DM-RMC-200-C

CRESTRON DigitalMedia™

DigitalMedia 8G+™ Receiver & Room Controller 200

- *DigitalMedia 8G+™ receiver, high-definition scaler, audio amplifier, and display controller*
- *DM 8G+™ input supports up to 330 ft (100 m) cable length[1]*
- *Connects to a DM® switcher or transmitter over one CAT5e or Crestron® DM 8G® cable[1]*
- *Supports HDBaseT™ Alliance specifications*
- *Provides one HDMI® or DVI display output[3]*
- *Accepts any video source from standard NTSC 480i or PAL 576i, to HD 1080p60 w/Deep Color*
- *Also accepts any computer source from VGA to UXGA/WUXGA*
- *Scales the source to match the native resolution of virtually any popular video display or computer monitor*
- *Provides intelligent frame rate conversion*
- *Allows motion-adaptive de-interlacing or interlacing*
- *Allows adjustable overscan or underscan up to 7.5%*
- *Provides automatic 3D to 2D signal conversion[2]*
- *Automatically passes 3D video without scaling to 3D capable displays[2]*
- *Includes content-adaptive noise reduction*
- *100% HDCP compliant*
- *Scalable zoom feature enables 2x2, 3x2, 3x3, 4x3, or 4x4 video wall capability[5]*
- *Handles Dolby® TrueHD, DTS-HD Master Audio™, and uncompressed 7.1 linear PCM audio*
- *Provides a stereo analog line level audio output*
- *Includes a built-in 30 Watt stereo amplifier*
- *Provides 10/100 Ethernet and USB HID mouse/keyboard ports*
- *Enables device control via CEC, IR, RS-232, and Ethernet*
- *Provides two relay control ports and two contact sensing inputs*
- *Allows quick, easy setup and diagnostics*
- *Low-profile design mounts to a 2-gang US, UK, or European wall box*
- *Includes mounting bracket with integral power pack holder*
- *Universal power pack included*

The DM-RMC-200-C provides an advanced one-box interface solution for a single display device as part of a complete Crestron® DigitalMedia™ system. It functions as a DM 8G+™ receiver, video scaler, audio amplifier, and control interface, providing a single HDMI® output along with speaker and line level audio, plus Ethernet, USB HID, and a variety of control ports. In addition to DM 8G+, it is also compatible with HDBaseT™ specifications, allowing it to be connected directly to any HDBaseT compliant source. Built-in scaling allows the connected display to handle virtually any video signal. Its compact, low-profile design allows the DM-RMC-200-C to be installed discreetly behind a flat panel display or above a ceiling mounted projector. It connects to the head end or source location using a single CAT5e or Crestron DM 8G® cable.[1]

DigitalMedia 8G+™

As the leader in HDMI and control system technologies, Crestron developed DigitalMedia (DM®) to deliver the first complete HD AV distribution system to take HDMI to a higher level. DigitalMedia allows virtually any mix of HDMI and other AV sources to be distributed throughout a home, office, school, or virtually any other facility.

DigitalMedia 8G+ is the latest generation of DM, providing a true one-wire transport for moving high-definition video, audio, and Ethernet over low-cost twisted-pair cable without any compression or repeaters. Engineered for ultra high-bandwidth and ultimate scalability, DM 8G+ handles uncompressed video beyond high-definition with support for HDCP, Deep Color, and 3D. Audio capabilities include support for high-bitrate 7.1 audio formats like Dolby® TrueHD and DTS-HD Master Audio™ as well as uncompressed linear PCM. All signals are transported over one 8-conductor twisted-pair cable, supporting distances up to 330 feet (100 m) using Crestron DM 8G Cable or CAT5e.[1]

HDBaseT™

Crestron DigitalMedia 8G+ technology is designed using HDBaseT Alliance specifications, ensuring interoperability with third-party HDBaseT products. Via its DM 8G+ input, the DM-RMC-200-C can be connected directly to any HDBaseT compliant source without requiring a DM transmitter. HDBaseT connectivity through the DM-RMC-200-C converges uncompressed full HD digital video, audio, Ethernet, and control signals through a single CAT5e or CAT6 cable over distances up to 328 ft (100m).

