

# HD-RX-201-C-E

## DM Lite – HDMI® over CATx Receiver, Room Controller, 2x1 Auto-Switcher, HD Scaler, Surface Mount

- > Pairs with a DM Lite receiver to provide a point-to-point signal extender, switcher, and HD video scaler
- > Enables extension of HDMI® video and audio signals
- > Also provides a local HDMI input and analog audio output<sup>[1]</sup>
- > Auto-switches between the local HDMI input and the input(s) on the transmitter
- > Links to the transmitter via a single CAT5e (or better) twisted pair cable<sup>[2]</sup>
- > Supports HD 1080p and WUXGA at up to 230 ft (70 m)
- > Automatically scales input signals to match the room display
- > Performs deinterlacing of NTSC, PAL, and 1080i sources
- > Handles Deep Color
- > Supports Dolby Digital® 5.1, DTS® 5.1, and uncompressed 7.1 linear PCM audio
- > Compatible with HDMI and DVI display devices<sup>[4]</sup>
- > Compatible with HDMI, DVI, and Dual-Mode DisplayPort sources<sup>[5]</sup>
- > HDCP 1.4 compliant
- > Supports stereo audio de-embedding via the analog audio output<sup>[1]</sup>
- > Provides up to 150 ms lip-sync delay at the analog output
- > QuickSwitch HD™ technology manages HDCP keys for fast, reliable switching
- > Includes comprehensive built-in EDID configuration tools
- > 10/100 Ethernet LAN connection
- > Easy web browser setup and configuration
- > Enables display device control via CEC, IR, or RS-232
- > Automatically turns the display on and off based on input signal detection
- > Allows control system integration for fully programmable functionality
- > Low-profile surface mount design
- > Universal 100-240V power pack included<sup>[2]</sup>

The HD-RX-201-C-E is a surface-mountable DM Lite receiver designed to pair with a DM Lite transmitter to form a point-to-point signal extender for HDMI® signals. It features a built-in HD video scaler and handles video resolutions up to HD 1080p and WUXGA. It supports Dolby Digital®, DTS®, and 8-channel LPCM surround sound audio formats, and includes a stereo analog audio output.<sup>[1]</sup> It also includes a local HDMI input to supplement the input(s) at the transmitter. The HD-RX-201-C-E links to the transmitter using a single CAT5e (or better) twisted pair cable and supports cable lengths of up to 230 ft (70 m).<sup>[2]</sup>

*Note: For applications requiring 4K video signal extension with high-bitrate audio support, refer to the HD-RX-101-C-E or HD-RXC-101-C-E.*

In addition to its DM Lite link port, the HD-RX-201-C-E also includes a single HDMI input, which may be wired to an optional wall plate or used to connect a local source such as a mini PC or Crestron® AirMedia® Gateway. Auto-switching between the HDMI and link inputs affords plug-and-play simplicity. Manual input selection is also available via individual buttons on the unit.



*Note: Auto-switching behavior for all of the inputs on the transmitter and receiver can be configured using “priority routing” mode to define which inputs take precedence when connecting multiple sources.*

A single HDMI output provides for connection to the display device (or other equipment). The HDMI output video signal is professionally scaled automatically to the native resolution of the display to ensure reliable performance and optimal image quality. Resolutions up to Full HD 1080p and WUXGA are supported. The HDMI output also passes audio to the display, or the stereo analog audio output may be used to feed audio to a separate sound bar or amplifier.<sup>[1]</sup>

The HD-RX-201-C-E features onboard control capabilities to automatically turn the display device on when an input signal is detected, and off when no source is connected. Display control is available using the onboard IR or RS-232 ports, or through the HDMI connection using CEC. Connecting the HD-RX-201-C-E to an Ethernet network enables easy setup, configuration, and basic operation using a web browser, and also allows integration with a Crestron control system for enhanced control capabilities using a Crestron touch screen, keypad, wireless remote, or mobile device app. The control system can be programmed to provide enhanced control of the display device, switch inputs on the receiver and transmitter, adjust the analog audio output volume, and control any other equipment in the room using IR, RS-232, CEC, and IP. Integration with a control system also enables centralized monitoring and scheduling using the Crestron Fusion® Enterprise Management Service.

