

# DigitalMedia™ Switcher Output Cards

- > A complete family of output cards for the DM-MD8X8, DM-MD16X16, and DM-MD32X32
- > Available in five types of DM®, plus HDBaseT®, HDMI®, analog audio, and H.264 streaming
- > Modular concept enables versatile combinations of multiple output types on one switcher chassis
- > Affords a unified HD signal distribution solution incorporating both point-to-point wired and IP streaming technologies
- > Easily configured using the online DigitalMedia™ Switcher Configuration Tool
- > Support for 4K Ultra HD and 4K DCI resolutions via Type 8 DM 8G+™ output cards

The DMCO series is a family of output cards for Crestron® DigitalMedia™ Matrix Switchers. A complete selection of cards is offered to allow numerous combinations of DigitalMedia, HDBaseT®, HDMI®, H.264 streaming, and analog audio outputs on a single switcher chassis. The **DM-MD8X8** accepts up to two DMCO cards, with up to four outputs per card, for a total of 8 possible outputs. The **DM-MD16X16** accepts up to two DMCO cards, with up to eight outputs per card, for a total of 16 possible outputs. Finally, the **DM-MD32X32** accepts up to eight DMCO cards, with up to four outputs per card, for a total of 32 possible outputs.

## DigitalMedia™ Outputs

DigitalMedia (DM®) outputs are offered in five types — DM Fiber, DM CAT, DM 8G® Fiber, DM 8G Single-Mode Fiber, and DM 8G+™. Each type of DM is available in pairs of two completely independent outputs. An HDMI output is also provided in parallel with every odd-numbered DM output (excluding DM Fiber), providing a supplemental connection for feeding a centralized audio processor or display device via HDMI while simultaneously driving a remote display device via DM.

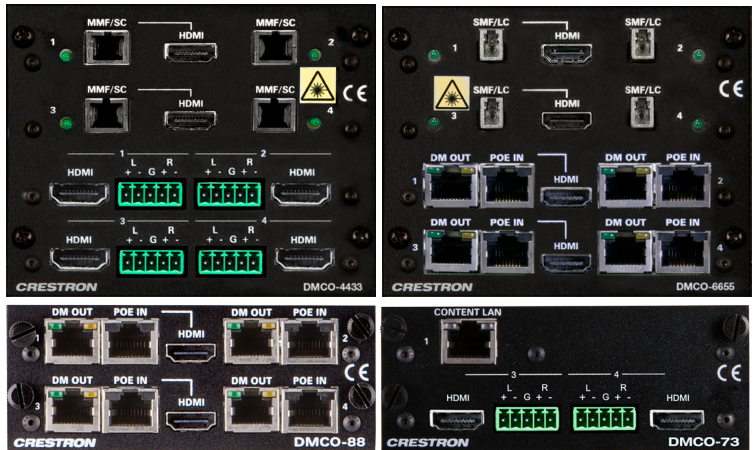
DM Fiber and DM CAT represent the first generation of DigitalMedia, while DM 8G Fiber, DM 8G Single-Mode Fiber, and DM 8G+ are the latest generation. DM 8G provides a true one-wire transport for moving high-definition video, audio, and Ethernet over low-cost twisted-pair or fiber optic cable without any compression or repeaters. Engineered for ultra high-bandwidth and ultimate scalability, DM 8G handles uncompressed video beyond high-definition, with support for HDCP, Deep Color, and 3D. Audio capabilities include simultaneous stereo and multichannel surround sound signals, with support for high-bitrate 7.1 audio formats like Dolby® TrueHD and DTS-HD Master Audio™ as well as uncompressed linear PCM.

## HDBaseT® Certified

DM 8G+ outputs are also compatible with HDBaseT, allowing a DM switcher to connect directly to HDBaseT compliant devices without requiring any DM receivers. Crestron DM 8G+ technology is designed using HDBaseT Alliance specifications, ensuring interoperability with third-party HDBaseT products.

## 4K Ultra HD

4K Ultra HD and 4K DCI video resolutions are supported via DM 8G+, HDBaseT, and HDMI outputs using “Type 8” DM 8G+ output cards.



## H.264 Streaming

High-performance H.264 streaming capability enables enterprise-wide distribution of HD content over an IP network. Streaming expands the capabilities of DM to remove all distance limitations and allow distribution to virtually any device — anywhere in the world. Streaming is an essential component of any complete DM system, allowing for high-definition signal routing to Crestron touch screens, digital signage displays, remote buildings, and global offices without requiring any new or dedicated wiring. Large-scale streaming to computers and mobile devices can be facilitated through integration with a streaming media system such as Wowza® or Kaltura®.

DigitalMedia with streaming affords the ability to distribute any combination of sources to virtually any device anywhere. Each streaming output supports resolutions up to HD 1080p at bitrates up to 25 Mbps. Built-in scaling enables fast, trouble-free switching between sources of any type or resolution. Audio support includes stereo signals, as well as multichannel audio signals down-mixed to stereo via a DM switcher input card with DSP.<sup>[1]</sup> High-quality video and audio is maintained using high-performance H.264 video and AAC audio compression. The encoded video and audio can be output as independent RTP streams or encapsulated in an MPEG-TS (MPEG-2 Transport Stream) container. HDCP management ensures that protected content cannot be distributed via streaming.

