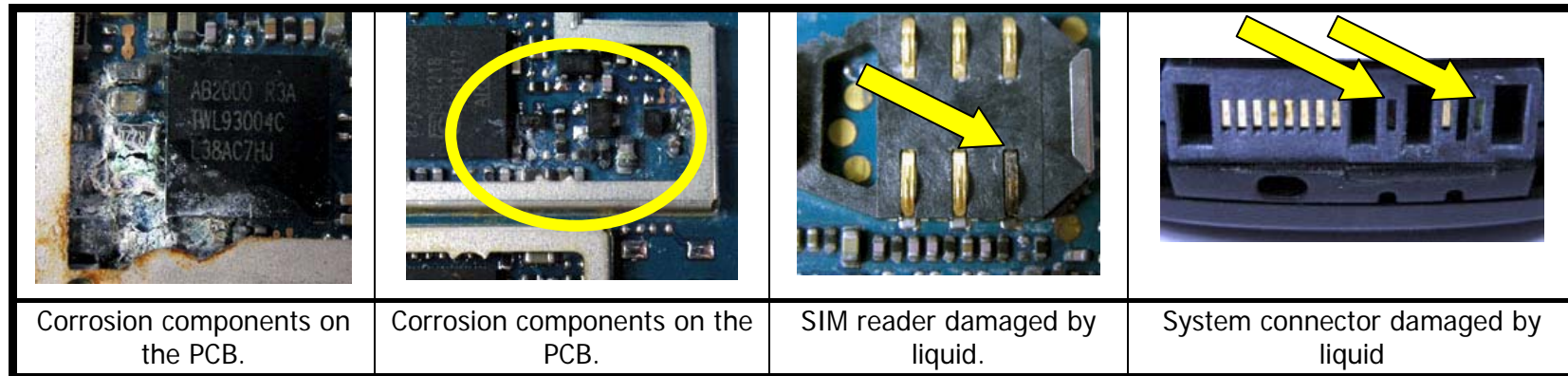
1.2.1 Action

Make a general visual inspection for misuse.

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

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

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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.

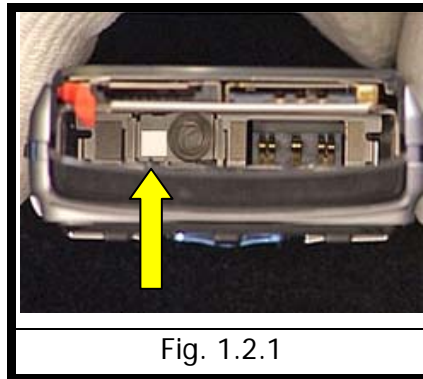
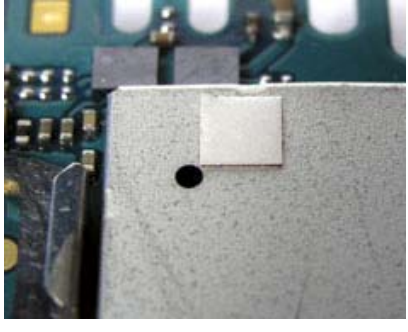
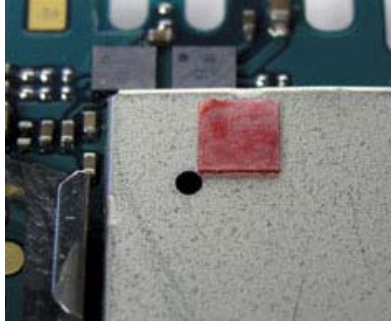


Fig. 1.2.1

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 <u>is 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>Fig. 1.2.2</p>	<p>Fig. 1.2.3</p>	

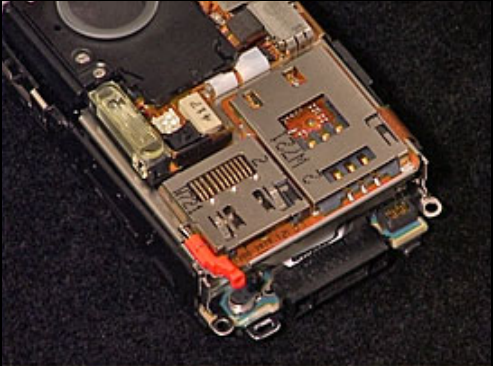
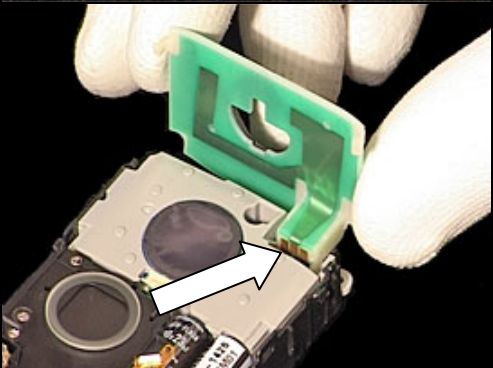
1.2.3 Action

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.