Multimedia Display Interface

A single HDMI digital AV output port is provided on the DM-RMC-200-C, supporting HD 1080p video and WUXGA computer signals with HDCP, Deep Color, 3D[2], and multi-channel HD lossless audio — all through one connection. The HDMI output can also handle DVI signals using an appropriate adapter or interface cable[3].

Stereo audio outputs are also provided for directly driving a pair of speakers, or for connecting to line inputs on the display or a separate amplifier or AV receiver.

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DM-RMC-200-C – Rear and Front Views

A single cable connects the DM-RMC-200-C to a DM switcher or transmitter, or to an HDBaseT source, transporting video, audio, control, and networking signals all through one simple RJ45 connection.[1] Multiple DM-RMC-200-Cs may be installed to handle each display in a multi-room distribution system, all fed from a central DM-MD series switcher. Or, a single DM-RMC-200-C can be fed straight from a DM 8G+ transmitter, affording a simple solution for extending a computer or AV signal to a single display.

High-Definition Scaler

Through a distributed scaler approach, DigitalMedia truly delivers the most flexible and user-friendly solution for routing multiple disparate sources to many different display devices. By placing an independent high-performance scaler at every display device, DM ensures an optimal image on every screen no matter what sources are selected. Distributed scaling allows a high-res computer source to be viewed on any display in the building. It also allows a high-definition 3D source to be viewed on lower-resolution 2D displays without compromising the original signal, letting you share your theater's full HD 1080p 3D image with smaller, lesser displays in other rooms.

The DM-RMC-200-C accepts any video source from standard NTSC 480i to HD 1080p60 w/Deep Color, as well as computer sources from VGA to UXGA/WUXGA, and scales them perfectly to match the native resolution of your video display. A range of common output resolutions are supported to work with virtually any popular flat-panel display, projector, or computer monitor. Intelligent frame rate conversion enables support for 24p and PAL format sources, and 3D to 2D conversion allows 3D content to be fed simultaneously to separate 3D and 2D displays. Setup and use of the scaler is simplified through fully automatic operation utilizing the display's EDID[2,4].

A pair of DM-RMC-200-Cs can also be used to facilitate a dual-projector 3D setup, steering just the left eye portion of a 3D signal to one projector, and the right eye portion to the other. This is done using the scaler's 3D to 2D conversion mode, enabling 3D capability with scaling.

Video Wall Processing

The DM-RMC-200-C has another trick up its sleeve, providing zoom capability on its output to display just a portion of the source image. Using this feature, multiple units may be combined to configure a high-definition video wall composed of up to 16 individual displays. Configurations of 2x2, 3x2, 3x3, 4x3, or 4x4 are supported, and all that is required is a separate DM-RMC-200-C for each display, and a DM switcher with sufficient DM 8G+ outputs.

Audio Amplifier

The DM-RMC-200-C is equipped with stereo analog audio outputs, and a built-in 30 Watt stereo amplifier. The output volume is adjustable via a control system using a keypad, touch screen, or handheld remote. The amplifier provides plenty of power to drive a pair of local speakers, or use the line output to connect directly to an input on the display device, a pair of amplified speakers, or a local sound system.

LAN Connectivity

Along with high-definition AV and control, DigitalMedia also integrates high-speed Ethernet networking for a total signal distribution solution. The DM-RMC-200-C includes a 10/100 Ethernet port, providing a convenient LAN connection for a local network device.

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Keyboard/Mouse Extender

The DM-RMC-200-C also functions as a keyboard/mouse extender, allowing a USB HID-compliant keyboard and/or mouse to be connected at the display location and used to control a computer or other component located at the central equipment rack or some other location.

Embedded Device Control

The primary objective of every Crestron system is to enable precisely the control desired for a seamless user experience. The DM-RMC-200-C includes built-in RS-232, IR, and Ethernet control ports to allow programmable control of the display device connected to it. But, it can also provide an alternative to such conventional control methods by harnessing the CEC (Consumer Electronics Control) signal embedded in HDMI. Through its connection to the control system, the DM-RMC-200-C provides a gateway for controlling the display device right through the HDMI connection, potentially eliminating the need for any dedicated control wires or IR emitters.

