

8-Channel 4K HDMI® & Dante™ Output Blade for DM® Switchers

- > Modular output blade for a DM-MD64X64 or DM-MD128X128 switcher
- > Provides eight independent 4K HDMI® outputs
- > Includes a discrete 4K/60 scaler on each output
- > Upscales video and computer sources to match the native resolution of any screen up to Ultra HD and 4K
- > Downscapes 4K, UHD, and ultra high-resolution computer signals to enable viewing on 1080p and lower-resolution displays
- > Handles any input resolution from standard NTSC 480i or PAL 576i, to UHD and 4K
- > Provides intelligent frame rate conversion
- > Includes content-adaptive noise reduction
- > Includes motion-adaptive de-interlacing
- > Allows adjustable overscan or underscan up to 7.5%
- > Provides automatic 3D to 2D signal conversion^[3]
- > Supports up to 8x8 video wall processing using multiple outputs
- > Handles Dolby® TrueHD, Dolby Atmos®, DTS-HD®, and uncompressed 7.1 linear PCM audio
- > Dante™ audio networking supports up to eight stereo outputs/sends and eight stereo returns
- > Integrates seamlessly with Crestron® Avia™ DSP products
- > Analog audio outputs enable stereo audio de-embedding via the optional AUD-BOB-1602 breakout box^[1]
- > Includes programmatically controllable volume control on each analog audio output^[1]
- > Enables device control via CEC
- > HDCP 2.2 compliant
- > Occupies a single DM switcher output blade slot

The DMB-4K-O-HD-DNT is an output blade designed for use with any blade-based Crestron® DigitalMedia Switcher. It provides eight independent HDMI® outputs with complementary analog audio outputs^[1] and Dante™ audio networking. The HDMI outputs are each capable of handling Full HD 1080p, Ultra HD, 2K, and 4K video signals with support for HDCP 2.2, Deep Color, and high-bitrate 7.1 audio. Built-in 4K scaling enables the devices connected to each HDMI output to handle any video resolution from NTSC 480i to DCI 4K. DVI signals are also supported using HDMI-to-DVI adapters or interface cables.^[2]

Support for Dante audio networking allows for routing of stereo audio output signals to other Dante enabled equipment over the local area network. The analog audio outputs are enabled using the optional Analog Audio Breakout Box (model AUD-BOB-1602), which provides support for balanced or unbalanced stereo line-level signals.^[1]

4K/60 Scalers

An independent, high-performance 4K scaler is provided at each output to ensure that input sources of any resolution or frame rate can be routed and displayed reliably on virtually any display device without compromising the original input signal. As part of a DM® switcher with many outputs, this allows any video or computer source to be viewed simultaneously on multiple disparate displays, scaling the signal up or down to match the

native resolution of each display.

No matter what source is selected, or where it's routed, the DMB-4K-O-HD-DNT helps to ensure an optimal image on every screen. It can take any input resolution from standard definition NTSC 480i to ultra high-definition DCI 4K, and scale it beautifully to any output resolution up to DCI 4K (4096 x 2160 @ 60 Hz). Interlaced sources are converted to progressive scan using motion-adaptive deinterlacing. Intelligent frame rate conversion enables support for 24p and PAL format sources. 3D signals are converted to 2D.^[3] Fully automatic operation eliminates any complicated setup by utilizing the displays' EDID to configure each scaler.^[4]

Video Wall Processing

The DMB-4K-O-HD-DNT has another trick up its sleeve, providing zoom capability and bezel compensation on each output to display just a portion of the source image. Using this feature, up to eight output cards may be combined to provide processing for a video wall composed of up to 64 individual displays. Video wall configurations up to eight wide by up to eight high are supported.

Analog Audio De-Embedding

Each HDMI output on the DMB-4K-O-HD-DNT is accompanied by a balanced analog audio output, allowing stereo audio signals to be extracted from the digital output and fed to a sound system. The analog audio outputs are enabled using the optional Analog Audio Breakout Box (model AUD-BOB-1602).^[1]

Dante™ Audio Networking

Dante networking enables streamlined integration with Crestron Avia™ DSP products and other Dante enabled audio processors, amplifiers, mixers, and switchers. Dante allows stereo audio signals from any or all of the blade's outputs to be routed to such equipment over an Ethernet network. Send/return loop capability is also supported, allowing audio from any input source to be externally processed, mixed, or switched via Dante, and then re-embedded with the video signal at any of the HDMI outputs. The Dante network interface is provided via the DM switcher's LAN port, supporting up to 120 simultaneous stereo input and output signals.

