

**10 input × 2 output HDMI UHD  
Matrix with Fast Switching - # 15367**



**Operation Manual**

## Introduction

This 10 by 2 HDMI UHD Matrix is an advanced solution for switching up to 10 HDMI inputs to two HDMI outputs. It provides high performance pass-through of video/audio and is capable of receiving and transmitting 300MHz/9Gbps bandwidth rate with no data loss. It's Fast Switching technology can greatly reduce the time required to swap between inputs. Supporting the latest features you can be assured of reliable and high quality HDMI distribution.

## Applications

- Showroom display & control
- Educational demo
- Installation usage
- Advertising display

## Features

- Supports UHD resolutions up to 4K2K@24/25/30Hz & 4K2K YUV420@60Hz
- Supports HDTV resolutions up to 1080@60Hz, 'Deep Color' 36/30/24-bit and PC resolutions up to WUXGA@60Hz(RB)
- Supports 3D
- Supports pass-through of audio formats: LPCM 2/5.1/7.1CH, Dolby Digital 2~5.1CH, DTS 2~5.1CH, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos and DTS-HD Master Audio
- Supports EDID selection function
- Supports control via IR, RS-232, Telnet and WebGUI controls
- Input port HDCP support Standard and Apple mode. The Apple mode selection to guarantees the use of Apple devices.
- Compliant with DVI source

**Note:**

*Supporting HDMI to DVI conversion when HDMI sources is non-deep color and color space RGB.*

## System

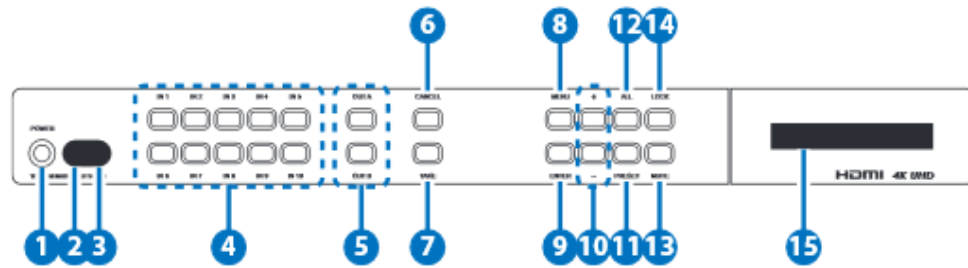
### Requirements

Input source equipment such as DVD/Blu-ray player and output HD display/Monitor with HDMI cables.



## Operation Controls and Functions

### Front Panel



#### 1. POWER Button

Press this button to switch On or set the device to standby mode.

#### 2. POWER LED

This LED will illuminate in green when the device is power On and if it is switched to standby mode the LED will turn red.

#### 3. IR Window

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

#### 4. IN 1~10

Press these IN buttons to select an input from the 10 input sources.

#### 5. OUT A/B

Press these buttons once a time along with an IN buttons to select an input source for an output display. i.e. OUTA → IN1 → TAKE or OUTB → IN10 → TAKE.

#### 6. CANCEL

Press this button to cancel the IN/OUT selection and during any selection under MENU.

#### 7. TAKE

Press this button to confirm the selection of an IN and an OUT button. If this button is not pressed the IN & OUT selection will not be executed.

#### 8. MENU

Press to enter into the menu selection.

#### 9. ENTER

Press to confirm the selection.

#### 10. +/-

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

#### 11. PRESET

Press this button to recall the preset setting from 1~10. Press and select from IN1~10 then press TAKE to confirm the recall selection or press CANCEL to exit the selection. To reset the Preset setting, enter into menu and select Preset setting from IN1~10 then press OUTA and select an input from IN1~10 then press OUTB and select an input from IN1~10 again and press ENTER to confirm the selection. eg. To preset 2's figure, MENU → ENTER → Matrix Preset → Enter→

Preset2 → IN2 → OUTA → IN8 → OUTB → IN7 → ENTER

### 12. ALL

Press this button to select all outputs to display with an input source. e.g. To select all output with input source 3. ALL → IN3

### 13. MUTE

Press this button to mute video and audio on OUT A or B or on all output. e.g. To mute output A OUTA → MUTE

