CDPS-U42HPIP

4K UHD⁺ 4×2 HDMI Multiviewer

HDMI®

HIGH-DEFINITION MULTIMEDIA INTERFACE

SAFETY PRECAUTIONS

Please read all instructions before attempting to unpack, install or operate this equipment and before connecting the power supply. Please keep the following in mind as you unpack and install this equipment:

- Always follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.

- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.

- Never spill liquid of any kind on or into this product.

- Never push an object of any kind into this product through any openings or empty slots in the unit, as you may damage parts inside the unit.

- Do not attach the power supply cabling to building surfaces.

- Use only the supplied power supply unit (PSU). Do not use the PSU if it is damaged.

- Do not allow anything to rest on the power cabling or allow any weight to be placed upon it or any person walk on it.

- To protect the unit from overheating, do not block any vents or openings in the unit housing that provide ventilation and allow for sufficient space for air to circulate around the unit.

- Please completely disconnect the power when the unit is not in use to avoid wasting electricity.

VERSION HISTORY

REV.	DATE	SUMMARY OF CHANGE
VS1	17/01/18	Final technical review
VS2	25/01/18	Page number correction
VS3	25/07/18	Added section 8.2.2
VS4	27/09/18	Updated Section 6.6, 6.7.3 (Matrix Mode)

CONTENTS

1. INTRODUCTION

This 4 by 2 Multiviewer is a high performance HDMI switch with integrated scaling and multi-windowing technology. It is an ideal solution for monitoring or displaying multiple sources simultaneously for use in control rooms, conference rooms or classrooms. Video resolutions up to 4K@60Hz and LPCM audio up to 7.1 channels at 192kHz are supported on both input and output and this unit is fully compatible with the HDCP 1.x and 2.2 standards.

Any of 4 different HDMI sources may be displayed individually, full screen, or they can be displayed using a variety of multi-window modes including quad view and PiP with the output being sent to 2 mirrored HDMI outputs (4K@50/60Hz output supports quad view and full screen only). Management of input/window routing, position and sizing can be controlled easily by use of the front panel controls as well as by WebGUI, RS-232, Telnet, and IR remote control options.

2. APPLICATIONS

- Entertainment Room & Home Theater
- Show Room & Demo Room
- Lecture Room & Hall Presentation
- Public Commercial Display

3. PACKAGE CONTENTS

- 1×4 by 2 HDMI Multiviewer
- 1×12V/3A DC Power Adapter
- 2×5-pin Terminal Block
- 1×Remote Control (CR-180)
- 1×Rackmount Ears (Set of 2)
- 1×Operation Manual

4. SYSTEM REQUIREMENTS

- HDMI source equipment such as media players, video game consoles or set-top boxes.
- HDMI receiving equipment such as HDTVs, monitors or audio amplifiers.

5. FEATURES

- HDMI inputs and outputs with 18Gbps (600MHz) 4K UHD support
- DVI 1.0 compatible with the use of an HDMI-DVI adaptor
- HDCP 1.x and 2.2 compliant
- Supports HD resolutions up to 4K@60Hz (4:4:4, 8-bit)
- 4 HDMI inputs and 2 mirrored HDMI outputs
- Seamless switching (no loss of sync to display) when switching sources in both full screen and multi-window modes
- Supports PiP (Picture-in-Picture), side by side, 3+1 quad view, and 2×2 quad view display options with independent audio source selection

  Note: 4K@50/60Hz output supports 2×2 Quad View only and is limited to 1080p/4K sources.
- Supports the ability to store a multi-window arrangement as a preset that can be recalled later
- Each window can have a border with a selectable color
- Uploadable and freely positioned graphic logo support

  Note: The logo and border features are not available when the output is set to 4K@50/60Hz.
- Supports easy adjustment of window size, position and settings in the PiP windowing mode via the WebGUI
- Matrix mode supports input and output resolutions up to 1080p@60Hz with a single shared audio source (Outputs are mirrored at higher resolutions)
- Controllable via front panel buttons, WebGUI, Telnet, RS-232, and IR remote

6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel
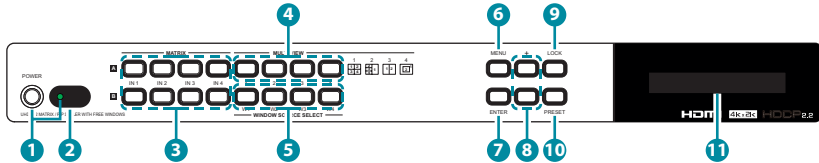
1 **POWER:** Press this button to power the unit on (green LED) or place it into stand-by mode (red LED).

2 **IR WINDOW:** Accepts IR signals from the included IR remote for control of this unit only.

3 **MATRIX A/B IN1~IN4:** These input selection buttons behave differently depending on the current input and output resolutions in use.

A **All inputs and outputs are below 4K:** Press any of these buttons to seamlessly switch to the selected input (IN1~IN4)for display on the associated output (A or B).

B **Any input or output is 4K:** Press any of these buttons to seamlessly switch to the selected input (IN1~IN4) for display on both outputs simultaneously.

Note: Audio for both outputs will follow the most recently selected input (from A or B) in both modes.

4 **MULTIVIEW:** Press any of these buttons to switch immediately to the corresponding Multiview output mode.

5 **WINDOW SOURCE SELECT:** Press these buttons to sequentially switch through the available inputs for each window in Multiview output modes.

6 **MENU:** Press to enter the LCD menu, or to back out from menu Items.

7 **ENTER:** Press to confirm a selection within the LCD menu or to go deeper into a menu item.

8 **+ & −:** Press to move up and down or adjust selections within menus.

9 **LOCK:** Press to lock all button functions on the front panel. Press the button again to release the lock function. The LCD will display a "Lock" message when the function is active.

10 **PRESET:** Press this button to switch between the "Preset Load" and "Preset Save" modes. Pressing the button a 3rd time exits the Preset menu.

A **Preset Save:** When in "Preset Save" mode, pressing the "Enter" button will save the currently displayed window layout.

B **Preset Load:** When in the "Preset Load" mode, pressing the "Enter" button will load the previously saved window layout.

Note: The audio selection is not saved as a part of the preset, only the window layout.

11 **LCD WINDOW:** Displays the unit's menu, settings, and information.

6.2 Rear Panel
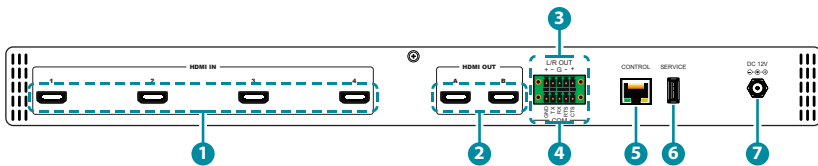
1 **HDMI IN 1~4:** Connect to HDMI source equipment such as media players, game consoles or set-top boxes. DVI source equipment may be connected by using an HDMI to DVI adapter.

2 **HDMI OUT A~B:** Connect to HDMI TVs, monitors or amplifiers for digital video and audio output. DVI display equipment may be connected by using HDMI to DVI adapter.

3 **L/R OUT:** Connect to powered speakers or an amplifier using a 5-pin adapter cable for balanced stereo analog audio output.

Note: Only LPCM 2.0 sources are supported. Bitstream audio sources will be muted automatically.

