



DM-TX-4KZ-202-C/
DM-TX-4KZ-302-C
DigitalMedia 8G+[®] 4K60 4:4:4
HDR Transmitters

Supplemental Guide
Crestron Electronics, Inc.

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HDMI

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DM-TX-4KZ-202-C/DM-TX-4KZ-302-C: DigitalMedia 8G+[®] 4K60 4:4:4 HDR Transmitters

Introduction

The Crestron[®] DM-TX-4KZ-202-C and DM-TX-4KZ-302-C are DigitalMedia 8G+[®] transmitters and switchers that support 4K60 4:4:4 and HDR (HDR10) video signals. The DM-TX-4KZ-202-C provides a built-in 2 x 1 auto-switcher with two HDMI[®] inputs. The DM-TX-4KZ-302-C provides a built-in 3 x 1 auto-switcher with two HDMI inputs and one DisplayPort input. The DM-TX-4KZ-202-C and DM-TX-4KZ-302-C also function as control modules, providing RS-232, IR, and Ethernet control ports. In addition, USB HID device and host ports are included for USB signal extension.

This guide provides information about the following:

- Physical description of the side views of the DM-TX-4KZ-202-C and DM-TX-4KZ-302-C
- Configuration of some of the capabilities of the DM-TX-4KZ-202-C and DM-TX-4KZ-302-C, for example, automatic audio/video signal format management via EDID
- HDCP 2.2. compliance
- Troubleshooting
- Pin assignments

For installation information, refer to the DM-TX-4KZ-202-C/DM-TX-4KZ-302-C DO Guide (Doc. 7939) at www.crestron.com/manuals.

Physical Description

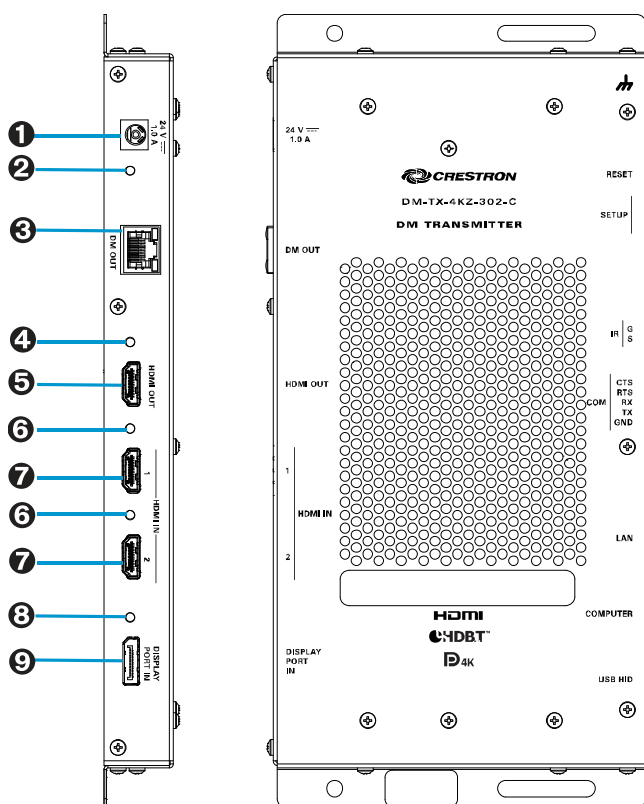
This section provides information about the connectors, controls, and indicators on the left and right sides of the DM-TX-4KZ-202-C and DM-TX-4KZ-302-C.

Side View, Left

The following illustration shows the left side of the DM-TX-4KZ-302-C.

NOTE: The left side of the DM-TX-4KZ-202-C provides the same connectors and indicators as the DM-TX-4KZ-302-C with the exception of the DISPLAY PORT IN connector and indicator.

