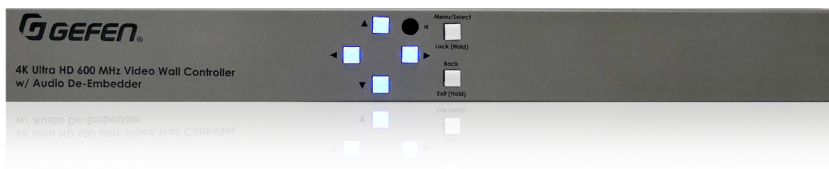




# 4K Ultra HD 600 MHz 1x4 Video Wall Controller with Audio De-Embedder



## User Manual

# Important Safety Instructions

## General Safety Information

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.

For the latest warranty coverage information, refer to the **Warranty and Return Policy** at the Gefen Web site at:

<http://www.gefen.com/connect/warranty-and-return-policy>

# Contacting Gefen Technical Support

## Technical Support

1-707-283-5900    1-800-472-5555  
8:00 AM to 5:00 PM Monday - Friday, Pacific Time

## Email

[support@gefen.com](mailto:support@gefen.com)

## Web

<http://www.gefen.com>

## Mailing Address

Gefen  
Nortek Security & Control, LLC  
c/o Customer Service  
1800 S McDowell Blvd  
Petaluma, CA 94954 USA

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- When using the 1x4 Video Wall Controller for the first time, it is recommended that the unit be configured using the web interface. Firmware upgrade is handled through Gefen Syner-G Software Suite. Download the application at:

<http://www.gefen.com/synerg/>

- When using any 4K (2160P) input resolution, the following limitations and requirements will be in effect:
  - Only 1080p output resolution
  - No Rotation effect
  - Only horizontal 2x2 layout mode
  - Restrictions in custom layout (see [page 38](#) for details)
- This manual has been written and is based on firmware version 1.60.

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- lwIP
- jQuery

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## Features\*

- Video Wall Controller divides the input signal into four separate sections to be scaled and sized for each of the four outputs.
- Controllable via front panel controls, IR, IP (web server interface, Telnet and RS-232)
- Input resolutions up to 4K UHD 60 Hz 4:4:4, with HDCP 2.2
- Output resolutions up to 1080p 60 Hz
- Analog L/R Audio Breakout for use with outboard amplification systems
- Easy to use on-screen Graphical User Interface (GUI) and web server interface
- Handheld IR remote control and IR Extender input on back panel
- HDCP compliant
- Field-upgradable firmware using the Gefen Syner-G™ software
- Default pre-configured layout arrangements make easy setup for different monitor layouts
- Custom layout can be setup for special monitor arrangements that go beyond the usual preset layouts.
- Locking power supply connector
- 1U tall rack-mountable enclosure, rack ears included

## Packing List

If any of these items are not present in the package when you first open it, immediately contact Gefen Technical Support as soon as possible:

- (1) 1x4 Video Wall Controller
- (1) 6 ft. Locking HDMI Cable
- (1) 6 ft. DB-9 Cable
- (1) EXT-RMT-EXTIRN IR Extender Module
- (2) Rack Ears
- (1) Handheld IR Remote with CR2025 battery included
- (1) 12V DC Locking Power Supply with US/EU/UK/AU plugs
- (1) Quick-Start Guide

\*Features and specifications are subject to change without notice.

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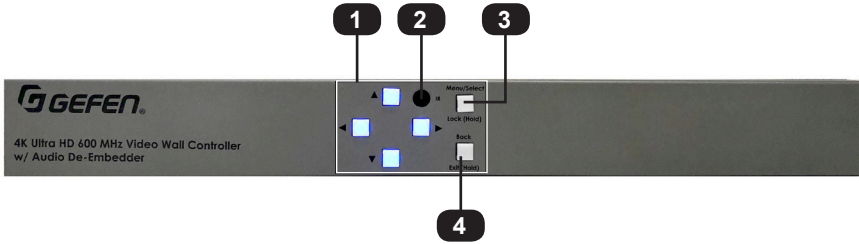
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# Video Wall Controller

## 01 Getting Started

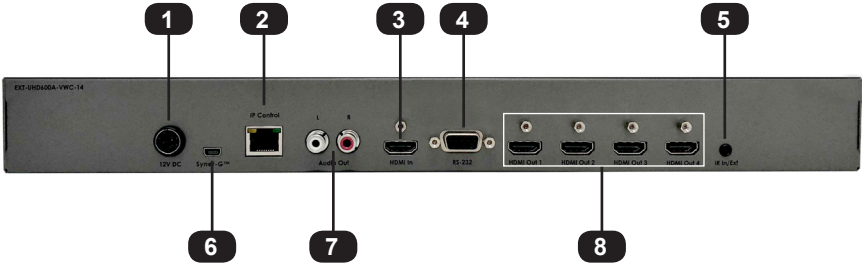
# Panel Layout

## Front



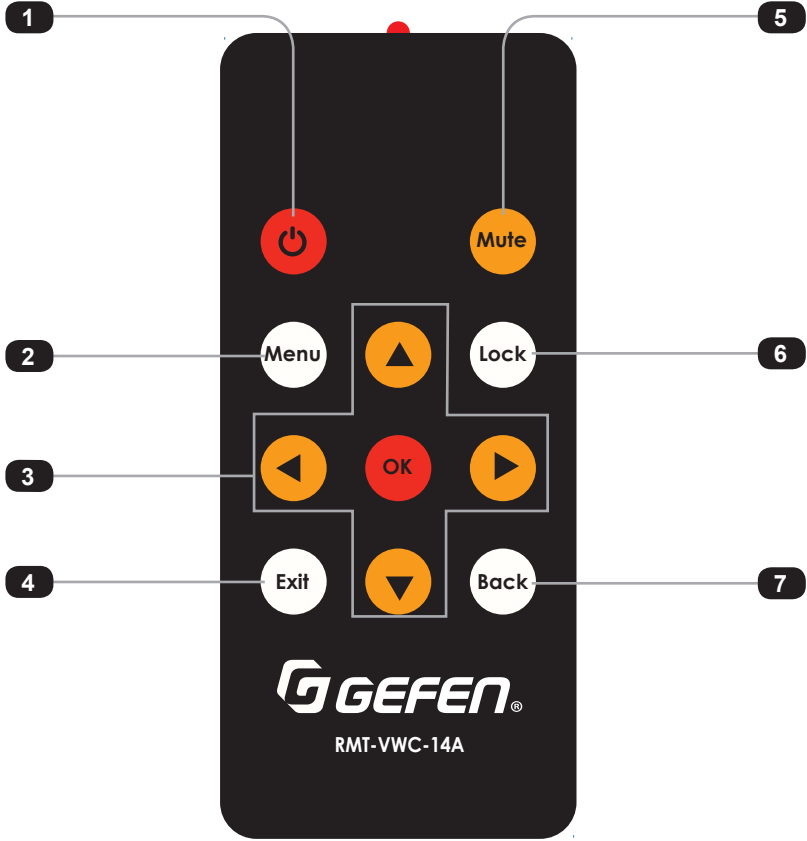
ID	Name	Description
1	Menu and Navigation	The Menu and Navigation keys control the operation of the on-screen user interface. Pressing and holding down the Menu key also allows locking and unlocking controls. See <a href="#">Menu System</a> , pg. 20, for details.
2	IR	This IR sensor receives signals from the included IR remote control unit.
3	Menu/Select Lock (HOLD)	Press this button to enter the <b>Menu</b> and to select and confirm options.  Pressing and holding down the <b>Menu</b> button (>3 sec) will lock/unlock the 1x4 Video Wall Controller and prevent accidental changes. See <a href="#">Locking/Unlocking</a> , pg. 18, for details.
4	Back Exit (HOLD)	<b>Back, Exit (Hold)</b> is used to step back within the menu structure. Hold down the <b>Back</b> button (>3 sec) for quick exit of the menu.
Any button	Power On	To power-on the unit, press any button on the front panel, or press the <b>Power</b> button on the handheld remote.

## Back



ID	Name	Description
1	12V DC	Connect the included 12V DC power supply from this power receptacle to an available AC electrical outlet.
2	IP Control	Connect a CAT-5 (or better) cable between this jack and a LAN to use IP control. Refer to <a href="#">RS-232 and IP Configuration</a> , pg. 48, for more information on setting up IP control.
3	HDMI In	Connect an Ultra HD or Full HD source to this input using an HDMI cable.
4	RS-232	To control the unit via RS-232, connect the included DB-9 cable from an automation control device to the unit. See <a href="#">RS-232 and IP Configuration</a> , pg. 48, for more information on setting up RS-232 control.
5	IR In/Ext	If IR control is required and the unit is not installed in line of sight, connect the included IR extender module EXT-RMT-EXTIRN or electrical IR output from an automation control device to the IR In/Ext port on the back panel of the unit.
6	Syner-G™ (mini USB)	Connection to Gefen Syner-G™ software for firmware upgrade
7	L/R Audio Out	If using an outboard amplification system, connect a pair of RCA patch cables from the Audio Out connectors on the unit to your amplifier.
8	HDMI Out (1 - 4)	Connect to up to four Full HD displays using an HDMI cable.

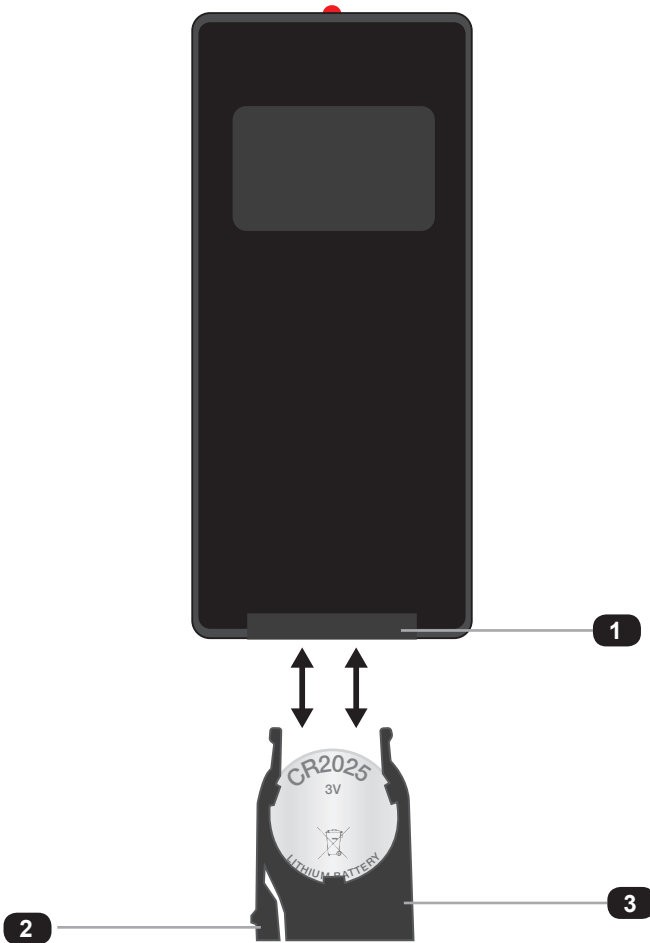
# IR Remote Control Unit



ID	Name	Description
1	Power button	Press this button to power-ON or power-OFF the Video Wall Controller.
2	Menu	Press this button to display the built-in menu system.
3	◀/▶/▲/▼/OK	Used to access and change features within the OSD menu system. Use the arrow buttons to select menu options. Press the <b>OK</b> button to make a selection within the menu system.
4	Exit	Press this button to quickly exit from anywhere within the menus.
5	Mute	Mutes the audio on both HDMI and analog outputs.
6	Lock	Press this button to lock or unlock the Video Wall Controller.
7	Back	Go back to the previous menu option or cancel an adjustment of a parameter.

# IR Remote Control Unit

## Remote Bottom - Installing the Batteries



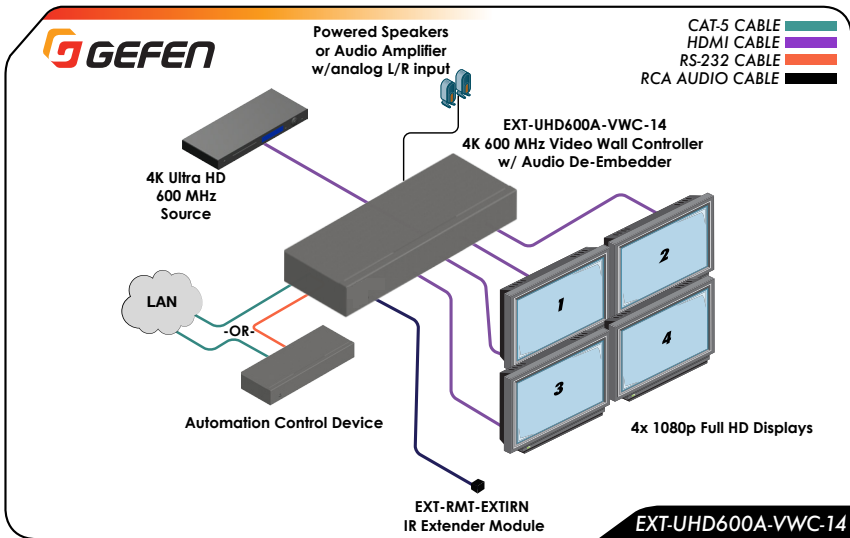
ID	Name	Description
1	Battery slot	Holds battery carriage in place.
2	Release Tab	Press inward with your thumb to release the tab that holds the battery carriage in place. Remove and replace the battery, then slide and snap the battery carriage back in to place.
3	Battery Carriage	Holds the lithium battery for operating the IR remote. Use only a CR2025 3V Lithium Battery.



## Connecting the 1x4 Video Wall Controller

1. Connect an Ultra HD or Full HD source to the input port (**HDMI In**) on the Video Wall Controller.
2. Connect up to four Full HD displays to the **HDMI Out** ports on the Video Wall Controller.
3. OPTIONAL: Connect an RS-232 cable from the **RS-232** port on the Video Wall Controller to the RS-232 connector on the automation controller.
4. OPTIONAL: Connect a CAT-5 (or better) cable from the **IP Control** port on the Video Wall Controller to a Local Area Network (LAN).
5. OPTIONAL: Connect the included IR extender to the **IR In/Ext** port on the Video Wall Controller.
6. Connect the included 12V DC locking power supply to the power receptacle on the Video Wall Controller.
7. Connect the power supply to an available electrical outlet.

## Sample Wiring Diagram



## Network Configuration using Syner-G

1. Launch the Gefen Syner-G application.  
Download the application here: <http://www.gefen.com/synerg/>
2. Select the EXT-UHD600A-VWC-14 from the list of products.

### Select Function

**Discover and Configure IP**      **Manage a Product**      **EDID Editor**

My PC	fe80::255a:2329:6b6a...	54:E1:AD:4A:29:3E	Local Area Connecti...
Product Name	IP Address	MAC Address	Description
GF-UHD-89-HBT2	10.5.27.90	00:1C:91:04:A0:00	GF-UHD-89-HBT2
EXT-UHD600A-88	10.5.27.122	00:1C:91:03:80:01	EXT-UHD600A-88
<b>EXT-UHD600A-VWC-14</b>	<b>192.168.1.72</b>	<b>00:1C:91:06:60:A5</b>	<b>EXT-UHD600A-VWC-14</b>
EXT-CU-LAN	10.5.27.52	00:1C:91:04:60:75	EXT-CU-LAN
EXT-UHD600A-VWC-14	10.5.27.82	00:1C:91:06:F0:00	EXT-UHD600A-VWC-14

3. Under the **Device Settings** section, select either Static or DHCP from the **IP Mode** drop-down list.
  - Select Static to manually 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.
  - Web GUI Port is fixed at 80.

