

Trouble Shooting Guide, Electrical

Applicable for W350

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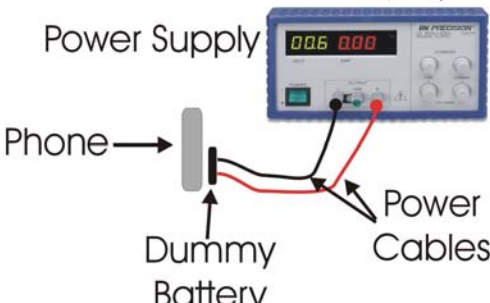


1 General

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>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 when powered off	<ul style="list-style-type: none"> • V0302 • N5700 • N7520
	Current draw greater than 300 mAmps	<ul style="list-style-type: none"> • <i>Check if the LCD flex is shorted out to the frame. Verify that the protective tape is installed.</i> • V0302 • N5700
	Will not power on AND will not flash	• N7520
	Draws less than 50 mA , hangs at gray display.	• B5506
	Powers On BUT will not power off	• X1101 if damaged
	Other symptoms	<ul style="list-style-type: none"> • X0616 if damaged • X1101
2.2 Software Flash	EMMA gives “unrecognized device” error and phone powers on	<ul style="list-style-type: none"> • X2600 if damaged • N2601 • N2602
	EMMA gives no response at all	<ul style="list-style-type: none"> • X2600 if damaged • V2613 if short circuit • N2603 • N2601 • N2602
2.3 Charging	Charging from power outlet	<ul style="list-style-type: none"> • X2600 if damaged • V0611 if short circuit • V0636 • V0637 • V0302 • N7520
	Charging from computer via USB	<ul style="list-style-type: none"> • X2600 if damaged • N2603 • N7520
2.4 Hands-Free connection	Phone stuck in PHF mode when PHF is not attached	• V2611 if short circuit
2.5 SIM		<ul style="list-style-type: none"> • X1102 if damaged • N7520
2.6 Display and Keypad Illumination		<ul style="list-style-type: none"> • V1220 • N1201
2.7 Display		• X1201 if damaged
2.8 Display Illumination		• X1201 if damaged
2.9 Flip LEDs		<ul style="list-style-type: none"> • X1101 if damaged • N1201
2.10 Keypad LEDs		• X1101 if damaged



Failure	Failure Symptom	Repair Action
2.11 Keypad Keys		<ul style="list-style-type: none"> • X1101 if damaged
2.12 Volume Up Key		<ul style="list-style-type: none"> • X1202 if damaged
2.13 Volume Down Key		<ul style="list-style-type: none"> • X1202 if damaged
2.14 Key Lock Key		<ul style="list-style-type: none"> • X1202 if damaged
2.15 Vibrator		<ul style="list-style-type: none"> • X1202 if damaged • N7520
2.16 Real Time clock	The clock has to be set after the battery has been detached	<ul style="list-style-type: none"> • X1102 if damaged
	The clock gain or lose time SERP is performed	<ul style="list-style-type: none"> • B5506
2.17 Earphone		<ul style="list-style-type: none"> • X1202 if damaged
2.18 Polyphonic Speaker (Loudspeaker, Base Speaker)		<ul style="list-style-type: none"> • X2203 if damaged • X2204 if damaged • C2210 if short circuit • N2201
2.19 Hands-free (PHF) Aux Earphone		<ul style="list-style-type: none"> • X2600 if damaged • L2601 if more than 1 Ohm • L2602 if more than 1 Ohm • L2605 if more than 1 Ohm • N2203
2.20 Microphone		<ul style="list-style-type: none"> • B2201
2.21 Hands-Free (PHF) Aux Microphone		<ul style="list-style-type: none"> • X2600 if damaged • L2603 if more than 1 Ohm • L2604 if more than 1 Ohm • N2203
2.22 Camera		<ul style="list-style-type: none"> • X1202 if damaged
2.23 Flip Sensor		<ul style="list-style-type: none"> • N0320
2.24 Light Sensor		<ul style="list-style-type: none"> • X1201 if damaged
2.25 FM Radio		<ul style="list-style-type: none"> • X2600 if damaged • N2503
2.26 Bluetooth		<ul style="list-style-type: none"> • X2501 if damaged • N2503



Failure	Failure Symptom	Repair Action
2.27 M2 Reader		<ul style="list-style-type: none"> • X1102 if damaged

3 Repair Actions for Go/No Go Test Failures

Failure	Repair Action
Fails any part of Go/No Go testing	run the calibration routine
Fails Go/No Go test, but passes calibration	replace the antenna check X5300 and X5301 for damage and replace if necessary rerun the phone through Go/No Go testing
Fails Go/No Go test after passing calibration	change W5301 and retest

4 Repair Actions for Calibration Routine Failures

4.1 GSM 850, 900, 1800, or 1900

The variable **F** in the table below will be replaced by one of the different frequencies (GSM850, GSM900, etc.).

Routine	Repair Action
F_Check_Output_Power	<ul style="list-style-type: none"> • N5700 • N5301 • W5301 • N7520
F_Calculate_POWTX_Value	<ul style="list-style-type: none"> • N5700 • N5301 • W5301
F_Measure_Multiframe	<ul style="list-style-type: none"> • N5700
F_RSSI_Calibration	<ul style="list-style-type: none"> • N5301

4.2 EDGE 850, 900, 1800, or 1900

The variable **F** in the table below will be replaced by one of the different frequencies (EDGE850, EDGE900, etc.).

The variable **X** in the table below will be replaced by one of the different levels (1, 2, or 3).

Routine	Repair Action
F_Check_Output_Power	<ul style="list-style-type: none"> • N5700
F_Get_POWTX_Value_For_PLX	<ul style="list-style-type: none"> • N5700



Routine	Repair Action
F_Calibrate_VGAGAINX	• N5700
F_Calibrate_PowerX	• N5700

5 Revision History

Rev.	Date	Changes / Comments
1	2008-05-01	First release
2	2008-12-11	On/Off section updated