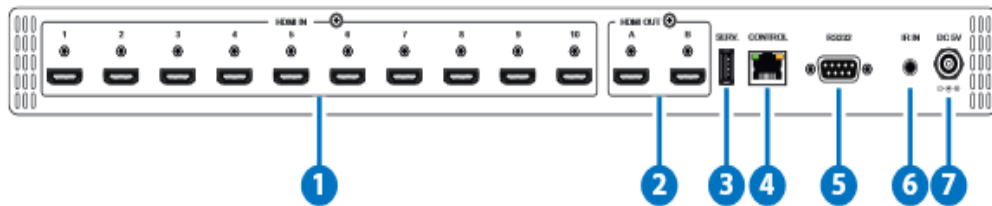
### 14. LOCK

Press this button to lock all button functions on the panel to unlock, press the button and hold for 3 seconds.

### 15. LCM

Displaying Input and Outputs selection and menu selection.

## Rear Panel



### 1. HDMI IN

Connect from source equipment 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. SERV.

This slot is reserved for firmware update use only.

### 4. CONTROL

Connect from PC/Laptop with active internet service for Telnet or WebGUI control with RJ-45 terminated cable.

### 5. RS-232

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

### 6. IR IN

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

### 7. DC 5V

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

## Remote Control

### 1. POWER

Press this button to switch On or set the device to standby mode.

### 2. MUTE

Press this button to mute video and audio on OUT A or B or on all output. e.g. To mute output A OUTA → MUTE

### 3. OUT A/B

Press these buttons once a time along with an IN buttons to select an input source for an output display. i.e. OUTA → IN1 → TAKE or OUTB → IN10 → TAKE.

### 4. IN 1~10

Press these IN buttons to select an input from the 10 input sources.

### 5. +/-

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

### 6. OK

Press to confirm the selection.

### 7. CANCEL

Press this button to cancel the IN/OUT selection and during any selection under MENU.

### 8. MENU

Press to enter into the menu selection.

### 9. TAKE

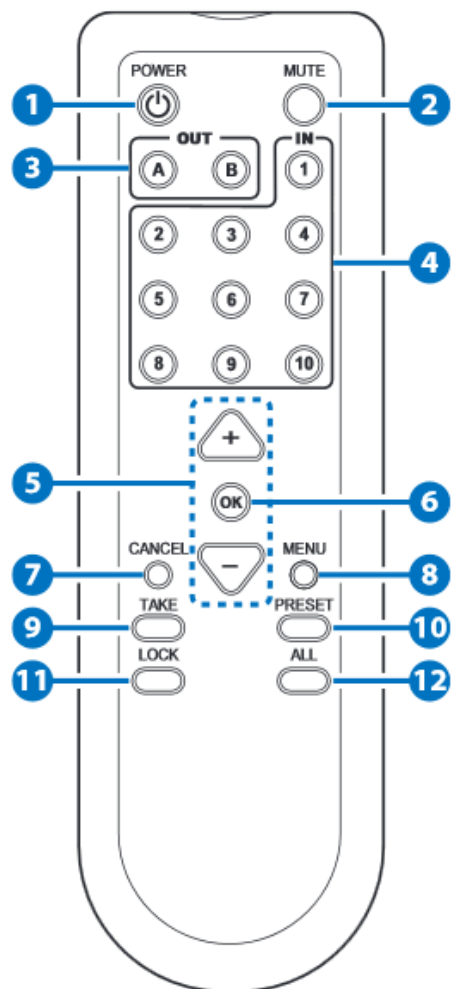
Press this button to confirm the selection of an IN and an OUT button. If this button is not pressed the IN & OUT selection will not be executed.

### 10. PRESET

Press this button to recall the preset setting from 1~10. Press and select from IN1~10 then press TAKE to confirm the recall selection or press CANCEL to exit the selection. To reset the Preset setting, enter into menu and select Preset setting from IN1~10 then press OUTA and select an input from IN1~10 then press OUTB and select an input from IN1~10 again and press ENTER to confirm the selection. eg. To preset 2's figure, MENU → ENTER → Matrix Preset → ENTER → Preset2 → IN2 → OUTA → IN8 → OUTB → IN7 → ENTER

### 11. LOCK

Press this button to lock all button functions on the panel to unlock, press the button and hold for 3 seconds.



