

# DSC HD-HD 4K PLUS A

HDMI TO HDMI 4K/60 SCALERS WITH AUDIO MANAGEMENT



VECTOR 4K  
SCALING

18 Gbps  
4K/60 4:4:4

EVERLAST  
POWER SUPPLIES

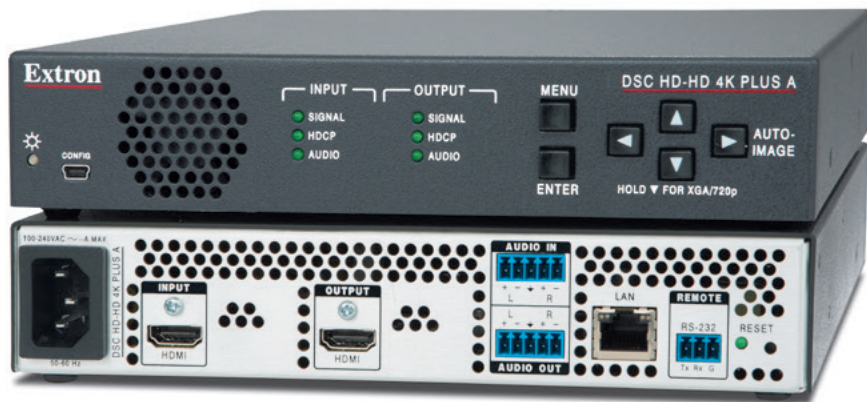
## Industry-Leading 4K/60 Scalers with 4:4:4 Signal Processing

- ▶ HDMI to HDMI 4K/60 scaling
- ▶ HDCP 2.3 compliant
- ▶ HDMI 2.0 interfaces with support for data rates up to 18 Gbps
- ▶ Advanced 4:4:4 signal processing
- ▶ Accepts HDMI video from 480i up to 4096x2160/60
- ▶ Selectable output rates from 640x480 up to 4096x2160/60

# Extron

# DSC HD-HD 4K PLUS A

The Extron DSC HD-HD 4K PLUS A and DSC HD-HD 4K PLUS A xi are high-performance scalers capable of converting between HDMI resolutions up to 4096x2160 at 60 Hz. They incorporate the Extron-exclusive Vector™ 4K scaling engine specifically designed for critical-quality 4K applications, including full-motion video and highly detailed computer graphics. Both models support single path 4K/60 signals, while the DSC HD-HD 4K PLUS A xi also supports dual path 4K/60 signals using two connections. Integrator-friendly features include on-screen display, stereo audio embedding and de-embedding, internal test patterns, and the ability to display custom images and logos for on-screen messages and corporate branding.



**18 Gbps**  
4K/60 4:4:4

HDMI 2.0 inputs and outputs support data rates up to 18 Gbps, delivering signals up to 4K/60 with 4:4:4 chroma sampling on a single cable. HDCP 2.3 compliance ensures display of content-protected media and interoperability with other HDCP compliant devices.



DSC HD-HD 4K PLUS A scalers include a convenient two-channel analog audio input for embedding audio onto the HDMI output, as well as a two-channel analog audio output for sending de-embedded audio to a sound system or other audio destination. They also deliver essential audio integration capabilities, including discrete, selectable analog and digital audio muting, input gain and attenuation, and output volume control.



The dynamic input detection feature of the DSC HD-HD 4K PLUS A and DSC HD-HD 4K PLUS A xi provides fast, accurate identification of incoming signals, without relying on format lookup tables. This enables support of unique input resolutions common to military and medical installations, as well as evolving consumer laptops and mobile products. Additionally, the output signal can be easily formatted to drive display devices with non-standard resolutions and aspect ratios by uploading custom EDID files or capturing EDID from a device.

# FEATURES

## **HDMI to HDMI 4K/60 scaling**

The DSC HD-HD 4K PLUS A scalers provide professional grade scaling of HDMI video resolutions and frame rates.

## **Advanced 4:4:4 signal processing**

4:4:4 signal processing for enhanced color accuracy and fine picture detail.

## **Accepts HDMI video from 480i up to 4096x2160/60 @ 4:4:4**

## **Selectable output rates from 640x480 up to 4096x2160/60 @ 4:4:4**

## **Supports single path and dual path 4K signals – xi model only**

Offers the convenience of managing 4K/60 as a single or dual path signal, for flexibility when working with 4K sources, peripherals, and displays.

## **Display two equal resolution input signals as a single side-by-side image – xi model only**

## **Distribution Amplifier Mode – xi model only**

The second output of the DSC HD-HD 4K PLUS A xi can provide a duplicate of the primary output, allowing a source to be scaled and presented simultaneously on two separate displays without the need for a distribution amplifier.

## **Advanced Extron Vector 4K scaling engine**

The Vector 4K scaling engine is specifically designed for critical-quality 4K imagery, with best in class image upscaling and downscaling.

## **Motion-adaptive deinterlacing for signals up to 1080i**

Advanced deinterlacing for all interlaced signals up to 1080i optimizes conversion to progressive formats.

## **Displays user-supplied images for screen saver, corporate branding, logo insertion, and HDCP notification**

## **Logo image keying and display**

A logo graphic can be positioned and keyed over live video. Full screen images up to 4K resolution can also be displayed to eliminate loss of video between presentations.

## **HDCP 2.3 compliant**

Ensures display of content-protected media and interoperability with other HDCP-compliant devices.

## **Supports custom EDID and output resolutions**

Three user-defined scaling output resolutions can be supported by uploading custom EDID files, or capturing EDID from a display or other destination device.

## **Automatic 3:2 and 2:2 pulldown detection**

Advanced film mode processing techniques that instantaneously detect NTSC, PAL, and 1080i sources that originated from film.

