

# HD-DA-2

## 1-to-2 HDMI® Distribution Amplifier & Audio Converter

- > Provides a high-performance one in, two out HDMI® signal splitter
- > Enables de-embedding analog and SPDIF audio signals from the HDMI source
- > Enables embedding SPDIF audio (coax or optical) onto the HDMI outputs
- > Allows merging DVI and SPDIF audio sources into one HDMI signal
- > Supports HD 1080p w/Deep Color, 3D, and 7.1 linear PCM or high-bitrate encoded audio
- > Compatible with DVI and Dual-Mode DisplayPort<sup>(1)</sup>
- > Allows versatile configuration of EDID and HDCP key handling
- > Includes HDMI signal and HDCP status indicators
- > No programming or control system required
- > Ideal for portable or fixed installation use

Do you need to feed two video displays from one HDMI® source? Or, split an HDMI signal between a display and a surround sound processor? Need to break out the HDMI audio signal and convert it to SPDIF or analog? Or, merge separate digital audio and video sources into one HDMI stream? Not a problem—just use the HD-DA-2.

The HD-DA-2 from Crestron® provides a versatile HD AV signal problem solver with high-performance specs and set-and-forget simplicity.

### HDMI Signal Splitter

As an HDMI distribution amp, the HD-DA-2 lets you easily share one HDMI signal between two display devices, or split that signal to feed one display and a separate audio processor. Ideal for use with Blu-ray Disc® and multimedia computer sources, the HD-DA-2 supports high-definition video up to 1080p60 with Deep Color and 3D, as well as high-resolution computer signals up to 1920x1200. It also handles high-bitrate 7.1 surround sound audio formats like Dolby® TrueHD, Dolby Atmos®, and DTS-HD®.

### HDMI Audio De-embedder

In addition to its two HDMI outputs, the HD-DA-2 also includes a SPDIF coaxial digital audio output and a stereo analog audio output, allowing the audio signal to be extracted from the HDMI source and converted to feed a legacy audio device. The SPDIF output supports Dolby Digital® or DTS® 5.1 surround sound signals, while the analog output handles stereo 2-channel signals.

### HDMI Audio Embedder

The HD-DA-2 also provides SPDIF coaxial and optical digital audio inputs, either of which may be selected as the audio source in place of the incoming HDMI audio signal. This allows any HDMI video signal to be merged with an alternate audio source, effectively letting you generate a new HDMI AV signal containing your choice of audio and video sources. The HDMI input can even accept the signal from a DVI digital video source<sup>(1)</sup>, allowing separate DVI and SPDIF signals to be merged into one HDMI signal, perfect for integrating an older digital AV source or computer into a modern HDMI based system.



### 1-to-4 Audio Distribution

All of the outputs on the HD-DA-2 can be used simultaneously to feed up to four separate devices. The surround sound format for all outputs is simply limited to the best common format supported by the selected input and outputs. For instance, if you are using the analog output, which only supports stereo 2-channel signals, then the HDMI and SPDIF outputs will be limited to 2-channel PCM. If you'd like to distribute 5.1 surround sound via the SPDIF output, then the HDMI outputs will be limited to 5.1 as well and the analog output will be disabled entirely. Eight-channel PCM and high-bitrate 7.1 formats can only be handled by HDMI, so naturally all the other inputs and outputs on the HD-DA-2 must be disabled in order to pass the highest quality formats.

### Reliable Performance with Simple Setup

Configuring the HD-DA-2 for each application requires just a quick setting of its DIP switches. The switches provide a simple yet versatile means for selecting the audio input source, configuring EDID, and choosing which audio formats to allow.

Embedded in every HDMI signal, EDID (Extended Display Identification Data) allows a display or audio processor to inform the upstream source about its format and resolution capabilities, enabling the source to configure itself to deliver an optimum signal to the downstream device. The HD-DA-2 provides extra measures to ensure optimum results when distributing HDMI to multiple destinations, letting the installer select which downstream device provides the EDID, or letting the HD-DA-2 determine the best common resolution and format that both devices can support. It also allows the audio EDID to be controlled independent of the video, even letting the installer manually limit the audio format based on the inputs and outputs in use.

Reliability is further enhanced by allowing the installer to limit the number of HDCP (High-bandwidth Digital Content Protection) keys to match the capabilities of the source, ensuring the core system remains functional in the event too many devices get connected.

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## SPECIFICATIONS

### Video

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**Input Signal Types:** HDMI w/Deep Color & 3D (DVI and Dual-Mode DisplayPort compatible<sup>[1]</sup>)

**Output Signal Types:** HDMI w/Deep Color & 3D (DVI compatible<sup>[1]</sup>)

**Resolutions, Progressive:** 640x480@60Hz, 720x480@60Hz (480p), 720x576@50Hz (576p), 800x600@60Hz, 848x480@60Hz, 852x480@60Hz, 854x480@60Hz, 1024x768@60Hz, 1024x852@60Hz, 1024x1024@60Hz, 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x768@60Hz, 1280x800@60Hz, 1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1365x1024@60Hz, 1366x768@60Hz, 1400x1050@60Hz, 1440x900@60Hz, 1600x900@60Hz, 1600x1200@60Hz, 1680x1050@60Hz, 1920x1080@24Hz (1080p24), 1920x1080@25Hz (1080p25), 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), 1920x1200@60Hz, 2048x1080@24Hz, 2048x1152@60Hz, plus any other resolution allowed by HDMI up to 165MHz pixel clock

**Resolutions, Interlaced:** 720x480@30Hz (480i), 720x576@25Hz (576i), 1920x1080@25Hz (1080i25), 1920x1080@30Hz (1080i30), plus any other resolution allowed by HDMI up to 165MHz pixel clock

