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!

Contact us

TELEDYNE LECROY
Everywhere**you**look™

quantum**data**™
280 Test Set
280G Video Generator
280A Video Analyzer
Portable, Feature Rich & Affordable!
Now verify HDR metadata end to end!

280G Video Generator   **280A Video Analyzer**

Benefits

- Shortens time on job site.
- Reduces callbacks and truck rolls.
- Simplifies testing process.
- Verifies network components and design

Key Features

- Test HDMI and HDBaseT cables, devices, components and entire video distribution networks end to end up to 18G (HDMI).
- Verify video and audio transmission through a video distribution network.
- Verify hot plug, +5V and protocols, such as HDCP, EDID and NEW! HDR metadata, through the distribution network end to end.
- Check interoperability between video sources, displays and distribution equipment.
- Diagnose video and protocol failures in cables (including NEW! HDBaseT in Long Reach mode), video distribution devices and components.
- Simple Pass/Fail test indication on LCD display offers quick "Time-to-Insight."
- Test reports provide HTML formatted reports of tests performed to demonstrate proper network turn up.
- Battery powered
- Handy optional carrying case available

The Teledyne LeCroy quantumdata 280 Test Set is a combination test instrument set comprised of an HDMI/HDBaseT Video Generator (Tx) and Analyzer (Rx). Each device is small compact and battery powered. The 280 Test Set is ideally suited for professional A/V integrators and home theatre installers. This feature-rich test set enables you to conduct basic verification and diagnostic tests on HDMI/HDBaseT cables, video distribution networks and individual A/V components. The HDMI input and output ports support testing up to 18 Gbps data rate and 600 MHz pixel rate and the HDBaseT input and output ports support testing up to 300 MHz pixel rate (Long Reach mode supported up to 1080p).

The instrument set's features and convenient operation can shorten time on the job site and reduce callbacks by enabling you to run basic verification and diagnostic tests on complex video distribution installations quickly and efficiently.

This convenient test Instrument set can pay for itself by eliminating truck rolls and shortening time on the job site.

Diagnose and Troubleshoot

Installing UHD video distribution networks whether in residences or commercial, industrial or institutional facilities is complex. These installations do not all go well. A variety of failure conditions can occur such as no video, degraded video, flashing video, unexpected video, etc. These failures point to a range of underlying problems.

Whether verifying an HDMI cable or a re-terminated HDBaseT cable run, checking an HDBaseT extender, testing the EDID handling of an HDMI switch, checking HDCP content protection protocols or just verifying a video distribution network end-to-end, this compact, affordable 280 set will save you time on site, reduce callbacks and provide you with assurance that the video distribution network you just installed will run problem free.

Ease of Use

The 280 is battery powered with an embedded touch screen. It provides ease of use and fast Time-to-Insight when testing cables and distribution gear and checking interoperability between video components and diagnosing failures.

