



Test Instructions

- mechanical -



Aspen
M1i, M1a



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**For general information about test procedures, refer to
1220-1333: Generic Repair Manual - mechanical**



1 Pre-Test Preparations

1.1 Hardware

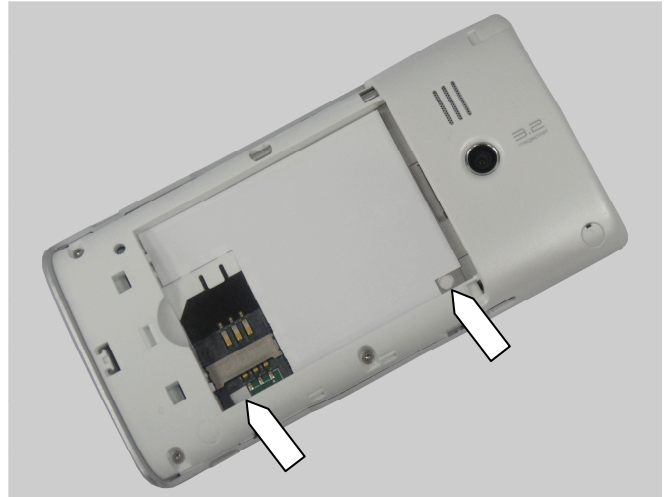
1.1.1 Water indicator inspection

Before starting any tests the water indicator has to be checked.

The indicator is located as shown in this picture after having the battery cover removed.

If affected (red color) - handle the phone according to your local directives.

If not affected (white color) - start SW inspecting as the step shows in next page.





Pre-Test Preparations

1.2 Software

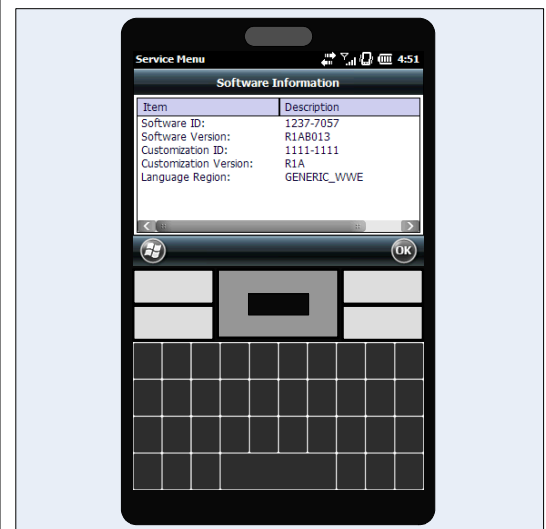
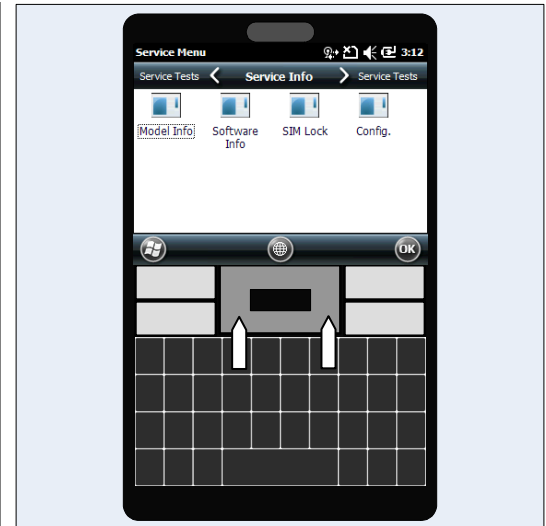
1.2.1 Software update

1.2.1.1 Software version verification

Check the software versions of the phone to establish whether a software version update is needed:

- Start up the phone and press the Navigation Keyboard keys as follows:
⇒ ⇐ ⇒ ⇒ ⇐ ⇒
- Select 'Service info'
- Select 'Software info'
- Check the software file revisions and, if needed, update as described below

For more information, refer to 1220-1333: Generic Repair Manual – mechanical



1.2.1.2 Software version update

Mandatory first repair action!

Use the EC700 Micro USB to USB cable for this purpose!

Do not use the SEPI equipment!

Install a fully charged battery, ensure the phone is powered off and proceed as follows:

- Open the Emma application and log in
- Press and keep the "call" key down on the phone, connect the phone to the USB cable and when the USB icon appears in the Emma window, release the "call" key

Select the appropriate service and follow the on-screen instructions

2 Tests

2.1 Service Tests Mode

All service tests can be carried out without a SIM card!

Start up the phone and enter the service menus:

- Press the Navigation Keyboard keys in the order ⇨ ⇩ ⇨
⇨ ⇩ ⇨
- Select 'Service tests'
- Select one of the tests and follow the test instructions as described below
- To stop the test and return to the 'Service tests' menu, press the OK key of the keyboard or press the OK button on the screen

For more information, refer to 1220-1333: Generic Repair Manual – mechanical



The pictures to follow will show a simplified basic phone for a general visualization of the service tests!