4 **COM:** Connect directly to a PC, laptop or other serial control device with a 3-pin adapter cable to send RS-232 commands to control the unit.

5 **CONTROL:** Connect directly, or through a network switch, to your PC/ laptop to control the unit via Telnet/WebGUI.

**6** **SERVICE:** This slot is reserved for firmware update use only.

7 **DC 12V:** Plug the 12V DC power adapter into the unit and connect it to an AC wall outlet for power.

6.3 Remote Control

1 POWER: Power on the machine or enter to standby mode.

2 INFO: Display the current status/ information of the unit.

3 A1~A4 & B1~B4: (Matrix Selection)

A When all inputs and outputs are below 4K: Press any of these buttons to seamlessly switch to the selected input (1~4) for display on the associated output (A or B).

B When any input or output is 4K: Press any of these buttons to seamlessly switch to the selected input (1~4) for display on both outputs simultaneously.

Note: Audio for both outputs will follow the most recently selected input (from A or B) in both modes.

4 MV1~MV4: (Multiview Selection) Press these buttons to switch immediately to the corresponding Multiview output mode.

MV1: Switch to 2×2 quad view mode.

MV2: Switch to the 3+1 quad view mode.

MV3: Switch to the side-by-side view mode

MV4: Switch to PiP view mode.

5 MATRIX/MULTIVIEW: Press to toggle between the Matrix and Multiview modes.

6 LOCK: Press to lock all button functions on the front panel. Press the button again to release the lock function.

7 ARROWS (▲/▼/◄/►) & OK: Press the arrow buttons to navigate the LCD menu. Press the "OK" button to confirm a selection or to go deeper into a menu item.

8 MENU: Press to enter the LCD menu.

9 EXIT: Press to exit out of the current LCD menu item.

10 W1~W4: (Window Source Selection) Press these buttons to sequentially switch through the available inputs for each window (1~4) in Multiview output modes.
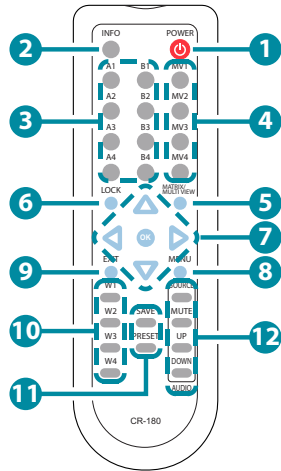
11 **SAVE:** Pressing this button will save the currently displayed window layout.

PRESET: Pressing this button will load the previously saved window layout.

12 **SOURCE:** Press this button to sequentially switch through the available audio sources.

MUTE: Press to toggle between muting and unmuting the audio output.

UP: Press this button to increase the audio output volume.

DOWN: Press this button to decrease the audio output volume.

Note: The volume controls only affect the analog audio output.

6.4 RS-232 Control

UNIT	
Pin	**Pinout**
1	GND
2	TX
3	RX
4	RTS
5	CTS

TERMINAL	
Pin	**Pinout**
1	
2	RxD
3	TxD
4	
5	GND
6	
7	
8	
9	

SERIAL PORT SETTINGS	
Baud Rate	19200
Data Bits	8
Parity Bits	None
Stop Bits	1
Flow Control	None

6.5 Telnet Control

Before attempting to use Telnet control, please ensure that both the unit and the PC are connected to the same active networks.

To Access the Command Line Interface (CLI)	
Windows 7	Click **Start**, type "cmd" in the search field, and press **Enter**.
Windows XP	Click **Start** > **Run**, type "cmd", and press **Enter**.
Mac OS X	Click **Go** > **Applications** > **Utilities** > **Terminal**.

Once in the Command Line Interface (CLI) type "**telnet**" followed by the IP address of the unit (and the port number if it is non-standard) and then hit "Enter". This will connect us to the unit we wish to control. Type "**help**" to list the available commands. See below for reference.

```
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation.  All rights reserved.

C:\Users\Administrator>telnet 192.168.1.50 23
```

Note: If the IP address is changed then the IP address required for Telnet access will also change accordingly.

6.6 RS-232 and Telnet Commands

6.6.1 Basic Commands	
COMMAND	
DESCRIPTION	**VARIABLES**
HELP↵	
Show the full command list.	
?↵	
Show the full command list.	
GET FW VER↵	
Show the current firmware version.	
GET MODEL NAME↵	
Show the model name.	
GET MODEL TYPE↵	
Show the model type.	

6.6.1 Basic Commands	
COMMAND	
DESCRIPTION	**VARIABLES**
SET FACTORY DEFAULT↵	
Reset the unit to its factory defaults.	
SET POWER **N1**↵	
Turn the unit on or off (standby).	Available values for **N1**: ON [Power on] STANDBY [Standby mode]
GET POWER↵	
Show the current power state.	
SET SYSTEM REBOOT↵	
Reboot the unit.	
SET KEYLOCK **N1**↵	
Enable or disable the front panel key lock.	**N1** = ON, OFF [Front panel lock state]
GET KEYLOCK↵	
Show the current front panel lock state.	

6.6.2 Ethernet Configuration	
COMMAND	
DESCRIPTION	**VARIABLES**
GET MAC 1 ADDR↵	
Show the unit's MAC address.	
SET IP MODE **N1**↵	
Set the IP mode of the unit.	Available values for **N1**: STATIC [Static IP mode] DHCP [DHCP mode]
GET IP MODE↵	
Show the current IP mode.	
GET IPCONFIG↵	

6.6.2 Ethernet Configuration	
COMMAND	
DESCRIPTION	**VARIABLES**
Show the current IP configuration.	
SET IPADDR **N1**↵	
Set the unit's static IP address.	**N1** = X.X.X.X [X = 0~255, IP address]
GET IPADDR↵	
Show the current IP address.	
SET NETMASK **N1**↵	
Set the unit's netmask address.	**N1** = X.X.X.X [X = 0~255, Netmask]
GET NETMASK↵	
Show the current netmask.	
SET GATEWAY **N1**↵	
Set the unit's gateway address.	**N1** = X.X.X.X [X = 0~255, Gateway]
GET GATEWAY↵	
Show the current gateway address.	

6.6.3 Video Commands	
COMMAND	
DESCRIPTION	**VARIABLES**
SET IN **N1** NAME **N2**↵	
Set the name for input **N1**.	**N1** = 1~4 [Input number] **N2** = {name} [24 characters max]
GET IN **N1** NAME↵	
Show the name of input **N1**.	**N1** = 1~4 [Input number]
SET OUT **N1** NAME **N2**↵	
Set the name for output **N1**.	**N1** = A~B [Output letter] **N2** = {name} [24 characters max]
GET OUT **N1** NAME↵	
Show the name of output **N1**.	**N1** = A~B [Output letter]
SET OUT **N1** ROUTE **N2**↵	

6.6.3 Video Commands	
COMMAND	

DESCRIPTION	VARIABLES	
Set the routing source for output **N1** and switch to matrix mode.	**N1** = A~B	[Output letter]
	N2 = 1~4	[Input number]
GET OUT **N1** ROUTE↵		
Show the matrix mode routing source for output **N1**.	**N1** = A~B	[Output letter]
SET PRESET 1 SAVE↵		
Save the current video layout as a preset.		
SET PRESET 1 LOAD↵		
Load the saved video layout preset.		

