Palm Powered Solutions Test

Application Compliance Testing
Version 2.0

March 2005

Table of Content

Table of Test Criteria

1. General Guidelines

GG-01	Released applications only
GG-02	Text spelling and grammar
GG-03	Graphics
GG-04	PalmSource Logo and Trademark usage
GG-05	Visible feedback
GG-06	Handling invalid data
GG-07	Error handling requirements
GG-08	Inappropriate Graphics/Text
GG-09	Form entry
GG-10	Application support
GG-11	Documentation

2. Palm Powered Solutions Test

Application Launch

APP_LAUNCH-01	Normal launch and exit
APP_LAUNCH-02	Unsupported system (OS Version)
APP_LAUNCH-03	Global Find
APP_LAUNCH-04	Launching from expansion card
APP_LAUNCH-05	Test reset launch code
APP_LAUNCH-06	Alarms
APP_LAUNCH-07	Additional launch code

Screen Configuration

SCREEN-01	320x480 resolution, 16 bit color
SCREEN-02	240x320 resolution, 16 bit color
SCREEN-03	Other Resolutions
SCREEN-04	Dynamic input area

User Interface and Experience

UI-01	Field input and edit menu
UI-02	UI Objects
UI-03	Modal dialogs
UI-04	About dialog

Stress Tests

STRESS-01	Gremlins on Palm OS Simulator
STRESS-02	Low memory condition

System Integration

SYS-01	Mask/Unmask records
SYS-02	Obscuring the launcher icon
SYS-03	Unique creator Ids and database names
SYS-04	System preferences
SYS-05	Verification of application icons on different launcher views
SYS-06	Reserved shortcuts
SYS-07	Application deletion
SYS-08	Backup bit reset

Phone environment tests (test to ensure smartphone compliance)

PH-01	Over the air verification
PH-02	Network Connection
PH-03	Incoming SMS test
PH-04	No data connection test
PH-05	Additional Stress test
PH-06	Power charge/interruption

PPST Application Compliance General Guidelines

The information provided in this section are basic guidelines that an application being submitted for PPST application compliance are expected to comply. Because of the varied functionality of the applications that are expected to go through the PPST application compliance testing, some of the guidelines described in this section may have specific test cases associated with them while others may not and can only be verified purely through analysis or inspection.

GG-01. Released applications only

ISV (Independent Software Vendor) must only submit released apps (no alpha, beta apps - this is not for testing the functionality of their application or to identify bugs on their unreleased product).

GG-02. Text spelling and grammar

ISV must ensure that the text in their application are correctly spelled and grammatically correct.

GG-03. Graphics

ISV must ensure that the graphics in their application display correctly on various supported screen resolutions. If it only supports certain screen resolutions (e.g., 320x320 square screen but not 320x480), ISV must indicate on their documentation.

GG-04. PalmSource Logo and Trademark usage

ISV must ensure application does not infringe with PalmSource Logo usage and to make sure application is not using PalmSource Logo in their About box.

GG-05. Visible feedback

If an application takes several seconds to refresh the User Interface due to application busy processing data, the application must provide a visual progress or status bar to the user.

GG-06. Handling invalid data

ISV must ensure that the application handles invalid data, performs appropriate data validation and doesn't crash the device.

GG-07. Error handling requirements

ISV must handle all error conditions gracefully. Avoid cryptic error message, instead, provide user friendly error messages when appropriate.

GG-08. Inappropriate Graphics/Text

ISV must ensure the application does not contain inappropriate or offensive graphics or text

GG-09. Form entry

Form entry fields (if applicable) shall be sequential and logical and should require minimal manual tabbing that the user might otherwise be required to perform.

GG-10. Application support

ISV must provide customers with a method to call, email or otherwise request and or contact the application support. This method should be obvious, documented and promoted to the users. One idea might be to have this information in the Help About box of the application. This is mandatory.

