HD Video Wall Controller

EXT-HD-VWC-144

User Manual

Release A2

Gefen®

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.

Warranty Information

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.

PRODUCT REGISTRATION

Please register your product online by visiting the Register Product page under the Support section of the Gefen Web site.

Contacting Gefen Technical Support

Gefen, LLC
c/o Customer Service
20600 Nordhoff St.
Chatsworth, CA 91311

Telephone:	(818) 772-9100
	(800) 545-6900
Fax:	(818) 772-9120
Email:	support@gefen.com
Visit us on the Web:	www.gefen.com
Technical Support Hours:	8:00 AM to 5:00 PM Monday - Friday, Pacific Time

HD Video Wall Controller is a trademark of Gefen, LLC.

Important Notice
Gefen, LLC reserves the right to make changes in the hardware, packaging, and any accompanying documentation without prior written notice.

Operating Notes

- The HD Video Wall Controller only operates in 2x2 (two rows of two displays) mode, only. This unit does not support 4x1 (column) or 1x4 (row) configurations.

Features and Packing List

Features

- Create a 2x2 video wall from any Hi-Def source, using four HDTV displays
- Split and scale a single Hi-Def source to four displays
- Input and Output resolutions up to 1080p Full HD and 1920x1200 (WUXGA)
- HDCP compliant
- Advanced Bezel Compensation feature provides compatibility with virtually any screen frame width, and allows for accurate display of the image
- Controllable via front panel, IR, IP (web server interface, Telnet, and UDP), and RS-232
- Easy to use on-screen Graphical User Interface (GUI)
- Advanced web server interface using an external computer
- Handheld IR remote control
- Field-upgradeable firmware via web server interface
- USB port (reserved for future product enhancements)
- Locking power supply connector
- 1U tall rack-mountable enclosure, rack ears included

Packing List

The *HD Video Wall Controller* ships with the items 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 HD Video Wall Controller
- 1 x 6 ft. Locking HDMI Cable (M-M)
- 1 x 6 ft. DB-9 Cable (M-F)
- 1 x IR Extender Module
- 1 x IR Remote Control
- 1 x 12V DC Locking Power Supply
- 1 x Set of Rack Ears
- 1 x Quick-Start Guide

Table of Contents

04   Appendix

HD Video Wall Controller

01 Getting Started

Panel Layout

Front

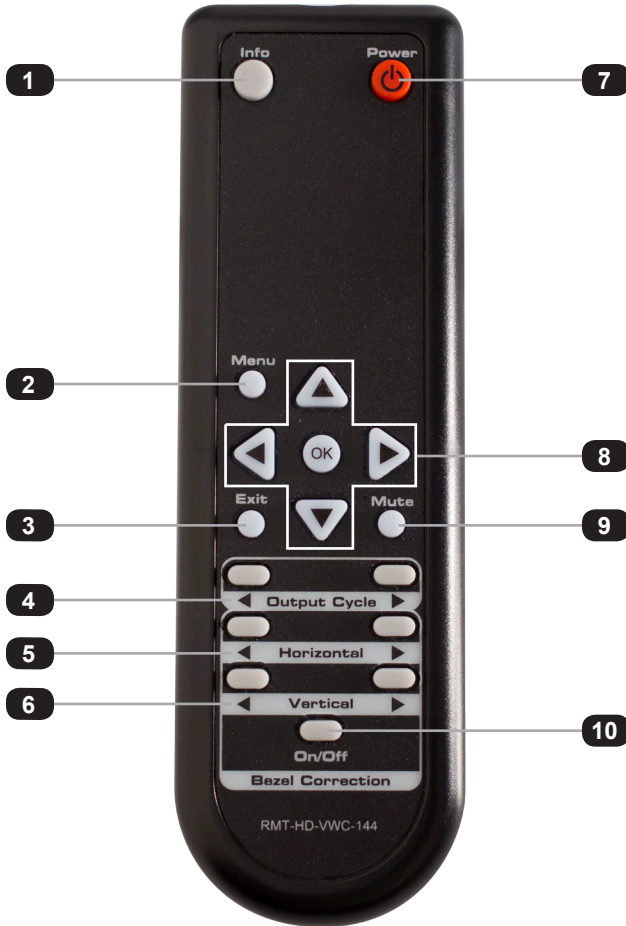| ID	Name	Description
1	Power indicator	This LED glows bright blue when the unit is connected to an AC outlet and the unit is powered on. In standby mode, this LED glows bright red.
2	Power	Press this button to toggle between power-on and standby mode. This button will glow bright blue when the unit is powered on.
3	IR sensor	This IR sensor receives commands from the included IR remote control unit.
4	Menu	Press this button to display the On-Screen Display (OSD) menu system.
5	▲, ◄, ▼, ►, Enter	These buttons are used to make selections from within the OSD menu system.
6	Lock	Press this button to lock the front panel. This button will glow bright blue when this button is enabled.

Back
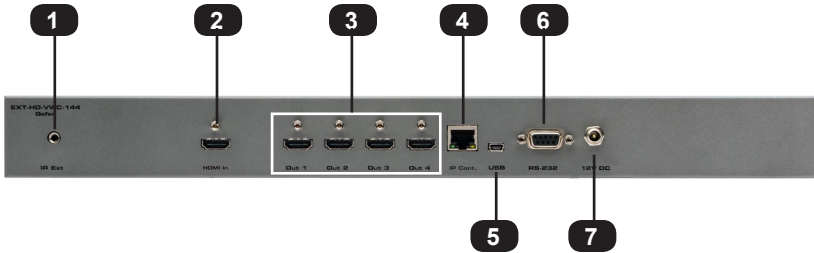
ID	Name	Description
1	IR Ext	Connect the included IR Extender (Gefen part no. EXT-RMT-EXTIRN) to this port.
2	HDMI In	Connect the included HDMI cable between this port and the Hi-Def source.
3	Out (1 - 4)	Connect up to four HDTV displays to these HDMI outputs.
4	IP Control	Connect an Ethernet cable between this jack and a LAN to use IP control. See RS-232 and IP Configuration for more information on setting up IP control.
5	USB	This mini USB port is used for upgrading the firmware. See Upgrading the Firmware for more information.
6	RS-232	Connect the included RS-232 cable from this port to an RS-232 device. See RS-232 and IP Configuration for more information on setting up RS-232.
7	12V DC	Connect the included 12V DC power supply from this power receptacle to an available AC electrical outlet. Do not overtighten the locking connector on the power receptacle.

IR Remote Control Unit

Top

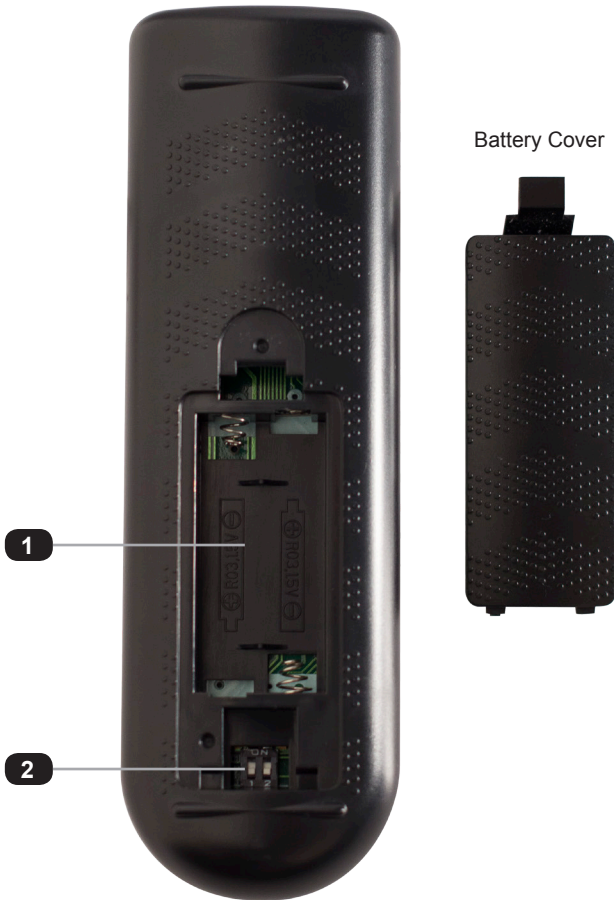| ID	Name	Description
1	Info	Used to toggle notifications on all outputs.
2	Menu	Press this button to display the built-in menu system.
3	Exit	Press this button to exit the main menu or exit from sub-menus.

4	Output Cycle (◄ / ►)	Press these buttons to cycle through the available output resolutions. For a list of available resolutions, refer to the `#set_output` command.
5	Horizontal (◄ / ►)	Press these buttons to adjust the horizontal positioning of the image. Press the ◄ button to move the image to the left. Press the ► button to move the image to the right.
6	Vertical (◄ / ►)	Press these buttons to adjust the vertical positioning of the image. Press the ◄ button to move the image up. Press the ► button to move the image down.
7	Power	Press this button to toggle the power state of the HD Video Wall Controller.
8	◄ /►/▲/▼/OK	Used to access and change features within the menu system. Use the arrow buttons to move around within the menu system or change a value. Press the OK button to make a selection within the menu system.
9	Mute	Mutes the audio on all outputs.
10	Bezel Correction (On / Off)	Used to adjust the bezel correction.

Bottom

Battery Cover

1

2

ID	Name	Description
1	Battery slot (shown without batteries)	Holds the batteries for operating the IR remote. Use only 1.5V "AAA"-type batteries. See Installing the Batteries for more information.
2	DIP switch bank	Use these DIP switches to set the IR channel of the remote. See Setting the IR Channel for details.

Installing the Batteries

1. Remove the battery cover on the bottom of the IR remote control unit.

2. Make sure that the batteries are installed with the correct polarity, as shown in the illustration, below. Always use two 1.5V AAA-type batteries.

3. Replace the battery cover.

Battery 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

> **NOTE:** The IR remote must be set to channel 0 in order to communicate with the HD Video Wall Controller.

Make sure that the IR remote is set to channel 0 (see the diagram, below). Otherwise, the HD Video Wall Controller will not work with the IR remote. Future releases of the firmware will allow the IR channel to be changed.

IR Channel	DIP settings
0	ON 1 2
1 (not used)	ON 1 2
2 (not used)	ON 1 2
3 (not used)	ON 1 2

DIP switches

Installation

Connecting the HD Video Wall Controller

1. Use the included HDMI cable to connect the Hi-Def source to the **HDMI In** port on the HD Video Wall Controller.

2. Connect up to four HDTV displays to the **Out** (1 - 4) ports on the HD Video Wall Controller.

3. OPTIONAL: To use IP / UDP / Telnet control, connect an Ethernet cable from the **IP Control** port on the HD Video Wall Controller to a Local Area Network (LAN).

4. OPTIONAL: To extend the range of the IR sensor, connect the included IR extender to the **IR Ext** port on the HD Video Wall Controller.

5. Connect the included 12V DC locking power supply to the power receptacle on the Video Wall Controller. Do not overtighten the locking power connector.

6. Connect the power supply to an available electrical outlet.

Sample Wiring Diagram

HDMI CABLE
RS-232 CABLE
CAT-5 CABLE
IR EXTENDER

HD Source

HD Video Wall Controller

Network

IP Control

EXT-PACS

HD Displays

EXT-HD-VWC-144
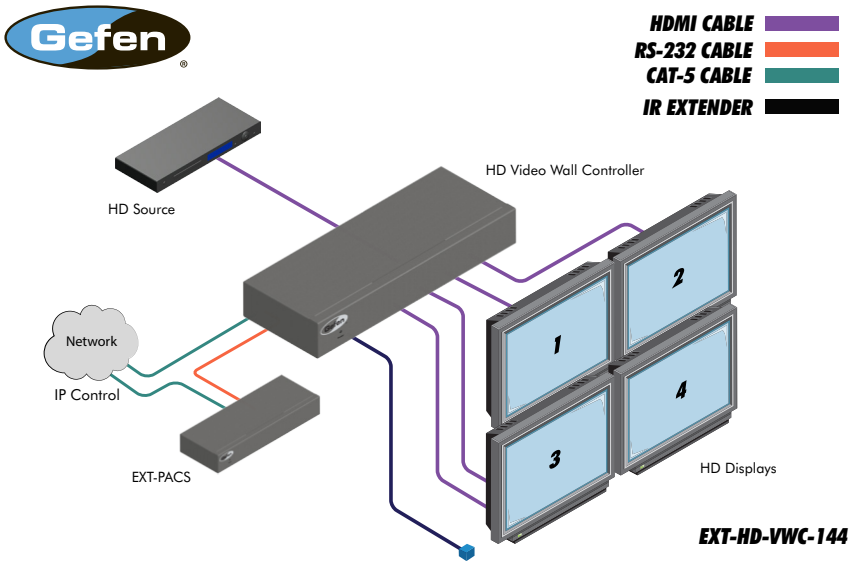
HD Video Wall Controller

02 Operating the HD Video Wall Controller

Introduction

Standby Mode

The multi-color LED next to the Power button, on the front panel, indicates the power state of the HD Video Wall Controller. In standby mode, power is being supplied to the HD Video Wall Controller but the unit is not turned on. This LED will be red and remain illuminated as long as the unit is in standby mode. If this LED does not illuminate, check the connection between the power receptacle on the HD Video Wall Controller and the AC outlet.

Red LED indicates that matrix is in *standby mode*
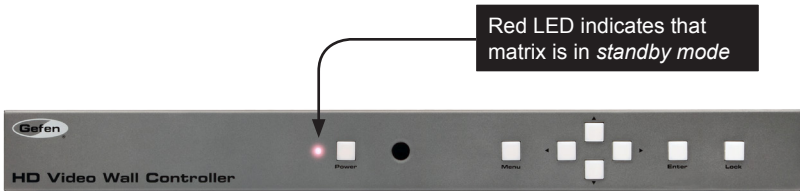
Turning on the HD Video Wall Controller

Once the HD Video Wall Controller is in standby mode, press the Power button to power on the unit. The Power button and the LED indicator will turn blue and both remain illuminated as long as the unit is powered on. To power off the HD Video Wall Controller and return to standby mode, press the Power button again.

