



DM-RMC-4KZ-100-C:
DigitalMedia 8G+[®] 4K60 4:4:4 HDR
Receiver and Room Controller

Supplemental Guide
Crestron Electronics, Inc.

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DM-RMC-4KZ-100-C: DigitalMedia 8G+® 4K60 4:4:4 HDR Receiver and Room Controller

Introduction

The Crestron® DM-RMC-4KZ-100-C is a DigitalMedia 8G+® receiver and room controller that supports full 4K60 4:4:4 and high dynamic range (HDR) video signals. Via a CATx cable, the DM-RMC-4KZ-100-C connects to a DigitalMedia™ switcher or transmitter or to an HDBaseT® source. Connection to a display device is provided by a single HDMI® output. In addition, built-in RS-232, IR, and Ethernet control ports enable programmable control of the display device via a control system.

This guide provides information about the following:

- Model comparison
- Physical description of the DM-RMC-4KZ-100-C
- Connection to a third-party HDBaseT transmitter
- HDCP 2.2. compliance
- Troubleshooting

For installation information, refer to the DM-RMC-4KZ-100-C DO Guide (Doc. 7939) at www.crestron.com/manuals.

Model Comparison

The following table provides a comparison between the DM-RMC-4KZ-100-C and other 4K DigitalMedia 8G+ receivers and room controllers.

4K DigitalMedia 8G+ Receivers and Room Controllers

FEATURE	DM-RMC-4KZ-100-C	DM-RMC-4K-100-C-1G-B-T/W-T	DM-RMC-4K-SCALER-C	DM-RMC-4K-SCALER-C-DSP
Form Factor	Surface-Mount Box	U.S. 1-Gang	Surface-Mount Box	Surface-Mount Box
Input	DM 8G+® and HDBaseT®	DM 8G+ and HDBaseT	DM 8G+ and HDBaseT	DM 8G+ and HDBaseT
Output	HDMI® (DVI compatible) ¹	HDMI (DVI compatible) ¹	HDMI (DVI compatible) ¹	HDMI (DVI compatible) ¹
Video				
Scaler	—	—	4K video scaler, motion-adaptive deinterlacer, intelligent frame rate conversion, Deep Color support, content-adaptive noise reduction, widescreen format selection (zoom, stretch, maintain aspect ratio, or 1:1)	4K video scaler, motion-adaptive deinterlacer, intelligent frame rate conversion, Deep Color support, content-adaptive noise reduction, widescreen format selection zoom, stretch, maintain aspect ratio, or 1:1)
Video Wall Processing	—	—	Up to 8 x 8	Up to 8 x 8
Input/Output Signal Types	HDR10, Deep Color, 3D, and 4K60 4:4:4	Deep Color, 3D, and 4K60 4:2:0	Deep Color, 3D, and 4K60 4:2:0	Deep Color, 3D, and 4K60 4:2:0
Maximum Input/Output Resolutions	4096 x 2160 DCI and 3840 x 2160 60 Hz @ 4:4:4	4096 x 2160 DCI and 3840 x 2160 60 Hz @ 4:2:0	4096 x 2160 DCI and 3840 x 2160 60 Hz @ 4:2:0	4096 x 2160 DCI and 3840 x 2160 60 Hz @ 4:2:0
Custom Resolutions	Supported at pixel clock rates up to 600 MHz	Supported at pixel clock rates up to 300 MHz	Supported at pixel clock rates up to 300 MHz	Supported at pixel clock rates up to 300 MHz
HDR/HDR10	Yes	No	No	No
4K60 @ 4:4:4	Yes	No	No	No
Copy Protection	HDCP 2.2	HDCP 2.2	HDCP 2.2	HDCP 2.2

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4K DigitalMedia 8G+ Receivers and Room Controllers (Continued)