### Device Settings

<b>Product Name</b>	EXT-UHD600A-VWC-14	<b>IP Mode</b>	DHCP
<b>MAC Address</b>	00:1C:91:06:60:A5	<b>Web GUI Port</b>	Static
<b>IP Address</b>	192.168.1.72	<b>Telnet Port</b>	DHCP
<b>Subnet Mask</b>	255.255.255.0	<b>Firmware Version</b>	1.60
<b>Gateway IP</b>	10.5.27.1	<b>Hardware Version</b>	6.0
<b>DNS</b>		<b>Description</b>	EXT-UHD600A-VWC-14

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

MAC Address	00:1C:91:06:60:A5	Web GUI Port	80
IP Address	192.168.1.72	Telnet Port	23
Subnet Mask	255.255.255.0	Firmware Version	1.60
Gateway IP	192.168.1.1	Hardware Version	6.0
DNS		Description	EXT-UHD600A-VWC-14

Reboot
Show Me

Save

- After saving, select **Reboot** for the new network settings to take effect.
- Use the IP address of the switcher to access the built-in web interface or start a Telnet session. See the following for more information:
  - [Web Interface, pg. 34](#)
  - [RS-232 and IP Configuration, pg. 48](#)

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# Video Wall Controller

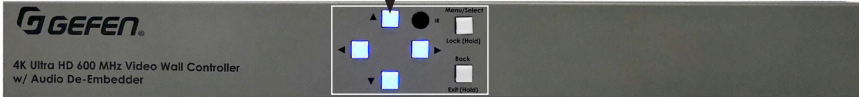
## 02 Operating the Video Wall Controller

# Introduction

## Turning on the Video Wall Controller

To power-on the unit, press the any button on the front panel, or press the power button on the handheld remote. Navigation button (◀, ▶, ▲, and ▼) LEDs will illuminate when powered up. Power can also be controlled via commands over IP or serial connection.

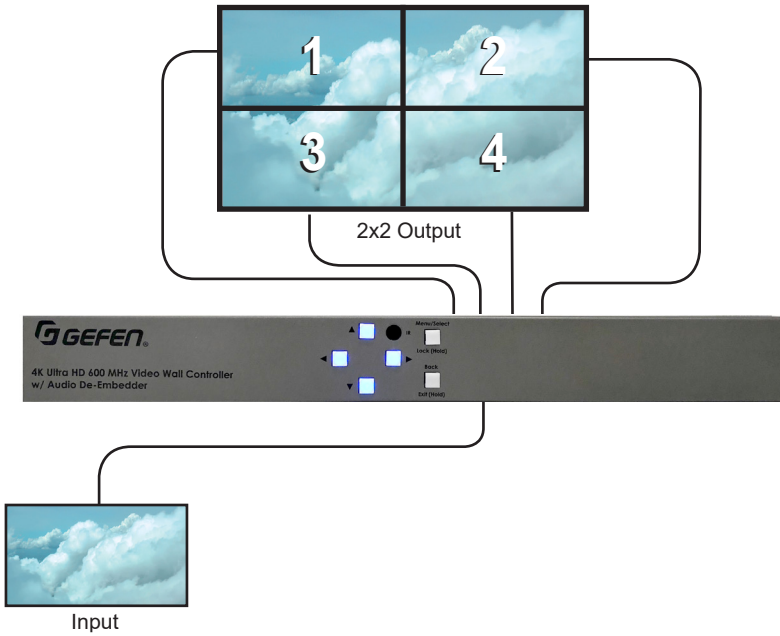
Blue LED illumination indicates that switcher is in *powered on*.



## Display Layout

Up to 4 individual displays can be active at one time.

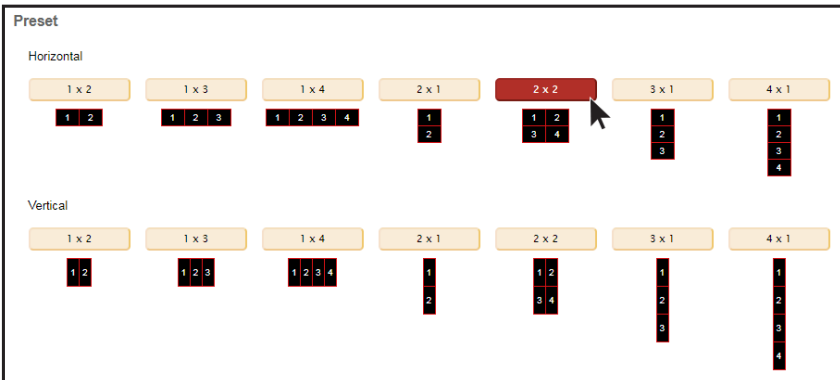
The most common application is a 2x2 display layout, but other layouts are available.



There are multiple preset layouts that can be recalled that include both horizontal and vertical display orientations. See **Setup ► Layout**, [pg. 38](#).

For advanced installations, each output's size and position can be individually configured.

Click to select the desired Preset (this example uses the web interface).



## Choosing a Layout

Layouts can be chosen from the web interface, OSD, TCP/IP, or RS-232 interfaces.

There are 7 horizontal and 7 vertical preset layouts available. Each preset layout will crop and scale the input video source to work with each preset layout. Vertical preset layouts apply clockwise rotation, assuming that all display devices are rotated 90 degrees counterclockwise to compensate.

When the source resolution and output resolution both use a matching aspect ratio (e.g. 16:9), all preset layouts (other than the horizontal and vertical 2x2) will stretch and distort the incoming pixels to display the desired layout. To prevent content from appearing distorted, it's highly recommended that content should be generated to specifically match the desired layout.

To choose a layout using the web interface, navigate to the **Setup ► Layout** ([pg. 38](#)) tab and click on the desired horizontal or vertical preset. The current preset will be highlighted.



**NOTE:** When the input video source is 4K Ultra HD (3840 x 2160), the only layout option is horizontal 2x2.

Vertical 2x2 Output





Click to select the desired Preset (this example uses the web interface).

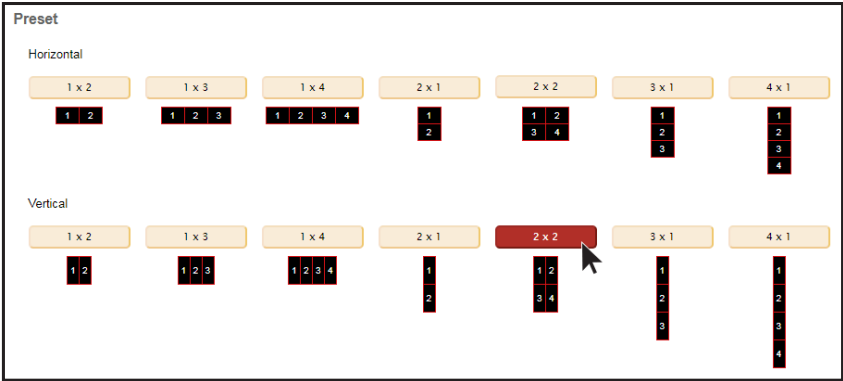
Preset

Horizontal

1 x 2	1 x 3	1 x 4	2 x 1	2 x 2	3 x 1	4 x 1																						
<table><tr><td>1</td><td>2</td></tr></table>	1	2	<table><tr><td>1</td><td>2</td><td>3</td></tr></table>	1	2	3	<table><tr><td>1</td><td>2</td><td>3</td><td>4</td></tr></table>	1	2	3	4	<table><tr><td>1</td><td>2</td></tr></table>	1	2	<table><tr><td>1</td><td>2</td><td>3</td><td>4</td></tr></table>	1	2	3	4	<table><tr><td>1</td><td>2</td><td>3</td></tr></table>	1	2	3	<table><tr><td>1</td><td>2</td><td>3</td><td>4</td></tr></table>	1	2	3	4
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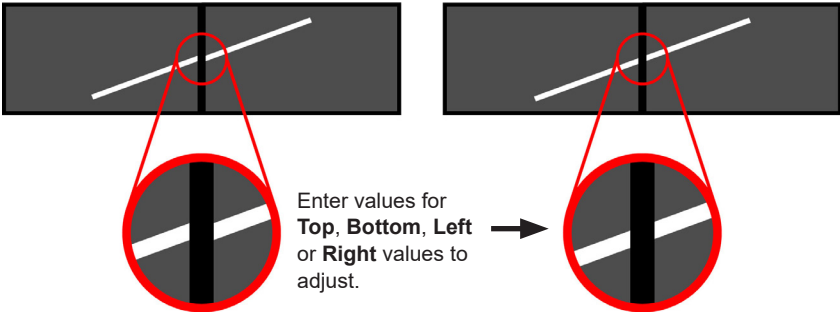
Vertical

1 x 2	1 x 3	1 x 4	2 x 1	2 x 2	3 x 1	4 x 1																						
<table><tr><td>1</td><td>2</td></tr></table>	1	2	<table><tr><td>1</td><td>2</td><td>3</td></tr></table>	1	2	3	<table><tr><td>1</td><td>2</td><td>3</td><td>4</td></tr></table>	1	2	3	4	<table><tr><td>1</td><td>2</td></tr></table>	1	2	<table><tr><td>1</td><td>2</td><td>3</td><td>4</td></tr></table>	1	2	3	4	<table><tr><td>1</td><td>2</td><td>3</td></tr></table>	1	2	3	<table><tr><td>1</td><td>2</td><td>3</td><td>4</td></tr></table>	1	2	3	4
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## Bezel Compensation

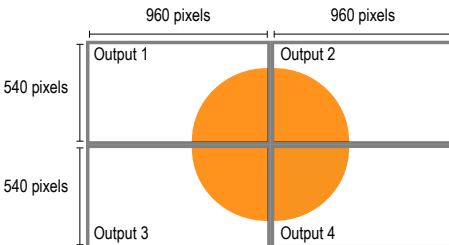
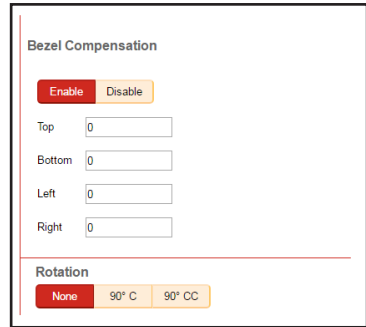
Nearly all displays have a bezel. When used in a video wall application, these bezels will have a negative impact on the total application if compensation is not applied. Bezel Compensation effectively crops the display area, "hiding" parts of the image that are covered by the bezels of a display.



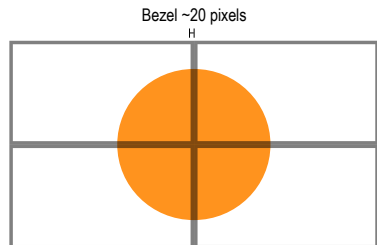
Bezel compensation can be applied individually to each of the 4 display sides on each of the 4 HDMI outputs.

Pixel adjustments are made based on the output resolution. These numbers are scaled to affect the total area that each output crops from the input resolution. Adjustments for Bezel Compensation are accomplished using the web interface, telnet, RS-232, or OSD.

To adjust Bezel Compensation from the web interface, navigate to the **Setup ► Output** tab, [pg. 37](#). Enter the desired value (in pixels) for the top, bottom, left, and right bezels.



**No Compensation Applied**  
Circle is distorted (Bezels transparent to show that no output is cropped).



**Corrected Compensation**  
(Bezels transparent to show image areas that are now cropped).

Settings for each output to make correction shown above with bezel width ~20 pixels on all sides:

- Output 1:** Right 20, Bottom 20
- Output 2:** Left 20, Bottom 20
- Output 3:** Right 20, Top 20
- Output 4:** Left 20, Top 20

## Customized Layouts

Preset layouts are a good way to begin setting up your video wall. In most cases, using a preset layout will only require Bezel Compensation to be applied. In more specific applications (i.e. when building a video wall using projectors or when a custom video wall is desired), it's necessary to have complete control of the area that each display will crop within the entire input image area.

Starting with a preset layout, customize each HDMI output by specifying the exact starting and ending pixels of the input resolution for where the image crop begins and ends on both the horizontal and vertical axis.

Custom layouts can be created using the web interface, telnet, RS-232, or OSD ([see pg. 38](#)).

**Custom**

Output: 1 2 3 4

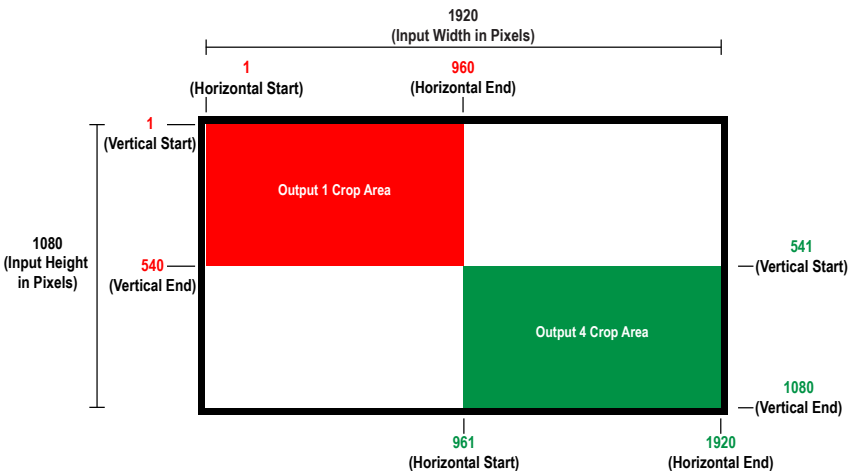
Horizontal Start:  End:

Vertical Start:  End:

Horizontal Shift:

Vertical Shift:

1. Select the output that will be customized (output 1 in red and output 4 in green are show below in the example image).
2. Use the **Horizontal** and **Vertical Start** and **End** to specify the area of the input signal that will be cropped to display on that output. These values are entered in pixels.
3. **Vertical** and **Horizontal Shifts** will allow easy shifting of the crop area for fine tuning once the crop area has been set. These values are entered in pixels.
4. Click the Save button, then repeat for all desired outputs.



# Locking / Unlocking

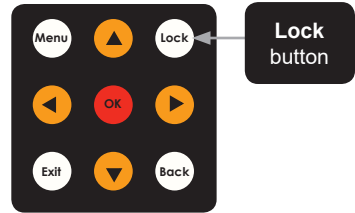
Locking the Video Wall Controller disables front panel functions (except the **Lock (Hold)** button) to prevent changes caused by accidental button presses. Disabled are the front panel, IR, and Web GUI, but API control will remain unlocked.

## Using the Front Panel Buttons

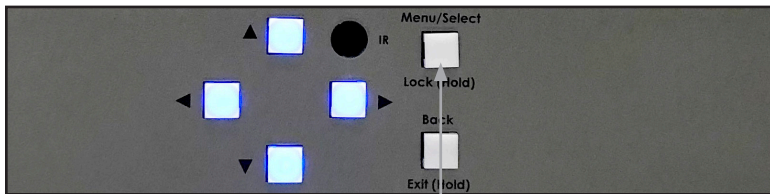
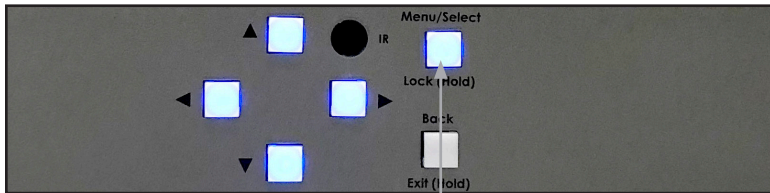
1. Press and hold the **Lock (Hold)** button (3 seconds) on the front panel.

If using the **IR Remote**, press the **Lock** button.

The **Lock (Hold)** button on the console will illuminate.



2. The Video Wall Controller is now locked. The button will remain illuminated as long as the unit is locked.
3. To unlock the unit, press and hold the **Lock (Hold)** button. The button will no longer be illuminated.
4. The Video Wall Controller is now unlocked and can be used normally.

