

Trouble Shooting Guide, Mechanical

Applicable for W902

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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 unit, this document should be used in conjunction with the Test Instructions, Mechanical and the Working Instructions, Mechanical.

NOTE! *A unit should always be inspected for liquid damage and flashed with latest software before using the Mechanical Trouble Shooting Guide. Refer to the Mechanical Test Instructions for details regarding upgrading software.*

NOTE! *If all of the repair actions listed in this document for addressing a problem have been performed and a unit still is not working, handle the unit according to your local Sony Ericsson Representative*



Service functions in the software

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

⇒*←←*←*

The service menu options are:

Service info

Service settings

Service tests

Text labels

Under the “**Service tests**” option, the phone’s software has a built in service functionality that allows you to test some of the phones functions. It looks like this:

Main display

LED/illumination

Keyboard

Speaker

Earphone

Microphone

Vibrating alert

Camera

Video Call Camera

Flash LED

Accelerometer

M2 Memory Card

FM-Radio

Real time clock

Total call time





Security


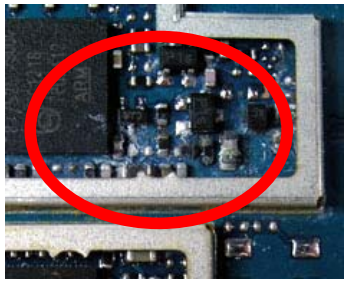

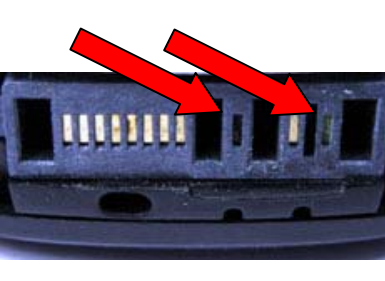
NOTE: Different names may occur depending on language setting and customization.

Misuse and other no warranty issues

A phone that is damaged due to misuse is not covered by warranty. This section shows many of the signs of misuse that are seen in the field. Please refer to local directives on how a phone that appears to be damaged due to misuse should be handled.

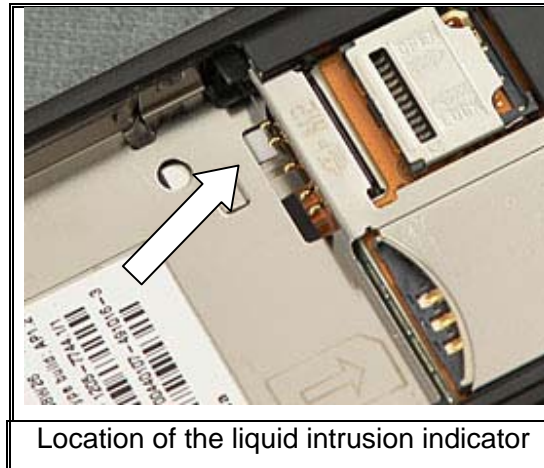
Below are some **examples** of damage due to misuse that are not covered by warranty.

			
Front window broken due to misuse.	LCD cracked due to drop.	Clear scratches	Mark after drop

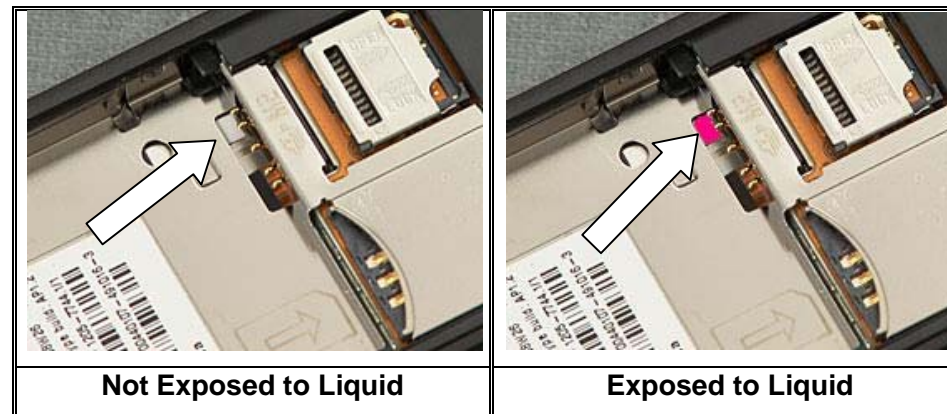
			
Corrosion components on the PCB.	Corrosion components on the PCB.	Components damaged by liquid	System connector damaged by liquid

