TIZEN™

Tizen 2.3
TBT User Guide

Revision History

Date	Version	History	Writer	Reviewer
19-Sep-2014	1.0	First version of document	Md. Nazmus Saqib	Rezwanul Huq Shuhan
1-Oct-2014	2.0	Second version of document	Md. Nazmus Saqib	Golam Kayas
7-Nov-2014	3.0	Third version of document	Md. Nazmus Saqib	Muntasir Kabir Chowdhury
21-Nov-2014	4.0	Fourth version of document	Md. Nazmus Saqib	Muntasir Kabir Chowdhury
26-Nov-2014	5.0	Fifth version of document	Md. Nazmus Saqib	A.B.M. Nazibullah
05-Dec-2014	6.0	Sixth version of document	Md. Nazmus Saqib	Muntasir Kabir Chowdhury
14-Jan-2015	7.0	Seventh version of document	Md. Nazmus Saqib	Muntasir Kabir Chowdhury

Table of Contents

Installing the TBT Package 6
1.1. Application Status Report 6
Testing the Device 7
2.1. Testing the Camera 7
Testing Camera Capture 7
Testing Camera Recording 7
Testing Camera Face Detection 8
Testing Camera HDR Capture 8
2.2. Testing Sound 9
Testing the Sound Speaker 9
Testing Sound Volume 10
2.3. Testing GPS 10
2.4. Testing Bluetooth 11
Testing Bluetooth Server Pairing 11
Testing Bluetooth Client Pairing 11
Bluetooth Authorization Test 12
Bluetooth Client Socket Test 13
Bluetooth Server Socket Test 14
Bluetooth Profile Test 14
Bluetooth Handsfree 15
2.5. Testing the Wi-Fi Activation 15
2.6. Display Test 16
2.7. Testing Graphics 16
2.8. Testing the Input Device 17
Number Keypad, Phone Number Keypad and IP Keypad Test 17
2.9. Testing Wi-Fi Direct 17
Wi-Fi Direct Server 17
Wi-Fi Direct Client 18
2.10. Testing NFC 19
NFC Tag 19
Testing Multimedia Features 19

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3.1. Testing Local Video 19
3.2. Testing Image View 20
Testing Application Controls 21
4.1. Testing the Pick Operation 21
App Control Pick Test 21
4.2. Testing the view operation 22
App Control View Test 22
4.3. Data Control 23
Insert Operation 23
Delete Operation 23
Update Operation 24
Select Operation 24
Cursor Operation 25
Data Control Map 26
Testing Sensors 27
5.1. Testing the Accelerometer 27
5.2. Gyroscope 27
5.3. Proximity 28
5.4. Light 28
5.5. Magnetometer 29
5.6. Pressure 29
5.7. Ultraviolet 30
Testing Platform Resources 31
6.1. Testing UI Animations 31
6.2. Testing UI Components 33
Testing Image Resizing 33
Testing Shapes 33
Testing Rotation 34
Testing Alpha Drawing 34
Testing Fonts 35
Testing Line Drawings 35
EFL / Event 36
7.1. Touch Test 36
7.2. Mock Event 36

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7.3. EFL Callback 37
7.4. Event View 38
7.5. Adding Shortcut to Home screen 39
Testing the Push Service 39
Runtime Info 40
Viewing the Hardware/Software Feature Summary 41
Appendix 42

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Installing the TBT Package

Install the TBT package by following steps:

1. Download Source from git.

   $ git clone git://git.tizen.org/test/testsuite/tct/native/behavior

   $ cd behavior

   $ git checkout tizen_2.3

2. Import downloaded 4 Projects in Tizen SDK. (coretbt_dataprovider, coretbt_serviceapp, coretbt_uiapp, tbtcoreapp)

3. Connect Device or Emulator and run all projects.

4. After running, tpk file will be generated in debug folder of each project.

   Ex) behavior/coretbt_dataprovider/Debug :

   - Device : org.tizen.coretbt_dataprovider-1.0.0-arm.tpk

   - Emulator : org.tizen.coretbt_dataprovider-1.0.0-i386.tpk

5. Once they are generated, install tpk files to Device or Emulator.

   $ sdb install org.tizen.coretbt_dataprovider-1.0.0-arm.tpk

   $ sdb install org.tizen.coretbt_serviceapp-1.0.0-arm.tpk

   $ sdb install org.tizen.coretbt_uiapp-1.0.0-arm.tpk

   $ sdb install org.tizen.tbtcoreapp-1.0.0-arm.tpk

   $ sdb shell launch_app org.tizen.tbtcoreapp

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**

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Testing the Device

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

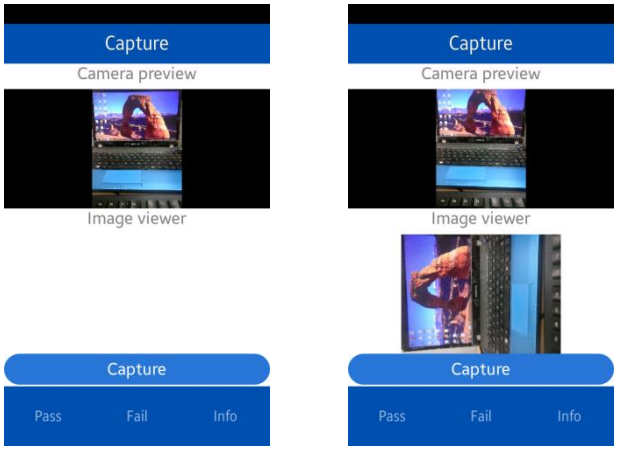
2.1. Testing the Camera

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

Testing Camera Capture

To test the camera capture functionality:

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



Testing Camera Recording

To test the camera recording functionality:

1. Select the Camera Video Recording 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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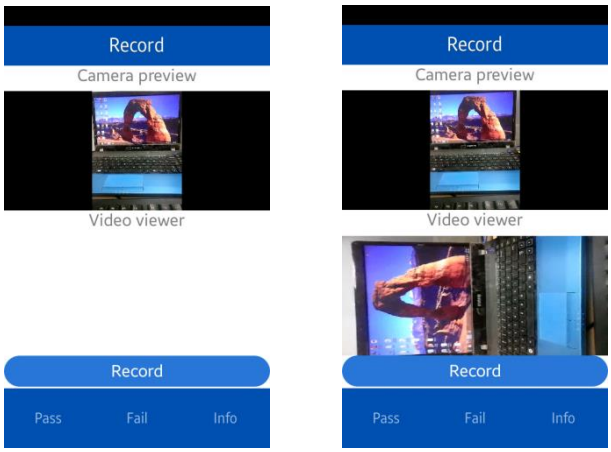
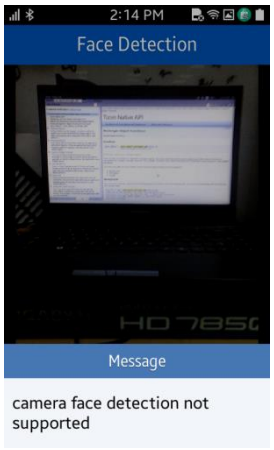


Testing Camera Face Detection

To perform the test,

1. Select **Camera Face Detect 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.**



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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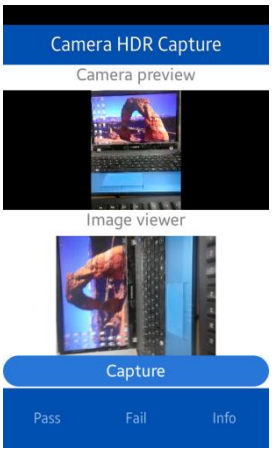

2.2. Testing Sound

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

Testing the Sound Speaker

To test the sound of the speaker:

1. Select Sound 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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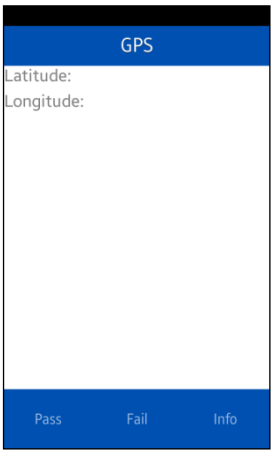
Testing Sound Volume

To test the sound volume:

1. Select the **Sound 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.

2.3. Testing GPS

To test the GPS functionality, view the GPS information.



