DM-MD8X1-4K-C/HD-MD8X1-4K

4K Scaling Auto-Switchers

Supplemental Guide

Contents

DM-MD8X1-4K-C/HD-MD8X1-4K: 4K Scaling Auto-Switchers

Introduction

The Crestron® DM-MD8X1-4K-C and HD-MD8X1-4K are ultra high-definition presentation switchers that integrate a multiformat auto-switcher, 4K video scaler, audio DSP, and control interface. The devices also provide out-of-the-box Crestron Connect It™ cable caddy collaboration.

This guide provides information about the following:

- Physical description of the front and rear panels of the DM-MD8X1-4K-C and HD-MD8X1-4K

- Crestron Connect It functionality

- Configuration of some of the capabilities of the DM-MD8X1-4K-C and HD-MD8X1-4K, for example, adjustable underscan

- Troubleshooting

- Pin assignments

For installation information, refer to the DM-MD8X1-4K-C/HD-MD8X1-4K DO Guide (Doc. 7652) at www.crestron.com/manuals.

Physical Description

This section provides information about the connectors, controls, and indicators on the front and rear panels of the DM-MD8X1-4K-C and HD-MD8X1-4K.

Front Panel

The following illustration shows the front panel of the DM-MD8X1-4K-C.

NOTE: For illustrative purposes, the front panel of the DM-MD8X1-4K-C is shown below. The front panel of the HD-MD8X1-4K is the same as the front panel of the DM-MD8X1-4K-C.

Front Panel (DM-MD8X1-4K-C Shown)
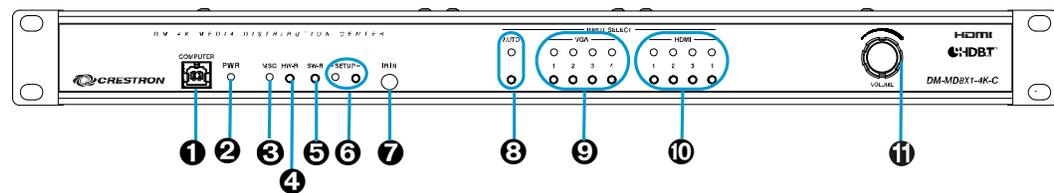
❶ **COMPUTER:** USB Type B female;
USB computer console port;
For setup only

❷ **PWR:** Bicolor green/amber LED, indicates operating power supplied from ac line power, turns amber while booting and green when operating

❸ **MSG:** Red LED, indicates an error message has been generated

❹ **HW-R:** Recessed push button for hardware reset, reboots the device

❺ **SW-R:** Recessed push button for software reset, restarts the software program

❻ **SETUP:** (Applicable only to a configuration in which a DigitalMedia™ switcher is not used) Red LED and recessed push button for Ethernet setup of the default static IP address of the device

NOTE: The default static IP address of the DM-MD8X1-4K-C is 192.168.1.200. The default static IP address of the HD-MD8X1-4K is 192.168.1.201.

❼ **IR IN:** Infrared sensor;
IR Frequency: 36 to 38 kHz;
IR Formats: Crestron format, RC5;
Allows control from IR wireless remotes using the Crestron or RC-5 command sets

NOTE: If the DM-MD8X1-4K-C or HD-MD8X1-4K is used without a control system, the IR IN sensor cannot be used. The IR IN sensor can be used for fully customizable applications through integration of the DM-MD8X1-4K-C or HD-MD8X1-4K with an external 3-Series® Control System with custom programming.

❽ **AUTO INPUT SELECT:** Push button and bicolor green/amber LED, selects auto-switching mode

❾ **VGA INPUT SELECT 1-4:** Push buttons for manual input selection and corresponding bicolor green/amber LEDs that indicate the current active input and signal presence at each corresponding VGA input

⑩ **HDMI INPUT SELECT 1-4:** Push buttons for manual input selection and corresponding bicolor green/amber LEDs that indicate the current active input and signal presence at each corresponding HDMI® input

⑪ **VOLUME:** Continuous turn rotary encoder, adjusts the analog audio output volume

Rear Panel

The following illustration shows the rear panel of the DM-MD8X1-4K-C.