1.1.1 Liquid Damage Inspection



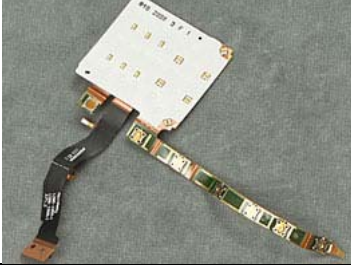
Before any tests are performed, an inspection of the liquid intrusion indicator should be made. If the liquid intrusion indicator is red this is an indication of possible liquid exposure. If the liquid intrusion indicator suggests liquid exposure please consult your local SEMC representative for handling instructions.



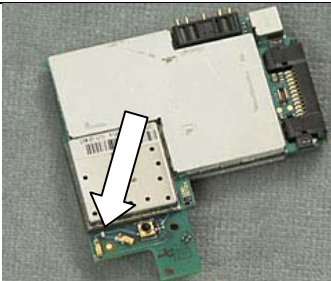
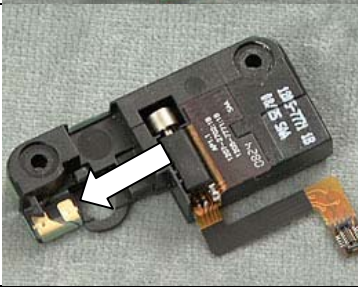
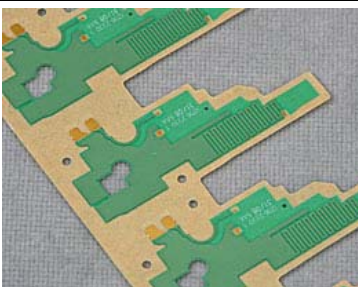
The following pictures show the different between an indicator that has been in contact with liquid and one that has not.




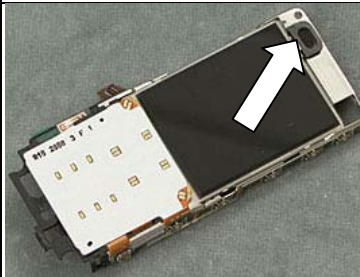
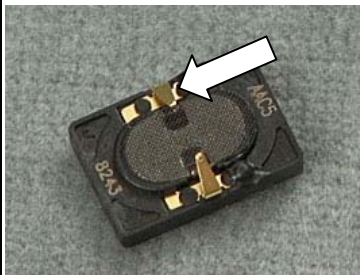
2 Power Problems

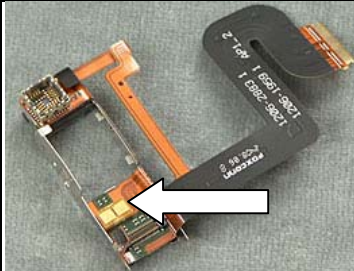

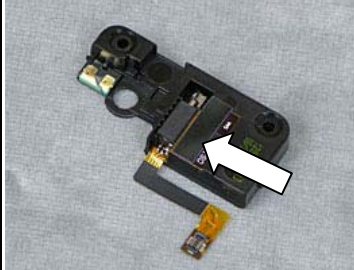
Problem Area	Items to Inspect	Repair Action	Inspection Reference
Unit will not Power On or switch off spontaneous	Check whether the phone vibrates when you press the power key	If activation of the vibrator is detected, refer to the "Display Problems" section	
	Inspect battery connector	<ul style="list-style-type: none"> If dirty or oxidized – Clean the connector's contact pins If adhesive is detected on the contact pins – use an eraser to rub off the adhesive If damaged – Escalate to electrical repair 	
	Inspect the area around the power key	<ul style="list-style-type: none"> If the Key On/Off is damaged, replace the Keyboard 	
	Inspect the Dome sheet area	<ul style="list-style-type: none"> Replace the Dome sheet 	
	If the issue is still not resolved→	<ul style="list-style-type: none"> Escalate to electrical repair 	

