

OR-HD62CD-4K22

6 x 2 HDMI 4K UHD Matrix with HDCP 2.2



Operation Manual

SAFETY PRECAUTIONS

Please read all instructions before attempting to unpack or 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.

REVISION HISTORY

VERSION NO.	DATE DD/MM/YY	SUMMARY OF CHANGE
RDV1	01/07/15	Preliminary Release
RDV2	22/01/16	Add annotation of screw replacement for rack ears

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1. INTRODUCTION

The 6 by 2 HDMI 4K UHD Matrix with HDCP 2.2 and Fast Switch which allows HDMI signal from any of its 6 sources to be routed to and displayed on any of its 2 connected HDMI displays simultaneously with View All Mode and Picture-in-picture (PIP) supported. Fast switching technology can greatly eliminate the time required by swapping or turning ON/OFF the connected displays. It supports 4Kx2K, 3D, 30-bit Deep Color, Hi-Def 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.

2. APPLICATIONS

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

3. PACKAGE CONTENTS

- 6 by 2 HDMI 4K UHD Matrix with HDCP2.2 and Fast Switching
- Remote Control with Battery
- Left & Right Rack Ears

(To fit the rack ears, please remove existing screws on the side panels and install the rack ears using the replacement screws supplied in the package.)

- 5V/2.6A DC Power Adaptor
- IR Receiver Cable
- Operation Manual

4. SYSTEM REQUIREMENTS

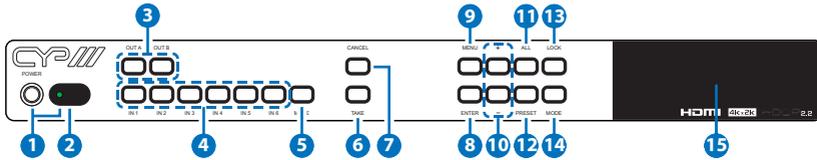
Input source equipment such as Blu-ray/DVD/PS3 player or Set-Top-Box and output HDMI TV/Display and or audio amplifier with connection cables.

5. FEATURES

- HDMI with 3D & 4Kx2K supported, HDCP 2.2 and DVI compliant
- Supports 6 HDMI inputs and 2 HDMI outputs
- Displays any of 6 High-Definition sources on 2 HDTV displays simultaneously with fast switch
- When in Preview mode, the system will be treated as Switcher (2 HDMI output same images at the same time)
- In Preview mode, it support View All (1 Main video source and 5 Sub video sources) and PIP (1 Main video source and 1 Sub video source). 3D and 4K2K sources inputs are not supported
- Note: View All is TDM (Time Division Multiplexing display)
- 3DTV Pass-Through
- Supports HDTV resolutions up to 4Kx2K (3840x2160@24/25/30 & 4096x2160 @30Hz)
- Supports Optical audio extraction
- Supports Optical audio sampling rate output up to 192kHz
- Supports data rate from 300Mbps to 3Gbps and Deep Color up to 1080p 30-bit
- Supports individual EDID or common EDID
- Supports LPCM 2/5.1/7.1CH, Dolby Digital 2~5.1CH, DTS 2~5.1CH (Pass through), Dolby TrueHD and DTS-HD Master Audio
- Supports 6 sets of Matrix preset functions for input/output setting
- Input port HDCP support Standard and Apple mode. The Apple mode selection to guarantees the use of Apple devices
- Compliant with DVI source (Not supporting Deep color and Color space YCbCr 422/444)
- Supports OSD on output B under Preview Mode

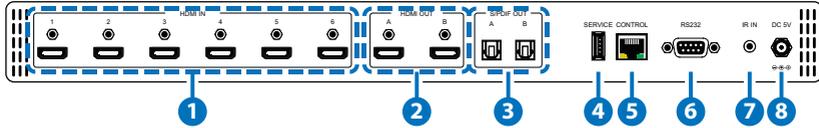
6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel



- 1 **Power & LED:** Press the Power key to turn on the device and the LED will illuminated.
- 2 **IR Window:** IR Receiver receives remote control signal from the remote control included in the package.
- 3 **OUTPUT A ~ B:** Press these OUT buttons once along with one IN buttons to select input source for select output display.
- 4 **IN 1~6:** Press these IN buttons to select an input from 6 input sources.
- 5 **MUTE:** Press to mute audio source.
- 6 **TAKE:** Press this button to confirm IN and OUT selection.
- 7 **CANCEL:** Press this button to cancel IN and OUT selection.
- 8 **ENTER:** Press this button to confirm selection.
- 9 **MENU:** Press to enter Menu options.
- 10 **+/-:** Press to move up / down under menu options.
- 11 **ALL:** Press to select all outputs to display with one input source.
- 12 **PRESET:** Press this button, the OLED menu will show preset, then select IN 1~6, press "TAKE" to confirm the selection or press "CANCEL" to deselect.
- 13 **LOCK:** Press to lock all button functions on the panel, press and hold 5 seconds to rescission lock mode.
- 14 **MODE:** Take mode / Real Time mode switch.
- 15 **LCM:** Display input and output selection and menu options.

6.2 Rear Panel



- 1 HDMI IN:** Connect from source equipment such as Blu-ray / DVD / PS3 player, 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 audio or audio display.
- 3 S/PDIF OUT:** Connect to Audio sound system or Amplifier for digital output sound.
- 4 SERVICE:** This is reserved for firmware update use only.
- 5 CONTROL:** Connect to PC / Laptop with active internet service for Telnet / Web GUI control with RJ-45 terminated cable.
- 6 RS232:** Connect to PC / Laptop to control the device.
- 7 IR IN:** Connect the IR receiver which contained in the package for receive IR signal from the remote control.
- 8 DC 5V:** Connect the adapter with power cord which included in the package and connect to AC wall outlet for power supply.

6.3 Remote Control

- 1 POWER:** Press Power key to turn on the device or set to standby mode.
- 2 OUT A~B:** Press these OUT buttons once then to select an input source for an output display.
- 3 TAKE:** Press this button to confirm IN and OUT selection.
- 4 MODE:** Press to switch to matrix or preview mode.

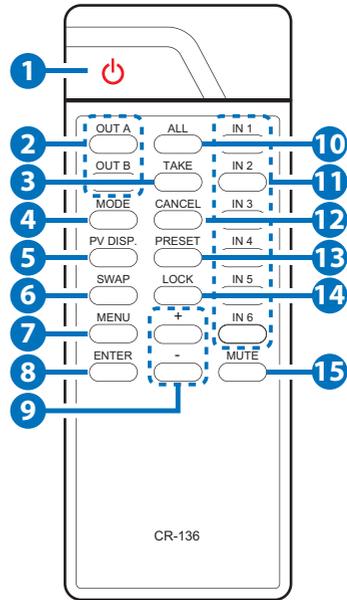
Matrix mode: Press OUT A or OUT B or both then select from INPUT 1~6 or MUTE to select input sources, press TAKE after selection to confirm or press CANCEL to undo.

Preview mode: Select VIEW ALL or PIP mode by entering Menu page.

Select to VIEW ALL: Press from INPUT 1~6 or MUTE to select input sources for main channel.

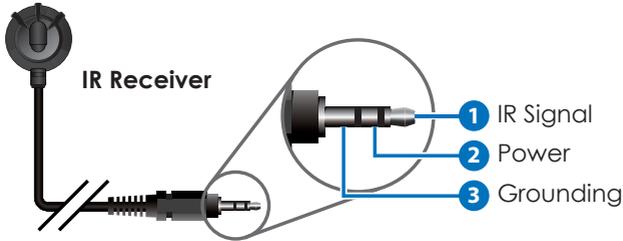
Select to PIP mode: Press from OUT A~B then Press from INPUT 1~6 or MUTE to select input as main or sub video sources, press ALL or SWAP to switch from main or sub video sources.

- 5 PV DISP.:** Press to switch Preview display on and off.
- 6 SWAP:** While in PIP mode, press to swap main or sub video source.
- 7 MENU:** Press to enter Menu options.
- 8 ENTER:** Press this button to confirm selection.
- 9 +/-:** Press to move up and down under menu options.
- 10 ALL:** Press to select all outputs to display with one input source.
- 11 IN 1~6:** Press these IN buttons to select an input from 6 input sources.
- 12 CANCEL:** Press this button to cancel IN and OUT selection.
- 13 PRESET:** Press this button, the OLED menu will show preset, then select IN 1~6, press "TAKE" to confirm the selection or press "CANCEL" to deselect.