6.6.4 Scaler Commands	
COMMAND	

DESCRIPTION	VARIABLES	
SET DISPLAY MODE **N1**↵		
Set the unit's output mode.	Available values for **N1**:	
	0	[Matrix mode]
	1	[Multiviewer mode]
GET DISPLAY MODE↵		
Show the unit's current output mode.		
SET OUT A TIMING **N1**↵		
Set the output resolution and timing to use for both outputs.	Available values for **N1**:	
	0	[Native (Output A)]
	1~36	[Output resolution]

6.6.4 Scaler Commands	
COMMAND	
DESCRIPTION	**VARIABLES**
	Timing Codes:
	0 = Native
	1 = 640×480
	2 = 480p@60
	3 = 576p@50
	4 = 800×600
	5 = 848×480
	6 = 1024×768
	7 = 720p@50
	8 = 720p@60
	9 = 1280×768
	10 = 1280×800
	11 = 1280×960
	12 = 1280×1024
	13 = 1360×768
	14 = 1366×768
	15 = 1400×1050
	16 = 1440×900
	17 = 1600×900 (RB)
	18 = 1600×1200
	19 = 1680×1050
	20 = 1080i@50
	21 = 1080i@60
	22 = 1080p@24
	23 = 1080p@25
	24 = 1080p@30
	25 = 1080p@50
	26 = 1080p@60
	27 = 1920×1200 (RB)
	28 = 2048×1152 (RB)
	29 = 3840×2160p@24
	30 = 3840×2160p@25
	31 = 3840×2160p@30
	32 = 4096×2160p@24
	33 = 4096×2160p@25

6.6.4 Scaler Commands	
COMMAND	
DESCRIPTION	**VARIABLES**
	34 = 4096×2160p@30 35 = 3840×2160p@50 36 = 3840×2160p@60
GET OUT A TIMING↵	
Show the current output resolution timing.	
SET WINDOW LAYOUT MODE **N1**↵	
Set the multiview window layout mode and switch to multiview mode.	Available values for **N1**: 1 [2×2 quad view] 2 [3+1 quad view] 3 [Side-by-Side] 4 [Picture-in-Picture]
GET WINDOW LAYOUT MODE↵	
Show the current window layout mode.	
SET WINDOW **N1** LAYOUT MODE **N2** ASPECT RATIO **N3**↵	
Set the aspect ratio to use for window **N1** in layout mode **N2**.	**N1** = 1~4 [Window number] Available values for **N2**: 2 [3+1 quad view] 3 [Side-by-Side] Available values for **N3**: 0 [Full window] 1 [16:9 aspect] 2 [4:3 aspect]
GET WINDOW **N1** LAYOUT MODE **N2** ASPECT RATIO↵	
Show the aspect ratio currently used by window **N1** in layout mode **N2**.	**N1** = 1~4 [Window number] Available values for **N2**: 2 [3+1 quad view] 3 [Side-by-Side]

6.6.4 Scaler Commands	
COMMAND	
DESCRIPTION	**VARIABLES**
SET WINDOW **N1** ROUTE **N2**↵	
Set the input routing for the windows in multiview mode.	**N1** = 1~4 [Window number] **N2** = 1~4 [Input number]
GET WINDOW **N1** ROUTE↵	
Show the input currently routed to window **N1**.	**N1** = 1~4 [Window number]
SET WINDOW **N1** BORDER **N2**↵	
Set the border color for window **N1**.	**N1** = 1~4 [Window number] Available values for **N2**: 0 [Off] 1 [Blue] 2 [Green] 3 [Red] 4 [Yellow] 5 [Cyan] 6 [Magenta]
GET WINDOW **N1** BORDER↵	
Show the border color for window **N1**.	**N1** = 1~4 [Window number]
SET PIP HSIZE **N1**↵	
Set the horizontal size of the PiP window (in pixels).	**N1** = 0~? [PiP width]
🔴 Note: The maximum value depends on, and cannot exceed, the current output resolution's width.	
GET PIP HSIZE↵	
Show the current horizontal PiP window size.	
SET PIP VSIZE **N1**↵	
Set the vertical size of the PiP window (in pixels).	**N1** = 0~? [PiP height]

6.6.4 Scaler Commands	
COMMAND	

DESCRIPTION	VARIABLES
⚠ *Note: The maximum value depends on, and cannot exceed, the current output resolution's height.*	
GET PIP VSIZE↵	
Show the current vertical PiP window size.	
SET PIP HPOSITION **N1**↵	
Set the horizontal position of the top left corner of the PiP window (in pixels).	**N1** = 0~?　　[Horizontal position]
⚠ *Note: The maximum value depends on, and cannot exceed, the current output resolution's width minus 1.*	
GET PIP HPOSITION↵	
Show the current horizontal position of the PiP window.	
SET PIP VPOSITION **N1**↵	
Set the vertical position of the top left corner of the PiP window (in pixels).	**N1** = 0~?　　[Vertical position]
⚠ *Note: The maximum value depends on, and cannot exceed, the current output resolution's height minus 1.*	
GET PIP VPOSITION↵	
Show the current vertical position of the PiP window.	

6.6.5 OSD Commands	
COMMAND	

DESCRIPTION	VARIABLES
SET OUT A OSD BANNER DISPLAY **N1**↵	
Enable or disable the OSD info banner.	**N1** = ON, OFF [Info banner state]
⚠ *Note: Enabling the info banner will automatically disable display of the graphic logo.*	

6.6.5 OSD Commands

COMMAND	
DESCRIPTION	**VARIABLES**
GET OUT A OSD BANNER DISPLAY↵	
Show the current state of the OSD info banner display.	
SET OUT A OSD BANNER LOCATION **N1**↵	
Set the position of the OSD info banner.	Available values for **N1**: 0　　　　　　[Upper-left] 1　　　　　　[Middle-left] 2　　　　　　[Lower-left] 3　　　　　　[Upper-right] 4　　　　　　[Middle-right] 5　　　　　　[Lower-right]
GET OUT A OSD BANNER LOCATION↵	
Show the current position of the OSD info banner.	
SET OUT A INFO LOGO DISPLAY **N1**↵	
Enable or disable the graphic logo.	**N1** = ON, OFF　[Graphic logo state]
⊘ *Note: Enabling the graphic logo will automatically disable display of the info banner.*	
GET OUT A INFO LOGO DISPLAY↵	
Show the current status of the graphic logo display.	
SET OUT A INFO LOGO HPOSITION **N1**↵	
Set the horizontal position of the top left corner of the graphic logo (in pixels).	**N1** = 0~?　　　[Horizontal position]
⊘ *Note: The maximum value depends on, and cannot exceed, the current output resolution's width minus 1.*	
GET OUT A INFO LOGO HPOSITION↵	
Show the graphic logo's current horizontal position.	

6.6.5 OSD Commands	
COMMAND	

DESCRIPTION	VARIABLES	
SET OUT A INFO LOGO VPOSITION **N1**↵		
Set the vertical position of the top left corner of the graphic logo (in pixels).	**N1** = 0~?	[Vertical position]
⚠ *Note: The maximum value depends on, and cannot exceed, the current output resolution's height minus 1.*		
GET OUT A INFO LOGO VPOSITION↵		
Show the graphic logo's current vertical position.		