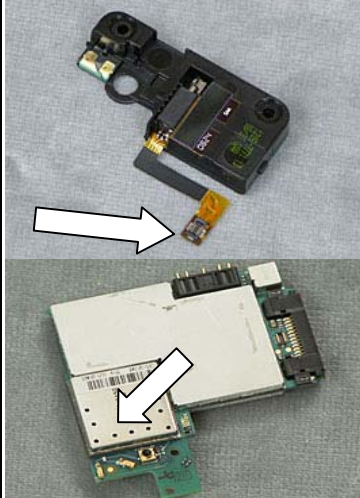

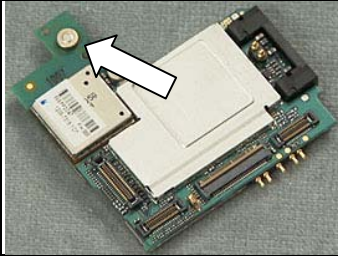
3 Network/Signal Problems

Problem Area	Items to Inspect	Repair Action	Inspection Reference
No Signal or Poor Signal	Before proceeding →	<ul style="list-style-type: none"> Ensure the correct SIM (GSM) or USIM (UMTS) is installed. See Test Instruction for details. 	
	Inspect antenna connectors	<ul style="list-style-type: none"> If dirty or oxidized – Clean the antenna connectors If damaged – Escalate to electrical repair 	
			
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the antenna main 	
	If the issue is still not resolved →	<ul style="list-style-type: none"> Escalate to electrical repair 	

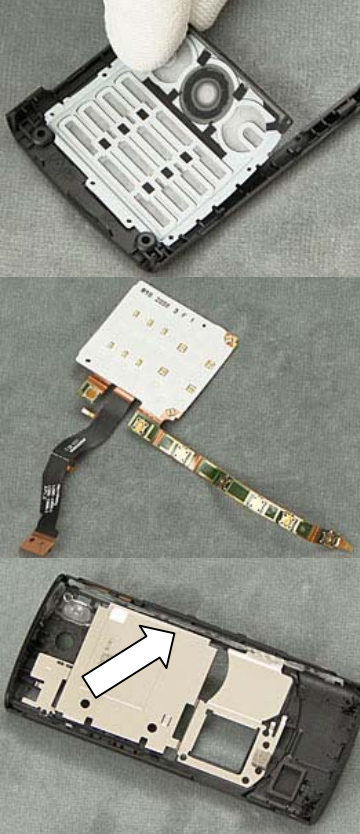

4 Audio Problems

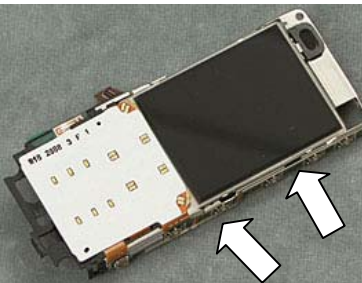
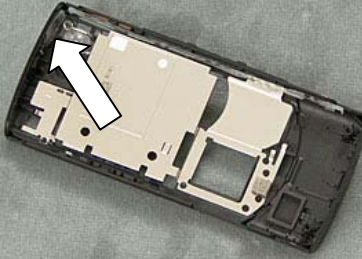

Problem Area	Items to Inspect	Repair Action	Inspection Reference
Ear Speaker: No sound or poor quality sound	Before proceeding → Inspect the Ear Speaker's external ports	<ul style="list-style-type: none"> Perform a setting reset If clogged – Clean the ports and Ear Speaker's dust cloth 	
	Inspect the Ear Speaker's dust cloth	<ul style="list-style-type: none"> If dirty – Clean If damaged – Replace the cloth 	
	Inspect the Ear Speaker connections	<ul style="list-style-type: none"> If dirty – Clean If damaged – Replace the ear speaker 	