Tests

2.2 Service Tests

2.2.1 Main display

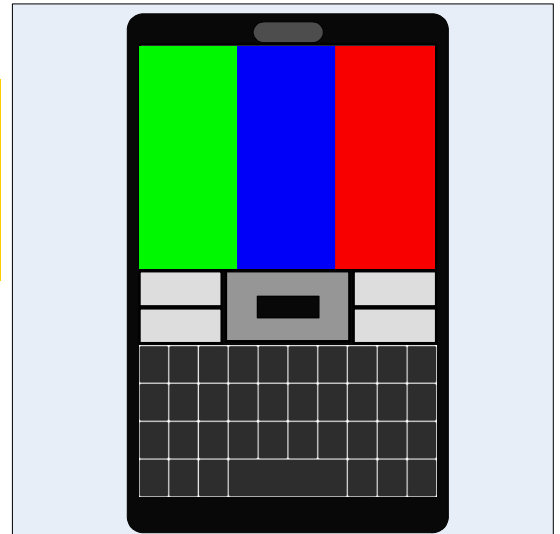
Minor variations in display brightness and colour may occur between phones.

There may be tiny bright dots on the display, so called defective pixels and occur when individual dots have malfunctioned and can not be adjusted.

Two defective pixels are considered to be acceptable.

- The display will show nine test patterns.
- Make sure that there are no missing segments and that the colours and contrast are OK.

Tap the screen to stop the test and return to the 'Service tests' menu.

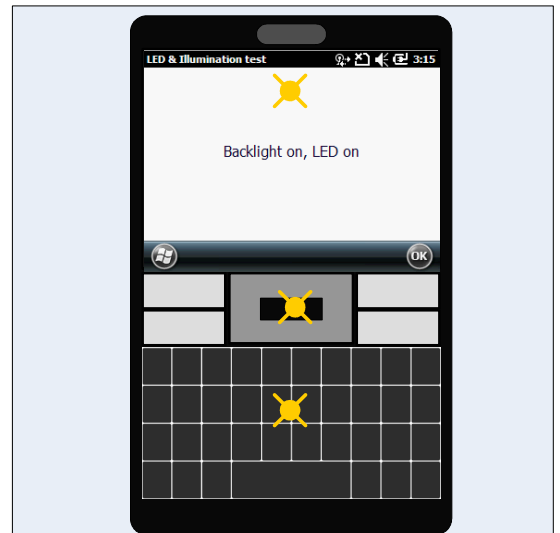


2.2.2 LED/illumination

Check that the:

- LEDs under the Keyboard are turned on and off
- Display backlight is turned on and off

To stop the test and return to the 'Service tests' menu, press the OK key of the keyboard or press the OK button on the screen



Tests: Service Tests

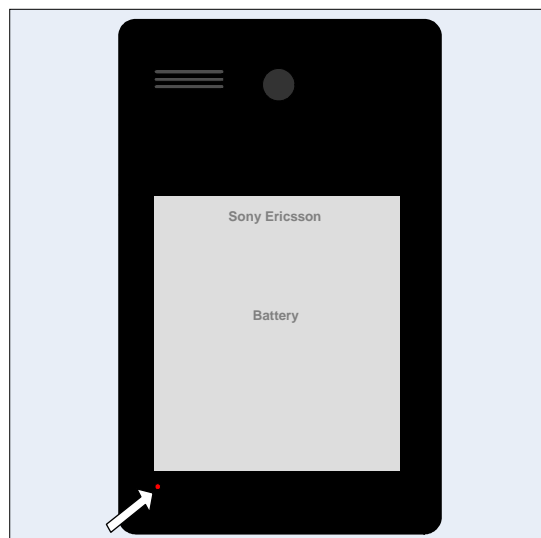
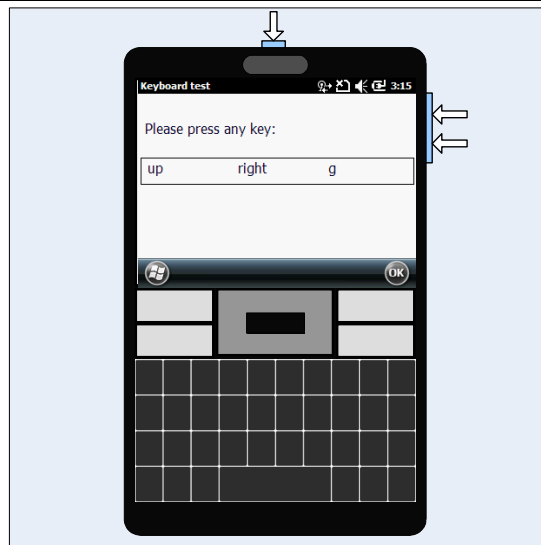
2.2.3 Keyboard

Press all keys on the:

- Keyboard
- Side and top of the phone
- Reset key

Check that each pressure is confirmed in the display.

To stop the test and return to the 'Service tests' menu, press the OK button on the screen.



Tests: Service Tests

2.2.4 Speaker

Do not hold the phone close to your ear during this test!

Adjust the volume and make sure that the sound from the speaker port on the back of the phone is emitted loud and clear.

