

**HDMI-PIP-4P**  
**4 x 1 HDMI Seamless Quad PIP Scaler**  
INSTRUCTION MANUAL





## 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.

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## INTRODUCTION

The 4 x 1 HDMI Seamless Quad PIP Scaler is a high performance, high speed zooming/shrinking system that can be easily configure and control for quad or picture-in-picture video processing. Allowing 4 different input sources to be freely selected and arranged on one single display with supporting resolution up to WUXGA@60RB, 1080p and audio up to 8Ch 192kHz for both input and output. Screen setting hot keys with IR and RS-232 allows instant control and switching on the output display.

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## PACKAGE CONTENTS

- 1 x 4 by 1 HDMI Seamless Quad PIP Scaler
- 1 x Remote Control (ANI-124)
- 1 x 12V/3A DC Power Adaptor
- Users Guide

# FEATURES

## FEATURES

- Seamless switching between channels and windows
  - Zoom and Shrink 4CH input image and/or overlay
  - Supports PIP, POP and multi-windows display
  - Supports OSD, RS-232 Remote and on-panel controls
  - Fade-In-Out, Chromakey, Mirror and Rotation (90° left & right and 180° up & down) functions
  - 8 Screen setting hot keys and extra 4 customized favorite screen setting
  - Support individual channel size and position adjustment
- 

## SYSTEM REQUIREMENTS

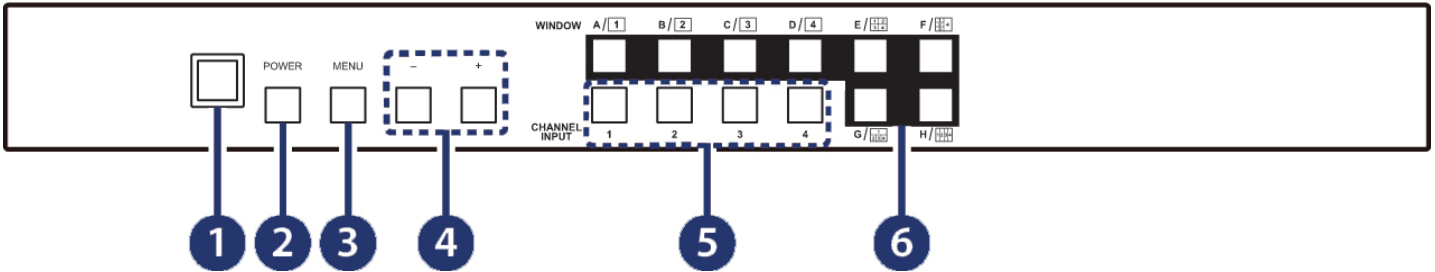
- Input source equipment such as DVD/Blu-ray players and PC/NB devices and output HD TV/monitor.
- 

## SPECIFICATIONS

- **Video Bandwidth:** 225MHz/6.75Gbps
- **Input Port:** 4x HDMI
- **Output Port:** 1 x HDMI
- **ESD Protection:** Human body model:  $\pm 8\text{kV}$  (air-gap discharge) /  $\pm 4\text{kV}$  (contact-gap discharge)
- **Power Supply:** 12V/3A DC (US/EU standards, CE/FCC/UL certified)
- **Dimensions (WxDxH):** 17 x 6.8 x 1.73 in (432 x 172 x 44mm)
- **Weight:** 4.9 lbs / 2200g
- **Chassis Material:** Aluminum
- **Silkscreen Color:** Black
- **Operating Temperature:** 32°F ~ 104°F (0°C ~ 40°C)
- **Storage Temperature:** -4°F ~ 140°F (-20°C ~ 60°C)
- **Relative Humidity:** 20 ~ 90% RH (non-condensing)

