



Trouble Shooting Guide, Mechanical

Applicable for S302

Contents

1	General	2
	o Service functions in the software	3
	o Misuse and other no warranty issues	4
2	Liquid Damage Inspection.....	5
3	Appearance Problems.....	6
4	Power Problems.....	7
5	Network/Signal Problems.....	9
6	Audio Problems.....	10
	Receiver:.....	10
	Speaker:	12
	Microphone:	14
7	Key Problems.....	15
	Keypad:.....	15
	Sidekey:	16
	Sidekey Photo:.....	17
8	Display Problems	18
9	Illumination Problems.....	19
	Keypad Illumination: The entire Keypad will not illuminate	19
	Keypad Illumination: A portion of the Keypad does not illuminate	19
	Display Illumination:.....	20
10	Alert Problems.....	21
	Vibrator:	21
	Rear speaker:	21
11	Charging/Capacity Problems	24
12	SIM Problems.....	26
13	Data Transfer Problems using a Data Cable	27
14	Hands-Free Problems	27
15	Camera Problems	28
16	Revision History	30

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 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

Vibrator

Camera

Flash LED

Memory Stick

FM Radio

Real time clock





Total call time


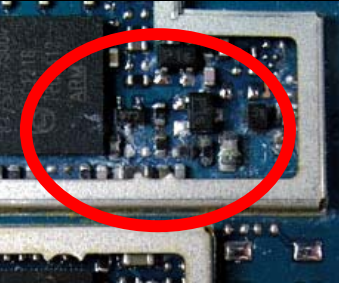
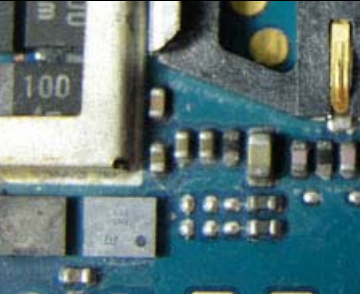
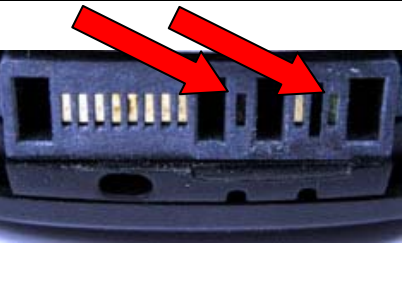
NOTE: Different names may occur depending on language setting and customization.

○ 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.

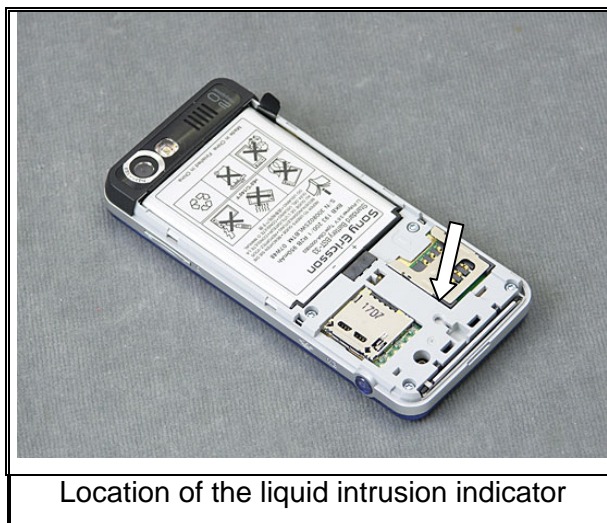
Below are some **examples** of damage due to misuse that are not covered by warranty.

