Crestron **DM-RMC-100-C**
DigitalMedia 8G+™ Receiver
& Room Controller 100

Operations & Installation Guide

CRESTRON®

This document was prepared and written by the Technical Documentation department at:

CRESTRON.

Important Safety Instructions

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer.
- Use only with the cart, stand, tripod, bracket or table specified by the manufacturer or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- Unplug this apparatus during lightning storms or when unused for long periods of time.
- Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
- Disconnect power prior to connecting or disconnecting equipment.
- Do not install in direct sunlight.
- The apparatus must be installed in a way that the power cord can be removed either from the wall outlet or from the device itself in order to disconnect the mains power.
- Prevent foreign objects from entering the device.

WARNING:

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE. THE APPARATUS SHALL NOT BE EXPOSED TO DRIPPING OR SPLASHING. OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHOULD NOT BE PLACED ON THE APPARATUS.

WARNING:

TO PREVENT ELECTRIC SHOCK, DO NOT REMOVE COVER. THERE ARE NO USER SERVICEABLE PARTS INSIDE. ONLY QUALIFIED SERVICE PERSONNEL SHOULD PERFORM SERVICE.

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

AVIS: RISQUE DE CHOC ELECTRIQUE NE PAS OUVRIR

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

IMPORTANT

This device can be used with Class 2 output wiring.

Regulatory Compliance

As of the date of manufacture, the DM-RMC-100-C has been tested and found to comply with specifications for CE marking and standards per EMC and Radiocommunications Compliance Labelling.

$$\text{CE} \quad \text{C}$$

Federal Communications Commission (FCC) Compliance Statement

CAUTION: Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna

- Increase the separation between the equipment and receiver

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected

- Consult the dealer or an experienced radio/TV technician for help

Industry Canada (IC) Compliance Statement

CAN ICES-3(B)/NMB-3(B)

Contents

DigitalMedia 8G+ Receiver & Room Controller 100: DM-RMC-100-C

Introduction

The DM-RMC-100-C provides a simple one-box interface solution for a single display device as part of a complete Crestron® DigitalMedia™ system. It functions as a DM 8G+™ receiver and control interface, providing a single HDMI® output along with Ethernet, RS-232, and IR 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. Its compact low-profile design allows the DM-RMC-100-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]

Features and Functions

- DigitalMedia 8G+™ receiver and display controller
- DM 8G+ input supports up to 330 foot (100 meter) cable length[1]
- Connects to a DM® switcher or transmitter (each sold separately) over one CAT5e or Crestron DM 8G cable[1]
- Supports HDBaseT Alliance specifications
- Provides one HDMI or DVI display output[2]
- Handles HD video with Deep Color, 3D, and HDCP
- Handles Dolby® TrueHD, DTS-HD Master Audio™, and uncompressed 7.1 linear PCM audio
- Provides a 10BASE-T/100BASE-TX Ethernet connection
- Enables device control via CEC, IR, RS-232, and Ethernet

(Continued on following page)

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 feet (100 meters) 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 latest version of the Crestron DigitalMedia Design Guide (Doc. 4546) for complete system design guidelines. It is available from the Crestron Web site at www.crestron.com/dmresources. DM 8G+ is also compatible with HDBaseT Alliance specifications for connecting to HDBaseT compliant equipment. All wire and cables sold separately.
2. HDMI requires an appropriate adapter or interface cable to accommodate a DVI signal. CBL-HD-DVI interface cable sold separately.

Features and Functions

(Continued)

- Allows quick, easy setup and diagnostics
- Low-profile surface mount design
- Powered over the DM connection or local power pack (included)[1]

DigitalMedia 8G+

DigitalMedia 8G+ provides a true one-wire transport for moving high-definition video, audio, and Ethernet over low-cost twisted pair cable without 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 such as Dolby TrueHD and DTS-HD Master Audio as well as uncompressed linear PCM. All signals are transported over one 8-conductor twisted pair cable (sold separately), supporting distances up to 330 feet (100 meters) using Crestron DM 8G cable or CAT5e.[2]

HDBaseT

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

Multimedia Display Interface

A single HDMI digital AV output port is provided on the DM-RMC-100-C, supporting HD 1080p video and WUXGA computer signals with HDCP, Deep Color, 3D, 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]

A single cable connects the DM-RMC-100-C to a DM switcher or transmitter or to an HDBaseT source (each sold separately), transporting video, audio, control, networking, and power signals through one RJ-45 connection.[1,2] Multiple DM-RMC-100-Cs may be installed to handle each display in a multi-room distribution system, all fed from a central DM switcher. Or, a single DM-RMC-100-C can be fed straight from a DM 8G+ transmitter, affording a very simple solution for extending a computer or AV signal to a single display.

1. Receiving Power over DM (PoDM) or Power over HDBaseT (PoH) requires connection to a switcher or other equipment that has a PoDM or PoH PSE (Power Sourcing Equipment) port.
2. 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 feet (100 meters) 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 latest version of 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.
3. HDMI requires an appropriate adapter or interface cable to accommodate a DVI signal. CBL-HD-DVI interface cable sold separately.

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-100-C includes a 10BASE-T/100BASE-TX Ethernet port, providing a convenient LAN connection for a local network device.

Embedded Device Control

The DM-RMC-100-C includes built-in RS-232, IR, and Ethernet control ports to allow programmable control of the display device connected to it. 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-100-C provides a gateway for controlling the display device through the HDMI connection, potentially eliminating the need for any dedicated control wires or IR emitters.

Low-Profile Installation

The DM-RMC-100-C mounts conveniently on a wall, ceiling, or other flat surface. At just one inch deep, it fits easily behind a flat panel display or above a ceiling mounted projector. All connections and LED indicators are positioned on the sides, ensuring optimal access and visibility for a clean, serviceable installation. An array of indicators is provided for easy setup and troubleshooting.

Applications

The diagram below shows a DM-RMC-100-C in a standalone application. In this application, the DM-RMC-100-C is used with a DM 8G+ transmitter such as the DM-TX-201-C and is not used with a DM switcher.