Problem Area	Items to Inspect	Repair Action	Inspection Reference
	Inspect the Ear Speaker connections on the Carrier top assembly	<ul style="list-style-type: none"> • If dirty – Clean • If damage – Replace the carrier • Escalate to electrical repair for calibration 	
Rear Speaker: No sound or poor quality sound	Before proceeding →	<ul style="list-style-type: none"> • Perform a setting reset 	
	Inspect whether the rear speaker's external port is clogged	<ul style="list-style-type: none"> • If clogged – Clean the port 	
	Inspect whether the adhesive is placed.	<ul style="list-style-type: none"> • Place the adhesive 	

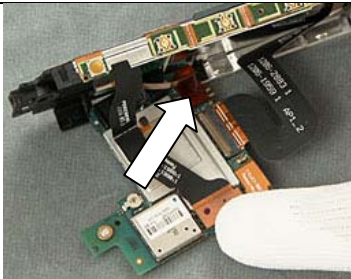
Problem Area	Items to Inspect	Repair Action	Inspection Reference
	Inspect BtB connectors	<ul style="list-style-type: none"> If dirty or oxidized – Clean the connectors If damaged – Escalate to electrical repair 	
	If the issue is still not resolved→	<ul style="list-style-type: none"> Escalate to electrical repair 	
Microphone:	Before proceeding →	<ul style="list-style-type: none"> Perform a setting reset 	
	Inspect the microphone's external port	<ul style="list-style-type: none"> If clogged – Clean the microphone's port hole 	
	Inspect the microphone	<ul style="list-style-type: none"> If dirty – Clean the microphone 	
	If the issue is still not resolved→	<ul style="list-style-type: none"> Escalate to electrical repair 	

5 Key Problems

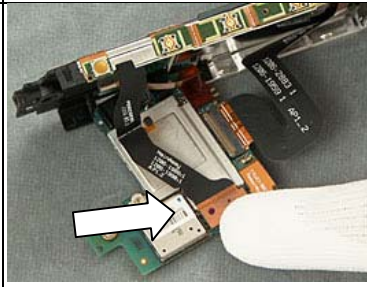
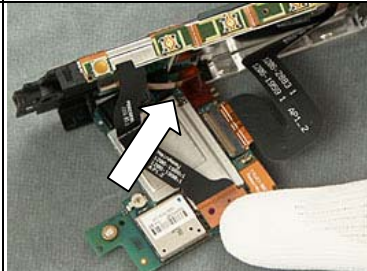
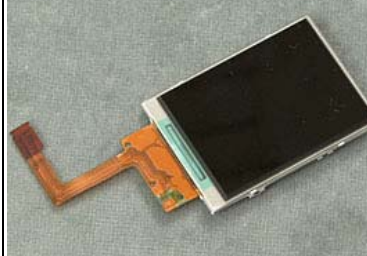
Problem Area	Items to Inspect	Repair Action	Inspection Reference
Keypad:	Inspect the area between the keyboard and the dome sheet assembly where the key is not functioning	<ul style="list-style-type: none"> If the keyboard is damaged, replace it 	
	If the issue is not resolved→	<ul style="list-style-type: none"> Replace the dome sheet 	
	If the issue is still not resolved→	<ul style="list-style-type: none"> Escalate to electrical repair 	
Volume key Camera key Music keys:	Inspect the key side	<ul style="list-style-type: none"> If dirty or damaged, replace the Back cover Assembly 	

Problem Area	Items to Inspect	Repair Action	Inspection Reference
	Inspect the key foil	<ul style="list-style-type: none"> If damaged - replace 	
	If the issue is still not resolved→	<ul style="list-style-type: none"> Escalate to electrical repair 	
Walkman key	Inspect the Walkman key	<ul style="list-style-type: none"> If dirty or damaged, replace the Back cover Assembly 	
	Inspect the key foil	<ul style="list-style-type: none"> If damaged - replace 	
	If the issue is still not resolved→	<ul style="list-style-type: none"> Escalate to electrical repair 	



