
Rhapsody[®]
Standard Plays for Sure Device
Program

Test Kit and Program Information

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Test Program Executed by Intertek Testing Services NA, Inc.

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1. WELCOME

Welcome to the “Rhapsody” Logo Program. The tests and processes detailed throughout this document have been designed in partnership between Real Networks, Inc. and Intertek and approved by Real Networks, Inc.

Intertek is an independent test company chosen to administer the Rhapsody® testing program. All program specifics including process, test design, and program design have been approved, and are enforced by Real Networks, Inc.

The purpose of this Kit is to provide the Rhapsody-compatible portable device manufacturer with detailed information about the process, and the specific tests that will be run, when you submit your portable product for Rhapsody® compliance with Rhapsody platform.

Upon passing these tests, you will receive a “Rhapsody®” logo from Real Networks, Inc.

The Test Kit includes a summary of tests for your use. In addition, each test contains a detailed description. Make sure that you pre-test your portable product prior to submitting it to Intertek.

We look forward to contributing to your portable product’s success and working with you as part of the Rhapsody testing program.

Intertek - Rhapsody Test Team
Intertek, Inc.

2. WHAT THE “RHAPSODY” LOGO MEANS

Introduction

The “Rhapsody” logo provides assurance that the portable product meets compatibility, quality and usability standards set by Real Networks, Inc. The test suite focuses mainly on the portable device’s interaction with the Rhapsody server. All Rhapsody® portable hardware that bears the logo will also exhibit a level of reliability that will work with the Rhapsody server, managed by the Rhapsody Jukebox software.

The logo is an assurance that your product has passed a set of criteria as defined by Real Networks, Inc. The logo is not a Full Intertek guarantee. Intertek’ test engineering service is to ensure that your product meets a set of Real Networks, Inc. compliance standards, and that your portable product’s stability is adequate throughout the compliance tests.

Intertek is pleased to be the Rhapsody® compliance Test Lab for retail level portable hardware devices.

Note: Passing results in the compliance test report do not represent any type of Quality Assurance seal from Intertek. Intertek has no control over whether Real Networks, Inc. will issue a “Rhapsody®” logo. Real Networks, Inc. has reserved the right to refuse participation by any Vendor in the use of any trademark, licensing or compliance program regardless of the test results determined by Intertek.

3. HOW TO ACHIEVE THE LOGO

To achieve Rhapsody® compliance, you must schedule testing for your portable product, and submit your package to the Intertek Test Lab. **In order to maximize your chances for a successful test result, you must run all tests prior to submission.** Once your portable product has passed the test, Real Networks, Inc. will provide you with the “Rhapsody” logo.

You can schedule your test by sending an email to realnetworks@Intertek.com

The following are requirements for submission of your test package.

- A pre-tested candidate of your portable device by package delivery submission. The version of your portable device must be the same as its release to your target market and should be stated on the Addendum A legal forms submitted to Intertek.
- Please submit a **full** version of your portable product. The logo does not apply to Demo or “lite” versions of the device. Please ship two of your hardware devices to Intertek.
- A copy of your product documentation, i.e. User’s Guide.
- The signed Intertek **Developer Vendor Hardware Testing Agreement** and Addendum. *Testing agreements are to be returned only once. Additional Rhapsody® compliance testing will only require product Addendums to be signed.*
- Payment by check for the Rhapsody® testing. Make checks payable to **Intertek Testing Services NA, Inc.** See “Pricing” to determine fee. We also accept cashier checks and wire transfer. Please contact Intertek via email (realnetworks@Intertek.com) for banking information if you choose wire transfer option.
- Developer Questionnaire with “required” fields filled in.
- Exception requests submitted to Intertek, Inc. See “Exception Handling Process” for details.
- Any additional active service accounts, software, hardware, server configurations, or equipment required to use the device.

The following is recommended prior to submission of your test package:

- A copy of the test outline or functional specification associated with your portable device.

Ship your package to:

Intertek Testing Services NA, Inc
Rhapsody Real Networks Program
450 Main Street, Suite 207
Pleasanton, CA 94566
Phone: (925) 485-5619 Fax: (925) 484-2631

4. SUBMISSION PROCESS

1. Intertek will schedule your test window to begin within five (5) business days of contact.

In an effort to continue to offer submission scheduling within a one-week time frame, it is important that once you have submitted and received confirmation of a start date that the commitment be met.

Delayed submissions by the Portable Device manufacturer and/or no shows, result in delayed schedule availability.

If no change of date or cancellation has been received prior to the original planned submission start date, then a new submission date will need to be requested and your submission will be placed in the queue for the next available submission start time. A late or no show submission penalty fee may be applied and due upon submission. See "Pricing" for details.

2. You will receive confirmation of receipt of your package and login information to a secure, online Intertek Problem Status database.
3. Once testing has begun, regular problem information can be obtained via the online Intertek Problem Status database at any time. Final test results will be made available to Real Networks team for evaluation. As soon as Real Networks team complete evaluation, final test result will be sent to you.
4. **IMPORTANT:** The majority of the testing will be performed during the first day of the test cycle. If numerous problems have been found thus inhibiting the completion of testing by the end of the first day, testing will be stopped and a resubmission of your application (with the problems fixed and all requirements re-tested) will be necessary to achieve the logo. In this case, a notification will be sent to you and Real Networks, Inc. indicating the testing has been stopped. Information will also be included on tests completed to date, tests remaining, problems found, and any open issues.

