ANI-PiP-41UHD

4x1 4K60 UHD Quad/PiP/PoP Multiviewer Seamless Video Switcher

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SAFETY INFORMATION

1. To ensure the best results from this product, please read this manual and all other documentation before operating your equipment. Retain all documentation for future reference.

2. Follow all instructions printed on unit chassis for proper operation.

3. To reduce the risk of fire, do not spill water or other liquids into or on the unit, or operate the unit while standing in liquid.

4. Make sure power outlets conform to the power requirements listed on the back of the unit. Keep unit protected from rain, water and excessive moisture.

5. Do not attempt to clean the unit with chemical solvents or aerosol cleaners, as this may damage the unit. Dust with a clean dry cloth.

6. Do not use the unit if the electrical power cord is frayed or broken. The power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords and plugs, convenience receptacles, and the point where they exit from the appliance.

7. Do not force switched or external connections in any way. They should all connect easily, without needing to be forced.

8. Always operate the unit with the AC ground wire connected to the electrical system ground. Precautions should be taken so that the means of grounding of a piece of equipment is not defeated.

9. AC voltage must be correct and the same as that printed on the rear of the unit. Damage caused by connection to improper AC voltage is not covered by any warranty.

10. Turn power off and disconnect unit from AC current before making connections.

11. Never hold a power switch in the "ON" position.

12. This unit should be installed in a cool dry place, away from sources of excessive heat, vibration, dust, moisture and cold. Do not use the unit near stoves, heat registers, radiators, or other heat producing devices.

13. Do not block fan intake or exhaust ports. Do not operate equipment on a surface or in an environment which may impede the normal flow of air around the unit, such as a bed, rug, carpet, or completely enclosed rack. If the unit is used in an extremely dusty or smoky environment, the unit should be periodically "blown free" of foreign dust and matter.

14. To reduce the risk of electric shock, do not remove the cover. There are no user serviceable parts inside. Refer all servicing to qualified service personnel. There are no user serviceable parts inside.

15. When moving the unit, disconnect input ports first, then remove the power cable; finally, disconnect the interconnecting cables to other devices.

16. Do not drive the inputs with a signal level greater than that required to drive equipment to full output.

17. The equipment power cord should be unplugged from the outlet when left unused for a long period of time.

18. Save the carton and packing material even if the equipment has arrived in good condition. Should you ever need to ship the unit, use only the original factory packing.

19. Service Information Equipment should be serviced by qualified service personnel when:

    A. The power supply cord or the plug has been damaged.

    B. Objects have fallen, or liquid has been spilled into the equipment.

    C. The equipment has been exposed to rain.

    D. The equipment does not appear to operate normally, or exhibits a marked change in performance.

    E. The equipment has been dropped, or the enclosure damaged.

THIS SAFETY INFORMATION IS OF A GENERAL NATURE AND MAY BE SUPERSEDED
BY INSTRUCTIONS CONTAINED WITHIN THIS 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.

DISCLAIMERS

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INTRODUCTION

The ANI-PiP-41UHD 4x1 4K60 Multiviewer Seamless UHD Video Switcher was developed for the purpose of supporting higher output resolution (4K@60) for multiple sources on a single screen. It can combine up to four video signals onto a single UHD or HD displayer. The user can easily manage each input via the supplied Control Software and create any layout and position of any of the four inputs on a single monitor. This device supports full range of input video resolutions up to 4K@60 (RB) and audio RCA /Optical de-embedding supported for external audio distribution systems. This device can be controlled via front panel buttons, IR remote, RS-232 commands. This product has a 3 year warranty.

PACKAGE CONTENTS

Before attempting to use this unit, please check the packaging and make sure the following items are contained in the shipping carton:

- 4K60 4x1 Multiviewer Seamless UHD Video Switcher
- IR Remote
- 3pin-3.81mm Phoenix Connector (male)
- 38KHz IR Wideband Receiver Cable (1.5 M)
- RS-232 Serial Cable (DP9 to 3pin H2.0 Phoenix Connector)
- (2) Mounting Ears
- (4) Machine Screws (KM3*4)
- (4) Rubber Feet
- 12V/2.5A Locking Power Adapter
- Users Guide

FEATURES

This unit supports customized PiP image size and location (via RS-232). Changes are stored in non-volatile ram and will be retain during a power cycle. See Multiview section in the users guide for a description.