Each streaming output is actually fed internally by two separate switcher outputs, allowing any two input sources to appear picture-in-picture or side-by-side in a single stream. Instant, single-frame switching between two full screen images is also possible. The audio signals from both input sources can also be mixed, allowing both signals to be heard simultaneously.

DigitalMedia provides many deployment options to address a wide range of streaming applications and accommodate each organization's specific

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IT requirements. DM with streaming supports both unicast and multicast, with or without RTSP (Real Time Streaming Protocol). Streaming connections can be configured to stream directly to one or more specific IP addresses, or to use RTSP to manage the configuration of numerous connections automatically. Any streaming output may be configured to stream via the DM switcher's LAN port or via a dedicated "CONTENT LAN" port, allowing the option to combine control and content on a single network or isolate them onto separate networks.

## HDMI® and Analog Audio Outputs

For applications that do not require a long-distance wiring or streaming solution, pairs of dedicated HDMI outputs are offered. Each HDMI output is accompanied by a balanced analog stereo audio output, making any 2-channel audio signal available to feed an analog audio mixer, processor, or amplifier.

**NOTE:** DMCO cards for the DM-MD8X8 and DM-MD32X32 are field-installable, allowing output configurations to be customized and changed at any time. DMCO cards for the DM-MD16X16 must be installed by a Crestron-authorized technician, and new DM-MD16X16 switchers are shipped with the desired DMCO output card(s) installed.

To configure a DM switcher complete with input and output cards, cables, and other peripherals, please use the [DigitalMedia™ Switcher Configuration Tool](#).

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

## SPECIFICATIONS

### Video & Audio

#### DM Fiber (Type 1):

**Output Signal Type:** DM® Fiber (DigitalMedia™ over two multimode fiber optic strands);

**Video Formats:** DM Fiber with Deep Color & 3D, HDCP content protection support;

**Audio Formats:** Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby® TrueHD, DTS®, DTS-ES, DTS 96/24, DTS-HD High Res, DTS-HD Master Audio™, Up to 8ch PCM;

**Output Resolutions, 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;

**Output Resolutions, 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

#### DM CAT (Type 2):

**Output Signal Types:** DM CAT (DigitalMedia over shielded twisted-pair copper wire), HDMI®, DVI<sup>2</sup>;

**Video Formats:** DM CAT & HDMI with Deep Color & 3D, HDCP content protection support;

**Audio Formats:** Dolby Digital, Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD, DTS, DTS-ES, DTS 96/24, DTS-HD High Res, DTS-HD Master Audio, Up to 8ch PCM;

**Output Resolutions, 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;

**Output Resolutions, 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

#### HDMI & Analog Audio (Type 3):

**Output Signal Types, Video:** HDMI, DVI<sup>2</sup>;

**Output Signal Types, Audio:** HDMI, Analog Stereo;

**Video Formats:** HDMI with Deep Color & 3D, HDCP content protection support;

**Audio Formats, Digital:** Dolby Digital, Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD, DTS, DTS-ES, DTS 96/24, DTS-HD High Res, DTS-HD Master Audio, Up to 8ch PCM;

**Audio Formats, Analog:** Stereo 2-channel;

**Output Resolutions, 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;

**Output Resolutions, 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;

**Digital-To-Analog Audio Conversion:** 24-bit 48 kHz;

#### Audio Performance (analog):

**Frequency Response:** 20Hz to 20kHz ±0.5 dB;

**S/N Ratio:** >95 dB;

**THD+N:** <0.005% @ 1 kHz;

**Stereo Separation:** >90 dB;

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**Volume Gain Range (analog):** -80dB to 0dB, adjustable from 0% to 100%

## DM 8G Fiber (Type 4):

**Output Signal Types:** DM 8G® Fiber (DigitalMedia over one multimode fiber optic strand), HDMI, DVI<sup>[2]</sup>;

**Video Formats:** DM 8G Fiber & HDMI with Deep Color & 3D, HDCP content protection support;

**Audio Formats:** Dolby Digital, Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD, DTS, DTS-ES, DTS 96/24, DTS-HD High Res, DTS-HD Master Audio, Up to 8ch PCM;

**Output Resolutions, 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;

**Output Resolutions, 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

## DM 8G+ (Type 5):

**Output Signal Types:** DM 8G+™ (DigitalMedia over one CAT5e twisted-pair copper wire), HDBaseT®, HDMI, DVI<sup>[2]</sup>;

**Video Formats:** DM 8G+, HDBaseT, & HDMI with Deep Color & 3D; HDCP content protection support;

**Audio Formats:** Dolby Digital, Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD, DTS, DTS-ES, DTS 96/24, DTS-HD High Res, DTS-HD Master Audio, Up to 8ch PCM;

**Output Resolutions, 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;

**Output Resolutions, 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

## DM 8G Single-Mode Fiber (Type 6):

**Output Signal Types:** DM 8G SMF (DigitalMedia over one single-mode fiber optic strand), HDMI, DVI<sup>[2]</sup>;

**Video Formats:** DM 8G SMF & HDMI with Deep Color & 3D, HDCP content protection support;

**Audio Formats:** Dolby Digital, Dolby Digital EX, Dolby Digital Plus, Dolby

TrueHD, DTS, DTS-ES, DTS 96/24, DTS-HD High Res, DTS-HD Master Audio, Up to 8ch PCM;

