



## EL-41 PIP

4-Way HDMI Switch with Integrated Picture-in-Picture (PIP) Technology

**OPERATION MANUAL**

[www.cie-group.com](http://www.cie-group.com)



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Version 1.1 August 2011

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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	SUMMARY OF CHANGE
v1.00	29/01/13	First Release

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## 1. INTRODUCTION

The EL-41PIP is an advanced 4 Way HDMI switch with integrated Picture in Picture (PIP) technology. This plug and play solution offers advanced control and display options that allow for the integration of 4 sources onto a single screen.

## 2. APPLICATIONS

- /// Broadcasting room and control
- /// Surveillance room and control
- /// Public advertisement and control
- /// Digital Presentation

## 3. PACKAGE CONTENTS

- /// 1 x EL-41PIP Advanced 4 Way HDMI Switch
- /// 1 x Remote Control (CR-124)
- /// 1 x 12V/3A DC Power Adaptor
- /// Operation Manual

## 4. SYSTEM REQUIREMENTS

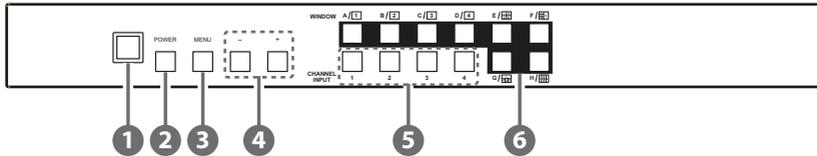
Source equipment such as DVD/Blu-ray player and PC/Laptop devices and output HD TV/monitor.

## 5. FEATURES

- /// Integration of up to 4 sources on a single display
- /// Multiple screen layout configurations
- /// Seamless switching channels and on screen windows
- /// Fade in out display functionality
- /// Ability to mirror and rotate images
- /// Zoom & Shrink HDMI Video and / or Overlay
- /// Resolution supported : HDTV: 480i to 1080p plus 1080p24fps; PC: VGA to UXGA

## 6. OPERATION CONTROLS AND FUNCTIONS

### 6.1 Front Panel



#### 1 IR Window

Accept IR signal from the device's remote control included in the package.

#### 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.

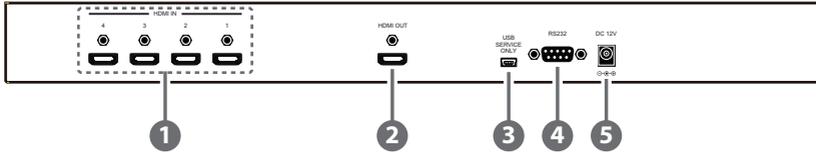
#### 5 CHANNEL INPUT 1~4

Press these buttons to rotate HDMI 1~4 input source on each channel to be display on screen.

#### 6 WINDOW A~H

Press these hot keys to select the screen setting where A~D are display a full screen of each channel and E~H are a different combination of a full screen setting with all 4 channels.

## 6.2 Rear Panel



### 1 HDMI IN

Connect with source equipments such as DVD/Blu-ray players and or PC/NB devices.

### 2 HDMI OUT

Connect with HD TV/monitor for output image display.

### 3 USB SERVICE ONLY

This slot is reserved for factory use only.

### 4 RS-232

Connect from PC/NB with D-Sub 15pin cable for RS-232 control.

### 5 DC 12V

Plug the 12V DC power supply into the unit and connect the adaptor to an AC outlet.

## 6.3 Remote Control

### 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 display on screen

### 4 WA~H

Press these hot keys to select the screen setting where A~D are 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 this 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

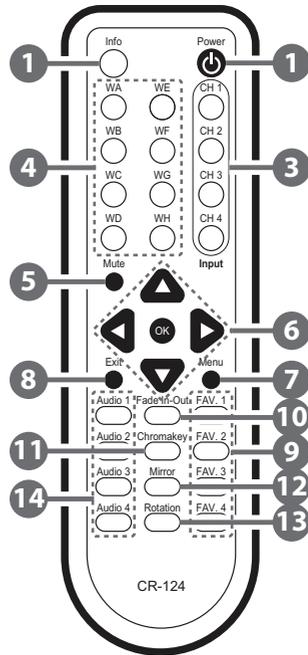
Press this button to exit the OSD menu or the OSD settings.