- HDMI 2.0b, HDCP 2.2 and HDCP 1.x compliant
- Supports 18Gbps video bandwidth
- Input and output resolutions support up to 4K@60Hz
- Supports LPCM, AC3, DD+, DTS, DTS-HD, up to 7.1 audio channel
- Seamless switching between input channels and combined multiple images on single UHD monitor
- Up to (8) display modes: SINGLE, PIP, PBP (1), PBP (2), Triple (1), Triple (2), Quad (1), Quad (2)
- Seamless switching on single screen display mode
- Fast switching on multiview display mode
- Audio de-embedding via analog and (L/R) and TosLink (Optical) ports
- Supports volume control and independent audio selection
- Supports OSD navigation for advanced setting
- EDID management
- Control via front panel buttons, IR remote, RS-232 commands
- Compact design for easy and flexible installation

SPECIFICATIONS

- **Input Ports:** (4) HDMI IN [Type A, 19-pin female]
- **Output Ports:** HDMI OUT [Type A, 19-pin female]
    - L/R OUTPUT [RCA]
    - OPTICAL OUTPUT (TosLink)
- **Control Ports:**
    - RS-232 [3pin-3.81mm phoenix connector]
    - IR EXT [3.5mm Stereo Mini-jack]
- **HDMI Compliance:** HDMI 2.0b
- **HDCP Compliance:** HDCP 2.2 / 1.x
- **Video Bandwidth:** 18Gbps
- **Video Resolution:** Up to 4K@60Hz
- **IR Level:** 5Vp-p
- **IR Frequency:** 38KHz
- **Color Space:** RGB, YCbCr 4:4:4, YCbCr 4:2:2, YCbCr 4:2:0
- **Audio Formats:**
    - HDMI: PCM2.0/5.1/7.1CH, Dolby Digital/Plus, DTS, DTS High Res
    - Analog audio [3.5mm L/R]: PCM2.0;
    - TosLink (OPTICAL): Dolby Digital, DTS 5.1, PCM2.0.
    - Note: It does not support HBR audio. For example Atmos.
- **ESD Protection:** Human Body Model:
    - ±8kV (air-gap discharge)
    - ±4kV (contact discharge)
- **Housing:** Metal Enclosure
- **Color:** Black
- **Dimensions (WxDxH):** 8.7 x .22 x 1.2 in (220x100x30mm)
- **Weight:** 1.4 lb / 620g
- **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 (non-condensing)
- **Power Consumption (Max):** 10W
- **Power Supply:** Input: AC 100 - 240V 50/60Hz / Output: DC 12V/2.5A (US/EU standard, CE/FCC/UL certified)

As product improvements are continuous, specifications are subject to change without notice.

OPERATION CONTROLS & FUNCTIONS

FRONT PANEL
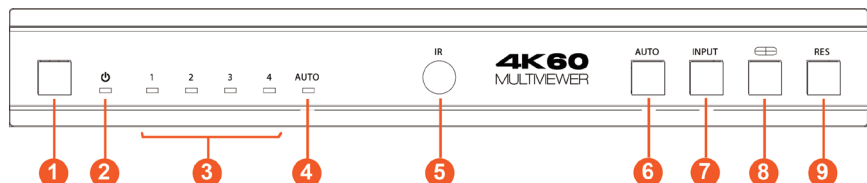
❶ POWER BUTTON: Press this button to power on the device. Hold down this button for 1 second to enter the standby mode.

❷ POWER LED: The Power LED will light green when the product is powered on, and red when on standby.

