



CDPS-U4H4HSA

4 by 4 HDMI with Audio Matrix Fast Switch



Operation Manual

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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.

REVISION HISTORY

VERSION NO.	DATE DD/MM/YY	SUMMARY OF CHANGE
RDV1	21/05/14	Preliminary Release

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1. INTRODUCTION

The 4 by 4 HDMI matrix with audio which allows HDMI signal from any of its four sources to be routed to and displayed on any of its four connected HDMI displays simultaneously plus an additional audio selection and extension allows users to utilise both video and audio more efficiently. 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.

2. APPLICATIONS

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

3. PACKAGE CONTENTS

- 4 by 4 HDMI 4Kx2K Matrix with Audio
- Remote Control with Battery
- Left & Right Rack Ears
- 12V/3A DC Power Adaptor
- IR Receiver Cable
- Operation Manual

4. SYSTEM REQUIREMENTS

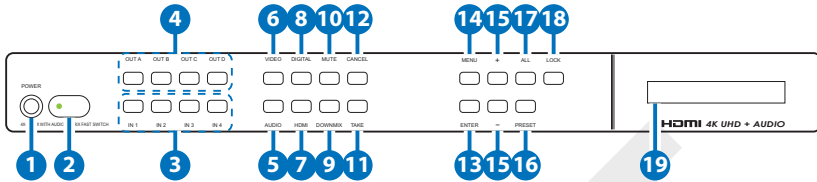
Input source equipments such as Blu-ray/DVD/PS3 player or Set-Top-Box and output HDMI TV/Display and or audio amplifier with connection cables.

5. 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
- 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 from 300Mbps to 3Gbps and Deep Color up to 1080p 36-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
- Input port HDCP support Standard and Apple mode. The Apple mode selection to guarantees the use of Apple devices

6. OPERATION CONTROLS AND FUNCTIONS

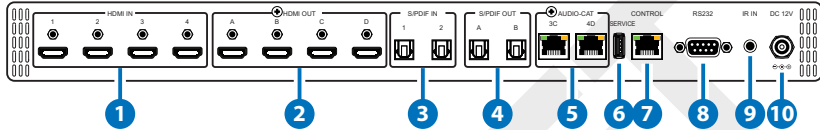
6.1 Front Panel



- 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 4 input sources.
- 4 OUT A/D:** Press these buttons once a time along with an IN buttons to select an input source for an output display. i.e. OUT A→ IN 1→TAKE or OUT B→ IN 4→TAKE.
- 5 AUDIO:** Press this button to display audio only for outputs.
- 6 VIDEO:** Press this button to perform video only for output displays.
- 7 HDMI:** Press this button to display video only for outputs.
- 8 DIGITAL:** Press this button to select an input source audio.
- 9 DOWNMIX:** Press this button to downmix the audio.
- 10 MUTE:** Press this button to mute all the audio output sound. To unmute, press it again.
- 11 TAKE:** Press this button to confirm the selection of an IN and an OUT button.
- 12 CANCEL:** Press this button to cancel the IN/OUT selection.
- 13 ENTER:** Press to confirm the selection.
- 14 MENU:** Press to enter into the menu.
- 15 +/-:** Press these buttons to move up/down under menu selection.
- 16 PRESET:** Press "PRESET", the OLED menu will show Preset then select IN 1~4. Preset 1~4 after the selection, press "TAKE" to confirm the selection or press "CANCEL" to cancel the selection.

- 17 **All:** Press this button to select all outputs to display with an input source.
- 18 **LOCK:** Press this button to lock all button functions on the panel. Press 3 seconds to relieve the lock function.
- 19 **LCM:** Displaying Input and Outputs selection and menu selection.

6.2 Rear Panel



- 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 **S/PDIF IN:** Connect from source equipment such as DVD, Blu-ray, PS3 or etc. with audio signal.
- 4 **S/PDIF 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.