## 12. ALL

Press this button to select all outputs to display with an input source. e.g. To select all output with input source 3. ALL → IN3

### 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 IN1~10" select suitable EDID	
	Exit		
EDID All	Sink A	Copy Output A display EDID	8/2D/ PCM/1080p
	Sink B	Copy Output B display EDID	
	8/2D/ PCM/720p	Standard EDID, Content: deep color/2D3D/audio/native resolution	
	8/2D/PCM/ AC3/720p	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/ AC3/1080p	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/ AC3/4K2K	Standard EDID, Content: deep color/2D3D/audio/ native resolution	
	8/2D/PCM/ Y420	Standard EDID, Content: deep color/2D3D/audio/ native resolution	
	8/2D/PCM/ AC3/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
EDID IN5	Same EDID All	Select Input 5's EDID	Same EDID All
EDID IN6	Same EDID All	Select Input 6's EDID	Same EDID All
EDID IN7	Same EDID All	Select Input 7's EDID	Same EDID All
EDID IN8	Same EDID All	Select Input 8's EDID	Same EDID All
EDID IN9	Same EDID All	Select Input 9's EDID	Same EDID All
EDID IN10	Same EDID All	Select Input 10's EDID	Same EDID All
Matrix Preset	Preset 1	IN/OUT default No.1	A=1 , B=1
	Preset 2	IN/OUT default No.2	A=1 , B=1
	Preset 3	IN/OUT default No.3	A=1 , B=1
	Preset 4	IN/OUT default No.4	A=1 , B=1
	Preset 5	IN/OUT default No.5	A=1 , B=1
	Preset 6	IN/OUT default No.6	A=1 , B=1
	Preset 7	IN/OUT default No.7	A=1 , B=1
	Preset 8	IN/OUT default No.8	A=1 , B=1
	Preset 9	IN/OUT default No.9	A=1 , B=1
	Preset 10	IN/OUT default No.10	A=1 , B=1

	Exit		
--	------	--	--

**To reset the Preset setting, select a Preset from 1~10 then press OUTA and select an input from 1~10 then press OUTB and select an input from 1~10 again and press ENTER to confirm the selection.**

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
	IN5 Standard/ Apple	Set IN5 in Apple/ Standard mode	Standard
	IN6 Standard/ Apple	Set IN6 in Apple/ Standard mode	Standard
	IN7 Standard/ Apple	Set IN7 in Apple/ Standard mode	Standard
	IN8 Standard/ Apple	Set IN8 in Apple/ Standard mode	Standard
	IN9 Standard/ Apple	Set IN9 in Apple/ Standard mode	Standard
	IN10 Standard/ Apple	Set IN10 in Apple/ Standard mode	Standard
	Exit		
Network Setup	IP Mode	DHCP , Static	DHCP
	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	<b>Re-Link. After setup Network, the system needs to re-link</b>	-
	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 (Detect Source's 5V-pin only)	IN1 On/Off , IN2 On/Off	IN1, IN2 detect source with/without the signal	-
	IN3 On/Off , IN4 On/Off	IN3, IN4 detect source with/without the signal	
	IN5 On/Off , IN6 On/Off	IN5, IN6 detect source with/without the signal	
	IN7 On/Off , IN8 On/Off	IN7, IN8 detect source with/without the signal	
	IN9 On/Off , IN10 On/Off	IN9, IN10 detect source with/without the signal	
	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	-
Firmware	FW Version	Display the model	-

		number and FW version	
	Update	FW Update	
	Exit		
Factory Reset	Do Reset	Do system Reset	-
	Exit		
Exit			

**RS-232 Protocols**

Switch	
PIN	Assignment
1	NC
2	TxD
3	RxD
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC

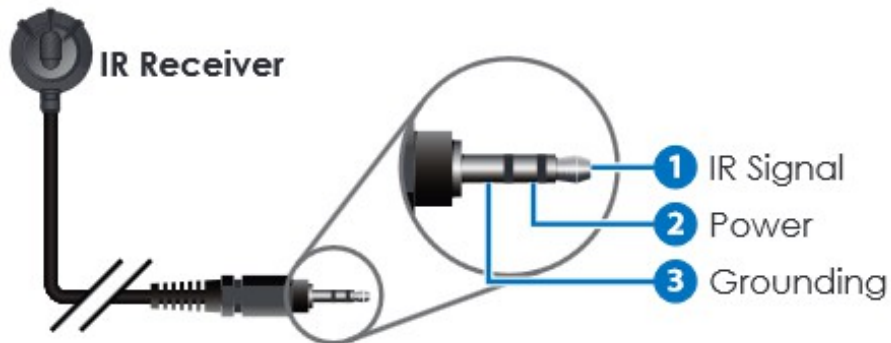
Remote Control	
PIN	Assignment
1	NC
2	RxD
3	TxD
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC



**Baud Rate: 115200bps**  
**Parity: None**  
**Stop Bit: 1**

**Data bit: 8 bits**  
**Flow Control: None**

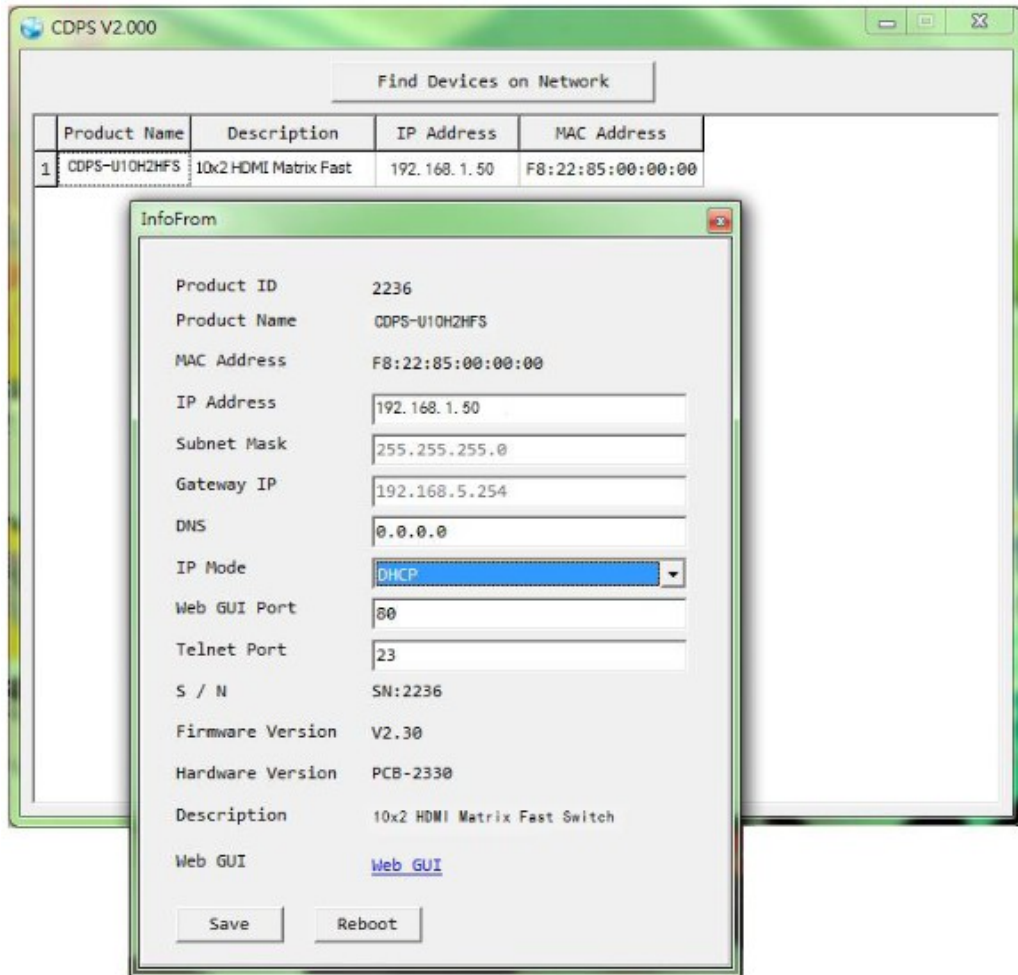
**IR Pin Definitions**



### IP Searching Software Application and Installation

Please download the software from [www.converters.tv](http://www.converters.tv) with file name CDPS V2.000 and save it in a directory where you may use it later.

Connect the Control System with PC/Laptop through the Ethernet port through an active network system and open the CDPS V2.000 application. Click on Find Devices on Network and a list of the devices connected to the Control System will show up.



