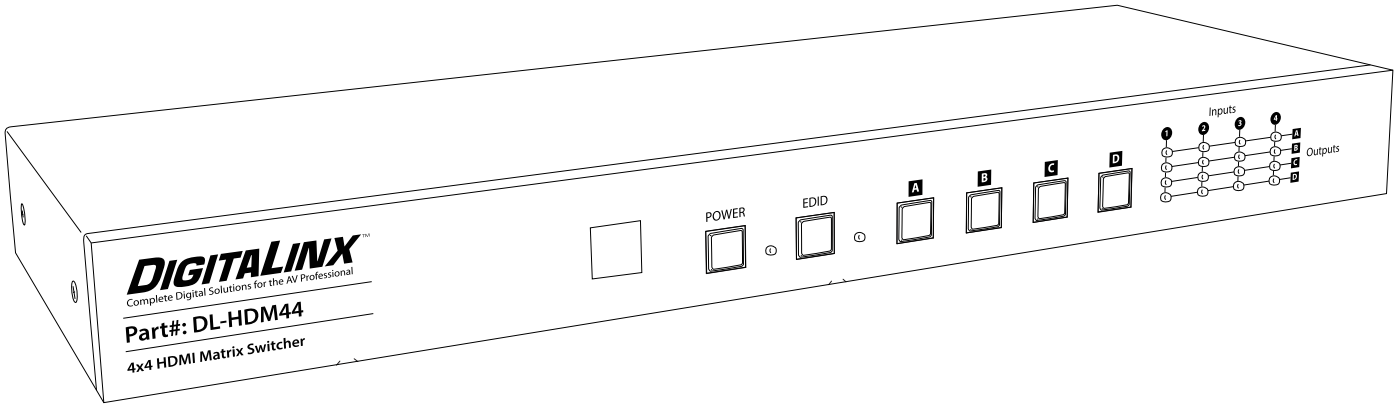
DL-HDM44 Installation and Operation Guide



Rev 140411

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Colorado Springs, CO 80921

Phone: 719-260-0061
Toll-Free: 800-530-8998
Fax: 719-260-0075

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.

Table of Contents

Product Overview 6
Package Contents 7
Front and Rear Panels 8
Front Panel 8
Rear Panel 8
IR Remote 9
Installation Instructions 10
Quick Start 10
Mount the Matrix 10
Shelf Mounting Instructions 10
Rack Mounting Instructions 10
Connect Sources 11
Connect Displays 11
Connect External IR Control 11
Connect RS232 Control 12
Connect TCP/IP (Ethernet) Control 12
Router Connection 13
Crossover Cable Connection 13
Web Browser Control 13
Apply Power 14
Front Panel and IR Remote Operation 15
Front Panel Operation 15
IR Remote Operation 15
Web Browser Control 16
Matrix Status 16
Matrix Control 16
Network Setting 17
EDID Management 18
RS232 Commands 19
Routing Commands 19
System Commands 19
EDID Commands 20
TCP/IP Setup Commands 20

Troubleshooting 21
Matrix does not power on 21
Cannot view 3D content 21
Cannot view 4K content 21
Cannot hear surround sound audio 21
Technical Specifications 22

Product Overview

The Digitalinx DL-HDM44 is a four input by four output HDMI matrix switcher. The DL-HDM44 supports up to 4K video resolutions, Deep Color, and 3D video.

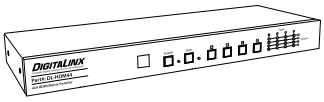
The DL-HDM44 can be controlled via front panel buttons, front panel IR, external IR, RS232, and through a web browser when the matrix is connected to a network. The matrix includes a simple IR remote control to allow IR switching. The EDID settings for the matrix, either 1080p with stereo audio or the EDID of the display on Output A, are toggled by a button on the front of the matrix.

To extend the inputs or the outputs of the DL-HDM44 beyond the 5 meter cable limitation, please use the DL-HD70 or DL-HDE100.

