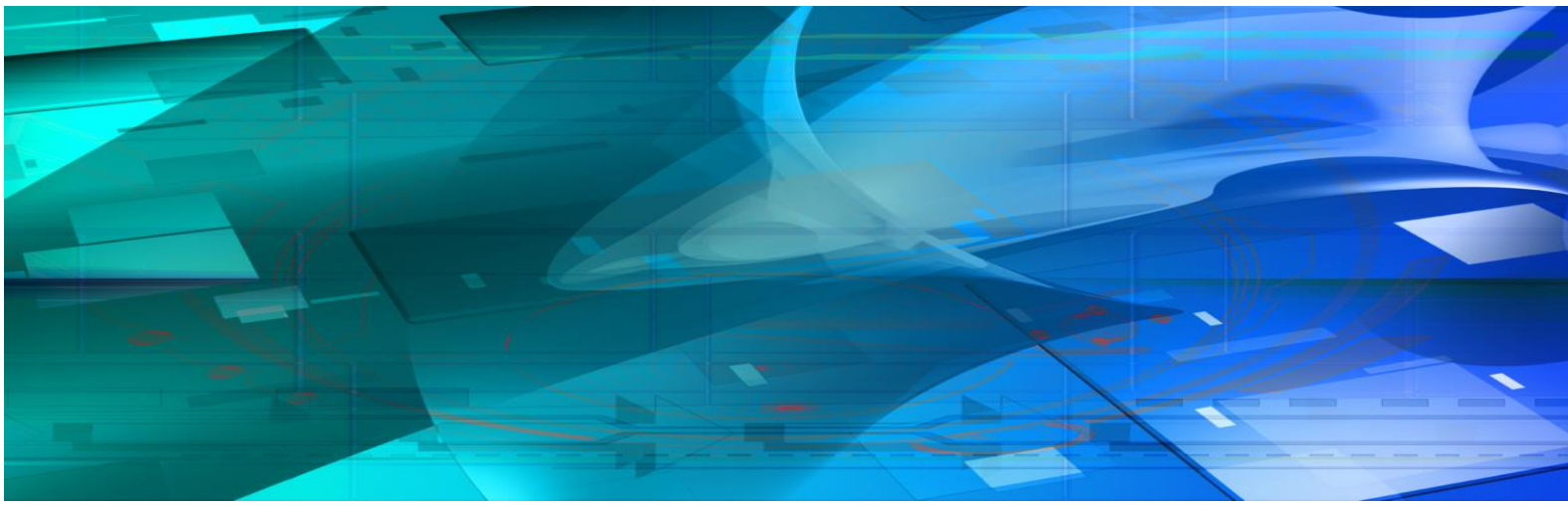
DisplayPort™ CTS Tools for UCD-400



Guide to Product Options

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Edition

DP CTS Tool Options for UCD-400, rev 13

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Company information

Unigraf Oy
Piispantilankuja 4, FI-02240 ESPOO, Finland

info@unigraf.fi

https://www.unigraf.fi

http://www.unigraf-china.cn

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High-bandwidth Digital Content Protection, Revision 2.3 on DisplayPort, Compliance Test Specification, Revision 1.1, 4 March 2019

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VESA® DisplayPort® DSC Link Layer Compliance Test Specification, Version 1.4a, Revision 1.1, Draft 6, Nov 18, 2019

Released Versions

This document explains features found in the following versions of the software:

Tool	Version
HDCP 2.3 CTS: UCD Console	1.8
DP 1.4a CTS: UCD Console	1.8

DP 1.4 LINK LAYER CTS

DP 1.4 Reference Hardware Products

Product	P/N	Description
UCD-400 DP 1.4 Test Device	*066600*	DP1.4a / HBR3 capable test unit for DisplayPort Sink, Source and Repeater. USB 3.0 Interface to Host PC.

DP 1.4 Link CTS Test Software Product Options

Product	P/N	Tests included
DP 1.4 LL CTS for testing Source DUT	*MT6637*	DP 1.4a Link Layer compliance tests (HBR3) for testing Source DUT.
DP 1.4 LL CTS for testing Sink DUT	*MT6635*	DP 1.4a Link Layer compliance tests (HBR3) for testing Sink DUT.

