TELEDYNE LECROY
Everywhere**you**look™

quantumdata™ 980
HDMI Phy & Protocol
Aux Chan Analyzer Module
HDMI 2.0 CEC Compliance

Key Features

- **Run limited HDMI 2.0 CEC Compliance tests in Section 5 for Low Level 4-1, General Protocol 4-2, Timing 4-3 tests**

- **Test HDMI DDC bus characteristics such as bit timing, pull-up resistance and low level voltage**

- **Pre-test or self-test your HDMI 2.0 CEC capable devices to reduce costs and improve time to market**

- **Run tests individually or in batch; reuse stored test configurations**

- **Share your compliance test results with colleagues and subject matter experts**

- **Provides access to HDMI auxiliary channel pins for direct measurements**

The quantumdata 980 HDMI 2.0 Phy & Protocol Aux Channel Analyzer module is equipped with an HDMI Tx port and an HDMI Rx port for running tests on HDMI auxiliary channels such as the DDC channel and the CEC bus. The 980 Phy & Protocol Aux Channel Analyzer module's CEC compliance tests (partial support only) enable you to identify compliance failures early in the development cycle. The solution is ideal for pre-testing and self-testing (where permitted) your HDMI 1.4 & 2.0 device.

Compliance Tests

The 980 Phy & Protocol Aux Channel Analyzer module's HDMI CEC2.0 compliance tests enable you to identify compliance failures early in the development cycle. (Note that only a limited set of the CEC 2.0 CTs are supported.) Pre-testing and self-testing reduces cost of testing or retesting at an Authorized Test Center (ATC) and enables you to meet time to market requirements. You can save the results and distribute them to colleagues.

Operation

The 980 HDMI Phy and Protocol Aux Channel Analyzer module's compliance tests can be controlled either through the PC-based 980 GUI Manager or through the embedded 980 GUI Manager running on the 980 platform itself. The 980's built-in color touch screen provides a graphical user interface (GUI) to control the module and run the compliance tests.
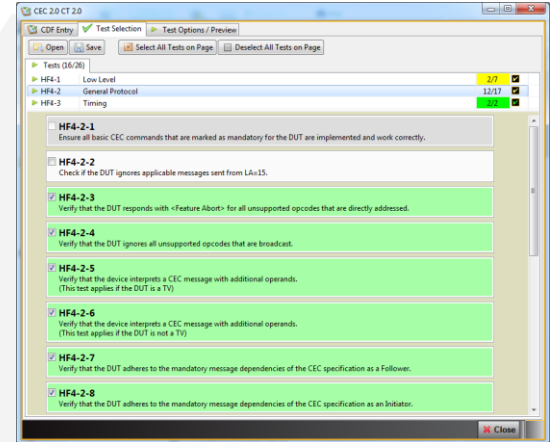
CEC Compliance Testing

The 980 CEC compliance tests are ideal for pre-testing your product prior to submission to an Authorized Test Center for approval. Pre-testing provides added assurance that your product will pass at the Authorized Test Center (ATC) when submitted.
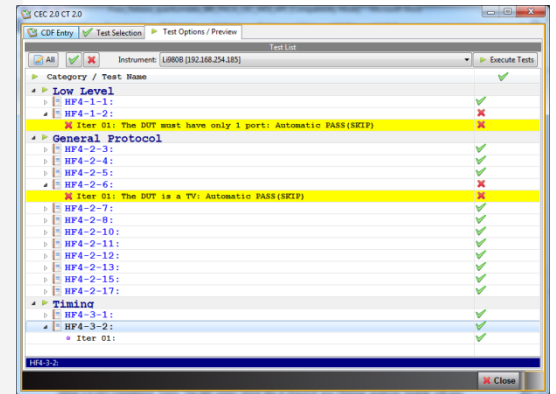
HDMI 2.0 Compliance Tests