- 14 **LOCK:** Press to lock all button functions, press and hold 5 seconds to rescission lock mode.
- 15 **MUTE:** Press to mute audio source.

6.4 IR Pin Definitions



6.5 OSD Menu

Main Menu	Sub Menu	Description	Default
EDID Mode	All	All Input ports are using same EDID. In menu "EDID All", can select suitable EDID.	All
	Appoint	Each Input port can select individual EDID. In menu "EDID IN1~6" 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.	

Main Menu	Sub Menu	Description	Default
	8/2D/PCM/ AC3/720P	Standard EDID. Content: deep color/2D3D/audio/na- tive resolution.	
	8/2D/ PCM/1080P	Standard EDID. Content: deep color/2D3D/audio/na- tive 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 as EDID All.	Select Input 1 EDID.	Same as EDID All.
EDID IN2	Same as EDID All.	Select Input 2 EDID.	Same as EDID All.

Main Menu	Sub Menu	Description	Default	
Preview Mode	View All	1 Main video source and 5 Sub video sources.	View All	
	PIP	1 Main video source and 1 Sub video source.		
	Exit			
Preview Position	View All	Top	Preview 5 Sub screens position.	Top Left
		Right	Preview 5 Sub screens position.	
		Bottom	Preview 5 Sub screens position.	
		Left	Preview 5 Sub screens position.	
	PIP	Top Left	Preview sub screen position.	
		Top Right	Preview sub screen position.	
		Bottom Right	Preview sub screen position.	
		Bottom Left	Preview sub screen position.	
	Exit			
	OSD Transparency	0~15	Preview OSD background transparency.	
Exit				
OSD Timeout	OSD Off	Preview without OSD info	OSD Always On	

Main Menu	Sub Menu	Description	Default
	5~20	Preview with OSD info show 5~20 Seconds then disappear	
	OSD Always On	Preview with OSD always on	
	Exit		
Network Setup	IP Mode	DHCP, Static	DHCP
	IP	Setup Static IP.	
	Mask	Setup Static Mask.	
	Gate	Setup Static Gateway	
	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	
	Exit		
Source Detection	IN1 On/Off, IN2 On/Off	Detect IN1, IN2 source with/without signal.	
	IN3 On/Off, IN4 On/Off	Detect IN3, IN4 source with/without signal.	

Main Menu	Sub Menu	Description	Default
	IN5 On/Off		
	IN6 On/Off	Detect IN5, IN6 source with/without signal.	
	Exit		
Sink A Info	Type, Manuf.	Detect and analysis Output A display's EDID. Content: Type(HDMI/DIV/VGA), Manufactory/Model number.	
	Native	Content: Native resolution.	
	Video Format	Content: deep color, 2D/3D, 4K2K.	
	Audio Format	Content: PCM, Bitstream, HBR.	
	Exit		
Sink B Info	Same as Sink A Info.	Detect and analysis Output B display's EDID.	
Firmware	FW Version	Display Model number & FW Version.	
	Update	FW Update.	
	Exit		
Factory Reset	Do Reset	Do System Reset.	
	Exit		
Exit			

6.6 RS-232 Protocols

Matrix			Remote Control	
PIN	Definition		PIN	Definition
1	NC		1	NC
2	Tx		2	Rx
3	Rx		3	Tx
4	NC	▶	4	NC
5	GND	◀	5	GND
6	NC		6	NC
7	NC		7	NC
8	NC		8	NC
9	NC		9	NC

Baud Rate: 115200bps

Data bit: 8 bits

Parity: None

Flow Control: None

Stop Bit: 1

6.7 Telnet and RS-232 Commands

Command Name	Description	Description of parameter
P0	Power Off (Standby)	NONE
P1	Power On	NONE
IPCONFIG	Display The Current IP Configure	NONE
SIPADDR X.X.X.X	Set Ethernet IP Address	X=0~255
SNETMASK X.X.X.X	Set Ethernet Net Mask	X=0~255
SGATEWAY X.X.X.X	Set Ethernet Gateway	X=0~255

