VESA DisplayPort

Version 1.4

Teledyne LeCroy

Source Display Stream Compression (DSC) Compliance Tests MOI v1.1

February 21, 2020
Preface

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Document Revision History
1.0 August 14, 2019 – Initial version.
1.1 February 21, 2021 – Updated procedure to specify need for Real Time monitoring.

Contact Information
The URL for the VESA web site is: http://www.vesa.org/
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Introduction

Formally, each test description in the CTS contains the following sections:

- Test Objective
- Required Test Equipment
- Test Procedures

This MOI reduces the CTS test description to practice using the Teledyne LeCroy test equipment and procedures.

Scope

This document provides DSC Compliance testing procedures for DisplayPort 1.4 Source devices.

References

The following specification is referenced in this document:

The most current version of above document is available to VESA members at the following website: http://www.vesa.org/join-vesamemberships/member-downloads/
Test Objective – Source Tests

Refer to the DisplayPort Link Layer CTS for detailed test objectives for each test. Each section of the CTS links back to the DisplayPort Standard.

Required Test Equipment

<table>
<thead>
<tr>
<th>Item</th>
<th>Generic Equipment</th>
<th>Vendor Specific Equipment</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>DisplayPort 1.4</td>
<td>980 Advanced Test Platform series: 980 DisplayPort 1.4 Generator/ Protocol Analyzer module or 980 DisplayPort 1.4 USB-C/eDP Generator/ Protocol Analyzer module  Hereinafter these modules will be referred to as the: “980 DisplayPort 1.4 module.” with DP DSC Compliance Test Package license option</td>
<td>1</td>
</tr>
</tbody>
</table>

Procedure

The 980 DisplayPort 1.4 module can be installed in the 980B Advanced Test Platform.

Test Setup

The Pass/Fail criteria is assessed by the application with no human examination required.

Note: Card positioning may vary depending on configuration.

980B with DP 1.4 modules
Test Procedure

Use the following procedure to conduct this test.

1. Connect Source DUT to the 980 DP 1.4 module in the 980 chassis. Make the connection at the module’s port labeled Rx. Use a standard DP cable. The figures below show depictions of connections to both the 980 DP 1.4 modules in the 980B Test Platform. Please note that these modules can also reside in the 980R Test Platform (not shown).

2. Operate the Source DUT to output a video format specified for the specific test in the DSC Compliance Test Specification.

3. Use 980 Embedded Manager GUI (touchscreen) or invoke 980 External Manager GUI (Windows application).

**Important Note:** You will need to initiate the Real Time application to monitoring the
incoming DCS stream. You will then run the DSC source compliance tests through the remote 980 GUI Manager on our host PC.

4 Launch the Real Time Rx Protocol Analyzer Rx application.

The Real Time window appears showing the incoming DSC stream.
Complete the following steps:

5.1 Click on the DisplayPort icon in the Compliance Tests page of the Apps panel.
5.2 Click on the DisplayPort 1.4 Source DSC Compliance Test icon.
5.3 Navigate to the CDF tab if not already there. If there is a saved CDF file, then click on Open and select it. Otherwise, enter the DUT’s CDF information for each tab and optionally click on Save to save the CDF.

Make the changes on the DSC tab to match the capabilities of the source device under test.
### DSC TRANSMISSION
*Is DSC transmission supported?*
- Yes
- No

### DSC TX VERSION
*Supported DSC Version.*
- DSC Version 1.1
- DSC Version 1.2

### DSC_TX_COLOR
*Supported DSC Colorimetry.*
- RGB
- 4:4:4
- Simple 4:2:2
- Native 4:2:0

### DSC_TX_COLOR_DEPTH
*DSC Maximum bits per component (bpc).*
- 8
- 10
- 12

### DSC_TX_BLOCK_PREDICTION
*DSC Block Prediction supported?*
- Yes
- No

### DSC_TX_SLICE
*Supported DSC Slice.*
- 1
- 2
- 4
- 8
- 10
- 12
- 16
- 20
- 24

### DSC_TIMINGS
*Supported DSC Timings.*
- 7680x4320p @ 100Hz
- 7680x4320p @ 60Hz
- 7680x4320p @ 30Hz
- 5120x2160p @ 120Hz
- 5120x2160p @ 60Hz
- 5120x2160p @ 30Hz
- 3840x2160p @ 120Hz
- 3840x2160p @ 60Hz
- 3840x2160p @ 30Hz
- 1920x1080p @ 120Hz
- 1920x1080p @ 60Hz
- 1920x1080p @ 30Hz
5.4 Click on the Test Selection tab and select the source compliance tests that you wish to run. Refer to the sample screen below. The example below shows the DSC tab with all tests selected.

5.5 Click on Test Options / Preview tab and review the list of tests. Refer to the sample screen below.
5.6 Click on Execute tests activation button to initiate the test. Refer to the sample screen below.
**Note:** You will be prompted with a dialog box to assign a name to the test results. Refer to the screen example below:

Enter a name, click OK and the test will begin.

A Test Window will appear indicating the progress of the test.

A dialog box will appear (below) indicating the test setup.

If the 980 DP Source DSC compliance test application reports PASS or FAIL as shown below.