5. TEST CUSTOMIZATION

Should you customize?

You may be eligible for test customization if one of the following applies:

- If your product technology is a component other than a standalone portable device
- If your portable device technology does not apply to the majority of the tests described in this kit
- Due to the nature of your portable device, Real Networks, Inc. **requires** a customized test kit in order to achieve compliance

Note: Real Networks, Inc. has reserved the right to require a customized test kit for a portable device in order to issue a "Rhapsody Logo". Intertek has no control over whether Real Networks, Inc. will issue a "Rhapsody Logo" or refuse participation by any Vendor in the use of any trademark, licensing or compliance program.

What's the Process?

1. Intertek emails the "Rhapsody Committee" describing the portable device, and states justification for the customization. Approval from Real Networks, Inc will be typically provided within 24 hours.

==> If Real Networks, Inc. approves/agrees the portable product needs to have a customized set of test suites, then proceed to next step. Otherwise inform Portable Device manufacturer they must go through the standard program.

2. Intertek requests detailed information from the Portable Device manufacturer. With this information Intertek - INTERTEK provides a cost estimate to customize, develop, and execute the Test Suite for the logo.

==> If the Portable Device manufacturer agrees to pay for a customized suite, then proceed to next step.

3. Within an average maximum of 6 business days of receipt of payment from Portable Device manufacturer, Intertek develops and sends to Portable Device manufacturer and Real Networks a customized Test Suite. Feedback or approval from Real Networks, Inc will be typically provided within 24 hours, and no later than 72 hours.

==> If Portable Device manufacturer and Real Networks approves/agrees to the Test Suite written by Intertek, then proceed to next step. Otherwise, there is a reiterative process between Intertek, Portable Device manufacturer and/or Real Network, to modify the customized Test Suite that will become approved.

4. Portable Device manufacturer schedules their tests with the Intertek - Rhapsody Test lab, submitting hardware, documentation, and other relevant information.

6. **EXCEPTION HANDLING PROCESS**

On occasion, there are justified cases that need exception. For example, if the design of a portable product prohibits a Portable Device manufacturer from conforming to one of the tests listed in the criteria, or if a Portable Device manufacturer is unable to conform to a test because of a specific problem with the RealNetwork SDK, or a reason completely out of the portable device manufacturer's control.

After reviewing the tests within this kit, and you feel that your portable product will not meet a portion of the test criteria, you must request an exception upon submission by sending an email to Intertek. Please indicate "EXCEPTION REQUEST" in the email subject line, and include the test the exception is requested for as well as the rationale for the request in the body of the message. Intertek will submit the exception request for approval to Real Networks, Inc.

If you were unaware of a particular exception candidate at time of submission, a section for tracking exceptions will be included in the test results report. Each case will be handled separately. All potential exceptions will be communicated to Real Networks, Inc. in the results report with information explaining the rationale of the problem. Real Networks, Inc. will approve or deny the exception typically within 24 hours, but no later than 72 hours. An immediate e-mail will be sent to the Portable Device manufacturer reporting approval results for their exception candidate.

If the exception has been approved, Intertek will record the information in the results report. If all other tests have passed, the Portable Device manufacturer will receive a test pass. If the exception has been denied, a retest of the portable product will be necessary to fix the problem as documented in the failed test result.

PLEASE NOTE: No failure status will occur if the failure cannot be reproduced in the lab at Intertek. If Intertek discovers a problem once and cannot reproduce the problem, it will be noted in the test results report but will not affect the test status. However, if Intertek can reproduce the problem consistently, but the Portable Device manufacturer cannot, we will work with the Portable Device manufacturer to help isolate the condition for reproducibility. Problems not reproducible at the Portable Device manufacturer site will be escalated to Real Networks, Inc. for decision handling through the test results report.

It is important to note that an exception granted will not indicate a passed status for that particular test. However, a Portable Device manufacturer will pass the overall test suite and receive the logo, with a disclaimer for those tests that have been granted an exception.

7. TEST INFORMATION

The following are some test tips, and a guide to follow during your pre-test effort. The tests listed in the next section will be executed at the Intertek – Rhapsody® Test Lab. A full Requirements Pass/No Pass report will be generated based on the results of these tests. **You must run all tests prior to submission in order to maximize your chances for a successful test result.**

If a specific test does not apply to your portable device, the difference and reasoning behind this must be documented for test and for the users.

For devices that require additional software/device drivers installed onto the Desktop and/or Server that will host the Rhapsody service, the most recent versions of Windows and Mac OS supported by the product will be used.

Testing will be performed with the most recent version of the Rhapsody™ Jukebox software and the submitted portable devices. At Intertek’s and/or Real Network’s discretion, Windows XP will be selected for testing from the list of supported OS platforms provided by the product’s user documentation. If no particular OS is specified by the product documentation, the application will be tested with Windows XP (subject to change).

