



# **SL-8800-M3X MHL Adapter for HDCP 2.X Compliance Testing**

## **User Guide**

Simplay-UG-1003-B

September 2014

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# 1. Overview

This document describes the features and operation of the Simplay Labs, LLC™ (SimplayLabs) SL-8800-M3X MHL 3 Adapter when used together with the SL-8800 HDCP 2.X Protocol Analyzer for HDCP compliance testing of devices compliant with the Mobile High-Definition Link (MHL®) 3 Specification.

The SL-8800-M3X MHL 3 Adapter integrates with the SL-8800 HDCP 2.X Protocol Analyzer, and is not designed for standalone operation.

## 1.1. How to Use this Document

This document provides details on testing setup and results verification when using the SL-8800-M3X MHL 3 Adapter. The purpose of the testing is to validate HDCP 2.X conformance for source and sink devices that conform to the MHL 3 Specification.

This document contains:

- SL-8800-M3X MHL 3 Adapter interface features
- Test operation including how to connect the hardware components
- Sample report file of the SL-8800 HDCP 2.X Protocol Analyzer

For specifications and operation details on the SL-8800 HDCP 2.X Protocol Analyzer, see the SimplayLabs *SL-8800 HDCP Protocol Analyzer User Guide* (Simplay-UG-1002) . This user guide describes how to:

- Review system requirements
- Verify the hardware inventory for the delivery
- Install the HDCP 2.X Protocol Analyzer software
- Use the HDCP 2.X Protocol Analyzer GUI.
- Perform testing for source, sink, dongle, and repeater device configurations

**Note:** Operation of the SL-8800-M3X MHL 3 Adapter is possible only after you perform the installation and setup procedures that are required for the SL-8800 Test Equipment (TE) and the SL-8800 HDCP 2.X Protocol Analyzer.

The SL-8800 TE is the hardware of the SL-8800 HDCP 2.X Protocol Analyzer.

## 1.2. System Requirements

For details about the system requirements for testing setup, see the System Requirements section in *SL-8800 HDCP Protocol Analyzer User Guide*.

### 1.3. SL-8800-M3X MHL 3 Adapter

Figure 1.1 shows the SL-8800-M3X MHL 3 Adapter interface.

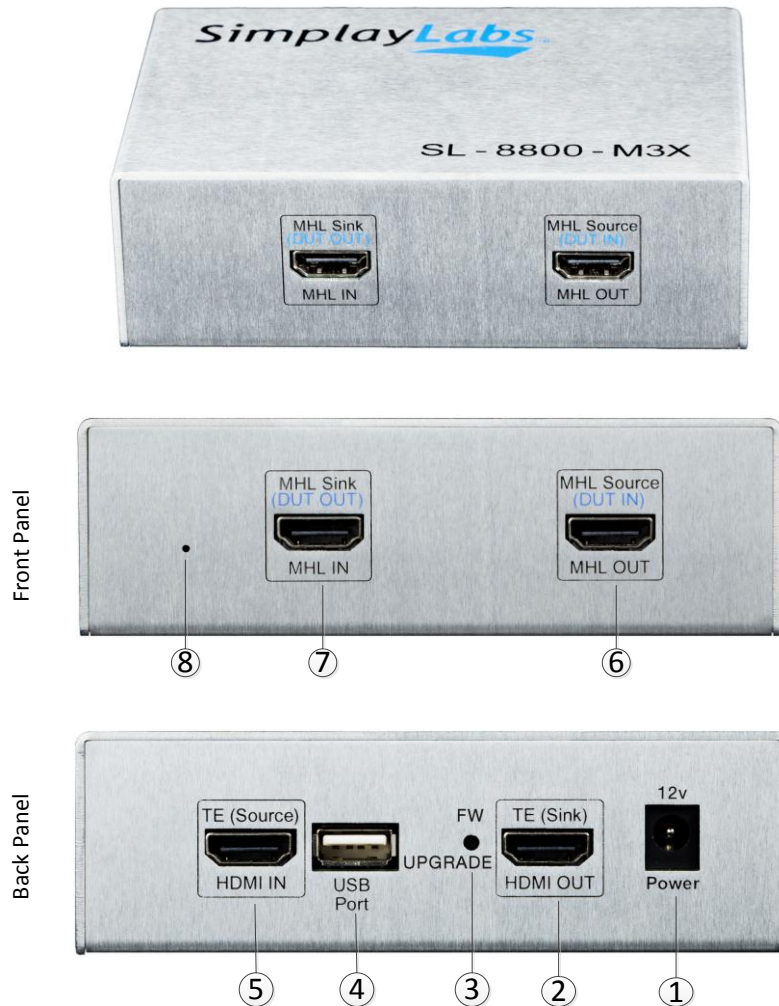


Figure 1.1. SL-8800-M3X MHL 3 Adapter Interface

Table 1.1. SL-8800-M3X MHL 3 Adapter Interface Items

Item	Label	Description
1	POWER	12 V power receptacle.*
2	HDMI OUT	Connect to HDMI IN (Pseudo-Sink) of the SL-8800 TE.
3	FW UPDATE	Press and hold the button with power-on to enter firmware update mode.
4	USB Port	Connect to PC, used to update the firmware of the SL-8800-M3X MHL 3 Adapter.
5	HDMI IN	Connect to HDMI OUT (Pseudo-Source) of the SL-8800 TE.
6	MHL OUT	Connect to MHL 3 input of the MHL 3 Sink Device under Testing (DUT).
7	MHL IN	Connect to MHL 3 output of the MHL 3 Source Device under Testing (DUT).
8	Power Light	Indication of the power status. When powered ON, the light is green.