SOURCE TESTING OR TESTING DISTRIBUTION NETWORK UPSTREAM

Verify and Troubleshooting a Video Network Upstream

In the example below the 280A Rx unit serves as a 4K video display to verify various video resolutions, bit depth settings, colorimetry, sampling, NEW! HDR, etc. You can also verify the +5V and emulate an EDID to verify that the upstream network is passing it through to the source properly. HDCP can be verified as well using either HDCP 1.4 or HDCP 2.2. If you encounter problems you can *segment the network* by moving the 280A Rx upstream to run further tests. In this case the 280A Rx can serve either as an HDMI or an HDBaseT sink. Segmenting the network either from the upstream direction of the downstream direction enables you to *determine where the failure occurs*.
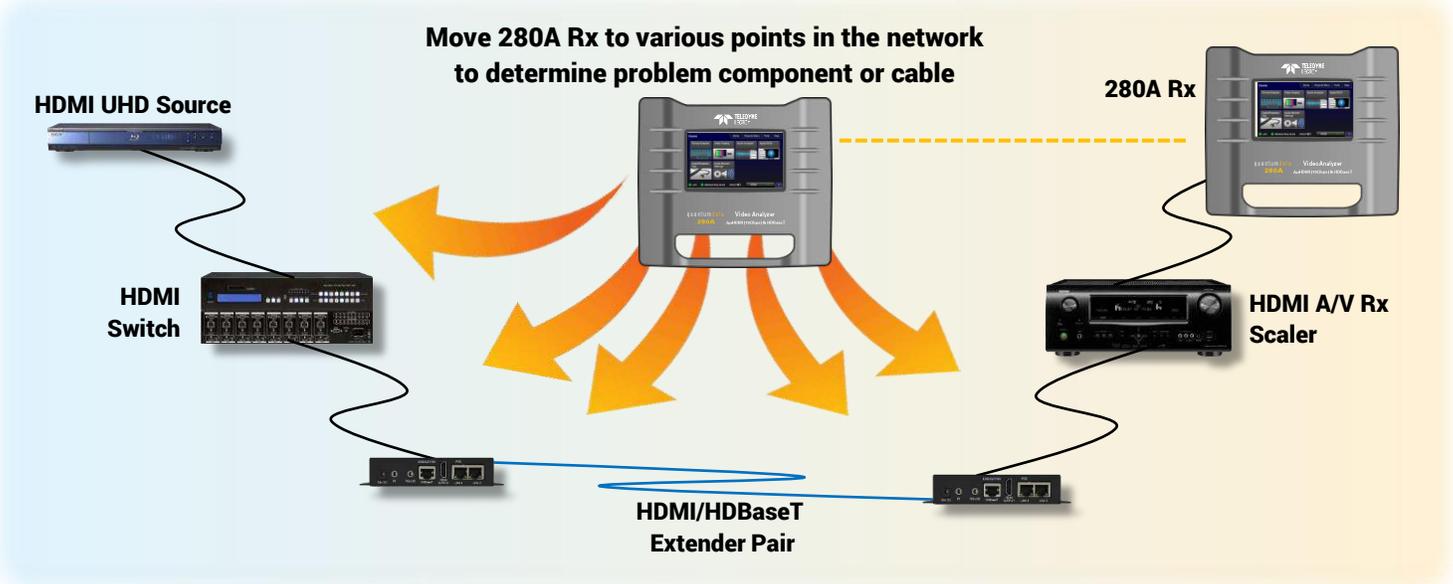
Move 280A Rx to various points in the network to determine problem component or cable

280A Rx

HDMI UHD Source

HDMI Switch

HDMI A/V Rx Scaler

HDMI/HDBaseT Extender Pair

280A Main Stream

Home	Home	Reports Menu	Prefs	Help

Format Analyzer

Video Display

Audio Analyzer

Apply EDID

Cable/Repeater Test

Audio Monitor Settings

● +5V ● 3840x2160p 59.94 HDCP 2.2 HDM

Format Analyzer | Home | Reports Menu | Prefs | Help

Refresh

Errors:
None

Video type: HDMI
Total: 4400 x 2250
Active: 3840 x 2160
Frames/sec: 60.0
Scan type: Progressive

Bits per comp.: 8
Color space: YCbCr 4:2:0
Colorimetry: BT.2020 (non-const)
HDR EOTF: SMPTE ST 2084
AV Mute Status: Not muted
HDCP: Encrypted (2.2)

● +5V ● 3840x2160p 60 HDCP 2.2 HDMI HPD

280A Video Analyzer Screen

280A Video Display Screen

Verify and Troubleshooting a Video Network Downstream

In the example below the 280G Tx is placed at the source end. The 280G Tx will serve as an HDMI 4K video source and check various video resolutions and video settings. You can also verify the hot plug voltage and check for a valid EDID. HDCP can be verified as well using either HDCP 1.4 or HDCP 2.2. If you encounter problems you can *segment the network* by moving the 280G Tx downstream to run further tests at various points in the network. In this case the 280G Tx can serve either as an HDMI or an HDBaseT source. Segmenting the network enables you to *determine where the failure occurs —to identify the problem device or cable*.

Move 280G Tx to various points in the network to determine problem component or cable

280G Tx

HDMI Switch

HDMI UHD TV

HDMI A/V Scaler

HDMI/HDBaseT Extender Pair

280G Main Stream

280G EDID Test Screen

280G HDCP 2.2 Test Screen

Verifying a Video Link End-to-End

The 280 Installation test set enables installers to *check a video distribution network* prior to the delivery of the video source and display components. The 280G Tx device can be placed at the source end and the 280A Rx device at the far end where the display will be mounted. A series of tests can be run to verify the link bandwidth capability up to 4K@60Hz even if the link will only be transmitting 1080p initially. This enables you to *future proof the link*. The test set can *test for basic signal integrity* and even *test protocols* such as HDCP (content protection), EDID and NEW! HDR metadata transmission. When failures occur individual component devices and cables can be tested separately.

280G Tx

Run end-to-end video and protocol tests to check the video distribution network cables and components for up to 4K video transmission and HDCP 2.2.