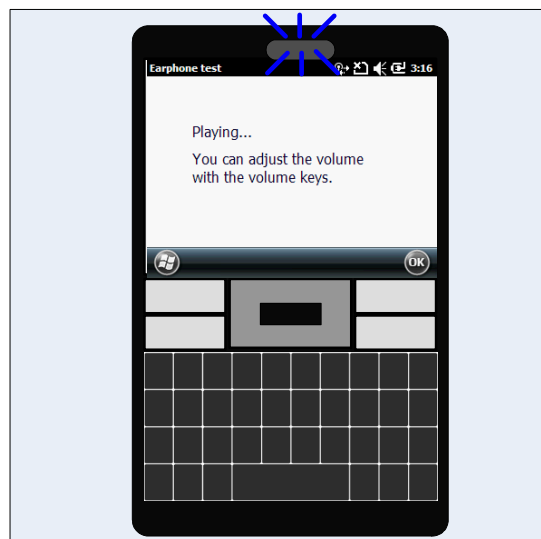
To stop the test and return to the 'Service tests' menu, press the OK key of the keyboard or press the OK button on the screen



2.2.5 Earphone

Adjust the volume and make sure that the sound from the earphone port on top of the phone is emitted loud and clear.

To stop the test and return to the 'Service tests' menu, press the OK key of the keyboard or press the OK button on the screen



2.2.6 Micro-phone

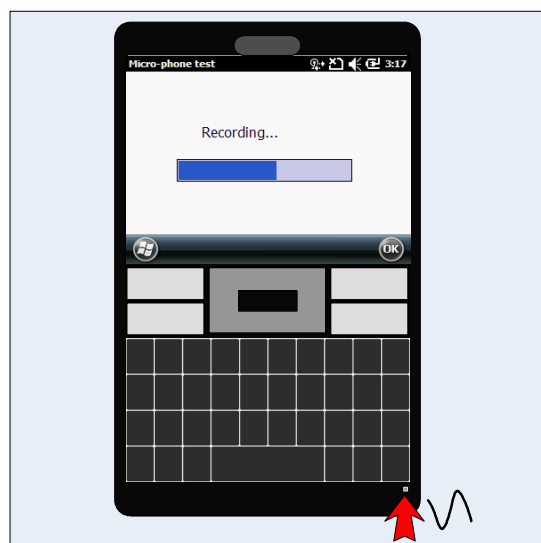
The previous test, 'Earphone*', should have been successfully carried out before doing this test!

The phone will start to record and after approximately eight seconds the sound is played back in the earphone.

Speak into the microphone during the 'Microphone Recording' phase.

Check the quality by listening to the recording from the earphone during the 'Microphone Playback' phase.

To stop the test and return to the 'Service tests' menu, press the OK key of the keyboard or press the OK button on the screen

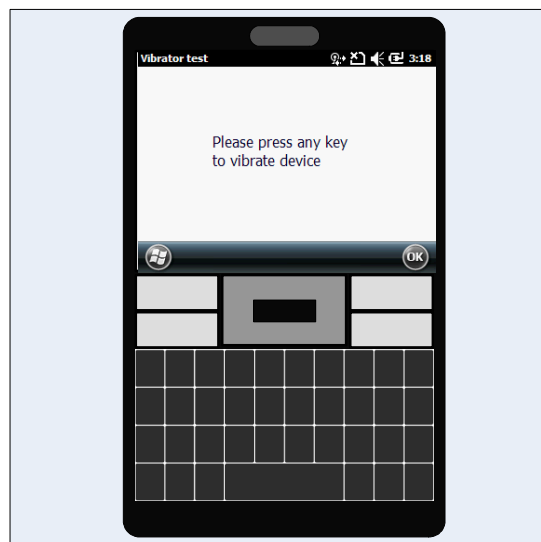


Tests: Service Tests

2.2.7 Vibrator

Press any key and the vibrator gets activated three times.

To stop the test and return to the 'Service tests' menu, press the OK button on the screen

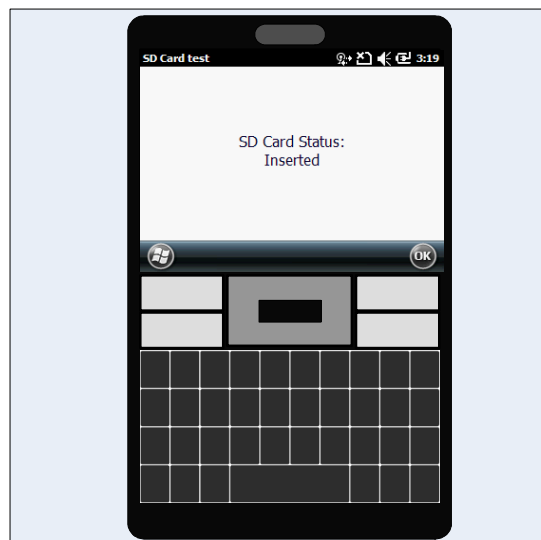


2.2.8 SD Card

A SD card should be inserted in the phone before the start of this test!

The phone should detect that the SD card is inserted.

