

# UCD-323

## 4K Video Generator & Analyzer for HDMI and DP



HDCP 2.3 CTS

### Test 4K Receivers and Transmitters

The UCD-323 is a fully-featured R&D debug tool for testing all aspects of HDMI 2.0 and DisplayPort 1.4a (limited to HBR2 link rate). The UCD-323 combines Reference Source and Reference Sink functionality in one unit. The UCD-323 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-323 is a DCP LLC Approved Test Tool for HDCP 2.3 Compliance Testing on DisplayPort Transmitter and Receiver 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-323 Test Tool with an SW add-on. The software add-on can be purchased separately for testing transmitter or receiver devices.

### Dolby Vision™ Compatibility Test Tool

Unigraf's UCD-323 has been approved as an official Dolby Vision™ compatibility test tool. With the Dolby SW package, UCD-323 is a mandatory tool for any e.g. television or monitor manufacturer that is willing to have a Dolby Vision™ certificate on their products.

### Highlights

- UHD / 4K compliant test equipment
- HDMI 2.0 and DP 1.4a (limited to HBR2 link rate) input and output in one unit
- DCP Approved HDCP 2.3 CTS Test Tool
- Approved Dolby Vision™ Compatibility Test Tool
- Approved HDR 10+ Display Device Test Tool
- HDCP 1.3 and HDCP 2.3 support
- Sink and source video, audio and configuration parameters
- USB 3.0 connected
- UCD Console GUI for debugging
- High level API for easy integration

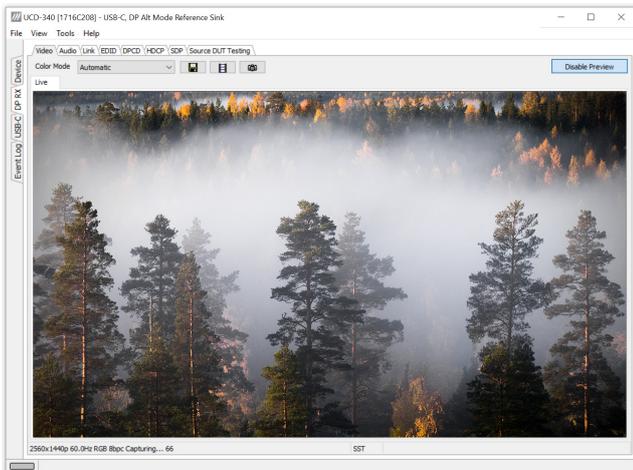
# UCD-323 4K DisplayPort and HDMI Video Generator & Analyzer

```
[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, 15:46:11.449]: 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-323, including Compliance Tests for HDCP 2.3.



## UCD Console GUI

The UCD-323 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, video and audio pattern generator, 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 Sinks and Sources.

## Specifications

Inputs	DP 1.4a (4096×2160p60 max) HDMI 2.0 (4096×2160p60 max)
Outputs	DP 1.4a (4096×2160p60 max) HDMI 2.0 (4096×2160p60 max)
Content Protection	HDCP 1.3 / 1.4 HDCP 2.3
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	281×128×62 mm
Weight	900 g (w/o AC/DC converter)