Testing on additional OS platforms is available. Please contact the Intertek -Rhapsody Test Lab for information on additional OS platforms available for testing. See [“Pricing”](#) for details.

Warnings:

All requirements must be met in order to be eligible for the logo. However, if your application does not meet a requirement identified with “*WARNING ELIGIBLE*” (see Core Tests descriptions below), the requirement not met will be indicated as a warning on the final report. Warnings are typically granted for problems that are more cosmetic in nature. A warning on the final report will still allow the application to receive the logo and all of its benefits, as described in Rhapsody Logo usage agreement, however, the requirement will only be excused from being met until the release of the next version of the application. Please realize that a warning will not be issued twice.

If a warning is issued for a requirement that only requires a firmware edit to rectify, then the portable device manufacturer will be allowed to submit revised firmware for the portable device. See **HARDWARE REVISION HANDLING** section below for additional revision information.

It’s important to note that if a memory leak is given a warning; all memory leaks no matter the location, on all future revisions, will result in the no memory leak requirement to not be met. In other words, if a memory leak is given a warning, no other warnings will be granted for any memory leaks found in future revisions.

Important Notes:

1. If numerous problems have been found thus inhibiting the completion of testing by the end of the first day, testing will be stopped and a resubmission of your device (with the problems fixed and all requirements re-tested) will be necessary to achieve the logo.
2. Portable Devices must support Windows XP.

8. CORE TESTS

Test Cases
1. Transfer
1.1. Test: Transfer purchased tracks
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Drag a track from the Music Guide to your Library - Purchase the track (Library: right click - Buy Track) - Drag a track to the device node - Verify track plays on device
Info: Whether a device supports WMDRM or Real's Helix DRM, the track should be converted to the devices supported type of DRM. Rhapsody downloads Helix DRM tracks when purchased by default and will transcode to Windows Media DRM for most devices. For example, if the device supports WMDRM, then Rhapsody will convert the track to secure WMA, and then transfer.
1.2. Test: Transfer downloaded subscription tracks
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Drag a track from the Music Guide to the device node - Verify track plays on device
Info: If the device supports subscription licenses then Rhapsody should be able to transfer subscription download tracks to the device. These are also known as PlaysForSure Subscription tracks, or Janus tracks.
1.3. Test: Transfer downloaded subscription tracks from Library
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Drag a track from the Music Guide to the library node - Drag the same track from the library to the device node - Verify track plays on device
Info: If the device supports subscription licenses then Rhapsody should be able to transfer subscription download tracks to the device. These are also known as PlaysForSure Subscription tracks, or Janus tracks.
1.4. Test: Transfer un-licensed purchased tracks
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Obtain a secure purchased track from another computer under another account (see "Transfer purchased tracks" above for instructions) - Import track to Library (under File menu) - Drag track to device node - Verify track does not transfer
Info: Rhapsody should check to see if the track is secure and if there are proper rights. With a secure track without a license, Rhapsody should refuse to transfer to the device.

1.5. Test: Transfer un-licensed subscription tracks
Required/recommended: Required
<p>Steps:</p> <ul style="list-style-type: none"> - Obtain a secure subscription track from another computer under another account (see “Transfer downloaded subscription tracks” above for instructions) - Import track to Library (under File menu) - Drag track to device node - Verify track does transfer <ul style="list-style-type: none"> - Verify the track plays
<p>Info: Rhapsody should check to see if the track is secure and if there are proper rights. With a secure track without a license, Rhapsody should re-acquire the license and transfer to the device.</p> <p>The cases where it would not transfer is if:</p> <ol style="list-style-type: none"> 1) The user is not a Rhapsody-to-go user 2) Rhapsody is unable to re-acquire the license (e.g., user not logged in, no network available, service is down)
1.6. Test: Transfer un-secure MP3, WMA, WAV, ACC and RA
Required/recommended: Recommended
<p>Steps:</p> <ul style="list-style-type: none"> - Add a sample track of each of these Rhapsody-supported track types into your Library (File -> Import Music to My Library) - Drag one of each of these track types onto the device node - Rhapsody should transfer over all supported file types, and convert all the unsupported file types into supported versions (typically MP3 or WMA), then transfer those.
1.7. Test: Transfer all supported file formats and bit rates (varies by device)
Required/recommended: Recommended
<p>Steps:</p> <ul style="list-style-type: none"> - Verify all range of bit rates can be transferred to the device for each device format
<p>Info: For each supported format the device can take (typically MP3 and WMA) verify the device can take the low and high end of bit rates.</p>
1.8. Test: Single track transfer cancellation
Required/recommended: Required
Pass/fail:
<p>Steps:</p> <ul style="list-style-type: none"> - Start a transfer of a large track - During the transfer click “cancel” - Verify the device does not report the song transferred
<p>Info: Using Windows Explorer (or if the device comes with a file explorer application), use that to verify there are no partial files left due to canceling.</p>

