Chipsmall

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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quantum**data**™ 780D
Video Generator / Protocol Analyzer
for HDMI & HDBaseT Testing

Important Note: The model name and description for this 780 model has been changed to: *"780D Video Generator / Protocol Analyzer for HDMI & HDBaseT Testing."*

Key Features

- **HDMI and HDBaseT input and output ports for testing both source display devices as well as cables and distribution networks**

- **Test Ultra High Definition video products supporting 4K resolutions up to 600 MHz**

- **Video pattern and format library with programmable settings**

- **Protocol tests for digital video sources and displays, including test for HDCP 2.2 authentication**

- **Protocol logging application auxiliary channel analyzer (ACA) enables real time monitoring of EDID exchanges, HDCP (including HDCP 2.2), SCDC and CEC messages**

- **Passive protocol logging between a source and a sink is also optionally supported on HDMI ports**

- **Report File Creation feature provides HTML formatted report of tests performed**

The Teledyne LeCroy quantumdata 780D Video Generator /Protocol Analyzer for HDMI & HDBaseT Testing is a portable, handheld digital video generator and analyzer that enables you to run tests on digital video devices and network distribution devices on site or in the R&D lab. The HDMI ports support testing up to 600 MHz pixel rate and the HDBaseT ports support testing up to 300 MHz pixel rate. Testing these digital interfaces is supported by both an output port and an input port to allow testing of digital video sources, displays, audio devices and distribution devices. The 780D also offers a VGA output for testing RGB and component analog.

Diagnose and Troubleshoot

The 780D model provide an at-a-glance status bar on the bottom of the 7" in touch screen. The status bar provides basic information about what the instrument is transmitting to a display and what it is receiving from a source. The instruments can run quick video audio and protocol tests on individual sources, displays , repeaters, distribution gear as well as cables. Protocol tests include tests for EDID, HDCP authentication, inoframes and timing data. You can place the 780D at any point in a video distribution network and run tests upstream toward the source while emulating a display (or sink). Or you can run tests downstream while emulating a source. Generate reports to demonstrate test series completion.

Ease of Use

The 780D's large color touch screen provides ease of use and quick status information. The rich set of routine tests and diagnostic tests are accessible with just a few touch clicks. You can quickly configure settings on the outputs. A rich command set, available either through USB or RS-232 serial ports, supports automated testing.

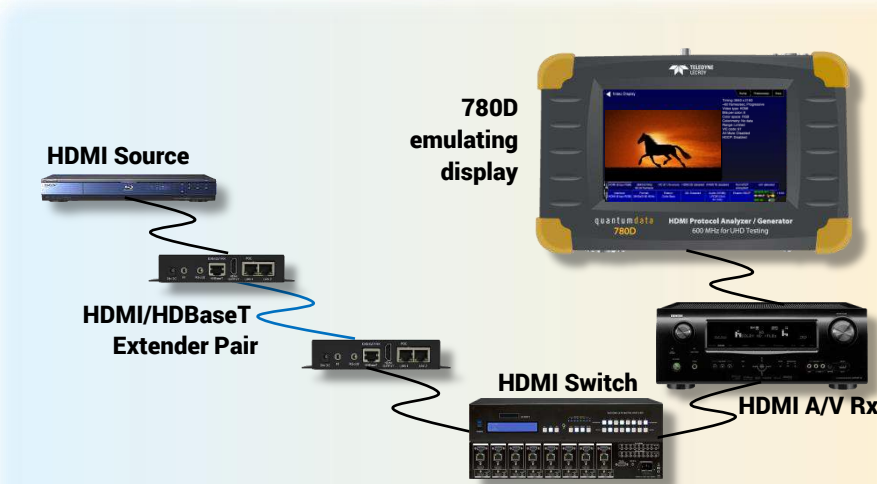# SOURCE & NETWORK DIAGNOSTIC TEST FEATURES

View Incoming Video & Data

The 780D status bar provides essential information about the incoming video. The Video Display Test shows the incoming video and essential video and audio meta-data. Both provide quick time-to-insight when conducting routine tests or diagnosing interoperability problems.