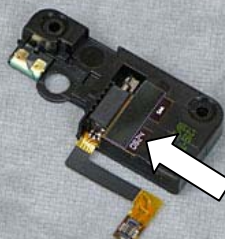
6 Main Display Problems

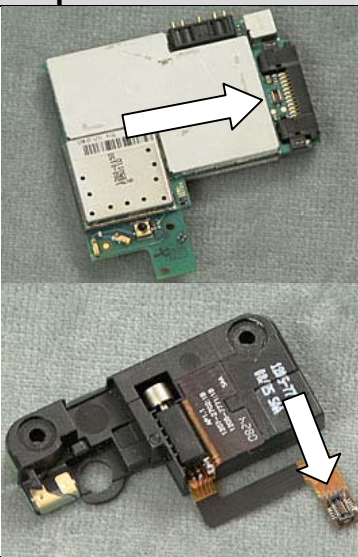
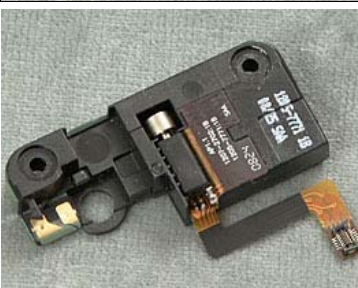
Problem Area	Items to Inspect	Repair Action	Inspection Reference
If display is not functioning	Check whether the phone vibrates when you press the power key	<ul style="list-style-type: none"> If activation of the vibrator is not detected, refer to the “Power Problems” section 	
	Inspect the display flex film’s connection to the display	<ul style="list-style-type: none"> If improperly connected – establish proper connection If dirty or oxidized – Clean both halves of the connection If the display’s portion of the connection is damaged – replace the Display. 	
	If the issue is still not resolved →	<ul style="list-style-type: none"> Escalate to electrical repair 	
Display is not Illuminating properly	Refer to the “Illumination Problems” section of this document		

7 Illumination Problems



Problem Area	Items to Inspect	Repair Action	Inspection Reference
Keypad Illumination:	Before proceeding →	<ul style="list-style-type: none"> Perform a setting reset 	
	Inspect the dome sheet flex film's connection to the display	<ul style="list-style-type: none"> If dirty or oxidized – Clean both halves of the connection If the portion of the connection on the Hinge flex is damaged – Replace the Dome sheet flex If the portion of the connection on the circuit board is damaged – Escalate to electrical repair 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Escalate to electrical repair 	
Main Display Illumination:	Before proceeding →	<ul style="list-style-type: none"> Perform a setting reset 	
	Inspect the display flex film's connection to the sub display	<ul style="list-style-type: none"> If improperly connected – establish proper connection If dirty or oxidized – Clean both halves of the connection If the display's portion of the connection is damaged – replace the Display 	 
	If the issue is still not resolved →	<ul style="list-style-type: none"> Escalate to electrical repair 	

8 Alert Problems

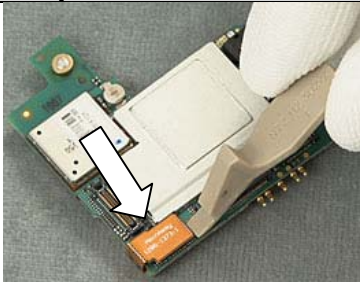
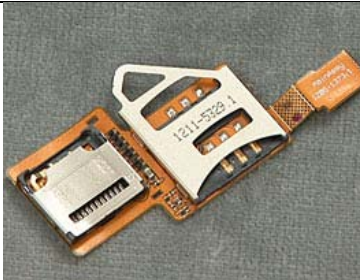
Problem Area	Items to Inspect	Repair Action	Inspection Reference
Vibrator:	Before proceeding →	<ul style="list-style-type: none"> Perform a setting reset 	
	If the issue is not resolved → Inspect the vibrator connections on the speaker box	<ul style="list-style-type: none"> If dirty or oxidized – Clean the connectors 	
	If the issue is not resolved →	<ul style="list-style-type: none"> Replace the vibrator 	
	If the issue is not resolved →	<ul style="list-style-type: none"> See rear speaker problems below 	
Rear speaker: No sound or poor quality sound	Before proceeding →	<ul style="list-style-type: none"> Perform a setting reset 	
	Inspect whether the rear speaker's external port is clogged	<ul style="list-style-type: none"> If clogged – Clean the port 	
	Inspect whether the adhesive is placed.	<ul style="list-style-type: none"> Place the adhesive 	

