

4×4 HDMI UHD & Audio Matrix with Fast Switching ID# 15366



Operation Manual

Introduction

The 4 by 4 HDMI matrix with audio which allows HDMI and audio signal to be routed to and displayed on connected HDMI displays and or audio output equipments simultaneously. Additional audio selection and extension allows users to utilise both video and audio more efficiency. With fast switching technology the device can greatly eliminate the time required by swapping or turning ON/OFF the connected displays. It supports 4Kx2K, 3D, 36-bit Deep Color, Hi-Def lossless audio and other features defined by HDMI specifications.

The management of source/sink scenarios can be operated easily through on-panel buttons, IR remote control, RS-232 or Ethernet protocol.

Features

- HDMI with 3D & 4Kx2K supported, HDCP and DVI compliant
- Supports four HDMI inputs and four HDMI outputs
- Supports external audio inputs and outputs for HDMI outputs selection and additional audio extension up to 300M
- Supports HDMI and Optical audio format for both HDMI and Optical outputs selection
- Support individual output MUTE function on both video and audio
- Displays any of four High-Definition sources on four HDTV displays simultaneously with fast switch
- 3DTV Pass-Through
- Supports HDTV resolutions up to 4Kx2K (3840x2160@24/25/30 & 50/60 Y420 4096x2160@24 & 50/60Hz Y420)
- Supports data rate up to 300Mbps or 9Gbps and Deep Color up to 1080p 36-bit
- Supports individual EDID or common EDID
- Supports LPCM 2CH with sampling up to 192kHz
- Input port HDCP support Standard and Apple mode. The Apple mode selection to guarantees the use of Apple devices

Applications

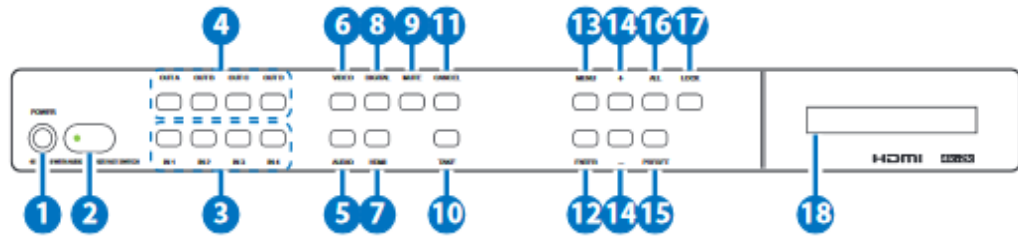
- Home Theater/Entertainment
- Lecture Room/Hall Presentation
- Show Room/Demo Room
- Public Commercial Display
- Information Board

System Requirements

Input source equipments such as Blu-ray/DVD/PS3 player or Set-Top-Box and output HDMI TV/Display and or audio amplifier with connection cables.

Operating Functions and Controls

Front Views



1. POWER:

Press this button to turn ON the device and the LED will illuminated.

2. IR Window:

This IR Receiver receives the remote control signal from the package include remote control only.

3. IN 1~4:

Press these IN buttons to select an input from the input sources. Under audio selection press it continually to select audio format. For example: HDMI OUT A need to output HDMI IN 2's video with S/PDIF 2 audio format. Setting steps should be press VIDEO → OUT A → IN 2 → TAKE → VIDEO, AUDIO → OUT A → IN 2 (press twice: S2) → TAKE → AUDIO.

4. OUT A/D:

Press these buttons along with an IN buttons to select an input source for an output display. i.e. OUT A → IN1 → TAKE or OUT B & OUT C → IN4 → TAKE.

5. AUDIO:

Press this button to select audio matrix setting only for outputs.

6. VIDEO:

Press this button to select video matrix setting only for outputs.

7. HDMI:

Press this button under AUDIO to select HDMI audio.

8. DIGITAL:

Press this button to select an input source audio.

9. MUTE:

Press this button to mute video image or audio output sound. To unmute, press it again.

10. TAKE:

Press this button to confirm the selection If this button is not pressed, all selection will be avoid.

11. CANCEL:

Press this button to cancel the selection.

12. ENTER:

Press to confirm the selection.

13. MENU:

Press to enter into the menu.

14. +/-:

Press these buttons to move up/down under menu selection.

15. PRESET:

Press "PRESET", the OLED menu will show Preset then select IN 1~4. Preset 5~8 selection, press IN 1/2/3/4 twice. Press "TAKE" to confirm the selection or press "CANCEL" to exit the selection.

16. All:

Press this button to select all outputs with an selection.

