



# CPT-2370

PC to Video Overlay



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
VR0	05/02/13	Preliminary Release
VR1	22/04/13	Package Accessories
VR2	02/07/13	Remote Control's PC Key Function



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## 1. INTRODUCTION

The PC to Video overlay system is designed to overlay PC/ Graphics signal onto Video signal or vice versa. Moreover, it can convert a variety of VGA sources to Video signal. It is idea for using in applications like video conference, home theater, business presentation and lecturing room.

## 2. APPLICATIONS

- Video Conference
- Home theater
- Business presentation
- Lecturing room

## 3. PACKAGE CONTENTS

- PC to Video overlay system
- 5V DC power supply adaptor
- Operation Manual
- 3.5mm to D-Sub 9 pin Adaptor
- D-Sub 15 pin male to D-Sub 15 pin male cable
- S-Video cable
- Video cable
- Remote Control (CR-116 with Battery)

## 4. SYSTEM REQUIREMENTS

- Source equipments such as PC/Video /DVD player with VGA/ Video/S-Video output connector(s)
- Displays TV/monitor with VGA/Video/S-Video input connector(s)



## 5. FEATURES

- Superimpose PC text and graphics onto another video signal. Or superimpose Video signal onto VGA source.
- Supports VGA to Video conversion  
VGA: 640x480, 800x600, 1024x768, 1280x1024, 1600x1200  
Video: NTSC, NTSC4.43, PAL, PAL-M, PAL-N or SECAM
- Supports PC & Video picture adjustment
- Supports Key adjust and PC aspect
- Supports Zoom and Pan functions
- Supports Vertical and Horizontal Overscan/ Underscan control
- Automatically supports frame rate conversion from 56Hz up to 85Hz
- Cross-platform compatibility for PC, Macintosh and Notebook
- Plug-and-Play design, no software driver required
- Simultaneously design, no software driver required
- Can be adjust from front panel, RS-232 or remote control

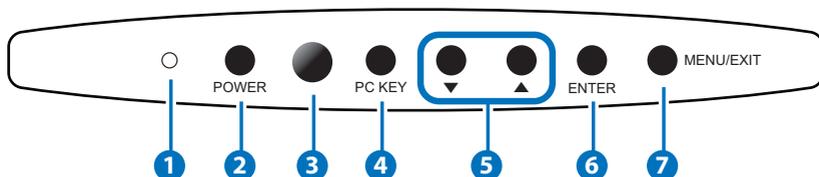
### **Note:**

1. *The system did not support video format conversion. For example: NTSC in to NTSC out, PAL in to PAL out or SECAM in to SECAM out.*
2. *In Overlay mode, suggest the users to preserve the Contrast/ Brightness/Color/Hue in default value.*
3. *The PC to Video or Video to PC overlay system is designed to overlay PC/Graphics onto Video signal or vise versa. Simply select from the Menu, Main Menu→SETUP→OUTPUT-PC KEY/CV KEY.*
4. *Zoom and Pan functions are not supported with Video signal input is used.*

## 6. OPERATION CONTROLS AND FUNCTIONS

The following sections describe the hardware components of the unit.

### 6.1 Front Panel



#### 1 POWER LED INDICATOR

The LED will illuminate when power is on.

#### 2 POWER

Press to power on the system, press again to turn the system to standby.

#### 3 IR SENSOR

#### 4 PC KEY

Press the button to display the combination of PC and Video or S-Video screen.

#### 5 ▲ and ▼

Press to toggle through various control or setting values.

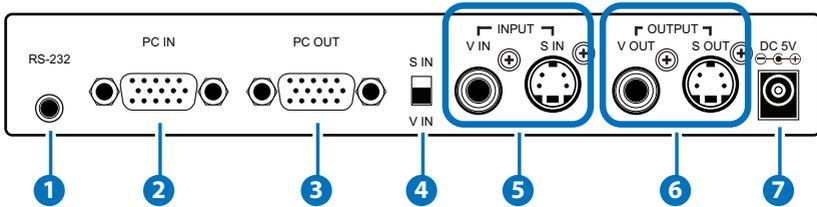
#### 6 ENTER

Press to enter or to confirm the selection.

