



MOTOROLA

Motorola GmbH, Repair Entitlement, Mobile Devices


Doc. No: TSG_Milestone
Version: 1.0
Date: 2010-02-26

Title: Troubleshooting-Guide **Milestone**

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Troubleshooting Guide Milestone Level 1+2




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Revision History

Date	Version	Comment
2010-02-26	1.0	Initial release of document

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Introduction

Audience

This document aids service personnel in testing and repairing Android telephones. Service personnel should be familiar with electronic assembly, testing, and troubleshooting methods, and with the operation and use of associated test equipment.

Requirements and Related Documents

Follow the current Technical Requirements for servicing Motorola products as described in the Requirement List for Motorola Authorized Service Centers.

- L1, 2 Training Slides Milestone
- L2 Assembly **Video** Milestone
- L2 Disassembly **Video**
- L2 Disassembly Assembly Milestone **PDF**

Visit:

my.motorola.com


Basic information on troubleshooting Motorola Android phones

Make sure on any problem, that it is not a software related one by simply doing a 1FF reflash with a Master Reset/Master Clear afterwards. In some cases a simple Master Reset can already fix the problem.

Make sure all contacts are clean and in good condition

Use latest approved software

Do a visual inspection on customer abuse or liquid contamination.

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Troubleshooting Level 2

No speaker audio

Probable cause:

a) Transceiver board assembly defective

Verification: Temporarily replace the transceiver board assembly with a known good one. If the fault has been cleared forward to authorized Level 3 Service Center.

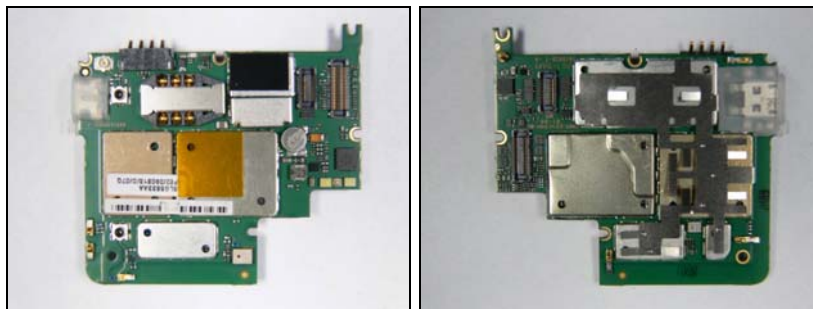


Figure 1

b) Assembly, PWA, Dynamic Flex , Speaker defective

Disassemble housing and replace Slider Front Assembly. If the failure is fixed change the dynamic Flex Assy where the earpiece speaker is assembled to (NOTE: if there is no touch screen functionality after replacement of the dynamic flex assy, make sure that it is preprogrammed

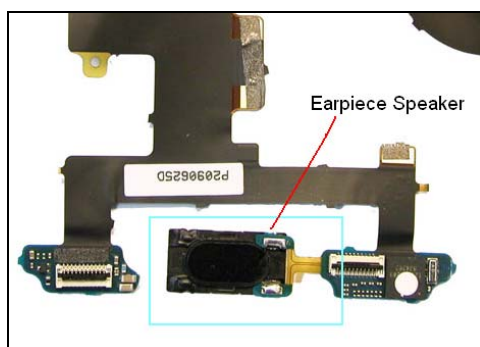


Figure 2



Figure 3

No microphone audio

Probable Causes:

a) Transceiver board (“Assembly, PWA”) defective:

Replace transceiver with a known good one (or housing with a known good one) to verify if housing or PCB is defective. In case of defect transceiver, forward to an authorized level 3 service center.

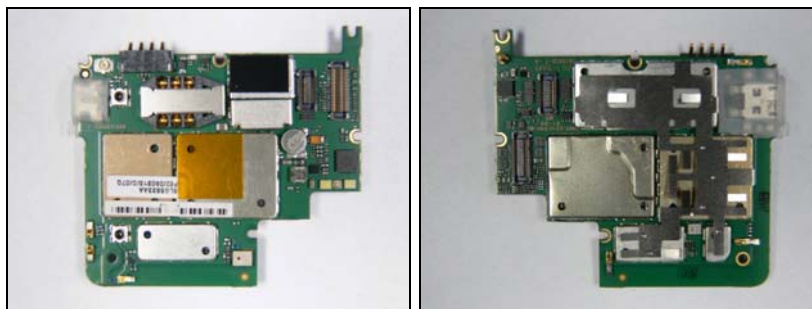


Figure 4

The microphone 2 (MK4190) is on the “Assembly PWA” the transceiver board.

