DM-TX-400-3G

Wall Plate DigitalMedia™ CAT Transmitter 400

The DM-TX-400-3G is a DM® CAT transmitter and switcher that installs in a triple-gang electrical box to provide a convenient interface for computers and high-definition AV sources as part of a complete Crestron® DigitalMedia™ system. The DM-TX-400-3G is ideal for wall, lectern, and floor box applications in a boardroom, classroom, auditorium, or residence. It connects to the head end or display location using a single Crestron DM cable, providing HDMI®, VGA, and analog video and audio inputs, plus a USB HID host port. Standard gang-box mounting allows for installation adjacent to an Ethernet jack (Crestron MP-WP183 or equivalent) for a total connectivity solution[1].

DigitalMedia™
As the leader in HDMI and control system technologies, Crestron developed DigitalMedia (DM) 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. DigitalMedia CAT distributes uncompressed digital video and audio signals up to 450 feet (137 m) using Crestron DM cable[2].

Multimedia Computer/AV Interface
The DM-TX-400-3G provides versatile switching among four inputs. The inputs can be configured to switch automatically or be selected through a Crestron control system. Inputs include:

• **HDMI** — Supports HD 1080p60 video and WUXGA computer signals with HDCP and multi-channel lossless audio. Also handles DVI and DisplayPort Multimode signals using an appropriate adapter or interface cable[3].
• **PC** — This VGA type input handles analog RGB signals up to WUXGA 1920x1200 pixels, as well as analog video up to 1080p60[4]. A 1/8" (3.5mm) stereo audio input is included to accommodate analog audio signals from an unbalanced line-level source or headphone output.
• **Component Video** — Accepts analog YPbPr component video signals up to 1080p60, and includes a S/PDIF digital audio input.
• **Composite Video** — Accepts the connection of an NTSC or PAL composite video source with stereo unbalanced line-level audio.

Note: Audio breakaway capability enables any analog audio input to be used with any video input.

A single DM CAT output is provided for connection to a DM switcher or receiver.[2] Used with a single DM CAT Receiver/Room Controller and optional Crestron Control System, the DM-TX-400-3G affords a simple solution for extending a multimedia computer or AV signal to a single display up to 450 feet (137 m) away[2]. As part of a larger system using a DM-MD series switcher, multiple DM-TX-400-3Gs may be installed to enable the distribution of several sources at different locations to feed multiple displays throughout any room or larger facility.

Keyboard/Mouse Extender
The DM-TX-400-3G functions as a keyboard/mouse extender, allowing a USB HID-compliant keyboard and/or mouse to be connected at the wall plate and used to control a computer or other component located at the central equipment rack or some other location.

EDID Format Management

The DM-TX-400-3G allows for management of the EDID (Extended Display Identification Data) information that passes between the display devices and input sources in the system. Using Crestron Toolbox™ software, the format and resolution capabilities of each device can be assessed and managed through the DM-TX-400-3G, ensuring reliable operation by instructing sources to output only the resolutions and formats that can be handled by the displays and system wiring.

CEC Embedded Device Control
The primary objective of every Crestron system is to enable precisely the control desired for a seamless user experience. DigitalMedia provides an alternative to conventional IR and RS-232 device control by harnessing the CEC (Consumer Electronics Control) signal embedded in HDMI. Through its connection to the control system, the DM-TX-400-3G provides a gateway for controlling the connected source device right through the HDMI connection, potentially eliminating the need for any dedicated control wires or IR emitters. Through proper CEC signal management, DigitalMedia allows you to take control of each device in the system as you like.

Simple Wall Box Mounting
The DM-TX-400-3G is designed to be installed using a 3-gang electrical box or plaster ring. It also fits a 3-gang opening in a typical 6" deep floor box. The DM cable is terminated to the rear of the transmitter using screw terminals. The unit is powered via the DMNet® connection. An array of indicators on the front of the DM-TX-400-3G provides for easy setup and troubleshooting. Advanced configuration is enabled through Crestron Toolbox software.