## **Aspect ratio control**

The aspect ratio of the video output can be controlled by selecting FILL mode, which provides a full screen output, or FOLLOW mode, which preserves the original aspect ratio of the input signal.

## **Image freeze control**

A live image can be frozen using RS-232 serial control, USB, or Ethernet control.

## **Picture controls for brightness, contrast, and detail, as well as horizontal and vertical sizing, positioning, and overscan**

# AUDIO

## **HDMI audio embedding**

Audio from the two-channel line level analog input can be embedded onto the HDMI output.

## **HDMI audio de-embedding**

Embedded HDMI two channel PCM audio can be extracted to the line level analog output, or multi-channel and bitstream formats can be passed to the HDMI output.

## **Output volume control**

Provides master volume control for the analog and HDMI embedded audio outputs.

## **Audio input gain and attenuation**

Gain and attenuation can be adjusted for the analog audio input.

## **Integrated audio delay**

The audio output is automatically delayed to compensate for latency introduced by the video processing.

# SETUP AND INTEGRATION

## **Auto Input Memory**

When activated, the unit automatically stores size, position, and picture settings based on the incoming signal. When the same signal is detected again, these image settings are automatically recalled from memory.

## **On-screen menus**

Intuitive on screen menus allow for easy system setup using the front panel controls.

## **Output Standby Mode**

A unit can be set to automatically mute video and sync output to the display device when no active input signal is detected. This allows the projector or flat-panel display to automatically enter into standby mode to save energy and enhance lamp or panel life.

## **Input presets**

Memory presets are available to store and recall optimized image settings.

## **Automatic input cable equalization**

Actively conditions incoming HDMI signals to compensate for signal loss when using long cables, low quality cables, or source devices with poor signal output.

## **Internal video test patterns and pink noise generator for calibration and setup**

The units offer several video test patterns and audio pink noise to facilitate proper system setup and calibration of display devices.

## **Ethernet monitoring and control**

Enables control and proactive monitoring over a LAN or WAN. An intuitive Web interface is included for system monitoring and firmware updates.

## **RS-232 control port**

Enables the use of serial commands for integration into a control system.

## **Easy setup and commissioning with Extron's PCS - Product Configuration Software**

Conveniently configure multiple products using a single software application.



# VECTOR 4K SCALING

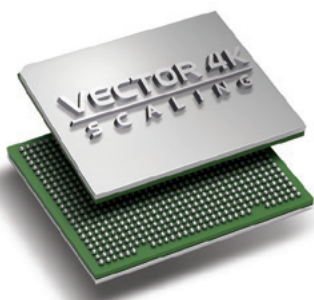


## Extron Vector 4K Scaling Technology

For over 20 years, Extron has been engineering scaling and signal processing solutions that deliver uncompromised image quality and performance. As a result, we have become an industry leader in scaling technology, designing best-in-class products renowned for their quality, reliability, and ease of use. We have continually refined our technology to keep pace with evolving video formats – from standard definition to high definition signals, and now, 4K.

### Engineered by Extron from the Ground Up

Vector 4K was developed internally by Extron's expert team of signal processing engineers. Extron engineers have crafted patented image processing technologies that set the industry benchmark for visual performance. Features such as 4:4:4 chroma sampling and bicubic scaling ensure very high image quality and preserve detail present in the original source material.



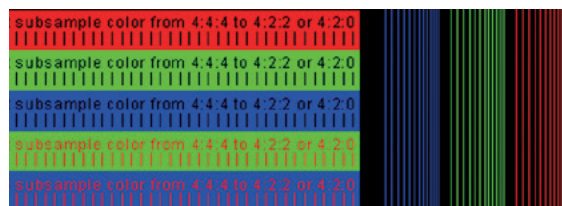
### Patented Scaling Technology for the Most Demanding 4K Applications

By developing our own scaling technology, we can design to our own exacting specifications and have absolute control over the end product. Our many years of signal processing achievements have resulted in 24 worldwide patents

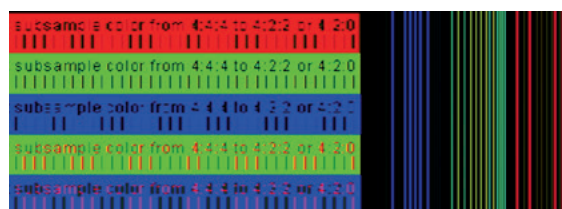
for our scaling engines and video processing algorithms. These patented technologies are part of what makes Extron Vector 4K scaling the new benchmark for 4K video processing.

### 4:4:4 Chroma Sampling

Vector 4K processing is always performed in the RGB domain with full 4:4:4 color bandwidth, which is critical for processing fine image details. Competing 4K scalars commonly process in the component domain, employing 4:2:2 or 4:2:0 chroma subsampling. This decreases the bandwidth required to process the signal, at the expense of reduced color detail. Chroma subsampling may be acceptable when processing full-motion video content, but with PC-generated content, subsampled color negatively impacts the clarity of the image. Vector 4K 4:4:4 color processing retains the fine color details present in the original source.



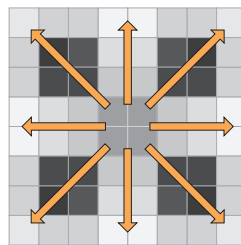
4:4:4 Chroma Sampling



4:2:2 Chroma Subsampling

## Bicubic Interpolation

The Vector 4K scaling engine incorporates Extron-patented, multi-tap, bicubic interpolation, which creates a new pixel by averaging adjacent pixels above, below, to the sides, and diagonally of the new pixel. This produces sharp, accurate output, preserving single-pixel detail that other scaling methods lack. Vector 4K algorithms continually and dynamically adapt, ensuring optimal processing for upscaling, downscaling, or 1:1 pass-through applications.