Command Name	Description	Description of parameter
HTTPPORT N1	Set Http Port Number	N1=0~65535
TELNETPORT N1	Set Telnet port number	N1=0~65535
RSTIP	IP Configuration Set To <DHCP>	NONE
A N1	Set Output A Source to input N1	N1=1~6
B N1	Set Output BSource to input N1	N1=1~6
I N1	Set All Outputs Source to input N1	N1=1~6
EDIDMODE	Show EDID Mode	NONE
EDIDMODE N1	Set EDID Mode	N1=0(Appoint), 1(All)
EDIDALL	Show EDID Mode Source for All	NONE
EDIDALL N1	Set EDID Mode Source for All	N1=0(Sink A), 1(Sink B), 2(8/2D/PCM/720p), 3(8/2D/PCM/AC3/720p), 4(8/2D/PCM/1080p), 5(8/2D/PCM/AC3/1080p), 6(8/2D/PCM/4K2K), 7(8/2D/PCM/AC3/4K2K), 8(8/2D/PCM/Y420), 9(8/2D/PCM/AC3/Y420)
EDIDIN	Show Input EDID Source	NONE
EDIDIN N1	Show Input N1 EDID Source	N1=1~6

Command Name	Description	Description of parameter
EDIDIN N1 N2	Set Input N1 EDID Source	N1=1~6 N2=0(Sink A), 1(Sink B), 2(8/2D/PCM/720p), 3(8/2D/PCM/AC3/720p), 4(8/2D/PCM/1080p), 5(8/2D/PCM/AC3/1080p), 6(8/2D/PCM/4K2K), 7(8/2D/PCM/AC3/4K2K), 8(8/2D/PCM/Y420), 9(8/2D/PCM/AC3/Y420)
HDCPIN	Show All Input HDCP Status	NONE
HDCPIN N1	Show Input N1 HDCP Status	N1=1~6
HDCPIN N1 N2	Set Input N1 HDCP ON/OFF	N1=1~6 N2=0(OFF), 1(ON)
PRESET	Show All Preset Configure	NONE
PRESET N1	Set Preset N1 Source to Outputs	N1=1~6
PRESET N1 N2	Set Preset N1 Configure N2	N1=1~6 N2=AXBX (X=1~6)
PVMODE	Show preview mode	NONE
PVMODE N1	Set preview mode to N1	N1=0(View all), 1(PIP)
PVPOS	Show preview mode position	NONE

Command Name	Description	Description of parameter
PVPOS N1	Set preview mode to N1	In view all mode: N1=0(Top), 1(Right), 2(Bottom), 3(Left) In PIP mode: N1=0(Top), 1(Top right), 2(Bottom Right), 3(Bottom Left)
PVSRC	Show preview mode source select	None
PVSR N1	In VIEWALL mode: Set Main Screen Source To Input N1 In PIP mode: Show N1 screen source select	In VIEWALL mode: N1=1~6 In PIP mode: N1=0(Main), 1(Sub)
PVSR N1 N2	Set PIP mode main/sub screen source to input N2	N1=0(Main), 1(Sub) N2=1~6
OSDTRANS	Show OSD transparency	NONE
OSDTRANS N1	Set OSD transparency	N1=0~15
OSDTO	Show OSD time out	NONE
OSDTO N1	Set OSD time out	N1=0(OSD off), 1~16(5~20), 17(OSD always on)
SOURCEDET	Show All Input Signal	NONE
SOURCEDET N1	Show Input N1 Signal	N1=1~6
SINKINFO	Show All Output Information	NONE

Command Name	Description	Description of parameter
SINKINFO N1	Show Output N1 Information	N1=A~B Information: TYPE, Manuf. Name, Native Resolution, Color Depth, 3D, 4K2K, Audio Format
INNAME	Show all Input name	NONE
INNAME N1	Show Input N1 name	N1=1~6
INNAME N1 N2	Set Input N1 Name	N1=1~6 N2=ABCDEFGH(Max Length=8)
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(Max Length=8)
MATRIXMODE	Show matrix current mode	NONE
MATRIXMODE N1	Set matrix mode N1	N1=0(matrix), 1 (preview)
VER	Show Device Firmware version	NONE
REBOOT	System Reboot	NONE
HELP(?)	Show Command list	NONE
HELP(?) N	Show Command description	N=Command name