\*Note: Restart the SL-8800-M3X MHL 3 Adapter if the SL-8800 TE power is turned Off and then On.

## 2. Transmitter Test for Source DUT

This section describes the test items, test operation guide, and sample report file.

### 2.1. Test Items

Table 2.1 lists the test items for source DUT testing, when the SL-8800 TE emulates a receiver device.

**Table 2.1. 1A. Downstream Procedure with Receiver**

Item ID	Test Description	Check Video
1A_01	Regular Procedure – With previously connected Receiver (With stored km)	Yes
1A_02	Regular Procedure – With newly connected Receiver (Without stored km) TE (Test Equipment) does not complete pairing.	No
1A_03	Regular Procedure – Receiver disconnect after AKE_Init	Yes
1A_04	Regular Procedure – Receiver disconnect after km	Yes
1A_05	Regular Procedure – Receiver disconnect after locality check	Yes
1A_06	Regular Procedure – Receiver disconnect after ks	Yes
1A_07	Regular Procedure – Receiver sends REAUTH_REQ after AKE_Init with ks	Yes
1A_08	Irregular Procedure – Rx certificate not received	No
1A_09	Irregular Procedure – Verify Receiver Certificate	No
1A_10	Irregular Procedure – SRM	No
1A_11T1	Irregular Procedure – Invalid H' Invalid H'	No
1A_11T2	Irregular Procedure – AKE_Send_H_prime timeout Not sending H' with Paired Receiver ID	No
1A_11T3	Irregular Procedure – AKE_Send_H_prime timeout Not sending H' with Unpaired Receiver ID	No
1A_12	Irregular Procedure – Pairing Failure	No
1A_13T1	Irregular Procedure – Locality Failure Invalid L' Invalid L'	No
1A_13T2	Irregular Procedure – Locality Failure time out Not sending L'	No

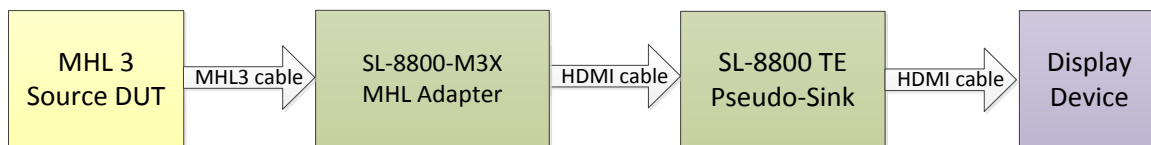
Table 2.2 lists the test items for source DUT testing, when the SL-8800 TE emulates a repeater device.

**Table 2.2. 1B. Downstream Procedure with Repeater**

Item ID	Test Description	Check Video
1B_01	Regular Procedure – With Repeater	Yes
1B_02	Irregular Procedure – Timeout of Receiver ID list	No
1B_03	Irregular Procedure – Verify V'	No
1B_04	Irregular Procedure – MAX_DEVS_EXCEEDED	No
1B_05	Irregular Procedure – MAX_CASCADE_EXCEEDED	No
1B_06	Irregular Procedure – Incorrect seq_num_V	No
1B_07	Regular Procedure – Re-authentication on HDCP_HPD	Yes
1B_08	Regular Procedure – Re-authentication on REAUTH_REQ	Yes
1B_09	Irregular Procedure – Rollover of seq_num_V	No
1B_10T0	Irregular Procedure – Failure of Content Stream Management Sending Invalid M'	No
1B_10T1	Irregular Procedure – Failure of Content Stream Management Not sending M'	No

## 2.2. Test Operation

### 2.2.1. Connection Setup for Source DUT Testing



**Figure 2.1. Connection Setup for MHL Source DUT Testing**

Figure 2.1 shows the connection between the MHL 3 Source DUT, SL-8800-M3X MHL 3 Adapter (see Figure 1.1 on page 5), SL-8800 TE Pseudo-Sink, and Display Device. Follow these steps to setup the connection and start testing.

1. Power on the SL-8800 TE Pseudo-Sink and connect it to the PC using the USB cable.
2. Power on the SL-8800-M3X MHL 3 Adapter.
3. Turn on the MHL 3 Source DUT.
4. Connect the MHL 3 output port of the MHL Source DUT to the MHL IN connector of the SL-8800-M3X MHL 3 Adapter.
5. Connect the HDMI OUT of the SL-8800-M3X MHL 3 Adapter to the HDMI IN connector of the SL-8800 TE Pseudo-Sink.
6. Connect the HDMI OUT connector of the SL-8800 TE Pseudo-Sink to Display Device.
7. Make sure that the source generates 480P @ 60 Hz video.

**Note:** The TE only supports 480P @ 60 Hz.

8. Double-click the HDCP icon on PC desktop. The main window of the HDCP 2.X Protocol Analyzer GUI appears. Expand the Transmitter Test field.
9. In GUI settings, select MHL from the drop-down list as DEVICE item.
10. Click Set LogPath to change the log directory to a desired location if needed.
11. Select test items. Click Start Test button. The verification process begins.

## 2.2.2. Verification Test of the Authentication Procedure

1. Wait for about 30 seconds for each test item to complete.
2. If Check Video is Yes and the authentication process has completed successfully, the Select Output Video Option dialog box pops up to let you select the output video pattern that matches with the one on the Display Device. If Check Video is No, a dialog box pops up to let you decide whether to continue next item by selecting either Continue or Abort.

