

**UHD 4x2 4K2K Switch with 6G  
capability - ID# 15429**



**Operation Manual**

## Introduction

This 6G UHD 4 by 2 HDMI Matrix allows the customer to route up to four 6G HDMI input signals to any of two 6G HDMI outputs. This unit supports 4K@60Hz (YUV 4:4:4), 48-bit Deep Color, HDR (High Dynamic Range), HD audio formats and other features defined by the HDMI 2.0 specification. Five pre-defined internal EDIDs and two external EDID options are available for EDID management. The unit provides intuitive front panel controls as well as RS-232, telnet, WebGUI and IR remote control options.

## Features

- HDMI 2.0 and DVI 1.0 compliant
- HDCP 1.4 and 2.2 compliant
- Supports the matrix routing of four 6G HDMI inputs to two 6G HDMI outputs
- Supports HDTV resolutions up to 4K UHD (3840x2160@24/25/30/50/60 & 4096x2160@24/25/30/50/60Hz)
- Maximum data rate up to 6Gbps with Deep Color support up to 48-bit at 1080p
- Supports pass-through of HD audio formats including LPCM, Dolby Digital, DTS, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos and DTS-HD Master Audio
- Supports EDID management via five pre-defined internal EDIDs and two external EDID options
- Multiple control interfaces including RS-232, telnet, WebGUI and IR remote

## Applications

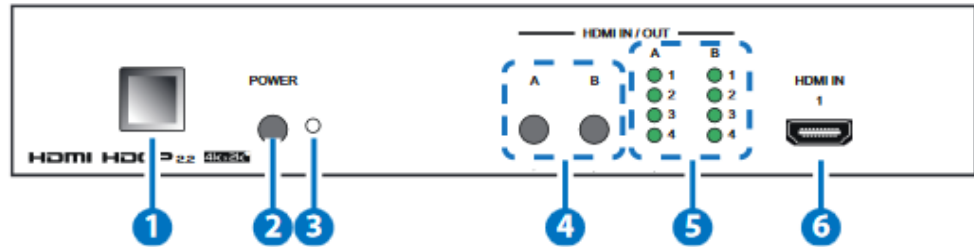
- Entertainment Room & Home Theater
- Show Room & Demo Room
- Class room & Lecture Hall Presentations
- Public Commercial Display

## 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.
- The use of "Premium High Speed HDMI" cables is highly recommended.

## Operating Functions and Controls

### Front Panel



#### 1. IR window:

Accepts IR signals from the included IR remote for control of this unit only.

#### 2. POWER:

Press this button to power on the unit or place it into stand-by mode.

#### **Note:**

Ethernet and RS-232 remain active while the unit is in stand-by mode.

#### 3. Power indicator:

This LED will illuminate GREEN to indicate the unit is on and receiving power. When the unit is in stand-by mode the LED will illuminate RED.

#### 4. HDMI Out routing buttons "A" & "B":

Press either of these buttons to sequentially switch through the available inputs for the associated output.

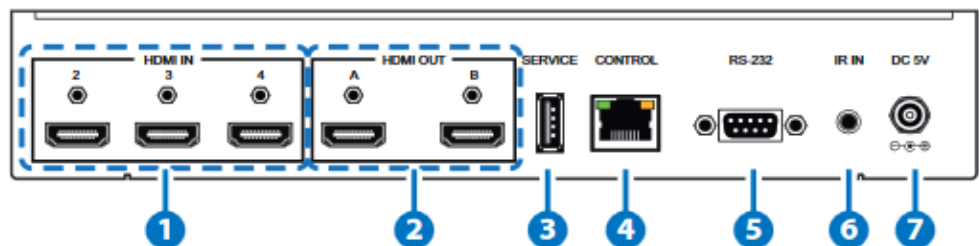
#### 5. HDMI In indicator "1&2&3&4":

The LED in each column will illuminate GREEN to indicate which source is currently selected for each output

#### 6. HDMI In:

Connect to HDMI source equipment such as a media player, game console or set-top box. DVI sources are also supported with the use of an HDMI to DVI adapter.

