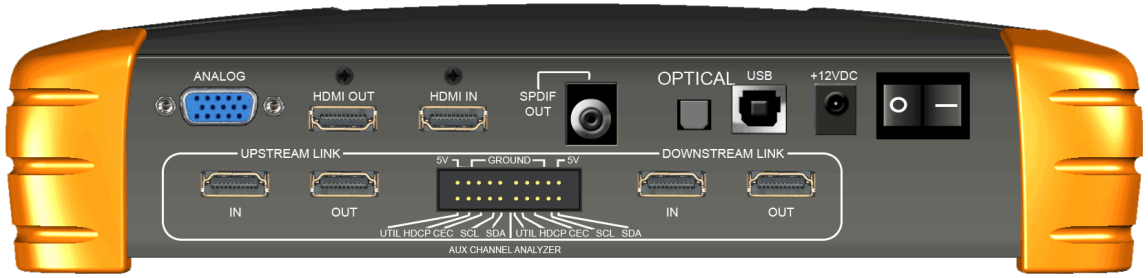
Quantum Data Inc.
780B Video Generator/Analyzer

Check out the new HDMI 2.0 features and Auto EDID test option!

Quantum Data, Inc. 2111 Big Timber Road Elgin, IL 60123 USA Phone (847) 888-0450 Fax (847) 888-2802 www.quantumdata.com

Quantum Data 780B - Overview



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Quantum Data Inc.
780B Video Generator/Analyzer
Overview

Quantum Data 780B – Model Options

- 780B HDMI specs – Tx and Rx ports
  - Max TMDS/pixel clock with 24 bit/pixel color**:** 300MHz; e.g. 4K x 2K at 30Hz and **NEW!** at 60Hz with HDMI 2.0 4:2:0 pixel encoding.
  - Max pixel clock with 36 bit/pixel color: 165MHz; e.g. 1080p at 60Hz.
  - Max TMDS clock with 36 bit/pixel color: 225MHz (2.25Gb/s per channel); e.g. 1080p at 60Hz.

Quantum Data 780B - Video Generator/Analyzer

- Portable troubleshooting tool for analysis of HDMI products and systems in many different test environments.
- This low cost, flexible and easy to use test instrument with intuitive touch screen control can identify solutions at every level of the supply chain, minimizing the return of goods and maximizing an HDMI product's success.
- In the lab, it is an inexpensive, intuitive tool for troubleshooting and validating product designs Can be used to validate products before they are delivered to be installed.
- For field applications, it is ideal for troubleshooting HDMI interoperability problems and demystifying HDMI.
- Provides confidence in HDMI products within the supply chain, making this product crucial as products with HDMI connectors have increased in demand by consumers.

Quantum Data 780B – Standard Features

- HDMI output for testing displays; includes support for deep color and 3D.
- Network Analyzer: HDMI input for source testing & analysis including EDID & HDCP testing.
- Compressed and uncompressed audio formats (LPCM, Dolby Digital, DTS) and high bit rate audio (Dolby TrueHD, DTS-HD Master Audio).
- HDMI 3D rendering using custom 3D bitmaps
- Multichannel (up to 8 channel), configurable, digital audio outputs (HDMI, SPDIF, TOSLink).

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Quantum Data 780B – Standard Features (Cont)

- Installer Test utility to verify and troubleshoot HDMI installations.
- Analog video output (RGB and YUV).
- Custom bitmaps for image scrolling to test motion artifacts.

Quantum Data 780B – Optional Features

- HDMI Pixel Error Cable, Repeater Test and Frame Compare Tests: Test HDMI cables and distribution networks with repeaters, switches, extenders, etc.
- **NEW!** Auto EDID test to test an HDMI source's response to a variety of EDIDs.
- Auxiliary Channel Analyzer (ACA) monitors hot plug events, HDCP & EDID transactions and CEC messages while emulating an HDMI sink or source.
- Auxiliary Channel Analyzer (ACA) passively monitors hot plug events, HDCP and EDID transactions and CEC messages on an existing HDMI installation. Requires optional hardware board with 4 additional HDMI ports.

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Quantum Data 780B – HDMI 2.0 Features

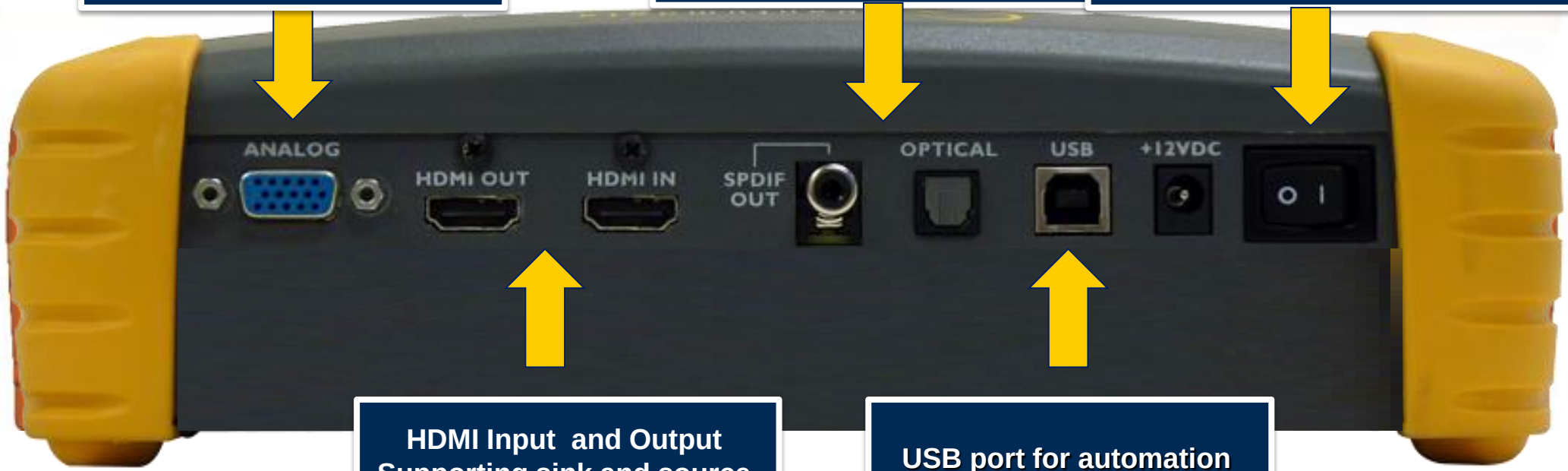
- **NEW!** HDMI 2.0 4:2:0 Pixel Encoding.
  - Source Tests: Enable viewing of 4:2:0 video, timing and metadata from 4K sources at 60Hz.
  - Sink Tests: Support sending of 4:2:0 video and associated metadata at 4K timings at 60Hz.
- **NEW!** CEA-861F 21:9 aspect ratio video timings. Support sending of 21:9 format timings for testing HDMI 2.0 sink devices.
  - Source Tests: View 21:9 video formats, timing information and metadata.
  - Sink Tests: Support sending of 21:9 format timings for testing HDMI 2.0 sink devices.
- **NEW!** HDMI 2.0 EDID testing. Capability for emulating HDMI 2.0 EDIDs for testing HDMI 2.0 source devices.

Quantum Data 780B – Power, Physical Specs

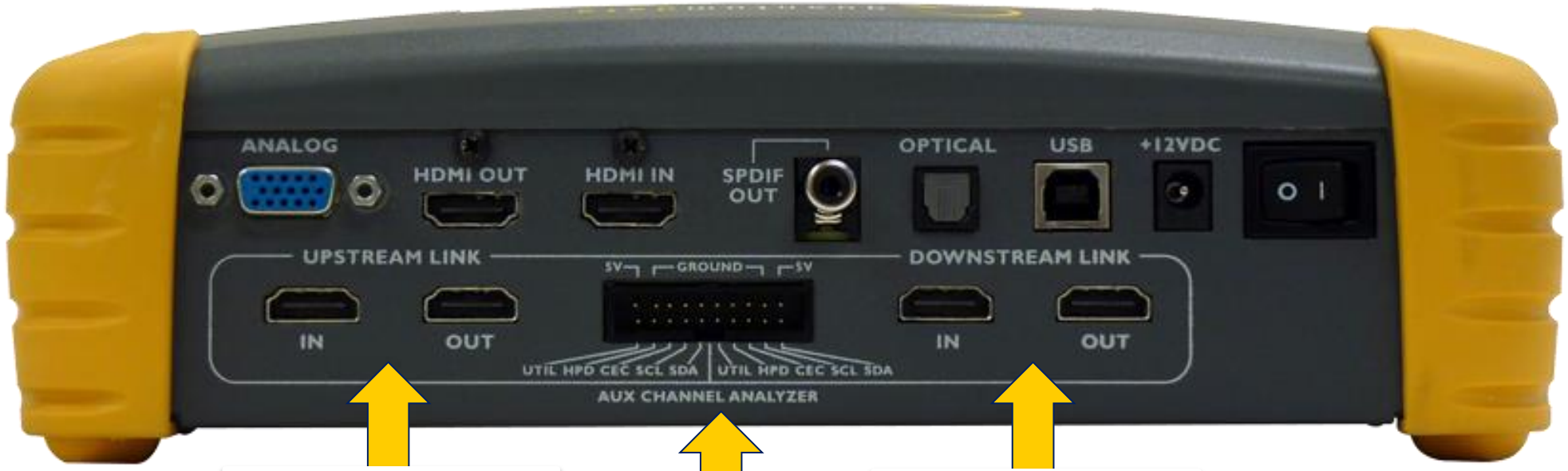
- Size: 2.7” x 9.75” x 6”
  or 6.98 cm x 24.76 cm x 15.24 cm
- Weight: 3.25 lbs. or 1.47 Kg
- Power: DC 6 AA NiMh, rechargeable – Maximum 1 hour capacity, AC Charger/Converter 100-240V; Requires overnight charge.
- Regulatory
  - FCC Class B
  - RoHS
  - CE

Inputs / Outputs

780B Inputs/Outputs – Standard Configuration



780B Inputs/Outputs – Optional Configuration

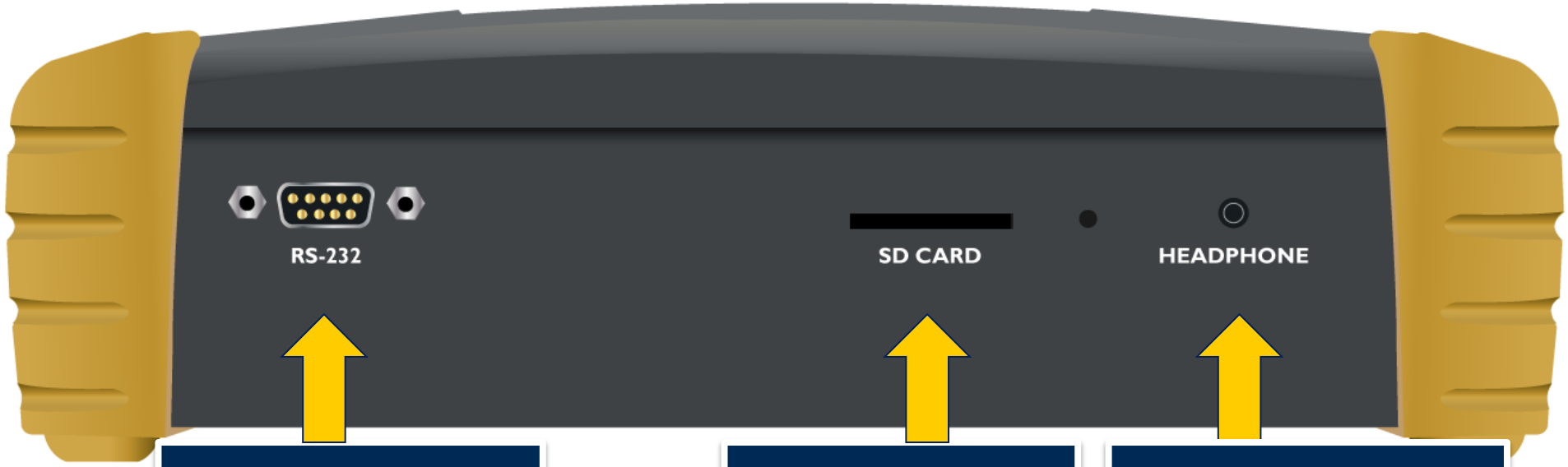


Passive monitoring (2) Upstream HDMI ports

Passive monitoring (2) Downstream HDMI ports

Breakout for direct access to DDC, CEC, 5V for each side upstream and downstream

780B Inputs/Outputs – Optional Configuration



RS-232 port for command line control on 780A only

SD card for rebooting and upgrading

Headphone Jack for monitoring LPCM audio on 780A only

User Interface

780B User Interface – Home Screen Source Tests

Test Sources
For Testing Source Devices (Players, PCs, STBs, etc.)

- Source tests:
  - Format Analyzer
  - Packet Viewer
  - Audio Analyzer
  - Video Display
  - HDCP Test
  - Audio Monitor Settings
  - Video Passthrough
  - CEC Test

780B User Interface – Home Screen Sink Tests

Test Sink
For Testing Sink Devices (Displays, TV, Projectors AVR input)

- Sink tests:
  - EDID Test
  - HDCP Test
  - CEC Test

780B User Interface – Home Screen Installer Tests

Installer Tests
One-button tests of sources, sinks, repeaters

- Installer Tests:
  - Link Test
  - Sink Test
  - Source Test
  - Repeater Test

780B User Interface – Home Screen Administrative

Administrative Functions:

-"Home" Returns to main menu
-"Preferences" allows user to change settings and modes.
-"Help" allows user to change settings and update firmware.

Battery Status

780B User Interface – Status Bar HDMI IN

Status Bar (HDMI Rx)

- Status Bar HDMI IN; conveys real time status of incoming HDMI stream:
  - Video Status
  - Resolution Status
  - Video Identification Code and status
  - 3D Status
  - AVMute Status
  - HDCP Status
  - +5V Status

780B User Interface – Status Bar HDMI OUT

Status Bar (HDMI Tx)

- Status Bar HDMI OUT:
  - Interface Status/Configure
  - Resolution Status/Configure
  - Test Pattern Status/Configure
  - 3D Format Status/Configure
  - LPCM Status/Configure
  - HDCP Enable/Disable Status
  - Other Elements:
    - AVMute Status
    - HDCP Status
    - Hot Plug Status

Standard Features

Quantum Data 780B Standard Features

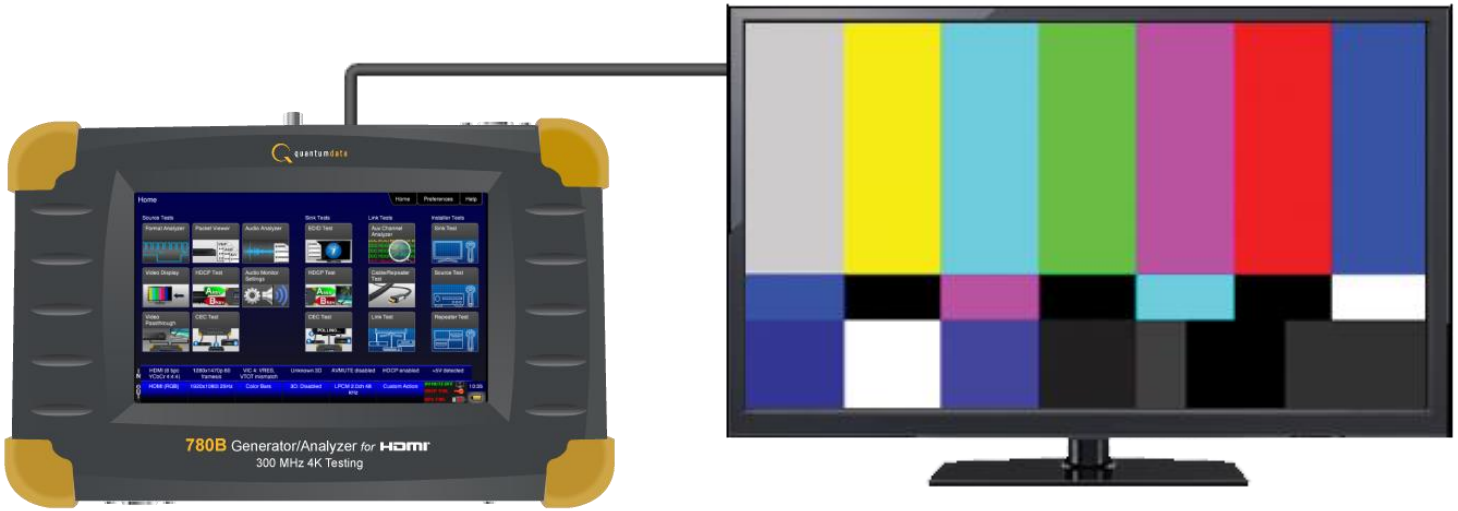
- Confidence test for HDMI, analog HDTVs and displays
  - All standard resolutions available or create your own custom formats
  - Use standard test patterns or create custom bitmaps
  - 3D test patterns available
  - Scroll bitmap images for testing motion artifacts
  - Transmit audio patterns including multi-channel compressed formats
- Confidence test of an HDMI source device
  - View incoming video and parameters of an HDMI source
  - Checks HDCP authentication
- HDMI Network Analyzer; includes the following features:
  - HDMI Sink Protocol Tests.
  - HDMI Source Analyzer Tests.

780B Standard Features (cont)

- HDMI Installer Test utility
  - Verifies HDMI devices and components prior to installation
  - Troubleshoots HDMI interoperability problems on-site

Pattern Testing

- Confidence test for HDMI, analog HDTVs and displays
  - All standard resolutions available or create your own custom formats
  - Use standard test patterns or create custom bitmaps
  - 3D test patterns available
  - Scroll bitmap images for testing motion artifacts
  - Transmit audio patterns including multi-channel compressed formats



Video Output Selection

Select Signal Type (e.g. HDMI) and configure color space as well as bit depth to test for HDMI "deep color".

Video Output Selection

DVI selection provides configuration for TV or PC devices.

Video Output Selection

YPbPr Analog is supported through HD-15 connector and the 3 RCA adaptor cable (provided).
Select "Sync on Green" when using this cable.

Video Output Selection

Select RGB Analog sync type: DSS or SOG
Choose format types that are either CEA (TV) or VESA (PC) timings.

Video Pattern Selection

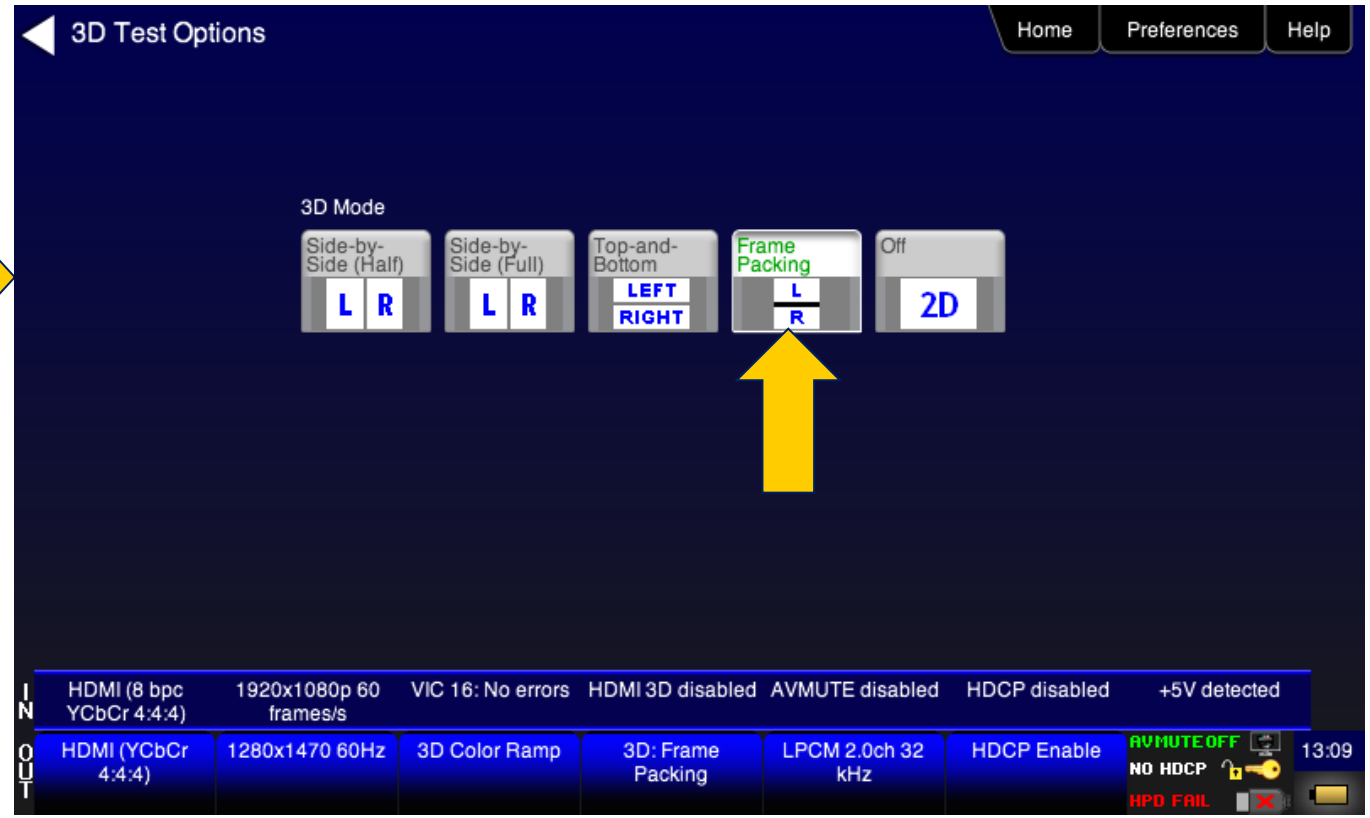
Use one of built-in images or download .bmp files to provide custom images.

Video Pattern Selection - Options

"+" indicates that there are optional Settings for the pattern being selected. A "double click" opens up the options

Video Patterns – 3D Pattern Rendering

3D bitmap files can be downloaded to the 780 by using the USB connector. Once an image is downloaded it can be output for testing an HDMI 3D capable HDTV.



Video Patterns - Bitmap Download & Image Shift

.bmp files can be downloaded to the 780 by using the USB connector. Once an image is downloaded it can be set in motion as a way to test motion artifact. The "Zone Plate" image is stored as a .bmp file and it's option settings provide all image shift controls.

Video Patterns - Bitmap Download & Image Shift

.bmp files with higher resolution than the format being output by the generator can be manually panned to center the test on a portion of the stored .bmp file by the user

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Video Format Selection

Choose resolution then select a video frame rate to create the output format. EDID configures the available resolutions and frame rates of the generator, "graying" out the ones not supported by the display.

Video Format Selection

Choose resolution then select a video frame rate to create the output format. EDID configures the available resolutions and frame rates of the generator, "graying" out the ones not supported by the display.

View Incoming Video from an HDMI Source

Video from source is displayed on the 780 LCD.

Source Tests – View Incoming Video and Metadata

Incoming video image and metadata displayed on built-in display.

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Source Tests – View Incoming 3D Video

This method of accessing the Video Display feature Is used on 780 units with the Network Analyzer Suite.

3D Images from source are displayed on the 780 LCD.

Source Tests – View Incoming

This method of accessing the Video Display feature Is used on 780 units with the Network Analyzer Suite.

3D Images from source are displayed on the 780 LCD.

Source Tests – Frame View of Incoming Video

View the incoming video in full frame view by scrolling.

Source Tests – Frame View of Incoming Video

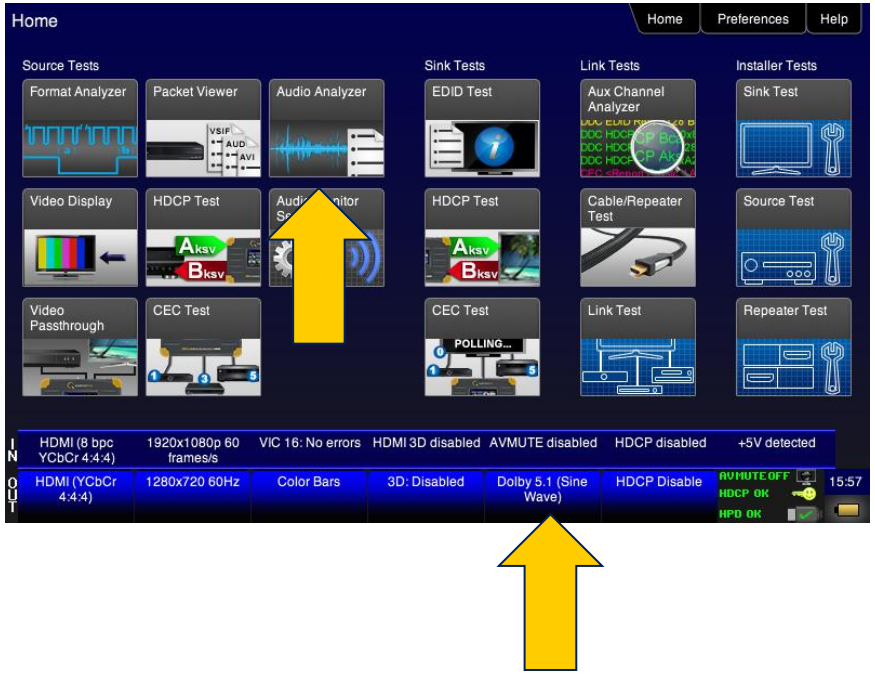
View full frame of incoming video by scrolling.