*Note: The control ports on this device cannot be used to extend IR, RS-232, or Ethernet signals over the DM Lite link. COM and IR ports on the transmitter are not addressable from the HD-RX-201-C-E or control system.*

The HD-RX-201-C-E is designed to mount on a wall behind a flat-panel display, on the ceiling above a projector, or on any other flat surface. It can also be attached to a single rack rail in the back of an equipment cabinet. When powered using the provided wall mount power pack, the HD-RX-201-C-E also supplies power to the connected transmitter over the

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link cable. Alternately, a power pack may be connected to the transmitter, which in turn supplies power to the HD-RX-201-C-E over the link cable.<sup>[3]</sup>

**Important:** The RJ45 link port on this product, labeled “FROM TX,” is exclusively intended for linking with a single DM Lite transmitter. It should not be used to connect to any other equipment or network. DM Lite is not compatible with PoE, PoDM, DigitalMedia 8G+® (DM 8G+®), or HDBaseT®.

## SPECIFICATIONS

### Video

**Switcher:** 2x1 manual or auto-switching, audio-follow-video

**Scaler:** HD video scaler and deinterlacer, noise reduction, 3:2/2:2 pull-down detection and recovery, aspect ratio selection, VGA phase/clock & H/V position adjustments, picture and RGB color adjustments

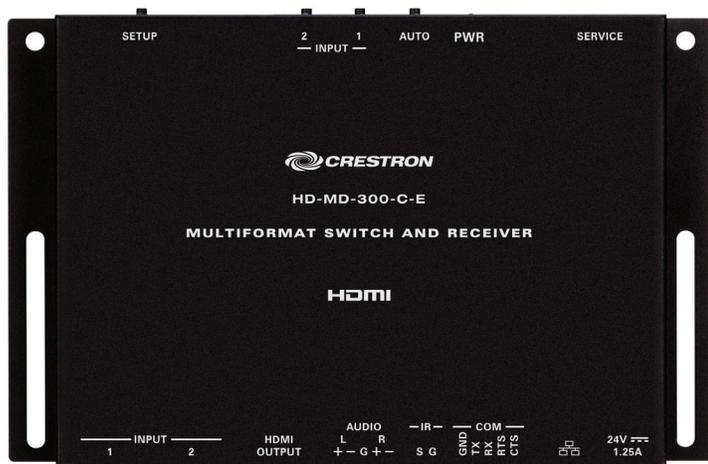
**Input Signal Types:** HDMI w/Deep Color (DVI & Dual-Mode DisplayPort compatible<sup>[5]</sup>), DM Lite link

**Output Signal Types:** HDMI w/Deep Color (DVI compatible<sup>[4]</sup>)

**Copy Protection:** HDCP 1.4

**Maximum Input Resolutions:**

Input Type	Scan Type	Resolution	Frame Rate
HDMI & DM Lite Link	Progressive	1920x1200 WUXGA	60 Hz
		1920x1080 HD 1080p	60 Hz
	Interlaced	1920x1080 HD 1080i	30 Hz



HD-RX-201-C-E Receiver – Top, Front, and Rear Views

**NOTE:** Common resolutions are shown; other custom resolutions are supported at pixel clock rates up to 165 MHz

**Scaler Output Resolutions, Progressive:** Auto, 640x480@60Hz, 720x480@60Hz (480p), 720x576@50Hz (576p), 800x600@60Hz, 840x480@60Hz, 1024x768@60Hz, 1280x720@50/60Hz (720p50/60), 1280x768@60Hz<sup>[6]</sup>, 1280x800@60Hz<sup>[6]</sup>, 1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1366x768@60Hz<sup>[6]</sup>, 1400x1050@60Hz<sup>[6]</sup>, 1440x900@60Hz<sup>[6]</sup>, 1600x900@60Hz<sup>[7]</sup>, 1600x1200@60Hz, 1680x1050@60Hz<sup>[6]</sup>, 1920x1080@30/50/60Hz (1080p30/50/60), 1920x1200@60Hz<sup>[7]</sup>