Then user may use the IP Address to find the control device through Telnet, WebGUI or even RS-232/Hyper Terminal tools.

Telnet & RS-232  
Commands

Command Name	Description	Description of Parameter
P0	Power Off (Standby)	NONE
P1	Power On	NONE
A <i>N</i>	Set Output A Source	N=1-10
B <i>N</i>	Set Output B Source	N=1-10
I <i>N</i>	Set All Outputs Source	N=1-10
IPGONFIG	Display The Current IP Configure	NONE
SIPADDR XXX.XXX.XXX.XXX	Set Ethernet IP Address	XXX=0~255
SNETMASK XXX.XXX.XXX.XXX	Set Ethernet Net Mask	XXX=0~255
SGATEWAY XXX.XXX.XXX.XXX	Set Ethernet Gateway	XXX=0~255
HTTPPORT <i>N</i>	Set Http Port Number	N=0~65535
RSTIP	IP Configuration Reset To <DHCP>	NONE
EDIDMODE	Show EDID MODE	NONE
EDIDMODE <i>N</i>	Set EDID Mode	N=0(Appoint), 1(All)
EDIDALL	Set EDID Mode	NONE
EDIDALL <i>N</i>	Show EDID Mode Source For All	N=1-10
EDIDIN	Set EDID Mode Source For All	NONE
EDIDIN <i>N1</i>	Show Input <i>N1</i> EDID Source	N1=1-10
EDIDIN <i>N1 N2</i>	Set Input <i>N1</i> EDID Source	N1=1-10 N2=1-10
HDCPIN	Input HDCP Status	NONE
HDCPIN <i>N1</i>	Show Input <i>N1</i> HDCP Status	N1=1-10

HDCPIN N1 N2	Set Input N1 HDCP On/Off	N1=1-10 N2=0(OFF), 1(ON)
PRESET	Show All Preset Configure	NONE
PRESET N1	Set Preset N1 Source to Outputs	N1=1-10
PRESET N1 N2	Set Preset N1 Configure	N1=1-10 N2=AXBX (X=01-10,0M)
SOURCEDET	Show All Input Signal	NONE
SOURCEDET N1	Show Input N1 Signal	N1=1-10
SINKINFO	Show Output Information	NONE
INNAME	Show Input Name	NONE
INNAME N1 N2	Set Input N1Name	N1=1-10 N2=ABCDEFGH(Max Length=8)
OUTNAME	Show Output Name	NONE
OUTNAME N1 N2	Set Output N1 Name	N1=1-2 N2=ABCDEFGH(Max Length=8)
VER	Show Unit Firmware Version	NONE
REBOOT	System Reboot	NONE
HELP (?)	Show Command List	NONE
HELP N	Show Description Of Command	N : COMMAND NAME
FADEFAULT	All Configure Set To Factory Default	NONE

**Note:**

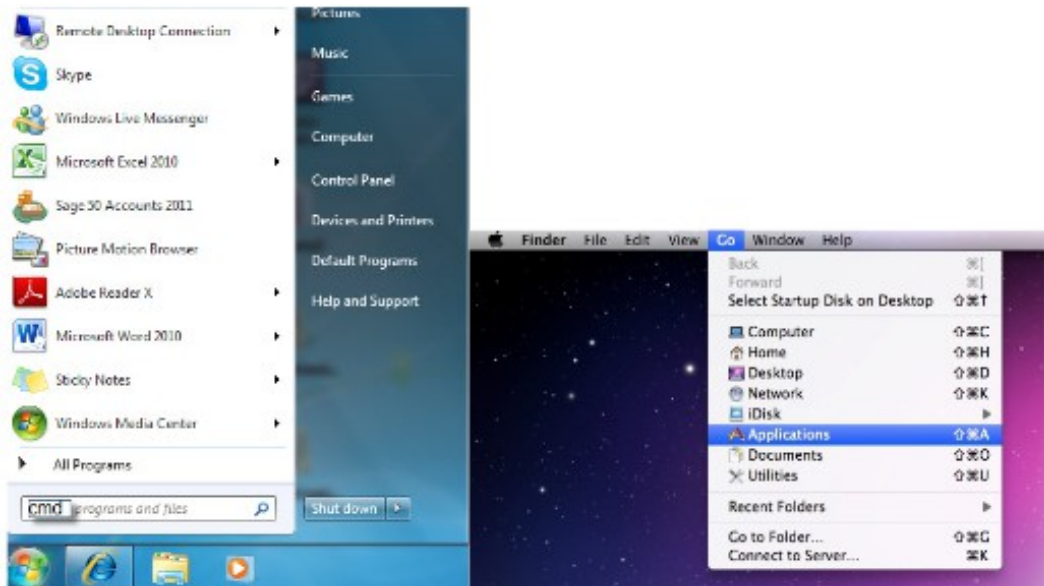
All the RS-232 command will be not executed unless followed with a carriage return. All commands are case-sensitive.