Bicubic Interpolation

## Motion-Adaptive Deinterlacing

For the highest quality conversion from interlaced to progressive video, Extron Vector 4K scaling features patented motion-adaptive deinterlacing which integrates two different processing techniques per video frame. Blended odd and even fields are ideal for static content, while line doubling is optimal for areas of motion between fields. To best apply these two modes, Vector 4K utilizes motion estimation at the single-pixel level for the greatest accuracy in detecting dynamic content. Alternative deinterlacing approaches may apply only one method of deinterlacing, or apply simple motion-adaptive techniques, which only evaluate motion in regions rather than individual pixels.



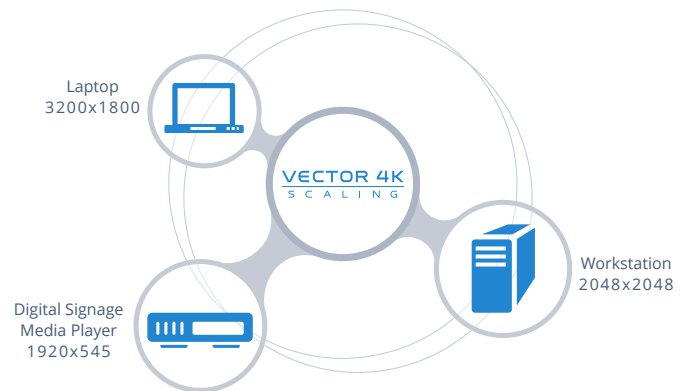
Detected Motion



Original Source

## Dynamic Digital Input Detection and Auto-Image

Today's computer video standards allow for signal customization to suit the needs of a particular application or display. Such sources can present a challenge for signal processors that rely solely on fixed lookup tables of common resolutions, which are typically incomplete and quickly become obsolete. Vector 4K goes beyond conventional lookup tables, incorporating dynamic input detection which analyzes incoming digital video signals and accurately identifies the signal parameters before processing them for precise conversion and scaling.



## Automatic Film Cadence Detection

Vector 4K features 3:2, 2:2, and 24:1 cadence detection which examines interlaced signals and instantaneously identifies content that originated from 24 Hz source material. Repeated fields, generated during the 3:2, 2:2, or 24:1 pulldown process, are discarded to recreate the original, progressive 24 frame-per-second content, removing any degradation due to the interlaced transmission.



## Integration Features

Vector 4K technology also provides features that aid in system integration, such as aspect ratio control, dynamic internal test patterns, auto-memory and user presets, advanced HDCP and EDID management, and more.

**Learn more about Vector 4K at**  
[extron.com/vector4k](http://extron.com/vector4k)

# OVERVIEW

## Front panel configuration port

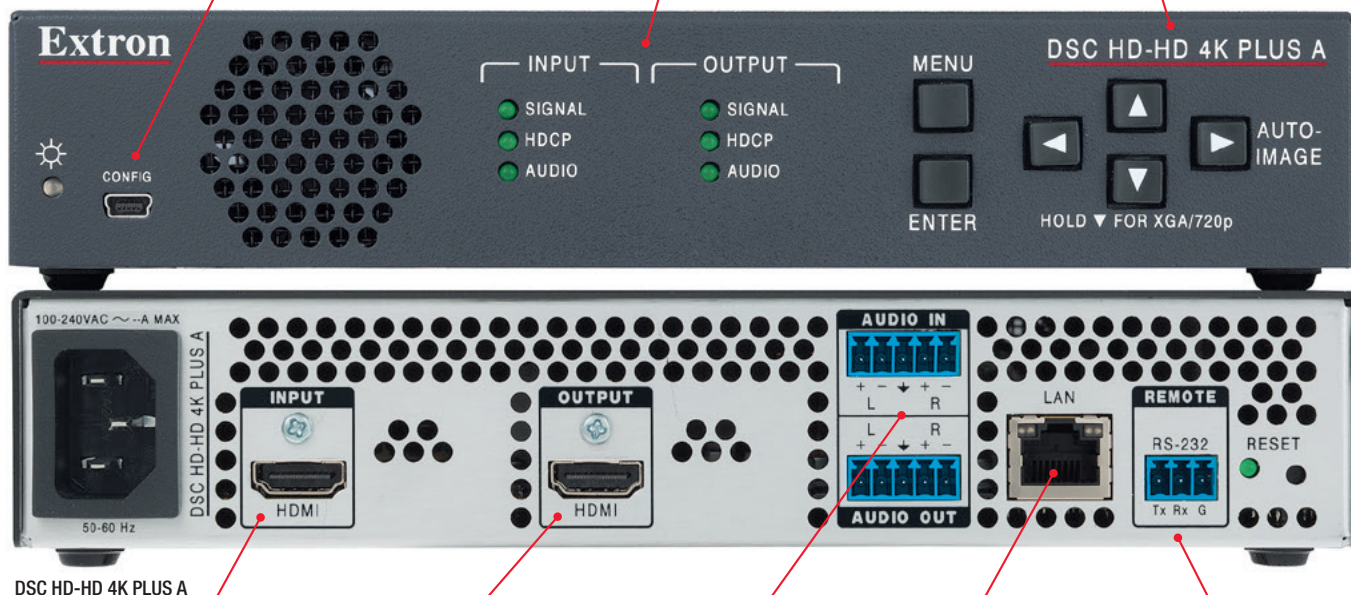
Allows easy access for system configuration and firmware updates using Extron PCS software.

## LED signal status indicators

Provide quick visual confirmation of signal, HDCP, and audio status.

## Front panel controls and on-screen display

Allow convenient access to device configuration and status.



DSC HD-HD 4K PLUS A

## HDMI 2.0/HDCP 2.3 input

Accept input signals up to 4096x2160/60.

## HDMI 2.0/HDCP 2.3 output

Deliver signals up to 4096x2160/60.

## Audio input and output

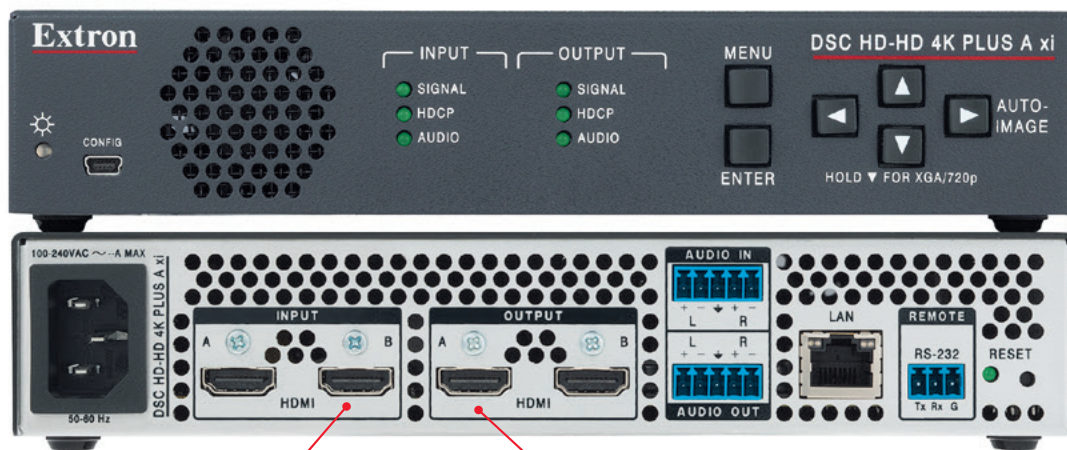
Embed analog audio onto the HDMI output, or de-muxed HDMI two-channel PCM audio to the analog output.

## Ethernet port

Enables device configuration and firmware updates, as well as remote control and monitoring from a control system.

## RS-232 serial control

Allows remote control and monitoring from a control system.



DSC HD-HD 4K PLUS A xi

## HDMI 2.0/HDCP 2.3 inputs

Accept input signals up to 4096x2160/60 on a single input, or as columns using two connections.

## HDMI 2.0/HDCP 2.3 outputs

Deliver signals up to 4096x2160/60 on a single output, or as columns using two connections. Alternatively, output B can deliver a duplicate of output A.

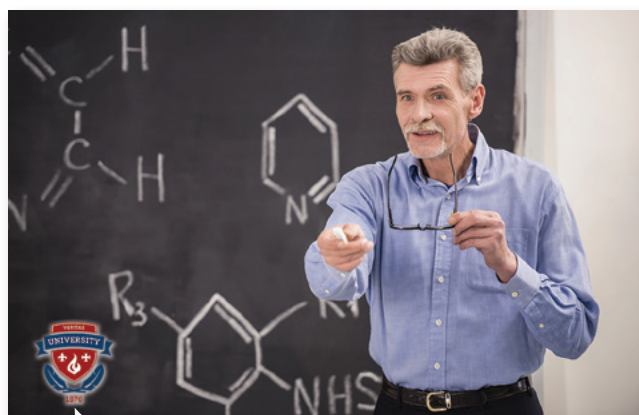


## Logo Keying and Full-Screen Image Display

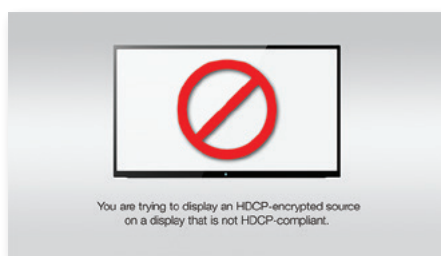
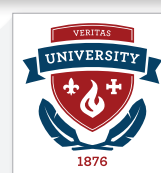
A graphic image can be uploaded to the DSC HD-HD 4K PLUS A and DSC HD-HD 4K PLUS A xi scalars and displayed as a notification when a loss of input signal is detected, or when HDCP-encrypted content is transmitted to a non-HDCP compliant display. Additionally, an image can be displayed at any time to serve as corporate branding or other messaging. Up to 16 image files can be uploaded and stored on the unit. The DSC HD-HD 4K PLUS A scalars accept BMP, JPG, PNG, or TIFF graphic file formats up to 4K resolution.

A logo can be inserted over live video using level keying, RGB color keying, transparency, or an alpha channel as supported by the graphic file format. Flexible positioning controls allow placement of the logo anywhere over the active video.

Up to 16 logo presets are available to store the image file, position, and key settings for quick recall and switching between multiple logos.



Logo Keying



Customized HDCP Warning



Corporate-branded Screen Saver

## Product Comparison

FEATURES	DSC HD-HD 4K PLUS A	DSC HD-HD 4K PLUS A xi
18 Gbps HDMI 2.0 inputs and outputs	✓	✓
4K/60 @ 4:4:4 support on a single connection	✓	✓
HDCP 2.3 compliant	✓	✓
Vector 4K scaling	✓	✓
HDMI audio embedding and de-embedding	✓	✓
Ethernet and RS-232 system control	✓	✓
Custom EDID / output resolutions	✓	✓
Columned input support		✓
Columned output support		✓
Duplicated main output		✓

The DSC HD-HD 4K PLUS A and the DSC HD-HD 4K PLUS A xi provide high-performance video processing at the source or in a distribution system.

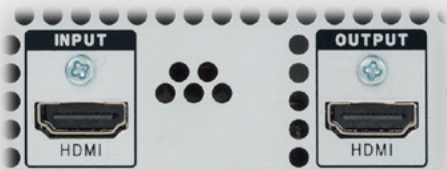
Both models feature Vector 4K scaling, engineered by Extron for the highest quality scaling and signal processing. Additional features such as HDMI audio embedding and de-embedding, HDCP 2.3 compliance, EDID Minder, and support for custom output resolutions maintain high-quality images with easy integration.

The DSC HD-HD 4K PLUS A has a single HDMI input and an HDMI output. It supports signals up to 4K/60 @ 4:4:4 on a single connection using an HDMI 2.0 interface.

The DSC HD-HD 4K PLUS A xi shares the same features as the DSC HD-HD 4K PLUS A, but incorporates dual HDMI 2.0 inputs and outputs for devices that manage 4K signals as two columns.

Multi-Path Signals and The DSC HD-HD 4K PLUS A xi

The DSC HD-HD 4K PLUS A has a single HDMI input and output, while the DSC HD-HD 4K PLUS A xi has dual HDMI inputs and outputs. The extra input and output on the DSC HD-HD 4K PLUS A xi allows 4K signals to be accepted or delivered as two columns of 1920x2160/60 or 2048x2160/60.



DSC HD-HD 4K PLUS A – Single HDMI Input and Output



DSC HD-HD 4K PLUS A xi – Dual HDMI Input and Output

4K Delivery Using Single and Dual Signal Paths

The DSC HD-HD 4K PLUS A and DSC HD-HD 4K PLUS A xi both utilize HDMI 2.0 interfaces that support a data rate of 18 Gbps, allowing delivery of 4K or UHD resolutions with 24-bit color and 4:4:4 chroma sampling at a maximum frame rate of 60 Hz over a single HDMI cable.

However, many 4K products incorporate HDMI 1.4, 1.4a, or 1.4b interfaces, which only support a maximum 4K frame rate of 30 Hz over a single cable. In order for these products to support 4K/60, a 4K signal is sometimes distributed across a pair of connections, with each interface delivering or accepting half of the 4K/60 signal. This dual-path approach typically divides 4K/60 into two columns of either 1920x2160/60 for UHD, or 2048x2160/60 for 4K, and requires two cables to transport the signal.

Standard	Max Data Rate	Chroma Sampling	4K/UHD @ 30 Hz	4K/UHD @ 60 Hz
HDMI 1.4x	10.2 Gbps	4:4:4	1 cable	2 cables
HDMI 2.0	18.0 Gbps	4:4:4	1 cable	1 cable

Advantages of Multi-Path 4K

Even for devices with HDMI 2.0 interfaces that can support 4K/60 on a single cable, it is sometimes advantageous to separate the signal into two 1920x2160/60 or 2048x2160/60 halves. For example, computer workstations can often process high-resolution 4K/60 renderings more efficiently if the signal is distributed across two outputs. This spreads image rendering and processing across two separate GPUs, which increases system performance.

Signal distribution is also a consideration. Running 4K/60 4:4:4 signals very long distances can pose a significant challenge to an integrator, as current twisted pair distribution methods, such as Extron DTP or HDBaseT, support a maximum data rate of 10.2 Gbps. This limits 4K distribution across a single cable to a maximum frame rate of 30 Hz. Splitting a 4K/60 signal into two columns allows a pair of transmitters and receivers to distribute dual-path 4K/60 up to 330 feet. Fiber extenders support a maximum data rate similar to twisted pair technology and also benefit from dual-path 4K to allow extension of 60 frame-per-second signals.



## DSC HD-HD 4K PLUS A xi Connection Options

The DSC HD-HD 4K PLUS A xi provides the flexibility of scaling and managing 4K/60 signals using either single or dual connections. Example configurations include:

- Accepting up to 4K/60 on a single input, and delivering up to 4K/60 on a single output; same operation as the DSC HD-HD 4K PLUS A



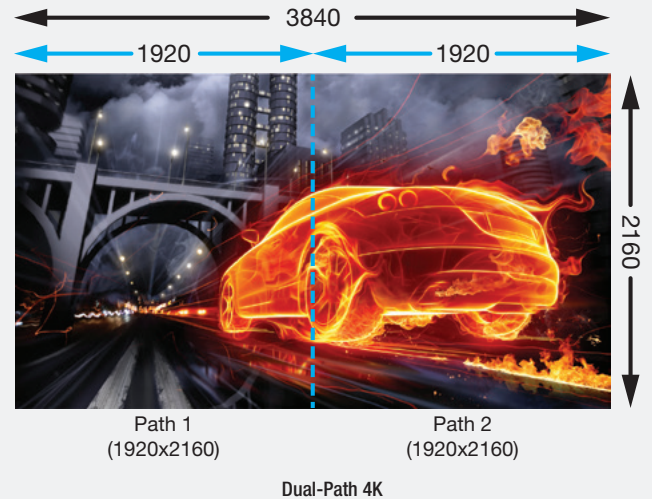
- Accepting a dual-path 4K/60 signal across two inputs, and outputting up to 4K/60 on a single output



- Accepting up to 4K/60 on a single input, and outputting a dual-path 4K/60 signal across two outputs



Alternatively, Output B of the DSC HD-HD 4K PLUS A xi can provide a duplicate of Output A, allowing any input to be scaled and presented simultaneously on two separate displays without the need for a distribution amplifier.



## Signage Applications

In addition to accepting dual-path 4K signals, the DSC HD-HD 4K PLUS A xi can also accept two inputs of any matching resolution for side by side display on a scaled output.



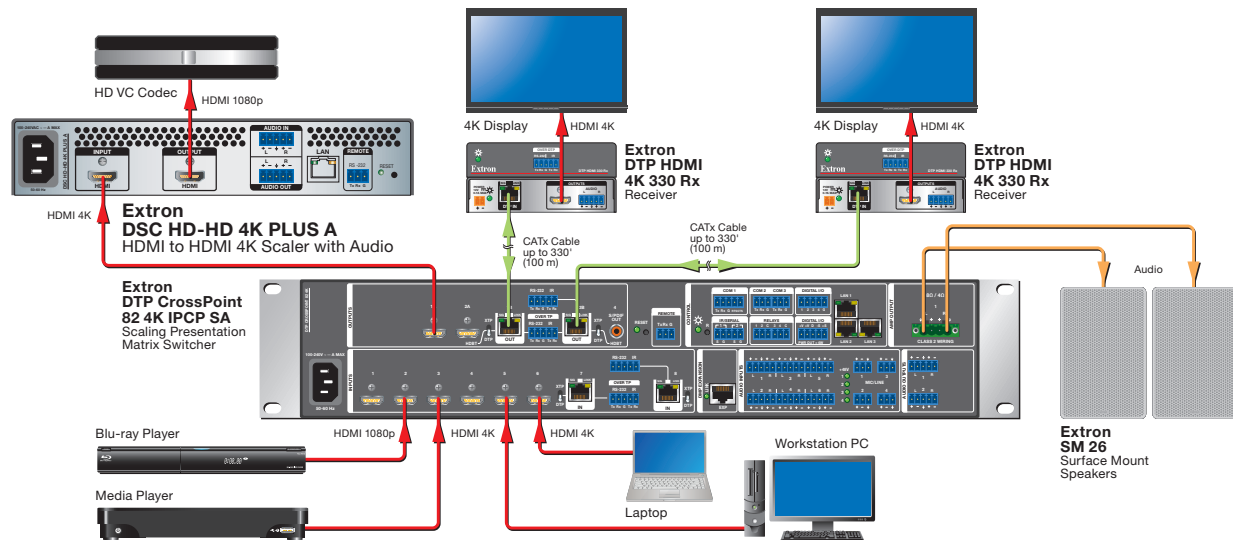
When combining this feature with the scaler's ability to display and key images, there are numerous possibilities for designing creative digital signage or messaging stations. For example, two 1080p inputs can be displayed side-by-side on a 4K display. A logo graphic can be placed at any position on the scaled video output as a foreground image.



Digital signage using two 1080p signals and an image file

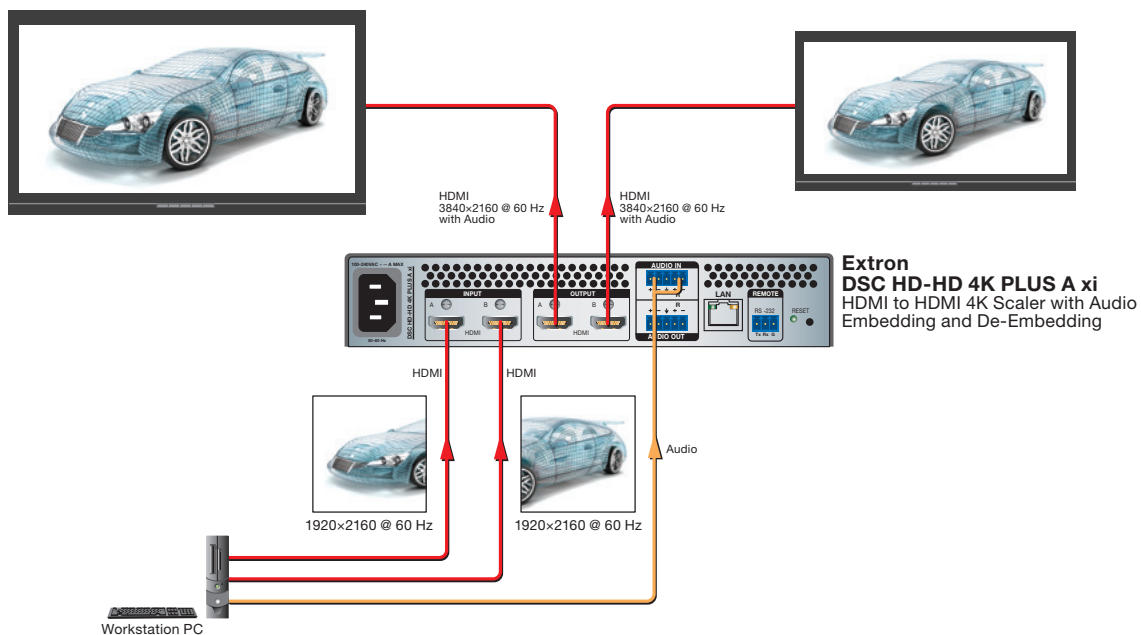
## Conference Room

In a system with a mix of 4K and HD destinations, the DSC HD-HD 4K PLUS A is ideal for integrating 4K source signals with 1080p destinations such as displays, streaming media and presentation capture systems, and videoconferencing codecs. In this conference room system, the DSC HD-HD 4K PLUS A is being used to optimize 4K video for the videoconferencing codec. The Vector 4K scaling engine ensures that 4K content is downscaled to 1080p with superior image quality, by faithfully rendering detail and integrity of the original source.



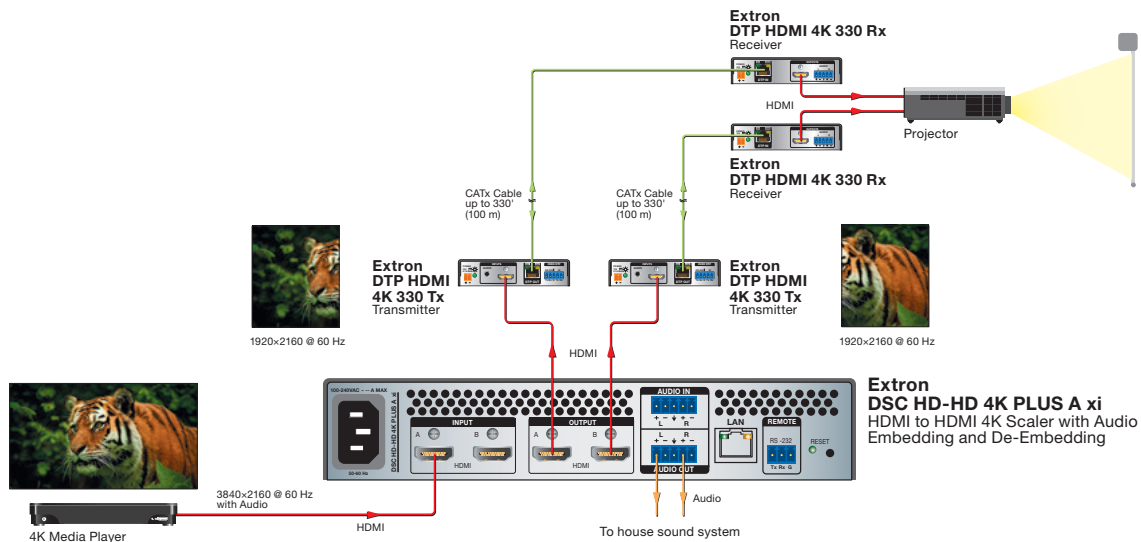
## Product Development Lab

A workstation PC in a product development lab is equipped with a graphics card capable of delivering 3840x2160 Ultra HD video as two 1920x2160 columned output signals. These signals, plus stereo analog audio are fed into a DSC HD-HD 4K PLUS A xi. This scaler combines them into a single 3840x2160 HDMI output with embedded audio for the workstation PC's Ultra HD display. The second HDMI output of the DSC HD-HD 4K PLUS A xi allows delivery of the same content to an adjoining meeting space.



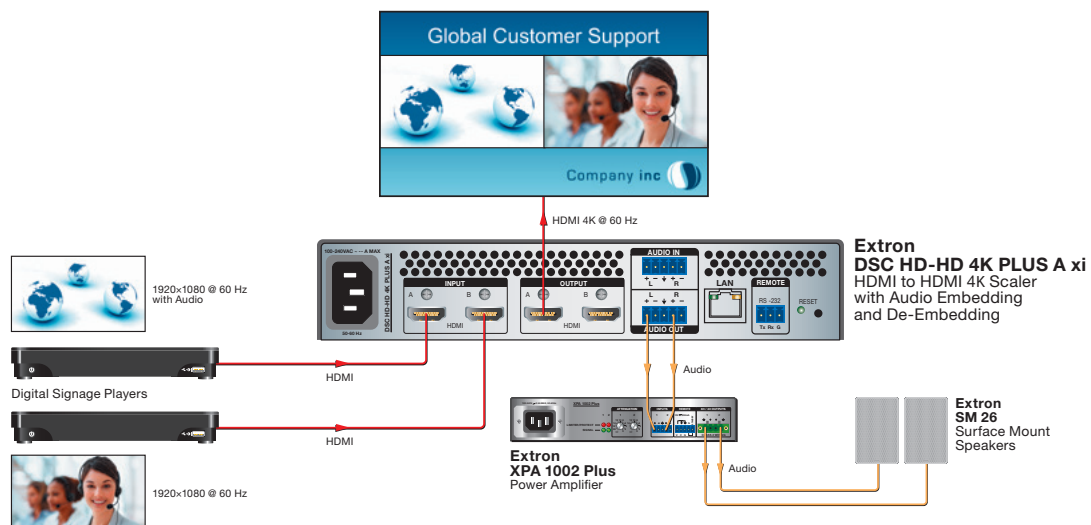
## Large Auditorium

A media player provides source content to a projector hundreds of feet away in a large auditorium. The player outputs 3840x2160 Ultra HD video at 60 Hz with embedded audio on a single HDMI connection. To facilitate long-distance delivery of a 4K signal at 60 Hz, a DSC HD-HD 4K PLUS A xi splits it into two separate 1920x2160/60 Hz signals before sending it to a pair of DTP HDMI 4K 330 Tx transmitters which convert the HDMI signal to twisted pair. A pair of DTP HDMI 4K 330 Rx receivers convert the signal back to HDMI for connection to the projector. Audio is de-embedded from the HDMI signal and sent to the analog outputs, which feeds the house sound system.



## Corporate Lobby Signage

To promote branding in a corporate lobby, two digital signage players provide 1080p/60 Hz content to a DSC HD-HD 4K PLUS A xi. The two 1080p feeds are composited side by side into a 4K/60 Hz signal for presentation onto a large 4K display. The screen space above and below the video windows is occupied by corporate-themed messaging sourced from one of several graphic files stored locally on the DSC HD-HD 4K PLUS A xi. Audio is de-embedded from the first player's HDMI signal and sent to the analog outputs, which feeds an XPA 1002 Plus and a pair of Extron SM 26 surface-mount speakers.





# SPECIFICATIONS

## TRUE 4K SPECIFICATION

### DSC HD-HD 4K PLUS A models

Max. 4K Capabilities		
Resolution and Refresh Rate	Chroma Sampling	Max Bit Depth per Color
4096 x 2160 at 30 Hz 3840 x 2160 at 30 Hz	4:4:4	8 bit
4096 x 2160 at 60 Hz 3840 x 2160 at 60 Hz		

Frame rate <sup>1</sup>	24, 25, 30, 50, or 60 fps
Chroma sampling <sup>1</sup>	4:4:4, 4:2:2, or 4:2:0
Color bit depth <sup>1</sup>	8 or 10 bits per color
Signal type	DVI 1.0, HDMI 1.4 and 2.0, HDCP 1.4 and 2.3

#### Max. video data rate

DSC HD-HD 4K PLUS A models 17.82 Gbps (5.94 per color) per connection

**NOTE:** <sup>1</sup>Subject to the maximum data rate limit. Use our calculator at [www.extron.com/4Kdata](http://www.extron.com/4Kdata) to determine video parameters supported by this data rate.

## VIDEO INPUT

<b>Number/signal type</b>	
DSC HD-HD 4K PLUS A	1 HDMI/DVI (HDCP 1.4 and 2.3 compliant)
DSC HD-HD 4K PLUS A xi	2 HDMI/DVI (HDCP 1.4 and 2.3 compliant)
<b>Horizontal frequency</b>	15 kHz to 135 kHz
<b>Vertical frequency</b>	24 Hz to 75 Hz
<b>Resolution range</b>	
DSC HD-HD 4K PLUS A models	640x480 @ 60 Hz through 4096x2160 @ 60 Hz with 4:4:4 chroma sampling Includes 480i, 576i, 480p, 576p, 720p, 1080i, 1080p, 2K, and 4K.
<b>Color bit depth</b>	
All models	8 or 10 bits per color, up to 170 MHz pixel clock (4:4:4, 4:2:2)
DSC HD-HD 4K PLUS A models	8 bits per color, 171 MHz to 594 MHz pixel clock (4:4:4, 4:2:2, 4:2:0)
<b>Formats</b>	RGB and YCbCr digital video
<b>Standards</b>	DVI 1.0, HDMI 1.4 and 2.0, HDCP 1.4 and 2.3

## VIDEO PROCESSING

<b>Bit depth</b>	10 bits per color
<b>Color sampling</b>	RGB 4:4:4
<b>Colors</b>	1.07 billion

## VIDEO OUTPUT

<b>Number/signal type</b>	
DSC HD-HD 4K PLUS A	1 HDMI/DVI (HDCP 1.4 and 2.3 compliant)
DSC HD-HD 4K PLUS A xi	2 HDMI/DVI (HDCP 1.4 and 2.3 compliant)
<b>Vertical frequency</b>	23.98 Hz, 24 Hz, 25 Hz, 29.97 Hz, 30 Hz, 50 Hz, 59.94 Hz, 60 Hz
<b>Scaled resolutions</b>	640x480 <sup>8</sup> , 800x600 <sup>8</sup> , 1024x768 <sup>8</sup> , 1280x768 <sup>8</sup> , 1280x800 <sup>8</sup> , 1280x1024 <sup>8</sup> , 1360x768 <sup>8</sup> , 1366x768 <sup>8</sup> , 1440x900 <sup>8</sup> , 1400x1050 <sup>8</sup> , 1600x900 <sup>8</sup> , 1680x1050 <sup>8</sup> , 1600x1200 <sup>8</sup> , 1920x1200 <sup>8</sup> HDTV: 480p <sup>7,8</sup> , 576p <sup>8</sup> , 720p <sup>1,2,3,4,5,6,7,8</sup> , 1080i <sup>6,7,8</sup> , 1080p <sup>1,2,3,4,5,6,7,8</sup> , 2K (2048x1080) <sup>1,2,3,4,5,6,7,8</sup> , 2048x1200 <sup>8</sup> , 2048x1536 <sup>8</sup> , 2560x1080 <sup>8</sup> , 2560x1440 <sup>8</sup> , 2560x1600 <sup>8</sup> , 3840x2160 <sup>1,2,3,4,5,6,7,8,*</sup> , 4K (4096x2160) <sup>1,2,3,4,5,6,7,8,*</sup> <sup>1</sup> = at 23.98 Hz, <sup>2</sup> = at 24 Hz, <sup>3</sup> = at 25 Hz, <sup>4</sup> = at 29.97 Hz, <sup>5</sup> = 30 Hz, <sup>6</sup> = at 50 Hz, <sup>7</sup> = at 59.94 Hz, <sup>8</sup> = at 60 Hz, * = 4:4:4" up to 30 Hz, 4:2:0 for 50, 59.94, and 60 Hz (DSC HD-HD 4K A only)
<b>Color bit depth</b>	
All models	8 or 10 bits per color, up to 240 MHz pixel clock (4:4:4, 4:2:2)
DSC HD-HD 4K PLUS A models	8 bits per color, 241 MHz to 594 MHz pixel clock (4:4:4, 4:2:2, 4:2:0)
<b>Standards</b>	DVI 1.0, HDMI 1.4 and 2.0, HDCP 1.4 and 2.3

## AUDIO INPUT

<b>Connectors</b>	
DSC HD-HD 4K PLUS A	1 female HDMI (1) 5 pole captive screw
DSC HD-HD 4K PLUS A xi	2 female HDMI (1) 5 pole captive screw

## AUDIO OUTPUT

<b>Connectors</b>	
DSC HD-HD 4K PLUS A	1 female HDMI (1) 5 pole captive screw
DSC HD-HD 4K PLUS A xi	2 female HDMI (1) 5 pole captive screw

## COMMUNICATION

<b>Serial control port</b>	1 RS-232 on captive screw connector on back panel
<b>USB control port</b>	1 female USB mini B on front panel
<b>Ethernet port</b>	1 female RJ-45 on rear panel

## GENERAL

<b>Power supply</b>	Internal Input: 100-240 VAC, ~50-60 Hz
<b>Fan noise</b>	<26 dB(A) at 1 m
<b>Enclosure dimensions</b>	1.66" H x 8.68" W x 9.5" D (1U high, half-rack wide) (4.2 cm H x 22.1 cm W x 24.1 cm D) (Depth excludes connectors.)
<b>Regulatory compliance</b>	
Safety	CE, c-UL, UL
EMI/EMC	CE, C-tick, FCC Class A, ICES, VCCI
<b>Product warranty</b>	3 years parts and labor
<b>Everlast power supply warranty</b>	7 years parts and labor

Model	Version Description	Part number
DSC HD-HD 4K PLUS A	4K/60 4:4:4 Single HDMI Input and Output	60-1573-01
DSC HD-HD 4K PLUS A xi	4K/60 4:4:4 Dual HDMI Inputs and Outputs	60-1573-02

For complete specifications, please go to [www.extron.com](http://www.extron.com)  
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