



DIGITALINX  
VALUE-ENGINEERED DIGITAL SOLUTIONS

# DL-HDM44A-H2 Owners Manual



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## Important Safety Instructions

- » Please completely read and verify you understand all instructions in this manual before operating this equipment.
- » Keep these instructions in a safe, accessible place for future reference.
- » Heed all warnings.
- » Follow all instructions.
- » Do not use this apparatus near water.
- » Clean only with a dry cloth.
- » Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- » Use only accessories specified or recommended by Intelix.
- » Explanation of graphical symbols:

◊ Lightning bolt/flash symbol: the lightning bolt/flash and arrowhead within an equilateral triangle symbol is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product enclosure which may be of sufficient magnitude to constitute a risk of shock to a person or persons.



◊ Exclamation point symbol: the exclamation point within an equilateral triangle symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.



- » **WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE AND OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHOULD NOT BE PLACED ON THIS APPARATUS.**
- » Use the mains plug to disconnect the apparatus from the mains.
- » **THE MAINS PLUG OF THE POWER CORD MUST REMAIN READILY ACCESSIBLE.**
- » Do not defeat the safety purpose polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of your obsolete outlet. **Caution! To reduce the risk of electrical shock, grounding of the center pin of this plug must be maintained.**
- » Protect the power cord from being walked on or pinched particularly at the plugs, convenience receptacles, and the point where they exit from the apparatus.
- » Do not block the air ventilation openings. Only mount the equipment per Intelix’s instructions.
- » Use only with the cart, stand, table, or rack specified by Intelix or sold with the equipment. When/if a cart is used, use caution when moving the cart/equipment combination to avoid injury from tip-over.
- » Unplug this apparatus during lightning storms or when unused for long periods of time.
- » **Caution! Shock Hazard. Do not open the unit.**
- » Refer to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.



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## Product Overview

The DigitaLinx DL-HDM44A-H2 is a four input by four output HDMI 2.0 matrix switcher with HDCP 2.2 support and capable of handling resolutions up to 4K@60Hz 4:4:4 / 8 bit color with static and dynamic HDR output support for each channel. The matrix features advanced independent EDID management control for each HDMI input as well as an Easy EDID analyzer. The analog and digital audio outputs on the DL-HDM44A-H2 can be set to follow the HDMI video route or can be independently routed either by API or web control interface. Built-in re-clocking circuitry ensures the switcher is backwards compatible with sources with older HDMI version chip sets.

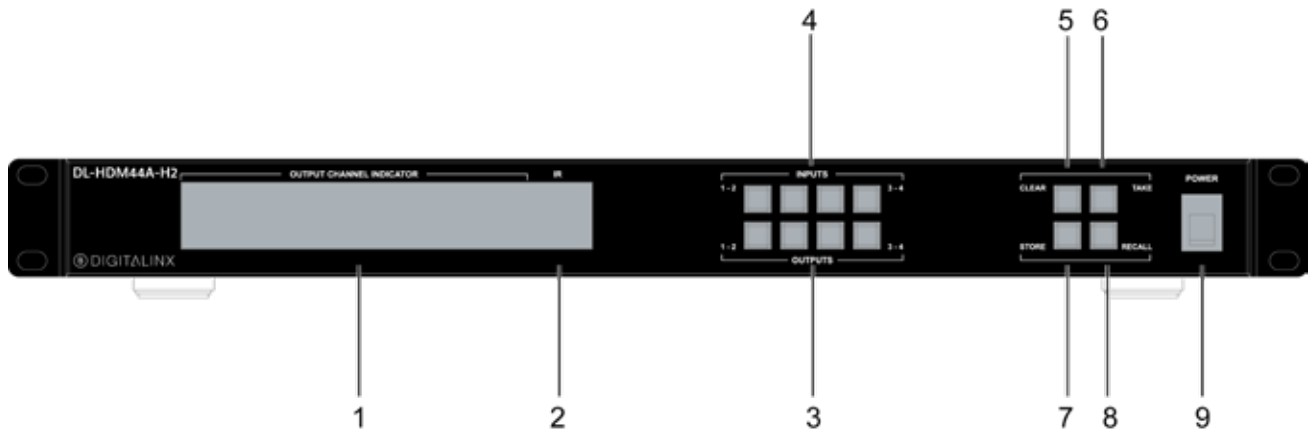
The DL-HDM44A-H2 can be controlled via front panel buttons, front panel IR, external IR, remote IR, RS232, and Ethernet. The matrix includes a simple IR remote control to allow IR switching. The matrix also features a full command set for RS232 and Ethernet control with third-party control systems, plus control via web user interface.

## Product Overview

- DL-HDM44A-H2 Matrix Switcher
- Quick Install Guide
- (1) Matrix IR Remote
- (1) IR Receiver (38KHz)
- (1) AC power adapter with US, UK, EU and AU power plugs
- (4) Phoenix Male Connector (3.5mm, 3 Pins)
- (2) Rack mounting clips with mounting screws

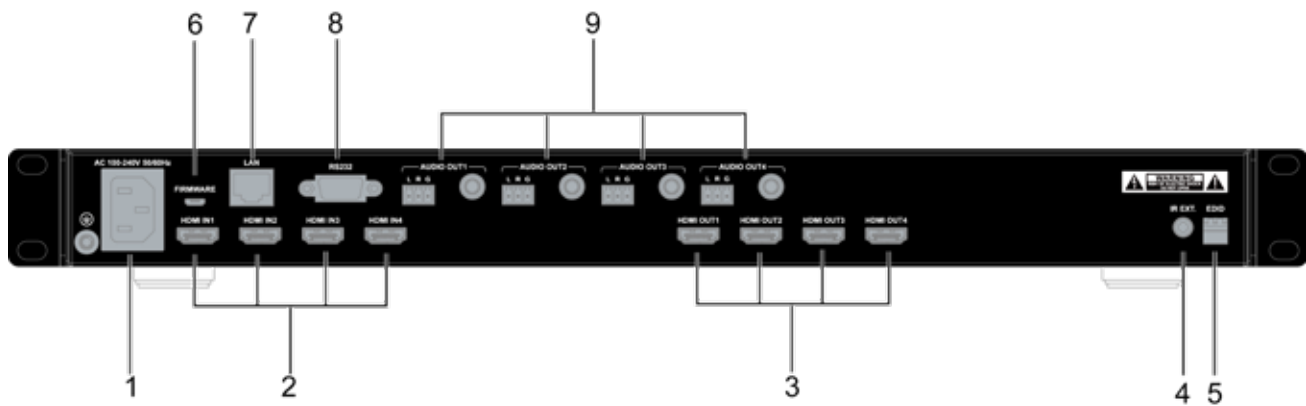
# Front and Rear Panels

## Front Panel



1. **OUTPUT CHANNEL INDICATOR** - Indicates input for output port 1-4
2. **IR** - Receives signals from IR remote
3. **INPUT 1-4** - Input 1-4 selection buttons
4. **OUTPUT 1-4** - Output 1-8 selection buttons
5. **CLEAR** - Clear button, clears the selection operation
6. **TAKE** - Take button, implements input selection
7. **STORE** - Store button, stores the matrix routes to preset
8. **RECALL** - Recall button, loads the matrix routes from preset
9. **POWER SWITCH** - Power switch for on/off control of matrix