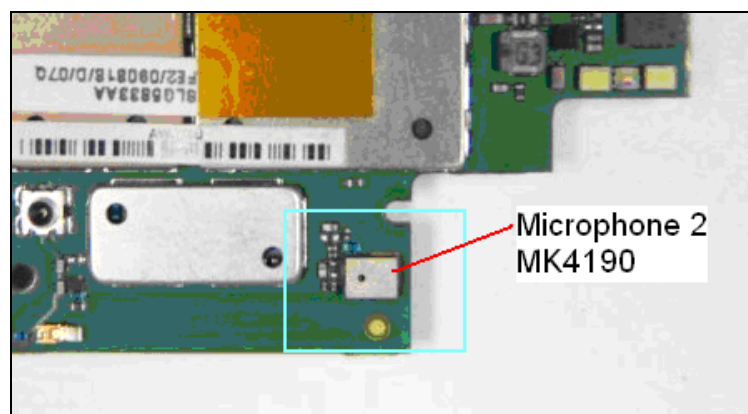


Figure 5

b) Microphone 1

The microphone 1 is located on the audio PCB (Assembly, Printed Circuit Board, Audio) in the front housing ("Slider Front Assembly"). Make sure that no dust or foreign particles are on microphone hole from outside. Disassemble housing and replace with a known good housing ("Assembly, Housing, Front"). Check also the vibrator flex cable that is the connection to the audio board (aligned to the Assembly, Chassis, Guide Metal Flex).

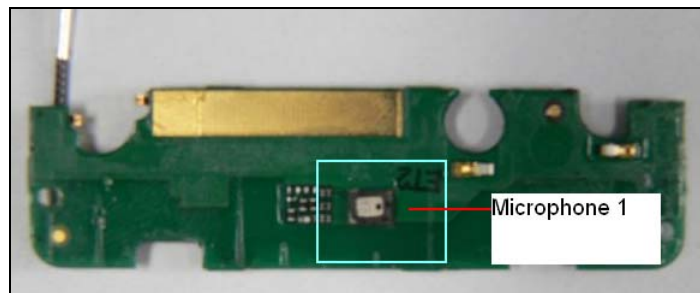


Figure 6

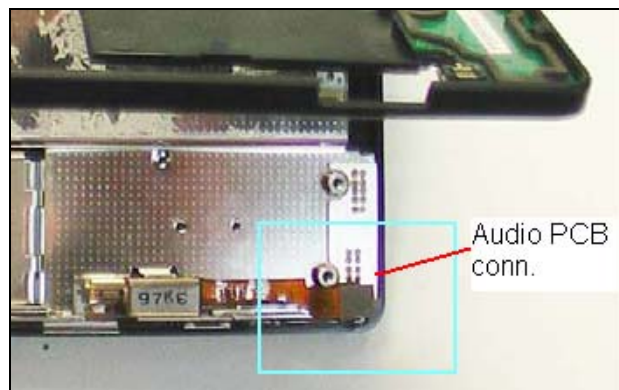



Figure 7



Figure 8

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No ring tone / alert function

Probable cause:

a) Transceiver board ("Assembly, PWA") defective:

Replace transceiver with a known good one (or housing with a known good one) to verify if housing or PCB is defective. In case of defect transceiver, forward to an authorized level 3 service center.