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

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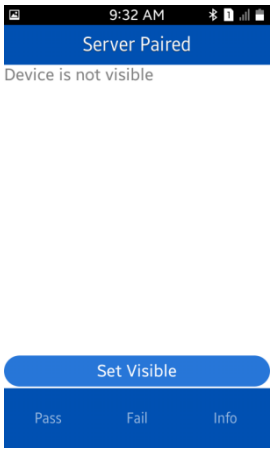
2.4. Testing Bluetooth

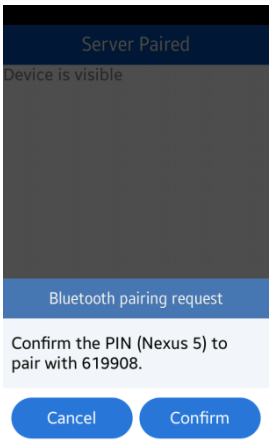
This section describes the Bluetooth testing options. If the functionality works as expected, press **Pass**. Otherwise, press **Fail**.

Testing Bluetooth Server Pairing

To test Bluetooth server pairing:

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





Testing Bluetooth Client Pairing

To test Bluetooth client pairing:

1. Before test, enable the Bluetooth.
2. Select **Client Paired** from the test case list.

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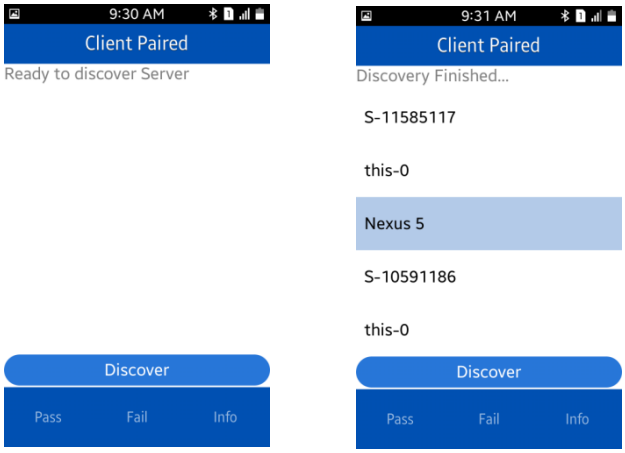
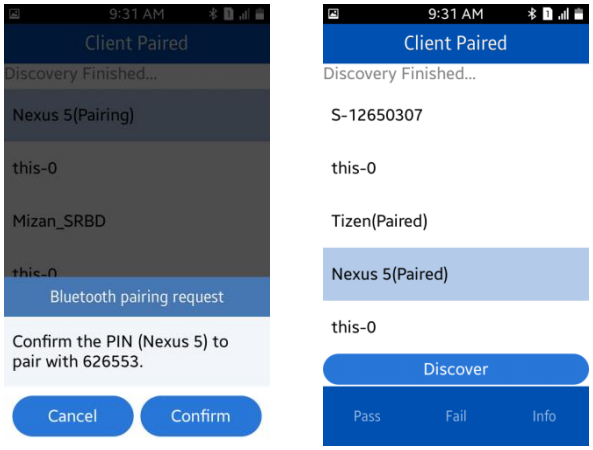
3. Press button **Discover** and a list of available devices will appear



4. Select the desired device and wait for the connection popup message.



Bluetooth Authorization Test

To perform the test

1. Before test, enable the Bluetooth.
2. Select **Authorization** from the test case list.
3. Press button **Discover** to see the list of Bluetooth devices**.**

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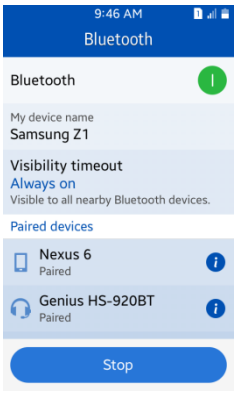
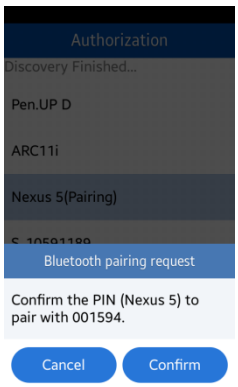
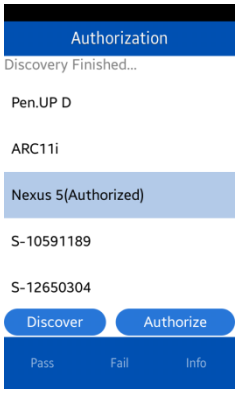
4. Select the desired device from the list**.**
5. Press button **Authorize** and the desired device is Authorized.
6. If all the steps are performed correctly then **Pass,** otherwise **Fail.**



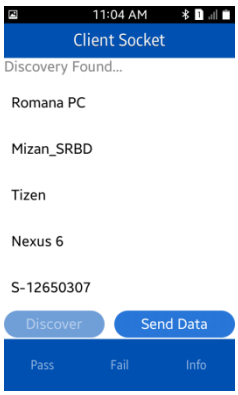


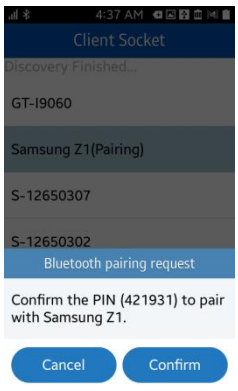


Bluetooth Client Socket Test

To perform the test

1. Before test, enable the Bluetooth.
2. Select **Client Socket** from the test case list.
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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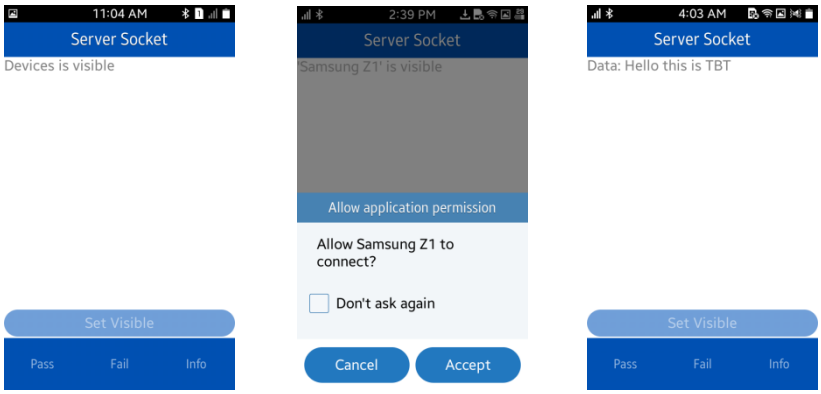
Bluetooth Server Socket Test

To perform the test

1. Before test, enable the Bluetooth.
2. Select **Server Socket** from the test case list.
3. Press **Set Visible** and wait for the connection pop-up message.

