

Trouble Shooting Guide, Electrical

Applicable for G900

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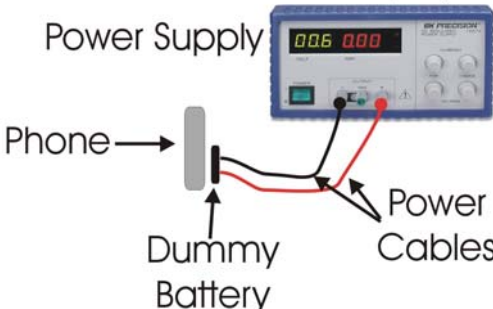


1 General

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>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"> • V4001 if short circuit • N5010 if getting hot • D2665 if getting hot • D1100 if getting hot Marlin- Approved Centers Only • N1400 if getting hot Ray - Approved Centers Only • N2000
	<i>Current draw when powered off</i>	<ul style="list-style-type: none"> • V4001 if short circuit • D1100 if getting hot Marlin- Approved Centers Only • N1400 if getting hot Ray - Approved Centers Only • N2000
	<i>Using no current when On/Off button is pressed and will not start Start up when connected to charger</i>	<ul style="list-style-type: none"> • X2745 if damaged • N2000
	<i>Current draw when powered off. The phone is using 9mA after the phone is switch on and off. The dummy battery need to be connected when on and off switch is performed.</i>	<ul style="list-style-type: none"> • D2500
	<i>The phone can not start, only the vibrator start up process is working.</i>	<ul style="list-style-type: none"> • B2500 • B2510 • D2500
	<i>Draws current when pushing On/Off key, returns to zero</i>	<ul style="list-style-type: none"> • N2000 • D1100 Marlin- Approved Centers Only • N4030 • N4021 • N4040 • N4050
	<i>Other symptoms</i>	<ul style="list-style-type: none"> • X4000 if damaged
2.2 Software Flash		<ul style="list-style-type: none"> • N2662 if pin 10 or pin11 at X2665 System connector is short circuit to pin 9 GND • N2664 • D2670



Failure	Failure Symptom	Repair Action
2.3 USB Data		<ul style="list-style-type: none"> • N2662 <i>if pin 10 or pin11 at X2665 is short circuit to pin 9 GND</i> • N2664 • D2670
2.4 Charging	<i>Charging from power outlet</i>	<ul style="list-style-type: none"> • V4001 <i>if Charging alien battery only</i> • V4002 • V4005 • N2000
	<i>Charging from computer via USB</i>	<ul style="list-style-type: none"> • N2664 • V4004 • N2000
2.5 Hands-Free connection	<i>Phone stuck in PHF mode when PHF is not attached</i>	<ul style="list-style-type: none"> • D2665
2.6 SIM		<ul style="list-style-type: none"> • X2821 <i>if damaged</i> • N2000
2.7 Vibrator		<ul style="list-style-type: none"> • X2745 <i>if damaged</i> • N2000
2.8 Charging indicator (RED/GREEN LED)		<ul style="list-style-type: none"> • V2181 • N2000
2.9 Display		<ul style="list-style-type: none"> • X2820 <i>if damaged</i>
2.10 TOUCHSCREEN		<ul style="list-style-type: none"> • X2825 • D2500
2.11 Display and Keyboard Illumination		<ul style="list-style-type: none"> • N4070 • N4071
2.12 Display Illumination		<ul style="list-style-type: none"> • X2820 <i>if damaged</i>
2.13 Keyboard Illumination		<ul style="list-style-type: none"> • X2821 <i>if damaged</i>
2.14 Keyboard		<ul style="list-style-type: none"> • X2821 <i>if damaged</i> • D2500



Failure	Failure Symptom	Repair Action
2.15 Volume Up Key		<ul style="list-style-type: none"> • X2742 if damaged • D2500
2.16 Volume Down Key		<ul style="list-style-type: none"> • X2742 if damaged • D2500
2.17 Real Time clock	<i>The clock has to be set after the battery has been detached</i>	<ul style="list-style-type: none"> • X2821 if damaged
	<i>The clock stops when the phone is powering down, after powering up the clock start the same time is has been powered down</i>	<ul style="list-style-type: none"> • B2000
2.18 Back Speaker (Loudspeaker, Bas Speaker)		<ul style="list-style-type: none"> • N5505 • D2500
2.19 Ear Speaker		<ul style="list-style-type: none"> • X2745 if damaged • V5000 • N2000
2.20 Hands-Free (PHF) Aux Earphone		<ul style="list-style-type: none"> • N5010 • N5500 • N2000 • D2500
2.21 Microphone		<ul style="list-style-type: none"> • D5001 • N5010 • N2000
2.22 Hands-Free (PHF) Aux Microphone		<ul style="list-style-type: none"> • N5010 • N2000
2.23 Camera Mega pixel		<ul style="list-style-type: none"> • X2744 if damaged • D2500
2.24 Camera Flash		<ul style="list-style-type: none"> • X2745 if damaged
2.25 VGA Camera		<ul style="list-style-type: none"> • X2741 if damaged • D2500



Failure	Failure Symptom	Repair Action
2.26 WLAN and Bluetooth		<ul style="list-style-type: none">• <i>X6001 if damaged</i>• <i>X6002 if damaged</i>• <i>X6000 if only short distance</i>• <i>N6001</i>• <i>B3000</i>• <i>D2500</i>
2.27 Bluetooth and FM Radio		<ul style="list-style-type: none">• <i>N3001</i>
2.28 Memory Stick		<ul style="list-style-type: none">• <i>X2821 if damaged</i>

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"> • <i>Run the calibration routine</i>
<i>Fails Go/No Go test, but passes calibration</i>	<ul style="list-style-type: none"> • <i>Replace the antenna if damaged</i> • <i>Check X1010 and X1011 for damage and replace if necessary</i> • <i>Rerun the phone through Go/No Go testing</i>
<i>Fails Go/No Go test after passing calibration</i>	<ul style="list-style-type: none"> • <i>Change X1001 and retest</i>

4 Repair Actions for Calibration Routine Failures

Failure	Repair Action
<i>Fails any part of the GSM calibration routine</i>	<ul style="list-style-type: none"> • <i>Replace X1001 if damaged</i> • <i>D1100 Marlin – Approved Centers Only</i> • <i>N2000</i>
<i>Fails any part of the UMTS calibration routine</i>	<ul style="list-style-type: none"> • <i>Replace X1001 if damaged</i> • <i>N1400 Ray – Approved Centers Only</i> • <i>D2005</i> • <i>D1100 Marlin – Approved Centers Only</i>

5 Revision History

Rev.	Date	Changes / Comments
Rev 1	2008-05-08	First Release