GG-11. Documentation

ISV should provide the documentation of their application to the test house. Documentation or online help must be accurate and consistent in functionality with the software and device. Graphics, screenshots must also be accurate between software and documentation.

Additional Information:

A well thought out user interface is key in providing great and compelling user experience to end customers. PalmSource highly encouraged application developers to look at the Palm OS User Interface Design Guidelines when designing their applications. This document can be found at PalmSource's website at http://www.palmos.com/dev/support/docs/uiguidelines.pdf.

Palm Powered Solution Test

This section describes the first level of tests for general Palm OS compatibility. A 3rd party developer may perform these self test using the Emulator (Palm OS 4.x) or the Simulator (Palm OS 5.x). The emulator and the Simulator can be downloaded from PalmSource's website.

Default Settings for Palm OS Emulator

1. Launch Palm OS Emulator and open the appropriate ROM file.
2. Right click on the emulator and choose Settings>Debugging.
3. Verify that all debug checks are enabled.

Default settings for Palm OS Simulator

1. Launch Palm OS Simulator and open the appropriate ROM file.
2. Right click on the simulator to navigate the various settings menus.
3. Verify that Color depth is set to 65535 colors.
4. Verify that all check boxes under Allowed screen depths are checked.
5. Set Resolution to 320x480.
6. Verify that "Allow screen direct access" is NOT checked.
7. Verify that "Storage is write protected" and "PACE extended checks" are enabled in Settings->Memory.
8. Verify that Settings->Enable sound is checked.

Additional Information

These versions of Palm OS Simulator and Palm OS Emulator represent generic versions of Palm OS. PalmSource strongly recommends additional testing on licensee-specific versions of these tools, as well as on actual shipping devices.

Notes about the tests

Languages:

Test using English language ROMs, or other language ROMs, as appropriate for the application's target audience.

Debugging checks:

Perform all tests on debug versions of the ROM, with all available debugging checks enabled, unless otherwise specified.

Optional test cases:

Some of the tests are marked optional. An optional test case must be completed, but passing the test case is not required. Optional test cases may reveal bugs that should be fixed, however some applications might have valid reason for failing these test cases.

After completing a test that requires different settings, be sure to return to the default settings before proceeding to the next test.

Special Cases

Some applications require special treatment - it is difficult to write a generic set of test cases that apply to all types of applications. However, PalmSource would like to include such applications in the logo program where possible.

Handling for common cases:

1. Applications that run on specific hardware should be tested on that licensee's version of the emulator or simulator. Make every effort to obtain and test against a debug ROM.
2. Applications that require specific hardware (e.g. SDIO cards) can be tested on actual hardware. In this case, substitute an appropriate amount of user testing for Gremlins testing.
3. Drivers, shared libraries and other "component"-type applications should be tested with one or more applications with which they are designed to interoperate. For example, a word-completion utility might be tested using the standard Memo Pad application.
4. Applications that require external components (e.g. third-party applications or libraries) are responsible for the integrity of those components. For example, if an error in a third-party shared library causes an error in your application, your application cannot pass the test until the library error is corrected or worked around. However, if the third-party component is not required for the application to function normally, then a solution can be considered optional.

Application Launch

These tests verify that the application reacts correctly to a variety of launch codes and launch conditions.

Test ID	*Test Title*
APP_LAUNCH-01	**Normal Launch and exit**
Conformance	*Full Description*
REQUIRED	**Normal Launch and exit**

Steps	*Expected Result*
1. Launch the application by tapping its icon in the Launcher. 2. Exit the application by tapping the launcher icon. 3. Re-launch the application by tapping the application's icon in the Launcher.	The application launches correctly. It should return to the Launcher and re-launch without error.
Test Notes	Pass: ___ Fail: ___ Exception: ___

Test ID	*Test Title*
APP_LAUNCH-02	**Unsupported system (OS Version)**
Conformance	*Full Description*
REQUIRED	**Test launch on unsupported system (OS Version)**