**Output Resolutions, 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;

**Output Resolutions, 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

## Streaming (Type 7):

**Video Streaming Formats:** H.264 @ 360p60, 480p30, 480p60, 720p10, 720p15, 720p30, 720p60, 1080p10, 1080p15, and 1080p30;

**Video Streaming Bitrate:** Up to 25 Mbps;

**Audio Format:** AAC stereo;

**Streaming Protocols:** RTP, RTSP, SDP;

**Container:** MPEG-2 transport stream (.ts) or none;

**Session Initiation Modes:**

0: By receiver (unicast);

1: By transmitter (unicast);

2: Multicast via RTSP;

3: Multicast via UDP;

**Audio Controls:**

**Volume:** Adjustable 0% to 100%, plus mute;

**Bass:** ±15.0 dB;

**Treble:** ±15.0 dB;

**Delay:** 0.0 to 40.0 ms;

**Source 1 – 2 Mix Level:** -80.0 to 0.0 dB

## DM 8G+ w/4K Support (Type 8):

**Output Signal Types:** DM 8G+ (DigitalMedia over one CAT5e twisted-pair copper wire), HDBaseT, HDMI, DVI<sup>[2]</sup>;

**Video Formats:** DM 8G+, HDBaseT, & HDMI with Deep Color, 3D, & 4K; HDCP content protection support;

**Audio Formats:** Dolby Digital, Dolby Digital EX, Dolby Digital Plus, Dolby TrueHD, DTS, DTS-ES, DTS 96/24, DTS-HD High Res, DTS-HD Master Audio, Up to 8ch PCM;

**Output Resolutions, 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,

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2560x1440@60Hz, 2560x1600@60Hz, 3840x2160@24Hz, 3840x2160@25Hz, 3840x2160@30Hz, 3840x2160@50Hz<sup>[3]</sup>, 3840x2160@60Hz<sup>[3]</sup>, 4096x2160@24Hz, 4096x2160@50Hz<sup>[3]</sup>, 4096x2160@60Hz<sup>[3]</sup>, plus any other resolution allowed by HDMI up to 300MHz pixel clock;

**Output Resolutions, Interlaced:** 720x480@30Hz (480i), 720x576@25Hz (576i), 1920x1080@25Hz (1080i25), 1920x1080@30Hz (1080i30), plus any other resolution allowed by HDMI up to 300MHz pixel clock

## Connectors & Indicators

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### DM Fiber (Type 1):

**D, M:** (2, 4, 6, or 8) DM Fiber outputs, each composed of (2) SC female optical fiber connectors;

Connect to DM Fiber inputs of DM receivers or other DM devices via CresFiber® 8G fiber optic cable<sup>[4,9]</sup>

### DM CAT (Type 2):

**D, M:** (2, 4, 6, or 8) DM CAT outputs, each composed of (2) 8-pin RJ45 female, shielded;

Connect to DM CAT inputs of DM receivers or other DM devices via DM-CBL DigitalMedia cable<sup>[5,9]</sup>;

**HDMI:** (1 per each odd-numbered DM port) 19-pin Type A HDMI, female, digital video/audio outputs

### HDMI & Analog Audio (Type 3):

**HDMI:** (2, 4, 6, or 8) 19-pin Type A HDMI, female, digital video/audio outputs;

**L, R:** (1 per each HDMI port) 5-pin 3.5mm detachable terminal blocks; Balanced/unbalanced stereo line-level outputs, variable level; Output Impedance: 200 Ohms balanced, 100 Ohms unbalanced; Maximum Output Level: 4 Vrms balanced, 2 Vrms unbalanced

### DM 8G Fiber (Type 4):

**MMF/SC:** (2, 4, 6, or 8) DM 8G Fiber outputs, each composed of (1) SC female optical fiber connector;

Connect to DM 8G Fiber inputs of DM receivers or other DM devices via CresFiber 8G fiber optic cable<sup>[6,9]</sup>;

**HDMI:** (1 per each odd-numbered MMF/SC port) 19-pin Type A HDMI, female, digital video/audio outputs;

**DM Link Indicator:** (1 per each MMF/SC port) green LED, indicates DM link status

### DM 8G+ (Type 5):

**DM OUT:** (2, 4, 6, or 8) DM 8G+ outputs (HDBaseT compliant), each composed of (1) 8-pin RJ45 female, shielded;

PoDM and PoH PSE (Power Sourcing Equipment) ports<sup>[10]</sup>;

Connect to DM 8G+ inputs of DM receivers or other DM devices, or to HDBaseT devices, via CAT5e or Crestron DM-CBL-8G DigitalMedia 8G<sup>a</sup> cable<sup>[7,9]</sup>;

