

# Trouble Shooting Guide, Electrical

Applicable for G700, G700c, G700 Business Edition

## Contents

<b>1</b>	<b>General .....</b>	<b>2</b>
<b>2</b>	<b>Repair Actions for Manual Test Failures.....</b>	<b>3</b>
2.1	Power On/Off.....	3
2.2	Software Flash .....	3
2.3	USB Data .....	3
2.4	Charging.....	4
2.5	Hands-Free connection .....	4
2.6	SIM .....	4
2.7	Vibrator.....	4
2.8	Charging indicator (RED/GREEN LED) .....	4
2.9	Display.....	4
2.10	TOUCHSCREEN.....	4
2.11	Display and Keyboard Illumination .....	4
2.12	Display Illumination .....	4
2.13	Keyboard Illumination .....	4
2.14	Keyboard .....	4
2.15	Volume Up Key .....	4
2.16	Volume Down Key.....	4
2.17	Real Time clock.....	5
2.18	Back Speaker (Loudspeaker, Bas Speaker) .....	5
2.19	Ear Speaker .....	5
2.20	Hands-Free (PHF) Aux Earphone .....	5
2.21	Microphone.....	5
2.22	Hands-Free (PHF) Aux Microphone.....	5
2.23	Camera Mega pixel .....	5
2.24	Camera Flash.....	5
2.25	VGA Camera .....	5
2.26	Bluetooth and FM Radio.....	5
2.27	Bluetooth .....	5
2.28	Memory Stick.....	6
<b>3</b>	<b>Repair Actions for Go/No Go Test Failures .....</b>	<b>6</b>
<b>4</b>	<b>Repair Actions for Calibration Routine Failures .....</b>	<b>6</b>
<b>5</b>	<b>Revision History .....</b>	<b>7</b>



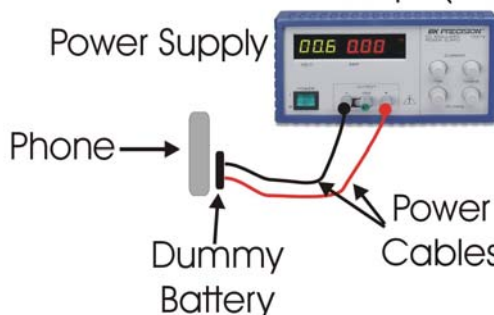


# 1 General

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 (<math>\Omega</math>)</p>  <p>Multimeter</p>	<p>Perform resistance measurements with a multimeter.</p>



## 2 Repair Actions for Manual Test Failures

Failure	Failure Symptom	Repair Action
<b>2.1 Power On/Off</b>	<i>Current draw greater than 300 mAmps</i>	<ul style="list-style-type: none"> <li>• <b>V4001</b> if short circuit</li> <li>• <b>N5010</b> if getting hot</li> <li>• <b>D2665</b> if getting hot</li> <li>• <b>D1100</b> if getting hot Marlin- Approved Centers Only</li> <li>• <b>N1400</b> if getting hot Ray – Approved Centers Only</li> <li>• <b>N2000</b></li> </ul>
	<i>Current draw when powered off</i>	<ul style="list-style-type: none"> <li>• <b>V4001</b> if short circuit</li> <li>• <b>D1100</b> if getting hot Marlin- Approved Centers Only</li> <li>• <b>N1400</b> if getting hot Ray – Approved Centers Only</li> <li>• <b>N2000</b></li> </ul>
	<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"> <li>• <b>X2745</b> if damaged</li> <li>• <b>N2000</b></li> </ul>
	<i>The phone can not start, only the vibrator start up process is working.</i>	<ul style="list-style-type: none"> <li>• <b>B2500</b></li> <li>• <b>B2510</b></li> </ul>
	<i>Draws current when pushing On/Off key, returns to zero</i>	<ul style="list-style-type: none"> <li>• <b>N2000</b></li> <li>• <b>D1100</b> Marlin- Approved Centers Only</li> <li>• <b>N4030</b></li> <li>• <b>N4021</b></li> <li>• <b>N4040</b></li> <li>• <b>N4050</b></li> </ul>
	<i>Other symptoms</i>	<ul style="list-style-type: none"> <li>• <b>X4000</b> if damaged</li> </ul>
<b>2.2 Software Flash</b>		<ul style="list-style-type: none"> <li>• <b>N2662</b> if pin 10 or pin11 at <b>X2665</b> System connector is short circuit to pin 9 GND</li> <li>• <b>N2664</b></li> <li>• <b>D2670</b></li> </ul>
<b>2.3 USB Data</b>		<ul style="list-style-type: none"> <li>• <b>N2662</b> if pin 10 or pin11 at <b>X2665</b> is short circuit to pin 9 GND</li> <li>• <b>N2664</b></li> <li>• <b>D2670</b></li> </ul>



