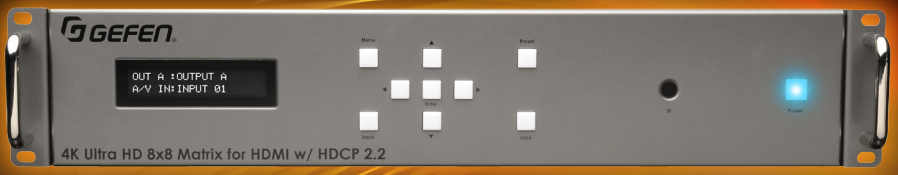
GEFEN

4K ULTRA HD

8x8 Matrix for HDMI w/ HDCP 2.2

EXT-UHD-88

User Manual



Release A3

Important Safety Instructions

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this product near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install or place this product near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the 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 are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. To reduce the risk of electric shock and/or damage to this product, never handle or touch this unit or power cord if your hands are wet or damp. Do not expose this product to rain or moisture.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. Refer all servicing 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.
15. Batteries that may be included with this product and/or accessories should never be exposed to open flame or excessive heat. Always dispose of used batteries according to the instructions.

Gefen warrants the equipment it manufactures to be free from defects in material and workmanship.

If equipment fails because of such defects and Gefen is notified within two (2) years from the date of shipment, Gefen will, at its option, repair or replace the equipment, provided that the equipment has not been subjected to mechanical, electrical, or other abuse or modifications. Equipment that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for ninety (90) days from the day of reshipment to the Buyer.

This warranty is in lieu of all other warranties expressed or implied, including without limitation, any implied warranty or merchantability or fitness for any particular purpose, all of which are expressly disclaimed.

1. Proof of sale may be required in order to claim warranty.
2. Customers outside the US are responsible for shipping charges to and from Gefen.
3. Copper cables are limited to a 30 day warranty and cables must be in their original condition.

The information in this manual has been carefully checked and is believed to be accurate. However, Gefen assumes no responsibility for any inaccuracies that may be contained in this manual. In no event will Gefen be liable for direct, indirect, special, incidental, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. The technical information contained herein regarding the features and specifications is subject to change without notice.

For the latest warranty coverage information, refer to the Warranty and Return Policy under the Support section of the Gefen Web site at www.gefen.com.

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Product Registration

Register your product here: http://www.gefen.com/kvm/Registry/Registration.jsp

- There is no internal scaling in the 4K Ultra HD Matrix for HDMI. All of the attached monitors must be able to display the resolutions output by the source devices. For maximum compatibility it is recommended that only one compatible / common resolution be used by all of the source devices.

- The Gefen Syner-G Software Suite is a free downloadable application from Gefen that provides automatic download and installation of firmware upgrades as well as effortless network configuration for this product.

  Download the application here: http://www.gefen.com/synerg/

This product uses UL listed or CE-compliant power supplies.

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- lwIP
- jQuery

lwIP is licenced under the BSD licence:

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Features

- Routes eight 4K sources to eight displays
- Supports resolutions up to 4K Cinema-DCI (4096 x 2160 at 24 or 30 Hz), 4K Ultra HD (3860 x 2160 at 60 Hz, 4:2:0 color space),1080p Full HD, and 1920x1200 WUXGA
- HDCP 2.2 and 1.4 compliant
- Supports 12-bit Deep Color (up to 1080p Full HD)
- 3D pass-through
- Lip Sync pass-through
- Push button controls for Routing and Status
- Advanced EDID Management for rapid integration of sources and displays
- Supports LPCM 7.1, Dolby® TrueHD, Dolby Digital® Plus, and DTS-HD Master Audio™
- Supports the use of DVI sources and DVI displays with HDMI-to-DVI adapters (not included)
- RS-232 Serial interface for use with an automation control system
- IP control via Telnet, UDP, and the built-in web server interface
- IR remote control
- Gefen Syner-G™ software's Discovery and Show-Me features simplify initial IP configuration
- Field-upgradeable firmware via web server interface
- Can be placed on a shelf or mounted in a standard 19-inch wide rack

Packing List

The 4K Ultra HD 8x8 Matrix for HDMI w/ HDCP 2.2 ships with the items listed below. The packing contents of the Sender and Receiver unit are listed below. If any of these items are not present in the box when you first open it, immediately contact your dealer or Gefen.

- 1 x 4K Ultra HD 8x8 Matrix for HDMI w/ HDCP 2.2 (with detachable rack ears)
- 1 x IR remote control unit
- 1 x 24V DC power supply
- 1 x IEC-type AC power cord
- 1 x Quick-Start Guide

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1 Getting Started

2 Basic Operation

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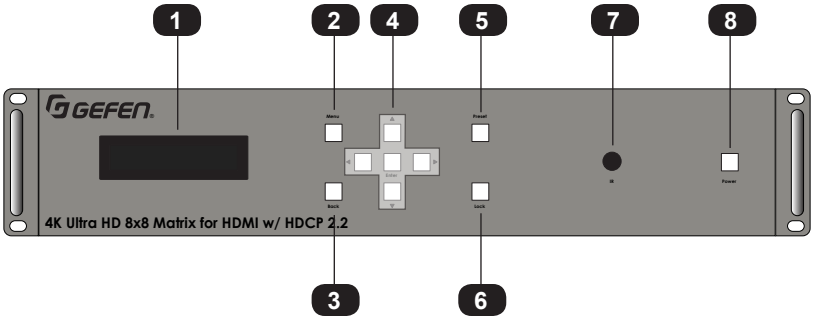
4K ULTRA HD

8x8 Matrix for HDMI

w/ HDCP 2.2

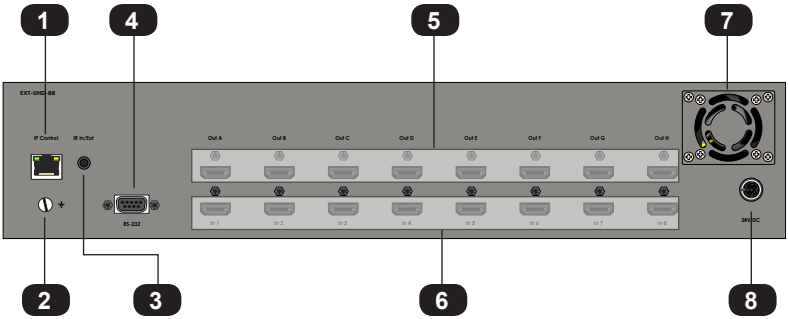
1 Getting Started

Front Panel



ID	Name	Description
1	Front panel display	Displays matrix settings and feedback during operation.
2	Menu	Used to access the internal menu system. See Accessing the Menu System (page 27).
3	Back	Press this button to step return to a previous menu item.
4	▲, ▼, ◄, ►, Enter	Use the cursor buttons to select the desired item within the menu system. Press the **Enter** button to confirm the selection. See Menu System (page 27) for more information.
5	Preset	Press this button to select the desired Preset.
6	Lock	Press this button to lock the matrix. See Locking the Matrix (page 23) for more information.
7	IR	Receives signals from the included IR remote control unit.
8	Power	Press this button to power-ON or Power-OFF the matrix.

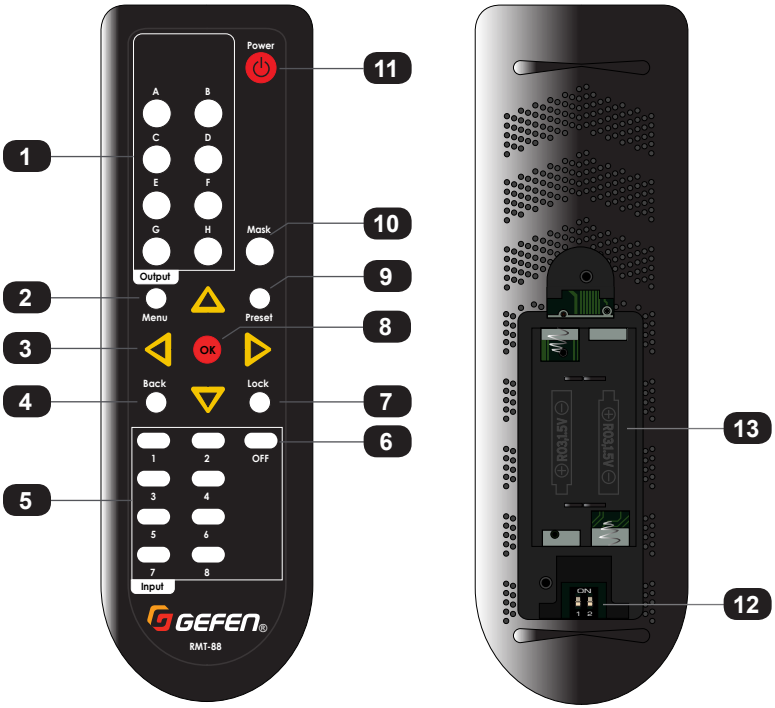
Rear Panel



ID	Name	Description
1	IP Control	Connect an Ethernet cable between this jack and a LAN. See Connection Instructions (page 9) for more information.
2	Grounding terminal	Connect a grounding wire (16 AWG or greater) from this terminal to an approved ground path.
3	IR In / Ext	Connect an IR extender (Gefen part no. EXT-RMT-EXTIRN) or an electrical IR cable from an automation system to this port.
4	RS-232	Connect the RS-232 cable from this port to an RS-232 device. See Connection Instructions (page 9) for more information.
5	Out (A - H)	Connect up to eight 4K Ultra HD displays to the matrix using these HDMI ports.
6	In (1 - 8)	Connect up to eight 4K Ultra HD source devices to the matrix using these HDMI ports.

ID	Name	Description
7	Cooling fan assembly	Provides active cooling for the matrix by expelling warm air from the enclosure. To prevent overheating, make sure this vent is not blocked.
8	24V DC	Connect the included 24V DC power supply to this power connector.

IR Remote Control

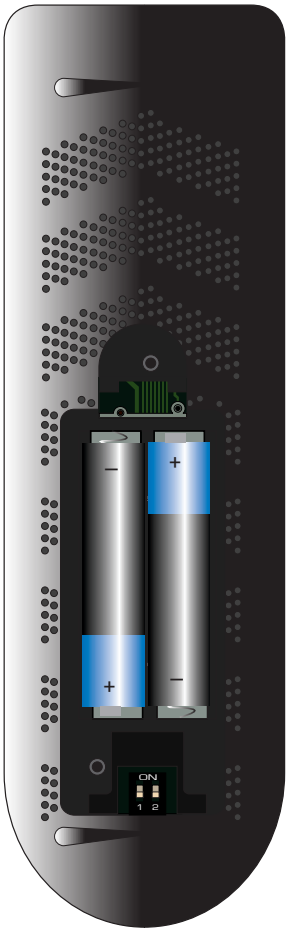


ID	Name	Description
1	Output buttons (A - H)	Press these buttons to select the desired input when performing routing operations. Each button corresponds to an **Out** port (A - H) on the rear panel of the matrix.
2	Menu	Press this button to display the On-Screen Menu.
3	▲, ▼, ◄, ►	Press these buttons to move around within the OSD.
4	Back	Press this button to return to a previous menu item.

ID	Name	Description
5	Input buttons (1 - 8)	Press these buttons to select the desired input when performing routing operations. Each button corresponds to an **In** port (1 - 8) on the rear panel of the matrix.
6	Off	Press this button to block an input. See Blocking Inputs (page 22) for more information.
7	Lock	Press this button to toggle between locking and unlocking the buttons on the front panel.
8	OK	Press this button to accept the current selection in the menu system.
9	Preset	Press this button to select the desired preset. See Routing Presets (page 25) for more information.
10	Mask	Press this button to mask the desired output.
11	Power	Press this button to toggle power on the matrix.
12	DIP switches	Sets the IR channel of the IR remote control. In order for the IR remote control to communicate with the matrix, both the IR remote control and the matrix must be set to the same IR channel. See Setting the IR Channel (page 8) for setting the IR channel of the IR remote control. Use the front panel controls to set the IR channel of the matrix. See Setting the Matrix IR Channel (page 58) for more information.
13	Battery compartment (shown open)	Accepts two 1.5V AAA-type batteries. See Installing the Batteries (page 7) for more information.

Installing the Batteries

1. Remove the back cover the IR remote control unit.
2. Insert two 1.5V AAA-type batteries, as shown, within the battery compartment.



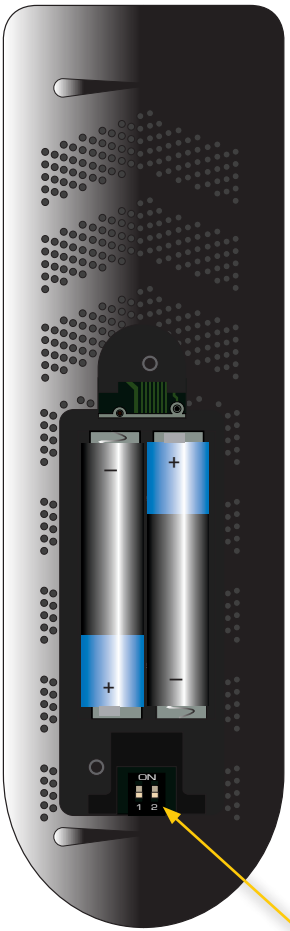
3. Replace the back cover.

Warning!

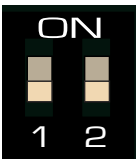
Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

Setting the IR Channel

Use the following DIP switch settings to set the IR channel of the IR remote control. In order for the included IR remote control to communicate with the matrix, the IR remote control must be set to the same channel as the matrix. See Setting the Matrix IR Channel (page 58) for more information.

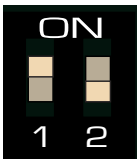


Channel 1 (default):



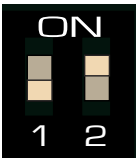
DIP1 = OFF
DIP2 = OFF

Channel 2:



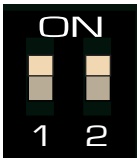
DIP1 = ON
DIP2 = OFF

Channel 3:



DIP1 = OFF
DIP2 = ON

Channel 4:



DIP1 = ON
DIP2 = ON

Connection Instructions

► **Video**

1. Connect an HDMI cable from each 4K Ultra HD source device to the **In** ports (1 - 8) on the rear panel of the matrix. Up to eight source devices can be connected.

2. Connect a 4K Ultra HD display to each of the **Out** ports (A - H) on the rear panel of the matrix. Up to eight displays can be connected.

► **IP Control**

3. Connect a shielded CAT-5e (or better) cable from the IP Control port on the rear panel of the matrix to the Local Area Network. See Network Configuration using Syner-G (page 11) for more information on configuration.

► **RS-232 (optional)**

4. Connect a DB-9 cable from the RS-232 port on the rear panel of the matrix to the automation device. See RS-232 Configuration (page 109) for more information.

► **IR Control** (Optional)

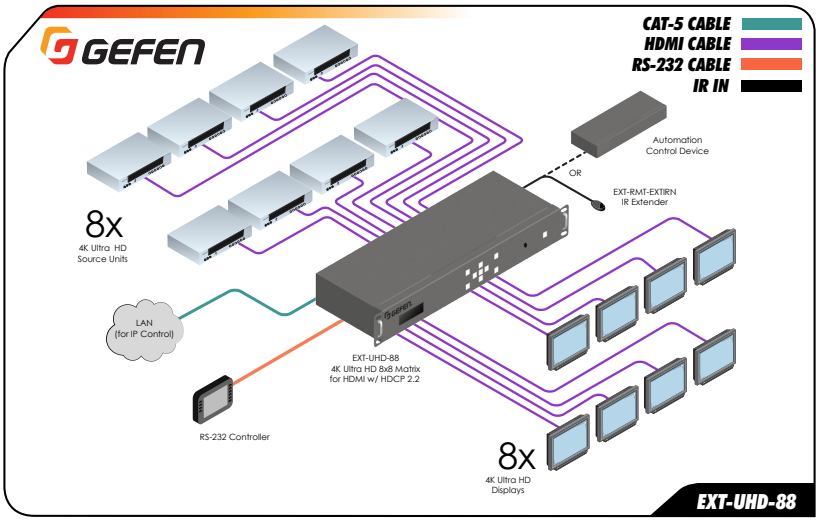
5. Connect an IR extender (Gefen part no. EXT-RMT-EXTIRN) or an electrical IR cable from an automation system to the **IR In / Ext** port on the rear panel of the matrix. Connecting an IR extender is useful if the IR sensor on the front panel will be hidden from view.

► **Power**

6. Connect the included 24V DC power supply to the power connector on the matrix.

7. Connect the AC power cord to the power supply and connect the power cord to an available electrical outlet.

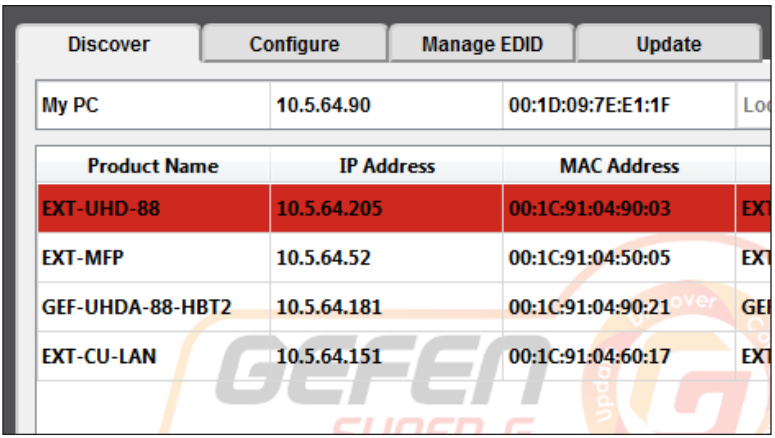
Application Diagram



Network Configuration using Syner-G

1. Launch the Gefen Syner-G application.
   Download the application here: http://www.gefen.com/support/download.jsp

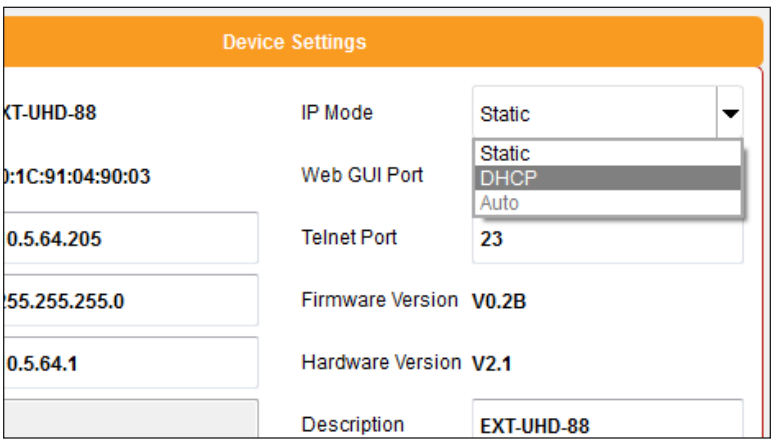
2. Select the matrix (EXT-UHD-88) from the list of products.



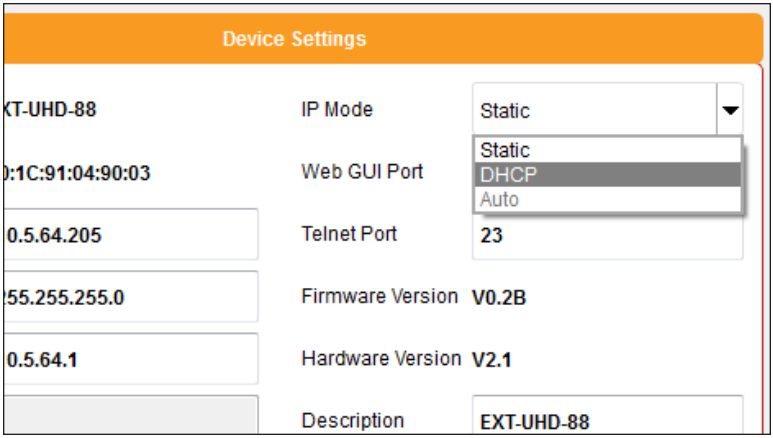
3. Under the Device Settings section, select either Static or DHCP from the IP Mode drop-down list.

   ► Select **Static** to manual enter the IP address, subnet mask, and gateway IP. Consult with your network administrator, if necessary.

   ► Select **DHCP** to let the DHCP server automatically assign the IP address, subnet mask, and gateway IP.



4. Click the **Save** button at the bottom of the screen.



5. The matrix will automatically reboot and use the new network settings.

6. Use the IP address of the matrix to access the built-in web interface or start a Telnet session. See the following for more information:

   ► The Web Interface (page 64)

   ► Using Telnet, UDP, and RS-232 (page 108)

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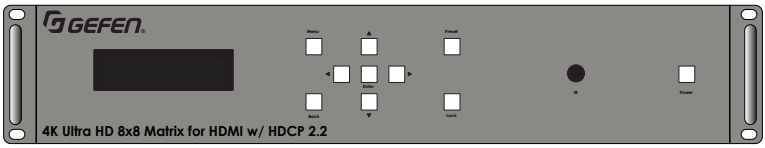
4K ULTRA HD

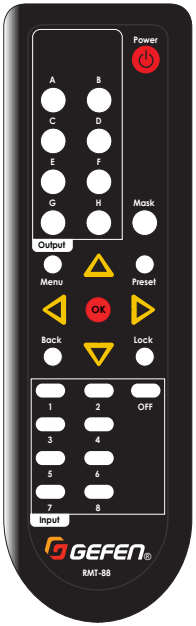
8x8 Matrix for HDMI

w/ HDCP 2.2

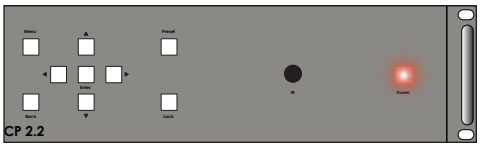
2 Basic Operation

Use the **Power** button to power-on and power-off the matrix. The **Power** button is located on the front panel of the matrix and on the IR remote control.



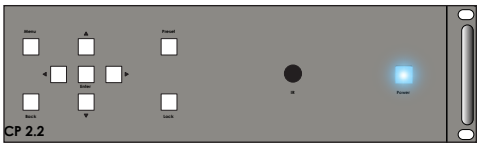


1. Connect the included power supply from the power connector to an available electrical AC outlet. The **Power** button will glow solid red, indicating that the matrix is connected to an active outlet. However, the matrix is not turned on.



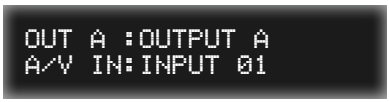
2. Press the **Power** button on the front panel or on the IR remote control.

3. The **Power** button on the front panel will glow solid blue to indicate that the matrix is powered.

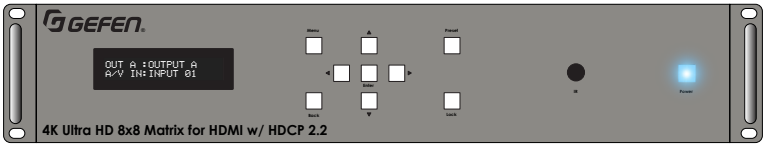


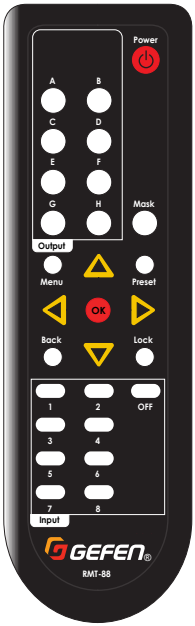
The first piece of information that is displayed is the model and current firmware. As of this writing, the current firmware is `0.2B`. Be sure to check the Gefen website for the latest version of firmware.

4. After a few moments, the *routing screen* will be displayed. The *routing screen* represents the “home” screen from which the built-in menu system can be accessed.

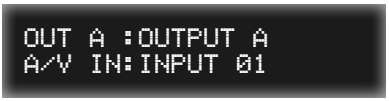


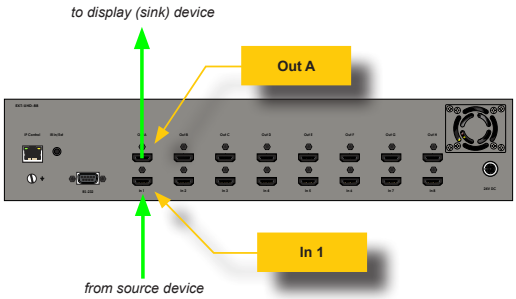
1. Go to the *routing screen*. If the routing screen is not displayed, then press the **Back** button on the front panel or on the IR remote control until the *routing screen* is displayed.





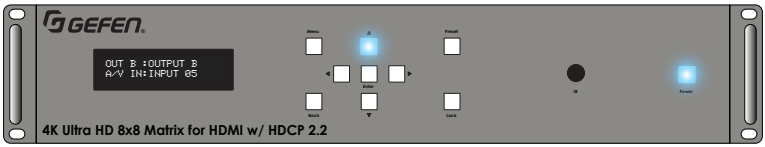
In the example, below, the source that is connected to **In 1** is currently routed to the display (sink device) that is connected to **Out A**.





2. Press and release the ▲ or ▼ buttons on the front panel or on the IR remote control to view each output and which input is being received.

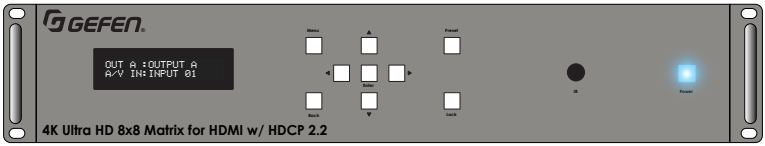
   The ▲ or ▼ buttons, on the front panel, will momentarily glow blue when pressed, as shown below:



When the matrix is shipped from the factory, the matrix is set to “one-to-one” routing mode. This means that Input 1 is routed to Output A, Input 2 is routed to Output B, Input 3 is routed to Output C, and so on. To change the routing state for any output, follow the instructions below.

Using the Front Panel

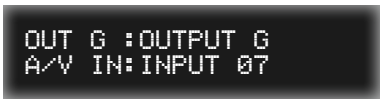
1. Go to the *routing screen*. If the routing screen is not displayed, then press and release the **Back** button until the *routing screen* is displayed.



2. Select the desired output by pressing and releasing the ▲ or ▼ buttons. These buttons will glow blue when they are pressed.

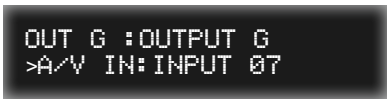
   Example: We have a 4K Ultra HD source connected to **In 4** (Input 4) and we want to view the source on the 4K Ultra HD display that is connected to **Out G** (Output G).

   The first thing we need to do is use the ▲ or ▼ buttons until Output G is displayed. Currently, Input 7 is routed to Output G. We need to change it to Input 4.

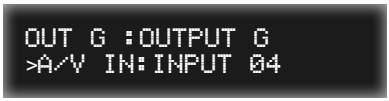


3. Press the **Enter** button.

4. An arrow cursor will be displayed next to the input. This indicates that input can now be changed.



5. Press and release the ▲ or ▼ buttons to select the desired input. In this example, we will select Input 4.



6. Once the desired input is selected, press the **Enter** button. The arrow cursor, next to the input, will disappear indicating that the input can not be changed.