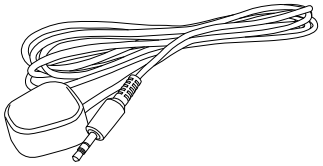
Package Contents

Please verify the following items are in the shipping box prior to installation of the DL-HDM44.

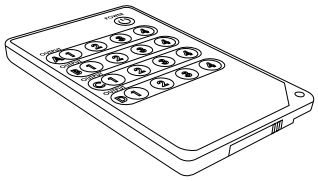
DL-HDM44
Matrix Switcher
1 ea



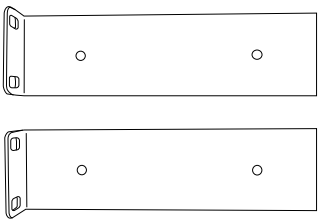
IR Receiver
1 ea



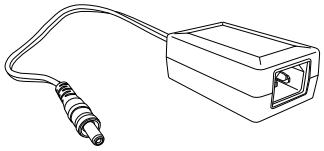
Infrared Remote Control
1 ea



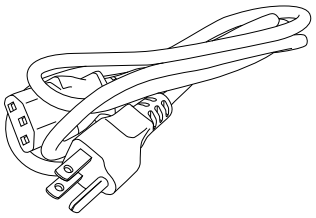
Rack Ears
2 ea



5V DC 3.6A Power
Supply
1 ea



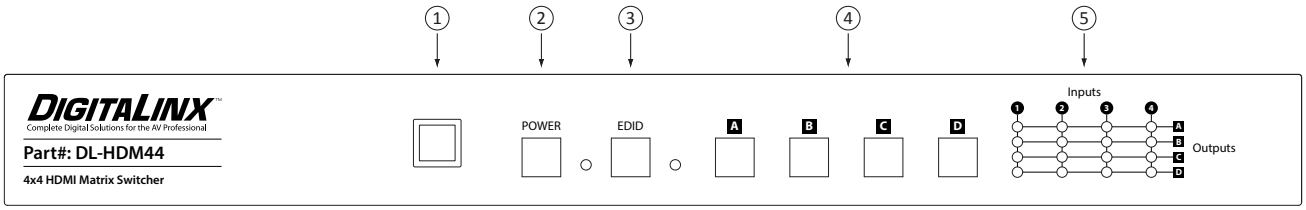
US Power Cable
1 ea



DL-HDM44 Installation
and Operation Guide
1 ea

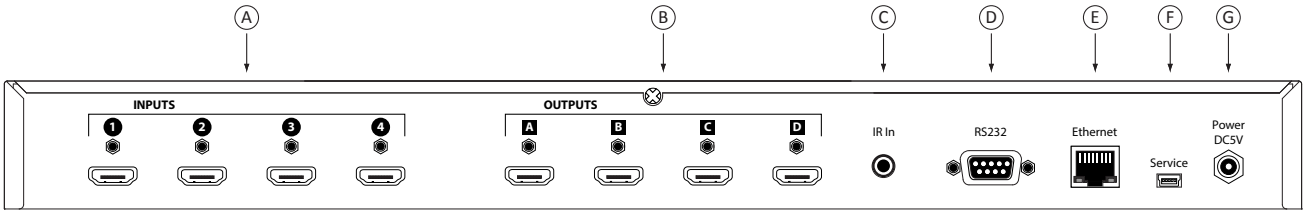
Front and Rear Panels

Front Panel



1. IR receiver for matrix control via IR remote
2. Power button and LED
3. EDID button and LED
4. Output cycle buttons
5. Matrix routing status LEDs

