



Test Instruction, Mechanical

Applicable for K660i

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1 Abstract

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

If there are any failures, the mobile must be repaired according to the troubleshooting guide or sent to a higher repair level.

2 Test Procedure

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

2.1 Test flow

It's OK 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 latest signalling software and run the service activities software from EMMA III.

3.1.2 Verify Software Version

NOTE! Remove the SIM-card before testing.

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. Enter the Service Tests Menu by pressing the sequence ➡*⬅⬅*⬅* with the navigate buttons and the * on the keypad.
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.'

3.1.3 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 battery eliminator.
Connect correct flash cable and interface according to the Installation instruction.
2. Logon to the EMMA III server, and follow the instructions

4 Service Tests

4.1.1 Main Display Test

To verify the display:

1. Select "Main 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. Press the "Centre Navi" key to go back to the service tests menu.

4.1.2 LED/Illumination Test

To verify that the backlights are OK:

1. Select "LED/illumination" from the "Service Tests" menu.
2. Check that the backlight in the display and the keyboard is toggle between on and off.
3. Press the "OK" key to go back to the service tests menu.

4.1.3 Keyboard Test

To verify that all the keys are working:

1. Select "Keyboard" from the "Service Tests".
2. Press all keys on the keypads, the camera key and up/down keys on the right side and the on/off button on the top. If they are ok a text feedback is displayed showing the information which key was pressed. All keys should be tested.
3. If you stop pressing keys the phone will return to the service test menu.



4.1.4 Speaker Test

Warning! Do NOT hold the phone to your ear while performing this test.

To verify the Speaker function:

1. Select "Speaker" from the "Service Tests" menu.
2. Adjust the volume on the right side of the phone and make sure that the speaker is working properly.
3. Press the "Ok" key to go back to the service tests menu.

4.1.5 Earphone Test

To verify the Earphone function:

1. Select "Earphone" from the "Service Tests" menu.
2. Adjust the volume on the right side of the phone and make sure that the earphone is working properly.
3. Press the "Ok" key to go back to the service tests menu.

4.1.6 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. The phone will start to record and after that the sound is played in the speaker. Make sure that the record sounds have a loud and clear sound.
3. After the sound has been replayed the test case will return to "Service Test" menu.

4.1.7 Vibrator Test

To verify the vibrator function:

1. Select "Vibrator" from the "Service Tests" menu.
2. Press any key (except the Centre Navi Key) and the vibrator will vibrate 3 times.
3. Press the "Ok" key to go back to the service tests menu.

4.1.8 Camera Test

To verify the camera functionality:

1. Select Camera from the "Service Tests" menu.
2. The camera function will now start and are visible in the display. Make sure that the contrast and light is OK.
3. Press the "back" key to go back to the service tests menu.



4.1.9 Video Camera Test

To verify the Video call camera functionality:

1. Select Video call camera from the "Service Tests" menu.
2. The video call camera function will now start and is visible in the display, then make sure that the contrast and light is OK.
3. Press the "back" key to go back to the service tests menu.

4.1.10 Memory stick test

This test is to verify if the communication to the memory stick is working.

1. Insert a memory stick in to the memory stick holder on the left hand-side of the phone.
2. Select "Memory Stick" from the "Service tests" menu.
3. Make sure that the phone will detect the memory stick.
4. Remove the memory stick from the holder.
5. Press the "Ok" key to go back to the service tests menu.

4.1.11 FM Radio Test

This test will check if the inbuilt FM radio is working.

Hands free equipment is used in this test.

1. Switch on phone wait until start-up screen appears, select normal mode when "insert SIM card" message appears on the screen then enter test mode sequence.
2. Select "FM radio" from the "Service Tests" menu.

Connect the hands free equipment to the system connector and tune in a well-known FM-Radio channel. Verify that it's possible to switch between different radio channels and that the sound is clear.

3. Press the "Ok" key to go back to the service tests menu.

4.1.12 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 "Ok" key to go back to the service tests menu.

4.1.13 Total Call Time test

This test will show you the Total Call Time of the phone.

1. Select "Total Call Time" from the "Service Tests" menu and you will get information regarding the "Total Call Time" of this phone.
2. Press "Ok" key to return to the service tests menu.

4.1.14 Security Test

This test will check if the security device keys

1. Select "Security" from the "Service Tests" menu, then select "Device Key Test". After approximately 5 seconds you will get information whether the Security keys are ok.
2. Press the "Ok" key to go back to the service tests menu.

5 Manual Tests

5.1 On The Air Call To Mobile

To verify the function of the speaker, microphone, polyphonic ring signal and volumes button.

1. Insert an operator SIM card and start the phone.
2. Set up a call from another phone to the mobile phone.
3. Answer the phone call.
4. Check that the polyphonic ring signal is working and that the backlight switches on OK.
5. Also check that the quality of the sound both in the mobile phone and the other phone are OK.
6. Press the volume key up and down and check that the volume in the phone is altered.
7. End the call.
8. Check that the ending procedure is OK and that the speech time is displayed.

5.2 Bluetooth Test

To verify that the Bluetooth communication is working:

1. Insert a SIM card, connect a battery and start the unit.
2. Activate the Bluetooth function by entering Connectivity/Bluetooth and turn it on.
3. Set up a link between the phone and another Bluetooth compatible device. If a connection can be established the Bluetooth module is considered working.

5.3 System Connector Test

Hands free 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 Hands free 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.

6 Revision History

Rev.	Date	Changes / Comments
1	2008-02-29	First Release