### Rear Panel



#### 1. HDMI In :

Connect to HDMI source equipment such as a media player, game console or set-top box. DVI sources are also supported with the use of an HDMI to DVI adapter

**2. HDMI Out:**

Connect to HDMI TVs, monitors or amplifiers for digital video and audio output. DVI sources are also supported with the use of an HDMI to DVI adapter

**3. SERVICE:**

This slot (USB 2.0) is reserved for firmware update use only. Please plug in a USB thumb drive containing the new firmware to update the unit.

**4. CONTROL:**

Connect directly, or through a network switch, to your PC/laptop to control the unit via telnet/WebGUI.

**5. RS-232:**

Connect directly to your PC/laptop to send RS-232 commands to control the unit.

**6. IR IN:**

Connect to the provided IR Extender to extend the IR control range of the unit. Ensure that the remote being used is within direct line-of-sight of the IR Extender.

**7. DC 5V:**

Plug the 5V DC power adapter into the unit and connect it to an AC wall outlet for power

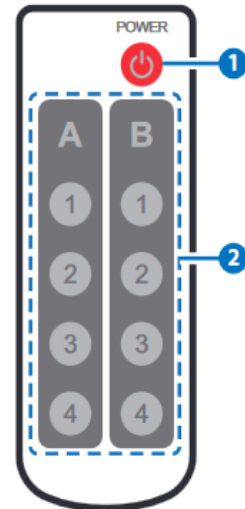
**Remote Control**

**1. POWER:**

Press Power key to turn on the device or set to standby mode.

**2. OUTPUT A1~A4 & B1~B4:**

Press these buttons to change the routing of output A/B



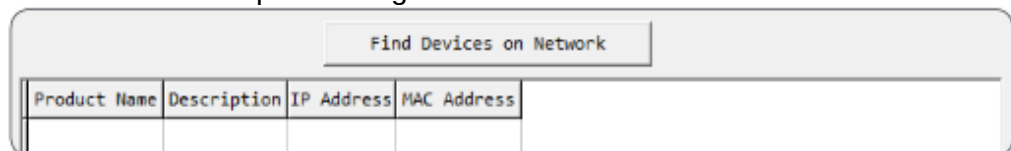
**WebGUI**

**Install the IP Discovery Tool:**

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

Note: The unit's default IP address is 192.168.1.50

2. 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



3. By clicking on one of the listed devices you will be presented with

the network details of that particular device. 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”.

MAC Address	00:00:00:00:00:00
IP Address	<input type="text"/>
Subnet Mask	<input type="text"/>
Gateway IP	<input type="text"/>
DNS	<input type="text"/>
IP Mode	Static
Web GUI Port	80
Telnet Port	23
S / N	
Firmware Version	
Hardware Version	

4. 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 Control Page

All functions, including power, input selection, EDID management, HDCP management, Ethernet settings, and reset/firmware functions, are presented on a single web page to allow for intuitive operation. The individual functions will be introduced in the following sections.

<b>POWER</b> POWER: ON	<b>ROUTING</b> Output A From: INPUT1 Output B From: INPUT3	<b>SOURCE DETECT</b> INPUT1: OFF INPUT2: OFF INPUT3: OFF INPUT4: OFF	<b>STATUS</b> HDMI OUT A: INPUT1 HDMI OUT B: INPUT3 VERSION: V2.1 RESET REBOOT
<b>EDID</b> Mode: ALL EDID ALL: S/2D/PCM/1080p	<b>HDCP CONTROL</b> INPUT1: Standard INPUT2: Standard INPUT3: Standard INPUT4: Standard	<b>FIRMWARE UPDATE</b> BROWSE UPDATE	
<b>NAMING</b> INPUT1: INPUT1 INPUT2: INPUT2 INPUT3: INPUT3 INPUT4: INPUT4 OUTPUTA: OUTPUTA OUTPUTB: OUTPUTB SAVE	<b>NETWORK SETTING</b> MAC: 00:23:45:67:89:ab IP Mode: DHCP IP Address: 192.168.8.132 Net Mask: 255.255.255.0 Gateway: 192.168.8.254 HTTP Port: 80 Telnet Port: 23 APPLY	<b>HDMI OUT A INFO</b> Type: - Manuf. Name: - Native Resolution: - Color Depth: - 3D: - 4K2K: - Audio Format: -	
		<b>HDMI OUT B INFO</b> Type: - Manuf. Name: - Native Resolution: - Color Depth: - 3D: - 4K2K: - Audio Format: -	