7. The selected input is now routed to the selected output.

8. Repeat steps 2 - 6 to change the routing state for additional outputs.

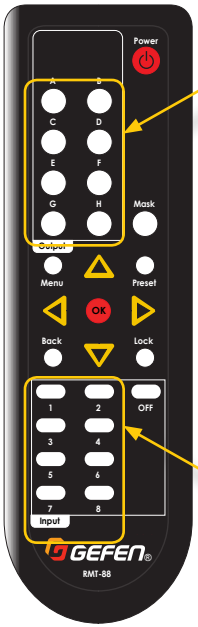
Using the IR Remote Control

Information

The front panel display will only show activity if a routing operation is being performed on the output that is displayed. Otherwise, the routing operation is performed in the background. To verify that the new routing state has been executed, you can view the current routing state for that output. See Viewing the Routing Status (page 17) for more information.

1. Go to the *routing screen*. If the routing screen is not displayed, then press and release the **Back** button on the IR remote control until the *routing screen* is displayed.

2. Select the desired output by pressing one of the Output buttons (A - H) on the top-portion of the IR remote control. In this example, we will route Input 5 to Output D.



Output buttons

3. Select the desired input by pressing one of the **Input** buttons (1 - 8) on the lower-portion of the IR remote control.

4. The routing process is complete.

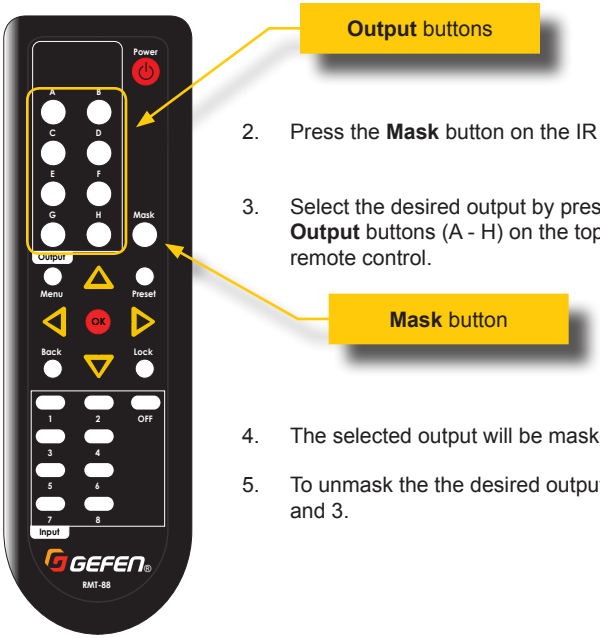
Input buttons

Masking Outputs

When masking outputs through the front panel, the IR remote control *must* be used. Outputs can also be masked by by using the built-in web interface. See Routing Inputs and Masking Outputs (page 73) for more information.

When an output is masked, the signal is blocked at the output. Let's say **Input 02** is routed to **Output A**, **Output B**, and **Output C**. If we mask **Output B**, then only A/V signal on **Output B** will be blocked. **Output A** and **Output C** will remain unaffected.

1. Start from any screen. In this example, we are starting at the *routing screen*.



2. Press the **Mask** button on the IR remote control.

3. Select the desired output by pressing one of the **Output** buttons (A - H) on the top-portion of the IR remote control.

4. The selected output will be masked immediately.

5. To unmask the the desired output, repeat steps 2 and 3.

Information

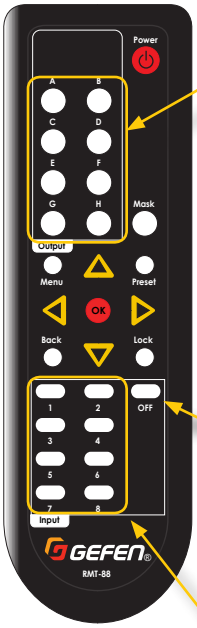
When an output is masked, no feedback will be shown on the front-panel display. However, the built-in web interface will always reflect a masking change.

Blocking an input disables the input, preventing the source signal from reaching any of the outputs. For example, if **Input 02** is routed to **Output A**, **Output B**, and **Output C**, then "blocking" **Input 02** will prevent the A/V signal from being displayed on **Output A**, **Output B**, and **Output C**.

When *blocking* an input, the IR remote control *must* be used. Inputs can also be "blocked" using the built-in web interface. See Routing Inputs and Masking Outputs (page 73) for more information.

1. Starting from any screen, press the button of the output (**Local**, **A** - **H**), on the top-portion of the IR remote control, where the **Input** is routed.

   For example, if we want to "block" **Input 3**, and **Input 3** is routed to **Output H**, then we would press the **H** button.



Output buttons

2. Press the **Off** button on the IR remote control.
3. The selected input will be turned "off" immediately.
4. The front-panel display will show the change:

Off button

In order for an input, on the matrix, to be turned "off", a source device must be connected to the input.

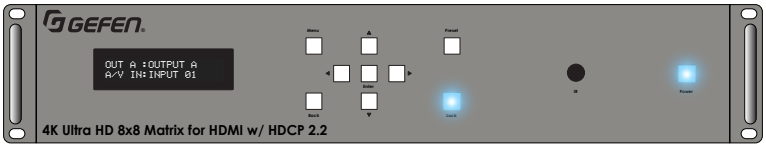
Input buttons

5. To "unblock" an input, press the desired **Output** button (A - H) then select an input from the **Input** buttons, located at the bottom-portion of the IR remote control.

To prevent an accidental routing change or power-down (by pressing the **Power** button), the front-panel buttons on the matrix can be locked. Locking the matrix disables the front-panel controls, IR, and the built-in web interface.

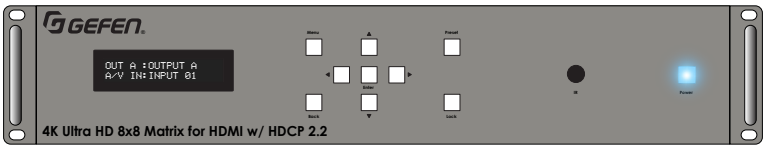
► Locking the Matrix

1. Starting from any screen, press and hold the **Lock** button.
2. The **Lock** button will flash blue six times and then glow solid blue.
3. Release the Lock button.
4. The matrix is now locked.



► Unlocking the Matrix

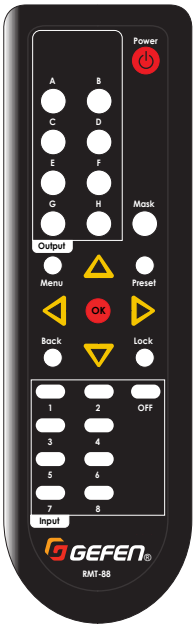
1. To unlock the matrix, press and hold the Lock button.
2. The Lock button will flash six times and then will be no longer illuminated.
3. The matrix is now unlocked.



Using the IR Remote Control

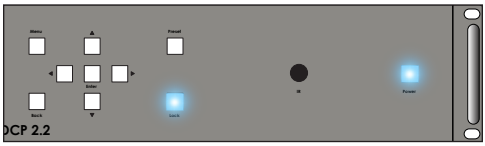
► Locking the Matrix

1. Starting from any screen, press the **Lock** button on the IR remote control.



2. The **Lock** button on the front panel will glow solid blue.

3. The matrix is now locked.

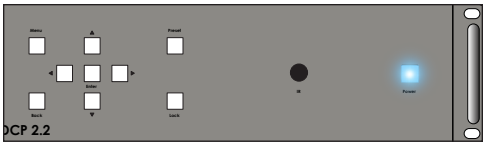


► Unlocking the Matrix

1. To unlock the matrix, press the Lock button on the IR remote control.

2. The Lock button, on the front panel, will be no longer illuminated.

3. The matrix is now unlocked.

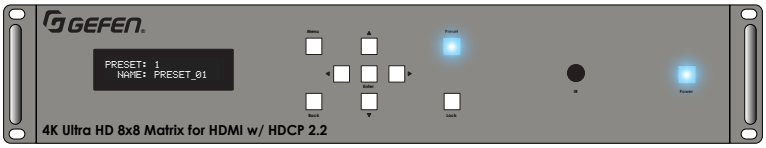


Routing presets can be recalled using the front panel buttons or the IR remote control. For information on creating presets, see Creating / Editing Routing Presets (page 76).

Using the Front Panel

1. Start from any screen.

2. Press the **Preset** button on the front panel. The **Preset** button, on the front panel, will flash blue when pressed.



3. The **Preset** selection screen will be displayed.

4. Select the desired preset by pressing and releasing the ▲ or ▼ buttons on the front panel.

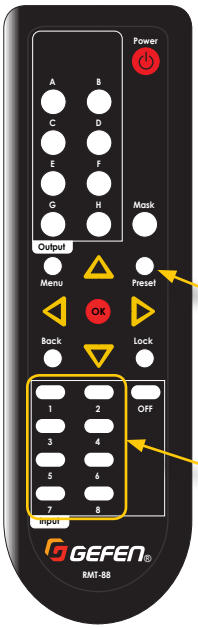
5. Once the desired preset is selected, press the **Enter** button on the front panel to load the preset.

6. The preset is now loaded and the routing state, stored in the preset, will be applied to the matrix.

7. After a few moments, the routing screen will be displayed.

Using the IR Remote Control

1. Start from any screen.
2. Press the **Preset** button on the IR remote control.



3. Use the set of **Input** buttons, from the bottom-portion of the IR remote control to select the desired preset.

   Only Presets 1 - 8 can be selected, when using the IR remote control.

4. The preset is now loaded and the routing state, stored in the preset, will be applied to the matrix.

Preset button

Input buttons

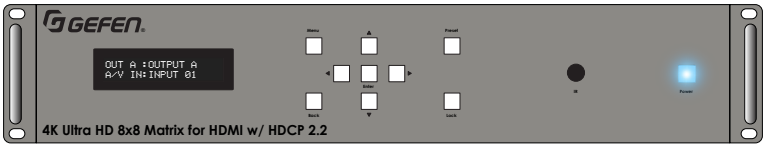
Information

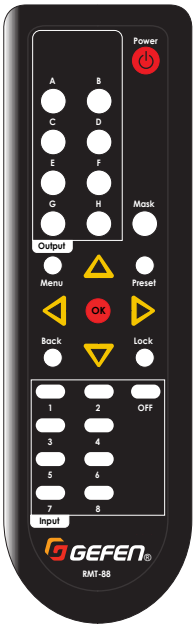
When using the IR remote control, no confirmation will be shown in the front panel display.

Accessing the Menu System

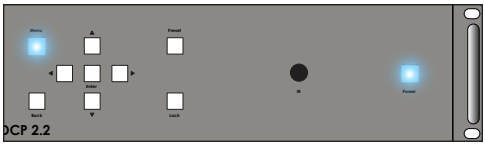
The front-panel menu system provides the ability to locally control many of the matrix features. However, we recommend using the built-in Web interface to control the matrix. For more information on accessing the web interface, see The Web Interface (page 64).

1. Go to the *routing screen*. If the routing screen is not displayed, then press the **Back** button on the front panel or on the IR remote control until the *routing screen* is displayed.





2. Press and release the **Menu** button on the front panel or on the IR remote control. The **Menu** button will momentarily flash blue when it is pressed.

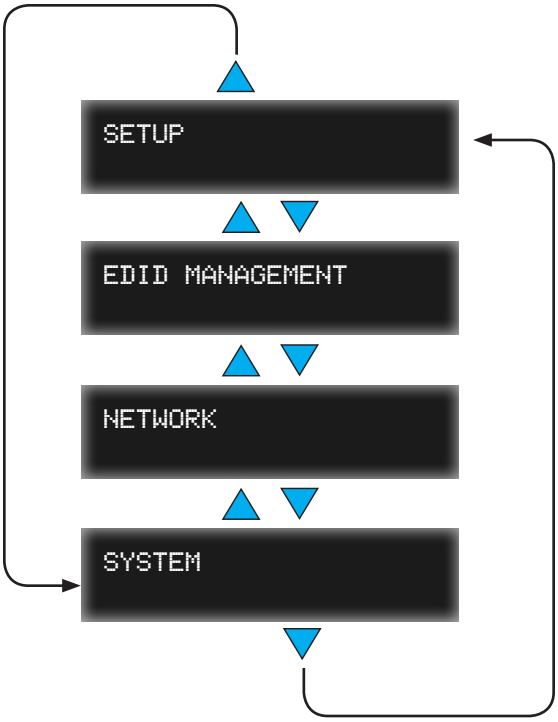


3. The **Setup** menu will be displayed:

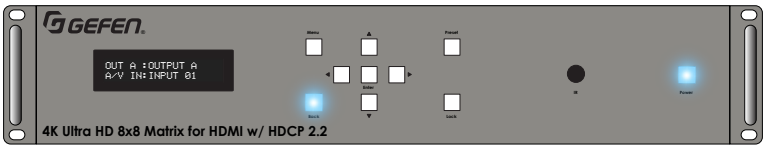
There are four menu systems: **Setup**, **EDID Management**, **Network**, and **System**. The **Setup** menu will always be the first menu to be displayed, when entering the menu system.

4. Press and release the ▲ or ▼ buttons to select the desired menu. These buttons will glow blue when they are pressed.

5. The menu system has the following order:



6. To return to the *routing screen*, press the **Back** button on the front panel or on the IR remote control until the *routing screen* is displayed.



Information

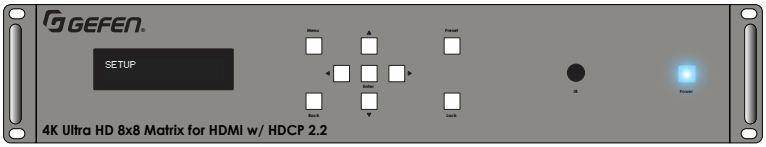
Depending upon the location within the menu system, multiple presses of the **Back** button may be required in order to return to the routing screen.

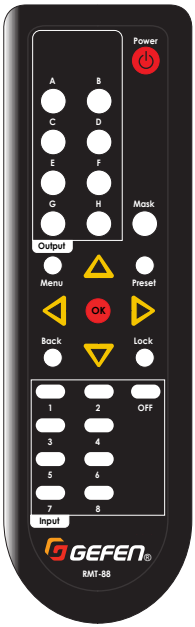
HPD Control

This menu option allows an HPD (Hot-Plug Detect) pulse to be sent to the selected input. Sending an HPD pulse to an input is equivalent to disconnecting and reconnecting the video cable at the source.

1. Go to the *routing screen*. If the *routing screen* is not displayed, then press the **Back** button on the front panel or on the IR remote control until the *routing screen* is displayed.

2. Press and release the **Menu** button on the front panel or on the IR remote control. The **Menu** button, on the front panel, will momentarily flash blue when it is pressed.





3. The **Setup** menu will be displayed:

4. Press the **Enter** button on the front panel. If using the included IR remote control, press the **OK** button.

5. The **HPD Control** option will be displayed:

6. Press the **Enter** button on the front panel. If using the included IR remote control, press the **OK** button.

7. The input selection screen will be displayed. **Input 01** will be displayed, by default.

8. Press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the desired input. These buttons will glow blue when they are pressed on the front panel.

9. After selecting the desired input, press the **Enter** button on the front panel. If using the included IR remote control, press the **OK** button.

10. The HPD pulse will be sent to the selected input. If a display is connected to the output to which the input is routed, then the display will flash as the HPD pulse is received.

11. After a few moments, the input selection screen will be displayed again:

12. To send an HPD pulse to another input, repeat steps 4 - 7.

13. To return to the **HPD Control** option, press the **Back** button on the front panel or on the IR remote control.

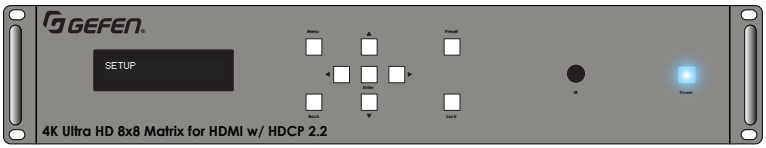
14. To return to the routing screen, press the **Back** button two more times.

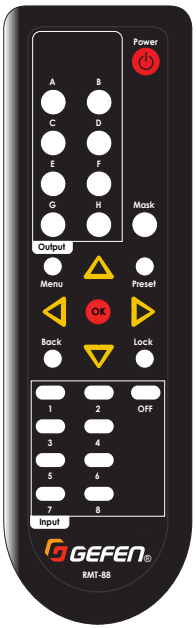
HDCP Control

This menu option restricts the version of HDCP that is accepted by an input. This matrix supports up to HDCP 2.2.

1. Go to the *routing screen*. If the routing screen is not displayed, then press the **Back** button on the front panel or on the IR remote control until the *routing screen* is displayed.

2. Press and release the **Menu** button on the front panel or on the IR remote control. The **Menu** button, on the front panel, will momentarily flash blue when it is pressed.





2. The **Setup** menu will be displayed:

3. Press the **Enter** button on the front panel.
If using the included IR remote control, press the **OK** button.

4. The **HPD Control** option will be displayed:

5. Press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the **HDCP Control** option:

6. Press the **Enter** button on the front panel or on the IR remote control to display the input control screen.

7. Press the **Enter** button on the front panel or on the IR remote control to display the input control screen.

8. Press and release the ▲ or ▼ buttons on the front panel or on the included IR remote control, to select the desired input or output. These buttons will glow blue when they are pressed on the front panel.

9. Press the **Enter** button on the front panel. If using the included IR remote control, press the **OK** button.

   If an input (1 - 8) is selected, then the following options will be available:

   ► **2.2 and below**
   Only HDCP version 2.2 and below is allowed to be sent from the source device.

   ► **1.4 and below**
   Only HDCP version 1.4 and below is allowed to be sent from the source device.

   ► **Reject**
   Blocks HDCP content from being sent from the source device.

   If an output (A - H) is selected, then the following options will be available:

   ► **Follow Input**
   HDCP pass-through: The content on the output of the matrix matches the content provided by the source device.

   ► **Always Encode**
   Always applies HDCP encryption to the content on the output of the matrix. So, even if the source is not HDCP, the output will be HDCP.

10. Once the desired input or output is selected, press the **Enter** button on the front panel or the **OK** button on the IR remote control. The arrow cursor will appear next to the current selection for the input (or output).

11. Press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the desired setting.

12. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to save the setting.

13. To set the HDCP control on a different input or output, press the **Back** button on the front panel or on the IR remote control.

14. To return to the **HPD Control** option, press the **Back** button on the front panel or on the IR remote control.

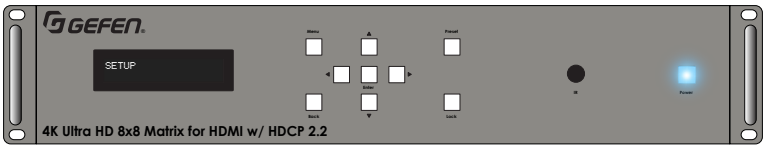
15. To return to the routing screen, press the **Back** button two more times.

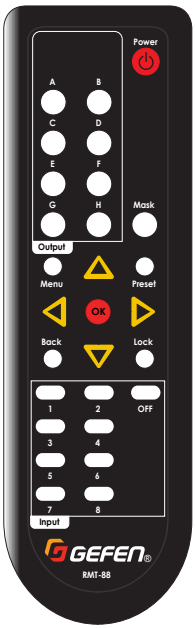
Setting the EDID Mode

This menu option allows the EDID that will be used by the source that is connected to each input. Internal, external, or a custom EDID can be selected.

1. Go to the *routing screen*. If the routing screen is not displayed, then press the **Back** button on the front panel or on the IR remote control until the *routing screen* is displayed.

2. Press and release the **Menu** button on the front panel or on the IR remote control. The **Menu** button, on the front panel, will momentarily flash blue when it is pressed.





2. The **Setup** menu will be displayed:

3. Press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the **EDID Management** menu:

4. Press the **Enter** button on the front panel. If using the included IR remote control, press the **OK** button.

5. The **EDID Mode** menu will be displayed:

6. Press the **Enter** button on the front panel or on the IR remote control to display the input control screen. **Input 01** will be displayed by default.

7. Press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the desired input.

8. Press the **Enter** button on the front panel. If using the included IR remote control, press the **OK** button.

9. The EDID selection screen will be displayed. The current EDID, for the selected input, will be displayed. An arrow cursor will be displayed next to the current EDID, indicating that it can be changed.

10. Press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the desired EDID. Refer to Internal EDID Profiles (page 182) for details on internal EDID specifications.

    The available EDID options, for each input, are:

EDID	Description
Internal-720p 2Ch	720p with 2-channel audio
Internal-720p Multi	720p with multichannel audio
Internal-1080p 2Ch	1080p with 2-channel audio
Internal-1080p Multi	1080p with multichannel audio
Internal-4K 2Ch	4K Ultra HD with 2-channel audio
Internal-4K Multi	4K Ultra HD with multichannel audio
External	Uses EDID of downstream sink
Custom	Uses a custom EDID

    See Setting the EDID Mode (page 84) for more information on using the Custom setting.

11. Once the desired EDID has been selected, press the **Enter** button on the front panel or the **OK** button on the IR remote control. The input selection screen will be displayed.

12. To set the EDID on another input, repeat steps 7 - 11.

13. Press the **Back** button on the front panel or on the IR remote control to return to the **EDID Mode** menu.

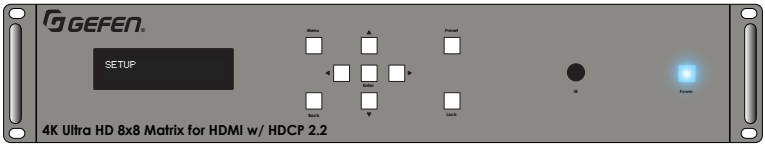
14. To return to the routing screen, press the **Back** button two more times.

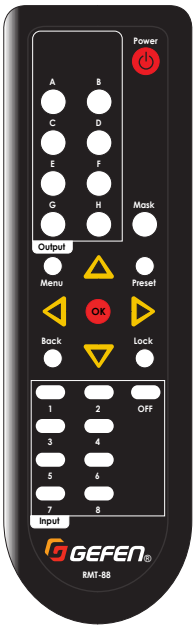
IP Settings

Use this menu option to set the IP mode, IP address, subnet mask, gateway, and HTTP port of the matrix.

1. Go to the *routing screen*. If the routing screen is not displayed, then press the **Back** button on the front panel or on the IR remote control until the *routing screen* is displayed.

2. Press and release the **Menu** button on the front panel or on the IR remote control. The **Menu** button, on the front panel, will momentarily flash blue when it is pressed.



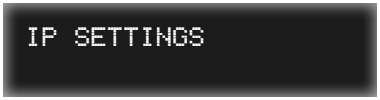


2. The **Setup** menu will be displayed:

3. Press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the **Network** menu:

4. Press the **Enter** button on the front panel. If using the included IR remote control, press the **OK** button.

5. The **IP Settings** menu will be displayed:



6. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to display the **IP Mode** screen. The current network mode will be displayed.

► Setting the IP Mode

a. From the **IP Mode** screen, press the **Enter** button on the front panel or the **OK** button on the IR remote control. An arrow cursor will be displayed next to the current IP mode, indicating that it can be changed:

b. Press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the desired IP Mode.

- **Static mode**
  Allows custom configuration of the IP address, subnet mask, and gateway.
- **DHCP mode**
  The IP address, subnet mask, and gateway address are automatically assigned by a DHCP server.

c. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to save the change.

d. Reboot the matrix to affect changes.

► Setting the IP Address

a. From the **IP Mode** screen, press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the **IP Address** option.
The current IP address will be displayed.

b. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to edit the IP address.

Important
The IP address can only be changed if the IP Mode is set to Static.

c. The cursor will appear under the first digit of the IP address.

d. Press the ▲ or ▼ buttons on the front panel or on the IR remote control, to change the numerical value of the digit (0 - 9).

e. Press the ◄ or ► buttons on the front panel or on the IR remote control to move between each digit in the IP address.

f. After the desired IP address has been set, press the **Enter** button on the front panel or the **OK** button on the IR remote control to save the change.

g. Reboot the matrix to affect changes.

► Setting the Subnet Mask

a. From the **IP Mode** screen, press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the **Subnet Mask** option. The current subnet mask will be displayed.

b. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to edit the IP address.

Important

The subnet mask can only be changed if the IP Mode is set to Static.

c. The cursor will appear under the first digit of the address.

d. Press the ◄ or ► buttons on the front panel or on the IR remote control to move between each digit in the address.

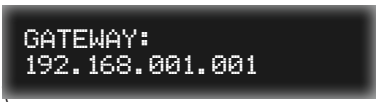
a. Press the ▲ or ▼ buttons on the front panel or on the IR remote control, to change the numerical value of the digit (0 - 9).

b. After the desired address has been set, press the **Enter** button on the front panel or the **OK** button on the IR remote control to save the change.

c. Reboot the matrix to affect changes.

► Setting the Gateway

a. From the **IP Mode** screen, press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the **Gateway** option.
The current gateway address will be displayed.



b. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to edit the address.

Important

The gateway address can only be changed if the IP Mode is set to Static.

c. The cursor will appear under the first digit of the address.

d. Press the ▲ or ▼ buttons on the front panel or on the IR remote control, to change the numerical value of the digit (0 - 9).

e. Press the ◄ or ► buttons on the front panel or on the IR remote control to move between each digit in the IP address.

f. After the desired IP address has been set, press the **Enter** button on the front panel or the **OK** button on the IR remote control to save the change.

g. Reboot the matrix to affect changes.

► Setting the HTTP Listening Port

a. From the **IP Mode** screen, press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the **HTTP Port** option. The current HTTP port will be displayed.

b. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to edit the port number. The cursor will appear under the first digit of the port number.

c. Press the ▲ or ▼ buttons on the front panel or on the IR remote control, to change the numerical value of the digit (0 - 9).

d. Press the ◄ or ► buttons on the front panel or on the IR remote control to move between each digit in the port number.

e. After the desired address has been set, press the **Enter** button on the front panel or the **OK** button on the IR remote control to save the change.

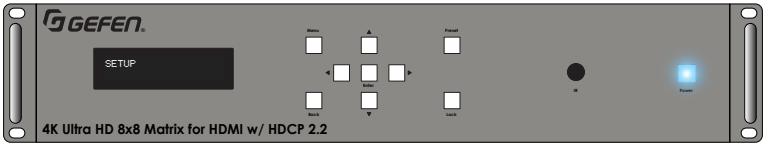
f. Reboot the matrix to affect changes.

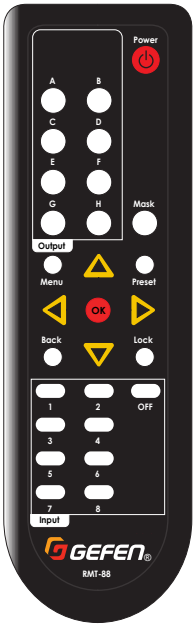
TCP / Telnet Settings

Use this menu option to set TCP access, the TCP port, Telnet welcome message state, and enabling / disabling of password credentials.