6.6.6 Audio Commands	
COMMAND	

DESCRIPTION	VARIABLES	
SET AUDIO OUT A MUTE **N1**↵		
Enable or disable muting the audio output.	Available values for **N1**: OFF ON	[Un-muted] [Muted]
GET AUDIO OUT A MUTE↵		
Show the current audio mute state.		
SET AUDIO OUT A ROUTE **N1**↵		
Set Input **N1** as the audio source to output.	**N1** = 1~4	[Input number]
GET AUDIO OUT A ROUTE↵		
Show the current audio source.		
SET AUDIO OUT A VOLUME **N1**↵		
Set or adjust the analog audio output volume.	Available values for **N1**: 0~100 UP DOWN	[Set volume in dB units] [Raise volume by 1] [Lower volume by 1]

6.6.6 Audio Commands	
COMMAND	
DESCRIPTION	VARIABLES
GET AUDIO OUT A VOLUME↵	
Show the current analog audio volume value.	
SET AUDIO OUT A DELAY **N1**↵	
Set the analog audio delay value (in milliseconds).	**N1** = 13~100 [Audio delay in ms]
❗ Note: The range provided is for 48KHz sources. Increasing the sample rate will reduce the maximum delay range.	
GET AUDIO OUT A DELAY↵	
Show the current analog audio delay value.	

6.6.7 EDID Management	
COMMAND	
DESCRIPTION	VARIABLES
SET IN **N1** EDID **N2**↵	
Set the EDID to use on Input **N1**.	**N1** = 1~4 [Input number]
	Available values for **N2**:
	1 [FHD/2CH]
	2 [FHD/MCH]
	3 [UHD/2CH]
	4 [UHD/MCH]
	5 [UHD+/2CH]
	6 [UHD+/MCH]
	7~10 [User EDID 1~4]
	11 [Sink A]
	12 [Sink B]
GET IN **N1** EDID↵	
Show the EDID used by Input **N1**	**N1** = 1~4 [Input number]
SET EDID **N1** NAME **N2**↵	
Set the name for User EDID **N1**.	**N1** = 7~10 [User EDID 1~4]
	N2 = {name} [20 characters max]

6.6.7 EDID Management	
COMMAND	
DESCRIPTION	**VARIABLES**
GET EDID **N1** NAME↵	
Show the name of EDID **N1**. (User EDIDs only)	**N1** = 7~10 [User EDID 1~4]
SET ALL IN EDID MODE **N1**↵	
Set the EDID mode to "All EDID" or "Appoint".	Available values for **N1**: ON [All EDID mode] OFF [Appoint mode]
GET ALL IN EDID MODE↵	
Show the current "All EDID" mode state.	
SET ALL IN EDID **N1**↵	
Set the EDID to use when "All EDID" mode is active.	Available values for **N1**: 1 [FHD/2CH] 2 [FHD/MCH] 3 [UHD/2CH] 4 [UHD/MCH] 5 [UHD+/2CH] 6 [UHD+/MCH] 7~10 [User EDID 1~4] 11 [Sink A] 12 [Sink B]
GET ALL IN EDID↵	
Show the current EDID used by "All EDID" mode.	

6.6.8 HDCP Management	
COMMAND	
DESCRIPTION	**VARIABLES**
SET IN **N1** MATRIX HDCP MODE **N2**↵	
Set the HDCP mode to use with Input **N1** in matrix mode.	**N1** = 1~4 [Input number] Available values for **N2**: 0 [Disable HDCP] 1 [Refer to source] 2 [Refer to display]
GET IN **N1** MATRIX HDCP MODE↵	
Show the HDCP mode currently used with Input **N1** in matrix mode.	**N1** = 1~4 [Input number]
SET IN **N1** MULTIVIEW HDCP MODE **N2**↵	
Set the HDCP version to enforce on Input **N1** in multiviewer mode.	**N1** = 1~4 [Input number] Available values for **N2**: 0 [Disable HDCP] 1 [HDCP 1.4] 2 [HDCP 2.2]
GET IN **N1** MULTIVIEW HDCP MODE↵	
Show the HDCP mode currently used with Input **N1** in multiviewer mode.	**N1** = 1~4 [Input number]
SET WINDOW OUT **N1** HDCP MUTE **N2**↵	
Set the behavior of Output **N1** if the HDCP version of a source is not supported.	**N1** = A~B [Output letter] Available values for **N2**: 0 [Blank Window] 1 [Disable Output]
GET WINDOW OUT **N1** HDCP MUTE↵	
Show the behavior of Output **N1** if the HDCP version of a source is not supported.	**N1** = A~B [Output letter]

Note: Commands will not be executed unless followed by a carriage return. Commands are not case-sensitive.

6.7 WebGUI Control

• **Device Discovery**

Please obtain the "Device Discovery" software from your authorized dealer and save it in a directory where you can easily find it.

Connect the unit and your PC/Laptop to the same active network and execute the "Device Discovery" software. Click on "Find Devices on Network" and a list of devices connected to the local network will show up indicating their current IP address.

🔴 *Note: The unit's default IP address is 192.168.1.50.*
By clicking on one of the listed devices you will be presented with the network details of that particular device.
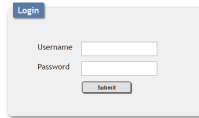
(1) IP Mode

If you choose, you can alter the static IP network settings for the device, or switch the unit into DHCP mode to automatically obtain proper network settings from a local DHCP server. To switch to DHCP mode, please select DHCP from the IP mode drop-down, then click "Save" followed by "Reboot".

(2) WebGUI Hotkey

Once you are satisfied with the network settings, you may use them to connect via Telnet or WebGUI. The network information window provides a convenient link to launch the WebGUI directly.

• WebGUI Overview

By default, both the Username and Password are "admin" for the WebGUI. The administrator password can be changed within the "System Settings" tab of the WebGUI if desired. The following function tabs will always display on left side of the WebGUI to aid with navigation.
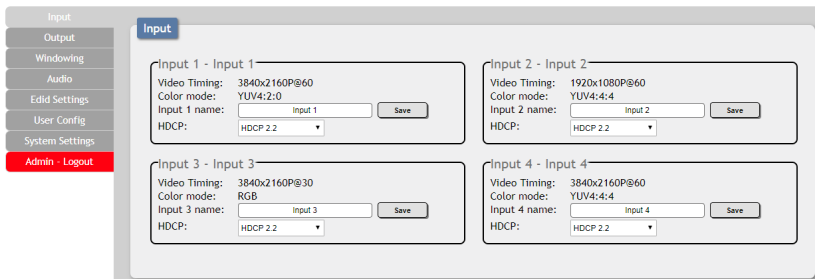
🛑 *Note: The unit's default IP address is 192.168.1.50.*

All primary functions of this unit are controllable via the built in WebGUI, including Input, Output, Windowing, Audio, EDID Settings, User Config, and System settings. The individual functions will be introduced in the following sections.
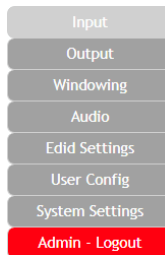
6.7.1 Input

This tab displays the current status of each of the four inputs, allows renaming each input, and provides a way to set the unit's HDCP handling behavior.

(1) Video Timing

Shows the currently detected resolution and timing of each video input.

(2) Color Mode

Shows the currently detected color space format of each video input.