#### 7 MENU/EXIT

Press to enter MENU mode and press again to EXIT the menu or return to previous page.

## 6.2 Rear Panel



### 1 RS-232

Connect 3.5mm phone jack to D-Sub 9pin adaptor to the PC/ Notebook device for RS-232 control.

### 2 PC INPUT

Connect the input source equipment such as PC/NB for PC signal input.

### 3 PC OUTPUT (PASS THROUGH)

Connect the display TV/monitor for PC signal output.

### 4 V-IN AND S-IN

Switch between Video or S-Video input.

### 5 VIDEO/S-VIDEO INPUT

Connect the Video/S-Video input port to the source equipment such as DVD player or set-top-box.

### 6 VIDEO/S-VIDEO OUTPUT

Connect the Video/S-Video output port to the display.

### 7 DC 5V

Plug the 5V DC power supply into the splitter and connect the adaptor to AC wall outlet.

## 6.3 Remote Control

### 1 OSD

Press to turn ON/OFF the OSD on the display.

### 2 POWER

Press to power ON or to Standby for the system.

### 3 V IN

Press to select Video input source. Depending on the S/V IN switch the output display will show S/V video.

### 4 PC IN

Press to select PC input source.

### 5 PC KEY

Press the button to display the combination of PC and Video or S-Video screen.

### 6 1 ~ 9

When in PC mode, press each key to Zoom the picture to the specific area.

### 7 ZOOM

Press to turn ON/OFF the ZOOM function, excepted for Video input source.

### 8 MENU/EXIT

Press to enter MENU mode and press again to EXIT the menu or return to previously page.

### 9 ▲▼◀▶

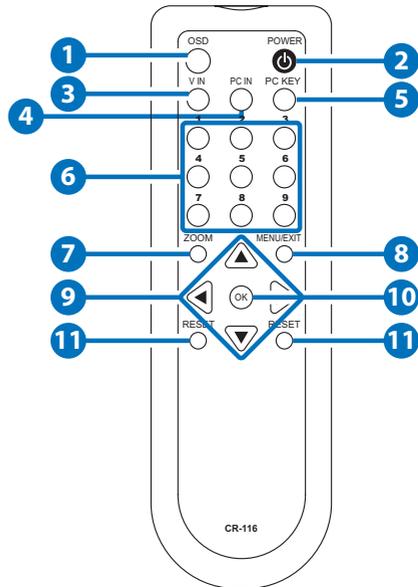
- a. Press each key to pan the PC picture to different position follow by each key definition.
- b. To enter the Sub-menu.

### 10 OK

Press OK to confirm the selection.

### 11 RESET

Press once to reset current setting values back to factory default value.



## 6.4 RS-232 Protocols

Pins definition of modem cable				
Video Scaler			Remote Controller	
PIN	Definition		PIN	Definition
1	NC		1	NC
2	TXD		2	RXD
3	RXD		3	TXD
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: 9600bps

Data bit: 8 bits

Parity: None

Stop Bit: 1

Flow Control: None

## 6.5 RS-232 Commands

Command	Description
[POWER1]	power on(normal)
[POWER0]	power off(standby)
[KEY0]	Chroma Key--Blue
[KEY1]	Chroma Key--Green
[KEY2]	Chroma Key--Red
[KEY3]	Chroma Key--Black
[OUTPUT0]	output mode--PC
[OUTPUT1]	output mode--VIDEO

[OUTPUT2]	output mode--PC KEY
[OUTPUT3]	output mode--CV KEY
[OUTPUT4]	output mode--MIXER
[SYSTEM0]	output video system :NTSC
[SYSTEM1]	output video system :NTSC4.43
[SYSTEM2]	output video system :PAL
[SYSTEM3]	output video system :PALM
[SYSTEM4]	output video system :PALN
[SYSTEM5]	output video system :SECAM
[OSD0]	OSD off
[OSD1]	OSD on
[DISPLAY0]	Display off
[DISPLAY1]	Display on
[DISPLAY2]	Display info
[ZOOM0]	PC ZOOM off
[ZOOM1]	PC ZOOM position 1
[ZOOM2]	PC ZOOM position 2
[ZOOM3]	PC ZOOM position 3
[ZOOM4]	PC ZOOM position 4
[ZOOM5]	PC ZOOM position 5
[ZOOM6]	PC ZOOM position 6
[ZOOM7]	PC ZOOM position 7
[ZOOM8]	PC ZOOM position 8
[ZOOM9]	PC ZOOM position 9
[ZOOMC]	PC PAN center
[ZOOML]	PC PAN left
[ZOOMU]	PC PAN up
[ZOOMR]	PC PAN right