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HDCP 2.3 CTS FOR DISPLAYPORT SINK, SOURCE AND REPEATER DUT

DP HDCP 2.3 CTS Capable Hardware Products

Product	**P/N**	**Description**
UCD-323 HDDP *	*066512*	4K capable test unit for digital video inputs and outputs. USB 3.0 Interface to Host PC.
UCD-400 DP 1.4 Test Device *	*066600*	DP1.4a / HBR3 capable test unit for DisplayPort Sink, Source and Repeater. USB 3.0 Interface to Host PC.
UCD-340 USB-C DP Alt Mode Tester **	*066514*	4K capable test unit for USB-C DP Alt Mode Sinks or Sources. USB 3.0 Interface to Host PC. TSI SDK Basic Test Set included
UCD-340 USB-C DP Alt Mode Tester with Electrical Test **	*066515*	4K capable test unit for USB-C DP Alt Mode Sinks or Sources with Electrical Test. USB 3.0 Interface to Host PC. TSI SDK Basic Test Set included.
UCD-301 Digital **	*066510*	4K capable test unit for digital video outputs. USB 3.0 Interface to Host PC.

*) Approved as Authorized Test Tool for DP Sinks and Sources

**) Approved as Authorized Test Tool for DP Sources

DP HDCP 2.3 CTS Test Software Product Options

Product	**P/N**	**Tests included**
HDCP 2.3 CTS for testing Source DUT on DP	*MT6634*	HDCP 2.3 on DisplayPort compliance tests for testing Source DUT. (Sets 1A + 1B)
HDCP 2.3 CTS for testing Sink DUT on DP	*MT6636*	HDCP 2.3 on DisplayPort compliance tests for testing Sink DUT. (Set 2C)
HDCP 2.3 CTS for testing Sink, Source and Repeater DUT on DP	*MT6638*	HDCP 2.3 on DisplayPort CTS for testing Sink, Source and Repeater DUT. (Sets 2C + 1A + 1B + 3A + 3B + 3C)

Description of HDCP 2.3 CTS Transmitter Tests

1A. Downstream procedure with Receiver

Test Reference	Test Name
HDCP2.3 CTS 1A-01	Regular Procedure – With previously connected Receiver (With stored km)
HDCP2.3 CTS 1A-02	Regular Procedure – With newly connected Receiver (Without stored km)
HDCP2.3 CTS 1A-03	Regular Procedure – Receiver disconnect after AKE_Init
HDCP2.3 CTS 1A-04	Regular Procedure – Receiver disconnect after km
HDCP2.3 CTS 1A-05	Regular Procedure – Receiver disconnect after locality check
HDCP2.3 CTS 1A-06	Regular Procedure – Receiver disconnect after ks
HDCP2.3 CTS 1A-07	Regular Procedure – Receiver sends REAUTH_REQ after ks
HDCP2.3 CTS 1A-08	Irregular Procedure – Verify Receiver Certificate
HDCP2.3 CTS 1A-09	Irregular Procedure – SRM
HDCP2.3 CTS 1A-10	Irregular Procedure – Invalid H’
HDCP2.3 CTS 1A-11	Irregular Procedure – Pairing Failure
HDCP2.3 CTS 1A-12	Irregular Procedure – Locality Failure
HDCP2.3 CTS 1A-13	Regular Procedure – Encryption Disable Bootstrapping

1B. Downstream procedure with Repeater

HDCP2.3 CTS 1B-01	Regular Procedure – With Repeater
HDCP2.3 CTS 1B-02	Irregular Procedure – Timeout of Receiver ID list
HDCP2.3 CTS 1B-03	Irregular Procedure – Verify V’
HDCP2.3 CTS 1B-04	Irregular Procedure – MAX_DEVS_EXCEEDED
HDCP2.3 CTS 1B-05	Irregular Procedure – MAX CASCADE_EXCEEDED
HDCP2.3 CTS 1B-06	Irregular Procedure – Incorrect *seq_num_V*
HDCP2.3 CTS 1B-07	Regular Procedure – Re-authentication on HPD
HDCP2.3 CTS 1B-08	Regular Procedure – Re-authentication on REAUTH_REQ
HDCP2.3 CTS 1B-09	Irregular Procedure – Rollover of *seq_num_V*
HDCP2.3 CTS 1B-10	Irregular Procedure – Failure of Content Stream Management

Description of HDCP 2.3 CTS Receiver Tests

2C. Upstream procedure with Transmitter

Test Reference	Test Name
HDCP2.3 CTS 2C-01	Regular Procedure – With transmitter
HDCP2.3 CTS 2C-02	Irregular Procedure – New Authentication after AKE_Init
HDCP2.3 CTS 2C-03	Irregular Procedure – New Authentication during Locality Check
HDCP2.3 CTS 2C-04	Irregular Procedure – New Authentication after SKE_Send_Eks
HDCP2.3 CTS 2C-05	Irregular Procedure – New Authentication during Link Synchronization
HDCP2.3 CTS 2C-06	Regular Procedure – Encryption Disable Bootstrapping

