

32x32 DigitalMedia™ Switcher with Redundant Power Supplies



- Delivers a unified HD signal distribution solution incorporating both point-to-point wired and IP streaming technologies
- Provides lossless HD AV signal routing over twisted pair copper wire or fiber
- Integrates video, audio, networking, and control over one wire or fiber strand
- Enables high-performance H.264 streaming from any input source up to 1080p or WUXGA
- Provides a built-in CONTENT LAN port for streaming
- Affords full matrix switching with ultra high 12.5 Gbps backplane data rate
- Handles HDMI® devices with Deep Color, 3D, 4K, and high-bitrate 7.1 encoded audio
- HDBaseT® Certified device — Enables direct connection to other HDBaseT certified equipment
- HDCP 2.2 compliant via 4K input and output cards
- Distributes Full HD 1080p, Ultra HD, and 4K signals via DM 8G+® and HDBaseT connectivity

- Distributes 1080p and WUXGA signals over via DM 8G® Fiber or via DM 8G® SM Fiber
- Allows streaming of 1080p signals over an IP network with no distance limitations
- Supports first-generation DM® CAT and DM® Fiber products
- Configurable with up to 32 DM, HDBaseT, and/or HDMI outputs
- Configurable with up to 16 streaming outputs
- Easy output expansion using multiple DM switchers
- Modular inputs support a complete range of digital, analog, and streaming signal types
- QuickSwitch HD™ technology manages HDCP keys for fast, reliable switching
- Auto-Locking® technology achieves rapid switching between disparate sources
- Performs automatic AV signal format management via EDID
- Enables device control via CEC
- Allows independent scaling for every display through select output cards and DM receivers
- Distributes and routes USB HID mouse and keyboard signals
- Allows full audio and USB breakaway switching
- Supports analog audio embedding and de-embedding
- Includes integrated Ethernet switch with Gigabit LAN port
- Private Network Mode — requires just one IP address for the complete DM system
- Secure access through full user/group management or Active Directory® credential management integration
- Hardware level security using 802.1X authentication
- TLS, SSL, SSH, and SFTP network security protocols
- Includes a built-in web server
- 14-space 19 in. (483 mm) rack-mountable

The DM-MD32X32-CPU3-RPS delivers an advanced 4K60 4:4:4 AV signal routing solution to provide the foundation for a complete [DigitalMedia™](#) system. The DM-MD32X32-CPU3-RPS affords ultra fast switching and lossless distribution of HDMI® and other signals to support digital media players, HDTV receivers, computers, cameras, and display devices. The DM-MD32X32-CPU3-RPS is an enhanced version of the [DM-MD32X32-CPU3](#) featuring three built-in redundant power supplies.

The DM-MD32X32-CPU3-RPS is configurable to handle up to 32 AV sources. The outputs are configurable to provide up to 32 DM, HDBaseT®, and/or HDMI outputs, or up to 16 H.264 streaming outputs, in a single chassis.¹ Based on the 3-Series® platform, the provides enterprise-grade security.

32x32 DigitalMedia™ Switcher with Redundant Power Supplies

Integrated Ethernet networking and USB distribution provide a complete connectivity solution combined with built-in Crestron® control² for managing the displays and other room devices without any additional wiring. User-friendly operation, setup, and troubleshooting tools are provided through the front panel, or via [Crestron Toolbox™](#) software, to allow for easy setup. A web browser interface is also provided.³

4K Ultra HD

The DM-MD32X32-CPU3-RPS is designed to meet the extreme bandwidth requirements for handling 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.⁴

DigitalMedia 8G+® Technology

The DM-MD32X32-CPU3-RPS provides full support for Crestron DigitalMedia 8G+ devices as well as first-generation DM CAT^{8,10} and DM Fiber^{9,10} products, letting you take advantage of the latest Crestron DigitalMedia 8G+ technology.

A DigitalMedia 8G+ system handles high resolution video signals and can simultaneously distribute stereo and multichannel surround sound signals that support high bitrate 7.1 audio formats as well as uncompressed linear PCM. Signals are transported over one CAT type twisted pair cable or one strand of multimode or single-mode fiber.

