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Troubleshooting Guide

- mechanical -



Xperia™ ZR

C5502, C5503, M36h

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You shall always after verifying the problem, start the trouble shooting with the Emma Service“Refurbish”.

Software release information about improvements are found: www.sonymobile.com/Update

1 Problem Areas

1.1 Power

1.1.1 Will not power on or will switch off randomly

Check:

Check if the phone vibrates by pressing the power key.

Action:

1. If activation of the Vibrator is detected, refer to section 1.4 'Display'.
2. If NO activation of the Vibrator is detected, check that the battery is charging when connected to a charger.
Follow Test Instruction Charging via USB, Diagnostic Battery / Charging status.

Check:

Inspect the contact pads on the Battery.

Action:

1. If dirty or oxidized – clean the pads.
2. If damaged – replace the Battery.

Check:

Inspect the battery contact pins.

Action:

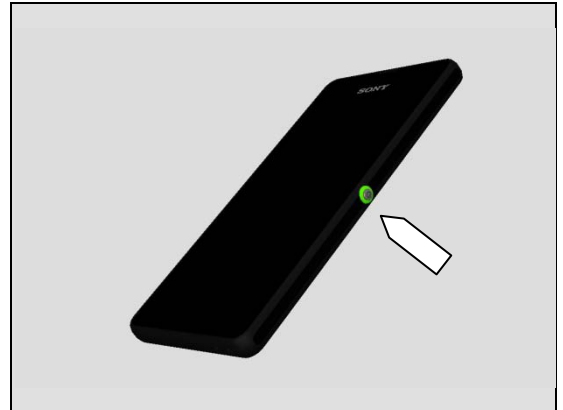
If dirty or oxidized – clean the contact pins.

Check:

Inspect the power key.

Action

Refer to section 1.2.3 'On/Off Key'.



Problem Areas

1.2 Keys

1.2.1 Camera Key

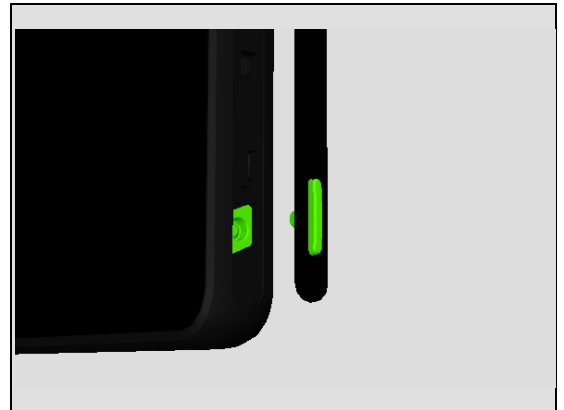
Check:

Inspect the Key Camera and the Gasket Key Cam.



Action:

1. If the Key Camera or the Gasket key Cam is dirty or clogged – clean them.
2. If any of these two parts are damaged – replace that part.

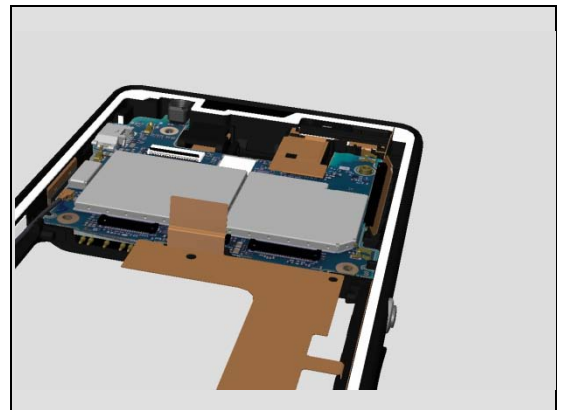


Check:

Inspect the connection between the FPC Relay and the main PBA.

Action:

1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean the BtB connector.

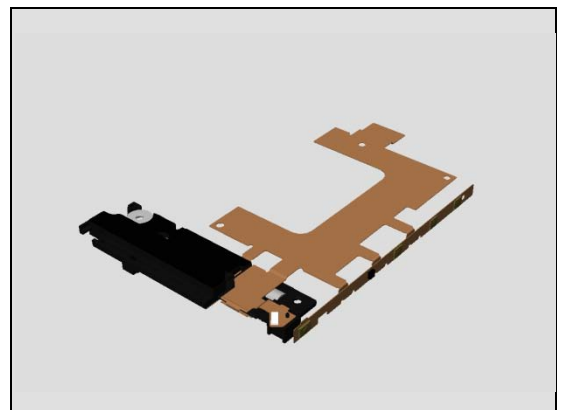


Check:

Inspect the FPC Relay.

Action:

1. If the FPC Relay is damaged – replace it.
2. Replace the Main PBA.



Problem Areas: Keys

1.2.2 Volume Key

Check:

Inspect the Key Volume and the two Gaskets Key.

Action:

1. If the Key Volume or any of the Gaskets Key is dirty or clogged – clean them.
2. If any of these three parts are damaged – replace that part.

Check:

Inspect the connection between the FPC Relay and the main PBA.

Action:

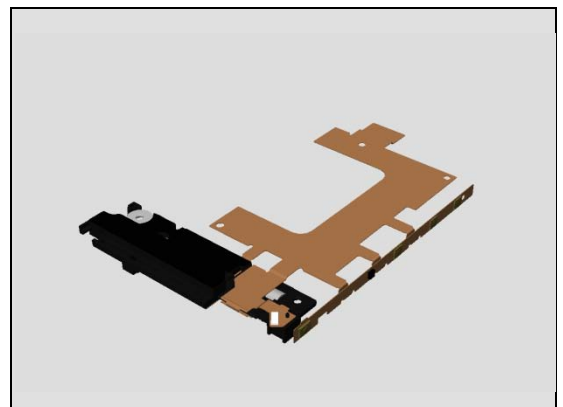
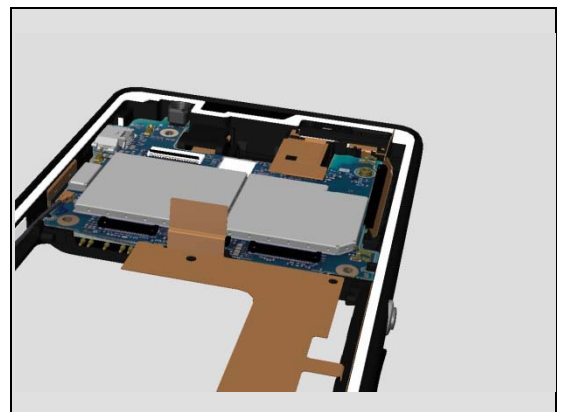
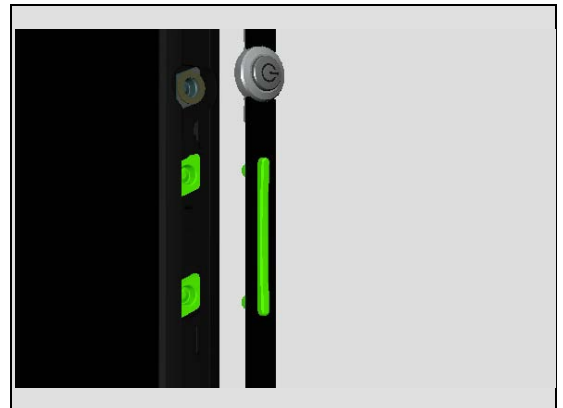
1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean the BtB connector.