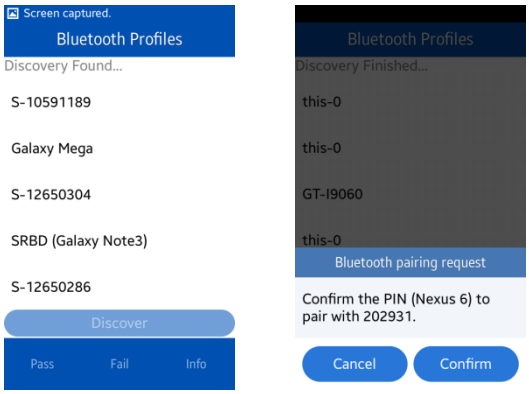


4. If the message is shown properly then **Pass,** otherwise **Fail.**

Bluetooth Profile Test

To perform Bluetooth Profile Test

1. Before test, enable the Bluetooth.
2. Select **Bluetooth Profile** form the test case list.
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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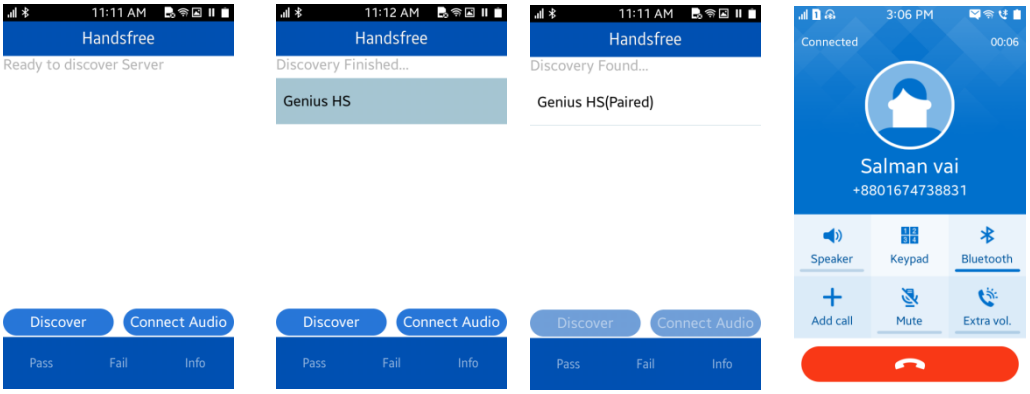
Bluetooth Handsfree

To perform the test

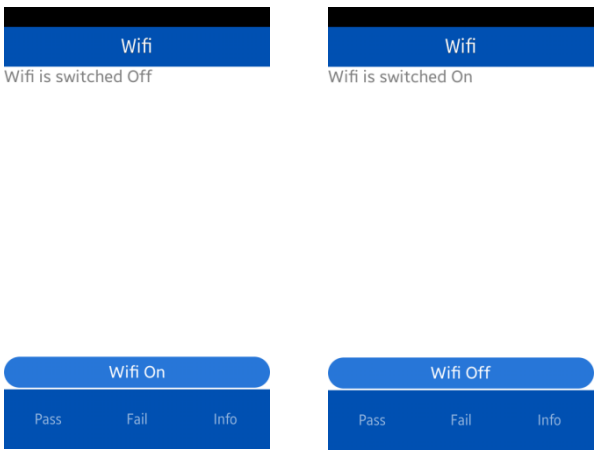
1. Before test, enable the Bluetooth.
2. Select **Handsfree** from the test case list
3. Press button **Discover** to see the list of Bluetooth Audio devices**.**
4. Select the desired device from the list.
5. Press button **Connect Audio.**
6. Now make a call and test if sound is heard in the audio device.
7. If all the steps are performed correctly then **Pass,** otherwise **Fail.**



2.5. Testing the Wi-Fi Activation

To test the Wi-Fi activation:

1. Select Wifi Test from the test case list.



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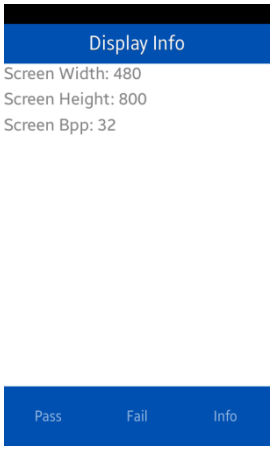
2. To enable Wi-Fi, press button **On/Off Test**.

3. To disable Wi-Fi, press button **On/Off Test**.

2.6. Display Test

The following requirements are mandatory for the display test:

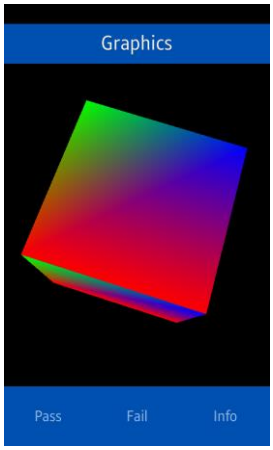
Minimum screen size: 240 x 320 (QVGA)



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

2.7. Testing Graphics

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



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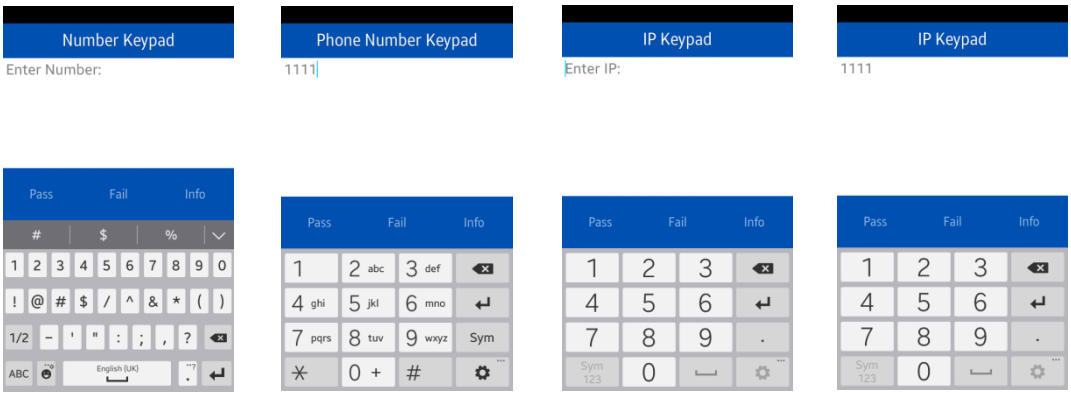
2.8. Testing the Input Device

Number Keypad, Phone Number Keypad and IP Keypad Test

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.



2.9. Testing Wi-Fi Direct

Wi-Fi Direct Server

To perform the test

1. Before test, enable Wifi-direct.
2. Select **Wifi Direct Server** from the test case list and the device is visible to the clients.
3. Connect with the server from **Wifi Direct Client** and the connected client name will be shown.
4. Press button **Info** to see the Mac address, IP address, Subnet mask, Gateway address, Network interface name, Operating channel and Persistent group.

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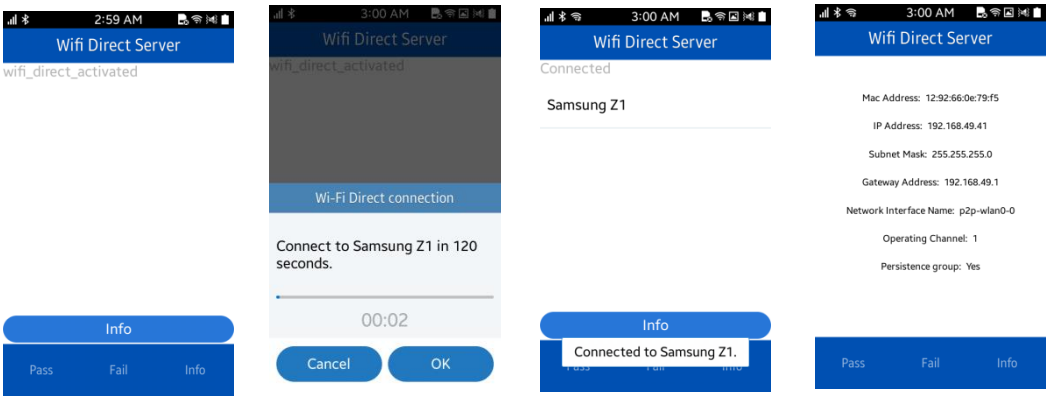
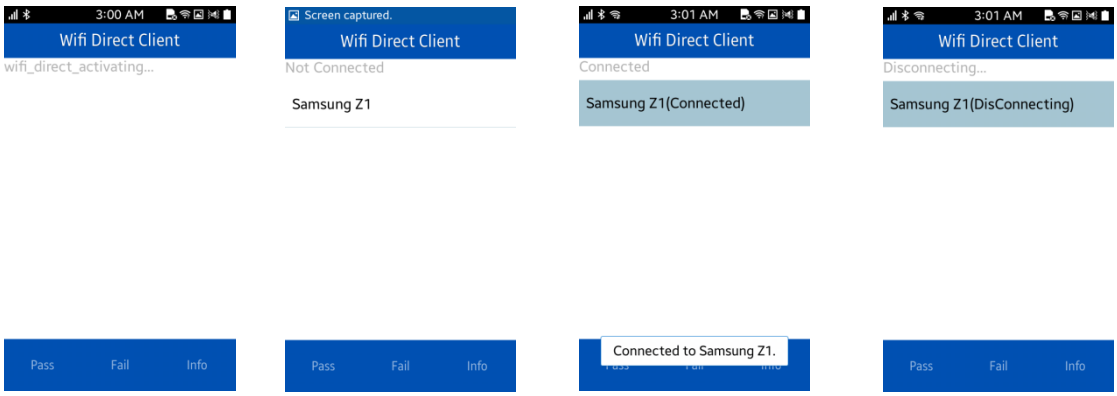


Wi-Fi Direct Client

To perform the test

1. Before test, enable Wifi-direct.
2. Select **Wifi Direct Client** from the test case list.
3. Discovery for new devices starts automatically and the list of discovered devices is shown.
4. Select the desired device from the list to connect.
5. Tap on the connected device name to disconnect from the server.