## Rear Panel



1. **AC** - AC power cord input
2. **HDMI IN (1-4)** - HDMI input ports for connections to HDMI video sources
3. **HDMI IN (1-4)** - HDMI output ports for connections to displays
4. **IR EXT.** - 3.5mm IR input port for connection to IR extension cable
5. **EDID** - EDID switch for EDID management
6. **FIRMWARE** - USB port firmware updates
7. **LAN** - RJ45 port for LAN connection to network or control system for telnet control
8. **RS232** - DB9 port for connection to control system for serial control
9. **AUDIO OUT** - Audio de-embedded outputs for 1-4; phoenix for analog 2 channel audio and RCA for digital S/PDIF multichannel

# Installation Instructions

## ***Mount the Matrix***

At least 2 inches of free air space is required on both sides of the DL-HDM44A-H2 for proper side ventilation. Avoid mounting the DL-HDM44A-H2 near a power amplifier or any other source of significant heat.

### ***Rack Mounting Instructions***

Remove the rubber feet from the bottom of the matrix. Remove the larger two screws on both sides of the DL-HDM44A-H2.

Attach the supplied rack ears to the sides of the DL-HDM44A-H2 matrix. The matrix requires one rack unit (1 RU) of space. It is recommended that you leave an empty rack space above and below the DL-HDM44A-H2 for additional cooling.

## ***Connect Sources***

Connect the source devices to HDMI inputs using HDMI cables that are less than or equal to 1.5 meters in length for 4k60 signals. For source devices that are further away, it is highly recommended to install a Digitalinx DL-HD70, DL-HDE100, DL-HDE100-H2 or the DL-HD2100.

## ***Connect Displays***

Connect the display devices to HDMI outputs using HDMI cables that are less than or equal to 1.5 meters in length for 4k60 signals.. For display devices that are further away, it is highly recommended to install a Digitalinx DL-HD70, DL-HDE100, DL-HDE100-H2 or the DL-HD2100.

## ***Applying Power***

Insert the matrix power supply included and switch on power located on the front panel. Check that the front panel LED screen is on to indicate the matrix is ready for use.

## ***Switching Capabilities***

Switch between sources and displays using the matrix front panel buttons, IR remote control, serial RS232, or LAN. To set a route using the front panel of the DL-HDM44A-H2, press the desired Input button (Source) and desired Output button (Display), then press Take.

## ***Connect External IR Control***

If IR extension is required, connect the TRS 3.5 mm plug IR RX to the matrix IR EXT port, ensuring the IR receiver eye is placed in clear view of the handset used to control.



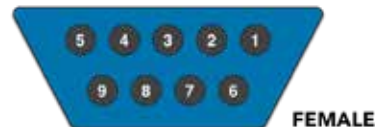
## Connect RS232 Control

The RS232 connection on the matrix is female DB9. User can use a USB to UART cable or a direct serial cable for matrix control. See below for control system configuration.

- 9600 baud
- 8 Data Bits
- 1 Stop Bit
- Parity = none

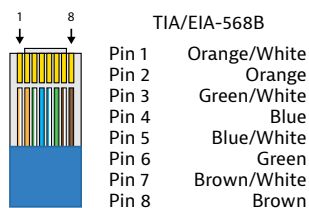
### Pinout:

Pin 2 - TRANSMIT  
Pin 3 - RECEIVE  
Pin 5 - GROUND



## Connect Ethernet (Web Browser) Control

The DL-HDM44A-H2 may be controlled via Ethernet through a web browser interface.



The TCP/IP port requires a standard straight-through Category 5 or greater cable with the TIA/EIA-568B crimp pattern for optimal operation.

The default settings for the TCP/IP port are:  
IP address: 192.168.0.178

Connect the Ethernet cable between to the matrix and a router with a straight-through cable or between the matrix and a computer with a crossover cable.

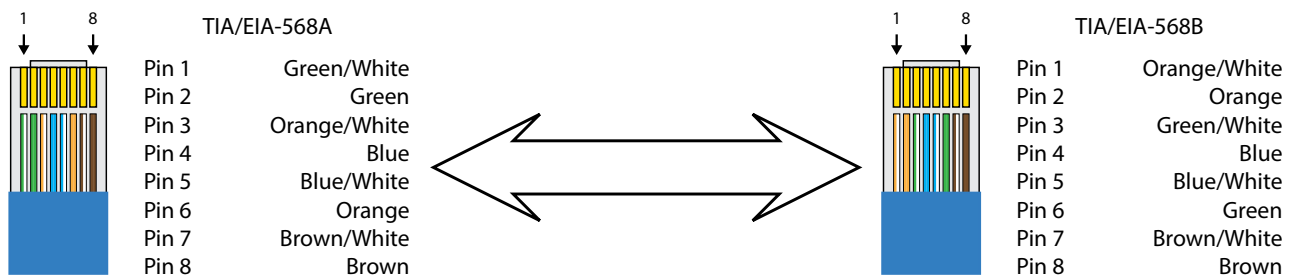
### Router Connection

1. Configure the router to use the same IP range as the matrix, such as 192.168.0.1.
2. Connect the computer to the router.
3. Connect the DL-HDM44A-H2 to the router

### Crossover Cable Connection

1. Configure the computer to use the same network prefix as the IP address assigned to the matrix. *For example, the IP address of the matrix is 192.168.0.178. Set the computer to use a static IP address within the same network range, such as 192.168.0.42.*
2. Connect the network crossover cable to the computer and to the TCP/IP port on the DL-HDM44A-H2

#### Crossover Cable Pinout



### Web Browser Control

The DL-HDM44A-H2 includes a web portal to allow control of the matrix via a standard web browser. The IP address is the same address that is used for TCP/IP control.

