Crestron® DM® Switchers provide the foundation for a complete DigitalMedia system, delivering an advanced, true high-definition multi-room AV signal routing solution that’s extremely flexible and installer-friendly. The DM-MD16X16-RPS affords low-latency switching and pure, lossless distribution of HDMI® and other signals to support the latest Blu-ray Disc® players, HDTV receivers, digital media servers, computers, and all your other AV devices. Integrated Ethernet networking and USB HID distribution provide a complete connectivity solution. And naturally, Crestron control is built in for managing the displays and other room devices without necessitating any additional wiring. The DM-MD16X16-RPS also features built-in redundant power supplies to ensure continuous reliable operation for mission critical applications.

The DM-MD16X16-RPS is field-configurable to handle up to 16 AV sources of virtually any type. The outputs are factory-configurable to provide up to 16 DM room outputs and/or HDMI outputs in a single chassis, with expansion capability possible for up to 80 outputs using multiple chassis. A full selection of DM switcher input cards, DM transmitters, and DM receivers provides extensive connectivity throughout a residence or commercial facility, supporting a complete range of analog and digital signal types — all through one switcher!

DigitalMedia thoughtfully manages all of your disparate AV signals and devices to ensure an optimum video image and audio signal at every location. User-friendly setup and troubleshooting tools are provided through the DM-MD16X16-RPS front panel, or via Crestron Toolbox™ software, to make setting up a complete multi-room HD system easy.

**DigitalMedia 8G™**

You can’t talk about AV and home entertainment today without talking about high-definition, and creating a professional HD AV distribution system means handling the challenges that come with HDMI. HDMI is the standard for interfacing high-definition AV equipment, but despite its many benefits, wasn’t developed with multi-room distribution in mind. So, as the leader in HDMI and control system technologies, Crestron developed DigitalMedia, the first complete HD AV distribution system to take HDMI to a higher level, allowing virtually any mix of AV sources to be distributed throughout a room, structure or across a campus from a centralized rack location.

DigitalMedia 8G is the latest generation of DM, providing the world’s only truly professional, one-wire digital AV distribution and control network. Engineered for ultra high-bandwidth and ultimate scalability, DM 8G™ handles uncompressed video beyond high-definition with support for HDCP, Deep Color, and 3D, plus high-bitrate 7.1 audio formats including Dolby® TrueHD and DTS-HD Master Audio™, uncompressed multichannel PCM audio, and high-speed Ethernet, all over one 8-conductor twisted-pair wire or simplex multimode fiber. DM 8G enables wire distances up to 300 feet (100 m) via DM 8G+ (DM 8G over CAT5e)¹², or 1000 ft via DM 8G Fiber (DM 8G over simplex multimode fiber)¹², without any need for repeaters.

The DM-MD16X16-RPS provides full support for Crestron DigitalMedia 8G devices as well as all first-generation DM CAT5¹² and DM Fiber¹² products, letting you take advantage of the latest Crestron DM technology without compromising your existing investment.

**Modular Architecture**

The DM-MD16X16-RPS features a modular architecture with 16 input card slots. Input cards are field-installable, allowing for easy and flexible system configuration with the ability to make changes to the system as needs change. A wide selection of input cards is offered to support a complete range of digital and analog AV signal types including HDMI, DVI, DisplayPort Multimode⁶, SDI, analog video and RGB, SPDIF and analog audio, and DigitalMedia.

The outputs on the DM-MD16X16-RPS are factory-configurable to feed up to 16 DM Receivers/Room Controllers using your choice of DM 8G+, DM 8G Fiber, DM CAT, or DM Fiber. HDMI outputs are also available for direct connection to centralized audio processors and video monitors.

**Output Expansion**

An HDMI “pass-thru” output is provided on every input card to allow the inputs of up to 5 DM switchers to be daisy-chained, enabling the configuration of very large distribution systems with many DM and HDMI outputs. Using five DM-MD16X16-RPS switchers, it is possible to support an incredible 80 separate outputs.

**Computer Compatibility**

Besides handling every available HDTV format supported by HDMI, DigitalMedia also supports the distribution of DVI, DisplayPort Multimode⁸, and RGB computer sources, and is fully compatible with DVI computer monitors up to 1920 x 1200 WUXGA.