To stop the test and return to the 'Service tests' menu, press the OK key of the keyboard or press the OK button on the screen



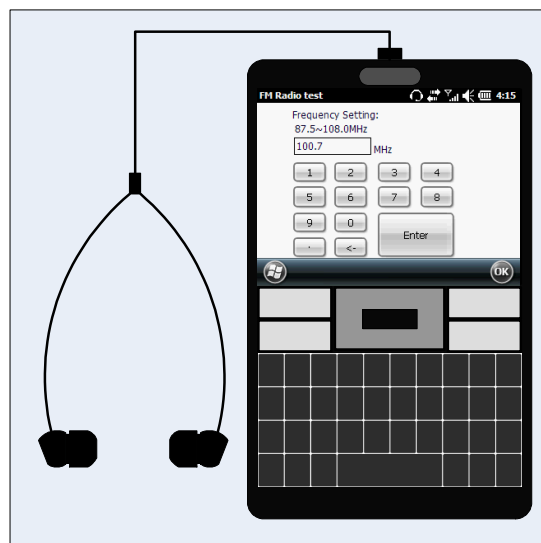
2.2.9 FM Radio

A Portable Hands-Free (PHF) has to be connected to the system connector prior to this test!

Use the keyboard to enter the frequency of an FM station known to be good regarding reception.

Listen to the FM station and verify that the sound quality is as good as can be expected.

To stop the test and return to the 'Service tests' menu, press the OK key

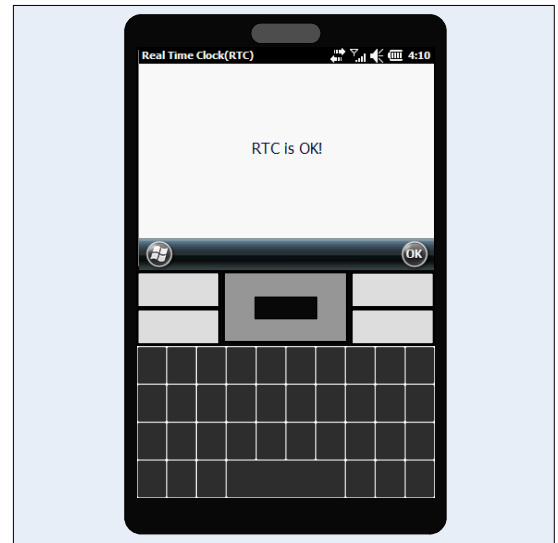


Tests: Service Tests

2.2.10 Real Time Clock

During the actual test, the text 'Please wait for 5 seconds!' is displayed, then follow by a message stating whether the test is OK or not.

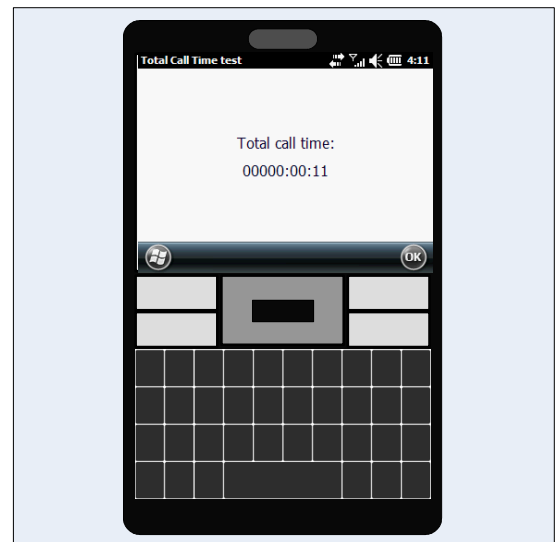
To stop the test and return to the 'Service tests' menu, press the OK key of the keyboard or press the OK button on the screen



2.2.11 Total Call Time

The total call time is displayed in the format HH:MM:SS (hours: minutes: seconds).

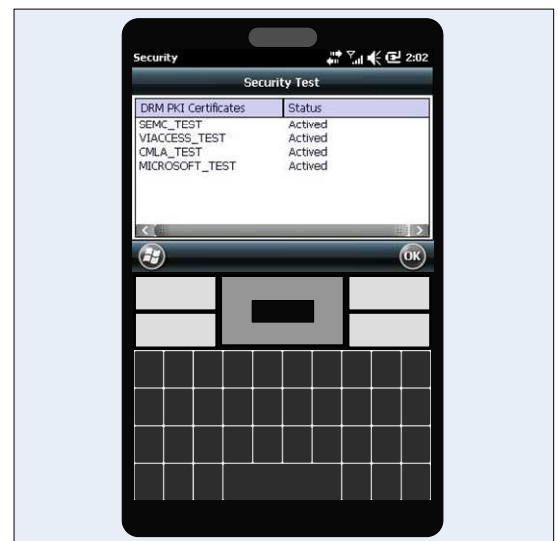
To stop the test and return to the 'Service tests' menu, press the OK key of the keyboard or press the OK button on the screen



2.2.12 Security

There will be information of DRM PKI Certificates shown in Status.