6.3 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/ 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	
	Exit		

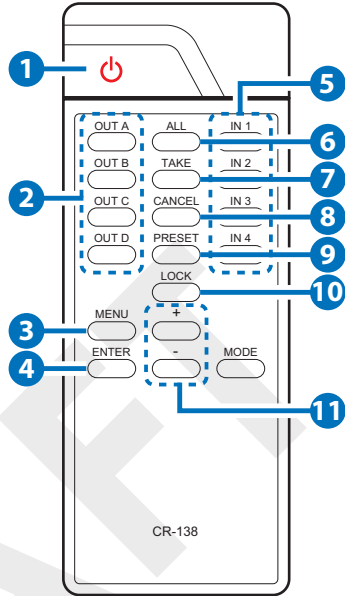
EDID IN1	Same EDID All	Select Input 1's EDID	Same EDID All
EDID IN2	Same EDID All	Select Input 2's EDID	Same EDID All
EDID IN3	Same EDID All	Select Input 3's EDID	Same EDID All
EDID IN4	Same EDID All	Select Input 4's EDID	Same EDID All
Matrix Preset	Preset 1	IN/OUT default No.1	A=1, B=2, C=3, D=4
	Preset 2	No.2	A=1, B=2, C=3, D=4
	Preset 3	No.3	A=1, B=2, C=3, D=4
	Preset 4	No.4	A=1, B=2, C=3, D=4
	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	192.168.5.83
	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	Display the model number and FW version	---
	Update	FW Update	
	Exit		
Factory Reset	Do Reset	Do system Reset	---
	Exit		
Exit			

6.4 Remote Control

- 1 **POWER:** Press this button to switch the system ON/OFF.
- 2 **OUT A/D:** Press these buttons one at a time along with an IN buttons to select an input source for an output display.
- 3 **MENU:** Press to enter into the menu.
- 4 **ENTER:** Press to confirm the selection.
- 5 **IN1~4:** Press the IN buttons to select an input from the 4 input sources.
- 6 **ALL:** Press this button to select all outputs to display with an input source.
- 7 **TAKE:** Press this button to confirm the selection of an IN and an OUT button.
- 8 **CANCEL:** Press this button to cancel the IN/OUT selection.
- 9 **PRESET:** Press "PRESET", the OLED menu will show Preset and select IN 1~4. After preset 1~4, press "TAKE" to confirm the selection or press "CANCEL" to cancel the selection.
- 10 **LOCK:** Press this button to lock all button functions on the panel. Press 3 seconds to relieve the lock function.
- 11 **+/-:** Press these buttons to move up/down under menu selection.



6.5 RS-232 Protocols

CDPS-U4H4HSA			Remote Control	
PIN	Assignment		PIN	Assignment
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

6.6 RS-232 Commands

Command Name	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 AD- DRESS	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
A N	SET OUTPUT A SOURCE	N=1-4
B N	SET OUTPUT B SOURCE	N=1-4
C N	SET OUTPUT C SOURCE	N=1-4
D N	SET OUTPUT D SOURCE	N=1-4
I N	SET ALL OUTPUTS SOURCE	N=1-4
EDIDMODE N	SHOW EDID MODE	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

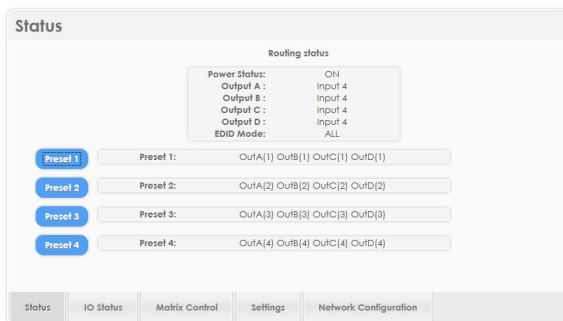
EDIDIN N1 N2	SET INPUT N1 EDID SOURCE	N1=1-4 N2=0-9
HDCPIN	SHOW ALL INPUT HDCP STATUS	NONE
HDCPIN N1	SHOW INPUT N1 HDCP STATUS	N1=1-4
HDCPIN N1 N2	SET INPUT N1 HDCP ON/OFF	N1=1-4 N2=(0)OFF (ON)
PRESET	SHOW ALL PRESET CONFIG	NONE
PRESET N1	SHOW PRESET N1 CONFIG	N1=1-4
PRESET N1 N2	SET PRESET N1 CONFIGURE	N1=1-4 N2=AXBX (X=1-6,M)
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

MATRIXMODE	SHOW MATRIX CURRENT MODE	NONE
MATRIXMODE N1	SET MATRIX MODE	N1=0-1
VER	SHOW DESCRIPT OF UNIT	NONE
REBOOT	SYSTEM REBOOT	NONE
HELP	SHOW COMMAND LIST	NONE
HELP N	SHOW DESCRIPT OF COMMAND	N : command name

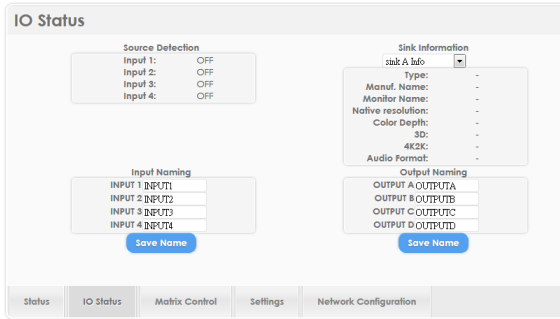
Note: All the RS-232 command will be not executed unless followed with a carriage return. All commands are case-sensitive.

6.7 Web GUI Control

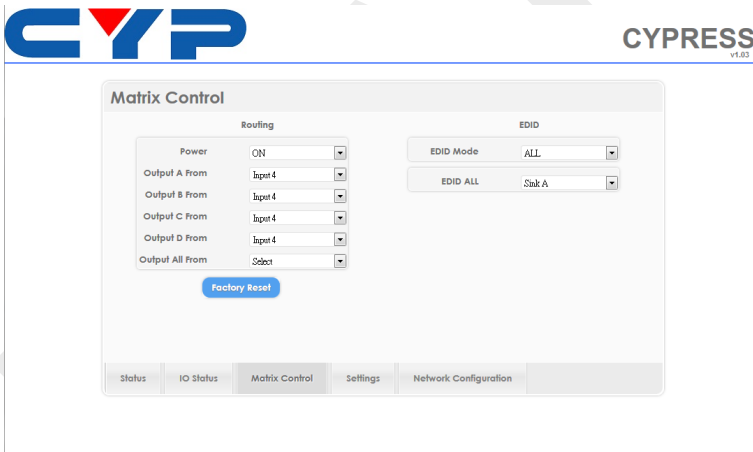
On a PC/Laptop that is connected to an active network system, open a web browser and type device's IP address (available from LCM monitor or OSD menu) on the web address entry bar. The browser will display the device's Status, IO Status, Matrix Control, Settings and Network Configuration control pages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

Settings

HDCP Control

HDCP Enable ▾

HDCP Enable ▾

HDCP Enable ▾

HDCP Enable ▾

Presef Configuration

PRESET 1	<input type="button" value="OUTPUT A: Input 1"/> ▾	<input type="button" value="OUTPUT B: Input 1"/> ▾	<input type="button" value="OUTPUT C: Input 1"/> ▾	<input type="button" value="OUTPUT D: Input 1"/> ▾
PRESET 2	<input type="button" value="OUTPUT A: Input 2"/> ▾	<input type="button" value="OUTPUT B: Input 2"/> ▾	<input type="button" value="OUTPUT C: Input 1"/> ▾	<input type="button" value="OUTPUT D: Input 1"/> ▾
PRESET 3	<input type="button" value="OUTPUT A: Input 3"/> ▾	<input type="button" value="OUTPUT B: Input 3"/> ▾	<input type="button" value="OUTPUT C: Input 1"/> ▾	<input type="button" value="OUTPUT D: Input 1"/> ▾
PRESET 4	<input type="button" value="OUTPUT A: Input 4"/> ▾	<input type="button" value="OUTPUT B: Input 4"/> ▾	<input type="button" value="OUTPUT C: Input 1"/> ▾	<input type="button" value="OUTPUT D: Input 1"/> ▾

Status
IO Status
Matrix Control
Settings
Network Configuration

Click on Network Configuration to set the device's IP configuration. Once the changes is 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.