Scroll through video using arrows and view window.

Audio Testing

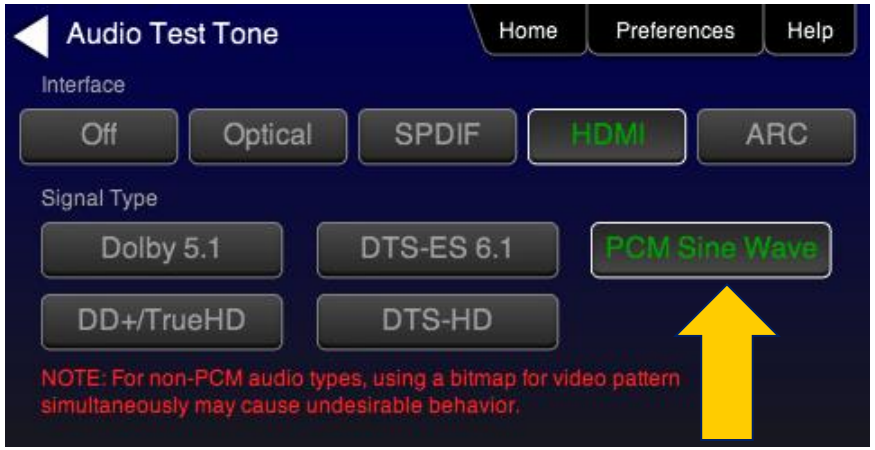
- Confidence test for HDMI, analog HDTVs and audio systems
  - Transmit audio patterns including multi-channel compressed formats

Audio Pattern (Test Tones) Selection



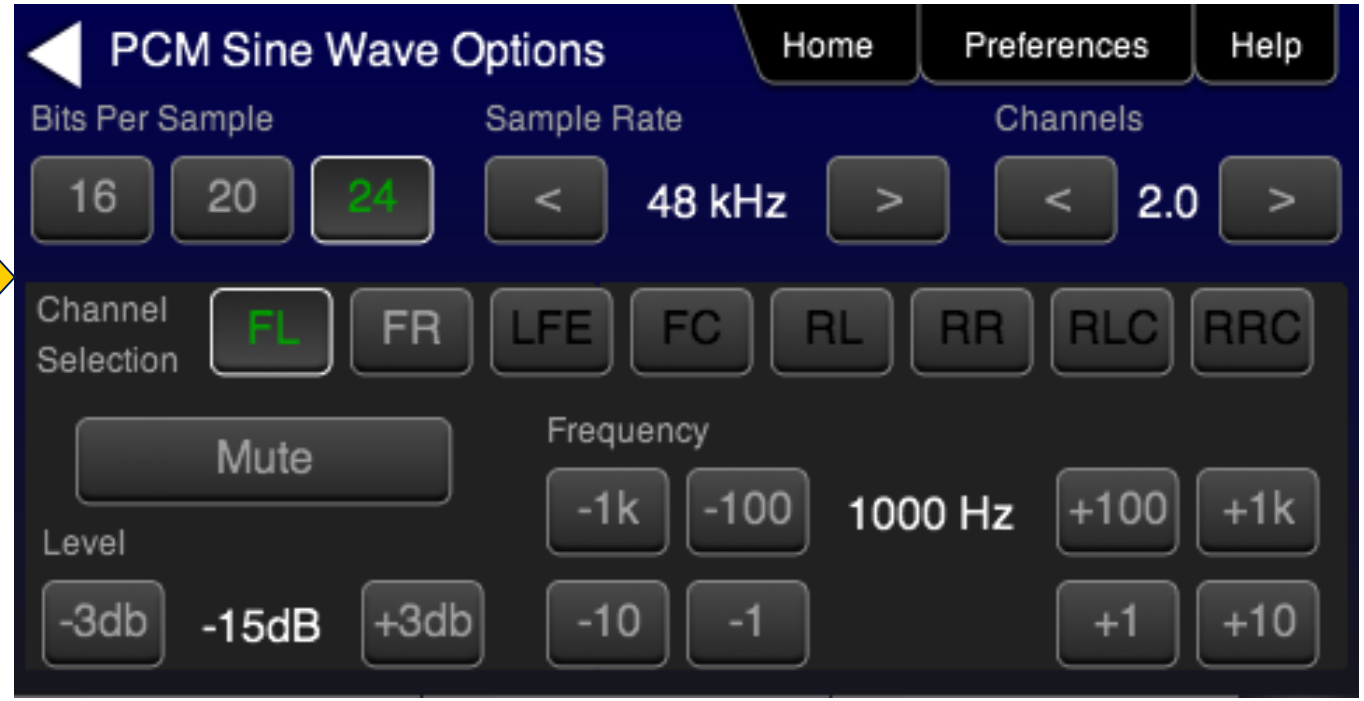
Audio Patterns allow the user to test multi-channel audio on different audio formats, bit depth and sampling rates.

Audio Output Setup (PCM Sine Wave)

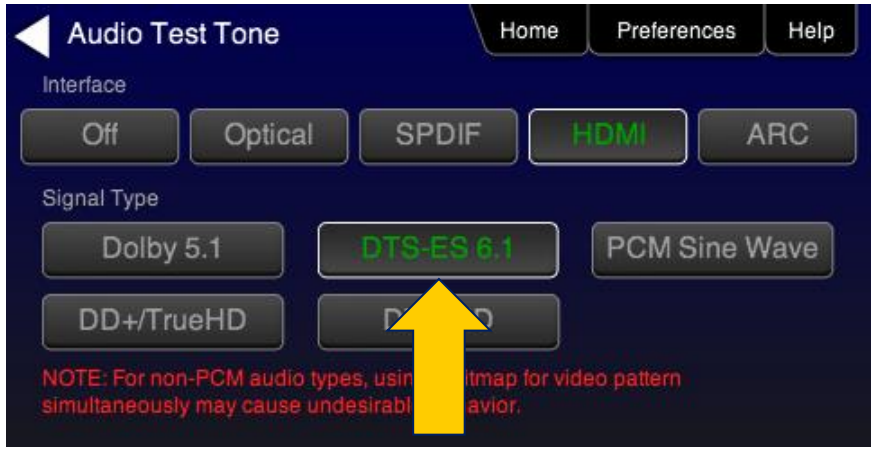


Audio set up allows changing audio type, bits per channel and sampling rates on the fly.

The Sine Wave test changes frequency and amplitude per channel as a user setting. This test supports up to 8 channels of audio.



Audio Pattern Selection (DTS-ES 6.1/Dolby 5.1)



Play compressed DTS audio clips over any digital audio output.

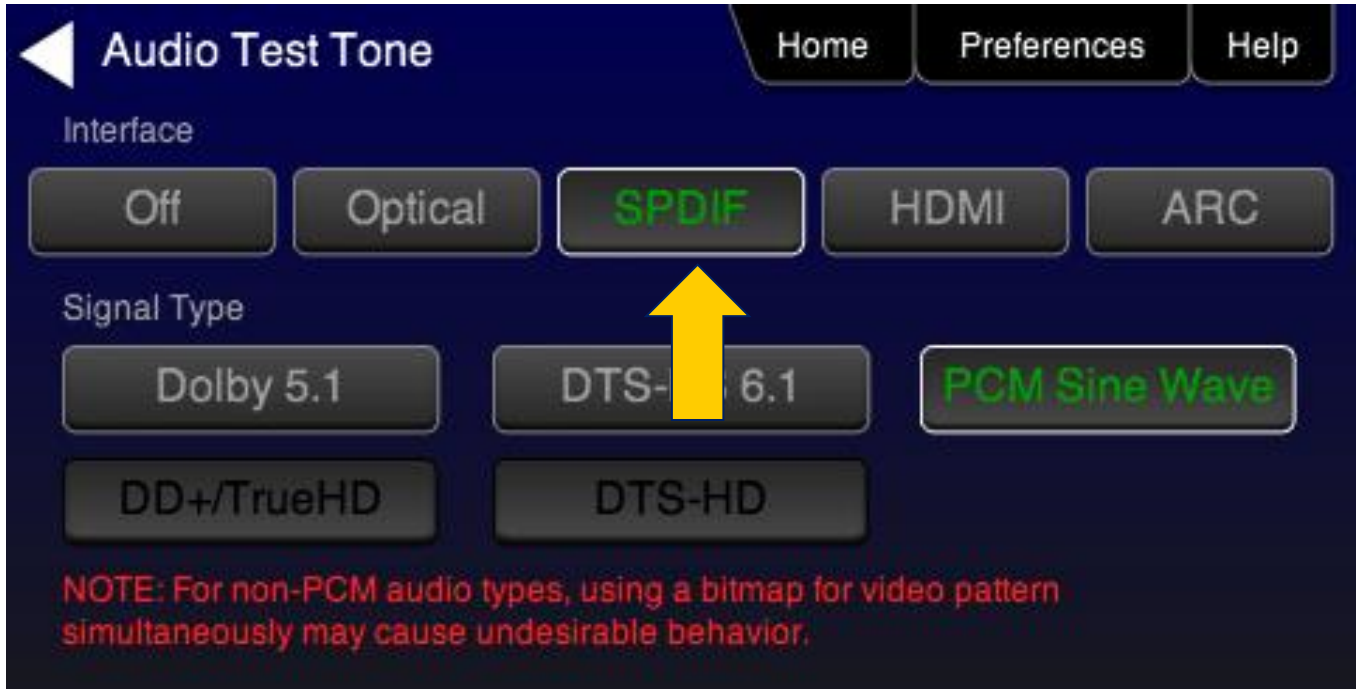
Audio Pattern Selection (DD+ and TrueHD)

Play compressed Dolby Digital+ or TrueHD audio clips over the HDMI output.

Audio Pattern Selection (DTS-HD)

Play compressed DTS-HD audio clips over the HDMI output.

Audio Pattern Testing - SPDIF / Optical



Test digital audio inputs through 780's SPDIF or Optical output.

Audio Pattern Testing – HDMI 1.4 ARC (780A Only)

Test HDMI 1.4 Audio Return Channel (ARC) with LPCM and compressed formats on audio systems.

Installer Test Utility

Installer Test Utility

- Troubleshoot HDMI interoperability problems on-site.
  - Easy to use.
  - Provides simple pass/fail results.
  - Isolate interoperability problems to a specific device or component.
  - Tests for proper video, hot plug, EDID and HDCP authentication.
- Evaluate HDMI components prior to installation to avoid on-site problems.
  - Easy to use.
  - Provides simple pass/fail results.
  - Prequalify HDMI sources, sinks and repeaters prior to installation.
  - Tests for proper video, hot plug, EDID and HDCP authentication.

Installer Test Utility - Menu

Select desired Installer test from the main screen.

Installer Test Utility – Sink Test Configuration

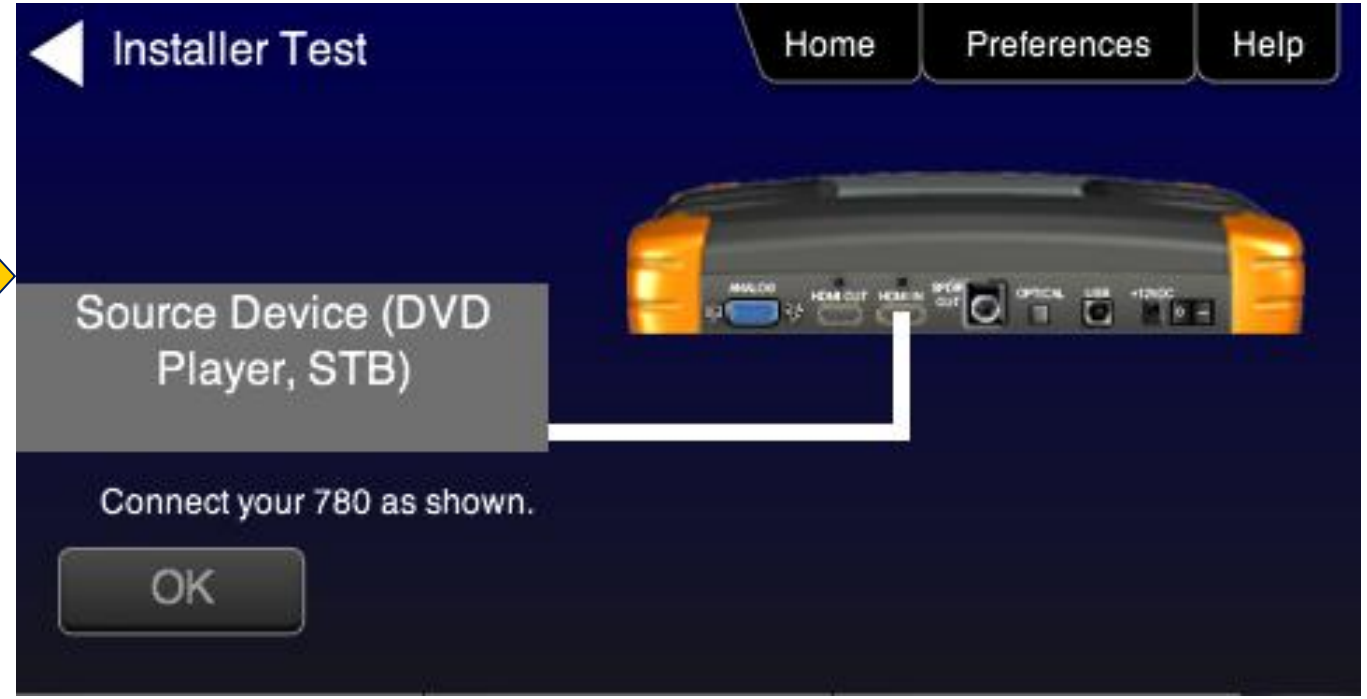
Select the Installer Sink test.

Installer Test Utility – Sink Test Results

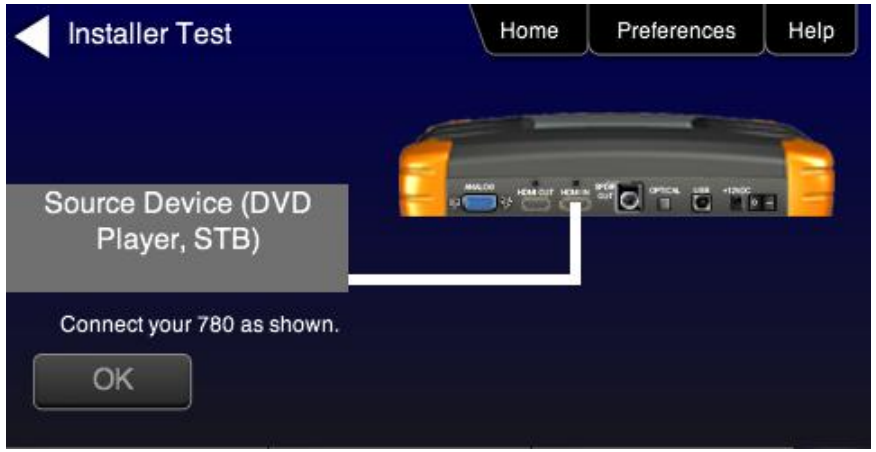
Verifies HDCP, EDID, and video of sink device at various resolutions using different video and sampling types.

Installer Test Utility – Source Test Configuration

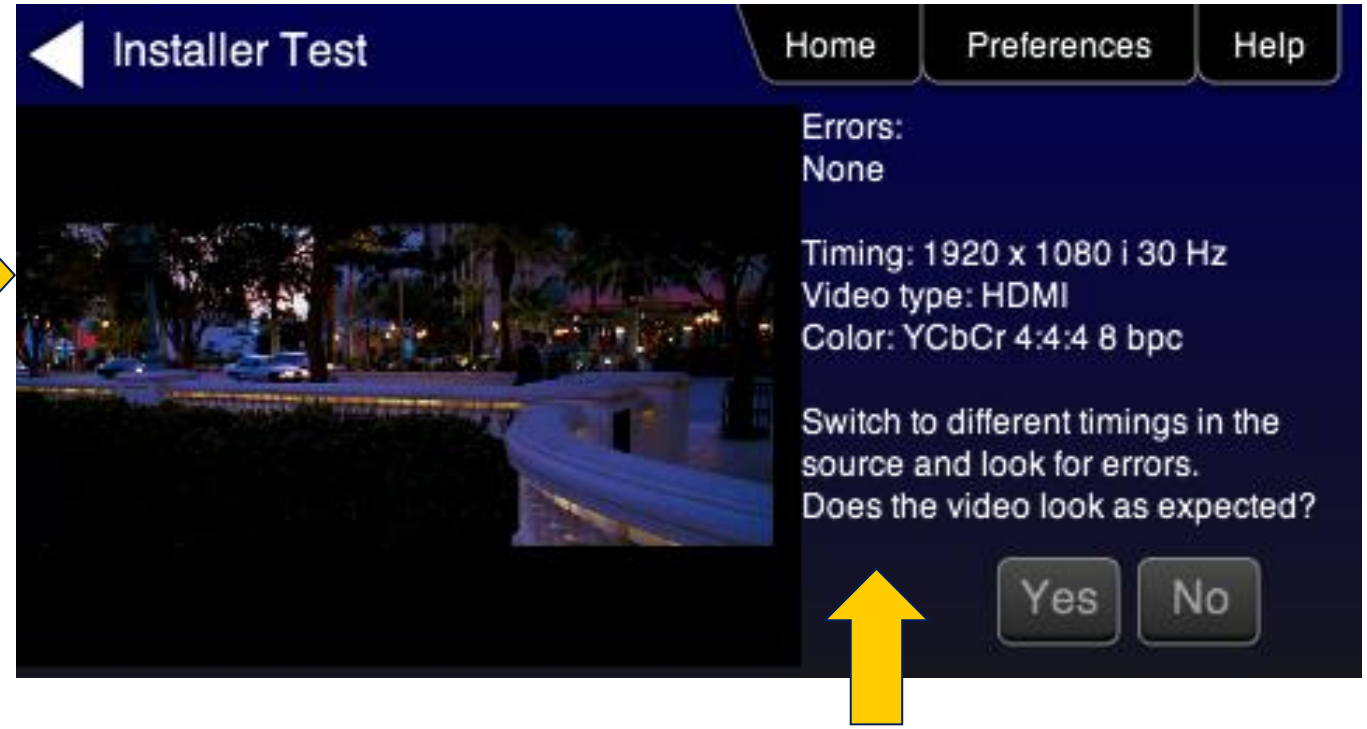
Select the Installer Source test.



Installer Test Utility – Source Test Results

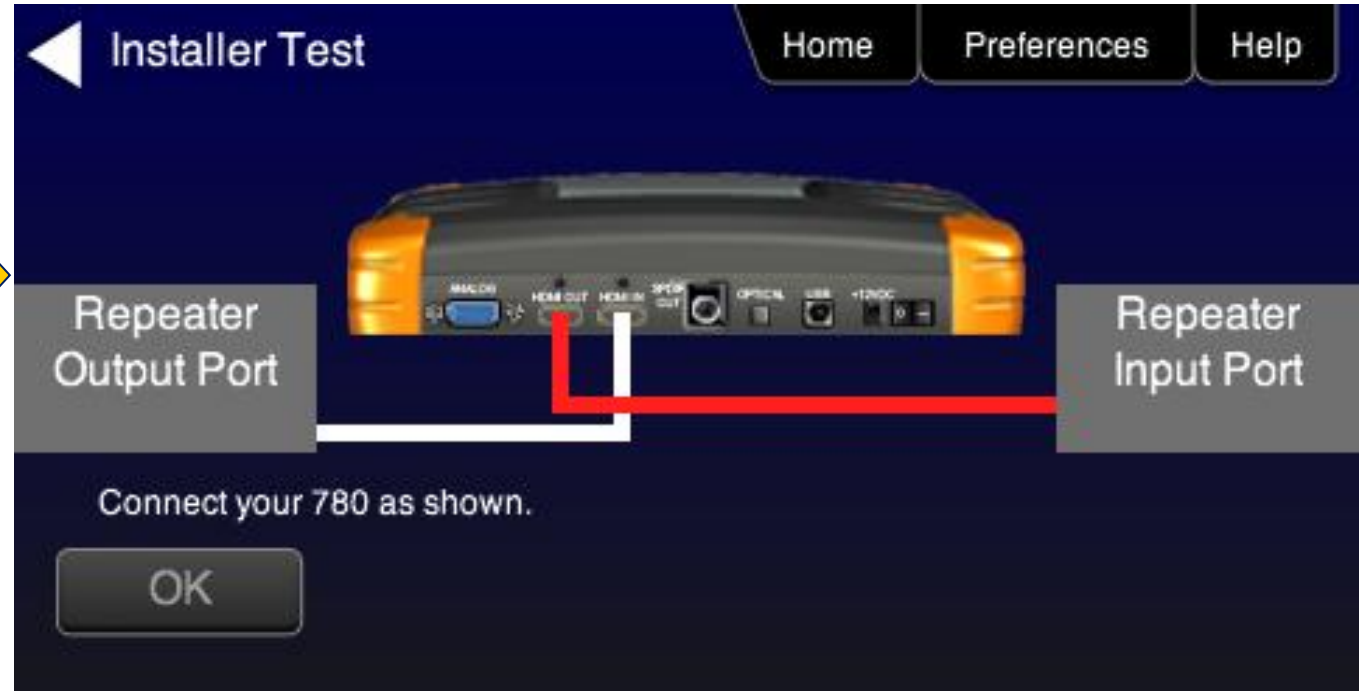


Verifies HDCP, EDID response, and video of source device at various resolutions using different video and sampling types.



Installer Test Utility – Repeater Configuration

Select the Installer Repeater test.



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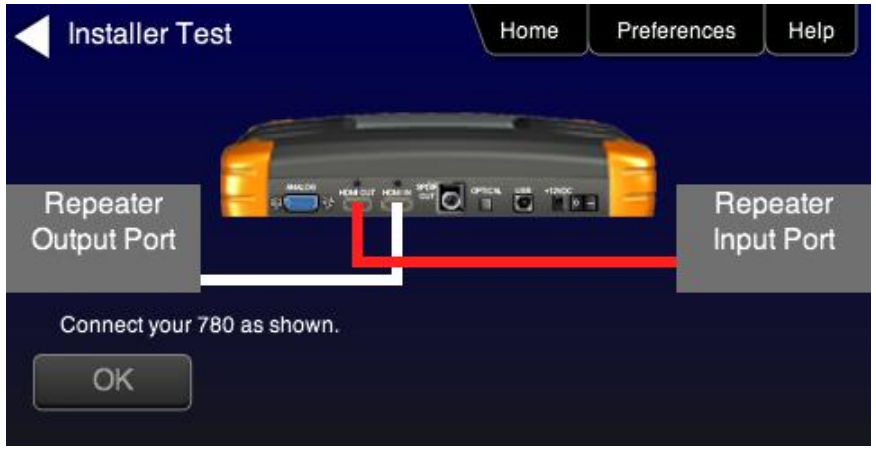
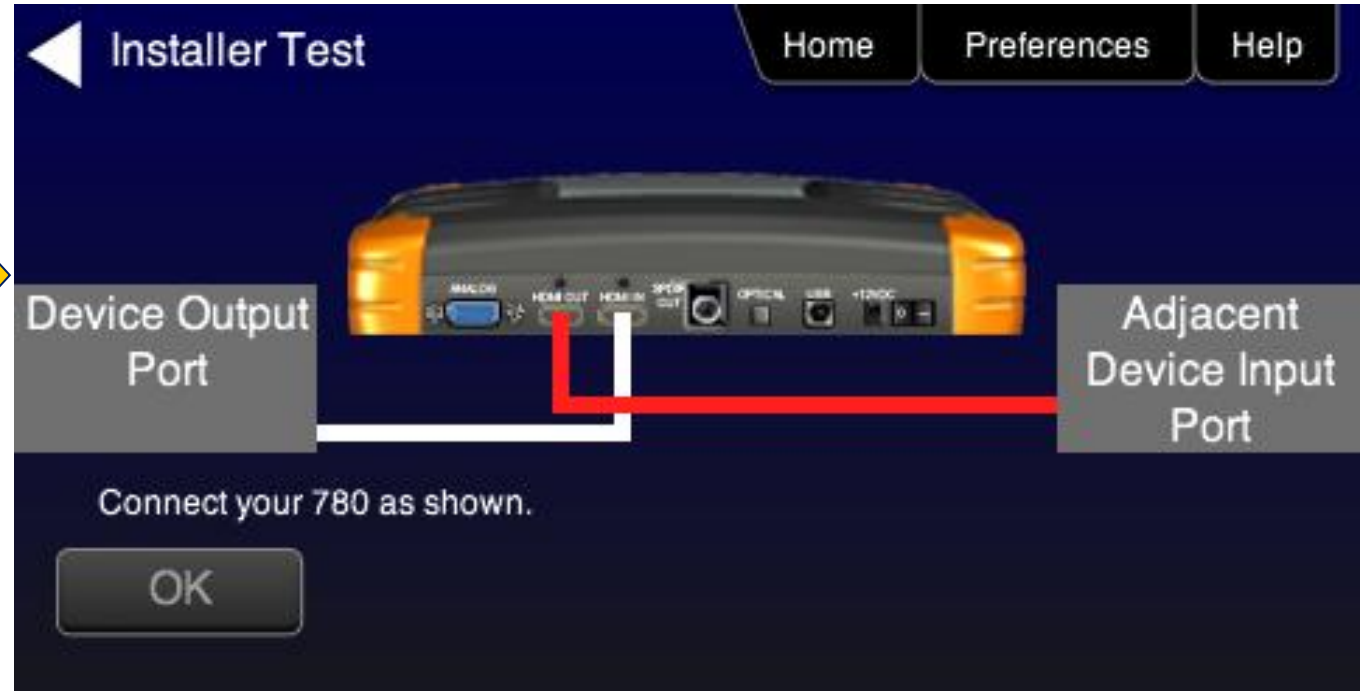
Installer Test Utility – Repeater Test Results



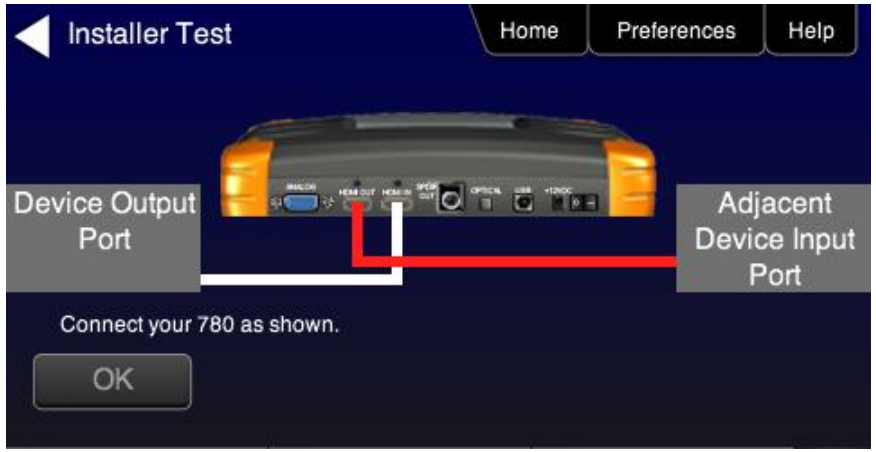
Verifies HDCP, EDID response, and video of source device at various resolutions using different video and sampling types.