**Scaler Output Resolutions, Interlaced:** Auto, 480i, 576i, 1080i25, 1080i30

### Audio

**Input Signal Types:** HDMI (Dual-Mode DisplayPort compatible<sup>[5]</sup>), DM Lite link

**Output Signal Types:** HDMI, analog stereo<sup>[1]</sup>

**Digital Formats:** Dolby Digital, Dolby Digital EX, DTS, DTS ES, DTS 96/24, LPCM up to 8 channels

**Analog Formats:** Stereo 2-channel<sup>[1]</sup>

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

**Analog Output Volume:** -80 to +20 dB Level adjustment range, plus Mute

**Analog Output Lip-Sync Delay:** 0 to 150 ms (maximum delay time is reduced for input signals with sampling rates over 48 kHz)

**Analog Performance:**

**Frequency Response:** 20 Hz to 20 kHz ±0.5 dB;

**S/N Ratio:** >93 dB, 20 Hz to 20 kHz A-weighted;

**THD+N:** <0.005% @ 1 kHz;

**Stereo Separation:** >80 dB

### Communications

**Ethernet:** 10/100 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, DHCP, web browser setup and control, Crestron control system integration

**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 1.4, EDID, CEC

**DM Lite Link:** Proprietary link for connection between one DM Lite RX & TX only

**Note:** Supports management of HDCP and EDID; supports management of CEC between the connected HDMI devices and a control system (inclusive of the local HDMI ports and those on the transmitter), does not support IR or RS-232 signal extension over the DM Lite link

### Connectors

**HDMI, INPUT 1:** (1) HDMI Type A connector, female;

HDMI digital video/audio input (DVI & Dual-Mode DisplayPort compatible<sup>[5]</sup>)

**FROM TX, INPUT 2:** (1) 8-pin RJ45 connector, female, shielded;

Link port for connection to a DM Lite transmitter<sup>[2]</sup>;

Maximum cable length: 230 ft (70 m)

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**HDMI OUTPUT:** (1) HDMI Type A connector, female;  
HDMI digital video/audio output (DVI compatible<sup>[4]</sup>)

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

**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: Provides power on/off control of the display device without a control system, or fully programmable control of any device with a control system. Does not support IR signal extension over the DM Lite link.*

**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: Provides power on/off control of the display device without a control system, or fully programmable control of any device with a control system. Does not support RS-232 signal extension over the DM Lite link.*

**LAN:** (1) 8-pin RJ45 connector, female;  
10Base-T/100Base-TX Ethernet port

**24VDC 1.25A:** (1) 2.1 x 5.5 mm DC power connector;  
24 Volt DC power input;  
**PW-2412WU** power pack included;

*Note: This connection powers both the receiver and transmitter<sup>[3]</sup>*

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

## Controls & Indicators

**FROM TX, INPUT 2:** (2) LEDs (on RJ45 connector), green LED indicates DM Lite link status, amber LED indicates a valid video signal

**LAN:** (2) LEDs (on RJ45 connector), green LED indicates Ethernet link status, amber LED indicates Ethernet activity

**PWR:** (1) Bi-color green/amber LED, indicates operating power is supplied from the power pack via the 24VDC input or from the TX via the DM Lite link, turns amber while booting and green when operating

**AUTO:** (1) Pushbutton to enable/disable auto-switching mode, and (1) green LED to indicate auto-switching mode it enabled

**INPUT 1 – 2:** (2) Pushbuttons for manual input selection, and (2) bi-color green/amber LEDs to indicate the current active input and signal presence at each corresponding input

**SETUP:** (1) Red LED and (1) recessed pushbutton for Ethernet setup

## Power

**Power Pack (included):** Input: 100-240 Volts AC, 50/60 Hz;  
Output: 1.25 Amps @ 24 Volts DC;  
Model: **PW-2412WU**

*Note: The receiver and transmitter are powered together using a single power pack connected at either the receiver or transmitter (not both).<sup>[3]</sup>*

## Environmental

**Temperature:** 32° to 104° F (0° to 40° C)  
**Humidity:** 20% to 90% RH (non-condensing)

## Construction

**Chassis:** Metal, black finish, with (2) integral mounting flanges, vented sides  
**Mounting:** Freestanding, surface mount, or attach to a single rack rail

