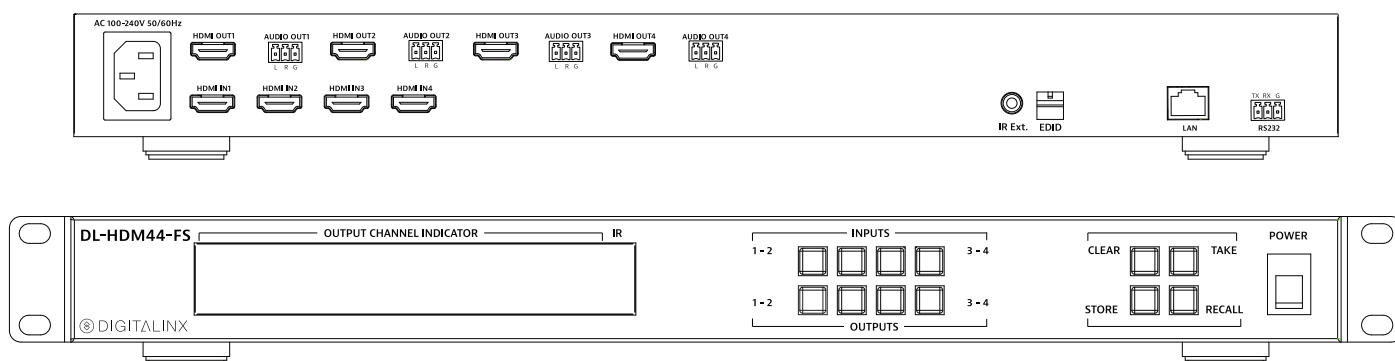


DL-HDM44-FS Installation and Operation Guide



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 DigitalLinX DL-HDM44-FS is an four input by four output seamless 4K scaling HDMI matrix switcher with input support up to 4k@30Hz and HDCP2.2. With a high-performance 4K@30Hz video scaler built into each output channel, it easily scales various resolutions to match the best video and picture quality across all displays. The DL-HDM44-FS provides each HDMI output with a de-embedded 3-pin unbalanced stereo audio out to feed an audio amplifier system.

The matrix features advanced independent DIP switch for EDID management. The DL-HDM44-FS offers HDCP handling, including the ability to turn input HDCP compliance ON and OFF to ensure maximum functionality with a wide range of sources.

The DL-HDM44-FS 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 a web browser.

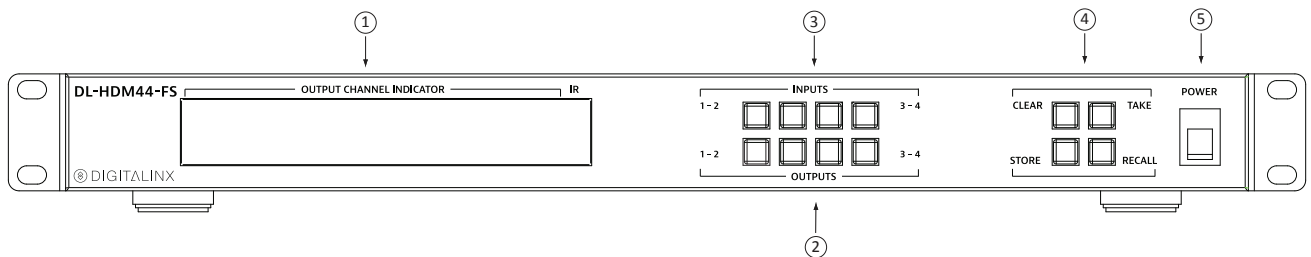
Package Contents

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

- 1 ea. DL-HDM44-FS
- 1 ea. IR Remote Controller
- 1 ea. AC Power Cord
- 1 ea. USB to UART Cable
- 4 ea. 3.5mm 3pin Phoenix
- 1 ea. Matrix Mounting Brackets (pair)
- 1 ea. IR Receiver
- 1 ea. DL-HDM44-FS Installation and Operation Guide