HDBaseT® Certified

Using DigitalMedia 8G+® technology, the DM-MD32X32-CPU3-RPS can be connected directly to an HDBaseT compliant device without requiring a DM transmitter or receiver.

H.264 Streaming

The DM-MD32X32-CPU3-RPS streaming input capability enables IP cameras and other H.264 encoded sources to be distributed via DigitalMedia alongside HDMI and other non-streaming sources. It also allows DM switchers to be bridged together for simplified routing of HD content between buildings and global offices. Large-scale streaming to computers and mobile devices can be facilitated through integration with a streaming media system such as a Wowza® or Kaltura® media system.

Built-In CONTENT LAN Port

Any streaming input or output may be configured to stream via the CONTENT LAN or LAN port of the DM switcher or via a dedicated CONTENT LAN port of a DMC Series input or output card. Control and content can be combined on a single network or can be isolated onto separate networks.

Modular Architecture

The DM-MD32X32-CPU3-RPS features a modular architecture with 32 input card slots and 16 dual output card slots. A wide selection of input cards is offered to support a complete range of digital and analog AV signal types as specified in the following specifications table.

Output Expansion

An HDMI pass-through output is provided on every input card to allow the inputs of up to five DM switchers to be daisy-chained, enabling the configuration of very large distribution systems with many outputs. Using five DM-MD32X32-CPU3-RPS switchers, for example, it is possible to support up to 160 separate outputs.

QuickSwitch HD™ Technology

Digital media signals are typically encrypted to protect against unauthorized viewing. After authenticating displays or signal processors, a source device must issue a key before delivering an output signal. Crestron QuickSwitch HD technology manages these keys to ensure fast, reliable switching and immunity to blackouts.

NOTE: QuickSwitch HD technology requires the use of a scaling HDMI output, which is available on DigitalMedia™ devices such as the DM-RMC-4KZ-SCALER-C and DMC-4KZ-HDO.

Auto-Locking® Technology

Crestron Auto-Locking technology enables super fast signal switching by instantaneously configuring every device in the signal path as soon as the signal hits the first device. Auto-Locking technology virtually eliminates any noticeable gap while switching.

EDID Format Management

DigitalMedia technology manages the EDID (Extended Display Identification Data) that devices use to communicate to eliminate conflicts that may arise when one source is routed to multiple displays or audio components. Via Crestron Toolbox software, the format and resolution capabilities of each device can be assessed, allowing the installer to properly configure EDID.

A Scaler for Every Display

Installing select output cards into the DM-MD32X32-CPU3-RPS or connecting a DM receiver with built-in HD and 4k scalers to the DM-MD32X32-CPU3-RPS allows for high-performance scaling. Independent scalers placed at every display device allow for the routing of multiple sources to many different display devices.¹³ The Distributed Scaler Approach ensures an optimal image on every screen and allows a high-res computer source to be viewed on any display in the building.

Versatile Audio Routing

HDMI is the key to handling 7.1 surround sound formats such as Dolby® TrueHD, Dolby Atmos®, and DTS HD Master Audio™. To share these audio sources with multiple audio zones, the DM-MD32X32-CPU3-RPS allows for the simultaneous distribution of multichannel surround sound and two-channel stereo signals from the same HDMI source.

32x32 DigitalMedia™ Switcher with Redundant Power Supplies

The digital stereo signal is converted to analog to enable sharing via a Sonnex® Multiroom Audio System or any other audio distribution system. The DM-MD32X32-CPU3-RPS also allows surround sound processors and amplifiers to be located centrally instead of at the display location via optional local HDMI outputs.

Built-in Ethernet Switch

The DM-MD32X32-CPU3-RPS includes an integrated Ethernet switch with a gigabit LAN port. In addition to transporting digital video and audio, a DigitalMedia system can also extend a 100 Mbps Ethernet link to each display and source device via select DM receivers and transmitters, providing high-speed connectivity for any room device that requires a LAN connection. Ethernet is also utilized internally by the Crestron control bus to manage the DM devices in the system and provide display control in each room.

