

Crestron **DM-RMC-100-S**  
DigitalMedia 8G™ Fiber Receiver &  
Room Controller 100

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Operations & Installation Guide



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



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## Regulatory Compliance

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



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### Federal Communications Commission (FCC) Compliance Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following conditions:  
(1) This device may not cause harmful interference and (2) this device must accept any interference received, including interference that may cause undesired operation.

**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

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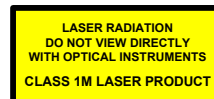
### Industry Canada (IC) Compliance Statement

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

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The DM-RMC-100-S is a class 1M laser product. It complies with safety regulations of IEC-60825-1, FDA 21 CFR 1040.11 and FDA 21 CFR 1040.10.



**WARNING:** Invisible laser radiation may be emitted from disconnected fiber or connector. Do not stare into beam or view directly with optical instruments.

**NOTE:** Plug the included dust cap into the optical transceiver when the fiber optic cable is unplugged.



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# DigitalMedia 8G™ Fiber Receiver & Room Controller 100: DM-RMC-100-S

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## Introduction

The DM-RMC-100-S provides a one-box interface solution for a single display device as part of a complete Crestron® DigitalMedia™ system. It functions as a DM 8G™ Fiber receiver and control interface, providing a single HDMI® output along with Ethernet, RS-232 and IR control ports. Its compact, low-profile design allows the DM-RMC-100-S to be installed discreetly behind a flat panel display or above a ceiling mounted projector. It connects to the head end or source location via a single multimode fiber strand.

## Features and Functions

- DigitalMedia 8G™ receiver and display controller
- Low-profile surface mount design
- DM 8G Fiber input supports up to 1000 foot (~300 meter) cable length<sup>1</sup>
- Provides one HDMI or DVI display output<sup>2</sup>
- Handles HD video with Deep Color, 3D, and HDCP
- Handles multichannel PCM and high bitrate 7.1 surround sound formats
- Enables device control via CEC, RS-232, IR, or Ethernet
- Affords a one-wire connection to a DM® switcher or transmitter
- Provides 10BASE-T/100BASE-TX Ethernet connection
- Allows quick, easy setup and diagnostics

1. All cable sold separately. The maximum DigitalMedia 8G Fiber cable length is 1000 feet (~300 meters) using CRESFIBER8G fiber optic cable, or 500 feet (~150 meters) using standard CRESFIBER, CRESFIBER-SINGLE-SC, or generic OM3 simplex multimode fiber optic cable. Refer to the latest version of the Crestron DigitalMedia Design Guide (Doc. 4789) for complete wiring guidelines. It is available from the Crestron Web site at [www.crestron.com/dmresources](http://www.crestron.com/dmresources).
2. HDMI requires an appropriate adapter or interface cable to accommodate a DVI signal. CBL-HD-DVI interface cable sold separately.

### ***DigitalMedia 8G***

DigitalMedia 8G provides a one-wire digital AV distribution and control network. Engineered for ultra high bandwidth and ultimate scalability, DM 8G handles uncompressed video beyond high definition with support for HDCP, Deep Color, and 3D, plus high bitrate 7.1 audio formats including Dolby® TrueHD and DTS-HD Master Audio™, uncompressed multichannel PCM audio, and high-speed Ethernet, all over one simplex multimode fiber. DM 8G enables wire distances up to 1000 feet (~300 meters) using CresFiber® 8G fiber optic cable.<sup>1</sup>

DigitalMedia manages all of the various AV signals and devices in your system, matching each source's output to the capabilities of the selected display(s) without relying on scaling or compression. Every signal is preserved in its native video resolution and audio format, ensuring a pure, lossless signal path throughout.

### ***Multimedia Display Interface***

A single HDMI digital AV output port is provided on the DM-RMC-100-S, supporting 1080p60 HDTV and WUXGA computer signals with HDCP, Deep Color, 3D, and multi-channel HD lossless audio—all through a single connection. The HDMI output can also handle DVI signals using an appropriate adapter or interface cable.<sup>2</sup> In addition, RS-232, IR, and Ethernet control ports are provided for controlling the display device and other equipment.

A single fiber strand connects the DM-RMC-100-S to a DM switcher or transmitter, transporting video, audio, control, and networking signals through one SC type optical connection.<sup>1</sup> Multiple DM-RMC-100-S receivers 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-S can be fed straight from a DM 8G Fiber transmitter to extend a computer or AV signal to a single display.

### ***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-S 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-S 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 these 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-S provides a gateway for controlling the display device right through the HDMI connection, potentially eliminating the need for any dedicated control wires or IR probes.

1. All cable sold separately. The maximum DigitalMedia 8G Fiber cable length is 1000 feet (~300 meters) using CRESFIBER8G fiber optic cable, or 500 feet (~150 meters) using standard CRESFIBER, CRESFIBER-SINGLE-SC, or generic OM3 simplex multimode fiber optic cable. Refer to the latest version of the Crestron DigitalMedia Design Guide (Doc. 4789) for complete wiring guidelines. It is available from the Crestron Web site at [www.crestron.com/dmresources](http://www.crestron.com/dmresources).
2. HDMI requires an appropriate adapter or interface cable to accommodate a DVI signal. CBL-HD-DVI interface cable sold separately.



