



Test Instruction, Electrical

Applicable for Z250 and Z320

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1 Abstract

This document describes the process used for flashing software upgrades and how to functionally test the mobile phone.

2 Test Procedure

To verify all components within Electrical repair package all tests must be performed.

2.1 Test flow

It's acceptable to return the phone to the customer if the unit is passing these steps of testing without any failures. If there are any failures, the phone must be repaired according to the troubleshooting guide or sent to higher repair level.

3 Pre-Test Preparations

3.1.1 Software Update

Update to the latest signaling software using Emma III.

3.1.2 Verify Software Version

To verify if the mobile needs new software, you have to check the Software Version in the mobile. Current Software Versions are checked using the following steps:

1. Start the phone.
2. Press the following Navigation key and keypad sequence: → * ← ← * ← *
3. Select "Service Info".
4. Select "Software info".
5. Check the software file revisions on the display. (Contact your line supervisor to determine what the latest SW revision is.)
6. Press "OK" to return to the "Service Info" menu.

3.1.3 Update Software Version

Update the software in the mobile by doing the following:

1. Make sure that the phone's battery is fully charged or use a Dummy battery and a power supply. Connect correct flash cable and interface according to the Installation instruction.
2. Connect to the Emma III server, follow the instruction and update to latest software.

4 Go/No Go Test

4.1 GSM

Will be added in a later release

5 Service Tests

NOTE! It is **not** necessary to have a SIM card inserted for the Service Tests.

1. Press the "On/Off" button to start the mobile.
2. The Service menu is entered using the following Navigation key and keypad sequence: → * ← ← * ← *
3. Select "Service Tests" then press the "Select" key.

5.1 Main Display Test

To verify the display:

1. Select "Main Display" from the "Service Tests" menu and press the "Select" key.
2. The display toggles between different test patterns. Make sure that there are no missing segments and the colors/contrast are OK.
3. Press the "Back" key to return to the Service Tests menu.

5.2 LED/Illumination Test

To verify that the backlighting of the display and the keypad are OK:

1. Select "LED/illumination" from the "Service Tests" menu and press the "Select" key.
2. The words "LED/illumination" will be splashed on the screen.
3. Check that the backlight turns on and off and the LED's (white) under the keypad light up from the top to the bottom of the Keypad.
4. Press the "OK" key to end the test and return to the Service Tests menu.

5.3 Keyboard Test

To verify that the keyboard, the Navigation key and side keys are OK:

1. Select "Keyboard" from the "Service Tests" menu and press the "Select" key.
2. The phrase "Keyboard Test. Press any key." will be displayed on the screen.
3. Press all keys on the keypad and the side keys. If they are ok a text message will be displayed corresponding to the key pressed. All keys should be tested.
4. If you stop pressing keys the phone will return to the Service Tests menu after a few seconds.



5.4 Speaker Test

WARNING! DO NOT HOLD THE PHONE TO YOUR EAR WHILE PERFORMING THIS TEST.

To verify the Speaker functions:

1. Select "Speaker" from the "Service Tests" menu and press the "Select" key.
2. Adjust the volume with the navigation or side volume keys and make sure that the speaker is working properly.
3. Press the "OK" key to go back to the Service Tests menu.

5.5 Earphone Test

To verify the Earphone functions:

1. Select "Earphone" from the "Service Tests" menu and press the "Select" key.
2. Adjust the volume with the navigation or side volume keys and make sure that the earphone is working properly.
3. Press the "OK" key to go back to the Service Tests menu.

5.6 Microphone Test

This test can only be performed by making an "On the Air Call to Mobile" test. See chapter 6.3

5.7 Vibrator Test

To verify the vibrator functions:

1. Select "Vibrator" from the "Service Tests" menu and press the "Select" key.
2. Press any key to start the Vibrator
3. Verify that the mobile vibrates multiple times.
4. Press the "OK" key to end the test and return to the Service Tests menu.



5.8 Camera Test

To verify the camera functions:

NOTE! Minor variations in image appearance may occur between phones. This is nothing uncommon and is not regarded as a defective camera module.

To verify that the camera is OK:

1. Select Camera from the "Service Tests" menu and press the "Select" key.
2. Focus on an object as to take a picture. Check that the image quality is OK.

NOTE! Picture cannot be taken during this test.

3. Press the "Back" key to return to the Service Tests menu.

5.9 Real Time Clock Test

This test will check if the built in real time clock works.

1. Select "Real Time Clock" from the "Service Tests" menu and press the "Select" key.
2. The words "Real Time Clock Please wait..." will be displayed on the screen.
3. After a few seconds you will get information whether the clock is ok or not. After the test results are displayed the test will end and return to the Service Tests menu.

5.10 Total Call Time Test

This test is to check the total call time of the hand set.

1. Select "Total call time" from the "Service Tests" menu. The total call time of the hand set will now be displayed.
2. Press the "OK" key to go back to the service tests menu.

6 Manual Tests

6.1 SIM Test

To verify that the phone can detect a SIM:

1. Insert a SIM card, connect a battery and start the unit.
2. Press the "Select" key at the "Start phone" menu. If this menu does not appear proceed to step 3.
3. If the SIM is detected the phone will start "Searching" for a signal. If the SIM is not detected the phone will ask you to "Insert SIM card".

6.2 Infrared Test

To verify that the Infrared (IR) communication is working:

1. Insert a SIM card, connect a battery and start the unit.
2. Activate the IR function by entering the menu and selecting: Settings/Connectivity/Infrared port/10 Minutes.
3. Set up an infrared link between an IR test device and the mobile. If a link can be established, the IR module is considered functional.
4. Press and hold the "Back" key to get back to the main screen.

6.3 System Connector Test

6.3.1 Battery Charger

To verify if the charging of the phone is working properly:

1. Connect a battery.
2. Connect the Charger to the system connector.
3. Verify that the main display shows that the phone is being charged.
4. Remove the Charger from the system connector and verify that the main display no longer shows the phone being charged.

6.3.2 Portable Hands-free (PHF)

To verify the portable hands-free function:

1. Insert a SIM card, connect a battery and start phone.
2. Insert a Portable Hands-free that is compatible to the phone
3. Make a "On the Air Call Test" according to Chapter 6.3 to verify the function of the hands-free microphone and the hands-free earphone
4. Adjust the volume up and down using the side volume key and check that the volume in the mobile is altered.

6.4 On The Air Call to Mobile

Use an On the Air Call to the mobile to test its network functionality.

NOTE! An “On the Air” test can only be performed if the mobile has an activated SIM card properly installed in the mobile and a network signal is available. This test cannot be performed with a Test SIM.

To verify the radio functions in the phone do the following:

1. Insert an operator SIM card and start phone.
2. Set up a call from a landline phone (PSTN) to the mobile.
3. Answer the phone call.
4. Check that the ringer is working and that the backlight switches on OK.
5. Check that the quality of sound both in the mobile and the landline phone (PSTN) are OK.
6. Adjust the volume up and down using the side volume key and check that the volume in the mobile is altered.
7. End the call. Check that the ending procedure is OK and that the talk time is displayed.



7 Revision History

Rev.	Date	Changes / Comments
A	2007-10-09	1 st release