**Note:** The GUI does not generate a report, rather only txt file for each test item, if Abort is selected.

3. Check the test results according to GUI or the report file.

- Notes:**
1. There is no need to unplug and plugin the HDMI cable during the test process. The SL-8800 TE can emulate HPD process.
  2. For the 1A side, the SL-8800 TE Pseudo-Sink emulates the receiver functions.
  3. For the 1B side, the SL-8800 TE Pseudo-Sink emulates the repeater functions.

## 2.3. Report File

Figure 2.2 shows a sample report file for Source DUT testing results.

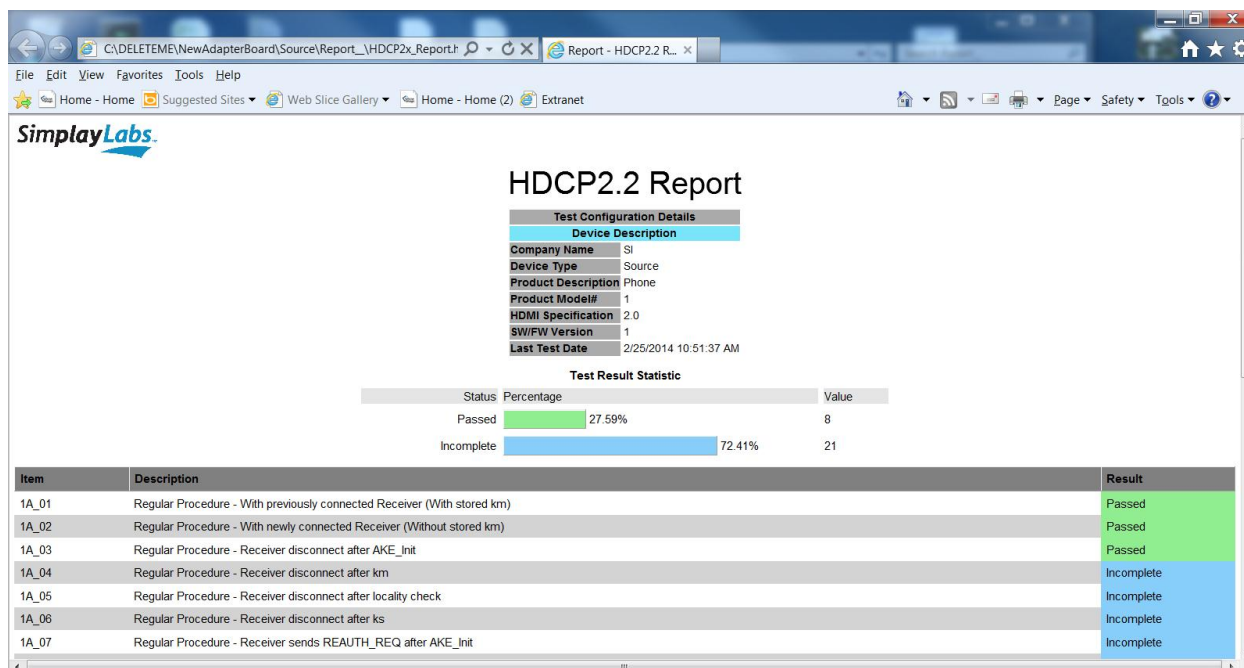


Figure 2.2. Sample Report File of Source DUT Testing



## 3. Receiver Test for Sink DUT

This section describes the test items, test operation guide, and sample report file.

### 3.1. Test Items

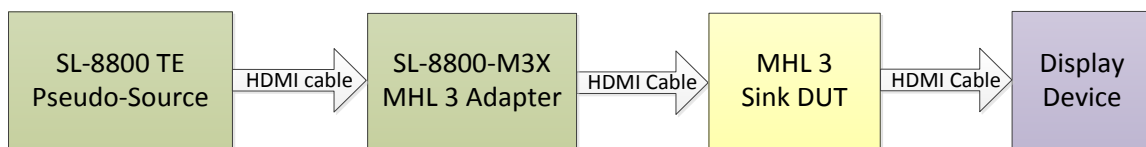
Table 3.1 lists the test items for sink DUT testing, when the SL-8800 TE emulates a transmitter device.

**Table 3.1. 2C. Upstream Procedure with Transmitter**

Item ID	Test Description	Check Video
2C_01_T1	Regular Procedure (AKE_No_Stored_km)	Yes
2C_01_T2	Regular Procedure (AKE_Stored_km)	Yes
2C_02	Irregular Procedure – New Authentication after AKE_Init	Yes
2C_03	Irregular Procedure – New Authentication during Locality Check	Yes
2C_04	Irregular Procedure – New Authentication After SKE_Send_Eks	Yes
2C_05	Irregular Procedure – New Authentication during Link Synchronization	Yes

### 3.2. Test Operation

#### 3.2.1. Connection Setup for Sink DUT Testing



**Figure 3.1. Connection Setup for MHL Sink DUT Testing**

Figure 3.1 shows the connection between the SL-8800 TE Pseudo-Source, SL-8800-M3X MHL 3 Adapter (see Figure 1.1 on page 5), MHL Sink DUT, and Display Device. Follow these steps to setup the connection and start testing.

1. Power on the SL-8800 TE Pseudo-Source and connect it to the PC using the USB cable.
2. Power on the SL-8800-M3X MHL 3 Adapter.
3. Turn on the MHL 3 Sink DUT.
4. Connect the HDMI OUT connector of the SL-8800 TE Pseudo-Source to the HDMI IN connector of the SL-8800-M3X MHL 3 Adapter.
5. Connect the MHL OUT of the SL-8800-M3X MHL 3 Adapter to the MHL input port of the MHL3 Sink DUT.
6. Make sure that MHL Sink DUT can output video to display.
7. Double-click the HDCP icon on the PC desktop. The main window of the SL-8800 HDCP 2.X Analyzer GUI appears. Expand the Receiver Test field.
8. In GUI settings, select MHL from the drop-down list as DEVICE item.
9. Click Set LogPath to change the log directory to a desired location if needed.
10. Select test items to test and click Start Test button. The verification process begins.