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

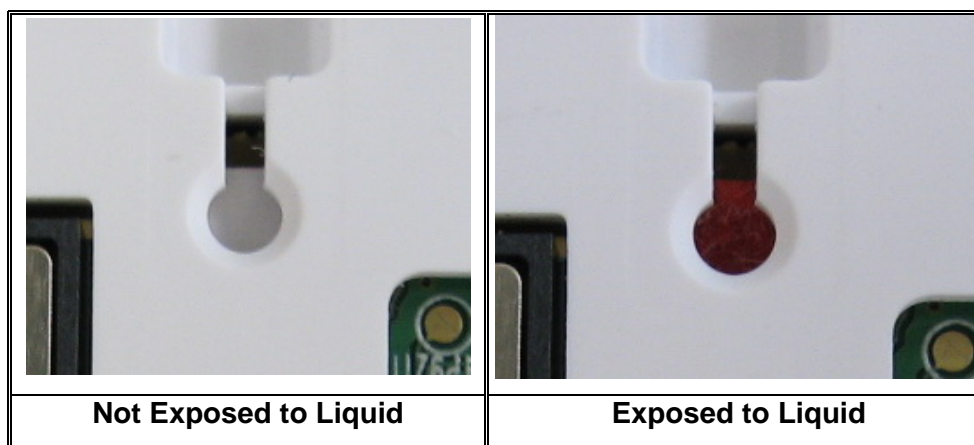
			
Corrosion components on the PCB.	Corrosion components on the PCB.	Components damaged by liquid	System connector damaged by liquid

2 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.




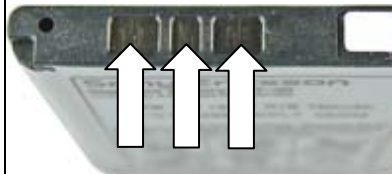
The following pictures show the difference between an indicator that has been in contact with liquid and one that has not.




3 Appearance Problems

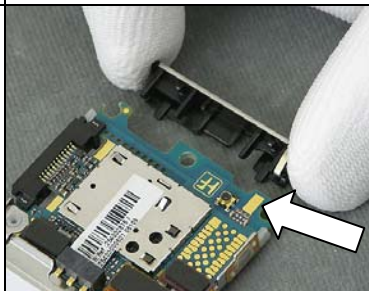


Problem Area	Items to Check	Repair Action	Reference Image
Appearance	Visually inspect the cosmetic quality of all user viewable surfaces	<ul style="list-style-type: none"> If dirty – Clean parts as necessary. If unacceptably scratched or damaged – Replace damage parts as necessary. <p>NOTE: Misuse is 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 if 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 if necessary. 	

4 Power Problems



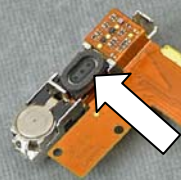
Problem Area	Items to Inspect	Repair Action	Inspection Reference
Unit will not Power On or switch off spontaneous	Check whether the phone vibrates when you press the power key	If activation of the Vibrator is detected, refer to the “Display Problems” section	
	Before proceeding →	<ul style="list-style-type: none"> Perform a flash upgrade. 	
	Inspect Battery Connector	<ul style="list-style-type: none"> If dirty – Clean the connector’s contact pins If adhesive is detected on the contact pins – use an eraser to rub off the adhesive If damaged or oxidized– Send to a repair location allowed to perform electrical repairs on this product 	
	Visually inspect contact pads on battery	<ul style="list-style-type: none"> If dirty – Clean pads. If damaged or oxidized – Replace the battery. 	

Problem Area	Items to Inspect	Repair Action	Inspection Reference
	Inspect the area between the power key portion of the Keypad and the Metal Dome	<ul style="list-style-type: none"> If the Keypad is damaged, replace it Replace the Metal dome 	
	If the issue is still not resolved→	<ul style="list-style-type: none"> Send to a repair location allowed to perform electrical repairs on this product 	

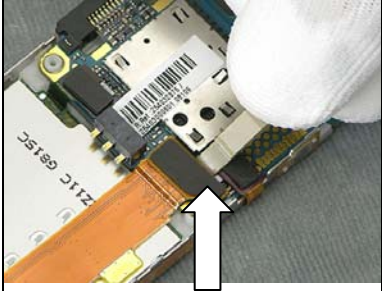
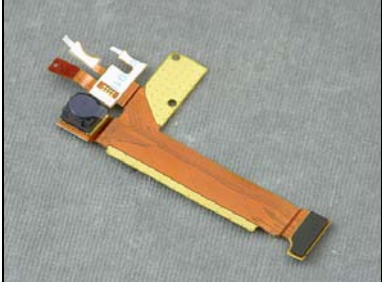
5 Network/Signal Problems