❸ INPUT 1-4 LEDS: Input signal indicator lights. When the HD 1/2/3/4 ports are connected to an active source device, the corresponding green LED will be on.
Note: Only the LED of the selected input channel will light in green on single screen display mode; all LEDs will light in green on multiview mode.

❹ AUTO LED: When the device is in AUTO mode, the AUTO LED will light green, and a HDMI is automatically identified. When the current displayed source signal is disconnected, the switcher will automatically identify the next connected HDMI input port.

❺ IR WINDOW: IR signal receiving window.

❻ AUTO BUTTON: Automatic button, only available on a single screen AUTO display mode.

❼ INPUT BUTTON: Input source button, only available on single screen display mode.

❽ MULTIVIEW BUTTON: Multiview display mode button.
- Press this button to circularly select: SINGLE - PIP - PBP (1) - PBP (2) - Triple (1) - Triple (2) - Quad (1) - Quad (2).
- Hold down this button for 3 seconds to select the aspect ratio for PBP (1) / PBP (2) / Triple (1) / Triple (2) / Quad (1) / Quad (2).

❾ RES BUTTON: Output resolution switching button.
- Press the RES button to circularly switch the output resolution of the HDMI OUTPUT port (Please refer to the output resolution list of "8. Video & Audio").
- Hold down the RES button for 3 seconds to switch the output resolution to 720P60.

OPERATION CONTROLS & FUNCTIONS

BACK PANEL
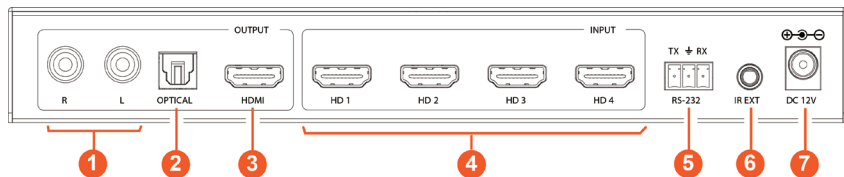
❶ L/R PORT: PCM2.0 Analog audio output port.

❷ OPTICAL PORT: Optical fiber digital audio output port.

❸ HDMI OUTPUT PORT: HDMI output port, connected to a HDMI display device such as a TV or Monitor with a HDMI cable.

❹ HD 1-4 INPUT PORTS: HDMI signal input ports, connected to HDMI source devices such as a DVD or Set-top box with a HDMI cable.

❺ RS-232 PORT: 3-pin phoenix connector, connected to a PC or control system for serial port upgrade or RS-232 command control.

❻ IR EXT PORT: IR signal receiving port, connected with a 38KHz IR Receiver cable. If the IR signal receiving window of the unit is blocked or the unit is installed in a closed area out of infrared line of sight, the IR receiver cable can be inserted to the **"IR EXT"** port to receive the IR remote signal.

❼ DC 12V: DC 12V/2.5A power input port.

REMOTE CONTROL

❶ **POWER ON OR STANDBY:** Press this button to power on the switcher or set it to standby mode.

❷ **HD 1/2/3/4:** Press these buttons to select input source on single screen display mode, and the corresponding input LED on the front panel will light in green.

◀ ▶: Press these buttons to circularly select the last or next input source on single screen display mode.

⊞ : Multiview display mode switching button.

▪ Press this button to circularly select: SINGLE - PIP - PBP (1) - PBP (2) - Triple (1) - Triple (2) - Quad (1) - Quad (2).

▪ Hold this button for 3 seconds to select the aspect ratio for PBP (1) / PBP (2) / Triple (1) / Triple (2) / Quad (1) / Quad (2).

RES: Output resolution switching button.

▪ Press the RES button to circularly switch the output resolution of the HDMI OUTPUT port (Please refer to the output resolution list of "8. Video & Audio").

▪ Hold the RES button for 3 seconds to switch the output resolution to 720P60.

❸ **MENU, EXIT, LEFT, RIGHT, UP, DOWN, OK:** OSD Menu navigation buttons.