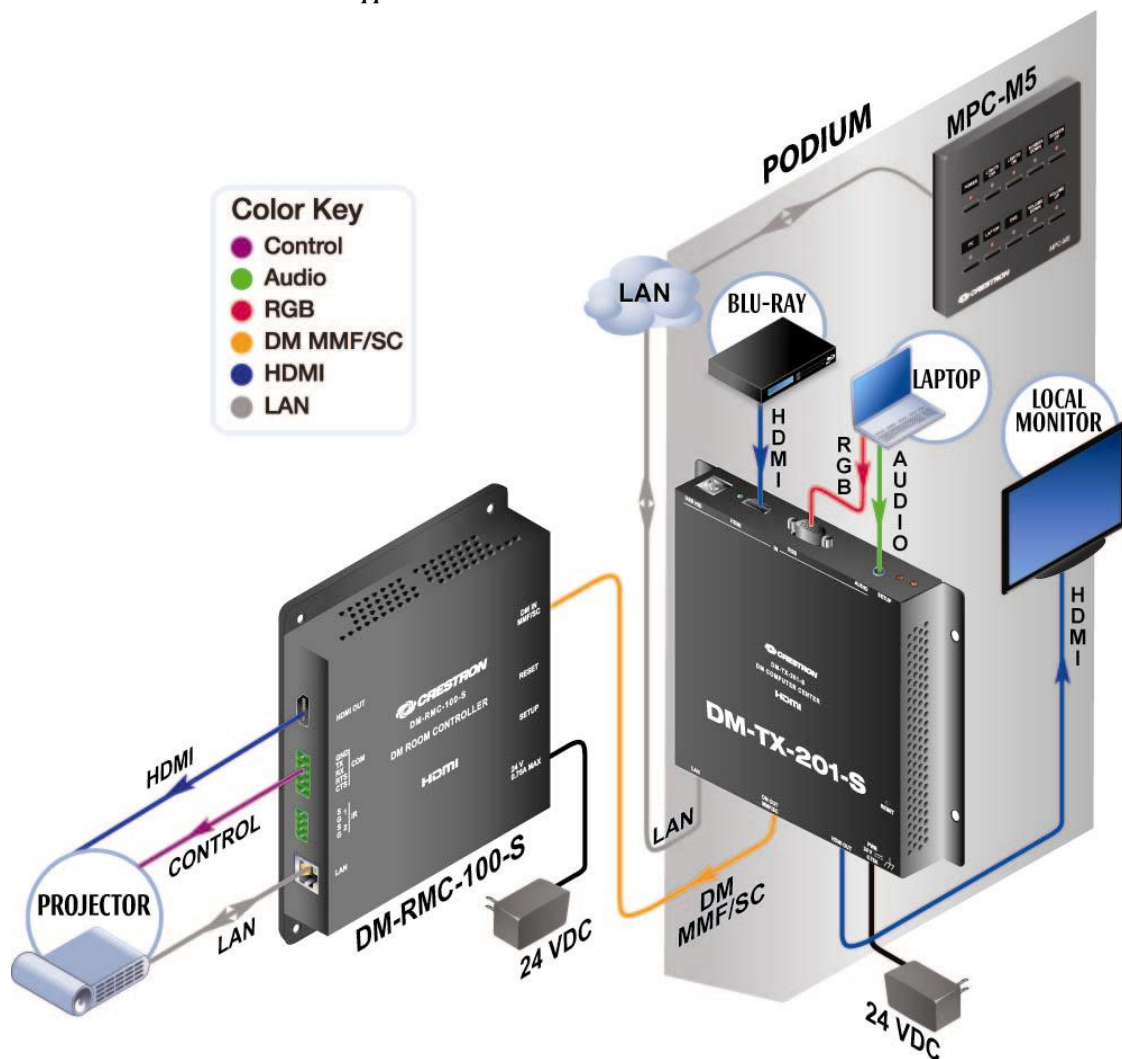
### Low-Profile Installation

The DM-RMC-100-S mounts on a wall, ceiling, or other flat surface. 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, verifying the status of connections and signal activity at a glance.

### Applications

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

*DM-RMC-100-S in a Standalone Application*



## Specifications

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

### *DM-RMC-100-S Specifications*

SPECIFICATION	DETAILS
Video	
Input Signal Type	DM 8G Fiber (DigitalMedia over simplex multimode fiber optic cable)
Output Signal Types	HDMI, DVI <sup>1</sup>
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-S 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 Fiber
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 Fiber, HDCP management, EDID format management, CEC
Ethernet	10BASE-T/100BASE-TX, auto-switching, auto-negotiating, auto-discovery, full/half duplex, TCP/IP, UDP/IP, CIP, DHCP, rSTP
Power Requirements	
Power Pack	0.75 Amps @ 24 Volts DC; 100-240 Volts AC, 50/60 Hz power pack included
Minimum 2-Series Control System Update File <sup>2,3</sup>	Version 4.003.0015 or later
Environmental	
Temperature	32° to 104° F (0° to 40° C)
Humidity	10% to 90% RH (non-condensing)
Heat Dissipation	61 BTU/Hr
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-S Specifications (Continued)*