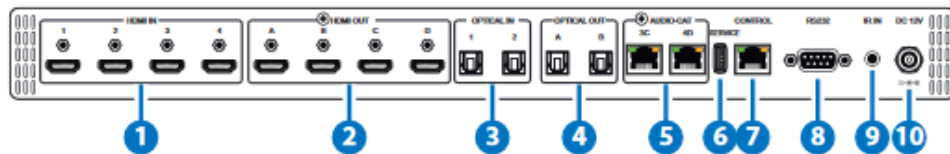
17. LOCK:

Press this button to lock all button functions on the panel.
Press 3 seconds to relieve the lock function.

18. LCM:

Displaying Input and Outputs selection and menu selection.

Rear Views



1. HDMI IN:

Connect from source equipments such as Blu-ray/DVD/ PS3 players, Set-Top-Box or any HDMI equipped source device for input signal sending.

2. HDMI OUT:

Connect to HDMI TV/display or HD Amplifier for output image and or audio display.

3. OPTICAL IN:

Connect from source equipment such as DVD, Blu-ray, PS3 or etc. with audio signal.

4. OPTICAL OUT:

Connect to active speaker or audio amplifier for audio distribution.

5. AUDIO-CAT:

Connect this port to the AUDIO-CAT input of the Receiver unit using CAT5e/6/7 cable.

6. SERVICE:

This slot is reserved for firmware update use only.

7. CONTROL:

Connect from PC/Laptop with active internet service for Web GUI control with RJ-45 terminated cable.

8. RS232:

Connect from PC/Laptop for RS-232 command sending to control the device.

9. IR IN:

Connect the IR Receiver included in the package for IR signal receive from the included remote control.

10. DC 12V:

Connect the adaptor with power cord included in the package and connect to AC wall outlet for power supply.

OSD Menu

Main Menu	Sub Menu	Description	Default
EDID Mode	All	All Input port is using same EDID. In menu "EDID All", can select suitable EDID.	All
	Appoint	Each Input port can select individual EDID. In menu "EDID IN1~4" select suitable EDID.	
	Exit		
EDID All	Sink A	Copy Output A display EDID	8/2D/ PCM/1080p
	Sink B	Copy Output B display EDID	
	Sink C	Copy Output C display EDID	
	Sink D	Copy Output D display EDID	
	8/2D/ PCM/720p	Standard EDID, Content: deep color/2D3D/ audio/native resolution	
	8/2D/ PCM/1080p	Standard EDID, Content: deep color/2D3D/ audio/native resolution	
	8/2D/ PCM/4K2K	Standard EDID, Content: deep color/2D3D/ audio/native resolution	
	8/2D/PCM/ Y420	Standard EDID, Content: deep color/2D3D/ audio/native resolution	

	Exit		
EDID IN1	Same EDID All	Select Input 1's EDID	Same EDID All
EDID IN2	Same EDID All	Select Input 2's EDID	Same EDID All
EDID IN3	Same EDID All	Select Input 3's EDID	Same EDID All
EDID IN4	Same EDID All	Select Input 4's EDID	Same EDID All
Video Preset	Video 1	IN/OUT default No.1	A=1, B=2, C=3, D=4
	Video 2	No.2	A=4, B=1, C=2, D=3
	Video 3	No.3	A=3, B=4, C=1, D=2
	Video 4	No.4	A=2, B=3, C=4, D=1
	Video 5	No.5	A=4, B=3, C=2, D=1
	Video 6	No.6	A=1, B=4, C=3, D=2
	Video 7	No.7	A=2, B=1, C=4, D=3
	Video 8	No.8	A=3, B=2, C=1, D=4
	Exit		
Audio Preset-- HDMI	HDMI 1	IN/OUT default No.1	A=H1, B=H2, C=H3, D=H4
	HDMI 2	No.2	A=H4, B=H1, C=H2, D=H3
	HDMI 3	No.3	A=H3, B=H4, C=H1, D=H2
	HDMI 4	No.4	A=H2, B=H3, C=H4, D=H1
	HDMI 5	No.5	A=H4, B=H3, C=H2, D=H1
	HDMI 6	No.6	A=H1, B=H4, C=H3, D=H2
	HDMI 7	No.7	A=H2, B=H1, C=H4, D=H3

