



980 Protocol Analyzer for HDMI™

HIGH DEFINITION MULTIMEDIA INTERFACE

User Guide – HDMI Compliance Tests

Rev: B33



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1 About the 980

This chapter provides an overview of features of the 980 Protocol Analyzer and the 980 GUI Manager. The 980 Protocol Analyzer is an HDMI analyzer for HDMI source devices. It provides visibility into the HDMI protocol to help resolve common interoperability problems in HDMI systems. The 980 GUI Manager is a PC application to manage and use the 980 Protocol Analyzer.

There are two options for the 980: 1) 980 225MHz “Gen 2” and 2) 980 297MHz “Gen 3”. The 980 225MHz “Gen 2” is able to parse HDMI streams from source devices with a TMDS clock up to 225MHz. The 980 297MHz “Gen 3” version is able to parse HDMI streams from source devices with a TMDS clock and pixel clock up to 297MHz.



1.1 What makes the 980 Unique?

The 980 Protocol Analyzer for HDMI or MHL source devices provides full visibility into the protocol, timing, control and auxiliary data. It captures and decodes encrypted or unencrypted metadata (audio sample, infoframes and other data packets) as well as DDC transactions and CEC messages (C-Bus transactions for MHL).

Competitive “analyzers” available on the market are more limited because they utilize commercial silicon chips. The 980 uses a proprietary solution and therefore can provide much greater visibility into the protocol, timing and control data. The competitive “analyzers” support some of the 980 features but not nearly all of them. They support functional testing but not true interoperability testing. Functional test “analyzers” often support only real time monitoring. The 980 supports capture, store and analysis as well as Real Time monitoring.

For these same reasons, the 980 can support all of the tests in the HDMI and MHL source protocol compliance test specification. Functional test instruments cannot. For example, the 980 supports all the Protocol tests in Test 7-17 of the HDMI Compliance Test Specification and the Basic Protocol Tests in the section 3.2.2.2 in the MHL Compliance Test Specification related to control periods, preamble and guard bands. Similarly the 980 can measure the audio sample rate precisely and therefore measure audio jitter correctly. Functional test instruments cannot support these tests correctly.

1.2 Scope of this User Guide

This User Guide provides descriptive and procedural information on the HDMI compliance test options for testing HDMI sources and sinks. The HDMI sink compliance test is only supported on 980 Protocol Analyzer 225MHz “Gen 2”. The HDMI source compliance test is supported both the 980 the 980 225MHz “Gen 2” product version and the 980 297MHz “Gen 3” product version. Some of the source compliance tests are not supported on the 980 225MHz “Gen 2” unit (for example the 4K x 2K Video Formats Test). The HDMI sink compliance test is only supported on the “Gen 3” version of the product.

This User Guide provides descriptive and procedural information on the HDMI compliance test options for testing HDMI sources and sinks. Although you can run the compliance tests through the 980’s “embedded GUI,” all the examples used in the procedures of this User Guide are taken from the external standalone PC GUI application. The procedures are identical between the embedded GUI running through the 980 front panel display and the external standalone PC application but the look and feel is slightly different.

Note: There is a separate user guide for the MHL source and sink compliance tests. This MHL compliance test user guide can be found on the Quantum Data website at: <http://www.quantumdata.com/products/MHL.asp>.

1.3 Changes to this User Guide

The following changes have been made to this User Guide since the last version:

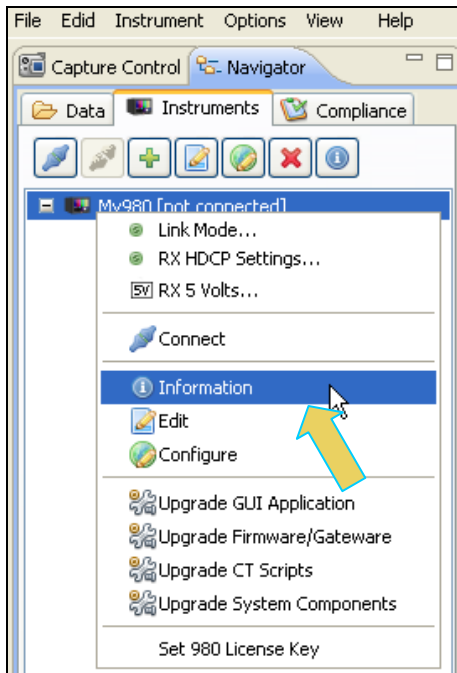
- Updated various diagrams.

Note: Please be sure to check the Quantum Data website for updates to this User Guide.

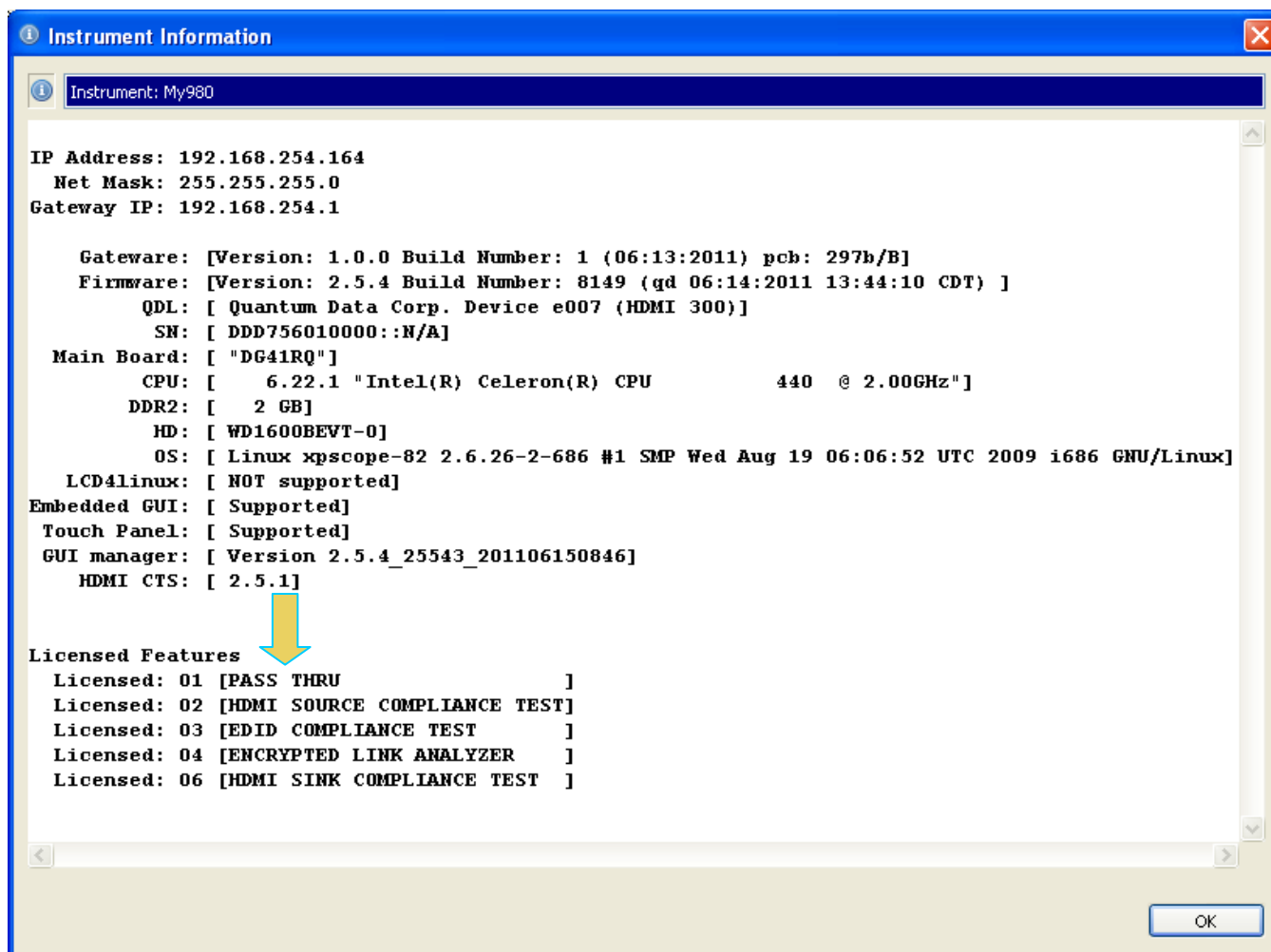
1.4 What options are available with the 980?

The 980 offers four options that you can purchase with the 980 Protocol Analyzer. You must have a license to use these optional features: 1) Encrypted Link Analyzer mode for monitoring encrypted data between an HDMI source and sink device. 2) HDMI Source Compliance tests in accordance with HDMI 1.4 CTS Sections 7.4 through 7.8. 3) EDID Compliance test in accordance with Sections 8.2 and 8.5 of the HDMI 1.4 CTS. 4) HDMI Sink Compliance tests in accordance with HDMI 1.4 CTS Sections 8.2 and 8.4 through 8.8 (*supported on “Gen 3” only*). 5) MHL Source Compliance tests in accordance with MHL 1.0 CTS Section 3. 6) MHL Sink Compliance tests in accordance with MHL 1.0 CTS Section 4. *MHL testing is only supported on the 980 297MHz “Gen 3” version.*

You can determine what options the 980 is provisioned with by looking at the label on the bottom of the 980 or by accessing the Instrument Information screen on either the built-in or external 980 GUI manager. You will need to access the Instrument Information panel through embedded 980 GUI Manager as shown below.



The information is then displayed in a separate window. The information on the **Instrument Information** window will provide you with the information about what options are supported and will also be helpful if you call Quantum Data customer support during an upgrade process.



1.5 980 User Interface

The 980 Protocol Analyzer provides a graphical user interface for operation. This GUI can run both on the 980 itself through the built-in color touch screen display or as a standalone application running on a PC. The look and feel and functions are similar but not identical.

1.5.1 980 GUI Manager

The external 980 GUI Manager provides easy access to the captured data on your PC for sharing with others. Also the external 980 GUI Manager enables you to operate the 980 through a larger interface which allows you to use multiple panels at the same time. There are two key features that are not available in the external 980 GUI Manager however: 1) viewing the incoming video in real time, 2) viewing the HDMI video/audio metadata and DDC transactions in real time using the **Real Time** mode.

1.5.2 Embedded 980 GUI Manager – Real Time Monitoring

You can operate the 980 fully through the embedded 980 GUI Manager. In addition to the basic operation of the 980 Protocol Analyzer the touch screen display GUI also enables you to view the incoming video from a source even when encrypted with HDCP content protection. The ability to view the incoming video also enables you to control the menus of the source device (e.g. STB or DVD player) to ensure that it is in the correct mode. The

embedded 980 GUI Manager also enables you to view the HDMI video metadata and DDC transactions in real time, as they are being captured, using the **Real Time** mode.

You can transfer data captures taken from the embedded 980 GUI Manager to your PC where they can be viewed through the external 980 GUI Manager and also disseminated to others for analysis.

1.6 What kinds of data does the 980 Protocol Analyzer allow you to view?

By providing visibility into the HDMI protocol, the 980 Protocol Analyzer enables you to detect changes and identify anomalies in the HDMI signal. The following is a list of the data types you can view (currently):

- Video
 - Timing parameters
 - Pixel values
- Data Islands, including:
 - Infoframes (AVI, Audio, Source Product Descriptor, etc.)
 - General Control Packet (GCP)
 - Audio Clock Regeneration (ACR)
 - Audio Sample Packet Header including Channel Status Blocks
 - Control data (vsync, hsync, encryption enable)
- Hot plug events
- DDC transactions, including:
 - HDCP
 - EDID
- Control data
- CEC transactions
- Audio Return Channel (ARC) data (not currently supported)

2 Getting Started

This chapter explains what is involved in getting your 980 up and operating to capture data.

2.1 What is in the 980 Protocol Analyzer shipping box?

You will find the following items in the 980 shipping box:

- Quantum Data 980 Protocol Analyzer test instrument.
- Ethernet cable (P/N 30-00151) – used for connecting to the 980 Protocol Analyzer over the LAN interface.
- Detachable power cable – used for supplying power to the 980 Protocol Analyzer.
- HDMI cable (P/N 30-00146) – used for connecting to the 980 Protocol Analyzer to the device under test.
- ESD warning sheet (P/N 68-00204) – information useful for protecting the HDMI interface against static discharge.
- Quick Start Guide (P/N 68-00223). Please note that the quick start guide included in the 980 shipping box does not provide procedures on how to run the optional compliance tests.

2.2 Front Panel

The 980 Protocol Analyzer is equipped with a built-in color touch display that enables you to fully operate the 980 Protocol Analyzer. There is a power button to turn the 980 Protocol Analyzer on (along with the rocker switch on back). The power switch in the front is used when you are turning off the 980 Protocol Analyzer for a short period of time. For extended periods of off time, it is best to power the 980 down by first using the power button on the front and then the rocker switch on the back.

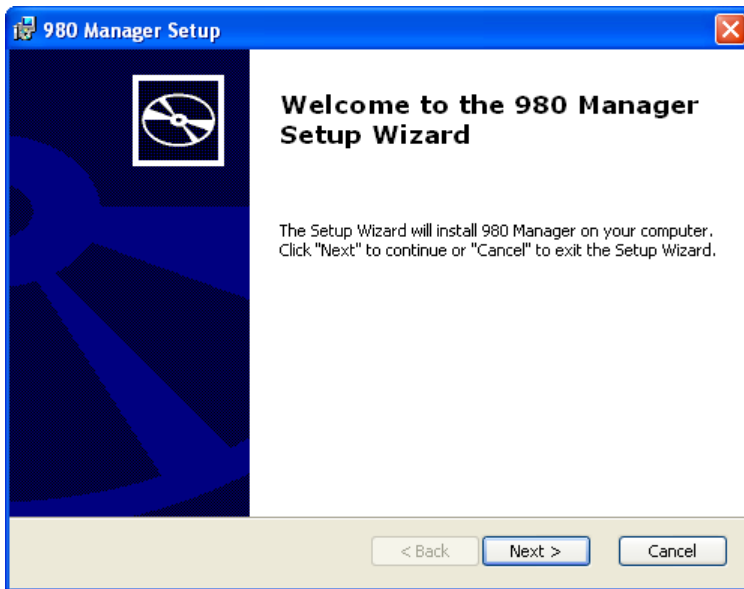
2.3 Downloading and launching the 980 GUI Manager

If you are going to use the external 980 GUI Manager instead of using the embedded 980 GUI Manager, you will have to download the application from the Quantum Data website. The external 980 GUI Manager runs on a Windows platform. Use the following procedures.

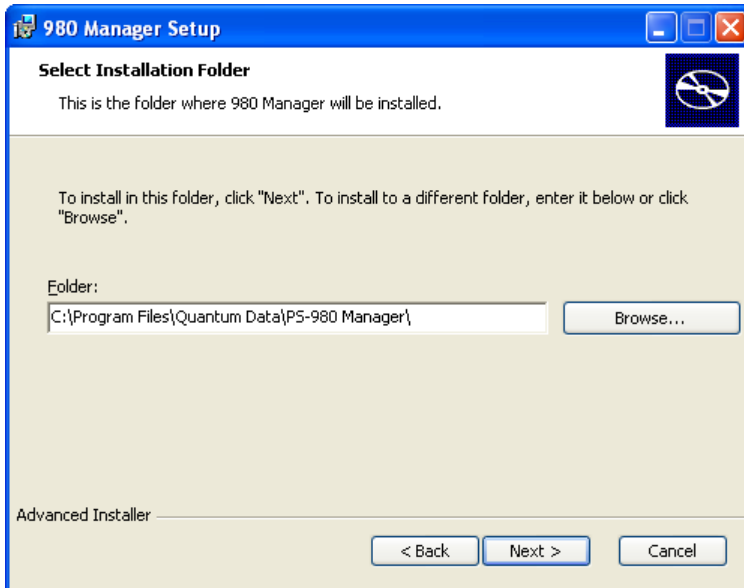
To download the 980 GUI Manager:

1. Download the external 980 GUI Manager from the Quantum Data *downloads* page to your PC. The link to the *downloads* page is: <http://www.quantumdata.com/downloads/index.asp>.
2. Start the installation by double-clicking on your downloaded *.msi file.

The Setup Wizard will launch.



3. Select the installation folder. We recommend installation in the default folder.



4. After installation completes, run the new 980 GUI Manager. It should be available in the Start Menu under **All Programs** → **Quantum Data**, and also from an icon on your Desktop.
5. Verify that the version number in the title bar matches the version on the Quantum Data website Downloads page www.quantumdata.com/downloads.

2.4 Powering up the 980

Use the following procedures to power up the 980 Protocol Analyzer.

1. If necessary, apply power by toggling the rocker type power switch on the back of the 980 as shown below.



Note: The power switch in the front is used when you are turning off the 980 Protocol Analyzer for a short period of time. For extended off periods, it is best to power down the 980 Protocol Analyzer by first using the power button on the front and then the rocker switch on the back.

2. Turn the 980 on by pushing the power button on the lower portion of the front panel.



The following prompt will occur. Select the desired option.



2.5 Connection for 980 GUI Manager and 980 Protocol Analyzer

This subsection describes the procedures for connecting the external 980 GUI Manager to the 980 Protocol Analyzer. If you are using the embedded 980 GUI Manager this procedure does not apply. In order to operate the 980 Protocol Analyzer with the 980 GUI Manager you will need to establish a connection between the 980 Protocol Analyzer and the 980 GUI Manager. The 980 GUI Manager will be running on your laptop or host PC. You will either be connecting directly from the 980 GUI Manager to the 980 Protocol Analyzer through an Ethernet cable or you will be connecting through your corporate LAN network or local Ethernet hub.

When using the external 980 GUI Manager, you will need to ensure that the IP addresses of the 980 and the network interface card on the PC hosting the 980 GUI Manager are compatible. To be compatible, the IP addresses must have the same network portions of their IP address but different host portions. You can either change the IP address of the host PC using standard Windows OS techniques or you can change the IP address of the 980. The 980 is provisioned with a default IP address (192.168.1.10).

If you are connecting directly between your host PC and the 980 Protocol Analyzer or through a local Ethernet hub, you will manually set the IP addresses of the host PC and 980 such that they are compatible. If you are connecting through your corporate LAN, the PC that the external 980 GUI Manager is running on will typically have an IP address assigned to it through DHCP services. In this case you can either assign an IP address to the 980 directly or allow the network DHCP server on your corporate network to assign one to the 980.

The procedures for setting the IP address of the 980 are provided in the following subsection. These procedures also describe how to enable the 980 DHCP client to allow the network to assign an IP address.

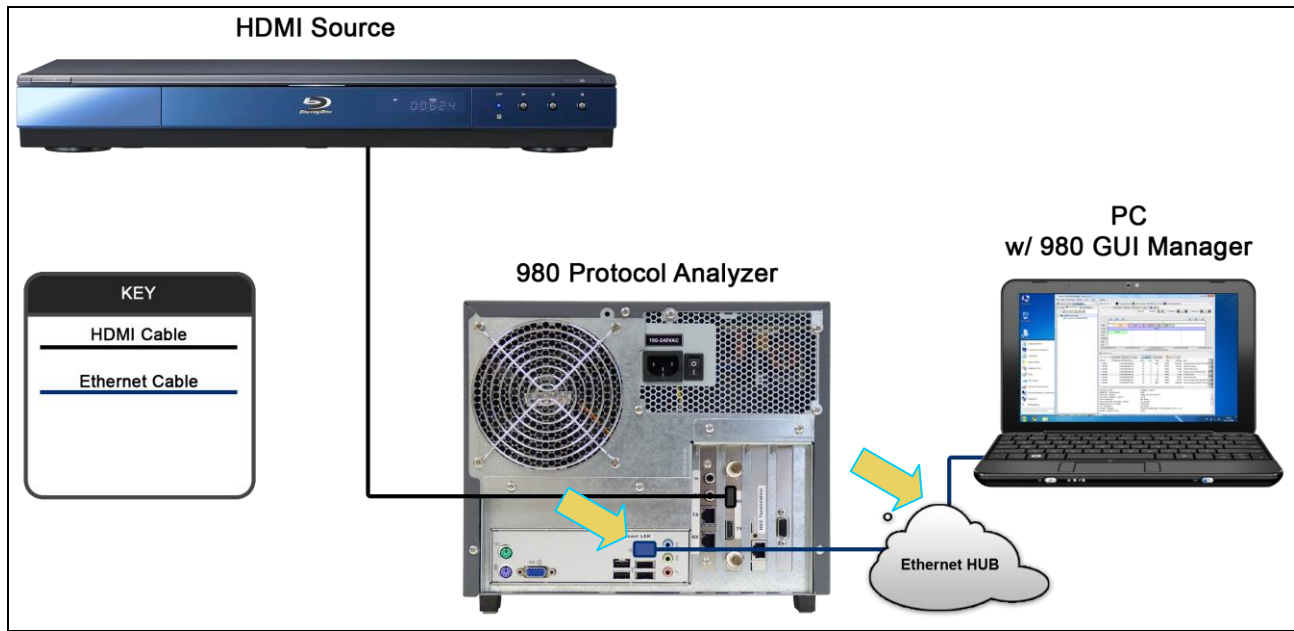
2.5.1 Establishing the Ethernet connections between the 980 GUI Manager and the 980 Protocol Analyzer

This subsection describes how to make the physical Ethernet connections between the PC hosting the external 980 GUI Manager and the 980 Protocol Analyzer. This procedure assumes that you have assembled the 980 Protocol Analyzer and host PC for the 980 GUI Manager and applied power to them.

To make the physical Ethernet connection when using the external 980 GUI Manager and connecting through your corporate LAN or local Ethernet hub:

This procedure is used when you using the external 980 GUI Manager and connecting to the 980 through your corporate LAN network or local Ethernet hub. If you are connecting directly from the 980 to the 980 GUI Manager, use the next procedure.

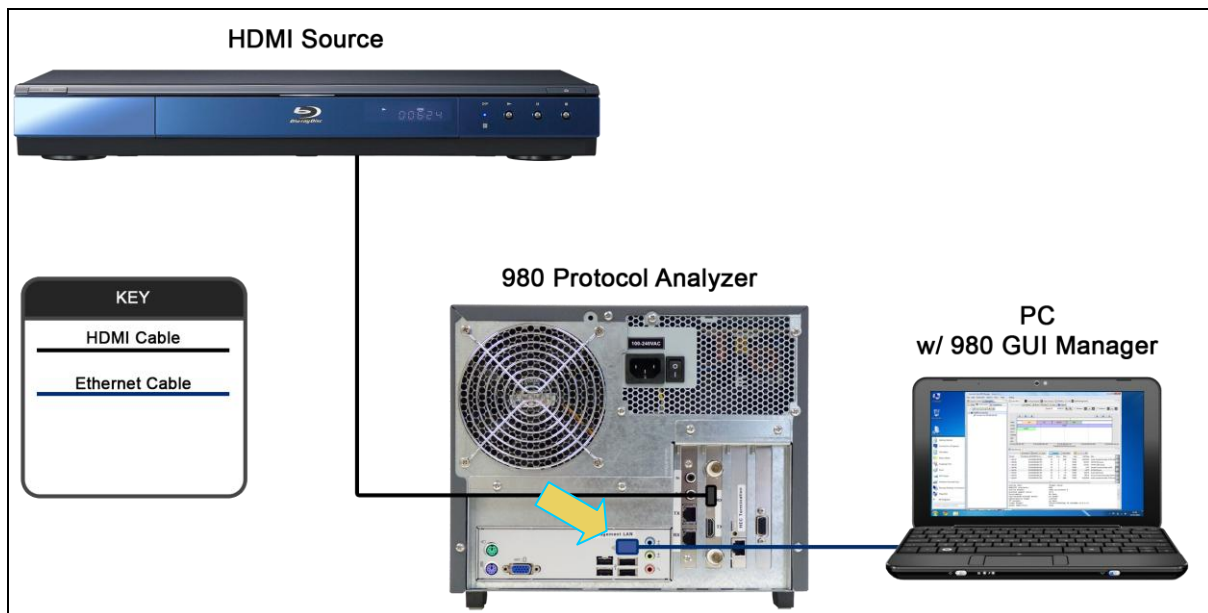
1. Connect an Ethernet cable from the 980 Ethernet jack on the lower left half of the back panel of the 980 Protocol Analyzer to your corporate LAN or local Ethernet hub. Refer to the diagrams below.
2. Connect an Ethernet cable from your PC hosting the external 980 GUI Manager to your corporate LAN or local Ethernet hub. Refer to the diagram below.



To make the physical connections using Ethernet Point-to-Point connection with the external GUI Manager:

This procedure is used when you are using the external 980 GUI Manager and connecting to the 980 directly. If you are connecting through your corporate LAN, use the previous procedure.

1. Connect an Ethernet cable from the 980 Ethernet jack on the lower left half of the back panel of the 980 Protocol Analyzer frame to your PC hosting the 980 GUI Manager. Refer to the diagram below.



2.5.2 Setting the IP address of the 980 Protocol Analyzer

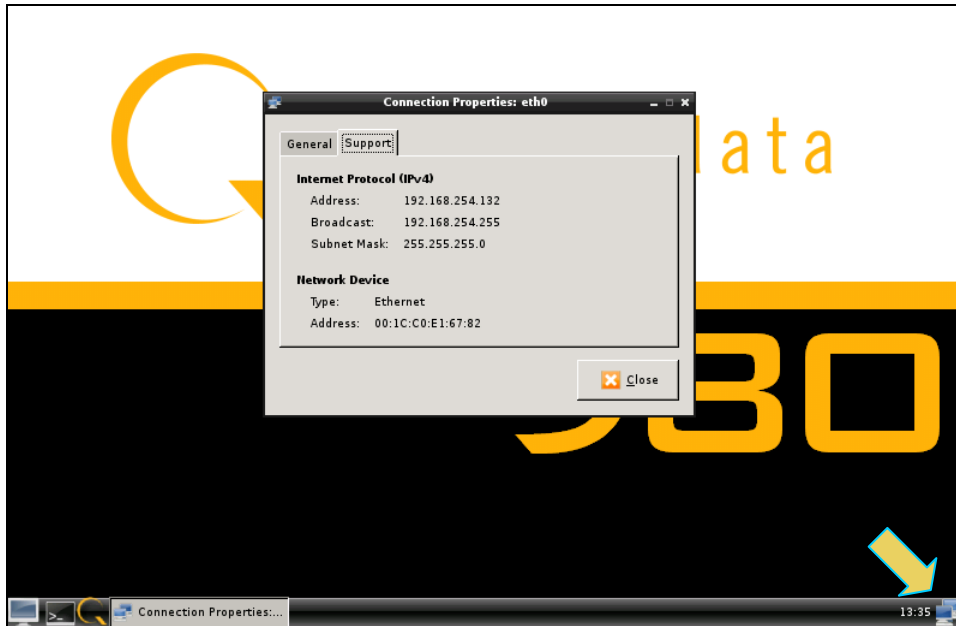
This procedure describes how to set the IP address of the 980 Protocol Analyzer manually. You can change the 980's IP address through the 980's front panel touch screen display. You can also allow the network DHCP server

to assign an IP address. This procedure assumes that you have powered up the 980 and that the embedded 980 GUI Manager has been launched.

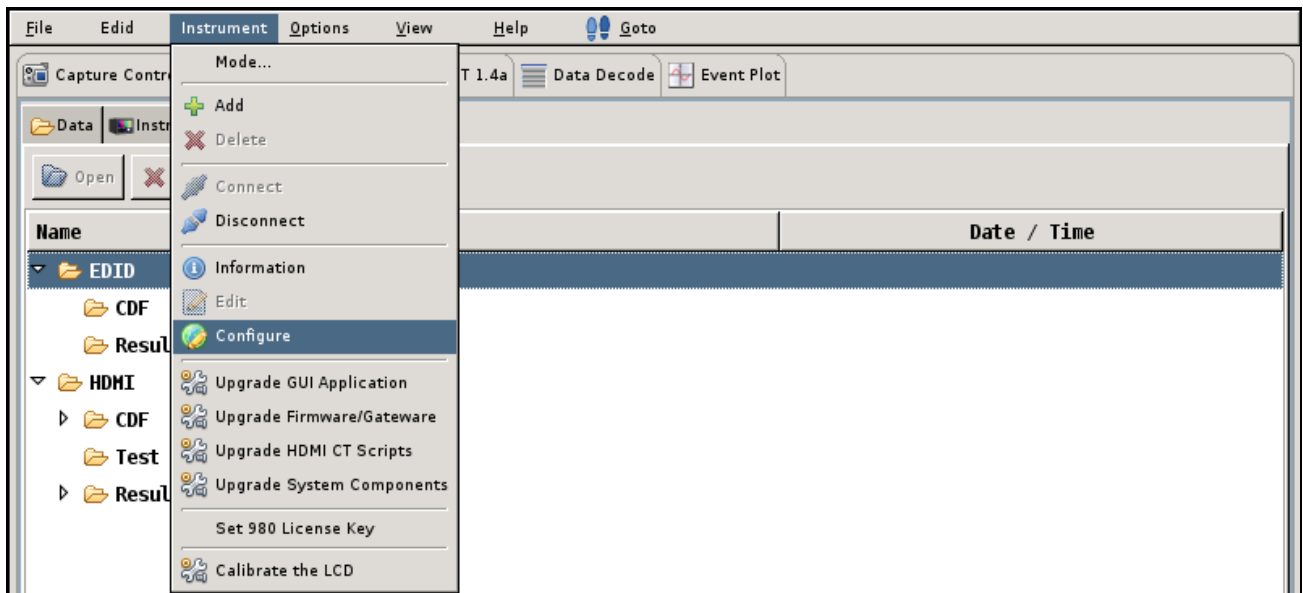
To set the IP address of the 980 through the embedded 980 GUI Manager:

1. Touch select the terminal icon on the lower right corner of the 980 built-in display to access the **Connection Properties** dialog box to view the current IP address. If the IP address of the 980 is compatible with IP address of your PC and corporate network, no further action is required.

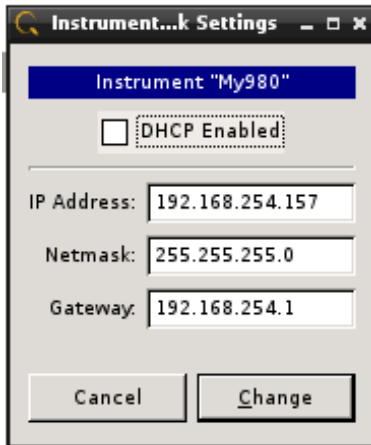
Note: If you do not see the icon in the lower right corner, press the **Hide** button in the Real Time Window.



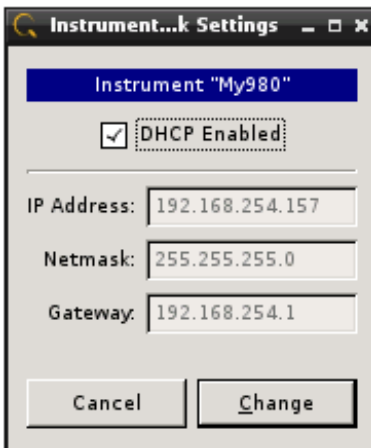
2. Touch select the **Instrument** pulldown menu and select **Configure**.



The following dialog box appears:

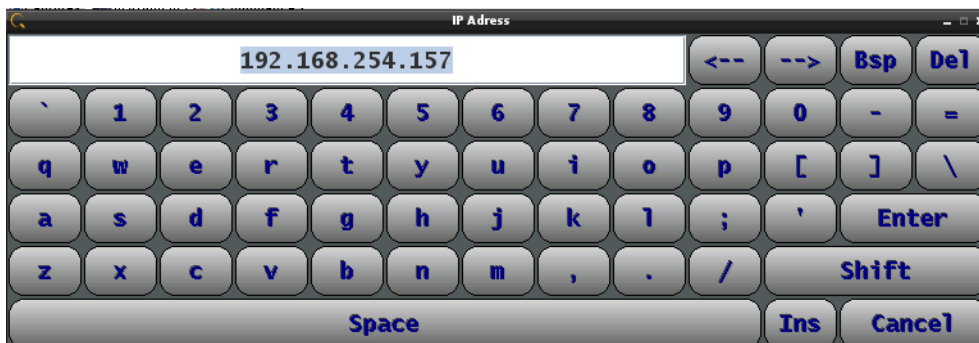


3. If you wish to allow the 980's IP address to be set through DHCP services, select the DHCP Checkbox as shown below:



4. Alternatively, if you wish to set the IP address without DHCP, touch select the IP address field to access the on-line keyboard which enables you to change the IP address. Edit the IP address and press the **Enter** key on the on-line keyboard.

Note: You will have to deselect DHCP if it is checked in order to access the pop up keyboard.



5. Touch select the **Change** activation button to initiate the change. You do not have to reboot the 980 for the IP address change to take effect.

To set the IP address of the 980 through the command line:

Note: To complete this procedure you will first have to establish a physical Ethernet connection between your PC and the 980 Protocol Analyzer. Please refer to the procedures for making the physical connections provided in each Compliance Test sections of this User Guide.

1. Open up a DOS window on your PC.

Note: This procedure requires a telnet session. Use standard Windows OS utilities or third party utilities.

2. Establish a telnet session to the 980 using the default IP address as follows:

```
telnet 192.168.1.10
```

You will be prompted with the `Pscope login:` prompt. Enter the following for a user name and password:

```
Pscope login: qd
```

```
Password: qd
```

When the `p-scope` prompt appears, you will need to execute a command to change its IP address using the following command:

```
Setip <IP_address> <subnet mask> <gateway>
```

Note: You will have to include the subnet mask and gateway address as arguments.

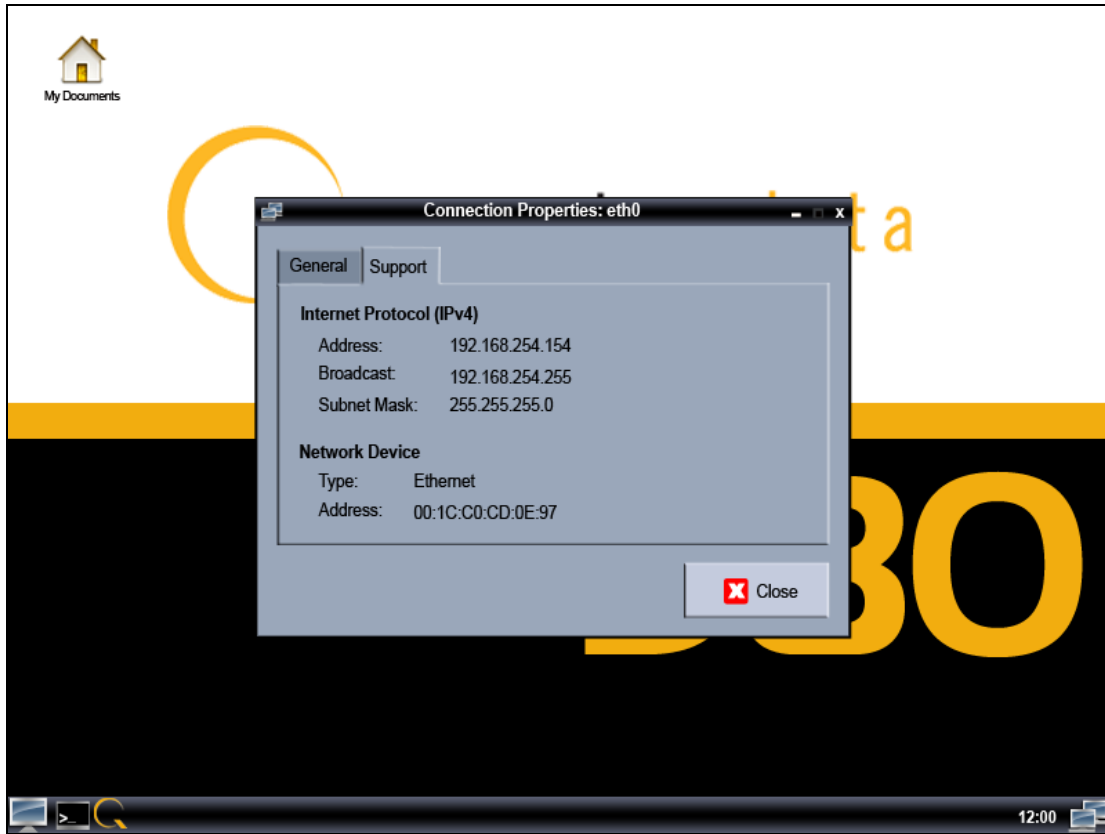
The following is an example:

```
p-scope> setip 192.168.254.100 255.255.255.0 192.168.254.1
```

If you wish to use DHCP to set the IP address, use the following command:

```
p-scope> setip dhcp
```

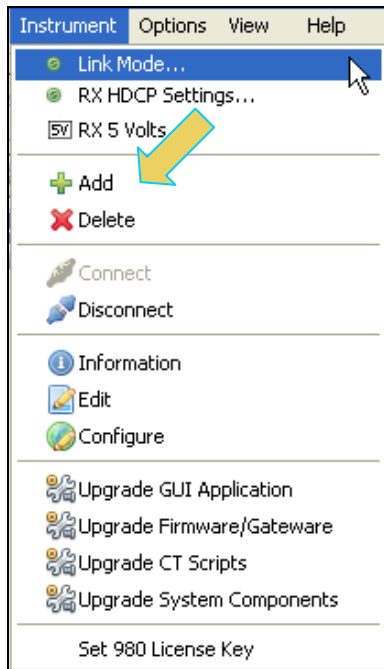
Reboot the 980 by pressing the power button on the lower middle part of the front panel bezel. When the 980 initializes, you will be able to view the new IP address by touch selecting the terminal icon on the lower right corner of the 980 built-in display through the **Connection Properties** dialog box to view the current IP address.