[ZOOMD]	PC PAN down
[PANEL0]	Front panel lockout on
[PANEL1]	Front panel lockout off
[CVCONTx]	video Contrast x=0~63
[CVBRIGHTx]	video Brightness x=0~63
[CVCOLORx]	video Color x=0~63
[CVHUEx]	video Tint x=0~63
[CVDETAILx]	video Sharpness x=0~63
[CVRESET]	Video Adjustment Reset [CVCONT58] [CVBRIGHT31] [CVCOLOR31] [CVHUE31] [CVDETAIL10]
[PCCONTx]	PC Contrast x=0~63
[PCBRIGHTx]	PC Brightness x=0~63
[PCCOLORx]	PC Color x=0~63
[PCHUEx]	PC Tint x=0~63
[PCDETAILx]	PC Sharpness x=0~63
[PCRESET]	PC adjustment reset [PCCONT58] [PCBRIGHT31] [PCCOLOR31] [PCHUE31] [PCDETAIL10]
[PCHSIZEx]	PC H Size x=0~63
[PCVSIZEx]	PC V Size x=0~63
[PCHPOSx]	PC H Position x=0~63
[PCVPOSx]	PC V Position x=0~63
[PCPHASEx]	PC Phase x=0~63

[ASPECTRS]	PC aspect reset [PCHSIZE31] [PCVSIZE31] [PCHPOS31] [PCVPOS31] [PCPHASE?]
[KEYPHASEx]	KEY Adjust Phase x=0~63
[KEYLEVELx]	KEY Adjust Level x=0~63
[KEYRESET]	KEY adjustment reset [KEYPHASE31] [KEYLEVEL31]
[RMCODEx]	Remote Code adjustment reset Remote Code x=0~3

<b>[STATUS]</b>	<b>Retrieve video scaler all status</b> [POWER?] [KEY?] [OUTPUT?] [SYSTEM?] [ZOOM?] [OSD?] [DISPLAY?] [PANEL?] [RMCODE?] [PCCONT?] [PCBRIGHT?] [PCCOLOR?] [PCHUE?] [PCDETAIL?] [PCHSIZE?] [PCVSIZE?] [PCHPOS?] [PCVPOS?] [PCPHASE?] [CVCONT?] [CVBRIGHT?] [CVCOLOR?] [CVHUE?] [CVDETAIL?] [KEYPHASE?] [KEYLEVEL?] [ZOOMC?]
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All RS-232 command will be not executed unless followed with a carriage return. Zoom functions are for PC input only.

## 7. OSD MENU AND FUNCTION LIST

Main Menu	2nd Layer
PC PICTURE	CONTRAST (0~63): Default 58
	BRIGHT (0~63): Default 31
	COLOR (0~63): Default 31
	HUE (0~63): Default 31
	DETAIL (0~63): Default 10
	RESET
	EXIT
PC ASPECT	H SIZE (0~63): Default 31
	V SIZE (0~63): Default 31
	H POSITION (0~63): Default 31
	V POSITION (0~63): Default 31
	PHASE (0~63): Default 16 (will depend on the input resolution)
	RESET
	EXIT
CV PICTURE	CONTRAST (0~63): Default 58
	BRIGHT (0~63): Default 31
	COLOR (0~63): Default 31
	HUE (0~63): Default 31
	DETAIL (0~63): Default 10
	RESET
	EXIT

KEY ADJUST	KEY PHASE (0~63): Default 31
	KEY LEVEL (0~63): Default 31
	CHROMA KEY: (RED/BLACK/BLUE/GREEN)*Reset will not change this setting
	RESET
	Exit
SETUP	OUTPUT: PC IN/VIDEO IN/PC KEY/MIXER*3
	CV SYSTEM: NTSC/NTSC4.43/PAL/PAL-M/PAL-N/ SECAM
	PC ZOOM: 1 ~9/OFF
	DISPLAY: INFO/OFF/ON
	REMOTE 0~3
	Exit
INFORMATION	PC INPUT/CV INPUT/OUTPUT/VERSION/EXIT
Exit	

