



HA5-4K

4K HDMI to 4K SDI



Overview

AJA's HA5-4K 4K Mini-Converter provides high-quality conversion of HDMI to 4K SDI with 4x 3G SDI outputs. HA5-4K allows conversion of HDMI video from DSLRs, mirrorless cameras, action cameras, or prosumer 4K video cameras to 4K SDI for use in professional workflows. HA5-4K is also capable of analyzing HDR inframe data coming in over HDMI when used with AJA Mini-Config software

Features

- Convert HDMI 2.0b to Quad-3G, 4K/UltraHD 60 fps at 4:4:4, 4:2:2, and 4:2:0
- Supports Two Sample Interleave (2SI) and Square Division (Quadrant) output pixel mapping
- EDID Emulation
- Analyzes HDR Inframe data coming in over HDMI in accordance with HDMI v2.0b/CTA-861-G
- HDR Metadata VPID Pass-through and optional override
- Simple Frame Rate Conversion (FRC) 60 fps to 59.94 fps, and 59.94 fps to 60 fps
- Embedded audio support 8-channel 24-bit
- Embedded audio pass-through of AC-3 (Dolby Digital) and E-AC-3 (Dolby Digital Plus) compressed audio, including DD+ Atmos (aka DD+ JOC)
- Configure via USB port and supplied AJA Mini-Config software on PC/Mac
- Uses 5-20 VDC power ([DWP-U-R1 universal power supply included](#))
- Five year warranty

Connectivity

An increasing number of 4K products utilize an HDMI output connection, which allows a full 4K signal to be passed over a single cable. Typical professional 4K workflows use four SDI cables to carry the full resolution image, making it difficult to incorporate these newer devices. HA5-4K is an easy-to-use converter that bridges the gap between these two worlds for seamless integration.



HDR

HDR or High Dynamic Range, provides the ability to display a wider and richer range of colors, much brighter whites, and much deeper, darker blacks than standard signals allow. This gives your imagery a more 'dynamic' look and allows for natural true to life colors to be communicated to your audience.



HA5-4K provides support for analyzing HDR infoframe data coming in over HDMI when used with AJA Mini-Config software.

4K and UltraHD



HA5-4K supports conversion of full resolution 4K (4096x2160) as well as UltraHD (3840x2160) from HDMI to 3G-SDI at frame rates up to 50/60 fps, providing a great solution for cinematic 4K productions as well as UltraHD projects.

HD Support

Not every job is a 4K job. When you're not working in 4K, HA5-4K can still be a useful tool for converting HD-HDMI to HD-SDI. HA5-4K will automatically sense an incoming HD resolution HDMI signal and convert this to a single 3G-SDI output, much like AJA's HA5-Plus Mini-Converter.



Audio

Up to 2-channels of embedded audio in the incoming HDMI signal are carried through seamlessly into the SDI output, ensuring your audio is always in sync and carried flawlessly along with the SDI signal for use anywhere in your workflow.



Tech Specs

Video Input Digital

- 1x HDMI Type A connector, HDMI v2.0b
 - HDR Infoframe decoder as defined in CTA-861.3 and HDMI v2.0b
 - HDR VPID generation with pass-through or override for Colorimetry and Transfer Characteristic
 - YCbCr 4:2:2/4:4:4/4:2:0
 - RGB 4:4:4, SMPTE or Full level
 - 8, 10, or 12-bit (HFR 4K/UltraHD 4:4:4 limited to 8 bit)
 - (4K) 4096 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
 - (UltraHD) 3840 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
 - (2K) 2048 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
 - (HD) 1920 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
 - (HD) 1920 x 1080i 50, 59.94, 60
 - (HD) 1280 x 720p 50, 59.94, 60
 - (SD) 720 x 576p 50
 - (SD) 720 x 576i 50
 - (SD) 720 x 480p 59.94
 - (SD) 720 x 480i 59.94
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HDCP Decryption

- Not supported. By definition, SDI outputs are unencrypted.
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Video Output Digital