(3) Input 1~4 Name

Allows each input to be renamed. To change an input's name, type the new name into the provided space and click on "Save".
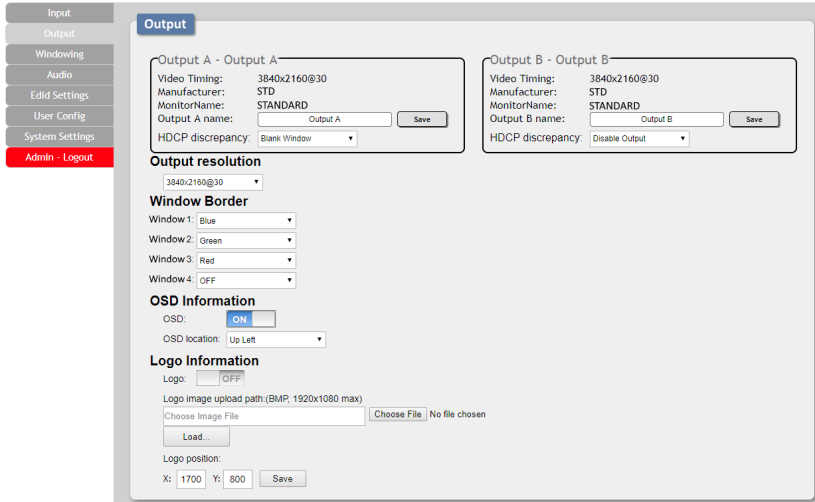
(4) HDCP

Allows setting the HDCP compliance behavior of each input individually. Due to the differences in the way the Matrix and Multiviewer modes function, each mode handles HDCP slightly differently.

Matrix Mode Options	
Refer to Source	The input supports up to the HDCP version required by the connected source.
Refer to Display	The input supports up to the HDCP version supported by the connected display.
HDCP Support Off	HDCP support is completely disabled.

Multiviewer Mode Options	
HDCP 1.4	HDCP v1.4 (and below) is supported by the input.
HDCP 2.2	HDCP v2.2 (and below) is supported by the input.
HDCP Off	HDCP support is completely disabled.

6.7.2 Output

This tab displays the current status of both HDMI outputs as well as providing control over the output resolution, output names and HDCP failure handling. Additional output related functions also have controls on this tab, such as window borders, the OSD information display, and graphic logo uploading and placement.

(1) Output A/B

These 2 sections show the current output resolution as well as the detected details of the connected displays. Each output can also be renamed. To change an output's name, type the new name into the provided space and click on "Save".

There is also a dropdown to select how each output behaves if one of the windows displayed on it requires a version of HDCP the display can't support. To have the display show black in case of an HDCP failure, select "Blank Window". To disable the output completely select "Disable Output".

(2) Output Resolution

The output resolution for both outputs can be freely selected by clicking on the provided dropdown. To have the output resolution automatically determined by the EDID of the display connected to Output A, select "NATIVE".

⚠️ *Note: Both outputs will always use the same resolution, regardless of windowing mode. Certain functions and windowing modes are not available when the output resolution is set to 4K@50/60Hz.*

(3) Window Border

This section provides controls to add a colored border to each window. Click the dropdown next to the window you wish to affect and select a border color, or "OFF". Selecting "OFF" will disable the border completely.

⚠️ *Note: The Window Border function is not supported when the output resolution is set to 4K@50/60Hz.*

(4) OSD Information

This section provides control over the OSD Information display for each window. When the OSD switch is set to "ON", each window will display 2 lines of input information including the input's name and detected resolution.

The position of the OSD Information is controlled by changing the "OSD Location" setting which provides 6 possible location presets: Up Left, Middle Left, Down Left, Up Right, Middle Right, Down Right.

⚠️ *Note: The OSD Information display is automatically disabled if the Logo function is enabled.*

(5) Logo Information

This section provides a way to upload a graphic logo to the unit and display it on both outputs at a specified position. When the Logo switch is set to "ON" the currently loaded logo will display on both outputs. If no logo has been uploaded yet, a "No Image" error will be displayed.

To position the logo, type the X and Y coordinates into the spaces provided and click on the "Save" button. The X and Y coordinates correspond to the position of the upper left corner of the logo and cannot exceed the horizontal (X) or vertical (Y) size of the currently selected output resolution.

To upload a graphic logo, please click the "Choose File" button to open the file selection window and then select the graphic logo file (8-bit *.bmp format, 1920×1080 max resolution) located on your local PC. After selecting the file, click the "Load..." button to upload the logo to the unit.

⚠️ *Note: The Logo function is not supported when the output resolution is set to 4K@50/60Hz. The Logo display is automatically disabled if the OSD Information function is enabled.*

6.7.3 Windowing

This tab provides access to controls for selecting between the Matrix and Multiview output modes of the unit as well as controls over the distinct features supported by each mode. To switch between the Matrix and Multiview modes, simply click on the radio button next to the mode you wish to activate.

🛈 *Note: Certain windowing modes are not available, or have limited functionality, when an input or output is 4K.*
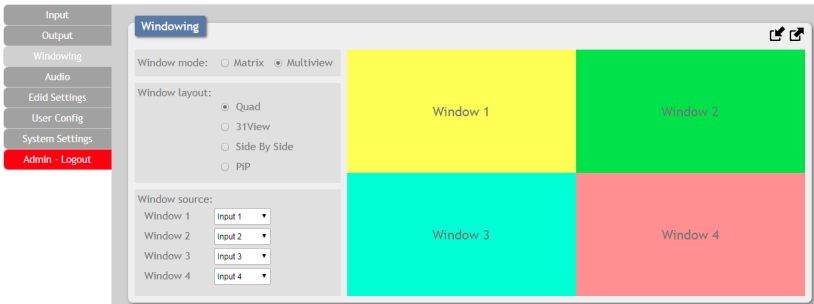
(1) Matrix Mode

This mode provides a way to switch between the 4 available inputs with full screen output. To select a new input, click on the dropdown next to either Output A or Output B and select the new Input to route to that output. The switch will occur immediately.

⚠️ *Note: Selecting a new input overrides the audio source selection from the Audio tab and audio output will be from the most recently selected input.*
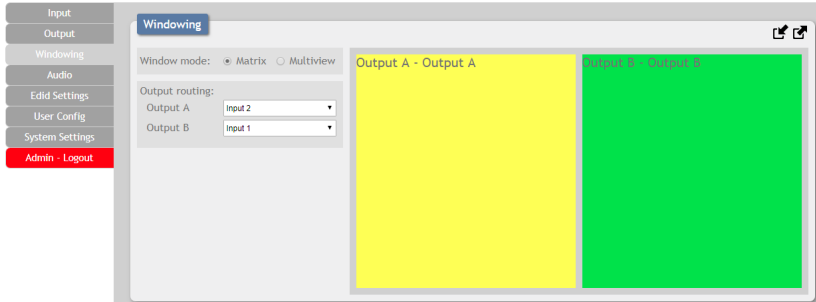
The behavior of this mode is different depending on the resolution of the inputs and the selected output resolution.

Ⓐ **All Inputs and Outputs are below 4K:** Switching is seamless and each output can display an independently selected source.

Ⓑ **Any Input or Output is 4K:** Switching is seamless (sync to the display is continuous), but black will be briefly shown between switches.

(2) Multiview Mode

Multiview Mode provides a selection of 4 different multi-window display options: Quad View, 3+1 View, Side by Side, and Picture in Picture. In Multiview Mode, both outputs are always mirrored and display the same image.