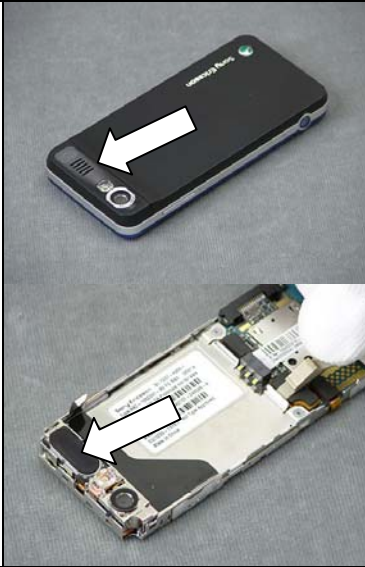
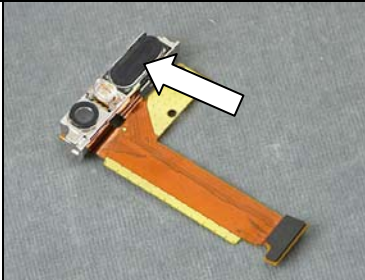
Problem Area	Items to Inspect	Repair Action	Inspection Reference
No Signal or Poor Signal	Before proceeding →	<ul style="list-style-type: none"> Ensure the correct SIM (GSM) or USIM (UMTS) is installed. See Test Instruction for details. 	
	Inspect antenna-to-board spring connectors	<ul style="list-style-type: none"> If dirty – Clean the antenna-to-board spring connectors If damaged or oxidized – Send to a repair location allowed to perform electrical repairs on this product 	
	<ul style="list-style-type: none"> Visually inspect SIM holder 	<ul style="list-style-type: none"> If dirty – Clean it. If damaged or oxidized – Replace the SIM/M2 PBA Assy 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the Antenna Assy 	
	If the issue is still not resolved→	<ul style="list-style-type: none"> Send to a repair location allowed to perform electrical repairs on this 	

6 Audio Problems

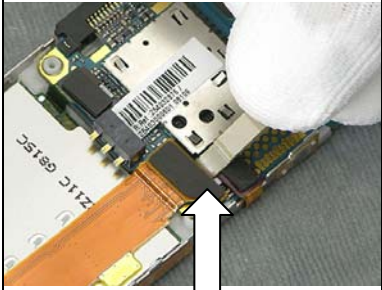
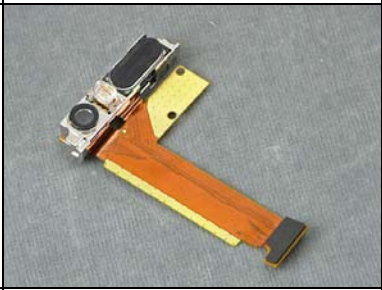
Problem Area	Items to Inspect	Repair Action	Inspection Reference
Receiver: No sound or poor quality sound	Before proceeding →	<ul style="list-style-type: none"> Perform a Software update content refresh 	
	Inspect the Receiver's external holes	<ul style="list-style-type: none"> If clogged – Clean the holes to the receiver. If clogged – Clean the receiver dustnet If damaged – replace the Metal Frame 	 
	Inspect the Receiver	<ul style="list-style-type: none"> If dirty – Clean the contact springs of receiver If damaged – Replace the receiver 	





Problem Area	Items to Inspect	Repair Action	Inspection Reference
	Inspect the btb connector where the Camera Flex Assy connects to the PBA	<ul style="list-style-type: none">• If either connection is improperly connected – Reestablish proper connection• If any portion on the camera assembly flex film is damaged – replace the Camera Flex Assy• If the Camera Flex Assy connection on the circuit board is damaged – Send to a repair location allowed to perform electrical repairs on this product	
	If the issue has not been resolved →	<ul style="list-style-type: none">• Replace the Camera Flex Assy, if it has not been replaced	
	If the issue is still not resolved →	<ul style="list-style-type: none">• Send to a repair location allowed to perform electrical repairs on this product	

Speaker: No sound or poor quality sound	Before proceeding →	<ul style="list-style-type: none"> Perform a Software update content refresh 	
	Inspect whether the rear Speaker's external port is clogged	<ul style="list-style-type: none"> If clogged – Clean the port and rear Speaker cloth If damaged – replace the Camera Cover 	
	Inspect the Speaker	<ul style="list-style-type: none"> If dirty – Clean the contact springs If damaged – Replace the Speaker 	