Installer Test Utility – Link Test Configuration

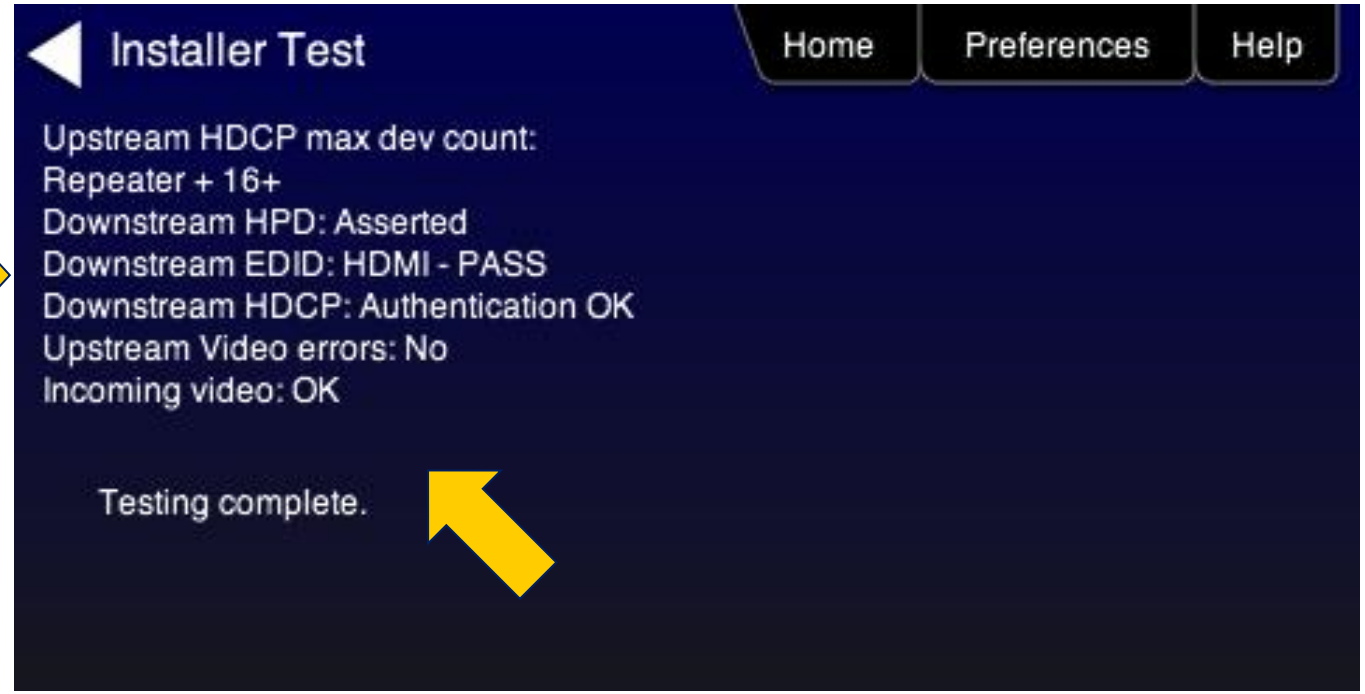
Select the Installer Link test.



Installer Test Utility – Link Test Results



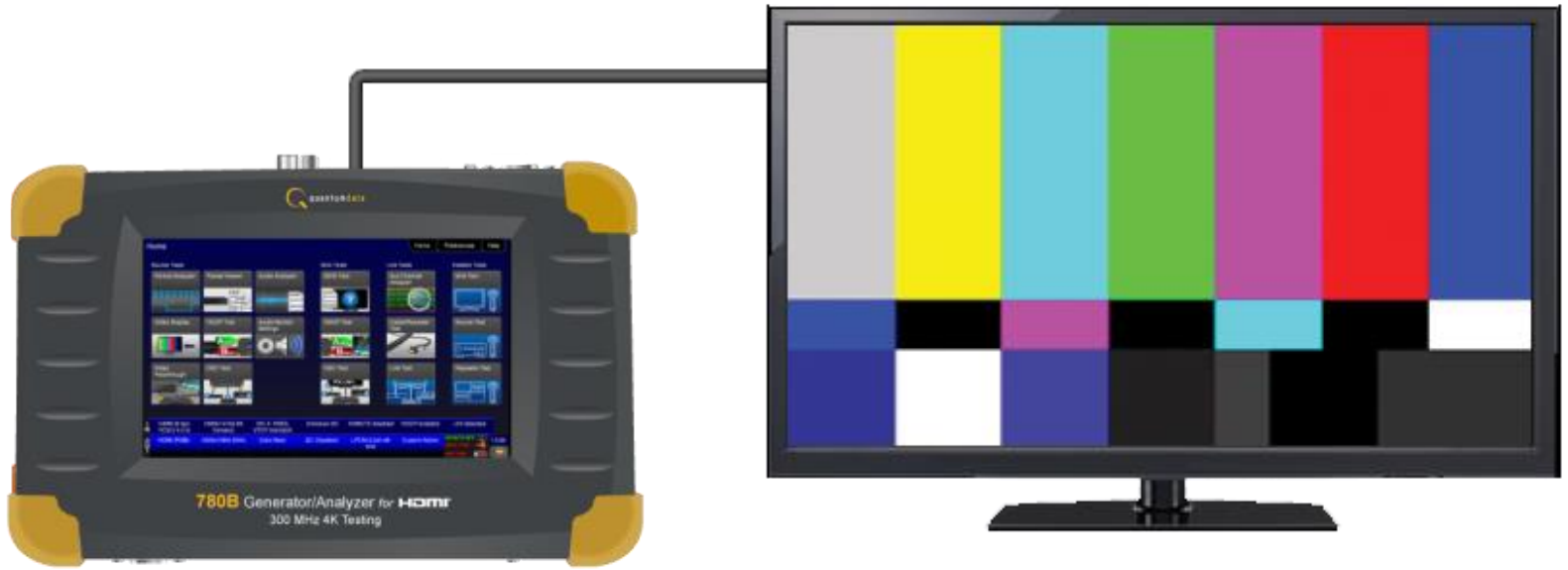
Verifies HDCP, EDID response, and video of source and sink devices at various resolutions using different video and sampling types.



Network Analyzer Features

780B Network Analyzer Features

- HDMI Network Analyzer – Sink Testing:
  - Verify an HDMI sink's handling of HDCP encrypted video
  - EDID verification and listing
  - CEC ping test

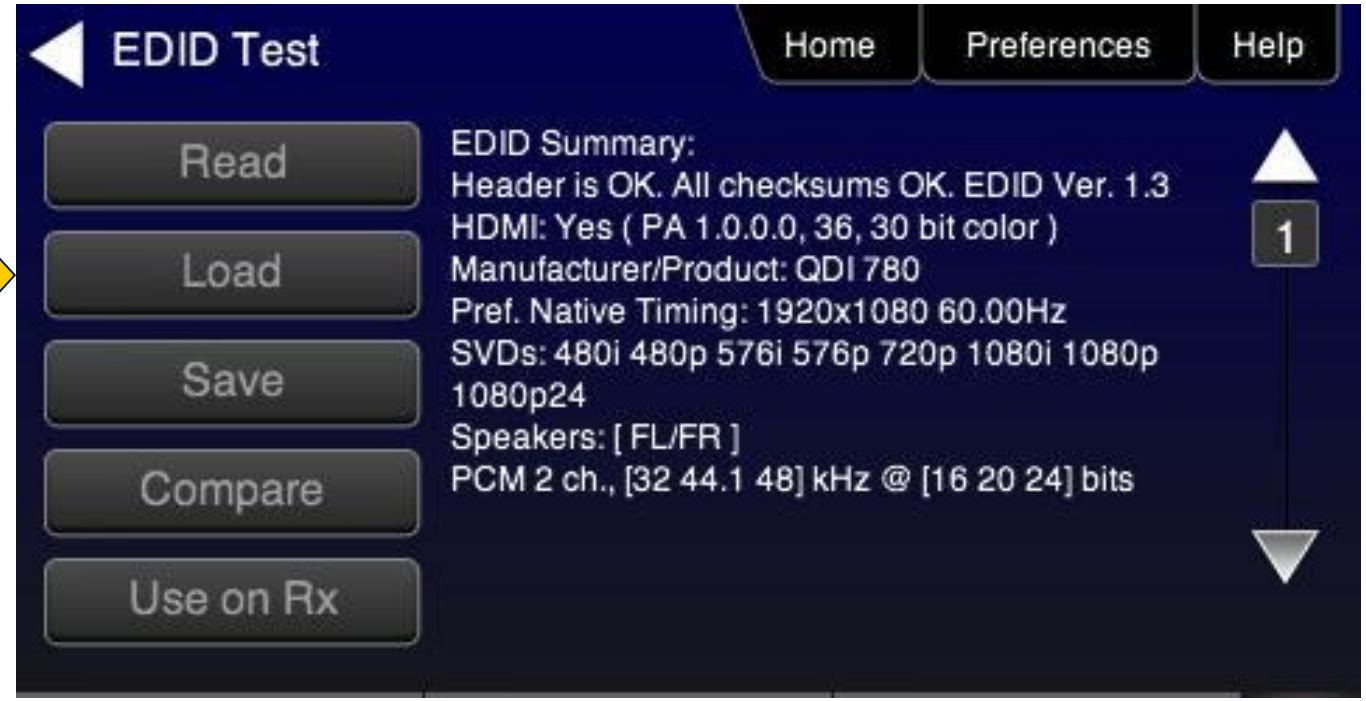


Network Analyzer - Sink Testing

“Sink Tests” provides a selection of auxiliary channel test functions for TV, Projectors and other displays.

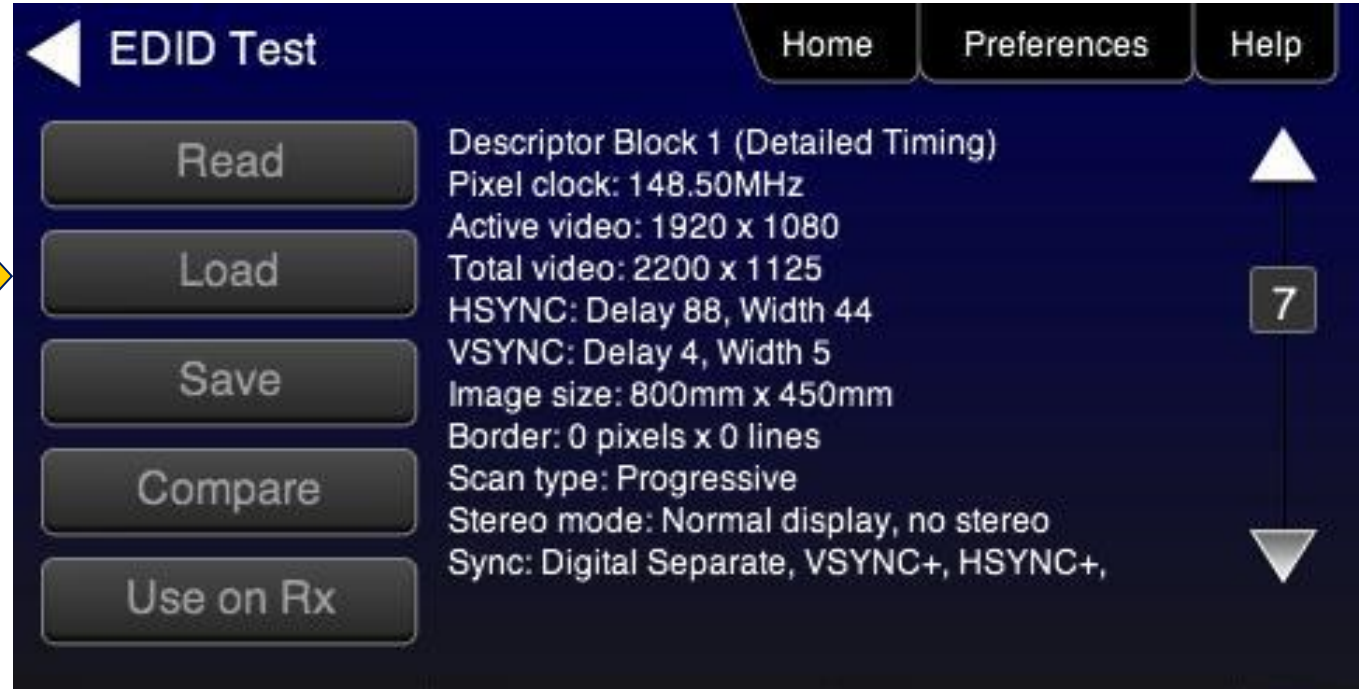
Network Analyzer – EDID Report (Page 1)

The EDID Test reads and parses EDID data Page 1 shows a summary including any errors if there are any.



Network Analyzer – EDID Report (Page 7)

The EDID Test reads and parses EDID data Page 7 shows Detailed Timing Descriptor.



Network Analyzer – EDID Report (Page 14)

The EDID Test reads and parses EDID data Page 14 Shows CEA Audio Block.

Network Analyzer – EDID Report (Page 15)

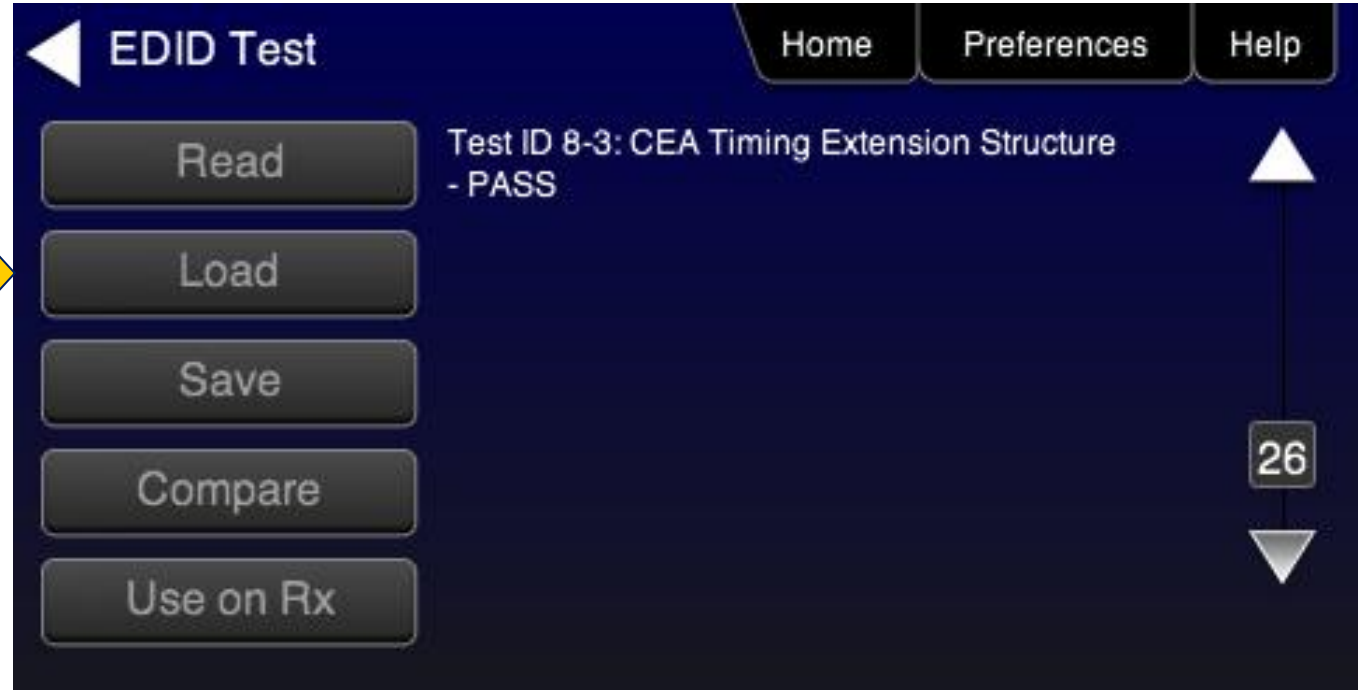
The EDID Test reads and parses EDID data Page 15 shows CEA timings.

Network Analyzer – EDID Report (Page 25)

The EDID Test reads and parses EDID data Page 25 shows results of EDID compliance Test ID 8-2.

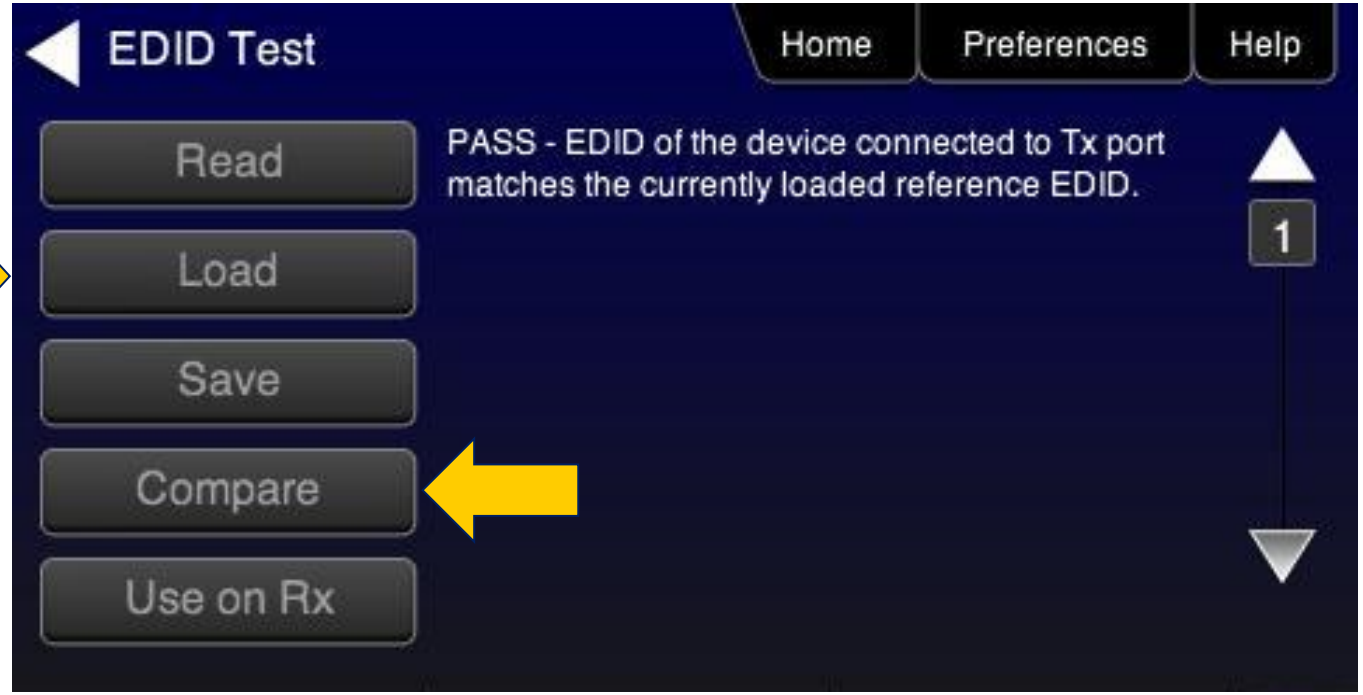
Network Analyzer – EDID Report (Page 26)

The EDID Test reads and parses EDID data Page 26 shows results of EDID compliance Test ID 8-3.



Network Analyzer – EDID Compare

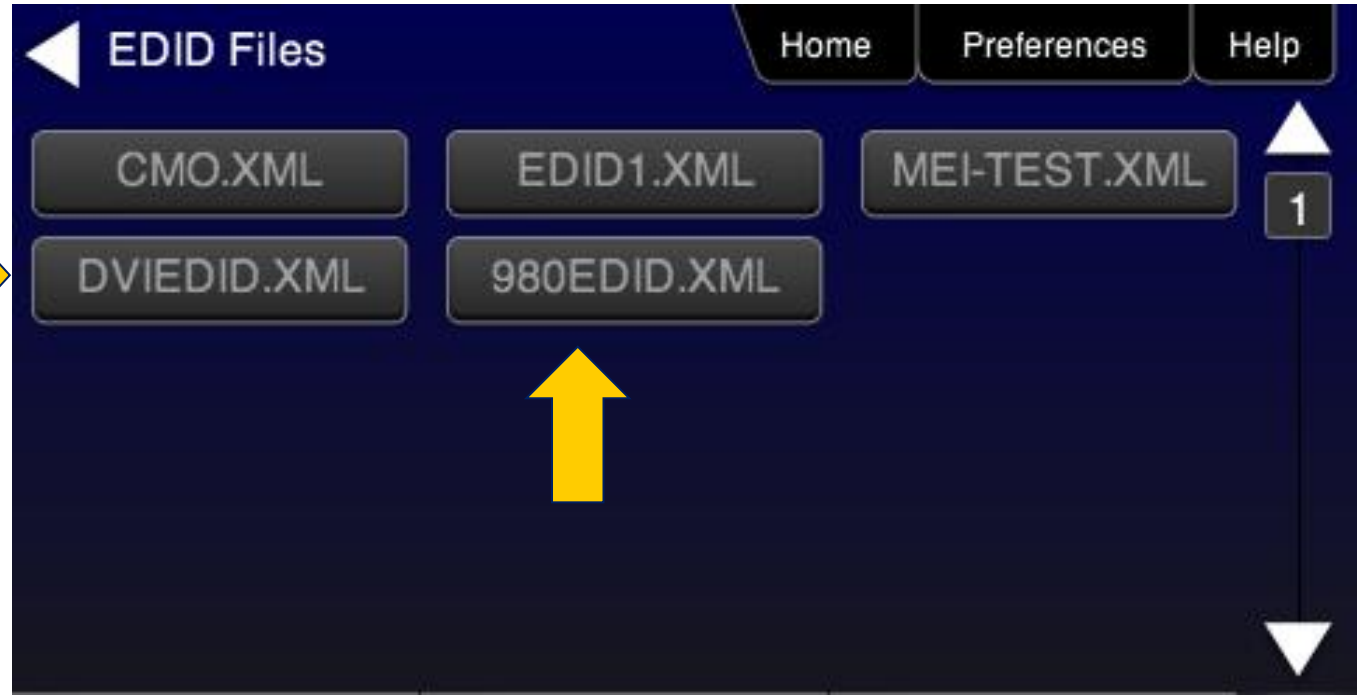
Compare a stored reference EDID with the EDID of a sink device that 780 Tx is connected to.



Network Analyzer – EDID Load/Save

Load a stored EDID or default EDID for viewing.