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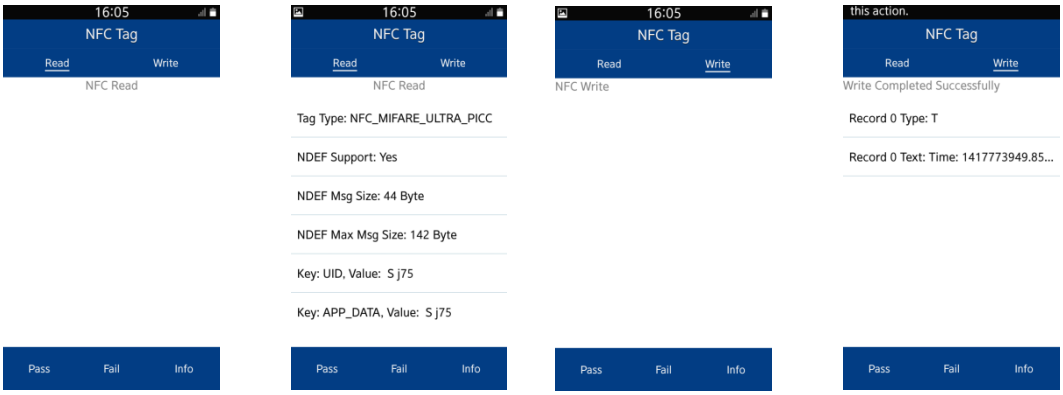
2.10. Testing NFC

NFC Tag

To perform the test,

1. Select **NFC Tag** from the test case list and it is by default in read mode
2. Take the device to an 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 type, record etc.
4. Then select the tab **Write** and take the device to an 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**



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 `MPEG-4`, `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.

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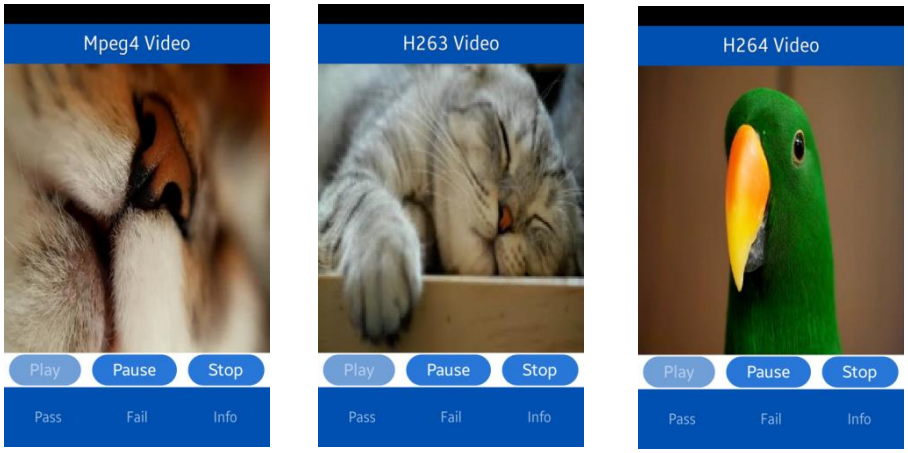
- **MPEG-4 Video** for testing video format of MPEG-4
- **H264 Video** for testing video format of H264.



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.

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, press

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

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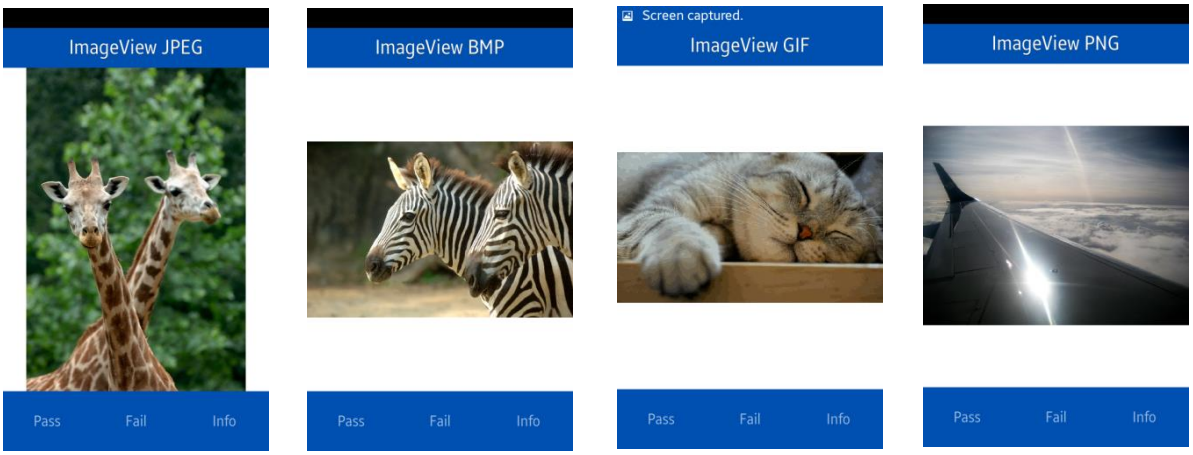

Testing Application Controls

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.**

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

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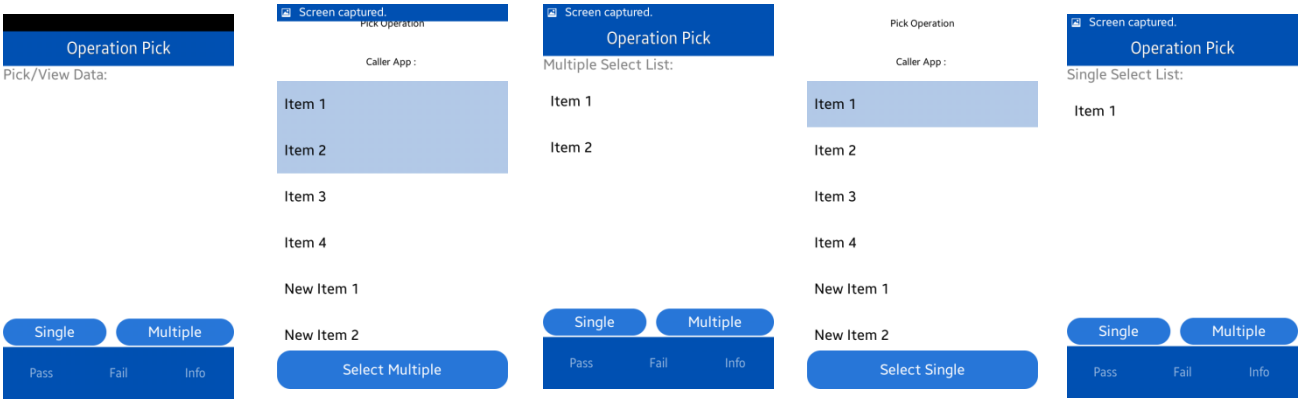


