Native TCT 2.4

TBT User Guide

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1. Installing the TBT Package

Install the TBT package by following steps:

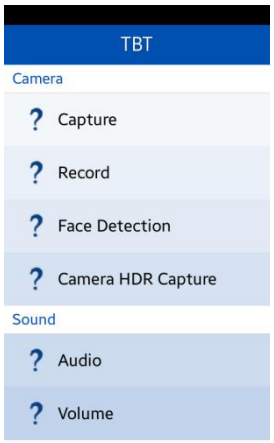
1. Download binary from site :
   http://download.tizen.org/tct/2.4/NATIVE_TCT/2.4_rXX/native-tct_2.4_rXX.zip
2. First uninstall tbtcoreapp from device if already installed.
3. Execute **install.sh**.

   $ unzip native-tct_2.4_rXX.zip

   $ cd native-tct_2.4_rXX/TBT

   $ chmod +x install.sh

   $ ./install.sh
4. After running the script, TBT will be launched.
5. Test case list will appear in welcome screen.
6. If the required feature for the respective test case is not available in the device, then a message will be shown, while executing the test cases.



Mobile

Figure 1: TBT Application

1.1. Application Status Report

The status (**Pass**, **Fail**, **Not-Tested or Feature-Not-Supported**) of all the test cases are stored in an XML file. The name of the file is **tbt-report.xml.** It is generated in the **Others** folder of the **storage** directory of the system.

By default, if manufacturer doesn't change the path, it should be located in /opt/usr/media/Others/tbt-report.xml. You can get report with :

$ sdb pull /opt/usr/media/Others/tbt-report.xml

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2. Testing the Device

This chapter describes the various tests that can be performed to check the device functionality.

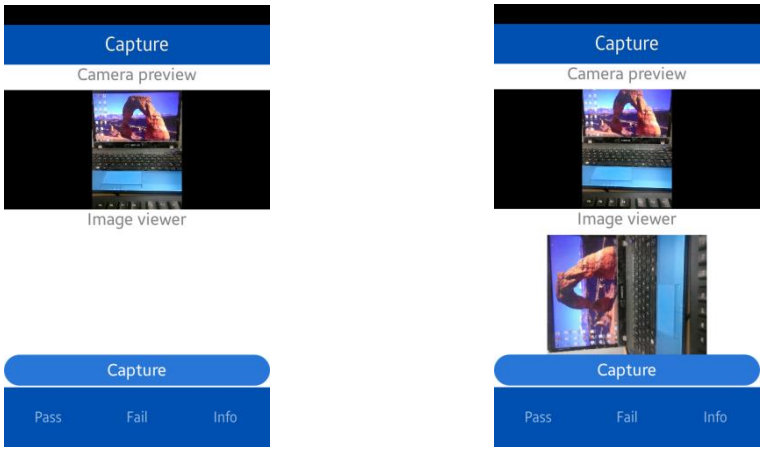
2.1. Testing the Camera

This section describes the camera testing options. If the functionality works as expected and press **Pass**. Otherwise, press **Fail**.

2.1.1. Testing Camera Capture

To test the camera capture functionality:

1. Select the **Capture** from the test case list
2. Press **Capture** to capture a picture.
3. Check the captured picture which is shown automatically.



Mobile

Figure 2: Camera Preview

2.1.2. Testing Camera Recording

To test the camera recording functionality:

1. Select the **Record** Test from the test case list.
2. Press **Record** button to record the video.
3. Press **Stop** to stop the recording
4. Check the recorded video clip which is shown automatically.

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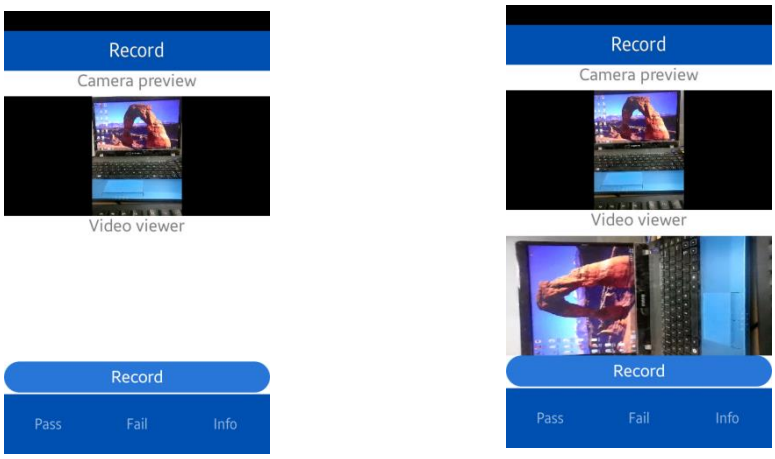

Mobile

Figure 3: Camera Record

2.1.3. Testing Camera Face Detection

To perform the test,

1. Select **Face Detection** Test from the **test case list** and the camera preview starts automatically**.**
2. If the camera can detect face and "zoom in" and "zoom out" is performed automatically then **Pass**, otherwise **Fail.**

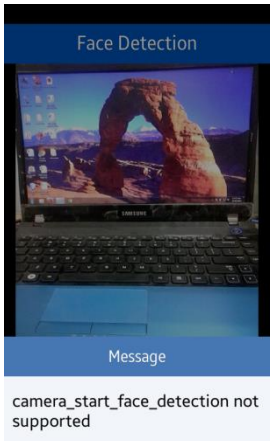

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Figure 4: Face detection

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2.1.4. Testing Camera HDR Capture

To perform the test,

1. Select **Camera HDR Capture** from the test case list.
2. Press button **Capture** and the captured picture is shown.
3. If the picture can be captured and shown, then **Pass,** otherwise **Fail.**

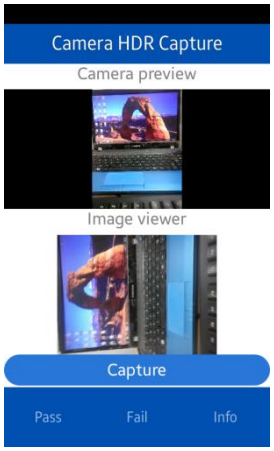

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Figure 5: Camera HDR Capture

2.2. Testing Sound

This section describes the sound testing options. If the functionality works as expected, press **Pass**. Otherwise, press **Fail**.

2.2.1. Testing the Sound Audio

To test the sound of the speaker:

1. Select **Audio** Test from the test case list.
2. Press **Play**.
3. Check the sound output to the speaker.
4. Press **Stop** to stop the music.
5. Press **Pause** to pause the music

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Figure 6: Sound Test

2.2.2. Testing Sound Volume

To test the sound volume:

1. Select the **Volume** Test from the **test case list** and the sound is played automatically.
2. Slide the **Slider** to change the volume level.
3. Check the sound output to the speaker by hearing and watching the value of volume label.

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Figure 7: Sound Volume Test

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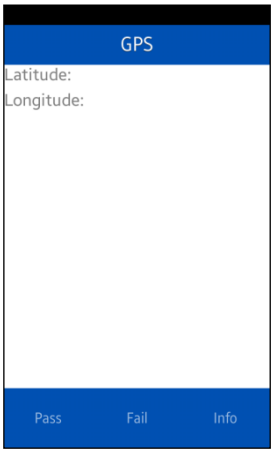
2.3. Testing GPS

To test the **GPS** functionality,

1. Select the **GPS** Test from the **test case list** and view the GPS information.
2. If the information is correct then **PASS**, otherwise **FAIL**.



Mobile

Figure 8: GPS

Note: If the GPS information is unavailable for 6 minutes, the process fails.

2.4. Testing Bluetooth

This section describes the Bluetooth testing options. If the functionality works as expected, press **PASS**, otherwise, press **FAIL**.

2.4.1. Testing Bluetooth Server Pairing

To test Bluetooth server pairing:

1. Select **Server Paired** from the test case list.
2. If Bluetooth is off, turn on manually.
3. Press **Set Visible** and wait for the connection pop-up message.
4. If the message is shown properly then **PASS,** otherwise **FAIL.**

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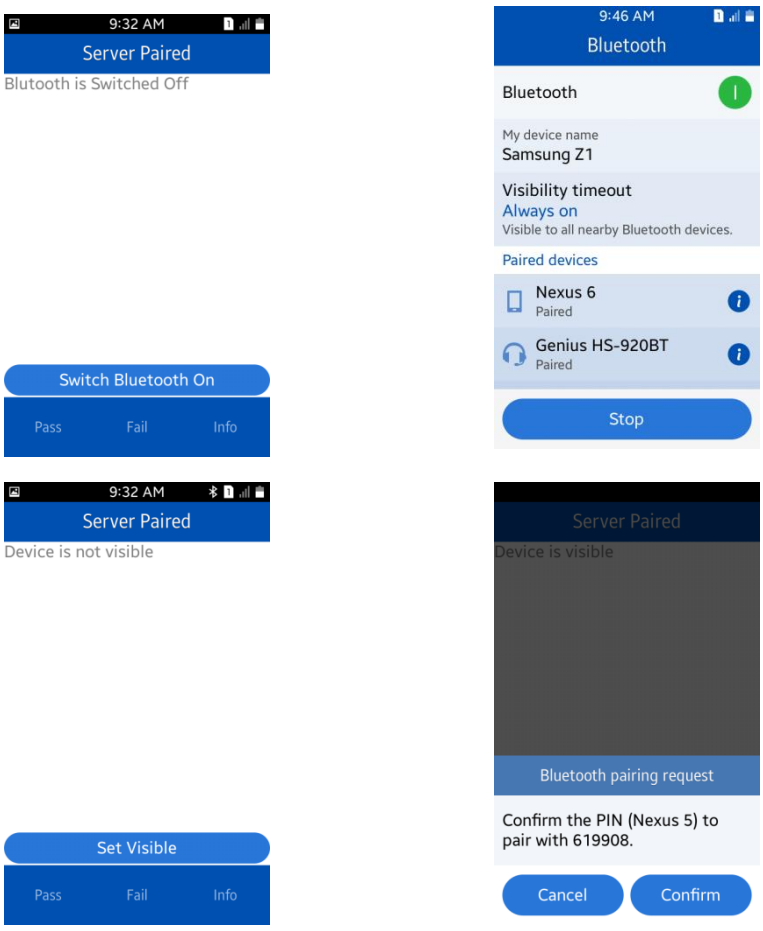

Mobile

Figure 9: Server Pairing

2.4.2. Testing Bluetooth Client Pairing

To test Bluetooth client pairing:

1. Select **Client Paired** from the test case list.
2. If Bluetooth is off, turn on manually.
3. Press button **Discover** and a list of available devices will be appeared
4. Select the desired device and wait for the connection popup message. If you want to cancel connection during paring, select the **Cancel** button..

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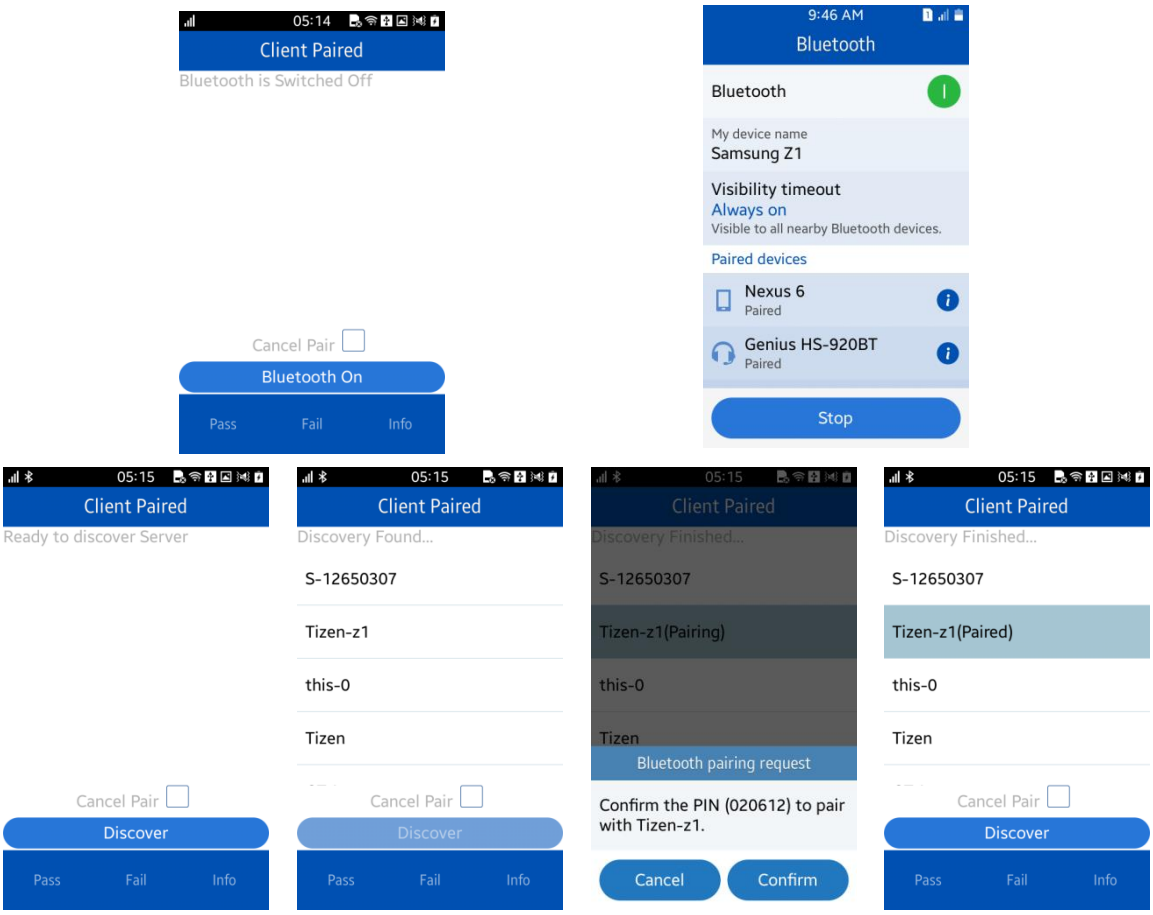

