
Operation

Operating Modes

A DM switcher can operate in the *Route* mode, the *View* mode, or the *Info* mode.

The DM switcher can also be controlled from Crestron Toolbox. For more information, refer to the Crestron Toolbox help file.

Route Mode

The *Route* mode uses the front panel controls to route input signals to outputs. Press the **ROUTE** button to activate the *Route* mode.

- When in the *Route* mode, pressing an input button will show the outputs that are connected to the input.
- Audio, video, and USB portions of an input can be routed independently. For more information, refer to “*Route Mode*” below.

View Mode

The *View* mode uses the front panel controls to view routing information for inputs and outputs.

Routing information for audio, video, and USB portions of an input can be viewed independently. For more information, refer to “*View Mode*” on page 65.

Info Mode

The *Info* mode uses the front panel controls to view data about signals that are passed through the inputs and outputs of the DM switcher. For more information, refer to “*Info Mode*” on page 66.

Route Mode

Signals coming in to the DM switcher can be switched to single or multiple outputs. Additionally, the audio, video, and USB portions of an input signal can be switched simultaneously or separately.

To enter the *Route* mode, press the **ROUTE** button. The **ROUTE** LED will light.

Switch Audio, Video, and USB Simultaneously

1. Press the **AUDIO**, **VIDEO**, and **USB** buttons to select the audio, video, and USB portions for switching. The respective LEDs will light.

NOTE: If an output has different audio, video, or USB portions, a new route will cause the audio and USB portions on the output to switch to the newly selected video input.

2. Press the button corresponding to the input to be switched. The LED of the selected input will light.

To turn off an output, deselect the input. The display will show “IN None” and the input LEDs will be extinguished.

3. Press the button(s) corresponding to the output(s) to be switched. The LED(s) of the selected output(s) will flash.

If a button press will result in changing the current routing, the LEDs of the newly selected outputs will flash and the display will state “Press **ENTER** to Route”.

4. Press **ENTER** to make the connection(s) shown on the front panel.

Changes made on the front panel are made only after the **ENTER** button is pressed. If you do not press **ENTER**, the connection is not made.

Only one input can be routed at a time. Pressing a different input button will lose any routing plans that were not confirmed by pressing the **ENTER** button.

NOTE: If **ENTER** has not been pressed, you can go back and “undo” changes made to the current routing.

5. Repeat for any other routes to be changed.
1. Press the **AUDIO**, **VIDEO**, or **USB** buttons to select the audio, video, or USB portions to be switched. The respective LEDs will light.

NOTE: When audio is switched independently, the signal is 2-channel audio.

2. Press the button corresponding to the input to be switched. The LED of the selected input will light.

To turn off an output, deselect the input. The display will show “IN None” and the input LEDs will be extinguished.

3. Press the button(s) corresponding to the output(s) to be switched. The LED(s) of the selected output(s) will light.

If a button press will result in changing the current routing, the LEDs of the newly selected outputs will flash and the display will state “Press **ENTER** to Route”.

4. Press **ENTER** to make the connection(s) shown on the front panel.

Changes made on the front panel are made only after the **ENTER** button is pressed. If you do not press **ENTER**, the connection is not made.

Only one input can be routed at a time. Pressing a different input button will lose any routing plans that were not confirmed by pressing the **ENTER** button.

NOTE: If **ENTER** has not been pressed, you can go back and “undo” changes made to the current routing.

5. Repeat for any other routes to be changed.

View Mode

Use the *View Mode* to view routing information for inputs and outputs. To select the *View* mode, press the **VIEW** button.

View Source Routing

1. Press an input signal button to display all of the outputs that are connected to it.
2. Press **AUDIO**, **VIDEO**, or **USB** to see where the audio, video, or USB portions of an input signal are routed.

View Output Routing

1. Press an output signal button to display the input signal that is connected. All outputs that are receiving the same input signal are also displayed.
2. Press **AUDIO**, **VIDEO**, or **USB** to see the input that is providing the audio, video, or USB portions of the output signal.

Info Mode

Use the *Info* mode to view information about the signal on an input or output. Depending on the input selected, available information can include the name of the input, the detected resolution, the detected video type, the detected frame rate, the detected aspect ratio, the HDCP state, and the deep color setting. To select the *Info* mode, press the **INFO** button. If an input port is receiving a signal from its connected source, the accompanying LED will illuminate.

View Input Information

1. Press an input button to display information about the input signal. The accompanying LED will flash.

NOTE: If the DMC-VID4 is selected, each composite video input can be selected for viewing by pressing the soft button of the desired input.

2. Turn the selection knob to display available information.
3. Press another input button to view its information.

View Output Information

1. Press an output button to display information about the output signal. The accompanying LED will flash.

NOTE: If a DM output with HDMI is selected, information for the DM port and the HDMI port can be selected for viewing by pressing the soft button of the desired output.

2. Turn the selection knob to display available information.
3. Press another output button to view its information.

Problem Solving

Troubleshooting

The following table provides corrective action for possible trouble situations. If further assistance is required, please contact a Crestron customer service representative.