SPECIFICATION	DETAILS
Dimensions	
Height	6.09 in (155 mm)
Width	5.60 in (143 mm)
Depth	1.00 in (26 mm)
Weight	15 oz (416 g)
Included Accessory	24 Volt DC power pack
Available Accessories	
CBL-HD	Crestron Certified HDMI Interface Cable
CBL-HD-DVI	Crestron Certified HDMI to DVI Interface Cable
CNSP-XX	Custom Serial Interface Cable
CRESFIBER8G	CresFiber 8G Fiber Optic Cable
CRESFIBER-CONN-SC50UM-12	CresFiber Fiber Optic Cable Connector
CRESFIBER-SINGLE-SC-P	CresFiber Simplex Fiber Optic Cable Assembly, 50/125, SC, Plenum
CRESFIBER-SINGLE-SC-ARMORED-P	CresFiber ARMORED Simplex Fiber Optic Cable Assembly, 50/125, SC, Plenum
CRESFIBER-SINGLE-SC-CLEAR-NP	CresFiber CLEAR Simplex Fiber Optic Cable Assembly, 50/125, SC, Non-Plenum
IRP2	IR Emitter Probe
MP-WP140	Media Presentation Wall Plate – DVI with Mini-TRS Stereo Audio
MP-WP152	Media Presentation Wall Plate – HDMI

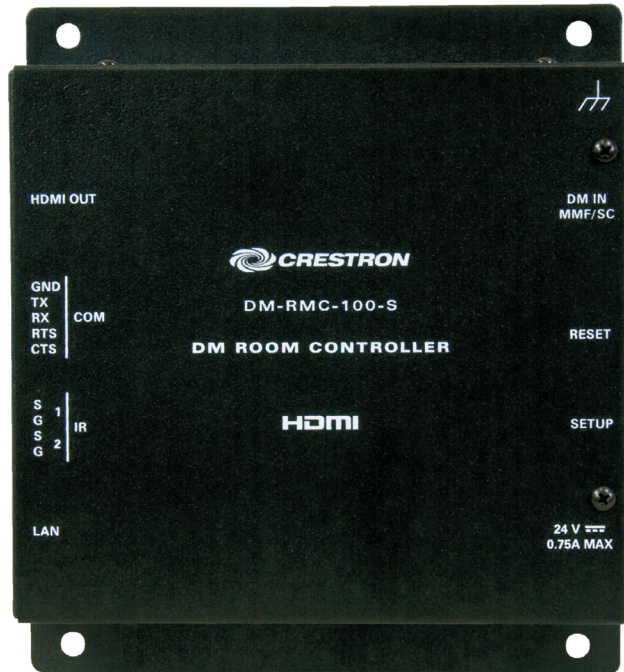
1. HDMI requires an appropriate adapter or interface cable to accommodate a DVI signal. CBL-HD-DVI interface cable sold separately.
2. The latest software versions can be obtained from the Crestron Web site. Refer to the NOTE following these footnotes.
3. Crestron 2-Series control systems include the 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

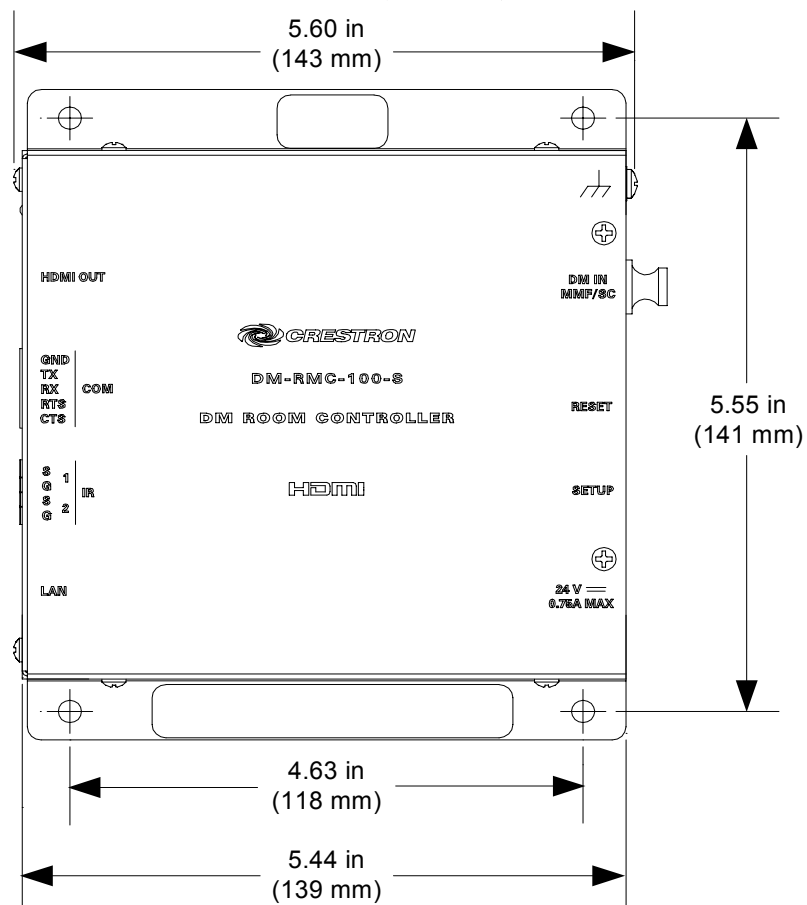
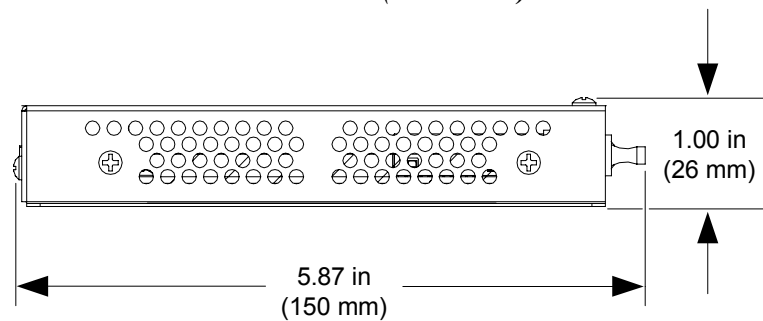
This section provides information on the connections, controls and indicators available on your DM-RMC-100-S.