**POE IN:** (1 per each DM OUT port) 8-pin RJ45 female, PoE inputs;

Connect to a DM-PSU-8 or DM-PSU-16 PoDM Power Supply, or to an 802.3af or 802.3at compliant PoE PSE (Power Sourcing Equipment), to enable PoDM and PoH power sourcing via the corresponding DM 8G+ output<sup>[10]</sup>;

**HDMI:** (1 per each odd-numbered DM OUT port) 19-pin Type A HDMI, female, digital video/audio outputs;

**DM Link Indicator:** (1 set per each DM OUT port) green & amber LEDs, green indicates DM link status, amber indicates DM signal stream and HDCP status

### DM 8G Single-Mode Fiber (Type 6):

**SMF/LC:** (2, 4, 6, or 8) DM 8G Single-Mode Fiber outputs, each composed of (1) LC female optical fiber connector;

Connect to DM 8G SMF inputs of DM receivers or other DM devices via CresFiber 8G SM single-mode fiber optic cable<sup>[8,9]</sup>;

**HDMI:** (1 per each odd-numbered SMF/LC port) 19-pin Type A HDMI, female, digital video/audio outputs;

**DM Link Indicator:** (1 per each SMF/LC port) green LED, indicates DM link status

### Streaming (Type 7):

**CONTENT LAN:** (1, 2, 3, or 4) 8-wire RJ45 female; 10Base-T/100Base-TX/1000Base-T Ethernet ports;

Each port provides a dedicated LAN connection per streaming output for use in lieu of streaming via the switcher's main LAN port;

**LAN Link Indicators:** (1 set per each CONTENT LAN port) green & amber LEDs, green indicates Ethernet link status, amber indicates Ethernet activity

### DM 8G+ w/4K Support (Type 8):

**DM OUT:** (2, 4, 6, or 8) DM 8G+ outputs (HDBaseT compliant), each composed of (1) 8-pin RJ45 female, shielded;

PoDM and PoH PSE (Power Sourcing Equipment) ports<sup>[10]</sup>;

Connect to DM 8G+ inputs of DM receivers or other DM devices, or to HDBaseT devices, via CAT5e or Crestron DM-CBL-8G DigitalMedia 8G<sup>a</sup> cable<sup>[7,9]</sup>;

**POE IN:** (1 per each DM OUT port) 8-pin RJ45 female, PoE inputs;

Connect to a DM-PSU-8 or DM-PSU-16 PoDM Power Supply, or to an 802.3af or 802.3at compliant PoE PSE (Power Sourcing Equipment), to enable PoDM and PoH power sourcing via the corresponding DM 8G+ output<sup>[10]</sup>;

**HDMI:** (1 per each odd-numbered DM OUT port) 19-pin Type A HDMI, female, digital video/audio outputs;

**DM Link Indicator:** (1 set per each DM OUT port) green & amber LEDs, green indicates DM link status, amber indicates DM signal stream and HDCP status

## Construction

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**DMCO-xx:** Plug-in card for DM-MD8X8 and DM-MD32X32, occupies (1) output card slot, includes metal faceplate w/black finish

**DMCO-xxxx:** Factory-installed card for DM-MD16X16, occupies (1) output card slot, includes metal faceplate w/black finish

# DMCO DigitalMedia™ Switcher Output Cards

## MODELS & ACCESSORIES

### Available Models – for DM-MD8X8 & DM-MD32X32

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DMCO-10: 2 DM Fiber Output Card  
DMCO-11: 4 DM Fiber Output Card  
DMCO-20: 2 DM CAT w/1 HDMI Output Card  
DMCO-22: 4 DM CAT w/2 HDMI Output Card  
DMCO-30: 2 HDMI w/2 Stereo Analog Audio Output Card  
DMCO-33: 4 HDMI w/4 Stereo Analog Audio Output Card  
DMCO-40: 2 DM 8G Fiber w/1 HDMI Output Card  
DMCO-44: 4 DM 8G Fiber w/2 HDMI Output Card  
DMCO-50: 2 DM 8G+ w/1 HDMI Output Card  
DMCO-55: 4 DM 8G+ w/2 HDMI Output Card  
DMCO-60: 2 DM 8G SM Fiber w/1 HDMI Output Card  
DMCO-66: 4 DM 8G SM Fiber w/2 HDMI Output Card  
DMCO-70: 1 Streaming Output Card  
DMCO-77: 2 Streaming Output Card  
DMCO-80: 2 DM 8G+ w/1 HDMI Output Card, 4K Support  
DMCO-88: 4 DM 8G+ w/2 HDMI Output Card, 4K Support  
DMCO-12: 2 DM Fiber & 2 DM CAT w/1 HDMI Output Card  
DMCO-13: 2 DM Fiber & 2 HDMI w/2 Stereo Analog Audio Output Card  
DMCO-15: 2 DM Fiber & 2 DM 8G+ w/1 HDMI Output Card  
DMCO-23: 2 DM CAT w/1 HDMI & 2 HDMI w/2 Stereo Analog Audio Output Card  
DMCO-43: 2 DM 8G Fiber w/1 HDMI & 2 HDMI w/2 Stereo Analog Audio Output Card  
DMCO-45: 2 DM 8G Fiber w/1 HDMI & 2 DM 8G+ w/1 HDMI Output Card  
DMCO-53: 2 DM 8G+ w/1 HDMI & 2 HDMI w/2 Stereo Analog Audio Output Card  
DMCO-63: 2 DM 8G SM Fiber w/1 HDMI & 2 HDMI w/2 Stereo Analog Audio Output Card  
DMCO-64: 2 DM 8G SM Fiber w/1 HDMI & 2 DM 8G Fiber w/1 HDMI Output Card  
DMCO-65: 2 DM 8G SM Fiber w/1 HDMI & 2 DM 8G+ w/1 HDMI Output Card  
DMCO-73: 1 Streaming & 2 HDMI w/2 Stereo Analog Audio Output Card  
DMCO-74: 1 Streaming & 2 DM 8G Fiber w/1 HDMI Output Card  
DMCO-75: 1 Streaming & 2 DM 8G+ w/1 HDMI Output Card  
DMCO-76: 1 Streaming & 2 DM 8G SM Fiber w/1 HDMI Output Card