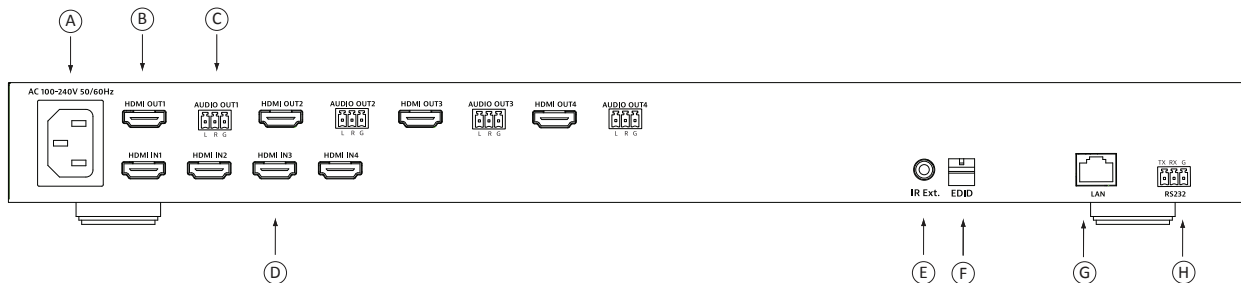
Front and Rear Panels

Front Panel



1. Output Channel Indicator
2. Output Buttons
3. Input Buttons
4. Front Panel Menu Selection
5. Power Switch

Rear Panel



- A. AC 100~240V 50/60Hz power supply input
- B. HDMI Outputs
- C. Audio Outputs
- D. HDMI Inputs
- E. IR Extension
- F. EDID DIP Switch
- G. TCP/IP (Ethernet) control input for control via web browser
- H. RS232 control input

IR Remote

The DL-HDM44-FS 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.

Installation Instructions

Mount the Matrix

At least 2 inches of free air space is required on both sides of the DL-HDM44-FS for proper side ventilation. Avoid mounting the DL-HDM44-FS 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-HDM44-FS.

Attach the supplied rack ears to the sides of the DL-HDM44-FS 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-FS 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 4k30 signals. 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 4k30 signals.. For display devices that are further away, it is highly recommended to install a Digitalinx DL-HD70 or DL-HDE100.

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-HDM44-FS, 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.

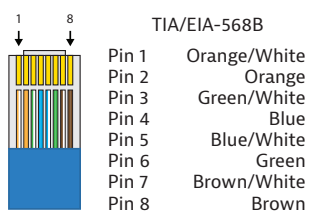
Connect RS232 Control

The RS232 connection on the matrix is One (1) 3-pin Removable Terminal Block Connector. User can use a USB to UART cable or a direct serial cable for matrix control. See below for control system configuration.

- 57600 baud
- 8 Data Bits
- 1 Stop Bit
- Parity = none

Connect Ethernet (Web Browser) Control

The DL-HDM44-FS 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

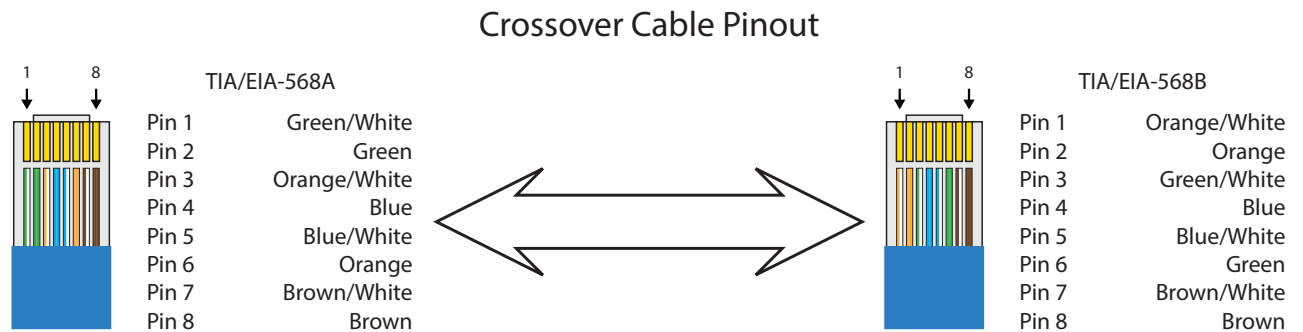
Connect the Ethernet cable between to the matrix and a router with a straight-through cable or between the matrix and a computer with a crossover cable.

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-HDM44-FS to the router.