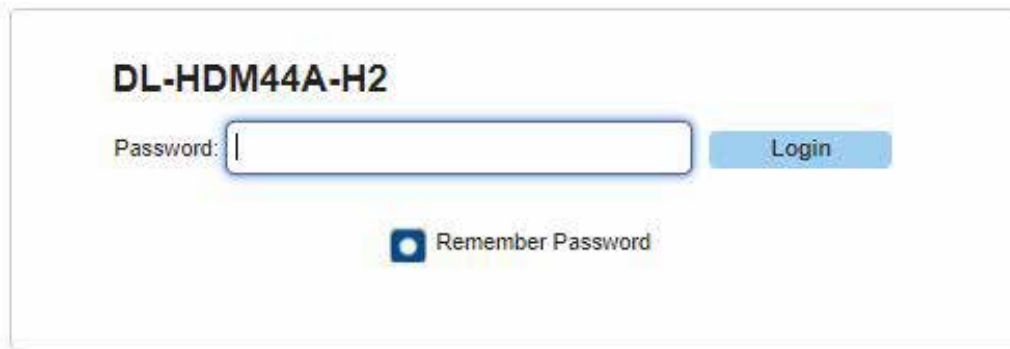
# Web Browser Control / System Settings

## **Matrix Control**

### *Connecting to Web Control Interface*

Open a web browser and type in IP address of the DL-HDM44A-H2. The default IP address is 192.168.0.178. Be sure the computer you are using to connect to the DL-HDM44A-H2 is in the same IP range.

The matrix login screen will appear. The default password is *admin*

The image shows a web browser login interface for the DL-HDM44A-H2 device. At the top, the text "DL-HDM44A-H2" is displayed in a bold, black font. Below this, there is a label "Password:" followed by a text input field. To the right of the input field is a blue button with the text "Login" in white. Below the input field and the "Login" button is a checkbox with a blue square icon and the text "Remember Password".

**DL-HDM44A-H2**

Password:

Login

☐ Remember Password

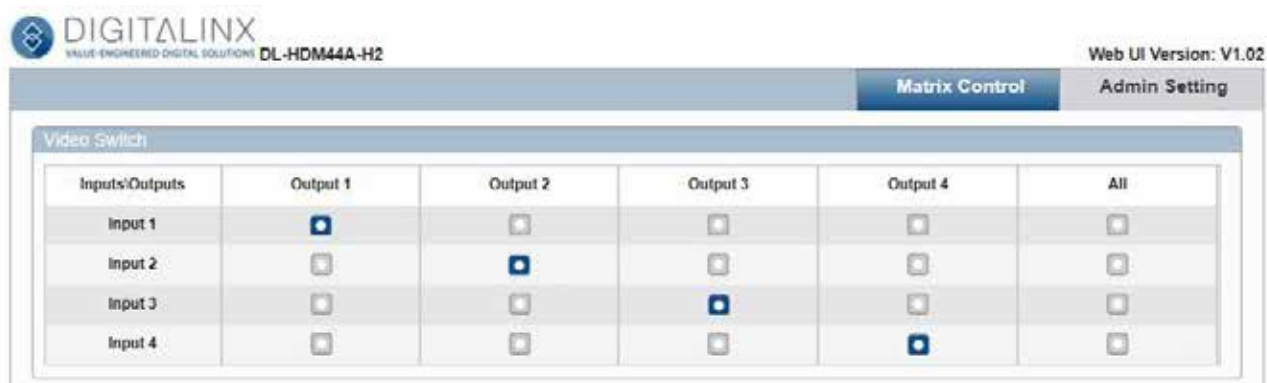
## Audio / Video Switching

After logging in, the main screen appears. It contains two sub-menus; *Matrix Control* and *Admin Setting* and defaults to *Matrix Control*.

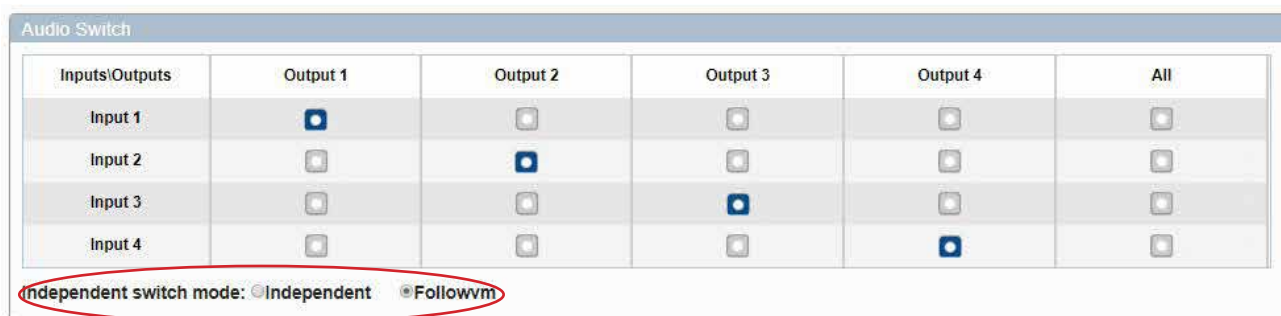
The *Matrix Control* menu allows you to control video routes and audio routes that can either follow the video routes or can be routed independently.

To switch the video route, check the desired output button corresponding to the desired input.

*All*: Checking the *ALL* button corresponding to the input will route the input signal to ALL outputs



By default the audio switching routes follows video, in order to change this option in the matrix control so audio can be routed independently, change the *Independent switch mode* underneath the audio switch matrix to *Independent*. Routing audio in the matrix control will function the same as the video control above.



## Saving and Loading Presets

In the *Matrix Control* section audio and video routes can be saved and recalled in presets.

To save the current routing scheme into a predefined preset to be recalled at a later time, click the *SAVE* button in the *Presets* section into preset location 1, 2 or 3. To recall the preset check the *LOAD* button.



## Changing System Status

In the *Matrix Control* section the switchers on and off state can be controlled. Check the *STANDBY* button to put the device in a OFF state, check the *WAKE* button to put the switcher into an ON state.



## API Log

The *Matrix Control* section features an API log that shows system commands and responses

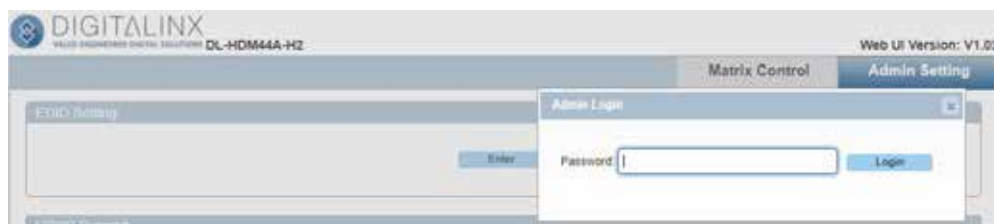


## Admin Settings

To adjust the admin settings for the DL-HDM44A-H2, click on *ADMIN SETTING* on the upper right hand corner of the *Matrix Control* page.