### Available Models – for DM-MD16X16

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DMCO-1000: 2 DM Fiber Output Card  
DMCO-1100: 4 DM Fiber Output Card  
DMCO-1110: 6 DM Fiber Output Card  
DMCO-1111: 8 DM Fiber Output Card  
DMCO-2000: 2 DM CAT w/1 HDMI Output Card  
DMCO-2200: 4 DM CAT w/2 HDMI Output Card  
DMCO-2220: 6 DM CAT w/3 HDMI Output Card  
DMCO-2222: 8 DM CAT w/4 HDMI Output Card

DMCO-3000: 2 HDMI w/2 Stereo Analog Audio Output Card  
DMCO-3300: 4 HDMI w/4 Stereo Analog Audio Output Card  
DMCO-3330: 6 HDMI w/6 Stereo Analog Audio Output Card  
DMCO-3333: 8 HDMI w/8 Stereo Analog Audio Output Card

DMCO-4000: 2 DM 8G Fiber w/1 HDMI Output Card  
DMCO-4400: 4 DM 8G Fiber w/2 HDMI Output Card  
DMCO-4440: 6 DM 8G Fiber w/3 HDMI Output Card  
DMCO-4444: 8 DM 8G Fiber w/4 HDMI Output Card

DMCO-5000: 2 DM 8G+ w/1 HDMI Output Card  
DMCO-5500: 4 DM 8G+ w/2 HDMI Output Card  
DMCO-5550: 6 DM 8G+ w/3 HDMI Output Card  
DMCO-5555: 8 DM 8G+ w/4 HDMI Output Card

DMCO-6000: 2 DM 8G SM Fiber w/1 HDMI Output Card  
DMCO-6600: 4 DM 8G SM Fiber w/2 HDMI Output Card  
DMCO-6660: 6 DM 8G SM Fiber w/3 HDMI Output Card  
DMCO-6666: 8 DM 8G SM Fiber w/4 HDMI Output Card

DMCO-7000: 1 Streaming Output Card  
DMCO-7700: 2 Streaming Output Card  
DMCO-7770: 3 Streaming Output Card  
DMCO-7777: 4 Streaming Output Card

DMCO-8000: 2 DM 8G+ w/1 HDMI Output Card, 4K Support  
DMCO-8800: 4 DM 8G+ w/2 HDMI Output Card, 4K Support  
DMCO-8880: 6 DM 8G+ w/3 HDMI Output Card, 4K Support  
DMCO-8888: 8 DM 8G+ w/4 HDMI Output Card, 4K Support

DMCO-1112: 6 DM Fiber & 2 DM CAT w/1 HDMI Output Card  
DMCO-1113: 6 DM Fiber & 2 HDMI w/2 Stereo Analog Audio Output Card  
DMCO-1115: 6 DM Fiber & 2 DM 8G+ w/1 HDMI Output Card  
DMCO-1120: 4 DM Fiber & 2 DM CAT w/1 HDMI Output Card  
DMCO-1122: 4 DM Fiber & 4 DM CAT w/2 HDMI Output Card  
DMCO-1130: 4 DM Fiber & 2 HDMI w/2 Stereo Analog Audio Output Card  
DMCO-1133: 4 DM Fiber & 4 HDMI w/4 Stereo Analog Audio Output Card  
DMCO-1150: 4 DM Fiber & 2 DM 8G+ w/1 HDMI Output Card  
DMCO-1155: 4 DM Fiber & 4 DM 8G+ w/2 HDMI Output Card  
DMCO-2100: 2 DM Fiber & 2 DM CAT w/1 HDMI Output Card  
DMCO-1220: 2 DM Fiber & 4 DM CAT w/2 HDMI Output Card  
DMCO-2221: 2 DM Fiber & 6 DM CAT w/3 HDMI Output Card  
DMCO-1300: 2 DM Fiber & 2 HDMI w/2 Stereo Analog Audio Output Card  
DMCO-1330: 2 DM Fiber & 4 HDMI w/4 Stereo Analog Audio Output Card  
DMCO-1333: 2 DM Fiber & 6 HDMI w/6 Stereo Analog Audio Output Card  
DMCO-5100: 2 DM Fiber & 2 DM 8G+ w/1 HDMI Output Card  
DMCO-1550: 2 DM Fiber & 4 DM 8G+ w/2 HDMI Output Card  
DMCO-5551: 2 DM Fiber & 6 DM 8G+ w/3 HDMI Output Card  
DMCO-2223: 6 DM CAT w/3 HDMI & 2 HDMI w/2 Stereo Analog Audio Output Card  
DMCO-2230: 4 DM CAT w/2 HDMI & 2 HDMI w/2 Stereo Analog Audio Output Card  
DMCO-2233: 4 DM CAT w/2 HDMI & 4 HDMI w/4 Stereo Analog Audio Output Card  
DMCO-2300: 2 DM CAT w/1 HDMI & 2 HDMI w/2 Stereo Analog Audio Output Card

# DMCO DigitalMedia™ Switcher Output Cards

**DMCO-2330:** 2 DM CAT w/1 HDMI & 4 HDMI w/4 Stereo Analog Audio Output Card

**DMCO-2333:** 2 DM CAT w/1 HDMI & 6 HDMI w/6 Stereo Analog Audio Output Card

**DMCO-4300:** 2 DM 8G Fiber w/1 HDMI & 2 HDMI w/2 Stereo Analog Audio Output Card

**DMCO-4330:** 2 DM 8G Fiber w/1 HDMI & 4 HDMI w/4 Stereo Analog Audio Output Card

**DMCO-4333:** 2 DM 8G Fiber w/1 HDMI & 6 HDMI w/6 Stereo Analog Audio Output Card

**DMCO-4430:** 4 DM 8G Fiber w/2 HDMI & 2 HDMI w/2 Stereo Analog Audio Output Card

**DMCO-4433:** 4 DM 8G Fiber w/2 HDMI & 4 HDMI w/4 Stereo Analog Audio Output Card

**DMCO-4443:** 6 DM 8G Fiber w/3 HDMI & 2 HDMI w/2 Stereo Analog Audio Output Card

**DMCO-5300:** 2 DM 8G+ w/1 HDMI & 2 HDMI w/2 Stereo Analog Audio Output Card

**DMCO-5330:** 2 DM 8G+ w/1 HDMI & 4 HDMI w/4 Stereo Analog Audio Output Card

**DMCO-5333:** 2 DM 8G+ w/1 HDMI & 6 HDMI w/6 Stereo Analog Audio Output Card

**DMCO-5400:** 2 DM 8G+ w/1 HDMI & 2 DM 8G Fiber w/1 HDMI Output Card

**DMCO-5440:** 2 DM 8G+ w/1 HDMI & 4 DM 8G Fiber w/2 HDMI Output Card

**DMCO-5444:** 2 DM 8G+ w/1 HDMI & 6 DM 8G Fiber w/3 HDMI Output Card

**DMCO-5530:** 4 DM 8G+ w/2 HDMI & 2 HDMI w/2 Stereo Analog Audio Output Card

**DMCO-5533:** 4 DM 8G+ w/2 HDMI & 4 HDMI w/4 Stereo Analog Audio Output Card

**DMCO-5540:** 4 DM 8G+ w/2 HDMI & 2 DM 8G Fiber w/1 HDMI Output Card

**DMCO-5544:** 4 DM 8G+ w/2 HDMI & 4 DM 8G Fiber w/2 HDMI Output Card

**DMCO-5553:** 6 DM 8G+ w/3 HDMI & 2 HDMI w/2 Stereo Analog Audio Output Card

**DMCO-5554:** 6 DM 8G+ w/3 HDMI & 2 DM 8G Fiber w/1 HDMI Output Card

**DMCO-6300:** 2 DM 8G SM Fiber w/1 HDMI & 2 HDMI w/2 Stereo Analog Audio Output Card

**DMCO-6330:** 2 DM 8G SM Fiber w/1 HDMI & 4 HDMI w/4 Stereo Analog Audio Output Card

**DMCO-6333:** 2 DM 8G SM Fiber w/1 HDMI & 6 HDMI w/6 Stereo Analog Audio Output Card

**DMCO-6400:** 2 DM 8G SM Fiber w/1 HDMI & 2 DM 8G Fiber w/1 HDMI Output Card

**DMCO-6440:** 2 DM 8G SM Fiber w/1 HDMI & 4 DM 8G Fiber w/2 HDMI Output Card

**DMCO-6444:** 2 DM 8G SM Fiber w/1 HDMI & 6 DM 8G Fiber w/3 HDMI Output Card

**DMCO-6500:** 2 DM 8G SM Fiber w/1 HDMI & 2 DM 8G+ w/1 HDMI Output Card

**DMCO-6550:** 2 DM 8G SM Fiber w/1 HDMI & 4 DM 8G+ w/2 HDMI Output Card

**DMCO-6555:** 2 DM 8G SM Fiber w/1 HDMI & 6 DM 8G+ w/3 HDMI Output Card

**DMCO-6630:** 4 DM 8G SM Fiber w/2 HDMI & 2 HDMI w/2 Stereo Analog Audio Output Card

**DMCO-6633:** 4 DM 8G SM Fiber w/2 HDMI & 4 HDMI w/4 Stereo Analog Audio Output Card

**DMCO-6640:** 4 DM 8G SM Fiber w/2 HDMI & 2 DM 8G Fiber w/1 HDMI Output Card

**DMCO-6644:** 4 DM 8G SM Fiber w/2 HDMI & 4 DM 8G Fiber w/2 HDMI Output Card

**DMCO-6650:** 4 DM 8G SM Fiber w/2 HDMI & 2 DM 8G+ w/1 HDMI Output Card

**DMCO-6655:** 4 DM 8G SM Fiber w/2 HDMI & 4 DM 8G+ w/2 HDMI Output Card

**DMCO-6663:** 6 DM 8G SM Fiber w/3 HDMI & 2 HDMI w/2 Stereo Analog Audio Output Card

**DMCO-6664:** 6 DM 8G SM Fiber w/3 HDMI & 2 DM 8G Fiber w/1 HDMI Output Card

**DMCO-6665:** 6 DM 8G SM Fiber w/3 HDMI & 2 DM 8G+ w/1 HDMI Output Card

**DMCO-7300:** 1 Streaming & 2 HDMI w/2 Stereo Analog Audio Output Card

**DMCO-7330:** 1 Streaming & 4 HDMI w/4 Stereo Analog Audio Output Card

**DMCO-7333:** 1 Streaming & 6 HDMI w/6 Stereo Analog Audio Output Card

**DMCO-7400:** 1 Streaming & 2 DM 8G Fiber w/1 HDMI Output Card

**DMCO-7440:** 1 Streaming & 4 DM 8G Fiber w/2 HDMI Output Card

**DMCO-7444:** 1 Streaming & 6 DM 8G Fiber w/3 HDMI Output Card

**DMCO-7500:** 1 Streaming & 2 DM 8G+ w/1 HDMI Output Card

**DMCO-7550:** 1 Streaming & 4 DM 8G+ w/2 HDMI Output Card

**DMCO-7555:** 1 Streaming & 6 DM 8G+ w/3 HDMI Output Card

**DMCO-7600:** 1 Streaming & 2 DM 8G SM Fiber w/1 HDMI Output Card

**DMCO-7660:** 1 Streaming & 4 DM 8G SM Fiber w/2 HDMI Output Card

**DMCO-7666:** 1 Streaming & 6 DM 8G SM Fiber w/3 HDMI Output Card

**DMCO-7730:** 2 Streaming & 2 HDMI w/2 Stereo Analog Audio Output Card

**DMCO-7733:** 2 Streaming & 4 HDMI w/4 Stereo Analog Audio Output Card

**DMCO-7740:** 2 Streaming & 2 DM 8G Fiber w/1 HDMI Output Card

**DMCO-7744:** 2 Streaming & 4 DM 8G Fiber w/2 HDMI Output Card

**DMCO-7750:** 2 Streaming & 2 DM 8G+ w/1 HDMI Output Card

**DMCO-7755:** 2 Streaming & 4 DM 8G+ w/2 HDMI Output Card

**DMCO-7760:** 2 Streaming & 2 DM 8G SM Fiber w/1 HDMI Output Card

**DMCO-7766:** 2 Streaming & 4 DM 8G SM Fiber w/2 HDMI Output Card

**DMCO-7773:** 3 Streaming & 2 HDMI w/2 Stereo Analog Audio Output Card

**DMCO-7774:** 3 Streaming & 2 DM 8G Fiber w/1 HDMI Output Card

**DMCO-7775:** 3 Streaming & 2 DM 8G+ w/1 HDMI Output Card

**DMCO-7776:** 3 Streaming & 2 DM 8G SM Fiber w/1 HDMI Output Card

**DMCO-8833:** 4 DM 8G+ (4K) w/2 HDMI (4K) & 4 HDMI (not 4K) w/4 Stereo Analog Audio Output Card

**DMCO-8883:** 6 DM 8G+ (4K) w/3 HDMI (4K) & 2 HDMI (not 4K) w/2 Stereo Analog Audio Output Card

# DMCO DigitalMedia™ Switcher Output Cards

## Notes:

1. Streaming output supports stereo audio only. Multichannel surround sound audio cannot be streamed unless down-mixed to stereo. Stereo down-mix capability requires a [DMC-HD-DSP](#) or other DSP-based DM Switcher Input Card, sold separately.
2. DVI is supported via an HDMI output using a suitable adapter or interface cable. [CBL-HD-DVI](#) interface cable available separately.
3. 4K support at 50/60 Hz with 4:2:0 color sampling will be enabled through a future firmware update.