FEATURE	DM-RMC-4KZ-100-C	DM-RMC-4K-100-C-1G-B-T/W-T	DM-RMC-4K-SCALER-C	DM-RMC-4K-SCALER-C-DSP
Audio				
Input Signal Types	DM 8G+ and HDBaseT	DM 8G+ and HDBaseT	DM 8G+ and HDBaseT	DM 8G+ and HDBaseT
Output Signal Types	HDMI	HDMI	HDMI, Analog Stereo (Phoenix connector)	HDMI, Analog Stereo (Phoenix connector)
Digital Input/Output Audio Formats	Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby® TrueHD, Dolby Atmos®, DTS®, DTS ES, DTS 96/24, DTS HD® High Res, DTS HD Master Audio™, DTS X®, LPCM up to 8 channels	Dolby Digital, Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos, DTS, DTS ES, DTS 96/24, DTS HD High Res, DTS HD Master Audio, LPCM up to 8 channels	Dolby Digital, Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos, DTS, DTS ES, DTS 96/24, DTS HD High Res, DTS HD Master Audio, LPCM up to 8 channels	Dolby Digital, Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos, DTS, DTS ES, DTS 96/24, DTS HD High Res, DTS HD Master Audio, LPCM up to 8 channels
Analog Output Audio Formats	—	—	Stereo 2-channel	Stereo 2-channel
Audio De-Embedding	Yes	Yes	Yes	Yes
DSP/Downmixing	No	No	No	Yes
Communications				
Ethernet	10/100 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, DHCP	—	10/100 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, DHCP	10/100 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, DHCP
RS-232	2-way device control and monitoring up to 115.2k baud with hardware and software handshaking via control system	2-way device control and monitoring up to 115.2k baud with software handshaking via control system	2-way device control and monitoring up to 115.2k baud with hardware and software handshaking via control system	2-way device control and monitoring up to 115.2k baud with hardware and software handshaking via control system
IR/Serial	1-way device control via infrared up to 1.1 MHz or serial TTL/RS-232 (0-5 volts) up to 19.2k baud via control system	1-way device control via infrared up to 1.1 MHz or serial TTL/RS-232 (0-5 volts) up to 19.2k baud via control system	1-way device control via infrared up to 1.1 MHz or serial TTL/RS-232 (0-5 volts) up to 19.2k baud via control system	1-way device control via infrared up to 1.1 MHz or serial TTL/RS-232 (0-5 volts) up to 19.2k baud via control system
EDID Management	Yes	Yes	Yes	Yes

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4K DigitalMedia 8G+ Receivers and Room Controllers *(Continued)*