## 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 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

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

Type HELP or ? to bring out all the commands.

```
Welcome to TELNET.
>??
P0      : POWER OFF
P1      : POWER ON
IPCONFIG : DISPLAY THE CURRENT IPCONFIG
SIPADDR : SET ETHERNET IP ADDRESS
SNETMASK : SET ETHERNET NETMASK
SGATEWAY : SET ETHERNET GATEWAY
HITPPORT : SET HTTP PORT NUMBER
TELNETPORT : SET TELNET PORT NUMBER
RSTIP   : IP CONFIGURATION RESET TO <DHCP>
A       : SET OUTPUT A SOURCE
B       : SET OUTPUT B SOURCE
I       : SET ALL OUTPUTS SOURCE
EDIDMODE : EDID MODE
EDIDALL  : EDID MODE SOURCE FOR ALL
EDIDIN   : INPUT EDID SOURCE
HDCPIN   : INPUT HDCP STATUS
PRESET   : MATRIX PRESET CONFIGURATION
SOURCEDET : SOURCE SIGNAL DETECT <ON/OFF>
SINKINFO : SINK INFORMATION
INNAME   : INPUT NAME
OUTNAME  : OUTPUT NAME
USER     : SHOW UNIT FIRMWARE VERSION
REBOOT   : SYSTEM REBOOT
?        : SHOW DESCRIPT OF COMMAND
HELP     : SHOW DESCRIPT OF COMMAND
FAEFAULT : ALL CONFIGURE SET TO FACTORY DEFAULT

>
```

**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 Status, IO Status, Matrix Control, Settings and Network Configuration control pages for users to control.

### Status

#### Routing status

Power: ON

Output A From: INPUT9

Output B From: INPUT1

Output All From: Select

EDID Mode: ALL

#### Preset info

Presets 1-10 buttons	Output A:(1)Output B:(1)
Presets 1-10 buttons	Output A:(1)Output B:(2)
Presets 1-10 buttons	Output A:(1)Output B:(3)
Presets 1-10 buttons	Output A:(1)Output B:(4)
Presets 1-10 buttons	Output A:(1)Output B:(5)
Presets 1-10 buttons	Output A:(9)Output B:(6)
Presets 1-10 buttons	Output A:(1)Output B:(7)
Presets 1-10 buttons	Output A:(1)Output B:(8)
Presets 1-10 buttons	Output A:(1)Output B:(9)
Presets 1-10 buttons	Output A:(1)Output B:(10)

Status
IO Status
Matrix Control
Settings
Network Configuration

**Click on Status for input and output and Preset selection.**

### IO Status

#### Source Detection

Input 1: OFF    Input 4: OFF  
 Input 2: OFF    Input 7: OFF  
 Input 3: OFF    Input 8: OFF  
 Input 4: OFF    Input 9: OFF  
 Input 5: OFF    Input 10: OFF

#### Sink A Info

Type: -  
 Manuf. Name: -  
 Native resolution: -  
 Color Depth: -  
 3D: -  
 4K2K: -  
 Audio Format: -

#### Sink B Info

Type: -  
 Manuf. Name: -  
 Native resolution: -  
 Color Depth: -  
 3D: -  
 4K2K: -  
 Audio Format: -

#### Input Naming

INPUT 1	INPUT1	INPUT 6	INPUT6
INPUT 2	INPUT2	INPUT 7	INPUT7
INPUT 3	INPUT3	INPUT 8	INPUT8
INPUT 4	INPUT4	INPUT 9	INPUT9
INPUT 5	INPUT5	INPUT 10	INPUT10