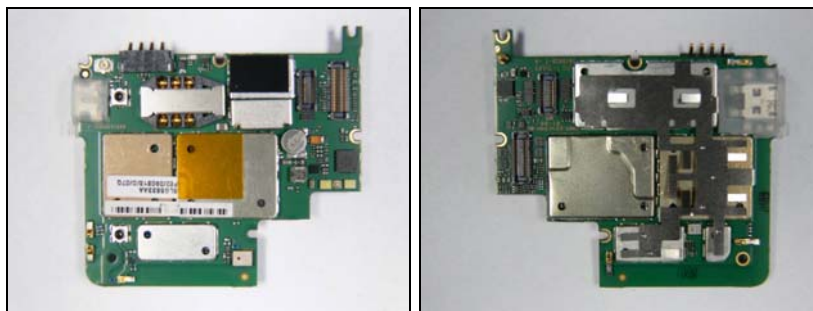


Figure 9

b) Faulty alert "Loudspeaker, dynamic"

Remove rear housing and temporarily replace the acoustic chamber with a known good one. If the fault has been cleared, reassemble with a new one.

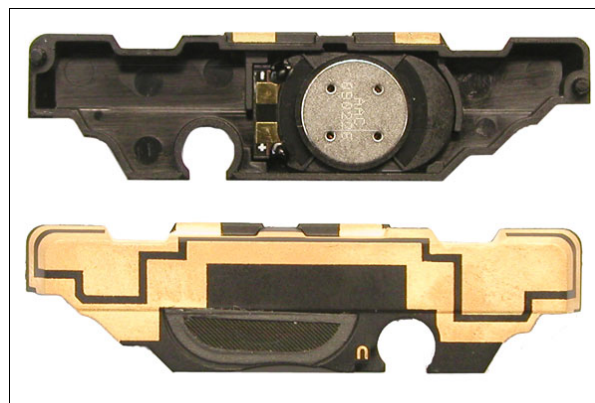



Figure 10

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c) Faulty audio PCB (Assembly, Printed Circuit Board, Audio)

Remove rear housing assy and check contacts on “Assembly, Printed Circuit Board, Audio”.

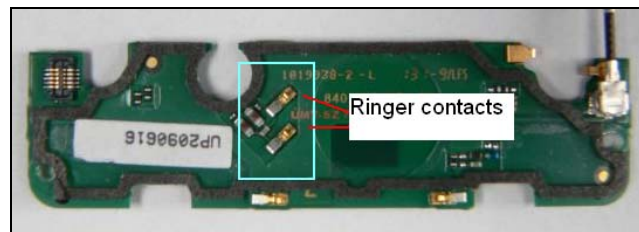



Figure 11

If clean and not bent, temporarily replace audio PCB assy with a known good one. If the fault has been cleared, reassemble with a new one.

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No or faulty display (flickering, white screen, black screen...)

Probable Cause:

a) Transceiver board ("Assembly, PWA") defective:

Replace transceiver with a known good one (or housing with a known good one) to verify if housing or PCB is defective. In case of defect transceiver, forward to an authorized level 3 service center.

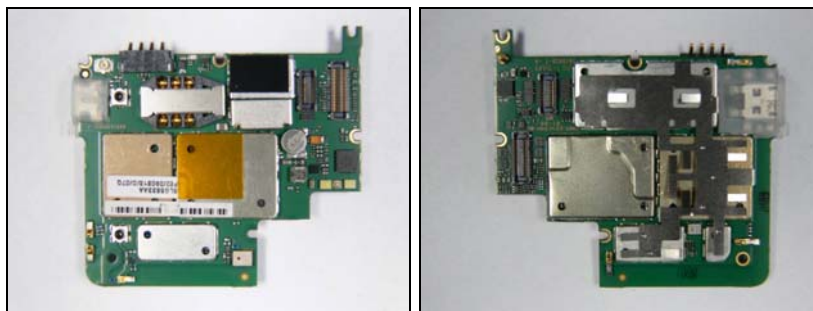


Figure 13

b) Connections from transceiver board to display faulty

Check J5200 Slider Connector on transceiver board (figure 13), dynamic flex ("Assembly, PWA, dynamic flex", figure 3) and finally the display itself in the front housing, figure 3 / 14) for damage or dust. Replace step by step to find out what part is defect.