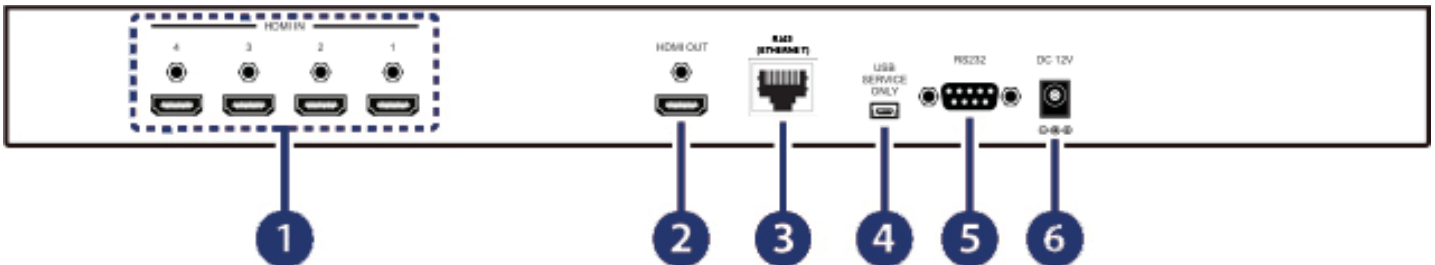
# OPERATION CONTROLS AND FUNCTIONS

## FRONT PANEL



- 1 IR Window:** Accept IR signal from the device's remote control (included).
- 2 POWER:** Press this button to power on the device or set it to standby mode.
- 3 MENU:** Press this button to bring up the OSD menu on screen.
- 4 -/+ Buttons:** Press these buttons to scroll down/up the OSD selections.
- 5 CHANNEL INPUT 1~4:** Press these buttons to cycle thru HDMI 1~4 input source as assigned to each window.
- 6 WINDOW A~H:** Press these hot keys to select the screen setting where A~D display a full screen of each channel and E~H are a different combination of a full screen setting with all 4 channels (quad view).

## REAR PANEL



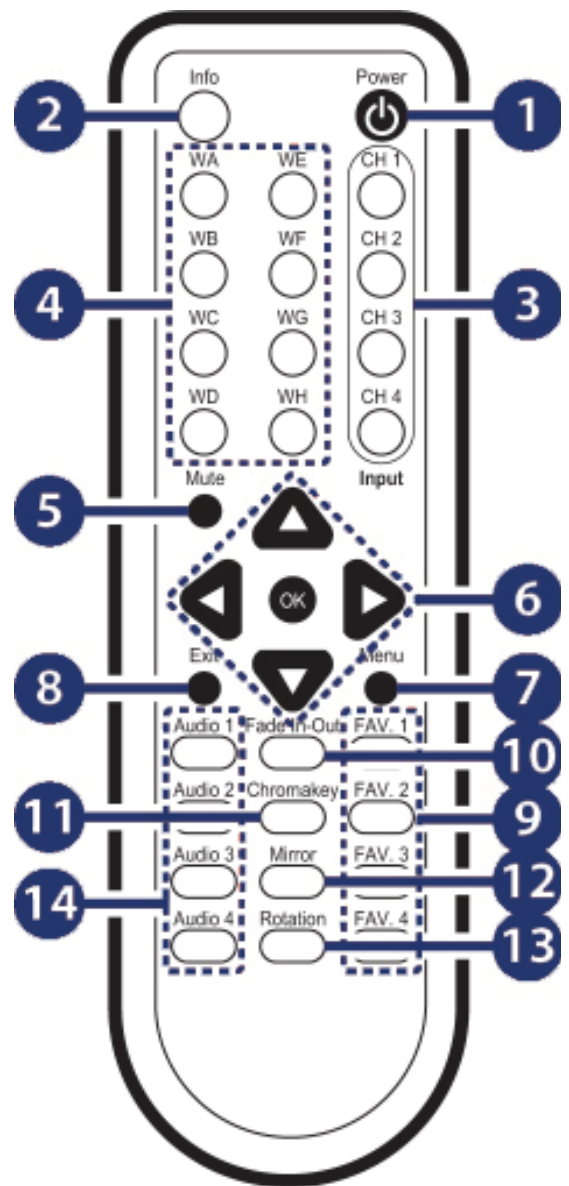
- 1 HDMI IN:** Connect with source equipments such as DVD, Blu-ray players, Computers, Apple TV, etc.
- 2 HDMI OUT:** Connect with HD TV/monitor for output image display.
- 3 RJ45 JACK:** Ethernet jack for switcher control using telnet control.
- 4 USB SERVICE ONLY:** This slot is reserved for factory use only.
- 5 RS-232:** Connect from PC/NB with D-Sub 15pin cable for RS-232 control.
- 6 DC 12V:** Plug the 12V DC power supply into the unit and connect the adaptor to an AC outlet.