Crossover Cable Connection

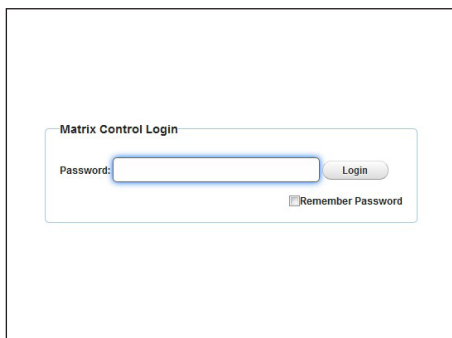
1. Configure the computer to use the same network prefix as the IP address assigned to the matrix. *For example, the IP address of the matrix is 192.168.0.178. Set the computer to use a static IP address within the same network range, such as 192.168.0.42.*
2. Connect the network crossover cable to the computer and to the TCP/IP port on the DL-HDM44-FS.



Web Browser Control

The DL-HDM44-FS 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.

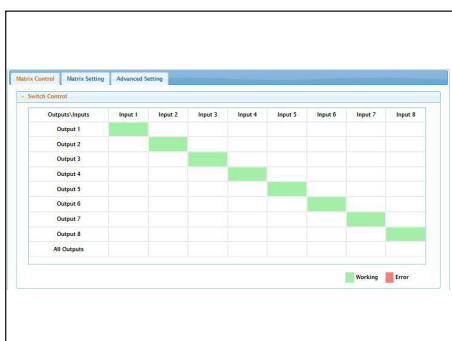
Web Browser Control



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

The matrix login screen will appear. The default password is **admin**. After logging in, the main screen appears. It contains three sub-menus:

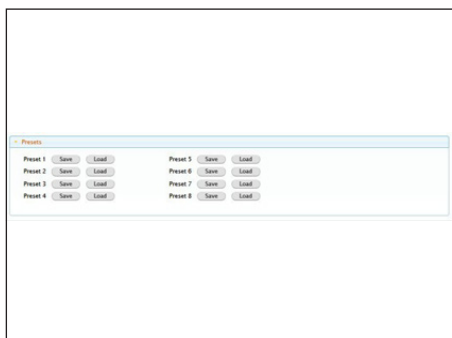
1. Matrix Control
2. Matrix Setting
3. Advanced Setting



The Matrix Control submenu manages the connection configurations of displays and sources. The green bar represents that input and output are routed. The white bar represents that input and output are not routed. Click the white bar, it will become green, which represents that input and output are routed.

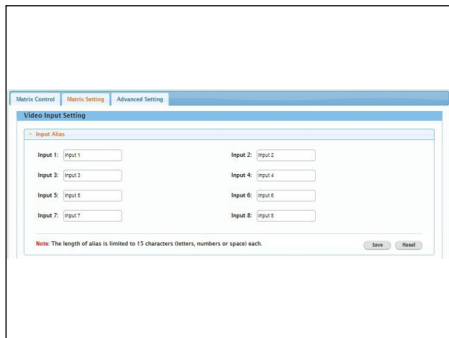


The users can choose the volume adjustment value, enable/disable Mute function.



The user can load any of the presets to the device. Once a preset is selected, the user clicks on Load to show the connection configuration of the given preset.

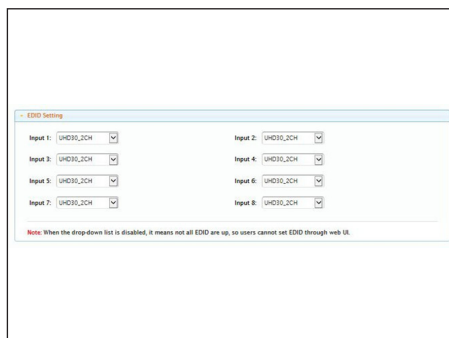
To modify a given preset, such as preset 1, users click Load 1, then make changes to the connections between displays and sources. Once all changes are made, the users clicks on Save 1. This effectively modified the connection configuration of the given preset.



Video input setting:

Give the sources different names which will be easier for the users to remember, user can modify port names in this column.