You will be prompted for a password which is by default 123456. This can be changed in the admin settings page if desired



## Adjusting EDID Settings

EDID settings for inputs can be adjusted in the web GUI control interface. Click on the *ENTER* button in the *EDID Setting* menu to access the settings



**Note:** In the EDID Settings menu, the EDID settings for each HDMI input will not be able to be adjusted if the EDID dip switches are set to a predefined EDID setting. In order to change the EDID settings for the inputs in the web GUI control interface, all three EDID dipswitches on the back of the DL-HDM44A-H2 must be changed to the UP position. If these switches are not in the UP position, change the dipswitches and do a power cycle for the settings to take affect. For more into on the EDID Management settings via dipswitch see page 18

Once the EDID settings menu has been opened users are given the ability to adjust the EDID for each individual HDMI input as well as reading the native EDID table from a display connected to an HDMI output that can be saved as a custom EDID setting.

To read an EDID table from a display connected to an output, select the desired HDMI output in the *OUTPUT* drop down menu, then click *READ*.

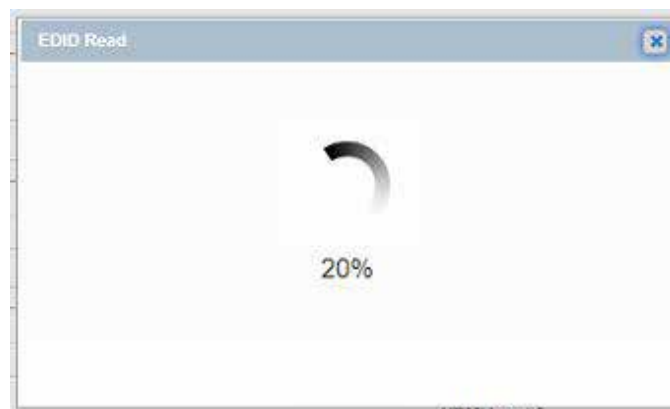


It is important to be sure that the display you are reading EDID from is connected to the selected output. If this is the case an error message will occur letting the user know the device is not connected

Once a display has been connected to the desired output, click *TRY AGAIN* to read EDID



A progress window will appear letting you know that the EDID settings are being read



The following window will appear once EDID read function is successful



Users now have the option to view the EDID table or to save the custom EDID table onto their computer.

To display the EDID table, click on *DISPLAY* in the *EDID READ* window. The EDID table will be displayed as followed:

|    | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 01 | 00 | FF | FF | FF | FF | FF | FF | 00 | 4D | D9 | 03 | CA | 01 | 01 | 01 | 01 |
| 02 | 01 | 19 | 01 | 03 | 80 | 7A | 44 | 78 | 0A | 0D | C9 | A0 | 57 | 47 | 98 | 27 |
| 03 | 12 | 48 | 4C | 21 | 08 | 00 | 81 | 80 | A9 | C0 | 71 | 4F | B3 | 00 | 01 | 01 |
| 04 | 01 | 01 | 01 | 01 | 01 | 01 | 02 | 3A | 80 | 18 | 71 | 38 | 2D | 40 | 58 | 2C |
| 05 | 45 | 00 | C2 | AD | 42 | 00 | 00 | 1E | 01 | 1D | 00 | 72 | 51 | D0 | 1E | 20 |
| 06 | 6E | 28 | 55 | 00 | C2 | AD | 42 | 00 | 00 | 1E | 00 | 00 | 00 | FC | 00 | 53 |
| 07 | 4F | 4E | 59 | 20 | 54 | 55 | 20 | 20 | 2A | 30 | 32 | 0A | 00 | 00 | 00 | FD |
| 08 | 00 | 30 | 3E | 0E | 46 | 3C | 00 | 0A | 20 | 20 | 20 | 20 | 20 | 20 | 01 | D4 |
| 09 | 02 | 03 | 56 | F0 | 5B | 61 | 60 | 5D | 5E | 62 | 1F | 10 | 14 | 05 | 13 |    |
| 10 | 04 | 20 | 22 | 3C | 3E | 12 | 16 | 03 | 07 | 11 | 15 | 02 | 06 | 01 | 65 | 66 |
| 11 | 29 | 0D | 7F | 07 | 15 | 07 | 50 | 3D | 07 | BC | 83 | 0F | 00 | 00 | 6E | 03 |
| 12 | 0C | 00 | 30 | 00 | B8 | 3C | 2F | 00 | 80 | 01 | 02 | 03 | 04 | 67 | D8 | 5D |
| 13 | C4 | 01 | 78 | 80 | 01 | E2 | 00 | F9 | E3 | 05 | FF | 01 | E5 | 0F | 03 | 00 |
| 14 | 00 | 06 | E3 | 06 | 0D | 01 | 01 | 1D | 80 | 18 | 71 | 1C | 16 | 20 | 58 | 2C |
| 15 | 25 | 00 | C2 | AD | 42 | 00 | 00 | 9E | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 |
| 16 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 00 | 40 |

To save the custom EDID table file onto your computer, click the *SAVE AS* button in the *EDID READ* window, this will prompt you to save the EDID file (.bin) onto a local storage drive on your computer to be used in the *EDID Write* option in the *EDID Settings* menu.

See pg 17 for EDID Write instructions



To adjust EDID settings for each HDMI input in the *EDID Setting* menu, choose an option from the drop down menu for the desired HDMI input and click *APPLY*



Below is a brief explanation for each drop down menu option:

*Copy from Output (1-4)* - Choosing this option will copy the EDID from a display connected to the corresponding output

*Fix 4K@60Hz 2.0ch audio WITH HDR* - Choosing this option gives you up to 4K@60Hz video with 2.0 channel audio with HDR capability

*Fix 4K@30Hz 7.1ch audio WITH HDR* - Choosing this option gives you up to 4K@30Hz video with 8 channel audio with HDR capability

*Fix 4K@30Hz 5.1ch audio WITH HDR* - Choosing this option gives you up to 4K@30Hz video with 6 channel audio with HDR capability

*Fix 4K@30Hz 2ch audio WITH HDR* - Choosing this option gives you up to 4K@30Hz video with 2 channel audio with HDR capability

*Fix 4K@30Hz/8Bit Only 2CH Audio without HDR* - Choosing this option gives you up to 4K@30Hz video / 8 bit deep color only with 2 channel audio, this does not support HDR

*1080p@60Hz 2.0ch audio* - Choosing this option gives you up to 1080p 60Hz with 2 channel audio