- 4x 3G-SDI BNC, SMPTE-259/292/424
 - YCbCr 4:2:2/4:4:4
 - RGB 4:4:4, SMPTE or Full level
 - 10-bit
 - Two Sample Interleave (2SI) or Square Division (Quadrant) pixel mapping
- 4x 3 Gb SDI (Level A or B Dual Link)
 - (4K) 4096 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
 - (4K) 4096 x 2160PsF* 23.98, 24, 25, 29.97, 30
 - (UltraHD) 3840 x 2160p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60

- (Ultra HD) 3840 x 2160PsF* 23.98, 24, 25, 29.97, 30
- 4x 1.5 Gb SDI
 - (4K) 4096 x 2160p 23.98, 24, 25, 29.97, 30
 - (4K) 4096 x 2160PsF 23.98, 24, 25, 29.97, 30
 - (UltraHD) 3840 x 2160p 23.98, 24, 25, 29.97, 30
 - (UltraHD) 3840 x 2160PsF 23.98, 24, 25, 29.97, 30
- 2x 3 Gb SDI (Level B Dual Stream)
 - (4K) 4096 x 2160p 23.98, 24, 25, 29.97, 30
 - (4K) 4096 x 2160PsF 23.98, 24, 25, 29.97, 30
 - (UltraHD) 3840 x 2160p 23.98, 24, 25, 29.97, 30
 - (UltraHD) 3840 x 2160PsF 23.98, 24, 25, 29.97, 30
- 2x 1.5 Gb SDI (Dual Link HD-SDI), SMPTE-372
 - (HD) 1920 x 1080p 50, 59.94, 60
- 1x 3 Gb SDI (Level A or B Dual Link)
 - (2K) 2048 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
 - (2K) 2048 x 1080PsF 23.98, 24, 25, 29.97, 30
 - (HD) 1920 x 1080p 23.98, 24, 25, 29.97, 30, 50, 59.94, 60
 - (HD) 1920 x 1080PsF 23.98, 24, 25, 29.97, 30
 - (HD) 1920 x 1080i 50, 59.94, 60
 - (HD) 1280 x 720p** 50, 59.94, 60
- 1x 1.5 Gb SDI
 - (2K) 2048 x 1080p 23.98, 24, 25, 29.97, 30
 - (2K) 2048 x 1080PsF 23.98, 24, 25, 29.97, 30
 - (HD) 1920 x 1080p 23.98, 24, 25, 29.97, 30
 - (HD) 1920 x 1080PsF 23.98, 24, 25, 29.97, 30
 - (HD) 1920 x 1080i 50, 59.94, 60
 - (HD) 1280 x 720p 50, 59.94, 60
- 1x 270 Mb SDI
 - (SD) 625i 50
 - (SD) 525i 59.94

*PsF is Level B Dual Link

**1280 x 720p is Level A Only

Audio Pass-Through Formats

- PCM
- Dolby Digital (AC-3)
- Dolby Digital Plus (E-AC-3), including Atmos Immersive Sound (JOC)

Audio Input Digital

- HDMI embedded audio, 24-bit, 8-channel

Audio Output Digital

- SDI embedded audio, 24-bit (SD limited to 20-bit), 16-channel

User Interface

- USB port used with supplied cable and Mini-Config software application to configure the device via Mac or Windows

Size (w x d x h)

- 5.76" x 4.02" x 0.90" (146.31 × 102.11 × 22.86 mm)

Weight

- 0.6 lb (0.3 kg)

Power

- 5-20VDC regulated, 10 watts, power supply required, included with purchase
- AC Adapter: 100-240VAC, 50/60 Hz, universal input

Environment

- Safe Operating Temperature: 0 to 40 C (32 to 104 F)*
- Safe Storage Temperature (Power OFF): -40 to 60 C (-40 to 140 F)
- Operating Relative Humidity: 10-90% noncondensing
- Operating Altitude: <3,000 meters (<10,000 feet)

*NOTE: HA5-4K uses approximately 10 watts of power and convection cooling. It will be warm to the touch, which is normal. When installing the unit, mount in a location where it has access to air for proper cooling. Do not stack the HA5-4K with other Mini-Converters.