



Trouble Shooting Guide, Electrical

Applicable for W902

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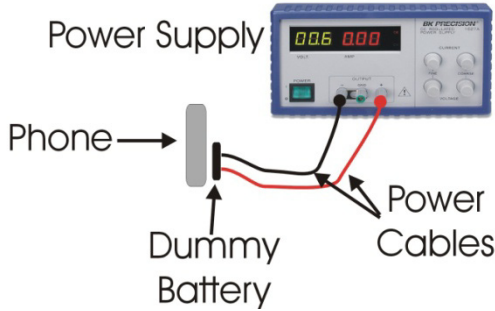


1 General

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 (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	Current draw greater than 300 mAmps	• N1002 inside module N1200
	Current draw when powered off	• N1002 inside module N1200
	Using no current when On/Off key is pressed and will not start	• X2410 if damaged
	Hangs at gray display. Constant vibration. Will not power off.	• B2100
	Draws current when pushing On/Off key, returns to zero	• N2202 • L2200
	Other symptoms	• X2201 if damaged
2.2 Software Flash/USB		• X2400 if damaged • V2426 if short circuit • V2427 if short circuit
2.3 Charging	Charging from power outlet	• X2400 If damaged • V2421 if short circuit • V2202
	Charging from computer via USB	• X2400 If damaged
2.4 Hands-Free connection (PHF)	Phone stuck in PHF mode when PHF is not attached	• V2405 • N2400
	Phone not recognize PHF set	• X2400 if damaged
2.5 SIM		• X2409 if damaged
2.6 Display		• X4200 if damaged
2.7 Display Illumination and Keypad White LEDs		• L4201 if more than 1 Ohm • V4201 • V4200
2.8 Display Illumination		• X4200 if damaged
2.9 Keypad White LEDs		• X2410 if damaged
2.10 Camera Flash LED and Keypad Orange LEDs		• L4102 if more than 1 Ohm • N4103
2.11 Camera Flash LED		• X4300 if damaged
2.12 Keypad Orange LEDs		• X2410 if damaged
2.13 All Keys		• X2410 if damaged



Failure	Failure Symptom	Repair Action
2.14 Real Time clock	The clock has to be set after the battery has been detached	<ul style="list-style-type: none"> • C2217
	The clock gain or lose time SERP is performed	<ul style="list-style-type: none"> • B2100
2.15 Polyphonic Speaker (Loudspeaker, Base Speaker)		<ul style="list-style-type: none"> • X3100 if damaged
2.16 Earphone		<ul style="list-style-type: none"> • X4300 if damaged
2.17 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 • L2487 if more than 1 Ohm • N3101
2.18 Microphone		<ul style="list-style-type: none"> • L3105 or L3106 if more than 1 Ohm • B3105
2.19 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 • N3101
2.20 Vibrator		<ul style="list-style-type: none"> • X3100 if damaged
2.21 Camera		<ul style="list-style-type: none"> • X4300 if damaged • L2260 if more than 1 Ohm • L2261 if more than 1 Ohm • N2203 • N2206
2.22 Opto Sensor		<ul style="list-style-type: none"> • X4300 if damaged
2.23 VGA Camera		<ul style="list-style-type: none"> • X4300 if damaged
2.24 Accelerometer		<ul style="list-style-type: none"> • N2550
2.25 Memory Card		<ul style="list-style-type: none"> • X2409 if damaged
2.26 Bluetooth		<ul style="list-style-type: none"> • X1300 if damaged • N1300
2.27 FM Radio		<ul style="list-style-type: none"> • X2400 if damaged • N1300



3 Repair Actions for Go/No Go Test Failures

Failure	Repair Action
Fails any part of Go/No Go testing	<ul style="list-style-type: none">• Run the calibration routine
Fails Go/No Go test, but passes calibration	<ul style="list-style-type: none">• Replace the antenna• Check X1100, X1101 and X1102 for damage and replace if necessary• Rerun the phone through Go/No Go testing
Fails Go/No Go test after passing calibration	<ul style="list-style-type: none">• Change X1200 and retest

4 Repair Actions for Calibration Failures

Failure	Repair Action
Fails any part of the calibration routine	<ul style="list-style-type: none">• X1200 if damaged• N1220 UMTS• N1002 GSM



5 Revision History

Rev.	Date	Changes / Comments
Rev 1	2008-09-06	First Release
Rev 2	2009-01-26	L4201 added in 2.07 Display Illumination and Keypad White LEDs L4102 Added in 2.10 Camera Flash LED and Keypad Orange LEDs L2261 Added in 2.21 Camera
Rev 3	2009-06-18	L3105 and L3106 added to 2.18 Microphone