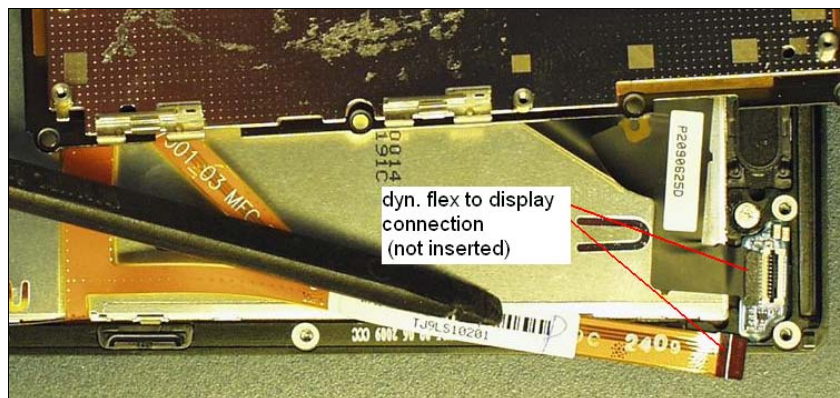


Figure 14

c) Display, LCD "Imager Module, 5MP, MIPI, Landscape Display Assembly"

Temporary replace with a known good one, if ok, reassemble with a new one.

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No or faulty display backlight

To analyse the failure with help of RadioComm :

Settings: Main Menu Bar : MAIN > MA > 3GSM > all others

Mode : SUSPEND (1) and execute

CIT 1 Tab : main display (2)

Hook and unhook the main display box and backlight will switch on and off, if display is not in standby. Activate with any key.

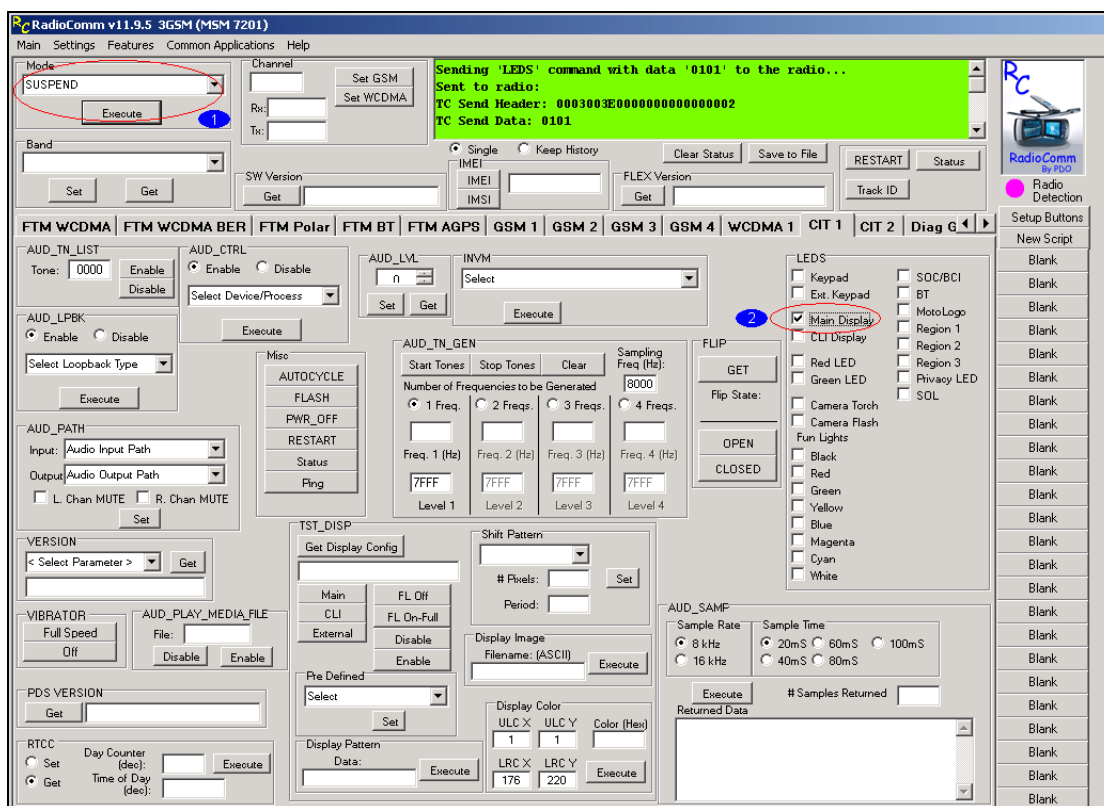



Figure 15

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No turn on or stay on

Probable cause:

a) Battery discharged or defective

Try to switch on telephone with a known good battery. If the telephone turns on, make sure that the phone is able to charge the battery. If ok, replace battery with a new one. If the phone does not charge the battery, forward to Level 3 Service Center.

