

# DXP HD 4K PLUS Series

4K/60 HDMI MATRIX SWITCHERS WITH AUDIO DE-EMBEDDING



18 Gbps  
4K/60 4:4:4

## Reliable, High Performance Switching of HDMI Video and Audio Signals

- ▶ Available in fixed I/O sizes from 4x2 to 16x16
- ▶ Supports computer and video resolutions up to 4K/60 @ 4:4:4
- ▶ Supported HDMI 2.0b specification features include data rates up to 18 Gbps, HDR, Deep Color up to 12-bit, 3D, HD lossless audio formats, and CEC
- ▶ HDMI audio de-embedding with digital S/PDIF and analog stereo audio outputs
- ▶ CEC - Consumer Electronics Control capability
- ▶ Output volume control
- ▶ HDCP 2.3 compliant

**Extron**

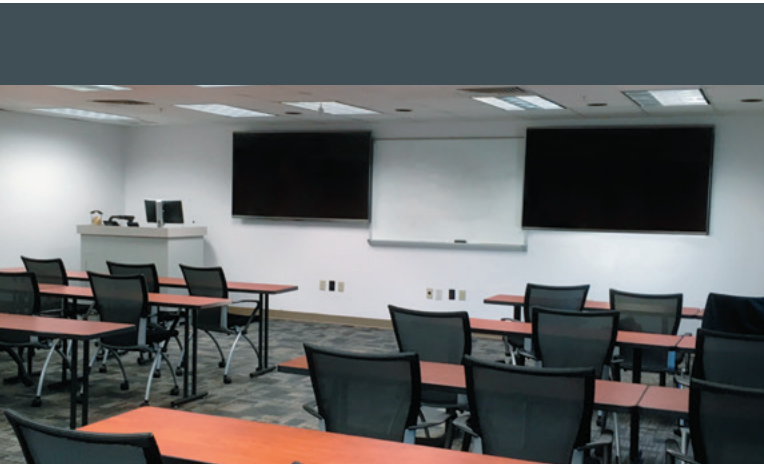
# DXP HD 4K PLUS Series

The Extron DXP HD 4K PLUS Series are high-performance HDMI matrix switchers for computer and video signals at resolutions up to 4K/60 with 4:4:4 color sampling. They support HDMI 2.0b specifications, including data rates up to 18 Gbps, HDR, Deep Color up to 12-bit, 3D, HD lossless audio formats, and CEC. These HDCP 2.3-compliant matrix switchers incorporate Extron technologies such as SpeedSwitch®, EDID Minder®, and Key Minder®, as well as HDMI input equalization and output regeneration, to ensure reliable system operation. Digital audio can be de-embedded from any input and assigned to digital or analog stereo outputs for ease of integration. Available in fixed configurations from 4x2 to 16x16, the DXP HD 4K PLUS Series is ideal for applications that demand reliable, high-performance matrix switching of 4K/60 HDMI video and audio signals.



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

HDMI 2.0b inputs and outputs provide full 18 Gbps support of signals up to 4K/60 with 4:4:4 color sampling on each connection. In addition, HDCP 2.3 compliance ensures display of content-protected media and interoperability with other HDCP-compliant devices.



The DXP HD 4K PLUS Series can provide AV signal switching for various commercial, education, military, government, and residential environments. This includes conference and divisible meeting rooms, briefing rooms, simulation labs, lecture halls, and a centralized control room supporting adjacent classrooms. DXP HD 4K PLUS matrix switchers are ideal for a wide variety of professional AV installations where distribution of 4K video is needed and a fully digital pathway is essential to maintain the highest possible image quality between multiple sources and displays.

# FEATURES

**Available in fixed I/O sizes from 4x2 to 16x16**

**Supports computer and video resolutions up to 4K/60 @ 4:4:4**

**HDMI 2.0b specification features include data rates up to 18 Gbps, HDR, Deep Color up to 12-bit, 3D, HD lossless audio formats, and CEC**

**HDMI audio de-embedding with digital S/PDIF and analog stereo audio outputs**

The DXP HD 4K PLUS Series can extract embedded HDMI two-channel LPCM audio to analog audio outputs. Models with S/PDIF outputs can also extract Dolby® or DTS® encoded bitstream audio to the S/PDIF outputs.