Test Response to EDIDs

Many interoperability problems are related to EDIDs. 780D enables you to emulate any EDID to test a source's response. You can use commercial EDIDs or test EDIDs with specific video and audio support. Test with EDIDs with known anomalies or grab an EDID from a UHD TV for future testing.

View Auxiliary Channel Transactions

Complex interoperability problems require visibility into the auxiliary channel. You can monitor HDMI and HDBaseT Display Data Channel data to view EDID, HDCP, SCDC and CEC transactions. You can check details of each transaction in the log and distribute the logs to colleagues and subject matter experts.
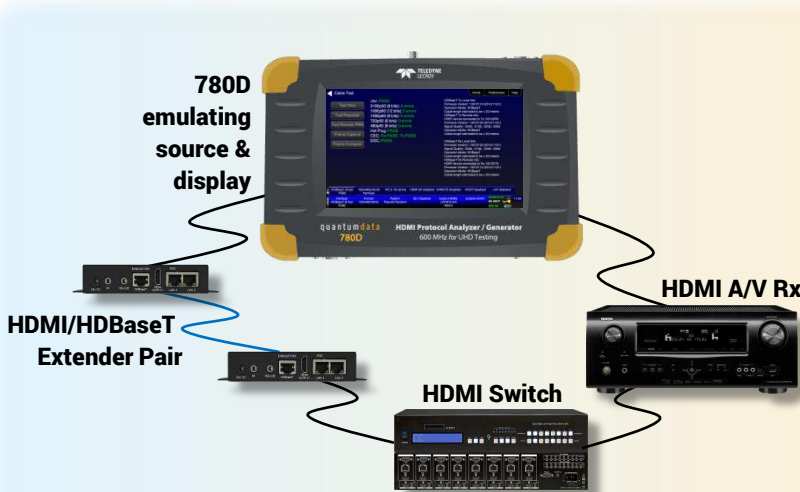
Video Display Test – View video & metadata

HDMI Source

780D emulating display

HDMI/HDBaseT Extender Pair

HDMI Switch

HDMI A/V Rx

Example Source Test Setup

Format Analyzer – View metadata & timing

Verify Cable / Network (Loop)

The 780D enables you to test distribution equipment to verify integrity of extenders, matrix switches and distribution amps. You can test individual devices or entire networks including digital video cables.

Verify Video at Far End

The 780D supports testing of installed distribution networks from the far-end at the display.

Cable Test - Verify networks and cables

780D emulating source & display

HDMI/HDBaseT Extender Pair

HDMI Switch

HDMI A/V Rx

Example Network Test Setup

Verify distribution network from far end
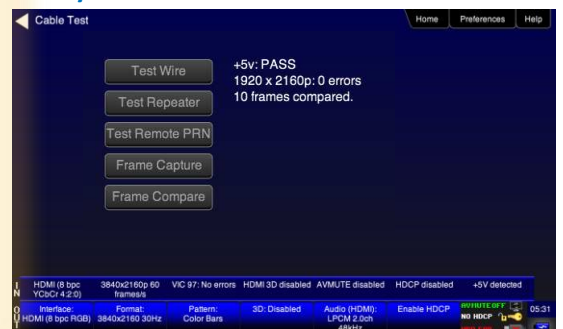
SINK (DISPLAY) TEST & DIAGNOSTIC FEATURES

Verify Video

Select from CEA and VESA formats or create your own custom formats including 4K resolutions for Ultra HD testing up to 600 MHz. Use the test pattern library to verify specific video display elements. Set bit depth, pixel encoding, colorimetry and sampling parameters. Use industry standard patterns for color calibration. Create custom bitmap test patterns. Scroll bitmaps to test motion artifacts.

Verify EDID Contents

Many interoperability problems are related to EDIDs. You can view the EDID contents of any connected display to verify its audio/video capabilities (including HDR elements). You can verify the structure of an EDID and check for compliance.