### 3.2.2. Verification Test of the Authentication Procedure

1. Wait for about 30 seconds for each test item to complete.
2. If Check Video is Yes and the authentication process has completed successfully, the Select Output Video Option dialog box pops up to let you select the output video pattern that matches the one on the Display Device. If Check Video is No, a dialog box pops up to let you decide whether to continue next item by selecting Continue or Abort.

**Note:** The GUI does not generate a report, rather only a txt file for each test item, if Abort is selected.

3. Check the test results according to GUI or the report file.

- Notes:**
1. There is no need to unplug and plugin the HDMI cable during the test process.
  2. For the 2C side, The SL-8800 TE Pseudo-Source emulates the transmitter functions.

### 3.3. Report File

Figure 3.2 shows a sample report file for Sink DUT testing results.

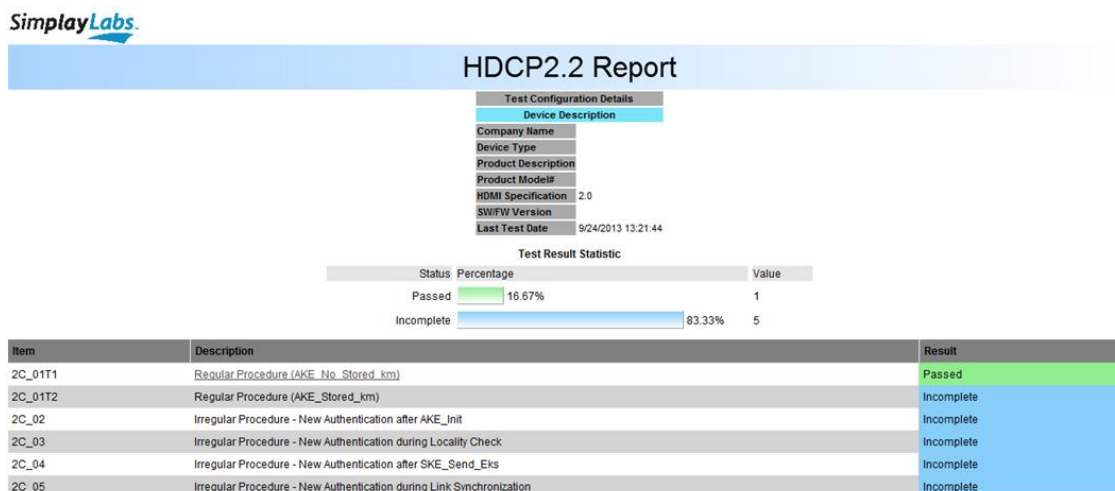


Figure 3.2. Sample Report File of Sink DUT Testing

## 4. Downstream Procedure Repeater Test for Dongle DUT

This section describes the test items, test operation guide, and sample report file.

### 4.1. Test Items

Table 4.1 lists the test items for Dongle DUT testing, when the SL-8800 TE emulates a receiver device.

**Table 4.1. 3A. Downstream Procedure with Receiver**

Item ID	Test Description	Check Video
3A-01	Regular procedure: With previously connected Receiver (With stored km)	Yes
3A-02	Regular procedure: With newly connected Receiver (Without stored km) TE does not complete pairing	No
3A-03	Irregular Procedure – Rx certificate not received	No
3A-04	Irregular Procedure – Verify Receiver Certificate	No
3A_05T1	Irregular Procedure – Invalid H' Invalid H'	No
3A_05T2	Irregular Procedure – AKE_Send_H_prime timeout Not sending H' with Paired Receiver ID	No
3A_05T3	Irregular Procedure – AKE_Send_H_prime timeout Not sending H' with Unpaired Receiver ID	No
3A_06	Irregular Procedure – Pairing Failure	No
3A_07T1	Irregular Procedure – Locality Failure Invalid L'	No
3A_07T2	Irregular Procedure – Locality Failure Not sending L'	No

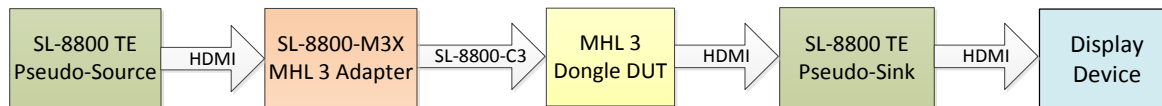
Table 4.2 lists the test items for Dongle DUT testing, when the SL-8800 TE emulates a repeater device.

**Table 4.2. 3B. Downstream Procedure with Repeater**

Item ID	Test Description	Check Video
3B_01	Regular Procedure – With Repeater	Yes
3B_02	Irregular Procedure – Timeout of Receiver ID list Not sending Receiver ID list	No
3B_03	Irregular Procedure – Verify V'	No
3B_04	Irregular Procedure – MAX_DEVS_EXCEEDED	No
3B_05	Irregular Procedure – MAX_DEVS_EXCEEDED	No
3B_06	Irregular Procedure – Rollover of seq_num_V	No
3B_07T0	Irregular Procedure – Failure of Content Stream Management Sending Invalid M'	No
3B_07T1	Irregular Procedure – Failure of Content Stream Management Not sending M'	No

## 4.2. Test Operation

### 4.2.1. Connection Setup for Dongle DUT Testing



**Figure 4.1. Downstream: Connection Setup for MHL 3 Dongle DUT Testing**

Figure 4.1 shows the connection between the SL-8800 TE Pseudo-Source, SL-8800-M3X MHL 3 Adapter (see Figure 1.1 on page 5), MHL 3 Dongle DUT, SL-8800 TE Pseudo-Sink, and Display Device. Follow these steps to setup the connection and start testing.

