

## DMPS Lite™ 4K Multiformat 5x1 AV Switch and Receiver



- 4K/60 4:2:0 capability
- Three DM Lite® ports for interoperability with up to three DM Lite transmitters
- Two HDMI® inputs
- One HDMI output with 4K scaler
- Gigabit Ethernet port
- Two stereo line level inputs, two mono microphone inputs, and one mono auxiliary audio input
- Built-in amplifier with 25 W per channel for 4- or 8-ohm stereo speakers
- Two stereo auxiliary outputs
- IR, RS-232, relay, and I/O control ports
- CEC (Consumer Electronics Control) capability
- Automatic switching of inputs
- 6x2 audio mixing capability
- EDID management
- HDCP management including HDCP 2.2 support
- Built-in web interface for easy configuration and monitoring
- Compatibility with Crestron® 3-Series® or later control systems
- .AV Framework™ technology support
- Native integration with Cisco Webex® and Touch 10 devices
- Compact surface-mountable design

The Crestron HD-RX-4K-510-C-E is a DMPS Lite™ multiformat AV switch and receiver that provides enhanced HDMI® video switching and audio presentation capabilities in areas such as conference rooms and classrooms. Compatible with all DM Lite® transmitters, the HD-RX-4K-510-C-E provides three DM Lite inputs for connection to up to three transmitters. A CATx (CAT5e or higher) twisted pair cable connects a transmitter to the HD-RX-4K-510-C-E for the transmission of HDMI signals. For resolutions up to 2K, the maximum transmission distance is 230 ft (70 m). For higher resolutions up to 4K, the maximum transmission distance is 130 ft (40 m).<sup>1</sup>

**NOTE:** Power is transmitted over the CATx cable that connects the HD-RX-4K-510-C-E to a DM Essentials transmitter. The HD-RX-4K-510-C-E can power three transmitters simultaneously.

In addition to three DM Essentials inputs, the HD-RX-4K-510-C-E provides two HDMI inputs that can be connected to local AV sources or to optional Crestron® media presentation wall plates ([MP-WP152](#) or [MPI-WP150](#) Series, sold separately).

### Automatic Switching of Inputs

Automatic switching among the DM Essentials and HDMI inputs can occur based on the last connected input or on the routing priority assigned to each input. Switching behavior is configurable using the web interface or programmable using a Crestron control system. In addition, input selection push buttons on the front panel of the HD-RX-4K-510-C-E enable the desired input to be selected manually.

### HDMI Output with 4K Scaler

A single HDMI output with a built-in scaler connects to a display or other device with an HDMI input. Input resolutions are automatically scaled to match the native resolution of the display device, resulting in optimal image quality. For applications requiring comprehensive EDID management, the web interface can be used to ensure that every input is displayed at its optimal resolution and format. Input resolutions up to 4K60 4:2:0 are supported.

### Enhanced Audio Capabilities

The HD-RX-4K-510-C-E includes a built-in amplifier that can drive a pair of 4- or 8-ohm stereo speakers (25 W per channel). The HD-RX-4K-510-C-E also provides 6x2 audio mixing capability. Embedded HDMI 2-channel LPCM audio can be extracted from the selected DM Lite or HDMI input and combined with the five analog audio inputs (LINE 1, LINE 2, MIC 1, MIC 2, and AUX). Gain and mute sound adjustments can be made to each of the six inputs being mixed. The mixed audio is then transmitted as two audio outputs: one mirrored AUX 1, SPEAKER, HDMI mixer output and one AUX 2 output. Audio mixer settings such as volume and mute control are configurable for each of the two outputs independently.

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### Device Control

Equipped with onboard control ports, the HD-RX-4K-510-C-E can control various devices in a room. The COM (RS-232) port and CEC over the HDMI output can enable the display device to be turned on or off automatically without the use of a control system. With the use of a control system, the IR port can also control the display device. Two relay ports are provided for controlling a projection screen and other low-voltage contact-closure activated equipment. Two Versiport I/O ports enable the integration of devices such as power sensors and motion detectors. An Ethernet port connection to a LAN also provides control by enabling use of the built-in web interface as well as connection to a control system.