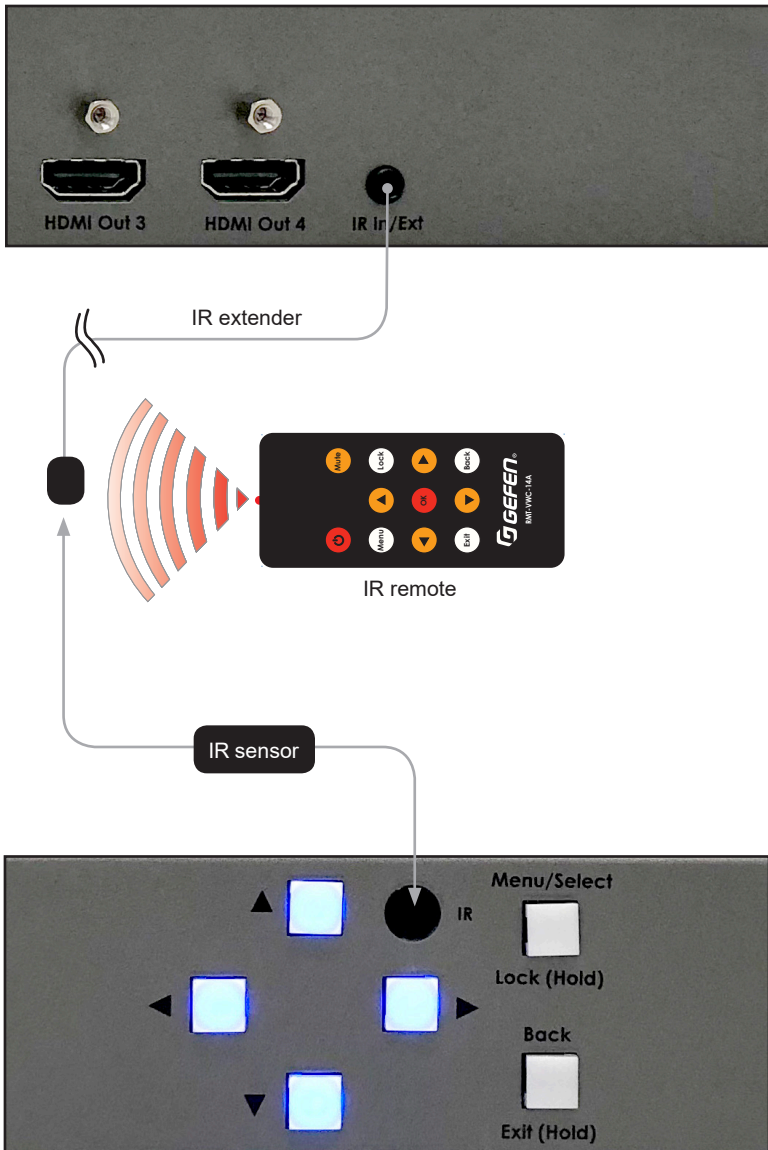


When the unit is locked, any button press will cause the **Menu/Select/Lock** button to blink in the following pattern one time to indicate that the unit is locked:

- Menu/Select/Lock button LED inactive (OFF) for 500 ms
- Menu/Select/Lock button LED active (ON) for 500 ms
- Menu/Select/Lock button LED inactive (OFF) for 500 ms
- Menu/Select/Lock button LED active (ON).

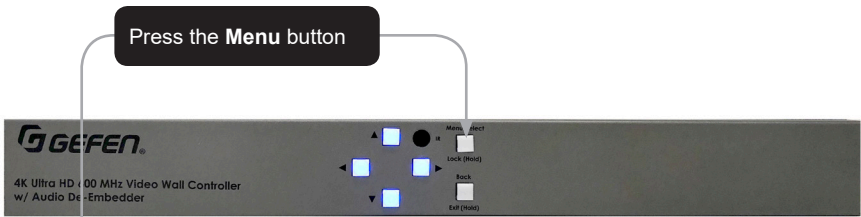
# Using the IR Extender

In the event the front panel IR sensor is blocked due to being positioned inside a cabinet or other mounting situation, the included IR extender (Gefen part no. EXT-RMT-EXTIRN) can be connected to the **IR In/Ext** port on the Video Wall Controller. The sensor on the IR extender behaves exactly like the sensor on the front panel of the switcher. Always point the IR remote control in the direction of the IR sensor.

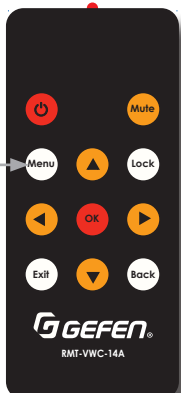


## Accessing the Menu System

The 1x4 Video Wall Controller uses a built-in, On-Screen Display (OSD) menu system to manage and control all video features. To access the menu system, press the **Menu** button on the front panel or on the included IR remote control.



Press the **Menu** button

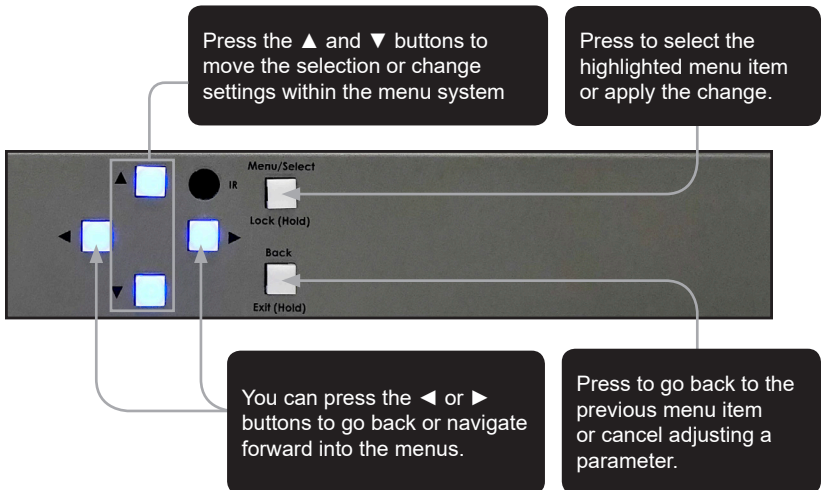
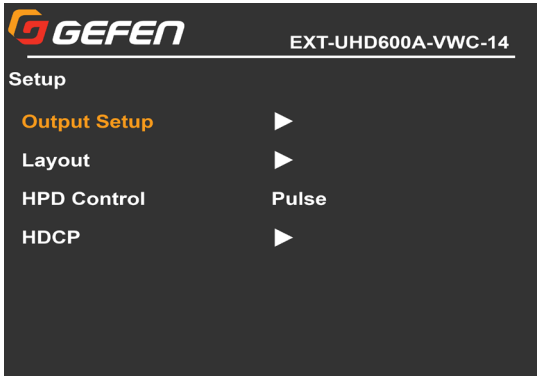


The OSD time-out value (duration) for the menu system can be changed in the **Menu System**, [pg. 32](#).

**NOTE:** By default output that the OSD will appear on is HDMI Output 1.

## Using the Front Panel Controls

Use the ◀, ▶, ▲, and ▼ buttons on the front panel to move around within the menu system. Press the ▲ and ▼ buttons to move up and down. Press the **Select** button to make the desired selection. The current selection will be highlighted in orange. Press the ▲ and ▼ buttons to change settings. Press the **Select** button to apply the change. You can also press the ◀ or ▶ buttons to go back or navigate forward into the menus.



## Using the IR Remote Control

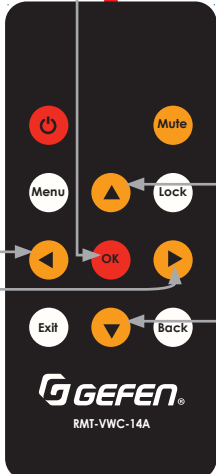
The IR remote control has buttons which represent the controls on the front panel. Press the **▲** and **▼** buttons to navigate and change settings. Press the **OK** button to choose a setting or to apply the change. You can also press the **◀** or **▶** buttons to go back or navigate forward into the menus.



Press OK to choose a setting or to apply the selected setting

Press the **◀** or **▶** buttons to go Back or to Navigate forward into the menus

Press the **▲** and **▼** buttons to move up and down within the menu system or change settings

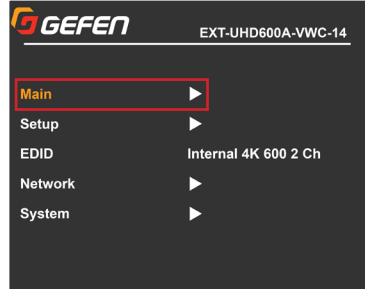




## Main

1. Press the **Menu** button on the front panel or on the IR remote control. The menu system will be displayed.

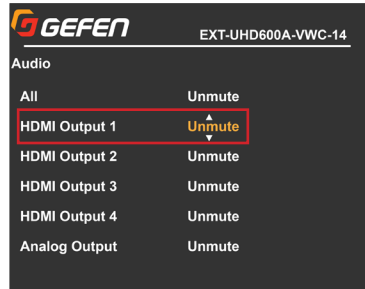
Select **Main**, then select **Audio**.



2. The **Audio** item shows the current audio status for the HDMI Outputs.

Use the **▲** or **▼** buttons to go through the list of outputs.

Press **Select** then **▲** or **▼** to select **Mute** or **Unmute** for the output and press the **Select** button to apply the change.



3. Use the **Power Off** option to put the unit into standby. Press **Select** then press the **▶** button to highlight **Yes**. Press **Select** again to verify you want to power down the unit.



## Setup ► Output Setup



**NOTE:** Before changing this setting, make sure that the connected display can support the selected output resolution.

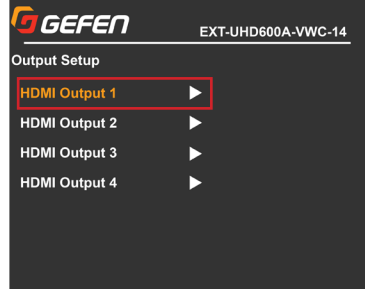
1. Press the **Menu** button on the front panel or IR remote control. The menu system will be displayed. Select **Setup**.

**Output Setup** will be highlighted.



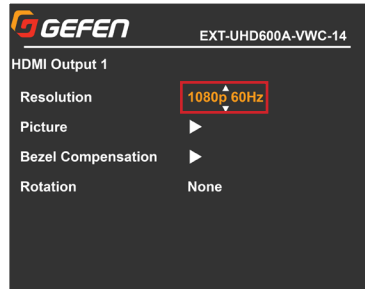
2. Press the **Select** button (or IR Remote **OK** button) to display the **Output Setup** menu.

Use the **▲** or **▼** buttons to highlight the desired output resolution. Select the HDMI output to adjust.



3. Press the **Select** button again to select an [Output Resolution](#).

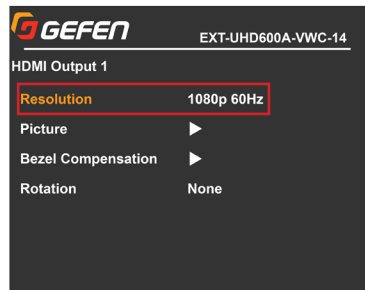
Use the **▲** or **▼** buttons to highlight the desired output resolution.

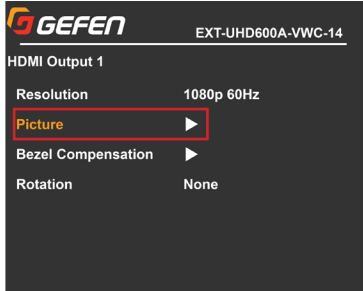
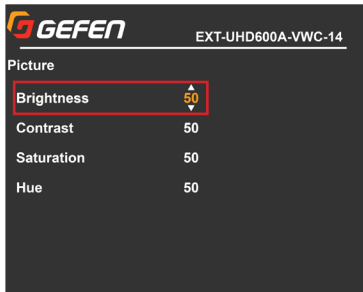
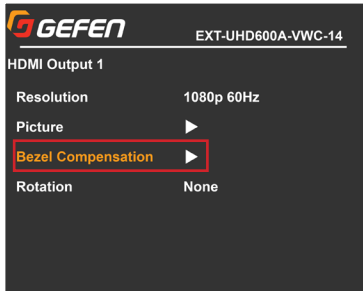
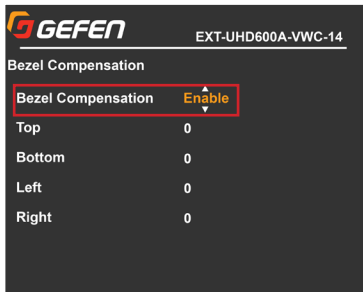


4. Press the **Select** button to apply the selected resolution.

If you were editing the display in which the menu is shown and the display does not support the selected resolution, use the web interface, RS-232 or IP commands to change the resolution.

See [RS-232 and IP Configuration](#), pg. 48, for more information on commands.



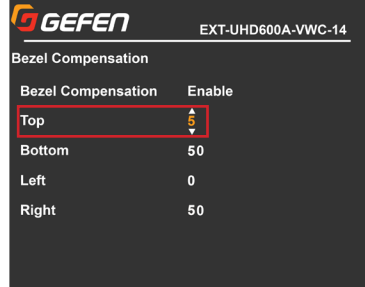
<p>5. From the HDMI Output menu, select <a href="#">Picture</a> to view adjustment options for the chosen output: <b>Brightness</b>, <b>Contrast</b>, <b>Saturation</b>, or <b>Hue</b>.</p>	 <p>Resolution 1080p 60Hz  <b>Picture</b> ▶          Bezel Compensation ▶          Rotation None</p>
<p>6. Select an option, then press the <b>Select</b> button.</p> <p>Press the ▲ or ▼ buttons to adjust the value, then press the <b>Select</b> button to accept.</p>	 <p>Brightness 50 ▲▼          Contrast 50          Saturation 50          Hue 50</p>
<p>7. From the HDMI Output menu, press the ▼ button to highlight <b>Bezel Compensation</b>. Press the <b>Select</b> button to access the options.</p>	 <p>Resolution 1080p 60Hz          Picture ▶  <b>Bezel Compensation</b> ▶          Rotation None</p>
<p>8. Select <a href="#">Bezel Compensation</a>, then press the ▲ or ▼ button to <b>Enable</b> or <b>Disable</b> Bezel Compensation.</p>	 <p>Bezel Compensation Enable ▲▼          Top 0          Bottom 0          Left 0          Right 0</p>

## Setup ► Output Setup (continued)

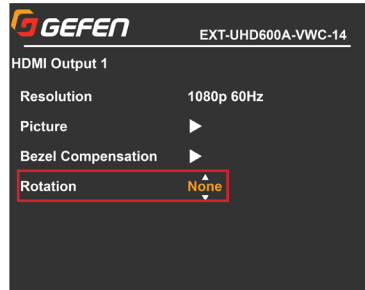
9. When set to **Enable**, the **Top**, **Bottom**, **Left** and **Right** options will become available.

Select an option, then press the ▲ or ▼ buttons to adjust the value.

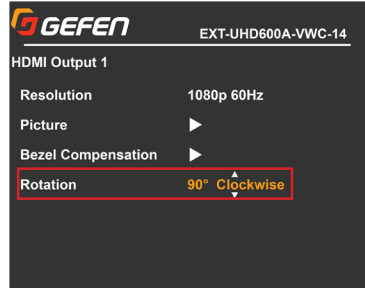
Press the **Select** button to accept.