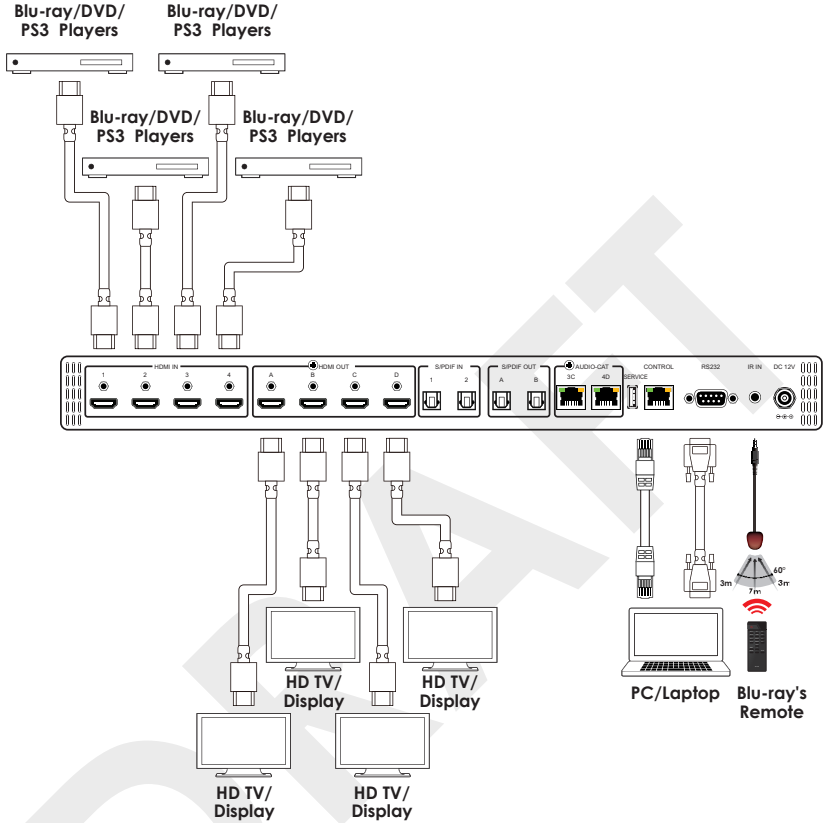
Network Configuration

▾

IP Address: 192.168.3.215
 Net Mask: 255.255.255.0
 Default Gateway: 192.168.3.254
 Http Port: 80

Status
IO Status
Matrix Control
Settings
Network Configuration

7. CONNECTION DIAGRAM



8. SPECIFICATIONS

Frequency Bandwidth	340Mbps to 3Gbps
Input Ports	4 x HDMI, 2 x S/PDIF 1 x USB (Service only) 1 x Control 1 x RS-232 1 x IR
Output ports	4 x HDMI, 2 x S/PDIF, 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	438mm (W) x 269mm (D) x 44mm (H) /Jacks Excluded 482mm (W) x 278mm (D) x 50mm (H) /Jacks & Rack Ears Included
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	✓	✓
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	✓	✓
1920x1080p@60	✓	✓
1920x1200@60(RB)	✓	✓
3840x2160@24/25/30	✓	✓
4096x2160@24	✓	✓

Audio Sampling Rate Up to 192 kHz

HDMI input (Up to 192kHz)	HDMI output
LPCM 2CH	✓
LPCM 5.1CH	✓
LPCM 7.1CH	✓
Dolby Digital 2~5.1CH/ DTS 2~5.1CH	✓
Dolby TrueHD/ DTS-HD Master Audio	✓

Audio Format LPCM 2/5.1/7.1CH, Dolby Digital 2~5.1CH, DTS 2~5.1CH (Pass through), Dolby TrueHD and DTS-HD Master Audio

HDMI input	HDMI output
LPCM 2CH	✓
LPCM 5.1CH	✓
LPCM 7.1CH	✓
Dolby Digital 2~5.1CH/ DTS 2~5.1CH	✓
Dolby TrueHD/ DTS-HD Master Audio	✓

9. ACRONYMS

ACRONYM	COMPLETE TERM
CEC	Consumer Electronic Control
DVI	Digital Visual Interface
HDCP	High-bandwidth Digital Content Protection
HDMI	High Definition Multimedia Interface
4Kx2K	3840x2160/ 4096x2160

DRAFT



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