**Data Rates:** Up to 6.75 Gbps

### Audio

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**Switcher:** 3x1 digital switch

**Input Signal Types:** HDMI (Dual-Mode DisplayPort compatible<sup>[1]</sup>), SPDIF coaxial, SPDIF optical (TOSLINK)

**Output Signal Types:** HDMI, SPDIF coaxial, analog 2-channel

**Digital Formats, HDMI & SPDIF:** Dolby Digital, Dolby Digital EX, DTS, DTS-ES, DTS 96/24, 2 channel LPCM

**Digital Formats, HDMI only:** Dolby Digital Plus, Dolby TrueHD, Dolby Atmos, DTS-HD High Res, DTS-HD Master Audio, LPCM up to 8 channels

**Analog Formats:** Stereo 2-channel

**Digital-To-Analog Conversion:** 24-bit 48 kHz

**Analog Performance:** Frequency Response: 20 Hz to 20 kHz  $\pm 1$  dB  
S/N Ratio: >70 dB, 20 Hz to 20 kHz A-weighted  
THD+N: <0.2% @ 1 kHz  
Stereo Separation: >60 dB

### Communications

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**USB:** For console, USB 2.0 client

**HDMI:** Passes CEC (between HDMI IN & HDMI OUT 1 only), provides EDID and HDCP key management

### Connectors - Top

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**AUDIO IN, OPTICAL:** (1) JIS F05 female (TOSLINK) optical fiber connector; S/PDIF optical digital audio input

**AUDIO IN, SPDIF:** (1) RCA connector, female; S/PDIF coaxial digital audio input; Input Impedance: 75 Ohms

**AUDIO OUT, SPDIF:** (1) RCA connector, female; S/PDIF coaxial digital audio output; Output Impedance: 75 Ohms

**AUDIO OUT, R – L:** (2) RCA connectors, female; Unbalanced stereo line-level audio output; Maximum Output Level: 2 Vrms; Output Impedance: 100 Ohms nominal

### Connectors - Bottom

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**HDMI IN:** (1) HDMI Type A connector, female; HDMI digital video/audio input; (DVI & Dual-Mode DisplayPort compatible<sup>[1]</sup>)

**HDMI OUT 1 – 2:** (2) HDMI Type A connectors, female; HDMI digital video/audio outputs; (DVI compatible<sup>[1]</sup>)

**COMPUTER:** (1) USB Type B connector, female; USB 2.0 computer console port

**PWR 24 VDC 0.21A:** (1) 2.1 x 5.5 mm DC power connector; 24 Volt DC power input, PW-2407WU power pack included

**Ground:** (1) 6-32 screw; Chassis ground lug

### Controls & Indicators

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**CONFIG, AUDIO:** (8) Toggle DIP Switches; configure audio source, audio format, audio EDID, and video EDID

**CONFIG, HDCP:** (1) 16-position rotary switch, selects number of HDCP keys

**HDMI IN:** (1) Red/green bi-color LED, green indicates valid HDMI input signal presence, red indicates no HDMI source detected

**HDMI OUT 1 – 2:** (2) Red/green bi-color LEDs, green indicates video signal presence, red indicates an HDCP authentication failure

**PWR 24 VDC 0.21A:** (1) Green LED, indicates 24 Volts DC power supplied from power pack

### Power

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**Power Pack (included):** Input: 100-240 Volts AC, 50/60 Hz  
Output: 0.75 Amps @ 24 Volts DC  
Model: PW-2407WU

**Power Consumption:** 5.3 Watts

### Environmental

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**Temperature:** 32° to 104° F (0° to 40° C)

**Humidity:** 10% to 90% RH (non-condensing)

**Heat Dissipation:** 18 BTU/hr

### Enclosure

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**Chassis:** Metal, black finish, with (2) integral mounting flanges

**Mounting:** Freestanding, surface mount, or attach to a single rack rail

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## Dimensions

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**Height:** 4.53 in (115 mm)

**Width:** 7.21 in (183 mm)

**Depth:** 1.24 in (32 mm)

## Weight

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1.1 lb (0.50 kg)

## MODELS & ACCESSORIES

### Available Models

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**HD-DA-2:** 1-to-2 HDMI® Distribution Amplifier & Audio Converter

### Included Accessories

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**PW-2407WU:** Wall Mount Power Pack 24VDC, 0.75A, Universal  
(Qty. 1 included)

### Available Accessories

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**CBL-HD-LOCK:** Locking High-Speed HDMI® Cable

**CBL-HD:** Crestron® Certified HDMI® Interface Cable

**CBL-HD-DVI:** Crestron® Certified HDMI® to DVI Interface Cable

**CBL-RCA:** Crestron® Certified RCA S/PDIF Audio Interface Cable

**CBL-RCA2:** Crestron® Certified RCA Stereo Audio Interface Cable

**MP-WP140:** Media Presentation Wall Plate - DVI-I w/Mini-TRS Stereo  
Audio

**MP-WP150:** Media Presentation Wall Plate - HDMI® w/Mini-TRS Stereo  
Audio

**MP-WP152:** Media Presentation Wall Plate - HDMI®

**MPI-WP150:** Media Presentation Wall Plate - International Version - HDMI®  
w/Mini-TRS Stereo Audio

## Notes:

1. HDMI IN requires an appropriate adapter or interface cable to accommodate a DVI or Dual-Mode DisplayPort signal. HDMI OUT requires an appropriate adapter or interface cable to accommodate a DVI signal. [CBL-HD-DVI](#) interface cables are available separately.

This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at [www.crestron.com/salesreps](http://www.crestron.com/salesreps) or by calling 800-237-2041.

The specific patents that cover Crestron products are listed online at: [patents.crestron.com](http://patents.crestron.com).

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