280A Rx

HDMI Switch

**HDMI A/V Rx/Scaler**

HDMI/HDBaseT Extender Pair
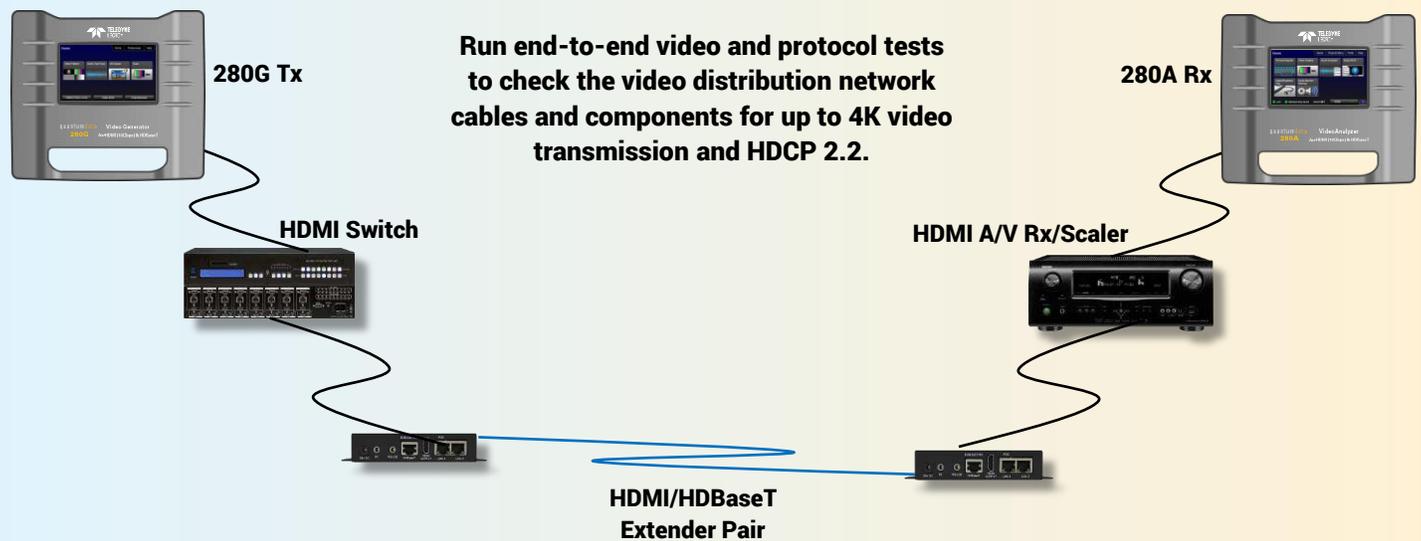
Verify Individual Cables, Devices and Components

If you encounter a distribution link problem during qualification testing (above), the 280 test set enables you to test each distinct element: cables, extender, switches, scaler etc. to quickly identify the root cause of a link failure. NEW! You can test HDBaseT links in "Long Reach" mode as well. Here are just a few examples below:

Test HDMI switch and HDMI cables for EDID, HDCP and video formats.

280G Tx   **280A Rx**

HDMI Switch
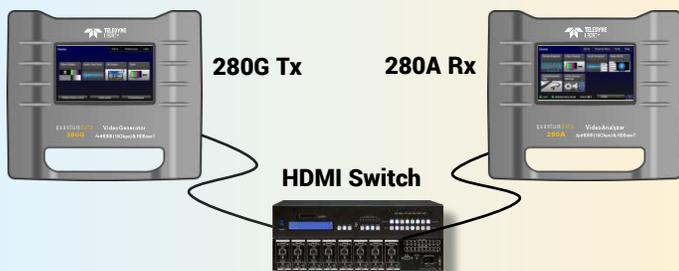
Test signal quality of HDMI or HDBaseT Cat cable run.
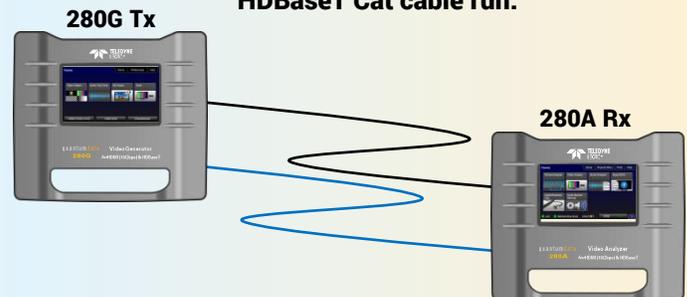
280G Tx

280A Rx

Test HDMI/HDBaseT extender. 280G Tx serves as HDMI source; 280A Rx serves as HDBaseT receiver.