1. Go to the *routing screen*. If the routing screen is not displayed, then press the **Back** button on the front panel or on the IR remote control until the *routing screen* is displayed.

2. Press and release the **Menu** button on the front panel or on the IR remote control. The **Menu** button, on the front panel, will momentarily flash blue when it is pressed.





2. The **Setup** menu will be displayed:

3. Press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the **Network** menu:

4. Press the **Enter** button on the front panel. If using the included IR remote control, press the **OK** button.

5. Press the ▲ or ▼ buttons on the front panel or on the IR remote control to select the **TCP / Telnet Settings** menu.

6. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to display the **TCP access** screen. The current setting will be displayed.

► Enabling / Disabling TCP (Telnet) Access

a. From the **TCP access** screen, press the **Enter** button on the front panel or the **OK** button on the IR remote control.

b. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to change the current setting. An arrow cursor will be displayed next to the current setting, indicating that it can be changed:

c. Press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the desired setting.

- ► **Enabled**
  Allows Telnet sessions to the matrix.

- ► **Disabled**
  Disables Telnet sessions to the matrix.

d. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to save the change.

e. Reboot the matrix to affect changes.

► Setting the TCP Listening Port

a. From the **TCP access** screen, press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the **TCP Port** option. The current TCP port will be displayed.

b. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to edit the port number. The cursor will appear under the first digit of the port number.

c. Press the ◄ or ► buttons on the front panel or on the IR remote control to move between each digit in the port number.

d. Press the ▲ or ▼ buttons on the front panel or on the IR remote control, to change the numerical value of the digit (0 - 9).

e. After the desired port number has been set, press the **Enter** button on the front panel or the **OK** button on the IR remote control to save the change.

f. Reboot the matrix to affect changes.

► Enabling / Disabling Telnet Welcome Message

a. From the **TCP access** screen, press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the **Login on Connect** option. The current setting will be displayed. The default setting is *enabled*.

b. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to change the current setting. The cursor will appear next to the current setting.

c. Press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the desired setting.

► **Enabled**
Shows the welcome message at the beginning of each Telnet session.

► **Disabled**
Hides the welcome message for Telnet sessions.

d. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to save the change.

e. Reboot the matrix to affect changes.

► Enabling / Disabling Password

a. From the **TCP access** screen, press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the **Require Password** option. The current setting will be displayed.

```
REQUIRE PASSWORD:
DISABLED
```

b. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to edit the current setting. The cursor will appear next to the current setting.

```
REQUIRE PASSWORD:
>DISABLED
```

c. Press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the desired setting.

- **Enabled**
  Requires login credentials at the beginning of each Telnet session.

- **Disabled**
  Login credentials are not required for Telnet sessions.

See Configuring Network Settings (page 92) for information on changing the current (default) password.

```
REQUIRE PASSWORD:
>ENABLED
```

d. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to save the change.

```
REQUIRE PASSWORD:
ENABLED
```

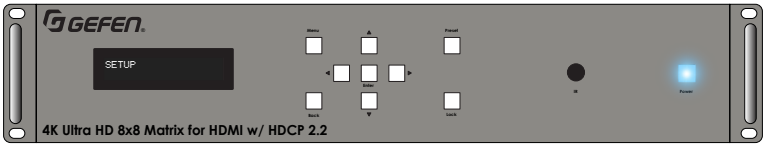
e. Reboot the matrix to affect changes.

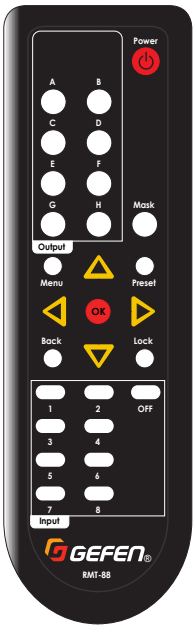
UDP Settings

Use this menu option to enable / disable UDP access, set the UDP port, UDP remote access, and setting the remote UDP IP address.

1. Go to the *routing screen*. If the routing screen is not displayed, then press the **Back** button on the front panel or on the IR remote control until the *routing screen* is displayed.

2. Press and release the **Menu** button on the front panel or on the IR remote control. The **Menu** button, on the front panel, will momentarily flash blue when it is pressed.





2. The **Setup** menu will be displayed:

3. Press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the **Network** menu:

4. Press the **Enter** button on the front panel. If using the included IR remote control, press the **OK** button.

5. Press the ▲ or ▼ buttons on the front panel or on the IR remote control to select the **UDP Settings** menu.

6. Press the **Enter** button on the front panel or the OK button on the IR remote control to display the **UDP Access** screen. The current setting will be displayed.

► Enabling / Disabling UDP Access

a. From the **UDP access** screen, press the **Enter** button on the front panel or the **OK** button on the IR remote control. An arrow cursor will be displayed next to the current setting, indicating that it can be changed:

b. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to change the current setting. The cursor will appear next to the current setting.

c. Press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the desired setting.

- ► **Enabled**
  Allows the UDP protocol to be used with the matrix.
- ► **Disabled**
  Prevents the UDP protocol from being used with the matrix.

d. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to save the change.

e. Reboot the matrix to affect changes.

► Setting the UDP Listening Port

a. From the **UDP Access** screen, press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the **UDP Port** option. The current UDP port will be displayed.

b. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to edit the port number. The cursor will appear under the first digit of the port number.

c. Press the ◄ or ► buttons on the front panel or on the IR remote control to move between each digit in the port number.

d. Press the ▲ or ▼ buttons on the front panel or on the IR remote control, to change the numerical value of the digit (0 - 9).

e. After the desired port number has been set, press the **Enter** button on the front panel or the **OK** button on the IR remote control to save the change.

f. Reboot the matrix to affect changes.

► Enabling / Disabling Remote UDP Access

a. From the **UDP Access** screen, press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the **Remote UDP Access** option. The current setting will be displayed.

b. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to change the current setting. The cursor will appear next to the current setting.

c. Press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the desired setting.

- **Enabled**
  Allows the Remote UDP protocol to be used with the matrix.

- **Disabled**
  Prevents the Remote UDP protocol from being used with the matrix.

d. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to save the change.

e. Reboot the matrix to affect changes.

► Setting the Remote UDP Address

a. From the **UDP Access** screen, press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the **Remote UDP Address o**ption. The current UDP address will be displayed.

b. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to edit the IP address.

c. The cursor will appear under the first digit of the UDP address.

d. Press the ▲ or ▼ buttons on the front panel or on the IR remote control, to change the numerical value of the digit (0 - 9).

e. Press the ◄ or ► buttons on the front panel or on the IR remote control to move between each digit in the IP address.

f. After the desired UDP address has been set, press the **Enter** button on the front panel or the **OK** button on the IR remote control to save the change.

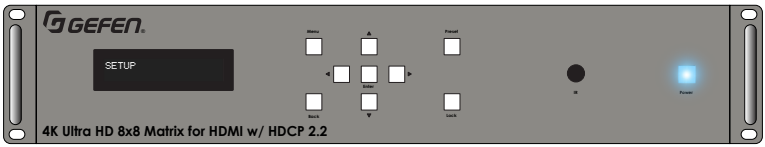
g. Reboot the matrix to affect changes.

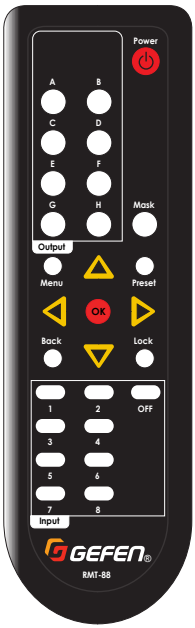
Discovery Settings

Use this menu option to enable / disable the “discovery” feature.

1. Go to the *routing screen*. If the routing screen is not displayed, then press the **Back** button on the front panel or on the IR remote control until the *routing screen* is displayed.

2. Press and release the **Menu** button on the front panel or on the IR remote control. The **Menu** button, on the front panel, will momentarily flash blue when it is pressed.





2. The **Setup** menu will be displayed:

3. Press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the **Network** menu:

4. Press the **Enter** button on the front panel. If using the included IR remote control, press the **OK** button.

5. Press the ▲ or ▼ buttons on the front panel or on the IR remote control to select the **Discovery Settings** menu.

6. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to display the **Discovery** screen. The current setting will be displayed.

7. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to change the current setting. The cursor will appear next to the current setting.

8. Press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the desired setting.

   ► **Enabled**
   Allows the matrix to be “discovered”, when connected to a network, by the Syner-G Software Suite.

   ► **Disabled**
   Prevents the matrix from being “discovered” by the Syner-G Software Suite.

9. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to save the change.

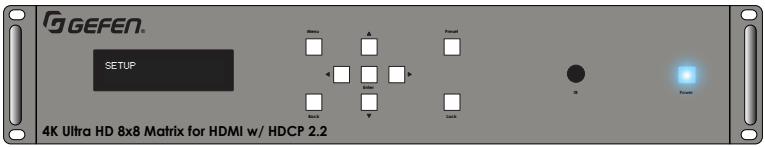
10. Reboot the matrix to affect changes.

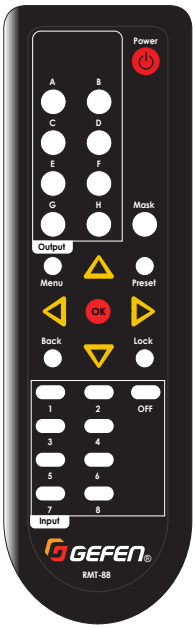
RS-232 Feedback

Use this menu option to enable / disable RS-232 feedback. When *disabled*, RS-232 commands will be executed but will not provide a response.

1. Go to the *routing screen*. If the routing screen is not displayed, then press the **Back** button on the front panel or on the IR remote control until the *routing screen* is displayed.

2. Press and release the **Menu** button on the front panel or on the IR remote control. The **Menu** button, on the front panel, will momentarily flash blue when it is pressed.





3. The **Setup** menu will be displayed:

4. Press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the **System** menu:

5. Press the **Enter** button on the front panel. If using the included IR remote control, press the **OK** button.

6. Press the ▲ or ▼ buttons on the front panel or on the IR remote control to select the **RS-232 Feedback** menu.

   The current setting will be displayed.

7. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to change the current setting. The cursor will appear next to the current setting.

8. Press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the desired setting.

   ► **Enabled**
   RS-232 commands are executed and a response is sent back to the automation device.

   ► **Disabled**
   RS-232 commands are executed but no response is provided.

9. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to save the change.

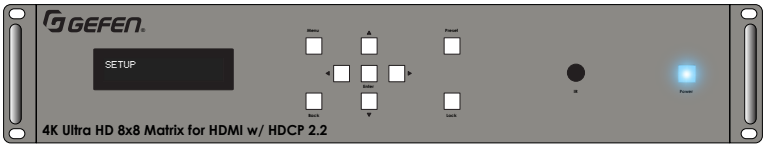
10. Reboot the matrix to affect changes.

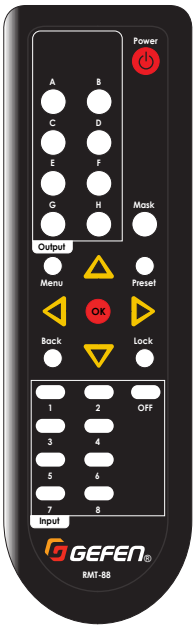
Adjust the LCD Brightness

Use this menu option to change the brightness of the front panel LCM display.

1. Go to the *routing screen*. If the routing screen is not displayed, then press the **Back** button on the front panel or on the IR remote control until the *routing screen* is displayed.

2. Press and release the **Menu** button on the front panel or on the IR remote control. The **Menu** button, on the front panel, will momentarily flash blue when it is pressed.





3. The **Setup** menu will be displayed:

4. Press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the **System** menu:

5. Press the **Enter** button on the front panel. If using the included IR remote control, press the **OK** button.

6. Press the ▲ or ▼ buttons on the front panel or on the IR remote control to select the **LCD Brightness** menu.

   The current setting will be displayed.

7. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to change the current setting. The cursor will appear next to the current setting.

8. Press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the desired setting. The range is from 0 to 100 and can be adjusted by increments of 1.

9. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to save the change.

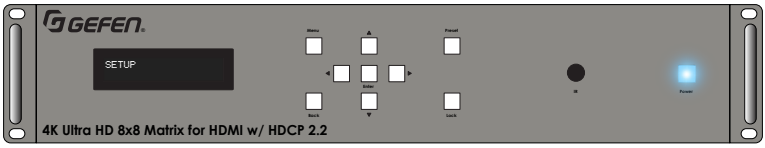
10. Reboot the matrix to affect changes.

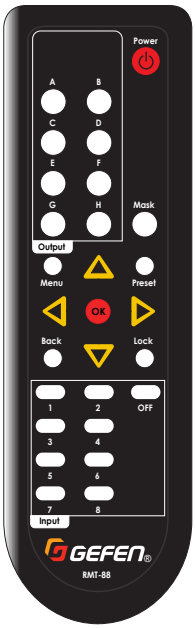
Setting the Matrix IR Channel

Use this menu option to set the IR channel of the matrix. In order for the included IR remote to work with the matrix, both the matrix and the IR remote control must be set to the same IR channel. See Setting the IR Channel (page 8) for more information on setting the IR channel for the IR remote control

1. Go to the *routing screen*. If the routing screen is not displayed, then press the **Back** button on the front panel or on the IR remote control until the *routing screen* is displayed.

2. Press and release the **Menu** button on the front panel or on the IR remote control. The **Menu** button, on the front panel, will momentarily flash blue when it is pressed.





3. The **Setup** menu will be displayed:

4. Press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the **System** menu:

5. Press the **Enter** button on the front panel. If using the included IR remote control, press the **OK** button.

6. Press the ▲ or ▼ buttons on the front panel or on the IR remote control to select the **IR Channel** menu.

   The current IR channel will be displayed.

7. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to change the current IR channel. The cursor will appear next to the current IR channel.

8. Press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the desired IR channel. The IR channel range is 1 - 4.

9. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to save the change.

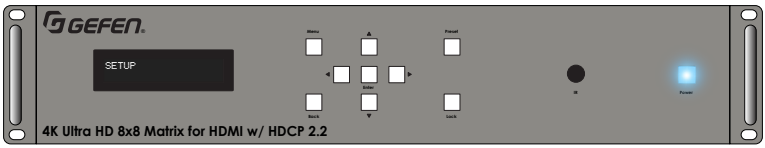
10. Reboot the matrix to affect changes.

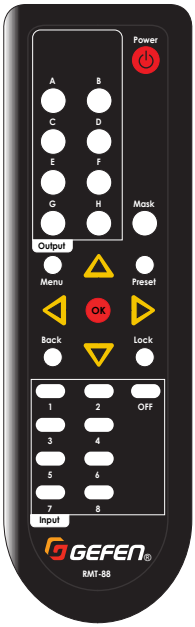
Resetting the Matrix

Use this menu option to reset the matrix to factory-default settings. See Default Settings (page 181) for more information on these settings.

1. Go to the *routing screen*. If the routing screen is not displayed, then press the **Back** button on the front panel or on the IR remote control until the *routing screen* is displayed.

2. Press and release the **Menu** button on the front panel or on the IR remote control. The **Menu** button, on the front panel, will momentarily flash blue when it is pressed.





3. The **Setup** menu will be displayed:

4. Press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the **System** menu:

5. Press the **Enter** button on the front panel. If using the included IR remote control, press the **OK** button.

6. Press the ▲ or ▼ buttons on the front panel or on the IR remote control to select the **Factory Reset** menu.

7. Press the **Enter** button on the front panel or the **OK** button on the IR remote control. The matrix will prompt to confirm the factory-reset operation.

8. Press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select either **Yes** or **No**.

9. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to confirm the selection.

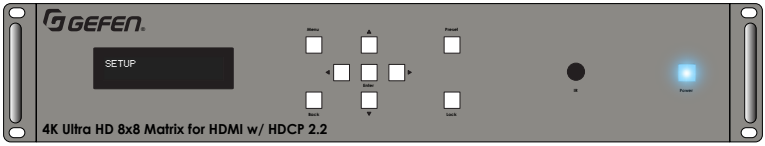
   If Yes is selected, then the matrix will be reset to factory-default settings and will automatically be rebooted.

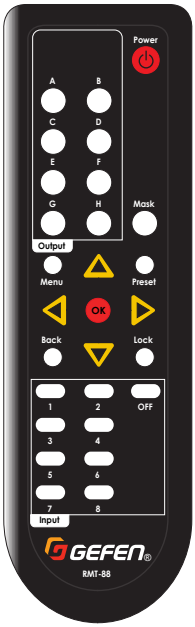
Rebooting the Matrix

Use this menu option to reboot the matrix.

1. Go to the *routing screen*. If the routing screen is not displayed, then press the **Back** button on the front panel or on the IR remote control until the *routing screen* is displayed.

2. Press and release the **Menu** button on the front panel or on the IR remote control. The **Menu** button, on the front panel, will momentarily flash blue when it is pressed.





3. The **Setup** menu will be displayed:

4. Press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select the **System** menu:

5. Press the **Enter** button on the front panel. If using the included IR remote control, press the **OK** button.

6. Press the ▲ or ▼ buttons on the front panel or on the IR remote control to select the **Reboot Unit** menu.

7. Press the **Enter** button on the front panel or the **OK** button on the IR remote control. The matrix will prompt to confirm the factory-reset operation.

8. Press and release the ▲ or ▼ buttons on the front panel or on the IR remote control, to select either **Yes** or **No**.

9. Press the **Enter** button on the front panel or the **OK** button on the IR remote control to confirm the selection.

   If Yes is selected, then the matrix will automatically be rebooted.

Introduction to the Web Interface

The 4K Ultra HD 8x8 Matrix for HDMI w/ HDCP 2.2 includes a built-in web interface. We recommend that the web interface be used to control the matrix as it provides easy management of all features used by the matrix.

► Logging In

1. Launch your favorite web browser.
2. In the address bar, type the IP address of the matrix.
3. The login page will be displayed.
4. Select the user from the **Username** drop-down list.

- **Operator**
  The Operator username provides restricted access to the web interface. This username allows access to both the Routing and Status tabs, locking / unlocking and powering on / off the matrix.

  The default password for the Operator user name is `Operator`. All passwords are case-sensitive. For information on changing the default password, see Configuring Network Settings (page 92).

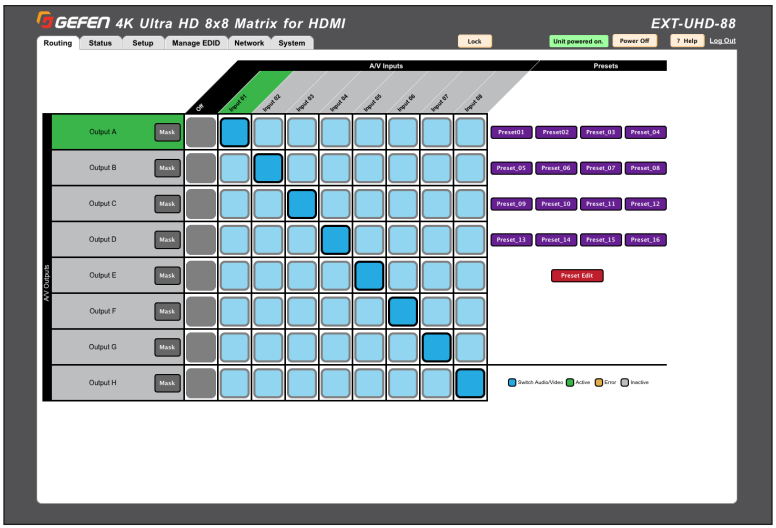
- **Administrator**
  The Administrator username provides full access to all features within the web interface.

  The default password for the Administrator user name is `Admin`. All passwords are case-sensitive. For information on changing the default password, see Configuring Network Settings (page 92).

5. Enter the password for the selected username.

6. Click the **Login** button.

7. Ater a few moments, the **Routing** tab will be displayed.



► Administrator vs Operator

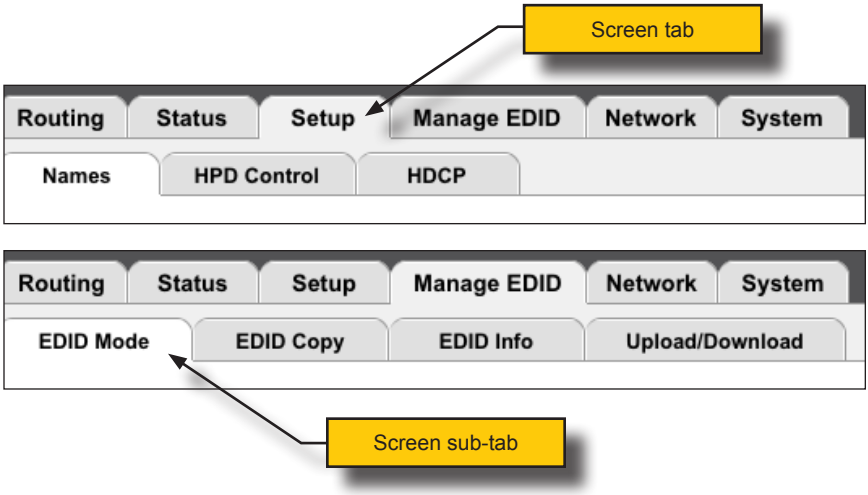
As mentioned earlier, logging in as `Operator` provides restricted access to many of the available features within the web interface. This is summarized in the table below:

Administrator	Operator
• Access to all features	• Access to **Routing** and **Status** tabs, only. • No access to the **Preset Edit** button under the **Routing** tab.

► Tabs and Sub-tabs

The web interface is organized into tabs, in the top-portion of the screen. Clicking on a tab will display a different screen.

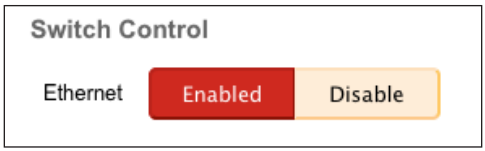
The **Setup** and **Manage EDID** tab have their own set of tabs, which we will refer to as "sub-tabs", as shown below.



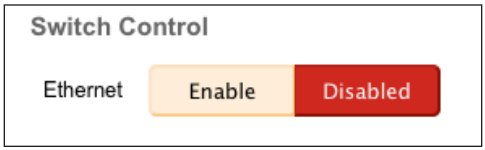
► Buttons

Several screen contain buttons which allow the selection of a particular mode or setting. Click the button for the desired setting. Buttons that are red represent a setting that is "turned on". If the button is pale-yellow, then the feature is "turned off":

- Feature is "turned on"

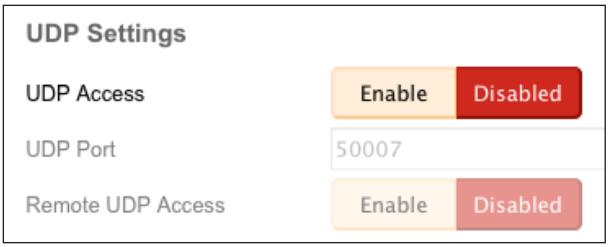


- Feature is "turned off"



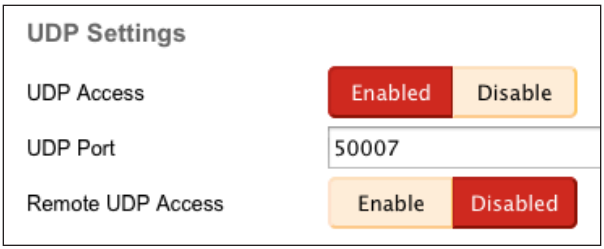
- If a button is pale-yellow or pale-red (disabled), then this means that the setting is not available. This usually requires that another setting must be *enabled* before setting a "sub-set" of that feature.

For example, note that both the **Remote UDP Access** button and the **UDP Port** field are disabled in the illustration, below:



In order to change either of these settings, **UDP Access** must be enabled.

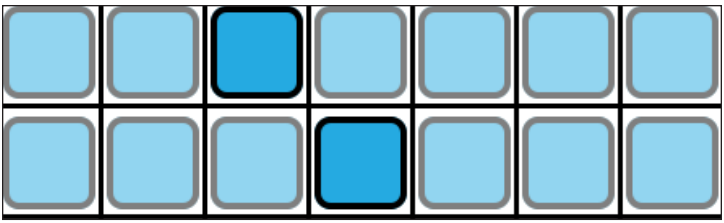
After clicking the **Enable** button, next to **UDP Access**, the button turns red and reads "Enabled." Since **UDP Access** is now *enabled*, we can now *enable* or *disable* **Remote UDP Access** and/or change the **UDP Port** number:



► Legend

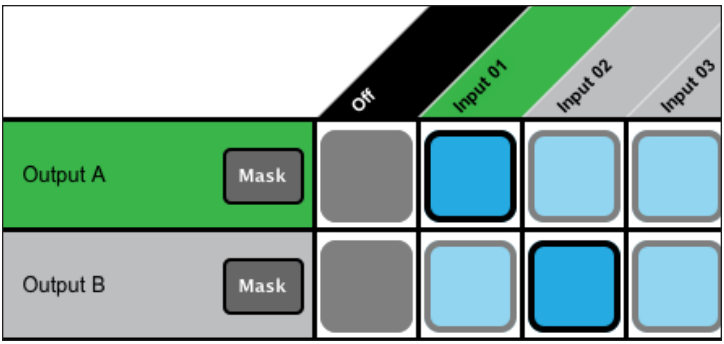
The legend, near the bottom-right corner of the screen, defines the colors used to indicate the status of an input or output:

Switch Audio / Video
A dark blue square indicates which inputs are routed to which outputs. Although not illustrated in the legend, a cyan-colored square indicates that the input and output are not routed to one another. See Routing Inputs and Masking Outputs (page 73) for more information.



Active
An input or output name, which is highlighted in green, indicates that an active source or sink is connected to the representative input / output.
of an active source or sink.

Inactive
Indicates the absence of an source or sink device on that input or output.

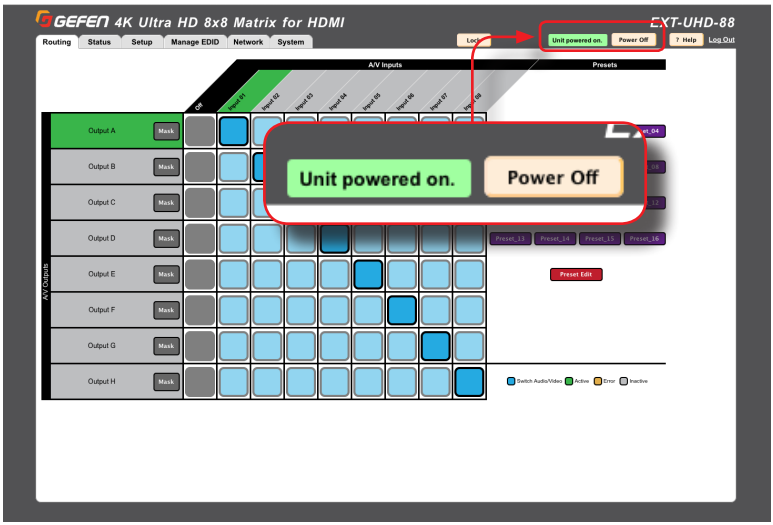


Error
Although a rare occurrence, this indicates an error (e.g. HDCP, etc.) with the source or sink device. These rows or columns are highlighted in amber.