Problem Area	Items to Inspect	Repair Action	Inspection Reference
	Inspect BtB connectors	<ul style="list-style-type: none"> If dirty or oxidized – Clean the connectors If damaged – Escalate to electrical repair 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the speaker box 	
	If the issue is still not resolved →	<ul style="list-style-type: none"> Escalate to electrical repair 	


9 Charging/Capacity Problems

Problem Area	Items to Inspect	Repair Action	Inspection Reference
Phone is not charging properly	Inspect the battery connector	<ul style="list-style-type: none"> • If dirty or oxidized – Clean the connector's contact pins • If adhesive is detected on the contact pins – use an eraser to rub off the adhesive • If damaged – Escalate to electrical repair 	
	Inspect the system connector	<ul style="list-style-type: none"> • If dirty or oxidized – Clean the connector's contacts • If damaged – Escalate to electrical repair 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> • Escalate to electrical repair 	


10 SIM Problems

Problem Area	Items to Inspect	Repair Action	Inspection Reference
SIM undetected	Inspect the Memory/Sim PWB and circuit board connection	<ul style="list-style-type: none"> • If dirty or oxidized – Clean both halves of the connection • If the portion of the connection on the Memory/Sim PWB is damaged – Replace the Memory/Sim PWB • If the portion of the connection on the circuit board is damaged – Escalate to electrical repair 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> • Replace the PBA card reader 	
	If the issue is still not resolved →	<ul style="list-style-type: none"> • Escalate to electrical repair 	
Unit indicates the incorrect SIM is inserted	Before proceeding →	<ul style="list-style-type: none"> • Ensure the correct SIM (GSM) or USIM (UMTS) is installed. See Test Instruction for details. 	
	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 	


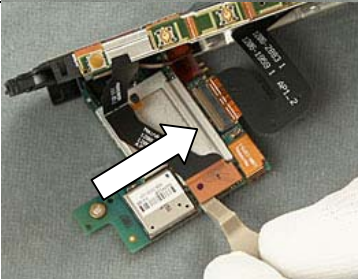
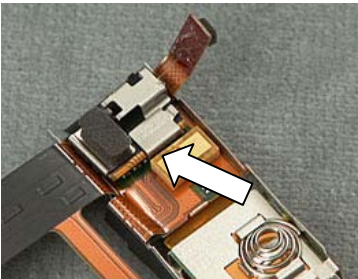
11 Data Transfer Problems using a Data Cable

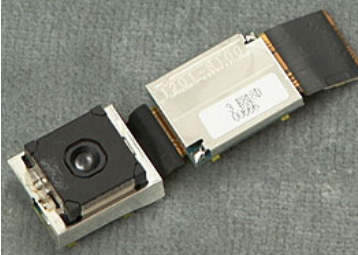
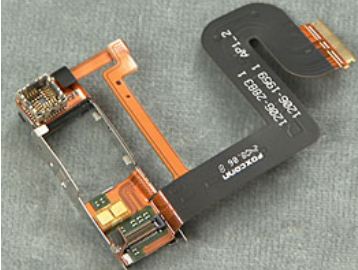
Problem Area	Items to Inspect	Repair Action	Inspection Reference
Problem transferring data using a direct connection	Inspect the system connector	<ul style="list-style-type: none"> If dirty or oxidized – Clean the connector's contacts 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Escalate to electrical repair 	