CEC Embedded Device Control

DigitalMedia offers an alternative to conventional RS-232 and IR display control by harnessing the CEC (Consumer Electronics Control) signal embedded in HDMI. Through its connection to a control system (via the DM switcher), the DMB-4K-O-HD-DNT provides a gateway for controlling display devices right through their HDMI connections, potentially eliminating the need for any dedicated control wires or IR emitters.

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



SPECIFICATIONS

Video

Scalers: (8) 4K video scalers with motion-adaptive deinterlacing, intelligent frame rate conversion, Deep Color support, 3D to 2D conversion^[3], content-adaptive noise reduction, widescreen format selection (zoom, stretch, maintain aspect-ratio, or 1:1), and video wall processing (up to 8 wide x up to 8 high using multiple outputs)
Output Signal Types: HDMI w/Deep Color & 4K (DVI compatible^[2])

Maximum Resolutions:

Scan Type	Resolution	Frame Rate	Color Sampling	Color Depth
Progressive	4096x2160 DCI 4K & 3840x2160 4K UHD	24 Hz	4:4:4	30 bit
		30 Hz	4:4:4	24 bit
		30 Hz	4:2:2	36 bit
		60 Hz	4:2:0	24 bit
	2560x1600 WQXGA	60 Hz	4:4:4	36 bit
	1920x1080 HD1080p	60 Hz	4:4:4	36 bit
Interlaced (Input only)	1920x1080 HD1080i	30 Hz	4:4:4	36 bit

NOTE: Common resolutions are shown; other custom resolutions are supported at pixel clock rates up to 300 MHz

Audio

Output Signal Types: HDMI, Dante™, analog stereo^[1]
Return Input Signal Types: Dante
Digital Formats, HDMI: Dolby Digital®, Dolby Digital EX, Dolby Digital Plus, Dolby® TrueHD, Dolby Atmos®, DTS®, DTS-ES, DTS 96/24, DTS-HD High Res, DTS-HD Master Audio™, LPCM up to 8 channels
Digital Formats, Dante: Stereo 2-channel send/output and return/input per channel at up to 24-bit 48 kHz
Analog Formats: Stereo 2-channel^[1]
Digital-To-Analog Conversion: 24-bit 48 kHz
Analog Performance: Frequency Response: 20 Hz to 20 kHz ±0.5 dB;
S/N Ratio: >95 dB, 20 Hz to 20 kHz A-weighted;
THD+N: <0.005% @ 1 kHz;
Stereo Separation: >80 dB
Analog Volume Adjustment: -80 to 0 dB

Communications

HDMI: HDCP 2.2, EDID, CEC
Dante: Dante network interface provided via the host switcher's LAN port, limited to a maximum of up to 120 stereo audio channels per switcher
NOTE: Supports management of HDCP and EDID; supports management of CEC between the connected HDMI devices and a control system

Connectors

OUTPUT HD 1 – 8: (8) 19-pin Type A HDMI female;
HDMI digital video/audio outputs (DVI compatible^[2])

ANALOG AUDIO EXTRACT: (1) 68-pin VHDCI female;
Connects to external analog audio breakout box, model AUD-BOB-1602^[1];
Output Impedance: 200 Ohms balanced, 100 Ohms unbalanced;
Maximum Output Level: 4 Vrms balanced, 2 Vrms unbalanced

Indicators

ACT: (1) Green LED, indicates blade activity
MSG: (1) Red LED, indicates an error message has been generated
OUTPUT HD 1 – 8: (8) Bi-color red/green LEDs, indicate video lock and HDCP status for each corresponding output

Construction

Plug-in blade, occupies (1) DM switcher output blade slot, includes metal faceplate w/black finish

Weight

1.6 lb (726 g)

MODELS & ACCESSORIES

Available Models

DMB-4K-O-HD-DNT: 8-Channel 4K HDMI® & Dante™ Output Blade for DM® Switchers

Available Accessories

AUD-BOB-1602: 16-Channel Analog Audio Breakout Box
CBL Series: Crestron® Certified Interface Cables
MP-WP Series: Media Presentation Wall Plates
MPI-WP Series: Media Presentation Wall Plates – International Version

Notes:

1. Analog audio output capability requires the optional Analog Audio Breakout Box, model **AUD-BOB-1602**, sold separately. The analog stereo audio outputs are only active when the selected input source is outputting a 2-channel stereo signal.
2. DVI is supported via any HDMI output using a suitable adapter or interface cable. **CBL-HD-DVI** interface cables are available separately.
3. Does not support pass-through or scaling of 3D signals. 3D signals are automatically converted to 2D, then scaled and output as 2D.
4. EDID (Extended Display Identification Data) is data embedded in an HDMI or DVI signal that enables a display device to tell the scaler what resolutions and formats it can support.

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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