

Trouble Shooting Guide, Electrical

Applicable for W960

Contents

1	General	2
2	Repair Actions for Manual Test Failures.....	3
2.1	Power On/Off.....	3
2.2	Software Flash	3
2.3	USB Data	4
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 Illumination	4
2.12	Keyboard Illumination	4
2.13	Keyboard	4
2.14	On/Off Key.....	5
2.15	Volume Up Key	5
2.16	Volume Down Key.....	5
2.17	JOG Dial.....	5
2.18	Real Time clock.....	5
2.19	Back Speaker (Loudspeaker, Bas Speaker)	5
2.20	Ear Speaker	5
2.21	Hands-Free (PHF) Aux Earphone	5
2.22	Microphone.....	5
2.23	Hands-Free (PHF) Aux Microphone	5
2.24	Camera Mega pixel	5
2.25	Camera Flash.....	5
2.26	VGA Camera	5
2.27	WLAN.....	6
2.28	8GB Memory	6
2.29	Bluetooth	6
2.30	Fm Radio	6
3	Repair Actions for Go/No Go Test Failures	7
4	Repair Actions for Calibration Routine Failures	7
5	Revision History	8

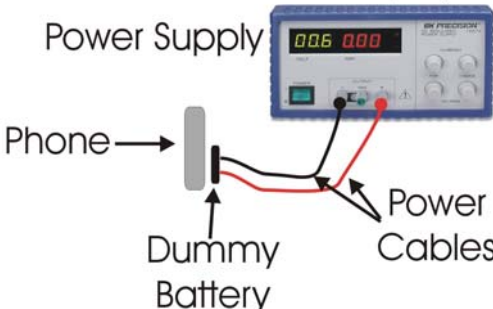


1 General

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>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 • D2665 if getting hot • D1100 if getting hot Marlin- 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 • 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>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"> • S2125
	<i>The phone can not start, only the vibrator start up process is working and the units is using 30mA.</i>	<ul style="list-style-type: none"> • B2500
	<i>The phone can not start, only the vibrator start up process is working and the units is using 20mA.</i>	<ul style="list-style-type: none"> • B2510
	<i>The phone can not start, only the vibrator start up process is working and the units is using 50mA.</i>	<ul style="list-style-type: none"> • D2500
	<i>Draws current when pushing On/Off key, returns to zero</i>	<ul style="list-style-type: none"> • N2000 • N4030 • N4021 • N4040 • N4050 • D2501
	<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 • D2665 • D2663



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> • D2663 • D6000 • B2680
2.4 Charging	<i>Charging from power outlet</i>	<ul style="list-style-type: none"> • V2663 <i>if short circuit</i> • V4001 <i>if Charging alien battery only</i> • N2000
	<i>Charging from computer via USB</i>	<ul style="list-style-type: none"> • D2665 <i>if pin 1 at X2665 is short circuit to pin 9 GND</i> • 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"> • Replace sub PCB • X2580 <i>if damaged</i> • N2000
2.7 Vibrator		<ul style="list-style-type: none"> • N2000
2.8 Charging indicator (RED/GREEN LED)		<ul style="list-style-type: none"> • V2181 • V2191 • N2000 <i>if no light at all</i>
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 Illumination		<ul style="list-style-type: none"> • X2820 <i>if damaged</i> • N4070 • N4071
2.12 Keyboard Illumination		<ul style="list-style-type: none"> • X2821 <i>if damaged</i>
2.13 Keyboard		<ul style="list-style-type: none"> • X2821 <i>if damaged</i> • D2500



Failure	Failure Symptom	Repair Action
2.14 On/Off Key		<ul style="list-style-type: none"> • S2125 • V2125 • N2000
2.15 Volume Up Key		<ul style="list-style-type: none"> • S2821 • D2500
2.16 Volume Down Key		<ul style="list-style-type: none"> • S2822 • D2500
2.17 JOG Dial		<ul style="list-style-type: none"> • S2820 • D2500
2.18 Real Time clock	<i>The clock has to be set after the battery has been detached</i>	<ul style="list-style-type: none"> • Replace sub PCB • X2580 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
2.19 Back Speaker (Loudspeaker, Bas Speaker)		<ul style="list-style-type: none"> • N5505 • D2500
2.20 Ear Speaker		<ul style="list-style-type: none"> • V5000 • V5001 • N2000
2.21 Hands-Free (PHF) Aux Earphone		<ul style="list-style-type: none"> • N5500 • N5010 • N2000 • D2500
2.22 Microphone		<ul style="list-style-type: none"> • D5001 • N2000
2.23 Hands-Free (PHF) Aux Microphone		<ul style="list-style-type: none"> • N5010 • N2000
2.24 Camera Mega pixel		<ul style="list-style-type: none"> • X2743 if damaged • D2500
2.25 Camera Flash		<ul style="list-style-type: none"> • X2742 if damaged
2.26 VGA Camera		<ul style="list-style-type: none"> • X2741 if damaged • D2500



Failure	Failure Symptom	Repair Action
2.27 WLAN		<ul style="list-style-type: none">• <i>X6000 if only short distance</i>• <i>X6001 if only short distance</i>• <i>B6000</i>• <i>N6000</i>• <i>D2500</i>
2.28 8GB Memory		<ul style="list-style-type: none">• <i>Replace sub PCB</i>• <i>X2580 if damaged</i>
2.29 Bluetooth		<ul style="list-style-type: none">• <i>X3001 if only short distance</i>• <i>N3001</i>• <i>D2500</i>
2.30 Fm Radio		<ul style="list-style-type: none">• <i>N5508</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">• Run the calibration routine
<i>Fails Go/No Go test, but passes calibration</i>	<ul style="list-style-type: none">• Replace the antenna if damaged• Check X1010, X1011, X1012 and X1021 for damage and replace if 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 X1001 and retest

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

5 Revision History

Rev.	Date	Changes / Comments
1	2007-11-29	Initial release
2	2008-03-26	Added a new Failure Symptom under On/Off problem