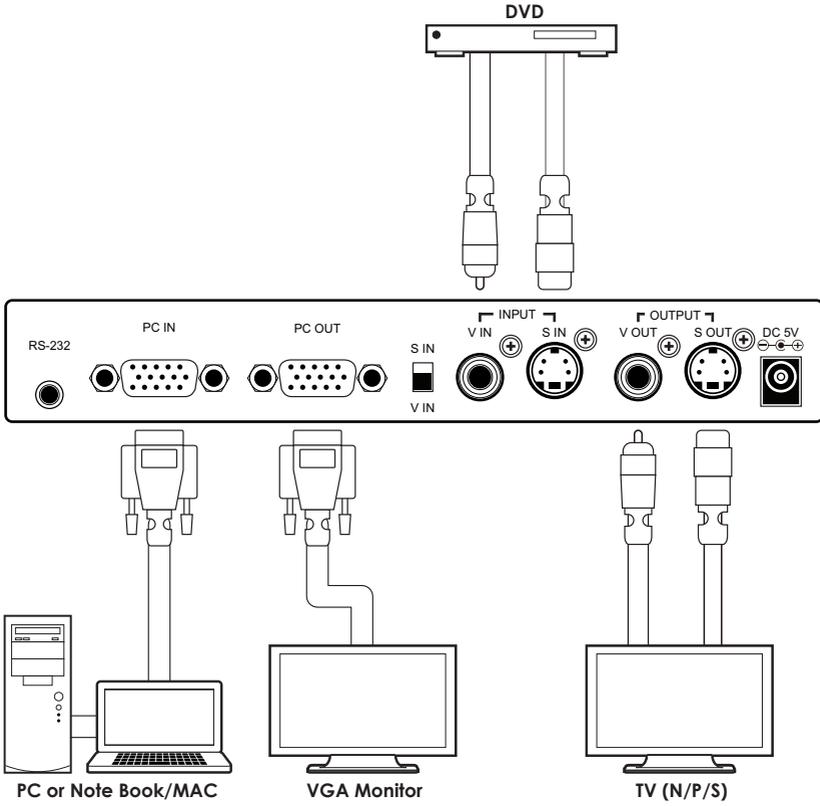
**Note:**

1. Power resetting will turn output display back to default setting.
2. Key phase/level setting 0~3 will have cristal color and a input of another back signal will be visible.
3. Output PC IN will display PC input source image, Video IN will display Video or S-Video source image depending on the S/V IN switch, PC Key will display a combination of PC and Video source image and Mixer will display a mix image of PC and Video source.

## 8. SPECIFICATIONS

<b>S-Video Bandwidth</b>	5.5MHz
<b>Input Format</b>	640 x 480 up to 85Hz 800 x 600 up to 85Hz 1024 x 768 up to 85Hz 1280 x 1024 up to 85Hz 1600 x 1200 up to 60Hz NTSC, NTSC4.43, PAL, PAL-M, PAL-N, SECAM
<b>Input Port</b>	1 x PC 1 x Video 1 Vp-p 75ohm 1 x S-Video 1 Vp-p 75ohm
<b>Output Format</b>	NTSC, NTSC4.43, PAL, PAL-M, PAL-N, SECAM
<b>Output Port</b>	1 x PC (Pass through) 1 x Video 1 Vp-p 75ohm 1 x S-Video 1 Vp-p 75ohm
<b>ESD Protection</b>	Human Body model: ± 8kV(air-gap discharge) ± 4kV(contact discharge)
<b>Power Supply</b>	5V/2.6A DC (US/EU Standards, CE/ FCC/UL certified)
<b>Dimensions (mm)</b>	236(W) x 123(D) x 45(H)
<b>Weight(g)</b>	400
<b>Chassis Material</b>	Plastic
<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)
<b>Power Consumption</b>	4.6 W

## 9. CONNECTION AND INSTALLATION



## 10. ACRONYMS

ACRONYM	COMPLETE TERM



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