



Trouble Shooting Guide, Electrical

Applicable for W890

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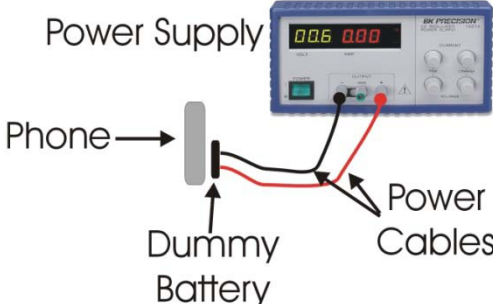


1 General

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 repairable 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.

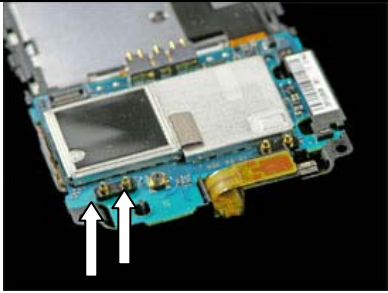
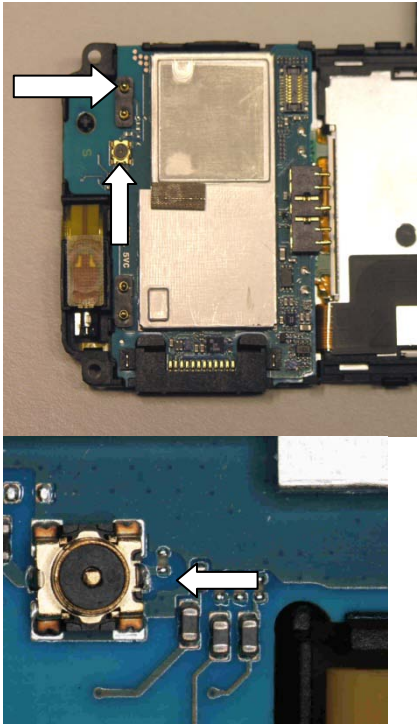
<p>Measure Current in Milliamps (mA)</p>  <p>Power Supply</p> <p>Phone</p> <p>Dummy Battery</p> <p>Power Cables</p>	<p>Perform current measurements using a dummy battery and power supply with digital current display. The phone should be fully assembled.</p>
<p>Measure Diode Voltage (VDC →)</p>  <p>Multimeter</p>	<p>Perform voltage measurements with a multimeter.</p>
<p>Measure Resistance in Ohms (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">• N1230• N1380
	<i>Current draw when powered off</i>	<ul style="list-style-type: none">• N1230• N1380
	<i>Using no current when On/Off button is pressed and will not start</i>	<ul style="list-style-type: none">• X4300 if damaged
	<i>Hangs at gray display. Constant vibration. Will not power off</i>	<ul style="list-style-type: none">• B2100
	<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• B1260• N1200



Failure	Failure Symptom	Repair Action
2.2 Network Problems	Check the resistance between the Antenna pogopins . If it is higher than 3 Ohm, go to next measurement.	
	Measure the resistance between the Antenna pogopin, (note which connector) and Conn Antenna output – If the value is more than 1 ohm, replace the Conn Antenna, RPT 799 47 (X1100) If the resistance is below 1 Ohm replace the FEM component, 1200-0169 (Z1230)	
2.3 Software Flash		<ul style="list-style-type: none"> • X2400 if damaged • N2424 • D2400
2.4 Charging	Charging from power outlet	<ul style="list-style-type: none"> • X2400 if damaged • L2405 If more than 1 Ohm • L2406 if more than 1 Ohm • V2202
	Charging from computer via USB	<ul style="list-style-type: none"> • X2400 if damaged • N2402
2.5 Hands-Free connection	Phone stuck in PHF mode when PHF is not attached	<ul style="list-style-type: none"> • V2420 if short circuit • N2400 • V2405



