

# Trouble Shooting Guide, Electrical

Applicable for Z250 and Z320

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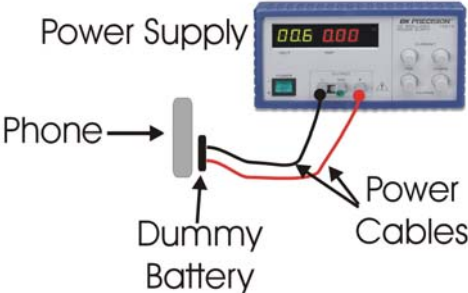

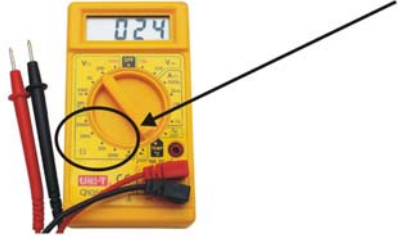
# 1 General

The purpose of this document is to indicate the electrical level repair actions associated with the different failure symptoms.

For symptoms that have multiple repair actions, the repair actions are listed in order of their probability of creating a successful repair. The first action has the highest probability, and subsequent actions have lower probabilities. The intention is for the repair technician to implement the first repair action and then retest the phone. If the phone continues to fail the same test, then the technician should continue to the second repair action. If the phone continues to fail the same test after all of the repair actions are exhausted, then the phone will be considered not reparable at this level.

This document should be used only after the actions from the Mechanical Trouble Shooting Guide have been exhausted for the specific symptom.

Voltage, current, and resistance information is provided for some symptoms to enable faster repairs. Purchasing this equipment and performing these measurements is optional but recommended.

<p>Measure Current in Milliamps (mA)</p>  <p>Power Supply</p> <p>Phone</p> <p>Dummy Battery</p> <p>Power Cables</p>	<p>Perform current measurements using a dummy battery and power supply with digital current display. The phone should be fully assembled.</p>
<p>Measure Diode Voltage (VDC →)</p>  <p>Multimeter</p>	<p>Perform voltage measurements with a multimeter.</p>
<p>Measure Resistance in Ohms (<math>\Omega</math>)</p>  <p>Multimeter</p>	<p>Perform resistance measurements with a multimeter.</p>

## 2 Repair Actions for Manual Test Failures

Failure	Failure Symptom	Repair Action
<b>2.1 Power On / Off</b>	Current draw when powered off	<ul style="list-style-type: none"> <li>Measure <b>C4117</b> and <b>C4118</b>. Replace if short circuit</li> </ul>
	Other Symptoms	<ul style="list-style-type: none"> <li><b>X2400</b> if damaged</li> </ul>
<b>2.2 Charging</b>	Charging from power outlet	Measure on Pin 12 on the System connector. If grounded, replace: <ul style="list-style-type: none"> <li><b>ESD2</b></li> <li><b>V2502</b></li> </ul> If not grounded, replace: <ul style="list-style-type: none"> <li><b>V2408</b></li> <li><b>R2518</b></li> </ul>
	Charging from computer via USB	Measure on Pin 1 on the System connector. If grounded, replace: <ul style="list-style-type: none"> <li><b>V2505</b></li> <li><b>C2509</b></li> </ul>
<b>2.3 USB connection</b>	Charging but no link to USB	<ul style="list-style-type: none"> <li><b>V2506</b></li> <li><b>V2603</b></li> </ul>
<b>2.4 Hands-Free connection</b>	Phone stuck in PHF mode when PHF is not attached	<ul style="list-style-type: none"> <li>Measure <b>V2504</b> and <b>L1015</b>. Replace if short circuit</li> <li><b>V2501</b></li> </ul>
<b>2.5 SIM</b>		<ul style="list-style-type: none"> <li><b>X2700</b> if damaged</li> <li><b>V2701 ,V2702</b></li> </ul>
<b>2.6 Charging indicator (RED LED)</b>		<ul style="list-style-type: none"> <li><b>V2402</b></li> </ul>
<b>2.7 Display</b>		<ul style="list-style-type: none"> <li><b>Z4201,Z4202,Z4203</b></li> <li><b>X4201</b></li> </ul>



Failure	Failure Symptom	Repair Action
<b>2.8 Display and Keypad LEDs Illumination</b>		<ul style="list-style-type: none"> <li>• Measure <b>L4301</b>. Replace component if more than 1 Ohm</li> <li>• <b>V4301</b></li> <li>• <b>LMU</b></li> </ul>
<b>2.9 Keypad LEDs</b>	Left Side does not illuminate	<ul style="list-style-type: none"> <li>• <b>V4303, V4304 and V4306</b></li> <li>• <b>LMU</b></li> </ul>
	Right Side does not illuminate	<ul style="list-style-type: none"> <li>• <b>V4307, V4308 and V4310</b></li> <li>• <b>LMU</b></li> </ul>
<b>2.10 Keypad Keys</b>	Column faults	<ul style="list-style-type: none"> <li>• <b>V2601-V2602</b></li> </ul>
<b>2.11 Volume Key</b>	Volume Key <b>up</b> not responding	<ul style="list-style-type: none"> <li>• <b>S2624</b></li> </ul>
	Volume Key <b>down</b> not responding	<ul style="list-style-type: none"> <li>• <b>S2625</b></li> </ul>
<b>2.12 Vibrator</b>	Vibrator is not working properly	<ul style="list-style-type: none"> <li>• <b>X4201</b></li> </ul>
<b>2.13 Real Time clock</b>	The clock has to be set after the battery has been detached	<ul style="list-style-type: none"> <li>• <b>C2405</b></li> </ul>
<b>2.14 Earphone and Speaker</b>		<ul style="list-style-type: none"> <li>• <b>X4201</b></li> </ul>
<b>2.15 Microphone</b>		<ul style="list-style-type: none"> <li>• <b>B1200</b></li> </ul>
<b>2.16 Hands-free earphone</b>	Right speaker not working	<ul style="list-style-type: none"> <li>• Measure <b>L2501</b>. Replace if more than 1 Ohm</li> <li>• <b>N1201</b></li> </ul>
	Left speaker not working	<ul style="list-style-type: none"> <li>• Measure <b>L2502</b>. Replace if more than 1 Ohm</li> <li>• <b>N1201</b></li> </ul>
	Right and left speaker is not working	<ul style="list-style-type: none"> <li>• Measure <b>L2505</b>. Replace if more than 1 Ohm</li> <li>• <b>N1201</b></li> </ul>



Failure	Failure Symptom	Repair Action
<b>2.17 Hands-Free Microphone</b>		<ul style="list-style-type: none"><li>• Measure <b>L2504</b>. Replace if more than 1 Ohm</li><li>• <b>N1201</b></li></ul>
<b>2.18 Camera</b>	Camera is not working properly	<ul style="list-style-type: none"><li>• <b>X4201</b></li></ul>
<b>2.19 IrDA</b>	Infra red communication is not working	<ul style="list-style-type: none"><li>• <b>H2700</b></li></ul>
<b>2.20 Network</b>	No signal	<ul style="list-style-type: none"><li>• <b>X4101</b></li></ul>

### 3 Revision History

Rev.	Date	Changes / Comments
1	2007-09-24	1 <sup>st</sup> release
2	2008-03-06	N1201, LMU and R2518 added
3	2008-05-06	Network: X4101 added