

## DMPS Essentials 4K Multiformat 2x1 AV Switch and Receiver



- 4K/60 4:2:0 capability
- One DM® Essentials port for interoperability with one DM Essentials transmitter
- One HDMI® input
- One HDMI output with 4K scaler
- Gigabit Ethernet port
- Stereo line level audio output
- IR, RS-232, relay, and I/O control ports
- CEC (Consumer Electronics Control) capability
- Automatic switching of inputs
- 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
- XiO Cloud® service support
- Native integration with Cisco Webex® and Touch 10 devices
- 100-240 VAC power pack included
- Compact surface-mountable design

The Crestron HD-RX-4K-210-C-E is a DMPS Essentials multiformat AV switch and receiver that provides HDMI® video switching and audio presentation capabilities in areas such as conference rooms and classrooms. Compatible with all DM® Essentials transmitters, the HD-RX-4K-210-C-E provides one DM Essentials input for connection to one transmitter. A CATx (CAT5e or higher) twisted pair cable connects a transmitter to the HD-RX-4K-210-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-210-C-E to a DM Essentials transmitter.

In addition to one DM Essentials input, the HD-RX-4K-210-C-E provides one HDMI input that can be connected to a local AV source or to an optional Crestron® media presentation wall plate ([MP-WP152](#) or [MPI-WP150](#) Series, sold separately).

### Automatic Switching of Inputs

Automatic switching between the DM Essentials input and HDMI input 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-210-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.

### Device Control

Equipped with onboard control ports, the HD-RX-4K-210-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.

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**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-210-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](http://configuration.crestron.com). Configuration includes the selection of the desired Crestron and Cisco hardware models and the assignment of HD-RX-4K-210-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-210-C-E using the HD-RX-4K-210-C-E web interface. Communication is established between the HD-RX-4K-210-C-E and Cisco devices, enabling the Cisco Touch 10 to display and control the additional HD-RX-4K-210-C-E inputs.

### Compact Design

Compact in design, the HD-RX-4K-210-C-E can be mounted onto a flat surface such as a wall or attached to the underside of a table. The device can also be mounted to a rack rail.

## Specifications

### Video

<b>Switcher</b>	2x1 auto-switching or manual, audio-follows-video, Crestron Auto-Locking® and QuickSwitch HD™ technologies
<b>Scaler (HDMI Output)</b>	4K video scaler with intelligent frame rate conversion, Deep Color support, content-adaptive noise reduction, 3:2/2:2 pull-down detection and recovery
<b>Input Signal Types</b>	HDMI with Deep Color and 4K (DVI and Dual-Mode DisplayPort™ interface compatible <sup>2</sup> ) on Input 1, DM Essentials with Deep Color and 4K on Input 2
<b>Output Signal Types</b>	HDMI with Deep Color and 4K (DVI compatible <sup>3</sup> )
<b>Copy Protection</b>	HDCP 2.2
<b>Maximum Resolutions</b>	Common resolutions are listed below for the HDMI and DM Essentials inputs

Scan Type	Resolution	Frame Rate	Color Sampling	Color Depth
Prog.	4096x2160 DCI 4K & 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

### Audio

<b>Input Signal Types</b>	HDMI (Dual-Mode DisplayPort compatible <sup>2</sup> ), DM Essentials
<b>Output Signal Types</b>	HDMI, stereo analog
<b>Digital Formats</b>	2-channel LPCM

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<b>Analog Formats</b>	Stereo 2-channel
<b>Digital-to-Analog Conversion</b>	24-bit 48 kHz
<b>Output Impedance</b>	200 $\Omega$ balanced; 100 $\Omega$ unbalanced
<b>Maximum Output Level</b>	4Vrms balanced; 2Vrms unbalanced
<b>Output Volume</b>	-80 to +20 dB level adjustment range plus Mute
<b>Mute</b>	Enable or disable independently for HDMI and analog audio output
<b>Analog Output Performance</b>	Frequency Response: 20 Hz to 20 kHz $\pm 0.5$ dB S/N Ratio: >95 dB @ 10 dBV, 20 Hz to 20 kHz, A-weighted THD+N: <0.005% @ 1 kHz and 10 dBV Stereo Separation: 20 Hz to 20 kHz $\leq 80$ dB

### Communications

<b>Ethernet</b>	100/1000 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, CIP, DHCP, web browser setup and control
<b>RS-232</b>	2-way device control and monitoring up to 115.2k baud with hardware and software handshaking
<b>IR</b>	1-way device control via infrared up to 60 kHz
<b>HDMI</b>	HDCP 2.2, EDID, CEC
<b>DM Essentials</b>	HDCP 2.2, EDID