DM-RMC-100-C in a Standalone Application
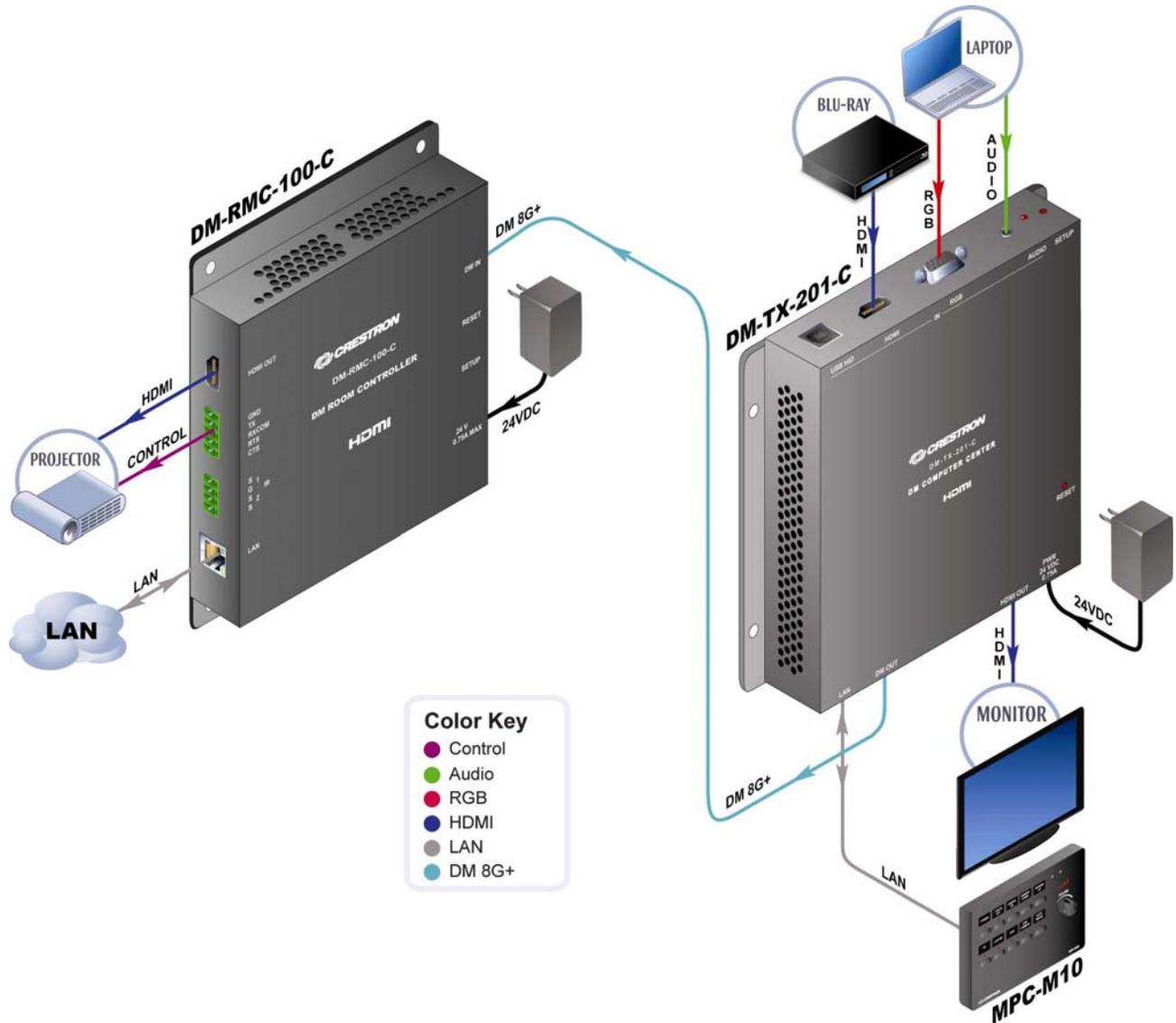
Specifications

Specifications for the DM-RMC-100-C are listed in the following table.

DM-RMC-100-C Specifications

SPECIFICATION	DETAILS
Video	
Input Signal Type	DM 8G+ (DigitalMedia over one CAT5e twisted pair copper wire), HDBaseT[1]
Output Signal Types	HDMI, DVI[2]
Formats	HDMI with Deep Color and 3D, DVI, HDCP content protection support
Input Resolutions	
Progressive	640 x 480 @ 60 Hz 720 x 480 @ 60 Hz (480p) 720 x 576 @ 50 Hz (576p) 800 x 600 @ 60 Hz 848 x 480 @ 60 Hz 852 x 480 @ 60 Hz 854 x 480 @ 60 Hz 1024 x 768 @ 60 Hz 1024 x 852 @ 60 Hz 1024 x 1024 @ 60 Hz 1280 x 720 @ 50 Hz (720p50) 1280 x 720 @ 60 Hz (720p60) 1280 x 768 @ 60 Hz 1280 x 800 @ 60 Hz 1280 x 960 @ 60 Hz 1280 x 1024 @ 60 Hz 1360 x 768 @ 60 Hz 1365 x 1024 @ 60 Hz 1366 x 768 @ 60 Hz 1400 x 1050 @ 60 Hz 1440 x 900 @ 60 Hz 1600 x 900 @ 60 Hz 1600 x 1200 @ 60 Hz 1680 x 1050 @ 60 Hz 1920 x 1080 @ 24 Hz (1080p24) 1920 x 1080 @ 25 Hz (1080p25) 1920 x 1080 @ 50 Hz (1080p50) 1920 x 1080 @ 60 Hz (1080p60) 1920 x 1200 @ 60 Hz 2048 x 1080 @ 24 Hz 2048 x 1152 @ 60 Hz plus any other resolution allowed by HDMI up to 165 MHz pixel clock

(Continued on following page)

DM-RMC-100-C Specifications (Continued)

SPECIFICATION	DETAILS
Video	
Input Resolutions (Continued)	
Interlaced	720 x 480 @ 30 Hz (480i) 720 x 576 @ 25 Hz (576i) 1920 x 1080 @ 25 Hz (1080i25) 1920 x 1080 @ 30 Hz (1080i30) plus any other resolution allowed by HDMI up to 165 MHz pixel clock
Output Resolutions	Matched to input
Audio	
Input Signal Type	DM 8G+, HDBaseT
Output Signal Type	HDMI
Formats	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
Communications	
DigitalMedia	DM 8G+, HDCP management, EDID format management, CEC, PoDM, HDBaseT compliant
Ethernet	10BASE-T/100BASE-TX, auto-switching, auto-negotiating, auto-discovery, full/half duplex, DHCP
Power Requirements[3]	
Power Pack	0.75 amps @ 24 Vdc; 100-240 Vac, 50/60 Hz power pack included
Power over DM (PoDM)	PoDM PD (Powered Device), capable of being powered by a PoDM PSE (Power Sourcing Equipment)
Power over HDBaseT (PoH)	PoH PD, capable of being powered by a PoH PSE
Minimum 2-Series Control System Update File[4, 5]	Version 4.001.1012 or later
Environmental	
Temperature	32º to 104º F (0º to 40º C)
Humidity	10% to 90% RH (non-condensing)
Heat Dissipation	29 Btu/h
Enclosure	
Chassis	Metal, black finish, with two integral mounting flanges, vented top and bottom
Mounting	Freestanding, surface mount, or attach to a single rack rail