NOTE: For illustrative purposes, the rear panel of the DM-MD8X1-4K-C is shown below. The rear panel of the HD-MD8X1-4K-C is similar to the rear panel of the DM-MD8X1-4K-C; however, only the DM-MD8X1-4K-C includes the DM OUT and MIC IN connectors.

Rear Panel (DM-MD8X1-4K-C Shown)
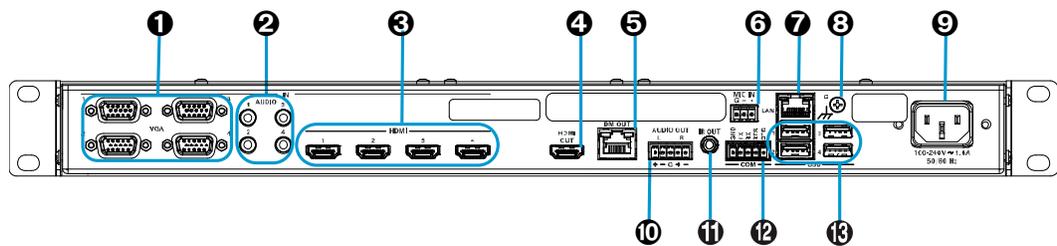
❶ **VGA IN 1-4:** HD15 female;
Analog VGA/RGB/video inputs;
Signal Types: VGA, RGB, component, S-video, or composite;
Formats: RGBHV, RGBS, RGsB, YPbPr, Y/C, NTSC or PAL;
Input Level: 0.5 to 1.5 Vp-p with built-in DC restoration;
Input Impedance: 75 Ohms nominal;
Sync Detection: RGBHV, RGBS, RGsB, YPbPr;
Sync Input Level: 3 to 5 Vp-p;
Sync Input Impedance: 2.2k Ohms

NOTE: The VGA inputs can accept component, composite, and S-video signals using an appropriate adapter (not included). However, input sync detection is not provided for composite or S-video signal types.

❷ **AUDIO IN 1-4:** 3.5 mm TRS mini phone jacks;
Unbalanced stereo line-level analog audio inputs;
Input Impedance: 32k Ohms unbalanced;
Maximum Input Level: 2.8 Vrms unbalanced

NOTE: If an HDMI input is selected but no digital audio signal is detected, the corresponding analog audio input is activated (AUDIO 1 for HDMI 1, AUDIO 2 for HDMI 2, and so on). The analog audio inputs do not pass audio if the HDMI video input resolution is higher than 1920 x 1200.

❸ **HDMI IN 1-4:** 19-pin Type A HDMI female;
Digital video/audio inputs;
Signal Types: HDMI, DVI, or Dual-Mode DisplayPort

NOTE: The HDMI inputs require an appropriate adapter or interface cable to accommodate a DVI or Dual-Mode DisplayPort signal. The CBL-HD-DVI interface cable is sold separately.

❹ **HDMI OUT:** 19-pin Type A HDMI female;
Digital video/audio output;
Signal Types: HDMI, DVI

NOTE: The HDMI output requires an appropriate adapter or interface cable to accommodate a DVI or Dual-Mode DisplayPort signal. The CBL-HD-DVI interface cable is sold separately.

❺ **DM OUT:** (DM-MD8X1-4K-C only) 8-pin RJ-45 female, shielded;
DM 8G+® output, HDBaseT® standard compliant;
PoDM PSE (Power Sourcing Equipment) port (HDBaseT PoE compatible);
Connects to the DM 8G+ input of a DigitalMedia receiver or other DM® device or to an HDBaseT device via CAT5e, Crestron DM-CBL-8G, or Crestron DM-CBL-ULTRA cable;
Green LED indicates DM link status;
Solid amber LED indicates HDCP video;
Blinking amber LED indicates non-HDCP video

NOTE: The DM-MD8X1-4K-C cannot connect to an Ethernet LAN over a DM connection. It must be connected using its onboard LAN port.