Failure	Failure Symptom	Repair Action
<b>2.4 Charging</b>	<i>Charging from power outlet</i>	<ul style="list-style-type: none"> <li>• <b>V4001</b> <i>if Charging alien battery only</i></li> <li>• <b>V4002</b></li> <li>• <b>V4005</b></li> <li>• <b>N2000</b></li> </ul>
	<i>Charging from computer via USB</i>	<ul style="list-style-type: none"> <li>• <b>N2664</b></li> <li>• <b>V4004</b></li> <li>• <b>N2000</b></li> </ul>
<b>2.5 Hands-Free connection</b>	<i>Phone stuck in PHF mode when PHF is not attached</i>	<ul style="list-style-type: none"> <li>• <b>D2665</b></li> </ul>
<b>2.6 SIM</b>		<ul style="list-style-type: none"> <li>• <b>X2821</b> <i>if damaged</i></li> <li>• <b>N2000</b></li> </ul>
<b>2.7 Vibrator</b>		<ul style="list-style-type: none"> <li>• <b>N2000</b></li> </ul>
<b>2.8 Charging indicator (RED/GREEN LED)</b>		<ul style="list-style-type: none"> <li>• <b>V2181</b></li> <li>• <b>N2000</b></li> </ul>
<b>2.9 Display</b>		<ul style="list-style-type: none"> <li>• <b>X2820</b> <i>if damaged</i></li> </ul>
<b>2.10 TOUCHSCREEN</b>		<ul style="list-style-type: none"> <li>• <b>X2825</b></li> </ul>
<b>2.11 Display and Keyboard Illumination</b>		<ul style="list-style-type: none"> <li>• <b>N4070</b></li> <li>• <b>N4071</b></li> </ul>
<b>2.12 Display Illumination</b>		<ul style="list-style-type: none"> <li>• <b>X2820</b> <i>if damaged</i></li> </ul>
<b>2.13 Keyboard Illumination</b>		<ul style="list-style-type: none"> <li>• <b>X2821</b> <i>if damaged</i></li> </ul>
<b>2.14 Keyboard</b>		<ul style="list-style-type: none"> <li>• <b>X2821</b> <i>if damaged</i></li> </ul>
<b>2.15 Volume Up Key</b>		<ul style="list-style-type: none"> <li>• <b>X2745</b> <i>if damaged</i></li> </ul>
<b>2.16 Volume Down Key</b>		<ul style="list-style-type: none"> <li>• <b>X2745</b> <i>if damaged</i></li> </ul>



Failure	Failure Symptom	Repair Action
<b>2.17 Real Time clock</b>	<i>The clock has to be set after the battery has been detached</i>	<ul style="list-style-type: none"> <li>• <b>X2821</b> if damaged</li> </ul>
	<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"> <li>• <b>B2000</b></li> </ul>
<b>2.18 Back Speaker (Loudspeaker, Bas Speaker)</b>		<ul style="list-style-type: none"> <li>• <b>N5505</b></li> </ul>
<b>2.19 Ear Speaker</b>		<ul style="list-style-type: none"> <li>• <b>X2745</b> if damaged</li> <li>• <b>V5000</b></li> <li>• <b>N2000</b></li> </ul>
<b>2.20 Hands-Free (PHF) Aux Earphone</b>		<ul style="list-style-type: none"> <li>• <b>N5010</b></li> <li>• <b>N5500</b></li> <li>• <b>N2000</b></li> </ul>
<b>2.21 Microphone</b>		<ul style="list-style-type: none"> <li>• <b>D5001</b></li> <li>• <b>N5010</b></li> <li>• <b>N2000</b></li> </ul>
<b>2.22 Hands-Free (PHF) Aux Microphone</b>		<ul style="list-style-type: none"> <li>• <b>N5010</b></li> <li>• <b>N2000</b></li> </ul>
<b>2.23 Camera Mega pixel</b>		<ul style="list-style-type: none"> <li>• <b>X2743</b> if damaged</li> </ul>
<b>2.24 Camera Flash</b>		<ul style="list-style-type: none"> <li>• <b>X2745</b> if damaged</li> </ul>
<b>2.25 VGA Camera</b>		<ul style="list-style-type: none"> <li>• <b>X2741</b> if damaged</li> </ul>
<b>2.26 Bluetooth and FM Radio</b>		<ul style="list-style-type: none"> <li>• <b>N3001</b></li> <li>• <b>B3000</b></li> </ul>
<b>2.27 Bluetooth</b>		<ul style="list-style-type: none"> <li>• <b>X6001</b> if damaged</li> <li>• <b>X6002</b> if damaged</li> <li>• <b>X6000</b> if only short distance</li> <li>• <b>N6001</b></li> </ul>



Failure	Failure Symptom	Repair Action
2.28 Memory Stick		<ul style="list-style-type: none"><li>• <b>X2821</b> if damaged</li></ul>

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

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

## 5 Revision History

Rev.	Date	Changes / Comments
Rev 1	2008-05-23	1 <sup>st</sup> test
Rev 2	2008-09-02	G700 Business Edition Added
Rev 3	2009-01-09	D2500 Removed