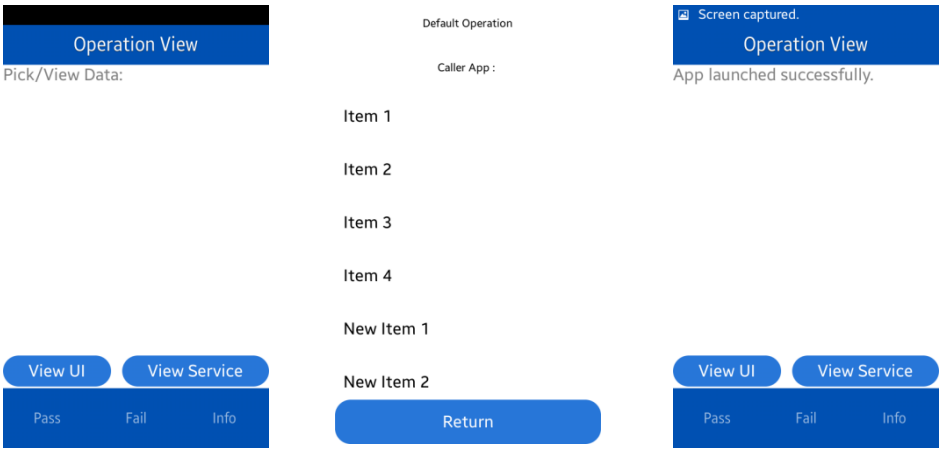
4.2. Testing the view operation

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

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, then **Pass,** otherwise **Fail**.
4. Then press button **View Service.**
5. If App launched successfully, then **Pass,** otherwise **Fail**.



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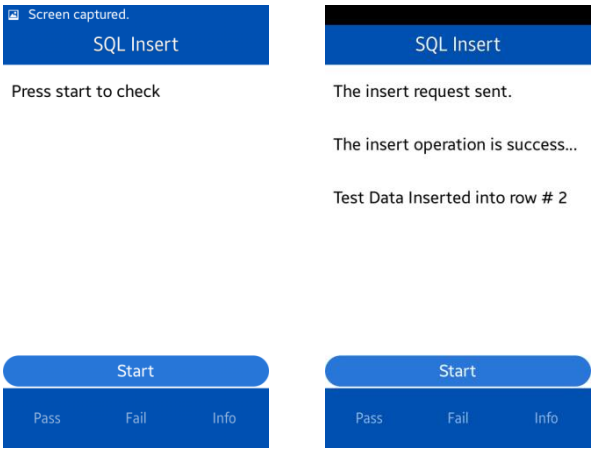
4.3. Data Control

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

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.**



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.**

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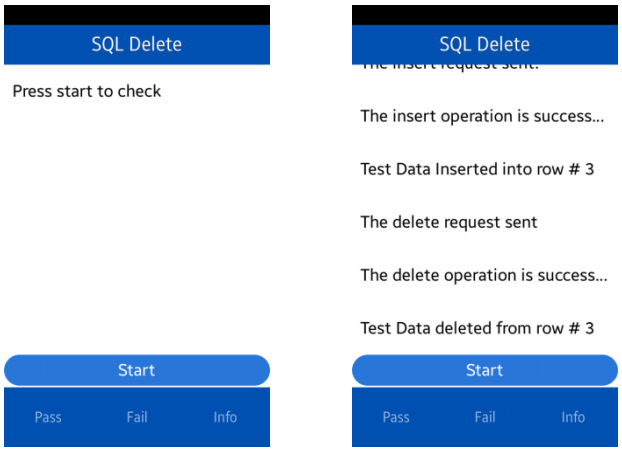
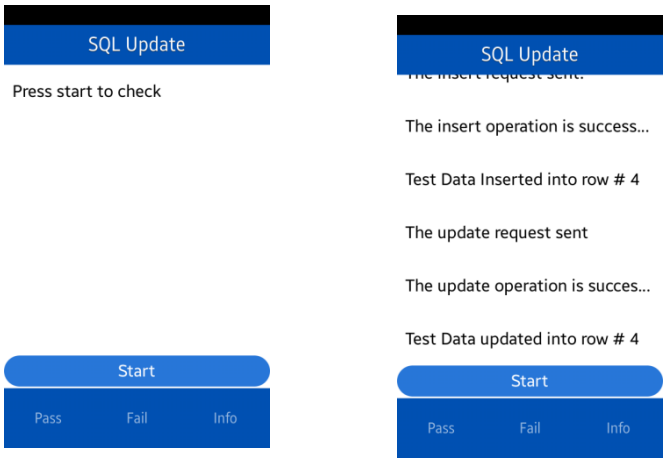
4. If any error is shown, then **Fail.**



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.**



Select Operation

To perform the operation

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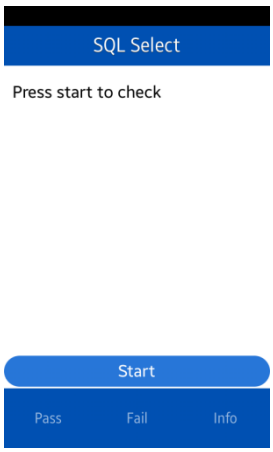
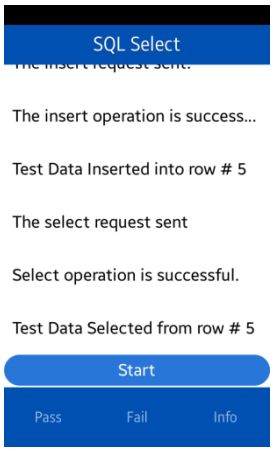
1. Select **SQL Select** from the test case list
2. Press button **Start**
3. If the request is sent successfully and information is shown normally then **Pass.**
4. If any error is shown, then **Fail.**





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 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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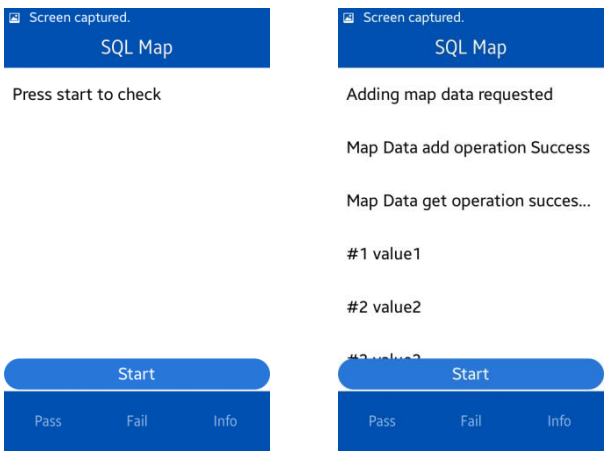
Data Control Map

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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Testing Sensors

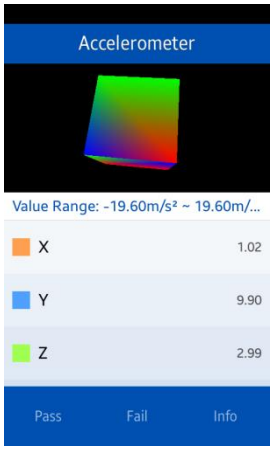
This chapter describes the various tests that can be performed to check that the device sensors work normally. If the functionality works as expected, press **Pass**. Otherwise, press **Fail**.

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 cube displayed on the screen must point down.
3. If it points in another direction, the accelerometer is not properly configured.



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**.
4. **Move** the device to the opposite direction of the cube movement and background color will be **red**.