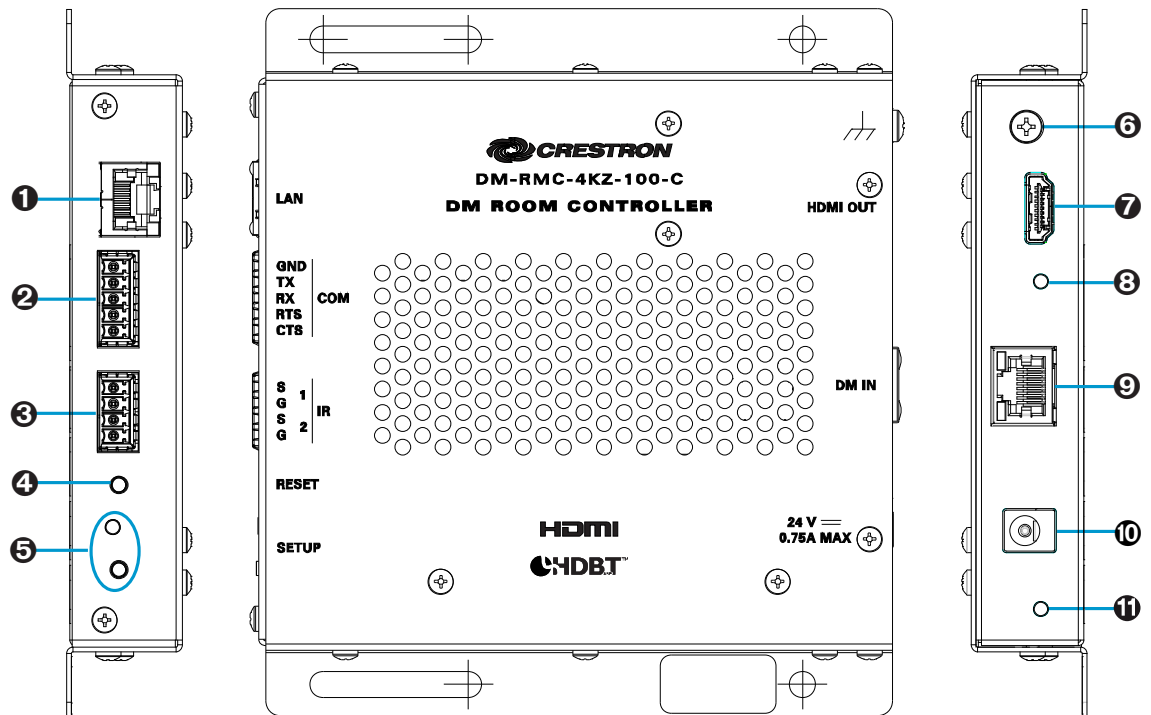
FEATURE	DM-RMC-4KZ-100-C	DM-RMC-4K-100-C-1G-B-T/W-T	DM-RMC-4K-SCALER-C	DM-RMC-4K-SCALER-C-DSP
Communications <i>(Continued)</i>				
CEC ²	Yes	Yes	Yes	Yes
Power	PoDM (Power over DM), Power Pack	PoDM, Power Pack	PoDM+ (Power over DM Plus), Power Pack	PoDM+, Power Pack
Crestron Software Support³				
Crestron XiO Cloud™ Service	Yes	Yes	Yes	Yes
SIMPL Windows Software	Yes	Yes	Yes	Yes
Crestron Pyng® OS 2	Yes	Yes	Yes	Yes
SIMPL # Software	Yes	Yes	Yes	Yes
Crestron Toolbox™ Software (DMTool)	Yes	Yes	Yes	Yes
Crestron Studio® Software	Yes	Yes	Yes	Yes
.AV Framework™ Software	No	No	No	No

1. DVI is supported via the HDMI output using a suitable adapter or interface cable.
2. CEC management between connected HDBaseT and HDMI devices is available via a control system.
3. Software support is available via the DM-MD8X8, DM-MD16X16, and DM-MD32X32 chassis. The Crestron XiO Cloud service is only available on a chassis that uses the DMC-CPU3 card.

Physical Description

The following illustration shows the connectors, controls, and indicators on the DM-RMC-4KZ-100-C.

Connectors, Controls, and Indicators



- ❶ **LAN:** 8-pin RJ-45 female, shielded; 10BASE-T/100BASE-TX Ethernet port; Green LED indicates Ethernet link status; Amber LED indicates Ethernet activity

NOTE: The LAN port can connect to an Ethernet switch only when the DM IN port is not connected to a DigitalMedia switcher.

- ❷ **COM:** 5-pin 3.5 mm detachable terminal block; Bidirectional RS-232 port; Up to 115.2k baud, hardware and software handshaking support
- ❸ **IR 1-2:** 4-pin 3.5 mm detachable terminal block; Comprised 2 IR/serial ports; IR output up to 1.1 MHz; 1-way serial TTL/RS-232 (0-5 volts) up to 19200 baud
- ❹ **RESET:** Recessed push button for reboot of the device

- ⑤ **SETUP:** (Applicable only to a configuration in which a DigitalMedia switcher is not used) Red LED indicates that the SETUP button is pressed and times out automatically;
Recessed push button for Ethernet setup

NOTE: The default static IP address of the DM-RMC-4KZ-100-C is 192.168.1.250.