To stop the test and return to the 'Service tests' menu, press the OK key of the keyboard or press the OK button on the screen

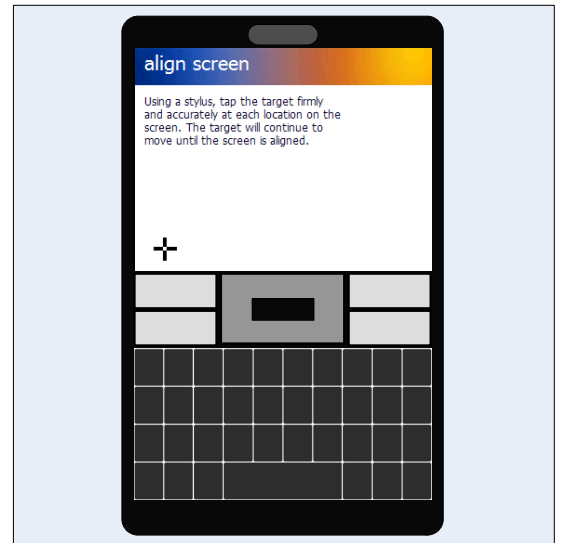




Tests: Service Tests

2.2.13 Touch Screen

During touch screen test, it needs to use the stylus to tap the target firmly and accurately at each location on the screen. If the test is ok, it will move to Service Tests, otherwise, it will stay in the align screen again.



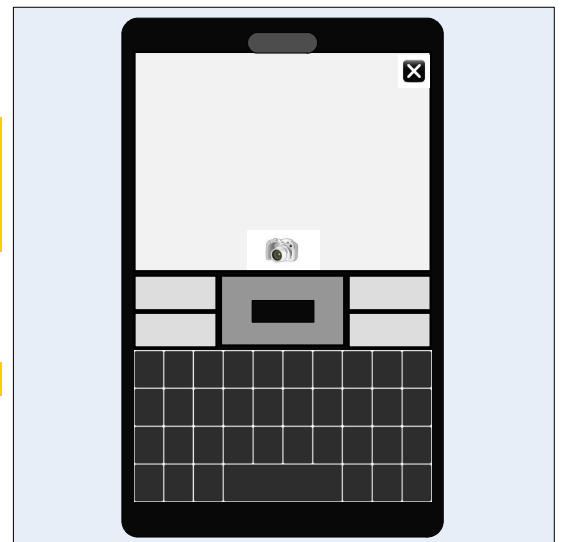
2.2.14 Main Camera

Minor variations in image appearance may occur between phones, but is not uncommon and should not be regarded as an indication of a defective camera module!

Aim the camera (located back of the phone) at an object and check the quality of the image shown in the display.

Photos cannot be taken during this test!

Tap "Test" icon on the screen to keep testing, and tap "X" icon on the screen or press OK key of the keyboard to exit camera test



Tests: Service Tests

2.2.15 Bluetooth

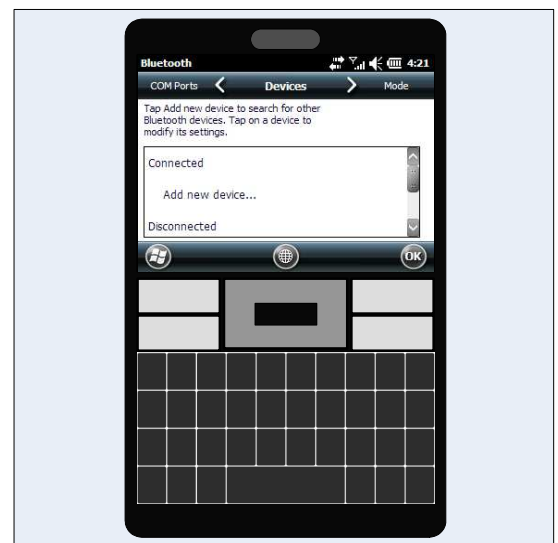
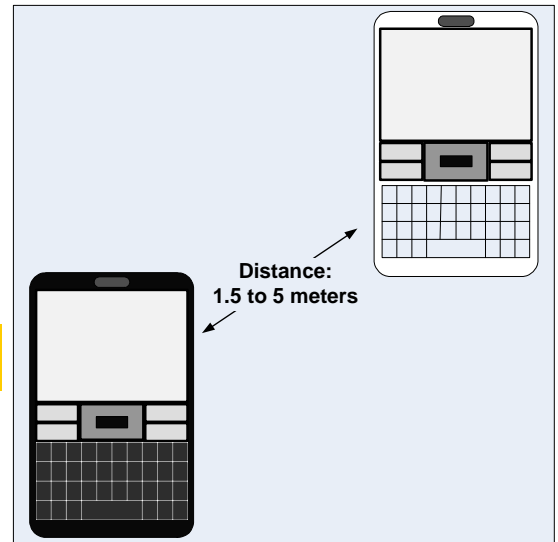
Verify that the Bluetooth communication functions properly:

During this test, the distance between the phone and the other Bluetooth device must be 1.5 to 5 meters!

- Install a battery and start the phone
- Activate the Bluetooth function:
Bluetooth test ⇒ *Mode* ⇒ select *Turn on Bluetooth* and check *Make this device visible to other devices*
- Set up a Bluetooth link between the phone and the other Bluetooth device:
Bluetooth test ⇒ *Devices* ⇒ *Add new device...*
After a list of Bluetooth devices shown up, choose a device to link

If a link can be established, the Bluetooth function is regarded to be fully functional

To stop the test and return to the 'Service tests' menu, press the OK key of the keyboard or press the OK button on the screen.