Two low-voltage relay ports are also included on the DM-RMC-200-C for control of a projection screen or lift. Also, there are two discrete digital input ports to accommodate room occupancy sensors, power sensors, or contact closures for enhanced automation and monitoring.

Low-Profile Installation

Its low-profile design makes the DM-RMC-200-C perfect for installation behind a flat panel display or above a ceiling mounted projector. It mounts to a standard 2-gang US, UK, or European electrical box using the mounting bracket provided. The bracket even includes a convenient holder for the external power pack, providing for a clean installation that protrudes a mere 1-5/8 inches (41 mm) from the mounting surface.

Connections for the display device are all positioned along the top and bottom of the unit for a clean, serviceable installation. The DigitalMedia and relay connections are provided on the rear panel within the electrical box. Speakers may be connected to either the top panel or the rear. One of the digital input control ports is located on the rear panel, with the other provided on the bottom. An array of indicators is provided on the front of the DM-RMC-200-C for easy setup and troubleshooting.

Please refer to the DigitalMedia Resources Webpage at http://www.crestron.com/dmresources/ *for additional design tools and reference documents.*

SPECIFICATIONS

Video

Scaler: HD video scaler, motion-adaptive deinterlacer, interlacer, intelligent frame rate conversion, Deep Color support, 3D to 2D conversion[2], content-adaptive noise reduction, widescreen format selection (zoom, stretch, maintain aspect-ratio, or 1:1), video wall processing (2x2, 3x2, 3x3, 4x3, or 4x4)[5]

Input Signal Types: DM 8G+™ (DigitalMedia™ over one CAT5e twisted-pair copper wire), HDBaseT™ [1]

Output Signal Types: HDMI®, DVI[3]

Formats: HDMI w/Deep Color & 3D[2], DVI, HDCP content protection support

Input Resolutions, Progressive: 640x480@60Hz, 720x480@60Hz (480p), 720x576@50Hz (576p), 800x600@60Hz, 848x480@60Hz, 852x480@60Hz, 854x480@60Hz, 1024x768@60Hz, 1024x852@60Hz, 1024x1024@60Hz, 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x768@60Hz, 1280x800@60Hz, 1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1365x1024@60Hz, 1366x768@60Hz, 1400x1050@60Hz, 1440x900@60Hz, 1600x900@60Hz, 1600x1200@60Hz, 1680x1050@60Hz, 1920x1080@24Hz (1080p24), 1920x1080@25Hz (1080p25), 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), 1920x1200@60Hz, plus any other resolution allowed by HDMI up to 165MHz pixel clock

Input Resolutions, Interlaced: 720x480@30Hz (480i), 720x576@25Hz (576i), 1920x1080@25Hz (1080i25), 1920x1080@30Hz (1080i30), plus any other resolution allowed by HDMI up to 165MHz pixel clock

Scaler Output Resolutions, Progressive: 640x480@60Hz, 720x480@60Hz (480p), 720x576@50Hz (576p), 800x600@60Hz, 848x480@60Hz, 1024x768@60Hz[6], 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x768@60Hz, 1280x800@60Hz[6], 1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1366x768@60Hz[6], 1400x1050@60Hz[6], 1440x900@60Hz[6], 1600x900@60Hz[7], 1600x1200@60Hz, 1680x1050@60Hz[6], 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), 1920x1200@60Hz[7], 2048x1152@60Hz[7]

Scaler Output Resolutions, Interlaced: 720x480@30Hz (480i), 720x576@25Hz (576i), 1920x1080@25Hz (1080i25), 1920x1080@30Hz (1080i30)

Pass-Thru Output Resolutions: Matched to input

Audio

Input Signal Types: DM 8G+, HDBaseT

Output Signal Types: HDMI, analog stereo (speaker and line level)

Formats, HDMI: Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby® TrueHD, DTS®, DTS-ES, DTS 96/24, DTS-HD High Res, DTS-HD Master Audio™, Up to 8ch PCM

Formats, Analog: Stereo 2-Channel

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

Performance (analog):

Amplifier Output Power: 15 Watts per channel at 8 Ohms;
Frequency Response: 20Hz to 20kHz ±0.5dB (line), 20Hz to 16kHz ±3dB (speaker);
S/N Ratio: >95dB (line), >75dB (speaker) 20Hz to 20kHz A-weighted;
THD+N: <0.005% (line), <0.3% (speaker) @ 1kHz;
Stereo Separation: >90dB (line), >60dB (speaker)