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

> *DigitalMedia™ CAT transmitter and multimedia interface*

> *Built-in 4x1 AV switcher with auto-switching and analog audio-breakaway*

> *QuickSwitch HD® technology achieves fast, reliable switching*

> *DM® CAT output supports up to 450 ft (137 m) cable length[2]*

CRESTRON®

> Provides HDMI®, RGB, component, and composite video inputs[4]

> Also supports DVI and DisplayPort Multimode sources[3]

> Includes S/PDIF, RCA, and mini-TRS audio inputs

> Handles HD video with HDCP

> Handles Dolby Digital®, DTS®, and uncompressed 7.1 linear PCM audio

> Detects and reports detailed video and audio input information

> Performs automatic AV signal format management via EDID

> Includes USB HID keyboard/mouse port

> Enables device control via CEC

> Allows quick, easy setup and diagnostics

> 3-gang wall box mount design

> Also fits in a typical 6" deep floor box

> Available in black or white finish

> Powered over the DMNet® connection

SPECIFICATIONS

Video

Switcher: 4x1 combination digital/analog switch, Crestron QuickSwitch HD®
Input Signal Type: HDMI®, DVI[3], DisplayPort Multimode[3], RGB, component (YPbPr)[4], S-Video (Y/C)[4], composite[4]
Output Signal Type: DM® CAT (DigitalMedia™ over twisted-pair copper wire)
Formats: HDMI, DVI, HDCP content protection support, computer up to UXGA/WUXGA, HD up to 1080p60, NTSC or PAL
Input Resolutions, HDMI & DVI, Progressive: 640x480@60Hz, 720x480@60Hz (480p), 720x576@50Hz (576p), 800x600@60Hz, 848x480@60Hz, 852x480@60Hz, 854x480@60Hz, 1024x768@60Hz, 1024x852@60Hz, 1024x1024@60Hz, 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x768@60Hz, 1280x800@60Hz, 1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1365x1024@60Hz, 1366x768@60Hz, 1400x1050@60Hz, 1440x900@60Hz, 1600x900@60Hz, 1600x1200@60Hz, 1680x1050@60Hz, 1920x1080@24Hz (1080p24), 1920x1080@25Hz (1080p25), 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), 1920x1200@60Hz, 2048x1080@24Hz, 2048x1152@60Hz, plus any other resolution allowed by HDMI up to 165MHz pixel clock
Input Resolutions, HDMI & DVI, Interlaced: 720x480@30Hz (480i), 720x576@25Hz (576i), 1920x1080@25Hz (1080i25), 1920x1080@30Hz (1080i30), plus any other resolution allowed by HDMI up to 165MHz pixel clock
Input Resolutions, RGB: 640x480@60Hz, 720x480@60Hz (480p), 720x576@50Hz (576p), 800x600@60Hz, 848x480@60Hz, 1024x768@60Hz, 1280x720@50Hz (720p50), 1280x720@60Hz (720p60), 1280x768@60Hz, 1280x800@60Hz, 1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1366x768@60Hz, 1400x1050@60Hz, 1440x900@60Hz, 1600x1200@60Hz, 1680x1050@60Hz, 1920x1080@50Hz (1080p50), 1920x1080@60Hz (1080p60), 1920x1200@60Hz, 2048x1152@60Hz
Input Resolutions, Component[4]: 480i, 576i, 480p, 576p, 720p50, 720p60, 1080p24, 1080i25 (1125 lines), 1080i30, 1080p30, 1080p50 (1125 lines), 1080p60
Input Resolutions, Composite and S-Video[4]: 480i, 576i

Formats, HDMI & SPDIF: Dolby Digital®, Dolby Digital EX, DTS®, DTS-ES, DTS 96/24, 2ch PCM
Formats, HDMI only: Up to 8ch PCM
Formats, Analog: Stereo 2-channel
Analog-To-Digital Conversion: 24-bit 48 kHz
Input Level Compensation (analog): ±10 dB
Performance (analog): Frequency Response: 20Hz to 20kHz ±0.75dB;
S/N Ratio: >90dB, 20Hz to 20kHz A-weighted;
THD+N: <0.05% @ 1kHz;
Stereo Separation: >90dB

Communications
DigitalMedia: DM CAT, DMNet®, HDCP management, EDID format management, CEC
USB: Supports USB HID class devices

Connectors - Front
AUDIO IN: (1) 3.5mm TRS mini phone jack;
Unbalanced stereo line-level audio input;
Input Level: 2 Vrms maximum;
Input Impedance: 10k Ohms
USB HID: (1) USB Type A female;
USB 2.0 host port for connection of a mouse/keyboard or other USB HID-compliant device
HDMI IN: (1) 19-pin Type A HDMI female;
HDMI digital video/audio input;
Also supports DVI and DisplayPort Multimode[3]
PC IN: (1) DB15HD female;
RGB (VGA), component, S-Video, or composite video input[4];
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;
Sync Input Level: 3 to 5 Vp-p;
Sync Input Impedance: 1k Ohms
SPDIF: (1) RCA female;
S/PDIF coaxial digital audio input;
Input Impedance: 75 Ohms nominal
Y, Pb, Pr: (3) RCA female comprising (1) component (YPbPr) video input;
Input Level: 1 Vp-p nominal;
Input Impedance: 75 Ohms nominal
VID: (1) RCA female, composite video input;
Input Level: 1 Vp-p nominal;
Input Impedance: 75 Ohms nominal
L, R: (2) RCA female;
Unbalanced stereo line-level audio input;
Input Level: 2 Vrms maximum
Input Impedance: 15k Ohms