	HDMI 8	No.8	A=H3, B=H2, C=H1, D=H4
	Exit		
Audio Preset-- OPTICAL	OPTICAL 1	IN/OUT default No.1	A=O1, B=O2, C=O3, D=O4
	OPTICAL 2	No.2	A=O4, B=O1, C=O2, D=O3
	OPTICAL 3	No.3	A=O3, B=O4, C=O1, D=O2
	OPTICAL 4	No.4	A=O2, B=O3, C=O4, D=O1
	OPTICAL 5	No.5	A=O4, B=O3, C=O2, D=O1
	OPTICAL 6	No.6	A=O1, B=O4, C=O3, D=O2
	OPTICAL 7	No.7	A=O2, B=O1, C=O4, D=O3
	OPTICAL 8	No.8	A=O3, B=O2, C=O1, D=O4
	Exit		
HDCP Input	IN1 Standard/ Apple	Set IN1 in Apple/Standard mode	Standard
	IN2 Standard/ Apple	Set IN2 in Apple/Standard mode	Standard
	IN3 Standard/ Apple	Set IN3 in Apple/Standard mode	Standard
	IN4 Standard/ Apple	Set IN4 in Apple/Standard mode	Standard
	Exit		
Network Setup	IP Mode	DHCP , Static	Static
	IP	Setup Static IP	192.168.1.50
	Mask	Setup Static Netmask	255.255.255.0
	Gate	Setup Static Gateway	192.168.5.254
	Do Re-Link	Re-Link. After setup Network, the system need to re-link	

	Exit		
Network Status	Link	Network status DHCP,Static or Not Linked	---
	IP	Get IP	---
	Mask	Get Netmask	---
	Gate	Get Gateway	---
	MAC	System MAC Address	---
	Exit		
Source Detection	IN1 On/Off , IN2 On/Off	IN1 , IN2 detect source with/ without the signal & HDCP	---
	IN3 On/Off , IN4 On/Off	IN3 , IN4 detect source with/ without the signal & HDCP	
	Exit		
Sink A Info	Type, Manuf.	Detect and Analysis Output A display's EDID Content: type(HDMI/DVI/ VGA), Manufactory/Model number	---
	Native	Content: native resolution	
	Video Format	Content: deep color, 2D or 3D, 4K2K	
	Audio Format	Content:PCM, BitStream, HBR	
	Exit		
Sink B Info	Same Sink A Info	Detect and Analysis Output B display's EDID	---
Sink C Info	Same Sink A Info	Detect and Analysis Output C display's EDID	---
Sink D Info	Same Sink A Info	Detect and Analysis Output D display's EDID	---
Firmware	FW Version	FW Update	---
	Update		

	Exit		
Factory Reset	Do Reset	Do system Reset	---
	Exit		
Exit			

Remote Control

1. POWER:

Press this button to switch the system ON/OFF.

2. OUT A/D:

Press these buttons once a time along with an IN buttons to select an input source for an output display.

3. VIDEO:

Press this button to select video matrix setting only for outputs.

4. AUDIO:

Press this button to select audio matrix

5. HDMI:

Press this button under AUDIO to select HDMI audio.

6. DIGITAL:

Press this button to select an input source audio.

7. ALL:

Press this button to select all outputs to display with an input source.

8. TAKE:

Press this button to confirm the selection of an IN and an OUT button.

9. CANCEL:

Press this button to cancel the IN/OUT selection.

10. PRESET:

Press "PRESET", the OLED menu will showing Preset and select IN 1~4. After preset 1~4, press "TAKE" to confirm the selection or press "CANCEL" to cancel the selection.

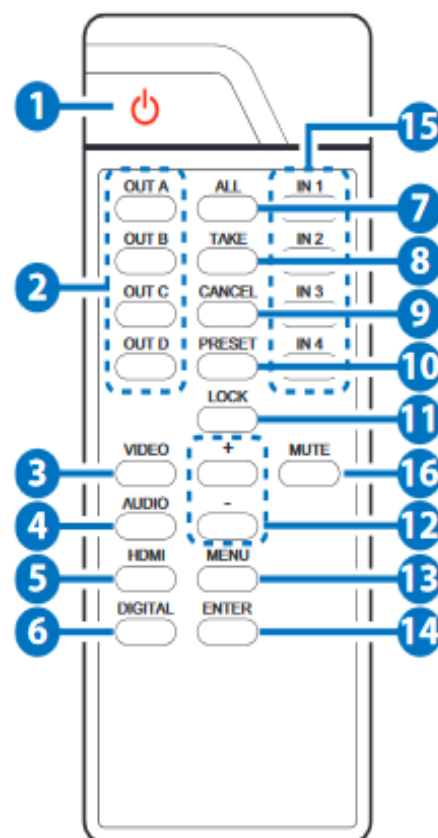
11. LOCK:

Press this button to lock all button functions on the panel. Press 3 seconds to relieve the lock function.

12. +/-:

Press these buttons to move up/down under menu selection.

13. MENU:



IR Cable Pin Assignment

Press to enter into the menu.