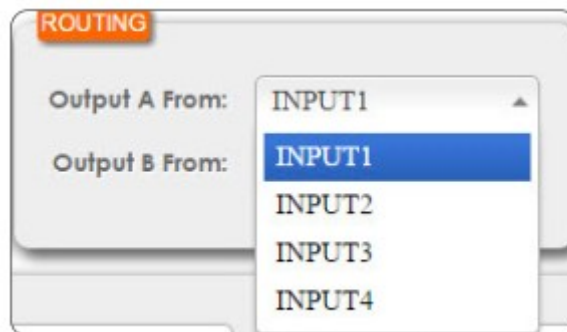
### Power On/Off

The unit can be powered on or off (stand-by mode) from this tab.



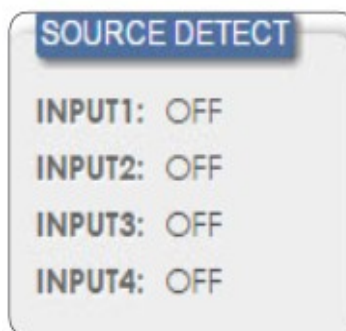
### Routing

This tab allows for the selection of the input source for each output. Four HDMI inputs and two HDMI outputs are available for selection.



### Source Detect

When a live input source is one of the 4 HDMI inputs the corresponding input in this tab will display "ON". If no source is detected on that input, it will display "OFF".



### Status

This tab displays the currently selected HDMI input sources for each output and the unit's firmware version. It also provides a way to reset or reboot the unit.

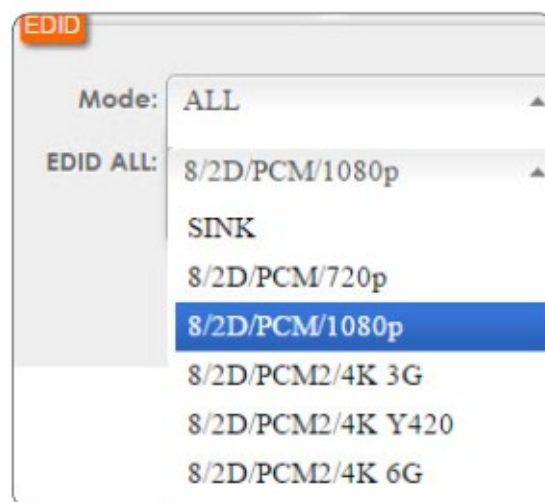
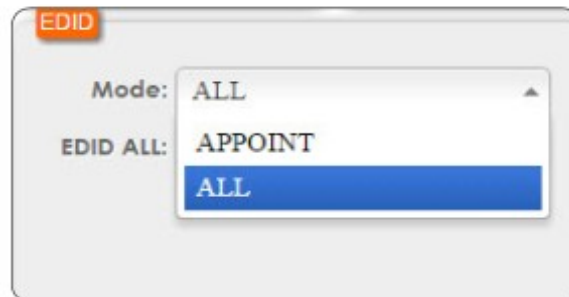
- 1) To perform a factory reset on the unit, please click the "RESET" button.
- 2) To reboot the unit, please click the "REBOOT" button.



### EDID

This tab controls EDID management for the unit. All inputs can share the same assigned EDID, or each input can have a discrete EDID assigned to it.