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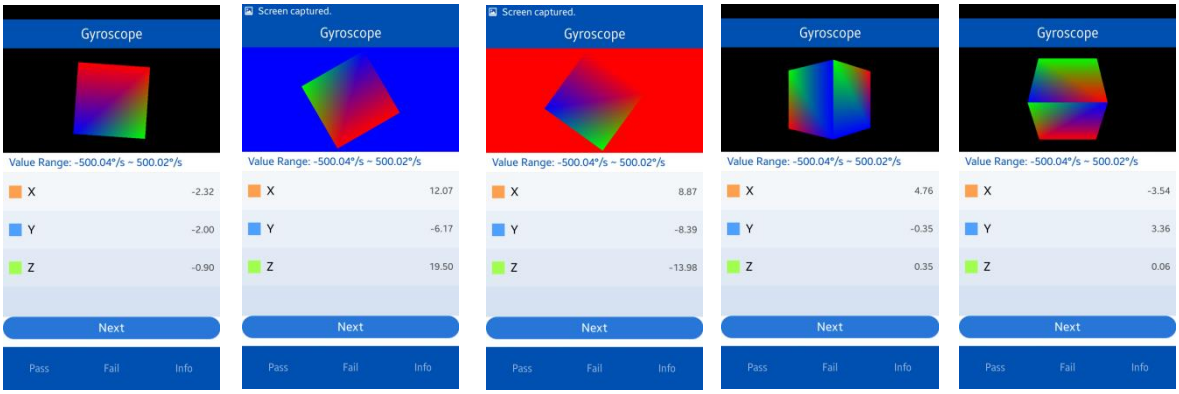
5. Press button **Next** to change direction of cube movement and do the previous steps accordingly.



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.

5.4. Light

To perform the test

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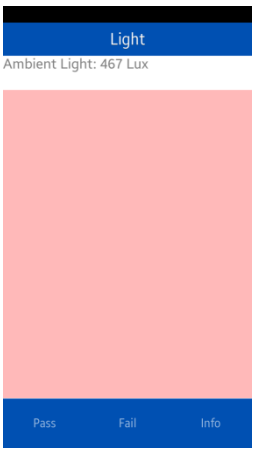
1. Select **Light** from the test case list.
2. **Move** the device to the light source.
3. The color of the object slowly turns into red according to the intensity of light.



5.5. Magnetometer

To perform the test

1. Select **Magnetometer** from the test case list.
2. Move device and the values of X, Y and Z components of Earth's magnetic field will be changed accordingly.

5.6. Pressure

To perform the test

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1. Select **Pressure** from the test case list.

2. Current air pressure is displayed automatically if device supports pressure sensor.

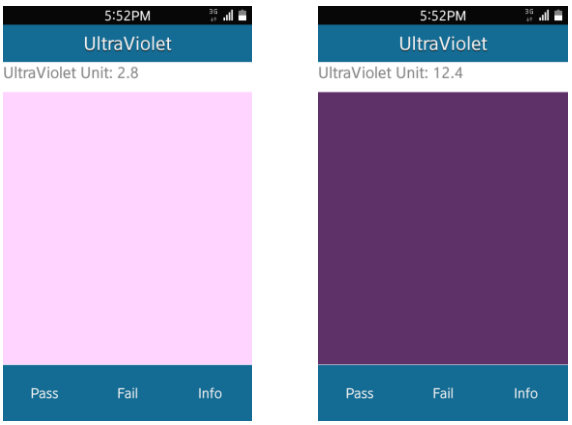
5.7. Ultraviolet

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.



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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:

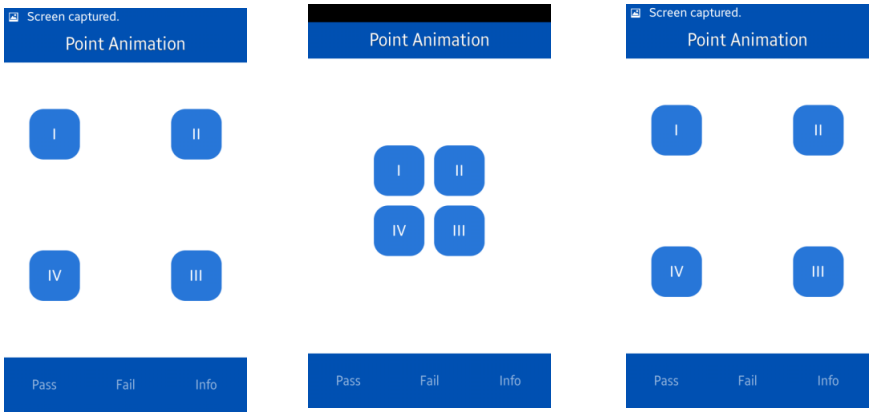
1. Select Integer Animation, Float Animation, Dimension Animation, Rectangle Animation, Point Animation and Rotation Animation respectively for the respective animations.

2. After selecting each test, the animation will be shown automatically.

3. Press **Pass** if all tests are successful.

Fade animation:

Point animation:



Dimension animation:

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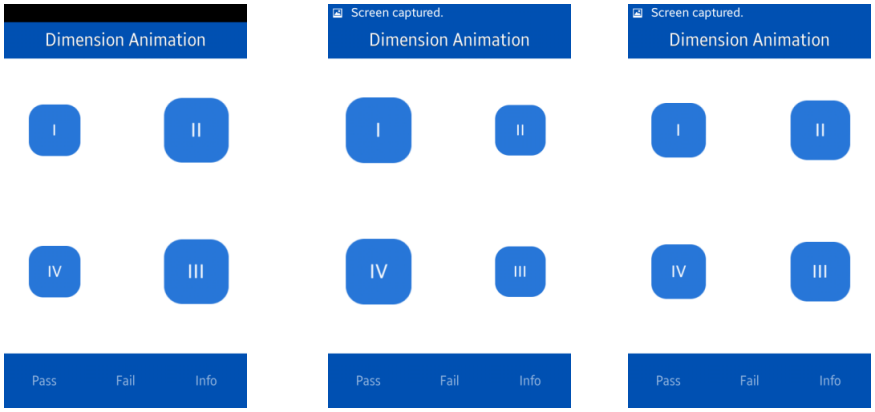
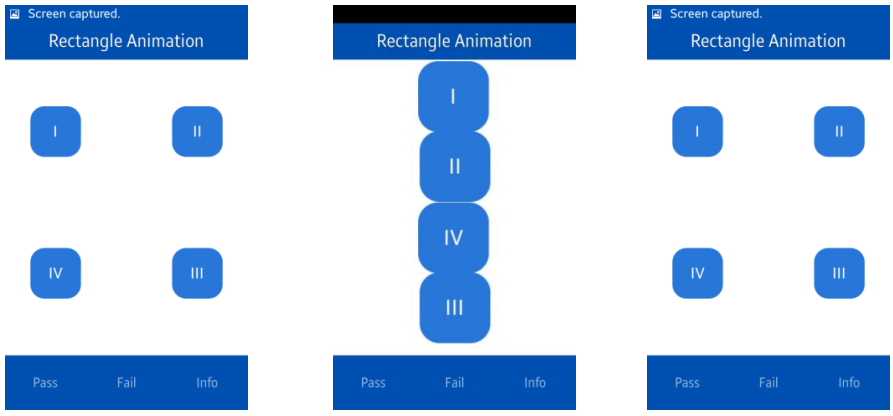
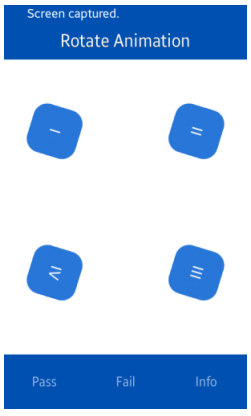


Rectangle animation:



Rotate animation:



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6.2. Testing UI Components

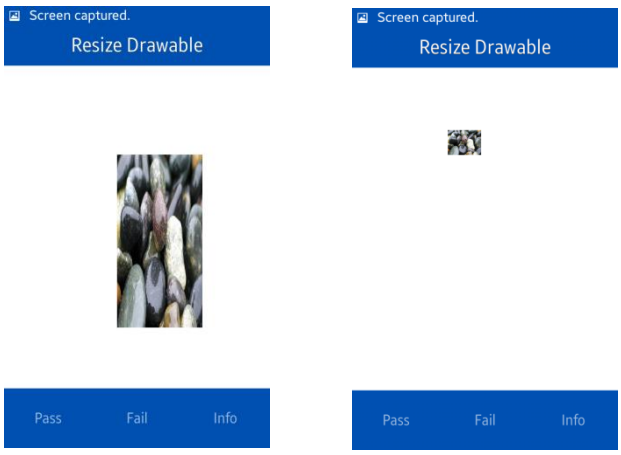
This section describes the tests you can perform on UI components.

