HD-MD8X4-4KZ-E

8x4 4K60 4:4:4 HDR AV Switcher

- *4K60 4:4:4 digital AV switcher*
- *HDR10, HDR10+, and Dolby Vision® video formats*
- *Eight HDMI® inputs and four HDMI outputs*
- *EDID management*
- *HDCP 2.3 compliance*
- *HDMI audio de-embedding*
- *Device control via CEC*
- *Enterprise-grade security*
- *Built-in web interface*
- *Compatibility with Crestron® 3-Series® or later control systems*
- *.AV Framework™ technology support*
- *XiO Cloud® service support*
- *1 RU rack-mountable design*
- *100-240 VAC power pack included*

The HD-MD8X4-4KZ-E is a 4K60 4:4:4 HDR (High Dynamic Range) AV switcher that provides a cost-effective solution for professional AV applications. Equipped with eight HDMI® inputs and four HDMI outputs, the HD-MD8X4-4KZ-E includes features such as EDID management, HDCP 2.3 compliance, enterprise-grade security, and XiO Cloud® service support.

4K60 4:4:4 and HDR Support

The HD-MD8X4-4KZ-E supports video resolutions up to 4K60 with 4:4:4 color sampling. HDR10, HDR10+, and Dolby Vision® video formats are also supported.

EDID Management

The HD-MD8X4-4KZ-E provides comprehensive management of EDID (Extended Display Identification Data) to ensure that every source is displayed at the optimal resolution and format. For applications requiring a custom configuration, the HD-MD8X4-4KZ-E enables assessment of the format and resolution capabilities of any device that is connected to an HDMI output of the switcher. The HD-MD8X4-4KZ-E provides the ability to configure signals appropriately for the most desirable and predictable behavior.

HDMI Audio De-embedding

Embedded HDMI 2-channel LPCM audio can be extracted from the selected HDMI input and transmitted to either of the two AUX stereo audio outputs. Volume and mute control are configurable for each of the HDMI outputs and for each of the two AUX audio outputs independently.

Device Control via CEC

Under the management of a control system, CEC (Consumer Electronics Control) over the HDMI connections can control the source and display devices, potentially eliminating the need for dedicated serial cables or IR emitters. CEC over the HDMI outputs can also enable the display devices to be turned on or off automatically without the use of a control system.

Enterprise-Grade Security

The HD-MD8X4-4KZ-E includes advanced security features and protocols. Using 802.1X authentication, Active Directory® credential management, PKI authentication, TLS, SSH, and HTTPS, the HD-MD8X4-4KZ-E provides a true enterprise-grade AV switcher.

Built-In Web Interface

Configuration of the HD-MD8X4-4KZ-E can be accomplished by using the built-in web interface. The configuration of a single unit can be downloaded to a computer or mobile device and then uploaded to multiple HD-MD8X4-4KZ-E units to simplify system installation.

.AV Framework™ Technology Support

In addition to a built-in web interface and control system programming, built-in .AV Framework technology of a Crestron control system can be used to configure and control the HD-MD8X4-4KZ-E. For information about .AV Framework technology and the supported Crestron control systems, visit www.crestron.com/avframework.

XiO Cloud® Service Support

The HD-MD8X4-4KZ-E is compatible with the XiO Cloud service, which is an IoT (Internet of Things) platform for remotely provisioning, monitoring, and managing Crestron devices across an enterprise or an entire client base. Built on the Microsoft® Azure® software platform and using industry-leading Azure IoT Hub technology, the XiO Cloud service enables installers and IT managers to deploy and manage thousands of devices in the amount of time it previously took to manage a single device. Unlike other virtual machine-based cloud solutions, Azure services provide unlimited scalability to suit the ever-growing needs of an enterprise. For more information, visit www.crestron.com/xiocloud.

1 RU Rack-Mountable Design

The HD-MD8X4-4KZ-E can be mounted into a 19-inch EIA equipment rack using the included rack ears. The device occupies 1 RU of rack space.

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Specifications

Video

Input Signal Types	HDMI with HDR10, HDR10+, Dolby Vision, Deep Color, 4K60 4:4:4: support[1, 2] (DVI and Dual-Mode DisplayPort™ interface compatible[3])
Output Signal Types	HDMI with HDR10, HDR10+, Dolby Vision, Deep Color, and 4K60 4:4:4 support[1, 2] (DVI compatible[4])
Switcher	8x4 digital AV switcher
Copy Protection	HDCP 2.3
Maximum Resolutions	Common resolutions are listed in the following table.