- 1) Selecting the "ALL" mode will send the selected EDID to all inputs.
- 2) Selecting the "APPOINT" mode allows each input to have a different EDID assigned to it.
- 3) The available EDID options include SINK A/SINK B (EDID is passed from one of the currently connected displays), 8/2D/PCM/720p, 8/2D/PCM/1080p, 8/2D/PCM2/4K 3G, 8/2D/PCM2/4K Y420 and 8/2D/PCM/4K 6G.



### HDCP Control

This tab allows for the HDCP mode to be switched between "Standard"

and “Apple” mode. “Apple” mode allows for the display of non-HDCP required content from Apple devices on non-HDCP displays. This setting can be assigned individually to each input.



### Firmware Update

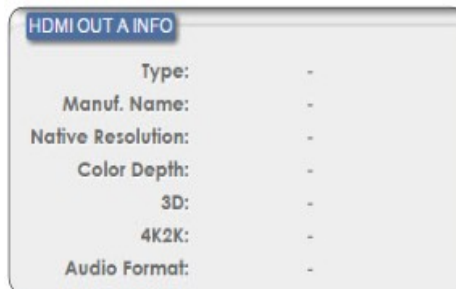
This tab provides a way to update the firmware of the unit.

- 1) BROWSE: Click the “BROWSE” button to select the firmware update .bin file which is located on your local PC.
- 2) UPDATE: Click the “UPDATE” button to begin the firmware update process.



### HDMI Out A Info & HDMI Out B Info


These tabs present the information detected from displays connected to HDMI outputs A & B, including type, manufacturer name, native resolution, color depth, 3D support, 4K support and audio format support.





## NAMING

This tab allows for the renaming of the four HDMI input ports and the two HDMI output ports. Please click the “SAVE” button to store the changes.



The NAMING configuration panel features a title bar with the word "NAMING" in an orange box. Below the title bar, there are six input fields arranged vertically. The first four are labeled "INPUT1:", "INPUT2:", "INPUT3:", and "INPUT4:", each containing the text "INPUT1", "INPUT2", "INPUT3", and "INPUT4" respectively. The next two are labeled "OUTPUTA:" and "OUTPUTB:", each containing the text "OUTPUTA" and "OUTPUTB" respectively. At the bottom of the panel is a "SAVE" button.

## Network Setting

This tab provides control over the unit’s network settings. The IP mode can be set to DHCP for automatic IP configuration, if your local network supports it, or it can be placed into STATIC mode. When in STATIC mode the IP address, netmask and gateway can be defined manually. The HTTP and telnet ports can also be changed from their defaults here.



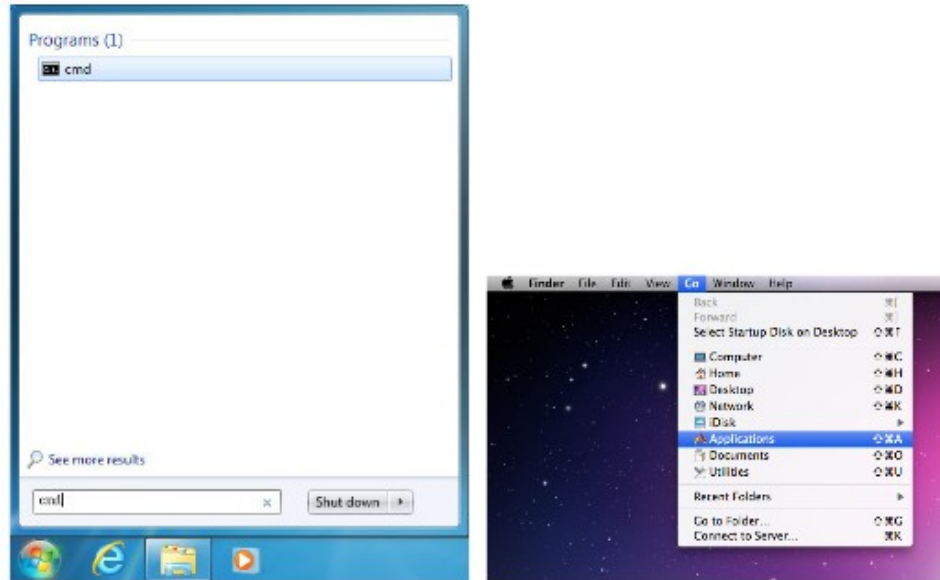
The NETWORK SETTING configuration panel features a title bar with the words "NETWORK SETTING" in an orange box. Below the title bar, the MAC address is displayed as "f0:23:45:67:89:ab". The IP Mode is set to "DHCP" in a dropdown menu. The IP Address is "192.168.6.132", the Net Mask is "255.255.255.0", and the Gateway is "192.168.6.254". The HTTP Port is "80" and the Telnet Port is "23". At the bottom of the panel is an "APPLY" button.