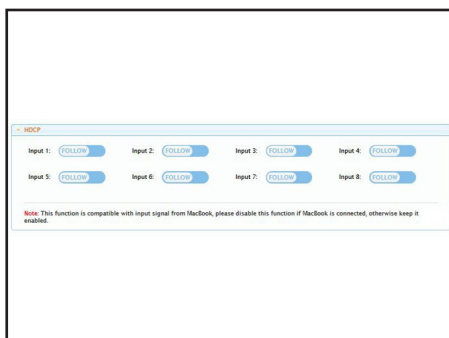
Click on Save to save these modifications, click Reset to reset the name.



EDID Setting:

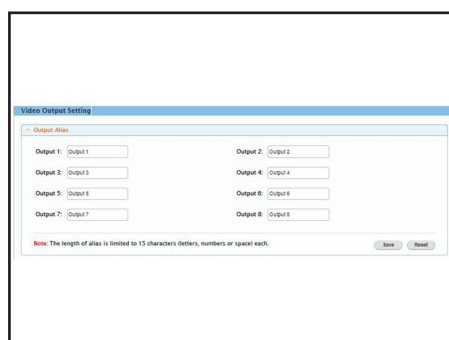
The EDID Setting allows users to access and configure EDID settings that can be selected one fix EDID to a specific input port.

Note: EDID DIP should be on Manual by Web GUI Control mode before setting.



HDCP Selecting:

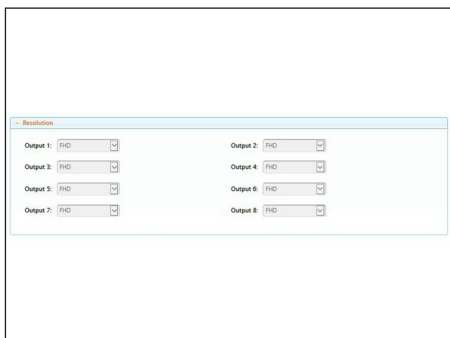
In HDCP Setting column, user can enable/disable the HDCP of an HDMI IN port. FOLLOW represents follow the HDCP status of input source. OFF represents does not support the HDCP status of input source.



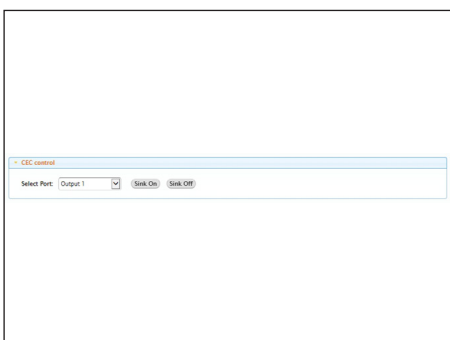
Output Setting:

Give the display different names which will be easier for users to remember, user can modify port names in this column.

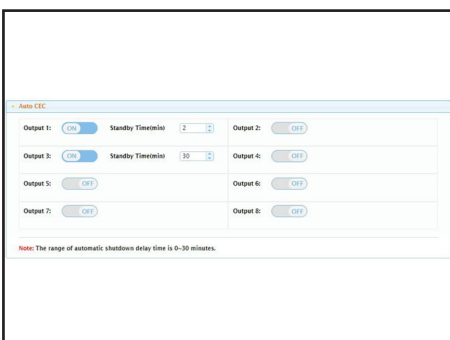
Click on Save to save these modifications, click Reset to reset the name.

**Resolution Selecting:**

Set the resolution of the HDMI OUT when connected to display devices.

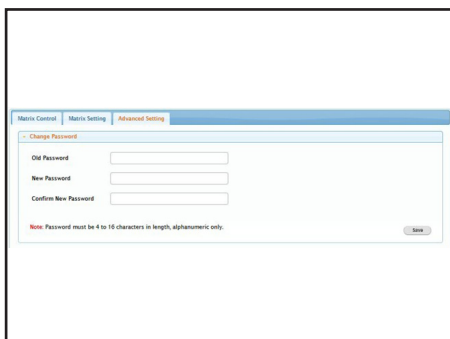
**CEC Control:**

Click Sink Off to power off the display connected to HDMI OUT.
Click Sink On to power on the display connected to HDMIOUT.

**Auto CEC Standby:**

Set the auto CEC standby time. For example, if the time is 2 minutes to disconnect the source, the display will power off automatically after 2 minutes.

Note: This function is valid if only the display supports CEC control and the range of automatic shut down delay time is 0-30 minutes.