14. ENTER:

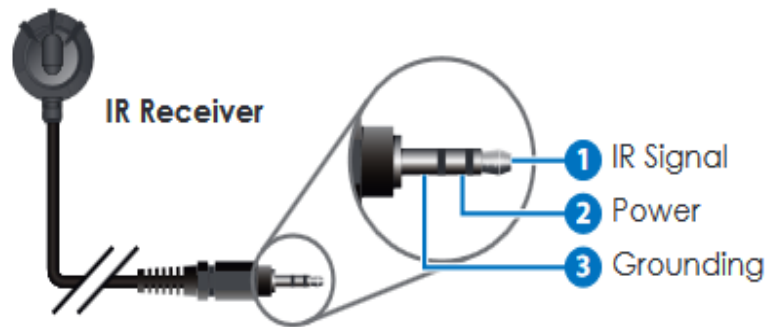
Press to confirm the selection.

15. IN1~4:

Press the IN buttons to select an input from the 4 input sources.

16. MUTE:

Press this button to mute or unmute the output audio sound.



RS-232 Protocols

ID 15366	
PIN	Assignment
1	NC
2	Tx
3	Rx
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC



Remote Control	
PIN	Assignment
1	NC
2	Rx
3	Tx
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC

Baud Rate: 115200bps

Data bit: 8 bits

Parity: None

Flow Control: None

Stop Bit: 1

RS-232 and Telnet Commands

Command	Description	Description of Parameter
P0	POWER OFF	NONE
P1	POWER ON	NONE
IPCONFIG	DISPLAY THE CURRENT IPCONFIG	NONE
SIPADDR XXX.XXX. XXX.XXX	SET ETHERNET IP ADDRESS	XXX=0~255
SNETMASK XXX. XXX.XXX.XXX	SET ETHERNET NETMASK	XXX=0~255
SGATEWAY XXX. XXX.XXX.XXX	SET ETHERNET GATEWAY	XXX=0~255
HTTPPORT N	SET ETHERNET PORT NUMBER	N=0~65535
RSTIP	IP CONFIGURATION RESET TO<DHCP>	NONE
VA N	SET OUTPUT A VIDEO SOURCE	N=1-4, 0=MUTE
VB N	SET OUTPUT B VIDEO SOURCE	N=1-4, 0=MUTE
VC N	SET OUTPUT C VIDEO SOURCE	N=1-4, 0=MUTE
VD N	SET OUTPUT D VIDEO SOURCE	N=1-4, 0=MUTE
VI N	SET ALL OUTPUTS VIDEO SOURCE	N=1-4, 0=MUTE
AHA N	SET HDMI OUTPUT A AUDIO SOURCE	N=1-4/H1~H4, 5~8/ O1~O4, 0=MUTE
AHB N	SET HDMI OUTPUT B AUDIO SOURCE	N=1-4/H1~H4, 5~8/ O1~O4, 0=MUTE
AHC N	SET HDMI OUTPUT C AUDIO SOURCE	N=1-4/H1~H4, 5~8/ O1~O4, 0=MUTE
AHD N	SET HDMI OUTPUT D AUDIO SOURCE	N=1-4/H1~H4, 5~8/ O1~O4, 0=MUTE
AHI N	SET ALL HDMI OUTPUTS AUDIO SOURCE	N=1-4/H1~H4, 5~8/ O1~O4, 0=MUTE
AOA N	SET OUTPUT A	N=1-4/H1~H4, 5~8/

	AUDIO SOURCE	O1~O4, 0=MUTE
AOB N	SET OUTPUT B AUDIO SOURCE	N=1-4/H1~H4, 5~8/ O1~O4, 0=MUTE
AOC N	SET OUTPUT C AUDIO SOURCE	N=1-4/H1~H4, 5~8/ O1~O4, 0=MUTE
AOD N	SET OUTPUT D AUDIO SOURCE	N=1-4/H1~H4, 5~8/ O1~O4, 0=MUTE
AOI N	SET OUTPUT D AUDIO SOURCE	N=1-4/H1~H4, 5~8/ O1~O4, 0=MUTE
AI	SET ALL OUTPUTS AUDIO SOURCE	N=1-4/H1~H4, 5~8/ O1~O4, 0=MUTE
VPRESET	SHOW VIDEO PRESET CONFIG	
VPRESET N1	SHOW VIDEO PRESET CONFIG	N1=1~8,
VPRESET N1 N2	SET VIDEO PRESET CONFIG	N1=1~8, N2=AxBxCxD(x=1-4/ H1~H4, 5~8/O1~O4, 0=MUTE
APRESET-H	SHOW HDMI AUDIO PRESET CONFIG	
APRESET-H N1	SHOW HDMI AUDIO PRESET CONFIG	N1=1~8,
APRESET-H N1 N2	SET HDMI AUDIO PRESET CONFIG	N1=1~8, N2=AxBxCxD(x=1-4/ H1~H4, 5~8/O1~O4, 0=MUTE
APRESET-O	SHOW OPTICAL AUDIO PRESET CONFIG	
APRESET-O N1	SHOW OPTICAL AUDIO PRESET CONFIG	N1=1~8,
APRESET-O N1 N2	SET OPTICAL AUDIO PRESET CONFIG	N1=1~8, N2=AxBxCxD(x=1-4/ H1~H4, 5~8/O1~O4, 0=MUTE
PRESET	SHOW CURRENT PRESET	
PRESET N	SET CURRENT PRESET	N1=1~8,
EDIDMODE	SHOW EDID MODE	