1. Power on the SL-8800 TE Pseudo-Source and SL-8800 TE Pseudo-Sink, and connect the SL-8800 TE Pseudo-Source to the PC using the USB cable.
2. Power on the SL-8800-M3X MHL 3 Adapter.
3. Turn on the MHL 3 Dongle DUT.
4. Connect the HDMI OUT connector of the SL-8800 TE Pseudo-Source to the HDMI IN connector of the SL-8800-M3X MHL 3 Adapter.
5. Connect the MHL OUT of the SL-8800-M3X MHL 3 Adapter to the MHL input port of the MHL 3 Dongle DUT using SL-8800-C3 cable.

**Note:** The SL-8800-C3 shown in the Figure 4.2 is used to test MHL Dongle DUT.



**Figure 4.2. SL-8800-C3 Cable**

6. Connect the HDMI OUT connector of MHL 3 Dongle DUT to the SL-8800 TE Pseudo-Sink.
7. Make sure that MHL 3 Dongle DUT can output video to display.
8. Double-click the HDCP icon on the PC desktop. The main window of the HDCP 2.X Analyzer GUI appears. Expand the Repeater Test field.
9. In GUI Settings, select MHL\_HDMI from the drop-down list as DEVICE item.
10. Click Set LogPath to change the log directory to a desired location if needed.
11. Select test items. Click Start Test button. The verification process begins.

## 4.2.2. Verification Test of the Authentication Procedure

1. Wait for about 30s for each test item.
2. If Check Video is Yes and the authentication process has completed successfully, the Select Output Video Option dialog box pops up to let you select the output video pattern that matches the one on the Display Device. If Check Video is No, a dialog box pops up to let you decide whether to continue next item by selecting Continue or Abort.

**Note:** The GUI does not generate a report, rather only a txt file for each test item, if Abort is selected.

3. Check the test results according to GUI or the report file.

- Notes:**
1. For 3A, the SL-8800 TE Pseudo-Source emulates a normal transmitter and the SL-8800 TE Pseudo-Sink emulates the receiver functions.
  2. For 3B, the SL-8800 TE Pseudo-Source emulates a normal transmitter and the SL-8800 TE Pseudo-Sink emulates the repeater functions.

## 4.3. Report Description

Figure 4.3 shows a sample report file of downstream procedure testing results for MHL 3 Dongle DUT.

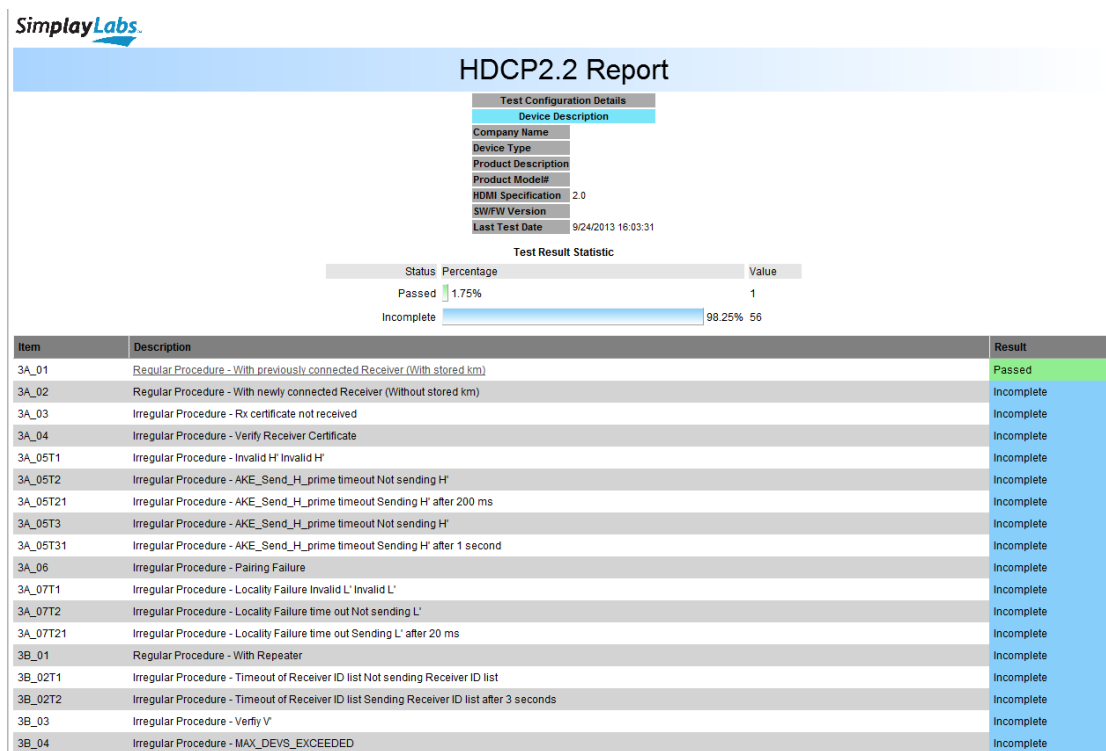


Figure 4.3. Sample Report File of Downstream Procedure Testing Results for MHL 3 Dongle DUT

## 5. Upstream Procedure Repeater Test for Dongle DUT

This section describes the test items, test operation guide, and sample report file.