12 Hands-Free Problems



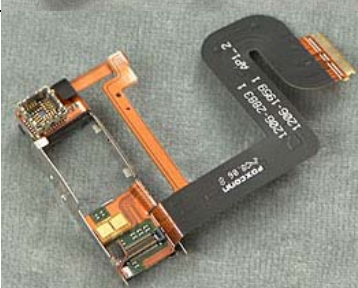

Problem Area	Items to Inspect	Repair Action	Inspection Reference
Hands-free not working	Inspect the system connector	<ul style="list-style-type: none"> If dirty or oxidized – Clean the connector's contacts 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Escalate to electrical repair 	

13 Rear Camera Problems

Problem Area	Items to Inspect	Repair Action	Inspection Reference
Lines or marks in picture	Visually inspect the rear camera window	<ul style="list-style-type: none"> If dirty – Clean the rear camera window If scratched or damaged – Replace the back cover assembly 	
	Inspect the Carrier top flex assembly connection to the circuit board and to the Carrier top assembly	<ul style="list-style-type: none"> If either connection is improperly connected – Reestablish proper connection If one or both of the connections is dirty or oxidized – Clean both halves of the connection(s) If the carrier top flex assembly connections on the circuit board is damaged – Send to a repair location allowed to perform electrical repairs on this product 	 

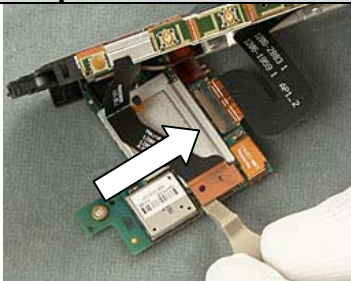
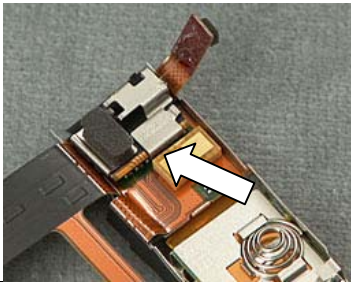
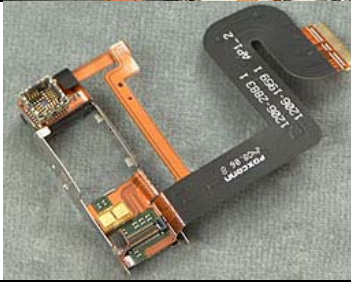
Problem Area	Items to Inspect	Repair Action	Inspection Reference
	Inspect the rear camera	<ul style="list-style-type: none"> Replace the Rear camera 	
		<ul style="list-style-type: none"> Replace the Carrier top assembly Escalate to electrical repair for calibration 	
Will not capture an image	To determine whether or not the problem is with the camera key, try capturing an image by pressing the navigation key	<ul style="list-style-type: none"> If pressing the navigation key does take a picture – Perform the steps listed in the camera key portion of the “Key Problems” section If pressing the navigation key does not take a picture– Perform the inspect/repair procedures in this section. 	
	If the issue is still not resolved→	<ul style="list-style-type: none"> Escalate to electrical repair 	

14 Video Call Camera Problems

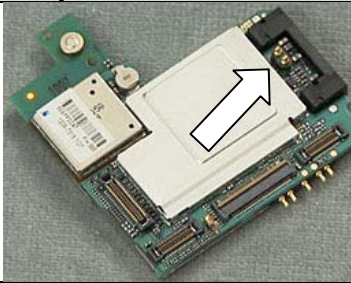
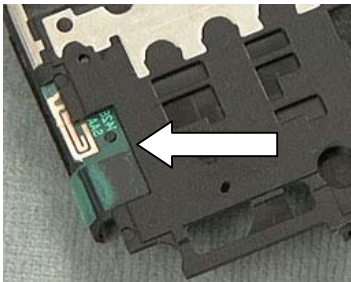
Problem Area	Items to Inspect	Repair Action	Inspection Reference
Lines or marks in picture or not see image when in video call mode	Visually inspect the front camera's window	<ul style="list-style-type: none"> • If dirty – Clean the front camera's window • If scratched or damaged – Replace the front cover • Check the carrier top flex connections to the circuit board as in the previous chapter. • 	 
	If the issue has not been resolved →	<ul style="list-style-type: none"> • Check the carrier top flex connections to the circuit board as in the previous chapter, if any damage on the flex – Replace the carrier 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> • Replace Camera QCIF Mpixel CMOS • Escalate to electrical repair for calibration 	