## Telnet Control

Before attempting to use telnet control, please ensure that both the unit and the PC/Laptop are connected to the same active networks. To access Telnet in Windows 7, click on the “Start” menu and type “cmd” in the search field, then press “Enter”.

Under Windows XP go to the “Start” menu, click on “Run”, type “cmd” then press “Enter”.

Under Mac OS X, go to Go → Applications → Utilities → Terminal  
See below for reference.



Once in the CLI (Command Line Interface) type “telnet” followed by the IP address of the unit and “23”, then hit “Enter”.

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

C:\Users\Administrator>telnet 192.168.XX.XX 23
```

This will connect us to the unit we wish to control. Type “help” to list the available commands.

```

Welcome to TELNET.
?

Command List
-----
HELP
P0
P1
INNAME
OUTNAME
OUT
SOURCEDET
SINKINFO
HDCPIN
EDIDMODE
EDIDALL
EDIDIN
FADEFAULT
REBOOT
USER
IPCONFIG
SIPADDR
SNETMASK
SGATEWAY
HTTTPORT
TELNETPORT
IPMODE
SETMAC
READMAC
UPDATE

```

**RS-232  
Command**

Command	Description	Parameter
HELP/?	List available commands	NONE
P0	POWER OFF	NONE
P1	POWER ON	NONE
INNAME	SET/SHOW ALL INPUT NAMEIN	NAME [1~4] [8 char]
OUTNAME	SET/SHOW HDMI OUTPUT NAME	OUTNAME [A/B] [8 char]
A	SET/SHOW OUTA SOURCE	A [1~4]
B	SET/SHOW OUTB SOURCE	B [1~4]
OUT	SET/SHOW OUTA/B SOURCE	OUT [1~4]
SOURCEDET	SHOW INPUT INFORMATION NONE	NONE