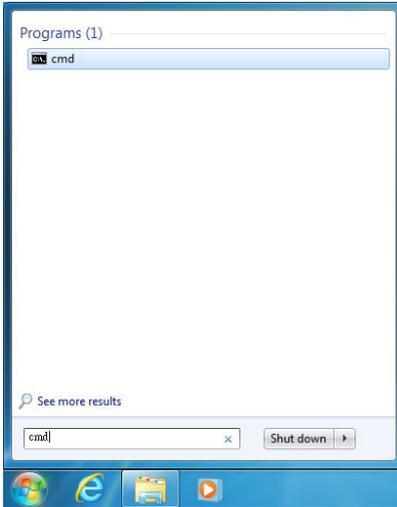
Note: All the RS-232 command will be not executed unless followed with a carriage return. All commands are insensitive.

6.8 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 port "23" and hit enter.

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

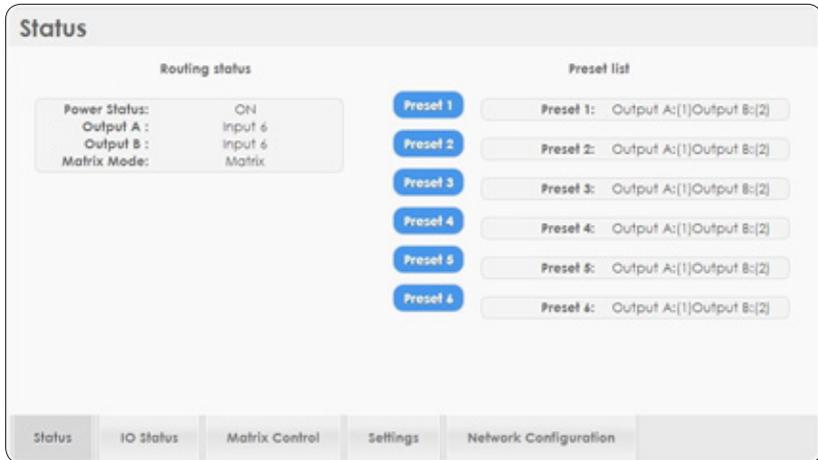
C:\Users\Administrator>telnet 192.168.5.80 23
```

Type HELP or ? to bring out all the commands.

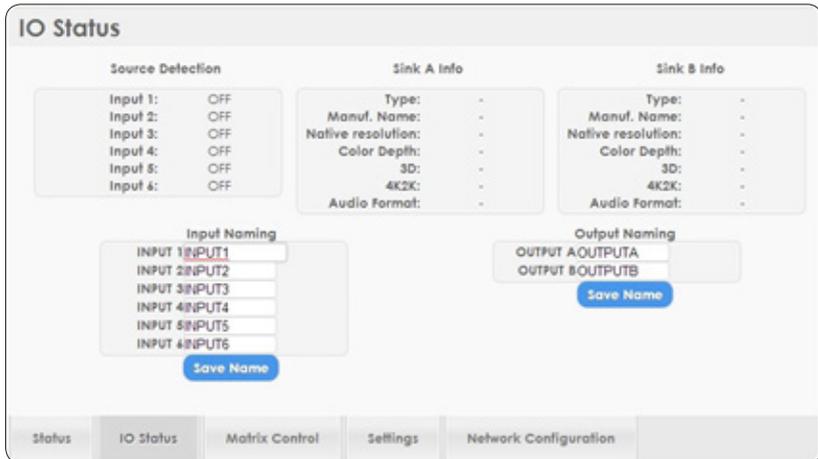
```
Welcome to TELNET.  
??  
:  
P0  
P1  
IPCONFIG  
SIPADDR  
SNETMASK  
SGATEWAY  
RSTIP  
A  
B  
I  
EDIDMODE  
EDIDALL  
EDIDIM  
HDCPIN  
PRESET  
PUMODE  
PUPOS  
PUSRC  
OSDTRANS  
OSDIO  
SOURCEDET  
SINKINFO  
INNAME  
OUTNAME  
MATRIXMODE  
UER  
REBOOT  
CUSTCODE  
?  
HELP  
>
```

6.9 Web GUI Control

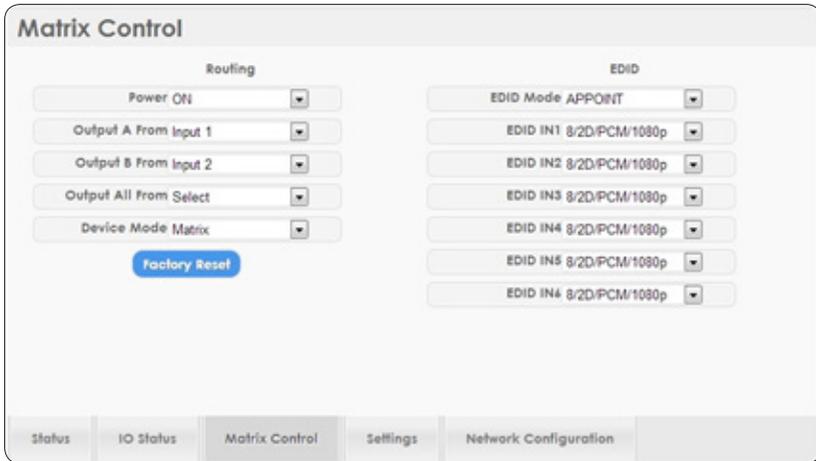
On a PC/Laptop which is connected to an active network system, open a web browser and type device's IP address (available from LCM monitor or OSD menu) on the web address entry bar. The browser will display the device's Status, IO Status, Matrix Control, and Network Configuration pages for users to control.