	TYPE	
EDIDMODE N	SET EDID MODE TYPE	N=(1)All (0)Appoint
EDIDALL	SHOW EDID MODE SOURCE FOR ALL	NONE
EDIDALL N	SET EDID CONTENT FOR ALL	N=0-9
EDIDIN	SHOW ALL INPUT EDID SOURCE \\	NONE
EDIDIN N1	SHOW INPUT N1 EDID SOURCE	N1=1-4
EDIDIN N1 N2	SET INPUT N1 EDID SOURCE	N1=1-4 N2=0-9
HDCPIN	SHOW ALL INPUT HDCP STATUS	NONE
HDCPIN N1	SHOW INPUT N1 HDCP STATUS	N1=1-4
HDCPIN N1 N2	SET INPUT N1 HDCP ON/OFF	N1=1-4 N2=(0)OFF (ON)
SOURCEDET	SHOW ALL INPUT SIGNAL	NONE
SOURCEDET N1	SHOW INPUT N1 SIGNAL	N1=1-4
SINKINFO	SHOW ALL OUTPUT INFORMATION	NONE
SINKINFO N1	SHOW OUTPUT N1 INFORMATION	N1=A-B
INNAME	SHOW ALL INPUT NAME	NONE
INNAME N1	SHOW INPUT N1 NAME	N1=1-4
INNAME N1 N2	SET INPUT N1 NAME	N1=1-4 N2=ABCDEFGH
OUTNAME	SHOW ALL OUTPUT NAME	NONE
OUTNAME N1	SHOW OUTPUT N1 NAME	N1=A-B
OUTNAME N1 N2	SET OUTPUT N1 NAME	N1=A-B N2=ABCDEFGH

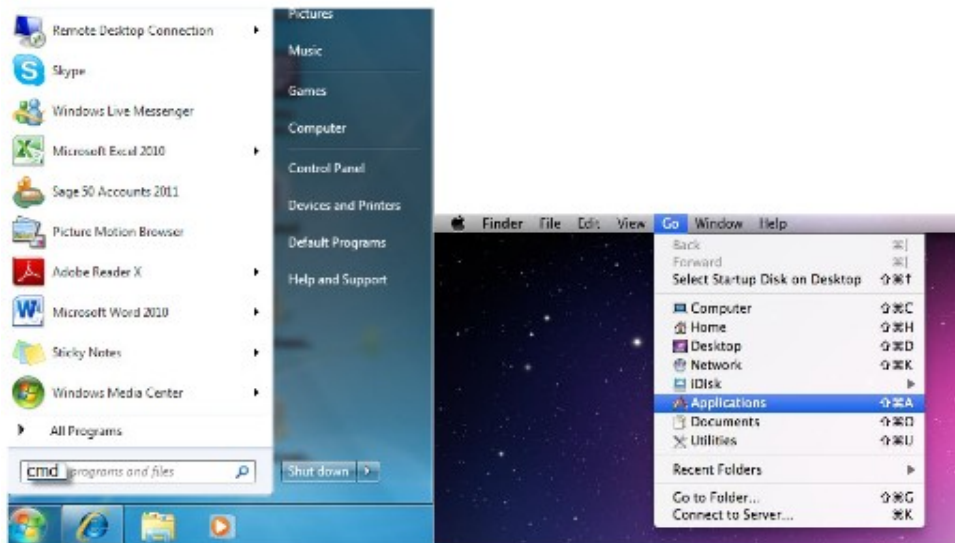
VER	SHOW DESCRIPT OF UNIT	NONE
REBOOT	SYSTEM REBOOT	NONE
HELP	SHOW COMMAND LIST	NONE
HELP N	SHOW DESCRIPT OF COMMAND	N : command name

Note:

All the RS-232 command will be not executed unless followed with a carriage return. All commands are case-sensitive.