Video Test – Select formats & parameters

Verify Audio

You can use the 780D to verify audio on displays or audio systems using programmable LPCM test tones. Set sampling rate, bit depth, amplitude and number of channels. You can select Dolby and DTS compressed audio clips including Dolby TrueHD & DTS Master Audio.

Audio Test
Select compressed or LPCM tones

780D emulating source

HDMI UHD TV

HDMI/HDBaseT Extender Pair

HDMI Switch

HDMI A/V Rx

Sink (Display) Test Setup

EDID Verification Test

Verify HDCP Authentication

HDCP authentication problems occur in complex digital video distribution networks. Use the HDCP test to quickly check HDCP 1.4 and HDCP 2.2 authentication. Enabling and disabling HDCP can quickly reveal the nature of an interoperability problem. Monitor the HDCP transactions during the HDCP test using the Auxiliary Channel Analyzer.

Aux Channel Analyzer

HDCP Authentication Test

SPECIFICATIONS

HDMI

Version	HDMI 2.0
Standard Formats	VESA (DMT, CVT-R, CVT), CEA
Connector	(1) Type A Tx; (1) Type A Rx
Protocol	HDMI, DVI
Video Colorimetry	ITU-R BT.601-5, ITU-R BT.709-5, BT.2020 (Rx only currently)
Video Max Pixel Rate	600 MHz (6.00 Gbps/channel TMDS rate)
Color Depths	8, 10, 12 bits (deep color only supported up to 1080p60 formats)
Video Encoding / Sampling	RGB, YCbCr; 4:4:4, 4:2:2, 4:2:0
HDCP	Versions 1.4 & 2.2
Audio Formats	LPCM, Dolby (DD, DD+, TrueHD), DTS (ES, HD, Master Audio)
Audio LPCM Settings	Sampling rates (32 – 192 kHz); Bits per sample (16, 20, 24)

HDBaseT

Version	HDBaseT 1.0
Standard Formats	VESA (DMT, CVT-R, CVT), CEA
Connector	(1) 8P8C (RJ-45) Tx; (1) RJ-45 Rx
Video Colorimetry	ITU-R BT.601-5, ITU-R BT.709-5
Video Max Pixel Rate	300 MHz
Color Depths	8, 10, 12 bits
Video Encoding / Sampling	RGB, YCbCr; 4:4:4, 4:2:2, 4:2:0
HDCP	Version 1.4
Audio Formats	LPCM, Dolby (DD, DD+, TrueHD), DTS (ES, HD, Master Audio)
Audio LPCM Settings	Sampling rates (32 – 192 kHz); Bits per sample (16, 20, 24)

Digital Audio

Connectors	Optical (JIS FOS); SPDIF (RCA)
Audio Formats	LPCM, Dolby (DD, DD+), DTS (ES, HD)
Audio LPCM Settings	Sampling rates (32 – 192 kHz); Bits per sample (16, 20, 24)

Analog Video

Connector	VGA HD-15
Format Standards	VESA, CEA
Video Encoding	RGB, YPbPr
Max Pixel Rate	165 MHz

Options

Auto EDID Test	Run automated EDID test on source devices
Cable Test	Test digital video cables and video distribution networks
ACA Monitor	Monitor aux channel transactions while emulating a source or sink or passively
Report File Creation	Provides HTML formatted report of tests performed

Instrument

AC Adapter	100-120 VAC, 47-63Hz
Weight	3.25 LBS; 1.47 Kg
Embedded Display	800 (H); x 480 (V) resolution; 24 bit RGB color.
Tilt Bail	For convenient viewing
Size	Height: 2.7 in. (6.98 cm) Width: 9.75 in. (24.76 cm) Depth: 6 in. (15.24 cm)
Command Line Control	USB Type B, RS-232
Environmental	Operating Temp: 32 to 104 (F); 0 to 40 (C)
File Access	USB Type B (command line / file transfer; SD Card (upgrades / file transfer)