⚠️ *Note: When the output resolution is set to 4K@50/60Hz, only Quad View is available.*

① **Quad View**

Quad View displays 4 equally sized windows. Each window has an independently selected source. Audio always follows the source selected in the Audio tab.

🛈 *Note: When the output resolution is set to 4K@50/60Hz, only 1080p or 4K sources may be displayed in the quad view windows.*

• **Window Source:** To change the source for a specific window, click on the dropdown next to the window to change (1~4) and select the preferred Input. The switch will occur immediately.

② **3+1 View**

The 3+1 View displays 1 large window to the right and 3 equally sized, but smaller, windows on the left. Each window has an independently selected source and the aspect ratio of the video in each window can be changed. Audio always follows the source selected in the Audio tab.

🛈 *Note: This mode is not available when the output resolution is set to 4K@50/60Hz.*
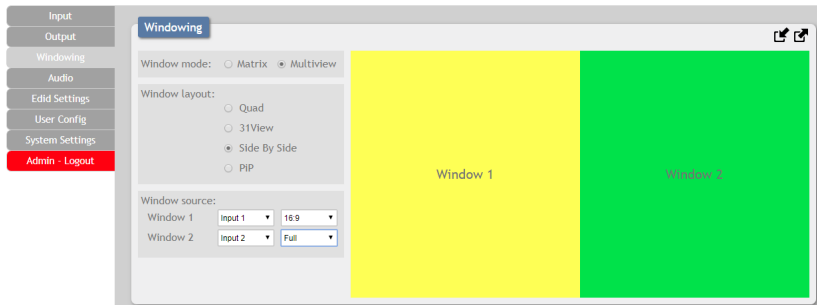
- **Window Source:** To change the source for a specific window, click on the dropdown next to the window to change (1~4) and select the preferred Input. To change the aspect ratio of the source, as displayed within the window, click on the second dropdown and select "Full", "16:9", or "4:3". The switch or format change will occur immediately.

❸ Side By Side

The Side by Side mode displays 2 equally sized windows next to each other. Each window has an independently selected source and the aspect ratio of the video in each window can be changed. Audio always follows the source selected in the Audio tab.

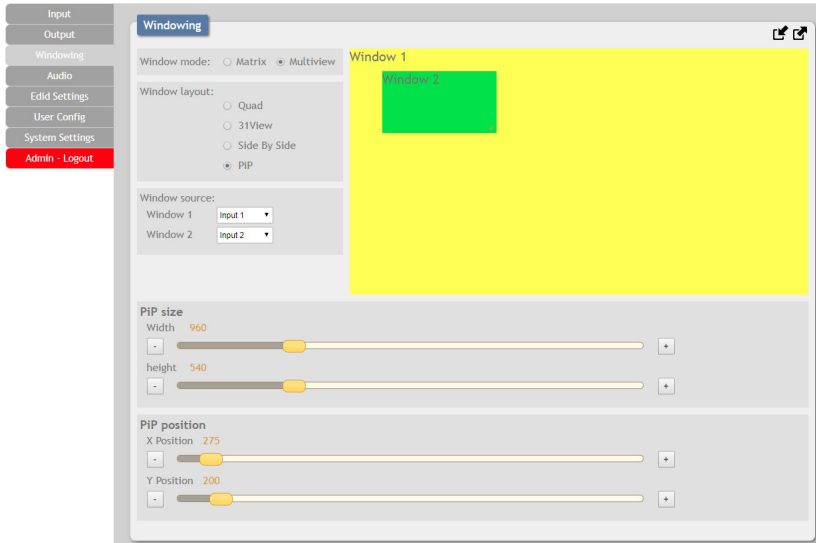⚠ *Note: This mode is not available when the output resolution is set to 4K@50/60Hz.*

- **Window Source:** To change the source for a specific window, click on the dropdown next to the window to change (1~2) and select the preferred Input. To change the aspect ratio of the source, as displayed within the window, click on the second dropdown and select "Full", "16:9", or "4:3". The switch or format change will occur immediately.

❹ PiP (Picture in Picture)

The PiP mode displays 1 full screen window in the background with a 2nd, freely sizable and positioned window on top of it. Each window has an independently selected source. Audio always follows the source selected in the Audio tab.

⚠ *Note: This mode is not available when the output resolution is set to 4K@50/60Hz.*

- **Window Source:** To change the source for a specific window, click on the dropdown next to the window to change (1~2) and select the preferred Input. The switch will occur immediately.

- **PiP Size:** There are 2 ways to change the size of the PiP window. Clicking on the bottom right corner of the PiP window and dragging it will resize the window freely. For more precise adjustments, move the width and height sliders. The height and width values cannot exceed the horizontal or vertical size of the currently selected output resolution. Changes will occur immediately.

- **PiP Position:** There are 2 ways to change the position of the PiP window. Clicking on the PiP window and dragging it will move the window freely. To position the PiP window with more accuracy, move the X Position and Y Position sliders. The X and Y coordinates correspond to the position of the upper left corner of the PiP window and cannot exceed the horizontal (X) or vertical (Y) size of the currently selected output resolution. Changes will occur immediately.

6.7.4 Audio

This tab provides control over the audio routed to both outputs as well as control over audio muting for both digital and analog outputs. Audio volume and delay control is also provided for the analog audio output.
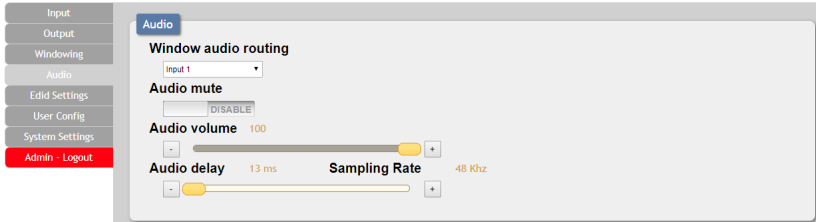
(1) Window Audio Routing

A single selectable audio source is sent to all available outputs (HDMI and analog) in both Matrix and Multiviewer modes. Click on the dropdown to select the input to route audio from.

🔴 *Note: In Matrix mode, changing a video source (for either output) will automatically change the audio routing selection to use that audio source for all outputs.*

(2) Audio Mute

The audio output can be freely muted or unmuted. To mute all audio output, click the button so that it reads "Enable". To unmute all audio output, click the button so that it reads "Disable".

(3) Audio Volume

The analog audio volume can be adjusted from 0 to 100 by moving the slider left or right. Clicking on the plus or minus buttons will change the volume level 1 unit at a time. The current audio volume is listed above the volume slider.