1.9. Test: Multiple track transfer cancellation
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Transfer a list of songs (i.e., an Album or Playlist) - Click "cancel" after a couple of songs have transferred - Disconnect device - For devices that support album art, check to see if album art is present for the completed songs
Info: Using Windows Explorer (or if the device comes with a file explorer application), verify there are no partial files left due to canceling.
1.10. Test: Single object transfer to device / transfer from device / enumerate / delete
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Transfer a single track - Click on the device name/node to show the items on the device - Verify the song shows as transferred - Click on the track on the device - Click delete - Verify the device reports the track is not there anymore
Info: This test is to show that communication between Rhapsody and the device works when the contents change, and while the device is still connected.
1.11. Test: 100 objects transfer to device / transfer from device / enumerate / delete
Required/recommended: Required
Pass/fail:
Steps: <ul style="list-style-type: none"> - Create a playlist with 100 songs - Drag playlist to device - Once complete, click on the device to show it's contents - Verify all 100 songs show up - Select the songs in the device view - Click delete - Verify the device reports the songs are gone
Info: This tests communication with multiple tracks while the device is still connected.

2. Delete

2.1. Test: Delete a single track from device

Required/recommended: Required

Steps:

- In the device view, select a track
- Click delete
- Verify the song disappears
- Disconnect the device, verify the song is not there

Info: This tests the communication between Rhapsody and the device before deleting and after.

2.2. Test: Delete multiple tracks from device

Required/recommended: Required

Steps:

- In the device view, select multiple tracks
- Click delete
- Verify the songs disappear
- Disconnect the device, verify the songs are not there

Info: This tests the communication between Rhapsody and the device before deleting and after.

2.3. Test: Delete all tracks from device

Required/recommended: Required

Steps:

- In the device view, select all tracks
- Click delete
- Verify the songs disappear
- Disconnect the device, verify the songs are not there

Info: This tests the communication between Rhapsody and the device before deleting and after.

3. Stress

3.1. Test: Fill the device

Required/recommended: Required

Steps:

- Transfer enough songs to completely fill the device

Info: This tests that the device will report it is full and will refuse to accept more songs. Rhapsody should show an error status once the device is full.

4. High Bitrate

4.1. Test: 320kbps AAC gets transcoded to WMA 160kbps

Required/recommended: Recommended

Steps:

- Transfer 320kbps AAC track to the device
- Verify on devices that do not support AAC natively that Rhapsody transcodes to 160kbps WMA (the device may report the format type, if not, view file type in Windows Explorer)
- Verify track plays

Info: Rhapsody will transcode unsupported formats to WMA, but only as high as 160kbps.

4.2. Test: High bit rate WMAs get transcoded to WMA 160kbps

Required/recommended: Recommended

Steps:

- Transfer 320kbps WMA track to the device (if the device supports 320kbps, then use a higher-bitrate than supported by the device)
- Verify songs on the device is at least 160kbps
- Verify track plays

Info: Rhapsody will transcode high bit rate WMA to be 160kbps.

4.3. Test: 320kbps MP3 are transferred intact

Required/recommended: Recommended

Steps:

- Transfer 320kbps MP3 track to the device
- Most devices support MP3, so Rhapsody should transfer the song without transcoding it
- Verify the bitrate of MP3 on the device is the same as on the PC (the device may report the format type, if not, view file type in Windows Explorer)
- Verify track plays

Info: For MP3 and other natively supported formats, verify that Rhapsody will simply transfer the song without transcoding it. This tests that the device will report which formats it can support.

5. Metadata in Client Device View

5.1. Test: After Rhapsody restarts, Artist info shows correctly, songs show up when browsing on the device by Artist

Required/recommended: Required

Steps:

- transfer an album to the device (try an Artist with special characters in their name example: <http://rhapl原因s.real.com/rhaplink?rhapid=3097987&type=playlist&title=Playlist&from=real>)
- Disconnect the device
- On the device, browse by Artist
- Verify the Artist shows up in the correct location
- Connect the device to Rhapsody
- Click on the device to show its contents
- Verify the Artist info shows correctly

Info: This is to test metadata is transferred with the songs correctly and that the device can categorize based on the metadata.

5.2. Test: After Rhapsody restarts, Album info shows correctly, songs show up when browsing on the device by Album

Required/recommended: Required

Steps:

- Transfer an album to the device (try an Album with special characters in its name)
- Disconnect the device
- On the device, browse by Album
- Verify the Album shows up in the correct location
- Connect the device to Rhapsody
- Click on the device to show its contents
- Verify the Album info shows correctly

Info: This is to test metadata is transferred with the songs correctly and that the device can categorize based on the metadata.

5.3. Test: After Rhapsody restarts, Track name info shows correctly

Required/recommended: Required

Steps:

- Transfer a Track to the device (try a Track with special characters in its name)
- Disconnect the device
- On the device, browse by Track Name
- Verify the songs show up in the correct location
- Connect the device to Rhapsody
- Click on the device to show its contents
- Verify the Track Name info shows correctly

Info: This is to test metadata is transferred with the songs correctly and that the device can categorize based on the metadata.