The 980 HDMI Phy & Aux Channel Protocol Analyzer supports various CEC compliance tests (MOIs) for HDMI 2.0 CTS Sections 10.1, 10.2 and 10.3.
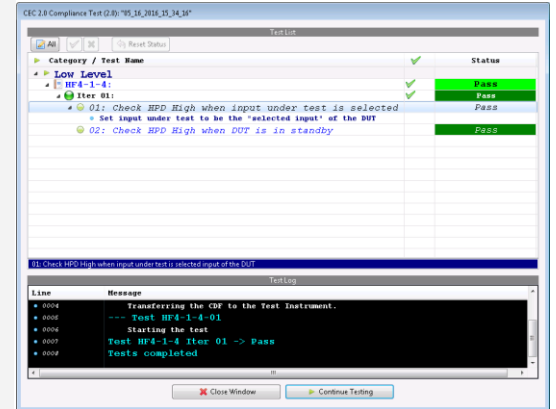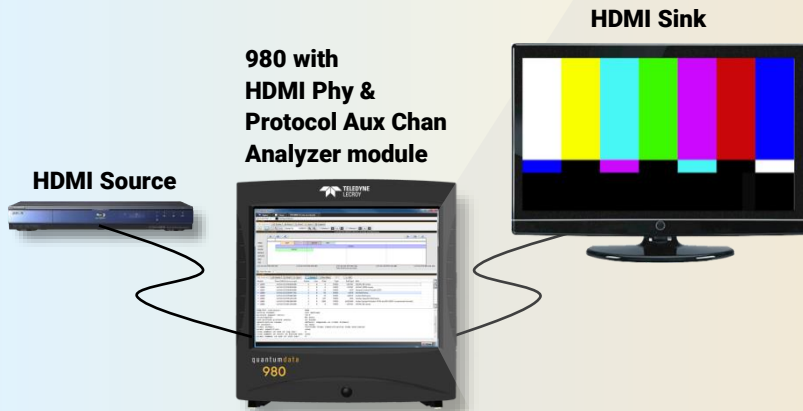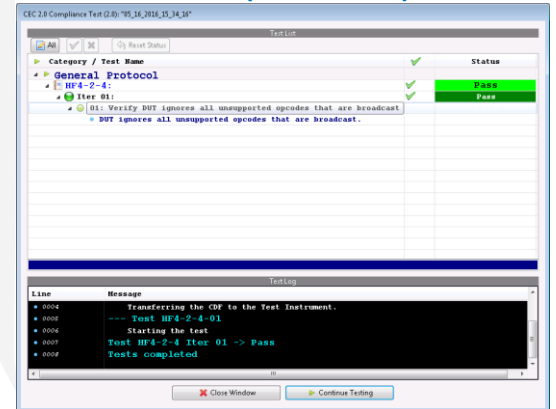
HDMI 2.0 CEC Test Selection

HDMI 2.0 CEC Test List

HDMI Sink

980 with HDMI Phy & Protocol Aux Chan Analyzer module

HDMI Source

Test Setup for HDMI 2.0 CEC Compliance Test

HDMI 2.0 CEC Compliance - Sample Results

Self-Testing

Where permitted, the 980 HDMI Phy & Aux Channel Protocol Analyzer can be used to self-test your product. Self-testing offers greater benefits for time to market and cost reduction than pre-testing by avoiding submission to the Authorized Test Center (ATC) for approval.

Test Results

The compliance tests provide detailed test results which help pinpoint the cause of compliance test failures.

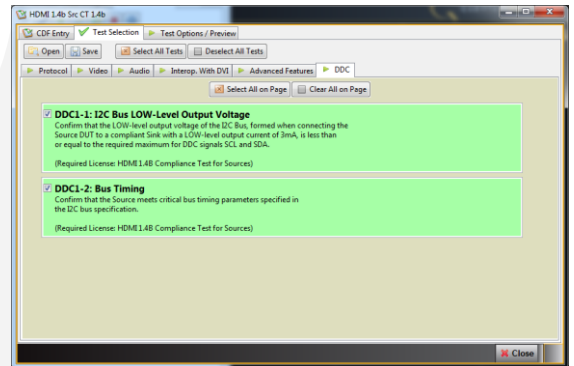**HDMI 2.0 CEC Compliance - Sample Results**

DDC Channel Testing

The 980 HDMI Phy & Aux Channel Protocol Analyzer module supports previously untested characteristics of the HDMI 1.4b DDC channel. You can run tests on the HDMI DDC bus on source and sink devices. Tests include Low level output voltage, bus timing and pull-up resistance.
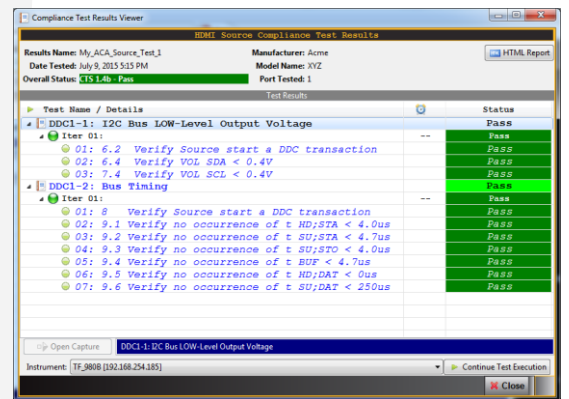
Test Results

Detailed test results enable you to pinpoint the cause of compliance test failures.