Telnet Control

To access the telnet control in Windows 7, click on 'Start' menu and type "cmd" in the Search field then press enter. Under Windows XP go to the 'Start' menu and click on "Run", type "cmd" and press enter. Under Mac OS X, go to Go→Application→Utilities→Terminal



Once in the command line interface (CLI) type "telnet", then the IP address of the unit and hit enter.

```
Microsoft Windows [Version 6.1.7600]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

C:\Users\CYP>telnet 192.168.5.153 23
```

Type HELP or ? to bring out all the commands.

```
-----
Available commands:
P0
P1
IPCONFIG
SIPADDR
SNETMASK
SGATEWAY
HTTPPORT
RSTIP
UA
UB
UC
UD
UI
AUA
AUB
AUC
AUD
AUI
AOA
AOB
AOC
AOD
AOI
AOJ
AI
UPRESET
APRESET-H
APRESET-O
PRESET
EDIDMODE
EDIDALL
EDIDIN
HDCPIN
SOURCEDET
SINKINFO
INNAME
OUTNAME
UART1BR
UART2BR
UER
REBOOT
HELP
-----
```

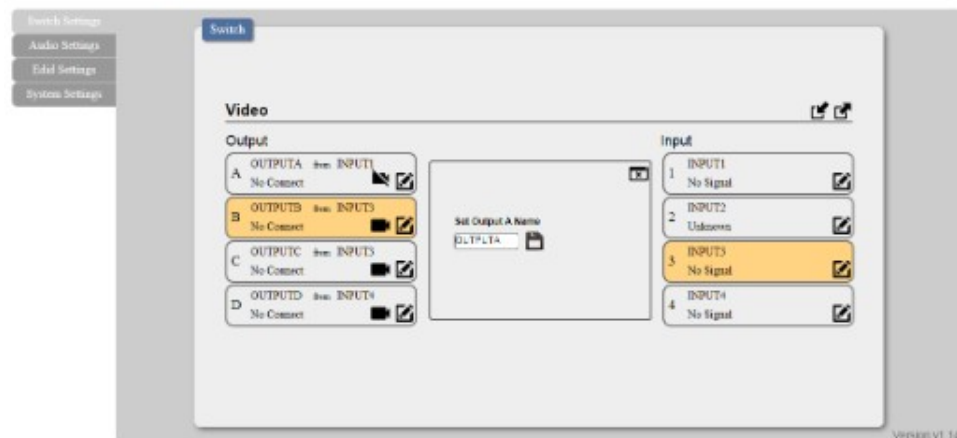
Note:


All the commands will be not executed unless followed by a carriage return. Commands are case-insensitive. If the IP is changed then the IP Address required for Telnet access will also change accordingly

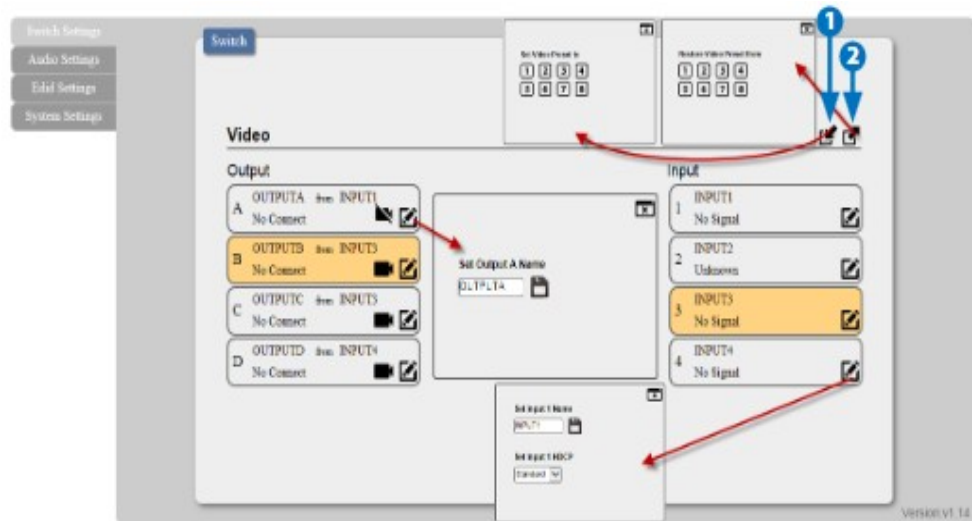
Web GUI Control

On a PC/Laptop that is connected to an active network system, open a web browser and type device's IP address (available inside the OSD menu) on the web address entry bar. The browser will display device's Switch, Audio, EDID & System Settings for users to control.

