



Trouble Shooting Guide, Electrical

Applicable for Z310

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	Charging	3
2.4	Hands-Free connection (PHF)	3
2.5	SIM	3
2.6	Charging indicator (RED LED).....	3
2.7	Display.....	3
2.8	Display Illumination.....	3
2.9	Keypad LEDs	3
2.10	Keypad Keys	3
2.11	Volume Up Key.....	3
2.12	Volume Down Key.....	3
2.13	Vibrator	4
2.14	Real Time Clock.....	4
2.15	Earphone (Receiver, Flip Speaker).....	4
2.16	Polyphonic Speaker (Loudspeaker, Base Speaker)	4
2.17	Hands-Free (PHF) Aux Earphone	4
2.18	Microphone.....	4
2.19	Hands-Free (PHF) Aux Microphone	4
2.20	Camera.....	4
2.21	Flip Sensor.....	4
2.22	IR	4
2.23	Bluetooth	4
3	Repair Actions for Go/No Go Test Failures	4
4	Repair Actions for Calibration Routine Failures.....	5
5	Revision History	6



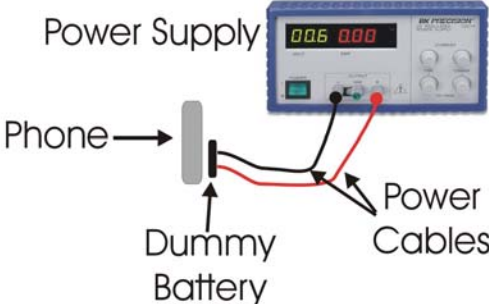


1 General

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>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	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"> • V0302 • N5700
	Will not power on AND will not flash	<ul style="list-style-type: none"> • N7520
	Draws less than 50 mA , hangs at gray display, and will not flash	<ul style="list-style-type: none"> • B5506
	Powers On BUT will not power off	<ul style="list-style-type: none"> • V2008
	Other symptoms	<ul style="list-style-type: none"> • X0616 if damaged
2.2 Software Flash	EMMA gives “unrecognized device” error and phone powers on	<ul style="list-style-type: none"> • N2602 • N2601
	EMMA gives no response at all	<ul style="list-style-type: none"> • N2602 • N2601 • V0609
2.3 Charging	Charging from power outlet	<ul style="list-style-type: none"> • V0301 • N2602 • N7520
	Charging from computer via USB	<ul style="list-style-type: none"> • V0609 • N2602 • N7520
2.4 Hands-Free connection	Phone stuck in PHF mode when PHF is not attached	<ul style="list-style-type: none"> • V2611
2.5 SIM		<ul style="list-style-type: none"> • X2500 if damaged • N7520 • R1523 if damaged
2.6 Charging indicator (RED LED)		<ul style="list-style-type: none"> • V1414 • N7520
2.7 Display		<ul style="list-style-type: none"> • X1201
2.8 Display Illumination		<ul style="list-style-type: none"> • N1401 • X1201
2.9 Keypad LEDs	Bottom Left	<ul style="list-style-type: none"> • V1403-V1404-V1405
	Bottom Right	<ul style="list-style-type: none"> • V1406-V1407-V1408
	Top	<ul style="list-style-type: none"> • V1409-V1410
	RGB Left	<ul style="list-style-type: none"> • V1401
	RGB Right	<ul style="list-style-type: none"> • V1402
	All	<ul style="list-style-type: none"> • N1401
2.10 Keypad Keys		<ul style="list-style-type: none"> • V2001 • V2002
2.11 Volume Up Key		<ul style="list-style-type: none"> • S2011 • V2002
2.12 Volume Down Key		<ul style="list-style-type: none"> • S2012 • V2001
2.13 Vibrator		<ul style="list-style-type: none"> • N7520 • X1201



Failure	Failure Symptom	Repair Action
2.14 Real Time clock	The clock has to be set after the battery has been detached	<ul style="list-style-type: none"> • C0699
	The clock gain or lose time	<ul style="list-style-type: none"> • B5506
2.15 Earphone (Receiver, Flip speaker)		<ul style="list-style-type: none"> • X1201
2.16 Polyphonic Speaker(Loudspeaker, Base Speaker)		<ul style="list-style-type: none"> • C2235 • N2249
2.17 Hands-free (PHF) Aux Earphone		<ul style="list-style-type: none"> • N2203 • L2601 if more than 1 Ohm • L2602 if more than 1 Ohm • L2605 if more than 1 Ohm
2.18 Microphone		<ul style="list-style-type: none"> • X2201 if damaged • N2203 • L2248 if more than 0,5 Ohm • N7520
2.19 Hands-Free (PHF) Aux Microphone		<ul style="list-style-type: none"> • N2203 • L2604 if more than 1 Ohm • L2605 if more than 1 Ohm
2.20 Camera		<ul style="list-style-type: none"> • N2326 • X1201
2.21 Flip Sensor		<ul style="list-style-type: none"> • B2032
2.22 IR		<ul style="list-style-type: none"> • H2701
2.23 Bluetooth		<ul style="list-style-type: none"> • N2503 • D2599

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 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

GSM/EDGE 850, 900, 1800 or 1900

The variable **F** in the table below will be replaced by one of the different frequencies (GSM850, GSM900, DCS1800 or PCS1900).

Routine	Repair Action
Tm_Cal_PEAKPOW_DAC_GMSK_F	<ul style="list-style-type: none">• L5707 if more than 0,2 Ohm• N5700• N5301• W5301• N7520
Tm_Cal_8PSK_Mod_F	<ul style="list-style-type: none">• N5000• N7520
Tm_Cal_26Mhz_VCTCXO	<ul style="list-style-type: none">• N7200• N5000
Tm_Cal_8PSK_OOS_F	<ul style="list-style-type: none">• N5000• N7520
Tm_Cal_RSSI_ALVA_F	<ul style="list-style-type: none">• N5000• N5301



5 Revision History

Rev.	Date	Changes / Comments
A	2007-02-14	First release
B	2007-09-05	R1523 added
C	2008-12-08	Some changes in Chapter 4