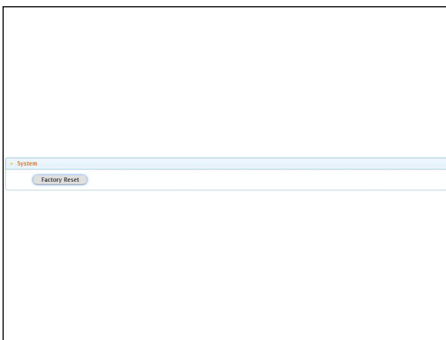
**Change Password:**

In Change Password column, the user can modify the login password for Administrator.

Click Save button to save the changes.

**Network:**

The matrix can be controlled over LAN, through which it maybe accessed through WebGUI or Telnet after obtaining the matrix IP address. By default, The IP address is 192.168.0.178



System is used for Factory Reset, click the Factory Reset, A window will pop up, click Yes, then the Matrix is restored to factory default settings.

EDID Management

EDID (Extended Display Identification Data) is data generated from each display in the system to communicate the capabilities of the device.

EDID Presets

Note: If you change the EDID, repower the matrix for the changes to take effect.

EDID Setting	Position 1	Position 2	Position 3
Manual by Web GUI Control	DOWN	DOWN	DOWN
3840x2160P@30Hz / PCM2CH	DOWN	DOWN	UP
1920x1080P@60Hz / PCM2CH	DOWN	UP	DOWN
1280x720P@60Hz / PCM2CH	DOWN	UP	UP
1920x1200@60Hz / PCM2CH	UP	DOWN	DOWN
1280x800@60Hz / PCM2CH	UP	DOWN	UP
1920x1080P@60Hz / Dolby5.1	UP	UP	DOWN
3840x2160P@30Hz / Dolby5.1	UP	UP	UP

RS232 Commands

RS232 Settings:

- 57600 baud
- 8 Data Bits
- 1 Stop Bit
- Parity = none

<CR> = Carriage return.

<LF> = Line feed

Take Command DISPLAY AUTO prm[CR/LF] as an example:

1. [DISPLAY AUTO] denotes command key words, case in-sensitive.
2. [prm] denotes parameters, case in-sensitive, incorrect parameters number will not be recognized.
3. [CR/LF] is needed, all commands end up with [CR/LF].

Routing Commands

Description	Command Example	Response
Switch Input for Output <i>Ex: Switch Input port 1 to output port 2</i>	Set 01 02 [CR/LF]	01 02 [CR/LF]
Switch all outputs to the same input <i>Ex: Switch all outputs to input port 2</i>	SET 02 all [CR/LF]	02 01 [CR/LF] 02 02 [CR/LF] 02 03 [CR/LF] 02 04 [CR/LF]
Get a specific output port routing information <i>Ex: Output port 1 is routed to input port 2</i>	GET 01 [CR/LF]	02 01 [CR/LF]
Get routing status for all inputs and outputs <i>Ex: All outputs are routed to input port 2</i>	GET all [CR/LF]	02 01 [CR/LF] 02 02 [CR/LF] 02 03 [CR/LF] 02 04 [CR/LF]

CEC Control Commands

Description	Command Example	Response
Power on/off Display through CEC <i>Ex: CEC power on the display which is connected to output 1</i>	DISPLAY 01 on[CR/LF]	DISPLAY 01 on![CR/LF]
Power on/off Display automatically through CEC <i>Ex: CEC power on the display which is connected to output 1 automatically</i>	DISPLAY 01 AUTO on[CR/LF]	DISPLAY 01 AUTO on![CR/LF]
Get CEC Auto Power Function Status <i>EX: CEC power on the display which is connected to output 1 automatically</i>	GET DISPLAY 01 AUTO[CR/LF]	DISPLAY 01 AUTO on![CR/LF]
Set Delay Time for CEC to power on/off the Display automatically <i>Ex: Set the delay time for CEC to power on/off the display automatically to 3 minutes</i>	DISPLAY 01 AUTO DELAY 3[CR/LF]	DISPLAY 01AUTO DELAY 3 MINUTES[CR/LF]
Get Delay Time for CEC to power on/off the Display automatically <i>EX: The delay time for CEC to power on/off the display automatically is 3 minutes</i>	GET DISPLAY 01 AUTO DELAY[CR/LF]	DISPLAY 01 AUTO DELAY 3 MINUTES[CR/LF]