❹ **A-IN:** Press this button to pop up the audio channel selection OSD, then press the UP / DOWN button to select the audio output channel. (The output audio follows the video source by default.)

Mute: Press this button to mute / unmute the audio.

VOL-, VOL+: Press these buttons to increase / decrease the audio output volume.
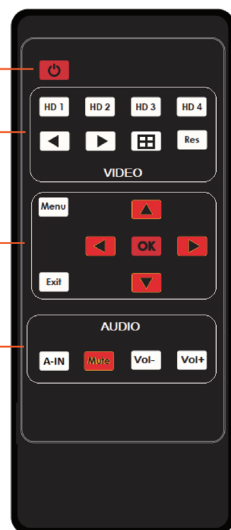
Power Toggle	08F7 4D	Cycle Multiview	08F7 4B	OK	08F7 56
HD Input 1	08F7 09	Resolution	08F7 43	A-In	08F7 13
HD Input 2	08F7 54	Menu	08F7 55	Mute	08F7 12
HD Input 3	08F7 47	Exit	08F7 40	Volume +	08F7 15
HD Input 4	08F7 42	Menu Up	08F7 4E	Volume -	08F7 53
Previous Source	08F7 08	Menu Left	08F7 0D		
Next Source	08F7 48	Menu Right	08F7 16		

EDID SETTINGS / VIDEO & AUDIO

EDID SETTINGS

User can select following EDID modes via RS-232 command or OSD menu navigation.

No.	EDID Mode		No.	EDID Mode
1	4K60-2.0CH		10	1920x1200-2.0CH
2	4K60-5.1CH		11	1680x1050-2.0CH
3	4K60-7.1CH		12	1600x1200-2.0CH
4	4K30-2.0CH		13	1440x900-2.0CH
5	4K30-5.1CH		14	1360x768-2.0CH
6	4K30-7.1CH		15	1280x1024-2.0CH
7	1080P-2.0CH		16	1024x768-2.0CH
8	1080P-5.1CH		17	720P-2.0CH
9	1080P-7.1CH		18	AUTO

VIDEO & AUDIO

The switcher supports multiple resolution video inputs up to 3840x2160@60, and supports multiple audio formats such as LPCM, AC3, DD+, DTS, DTSHD, up to 7.1 channel pass through function via a HDMI cable. Control the volume of audio in LPCM format.

The switcher supports following video output resolutions via a powerful scaling engine.

No.	EDID Mode		No.	EDID Mode
1	4K60-2.0CH		8	1920x1200-2.0CH
2	4K60-5.1CH		9	1680x1050-2.0CH
3	4K60-7.1CH		10	1600x1200-2.0CH
4	4K30-2.0CH		11	1440x900-2.0CH
5	4K30-5.1CH		12	1360x768-2.0CH
6	4K30-7.1CH		13	1280x1024-2.0CH
7	1080P-2.0CH		14	1024x768-2.0CH

MULTIVIEW

The switcher supports (8) categories of multiview display modes: SINGLE, PIP, PBP (1), PBP (2), Triple (1), Triple (2), Quad (1), Quad (2)

Users can select different operations for different Multiview modes as following:

SINGLE: Inputs selection

PIP: Inputs selection, Sub window size and position selection PBP (1), PBP (2), Triple (1), Triple (2), Quad (1), Quad (2): Inputs selection, Display mode selection, Display aspect selection Multiview window distributions are as following:

| SINGLE | PIP* | PBP (1) | PBP (2) | Triple (1) | Triple (2) | Quad (1) | Quad (2) |

Users can select Multiview modes via RS-232 commands or OSD menu navigation.

* The ANI-PIP-41UHD switcher supports customized PIP size and location via RS-232 commands.

