



Trouble Shooting Guide Repair Instruction Electrical/, Electrical

Applicable for K660i

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	3
2.5	SIM	3
2.6	Display.....	3
2.7	Display Illumination	3
2.8	Keypad LEDs	3
2.9	Keypad Keys	3
2.10	Volume Up Key	3
2.11	Volume Down Key	3
2.12	Real Time clock.....	4
2.13	Polyphonic Speaker (Loudspeaker, Base Speaker).....	4
2.14	Receiver "Ear Speaker"	4
2.15	Hands-free (PHF) Aux Earphone	4
2.16	Microphone.....	4
2.17	Hands-Free (PHF) Aux Microphone	4
2.18	Camera.....	4
2.19	VGA Camera	4
2.20	Memory Card.....	4
2.21	Bluetooth	4
2.22	Fm Radio.....	4
3	Repair Actions for Go/No Go Test Failures	5
4	Repair Actions for Calibration Failures.....	5
5	Revision History.....	5

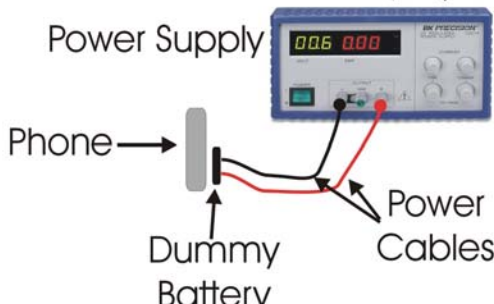


1 General

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. 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 greater than 300 mAmps	N1002 inside Module N1200 N2001 inside Module N1200 N1200 N1210
	Current draw when powered off	N1002 inside Module N1200 N2001 inside Module N1200 N1200 N1210
	Using no current when On/Off button is pressed and will not start	S2400
	Hangs at grey display. Constant vibration. Will not power off.	B2100
	Other symptoms	X2200 if damaged
	Some current draw when pressing power key, but current returns to 0 when power key is released	V2206
2.2 Software Flash		<ul style="list-style-type: none"> V2405
2.3 Charging	Charging from power outlet	V2421 if short circuit V2202
2.4 Hands-Free connection	Phone stuck in PHF mode when PHF is not attached	V2420 if short circuit N2400
2.5 SIM		X2403 if damaged
2.6 Display		X4200 if damaged
2.7 Display Illumination		<ul style="list-style-type: none"> X4200 if damaged V4201
2.8 Keypad LEDs		X2402 if damaged
2.9 Keypad Keys		<ul style="list-style-type: none"> X2402 if damaged V3107, V3108, V3109, V3110
2.10 Volume Up Key		S2403
2.11 Volume Down Key		S2402



Failure	Failure Symptom	Repair Action
2.12 Real Time clock	The clock has to be set after the battery has been detached	C2217 B2100
2.13 Polyphonic Speaker (Loudspeaker, Base Speaker)		V3105, V3106, N3100
2.14 Receiver “Ear Speaker”		V3101, V3102
2.15 Hands-free (PHF) Aux Earphone		<ul style="list-style-type: none"> • N3101 L2403 if more than 1 Ohm L2404 if more than 1 Ohm
2.16 Microphone		V3103, V3104, B3100
2.17 Hands-Free (PHF) Aux Microphone		<ul style="list-style-type: none"> • N3101 • B3100 L2401 if more than 1 Ohm L2402 if more than 1 Ohm
2.18 Camera		X4310 if damaged N2203 N2204
2.19 VGA Camera		X4300 if damaged N2203
2.20 Memory Card		X2490 if damaged
2.21 Bluetooth		N1400
2.22 Fm Radio		N1400 C3145, C3146



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 X1201, X1202 and X1203 for damage and replace if necessary Rerun the phone through Go/No Go testing
Fails Go/No Go test after passing calibration	Change X1200 and retest

4 Repair Actions for Calibration Failures

Failure	Repair Action
Fails any part of the calibration routine	Replace X1200 if damaged N1002 inside Module N1200 N2001 inside module N1200 N1210 UMTS – Approved Centers Only N2205 UMTS N1200 GSM – Approved Centers Only

5 Revision History

Rev.	Date	Changes / Comments
1	2008-02-29	First Release
2	2008-03-28	No Change
3	2009-01-08	N2001 & N1002 Added
4	2009-01-08	No Change