Mobile

Figure 10: Client Paring

2.4.3. Bluetooth Authorization Test

To perform the test

1. Select **Authorization** from the test case list.
2. If Bluetooth is off, turn on manually.
3. Press button **Discover** to see the list of Bluetooth devices**.**
4. Select the desired device from the list**.**
5. Press button **Authorize** and the desired device is Authorized.
6. If all the steps are performed correctly then **Pass,** otherwise **Fail.**

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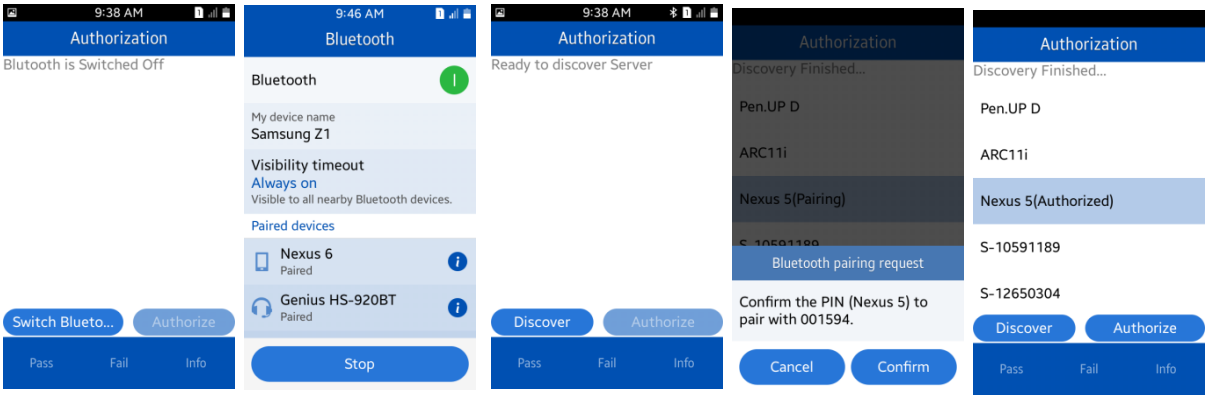


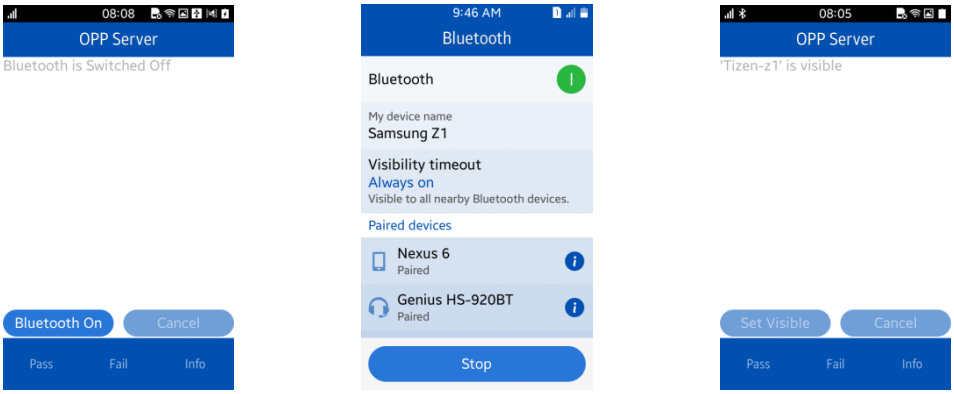
Mobile

Figure 11: Authorization Test

2.4.4. Bluetooth OPP Server

To perform the test at first, **Turn On** the Bluetooth of the device where the object will be pushed. Then,

1. Select **OPP Server** from the test case list.
2. Press **Switch Bluetooth On** to activate Bluetooth on the device and the Bluetooth application of the device will be opened. Turn on Bluetooth from there Select the desired device and the devices will be paired.
3. Press **Set Visible** and wait for the connection pop-up message.
4. Press "**Confirm**" button to accept connection from client.
5. When client is trying to send a file press "Accept/Reject" button to accept/reject file sending request.
6. Select "Pass/Fail" if proper message shown in the server side.



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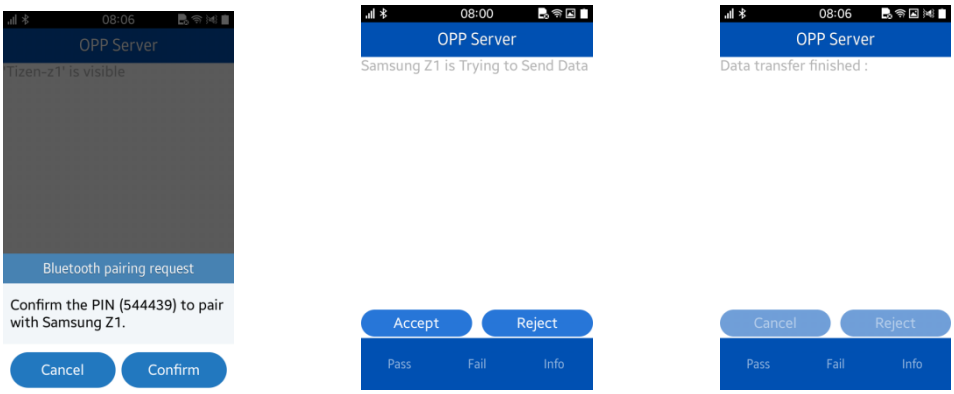


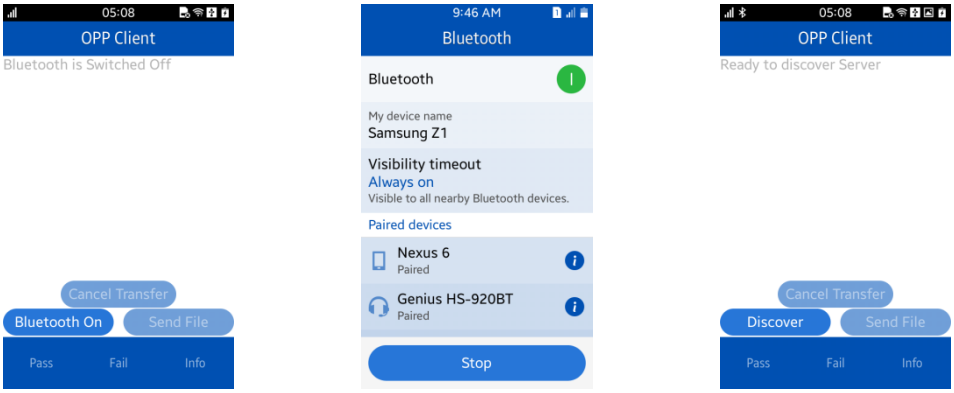
Mobile

Figure 12: OPP Server

2.4.5. Bluetooth OPP Client

To perform the test at first, **Turn On** the Bluetooth of the device where the object will be pushed. Then,

1. Select Bluetooth **OPP Client** from the test case list.
2. Press **Switch Bluetooth On** to activate Bluetooth on the device and the Bluetooth application of the device will be opened. Turn on Bluetooth from there Select the desired device and the devices will be paired.
3. Press button **Discover** to see the list of Bluetooth devices**.**
4. Select the desired device from the list.
5. Press button **Send File.**
6. If you want to cancel file sending after pressing "Send File" just press "Cancel Transfer" button, check the message to verify pass/fail.
7. Check if any image file is pushed in the other device.
8. If any image file is pushed then **Pass** otherwise **Fail.**
9. Also turn on the Visibility of Bluetooth.



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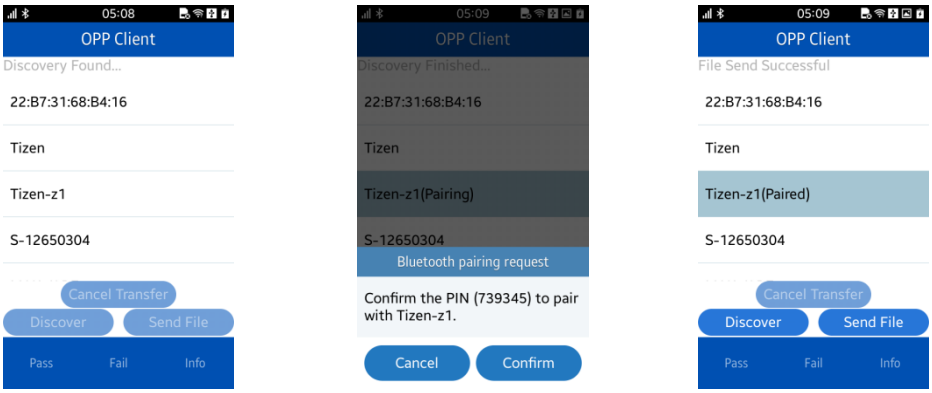

Mobile

Figure 13: OPP Client

2.4.6. Bluetooth Client Socket Test

To perform the test

1. Select **Client Socket** from the test case list.
2. If Bluetooth is off, turn on manually.
3. Press button **Discover** to see the list of Bluetooth devices**.**
4. Select the desired device from the list.
5. Press button **Send File.**
6. Check if any file is pushed in the other device.
7. If any file is pushed then **Pass** otherwise **Fail.**

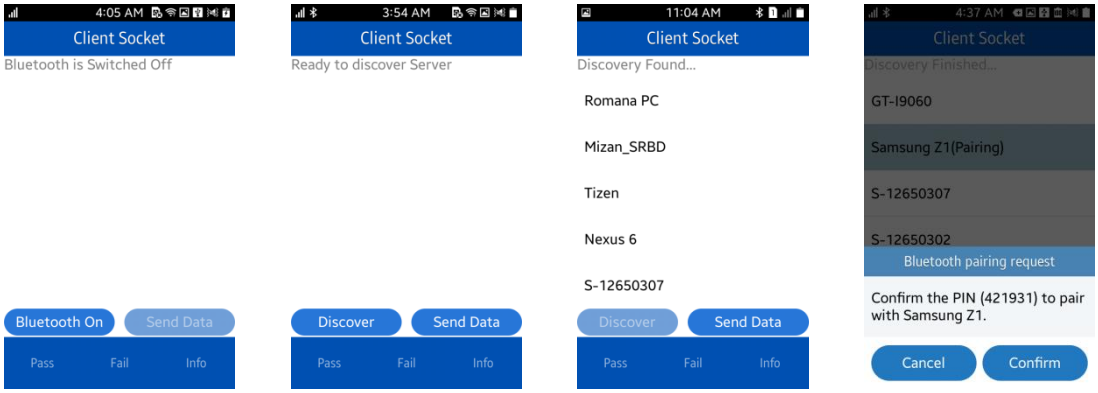

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Figure 14: Client Socket

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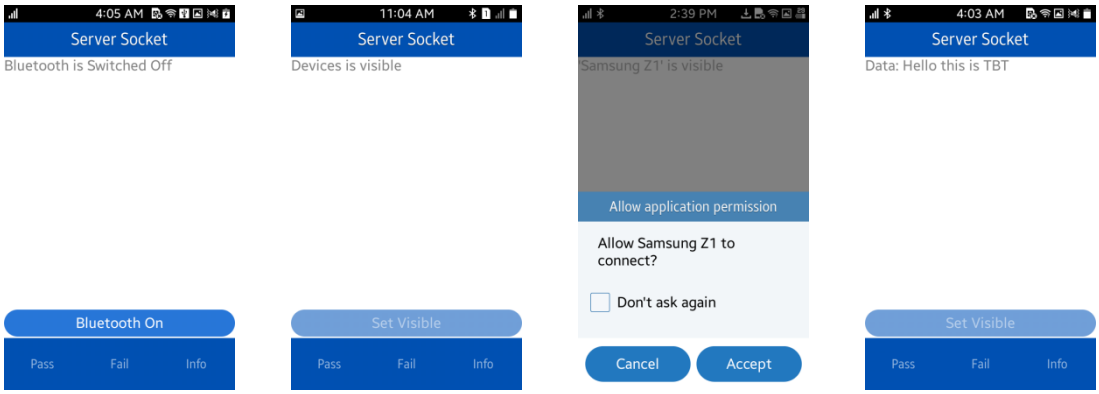
2.4.7. Bluetooth Server Socket Test

To perform the test

1. Select **Server Socket** from the test case list.
2. If Bluetooth is off, turn on manually.
3. Press **Set Visible** and wait for the connection pop-up message.
4. If the message is shown properly then **Pass** otherwise **Fail.**



Mobile

Figure 15: Server Socket

2.4.8. Bluetooth Profiles Test

To perform the test

1. Select **Bluetooth Profile** form the test case list.
2. If Bluetooth is off, turn on manually.
3. Press button **Discover** to see the list of Bluetooth Audio devices**.**
4. Select an audio profile enabled device like, Bluetooth Headset from the list for pairing.
5. After successful pairing, connected profiles will be shown.