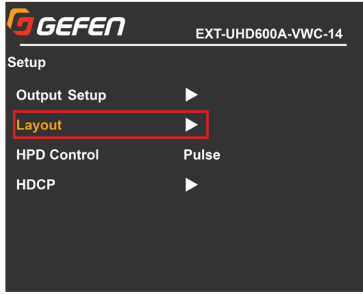
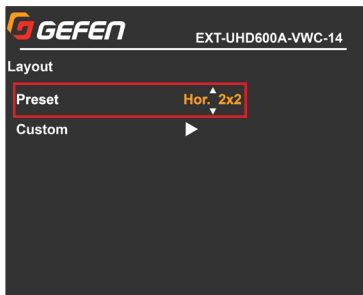
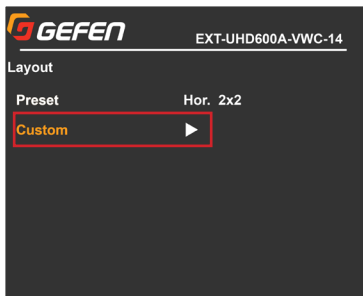
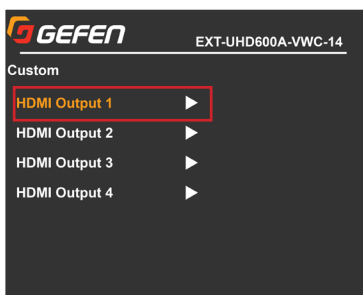
10. From the HDMI Output menu, select **Rotation**, press the **Select** button.



11. Press the ▲ or ▼ buttons to select a rotation option, then press the **Select** button to accept.



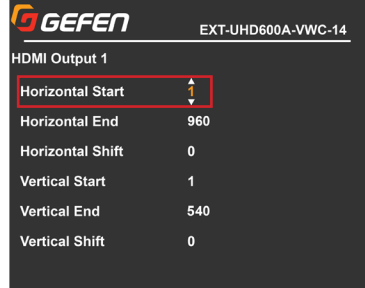
## Setup ► Layout

<p>1. Press the <b>Menu</b> button on the front panel or on the IR remote control. The menu system will be displayed. Select <b>Setup</b>.</p> <p>Press the ▲ or ▼ buttons to highlight <b>Layout</b>, then press the <b>Select</b> button.</p>	 <p>The screenshot shows the GEFEN logo and model number EXT-UHD600A-VWC-14 at the top. Below the title 'Setup', there are four menu items: 'Output Setup', 'Layout', 'HPD Control', and 'HDCP'. 'Layout' is highlighted with a red rectangular box. To the right of 'Layout' is a right-pointing arrow. To the right of 'HPD Control' is the text 'Pulse'. To the right of 'HDCP' is a right-pointing arrow.</p>
<p>2. Press the ▲ or ▼ buttons to highlight <b>Preset</b>, then press the <b>Select</b> button. See <b>Setup ► Layout</b>, <a href="#">pg. 38</a>, for preset layout options.</p> <p>Press the ▲ or ▼ buttons to adjust the setting, then press the <b>Select</b> button to save the change.</p>	 <p>The screenshot shows the GEFEN logo and model number EXT-UHD600A-VWC-14 at the top. Below the title 'Layout', there are two menu items: 'Preset' and 'Custom'. 'Preset' is highlighted with a red rectangular box. To the right of 'Preset' is the text 'Hor. 2x2' with a small upward-pointing arrow above it and a downward-pointing arrow below it. To the right of 'Custom' is a right-pointing arrow.</p>
<p>3. Press the ▲ or ▼ buttons to highlight <b>Custom</b>, then press the <b>Select</b> button to view the submenu. See <b>Setup ► Layout</b>, <a href="#">pg. 38</a>, for custom layout options.</p>	 <p>The screenshot shows the GEFEN logo and model number EXT-UHD600A-VWC-14 at the top. Below the title 'Layout', there are two menu items: 'Preset' and 'Custom'. 'Custom' is highlighted with a red rectangular box. To the right of 'Preset' is the text 'Hor. 2x2'. To the right of 'Custom' is a right-pointing arrow.</p>
<p>4. Press the ▲ or ▼ buttons to highlight an HDMI Output, then press the <b>Select</b> button.</p>	 <p>The screenshot shows the GEFEN logo and model number EXT-UHD600A-VWC-14 at the top. Below the title 'Custom', there are four menu items: 'HDMI Output 1', 'HDMI Output 2', 'HDMI Output 3', and 'HDMI Output 4'. 'HDMI Output 1' is highlighted with a red rectangular box. To the right of each of the four items is a right-pointing arrow.</p>

## Setup ► Layout

5. Press the ▲ or ▼ buttons to highlight an option then press the **Select** button.

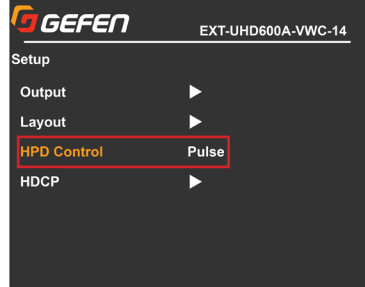
Press the ▲ or ▼ buttons to adjust the value, then press the **Select** button to save the change.



## Setup ► HPD Control

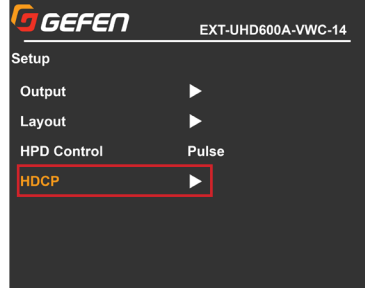
Press the **Menu** button on the front panel or on the IR remote control. The menu system will be displayed. Select **Setup**.

Press the **Select** button to highlight **Pulse**, then press the **Select** button again to send an *HPD Pulse* to the source device, simulating the removal and re-connection of the HDMI input cable. See **Setup**, then select [HPD](#).

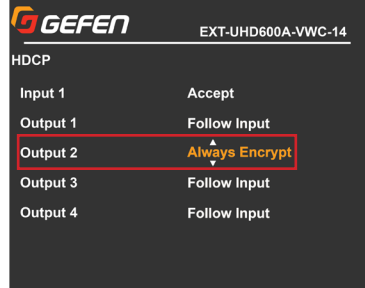


## Setup ► HDCP

1. Press the **Menu** button on the front panel or on the IR remote control. The menu system will be displayed. Select **Setup**, then select [HDCP](#).

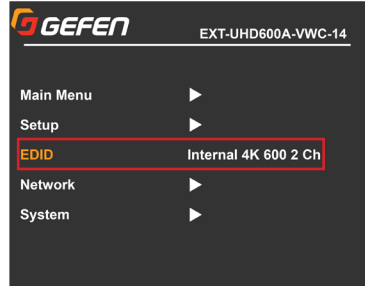


2. Press the ▲ or ▼ buttons to highlight an option, then press the **Select** button.  
  
Press the ▲ or ▼ buttons to adjust the setting, then press the **Select** button to save the change.

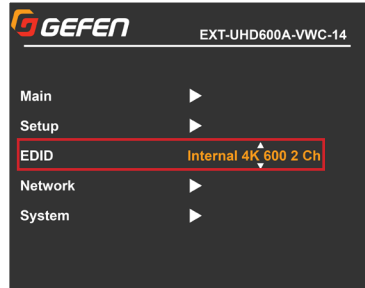


## Main ► EDID

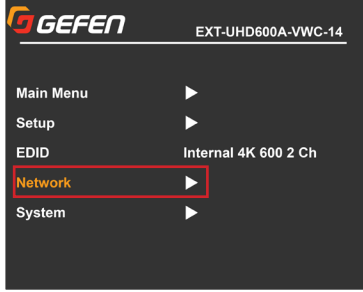
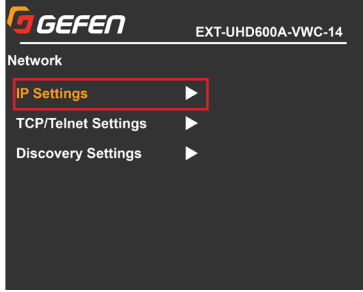
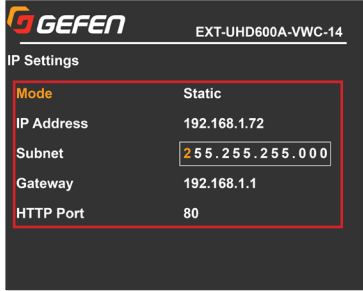
1. Press the **Menu** button on the front panel or on the IR remote control. The menu system will be displayed. Select [EDID](#).



2. Press the ▲ or ▼ buttons to adjust the setting, then press the **Select** button to save the change.




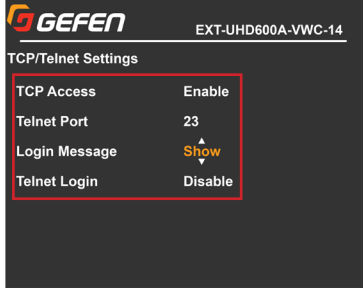
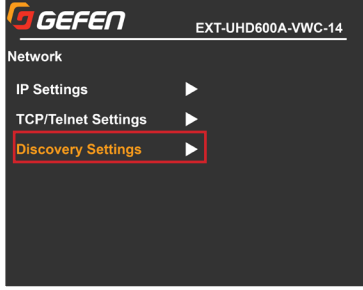

## Network

<p>1. Press the <b>Menu</b> button on the front panel or on the IR remote control. The menu system will be displayed. Select <b>Network</b>.</p>	 <p>The screenshot shows the main menu of the GEFEN EXT-UHD600A-VWC-14. The menu items are: Main Menu, Setup, EDID (Internal 4K 600 2 Ch), Network (highlighted with a red box), and System.</p>
<p>2. Press the ▲ or ▼ buttons to highlight <b>IP Settings</b>, then press the <b>Select</b> button.</p>	 <p>The screenshot shows the Network menu. The options are: IP Settings (highlighted with a red box), TCP/Telnet Settings, and Discovery Settings.</p>
<p>3. Press the ▲ or ▼ buttons to highlight an option, then press the <b>Select</b> button.</p> <p>Press the ▲ or ▼ buttons select an option setting, then press the <b>Select</b> button to save the change.</p> <p>To adjust numbers, press the ◀ or ▶ buttons to highlight the digit you wish to change. Press the ▲ or ▼ buttons to change the digit's value, then press the <b>Select</b> button to save the change.</p>	 <p>The screenshot shows the IP Settings menu. The options are: Mode (Static), IP Address (192.168.172), Subnet (255.255.255.000), Gateway (192.168.1.1), and HTTP Port (80). The Subnet field is highlighted with a red box.</p>

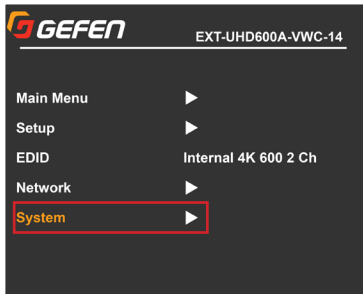
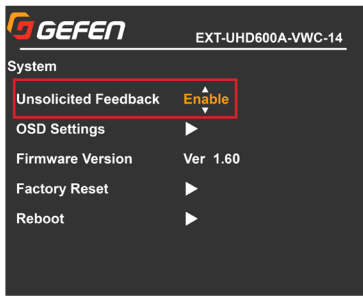
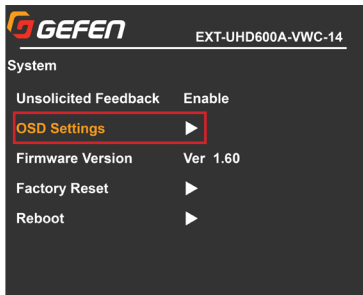
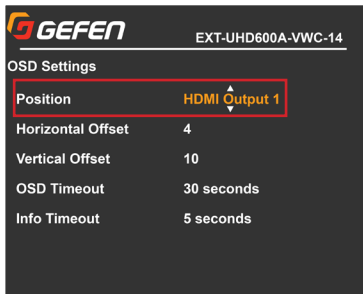


**NOTE:** Rebooting is necessary for IP settings changes to take effect.



<p>4. Press the <b>Back</b> button to return to the <i>Network</i> screen.</p> <p>Highlight <b>TCP/Telnet Settings</b>, then press the <b>Select</b> button.</p>	 <p>GEFEN EXT-UHD600A-VWC-14</p> <p>Network</p> <ul style="list-style-type: none"> <li>IP Settings ▶</li> <li><b>TCP/Telnet Settings</b> ▶</li> <li>Discovery Settings ▶</li> </ul>
<p>5. Press the ▲ or ▼ buttons to highlight an option, then press the <b>Select</b> button.</p> <p>Press the ▲ or ▼ buttons to adjust the setting, then press the <b>Select</b> button to save the change.</p>	 <p>GEFEN EXT-UHD600A-VWC-14</p> <p>TCP/Telnet Settings</p> <ul style="list-style-type: none"> <li>TCP Access Enable</li> <li>Telnet Port 23</li> <li>Login Message Show</li> <li><b>Telnet Login</b> Disable</li> </ul>
<p>6. Press the <b>Back</b> button to return to the <i>Network</i> screen.</p> <p>Highlight <b>Discovery Settings</b>, then press the <b>Select</b> button.</p>	 <p>GEFEN EXT-UHD600A-VWC-14</p> <p>Network</p> <ul style="list-style-type: none"> <li>IP Settings ▶</li> <li>TCP/Telnet Settings ▶</li> <li><b>Discovery Settings</b> ▶</li> </ul>
<p>7. Press the ▲ or ▼ buttons to highlight an option, then press the <b>Select</b> button.</p> <p>Press the ▲ or ▼ buttons to adjust the setting, then press the <b>Select</b> button to save the change.</p>	 <p>GEFEN EXT-UHD600A-VWC-14</p> <p>Discovery Settings</p> <ul style="list-style-type: none"> <li><b>Discovery Service</b> Enable</li> <li>Discovery R/RW Read/Write</li> </ul>

## System

<p>1. Press the <b>Menu</b> button on the front panel or on the IR remote control. The menu system will be displayed. Select <a href="#">System</a>.</p>	 <p>The screenshot shows the GEFEN OSD menu for model EXT-UHD600A-VWC-14. The main menu items are: Main Menu, Setup, EDID (Internal 4K 600 2 Ch), Network, and System. The 'System' option is highlighted with a red box.</p>
<p>2. Press the ▲ or ▼ buttons to highlight an option, then press the <b>Select</b> button.</p> <p>For the Enable/Disable option, press the ▲ or ▼ buttons to adjust the setting, then press the <b>Select</b> button to save the change.</p>	 <p>The screenshot shows the 'System' menu. The options are: System, Unsolicited Feedback (Enable), OSD Settings, Firmware Version (Ver 1.60), Factory Reset, and Reboot. The 'Unsolicited Feedback' option is highlighted with a red box, and the 'Enable' status is shown to the right.</p>
<p>3. Press the ▲ or ▼ buttons to highlight <b>OSD Settings</b>, then press the <b>Select</b> button.</p>	 <p>The screenshot shows the 'System' menu. The options are: System, Unsolicited Feedback (Enable), OSD Settings, Firmware Version (Ver 1.60), Factory Reset, and Reboot. The 'OSD Settings' option is highlighted with a red box.</p>
<p>4. Press the ▲ or ▼ buttons to highlight an option, then press the <b>Select</b> button.</p> <p>Press the ▲ or ▼ buttons to adjust the setting, then press the <b>Select</b> button to save the change.</p>	 <p>The screenshot shows the 'OSD Settings' menu. The options are: OSD Settings, Position (HDMI Output 1), Horizontal Offset (4), Vertical Offset (10), OSD Timeout (30 seconds), and Info Timeout (5 seconds). The 'Position' option is highlighted with a red box, and the 'HDMI Output 1' setting is shown to the right.</p>

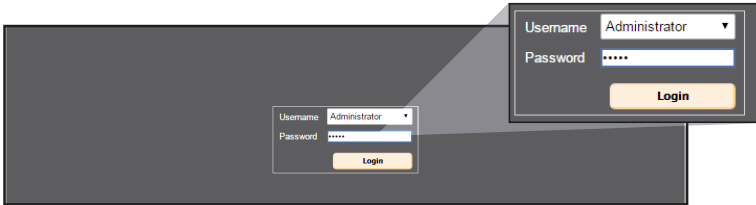
5. Press the **Back** button to return to the System screen.