NOTE: Any wiring that is connected to a PoDM or HDBaseT PoE PSE port is for intrabuilding use only and should not be connected to a line that runs outside of the building in which the PSE is located.

❻ **MIC IN:** (DM-MD8X1-4K-C only) 3-pin 3.5 mm detachable terminal block;
Balanced microphone audio input;
Input Level: -60 to 0 dBV, 1 Vrms maximum;
Input Impedance: 6.5k Ohms balanced;
Phantom Power: 48 Vdc, software enabled/disabled

❼ **LAN:** 8-pin RJ-45 female;
10BASE-T/100BASE-TX Ethernet port;
Green LED indicates Ethernet link status;
Amber LED indicates Ethernet activity

❽ **Ground ( ):** 6-32 screw, chassis ground lug

❾ **100-240 V~1.4 A 50/60 Hz:** IEC 60320 C14 mains power inlet;
Mates with removable power cord, included

❿ **AUDIO OUT:** 5-pin 3.5 mm detachable terminal block;
Balanced/unbalanced stereo line-level audio output;
Output Impedance: 200 Ohms balanced, 100 Ohms unbalanced;
Maximum Output Level: 4 Vrms balanced, 2 Vrms unbalanced

⓫ **IR OUT:** 3.5 mm mini-phone jack;
IR/serial output port;
IR output up to 1.2 MHz;
1-way serial TTL/RS-232 (0-5 volts) up to 115.2k baud

> **NOTE:** If the DM-MD8X1-4K-C or HD-MD8X1-4K is used without a control system, the IR OUT port cannot be used. The IR OUT port can be used for fully customizable applications through integration of the DM-MD8X1-4K-C or HD-MD8X1-4K with an external 3-Series Control System with custom programming.

⑫ **COM:** 5-pin 3.5 mm detachable terminal block;
Bidirectional RS-232 port;
Up to 115.2k baud, hardware and software handshaking support

> **NOTE:** If the DM-MD8X1-4K-C or HD-MD8X1-4K is used without a control system, the COM port supports basic display device control only. The COM port can be used for fully customizable applications through integration of the DM-MD8X1-4K-C or HD-MD8X1-4K with an external 3-Series Control System with custom programming.

⑬ **USB 1-4:** USB Type A female;
USB 2.0 host ports for TT-100 series Crestron Connect It cable caddies (sold separately);
Also enable firmware update via USB flash drive

For pin assignment information, refer to the Appendix on page 13.

Built-In System Configuration and Control Software

Built-in software of the DM-MD8X1-4K-C and HD-MD8X1-4K enables complete system configuration and control without the need for additional programming. For additional information, refer to the Software Features of the DM-MD8X1-4K-C and HD-MD8X1-4K Operations Guide (Doc. 7772) at www.crestron.com/manuals.

> **NOTE:** The DM-MD8X1-4K-C and HD-MD8X1-4K can optionally be controlled by an external 3-Series Control System rather than by the built-in software. When a control system is added to the IP table, functionality of the built-in software is disabled.

Crestron Connect It Functionality

The DM-MD8X1-4K-C and HD-MD8X1-4K provide built-in Crestron Connect It functionality, allowing USB connections of up to four TT-100 series Crestron Connect It cable caddies (sold separately). The auto-switching inputs of the DM-MD8X1-4K-C and HD-MD8X1-4K support individual HDMI, VGA, and analog audio connections at each cable caddy.

Configuration

In addition to the built-in software, the DM-MD8X1-4K-C and HD-MD8X1-4K can be configured using the web interface. SIMPL Windows can also be used to configure the DM-MD8X1-4K-C and HD-MD8X1-4K.