Tests: Service Tests

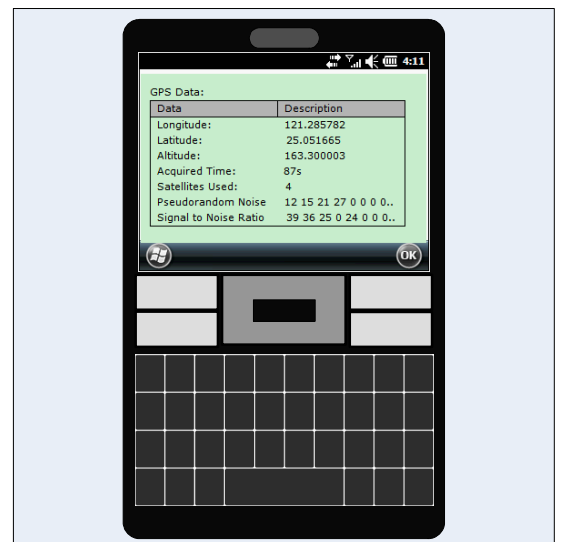
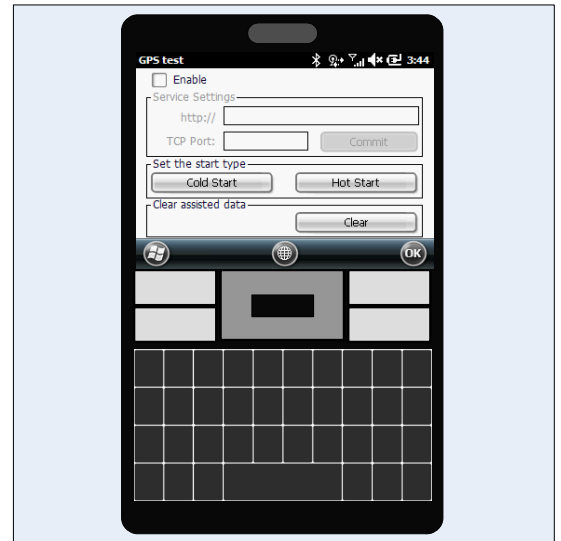
2.2.16 GPS

Verify that the GPS functions properly:

- Install a battery, start the phone and go outdoor
- Go to Service Tests ⇒ *GPS test* ⇒ select “Cold Start” or “Hot Start” in *Set the start type*
- The phone will be searching for available satellites and in “Position Getting” status in 300 seconds.
- The GPS Data (Longitude, Latitude, Altitude, Acquired Time, Satellites Used, Pseudorandom Noise(PRN) code and Signal to Noise Ratio(SNR)) could be shown if GPS test works successfully. At least, the number of satellites used should be 3.

If the positioning time is over 300 seconds and nothing shown, the test is fail.

To stop the test and return to the ‘Service tests’ menu, press the OK key of the keyboard or press the OK button on the screen.



Tests: Service Tests

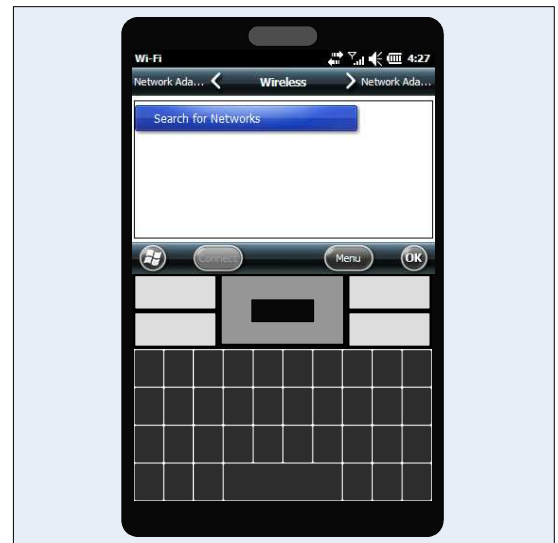
2.2.17 WLAN

Verify that the Wi-Fi communication functions properly:

- Install a battery and start the phone
- Activate the Wireless function: Go to Service Tests ⇒ *WLAN test* ⇒ *Wireless* ⇒ *Search for Network*
- The phone will be searching for any available Wi-Fi, a.k.a. WLAN (Wireless Local Area Network)
- The networks found are listed in alphabetical order, with icons indicating network quality and type as described in the adjacent picture
- Select the desired network and press 'Connect'
- Input the password in "Configure Network Authentication" phase

If the phone is able to scan, detect and connect to a network, the Wi-Fi function is regarded to be fully functional.

To stop the test and return to the 'Service tests' menu, press the OK key of the keyboard or press the OK button on the screen.