Private Network Mode

To streamline its implementation on a corporate or university LAN, the DM-MD32X32-CPU3-RPS employs Private Network Mode to provide a single-point connection for the complete system. Using Private Network Mode, the DM-MD32X32-CPU3-RPS requires just one IP address for the complete DM network.

USB Signal Routing

The DM-MD32X32-CPU3-RPS supports USB HID (Human Interface Device) signal routing so that a USB HID compliant keyboard and/or mouse can provide local control for devices in other locations.¹⁶ USB HID connectivity is provided through select DM receivers, transmitters, and input cards. Connect a USB over Ethernet Extender host module ([USB-EXT-DM-LOCAL](#)¹²) to a host that you would like to communicate with and install a device module ([USB-EXT-DM-REMOTE](#)¹²) at every display location to connect keyboards, gaming controllers, mice, or other devices.

CEC Embedded Device Control

Through its connection to the control system, the DM-MD32X32-CPU3-RPS provides a gateway for controlling many devices right through their HDMI or HDBaseT connections, potentially eliminating the need for any dedicated control wires or IR emitters.¹³

Web Browser Control

The DM-MD32X32-CPU3-RPS also includes a built-in web server that allows functions such as Ethernet configuration, routing, and firmware upgrades to be performed.³

Redundant Power Supplies

The DM-MD32X32-CPU3-RPS delivers enhanced reliability through three long-life redundant power supplies. In the unlikely event of a fault with one of the power supplies (indicated by a flashing red LED), the DM-MD32X32-CPU3-RPS will continue to operate on two power supplies. Individual green LEDs show that the power supplies are functioning without fault. The power supplies can also be remotely monitored via Crestron Fusion® software or any control system touch screen.

Upgrading an existing DM switcher that has older multi-gang DMCO-series output cards? Use the online [Output Card Additions and Upgrades Tool](#) to update your existing output cards and switcher to the new single-gang output card format.

Refer to the [DigitalMedia Resources](#) webpage at www.crestron.com/dmresources/ for additional design tools and reference documents.

32x32 DigitalMedia™ Switcher with Redundant Power Supplies

Specifications

Maximum Cable Lengths

Resolution	Cable Type		
	DM-CBL-ULTRA DM® Ultra Cable	DM-CBL-8G DM 8G® Cable	Third-Party CAT5e (or higher)
1920x1080 FHD 1080p	330 ft (100 m)	330 ft (100 m)	330 ft (100 m)
1920x1200 WUXGA			
1600x1200 UXGA			
2048x1080 DCI 2K			
2048x1152 QWXGA			
2560x1080 UWFHD	230 ft (70 m)	230 ft (70 m)	165 ft (50 m)
2560x1080 WQHD			
2560x1600 WQXGA			
3840x2160 4K UHD			
4096x2160 DCI 4K			

Resolution	Cable Type	
	CRESFIBER8G CresFiber® 8G Multimode Fiber	Third-Party OM3 Multimode Fiber
1920x1080 FHD 1080p	1000 ft (300 m) via DM 8G Fiber cards	500 ft (150 m) via DM 8G Fiber cards
1920x1200 WUXGA		
1600x1200 UXGA		
2048x1080 2K DCI @ 24Hz		

Resolution	Cable Type	
	CRESFIBER8G-SM CresFiber 8G Single-Mode Fiber	Third-Party G.652.D (or higher) Single-Mode Fiber
1920x1080 FHD 1080p	7.5 miles (12 km) via DM 8G SM Fiber cards	
1920x1200 WUXGA		
1600x1200 UXGA		
2048x1080 2K DCI @ 24Hz		

Video

Switcher	32x32 digital matrix, modular input/output cards, Crestron QuickSwitch HD™ technology
Input Signal Types	Configurable via modular plug-in cards supporting HDMI® (DVI & Dual-Mode DisplayPort compatible ¹²), DVI, 3G-SDI, RGB/VGA, component, S-Video, composite (NTSC & PAL), DM 8G+® & HDBaseT®, DM 8G® Fiber, DM 8G SM Fiber, DM® CAT (legacy), DM Fiber (legacy), & H.264 streaming
Output Signal Types	Configurable via modular plug-in cards supporting HDMI (DVI compatible ¹⁵), DM 8G+ & HDBaseT, DM 8G Fiber, DM 8G SM Fiber, DM CAT (legacy), DM Fiber (legacy), & H.264 streaming (All input cards also include HDMI pass-through outputs)
Backplane Data Rate	12.5 Gbps

NOTE: For additional specifications, refer to the DMC Series input and output card spec sheets.