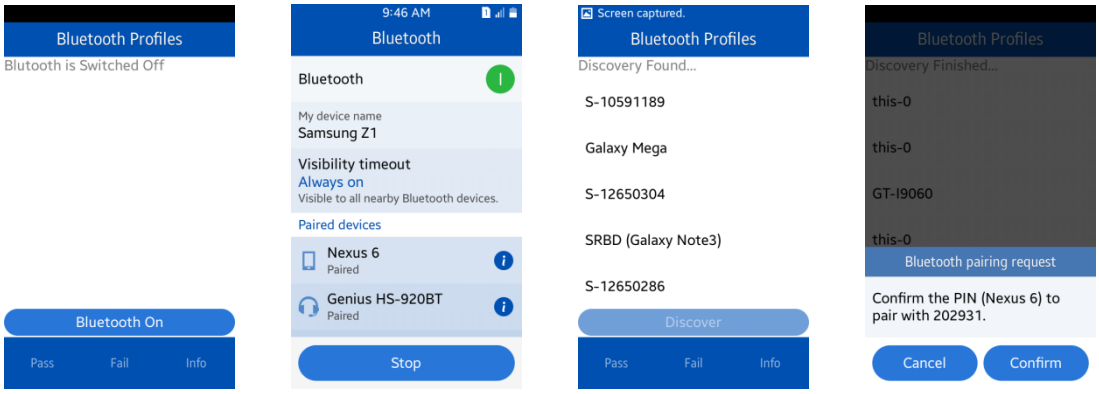


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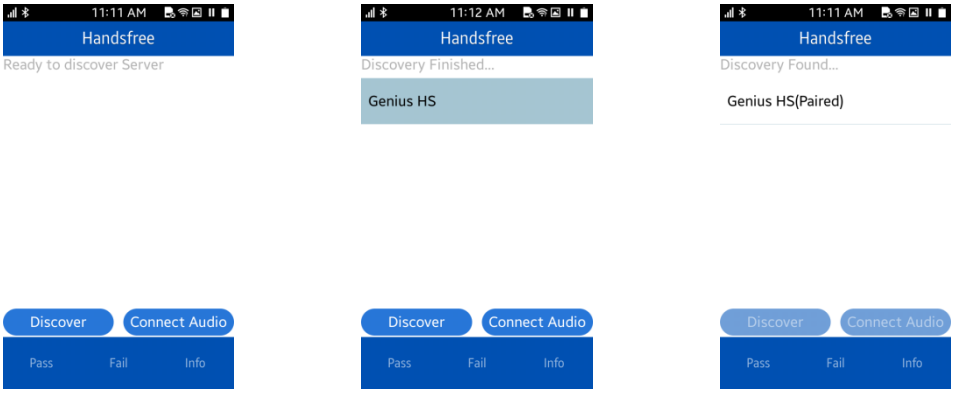
Figure 16: Profiles Test

2.4.9. Bluetooth Audio Connect

To perform the test

1. Select **Audio Connect** from the test case list
2. If Bluetooth is off, turn on manually.
3. Press button **Discover** to see the list of Bluetooth Audio devices**.**
4. Select the desired device from the list.
5. Press button **Connect Audio.**
6. Now you can hear the key pressing sound in Headset.
7. If all the steps are performed correctly then **Pass,** otherwise **Fail.**



Mobile

Figure 17: Audio Connect

2.4.10. Bluetooth Handsfree

To perform the test

1. Select **Handsfree** from the test case list
2. If Bluetooth is off, turn on manually.
3. Press button **Discover** to see the list of Bluetooth Audio devices**.**
4. Select the desired device from the list.
5. Press button **Connect Audio.**
6. Now make a call and test if sound is heard in the audio device.

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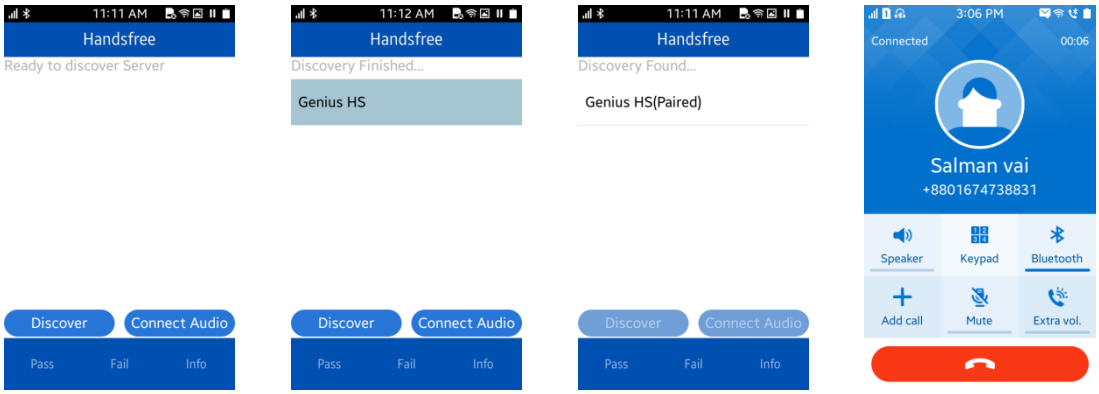
7. If all the steps are performed correctly then **Pass,** otherwise **Fail.**



Mobile

Figure 18: Handsfree

2.4.11. Bluetooth HID

To perform this test:

1. Select **HID Connect** from the test case list
2. If Bluetooth is off, turn on manually.
3. Press button **Discover** to see the list of Bluetooth HID devices.
4. Select the desired device from the list.
5. If you are trying to connect a keyboard a pop-up will appear, press the same code on the keyboard and press enter.
6. "**HID connected**" will be written on the label, just above the device list.
7. Then go to the default messsaging application, try to write message from the HID keyboard.
8. If input can be inserted using remote input device correctly then PASS otherwise FAIL.

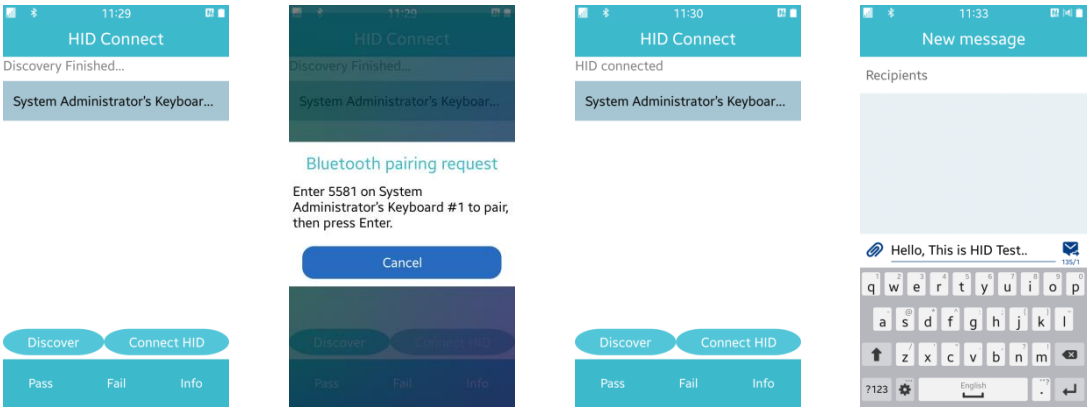


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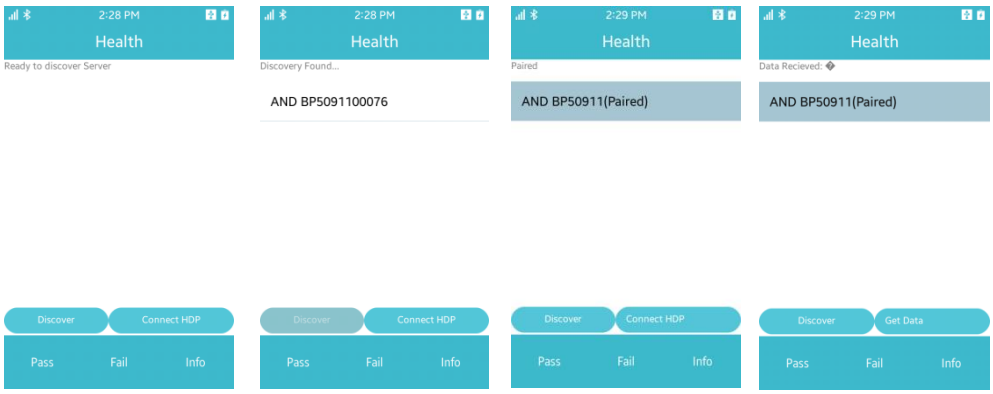
Figure 19: HID

2.4.12. Bluetooth Health

To perform the test

1. Select **Health** from the test case list
2. If Bluetooth is off, turn on manually.
3. Press button **Discover** to see the list of devices**.**
4. Select the desired device from the list.
5. Press button **Connect HDP** if not already connected**.**
6. Press button **Get Data** and data received will be shown on label then PASS otherwise FAIL.



Mobile

Figure 20: Health

2.4.13. Bluetooth SDP

To perform this test:

1. Select **Bluetooth SDP** from the test case list.
2. If Bluetooth is off, turn on manually.
3. Press button **Discover** to see the list of Bluetooth devices.
4. Clicked on the desire device to make pair with that device.
5. After paring is completed press Connected Services, Bluetooth services will be shown in a list.
6. If Bluetooth profiles are shown then press PASS otherwise FAIL.

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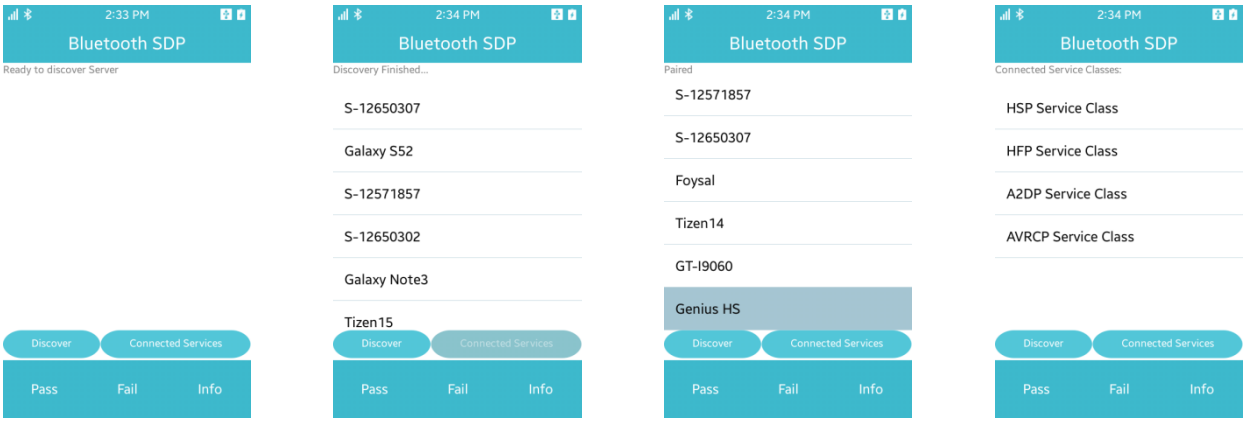

Mobile

Figure 21: SDP

2.5. Testing Bluetooth LE

This section describes the Bluetooth LE testing options. If the functionality works as expected, press PASS, otherwise, press FAIL.

2.5.1. Gatt Client Test

This section act as a gatt client and shows the services, characteristics, descriptions of gatt server with corresponding uuid.

To perform the test

1. Select **Gatt Client** from the test case list.
2. Set **BLE device** in discover mode.
3. If Bluetooth is off, turn on manually.
4. Press button **Discover** and a list of available BLE devices will be appeared.
5. Select the desired device and gatt services will be shown with corresponding uuid in list.
6. Select the desired **gatt** service and corresponding characteristics will be shown with uuid in list.
7. Select the desired characteristic and press write button, written successfully message will be shown.
8. Press **read** button, read successfully message will be shown.
9. Press **expand** button, if descriptors is available for selected characteristics then descriptors will be shown with corresponding uuid in list.
10. Select the desired descriptor and press write int button, written successfully

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message will be shown.

11. Press **read int** button, Descriptor value 25 will be shown in list.
12. Press **write float** button, written successfully message will be shown.
13. Press **read float** button, Descriptor float value 15200.00000 will be shown in list.

If all the steps are performed correctly then Pass, otherwise Fail.

NB: From steps 8-12 depends on availability of descriptors.