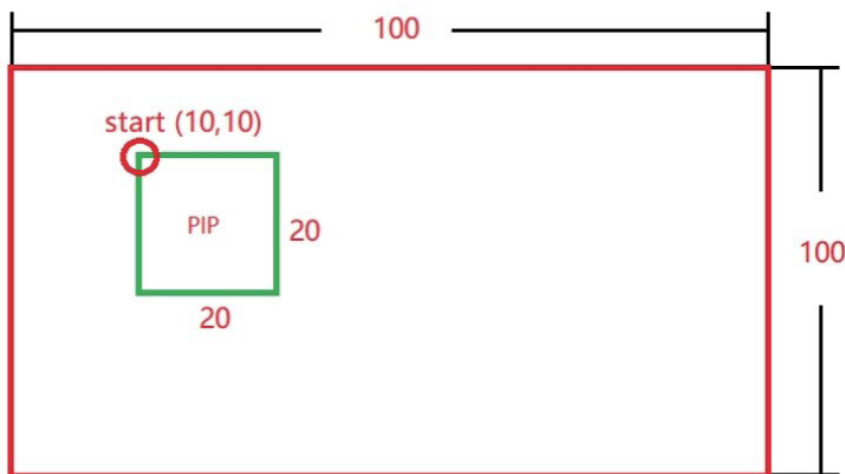The command format is **"s PIP Hstart Vstart Hsize Vsize!"**

Hstart=(1~100)
Vstart=(1~100)
Hsize=(1~100)
Vsize=(1~100)

For example: the command **"s PIP 10 10 20 20!"** will produce an image as shown below:

OSD MENU NAVIGATION

(1) A total of seven buttons on the IR Remote are used for OSD menu navigation, including MENU, EXIT, UP, DOWN, LEFT, RIGHT, OK.

Menu contents are as follows:

Output	Resolution	3840x2160p60	4096x2160p 60Hz 4096x2160p 50Hz 3840x2160p 60Hz 3840x2160p 50Hz 3840x2160p 30Hz 3840x2160p 25Hz 1920x1200p60Hz RB 1920x1080p 60Hz 1920x1080p 50Hz 1360x768p 60Hz 1280x800p 60Hz 1280x720p 60Hz 1280x720p 50Hz 1024x768 60Hz
	VKA	BLACKSCREEN	BLACKSCREEN, BLUESCREEN
	ITC	OFF	ON,OFF
Multiview	Single	Input select	HDMI1, HDMI2, HDMI3, HDMI4
	PIP	Win1 Select	HDMI1, HDMI2, HDMI3, HDMI4
	PIP	Win2 Select	HDMI1, HDMI2, HDMI3, HDMI4
		PIP Position	Right Bottom, Right Top, Left Bottom, Left Top
		PIP Size	Small, Middle, Large
	PBP	Win1 Select	HDMI1, HDMI2, HDMI3, HDMI4
		Win2 Select	HDMI1, HDMI2, HDMI3, HDMI4
		MODE	1, 2
		Aspect	Full, 16:9
	3xWIN	Win1 Select	HDMI1, HDMI2, HDMI3, HDMI4
		Win2 Select	HDMI1, HDMI2, HDMI3, HDMI4
		Win3 Select	HDMI1, HDMI2, HDMI3, HDMI4

OSD MENU NAVIGATION

Multiview	3xWIN	MODE	1, 2
		Aspect	Full, 16:9
	4xWIN	Win1 Select	HDMI1, HDMI2, HDMI3, HDMI4
		Win2 Select	HDMI1, HDMI2, HDMI3, HDMI4
		Win3 Select	HDMI1, HDMI2, HDMI3, HDMI4
		MODE	1, 2
		Aspect	Full, 16:9
AUDIO	Audio Select	WIN1	WIN1, HDMI1, HDMI2, HDMI3, HDMI4
	Volume	100	0..100
	Audio-Mute	OFF	ON, OFF
System	EDID	4K60-2.0	4K60-2.0,4K60-5.1CH, 4K60-7.1CH,4K30-2.0CH, 4K30-5.1CH,4K30-7.1CH, 1080P-2.0CH,1080P-5.1CH, 1080P-7.1CH, 1920x1200-2.0CH, 1680x1050-2.0CH, 1600x1200-2.0CH, 1440x900-2.0CH, 1360x768-2.0CH, 1280x1024-2.0CH, 1024x768-2.0CH, 720P-2.0CH, AUTO

Menu contents are as follows:

System	Language		English
	Baud rate	115200	115200,57600, 38400,19200, 9600
	Reset	Reset	Reset
	FW Version		Read only

(2) A total of four buttons on the IR Remote are used for audio setting on OSD menu navigation, including A-IN, Mute, VOL-, VOL+.