Steps	*Expected Result*
1. If an application supports Palm OS version 4.1 and above, run this test on Palm OS version 3.5 for example.	The application launches correctly, displays a warning dialog, and then returns to the launcher. Note that throughout the entire test, it is acceptable to fail gracefully in this manner. Applications need not work on all versions of Palm OS, but applications should know their limitations and handle them in a manner that does not cause a crash.
Test Notes	Pass: ___ Fail: ___ Exception: ___

Test ID **APP_LAUNCH-03**	*Test Title* **Global Find**
Conformance **REQUIRED**	*Full Description* **Launch application via the global find functionality**

Steps	*Expected Result*
1. Add some text to search for within the application. 2. While still running the application, tap the Find icon and search for the text that has just been added within the application. If the application does not handle global find: 1. Tap the Find icon from the launcher and enter some text to search for. 2. Keep tapping the Find More button until there are no more applications to search. Verify that the Global Find feature works correctly, and that the application does NOT draw to the find dialog.	Verify that the text is found, and that tapping on the found text returns to the application (optionally taking you to the found text). Verify that the Global Find feature works correctly, and that the application does NOT draw to the find dialog.
Test Notes Please note that this test applies to applications that create database records. Some applications such as games may not have database records.	Pass: ___ Fail: ___ Exception: ___

Test ID **APP_LAUNCH-04**	*Test Title* **Launching from an expansion card**
Conformance **REQUIRED**	*Full Description*

Steps	*Expected Result*
1. Install the application onto the simulator. 2. From the Launcher menu, select Copy, and copy the device to the ram disk expansion card. 3. Return to the Launcher and choose Delete from the menu. Delete the application from RAM, along with any associated databases. 4. Return to the Launcher and choose the ram disk Launcher category. 5. Launch the application by tapping on its icon. 6. Tap the Launcher icon to exit the application and return to the Launcher.	As with a normal launch, the application should launch and exit without error.
Test Notes The streamline testing sequence, it is recommended that this test case is performed before test case SYS-07.	Pass: ___ Fail: ___ Exception: ___

Test ID **APP_LAUNCH-05**	*Test Title* **Test Reset Launch code**
Conformance **REQUIRED**	*Full Description* **Handling the reset launch code**

Simulator Steps	***Expected Result***
1. Install the application onto the device. 2. Right click on the simulator and choose Reset>Soft to simulate a soft reset. 3. Launch the application manually and then exit to the Launcher. 4. Perform an additional soft reset *Device Steps* 5. Install the application onto the device. 6. Perform soft reset for the device 7. Once the device restores itself, launch the application manually and then exit to the Launcher. 8. Perform an additional soft reset	**Simulator:** The application launches and the simulator resets without error. ***Device:*** The application launches and the device retains data.
Test Notes	Pass: ___ Fail: ___ Exception: ___

Test ID **APP_LAUNCH-06**	*Test Title* **Alarms**
Conformance **REQUIRED**	*Full Description* **Test to see if application handles alarms.**
Steps 1. Set an alarm to occur in two minutes. 2. Enter the application. 3. Wait for the alarm to go off. 4. If present, tap the Go To button from the Reminder dialog.	*Expected Result* The alarm should be handled without error.
Test Notes	Pass: ___ Fail: ___ Exception: ___

Test ID **APP_LAUNCH-07**	*Test Title* **Additional Launch Codes**
Conformance **OPTIONAL**	*Full Description* **Test how application handles additional launch codes.**
Steps [Additional launch codes may be device specific]	*Expected Result* The application handles any other standard launch codes defined in SystemMgr.h. The application successfully launches and exits when called with these launch codes. In particular, the applications respond correctly to notifications they handle via the sysAppLaunchCmdNotify launch code.
Test Notes	Pass: ___ Fail: ___ Exception: ___

Alternate Screen Configurations

These tests verify the application's ability to handle a variety of screen sizes, densities, and color depths. Note that changing many of the simulator settings will cause a soft reset. These tests are to confirm that the application will run under different display settings, NOT that it can handle a change in settings while running.