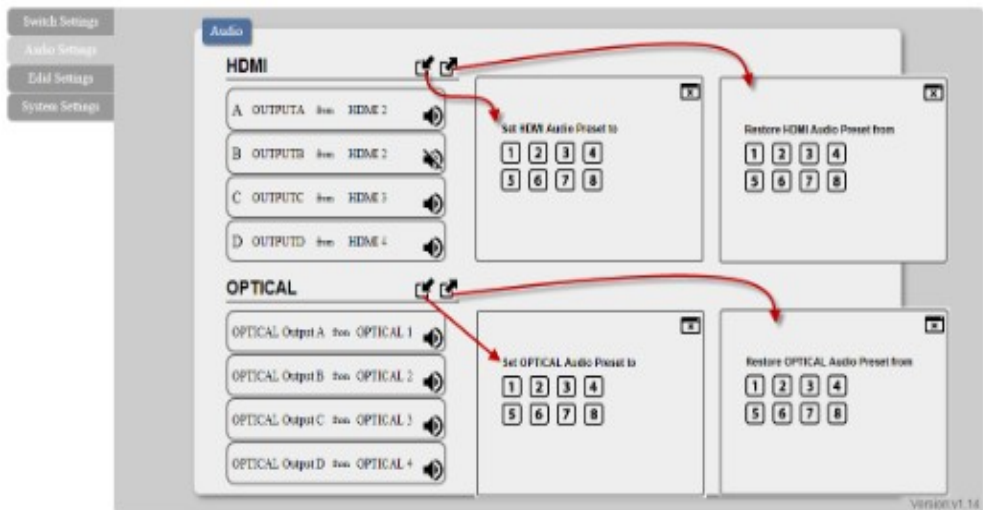
Switch Settings





Click on OUTPUT A~D to select output display with INPUT 1~4 source selection, multi-outputs can select an input or an output with an input selection. Once the selection is made on both output and input successfully, the background color will return back to white. Click on  to mute video output allowing only audio only on HDMI output.






1. Set Video Preset from 1~8: Select the desire input for output(s) setting first then click a number from 1~8 to set the video setting.
2. Restore Video Preset from 1~8: To recall the video setting from 1~8.



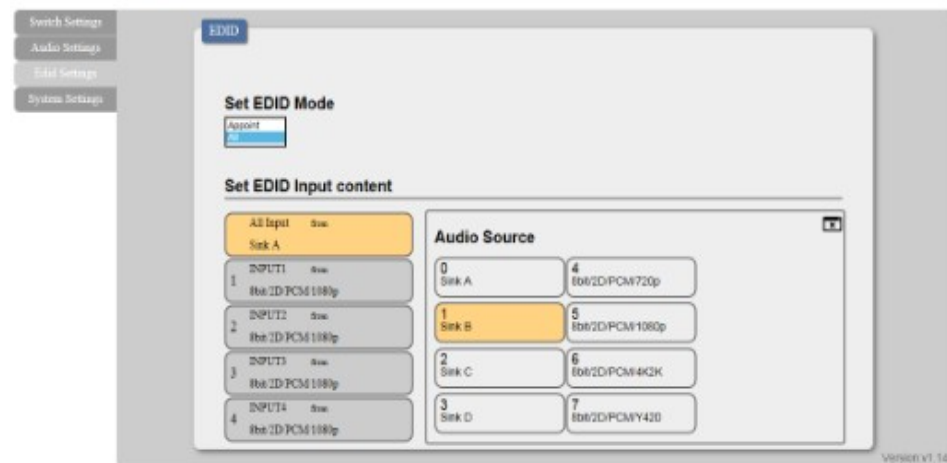
You may rename outputs and inputs devices by click on  to bring out the rename window. Type in the new name under Set OUTPUT/INPUT Name and click on  to save it. Inputs HDCP setting can be selected under this window.

Audio Settings



Click on HDMI/Optical output(s) A~D to select an Audio Source from 1~12, multiple output may be selected for an input setting. To save the setting click on  and to recall the setting click on . To mute and unmute the output audio click on .