Check:

Inspect the FPC Relay.

Action:

1. If the FPC Relay is damaged – replace it.
2. Replace the Main PBA.



Problem Areas: Keys

1.2.3 On/Off Key

Check:

Inspect the Key Power, Panel Key Power and the Gasket Key.

Action:

1. If the Key Power, Panel Key Power or the Gasket Key is dirty or clogged – clean them.
2. If any of these parts are damaged – replace that part.

Check:

Inspect the connection between the FPC Relay and the main PBA.

Action:

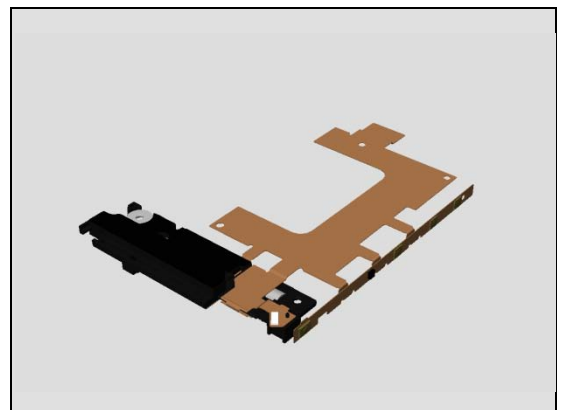
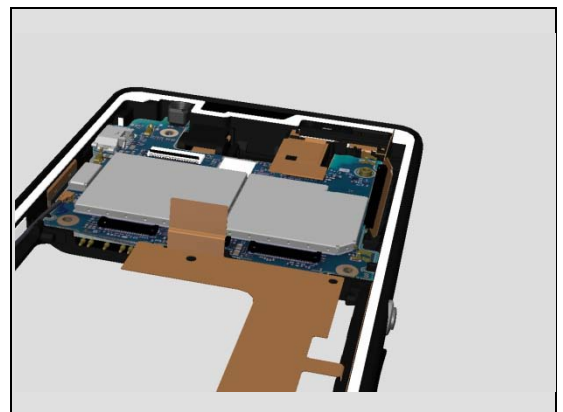
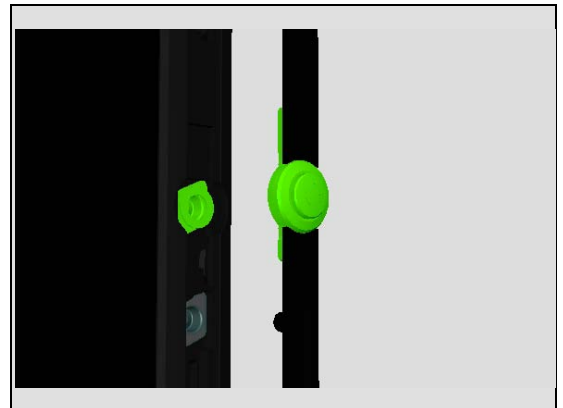
1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean the BtB connector.

Check:

Inspect the FPC Relay.

Action:

1. If the FPC Relay is damaged – replace it.
2. Replace the Main PBA.



Problem Areas: Keys

1.2.4 Back, Home, Menu and Multitask Keys

Action

Refer to section 1.3 'Touch Screen'.



Problem Areas

1.3 Touch Screen

1.3.1 Touch Screen malfunction

Check:

Inspect the touch screen and try the function of the touch keys in the front.

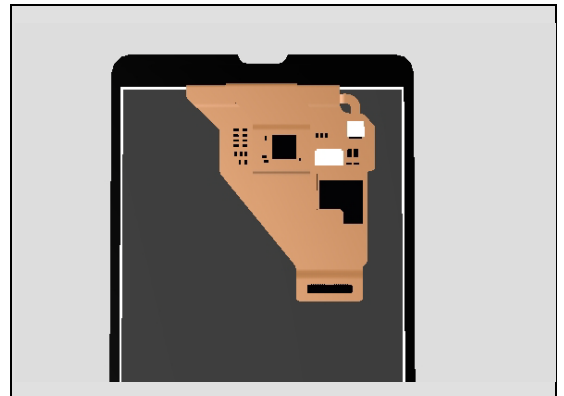
Action:

If dirty – clean it.



Check:

Inspect the connection between the touch flex and the display flex. And also the connection between the Display and the main PBA.



Action:

1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean the connectors.



Check:

Inspect the Display, the flex film and the connectors on the Display and also the connector on the Main PBA.

Action:

1. If the Display, the flex film or the connectors is damaged
- replace the Display.
2. Replace the Main PBA.



Problem Areas

1.4 Display

1.4.1 Graphics & Illumination

Note: After a replacement of the Display or the Main PBA should always the Display calibration be performed: Trouble Shooting Application 1269-2060 .

Check:

Check whether the phone vibrates after the Key Power has been pressed.

Action:

If the phone doesn't vibrate, refer to section 1.1 'Power'.

Check:

Inspect the connection between the Display and the main PBA.

Action:

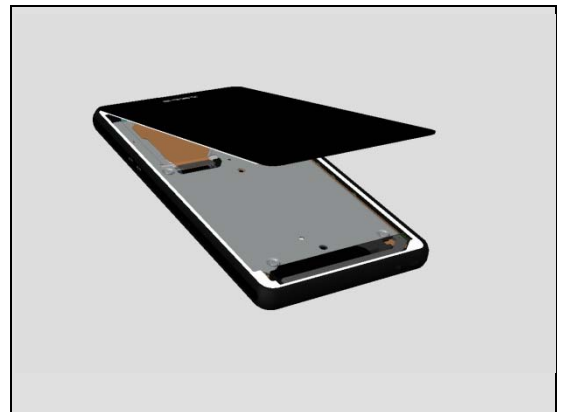
1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean the BtB connector.

Check:

Inspect the Display, the flex film and the connector on the Display and also the connector on the Main PBA.

Action:

1. If the Display, the flex film or the connector is damaged
- replace the Display.
2. Replace the Main PBA.



Problem Areas

1.5 LED/Illumination

1.5.1 Illumination

Check:

Inspect the lower part of the Display.

Action:

If dirty – clean it.

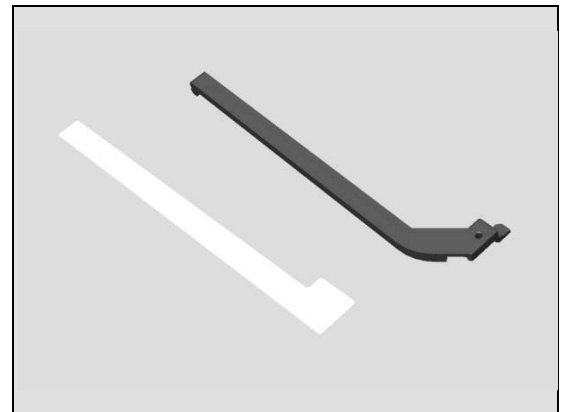


Check:

Inspect the Lightguide and the Lightguide Sheet.

