



# Test Instruction, HVC/Electrical

Applicable for Z200/208

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# 1 Abstract

This document describes the test procedure for the Electrical repair package.

# 2 Test Procedure

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

# 3 Test flow

If the phone is passing these steps of testing without any failures, it is OK to return it to the customer.

If there are any failures, repair the phone according to the troubleshooting guide.

## 3.1 Software Update

Update to latest signalling software and run the service software from EMMA II.

### 3.1.1 Verify Software Version

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

1. Start up the phone.
2. Press the following navigation-key and keyboard sequence:  $\Rightarrow * \Leftarrow \Leftarrow * \Leftarrow *$
3. Select Service info.
4. Select SW Information.
5. Check the file revisions on the display.
6. Press OK to return to the Service info menu.

### 3.1.2 Update Software Version

Update the software in the phone by doing the following steps:

1. Make sure that the phone's battery is fully charged or use a Dummy battery. Connect correct flash cable and interface according to the Installation instruction.
2. Connect to the EMMA II server, choose application "GSM" and follow the instructions.



## 3.2 Go/No-Go Test

This test verifies that the radio parameters of the phone fulfil the EGSM900/GSM 1800/GSM1900 specification. If all measurements are approved, this will be confirmed. If any faults are discovered, this will be presented either on the screen or printed out. It's possible to do this test either with antenna coupler from Acterna or Rohde&Schwarz or RF adapter.

It's very important that a fully charged battery is used otherwise there is a risk for wrong test results.

### Antenna Coupler

- Insert a test-SIM and a fully charged standard battery. Position the phone in the coupler according to the pictures (Fig 1 and 2).

### RF adapter

- Insert a test-SIM and a dummy battery or a fully charged standard battery. Assemble the RF adapter according to Fig 2 and 2.1. Connect the RF cable between the Test set and the antenna adapter.



Fig. 1 Position of the phone in to the Acterna holder.



Fig.2 Position of the phone in to the Rohde&Schwarz holder.

1. Start the Test set, and run the script called "Z200".



2. Follow the instructions on the Test instrument during the test.

### 3.3 Service Settings

Start the phone.

**Note:** It is not necessary to have a SIM card inserted.

The Service Settings menu is entered using the following navigation-key and key sequence:  
⇒ \* ⇐ ⇐ \* ⇐ \* and select "Service Settings".

#### 3.3.1 Contrast

To adjust the contrast:

1. Make sure that the contrast setting in the display menu (in the user MMI) is set to 0.
2. Select "Contrast" from the "Service Settings".
3. Adjust contrast with the navigation-key.
4. Press the "NO" key and you will return to the Main menu.

### 3.4 Service Tests

Start the phone.

**Note:** It is not necessary to have a SIM card inserted.

The Service Tests menu is entered using the following navigation-key and key sequence:  
⇒ \* ⇐ ⇐ \* ⇐ \* and select "Service Tests".

#### 3.4.1 Display Test

To verify the display:

1. Select "Display" from the "Service Tests" menu.
2. The display toggles between four different test patterns.  
Make sure that there are no dots missing and that the colours and contrast is OK.
3. Close the flip and make sure that the status-display is starting up and that the information is visible and the backlight is turned on.
4. Open the flip and press the "NO" key to go back to the service tests menu.

#### 3.4.2 LED/Illumination Test

To verify that the backlight and the Top LED's are OK:

1. Select "LED/illumination" from the "Service Tests" menu.



2. Check that the backlight is toggle between on and off, and that the LED on the top toggles between “red” and off..
3. Press the “YES” key to go back to the service tests menu.

### 3.4.3 Keyboard Test

To verify that the keyboard, the navigation-key and the volume key are OK:

1. Select “Keyboard” from the “Service Tests”.
2. Press all keys on the keypad, the camera key on the right side and the volume keys on the left side. If they are ok a text feedback is displayed showing the information which key was pressed. All keys should be tested. On/Off button is not included in the test; functionality is secured if the phone can be switched on/off.
3. If you stop pressing keys the phone will return to the service test menu after 3 seconds.

### 3.4.4 Buzzer Test

To verify the Polyphonic Ring signal function:

1. Select Polyphonic from the Service Tests menu.
2. Adjust the volume with the navigation-key or Volume-key and then press “Yes” to go back to the service test menu.

### 3.4.5 Earphone Test

The earphone is tested using DTMF tones.

1. Select “Earphone” from the “Service Tests” menu.
2. Press a numeric key and check that you get a tone in the earphone.
3. Press the “YES” key to go back to the service tests menu.

### 3.4.6 Microphone Test

This test is intended to test the microphone. Therefore, the earphone should be tested before this test is entered.

1. Select “Microphone” from the “Service Tests” menu.
2. Check that every sound that is going into the microphone can be instantly heard in the earphone.
3. Press the “YES” key to go back to the service tests menu.



### **3.4.7 Vibrator Test**

To verify the vibrator function:

1. Select "Vibrate" from the "Service Tests" menu.
2. Press any key and the vibrator will vibrate.
3. Press the "YES" key to stop the vibrator and go back to the service tests menu.

### **3.4.8 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.  
After approximately 5 seconds you will get information whether the clock is ok or not.
2. Press the "YES" key to go back to the service tests menu.

### **3.4.9 Flip Counter Test**

This test will show how many times the flip have been opened and closed.

1. Select "Flip counter" from the "Service Tests" menu.
2. The number shown on the display will increase then the phone is open and closed.
3. Press the "YES" key to go back to the Service Test menu

### **3.4.10 Total call time Test**

This test will show the total time on both incoming and outgoing calls.

1. Select "Total call time" from the "Service Tests" menu.
2. The total call time will be displayed
3. Press the "YES" key to go back to the Service Test menu

## **3.5 Manual Tests**

### **3.5.1 On The Air Call To Mobile**

To verify the function of the earphone, microphone, buzzer, volumes button and radio:

1. Set up a call from another phone to the mobile phone.
2. Answer the phone call.



3. Check that the polyphonic ring signal is working and that the backlight switches on OK.
4. Also check that the quality of sound both in the mobile phone and the other phone are OK.
5. Press the volume key up and down and check that the volume in the phone is altered.
6. End the call.
7. Check that the ending procedure is OK and that the speech time is displayed.

### **3.5.2 System Connector Test**

Handsfree equipment and a charger are used in this test, to check the functionality of the System Connector.

1. Insert a SIM card, connect a battery and start the unit.
2. Connect the Handsfree equipment to the system connector and set up a call and listen if you can speak/hear in the hands free set.
3. Connect the charger to the system connector and see if the phone starts to charge and if the charging is indicated in the display.

## **4 Revision History**

<b>Rev.</b>	<b>Date</b>	<b>Changes / Comments</b>
A	2004-02-04	First release