Problem Area	Items to Inspect	Repair Action	Inspection Reference


15 Flash LED Problems

Problem Area	Items to Inspect	Repair Action	Inspection Reference
Flash LED not working	Inspect the Carrier top flex assembly connection to the circuit board and to the Carrier top assembly	<ul style="list-style-type: none"> If either connection is improperly connected – Reestablish proper connection If one or both of the connections is dirty or oxidized – Clean both halves of the connection(s) 	 
		<ul style="list-style-type: none"> Replace the Carrier top assembly 	
	If the issue is still not resolved→	<ul style="list-style-type: none"> Escalate to electrical repair 	

16 Bluetooth Problems

Problem Area	Items to Inspect	Repair Action	Inspection Reference
Will not connect with a functional Bluetooth device	Inspect Bluetooth antenna-to-board spring connectors	<ul style="list-style-type: none"> If dirty or oxidized – Clean the Bluetooth antenna-to-board spring connectors If damaged – Escalate to electrical repair 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the Bluetooth antenna 	
	If the issue is still not resolved →	<ul style="list-style-type: none"> Escalate to electrical repair 	

17 FM Radio Problems

Problem Area	Items to Inspect	Repair Action	Inspection Reference
FM Radio not working	Perform the following action →	<ul style="list-style-type: none"> If the system connector is dirty or oxidized, clean it If the system connector is damaged, escalate to an electrical repair level 	
	If the issue is not resolved →	<ul style="list-style-type: none"> Escalate to an electrical repair level 	

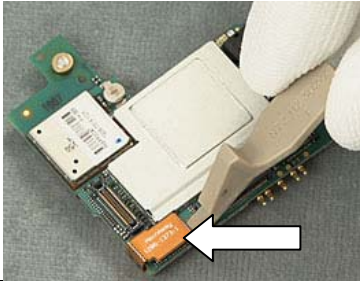
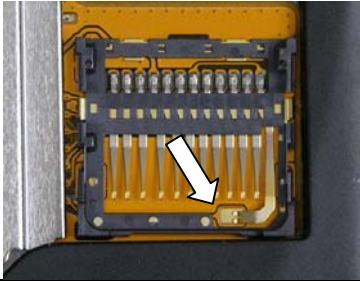
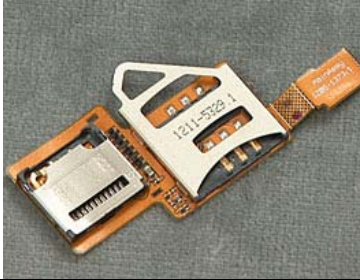
18 Accelerometer Problems

Problem Area	Items to Inspect	Repair Action	Inspection Reference
Accelerometer not working properly	If the issue is still not resolved→	<ul style="list-style-type: none"> Escalate to electrical repair 	

19 Real Time Clock Problems

Problem Area	Items to Inspect	Repair Action	Inspection Reference
Real Time Clock not working properly	If the issue is still not resolved→	<ul style="list-style-type: none"> Escalate to electrical repair 	

20 Memory Card Problem

Problem Area	Items to Inspect	Repair Action	Inspection Reference
Memory Card Not Detected	Check with Memory Card KDR 109 171/512		
	Inspect the BtB flex connection to the circuit board.	<ul style="list-style-type: none"> If either connection is improperly connected – Reestablish proper connection 	
	Inspect the position of the detection finger	<ul style="list-style-type: none"> If it's not centered over the receiver pad – Center it 	
	If the issue is still not resolved→	<ul style="list-style-type: none"> Replace the PBA Card reader 	
	If the issue is still not resolved→	<ul style="list-style-type: none"> Escalate to electrical repair 	

21 Revision History

Rev.	Date	Changes / Comments
1	2008-08-22	Initial release
2	2008-11-24	Updated in memory card problem
3	2009-02-19	Updated with escalation instructions for Carrier Top Assembly