Description of HDCP 2.3 CTS Repeater Tests

3A. Downstream Procedure with Receiver

Test Reference	Test Name
HDCP2.3 CTS 3A-01	Regular Procedure - With previously connected Receiver (With stored k_m)
HDCP2.3 CTS 3A -02	Regular Procedure - With newly connected Receiver (Without stored k_m)
HDCP2.3 CTS 3A -03	Irregular Procedure - Verify Receiver Certificate
HDCP2.3 CTS 3A -04	Irregular Procedure - invalid H'
HDCP2.3 CTS 3A -05	Irregular Procedure - Pairing Failure
HDCP2.3 CTS 3A -06	Irregular Procedure - Locality Failure

3A. Downstream Procedure with Repeater

HDCP2.3 CTS 3B-01	Regular Procedure - With Repeater
HDCP2.3 CTS 3B -02	Irregular Procedure - Timeout of Receiver ID list
HDCP2.3 CTS 3B -03	Irregular Procedure - Verify V'
HDCP2.3 CTS 3B -04	Irregular Procedure - MAX_DEVS_EXCEEDED
HDCP2.3 CTS 3B -05	Irregular Procedure - MAX_CASCADE_EXCEEDED
HDCP2.3 CTS 3B -06	Irregular Procedure - Rollover of *seq_num_V*
HDCP2.3 CTS 3B -07	Irregular Procedure - Failure of Content Stream Management

3C. Downstream Procedure with Transmitter

Repeater (DUT) Connected to Transmitter (TE pseudo-Source) and
Receiver (TE pseudo-Sink)

HDCP2.3 CTS 3C-01	Regular Procedure - Transmitter - DUT - Receiver
HDCP2.3 CTS 3C -02	Regular Procedure - Receiver Disconnect Propagation when an Active Receiver is Disconnected Downstream
HDCP2.3 CTS 3C -03	Regular Procedure - Receiver Connected when an Active Receiver is Connected Downstream
HDCP2.3 CTS 3C -04	Irregular Procedure - New Authentication after AKE_init
HDCP2.3 CTS 3C -05	Irregular Procedure - New Authentication during Locality Check
HDCP2.3 CTS 3C -06	Irregular Procedure - New Authentication after SKE_Send_Eks
HDCP2.3 CTS 3C -07	Irregular Procedure - New Authentication during Link Synchronization
HDCP2.3 CTS 3C -08	Irregular Procedure - Rx Certificate invalid
HDCP2.3 CTS 3C -09	Irregular Procedure - invalid H'
HDCP2.3 CTS 3C -10	Irregular Procedure - Locality Failure

Repeater (DUT) Connected to Transmitter (TE pseudo-Source) and Receiver (TE pseudo-Repeater)

Test Reference	Test Name
HDCP2.3 CTS 3C-11	Regular Procedure - Transmitter - DUT - Repeater (With stored km)
HDCP2.3 CTS 3C-12	Regular Procedure - Receiver disconnect after AKE_Init
HDCP2.3 CTS 3C-13	Regular Procedure - Receiver disconnect after k_m
HDCP2.3 CTS 3C-14	Regular Procedure - Receiver disconnect after locality check
HDCP2.3 CTS 3C-15	Regular Procedure - Receiver disconnect after K_s
HDCP2.3 CTS 3C-16	Irregular Procedure - Timeout of Receiver ID list
HDCP2.3 CTS 3C-17	Irregular Procedure - Verify V'
HDCP2.3 CTS 3C-18	Irregular Procedure - DEVICE_COUNT
HDCP2.3 CTS 3C-19	Irregular Procedure - DEPTH
HDCP2.3 CTS 3C-20	Irregular Procedure - MAX_DEVS_EXCEEDED
HDCP2.3 CTS 3C-21	Irregular Procedure - MAX_CASCADE_EXCEEDED
HDCP2.3 CTS 3C-22	Regular Procedure - Repeater with zero downstream device
HDCP2.3 CTS 3C-23	Regular Procedure - Propagation of HDCP2_0_REPEATER_DOWNSTREAM flag
HDCP2.3 CTS 3C-24	Regular Procedure - Propagation of HDCP1_DEVICE_DOWNSTREAM flag
HDCP2.3 CTS 3C-25	Regular Procedure - Content Stream Management