**EDID Format Management**

With all of today’s varied AV sources comes a multitude of confusing video and audio formats to keep track of, and chances are not every device in your system supports all of the same formats. Such conflicts can wreak havoc any time you route one source to more than one display or audio component. For instance, the Blu-ray player that’s feeding your 1080p projector in the theater may restrict itself to a lower resolution, or even shut off completely, if someone decides to view the same signal on the 20” TV in the kitchen. And, instead of enjoying your theater’s incredible 7.1 surround sound, you may find yourself limited to 5.1 or even plain old stereo.

DigitalMedia eliminates such conflicts by managing the EDID (Extended Display Identification Data) that many devices use to communicate their capabilities. Via Crestron Toolbox software, the format and resolution capabilities of each device can be assessed, allowing the
installer to configure EDID signals appropriately for the most desirable and predictable behavior.

A Scaler for Every Display
Scaling capability can be added to any DM system using select DM receivers with built in high-definition scalers.[7] By placing an independent high-performance scaler at every display device, DigitalMedia truly delivers the most flexible and user-friendly solution for routing multiple disparate sources to many different display devices. This “Distributed Scaler Approach” ensures an optimal image on every screen no matter what sources are selected. Distributed scaling allows a high-res computer source to be viewed on any display in the building, and allows a high-definition 3D source to be viewed on lower-resolution 2D displays without compromising the original signal, letting you share your theater’s full HD 1080p 3D image with smaller, lesser displays in the kitchen, bathroom, and bedrooms.

QuickSwitch HD® Technology
Handling high-definition digital media means handling HDCP (High-bandwidth Digital Content Protection), the encryption scheme that content providers use to protect their DVDs, Blu-ray Discs, and broadcast signals against unauthorized copying. Viewing HDCP encrypted content requires a source device to “authenticate” each display and signal processor in the system and issue it a “key” before the content can be viewed. Ordinarily this causes a complete loss of signal for up to 15 seconds each time a new source or display is selected anywhere in the system. To make matters worse, every source device has a limited number of keys available, so connect too many displays and the source will simply stop outputting a signal without warning.

Not to worry — Crestron QuickSwitch HD manages the keys for every HDCP-compliant device in the system, maintaining continuous authentication for each device to ensure fast, reliable routing of any source to any number of display devices.

Versatile Audio Routing
HDMI is the key to handling all the latest 7.1 surround sound formats like Dolby TrueHD and DTS-HD Master Audio. Great for your high-end home theater, but how do you share that same source with other audio zones in the house?

DigitalMedia provides the answer, allowing for the simultaneous distribution of multi-channel surround sound and two-channel stereo signals from the same HDMI source. Using a choice of DSP-based input cards, the DM-MD16X16-RPS employs onboard digital processing to derive a stereo down-mix from the original multi-channel signal. Both signals can be routed separately or simultaneously from any of the switcher’s DM outputs, allowing either signal to be selected for output at each DM receiver location.

Back at the switcher, the digital stereo signal is also converted to analog to enable sharing with every other room in the house via a Sonnex™, Adagio®, or other multi-room audio distribution system. The DM-MD16X16-RPS also allows bulky surround sound processors and amplifiers to be located centrally instead of at the display location via optional local HDMI outputs.

Built-in Ethernet Switch
In addition to transporting digital video and audio, DigitalMedia can also extend 10/100 Ethernet out to each display and source device via DM room controllers and select DM 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 all of the DM devices in the system and provide display control in each room. Through its Gigabit Ethernet port, the DM-MD16X16-RPS television receivers and DVD changers, but also media servers and computers. Built-in USB HID (Human Interface Device) signal routing allows USB HID compatible keyboards and mice to be connected at a remote display location, conference table or presentation lectern, extending their signals through to the centralized equipment via USB HID ports provided on select switcher input cards.

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-MD16X16-RPS provides a gateway for controlling many devices right through their HDMI connections, potentially eliminating the need for any dedicated control wires or IR probes. Through proper CEC signal management, DigitalMedia allows you to take control of each device as you like.