An application fails when UI defects severely inhibit the usability of the application, including (but not limited to) text that is not legible, UI objects that overlap or do not draw, or portions of the form that are improperly clipped.

<table>
<tr><td>Test ID
SCREEN-01</td><td colspan="2">Test Title
320x480 resolution, 16-bit color</td></tr>
<tr><td>Conformance
REQUIRED</td><td colspan="2">Full Description
Test how application handles hi resolution screen</td></tr>
<tr><td colspan="2">Steps

1. Launch the application normally.
2. Navigate through the application's forms, alerts, dialogs, etc., using the menus and screen controls.</td><td>Expected Result
The application's UI must all display correctly, and bitmaps and fonts must be legible. In particular, verify that any custom drawing (e.g. bitmaps or gadget controls) is correctly redrawn or a menu or modal dialog is dismissed. If the application has no modal dialogs, set an alarm in the Datebook application, and then launch the test application while the Alarm triggers.

The application must never be in an unusable state, such that important UI objects are outside the currently visible screen area.</td></tr>
<tr><td colspan="2">Test Notes</td><td>Pass: ___ Fail: ___ Exception: ___</td></tr>
</table>

Test ID **SCREEN-02**	*Test Title* **240x320 resolution, 8-bit color**
Conformance **REQUIRED**	*Full Description* **Test how application handles QVGA screen**
Steps 1. Launch the application normally. 2. Navigate through the application's forms, alerts, dialogs, etc., using the menus and screen controls.	*Expected Result* Repeat the previous test, verifying that all UI is correct. Note that 240x320 displays use a 1.5x scaling factor, which can leave artifacts in unoptimized UI and text. This does not cause failure unless the end result is unusable.
Test Notes	Pass: ___ Fail: ___ Exception: ___

Test ID **SCREEN-03**	*Test Title* **Other Resolutions**
Conformance **OPTIONAL**	*Full Description* **Test how application handles other resolutions (if applicable)**
Steps Repeat the previous test for the following resolutions: • 160x160, 8-bit color • 160x160, 1-bit color • 320x320, 1-bit color	*Expected Result* Result should be the same as SCREEN-01 and SCREEN-02 tests.
Test Notes	Pass: ___ Fail: ___ Exception: ___

Test ID	*Test Title*
SCREEN-04	**Dynamic Input Area**
Conformance	*Full Description*
OPTIONAL	**Test how application handles Dynamic Input Area (if applicable)**

Steps	*Expected Result*
1. Set the resolution to 320x480. 2. Launch the application. 3. If the input area trigger (usually a small arrow) is available, tap it to minimize the input area. 4. If possible, bring up a modal dialog (such as the About dialog from the application's menu). 5. While the dialog is displayed, tap the input area trigger. 6. Close the About dialog. 7. With the input area minimized, tap the Find icon. 8. Cancel the Find dialog.	Applications that do not enable the dynamic input area should run in the legacy square screen area with the input area trigger disabled, preventing the user from minimizing the input area. Use of the dynamic input area is not required and applications that don't enable it will automatically pass this test. The application must never in an unusable state, such that important UI objects are outside the currently visible screen area. Also consider testing against the Sony Virtual Silk Screen as well as a device with display rotation capabilities.

User Interface and Experience

These tests verify consistency of the user interface and user experience.