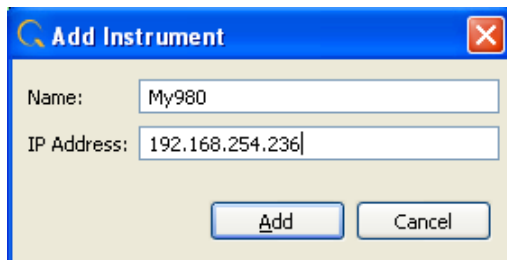
2.5.3 Establishing a Management Session between the 980 GUI Manager and the 980 Protocol Analyzer

This procedure describes how to establish a management session between your 980 GUI Manager and the 980 Protocol Analyzer. The procedure assumes that you have IP addresses provisioned in the 980 and the PC hosting the 980 GUI Manager and that you have a suitable Ethernet cable connected between the PC and the 980 either directly or through your corporate LAN.

1. Add your 980 Protocol Analyzer to the 980 GUI Manager application using the green + icon or the + **Add** item on the Instrument pull-down menu identified below.

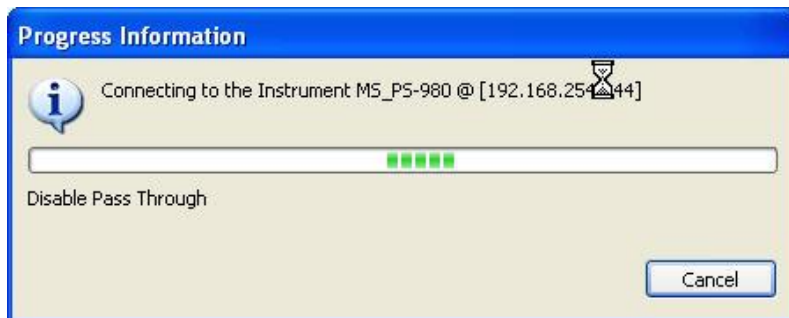


The **Add Instrument** dialog appears enabling you to enter the name and IP information for the 980 that you are trying to connect to (below).



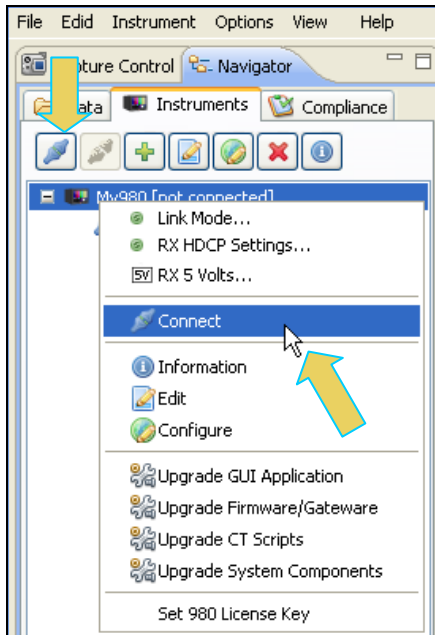
2. Enter the name (any suitable name) and IP address of the 980 Protocol Analyzer that you want to connect to in the **Add Instrument** dialog box (above). Then click on the **Add** activation button.

You will see a series of messages on a dialog boxes describing the progress. One example is shown below:

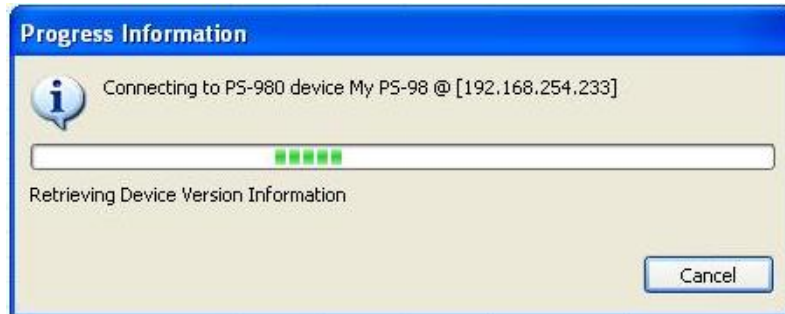


The 980 Protocol Analyzer with the IP address you entered appears on the list in the **980 Navigator** panel (below). The 980 GUI Manager application will automatically connect to the 980 Protocol Analyzer once you add the 980 to the application.

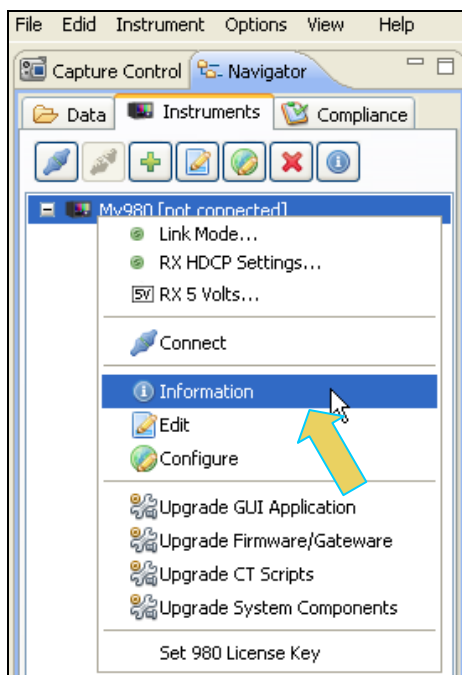
- (If not already connected) Connect to the 980 Protocol Analyzer using either the **Connect** icon or the **Connect** item on the right click menu as shown in the screen below. Note that you can also double click on the 980 in the **Instrument** dialog box in order to initiate a connection.



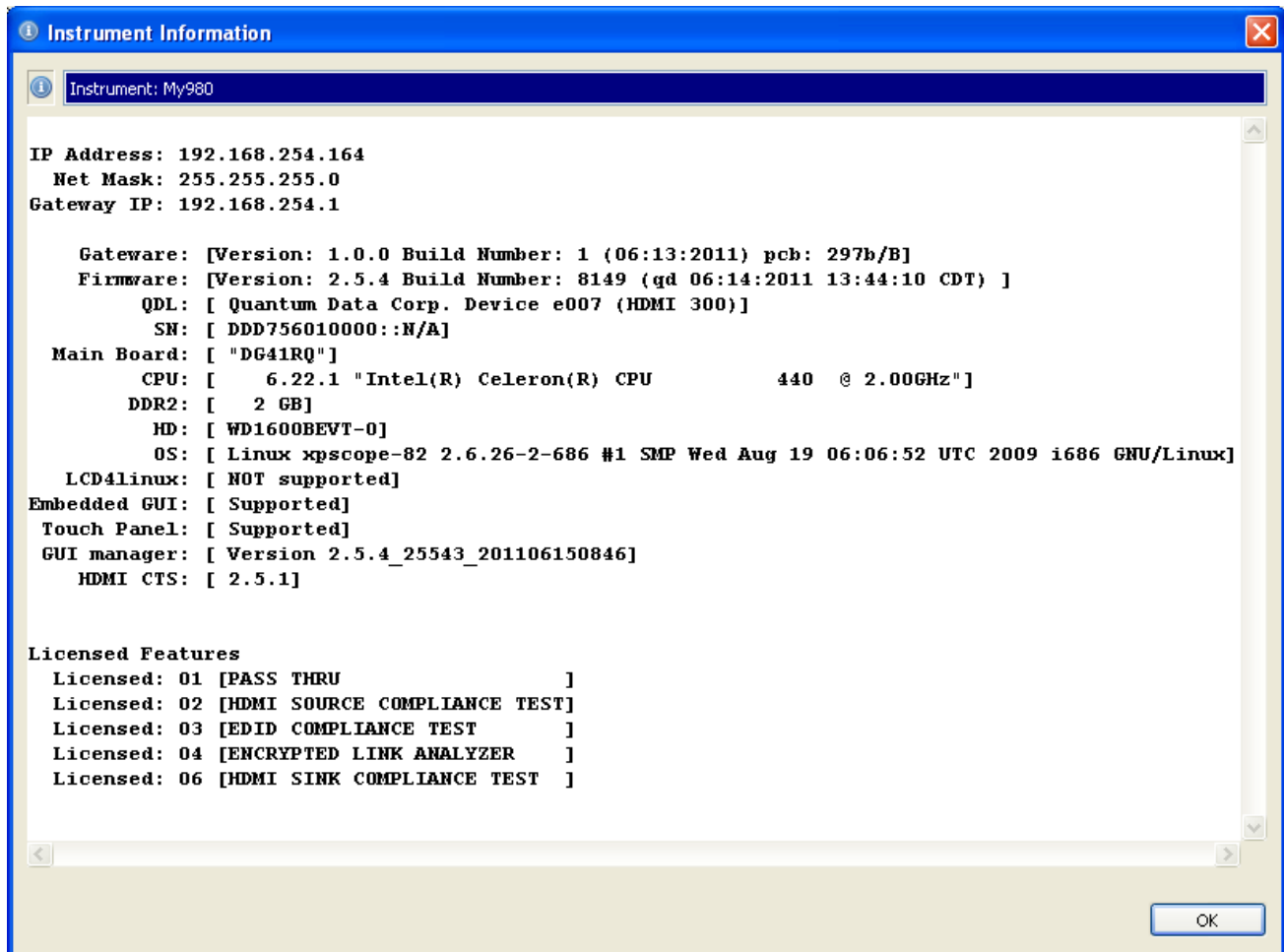
A dialog box appears indicating that a connection is in progress:



Once the connection is made the information about the connected 980 Protocol Analyzer is available via the right click menu as shown below.



The information is then displayed in a separate window. The information on the **Instrument Information** window will be helpful if you call Quantum Data customer support during an upgrade process.



3 HDMI Source Compliance Tests

This chapter describes how to use the **optional** HDMI source compliance test feature. The HDMI source compliance test series is supported on both the 980 225MHz “Gen 2” and the 980 297MHz “Gen 3” version of the product; however the 4K x 2K test is only supported on the “Gen 3” product. Please note you will have to purchase the HDMI Compliance Test option in order to run these tests. The 980 supports the following test sections in the HDMI 1.4a Compliance Test specification:

- 7.4 Source Protocol Tests
 - 7-16 Legal Codes
 - 7-17 Basic Protocol
 - 7-18 Extended Control Period
 - 7-19 Packet Types
- 7.5 Source Video Tests
 - 7-21 Minimum Format Support
 - 7-22 Additional Format Support
 - 7-23 Pixel Encoding (RGB)
 - 7-24 Pixel Encoding (YCbCr)
 - 7-25 Video Format Timing
 - 7-26 Pixel Repetition
 - 7-27 AVI Infoframe
- 7.6 Source Audio Tests
 - 7-28 IEC 60958/61937
 - 7-29 ACR
 - 7-30 Audio Sample Packet Jitter
 - 7-31 Audio Infoframe
 - 7-32 Audio Sample Packet Layout
- 7.7 Source Interoperability with DVI Tests
 - 7-32 Interoperability with DVI
- 7.8 Source Advanced Features Tests
 - 7-34 Deep Color
 - 7-35 Gamut Metadata Transmission
 - 7-36 High Bitrate Audio
 - 7-37 One Bit Audio
 - 7-38 3D Video Format Timing
 - 7-39 4K x 2K Video Format Timing (supported on Gen 3 only)
 - 7-40 Extended Colorimetry Transmission

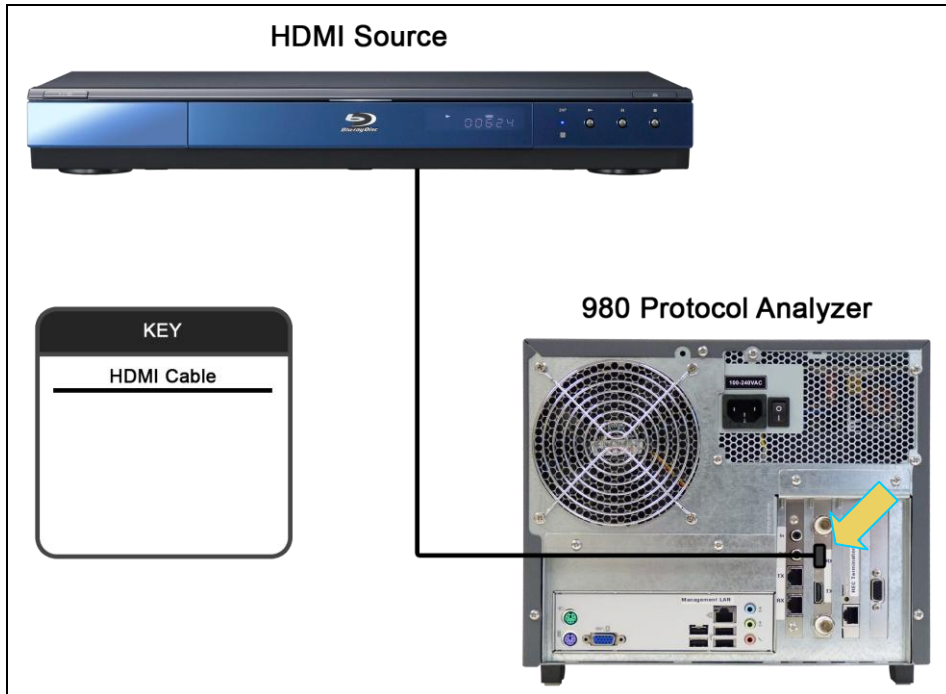
3.1 Workflow for running the HDMI Source Compliance Tests

The following is the high level workflow for running the HDMI Source Compliance Tests.

1. Power up the 980 Protocol Analyzer.
2. (Optional) Establish an Ethernet/IP connection between the external 980 GUI Manager and the 980 Protocol Analyzer.
3. Connect the source device under test to the 980 Protocol Analyzer via HDMI.
4. Complete a (or load an existing) Capabilities Declaration Form (CDF) for the device under test using the **CDF Entry** panel.
5. Select the tests that you wish to run from the **Test Selection** panel.
6. Initiate the tests through the **Test Options / Review** panel.
7. View the detailed data for test failures if failures occur.
8. View the results in the **Test Results** panel under the **Navigator** panel.

3.2 Making the HDMI connections

This procedure describes how to establish an HDMI connection between the HDMI source device under test and the 980 Protocol Analyzer. This procedure assumes that you have assembled the 980 Protocol Analyzer and source device under test and applied power to all these devices. Refer to the procedures and diagram below.



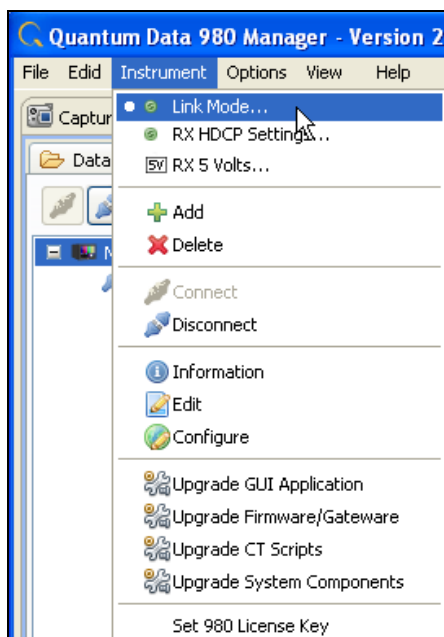
1. Connect your HDMI source device under test to the HDMI Rx connector (the top most HDMI connector shown in the figure below) on the 980 Protocol Analyzer. Use a high speed HDMI cable.

3.3 Setting the 980 mode to HDMI

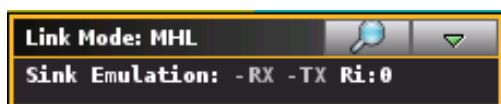
Use the following procedures to set the 980 Protocol Analyzer to the HDMI mode.

To set the 980 mode to HDMI:

1. From the **Instrument** menu, select the **Link Mode**.



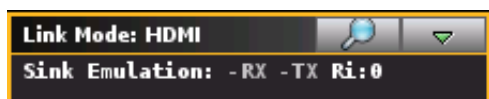
The following menu appears:



2. Select the pull-down menu as shown below and select the HDMI Monitor checkbox. The default mode is HDMI.



The Link Mode menu will show HDMI as the Link Mode.

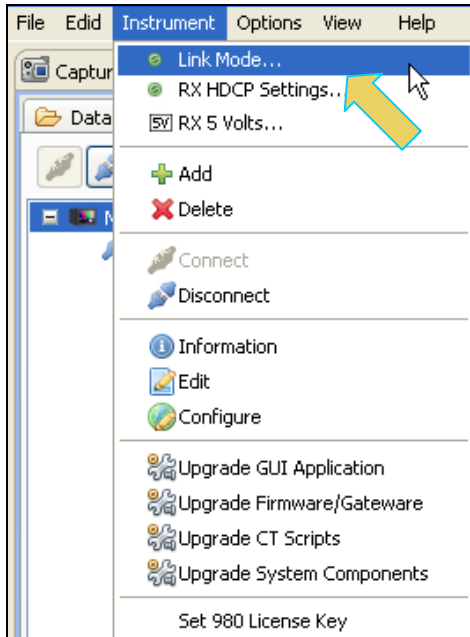


3.4 Setting the Configuration of the Link Mode

Prior to a capturing or viewing video you will need to set the configuration of the **Link Mode** to Sink Emulation.

To set the 980 link configuration mode:

1. Ensure that you are sending video from your source device under test.
2. Select the configuration of the **Link Mode** item from the Instrument pull-down menu on the built-in front panel as shown below.



The mode dialog box appears as shown below.



3. Select Sink Emulation as **Link Mode** item from the pull-down menu on the built-in front panel as shown below.

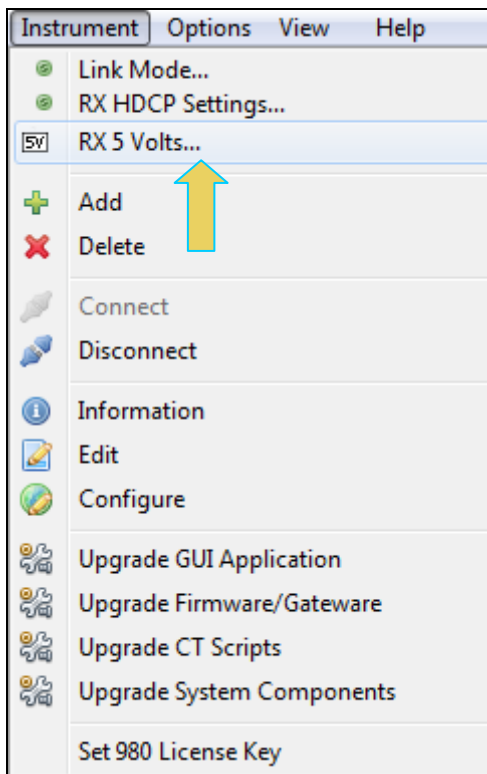


4. Set the TX-RX HPD to replicate the hot plug signal from the TX side (an attached sink device) on the RX side (like a hot plug repeater).

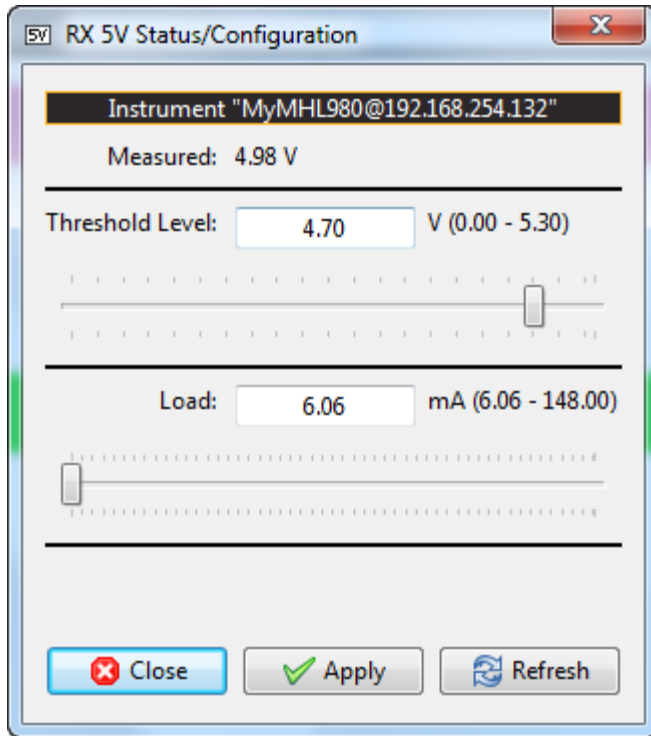
3.5 Setting the +5V levels

The 980 enables you to view the +5V levels from the source device under test and to set the current load on the +5V lead.

1. Select the **RX 5 Volts...** item from the **Instrument** pull-down menu on the built-in front panel as shown below.



The RX 5V Status/Configuration dialog box is displayed as shown below.



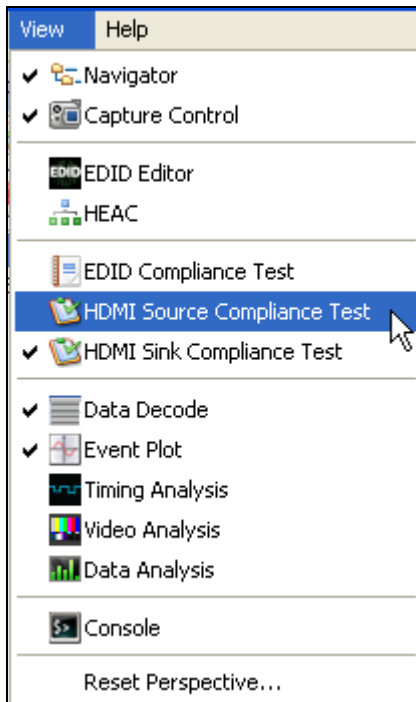
2. Note the current Measured 5V level (4.98 in the example above).
3. Select the Threshold Level using the upper slider (0.0 to 5.3V). Be sure to select the **Apply** button. Then hit **Refresh** to view the new value. You may wish to lower the threshold to enable testing of a source whose 5V level is too low. If you specify a threshold higher than the voltage detected there will be no effect on the ability to test.
4. Select the current Load using the lower slider provided. Increasing the current load will cause the detected voltage to fall. Be sure to select the **Apply** button. Then hit **Refresh** to view the new value.

3.6 Completing the CDF

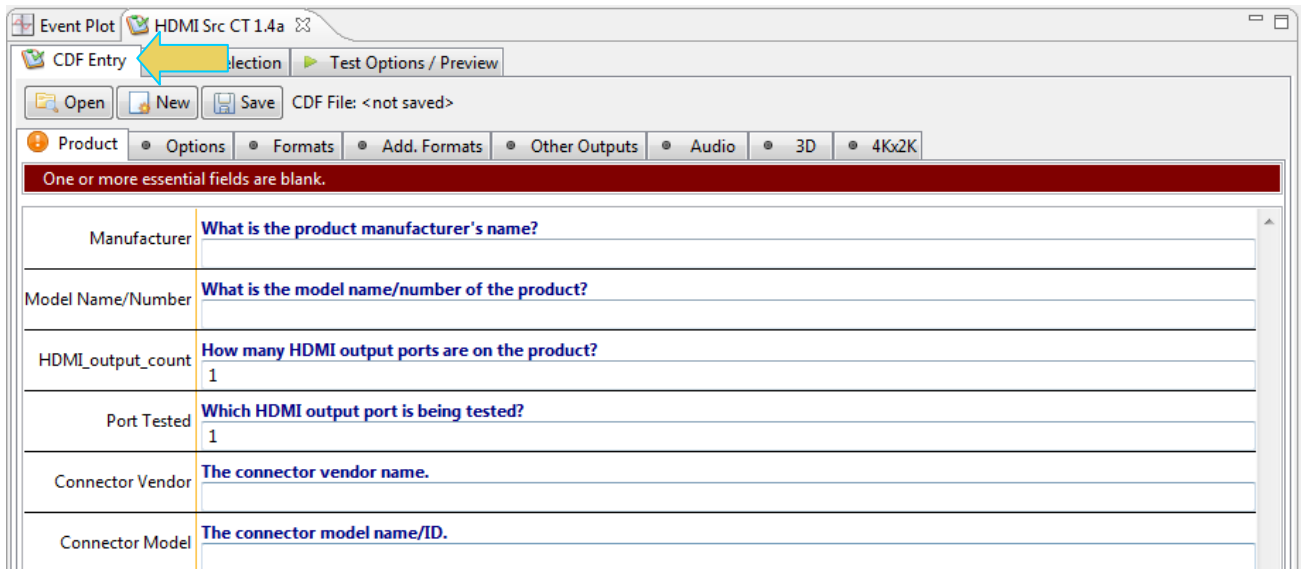
Use the following procedures to complete the CDF for the HDMI source compliance tests.

To complete the CDF:

1. From the **View** menu, enable viewing of the **HDMI Source Compliance Test** panel.

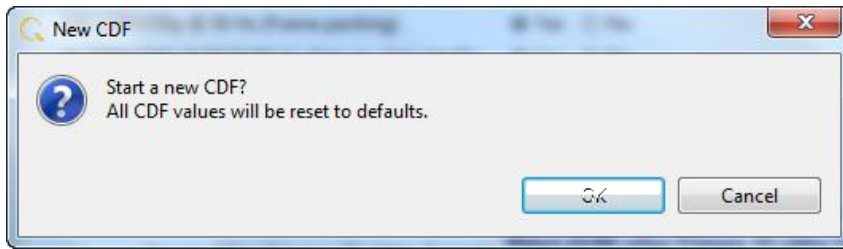


2. Select the **CDF Entry** panel as shown below.



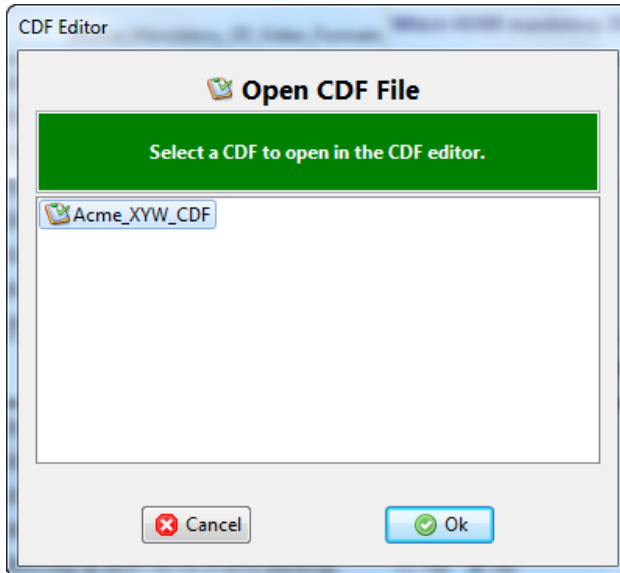
3. To create a new CDF, click on the **New** activation button.

You will be prompted with a confirmation that you want to start a new CDF and reset the values. Click **OK** to proceed.

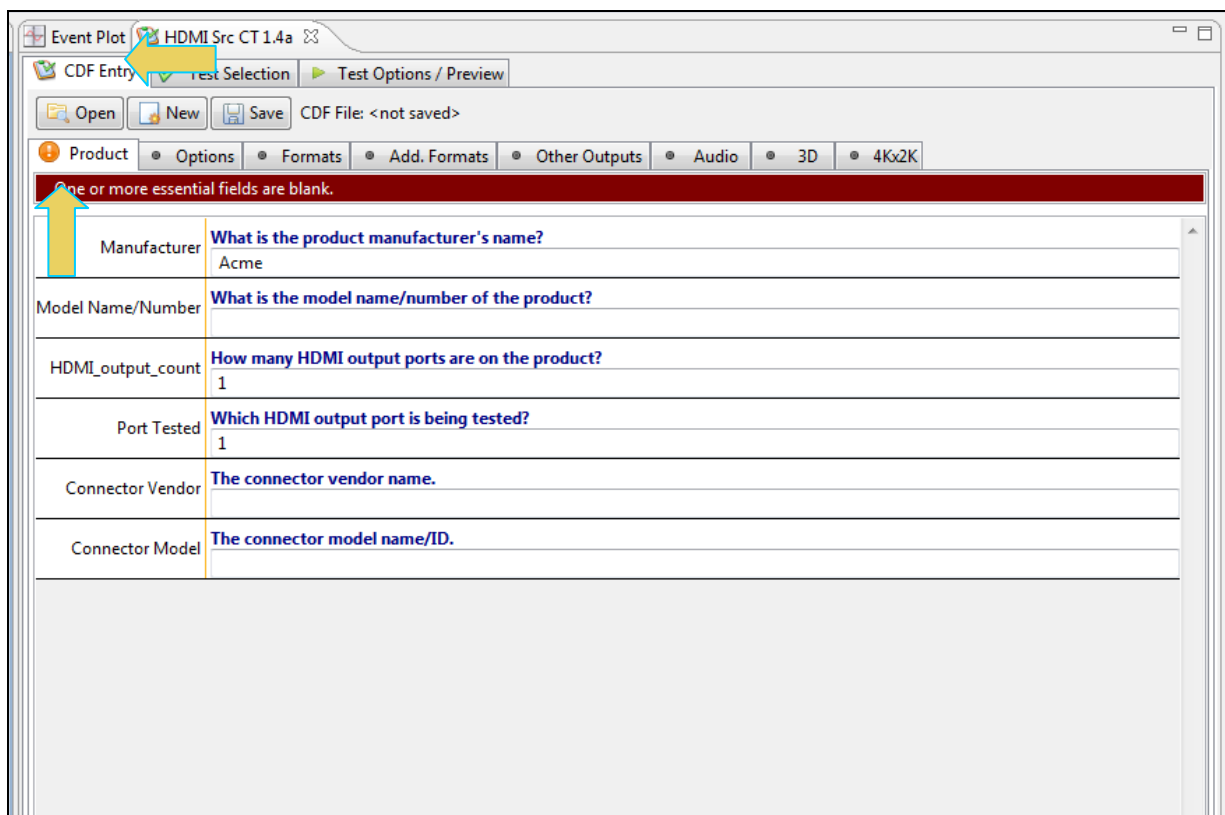


4. To open an existing CDF, click on the **Open** activation button.

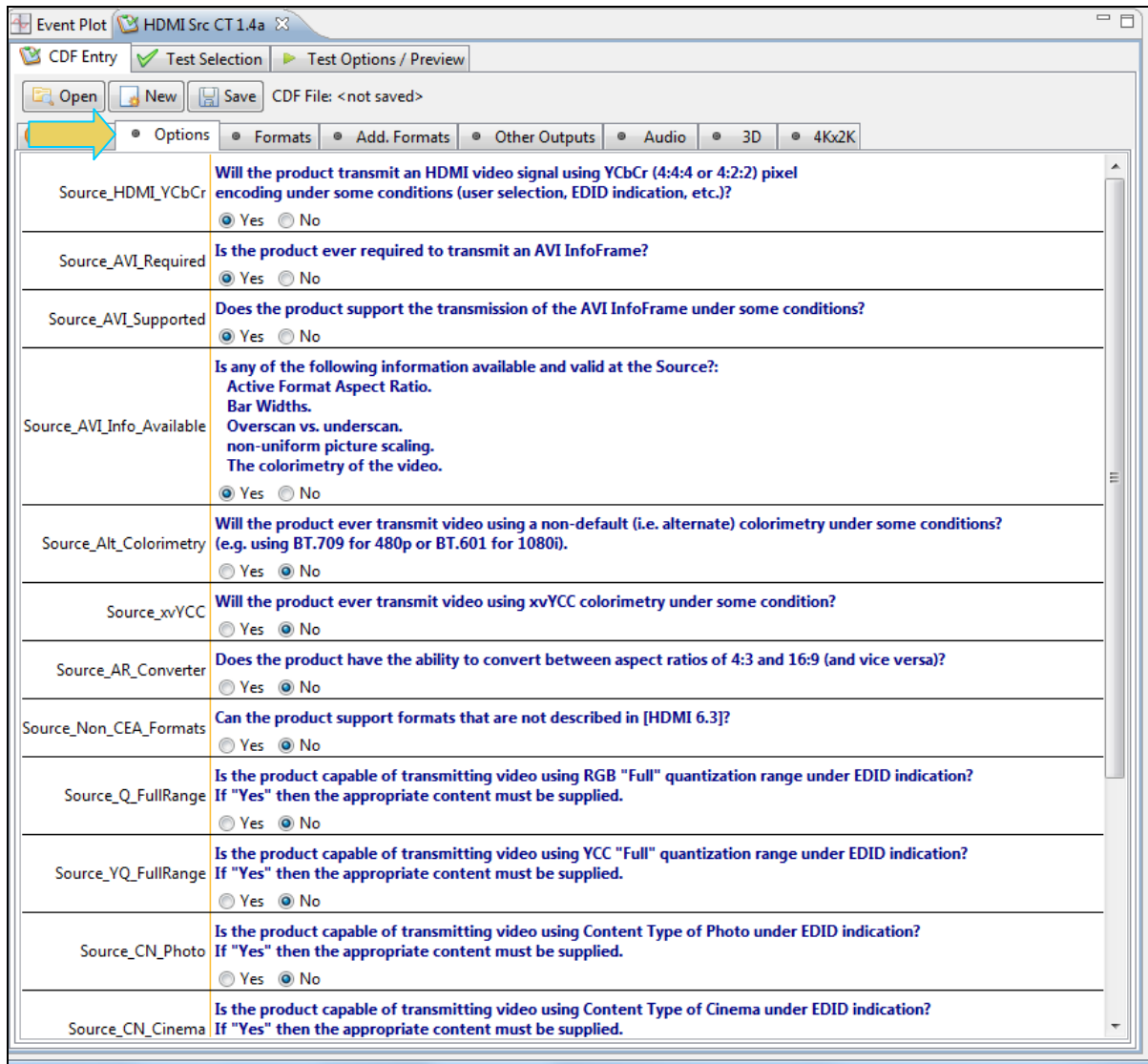
You will be prompted with a dialog box that enables you to open a CDF. Select a CDF and then **OK** to proceed.