(Continued on following page)

DM-RMC-100-C Specifications (Continued)

SPECIFICATION	DETAILS
Dimensions	
Height	6.09 in (155 mm)
Width	5.63 in (143 mm)
Depth	1.02 in (26 mm)
Weight	17 oz (468 g)
Included Accessory	Universal 24 Vdc power pack
Available Accessories	
CBL-HD	Crestron Certified HDMI Interface Cable
CBL-HD-DVI	Crestron Certified HDMI to DVI Interface Cable
CBL-HD-LOCK	Locking High-Speed HDMI Cable
CNSP-XX	Custom Serial Interface Cable
DM-8G-CONN-100	DigitalMedia 8G Cable Connectors
DM-8G-CRIMP	Crimping Tool for DM-8G-CONN
DM-CBL-8G	DigitalMedia 8G Cable
IRP2	IR Emitter Probe
MP-WP140	Media Presentation Wall Plate – DVI with Mini-TRS Stereo Audio
MP-WP152	Media Presentation Wall Plate – HDMI
MP-WP181-C	Media Presentation Wall Plate – DigitalMedia 8G+
MPI-WP150	Media Presentation Wall Plate – International Version – HDMI
MPI-WP181-C	Media Presentation Wall Plate – International Version – DigitalMedia 8G+

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 feet (100 meters) 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 latest version of 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. HDMI requires an appropriate adapter or interface cable to accommodate a DVI signal. CBL-HD-DVI interface cable sold separately.
3. A power pack, power over DM, or power over HDBaseT can be used to power the DM-RMC-100-C.
4. The latest software versions can be obtained from the Crestron Web site. Refer to the NOTE following these footnotes.
5. Crestron 2-Series control systems include the AV2 and PRO2. Consult the latest Crestron Product Catalog for a complete list of 2-Series control systems.

NOTE: Crestron software and any files on the Web site are for authorized Crestron dealers and Crestron Authorized Independent Programmers (CAIP) only. New users may be required to register to obtain access to certain areas of the site (including the FTP site).

Physical Description

This section provides information on the connections, controls and indicators available on the DM-RMC-100-C.

DM-RMC-100-C Physical View (Front View)

DM-RMC-100-C Physical Views (Left and Right Side Views)

DM-RMC-100-C Overall Dimensions (Front View)

HDMI OUT

GND
TX
RX   COM
RTS
CTS

S
G   1
G   IR
G   2

LAN

CRESTRON

DM-RMC-100-C

DM ROOM CONTROLLER

HDMI

DM IN

RESET

SETUP

24 V ⎓
0.75A MAX

5.55 in
(141 mm)

4.63 in
(118 mm)

5.45 in
(139 mm)
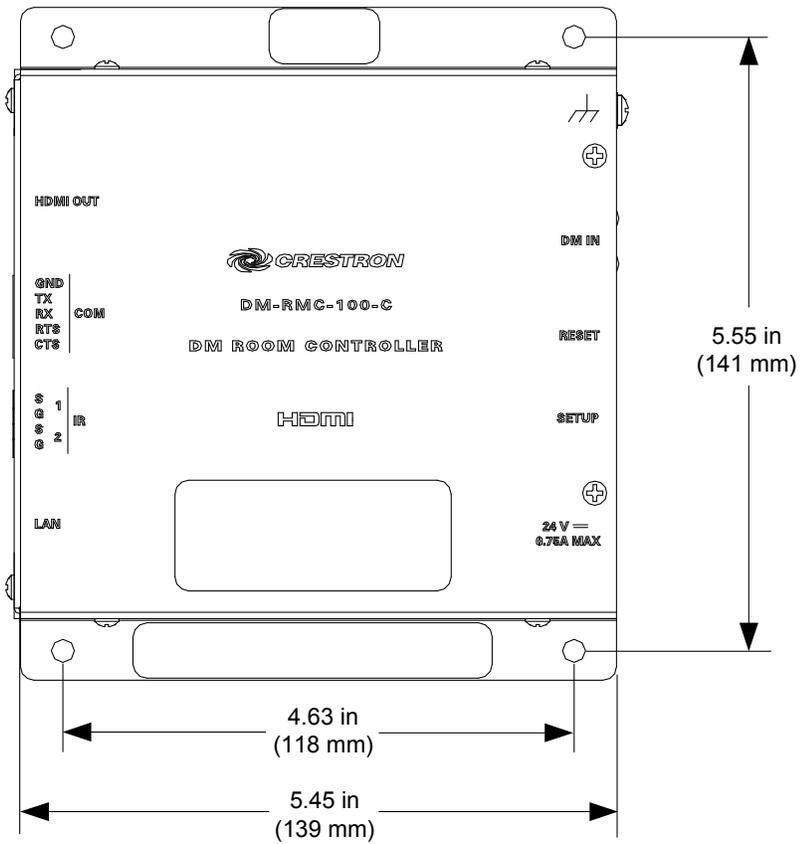
DM-RMC-100-C Overall Dimensions (Bottom View)

1.00 in
(25 mm)

1.02 in
(26 mm)

5.63 in
(143 mm)
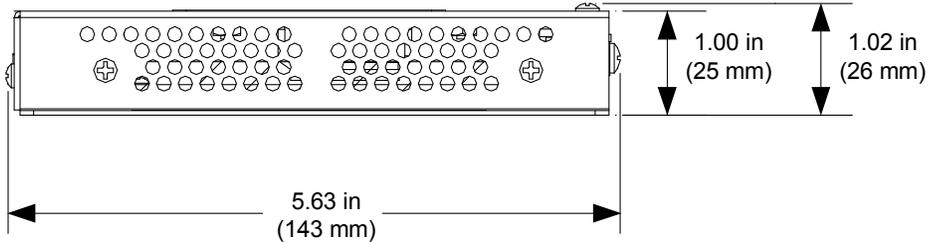
DM-RMC-100-C Overall Dimensions (Left and Right Side Views)
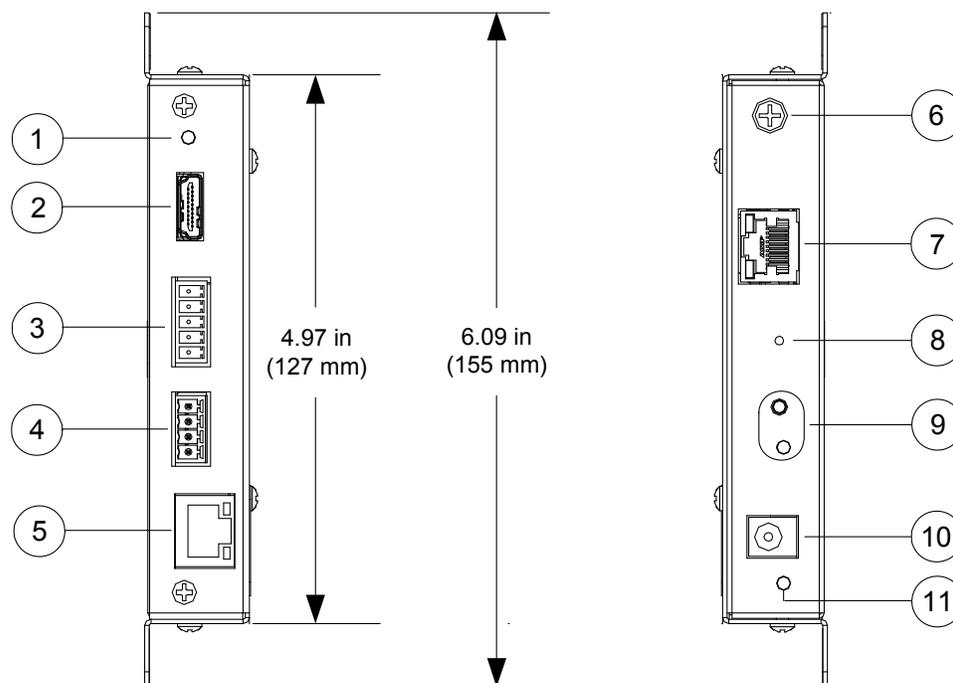
Connectors, Controls & Indicators

#	CONNECTORS[1], CONTROLS & INDICATORS	DESCRIPTION
1	HDMI OUT LED	(1) Green LED, indicates video signal presence at the HDMI output
2	HDMI OUT	(1) 19-pin Type A HDMI female; HDMI digital video/audio output; Supports DVI[2]
3	COM	(1) 5-pin 3.5 mm detachable terminal block, bidirectional RS-232 port; Up to 115.2k baud, hardware and software handshaking support
4	IR (1-2)	(1) 4-pin 3.5 mm detachable terminal block comprising two IR/serial ports; IR output up to 1.1 MHz; 1-way serial TTL/RS-232 (0-5 volts) up to 19200 baud[3]
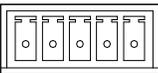
(Continued on following page)

Connectors, Controls & Indicators

#	CONNECTORS[1], CONTROLS & INDICATORS	DESCRIPTION
5	LAN Pin 1 Pin 8 Amber LED Green LED	(1) 8-pin RJ-45 female, shielded, with two LED indicators; 10BASE-T/100BASE-TX Ethernet port; Green LED indicates Ethernet link status; Amber LED indicates Ethernet activity
6		(1) 6-32 screw, chassis ground lug
7	DM IN[4] Pin 1 Pin 8 Amber LED Green LED	(1) 8-pin RJ-45 female, shielded, with two LED indicators; DM 8G+ input, HDBaseT compliant; PoDM and PoH PD (Powered Device) port[5]; Connects to the DM 8G+ output of a DM switcher, transmitter, or other DM device, or to an HDBaseT device via CAT5e or Crestron DM-CBL-8G cable[6]; Green LED indicates DM link status; Solid amber LED indicates HDCP video; Blinking amber LED indicates non-HDCP video
8	RESET	(1) Miniature recessed push button for hardware reset
9	SETUP (Button and LED)	(1) Miniature recessed push button for Ethernet setup and (1) red LED
10	24 V 0.75A MAX	(1) 2.1 x 5.5 mm dc power connector; 24 volt dc power input; Power pack included
11	Power LED	(1) Green LED, indicates operating power supplied from local power pack, PoDM, or PoH

For row 5, the DESCRIPTION also contains:

PIN	SIGNAL	PIN	SIGNAL
1	TX +	5	N/C
2	TX -	6	RX -
3	RX +	7	N/C
4	N/C	8	N/C

1. Interface connectors for the **COM** and **IR** ports are provided with the unit.

2. HDMI requires an appropriate adapter or interface cable to accommodate a DVI signal. CBL-HD-DVI interface cable sold separately.

3. Maximum string length for serial commands sent via the **IR** port should be no greater than 40 characters.

4. The **DM IN** port consists of one RJ-45 connector. Refer to the following table for the connector pinouts.

DM IN Connector Pinouts

1 8			
PIN #	**WIRE COLOR**	**PIN #**	**WIRE COLOR**
1	Orange/White	5	Blue/White
2	Orange	6	Green
3	Green/White	7	Brown/White
4	Blue	8	Brown

5. Receiving Power over DM (PoDM) or Power over HDBaseT (PoH) requires connection to a switcher or other equipment that has a PoDM or PoH PSE (Power Sourcing Equipment) port.

6. 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 feet (100 meters) 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 latest version of 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.

Setup

Network Wiring

When wiring the DM network, consider the following:

- Use Crestron Certified Wire.

- Use Crestron power supplies for Crestron equipment.

  CAUTION: Failure to use Crestron power supplies could cause equipment damage or void the Crestron warranty.

- Provide sufficient power to the system.

- 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 feet (100 meters) 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 latest version of 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.

The DM-RMC-100-C also uses high-speed Ethernet for communications between the device and a control system, computer, media server, and other IP-based devices. For general information on connecting Ethernet devices in a Crestron system, refer to the latest version of the Crestron e-Control® Reference Guide (Doc. 6052), which is available from the Crestron Web site (www.crestron.com/manuals). For information specifically related to Ethernet connectivity using DigitalMedia devices, refer to the latest version of the Crestron IP Considerations Guide for the IT Professional (Doc. 4579), which is also available from the Crestron Web site (www.crestron.com/dmresources).

Identity Code

NOTE: In the SIMPL Windows program, the IP ID of the DM-RMC-100-C is assigned automatically and does not require additional programming when the DM-RMC-100-C is dropped onto an output card of a DM switcher. Use the information below when the DM-RMC-100-C is dropped directly into an Ethernet slot on the control system in SIMPL Windows without a DM switcher.

The IP ID is set within the DM-RMC-100-C IP table using Crestron Toolbox™. For information on setting an IP table, refer to the Crestron Toolbox help file. The IP IDs of multiple DM-RMC-100-C devices in the same system must be unique.

When setting the IP ID, consider the following:

- The IP ID of each unit must match an IP ID specified in the SIMPL Windows program.

- Each device using IP to communicate with a control system must have a unique IP ID.

Installation

The DM-RMC-100-C mounts on a flat surface such as a wall or ceiling. The DM-RMC-100-C can also be mounted on a rack rail.

Ventilation

The DM-RMC-100-C should be used in a well-ventilated area. The venting holes should not be obstructed under any circumstances.

To prevent overheating, do not operate this product in an area that exceeds the environmental temperature range listed in the table of specifications.

Mounting on a Flat Surface

To mount the DM-RMC-100-C on a flat surface such as a wall or ceiling, use four mounting screws (not included). The following illustration shows mounting of the DM-RMC-100-C on a wall.

NOTE: To ensure optimum ventilation when mounted on a wall, position the DM-RMC-100-C vertically so that the venting holes are positioned at the top and bottom of the unit.

Mounting DM-RMC-100-C on a Wall

Mounting Screws (4)
(Not Included)

To mount the DM-RMC-100-C on the left or right rail of a rack, use two rack mounting screws (not included). The following illustration shows mounting of the DM-RMC-100-C on the right rail of a rack.

Mounting DM-RMC-100-C on Rack Rail (Right Rack Rail Shown)

Rack Mounting
Screws
(Not Included)

Hardware Hookup

Make the necessary connections as called out in the illustrations on the following page. Refer to "Network Wiring" on page 13. Apply power after all connections have been made.

Hardware Connections for the DM-RMC-100-C (Left Side)

HDMI OUT:
Digital Video/Audio Output

COM:
To RS-232 Device

IR:
To IR Device or
Device Without RS-232

LAN:
10BASE-T/100BASE-TX
Ethernet to LAN
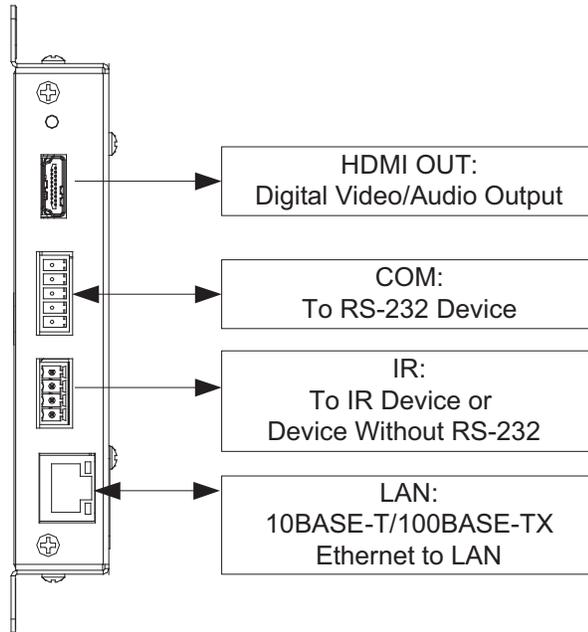
Hardware Connections for the DM-RMC-100-C (Right Side)

Ground

DM IN:
From DM Switcher, Transmitter,
or Other DM Device
or from Third-Party
HDBaseT Device

24 VDC:
From Power Supply
(Included)
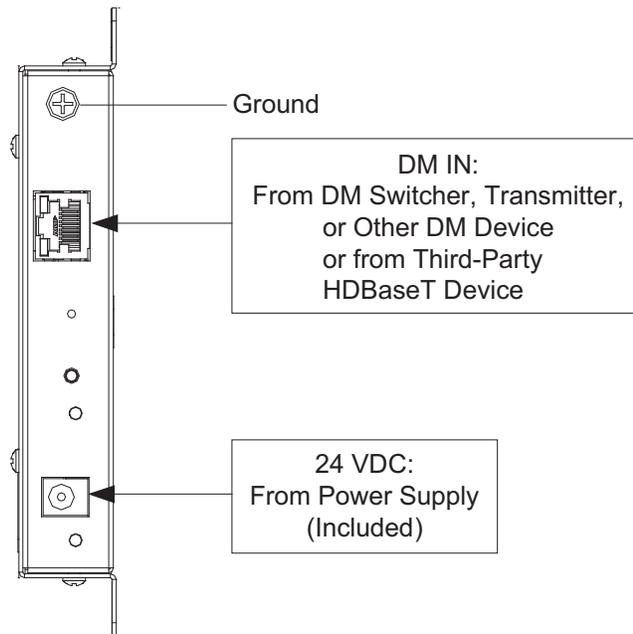
NOTE: Ensure that the unit is properly grounded by connecting the chassis ground lug to an earth ground (building steel).

NOTE: 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 feet (100 meters) 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 latest version of 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.

NOTE: The 24 Vdc power pack (included) is not required if power over DM or power over HDBaseT is used.

Programming Software

Have a question or comment about Crestron software?

Answers to frequently asked questions (FAQs) can be viewed in the Online Help section of the Crestron Web site. To post a question or to view questions submitted to Crestron's True Blue Support, log in at www.crestron.com/onlinehelp. First-time users must establish a user account to fully benefit from all available features.

Software Requirements for the PC

NOTE: The latest software can be downloaded from the Crestron Web site (www.crestron.com/software).

Crestron provides an assortment of Windows®-based software tools to develop a customized system. Use Crestron SIMPL Windows to create a program to control the DM-RMC-100-C.

Programming with SIMPL Windows

SIMPL Windows is Crestron's premier software for programming Crestron control systems. It is organized into two separate but equally important "Managers": Configuration and Program.

Configuration Manager

Configuration Manager is the view where programmers "build" a Crestron control system by selecting hardware from the *Device Library*.

1. To incorporate the DM-RMC-100-C into the system, drag the DM-RMC-100-C from the DigitalMedia | DM Receivers folder of the *Device Library* and drop it into either of the following in *System Views:*

   - A compatible output card of a DM switcher

   - Directly to a card in the Ethernet slot of the control system (used without a DM switcher)

   Locating the DM-RMC-100-C in the Device Library
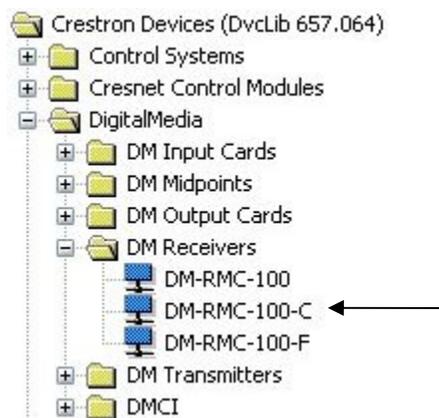
The system tree of the control system displays the DM-RMC-100-C in the appropriate slot with a default IP ID as shown in the following illustrations. In the first example, the DM-RMC-100-C is used with the DMCO-50 output card in a DM-MD8X8 switcher. In the second example, the DM-RMC-100-C is used with the C2ENET-2 card in an Ethernet slot on the control system.

C2ENET-2 Device, Slot 8 (Using Output Card in DM Switcher)

```
□ 🖳 PRO2
    └── ◉ Slot 1: {Empty C2Y Card Slot}
    └── ◉ Slot 2: {Empty C2Y Card Slot}
    └── ◉ Slot 3: {Empty C2Y Card Slot}
    ⊞ ▦ Slot 4: C2I-COM6
    ⊞ ▦ Slot 5: C2I-IR8
    ⊞ ▦ Slot 6: C2I-IO8
    ⊞ ▦ Slot 7: C2I-RY8
    □ ▦ Slot 8: C2ENET-2
        □ 🖥 IP-ID 03: DM-MD8x8
            └── ◉ Slot 1: {Empty DM Input Card Expansion Slot}
            └── ◉ Slot 2: {Empty DM Input Card Expansion Slot}
            └── ◉ Slot 3: {Empty DM Input Card Expansion Slot}
            └── ◉ Slot 4: {Empty DM Input Card Expansion Slot}
            └── ◉ Slot 5: {Empty DM Input Card Expansion Slot}
            └── ◉ Slot 6: {Empty DM Input Card Expansion Slot}
            └── ◉ Slot 7: {Empty DM Input Card Expansion Slot}
            └── ◉ Slot 8: {Empty DM Input Card Expansion Slot}
            □ 🖥 Slot 17: DMCO-50
                □ ▦ Slot 1: DMC-CO-HD
                    □ ▦ Slot 1: DMC-CO-HD Output 1
                        ⊞ 🖥 IP-ID 14: DM-RMC-100-C    ←────────
                    ⊞ ▦ Slot 2: DMC-CO-HD Output 2
            └── ◉ Slot 21: {Empty DM Output Card Expansion Slot}
        └── ◉ IP-ID 04: {EMPTY}

        └── ◉ IP-ID FE: {EMPTY}
    ⊞ 🔲 Slot 9: C2Net-Device
    └── ▦ Slot 10: C2I-PRO2-LCDPANEL
```
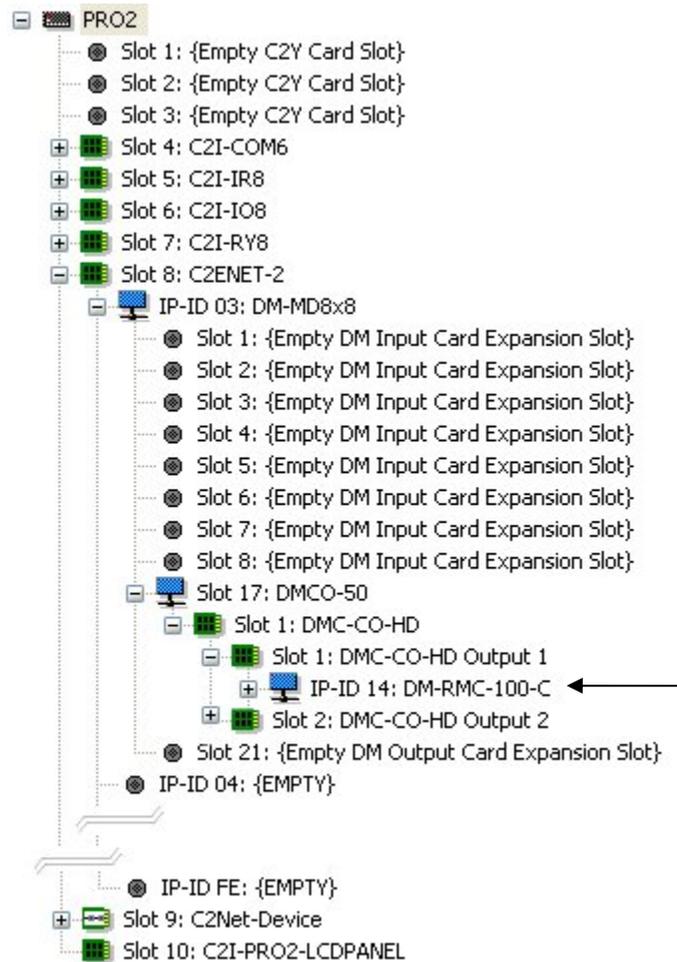
C2ENET-2 Device, Slot 8 (Using Ethernet Slot on Control System)
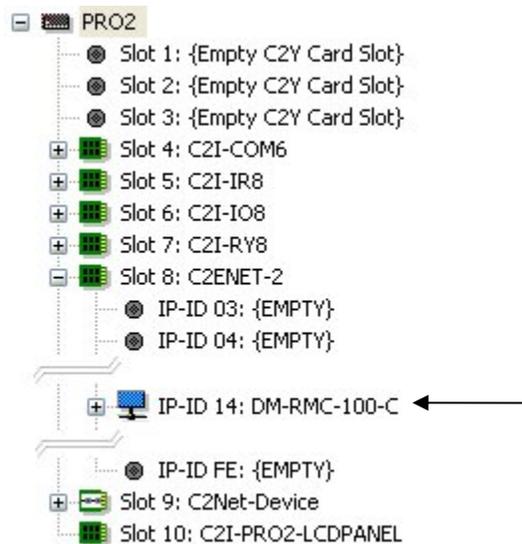
2. If additional DM-RMC-100-C devices are to be added, repeat step 1 for each device. Each DM-RMC-100-C device is assigned a different IP ID.

3. If necessary, double-click a device to open the "Device Settings" window and change the IP ID as shown in the following illustration.

"Device Settings: Crestron DM-RMC-100-C" Window
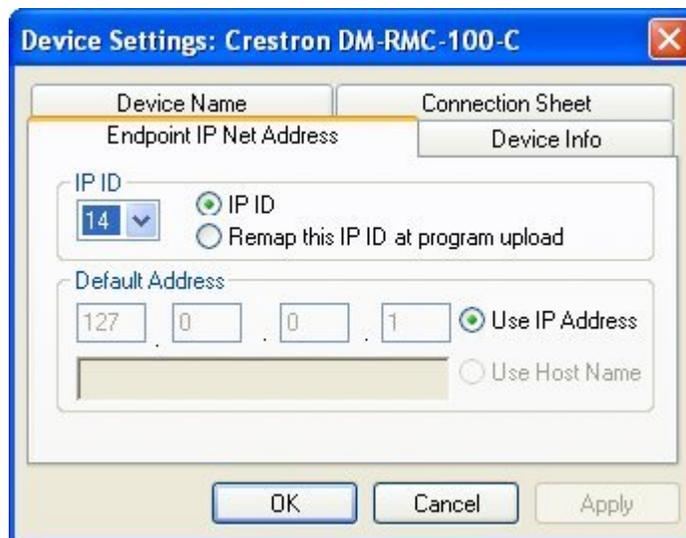
NOTE: The ID code specified in the SIMPL Windows program must match the IP ID of each unit. Refer to "Identity Code" on page 13.

Program Manager

Program Manager is the view where programmers "program" a Crestron control system by assigning signals to symbols.

The symbol can be viewed by double-clicking the icon or dragging it into *Detail View*. Each signal in the symbol is described in the SIMPL Windows help file (**F1**).

Uploading and Upgrading

Crestron recommends using the latest programming software and that each device contains the latest firmware to take advantage of the most recently released features. However, before attempting to upload or upgrade it is necessary to establish communication. Once communication has been established, files (for example, firmware) can be transferred to the device. In addition, the IP table of the device can be configured.
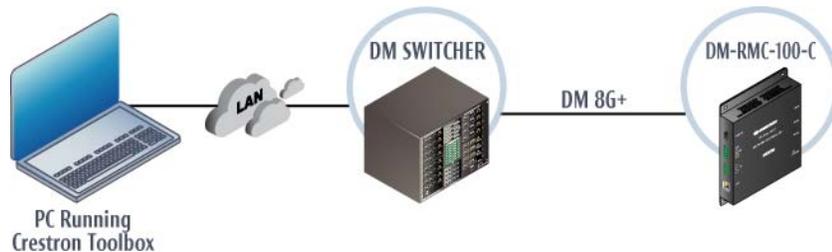
Establishing Communication

Use Crestron Toolbox for communicating with the DM-RMC-100-C; refer to the Crestron Toolbox help file for details.

A PC running Crestron Toolbox communicates with the DM-RMC-100-C in the following ways:

- Via a DM switcher using TCP/IP or USB communication. TCP/IP provides a faster method of communication than USB.

- Via the **LAN** port of the DM-RMC-100-C using TCP/IP communication. In this scenario, the DM-RMC-100-C is used in a standalone configuration (a DM switcher is not used).

Via DM Switcher

TCP/IP Communication via DM Switcher

To establish TCP/IP communication between the PC and the DM-RMC-100-C via the DM switcher:

1. Establish communication between the PC and the DM switcher as described in the latest version of the DigitalMedia Switchers Operations Guide (Doc. 6755).

2. Use the Device Discovery Tool in Crestron Toolbox to find the IP address of the DM-RMC-100-C. The tool is available in Toolbox version 1.15.143 or later.

3. Use the Address Book in Crestron Toolbox to create an entry for the DM-RMC-100-C using the *TCP* connection type, and enter the IP address of the DM-RMC-100-C.

4. Display the "System Info" window of the DM-RMC-100-C (click the icon); communications are confirmed when the device information is displayed.

USB Communication via DM Switcher
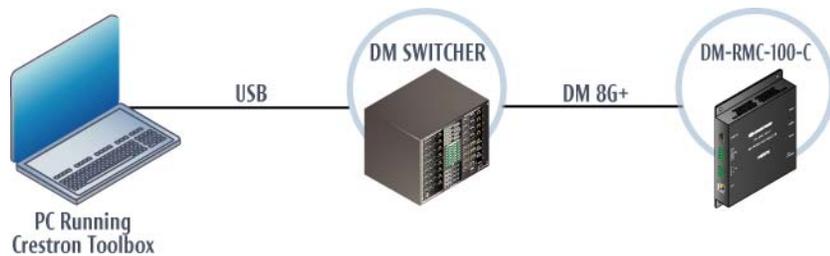
To establish USB communication between the PC and the DM switcher:

1. Use the Address Book in Crestron Toolbox to create an entry using the expected communication protocol (USB). When multiple USB devices are connected, identify the DM switcher by entering "DM-MD8X8", "DM-MD16X16", or "DM-MD32X32" in the *Model* textbox, the unit's serial number in the *Serial* textbox, or the unit's hostname in the *Hostname* textbox. The hostname can be found in the "System Info" window in the section marked *Ethernet*; however, communications must be established in order to see this information in the "System Info" window.

2. Display the "System Info" window (click the [i] icon); communications are confirmed when the device information is displayed.

Via LAN Port   *TCP/IP Communication via LAN Port of DM-RMC-100-C*
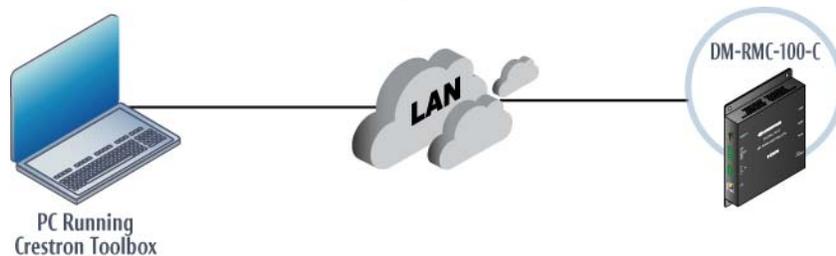
To establish TCP/IP communication between the PC and the DM-RMC-100-C via the **LAN** port of the DM-RMC-100-C:

1. Use the Device Discovery Tool in Crestron Toolbox to find the IP address of the DM-RMC-100-C. The tool is available in Toolbox version 1.15.143 or later.

    NOTE: When the DM-RMC-100-C is used in a standalone configuration (not used with a DM switcher), DHCP is enabled by default. If desired, a default IP address (192.168.1.243) can be assigned by holding down its **SETUP** button while applying power. This IP address overwrites any previous settings and remains until it is changed.

2. Use the Address Book in Crestron Toolbox to create an entry for the DM-RMC-100-C using the *TCP* connection type, and enter the IP address of the DM-RMC-100-C.

3. Display the "System Info" window of the DM-RMC-100-C (click the [i] icon); communications are confirmed when the device information is displayed.