Test ID **UI-01**	*Test Title* **Field input and edit menu**
Conformance **REQUIRED**	*Full Description*

Steps	*Expected Result*
1. Launch the application normally. 2. Access fields (or custom text control) and menu items. 3. If applicable, test Cut, Copy, and Paste. 4. For each applicable text control, verify the system pop-up keyboard works correctly. 5. Verify that each form with text controls contains a shift indicator in the lower right-hand corner.	For each applicable text control, the system pop-up keyboard should work correctly. Application's cut, copy and paste functions should have standard behavior. Each form with text controls contains a shift indicator in the lower right hand corner.
Test Notes	Pass: ___ Fail: ___ Exception: ___

Test ID **UI-02**	*Test Title* **UI Objects**
Conformance **REQUIRED**	*Full Description*
Steps 1. Launch the application normally. 2. Tap each UI element in every form.	*Expected Result* All UI elements should function and display correctly within the specified screen resolution.
Test Notes	Pass: ___ Fail: ___ Exception: ___

Test ID **UI-03**	*Test Title* **Modal Dialogs**
Conformance **REQUIRED**	*Full Description* **Modal dialog design should avoid data loss**
Steps 1. Open each dialog. 2. Tap the Launcher icon to exit the application.	*Expected Result* Verify that the application has not lost data. For example, each dialog should have a default button that cancels the action when the user exits the application.
Test Notes This test is not applicable for devices with physical keyboards using a HOME key.	Pass: ___ Fail: ___ Exception: ___

Test ID **UI-04**	*Test Title* **About Dialog**
Conformance **OPTIONAL**	*Full Description* **Application About Dialog**
Steps 1. Launch application 2. Click Menu 3. choose Options 4. choose About	*Expected Result* The application has an "About" menu item that contains, at a minimum, developer contact information and a version string that matches the launcher's tver1000 resource. The About dialog should be available from the application's main form, and may be available from other forms as well.
Test Notes	Pass: ___ Fail: ___ Exception: ___

Stress Tests

Test ID **STRESS-01**	*Test Title* **Gremlins on Palm OS Simulator**
Conformance **REQUIRED**	*Full Description*

Steps	*Expected Result*
1. With the test application installed, right click on the simulator and choose Gremlins. 2. Select the application, choose any seed number, and set it to stop after 100,000 events. Note for Developers. Please note the seed values you have used for this test. PalmSource may request the seed values you have used for this test for verification purposes. 3. Start Gremlins. You may select "Disable display" to make the Gremlins run faster.	Verify that steps 1-3 work for 10 unique random seeds, for a grand total of 1,000,000 events.
Test Notes	Pass: ___ Fail: ___ Exception: ___

Test ID **STRESS-02**	*Test Title* **Low memory condition**
Conformance **REQUIRED**	*Full Description*

Steps	*Expected Result*
1. Run the MemHog application to decrease free memory. PalmSource recommends choosing an amount of free memory that best tests your application, using 20kb as a default. 2. Repeat the Palm OS Simulator Gremlin test (10 seeds, 100,000 events each).	The application runs correctly or fails gracefully. When an application fails gracefully, it gives an error message prior to exiting out of the application.
Test Notes MemHog does not work with Treo 600 or 650. Instead use performance data such as adding 50,000 records to the address book to fill up the device memory.	Pass: ___ Fail: ___ Exception: ___

Test ID **SYS-01**	*Test Title* **Mask/Unmask records**
Conformance **OPTIONAL**	*Full Description*

Steps	*Expected Result*
If the application supports masking and unmasking records: 1. Create a masked record in the system Address application. 2. With the Mask Global Records preference enabled, launch the test application. 3. Choose a masked record and unmask it. 4. Exit the application and return to the Address application.	Verify that the masked Address record is still masked.
Test Notes This will only apply to applications that create database records. Applications such as games may not have database records.	Pass: ___ Fail: ___ Exception: ___

Test ID **SYS-02**	*Test Title* **Obscuring the launcher icon**
Conformance **REQUIRED**	*Full Description*
Steps 1. Launch the application. 2. From each form and dialog, tap the Launcher icon to exit the test application.	*Expected Result* No forms or dialogs should obscure or override the behavior of the Launcher icon. It is acceptable to use an exit-confirmation dialog if an inadvertent exit would cause data loss.
Test Notes	Pass: ___ Fail: ___ Exception: ___