EDID Setting



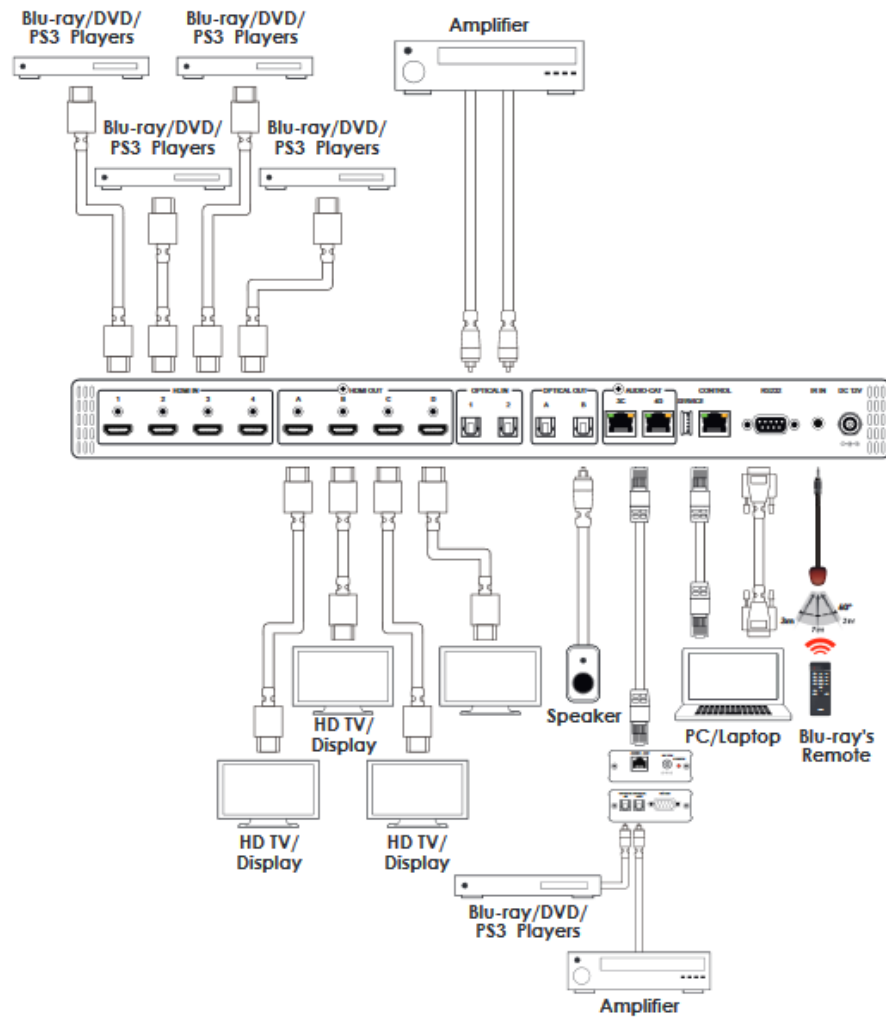
EDID setting can be set individually for each input or one setting for inputs, click on "Appoint" or "All" first to select EDID mode. Click on input(s) and select from 1~9 to set the EDID

System Settings



Select IP Mode with STATIC IP or DHCP for using a static or floating IP.

Connection Diagram



Specifications

Frequency Bandwidth	300MHz/3Gbps
Input Ports	4 x HDMI, 2 x S/PDIF, 2 x AUDIO-CAT 1 x USB (Service only) 1 x Control 1 x RS-232 1 x IR
Output ports	4 x HDMI, 2 x AUDIO-CAT
Resolution	480i~1080p@50/60, 1080p@24, 4K x 2K (3840x2160/4096x2160@24/50/60Hz
Y420)	
Output Level	VGA~WUXGA
THD+N	
Frequency Response	
SNR	
Crosstalk	
IR Frequency	30~50kHz
Power Supply	12VDC/3A (US/EU standards, CE/FCC/UL certified)
ESD Protection	Human body model: ±8kV (air-gap discharge) ±4kV (contact discharge)
Dimensions	482mm (W) x 278mm (D) x 50mm (H)
Weight	2936 g
Chassis Material	Metal
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 (no condensation)
Power Consumption (W)	4.7

DVI and HDMI Supported Resolutions	Input	Output
640x480@60	V	V
640x480@72	V	V
640x480@75	V	V
720x480@60	V	V
720x576p@50	V	V
800x600@60	V	V
800x600@72	V	V
800x600@75	V	V
1024x768@60	V	V
1024x768@70	V	V
1024x768@75	V	V
1280x720@50	V	V
1280x720@60	V	V
1280x720p@60	V	V
1280x768@60	V	V
1280x800@60	V	V
1280x1024@60	V	V
1360x768@60	V	V
1600x1200@60	V	V
1920x1080i@50	V	V
1920x1080i@60	V	V
1920x1080p@24	V	V
1920x1080p@25	V	V
1920x1080p@30	V	V
1920x1080p@50	V	V
1920x1080p@60	V	V
1920x1200@60(RB)	V	V
3840x2160@24/25/30	V	V
4096x2160@24_YUV420	V	V

HDMI input (Up to 192kHz)	HDMI output
LPCM 2CH	V