# REMOTE CONTROL

## OUTPUT RESOLUTIONS

- 1 **Power:** Press this button to switch on the device or press it again to set it to standby mode.
- 2 **Info:** Press this button to show the device's firmware version.
- 3 **Input CH 1~4:** Press these buttons to rotate HDMI 1~4 input source on each channel to be displayed on screen
- 4 **WA~H:** Press these hot keys to select the screen setting where A~D will display a full screen of each channel and E~H are a different combination of a full screen setting with all 4 channels.
- 5 **Mute:** Press this button to mute the audio from HDMI output port.
- 6 **▲▼▶◀ & OK Buttons:** Press these buttons to scroll through the OSD selection and press OK to enter and confirm the setting.
- 7 **Menu:** Press this button to enter into the OSD menu.
- 8 **Exit:** Press this button to exit the OSD menu or the OSD settings.
- 9 **FAV. 1~4:** Press these buttons to bring up the customized screen settings.
- 10 **Fade-In-Out\*:** Press this button to switch on or off the Fade-in-out function.
- 11 **Chromakey\*:** Press this button to enter into Chroma function where CH 1 is the background and CH 2 is the top image.
- 12 **Mirror\*:** Press this button to display the screen in mirror image.
- 13 **Rotation\*:** Press this button to rotate the image 90° left and right or 180° upside down.
- 14 **Audio 1~4:** Press these buttons to select audio from HDMI input source 1~4.

\* Functions only work under Window A to D. The system will force the switch to Window A when current operation is Window E~H.



# RS-232 PROTOCOLS

## RS-232 PROTOCOLS

Baud Rate: 115200bps

Data Bit: 8 bits

Parity: None

Flow Control: None

Stop Bit: 1

HDMI-PIP-4P		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

## RS-232 COMMANDS

Command	Action
POW000 POW001	POW000 POW001
WND001 WND002 WND003 WND004 WND005 WND006 WND007 WND008	Change to Window A Change to Window B Change to Window C Change to Window D Change to Window E Change to Window F Change to Window G Change to Window H
CH1001 CH1002 CH1003 CH1004	Change CH1 to Source 1 Change CH1 to Source 2 Change CH1 to Source 3 Change CH1 to Source 4
CH2001 CH2002 CH2003 CH2004	Change CH2 to Source 1 Change CH2 to Source 2 Change CH2 to Source 3 Change CH2 to Source 4
CH3001 CH3002 CH3003 CH3004	Change CH3 to Source 1 Change CH3 to Source 2 Change CH3 to Source 3 Change CH3 to Source 4
CH4001 CH4002 CH4003 CH4004	Change CH4 to Source 1 Change CH4 to Source 2 Change CH4 to Source 3 Change CH4 to Source 4

Command	Action
MUT000 MUT001	Mute Off Mute On
AUD001 AUD002 AUD003 AUD004	Change Output Audio to Source 1 Change Output Audio to Source 2 Change Output Audio to Source 3 Change Output Audio to Source 4
FAD000 FAD001	Fade In-Out Off Fade In-Out On
CHR000 CHR001	Chromakey Function Off Chromakey Function On
MIR000 MIR001	Mirror Function Off Mirror Function On
ROT000 ROT001 ROT002 ROT003	Rotation Function Off Rotation Function R Rotation Function L Rotation Function Up-Side Down
SFA001 SFA002 SFA003 SFA004	Store window format to FAV 1* Store window format to FAV 2* Store window format to FAV 3* Store window format to FAV 4*
RFA001 RFA002 RFA003 RFA004	Recall window from FAV 1 Recall window from FAV 2 Recall window from FAV 3 Recall window from FAV 4

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

\* Commands will not execute under window A~D.