Connectors - Rear
D, M: (1) DM CAT output composed of (16) captive screw terminals with (2) grounded strain reliefs;
Connects to DM CAT input of a DM switcher, receiver/room controller, or other DM device via DM-CBL cable[2]
G B A 24: (1) DMNet port composed of (4) captive screw terminals;
Connects to DMNet port of a DM switcher, receiver/room controller, or other DM device via DM-CBL cable[2]
G: (1) Flying lead, chassis ground connection

DM Cable Length
Cable Type:
DM-CBL DigitalMedia CableMaximum length without, between, before, or after repeaters:

- 200 ft (60 m) for 720p, 1080i, 1080p24
- 200 ft (60 m) for 1024x768 @75Hz

CRESTRON®

- 450 ft (137 m) for 1280x1024 @75Hz

- 450 ft (137 m) for 1920x1200 @60Hz
- 375 ft (114 m) for 1600x1200 @60Hz

Controls & Indicators

PWR: (1) green LED, indicates operating power supplied via DMNet
RESET: (1) miniature recessed pushbutton for hardware reset
SETUP: (1) red LED and (1) miniature recessed pushbutton for Ethernet setup
DM LINK: (1) green LED, indicates DM link status
HDMI: (1) green LED, indicates HDMI input is selected
PC: (1) green LED, indicates PC input is selected
YPbPr: (1) green LED, indicates YPbPr input is selected
PC: (1) green LED, indicates VID input is selected

Power Requirements

DMNet Power Usage: 12 Watts (0.5 Amps @ 24 Volts DC)

Environmental

Temperature: 32° to 104°F (0° to 40°C)
Humidity: 10% to 90% RH (non-condensing)
Heat Dissipation: 40 BTU/Hr

Enclosure

Construction: Metal
Flush Mount: Mounts in a 3-gang electrical box or in a 3-gang opening in a typical 6 inch deep floor box, 2.75 inch minimum mounting depth required, decorator style faceplate not included

Dimensions

Height: 4.12 in (105 mm)
Width: 5.30 in (135 mm)
Depth: 2.53 in (64 mm)

Weight

14.4 oz (408 g)

Available Models

DM-TX-400-3G: Wall Plate DigitalMedia™ CAT Transmitter 400, Black Textured
DM-TX-400-3G-W-T: Wall Plate DigitalMedia™ CAT Transmitter 400, White Textured

Available Accessories

DM-CBL-NP-SP500: DigitalMedia™ Cable, non-plenum, 500 ft spool
DM-CBL-P-SP500: DigitalMedia™ Cable, plenum-rated, 500 ft spool
DM-DR: DigitalMedia™ CAT Repeater
CBL-HD-LOCK-2: Locking High-Speed HDMI® Cable, 2 ft
CBL-HD-LOCK-4: Locking High-Speed HDMI® Cable, 4 ft
CBL-HD-LOCK-8: Locking High-Speed HDMI® Cable, 8 ft
CBL-HD-LOCK-16: Locking High-Speed HDMI® Cable, 16 ft
CBL-HD-1.5: Crestron® Certified HDMI® Interface Cable, 1.5 ft
CBL-HD-3: Crestron® Certified HDMI® Interface Cable, 3 ft
CBL-HD-6: Crestron® Certified HDMI® Interface Cable, 6 ft
CBL-HD-12: Crestron® Certified HDMI® Interface Cable, 12 ft
CBL-HD-20: Crestron® Certified HDMI® Interface Cable, 20 ft
CBL-HD-30: Crestron® Certified HDMI® Interface Cable, 30 ft
CBL-HD-DVI-1.5: Crestron® Certified HDMI® to DVI Interface Cable, 1.5 ft
CBL-HD-DVI-3: Crestron® Certified HDMI® to DVI Interface Cable, 3 ft
CBL-HD-DVI-6: Crestron® Certified HDMI® to DVI Interface Cable, 6 ft