**NOTE:** The IR, COM, and Ethernet ports cannot be used to extend signals over a DM Essentials connection.

### Native Integration with Cisco Webex® and Touch 10 Devices

Native integration of the Cisco API enables source inputs of the HD-RX-4K-510-C-E to be added to a compatible Cisco Webex video conference system that is controlled by a Cisco Touch 10 control unit. Eliminating the need for control system programming, integration with Cisco® devices is accomplished by using the Crestron Configuration tool, which is hosted on the Crestron website at [configuration.crestron.com](https://configuration.crestron.com). Configuration includes the selection of the desired Crestron and Cisco hardware models and the assignment of HD-RX-4K-510-C-E input names and icons for use on the Cisco Touch 10 screen. The resulting configuration file is then downloaded from the website and loaded to the HD-RX-4K-510-C-E using the HD-RX-4K-510-C-E web interface. Communication is established between the HD-RX-4K-510-C-E and Cisco devices, enabling the Cisco Touch 10 to display and control the additional HD-RX-4K-510-C-E inputs.

### Compact Design

Compact in design, the HD-RX-4K-510-C-E can be mounted onto a flat surface such as a wall or attached to the underside of a table.

### Specifications

#### Video

**Switcher:** 5x1 auto-switching or manual, audio-follows-video, Crestron Auto-Locking® and QuickSwitch HD™ technologies

**Scaler (HDMI Output):** 4K video scaler with intelligent frame rate conversion, Deep Color support, content-adaptive noise reduction, 3:2/2:2 pull-down detection and recovery

**Input Signal Types:** HDMI with Deep Color and 4K (DVI and Dual-Mode DisplayPort™ interface compatible<sup>2</sup>) on Inputs 1-2, DM Lite with Deep Color and 4K on Inputs 3-5

**Output Signal Types:** HDMI with Deep Color and 4K (DVI compatible<sup>3</sup>)

**Copy Protection:** HDCP 2.2

**Maximum Resolutions:** Common resolutions are listed below for the HDMI and DM Lite inputs.

Scan Type	Resolution	Frame Rate	Color Sampling	Color Depth
Progressive	4096x2160 DCI 4K and 3840x2160 4K UHD	24 Hz	4:4:4	30 bit
		30 Hz	4:4:4	24 bit
		30 Hz	4:2:2	36 bit
		60 Hz	4:2:0	24 bit
	2560x1600 WQXGA	60 Hz	4:4:4	36 bit
	1920x1080 HD 1080p	60 Hz	4:4:4	36 bit

#### NOTES:

- Custom resolutions are supported at pixel clock rates up to 300 MHz.
- Interlaced video sources are not supported.

#### Scaler Output Resolutions, HDMI:

Auto (EDID preferred), 1280x720p@50Hz (720p50), 1280x720p@60Hz (720p60), 1920x1080i@25Hz (1080i25), 1920x1080i@30Hz (1080i30), 1920x1080p@30Hz (1080p30), 1920x1080p@25Hz (1080p25), 1920x1080p@24Hz (1080p24), 1920x1080p@50Hz (1080p50), 1920x1080p@60Hz (1080p60), 3840x2160p@24Hz, 3840x2160p@25Hz, 3840x2160p@30Hz, 4096x2160p@24Hz, 4096x2160p@25Hz, 4096x2160p@30Hz, 3840x2160p@50Hz, 3840x2160p@60Hz, 4096x2160p@50Hz, 4096x2160p@60Hz

## DMPS Lite™ 4K Multiformat 5x1 AV Switch and Receiver

### Audio, General

**Switcher/Mixer:** 6x2 audio mixer:

Audio Inputs:

- Two stereo 2-channel LINE inputs
- Two mono 1-channel MIC inputs
- One mono 1-channel AUX input
- One stereo 2-channel LPCM audio extracted from the selected HDMI or DM Lite input source

Audio Outputs:

- One mirrored AUX 1, SPEAKER, and HDMI mixer output, stereo 2-channel
- One AUX 2 output, stereo 2-channel

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

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

**Frequency Response, Analog Audio Outputs:**

- 20 Hz to 20 kHz  $\pm 0.5$  dB (AUX outputs)
- 20 Hz to 20 kHz @ full power  $\pm 3$  dB (speaker output)

**S/N Ratio, Analog Audio Outputs:**

- >95 dB @ 10 dBV, 20 Hz to 20 kHz, A-weighted (AUX outputs)
- >90 dB @ 10 dBV, 20 Hz to 20 kHz, A-weighted (speaker output)

**THD+N, Analog Audio Outputs:**

- <0.005% @ 1 kHz and 10 dBV (AUX outputs)
- <0.3% @ 1 kHz and 10 dBV (speaker output)

**Stereo Separation, Analog Audio Outputs:**

- 20 Hz to 20 kHz  $\leq 80$  dB (AUX outputs)
- 20 Hz to 20 kHz  $\leq 60$  dB (speaker output)