Action:

1. If not properly mounted – remount the Lightguide or replaces the Lightguide Sheet.
2. If they are damaged – replace them.

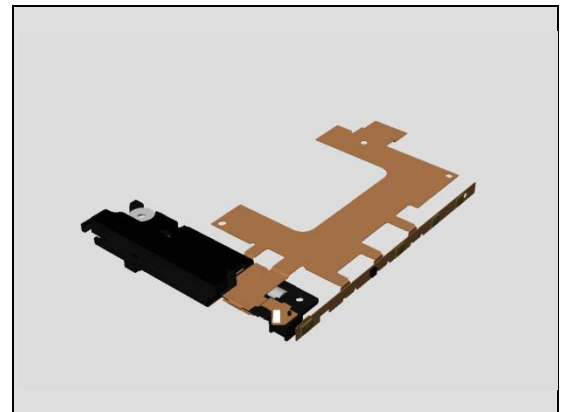


Check:

Inspect the FPC Relay.

Action:

1. If not properly connected – disconnect and reconnect.
2. If the FPC Relay is damaged – replace it.



Check:

Inspect the connection between the Display and the main PBA.

Action:

1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean the BtB connector.



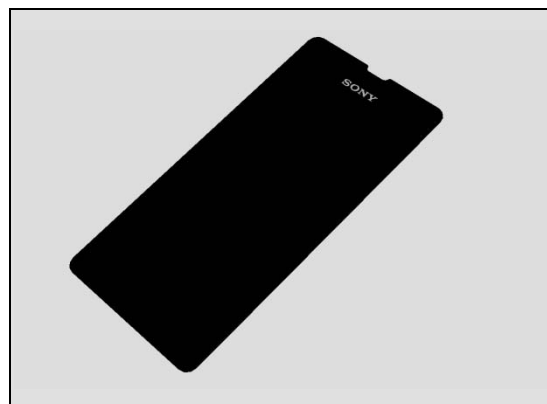
Problem Areas: Illumination

Check:

Inspect the Display, the flex film and the connector on the Display and also the connector on the Main PBA.

Action:

1. If the Display, the flex film or the connector is damaged
- replace the Display.
2. Replace the Main PBA.



Problem Areas

1.6 Speaker

1.6.1 Loudspeaker

Check:

Inspect the speaker's external port on the Cover Battery.



Action:

1. If clogged – clean the speaker port.
2. If the Cover Battery is damaged – replace it.



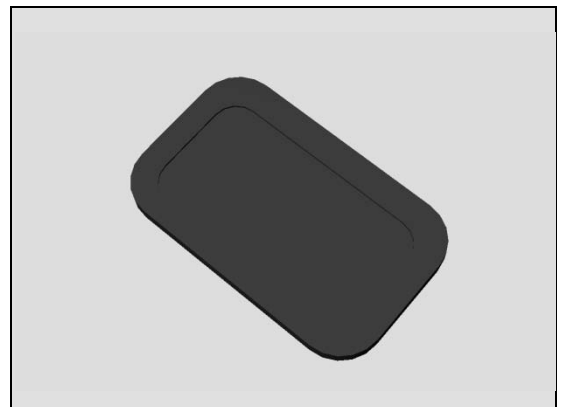
Check:

Inspect the Net Speaker on the Cover Main.



Action:

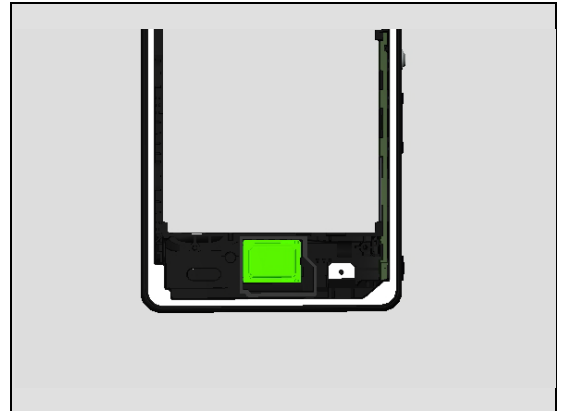
If the net is clogged or damaged – replace it.



Problem Areas: Speaker

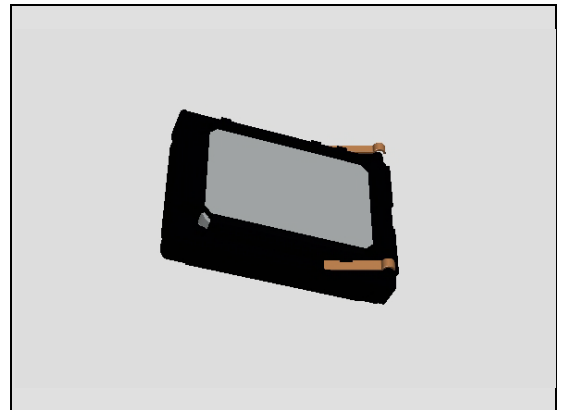
Check:

Inspect the Loudspeaker's pins and the contact pads on FPC Relay.



Action:

If Loudspeaker's pins or the Loudspeaker is damaged – replace the Loudspeaker.

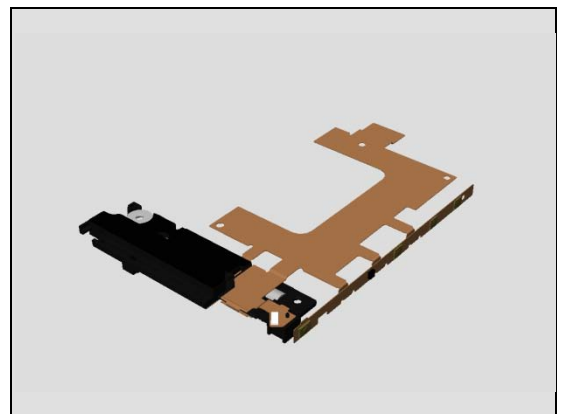


Check:

Inspect the whole FPC Relay with connectors.

Action:

1. If not properly connected – disconnect and reconnect.
2. If the FPC Relay is damaged – replace it.
3. Replace the Main PBA.



Problem Areas

1.7 Earphone

1.7.1 Earphone

Check:

Inspect the speaker's external port on the Cover Main.

Action:

If the external port is damaged – replace the Cover Main.

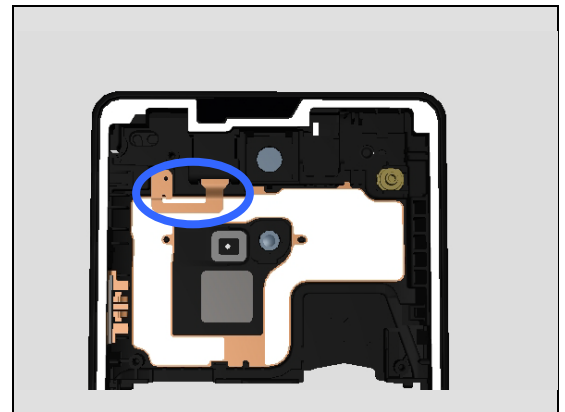


Check:

Inspect the flex of the ear speaker.