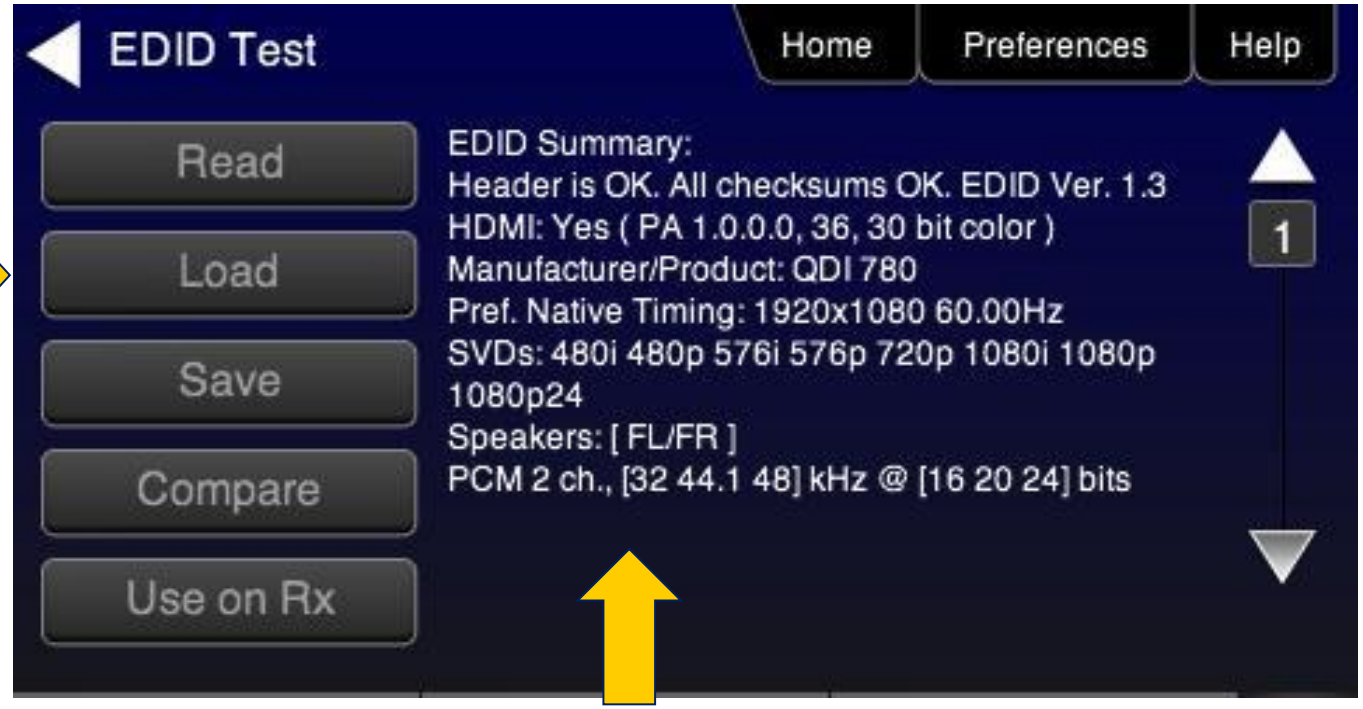
Network Analyzer – EDID Load/Save



Select stored EDID; use Quantum Data EDID Library for additional EDIDs.
NEW! Store and Load HDMI 2.0 EDIDs.

Network Analyzer – EDID Load/Save

View the EDID that you loaded.



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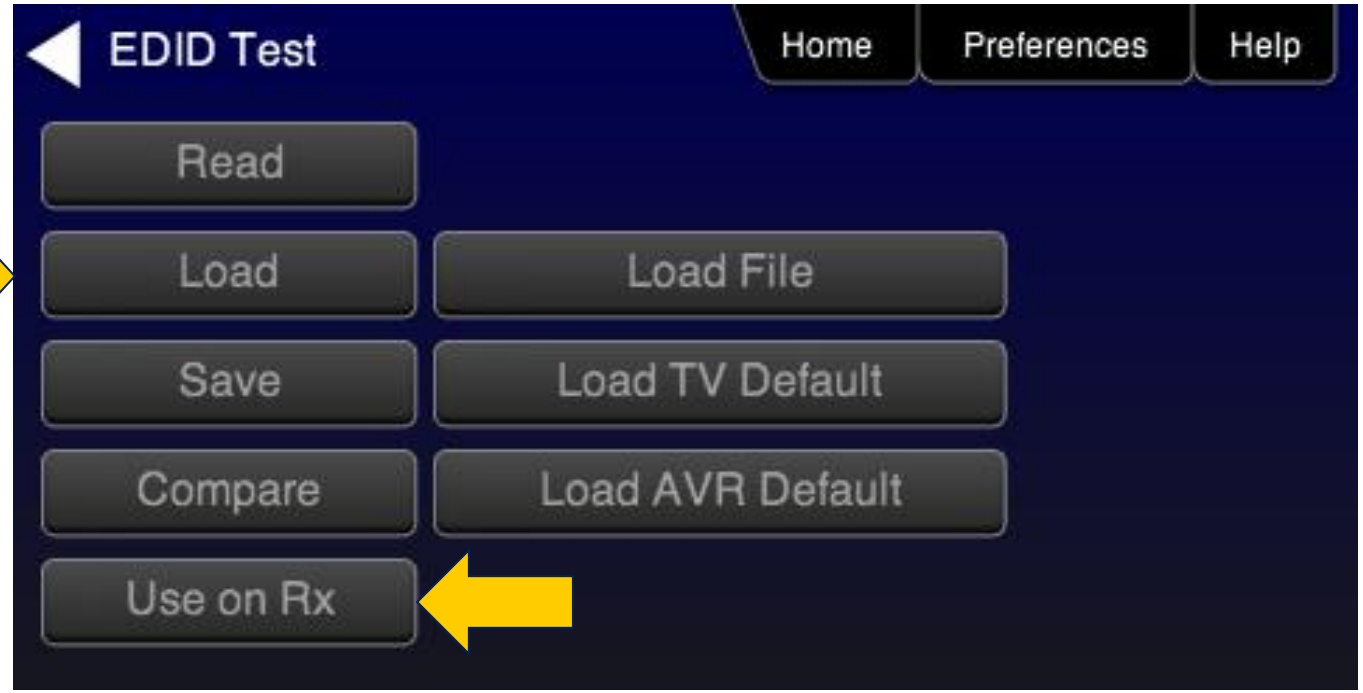
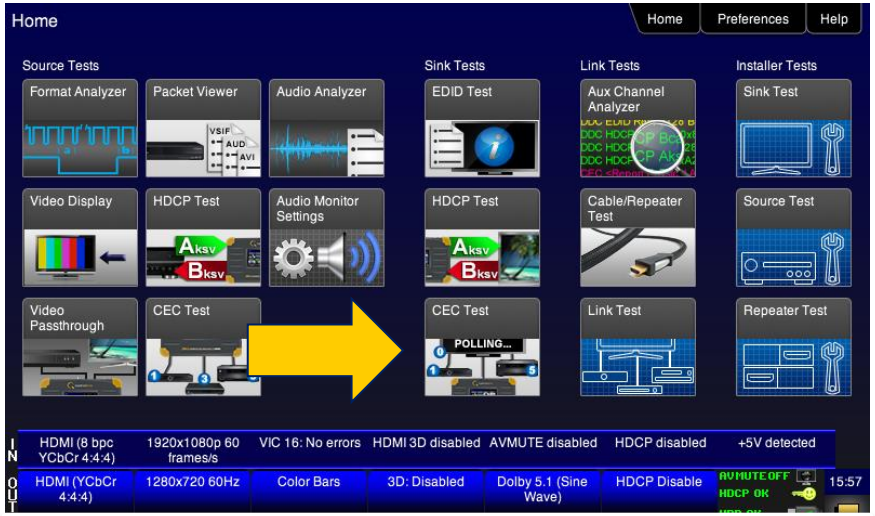
Network Analyzer – EDID Load/Save

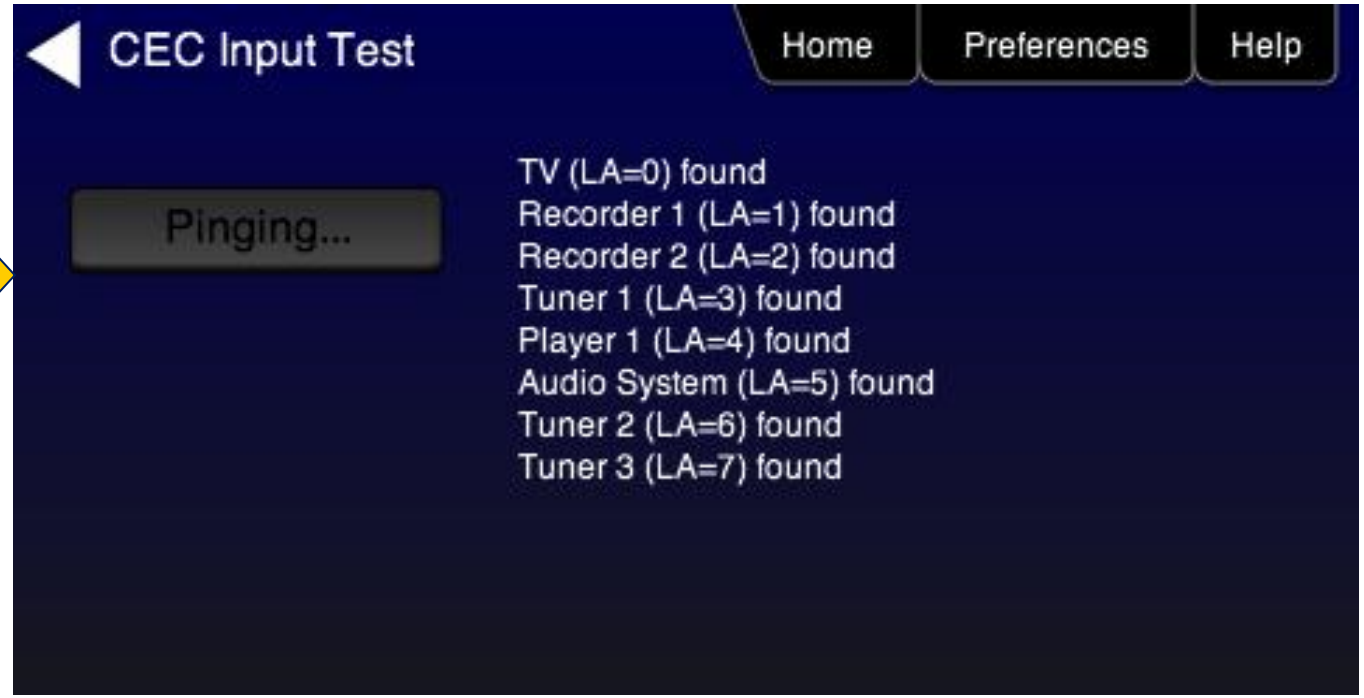


Apply the EDID to the 780 Rx port for emulation.

Network Analyzer – CEC Sink Testing

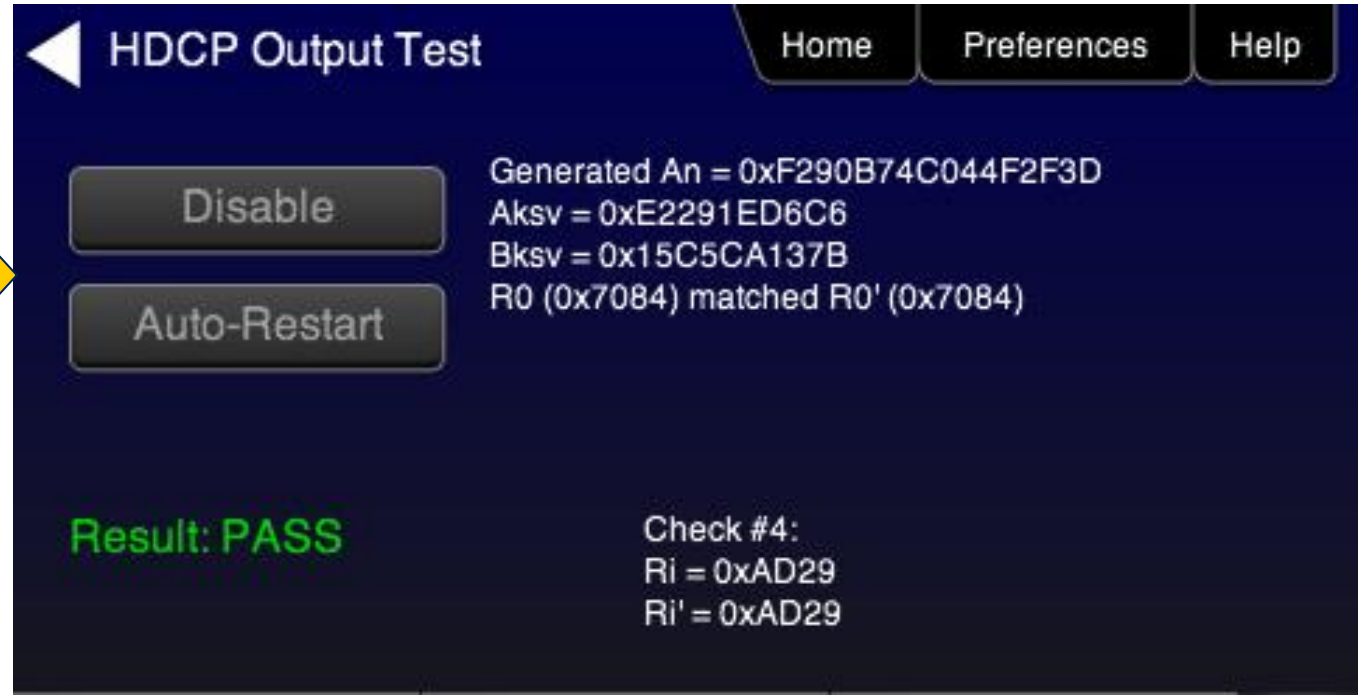


The CEC test not only provides verification of CEC basic function, but requests a device's Logical Address to determine system components.



Network Analyzer – HDCP Sink Testing

Our HDCP test not only verifies the DUT with a PASS/FAIL result, but also shows the exchange of Aksv, Bksv and the on going Ri comparison.



HDMI Source Analysis Tests

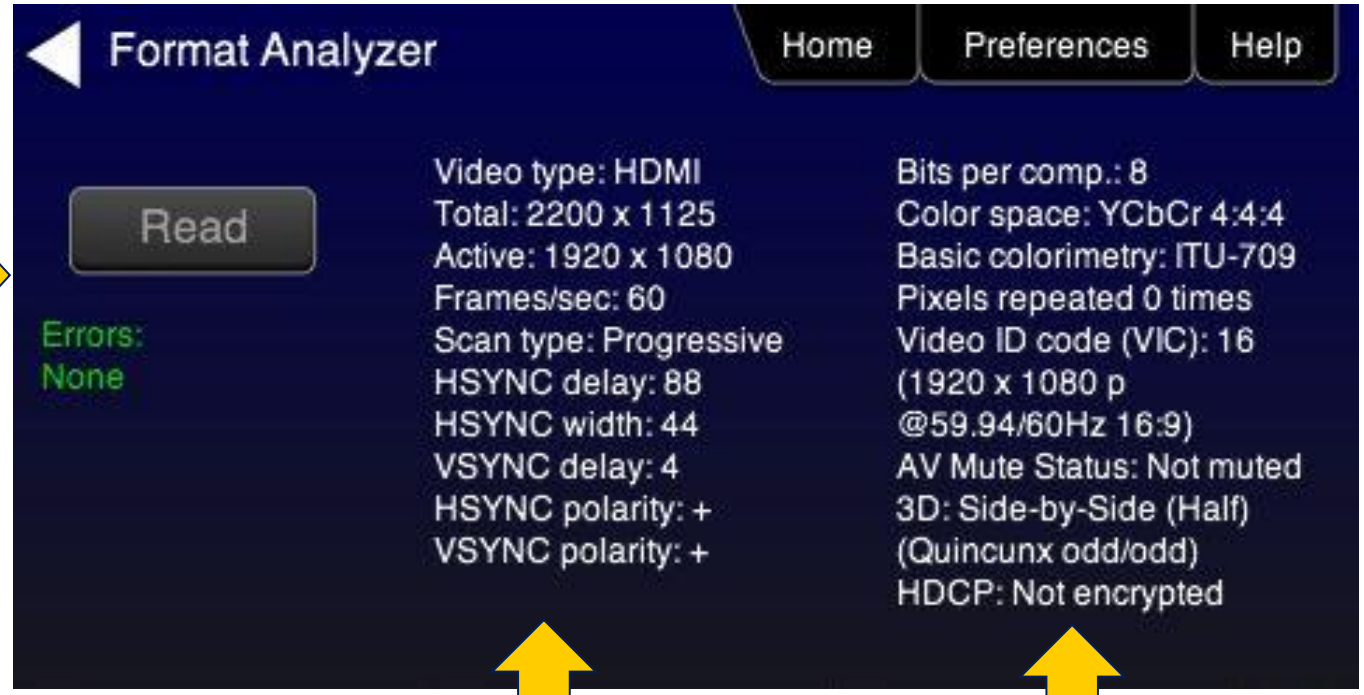
- Source Analysis Tests:
  - View video InfoFrame and timing data—including 3D metadata—from an HDMI source.
  - View audio InfoFrame and metadata from an HDMI source.
  - Test an HDMI source device's response to any EDID.
  - Check the number of HDCP devices an HDMI source supports.

HDMI Source Testing

"Test Source" provides tests for source devices such as DVD players, set top box and AVRs.

Source Format Analyzer

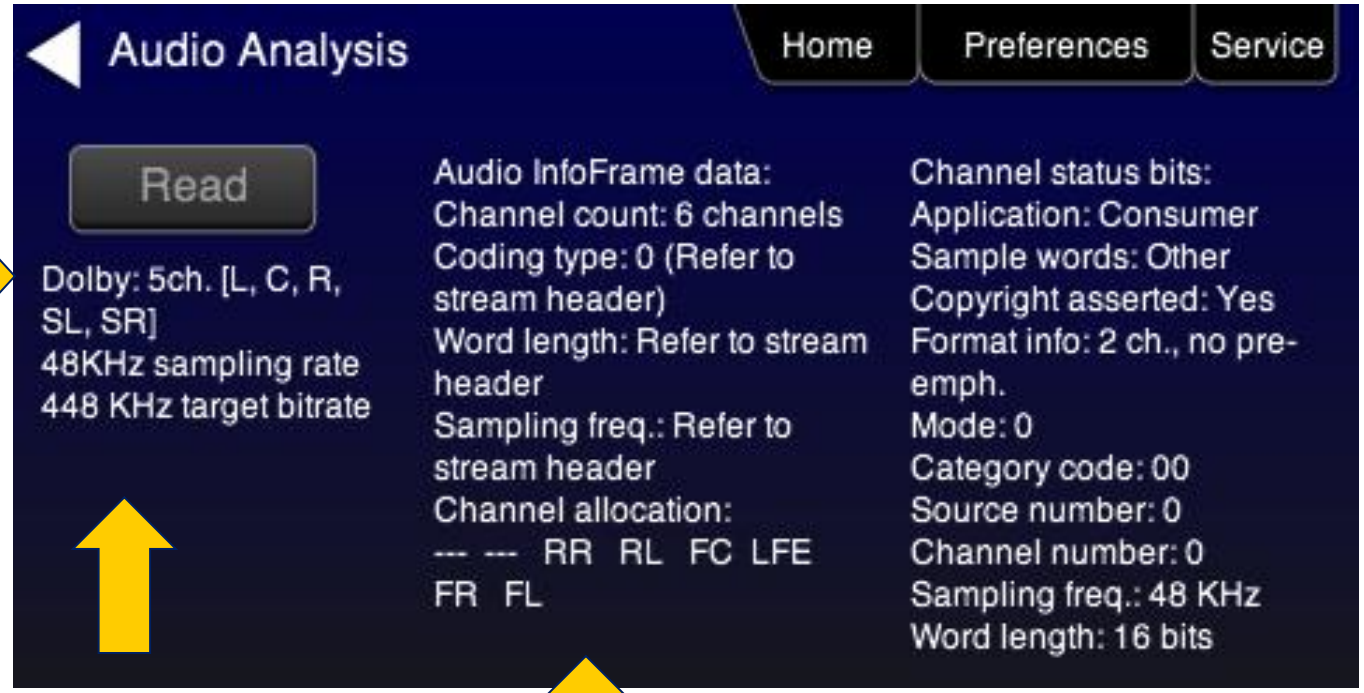
The Format Analyzer is an excellent tool for verifying that a source device is outputting a standard timing or supports deep color. This test displays detail on the incoming video format.



Test Source
For checking timing from Source Devices (STB, DVD, AVR output)

Test Source
For Testing Source Devices shows AVI& 3D metadata (STB, DVD, AVR output)

Source Tests – Audio Analyzer



The Audio Analyzer offers a description from the Audio Infoframe and audio sample packet headers. This provides quick, clear description of the audio data that is being output by an HDMI device.

Test Source Audio
For verifying audio format, sampling rate, channels with decoded IEC audio headers to view

Test Source Audio
For checking audio meta-data from Source Devices (STB, DVD, AVR output)

Test Source Audio
For checking audio channel status bits from Source Devices shows AVI& 3D metadata (STB, DVD, AVR output)

Source Tests – Audio Monitoring with Headphone

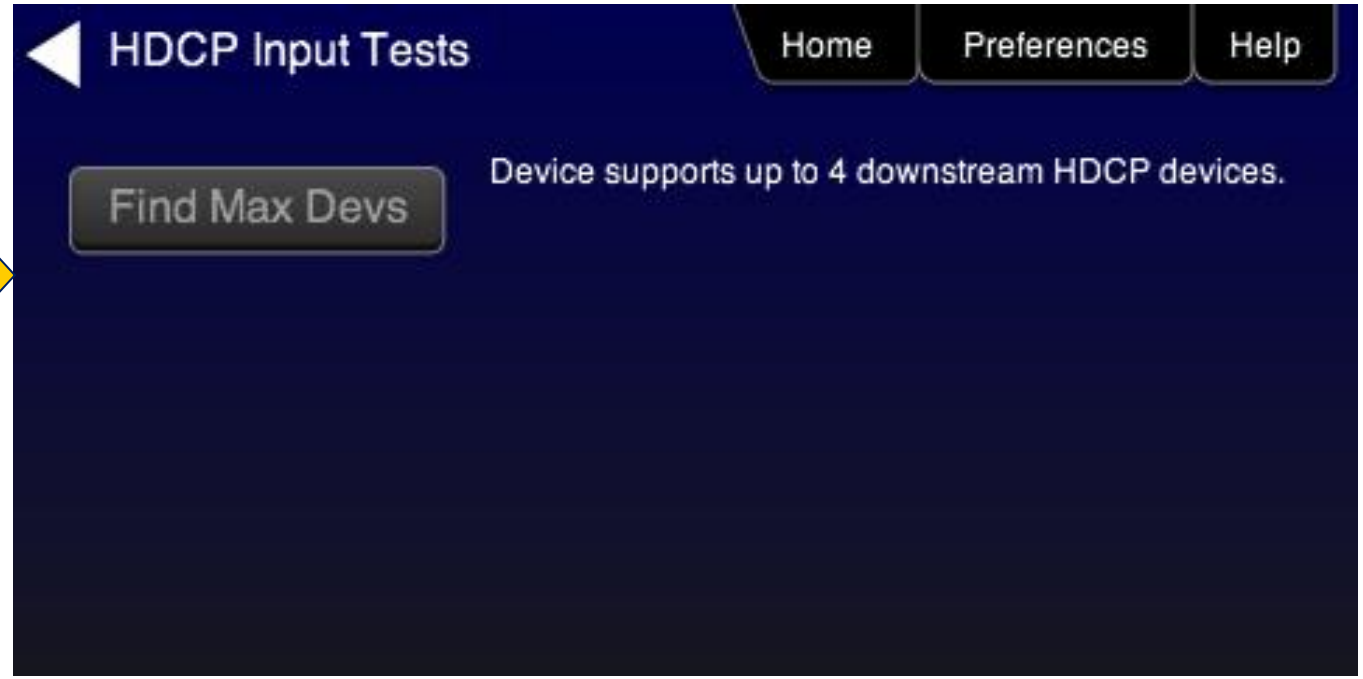
Monitor LPCM audio
Use headphone jack or internal speaker

Audio Monitor Headphone Configuration

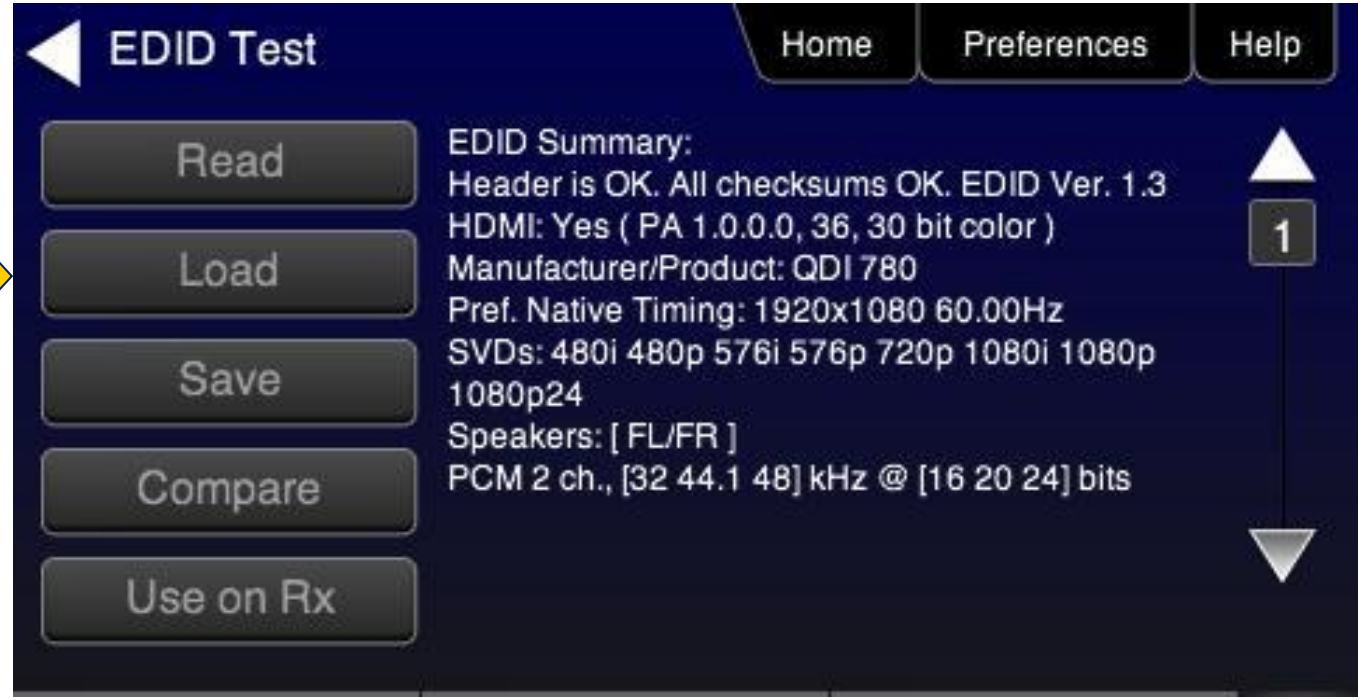
The Audio Monitor setup enables you to configure the audio that comes out of the 780A headphone jack.

HDCP Source Max Devices Test

HDCP Max devices test checks to see how many downstream devices the HDMI source device can support in an HDCP authentication.



Source Tests – EDID



The EDID Test reads EDID data from a sink device. Use the EDID obtained from connected display on the 780 Rx port to emulate that display

Emulate a standard EDID from a TV or AVR on the 780 Rx port.

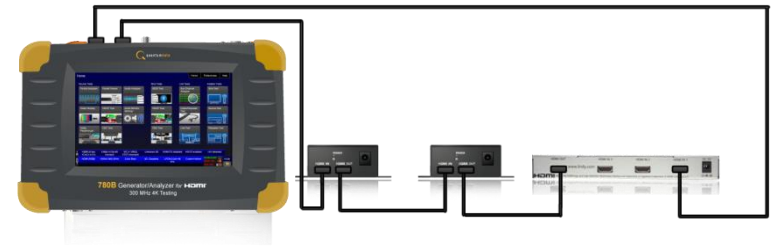
Source Packet Viewer

The Packet Viewer tool allows the user to view the data contained within many common types of packets such as InfoFrames, ACP/ISRC packets, and xvYCC gamut metadata.

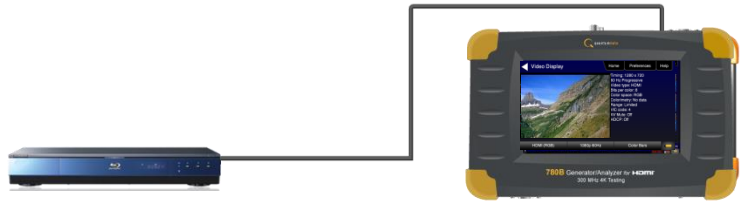
Save packet data to a file for dissemination to colleagues.

780B Test Configurations Recap

HDMI Cable/Link and loop Test Functions



HDMI Source Test Functions



HDMI Sink Test Functions

780B Optional Features

780B Optional Features

- HDMI Cable, Link (Repeater) and Frame Compare Test
- Auto EDID Test
- HDMI Auxiliary Channel Analyzer (ACA):
  - Option 1: Emulation monitoring of hot plug events and DDC transactions
  - Option 2 (includes Option 1): Passive monitoring of hot plug events, DDC transactions and CEC messages.

Auto EDID Test

780B Auto EDID Test Option

- Test HDMI source's response to a variety of EDIDs.
- EDIDs used in test are specified prior to test.
- Test EDIDs can be obtained from:
  - Quantum Data EDID Library.
  - Commercial HDTVs or other sinks.
  - Known-bad EDIDs.
  - EDIDs you created with Quantum Data EDID editing tools.
- Results appear on 780B display.
- Test feature checks incoming timing, video type, colorimetry, sampling and VIC and presents results.
- Test report of results available following test from installed SD card.

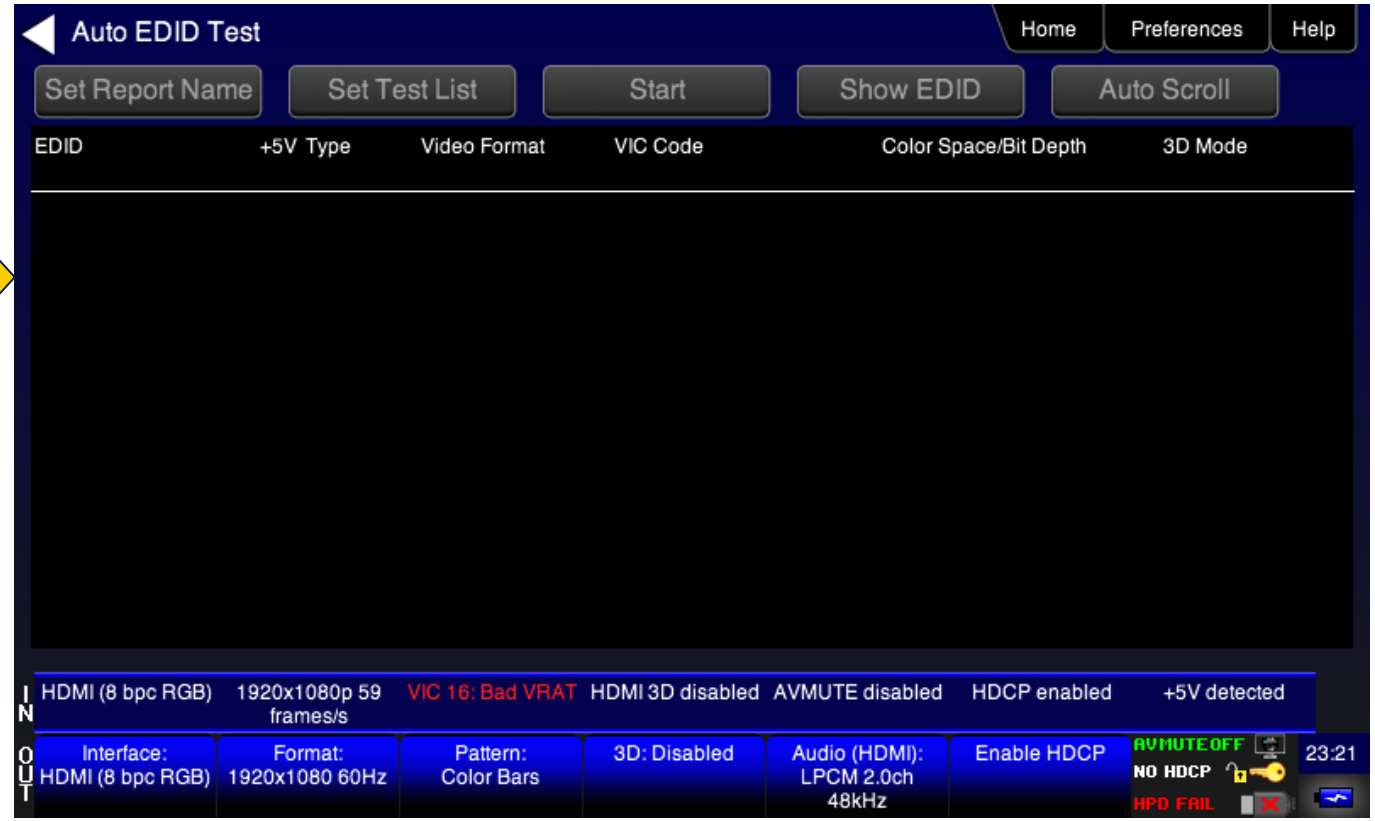
780B Auto EDID Test Option

An automated test to verify that a source responds properly to a variety of EDIDs.

Select Auto-EDID Test.

780B Auto EDID Test Option

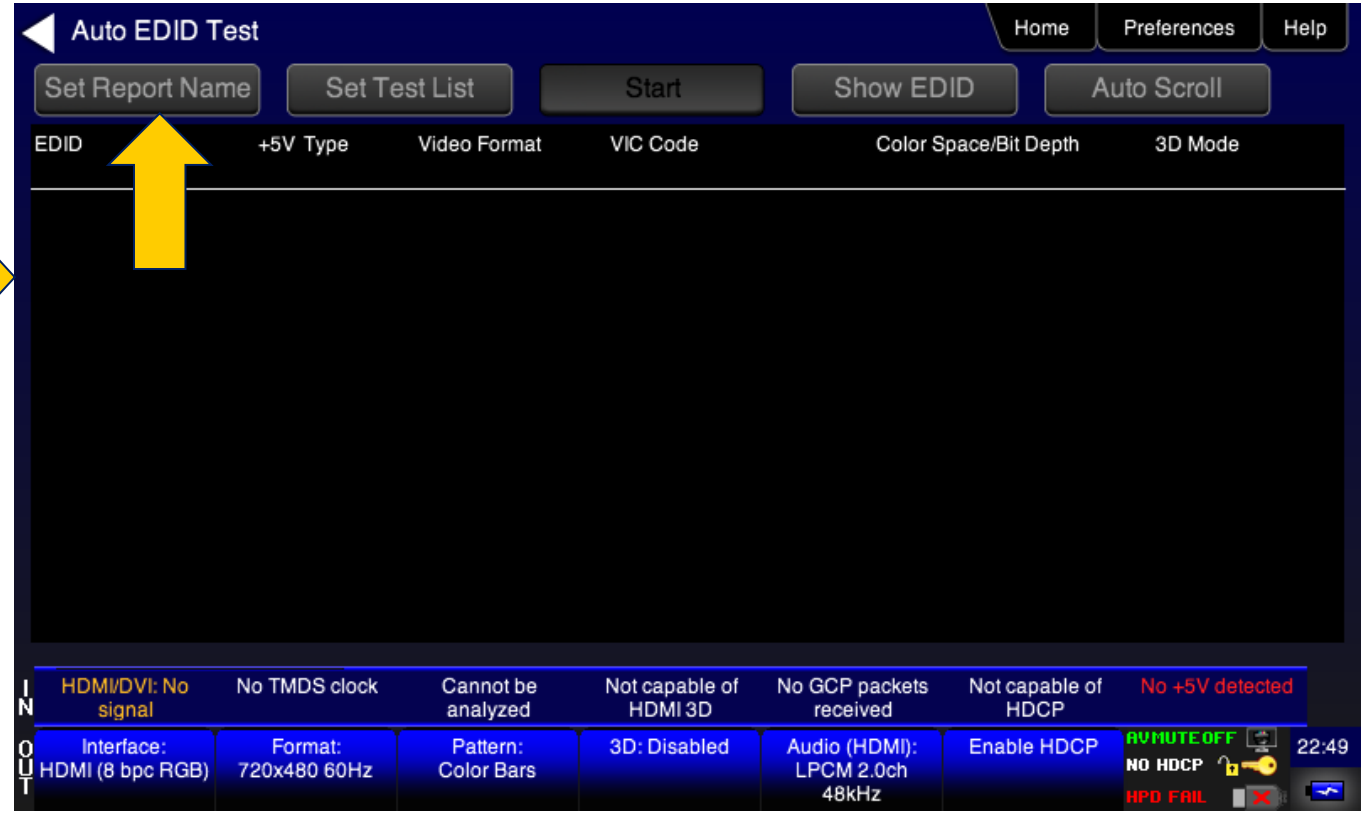
Select Auto-EDID Test.



Auto-EDID Test home screen.

780B Auto EDID Test Option

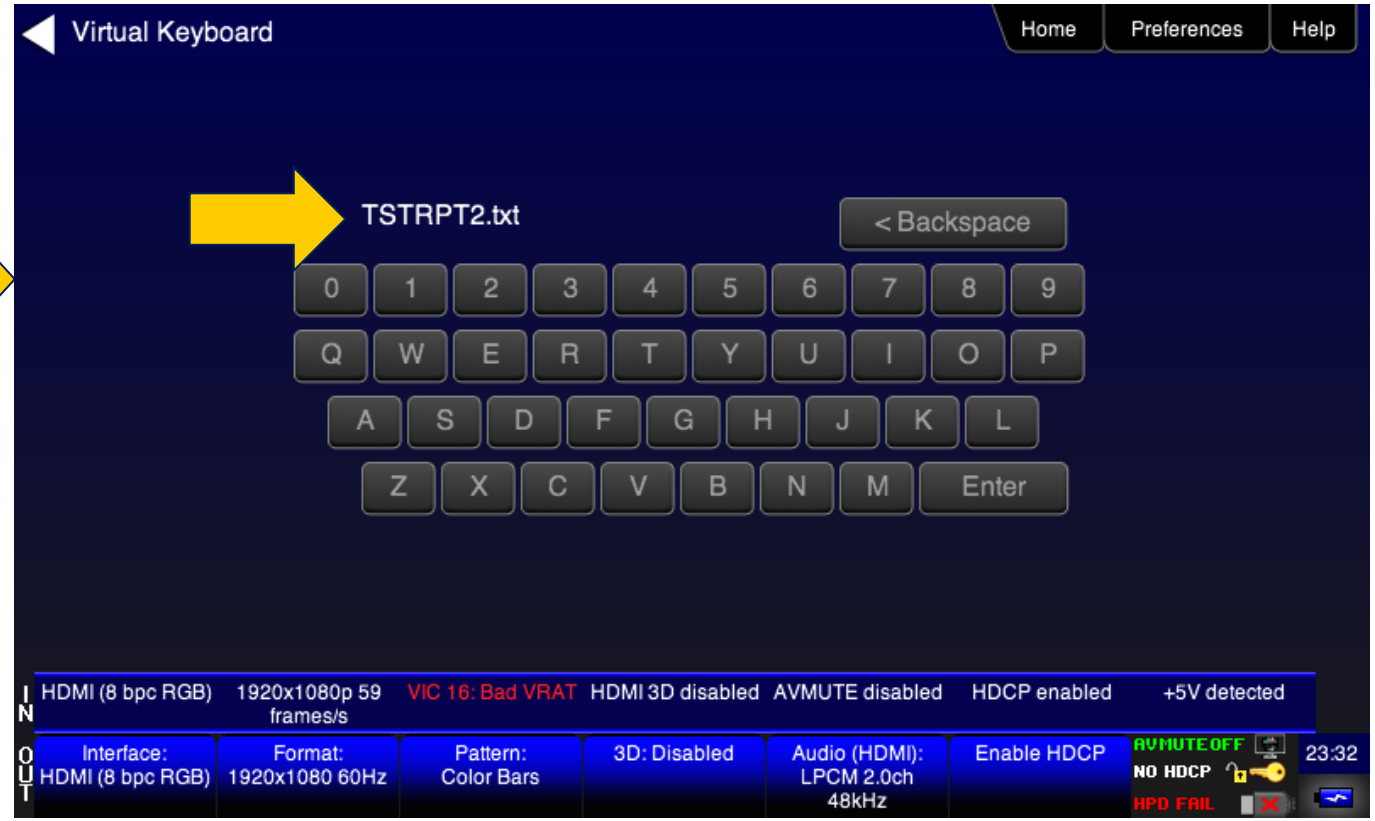
An automated test to verify that a source responds properly to a variety of EDIDs.

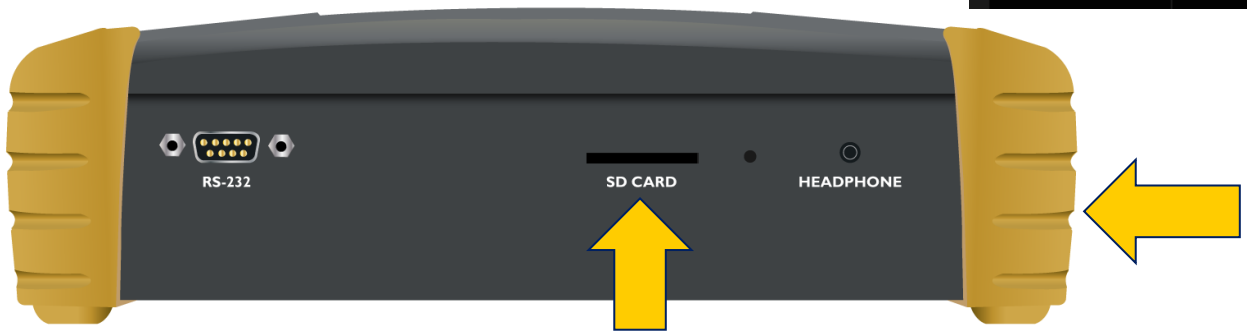


Optionally specify if you want to issue a report.

780B Auto EDID Test Option

Specify that you want to issue a report with Set Report Name activation button.





Specfy a name for the report.
Important Notes:
1. Report is written to SD card in 780B front slot.
2. SD card must be installed prior to power up of 780B.

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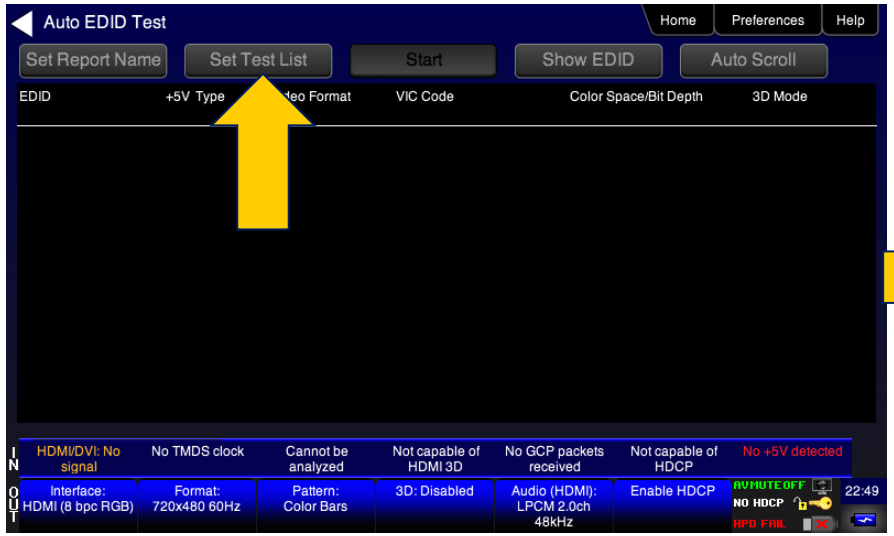
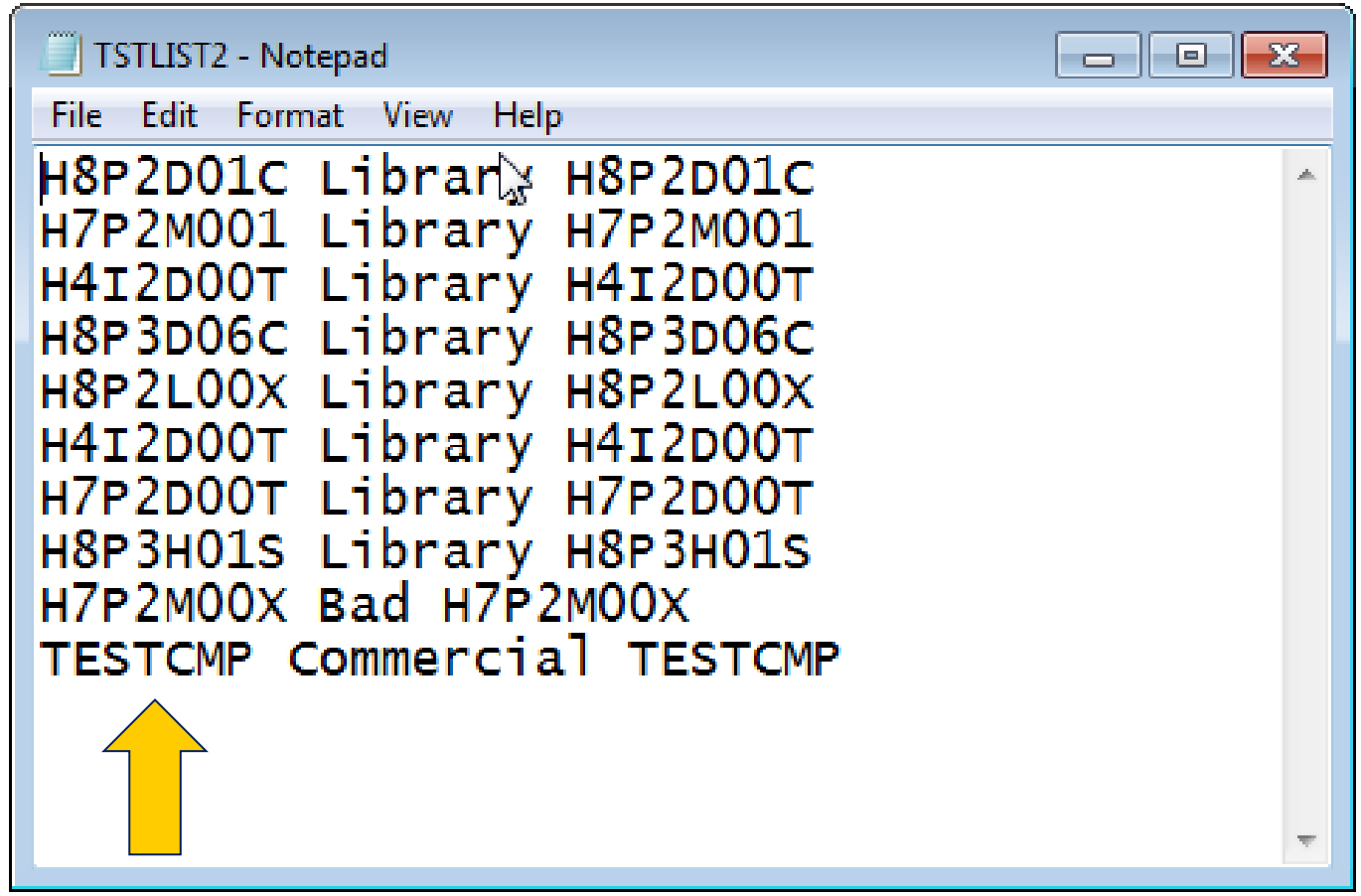
780B Auto EDID Test Option



Configure the list of EDIDs that will be tested by selecting a configuration file.

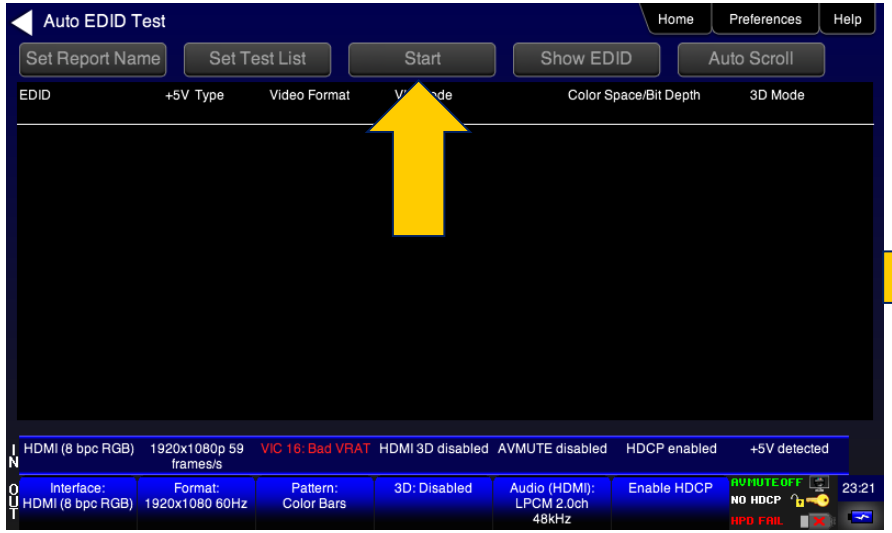
Specify the configuration file which is a text file listing of EDIDs (and names) that will be used in the test.

780B Auto EDID Test Option

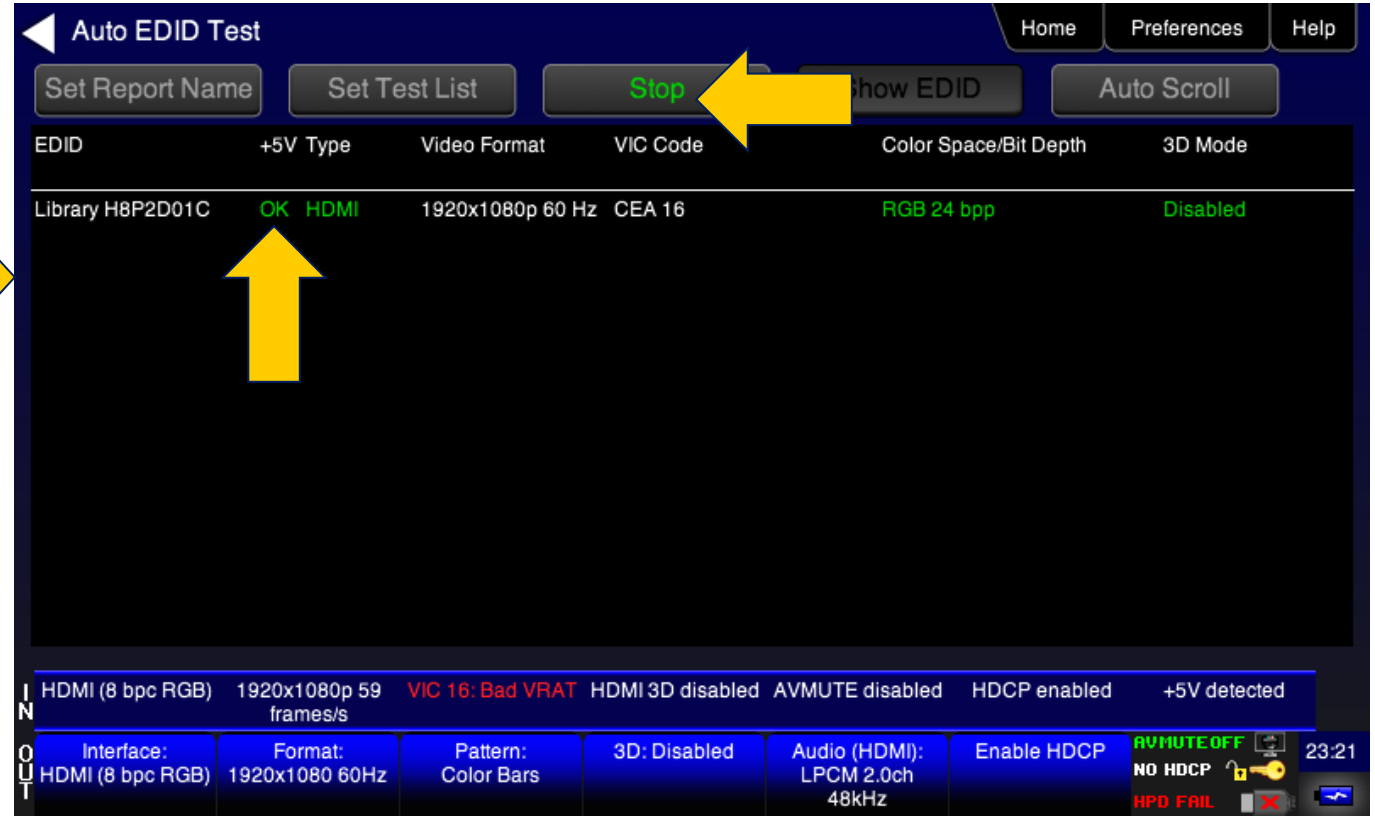


Sample Auto EDID configuration file.
Specify EDIDs and names in configuration text file.
Transfer configuration file to AutoEDID directory on 780B file system.

780B Auto EDID Test Option

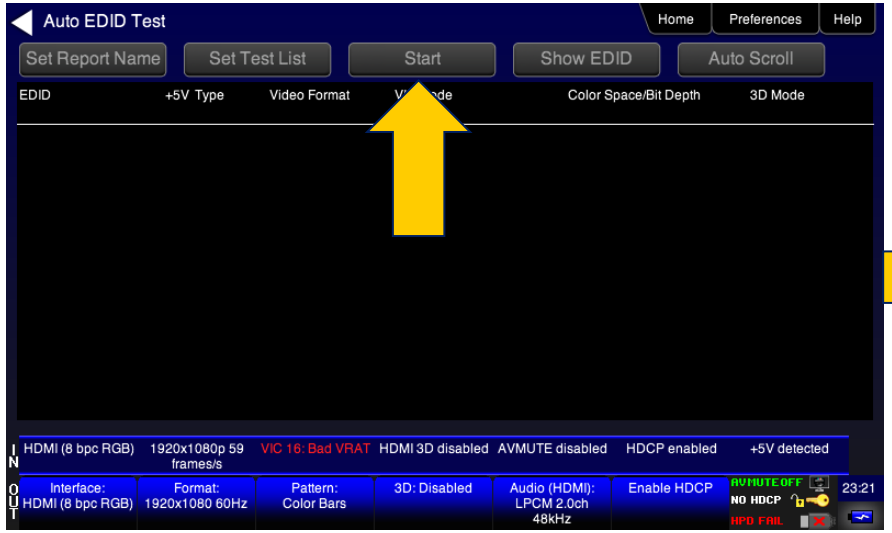


Connect source and initiate the test.



Results appear as each EDID is being tested.
You can stop the test at any time.

780B Auto EDID Test Option

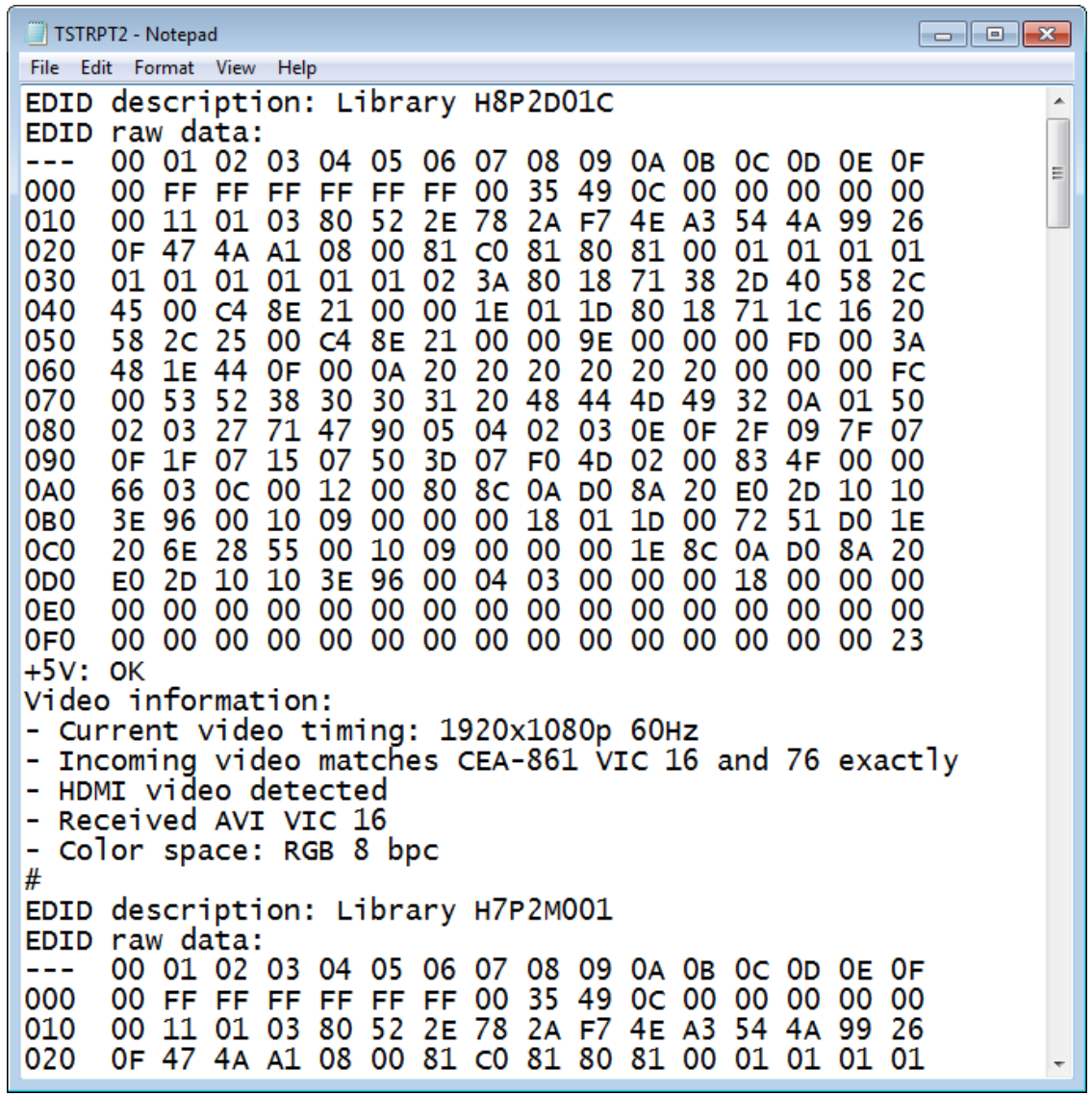


Red text indicates anomalous conditions in the handling of an EDID.
Example shows:
1. Incoming video timing resolution is not present in EDID (2 cases).
2. EDID with bad checksum where incoming video is DVI (no infoframes).

780B Auto EDID Test Option

Sample Auto EDID Test Report.
Shows:
1. **EDID name**
2. **Hex listing**
3. **Results of each EDID tested.**

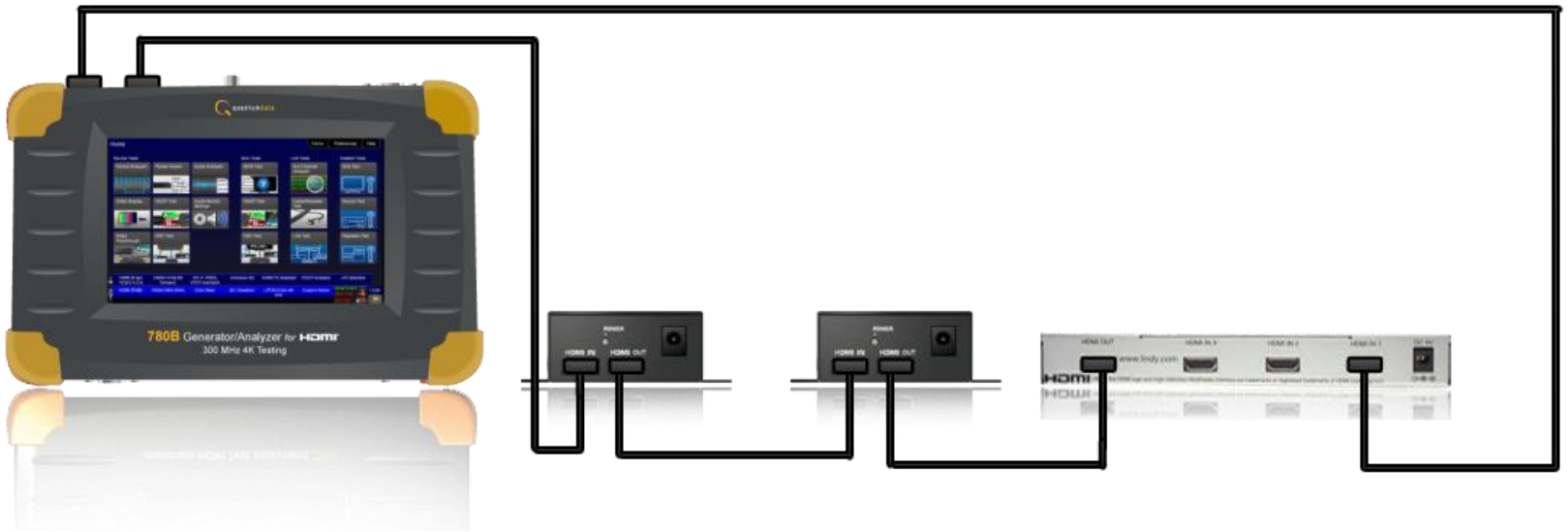
Scroll to view entire report.



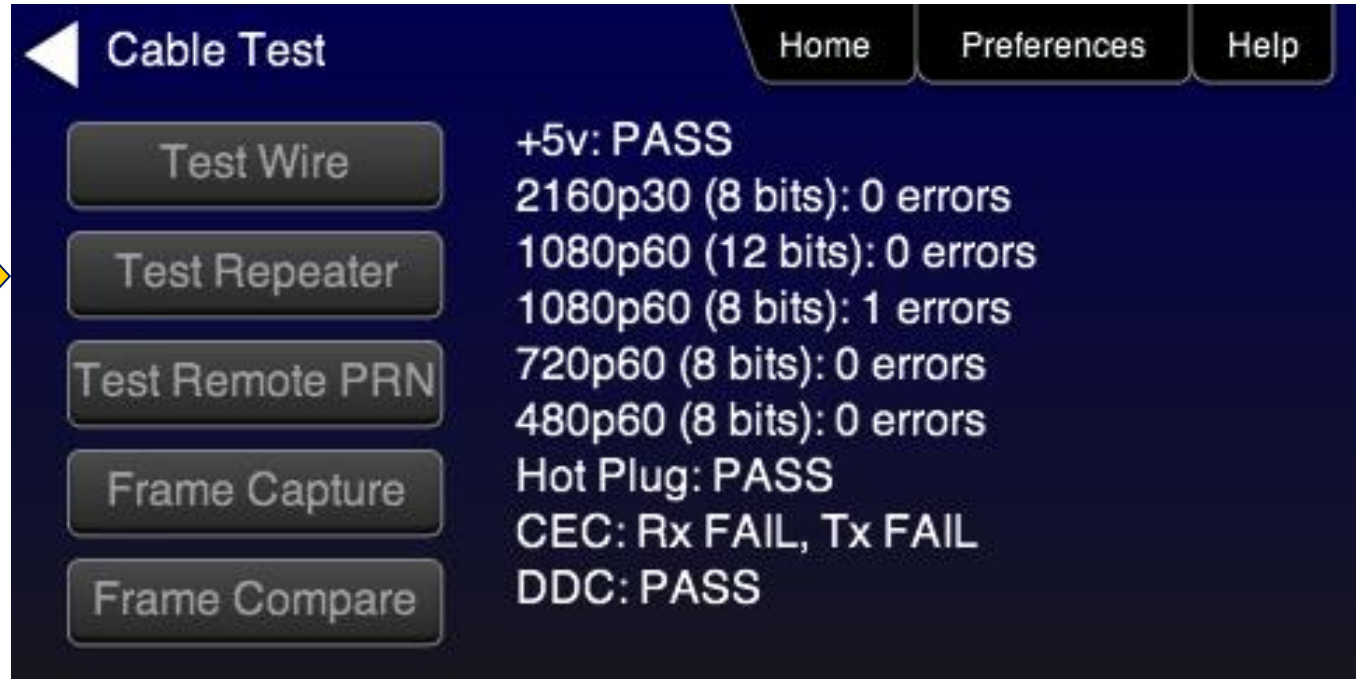
Cable and Link Test Option

780B HDMI Cable & Link Test Option

- HDMI Cable and Link (Repeater) Test Option:
  - Tests for video errors using pseudo random noise pattern
  - Tests video at 480p (8bits), 720p (8bits), 1080p (8bits and 12bits).
  - Tests Hot plug & +5V
  - Tests DDC for proper communication



HDMI Cable Test



A basic test for HDMI cable quality is provided. The test is based on a Pseudo Random Noise image that is generated on the Tx and received at the Rx. Every pixel sent should be received or errors are reported.

<u>Test Cables</u>
Test for pixel errors on TMDS at multiple timings (up to 4K resolutions for 780A).
Check continuity on auxiliary data channels.

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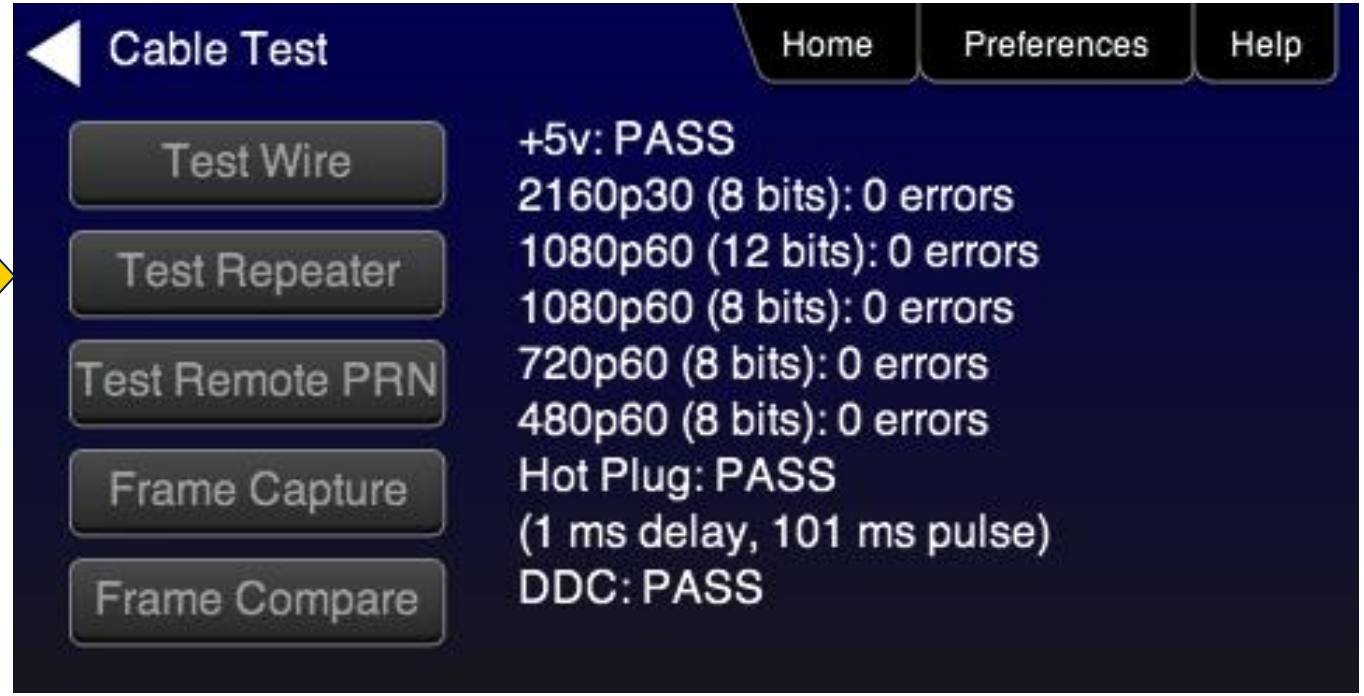
HDMI Repeater Test



A basic test for HDMI cable quality is provided. The test is based on a Pseudo Random Noise image that is generated on the Tx and received at the Rx. Every pixel sent should be received or errors are reported.

<u>Test Repeaters</u>
Test for pixel errors on TMDS at multiple timings (up to 4K resolutions for 780A)
Check continuity on auxiliary data channels and measures hot plug delay and pulse width.

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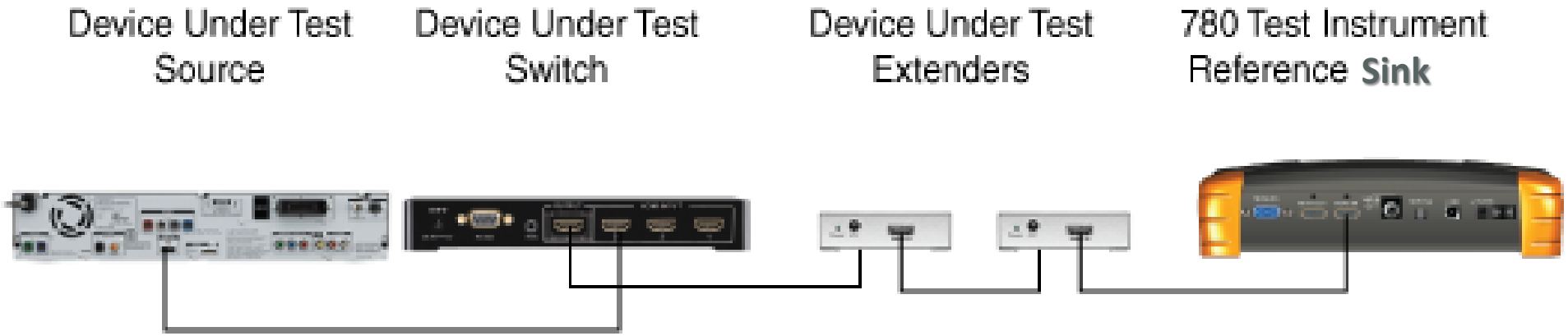
HDMI Frame Compare Test

- HDMI Frame Compare Test Option:
  - Tests for video errors using pixel error tests
  - Capture reference frame from network and compare subsequent captured frames.



HDMI Frame Compare Test

A basic test for HDMI distribution system or cable once installed on site. The test captures a reference frame" and then compare subsequent frames captured to it.

<u>Test Distribution Networks</u>
Test for pixel errors on TMDS on installed networks.

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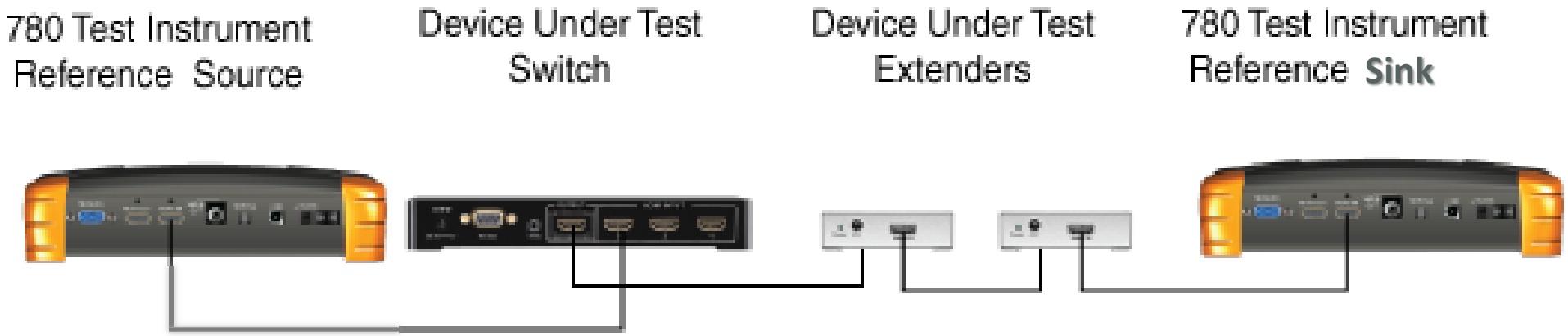
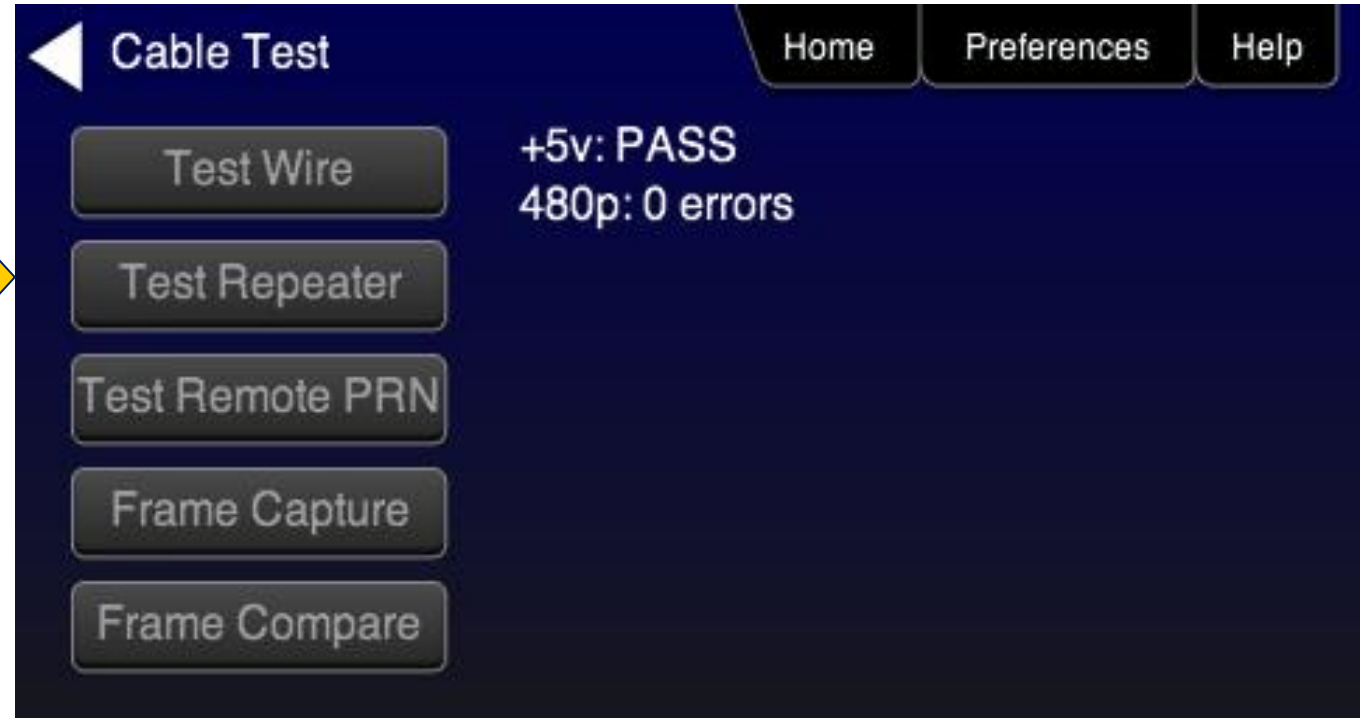
HDMI Remote PRN Test

- HDMI Remote PRN Test:
  - Tests for video errors through HDMI distribution network with full control over source.
  - Requires two (2) 780 Test Instruments.