4. The maximum cable length for DigitalMedia Fiber (DM Fiber) is 1000 ft (300 m) using [CRESFIBER](#), [CRESFIBER8G](#), [CRESFIBER-DUAL-SC](#), or third-party OM2/OM3 duplex multimode fiber optic cable.
5. The maximum cable length for DigitalMedia CAT (DM 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.
6. The maximum cable length for DigitalMedia 8G Fiber (DM 8G Fiber) is 1000 ft (300 m) using [CRESFIBER8G](#) fiber optic cable, or 500 ft (150 m) using standard [CRESFIBER](#), [CRESFIBER-SINGLE-SC](#), or third-party OM3 simplex multimode fiber optic cable.
7. The maximum cable length for DigitalMedia 8G+ (DM 8G+) or HDBaseT is 330 ft (100 m) for resolutions up to 1600x1200 and 1920x1200 (including 1080p60 and 2K) using [DM-CBL-8G](#) DigitalMedia 8G cable, [DM-CBL](#) DigitalMedia Cable, [DM-CBL-D](#) DigitalMedia D Cable, or third-party CAT5e (or better) UTP or STP. For higher resolutions (including 4K), the maximum wire length is 230 ft (70 m) using [DM-CBL-8G](#), or 165 ft (50 m) using [DM-CBL](#), [DM-CBL-D](#), or 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.
8. The maximum cable length for DigitalMedia 8G Single-Mode Fiber (DM 8G SM Fiber) is 7.5 miles (12 km) using [CRESFIBER8G-SM](#) or third-party G.652.D (or better) simplex single-mode fiber optic cable.
9. Refer to the [Crestron DigitalMedia Design Guide, Doc. #4546](#) for complete system design guidelines. All wire and cables sold separately.
10. Supplying Power over DM (PoDM) or Power over HDBaseT (PoH) via a DM 8G+ output requires connection of the corresponding POE IN port to a PoDM Power Supply ([DM-PSU-8](#) or [DM-PSU-16](#), sold separately) or an 802.3af or 802.3at compliant PoE PSE ([PWE-4803RU](#), [CEN-SW-POE-5](#), [CEN-SWPOE-16](#), or [CEN-SWPOE-24](#), sold separately). Refer to the connected DM 8G+ or HDBaseT device for its PoDM or PoH capabilities and requirements.

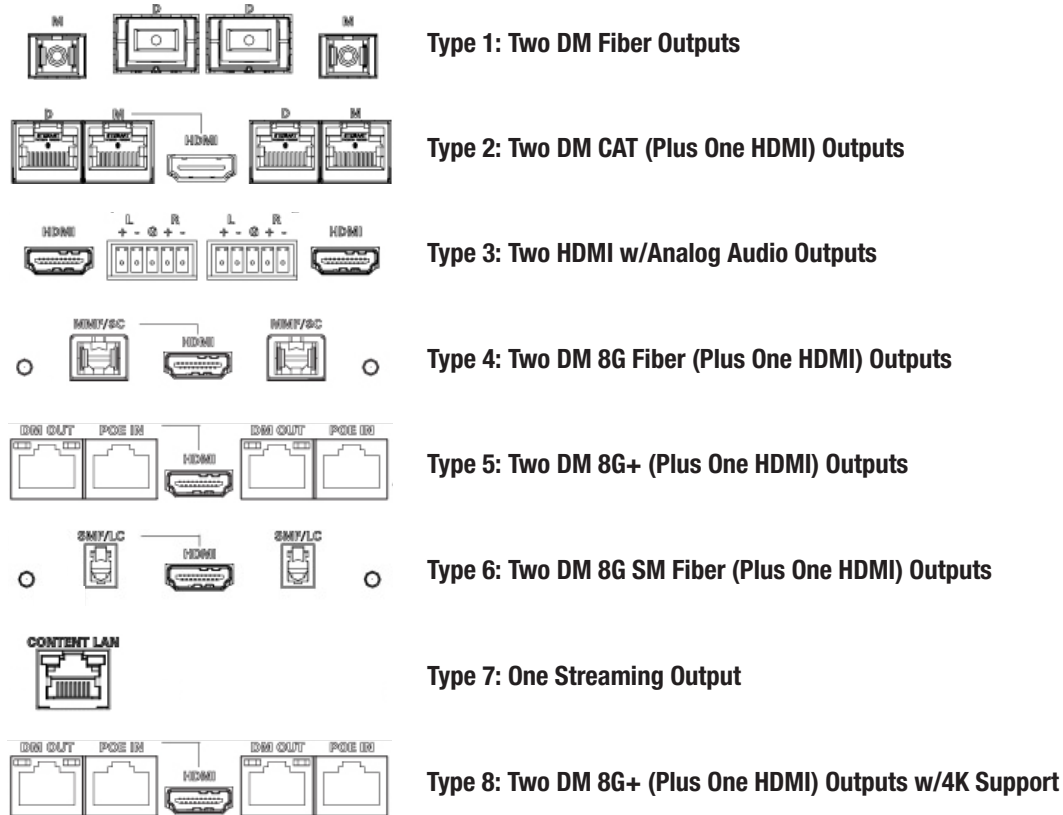
This product may be purchased from an authorized Crestron dealer. To find a dealer, please contact the Crestron sales representative for your area. A list of sales representatives is available online at [www.crestron.com/salesreps](http://www.crestron.com/salesreps) or by calling 800-237-2041.

The specific patents that cover Crestron products are listed online at: [patents.crestron.com](http://patents.crestron.com).

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# DMCO DigitalMedia™ Switcher Output Cards

## DM Switcher Card Output Types



## DMCO Card Model Numbering

DMCO Cards have either two or four digits, defining the output types, in order, from top to bottom. NOTE: 0 (zero) indicates none. Refer to the following examples:

