

4K DigitalMedia 8G+® Transmitters 302



- 4K DigitalMedia 8G+® transmitter and multimedia interface
- Built-in 3x1 AV switcher with auto-switching and analog audio-breakaway
- QuickSwitch HD™ technology manages HDCP keys for fast, reliable switching
- Connects to a DM® switcher or receiver over a single CAT type twisted pair cable¹
- Supports cable lengths up to 330 ft (100 m) for all resolutions up to UHD and 4K using DM Ultra cable¹
- Supports cable lengths up to 330 ft (100 m) for 1080p, WUXGA, and 2K using DM 8G® cable or CAT5e¹
- Supports cable lengths up to 230 ft (70 m) for UHD and 4K using DM 8G cable, or 165 ft (50 m) using CAT5e¹
- HDBaseT® Certified standard — Enables direct connection to other HDBaseT certified equipment
- Handles digital video with resolutions up to 4K and Ultra HD
- Handles analog video with resolutions up to HD 1080p and WUXGA
- Handles 3D video and Deep Color
- Handles Dolby® TrueHD, Dolby Atmos®, DTS HD®, and uncompressed 7.1 linear PCM audio
- HDCP 2.2 compliant
- Performs automatic AV signal format management via EDID
- Enables device control via CEC, IR, RS-232, and Ethernet
- Enables USB HID signal extension for a local computer⁴
- Compatible with Crestron® USB over Ethernet Extenders⁵
- Compatible with Crestron Connect It™ Cable Caddies⁸
- Powered via the DM connection or optional power pack, PW-2407WU, (sold separately)^{2,3,4}

The DM-TX-4K-302-C provides a versatile interface for computers and high-definition AV sources as part of a complete Crestron® DigitalMedia™ system. It functions as a DM 8G+® transmitter and switcher with HDMI®, VGA, and analog audio inputs and as a control module, providing RS-232 and IR control ports, plus Ethernet and USB HID ports for a total connectivity solution.

Its low-profile, surface-mountable design makes the DM-TX-4K-302-C ideal for installation beneath a conference table, inside a lectern or equipment rack, or at virtually any other location in a boardroom, classroom, auditorium, or residence. It connects to the head end or display location using a single CAT type twisted pair cable. In addition to DM 8G+, it is also compatible with HDBaseT® standard, which allows it to be connected directly to the input of an HDBaseT certified display device.¹

4K Ultra HD

Crestron DigitalMedia continues to advance the standard for digital AV signal distribution, delivering the world's first end-to-end 4K system solution. The DM-TX-4K-302-C features the latest DM 8G+ technology, providing support for the transport of 4K and Ultra HD video signals. Support for 4K video also ensures support for the latest generation of computers and monitors with native resolutions beyond 1080p and WUXGA.

DigitalMedia 8G+®

As the leader in HDMI and control system technologies, Crestron developed DigitalMedia to deliver the first complete HD AV distribution system to take HDMI to a higher level. DigitalMedia allows virtually any mix of HDMI and other AV sources to be distributed throughout a home, office, school, or virtually any other facility. The latest generation of DM® products is called DigitalMedia 8G™. Engineered for ultra-high bandwidth and ultimate scalability, DM 8G® products provide a true one-wire lossless transport for moving high-definition video, audio, and control signals over a choice of twisted-pair or fiber optic cable.

DM 8G over twisted-pair copper wire is called DigitalMedia 8G+ (DM 8G+). DM 8G+ handles uncompressed Full HD 1080p, Ultra HD, 2K, and 4K video signals with support for 3D, Deep Color, and HDCP 2.2. Audio capabilities include support for high-bitrate 7.1 audio formats like Dolby® TrueHD, Dolby Atmos®, and DTS HD®, as well as uncompressed linear PCM. All signals are transported over a single CAT type wire, supporting 1080p, WUXGA, and 2K signals at distances up to 330 ft (100 m) using Crestron [DM Ultra Cable](#), Crestron [DM 8G Cable](#), or third-party CAT5e. Higher resolutions up to UHD and 4K are supported at distances up to 330 ft (100 m) using DM Ultra Cable, 230 ft (70 m) using [DM 8G Cable](#), or 165 ft (50 m) using CAT5e.¹

HDBaseT® Compatible

Crestron DigitalMedia 8G+ technology is designed using HDBaseT Alliance specifications, ensuring interoperability with other HDBaseT certified products. Via its DM 8G+ output, the DM-TX-4K-302-C can be connected directly to an HDBaseT compliant device without requiring a DM receiver.