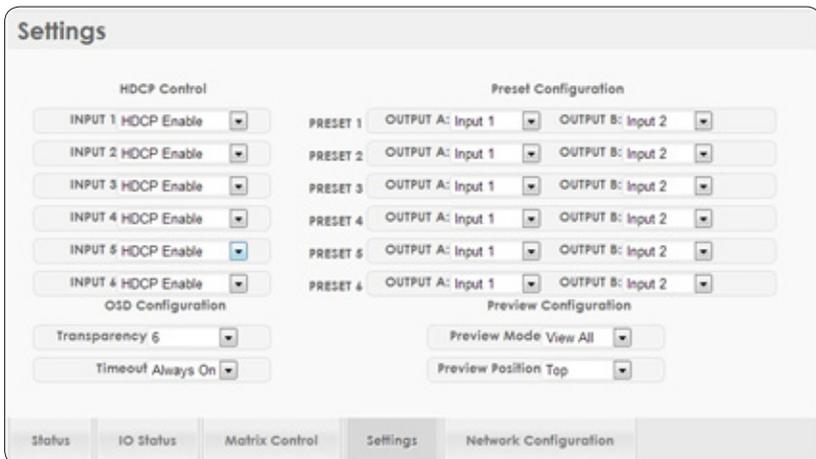
Click on IO Status for input and output selection.



Click on Matrix Control for outputs and EIDID selections.



Click on Settings to set each input's HDCP control and preset 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 the device automatically and user will need to re-enter the IP address to continue the Web GUI function.

Network Configuration

MAC Address F7-8F-01-14-00-00

Address Type STATIC

IP Address 192.168.5.216

Net Mask 255.255.255.0

Default Gateway 192.168.5.254

Http Port 80

Save

Status

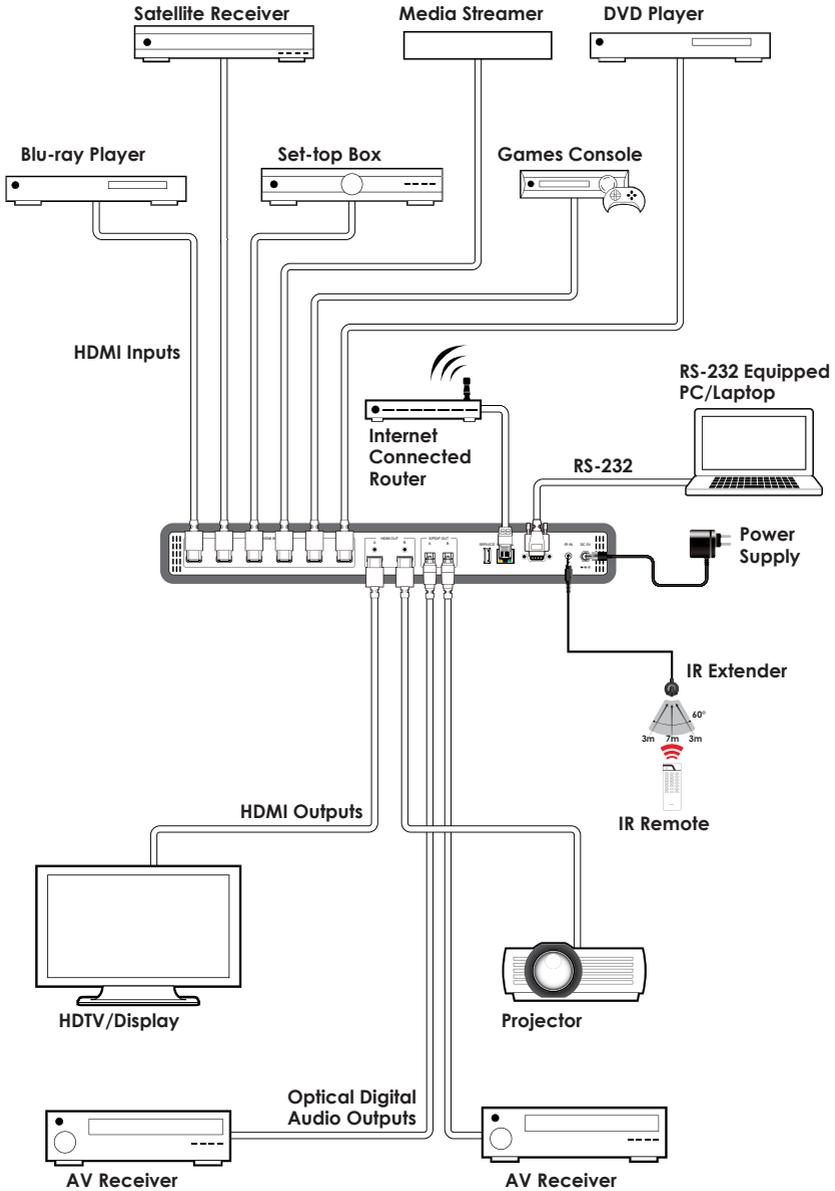
IO Status

Matrix Control

Settings

Network Configuration

7. CONNECTION DIAGRAM



8. SPECIFICATIONS

Video Bandwidth	300MHz/9Gbps
Input Ports	6 x HDMI 1 x USB(Service) 1 x RS232 1 x RJ45(Control) 1 x IR
Output Ports	2 x HDMI 2 x Optical(S/PDIF)
Supported Resolutions	480i~1080p@50/60 4K2K@24/25/30 4K2K@50/60(YUV 420) VGA~WUXGA(RB)