Mobile

Figure 22: GATT

2.6. Testing the Wi-Fi Activation

To test the Wi-Fi activation:

1. Select **Wifi** Test from the test case list.
2. To enable Wi-Fi, press button **Wifi On**.
3. To disable Wi-Fi, press button **Wifi Off**.

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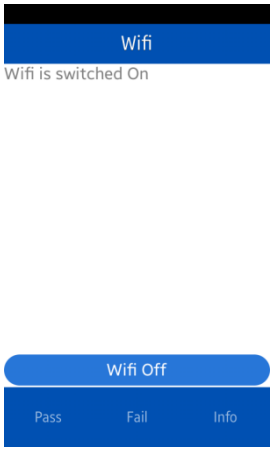


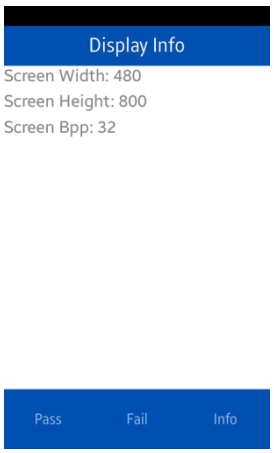
Mobile

Figure 23: WIFI

2.7. Display Test

The following requirements are mandatory for the **display** test:

Minimum screen size: 240 x 320 (QVGA)



Mobile

Figure 24: Display Test

To test the display, check whether the screen size is larger than the minimum size of 240 x 320.

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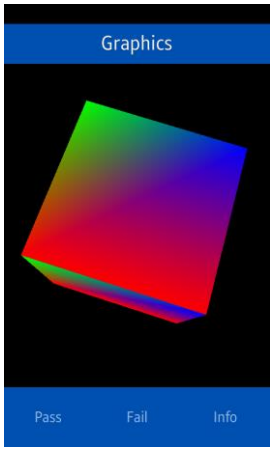
2.8. Testing Graphics

To test the **Graphics** ensure that a cube is rotating properly.



Mobile

Figure 25: Graphics

2.9. Testing the Input Device

Edit field:

To test the edit field, three kinds of keypad will appear. If the keys can be pressed and inputs are shown, then the test is **Pass,** otherwise **Fail.**

- Select **Number Keypad** from **test case list** for Number Keypad Test.
- Select **Phone Number Keypad** from **test case list** for Phone Number Keypad Test.
- Select **IP Keypad** from **test case list** for IPV4 Keypad Test.

Mobile

Figure 26: Input Device

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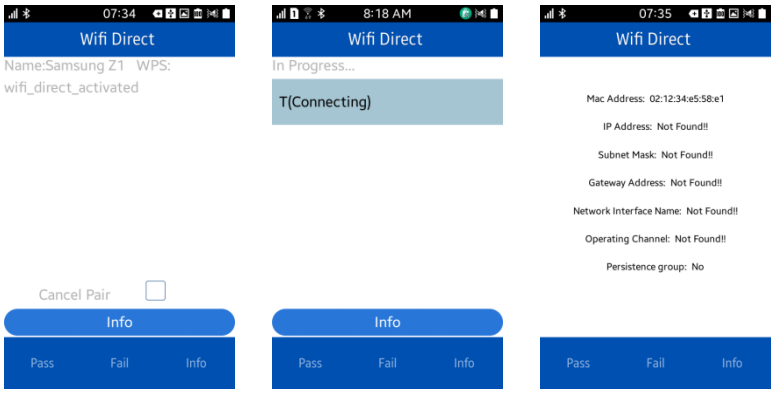
2.10. Testing Wi-Fi Direct

2.10.1. Wi-Fi Direct

To perform the test

1. Select **Wifi Direct** from the test case list from two devices concurrently.
2. Discovery for new devices starts automatically and the list of discovered devices is shown.
3. Select the desired device from the list to connect.
4. If you want to cancel connection during pairing check the cancel pair checkbox.
5. Press button **Info** to see the Mac address, IP address, Subnet mask, Gateway address, Network interface name, Operating channel and Persistent group.



Mobile

Figure 27: WIFI-Direct

2.11. Testing NFC

2.11.1. NFC Tag

To perform the test, switch on NFC and

1. Select NFC Tag from the test case list and it is by default in read mode
2. Take the device to a NFC tag
3. A list will appear showing information about tag type, NDEF support, NDEF message size, maximum size of NDEF message, key, value, record

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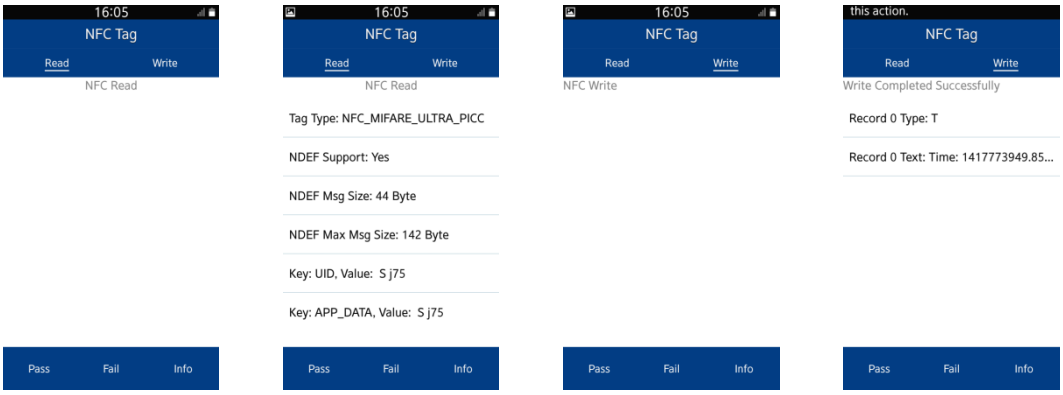
type, record etc.

4. Then select the tab Write and take the device to a NFC tag
5. Then a string of Text type will be written in the NFC tag and a success message will be shown with written message.
6. If all the steps are performed correctly then Pass, otherwise Fail



Mobile

Figure 28: NFC Tag

2.11.2. NFC P2P

To perform the test,

1. Take two NFC supported devices and switch on NFC in both
2. Select NFC P2P from the test case in two devices and click Server in one device and Client in other device
3. Touch the back of two devices, Server TC will output Data Received Successfully along with received data and Client TC will output Data Sent successfully.
4. If all the steps are performed correctly then Pass, otherwise Fail.

Client **Server**

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Figure 29: NFC P2P

3. Testing Multimedia Features

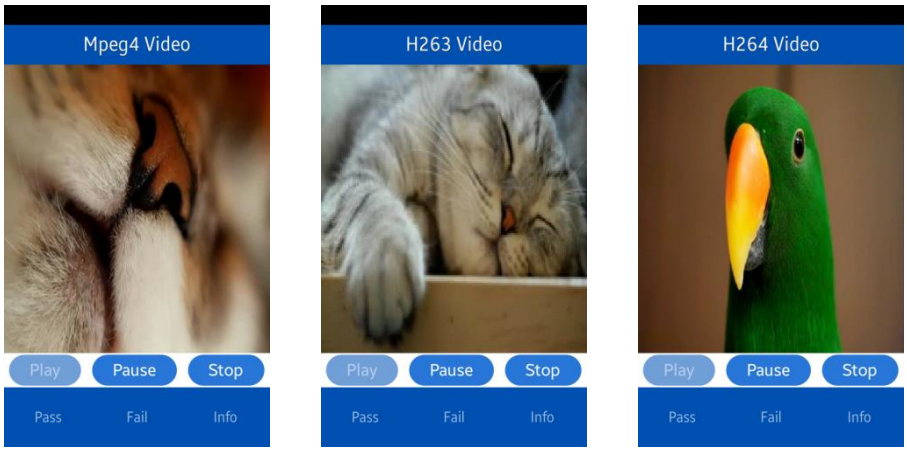
This chapter describes the various tests that can be performed to check the multimedia features. If the functionality works as expected, press **Pass**, otherwise, press **Fail**.

3.1. Testing Local Video

The local video test enables you to confirm that file formats, such as `Mpeg4`, `H263`, and `H264` are playing normally. To test the video formats from the test case list select,

- **H263 Video** for testing video format of H263.
- **MPEG4 Video** for testing video format of Mpeg4
- **H264 Video** for testing video format of H264.

1. After selecting each test, press **Play** to play the video.
2. Press **Pause** to pause the video.
3. Press **Stop** to stop the video.



Mobile

Figure 30: Local Video

3.2. Testing Image View

The image view test enables you to confirm that file formats, such as `.jpeg`, `.bmp`, `.gif`, and `.png` can be viewed normally.

To perform the image view test,

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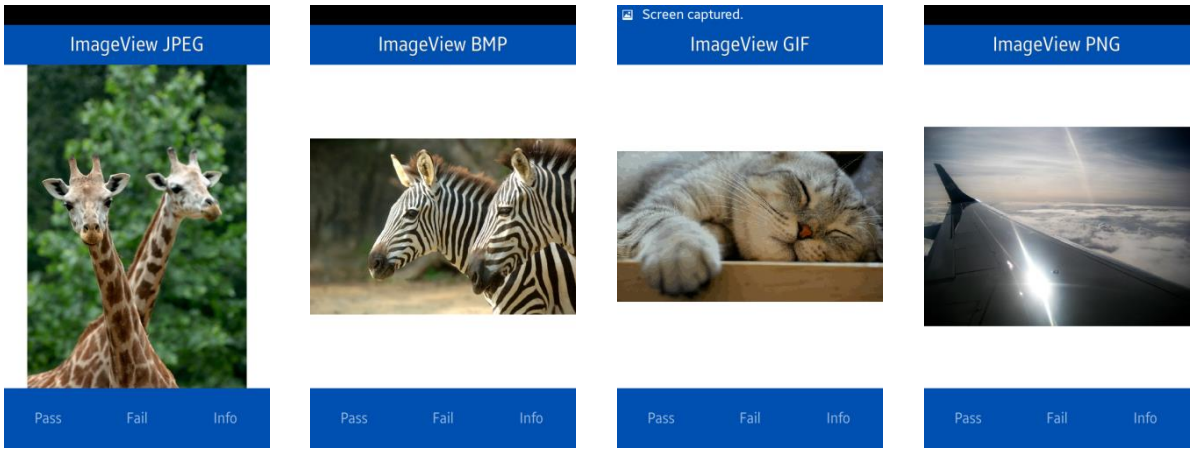
- Select **ImageView PNG** from **test case list** and an .png image will be shown automatically
- Select **ImageView GIF** from **test case list** and an .gif image will be shown automatically
- Select **ImageView BMP** from **test case list** and an .bmp image will be shown automatically
- Select **ImageView JPG** from **test case list** and an .jpg image will be shown automatically



Mobile

Figure 31: Image View

4. Testing Application Controls

This chapter describes the various tests that can be performed to check that the application control operations work normally.

4.1. Testing the Pick Operation

If the functionality works as expected, press **Pass**, otherwise, press **Fail.**

4.1.1. App Control Pick Test

To perform the test:

1. Select Operation Pick from the test case list
2. Press **Multiple** and select multiple items and press Select Multiple.
3. If multiple data is returned, then **Pass** otherwise **Fail**

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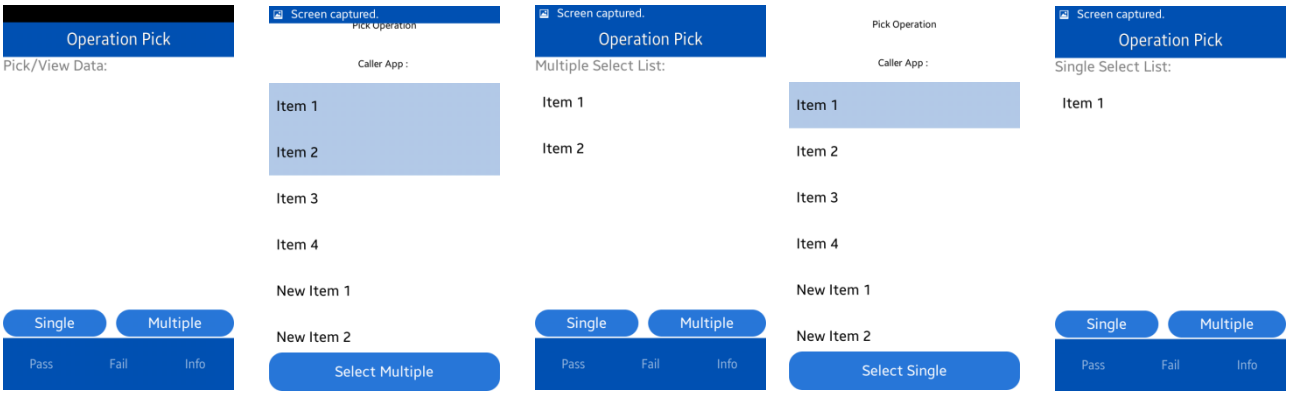
4. Press **Single** and select single item and press Select Single.
5. If single data is returned, then **Pass,** otherwise **Fail**.