Volume Gain Range (analog): -80dB to 0dB

Communications

DigitalMedia: DM 8G+, HDCP management, EDID format management, CEC, HDBaseT compliant

Ethernet: 10/100 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, DHCP

USB: Supports USB HID class devices

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Connectors – Bottom

DIG IN: (1) 2-pin 3.5mm detachable terminal block;
Digital/contact closure sensing input;
Rated for 0-24 Volts DC, referenced to GND;
Input Impedance: 2.2k Ohms pulled up to 5 Volts DC;
Logic Threshold: 2.5 Volts DC nominal with 1 Volt hysteresis band

HDMI OUT: (1) 19-pin Type A HDMI female;
HDMI digital video/audio output;
Also supports DVI[3]

USB HID: (1) USB Type A female;
USB 2.0 host port for connection of a mouse/keyboard or other USB HID-compliant device

COM: (1) 5-pin 3.5mm detachable terminal block,;
Bidirectional RS-232 port;
Up to 115.2k baud, hardware and software handshaking support

IR 1 – 2: (1) 4-pin 3.5mm detachable terminal block comprising (2) IR/Serial ports;
IR output up to 1.1 MHz;
1-way serial TTL/RS-232 (0-5 Volts) up to 19200 baud

Connectors – Top

AUDIO OUT R, L (Speaker): (2) 2-pin 5mm detachable terminal blocks;
Left & Right speaker-level audio outputs;
Paralleled with rear panel AUDIO OUT connectors;
Wire Size: Connector accepts 12 AWG maximum;
Output Power: 15 Watts per channel at 8 Ohms

AUDIO OUT R, L (Line): (2) RCA female;
Stereo unbalanced line-level audio output;
Output Level: 2 Vrms maximum;
Output Impedance: 100 Ohms nominal

LAN: (1) 8-wire RJ45 female, shielded 10Base-T/100Base-TX Ethernet port

24VDC 2.0A MAX: (1) 2.1 x 5.5 mm DC power connector;
24 Volt DC power input;
PW-2420RU power pack included

Connectors – Rear

G: (1) 6-32 screw, chassis ground lug

AUDIO OUT L, R (Speaker): (2) 2-pin 5mm detachable terminal blocks;
Left & Right speaker-level audio outputs;
Paralleled with top panel AUDIO OUT (Speaker) connectors;
Wire Size: Connector accepts 12 AWG maximum;
Output Power: 15 Watts per channel at 8 Ohms

RELAY 1 – 2: (1) 4-pin 3.5mm detachable terminal block comprising (2) normally open, isolated relays;
Rated 1 Amp, 30 Volts AC/DC;
MOV arc suppression across contacts

DIG IN: (1) 2-pin 3.5mm detachable terminal block;
Digital/contact closure sensing input;
Rated for 0-24 Volts DC, referenced to GND;
Input Impedance: 2.2k Ohms pulled up to 5 Volts DC;
Logic Threshold: 2.5 Volts DC nominal with 1 Volt hysteresis band

DM IN: (1) 8-pin RJ45 female, shielded;
DM 8G+ input, HDBaseT compliant;
Connects to the DM 8G+ output of a DM switcher, transmitter, or other DM device, or to a HDBaseT device, via CAT5e or Crestron DM-CBL-8G cable[1]

Controls & Indicators

PWR: (1) green LED, indicates operating power supplied via local power supply
DM LINK: (1) green LED, indicates DM link status
VIDEO: (1) green LED, indicates video signal presence and lock status
USB HID: (1) green LED, indicates a valid device connection and activity on the USB HID port
SETUP: (1) red LED and (1) miniature recessed pushbutton, for Ethernet setup
RESET: (1) miniature recessed pushbutton, for hardware reset
LAN (Top): (2) LEDs, green LED indicates Ethernet link status, amber LED indicates Ethernet activity
DM IN (Rear): (2) LEDs, green LED indicates DM link status, amber LED indicates video and HDCP signal presence

