



# CV-401V

PC/HD to Video Scan Converter



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         | 07/04/11      | Preliminary Release       |
| VS1         | 11/10/12      | Updated format/diagrams   |
| VR2         | 25/09/14      | OSD Menu add Info. On/Off |



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## 1. INTRODUCTION

The PC/HD to Video Scan Converter is designed to down-scale PC/Component source to analog CVBS (NTSC,PAL) signal. Ideal for businesses with multiple CCTV cameras, this device takes your high-resolution camera footage and scales it to lower resolutions.

Supporting PC resolutions up to WUXGA@60 Hz, this scaler can also connect new video sources to older displays. The device has many great features such as 3D noise reduction, frame rate conversion, adaptive contrast enhancement and many more. It also has a simple on-screen display (OSD) menu that allows the user to access the display status including input/output information.

## 2. APPLICATIONS

- Security camera display
- Display PC signal to non-VGA CRT TV or monitor
- Display PC signal to non-VGA LCD TV or monitor

## 3. PACKAGE CONTENTS

- PC/HD to Video Scan Converter
- Power Adaptor
- Operation Manual

## 4. SYSTEM REQUIREMENTS

Input source equipment such as a PC/Component (RGBHV/YPbPr) camera with D-Sub 15-pin or Component adaptor cable and output display (TV or monitor) with CVBS input port and cable.

## 5. FEATURES

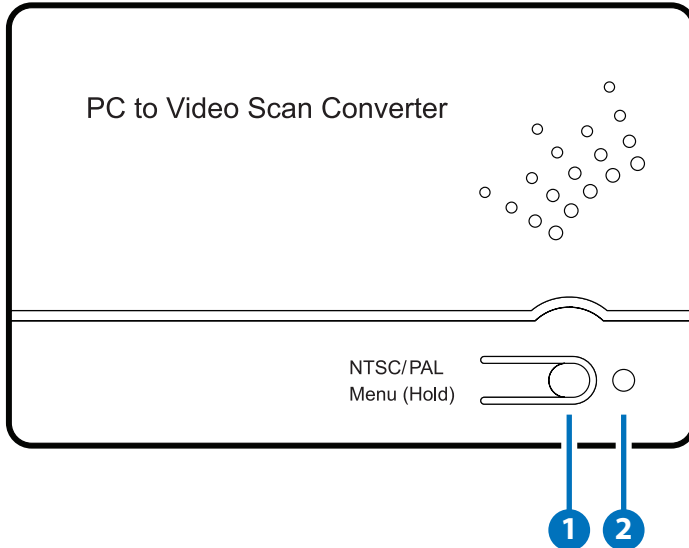
- Converts the video signal from PC/Component source to NTSC or PAL signal
- Accepts a wide range of input resolutions of 480i to 1080p@60 Hz (Component) and VGA to WUXGA@60 Hz (PC)
- 3D noise reduction in both temporal and spatial domain
- Frame rate conversion
- Adaptive contrast enhancement
- OSD Display
- Overscan and underscan adjustment
- Phase and Aspect adjustment
- No software installation required
- Compact and elegant design

**Note:** The converter do NOT support the following conversion:

- Interlace source signal conversion between 50/60 Hz
- 480i and 1080i@60 to PAL frame rate conversion
- 576i and 1080i@50 to NTSC frame rate conversion

## 6. OPERATION CONTROLS AND FUNCTIONS

### 6.1 Top Panel



- 1 NTSC/PAL MENU (Hold):** Press this button to bring up the On-Screen Display (OSD) which will display the input timing and the output TV format information.

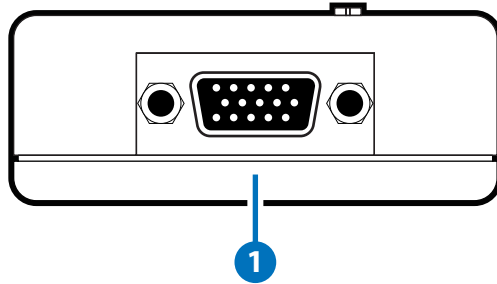
When the OSD is displayed, press the button again to switch the output TV system from NTSC to PAL or from PAL to NTSC.

Press and hold this button for 3 seconds the OSD will bring up the selection menu. Press it sequentially to select the required setting.

- 2 POWER LED:** This LED will illuminate in RED when the unit is connected to the power supply.