Easy Setup
Via the front panel or using Crestron Toolbox software, every step of the DM-MD16X16-RPS’s setup process is designed to be quick and easy, configuring inputs and outputs automatically while letting the installer make intelligent design decisions along the way. The switcher even tests and measures the length of each DM cable, automatically making the appropriate calibrations for optimal signal transmission to every room. With DigitalMedia, an entire 16x16 system can be commissioned in as little as 15 minutes.

Redundant Power Supplies
The DM-MD16X16-RPS model delivers enhanced reliability for mission critical applications employing extreme long-life, redundant power supplies to ensure continuous dependable operation throughout the life of the system. Each of its internal switch-mode power supplies has a demonstrated MTBF (Mean Time Between Failures) of over 1,000,000 hours, and in the unlikely event of an individual power supply fault, the DM-MD16X16-RPS will continue to operate unhindered on only one power supply. Clear indication of such a fault is provided on the unit’s front panel via a flashing red LED, with individual green LEDs also provided to show the status of each individual power supply. The power supplies can even be remotely monitored via Crestron RoomView® software or any control system touch screen.


> Provides lossless HD AV signal routing over twisted-pair wire or fiber
> Integrates video, audio, networking, and control over one wire
> Affords full matrix switching with ultra high 12.5 Gbps backplane data rate
> Handles HDMI® with Deep Color, 3D, and high-bitrate 7.1 encoded audio
> Supports video resolutions up to WUXGA 1920x1200 and HD 1080p60
> Allows up to 330 ft (100 m) wire distance via DM 8G™
> Allows up to 1000 ft (300 m) wire distance via DM 8G Fiber[2,5] > Also supports all first-generation DM® CAT...
**Specifications**

**Video**
Switcher: 16x16 digital matrix, modular input cards and factory-configurable outputs, Crestron QuickSwitch HD®

**Input Signal Types:** Configurable via modular plug-in cards supporting HDMI®, DisplayPort Multimode®, DVI, SDI, RGB, component (YPbPr), S-Video (Y/C), composite video, DM CAT, DM Fiber, DM 8G+, and DM 8G Fiber

**Output Signal Types:** Configurable via factory-installed output cards supporting DM CAT, DM Fiber, DM 8G+, and DM 8G Fiber

**Format:** HDMI only: Dolby Digital® Plus, Dolby® TrueHD, DTS-HD High Res, DTS-HD Master Audio™, up to 8ch PCM

**Formats:** HDMI and SPDIF: Dolby Digital, Dolby Digital EX, DTS®, DTS-ES, DTS 96/24, 2ch PCM

**Formats:** Analog: Stereo 2-Channel

**Formatters:** DVI

**Communications**

**DigitalMedia**: DM Fiber, DM CAT, DMNet®, DM 8G+, DM 8G Fiber, HDCP management, EDID format management, CEC

**Ethernet:** 10/100/1000 Mbps, auto-switching, auto-negotiating, auto-discovery, full/half duplex, TCP/IP, UDP/IP, CIP, DHCP, RSTP

**USB:** Supports USB HID class devices

**Ethernet Switch**
Provides (1) onboard 10/100/1000BaseT Gigabit Ethernet port, (1) internal 10BaseT/100BaseTX Ethernet port for the switcher, and (32) remote 10BaseT/100BaseTX Ethernet ports via select outboard devices

**USB Switch**
16x16 matrix

**Card Slots**
1 - 16: (16) DM switcher input card slots; Each slot accepts (1) DMC-series input card; Input cards are field-installable

DM OUTPUTS (SLOT 1 - 2): (2) DM switcher output card slots; Each slot accepts (1) DMCO-series output card; Output cards require factory installation

**Connectors**

**LAN:** (1) 8-wire RJ45 female; 10/100/1000BaseT Ethernet port

24ABG / EIG 1 - 8 (SLOT 1 - 2): (16) sets of (1) 4-pin and (1) 3-pin 3.5mm detachable terminal blocks

Comprises (16) DMNet ports with “EIG” power selection ports, each set associated with a corresponding DM CAT output port on the output card in either output slot

Each DMNet port provides power and communications for a DM CAT device connected via DM cable;

Each EIG port connects to an external power supply[8] to power the DM CAT device associated with the corresponding DMNet port;