IR Frequency	30~50kHz
Baud Rate	Up to 115200 bps
Power Supply	5VDC/2.6A (US/EU standards, CE/FCC/ UL certified)
ESD Protection	Human Body model: ±8kV (air-gap discharge) ±4kV (contact discharge)
Chassis Material	Metal
Silkscreen color	Black
Dimensions	438mm (W) x 269mm (D) x 44mm (H) (Jacks excluded) 482mm (W) x 274mm (D) x 49mm (H) (Jacks included)
Weight	1892g
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	11.44w

DVI and HDMI Supported Resolutions	Input	Output
640x480@60	✓	✓
640x480@72	✓	✓
640x480@75	✓	✓
720x480@60	✓	✓
720x576p@50	✓	✓
800x600@60	✓	✓
800x600@72	✓	✓
800x600@75	✓	✓
1024x768@60	✓	✓
1024x768@70	✓	✓
1024x768@75	✓	✓
1280x720@50	✓	✓
1280x720@60	✓	✓
1280x720p@60	✓	✓
1280x768@60	✓	✓
1280x800@60	✓	✓
1280x1024@60	✓	✓
1360x768@60	✓	✓
1600x1200@60	✓	✓
1920x1080i@50	✓	✓
1920x1080i@60	✓	✓
1920x1080p@24	✓	✓
1920x1080p@25	✓	✓
1920x1080p@30	✓	✓
1920x1080p@50	✓	✓

DVI and HDMI Supported Resolutions	Input	Output
1920x1080p@60	✓	✓
1920x1200@60(RB)	✓	✓
3840x2160@30	✓	✓
4096x2160@24	✓	✓