### 5.1. Test Items

Table 5.1 lists the test items for Dongle DUT testing, when the SL-8800 TE emulates a transmitter device.

**Table 5.1. 3C\_xx. DUT connected to Transmitter (SL-8800 TE Pseudo-Source) and Receiver (SL-8800 TE Pseudo-Sink)**

Item ID	Test Description	Check Video
3C_01_1	Regular Procedure – Transmitter - DUT –Receiver Not previously connected Content Stream Management done in serial with propagation of topology information	Yes
3C_01_2	Regular Procedure – Transmitter - DUT –Receiver Not previously connected Content Stream Management done in parallel with propagation of topology information	Yes
3C_01_3	Regular Procedure – Transmitter - DUT –Receiver Previously connected Content Stream Management done in serial with propagation of topology information	Yes
3C_01_4	Regular Procedure – Transmitter - DUT –Receiver Previously connected Content Stream Management done in parallel with propagation of topology information	Yes
3C_04	Irregular Procedure – New Authentication after AKE_Init	Yes
3C_05	Irregular Procedure – New Authentication during Locality Check	Yes
3C_06	Irregular Procedure – New Authentication after SKE_Send_Eks	Yes
3C_07	Irregular Procedure – New Authentication during Link Synchronization	Yes
3C_08	Irregular Procedure – Rx Certificate invalid	No
3C_09_1	Irregular Procedure – Invalid H' Invalid H'	No
3C_09_2	Irregular Procedure – AKE_Send_H_prime timeout Not sending H' with Paired Receiver ID	No
3C_10_1	Irregular Procedure – Locality Failure Invalid L'	No
3C_10_2	Irregular Procedure – Locality Failure time out Not sending L'	No

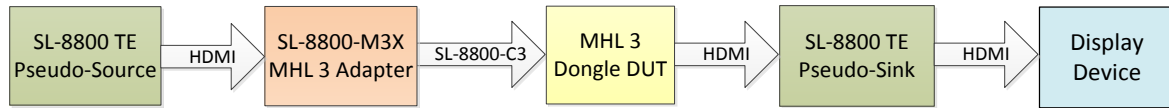
Table 5.2 lists the test items for Dongle DUT testing, when the SL-8800 TE Pseudo-Source emulates a transmitter device and the SL-8800 TE Pseudo-Sink side emulates a repeater device.

**Table 5.2. 3C\_xx. DUT connected to Transmitter (SL-8800 TE Pseudo-Source) and Repeater (SL-8800 TE Pseudo-Sink)**

Item ID	Test Description	Check Video
3C_11	Regular Procedure – Transmitter - DUT -Repeater (With stored km)	Yes
3C_12	Regular Procedure – Receiver disconnected after AKE_Init	No
3C_13	Regular Procedure – Receiver disconnected after Km	No
3C_14	Regular Procedure – Receiver disconnected after locality check	No
3C_15	Regular Procedure – Receiver disconnected after ks	No
3C_16	Irregular Procedure – Timeout of Receiver ID list	No
3C_17	Irregular Procedure – Verify V'	No
3C_18	Irregular Procedure – DEVICE_COUNT	No
3C_19	Irregular Procedure – DEPTH	No
3C_20	Irregular Procedure – MAX_DEVS_EXCEEDED	No
3C_21	Irregular Procedure – MAX_CASCADE_EXCEEDED	No
3C_22	Irregular Procedure – Repeater with zero downstream device	No
3C_23	Regular Procedure – Propagation of HDCP_2_0_REPEATER_DOWNSTREAM flag	Yes
3C_24	Regular Procedure – Propagation of HDCP1_DEVICE_DOWNSTREAM flag	Yes
3C_25_T0	Regular Procedure – Content Stream Management – Valid M'	Yes
3C_25_T1	Regular Procedure – Content Stream Management - Invalid M'	No
3C_25_T2	Regular Procedure – Content Stream Management - Not sending M'	No

## 5.2. Test Operation

### 5.2.1. Connection Setup for Dongle DUT Testing



**Figure 5.1. Upstream: Connection Setup for the MHL 3 Dongle DUT Testing**

Figure 5.1 shows the connection between the SL-8800 TE Pseudo-Source, SL-8800-M3X MHL 3 Adapter (see Figure 1.1 on page 5), MHL 3 Dongle DUT SL-8800 TE Pseudo-Sink, and Display Device. Follow these steps to setup the connection and start testing.

1. Power on the SL-8800 TE Pseudo-Source and SL-8800 TE Pseudo-Sink, and connect the SL-8800 TE Pseudo-Source to the PC using the USB cable.
2. Power on the SL-8800-M3X MHL 3 Adapter.
3. Turn on the MHL 3 Dongle DUT.
4. Connect the HDMI OUT connector of the SL-8800 TE Pseudo-Source to the HDMI IN of the SL-8800-M3X MHL 3 Adapter.
5. Connect the MHL OUT of the SL-8800-M3X MHL 3 Adapter to the MHL input port of the MHL 3 Dongle DUT using SL-8800-C3 cable.
6. Connect the HDMI OUT connector of MHL 3 Dongle DUT to the SL-8800 TE Pseudo-Sink.
7. Make sure that MHL 3 Dongle DUT can output video to display.
8. Double-click the HDCP icon on the PC desktop. The main window of the HDCP 2.X Analyzer GUI appears. Expand the Repeater Test field.
9. In GUI settings, MHL\_HDMI from the drop-down list as DEVICE item.
10. Click Set LogPath to change the log directory to a desired location if needed.
11. Select test items. Click Start Test button. The verification process begins.