Audio

Switcher	32x32 digital multichannel audio-follow-video matrix switching, plus independent 32x32 stereo matrix for audio breakaway
Input Signal Types	Configurable via modular plug-in cards supporting HDMI (Dual-Mode DisplayPort compatible ¹²), 3G-SDI, analog (stereo 2-channel), SPDIF, DM 8G+ & HDBaseT, DM 8G Fiber, DM 8G SM Fiber, DM CAT (legacy), DM Fiber (legacy), & H.264 streaming

32x32 DigitalMedia™ Switcher with Redundant Power Supplies

Output Signal Types	Configurable via modular plug-in cards supporting HDMI, analog (stereo 2-channel), DM 8G+ & HDBaseT, DM 8G Fiber, DM 8G SM Fiber, DM CAT (legacy), DM Fiber (legacy), & H.264 streaming (All input cards also include HDMI pass-through outputs, and most digital audio input cards also include analog stereo pass-through audio outputs)
----------------------------	--

NOTE: For additional specifications, refer to the DMC Series input and output card spec sheets.

Communications

Ethernet	100/1000 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, industry-standard TCP/IP stack, UDP/IP, CIP, DHCP, SSL, TLS, SSH, SFTP (SSH File Transfer Protocol), FIPS 140-2 compliant encryption, IEEE 802.1X, SNMP, IPv4 or IPv6, Active Directory authentication, IIS v.6.0 Web Server, SMTP e-mail client, Private Network Mode
USB	USB signal routing via select input cards, transmitters, receivers, and extenders ¹⁰ ; USB computer console port for setup
DigitalMedia	DM 8G+, DM 8G Fiber, DM 8G SM Fiber, DM Fiber, DM CAT, HDCP 2.2 ⁴ , EDID, CEC, PoDM, PoDM+, Ethernet
HDBaseT	HDCP 2.2 ⁴ , EDID, CEC, RS-232, PoH, Ethernet
HDMI	HDCP 2.2 ⁴ , EDID, CEC

NOTE: Supports management of HDCP and EDID; supports management of CEC between connected HDMI and HDBaseT devices and a control system.¹⁴ For additional specifications, refer to the DMC Series input and output card spec sheets.

Card Slots

1 - 32	(32) DM switcher input card slots; Each slot accepts (1) DMC-series input card
DM OUTPUTS 1-32	(16) DM switcher output card slots; Each slot accepts (1) DMC-series output card

Connectors

LAN	(1) 8-pin RJ45 female; 100BASE-TX/1000BASE-T Ethernet port
CONTENT	(1) 8-pin RJ45 female; 100BASE-TX/1000BASE-T Ethernet port; Provides a dedicated LAN connection for streaming only, used in lieu of streaming via the LAN port of the switcher or the CONTENT LAN port of a DMC Series input or output card
SERVICE	(1) 8-pin RJ45 female; 100BASE-TX/1000BASE-T Ethernet port; For factory use only
USB	(1) USB Type A connector, female; USB 2.0 host port for USB flash drive; For save/load of EDID settings and firmware update
100-240V-12-5A 50/60 Hz	(1) IEC 60320 C14 mains power inlet; Mates with included power cord
G	(1) 6-32 screw, chassis ground lug
COMPUTER (front)	(1) USB Type B female; USB computer console port (6 ft cable included)