Mobile

Figure 32: App Control Pick Test

4.2. Testing the view operation

If the functionality works as expected, press **Pass**. Otherwise, press **Fail.**

4.2.1. App Control View Test

To perform the test:

1. Select Operation View from the test case list
2. Press button **View UI**.
3. If UI is shown, Click item and press **Return** button.
4. Then press button **View Service.**
5. If App launched successfully, then **Pass** otherwise **Fail**.

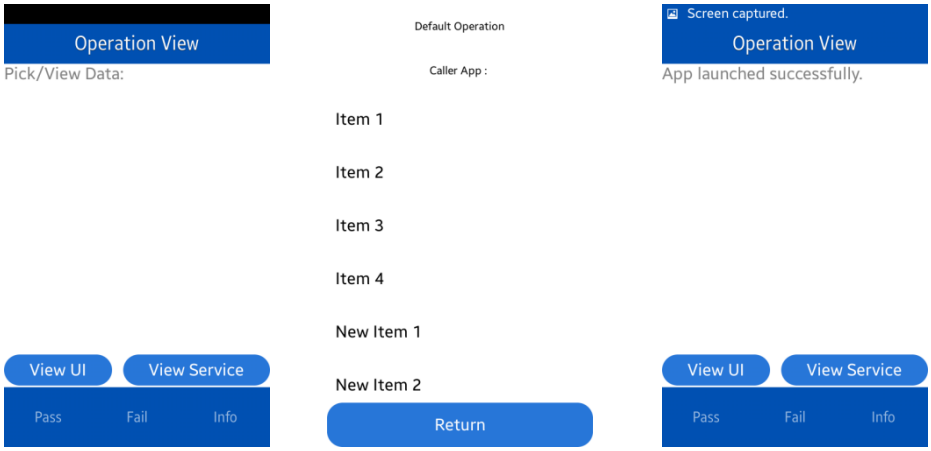


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Figure 33: App Control View Test

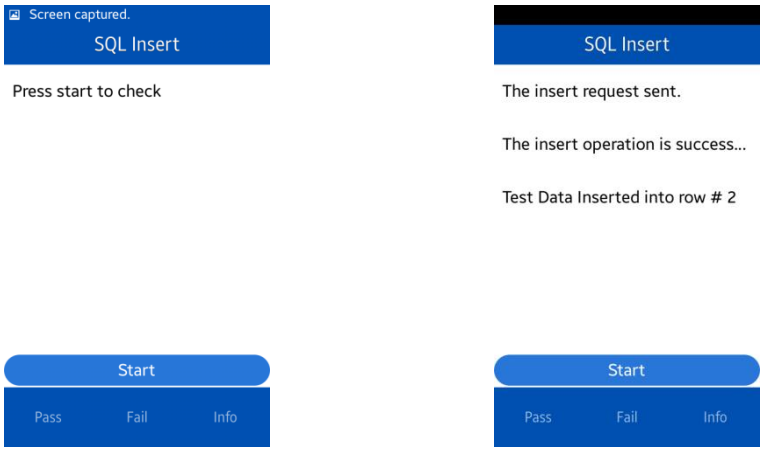
4.3. Data Control

TBT Data Control module requests different operations on the data provided by DataUIControl application. If the request is processed successfully then **Pass** otherwise **Fail**

4.3.1. Insert Operation

To perform the operation

1. Select **Sql Insert** from the test case list
2. Press button **Start.**
3. If the request is sent successfully and information is shown normally then **Pass.**
4. If any error is shown, then **Fail.**



Mobile

Figure 34: SQL Insert

4.3.2. Delete Operation

To perform the operation

1. Select **Sql Delete** from the test case list
2. Press button **Start Test.**
3. If the request is sent successfully and information is shown normally then **Pass.**
4. If any error is shown, then **Fail.**

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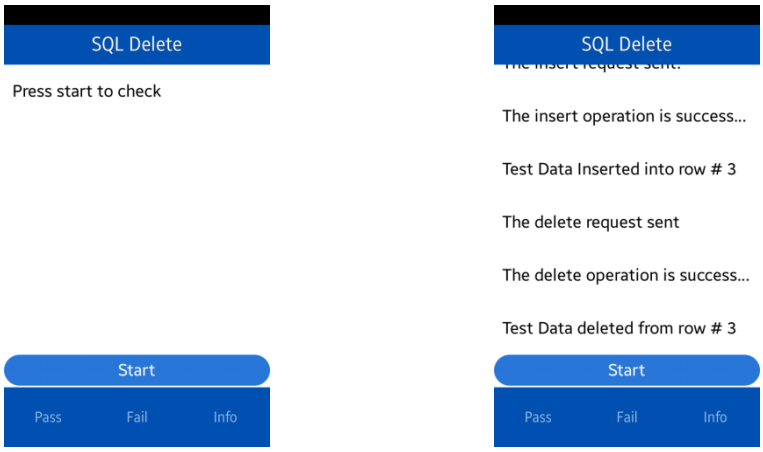


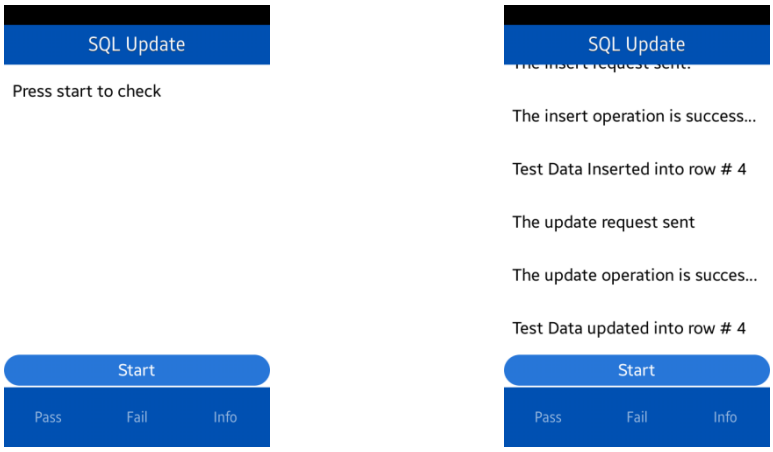
Mobile

Figure 35: SQL Delete

4.3.3. Update Operation

To perform the operation

1. Select **Sql Update** from the test case list
2. Press button **Start.**
3. If the request is sent successfully and information is shown normally then **Pass.**
4. If any error is shown, then **Fail.**



Mobile

Figure 36: SQL Update

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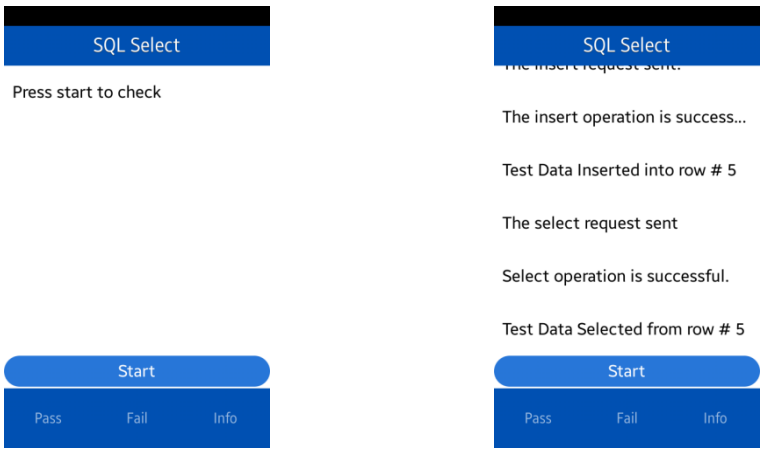
4.3.4. Select Operation

To perform the operation

1. Select **Sql Select** from the test case list
2. Press button **Start**
3. If the request is sent successfully and information is shown normally then **Pass.**
4. If any error is shown, then **Fail.**



Mobile

Figure 37: SQL Select

4.3.5. Cursor Operation

To perform the operation

1. Select **Sql Cursor** from the test case list
2. Press button **Start.**
3. It will show the list of row id of the selected items.
4. Press **First** to get the row id of the first selected item**.**
5. Press **Last** to get data t the row id of the last selected item.
6. Press **Next** and **Prev** to navigate between the selected items.
7. If all the operations are successful then **Pass** otherwise **Fail**.

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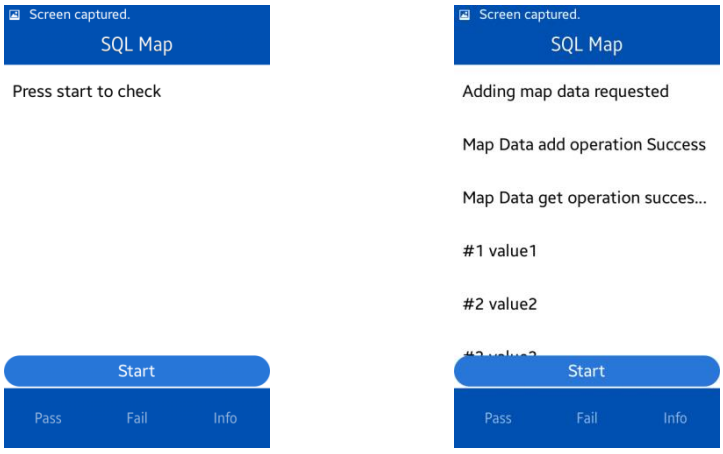
Figure 38: SQL Cursor

4.3.6. Data Control Map

To perform the test,

1. Select **SQL Map** from the test case list.
2. Press button **Start Test.** If three values are shown then **Pass**.
3. If all the values are not shown, then **Fail.**



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Mobile

Figure 39: SQL Map

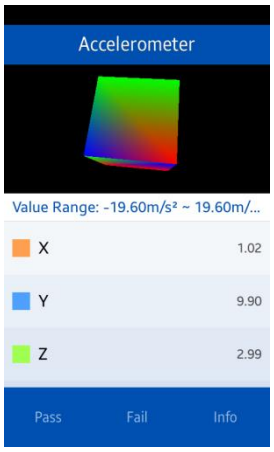
5. Testing Sensors

This chapter describes the various tests that can be performed to check that the device sensors work normally. If the functionality works as expected, press **Pass**. Otherwise, press **Fail**.

5.1. Testing the Accelerometer

This test verifies that the acceleration sensor is working normally.
To perform the test,

1. Select **Accelerometer** from the test case list
2. As you move the device, the triangle displayed on the screen must point down.
3. If it points in another direction, the accelerometer is not properly configured.



Mobile

Figure 40: Accelerometer

5.2. Gyroscope

To perform the test

1. Select **Gyroscope** from the test case list
2. If the device is stable, then the background of the cube is black.
3. **Move** the device to the direction of the cube movement and background color will be **blue**.

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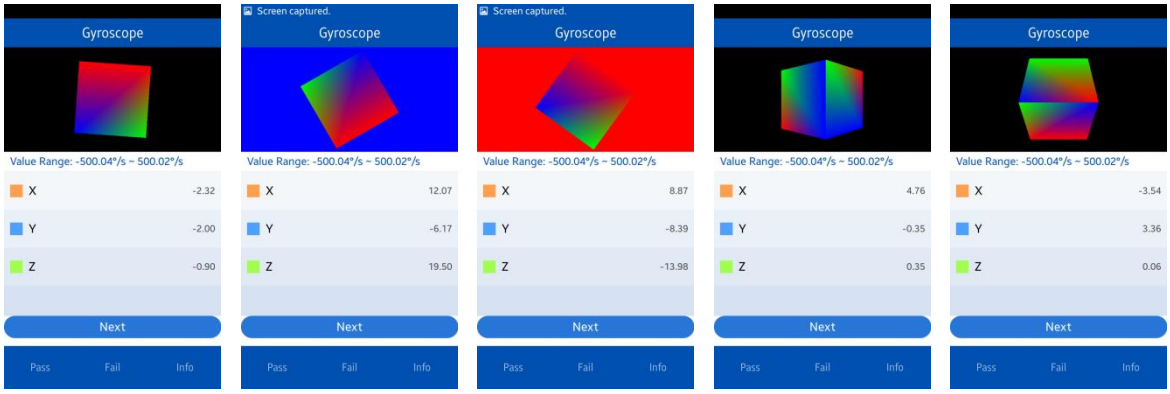
4. **Move** the device to the opposite direction of the cube movement and background color will be **red**.
5. Press button **Next** to change direction of cube movement and do the previous steps accordingly.



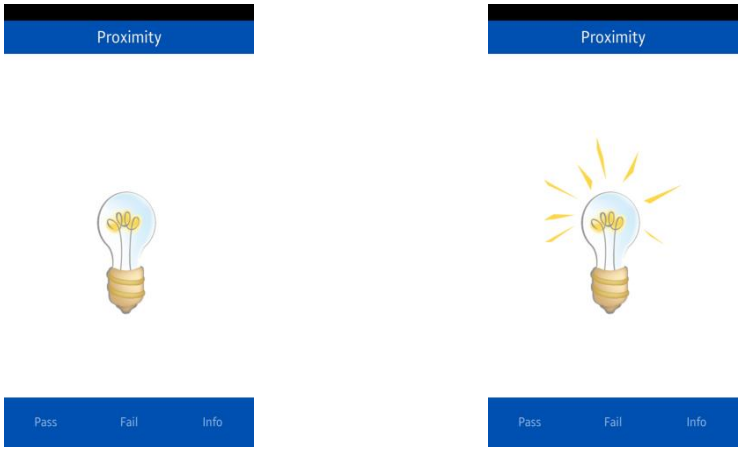
Mobile

Figure 41: Gyroscope

5.3. Proximity

To perform the test

1. Select **Proximity** from the test case list and an image showing a bulb will appear
2. Cover the upper portion of the device with hand and an image showing a glowing bulb will appear.
3. If the hand is moved away, the previous image will appear again.