This section provides information about configuration of the following:

- Adjustable underscan
- User-selectable output resolution
- Standby timeout
- Display mode
- EDID
- Connection to a third-party HDBaseT receiver (DM-MD8X1-4K-C only)

Adjustable Underscan

If content does not fit properly on a display, adjustments to underscan may be desired. Adjusting the underscan reduces the image size by the specified percentage so that the entire video frame is displayed.

To adjust underscan, use the web interface or SIMPL Windows as discussed in the following sections.
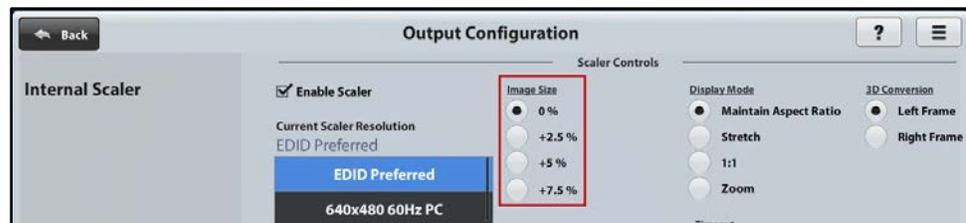
Configuration Using the Web Interface

An overview of the steps necessary to adjust the underscan setting is as follows:

NOTE: For detailed information, refer to the online help of the web interface.

1. On the Main Setup page, click the **INTERNAL SCALER Settings** button. The Output Configuration page for the internal scaler opens.

2. In the **Image Size** list, click the radio button that corresponds to the desired underscan setting.

Output Configuration Page for Internal Scaler—Image Size (Underscan) Configuration

Configuration Using SIMPL Windows

Using SIMPL Windows, adjust underscan in subslot 02 of the Outputs slot for the DM-MD8X1-4K-C or HD-MD8X1-4K. Set the **<Scaler_Underscan_Mode>** analog input join to the desired value.

NOTE: For detailed information, refer to the SIMPL Windows help file.

User-Selectable Output Resolution

The output resolution of the scaler is user selectable. To select the output resolution, use the web interface or SIMPL Windows as discussed in the following sections.
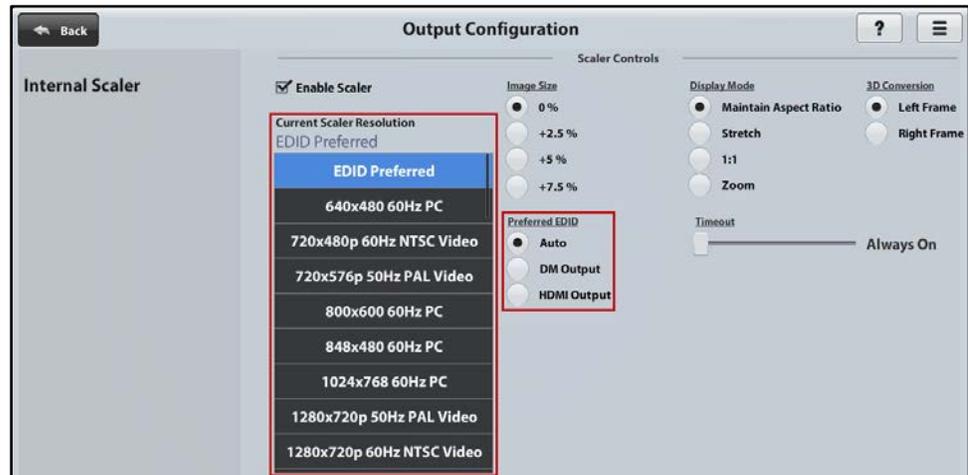
Configuration Using the Web Interface

An overview of the steps necessary to select the output resolution of the scaler is as follows:

NOTE: For detailed information, refer to the online help of the web interface.

1. On the Main Setup page, click the **INTERNAL SCALER Settings** button. The Output Configuration page for the internal scaler opens.