Testing Image Resizing

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

To perform the Resize Drawable test:

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

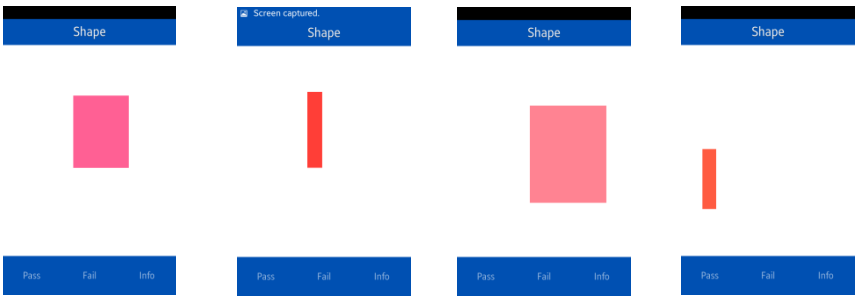


Testing Shapes

This test shows different shapes on the screen.

To perform the Shape test:

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



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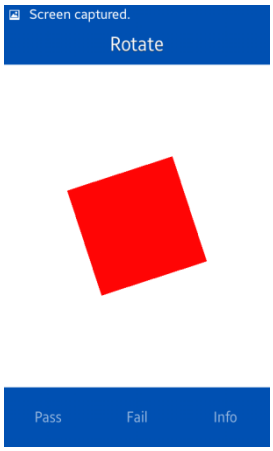
Testing Rotation

To perform the rotation test:

1. Select **UI (Rotate)** from the test case list and check if the objects are rotating properly.

2. If yes then **Pass,** otherwise **Fail.**

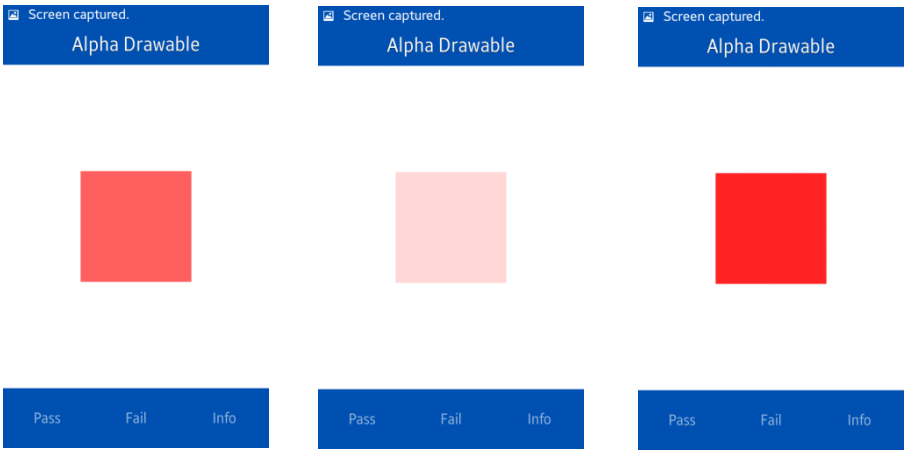


Testing Alpha Drawing

To perform the test

1. Select **UI (Alpha)** 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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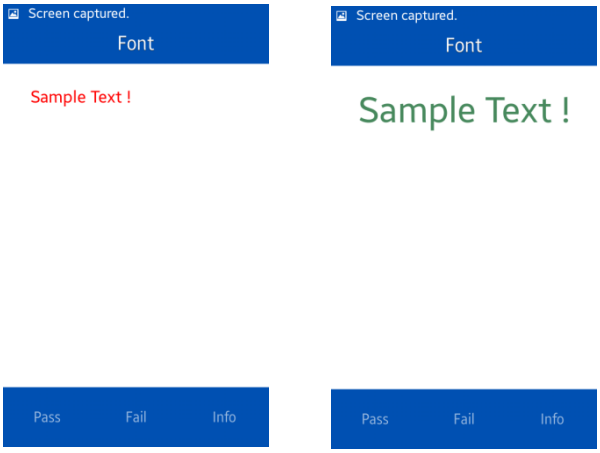
Testing Fonts

To perform the test,

1. Select **UI (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.**

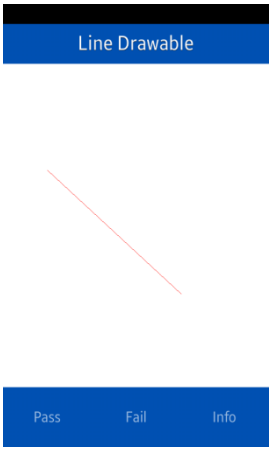


Testing Line Drawings

To perform the test,

1. Select **UI (Line)** from the test case list and lines of different colors and sizes are drawn in different directions automatically.

2. If yes then **Pass** otherwise **Fail.**



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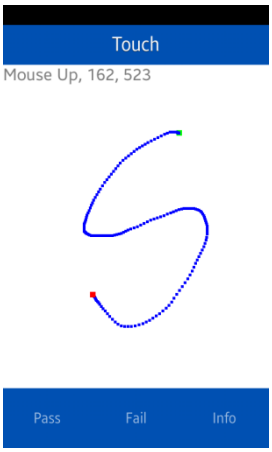
EFL / Event

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 red.
4. Check that the touch-drag is blue.
5. Check that the release location is green.
6. If the functionality works as expected, press **Pass**. Otherwise, press **Fail**.



7.2. Mock Event

To perform the test

1. Select **Mock Event** from the test case list.
2. During the test do not touch or tap on the screen
3. Press button **Tap** and a red dot will appear on the screen, that represents a single tap on the screen.
4. Press button **Long Tap** and a green dot (representing touch down) will appear and after that a red dot (representing touch up) will appear, that represents the long tap on the screen.

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5. Press button **Draw** and a line will be drawn on the screen.

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

7.3. 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 is detected.

3. Press button **Delete Callback** and the callback will be deleted.

4. Press the **Hardware Back Button** and check, 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**

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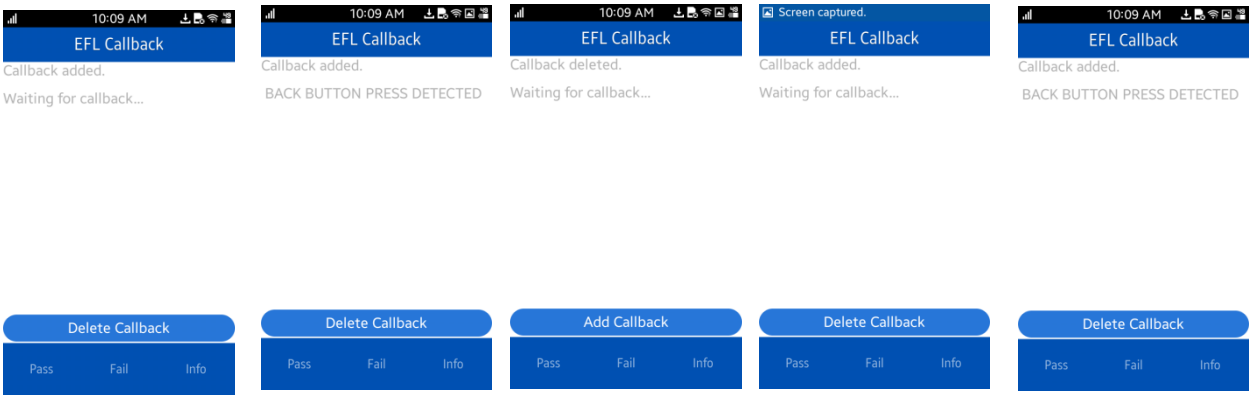
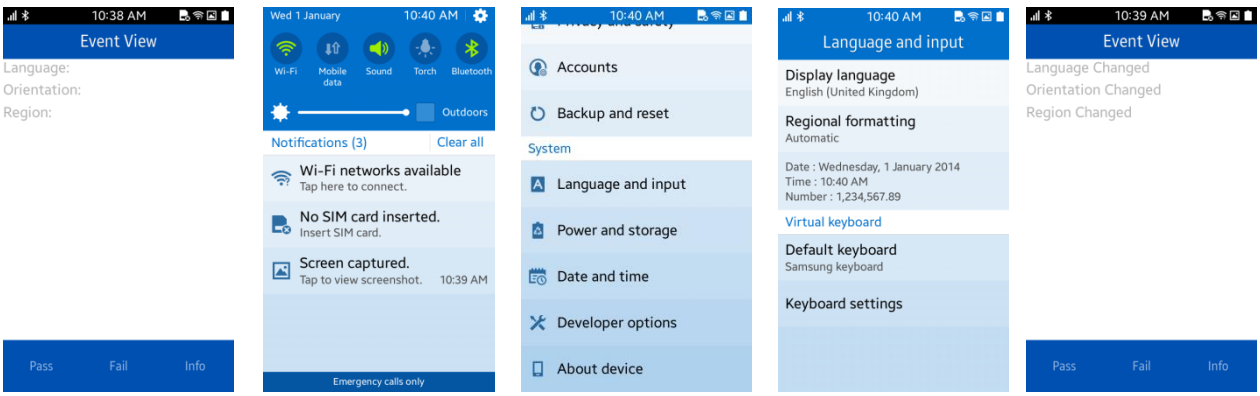