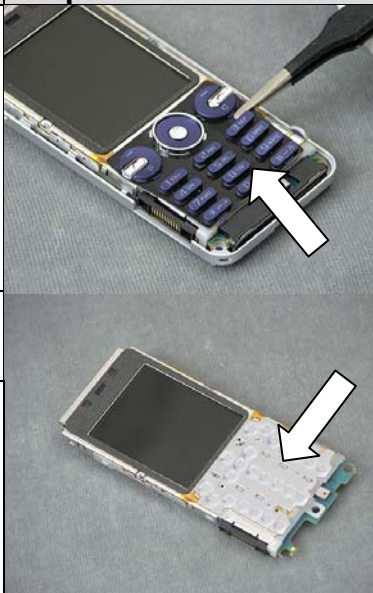
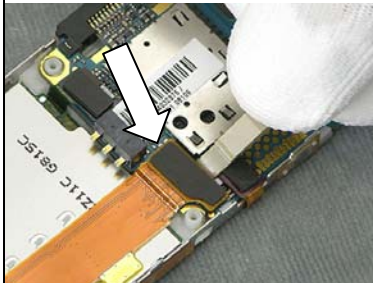


	Inspect the btb connector where the Camera Flex Assy connects to the PBA	<ul style="list-style-type: none">• If either connection is improperly connected – Reestablish proper connection• If any portion on the camera assembly flex film is damaged – replace the Camera Flex Assy• If the Camera Flex Assy connection on the circuit board is damaged – Send to a repair location allowed to perform electrical repairs on this product	
	If the issue has not been resolved →	<ul style="list-style-type: none">• Replace the Camera Flex Assy, if it has not been replaced	
	If the issue is still not resolved →	<ul style="list-style-type: none">• Send to a repair location allowed to perform electrical repairs on this product	



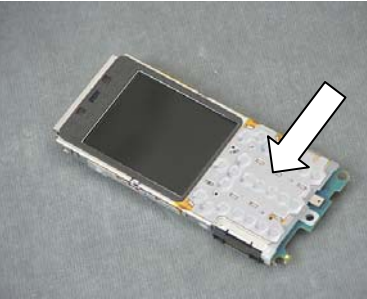


Microphone:	Before proceeding →	<ul style="list-style-type: none">• Perform a Software update content refresh	
	Inspect the Microphone's external port	<ul style="list-style-type: none">• If clogged –Clean the Microphone's port hole	
	Inspect the Mic Gasket	<ul style="list-style-type: none">• If dirty – Clean the Mic Gasket• If damaged – Send to a repair location allowed to perform electrical repairs on this product	
	If the issue is still not resolved→	<ul style="list-style-type: none">• Send to a repair location allowed to perform electrical repairs on this product	

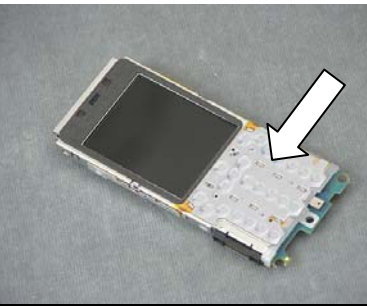

7 Key Problems

Problem Area	Items to Inspect	Repair Action	Inspection Reference
Keypad: A key on the Keypad is not functioning or is intermittent	Inspect the area between the Keypad and the Dome Foil where the key is not functioning	<ul style="list-style-type: none"> If the Keypad is damaged, replace it 	
	If the issue is not resolved→	<ul style="list-style-type: none"> Replace the Dome Foil 	
	If the issue is still not resolved→	<ul style="list-style-type: none"> Send to a repair location allowed to perform electrical repairs on this product 	
Entire Keypad or a portion of the Keypad is not functioning or is intermittent	Inspect the Dome Foil to circuit board connection	<ul style="list-style-type: none"> If the connector is improperly connected – Reestablish proper connection If the connection is dirty – Clean both halves of the connection If the Dome Foil half of the connection is damaged – replace the Dome Foil If the half of the connection on the circuit board is damaged – Send to a repair location allowed to perform electrical repairs on this product 	