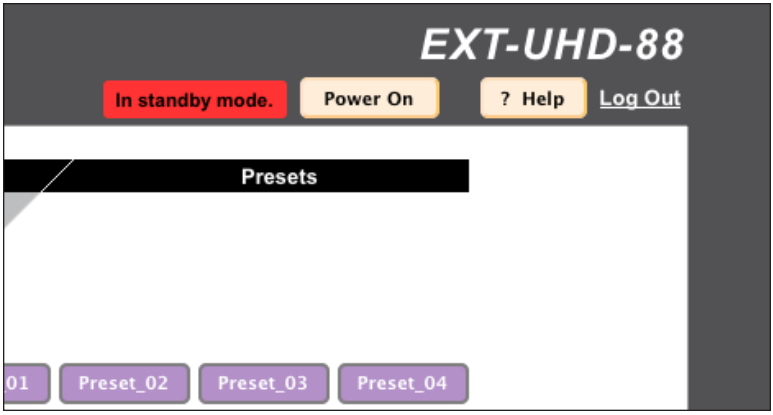
Controlling Power

1. The current power status (ON or OFF) of the matrix is indicated next to the **Power Off** / **Power On** button in web Interface.

   ► If the matrix is powered-on, then the indicator will read **Unit powered on**, as shown below. The **Power Off** / **Power On** button will be displayed as **Power Off**.



   ► If the matrix is powered-off, then the indicator will be highlighted in red and will read **In Standby mode**, as shown:



2. Click the Power Off button to “turn off” the matrix.

3. The following message box will be displayed, as the matrix powers-down.

4. After a few moments, the web interface will reappear.

5. Click the **Power On** button to “turn on” the matrix.

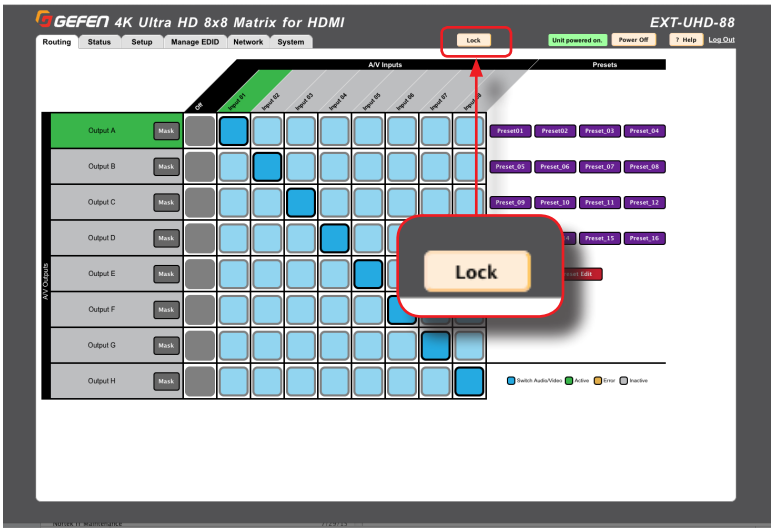
6. The “Please wait, processing...” message box will be displayed and after a few moments, the web interface will reappear.

Locking the Matrix

Locking the matrix disables the front-panel controls, IR routing, and the built-in web interface. This is useful in preventing an accidental change to matrix settings by inadvertently pressing any of the front-panel buttons.

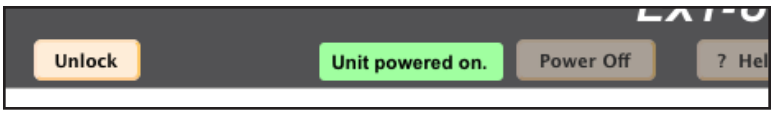
1. Click the **Routing** tab.

2. Click the **Lock** button near the top of the screen.



3. Once pressed, the **Lock** button will read “Unlock”. The Lock button on the front panel will also glow bright blue. The matrix is now locked.

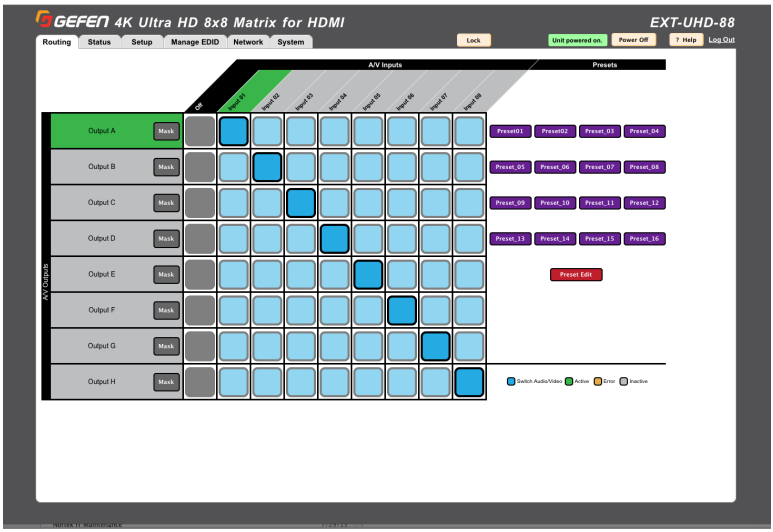
4. Click the **Unlock** button to unlock the matrix.



5. The **Unlock** button will now read “Lock”. The **Lock** button on the front panel will also turn-off. The matrix is now unlocked.

Viewing the Routing Status

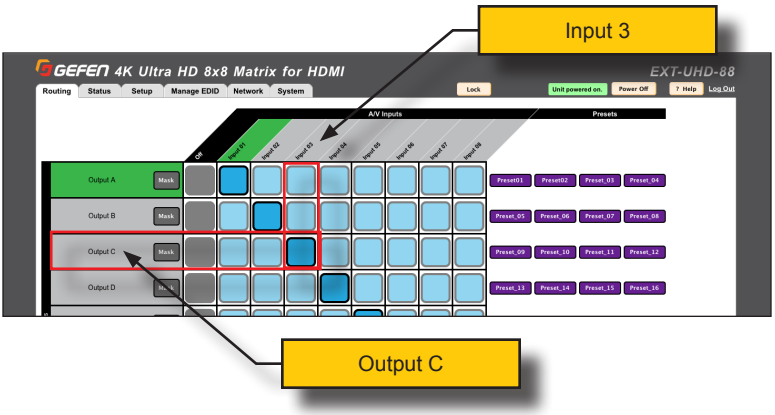
1. Click the **Routing** tab.



2. Locate the desired output from the rows on the left, then read across until a *routing indicator* (dark-blue square) is encountered.

3. Note the column where the dark-blue square is located. Each column identifies an input. The output and inputs names can be changed, if desired. See Changing Input and Output Names (page 80) for more information.

   For example, in the illustration below, **Input 3** is routed to **Output C**.



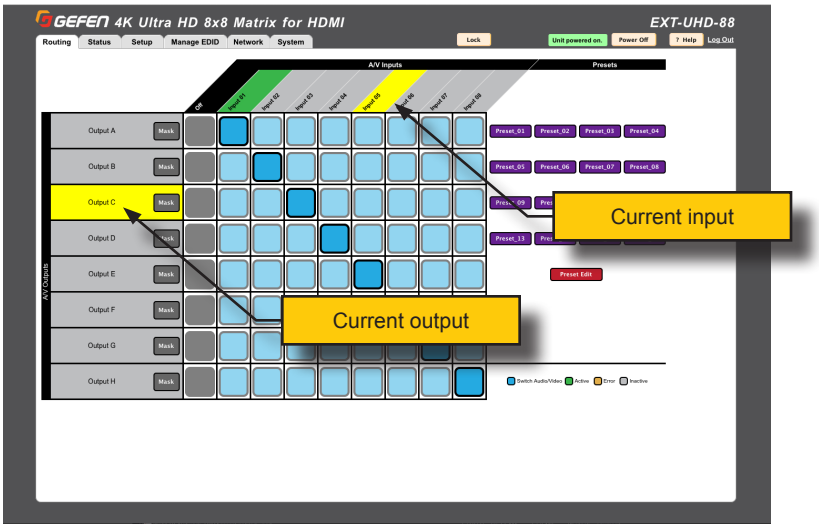
Routing Inputs and Masking Outputs

► Routing Inputs

1. Click the **Routing** tab.

2. Located the desired output, from the left side of the screen. For this example, we will select **Output C**.

3. Move the mouse horizontally, within the selected output row. As the mouse moves, the current output row and input column will be highlighted in yellow:

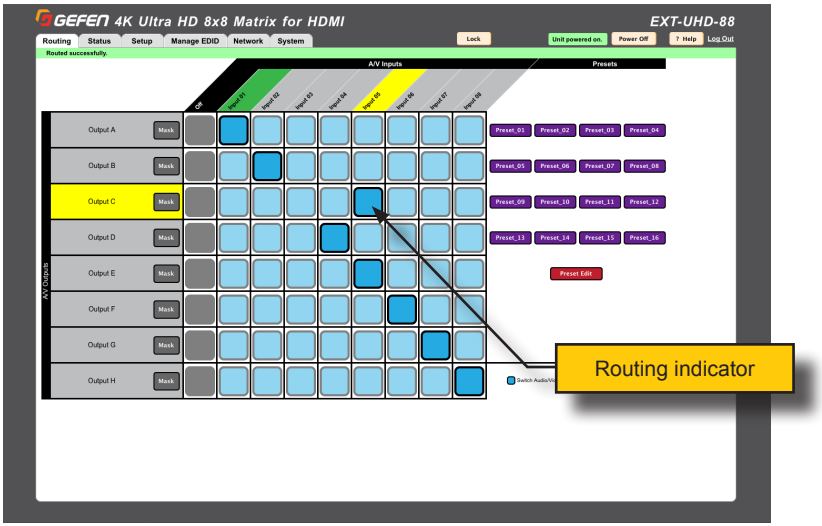


4. Click the desired input. Use the column, with the input names, as a guide when selecting the input. For this example, we will select **Input 05**.

5. The new routing state will be applied immediately.

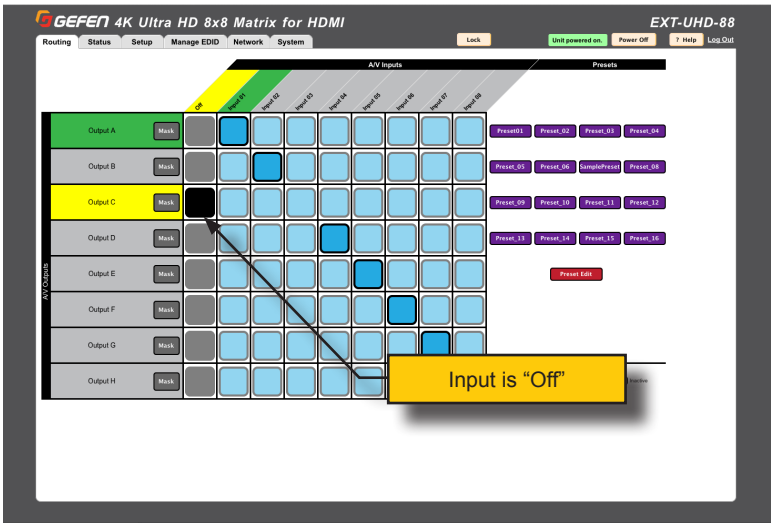
6. A *routing indicator* (dark blue square) will appear at the intersection of the row (output) and column (input) of the current routing state:

   Refer to the next page for an illustration.



7. To “turn-off” an input, click the dark-gray square in the same row where the routing indicator for the input is located. In the example, above, **Input 05** is routed to **Output C**. The routing indicator for **Input 05** is located in the same row as **Output C**. Therefore, we need to click the dark square, next to **Output C**.

   When an input is “off”, the gray square will turn black, as shown:

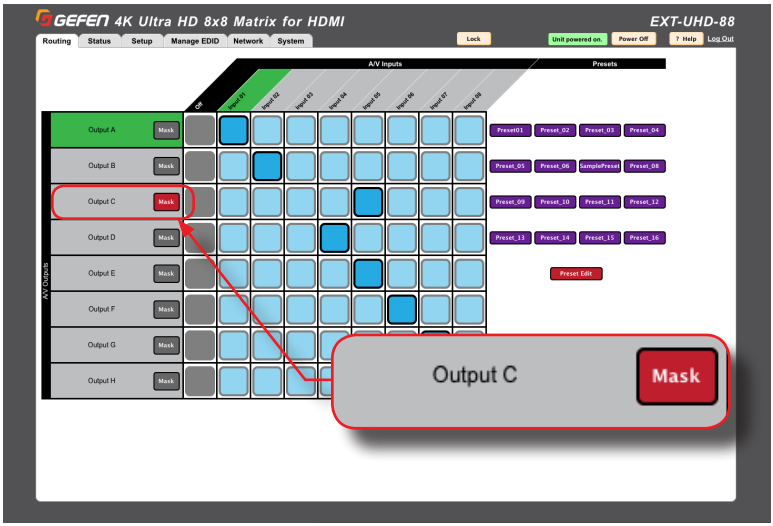


8. To “turn-on” the input, click the desired input within the same row. Once an input is selected, the black box will disappear indicating that the input is active.

► Masking Outputs

1. Click the **Routing** tab.

2. Mask the desired output by clicking the **Mask** button. The **Mask** button will turn red, indicating that the selected output is masked.



3. To unmask the output, click the **Mask** button again. The button will turn black.

► Masking Outputs vs Turning-off Inputs

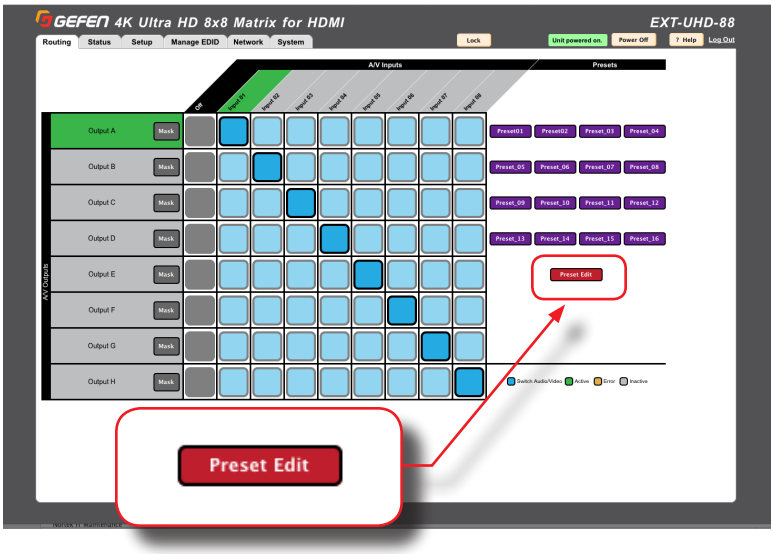
It is important to distinguish between “masking” an output and “turning off” and input:

- T**urning-off an input**
  When an input is “turned-off”, the signal is “blocked” at the source. This has the effect of “masking” all outputs to which each input is routed. For example, if **Input 02** is routed to **Output A**, **Output B**, and **Output C**, then “turning-off” **Input 02** will prevent the A/V signal from being displayed on **Output A**, **Output B**, and **Output C**.

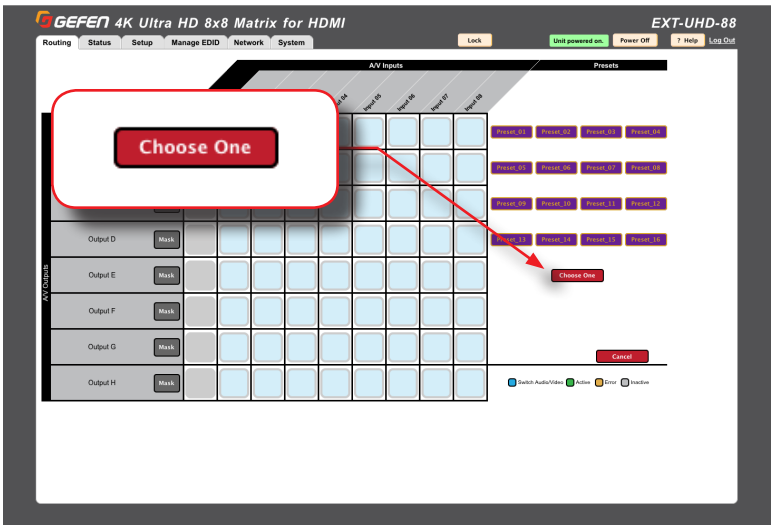
- M**asking (output)**
  When an output is masked, the signal is “blocked” at the output. Let’s say **Input 02** is routed to **Output A**, **Output B**, and **Output C**. If we mask **Output B**, then only A/V signal on **Output B** will be blocked. **Output A** and **Output C** will remain unaffected.

Creating / Editing Routing Presets

1. Click the **Routing** tab.
2. Under the **Presets** section, click the **Preset Edit** button.

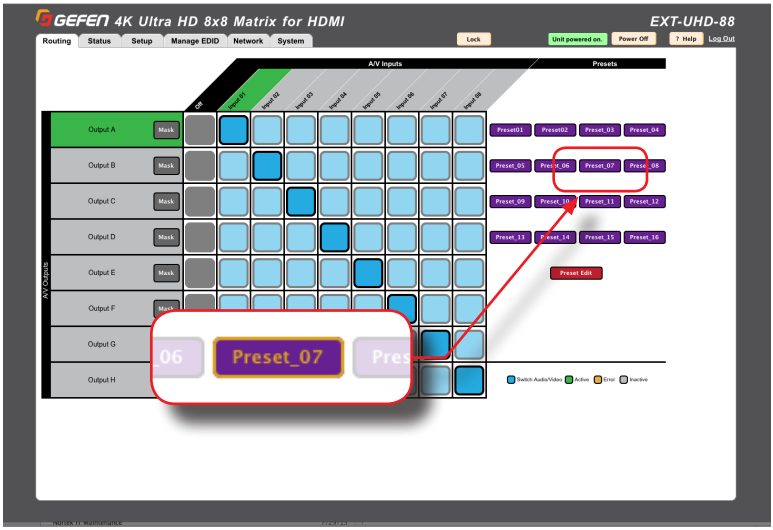


3. The screen will change and the **Preset Edit** button will read “Choose One”.

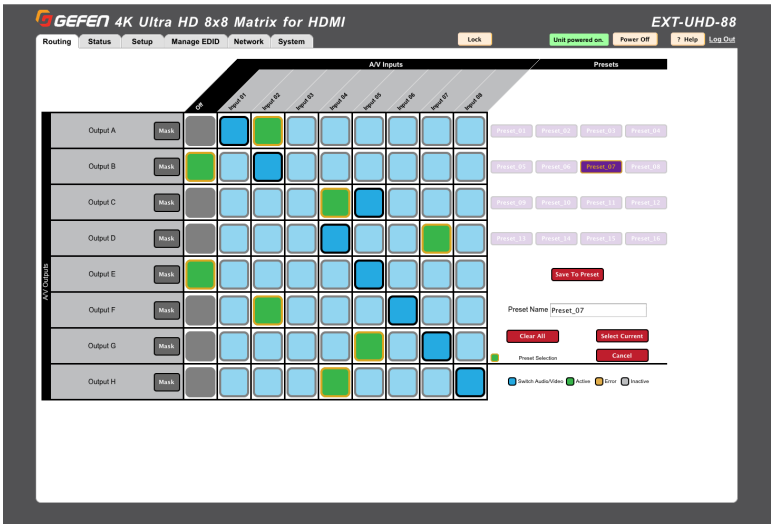


4. Click the desired preset to edit. In this example, we will select **Preset_07**.

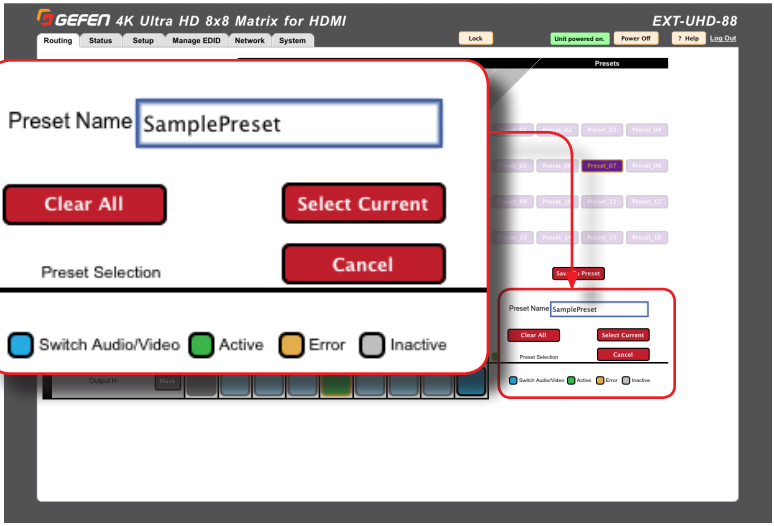
5. The selected preset will be highlighted.



6. Select the desired routing state for each input/output. See Routing Inputs and Masking Outputs (page 73), if necessary. The *preset selections* for the selected preset, will be indicated by a green square, as shown below. Note that an input can also be set to *inactive* ("off"). The dark blue squares indicate the current routing state.



7. After the desired routing states, for input/output have been assigned, provide a name for the preset in the **Preset Name** field.



- ► To clear the *preset selections* for the current preset, click the **Clear All** button.
- ► To use the current routing state (dark blue squares) as the preset selection, click the **Select Current** button.
- ► To abort the editing of the preset, click the **Cancel** button.

8. Click the **Save to Preset** button to save the preset.
9. Repeat steps 2 - 8, as desired, for each preset.
10. To load a preset, click the desired preset button.

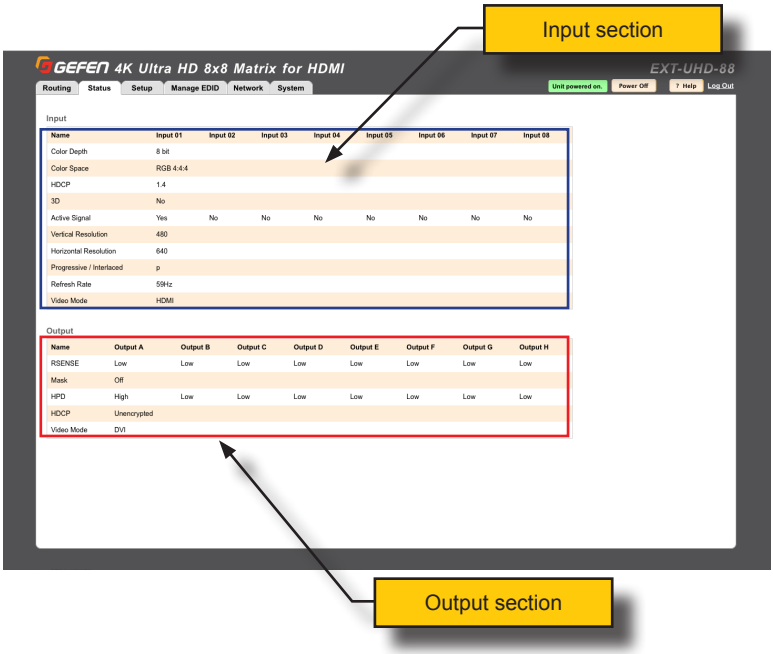
Input and Output Status

Provides video and audio information for all inputs and outputs.

1. Click the **Status** tab within the built-in web interface.

2. Information on each input is listed in the top portion of the screen. We have outlined this section in blue.

3. Information on each output is listed in the bottom portion of the screen. We have outlined this section in red.



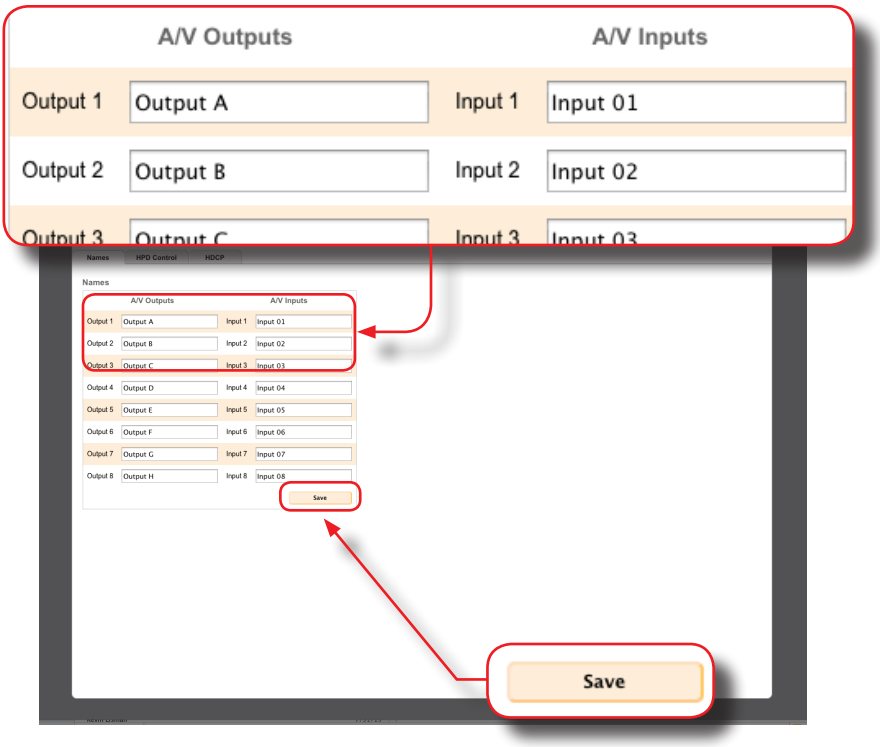
The table below outlines the information that is available for each section:

Input	Output
• Color depth • Color space • HDCP (version) • 3D (status) • Active Signal • Vertical resolution • Horizontal Resolution • Progressive / interlaced • Refresh rate • Video mode	• Rsense • Mask • HDP • HDCP • Video mode

Changing Input and Output Names

By default, the names of each output are Output A - Output H. The names of each input are Input 1 - Input 8. Each of these names can be changed, as desired, to suit the type of device that is connected to the input or output. This allows easy reference when performing routing operations.

1. Click the **Setup** tab within the built-in web interface.
2. Click the **Names** sub-tab.
3. Click in the field of the desired output or input to be changed.