#### Output Naming

OUTPUT A    OUTPUTA

OUTPUT B    OUTPUTB

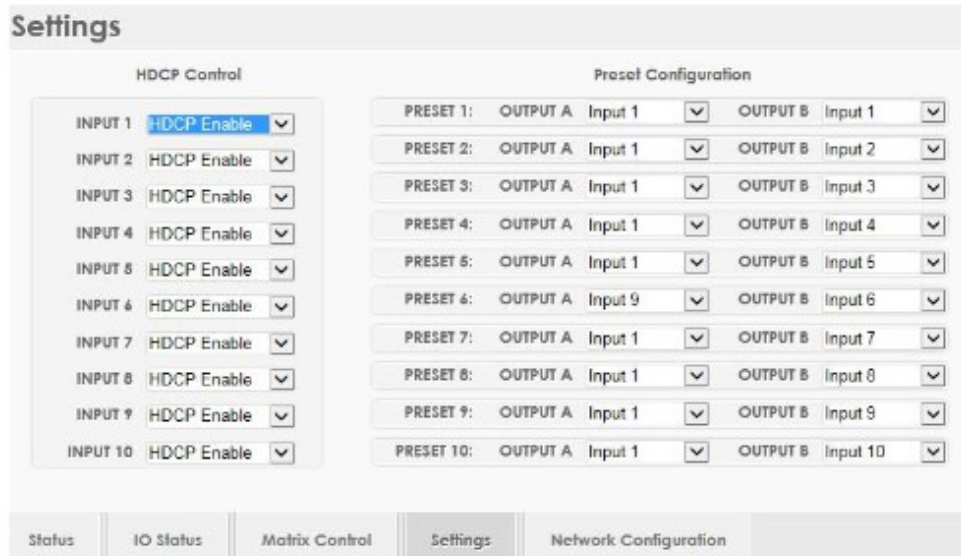
Status
IO Status
Matrix Control
Settings
Network Configuration

**Click on IO Status to view connection status and output EDID information and to rename input and output ports**





Click on Matrix Control to set the EDID mode for each and all inputs.



Click on Settings to set each input's HDCP Control and Preset Configuration.

**Network Configuration**

MAC Address: F8-22-85-00-03-C9

Address Type: DHCP

IP Address: 192.168.5.131

Net Mask: 255.255.255.0

Default Gateway: 192.168.5.254

HTTP Port: 80

Telnet Port: 23

Save

Status | IO Status | Matrix Control | Settings | **Network Configuration**

Click on Network Configuration to set the device's IP configuration. Once the changes are saved the system will reset the IP address on device automatically and user will need to re-enter the IP address to continue the WebGUI function

## Specifications

Video Bandwidth	300MHz / 9Gbps
Input Ports	10 x HDMI, 1 x IR Extender, 1 x RJ-45 (Control), 1 x RS-232, 1 x USB (Firmware update only)
Output ports	2 x HDMI
Resolution	HD: 480i~1080p@24/50/60, 4K2K@24/25/30 & 4K2K@60 YUV_420
HDMI I/O Cable Length	Up to 10M at 1080p@ 8/12 bits or up to 5M at 4K2K
Power Supply	5V DC/2.6A (US/EU standards, CE/FCC/UL certified)
ESD Protection	Human body model: ±8kV (air-gap discharge) ±4kV (contact discharge)
Dimensions	482mm (W) x 276mm (D) x 52mm (H)/
Weight	2854g
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	8.3w (Max)

DVI and HDMI Supported Resolutions	Input	Output
640x480@60/72/75	√	√
720x480@60	√	√
720x576p@50	√	√
800x600@60/72/75	√	√
1024x768@60/70/75	√	√
1280x720@50/60	√	√
1280x720p@60	√	√
1280x768@60	√	√
1280x800@60	√	√
1280x1024@60	√	√
1360x768@60	√	√
1600x1200@60	√	√
1920x1080i@50/60	√	√
1920x1080p@24/25/30/50/60	√	√
1920x1200@60(RB)	√	√
3840x2160@24/25/30	√	√
3840x2160@50/60 YUV420	√	√
4096x2160@24/25/30	√	√
4096x2160@50/60 YUV420	√	√

# Connection Diagram