Test ID **SYS-03**	*Test Title* **Unique creator Ids and database names**
Conformance **REQUIRED**	*Full Description*
Steps 1. Ensure that Creator ID's are unique and registered with PalmSource, Inc. 2. Go to Manage My Applications and register Creator ID. 3. Associate Creator ID to the application.	*Expected Result* The application's creator ID and the names of all associated databases should be unique. Each creator ID is registered via the PalmSource website. Once the developer logs in to the Palsource website, go to Manage My Applications and register Creator ID's.
Test Notes	Pass: ___ Fail: ___ Exception: ___

Test ID **SYS-04**	*Test Title* **System preferences**
Conformance **REQUIRED**	*Full Description*

Steps	*Expected Result*
There are various system preference settings. This test is only a spot check. Tester may verify common settings such as Sounds and Alerts, Date and time Formats, Security/Record locking preferences. Example: Test sound preference for a game application 1. From Launcher, go to Prefs 2. Turn off Game Sound 3. Go back to Launcher and launch game application 4. Game application should have no sound Example for application that displays date/time format and record masking. 1. From Launcher go to Prefs and change date format. 2. Go back to launcher and launch application. 3. Call a form that displays date and verify that the date format is consistent with what was set on the Prefs setting. **Note:** Similar steps can also be be performed for setting such as hiding/masking records.	The application respects system preference settings for date formats, sound levels, and other system global preferences.
Test Notes	Pass: ___ Fail: ___ Exception: ___

Test ID **SYS-05**	*Test Title* **Application icons visible in the Launcher**
Conformance **REQUIRED**	*Full Description* **Verification of application icons on different launcher views**

Steps	*Expected Result*
1. Find the application's icon in the Launcher. 2. Tap the launcher's options menu and choose Preferences. 3. Change to view by list.	The application has a normal and list-view icon. The application icon's transparency is set to avoid white borders around the icon on a debug ROM.
Test Notes	Pass: ___ Fail: ___ Exception: ___

Test ID **SYS-06**	*Test Title* **Reserved shortcuts**
Conformance **REQUIRED**	*Full Description* **Standard platform shortcuts are not used for different purpose by the application**

Steps	*Expected Result*
1. Launch application 2. Go to Menu 3. check the following shortcuts U = undo , C = copy , P = paste , X = cut S = Select All, K = keyboard , G = Graffiti help	The following menu shortcuts are not used for a non-standard purpose. U = undo , C = copy , P = paste , X = cut S= Select All, K = keyboard , G = Graffiti help Consider respecting other common shortcuts, such as N for new and D for delete, but this is not required.
Test Notes	Pass: ___ Fail: ___ Exception: ___

Test ID **SYS-07**	*Test Title* **Application deletion**
Conformance **REQUIRED**	*Full Description*

Steps	*Expected Result*
1. Install the application and any required databases. 2. Run the application, to create any default databases. 3. Using a file utility application such as Filez note down the files and databases related to the application that were created. 4. Delete the application from the launcher. 5. Verify the application is deleted by using Filez.prc to verify the application and all databases no longer appear.	The application *and all associated databases* are deleted.
Test Notes If the tester is performing the tests in sequential order, the application should have been deleted in **APP_LAUNCH-04.** If the application makes use of third-party shared resources, libraries, or databases, it is acceptable to leave these third-party components installed after deletion.	Pass: ___ Fail: ___ Exception: ___

Test ID **SYS-08**	*Test Title* **Backup bit set**
Conformance **REQUIRED**	*Full Description*

