

Trouble Shooting Guide, Electrical

Applicable for K850

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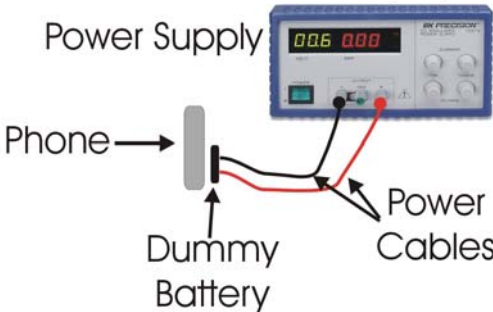


1 General

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. Perform current measurements using a dummy battery and power supply with digital current display. The phone should be fully assembled. Perform voltage and resistance measurements with a multimeter. Purchasing this equipment and performing these measurements is optional but recommended.

<p>Measure Current in Milliamps (mA)</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 (Ω)</p>  <p>Multimeter</p>	<p>Perform resistance measurements with a multimeter.</p>



2 Repair Actions for Manual Test Failures

Failure	Failure Symptom	Repair Action
2.1 Power On/Off	<i>Current draw greater than 300 mAmps</i>	<ul style="list-style-type: none"> • N1002 inside module N1200 • N1200 • N1210
	<i>Current draw when powered off</i>	<ul style="list-style-type: none"> • N1002 inside module N1200 • N1200 • N1210
	<i>Using no current when On/Off button is pressed and will not start</i>	<ul style="list-style-type: none"> • S2400
	<i>Hangs at gray display. Constant vibration. Will not power off</i>	<ul style="list-style-type: none"> • B2101
	<i>Draws current when pushing On/Off key, returns to zero</i>	<ul style="list-style-type: none"> • N2202 • L2200
	<i>Will not power off</i>	<ul style="list-style-type: none"> • V2402
	<i>Other symptoms</i>	<ul style="list-style-type: none"> • X2200 if damaged
2.2 Software Flash		<ul style="list-style-type: none"> • N2401 • D2404 • V2405
2.3 Charging	<i>Charging from power outlet</i>	<ul style="list-style-type: none"> • V2421 if short circuit • V2202
	<i>Charging from computer via USB</i>	<ul style="list-style-type: none"> • N2402
2.4 Hands-Free connection	<i>Phone stuck in PHF mode when PHF is not attached</i>	<ul style="list-style-type: none"> • V2420 if short circuit • N2400
2.5 SIM		<ul style="list-style-type: none"> • X2409 if damaged
2.6 Charging indicator (RED LED)		<ul style="list-style-type: none"> • V2428
2.7 Display		<ul style="list-style-type: none"> • X4200 if damaged
2.8 Display Illumination		<ul style="list-style-type: none"> • X4200 if damaged • V4201 • V4200
2.9 Keypad LEDs		<ul style="list-style-type: none"> • X2410 if damaged • N4101
2.10 Keypad Keys		<ul style="list-style-type: none"> • X2410 if damaged
2.11 Volume Up Key		<ul style="list-style-type: none"> • S2403 • V2477 if short circuit
2.12 Volume Down Key		<ul style="list-style-type: none"> • S2402 • V2478 if short circuit



Failure	Failure Symptom	Repair Action
2.13 Real Time clock	<i>The clock has to be set after the battery has been detached</i>	<ul style="list-style-type: none"> • C2217
2.14 Polyphonic Speaker (Loudspeaker, Bas Speaker)		<ul style="list-style-type: none"> • C3137 if short circuit • C3160 if short circuit • N3100
2.15 Hands-Free (PHF) Aux Earphone		<ul style="list-style-type: none"> • N3101 • L2403 if more than 1 Ohm • L2404 if more than 1 Ohm
2.16 Microphone		<ul style="list-style-type: none"> • X3105 if damaged
2.17 Hands-Free (PHF) Aux Microphone		<ul style="list-style-type: none"> • N3101 • L2401 if more than 1 Ohm • L2402 if more than 1 Ohm
2.18 Camera		<ul style="list-style-type: none"> • X4301 if damaged • N2203 • N2206 • N2208 • D2420
2.19 Camera Door		<ul style="list-style-type: none"> • X2511 if damaged • V2500 • N2500
2.20 Camera Flash		<ul style="list-style-type: none"> • X2511 if damaged
2.21 Opto Sensor		<ul style="list-style-type: none"> • N2201 • N4200
2.22 VGA Camera		<ul style="list-style-type: none"> • X4300 if damaged
2.23 Accelerometer		<ul style="list-style-type: none"> • N2525
2.24 Memory Card		<ul style="list-style-type: none"> • X2409 if damaged • D2460
2.25 Bluetooth		<ul style="list-style-type: none"> • N1400 • D2105
2.26 Fm Radio		<ul style="list-style-type: none"> • N1400 • V2425



3 Repair Actions for Go/No Go Test Failures

Failure	Repair Action
<i>Fails any part of Go/No Go testing</i>	<ul style="list-style-type: none">• Run the calibration routine
<i>Fails Go/No Go test, but passes calibration</i>	<ul style="list-style-type: none">• Replace the antenna• Check X1201, X1202 and X1203 for damage and replace it necessary• Return the phone through Go/No Go testing
<i>Fails Go/No Go test after passing calibration</i>	<ul style="list-style-type: none">• Change X1200 and retest

4 Repair Actions for Calibration Routine Failures

Failure	Repair Action
<i>Fails any part of the calibration routine</i>	<ul style="list-style-type: none">• Replace X1200 if damaged• N1210 UMTS – Approved Centers Only• N2205 UMTS• N1200 GSM – Approved Centers Only

5 Revision History

Rev.	Date	Changes / Comments
1	2007-10-09	1 st version
2	2007-10-12	Layout update
3	2008-04-24	Document updated