For the No/Yes options (**Factory Reset** and **Reboot**), press the ◀ or ▶ buttons to choose, then press the **Select** button to execute it.



## Using the built-in Web Interface

This is the login page. Options for login are **Administrator** and **Operator**. Password defaults are 'admin' and 'operator'. The Web interface is divided into five tabs at the top of the screen: **Main**, **Setup**, **EDID**, **Network**, **System**. Some tabs have sub-tabs.



### Username

Select the username from the drop-down list:

- Operator
- Administrator

*Administrator* login provides unrestricted access to all features and settings. *Operator* login limits access to audio muting and input/output status info (see **Main-Audio** and **Main-Status** sections for more information).

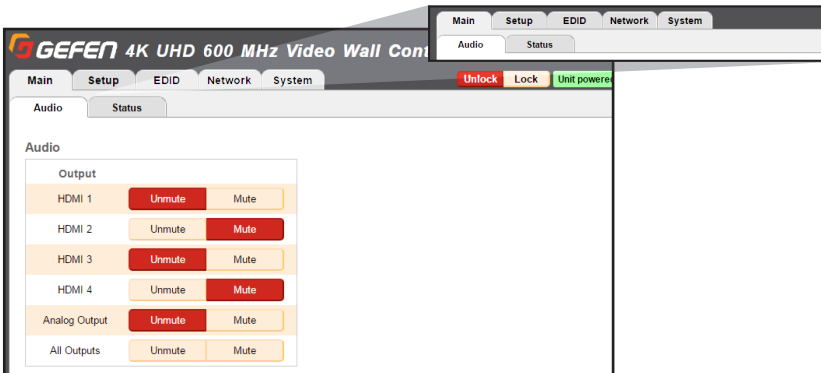
### Password

Enter the password for the associated username.

## Main ► Audio

This is the MAIN tab and contains Audio and Status items.

The **Audio** tab allows you to **Mute** or **Unmute** a specific HDMI output, the analog output or all outputs together.



## Main ► Status

This tab indicates the status of the input and outputs.

The screenshot shows the GEFEN web interface with the 'Status' tab selected. Two callout boxes highlight the 'Outputs' and 'Input' tables. The 'Outputs' table shows the status of RSENSE, HPD, and HDCP for four outputs. The 'Input' table shows the status of various features like Color Depth, Color Space, HDCP, Active Signal, Horizontal Resolution, Vertical Resolution, Progressive/Interlaced, Refresh Rate, and Video Mode.

Feature	Output 1	Output 2	Output 3	Output 4
RSENSE	Yes	Yes	Yes	Yes
HPD	Yes	Yes	Yes	Yes
HDCP	Yes	Yes	Yes	Yes

Feature	HDMI
Color Depth	8 bits
Color Space	YCbCr420 BT.709
HDCP	HDCP 2.2
Active Signal	Yes
Horizontal Resolution	3840
Vertical Resolution	2160
Progressive/Interlaced	Progressive
Refresh Rate	59.94Hz
Video Mode	HDMI

## Output

The Output table displays the *Feature* and *Output 1-4* status for:

**RSENSE** : Displays the current Rsense state (On/Off).

**HPD** : Displays the current HPD state.

**HDCP** : Displays the current HDCP state. The HDCP state can be set using the `#set_output_HDCP` command or through the **Setup ► HDCP** section of the Web interface or OSD menu.

## Input

The Input table displays the *Feature* and *Input* status for:

**Color Depth** : The color depth of the input signal (8-bit, 10-bit, etc).

**Color Space** : The color space (RGB or YCbCr) of the input signal.

**HDCP** : Displays whether or not HDCP is detected on the input.

**Active Signal** : Detects whether an input signal is present or not.

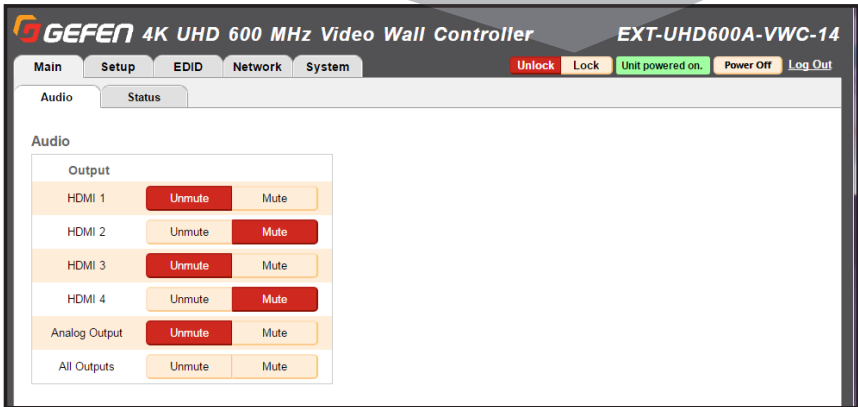
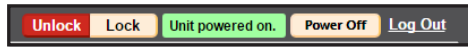
**Horizontal Resolution** : The horizontal resolution (in pixels) of the input signal.

**Vertical Resolution** : The vertical resolution (in pixels) of the input signal.

**Progressive / Interlaced** : Detects whether the input signal is progressive or interlaced.

**Refresh Rate** : The refresh rate (frequency) of the input signal.

**Video Mode** : The video mode (HDMI or DVI) of the input signal.

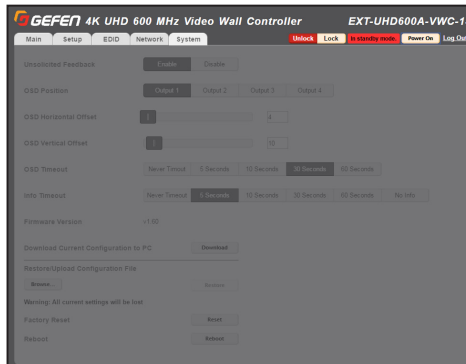


## Unlock / Lock Buttons

Lock or unlock the switcher. Once the switcher is locked, settings (except unlock) cannot be changed using the front-panel buttons, IR remote control or through the Web GUI.

## Power Off

Toggles the power state of the Video Wall Controller. When the switcher is powered-on, the indication will read "Unit powered on". When powered-off, the indication will read "In standby mode".

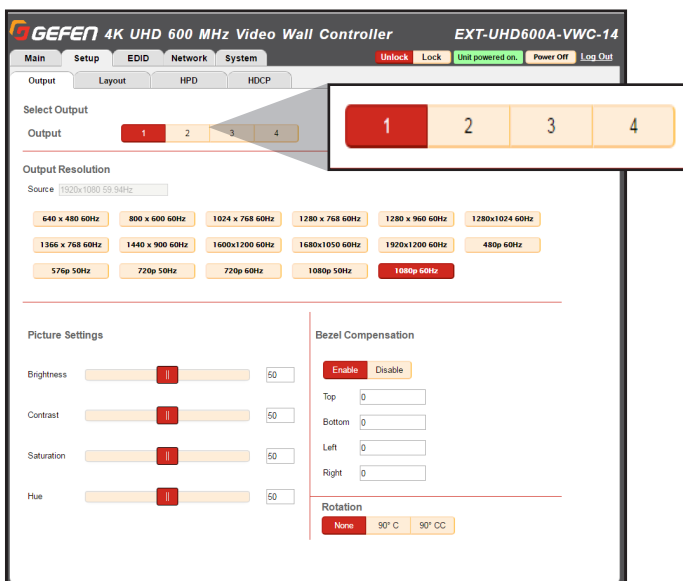


## Log Out

Click *Log Out* to terminate the current Web session and return to the login page.

## Setup ► Video

This tab is the main configuration page for the output and windows.



### Output Resolution

To configure an Output resolution, select an output from the **1**, **2**, **3** and **4** options displayed. Click on one of the 17 resolution options available.

### Picture Settings

To configure the *Picture Settings* for an Output, select an Output (**1**, **2**, **3** or **4**). Use the option sliders under *Picture Settings* to set the **Brightness**, **Contrast**, **Saturation** and **Hue**. You can also set them manually by typing in numeric values (0 – 100).

### Bezel Compensation

To configure the *Bezel Compensation* for an Output, select an Output (**1**, **2**, **3** or **4**). Click **Enable**, and set the values for **Top**, **Bottom**, **Left** and **Right**. Select **Save**.

**Note:** Values are in pixels of the output resolution.

### Rotation

Use the *Rotation* option to rotate the currently selected output image 90° clockwise or 90° counter-clockwise.

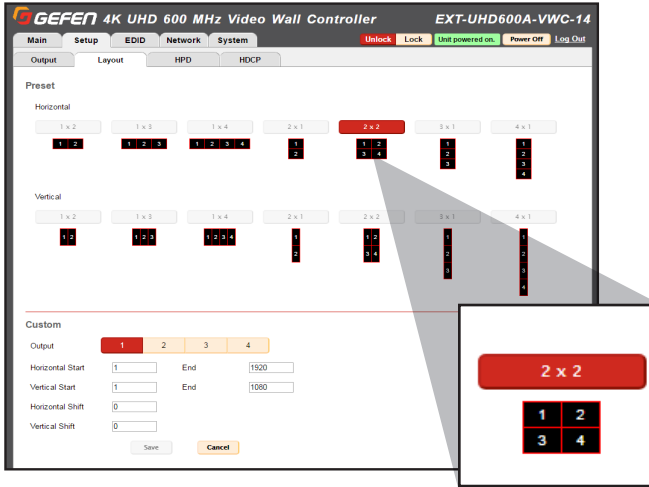


#### 4K Input Limitations

- Only 1080p output resolution (auto changes to 1080p)
- No Rotation effect
- Only horizontal 2x2 layout mode with restriction of crop areas in custom layout to 1920x1080 or less (see **Layout** on next page)

## Setup ► Layout

This tab allows you to choose a layout preset or customize the layout settings.



### Preset

The list contains ALL of the default **Horizontal** and **Vertical** presets.

### Custom

Fully customize the exact starting and ending pixels of the input resolution for each scaled output, specifying where the cropped area of the input image begins and ends on both the horizontal and vertical axis (see **Customized Layouts**, [pg. 17](#)).

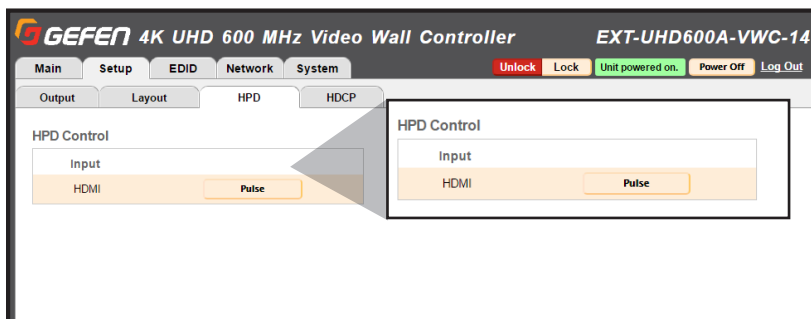
**NOTE:** When a 4K source is being used, the only available preset is horizontal 2x2.

Custom layout will still be available with 4K input, but for each output, the total area cropped from anywhere across the 4K image will be restricted to 1920x1080. This total area is a combination of the custom layout settings and the bezel compensation settings together.



## Setup ► HPD Control

This tab is used to perform **HPD** (*Hot Plug Detect*) pulse events.

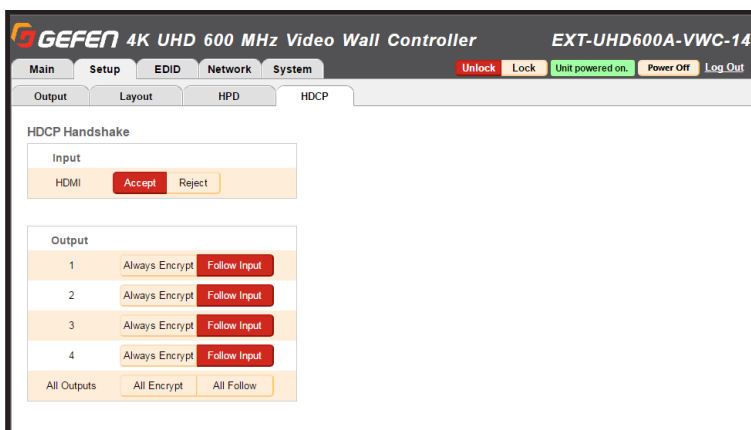


HPD is a low voltage pin in the HDMI cable that is set either HIGH or LOW that indicates the presence of a cable connection.

Momentarily changing this voltage from HIGH to LOW and then back to HIGH creates a *Pulse* that *disconnects* and *reconnects*. This triggers a connection reset between the unit and the input source without unplugging and plugging in the HDMI cable.

## Setup ► HDCP Control

This tab will configure the HDCP (*High-bandwidth Digital Content Protection*) options available for this Video Wall Controller.



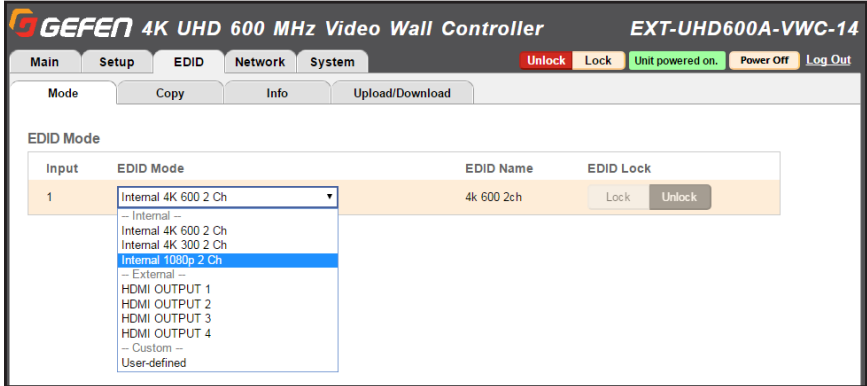
### HDCP Handshake

Click the **Accept** button to allow HDCP content to pass to the input. Click the **Reject** button to prevent HDCP content from being transmitted to the input.

Click the **Always Encrypt** button to force HDCP 1.4 encryption on the output, regardless of the inputs. Click the **Follow Input** button to let output HDCP turn off, if the input is not HDCP encrypted.

## EDID ► Mode

The EDID Mode tab is used to configure the EDID (Extended Display Identification Data), typically a 256 byte file that is hosted on a sink (display or other endpoint device) that contains video and audio capability information for that device.



There are 3 EDID modes:

### Internal

Preconfigured and non-customizable EDIDs that have specific limitations on the resolution and number of allowable audio channels.

### External

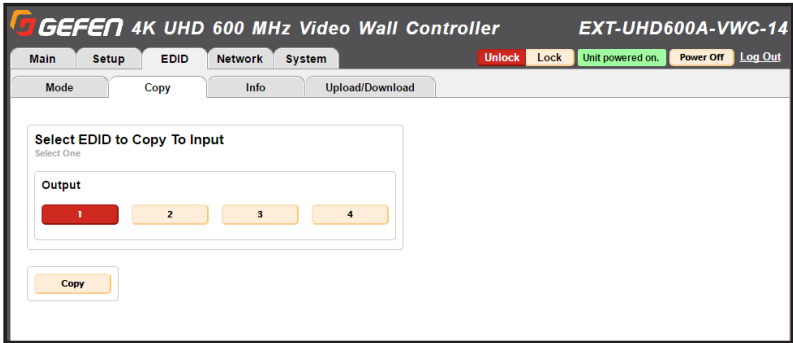
An EDID that is “pass-through” from a connected display through the unit and directly to the source with little to no modification.

### Custom

The **User Defined** EDID can be uploaded, and the input has a memory location that stores the selected EDID. When using the Custom EDID mode, the EDID Lock function will be available to prevent accidental overwrite of the EDID that has been uploaded or copied from an output.

### EDID ► Copy

The EDID Copy option provides the ability to copy from an output to the input.