- ⑥ **Ground (M):** 6-32 screw, chassis ground lug
- ⑦ **HDMI OUT:** HDMI Type A connector, female;
HDMI digital video/audio output (DVI compatible)

NOTES:

- The HDMI OUT port requires an appropriate adapter or interface cable to accommodate a DVI signal. CBL-HD-DVI interface cables are available separately.
- 4K60 4:4:4 performance and HDR support require the use of HDMI cables and couplers with a minimum TMDS bandwidth of 18 Gbps. If 4K60 4:2:0 or 4K30 4:4:4 performance is acceptable, cables and couplers with a minimum bandwidth of 10.2 Gbps may be used. Performance may be reduced when inserting multiple cables and couplers inline.

-
- ⑧ **HDMI OUT LED:** Green LED, indicates that an HDMI signal is detected at the HDMI output
- ⑨ **DM IN:** 8-pin RJ-45 female, shielded;
DM 8G+® input, HDBaseT standard compliant;
PoDM PD (powered device) port (HDBaseT PoE compatible);
Connects to the DM 8G+ output of a DM® switcher, transmitter, or other DM® device, or to an HDBaseT device via CAT5e, Crestron DM-CBL-8G, or Crestron DM-CBL-ULTRA cable;
Green LED indicates that a DM or HDBaseT link is established;
Solid amber LED indicates that HDCP video is detected;
Flashing amber LED indicates that non-HDCP video is detected.

NOTE: In order to receive PoDM, the DM IN port requires connection to a DigitalMedia switcher or other DM equipment that has a PoDM PSE (power sourcing equipment) port. In order to receive HDBaseT PoE, the DM IN port requires connection to equipment that has an HDBaseT PoE PSE port. Wiring that connects to a PoDM or HDBaseT PoE PSE port is for intrabuilding use only.

- ⑩ **24 VDC 0.75A MAX:** 2.1 x 5.5 mm DC power connector;
24 VDC power input;
Power pack included
- ⑪ **Power LED:** Green LED, indicates that power is being applied via PoDM, HDBaseT PoE, or the included power pack

Connection to a Third-Party HDBaseT Transmitter

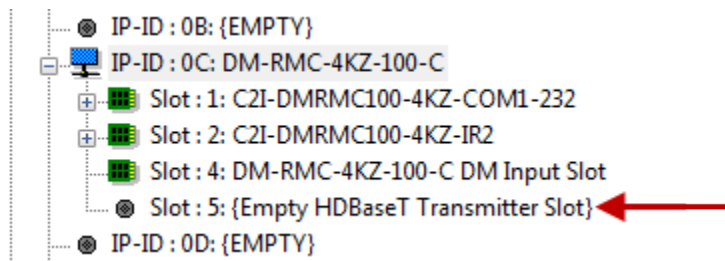
The DM-RMC-4KZ-100-C is compliant with the HDBaseT standard, enabling direct connection to other HDBaseT certified equipment. Via the DM 8G+ input, the DM-RMC-4KZ-100-C can be connected directly to a third-party HDBaseT compliant source without requiring a DigitalMedia transmitter.

SIMPL Windows allows an HDBaseT transmitter to be added to the DM-RMC-4KZ-100-C. The HDBaseT transmitter adds a COM port to the DM-RMC-4KZ-100-C and enables two-way serial communication.

To add a third-party HDBaseT transmitter to the DM-RMC-4KZ-100-C, use SIMPL Windows. An overview of the necessary steps follows.