4. (Optional) If additional changes to TCP/IP settings are desired,
do the following:

 a. Assign an IP address, IP mask, and default router for the
 DM-RMC-100-C via the Crestron Toolbox (**Functions | Ethernet
 Addressing**).

 b. Close the "System Info" window.

 c. In Crestron Toolbox, change the Address Book entry for the
 DM-RMC-100-C so that it uses the IP address assigned in step 4a.

 d. Display the "System Info" window of the DM-RMC-100-C (click the
 icon); communications are confirmed when the device information
 is displayed.

Firmware

Firmware files may be distributed from programmers to installers or from Crestron
to dealers. Firmware upgrades are available from the Crestron Web site as new
features are developed after product releases. For details on upgrading, refer to the
Crestron Toolbox help file.

Check the Crestron Web site to find the latest firmware. (New users may be required
to register to obtain access to certain areas of the site, including the FTP site.)

To upgrade DM-RMC-100-C firmware:

1. Do either of the following:

 • If the DM-RMC-100-C is connected to a DM switcher, use the Device
 Discovery Tool in Crestron Toolbox to find the IP address of the
 switcher.

 • If the DM-RMC-100-C is being used in a standalone configuration (not
 used with a DM switcher), use the Device Discovery Tool to find the IP
 address of the DM-RMC-100-C.

2. Add the IP address found in step 1 to the Address Book in Toolbox.

3. Download the appropriate .puf file from the Crestron Web site to the PC.

4 Double-click the .puf file. The Toolbox Address Book opens.

5. From the list in the Address Book, select the DM switcher (if the
DM-RMC-100-C is connected to a switcher) or the DM-RMC-100-C (if the
DM-RMC-100-C is used in a standalone configuration), and then click **OK.**

 Either of the following occurs:

 • If the DM switcher was selected, a DM device list is displayed that
 allows an upgrade to all DM devices connected to the switcher.

 • If the DM-RMC-100-C was selected, a DM device list is displayed that
 allows an upgrade to the DM-RMC-100-C only.

 In the DM device lists that are displayed, the checkbox of any item that
 needs to be upgraded is automatically selected.

6. Click **Update.**

7. After the process is complete, click **Recheck** to verify the upgrade.

IP Configuration

If the DM-RMC-100-C is used in a standalone configuration (without a DM switcher), use Crestron Toolbox to create the IP table entry of the DM-RMC-100-C.

NOTE: If the DM-RMC-100-C is connected to a DM switcher, the IP table entry of the DM-RMC-100-C is created automatically.

1. Use the Device Discovery Tool to find the IP address of the DM-RMC-100-C. Then, in the Toolbox, display the "System Info" window (click the i icon) and select the DM-RMC-100-C entry from the Address Book.

2. Select **Functions | IP Table Setup**.

3. Add, modify or delete entries in the IP table. The DM-RMC-100-C can have only one IP table entry.

4. A defined IP table can be saved to a file or sent to the device.

Problem Solving

Troubleshooting

The following table provides corrective action for possible trouble situations.
If further assistance is required, please contact a Crestron customer
service representative.

DM-RMC-100-C Troubleshooting

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Power LED does not illuminate.	Device is not receiving power.	If device is powered over DM: • Verify cable connection to the **DM IN** port. • Verify that device connected to the **DM IN** port can provide power to this device. If device is powered from power supply connected to DC power jack, verify power supply connections to the device and to the power outlet.
Green LED on **DM IN** port does not illuminate.	Device cannot establish a link to the device connected to the **DM IN** port.	Verify cable connection to the **DM IN** port.
HDMI OUT LED does not illuminate.	Device is not receiving video signal.	Ensure proper video signal is routed to device.
	Device connected to the **HDMI OUT** port has not sent the hotplug signal.	Power on device connected to the **HDMI OUT** port and ensure that it is switched to the correct input.
HDMI OUT LED is green but video on connected display is black.	HDCP is blanking the video output.	Verify that device connected to HDMI output supports HDCP.

(Continued on following page)

DM-RMC-100-C Troubleshooting (Continued)

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
LAN LED does not illuminate green.	LAN network cable is not connected to the **LAN** port or to the 10BASE-T/ 100BASE-TX compatible device.	Verify LAN network cable connection to the **LAN** port and to the compatible network device.
	LAN network cable is not the proper type.	Verify that network cable complies with EIA/TIA 568 and the CAT5 specification.
	LAN network cable is not the proper length.	Verify that network cable is the proper length. Cable length must not exceed 328 feet (100 meters).
	10BASE-T/100BASE-TX compatible device is not receiving power.	Apply power to the network device.
Loss of functionality due to electrostatic discharge.	Improper grounding.	Check that all ground connections have been made properly.

NOTE: For more advanced diagnostics, use the DMTool in Crestron Toolbox.

Reference Documents

The latest version of all documents mentioned within the guide can be obtained from the Crestron Web site.

List of Related Reference Documents

DOCUMENT TITLE
Crestron DigitalMedia Design Guide (www.crestron.com/dmresources)
Crestron DigitalMedia Switchers Operations Guide (www.crestron.com/manuals)
Crestron e-Control Reference Guide (www.crestron.com/manuals)
Crestron IP Considerations Guide for the IT Professional (www.crestron.com/dmresources)

Further Inquiries

To locate specific information or to resolve questions after reviewing this guide, contact Crestron's True Blue Support at 1-888-CRESTRON [1-888-273-7876] or refer to the listing of Crestron worldwide offices on the Crestron Web site (www.crestron.com/offices) for assistance within a particular geographic region.

To post a question about Crestron products, log onto the Online Help section of the Crestron Web site (www.crestron.com/onlinehelp). First-time users must establish a user account to fully benefit from all available features.

Future Updates

As Crestron improves functions, adds new features and extends the capabilities of the DM-RMC-100-C, additional information may be made available as manual updates. These updates are solely electronic and serve as intermediary supplements prior to the release of a complete technical documentation revision.

Check the Crestron Web site periodically for manual update availability and its relevance. Updates are identified as an "Addendum" in the Download column.

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2. Products may be returned for credit, exchange or service with a CRESTRON Return Merchandise Authorization (RMA) number. Authorized returns must be shipped freight prepaid to Crestron, 6 Volvo Drive, Rockleigh, N.J. or its authorized subsidiaries, with RMA number clearly marked on the outside of all cartons. Shipments arriving freight collect or without an RMA number shall be subject to refusal. Crestron reserves the right in its sole and absolute discretion to charge a 15% restocking fee plus shipping costs on any products returned with an RMA.

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