## 5.2.2. Verification Test of the Authentication Procedure

1. Wait for about 30s for each test item.
2. If Check Video is Yes and the authentication process has completed successfully, the Select Output Video Option dialog box pops up to let you select the output video pattern that matches the one on the Display Device. If Check Video is No, a dialog box pops up to let you decide whether to continue next item by selecting Continue or Abort.

**Note:** The GUI does not generate a report, rather only a txt file for each test item, if Abort is selected.

3. Check the test results according to GUI or the report file.

- Notes:**
1. For 3C-01~3C-10, the SL-8800 Pseudo-Source emulates the transmitter functions and the SL-8800 Pseudo-Sink emulates the receiver functions.
  2. For 3C-11~3C-25, the SL-8800 Pseudo-Source emulates the transmitter functions and the SL-8800 Pseudo-Sink emulates the repeater functions.

## 5.3. Report File

Figure 5.2 shows a sample report file of upstream procedure testing results for MHL 3 Dongle DUT.

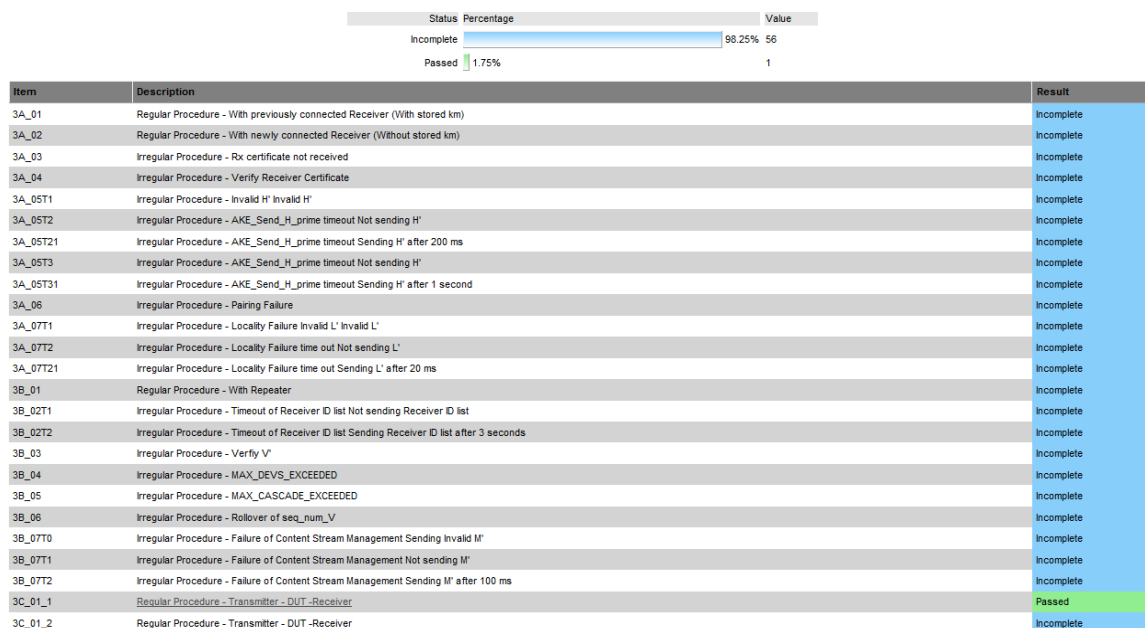


Figure 5.2. Sample Report File of Upstream Procedure Testing results for MHL 3 Dongle DUT



## References

This is a list of the standards abbreviations appearing in this document.

Abbreviation	Standards Publication, Organization, and Date
MHL	<i>Mobile High-definition Link Specification</i> , Version 3, MHL, LLC, August 2013
MHL CTS	<i>Main required methods</i> , Version 3.0
CTS MOI	<i>Simplay MOI for CTS 3.2</i>

## Revision History

### Revision B, September 2014

- Updated [Table 2.1. 1A. Downstream Procedure with Receiver](#).
- Added [Downstream Procedure Repeater Test for Dongle DUT](#) and [Upstream Procedure Repeater Test for Dongle DUT](#) sections.

### Revision A, March 2014

First production release.

### General Warranty Terms

Simplay Labs, LLC., (Simplay Labs), offers a limited warranty for its Simplay Labs products. Any product first sold to your business is guaranteed to be free from defects in both components and workmanship under regular uses. The warranty period commences on the date the item ships.

Attention: Your invoice with the date of purchase, model number and serial number of the product is your proof of the date of purchase.

This International Limited Warranty is applicable and shall be honored in every country where Simplay Labs or its Authorized Service Providers offer warranty service subject to the terms and conditions provided in this International Limited Warranty Statement.

### Simplay Labs Products Warranty Period

The warranty terms for Simplay Labs products are: Domestic & Asia	EU & UK
1 Year	2 Year

The International Limited warranty does not affect your statutory rights.

### System Warranty

During the warranty period, the defective hardware of Simplay Labs products will be either repaired or replaced, with new or like new products, at the discretion of Simplay Labs except in the cases listed in the Limitation of Liability Clause of this document.

This International Limited Warranty covers the costs of service parts and labor required to restore your product to fully functional condition. Simplay Labs will, at its discretion, repair or replace any defective products or parts thereof covered by this International Limited warranty with refurbished parts of the product that are equivalent to new or like new products in both functionality and performance. A product or part that is repaired or replaced under this International Limited warranty shall be covered for the remainder of the original warranty period applying to the product or part, or for 90-days, whichever expires last. All exchanged parts and products under this International Limited Warranty will become the property of Simplay Labs.