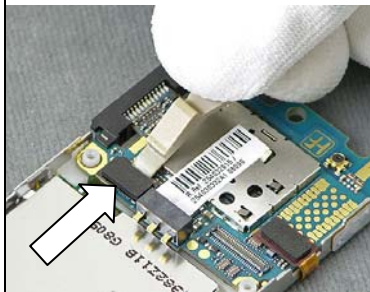
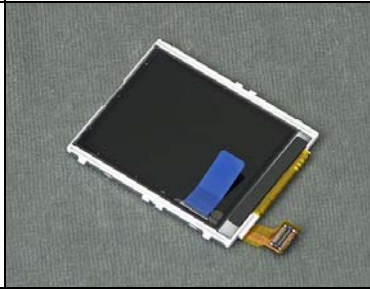


Problem Area	Items to Inspect	Repair Action	Inspection Reference
	If the issue is not resolved→	<ul style="list-style-type: none">Replace the Dome Foil	
	If the issue is still not resolved→	<ul style="list-style-type: none">Send to a repair location allowed to perform electrical repairs on this product	
Sidekey:	Inspect the Key Volume	<ul style="list-style-type: none">If dirty or damaged, replace the Key Volume	
	Inspect the volume switch on the Dome Foil	<ul style="list-style-type: none">If damaged, replace the Dome Foil	

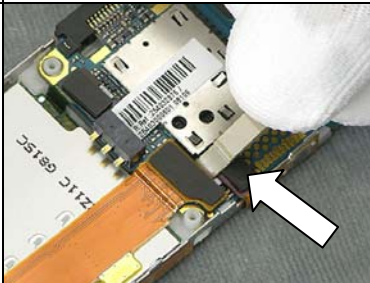




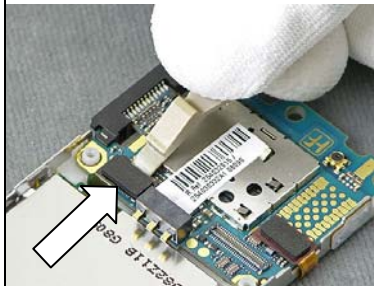

Problem Area	Items to Inspect	Repair Action	Inspection Reference
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the Dome Foil if it has not already been replaced 	
	If the issue is still not resolved→	<ul style="list-style-type: none"> Send to a repair location allowed to perform electrical repairs on this product 	
Sidekey Photo:	Inspect the area between the Sidekey Photo and the Dome Foil	<ul style="list-style-type: none"> If the Sidekey Photo is damaged, replace it If the Sidekey Photo portion of the Dome Foil is damaged, replace the Dome Foil 	
	If the issue is not resolved→	<ul style="list-style-type: none"> Replace the Dome Foil, if it has not already been replaced 	
	If the issue is still not resolved→	<ul style="list-style-type: none"> Send to a repair location allowed to perform electrical repairs on this product 	

8 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 LCD Assy btb connection to the circuit board	<ul style="list-style-type: none"> If improperly connected – establish proper connection If dirty – Clean both halves of the connection If the display’s portion of the connection is damaged or oxidized – replace the LCD Assy If the portion of the connection on the circuit board is damaged – Send to a repair location allowed to perform electrical repairs on this product 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the LCD Assy if it has not been replaced 	
	If the issue is still not resolved →	<ul style="list-style-type: none"> Send to a repair location allowed to perform electrical repairs on this product 	
Display is not Illuminating properly	Refer to the “Illumination Problems” section of this document		