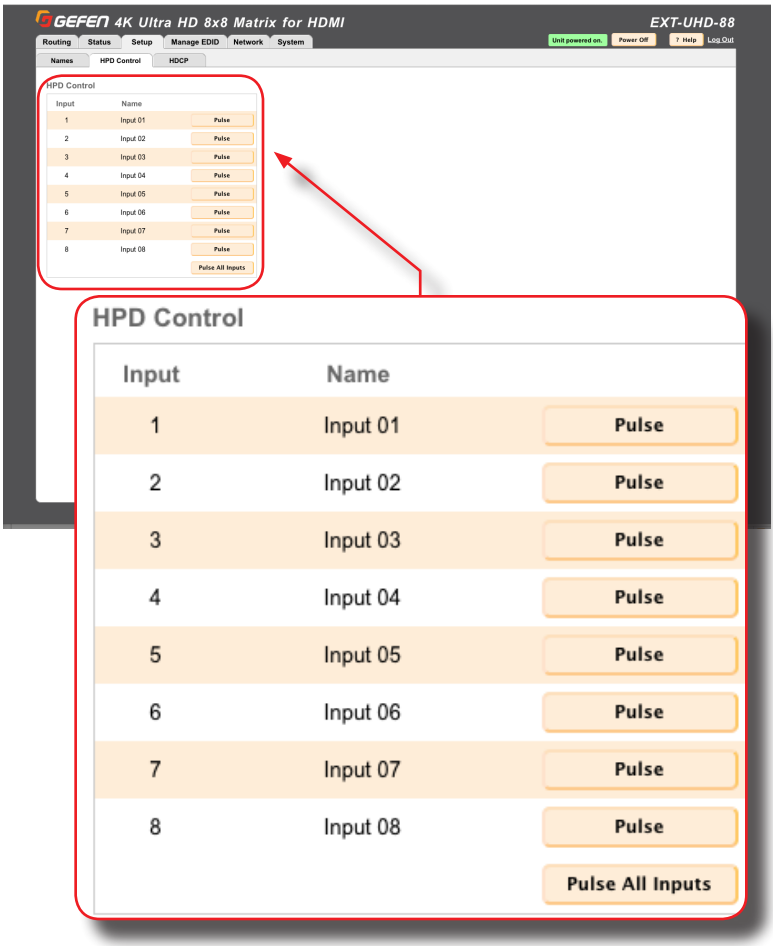


4. Once all changes have been made, click the **Save** button.
5. The new input / output name(s) will be displayed within the **Routing** tab. Note that the new input / output name(s), to the left of each field, will not be changed.

HPD Control

HPD (Hot-Plug Detect) is an HDMI feature which senses if the HDMI cable is disconnected, from the source or sink device, and then re-initializes the HDMI link if necessary. Within the web interface, the HPD pulse can be sent to the selected input, and reset the HDMI connection without disconnecting any cables. The connected display will flash when an HPD signal is received.

1. Click the **Setup** tab within the built-in web interface.
2. Click the **HPD Control** sub-tab.
3. Click the **Pulse** button for the desired input. Click the **Pulse All Inputs** button to send an HPD signal to all inputs.



HDCP

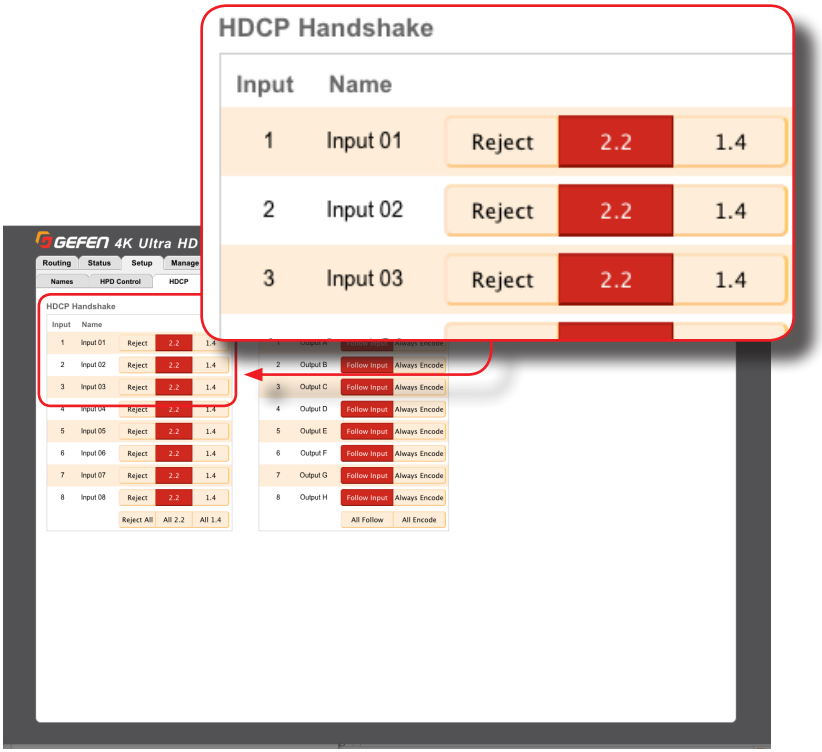
This feature allows HDCP content to either be passed-through or rejected on each input. Outputs can either follow the input status or can be set to always encode HDCP. Note that using the "Reject" feature, on an input, does *not* decrypt HDCP content.

1. Click the **Setup** tab within the built-in web interface.
2. Click the **HDCP** sub-tab.
3. For inputs, select the desired button next to the input.

   ► **Reject** - Does not allow HDCP content to be passed through. Click the **Reject All** button to set all inputs to **Reject**.

   ► **2.2** - Click this button if the sink device supports HDCP 2.2. Click the **All 2.2** button to set all inputs to **2.2**.

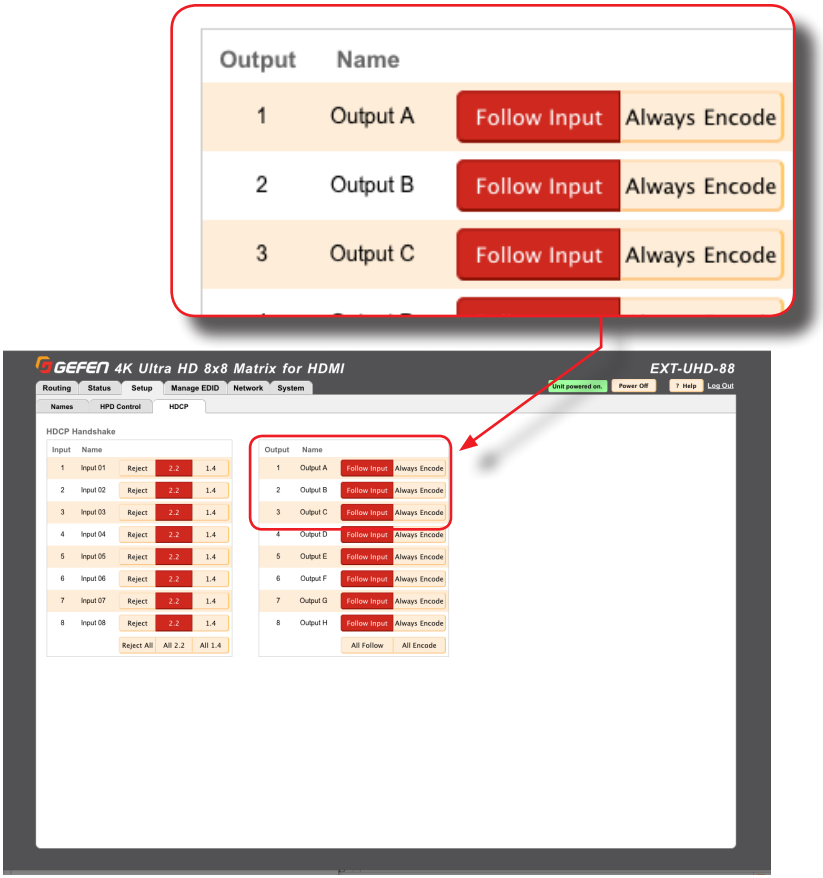
   ► **1.4** - Click this button if the sink device only supports HDCP 1.4. Click the **All 1.4** button to set all inputs to **1.4**.



4. For outputs, select the desired button next to the output.

   ► **Follow Input** - Click this button to have the output follow the setting used on the input. Click the **Follow All** button to set all outputs to **Follow Input**.

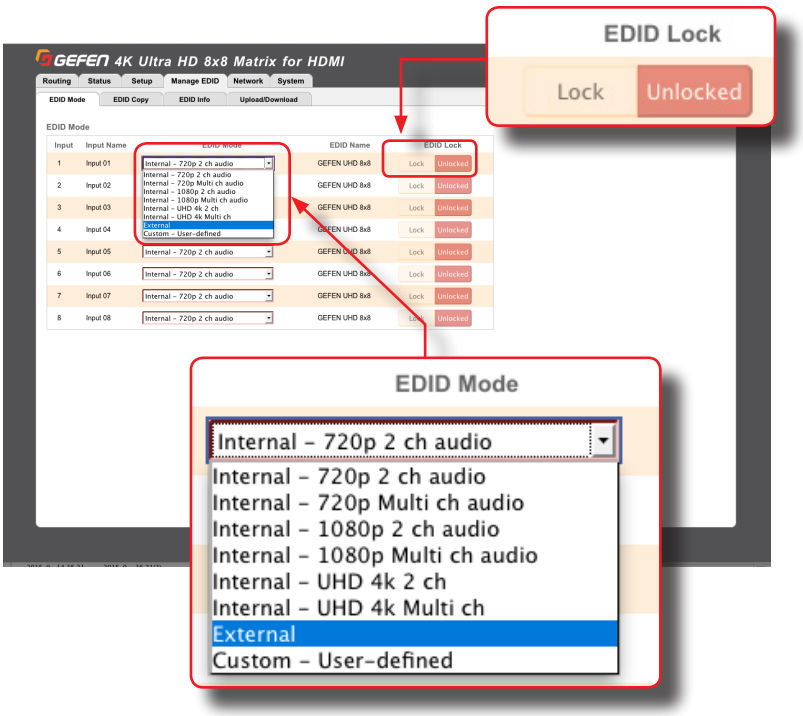
   ► **Always Encode** - Encodes the output signal with HDCP, regardless of the input signal. Use this feature for displays that require HDCP-encoded content. Click the **All Encode** button to set all outputs to **Always Encode**.



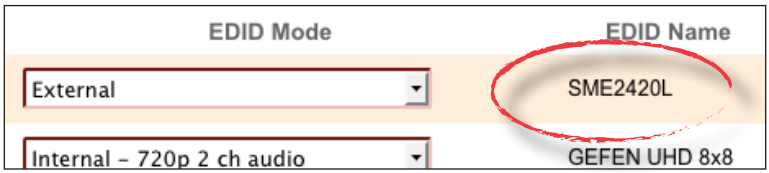
Setting the EDID Mode

The **EDID Mode** tab allows the desired EDID mode (internal preset, external, or custom) to be set for each input.

1. Click the **Manage EDID** tab within the built-in web interface.
2. Click the **EDID Mode** sub-tab.
3. Select the desired EDID mode for each input using the drop-down list.



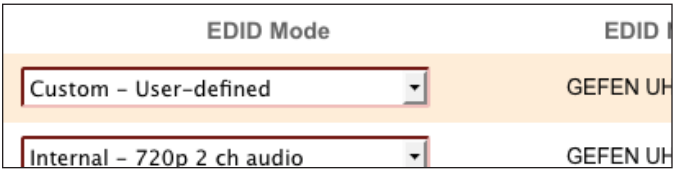
If the **EDID Mode** is set to **External**, then the name of the downstream EDID (device) will appear under the EDID Name column, as shown:



► Using a Custom EDID

The **Custom - User-defined** setting is used to store a custom EDID in the selected input. To use a custom EDID, follow the instructions below:

1. Select **Custom - User-defined** from the drop-down list of the desired input.



2. Copy or upload an EDID to the input that is using the **Custom** mode. See one of the following sections for more information on copying or uploading EDID data:

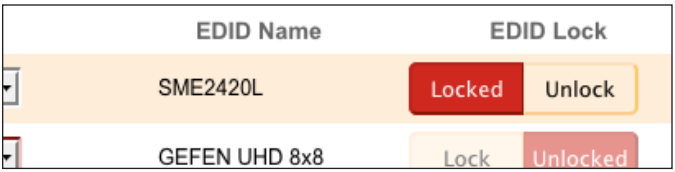
   ► Copying EDID Data (page 86).

   ► Uploading and Downloading EDID Data (page 89).

3. Set the EDID Lock mode to either **Locked** or **Unlocked**:

   ► **Locked**
   Prevents the EDID from being changed on the input..

   ► **Unlocked**
   Allows the EDID to be changed.

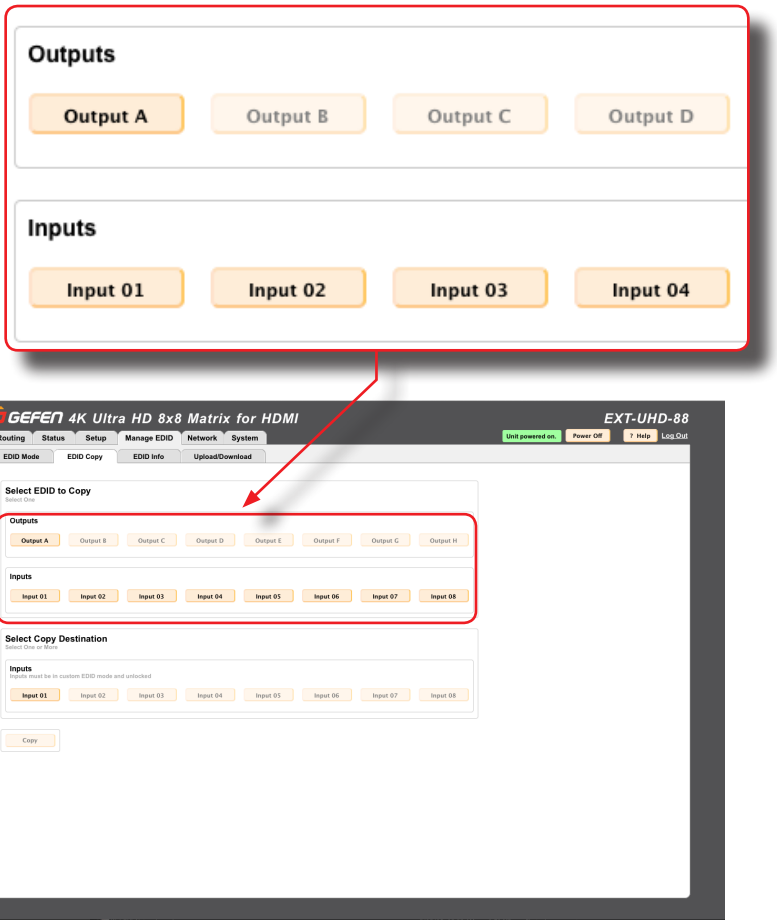


4. The name of the custom EDID will appear under the **EDID Name** column.

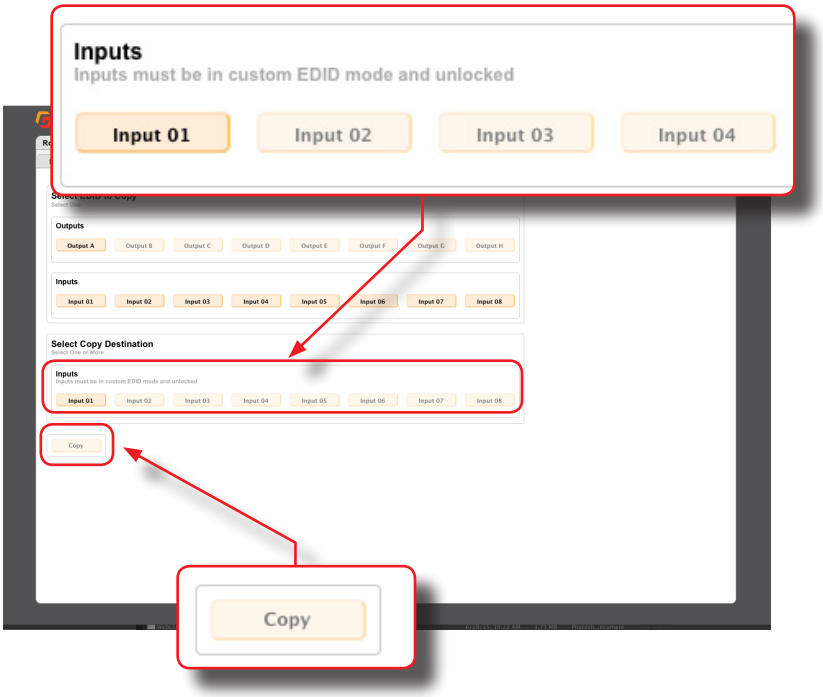
Copying EDID Data

The **EDID Copy** tab allows an EDID to be copied from an input or output (sink device) to any input. In order to copy an EDID to an input, the input must be set to **Custom - User-defined** mode and then unlocked. See Setting the EDID Mode (page 84) for more information.

1. Click the **Manage EDID** tab within the built-in web interface.
2. Click the **EDID Copy** sub-tab.
3. Click the button of the desired output or input from the **Select EDID to Copy** section. Select only one input or output at a time.



4. After the input or output is selected, click the button for the corresponding input where the EDID will be copied. One or more inputs can be selected at a time.



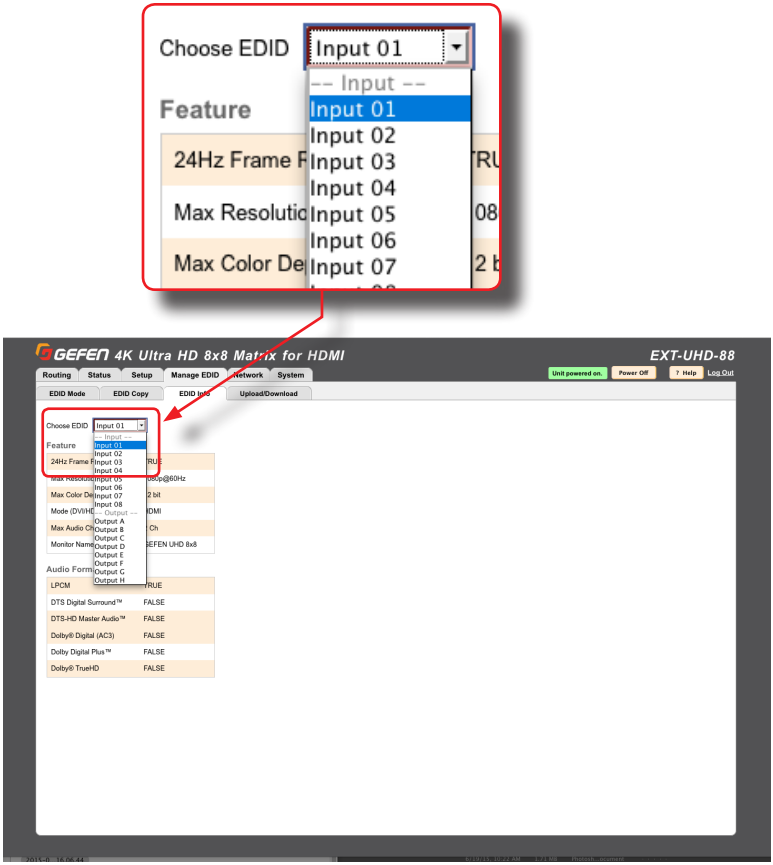
5. Click the **Copy** button. The **Copy** can only be pressed when both an output or input (the source) and an input (destination) are selected.

6. The EDID copy process is complete. Repeat steps 3 - 5 as desired.

Getting EDID Information

The **EDID Info** tab allows the EDID informatioin, from an input or sink device, to be displayed.

1. Click the **Manage EDID** tab within the built-in web interface.
2. Click the **EDID Info** sub-tab.
3. Select the desired input or output from the **Choose EDID** drop-down list.



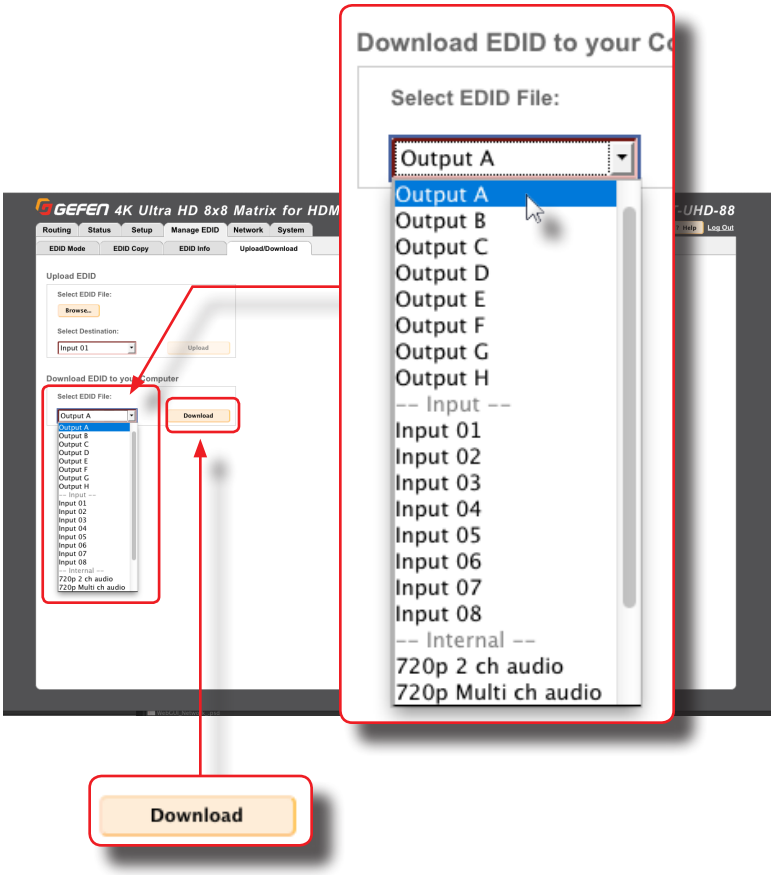
4. The EDID information for the selected input or output will be displayed.

Uploading and Downloading EDID Data

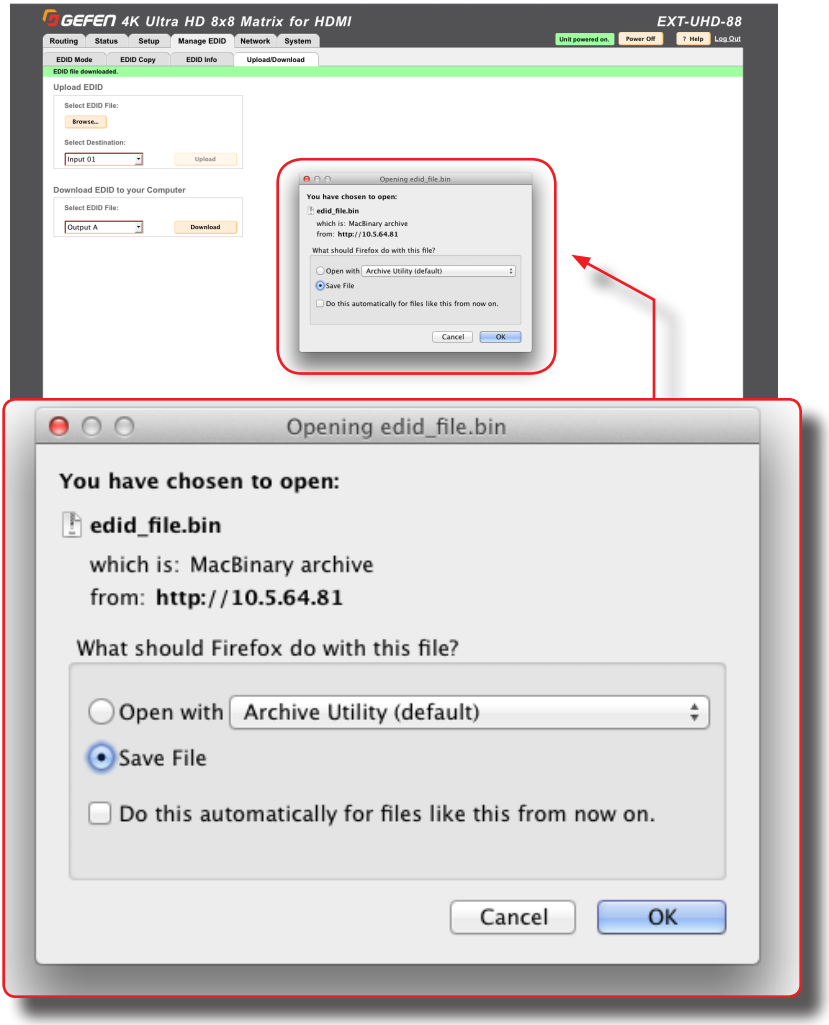
The **Upload / Download** tab allows EDID data from an input, output, or one of the internal EDID presets, to be downloaded and saved as a file on your computer. An EDID file can also be uploaded to any (unlocked) input.

► Downloading an EDID

1. Click the **Manage EDID** tab within the built-in web interface.
2. Click the **Upload/Download** sub-tab.
3. Select the desired input, output, or internal EDID preset to be downloaded using the **Select EDID File** drop-down list.
4. Click the **Download** button.



5. The following dialog will be displayed:



6. Click the **Save File** button to save the EDID file to your computer.

   - Mac OS X
     The file will automatically be saved under
     `Macintosh HD\Users\[username]\Downloads`.

   - Windows OS
     The file will be saved under
     `C:\Users\[username]\Downloads`.

► Uploading an EDID

1. Set the input, where the EDID file will be uploaded, to **Custom** mode. See Setting the EDID Mode (page 84) for more information.

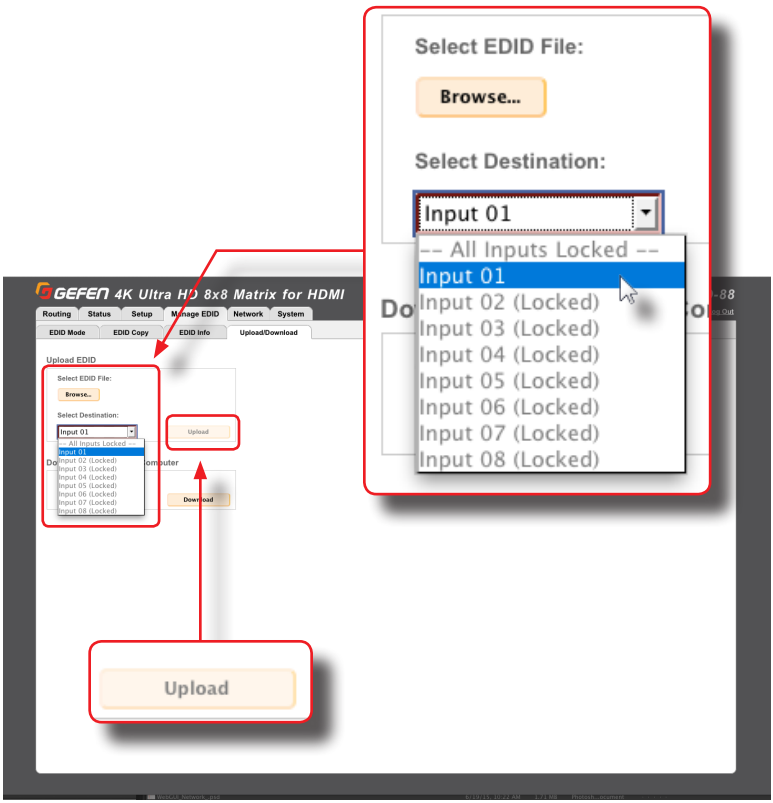
2. Click the **Browse...** button under **Upload EDID** section.