Controls & Indicators

LCD Display	Green LCD dot matrix, 128 x 64 resolution, adjustable LED backlight, displays inputs/outputs by name, video & audio signal information, Ethernet configuration and setup menus
SOFTKEYS	(4) Push buttons for activation of LCD driven functions
HW-R	(1) Recessed push button for hardware reset, reboots the switcher
ROUTE	(1) Push button and red LED, selects ROUTE mode to allow routing changes
VIEW	(1) Push button and red LED, selects VIEW mode for viewing current routes
INFO	(1) Push button and red LED, selects INFO mode for viewing AV and device info
MENU	(1) Push button, steps menu back one level
ENTER	(1) Push button, executes highlighted menu or value
AUDIO	(1) Push button & red LED, selects audio routing view
VIDEO	(1) Push button & red LED, selects video routing view
USB	(1) Push button & red LED, selects USB routing view
Quick-Adjust Knob	(1) Continuous turn rotary encoder, adjusts menu parameters

32x32 DigitalMedia™ Switcher with Redundant Power Supplies

IN 1 - 32	(32) Push buttons and red LEDs, each button selects the corresponding input for routing
OUT 1 - 32	(32) Push buttons and red LEDs, each button selects the corresponding output for routing
POWER SUPPLIES, 1-3	(3) Green LEDs, each indicates when the corresponding internal supply is functioning
POWER SUPPLIES, FAULT	(1) Red flashing LED, indicates a fault with any internal supply
LAN (rear)	(2) LEDs; Left LED, green indicates 100BASE-TX link is established, amber indicates 1000BASE-T link is established; Right LED, flashing amber indicates Ethernet activity
CONTENT (rear)	(2) LEDs; Left LED, green indicates 100BASE-TX link is established, amber indicates 1000BASE-T link is established; Right LED, flashing amber indicates Ethernet activity
SERVICE (rear)	(2) LEDs; Left LED, green indicates 100BASE-TX link is established, amber indicates 1000BASE-T link is established; Right LED, flashing amber indicates Ethernet activity

Power Requirements

Main Power	12-5 A @ 100-240 VAC, 50/60 Hz
Power Consumption	880 W typical
Available PoDM/PoH Power	Refer to the specifications for each DM 8G+ input and output card

Redundant Power Supplies

Quantity/Type	(3) switch-mode, internal
Demonstrated MTBF	>1,000,000 hours per power supply @ full load and 25° C ambient conditions
Redundancy	Complete unit continues to operate at full capacity on two or more functioning power supplies. If two power supplies fail, the unit enters a safety shutdown mode that prevents damage to the unit and attached external devices.

Environmental

Temperature	32° to 104° F (0° to 40° C)
Humidity	10% to 90% RH (noncondensing)
Heat Dissipation	3000 BTU/hr
Ambient Noise	30 to 34 dBA typical; 29 to 30 dBA idle

Enclosure

Chassis	Metal with black finish, integrated rack ears, vented sides, fan-cooled
Front Panel	Metal, black finish with polycarbonate label overlay
Mounting	Freestanding or 14 RU 19 in. (483 mm) rack-mountable (rack ears built in)

Dimensions

Height	24.44 in. (621 mm)
Width	19 in. (483 mm)
Depth	15.75 in. (400 mm) without cards

Weight

64.5 lb (29.3 kg) without cards

Model

DM-MD32X32-CPU3-RPS

Available Accessories

For a list of available accessories, visit the [DM-MD32X32-CPU3-RPS](#) product page.

32x32 DigitalMedia™ Switcher with Redundant Power Supplies

Notes:

- All output types are configured in pairs except for streaming (a single streaming output occupies the space of two outputs of any other type). To configure a complete DM switcher with output and input cards, use the online [DigitalMedia Switcher Configuration Tool](#). Current DM switchers use DMC-series "single-gang" output cards. For older DM switchers with DMCO-series "multi-gang" output cards, use the online [Output Card Additions and Upgrades Tool](#) to update your existing output cards and switcher to the new single-gang output card format.
- Control via the DM network requires a Crestron control system, sold separately.
- Configuration of input cards, output cards, and endpoints is not supported.
- 4K60 4:4:4, HDR, Ultra HD, and HDCP 2.2 are currently supported over HDMI, DM 8G+, and HDBaseT using select input and output cards. Refer to the specifications for each input/output card and each connected device for its full capabilities.
- The maximum cable length for DigitalMedia 8G+ or HDBaseT is dependent upon the type of cable, the choice of input/output card, and the resolution of the video signal. Refer to the "Maximum DM 8G 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 recommended to safeguard against unpredictable environmental electrical noise which may impact performance at resolutions above 1080p. DM 8G+ is compatible with HDBaseT Alliance specifications for connecting to HDBaseT compliant equipment.
- The maximum cable length for DigitalMedia 8G™ Fiber is 1000 ft (300 m) using [CRESFIBER8G](#) multimode fiber optic cable, or 500 ft (150 m) using [CRESFIBER](#) (legacy) or third-party OM3 multimode fiber optic cable.
- The maximum cable length for DigitalMedia 8G Single-Mode Fiber is 7.5 miles (12 km) using [CRESFIBER8G-SM](#) or third-party G.652.D (or better) single-mode fiber optic cable.
- The maximum cable length for DigitalMedia CAT is 450 ft (137 m) using [DM-CBL](#) DigitalMedia Cable. Actual cable length depends upon multiple factors. Up to two DM Repeaters (Model [DM-DR](#)) may be required.
- The maximum cable length for DigitalMedia Fiber is 1000 ft (300 m) using [CRESFIBER](#) (legacy), [CRESFIBER8G](#), or third-party OM2/OM3 duplex multimode fiber optic cable.
- Refer to the Crestron [DigitalMedia Design Guide, Doc. #4546](#), for complete system design guidelines. All wire and cables are sold separately.
- Streaming output supports 2-channel stereo audio only. Multichannel surround sound audio sources cannot be streamed unless downmixed to stereo. Stereo downmix capability requires a "DSP" type DM switcher input card, sold separately.
- Any HDMI input can support a DVI or Dual-Mode DisplayPort signal using a suitable adapter or interface cable.
- Item(s) sold separately.
- Control of third-party HDBaseT devices using CEC is only supported via 4K DM 8G+ input and output cards.
- DVI output is supported via an HDMI output port using a suitable adapter or interface cable. [CBL-HD-DVI](#) interface cables are available separately.
- Manages the routing of USB HID signals between peripheral DM devices and input cards that are equipped with USB HID ports. Also programmable to manage the routing of USB signals between Crestron USB over Ethernet Extender modules ([USB-EXT-DM](#), sold separately). Refer to the USB-EXT-DM 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.

Crestron, the Crestron logo, 3-Series, Auto-Locking, CresFiber, Crestron Toolbox, DigitalMedia, DigitalMedia 8G, DigitalMedia 8G+, DM, DM 8G, DM 8G+, QuickSwitch HD, and Sonnex are either trademarks or registered trademarks of Crestron Electronics, Inc. in the United States and/or other countries. Active Directory is either a trademark or registered trademark of Microsoft Corporation in the United States and/or other countries. DisplayPort is either a trademark or registered trademark of VESA in the United States and/or other countries. Dolby, the Dolby logo, and Dolby Atmos are either trademarks or registered trademarks of Dolby Laboratories in the United States and/or other countries. The DTS-HD logo and DTS-HD Master Audio are either trademarks or registered trademarks of DTS, Inc. in the United States and/or other countries. HDBaseT and the HDBaseT logo are either trademarks or registered trademarks of the HDBaseT Alliance in the United States and/or other countries. HDMI and the HDMI logo are either trademarks or registered trademarks of HDMI Licensing LLC in the United States and/or other countries. Kaltura is either a trademark or registered trademark of Kaltura, Inc. in the United States and/or other countries. Wowza is either a trademark or registered trademark of Wowza Media Systems, LLC in the United States and/or other countries. Other trademarks, registered trademarks, and trade names may be used in this document to refer to either the entities claiming the marks and names or their products. Crestron disclaims any proprietary interest in the marks and names of others. Crestron is not responsible for errors in typography or photography.

Specifications are subject to change without notice.

©2020 Crestron Electronics, Inc.

Rev 12/02/20

32x32 DigitalMedia™ Switcher with Redundant Power Supplies