Menu contents are as follows:

A-IN	Audio Input	WIN1	WIN1, HDMI1, HDMI2, HDMI3, HDMI4
Mute	Audio Mute	OFF	ON, OFF
VOL-/ VOL+	Audio Volume	100	0..100

RS-232 COMMANDS

The product also supports RS-232 command control. Connect the RS-232 port of the product to a PC with a 3-pin phoenix connector cable. Then, open a Serial Command tool on PC to send ASCII commands to control the product.

The ASCII command list about the product is shown as below.

ASCII Commands				
Serial port protocol: baud rate: 115200(default) Data bits: 8 Stop bits: 1 Check bit: 0				
x - Parameter 1; y - Parameter 2; ! - Delimiter				
Command Code	**Function Description**	**Example**	**Feedback**	**Default Setting**
System Setting				
help!	List all commands	help!		
r type!	Get device model	r type!	4x1 HDMI Multiviewer	
r fw version!	Get Firmware version	r fw version!	MCU FW version x.xx.xx SCALER FW version x.xx.xx	
power z!	Power on/off the device, z=0~1(z=0 power off, z=1 power on)	power z!	power on System Initializing... Initialization Finished! MCU FW version x.xx.xx SCALER FW version x.xx.xx	
r power!	Get current power state	r power!	power on/power off	
reboot!	Reboot the device	reboot!	Reboot… System Initializing... Initialization Finished! MCU FW version x.xx.xx SCALER FW version x.xx.xx	
reset!	Reset to factory defaults	reset!	Reset to factory defaults System Initializing... Initialization Finished! MCU FW version x.xx.xx SCALER FW version x.xx.xx	

RS-232 COMMANDS

Command Code	Function Description	Example	Feedback	Default Setting
Output Setting				
s output res x!	Set Output Resolution (x=1~14) 1. 4096x2160p60, 2. 4096x2160p50, 3. 3840x2160p60, 4. 3840x2160p50, 5. 3840x2160p30, 6. 3840x2160p25, 7. 1920x1200p60RB, 8. 1920x1080p60, 9. 1920x1080p50, 10.1360x768p60, 11.1280x800p60, 12.1280x720p60, 13.1280x720p50, 14. 1024x768p60	s output res 3!	out resolution: 3840x2160p60	3840x2160p60
r output res!	Get output resolution	r output res!	out resolution: 3840x2160p60	
s output hdcp x!	set output hdcp(x=1~3) 1. HDCP 1.4 2. HDCP 2.2 3. HDCP OFF	s output hdcp 2!	output HDCP: HDCP 1.4	HDCP1.4
r output hdcp!	Get output hdcp status.	r output hdcp!	output HDCP: HDCP 1.4	
s output vka x!	Set output video keep active pattern.(x=1~2) 1. black screen 2. blue screen	s output vka 1!	output VKA pattern: black screen	black screen
r output vka!	Get output video keep active pattern.	r output vka!	output VKA pattern: black screen	
s output itc x!	Set output video mode(x=1~2) 1: video mode 2: pc mode	s output itc 1!	output ITC: video mode	video mode
r output itc!	Get output video mode	r output itc!	output ITC: video mode	