Scan Type	Resolution	Frame Rate	Color Sampling	Color Depth
Progressive	4096x2160 DCI 4K and 3840x2160 4K UHD	24 Hz	4:4:4	36 bit
		30 Hz	4:4:4	36 bit
		60 Hz	4:2:2	36 bit
		60 Hz	4:4:4	24 bit
	2560x1600 WQXGA	60 Hz	4:4:4	36 bit
	1920x1080 HD 1080p	60 Hz	4:4:4	36 bit
Interlaced (Input Only)	1920x1080 HD 1080i	30 Hz	4:4:4	36 bit

> **NOTE:** Custom resolutions that do not exceed 4096 pixels in width and 2160 pixels in height are supported at pixel clock rates up to 600 MHz.

Audio - General

Digital-to-Analog Conversion	24-bit 48 kHz
Frequency Response	±0.5 dB, 20 Hz to 20 kHz
THD+N	<0.005%, 1 kHz, 10 dBV
S/N Ratio	>95 dB, 10 dBV, 20 Hz to 20 KHz, A-weighted
Crosstalk	≤90 dB, 1 KHz, for multiple inputs only
Stereo Separation	≤80 dB, 20 Hz to 20 kHz

Audio - Source Inputs

Input Signal Type	HDMI (Dual-Mode DisplayPort interface compatible[3])
Formats	Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby® TrueHD, Dolby Atmos®, DTS®, DTS-ES, DTS 96/24, DTS HD® High Res, DTS-HD Master Audio, DTS:X®, LPCM up to 8 channels

Audio - Digital Output

Output Signal Type	HDMI
Formats	Dolby Digital, Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos, DTS, DTS-ES, DTS 96/24, DTS HD High Res, DTS-HD Master Audio, DTS:X, LPCM up to 8 channels
Source	-80 dB to +20 dB adjustment range, plus Mute
Master Volume	-80 dB to +20 dB adjustment range, plus Mute

Audio - Analog Line Output

Output Signal Type/Format	Stereo 2-channel
Volume Control	-80 dB to +20 dB adjustment range, plus Mute, Mono, and Stereo

Communications

Ethernet	100/1000 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, DHCP, Web browser setup and control, Crestron control system integration, 802.1X, Secure CIP, Authentication, SSH/SSL, TLS
USB	For firmware loading and configuration management and to power a USB powered device
HDMI	HDCP 2.3, EDID, CEC

Connectors

HDMI IN 1-8	(8) 19-pin Type A connector, female; HDMI digital video/audio inputs (DVI and Dual-Mode DisplayPort interface compatible[3])
HDMI OUT 1-4	(4) 19-pin Type A HDMI female; HDMI digital video/audio output (DVI compatible[4])
AUDIO OUT, AUX 1-2	(2) 5-pin 3.5 mm detachable terminal block; Balanced/unbalanced stereo line-level audio output; Output Impedance: <100 Ohms; Maximum Output Level: 4 Vrms balanced, 2 Vrms unbalanced

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LAN	(1) 8-pin RJ-45 female; 100BASE-TX/1000BASE-T Ethernet port
24 VDC 2.5 A	(1) 2.1 x 5.5 mm DC power connector; 24 VDC power input; PW-2420RU power pack included
SERVICE	(1) USB Type A female; For firmware loading and configuration management; Can also provide up to 5 V 500 mA power to a USB powered device
G	(1) 6-32 screw, chassis ground lug

Controls and Indicators

PWR	(1) LED. Amber indicates that the device is booting. Green indicates that the device is operational.
INPUT 1-8	(8) Push buttons for manual input selection and (8) LEDs. Green indicates that the corresponding input is routed to an output. Amber indicates that a source is detected at the corresponding input but is not routed to an output.
OUTPUT 1-4	(4) Push buttons for manual output selection and (4) LEDs. Green indicates that a display or other destination device is detected and the corresponding output is transmitting video. Amber indicates that a display or other destination device is detected but no video is routed to the corresponding output.
SETUP	(1) Red LED and (1) push button for display of IP address on connected HDMI outputs
Ethernet	(2) LEDs on RJ-45 LAN connector. Link status LED: Green indicates that a 100BASE-TX link is established. Amber indicates that a 1000BASE-T link is established. Ethernet activity LED: Flashing amber indicates Ethernet activity.