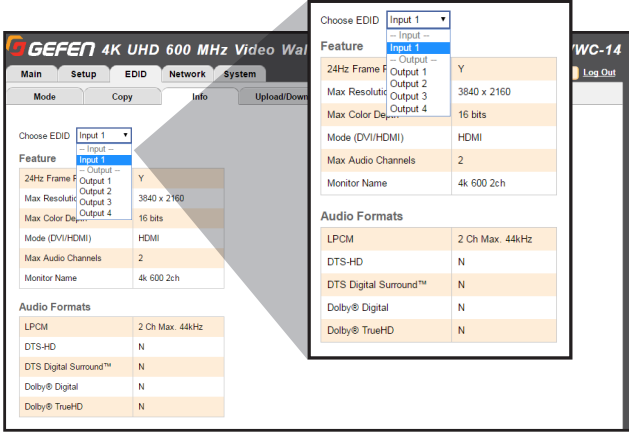


Select an output, then press the **Copy** button to copy its EDID to the input.

**NOTE:** The EDID Mode of the input must be set to *Custom/User-defined*, and the EDID Lock must be turned off to allow the copy procedure. The **Copy** button will then be available.

### EDID ► Info

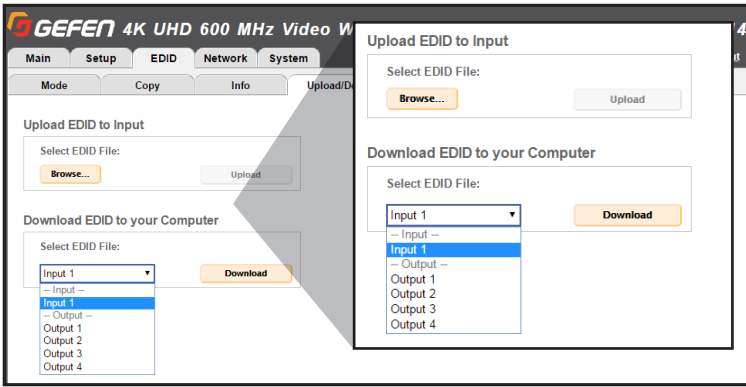
The EDID Info tab is an information page where the user can see features that the selected EDID contains.



Select the input or any of the 4 outputs to view the EDID information. Information is sourced from the input's local memory, so the information displayed depends on which mode is currently in use.

## EDID ► Upload/Download

The EDID Upload/Download tab is used to download an EDID to the computer or to upload an externally sourced EDID ".bin" file for use with the input.



To upload an externally sourced EDID, select the **Browse** button and then select an EDID .bin file from the computer. Once selected, the filename will be displayed. You can then click **Upload**.

**NOTE:** The input EDID mode must be set to **Custom** to enable the Upload button.

You can also download an EDID to your computer by selecting an option from the **Select EDID File** drop down menu. A downloaded EDID may be loaded into the Gefen Syner-G™ or other EDID modification software to then customize and re-upload back to the unit.

## Network ► Settings

The Network tab is used to configure all of the network related options on the Video Wall Controller. Once revisions have been made, select **Save**. Select the **Set Network Defaults** button if you want to return to default network settings.

The screenshot shows the 'Network' tab selected in the top navigation bar. The page title is 'GEFEN 4K UHD 600 MHz Video Wall Controller EXT-UHD600A-VWC-14'. The 'Network' tab is active, and the 'Unlock' button is highlighted in red. The 'Unit powered on' button is green, and 'Power Off' and 'Log Out' are grey.

**IP Settings**

MAC Address: 00:1c:91:06:00:00  
 HTTP Port: 80  
 Mode: **Static** (selected), DHCP  
 IP Address: 192.168.1.72  
 Subnet: 255.255.255.0  
 Gateway: 192.168.1.1

**TCP/Telnet Settings**

TCP Access: **Enabled** (selected), Disable  
 TCP Port: 23  
 Login Message on Connect: **Show** (selected), Hide  
 Require Password on Connect: **Enable** (selected), Disabled  
 User Name: **Operator** (selected), Admin  
 Old Password: [text field]  
 New Password: [text field]  
 Confirm New Password: [text field]  
 Change Password

**Web Login Settings**

Username: **Operator** (selected), Administrator  
 New Password: [text field]  
 Old Password: [text field]  
 Confirm New Password: [text field]  
 Change Password

**Discovery Protocol Settings**

Enable Discovery: **Enabled** (selected), Disable  
 Find Your Device: Show Me  
 Discover Read Only: **Read Only** (selected), Read/Write  
 Product Description: EXT-UHD600A-VWC-14

Buttons at the bottom: Set Network Defaults, Save

### IP Settings

#### MAC Address

This is the console's MAC address. It cannot be changed.

#### Mode

The network mode setting. Default is set to Static.

Options

**Static**

DHCP

#### IP Address

Enter the new IP address of the switcher in this field. This option is only available if the network mode is set to **Static**. Default is set to 192.168.1.72.

#### Subnet

Enter the new subnet mask of the switcher in this field. This option is only available if the network mode is set to **Static**. Default is set to 255.255.255.0.

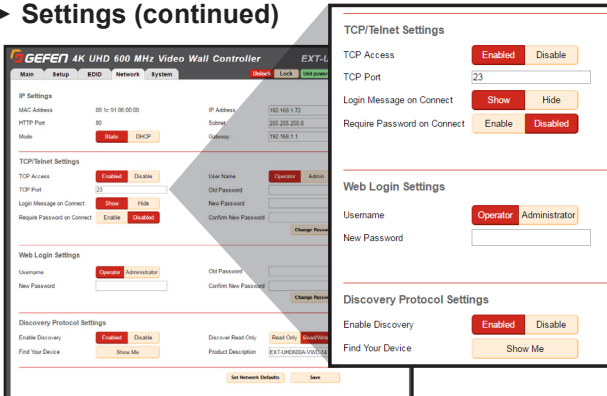
#### Gateway

Enter the new gateway (router) address in this field. This option is only available if the network mode is set to **Static**. Default is set to 192.168.1.1.

#### HTTP Port

Shows the port used by HTTP (web interface). This cannot be modified.

## Network ► Settings (continued)



### TCP/Telnet Settings

#### Enable TCP Access

Click **Enable** to make TCP available, or click **Disable** to disable TCP access.

#### TCP Port

Type in the a TCP port number. Default is set to 23.

#### Login Message on Connect

Click **Show** to display the Telnet Welcome Message. Click **Hide** to disable the Telnet Welcome Message.

#### Require Password on Connect

Click **Enable** to force the password prompt at the beginning of a Telnet session. Click to **Disable** to disable the password prompt. See [page 34](#) for the default password.

### Web Login Settings

#### Username

Select **Operator** or **Administrator**.

#### Old Password

Enter the current (old) password in this field. See [page 34](#) for default passwords.

#### New Password

Enter the new password in this field.

#### Confirm New Password

Enter the new password in this field.

### Discover Protocol Settings

#### Enable Discovery

Select **Enable** to find and perform simple IP configuration over a network using Gefen Syner-G.

#### Find Your Device

Click **Show Me** to have the front panel blink all LEDs to help find this device in an equipment rack.

#### Discover Read Only

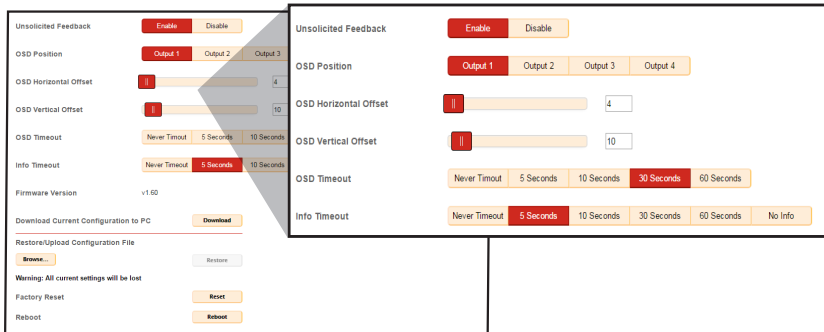
The **Read Only** and **Read/Write** option dictates whether or not changes can be made to the switcher's IP settings remotely via Gefen Syner-G.

#### Product Description

By default the part number is used as the description. If desired, type a new description.

## System ► Settings

The System tab is used to configure settings that relate to operational functions or factory default and rebooting operations.



### Unsolicited feedback

This option controls feedback information on both the Serial and TCP/IP interfaces and is used to relay the status of any changes made to options through any of the interfaces. This includes front panel, web interface, TCP, Serial and IR remote control. It informs any serial or TCP connected control device of changes that have NOT been made through those interfaces. It allows any external control GUI to remain in sync with the unit.

### OSD Position

This option controls on which HDMI Output the OSD appears. By default, the OSD is set to HDMI Output 1. Any of the four HDMI outputs can host the OSD. Use this setting with the OSD Offset setting to customize the location of the OSD.

### OSD Horizontal Offset

This option will set the horizontal offset of the OSD, moving it horizontally as a percentage of the width of the output.

### OSD Vertical Offset

This option will set the vertical offset of the OSD, moving it vertically as a percentage of the height of the output.

### OSD Timeout

Timeout is the duration, in seconds, when the OSD menu will be automatically dismissed. Select the amount of seconds (5 – 60 seconds). If set to **Disable**, the OSD must be hidden manually by pressing the **Exit** button on the front panel or IR remote control.

### Download Current Configuration to PC

Click the **Download** button to download the current settings and configuration to a file.

### Restore/Upload Configuration File

Click the **Browse** button to select the desired configuration file to upload to the Video Wall Controller. Any current settings will be overwritten when uploading a configuration file.

### Factory Reset

Click the **Reset** button to set the switcher to factory-default settings. The IP settings are preserved to allow this to be executed remotely through TCP/IP or web interface without losing the connection. To reset IP settings, use the **Set Network Defaults** button in the Network tab or perform the factory reset through the serial port interface.

### Reboot

Click the **Reboot** button to reboot the console.

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# Video Wall Controller

## 03 Advanced Operation

## Using Telnet

1. Launch the desired terminal application. For example, on the Windows operating system, we can use Hyperterminal; on Mac OS X, we can use the Terminal application.
2. In this example, we will use Terminal in Mac OS X. At the command prompt, type the following:

```
telnet IP_address
```

where **IP\_address** is the IP address of the Video Wall Controller.

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

```
*****Welcome to the EXT-UHD600A-VWC-14*****  
          Firmware Version: v1.60  
*****  
  
>
```

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

## Using RS-232

1. Launch the desired terminal application.
2. Selected the assigned COM port.
3. Configure the RS-232 port to the following settings.

Description	Setting
Baud rate	115200
Data bits	8
Parity	None
Stop bits	1
Hardware flow control	None

4. Connect to the RS-232 port (DB-9 connector). Only TxD, RxD, and GND pins are used.
5. Type `#help` for a list of commands or refer to the tables on the following pages.



**NOTE:** Depending upon the network, all related IP and Telnet settings will need to be assigned. Consult your network administrator to obtain the proper settings.

# Commands

Name	Command(s)	Description(s)
Bezel	#GET_BEZEL	Get top, bottom, left, & right Bezel Compensation values for one or all HDMI outputs
	#SET_BEZEL	Set top, bottom, left, & right Bezel Compensation values for one or all HDMI outputs
Brightness	#GET_BRIGHTNESS	Set brightness adjustment for one or all HDMI outputs
	#SET_BRIGHTNESS	Get brightness adjustment value for one or all HDMI outputs
Contrast	#GET_CONTRAST	Get contrast adjustment value for one or all HDMI outputs
	#SET_CONTRAST	Set contrast adjustment for one or all HDMI outputs
Custom EDID	#GET_CUSTOM_EDID	Download a custom user EDID from an input
	#SEND_CUSTOM_EDID	Upload the custom user EDID for use with custom mode to the unit
Device Description	#GET_DEVICE_DESC	GET or SET the device description
	#SET_DEVICE_DESC	
Discovery	#GET_DISCOVERY	GET or SET the current status of the discovery service
	#SET_DISCOVERY	
Discovery Mode	#GET_DISCOVERY_MODE	GET or SET the discovery read/write mode
	#SET_DISCOVERY_MODE	
EDID Lock	#GET_EDID_LOCK	GET or SET input EDID lock status
	#SET_EDID_LOCK	Set input EDID lock (prevents accidental custom EDID overwrite and valid only when EDID mode is set to custom mode)
EDID Mode	#GET_EDID_MODE	GET or SET input EDID mode
	#SET_EDID_MODE	
External EDID	#GET_EXTERNAL_EDID	Download external (bypass) EDID
Factory Reset	#FACTORY_RESET	Reset to Factory Defaults
Feedback	#GET_FEEDBACK	Get the status of feedback
	#SET_FEEDBACK	Turn all unsolicited feedback on or off for RS-232 and IP interfaces
Firmware version	#GET_FIRMWARE_VERSION	Get the current firmware version
Gateway	#GET_GATEWAY	Get the current gateway address
	#SET_GATEWAY	Set the gateway address
Help	#HELP	Lists all available TCP/RS-232 commands. If a command is specified then both the description and syntax will be listed for the command.
HPD	#SEND_HPD	Send HPD (hot plug detect) pulse to one or all HDMI inputs
Hue	#GET_HUE	Get hue adjustment value for one or all HDMI outputs
	#SET_HUE	Set hue adjustment for one or all HDMI outputs
Input HDCP	#GET_INPUT_HDCP	Get or set get input HDCP handshake mode
	#SET_INPUT_HDCP	

Name	Command(s)	Description(s)
Info Timeout	#GET_INFO_TIMEOUT	GET or SET the Info Timeout
	#SET_INFO_TIMEOUT	
Internal EDID	#GET_INTERNAL_EDID	Download a preset internal EDID
IP Address	#GET_IP_ADDRESS	Get the current IP address
	#SET_IP_ADDRESS	Set the IP address
IP Mode	#GET_IP_MODE	Get the current IP mode
	#SET_IP_MODE	Set the IP mode to static or DHCP
IP Configuration	#GET_IPCONFIG	Get the current IP configuration
Lock	#GET_LOCK	Get the current status control lock
	#SET_LOCK	Enable/Disable control lock
Layout (Custom)	#GET_LAYOUT_CUSTOM	Get custom layout
	#SET_LAYOUT_CUSTOM	Set custom layout (only applicable in custom layout mode)
Layout (Preset)	#GET_LAYOUT_PRESET	Get layout preset
	#SET_LAYOUT_PRESET	Set layout preset (only applicable in preset layout mode)
MAC Address	#GET_MAC_ADDR	Print the MAC address to the screen
Mute	#GET_MUTE	Get output audio mute status on one or all outputs
	#SET_MUTE	Set output audio mute for one or all outputs
OSD Position	#GET_OSD_POSITION	Get the OSD position
	#SET_OSD_POSITION	Set the OSD position to one of the HDMI outputs
OSD Horizontal Offset	#GET_OSD_HOFFSET	GET or SET OSD horizontal offset
	#SET_OSD_HOFFSET	
OSD Vertical Offset	#GET_OSD_VOFFSET	GET or SET OSD vertical offset
	#SET_OSD_VOFFSET	
OSD Timeout	#GET_OSD_TIMEOUT	GET or SET the OSD timeout
	#SET_OSD_TIMEOUT	
Output HDCP	#GET_OUTPUT_HDCP	GET or SET output HDCP encoding mode
	#SET_OUTPUT_HDCP	
Output Resolution	#GET_OUTPUT_RES	Get the output resolution for one or all HDMI outputs
	#SET_OUTPUT_RES	Set output resolution for one or all HDMI outputs
Power	#GET_POWER	Get current power state
Power ON/OFF	#POWER	Power the unit on/off
Reboot	#REBOOT	Reboot the unit
Rotation	#GET_ROTATION	Get rotation adjustment value for one or all HDMI outputs
	#SET_ROTATION	Set rotation adjustment for one or all HDMI outputs
Saturation	#GET_SATURATION	Get saturation adjustment value for one or all HDMI outputs
	#SET_SATURATION	Set saturation adjustment for one or all HDMI outputs

# Commands

Name	Command(s)	Description(s)
Showme	#GET_SHOWME	Get the status of the discovery 'show me' feature
	#SET_SHOWME	Enable/Disable the discovery 'show me' feature
Subnet Mask	#GET_SUBNET	Get the current subnet mask
	#SET_SUBNET	Set the subnet mask
Telnet Access	#GET_TELNET_ACCESS	Get the current status of Telnet access
	#SET_TELNET_ACCESS	Enable/Disable Telnet access
Telnet Login	#GET_TELNET_LOGIN	Get the current status of the Telnet login process
	#SET_TELNET_LOGIN	Enable/Disable the Telnet login process
Telnet Message	#GET_TELNET_WELCOME	Get the current Telnet login welcome message status
	#SET_TELNET_WELCOME	Enable/Disable the Telnet login welcome message
Telnet Port	#GET_TELNET_PORT	Get the current Telnet communication port
	#SET_TELNET_PORT	Set the Telnet communication port
Web Interface Port Number	#GET_WEB_PORT	Get the current web interface port number

## Bezel (#SET\_ / #GET\_)

SET top, bottom, left, & right Bezel compensation values for one or all HDMI outputs.