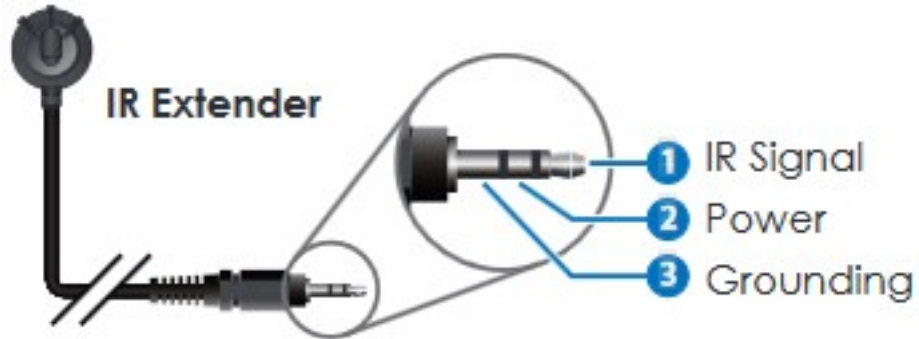
SINKINFO	SHOW OUTPUT INFORMATION	NONE
HDCPIN	SET/SHOW INPUT HDCP STATUS	HDCPIN [1~4] [0:STANDARD/1:APPLE]
EDIDMODE	SET/SHOW EDID MODE TYPE	EDIDMODE [0:APPOINT/1:ALL]
EDIDALL	SET/SHOW EDID ALL CONTENT	EDIDALL [0~6] 0=OUTPUT A 1=OUTPUT B 2=8/2D/PCM/720P 3=8/2D/PCM/1080P 4=8/2D/PCM/4K2K_30 5=8/2D/PCM/4K2K_Y420 6=8/2D/PCM/4K2K_60
EDIDIN	SET/SHOW EDID INPUT CONTENT	EDIDIN [1~4] [0~6]
FADEFAULT	SET ALL CONFIGURATIONS TO FACTORY DEFAULT	NONE
REBOOT	REBOOT DEVICE	NONE
VER	DISPLAY FIRMWARE VERSION	NONE
IPCONFIG	DISPLAY THE CURRENT IPCONFIG	NONE
SIPADDR	SET ETHERNET IP ADDRESS	SIPADDR X.X.X.X (X:0~255)
SNETMASK	SET ETHERNET NETMASK	SNETMASK X.X.X.X (X:0~255)
SGATEWAY	SET ETHERNET GATEWAY	SGATEWAY X.X.X.X (X:0~255)
HTTPPORT	SET HTTP PORT NUMBER	HTTPPORT N (N=0~65535)
TELNETPORT	SET TELNET PORT NUMBER	TELNETPORT N (N=0~65535)
IPMODE	SET IP MODE	IPMODE N (N=0-STATIC, 1-DHCP)
SETMAC	Write MAC Address to eeprom	NONE
READMAC	Read MAC Address	NONE

	from eeprom	
UPDATE	UPDATE Firmware <MCU/VS/ZVS>	
HDCPDOWN(N)	N=1 YES	

**Note:**

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

**IR Cable Pin Assignment**



**D-sub 9 Pin Definition**

Pin	Define TX / RX
1	N/C
2	TxD/RxD
3	RxD/TxD
4	N/C
5	GND
6	N/C
7	N/C
8	N/C
9	N/C

Baud Rate: 115200bps  
Data bit: 8 bits  
Parity: None  
Flow Control: None  
Stop Bit: 1