*Easy Edid* - Choosing this option will select lowest common denominator resolution and EDID settings from all collective outputs. *See page 22 for Easy EDID explanation*

*EDID Write* - Allows you to write a custom EDID file for the designated input

**Note:** Choosing this option will prompt you to browse an EDID file (.bin) from the local storage on the computer to write into the selected input. *See page 16 on creating a custom EDID file from an output to use with this function*

Adjusting HDCP Support

To adjust HDCP support for an input in the *Admin Settings*, check either the ON or OFF button under the desired HDMI input in the *HDCP Support* menu. To update the current support settings click *REFRESH*

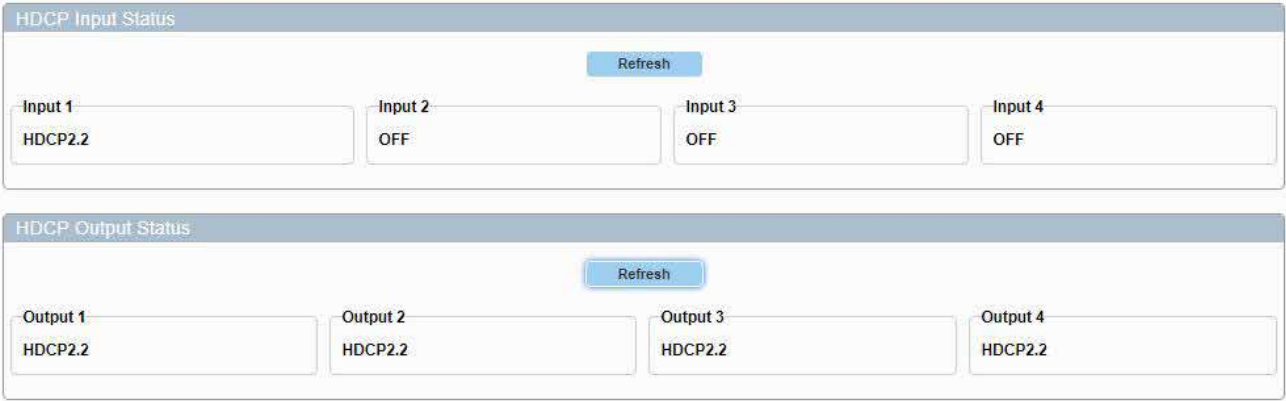
**NOTE:** Encrypted video content will NOT pass on an input where the HDCP support has been turned off



Viewing HDCP Input and Output Status

To view the current HDCP version status on each input and output, click the *REFRESH* button in the *HDCP Input Status* and *HDCP Output Status* menus

In the example below, HDCP 2.2 encrypted content is being transmitted from HDMI input 1 to all outputs. The status for all ports shows the encryption version status.



### Changing the Audio and Video Alias Names

To adjust the alias names for the audio and video inputs and outputs in the matrix control, enter the desired alias name for each in the *Video Alias Name* and *Audio Alias Name* menus, then click *SAVE* to apply the changes or *RESET* to reset the fields to factory default.

**Note:** The character length for each alias is limited to 15 characters; only letters, numbers and spaces are allowed. No punctuation supported.

#### Video Alias Name

|         |                                      |          |                                       |
|---------|--------------------------------------|----------|---------------------------------------|
| Input 1 | <input type="text" value="Input 1"/> | Output 1 | <input type="text" value="Output 1"/> |
| Input 2 | <input type="text" value="Input 2"/> | Output 2 | <input type="text" value="Output 2"/> |
| Input 3 | <input type="text" value="Input 3"/> | Output 3 | <input type="text" value="Output 3"/> |
| Input 4 | <input type="text" value="Input 4"/> | Output 4 | <input type="text" value="Output 4"/> |

Note: The length of name is limited to 15 characters (only letters, numbers or space, can't included punctuation) each.

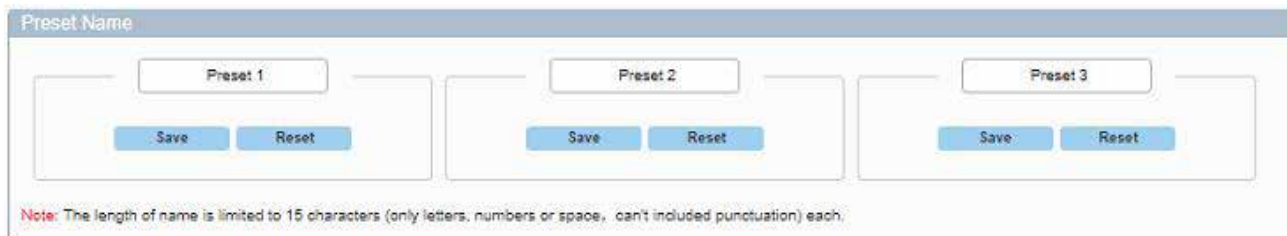
#### Audio Alias Name

|         |                                      |          |                                       |
|---------|--------------------------------------|----------|---------------------------------------|
| Input 1 | <input type="text" value="Input 1"/> | Output 1 | <input type="text" value="Output 1"/> |
| Input 2 | <input type="text" value="Input 2"/> | Output 2 | <input type="text" value="Output 2"/> |
| Input 3 | <input type="text" value="Input 3"/> | Output 3 | <input type="text" value="Output 3"/> |
| Input 4 | <input type="text" value="Input 4"/> | Output 4 | <input type="text" value="Output 4"/> |

Note: The length of name is limited to 15 characters (only letters, numbers or space, can't included punctuation) each.

### Changing Preset Names

To adjust the preset names for the three given routing presets, enter a desired name into either *Preset 1*, *2* or *3* in the *Preset Name* menu then click *SAVE*. Click *RESET* to reset the names to factory default



### Changing Network Address Settings

The IP address of the DL-HDM44A-H2 can be predefined by a static address or can be given automatically by a DHCP server. By default the static IP address is 192.168.0.178 and the subnet mask is 255.255.0.0 and the default gateway is 192.168.0.1. To change the static address information, enter the desired IP address, Subnet Mask and Default Gateway address in the *NETWORK* menu and click *APPLY*

To change the static IP address to a DHCP given address, check the DHCP box and click *APPLY*

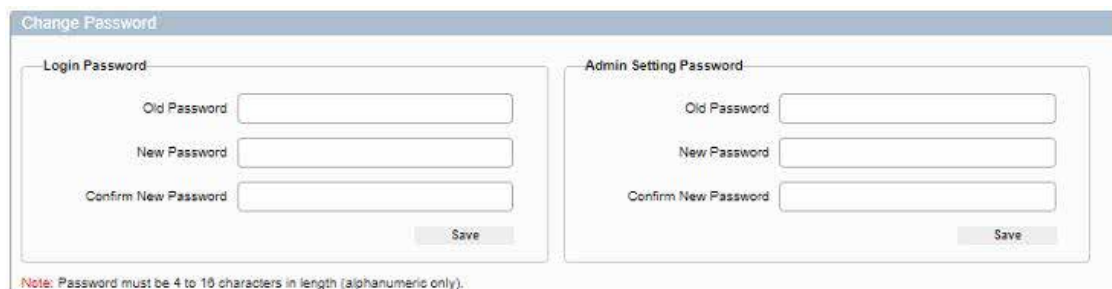


### Changing Password for Matrix Control and Admin Setting

The password for the web Matrix Control and the Admin Settings page can be changed.