Power Requirements

Power Pack: 2 Amps @ 24 Volts DC;
100-240 Volts AC, 50/60 Hz power pack, model PW-2420RU included

Environmental

Temperature: 32° to 104°F (0° to 40°C)
Humidity: 10% to 90% RH (non-condensing)
Heat Dissipation:
Power amp off: 50 BTU/Hr;
Power amp on: 60 BTU/Hr (typical), 165 BTU/Hr (maximum)

Enclosure

Chassis: Metal, black finish, vented sides and front
Mounting: Mounts to a 2-gang electrical box, 2-Gang UK (BS 4662) electrical box, or 2-Gang European (DIN 49073) electrical box; bracket includes holder for the included power pack

Dimensions

Height: 7.92 in (202 mm)
Width: 10.84 in (276 mm) with mounting bracket
Depth: 1.85 in (47 mm) with mounting bracket

Weight

3.25 lb (1.48 kg) including bracket and power pack

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MODELS & ACCESSORIES

Available Models

DM-RMC-200-C: DigitalMedia 8G+™ Receiver & Room Controller 200

Included Accessories

PW-2420RU: Power Pack, Desktop, 24VDC, 2A (50 Watts), Regulated, US/International (Qty. 1 included)

Available Accessories

DM-CBL-8G-NP: DigitalMedia 8G™ Cable, non-plenum
DM-CBL-8G-P: DigitalMedia 8G™ Cable, plenum
DM-8G-CONN-100: DigitalMedia 8G™ Cable Connector, 100-Pack
DM-8G-CRIMP: Crimping Tool for DM-8G-CONN
CBL Series: Crestron® Certified Interface Cables
MP-WP Series: Media Presentation Wall Plates
MPI-WP Series: Media Presentation Wall Plates - International Version
IRP2: IR Emitter Probe w/Terminal Block Connector
CNSP-XX: Custom Serial Interface Cable

Notes:

1. For DM 8G+ wiring, use Crestron DM-CBL-8G DigitalMedia 8G Cable, Crestron DM-CBL DigitalMedia Cable, Crestron DM-CBL-D DigitalMedia D Cable, or generic CAT5e (or better) UTP or STP. Maximum wire length for DM 8G+ is 330 ft (100 m) between devices. Shielded cable and connectors are recommended to safeguard against unpredictable environmental electrical noise which may impact performance at resolutions above 1080p. Refer to the Crestron DigitalMedia Design Guide, Doc. #4546 for complete system design guidelines. DM 8G+ is also compatible with HDBaseT Alliance specifications for connecting to HDBaseT compliant equipment. All wire and cables sold separately.
2. Automatically passes 3D video if display device supports it (reverts to pass-through mode without scaling). Provides automatic 3D-to-2D conversion (with scaling) if display device does not support 3D.
3. HDMI requires an appropriate adapter or interface cable to accommodate a DVI signal. CBL-HD-DVI interface cable available separately.
4. EDID (Extended Display Identification Data) is data embedded in an HDMI, DVI, or VGA signal that enables a display device to tell the source device what resolutions and formats it can support, allowing the source to configure itself automatically to feed the best signal that both devices can support.
5. Video wall processing requires a separate DM-RMC-200-C for each individual display.
6. With or without reduced blanking.
7. With reduced blanking only.

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 www.crestron.com/salesreps or by calling 800-237-2041.