3. The **File Upload** dialog will be displayed.

4. Select the EDID file from your computer. The EDID file must be in `.bin` format. After the file is selected, click the **OK** button on the dialog box.

5. Select the input where the EDID will be uploaded using the **Select Destination** drop-down list. The input must not be locked. For more information, see Setting the EDID Mode (page 84).

6. Click the **Upload** button.



Configuring Network Settings

Once the matrix is configured on the network using Gefen Syner-G, the network settings can be changed within the built-in web interface. To access the network settings, click the **Network** tab in the built-in web interface.

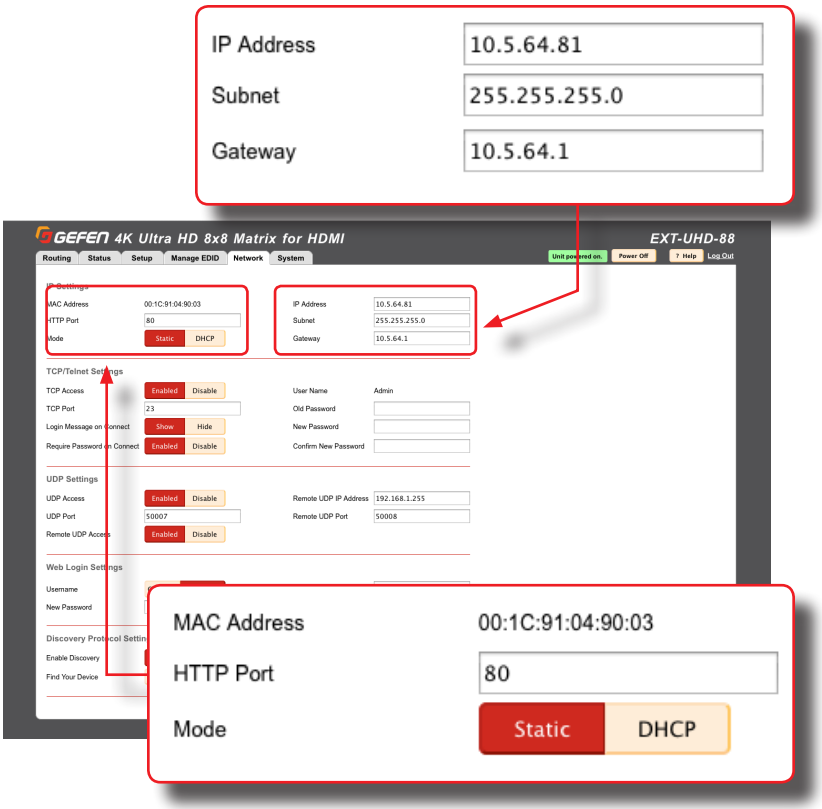
When changing any network setting, click the **Save** button at the bottom of the page. To revert network settings to factory default, click the **Set Network Defaults** button.

► IP Settings

1. Set the network mode by clicking the **Static** or **DHCP** button.

2. If set to **Static** mode, then enter the IP address, subnet mask, and gateway address in the **IP Address**, **Subnet**, and **Gateway** fields, respectively. If set to **DHCP** mode, the DHCP server will assign these values.

3. Enter the HTTP listening port in the **HTTP Port** field.



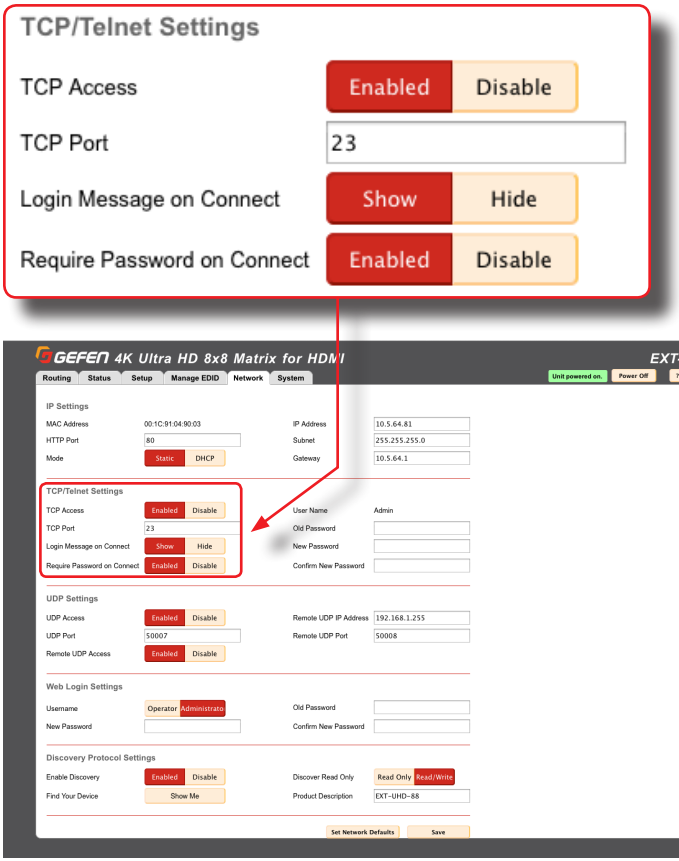
► TCP / Telnet Settings

a. **TCP Access**: Click the **Enable** button to allow Telnet access to the matrix. Otherwise, click the **Disable** button.

b. **TCP Port**: Enter the TCP listening port in this field.

c. **Login Message on Connect**: Click the **Show** button to display the welcome message at the beginning of a Telnet session. Otherwise, click the **Hide** button.

d. **Require Password on Connect**: Click the Enable button to require password credentials at the beginning of a Telnet session.

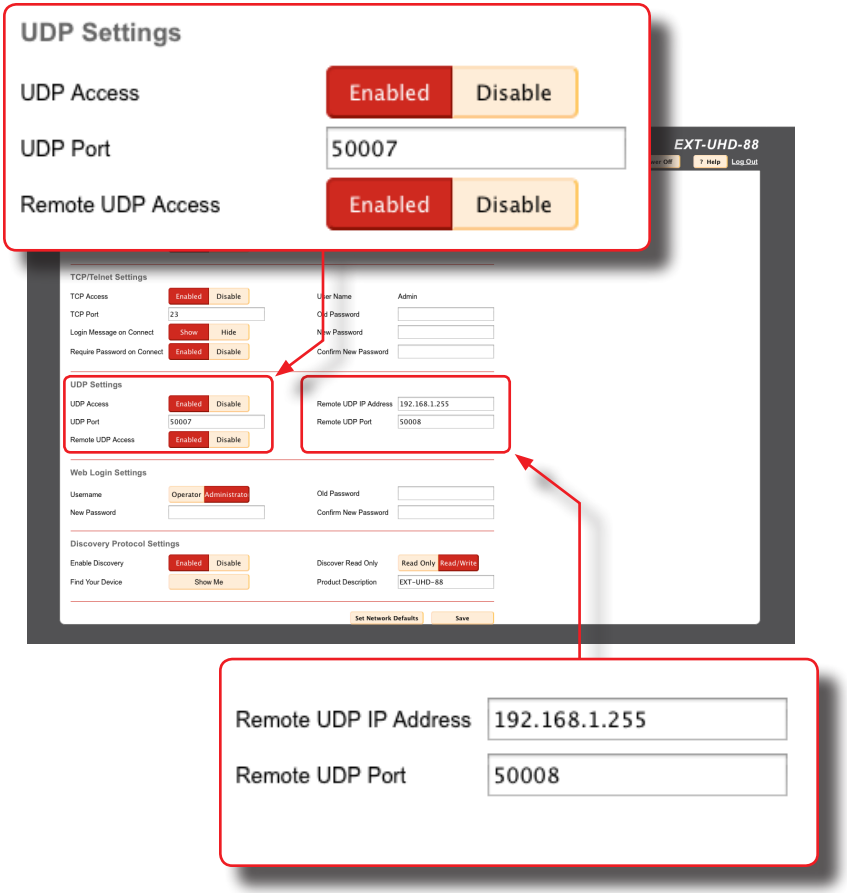


► UDP Settings

a. **UDP Access**: Click the **Enable** button to use the UDP protocol with the matrix. Otherwise, click the **Disable** button.

b. **UDP Port**: Enter the TCP listening port in this field.

c. **Remote UDP Access**: Click the **Enable** button to set the remote UDP address and UDP listening port. This feature only needs to be *enabled* if feedback to the matrix is required. Otherwise, this feature can be *disabled*.



d. **Remote UDP IP Address**: Enter the remote UDP IP address in this field.

e. **Remote UDP Port**: Enter the remote UDP listening port in this field.

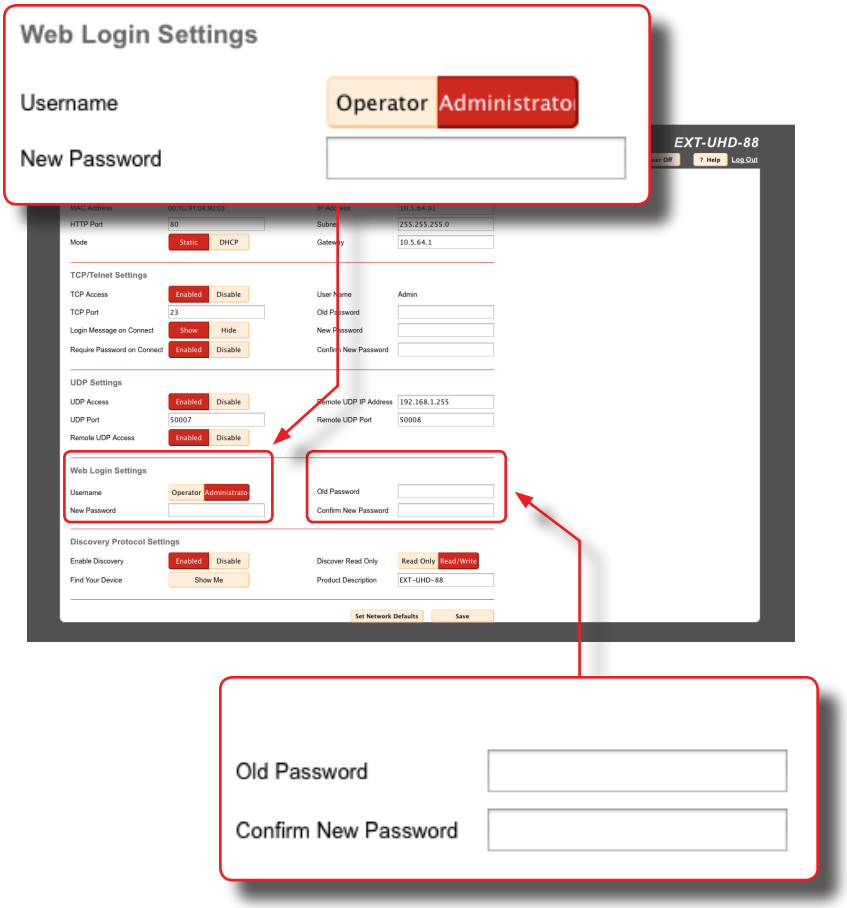
► Web Login Settings

a. **Username**: To change the password for the Administrator, click the **Administrator**. Otherwise, click the **Operator** button.

b. **New Password**: Enter password for the selected username (above), in this field.

c. **Old Password**: Enter the old (current) password in this field.

d. **Confirm New Password**: To confirm the new password, re-enter the new password in this field.



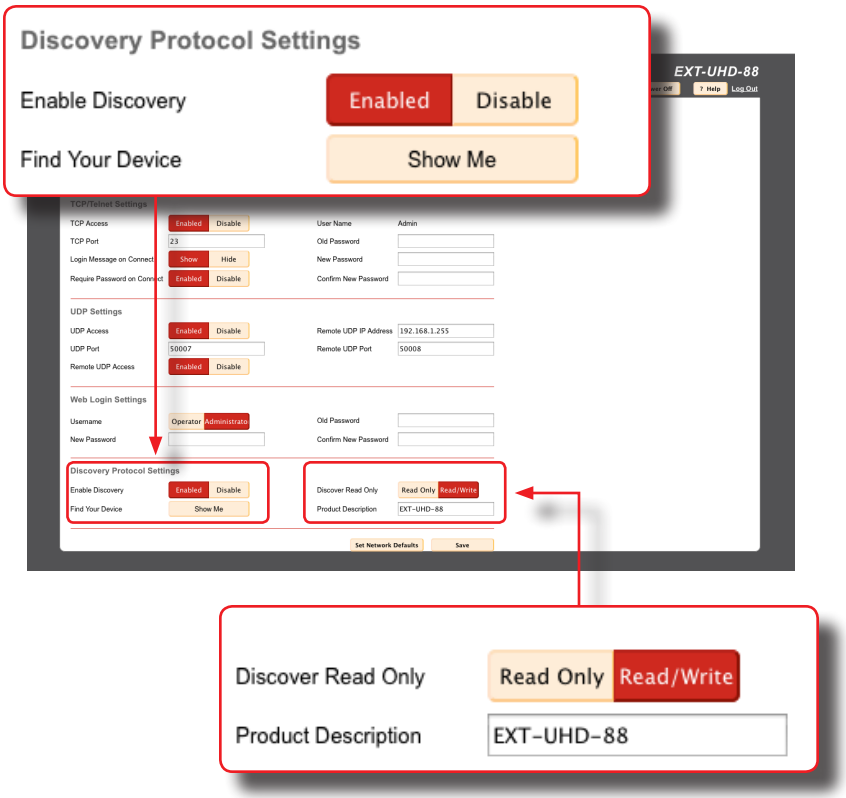
► Discovery Protocol Settings

a. **Enable Discovery**: Click the **Enable** button to enable "discovery" mode. Otherwise, click the **Disabled** button. In order for Gefen Syner-G to discover the matrix on a network, this feature must be *enabled*.

b. **Find Your Device**: To physically locate the matrix on a network, click the **Show Me** button. In order for the **Show Me** button to be available, the **Enable Discovery** button must be set to **Enable**.

c. **Discovery Read Only**: When set to **Read Only**, the IP settings for the matrix will be displayed by Syner-G but they cannot be changed. In order to display and change IP settings from within Gefen Syner-G, click the **Read / Write** button.

d. **Product Description**: EXT-UHD-88 is the default product description. This name will be used to identify the matrix when using the Gefen Syner-G software.



System Settings

The **System** tab provides controls for various other matrix features. Each of these controls is described below.

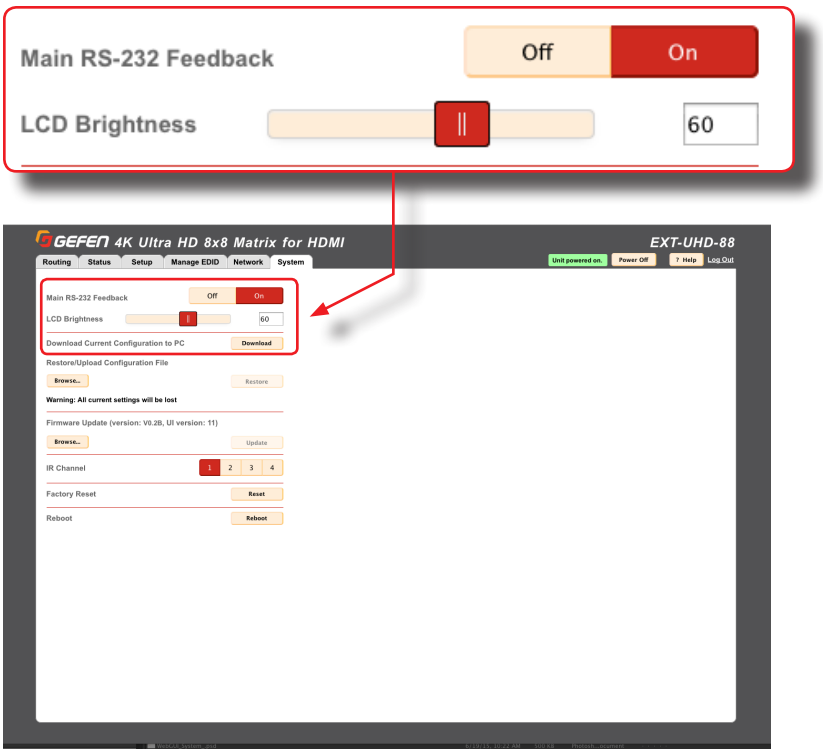
► Main RS-232 Feedback

1. Click the **Off** button to disable RS-232 feedback.
2. Click the **On** button to enable RS-232 feedback.

► LCD Brightness

Increases / decreases the brightness of the front-panel display.

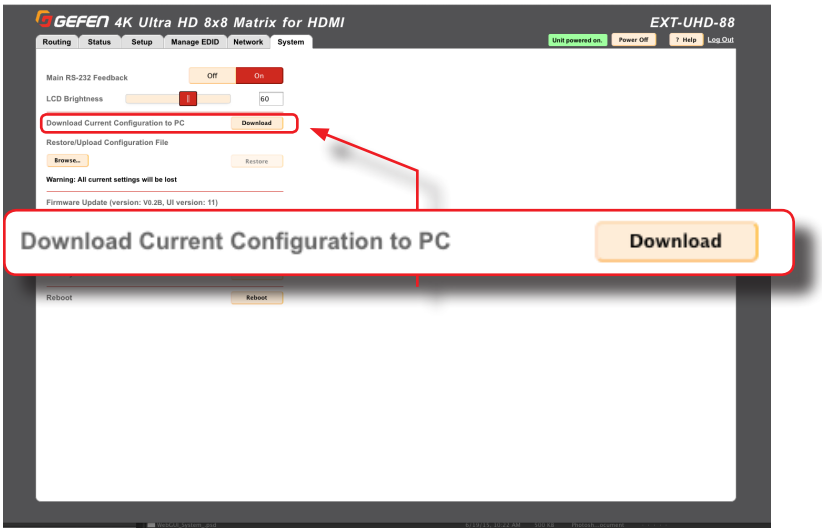
1. Move the slider to the right to increase the brightness.
2. Move the slider to the left to decrease the brightness.



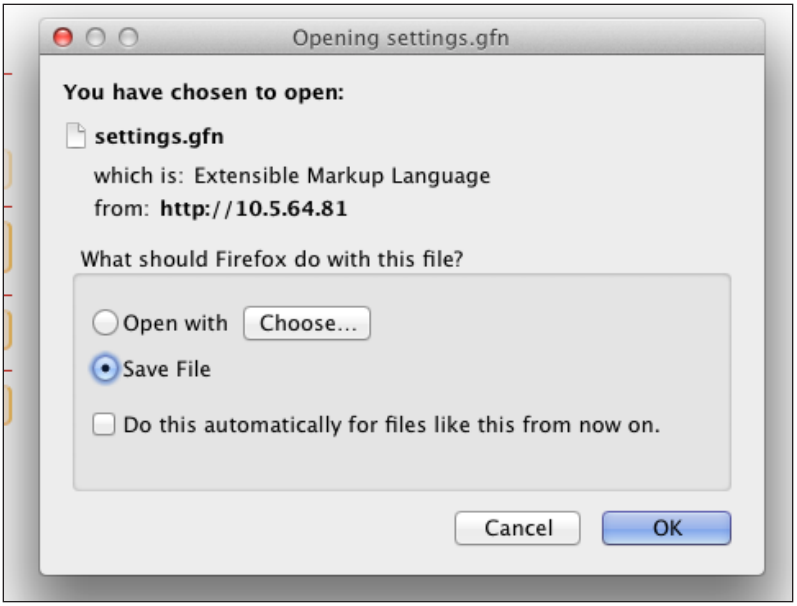
► Download Current Configuration to PC

Saves the current matrix configuration to a file on your computer.

1. Click the **Download** button.



2. The following dialog box will be displayed:



3. Click the **Save File** button to save the EDID file to your computer.

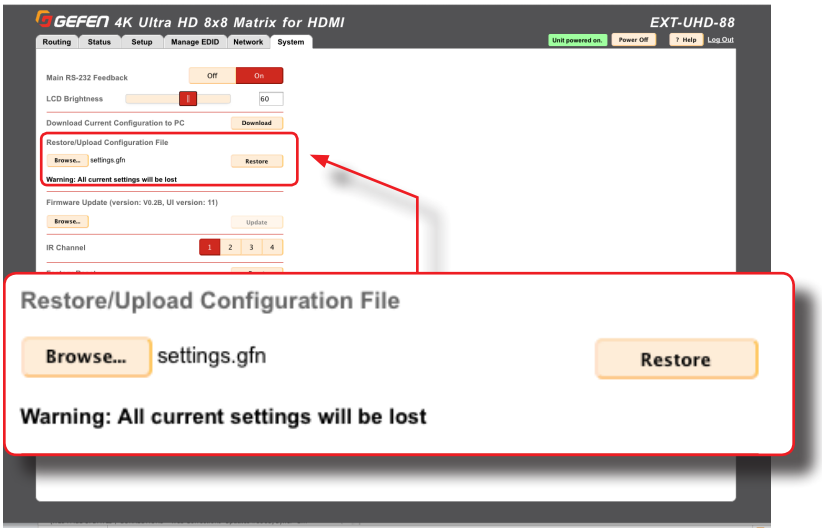
   - Mac OS X
     The file will automatically be saved under
     `Macintosh HD\Users\[username]\Downloads`

   - Windows OS
     The file will be saved under
     `C:\Users\[username]\Downloads`

► Restore / Upload Configuration File

Uploads the selected matrix configuration, from a file on your computer, to the matrix.

1. Click the **Browse...** button.



2. Select the desired configuration file from your computer. After the file has been selected, the filename will appear next to the **Browse...** button.

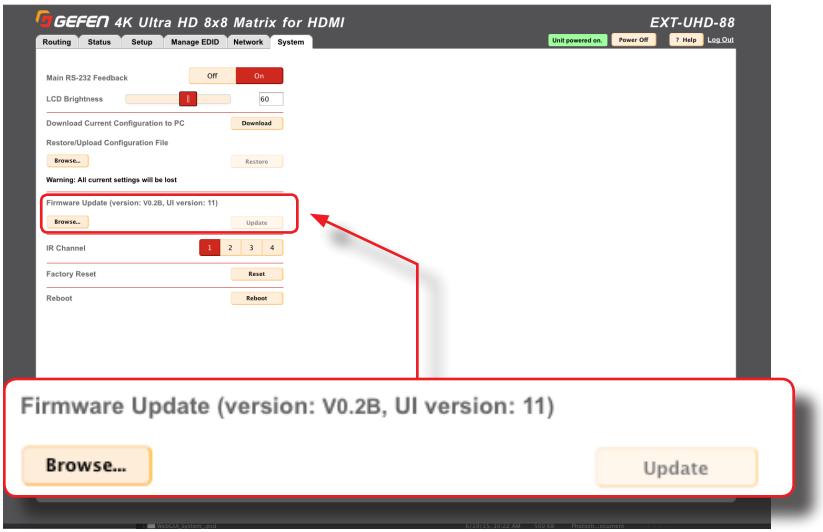
3. Click the **Restore** button to upload the file.

► Firmware Update

Uploads and applies the latest firmware file to the matrix.

1. Download the latest firmware from the Gefen web site.

2. Click the **Browse...** button.



3. Select the firmware file on your computer.

   The firmware must be a `.bin` file and will have the following naming convention: `EXT-UHD-88([version])(PACK).bin`.

4. Click the **Update** button.

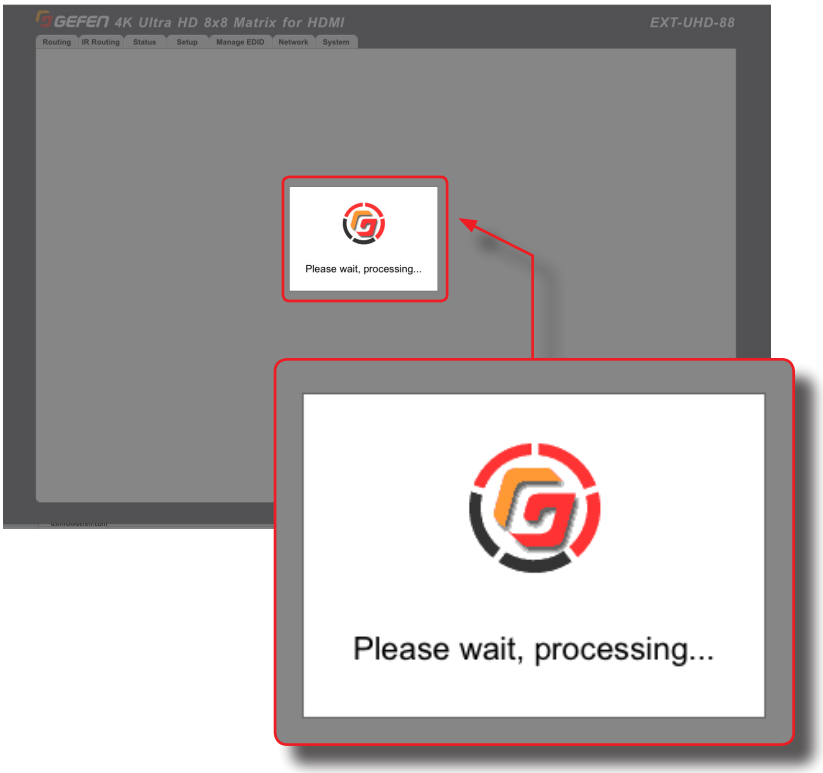
5. The following message box will be displayed:

   ```
   WARNING:  Updating the firmware may overwrite some
   of your settings.  Consider saving the configuration
   before updating the firmware.  Are you sure you want
   to continue?
   ```

   To save the configuration, before continuing, click the **Cancel** button on the message box. Refer to the section **Download Current Configuration to PC**.

6. Click the **OK** button on the message box.

6. After a few moments, the following message box will be displayed within the web interface:



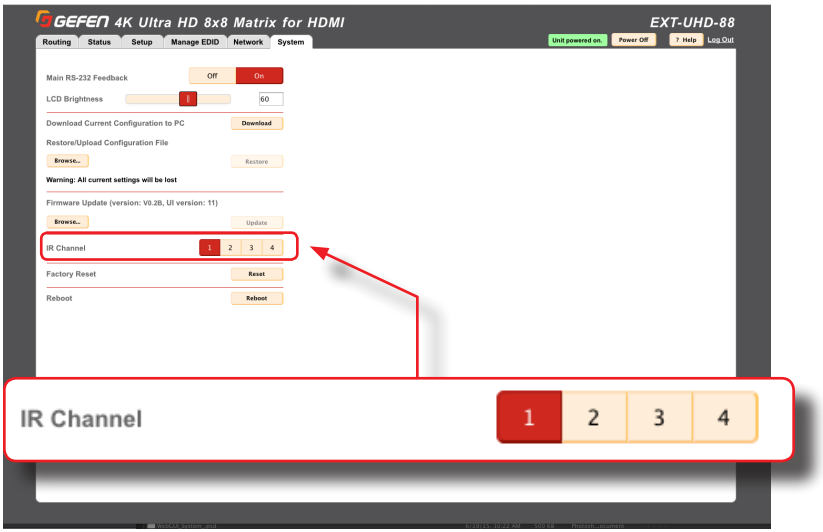
The **Power** button, on the front of the matrix, will flash red and blue and the update progress will be shown in the front-panel display:

7. After the update process completes, the matrix will automatically reboot.

► Setting the IR Channel

Sets the IR channel for the matrix. The matrix must be set to the same IR channel as the included IR remote control, in order for the IR remote control to communicate with the matrix.