Mobile

Figure 42: Proximity

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5.4. Light

To perform the test

1. Select **Light** from the test case list.
2. **Move** the device to the light source.
3. The color of the object slowly turns into red according to the intensity of light.

Mobile

Figure 43: Light

5.5. Magnetometer

To perform the test

1. Select **Magnetometer** from the test case list
2. Move device and the value of X, Y and Z component of earth magnetic field will be change accordingly.

Mobile

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Figure 44: Magnetometer

5.6. Pressure

To perform the test

1. Select **Pressure** from the test case list
2. Current air pressure is displayed automatically if device supports pressure sensor.

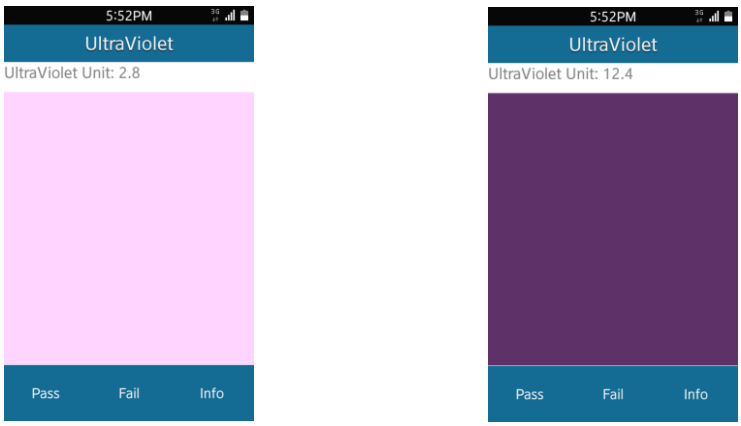
Mobile

Figure 45: Pressure

5.7. Ultra Violet

To perform the test

1. Select **Ultraviolet** from the test case list.
2. **Move** the device to the ultraviolet light source.
3. The color of the object slowly turns into violet according to the intensity of ultraviolet light.



Mobile

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Figure 46: Ultra Violet

6. Testing Platform Resources

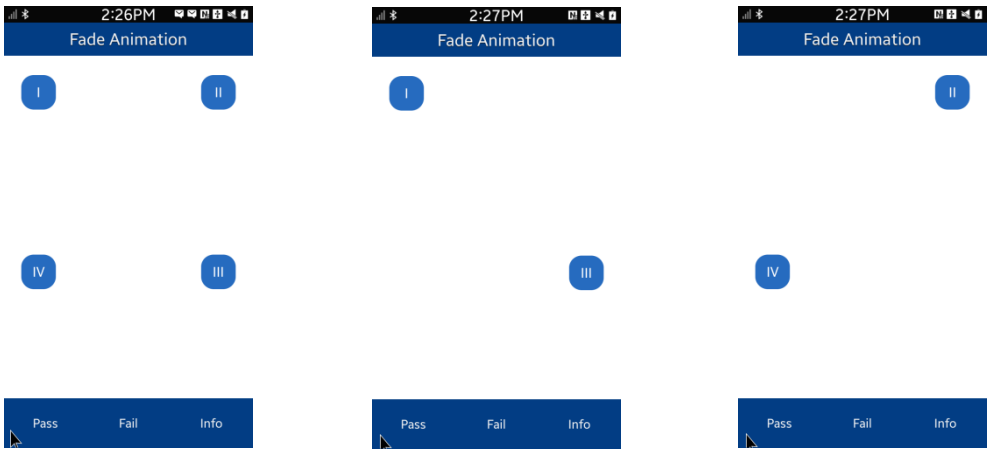
This chapter describes the various tests that can be performed to check the platform resources. If the functionality works as expected, press **Pass**. Otherwise, press **Fail**.

6.1. Testing UI Animations

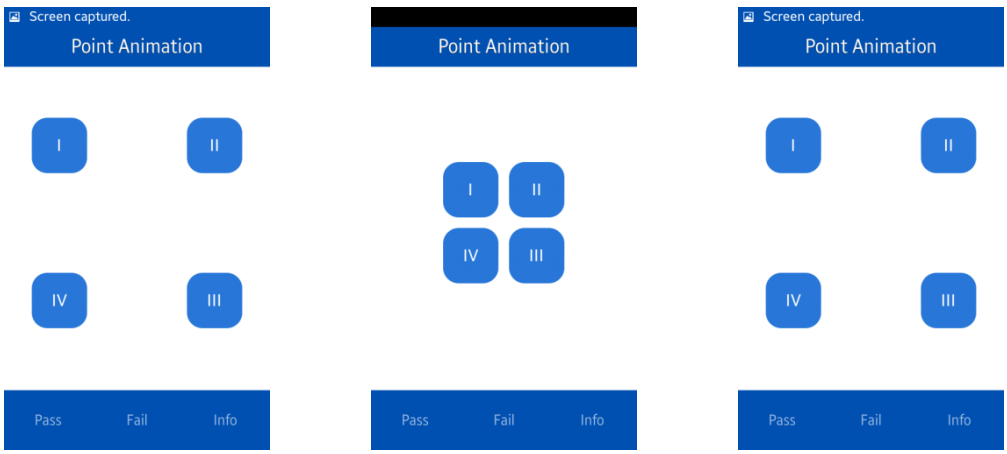
To perform the UI test:

1. Select Fade Animation, Dimension Animation, Rectangle Animation, Point Animation and Rotation Animation respectively for the respected animations.
2. After selecting each test, the animation will be shown automatically.
3. Press **Pass** if all tests are successful.

Fade animation:



Point animation:



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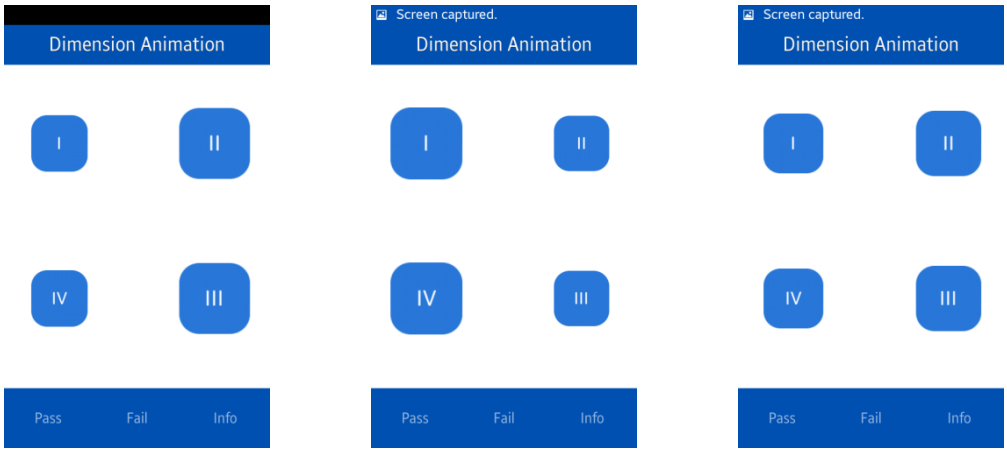
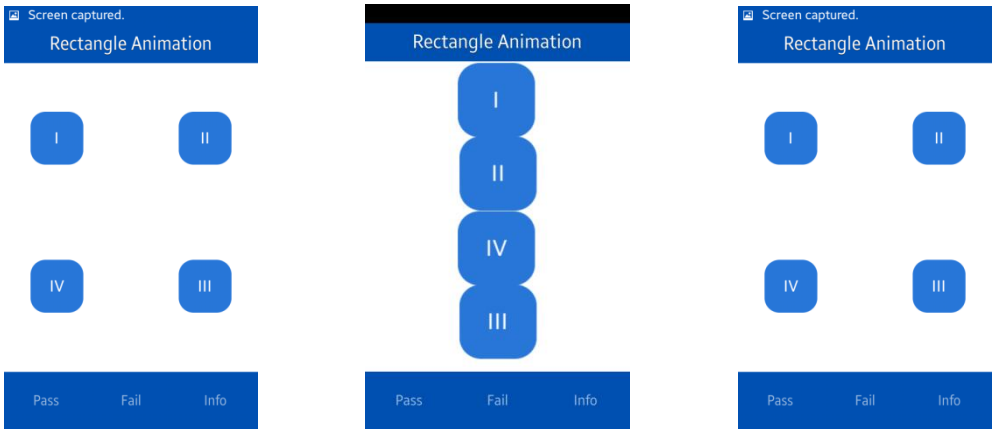
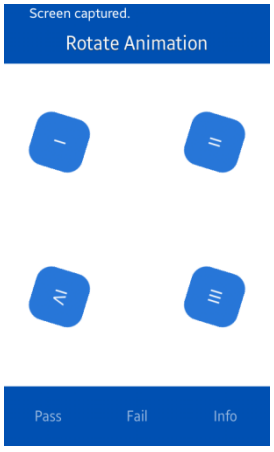
Dimension animation:



Rectangle animation:



Rotate animation:



Mobile

Figure 47: UI Animations

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6.2. Testing UI Components

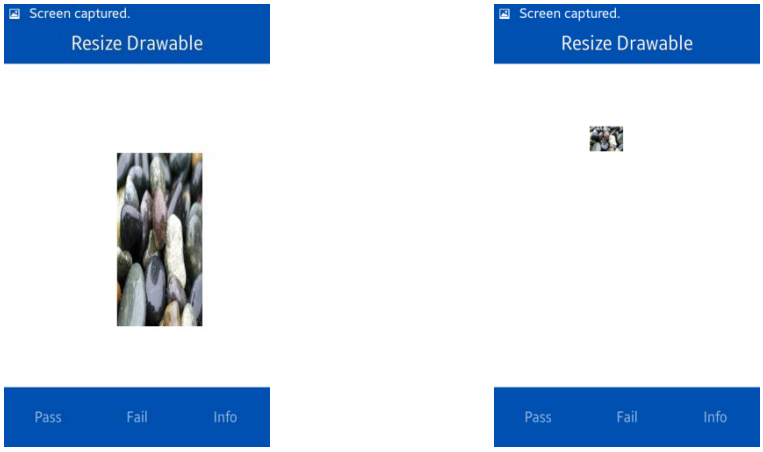
This section describes the tests you can perform on UI components.

6.2.1. Testing Image Resizing

This test enables you to resize the image as bigger and smaller.

To perform the **Resize Drawable** test:

1. Select **Resize Drawable** from the test case list.
2. Check that the images are resized automatically and normally.



Mobile

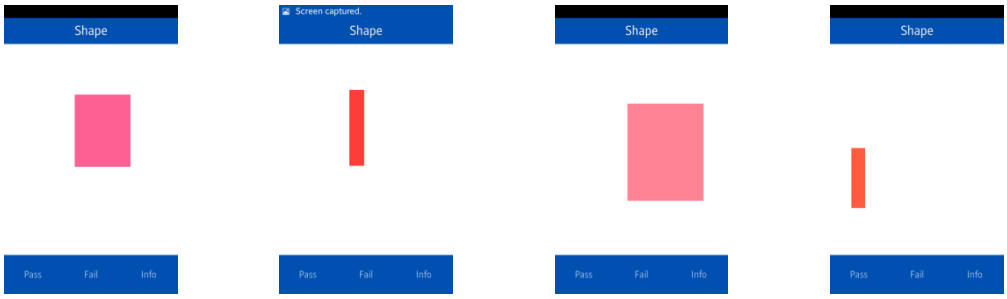
Figure 48: Image Resize

6.2.2. Testing Shapes

This test shows different shapes in the screen.

To perform the **Shape** test:

1. Select the **Shape** from the test case list
2. If different shapes appear automatically and correctly, then **Pass** otherwise **Fail.**



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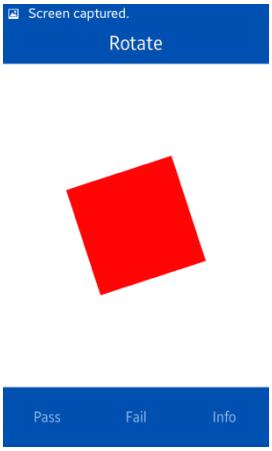
Mobile

Figure 49: Testing Shapes

6.2.3. Testing Rotation

To perform the rotation test:

1. Select **Rotate** from the **test case list** and check if the objects are rotating properly.
2. If yes then **Pass** otherwise **Fail.**



Mobile

Figure 50: Testing Rotation

6.2.4. Testing Alpha Drawing

To perform the test

1. Select **Alpha Drawble** from the **test case list** and objects of different brightness is shown automatically.
2. If it is shown, then the test is successful.