### Software Limited Warranty

Simplay Labs offers no warranty, either explicitly expressed or implicitly implied, for any pre-installed software, its quality, performance, functionality, or compatibility for a particular purpose. Nor does Simplay Labs warrant that the functions contained in the software will meet specific requirements or that the operation of the software will be uninterrupted or error-free. Thus, the software is sold 'as is' unless otherwise explicitly stated in writing.

### Obtaining the Warranty Service

Warranty service or Returned Merchandise Authorization (RMA) under this International Limited Warranty will be honored only if claims are made within the warranty period. For notifications to Simplay Labs or products outside the warranty period, the process will be the same, but charges may apply. Contact details may be obtained on Simplay Labs website ([www.simplaylabs.com/support](http://www.simplaylabs.com/support)). Customers are requested to perform the following actions before claiming Simplay Labs product as defective:

Owner must notify Simplay Labs, during the warranty period, in writing of alleged defect, and allow Simplay Labs a reasonable opportunity to inspect the allegedly defective product;

No Product may be returned without Simplay Labs' consent, The Simplay Labs RMA# must accompany all returns, and all returns must be delivered to Simplay Labs within the warranty period;

Owner may, then at its own expense, return the allegedly defective Product, freight pre-paid and in the original packaging, accompanied by a brief statement explaining the alleged defect to Simplay Labs;

If Simplay Labs determines that any returned Product is not defective, or if Simplay Labs determines that the defect is not covered by the warranty, Simplay Labs will return the Product to the Owner at Owner's expense, freight collect, and Owner agrees to pay Simplay Labs' reasonable cost of handling and testing;

Upon determining that a returned product is defective, to receive warranty service Owner will need to present the invoice showing the original purchase transaction. If shipping the product, Owner will need to package it carefully and send it, transportation prepaid by a traceable, insured method, to the Simplay Labs Service Center. Package the product using adequate padding material to prevent damage in transit. The original container is ideal for this purpose. Include the RMA#, your name, return shipping address, email address and telephone number where you may be reached during business hours, inside the shipping package with the unit. Any replacement unit will be warranted under these Terms and Conditions for the remainder of the original warranty period or ninety (90) days whichever is longer.

Make sure to back up any important data and remove all confidential, proprietary information. Neither Simplay Labs nor its authorized service centers are responsible for damages to or loss of any programs, data, or other software and files in the items.

Refer to user manual enclosed within the product package and/or information on [www.simplaylabs.com/support](http://www.simplaylabs.com/support) for important tips on how to operate and troubleshoot the product

### International Warranty

Warranty may be valid when a Simplay Labs product is purchased in one country and transferred to another country, without voiding the warranty. Please be advised that service availability and response time may vary from country to country.

Simplay Labs is not responsible for any export and import control issues, handling fees, tariffs, import duties, and all other related fees where owner is responsible for shipping its products.

#### Disclaimer of Warranty

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THE RIGHTS AND OBLIGATIONS OF THE PARTIES UNDER THIS AGREEMENT SHALL NOT BE GOVERNED BY THE PROVISIONS OF THE 1980 U.S. CONVENTION ON CONTRACTS FOR THE INTERNATIONAL SALE OF GOODS OR THE UNITED NATIONS CONVENTION ON THE LIMITATION PERIOD IN THE INTERNATIONAL SALE OF GOODS, AS AMENDED (COLLECTIVELY, THE "CONVENTIONS"); RATHER, THE RIGHTS AND OBLIGATIONS OF THE PARTIES SHALL BE GOVERNED BY THE LAWS OF THE STATE OF CALIFORNIA, INCLUDING ITS PROVISIONS OF THE UNIFORM COMMERCIAL CODE. FOR THE AVOIDANCE OF DOUBT, THE CONVENTIONS ARE HEREBY EXCLUDED.

This Limited Warranty gives you specific legal rights. You may also have other rights that may vary from state to state or from country to country. You are advised to consult applicable state or country laws for full determination of your rights.

Simplay Labs products are not designed for any "critical applications." "Critical applications" shall mean life support systems, medical applications, connections to implanted medical devices, commercial transportation, nuclear facilities or systems or any other applications where product failure could lead to injury to persons or loss of life or property damage.

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#### Limitation of Liability

Simplay Labs reserves the rights to refuse warranty service of products under disputable conditions. Simplay Labs also holds the rights to declare final decision whether products are within warranty conditions. The following actions and damages will result in voiding the limited warranty:

Damage caused by act of nature, such as fire, flood, wind, earthquake, lightning, etc.

Damage or incompatibility caused by failure to perform a proper installation or to provide an appropriate operational environment for the product, including but not limited to unstable wired/ wireless network connection and phone lines, bad grounding, external electro-magnetic fields, direct sunlight, high humidity and vibration.

- Damage caused by impact with other objects, dropping, falls, spilled liquids, or submersion in liquids.
- Damage caused by unauthorized repair or disassembling of the product.
- Damage caused by any other abuse, misuse, mishandling, or misapplication.
- Damage caused by third party peripherals (including but not limited to visible damages on motherboard or other electronic parts of the product such as burn spots after electric discharge, melting, fusing, splitting, etc.).
- Any unauthorized software or modification of built-in software not approved by Simplay Labs.
- The serial number of the product (or serial number stickers of its parts) has been modified, removed, blurred or damaged.
- Cracks and scratches on LCD and plastic material as well as other defects caused by transportation, handling or customer abuse.



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