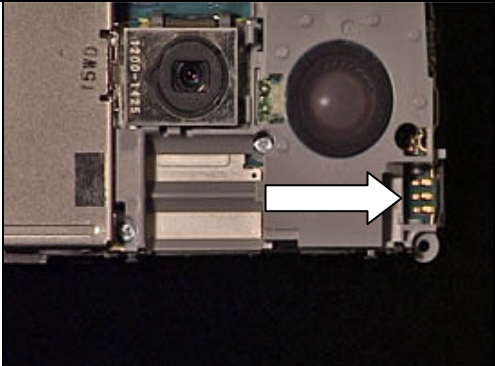
2 Appearance Problems

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"> • 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. 	

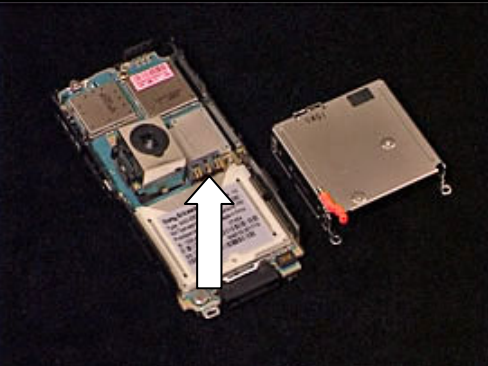
3 Network/Signal Problems

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>	
No Signal or Poor Signal	Visually inspect SIM holder.	<ul style="list-style-type: none"> If dirty or oxidized – Clean it If damaged – Replace the Card FPC Complete (SIM/COMBO) 	
	Visually inspect antenna contact pads and the antenna connector.	<ul style="list-style-type: none"> If dirty or oxidized – Clean it If damaged – Replace the Antenna PIFA. 	

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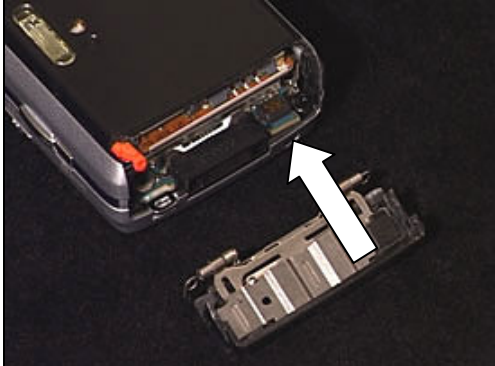
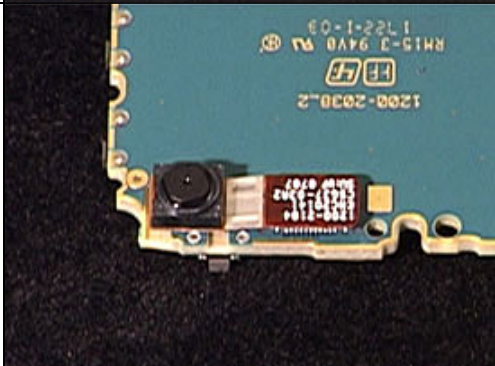
Problem Area	Items to Check	Repair Action	Reference Image
	Visually inspect the Antenna Connector	<ul style="list-style-type: none"> • If dirty or oxidized – Clean it. • If damaged – Handle the unit according to local directives. 	
	If the issue has not been resolved →	<ul style="list-style-type: none">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

4 On/Off Problems


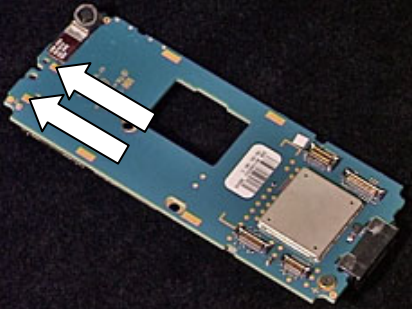
Problem Area	Items to Check	Repair Action	Reference Image
Power On problems	Check whether the phone vibrates 10 to 15 seconds after pressing the power key and whether the keypad illuminates.	<ul style="list-style-type: none"> If activation of the vibrator or keypad are detected, refer to the “Display Problems” chapter 8 	
	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>	
	Cannot be power on, Cannot be detected on USB cable on EMMA III.	<ol style="list-style-type: none"> Log on to EMMA III 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. 	
	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 – Handle the unit according to local directives. 	
	Visually inspect the power key.	<ul style="list-style-type: none"> If damaged – Replace on/off key. 	