Blue LED indicates that matrix is powered ON

Power button is illuminated
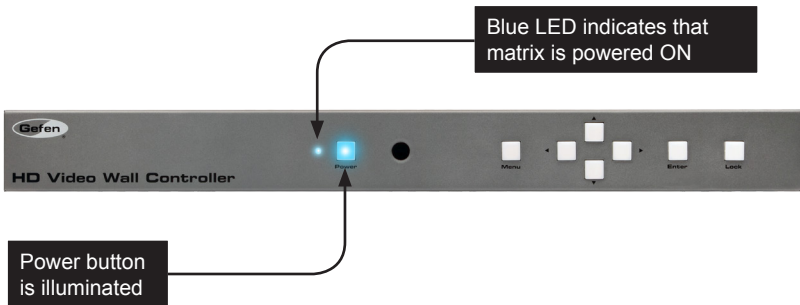
Using IR Control

The HD Video Wall Controller can also be powered-ON or placed in standby mode by using the included IR remote control.

When the HD Video Wall Controller is in *standby mode*, press the **Power** button to power-ON the unit. To power-OFF the unit and place it in *standby mode*, press the **Power** button again. Always make sure to point the IR remote at the IR sensor on the front panel.

The IR remote control also provides full control of all features. See Accessing the Menu System for more information.
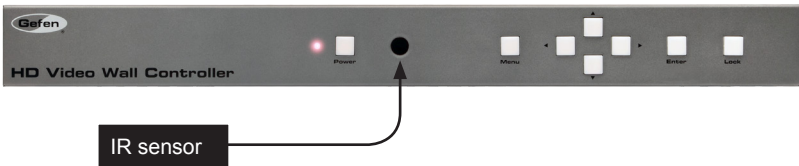
IR sensor

There may be situations where the IR sensor is blocked by a cabinet or other mounting device. In this case, an IR extender (Gefen part no. EXT-RMT-EXTIRN) can be connected to the **IR Ext** port on the back of the HD Video Wall Controller. The sensor on the IR extender behaves exactly like the sensor on the front panel of the matrix. Always point the IR remote control unit in the direction of the IR sensor.

Power button

IR extender

IR sensor
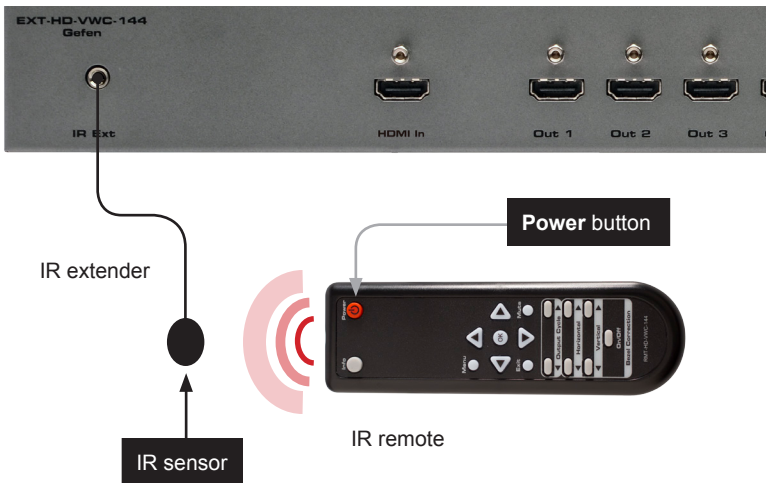
IR remote

Using the Menu System

Accessing the Menu System

The HD Video Wall Controller uses a built-in 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
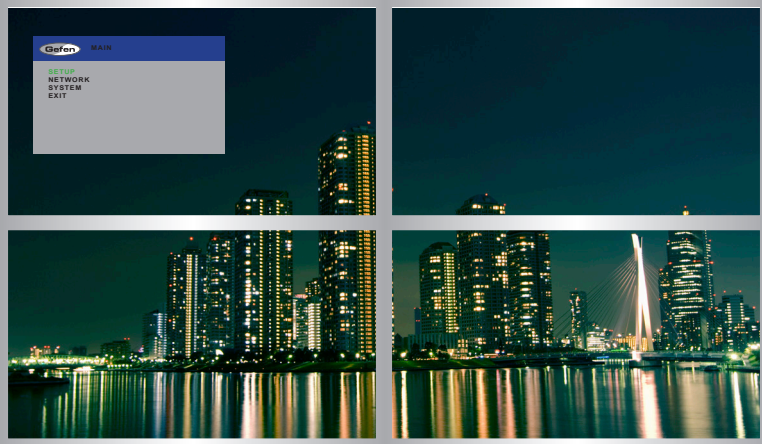
After pressing the **Menu** button on the front panel, the **Menu** button will remain illuminated as long as the menu system is displayed on the screen. By default, the menu system will be displayed within the top-left display.

The time-out value (duration) for the menu system can be changed in the OSD Settings page of the menu system.

Using the Front Panel Buttons

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 ◄ or ► buttons to change the value of the current selection.   Press the **Enter** button to make the desired selection. The current selection will be highlighted in green.

MAIN

SETUP
NETWORK
SYSTEM
EXIT

Press to select the highlighted menu item

Menu   ◄   ►   Enter   Lock

Press the ▲ and ▼ buttons to move up and down within the menu system
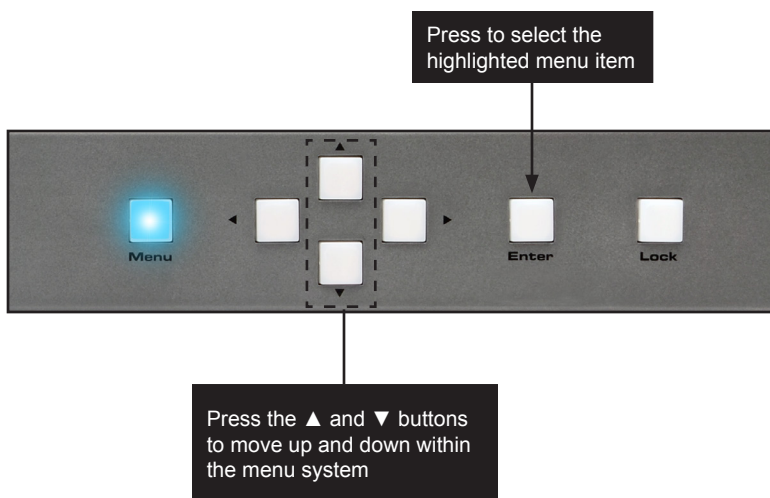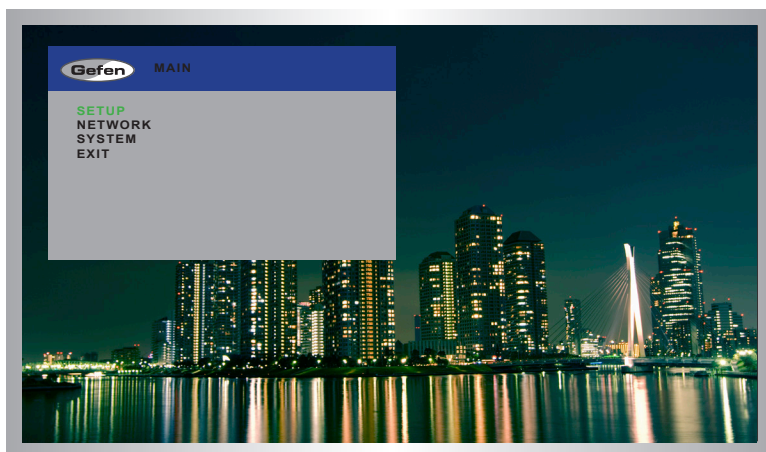
Using the IR Remote Control

The IR remote control has buttons which represent the controls on the front panel. Use the ◄, ►, ▲, and ▼ buttons to move around within the menu system. Press the ▲ and ▼ buttons to move up and down. Press the ◄ or ► buttons to change the value of the current selection.   Press the **OK** button to make the desired selection. The current selection will be highlighted in green.
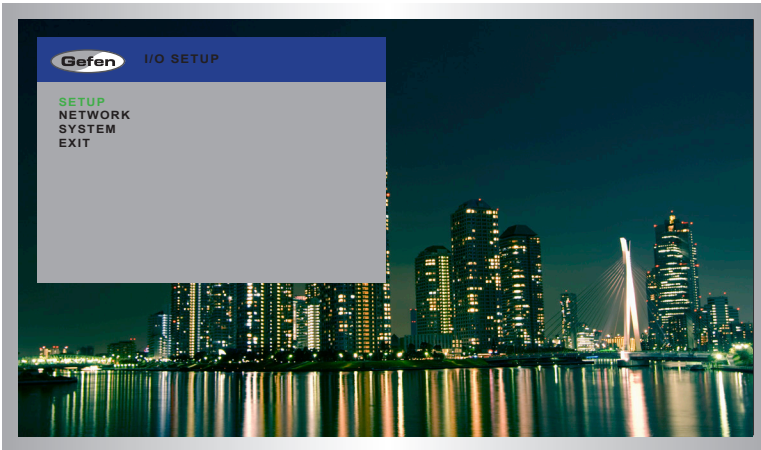
Press to select the highlighted menu item

Press the ▲ and ▼ buttons to move up and down within the menu system

Setting the Output Resolution

> **NOTE:** When changing this setting, make sure that all connected displays can support the selected output resolution.

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

```
Gefen      I/O SETUP

SETUP
NETWORK
SYSTEM
EXIT
```

2. Press the **Enter** button. If using the IR remote, press the **OK** button.

```
Gefen      I/O SETUP

OUTPUT RESOLUTION
PICTURE SETTINGS
BEZEL CORRECTION
OSD SETTINGS
EDID
BACK
EXIT
```
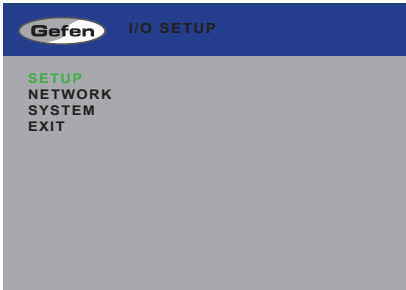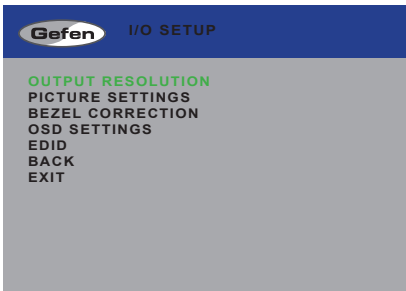
3. Press the **Enter** button again to enter the **Output Resolution** menu. If using the IR remote, press the **OK** button.

```
Gefen      OUTPUT RESOLUTION

480p              1600x900
576p              1600x1200
720p50            1680x1050
720p60            1920x1200
1080p24           NATIVE
1080p50           BACK
1080p60           EXIT
1024x768
1280x800
1280x1024
1366x768
1440x900
```

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

5.   Press the **Enter** button to apply the selected resolution. If using the IR remote, press the **OK** button.

Adjusting the Contrast

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

```
┌─────────────────────────────────────┐
│  Gefen    I/O SETUP                  │
├─────────────────────────────────────┤
│                                      │
│  SETUP                               │
│  NETWORK                             │
│  SYSTEM                              │
│  EXIT                                │
│                                      │
│                                      │
│                                      │
│                                      │
│                                      │
└─────────────────────────────────────┘
```

2. Press the **Enter** button. If using the IR remote, press the **OK** button.

3. Use the ▲ or ▼ buttons to select **Picture Settings**.

```
┌─────────────────────────────────────┐
│  Gefen    I/O SETUP                  │
├─────────────────────────────────────┤
│                                      │
│  OUTPUT RESOLUTION                   │
│  PICTURE SETTINGS                    │
│  BEZEL CORRECTION                    │
│  OSD SETTINGS                        │
│  EDID                                │
│  BACK                                │
│  EXIT                                │
│                                      │
│                                      │
│                                      │
└─────────────────────────────────────┘
```
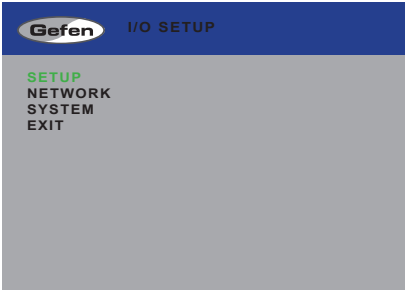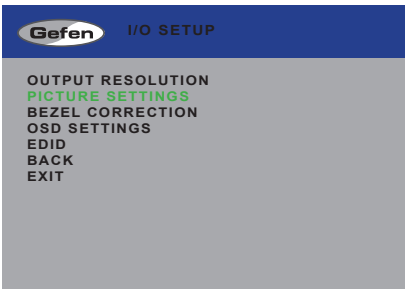
4. Press the **Enter** button. If using the IR remote, press the **OK** button.

    The **Contrast** option should already be highlighted in green.
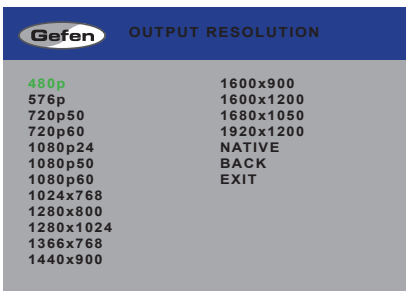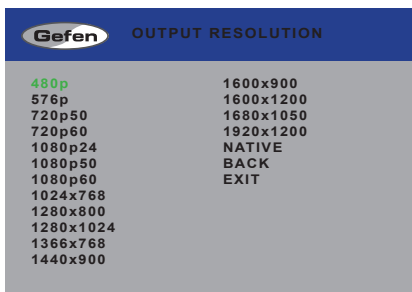
```
┌─────────────────────────────────────┐
│  Gefen    PICTURE SETTINGS           │
├─────────────────────────────────────┤
│                                      │
│  CONTRAST                            │
│  BRIGHTNESS                          │
│  SATURATION                          │
│  HUE                                 │
│  OUT  4                              │
│  OUT  3                              │
│  OUT  2                              │
│  OUT  1                              │
│  RESET                               │
│  RESET ALL                           │
│  BACK                                │
│  EXIT                                │
└─────────────────────────────────────┘
```

5.   Press the **Enter** button to select the **Contrast** option. If using the IR remote,
      press the **OK** button.