In the *Change Password* menu, type in the old password, desired new password for each login type and click *SAVE*.

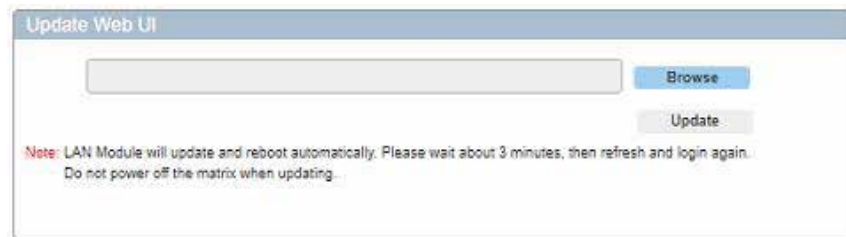
**Note:** passwords must be 4-16 characters in length and only support alpha numeric



### Updating Web Interface

Occasionally updates to the web GUI interface will be required, the *Update WEB UI* menu will allow you to update the interface.

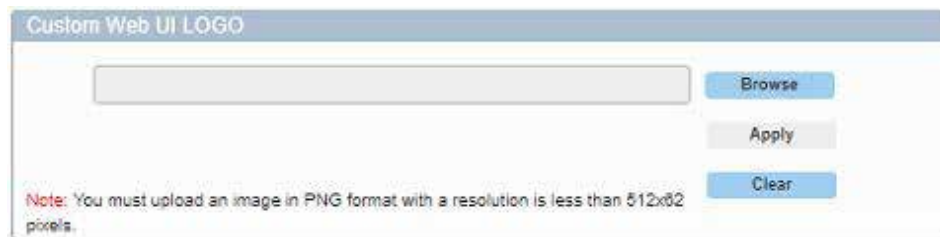
**NOTE:** Only use Liberty issued update files for updating the user interface



### Uploading a Custom Web Logo

To upload a custom image for the web user interface click *BROWSE* in the *Custom WEB UI LOGO* menu to locate an image file on a computer, then click *APPLY*

**NOTE:** PNG formatted images are only allowed for custom logos with less than or equal to 512 x 62 pixels



### Factory Default and Reboot

To set the DL-HDM44A-H2 to factory default or to reboot the unit, click *RESET TO DEFAULTS* or *REBOOT* in the *Factory Default and Reboot* menu



### API Log Show / Hide

The API log in the web GUI can be turned on or off, check either the *SHOW* or *HIDE* button in the *LOG* menu



## EDID Management

EDID (Extended Display Identification Data) is data generated from each display in the system to communicate the capabilities of the device. The matrix features an EDID copy mode that can be used when the EDID table does not meet the installation requirements

### EDID Presets

**Note:** If you change the EDID, re-power the matrix for the changes to take effect.

| EDID Setting                           | Position 1 | Position 2 | Position 3 |
|----------------------------------------|------------|------------|------------|
| EDID Copy or by Web GUI Control        | UP         | UP         | UP         |
| 4K@60Hz 2.0ch audio With HDR           | UP         | UP         | DOWN       |
| 4K@30Hz 7.1ch audio With HDR           | UP         | DOWN       | UP         |
| 4K@30Hz 5.1ch audio With HDR           | UP         | DOWN       | DOWN       |
| 4K@30Hz 2.0ch audio With HDR           | DOWN       | UP         | UP         |
| 4K@30Hz/8bit only 2.0ch audio / No HDR | DOWN       | UP         | DOWN       |
| 1080P@60Hz 2.0ch audio                 | DOWN       | DOWN       | UP         |
| Easy EDID On                           | DOWN       | DOWN       | DOWN       |

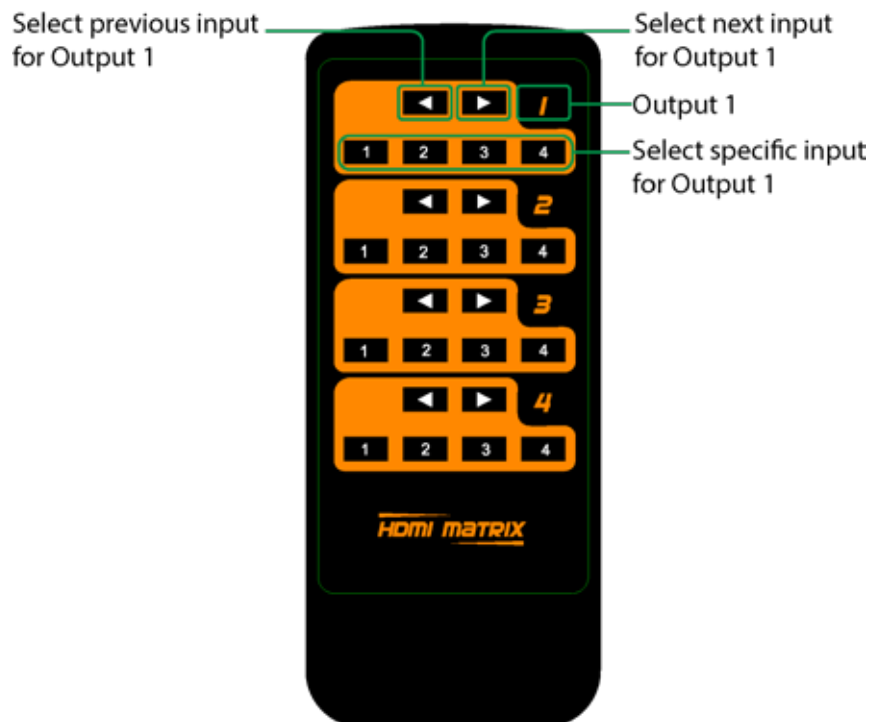
**Note:** When using web UI to copy EDID and the copy process fails, the EDID will be replaced by [4k@30Hz/8bit only without HDR] EDID.

When using the **Easy EDID** setting, the DL-HDM44A-H2 will analyze the EDID settings of all the displays connected to the switcher and will locate the lowest common denominator EDID settings on a display and will set the input EDID for each HDMI input according to the lowest resolution / EDID setting for that display so ALL displays connected to the DL-HDM44A-H2 can receive content.

The Easy Edid feature analyzes EDID on all outputs on every dynamic switch, if lowest common denominator EDID is the same no changes will be made to the source resolution. However if the lowest common denominator EDID settings is found to be a higher resolution than the previous EDID settings, the sources will adjust automatically to the new EDID settings and resolution. This will cause a brief blackout of image as image resolution is being reset from the sources.

# IR Remote Control

The DL-HDM44A-H2 includes a IR remote which performs routing functions available on the front panel of the matrix. When using the remote control locally, i.e., pointed directly at the matrix, the previous/next buttons are used to scroll between the input sources connected to the matrix for each individual output display.



## RS232 and TCP/IP Control

RS232 Settings: 9600 baud, 8 Data bits, 1 Stop bit, Parity = None

TCP/IP Settings: User defined IP address (default IP address:192.168.0.178), port 23

There are no spaces between any of the characters in the command string. The commands are case sensitive

All responses end in a carriage return (hex 0D) and a line feed (hex 0A).

<CR> = Carriage return (Hex 0D)

<LF> = Line Feed (Hex 0A)

### HDCP Management Commands

| Description                                                          | Command                                                                                               | Examples                                                                                                                                 |
|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Turns HDCP support ON/OFF <i>[p]</i> on matrix input port <i>[i]</i> | SET HDCP IN <i>[i]</i> <i>[p]</i><br><br><i>[i]</i> = <i>[01-04]</i><br><i>[p]</i> = <i>[on, off]</i> | Command:<br>SET HDCP IN 01 on<CR><LF><br><br>Response:<br>HDCP IN 01 on<CR><LF>                                                          |
| Query HDCP status of a source input <i>[i]</i>                       | GET HDCPV IN <i>[i]</i><br><br><i>[i]</i> = 01-04                                                     | Command:<br>GET HDCPV IN 01<CR><LF><br><br>Response:<br>HDCPV IN 01 14<CR><LF><br><br>14 = HDCP 1.4<br>22 = HDCP 2.2<br>off = Non-HDCP   |
| Query HDCP support status of matrix input port <i>[i]</i>            | GET HDCP IN <i>[i]</i><br><br><i>[i]</i> = 01-04                                                      | Command:<br>GET HDCP IN 01<CR><LF><br><br>Response:<br>HDCP IN 01 on<CR><LF>                                                             |
| Query HDCP version of an input <i>[i]</i>                            | GET HDCPV IN <i>[i]</i><br><br><i>[i]</i> = 01-04                                                     | Command:<br>GET HDCPV IN 01<CR><LF><br><br>Response:<br>HDCPV IN 01 14<CR><LF><br><br>14 = HDCP 1.4<br>22 = HDCP 2.2<br>off = Non-HDCP   |
| Query HDCP version of an output <i>[o]</i>                           | GET HDCPV OUT <i>[o]</i><br><br><i>[o]</i> = 01-04                                                    | Command:<br>GET HDCPV OUT 01<CR><LF><br><br>Response:<br>HDCPV OUT 01 14<CR><LF><br><br>14 = HDCP 1.4<br>22 = HDCP 2.2<br>off = Non-HDCP |



### Matrix Routing Commands

| Description                                       | Command                                                   | Examples                                                                                                                                                                                                  |
|---------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Set input <i>[i]</i> to output <i>[o]</i> route   | <pre>SET [i] [o]  [i] = [01-04] [o] = [01-04]</pre>       | <p>Command:</p> <pre>SET 04 02&lt;CR&gt;&lt;LF&gt;</pre> <p>Response:</p> <pre>04&gt;02&lt;CR&gt;&lt;LF&gt;</pre>                                                                                         |
| Query a specific output port <i>[o]</i> route     | <pre>GET [o]  [o] = [01-04]</pre>                         | <p>Command:</p> <pre>GET 02&lt;CR&gt;&lt;LF&gt;</pre> <p>Response:</p> <pre>02&gt;01&lt;CR&gt;&lt;LF&gt;</pre>                                                                                            |
| Set an input <i>[i]</i> route to all outputs      | <pre>SET [i] ALL&lt;CR&gt;&lt;LF&gt;  [i] = [01-04]</pre> | <p>Command:</p> <pre>SET 02 ALL&lt;CR&gt;&lt;LF&gt;</pre> <p>Response:</p> <pre>02&gt;01&lt;CR&gt;&lt;LF&gt; 02&gt;02&lt;CR&gt;&lt;LF&gt; 02&gt;03&lt;CR&gt;&lt;LF&gt; 02&gt;04&lt;CR&gt;&lt;LF&gt;</pre> |
| Query routing status of all inputs to all outputs | <pre>GET ALL&lt;CR&gt;&lt;LF&gt;</pre>                    | <p>Command:</p> <pre>GET ALL&lt;CR&gt;&lt;LF&gt;</pre> <p>Response:</p> <pre>01&gt;01&lt;CR&gt;&lt;LF&gt; 02&gt;02&lt;CR&gt;&lt;LF&gt; 03&gt;03&lt;CR&gt;&lt;LF&gt; 04&gt;04&lt;CR&gt;&lt;LF&gt;</pre>    |

## Audio Routing Commands

**NOTE:** By default the audio de-embedded outputs follow the video route. Below are commands you can use to breakaway audio so it can be separated and routed independently from video.

| Description                                                                     | Command                                                                                                  | Examples                                                                                        |
|---------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| Set audio switching mode <i>[P]</i> to either follow video or to be independent | SET AUDIOSW_M <i>[P]</i><br><br><i>[P]</i> = <i>[followvm]</i><br><i>[independent]</i>                   | Command:<br>SET AUDIOSW_M independent<CR><LF><br><br>Response:<br>AUDIOSW_M independent<CR><LF> |
| Query audio switching mode                                                      | GET AUDIOSW_M                                                                                            | Command:<br>GET AUDIOSW_M<CR><LF><br><br>Response:<br>AUDIOSW_M independent<CR><LF>             |
| Set audio input <i>[i]</i> to audio output <i>[o]</i> route                     | SET AUDIOSW <i>[i]</i> <i>[o]</i><br><br><i>[i]</i> = <i>[01-04]</i><br><i>[o]</i> = <i>[01-04, ALL]</i> | Command:<br>SET AUDIOSW 01 02<CR><LF><br><br>Response:<br>AUDIOSW hdmiin1 audioout2<CR><LF>     |
| Query audio route for output <i>[o]</i>                                         | GET AUDIOMP <i>[o]</i><br><br><i>[o]</i> = <i>[01-04, ALL]</i>                                           | Command:<br>GET AUDIOMP 02<CR><LF><br><br>Response:<br>AUDIOMP hdmiin1 audioout2<CR><LF>        |