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CBL-HD-DVI-12: Crestron® Certified HDMI® to DVI Interface Cable, 12 ft
CBL-HD-DVI-20: Crestron® Certified HDMI® to DVI Interface Cable, 20 ft
CBL-HD-DVI-30: Crestron® Certified HDMI® to DVI Interface Cable, 30 ft
CBL-VGA-1.5: Crestron® Certified Computer VGA Interface Cable, 1.5 ft
CBL-VGA-3: Crestron® Certified Computer VGA Interface Cable, 3 ft
CBL-VGA-6: Crestron® Certified Computer VGA Interface Cable, 6 ft
CBL-VGA-12: Crestron® Certified Computer VGA Interface Cable, 12 ft
CBL-VGA-25: Crestron® Certified Computer VGA Interface Cable, 25 ft
CBL-VGA-AUD-3: Crestron® Certified Computer VGA Interface Cable w/ Audio, 3 ft
CBL-VGA-AUD-6: Crestron® Certified Computer VGA Interface Cable w/ Audio, 6 ft
CBL-VGA-AUD-12: Crestron® Certified Computer VGA Interface Cable w/ Audio, 12 ft
CBL-VGA-AUD-25: Crestron® Certified Computer VGA Interface Cable w/ Audio, 25 ft
CBL-AUDIO-1.5: Crestron® Certified Mini-TRS Stereo Audio Interface Cable, 1.5 ft
CBL-AUDIO-3: Crestron® Certified Mini-TRS Stereo Audio Interface Cable, 3 ft
CBL-AUDIO-6: Crestron® Certified Mini-TRS Stereo Audio Interface Cable, 6 ft
CBL-AUDIO-12: Crestron® Certified Mini-TRS Stereo Audio Interface Cable, 12 ft
CBL-RCA-1.5: Crestron® Certified RCA Composite Video and S/PDIF Audio Interface Cable, 1.5 ft
CBL-RCA-3: Crestron® Certified RCA Composite Video and S/PDIF Audio Interface Cable, 3 ft
CBL-RCA-6: Crestron® Certified RCA Composite Video and S/PDIF Audio Interface Cable, 6 ft
CBL-RCA-12: Crestron® Certified RCA Composite Video and S/PDIF Audio Interface Cable, 12 ft
CBL-RCA3-1.5: Crestron® Certified RCA Component Video Interface Cable, 1.5 ft
CBL-RCA3-3: Crestron® Certified RCA Component Video Interface Cable, 3 ft
CBL-RCA3-6: Crestron® Certified RCA Component Video Interface Cable, 6 ft
CBL-RCA3-12: Crestron® Certified RCA Component Video Interface Cable, 12 ft
CBL-RCA2-1.5: Crestron® Certified RCA Stereo Audio Interface Cable, 1.5 ft
CBL-RCA2-3: Crestron® Certified RCA Stereo Audio Interface Cable, 3 ft
CBL-RCA2-6: Crestron® Certified RCA Stereo Audio Interface Cable, 6 ft
CBL-RCA2-12: Crestron® Certified RCA Stereo Audio Interface Cable, 12 ft
MP-WP183-B: Media Presentation Wall Plate - Ethernet, Black
MP-WP183-W: Media Presentation Wall Plate - Ethernet, White

Notes:
1. The DM-TX-400-3G does not include an external Ethernet port. Local Ethernet connectivity for external devices requires a MP-WP183 or equivalent Ethernet jack with a dedicated LAN connection.

2. For DigitalMedia CAT wiring, use DM-CBL DigitalMedia Cable. Up to two DM CAT Repeaters (Model DM-DR) may be required. Connection to a DM-RX1-1G receiver is only supported through a DM switcher. Refer to the Crestron DigitalMedia Design Guide, Doc. #4546 for complete system design guidelines. All cable sold separately.

3. HDMI requires an appropriate adapter or interface cable to accommodate a DVI or DisplayPort Multimode signal. CBL-HD-DVI interface cables available separately.

4. The RGB input can actually accept component, composite, and S-Video signals via direct interface to Crestron MPS Series products, or through an appropriate adapter (not included). However, input sync detection is not provided for composite or S-Video signal types through the RGB connection.

This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at www.crestron.com/salesreps or by calling 800-237-2041.

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The specific patents that cover Crestron products are listed online at:

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CRESTRON

0.34 in
(0.85 cm)

2.0 in
(5.08 cm)

5.18 in
(13.16 cm)

5.3 in
(13.47 cm)

4.12 in
(10.45 cm)

2.63 in
(6.67 cm)

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