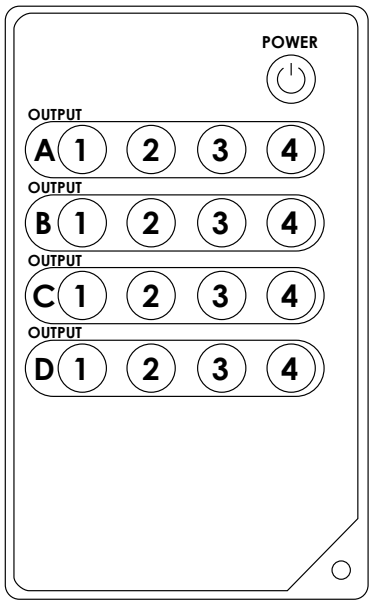
Rear Panel



A. HDMI Inputs
B. HDMI Outputs
C. IR input for matrix when front is covered or matrix is located in a concealed location
D. RS232 control input
E. TCP/IP (Ethernet) control input for control via web browser
F. Mini USB for firmware updates
G. 5V DC power input

IR Remote

The included IR remote features discrete input selection buttons for each output. It also has a power toggle button to turn off the matrix when not in use. Please see page 15 for IR Remote Operation.



Installation Instructions

Quick Start

1. Mount the matrix
2. Connect sources
3. Connect displays
4. Connect control (optional)
5. Apply power

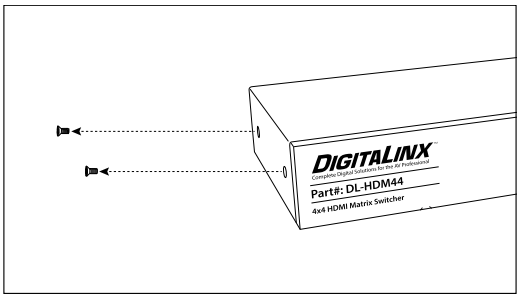
Mount the Matrix

At least 2 inches of free air space is required on both sides of the DL-HDM44 for proper side ventilation. Avoid mounting the DL-HDM44 near a power amplifier or any other source of significant heat.

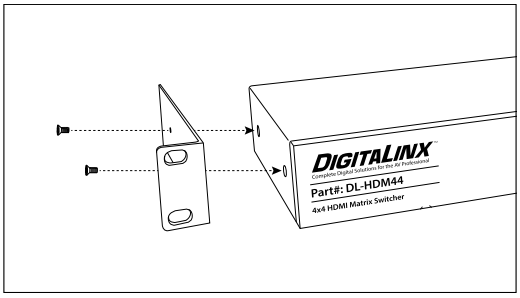
Shelf Mounting Instructions

Rubber shelf feet are already attached to the bottom of the DL-HDM44 to help accelerate the installation of the DL-HDM44.

Rack Mounting Instructions

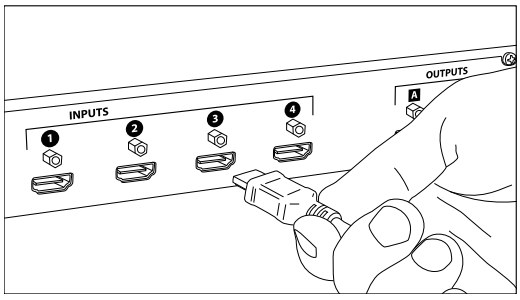


Remove the rubber feet from the bottom of the matrix. Remove the larger two screws on both sides of the DL-HDM44.



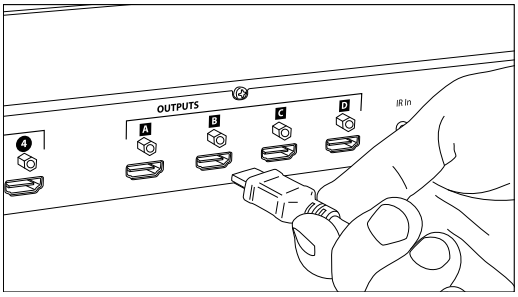
Attach the supplied rack ears to the sides of the DL-HDM44 matrix. The matrix requires one rack unit (1 RU) of space. It is recommended that you leave an empty rack space above and below the DL-HDM44 for additional cooling.

Connect Sources



Connect the source devices to HDMI inputs using HDMI cables that are less than or equal to 5 meters in length. For source devices that are further away, it is highly recommended to install a Digitalinx DL-HD70 or DL-HDE100.