2. In the **Current Scaler Resolution** list, click the desired setting.

3. (Applicable only to the DM-MD8X1-4K-C and only when **EDID Preferred** is selected in the **Current Scaler Resolution** list) In the **Preferred EDID** list, click the radio button that corresponds to the preferred EDID setting.

Output Configuration Page for Internal Scaler—Current Scaler Resolution Configuration

Configuration Using SIMPL Windows

Using SIMPL Windows, set the output resolution in subslot 02 of the Outputs slot. To do so, set the **<Scaler_User_Resolution_Index>** analog input join to the desired value.

NOTE: For detailed information, refer to the SIMPL Windows help file.

Standby Timeout

Standby timeout sets the period of time after which the output will shut down if no video is detected on the input.

To configure the Standby Timeout setting, use the web interface or SIMPL Windows as discussed in the following sections.
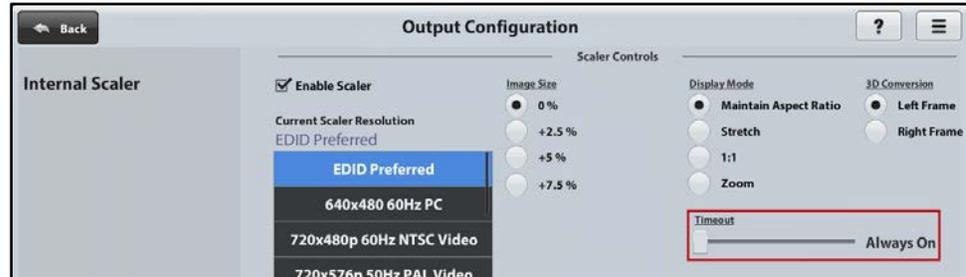
Configuration Using the Web Interface

An overview of the steps necessary to configure the Standby Timeout setting is as follows:

NOTE: For detailed information, refer to the online help of the web interface.

1. On the Main Setup page, click the **INTERNAL SCALER Settings** button.
   The Output Configuration page for the internal scaler opens.
2. Adjust the **Timeout** slider to the desired value.

Output Configuration Page for Internal Scaler—Standby Timeout Configuration

Configuration Using SIMPL Windows

Using SIMPL Windows, set the standby timeout in subslot 02 of the Outputs slot. To do so, set the **<Scaler_Out_Standby_Timeout>** analog input join to the desired value.

NOTE: For detailed information, refer to the SIMPL Windows help file.

Display Mode

The display mode of an image can be set to one of the following:

- Maintain aspect ratio

- Stretch to fit

- 1:1 pixel mapping

- Zoom

To configure Display Mode settings, use the web interface or SIMPL Windows as discussed in the following sections.
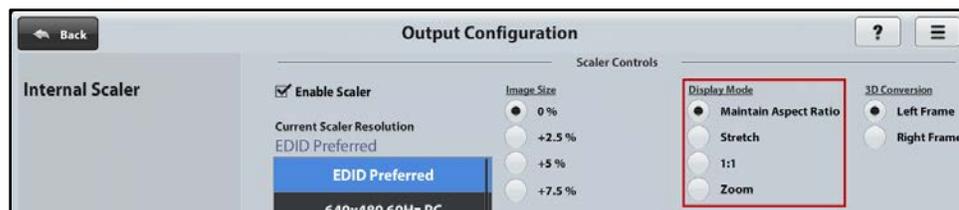
Configuration Using the Web Interface

An overview of the steps necessary to configure the display mode is as follows:

NOTE: For detailed information, refer to the online help of the web interface.

1. On the Main Setup page, click the **INTERNAL SCALER Settings** button.
   The Output Configuration page for the internal scaler opens.

2. In the **Display Mode** list, click the radio button that corresponds to the desired setting.

Output Configuration Page for Internal Scaler—Display Mode Configuration

Configuration Using SIMPL Windows

Using SIMPL Windows, set the display mode in subslot 02 of the Outputs slot. To do so, set the **<Scaler_Display_Mode>** analog input join to the desired value.