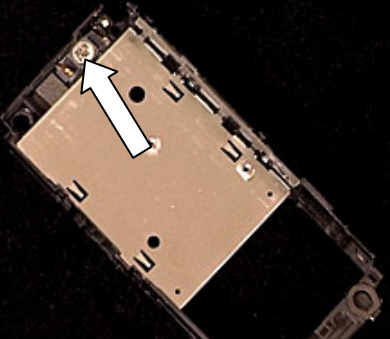

Problem Area	Items to Check	Repair Action	Reference Image
	If the issue has not been resolved →	<ul style="list-style-type: none">• Handle the unit according to local directives.	

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 by a regular software update.</p>	
	Visually inspect the microphone external port channel.	<ul style="list-style-type: none"> If clogged – Clean. <p>Note: It can easily happen that the customer blocks the microphone port with their hand. If no fault found. Please inform the customer where the port is and that it is important not to cover it during calls</p>	
	Visually inspect the microphone	<ul style="list-style-type: none"> If dirty – Clean If damaged – Replace the Microphone 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Handle the unit according to local directives. 	

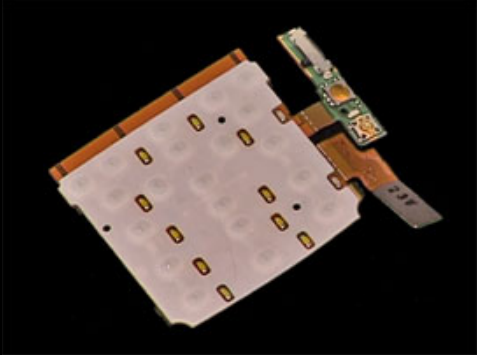
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Problem Area	Items to Check	Repair Action	Reference Image
Receiver (earphone): No sound or poor quality sound	Before proceeding →	<ul style="list-style-type: none"> Do software update content refresh. <p>Note: this problem will not be solved by a regular software update.</p>	
	Visually inspect receiver's external port.	<ul style="list-style-type: none"> If clogged – Clean or replace the front. 	
	Visually inspect the pads on the PCB.	<ul style="list-style-type: none"> If dirty or oxidized – Clean If damaged – Handle the unit according to local directives. 	

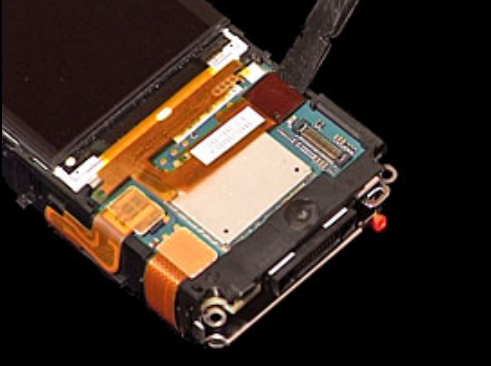
Problem Area	Items to Check	Repair Action	Reference Image
	Visually inspect the Receiver	<ul style="list-style-type: none"> • If contact springs are dirty – Clean • Replace the Receiver 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> • Handle the unit according to local directives. 	
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>	
	Visually inspect the speaker's external port.	<ul style="list-style-type: none"> • If clogged – Clean or replace the Rear Back Cover. 	
	Visually inspect the Speaker Flex BtB connected to the Main PCB.	<ul style="list-style-type: none"> • If improperly connected – Re-establish proper connection. • If damaged – Replace the Loudspeaker 	

Problem Area	Items to Check	Repair Action	Reference Image
	If the issue has not been resolved →	<ul style="list-style-type: none"><li data-bbox="1048 295 1534 359">• Handle the unit according to local directives.	