      The **Contrast** option will be highlighted in orange.

```
Gefen    PICTURE SETTINGS

CONTRAST
BRIGHTNESS
SATURATION
HUE
OUT  4              50
OUT  3              50
OUT  2              50
OUT  1              50
RESET   CONTRAST
RESET   ALL
BACK
EXIT
```

6.   Use the ▲ or ▼ buttons to highlight the desired output.

7.   Press the **Enter** button to select the highlighted output. If using the IR remote,
      press the **OK** button.

8.   Use the ◄ or ► buttons to change the contrast value.

```
Gefen    PICTURE SETTINGS

CONTRAST
BRIGHTNESS
SATURATION
HUE
OUT  4              50
OUT  3              50
OUT  2              50
OUT  1              50
RESET   CONTRAST
RESET   ALL
BACK
EXIT
```

9.   Press the **Enter** button to accept the current value. If using the IR remote,
      press the **OK** button.

10.   To reset the contrast to default values on all outputs, use the **Reset Contrast** option.

Adjusting the Brightness

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

```
        Gefen      I/O SETUP

      SETUP
      NETWORK
      SYSTEM
      EXIT
```
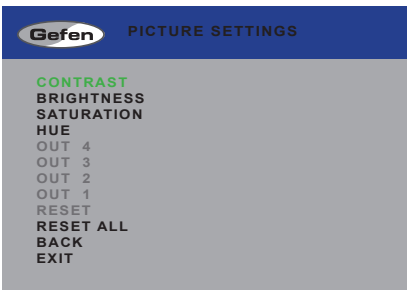
2.   Press the **Enter** button. If using the IR remote, press the **OK** button.

3.   Use the ▲ or ▼ buttons to select **Picture Settings**.

```
        Gefen      I/O SETUP

      OUTPUT RESOLUTION
      PICTURE SETTINGS
      BEZEL CORRECTION
      OSD SETTINGS
      EDID
      BACK
      EXIT
```
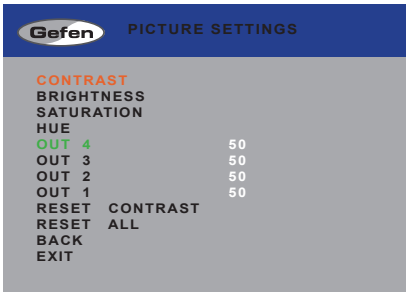
4.   Press the **Enter** button. If using the IR remote, press the **OK** button.

5.   Use the ▲ or ▼ buttons to highlight **Brightness**.

```
        Gefen      PICTURE SETTINGS

      CONTRAST
      BRIGHTNESS
      SATURATION
      HUE
      OUT  4
      OUT  3
      OUT  2
      OUT  1
      RESET
      RESET ALL
      BACK
      EXIT
```
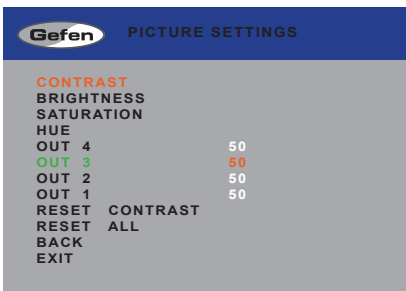
6. Press the **Enter** button again to select the **Brightness** option. If using the IR remote, press the **OK** button.
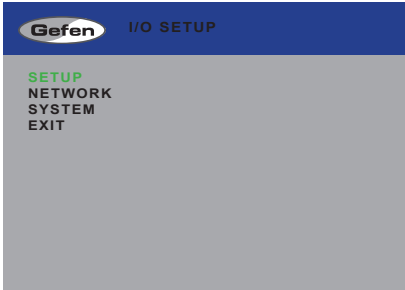
 The **Brightness** option will be highlighted in orange.

```
Gefen       PICTURE SETTINGS

 CONTRAST
 BRIGHTNESS
 SATURATION
 HUE
 OUT  4                50
 OUT  3                50
 OUT  2                50
 OUT  1                50
 RESET   CONTRAST
 RESET   ALL
 BACK
 EXIT
```

7. Use the ▲ or ▼ buttons to highlight the desired output.

8. Press the **Enter** button to select the highlighted output. If using the IR remote, press the **OK** button.

9. Use the ◄ or ► buttons to change the brightness value.

```
Gefen       PICTURE SETTINGS

 CONTRAST
 BRIGHTNESS
 SATURATION
 HUE
 OUT  4                57
 OUT  3                42
 OUT  2                50
 OUT  1                50
 RESET   BRIGHTNESS
 RESET   ALL
 BACK
 EXIT
```
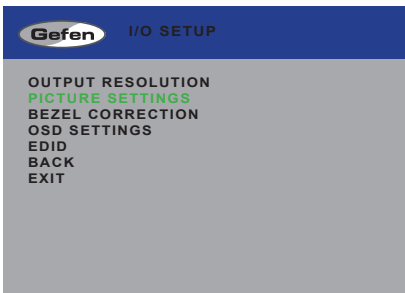
10. Press the **Enter** button to accept the current value. If using the IR remote, press the **OK** button.

11. To reset the brightness to default values on all outputs, use the **Reset Brightness** option.
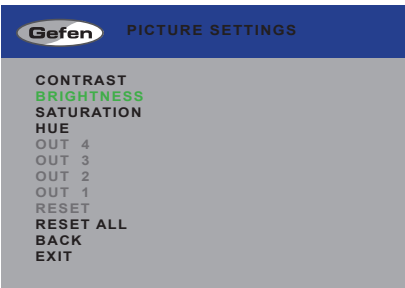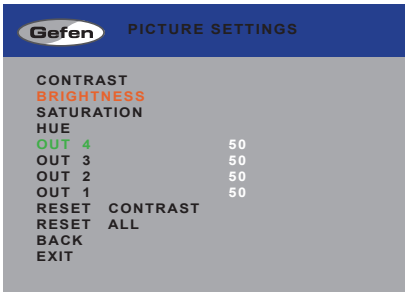
Adjusting the Saturation

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

    I/O SETUP

    SETUP
    NETWORK
    SYSTEM
    EXIT

2. Press the **Enter** button. If using the IR remote, press the **OK** button.

3. Use the ▲ or ▼ buttons to highlight **Picture Settings**.

    I/O SETUP

    OUTPUT RESOLUTION
    PICTURE SETTINGS
    BEZEL CORRECTION
    OSD SETTINGS
    EDID
    BACK
    EXIT

4. Press the **Enter** button. If using the IR remote, press the **OK** button.

5. Use the ▲ or ▼ buttons to highlight **Saturation**.

    PICTURE SETTINGS

    CONTRAST
    BRIGHTNESS
    SATURATION
    HUE
    OUT 4
    OUT 3
    OUT 2
    OUT 1
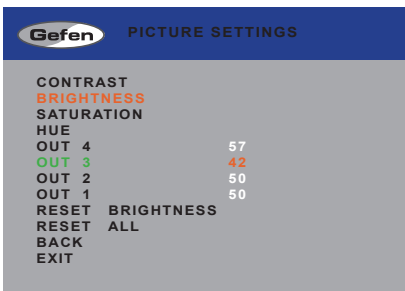   RESET
    RESET ALL
    BACK
    EXIT

6.   Press the **Enter** button again to select the **Saturation** option. If using the IR remote, press the **OK** button.

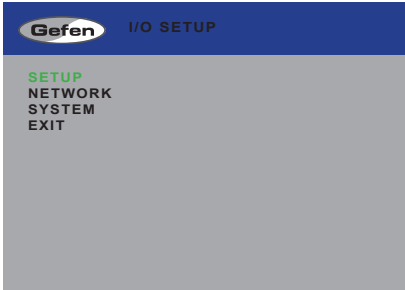   The **Saturation** option will be highlighted in orange.

```
            PICTURE SETTINGS
  Gefen

   CONTRAST
   BRIGHTNESS
   SATURATION
   HUE
   OUT  4              50
   OUT  3              50
   OUT  2              50
   OUT  1              50
   RESET   SATURATION
   RESET   ALL
   BACK
   EXIT
```

7.   Use the ▲ or ▼ buttons to highlight the desired output.

8.   Press the **Enter** button to select the highlighted output. If using the IR remote, press the **OK** button.

9.   Use the ◄ or ► buttons to change the saturation value.

```
            PICTURE SETTINGS
  Gefen

   CONTRAST
   BRIGHTNESS
   SATURATION
   HUE
   OUT  4              31
   OUT  3              50
   OUT  2              50
   OUT  1              50
   RESET   SATURATION
   RESET   ALL
   BACK
   EXIT
```
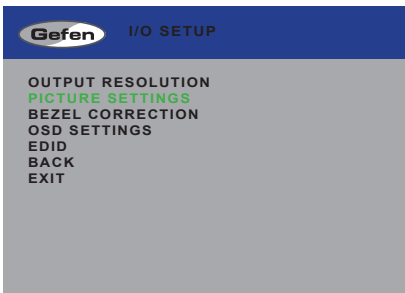
10.   Press the **Enter** button to accept the current value. If using the IR remote, press the **OK** button.

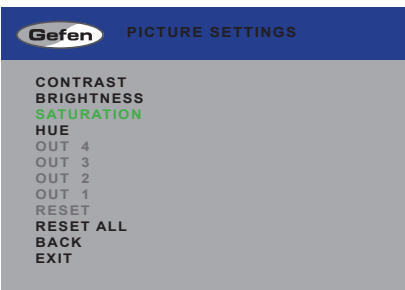11.   To reset the saturation to default values on all outputs, use the **Reset Saturation** option.

Adjusting the Hue

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

```
Gefen    I/O SETUP

SETUP
NETWORK
SYSTEM
EXIT
```

2. Press the **Enter** button. If using the IR remote, press the **OK** button.

3. Use the ▲ or ▼ buttons to highlight **Picture Settings**.

```
Gefen    I/O SETUP

OUTPUT RESOLUTION
PICTURE SETTINGS
BEZEL CORRECTION
OSD SETTINGS
EDID
BACK
EXIT
```
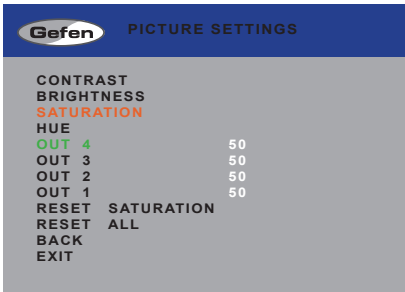
4. Press the **Enter** button. If using the IR remote, press the **OK** button.

5. Use the ▲ or ▼ buttons to highlight **Hue**.

```
Gefen    PICTURE SETTINGS

CONTRAST
BRIGHTNESS
SATURATION
HUE
OUT  4
OUT  3
OUT  2
OUT  1
RESET
RESET ALL
BACK
EXIT
```
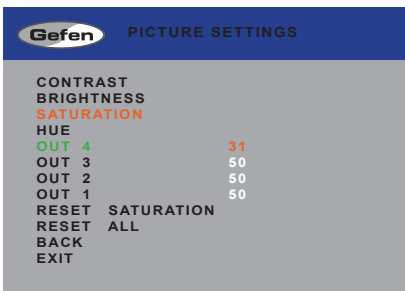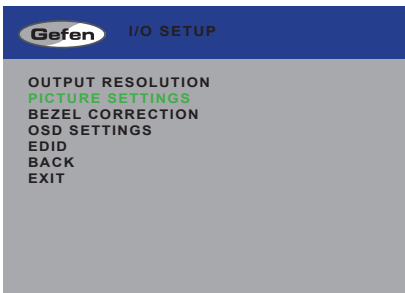
6. Press the **Enter** button again to select the **Hue** option. If using the IR remote, press the **OK** button.

The **Hue** option will be highlighted in orange.

```
Gefen    PICTURE SETTINGS

CONTRAST
BRIGHTNESS
SATURATION
HUE
OUT  4              50
OUT  3              50
OUT  2              50
OUT  1              50
RESET   HUE
RESET   ALL
BACK
EXIT
```

7. Use the ▲ or ▼ buttons to highlight the desired output.

8. Press the **Enter** button to select the highlighted output. If using the IR remote, press the **OK** button.

9. Use the ◄ or ► buttons to change the hue value.

```
Gefen    PICTURE SETTINGS

CONTRAST
BRIGHTNESS
SATURATION
HUE
OUT  4              28
OUT  3              50
OUT  2              50
OUT  1              50
RESET   HUE
RESET   ALL
BACK
EXIT
```

10. Press the **Enter** button to accept the current value. If using the IR remote, press the **OK** button.

11. To reset the hue to default values on all outputs, use the **Reset Hue** option.

Bezel Correction

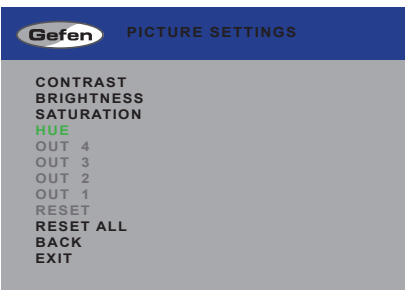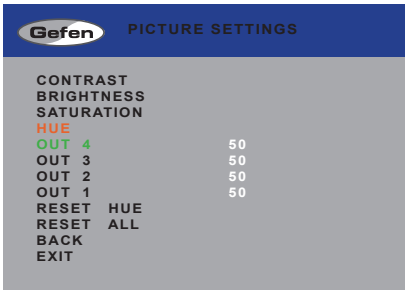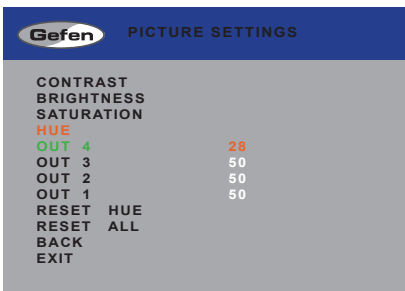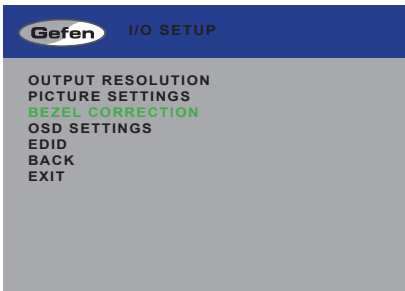Bezel correction is necessary to compensate for the bezel-thickness of each display. Without adjustment, the picture will appear distorted.