Steps	*Expected Result*
1. Install the application and any required databases. 2. Run the application, to create any default databases. 3. Perform a HotSync operation to a new HotSync account. 4. Perform a hard reset. 5. Perform an additional HotSync operation with the same HotSync account.	The application and data are all restored correctly. Note that if the application makes use of a custom conduit, that conduit should be installed on the test machine.
Test Notes	Pass: ___ Fail: ___ Exception: ___

T1.26 - (Optional)

Test ID **COBALT-01**	*Test Title* **Test against the Palm OS Cobalt Simulator**
Conformance **OPTIONAL**	*Full Description*

Steps	*Expected Result*
1. Perform all previous test cases on the Cobalt simulator.	The application works correctly or fails gracefully.
Test Notes PalmSource strongly recommends this test; it will eventually become a required test.	Pass: ___ Fail: ___ Exception: ___

Phone Device Compatibility Test

The test suite for this level of testing is performed by PalmSource Testing Labs. PalmSource Testing Labs will perform the Platform compatibility test suite (as described in the previous section) on specific device rather than on the simulator. In addition, phone centric test cases will be performed as described below.

Over the Air Tests
These tests are to verify the suitability of applications for the over-the-air downloads.

Test ID **OTA-01**	*Test Title* **Fully registered application**
Conformance **REQUIRED**	*Full Description*
Steps 1. Launch the application from the launcher. 2. Go to Menu>Options and verify that the application is fully registered. It should indicate that the application has been fully registered. If not registered, menu items such as “Register Now”, “Purchase” or “Buy” are sample indicators that the application has not been registered.	*Expected Result* The PRC is fully registered and does not require a registration code in any way.
Test Notes	Pass: ___ Fail: ___ Exception: ___

Test ID **OTA-02**	*Test Title* **Limited Beaming**
Conformance **REQUIRED**	*Full Description*
Steps 1. Go to Launcher 2. Menu 3. Beam 4. Check that the application is not 'beam-able'. There should be a graphic of a padlock next to the size of the application to indicate that the application is not 'beam-able'.	*Expected Result* Verify that a full version of the application cannot be beamed to another device and run. Demo versions of the app are allowed to be beamed.
Test Notes	Pass: ___ Fail: ___ Exception: ___

Test ID **OTA-03**	*Test Title* **Additional Over the Air verification**
Conformance **REQUIRED**	*Full Description*
Steps 1. Verify that the application is a single PRC or a single package.	*Expected Result* Single PRC Test (this will go away after the adoption of Palm Installer.) Verify that the application is a single PRC and not multiple files. If there are multiple files they must bundled in a single PRC and installed with an installer i.e. Nutshell. No PC support required (this will go away after the adoption of Palm Installer.) Verify that the application does not use or has no dependency on a desktop component
Test Notes	Pass: ___ Fail: ___ Exception: ___

Phone Environment Tests

These tests verify that an application with run correctly when the device receives a phone call or an SMS message. These tests have been added to ensure platform compliance for the application when it is used on a smart phone device, there is only one test which tests for wireless connectivity of the application. If the application does not use a wireless connection, then it will automatically pass that section.

<table>
<tr><td>Test ID
PH-01</td><td colspan="2">Test Title
Additional Over the Air verification</td></tr>
<tr><td>Conformance
REQUIRED</td><td colspan="2">Full Description
Verify that the application does not interfere with the phone functionality in any way.</td></tr>
<tr><td>Steps when IGNORING a phone call:
1. Launch the application
2. Dial the device phone number on another phone
3. The Phone Call form should appear on the tested device.
4. Tester chooses to Ignore the phone call.</td><td colspan="2">Expected Result
There are two verifications for this test.
One, make sure the application allows an incoming call to be answered.
Tester chooses Ignore the phone call
Two, after the incoming call was IGNORED, the focus must return back to the application. The test should fail, if the device stays in the phone dialer application or goes to launcher, when choosing IGNORE. It must go back to the application.</td></tr>
<tr><td>Test Notes</td><td colspan="2">Pass: ___ Fail: ___ Exception: ___</td></tr>
<tr><td>Steps when ANSWERING a phone call:
5. Launch the application
6. Dial the device phone number on another phone
7. The Phone Call form should appear on the tested device.
8. Tester chooses Answer the phone call.</td><td colspan="2">There are two verifications for this test.
One, make sure the application allows an incoming call to be answered.
Tester chooses ANSWER the phone call
Two, after the incoming call was ANSWERED, the focus must return back to the phone dialer application or go to the launcher. The test should fail, if the device resets or crashes when choosing ANSWER.</td></tr>
<tr><td>Test Notes</td><td colspan="2">Pass: ___ Fail: ___ Exception: ___</td></tr>
</table>