5.4. Test: After Rhapsody restart, Track Time is shown correctly for songs over 10 min
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Transfer a Track to the device that is longer than 10 minutes - Disconnect the device - On the device, check to see time is reported correctly (songs over 10 minutes should show 4 total digits with minutes and seconds) - Connect the device to Rhapsody - Click on the device to show its contents - Verify the Track Time info shows correctly
Info: This is to test metadata is transferred with the songs correctly and that the device can categorize based on the metadata.
6. Playlist Support (for devices that support playlists) <p>Note: Check the log file (C:\Documents and Settings\%CURRENT_USER%\Application Data\Real\Rhaphsody\ErrorLogs\pdgenwmdm.log) for the following string: "WMDM Device Supported Format: WMDM_FORMATCODE_ABSTRACTAUDIOVIDEOPLAYLIST". If this string does not exist then the device does not support playlists and section 6 should be skipped. Need to note this fact somewhere.</p>
6.1. Test: Transfer playlist with 10 songs to device
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Create a playlist (right click on Playlists -> create new -> add 10 tracks to playlist) - Drag playlist to device name/node (transfer will start automatically) - Verify both the tracks inside the playlist and the playlist itself get transferred
Info: To check if device reports that it supports playlists, check the device log for a line that looks like this: "09:47.29 - WMDM Device Supported Format: WMDM_FORMATCODE_ABSTRACTAUDIOVIDEOPLAYLIST" the log file is located here: C:\Documents and Settings\%CURRENT_USER%\Application Data\Real\Rhaphsody\ErrorLogs\pdgenwmdm.log Pick a song from the playlist and verify it plays
6.2. Test: Transfer playlist with 50 songs to device
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Create a playlist (right click on Playlists -> create new -> add 50 tracks to playlist) - Drag playlist to device name/node (transfer will start automatically) - Verify both the tracks inside the playlist and the playlist itself get transferred Pick a song from the playlist and verify it plays
Info: To check if device reports that it supports playlists, check the device log for a line that looks like this: "09:47.29 - WMDM Device Supported Format: WMDM_FORMATCODE_ABSTRACTAUDIOVIDEOPLAYLIST" the log file is located here: C:\Documents and Settings\%CURRENT_USER%\Application Data\Real\Rhaphsody\ErrorLogs\pdgenwmdm.log

6.3. Test: Transfer playlist containing only tracks already on device.
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Create a playlist (right click on Playlists -> create new -> add tracks to playlist) - Make sure songs on the playlist are already on the device - Drag playlist to device name/node (transfer will start automatically) - Monitor the transfer status information - Verify that tracks already on the device are not transferred again - Verify both the tracks inside the playlist and the playlist itself are still on the device and that they are not duplicated -IF these tracks exist in the main device library, check there for duplicates as well. -pick a song from the playlist and verify it still plays
Info: Verify Rhapsody does not re-transfer songs that are already on the device.
6.4. Test: Transfer playlist containing streams, purchased, and subscription tracks
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Create a playlist (right click on Playlists -> create new -> add tracks to playlist) - Make sure to have a mix of songs on the playlist including streams (not yet downloaded subscription tracks), downloaded subscription tracks, and purchased tracks - Drag playlist to device name/node (transfer will start automatically) - Verify both the tracks inside the playlist and the playlist itself get transferred - Pick a song from the playlist and verify it plays
Info: Tests transfer of a mixture of DRM-protected tracks.
6.5. Test: Transfer playlist containing every local file type, plus streams, purchased, and subscription tracks.
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Create a playlist (right click on Playlists > create new > add tracks to playlist) - Make sure to have songs on the playlist including streams (not yet downloaded subscription tracks), downloaded subscription tracks, and purchased tracks, as well as all supported non secure file types (MP3, WMA, AAC, WAV, and/or RA) - Drag playlist to device name/node (transfer will start automatically) - With devices that support playlists, verify both the tracks inside the playlist and the playlist itself get transferred -Play the different content types and make sure they play
Info: Tests transfer of a mixture of every type of DRM and non-DRM tracks.

6.6. Test: Transfer playlist with same name as existing playlist on device, but with different tracks.
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Create a playlist (right click on Playlists -> create new -> add tracks to playlist) - Name the playlist the same name as one already on the device - Drag playlist to device name/node (transfer will start automatically) - Verify both the tracks inside the playlist and the playlist itself get transferred
Info: Rhapsody should overwrite the existing playlist contents with the new playlist contents.
7. Playback on Device
7.1. Test: Playback of subscription tracks (for devices that support subscription tracks)
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Verify transferred subscription tracks will play on the device
7.2. Test: Playback of transcoded songs (AAC, WAV, RA10) play back correctly
Required/recommended: Recommended
Steps: <ul style="list-style-type: none"> - Verify that unsupported formats which require transcoding when transferred will playback on the device without any overtly noticeable quality issues
Info: See "Transfer unsecure MP3, WMA, WAV, AAC and RA" for steps to transfer tracks which require transcoding.
7.3. Test: Playback of songs encoded in supported local formats play back correctly
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Verify that unsecured supported formats which do not require transcoding (typically MP3 and WMA) will playback correctly
7.4. Test: Playback of purchased tracks (for devices that support purchase tracks)
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Verify transferred purchased tracks will play on the device
Info: Supported DRMs for purchase tracks include WMA DRM9, Helix DRM and FairPlay DRM.
7.5. Test: Chained playback of album tracks works correctly
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Tell the device to play an entire album - Compare playback order to order in the Rhapsody client - Verify it plays the songs in the correct order
7.6. Test: Chained playback of playlist tracks works correctly
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Tell the device to play a playlist. - Compare playback order to order in the Rhapsody client - Verify the songs are played in the correct order
8. Metadata On Device
8.1. Test: Artist info shows correctly, songs show up when browsing on the device by Artist
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Verify that the device can browse by artist and that the tracks show up correctly
Info: Try to test artists with special characters. Example of artist with odd characters: http://rhaplinks.real.com/rhaplink?rhapid=3097987&type=playlist&title=Playlist&from=real
8.2. Test: Album info shows correctly, songs show up when browsing on the device by Album