Volume Control Commands

Description	Command Example	Response
Adjust Volume Gain <i>EX: Set the volume gain of output 1 to 50</i>	SET VOL 01 50 [CR/LF]	VOL 01 50 [CR/LF]
View Current Volume Gain <i>Ex: The volume gain of output 1 is 50</i>	GET VOL 01 [CR/LF]	VOL 01 50 [CR/LF]
Enable/Disable Audio Mute <i>EX: Set output 2 audio mute to be on</i>	MUTE 01 on [CR/LF]	MUTE 01 on [CR/LF]
Get Audio Mute Status <i>Ex: Output 1 audio mute is on</i>	GET MUTE 01 [CR/LF]	MUTE 01 on [CR/LF]

Video Output Resolution Commands

Description	Command Example	Response
Set Output Resolution <i>EX: Set the resolution of output 1 to be 3840x2160@30Hz</i> Note: UHD30 : 3840x2160@30Hz, FHD: 1920x1080@60Hz, HD : 1280x720@60Hz, WUXGA: 1920x1200@60Hz, WXGA: 1280x800@60Hz, Auto: preferred native timing of the display	SET SCALE 01 UHD30 [CR/LF]	SCALE 01 UHD30 [CR/LF]
Get Output Resolution <i>Ex: The resolution of output 1 is 3840x2160@30Hz</i>	GET SCALE 01 [CR/LF]	SCALE 01 UHD30 [CR/LF]

HDCP Commands

Description	Command Example	Response
Get HDCP status of Input port <i>EX: Input port 1 supports HDCP 1.4</i> Note: 14: means HDCP 1.4 22: means HDCP 2.2 off: means Non-HDCP	GET HDCPV IN 01[CR/LF]	HDCPV IN 01 14[CR/LF]
Enable/Disable HDCP of Input Port <i>Ex: Set HDMI IN 1 to transmit HDCP video</i>	SET HDCP IN 01 on[CR/LF]	HDCP IN 01 on[CR/LF]
Get HDCP Status of Input Port <i>EX: HDMI IN 1 transmits HDCP video</i>	GET HDCP IN 01[CR/LF]	HDCP IN 01 on[CR/LF]

EDID Commands

Description	Command Example	Response
Set Input FIX EDID <i>EX: Set the EDID of input 1 to be 3840x2160@30Hz</i> Note: UHD30_2CH : 3840x2160@30Hz, FHD_2CH: 1920x1080@60Hz, HD_2CH: 1280x720@60Hz, WUXGA_2CH: 1920x1200@60Hz, WXGA_2CH: 1280x800@60Hz, FHD_6CH: 1920x1080@60Hz, UHD30_6CH : 3840x2160@30Hz	SET EDID 01 UHD30_2CH[CR/LF]	EDID 01 UHD30_2CH[CR/LF]
Get All Input EDID Status <i>Ex: EDID of HDMI IN 1, HDMI IN 3 is 3840x2160@30Hz, EDID of HDMI IN 2 and HDMI IN 4 is 1920x1080@60Hz</i>	GET EDID all[CR/LF]	EDID 01 UHD30_2CH [CR/LF] EDID 02 FHD_2CH [CR/LF] EDID 03 UHD30_2CH [CR/LF] EDID 04 FHD_2CH [CR/LF]

EDID Commands Continue...

Description	Command Example	Response
Get EDID Status of a specific input <i>EX: The EDID of input 1 is 3840x2160@30Hz</i> Note: UHD30_2CH : 3840x2160@30Hz, FHD_2CH: 1920x1080@60Hz, HD_2CH: 1280x720@60Hz, WUXGA_2CH: 1920x1200@60Hz, WXGA_2CH: 1280x800@60Hz, FHD_6CH: 1920x1080@60Hz, UHD30_6CH : 3840x2160@30Hz	GET EDID 01 [CR/LF]	EDID 01 UHD30_2CH [CR/LF]
EDID Key Value <i>Ex: The EDID key value is 3840x2160@30Hz, LPCM 2CH</i>	GET EDID_Key [CR/LF]	EDID_Key 01 [CR/LF]

System Commands

Description	Command Example	Response
Factory Reset <i>EX: Restore the device to factory default settings</i>	RST [CR/LF]	RESTORING FACTORY DEFAULTS [CR/LF]
System Reboot <i>Ex: Reboot the device</i>	REBOOT [CR/LF]	REBOOT [CR/LF]
Switch to Standby Mode <i>Ex: Switch the device to standby mode</i>	STANDBY [CR/LF]	STANDBY! [CR/LF]
Switch to Wake Mode <i>Ex: Switch the device to wake mode</i>	WAKE [CR/LF]	WAKE! [CR/LF]

System Commands Continue...