🔴 *Note: Only applicable with LPCM audio sources. Digital audio output is unaffected by this control.*

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(4) Audio Delay

The audio delay for the analog output can be adjusted by moving the slider left or right. Clicking on the plus or minus buttons will change the delay amount 1ms at a time. The current delay and detected sampling rate is listed above slider.
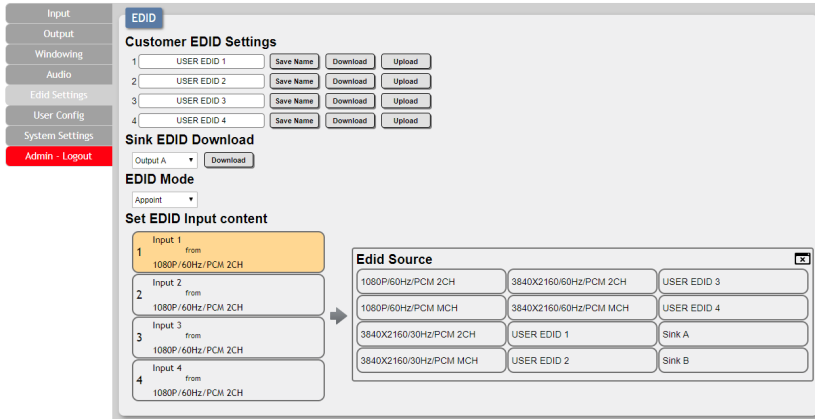
The available delay range depends on the sample rate of the source as follows:

Audio Delay Ranges	
44.1kHz/48kHz	The delay range is from 13 ~ 100ms
88.2kHz/96kHz	The delay range is from 7 ~ 50ms
176.4kHz/196kHz	The delay range is from 4 ~ 25ms

❗ *Note: Only applicable with LPCM audio sources. Digital audio output is unaffected by this control.*

6.7.5 EDID Settings

This unit provides the option of six standard EDIDs, two sink sourced EDIDs and four user uploaded EDIDs that can be assigned to each input port individually. The names of the four user uploaded EDIDs can changed if desired.

(1) Customer EDID Settings

To upload a User EDID, please click the "Upload" button next to the Customer EDID Settings item you would like to change. An EDID Upload window will appear, allowing you to locate and upload the preferred EDID file (*.bin format) from a local PC. Once the correct file has been selected, please click the "Upload" button in the window, and the file will be transferred to the unit.

To save an existing User EDID to your local PC please press the "Download" button next to the EDID you would like to save. Depending on your browser settings you will either be asked where to save the downloaded file, or the file will be transferred to the default download location on your PC. To change the name of a Customer EDID, type the new name in the space provided, then click on the "Save Name" button.

(2) Sink EDID Download

To save the EDID from one of the connected displays to your local PC, select the appropriate sink from the dropdown list then press the "Download" button. Depending on your browser settings you will either be asked where to save the downloaded file, or the file will be transferred to the default download location on your PC.

(3) EDID Mode

The EDID Mode section provides controls for how to assign EDID to the unit's inputs. Selecting "Appoint" allows for different EDID to be assigned to each individual input, selecting "ALL" allows for a single EDID to be assigned to all inputs.

(4) Set EDID Input Content

Click on the preferred input(s) to open the EDID Source management window. Multiple inputs can be selected at once, if desired. Select the new EDID source to use and the change will occur immediately.

🛑 *Note: In most cases, assigning a new EDID to an input will cause the affected input to briefly blink out while the source adapts to the new information.*

(5) Unit's Default EDIDs

This unit provides the following 6 default EDIDs:
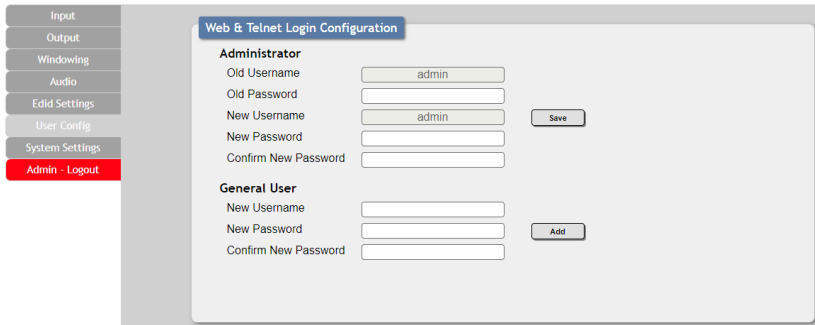
Unit's Default EDIDs		
FHD/2CH	1920×1080p@60Hz (148MHz) & 8-bit color	LPCM 2.0
FHD/MCH	1920×1080p@60Hz (148MHz) & 8-bit color	LPCM 7.1 & Bitstream
UHD/2CH	3840×2160p@30Hz (297MHz) & Deep Color (8/10/12-bit)	LPCM 2.0
UHD/MCH	3840×2160p@30Hz (297MHz) & Deep Color (8/10/12-bit)	LPCM 7.1 & Bitstream
UHD+/2CH	3840×2160p@60Hz (594MHz) & Deep Color (8/10/12-bit)	LPCM 2.0
UHD+/MCH	3840×2160p@60Hz (594MHz) & Deep Color (8/10/12-bit)	LPCM 7.1 & Bitstream

🛑 *Note: In some rare cases it is possible for custom or external EDIDs to cause compatibility issues with certain sources. If this happens, it is recommended to switch to one of the 6 default EDIDs for maximum compatibility.*

6.7.6 User Configration

This tab provides User Configuration options including changing the password for the Administrator account, and both the user name and password for the General User account.

🛑 *Note: The General User account has limited access to the WebGUI and only has access to the Input, Output, Windowing, and Audio tabs.*
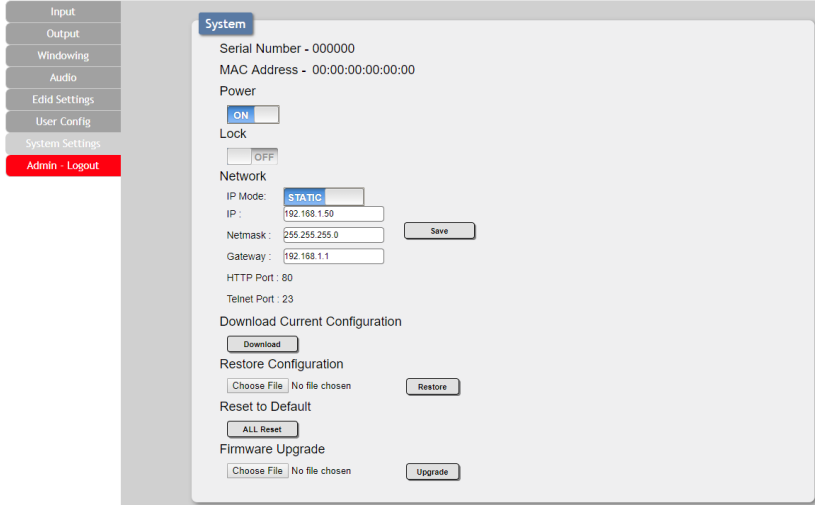
6.7.7 System Settings

This tab provides system information, power control, Ethernet configuration options, system configuration backup/restore/reset, and firmware update functions.

(1) Power

Press this switch to toggle the unit's power between ON and OFF (standby mode).

🛑 *Note: While in standby mode the unit's WebGUI, Telnet and RS-232 controls are still active.*

(2) Lock

Press this switch to enable or disable the front panel button lock function. When enabled, pressing the physical buttons on the front of the unit will have no effect.

(3) Network

IP mode may be switched between Static IP or DHCP. In Static IP mode the IP, netmask and gateway addresses may be manually set. When in DHCP mode, the unit will attempt to connect to a local DHCP server and obtain IP, netmask and gateway addresses automatically. Please press "Save" after making any changes to the IP configuration or mode.

🛑 *Note: The unit's default IP address is 192.168.1.50. If the IP address is changed then the IP address required for WebGUI/Telnet access will also change accordingly.*

(4) Download Current Configuration

The current system configuration, including routing and presets, may be saved as an JSON file to a PC. Click the "Download" button to save the current system configuration to your local PC.