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

```
Gefen    I/O SETUP

SETUP
NETWORK
SYSTEM
EXIT
```

2. Press the **Enter** button. If using the IR remote, press the **OK** button.

3. Use the ▲ or ▼ buttons to highlight **Bezel Correction**.

```
Gefen    I/O SETUP

OUTPUT RESOLUTION
PICTURE SETTINGS
BEZEL CORRECTION
OSD SETTINGS
EDID
BACK
EXIT
```

4. Press the **Enter** button. If using the IR remote, press the **OK** button.

```
Gefen    BEZEL CORRECTION

CORRECTION        OFF
H CORRECTION      0
V CORRECTION      0
BACK
EXIT
```

6. Press the **Enter** button again to select the **Correction** option. If using the IR remote, press the **OK** button.

    The **On / Off** option will be highlighted in orange.

```
┌─────────────────────────────────────┐
│  Gefen    BEZEL CORRECTION          │
├─────────────────────────────────────┤
│                                      │
│  CORRECTION          OFF             │
│  H CORRECTION        0               │
│  V CORRECTION        0               │
│  BACK                                │
│  EXIT                                │
│                                      │
└─────────────────────────────────────┘
```
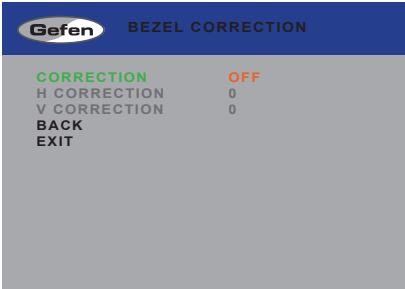
7. Use the ◄ or ► buttons to enable (**On**) or disable (**Off**) bezel correction.

8. Press the **Enter** button to select the desired option. The current state will be highlighted in white and the **H Correction** and **V Correction** options will become available.

```
┌─────────────────────────────────────┐
│  Gefen    BEZEL CORRECTION          │
├─────────────────────────────────────┤
│                                      │
│  CORRECTION          ON              │
│  H CORRECTION        0               │
│  V CORRECTION        0               │
│  BACK                                │
│  EXIT                                │
│                                      │
└─────────────────────────────────────┘
```

9. Use the ▲ or ▼ buttons to highlight **H Correction** or **V Correction**.

10. Press the **Enter** button to select the desired option. The current value will be highlighted in orange.

```
┌─────────────────────────────────────┐
│  Gefen    BEZEL CORRECTION          │
├─────────────────────────────────────┤
│                                      │
│  CORRECTION          ON              │
│  H CORRECTION        0               │
│  V CORRECTION        0               │
│  BACK                                │
│  EXIT                                │
│                                      │
└─────────────────────────────────────┘
```

11. Use the ◄ or ► buttons to change the value.

12. Press the **Enter** button to accept the current value.

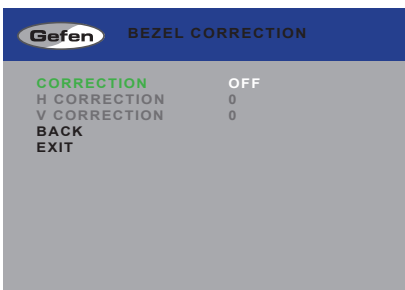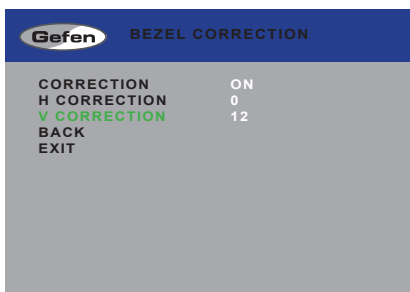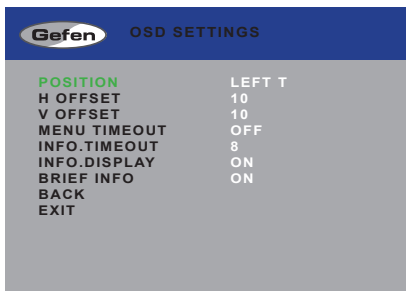| Gefen	BEZEL CORRECTION	
CORRECTION	ON	
H CORRECTION	0	
V CORRECTION	12	
BACK		
EXIT		

OSD Settings

The OSD Settings menu controls how the OSD is displayed.

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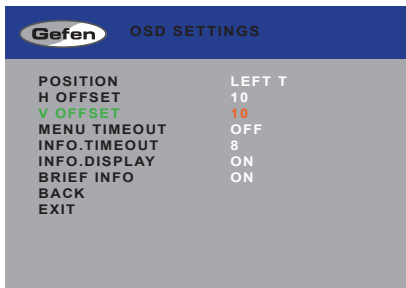   system will be displayed.

> **Gefen**   I/O SETUP
>
> **SETUP**
> NETWORK
> SYSTEM
> EXIT

2. Press the **Enter** button. If using the IR remote, press the **OK** button.

3. Use the ▲ or ▼ buttons to highlight the option to change. The **Position** option will be
    highlighted, automatically.

> **Gefen**   OSD SETTINGS
>
> POSITION   LEFT T
> H OFFSET   10
> V OFFSET   10
> MENU TIMEOUT   OFF
> INFO.TIMEOUT   8
> INFO.DISPLAY   ON
> BRIEF INFO   ON
> BACK
> EXIT

4. Once the desired option is highlighted, press the **Enter** button to select it. If using the
   IR remote control, press the **OK** button.

    When an option is selected, its current value will be highlighted in orange.

> **Gefen**   OSD SETTINGS
>
> POSITION   LEFT T
> H OFFSET   10
> V OFFSET   10
> MENU TIMEOUT   OFF
> INFO.TIMEOUT   8
> INFO.DISPLAY   ON
> BRIEF INFO   ON
> BACK
> EXIT

5.   Use the ◄ or ► buttons to change the current value.

6.   Press the **Enter** button to accept the current changes. If using the IR remote control, press the **OK** button.

Position

Assigns the display where the OSD will be displayed, when the Menu button is pressed.
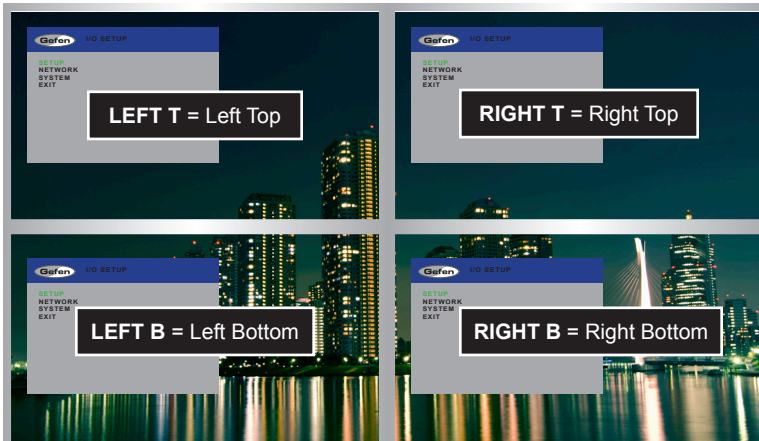
H Offset

The horizontal offset of the OSD, as it appears on the display.

V Offset

The vertical offset of the OSD, as it appears on the display.

Menu Timeout

Once the **Menu** button is pressed, the OSD will appear. Timeout is the duration, in seconds, when the OSD will be automatically dismissed. If set to **Off**, then the OSD must be hidden manually by pressing the **Menu** button.

Info Timeout

By default, each display will show an information (info) window. This window displays the input and output resolution. Menu Timeout is the duration, in seconds, of the OSD before it is automatically hidden.
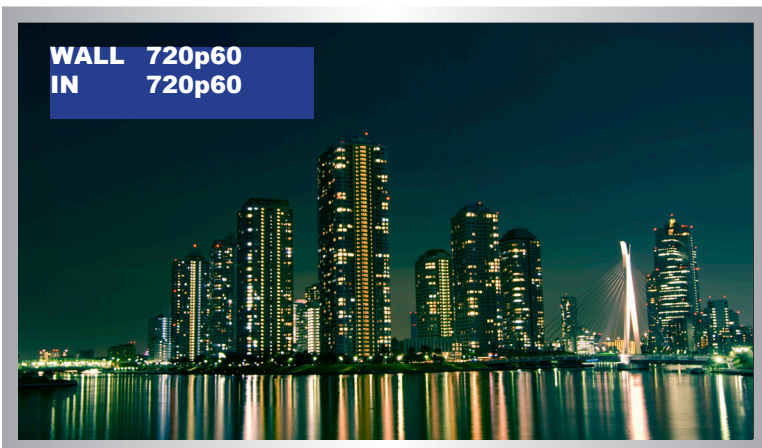
Info Display

Enables (**On**) or disables (**Off**) the Info window. If set to **Off**, the Info window is never displayed.
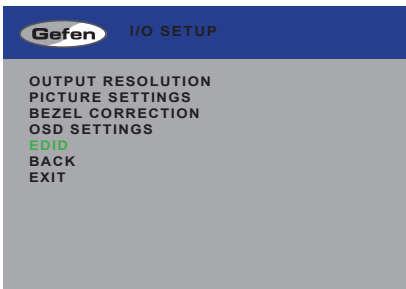
Brief Info

This option controls what is displayed when **Info Display** set to On. If **Brief Info** is set to **On**, then only the In and Out routing information is displayed. If **Brief Info** is set to **Off**, then the resolution information is also displayed.
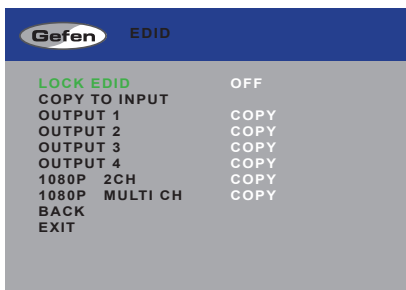
EDID Management

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

> **Gefen**   I/O SETUP
>
> **SETUP**
> **NETWORK**
> **SYSTEM**
> **EXIT**

2.   Press the **Enter** button. If using the IR remote, press the **OK** button.

3.   Use the ▲ or ▼ buttons to highlight the **EDID** option.

> **Gefen**   I/O SETUP
>
> **OUTPUT RESOLUTION**
> **PICTURE SETTINGS**
> **BEZEL CORRECTION**
> **OSD SETTINGS**
> **EDID**
> **BACK**
> **EXIT**

4.   Press the **Enter** button to display the EDID menu. If using the IR remote,
      press the **OK** button.

> **Gefen**   EDID
>
> **LOCK EDID**   **OFF**
> **COPY TO INPUT**
> **OUTPUT 1**   **COPY**
> **OUTPUT 2**   **COPY**
> **OUTPUT 3**   **COPY**
> **OUTPUT 4**   **COPY**
> **1080P   2CH**   **COPY**
> **1080P   MULTI CH**   **COPY**
> **BACK**
> **EXIT**

5.   Press the **Select** button to select the **Lock EDID** option.

6.   Use the ◄ or ► buttons to change the value of the **Lock EDID** option.

7.   Press the **Select** button to accept the **Lock EDID** value.
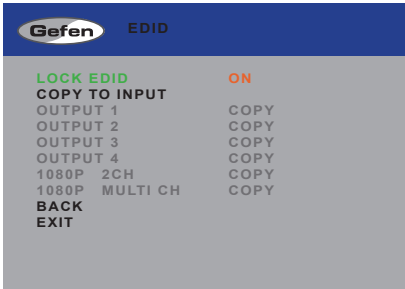

Selecting an EDID

1.   Make sure the **Lock EDID** option is set to **Off**.

2.   Use the ▲ or ▼ buttons to highlight the desired output, containing the EDID to be copied to the input. The 1080p 2CH or 1080p Multi Ch EDID can also be selected.

      When selecting an EDID, make sure that all displays can support the same audio and video capabilities

3.   Press the **Enter** button to accept the current output selection. If using the IR remote, press the **OK** button.
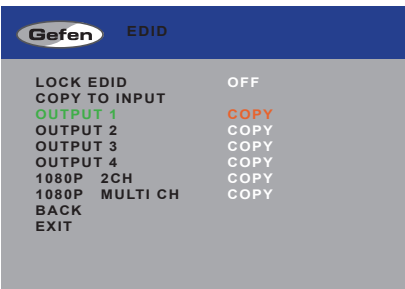

4.   The display will flash momentarily. The EDID from the selected output will be copied to the input and will be used by all outputs.
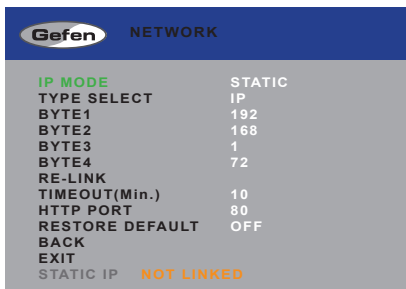
Changing the IP Settings

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

2. Use the ▲ or ▼ buttons to highlight the **Network** option.

> **Gefen**   I/O SETUP
>
> SETUP
> NETWORK
> SYSTEM
> EXIT

3. Press the **Enter** button to display the **Network** menu. If using the IR remote, press the **OK** button.

> **Gefen**   NETWORK
>
> IP SETTINGS
> TELNET SETTINGS
> UDP SETTINGS
> BACK
> EXIT
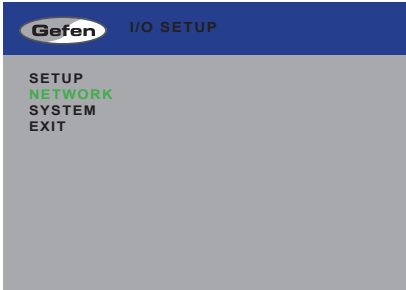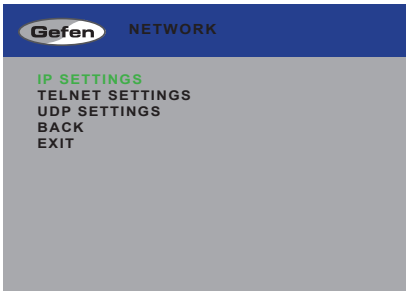
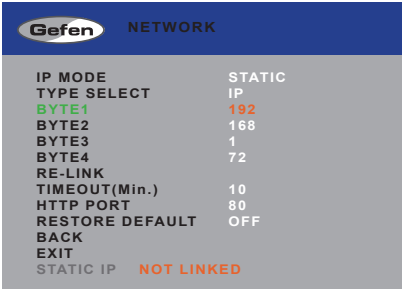4. Press the **Enter** button again to display the **IP Settings** menu. If using the IR remote, press the **OK** button.