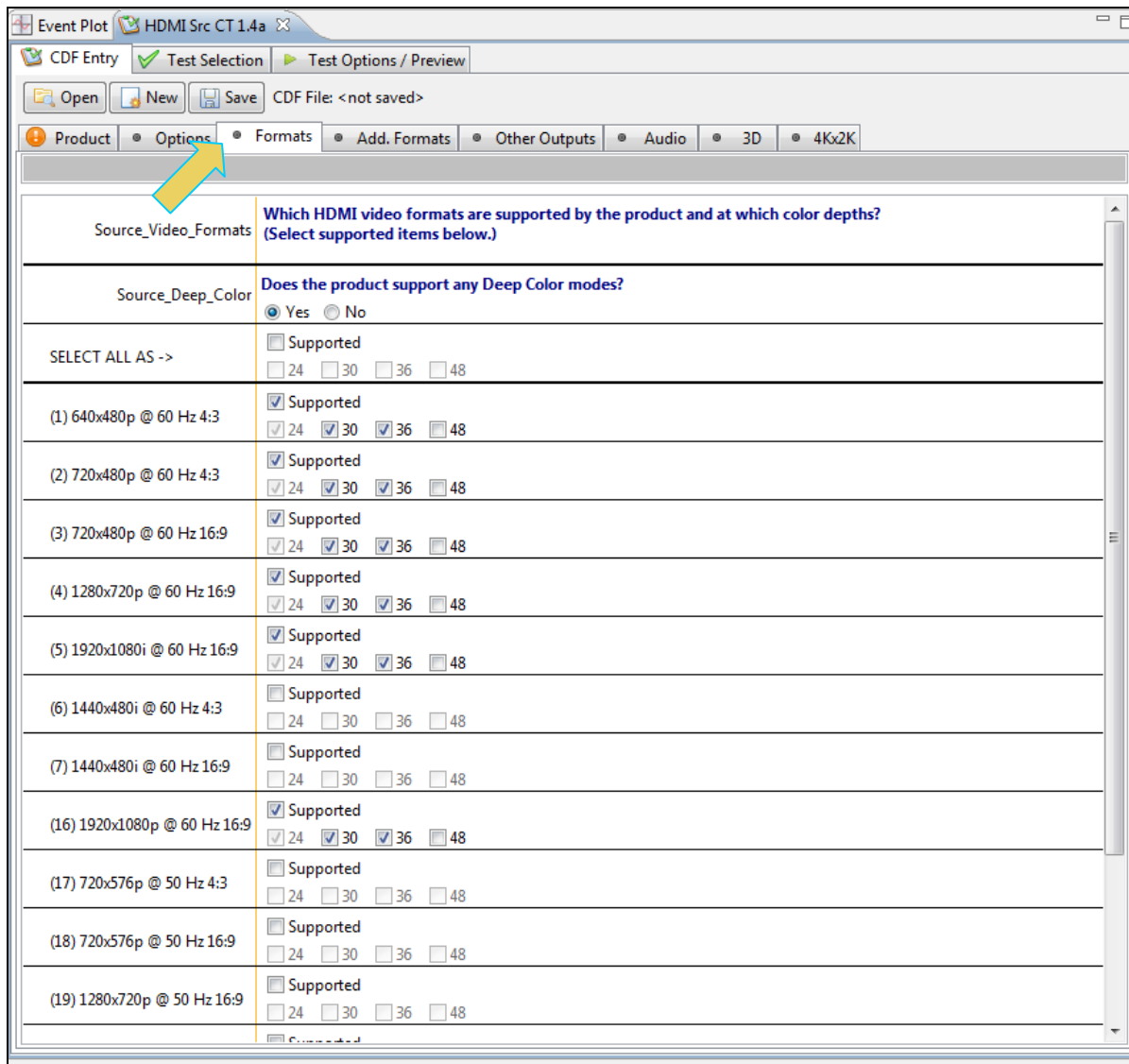
5. Complete the items in the **Products** tab of the CDF Entry panel shown below. Note that you will have to complete the essential fields in order to proceed. A read status message will appear indicating if you have not completed all the essential fields.



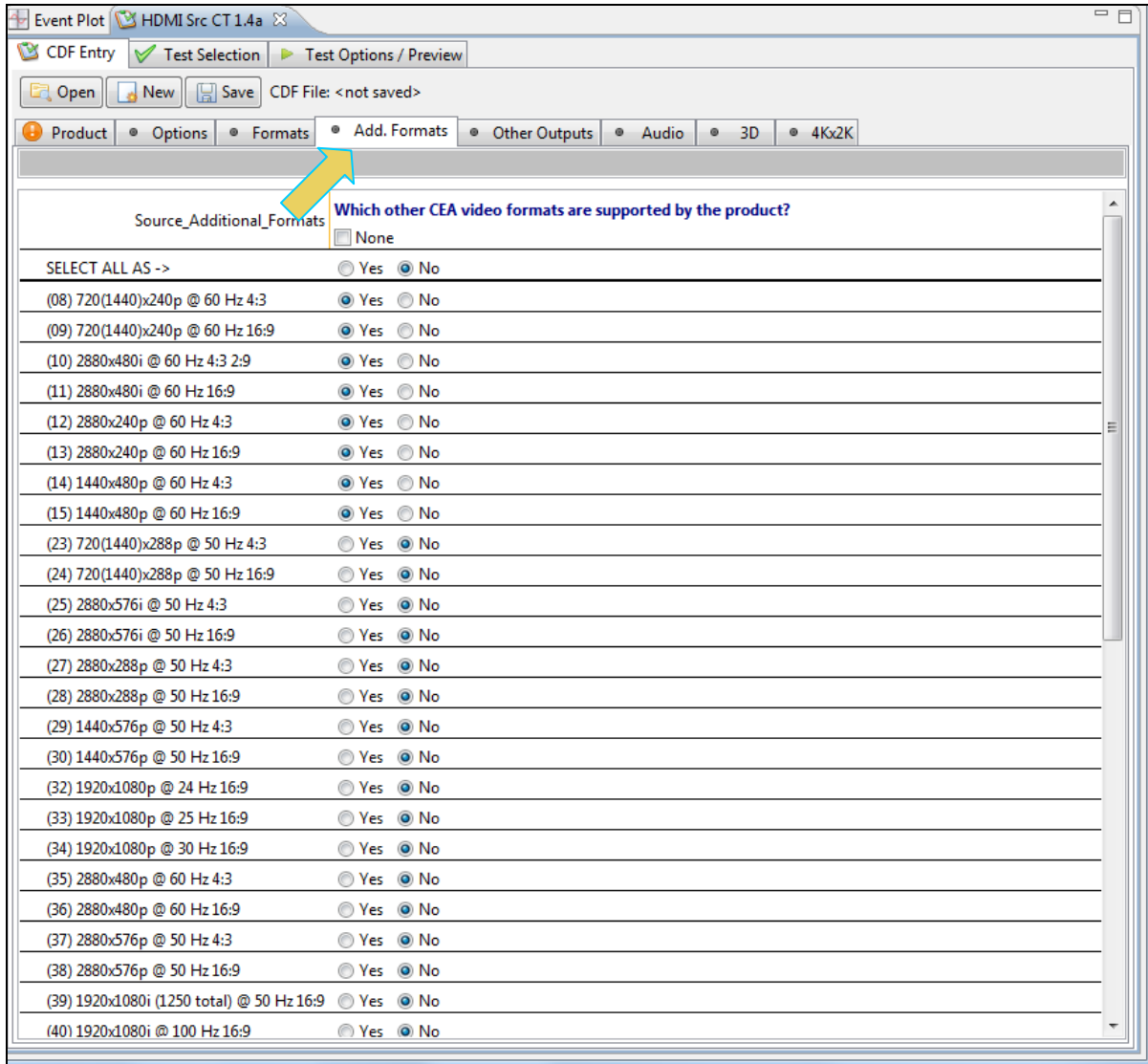
6. Complete the items in the **Option** tab.



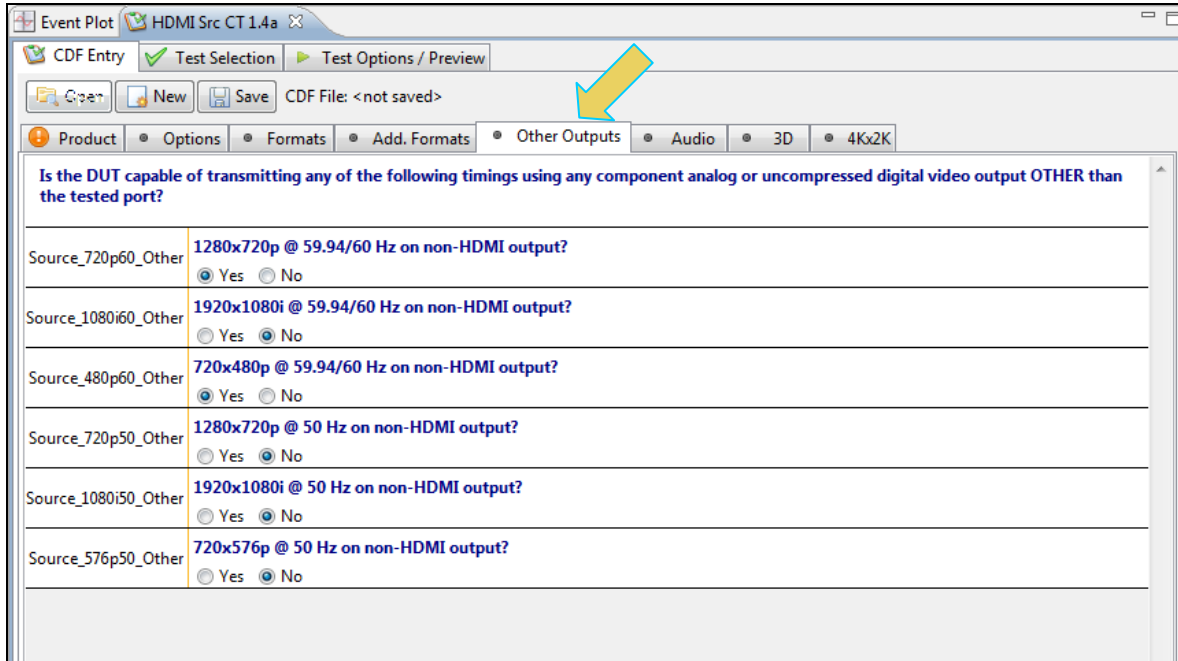
7. Complete the items in the **Formats** tab.



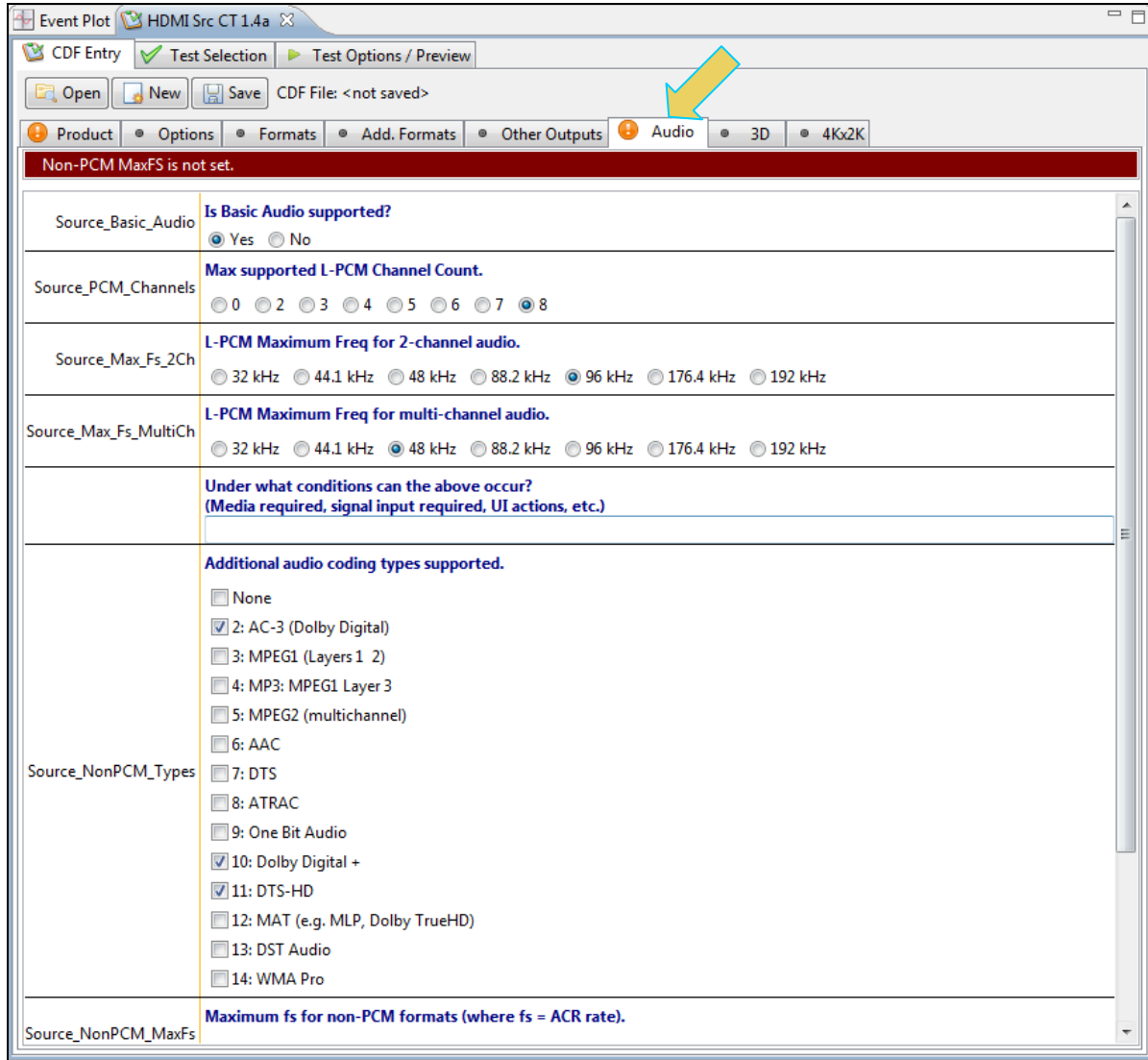
8. Complete the items in the **AddFormats** tab. These are the additional formats beyond the more common CEA formats.



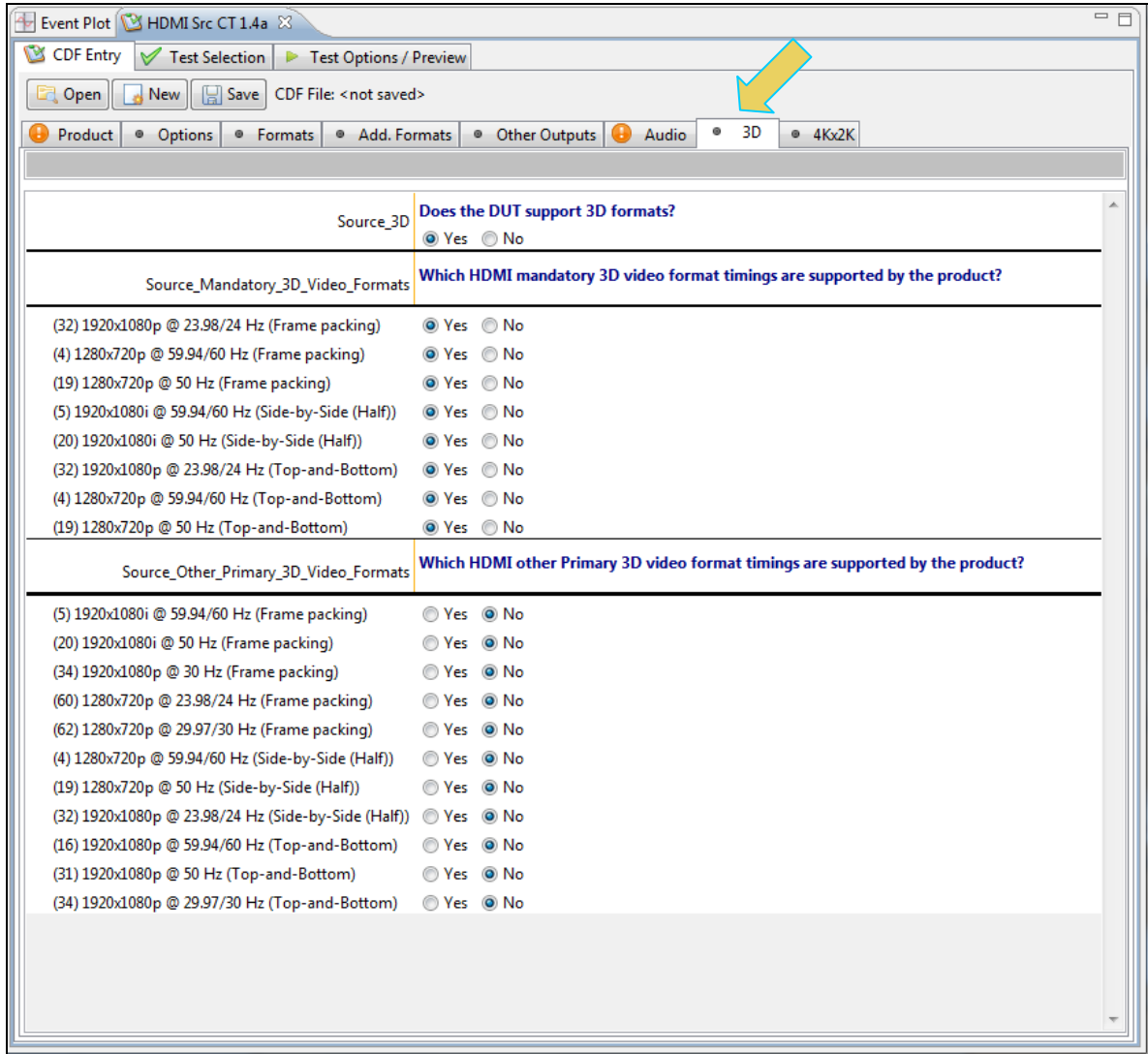
9. Complete the items in the **Other Outputs** tab. These are the formats available on the analog outputs.



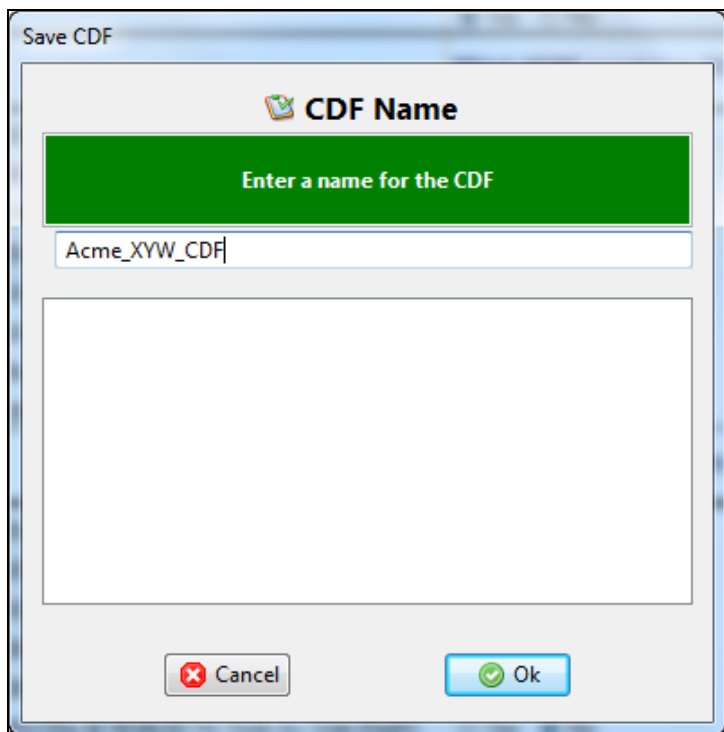
10. Complete the items in the **Audio** tab.



11. Complete the items in the **3D** tab.



12. Save the CDF. A confirmation box with a default name will appear as shown below. Edit the name if necessary and click OK.

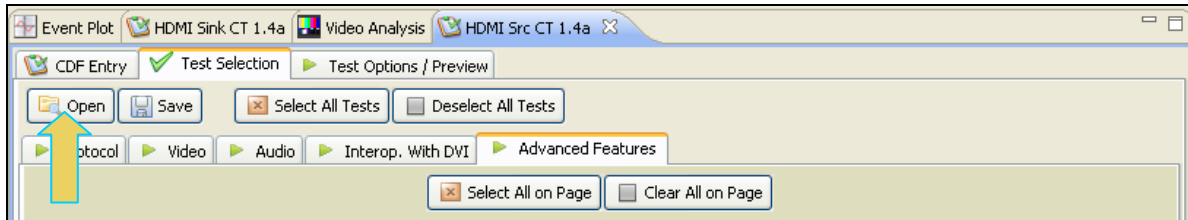


3.7 Selecting which tests to run

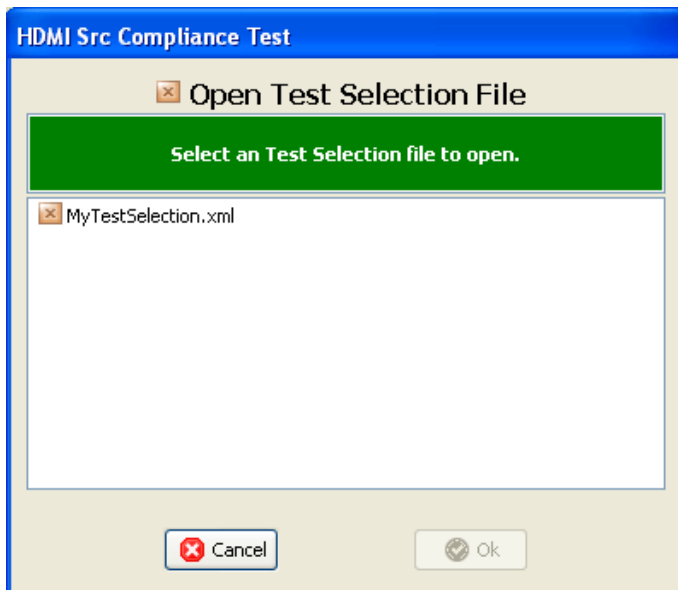
Use the following procedures to select the tests to run. There are multiple tabs which correspond to each section in the CTS.

To select the tests to run:

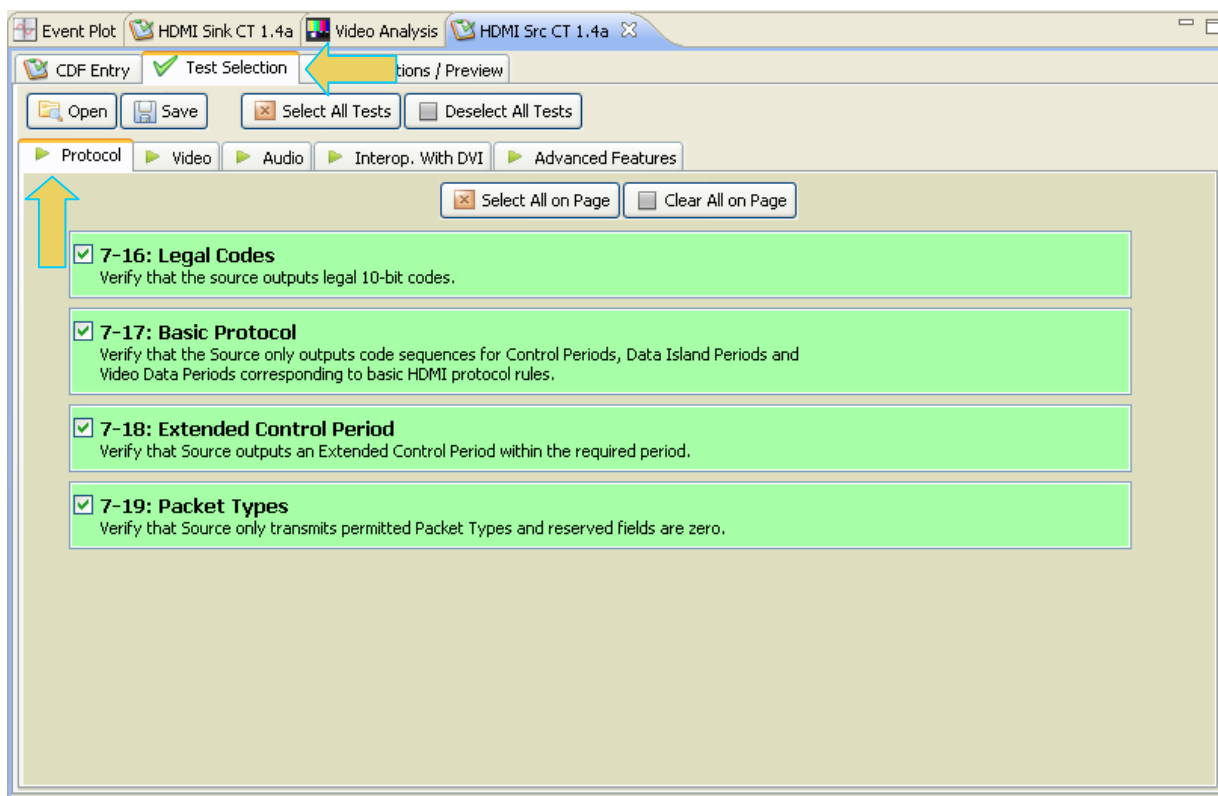
1. Select the **Test Selection** panel as shown below.
2. If you have an existing Test Selection option file saved you can recall that for use in your testing. Simply click on the **Open** activation button.



A dialog box will appear as follows. Simply select the file and click on the **OK** activation button.

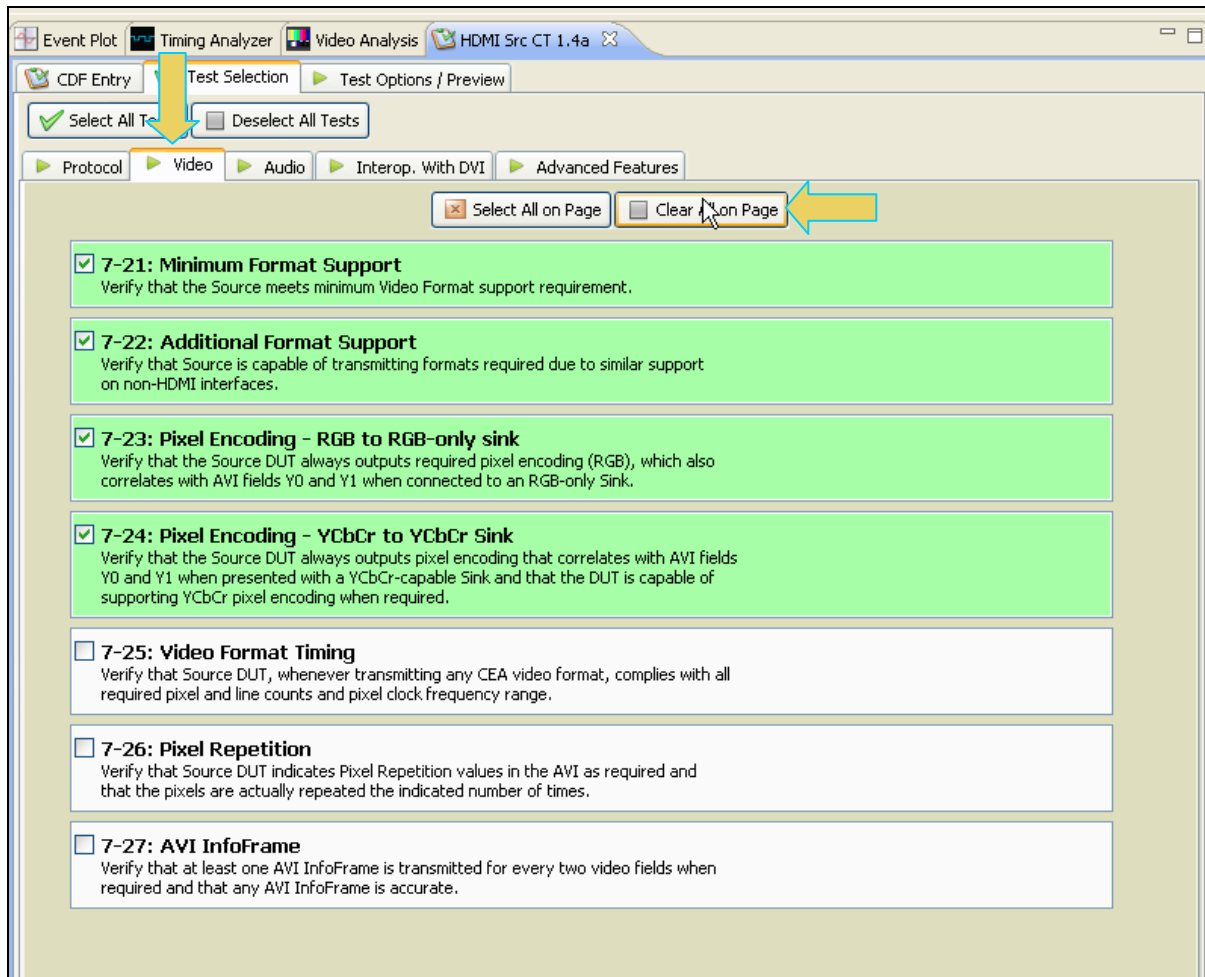


3. Complete the items in the **Protocol** tab of the **Test Selection** panel shown below.

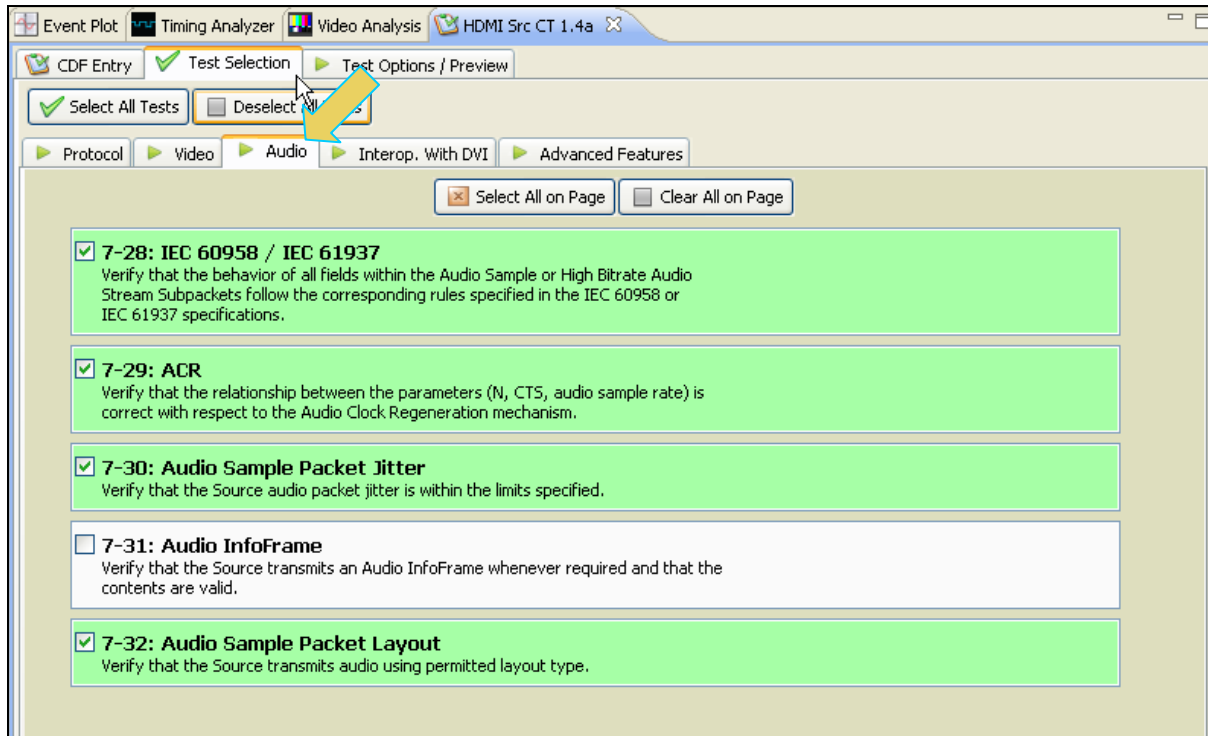


4. Complete the items in the **Video** tab of the **Test Selection** panel shown below.

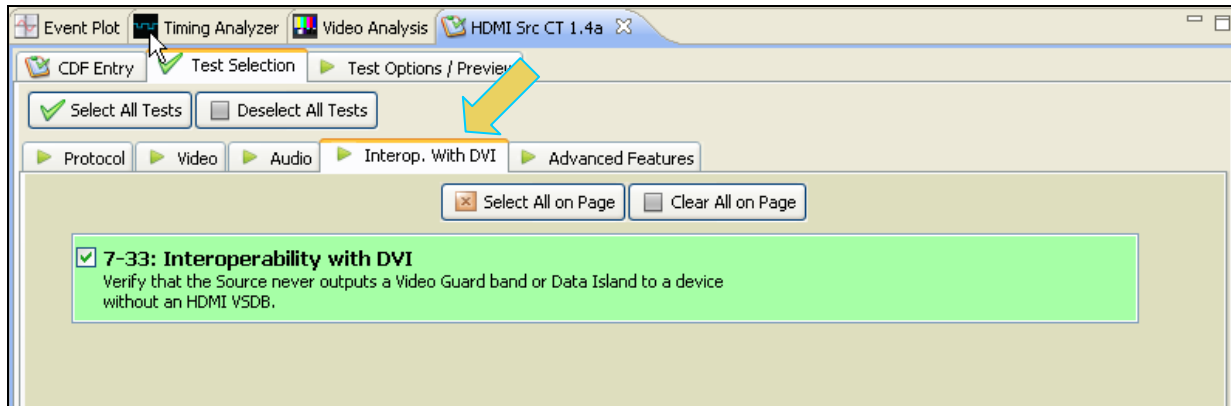
For convenience you can **Select All** or **Deselect All** tests using the activation buttons provided.



5. Complete the items in the **Formats** tab of the **Test Selection** panel shown below.

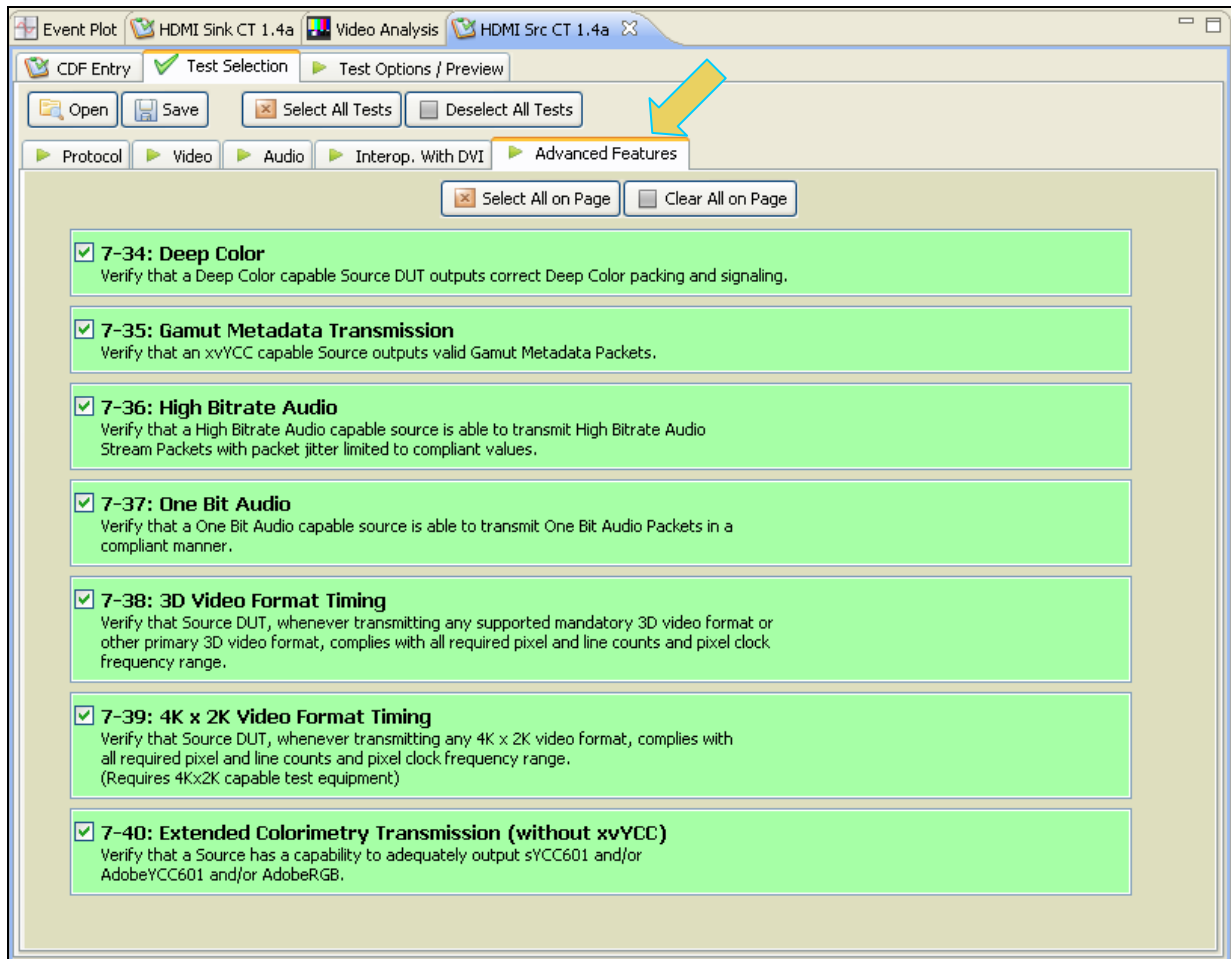


6. Complete the items in the **Interop. With DVI** tab of the **Test Selection** panel shown below.

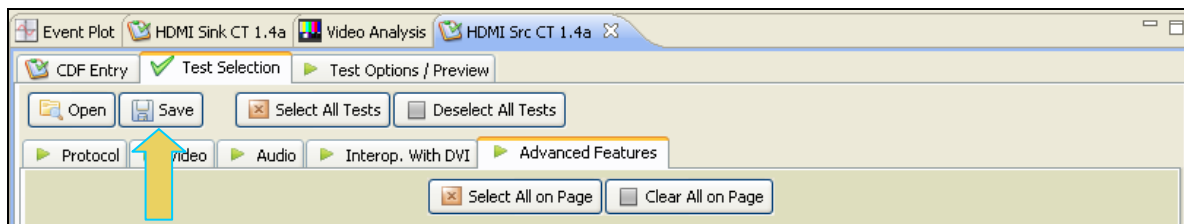


7. Complete the items in the **Advanced Features** tab of the **Test Selection** panel shown below.

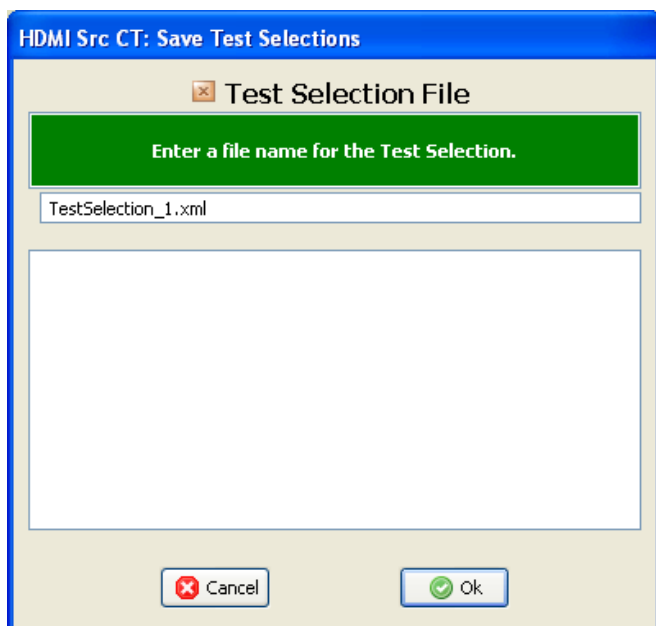
Note: Support for the 4K by 2K test (Test ID 7-39) is only available on the 980 297MHz “Gen 3” version of the Protocol Analyzer.