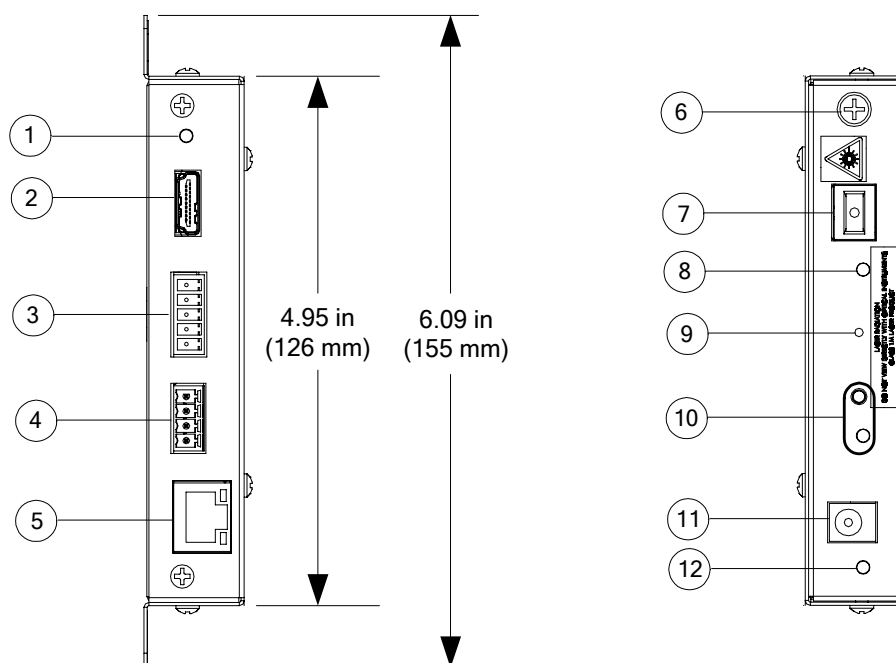
### *DM-RMC-100-S Physical View (Front View)*


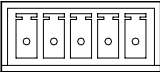



### *DM-RMC-100-S Physical Views (Left and Right Side Views)*



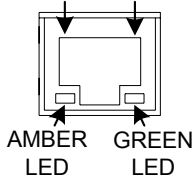



*DM-RMC-100-S Overall Dimensions (Front View)**DM-RMC-100-S Overall Dimensions (Bottom View)*

*DM-RMC-100-S Overall Dimensions (Left and Right Side Views)**Connectors, Controls & Indicators*

#	CONNECTORS <sup>1</sup> , 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 <sup>2</sup>
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 <sup>3</sup>

*(Continued on following page)*

*Connectors, Controls & Indicators (Continued)*

#	CONNECTORS <sup>1</sup> , CONTROLS & INDICATORS	DESCRIPTION																				
5	<p>LAN<sup>4</sup></p> <p>PIN 1    PIN 8</p>  <p>AMBER LED    GREEN LED</p>	<p>(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</p> <table><tr><th>PIN</th><th>SIGNAL</th><th>PIN</th><th>SIGNAL</th></tr><tr><td>1</td><td>TX +</td><td>5</td><td>N/C</td></tr><tr><td>2</td><td>TX -</td><td>6</td><td>RX -</td></tr><tr><td>3</td><td>RX +</td><td>7</td><td>N/C</td></tr><tr><td>4</td><td>N/C</td><td>8</td><td>N/C</td></tr></table>	PIN	SIGNAL	PIN	SIGNAL	1	TX +	5	N/C	2	TX -	6	RX -	3	RX +	7	N/C	4	N/C	8	N/C
PIN	SIGNAL	PIN	SIGNAL																			
1	TX +	5	N/C																			
2	TX -	6	RX -																			
3	RX +	7	N/C																			
4	N/C	8	N/C																			
6		(1) 6-32 screw, chassis ground lug																				
7	<p>DM IN MMF/SC</p> 	<p>(1) SC female optical fiber connector; DM 8G Fiber input; Connects to DM 8G Fiber output of a DM switcher, transmitter, or other DM device via CresFiber 8G fiber optic cable<sup>5</sup></p>																				
8	DM IN LED	(1) Green LED, indicates DM link status																				
9	RESET	(1) Miniature recessed push button for hardware reset																				
10	SETUP (Button and LED)	(1) Miniature recessed push button for Ethernet setup and (1) red LED																				
11	<p>24 V 0.75A MAX</p> 	<p>(1) 2.1 mm barrel DC power jack; 24 Volt DC power input; power pack included</p>																				
12	Power LED	(1) Green LED, indicates operating power supplied from local power pack																				

- Interface connectors for the **COM** and **IR** ports are provided with the unit.
- HDMI requires an appropriate adapter or interface cable to accommodate a DVI signal. CBL-HD-DVI interface cable sold separately.
- Maximum string length for serial commands sent via the **IR** port should be no greater than 40 characters.
- To determine which is pin 1 on the cable, hold the cable so that the end of the eight pin modular plug is facing away from you, with the clip down and copper side up. Pin 1 is on the far left.
- All cable sold separately. The maximum DigitalMedia 8G Fiber cable length is 1000 feet (~300 meters) using CRESFIBER8G fiber optic cable, or 500 feet (~150 meters) using standard CRESFIBER, CRESFIBER-SINGLE-SC, or generic OM3 simplex multimode fiber optic cable. Refer to the latest version of the Crestron DigitalMedia Design Guide (Doc. 4789) for complete wiring guidelines. It is available from the Crestron Web site at [www.crestron.com/dmresources](http://www.crestron.com/dmresources).



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## Setup

### Network Wiring

When wiring the DM network, consider the following:

- Use Crestron Certified Wire.
- Use Crestron power supplies for Crestron equipment.

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

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- Provide sufficient power to the system.
- For DigitalMedia 8G Fiber wiring, CresFiber 8G is recommended. Refer to the following table for the maximum transmission distance of CresFiber 8G and other fiber optic cable.

*DigitalMedia 8G Fiber Wiring and Maximum Transmission Distance*

CABLE TYPE	MAXIMUM TRANSMISSION DISTANCE
CresFiber 8G	1000 feet (~300 meters)
CresFiber	500 feet (~150 meters)
Generic OM3	500 feet (~150 meters)

For complete wiring guidelines, refer to the latest version of the Crestron DigitalMedia Design Guide (Doc. 4789).

The DM-RMC-100-S 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](http://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 (Doc. 4579), which is also available from the Crestron Web site ([www.crestron.com/dmresources](http://www.crestron.com/dmresources)).

### Identity Code

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

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The IP ID is set within the DM-RMC-100-S 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-S 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

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

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

### *Mounting on a Flat Surface*

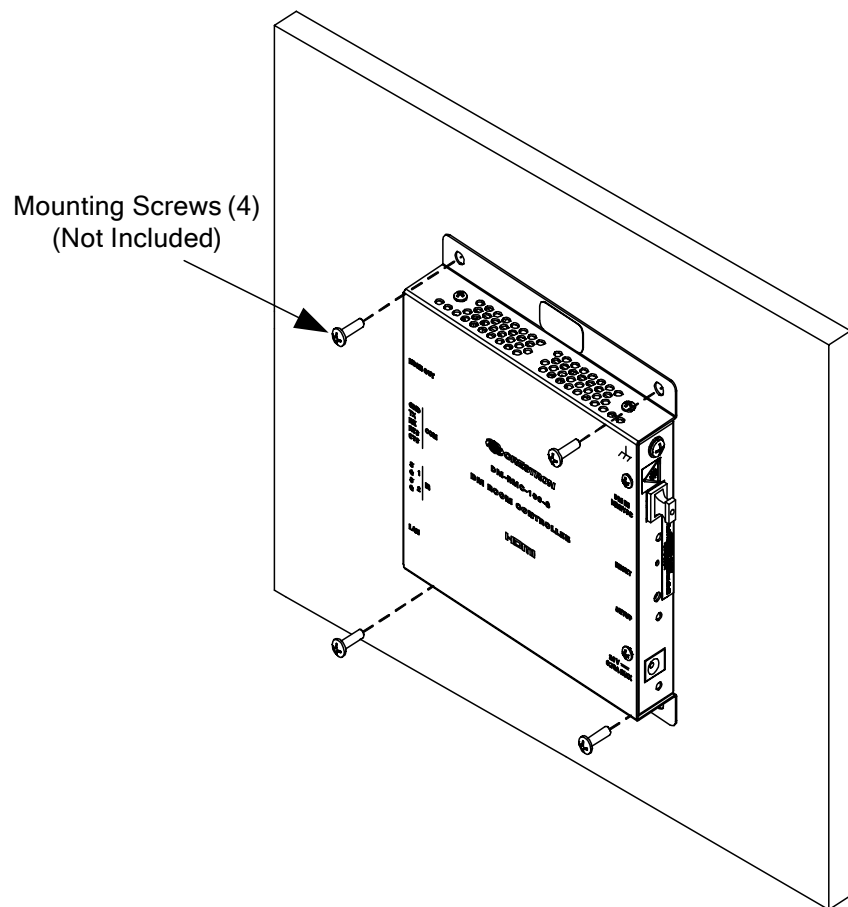
To mount the DM-RMC-100-S on a flat surface such as a wall or ceiling, use four mounting screws (not included). The following illustration shows mounting of the DM-RMC-100-S on a wall.

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

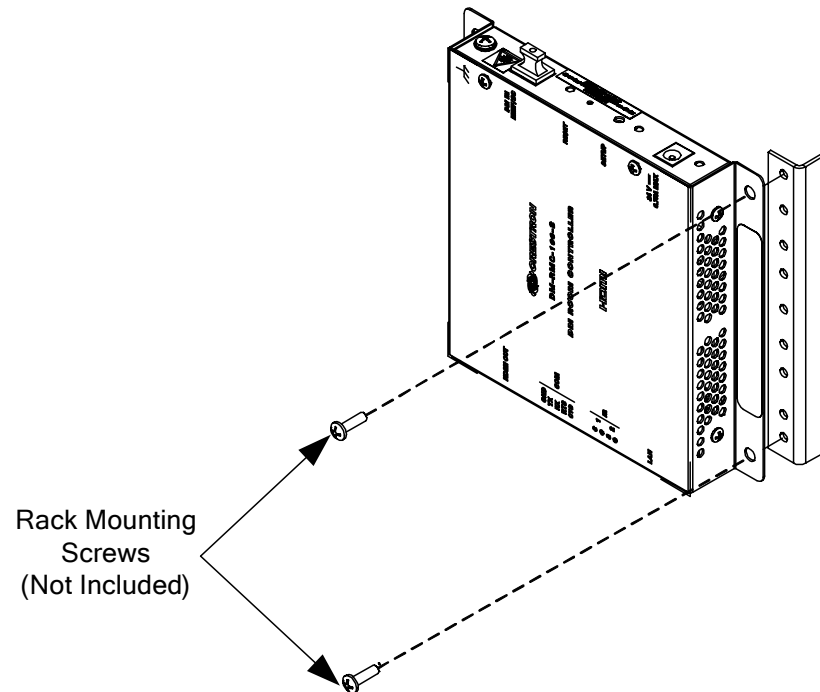
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### *Mounting the DM-RMC-100-S on a Wall*



**Rack Mounting**

To mount the DM-RMC-100-S 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-S on the right rail of a rack.

***Mounting the DM-RMC-100-S on Rack Rail (Right Rack Rail Shown)*****Hardware Hookup**

Make the necessary connections as called out in the illustrations on the following page. Refer to “Network Wiring” on page 11. Apply power after all connections have been made.

When making connections to the DM-RMC-100-S, use Crestron power supplies for Crestron equipment.

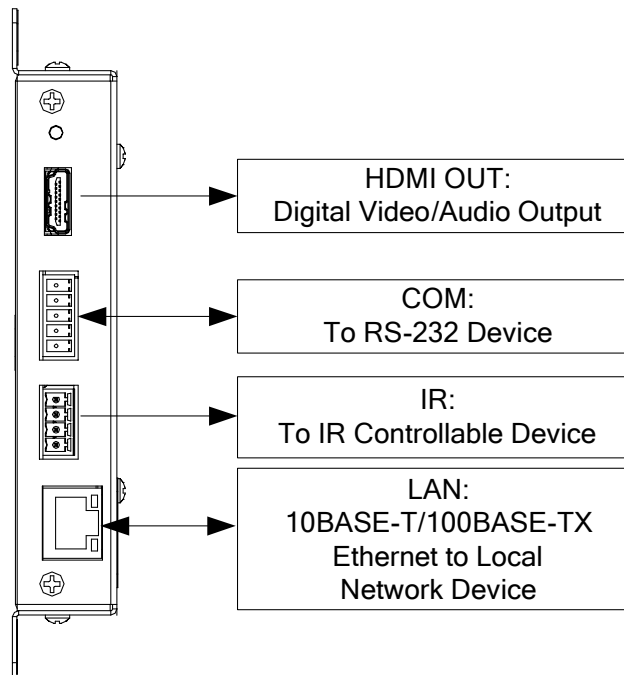
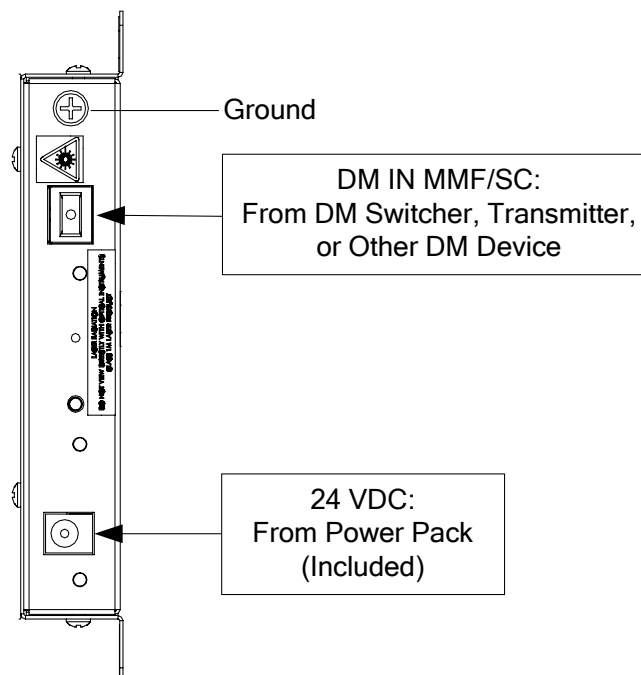
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**NOTE:** Ensure that the unit is properly grounded by connecting the chassis ground lug to an earth ground (building steel).

**NOTE:** For optimum performance, Crestron recommends using CresFiber 8G fiber optic cable.

**NOTE:** Fiber optic cable connectors and cable ends should be protected from contamination and scratching at all times. When cable is not connected, protect the optical receiver on the DM-RMC-100-S by using the included cap. Fiber ends should be handled carefully and the cable should not be bent or coiled tightly.

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*Hardware Connections for the DM-RMC-100-S (Left Side)**Hardware Connections for the DM-RMC-100-S (Right Side)*

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## Programming Software

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### 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 view questions you have submitted to Crestron's True Blue Support, log in at <http://support.crestron.com>. First-time users will need to establish a user account.

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### Earliest Version Software Requirements for the PC

**NOTE:** Crestron recommends that you use the latest software to take advantage of the most recently released features. The latest software is available from the Crestron Web site ([www.crestron.com/software](http://www.crestron.com/software)).

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

### Programming with Crestron SystemBuilder

Crestron SystemBuilder is the easiest method of programming but does not offer as much flexibility as SIMPL Windows. For additional details, download SystemBuilder from the Crestron Web site and examine the extensive help file.

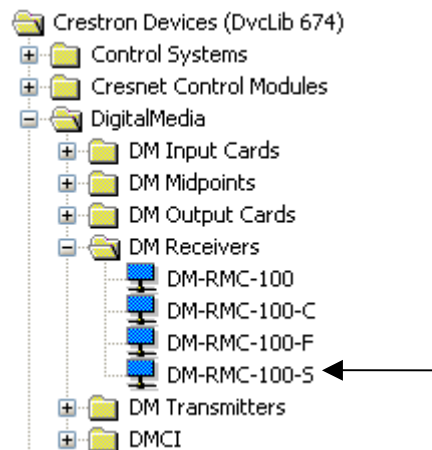
### Programming with SIMPL Windows

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.