Required/recommended: Required
Steps: - Verify that the device can browse by album and that the tracks show up correctly
Info: Try to test albums with special characters.
8.3. Test: Track name info shows correctly
Required/recommended: Required
Steps: - Verify the track name shows up correctly
Info: Try to test tracks with special characters.
8.4. Test: Genre info shows correctly, songs show up when browsing on the device by Genre (if supported by device)
Required/recommended: Recommended
Steps: - Verify that the device can browse by genre and that the tracks show up correctly
Info: Make sure to test with special characters.
Questions/comments:
8.5. Test: Album Art shows up on the device (if supported by device)
Required/recommended: Recommended
Steps: - Verify the album art shows up on devices that support it, and that the art looks correct
8.6. Test: Playlist tracks are in correct order on device
Required/recommended: Required
Steps: - Verify on devices that support playlists that the songs are listed in the same order as on the PC
8.7. Test: Album tracks are in correct order on device
Required/recommended: Required
Steps: - Verify that tracks under an album show up in the correct order
Info: This tests the track number metadata
8.8. Test: Double album tracks are in correct order on device
Required/recommended: Required
Steps: - Verify that each disc is shown as a separate album, and all the tracks show up in the correct order for each disc (ex., Pink Floyd "The Wall" will appear as two albums: "The Wall – Disc 1" and "The Wall – Disc 2" or similar)

9. Rights
9.1. Test: Transfer of streams that require purchase
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Transfer a song that does not have the right to be downloaded and must be purchased - Verify the purchase wizard comes up asking if the user wants to buy the song
Info: Several tracks on Eminem "Encore" are like this.
9.2. Test: Transfer of mixed-rights albums, requiring some purchases, but not all
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Transfer an album where some of the songs can be downloaded (subscription) and some require purchase - Verify the purchase wizard comes up and only requests that the required songs be purchased, not the entire album
10. Sync
10.1. Test: Sync of a Playlist only transfers songs that appear on the playlist
Required/recommended: Recommended
Steps: <ul style="list-style-type: none"> - Set the preference to Sync a specific playlist. (Right click on device and select Device Options. Select the checkbox for the playlist you want to transfer to the device from the list) - Hit the Okay button and wait a few seconds for the transfer to begin - Verify that only songs which are on the playlist get transferred
11. Device Connection / Interaction
11.1. Test: Rhapsody is an item in the Autoplay dialog when the device is connected
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Connect a device - Windows will open a dialog box asking which application should be associated - Verify that Rhapsody is listed
Info: This will verify that the device reports to Windows as a media device
11.2. Test: Device Storage Format and Transfer
Required/recommended: Recommended
Steps: <ul style="list-style-type: none"> - Format the device with Windows Explorer - Verify transfer works after formatting
Info: Formatting should not put the device into a bad state.

11.3. Test: Free space, song sizes, song time lengths show correctly in Device Tracklist tab (check tracks over 10 min)
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Connect the device - Click on the Device name to show it's contents - Check to make sure the amount of free space reported is correct, and that the song sizes and lengths are reported correctly - Make sure to check with tracks over 10 minutes long as well
11.4. Test: Device connects and works with Rhapsody first time plugged in
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Verify that the device works the first time with Rhapsody
Info: No drivers or plug-ins should be required
11.5. Test: Device "Disconnect" works properly
Required/recommended: Recommended
Steps: <ul style="list-style-type: none"> - Click Disconnect (at the top of the page when viewing the device or right-click on device name/node) - Verify the device gets put into a state where it reports "ok to disconnect"
11.6. Test: Disconnect during transfer
Required/recommended: Recommended
Steps: <ul style="list-style-type: none"> - Begin a transfer - Manually disconnect the device's cable - Verify the device does not hang or freeze
Info: The device should be able to be interrupted during transfer. Partial songs should not show up on the device or take up room as fragmented files.
Test: Upgrade firmware. Perform secure transfer immediately following to check that the device certificate is still intact and valid, and license database is not corrupt if device is not formatted during update. Verify playback on device
11.7. Required/recommended: Recommended
Steps: <ul style="list-style-type: none"> - Install a new firmware on the device (using whatever supported software the device provides) - Transfer a secure track - Verify playback - Repeat firmware upgrade, secure track transfer and playback verification five more times (for a total of six firmware upgrades) - Verify the device does not get counted as a new device
Info: Upgrading the firmware should not delete the devices license certificate. The device should not be counted as a new device. Users are allowed to have up to five devices, and the sixth device will trigger an error message.
11.8. Test: Clock on device can be changed without affecting subscription playback - 2 months past and 2 months future (if secure clock is supported by device)
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Transfer a subscription song - Disconnect the device and set the clock ahead 2 months - Verify the track will play - Set the clock back 4 months - Verify the track will play
Info: Subscription tracks are set to expire after 30 days by default. On devices that support secure clocks, changing the user-configurable clock should not alter the timeline for expiration.