8. You can save the Test Selection options using the **Save** activation button.



A dialog box will appear as follows. Simply assign a name and click on the **OK** activation button. Click **Cancel** to exit.

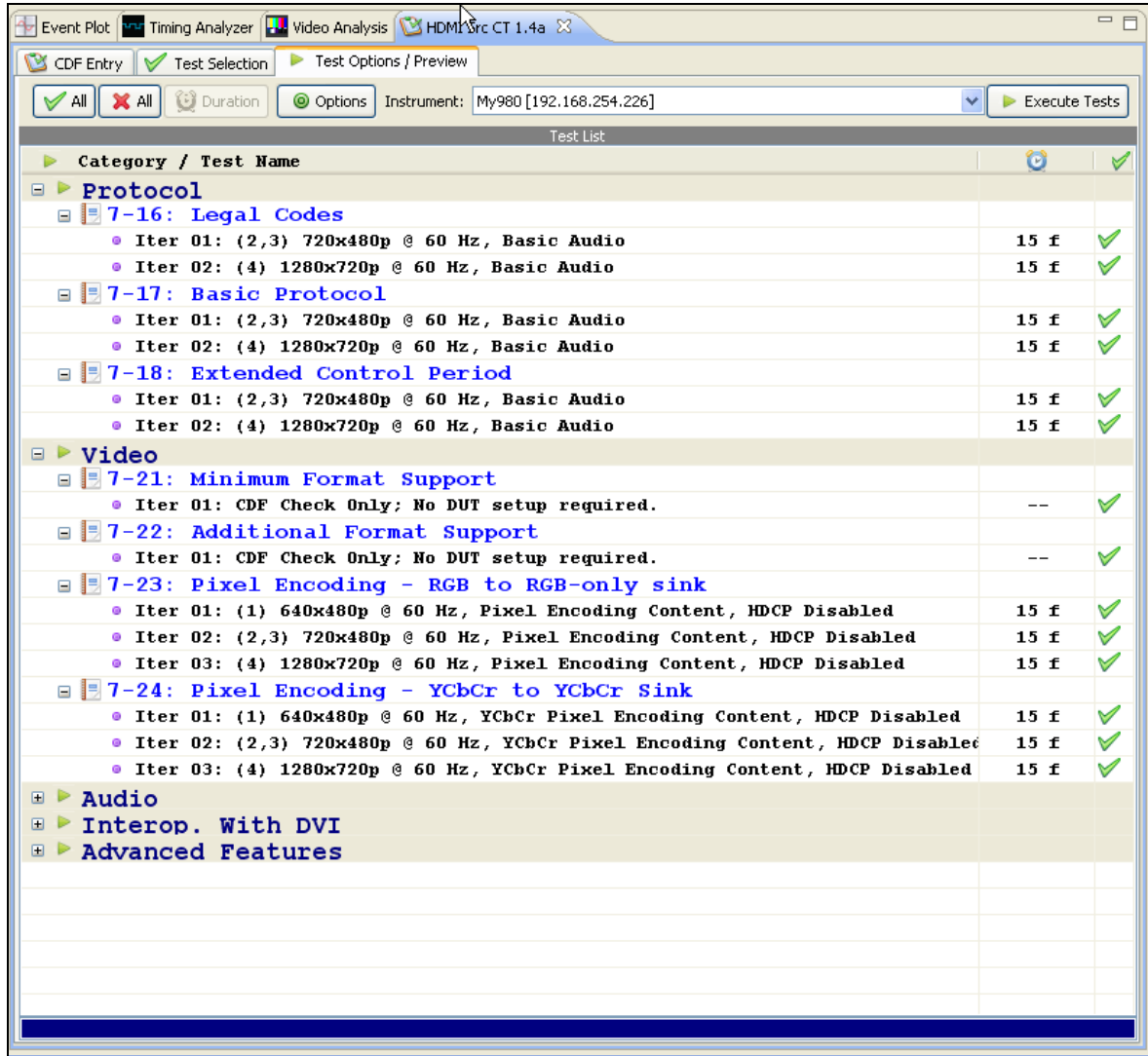


3.8 Executing the HDMI Source Compliance Tests

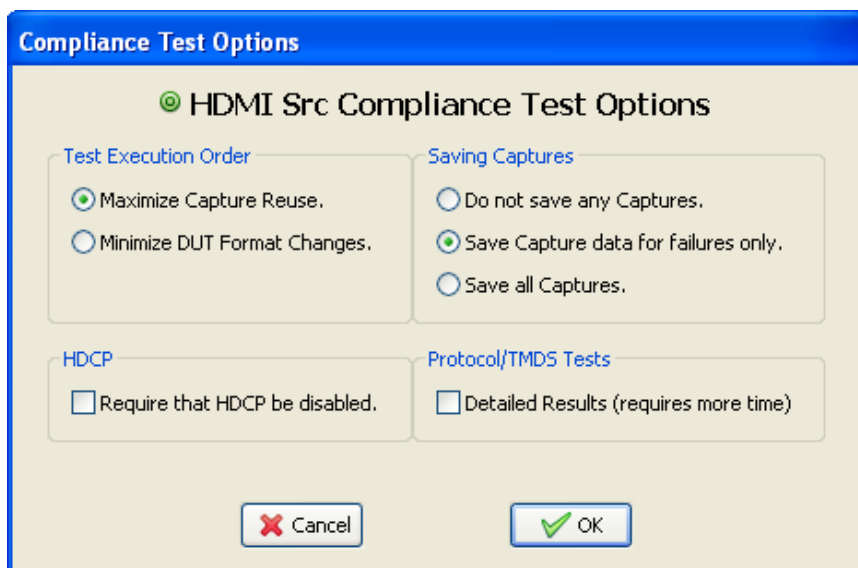
Use the following procedures to initiate the execution of an HDMI Source Compliance test series.

To initiate a test series:

1. Select the **Test Options / Preview** panel as shown below.



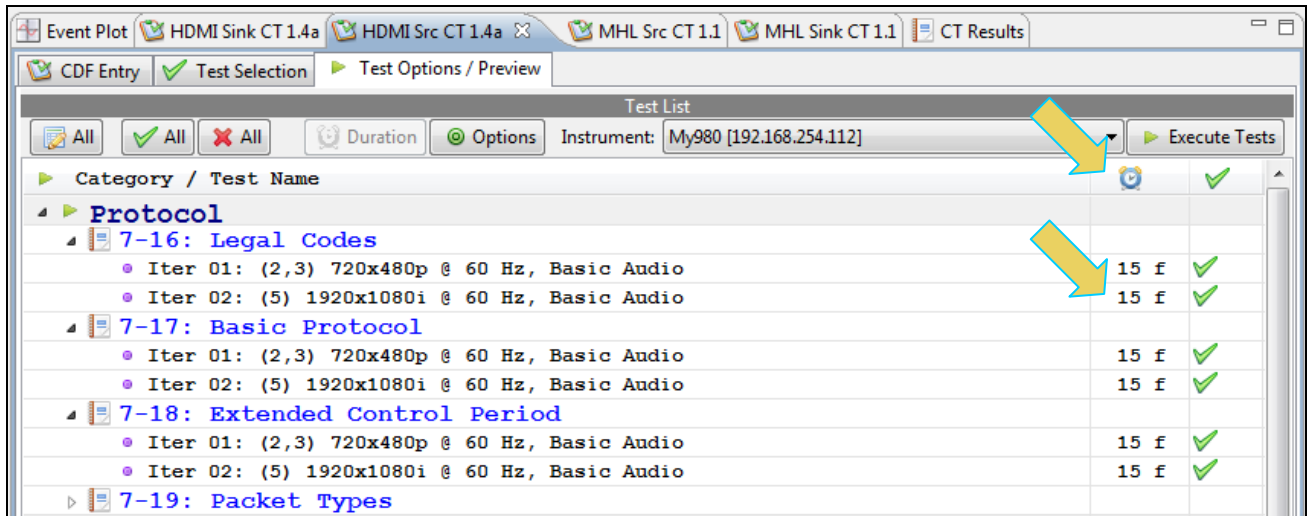
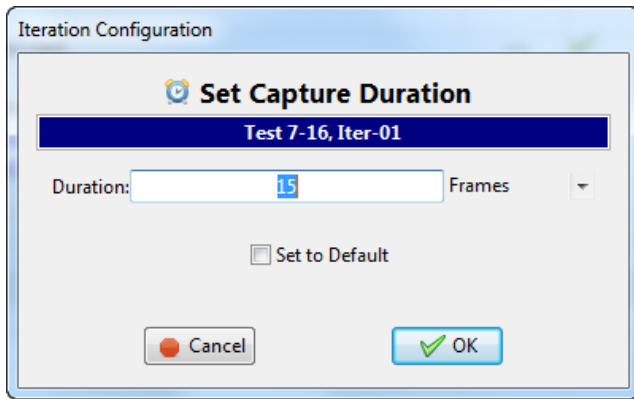
2. Set the **Options** for the tests. The following dialog box appears:



There are three settings you can define. These relate to what test execution order, saving captured data and enabling or disabling HDCP content protection. The table below describes the options. When completed with the options select the OK activation button to continue.

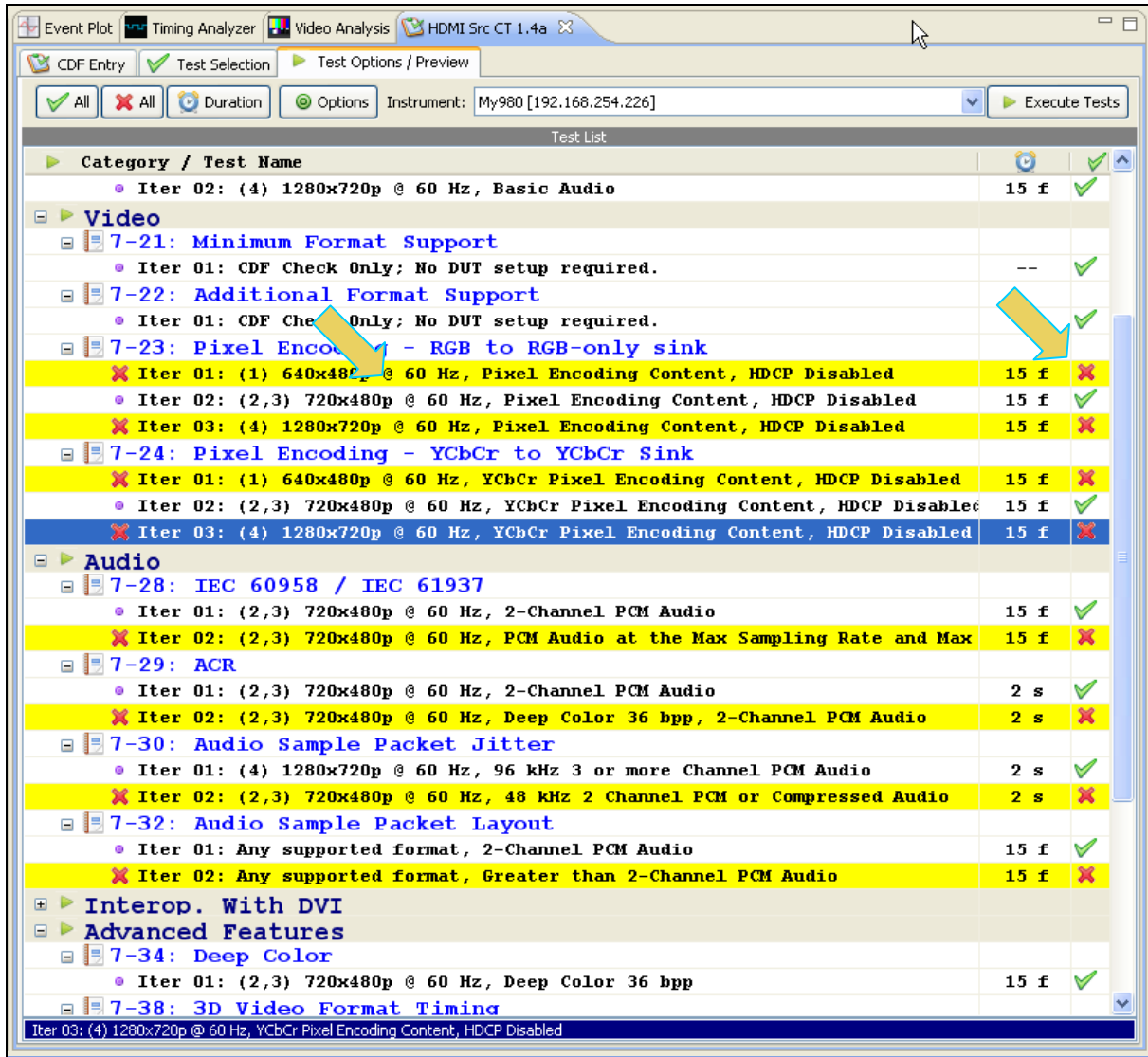
Option	Description
Test Execution Order	<p>There are two selections:</p> <ul style="list-style-type: none"> - Maximize Capture Reuse – Will run tests in an order that will be quicker because it reuses captures. - Minimize DUT format changes – Will run tests in an order that will minimize user interaction in changing formats. <p>Note: The 980 Rx port will automatically configure its EDID to cause or encourage the source device to send the proper video resolution and audio format for any give test.</p>
Saving Captures	<p>There are three selections:</p> <ul style="list-style-type: none"> - Do not save any captures – no captures are saved regardless of the results, pass or fail. - Save Capture data for failures only – Saves only captures for tests where failures occur. - Saves all Captures – Saves all captures regardless of the results, pass or fail.
HDCP	<p>Require that HDCP be disabled - A check box that when selected will only run the tests if HDCP content protection on the source is disabled.</p>
Protocol/TMDS Tests	<p>Detailed Results (requires more time) - A check box that when selected will provide detailed results. If unchecked you will just receive summary results.</p>

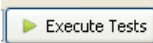
- (Optional) Set the number of frames to capture during the Protocol Tests. Use the alarm clock icon. In the example below, the number of frames are set to 15.

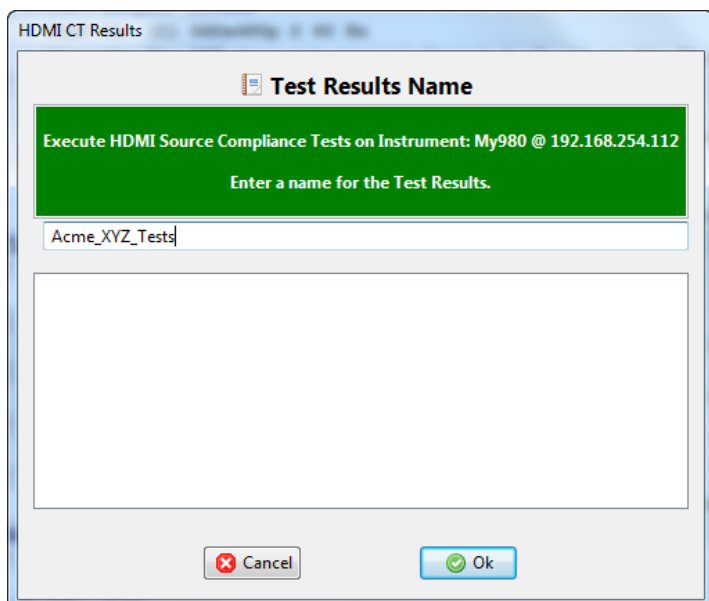


- (Optional) Review the list of tests for each category. If you wish to skip some of the tests. You can skip tests by clicking on the Check mark on the right side of the **Test Options / Preview** panel.

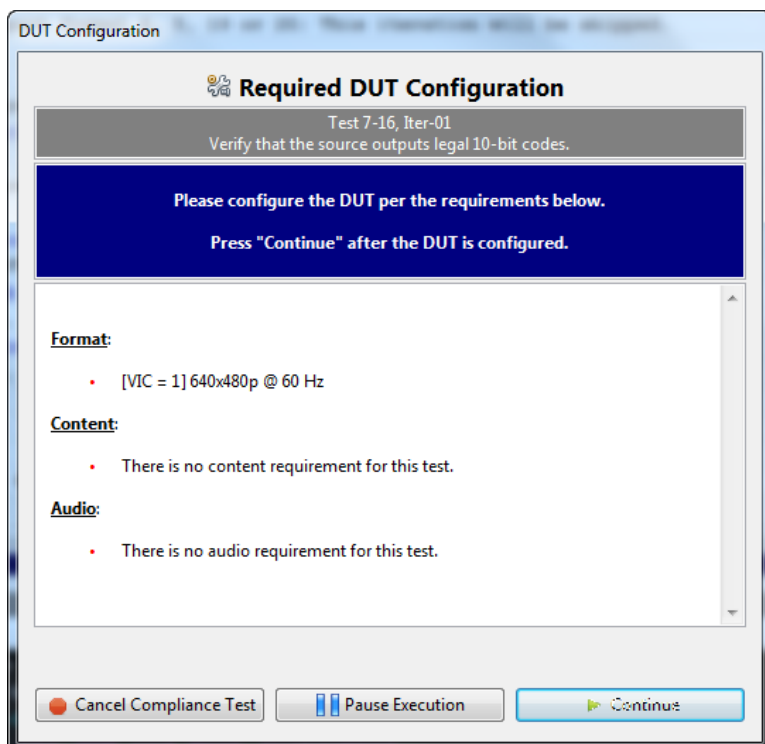
The screen shot below shows some of the tests that have been skipped (highlighted in yellow with a red X).



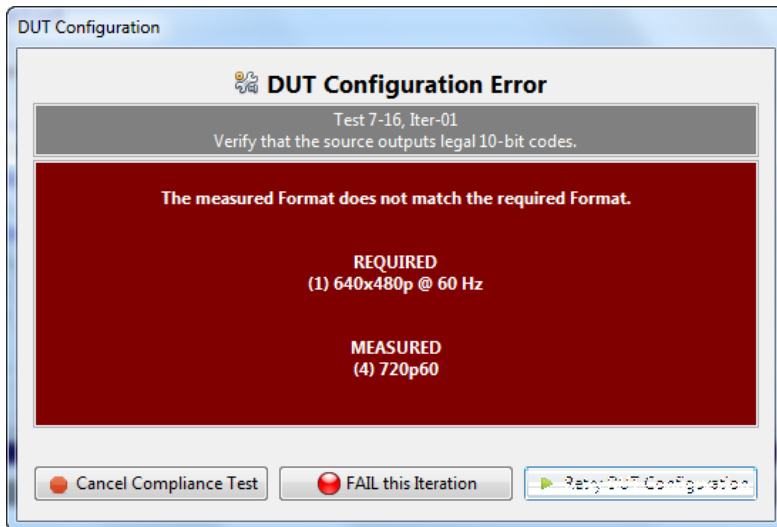
Click on the **Execute Tests**  activation button to initiate the test suite. You will be prompted for a name for the tests. This dialog box is shown below.



During the tests a **Required DUT Configuration** dialog box will appear which requires that you to verify that the source device under test is in the correct mode (video and audio format are correct). The following screen shot depicts this. Press **Continue** when you have the source device in the correct mode. If you need to pause the test to configure the source device under test, you can do so by clicking on the **Pause Execution** activation button. You can cancel the test using the **Cancel Compliance Test** button.

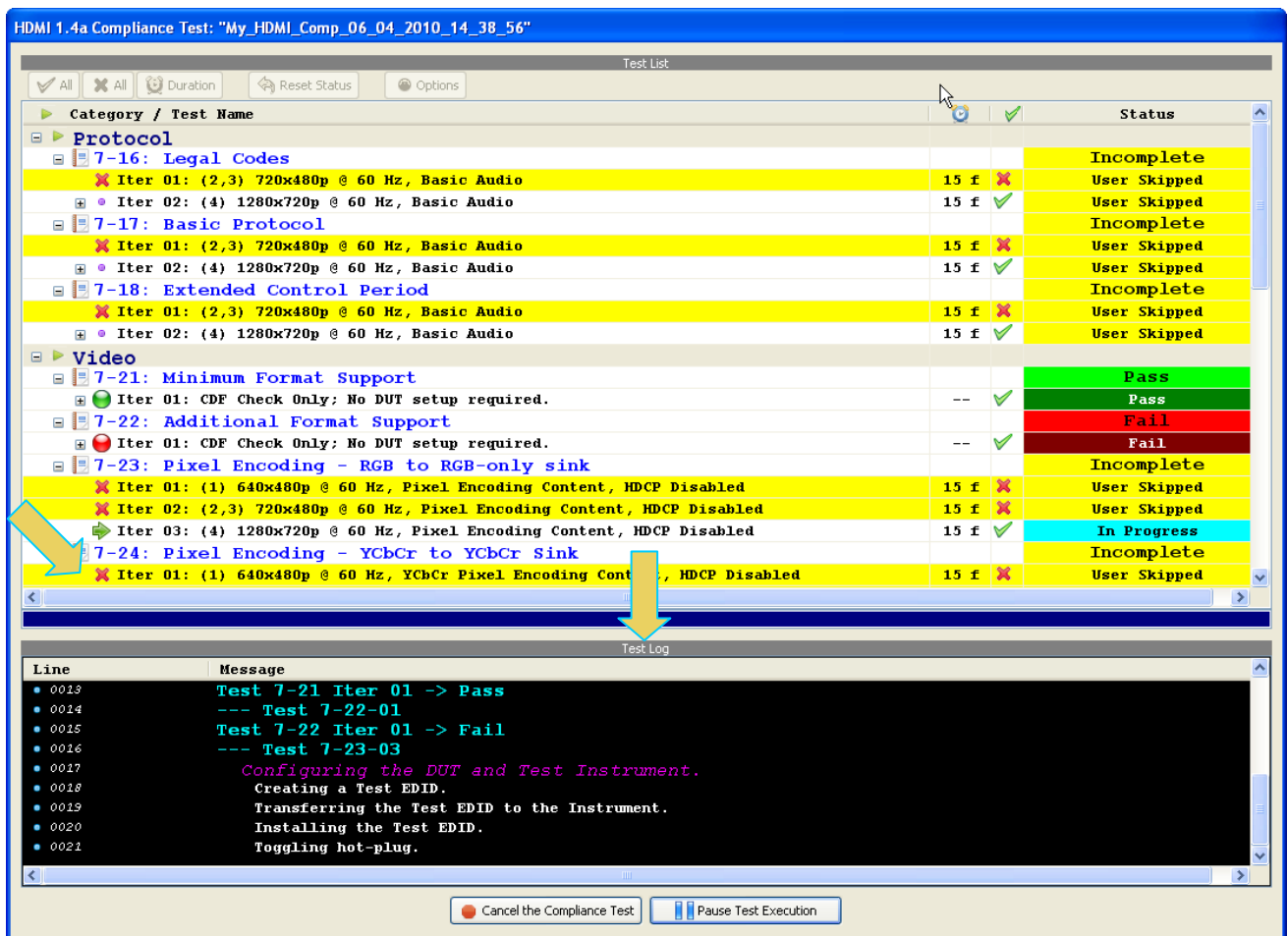


If you do not have the source device under test in the proper mode, an error dialog box will appear. A sample of this error dialog box is shown below.

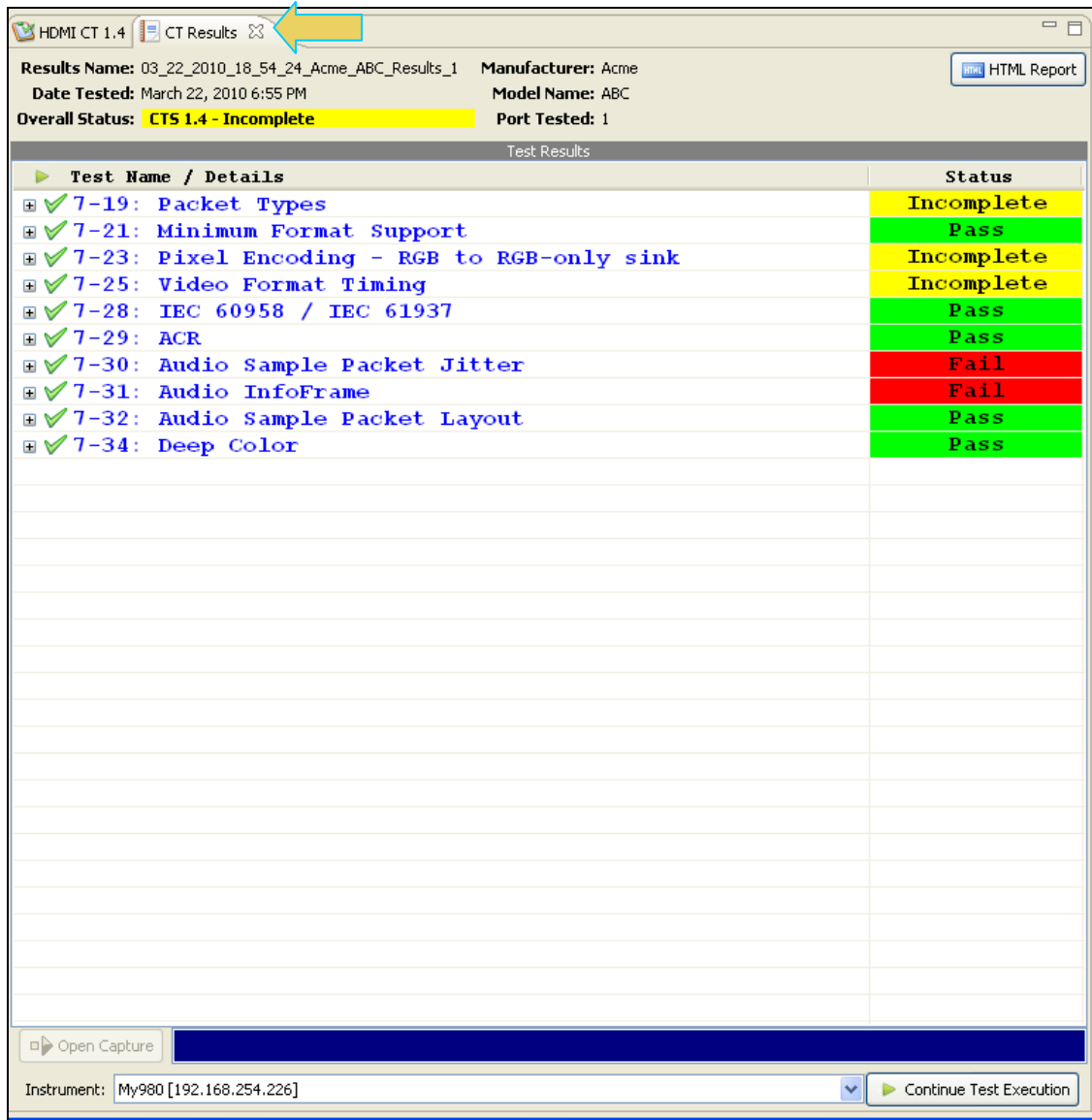


During the test, the test results are shown as they occur in the **Test Options / Preview** panel. There is a progress arrow which points to the test that is currently being run. Refer to the screen shot below.

The lower panel **Test Log** shows the testing activity as it occurs. You can cancel the compliance test or pause at any time. If you pause the test you can resume later at any time even if you exit the 980 Manager application. Refer to the following two screen examples.



When the tests are completed the test window that shows the current activity will close. A new tab and panel will appear next to the **HDMI CT 1.4** tab called the **CT Results** tab. You can view the test results in this panel. Refer to the following screen shots to see examples of the **CT Results** panel.

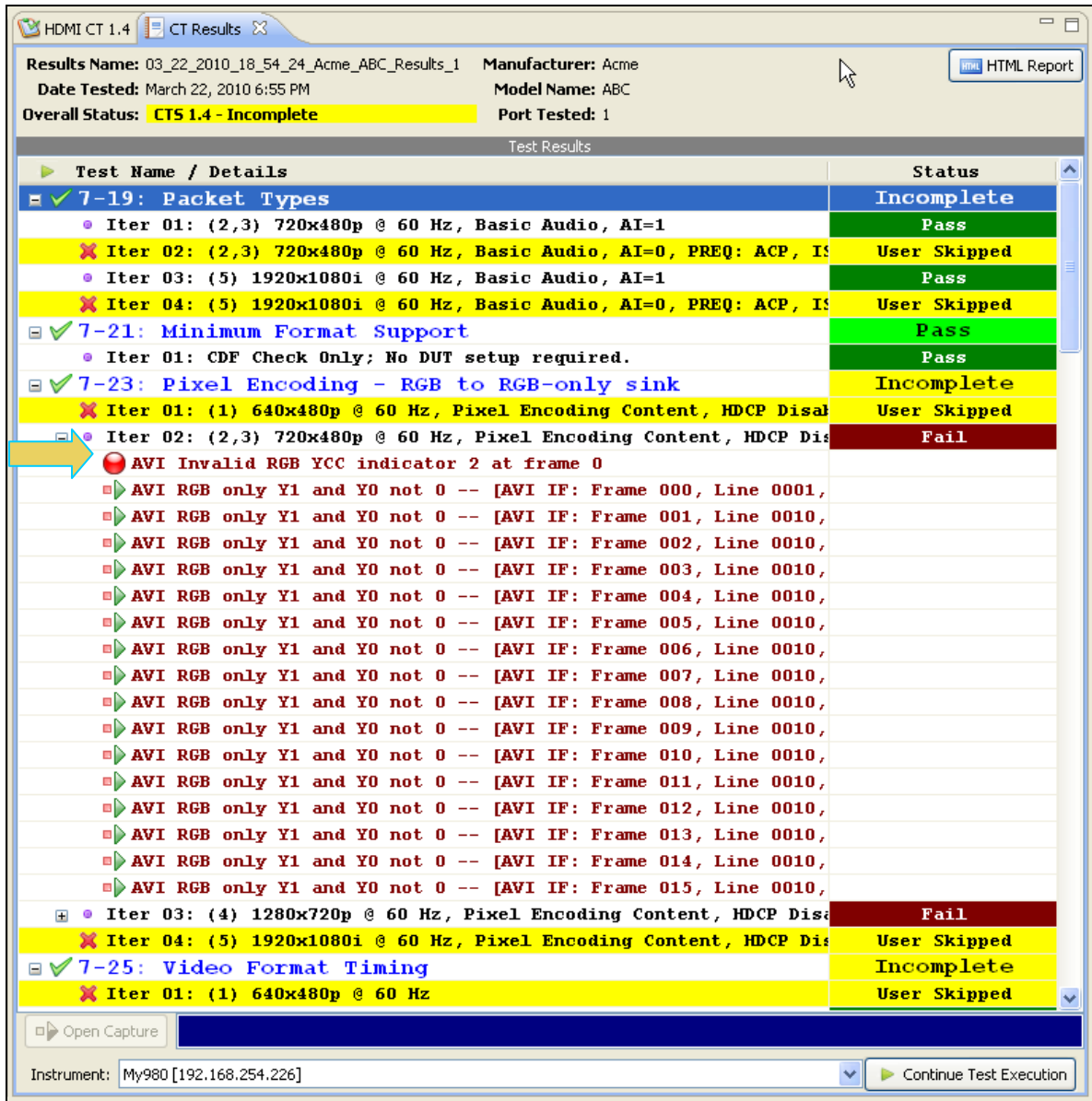


3.9 Viewing Details of Source Compliance Test Failures

When you have completed the test series you will have an opportunity to view the detailed data for a particular failure. Use the following procedures to view the details of a failure.