## Dimensions

**Height:** 1.11 in (28 mm)  
**Width:** 7.70 in (196 mm)  
**Depth:** 4.94 in (126 mm)

## Weight

20.82 oz (590 g)

## Compliance

CE, IC, FCC Part 15 Class B digital device

## MODELS & ACCESSORIES

### Available Models

**HD-RX-201-C-E:** DM Lite – HDMI® over CATx Receiver, Room Controller, 2x1 Auto-Switcher, HD Scaler, Surface Mount

### Included Accessories

**PW-2412WU:** Wall Mount Power Pack, 24VDC, 1.25A, 2.1mm, Universal (Qty. 1 included)

### Available Accessories

**HD-TX-101-C-1G-E-B-T:** DM Lite – HDMI® over CATx Transmitter, Wall Plate, Black Textured

**HD-TX-101-C-1G-E-W-T:** DM Lite – HDMI® over CATx Transmitter, Wall Plate, White Textured

**HD-TX-101-C-E:** DM Lite – HDMI® over CATx Transmitter, Surface Mount

**HD-TX-201-C-2G-E-B-T:** DM Lite – HDMI® over CATx Transmitter & 2x1 Auto-Switcher w/VGA & Analog Audio, Wall Plate, Black Textured

**HD-TX-201-C-2G-E-W-T:** DM Lite – HDMI® over CATx Transmitter & 2x1 Auto-Switcher w/VGA & Analog Audio, Wall Plate, White Textured

**HD-TX-301-C-E:** DM Lite – HDMI® over CATx Transmitter & 3x1 Auto-Switcher w/2x HDMI plus VGA & Analog Audio, Surface Mount

**DM-CBL-ULTRA-PC Series:** DigitalMedia™ Ultra Patch Cables

**DM-CONN-ULTRA-RECP Series:** DigitalMedia™ Ultra Keystone RJ45 Jacks

**DM-RPP-K24:** DigitalMedia™ 24-Port Keystone Patch Panel

**DM-CBL-8G-NP Series:** DigitalMedia 8G™ Cable, non-plenum

**DM-CBL-8G-P Series:** DigitalMedia 8G™ Cable, plenum

**DM-8G-CONN-WG:** Connector with Wire Guide for DM-CBL-8G

**DM-8G-CRIMP-WG:** Crimping Tool for DM-8G-CONN-WG

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**DM-CBL-ULTRA-NP Series:** DigitalMedia™ Ultra Cable, Non-Plenum Type CMR