**CEC – Consumer Electronics Control capability**

Standard, built-in CEC commands can be triggered to control displays or other AV devices connected over HDMI. The ability to control specific functions, such as power on/off, input selection, or volume level, is dependent on implementation by the device manufacturer.

**Output volume control**

Provides volume control for the audio outputs.

**EDID Minder® automatically manages EDID communication between connected devices**

EDID Minder ensures that all sources power up properly and reliably output content for display.

**Support for HDR - High Dynamic Range video**

Enables greater contrast range and wider color gamut by providing the necessary video bandwidth, color depth, and metadata interchange capability for HDR video.

**SpeedSwitch® Technology provides exceptional switching speed for HDCP-encrypted content**

**Key Minder® continuously verifies HDCP compliance for quick, reliable switching**

**HDCP 2.3 compliant**

**User-selectable HDCP authorization**

Allows individual inputs to appear HDCP compliant or non-HDCP compliant to the connected source, which is beneficial if the source automatically encrypts all content when connected to an HDCP-compliant device. Protected material is not passed in non-HDCP mode.

**HDMI to DVI Interface Format Correction**

Automatically reformats HDMI source signals for output to a connected DVI display.

**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 HDMI signal output. 4K/60 signals are equalized to 35 feet (10.7 meters) when used with Extron HDMI Pro cables.

**Automatic output reclocking**

Reshapes and restores timing of HDMI signals at each output, enabling transmission over long HDMI cables.

**Provides +5 VDC, 250 mA power on the HDMI outputs for external peripheral devices**

**Global presets**

For medium to larger systems, the 4x4 to 16x16 models allow up to 16 frequently used I/O configurations to be saved and recalled from the front panel, Ethernet, or serial control. This time-saving feature allows I/O configurations to be set up and stored in memory for future use.

**Rooming**

The 4x4 to 16x16 models can be programmed to group selected outputs into specific "rooms," each with its own set of unique presets. Each room can support up to 8 outputs. A total of 10 rooms, with 10 presets per room, are available.

**QS-FPC™ QuickSwitch Front Panel Controller**

Discrete buttons for each input and output allow for simple, intuitive operation.

**View I/O mode**

Discrete LEDs or tri-color buttons for each input so users can easily view which inputs and outputs are actively connected for ease in troubleshooting.

**Audio breakaway**

Provides the capability to break an analog audio signal away from its corresponding video signal and route to audio output 2. The 4x2, 16x8, and 16x16 models allow routing of analog audio signals to any audio output.

**Output muting control**

Provides the capability to mute one or all outputs at any time.

**Power Save Mode**

The unit can be placed in a low power standby state to conserve energy when not in use.

**Ethernet monitoring and control**

Can be proactively monitored, managed, or controlled over a LAN, WAN, or the Internet using standard TCP/IP protocols.

**RS-232 control port**

**Front panel USB configuration port**

**Front panel security lockout**

Prevents unauthorized use in non-secure environments.

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

Conveniently configure multiple products using a single software application.

**Rack-mountable metal enclosure**

The 4x2 model features a 1" (2.5 cm) high, half rack width enclosure. The 4x4, 8x4, and 8x8 models feature a 1U, full rack width enclosure. The 16x8 and 16x16 models feature a 2U, full rack width metal enclosure.

**Extron Everlast™ power supply**

Provides worldwide power compatibility, with high-demonstrated reliability and low power consumption for reduced operating costs.