9 Illumination Problems

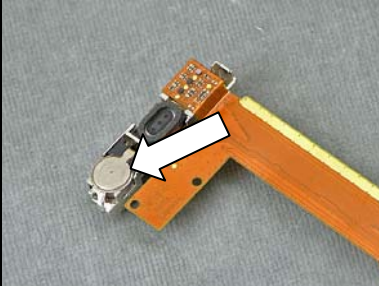
Problem Area	Items to Inspect	Repair Action	Inspection Reference
Keypad Illumination: The entire Keypad will not illuminate	Before proceeding →	<ul style="list-style-type: none"> Perform a Software update content refresh 	
	Inspect both halves of the Dome foil to circuit board connection	<ul style="list-style-type: none"> If dirty or oxidized – Clean both halves of the connection If the portion of the connection on the Dome Foil is damaged – Replace the Dome Foil If the portion of the connection on the circuit board is damaged – Send to a repair location allowed to perform electrical repairs on this product 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the Dome Foil, if it has not been replaced 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Send to a repair location allowed to perform electrical repairs on this product 	
Keypad Illumination: A portion of the Keypad does not	Perform the following action →	<ul style="list-style-type: none"> Replace the Dome Foil 	

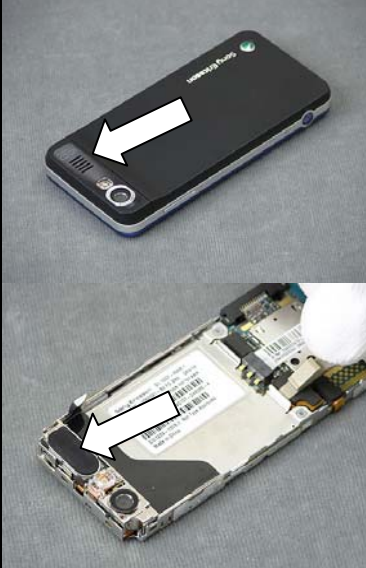

Problem Area	Items to Inspect	Repair Action	Inspection Reference
illuminate	If the issue has not been resolved →	<ul style="list-style-type: none"> Send to a repair location allowed to perform electrical repairs on this product 	
Display Illumination:	Before proceeding →	<ul style="list-style-type: none"> Perform a Software update content refresh 	
	Inspect the LCD Assy btb connection to the circuit board	<ul style="list-style-type: none"> If improperly connected – establish proper connection If dirty or oxidized – Clean both halves of the connection If the LCD Assy portion of the connection is damaged – replace the LCD Assy If the portion of the connection on the circuit board is damaged – Send to a repair location allowed to perform electrical repairs on this product 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the LCD Assy if it has not been replaced 	



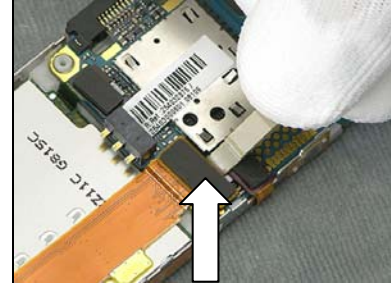

Problem Area	Items to Inspect	Repair Action	Inspection Reference
	If the issue is still not resolved →	<ul style="list-style-type: none"> Send to a repair location allowed to perform electrical repairs on this product 	

10 Alert Problems



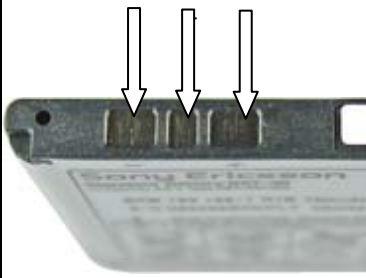
Problem Area	Items to Inspect	Repair Action	Inspection Reference
Vibrator:	Before proceeding →	<ul style="list-style-type: none"> Perform a Software update content refresh 	
	Inspect the connection where the Vibrator connects to the Camera Flex Assy	<ul style="list-style-type: none"> If the connection is dirty – clean both sides of the connection If any spring of the Vibrator is damaged or oxidized– replace the Vibrator 	
	If the issue is not resolved →	<ul style="list-style-type: none"> Send to a repair location allowed to perform electrical repairs on this product 	
Rear speaker: No sound or poor	Before proceeding →	<ul style="list-style-type: none"> Perform a Software update content refresh 	


Problem Area	Items to Inspect	Repair Action	Inspection Reference
quality sound	Inspect whether the rear Speaker's external port is clogged	<ul style="list-style-type: none"> • If clogged – Clean the port and rear Speaker cloth • If damaged – Replace the Camera Cover 	
	Inspect the rear Speaker cloth	<ul style="list-style-type: none"> • If dirty – Clean • If damaged – Replace the Camera Flex Assy 	