6 Key Problems

Problem Area	Items to Check	Repair Action	Reference Image
<p>Keyboard Numeric:</p> <p>A key on the main keyboard (1.2.3...) is not functioning or is intermittent</p>	<p>Visually inspect for debris between Keyboard Main and Key Foil Assy, also for damage to the Keyboard and the numeric Key Foil Assy.</p>	<ul style="list-style-type: none"> • If dirty – Clean it. • If damaged – Replace Keyboard Main and/or Key Foil Assy as necessary. 	
	<p>If the issue has not been resolved →</p>	<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
	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>	
Display	Visually inspect whether the Display flex film is properly connected to its connector on the Navi Key PBA.	<ul style="list-style-type: none"> If improperly connected – Re-establish proper connection. If the Display TFT 2.2 BtB connector is damaged – Replace the Display TFT 2.2 If PCB BtB connector is damaged - Handle the unit according to local directives. <p>NOTE: Misuse is not covered by warranty. Refer to chapter 1.2</p>	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Handle the unit according to local directives. 	

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>	
LCD illumination	Refer to “ Display ” section under “Display Problems”		
Key numeric illumination:	Refer to “ Keyboard numeric ” section under “Key Problems”		
Key navigation illumination:	Refer to “ Keyboard navigation ” section under “Key Problems”		


9 Alert Problems

Problem Area	Items to Check	Repair Action	Reference Image
Vibrator:	Before proceeding →	<ul style="list-style-type: none"> Do a software update content refresh. <p>Note: this problem will not be solved by a regular software update.</p>	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Handle the unit according to local directives. 	
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 or oxidized – Clean it. • If damaged – 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. 	


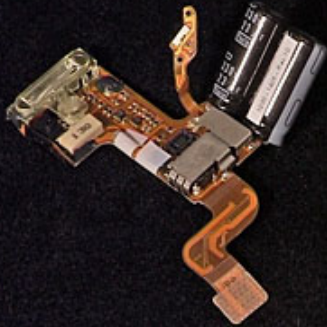
11 Charging/Capacity Problems


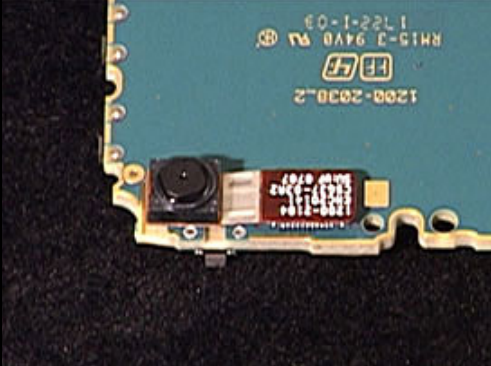
Problem Area	Items to Check	Repair Action	Reference Image
Battery will not charge	Visually inspect the contact pads of the battery	<ul style="list-style-type: none"> • If dirty or oxidized – Clean it. • If damaged – Replace the battery. 	
	Visually inspect the battery connector	<ul style="list-style-type: none"> • If dirty or oxidized – Clean it. • If damaged – Handle the unit according to local directives. 	
	Visually inspect the system connector	<ul style="list-style-type: none"> • If dirty or oxidized – Clean it. • If damaged – Handle the unit according to local directives. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> • Handle the unit according to local directives. 	

Battery looses 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) and Bluetooth.	<ul style="list-style-type: none"> Do a software update content refresh. Note: this problem will not be solved by a regular software update.	
	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 local directives. 	

12 Camera Problems

Problem Area	Items to Check	Repair Action	Reference Image
Camera rear (2 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 the Camera Cover Assembly. 	
	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 Camera BtB Connector is damaged – Replace the Camera If the PCB BtB Connector – Handle the unit according to local directives. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the Camera. <p>Note: Remember to put back the Shield Can Lid Camera when replacing the Camera.</p>	
	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
Will not capture an image	Visually inspect for damage to the camera keys	<ul style="list-style-type: none"> If damaged – Replace them. 	
	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 camera socket is damaged – Handle the unit according to local directives. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the Camera. <p>Note: Remember to put back the Shield Can Lid Camera when replacing the Camera.</p>	
	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 the Front Cover. 	
	Visually inspect whether the video call camera is properly connected the PCB	<ul style="list-style-type: none"> • If improperly connected – Re-establish proper connection. • If damaged – Replace the Camera QCIF MPixel CMOS 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> • Replace the Camera. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> • Handle the unit according to local directives. 	

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 BT antenna 	
	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	2007-10-09	Initial release