RS-232 COMMANDS

Command Code	Function Description	Example	Feedback	Default Setting
EDID Setting				
s input EDID x!	Set HDMI input EDID mode (x=18) 1. 4K2K60_444, Stereo Audio 2.0 2. 4K2K60_444,Dolby / DTS 5.1 3. 4K2K60_444,HD Audio 7.1 4. 4K2K30_444, Stereo Audio 2.0 5. 4K2K30_444,Dolby / DTS 5.1 6. 4K2K30_444, HD Audio 7.1 7. 1080P, Stereo Audio 2.0 8. 1080P,Dolby/DTS 5.1 9. 1080P, HD Audio 7.1 10.1920x1200, Stereo Audio 2.0 11.1680x1050, Stereo Audio 2.0 12.1600x1200, Stereo Audio 2.0 13.1440x900, Stereo Audio 2.0 14.1360x768, Stereo Audio 2.0 15.1280x1024, Stereo Audio 2.0 16.1024x768, Stereo Audio 2.0 17.720p, Stereo Audio 2.0 18.copy from HDMI out	s input EDID 1!	input EDID: 4K2K60_444, Stereo Audio 2.0	4K2K60_444,Stereo Audio 2.0
r input EDID!	Get input EDID mode	r input EDID!	input EDID:4K2K60_444, Stereo Audio 2.0	

RS-232 COMMANDS

Command Code	Function Description	Example	Feedback	Default Setting
Audio Setting				
s output audio x!	Set output audio source(x=0~4) 0. follow window 1 selected source 1. HDMI 1 input audio 2. HDMI 2 input audio 3. HDMI 3 input audio 4. HDMI 4 input audio	s output audio 0!	output audio: follow window 1 selected source	output audio: follow window 1 selected source
r output audio!	Get output audio source	r output audio!	output audio: follow window 1 video source	
s output audio vol+!	Increase output audio volume	s output audio vol+!	output audio volume: 50	
s output audio vol-!	Decrease output audio volume	s output audio vol-!	output audio volume: 50	
s output audio vol x!	Set output audio volume value (x=0~100)	s output audio vol 30!	output audio volume: 30	100
r output audio vol!	Get output audio volume	r output audio vol!	output audio volume: 30	
s output audio mute x!	Set output audio mute on/off (x=0~1) 0. mute off 1. mute on	s output audio mute 0!	output audio mute: off	off
r output audio mute!	Get output audio mute on/off	r output audio mute!	output audio mute: off	

RS-232 COMMANDS

Command Code	Function Description	Example	Feedback	Default Setting
Single Screen Mode Setting				
s auto switch x!	Enable/disable auto switch feature(x=0~1) 0. Disable auto switch 1. Enable auto switch	s auto switch 0!	auto switch off	auto switch off
r auto switch!	Get auto switch feature	r auto switch!	auto switch off	
s in source x!	Route input source to output (1~4) 1. HDMI 1 2. HDMI 2 3. HDMI 3 4. HDMI 4	s in source 1!	HDMI 1	HDMI 1
r in source!	Get output secected input source	r in source!	HDMI 1	

RS-232 COMMANDS

| Command Code	Function Description	Example	Feedback	Default Setting
Multi-viewer Mode Setting				
s multiview x!	Set multi-viewer display mode(x=1~5) 1. single screen 2. PIP 3. PBP 4. triple screen 5. quad screen	s multiview 1!	single screen	single screen
r multiview!	Get multi-viewer display mode	r multiview!	single screen	
s window x in y!	Select one input for one display window for the current Multiview mode. (x=1~4) 1. window 1 2. window 2 3. window 3 4. window 4 (y=1~4) 1. HDMI 1 2. HDMI 2 3. HDMI 3 4. HDMI 4	s window 1 in 1!	window 1 select HDMI 1	
r window x in!	Get windows selected input source (x=0~4) 0. ALL 1. window 1 2. window 2 3. window 3 4. window 4	r window 1 in!	window 1 select HDMI 1	
s PIP Hstart Vstart Hsize Vsize!	Set PIP window to user define mode Hstart=(1~100) Vstart=(1~100) Hsize=(1~100) Vsize=(1~100) NOTE: Hstart+Hsize<=101, Vstart+Vsize<=101	s PIP 10 10 20 20!	PIP 10 10 20 20	
s PIP position x!	Set PIP window position (x=1~5) 1. Left Top 2. Left Bottom 3. Right Top 4. Right Bottom 5. user	s PIP position 3!	PIP on right top	PIP on right top

RS-232 COMMANDS

Command Code	Function Description	Example	Feedback	Default Setting
r PIP position!	Get PIP window positon	r PIP position!	PIP on right top	
s PIP size x!	Get PIP window size (x=1~4) 1. small 2. middle 3. large 4. user	s PIP size 3!	PIP size: large	PIP size: large
r PIP size!	Get PIP window size	r PIP size!	PIP size: large	
s PBP mode x!	Set PBP windows display mode (x=1~2) 1. PBP mode 1 2. PBP mode 2	s PBP mode 1!	PBP mode 1	PBP mode 1
r PBP mode!	Get PBP windows display mode	r PBP mode!	PBP mode 1	
s PBP aspect x!	Set PBP windows display aspect ratio (x=1~2) 1. Full screen 2. 16:9	s PBP aspect 1!	PBP aspect: full screen	PBP aspect: full screen
r PBP aspect!	Get PBP windows display aspect ratio	r PBP aspect!	PBP aspect: full screen	
s triple mode x!	Set triple windows display mode (x=1~2) 1. triple mode 1 2. triple mode 2	s triple mode 1!	triple mode 1	triple mode 1
r triple mode!	Get triple windows display mode	r triple mode!	triple mode 1	
s triple aspect x!	Set triple windows display aspect ratio (x=1~2) 1. Full screen 2. 16:9	s triple aspect 1!	triple aspect: full screen	triple aspect: full screen
r triple aspect!	Get triple windows display aspect ratio	r triple aspect!	triple aspect: full screen	
s quad mode x!	Set quad windows display mode (x=1~2) 1. quad mode 1 2. quad mode 2	s quad mode 1!	quad mode 1	quad mode 1
r quad mode!	Get quad windows display mode	r quad mode!	quad mode 1	

RS-232 COMMANDS

Command Code	Function Description	Example	Feedback	Default Setting
s quad aspect x!	Set quad windows display aspect ratio (x=1~2) 1. Full screen 2. 16:9	s quad aspect 1!	quad aspect: full screen	quad aspect: full screen
r quad aspect!	Get quad windows display aspect ratio	r quad aspect!	quad aspect: full screen	

APPLICATION EXAMPLE
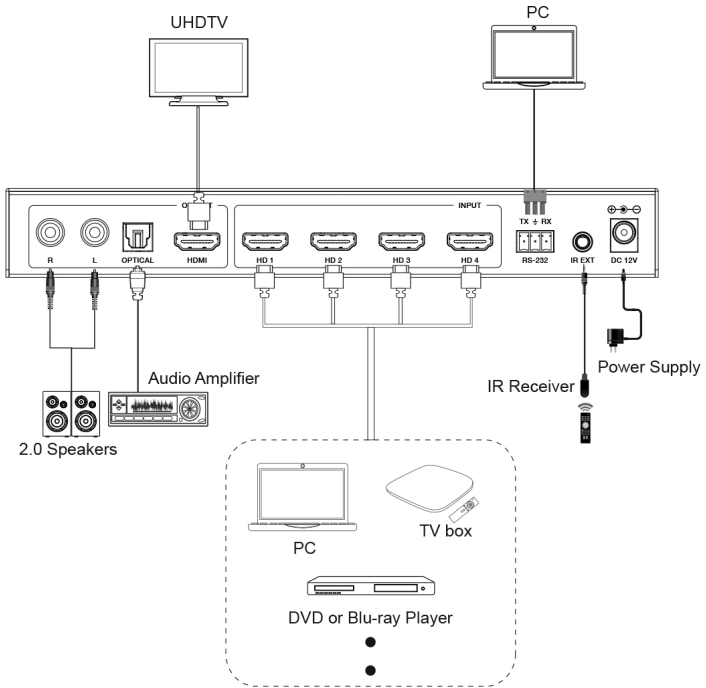
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