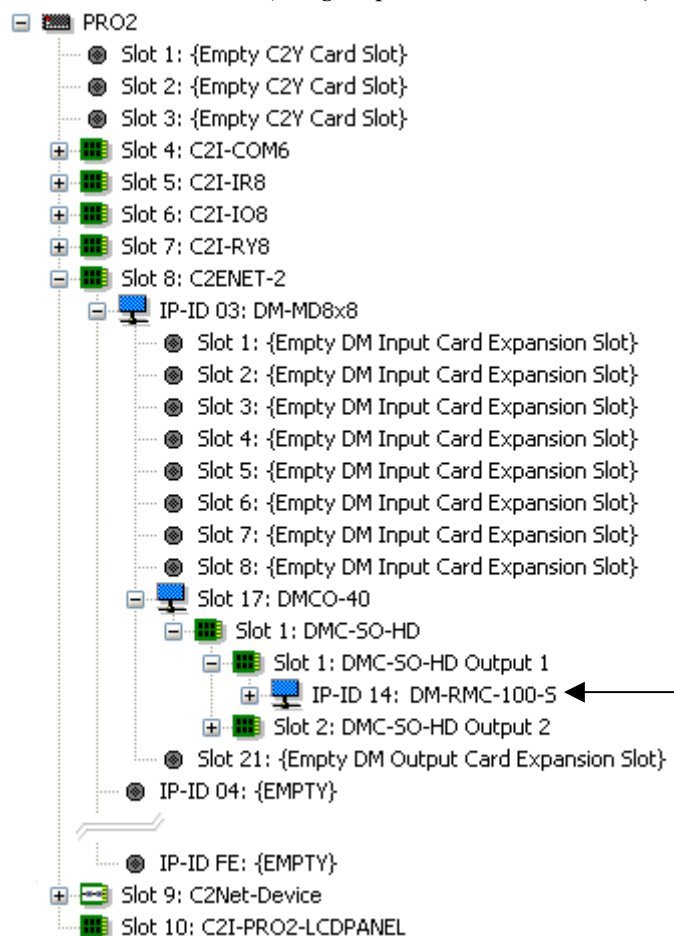
#### **Configuration Manager**

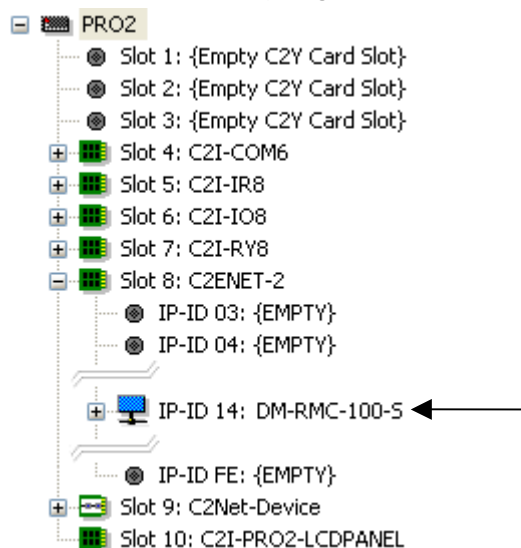
Configuration Manager is the view where programmers "build" a Crestron control system by selecting hardware from the *Device Library*.

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

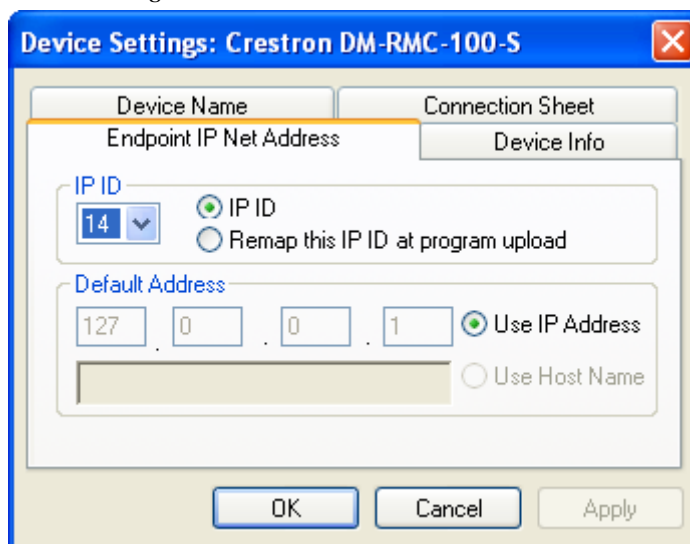
*Locating the DM-RMC-100-S in the Device Library*

The system tree of the control system displays the DM-RMC-100-S in the appropriate slot with a default IP ID as shown in the following illustrations. In the first example, the DM-RMC-100-S is used with the DMCO-40 output card in a DM-MD8X8 switcher. In the second example, the DM-RMC-100-S is used with the C2ENET-2 card in an Ethernet slot on the control system.

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

*C2ENET-2 Device, Slot 8 (Using Ethernet Slot on Control System)*

2. If additional DM-RMC-100-S devices are to be added, repeat step 1 for each device. Each DM-RMC-100-S 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.

*“Device Settings: Crestron DM-RMC-100-S” 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 11.