Side View, Left (DM-TX-4KZ-302-C Shown)



- 1** 24 VDC 1.0 A: 2.1 x 5.5 mm dc power connector;
24 Vdc power input;
Power pack included
- 2** Power LED: Green LED, indicates operating power supplied via PoDM+, HDBaseT PoE+, or local power pack

- ④ **DM OUT:** 8-pin RJ-45 female, shielded;
DM 8G+® output, HDBaseT standard compliant;
PoDM+ PD (Powered Device) port (HDBaseT PoE+ compatible);
Connects to the DM 8G+ input of a DM® switcher, receiver, or other DM device,
or to an HDBaseT® device via CAT5e, Crestron DM-CBL-8G, or Crestron
DM-CBL-ULTRA cable;
Green LED indicates DM link status;
Solid amber LED indicates HDCP video;
Flashing amber LED indicates non-HDCP video

NOTE: In order to receive PoDM+, the DM OUT port requires connection to a DigitalMedia switcher or other equipment that has a corresponding PoDM+ PSE (Power Sourcing Equipment) port. In order to receive HDBaseT PoE+, the DM OUT port requires connection to equipment that has a corresponding HDBaseT PoE+ PSE port. Wiring that connects to a PoDM+ or HDBaseT PoE+ PSE port is for intrabuilding use only.

NOTE: For pin assignment information, refer to the Appendix on page 12.

- ④ **HDMI OUT LED:** Green LED, indicates HDMI signal presence at the HDMI output
- ⑤ **HDMI OUT:** HDMI Type A connector, female;
HDMI digital video/audio output (DVI compatible)

NOTE: The HDMI OUT port requires an appropriate adapter or interface cable to accommodate a DVI signal. CBL-HD-DVI interface cables are available separately.

NOTE: 4K60 4:4:4 performance and HDR support require the use of HDMI and DisplayPort 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 can be used. Performance may be reduced when using multiple cables and couplers.

- ⑥ **HDMI IN 1–2 LEDs:** Green LEDs, each indicates HDMI signal presence at the corresponding HDMI input
- ⑦ **HDMI IN 1–2:** HDMI Type A connectors, female;
HDMI digital video/audio inputs;
(DVI and Dual-Mode DisplayPort compatible)

NOTE: The HDMI IN ports require an appropriate adapter or interface cable to accommodate a DVI or Dual-Mode DisplayPort signal. CBL-HD-DVI interface cables are available separately.

NOTE: 4K60 4:4:4 performance and HDR support require the use of HDMI and DisplayPort 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 can be used. Performance may be reduced when using multiple cables and couplers.

- ③ **DISPLAY PORT IN LED:** (DM-TX-4KZ-302-C only) Green LED, indicates video signal presence at the DisplayPort input
- ④ **DISPLAY PORT IN:** (DM-TX-4KZ-302-C only) DisplayPort connector, female; DisplayPort digital video/audio input

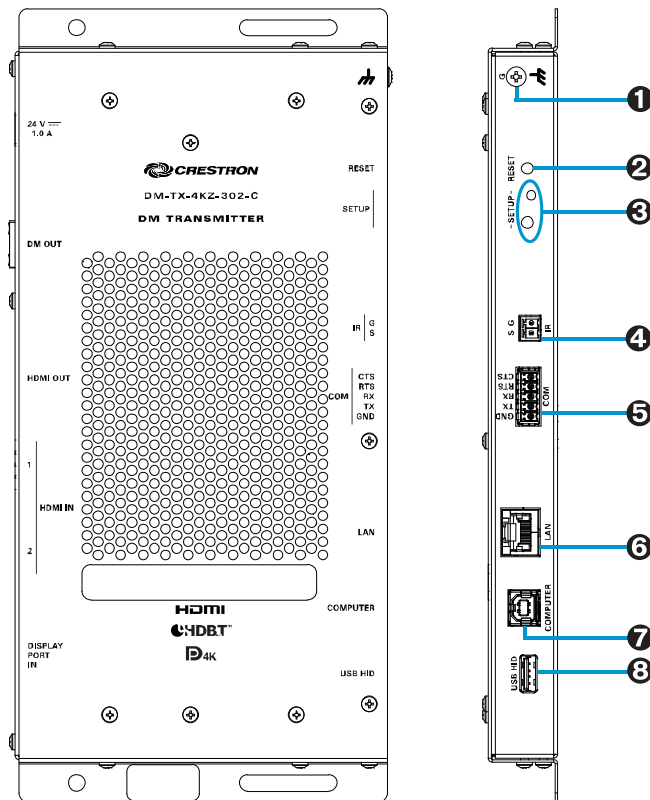
NOTE: 4K60 4:4:4 performance and HDR support require the use of HDMI and DisplayPort cables and couplers with a minimum TMDS bandwidth of 18 Gbps. If 4K60 4:2:0 or 4K30 4:4:4 performance is acceptable, cables and couplers with a minimum bandwidth of 10.2 Gbps can be used. Performance may be reduced when using multiple cables and couplers.