b) Battery contacts dirty or misaligned


Visually inspect the battery connectors on both the battery and the telephone. Realign and clean contacts, if necessary. For battery connector replacement forward to an authorized Level 3 Service Center.

c) Faulty transceiver board assembly

Verification: Temporarily replace the transceiver board assembly with a known good one. If the fault has been cleared, forward to an authorized Level 3 Service Center.



Figure 16

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d) Power On Key defective

If the telephone turns on via EMU USB cable and is unable to power down after pressing the ON/OFF button, it could be because of a faulty "Assembly, Chassis, Guide Metal Flex" where the side keys are assembled to. For verification reassemble the unit with a known good back housing. If the fault has been cleared, replace with a new "Assembly, Chassis, Guide Metal Flex".

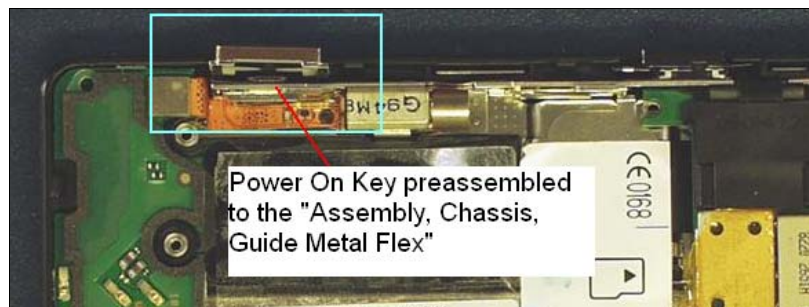


Figure 17

e) Software corrupt

Following steps are necessary to **recover** the Software:

If the phone doesn't start because of corrupted software it might be possible to recover it with RSDnet connected. Connect phone to EMU-cable **while** holding down "Navigation Up" key. The phone should start in flash mode now: *S Flash OMAP3430*



Figure 18

Flash 1FF superfile

For example **DC One File Flash:**

[SHOLS_U2_01.14.0_UCASHLSEMEAB1B803F.0R_USASHLS00RTDACH_P012_A008_HWp2a_1FF.sbf](#))

Write subsidy-lock using **DBS-Tool**, if branding has been changed.

Perform Master Reset/Master Clear after restart.

Can't make voice call / no service

Probable cause:

a) Faulty transceiver board assembly

Verification: Temporarily replace the transceiver board assembly with a known good one.
 If the fault has been cleared, first check antenna sockets for damage or dust.
 If ok, forward to an authorized Level 3 Service Center.

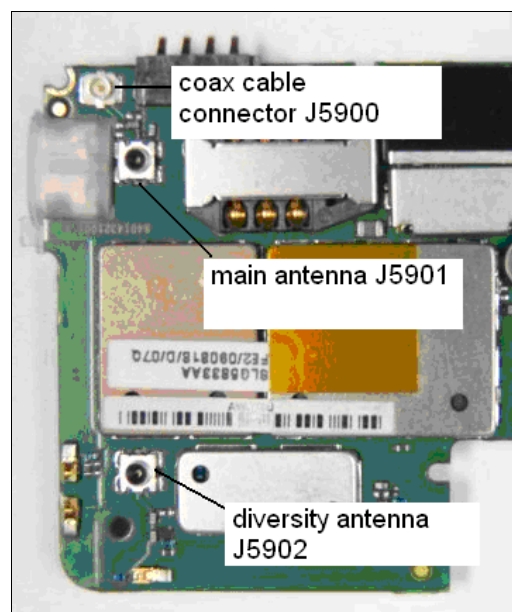


Figure 19

b) Faulty "Cable Coax"

Verification: Temporarily replace the coax cable with a known good one. If ok, replace it with a new one.