**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. Finally, the IP table of the device can be configured.

### Establishing Communication

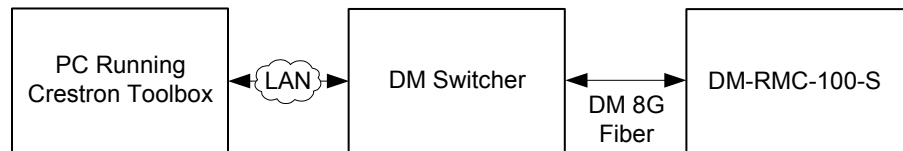
Use Crestron Toolbox for communicating with the DM-RMC-100-S; refer to the Crestron Toolbox help file for details.

A PC running Crestron Toolbox communicates with the DM-RMC-100-S 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-S using TCP/IP communication. In this scenario, the DM-RMC-100-S is used in a standalone configuration (i.e., 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-S via the DM switcher:

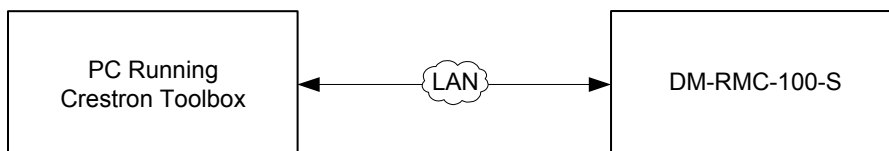
1. Establish communication between the PC and the DM switcher as described in the latest version of the DigitalMedia Switchers Operations Guide (Doc. 6755).
2. Use the Device Discovery Tool in Crestron Toolbox to find the IP address of the DM-RMC-100-S. The tool is available in Toolbox version 1.15.143 or later.
3. Use the Address Book in Crestron Toolbox to create an entry for the DM-RMC-100-S using the *TCP* connection type, and enter the IP address of the DM-RMC-100-S.
4. Display the “System Info” window of the DM-RMC-100-S (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  icon); communications are confirmed when the device information is displayed.

**Via LAN Port***TCP/IP Communication via LAN Port of DM-RMC-100-S*


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


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

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**NOTE:** When the DM-RMC-100-S is used in a standalone configuration (i.e., without a DM switcher), DHCP is enabled by default. If desired, a default IP address (192.168.1.244) 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 manually.

---

2. Use the Address Book in Crestron Toolbox to create an entry for the DM-RMC-100-S using the *TCP* connection type, and enter the IP address of the DM-RMC-100-S.
3. Display the “System Info” window of the DM-RMC-100-S (click the  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-S 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-S so that it uses the IP address assigned in step 4a.
  - d. Display the “System Info” window of the DM-RMC-100-S (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-S firmware:

1. Do either of the following:
  - If the DM-RMC-100-S 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-S 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-S.
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 your 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-S is connected to a switcher) or the DM-RMC-100-S (if the DM-RMC-100-S 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 you to upgrade all DM devices connected to the switcher.
- If the DM-RMC-100-S was selected, a DM device list is displayed that allows you to upgrade the DM-RMC-100-S 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-S is used in a standalone configuration (i.e., not connected to a DM switcher), use Creston Toolbox to create the IP table entry of the DM-RMC-100-S.

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

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1. Use the Device Discovery Tool to find the IP address of the DM-RMC-100-S. Then, in the Toolbox, display the “System Info” window (click the  icon) and select the DM-RMC-100-S 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-S 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-S Troubleshooting*

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Device does not function.	Device is not communicating with the network.	Use Crestron Toolbox to poll the network. Verify network connection to the device.
	Device is not receiving power from a Crestron power source.	Use the provided Crestron power source. Verify connections.
Power LED does not illuminate.	Device is not receiving power.	Verify power pack connections to the device and to the power outlet.
<b>DM IN</b> LED blinks once a second.	Device cannot establish a link to the device connected to the <b>DM IN</b> port.	Verify cable connection to the <b>DM IN</b> port.
<b>HDMI OUT</b> LED does not illuminate.	Device is not receiving video signal.	Ensure proper video signal is routed to device.
	Device connected to the <b>HDMI OUT</b> port has not sent the hotplug signal.	Power on device connected to the <b>HDMI OUT</b> port and ensure that it is switched to the correct input.
<b>HDMI OUT</b> 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-S Troubleshooting (Continued)*

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
<b>LAN LED</b> does not illuminate green.	LAN network cable is not connected to the <b>LAN</b> port or to the 10BASE-T/100BASE-TX compatible device.	Verify LAN network cable connection to the <b>LAN</b> 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 powered on.	Power on the network device.
Loss of functionality due to electrostatic discharge.	Improper grounding.	Check that all ground connections have been made properly.

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

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## 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 ( <a href="http://www.crestron.com/dmresources">www.crestron.com/dmresources</a> )
Crestron e-Control Reference Guide ( <a href="http://www.crestron.com/manuals">www.crestron.com/manuals</a> )
Crestron IP Considerations Guide ( <a href="http://www.crestron.com/dmresources">www.crestron.com/dmresources</a> )
DigitalMedia Switchers Operations Guide ( <a href="http://www.crestron.com/manuals">www.crestron.com/manuals</a> )

## Further Inquiries

If you cannot locate specific information or have questions after reviewing this guide, please take advantage of Crestron's award winning customer service team by calling Crestron at 1-888-CRESTRON [1-888-273-7876].

You can also log onto the online help section of the Crestron Web site ([www.crestron.com/onlinehelp](http://www.crestron.com/onlinehelp)) to ask questions about Crestron products. First-time users will need to 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-S, 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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