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Multimedia Computer/AV Interface

The DM-TX-4K-302-C provides simple switching among three inputs. The inputs can be configured to switch automatically or be controlled through a Crestron control system. Auto-detection on each input enables plug-and-play simplicity, supporting a wide range of input types without requiring any special configuration. Inputs include:

- **HDMI** — Provides two independent digital multimedia inputs for mobile devices, computers, and AV sources with resolutions up to UHD and DCI 4K. These inputs can also handle DVI and Dual-Mode DisplayPort™ signals using an appropriate adapter or interface cable.
- **VGA** — This input handles analog VGA and RGB signals up to WUXGA 1920x1200 pixels. It can also handle component, S-Video, and composite video signals up to 1080p60 through an appropriate adapter or breakout cable. A 1/8 in.(3.5 mm) stereo audio input is included to accommodate the analog audio signal from an unbalanced line-level source or headphone output.

NOTE: Analog audio breakaway capability enables the analog audio input to be used with any video input.

A single CAT type cable connects the DM-TX-4K-302-C to a DM switcher or receiver, or to an HDBaseT device, transporting video, audio, control, networking, and power signals all through one simple R-J45 connection.^{1,2,3} Used with a single DM 8G+ Receiver/Room Controller and optional Crestron control system, the DM-TX-4K-302-C affords a simple solution for extending a computer or AV signal to a single display. As part of a larger system using a DM-MD series switcher, multiple DM-TX-4K-302-Cs may be deployed to enable the distribution of several sources at different locations to feed multiple displays throughout any room or larger facility.

Local HDMI Output

An HDMI output is included to enable pass-through of the selected video and audio signals to feed a local display, monitor, or sound system.

LAN Connectivity

Along with high-definition AV and control, DigitalMedia also integrates high-speed Ethernet networking for a total signal distribution solution. The DM-TX-4K-302-C includes a 10/100 Ethernet port, which can be used to provide a convenient LAN connection for a local network device.

USB Signal Extension

The DM-TX-4K-302-C functions as a versatile USB keyboard/mouse extender with both host and device ports provided onboard. This allows a computer (or other USB HID-compliant host) to be connected to the DM-TX-4K-302-C and controlled remotely by a USB HID keyboard and/or mouse located elsewhere. Alternately, the keyboard/mouse may be connected locally and used to control a remote computer. Routing of the USB HID signals is handled through the DigitalMedia system. Support for other types of USB devices

can be enabled using Crestron USB over Ethernet Extenders ([USB-EXT-DM-LOCAL](#) and [USB-EXT-DM-REMOTE](#)) and Crestron USB over Ethernet Network Wall Plate Endpoints ([USB-NX2-LOCAL-1G](#) and [USB-NX2-REMOTE-1G](#)).^{4,5}

Embedded Device Control

The DM-TX-4K-302-C includes built-in IR, RS-232, and Ethernet control ports to enable programmable control of the devices connected to it (via a control system). It also offers 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-TX-4K-302-C provides a gateway for controlling the connected source devices right through their HDMI connections, potentially eliminating the need for any dedicated control wires or IR emitters.

Crestron Connect It™

A Crestron Connect It Cable Caddy ([TT-100](#) series) offers a convenient tabletop connectivity solution that works seamlessly with the DM-TX-4K-302-C. The cable caddy gets its power and control from the DM-TX-4K-302-C through a simple USB connection.⁴

Compact and Versatile

The DM-TX-4K-302-C is designed to be mounted to a flat surface or placed on a shelf. It is compact enough to fit discreetly inside a presentation lectern or beneath a table, and can even be attached to a rack rail in the back of an equipment cabinet. It can be powered using the optional power pack, [PW-2407WU](#) (sold separately), or PoDM+ (Power over DigitalMedia Plus) for a true one-wire solution.^{2,3,4} An array of indicators is provided for easy setup and troubleshooting.

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

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Maximum Cable Lengths

Resolution	DM-CBL-ULTRA DM® Ultra Cable	DM-CBL-8G DM 8G® Cable	CAT5e Cable (or better) ¹
1080p60 Full HD	330 ft (100 m)	330 ft (100 m)	330 ft (100 m)
1920x1200 WUXGA			
1600x1200 UXGA			
2048x1080 DCI 2K			
2560x1440 WQHD		230 ft (70 m)	165 ft (50 m)
2560x1600 WQXGA			
3840x2160 4K UHD			
4096x2160 DCI 4K			

Maximum Resolutions

Input Type	Scan Type	Resolution	Frame Rate	Color Sampling	Color Depth
HDMI	Progressive	4096x2160 DCI 4K or 3840x2160 4K UHD	24 Hz	4:4:4	30 bit
			30 Hz	4:4:4	24 bit
			30 Hz	4:2:2	36 bit
			60 Hz	4:4:0	24 bit
		60 Hz	4:4:4	36 bit	
	1920x1080 HD1080p	60 Hz	4:4:4	36 bit	
	Interlaced	1920x1080 HD1080i	30 Hz	4:4:4	36 bit
VGA/RGB	Progressive	1600x1200 UXGA	60 Hz	n/a	
		1920x1200 WUXGA	60 Hz	n/a	
Component ⁶	Progressive	1920x1080 HD1080p	60 Hz		n/a
	Interlaced	1920x1080 HD1080i	30 Hz		n/a
Composite or S-Video ⁶	Interlaced	480i NTSC or 576i PAL	60 Hz		n/a

NOTE: Common resolutions are shown. Other custom resolutions are supported at pixel clock rates up to 300 MHz for digital inputs, or 165 MHz for analog inputs.

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Specifications

Video

Switcher	3x1 manual or auto-switching, Crestron QuickSwitch HD technology
Input Signal Types	HDMI w/Deep Color, 3D, & 4K (DVI & Dual-Mode DisplayPort™ compatible ⁷); VGA/RGB (RGBHV, RGBS, RGsB); component (YPbPr); S-Video (Y/C); composite (NTSC, PAL) ⁶
Output Signal Types	DM 8G+ & HDBaseT w/HDR10, Deep Color, 3D, & 4K; HDMI w/Deep Color, 3D, & 4K (DVI compatible ⁷)

Audio

Switcher	3x1 with auto-detecting digital/analog inputs and analog audio breakaway
Input Signal Types	HDMI (Dual-Mode DisplayPort compatible ⁷), analog stereo
Output Signal Types	DM 8G+ & HDBaseT, HDMI
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™, LPCM up to 8 channels
Analog Formats	Stereo 2-channel
Analog-To-Digital Conversion	24-bit 48 kHz
Analog Input Level Compensation	±10.0 dB
Analog Performance	Frequency Response: 20 Hz to 20 kHz ±0.5 dB S/N Ratio: >90 dB, 20 Hz to 20 kHz A-weighted THD+N: <0.05% @ 1 kHz Stereo Separation: >90 dB

Communications

Ethernet	10/100 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, DHCP
USB	Supports signal extension of USB HID class devices, supports a TT-100 series cable caddy ⁸ supports computer console (for setup).
RS-232	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 V) up to 19.2k baud (via control system)

DigitalMedia	DM 8G+, HDCP 2.2, EDID, CEC, PoDM + ⁴ , Ethernet
HDBaseT	HDCP 2.2, EDID, RS-232, PoE+ ⁴ , Ethernet
HDMI	HDCP 2.2, EDID, CEC

NOTE: Supports management of HDCP and EDID; supports management of CEC between the connected HDMI devices and a control system.

Connectors

VGA IN	(1) HD15, female; Analog VGA/RGB/video input; Signal Types: VGA, RGB, component, S-Video, or composite ⁶ ; Formats: RGBHV, RGBS, RGsB, YPbPr, Y/C, NTSC, PAL; Input Levels: 0.5 to 1.5 Vp-p with built-in DC restoration; Input Impedance: 75 Ohms; Sync Input Type: Autodetect RGBHV, RGBS, RGsB, YPbPr, Y/C, composite; Sync Input Level: 3 to 5 Vp-p; Sync Input Impedance: 510 Ohms
AUDIO IN	(1) 3.5 mm TRS mini phone jack; Unbalanced stereo line-level audio input; Input Level: 2 Vrms maximum; Input Impedance: 10k Ohms
HDMI IN 1 – 2	(2) 19-pin HDMI Type A, female; HDMI digital video/audio inputs; (DVI & Dual-Mode DisplayPort compatible ⁷)
DM OUT	(1) 8-pin shielded RJ-45, female; DM 8G+ output, HDBaseT compliant; PoDM+ PD port (HDBaseT PoE+ compatible) ^{2,3,4} ; Connects to the DM 8G+ input of a DM switcher, receiver, or other DM device, or to a HDBaseT device, via CAT5e or Crestron DM-CBL-8G cable, or Crestron DM-CBL-ULTRA cable ¹
24VDC 0.75A	(1) 2.1 x 5.5 mm DC power connector; 24 VDC power input; PW-2407WU , optional power pack (sold separately)
Ground	(1) 6-32 screw; Chassis ground lug
USB HID	(1) USB Type A, female; SB 2.0 host port for connection of a mouse/keyboard or other USB HID-compliant device (USB signal extension & routing), or for connection of a Crestron TT-100 series device (Crestron Connect It) ^{4,8}

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COMPUTER	(1) 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 & routing)
LAN	(1) 8-pin RJ-45, female; 10Base-T/100Base-TX Ethernet port
HDMI OUT	(1) 19-pin HDMI Type A, female; HDMI digital video/audio output (DVI compatible ⁷)
COM	(1) 5-pin 3.5 mm detachable terminal block; Bidirectional RS-232 port; Up to 115.2k baud, hardware and software handshaking support
IR	(1) 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 V) up to 19200 baud

Controls & Indicators

VGA IN	(1) Green LED, indicates video signal presence at the VGA input
HDMI IN 1 – 2	(2) Green LEDs, each indicates HDMI signal presence at the corresponding HDMI input
DM OUT	(2) LEDs, green LED indicates DM link status, amber LED indicates video and HDCP signal presence
24 VDC	(1) Green LED, indicates operating power supplied via PoDM+, HDBaseT PoE+, or the optional PW-2407WU power pack (sold separately)
LAN	(2) LEDs, green LED indicates Ethernet link status, amber LED indicates Ethernet activity
HDMI OUT	(1) Green LED, indicates HDMI signal presence at the HDMI output
SETUP	(1) Red LED and (1) recessed pushbutton for Ethernet setup
RESET	(1) Recessed pushbutton for hardware reset

Power

Power over DM (PoDM)	IEEE 802.3at Type 2 Class 4 (25.5 W) compliant PoDM+ PD (Powered Device), capable of being powered by a PoDM+ PSE (Power Sourcing Equipment) ²
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NOTE: May be powered by a standard PoDM PSE (Class 3) if no USB device is connected to the USB HID port.⁴

Power over HDBaseT	IEEE 802.3at Type 2 Class 4 (25.5 W) compliant HDBaseT PoE+ PD (Powered Device), capable of being powered by an HDBaseT PoE+ PSE (Power Sourcing Equipment) ³
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NOTE: May be powered by a standard HDBaseT PoE PSE (Class 3) if no USB device is connected to the USB HID port⁴

Power pack (optional)	Input: 100-240 VAC, 50/60 Hz Output: 0.75 A @ 24 VDC Model: PW-2407WU (sold separately)
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Environmental

Temperature	32° to 104° F (0° to 40° C)
Humidity	10% to 95% RH (non-condensing)
Heat Dissipation	34.4 BTU/hr

Enclosure

Chassis	Metal, black finish, with (2) integral mounting flanges, vented top, front, and bottom
Mounting	Freestanding, surface mount, or attach to a single rack rail

Dimensions

Height	11.02 in. (280 mm)
Width	5.35 in. (136 mm)
Depth	1.08 in. (28 mm)

Weight

1.48 lb (670 g)

Compliance

UL Listed for US & Canada, CE, IC, FCC Part 15 Class B digital device, WEEE

Models

DM-TX-4K-302-C
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Available Accessories

DM-PSU-ULTRA-MIDSPAN
DigitalMedia™ Ultra Midspan PoDM++ Injector

DM-CBL-ULTRA-PC Series
DigitalMedia™ Ultra Patch Cables

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DM-CONN-ULTRA-RECP Series

DigitalMedia™ Ultra Keystone RJ-45 Jack

DM-CBL-ULTRA-NP Series

DigitalMedia™ Ultra Cable, Non-Plenum Type CMR

DM-CBL-ULTRA-P Series

DigitalMedia™ Ultra Cable, Plenum Type CMP

DM-CBL-ULTRA-LSZH Series

DigitalMedia™ Ultra Cable, Low Smoke Zero Halogen

DM-CONN-20

Connectors for DM-CBL DigitalMedia™ Cable & DM-CBL-ULTRA DigitalMedia Ultra Cable, 20-Pack

DM-CBL-8G-NP Series

DigitalMedia 8G™ Cable, non-plenum

DM-CBL-8G-P Series

DigitalMedia 8G™ Cable, plenum

DM-8G-CONN

Connector for DM-CBL-8G

DM-8G-CRIMP

Crimping Tool for DM-8G-CONN

DM-8G-CRIMP-WG

Crimping Tool for DM-8G-CONN-WG

DM-8G-CONN-WG-100

Connectors with Wire Guide for DM-CBL-8G DigitalMedia 8G™ Cable

CBL Series:

Crestron® Certified Interface Cables

MP-WP Series

Media Presentation Wall Plates

MPI-WP Series

Media Presentation Wall Plates - International Version

CNSP-XX:

Custom Serial Interface Cable

IRP2

IR Emitter Probe w/Terminal Block Connector

PW-2407WU

Wall Mount Power Pack 24VDC, 0.75A, Universal

USB-EXT-DM-LOCAL

USB over Ethernet Extender with Routing, Host Module

USB-EXT-DM-REMOTE

USB over Ethernet Extender with Routing, 4-Port Device Module

USB-NX2-LOCAL-1G

USB over Ethernet Network Endpoint Wall Plate with Routing, Local

USB-NX2-REMOTE-1G

USB over Ethernet Network Endpoint Wall, Plate with Routing, Remote

Notes:

1. The maximum cable length for DigitalMedia 8G+ (DM 8G+) or HDBaseT is dependent upon the type of cable and resolution of the video signal. Refer to the "Maximum Cable Lengths" table for a detailed overview. Crestron legacy cable models [DM-CBL](#) DigitalMedia Cable and [DM-CBL-D](#) DigitalMedia D Cable support the same resolutions and cable lengths as CAT5e. Shielded cable and connectors are required when bundling multiple cables in a wire run, and are recommended for all applications to safeguard against unpredictable environmental electrical noise which may impact performance at resolutions above 1080p. Refer to the [Crestron DigitalMedia Design Guide, Doc. #4546](#) for complete system design guidelines. DM 8G+ is compatible with HDBaseT Alliance specifications for connecting to HDBaseT compliant equipment. All wire and cables are sold separately.
2. To power the DM-TX-4K-302-C using PoDM+ (Power over DigitalMedia Plus) requires connection to a DM switcher or other DigitalMedia equipment that has a PoDM+ PSE port. Wiring that connects to a PoDM+ or PoDM PSE port is for intrabuilding use only.
3. To power the DM-TX-4K-302-C using HDBaseT PoE requires connection to a switcher or other equipment that has an HDBaseT PoE PSE port. Wiring that connects to a HDBaseT PoE+ or HDBaseT PoE PSE port is for intrabuilding use only.
4. To enable the supply of power to an external USB device via the USB HID port, the DM-TX-4K-302-C must be powered using PoDM+, HDBaseT PoE+, or the optional [PW-2407WU](#) power pack (sold separately). The DM-TX-4K-302-C may be powered using standard PoDM or HDBaseT PoE (802.3at Type 1 Class 3) if no USB device is connected to its USB HID port.
5. USB over Ethernet Extender Modules are sold separately. Refer to the Crestron USB over Ethernet Extenders ([USB-EXT-DM-LOCAL](#) and [USB-EXT-DM-REMOTE](#)) and Crestron USB over Ethernet Network Wall Plate Endpoints ([USB-NX2-LOCAL-1G](#) and [USB-NX2-REMOTE-1G](#)) spec sheets for more information.
6. The VGA input requires an appropriate passive adapter or breakout cable to accommodate a component, S-Video, or composite video signal.
7. The HDMI connections can accommodate a DVI or Dual-Mode DisplayPort signal using an appropriate adapter or interface cable. [CBL-HD-DVI](#) interface cables are available separately.
8. Crestron Connect It Cable Caddy ([TT-100](#) series) sold separately. Refer to each product's spec sheet for more information.

This product may be purchased from select authorized Crestron dealers and distributors. To find a dealer or distributor, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/How-To-Buy/Find-a-Representative or by calling 855-263-8754.

This product is covered under the Crestron standard limited warranty. Refer to www.crestron.com/warranty for full details.

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

Certain Crestron products contain open source software. For specific information, please visit www.crestron.com/opensource.

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HDMI

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