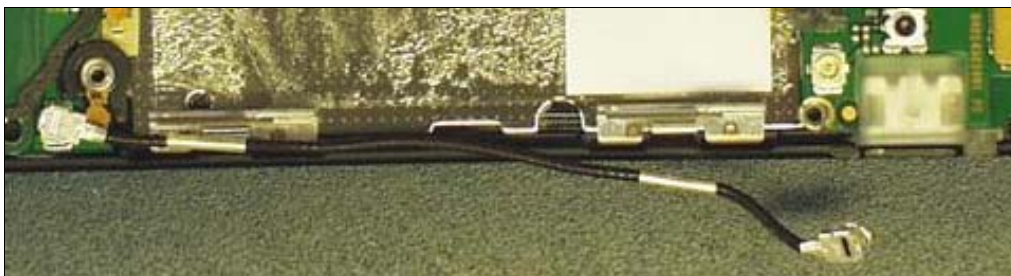


Figure 20

c) Damaged or misaligned acoustic chamber

The main antenna is molded on the acoustic chamber ("Housing, Acoustic Chamber, Main Antenna"). Check for damage or misalignment (figure 27/28)

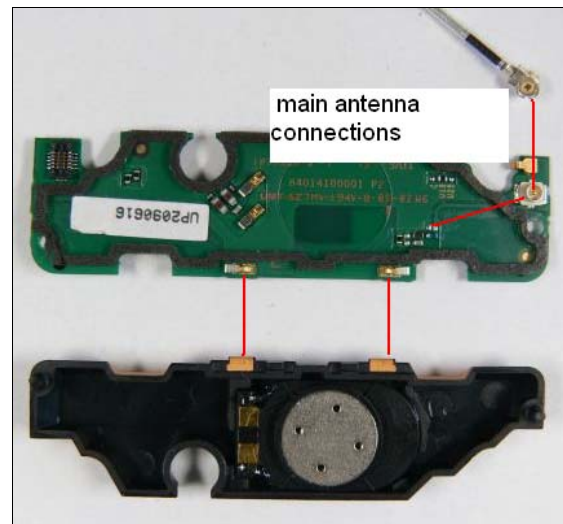


Figure 21

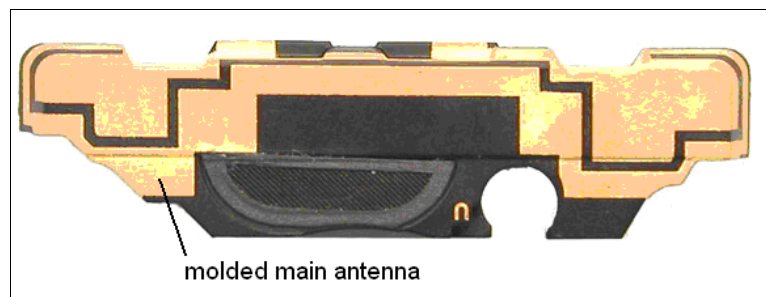



Figure 22

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No or partial QWERTZ / QWERTY / AZERTY keypad function

Probable cause:

a) Faulty transceiver board assembly

Verification: Temporarily replace the transceiver board assembly with a known good one.
 If the fault has been cleared, forward to an authorized Level 3 Service Center.

b) Faulty keypad flex

Verification: Temporarily replace the front housing with a known good one. If ok, replace the "Flex, Keypad, Large Spacebar"

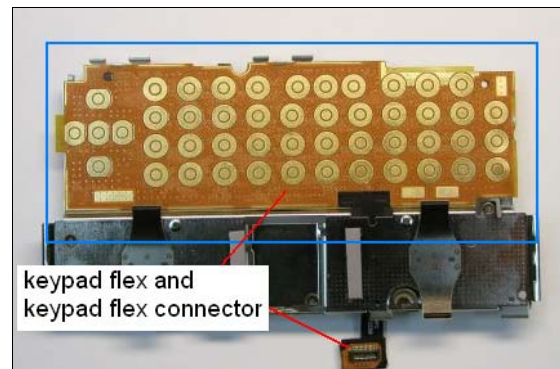


Figure 23

No sidekey function

Probable cause:

a) Faulty side key flex

The side keys are assembled to the "Assembly, Chassis, Metal Guide Flex".