HDMI Remote PRN Test

A basic test for HDMI distribution system or cable once installed on site. The test captures a reference frame" and then compare subsequent frames captured to it.



Test Distribution Networks
Test for pixel errors on TMDS on installed networks.

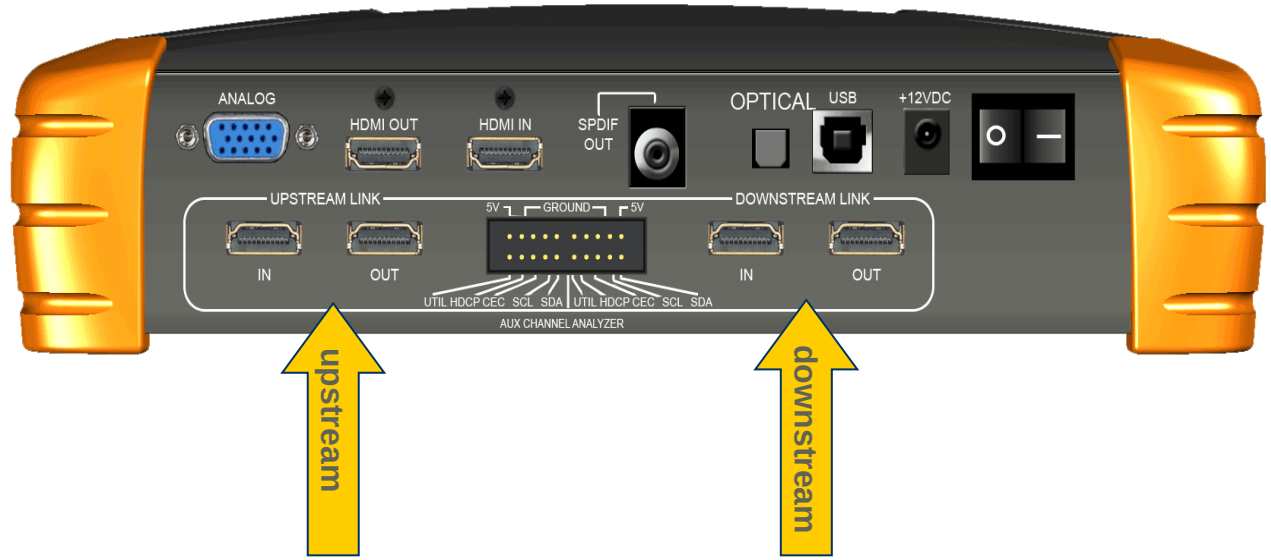
Auxiliary Channel Analyzer Option

Quantum Data 780/780A Auxiliary Channel Analyzer

- Auxiliary Channel Analyzer (ACA); two options:
  - Option 1 - Emulation Monitoring:
    - Hot plug events
    - HDCP transactions
    - EDID transactions
    - CEC messages
  - Option 2 - Passive Monitoring (includes Option 1 - Emulation Monitoring):
    - Hot plug events
    - 5 volt supply
    - HDCP transactions
    - EDID transactions
    - CEC messages

(Optional) Aux Channel Analyzer (ACA) - Configurations

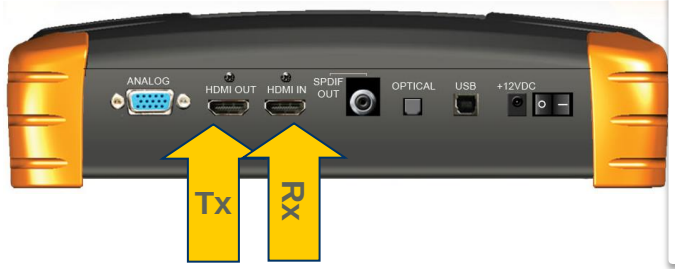
- Emulation Configuration:
  - Tx and Rx ports
  - Monitors DDC, hot plug, CEC while emulating a source and/or a sink device.
- Passive Configuration:
  - In addition to Emulation Configuration, adds two (2) Upstream monitoring ports and two (2) downstream monitoring ports.
  - Monitors DDC, hot plug/+5V and CEC, while passively monitoring source, repeater and sink devices.



Aux Channel Analyzer – Emulation Monitoring

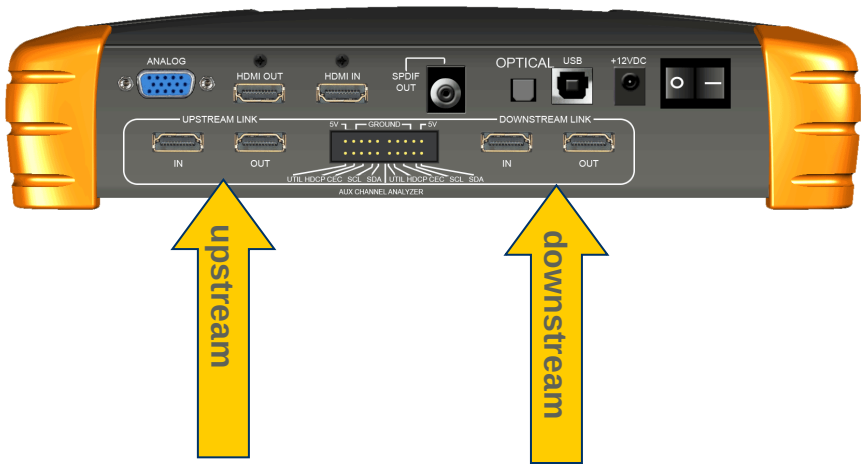
Emulate an HDMI source and monitor DDC traffic, hot plug events and CEC messages with AVR input port.

Emulate an HDMI sink and monitor DDC traffic, hot plug events and CEC messages with AVR input port.



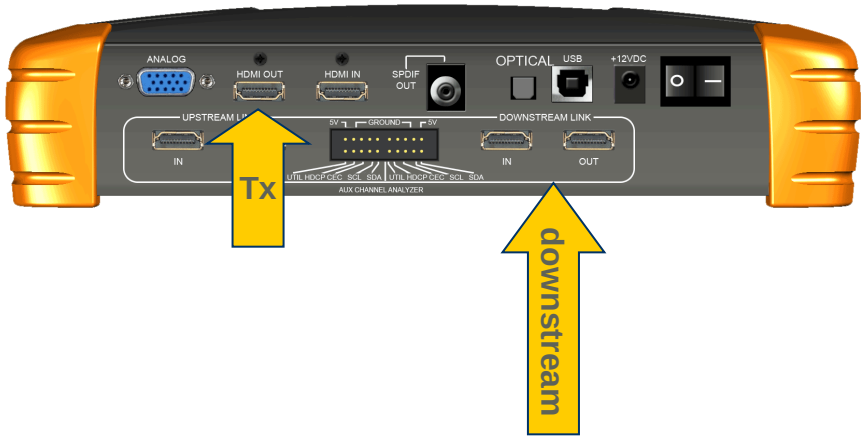
Emulate an HDMI source and sink and monitor DDC traffic, hot plug events and CEC messages with AVR input port.

Aux Channel Analyzer – Passive Monitoring

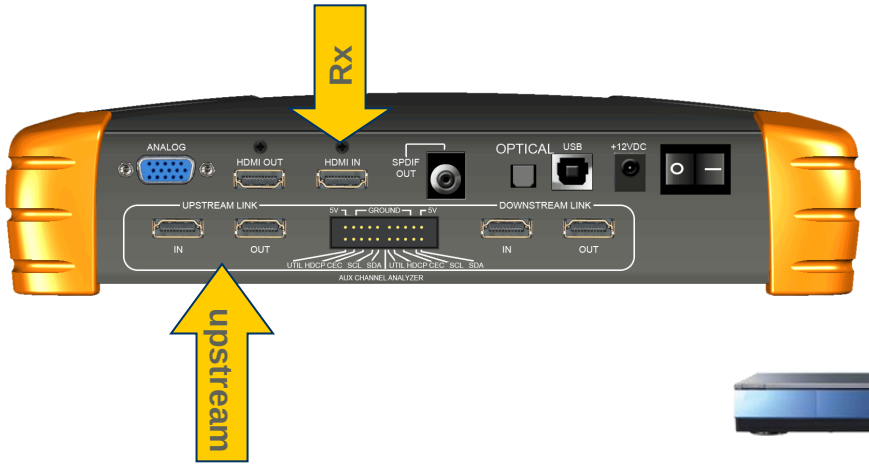


Passively monitor a source, repeater on upstream and repeater, sink on the down-stream side.

Aux Channel Analyzer – Emulation & Passive Monitoring



Emulate an HDMI source for monitoring the upstream while passively monitoring the downstream.

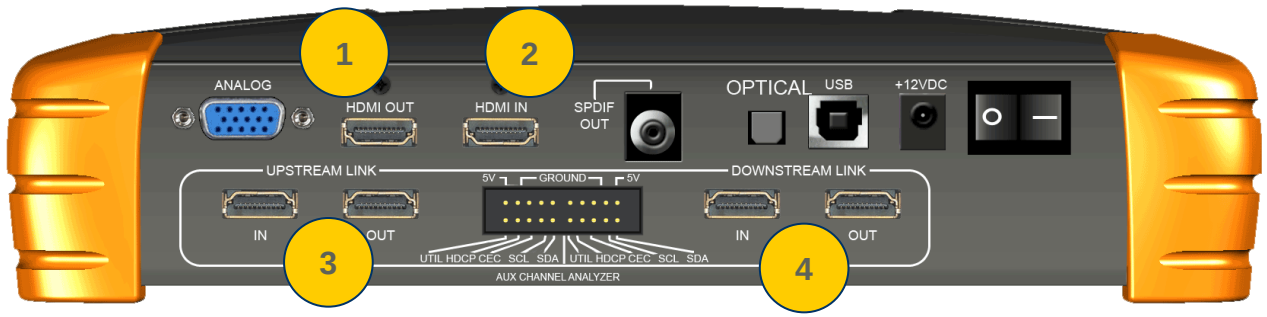


Emulate an HDMI sink for monitoring the downstream while passively monitoring the upstream

Aux Channel Analyzer – Operation (DDC & HPD)

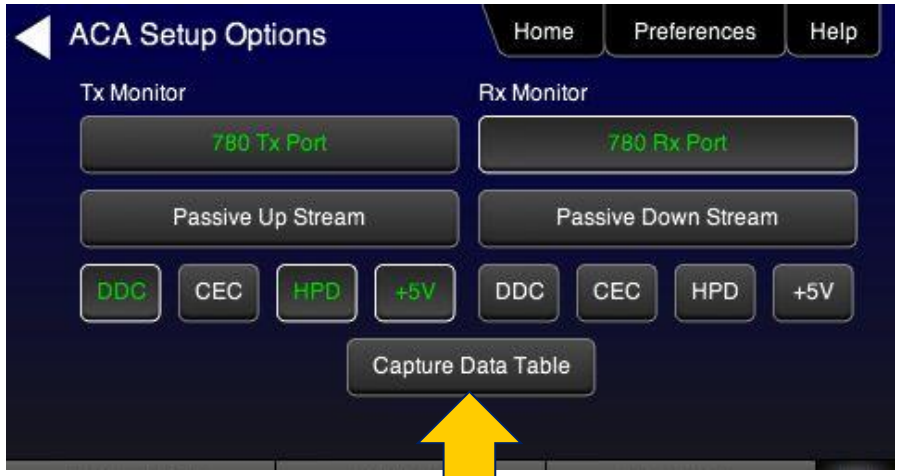
Select Auxiliary Channel Analyzer.

Aux Channel Analyzer Operation – Setup Capture

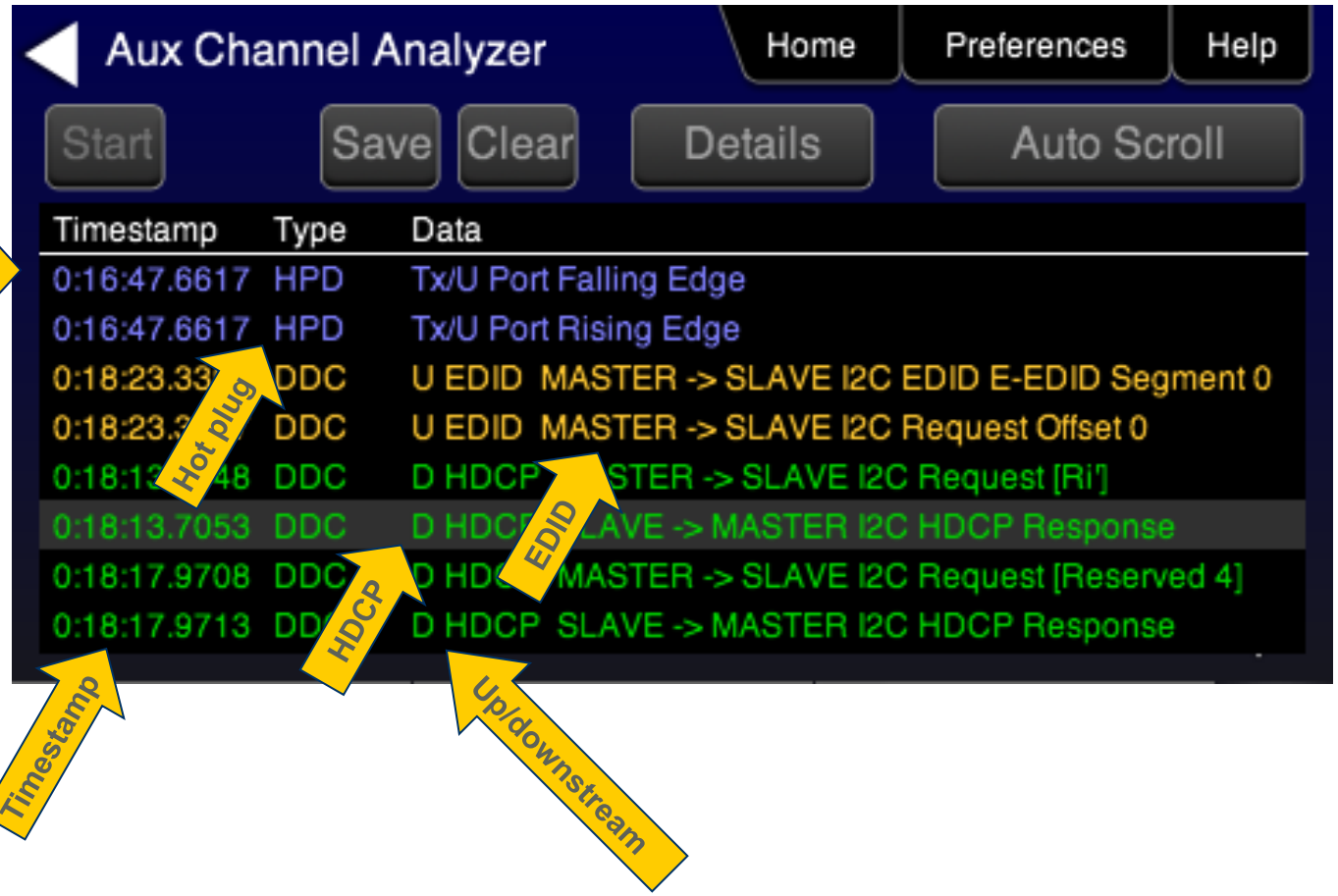


Monitor DDC while emulating a source or a sink at 1 and 2. Monitor passively DDC using the 4 additional and optional HDMI ports at 3 and 4.

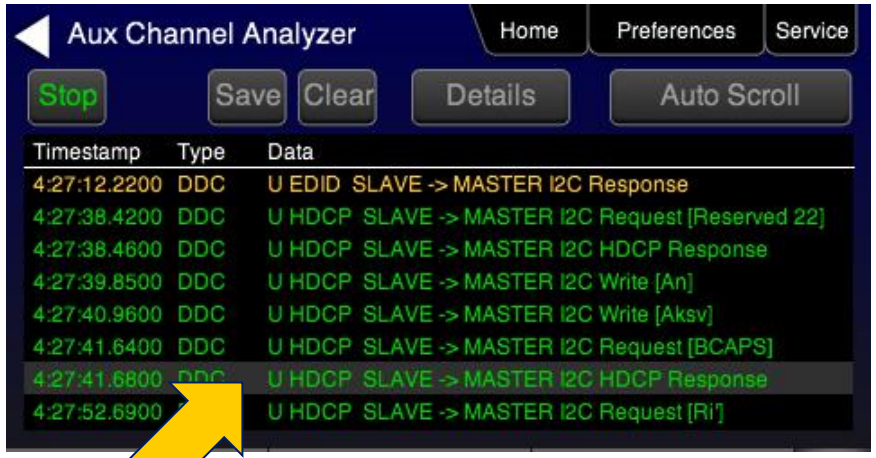
Aux Channel Analyzer Operation – View Trace



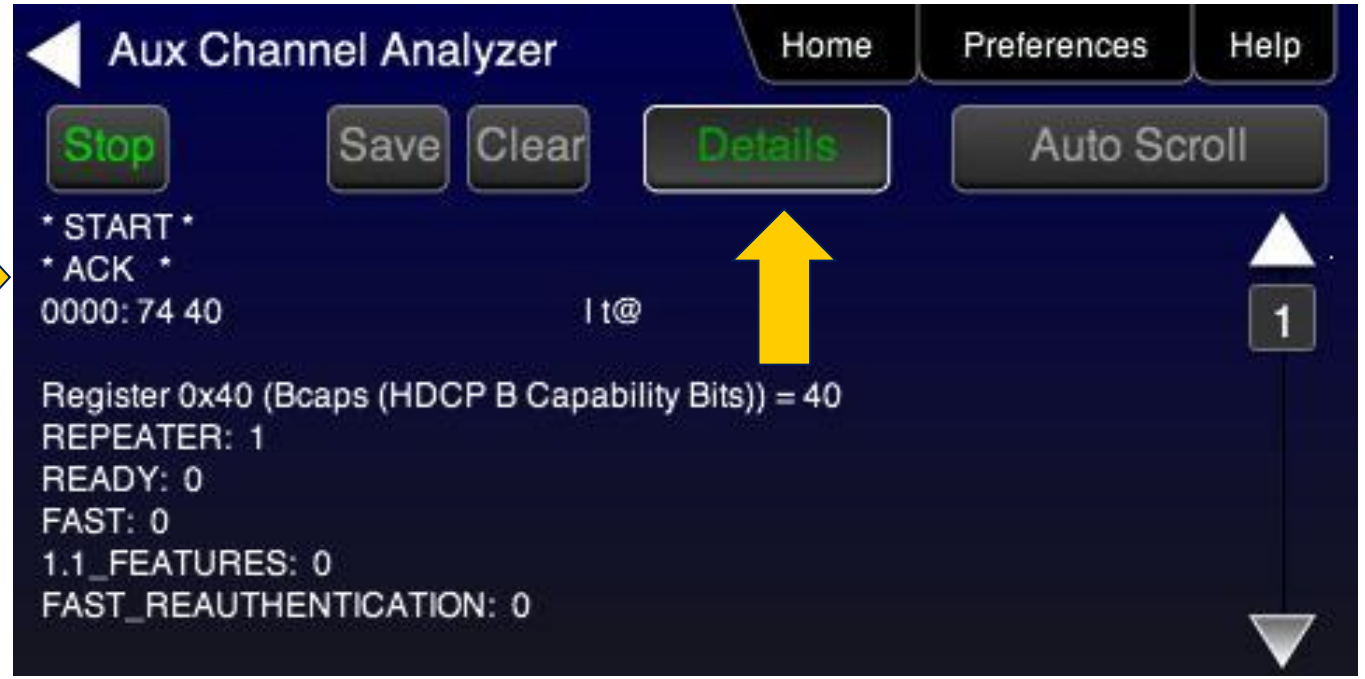
Use Capture Data Table button to begin capturing.



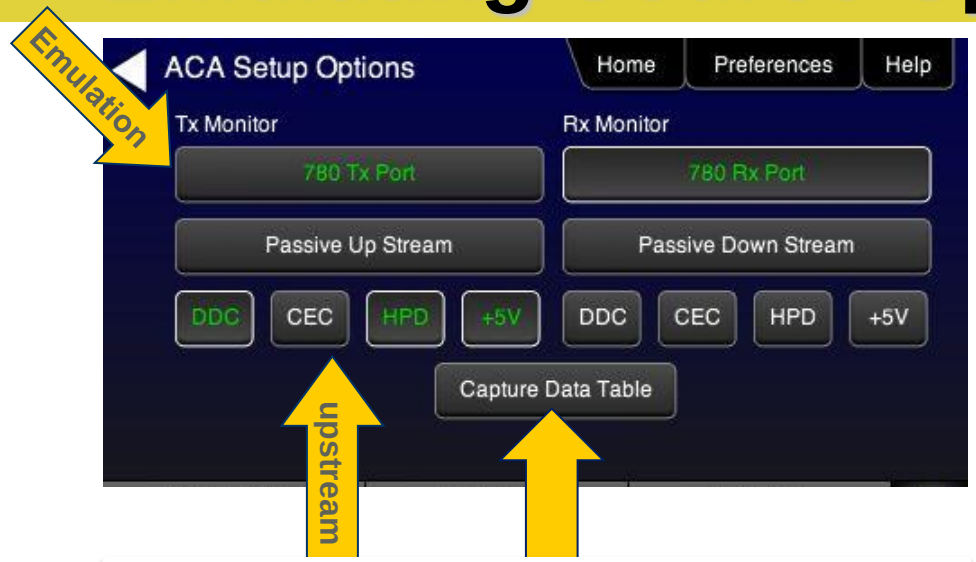
Aux Channel Analyzer Operation – View Details



View the details of HDCP/EDID transactions in human readable text as well as raw data. An example of the HDCP Bcaps register is shown.

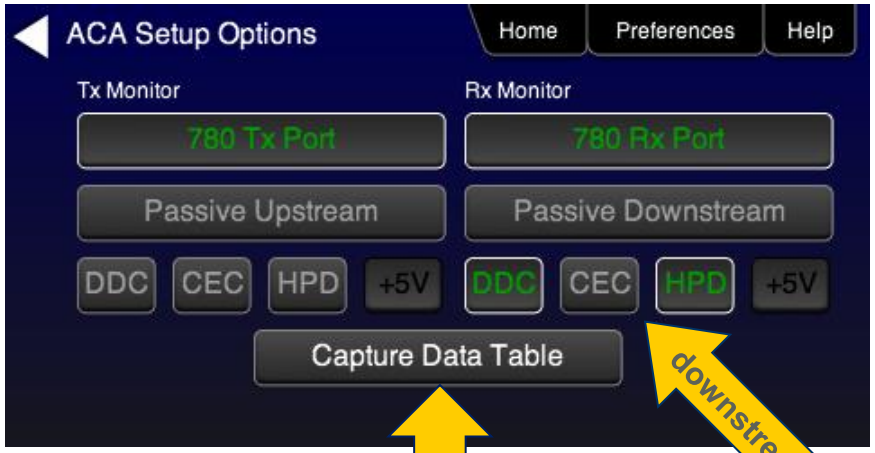


Emulating Source Upstream Monitoring (DDC)



Example shows capturing traces while emulating an HDMI source and monitoring upstream transactions.