To view the details of a failure:

1. Expose the detailed results of a failure and highlight a failure. Refer to the screen example below.



HDMI CT 1.4 | **CT Results** | **HTML Report**

Results Name: 03_22_2010_18_54_24_Acme_ABC_Results_1 | **Manufacturer:** Acme
Date Tested: March 22, 2010 6:55 PM | **Model Name:** ABC
Overall Status: **CTS 1.4 - Incomplete** | **Port Tested:** 1

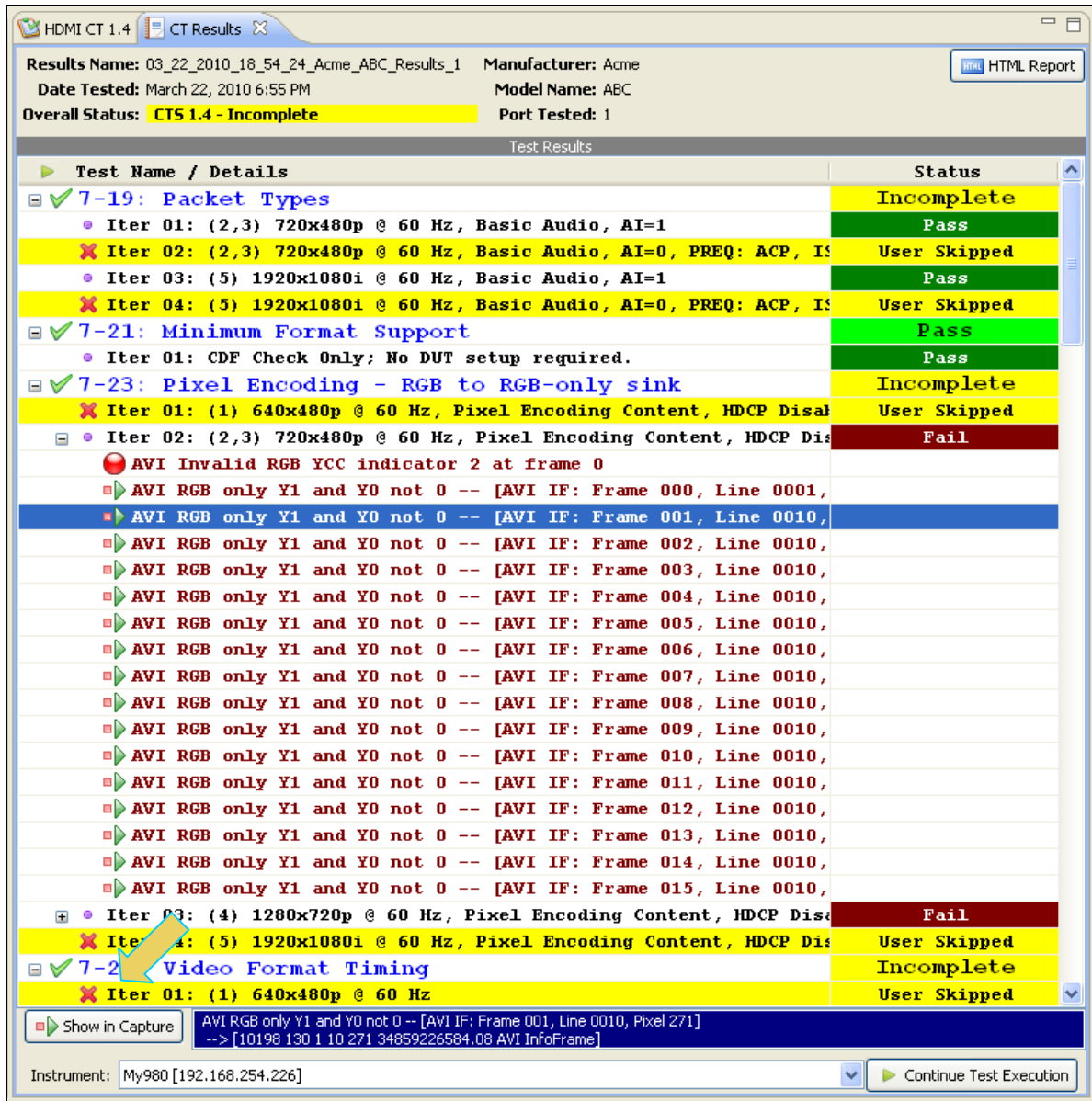
Test Name / Details	Status
7-19: Packet Types	Incomplete
• Iter 01: (2,3) 720x480p @ 60 Hz, Basic Audio, AI=1	Pass
✘ Iter 02: (2,3) 720x480p @ 60 Hz, Basic Audio, AI=0, PREQ: ACP, IS	User Skipped
• Iter 03: (5) 1920x1080i @ 60 Hz, Basic Audio, AI=1	Pass
✘ Iter 04: (5) 1920x1080i @ 60 Hz, Basic Audio, AI=0, PREQ: ACP, IS	User Skipped
7-21: Minimum Format Support	Pass
• Iter 01: CDF Check Only; No DUT setup required.	Pass
7-23: Pixel Encoding - RGB to RGB-only sink	Incomplete
✘ Iter 01: (1) 640x480p @ 60 Hz, Pixel Encoding Content, HDCP Disal	User Skipped
• Iter 02: (2,3) 720x480p @ 60 Hz, Pixel Encoding Content, HDCP Dis	Fail
• AVI Invalid RGB YCC indicator 2 at frame 0	
▶ AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 000, Line 0001,	
▶ AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 001, Line 0010,	
▶ AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 002, Line 0010,	
▶ AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 003, Line 0010,	
▶ AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 004, Line 0010,	
▶ AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 005, Line 0010,	
▶ AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 006, Line 0010,	
▶ AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 007, Line 0010,	
▶ AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 008, Line 0010,	
▶ AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 009, Line 0010,	
▶ AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 010, Line 0010,	
▶ AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 011, Line 0010,	
▶ AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 012, Line 0010,	
▶ AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 013, Line 0010,	
▶ AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 014, Line 0010,	
▶ AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 015, Line 0010,	
• Iter 03: (4) 1280x720p @ 60 Hz, Pixel Encoding Content, HDCP Dis	Fail
✘ Iter 04: (5) 1920x1080i @ 60 Hz, Pixel Encoding Content, HDCP Dis	User Skipped
7-25: Video Format Timing	Incomplete
✘ Iter 01: (1) 640x480p @ 60 Hz	User Skipped

Show in Capture | AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 001, Line 0010, Pixel 271] --> [10198 130 1 10 271 34859226584.08 AVI InfoFrame]

Instrument: My980 [192.168.254.226] | **Continue Test Execution**

2. Navigate to view the results.

When you highlight a failure in the Details window of the **CT Results** panel, you can navigate to the details in the **Data Decode** panel by clicking on the **Show in Capture** activation button on the bottom left of the panel. This is shown in the screen shot below.



The application will take you to the entry in the **Data Decode** panel where the error occurred.

The screenshot displays the HDMI CT 1.4 software interface. At the top, there are tabs for 'HDMI CT 1.4', 'CT Results', and 'Event Plot'. Below the tabs is a toolbar with search and navigation icons. The main area shows a timing diagram with various signal lines (TMD5, VSYNC, HSYNC, CTL3, AVMUTE, DDC, CEC) and colored blocks representing different data packets: GCP, AUDSAM, AVI, AUD IF, SPD, and GAM. A yellow arrow points to the 'GCP' block in the diagram and the corresponding 'GCP' entry in the 'Data Decode' table below.

Packet	TimeStamp (HH:MM:SS.ms....)	Frame	Line	Pixel	Type	SubType	Info
1607	9:40:59.226.583.680	1	10	0	TMD5	VSYNC	VSYNC 5148 pixels
1608	9:40:59.226.584.080	1	10	207	TMD5	GCP	General Control
1609	9:40:59.226.585.264	1	10	239	TMD5	AUDSAM	Audio Sample (L-PCM and IEC 61937 compressed)
1610	9:40:59.226.586.448	1	10	271	TMD5	AVI IF	AVI InfoFrame
1611	9:40:59.226.587.632	1	10	303	TMD5	AUD IF	Audio InfoFrame
1612	9:40:59.226.588.816	1	10	335	TMD5	SPD IF	Source Product Descriptor InfoFrame
1613	9:40:59.226.590.000	1	10	367	TMD5	GMP	Gamut Metadata
1614	9:40:59.226.607.910	1	10	691	TMD5	AUDSAM	Audio Sample (L-PCM and IEC 61937 compressed)
1615	9:40:59.226.615.430	1	10	0	TMD5	HSYNC	HSYNC 62 pixels

Below the table, there is a section for video format information:

```

picture aspect ratio:      4:3
colorimetry:              Extended
non-uniform picture scale: no known
quantization range:       default (depends on video format)
extended colorimetry:     xvYCC601
IT content:               no data
video format:             VIC=2( 720x480p 59.94/60Hz,4:3,8:9)
pixel repetition:         none
    
```

At the bottom, there are hexadecimal values for HB, SB0, and SB1:

```

HB : 82 02 0d e4
SB0: 8e 52 d8 00 02 00 00 5c | .R.....\
SB1: 00 e1 01 00 00 d1 02 2d | .....-
    
```

You can also view the **CT Results** and the **Data Decode** panel to see both the failure during the compliance test and the **Data Decode** panel at the same time. Refer to the screen shot below.

The screenshot displays the HDMI CT 1.4 software interface. At the top, the 'CT Results' tab is active, showing test details for 'Acme' manufacturer and 'ABC' model. The overall status is 'CTS 1.4 - Incomplete'. A table lists test results, with '7-23: Pixel Encoding - RGB to RGB-only sink' marked as 'Incomplete'. Below this, iteration details show a 'Fail' for 'AVI Invalid RGB YCC indicator 2 at frame 0'. A yellow arrow points to the 'CT Results' tab, and a green arrow points to the 'AVI RGB only Y1 and Y0 not 0' error message. The 'Data Decode' panel at the bottom shows a table of packets, with packet 1610 (AVI InfoFrame) selected. Below the table, scan and active info fields are displayed, along with hex data for HB and SB0.

Test Name / Details	Status
7-23: Pixel Encoding - RGB to RGB-only sink	Incomplete
✗ Iter 01: (1) 640x480p @ 60 Hz, Pixel Encoding Content, HDCP Disal	User Skipped
• Iter 02: (2,3) 720x480p @ 60 Hz, Pixel Encoding Content, HDCP Dis	Fail
● AVI Invalid RGB YCC indicator 2 at frame 0	
▶ AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 000, Line 0001,	
▶ AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 001, Line 0010,	
▶ AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 002, Line 0010,	
▶ AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 003, Line 0010,	
▶ AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 004, Line 0010,	

Packet	TimeStamp (HH:MM:SS.ms....)	Frame	Line	Pixel	Type	SubType	Info
1607	9:40:59.226.583.680	1	10	0	TMDS	VSYNC	VSYNC 5148 pixels
1608	9:40:59.226.584.080	1	10	207	TMDS	GCP	General Control
1609	9:40:59.226.585.264	1	10	239	TMDS	AUDSAM	Audio Sample (L-PCM and IEC 61937 compressed)
1610	9:40:59.226.586.448	1	10	271	TMDS	AVI IF	AVI InfoFrame
1611	9:40:59.226.587.632	1	10	303	TMDS	AUD IF	Audio InfoFrame
1612	9:40:59.226.588.816	1	10	335	TMDS	SPD IF	Source Product Descriptor InfoFrame
1613	9:40:59.226.590.000	1	10	367	TMDS	GMP	Gamut Metadata
1614	9:40:59.226.607.910	1	10	691	TMDS	AUDSAM	Audio Sample (L-PCM and IEC 61937 compressed)


```

scan info:           All active pixels & lines are displayed
active info:         format valid
RGB/YCC indicator:   YCbCr 4:4:4
active format:        same as picture 8
picture aspect ratio: 4:3
colorimetry:          Extended
non-uniform picture scale: no known

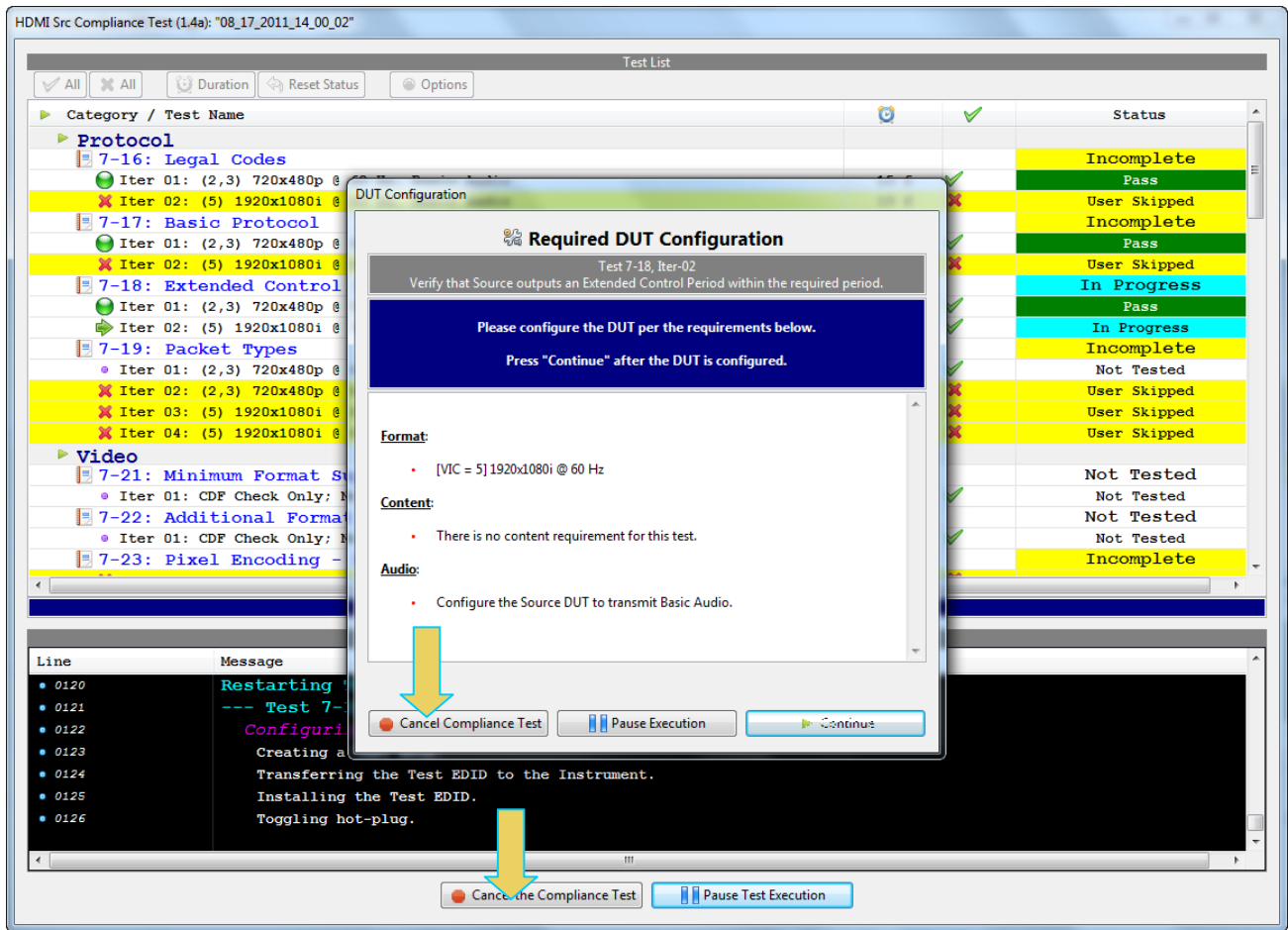
HB : 82 02 0d e4
SB0: 8e 52 d8 00 02 00 00 5c | .R....\
    
```

3.10 Canceling and Resuming the HDMI Source Compliance after cancel

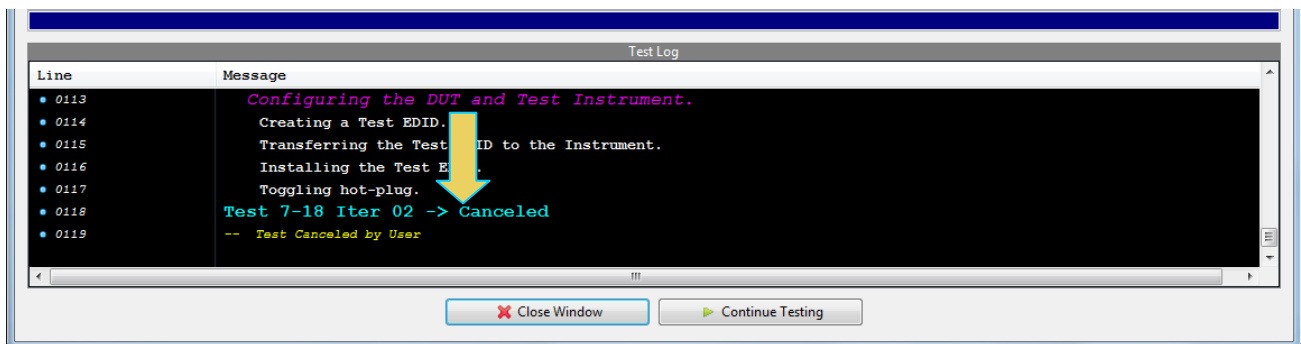
You can complete or resume a test series that was canceled earlier. The test results are saved in a directory that is accessible through the 980 GUI Manager interface. Use the following procedures to cancel and resume a canceled test.

To cancel a test:

1. Click on the **Cancel Compliance Test** activation button either on the popup dialog box or the bottom of the test log panel. See the screen example below.

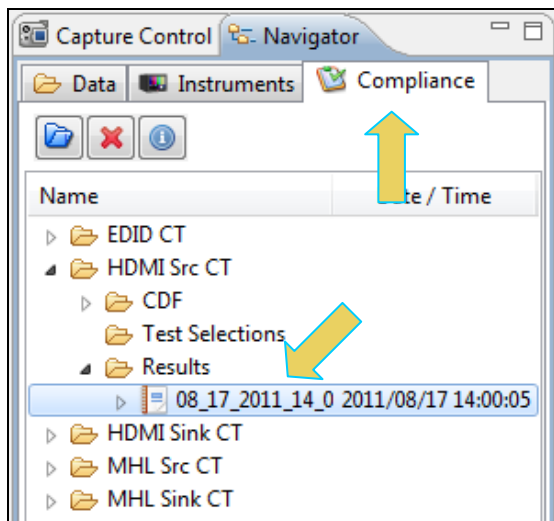


An indication that the test was canceled will be shown in the Test Log lower panel.

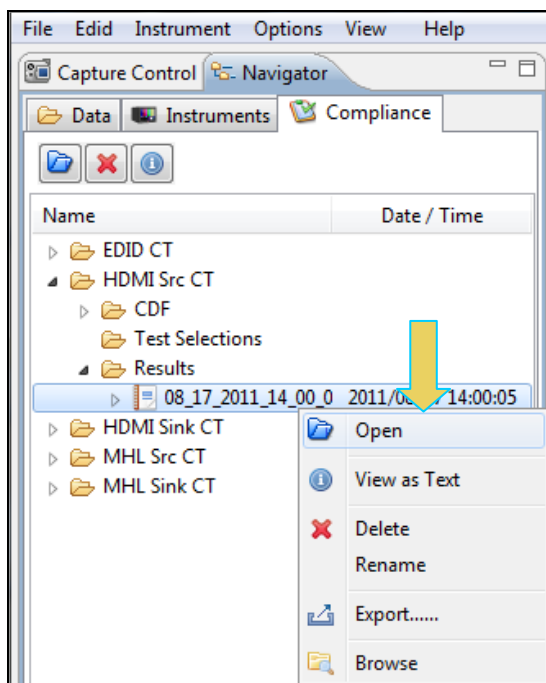


To resume a canceled test:

1. Navigate to the Navigator/Compliance panel and open the HDMI Source CT/Results directory as shown below.



2. Right click on the results file and select Open as shown below.



The CT Results window appears as shown below.

HDMI Source Compliance Test Results

Results Name: 08_17_2011_14_00_02 Manufacturer: Acme [HTML Report](#)
 Date Tested: August 17, 2011 2:00 PM Model Name: Acme HDTV
 Overall Status: **CTS 1.4a - Incomplete** Port Tested: 1

Test Name / Details		Status
7-16: Legal Codes		Incomplete
Iter 01: (2,3) 720x480p @ 60 Hz, Basic Audio	15 f	Pass
Iter 02: (5) 1920x1080i @ 60 Hz, Basic Audio	15 f	User Skipped
7-17: Basic Protocol		Incomplete
Iter 01: (2,3) 720x480p @ 60 Hz, Basic Audio	15 f	Pass
Iter 02: (5) 1920x1080i @ 60 Hz, Basic Audio	15 f	User Skipped
7-18: Extended Control Period		Canceled
Iter 01: (2,3) 720x480p @ 60 Hz, Basic Audio	15 f	Pass
Iter 02: (5) 1920x1080i @ 60 Hz, Basic Audio	15 f	Canceled
7-19: Packet Types		Incomplete
Iter 01: (2,3) 720x480p @ 60 Hz, Basic Audio, AI=1	2 s	Not Tested
Iter 02: (2,3) 720x480p @ 60 Hz, Basic Audio, AI=0, PREQ: ACP, IS	2 s	User Skipped
Iter 03: (5) 1920x1080i @ 60 Hz, Basic Audio, AI=1	2 s	User Skipped
Iter 04: (5) 1920x1080i @ 60 Hz, Basic Audio, AI=0, PREQ: ACP, IS	2 s	User Skipped
7-21: Minimum Format Support		Not Tested
7-22: Additional Format Support		Not Tested
7-23: Pixel Encoding - RGB to RGB-only sink		Incomplete
7-24: Pixel Encoding - YCbCr to YCbCr Sink		Incomplete
7-25: Video Format Timing		Incomplete
7-26: Pixel Repetition		Incomplete
7-27: AVI InfoFrame		Incomplete

Instrument: My980 [192.168.254.112] [Continue Test Execution](#)

- Click on the **Continue Test Execution** button on the lower left (above) to resume the tests.

3.11 Viewing the HDMI Source Compliance HTML test report

After you have completed the tests, an HTML Report activation button will appear in the upper right of the screen which enables you to access the html report of the test results. Use the following procedures to view the html test report.

To view the html test report:

- Select the **CT Results** panel as shown below.
- Click on the **HTML Report** activation button.

A dialog box will appear asking if you want a summary of the test results or a version that includes the CDF. This dialog box is shown in the screen shot below.

The screenshot displays the 'HDMI CT 1.4' software interface. At the top, it shows test details: 'Results Name: 03_22_2010_18_54_24_Acme_ABC_Results_1', 'Date Tested: March 22, 2010 6:55 PM', 'Manufacturer: Acme', and 'Model Name: ABC'. The 'Overall Status' is 'CTS 1.4 - Incomplete' and 'Port Tested: 1'. A yellow arrow points to an 'HTML Report' button in the top right.

The main area is a 'Test Results' table with columns for 'Test Name / Details' and 'Status'. The table contains the following entries:

Test Name / Details	Status
7-23: Pixel Encoding - RGB to RGB-only sink	Incomplete
✘ Iter 01: (1) 640x480p @ 60 Hz, Pixel Encoding Content, HDCP Disa	User Skipped
Iter 02: (2,3) 720x480p @ 60 Hz, Pixel Encoding Content, HDCP Dis	Fail
AVI Invalid RGB YCC indicator 2 at frame 0	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 000, Line 0001,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 001, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 002, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 003, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 004, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 005, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 006, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 007, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 008, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 009, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 010, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 011, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 012, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 013, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 014, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 015, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 016, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 017, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 018, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 019, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 020, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 021, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 022, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 023, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 024, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 025, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 026, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 027, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 028, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 029, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 030, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 031, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 032, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 033, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 034, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 035, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 036, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 037, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 038, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 039, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 040, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 041, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 042, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 043, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 044, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 045, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 046, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 047, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 048, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 049, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 050, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 051, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 052, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 053, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 054, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 055, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 056, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 057, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 058, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 059, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 060, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 061, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 062, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 063, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 064, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 065, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 066, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 067, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 068, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 069, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 070, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 071, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 072, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 073, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 074, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 075, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 076, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 077, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 078, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 079, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 080, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 081, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 082, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 083, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 084, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 085, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 086, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 087, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 088, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 089, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 090, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 091, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 092, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 093, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 094, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 095, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 096, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 097, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 098, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 099, Line 0010,	
AVI RGB only Y1 and Y0 not 0 -- [AVI IF: Frame 100, Line 0010,	

A 'Generate Report' dialog box is open, titled 'HTML Report'. It contains the following options:

- 03_22_2010_18_54_24_Acme_ABC_Results_1
- Select the desired report options.
- Show Test Summary Only.
- Include CDF Information.
- Buttons: Cancel, OK

Below the dialog box, there is a table of test data:

SubType	Info
VSYNC	VSYNC 5148 pixels
GCP	General Control
AUDSAM	Audio Sample (L-PCM and IEC 61937 compressed)
AVI IF	AVI InfoFrame
AUD IF	Audio InfoFrame
SPD IF	Source Product Descriptor InfoFrame
GMP	Gamut Metadata
ΔIIDSAM	ΔAudio Sample (L-PCM and IEC 61937 compressed)

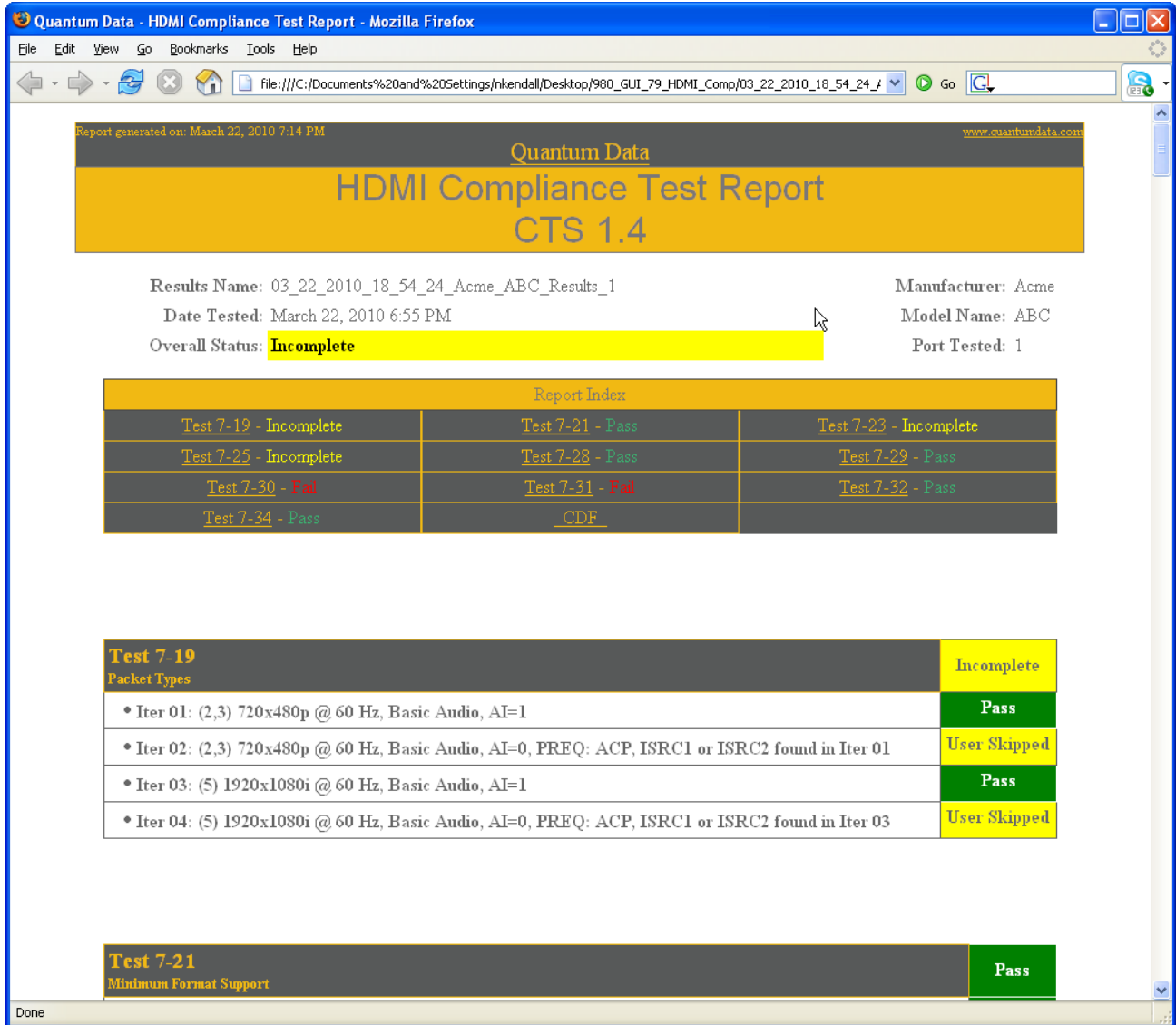
At the bottom, there is a 'scan info' section with the following text:

```

scan info:           All active pixels & lines are displayed
active info:         format valid
RGB/YCC indicator:   YCbCr 4:4:4
active format:       same as picture 8
picture aspect ratio: 4:3
colorimetry:         Extended
non-uniform picture scale: no known

HB : 82 02 0d e4
SB0: 8e 52 d8 00 02 00 00 5c | .R.....\
    
```

The html report is shown in the following screens.



Quantum Data - HDMI Compliance Test Report - Mozilla Firefox

file:///C:/Documents%20and%20Settings/nkendall/Desktop/980_GUI_79_HDMI_Comp/03_22_2010_18_54_24_1

Test 7-23 Pixel Encoding - RGB to RGB-only sink	Incomplete
<ul style="list-style-type: none"> • Iter 01: (1) 640x480p @ 60 Hz, Pixel Encoding Content, HDCP Disabled 	User Skipped
<ul style="list-style-type: none"> • Iter 02: (2,3) 720x480p @ 60 Hz, Pixel Encoding Content, HDCP Disabled <ul style="list-style-type: none"> ▪ Capture Data: Test_7_23_02 <ul style="list-style-type: none"> ▪ AVI Invalid RGB YCC indicator 2 at frame 0 ▪ AVI RGB only Y1 and Y0 not 0 [AVI IF: Frame 000, Line 0001, Pixel 271] ▪ AVI RGB only Y1 and Y0 not 0 [AVI IF: Frame 001, Line 0010, Pixel 271] ▪ AVI RGB only Y1 and Y0 not 0 [AVI IF: Frame 002, Line 0010, Pixel 271] ▪ AVI RGB only Y1 and Y0 not 0 [AVI IF: Frame 003, Line 0010, Pixel 271] ▪ AVI RGB only Y1 and Y0 not 0 [AVI IF: Frame 004, Line 0010, Pixel 271] ▪ AVI RGB only Y1 and Y0 not 0 [AVI IF: Frame 005, Line 0010, Pixel 271] ▪ AVI RGB only Y1 and Y0 not 0 [AVI IF: Frame 006, Line 0010, Pixel 271] ▪ AVI RGB only Y1 and Y0 not 0 [AVI IF: Frame 007, Line 0010, Pixel 271] ▪ AVI RGB only Y1 and Y0 not 0 [AVI IF: Frame 008, Line 0010, Pixel 271] ▪ AVI RGB only Y1 and Y0 not 0 [AVI IF: Frame 009, Line 0010, Pixel 271] ▪ AVI RGB only Y1 and Y0 not 0 [AVI IF: Frame 010, Line 0010, Pixel 271] ▪ AVI RGB only Y1 and Y0 not 0 [AVI IF: Frame 011, Line 0010, Pixel 271] ▪ AVI RGB only Y1 and Y0 not 0 	Fail

Done

When the tests are completed the test window that shows the current activity will close. A new tab and panel will appear next to the **HDMI CT 1.4** tab called the **CT Results** tab. You can view the test results in this panel. Refer to the following screen shots to see examples of the **CT Results** panel.

The screenshot shows a software window titled 'HDMI CT 1.4' with a sub-tab 'CT Results' highlighted by a blue arrow. The window displays the following information:

- Results Name:** 03_22_2010_18_54_24_Acme_ABC_Results_1
- Manufacturer:** Acme
- Date Tested:** March 22, 2010 6:55 PM
- Model Name:** ABC
- Overall Status:** CTS 1.4 - Incomplete
- Port Tested:** 1

Below this information is a table titled 'Test Results' with two columns: 'Test Name / Details' and 'Status'. The table contains the following entries:

Test Name / Details	Status
7-19: Packet Types	Incomplete
7-21: Minimum Format Support	Pass
7-23: Pixel Encoding - RGB to RGB-only sink	Incomplete
7-25: Video Format Timing	Incomplete
7-28: IEC 60958 / IEC 61937	Pass
7-29: ACR	Pass
7-30: Audio Sample Packet Jitter	Fail
7-31: Audio InfoFrame	Fail
7-32: Audio Sample Packet Layout	Pass
7-34: Deep Color	Pass

At the bottom of the window, there is an 'Open Capture' button, an 'Instrument' field showing 'My980 [192.168.254.226]', and a 'Continue Test Execution' button.

4 HDMI Sink Compliance Tests

This chapter describes how to use the HDMI sink compliance test feature. Please note you will have to purchase the 980 HDMI Sink Compliance Test option in order to run these tests.

Note: The HDMI sink compliance test is only offered on the 980 297MHz “Gen 3” version of the product.

The following test sections in the HDMI 1.4a Sink Compliance Test specification are supported through the 980 GUI Manager:

- 8.2 Sink - EDID/E-DDC Tests
 - Test ID 8-1 – EDID Readable
 - Test ID 8-2 – VESA Structure
 - Test ID 8-3 – CEA Timing Extension
- 8.4 Sink - Protocol Tests
 - Test ID 8-15 – Character Synchronization
 - Test ID 8-16 – Acceptance of Valid Packet Types
- 8.5 Video – Video Timing Tests
 - Test ID 8-17 – Basic Format Support
 - Test ID 8-18 – HDMI Format Support
 - Test ID 8-19 – Pixel Encoding
 - Test ID 8-20 – Video Format Timing
- 8.6 Sink - Audio Tests
 - Test ID 8-21 – Audio Clock Regeneration
 - Test ID 8-23 – Audio Formats
- 8.7 Sink - Interoperability with DVI Tests
 - Test ID 8-24 – Interoperability with DVI
- 8.8 Sink - Advanced Features Tests
 - Test ID 8-25 – Deep Color
 - Test ID 8-27 – High Bitrate Audio (*this test requires 882*)
 - Test ID 8-29 – 3D Video Format Timing
 - Test ID 8-30 – 4K by 2K Video Format Timing (only available on the 980 297MHz version “Gen 3”)
 - Test ID 8-31 – AVI Infoframe support for Extended Colorimetry, Content Type, Selectable YCC Quantization Range

4.1 Workflow for running the HDMI Sink Compliance Tests

The following are the high level steps you will need to follow to run the HDMI Sink Compliance Test. This high level workflow assumes that you have assembled the Host PC, 980 Protocol Analyzer and sink device under test and applied power to all them.

1. (Optional) Establish an Ethernet/IP connection between the external 980 GUI Manager and the 980 Protocol Analyzer.
2. Connect an HDMI cable between the 980 and the sink device under test.

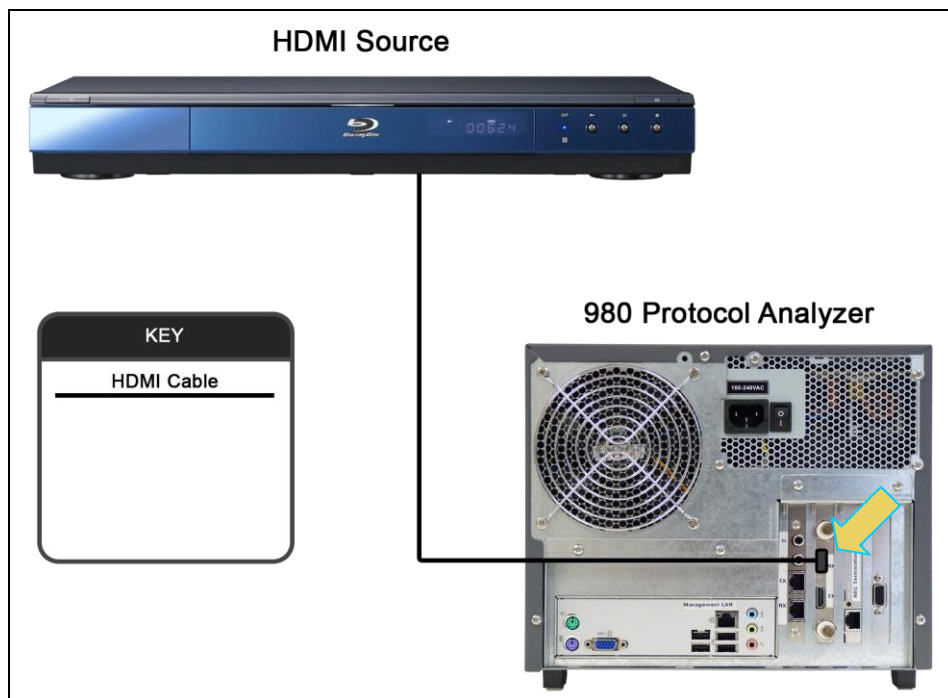
3. Launch either the external 980 GUI Manager or the embedded 980 GUI Manager and access the HDMI Sink Compliance Test panel.
4. Complete a new Capabilities Declaration Form (CDF) or load an existing CDF for the device under test using the **CDF Entry** panel.
5. Select the tests that you wish to run from the **Test Selection** panel.
6. Initiate the tests through the **Test Options / Review** panel.
7. View the detailed data for test failures if failures occur.
8. View the results in the **Test Results** panel under the **Navigator** panel.

4.2 Making the HDMI connections

This subsection describes the physical connections required to run the HDMI sink compliance tests. This procedure assumes that you have assembled the 980 Protocol Analyzer and sink device under test into your work area.

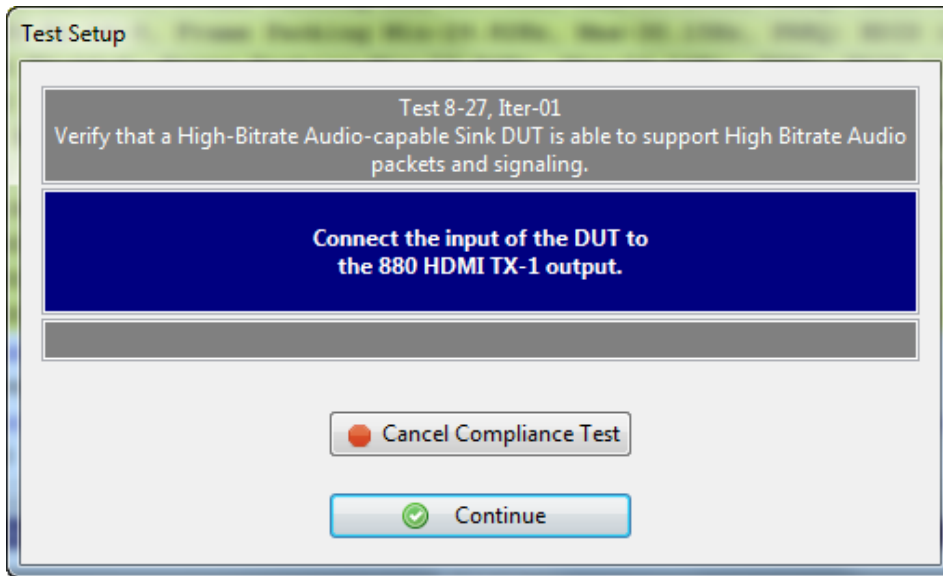
To make the physical HDMI connections:

This procedure assumes that you have assembled the 980 Protocol Analyzer and sink device under test and applied power to all them. Refer to the procedures and diagram below.

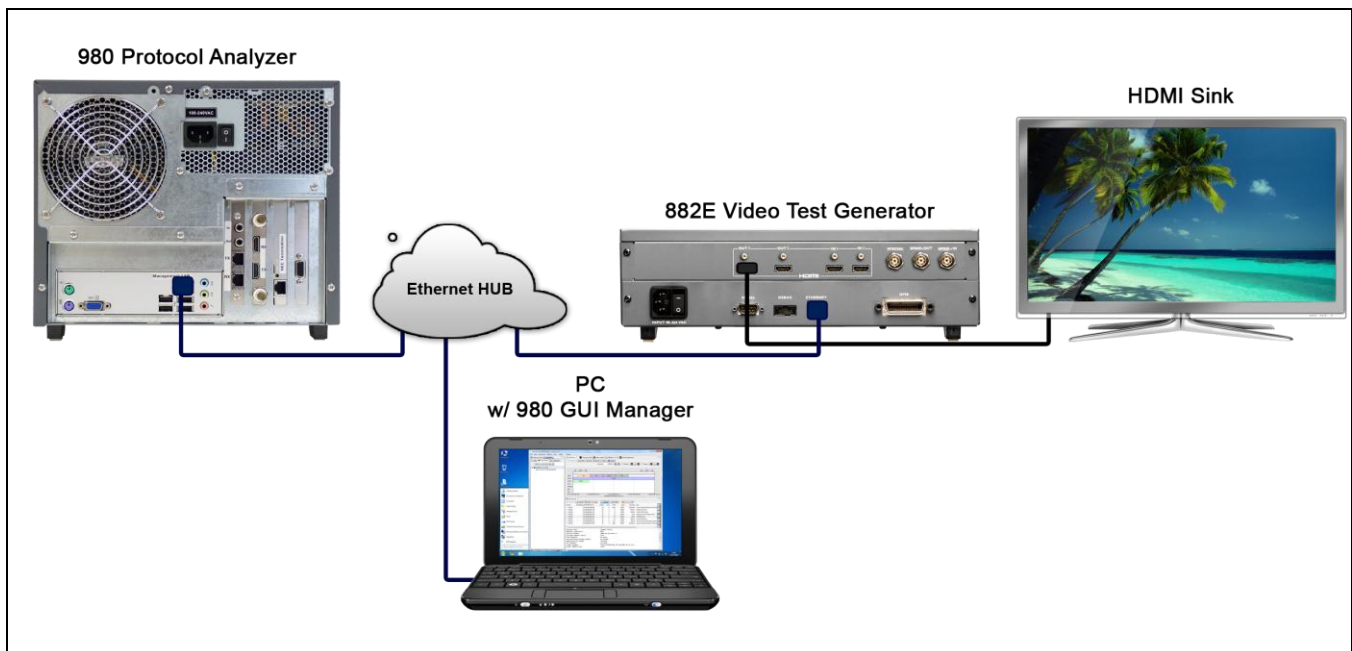


1. Connect your HDMI sink device under test to the HDMI Tx connector (the bottom most HDMI connector shown in the figure below) on the 980 Protocol Analyzer. Use a high speed HDMI cable.

Special Note about High Bitrate Audio Test: The High Bitrate Audio test requires the use of the Quantum Data 882E or 882EA. The following diagram is a depiction of the test setup for the High Bitrate audio test. When the 980 GUI Manager is ready to run the High Bitrate audio test 8-27 during the test execution, it will instruct you to reconfigure the test setup such that the 882EA HDMI Out port is connected to the sink device under test. The following dialog box is presented.

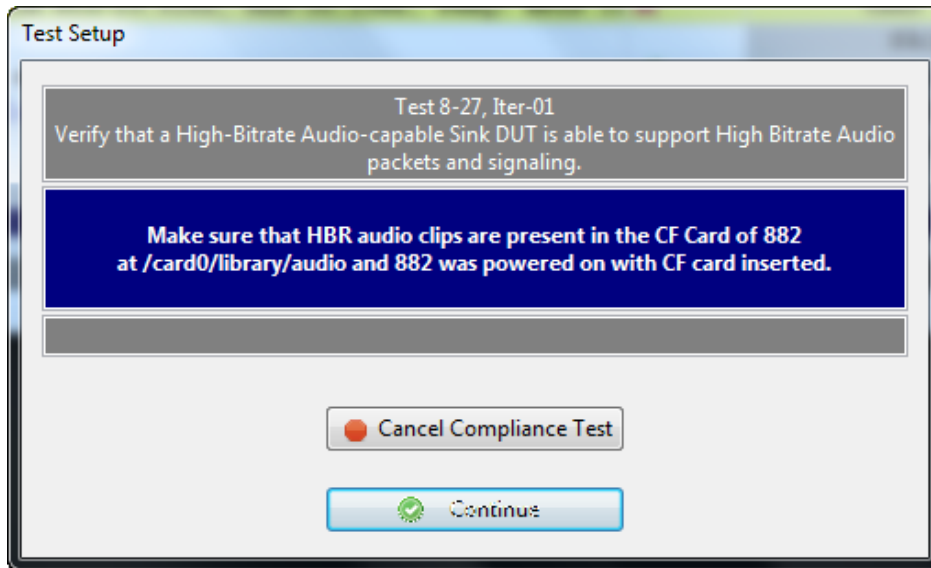


The following diagram is a depiction of the test setup for the High Bitrate audio test along with the procedures for making the connections.



1. Connect an HDMI cable from the Quantum Data 882E/EA HDMI Out port to the sink device under test (above). The HDMI cable connected from the 980 Protocol Analyzer to the sink device will be temporarily removed.

Note: You will have to ensure that you have the High Bitrate audio files stored on the CF Card in the 882. A dialog box instructs you to do this (below).



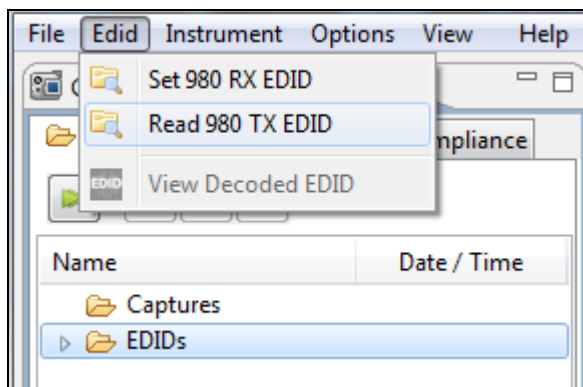
4.3 Completing the CDF

Use the following procedures to complete the CDF. You will have to know the capabilities of the sink device under test. You can determine this from the spec sheet or by reading its EDID. You can read the EDID through the 980 Protocol Analyzer GUI interface. Use the following procedure.

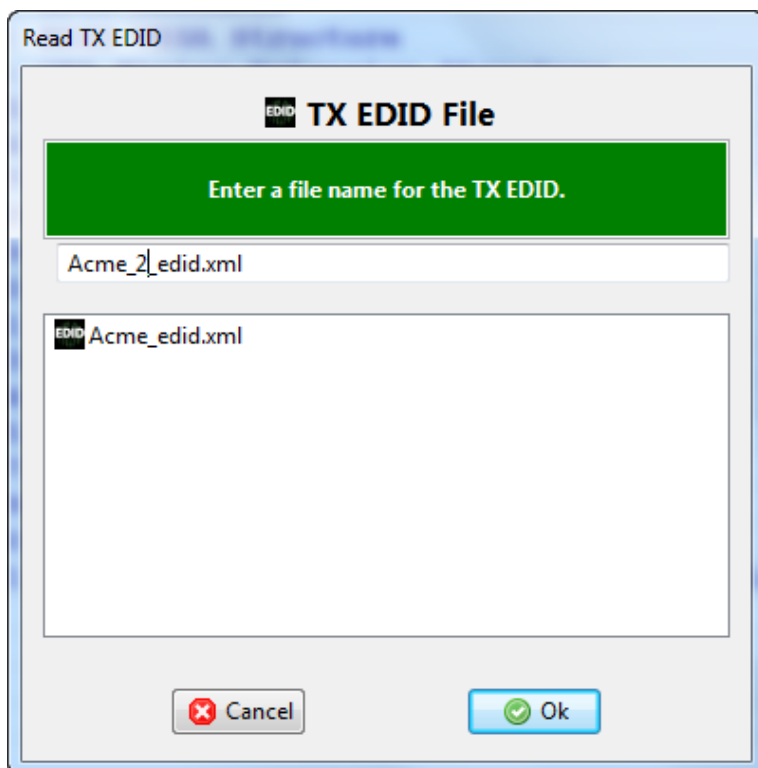
To read the EDID of the sink device under test:

Note: The 980 will have to be connected to the sink device in order to read the EDID.

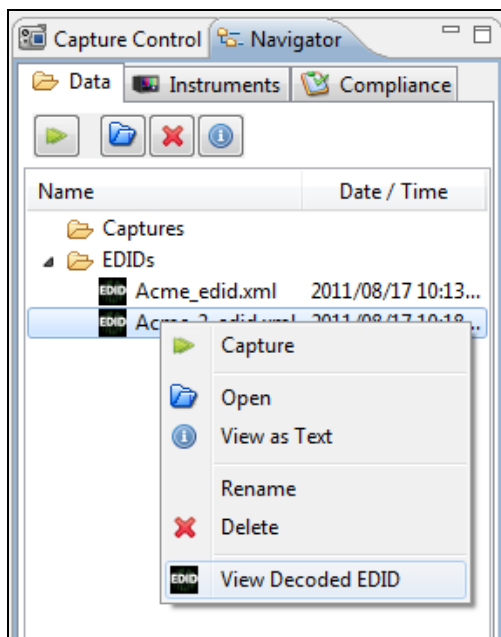
1. Select Read 980 Tx EDID from the EDID top level menu as shown below.



2. Assign a name to the EDID. You will be prompted to assign a file name in order to store the EDID for later viewing. The dialog box is shown below.



3. View the EDID by navigating to the Navigator/Data window and opening up the EDIDs directory. Then right click on the EDID file you wish to view and select View Decoded EDID as shown below.



A window opens up allowing you to view the entire contents of the EDID in hex and human readable text.

EDID Decode
 C:\Users\nkendall\Desktop\GUL_Mgr_3_1_6\980mgr\workspace\edid\data\Acme_2_edid.xml

Block 1

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00:	02	03	24	77	4A	90	05	04	03	07	02	06	01	20	22	23
10:	09	07	07	6C	03	0C	00	20	00	00	1E	C0	22	22	2B	2B
20:	E3	05	03	01	01	1D	00	72	51	D0	1E	20	6E	28	55	00
30:	C4	8E	21	00	00	1E	8C	0A	A0	14	51	F0	16	00	26	7C
40:	43	00	C4	8E	21	00	00	98	8C	0A	D0	8A	20	E0	2D	10
50:	10	3E	96	00	13	8E	21	00	00	18	8C	0A	A0	14	51	F0
60:	16	00	26	7C	43	00	13	8E	21	00	00	98	01	1D	80	18
70:	71	1C	16	20	58	2C	25	00	C4	8E	21	00	00	9E	00	F5

Checksum verified
 E-EDID CEA Extension Version 3
 Reserved data block offset 36

- Native DTDs in EDID: 7
- Supports underscan: No
- Supports basic audio: Yes
- Supports YCbCr 4:4:4: Yes
- Supports YCbCr 4:2:2: Yes

CEA Data Block: Tag 2, bytes 10: Video Data

Number of Descriptors: 10

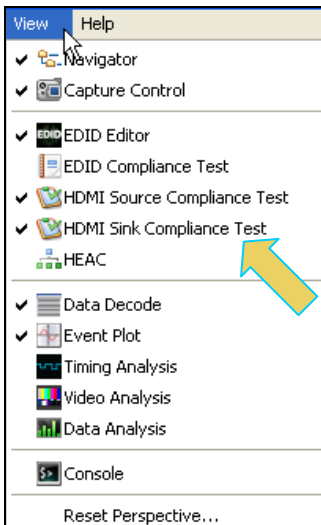
VIC 16: 1920 x 1080 p 59.94/60Hz 16:9 Native
 VIC 5: 1920 x 1080 i 59.94/60Hz 16:9
 VIC 4: 1280 x 720 p 59.94/60Hz 16:9
 VIC 3: 720 x 480 p 59.94/60Hz 16:9
 VIC 7: 720(1440) x 480 i 59.94/60Hz 16:9
 VIC 2: 720 x 480 p 59.94/60Hz 4:3
 VIC 6: 720(1440) x 480 i 59.94/60Hz 4:3
 VIC 1: 640 x 480 p 59.94/60Hz 4:3
 VIC 32: 1920 x 1080 p 23.97/24Hz 16:9
 VIC 34: 1920 x 1080 p 23.97/30Hz 16:9

Save As Close

You can save the EDID report to your PC by clicking on the **Save As** activation button on the lower right side. Click on **Close** to exit out of the viewing window.

To complete the CDF for the 980 sink compliance test:

1. From the **View** menu, enable viewing of the **HDMI Sink Compliance Test** panel.



- Select the **CDF Entry** panel as shown below.

The Manufacturer field is blank.

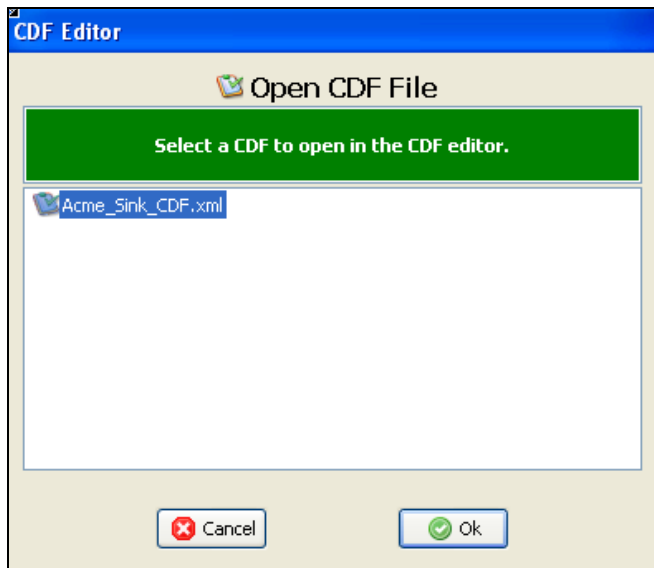
Manufacturer	What is the product manufacturer's name?
Model	What is the model name/number of the product?
Sink_HDMI_Output_Count	How many HDMI output ports are on the product? <input type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8 <input type="radio"/> 9
Sink_P	The number of the HDMI Input Port being tested. <input checked="" type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8 <input type="radio"/> 9 <input type="radio"/> 10 <input type="radio"/> 11 <input type="radio"/> 12 <input type="radio"/> 13 <input type="radio"/> 14 <input type="radio"/> 15
Sink_Image_Size	Does the DUT indicate correct size at Image Size area in the EDID? <input type="radio"/> Yes <input checked="" type="radio"/> No x cm
Sink_Max_TMD5_Clock	What is the maximum TMD5 clock frequency (in MHz) supported by the product? (Any value, e.g. 74.25, 148.5, 222.75, etc.) 74.25

- To create a new CDF, click on the **New** activation button.

You will be prompted with a confirmation that you want to start a new CDF and reset the values. Click **OK** to proceed.

- To open an existing CDF, click on the **Open** activation button.

You will be prompted with a dialog box that enables you to open a CDF. Select a CDF and then **OK** to proceed.

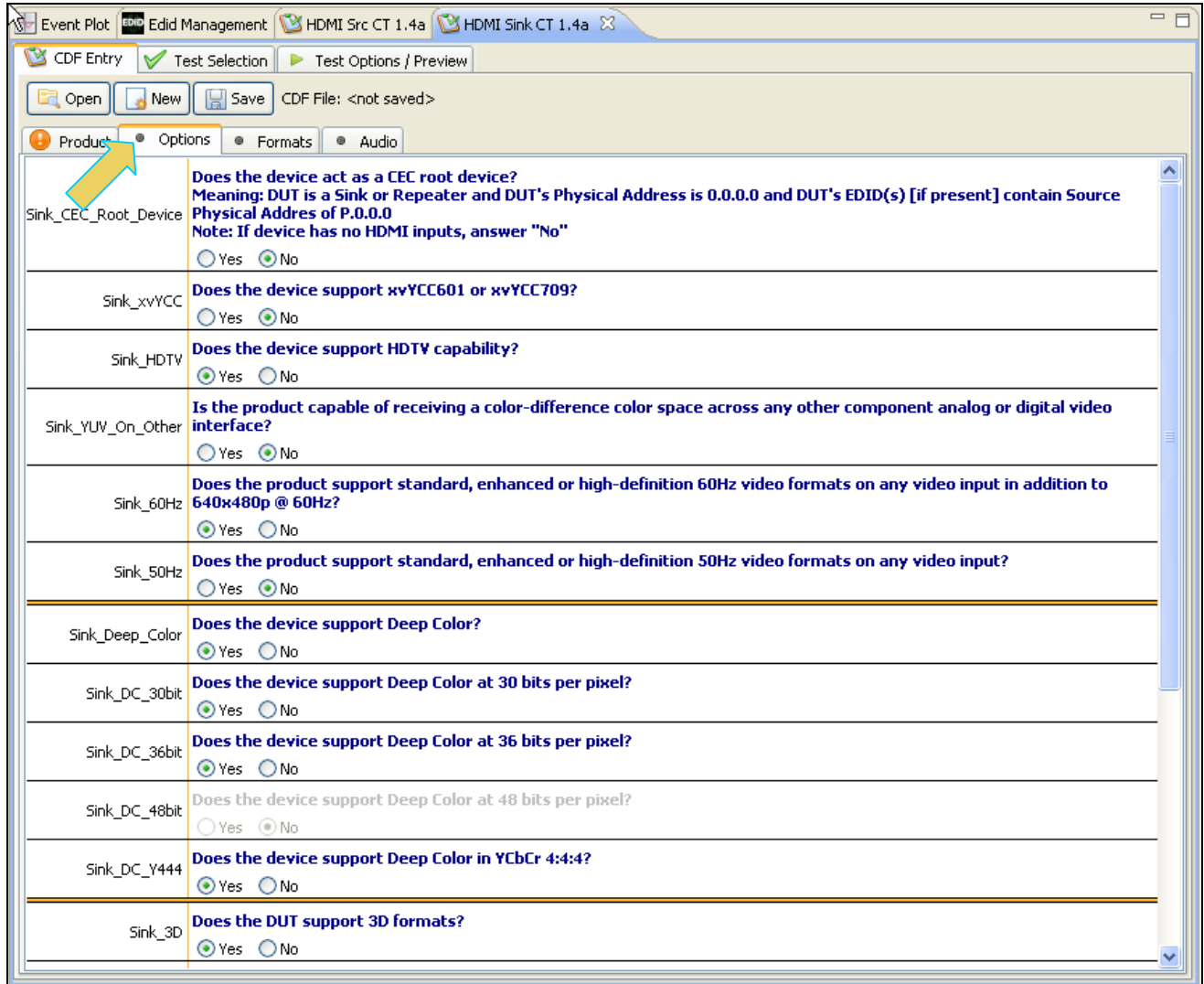


- Complete the items in the **Product** tab of the **CDF Entry** panel shown below. Note that you will have to complete the essential fields in order to proceed. A read status message will appear indicating if you have not completed all the essential fields.

The screenshot shows the Edid Management software interface. At the top, there are tabs for 'Event Plot', 'Edid Management', 'HDMI Src CT 1.4a', and 'HDMI Sink CT 1.4a'. Below the tabs is a menu bar with 'CDF Entry', 'Section', and 'Test Options / Preview'. A toolbar contains 'Open', 'New', and 'Save' buttons, with 'CDF File: <not saved>' displayed. Below the toolbar are tabs for 'Product', 'Options', 'Formats', and 'Audio'. A red error bar at the top of the form area states 'The Model field is blank.' Below this, the form contains several fields: 'Manufacturer' with the value 'Acme', 'Model' (which is empty and highlighted by a yellow arrow), 'Sink_HDMI_Output_Count' with radio buttons for values 0 through 9 (0 is selected), 'Sink_P' with radio buttons for values 1 through 15 (2 is selected), 'Sink_Image_Size' with radio buttons for 'Yes' and 'No' (No is selected) and a size input field, and 'Sink_Max_TMDS_Clock' with the value '74.25'.

The Model field is blank.	
Manufacturer	What is the product manufacturer's name? Acme
Model	What is the model name/number of the product?
Sink_HDMI_Output_Count	How many HDMI output ports are on the product? <input checked="" type="radio"/> 0 <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8 <input type="radio"/> 9
Sink_P	The number of the HDMI Input Port being tested. <input type="radio"/> 1 <input checked="" type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8 <input type="radio"/> 9 <input type="radio"/> 10 <input type="radio"/> 11 <input type="radio"/> 12 <input type="radio"/> 13 <input type="radio"/> 14 <input type="radio"/> 15
Sink_Image_Size	Does the DUT indicate correct size at Image Size area in the EDID? <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="text"/> x <input type="text"/> cm
Sink_Max_TMDS_Clock	What is the maximum TMDS clock frequency (in MHz) supported by the product? (Any value, e.g. 74.25, 148.5, 222.75, etc.) 74.25

6. Complete the items in the **Options** tab.



7. Complete the items in the **Formats** tab.

Event Plot Edid Management HDMI Src CT 1.4a HDMI Sink CT 1.4a

CDF Entry Test Selection Test Options / Preview

Open New Save CDF File: <not saved>

Product Options **Formats** Audio

Which HDMI "Primary" video format timings are supported by the product? (Select supported items below.)

Sink_Video_Formats

- (1) 640x480p @ 60 Hz 4/3
- (2) 720x480p @ 60 Hz 4/3
- (3) 720x480p @ 60 Hz 16/9
- (4) 1280x720p @ 60 Hz 16/9
- (5) 1920x1080i @ 60 Hz 16/9
- (6) 1440x480i @ 60 Hz 4/3
- (7) 1440x480i @ 60 Hz 16/9
- (16) 1920x1080p @ 60 Hz 16/9
- (17) 720x576p @ 50 Hz 4/3
- (18) 720x576p @ 50 Hz 16/9
- (19) 1280x720p @ 50 Hz 16/9
- (20) 1920x1080i @ 50 Hz 16/9
- (21) 1440x576i @ 50 Hz 4/3
- (22) 1440x576i @ 50 Hz 16/9
- (31) 1920x1080p @ 50 Hz 16/9

8. Complete the items in the **Audio** tab.

Event Plot Edid Management HDMI Src CT 1.4a HDMI Sink CT 1.4a

CDF Entry Test Selection Test Options / Preview

Open New Save CDF File: <not saved>

Product Options Formats **Audio**

Sink_Audio_Input **Can analog or digital audio be carried on any non-HDMI input on the device?**
 Yes No

Sink_Supports_AI **Does the Sink support ACP, ISRC1 or ISRC2 packets?**
 Yes No

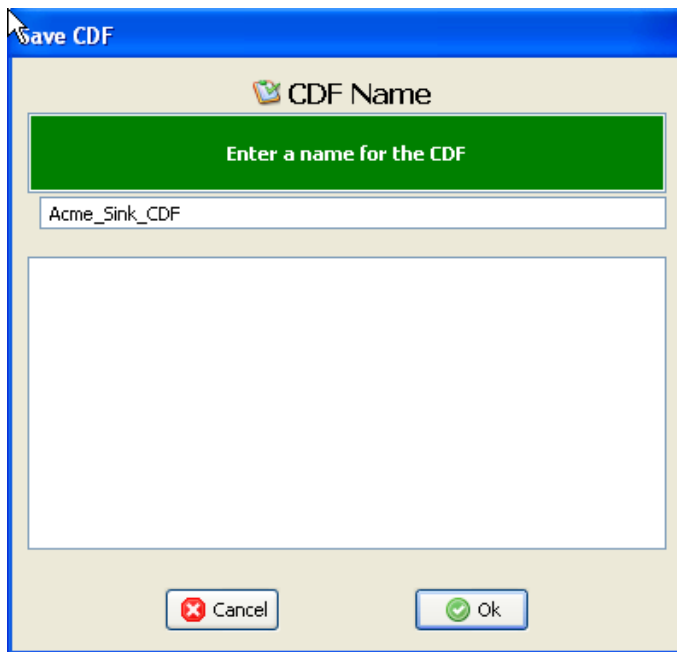
Sink_Basic_Audio **Does the Sink support Basic Audio?**
 Yes No

Sink_HBRA **Does the Sink support High-Bitrate Audio stream packets?**
 Yes No

Sink_HBRA_Format **Which HBRA formats are supported by the Sink?**
 Dolby TrueHD
 DTS-HD Master Audio

Sink_One_Bit_Audio **Does the Sink support One Bit Audio sample packets?**
 Yes No

9. Save the CDF. A confirmation box with a default name will appear as shown below. Edit the name if necessary and click OK.



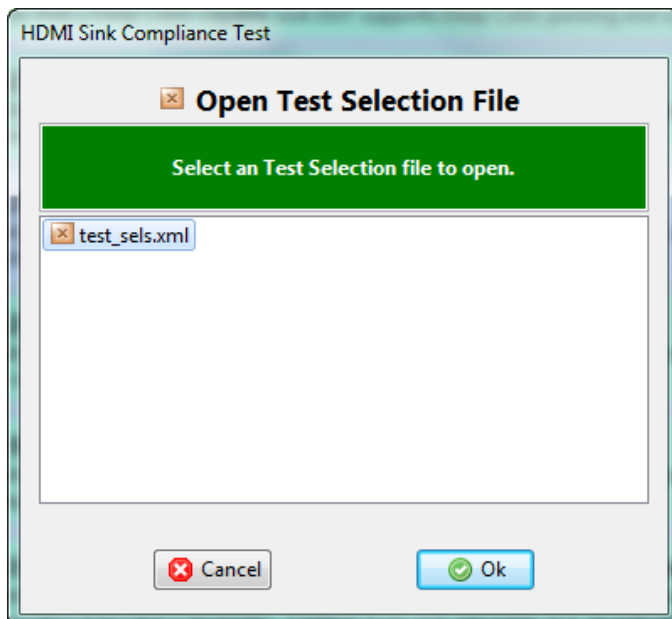
4.4 Selecting which tests to run

Use the following procedures to select the tests to run. There are multiple tabs which correspond to each section in the CTS.

To select the tests to run:

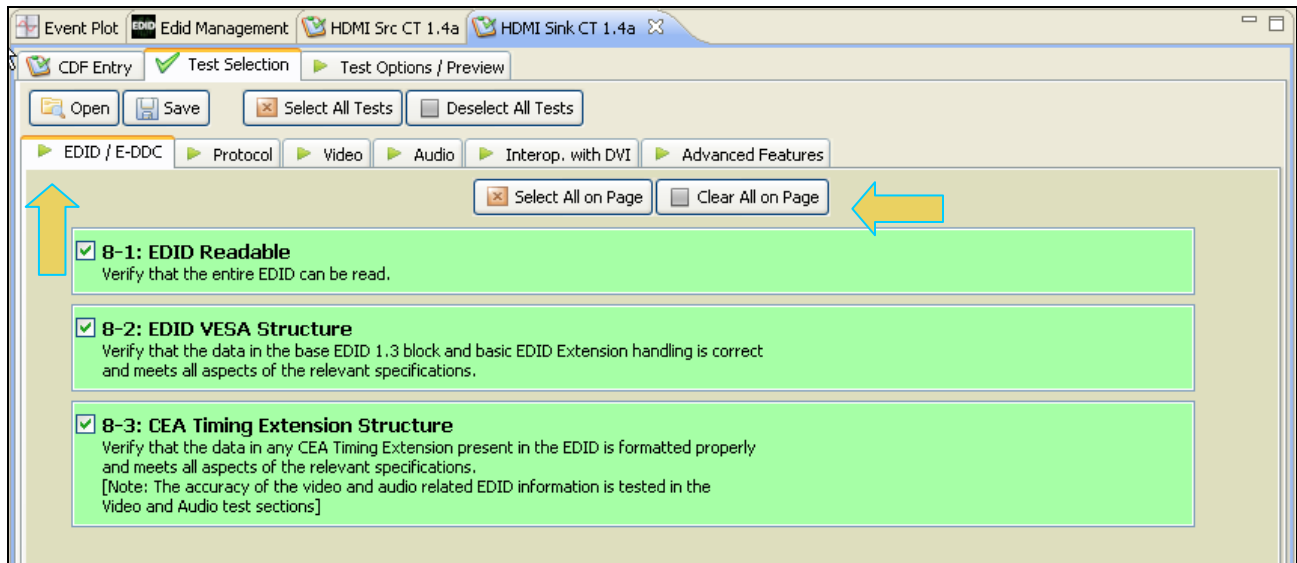
1. Select the **Test Selection** panel as shown below.
2. To open an existing Test Selection file, click on the **Open** activation button.

You will be prompted with a dialog box that enables you to open a Test Selection. Select a Test Selection file and then **OK** to proceed; **Cancel** to exit.



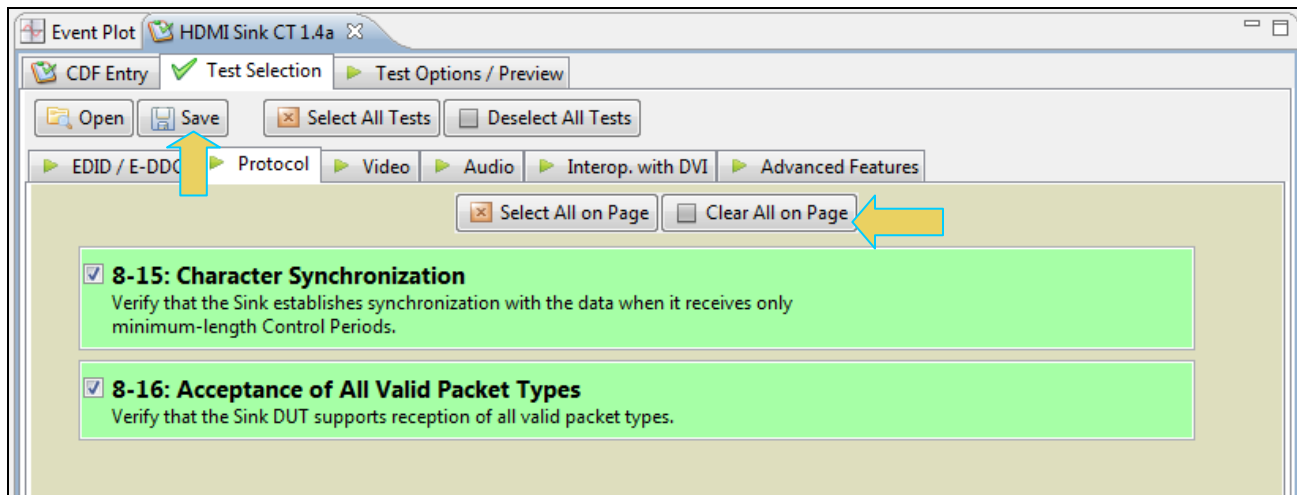
3. Complete the items in the **EDID / E-DDC** tab of the **Test Selection** panel shown below.

Note: The **EDID / E-DDC** tab will only appear if you have purchased the EDID Compliance Test option.

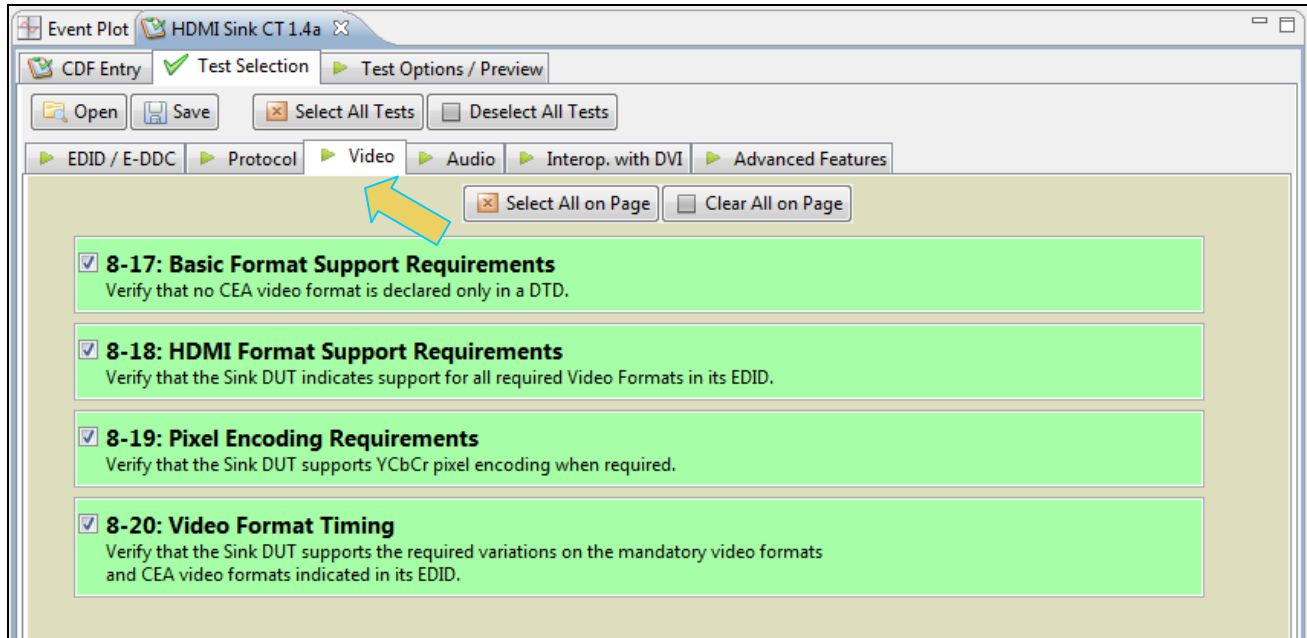


4. Complete the items in the **Protocol** tab of the **Test Selection** panel shown below.

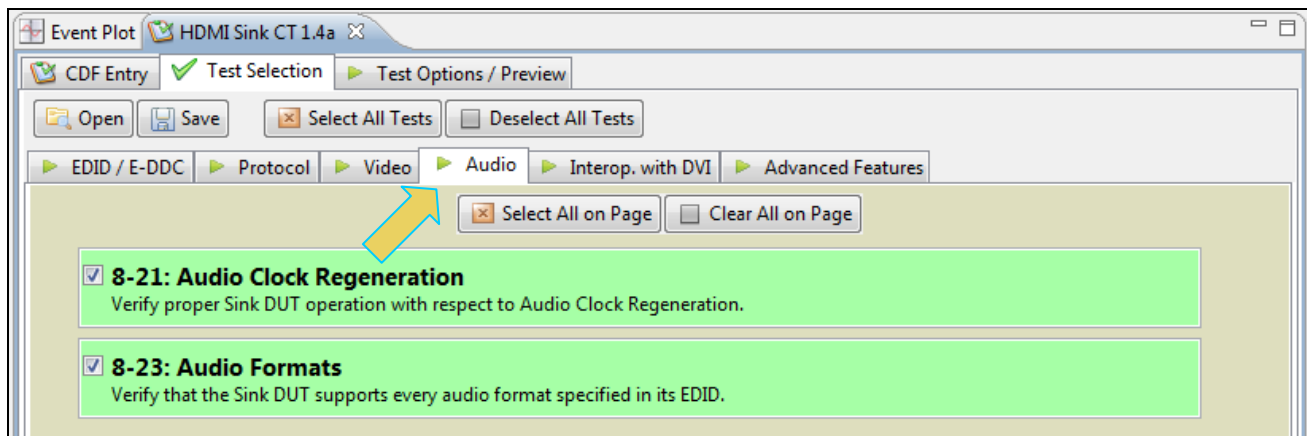
For convenience you can **Select All** or **Clear All** tests using the activation buttons provided.



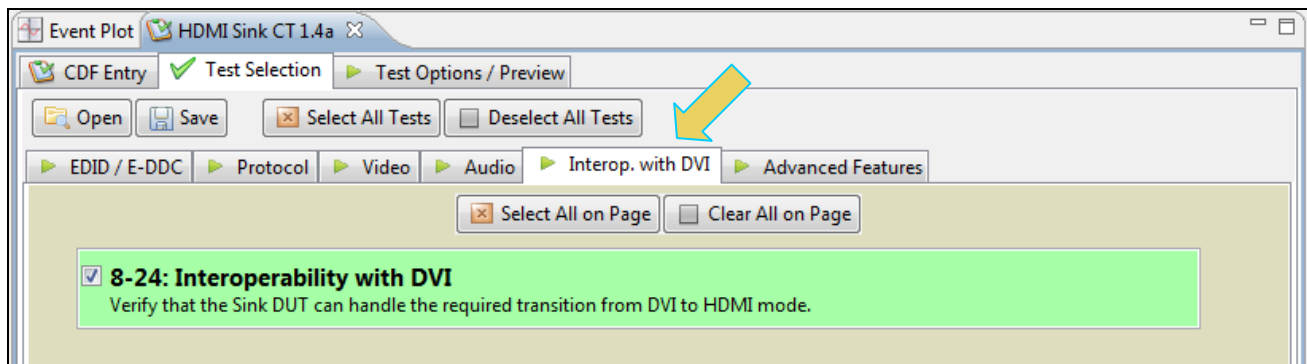
5. Complete the items in the **Video** tab of the **Test Selection** panel shown below.



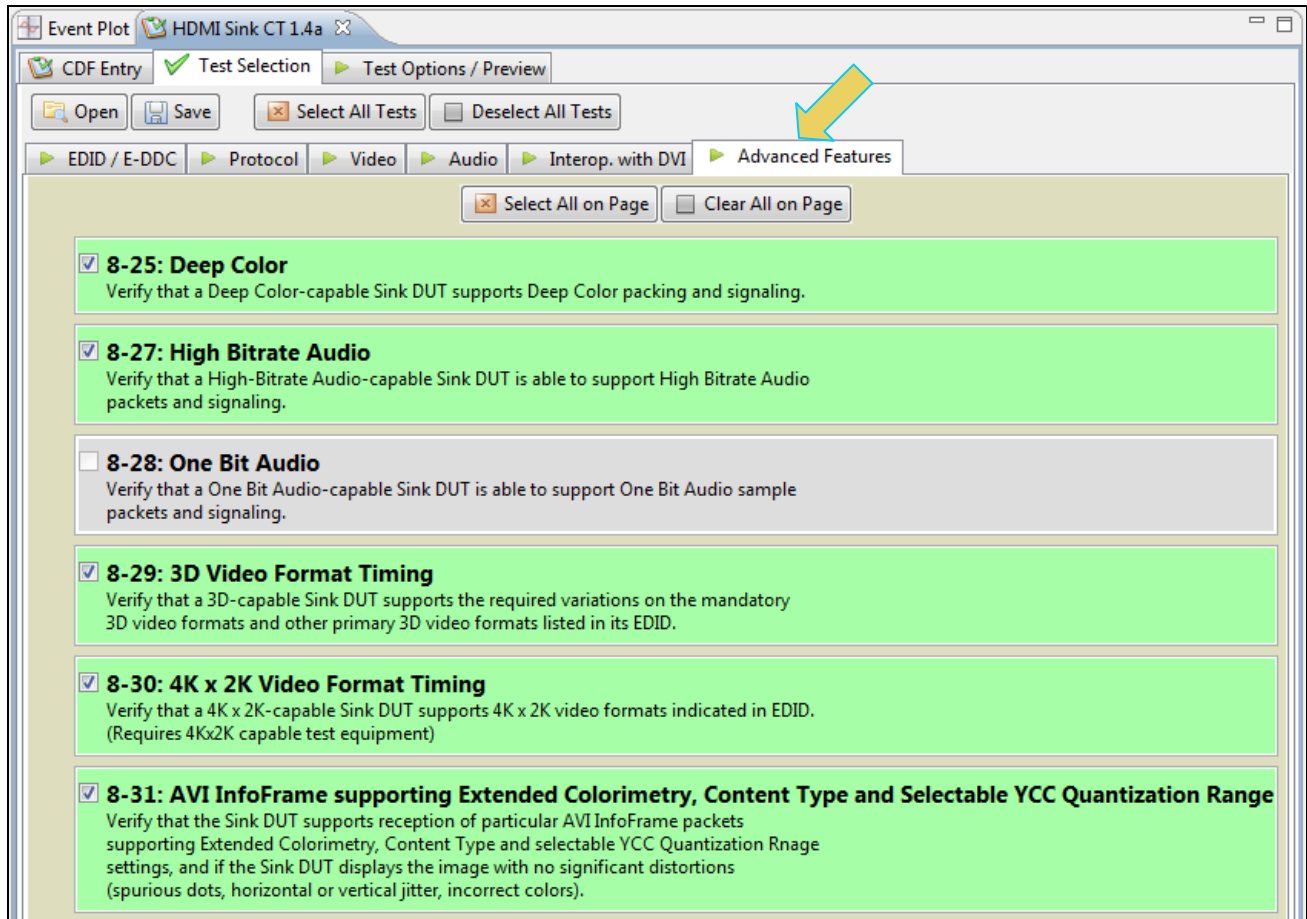
6. Complete the items in the **Audio** tab of the **Test Selection** panel shown below.



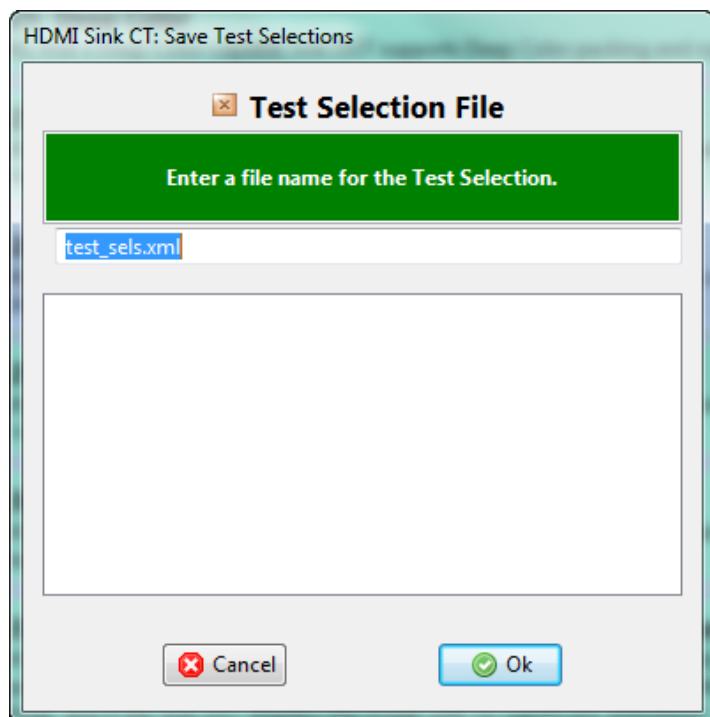
7. Complete the items in the **Interop. With DVI** tab of the **Test Selection** panel shown below.



8. Complete the items in the **Advanced Features** tab of the **Test Selection** panel shown below.



9. When you are done with the **Test Selection** panel you may choose to save these selections. Click on the **Save** activation button to save these selection. The dialog box below appears enabling you to assign a name. Enter the name and then click on the OK button to save or Cancel to exit without saving.



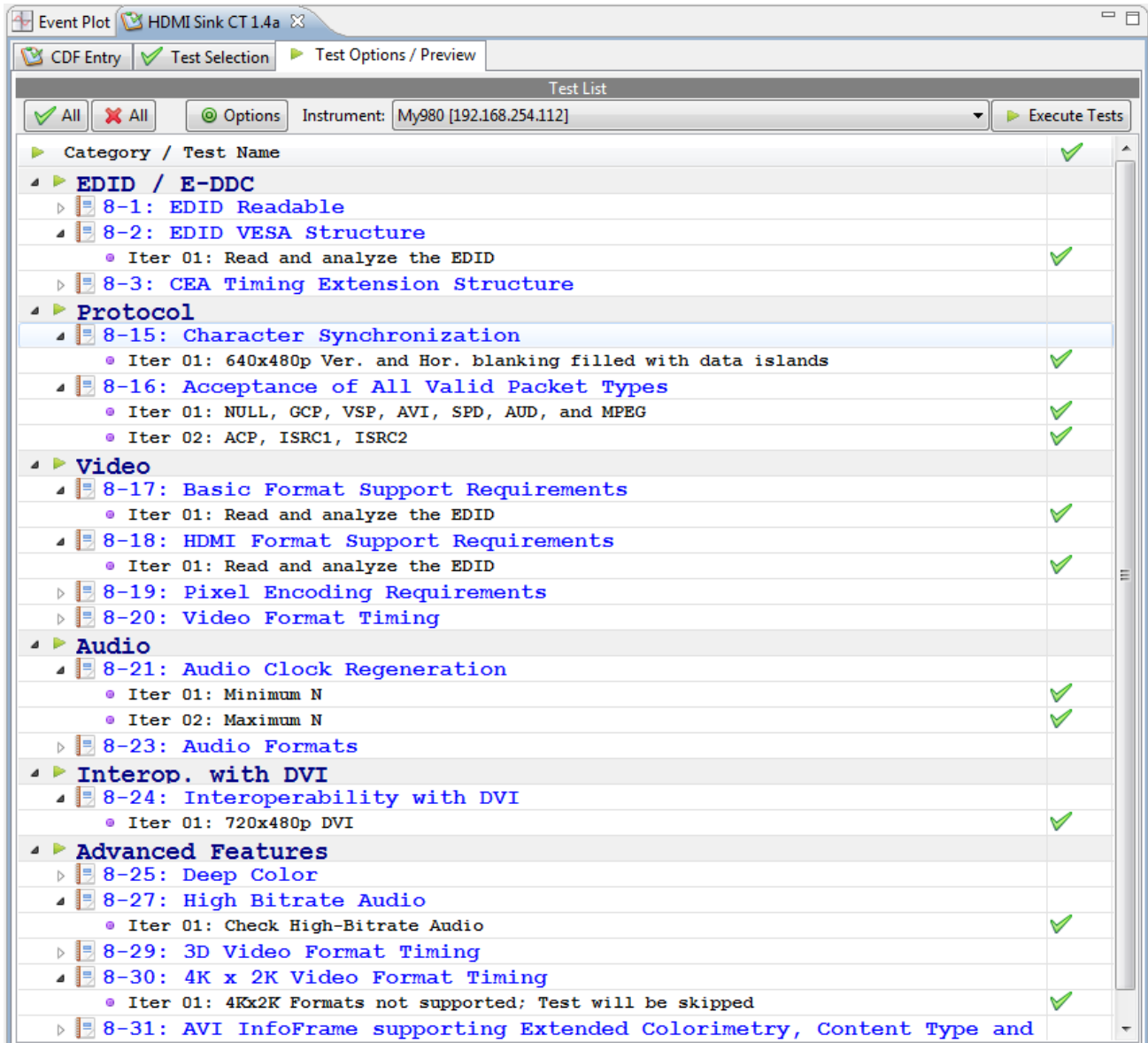
4.5 Executing the HDMI Sink Compliance Tests

Use the following procedures to initiate the execution of an HDMI Sink Compliance test series.

To initiate a test series:

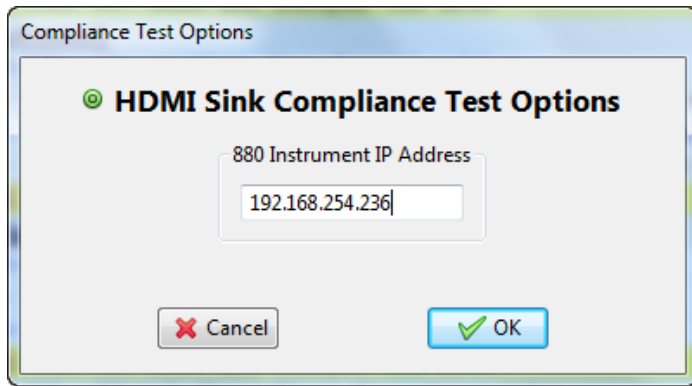
1. Select the **Test Options / Preview** panel as shown below.

Note: the EDID / E-DDC and Video Sections of the Sink Compliance Test can only be executed through this interface panel if you have also purchased the EDID Compliance Test option.



Set the **Options** for the tests. The following dialog box appears.

Note: In order to run the 8-27 High Bitrate Audio test, you will have to specify the IP address of the 882E or 882EA.



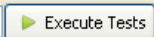
When you have entered the IP address, click **OK**. Click **Cancel** to exit.

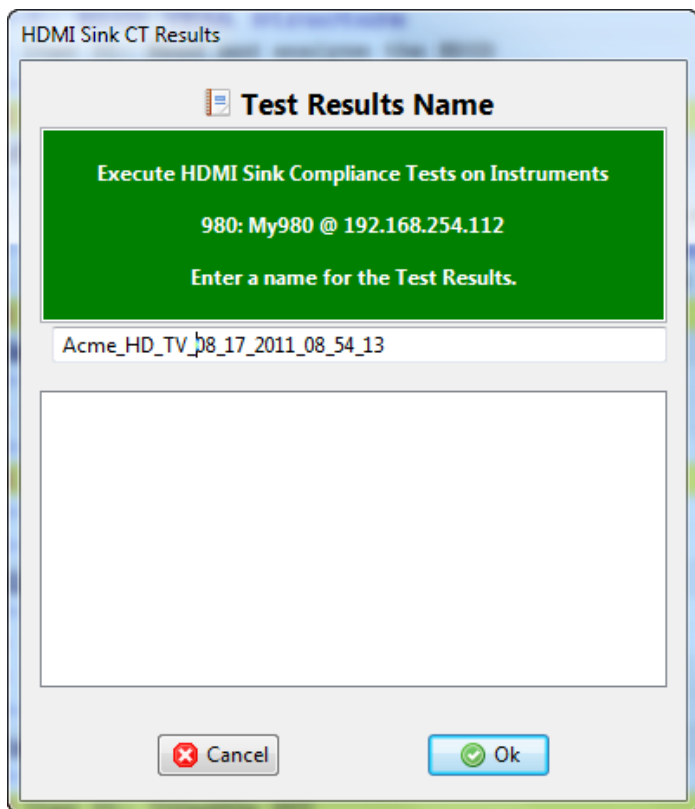
2. (Optional) Review the list of tests for each category. If you wish to skip some of the tests. You can skip tests by clicking on the Check mark on the right side of the **Test Options / Preview** panel. You can choose to skip all or test all with the associated activation buttons in the upper left. These are shown in the screen image below along with a sample selection of tests. The tests that have been skipped (highlighted in yellow with a red X).

The screenshot shows a software window titled "HDMI Sink CT 1.4a" with a "Test List" tab. The window includes a toolbar with "All", "Options", and "Execute Tests" buttons. The instrument is identified as "My980 [192.168.254.112]". The test list is organized into categories: EDID, Protocol, Video, Audio, Interop. with DVI, and Advanced Features. Each test entry shows its name, sub-items, and a result status (green checkmark for pass, red X for fail). Several tests are highlighted in yellow, indicating failure:

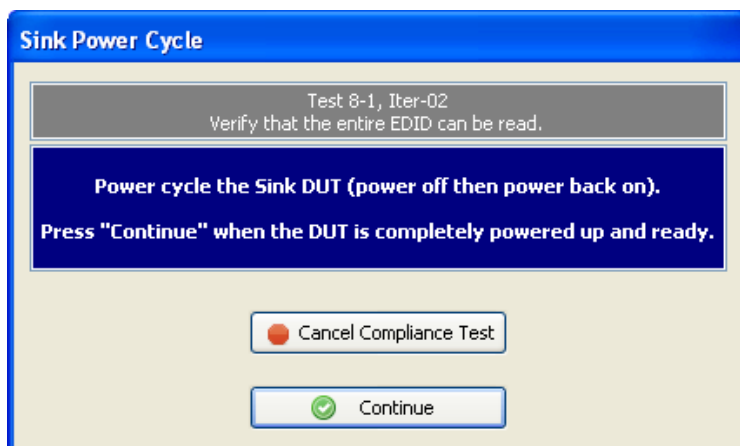
- 8-3: CEA Timing Extension Structure (Iter 01: Read and analyze the EDID) - Failed
- 8-16: Acceptance of All Valid Packet Types (Iter 02: ACP, ISRC1, ISRC2) - Failed
- 8-18: HDMI Format Support Requirements (Iter 01: Read and analyze the EDID) - Failed
- 8-24: Interoperability with DVI (Iter 01: 720x480p DVI) - Failed

Yellow arrows in the image point to the "Options" button and the failed test rows.

Click on the **Execute Tests**  activation button to initiate the test suite. You will be prompted for a name for the tests. This dialog box is shown below.



During the tests a **Required DUT Configuration** dialog box will appear which requires that you to verify that the sink device under test is in the correct state. The following screen shot depicts this. Press **Continue** when you have the source device in the correct mode. You can cancel the test using the **Cancel Compliance Test** button.



During the test, you will be asked to observe your sink device under test and select Pass or Fail depending on whether your sink device is displaying the video properly.

Adequate Support Check

Test 8-16, Iter-01
Verify that the Sink DUT supports reception of all valid packet types.

Does the Sink DUT adequately support the test signal?

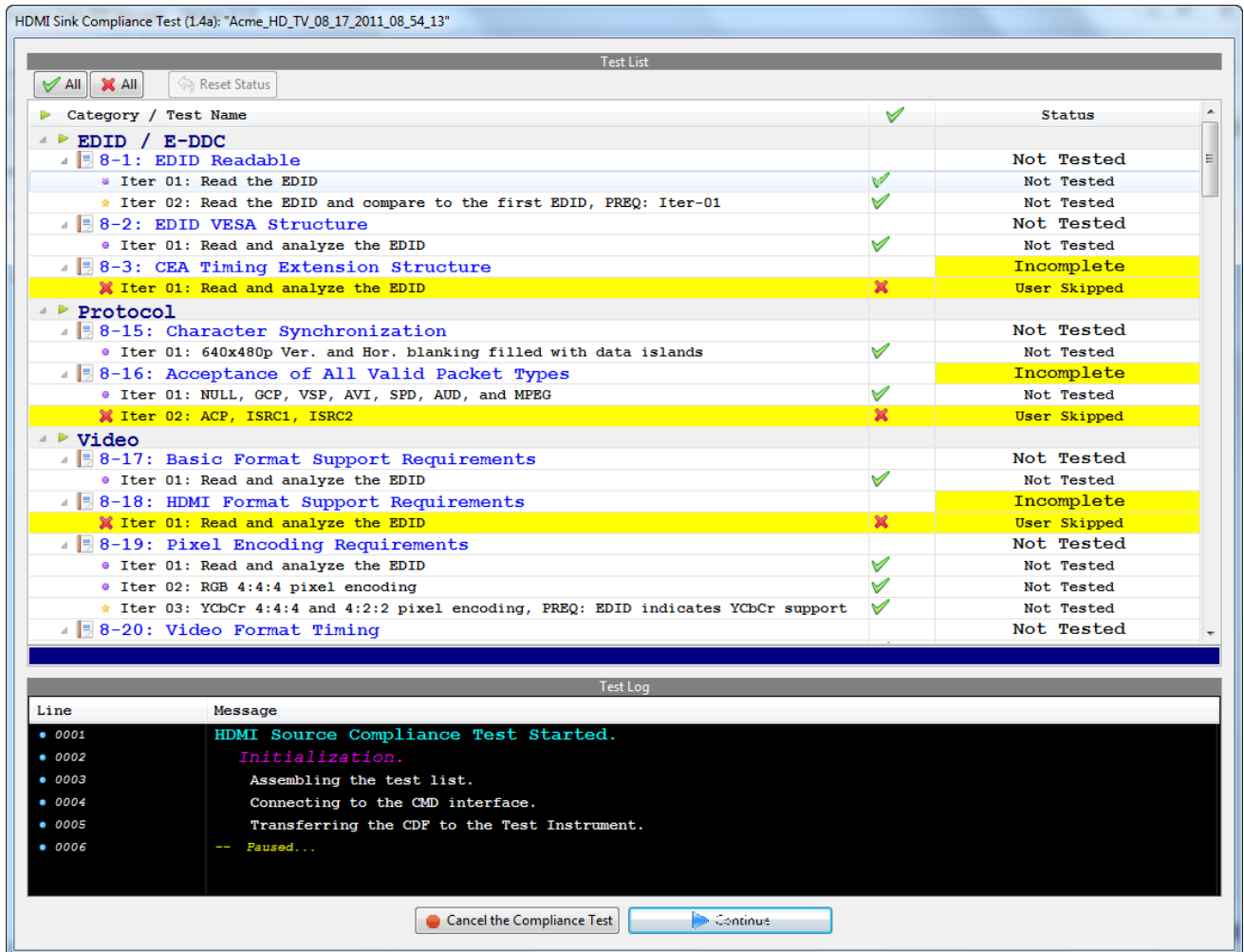
HDMI: (2) 720x480p @ 60 Hz 4:3
Image: /cache0/images/SmppteBar
PCM 2 Channel Audio, 48 KHz

Display products are defined to "adequately support" a particular video format if they display that format, legibly and correctly (e.g. centered) horizontally and vertically in the expected aspect ratio and over/underscan amount.

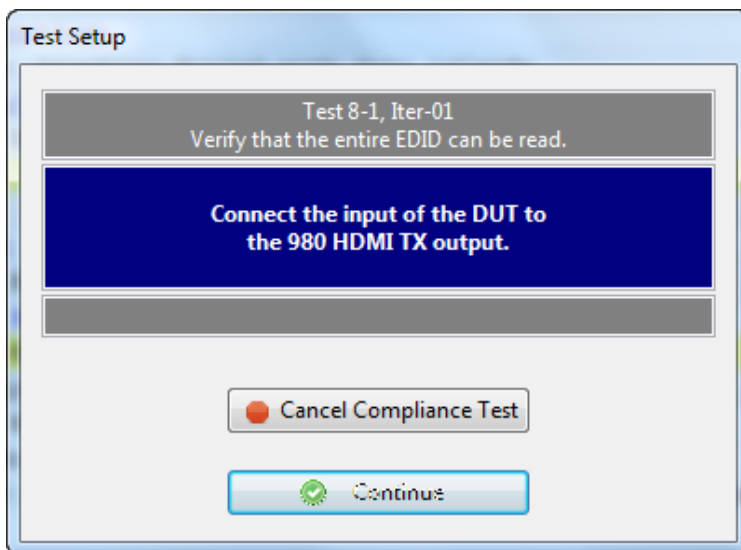
For overscanned formats, horizontally and vertically, at least some portion of the active portion of the image must not be visible due to border obstruction or clipping.
For underscanned images, 100% of the active portion must be visible.

Displays, audio amplifiers or other products designed to "render" the audio (convert to actual sound) are defined to "adequately support" a particular audio format if they reproduce the audio at approximately the same level of fidelity as any other audio input on that device.

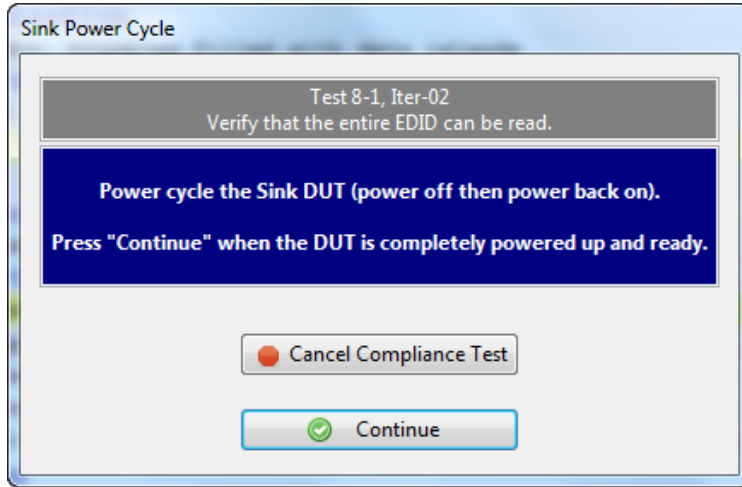
The test results are shown as they occur in the **Test Options / Preview** panel. Refer to the screen shot below.



The 980 GUI Manager will inform you how to setup the test if you have not already done so. A sample screen shot is shown below.

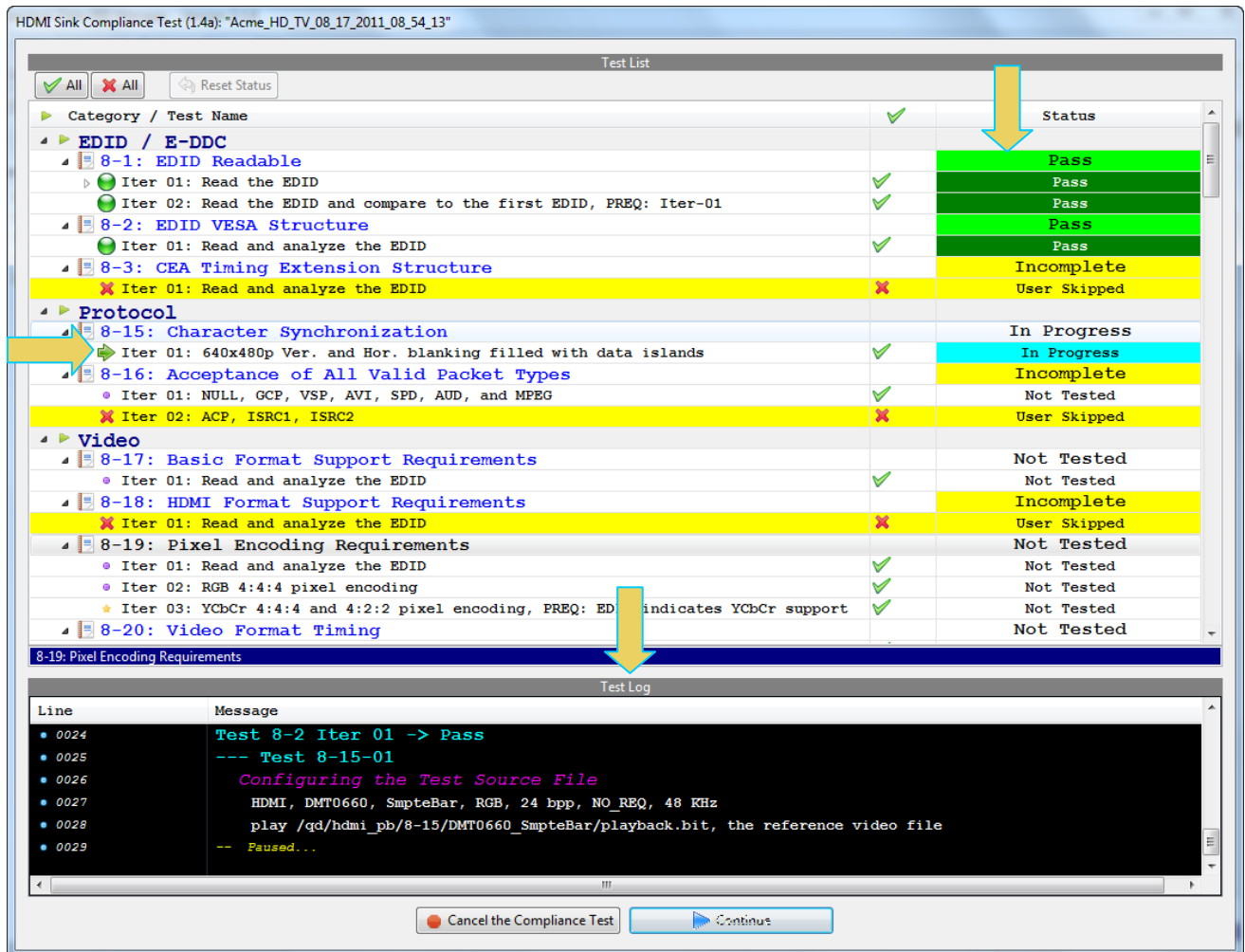


The 980 GUI Manager will inform you power cycle the sink device under test. A sample dialog box is shown below.

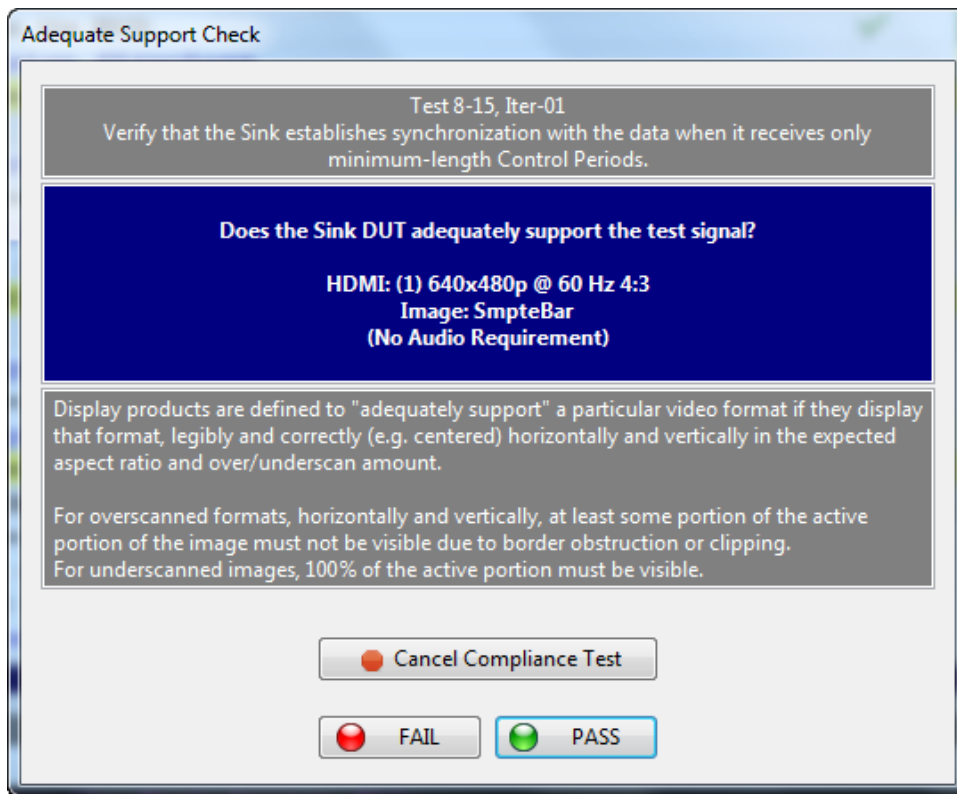


The 980 GUI Manager shows the test results for each test that has been completed and a green status arrow indicating the current test.

The lower panel **Test Log** shows the testing activity as it occurs. You can cancel the compliance test or pause at any time. If you pause the test you can resume later at any time even if you exit the 980 GUI Manager application. Refer to the following two screen examples. There is a progress arrow which points to the test that is currently being run.



The pass/fail assessment requires that you observe the video image on the HDTV and indicate Pass or Fail. You will be prompted with a dialog box as shown below. The dialog box also enables you to cancel the tests. However you can cancel the tests at any time by clicking on the **Cancel the Compliance Test** activation button on the lower center portion of the test log panel.



You can skip portions of the test even once the tests begin by clicking on the check icon on the right side of a particular test. This is shown in the sample screen shot below.

HDMI Sink Compliance Test (1.4a): "Acme_HD_TV_08_17_2011_08_54_13"

Test List

All
 A"

Category / Test Name	Status
✗ Iter 21: VIC 20: 1920x1080i @ 50 Hz 16:9 Min-49.75Hz, Max-50.25Hz, PREQ: SVD in EDID	User Skipped
✗ Iter 22: VIC 21: 720 (1440)x576i @ 50 Hz 4:3 Min-49.75Hz, Max-50.25Hz, PREQ: SVD in EDID	User Skipped
✗ Iter 23: VIC 22: 720 (1440)x576i @ 50 Hz 16:9 Min-49.75Hz, Max-50.25Hz, PREQ: SVD in EDID	User Skipped
✗ Iter 24: VIC 23: 720 (1440)x288p @ 50 Hz 4:3 Min-49.75Hz, Max-50.25Hz, PREQ: SVD in EDID	User Skipped
✗ Iter 25: VIC 24: 720 (1440)x288p @ 50 Hz 16:9 Min-49.75Hz, Max-50.25Hz, PREQ: SVD in EDID	User Skipped
✗ Iter 26: VIC 25: 2880x576i @ 50 Hz 4:3 Min-49.75Hz, Max-50.25Hz, PREQ: SVD in EDID	User Skipped
✗ Iter 27: VIC 26: 2880x576i @ 50 Hz 16:9 Min-49.75Hz, Max-50.25Hz, PREQ: SVD in EDID	User Skipped
✗ Iter 28: VIC 27: 2880x288p @ 50 Hz 4:3 Min-49.75Hz, Max-50.25Hz, PREQ: SVD in EDID	User Skipped
✗ Iter 29: VIC 28: 2880x288p @ 50 Hz 16:9 Min-49.75Hz, Max-50.25Hz, PREQ: SVD in EDID	User Skipped
✗ Iter 30: VIC 29: 1440x576p @ 50 Hz 4:3 Min-49.75Hz, Max-50.25Hz, PREQ: SVD in EDID	User Skipped
✗ Iter 31: VIC 30: 1440x576p @ 50 Hz 16:9 Min-49.75Hz, Max-50.25Hz, PREQ: SVD in EDID	User Skipped
★ Iter 32: VIC 31: 1920x1080p @ 50 Hz 16:9 Min-49.75Hz, Max-50.25Hz, PREQ: SVD in EDID	Skipped
▲ Iter 33: VIC 32: 1920x1080p @ 24 Hz 16:9 Min-23.86Hz, Max-24.12Hz, PREQ: SVD in EDID	Pass
● 01: MIN Rate 23.86Hz	Pass
● 02: MAX Rate 24.12Hz	Pass
▶ Iter 34: VIC 33: 1920x1080p @ 25 Hz 16:9 Min-24.88Hz, Max-25.12Hz, PREQ: SVD in EDID	Skipped
▶ Iter 35: VIC 34: 1920x1080p @ 30 Hz 16:9 Min-29.82Hz, Max-30.15Hz, PREQ: SVD in EDID	In Progress
✗ Iter 36: VIC 35: 2880x480p @ 60 Hz 4:3 Min-59.64Hz, Max-60.30Hz, PREQ: SVD in EDID	User Skipped
✗ Iter 37: VIC 36: 2880x480p @ 60 Hz 16:9 Min-59.64Hz, Max-60.30Hz, PREQ: SVD in EDID	User Skipped
✗ Iter 38: VIC 37: 2880x576p @ 50 Hz 4:3 Min-49.75Hz, Max-50.25Hz, PREQ: SVD in EDID	User Skipped
✗ Iter 39: VIC 38: 2880x576p @ 50 Hz 16:9 Min-49.75Hz, Max-50.25Hz, PREQ: SVD in EDID	User Skipped
✗ Iter 40: VIC 39: 1920x1080i (1250 total) @ 50 Hz 16:9 Min-49.75Hz, Max-50.25Hz, PREQ: SVD in EDID	User Skipped
✗ Iter 41: VIC 40: 1920x1080i @ 100 Hz 16:9 Min-99.50Hz, Max-100.50Hz, PREQ: SVD in EDID	User Skipped
✗ Iter 42: VIC 41: 1280x720p @ 100 Hz 16:9 Min-99.50Hz, Max-100.50Hz, PREQ: SVD in EDID	User Skipped

Iter 40: VIC 39: 1920x1080i (1250 total) @ 50 Hz 16:9 Min-49.75Hz, Max-50.25Hz, PREQ: SVD in EDID

Test Log

```

Line      Message
● 0108    play /qd/hdmi_pb/8-20/1080p30_SmpteBar_34/playback.bit, the reference video file
● 0109    Testing 1920x1080p @ 30 Hz 16:9 for Min prat 73.878
● 0110    Performing adequate support check
● 0111    Testing 1920x1080p @ 30 Hz 16:9 for Max prat 74.621
● 0112    Performing adequate support check
● 0113    -- Paused...
    
```

If the Compliance test application determines that a function is not supported by reading its EDID, the test will skip the related tests. For example, if you specify the 4K by 2K video format test in the CDF but the HDTV does not support this format, the test will be skipped. The test will indicated “Skipped” in the test list panel and the reason the test was skipped with be shown. Refer to the example below.