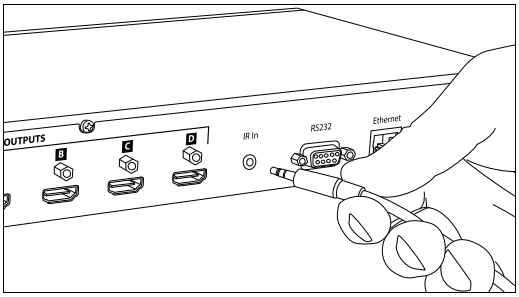
Connect Displays



Connect the display devices to HDMI outputs using HDMI cables that are less than or equal to 5 meters in length. For display devices that are further away, it is highly recommended to install a Digitalinx DL-HD70 or DL-HDE100.

Connect External IR Control

When the DL-HDM44 is installed in an equipment rack or other concealed location, access to the front panel for normal IR control may be difficult. The *IR In* input allows the IR remote to control the matrix via the supplied IR receiver.



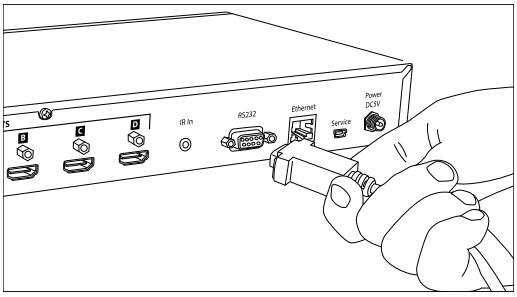
Insert the TRS 3.5 mm plug of the supplied IR receiver to the matrix IR input port (IR In) of the matrix.

Connect RS232 Control

The RS232 control port requires a standard straight-through serial cable for operation. The default settings for the RS232 port are:

- 19200 baud
- 8 Data Bits
- 1 Stop Bit
- Parity = none

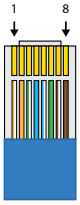
See page 19 for all available control commands for the DL-HDM44.



Connect a standard straight-through serial cable with DE9 connector between the RS232 port on the DL-HDM44 and the controller.

Connect Ethernet (Web Browser) Control

The DL-HDM44 may be controlled via Ethernet through a web browser interface.

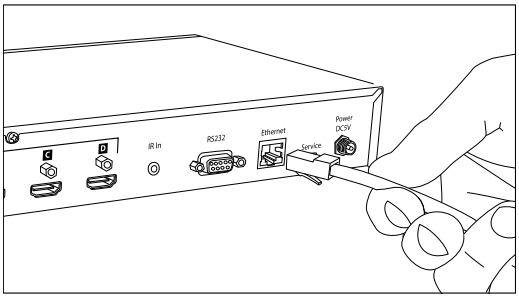


TIA/EIA-568B

Pin 1	Orange/White
Pin 2	Orange
Pin 3	Green/White
Pin 4	Blue
Pin 5	Blue/White
Pin 6	Green
Pin 7	Brown/White
Pin 8	Brown

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.

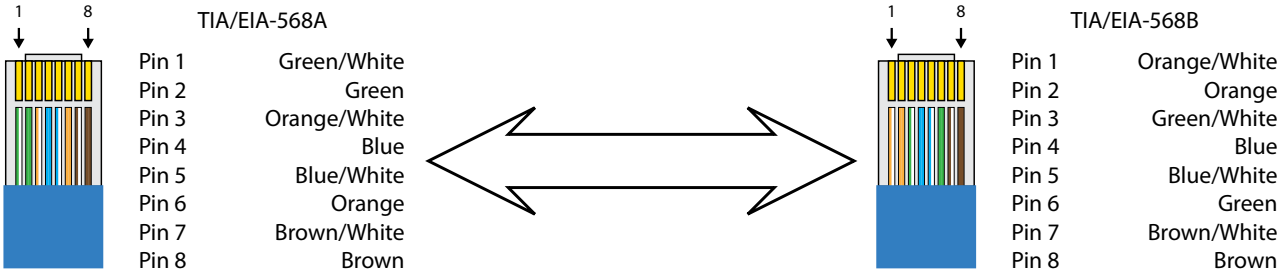
Router Connection

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-HDM44 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-HDM44.

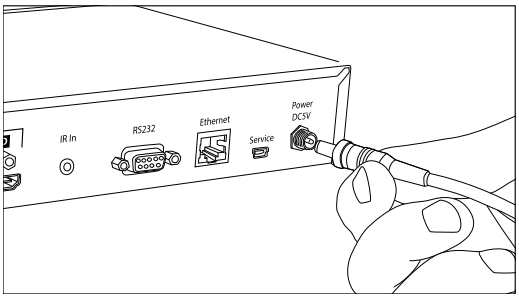
Crossover Cable Pinout



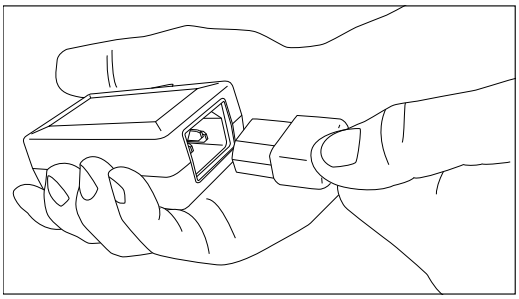
Web Browser Control

The DL-HDM44 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. See page 16 for detailed information regarding the web browser interface, including customization.

Apply Power



Plug the power supply into the power input port on the rear of the matrix. Twist the collar of the power plug in a clockwise direction to secure the connection.

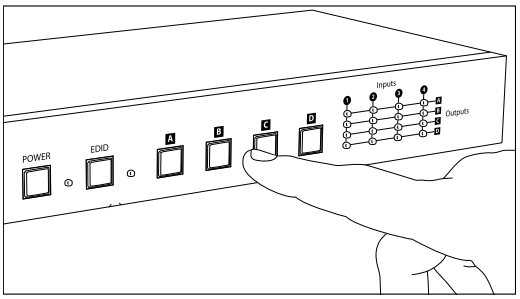


Connect the IEC power cable into the power supply. The matrix will turn on once the IEC cable is plugged into AC power.

Front Panel and IR Remote Operation

Front Panel Operation

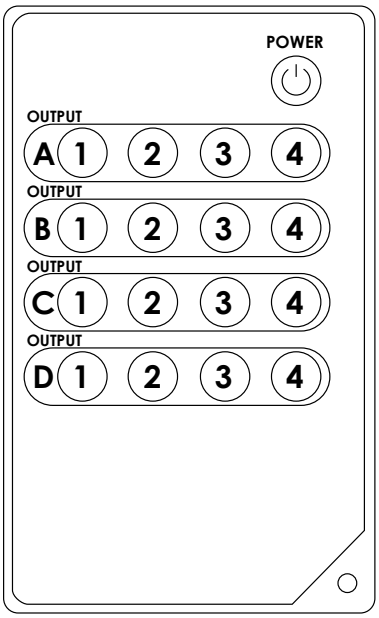
To set a route using the front panel of the DL-HDM44, press the desired output button (display) until the preferred input source is selected.



If output B is currently viewing input 4, the output B button would need to be pressed three times to view the content on input 3.

IR Remote Operation

The buttons on the IR remote will allow direct routing of inputs to a specific output. The Power button will send the matrix to a low power state. Pressing the Power button a second time will restore the DL-HDM44 to full power.



Web Browser Control

Matrix Status

Open a web browser and go to the IP address of the DL-HDM44. The default IP address is 192.168.0.178.

The *Matrix Status* screen shows the power, output and EDID states of the DL-HDM44.