Action:

1. If the flex or its pads are damaged – replace the Cover Main.
2. Replace the Main PBA.



Problem Areas

1.8 Microphone

1.8.1 Primary Microphone

Check:

Inspect the microphone's external port on the Cover Main.

Action:

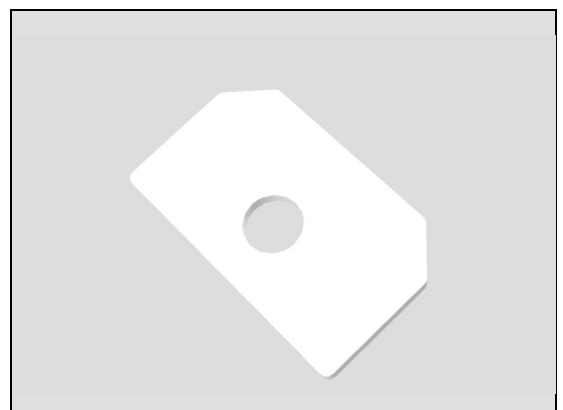
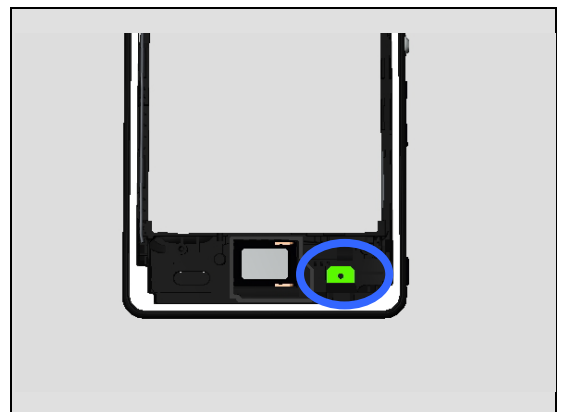
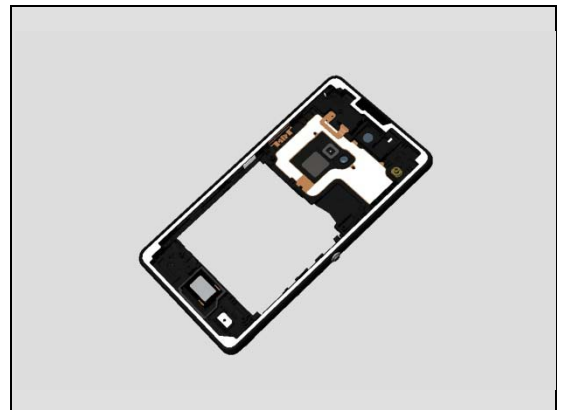
1. If clogged – clean the port.
2. If Cover Main is damaged – replace it.

Check:

Inspect the Cushion Mic in the Cover Main.

Action:

If the Cushion Mic is damaged or misalign – replace it.



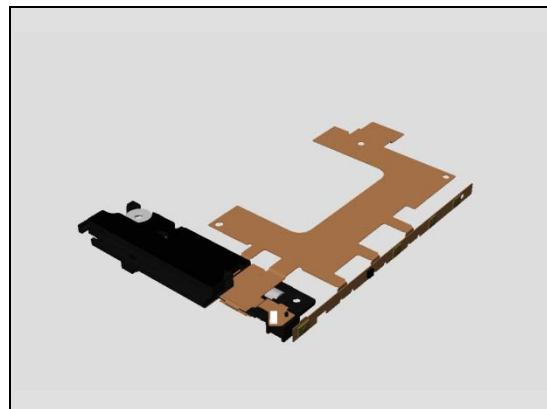
Problem Areas: Microphone

Check:

Inspect the whole FPC Relay with the BtB connector.

Action:

1. If not properly connected – disconnect and reconnect.
2. If the FPC Relay is damaged – replace it.
3. Replace the Main PBA.



Problem Areas: Microphone

1.8.2 Secondary Microphone

Check:

Inspect the Gasket 2nd MIC and the microphone's external port on the Cover Main.

Action:

1. If the external port is clogged – clean it.
2. If the Gasket 2nd MIC is damaged – replace it.

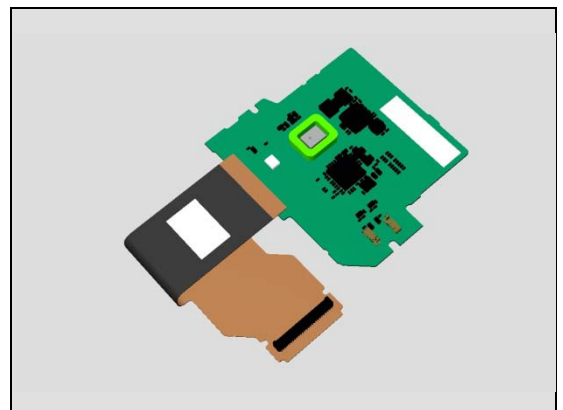
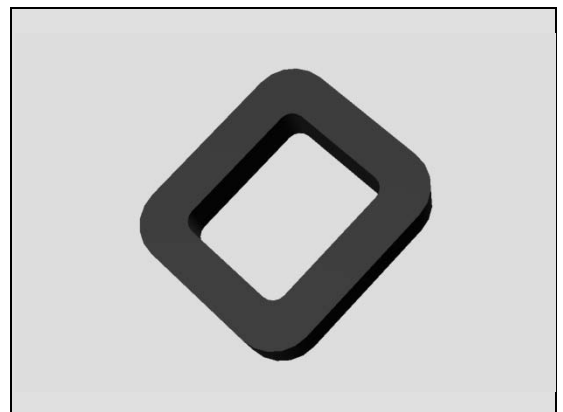


Check:

Inspect the Cushion 2nd MIC on the FPC PBA NFC.

Action:

1. If the Cushion 2nd MIC is damaged or misaligned – replace it.
2. If the BtB connector isn't properly connected – disconnect and reconnect.
3. If the MIC or the flex of the FPC PBA NFC is damaged – replace the FPC PBA NFC.
4. Replace the Main PBA.



Problem Areas

1.9 Vibrator

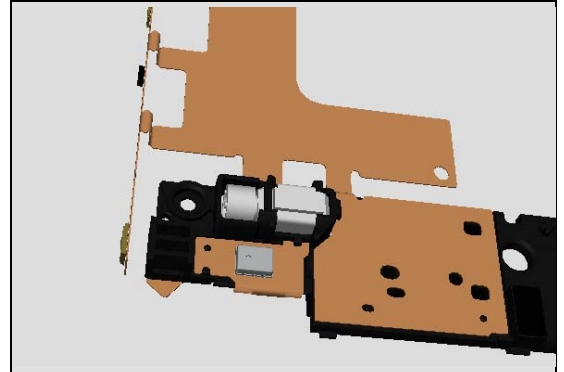
1.9.1 Vibrator not generating alerts

Check:

Inspect the vibrator on the FPC Relay.

Action:

If the vibrator is clogged – clean it.