11.9. Test: Clock on device being set back will expire content for devices without an secure anti-rollback clock (content license must have 'disable on roll-back' and valid start date)
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Transfer a subscription song - Disconnect the device and set the clock ahead 2 months - Verify the track will fail to play - Repeat by transferring a new track, but setting the clock back 2 months - Verify the track will fail to play
Info: Subscription tracks are set to expire after 30 days by default. Tampering with the clock on a device without "secure clock" will only subtract time from the timeline for expiration.
12. Compatibility
12.1. Test: Rip a CD using WMP10 with DRM turned on. Import to Rhapsody and transfer.
Required/recommended: Recommended
Steps: <ul style="list-style-type: none"> - Turn on DRM in the preferences of WMP - Rip a CD - Transfer the tracks - Verify the tracks play
Info: Windows Media Player has an option to add DRM to songs when they are ripped from a CD. This will verify the device can play this special type of DRM tracks.
12.2. Test: Rip a CD using iTunes to AAC format. Import to Rhapsody and transfer.
Required/recommended: Recommended
Steps: <ul style="list-style-type: none"> - On the PC, rip a CD with iTunes to AAC format - Transfer the resulting files - Verify playback on the device
13. Protocol Compliance Tests
13.1. Test: Metadata Reporting from device (Artist, Album, Track Name, Length)
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Connect the device - Verify the metadata shows up in the device view correctly
Info: Make sure to also verify with special characters.
13.2. Test: Media Capabilities Reported correctly (supported audio, video, playlist and image types)
Required/recommended: Recommended
Steps: <ul style="list-style-type: none"> - Connect the device - Check the log file to make sure all supported formats and categories are reported
Info: the log file is located here: C:\Documents and Settings\%CURRENT_USER%\Application Data\Real\Rhapsody>ErrorLogs\pdgenwmdm.log
14. Device Authorization
14.1. Test: Authorize a Previously Un-Authorized Device
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Connect the device - In Rhapsody right-click device node and choose Authorize Device - Go to My Account -> Manage My Account -> enter username-password -> Authorizations - Verify device has been authorized
14.2. Test: De-Authorize a Previously Authorized Device

Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Connect the device - Go to My Account -> Manage My Account -> enter username-password -> Authorizations - Verify device no longer shows being authorized.
14.3. Test: Re-Authorize a Previously De-Authorized Device
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Connect the device - In Rhapsody right-click device node and choose Authorize Device - Go to My Account -> Manage My Account -> enter username-password -> Authorizations - Verify device has been authorized
15. Playlist
15.1. Test: View Transferred Playlist on Device in Transfer Tab
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Connect the device - In Rhapsody create a playlist with both local and subscription content - Drag playlist to device node - Verify playlist shows up under device node and playlist and songs are on device.
15.2. Test: Delete Transferred Playlist on Device in Transfer Tab
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Connect the device - Click on device node and select the Playlists tab - Click on the playlist created in the above test, press the delete key and click Yes on the popup - Verify playlist is deleted from device. - Disconnect and make sure the playlist doesn't appear on the device.
15.3. Test: Transfer Dynamic Playlist
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Connect the device - Select a Dynamic Playlist and drag to the device node (find dynamic playlists in Playlist Central tab) - Wait for songs to be transferred - Verify playlist shows up under device node and playlist and all songs are on device. - Disconnect and verify its on the device.
15.4. Test: Alter Dynamic Playlist
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Connect the device - From the Rhapsody Music Guide go to the My Rhapsody tab - Add the My Dynamic Playlist and to your library and copy it to the device. - Sign out, then sign back in to rhapsody to refresh the dynamic playlist - Verify playlist on device is updated automatically - Disconnect and verify its on the device.
16. Photo & Video
16.1. Test: Photo Tab Is Present for Device
Required/recommended: Required
Steps: <ul style="list-style-type: none"> - Connect the device. Click on the device node. - Verify that there is a tab called 'Photos' in addition to 'Music' and 'Playlists' (and possibly others)
Info: If the device supports photos, the photo tab should be present. If the tab does not show up, make sure that the device capabilities include the type IMAGE_EXIF. This info can be found in the