> **Gefen**   NETWORK
>
> IP MODE   STATIC
> TYPE SELECT   IP
> BYTE1   192
> BYTE2   168
> BYTE3   1
> BYTE4   72
> RE-LINK
> TIMEOUT(Min.)   10
> HTTP PORT   80
> RESTORE DEFAULT   OFF
> BACK
> EXIT
> STATIC IP   NOT LINKED

5. Use the ▲ or ▼ buttons to highlight the option to change. The **IP Mode** option will be highlighted, automatically.

6. Once the desired option is highlighted, press the **Enter** button to select it. If using the IR remote control, press the **OK** button.

    When an option is selected, its current value will be highlighted in orange.

Gefen NETWORK	
IP MODE	STATIC
TYPE SELECT	IP
BYTE1	192
BYTE2	168
BYTE3	1
BYTE4	72
RE-LINK	
TIMEOUT(Min.)	10
HTTP PORT	80
RESTORE DEFAULT	OFF
BACK	
EXIT	
STATIC IP	NOT LINKED

7. Use the ◄ or ► buttons to change the current value.

8. Press the **Enter** button to accept the current changes. If using the IR remote control, press the **OK** button.

IP Mode

Set this option to either Static or DHCP. If using the Static option, the IP address must be specified. Use the Byte1, Byte2, Byte3, and Byte4 options to set each of the digits in the IP address, subnet mask, and gateway.
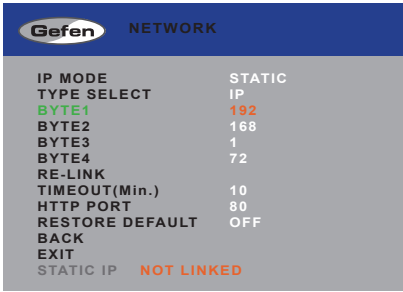
Type Select

Use this option to switch between the IP address (IP), subnet mask (Mask), and gateway (Gate).

Byte

Use the Byte1, Byte2, Byte3, and Byte4 options to set each of the digits in the IP address, subnet mask, and gateway.

Re-link

Use this option to attempt to re-link to the network using the current IP settings.

Timeout

Sets the time-out period (in seconds) when using the Re-Link option to link with the network using the current IP settings.

HTTP Port

Sets the HTTP listening port for the HD Video Wall Controller.

Restore Default

This option will reset the default IP settings for the HD Video Wall Controller.
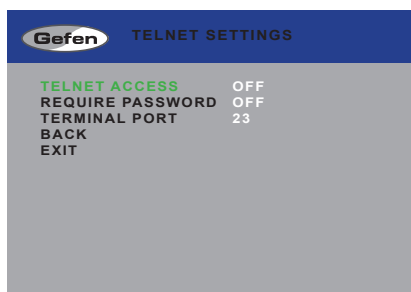
Changing the Telnet Settings

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

2. Use the ▲ or ▼ buttons to highlight the **Network** option.

> **Gefen**   I/O SETUP
>
> SETUP
> NETWORK
> SYSTEM
> EXIT

3. Press the **Enter** button to display the **Network** menu. If using the IR remote, press the **OK** button.

4. Use the ▲ or ▼ buttons to highlight the **Telnet Settings** option.

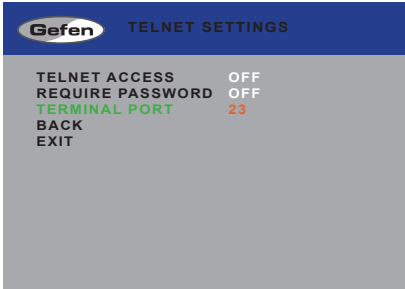> **Gefen**   NETWORK
>
> IP SETTINGS
> TELNET SETTINGS
> UDP SETTINGS
> BACK
> EXIT
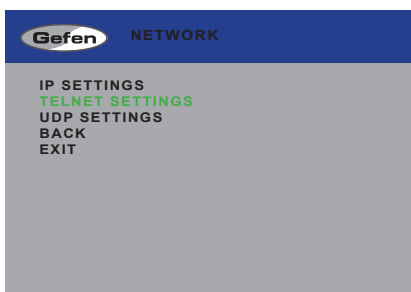
5. Press the **Enter** button again to display the **Telnet Settings** menu. If using the IR remote, press the **OK** button.

> **Gefen**   TELNET SETTINGS
>
> TELNET ACCESS   OFF
> REQUIRE PASSWORD   OFF
> TERMINAL PORT   23
> BACK
> EXIT

5.   Use the ▲ or ▼ buttons to highlight the option to change. The **Telnet Access** option will be highlighted, automatically.

6.   Once the desired option is highlighted, press the **Enter** button to select it. If using the IR remote control, press the **OK** button.

      When an option is selected, its current value will be highlighted in orange.

```
┌────────────────────────────────────────────┐
│  Gefen    TELNET SETTINGS                   │
├────────────────────────────────────────────┤
│                                             │
│  TELNET ACCESS        OFF                    │
│  REQUIRE PASSWORD     OFF                    │
│  TERMINAL PORT        23                     │
│  BACK                                        │
│  EXIT                                        │
│                                             │
│                                             │
│                                             │
│                                             │
└────────────────────────────────────────────┘
```

7.   Use the ◄ or ► buttons to change the current value.

8.   Press the **Enter** button to accept the current changes. If using the IR remote control, press the **OK** button.

Telnet Access

Enables (On) or disables (Off) Telnet access for the HD Video Wall Controller.

Require Password

Enables (On) or disables (Off) the password prompt at the beginning of a Telnet session.

Terminal Port

Sets the Telnet listening port for the HD Video Wall Controller.

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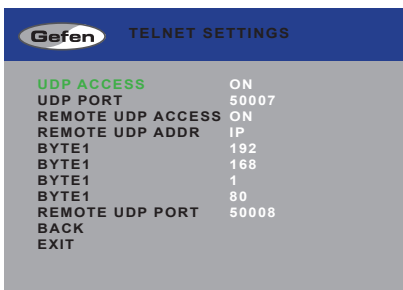
1. Press the **Menu** button on the front panel or on the IR remote control. The menu system will be displayed.

2. Use the ▲ or ▼ buttons to highlight the **Network** option.

```
Gefen    I/O SETUP

SETUP
NETWORK
SYSTEM
EXIT
```
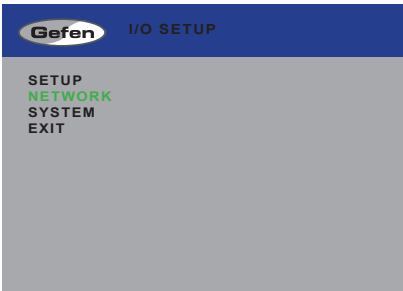
3. Press the **Enter** button to display the **Network** menu. If using the IR remote, press the **OK** button.

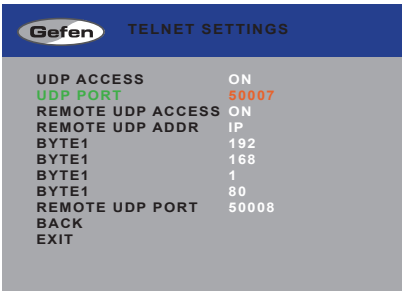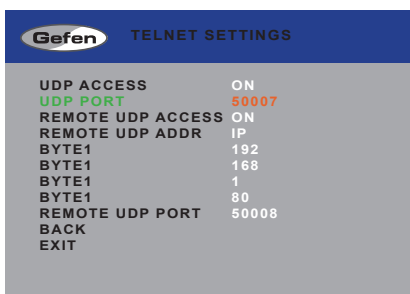4. Use the ▲ or ▼ buttons to highlight the **UDP Settings** option.

```
Gefen    NETWORK

IP SETTINGS
TELNET SETTINGS
UDP SETTINGS
BACK
EXIT
```
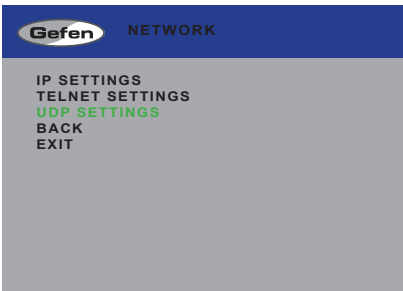
5. Press the **Enter** button again to display the **UDP Settings** menu. If using the IR remote, press the **OK** button.

```
Gefen    TELNET SETTINGS

UDP ACCESS            ON
UDP PORT             50007
REMOTE UDP ACCESS    ON
REMOTE UDP ADDR      IP
BYTE1                192
BYTE1                168
BYTE1                1
BYTE1                80
REMOTE UDP PORT      50008
BACK
EXIT
```

page | 41

5.   Use the ▲ or ▼ buttons to highlight the option to change. The **UDP Access** option will be highlighted, automatically.

6.   Once the desired option is highlighted, press the **Enter** button to select it. If using the IR remote control, press the **OK** button.

        When an option is selected, its current value will be highlighted in orange.

```
┌─────────────────────────────────────────────┐
│  Gefen    TELNET SETTINGS                    │
├─────────────────────────────────────────────┤
│                                              │
│   UDP ACCESS           ON                    │
│   UDP PORT             50007                 │
│   REMOTE UDP ACCESS    ON                    │
│   REMOTE UDP ADDR      IP                    │
│   BYTE1                192                   │
│   BYTE1                168                   │
│   BYTE1                1                     │
│   BYTE1                80                    │
│   REMOTE UDP PORT      50008                 │
│   BACK                                       │
│   EXIT                                       │
│                                              │
└─────────────────────────────────────────────┘
```

7.   Use the ◄ or ► buttons to change the current value.

8.   Press the **Enter** button to accept the current changes. If using the IR remote control, press the **OK** button.

UDP Access

Enables (On) or disables (Off) UDP access to the HD Video Wall Controller.

UDP Port

Sets the local UDP listening port for the HD Video Wall Controller.

Remote UDP Access

Enables (On) or disables (Off) UDP access on the HD Video Wall Controller.

Remote UDP Addr

Use this option to switch between the UDP IP address (IP), subnet mask (Mask), and gateway (Gate).

```
  Gefen    TELNET SETTINGS

UDP ACCESS           ON
UDP PORT             50007
REMOTE UDP ACCESS    ON
REMOTE UDP ADDR      IP
BYTE1                192
BYTE1                168
BYTE1                1
BYTE1                80
REMOTE UDP PORT      50008
BACK
EXIT
```

Byte

Use the Byte1, Byte2, Byte3, and Byte4 options to set each of the digits in the IP address, subnet mask, and gateway.
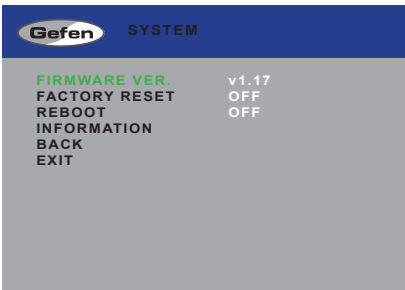
Remote UDP Port

Sets the remote UDP listening port for the HD Video Wall Controller.

System Settings

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

2. Use the ▲ or ▼ buttons to highlight the **System** option.

Gefen   I/O SETUP

SETUP
NETWORK
SYSTEM
EXIT

3. Press the **Enter** button to display the **System** menu. If using the IR remote, press the **OK** button.

Gefen   SYSTEM

FIRMWARE VER.   v1.17
FACTORY RESET   OFF
REBOOT   OFF
INFORMATION
BACK
EXIT

4. Use the ▲ or ▼ buttons to highlight the desired option.

Press the **Enter** button to make the selection. If using the IR remote control, press the **OK** button.

Selecting **Factory Reset** will reset the 4x1 Multiview Seamless Switcher to factory-default settings

Selecting **Reboot** will reboot the 4x1 Multiview Seamless Switcher. This option is the same as disconnecting and reconnecting the AC power cord, on the back of the switcher.

HD Video Wall Controller

03 Advanced Operation

RS-232 and IP Configuration

RS-232 Interface

5 4 3 2 1

6 7 8 9
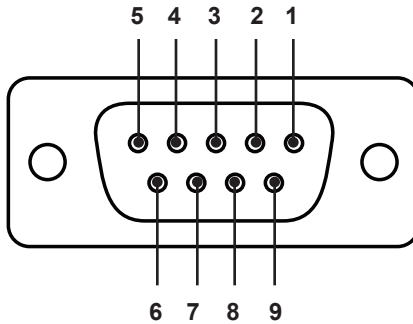
RS-232 Controller   HD Video Wall Controller

DCD	1		1	DCD
RXD	2		2	RXD
TXD	3		3	TXD
DTR	4		4	DTR
GND	5		5	GND
DSR	6		6	DSR
RTS	7		7	RTS
CTS	8		8	CTS
R1	9		9	R1
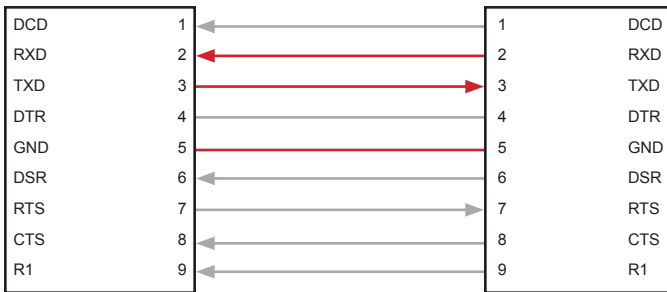
Only TXD, RXD, and GND pins are used.

RS-232 Settings

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

> **IMPORTANT:** When sending Telnet or RS-232 commands, a carriage return (0d) and a line feed (0a) must be included at the end of the command.

IP / UDP Configuration

The HD Video Wall Controller supports IP-based control using Telnet, UDP, or the built-in Web-based GUI. To set up IP control, the network settings for the HD Video Wall Controller must be configured using RS-232. The default network settings for the HD Video Wall Controller are as follows:

Description	IP Address / Port	Description	IP Address / Port
IP Address	192.168.1.72	UDP Port	23
Subnet	255.255.255.0	Remote UDP Port	50008
Gateway	192.168.1.254	Remote UDP IP	192.168.1.255
HTTP Port	80		

1.   Connect an RS-232 cable from the PC to the HD Video Wall Controller. Also make sure that an Ethernet cable is connected between the matrix and the network.