**DM-CBL-ULTRA-P Series:** DigitalMedia™ Ultra Cable, Plenum Type CMP

**DM-CBL-ULTRA-LSZH Series:** DigitalMedia™ Ultra Cable, Low Smoke Zero Halogen (Available only in Europe)

**DM-CONN-20:** Connectors for DM-CBL-ULTRA DigitalMedia Ultra Cable

**CBL Series:** Crestron® Certified Interface Cables

**MP-WP Series:** Media Presentation Wall Plates

**MPI-WP Series:** Media Presentation Wall Plates – International Version

**CNSP-XX:** Custom Serial Interface Cable

**IRP2:** IR Emitter w/Terminal Block Connector

**AM-101:** AirMedia® Presentation Gateway

**SAROS SB-200-P-B:** Saros® Sound Bar 200, Powered, Black

**AMP-150 Series:** Single-Channel Modular Power Amplifier, 50W, 70/100V

**AMP-1200 Series:** Single-Channel Modular Power Amplifier, 200W, 70/100V

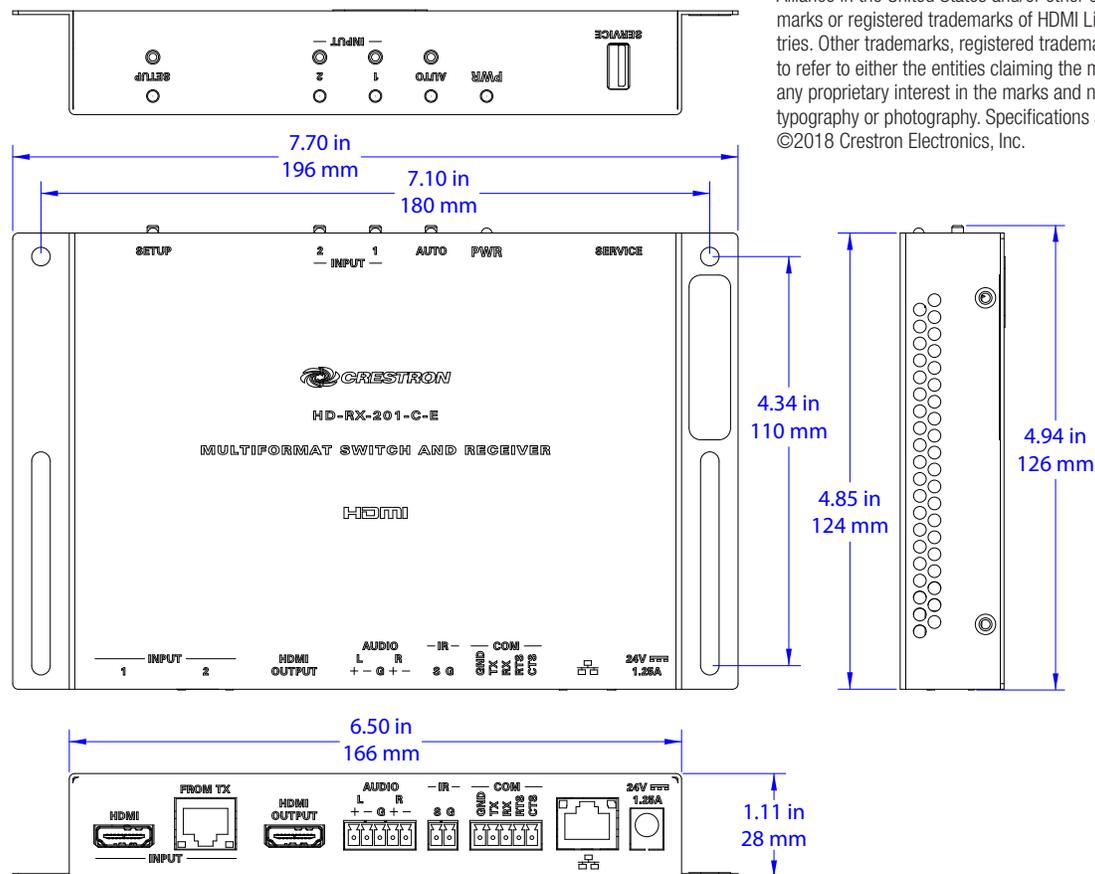
**AMP-225:** Dual-Channel Modular Power Amplifier, 25W/Ch., 4/8Ω

**AMP-2100 Series:** Dual-Channel Modular Power Amplifier, 100W/Ch.; 4/8Ω, 70V or 100V

**MP-AMP30:** Media Presentation Audio Amplifier

## Notes:

1. The analog audio output is only active when the input source is transmitting a 2-channel stereo signal.



2. For the DM Lite link cable, use Crestron **DM-CBL-8G** DigitalMedia 8G™ cable, Crestron **DM-CBL-ULTRA** DigitalMedia™ Ultra cable, or third-party CAT5e (or better). The maximum cable length is 230 ft (70 m). Shielded cable and connectors are required when bundling multiple cables in a wire run, and are recommended for all applications to safeguard against unpredictable environmental electrical noise which may impact performance at resolutions above 1080p. All wire and cables are sold separately. DM Lite devices are not compatible with DigitalMedia 8G+ (DM 8G+), HDBaseT, PoE, PoDM, or any other CATx based interface or network.
3. The power pack may be connected to either the transmitter or receiver. Only one power pack is required. Do not connect more than one power pack. DM Lite devices are not compatible with PoE or PoDM.
4. The HDMI output requires an appropriate adapter or interface cable to accommodate a DVI signal. **CBL-HD-DVI** interface cables are available separately.
5. The HDMI input requires an appropriate adapter or interface cable to accommodate a DVI or Dual-Mode DisplayPort signal. **CBL-HD-DVI** interface cables are available separately.
6. With or without reduced blanking.
7. With reduced blanking.

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

The specific patents that cover this and other Crestron products are listed online at <https://www.crestron.com/legal/patents>.

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

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