DM Switcher Troubleshooting

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
Incorrect Audio or Video displayed.	Audio is routed separately from video.	Reroute audio together with video.
Distorted audio or video.	Source does not match capabilities of destination.	Use Crestron Toolbox to manage EDID capabilities of devices in the system.
No video. Bandwidth check passes and VIDEO LED on DM-RMC-100 is lit.	"D" cable is incorrectly terminated.	Terminate cable as described in "DigitalMedia Cable" on page 28.
No video displayed, but audio is heard.	Possible HDCP error.	Check control system error log, or DM switch for HDCP errors.
HDCP Check Failure Message during commissioning.	Violation of HDCP rules (number of display devices exceeds the source's number of allowed displays).	Disconnect displays that may not be used with source during run time and repeat HDCP check.
	Violation of HDCP rules (device depth exceeds allowable depth specification).	Replace source device with a device that allows more displays to be connected. Reconfigure signal path to remove midpoint devices that increase overall device depth.
Bandwidth Test Failure Message during commissioning.	Poor cable connection to a DM-RMC-100 (on the "D" line).	Verify that cable is not crimped or damaged.
DM-DR Repeater or DM-RMC-100 Room Controller do not report to DM switcher.	Poor cable connection to the DM-DR or DM-RMC-100 (on the "D" line).	Verify that cable is not crimped or damaged.
No audio output from RCA connectors on DMC-HD	Source is not providing a 2-channel audio signal.	Replace DMC-HD card with DMC-HD-DSP to provide 2-channel stereo downmix from audio source.
Loss of functionality due to electrostatic discharge.	Improper grounding.	Check that all ground connections have been made properly.

Check Network Wiring

Use the Right Wire

In order to ensure optimum performance over the full range of your installation topology, Crestron Certified Wire and only Crestron Certified Wire may be used. Failure to do so may incur additional charges if support is required to identify performance deficiencies because of using improper wire.

Calculate Power

CAUTION: Use only Crestron power supplies for Crestron equipment. Failure to do so could cause equipment damage or void the Crestron warranty.

CAUTION: Provide sufficient power to the system. Insufficient power can lead to unpredictable results or damage to the equipment. The **EIG** connector on the DM switcher is used to bring in external power. Additional power is rarely required as switchers provide enough power for their maximum configuration of room controllers and repeaters. Please use the DMNet Power Calculator to help calculate how much power is needed for the system (www.crestron.com/calculators).

CresFiber fiber optic cables provide for longer distances between the DigitalMedia switcher and a DigitalMedia Room Controller. For more information, refer to the latest version of the Crestron DigitalMedia Design Guide (Doc. 4789).

Refer to the following tables for maximum cable lengths using various cables.

Maximum DM Cable Length

Cable Type:	DM-CBL DigitalMedia Cable	
	Maximum length without, between, before or after repeaters	Maximum total length using up to 2 repeaters
Resolution:		
720p, 1080i, 1080p24	200 ft (60 m)	450 ft (137 m)
1024x768 @ 75 Hz	200 ft (60 m)	450 ft (137 m)
1080p60	150 ft (45 m)	450 ft (137 m)
1280x1024 @ 75 Hz	150 ft (45 m)	450 ft (137 m)
1920x1200 @ 60 Hz	150 ft (45 m)	450 ft (137 m)
1600x1200 @ 60 Hz	125 ft (38 m)	375 ft (114 m)
1080p60 Deep Color	100 ft (30 m)	300 ft (91 m)

NOTE: All Crestron certified DMNet wiring must consist of two twisted pairs. One twisted pair is the +24V conductor and the GND conductor and the other twisted pair is the A conductor and the B conductor.

Maximum CresFiber Cable Length

RESOLUTION	CRESFIBER
720p, 1080i, 1080p24	1000' (~300 m)
1024 x 768 @ 75 Hz	
1280 x 1024 @ 75 Hz	
1600 x 1200 @ 60 Hz	
1920 x 1200 @ 60 Hz	
1080p60	
1080p60 Deep Color	

Other fiber optic cable can be used as well.

NOTE: 1080p60 is the most common resolution used in residential installations.

Reference Documents

The latest version of all documents mentioned within the guide can be obtained from the Crestron website (www.crestron.com/manuals). This link will provide a list of product manuals arranged in alphabetical order by model number.

List of Related Reference Documents

DOCUMENT TITLE
Crestron DigitalMedia Design Guide
Crestron e-Control Reference Guide

Further Inquiries

If you cannot locate specific information or have questions after reviewing this guide, please take advantage of Crestron's award winning customer service team by calling Crestron at 1-888-CRESTRON [1-888-273-7876].

You can also log onto the online help section of the Crestron website (www.crestron.com/onlinehelp) to ask questions about Crestron products. First-time users will need to establish a user account to fully benefit from all available features.

Future Updates

As Crestron improves functions, adds new features and extends the capabilities of DM switchers, additional information may be made available as manual updates. These updates are solely electronic and serve as intermediary supplements prior to the release of a complete technical documentation revision.

Check the Crestron website periodically for manual update availability and its relevance. Updates are identified as an "Addendum" in the Download column.