<b>Syntax</b>	<code>#SET_BEZEL PARAM1 PARAM2 PARAM3</code>
<b>Parameters</b>	<p>PARAM1 = 0 ~ 4</p> <p>0 - ALL HDMI OUTPUTS (FEEDBACK LISTS ALL OUTPUTS IN ORDER 1 ~ 4)</p> <p>1 ~ 4 - HDMI OUTPUTS 1 ~ 4</p> <p>PARAM2 = T, B, L, R</p> <p>T - TOP BEZEL COMPENSATION</p> <p>B - BOTTOM BEZEL COMPENSATION</p> <p>L - LEFT BEZEL COMPENSATION</p> <p>R - RIGHT BEZEL COMPENSATION</p> <p>PARAM3 = 0 ~ 540</p> <p>0 ~ 540 - BEZEL PIXEL VALUE</p>
<b>Examples</b>	<pre>#SET_BEZEL 0 T 50 #SET_BEZEL 0 B 50 #SET_BEZEL 0 L 50 #SET_BEZEL 0 R 50 #SET_BEZEL 1 T 50 #SET_BEZEL 1 B 50 #SET_BEZEL 1 L 50 #SET_BEZEL 1 R 50</pre>

GET top, bottom, left, & right Bezel compensation values for one or all HDMI outputs.

<b>Syntax</b>	<code>#GET_BEZEL PARAM1</code>
<b>Parameters</b>	<p>PARAM1 = 0 ~ 4 (FEEDBACK LISTS TOP, BOTTOM, LEFT, &amp; RIGHT IN ORDER)</p> <p>0 - ALL HDMI OUTPUTS (FEEDBACK LISTS ALL OUTPUTS IN ORDER 1 ~ 4)</p> <p>1 ~ 4 - HDMI OUTPUTS 1 ~ 4</p>
<b>Examples</b>	<pre>#GET_BEZEL 0 #GET_BEZEL 1</pre>

## Brightness (#SET\_ / #GET\_)

SET brightness adjustment for one or all HDMI outputs.

<b>Syntax</b>	<code>#SET_BRIGHTNESS PARAM1 PARAM2</code>
<b>Parameters</b>	PARAM1 = 0 ~ 4 0 - ALL HDMI OUTPUTS (FEEDBACK LISTS ALL OUTPUTS IN ORDER 1 ~ 4) 1 ~ 4 - HDMI OUTPUTS 1 ~ 4  PARAM2 = 0 ~ 100 0 ~ 100 - BRIGHTNESS VALUE
<b>Examples</b>	<code>#SET_BRIGHTNESS 0 50</code> <code>#SET_BRIGHTNESS 1 50</code>

GET brightness adjustment value for one or all HDMI outputs.

<b>Syntax</b>	<code>#GET_BRIGHTNESS PARAM1</code>
<b>Parameters</b>	PARAM1 = 0 ~ 4 0 - ALL HDMI OUTPUTS (FEEDBACK LISTS ALL OUTPUTS IN ORDER 1 ~ 4) 1 ~ 4 - HDMI OUTPUTS 1 ~ 4
<b>Example</b>	<code>#GET_BRIGHTNESS 1</code>

## Contrast (#SET\_ / #GET\_)

SET contrast adjustment for one or all HDMI outputs.

<b>Syntax</b>	<code>#SET_CONTRAST PARAM1 PARAM2</code>
<b>Parameters</b>	PARAM1 = 0 ~ 4 0 - ALL HDMI OUTPUTS (FEEDBACK LISTS ALL OUTPUTS IN ORDER 1 ~ 4) 1 ~ 4 - HDMI OUTPUTS 1 ~ 4  PARAM2 = 0 ~ 100 0 ~ 100 - CONTRAST VALUE
<b>Examples</b>	<code>#SET_CONTRAST 0 50</code> <code>#SET_CONTRAST 1 50</code>

GET contrast adjustment value for one or one or all HDMI outputs.

<b>Syntax</b>	<code>#GET_CONTRAST PARAM1</code>
<b>Parameters</b>	PARAM1 = 0 ~ 4 0 - ALL HDMI OUTPUTS (FEEDBACK LISTS ALL OUTPUTS IN ORDER 1 ~ 4) 1 ~ 4 - HDMI OUTPUTS 1 ~ 4
<b>Example</b>	<code>#GET_CONTRAST 1</code>



## Custom EDID (#SEND\_ / #GET\_)

**SEND:** Upload a custom user EDID to the input for use with custom mode

(After entering the command, while "WAITING" is shown, send the EDID as hex values with no spaces and no hard returns until the end)

<b>Syntax</b>	#SEND_CUSTOM_EDID
---------------	-------------------

**GET:** Download the custom user EDID from the unit

<b>Syntax</b>	#GET_CUSTOM_EDID
---------------	------------------

## Device Description (#SET\_ / #GET\_)

SET the device description

<b>Syntax</b>	#SET_DEVICE_DESC PARAM1
---------------	-------------------------

<b>Parameters</b>	PARAM1 = ABCDEFGH...(29 CHARACTERS MAX, NO CASE OR SPECIAL CHARACTER LIMIT)
-------------------	---

<b>Example</b>	#SET_DEVICE_DESC DEVICE
----------------	-------------------------

GET the device description

<b>Syntax</b>	#GET_DEVICE_DESC
---------------	------------------

## Discovery (#SET\_ / #GET\_)

Enable/Disable the Discovery service.

<b>Syntax</b>	#SET_DISCOVERY PARAM1
---------------	-----------------------

<b>Parameters</b>	PARAM1 = 0 ~ 1 0 - DISABLED 1 - ENABLED
-------------------	---

<b>Examples</b>	#SET_DISCOVERY 0 #SET_DISCOVERY 1
-----------------	--------------------------------------

GET the current status of the Discovery service.

<b>Syntax</b>	#GET_DISCOVERY
---------------	----------------

## Discovery Mode (#SET\_ / #GET\_)

SET the Discovery Read/Write mode

<b>Syntax</b>	#SET_DISCOVERY_MODE PARAM1
---------------	----------------------------

<b>Parameters</b>	PARAM1 = 0 ~ 1 0 - READ ONLY 1 - READ/WRITE
-------------------	---

<b>Examples</b>	#SET_DISCOVERY_MODE 0 #SET_DISCOVERY_MODE 1
-----------------	--

GET the Discovery Read/Write mode

<b>Syntax</b>	#GET_DISCOVERY_MODE
---------------	---------------------

## EDID Lock (#SET\_ / #GET\_)

SET input EDID Lock (prevents accidental custom EDID overwrite and valid only when EDID mode is set to custom mode).

**Syntax** #SET\_EDID\_LOCK PARAM1

**Parameters**  
PARAM1 = 0 ~ 1  
0 - DISABLED  
1 - ENABLED

**Example** #SET\_EDID\_LOCK 0

GET input EDID Lock status.

**Syntax** #GET\_EDID\_LOCK

## EDID Mode (#SET\_ / #GET\_)

SET input EDID Mode.

**Syntax** #SET\_EDID\_MODE PARAM1

**Parameters**  
PARAM1 = 1 ~ 8  
1 - INTERNAL - 4K 600 2 CH  
2 - INTERNAL - 4K 300 2 CH  
3 - INTERNAL - 1080P 2 CH  
4 - EXTERNAL (HDMI OUTPUT 1)  
5 - EXTERNAL (HDMI OUTPUT 2)  
6 - EXTERNAL (HDMI OUTPUT 3)  
7 - EXTERNAL (HDMI OUTPUT 4)  
8 - CUSTOM MODE - USER

**Examples** #SET\_EDID\_MODE 1

GET input EDID mode.

**Syntax** #GET\_EDID\_MODE

## External EDID

Download External (Bypass) EDID.

**Syntax** #SET\_EDID\_LOCK PARAM1

**Parameters**  
PARAM1 = 1 ~ 4  
1 ~ 4 - HDMI OUTPUT 1 ~ 4

**Example** #GET\_EXTERNAL\_EDID 1

## Factory Reset

Reset to factory defaults.

**Syntax** #FACTORY\_RESET

## Feedback (#SET\_ / #GET\_)

Turn all unsolicited Feedback ON or OFF for RS-232 and IP Interfaces.

<b>Syntax</b>	#SET_FEEDBACK PARAM1
<b>Parameters</b>	PARAM1 = 0 ~ 1 0 - OFF 1 - ON
<b>Examples</b>	#SET_FEEDBACK 1

GET status of Feedback.

<b>Syntax</b>	#GET_FEEDBACK
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## Firmware Version

GET Firmware version.

<b>Syntax</b>	#GET_FIRMWARE_VERSION
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## Gateway (#SET\_ / #GET\_)

SET the Gateway address.

<b>Syntax</b>	#SET_GATEWAY PARAM1
<b>Parameters (param1)</b>	PARAM1 = XXX.XXX.XXX.XXX XXX - 0 ~ 255
<b>Examples</b>	#SET_GATEWAY 192.168.1.1

GET the current Gateway address.

<b>Syntax</b>	#GET_GATEWAY
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## Help

Lists all available TCP/RS-232 commands. If a command is specified then both the description and syntax will be listed for the command.

<b>Syntax</b>	#HELP (OPTIONAL PARAM1)
<b>Parameters (param1)</b>	PARAM1 = ANY TCP/RS-232 COMMAND (NO '#')
<b>Example</b>	#HELP GET_IPCONFIG

## HPD

Send HPD (Hot Plug Detect) pulse to the HDMI input.

<b>Syntax</b>	#SEND_HPD
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# Commands

## Hue (#SET\_ / #GET\_)

SET Hue adjustment for one or all HDMI outputs.

<b>Syntax</b>	<code>#SET_HUE PARAM1 PARAM2</code>
<b>Parameters</b>	PARAM1 = 0 ~ 4 0 - ALL HDMI OUTPUTS (FEEDBACK LISTS ALL OUTPUTS IN ORDER 1 ~ 4) 1 ~ 4 - HDMI OUTPUTS 1 ~ 4  PARAM2 = 0 ~ 100 0 ~ 100 - HUE VALUE
<b>Examples</b>	<code>#SET_HUE 0 50</code> <code>#SET_HUE 1 50</code>

GET Hue adjustment value for one or all HDMI outputs.

<b>Syntax</b>	<code>#GET_HUE PARAM1</code>
<b>Parameters</b>	PARAM1 = 0 ~ 4 0 - ALL HDMI OUTPUTS (FEEDBACK LISTS ALL OUTPUTS IN ORDER 1 ~ 4) 1 ~ 4 - HDMI OUTPUTS 1 ~ 4
<b>Example</b>	<code>#GET_HUE 1</code>

## Input HDCP (#SET\_ / #GET\_)

SET Input HDCP Handshake mode.

<b>Syntax</b>	<code>#SET_INPUT_HDCP PARAM1</code>
<b>Parameters</b>	PARAM1 = 0 ~ 1 0 - REJECT 1 - ACCEPT
<b>Example</b>	<code>#SET_INPUT_HDCP 1</code>

GET Input HDCP Handshake mode.

<b>Syntax</b>	<code>#GET_INPUT_HDCP</code>
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## Info Timeout (#SET\_ / #GET\_)

SET the Info Timeout.

<b>Syntax</b>	<code>#SET_INFO_TIMEOUT PARAM1</code>
<b>Parameters</b>	PARAM1 = 0 ~ 4 0 - NEVER TIMEOUT 1 - 5 SECONDS 2 - 10 SECONDS 3 - 30 SECONDS 4 - 60 SECONDS 5 - NO INFO DISPLAY
<b>Example</b>	<code>#SET_INFO_TIMEOUT 1</code>

## Internal EDID (#GET\_)

Download a preset Internal EDID

<b>Syntax</b>	#GET_INTERNAL_EDID PARAM1
<b>Parameters</b>	PARAM1 = 1 ~ 3 1 - INTERNAL - 4K 600 2 CH 2 - INTERNAL - 4K 300 2 CH 3 - INTERNAL - 1080P 2 CH
<b>Examples</b>	#GET_INTERNAL_EDID 1

## IP Address (#SET\_ / #GET\_)

SET the IP Address.

<b>Syntax</b>	#SET_IP_ADDRESS PARAM1
<b>Parameters</b>	PARAM1 = XXX.XXX.XXX.XXX XXX - 0 ~ 255
<b>Examples</b>	#SET_IP_ADDRESS 192.168.1.72

GET the current IP Address.

<b>Syntax</b>	#GET_IP_ADDRESS
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## IP Mode (#SET\_ / #GET\_)

SET the IP Mode to STATIC or DHCP.

<b>Syntax</b>	#SET_IP_MODE PARAM1
<b>Parameters</b>	PARAM1 = 0 ~ 1 0 - STATIC 1 - DHCP
<b>Examples</b>	#SET_IP_MODE 0

GET the current IP mode.

<b>Syntax</b>	#GET_IP_MODE
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## IP Configuration

GET the current IP Configuration.

<b>Syntax</b>	#GET_IPCONFIG
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# Commands

## Lock (#SET\_ / #GET\_)

SET: Enable/Disable Control Lock.

<b>Syntax</b>	#SET_LOCK PARAM1
<b>Parameters</b>	PARAM1 = 0 ~ 1 0 - UNLOCK 1 - LOCK
<b>Examples</b>	#SET_LOCK 1 #SET_LOCK 0

GET the current status of the Control Lock.

<b>Syntax</b>	#GET_LOCK
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## Layout (Custom) (#SET\_ / #GET\_)

SET: Custom layout.

<b>Syntax</b>	#SET_LAYOUT_CUSTOM PARAM1 PARAM2 PARAM3 PARAM4 PARAM5 PARAM6 PARAM7
<b>Parameters</b>	PARAM1 = 1 ~ 4 1 ~ 4 - HDMI OUTPUT 1 ~4  PARAM2 = 1 ~ 3840 1 ~ 3840 - HORIZONTAL START (ANCHOR IS TOP LEFT CORNER OF IMAGE)  PARAM3 = 1 ~ 3840 1 ~ 3840 - HORIZONTAL END  PARAM4 = 1 ~ 2160 1 ~ 2160 - VERTICAL START (ANCHOR IS TOP LEFT CORNER OF IMAGE)  PARAM5 = 1 ~ 2160 1 ~ 2160 - VERTICAL END  PARAM6 = -1920 ~ 1920 -1920 ~ 1920 - HORIZONTAL SHIFT AMOUNT (PIXEL)  PARAM7 = -1080 ~ 1080 -1080 ~ 1080 - VERTICAL SHIFT AMOUNT (PIXEL)
<b>Example</b>	#SET_LAYOUT_CUSTOM 1 1 3840 1 2160 0 0

GET Custom Layout.