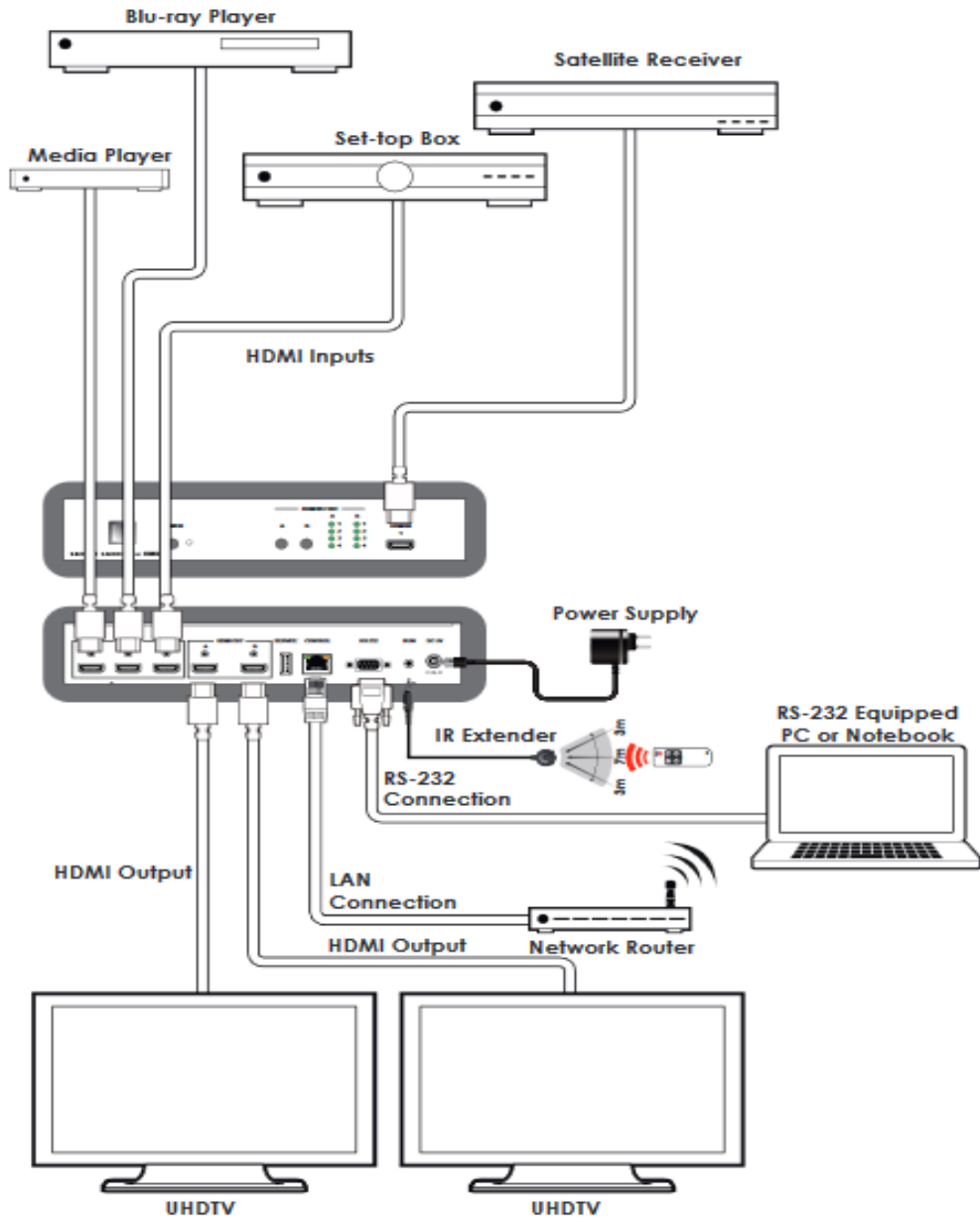
## Specifications

<b>Video Bandwidth</b>	600MHz/6Gbps
<b>Input Ports</b>	4 x HDMI, 1 x IR In
<b>Output Ports</b>	2 x HDMI
<b>Others</b>	1 x Control, 1 x Service, 1 x RS232
<b>Supported Resolutions</b>	480i to 4K2K@24/50/60
<b>HDMI Sampling Rate</b>	32kHz ~ 192 kHz
<b>IR Frequency</b>	38kHz
<b>Baud Rate</b>	19200 bps
<b>Power Supply</b>	5V/2.6A DC (US/EU standards, CE/FCC/UL certified)
<b>Chassis Material</b>	Metal
<b>Silkscreen Color</b>	Black
<b>Weight</b>	796g
<b>Dimensions</b>	240mm (W) x 43mm (H) x 104mm (D)
<b>Power Consumption</b>	7.106W (1.10W at standby mode)

## Support Timing Table

HDMI Resolution	Supported
480i	√
576i	√
480p	√
576p	√
640x480	√
720p @50&60	√
800x600	√
1080i @50&60	√
1080p@24&50&60	√
1024x768	√
1366x768	√
1280x1024	√
1600x1200	√
1920x1200	√
3840x2160p@24&25&30&50&60(YUV444)	√
3840x2160p@50&60(YUV420)	√
4096x2160p@24&50&60(YUV444)	√
4096x2160p@50& 60(YUV420)	√

# Connection Diagram



**HDMI Cable  
Length**

USB Audio Specifications	
USB Audio Class	USB Audio 2.0
Format Support	2CH LPCM : 44.1K, 48K, 88.2K, 96K, 176.4K, 192K, 352.8K, 384K
OS Support	Window XP, Vista, 7, 8, 8.1, 10 (32 & 64bit) / OSX 10.6.4 above

HDMI CABLE LENGTH (MAX)			
8-bit 1080p		12-bit 1080p	
Input	Output	Input	Output
10M	10M	10M	10M

HI SPEED 4K2K CABLE LENGTH (MAX)		
4K2K	HDMI In	HDMI Out
3840x2160p24	5m	5m
3840x2160p60	5m	5m