## System Commands

| Description                                                 | Command                       | Examples                                                                                                                                                                                                                                                         |
|-------------------------------------------------------------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Saves a matrix state to one of three memory locations {p}   | SAVE {p}<br><br>{p} = [01-03] | <p>Command:<br/>SAVE 02&lt;CR&gt;&lt;LF&gt;</p> <p>Response:<br/>PRESET SAVED&lt;CR&gt;&lt;LF&gt;</p>                                                                                                                                                            |
| Loads a matrix state from one of three memory locations {p} | LOAD {p}<br><br>{p} = [01-03] | <p>Command:<br/>LOAD 02&lt;CR&gt;&lt;LF&gt;</p> <p>Response:<br/>AUDIOMP hdmi1 audioout1&lt;CR&gt;&lt;LF&gt;<br/>AUDIOMP hdmi1 audioout2&lt;CR&gt;&lt;LF&gt;<br/>AUDIOMP hdmi1 audioout3&lt;CR&gt;&lt;LF&gt;<br/>AUDIOMP hdmi1 audioout4&lt;CR&gt;&lt;LF&gt;</p> |
| Restores the matrix to factory defaults                     | RST                           | <p>Command:<br/>RST&lt;CR&gt;&lt;LF&gt;</p> <p>Response:<br/>RESTORING FACTORY DEFAULTS&lt;CR&gt;&lt;LF&gt;</p>                                                                                                                                                  |
| System Reboot                                               | REBOOT                        | <p>Command:<br/>REBOOT&lt;CR&gt;&lt;LF&gt;</p> <p>Response:<br/>Reboot the device&lt;CR&gt;&lt;LF&gt;</p>                                                                                                                                                        |
| Switch to Standby Mode                                      | STANDBY                       | <p>Command:<br/>STANDBY&lt;CR&gt;&lt;LF&gt;</p> <p>Response:<br/>STANDBY!&lt;CR&gt;&lt;LF&gt;</p>                                                                                                                                                                |
| Switch to Wake Mode                                         | WAKE                          | <p>Command:<br/>WAKE&lt;CR&gt;&lt;LF&gt;</p> <p>Response:<br/>WAKE!&lt;CR&gt;&lt;LF&gt;</p>                                                                                                                                                                      |
| Get Standby Status                                          | GET STANDBY                   | <p>Command:<br/>GET STANDBY&lt;CR&gt;&lt;LF&gt;</p> <p>Response:<br/>STANDBY!&lt;CR&gt;&lt;LF&gt;</p>                                                                                                                                                            |

# Technical Specifications

|                                                     |                                                                                                                                      |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <b>Input/Output Connections</b>                     |                                                                                                                                      |
| HDMI Inputs                                         | Four (4) HDMI Type A Receptacle                                                                                                      |
| HDMI Outputs                                        | Four (4) HDMI Type A Receptacle                                                                                                      |
| IR                                                  | One (1) 3.5mm TRS                                                                                                                    |
| TCP/IP                                              | One (1) 8P8C Port (Shielded RJ45 Female)                                                                                             |
| RS232                                               | One (1) DB9 Port Female                                                                                                              |
| Power                                               | One (1) IEC C14                                                                                                                      |
| Audio                                               | - Eight (4) Analog L/R audio outputs, 3-Pin 3.5mm Phoenix connectors<br>- Eight (4) Digital S/PDIF audio outputs, RCA connectors     |
| <b>Supported Audio, Video, and Embedded Control</b> |                                                                                                                                      |
| Video Resolutions                                   | Up to 4K@60Hz 4:4:4 8 bit<br>Color Depth: 1080p 48bit / 4K 24bit                                                                     |
| Maximum Passive HDMI Cable Distance                 | 1.5m for 4k60 signals                                                                                                                |
| Video Compliance                                    | HDMI 2.0b and HDCP 2.2                                                                                                               |
| Embedded Audio                                      | Up to PCM 8 channel, Dolby Digital TrueHD, and DTS-HD Master Audio                                                                   |
| De-embedded Audio                                   | Analog L/R Out: PCM 2.0<br>Digital RCA S/PDIF Out: Up to Dolby 5.1, DTS 5.1                                                          |
| <b>Device Control Parameters</b>                    |                                                                                                                                      |
| IR Carrier Frequency Range                          | 38kHz at 5 volts                                                                                                                     |
| Ethernet                                            | 100BaseT                                                                                                                             |
| RS232 Baud Rate                                     | 9600 baud                                                                                                                            |
| <b>Chassis and Environmental</b>                    |                                                                                                                                      |
| Enclosure                                           | Painted Aluminum                                                                                                                     |
| Dimensions (H x W x D)                              | 43.5 mm x 440 mm x 300 mm (1.71 in x 17.32 in x 11.81 in) – 1 RU                                                                     |
| Shipping Weight                                     | 4.22kg (9.30 lbs.)                                                                                                                   |
| Operating Temperature                               | 0° to +45° C (+32° to +113° F)                                                                                                       |
| Operating Humidity                                  | 10% to 90%, Non-condensing                                                                                                           |
| Storage Temperature                                 | -20° to +70° C (-4° to +140° F)                                                                                                      |
| Storage Humidity                                    | 10% to 90%, Non-condensing                                                                                                           |
| <b>Power, ESD, and Regulatory</b>                   |                                                                                                                                      |
| Power Supply                                        | 100V-240VAC / 50-60 Hz                                                                                                               |
| Power Consumption                                   | 60W (Max.)                                                                                                                           |
| ESD Protection                                      | 8kV air, 4kV contact                                                                                                                 |
| Product Regulatory                                  | FCC, CE, RoHS                                                                                                                        |
| <b>Other</b>                                        |                                                                                                                                      |
| Standard Warranty                                   | 5 years                                                                                                                              |
| Diagnostic Indicators                               | System LCD                                                                                                                           |
| Included Accessories                                | Quick Install Guide, IR Remote, IR Receiver, Rack Mounting Ears with Screws, (1) AC power adapter with US, UK, EU and AU power plugs |

Distances and picture quality may be affected by cable grade, cable quality, source and destination equipment, RF and electrical interference, and cable patches.

Thank you for your purchase.

Please contact us with your questions and comments.

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