<b>Syntax</b>	#GET_LAYOUT_CUSTOM PARAM1
<b>Parameters</b>	PARAM1 = 1 ~ 4 1 ~ 4 - HDMI OUTPUT 1 ~ 4
<b>Example</b>	#GET_LAYOUT_CUSTOM 1

## Layout Preset (#SET\_ / #GET\_)

SET Layout Preset (RECALL)

<b>Syntax</b>	#SET_LAYOUT_PRESET PARAM1
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PARAM1 = 1 ~ 14  
 1 - 1 X 2 HORIZONTAL  
 2 - 1 X 3 HORIZONTAL  
 3 - 1 X 4 HORIZONTAL  
 4 - 2 X 1 HORIZONTAL  
 5 - 2 X 2 HORIZONTAL  
 6 - 3 X 1 HORIZONTAL  
 7 - 4 X 1 HORIZONTAL  
 8 - 1 X 2 VERTICAL  
 9 - 1 X 3 VERTICAL  
 10 - 1 X 4 VERTICAL  
 11 - 2 X 1 VERTICAL  
 12 - 2 X 2 VERTICAL  
 13 - 3 X 1 VERTICAL  
 14 - 4 X 1 VERTICAL  
 15 - CUSTOM

**Parameters**

<b>Example</b>	#SET_LAYOUT_PRESET 5
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GET Layout Preset.

<b>Syntax</b>	#GET_LAYOUT_PRESET
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## MAC Address

Print the MAC address to the screen.

<b>Syntax</b>	#GET_MAC_ADDR
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# Commands

## Mute (#SET\_ / #GET\_)

SET output audio Mute for one or all outputs.

<b>Syntax</b>	<code>#SET_MUTE PARAM1 PARAM2</code>
<b>Parameters</b>	PARAM1 = 0 ~ 5 0 - ALL HDMI OUTPUTS AND ANALOG AUDIO OUTPUT (FEEDBACK LISTS ALL HDMI OUTPUTS IN ORDER 1 ~ 4 AND THEN ANALOG AUDIO OUTPUT LAST) 1 ~ 4 - HDMI OUTPUTS 1 ~ 4 5 - ANALOG AUDIO OUTPUT  PARAM2 = 0 ~ 1 0 - UNMUTE 1 - MUTE
<b>Example</b>	<code>#SET_MUTE 0 0</code> <code>#SET_MUTE 1 0</code>

GET output audio Mute status on one or all outputs.

<b>Syntax</b>	<code>#GET_MUTE PARAM1</code>
<b>Parameters</b>	PARAM1 = 0 ~ 5 0 - ALL HDMI OUTPUTS AND ANALOG AUDIO OUTPUT (FEEDBACK LISTS ALL HDMI OUTPUTS IN ORDER 1 ~ 4 AND THE ANALOG AUDIO OUTPUT LAST) 1 ~ 4 - HDMI OUTPUTS 1 ~ 4 5 - ANALOG AUDIO OUTPUT
<b>Examples</b>	<code>#GET_MUTE 0</code> <code>#GET_MUTE 1</code>

## OSD Position (#SET\_ / #GET\_)

SET the OSD position to one of the HDMI outputs.

<b>Syntax</b>	<code>#SET_OSD_POSITION PARAM1</code>
<b>Parameters</b>	PARAM1 = 1 ~ 4 1 - HDMI OUTPUT 1 2 - HDMI OUTPUT 2 3 - HDMI OUTPUT 3 4 - HDMI OUTPUT 4
<b>Examples</b>	<code>#SET_OSD_POSITION 1</code>

GET the OSD position.

<b>Syntax</b>	<code>#GET_OSD_POSITION</code>
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## OSD Horizontal Offset (#SET\_ / #GET\_)

SET the OSD horizontal offset.

<b>Syntax</b>	#SET_OSD_HOFFSET PARAM1
<b>Parameters</b>	PARAM1 = 0 ~ 100 0 ~ 100 - PERCENT HORIZONTAL OFFSET
<b>Example</b>	#SET_OSD_HOFFSET 0

GET the OSD horizontal offset.

<b>Syntax</b>	#GET_OSD_HOFFSET
---------------	------------------

## OSD Vertical Offset (#SET\_ / #GET\_)

SET the OSD vertical offset.

<b>Syntax</b>	#SET_OSD_VOFFSET PARAM1
<b>Parameters</b>	PARAM1 = 0 ~ 100 0 ~ 100 - PERCENT VERTICAL OFFSET
<b>Example</b>	#SET_OSD_VHOFFSET 0

GET the OSD vertical offset.

<b>Syntax</b>	#SET_OSD_VOFFSET 0
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## OSD Timeout (#SET\_ / #GET\_)

SET the OSD Timeout.

<b>Syntax</b>	#SET_OSD_TIMEOUT PARAM1
<b>Parameters</b>	PARAM1 = 0 ~ 4 0 - NEVER TIMEOUT 1 - 5 SECONDS 2 - 10 SECONDS 3 - 30 SECONDS 4 - 60 SECONDS
<b>Example</b>	#SET_OSD_TIMEOUT 3

GET the OSD Timeout.

<b>Syntax</b>	#GET_OSD_TIMEOUT
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# Commands

## Output HDCP (#SET\_ / #GET\_)

SET output HDCP encoding mode.

<b>Syntax</b>	<code>#SET_OUTPUT_HDCP PARAM1 PARAM2</code>
<b>Parameters</b>	PARAM1 = 0 ~ 4 0 - ALL HDMI OUTPUTS (FEEDBACK LISTS ALL OUTPUTS IN ORDER 1 ~ 4) 1 ~ 4 - HDMI OUTPUTS 1 ~ 4  PARAM2 = 0 ~ 1 0 - FOLLOW INPUT 1 - ALWAYS ENCRYPT (1.4)
<b>Examples</b>	<code>#SET_OUTPUT_HDCP 1 0</code> <code>#SET_OUTPUT_HDCP 0 0</code>

GET Output HDCP encoding mode.

<b>Syntax</b>	<code>#GET_OUTPUT_HDCP PARAM1</code>
<b>Parameters</b>	PARAM1 = 0 ~ 4 0 - ALL HDMI OUTPUTS (FEEDBACK LISTS ALL OUTPUTS IN ORDER 1 ~ 4) 1 ~ 4 - HDMI OUTPUTS 1 ~ 4
<b>Examples</b>	<code>#GET_OUTPUT_HDCP 1</code> <code>#GET_OUTPUT_HDCP 0</code>

## Output Resolution (#SET\_ / #GET\_)

SET Output Resolution for one or all HDMI outputs.

<b>Syntax</b>	<code>#SET_OUTPUT_RES PARAM1 PARAM2</code>
<b>Parameters</b>	PARAM1 = 0 ~ 4 0 - ALL HDMI OUTPUTS (FEEDBACK LISTS ALL OUTPUTS IN ORDER 1 ~ 4) 1 ~ 4 - HDMI OUTPUTS 1 ~ 4  PARAM2 = 1 ~ 17 1 - 640 X 480 60 HZ 2 - 800 X 600 60 HZ 3 - 1024 X 768 60 HZ 4 - 1280 X 768 60 HZ 5 - 1280 X 960 60 HZ 6 - 1280 X 1024 60 HZ 7 - 1366 X 768 60 HZ 8 - 1440 X 900 60 HZ 9 - 1600 X 1200 60 HZ 10 - 1680 X 1050 60 HZ 11 - 1920 X 1200 60 HZ 12 - 480P 60 HZ 13 - 576P 50 HZ 14 - 720P 50 HZ 15 - 720P 60 HZ 16 - 1080P 50 HZ 17 - 1080P 60 HZ
<b>Examples</b>	<code>#SET_OUTPUT_RES 0 17</code> <code>#SET_OUTPUT_RES 1 17</code>

GET the Output Resolution status for one or all HDMI outputs.

<b>Syntax</b>	<code>#GET_OUTPUT_RES PARAM1</code>
<b>Parameters</b>	PARAM1 = 0 ~ 4 0 - ALL HDMI OUTPUTS (FEEDBACK LISTS ALL OUTPUTS IN ORDER 1 ~ 4) 1 ~ 4 - HDMI OUTPUTS 1 ~ 4
<b>Examples</b>	<code>#GET_OUTPUT_RES 0</code> <code>#GET_OUTPUT_RES 1</code>

## Power (ON / OFF / #GET\_)

Power the unit On/Off.

<b>Syntax</b>	#POWER PARAM1
<b>Parameters</b>	PARAM1 = 0 ~ 1 0 - OFF 1 - ON
<b>Examples</b>	#POWER 0 #POWER 1

GET the current Power state.

<b>Syntax</b>	#GET_POWER
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## Reboot

Reboot the unit.

<b>Syntax</b>	#REBOOT
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## Rotation (#SET\_ / #GET\_)

SET Rotation adjustment for one or all HDMI outputs.

<b>Syntax</b>	#SET_ROTATION PARAM1 PARAM2
<b>Parameters</b>	PARAM1 = 0 ~ 4 0 - ALL HDMI OUTPUTS (FEEDBACK LISTS ALL OUTPUTS IN ORDER 1 ~ 4) 1 ~ 4 - HDMI OUTPUTS 1 ~ 4  PARAM2 = N, C, CC N - NORMAL C - CLOCKWISE (+90 DEGREES) CC - COUNTERCLOCKWISE (-90 DEGREES)
<b>Example</b>	#SET_ROTATION 0 N

GET Rotation adjustment value for one or all HDMI outputs.

<b>Syntax</b>	#GET_ROTATION PARAM1
<b>Parameters</b>	PARAM1 = 0 ~ 4 0 - ALL HDMI OUTPUTS (FEEDBACK LISTS ALL OUTPUTS IN ORDER 1 ~ 4) 1 ~ 4 - HDMI OUTPUTS 1 ~ 4
<b>Examples</b>	#GET_ROTATION 0 #GET_ROTATION 1

## Saturation (#SET\_ / #GET\_)

SET Saturation adjustment for one or all HDMI outputs.

<b>Syntax</b>	#SET_SATURATION PARAM1 PARAM2
<b>Parameters</b>	PARAM1 = 0 ~ 4 0 - ALL HDMI OUTPUTS (FEEDBACK LISTS ALL OUTPUTS IN ORDER 1 ~ 4) 1 ~ 4 - HDMI OUTPUTS 1 ~ 4  PARAM2 = 0 ~ 100 0 ~ 100 - SATURATION VALUE
<b>Examples</b>	#SET_SATURATION 0 50 #SET_SATURATION 1 50

GET Saturation adjustment value for one or all HDMI outputs.

<b>Syntax</b>	#GET_SATURATION PARAM1
<b>Parameters</b>	PARAM1 = 0 ~ 4 0 - ALL HDMI OUTPUTS (FEEDBACK LISTS ALL OUTPUTS IN ORDER 1 ~ 4) 1 ~ 4 - HDMI OUTPUTS 1 ~ 4
<b>Example</b>	#GET_SATURATION 1

## Showme (#SET\_ / #GET\_)

Enable/Disable the discovery 'SHOW ME' feature.

<b>Syntax</b>	#SET_SHOWME PARAM1
<b>Parameters</b>	PARAM1 = 0 ~ 1 0 - DISABLED 1 - ENABLED
<b>Examples</b>	#SET_SHOWME 1 #SET_SHOWME 0

GET the status of the discovery 'SHOW ME' feature.

<b>Syntax</b>	#GET_SHOWME
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## Subnet (#SET\_ / #GET\_)

SET the Subnet Mask.

<b>Syntax</b>	#SET_SUBNET PARAM1
<b>Parameters</b>	PARAM1 = XXX.XXX.XXX.XXX XXX - 0 ~ 255
<b>Examples</b>	#SET_SUBNET 255.255.255.0

GET the current Subnet Mask.

<b>Syntax</b>	#GET_SUBNET
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## Telnet Access (#SET\_ / #GET\_)

SET: Enable/Disable Telnet Access

<b>Syntax</b>	#SET_TELNET_ACCESS PARAM1
<b>Parameters</b>	PARAM1 = 0 ~ 1 0 - DISABLED 1 - ENABLED
<b>Examples</b>	#SET_TELNET_ACCESS 1

GET the current status of Telnet access.

<b>Syntax</b>	#GET_TELNET_ACCESS
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## Telnet Login (#SET\_ / #GET\_)

SET: Enable/Disable the Telnet login process.

<b>Syntax</b>	#SET_TELNET_LOGIN PARAM1
<b>Parameters</b>	PARAM1 = 0 ~ 1 0 - DISABLED 1 - ENABLED
<b>Examples</b>	#SET_TELNET_LOGIN 0

GET the current status of the Telnet login process.

<b>Syntax</b>	#GET_TELNET_LOGIN
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## Telnet Welcome (#SET\_ / #GET\_)

SET: Enable/Disable the Telnet login welcome message.

<b>Syntax</b>	#SET_TELNET_WELCOME PARAM1
<b>Parameters</b>	PARAM1 = 0 ~ 1 0 - HIDE 1 - SHOW
<b>Examples</b>	#SET_TELNET_WELCOME 0

GET the current Telnet login welcome message status.

<b>Syntax</b>	#GET_TELNET_WELCOME
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## Telnet Port (#SET\_ / #GET\_)

SET the Telnet communication port.

<b>Syntax</b>	#SET_TELNET_PORT PARAM1
<b>Parameters</b>	PARAM1 = 1 ~ 65535
<b>Example</b>	#SET_TELNET_PORT 23

GET the current Telnet communication port.

<b>Syntax</b>	#GET_TELNET_PORT
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## Web Interface Port Number (#GET\_)

**GET** the current web interface port number.

### Syntax

```
#GET_WEB_PORT
```

# Video Wall Controller

## 04 Appendix

# 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 Listening Port	23
Telnet / TCP Access	Enabled
Gefen Syner-G Discovery	Enabled
Gefen Syner-G Discovery Mode	Read / Write
Gefen Syner-G Show Device	Hide Me

Description	Setting
EDID Mode	Internal - 4K 600 2CH
Input HDCP	Allow
Output HDCP	Follow Input
Output Resolution	1080p 60 Hz (all four outputs)
Layout Preset	2 X 2 Horizontal





Firmware upgrading for this product will be managed by Gefen Syner-G™ software. For instructions on upgrading firmware on this product, please download the software from:

<http://www.gefen.com/technology/gefen-syner-g-software>

**IMPORTANT:** *DO NOT* power-off or disconnect the AC power cord from the switcher, at any time, during the firmware upgrade process.

Maximum Resolutions	
Input	• 4K Ultra HD (3840 x 2160) 60 Hz, 4:4:4
Outputs	• 1080p Full HD (1920 x 1080, 60 Hz), WUXGA (1920 x 1200, 60 Hz)

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Electrical	
Maximum TMDS Clock/Data Rate	• 600 MHz/18 Gbps
Menu Navigation buttons	• 6x Tact-type, blue backlight
On Indicator	• ◀, ▼, ▲ and ▶ buttons illuminate

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Connectors	
Video Inputs	• 1 x HDMI Type A 19-pin, female, locking
Video Outputs	• 4 x HDMI Type A 19-pin, female, locking
RS-232	• 1 x DB-9, female
IP Control	• 1 x RJ-45
USB	• 1 x Mini-B
IR In/Ext (for EXT-RMT-EXTIRN)	• 1 x 3.5mm mini-stereo phone jack
Analog Audio Outputs	• 2 x RCA, female
Power	• 1 x 3-pin Locking-type

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Operational	
Power Supply	• 12V DC
Power Consumption	• 12W

---

Physical	
Dimensions (W x H x D)	<ul style="list-style-type: none"> <li>• Without rack ears: 15.3" x 1.7" x 8.9" (389mm x 43mm x 226mm)</li> <li>• With rack ears: 18.9" x 1.7" x 8.9" (480mm x 43mm x 226mm)</li> </ul>
Unit Weight	• 5.4 lbs (2.5 kg)

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