



Trouble Shooting Guide, Electrical

Applicable for Z780a,Z780i,TM506

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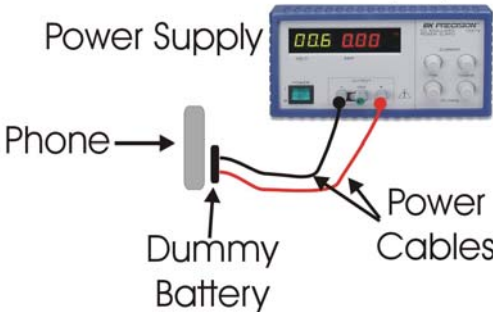


1 General

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 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"> • N1002 inside Thor N1200 • N1200 • N1210
	<i>Current draw when powered off</i>	<ul style="list-style-type: none"> • N1002 inside Thor N1200 • N1200 • N1210
	<i>Using no current when On/Off button is pressed and will not start</i>	<ul style="list-style-type: none"> • R2200 if opened • V2402
	<i>Hangs at gray display. Constant vibration. Will not power off</i>	<ul style="list-style-type: none"> • B2100
	<i>Draws current when pushing On/Off key, returns to zero</i>	<ul style="list-style-type: none"> • N2202
	<i>Will not power off</i>	<ul style="list-style-type: none"> • V2402
	<i>Other symptoms</i>	<ul style="list-style-type: none"> • X2200 if damaged
2.2 Software Flash		<ul style="list-style-type: none"> • D2405 • D2404 • V2405
2.3 Charging	<i>Charging from power outlet</i>	<ul style="list-style-type: none"> • V2421 if short circuit • V2202
	<i>Charging from computer via USB</i>	<ul style="list-style-type: none"> • N2402
2.4 Hands-Free connection	<i>Phone stuck in PHF mode when PHF is not attached</i>	<ul style="list-style-type: none"> • V2420 if short circuit • N2400 • R2441
2.5 SIM		<ul style="list-style-type: none"> • X2410 if damaged
2.6 Open/Close Flip		<ul style="list-style-type: none"> • B2400
2.7 Main/Sub Display		<ul style="list-style-type: none"> • X4200 if damaged.
2.8 Main/Sub LCD LED:		<ul style="list-style-type: none"> • X4200 if damaged
2.9 Keypad LEDs		<ul style="list-style-type: none"> • V2422-V2425 if damaged • V4207
2.10 Keypad Rock Keys		<ul style="list-style-type: none"> • V2407 (Rock down key) • V2408(Rock left key) • V2409(Rock up key) • V2410(Rock push key) • V2411(Rock right key)
2.11 Volume up Key		<ul style="list-style-type: none"> • S2431 • V2427 if short circuit



Failure	Failure Symptom	Repair Action
2.12 Real Time clock	<i>The clock has to be set after the battery has been detached</i>	<ul style="list-style-type: none"> • C2203
2.13 Polyphonic Speaker (Loudspeaker, Bas Speaker)		<ul style="list-style-type: none"> • X3101,X3102 if damaged • C3137 if short circuit • C3123 if short circuit • N3100
2.14 Hands-Free (PHF) Aux Earphone		<ul style="list-style-type: none"> • N3101 • L2403 if more than 1 Ohm • L2404 if more than 1 Ohm • R2441
2.15 Microphone		<ul style="list-style-type: none"> • B3100 if damaged
2.16 Hands-Free (PHF) Aux Microphone		<ul style="list-style-type: none"> • N3101 • L2401 if more than 1 Ohm • L2402 if more than 1 Ohm • R2441
2.17 Camera		<ul style="list-style-type: none"> • X4200 if damaged • N2301 • N2302
2.18 Memory Card		<ul style="list-style-type: none"> • X2405 if damaged
2.19 Bluetooth		<ul style="list-style-type: none"> • N1400
2.20 Fm Radio		<ul style="list-style-type: none"> • N1400 • V2429
2.21 Volume down Key		<ul style="list-style-type: none"> • S2432 • V2428 if short circuit
2.22 Earphone		<ul style="list-style-type: none"> • Earphone on Hinge FPC
2.23 AGPS		<ul style="list-style-type: none"> • X4200 if damaged



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 L1211 if damaged.• Replace the antenna box• Check X1201 for damage and replace it necessary• Return the phone through Go/No Go testing
<i>Fails Go/No Go test after passing calibration</i>	<ul style="list-style-type: none">• Change X1200 and retest

4 Repair Actions for Calibration Routine Failures

Failure	Repair Action
<i>Fails any part of the calibration routine</i>	<ul style="list-style-type: none">• Replace X1200 if damaged• N1210 UMTS – Approved Centers Only• N2205 UMTS• N1200 GSM – Approved Centers Only

5 Revision History

Rev.	Date	Changes / Comments
1	2008-06-3	First release
3	2008-06-13	Adding TM506 project
3	2008-10-07	Add R2441
4	2008-12-18	Add N1002
5	2009-4-8	Add L1211 for no network on page5.
6	2009-06-12	Add R2200 for Power ON/Off issue on page 3