NOTE: For detailed information, refer to the SIMPL Windows help file.

EDID

EDID (Extended Display Identification Data) configuration allows management of the EDID that is to be sent to the upstream device connected to the VGA or HDMI input of the DM-MD8X1-4K-C or HD-MD8X1-4K-C. If an EDID other than the default EDID is desired, use the web interface to configure the EDID. An overview of the steps necessary to configure the EDID is as follows:

NOTE: For detailed information, refer to the online help of the web interface.

1. (Applicable to custom EDID file only) Using an FTP client such as FileZilla, load a custom EDID file to the DM-MD8X1-4K-C or HD-MD8X1-4K-C:

   a. Connect to the device using the IP address of the device. A list of folders appears for the device.

   b. Select the EDID folder.

   c. Copy the desired custom EDID file to the EDID folder, and then continue with step 2.

2. In the web interface, do the following:

   a. On the Main Setup page, click the input whose EDID is to be configured. The Input Configuration page for the selected input opens.

   b. Click the **Configure EDID** button. The EDID Setup page opens.

   c. Click **Crestron EDID List** for a list of predefined Crestron EDID files or **User EDID List** for a list of custom EDID files.

   d. Select the desired EDID.

EDID Setup Page

Connection to a Third-Party HDBaseT Receiver (DM-MD8X1-4K-C Only)

The DM-MD8X1-4K-C is an HDBaseT certified device, enabling direct connection to other HDBaseT certified equipment. Via the DM 8G+ output, the DM-MD8X1-4K-C can be connected directly to a third-party HDBaseT compliant receiver without requiring a DM 8G+ receiver.

To add a third-party HDBaseT receiver to the DM-MD8X1-4K-C, use SIMPL Windows. An overview of the necessary step follows.

NOTE: For detailed information, refer to the SIMPL Windows help file.

In the Configure View of SIMPL Windows, add a third-party HDBaseT receiver device to the DM-MD8X1-4K-C by doing the following:

1. Follow the menu path:

   Slot:8:DM-MD8x1-4K-C Control>>Slot:2:AV Control>>Slot:3:Outputs>> Slot:2:DM/HDMI Output

2. Add the HDBaseT receiver to an empty receiver slot.

   Addition of HDBaseT Receiver
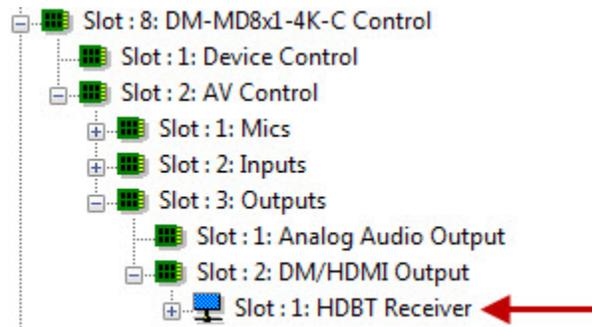
Troubleshooting

The following table provides troubleshooting information. If further assistance is required, contact a Crestron customer service representative.

