

# UCD-301

## 4K Analyzer for HDMI and DP



HDCP 2.3 CTS

### Test 4K Transmitters

The UCD-301 is a fully-featured R&D debug tool for testing all aspects of HDMI 2.0 and DisplayPort 1.2 with HBR2 max bit rate capability. The UCD-301 is delivered with ready-made test sets that are configured and able to run via easy-to-use PC GUI called UCD Console. All tests can be automated for compliance testing, R&D debugging, and production line testing.

### Approved HDCP 2.3 CTS Test Tool

UCD-301 is a DCP LLC Approved Test Tool for HDCP 2.3 Compliance Testing on DisplayPort Transmitter devices. HDCP 2.3 Compliance Test capability is an add-on feature to the UCD Console GUI. HDCP 2.3 CTS tests can be straightforwardly enabled to any UCD-301 Test Tool with an SW add-on. The software add-on can be purchased separately for testing transmitter or receiver devices.

### Test Connector Pin Soldering and Assembly Quality

With UCD-301 Digital, the tester can verify the electrical continuity of each signal in the HDMI and DisplayPort interface. The TSI test automation routine allows the calling application to set the target limits. TSI provides the result through 'Pass / Fail' indication with the actual measured value.

### Highlights

- UHD / 4K compliant test equipment
- HDMI 2.0 and DP 1.4 compliant device with a HBR2 max bit rate capability
- DCP Approved HDCP 2.3 CTS Test Tool
- Test Connector Pins soldering and assembly quality
- HDCP 1.3 and HDCP 2.3 support
- USB 3.0 connected
- UCD Console GUI for debugging
- High level API for easy integration

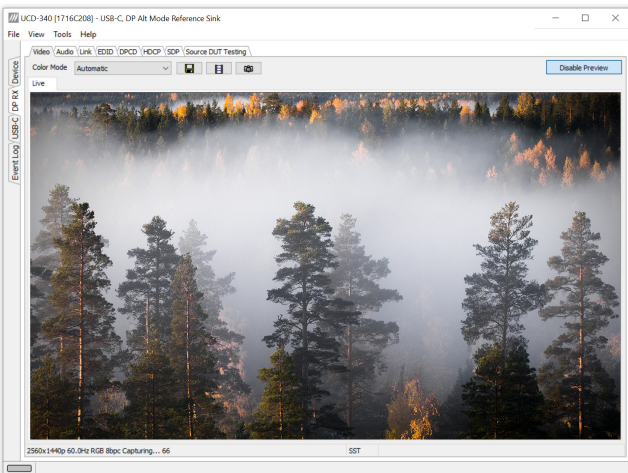
# UCD-301 4K DisplayPort and HDMI Video Analyzer

```
[2019-04-15, 15:46:11.213]: - CRC value set count = 50
[2019-04-15, 15:46:11.213]: - Require frame rate (mHz) = 0
[2019-04-15, 15:46:11.213]: - Frame rate tolerance (mHz) = 0
[2019-04-15, 15:46:11.213]: - Motion test iterations (# loops): 0
[2019-04-15, 15:46:11.213]: - Color format (ID): 0
[2019-04-15, 15:46:11.352]: Test max runtime 300000 ms
[2019-04-15, 15:46:11.449]: 0000.000.001: Start test "CRC based single frame video stability test"
[2019-04-15, 15:46:11.449]: 0000.000.093: Test params:
[2019-04-15, 15:46:11.449]: 0000.000.234:   Frames to test = 300
[2019-04-15, 15:46:11.449]: 0000.000.311: Stage 1: - connecting to input interface...
[2019-04-15, 15:46:11.450]: 0000.003.035:   done.
[2019-04-15, 15:46:11.450]: 0000.003.077: Stage 2: - measure timings and check params...
[2019-04-15, 15:46:11.450]: 0000.003.281:   done.
[2019-04-15, 15:46:11.450]: 0000.003.323: Stage 3: - synchronization...
[2019-04-15, 15:46:11.450]: 0000.019.740:   Reference frame has crc      : 0x923e, 0x16c5, 0x719b
[2019-04-15, 15:46:11.450]: 0000.019.864:   done.
[2019-04-15, 15:46:11.450]: 0000.019.906: Stage 4: - gathering information...
[2019-04-15, 15:46:16.388]: 0005.022.416:   300 frames were tested.
[2019-04-15, 15:46:16.388]: 0005.022.500:   0 mismatches were found.
[2019-04-15, 15:46:16.388]: 0005.022.564:   done.
[2019-04-15, 15:46:16.388]: 0005.022.609: Stage 5: - test data collection completed
[2019-04-15, 15:46:16.388]: 0005.022.816: Test PASSED: "CRC based single frame video stability test"
Passed Test
[2019-04-15, 15:46:16.405]:
[2019-04-15, 15:46:16.422]: Test Complete
```

## Platform for Test Automation

Automated tests help us save time and remove human errors from testing. All tests supported by Unigraf's test tools can be automated from simple R&D debugging tests to complicated compliance tests and fast-paced production line tests. There are different ways to automate tests and Unigraf's test automation solutions make sure that you find the best solution for your needs.

Run automated tests straight from the command line by using C++ code. Unigraf also provides users with a library of scripts that can be used as an example for detailed tests. The scripts are run through Unigraf's Test System Interface (TSI) which is the test software API that allows system integrators a fast and reliable way for ensuring the functionality of the test equipment. These scripts can be used to automate all the tests available in the UCD-301, including Compliance Tests for HDCP 2.3.



## UCD Console GUI

The UCD-301 Graphical User Interface (GUI) is called UCD Console. It provides users with a flexible way of navigating between its sink and source roles and functionalities of each role. Available functionalities include preview windows for captured video and audio, data logger for AUX and metadata content, link and DPCD register monitoring and control dialogs, EDID editor, HDCP status and control functions etc. UCD Console is delivered with ready-made test sets (e.g. content check-sum tests and Link Training tests) for testing HDMI and DisplayPort Sources.

## Specifications

Inputs	DP 1.2 (4096x2160p60 max) HDMI 2.0 (4096x2160p60 max) S/PDIF audio (192 kHz max)
Content Protection	HDCP 1.3 / 1.4 HDCP 2.3
Electrical Test	Verify signal levels of all HDMI and DP interface signals.
Computer Interface	USB 3.0
Operating System	Windows 10, 8, 7 and XP
Software	UCD Console GUI TSI API with interface specific Test Sets
Power Input	+12 Vdc (AC/DC converter included)
Module Size	281x128x62 mm
Weight	900 g (w/o AC/DC converter)

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