### Audio, Microphone Inputs

Two balanced 1-channel microphone inputs (MIC 1 and MIC 2):

**Input Signal Type:** Mono analog

**Phantom Power:** +48 VDC, 12 mA, enable or disable per channel

**Gain:** 0 dB to +60 dB per channel in 1 dB increments

**Mute:** Enable or disable per channel

### Audio, Line Inputs

Two balanced/unbalanced 2-channel line inputs (LINE 1 and LINE 2):

**Input Signal Type:** Stereo analog

**Balanced Line Input Level:** 4 Vrms

**Unbalanced Line Input Level:** 2 Vrms

**Line Input Impedance:** >10k ohms

### Audio, Auxiliary Input

One balanced 1-channel auxiliary input (AUX):

**Input Signal Type:** Mono analog

**Balanced Line Input Level:** 4 Vrms

**Line Input Impedance:** >10k ohms

### Audio, Source Inputs

Two HDMI and three DM Lite inputs (HDMI 1-2 and DM Lite 3-5):

**Input Signal Types:** HDMI (Dual-Mode DisplayPort interface compatible), DM Lite

**Digital Formats:** 2-channel LPCM

### Audio Outputs

One mirrored SPEAKER, HDMI, and balanced/unbalanced AUX 1 mixer output:

**Output Signal Type/Format:** Stereo 2-channel

**AUX 1 Output Impedance:** 200 ohms balanced, 100 ohms unbalanced

**AUX 1 Maximum Output Level:** 4 Vrms balanced, 2 Vrms unbalanced

**Selected Source:** -80 dB to +20 dB level adjustment range plus Mute

**MIC 1-2:** -80 dB to +20 dB level adjustment range plus Mute

**LINE 1-2:** -80 dB to +20 dB level adjustment range plus Mute

**AUX:** -80 dB to +20 dB level adjustment range plus Mute

**Master Volume:** -80 dB to +20 dB level adjustment range plus Mono

**Amplifier Output Power:** 25 W RMS per channel @ 8 ohms, 4 ohms tolerant

**Amplifier Power:** On or off

**Mute:** Enable or disable independently for AUX 1, SPEAKER, and HDMI mixer output

One balanced/unbalanced AUX 2 output:

**Output Signal Type/Format:** Stereo 2-channel

**Output Impedance:** 200 ohms balanced, 100 ohms unbalanced

**Maximum Output Level:** 4 Vrms balanced, 2 Vrms unbalanced

**Selected Source:** -80 dB to +20 dB level adjustment range plus Mute

**MIC 1-2:** -80 dB to +20 dB level adjustment range plus Mute

**LINE 1-2:** -80 dB to +20 dB level adjustment range plus Mute

**AUX:** -80 dB to +20 dB level adjustment range plus Mute

**Master Volume:** -80 dB to +20 dB level adjustment range plus Mono

**Mute:** Enable or disable for AUX 2

## DMPS Lite™ 4K Multiformat 5x1 AV Switch and Receiver

### Communications

**Ethernet:** 100/1000 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, CIP, DHCP, web browser setup and control

**RS-232:** 2-way device control and monitoring up to 115.2k baud with hardware and software handshaking

**IR:** 1-way device control via infrared up to 60 kHz

**HDMI:** HDCP 2.2, EDID, CEC

**DM Lite:** HDCP 2.2, EDID

### Connectors

**L/R, LINE INPUT 1-2:** (2) 5-pin 3.5 mm detachable terminal blocks

**MIC INPUT 1-2:** (2) 3-pin 3.5 mm detachable terminal blocks

**AUX INPUT:** (1) 3-pin 3.5 mm detachable terminal block

**HDMI INPUT 1-2:** (2) HDMI Type A connectors, female; HDMI digital video/audio inputs; DVI and Dual-Mode DisplayPort interface compatible<sup>2</sup>

**DM Lite INPUT 3-5:** (3) 8-pin RJ-45 yellow connectors, female, shielded; DM Lite input ports for connection to DM Lite transmitters

**L/R, AUX OUT 1-2:** (2) 5-pin 3.5 mm detachable terminal blocks

**HDMI OUTPUT:** (1) HDMI Type A connector, female; HDMI digital video/audio output; DVI compatible<sup>3</sup>

**NOTE:** CEC over the HDMI output provides Power On/Off control of the display device without a control system or full programmable control of any device with a control system.

**Ethernet:** (1) 8-pin RJ-45 connector, female; 100BASE-TX/1000BASE-T Ethernet port

**SPEAKER OUTPUT:** (2) 2-pin 7.62 mm reversed gender 20 A detachable terminal blocks, power amplifier outputs; Wire Size: Terminals accept up to 12 AWG (3.31 mm); Output is direct-coupled—not transformer isolated

**I/O 1-2:** (2) 2-pin detachable terminal blocks; Comprised of 2 Versiport digital input/output or analog input ports (referenced to GND); Digital Input: Rated to 0-24 VDC, input impedance 20k ohms, logic threshold >3.125 V low/0 and <1.875 V high/1; Digital Output: 250 mA sink from maximum 24 VDC, catch diodes for use with real world loads; Analog Input: Rated for 0-10 VDC, protected to 24 VDC maximum, input impedance 21k ohms with pull-up resistor disabled; Programmable 5 V, 2k ohms pull-up resistor per pin

**RLY 1-2:** (2) 2-pin detachable terminal blocks; Comprised of 2 normally open, isolated relays; Rated 1 A, 30 VAC/VDC; MOV arc suppression across contacts

**IR:** (1) 2-pin 3.5 mm detachable terminal block; IR output control port; supports IR up to 60 kHz; [IRP2](#) emitter sold separately

**NOTE:** The IR port provides Power On/Off control of the display device with the use of a control system.

**COM:** (1) 5-pin 3.5 mm detachable terminal block; Bidirectional RS-232 port; Supports RS-232 up to 115.2k baud with hardware and software handshaking

**NOTE:** The COM port provides Power On/Off control of the display device without a control system or full programmable control of any device with a control system.

**100-240V 4A-2A 50/60 Hz:** (1) IEC 60320 C14 mains power inlet; Mates with removable power cord, included

**NOTE:** This power connection powers both the HD-RX-4K-510-C-E and all connected DM Lite transmitters. When connected to the HD-RX-4K-510-C-E, DM Lite transmitters must not be connected to power.

**SERVICE:** (1) USB Type A connector, female; For factory use only

### Controls and Indicators

**PWR:** (1) LED, indicates that power is being applied to the HD-RX-4K-510-C-E. Amber indicates that the device is booting. Green indicates that the device is operational.

**INPUT 1-5:** (5) Push buttons for manual input selection and (5) LEDs. Green indicates that video is switched. Amber indicates that video is detected but is not switched.

**AUTO:** (1) Push button to enable or disable automatic switching, and (1) green LED to indicate that automatic switching is enabled

**SETUP:** (1) Red LED and (1) push button for display of IP address on the HDMI output

**DM Lite:** (2) LEDs on RJ-45 connector. Green indicates that a DM Lite link is established. Flashing amber indicates non-HDCP video and solid amber indicates HDCP video.

**Ethernet:** (2) LEDs on RJ-45 connector. Green indicates that an Ethernet link is established. Flashing amber indicates Ethernet activity.

## DMPS Lite™ 4K Multiformat 5x1 AV Switch and Receiver

### Power

**Mains Power:** 4 A - 2 A @ 100-240 VAC, 50/60 Hz

**NOTE:** The AC mains power connection powers both the HD-RX-4K-510-C-E and all connected DM Lite transmitters. When connected to the HD-RX-4K-510-C-E, DM Lite transmitters must not be connected to power.

### Environmental

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

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

### Enclosure

**Chassis:** Metal, black finish, vented sides, 2 mounting flanges attached

**Mounting:** Surface mount

### Dimensions

**Height:** 10.22 in. (260 mm)

**Width:** 14.18 in. (361 mm) with mounting flanges attached

**Depth:** 1.74 in. (45 mm)

### Weight

7.5 lb (3.4 kg) with mounting flanges attached

### Compliance

**Regulatory Model:** M1845002

UL® Listed for US and Canada, CE, IC, FCC Part 15 Class B digital device

### Model

**HD-RX-4K-510-C-E:** DMPS Lite™ 4K Multiformat 5x1 AV Switch and Receiver

### Accessories

For a list of accessories, visit the [HD-RX-4K-510-C-E](#) product page.

### Notes:

1. For DM Lite connections, use Crestron DM-CBL-8G, Crestron DM-CBL-ULTRA, or third-party CAT5e or higher cable. To safeguard against unpredictable environmental electrical noise that may impact performance at resolutions above 1080p, shielded cable and connectors are recommended for all applications and are required when bundling multiple cables in a wire run. Wire and cables sold separately. DM Lite ports are not compatible with DigitalMedia 8G+®, HDBaseT®, PoE, or PoDM technology or any other type of CATx based interface or network.
2. 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.
3. 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](http://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](http://www.crestron.com/warranty) for full details.

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### HDMI

Specifications are subject to change without notice.

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