280G Tx   **280A Rx**
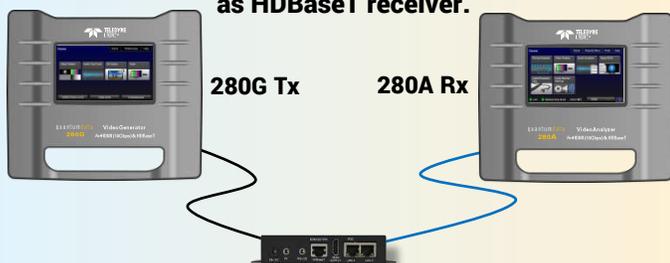
Test HDMI scaler for EDID, HDCP and video formats.

280G Tx   **280A Rx**

HDMI A/V Rx/Scaler
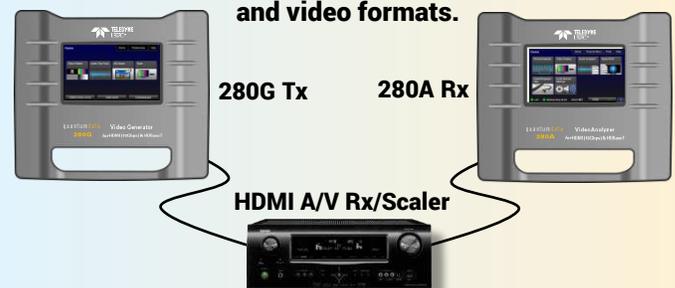
HDMI

Version	HDMI 2.0
Standard Formats	VESA (DMT, CVT-R, CVT), CEA
Connector	(1) Type A 280G; (1) Type A 280A
Protocol	HDMI, DVI
Video Colorimetry	ITU-R BT.601-5, ITU-R BT.709-5, BT.2020 (Rx only)
Video Max Pixel Rate	18G bps data rate; 600 MHz pixel rate (upscaled from 1080p)
Video Encoding / Sampling	RGB, YCbCr; 4:4:4, 4:2:2, 4:2:0
HDCP	Versions 1.4 & 2.2
Audio Formats	2Channel LPCM

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; NEW! Supports Long Reach mode
Video Encoding / Sampling	RGB, YCbCr; 4:4:4, 4:2:2, 4:2:0
HDCP	Versions 1.4 & 2.2
Audio Formats	2Channel LPCM

Tests Supported

280G Transmitter	
- Video Format Test	Select from common standard CEA and VESA formats
- Video Pattern Test	Select from several test patterns; patterns above 1080p are up-scaled to 4K
- Hot plug detect	Check hot plug voltage from connected sink (e.g. UHD TV)
- HDCP active	Verify HDCP; select version 1.4 or 2.2
- EDID Test	View summary of EDID contents of connected sink or entire downstream network
- HDR Test	Verify that HDR metatdata is transmitted through the network
- Audio Test	Generate LPCM audio test tone to check continuity end-to-end
280A Receiver	
- Video Format Test	Verify incoming video timing from a UHD source
- Video Test	View incoming video on embedded screen; view pixel values up to 150MHz pixel rate
- +5V	Check +5V from a UHD source
- HDCP Active	Verify HDCP operation; version 1.4 or 2.2
- EDID Test	Emulate EDIDs to test response of source or entire upstream network
- HDR Test	NEW! Verify that HDR metatdata is transmitted through the network
- Link / Cable Test	Test HDMI or HDBaseT cable runs
- Audio Test	Verify LPCM audio end-to-end

Instrument (each unit)

AC Adapter/Charger	100-120 VAC, 47-63Hz
Battery	Minimum 4 hours continuous use on 8 hour charge
Micro SD Card Slot	For saving and retrieving test reports, EDIDs and software upgrade files
LCD Display	480 (H); x 272 (V) resolution; 4.3" diagonal
Weight (each unit)	0.95 LBS (0.358 Kg)
Size (each unit)	Height: 7.1 in. (18.04 cm) Width: 7.4 in. (18.79 cm) Depth: 1.25 in. (3.18 cm)
Environmental	Operating Temp: 32 to 104 (F); 0 to 40 (C)

TELEDYNE LECROY
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1-800-909-7211
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**Local sales offices are located throughout the world.
Visit our website to find the most convenient location.**

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