(5) Restore Configuration

Previously saved system configurations may be restored from a saved JSON file. Click the "Choose File" button to locate the saved JSON file, then click the "Restore" button.

(6) Reset to Default

Press the "ALL Reset" button to reset the unit to its factory default state. After the reset is complete, the unit will reboot automatically.

(7) Firmware Upgrade

To update the unit's firmware, click the "Choose File" button to open the file selection window and then select the firmware update file (*.bin format) located on your local PC. After selecting the file, click the "Upgrade" button to begin the firmware update process.

6.7.8 Admin - Logout

Clicking the red "Logout" tab will automatically log the currently connected user out of the WebGUI and return to login page.

Admin - Logout

7. CONNECTION DIAGRAM

Blu-ray Player

Set-top Box

Game Console

Satellite Receiver

HDMI Inputs

Balanced Stereo Output

Power Supply

HDMI Outputs

LAN

RS-232

Serial Equipped Computer

UHDTV

UHDTV

AV Receiver
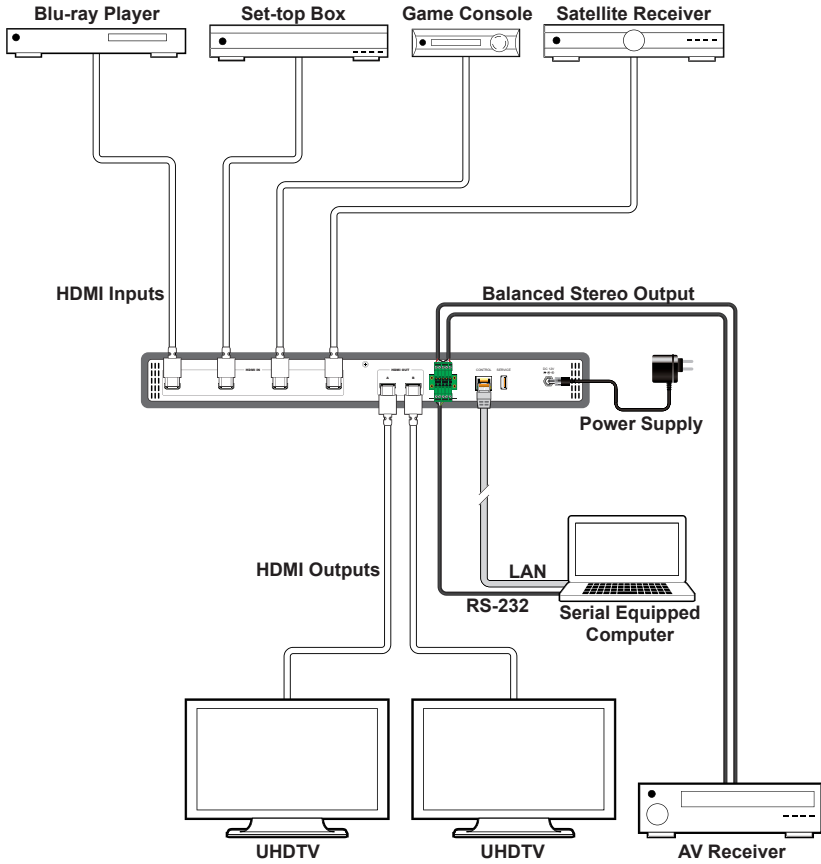
Multiview Screens:

8. SPECIFICATIONS

8.1 Technical Specifications

HDMI Bandwidth	600MHz/18Gbps
Input Ports	4×HDMI
Output Ports	2×HDMI
	1×Balanced Stereo (5-pin Terminal Block)
Control Interfaces	1×RS-232 (5-pin Terminal Block)
	1×IP Control (RJ-45)
Power Supply	12V/3A DC
	(US/EU standards, CE/FCC/UL certified)
ESD Protection	Human Body Model:
	±8kV (Air Discharge)
	±4kV (Contact Discharge)
Dimensions	438mm×44mm×268mm (W×H×D)
	[Case Only]
	438mm×49mm×276mm (W×H×D)
	[All Inclusive]
Weight	3,400g
Chassis Material	Aluminum
Silkscreen Color	Black
Operating Temperature	0˚C - 40˚C/32˚F - 104˚F
Storage Temperature	−20˚C - 60˚C/−4˚F - 140˚F
Relative Humidity	20 - 90% RH (Non-condensing)
Power Consumption	27.5W

8.2 Video Specifications

8.2.1 Resolution Support Tables

PC Resolutions	Input (Hz)	Output (Hz)
640×480	60, 72, 75, 85	60
800×600	56, 60, 72, 75, 85	60
1024×768	60, 70, 75, 85	60
1028×768	60, 75	60
1280×800	60 (RB), 60	60
1280×960	60	60
1280×1024	60	60
1360×768	60	60
1366×768	60	60
1400×1050	60 (RB), 60	60
1440×900	60 (RB), 60	60
1600×900	60	
1600×1200	60	60
1680×1050	60 (RB), 60	60
1920×1200	60 (RB), 60	60 (RB)
1920×1440	60	

TV Resolutions	Input (Hz)	Output (Hz)
720×480i	59.94, 60	
720×480p	59.94, 60	60
720×576i	50	
720×576p	50	50
1280×720p	50, 59.94, 60	50, 60
1920×1080i	50, 59.94, 60	50, 60
1920×1080p	23.97, 24, 25, 29.97, 30	24, 25, 30
	50, 59.94, 60	50, 60

TV Resolutions	Input (Hz)	Output (Hz)
3840×2160p (YUV 4:2:0)	50, 59.94, 60	
3840×2160p	24, 25, 30	24, 25, 30
	50, 59.94, 60	50, 60
4096×2160p	24, 25, 30	24, 25, 30
	50, 59.94, 60	

8.2.2 Feature Support Chart

Mode/Feature	Input/Output Timing Combinations			
	≤1080p to ≤1080p	Any 4K to ≤1080p	Any to 4K@24/30Hz	Any to 4K@50/60Hz
Matrix Mode	Supported	Unsupported	Unsupported	Unsupported
Switch Mode (Mirrored)	N/A	Supported	Supported	Supported
Quad View	Supported	Supported	Supported	Supported
3+1 Quad View	Supported	Supported	Supported	Unsupported
Side by Side View	Supported	Supported	Supported	Unsupported
PiP View	Supported	Supported	Supported	Unsupported
Window Borders	Supported	Supported	Supported	Unsupported
Logo Display	Supported	Supported	Supported	Unsupported

9. ACRONYMS

ACRONYM	COMPLETE TERM
AC	Alternating Current
CEC	Consumer Electronics Control
CLI	Command Line Interface
DC	Direct Current
DVI	Digital Visual Interface
EDID	Extended Display Identification Data
FHD	Full HD
GUI	Graphical User Interface
HD	High-Definition
HDCP	High-bandwidth Digital Content Protection
HDMI	High-Definition Multimedia Interface
HDR	High Dynamic Range
IP	Internet Protocol
IR	Infrared
LAN	Local Area Network
LCPM	Linear Pulse-Code Modulation
LED	Light-Emitting Diode
OSD	On-Screen Display
PiP	Picture-in-Picture
UHD	Ultra HD

CYP

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