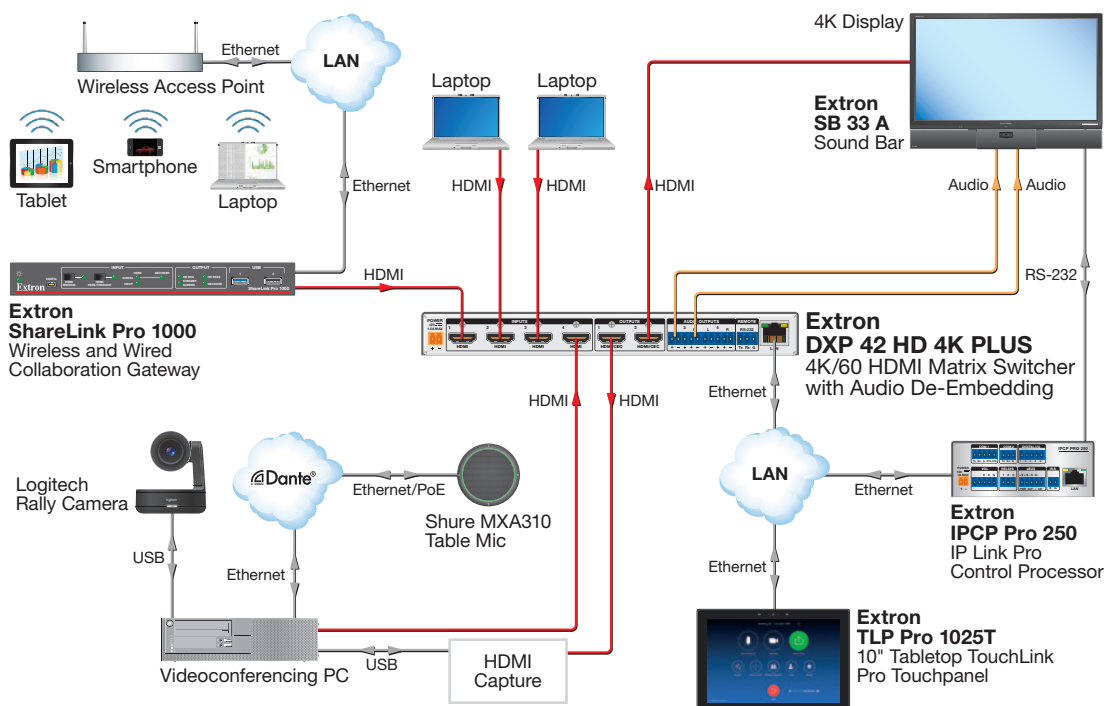
# APPLICATIONS



## Meeting Room for Presenting and Videoconferencing

This room provides excellent audio and video performance for videoconferencing and local meetings. Installed video equipment such as the display, the wireless collaboration gateway, and the codec are capable of 4K video resolution. Meeting participants sitting at the table can share content from their devices wirelessly or when connected over HDMI. For general presentations, all inputs on the DXP 42 HD 4K PLUS are switched directly to the display. In videoconferencing mode, output 1 is routed through an HDMI to USB capture device into the conferencing PC, then back to the switcher for display.

## Application Diagram



# OVERVIEW

## 4K/60 @ 4:4:4

Provides high performance switching and distribution of computer and video resolutions up to 4096x2160.

## HDMI 2.0b specification

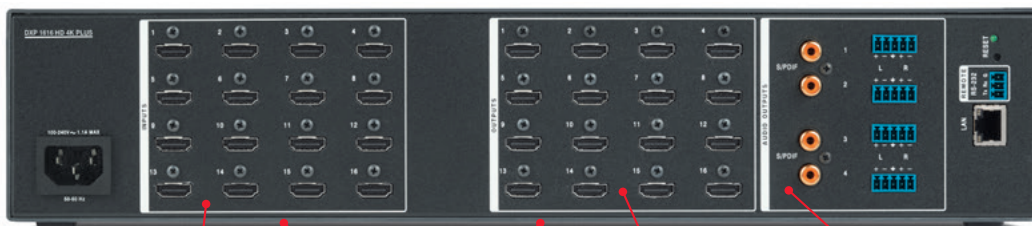
Supported features include data rates up to 18 Gbps, HDR, Deep Color up to 12-bit, 3D, HD lossless audio formats, and CEC.

## EDID Minder®

Automatically manages EDID communication between connected devices, ensuring that all sources power up properly and reliably output content for display.

## CEC - Consumer Electronics Control capability

Standard, built-in CEC commands can be triggered to control displays or other AV devices connected over HDMI.



**Fixed I/O Sizes**  
16x8 and 16x16 - 2U

## 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 HDMI signal output. 4K/60 signals are equalized to 35' feet (10.7 meters) when used with Extron HDMI Pro cables.