1. Click the desired IR channel for the matrix by clicking one of the **IR Channel** buttons (1 - 4).



The IR channel setting is automatically saved. Rebooting the matrix is not required.

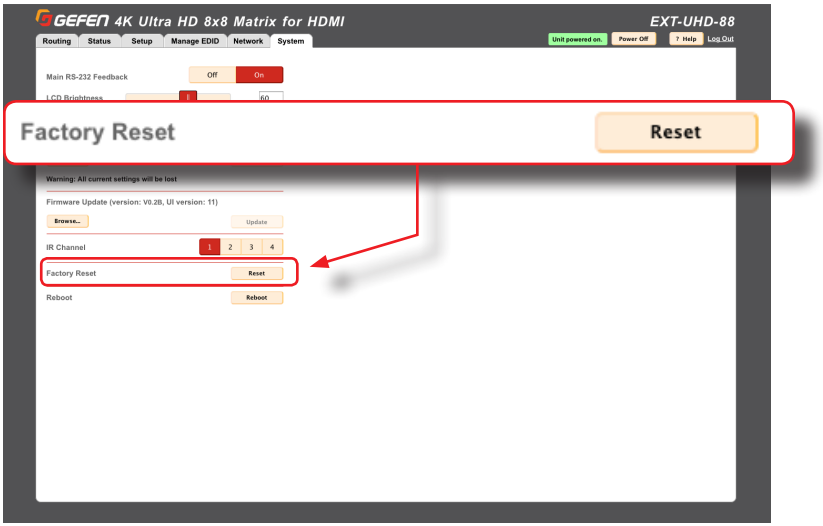
► Performing a Factory Reset

This feature restores the matrix to original factory-default settings.

Important

Performing this function will erase all current setting in your matrix. IP settings will be retained. To save the configuration, before continuing, refer to the section **Download Current Configuration to PC.**

1. Click the **Reset** button.



2. The following message box will be displayed:

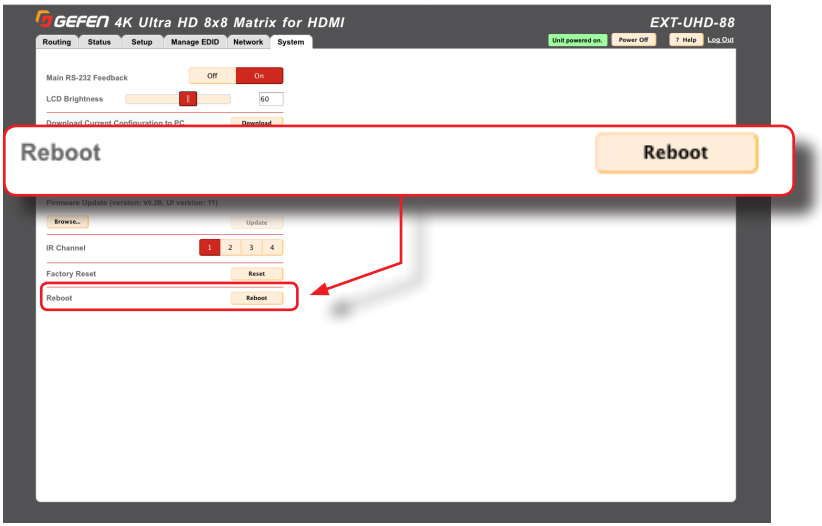
► Click the **OK** button to continue with the reset procedure.

► Click the **Cancel** button to abort the reset procedure and return to the web interface.

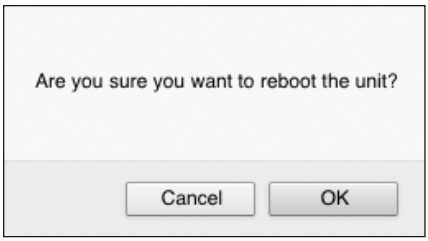
► Rebooting the matrix

Clicking this button will reboot the matrix.

1. Click the **Reboot** button.



2. The following message box will be displayed:



► Click the **OK** button to continue with the reboot procedure.

► Click the **Cancel** button to abort the reboot procedure and return to the web interface.

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4K ULTRA HD

8x8 Matrix for HDMI

w/ HDCP 2.2

3 Advanced Operation

Telnet Configuration

1. Launch the desired terminal application. For example, on the Windows operation system, we can use Hyperterminal; on Mac OS X, we can use the Terminal application.

2. At the command prompt, type the following:

   ```
   telnet ip_address
   ```

   where `ip_address` is the IP address of the matrix.

3. After correct settings have been used in the terminal program, information similar to the following will be displayed:

   ```
   Welcome to EXT-UHD-88 Telnet

   telnet->
   ```

4. Type `#help` for a list of commands or refer to the tables on the following pages.

UDP Configuration

1. Configure the desired control system for UDP.

2. Click the **Network** tab, within the web interface, and do the following.
   See Configuring Network Settings (page 92) for more information.

   a. Click the **Enabled** button next to UDP Access.

   b. Enter the UDP listening port in the **UDP Port** field. The default UDP listening port is `50007`.

   c. Click the **Enabled** button next to **Remote UDP Access**. This feature only needs to be *enabled* if feedback to the matrix is required. Otherwise, this feature can be *disabled*.

   d. If enabling Remote UDP Access, enter the remote UDP IP address in the **Remote UDP IP Address** field. This IP address should be the same as the control system. The default IP address is `192.168.1.255`.

   e. If enabling Remote UDP Access, enter the remote UDP listening port in the **Remote UDP Port** field. The default remote UDP listening port is `50008`.

   f. Click the **Save** button at the bottom of the **Network** screen.

RS-232 Configuration

1. Launch the desired terminal application.
2. Selected the desired COM port.
3. Configure the RS-232 port to the following settings. Note that Only TxD, RxD, and GND pins are used.

Description	Setting
Baud rate	19200
Data bits	8
Parity	None
Stop bits	1
Hardware flow control	None

4. Connect to the RS-232 port.
5. Type `#help` for a list of commands or refer to the tables on the following pages.

Command	Description
#factory_reset	Resets the matrix to factory-default settings
#get_device_desc	Returns the current device-description string
#get_discovery	Returns the current state of the discovery service
#get_discovery_mode	Returns the “discovery” mode
#get_edid_lock	Returns the EDID-lock status of the specified input
#get_edid_mode	Returns the EDID mode of the specified input
#get_gateway	Returns the gateway IP address of the matrix
#get_http_port	Returns the HTTP listening port
#get_input_hdcp	Returns the HDCP setting of the specified input
#get_io_name	Returns the name of the specified input
#get_ip_address	Returns the IP address of the matrix
#get_ip_mode	Returns the IP mode of the matrix
#get_ipconfig	Returns the matrix IP configuration
#get_mac_addr	Returns the MAC address of the matrix
#get_netmask	Returns the subnet mask of the matrix
#get_output_hdcp	Returns the HDCP setting of the specified output
#get_power	Returns the current power state of the matrix
#get_preset_name	Returns the name of the specified preset
#get_remote_udp_access	Returns the remote UDP access state of the matrix
#get_remote_udp_ip	Returns the remote UDP IP address of the matrix
#get_remote_udp_port	Returns the remote UDP listening port
#get_telnet_access	Returns the Telnet access state
#get_telnet_port	Returns the Telnet listening port
#get_telnet_welcome	Returns the Telnet welcome message
#get_udp_access	Returns the UDP access state
#get_udp_port	Returns the UDP listening port
#help	Returns a list of available commands
#lock_matrix	Locks or unlocks the matrix
#power	Power-on or power-off the matrix
#reboot	Reboots the matrix
#send_hpd	Sends an HPD signal to the specified input
#set_device_desc	Sets the description of the matrix
#set_discovery	Enables or disables the discovery service
#set_discovery_mode	Sets the “discovery” mode
#set_edid_copy	Enables or disables EDID copy

Command	Description
#set_edid_lock	Sets the EDID lock setting on the specified input
#set_edid_mode	Sets the EDID mode on the specified input
#set_feedback	Enables or disables unsolicited RS-232 feedback
#set_gateway	Sets the gateway address
#set_http_port	Sets the HTTP listening port
#set_input_hdcp	Sets the HDCP setting on the specified input
#set_io_name	Sets the name of the specified input or output
#set_ip_address	Sets the IP address
#set_ip_mode	Sets the IP mode
#set_ir_channel	Sets the IR channel of the matrix
#set_lcd_brightness	Sets the brightness of the front-panel display
#set_netmask	Sets the subnet mask for the matrix
#set_output_hdcp	Sets the HDCP setting on the specified output
#set_preset_name	Sets the name of the specified preset
#set_remote_udp_access	Enables or disables remote UDP access
#set_remote_udp_ip	Sets the remote UDP IP address
#set_remote_udp_port	Sets the remote UDP listening port on the matrix
#set_showme	Enables or disables the “show me” feature
#set_telnet_access	Enables or disables Telnet access
#set_telnet_port	Sets the Telnet listening port on the matrix
#set_telnet_welcome	Sets the Telnet welcome message
#set_udp_access	Enables or disables UDP access
#set_udp_port	Sets the UDP listening port on the matrix
#show_firmware_version	Returns the current firmware version
#use_telnet_login	Enable or disables Telnet login credentials
m	Masks or unmasks the specified output
p	Recalls the specified preset
r	Routes an input to an output

#factory_reset

Resets the matrix to factory-default settings. If a factory reset is performed through the built-in web interface or Telnet, then IP settings will be preserved. To reset all, including IP settings, this command must be issued using RS-232.

Syntax

```
#factory_reset
```

Parameters

```
None
```

Example

```
#factory_reset
RESET TO FACTORY DEFAULTS

EXT-UHD-88 V0.2B

OUT:ABCDEFGH
 IN:12345678
```

Related Commands

#reboot

#get_device_desc

Returns the description of the matrix.

Syntax

```
#get_device_desc
```

Parameters

```
None
```

Example

```
#get_device_desc
DEVICE DESCRIPTION IS EXT-UHD-88
```

Related Commands

#set_device_desc

#get_discovery

Returns the discovery mode setting. The value returned is one of the following:

Value	Description
0	“Discovery” mode is disabled
1	“Discovery” mode is enabled

Syntax

```
#get_discovery
```

Parameters

```
None
```

Example

```
#get_discovery
DISCOVERY 1
```

Related Commands

#set_discovery
#set_showme

#get_discovery_mode

Returns the current “discovery” mode. The value returned is one of the following:

Value	Description
0	Read only
1	Read / Write

Syntax

```
#get_discovery_mode
```

Parameters

```
None
```

Example

```
#get_discovery_mode
#get_discovery_mode 1
```

Related Commands

#get_discovery
#set_discovery
#set_discovery_mode

#get_edid_lock

Returns the current “EDID Lock” state of the specified input. The value returned is one of the following:

Value	Description
0	EDID unlocked
1	EDID locked

Syntax

```
#get_edid_lock input
```

Parameters

`input`

Type: **INTEGER**

The number of the HDMI input (1 - 8) to query.

Example

```
#get_edid_lock 1
EDID_LOCK 1 0
```

Related Commands

#get_edid_mode
#set_edid_copy
#set_edid_lock
#set_edid_mode

#get_edid_mode

Returns the EDID mode of the specified input. The value returned is one of the following:

Value	Description
0	Internal 720p 2Ch
1	Internal 720p Multi-Ch
2	Internal 1080p 2Ch
3	Internal 1080p Multi-Ch
4	Internal UHD 2Ch
5	Internal UHD Multi-Ch
6	External (Output A)
7	Custom

Syntax

```
#get_edid_mode input
```

Parameters

`input`

Type: **INTEGER**

The number of the HDMI input (1 - 8) to query.

Example

```
#get_edid_mode 1
#get_edid_mode 1 0
```

Related Commands

#get_edid_lock
#set_edid_copy
#set_edid_lock
#set_edid_mode

#get_gateway

Returns the gateway address of the matrix.

Syntax

```
#get_gateway
```

Parameters

```
None
```

Example

```
#get_gateway
 GATEWAY 10.5.64.1
```

Related Commands

#get_http_port
#get_ip_address
#get_ip_mode
#get_ipconfig
#get_mac_addr
#get_netmask
#set_gateway
#set_http_port
#set_ip_address
#set_ip_mode
#set_netmask

#get_http_port

Returns the HTTP listening port of the matrix.

Syntax

```
#get_http_port
```

Parameters

```
None
```

Example

```
#get_http_port
HTTP_PORT 80
```

Related Commands

#get_gateway
#get_ip_address
#get_ip_mode
#get_ipconfig
#get_mac_addr
#get_netmask
#set_gateway
#set_http_port
#set_ip_address
#set_ip_mode
#set_netmask

#get_input_hdcp

Returns the HDCP mode of the specified input. The value returned is one of the following:

Value	Description
0	Reject
1	HDCP 2.2 and below
2	HDCP 1.4 and below

Syntax

```
#get_input_hdcp input
```

Parameters

`input`

Type: **INTEGER**

The number of the HDMI input (1 - 8) to query.

Example

```
#get_input_hdcp 1
INPUT_HDCP 1 0
```

Related Commands

#get_output_hdcp
#set_input_hdcp
#set_output_hdcp

#get_io_name

Returns the name given to the specified input or output.

Syntax

```
#get_io_name inout
```

Parameters

`input`

Type: **INTEGER** or **CHARACTER**

The number of the HDMI input (1 - 8) to query.

Example

```
#get_io_name 1
IO_NAME 1 Bluray
```

Related Commands

`#set_io_name`

#get_ip_address

Returns the current IP address of the matrix.

Syntax

```
#get_ip_address
```

Parameters

```
None
```

Example

```
#get_ip_address
IP_ADDRESS 10.5.64.81
```

Related Commands

#get_gateway
#get_http_port
#get_ip_mode
#get_ipconfig
#get_mac_addr
#get_netmask
#set_gateway
#set_http_port
#set_ip_address
#set_ip_mode
#set_netmask

#get_ip_mode

Returns the current IP mode of the matrix. The value returned is one of the following:

Value	Description
0	Static mode
1	DHCP mode

Syntax

```
#get_ip_mode
```

Parameters

```
None
```

Example

```
#get_ip_mode
IP_MODE 0
```

Related Commands

#get_gateway
#get_http_port
#get_ip_address
#get_ipconfig
#get_mac_addr
#get_netmask
#set_gateway
#set_http_port
#set_ip_address
#set_ip_mode
#set_netmask

#get_ipconfig

Returns the current IP configuration of the matrix. In addition to providing the MAC address and the broadcast IP address, this command also provides the same information as executing the #get_ip_address, #get_netmask, #get_gateway, and #get_mac_addr ommands.

Syntax

```
#get_ipconfig
```

Parameters

```
None
```

Example

```
#get_ipconfig
IP CONFIGURATION IS :
 IP: 10.5.64.81
 NETMASK: 255.255.255.0
 GATEWAY: 10.5.64.1
 MAC ADDRESS: 00:1C:91:04:90:03
```

Related Commands

#get_gateway
#get_http_port
#get_ip_mode
#get_ip_address
#get_mac_addr
#get_netmask
#set_gateway
#set_http_port
#set_ip_address
#set_ip_mode
#set_netmask

#get_ir_channel

Returns the IR channel of the matrix.

Syntax

```
#get_ir_channel
```

Parameters

```
None
```

Example

```
#get_ir_channel
IR_CHANNEL 1
```

Related Commands

#set_ir_channel

#get_lcd_brightness

Returns the brightness level of the front-panel display.

Syntax

```
#get_lcd_brightness
```

Parameters

```
None
```

Example

```
#get_lcd_brightness
LCD_BRIGHTNESS 60
```

Related Commands

#set_lcd_brightness

#get_mac_addr

Returns the MAC address of the matrix.

Syntax

```
#get_mac_addr
```

Parameters

```
None
```

Example

```
#get_mac_addr
MAC ADDRESS IS: 00:1C:91:04:90:03
```

Related Commands

#get_gateway
#get_http_port
#get_ip_address
#get_ip_mode
#get_ipconfig
#get_netmask
#set_gateway
#set_http_port
#set_ip_address
#set_ip_mode
#set_netmask

#get_netmask

Returns the current subnet mask of the matrix.

Syntax

```
#get_netmask
```

Parameters

```
None
```

Example

```
#get_netmask
 NETMASK 255.255.255.0
```

Related Commands

#get_gateway
#get_http_port
#get_ip_address
#get_ip_mode
#get_ipconfig
#get_mac_addr
#set_gateway
#set_http_port
#set_ip_address
#set_ip_mode
#set_netmask

#get_output_hdcp

Returns the HDCP setting of the specified output. The value returned is one of the following:

Value	Description
0	Follow input
1	Always encode

Syntax

```
#get_output_hdcp output
```

Parameters

`output`

Type: **CHARACTER**

The identifier of the HDMI output (A - H) to query.

Example

```
#get_output_hdcp c
OUTPUT_HDCP C 1
```

Related Commands

`#set_output_hdcp`

#get_power

Returns the current power state of the matrix. The value returned is one of the following:

Value	Description
0	Power off
1	Power on

Syntax

```
#get_power
```

Parameters

```
None
```

Example

```
#get_power
POWER 1
```

Related Commands

#power

#get_preset_name

Returns the name of the specified preset.

Syntax

```
#get_preset_name preset
```

Parameters

`preset`

Type: **INTEGER**

The identifier of the preset name (1 - 16) to query.

Example

```
#get_preset_name 5
PRESET_NAME 5 Kitchen
```

Related Commands

`#set_preset_name`

#get_remote_udp_access

Returns the remote UDP access state. The value returned is one of the following:

Value	Description
0	Remote UDP access disabled
1	Remote UDP access enabled

Syntax

```
#get_remote_udp_access
```

Parameters

```
None
```

Example

```
#get_remote_udp_access
REMOTE_UDP_ACCESS 0
```

Related Commands

#get_remote_udp_ip
#get_remote_udp_port
#get_udp_access
#get_udp_port
#set_remote_udp_access
#set_remote_udp_ip
#set_remote_udp_port
#set_udp_access
#set_udp_port

#get_remote_udp_ip

Returns the remote UDP IP address.

Syntax

```
#get_remote_udp_ip
```

Parameters

```
None
```

Example

```
#get_remote_udp_access
REMOTE_UDP_IP 192.168.1.255
```

Related Commands

#get_remote_udp_access
#get_remote_udp_port
#get_udp_access
#get_udp_port
#set_remote_udp_access
#set_remote_udp_ip
#set_remote_udp_port
#set_udp_access
#set_udp_port

#get_remote_udp_port

Returns the remote UDP listening port.

Syntax

```
#get_remote_udp_port
```

Parameters

```
None
```

Example

```
#get_remote_udp_port
REMOTE_UDP_PORT 50008
```

Related Commands

#get_remote_udp_access
#get_remote_udp_ip
#get_udp_access
#get_udp_port
#set_remote_udp_access
#set_remote_udp_ip
#set_remote_udp_port
#set_udp_access
#set_udp_port

#get_telnet_access

Returns the Telnet access state. Use the `#set_telnet_access` command to enable or disable Telnet access.

Syntax

```
#get_telnet_access
```

Parameters

```
None
```

Example

```
#get_telnet_access
TELNET_ACCESS 1
```

Related Commands

#get_telnet_port
#get_telnet_welcome
#set_telnet_access
#set_telnet_port
#set_telnet_welcome
#use_telnet_login

#get_telnet_port

Returns the Telnet listening port.

Syntax

```
#get_telnet_port
```

Parameters

```
None
```

Example

```
#get_telnet_port
TELNET_PORT 23
```

Related Commands

#get_telnet_access
#get_telnet_welcome
#set_telnet_access
#set_telnet_port
#set_telnet_welcome
#use_telnet_login

#get_telnet_welcome

Returns the Telnet welcome message. Use the `#set_telnet_welcome` to create a custom welcome message.

Syntax

```
#get_telnet_welcome
```

Parameters

```
None
```

Example

```
#get_telnet_welcome
TELNET WELCOME SCREEN IS ENABLED
```

Related Commands

#get_telnet_access
#get_telnet_port
#set_telnet_access
#set_telnet_port
#set_telnet_welcome
#use_telnet_login

#get_udp_access

Returns the UDP access state. Use the `#set_udp_access` command to enable or disable UDP access. The value returned is one of the following:

Value	Description
0	UDP access disabled
1	UDP access enabled

Syntax

```
#get_udp_access
```

Parameters

```
None
```

Example

```
#get_udp_access
UDP_ACCESS 0
```

Related Commands

#get_remote_udp_access
#get_remote_udp_ip
#get_remote_udp_port
#get_udp_port
#set_remote_udp_access
#set_remote_udp_ip
#set_remote_udp_port
#set_udp_access
#set_udp_port

#get_udp_port

Returns the local UDP listening port.

Syntax

```
#get_udp_port
```

Parameters

```
None
```

Example

```
#get_udp_port
UDP_PORT 50007
```

Related Commands

#get_remote_udp_access
#get_remote_udp_ip
#get_remote_udp_port
#get_udp_access
#set_remote_udp_access
#set_remote_udp_ip
#set_remote_udp_port
#set_udp_access
#set_udp_port

#help

Returns a list of available commands. The commands listed are specific to either the Sender or Receiver unit.

Syntax

```
#help
```

Parameters

```
None
```

Example

```
#help

[Presets]
P
#SET_PRESET_NAME
#GET_PRESET_NAME

[Setup]
#SET_IO_NAME
#GET_IO_NAME
#SEND_HPD
#SET_INPUT_HDCP
#GET_INPUT_HDCP
#SET_OUTPUT_HDCP
#GET_OUTPUT_HDCP

[MANAGE EDID]
#SET_EDID_MODE
#GET_EDID_MODE
#SET_EDID_LOCK
...
...

[SYSTEM SETTINGS]
#SET_FEEDBACK
#SHOW_FIRMWARE_VERSION
#SET_LCD_BRIGHTNESS
#GET_LCD_BRIGHTNESS
#SET_IR_CHANNEL
#GET_IR_CHANNEL
#FACTORY_RESET
#REBOOT
```

#lock_matrix

Locks or unlocks the matrix. This command locks the front panel and the built-in web interface of the matrix. Note that if the matrix is locked, settings can still be changed using the command set.

Syntax

```
#lock_matrix state
```

Parameters

`state`

Type: **INTEGER**

Accepts a number from the table below, specifying the desired state:

state	Description
0	Unlocks the matrix
1	Locks the matrix

Example

```
#lock_matrix 1
LOCK_MATRIX 1
```

#power

Powers the unit ON or OFF.

Syntax

```
#power state
```

Parameters

`state`

Type: **INTEGER**

Accepts a number from the table below, specifying the desired state:

state	Description
0	Power-OFF the matrix
1	Power-ON the matrix

Example

```
#power 1
POWER 1
```

Related Commands

`#get_power`

#reboot

Reboots the matrix.

Syntax

```
#reboot
```

Parameters

```
None
```

Example

```
#reboot
UNIT WILL REBOOT SHORTLY
```

Related Commands

#factory_reset

#send_hpd

Sends an HPD (Hot-Plug Detect) pulse to the specified input.

Syntax

```
#send_hpd input
```

Parameters

`input`

Type: **INTEGER**

The identifier of the HDMI input (1 - 8) where the HPD pulse will be sent.

Example

```
#send_hpd 1
HPD SENT
```

Related Commands

#set_device_desc

Sets the matrix identifier string.

Syntax

```
#set_device_desc name
```

Parameters

`name`

Type: **STRING**

The device description. This value cannot exceed 30 characters in length.

Example

```
#set_device_desc matrix202
DEVICE DESCRIPTION IS SET TO matrix202
```

Related Commands

#get_device_desc

#set_discovery

Enables or disables the “discovery” feature. This feature is *enabled* by default.

Syntax

```
#set_discovery state
```

Parameters

`state`

Type: **INTEGER**

Accepts a number from the table below, specifying the desired state:

state	Description
0	Disables “Discovery” mode
1	Enables “Discovery” mode

If set to *disabled*, then the Syner-G Software Suite will be unable to detect the matrix on a network. It is recommended that this feature is *enabled*, until the matrix has been configured for use on a network.

Example

```
#set_discovery 0
DISCOVERY 0
```

Related Commands

```
#get_discovery
#get_discovery_mode
#set_discovery_mode
```

#set_discovery_mode

Sets the “discovery” mode. This mode is set to *read/write* by default.

Syntax

```
#set_discovery_mode mode
```

Parameters

`mode`

Type: **INTEGER**

Accepts a number from the table below, specifying the desired state:

mode	Description
0	Read-only mode
1	Read / write mode

When set to *read-only* mode, the IP settings for the matrix will be displayed within the Gefen Syner-G Software Suite but cannot be changed. In order to both display and allow changes to the IP settings within Gefen Syner-G, set this feature to *read/write* mode.

Example

```
#set_discovery_mode 0
DISCOVERY MODE 0
```

Related Commands

```
#get_discovery
#get_discovery_mode
#set_discovery
```

#set_edid_copy

Copies the EDID from output or input to the selected input for use in custom EDID mode. In order for an EDID to be copied, the destination input port must be set to Custom mode and must not be locked. See Copying EDID Data (page 86) for more information.

Syntax

```
#set_edid_copy inout input [...input]
```

Parameters

`inout`

Type: **INTEGER** or **CHARACTER**

This parameter can accept either the identifier of an HDMI input (1 - 8) or an HDMI output (A - H). Only a single input or output can be specified at a time.

`input`

Type: **INTEGER**

This parameter must be the identifier of an HDMI input (1 - 8). Multiple inputs can be specified.

Example

```
#set_edid_copy a 1
EDID_COPY a 1

#set_edid_copy b 2 5 6
EDID_COPY b 2 5 6
```

Related Commands

#get_edid_lock
#get_edid_mode
#set_edid_lock
#set_edid_mode

#set_edid_lock

Locks to unlocks the EDID when using Custom EDID mode. This command only works if the specified input is set to Custom. See the `#set_edid_mode` command.

Syntax

```
#set_edid_lock input state
```

Parameters

`input`

Type: **INTEGER**

This parameter must be the identifier of an HDMI input (1 - 8).

`state`

Type: **INTEGER**

Accepts a number from the table below, specifying the desired state:

state	Description
0	Unlock the EDID
1	Lock the EDID

Example

```
#set_edid_lock 1 0
SET_EDID_LOCK 1 0
```

Related Commands

`#get_edid_lock`
`#get_edid_mode`
`#set_edid_copy`
`#set_edid_mode`

#set_edid_mode

Sets the EDID mode for the specified input.

Syntax

```
#set_edid_mode input mode
```

Parameters

`input`

Type: **INTEGER**

This parameter must be the identifier of an HDMI input (1 - 8).