Side View, Right

The following illustration shows the right side of the DM-TX-4KZ-302-C.

NOTE: The right side of the DM-TX-4KZ-202-C provides the same connectors, controls, and indicators as the right side of the DM-TX-4KZ-302-C.

Side View, Right (DM-TX-4KZ-302-C Shown)



- ① **Ground** (⚡): 6-32 screw, chassis ground lug
- ② **RESET:** Recessed push button for reboot of the device

- ④ **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 of the default static IP address of the device

NOTE: The default static IP address of the DM-TX-4KZ-302-C is 192.168.1.252.
The default static IP address of the DM-TX-4KZ-202-C is 192.168.1.251.

- ④ **IR:** 2-pin 3.5 mm detachable terminal block;
IR/serial port;
IR output up to 1.1 MHz;
1-way serial TTL/RS-232 (0-5 volts) up to 19200 baud
- ⑤ **COM:** 5-pin 3.5 mm detachable terminal block;
Bidirectional RS-232 port;
Up to 115.2k baud, hardware and software handshaking support
- ⑥ **LAN:** 8-pin RJ-45 female;
10BASE-T/100BASE-TX Ethernet port;
Green LED indicates Ethernet link status;
Amber LED indicates Ethernet activity

NOTE: For pin assignment information, refer to the Appendix on page 12.

NOTE: Do not connect the LAN port to an Ethernet switch if the DM OUT port is connected to a DigitalMedia™ switcher.

- ⑦ **COMPUTER:** USB Type B female;
USB 2.0 device port for computer console (setup) or for connection to a computer or other USB HID compliant host (USB signal extension and routing)
- ⑧ **USB HID:** USB Type A female;
USB 2.0 host port for connection to a mouse, keyboard, or other USB HID compliant device (USB signal extension and routing), or for connection to a Crestron TT-100 Series Crestron Connect It™ cable caddy (sold separately)

Configuration

This section provides information about the following:

- EDID configuration
- HDBaseT configuration
- USB HID control configuration

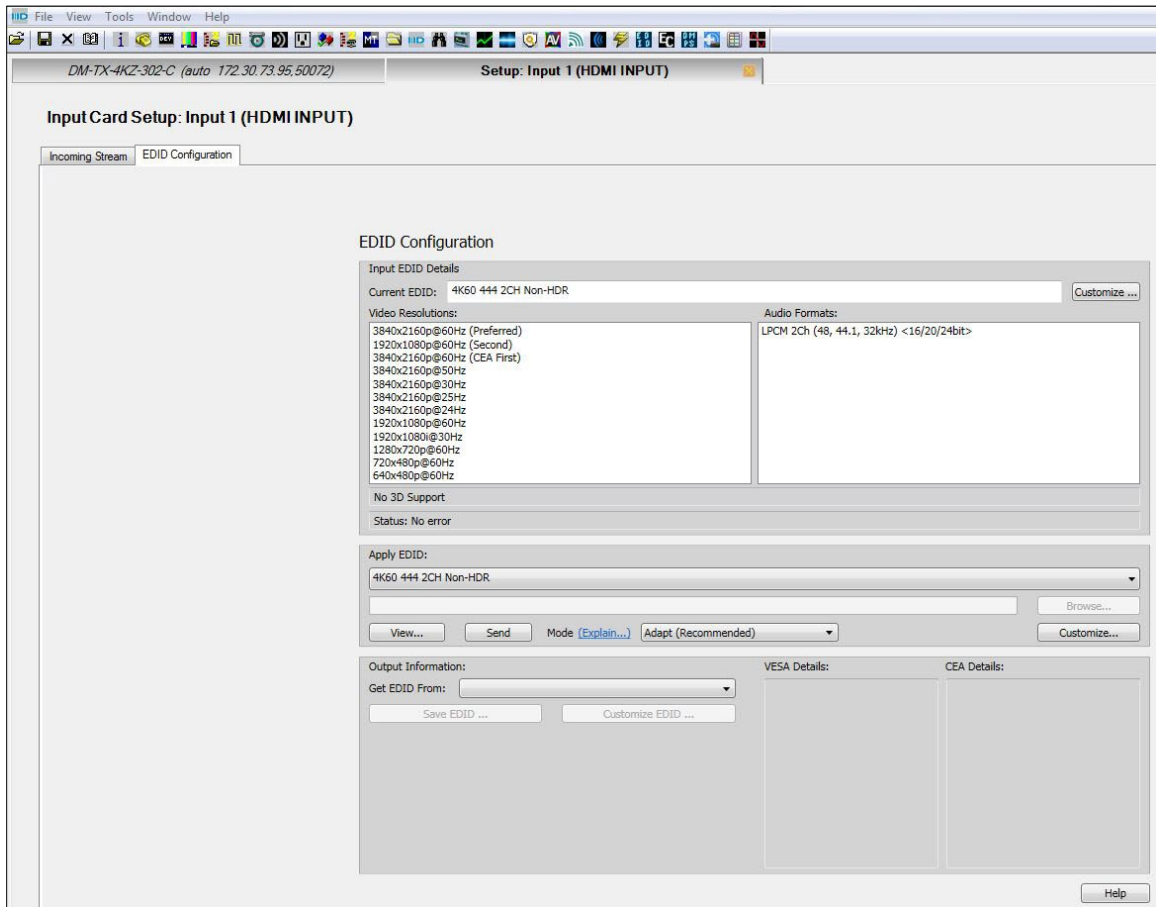
EDID Configuration

EDID (Extended Display Identification Data) configuration allows management of the EDID that is to be sent to the upstream device connected to an HDMI input of the DM-TX-4KZ-202-C or to an HDMI or DisplayPort input of the DM-TX-4KZ-302-C. By default, the EDID is set to **4K60 444 2CH Non-HDR** for HDMI and DisplayPort inputs. If a different EDID is desired, use DMTool to configure the EDID. An overview of the steps necessary to configure the EDID is as follows:

NOTE: For detailed information, refer to the Crestron Toolbox™ software help file.

1. Connect to the DM-TX-4KZ-202-C or DM-TX-4KZ-302-C.
2. Open the Setup window of the HDMI input for the DM-TX-4KZ-202-C or the Setup window of the HDMI or DisplayPort input for the DM-TX-4KZ-302-C.
3. In the EDID Configuration dialog box, configure the EDID by doing any of the following:
 - Customize the current EDID.
 - Load an EDID template and modify it.
 - Create a new EDID file.
 - Load the existing EDID and modify it.
 - Obtain an EDID from the output and then save or customize it.
 - Apply an EDID that is saved on a computer.