Power

Power Pack (Included)	Input: 1.3 A (maximum) @ 100-240 VAC, 50/60 Hz; Output: 2.5 A @ 24 VDC; Model: PW-2420RU
Power Consumption	21 W typical

Environmental

Temperature	32° to 104° F (0° to 40° C)
Humidity	10% to 90% RH (noncondensing)
Heat Dissipation	72 BTU/hr typical
Acoustic Noise	33.55 dBA

Construction

Chassis	Metal, black finish, vented sides
Mounting	1 RU 19-inch rack-mountable (rack ears included)

Dimensions

Height	1.72 in. (44 mm)
Width	17.33 in. (441 mm) without rack ears
Depth	7.02 in. (179 mm)

Weight

5.15 lb (2.37 kg)

Compliance

Regulatory Model	M201946002

Bureau Veritas Listed for US & Canada, IC, CE, FCC Part 15 Class B digital device

Model

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Included Accessories

PW-2420RU
Desktop Power Pack, 24 VDC, 2.5 A, 2.1 mm

Available Accessories

CBL-HD-1.5
Crestron Certified HDMI Interface Cable, 18 Gbps, 1.5 ft (0.45 m)

CBL-HD-3
Crestron Certified HDMI Interface Cable, 18 Gbps, 3 ft (0.91 m)

CBL-HD-6
Crestron Certified HDMI Interface Cable, 18 Gbps, 6 ft (1.8 m)

CBL-HD-12
Crestron Certified HDMI Interface Cable, 18 Gbps,
12 ft (3.6 m)

CBL-HD-20
Crestron Certified HDMI Interface Cable, 18 Gbps,
20 ft (6.1 m)

CBL-HD-30
Crestron Certified HDMI Interface Cable, 10.2 Gbps,
30 ft (9.1 m)

CBL-HD-DVI-1.5
Crestron Certified HDMI to DVI Interface Cable, 1.5 ft (0.45 m)

CBL-HD-DVI-3
Crestron Certified HDMI to DVI Interface Cable, 3 ft (0.91 m)

CBL-HD-DVI-6
Crestron Certified HDMI to DVI Interface Cable, 6 ft (1.8 m)

CBL-HD-DVI-12
Crestron Certified HDMI to DVI Interface Cable, 12 ft (3.6 m)

CBL-HD-DVI-20
Crestron Certified HDMI to DVI Interface Cable, 20 ft (6.1 m)

CBL-HD-DVI-30
Crestron Certified HDMI to DVI Interface Cable, 30 ft (9.1 m)

CBL-HD-LOCK-2
Locking High-Speed HDMI Cable, 10.2 Gbps, 2 ft (0.6 m)

CBL-HD-LOCK-4
Locking High-Speed HDMI Cable, 10.2 Gbps, 4 ft (1.2 m)

CBL-HD-LOCK-8
Locking High-Speed HDMI Cable, 10.2 Gbps, 8 ft (2.4 m)

CBL-HD-LOCK-16
Locking High-Speed HDMI Cable, 10.2 Gbps, 16 ft (4.8 m)

MPI-WP150-120
Media Presentation Wall Plate – International Version –
HDMI with Mini-TRS Stereo Audio, White

MPI-WP150-122
Media Presentation Wall Plate – International Version –
HDMI with Mini-TRS Stereo Audio, Anthracite

MP-WP152-A
Media Presentation Wall Plate – HDMI, Almond

MP-WP152-B
Media Presentation Wall Plate – HDMI, Black

MP-WP152-W
Media Presentation Wall Plate – HDMI, White

Notes:

1. 3D formats are not supported.

2. 4K60 4:4:4 performance and HDR support require the use of HDMI cables and couplers with a minimum TMDS bandwidth of 18 Gbps. If 4K60 4:2:0 or 4K30 4:4:4 performance is acceptable, cables and couplers with a minimum bandwidth of 10.2 Gbps may be used. Bandwidth loss is cumulative; therefore, performance may be reduced when inserting multiple cables and couplers inline.

3. The HDMI input requires an appropriate adapter or interface cable to accommodate a DVI or Dual-Mode DisplayPort signal. CBL-HDI-DVI interface cables are available separately.

4. The HDMI output requires an appropriate adapter or interface cable to accommodate a DVI signal. CBL-HDI-DVI interface cables are available separately.

This product may be purchased from select authorized Crestron dealers and distributors. To find a dealer or distributor, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/How-To-Buy/Find-a-Representative or by calling 855-263-8754.

This product is covered under the Crestron standard limited warranty. Refer to www.crestron.com/warranty for full details.

The specific patents that cover Crestron products are listed online at patents.crestron.com.

Certain Crestron products contain open source software. For specific information, please visit www.crestron.com/opensource.

17.33 in.
(441 mm)

17.17 in.
(437 mm)

1.72 in.
(44 mm)

7.02 in.
(179 mm)

6.83 in.
(174 mm)