Matrix Control

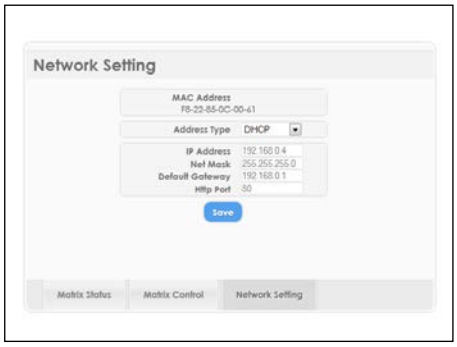
Click the *Matrix Control* tab to access all the control options.

A dropdown menu is available for power, output, and EDID settings. Once a selection is made, the matrix will immediately apply the requested change.

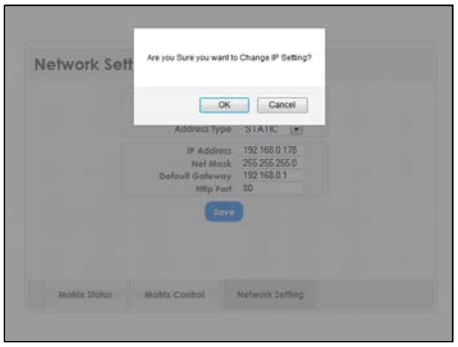
Output All From will change all outputs to a single input.

Factory Reset will reset output settings to the A1, B2, C3, and D4.

Network Setting



The *Network Setting* tab displays the network settings for the DL-HDM44, including the MAC address and static IP or DHCP settings. To apply the changes, click the *Save* button.



A confirmation dialog box will open to verify the changes.

EDID Management

Pressing the EDID button on the front of the matrix or changing the option in the Matrix Control window will cycle between the built-in EDID (STD mode) or the EDID of the display connected to Output A (TV mode). The EDID LED will be lit on the front of the matrix when using the stock EDID.

In STD mode, the EDID for the inputs of the DL-HDM44 is 1080p with stereo audio.

When in TV mode, the DL-HDM44 will read the EDID settings of the display connected to Output A. If it detects a 4K capable EDID setting it will transmit the signal in that format to the input ports. If the display on Output A is not 4K capable, the matrix will read the EDID settings of all outputs and define the best resolution that all displays can support.

RS232 Commands

RS232 Settings: 19200 baud, 8 Data bits, 1 Stop bit, Parity = None

x = Input Number (input 2 would be 2)
y = Output Letter (output C would be C and must be in caps)
<CR> = Carriage return (Hex 0D)
<SP> = Space (Hex 20)

A carriage return is required at the end of all command strings. Any changes made to the matrix via front panel, IR, or web browser will be replied on the RS232 port.

Control via IP is not available on the DL-HDM44.

Routing Commands

Description	Command	Response
Route input *x* to output *y*	*yx*<CR>	*yx*<CR>
Route input *x* to all outputs	ABCD*x*<CR>	ABCD*x*<CR>
Route input *x* to multiple outputs *y* Number of outputs is unlimited	*yyx*<CR>	*yyx*<CR>
Reset AV routes to A1, B2, C3, D4	RS<CR>	RS<CR>

Examples:

ABCD2<CR>	Route Video and Audio from input 2 to all outputs
C4<CR>	Route Video and Audio from input 4 to output C
BD3<CR>	Route Video and Audio from input 3 to outputs B and D

System Commands

Description	Command	Response
Power full ON	P1<CR>	P1<CR>
Power off (Standby Mode)	P0<CR>	P0<CR>
Get firmware version and matrix state	ST<CR>	ST<CR> <CR> <CR><LF> DL-HDM44<CR> <CR><LF> F/W Ver : v1.0E<CR> <CR><LF> Power : On<CR> <CR><LF> EDID : STD<CR> <CR><LF> Port : A1B2C3D4<CR>
Display all RS232 commands	?<CR>	Outputs list of all commands

EDID Commands

Description	Command	Response
Use built-in EDID	EM1<CR>	EM1<CR>
Use EDID from Output A	EM2<CR>	EM2<CR>

TCP/IP Setup Commands

Description	Command	Response
Set static IP address	SETIP<SP><IP ADDRESS><CR>	SETIP<SP><IP ADDRESS><CR> IP Address <IP ADDRESS> is set.<CR>
Set subnet mask	SETNETMASK<SP><SUBNET><CR>	SETNETMASK<SP><SUBNET><CR> NetMask Address <SUBNET> is set.<CR>
Set gateway	SETGATEWAY<SP><GATEWAY><CR>	SETGATEWAY<SP><GATEWAY><CR> GateWay Address <GATEWAY> is set.<CR>
Set matrix to DHCP	RSTIP<CR>	RSTIP<CR> <CR> <CR><LF> IP configuration is set to DHCP Mode.<CR> <CR><LF> The new IP Address is usable 10 seconds later<CR>
Get current IP setup	IPCONFIG<CR>	IPCONFIG<CR> <CR> <CR><LF> IP Configuration is :<CR> <CR><LF> [Static IP/DHCP Mode]<CR> <CR><LF> IP: <IP ADDRESS><CR> <CR><LF> NETMASK: <NETMASK><CR> <CR><LF> GATEWAY: <GATEWAY><CR> <CR><LF> HTTP PORT: 80<CR>

Example:

SETIP<SP>192.168.0.178<CR>	Set static IP Address to 192.168.0.178.

Troubleshooting

Matrix does not power on

» Verify power outlet is active.
» Verify continuity in power cable.

Cannot view 3D content

» Select TV mode in the EDID settings.
» Verify display is 3D compatible.
» Verify source device can output 3D content.

Cannot view 4K content

» Select TV mode in the EDID settings.
» Verify display is 4K compatible.
» Verify source device can output 4K content.

Cannot hear surround sound audio

» Select TV mode in the EDID settings.
» Verify output can broadcast surround sound audio.
» Verify source device is configured to output surround sound audio.

Technical Specifications

I/O Connections	
HDMI Inputs	Four (4) HDMI Type A Receptacle Connector (1 per input)
HDMI Outputs	Four (4) HDMI Type A Receptacle Connector (1 per output)
IR Eye	One (1) 3.5 mm jack (TRS)
5V DC Power	One (1) Threaded Barrel (5.5mm OD; 2.6mm ID)
Control, Rear Panel	RS232 via DE-9, TCP/IP via 8P8C, IR via 3.5mm TRS
Control, Front Panel	Push Button, IR
Supported Audio and Video	
HDTV Video Resolutions	480i, 480p, 576i, 576p, 720p, 1080i, 1080p, 4Kx2K (24, 25, and 30 Hz)
VESA Video Resolutions	Up to 1920x1200
Embedded Audio Compatibility	Up to PCM 5 channel, Dolby Digital TrueHD, and DTS-HD Master Audio
Maximum HDMI Distance	5m (16')
Chassis and Environmental	
Enclosure	Painted Aluminum
Dimensions	436mm x 167mm x 44mm (17.17" x 6.57"x 1.73")
Rack Spacing	1 RU
Shipping Weight	1.945 kg (4.3 lbs)
Operating Temperature	0° to +40° C (+32° to +104° F)
Operating Humidity	20% to 90%, Non-condensing
Storage Temperature	-10° to +60° C (+14° to +140° F)
Storage Humidity	20% to 90%, Non-condensing
Power, ESD, and Regulatory	
Power Supply Input	100V-240VAC / 50-60 Hz / 0.5A
Power Supply Output	5VDC / 3.6A
Power Consumption	38 watts (max)
ESD Protection	±8kV (air-gap discharge), ±4KV (contact discharge)
DL-HDM44 Regulatory	CE, RoHS
Power Supply Regulatory	UL, FCC, CE, RoHS
Other	
Warranty	2 years
Diagnostic Indicators	LED output status, power LED, status LED
Included Accessories	Installation Guide, IR Remote, US Power Cable and Power Supply, Two Mounting Brackets, Four Rubber Feet (installed on matrix)

Thank you for your purchase.

Please contact us with your questions and comments.

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