EDID Configuration Dialog Box (HDMI Input of DM-TX-4KZ-302-C Shown)



HDBaseT Configuration

The DM-TX-4KZ-202-C and DM-TX-4KZ-302-C are HDBaseT certified, enabling direct connection to other HDBaseT certified equipment. Via the DM 8G+ output of the DM-TX-4KZ-202-C and DM-TX-4KZ-302-C, the transmitter can be connected directly to a third-party HDBaseT compliant device without requiring a DigitalMedia receiver.

SIMPL Windows allows an HDBaseT receiver device to be added to the DM-TX-4KZ-202-C and DM-TX-4KZ-302-C. The HDBaseT receiver device adds a COM port to the DM-TX-4KZ-202-C and DM-TX-4KZ-302-C and enables two-way serial communication.

To add a third-party HDBaseT receiver device to the DM-TX-4KZ-202-C or DM-TX-4KZ-302-C, use SIMPL Windows. In the Configure View, add a third-party HDBaseT receiver device to slot 9 for the HDBaseT receiver slot of the DM-TX-4KZ-202-C or DM-TX-4KZ-302-C.

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

HDBaseT Receiver Slot (Slot 9)



When the third-party HDBaseT receiver device is added to slot 9, the HDBaseT Receiver symbol adds a COM port to the device and enables two-way serial communication.

Addition of HDBaseT Receiver to Slot 9 and COM Port in Slot 1



USB HID Control Configuration

A keyboard, mouse, or other USB HID compliant device can be connected locally to the USB HID port of the DM-TX-4KZ-202-C and DM-TX-4KZ-302-C. The USB HID compliant device can be used to control a remote computer or other host device that is connected to the USB HID compliant port of a DigitalMedia device, that is, a DigitalMedia transmitter or a DMC input card of a DigitalMedia switcher.

USB signal routing is handled by the DigitalMedia system. SIMPL Windows allows USB signal routing from the device connected to the USB HID port of the DM-TX-4KZ-202-C or DM-TX-4KZ-302-C to the host device that is connected to the USB HID compliant port of a DigitalMedia device. To configure USB routing, set the **<USB_HID_Control>** serial input join to the IP address of the DigitalMedia device to which USB signals are to be routed. The IP address must be in hexadecimal format. For detailed information about the **<USB_HID_Control>** serial input join and about setting the IP address, refer to the SIMPL Windows help file.

HDCP 2.2 Compliance

The DM-TX-4KZ-202-C and DM-TX-4KZ-302-C are 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-TX-4KZ-202-C and DM-TX-4KZ-302-C Troubleshooting

PROBLEM	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Video is not displayed, but the 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.
Video is not displayed.	The desired input may not be selected in DMTool.	Ensure that Auto mode is selected or that the desired input is selected in DMTool.
The HDMI 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 transmitter 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 transmitter cannot establish a link to the device that is connected to the DM OUT port. The DM 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 transmitter does not remain powered on.	When the transmitter is not powered by the included power pack, the DM OUT port is not connected to a PoDM+ or HDBaseT PoE+ power sourcing equipment (PSE) port that is required to power the transmitter.	Ensure that the DM OUT 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 transmitter connects to a DigitalMedia switcher, the transmitter does not connect to the correct DM input port of the switcher.	Ensure that the transmitter connects to the correct DM input port of the switcher.
The video flickers or drops when the transmitter is touched or when metal in the vicinity of the device is touched.	The transmitter is not properly grounded.	Ensure that the transmitter is properly grounded.

NOTE: If, for any reason, the factory default settings of the DM-TX-4KZ-202-C or DM-TX-4KZ-302-C must be restored, do the following: From the Tools menu in the Crestron Toolbox software, select Text Console and enter the following command:

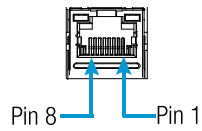
```
restore y
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Appendix: Pin Assignments

This section provides information about pin assignments and wiring for the following connectors:

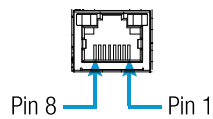
- DM OUT
- LAN

DM OUT Pin Assignments and Wiring



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

LAN Pin Assignments



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

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