2.   Launch a terminal emulation program (e.g. HyperTerminal) and use the RS-232 settings listed on the previous page.

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

3.   Set the IP address for the matrix using the `#set_ipadd` command.

4.   Set the subnet mask using the `#set_netmask` command.

5.   Set the gateway (router) IP address using the `#set_gateway` command.

6.   Set the Telnet listening port using the `#set_telnet_port` command.

7.   Set the HTTP listening port using the `#set_http_port` command.

8.   Set the UDP remote IP address for the HD Video Wall Controller using the `#set_udp_remote_ip` command.

9.   Set the UDP listening port for the HD Video Wall Controller using the `#set_udp_port` command.

10.   Set the UDP remote port for the matrix using the `#set_udp_remote_port` command.

11.   Reboot the HD Video Wall Controller to apply all changes, then type the IP address that was specified in step 3, in a Web browser to access the Web GUI. Use the same IP address to Telnet to the HD Video Wall Controller.

Commands

Command	Description
`#display_telnet_welcome`	Enables or disables the Telnet welcome message
`#fadefault`	Resets the current routing and masking state to factory-default settings
`#help`	Displays the list of available commands
`#lock_edid`	Locks or unlocks the local EDID
`#mute`	Enables or disables audio muting on the output
`#power`	Toggles the power on the matrix
`#reboot`	Reboots the HD Video Wall Controller
`#set_bezel`	Enables or disables bezel correction
`#set_brightness`	Sets the brightness for the specified output
`#set_contrast`	Sets the contrast for the specified output
`#set_edid`	Assigns the specified EDID to an input or bank
`#set_gateway`	Sets the IP address of the (router) gateway
`#set_hbezel`	Sets the horizontal bezel correction value
`#set_http_port`	Sets the Web server listening port
`#set_hue`	Set the hue for the specified output
`#set_ipadd`	Sets the IP address
`#set_ipmode`	Sets the IP mode
`#set_netmask`	Sets the subnet mask
`#set_output`	Sets the output resolution
`#set_saturation`	Set the saturation for the specified output
`#set_telnet_pass`	Sets the Telnet password
`#set_telnet_port`	Sets the Telnet listening port
`#set_udp_port`	Sets the local UDP port
`#set_udp_remote_ip`	Sets the remote UDP IP address
`#set_udp_remote_port`	Sets the remote UDP port
`#set_vbezel`	Sets the vertical bezel correction value
`#show_bezel`	Displays the bezel correction state
`#show_brightness`	Displays the brightness value for the specified output
`#show_contrast`	Displays the contrast value for the specified output
`#show_gateway`	Displays the address of the (router) gateway
`#show_hbezel`	Displays the horizontal bezel value
`#show_http_port`	Displays the Web server listening port
`#show_hue`	Displays the hue value for the specified output
`#show_ip`	Displays the IP address
`#show_ipconfig`	Displays the current IP configuration

Command	Description
`#show_ipmode`	Displays the current IP mode (Static or DHCP)
`#show_lock_edid`	Displays the current EDID lock state
`#show_mac_addr`	Displays the MAC address
`#show_mute`	Displays the current audio muting state
`#show_netmask`	Displays the current net mask
`#show_output`	Displays the current output resolution
`#show_power`	Displays the current power state
`#show_saturation`	Displays the saturation value for the specified output
`#show_telnet_port`	Displays the Telnet listening port
`#show_tcp_access`	Displays the current TCP access state
`#show_udp_port`	Displays the local UDP port
`#show_udp_remote_ip`	Displays the local UDP port
`#show_udp_remote_port`	Displays the remote UDP port
`#set_vbezel`	Displays the vertical bezel value
`#show_ver_data`	Displays the current hardware and software version
`#use_udp_access`	Disables or enables UDP access
`#use_telnet_pass`	Enables or disables the password prompt for Telnet sessions
`#use_udp_access`	Enables or disables UDP access

#display_telnet_welcome

The #display_telnet_welcome command enables or disables the Telnet welcome message at the start of a Telnet session.

Syntax

```
#display_telnet_welcome param1
```

Parameters

param1   Value   [0 ... 1]

Value	Description
0	Disable welcome message
1	Enable welcome message

Example

```
#display_telnet_welcome 1

TELNET WELCOME SCREEN IS ENABLED
```

When enabled and a Telnet session has been started, the following will appear:

```
Welcome to EXT-HD-VWC-144 TELNET
```

#fadefault

The #fadefault command resets the matrix to factory-default settings. Outputs are unmasked and all IP and UDP settings are reset to default settings.

Syntax:

```
#fadefault
```

Parameters:

None

Example:

```
#fadefault
UNIT IS SET TO FACTORY DEFAULTS!!
EXT-HD-VWC-144 v1.17
IP: 192.168.1.72
Netmask: 255.255.255.0
Gateway: 192.168.1.1
```

#help

The `#help` command displays the list of available RS-232 / Telnet commands. Help on a specific command can be displayed when using `param1`.

Syntax

```
#help param1
```

Parameters

param1   Command name (optional)

Example

```
#help #sipadd

#SIPADD PARAM 1
SET THE IP ADDRESS
PARAM 1 = XXX.XXX.XXX.XXX
WHERE XXX: 0 - 255
```

#lock_edid

The `#lock_edid` command secures the Local EDID by disabling the automatic loading of the downstream EDID when the matrix is powered.

Syntax

```
#lock_edid param1
```

Parameters

param1   Value   [0 ... 1]

Value	Description
0	Disable
1	Enable

Example

```
#lock_edid 0
EDID IS UNLOCKED


#lock_edid 1
EDID IS LOCKED
```

`#mute`

The `#mute` command enables or disables audio muting on the outputs.

Syntax

```
#mute param1
```

Parameters

param1   Value   [0 ... 1]

Value	Description
0	Disable
1	Enable

Example

```
#mute 1
AUDIO IS MUTED


#mute 0
AUDIO IS UNMUTED
```

`#power`

The `#power` command toggles the power state of the HD Video Wall Controller.

Syntax

```
#power param1
```

Parameters

param1   Value   [0 ... 1]

Value	Description
0	Off
1	On

Examples

```
#power 0
POWER IS OFF
```

```
#power 1
POWER IS ON
```

#reboot

The #reboot command reboots the HD Video Wall Controller. Executing this command is the equivalent of disconnecting and reconnecting the AC power cord.

Syntax

#reboot

Parameters

None

Example

#reboot

---> EXT-HD-VWC-144 v1.8 NET <---

#set_bezel

The #set_bezel command enables or disables bezel correction.

Syntax

```
#set_bezel param1
```

Parameters

param1   Value   [0 ... 1]

Value	Description
0	Off
1	On

Example

```
#set_bezel 1
BEZEL CORRECTION MODE IS ON
```

#set_brightness

The `#set_brightness` command sets the brightness level of the video signal on the specified output. If *param1* = 0, then all outputs are set to the specified brightness level.

Syntax

```
#set_brightness param1 param2
```

Parameters

param1	Output	[0 ... 4]
param2	Level	[0 ... 100]

Examples

```
#set_brightness 1 65
OUTPUT 1 IS SET TO BRIGHTNESS VALUE 65
```

```
#set_brightness 0 50
ALL OUTPUTS SET TO BRIGHTNESS VALUE 50
```

#set_contrast

The #set_contrast command sets the contrast level of the video signal on the specified output. If *param1* = 0, then all outputs are set to the specified contrast level.

Syntax

```
#set_contrast param1 param2
```

Parameters

param1   Output   [0 ... 4]
param2   Level   [0 ... 100]

Examples

```
#set_contrast 2 74
OUTPUT 2 IS SET TO CONTRAST VALUE 74


#set_contrast 0 50
ALL OUTPUTS SET TO CONTRAST VALUE 50
```

#set_edid

The #set_edid command sets the specified EDID type to an input or bank.

Syntax

#set_edid param1 param2 param3 param4

Parameters

param1   Source   [STRING]

Source	Description
int	Uses default (Internal) EDID
bank	Uses EDID bank
output	Uses EDID on Output (sink)

param2   Source   [1 ... 8]

Source	Description
1 ... 4	1 = 720p / 2CH 2 = 720p / Multichannel 3 = 1080p / 2CH 4 = 1080p / Multichannel
1 ... 8	EDID bank
1 ... 4	Output

param3   Target   [STRING]

Target	Description
input	Specifies an input
bank	Specifies an EDID bank

param4   Target   [1 ... 8]

Value	Description
1	Input
1 ... 8	EDID bank

Examples

```
#set_edid int 2 input 4
INTERNAL EDID 2 IS SAVED TO INPUT4


#set_edid bank 3 bank 5
BANK EDID 3 IS SAVED TO BANK5
```

#set_gateway

The #set_gateway command sets the gateway address. The gateway must be typed using dot-decimal notation. The HD Video Wall Controller must be rebooted after executing this command. The default gateway is 192.168.1.1.

Syntax

```
#set_gateway param1
```

Parameters

param1   Gateway

Example

```
#set_gateway 192.168.1.5
GATEWAY : 192.168.1.11
```

`#set_hbezel`

The `#set_hbezel` command sets the horizontal bezel correction value.

Syntax

```
#set_hbezel param1
```

Parameters

param1   Value   [0 ... 254]

Example

```
#set_hbezel 13
HORIZONTAL BEZEL CORRECTION VALUE IS 13
```

Notes

The maximum horizontal bezel value will depend upon the output resolution. Refer to the table below for more information.

Resolution	H. Bezel (max.)	Resolution	H. Bezel (max.)
480p	60	1280 x 800	200
576i	68	1280 x 1024	248
720p50	220	1366 x 768	213
720p60	220	1440 x 900	232
1080p24	148	1600 x 900	96
1080p50	148	1600 x 1200	254
1080p60	148	1680 x 1050	254
1024 x 768	160	1920 x 1200	80

#set_http_port

The #set_http_port command specifies the Web server listening port. The default port setting is 80. The matrix must be rebooted after executing this command. Use the #show_http_port command to display the current HTTP listening port.

Syntax

#set_http_port param1

Parameters

param1   Port   [1 ... 1024]

Example

#set_http_port 82

HTTP COMMUNICATION PORT 82 IS SET. PLEASE REBOOT THE UNIT.

#set_hue

The `#set_hue` command sets the hue for the specified output. If *param1* = 0, then all outputs are set to the specified hue value.

Syntax

```
#set_hue param1
```

Parameters

param1   Value   [0 ... 100]

Example

```
#set_hue 1 30
OUTPUT 1 IS SET TO HUE VALUE 30


#set_hue 0 45
ALL OUTPUTS SET TO HUE VALUE 45
```

#set_ipadd

The `#set_ipadd` command sets the IP address of the HD Video Wall Controller. The IP address must be entered using dot-decimal notation. The HD Video Wall Controller must be rebooted after executing this command. The default IP address is `192.168.1.72`. Use the **##** command to display the current IP address of the HD Video Wall Controller.

Syntax

```
#set_ipadd param1
```

Parameters

param1   IP address

Example

```
#set_ipadd 192.168.1.190
IP ADDRESS : 192.168.1.190
```

#set_ipmode

The #set_ipmode command sets the IP mode to Static or DHCP.

Syntax

#set_ipmode param1

Parameters

param1   Value   [0 ... 1]

Value	Description
0	Static
1	DHCP

Example

#set_ipmode 1

IP MODE SET TO DHCP

page | 69

#set_netmask

The #set_netmask command sets the subnet mask. The subnet mask must be entered using dot-decimal notation. The HD Video Wall Controller must be rebooted after executing this command. The default subnet mask is 255.255.255.0. Use the ## or the ## command to display the current net mask of the HD Video Wall Controller.

Syntax

#set_netmask param1

Parameters

param1   Subnet mask

Example

#set_netmask 255.255.255.0
NETMASK : 255.255.255.0

#set_output

The `#set_output` command sets the output resolution. The specified output resolution is applied to all outputs.

Syntax

```
#set_output param1
```

Parameters

param1   Value   [0 ... 16]

Value	Description
0	480p
1	576p
2	720p @ 50 Hz
3	720p @ 60 Hz
4	1080p @ 24 Hz
5	1080p @ 50 Hz
6	1080p @ 60 Hz
7	1024 x 768
8	1280 x 800
9	1280 x 1024
10	1366 x 768
11	1440 x 900
12	1600 x 900
13	1600 x 1200
14	1680 x 1050
15	1920 x 1200
16	Native

Example

```
#set_output 3

OUTPUT RESOLUTION IS SET TO  1280x720p 60Hz
```

#set_saturation

The #set_saturation command sets the color saturation level for the specified output.
If *param1* = 0, then all outputs are set to the specified color saturation level.

Syntax

```
#set_saturation param1 param2
```

Parameters

param1	Output	[0 ... 4]
param2	Level	[0 ... 100]

Examples

```
#set_saturation 3 65
OUTPUT 3 IS SET TO SATURATION VALUE 65

#set_saturation 0 50
ALL OUTPUTS SET TO SATURATION VALUE 50
```

#set_telnet_pass

The `#set_telnet_pass` command sets the Telnet password. The password cannot exceed 10 characters in length.

Syntax

```
#set_telnet_pass param1
```

Parameters

param1   Password   [STRING]

Example

```
#set_telnet_pass bossman
TELNET INTERFACE PASSWORD IS SET
```

#set_telnet_port

The `#set_telnet_port` command sets the Telnet listening port. The default port setting is `23`. The HD Video Wall Controller must be rebooted after executing this command. Use the `#show_telnet_port` command to display the current Telnet listening port.

Syntax

```
#set_telnet_port param1
```

Parameters

param1   Port   [1 ... 1024]

Example

```
#set_telnet_port 24

TELNET COMMUNCATION PORT 24 IS SET. PLEASE REBOOT THE UNIT.
```

#set_udp_port

The #set_udp_port command sets the local UDP server listening port. The default port setting is 21. The matrix must be rebooted after executing this command. Use the #show_udp_port command to display the current local UDP listening port.

Syntax

```
#set_udp_port param1
```

Parameters

param1   Port   [1 ... 65535]

Example

```
#set_udp_port 56

UDP COMMUNICATION PORT 56 IS SET.
```

#set_udp_remote_ip

The #set_udp_remote_ip command sets the remote UDP IP address. The default UDP remote IP address is 192.168.1.255. The IP address must be specified using dot-decimal notation. The HD Video Wall Controller must be rebooted after executing this command.

Syntax

```
#set_udp_remote_ip param1
```

Parameters

param1   UDP address

Example

```
#set_udp_remote_ip 192.168.1.227

REMOTE UDP IP ADDRESS 192.168.1.227 IS SET.
```

page | 75

#set_udp_remote_port

The #set_udp_remote_port command sets the remote UDP listening port. The default remote UDP listening port is 50008. The HD Video Wall Controller must be rebooted after executing this command.