Maximum Load: 40 Watts (1.66 Amps @ 24 Volts DC) per port, limited to available DMNet power from external power supply[6]

100-240V-450W 50/60Hz: (1) IEC C14 male chassis plug, main power input;

Mates with removable power cord, included

6: (1) 6-32 screw, chassis ground lug

**Computer (front):** (1) USB Type B female;

USB 1.1 computer console port (6 ft cable included)

**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

**Controls & Indicators**

**SOFTKEYS:** (4) pushbuttons for activation of LCD driven functions
**DM-MD16X16-RPS**

**VIEW:** (1) pushbutton and red LED, selects VIEW mode for viewing current routes

**INFO:** (1) pushbutton and red LED, selects INFO mode for viewing AV and device info

**MENU:** (1) pushbutton, steps menu back one level

**ENTER:** (1) pushbutton, executes highlighted menu or value

**AUDIO:** (1) pushbutton & red LED, selects audio routing view

**VIDEO:** (1) pushbutton & red LED, selects video routing view

**USB:** (1) pushbutton & red LED, selects USB routing view

**Quick-Adjust Knob:** (1) continuous turn rotary encoder, adjusts menu parameters

**Power Requirements**

- **Main Power:** 450 Watts @ 100-240 Volts AC, 50/60 Hz
- **Available DMNet Power:** none

**Redundant Power Supplies**

- **Quantity/Type:** (2) 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 one or more functioning power supplies

**Environmental**

- **Temperature:** 32° to 104°F (0° to 40°C)
- **Humidity:** 10% to 90% RH (non-condensing)
- **Heat Dissipation:** 1500 BTU/Hr

**Enclosure**

- **Chassis:** Metal with black finish, vented sides, fan-cooled
- **Faceplate:** Extruded aluminum, black finish with polycarbonate label overlay
- **Mounting:** Freestanding or 7U 19-inch rack-mountable (adhesive feet and rack ears included)

**Dimensions**

- **Height:** 12.22 in (311 mm) without feet
- **Width:** 17.28 in (439 mm), 19.00 in (483 mm) with ears
- **Depth:** 15.65 in (398 mm) without cards

**Weight**

28.4 lb (12.9 kg) without cards

**Available Models**

- **DM-MD16X16-RPS:** 16x16 DigitalMedia™ Switcher w/Redundant Power Supply

**Available Accessories**

- **DMC-HD:** HDMI® Input Card
- **DMC-HD-DSP:** HDMI® Input Card w/Down-mixing
- **DMC-DVI:** DVI/RGB Input Card
- **DMC-VID-RCA-A:** RCA Analog Video Input Card w/Analog Audio
- **DMC-VID-RCA-D:** RCA Analog Video Input Card w/SPDIF Audio
- **DMC-VID-BNC:** BNC Analog Video Input Card
- **DMC-VID4:** Quad Video Input Card
- **DMC-SDI:** SDI Input Card

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<tr>
<th>CresFiber® 8G Fiber Optic Cable, 50/125 x4 breakout, non-plenum, 1000 ft spool</th>
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<td>CresFiber® 8G Fiber Optic Cable, 50/125 x4 breakout, plenum, 1000 ft spool</td>
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<td>CresFiber® Duplex Fiber Optic Cable Assembly, 50/125, SC, Plenum, 1.5 ft</td>
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Notes:
1. The maximum DigitalMedia 8G+ cable length is 330 ft (100 m) using DM-CBL-8G DigitalMedia 8G cable, DM-CBL DigitalMedia Cable, DM-CBL-D DigitalMedia D Cable, or generic CAT5e (or better) UTP or STP. Shielded cable and connectors are recommended to safeguard against unpredictable environmental electrical noise which may impact performance at resolutions above 1080p.

2. The maximum DigitalMedia 8G Fiber cable length is 1000 ft (300 m) using CRESFIBER8G fiber optic cable, or 500 ft (150 m) using standard CRESFIBER, CRESFIBER-SINGLE-SC, or generic OM3 simplex multimode fiber optic cable.

3. The maximum DigitalMedia CAT cable length is 450 ft (137 m) using DM-CBL DigitalMedia Cable. Actual cable length depends upon multiple factors and environmental conditions.