pdgenwmdm.log file.
16.2. Test: Transfer Supported Filetypes To Device
Required/recommended: Required
<p>Steps:</p> <ul style="list-style-type: none"> - Import the test photos into your client library. There are JPEG, GIF, TIFF, and BMP formats. - Select all the photos and drag them to the device node - After they have transferred, make sure that all the files transferred over, and that each image is viewable on the device. Make sure each image is not stretched or distorted on the device screen. - Quit and re-launch Rhapsody. Reconnect the device and make sure that all photos are shown in the device library with original names. - Attempt to transfer the photos again. - Make sure there are no duplicates after this operation
<p>Info: Depending on the filetypes supported by the device, some files will transfer over directly to the device, and others will be changed during transfer to a common supported format, such as jpg. This test verifies that supported formats are recognized by the client, that the photos are put in the right place for the device to recognize them, that the device properly states the content that it contains to the client, and that metadata is not changed or corrupted (which can result in duplicate files).</p>
16.3. Test: Video Tab Is Present For Device
Required/recommended: Required
<p>Steps:</p> <ul style="list-style-type: none"> - Connect the device. Click on the device node. - Verify that there is a tab called 'Videos' in addition to 'Music' and 'Playlists' (and possibly others)
<p>Info: If the device supports videos, the video tab should be present. If the tab does not show up, make sure that the device capabilities include a client supported video type such as WMV, MP4, or AVI. This info can be found in the pdgenwmdm.log file.</p>
16.4. Test: Transfer Supported Video Filetypes To Device
Required/recommended: Required
<p>Steps:</p> <ul style="list-style-type: none"> - Import the test videos into your client library. There are various formats including WMV, AVI, MP4, VOB, RM, and FLV. - Verify that all the clips play in Rhapsody. Some clips may require extra video codecs to be installed on the test machine and rhapsody restarted. (Codec installers will be included with test videos) - Select all the videos and drag them to the device node - After they have transferred (this will take several minutes), make sure that all the videos successfully transferred over, and that each video is viewable on the device. Make sure each video is not stretched or distorted on the device screen, and the audio sounds okay during playback. - Quit and re-launch Rhapsody. Reconnect the device and make sure that all the videos are shown in the device library, and the video titles and other metadata are correct. - Attempt to transfer the videos again. - Make sure there are no duplicates after this operation
<p>Info: Depending on the filetypes supported by the device, some files will transfer over directly to the device, and others will be changed during transfer to a common supported format, such as WMV. This test verifies that supported formats of the player are recognized by the client, that the videos are put in the right place for the device to recognize them, that the device properly states the content that it contains to the client, and that metadata is not changed or corrupted (which can result in duplicate files).</p>

9. COMMON PROBLEMS

Have you checked for these?



1. Verify your portable device does not delay for an extended period of time. If there's functionality that requires an extended delay (e.g. searching/connecting to a network), make sure to display visual feedback indicating your portable device is not frozen.
2. Verify your portable device gives user friendly and meaningful messages for all error handling processes.

Re-Test Tip: Please be aware that previously blocked portions of the test results may contain areas that do not meet requirements and may not have been reported. This could result in new failures during a retest process if these areas are not tested before resubmitting.

10. PRICING

The program offers all device manufacturers:

- ✓ One full time, Senior-level resource allocated to the program
- ✓ Additional resource on an “as needed” basis to minimize scheduling time
- ✓ Submission time within one week of call request from device manufacturer
- ✓ A secured, online system database allowing the device manufacturer to check status of submission, real-time.
- ✓ Call support for questions, problem information requests, etc. from ISVs.

Standard Plays for Sure Device Certification Test (all portable devices): \$1,500.00

Important Notes:

The majority of the testing will be performed during the first day of the test cycle. If numerous problems have been found thus inhibiting the completion of testing by the end of the first day, testing will be stopped and a **resubmission** of your portable device or device driver (with the problems fixed and all requirements re-tested) will be necessary to achieve the logo. Contact Intertek if the device requires a software installation to be functional.

The cost of the submission includes the regression testing of any problems documented resulting from the testing of the initial submission. Regression testing is limited to those problems documented by the Intertek test engineers. Intertek will only regress problems that have been marked as fixed by the developer in the AWS database.

Each Additional OS Platform: \$1,500.00

If the submitted portable device is supported on two (2) or more OS platforms (*See Section 7: Test Information*).

Late or No Show Submission Penalty Fee:

All submission items must be received prior to the scheduled test date. If Intertek is not notified by the device manufacturer regarding a change of date or cancellation prior to the original planned submission start date, and if Intertek has not received the complete submission package by 8:00 AM Pacific Time of the planned start date, a \$300 penalty fee may apply and the device will automatically be rescheduled for the next available test window. No testing will begin until the penalty fee and the submission charge are paid in full.

11. HARDWARE REVISION HANDLING

Device Revision

The “Rhapsody” logo only applies to the device manufacturer’s portable product **version** (1) that has passed the Intertek’ Rhapsody tests, and (2) for which Real Networks, Inc. has authorized the use of a "Rhapsody".

If a new version of the portable device manufacturer’s portable product becomes available, which includes major feature changes or additions, the portable device **must** be resubmitted and pass the compliance tests for the use of the “Rhapsody” logo.

12. TESTING AGREEMENT

All first time participants in the program must sign a **Vendor Hardware Testing Legal Agreement**. Once your company has a **Vendor Hardware Testing Legal Agreement** on file with Intertek, future portable device certification testing will require product Addendum only to be signed. Other required form is Questionnaire. All the above required legal forms and Questionnaire form can be found on:

<http://intertek.com/wireless-mobile/applications-and-content/realnetworks-rhapsody/>

Please fax the forms to:

(925) 484-2631