## HDCP 2.3 compliant

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

## Automatic output reclocking

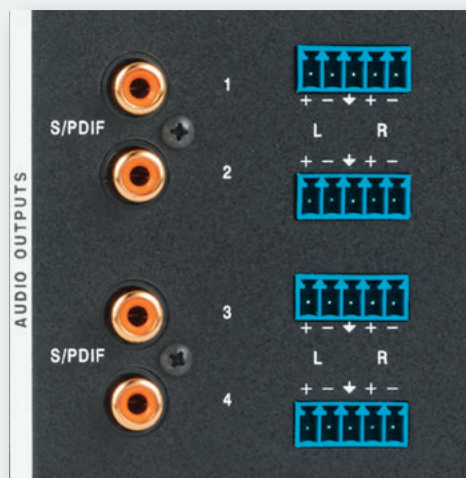
Reshapes and restores timing of HDMI signals at each output, enabling transmission over long HDMI cables.

## HDMI audio de-embedding

Encoded Dolby or DTS multi-channel audio or two-channel audio can be extracted to S/PDIF or analog audio outputs, depending on model.

## Audio De-embedding

The DXP HD 4K PLUS Series features built-in audio de-embedders that allow independent distribution on digital multi-channel or analog stereo outputs, depending on model. Mixers or DSP processors can be connected directly to the matrix switcher without the cost and complexity of additional audio de-embedding equipment. For flexible audio routing on models with S/PDIF outputs, native Dolby® Digital or DTS® format multi-channel digital audio can be assigned to the S/PDIF outputs and native two-channel audio can be assigned to both S/PDIF and analog stereo outputs. This enables a single centrally located DXP HD 4K PLUS matrix switcher to route independent video and audio signals to multiple locations.



# SPECIFICATIONS

## TRUE 4K SPECIFICATION

Max 4K Capabilities		
Resolution and Refresh Rate	Chroma Sampling	Max Bit Depth per Color
4096 x 2160 at 60 Hz 3840 x 2160 at 60 Hz 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		12 bit
	4:2:0	

Frame rate <sup>1</sup>	24, 25, 30, 50, 60, 120, 144, 240 fps
Chroma sampling <sup>1</sup>	4:4:4, 4:2:2, or 4:2:0
Color bit depth <sup>1</sup>	8, 10, or 12 bits per color
Signal type	HDMI 2.0, HDCP 2.3
Max. video data rate	18 Gbps (6 Gbps per color)
<b>NOTE:</b> <sup>1</sup> Subject to the maximum data rate limit. Use our calculator ( <a href="http://www.extron.com/8Kdatarate.aspx">http://www.extron.com/8Kdatarate.aspx</a> ) to determine video parameters supported by this data rate.	

## VIDEO

Routing	4x2 to 16x16 matrix
Maximum data rate	18 Gbps (6 Gbps per color)
Maximum pixel clock	600 MHz
Resolution range	640x480 to 4096x2160 @ 60 Hz, 4096x2160 @ 30Hz 480i, 576i, 480p, 576p, 720p, 1080i, 1080p, and 2K
Formats	RGB and YCbCr digital video
<b>NOTE:</b> *Appropriate DVI-D to HDMI cables or adapters are required for DVI signal input and output.	

## VIDEO PROCESSING

Digital sampling	8, 10, or 12 bits per color
Colors	1 billion (10-bit processing)

## VIDEO INPUT

Number/signal type	4, 8, or 16 HDMI digital video (HDCP compliant)
Connectors	4, 8, or 16 female HDMI type A
Horizontal frequency	15 KHz to 270 KHz for resolutions up to 18 Gbps
Vertical frequency	24 Hz to 240 Hz for resolutions up to 18 Gbps

## VIDEO OUTPUT

Number/signal type	2, 4, 8, or 16 HDMI digital video (HDCP compliant)
Connectors	2, 4, 8, or 16 female HDMI type A
Peripheral device power	250 mA per HDMI output