# OSD MENU

## OSD MENU

Main Menu	1st Layer	2nd Layer	3rd Layer	
Image Adjust	Brightness Adjust	CH 1	0~100 (50)	
		CH 2	0~100 (50)	
		CH 3	0~100 (50)	
		CH 4	0~100 (50)	
		Value Reset		
		Menu Exit		
	Contrast Adjust	CH 1	0~100 (50)	
		CH 2	0~100 (50)	
		CH 3	0~100 (50)	
		CH 4	0~100 (50)	
		Value Reset		
		Menu Exit		
	Hue Adjust	CH 1	0~100 (50)	
		CH 2	0~100 (50)	
		CH 3	0~100 (50)	
		CH 4	0~100 (50)	
		Value Reset		
		Menu Exit		
	Picture Reset			
	Menu Exit			
	Channel 1 Select	Size		CH1 Wxxx Hxxx
			Width Unit	
			Width Ten	
			Width Hundred	
			Height Unit	
			Height Ten	
			Height Hundred	
Position				CH1 Hxxx Vxxx
				Horizontal Unit
			Horizontal Ten	
			Horizontal Hundred	
			Vertical Unit	
			Vertical Ten	
		Vertical Hundred		
		Image Output OnOff		
		Window Reset		
		Menu Exit		



# OSD MENU

## OSD MENU

Main Menu	1st Layer	2nd Layer	3rd Layer	
	Channel 2 Select	Size	CH2 Wxxx Hxxx	
			Width Unit	
			Width Ten	
			Width Hundred	
			Height Unit	
			Height Ten	
		Height Hundred		
		Position	CH2 Hxxx Vxxx	
			Horizontal Unit	
			Horizontal Ten	
			Horizontal Hundred	
			Vertical Unit	
	Vertical Ten			
	Image Output OnOff	Window Reset	Menu Exit	
	Channel 3 Select	Size	CH3 Wxxx Hxxx	
			Width Unit	
			Width Ten	
			Width Hundred	
			Height Unit	
			Height Ten	
		Height Hundred		
		Position	CH3 Hxxx Vxxx	
			Horizontal Unit	
			Horizontal Ten	
			Horizontal Hundred	
			Vertical Unit	
	Vertical Ten			
	Image Output OnOff	Window Reset	Menu Exit	

# OSD MENU

## OSD MENU

Main Menu	1st Layer	2nd Layer	3rd Layer
	Channel 4 Select	Size	CH4 Wxxx Hxxx
			Width Unit
			Width Ten
			Width Hundred
			Height Unit
			Height Ten
			Height Hundred
		Position	CH4 Hxxx Vxxx
			Horizontal Unit
			Horizontal Ten
			Horizontal Hundred
			Vertical Unit
			Vertical Ten
			Vertical Hundred
		Image Output OnOff	
		Window Reset	
		Menu Exit	
	Favorites Store	FAV 1 Store ON/OFF/OK	
		FAV 2 Store ON/OFF/OK	
		FAV 3 Store ON/OFF/OK	
		FAV 4 Store ON/OFF/OK	
		Menu Exit	
	Favorites Recall	FAV 1 Recall ON/OFF/OK	
		FAV 2 Recall ON/OFF/OK	
		FAV 3 Recall ON/OFF/OK	
		FAV 4 Recall ON/OFF/OK	
		Menu Exit	
		Menu Exit	
Window Convert	Channel 1 Convert	Mirror On/Off	
		Fade In-Out On/Off	
		Rotation R90/L90/ Up-Side Down180/Off	
		Window Reset	
		Menu Exit	
	Channel 2 Convert	Mirror On/Off	
		Fade In-Out On/Off	
		Rotation R90/L90/ Up-Side Down180/Off	
		Window Reset	
		Menu Exit	
		Menu Exit	