Test ID **PH-02**	*Test Title* **Network Connection**
Conformance **REQUIRED**	*Full Description* **Verify that the application does not interrupt "always on" functionality of the device.**
Steps 1. Go to launcher 2. Tap the application 3. Exercise the functions of the application (e.g., go to menu etc.) 4. On a desktop computer, send an SMS message to the device.	*Expected Result* The expected result is that the SMS message Alert should appear on the screen. Choosing to Go to the actual SMS message should bring the tester to the SMS message. After responding or clicking on Done, it should bring the tester to the SMS message inbox or screen.
Test Notes	Pass: ___ Fail: ___ Exception: ___

Test ID **PH-03**	*Test Title* **Incoming SMS Test**
Conformance **REQUIRED**	*Full Description* **Verify that the application does not interrupt "always on" functionality of the device.**
Steps 1. Go to launcher 2. Tap the application 3. Exercise the functions of the application (e.g., go to menu etc.) 4. On a desktop computer, send an SMS message to the device	*Expected Result* Verify that the user sees SMS message when one appears. Verify that when the user hits OK they are taken back to the screen they were on prior to the delivery of the SMS message. Application screen should re-draw completely and allow user to continue using app at the same point.
Test Notes	Pass: ___ Fail: ___ Exception: ___

Test ID **PH-04**	*Test Title* **No data connection**
Conformance **REQUIRED**	*Test application to prompt user to connect if data connection is needed but not established yet.*

Steps	*Expected Result*
1. Check the device that there is no active data connection. 2. Launch the application 3. Perform a function that requires a data connection	When an application needs a data connection to perform a certain function and if the device has no established data connection yet, the application should prompt user to connect and not just exit the application.
Test Notes	Pass: ___ Fail: ___ Exception: ___

Test ID **PH-05**	*Test Title* **Additional Stress Test**
Conformance **REQUIRED**	*This is a manual test in addition to the STRESS-01 and STRESS-02 test which are performed on the simulator.*

Steps	*Expected Result*
Spend 10-15 minutes applying stressful actions to the device. For example: • Press buttons, keys on the device rapidly. • Enter invalid data on the applications forms/fields • Press objects/widgets on the application forms repeatedly etc. • Use hard keys (e.g PIM apps, home key) to exit the application.	The application should not crash or generate error message. All scenarios should be handled by the application gracefully. This is just an extra validation that the application handles error conditions and invalid scenarios appropriately.
Test Notes	Pass: ___ Fail: ___ Exception: ___

Test ID **PH-06**	*Test Title* **Power charge/interruption**
Conformance **REQUIRED**	*Application must handle and process a power charging event with no errors or interruptions.*

Steps	*Expected Result*
1. Launch application from launcher as usual. 2. Perform application functions as normal. 3. Plug the power charger to the device or dock/undock device to a HotSync cradle if available.	Application should not care whether a power charger has been attached to the device during its normal operation. The application must not generate any error message or crash the device.
Test Notes	Pass: ___ Fail: ___ Exception: ___

Note: Phone centric test cases will be augmented per test house recommendations.

Network Solution/Advanced Test

For complex and advanced applications that require additional and specific hardware and server side software setup will be out of scope for this version of the PPST application compliance testing.