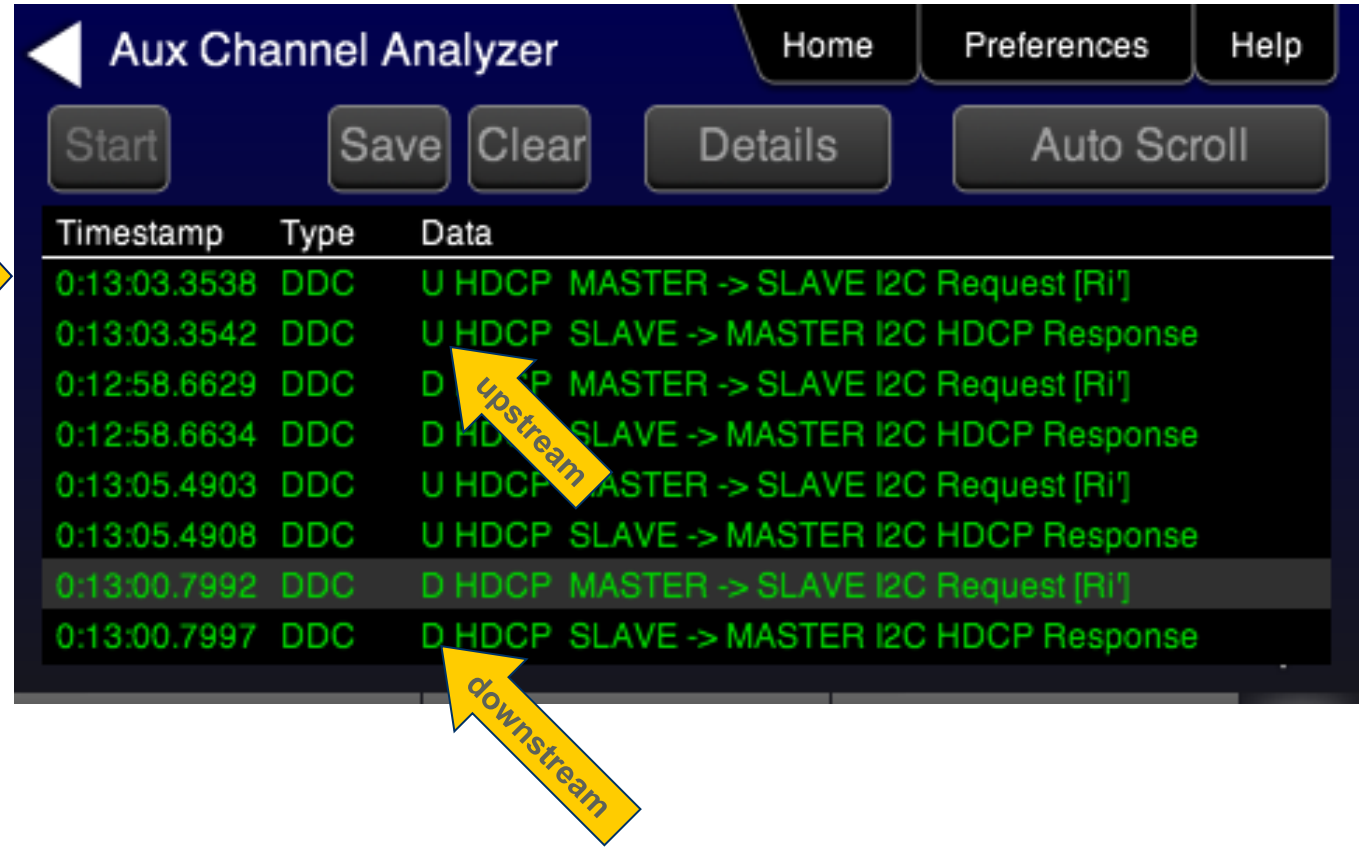
Emulating Sink Downstream Monitoring (DDC)



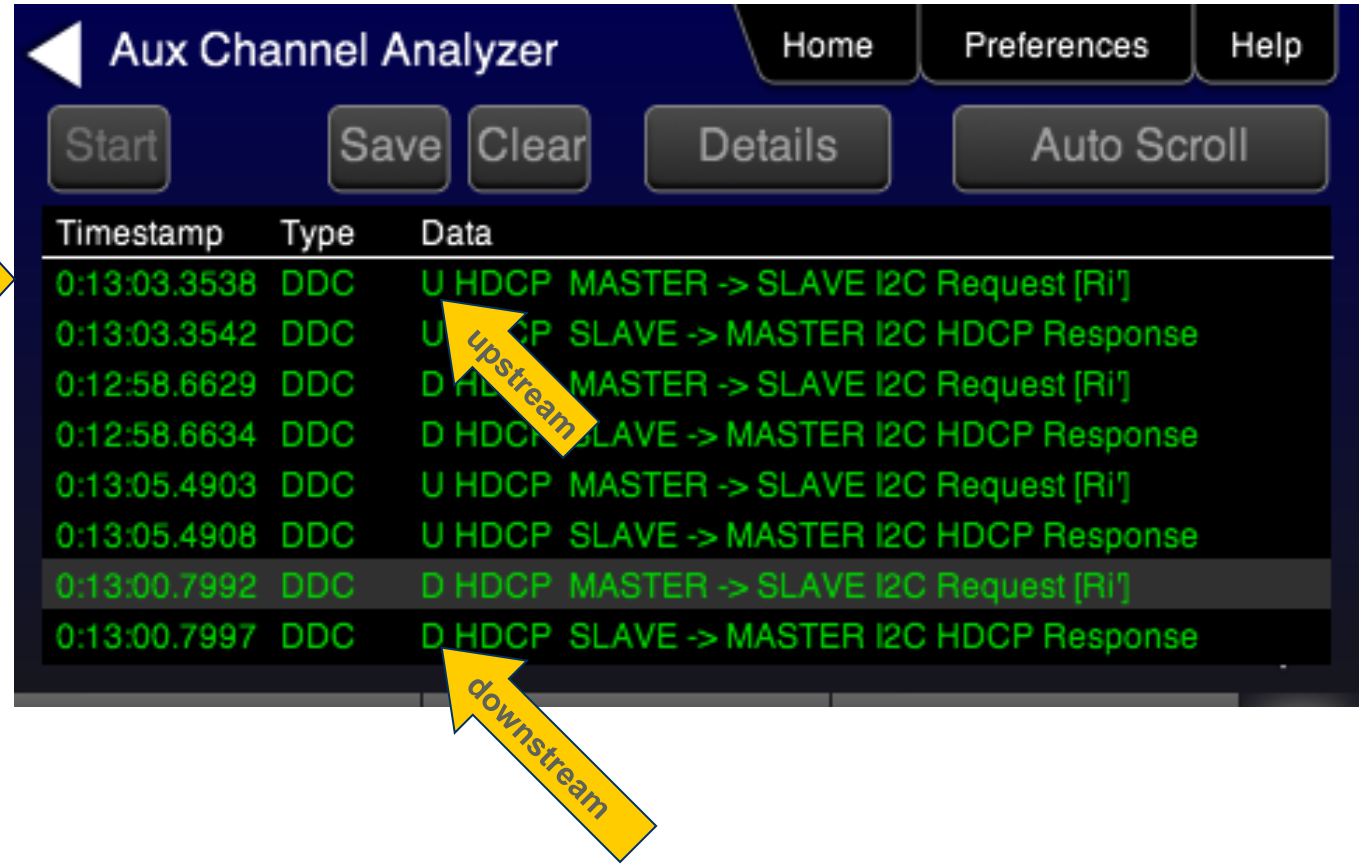
Example shows capturing only downstream transactions while emulating an HDMI sink device.

Emulation & Passive Up/Downstream Monitoring (DDC)

Example shows capturing upstream and downstream transactions while emulating both an HDMI sink and passively monitoring the upstream side of a repeater device.

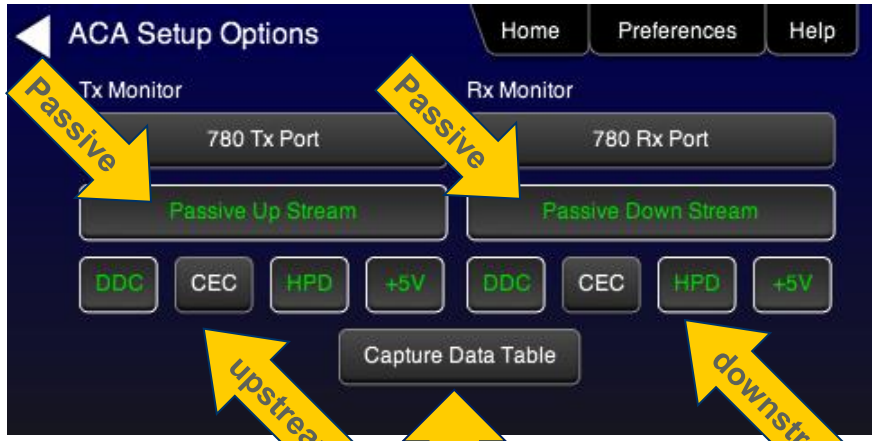


Emulation & Passive Up/Downstream Monitoring (DDC)

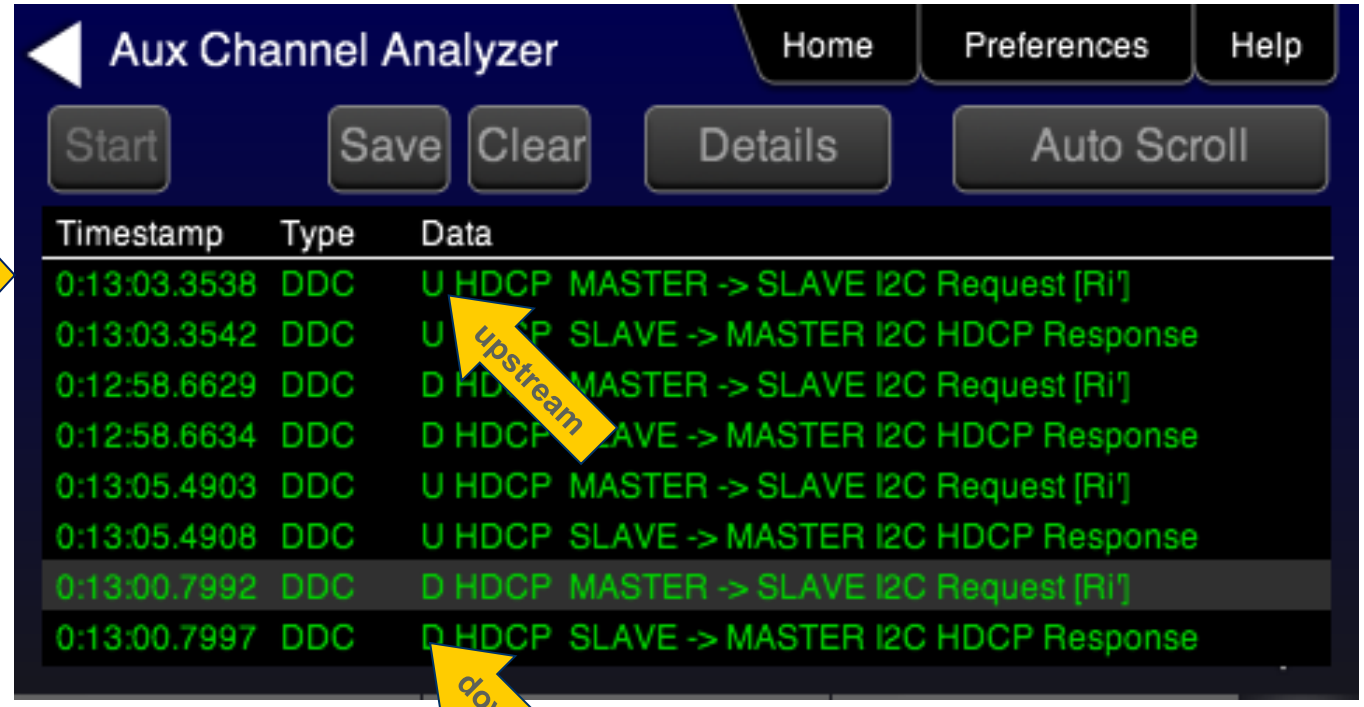


Example shows capturing upstream and down-stream transactions while emulating both an HDMI sink and passively monitoring the upstream side of a repeater device.

Passive Monitoring Up/Downstream (DDC)

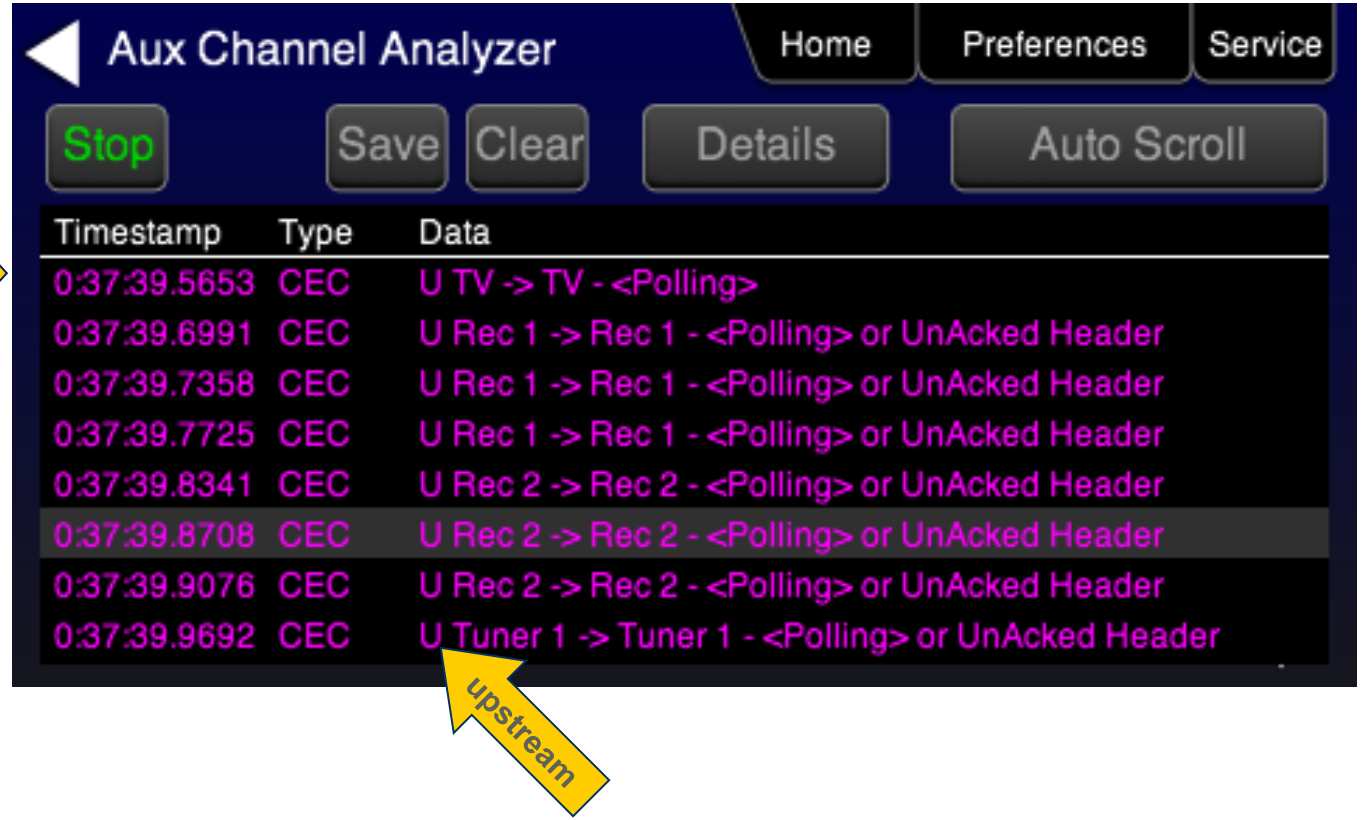


Example shows capturing upstream and down-stream DDC transactions while monitoring passively on both sides of a repeater device.

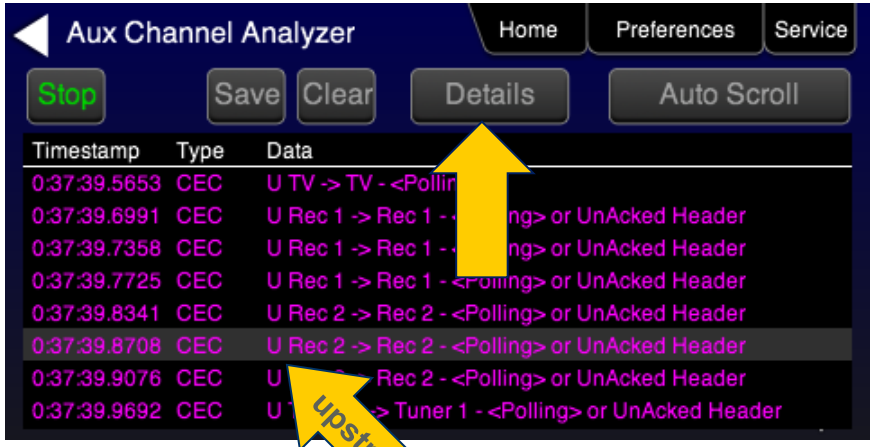


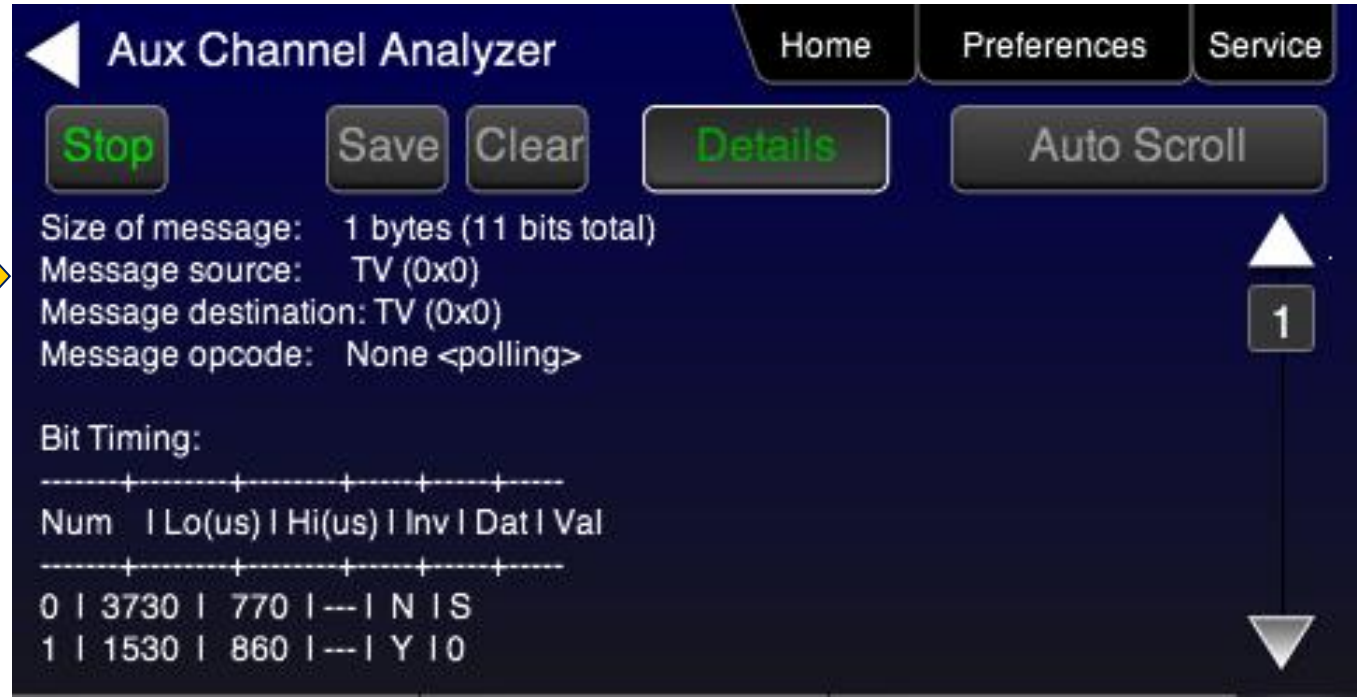
Monitoring Upstream (CEC Messages)

Example shows upstream CEC messages.



Monitoring Upstream (CEC Details)



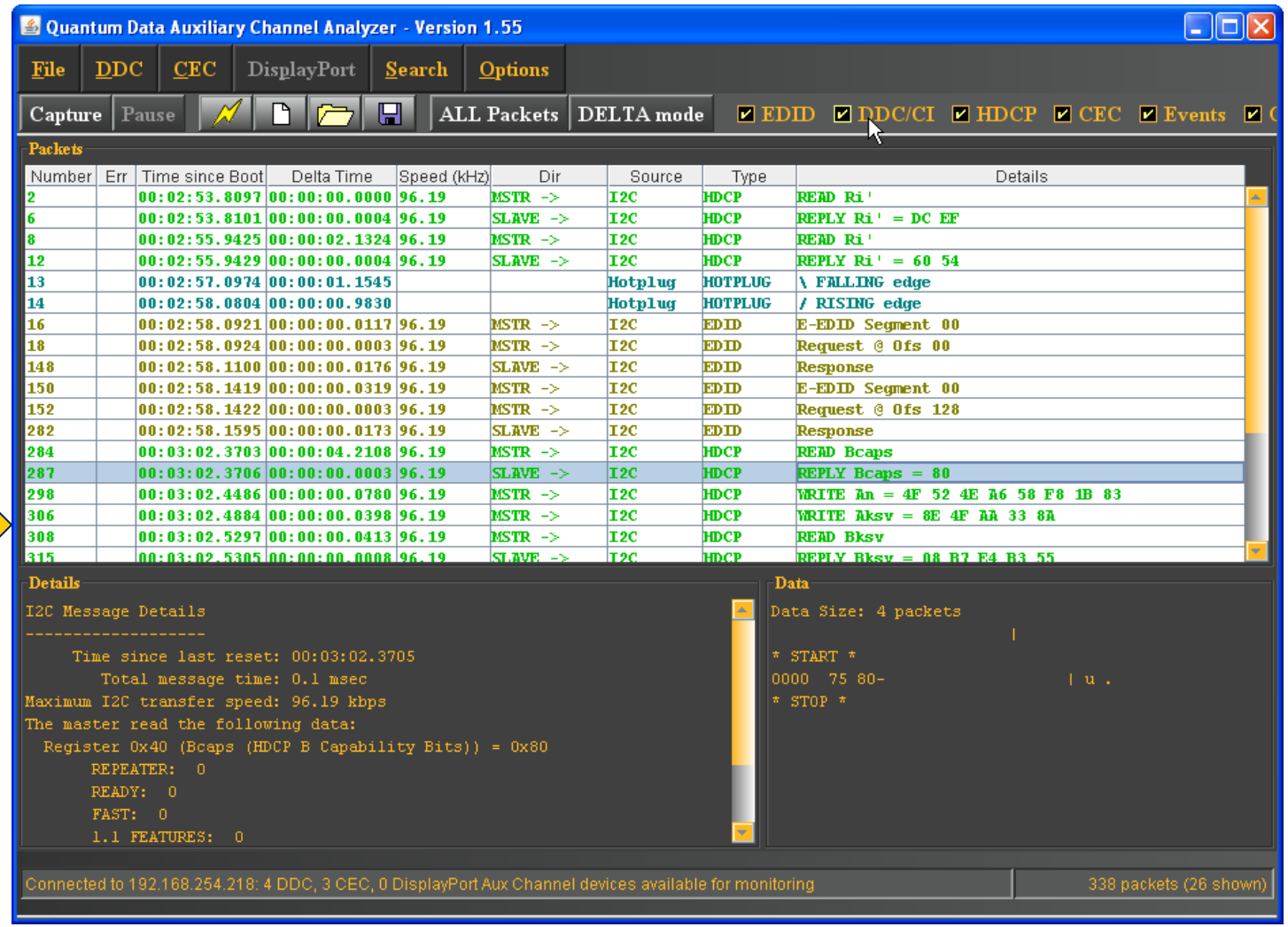


Example shows details of CEC message.

Aux Channel Analyzer Operation – Save Trace

Enter name for trace file using keypad.

Aux Channel Analyzer Operation – Import Trace to ACA

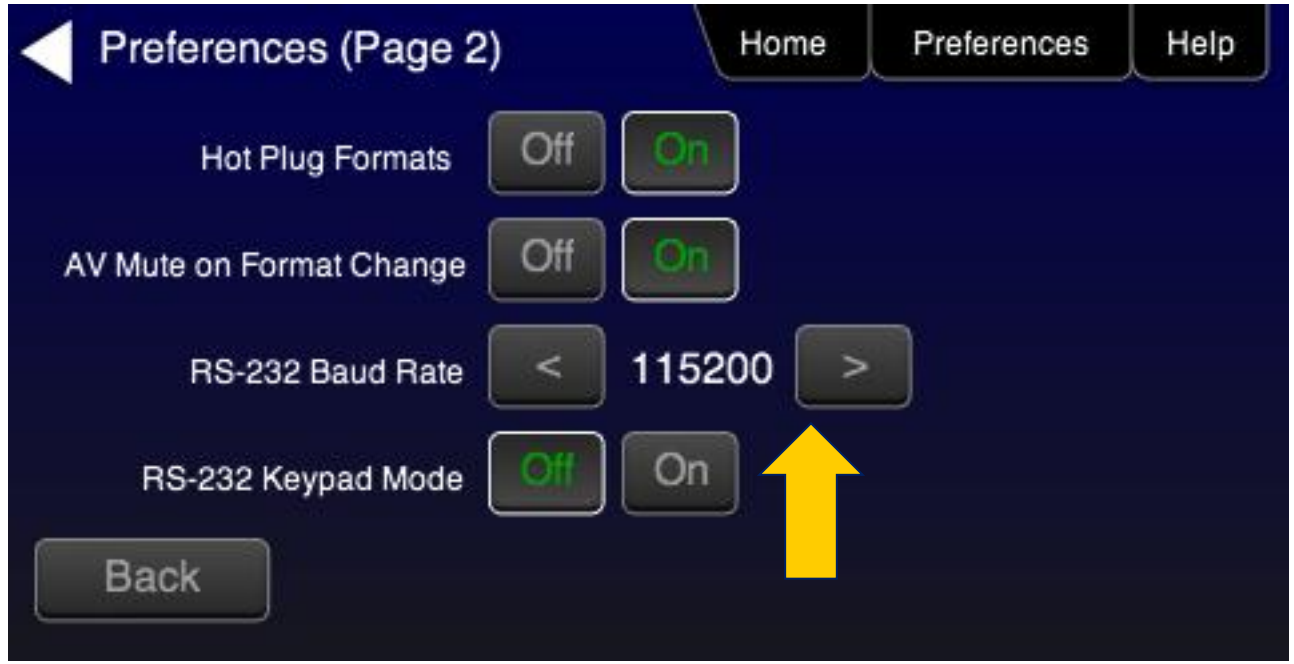


Send 780 traces to subject matter experts & colleagues for examination.
ACA application can be downloaded from Quantum Data website.

Command Line Control – USB or RS-232 (780A)

USB port for command line control

RS-232 port for command line control



Configure RS-232 port for command line

Quantum Data, Inc. 2111 Big Timber Road Elgin, IL 60123 USA Phone (847) 888-0450 Fax (847) 888-2802 www.quantumdata.com

Aux Channel Analyzer (ACA) – Header pins

Monitor physical parameters of the DDC, CEC, Hot plug, +5v and HEAC pins directly with third party instruments.