Syntax

#set_udp_remote_port param1

Parameters

param1   Port   [1 ... 65535]

Example

#set_udp_remote_port 50008

REMOTE UDP COMMUNICATION PORT 50008 IS SET.

#set_vbezel

The #set_vbezel command sets the vertical bezel correction value.

Syntax

```
#set_vbezel param1
```

Parameters

param1   Value   [0 ... 23]

Example

```
#set_vbezel 10
VERTICAL BEZEL CORRECTION VALUE IS 10
```

Notes

The maximum vertical bezel value will depend upon the output resolution. Refer to the table below for more information.

Resolution	V. Bezel (max.)	Resolution	V. Bezel (max.)
480p	40	1280 x 800	16
576i	34	1280 x 1024	35
720p50	15	1366 x 768	21
720p60	15	1440 x 900	19
1080p24	31	1600 x 900	93
1080p50	31	1600 x 1200	43
1080p60	31	1680 x 1050	24
1024 x 768	23	1920 x 1200	20

#show_bezel

The #show_bezel command displays the current bezel correction state.

Syntax

```
#show_bezel
```

Parameters

None

Example

```
#show_bezel

BEZEL CORRECTION MODE IS ON
```

#show_brightness

The #show_brightness command displays the brightness level for the specified output.

Syntax

```
#show_brightness param1
```

Parameters

param1   Output

Example

```
#show_brightness 2
OUTPUT 2 IS SET TO BRIGHTNESS VALUE 50
```

#show_contrast

The #show_contrast command displays the contrast level for the specified output.

Syntax

```
#show_contrast param1
```

Parameters

param1   Output

Example

```
#show_contrast 2
num=2
OUTPUT 2 IS SET TO CONTRAST VALUE 50
```

#show_gateway

The #show_gateway command displays the current gateway address of the HD Video Wall Controller. Use the #sgateway command to set the gateway address.

Syntax

```
#show_gateway
```

Parameters

None

Example

```
#show_gateway
GATEWAY ADDRESS IS: 192.168.1.5
```

#show_hbezel

The #show_hbezel command displays the horizontal bezel value. Use the #set_hbezel command to set the horizontal bezel value.

Syntax

```
#show_hbezel
```

Parameters

None

Example

```
#show_hbezel
HORIZONTAL BEZEL CORRECTION VALUE IS 13
```

#show_http_port

The #show_http_port command displays the current HTTP listening port of the HD Video Wall Controller. Use the #set_http_port command to set the HTTP listening port.

Syntax

```
#show_http_port
```

Parameters

None

Example

```
#show_http_port

HTTP COMMUNICATION PORT IS: 82
```

#show_hue

The #show_hue command displays the hue for the specified output.

Syntax

```
#show_hue param1
```

Parameters

param1   Output

Example

```
#show_hue 1
OUTPUT 1 IS SET TO HUE VALUE 45
```

#show_ip

The #show_ip command displays the current IP address of the matrix. Use the #sipadd command to set the IP address.

Syntax

```
#show_ip
```

Parameters

None

Example

```
#show_ip

IP ADDRESS IS: 192.168.1.239
```

#show_ipconfig

The `#show_ipconfig` command displays the current TCP/IP settings.

Syntax

```
#show_ipconfig
```

Parameters

None

Example

```
#show_ipconfig
IP CONFIGURATION IS :
IP: 192.168.2.84
NETMASK: 255.255.255.0
GATEWAY: 192.168.2.1
MAC ADDRESS: 00:1c:91:03:b0:19
```

#show_ipmode

The `#show_ipmode` command displays the current IP mode. To set the IP mode, use the `#set_ipmode` command.

Syntax

```
#show_ipmode
```

Parameters

None

Example

```
#show_ipmode
IP MODE SET TO DHCP
```

#show_lock_edid

The #show_lock_edid command displays the current EDID lock state. Use the #lock_edid command to lock or unlock the EDID.

Syntax

```
#show_lock_edid
```

Parameters

None

Example

```
#show_lock_edid
EDID IS UNLOCKED
```

#show_mac_addr

The #show_mac_addr command displays the MAC address of the HD Video Wall Controller.

Syntax

```
#show_mac_addr
```

Parameters

None

Example

```
#show_mac_addr
MAC ADDRESS IS: 00:1c:91:03:b0:19
```

#show_mute

The #show_mute command displays the current audio muting state. Use the #mute command to enable or disable audio muting.

Syntax

```
#show_mute
```

Parameters

None

Example

```
#show_mute

AUDIO IS UNMUTE
```

#show_netmask

The #show_netmask command displays the current net mask of the HD Video Wall Controller. Use the #snetmask command to set the net mask.

Syntax

```
#show_netmask
```

Parameters

None

Example

```
#show_netmask

NETMASK ADDRESS IS: 255.255.255.0
```

`#show_output`

The `#show_output` command displays the current output resolution. Use the `#set_output` command to set the output resolution.

Syntax

`#show_output`

Parameters

None

Example

```
#show_output

OUTPUT RESOLUTION IS SET TO: 1280x720p 60Hz
```

`#show_power`

The `#show_power` command displays the current power state. Use the `#power` command to set the power state (ON or OFF).

Syntax

`#show_power`

Parameters

None

Example

```
#show_power
POWER IS ON
```

#show_saturation

The `#show_saturation` command displays the saturation for the specified output.
Use the `#set_saturation` command to set the output resolution.

Syntax

```
#show_saturation param1
```

Parameters

param1   Output

Example

```
#show_saturation 2
OUTPUT 2 IS SET TO SATURATION VALUE 50
```

#show_telnet_port

The `#show_telnet_port` command displays the current Telnet port. Use the
`#set_telnet_port` command to set the Telnet port.

Syntax

```
#show_telnet_port
```

Parameters

None

Example

```
#show_telnet_port
TELNET COMMUNICATION PORT IS: 23
```

#show_tcp_access

The #show_tcp_access command displays the current TCP access state. Use the #use_tcp_access command to enable or disable TCP access.

Syntax

#show_saturation param1

Parameters

param1   Output

Example

#show_saturation 2
OUTPUT 2 IS SET TO SATURATION VALUE 50

#show_udp_port

The #show_udp_port command displays the current remote UDP port. Use the #set_udp_port command to set the remote UDP port.

Syntax

#show_udp_port

Parameters

None

Example

#show_udp_port
REMOTE UDP COMMUNICATION PORT IS: 56

#show_udp_remote_ip

The `#show_udp_remote_ip` command displays the current remote UDP address. Use the `#set_udp_remote_ip` command to set the remote UDP address.

Syntax

```
#show_udp_remote_ip
```

Parameters

None

Example

```
#show_udp_remote_ip
UDP REMOTE ADDRESS IS: 192.168.1.17
```

#show_udp_remote_port

The `#show_udp_remote_port` command displays the current remote UDP port. Use the `#set_udp_remote_port` command to set the remote UDP port.

Syntax

```
#show_udp_remote_port
```

Parameters

None

Example

```
#show_udp_remote_port
REMOTE UDP COMMUNICATION PORT IS: 56
```

#show_vbezel

The #show_vbezel command displays the current vertical bezel correction value.
Use the #set_vbezel command to set the vertical bezel correction value.

Syntax

```
#show_vbezel
```

Parameters

None

Example

```
#show_vbezel
VERTICAL BEZEL CORRECTION VALUE IS 10
```

#show_ver_data

The #show_ver_data command displays the current software and hardware version.

Syntax

```
#show_ver_data
```

Parameters

None

Example

```
#show_ver_data

SOFTWARE AND HARDWARE VERSION: v1.8
```

#use_tcp_access

The `#use_tcp_access` command enables or disables TCP access. Use the #show_tcp_ access command to display the current TCP access state.

Syntax

```
#sipadd param1
```


Parameters

param1   IP address

Example

```
#sipadd 192.168.2.190

IP ADDRESS 192.168.2.190 IS SET.
```

#use_telnet_pass

The #use_telnet_pass command forces the password credentials for each Telnet session. The default setting is 0 (disabled). Use the #set_telnet_pass command to set the Telnet password.

Syntax

```
#use_telnet_pass param1
```

Parameters

param1   Value   [0 ... 1]

Value	Description
0	Disable password
1	Enable password

Examples

```
#use_telnet_pass 1
TELNET INTERACE PASSWORD IS ENABLED


#use_telnet_pass 0
TELNET INTERACE PASSWORD IS DISABLED
```

#use_udp_access

The #use_udp_access command enables or disables UDP access mode.

Syntax:

#use_udp_access param1

Parameters:

param1   Value   [0 ... 1]

Value	Description
0	Disable UDP
1	Enable UDP

Example:

#use_udp_access 1

UDP ACCESS IS ENABLE

Web Interface

Using the built-in Web Interface

Access the built-in Web interface by entering the IP address of the HD Video Wall Controller that was specified in step 3 under IP / UDP Configuration.

The Web interface is divided into four pages: **Video**, **EDID**, **Network**, and **System**. Each page is represented by a tab at the top-most portion of the screen. Some of the pages (**Video**, **EDID**, and **Network)** have a set of sub-tabs which provide additional functionality. Click on the desired tab / sub-tab to open the desired page.

Video ► I/O Setup
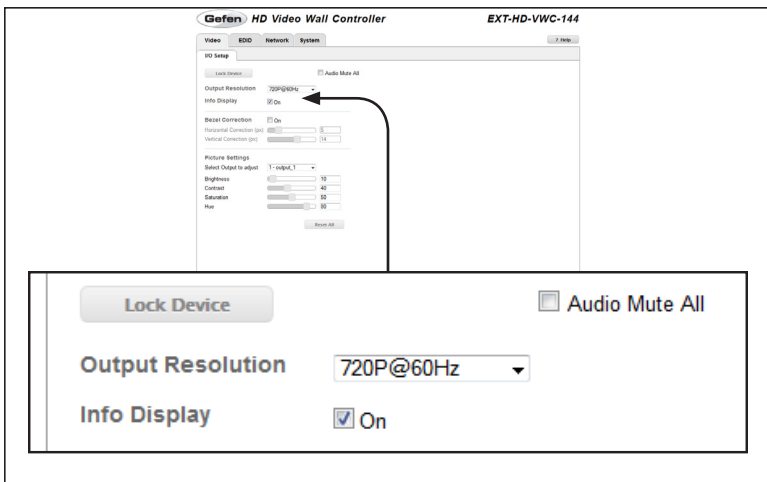
Lock Device
This feature will be available in a future release of the software.

Audio Mute All
Click this check box to enable audio muting on all outputs. When enabled, the message "Audio is muted" will be displayed. Click the check box again to disable audio muting. The factory-default setting is *disabled*.
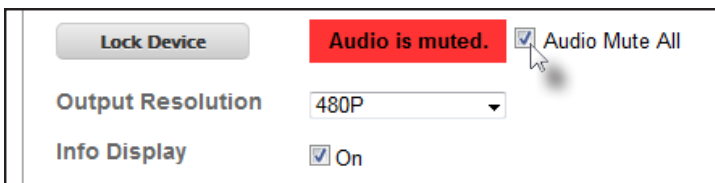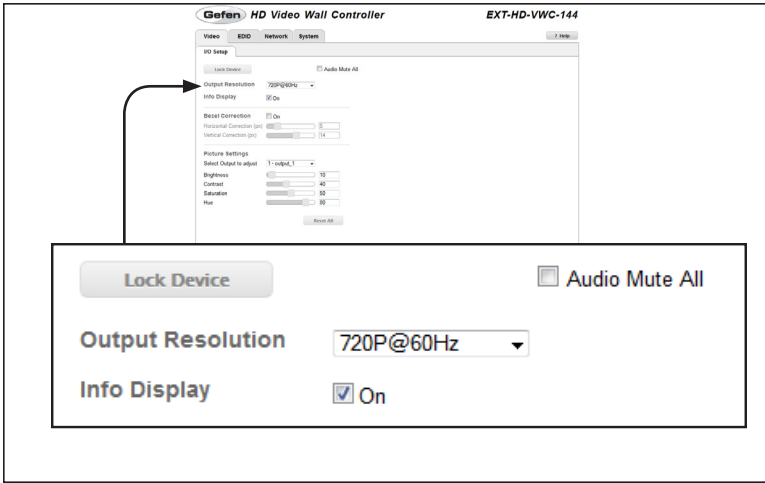
Output Resolution
Select the desired output resolution from the drop-down list. The following output resolutions are available:

Options	
480p	1280 x 1024
576p	1366 x 768
720p @ 50 Hz	1440 x 900
720p @ 60 Hz	1600 x 900
1080p @ 24 Hz	1600 x 1200
1080p @ 50 Hz	1680 x 1050
1080p @ 60 Hz	1920 x 1200
1024 x 768	Native (Output 1)
1280 x 800	

Help
Click the button to receive context-sensitive help for the features on the selected page.

Context-sensitive help for the **Video > I/O Setup** *page:*

Info Display
Place a check mark in this check box to enable notifications to the outputs.
Click this check box to remove the check mark and disable notifications.
The factory-default setting is *enabled*.
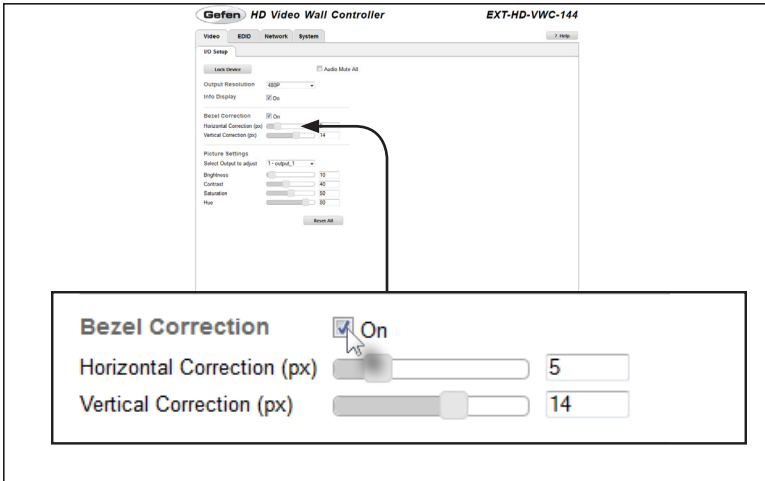
Bezel Correction

Place a check mark in this check box to enable bezel correction. When enabled, the HD Video Wall Controller will use the specified horizontal and vertical values. By default, Bezel Correction is *disabled*.