Below only for MLC(China) version:

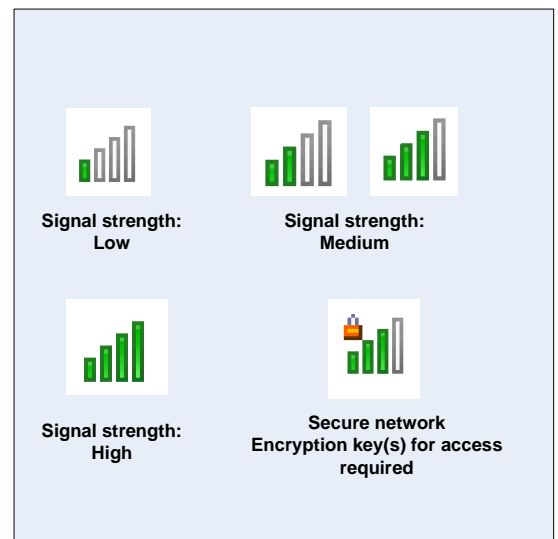
MLC version supports either WLAN(WAPI) or Wi-Fi standards, default setting is to support WLAN.

- To test WLAN, you need to go to *Start Menu* ⇒ *WLAN* ⇒ *Menu* ⇒ *Turn on WLAN*
- The networks found are listed in alphabetical order, with icons indicating network quality and type as described in the adjacent picture
- Select the desired network and press 'Connect'

If the phone is able to scan, detect and connect to a network, the WLAN function is regarded to be fully functional.

- Change to support Wi-Fi:
Start Menu ⇒ *WLAN* ⇒ *Menu* ⇒ *Turn On Wi-Fi*, there is warning message pop up: "Turn on WZC need to reset device, reset now?", if tap "Yes" device will reboot and then will support Wi-Fi after rebooting.

When device support Wi-Fi standard, the test method is the same as the non-MLC version.



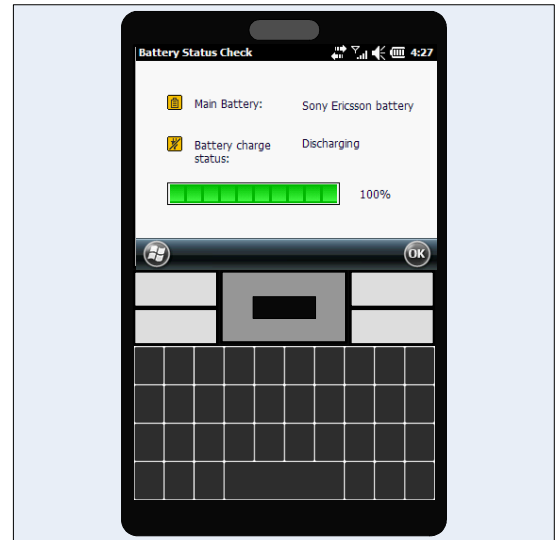
Tests: Service Tests

2.2.18 Battery

Verify that charging of the phone functions properly:

- Connect a wall charger or via USB to the system connector
- Verify that the display shows that the phone is being charged and the charged status
- Remove the charger from the system connector and verify that the display shows that the phone is being discharged

To stop the test and return to the 'Service tests' menu, press the OK key of the keyboard or press the OK button on the screen





Tests

2.3 Manual Tests

2.3.1 SIM

Verify that the phone can detect a SIM card:

- Insert a SIM card, install a battery and start the phone
- If the SIM card is detected by the phone, after finishing boot procedure, the phone will be in Today Screen or Home Screen and could operate properly.
- If not detected, the message "The SIM card is missing. You can still make emergency calls if your service provider supports it." will be displayed and could tap "Cancel" to continue other function expect phone function.

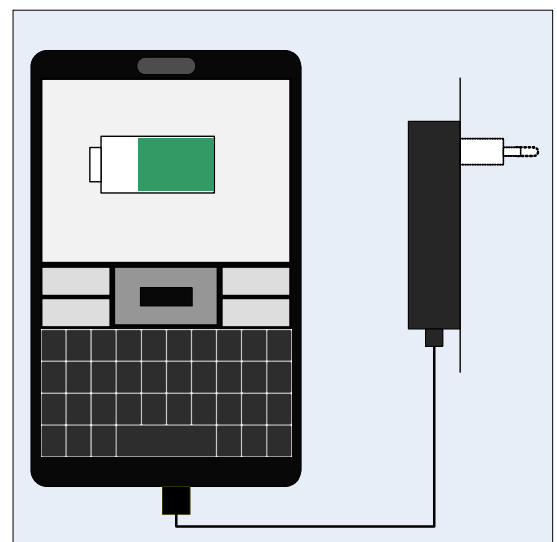


2.3.2 Battery charging

2.3.2.1 Charging by wall charger

Verify that charging of the phone functions properly:

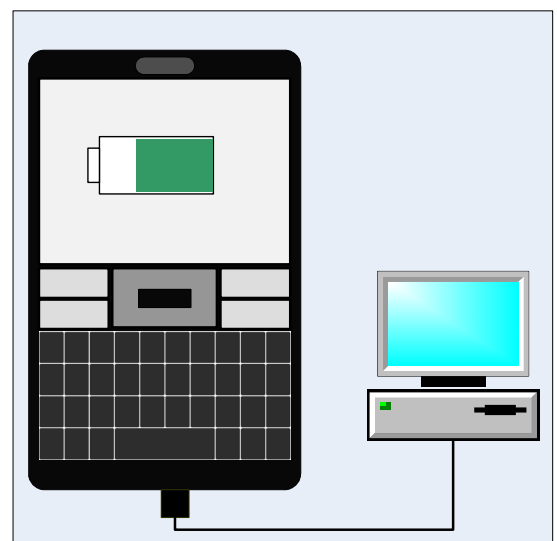
- Install a battery but do not start the phone
- Connect a wall charger to the system connector
- Verify that the display shows that the phone is being charged
- Remove the charger from the system connector and verify that the display no longer indicates charging



2.3.2.2 Charging via USB

Verify that the phone can charge the battery via a USB port:

- Install a battery but do not start the phone
- Connect a USB cable from a computer to the system connector
- Verify that the display shows that the phone is being charged
- Remove the USB cable from the system connector and verify that the display no longer indicates charging
- Ensure that no computer application, such as PC Suite or Emma, is active!





Tests: Manual Tests

For protected networks, you must obtain the correct password from the owner and input it in *Network key* field.

After inputting the Network key and tap Next, you could use Internet in your device.

If you input the wrong password, the wrong message "Incorrect Network Key: The network key is incorrect. Enter the correct key and tap Connect " will be shown.

If the phone is able to scan, detect and connect to a network, the Wi-Fi function is regarded to be fully functional.

Tests

2.4 Network Test

This test can only be performed if the phone has got an activated SIM/USIM card (no Test SIM/USIM) and an available network signal!

There are two versions of the test depending on whether a UMTS network is available or not!

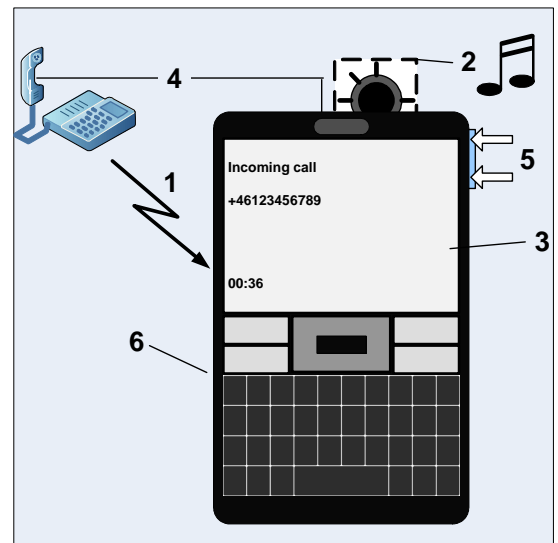
If a UMTS network is available, the network test has to be done separately for GSM and UMTS!

2.4.1 On-the-air call to mobile (no UMTS network available)

To verify the radio functions (GSM) of the phone, follow the '2.4.1.1 Procedure' below

2.4.1.1 Procedure

1. Set up a call from a landline phone (PSTN)
2. Check that the ring signal goes on
3. Check that the display backlight illuminates
4. Answer the call and check the sound quality in both phones
5. Adjust the volume up and down with the side key and verify that the sound level is altered
6. End the call and check that the elapsed time is displayed and that the termination is done in a proper way



2.4.2 On-the-air call to mobile (UMTS network available)

GSM

Go to the phone menu and set:

Settings ⇒ *Personal* ⇒ *Phone* ⇒ *Band* ⇒ *GSM only, WCDMA only, Auto* ⇒ choose *GSM only*

To verify the radio functions (GSM) of the phone, follow the '2.4.1.1 Procedure' above.

UMTS

Go to the phone menu and set:

Settings ⇒ *Personal* ⇒ *Phone* ⇒ *Band* ⇒ *GSM only, WCDMA only, Auto* ⇒ choose *WCDMA only*

Switch off the phone and then start it up again to enable search for an available UMTS signal.

Ensure that the UMTS/3G icon now is visible at the top of the display.

To verify the radio functions (UMTS) of the phone, follow the '2.4.1.1 Procedure' above.

Tests

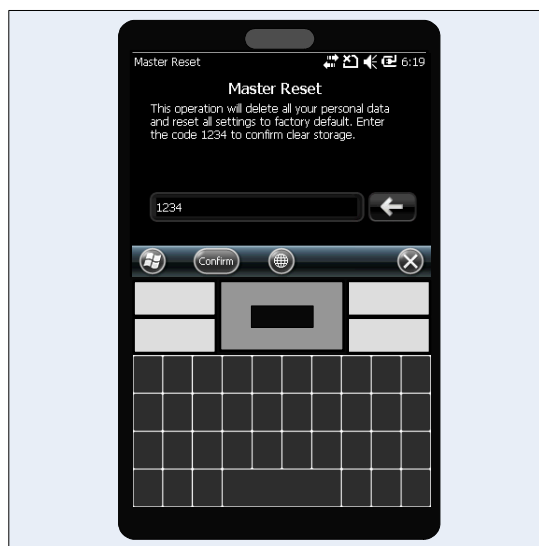
2.5 Master Reset

Master Reset is the function to reset your device to factory default settings. Apply master reset when All tests were done and the device must be returned to factory default settings.

Procedure

Go to Start ⇒ Settings ⇒ System ⇒ Master Reset

Tap 1234 and once tap “*Confirm*” on the screen, it will delete all your personal data and reset all settings to factory default.





3 Revision History

Rev.	Date	Changes / Comments
1	2010-Jun-14	Initial Release
2	2010-Jun-22	No Update