Failure	Failure Symptom	Repair Action
2.6 SIM		<ul style="list-style-type: none"> • X2402 if damaged
2.7 Charging indicator (RED LED)		<ul style="list-style-type: none"> • X2401
2.8 Display		<ul style="list-style-type: none"> • X4201 if damaged • Z4200 • Z4201 • Z4202
2.9 Display Illumination		<ul style="list-style-type: none"> • X4201 if damaged • L4201 if more than 1 Ohm • L4200 if more than 1 Ohm • N4201
2.10 Keypad LEDs		<ul style="list-style-type: none"> • X2401 if damaged
2.11 Keypad Keys		<ul style="list-style-type: none"> • X2401 if damaged
2.12 Volume Up Key		<ul style="list-style-type: none"> • X4300 if damaged
2.13 Volume Down Key		<ul style="list-style-type: none"> • X4300 if damaged
2.14 Real Time clock	The clock has to be set after the battery has been detached	<ul style="list-style-type: none"> • X2402 if damaged
2.15 Polyphonic Speaker (Loudspeaker, Bas Speaker)		<ul style="list-style-type: none"> • X4300 if damaged • N3100
2.16 Hands-Free (PHF) Aux Earphone		<ul style="list-style-type: none"> • X2400 if damaged • L2403 if more than 1 Ohm • L2404 if more than 1 Ohm • N3101
2.17 Microphone		<ul style="list-style-type: none"> • B3100
2.18 Hands-Free (PHF) Aux Microphone		<ul style="list-style-type: none"> • X2400 if damaged • L2401 if more than 1 Ohm • L2402 if more than 1 Ohm • L2407 if more than 1 Ohm • L2408 if more than 1 Ohm • N3101
2.19 Camera		<ul style="list-style-type: none"> • X4300 if damaged • N2203 • N2204



Failure	Failure Symptom	Repair Action
2.20 Opto Sensor		<ul style="list-style-type: none">• N2201• X4300 if damaged
2.21 VGA Camera		<ul style="list-style-type: none">• X4300 if damaged
2.22 Memory Card		<ul style="list-style-type: none">• X2402 if damaged
2.23 Bluetooth		<ul style="list-style-type: none">• X1400 if damaged• N1400• D2105
2.24 Fm Radio		<ul style="list-style-type: none">• N1400• D2105
2.25 Vibrator		<ul style="list-style-type: none">• X2401 if damaged



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 X1000 and X1203 for damage and replace it necessary • Rerun the phone through Go/No Go testing
<i>Fails Go/No Go test after passing calibration</i>	<ul style="list-style-type: none"> • Change X1100 and retest

4 Repair Actions for Calibration Routine Failures

Calibration is required after any of the parts in this section are reworked.

Failure	Repair Action
<i>TX OutputPowerCheck</i>	<ul style="list-style-type: none"> • Replace X1100 if damaged • Z1230 • N1230 • N1200
<i>MdBitCalibration</i>	<ul style="list-style-type: none"> • N1200
<i>CVCOCalibrationRX</i>	<ul style="list-style-type: none"> • N1200
<i>CVCOCalibrationRX</i>	<ul style="list-style-type: none"> • N1200
<i>LoopBandwithCalibration</i>	<ul style="list-style-type: none"> • N1200
<i>RFVcxoCalibration</i>	<ul style="list-style-type: none"> • B1260 • N1200
<i>TXPowerCalRF2001</i>	<ul style="list-style-type: none"> • Z1230 • N1230
<i>RSSICalibration</i>	<ul style="list-style-type: none"> • Z1200 • N1230
<i>Fails any part of the calibration routine UMTS</i>	<ul style="list-style-type: none"> • Z1230 • N1380 • N1300 • N2205



5 Revision History

Rev.	Date	Changes / Comments
1	2008-02-20	Initial release
2	2008-03-05	No changes made in content
3	2008-06-02	Changes in chapter 4
4	2008-06-24	Added Chapter 2.2 Network Problems
6	2008-09-08	Added Chapter 2.25 Vibrator
7	2009-04-30	Measurements added to Network problem
8	2009-11-04	Added L4200 to 2.9 Display Illumination
9	2009-11-23	Added L4201 to 2.9 Display Illumination