DM-MD8X1-4K-C and HD-MD8X1-4K Troubleshooting

TROUBLE	POSSIBLE CAUSE(S)	CORRECTIVE ACTION
	The HDCP settings of one or more DigitalMedia devices in the signal path do not support the HDCP level of the source.	Ensure that the HDCP settings of all DigitalMedia devices in the signal path support the HDCP level of the source.
	The display does not support the HDCP level of the source.	Ensure that the display supports the HDCP level of the source.
The video is intermittent.	The HDMI cable connections are faulty.	Verify that each end of the cable is connected properly.
A message indicating that the resolution is unsupported appears on the display.	The scaler is not set to a resolution that the display can support.	Change the scaler resolution setting to a resolution that the display can support.
(DM-MD8X1-4K-C only) The DM-MD8X1-4K-C cannot establish a link to the device that is connected to the DM OUT port. The DM link status LED is off.	The cable connections are faulty.	Verify that each end of the cable is properly connected. If necessary, check the cable terminations.
	The EDID is not set to 2-channel audio in the web interface.	Set the EDID to 2-channel audio.
	The analog audio output is not programmed properly in SIMPL Windows.	Ensure that the analog audio output is programmed properly.
	The volume is not set properly in web interface or in SIMPL Windows.	Verify that the volume is set properly.
	The mixer is not enabled on the selected input in the web interface.	Ensure that the mixer is enabled on the selected input.
The video flickers or drops when the DM-MD8X1-4K-C or HD-MD8X1-4K is touched or when metal in the vicinity of the device is touched.	The device is not properly grounded.	Ensure that the device is properly grounded.

NOTE: If, for any reason, the factory default settings of the DM-MD8X1-4K-C or HD-MD8X1-4K must be restored, do the following: From the Tools menu in the Crestron Toolbox™ application, select Text Console and enter the following command:
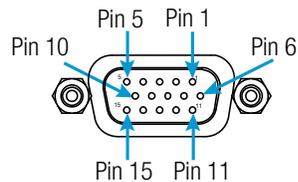
```
restore
```

Appendix. Pin Assignments

This section provides information about pin assignments and wiring for the following DM-MD8X1-4K-C and HD-MD8X1-4K connectors:

- VGA
- DM OUT (DM-MD8X1-4K-C only)
- AUDIO OUT
- LAN

VGA Pin Assignments

Pin 5 Pin 1
Pin 10   Pin 6
Pin 15 Pin 11

| PIN NUMBER	RGB	YPbPr	S-Video	Composite
1	R	Pr	C	
2	G	Y	Y	
3	B	Pb		COMP
5	GND	GND	GND	GND
6	RED_GND	Pr_GND	C_GND	
7	GRN_GND	Y_GND	Y_GND	
8	BLU_GND	Pb_GND		
13	H			
14	V			

NOTE: For best video performance, ground connections should be kept separate. Do not connect ground wires to the connector shell. The connector shell is reserved for the cable shield.
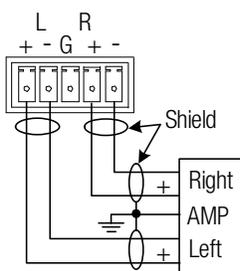
DM OUT Wiring

Pin 8 ——— Pin 1
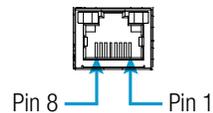
PIN NUMBER	WIRE COLOR	PIN NUMBER	WIRE COLOR
1	Orange/White	5	Blue/White
2	Orange	6	Green
3	Green/White	7	Brown/White
4	Blue	8	Brown

AUDIO OUT Pin Assignments and Wiring
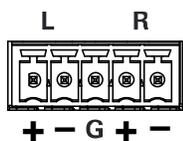
SIGNAL NAME	BALANCED AUDIO OUTPUT	UNBALANCED AUDIO OUTPUT
+	L+	L+ Out
–	L–	Open
G	Shield/Ground	Common Ground
+	R+	R+ Out
–	R–	Open

Balanced Output

Unbalanced Output

Shield

Right AMP Left

Right AMP Left
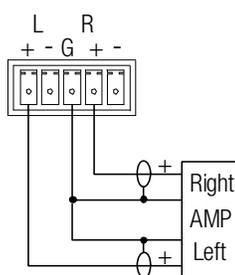
LAN Pin Assignments

Pin 8 — — Pin 1
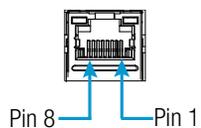
PIN NUMBER	SIGNAL	PIN NUMBER	SIGNAL
1	TX+	5	N/C
2	TX–	6	RX–
3	RX+	7	N/C
4	N/C	8	N/C

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