## AUDIO — DXP 42, 44, 84, 88, 168, 1616 HD 4K PLUS

<b>Supported formats — Pass through</b>	
HDMI connectors	LPCM up to 7.1/24-bit/96 kHz, Dolby ATMOS, Dolby TrueHD, Dolby Digital Plus, Dolby Digital EX, Dolby Digital 5.1, Dolby Digital 2/0 Surround, Dolby Digital 2/0, DTS-HD Master Audio, DTS-HD, DTS ES Discrete 6.1, DTS ES Matrix 6.1, DTS Digital Surround 5.1, DTS 2 Channel
<b>Supported formats — S/PDIF (DXP 44, 84, 88, 168, 1616 HD 4K PLUS)</b>	
LPCM	2-channel, 16/20/24 bit depths, 32/44.1/48 kHz sampling
Dolby Digital (AC-3)	6-channel, 640k mbr, 32/44.1/48 kHz sampling
DTS	7-channel, 1536k max bit rate, 44.1/48 kHz sampling

## AUDIO OUTPUT

Number/signal type	2, 4, 8, or 16 HDMI, embedded 2 or 4 stereo, balanced or unbalanced 2 or 4 S/PDIF (DXP 44, 84, 88, 168, 1616 only)
Connectors	HDMI 2, 4, 8, 16 female Stereo audio (2 or 4) 3.5 mm captive screw, 5 pole S/PDIF 2 or 4 female RCA (DXP 44, 84, 88, 168, and 1616 models only)
Impedance	Stereo audio 50 ohms unbalanced, 100 ohms balanced S/PDIF 75 ohms (DXP 44, 84, 88, 168, and 1616 HD 4K PLUS only)
D/A conversion	24-bit, 192 kHz

## COMMUNICATIONS

Serial control port	1 bidirectional RS-232
Serial control connector	(1) 3.5 mm captive screw, 3 pole (rear panel)
USB control port	1 front panel female USB mini-B
USB standards	USB 2.0, low speed
Ethernet control port	1 female RJ-45 connector
Ethernet protocol	ARP, DHCP, DNS, HTTP, HTTPS, ICMP (ping), NTP, SFTP, SMTP, SNMP, SSH, TCP/IP, Telnet, UDP/IP
Ethernet default settings	Link speed and duplex level: autodetected IP address: 192.168.254.254 Subnet mask: 255.255.0.0 Gateway: 0.0.0.0 DHCP: Off
Web server	Up to 200 simultaneous sessions 40.0 MB nonvolatile user memory

## GENERAL

<b>Power supply</b>	
DXP 42 HD 4K PLUS	External Input: 100-240 VAC, 50-60 Hz Output: 12 VDC, 1.5 A, 18 watts
DXP 44, 84, 88, 168, 1616 HD 4K PLUS	Internal Input: 100-240 VAC, 50-60 Hz
<b>Enclosure dimensions</b>	
DXP 42 HD 4K PLUS	1.0" H x 8.75" W x 8.0" D (half rack wide) (25 mm H x 222 mm W x 152 mm D) (Depth excludes connectors.)
DXP 44, 84, and 88 HD 4K PLUS	1.75" H x 17.5" W x 9.5" D (1U high, full rack wide) (44 mm H x 445 mm W x 241 mm D) (Depth excludes connectors and knobs. Width excludes rack ears.)
DXP 168 and 1616 HD 4K PLUS	3.5" H x 17.4" W x 9.5 D (2U high, full rack wide) (89 mm H x 432 mm W x 241 mm D) (Depth excludes connectors and knobs. Width excludes rack ears.)

Model	Version Description	Part number
DXP 42 HD 4K PLUS	4x2 4K/60 HDMI with 2 Audio Outputs	60-1678-01
DXP 44 HD 4K PLUS	4x4 4K/60 HDMI with 2 Audio Outputs	60-1493-21
DXP 84 HD 4K PLUS	8x4 4K/60 HDMI with 2 Audio Outputs	60-1494-21
DXP 88 HD 4K PLUS	8x8 4K/60 HDMI with 2 Audio Outputs	60-1495-21
DXP 168 HD 4K PLUS	16x8 4K/60 HDMI with 4 Audio Outputs	60-1496-21
DXP 1616 HD 4K PLUS	16x16 4K/60 HDMI with 4 Audio Outputs	60-1497-21

For complete specifications, please go to [www.extron.com](http://www.extron.com)  
Specifications are subject to change without notice.

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