7.4. Event View

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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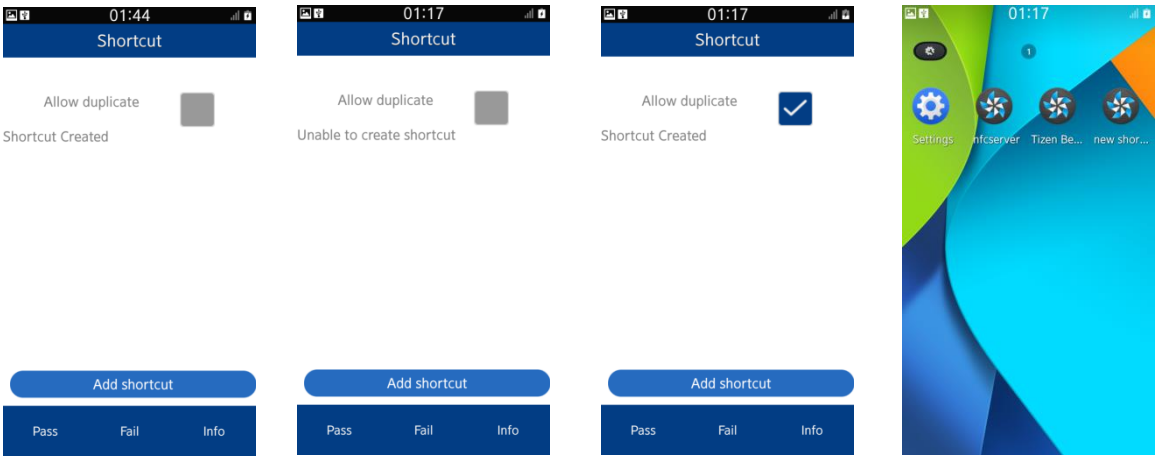
7.5. Adding Shortcut

Firstly delete the shortcut of the application Tizen Behavioral Test, if there exists any. Then follow the steps below to perform the test,

1. Select **Shortcut** from the test case list.
2. By default, the checkbox **Allow duplicate** is unchecked.
3. Press button **Add Shortcut** to create a shortcut of Tizen Behavioral Test application in home screen.
4. Press the button **Add Shortcut** again and it will not allow to create shortcut because a shortcut already exists in home screen.
5. Check the checkbox **Allow duplicate** and press button **Add shortcut.**
6. It will allow to create duplicate shortcut of the same name.
7. If it's not visible in the home screen, it will be made in dynamic box. You can check in the dynamic box with long tap.
8. If all the steps are performed correctly, then **Pass,** otherwise **Fail.**



Testing the Push Service

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

1. Press button **Start** to start the push service and a successful response will be displayed.
2. Then long press the **Home** button and clear the application instance.

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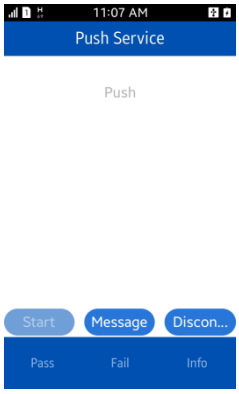
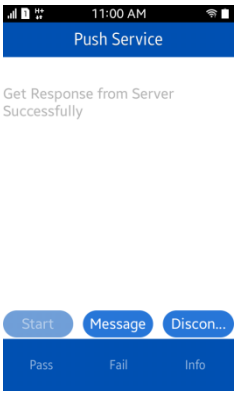
3. After a few moments, there will a notification.
4. Click on the notification and the message will be shown.

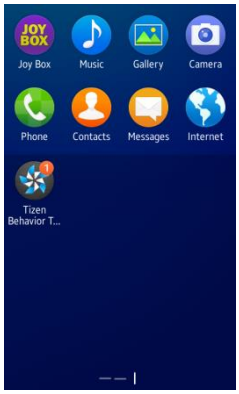
Secondly,

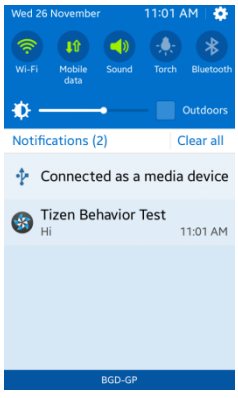
1. Press button **Start** to start the push service.
2. Press button **Message.**
3. After a few moments a message will be shown.
4. Press button **Disconnect** to disconnect Push Service

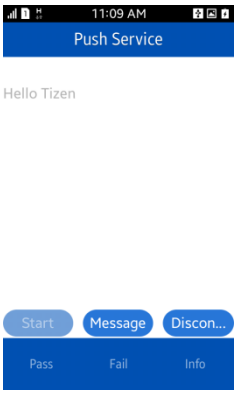
If all steps are performed perfectly, then the test can be considered as successful.

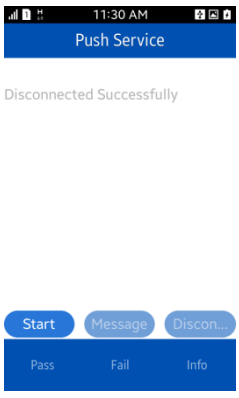












Runtime Info

To perform the test

1. Select **Runtime Info** from the test case list.
2. Connect an audio jack into the audio port of the device.

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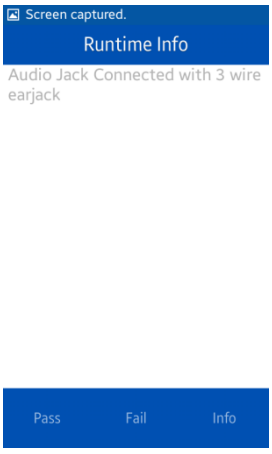
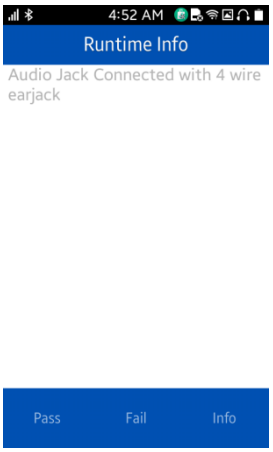
3. The type of the audio jack will be shown in runtime on the screen.
4. When there is no connected audio jack, it will show no jack is connected.
5. If all the steps are performed correctly then **Pass,** otherwise **Fail.**





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**.

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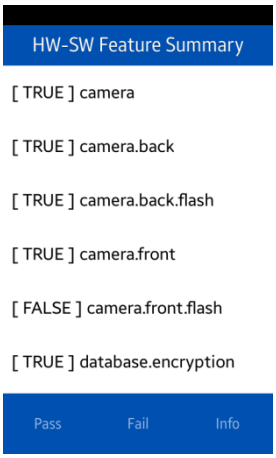

Appendix

- Device/emulator should be able to access port numbers listed below through internet connection:

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

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