Options	Range
Horizontal Correction	`0 ... 23`
Vertical Correction	`0 ... 23`

Bezel correction is necessary to compensate for the bezel-thickness of each display. Without adjustment, the picture will appear distorted.

The example, below, is using bezel correction to ensure that each portion of the image is properly and evenly distributed between the four displays.

page | 96
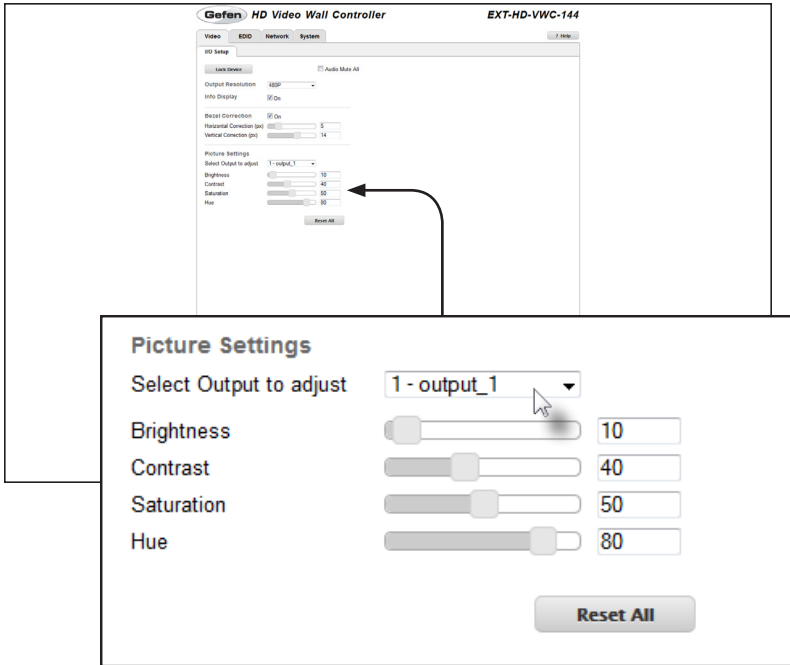
Select Output to adjust

Select the desired output, to adjust, from the drop-down list.
Brightness, Contrast, Saturation, and Hue can be independently adjusted for each of the four outputs.

Picture Settings	Range
Brightness	`0 ... 100`
Contrast	`0 ... 100`
Saturation	`0 ... 100`
Hue	`0 ... 100`

Reset All

Click this button to reset all I/O settings to their factory-default settings.

EDID ► Assign

Lock EDID
This feature will be available in a future release of the software.

Copy EDID From
Select the EDID from the drop-down list. The selected EDID will be copied to the
EDID specified under the Inputs or Banks section.

Options
720p 2 ch audio
720p Multi ch
1080p 2 ch audio
1080p Multi ch
Bank 1 ... Bank 8
Output_1 ... Output_4

Copy EDID To (Inputs)
Place a check mark in this check box to copy the EDID from the "Copy EDID From" drop-down list to the input.

Options
Internal - 720p 2 ch audio
Internal - 720p Multi ch
Internal - 1080p 2 ch audio
Internal - 1080p Multi ch
External - Output
Custom - User

Copy EDID To (Banks)
Place a check mark in the desired check box to select or deselect the desired
EDID bank(s).
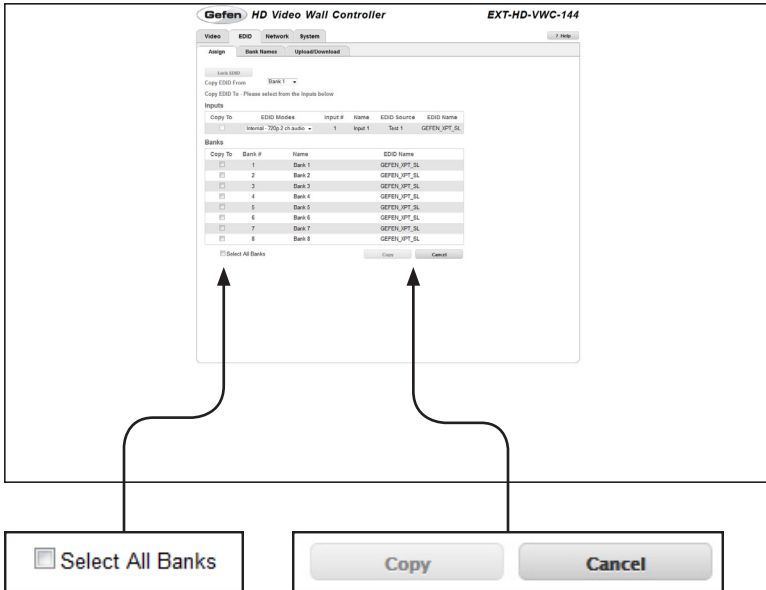
Select All Banks
Place a check mark in the check box to select all EDID banks. Remove the check mark to deselect all EDID banks.

Copy
Click this button to perform the EDID copy operation.

Cancel
Cancels the current operation and ignores changes for each input, if a change was made.

EDID ► Bank Names

Bank #
Indicates the EDID bank number.

Name
Type the desired name of the EDID bank in this field.

Save
Saves the current name change to the EDID bank(s).

Cancel
Cancels the naming operation and restores the previous names for each EDID bank.

EDID ► Upload / Download
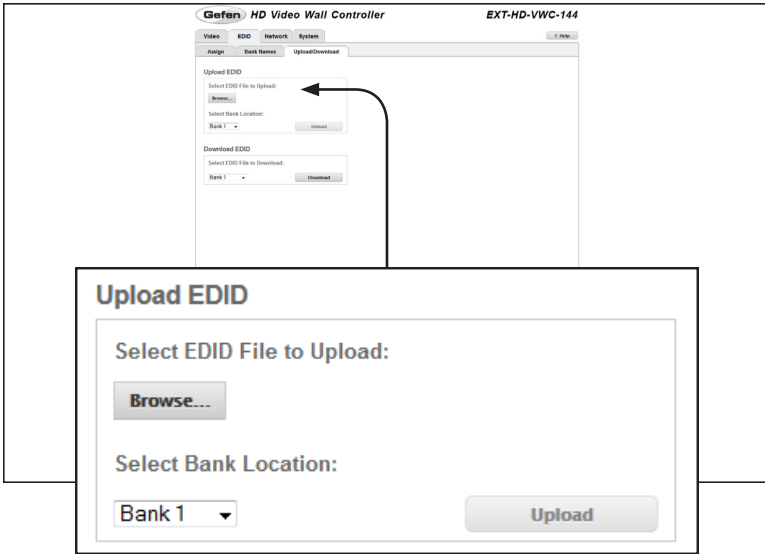
Browse...
Click this button to select the EDID file to be uploaded.

Select Bank Location
Click this drop-down list to select the bank to where the EDID will be uploaded.

Options
Bank 1 ... Bank 8

Upload
Click this button to upload the EDID to the specified bank.

Select EDID File to Download
Click this drop-down list to select the bank to where the EDID will be uploaded.

Options
Bank 1 ... Bank 8
A - out0Name ... D - out3Name
1 - inputname

Download
Click this button to download the selected EDID to a file.

Network

MAC Address
Displays the MAC address of the HD Video Wall Controller. The MAC address
cannot be changed.

Mode
Click this drop-down list to select the IP mode. The IP mode must be set to Static
in order to make changes to the IP Address, Subnet, and Gateway.

Options
DHCP
Static

IP Address
Enter the IP address in this field.

Subnet
Enter the subnet mask address in this
field.

Gateway
Enter the gateway address in this
field.

HTTP Port
Enter the HTTP listening port in this
field.

Set Defaults
Click this button to restore the factory-default IP settings. After clicking this
button, the Web interface will display a dialog indicating that the HD Video Wall
Controller must be rebooted for changes to take effect.

Save
Saves the current IP settings. After clicking this button, the Web interface will
display a dialog indicating that the HD Video Wall Controller must be rebooted for
changes to take effect.

Enable TCP Access
Place a check mark in the check box to enable Telnet access.

Require Password on Connect
Place a check mark in the check box to force the HD Video Wall Controller to prompt for a password each time a Telnet session is started. This box *must* be checked in order to change the Telnet user name and password.

User Name
Type the user name in this field.

Old Password
Type the current (old) password in this field.

New Password
Type the new password in this field.

Confirm New Password
Confirm the password change by retyping the new password in this field.

Terminal Port
Enter the Telnet listening port in this field.

Save
Saves the current changes to the TCP / Telnet Settings.

Enable UDP Access
Place a check mark in the check box to enable UDP access.

UDP Port
Enter the UDP port in this field.

Enable Remote UDP Access
Place a check mark in the check box to enable remote UDP access.

Remote UDP IP Address
Type the remote UDP IP address in this field.

Remote UDP Port
Type the remote UDP port in this field.

Save
Saves the current changes to the UDP Settings.

System

Download
This feature will be available in a future release of the software.
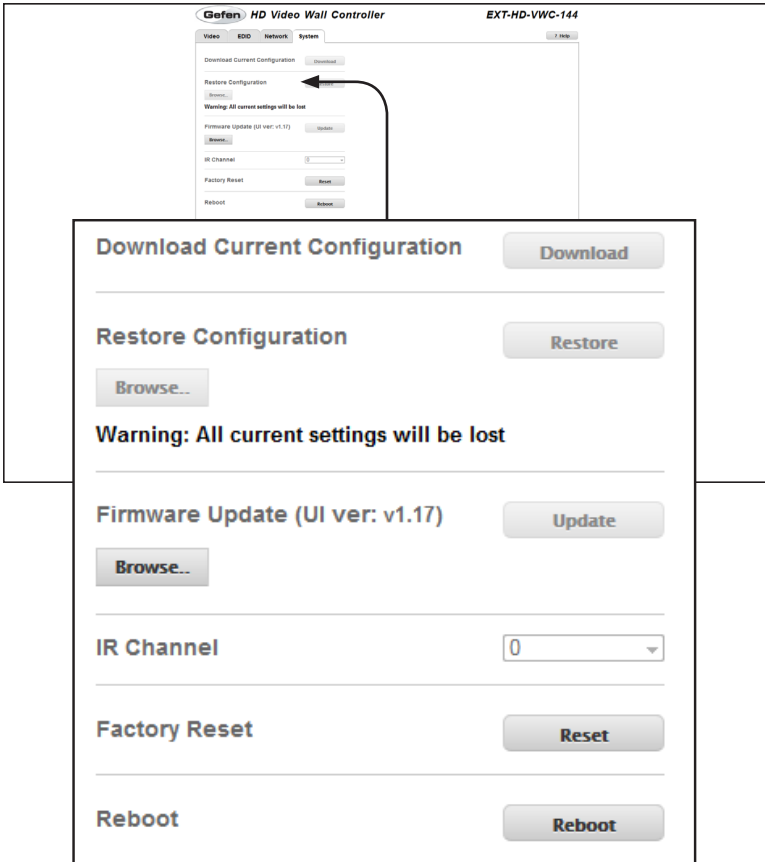
Browse... (Restore Configuration)
This feature will be available in a future release of the software.

Restore
This feature will be available in a future release of the software.

Browse... (Firmware Update)
This feature will be available in a future release of the software.

IR Channel
This feature will be available in a future release of the software.

Reset
Click this button to set the matrix to factory-default settings. The IP settings are preserved.

Reboot
Click this button to reboot the matrix.

HD Video Wall Controller

04 Appendix

Upgrading the Firmware

Using the Web Interface

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

1. Download the firmware update from the Support section of the Gefen Web site.

2. Extract the firmware file from the .ZIP file.

3. Power-ON the HD Video Wall Controller.

4. Connect an Ethernet cable between the matrix and the computer running the Web interface.

   It is unnecessary to disconnect any cables or extenders from the HD Video Wall Controller during the update process.

5. Click the **Configuration** tab in the Web interface and click the **Browse...** button under the **System Configuration** section.

6. Select the firmware file and click the **Update** button.

7. The matrix will display a prompt to verify that the current firmware will be overwritten. Click the **OK** button on the dialog box to begin uploading the firmware file.

8. The HD Video Wall Controller will begin the upgrade process. This process will take several minutes. The upgrade process may be monitored using the RS-232 interface.

9. After the HD Video Wall Controller has been updated, the unit will automatically reboot.

10. After the HD Video Wall Controller reboots, the firmware upgrade process will be complete.

Using the USB Interface

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

1. Download the firmware update from the Support section of the Gefen Web site.

2. Power-ON the HD Video Wall Controller.

Connect a USB cable between the computer and the HD Video Wall Controller.

It is unnecessary to disconnect any cables or extenders from the HD Video Wall Controller during the update process.

3. Once the computer is able to connect to the HD Video Wall Controller, a removable-disk icon will be displayed under My Computer.

4. Extract the firmware file from the .ZIP file and drag the .bin file to the Removable Disk.

5. Disconnect the USB cable from the computer.

6. After the HD Video Wall Controller has been updated, the unit will automatically reboot.

7. After the HD Video Wall Controller reboots, the firmware upgrade process will be complete.

Specifications

Supported Formats	
Resolutions (max.)	• 1080p Full HD • 1920 x 1200 (WUXGA)

Electrical	
Maximum Pixel Clock	• 225 MHz
Menu Button	• 1 x Tact-type
Menu Navigation Buttons	• 5 x Tact-type
Power Button	• 1 x Tact-type
Power Indicator	• 1 x LED, multi-color (red / blue)

Connectors	
Video Input	• 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, shielded
USB (Service only)	• 1 x Mini-USB

Operational	
Power Input (Sender / Receiver)	• 1 x 12V DC, locking
Power Consumption (Sender / Receiver)	• 24W (max.)

Physical	
Dimensions (W x H x D) (Sender / Receiver)	• 16.9" x 1.7" x 7.9" (430mm x 43mm x 200mm)
Unit Weight	• 4.8 lbs (2.18 kg)

EXT-HD-VWC-144
Gefen

IR Ext   HDMI In   Out 1 Out 2 Out 3 Out 4   IP Cont. USB   RS-232   12V DC

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www.gefen.com   support@gefen.com

This product uses UL or CE listed power supplies.