

Trouble Shooting Guide, Mechanical

Applicable for Z520a, Z520i, and Z520c

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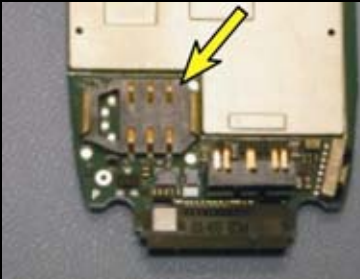

1 General


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 the Mechanical Test Instructions for details regarding inspecting for liquid damage and upgrading software.


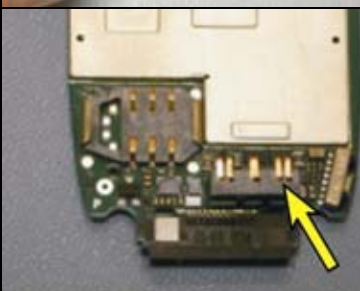
NOTE! If all of the repair actions listed in this document for addressing a problem have been preformed and a unit still is not working, handle the unit according to your local company directives.


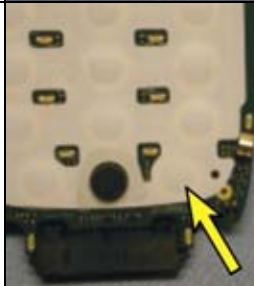
2 Network/Signal Problems

Problem Area	Items to Check	Repair Action	Reference Image
No Signal or Poor Signal	Inspect SIM holder	<ul style="list-style-type: none"> If dirty or oxidized – Clean If damaged – Send to an electrical repair location 	
	Inspect antenna-to-board connectors	<ul style="list-style-type: none"> If dirty or oxidized – Clean the antenna-to-board connectors and replace the antenna assembly If damaged – Send to an electrical repair location 	




Problem Area	Items to Check	Repair Action	Reference Image
No Signal or Poor Signal (Cont.)	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the antenna assembly 	

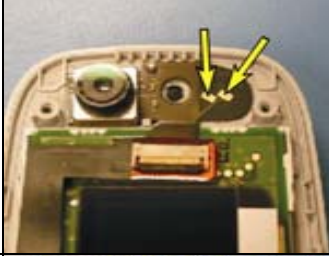
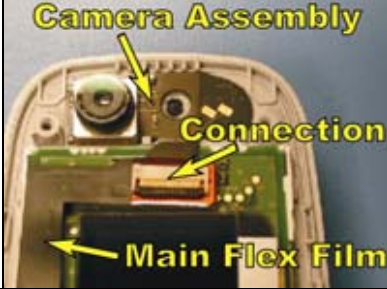


3 Power Problems





Problem Area	Items to Check	Repair Action	Reference Image
Unit will not Power On	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 and keypad are detected, refer to the “Display Problems” section 	
	Visually inspect contact pads on battery	<ul style="list-style-type: none"> If dirty or oxidized – Clean pads If damaged – Replace battery 	
	Visually inspect battery connector	<ul style="list-style-type: none"> If dirty or oxidized – Clean If damaged – Send to an electrical repair location 	

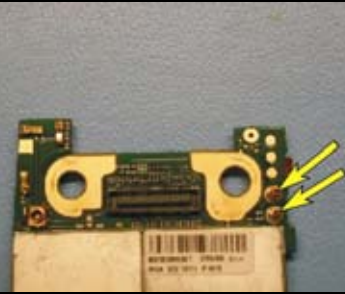
Problem Area	Items to Check	Repair Action	Reference Image
Unit will not Power On (Cont.)	Visually inspect the power key portion of the keypad for debris or damage	<ul style="list-style-type: none"> • If dirty – Clean • If damaged – Replace keypad 	
	Visually inspect the power contact portion of the dome foil	<ul style="list-style-type: none"> • If dirty – Clean • If damaged – Replace dome foil 	
	If the issue has not been resolved→	<ul style="list-style-type: none"> • Replace the keypad and the dome foil, if they have not already been replaced 	

4 Audio Problems


Problem Area	Items to Check	Repair Action	Reference Image
Microphone:	Before proceeding →	<ul style="list-style-type: none"> Perform a setting reset 	 
	Visually inspect the microphone's external port	<ul style="list-style-type: none"> If clogged - clean port opening in keypad 	
	Visually inspect the microphone's dust cloth	<ul style="list-style-type: none"> If dirty or damaged - Send to an electrical repair location 	
Flip Speaker: No sound or poor quality sound	Before proceeding →	<ul style="list-style-type: none"> Perform a setting reset 	
	Visually inspect the flip speaker's external port	<ul style="list-style-type: none"> If clogged – Replace the inner flip cover 	

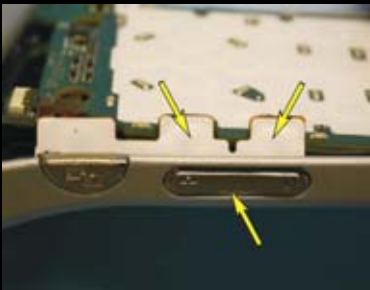
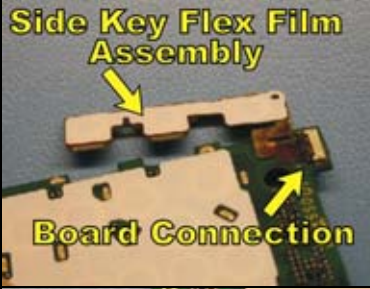

Problem Area	Items to Check	Repair Action	Reference Image
No sound or poor quality sound (Cont.)	Visually inspect the flip speaker's contact pads on the camera module's flex film	<ul style="list-style-type: none"> If dirty - Clean pads If damaged - Replace camera module 	
	Visually inspect whether camera module's flex film connection is properly connected to its connector on the main flex film	<ul style="list-style-type: none"> If improperly connected - Reestablish proper connection 	
	Visually inspect the connection pads on the camera module's flex film and the corresponding connector on the main flex film	<ul style="list-style-type: none"> If dirty or oxidized – Clean all pads and contacts that are part of this connection If connection pads of the camera module are damaged – Replace the camera module If the connector on the main flex film is damaged – Replace the main flex film assembly 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace flip speaker 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the camera module and the main flex film, if they have not been replaced 	

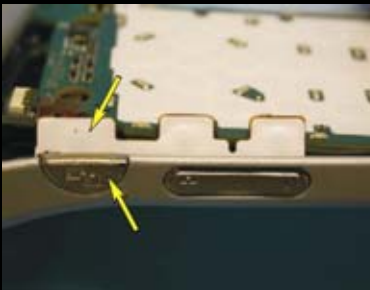
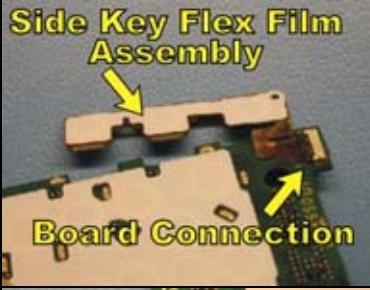

Problem Area	Items to Check	Repair Action	Reference Image
Base Speaker: No sound or poor quality sound	Before proceeding →	<ul style="list-style-type: none"> Perform a setting reset 	
	Visually inspect whether the base speaker's external port is clogged	<ul style="list-style-type: none"> If clogged – clean speaker port opening in outer base cover 	
	Visually inspect the base speaker's dust cloth	<ul style="list-style-type: none"> If dirty or damaged - Replace dust cloth 	
	Visually inspect base speaker assembly (including flex film connection pads)	<ul style="list-style-type: none"> If damaged - Replace base speaker assembly 	 <p>Base Speaker Assembly</p>  <p>Connection Pads on Base Speaker Flex Film</p>

Problem Area	Items to Check	Repair Action	Reference Image
No sound or poor quality sound (Cont.)	Visually inspect the base speaker connection springs on the circuit board	<ul style="list-style-type: none"> If dirty or oxidized – Clean both springs and their corresponding connection pads If damaged – Send to an electrical repair location 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the base speaker assembly if it has not already been replaced 	


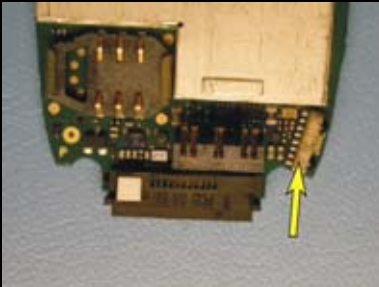
5 Key Problems

Problem Area	Items to Check	Repair Action	Reference Image
Keypad: A key on the keypad is not functioning or is intermittent	Visually inspect for debris between and/or damage to the keypad and the dome foil.	<ul style="list-style-type: none">• If dirty – Clean both parts• If damaged - Replace keypad and/or dome foil as necessary	
	If issue has not been resolved →	<ul style="list-style-type: none">• Replace the dome foil, if it has not already been replaced	
Navigation Key:	Refer to “Keypad” section under “Key Problems”		

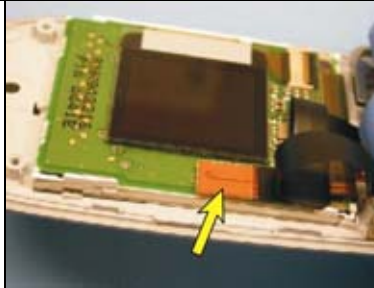


Problem Area	Items to Check	Repair Action	Reference Image
Volume keys:	Visually inspect for debris between and/or damage to the volume key and the side key flex film assembly.	<ul style="list-style-type: none"> • If dirty – Clean both parts • If damaged - Replace the volume key and/or the side key flex film assembly as necessary 	
	Visually inspect whether the side key flex film assembly is properly connected to its connector on the circuit board	<ul style="list-style-type: none"> • If improperly connected - Reestablish proper connection 	
	Visually inspect the connection pads of the side key flex film assembly and the corresponding board connector	<ul style="list-style-type: none"> • If dirty or oxidized – Clean all pads and contacts that are part of this connection • If the pads of side key flex film assembly are damaged - Replace the side key flex film assembly • If the board connector is damaged - Send to an electrical repair location 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> • Replace the side key flex film assembly if it has not already been replaced 	


Problem Area	Items to Check	Repair Action	Reference Image
Camera key:	Visually inspect for debris between and/or damage to the camera key and the side key flex film assembly.	<ul style="list-style-type: none"> • If dirty – Clean both parts • If damaged - Replace the camera key and/or the side key flex film assembly as necessary 	
	Visually inspect whether the side key flex film assembly is properly connected to its connector on the circuit board	<ul style="list-style-type: none"> • If improperly connected - Reestablish proper connection 	
	Visually inspect the connection pads of the side key flex film assembly and the corresponding board connector	<ul style="list-style-type: none"> • If dirty or oxidized – Clean all pads and contacts that are part of this connection • If the pads of side key flex film assembly are damaged – Replace the side key flex film assembly • If the board connector is damaged - Send to an electrical repair location 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> • Replace the side key flex film assembly if it has not already been replaced 	

6 IR Problems

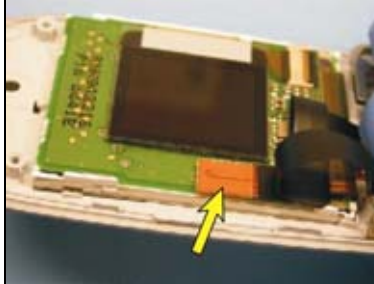

Problem Area	Items to Check	Repair Action	Reference Image
Will not connect with a functional IR device	Inspect the IR window for dirt, scratches, and damage	<ul style="list-style-type: none"> • If dirty – Clean • If damaged – Replace outer base cover 	
	Inspect the IR transceiver	<ul style="list-style-type: none"> • If dirty – Clean • If damaged - Send to an electrical repair location 	

7 Display Problems



Problem Area	Items to Check	Repair Action	Reference Image
If neither the inner or out display is functioning	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 and keypad are not detected, refer to the “Power Problems” section 	
	Visually inspect whether the main flex film is properly connected to the display assembly	<ul style="list-style-type: none"> If improperly connected - Reestablish proper connection 	
	Visually inspect each half of the display to main flex film connection	<ul style="list-style-type: none"> If dirty or oxidized – Clean both halves of the connection If the portion of the connector on the display assembly is damaged - Replace display assembly If the portion of the connector on the main flex film is damaged - Replace the main flex film 	
	If issue has not been resolved →	<ul style="list-style-type: none"> Replace the display assembly 	
	Visually inspect whether the main flex film is properly connected to the circuit board	<ul style="list-style-type: none"> If improperly connected - Reestablish proper connection 	





Problem Area	Items to Check	Repair Action	Reference Image
If neither the inner or out display is functioning (Cont.)	Visually inspect each half of the main flex film 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 connector on the main flex film is damaged - Replace the main flex film • If the portion of the connector on the circuit board is damaged – Send to an electrical repair location 	
	If issue has not been resolved →	<ul style="list-style-type: none"> • Replace the main flex film if it has not been replaced 	


8 Illumination Problems

Problem Area	Items to Check	Repair Action	Reference Image
Keypad: The entire keypad will not illumination	Before proceeding →	<ul style="list-style-type: none"> Perform a setting reset 	
	Perform the following action →	<ul style="list-style-type: none"> Send to an electrical repair location 	
Keypad: A portion of the keypad does not illumination	Perform the following action →	<ul style="list-style-type: none"> Send to an electrical repair location 	
Navigation Key:	Refer to the “ Keypad ” sections under “ Illumination Problems ”		
Display:	Before proceeding →	<ul style="list-style-type: none"> Perform a setting reset 	
	Visually inspect whether the main flex film is properly connected to the display assembly	<ul style="list-style-type: none"> If improperly connected - Reestablish proper connection 	
	Visually inspect each half of the display to main flex film connection	<ul style="list-style-type: none"> If dirty or oxidized –clean both halves of the connection If the portion of the connector on the display assembly is damaged - Replace display assembly If the portion of the connector on the main flex film is damaged - Replace the main flex film 	
	If issue has not been resolved →	<ul style="list-style-type: none"> Replace the display assembly 	

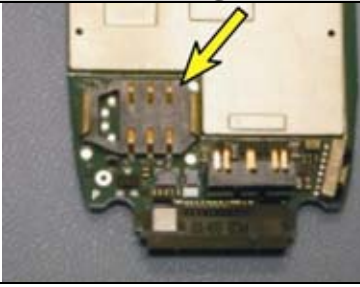
9 Alert Problems

Problem Area	Items to Check	Repair Action	Reference Image
Vibrator:	Before proceeding →	<ul style="list-style-type: none"> • Perform a setting reset 	
	Visually inspect the vibrator contact pads on the main flex film	<ul style="list-style-type: none"> • If dirty or oxidized – Clean • If damaged – Replace main flex film 	
	Visually inspect the vibrator	<ul style="list-style-type: none"> • If dirty or oxidized – Replace vibrator • If damaged - Replace vibrator 	


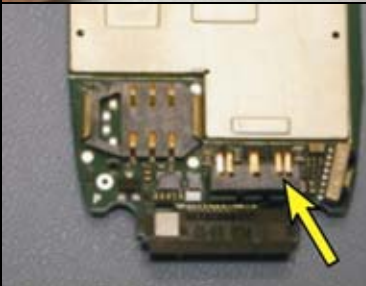

Problem Area	Items to Check	Repair Action	Reference Image
Base Speaker: No sound or poor quality sound	Before proceeding →	<ul style="list-style-type: none"> Perform a setting reset 	
	Visually inspect whether the base speaker's external port is clogged	<ul style="list-style-type: none"> If clogged – clean the speaker port opening in outer base cover 	
	Visually inspect the base speaker's dust cloth	<ul style="list-style-type: none"> If dirty - Replace dust cloth Damaged - Replace dust cloth 	
	Visually inspect base speaker assembly (including flex film connection pads)	<ul style="list-style-type: none"> If damaged - Replace base speaker assembly 	 <p>Base Speaker Assembly</p>  <p>Connection Pads on Base Speaker Flex Film</p>

Problem Area	Items to Check	Repair Action	Reference Image
No sound or poor quality sound (Cont.)	Visually inspect the base speaker connection springs on the circuit board	<ul style="list-style-type: none"> If dirty or oxidized – Clean both springs and their corresponding connection pads If damaged – Send to an electrical repair location 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the base speaker assembly if it has not already been replaced 	

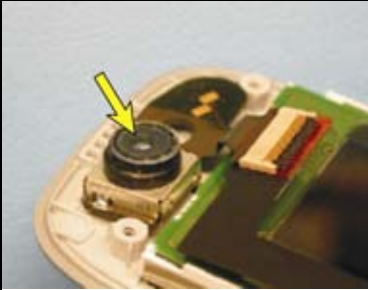

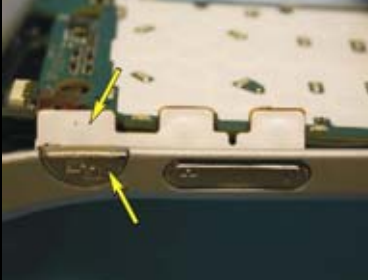
10 SIM Problems

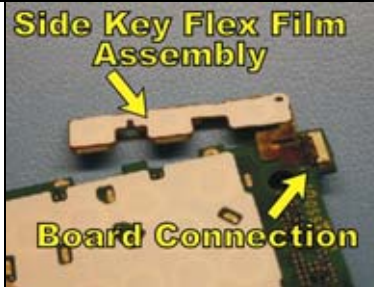


Problem Area	Items to Check	Repair Action	Reference Image
SIM undetected	Inspect SIM holder	<ul style="list-style-type: none"> If dirty or oxidized – Clean If damaged – Send to an electrical repair location 	
Unit indicates the incorrect SIM is inserted	Check whether the phone is locked to a particular 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 Charging/Capacity Problems


Problem Area	Items to Check	Repair Action	Reference Image
Battery will not charge	Visually inspect the contact pads of the battery	<ul style="list-style-type: none"> • If dirty or oxidized – Clean • If damaged – Replace battery 	
	Visually inspect the of the connector that connects the battery to the circuit board	<ul style="list-style-type: none"> • If dirty or oxidized – Clean • If damaged – Send to an electrical repair location 	
	Visually inspect the system connector	<ul style="list-style-type: none"> • If dirty or oxidized – Replace the system connector • If damaged – Replace the system connector 	

12 Camera Problems


Problem Area	Items to Check	Repair Action	Reference Image
Lines or marks in picture	Visually inspect the camera lens	<ul style="list-style-type: none"> • If dirty – Clean camera lens • If scratched or damaged – Replace the camera module 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> • Replace the camera module 	
Will not capture an image	Visually inspect for debris between and/or damage to the camera key and the side key flex film assembly.	<ul style="list-style-type: none"> • If dirty – Clean both parts • If damaged - Replace the camera key and/or the side key flex film assembly as necessary 	

Problem Area	Items to Check	Repair Action	Reference Image
Will not capture an image (Cont.)	Visually inspect whether the side key flex film assembly is properly connected to its connector on the circuit board	<ul style="list-style-type: none"> If improperly connected - Reestablish proper connection 	
	Visually inspect the connection pads of the side key flex film assembly and its corresponding board connector	<ul style="list-style-type: none"> If dirty or oxidized – Clean all pads and contacts that are part of this connection If pads of side key flex film assembly are damaged - Replace side key flex film assembly If the board connector is damaged - Send to an electrical repair location 	
	If the issue has not been resolved →	<ul style="list-style-type: none"> Replace the side key flex film assembly if it has not already been replaced 	
	If the issue still has not been resolved →	<ul style="list-style-type: none"> Replace camera module if it has not already been replaced 	

13 Data Communication Problems

Problem Area	Items to Check	Repair Action	Reference Image
Problem transferring data using a direct connection	Visually inspect the system connector	<ul style="list-style-type: none"> If dirty or oxidized – Replace the system connector If damaged – Replace the system connector 	

14 Hands-Free Problems

Problem Area	Items to Check	Repair Action	Reference Image
Hands-free not working	Visually inspect the system connector	<ul style="list-style-type: none"> If dirty or oxidized – Replace the system connector If damaged – Replace the system connector 	

15 Revision History

Rev.	Date	Changes / Comments
A	2005-August 9	<ul style="list-style-type: none"> Initial Release