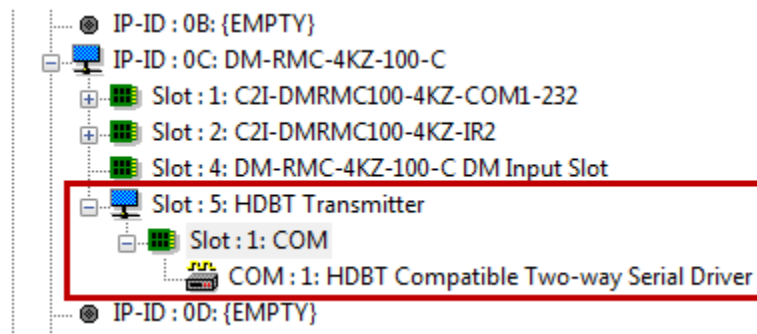
NOTE: For detailed information, refer to the SIMPL Windows help file.

HDBaseT Transmitter Slot (Slot 5)



When the third-party HDBaseT transmitter is added to slot 5, the HDBaseT Transmitter symbol adds a COM port to the device and enables two-way serial communication.

Addition of HDBaseT Transmitter to Slot 5 and COM Port in Slot 1



HDCP 2.2 Compliance

The DM-RMC-4KZ-100-C is compliant with HDCP 2.2. HDCP 2.2, commonly referred to as HDCP 2, is the next generation of HDCP (High-Definition Content Protection). Note the following about HDCP 2:

- Compared to HDCP 1, HDCP 2 brings a higher level of cryptographic protection to HDMI technology.
- HDCP 2 is **not** HDMI 2. It is possible to have a system built on HDCP 1 and HDMI 2, HDCP 2 and HDMI 1, or HDCP 2 and HDMI 2.
- Although not all 4K content requires HDCP 2, most 4K consumer video content requires HDCP 2.
- Any product that supports HDCP 2 also supports HDCP 1.
- HDCP is needed only when the source demands HDCP. If the source demands HDCP 2, then every device in the signal path must support HDCP 2.
- There are no issues related to HDCP 2 and cabling—all cables are compatible with HDCP 2.

Troubleshooting

The following table provides troubleshooting information. If further assistance is required, contact a Crestron customer service representative.

DM-RMC-4KZ-100-C Troubleshooting

PROBLEM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION(S)
Video is not displayed, but audio may be heard.	The HDCP settings of one or more DigitalMedia devices in the signal path do not support the HDCP level of the source.	Ensure that the HDCP settings of all DigitalMedia devices in the signal path support the HDCP level of the source.
	The display does not support the HDCP level of the source.	Ensure that the display supports the HDCP level of the source.
The video is intermittent.	The HDMI cable connections are faulty.	Verify that each end of the cable is connected properly.
The LAN connection is unresponsive.	The receiver and another DigitalMedia endpoint are both connected to a DigitalMedia switcher. The LAN port of the other endpoint is also connected to an Ethernet switch.	When a DigitalMedia endpoint is connected to a DigitalMedia switcher, the LAN port of the endpoint cannot be connected to an Ethernet switch. Disconnect the LAN port from the Ethernet switch.
The receiver cannot establish a link to the device that is connected to the DM IN port. The DM IN link status LED is off.	The cable connections are faulty.	Verify that each end of the cable is properly connected. If necessary, check the cable terminations.
The receiver does not remain powered on.	When the receiver is not powered by the included power pack, the DM IN port is not connected to a PoDM or HDBaseT PoE PSE port.	Ensure that the DM IN port is connected to an appropriate PSE port when not being powered by the included power pack.
The SIMPL Windows program is not operational.	In a configuration in which a DigitalMedia switcher is not used, the IP table is not set properly.	Verify that the IP table is set properly in System Info in the Crestron Toolbox software.
	If the receiver connects to a DigitalMedia switcher, the receiver does not connect to the correct DM output port of the switcher.	Ensure that the receiver connects to the correct DM output port of the switcher.
The video flickers or drops when the receiver is touched or when metal in the vicinity of the device is touched.	The receiver is not grounded properly.	Ensure that the receiver is grounded properly.

NOTE: If, for any reason, the factory default setting of the DM-RMC-4KZ-100-C must be restored, do the following: From the Tools menu in the Crestron Toolbox software, select Text Console and enter the following command:

```
restore y
```