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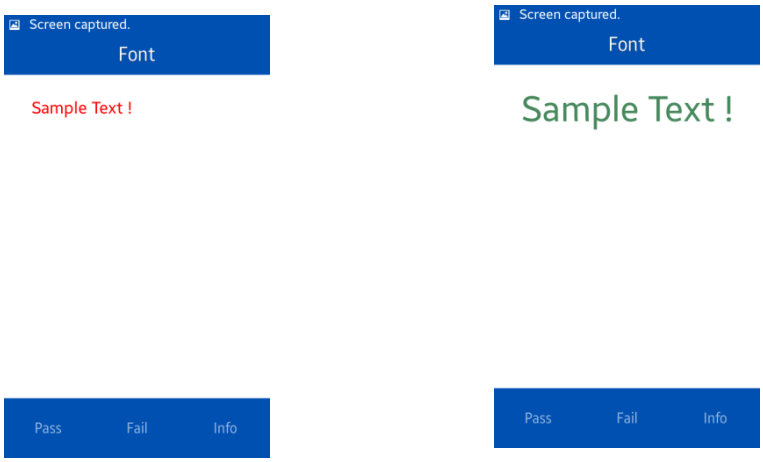
Mobile

Figure 51: Testing Alpha drawing

6.2.5. Testing Fonts

To perform the test,

1. Select **Font** from the **test case list** and text of different font sizes and colors are shown.
2. If it is shown, then **Pass** otherwise **Fail.**



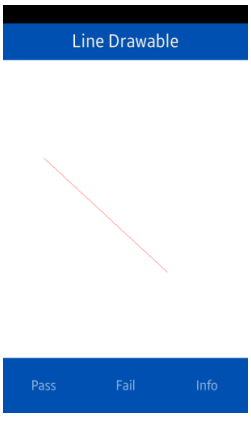
Mobile

Figure 52: Testing Fonts

6.2.6. Testing Line Drawings

To perform the test,

1. Select **UI (Line Drawable)** from the **test case list** and lines of different colors, size are drawn in different directions automatically.
2. If yes then **Pass** otherwise **Fail.**



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Mobile

Figure 53: Testing Line Drawable

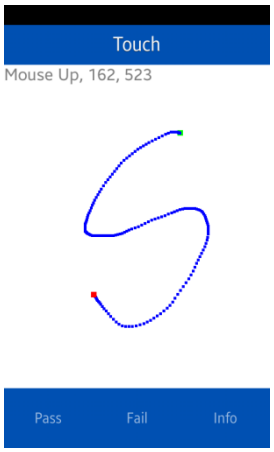
7. EFL / Event

This chapter describes the various tests that can be performed to check some EFL library functions. If the functionality works as expected, press **Pass**. Otherwise, press **Fail**.

7.1. Touch Test

To perform the touch test:

1. Select Touch from the test case list.
2. Touch and drag to draw random curves on the screen.
3. Check that the first press is green.
4. Check that the touch-drag is blue.
5. Check that the release location is red.
6. If the functionality works as expected, press Pass. Otherwise, press Fail.



Mobile

Figure 54: Touch Test

7.2. EFL Callback

To perform the test

1. Select EFL Callback from the test case list.
2. Press the Hardware Back Button and check whether the back button callback

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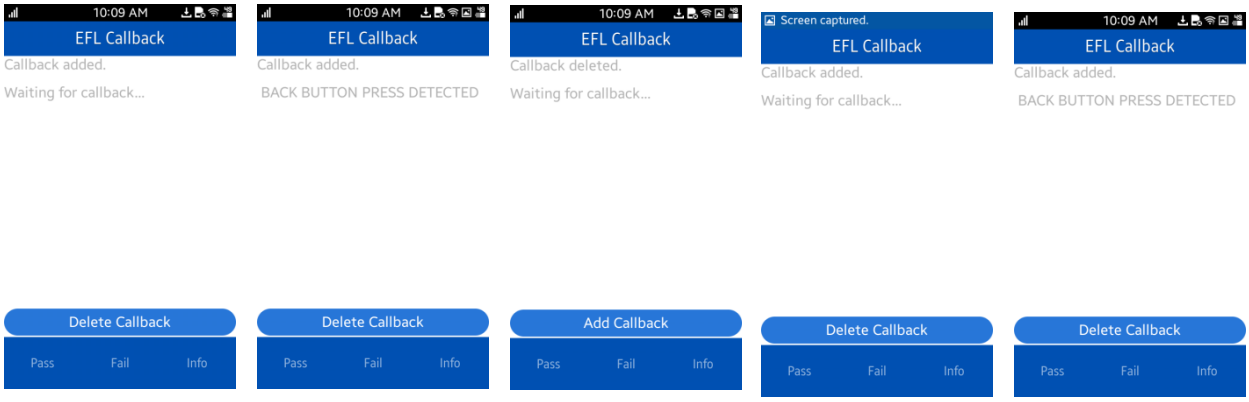
is detected.

3. Press button Delete Callback and the callback will be deleted.
4. Press the Hardware Back Button and check, there is no back button callback is detected.
5. Then press button Add Callback to add a new callback
6. Then again press the Hardware Back Button and check whether the back button callback is detected.
7. You must press Pass or Fail button to exit from the test.
8. If all the steps are performed correctly then Pass, otherwise Fail.



Mobile

Figure 55: EFL Callback

7.3. Event View

To perform the test

1. Select Event View from the test case list.
2. Select Settings from the Notification bar.
3. From Settings, select Language and input and change the language.
4. Go back to TBT and the information about language change and region change will be shown.
5. Move the device and change the device orientation.
6. Information about change in orientation will be shown.
7. If all the steps are performed correctly then Pass, otherwise Fail.

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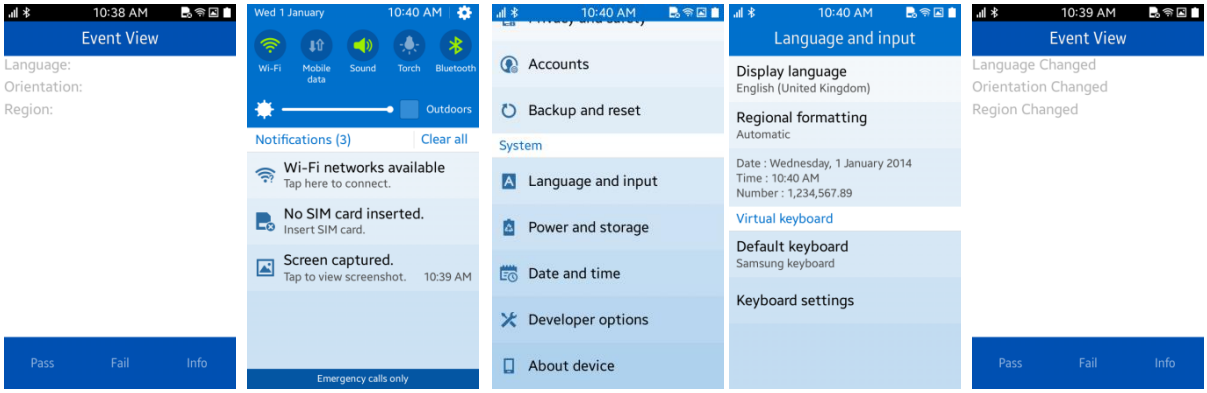

Mobile

Figure 56: Event View

7.4. Shortcut

To perform this test:

1. Select Shortcut from the test case list.
2. If you want to created duplicate shortcut, check the "Allow duplicate" labeled checkbox, otherwise do not check it.
3. Press the "Add shortcut" button, then you will see the message "Shortcut Created".
4. After that go to the home screen and check; if shortcut is created the PASS, otherwise FAIL.

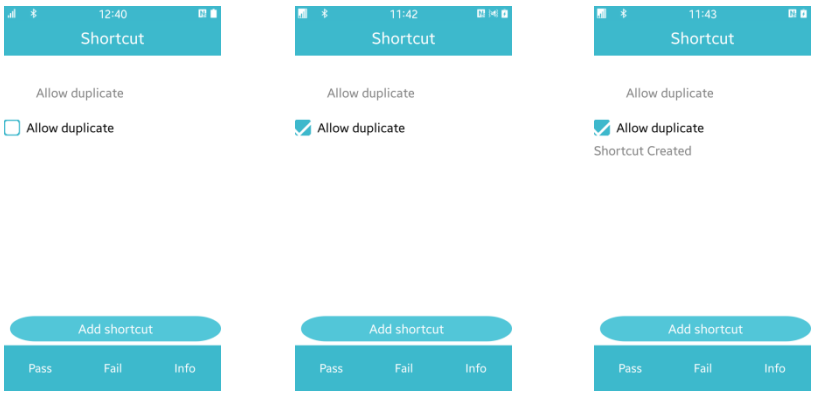

Figure 57: Shortcut

8. Runtime Info

8.1. Runtime Info

To perform the test, select **Runtime Info** from the **test case list**. There are two test steps.

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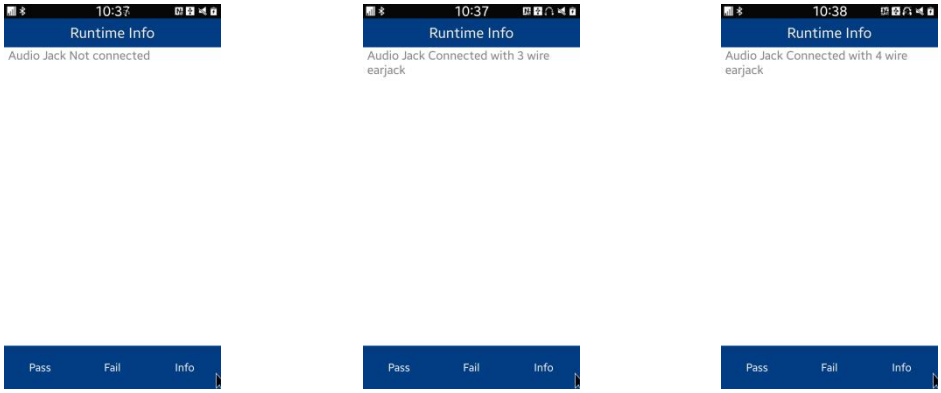
Firstly,

1. Initial page will show Audio Jack Not Connected, connect headphone in audio jack.
2. Then message will show "Audio Jack Connected with 3 wire ear jack" or "Audio Jack Connected with 4 wire ear jack" according to the type of air jack connected. If Audio jack is not supported, "Audio Jack is not supported" will be shown

If all steps are competed perfectly, then the test can be considered as success.



Mobile

Figure 58: Runtime Info

9. Attach Panel

9.1. Attach Panel

To perform this test, take come pictures with camera so that images are available in device images flder. Select **Attach Panel** from the **test case list**. Firstly,

1. Press "+" button in top left corned in the initial page.
2. Gallery Images will be shown using attach panel, click on a image.
3. Clicked Image will be selected and shown in the upper area.

If all steps are competed perfectly, then the test can be considered as success.

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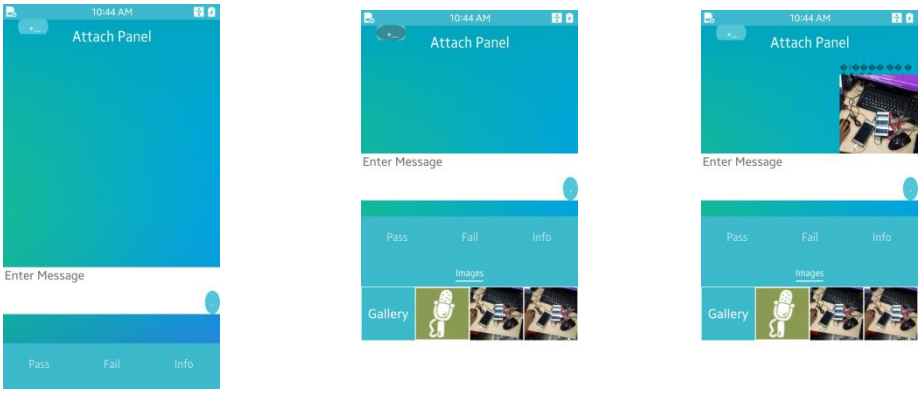

Mobile

Figure 59. Attach Panel

10. Testing IME

10.1. IME Alphabetic

This module shows a custom Alphabetic keyboard layout and its actions.

To Test this Module -

1. Set Default keyboard to TBT keyboard:
   Go to Settings>Language and input > keyboard and enable TBT keyboard, then Select Default keyboard as TBT Keyboard.
2. Open IME Alphabetic module from TBT module list
3. An Alphabetic keyboard will be shown and "ELM_INPUT_PANEL_LANG_AUTOMATIC" will be shown at the bottom key.
4. Press Alphabetic keys then corresponding alphabets will be written in entry field.
5. Press BACK key to remove one character at a time from entry field.
6. Press Prid On key, then "abcd" will be written in entry field.
7. Press Prid Off to remove "abcd" from entry field.
8. Press Spc key to make a space character in entry field.
9. If everything works properly as steps mentioned above then Pass otherwise Fail.