Tests Available for HDMI DDC Sink Sources
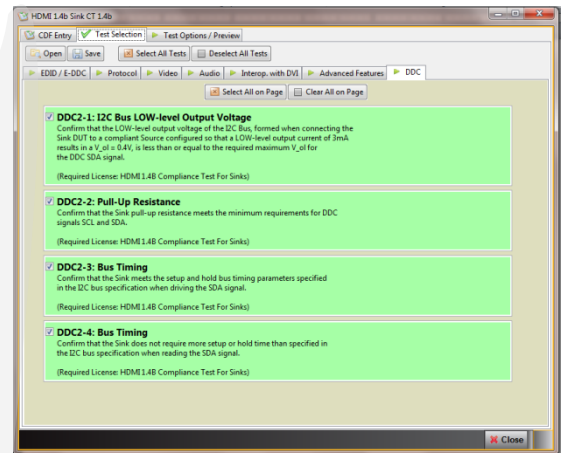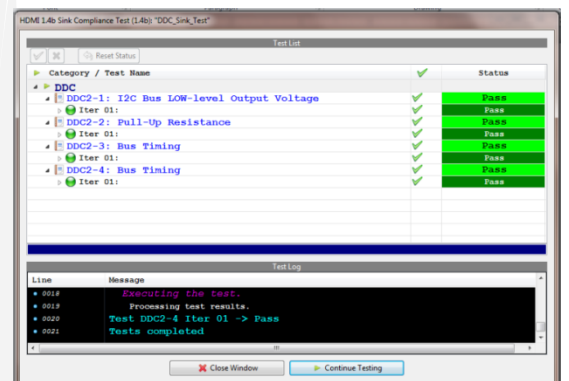

Test Setup for DDC Bus Source Tests

Test Results - DDC Channel Source Tests

Tests Available for HDMI DDC Sinks

Test Setup for DDC Bus Sink Tests

Test Results - DDC Channel Sink Tests

SPECIFICATIONS

HDMI Ports

Version	HDMI 1.4x & 2.0x
Standard Formats	VESA, CEA
Connector	Type A Tx & Rx
Protocol	HDMI
Video Colorimetry	ITU-R BT.601-5, ITU-R BT.709-5
Video Max Pixel Rate	300MHz (300 Gbps/channel TMDS rate)
Color Depths	8, 10, 12 bits
Video Encoding	RGB, YCbCr
Video Sampling Modes	4:4:4, 4:2:2, 4:2:0

Compliance Test Support

HDMI 2.0 CEC Tests (partial support only)	Various CEC tests in Section: 5 for Low Level 4-1, General Protocol 4-2 and Timing 4-3 of the HDMI 2.0 Compliance Test Specification

Options

Compliance Test Package #7	See list in table above

Aux Connectors

Aux connector block	Breakout pin block for direct access to aux channel pins: 1 (GND), 2 (CEC bus), 3 (HEAC +), 4 (DDC_SCL), 5 (DDC_SDA), 6 (GND), 7 (+5v), 8 (HEAC [HPD])

980B Test Platform

Embedded Display	15" diagonal; Resolution: 1024(H); x 768 (V) resolution; 24 bit RGB color.
Power	90-264 VAC, 47-63Hz
Weight	23.76 LBS; 10.78 Kg
Size	Height: 15.25 in. (38.7 cm) Width: 14.57 in. (36.5 cm) Depth: 6.29 in. (15.9 cm)
Command Line Control	Ethernet (RJ-45) for external GUI and telnet
Environmental	Operating Temp: 32 to 104 (F); 0 to 40 (C)

TELEDYNE LECROY
Everywhere**you**look™

1-800-909-7211
teledynelecroy.com

**Local sales offices are located throughout the world.
Visit our website to find the most convenient location.**