`mode`

Type: **INTEGER**

Accepts a number from the table below, corresponding to the desired EDID.

mode	Description
0	Internal 720p 2Ch
1	Internal 720p Multichannel
2	Internal 1080p 2Ch
3	Internal 1080p Multichannel
4	Internal UHD 4K 2Ch
5	Internal UHD 4K Multichannel
6	External (downstream sink)
7	Custom

Example

```
#set_edid_mode 1 0
EDID_MODE 1 0
```

Related Commands

#get_edid_lock
#get_edid_mode
#set_edid_copy
#set_edid_lock

#set_feedback

Enables or disables unsolicited RS-232 feedback.

Syntax

```
#set_feedback state
```

Parameters

`state`

Type: **INTEGER**

Accepts a number from the table below, specifying the desired state:

state	Description
0	Disable RS-232 feedback
1	Enable RS-232 feedback

Example

```
#set_feedback 1
SET_FEEDBACK 1
```

#set_gateway

Sets the gateway address for the matrix. The gateway address will be changed only if the matrix is in *static* IP mode. If the matrix is using *DHCP* mode, then the gateway address is automatically assigned by the DHCP server. The matrix must be rebooted after executing this command.

Syntax

```
#set_gateway addr
```

Parameters

addr

Type: **IP ADDRESS**

The desired gateway address of the matrix. This address must be entered in dot-decimal notation.

Example

```
#set_gateway 10.5.64.1
GATEWAY 10.5.64.1
REBOOT TO APPLY SETTINGS
```

Related Commands

#get_gateway
#get_http_port
#get_ip_address
#get_ip_mode
#get_ipconfig
#get_mac_addr
#get_netmask
#set_http_port
#set_ip_address
#set_ip_mode
#set_netmask

#set_http_port

Sets the HTTP listening port for the matrix.

Syntax

```
#set_gateway port
```

Parameters

`port`

Type: **INTEGER**

The desired HTTP listening port for the matrix.

Example

```
#set_gateway 192.168.1.1
GATEWAY 192.168.1.1
```

Related Commands

#get_gateway
#get_http_port
#get_ip_address
#get_ip_mode
#get_ipconfig
#get_mac_addr
#get_netmask
#set_gateway
#set_ip_address
#set_ip_mode
#set_netmask

#set_input_hdcp

Sets the HDCP mode on the specified input.

Syntax

```
#set_input_hdcp input mode
```

Parameters

`input`

Type: **INTEGER**

Accepts the number of an HDMI input (1 - 8).

`mode`

Type: **INTEGER**

Accepts a number from the table below, corresponding to the desired HDCP mode.

mode	Description
0	Reject HDCP content
1	Allow HDCP version 2.2 and below
2	Allow HDCP version 1.4 and below

Example

```
#set_input_hdcp 1
INPUT_HDCP 1 0
```

Related Commands

#get_input_hdcp
#get_output_hdcp
#set_output_hdcp

#set_io_name

Sets the name of the specified input.

Syntax

```
#set_io_name inout name
```

Parameters

`inout`

Type: **INTEGER** or **CHARACTER**

This parameter can accept either the number of an HDMI input (1 - 8) or the identifier or an HDMI output (A - H). Only one input or output can be specified at one time.

`name`

Type: **STRING**

The desired name of the specified input / output. The length of the string cannot exceed 30 characters. Strings greater than 30 characters in length will be rejected.

Example

```
#set_io_name 1 Bluray
IO_NAME 1 Bluray

#set_io_name d BIG_screen
IO_NAME D BIG_screen
```

Related Commands

`#get_io_name`

#set_ip_address

Sets the IP address of the matrix. The matrix must be rebooted after executing this command.

Syntax

```
#set_ip_address addr
```

Parameters

addr

Type: **IP ADDRESS**

The desired IP address of the matrix. This address must be entered in dot-decimal notation.

Example

```
#set_ip_address 10.5.64.81
IP_ADDRESS 10.5.64.81
REBOOT TO APPLY SETTINGS
```

Related Commands

#get_gateway
#get_http_port
#get_ip_address
#get_ip_mode
#get_ipconfig
#get_mac_addr
#get_netmask
#set_gateway
#set_http_port
#set_ip_mode
#set_netmask

#set_ip_mode

Sets the IP mode of the matrix. The matrix must be rebooted after executing this command.

Syntax

```
#set_ip_mode mode
```

Parameters

`mode`

Type: **INTEGER**

Accepts a number from the table below, corresponding to the desired IP mode.

mode	Description
0	Static
1	DHCP
2	Auto

Example

```
#set_ip_mode 1
IP MODE 1
REBOOT TO APPLY SETTINGS
```

Related Commands

#get_gateway
#get_http_port
#get_ip_address
#get_ip_mode
#get_ipconfig
#get_mac_addr
#get_netmask
#set_gateway
#set_http_port
#set_ip_address
#set_netmask

#set_ir_channel

Sets the IR channel of the matrix. In order to use the included IR remote control with the matrix, both the matrix and the IR remote control must be set to the same IR channel.

Syntax

```
#set_ir_channel irch
```

Parameters

`irch`

Type: **INTEGER**

Accepts a number from the table below, corresponding to the desired IR channel.

irch	Description
1	IR channel 1
2	IR channel 2
3	IR channel 3
4	IR channel 4

Example

```
#set_ir_channel 2
IR_CHANNEL 2
```

Related Commands

`#get_ir_channel`

#set_lcd_brightness

Sets the brightness level of the display on the front panel of the matrix.

Syntax

```
#set_lcd_brightness level
```

Parameters

`level`

Type: **INTEGER**

Accepts a number within the range of 0 - 100. The value of 100 represents the brightest setting of the display.

Example

```
#set_lcd_brightness 75
LCD_BRIGHTNESS 75
```

Related Commands

`#get_lcd_brightness`

#set_netmask

Sets the network mask address. The matrix must be rebooted after executing this command.

Syntax

```
#set_netmask addr
```

Parameters

addr

Type: **ADDRESS**

The desired subnet mask of the matrix. This address must be entered in dot-decimal notation.

Example

```
#set_netmask 255.255.255.0
NETMASK 255.255.255.0
REBOOT TO APPLY SETTINGS
```

Related Commands

#get_gateway
#get_http_port
#get_ip_address
#get_ip_mode
#get_ipconfig
#get_mac_addr
#get_netmask
#set_gateway
#set_http_port
#set_ip_address
#set_ip_mode

#set_output_hdcp

Sets the HDCP mode on the specified output.

Syntax

```
#set_output_hdcp output mode
```

Parameters

`output`

Type: **CHARACTER**

Accepts the identifier of an HDMI output (A - H).

`mode`

Type: **INTEGER**

Accepts a number, from table below, corresponding to the desired HDCP mode.

mode	Description
0	Follow Input
1	Always Encode

Example

```
#set_output_hdcp a 0
OUTPUT_HDCP A 0
```

Related Commands

#get_input_hdcp
#get_output_hdcp
#set_input_hdcp

#set_preset_name

Assigns a name to the specified preset.

Syntax

```
#set_present_name preset name
```

Parameters

`preset`

Type: **INTEGER**

Accepts the identifier of a Preset (1 - 16).

`name`

Type: **STRING**

The name of the preset. The name must not exceed 12 characters in length. No special characters (e.g. #,@,*,&,%, etc.) are allowed. Spaces are permitted.

Example

```
#set_preset_name 1 LivingRoom
PRESET_NAME 1 LivingRoom
```

Related Commands

`#get_preset_name`

#set_remote_udp_access

Enables or disables remote UDP access.

Syntax

```
#set_remote_udp_access state
```

Parameters

`state`

Type: **INTEGER**

Accepts a number from the table below, corresponding to the desired state.

state	Description
0	Disable remote UDP access
1	Enable remote UDP access

Example

```
#set_remote_udp_access 0
REMOTE_UDP_ACCESS 0
```

Related Commands

#get_remote_udp_access
#get_remote_udp_ip
#get_remote_udp_port
#get_udp_access
#get_udp_port
#set_remote_udp_ip
#set_remote_udp_port
#set_udp_access
#set_udp_port

#set_remote_udp_ip

Sets the remote UDP IP address of the matrix.

Syntax

```
#set_remote_udp_ip addr
```

Parameters

`addr`

Type: **IP ADDRESS**

The desired remote UDP IP address of the matrix. The address must be entered in dot-decimal notation.

Example

```
#set_remote_udp_ip 192.168.1.251
REMOTE_UDP_IP 192.168.1.251
```

Related Commands

#get_remote_udp_access
#get_remote_udp_ip
#get_remote_udp_port
#get_udp_access
#get_udp_port
#set_remote_udp_access
#set_remote_udp_port
#set_udp_access
#set_udp_port

#set_remote_udp_port

Sets the remote UDP listening port for the matrix.

Syntax

```
#set_remote_udp_port port
```

Parameters

`port`

Type: **INTEGER**

The desired remote UDP port (0 - 65535) of the matrix.

Example

```
#set_remote_udp_port 50008
REMOTE_UDP_PORT 50008
```

Related Commands

#get_remote_udp_access
#get_remote_udp_ip
#get_remote_udp_port
#get_udp_access
#get_udp_port
#set_remote_udp_access
#set_remote_udp_ip
#set_udp_access
#set_udp_port

#set_showme

Enables or disables the “Show Me” feature. If the “Show Me” feature is enabled, then all the buttons (with the exception of the Power button), will flash slowly. This feature allows the matrix to be visually identified on the network and is useful when multiple matrix units are being used. The default setting is *disabled*.

Syntax

```
#set_showme state
```

Parameters

`state`

Type: **INTEGER**

Accepts a number from the table below, corresponding to the desired state.

state	Description
0	Disable “Show Me”
1	Enable “Show Me”

Example

```
#set_showme 1
SET_SHOWME 1
```

Related Commands

```
#get_discovery
#set_discovery
```

#set_telnet_access

Enables or disables Telnet access on the matrix.

Syntax

```
#set_telnet_access state
```

Parameters

`state`

Type: **INTEGER**

Accepts a number from the table below, corresponding to the desired state.

state	Description
0	Disable Telnet access
1	Enable Telnet access

Example

```
#set_telnet_access 1
TELNET_ACCESS 1
```

Related Commands

#get_telnet_access
#get_telnet_port
#get_telnet_welcome
#set_telnet_port
#set_telnet_welcome
#use_telnet_login

#set_telnet_port

Sets the Telnet listening port on the matrix.

Syntax

```
#set_telnet_port port
```

Parameters

`port`

Type: **INTEGER**

The desired remote Telnet listening port (0 - 65535) of the matrix.

Example

```
#set_telnet_port 23
TELNET_PORT 23
```

Related Commands

#get_telnet_access
#get_telnet_port
#get_telnet_welcome
#set_telnet_access
#set_telnet_welcome
#use_telnet_login

#set_telnet_welcome

Enables or disables the Telnet welcome message.

Syntax

```
#set_telnet_welcome state
```

Parameters

`state`

Type: **INTEGER**

Accepts a number, from table below, corresponding to the desired state.

state	Description
0	Disable welcome message
1	Enable welcome message

Example

```
#set_telnet_welcome 1
TELNET WELCOME SCREEN IS ENABLED
```

Related Commands

#get_telnet_access
#get_telnet_port
#get_telnet_welcome
#set_telnet_access
#set_telnet_port
#use_telnet_login

#set_udp_access

Enables or disables UDP access.

Syntax

```
#set_udp_access state
```

Parameters

`state`

Type: **INTEGER**

Accepts a number, from table below, corresponding to the desired state.

state	Description
0	Disable UDP access
1	Enable UDP access

Example

```
#set_udp_access 0
UDP_ACCESS 0
```

Related Commands

#get_remote_udp_access
#get_remote_udp_ip
#get_remote_udp_port
#get_udp_access
#get_udp_port
#set_remote_udp_access
#set_remote_udp_ip
#set_remote_udp_port
#set_udp_port

#set_udp_port

Sets the local UDP listening port.

Syntax

```
#set_udp_port port
```

Parameters

`port`

Type: **INTEGER**

The desired UDP listening port (0 - 65535) of the matrix.

Example

```
#set_udp_port 50007
UDP_PORT 50007
```

Related Commands

#get_remote_udp_access
#get_remote_udp_ip
#get_remote_udp_port
#get_udp_access
#get_udp_port
#set_remote_udp_access
#set_remote_udp_ip
#set_remote_udp_port
#set_udp_access

#show_firmware_version

Returns the firmware version of the matrix. The returned value will depend upon the version of firmware that is currently installed.

Syntax

```
#show_firmware_version
```

Parameters

None

Example

```
#show_firmware_version
FIRWMARE VERSION IS V0.2B
```

#use_telnet_login

Enables or disables login credentials when starting a Telnet session.

Syntax

```
#use_telnet_login state
```

Parameters

`state`

Type: **INTEGER**

Accepts a number, from table below, corresponding to the desired state.

state	Description
0	Disable Telnet login
1	Enable Telnet login

Example

```
#use_telnet_login 0
USE_TELNET_LOGIN 0
```

Related Commands

#get_telnet_access
#get_telnet_port
#get_telnet_welcome
#set_telnet_access
#set_telnet_port
#set_telnet_welcome

m

Enables or disables masking on the specified output(s).

Syntax

```
m state output [...output]
```

Parameters

`state`

Type: **INTEGER**

Accepts a number from the table below, corresponding to the desired state.

state	Description
0	Disable masking
1	Enable masking

`output`

Type: **CHARACTER**

The identifier of an HDMI output (A - H).

Example

```
m 1 a b
M 1 A B
```

Related Commands

`r`

p

Recalls the specified routing preset.

Syntax

```
p preset
```

Parameters

`preset`

Type: **INTEGER**

The number of a preset (1 - 16).

Example

```
p 10
P 10
```

Related Commands

`r`

r

Routes the specified input to the one or more specified outputs.

Syntax

```
r input output [...output]
```

Parameters

`input`

Type: **INTEGER / STRING**

The number of an HDMI input (1 - 8). This parameter also accepts a string argument of “OFF”. The “OFF” argument is not case-sensitive. If “OFF” is specified, then no input is selected. To “turn on” an input that is marked as “OFF”, use an HDMI input (1 - 8) as the argument.

`output`

Type: **CHARACTER**

The identifier or an HDMI output (A - H). More than one output may be specified.

Examples

```
r 1 A
R 1 A

R OFF c
R OFF C

r 1 c
R 1 C
```

Related Commands

p

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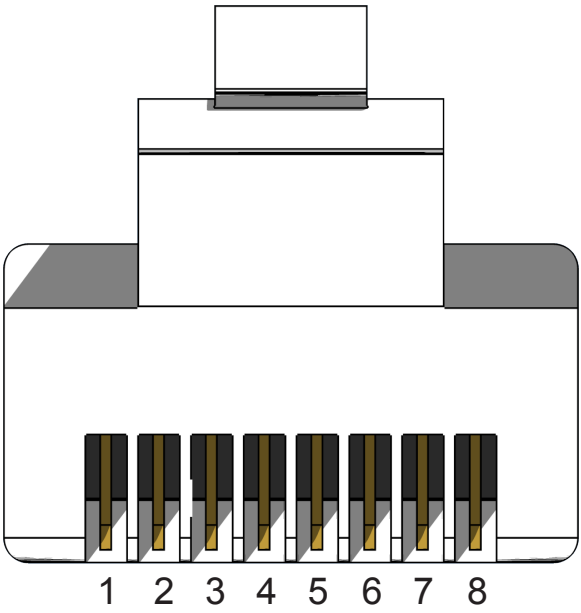
4K ULTRA HD

8x8 Matrix for HDMI

w/ HDCP 2.2

4 Appendix

Front of RJ-45 Connector



Gefen recommends the TIA/EIA-568-B wiring option. Use the table below when field-terminating cable for use with Gefen products.

Pin	Color	Description
1	Orange / White	TD+ (Transmit Data, positive differential signal)
2	Orange	TD- (Transmit Data, negative differential signal)
3	Green / White	RD+ (Receive Data, positive differential signal)
4	Blue	Unused
5	Blue / White	Unused
6	Green	RD- (Receive Data, negative differential signal)
7	Brown / White	Unused
8	Brown / White	Unused

Information

Shielded CAT-5e (or better) cabling is recommended.

Default Settings

Description	Setting
MAC Address	Device-dependent (cannot be modified)
IP Address	192.168.1.72
Subnet Mask	255.255.255.0
Default Gateway	192.168.1.1
HTTP Listening Port	80
Telnet Listning Port	23
Telnet / TCP Access	Enabled
UDP Port	50007
Enable UDP Access	Disabled
Remote UDP IP Address	192.168.1.255
Remote UDP Port	50008
Remote UDP Access	Disabled
Gefen Syner-G Discovery	Enabled
Gefen Syner-G Discovery Mode	Read / Write
Gefen Syner-G Show Device	Hide Me

Description	Setting
Output Names	Output A - Output H
A/V Input Names	Input 01 - Input 08
HDCP (each input)	Version 2.2 and below
HDCP (each output)	Follow Input
EDID (each input)	Internal 720p 2-channel audio
RS-232 Feedback	On
LCD Brightness	60
IR Channel	1
Routing	Input 01 > Output A Input 02 > Output B Input 03 > Output C Input 04 > Output D Input 05 > Output E Input 06 > Output F Input 07 > Output G Input 08 > Output H
Preset Names	Preset01 - Preset16
Matrix Lock	Disabled

720p 2-channel audio

```
Video data block
  1280x720p @ 60Hz (16:9)
  1280x720p @ 50Hz (16:9)
  640x480p  @ 60Hz (4:3)
  720x480p  @ 60Hz (16:9)
  720x480p  @ 60Hz (4:3)
  1440x480p @ 60Hz (4:3)
  1440x480p @ 60Hz (16:9)
  720x576p  @ 50Hz (4:3)
  1440x480i @ 60Hz (4:3)
  1440x480i @ 60Hz (16:9)
  720x576p  @ 50Hz (16:9)
  1440x576i @ 50Hz (4:3)
  1440x576i @ 50Hz (16:9)
  1440x576p @ 50Hz (4:3)
  1440x576p @ 50Hz (16:9)

Audio data block
  Linear PCM
    Max channels: 2
    Supported sample rates (kHz): 48 44.1 32
    Supported sample sized (bits): 24 20 16
```

720p Multichannel audio

```
Video data block
  640x480p  @ 60Hz (4:3)
  720x480p  @ 60Hz (4:3)
  720x480p  @ 60Hz (4:3)
  1280x720p @ 60Hz (native)
  1440x480i @ 60Hz (4:3)
  720x576p  @ 50Hz (4:3)
  720x576p  @ 50Hz (16:9)
  1280x720p @ 50Hz (16:9)
  1440x576i @ 50Hz (4:3)

Audio data block
  Linear PCM
    Max channels: 2
    Supported sample rates (kHz): 48 44.1 32
    Supported sample sized (bits): 24 20 16
```

1080p 2-channel audio

```
Video data block
  640x480p   @ 60Hz (4:3)
  720x480p   @ 60Hz (16:9)
  720x480p   @ 60Hz (16:9)
  1280x720p  @ 60Hz (16:9)
  1920x1080i @ 60Hz (16:9)
  1440x480i  @ 60Hz (4:3)
  1440x480i  @ 60Hz (16:9)
  1440x480p  @ 60Hz (4:3)
  1440x480p  @ 60Hz (16:9)
  720x576p   @ 50Hz (4:3)
  720x576p   @ 50Hz (16:9)
  1280x720p  @ 50Hz (16:9)
  1920x1080i @ 50Hz (16:9)
  1440x576i  @ 50Hz (4:3)
  1440x576i  @ 50Hz (16:9)
  1440x576p  @ 50Hz (4:3)
  1440x576p  @ 50Hz (16:9)
  1920x1080p @ 50Hz (16:9)
  1920x1080p @ 24Hz (16:9)
  1920x1080p @ 25Hz (16:9)
  1920x1080p @ 30Hz (16:9)
  1920x1080i @ 50Hz (16:9)
  1280x720p  @ 24Hz (16:9)
  1280x720p  @ 25Hz (16:9)
  1280x720p  @ 30Hz (16:9)
  1920x1080p @ 60Hz (16:9)

Audio data block
  Linear PCM
    Max channels: 2
    Supported sample rates (kHz): 48 44.1 32
    Supported sample sized (bits): 24 20 16
```

1080p Multichannel audio

```
Video data block
  640x480p   @ 60Hz (4:3)
  720x480p   @ 60Hz (16:9)
  720x480p   @ 60Hz (16:9)
  1280x720p  @ 60Hz (16:9)
  1920x1080i @ 60Hz (16:9)
  1440x480i  @ 60Hz (4:3)
  1440x480i  @ 60Hz (16:9)
  1440x480p  @ 60Hz (4:3)
  1440x480p  @ 60Hz (16:9)
  720x576p   @ 50Hz (4:3)
  720x576p   @ 50Hz (16:9)
  1280x720p  @ 50Hz (16:9)
  1920x1080i @ 50Hz (16:9)
  1440x576i  @ 50Hz (4:3)
  1440x576i  @ 50Hz (16:9)
  1440x576p  @ 50Hz (4:3)
  1440x576p  @ 50Hz (16:9)
  1920x1080p @ 50Hz (16:9)
  1920x1080p @ 24Hz (16:9)
  1920x1080p @ 25Hz (16:9)
  1920x1080p @ 30Hz (16:9)
  1920x1080i @ 50Hz (16:9)
  1280x720p  @ 24Hz (16:9)
  1280x720p  @ 25Hz (16:9)
  1280x720p  @ 30Hz (16:9)
  1920x1080p @ 60Hz (16:9)

Audio data block
Linear PCM
    Max channels: 2
    Supported sample rates (kHz): 192 176.4 96 88.2 48 44.1 32
    Supported sample sizes (bits): 24 20 16
Linear PCM
    Max channels: 8
    Supported sample rates (kHz): 48 44.1 32
    Supported sample sizes (bits): 24 20 16
DTS
    Max channels: 6
    Supported sample rates (kHz): 48 44.1
    Maximum bit rate: 0 kHz
AC-3
    Max channels: 6
    Supported sample rates (kHz): 48 44.1 32
    Maximum bit rate: 640 kHz
Enhanced AC-3
    Max channels: 8
    Supported sample rates (kHz): 48 44.1
```

4K 2-channel audio

```
Video data block
  720x480p   @ 60Hz
  1280x720p  @ 60Hz (16:9)
  1920x1080i @ 60Hz (16:9)
  1440x480i  @ 60Hz (16:9)
  1920x1080p @ 60Hz (16:9)
  720x576p   @ 50Hz (16:9)
  1280x720p  @ 50Hz (16:9)
  1920x1080i @ 50Hz (16:9)
  1440x576i  @ 50Hz (16:9)
  1920x1080p @ 50Hz (16:9)
  1920x1080p @ 24Hz (16:9)
  1920x1080p @ 25Hz (16:9)
  1920x1080p @ 30Hz (16:9)
  3840x2160p @ 24Hz (16:9)
  3840x2160p @ 25Hz (16:9)
  3840x2160p @ 30Hz (16:9)
  3840x2160p @ 50Hz (16:9)
  3840x2160p @ 60Hz (16:9)
  4096x2160p @ 24Hz (256:135)
  4096x2160p @ 25Hz (256:135)
  4096x2160p @ 30Hz (256:135)
  4096x2160p @ 50Hz (256:135)
  4096x2160p @ 60Hz (256:135)

Audio data block
Linear PCM
    Max channels: 2
    Supported sample rates (kHz): 192 176.4 96 88.2 48 44.1 32
    Supported sample sizes (bits): 24 20 16
```

4K multichannel audio

```
Video data block
  720x480p   @ 60Hz
  1280x720p  @ 60Hz (16:9)
  1920x1080i @ 60Hz (16:9)
  1440x480i  @ 60Hz (16:9)
  1920x1080p @ 60Hz (16:9)
  720x576p   @ 50Hz (16:9)
  1280x720p  @ 50Hz (16:9)
  1920x1080i @ 50Hz (16:9)
  1440x576i  @ 50Hz (16:9)
  1920x1080p @ 50Hz (16:9)
  1920x1080p @ 24Hz (16:9)
  1920x1080p @ 25Hz (16:9)
  1920x1080p @ 30Hz (16:9)
  3840x2160p @ 24Hz (16:9)
  3840x2160p @ 25Hz (16:9)
  3840x2160p @ 30Hz (16:9)
  3840x2160p @ 50Hz (16:9)
  3840x2160p @ 60Hz (16:9)
  4096x2160p @ 24Hz (256:135)
  4096x2160p @ 25Hz (256:135)
  4096x2160p @ 30Hz (256:135)
  4096x2160p @ 50Hz (256:135)
  4096x2160p @ 60Hz (256:135)

Audio data block
  Linear PCM
    Max channels: 2
    Supported sample rates (kHz): 48 44.1 32
    Supported sample sizes (bits): 24 20 16
  Linear PCM
    Max channels: 8
    Supported sample rates (kHz): 96 48 44.1
    Supported sample sizes (bits): 24 20 16
  AC-3
    Max channels: 6
    Supported sample rates (kHz): 48
    Maximum bit rate: 640 kHz
  Enhanced AC-3
    Max channels: 8
    Supported sample rates (kHz): 192 96 48 44.1
  MAT (MLP)
    Max channels: 1
    Supported sample rates (kHz): 192 96 48 44.1
  DTS
    Max channels: 6
    Supported sample rates (kHz): 96 48 44.1
    Maximum bit rate: 1536 kHz
  DTS-HD
    Max channels: 8
    Supported sample rates (kHz): 192 96 48
```

Supported Formats	
Resolutions (max.)	• 4096 x 2160 at 24 or 30 Hz • 3860 x 2160 at 60 Hz (4:2:0) • 1080p Full HD • 1920 x 1200 (WUXGA)

Connectors, Controls, and Indicators	
HDMI In	• 8 x Type A 19-pin female, locking
HDMI Out	• 8 x Type A 19-pin female, locking
RS-232	• 1 x DB-9, female
Ethernet	• 1 x RJ-45
IR In / Ext	• 1 x 3.5mm mini-stereo
24V DC	• 1 x 4-pin, locking
IR sensor	• 1 x front panel
Power button	• 1 x tact-type, bi-color blue/orange backlight
Control buttons	• 7 x tact-type, blue backlight
Front-panel display	• 1 x OLED (2x rows, 20 chars / row)

Operational	
Maximum pixel clock	• 300 MHz
Power input	• 24V DC
Power consumption	• 39W (max.)
Operating temperature	• +32 to +122 ºF (0 to +50 ºC)
Operating humidity	• 5% to 90% RH, non-condensing
Storage temperature	• -4 to +140 ºF (-20 to +60 ºC)
Storage humidity	• 5% to 95% RH, non-condensing
MTBF	• 50000 hours

Physical	
Rack-mount requirements	• Standard 19” rack, 2U high
Dimensions (excluding rack ears and connectors, W x H x D)	• 17.25” x 3.5” x 15.75” (440mm x 89mm x 400mm)
Unit weight	• 20 lbs (9.0 kg)

A

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D

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