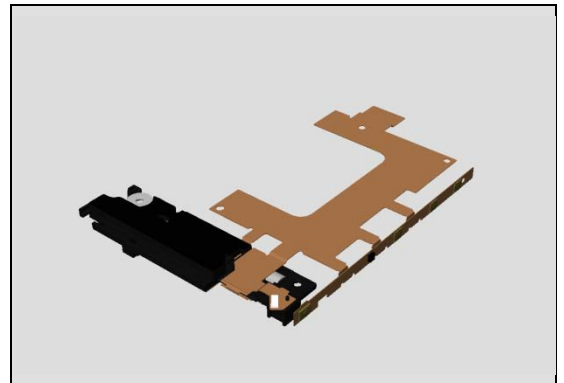


Check:

Inspect the whole FPC Relay with the BtB connector.

Action:

1. If not properly connected – disconnect and reconnect.
2. If the FPC Relay is damaged – replace it.
3. Replace the Main PBA.



Problem Areas

1.10 Camera

1.10.1 Camera defects

Check:

Inspect the camera lens on the Cover Main.

Action:

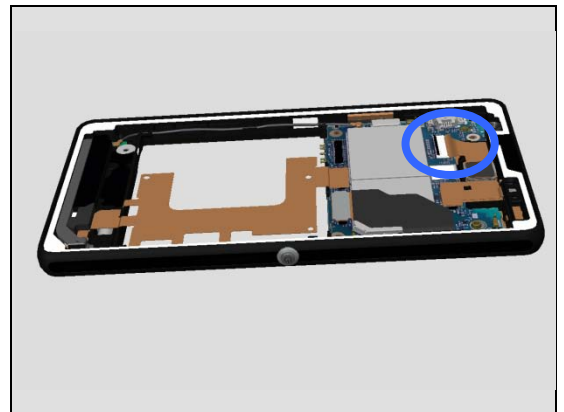
1. If dirty – clean it carefully.
2. If the camera lens is scratched or damaged – replace the Cover Main.

Check:

Inspect the connection between the Camera and the Main PBA.

Action:

1. If not properly connected – disconnect and reconnect.
2. If the Camera or the flex film is damaged – replace the Camera.
3. If camera functional occurred – verify with a known functioning Camera before replacement of the Camera.
4. Replace the Main PBA.



Problem Areas: Camera

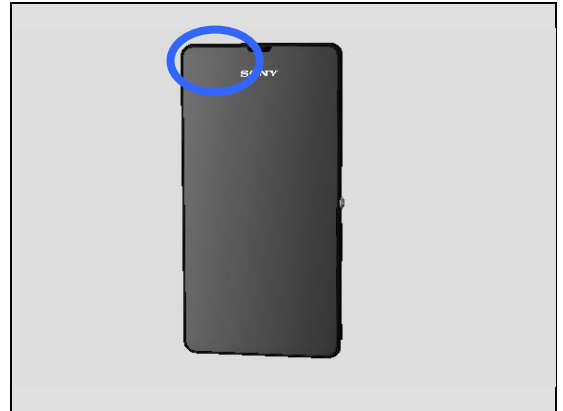
1.10.2 Secondary Camera

Check:

Inspect the camera window on the Display.

Action:

If dirty – clean it carefully.

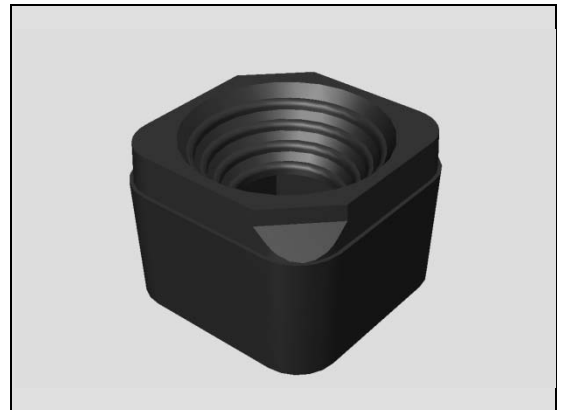


Check:

Check the Gasket Chat Camera.

Action:

1. If clogged – clean it.
2. If incorrect mounted – remount it.
3. If the Gasket Chat Camera is damaged – replace it.



Check:

Check the camera window in the Display.

Action:

1. If scratched or damaged – replace the Display.
2. Replace the Main PBA.



Problem Areas

1.11 Flash LED

1.11.1 Flash LED not flashing

Check:

Inspect flash lens window on Cover Main and the Gasket
2nd MIC.

Action:

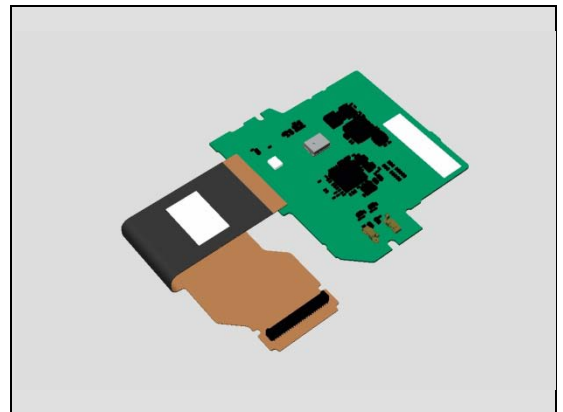
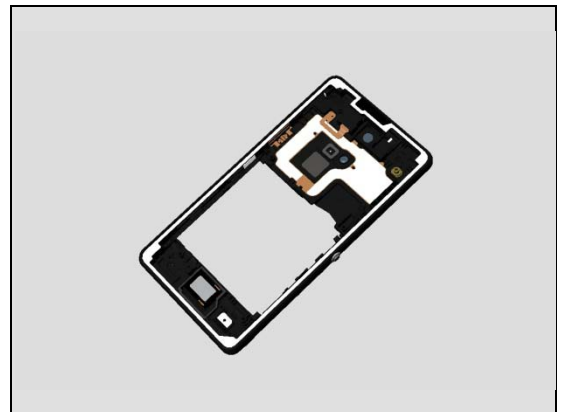
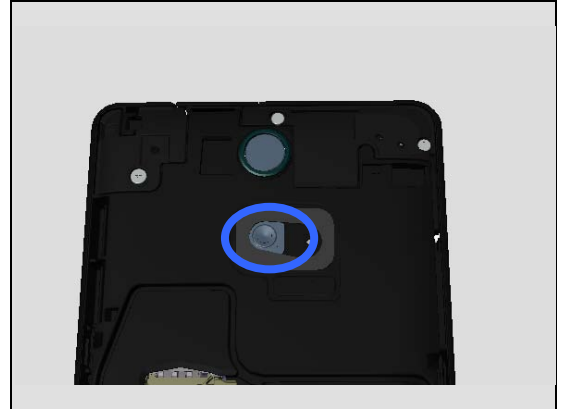
1. If the lens is dirty – clean it.
2. If the gasket is damaged or misaligned – replace the gasket.
3. If the lens is scratched or damaged – replace the Cover Main.
3. Replace board.

Check:

Inspect the FPC PBA NFC.

Action:

1. If the BtB connector isn't properly connected – disconnect and reconnect.
2. If the FPC PBA NFC or its flex is damaged – replace it.
3. Replace the Main PBA.



Problem Areas

1.12 Bluetooth, WLAN or GPS

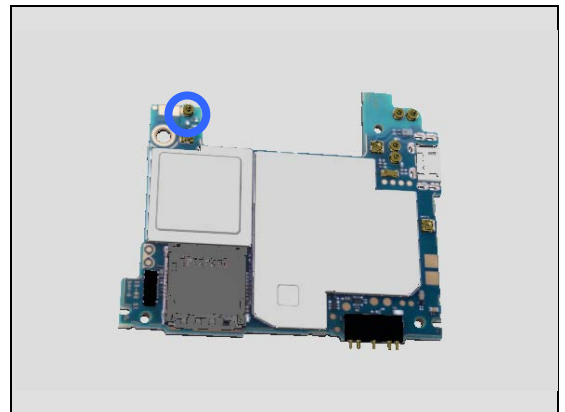
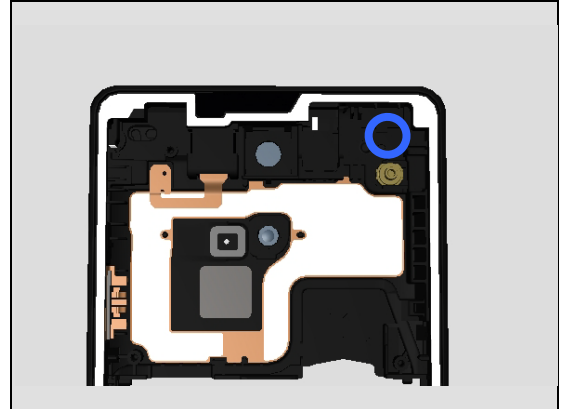
1.12.1 Bluetooth, WLAN or GPS connection failure

Check:

Inspect the contact pad in the Cover Main and the contact pin on the Main PBA.

Action:

1. If dirty or oxidized – clean the pad and pin.
2. If the pad in the Cover Main is damaged – replace the Cover Main.
3. Replace the Main PBA.



Problem Areas

1.13 NFC

1.13.1 NFC connection failure

Check:

Inspect the contact pins of the FPC PBA NFC and the NFC antenna contact pads in the Cover Main.

Action:

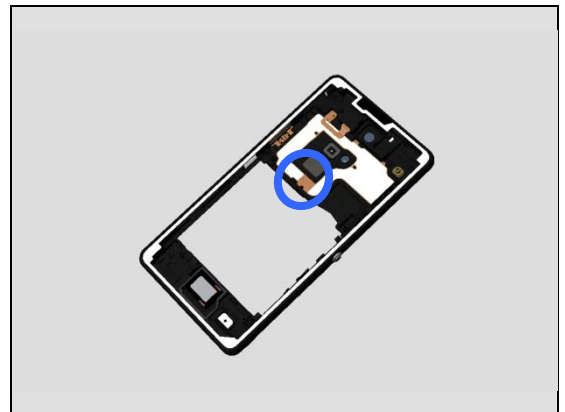
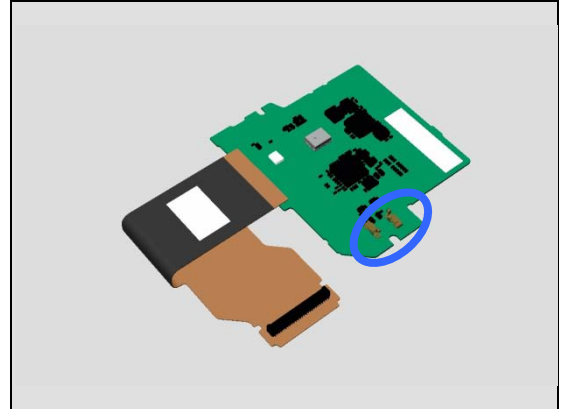
1. If dirty or oxidized – clean the pins and pads.
2. If the BtB connector of the FPC PBA NFC isn't properly connected – disconnect and reconnect.

Check:

Inspect the entire FPC PBA NFC and the NFC antenna in the Cover Main.

Action:

1. If the FPC PBA NFC or its flex is damaged – replace it.
2. If the pads or antenna in Cover Main is damaged – replace the Cover Main.
3. Replace the Main PBA.



Problem Areas

1.14 Compass

1.14.1 Compass fails

Action:

Replace the Main PBA.

Problem Areas

1.15 Accelerometer

1.15.1 Accelerometer test fails

Action:

Replace the Main PBA.

Problem Areas

1.16 Gyroscope

1.16.1 Gyroscope test fails

Action:

Replace the Main PBA.

Problem Areas

1.17 Ambient Light Sensor

1.17.1 Light Sensor malfunctions

Check:

Inspect the upper right part of the Display.

Action:

1. If dirty – clean it.
2. If damaged – replace it.



Check:

Inspect the FPC Top Compl.

Action:

1. If not properly connected – disconnect and reconnect.
2. If the FPC Top Compl is damaged – replace it.
3. Replace the Main PBA.



Problem Areas

1.18 Proximity switch

1.18.1 Proximity switch malfunctions

Check:

Inspect the upper right part of the Display.

Action:

1. If dirty – clean it.
2. If damaged – replace it.



Check:

Inspect the FPC Top Compl.

Action:

1. If not properly connected – disconnect and reconnect.
2. If the FPC Top Compl is damaged – replace it.
3. Replace the Main PBA.



Problem Areas

1.19 Pressure Sensor

1.19.1 Pressure Sensor test fails

This test is not applicable for this product.

Problem Areas

1.20 Water Proof

1.20.1 Water Proof fails

Check:

Inspect Cover battery and the caps in Cover main.

Action:

1. If dirty – clean it.
2. If Cover Battery damaged – replaced Cover battery
3. If Caps damaged – replace Cover main



Check:

Inspect Adhesive Display, Cover Main, Display, Gasket 2nd MIC, Gasket Key, Gasket Key Cam and Panel Side L for leak.

Action:

1. If leaking – replace relevant part

Problem Areas

1.21 Real Time Clock

1.21.1 Real Time Clock test fails

Action:

Replace the Main PBA.

Problem Areas

1.22 Total call time

1.22.1 Total call time test fails

Action:

Replace the Main PBA.

Problem Areas

1.23 Storage

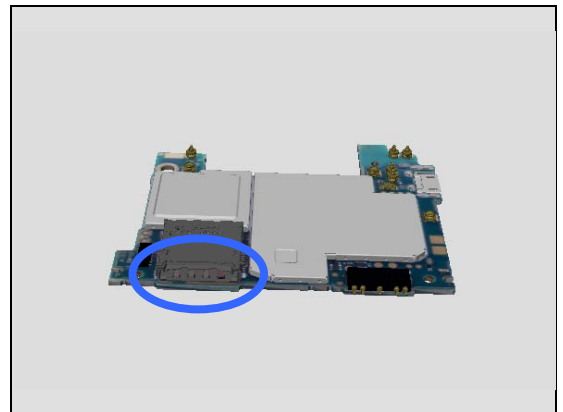
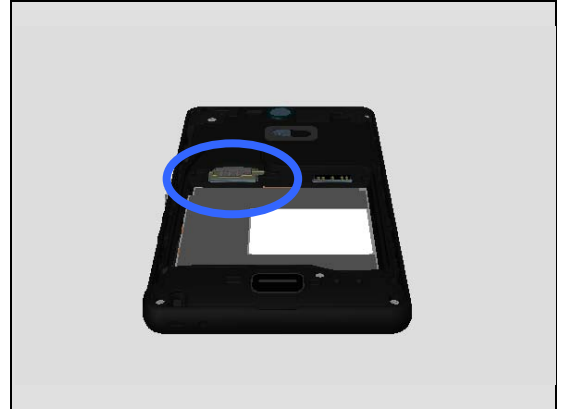
1.23.1 Memory Card not detected

Check:

Inspect the memory card holder and check if a memory card can be properly inserted.

Action:

1. If dirty or clogged – clean the holder.
2. Replace the Main PBA.



Problem Areas

1.24 Security

1.24.1 Security fails

Action:

Replace the Main PBA.

Problem Areas

1.25 FM Radio

1.25.1 No/Poor FM Radio reception

Make sure to use a headset with the CTIA standard.

A warning (*Headset not supported*) will occur if an incorrect headset is used.

Check:

Inspect the Audio Jack.

Action:

If clogged – clean the connector.

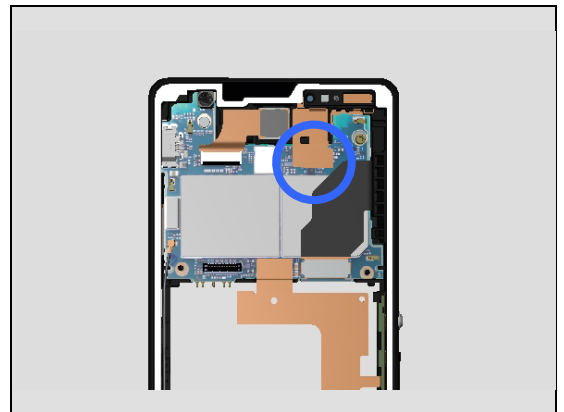


Check:

Inspect the connection between the FPC Top Compl and the Main PBA.

Action:

1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean the BtB connector.

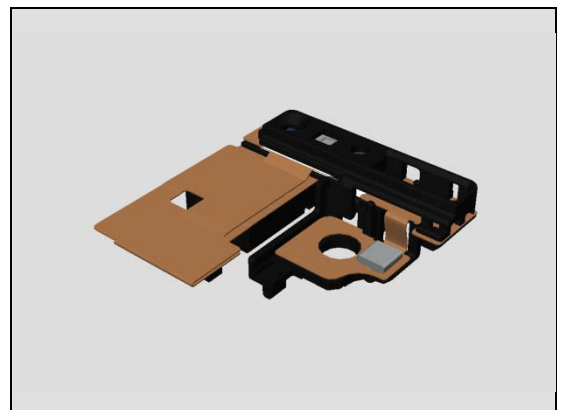


Check:

Inspect the FPC Top Compl.

Action:

1. If the FPC Top Compl is damaged – replace it.
2. Replace the Main PBA.



Problem Areas

1.26 Battery Health test

1.26.1 Battery Health test fails

This test is not applicable for this product.

Problem Areas

1.27 Flip slider counter

1.27.1 Flip slider counter fails

This test is not applicable for this product.

Problem Areas

1.28 Verify Certificates

1.28.1 Verify certificates fails

This test is not applicable for this product.

Problem Areas

1.29 IrDA Test

1.29.1 IrDA test fails

This test is not applicable for this product.

Problem Areas

1.30 TV-Out Test

1.30.1 TV-Out test fails

Check:

Inspect the USB connector.

Action:

1. If dirty, clogged or oxidized – clean the connector.
2. Replace the Main PBA.



Problem Areas

1.31 SIM

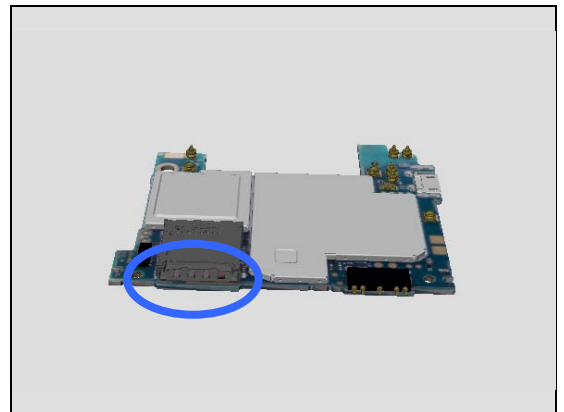
1.31.1 SIM not detected

Check:

Inspect the Card Connector Tray and check if a test SIM card can be properly inserted.

Action:

1. If the Card Connector Tray is damaged or missing – replace it.
2. If SIM reader is clogged – clean it.
2. Replace the Main PBA.



1.31.2 Incorrect SIM indicated

Check:

Check whether the phone is locked to a particular operator and whether the correct operator SIM is being used.

Action:

1. Use a proper operator SIM or test SIM.
2. Customize in Emma to the correct SI according label.
3. Replace the Main PBA.



Problem Areas

1.32 Charging (USB and Easy charger)

1.32.1 Battery will not charge

Check:

Inspect the contact pads of the Battery.

Action:

1. If dirty or oxidized – clean the pads.
2. If damaged – replace the Battery.



Check:

Inspect the battery contact pins.

Action:

If dirty or oxidized – clean the contact pins.



Check:

Inspect the USB connector.

Action:

If clogged – clean the USB connector.

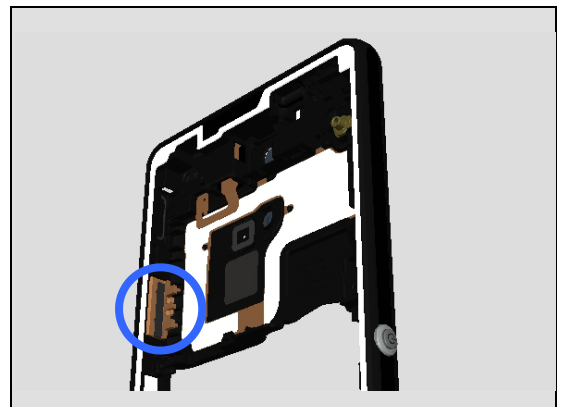


Check:

Inspect the Easy charger pads in the Cover Main.

Action:

1. If dirty or oxidized – clean pads.
3. If damaged – replace the Cover Main.



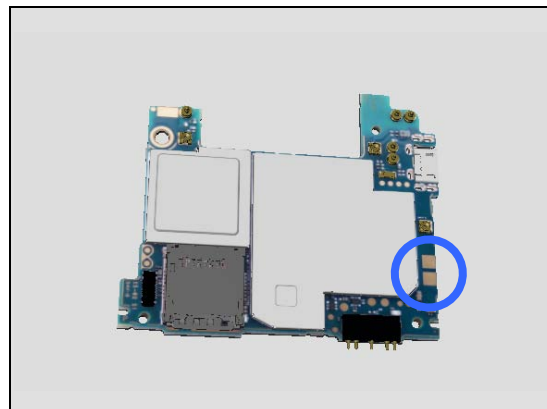
Problem Areas: Charging

Check:

Inspect the Easy charger pads on the Main PBA.

Action:

1. If dirty or oxidized – clean the pads.
2. Replace the Main PBA.



Problem Areas

1.33 Accessory by Wire

1.33.1 Connection with accessory to Audio Jack fails

Make sure to use a headset with the CTIA standard.
A warning (*Headset not supported*) will occur if an incorrect headset is used.

Check:

Inspect the Audio Jack.

Action:

If clogged – clean the connector.

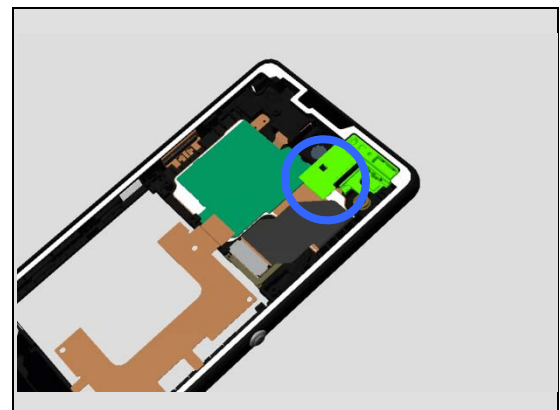


Check:

Inspect the connection between the FPC Top Compl and the Main PBA.

Action:

1. If not properly connected – disconnect and reconnect.
2. If dirty or oxidized – clean the BtB connector.

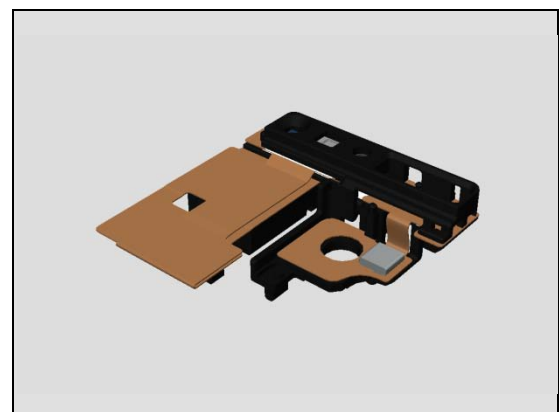


Check:

Inspect the FPC Top Compl.

Action:

1. If the FPC Top Compl is damaged – replace it.
2. Replace the Main PBA.



Problem Areas

1.34 Data Communication

1.34.1 Data transfer via System Connector fails

Check:

Inspect the USB connector.

Action:

1. If dirty, clogged or oxidized – clean the connector.
2. Replace the Main PBA.



Problem Areas

1.35 Network & Signal

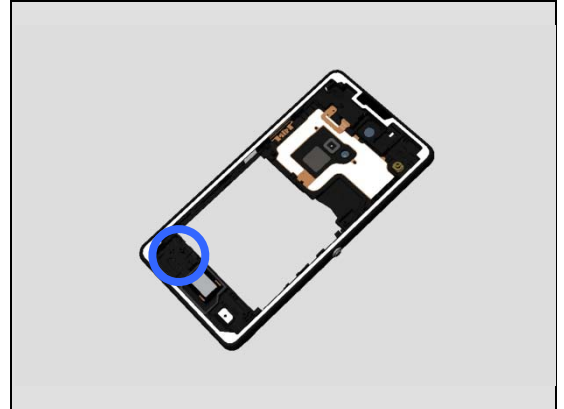
1.35.1 No/Poor signal

Check:

Inspect the main antenna in the lower part of the Cover Main and its contact pad.

Action:

If the pad is dirty or oxidized – clean it.

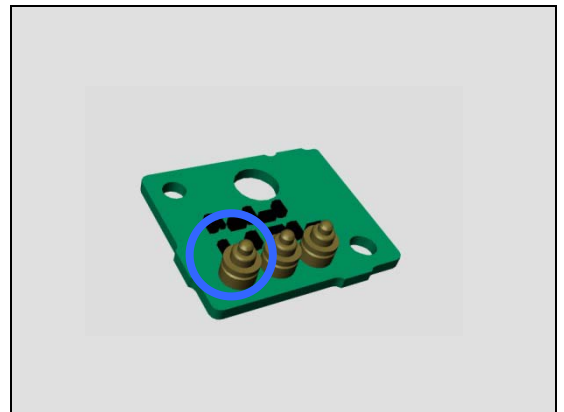


Check:

Inspect the pin on the PBA Antenna and RF Coax Cable connection.

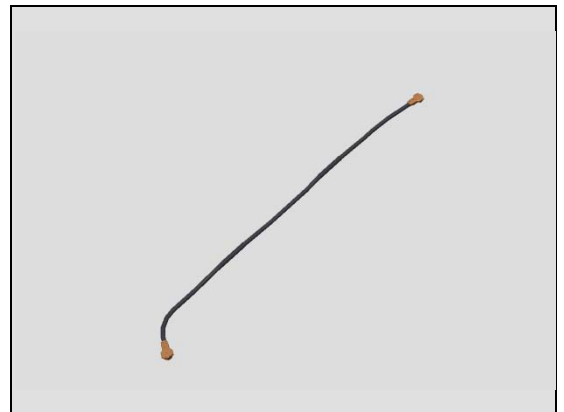
Action:

1. If the pin or the RF connection is oxidized – clean it.
2. If the pin, the RF connection or the PBA Antenna is damaged – replace the PBA Antenna.



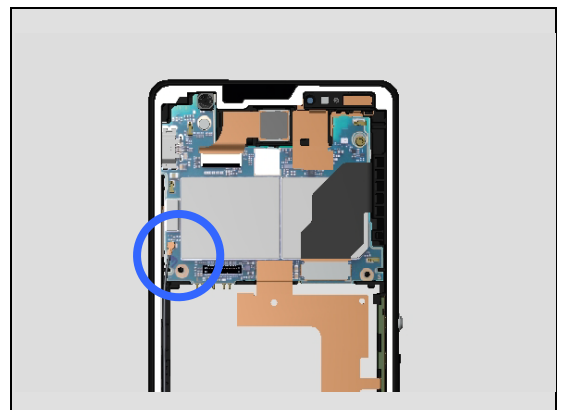
Check:

Inspect the entire RF Coax Cable and its connection to the Main PBA.



Action:

1. If oxidized – clean it.
2. If the RF Coax Cable isn't properly connected – disconnect and reconnect.
3. If the RF Coax Cable is damaged – replace it.
4. If the Cover Main is damaged – replace it.
5. Replace the Main PBA.



2 Revision History

Rev.	Date	Changes / Comments
1	2013-June-14	Initial release
2	2013-June-18	Update due to system failure.
3	2013-June-19	Updated the camera instruction in chapter 1.10
4	2014-April-25	WRT chapter updated