### Connectors

<b>HDMI INPUT 1</b>	(1) HDMI Type A connector, female; HDMI digital video/audio inputs; DVI and Dual-Mode DisplayPort interface compatible <sup>2</sup>
<b>DM INPUT 2</b>	(1) 8-pin RJ-45 yellow connector, female, shielded; DM Essentials input port for connection to a DM Essentials transmitter

**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.

**AUDIO L/R** (1) 5-pin 3.5 mm detachable terminal block; Balanced/unbalanced stereo line-level audio output; Maximum Output Level: 4Vrms balanced, 2Vrms unbalanced; Output Impedance: 200  $\Omega$  balanced, 100  $\Omega$  unbalanced

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

**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 0-24VDC, input impedance 20 k $\Omega$ , logic threshold >3.125V low/0 and <1.875 V high/1; Digital Output: 250mA sink from maximum 24VDC, catch diodes for use with real world loads; Analog Input: Rated for 0-10VDC, protected to 24VDC maximum, input impedance 21 k $\Omega$  with pull-up resistor disabled; Programmable 5V, 2 k $\Omega$  pull-up resistor per pin

**RELAY 1-2** (2) 2-pin detachable terminal blocks; Comprised of 2 normally open, isolated relays; Rated 1A, 30VAC/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.

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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	Ethernet	(2) LEDs on RJ-45 connector; Green indicates that an Ethernet link is established; Flashing amber indicates Ethernet activity
<div><b>NOTE:</b> 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.</div>			
24V 1.25A	(1) 2.1 x 5.5 mm DC power connector; 24VDC power input; <a href="#">PW-2412WU</a> power pack included	Power	
<div><b>NOTE:</b> The power pack powers both the HD-RX-4K-210-C-E and the connected DM Essentials transmitter. A power pack must not be connected to both devices simultaneously.</div>		Power Pack (Included)	Input: 100-240 VAC, 50/60 Hz Output: 1.25 A @ 24 VDC Model: <a href="#">PW-2412WU</a>
		<div><b>NOTE:</b> The power pack powers both the HD-RX-4K-210-C-E and the connected DM Essentials transmitter. A power pack must not be connected to both devices simultaneously.</div>	
SERVICE	(1) USB Type A connector, female; For factory use only	Power Consumption	9 W typical
Controls and Indicators			
PWR	(1) bicolor green/amber LED, indicates that power is being applied to the HD-RX-4K-210-C-E from the power pack connected to either the HD-RX-4K-210-C-E or the transmitter; Amber indicates that the HD-RX-4K-210-C-E is booting; Green indicates that the HD-RX-4K-210-C-E is operational	Environmental	
INPUT 1-2	(2) Push buttons for manual input selection and (2) bicolor green/amber LEDs; Green indicates that video is switched; Amber indicates that video is detected but is not switched	Temperature	32° to 104°F (0° to 40°C)
AUTO	(1) Push button to enable or disable automatic switching, and (1) green LED to indicate that automatic switching is enabled	Humidity	10% to 90% RH (noncondensing)
SETUP	(1) Red LED and (1) push button for display of IP address on the HDMI output	Heat Dissipation	30.7 BTU/hr
DM Essentials	(2) LEDs on RJ-45 connector; Green indicates that a DM Essentials link is established; Flashing amber indicates non-HDCP video and solid amber indicates HDCP video	Acoustic Noise	Not applicable (fanless)
Construction			
		Chassis	Metal, black finish, vented sides, 2 mounted flanges attached
		Mounting	Surface or rack rail mount
Dimensions			
		Height	5.11 in. (130 mm)
		Width	10.53 in. (268 mm) with mounting flanges attached
		Depth	1.10 in. (28 mm)
Replace this text (if this line is necessary)			
Weight			
		2.3 lb (1.05 kg)	
Compliance			
Regulatory Model: M1845001			
UL® Listed for US and Canada, CE, IC, FCC Part 15 Class B digital device			

## DMPS Essentials 4K Multiformat 2x1 AV Switch and Receiver

### Model

**HD-RX-4K-210-C-E:** DMPS Essentials 4K Multiformat 2x1 AV Switch and Receiver

### Included Accessory

**PW-2412WU:** Wall Mount Power Pack, 24 VDC, 1.25 A, 2.1 mm, Universal

### Available Accessories

For a list of available accessories, visit the [HD-RX-4K-210-C-E](#) product page.

#### Notes:

1. For the DM Essentials connection, 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 Essentials 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

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