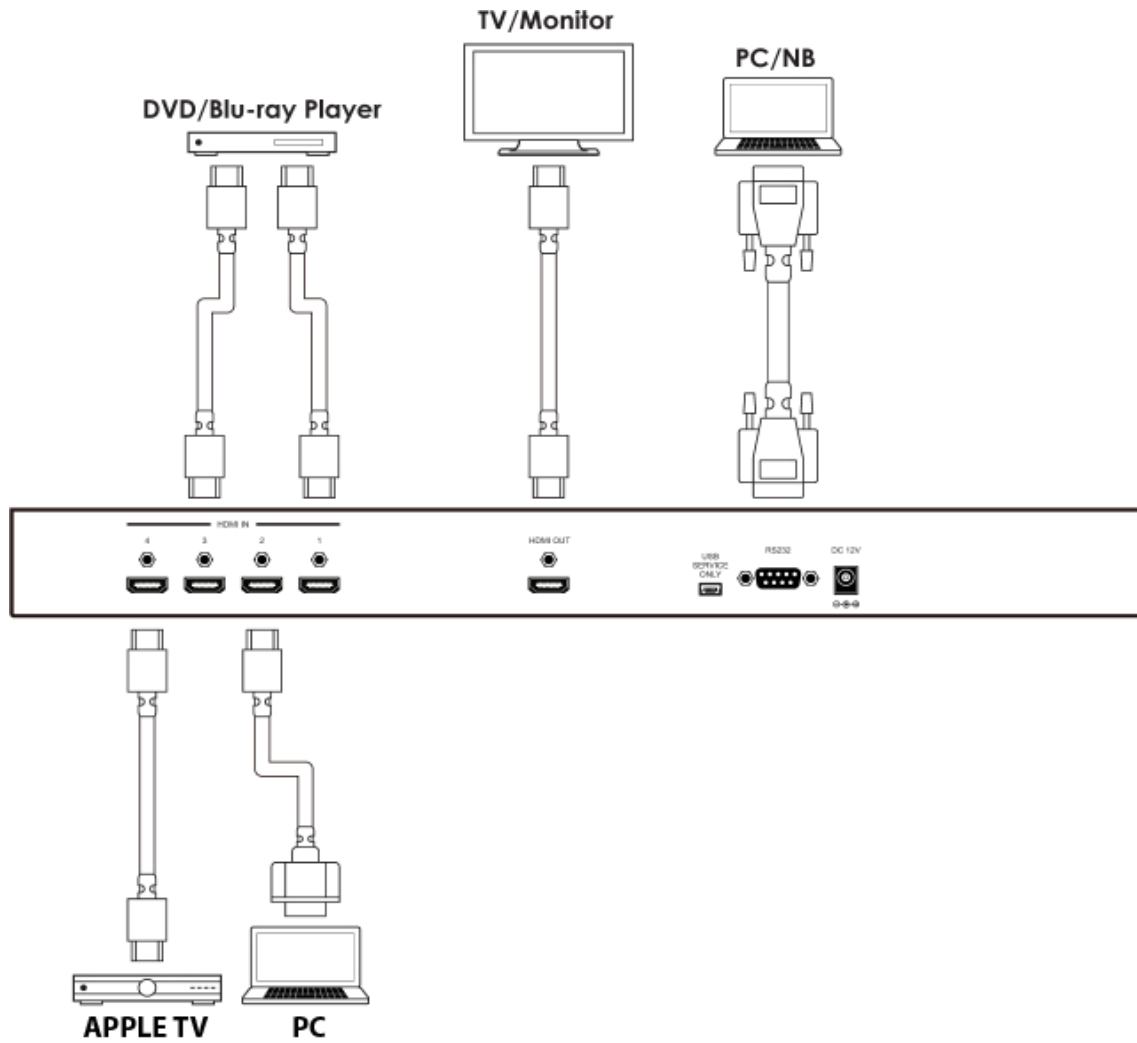
# OSD MENU

## OSD MENU

Main Menu	1st Layer	2nd Layer	3rd Layer
Window Convert	Channel 3 Convert	Mirror On/Off	
		Fade In-Out On/Off	
		Rotation R90/L90/ Up-Side Down180/Off	
		Window Reset	
		Menu Exit	
	Channel 4 Convert	Mirror On/Off	
		Fade In-Out On/Off	
		Rotation R90/L90/ Up-Side Down180/Off	
		Window Reset	
		Menu Exit	
Chromakey Setup*	Minimum For R 000~255		
	Maximum For R 000~255		
	Minimum For G 000~255		
	Maximum For G 000~255		
	Minimum For B 000~255		
	Maximum For B 000~255		
	Switch ON/ OFF		
	Exit		
Sys Reset			
Information	F/V version		
Menu Exit			

\* Chromakey Setup works under CH1 & CH2 where CH1 is the background and CH2 is the top layer. RGB's minimum setting cannot be greater than the maximum and the maximum cannot be lower than the minimum setting.

# CONNECTION AND INSTALLATION



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