HDMI Sink Compliance Test (1.4a): "Acme_HD_TV_08_17_2011_08_54_13"

Test List

All
 All
 Reset Status

Category / Test Name	Status
✘ Iter 06: (5) 1920x1080i @ 60 Hz 16:9, Frame Packing Min-59.64Hz, Max-60.30Hz, PREQ: EDID in	User Skipped
✘ Iter 07: (20) 1920x1080i @ 50 Hz 16:9, Frame Packing Min-49.75Hz, Max-50.25Hz, PREQ: EDID i	User Skipped
✘ Iter 08: (34) 1920x1080p @ 30 Hz 16:9, Frame Packing Min-29.82Hz, Max-30.15Hz, PREQ: EDID i	User Skipped
✘ Iter 09: (60) 1280x720p @ 24 Hz 16:9, Frame Packing Min-23.86Hz, Max-24.12Hz, PREQ: EDID in	User Skipped
✘ Iter 10: (62) 1280x720p @ 30 Hz 16:9, Frame Packing Min-29.82Hz, Max-30.15Hz, PREQ: EDID in	User Skipped
✘ Iter 11: (4) 1280x720p @ 60 Hz 16:9, Side-by-Side (Half) Min-59.64Hz, Max-60.30Hz, PREQ: ED	User Skipped
✘ Iter 12: (19) 1280x720p @ 50 Hz 16:9, Side-by-Side (Half) Min-49.75Hz, Max-50.25Hz, PREQ: E	User Skipped
✘ Iter 13: (32) 1920x1080p @ 24 Hz 16:9, Side-by-Side (Half) Min-23.86Hz, Max-24.12Hz, PREQ:	User Skipped
✘ Iter 14: (16) 1920x1080p @ 60 Hz 16:9, Top-and-Bottom Min-59.64Hz, Max-60.30Hz, PREQ: EDID	User Skipped
✘ Iter 15: (31) 1920x1080p @ 50 Hz 16:9, Top-and-Bottom Min-49.75Hz, Max-50.25Hz, PREQ: EDID	User Skipped
✘ Iter 16: (34) 1920x1080p @ 30 Hz 16:9, Top-and-Bottom Min-29.82Hz, Max-30.15Hz, PREQ: EDID	User Skipped
8-30: 4K x 2K Video Format Timing	Skipped
• Iter 01: 4Kx2K Formats not supported; Test will be skipped	Skipped
• 4Kx2K Formats not supported by the DUT.	
8-31: AVI InfoFrame supporting Extended Colorimetry, Content Type and Select	Skipped
▶ Iter 01: sYCC601, PREQ: EDID indicated support	Skipped
▶ Iter 02: AdobeYCC601, PREQ: EDID indicated support	Skipped
▶ Iter 03: AdobeRGB, PREQ: EDID indicated support	Skipped
▶ Iter 04: Selectable YCC Quantization Range, PREQ: EDID indicated support	Skipped
▶ Iter 05: Graphics Content Type, PREQ: EDID indicated support	Skipped
▶ Iter 06: Photo Content Type, PREQ: EDID indicated support	Skipped
▶ Iter 07: Cinema Content Type, PREQ: EDID indicated support	Skipped
▶ Iter 08: Game Content Type, PREQ: EDID indicated support	Skipped

Iter 01: sYCC601, PREQ: EDID indicated support

Test Log

Line	Message
• 0068	Test 8-27 Iter 01 -> Fail
• 0069	Tests completed
• 0070	Restarting Test Execution
• 0071	Tests completed
• 0072	Restarting Test Execution
• 0073	Tests completed
• 0074	Restarting Test Execution
• 0075	Tests completed

When the tests are completed the test window that shows the current activity will close. A new tab and panel will appear next to the **HDMI CT 1.4** tab called the **CT Results** tab. You can view the test results in this panel. Refer to the following screen shots to see examples of the **CT Results** panel.

HDMI Sink Compliance Test Results

Results Name: Test_1_04_15_2011_12_05_58 Manufacturer: Acme
 Date Tested: April 15, 2011 12:06 PM Model Name:
 Overall Status: **CTS 1.4a - Incomplete** Port Tested: 2

Test Results

Test Name / Details	Status
8-1: EDID Readable	Pass
8-3: CEA Timing Extension Structure	Fail
Iter 01: Read and analyze the EDID	Fail
CDF field CEC_root_device = N but device has no outputs.	
Incorrect additional video format capabilities	
Additional 3D capability indicated despite additional 3D video formats :	
Image size correctness indicated despite not applied	
Additional 3D video formats support indicated despite additional 3D vide	
8-16: Acceptance of All Valid Packet Types	Incomplete
8-17: Basic Format Support Requirements	Pass
8-18: HDMI Format Support Requirements	Pass
8-20: Video Format Timing	Incomplete
8-21: Audio Clock Regeneration	Pass
8-25: Deep Color	Pass
8-27: High Bitrate Audio	Pass
8-29: 3D Video Format Timing	Fail
Iter 01: (32) 1920x1080p @ 24 Hz 16:9, Frame Packing	Pass
Iter 02: (32) 1920x1080p @ 24 Hz 16:9, Top-and-Bottom	Fail
Iter 03: (4) 1280x720p @ 60 Hz 16:9, Frame Packing	Pass
Iter 04: (5) 1920x1080i @ 60 Hz 16:9, Side-by-Side (Half)	Pass
Iter 05: (4) 1280x720p @ 60 Hz 16:9, Top-and-Bottom	Pass
Iter 06: (5) 1920x1080i @ 60 Hz 16:9, Frame Packing, PREQ: EDID indicated	Skipped
Iter 07: (20) 1920x1080i @ 50 Hz 16:9, Frame Packing, PREQ: EDID indicated	Skipped
Iter 08: (34) 1920x1080p @ 30 Hz 16:9, Frame Packing, PREQ: EDID indicated	Skipped
Iter 09: (60) 1280x720p @ 24 Hz 16:9, Frame Packing, PREQ: EDID indicated	Skipped
Iter 10: (62) 1280x720p @ 30 Hz 16:9, Frame Packing, PREQ: EDID indicated	Skipped

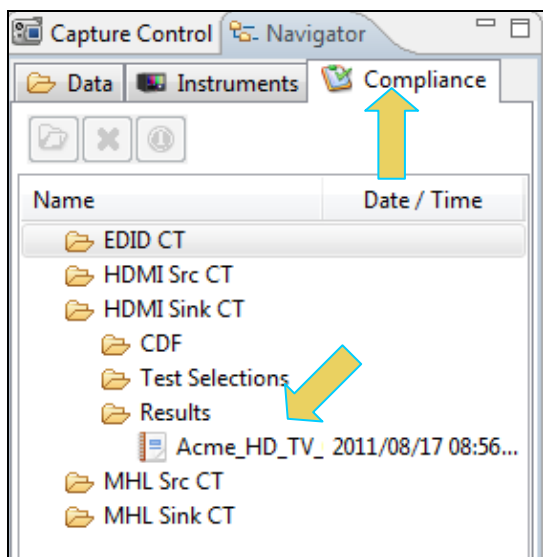
Instrument: My980 [192.168.254.112] Continue Test Execution

4.6 Resuming the HDMI Sink Compliance after cancel

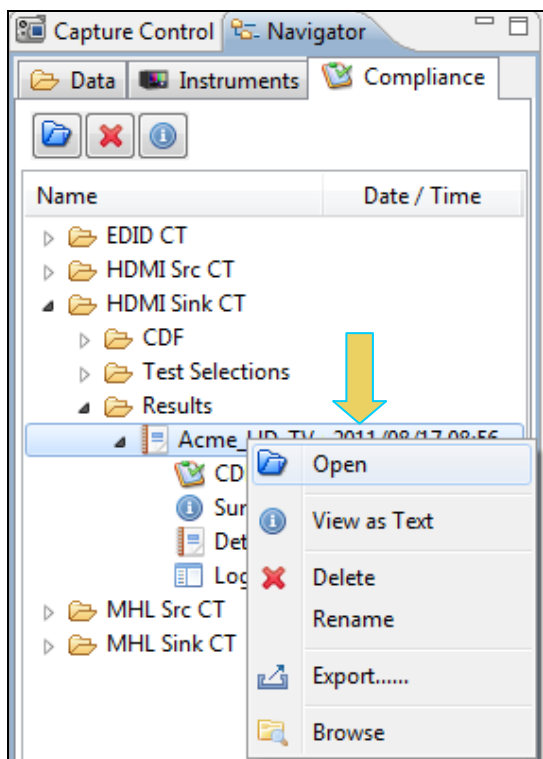
You can complete a series of tests that was canceled. The test results are saved in a directory that is accessible through the 980 GUI Manager interface. Use the following procedures to resume a canceled test.

To resume a canceled test:

1. Navigate to the Navigator/Compliance panel and open the HDMI Sink CT/Results directory as shown below.



2. Right click on the results file and select Open as shown below.



The CT Results window appears as shown below.

HDMI Sink Compliance Test Results

Results Name: Acme_HD_TV_08_17_2011_08_54_13 Manufacturer: Acme
 Date Tested: August 17, 2011 8:56 AM Model Name: ALT-HiDef
 Overall Status: **CTS 1.4a - Incomplete** Port Tested: 1

HTML Report

Test Name / Details	Status
8-1: EDID Readable	Pass
8-2: EDID VESA Structure	Pass
8-3: CEA Timing Extension Structure	Incomplete
8-15: Character Synchronization	Pass
8-16: Acceptance of All Valid Packet Types	Incomplete
8-17: Basic Format Support Requirements	Pass
8-18: HDMI Format Support Requirements	Incomplete
8-19: Pixel Encoding Requirements	Pass
8-20: Video Format Timing	Incomplete
8-21: Audio Clock Regeneration	Pass
8-23: Audio Formats	Pass
8-24: Interoperability with DVI	Incomplete
8-25: Deep Color	Error
8-27: High Bitrate Audio	Not Tested
8-29: 3D Video Format Timing	Not Tested
8-30: 4K x 2K Video Format Timing	Not Tested
8-31: AVI InfoFrame supporting Extended Colorimetry, Con	Not Tested

8-27: High Bitrate Audio

Instrument: My980 [192.168.254.112] Continue Test Execution

3. Click on the **Continue Test Execution** button on the lower left (above) to resume the tests.

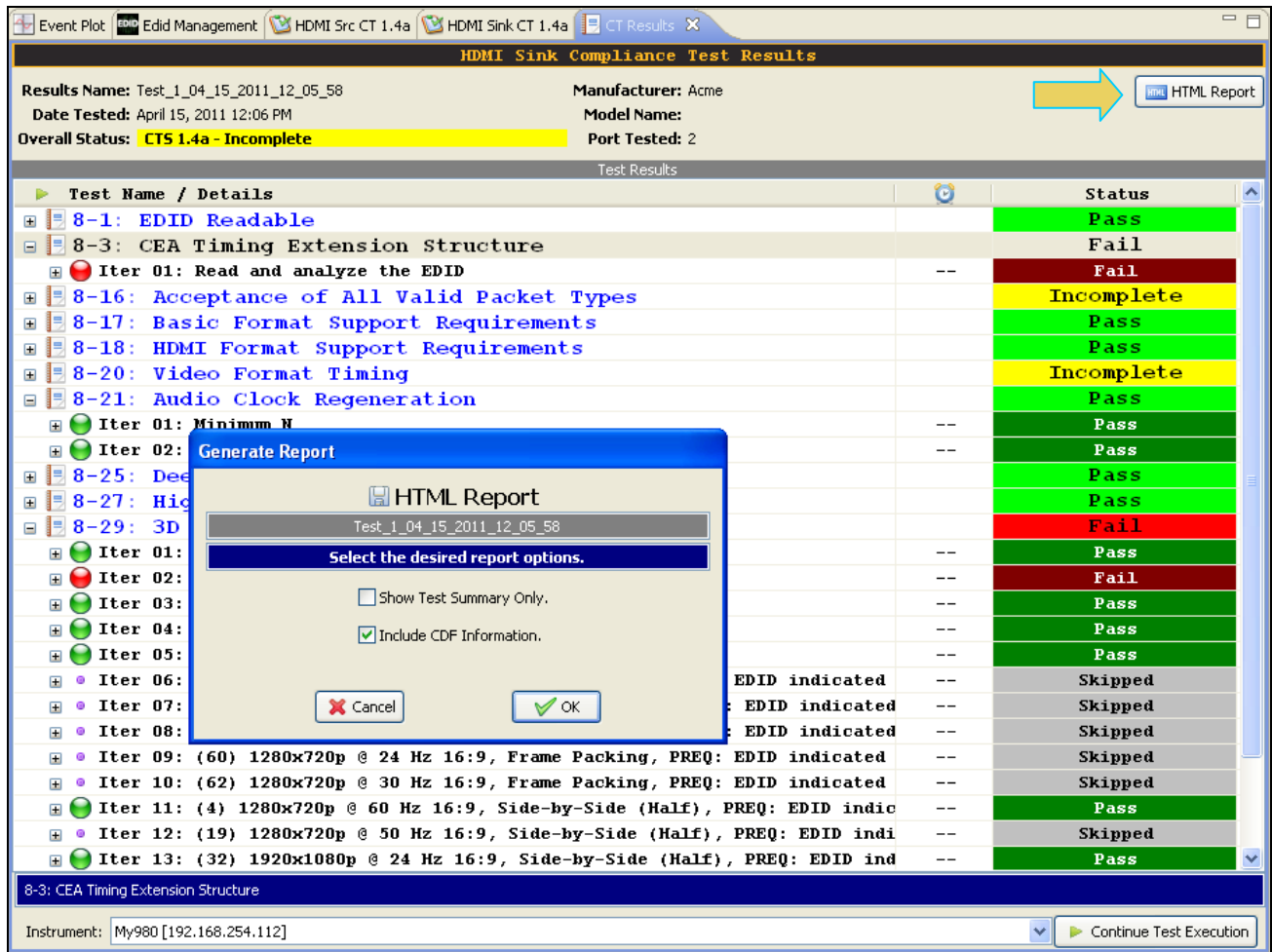
4.7 Viewing the HDMI Sink Compliance HTML test report

After you have completed the tests, an HTML Report activation button will appear in the upper right of the screen which enables you to access the HTML report of the test results. Use the following procedures to view the HTML test report.

To view the HTML test report:

1. Select the **CT Results** panel as shown below.
2. Click on the **HTML Report** activation button.

A dialog box will appear asking if you want a summary of the test results or a version that includes the CDF. This dialog box is shown in the screen shot below.



The HTML report is shown in the following screens.

HTML Viewer
 C:\Program Files\Quantum Data\980 Manager\980mgr\workspace\hdmict_sink\results\Test_1_04_15_2011_12_05_58\Report_Cdf.htm

Report generated on: April 15, 2011 12:33 PM www.quantumdata.com

Quantum Data

HDMI Sink Compliance Test Report

CTS 1.4a

Results Name:	Test_1_04_15_2011_12_05_58	Manufacturer:	Acme
Date Tested:	April 15, 2011 12:06 PM	Model Name:	
Overall Status:	Incomplete	Port Tested:	2

Report Index / Summary					
Test 8-1	Pass	Test 8-3	Fail	Test 8-16	Incomplete
Test 8-17	Pass	Test 8-18	Pass	Test 8-20	Incomplete
Test 8-21	Pass	Test 8-25	Pass	Test 8-27	Pass
Test 8-29	Fail	CDF			

Capabilities Declaration Form (CDF)	
Product	
Manufacturer	Acme
Model	
Sink_HDMI_Output_Count	0
Sink_P	2
Sink_Image_Size	NO
Sink_Image_Size_H	
Sink_Image_Size_V	
Sink_Max_TMDS_Clock	74.25
Options	
Sink_CEC_Root_Device	NO
Sink_xyYCC	NO
Sink_HDTV	YES

Save As Close

HTML Viewer
 C:\Program Files\Quantum Data\980 Manager\980mgr\workspace\hdmict_sink\results\Test_1_04_15_2011_12_05_58\Report_Cdf.htm

Formats		
(1) 640x480p @ 60 Hz 4/3		YES
(2) 720x480p @ 60 Hz 4/3		YES
(3) 720x480p @ 60 Hz 16/9		YES
(4) 1280x720p @ 60 Hz 16/9		YES
(5) 1920x1080i @ 60 Hz 16/9		YES
(6) 1440x480i @ 60 Hz 4/3		NO
(7) 1440x480i @ 60 Hz 16/9		NO
(16) 1920x1080p @ 60 Hz 16/9		YES
(17) 720x576p @ 50 Hz 4/3		NO
(18) 720x576p @ 50 Hz 16/9		NO
(19) 1280x720p @ 50 Hz 16/9		YES
(20) 1920x1080i @ 50 Hz 16/9		NO
(21) 1440x576i @ 50 Hz 4/3		NO
(22) 1440x576i @ 50 Hz 16/9		NO
(31) 1920x1080p @ 50 Hz 16/9		NO
Audio		
Sink_Audio_Input		YES
Sink_Supports_AI		YES
Sink_Basic_Audio		YES
Sink_HBRA		YES
Sink_HBRA_Format		Dolby TrueHD
Sink_One_Bit_Audio		NO

Test 8-1	
EDID Readable	Pass
<ul style="list-style-type: none"> • Iter 01: Read the EDID <ul style="list-style-type: none"> ▪ EDID read succeeded ▪ EDID extension count: 1 	Pass
• Iter 02: Read the EDID and compare to the first EDID, PREQ: Iter-01	Pass

Save As Close

HTML Viewer	
C:\Program Files\Quantum Data\980 Manager\980mgr\workspace\hdmict_sink\results\Test_1_04_15_2011_12_05_58\Report_Cdf.htm	
Test 8-1 EDID Readable	Pass
<ul style="list-style-type: none"> • Iter 01: Read the EDID <ul style="list-style-type: none"> ▪ EDID read succeeded ▪ EDID extension count: 1 	Pass
<ul style="list-style-type: none"> • Iter 02: Read the EDID and compare to the first EDID, PREQ: Iter-01 	Pass
Test 8-3 CEA Timing Extension Structure	Fail
<ul style="list-style-type: none"> • Iter 01: Read and analyze the EDID <ul style="list-style-type: none"> ▪ CDF field CEC_root_device = N but device has no outputs. ▪ Incorrect additional video format capabilities ▪ Additional 3D capability indicated despite additional 3D video formats support not applied ▪ Image size correctness indicated despite not applied ▪ Additional 3D video formats support indicated despite additional 3D video formats support not applied 	Fail
Test 8-16 Acceptance of All Valid Packet Types	Incomplete
<ul style="list-style-type: none"> • Iter 01: NULL, GCP, VSP, AVI, SPD, AUD, and MPEG <ul style="list-style-type: none"> ▪ Manual inspection of the DUT verified adequate support of the test signal. 	Pass
<ul style="list-style-type: none"> • Iter 02: ACP, ISRC1, ISRC2 	User Skipped
Test 8-17 Basic Format Support Requirements	Pass
<ul style="list-style-type: none"> • Iter 01: Read and analyze the EDID 	Pass
Test 8-18 HDMI Format Support Requirements	Pass

5 HDMI EDID Sink Compliance Tests

This chapter describes how to use the **optional** HDMI EDID sink compliance test feature. The EDID Compliance Test supports the following test sections in the HDMI 1.4 EDID Compliance Test specification:

- 8.2 Sink - EDID/E-DDC Tests
 - Test ID 8-1 – EDID Readable
 - Test ID 8-2 – VESA Structure
 - Test ID 8-3 – CEA Timing Extension
- 8.5 Video – Video Timing Tests
 - Test ID 8-17 – Basic Format Support
 - Test ID 8-18 – HDMI Format Support
 - Test ID 8-19 – Pixel Encoding
 - Test ID 8-20 – Video Format Timing

5.1 Workflow for running the HDMI EDID Compliance Tests

The following is the high level workflow for running the HDMI EDID Compliance Tests.

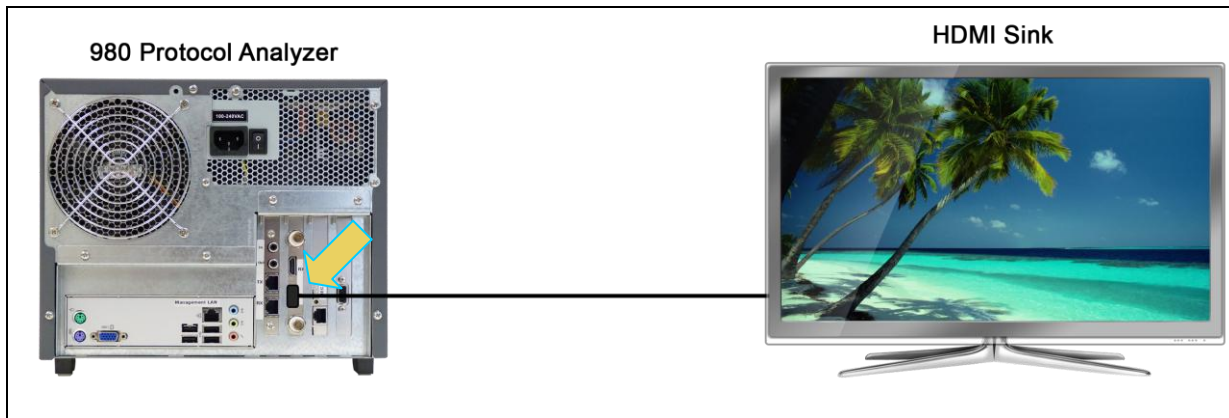
1. Make the physical connections between the 980 and the HDMI sink device under test.
2. Launch either the embedded 980 GUI Manager or the external 980 GUI Manager and access the EDID Compliance Test Panel.
3. Complete a (or load an existing) Capabilities Declaration Form (CDF) for the device under test using the **CDF Entry** panel.
4. Execute the tests through EDID compliance window.
5. View the detailed data for test failures if failures occur.
6. View the results in the **Test Results** panel under the **Navigator** panel.

5.2 Making the HDMI connections

This subsection describes the HDMI connections required to run the HDMI EDID compliance tests. This procedure assumes that you have assembled the 980 Protocol Analyzer and sink device under test into your work area.

To make the physical HDMI connections:

This procedure assumes that you have assembled the 980 Protocol Analyzer and source device under test and applied power to all these devices. Refer to the procedures and diagram below.



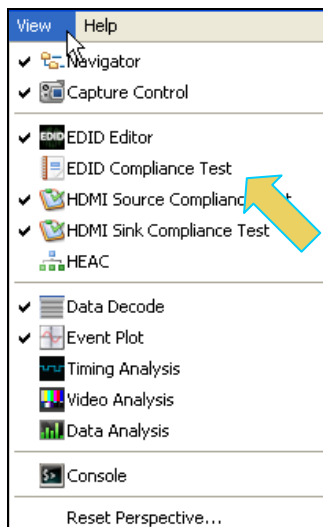
1. Connect your HDMI sink device under test to the HDMI Tx connector (the bottom most HDMI connector shown in the figure above) on the 980 Protocol Analyzer. Use a high speed HDMI cable.

5.3 Completing the CDF

Use the following procedures to complete the CDF for the EDID compliance test.

To complete the CDF:

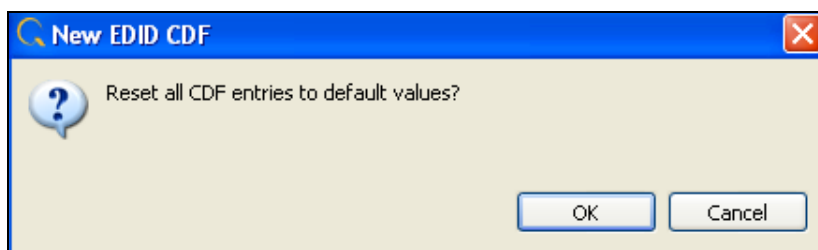
1. From the **View** menu, enable viewing of the **EDID Compliance Test** panel.



2. Select the **CDF Entry** panel as shown below.

The following screen appears:

3. You can either create a new CDF or you can load an existing CDF. To create a new CDF you click on the **New** activation button. A confirmation dialog box will open as shown below:



Click **OK** to continue with a new CDF.

4. Complete the items in the CDF Entry window using the radio buttons. An example is shown below:

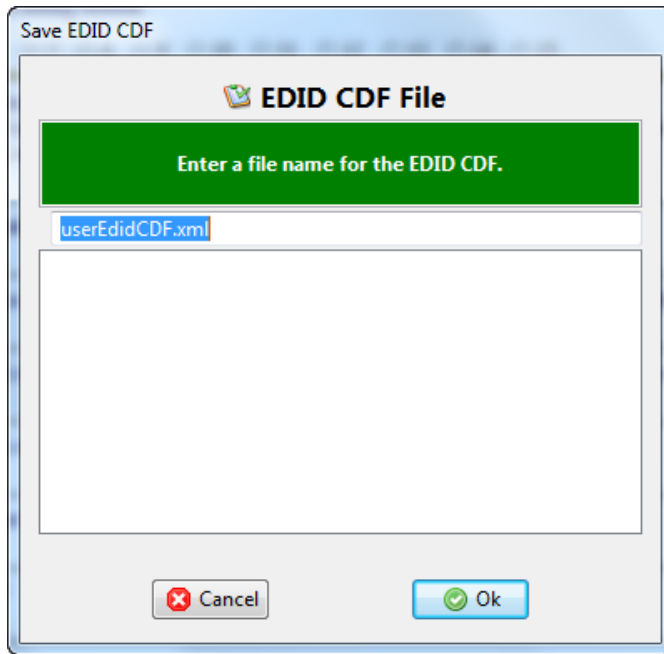
The screenshot shows the 'EDID Compliance Test' window with the following fields and options:

Manufacturer	What is the product manufacturer's name? ACME
Model Name/Number	What is the model name/number of the product? XYZ
Sink_HDMI_Output_Count	How many HDMI output ports are on the product? <input type="radio"/> 0 <input type="radio"/> 1 <input checked="" type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8 <input type="radio"/> 9
Sink_P	The number of the HDMI Input Port being tested. <input checked="" type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6 <input type="radio"/> 7 <input type="radio"/> 8 <input type="radio"/> 9 <input type="radio"/> 10 <input type="radio"/> 11 <input type="radio"/> 12 <input type="radio"/> 13 <input type="radio"/> 14 <input type="radio"/> 15
Sink_CEC_Root_Device	Does the device act as a CEC root device? Meaning: DUT is a Sink or Repeater and DUT's Physical Address is 0.0.0.0 and DUT's EDID(s) [if present] contain Source Physical Address of P.0.0.0 Note: If device has no HDMI inputs, answer "No" <input checked="" type="radio"/> Yes <input type="radio"/> No
Sink_HDTV	Does the device support HDTV capability? <input checked="" type="radio"/> Yes <input type="radio"/> No
Sink_YUV_On_Other	Is the product capable of receiving a color-difference color space across any other component analog or digital video interface? <input checked="" type="radio"/> Yes <input type="radio"/> No
Sink_60Hz	Does the product support standard, enhanced or high-definition 60Hz video formats on any video input in addition to 640x480p @ 60Hz? <input checked="" type="radio"/> Yes <input type="radio"/> No
Sink_50Hz	Does the product support standard, enhanced or high-definition 50Hz video formats on any video input? <input type="radio"/> Yes <input checked="" type="radio"/> No
Sink_Supports_AI	Does the Sink support ACP, ISRC1 or ISRC2 packets? <input checked="" type="radio"/> Yes <input type="radio"/> No
Sink_Basic_Audio	Does the Sink support Basic Audio? <input checked="" type="radio"/> Yes <input type="radio"/> No
Sink_3D	Does the DUT support 3D formats? <input checked="" type="radio"/> Yes <input type="radio"/> No
Sink_3D_Additional	Does the DUT support 3D additional formats in addition to the mandatory 3D formats? <input type="radio"/> Yes <input checked="" type="radio"/> No
Sink_4Kx2K	Does the DUT support 4K x 2K formats? <input checked="" type="radio"/> Yes <input type="radio"/> No
Sink_Image_Size	Does the DUT indicate correct size at Image Size area in the EDID? <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="text"/> x <input type="text"/> cm

For each timing listed below, is the DUT capable of supporting the timing using any component analog or uncompressed digital video output?

Close

5. Save the CDF using the **Save** activation button. A confirmation box with a default name will appear as shown below. Edit the name if necessary and click **OK**.



5.4 Executing the EDID Compliance Tests

Use the following procedures to initiate the execution of an EDID Compliance test series.

Note: The EDID compliance test has been discontinued. These tests are part of the HDMI Sink Compliance Test.

To initiate a test series:

1. Select the **Execute** activation button on the top panel of buttons as shown below.



During the test, the test results are shown as they occur in the window. The lower panel shows the testing activity as it occurs. Refer to the following two screen examples.

EDID Compliance Test: My EDID Test

CDF Editor Test Results

Open Stop

Compliance Test Report

Report generated on: October 1, 2010 1:22 PM www.quantumdata.com

Quantum Data EDID Compliance Test Report CTS 1.4a

Results Name:	My EDID Test	Manufacturer:
Date Tested:	October 1, 2010 1:22 PM	Model Name:
Overall Status:	Fail	Port Tested: 1

Test 8-1 EDID Readable	Pass
• EDID read succeeded	Pass

Test 8-2 EDID VESA Structure	Fail
• Missing CEA Extension in block 2	Fail
• Block Map/Extension mismatch	Fail
• Block Map/Extension mismatch	Fail

Line	Message
• 0010	<i>Executing the Compliance Test.</i>
• 0011	Saving a copy of the tested Sink EDID.
• 0012	Saving the test results
• 0013	<i>Generating the final report</i>
• 0014	<i>Performing Cleanup</i>
• 0015	Saving the INFO file to: C:\Program Files (x86)\Quantum Data\980 Manager\980mgr\workspace\edid\ct\My EDI...
• 0016	*** END OF TEST LOG ***

Close

EDID Compliance Test: My EDID Test

CDF Editor Test Results

Open Stop

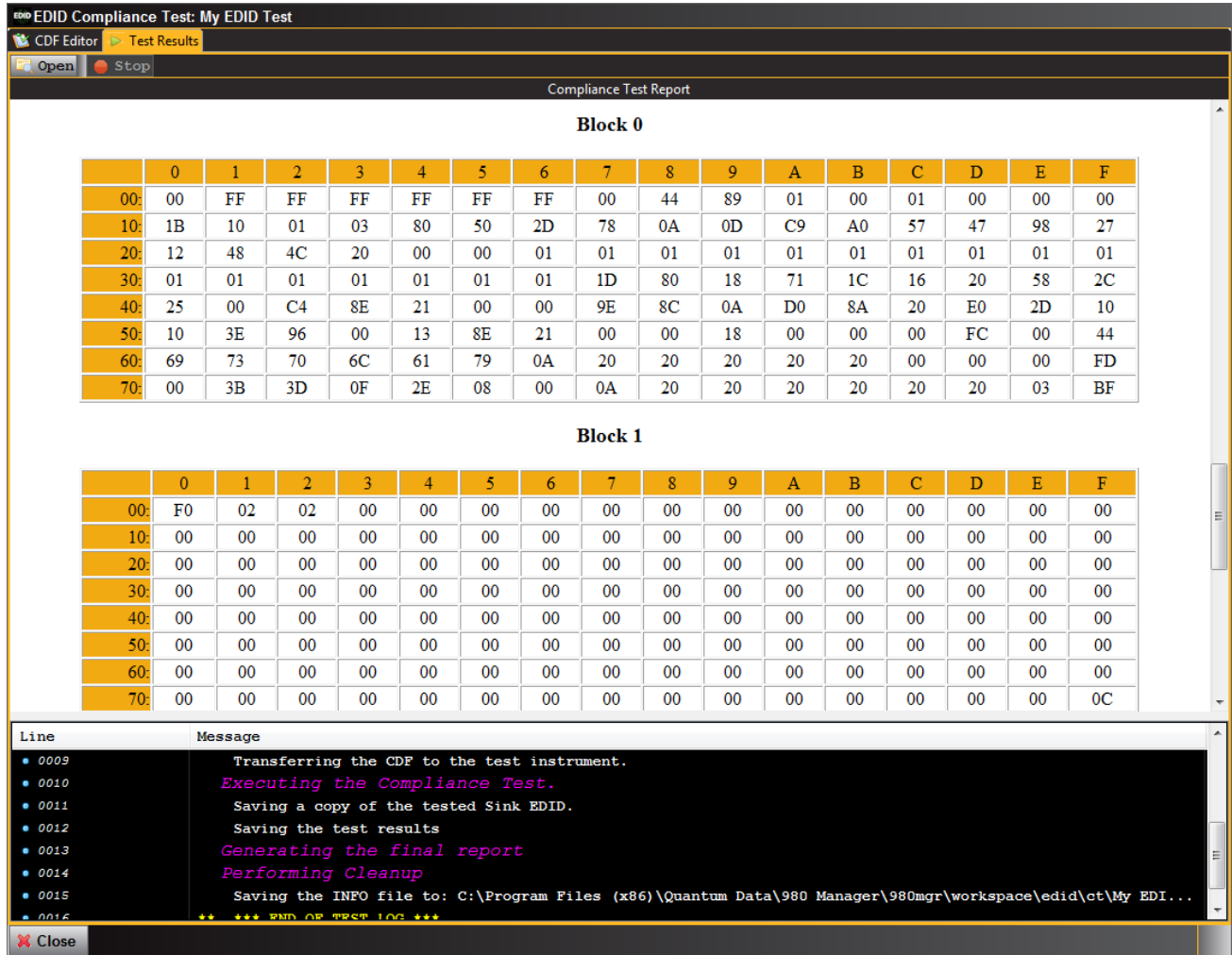
Compliance Test Report

Test 8-3 CEA Timing Extension Structure	Pass
Test 8-17 Basic Format Support Requirements	Fail
• No matching SVD found for VIC 5	Fail
• No matching SVD found for VIC 2	Fail
Test 8-18 HDMI Format Support Requirements	Pass
Test 8-19 Pixel Encoding Requirements	Pass
Test 8-20 Video Format Timing	Pass

Line	Message
• 0009	Transferring the CDF to the test instrument.
• 0010	<i>Executing the Compliance Test.</i>
• 0011	Saving a copy of the tested Sink EDID.
• 0012	Saving the test results
• 0013	<i>Generating the final report</i>
• 0014	<i>Performing Cleanup</i>
• 0015	Saving the INFO file to: C:\Program Files (x86)\Quantum Data\980 Manager\980mgr\workspace\edid\ct\My EDI...
• 0016	*** END OF TEST LOG ***

Close

The report also shows the EDID in hex form per block.



2. To close the window click on the Close activation button on the lower left.

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END OF USER GUIDE