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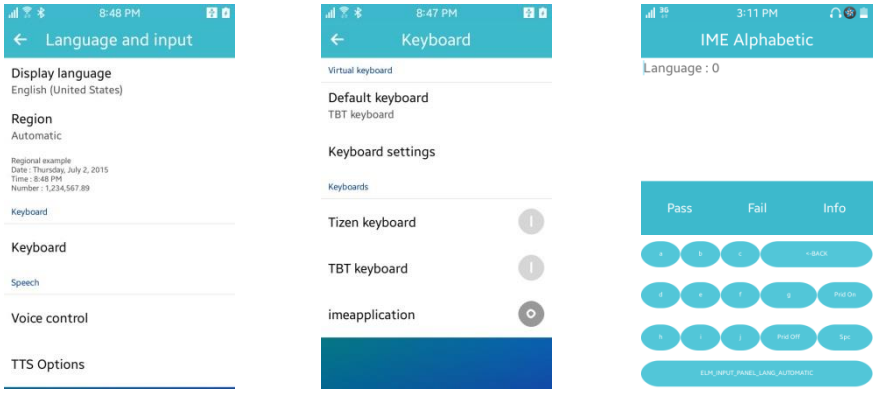

Figure 60: IME Alphabetic

10.2.IME Numeric

This module shows a custom Numeric keyboard layout and its actions.

To Test this Module -

1. Set Default keyboard to TBT keyboard:
   Go to Settings>Language and input > keyboard and enable TBT keyboard, then Select Default keyboard as TBT Keyboard.
2. Open IME Numeric module from TBT module list
3. An Numeric keyboard will be shown and "ELM_INPUT_PANEL_LANG_AUTOMATIC" will be shown at the bottom key.
4. Press Numeric keys then corresponding numerics will be written in entry field.
5. Press BACK key to remove one character at a time from entry field.
6. Press DS key to delete character under cursor from entry field.
7. Press Spc key to make a space character in entry field.
8. If everything works properly as steps mentioned above then Pass otherwise Fail.

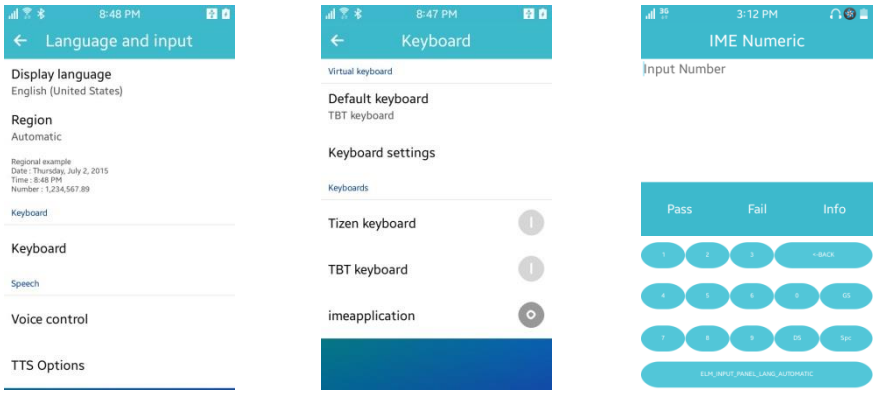

Figure 61: IME Alphabetic

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10.3.IME Events

This module Tests the effect of Language change Event to custom input method.

To Test this Module -

1. Set Default keyboard to TBT keyboard:
   Go to Settings > Language and input > keyboard and enable TBT keyboard, then Select Default keyboard as TBT Keyboard.
2. Open IME Events from TBT module list
3. Change Language from Settings > Language and input > Display language
4. Return back to IME Events module.
5. The text of the key will be changed as the language changed.
6. If everything works properly as steps mentioned above then Pass otherwise Fail.

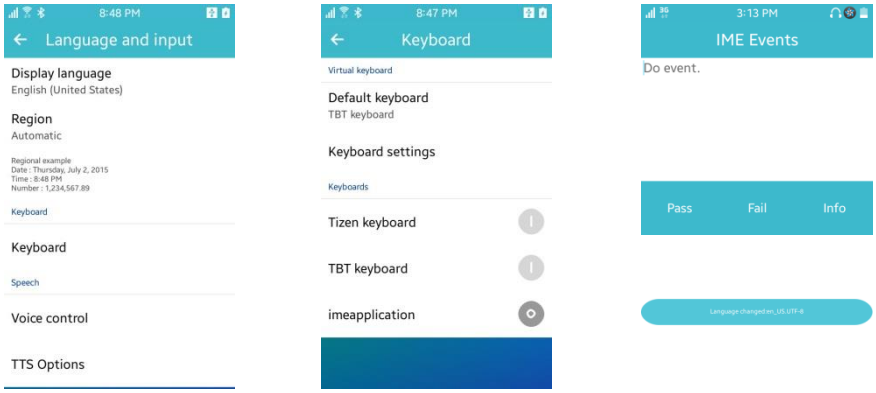

Figure 62: IME Events

10.4.IME Context Info

This module Tests the Context Info of a custom input panel.

To Test this Module -

1. Set Default keyboard to TBT keyboard:
   Go to Settings>Language and input > keyboard and enable TBT keyboard, then Select Default keyboard as TBT Keyboard.
2. Open IME Context Info from TBT module list
3. A keyboard with Pass text to all Keys will be shown
4. If everything works properly as steps mentioned above then Pass otherwise Fail.

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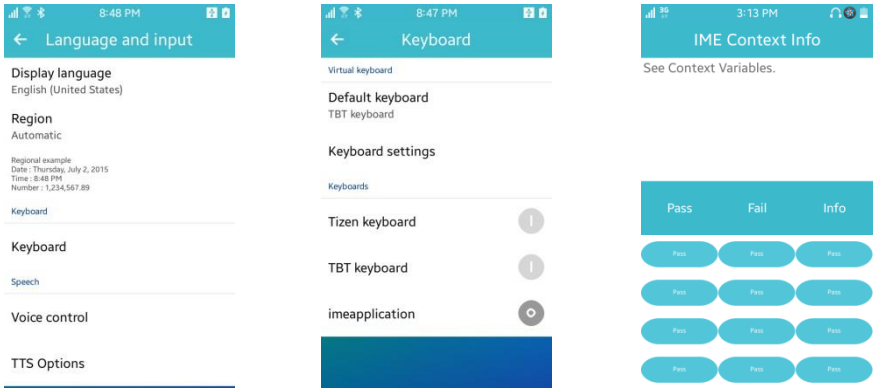


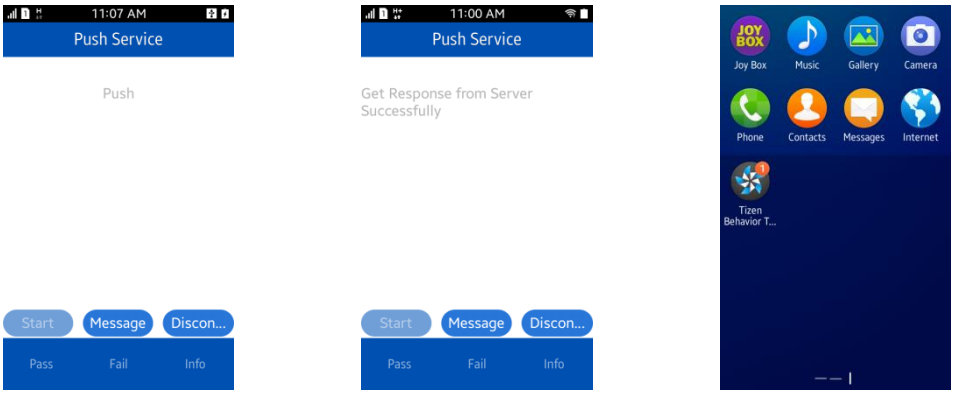
Figure 63: IME Context Info

11. Testing the Push Service

To perform the test, select **Push Service** from the **test case list**. There are two tests. Firstly,

1. Press Start button to start the push service and a successful response will be displayed.
2. Then long press the Home button and clear the application instance
3. After a few moments, there will a notification.
4. Click on the notification and the message will be shown.
5. Secondly, Press button Start to start the push service.
6. Press button Message.
7. After a few moments a message will be shown.
8. Press button Disconnect to disconnect Push Service

If all steps are competed perfectly, then the test can be considered as success.



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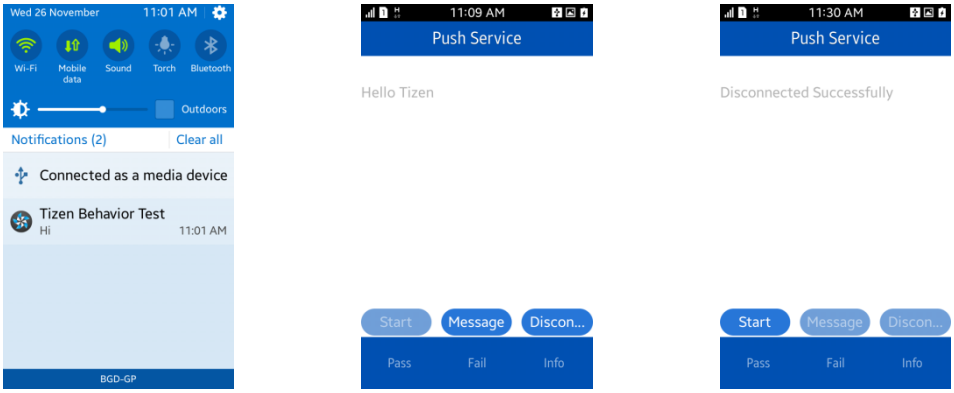

Mobile

Figure 64: Push Service

12. Testing OAuth 2.0

This section describes the OAuth 2.0 testing options. If the functionality works as expected, press PASS, otherwise, press FAIL.

This section test OAuth 2.0 by logging into **gmail** account and shows it's users information

To perform the test

1. At first, be sure that internet connection is available.
2. After Entering on OAuth 2.0 module, press Clear Cache button to remove previously saved data.
3. Select GOOGLE_AUTH2_CODE, This will redirected to Google Authentication page.
4. Give Gmail username and password and press login. It will prompt a tbtcoreapp access page.
5. Press Accept then the account profile picture and name will be shown as per Gmail account.

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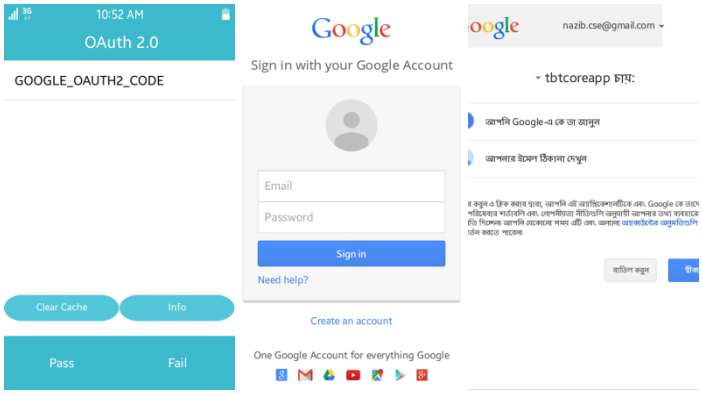
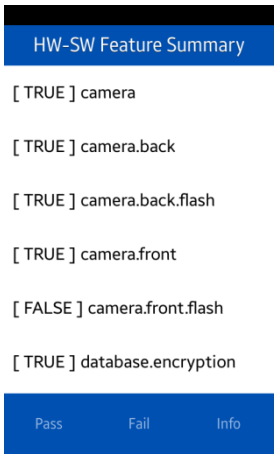


Figure 65: OAuth 2.0

13. Viewing the Hardware/Software Feature Summary

To view the hardware/software feature summary of the device:

1. Select HW / SW Feature Test from the test case list
2. Different Hardware/Software features are shown automatically.
3. If it works as expected, press **Pass**. Otherwise, press **Fail**.



Mobile

Figure 66: Hardware/Software Feature Summary

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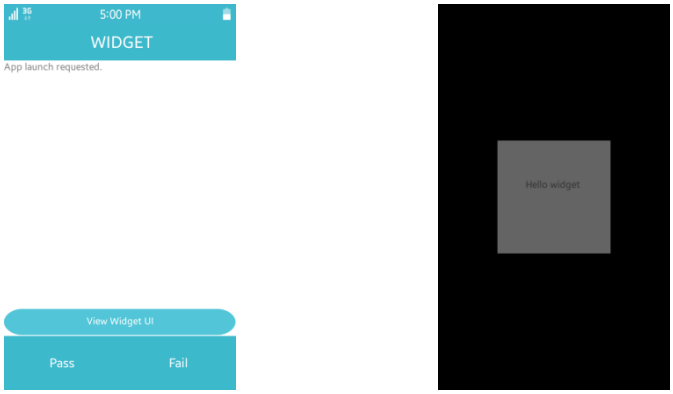
14. Testing the Widget

To perform the test:

1. Select WIDGET from the test case list
2. Press button **View Widget UI**.
3. If Widget UI is shown, then **Pass** otherwise **Fail**.



Mobile

Figure 67: Widget

15. Appendix

- Certain ports should be opened if company firewall is applied to Wi-Fi being used.
- Firewall should be open while using Wi-Fi access point for port numbers listed below :

  5223, 110, 143, 465, 587, 993, 995, 8000, 8081, 8088, 8080, 80, 443

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