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

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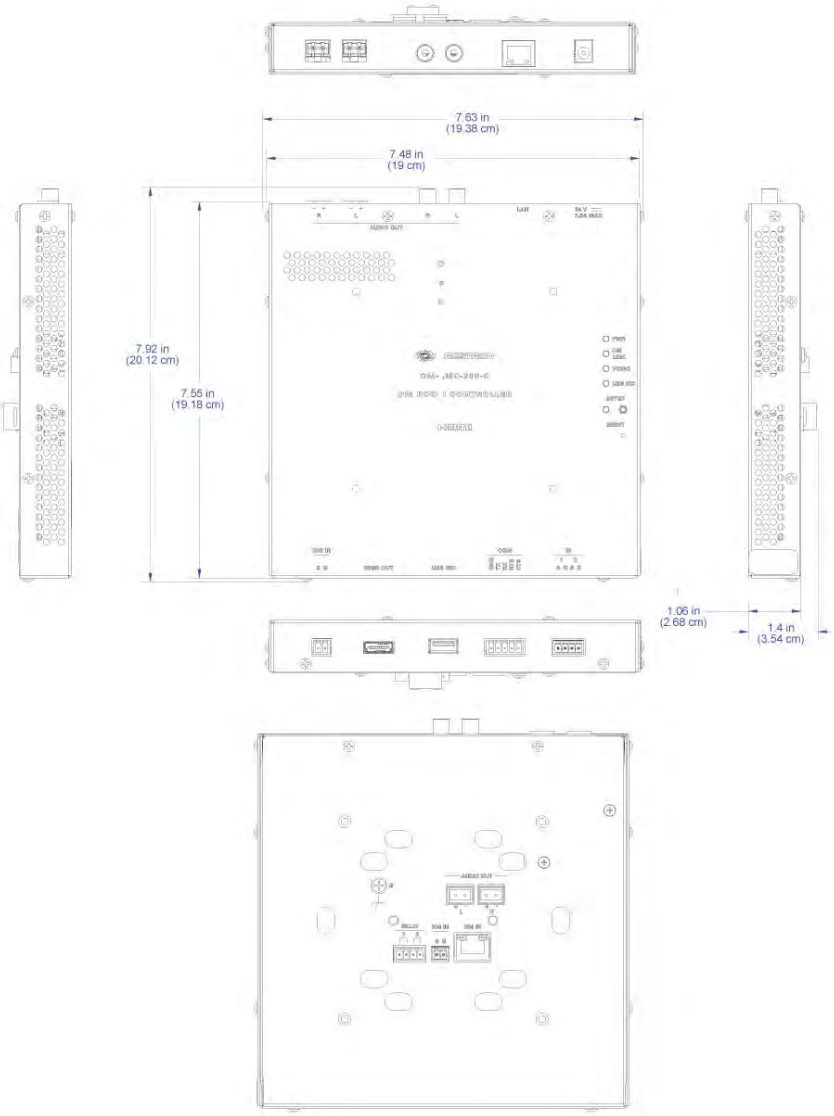

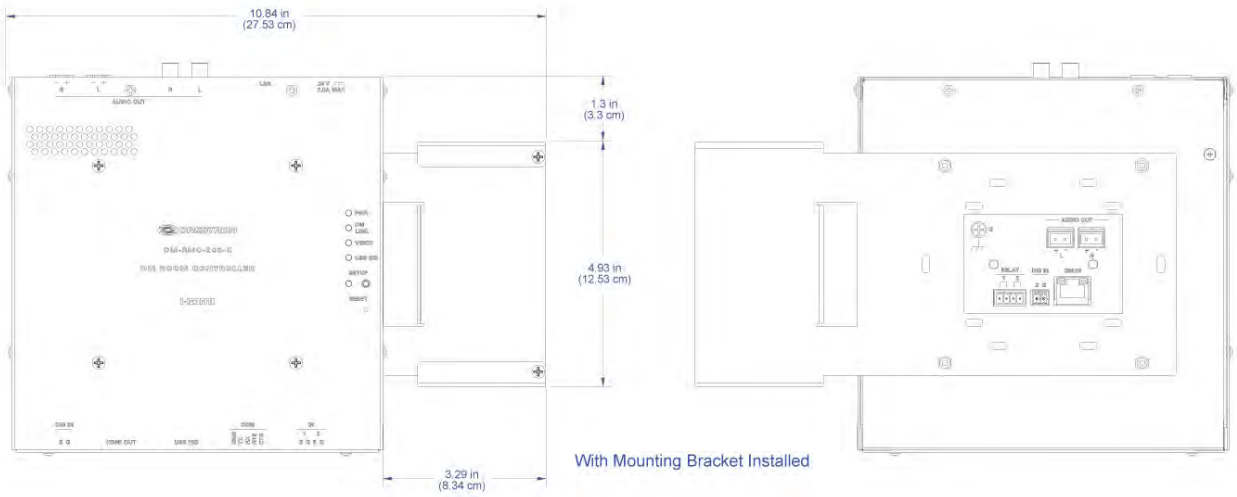

With Mounting Bracket Installed

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