Description	Command Example	Response
Get standby Status <i>EX: The device is in standby mode</i>	GET STANDBY [CR/LF]	STANDBY! [CR/LF]

Preset Scene Commands

Description	Command Example	Response
Save Preset Scene <i>EX: Save Preset Scene 01</i>	SAVE 01 [CR/LF]	PRESET SAVED [CR/LF]
Load Preset Scene <i>Ex: Load the preset scene 01, volume status and mute status of each port</i>	LOAD 01 [CR/LF]	01 01 [CR/LF] 02 02 [CR/LF] 03 03 [CR/LF] 04 04 [CR/LF] VOL 01 50 [CR/LF] MUTE 01 on [CR/LF] VOL 02 50 [CR/LF] MUTE 02 on [CR/LF] VOL 03 50 [CR/LF] MUTE 03 on [CR/LF] VOL 04 50 [CR/LF] MUTE 04 on [CR/LF]

Troubleshooting

Matrix does not power on

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

Cannot view 4K content

- » Verify the EDID settings of the matrix.
- » Verify display is 4K compatible.
- » Verify source device can output 4K content.
- » Verify the scaler setting of the output

Cannot hear surround sound audio

- » Verify output can broadcast surround sound audio.
- » Verify source device is configured to output surround sound audio.

Technical Specifications

Input/Output Connections	
HDMI Inputs	Four (4) HDMI Type A Receptacle
HDMI Outputs	Four (4) HDMI Type A Receptacle
Analog Audio Outputs	Four (4) 3-Pole/3.5mm Euroblock
IR extension	One (1) 3.5mm TRS
TCP/IP	One (1) 8P8C Port (Shielded RJ45 Female)
RS232	One (1) 3-pin Removable Terminal Block Connector
Power	One (1) IEC C14
Supported Audio, Video, and Embedded Control	
Video Resolutions	VESA: 640x480@60Hz, 800x600@60Hz, 1024x768@60Hz, 1280x768@60Hz, 1280x800@60Hz, 1280x960@60Hz, 1280x1024@60Hz, 1360x768@60Hz, 1366x768@60Hz, 1440x900@60Hz, 1600x900@60Hz, 1600x1200@60Hz, 1680x1050@60Hz, 1920x1200@60Hz, SMPTE: 720x480@60Hz, 720x576@60Hz, 1280x720@50/60Hz, 1920x1080@50/60Hz, 3840x2160@24/25/30Hz
Deep Color	1080p 36bit / 4K 24bit
Maximum Passive HDMI Cable Distance	5 m (16.4 ft)
Video Compliance	HDMI1.4 / HDCP2.2 only for inputs
Audio Format Supported	Multi-channel digital audio, PCM2.0 and Dolby5.1, 2-CH stereo audio de-embedded
Embedded RS232 Baud Rate	57600 baud
Device Control Parameters	
IR Carrier Frequency Range	33-55kHz at 5 volts
Ethernet	100BaseT
RS232 Baud Rate	57600 baud
Chassis and Environmental	
Enclosure	Painted Aluminum
Dimensions (H x W x D)	43 mm x 437 mm x 326 mm (1.69 in x 17.20 in x 12.83 in) – 1 RU
Shipping Weight	4.86kg (10.71 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
Power, ESD, and Regulatory	
Power Supply	100V-240VAC / 50-60 Hz
Power Consumption	75W(Max.)
ESD Protection	8kV air, 4kV contact
Product Regulatory	FCC, CE, RoHS
Other	
Standard Warranty	2 years
Diagnostic Indicators	System LCD
Included Accessories	Installation Guide, IR Remote, IR Receiver, Rack Mounting Ears with Screws, US Power Cable, USB to UART Cable, (8) 3.5mm 3pin Phoenix

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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www.libav.com

Digitalinx is a brand of:

