



Trouble Shooting Guide, Electrical

Applicable for W595

CONTENTS

1	General	2
2	Repair Actions for Manual Test Failures	3
2.1	Power On / Off	3
2.2	Software Flash / USB	3
2.3	Charging.....	3
2.4	Hands-Free connection (PHF)	5
2.5	SIM.....	5
2.6	Display	4
2.7	Display Illumination and Navigation Keys Illumination	4
2.8	Numeric Keyboard Illumination	4
2.9	Numeric Keyboard	4
2.10	Volume Up Key	4
2.11	Volume Down Key.....	4
2.12	Walkman Key	4
2.13	Navigation Keys	4
2.14	Navigation Keys Illumination	5
2.15	Real Time clock.....	4
2.16	Polyphonic Top Speaker (Loudspeaker Top).....	4
2.17	Polyphonic Bottom Speaker (Loudspeaker Bottom)	4
2.18	Hands-free (PHF) Aux Earphone	4
2.19	Earphone.....	4
2.20	Microphone	6
2.21	Hands-Free (PHF) Aux Microphone.....	6
2.22	Camera	5
2.23	Opto Sensor.....	5
2.24	Slide Sensor.....	5
2.25	Vibrator.....	5
2.26	Accelerometer	5
2.27	Memory Card	5
2.28	Bluetooth	5
2.29	FM Radio.....	5
3	Repair Actions for Go/No Go Test Failures	7
3.1	Fails any part of Go/No Go testing	7
3.2	Fails Go/No Go test, but passes calibration	7
3.3	Fails Go/No Go test after passing calibration.....	7
4	Repair Actions for Calibration Failures	7
4.1	Fails any part of the calibration routine	7
5	Revision History.....	8

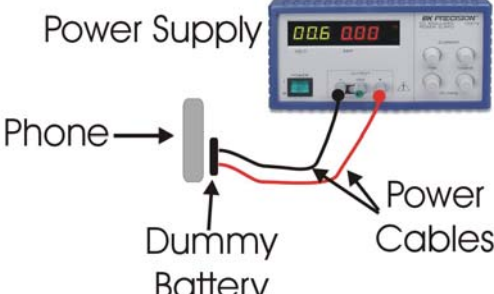


1 General

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 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. 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 (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	<ul style="list-style-type: none"> • N2404 if getting hot • N1002 inside module N1200 • N1200 • N1210
	Current draw when powered off.	<ul style="list-style-type: none"> • N2404 • N1002 inside module N1200 • N1200 • N1210
	Using no current when On/Off key is pressed and will not start.	<ul style="list-style-type: none"> • X4200 if damaged
	Hangs at gray display. Constant vibration. Will not power off.	<ul style="list-style-type: none"> • B2100
	Draws current when pushing On/Off key, returns to zero.	<ul style="list-style-type: none"> • N2202 • L2200 • N1200
	Will not power off.	<ul style="list-style-type: none"> • V2408
	Other symptoms	<ul style="list-style-type: none"> • X2200 if damaged
2.2 Software Flash / USB		<ul style="list-style-type: none"> • X2400 if damaged • N2402 if not charging via USB • N2410 if pin 10 or 11 at X2400 are short circuit to GND • N2404
2.3 Charging	Charging from power outlet	<ul style="list-style-type: none"> • X2400 if damaged • X2200 if damaged • V2421 if short circuit • V2200 if short circuit • R2432 if more than 1 Ohm • R2434 if more than 1 Ohm • V2202
	Charging from computer via USB	<ul style="list-style-type: none"> • X2400 if damaged • N2402



Failure	Failure Symptom	Repair Action
2.4 Hands-Free connection (PHF)	Phone stuck in PHF mode when PHF is not attached.	<ul style="list-style-type: none"> • V2420 if short circuit • N2400 • V2405
	Phone not recognizes PHF set.	<ul style="list-style-type: none"> • X2400 if damaged
2.5 SIM		<ul style="list-style-type: none"> • X2420 if damaged
2.6 Display		<ul style="list-style-type: none"> • X4200 if damaged • Z4200 only old w595 revision • Z4201 only old w595 revision • Z4202 only old w595 revision • Z4203 only old w595 revision
2.7 Display Illumination and Navigation Keys Illumination		<ul style="list-style-type: none"> • X4200 if damaged • N4200
2.8 Numeric Keyboard Illumination		<ul style="list-style-type: none"> • X2430 if damaged
2.9 Numeric Keyboard		<ul style="list-style-type: none"> • X2430 if damaged
2.10 Volume Up Key		<ul style="list-style-type: none"> • X2430 if damaged
2.11 Volume Down Key		<ul style="list-style-type: none"> • X2430 if damaged
2.12 Walkman Key		<ul style="list-style-type: none"> • X2430 if damaged
2.13 Navigation Keys		<ul style="list-style-type: none"> • X4200 if damaged
2.14 Navigation Keys Illumination	Led's light when battery is inserted.	<ul style="list-style-type: none"> • V4220 if short circuit
	Other symptoms	<ul style="list-style-type: none"> • X4200 if damaged
2.15 Real Time clock	The clock has to be set after the battery has been detached. Note very short time compare to other models.	<ul style="list-style-type: none"> • C2217
	The clock gain or lose time. SERP calibrating is performed.	<ul style="list-style-type: none"> • B2100
2.16 Polyphonic Top Speaker (Loudspeaker Top)		<ul style="list-style-type: none"> • N3102
2.17 Polyphonic Bottom Speaker (Loudspeaker Bottom)		<ul style="list-style-type: none"> • X2430 if damaged • N3100
2.18 Hands-free (PHF) Aux Earphone		<ul style="list-style-type: none"> • X2400 if damaged • L2403 if more than 1 Ohm • L2404 if more than 1 Ohm • L2411 if more than 1 Ohm • N3101
2.19 Earphone		<ul style="list-style-type: none"> • X4200 if damaged



Failure	Failure Symptom	Repair Action
2.20 Microphone		<ul style="list-style-type: none">• B3105
2.21 Hands-Free (PHF) Aux Microphone		<ul style="list-style-type: none">• X2400 if damaged• L2401 if more than 1 Ohm• L2402 if more than 1 Ohm• L2421 if more than 1 Ohm• L2422 if more than 1 Ohm• N3101
2.22 Camera		<ul style="list-style-type: none">• X4300 if damaged• N4310• N4311
2.23 Opto Sensor		<ul style="list-style-type: none">• X4200 if damaged• N2203
2.24 Slide Sensor		<ul style="list-style-type: none">• X4200 if damaged
2.25 Vibrator		<ul style="list-style-type: none">• B4200
2.26 Accelerometer		<ul style="list-style-type: none">• N2490
2.27 Memory Card		<ul style="list-style-type: none">• X2410 if damaged
2.28 Bluetooth		<ul style="list-style-type: none">• X1400 if damaged• X1401 if damaged• N1400
2.29 FM Radio		<ul style="list-style-type: none">• X2400 if damaged• N1400

3 Repair Actions for Go/No Go Test Failures

Failure	Failure Symptom	Repair Action
3.1	Fails any part of Go/No Go testing	<ul style="list-style-type: none"> • Run the calibration routine
3.2	Fails Go/No Go test, but passes calibration	<ul style="list-style-type: none"> • Replace the antenna • Check X1201 for damage and replace if necessary • Rerun the phone through Go/No Go testing
3.3	Fails Go/No Go test after passing calibration	<ul style="list-style-type: none"> • Change X1200 and retest

4 Repair Actions for Calibration Failures

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

5 Revision History

Rev.	Date	Changes / Comments
1	2008-09-26	First release
2	2009-03-06	N2404 added to 2.1 On/Off problems
3	2009-05-06	Only old W595 revision added to 2.6 Display Z4200-Z4203
4	2009-06-23	V4220 added to 2.14 Navigation Keys Illumination