### 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 to switch to Window A when operate under Window E~H.

## 6.4 RS-232 Protocols

EL-41PIP			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

## 6.5 RS-232 Commands

Command	Action
POW000	OFF
POW001	ON
WND001	Change to Window A
WND002	Change to Window B
WND003	Change to Window C
WND004	Change to Window D
WND005	Change to Window E
WND006	Change to Window F
WND007	Change to Window G
WND008	Change to Window H
CH1001	Change CH1 to Source 1
CH1002	Change CH1 to Source 2
CH1003	Change CH1 to Source 3
CH1004	Change CH1 to Source 4
CH2001	Change CH2 to Source 1
CH2002	Change CH2 to Source 2
CH2003	Change CH2 to Source 3
CH2004	Change CH2 to Source 4
CH3001	Change CH3 to Source 1
CH3002	Change CH3 to Source 2
CH3003	Change CH3 to Source 3
CH3004	Change CH3 to Source 4
CH4001	Change CH4 to Source 1
CH4002	Change CH4 to Source 2
CH4003	Change CH4 to Source 3
CH4004	Change CH4 to Source 4
MUT000	Mute Off
MUT001	Mute On

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

## 6.6 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		
			Size
			Width Unit
			Width Ten
			Width Hundred
			Height Unit
			Height Ten

	Channel 1 Select		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		
	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			

			Vertical Hundred	
		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
				Vertical Hundred
		Image Output OnOff		
		Window Reset		
		Menu Exit		
			CH4 Wxxx Hxxx	
			Width Unit	
		Width Ten		

	Channel 4 Select	Size	Width Hundred
			Height Unit
			Height Ten
			Height Hundred
		Position	CH4 Hxxx Vxxx
			Horizontal Unit
			Horizontal Ten
			Horizontal Hundred
			Vertical Unit
			Vertical Ten
	Vertical Hundred		
	Favourites Store	Image Output OnOff	
		Window Reset	
		Menu Exit	
		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	
FAV 2 Recall ON/OFF/OK			

	Favourites Recall	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	
	Channel 3 Convert	Mirror On/Off	
		Fade In-Out On/Off	
		Rotation R90/ L90/Up-Side Down180/Off	
		Window Reset	
		Menu Exit	

		Mirror On/Off	
		Fade In-Out On/Off	
	Channel 4 Convert	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/W version		
Menu Exit			

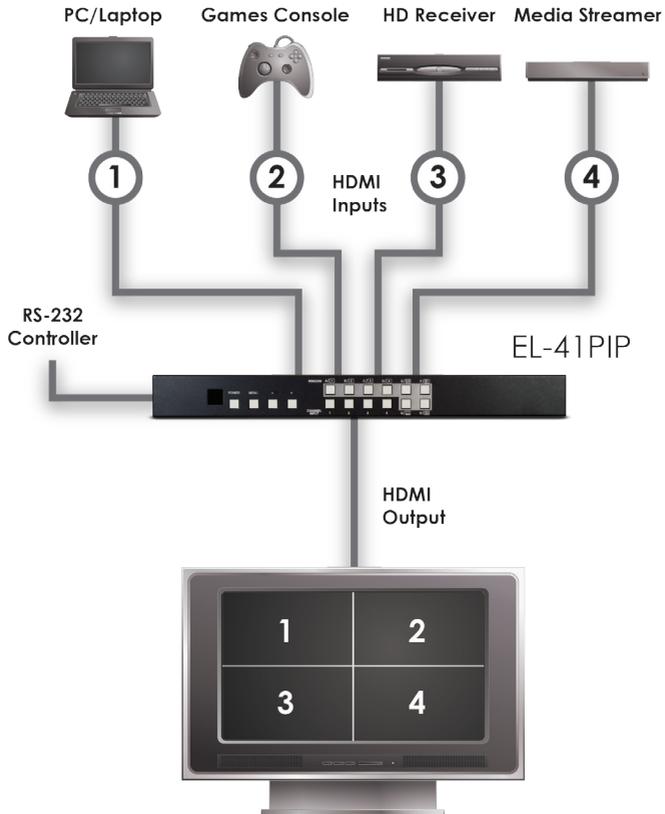
\* Chromakey Setup works under CH1&CH2 where CH1 is the background and CH2 is the top layer. RGB's minimum setting figures cannot be greater than the maximum and the maximum figures cannot be lower than the minimum setting figures.

## 7. SPECIFICATIONS

<b>Video Bandwidth</b>	225MHz/6.75Gbps
<b>Input port</b>	4x HDMI
<b>Output port</b>	1 x HDMI
<b>ESD Protection</b>	Human body model: ±8kV (air-gap discharge) ±4kV (contact-gap discharge)
<b>Power Supply</b>	12V/3A DC (US/EU standards, CE/FCC/UL certified)
<b>Dimensions</b>	432mm(W) x 172mm(D) x 44mm(H)
<b>Weight</b>	2200g
<b>Chassis Material</b>	Aluminum
<b>Silkscreen Color</b>	Black
<b>Operating Temperature</b>	0°C ~ 40°C / 32 °F ~ 104 °F
<b>Storage Temperature</b>	-20°C ~ 60°C / -4 °F ~ 140 °F
<b>Relative Humidity</b>	20 ~ 90% RH (non-condensing)



## 8. CONNECTION AND INSTALLATION



### Other Screen Arrangements