Problem Area	Items to Inspect	Repair Action	Inspection Reference
	Inspect the two Camera Flex Module connections to the circuit board	<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 any portion on the Camera Flex Assy flex film is damaged – replace the Camera Flex Module• If either of the Camera Flex Assy connections on the circuit board is damaged – Send to a repair location allowed to perform electrical repairs on this product	
	If the issue has not been resolved →	<ul style="list-style-type: none">• Replace Camera Flex Assy if it has not already been replaced	
	If the issue is still not resolved→	<ul style="list-style-type: none">• Send to a repair location allowed to perform electrical repairs on this product	

11 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 – Clean the connector's contact pins If adhesive is detected on the contact pins – use an eraser to rub off the adhesive If damaged or oxidized – Send to a repair location allowed to perform electrical repairs on this product 	
	Inspect the system connector	<ul style="list-style-type: none"> If dirty – Clean the connector's contacts If damaged or oxidized – Send to a repair location allowed to perform electrical repairs on this product 	
	Visually inspect the contact pads of the battery	<ul style="list-style-type: none"> If dirty – Clean. If damaged or oxidized – Replace battery. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Send to a repair location allowed to perform electrical repairs on this product 	

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 and), or Bluetooth.	<ul style="list-style-type: none"> Perform a flash upgrade and a Software update content refresh. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace battery. 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Handle the unit according to local directives. 	


12 SIM Problems

Problem Area	Items to Inspect	Repair Action	Inspection Reference
SIM undetected	Inspect the SIM M2 Holder	<ul style="list-style-type: none"> If dirty– Clean. If damaged or oxidized – Replace the SIM/M2 PBA Assy 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the SIM/M2 PBA Assy , if it has not been replaced 	
	If the issue is still not resolved →	<ul style="list-style-type: none"> Send to a repair location allowed to perform electrical repairs on this product 	
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 	



13 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"> Send to a repair location allowed to perform electrical repairs on this product 	

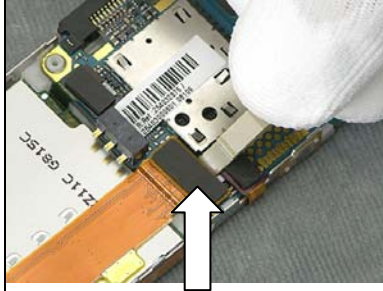
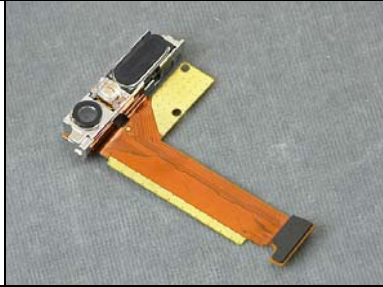
14 Hands-Free Problems

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"> Send to a repair location allowed to perform electrical repairs on this product 	

15 Camera Problems

Problem Area	Items to Inspect	Repair Action	Inspection Reference
Lines or marks in picture	Visually inspect the camera window	<ul style="list-style-type: none"> If dirty – Clean the camera window on the Camera Cover If scratched or damaged – Replace the Camera window 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the Camera Flex Assy 	
	If the issue is still not resolved →	<ul style="list-style-type: none"> Send to a repair location allowed to perform electrical repairs on this product 	
Will not capture an image	To determine whether or not the problem is with the Key Camera, 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 Key Camera portion of the “Key Problems” section If pressing the navigation key does not take a picture– Perform the remaining inspect/repair procedures in this section. 	



Problem Area	Items to Inspect	Repair Action	Inspection Reference
	Inspect the Camera Flex Module connection to the circuit board	<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 any portion on the Camera Flex Assy flex film is damaged – replace the Camera Flex Assy• If either of the Camera Flex Assy connections on the circuit board is damaged – Send to a repair location allowed to perform electrical repairs on this product	
	If the issue has not been resolved →	<ul style="list-style-type: none">• Replace Camera Flex Assy if it has not already been replaced	
	If the issue is still not resolved →	<ul style="list-style-type: none">• Send to a repair location allowed to perform electrical repairs on this product	



16 Revision History

Rev.	Date	Changes / Comments
1	2008-10-13	Initial Release