Verification: Temporarily replace the front housing with a known good unit like in picture below. If ok, replace with a new "Assembly, Chassis, Metal Guide Flex".

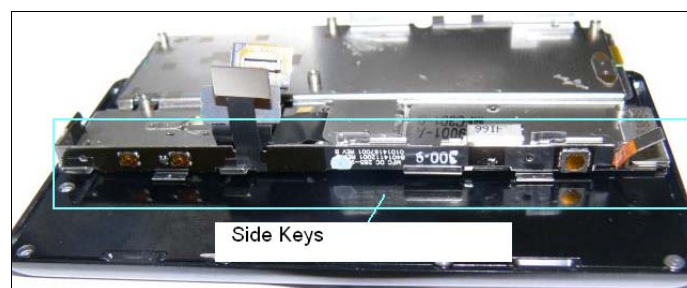



Figure 24

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No touchscreen function

Probable cause:

b) Assembly, PWA, Dynamic Flex

Disassemble housing and replace Slider Front Assembly. If the failure is fixed change the dynamic Flex Assy (NOTE: if there is no touch screen function after replacement of the dynamic flex assy, make sure that it is pre programmed !).

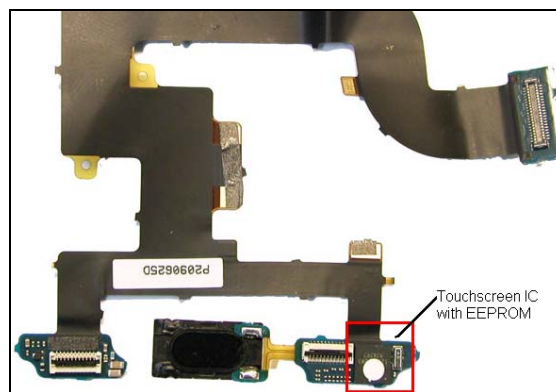


Figure 25

b) Faulty transceiver board assembly


Verification: Temporarily replace the transceiver board assembly with a known good one. If the fault has been cleared, forward to an authorized Level 3 Service Center.

c) Assembly, Housing Slider Service defect

Disassemble the housing and temporarily replace Slider Front Assembly Service with a known good one. If the failure is cleared, but not caused by the dynamic flex, replace the Housing Slider Assy with a new one.



Figure 26

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No SIM card function

Probable cause:

a) Faulty SIM connector on transceiver board assembly or faulty transceiver board assy

If the fault has not been cleared after cleaning the contacts, forward to an authorized Level 3 Service Center.

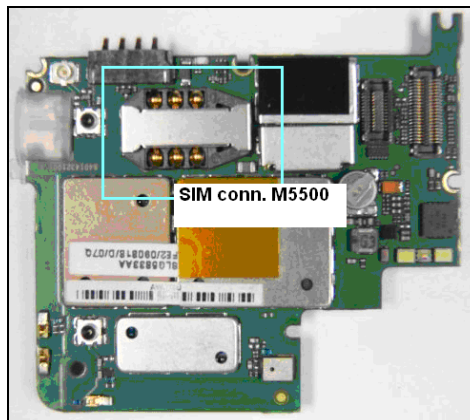



Figure 27

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No SD card function

Probable cause:

a) Faulty SD Card connector on transceiver board assembly or faulty transceiver board assy

If the fault has not been cleared after cleaning the contacts, forward to an authorized Level 3 Service Center.

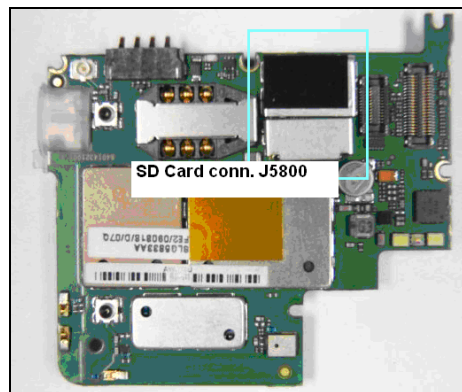


Figure 28

No WiFi / BT function

Probable cause:

a) Faulty transceiver board assembly

Verification: Temporarily replace the transceiver board assembly with a known good one and try to capture a picture. If the fault has been cleared, forward to an authorized Level 3 Service Center.

c) Assembly, Housing, Rear, Service

Disassemble the rear housing and temporarily replace with a known good one. If the failure is cleared replace the "Assembly, Housing, Rear, Service" with a new one.

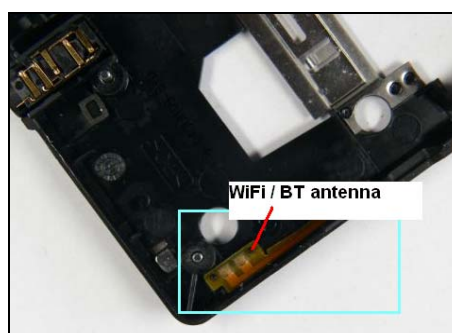



Figure 29

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No camera function

Probable cause:

a) Faulty transceiver board assembly

Verification: Temporarily replace the transceiver board assembly with a known good one and try to capture a picture. If the fault has been cleared, forward to an authorized Level 3 Service Center.

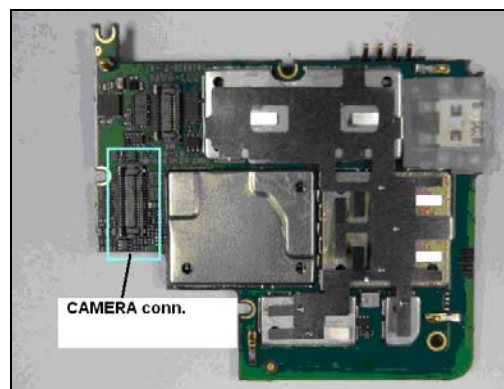


Figure 30

b) Faulty camera (Camera, Assembly, MP Imager)

Verification: Temporarily replace the camera with a known good one. It's connected to the transceiver board.

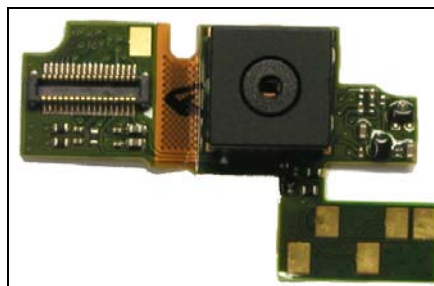



Figure 31

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Flash procedures

Note: It is very important to do a restart after every flash process! Otherwise the phone may start in flash mode again.

Recovering Flash Memory in Forced Flash Mode

Following steps are necessary to **recover** the Software:

If the phone doesn't start because of corrupted software it might be possible to recover it with RSDnet connected. Connect phone to EMU-cable **while** holding down "Navigation Up" key. The phone should start in flash mode now: *S Flash OMAP3430*



Figure 32


Flash 1FF superfile

For example **DC One File Flash:**

[SHOLS_U2_01.14.0_UCASHLSEMEAB1B803F.0R_USASHLS00RTDACH_P012_A008_HWp2a_1FF.sbf](#))

Write subsidy-lock using **DBS-Tool**, if branding has been changed.

Perform Master Reset/Master Clear after restart.

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Software update

Following steps are necessary to **update** the Software to latest approved Software:

If the phone doesn't start because of corrupted software it might be possible to recover it with RSDnet connected. Connect phone to EMU-cable **while** holding down "Navigation Up" key.

The phone should start in flash mode now: *S Flash OMAP3430*

First make sure, if a bootloader upgrade is necessary for the new software (see release notes).



Figure 33

Flash 1FF superfile

For example **DC One File Flash:**

[SHOLS_U2_01.14.0_UCASHLSEMEAB1B803F.0R_USASHLS00RTDACH_P012_A008_HWp2a_1FF.sbf](#))

Write subsidy-lock using **DBS-Tool**, if branding has been changed.

Perform Master Reset/Master Clear after restart.

Bootloader upgrade

Following steps are necessary to **update** the Bootloader :

Flash the bootloader file (example: **Bootloader:**

[Orange_UK_Viper_1.0.15_022_secure_morrison_P3_boot.shx](#))

Perform Master Reset/Master Clear after restart.

If the phone doesn't start in flash mode, there is a hardware problem. Please forward to **L4** Service Centre.