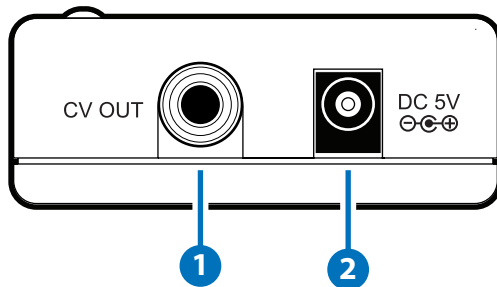


## 6.2 Left Panel



- 1 PC IN:** Connect to the source equipment such as a PC, laptop or digital camera with D-sub 15pin cable (VGA) or adaptor converter cable (Component).

## 6.3 Right Panel



- 1 CV OUT:** Connect to the output display TV or monitor with RCA cable for display of the converted composite (CVBS) signal.
- 2 DV5V:** Plug the 5V DC power supply included in the package into the unit and connect the adaptor to an AC wall outlet.

## 6.4 OSD Menu

|            |                         |   |
|------------|-------------------------|---|
| <b>IN</b>  | 640×480 (Input Timing)  | Press the Menu button once to bring up the OSD and display the input (IN) and Output (OUT) information. |
| <b>OUT</b> | NTSC (Output TV System) |   |

|                    |              |   |
|--------------------|--------------|---|
| <b>NTSC</b>        |              | Press and hold the MENU button for 3 seconds to bring up the OSD then press it repeatedly to move the OSD cursor to the desired selection. Once the selection is made, if the MENU button is not pressed for a few seconds, the OSD will disappear and the display will output following the selected parameters. |
| <b>PAL</b>         |              |   |
| <b>Underscan 1</b> |              |   |
| <b>Underscan 2</b> |              |   |
| <b>Overscan</b>    |              |   |
| <b>Phase Adj.</b>  | 0~31         |   |
| <b>Aspect Adj.</b> | Full Screen  |   |
|                    | Lette (RB)ox |   |
|                    | Pan & Scan   |   |
|                    | Auto TV 4:3  |   |
| <b>Info.</b>       | Auto TV 16:9 |   |
|                    | On           |   |
| <b>F/W.</b>        | Off          |   |
|                    | vx.x         |   |

**Note:** A "\*" mark will display on the OSD to represent the selection. The device obtain the last memory function on OSD selection.

Below is the example of the scan selection result.

|        |    |            |            |          |
|--------|----|------------|------------|----------|
|        |    |            |            |          |
| Source | TV | Underscan1 | Underscan2 | Overscan |

**Phase Adjustment:** Range is from 0~31 and can be used to compensate for blurry image quality and/or character jiggle.

**Aspect Adjustment:** There are total of 5 different aspect ratio adjustments: Full Screen, Lette (RB)ox, Pan & Scan and Auto TV 4:3 & Auto TV 16:9.

**Full Screen:** To allow the image to fill the screen of the TV.

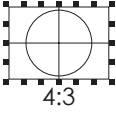

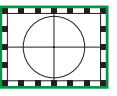

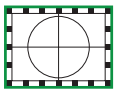

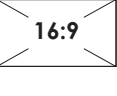
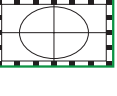




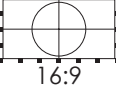

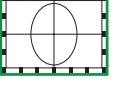
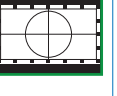

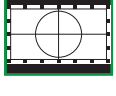

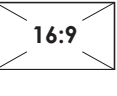
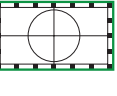



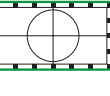
**Lette (RB) ox:** To fit a 16:9 formatted video signal on a 4:3 display. Horizontal Black bars will be displayed above and below the image

**Pan & Scan:** To fit a 4:3 formatted video signal on a 16:9 display. Vertical black bars will be displayed at both sides of the the image.

**Auto TV 4:3:** The device will detect the input source aspect ratio of 4:3 or 16:9 and make the automatically make the adjustment to 4:3.

**Auto TV 16:9:** The device will detect the input source aspect ratio of 16:9 or 4:3 and automatically make the adjustment to 16:9.

Blow is the sample chart of the selection result:

| Source TV   | Aspect Adjust   | Full Screen   | Lette (RB) ox  | Pan&Scan   | Auto TV 4:3  | Auto TV 16:9  |
|---|---|---|--|--|--|---|
| <br>4:3    | <br>4:3    |    |  | <br>X   |         | <br>X   |
|   | <br>16:9  |   | <br>X  |        | <br>X  |        |
| <br>16:9 | <br>4:3  |  |       | <br>X |       | <br>X |
|   | <br>16:9 |  | <br>X | <br>X | <br>X |       |

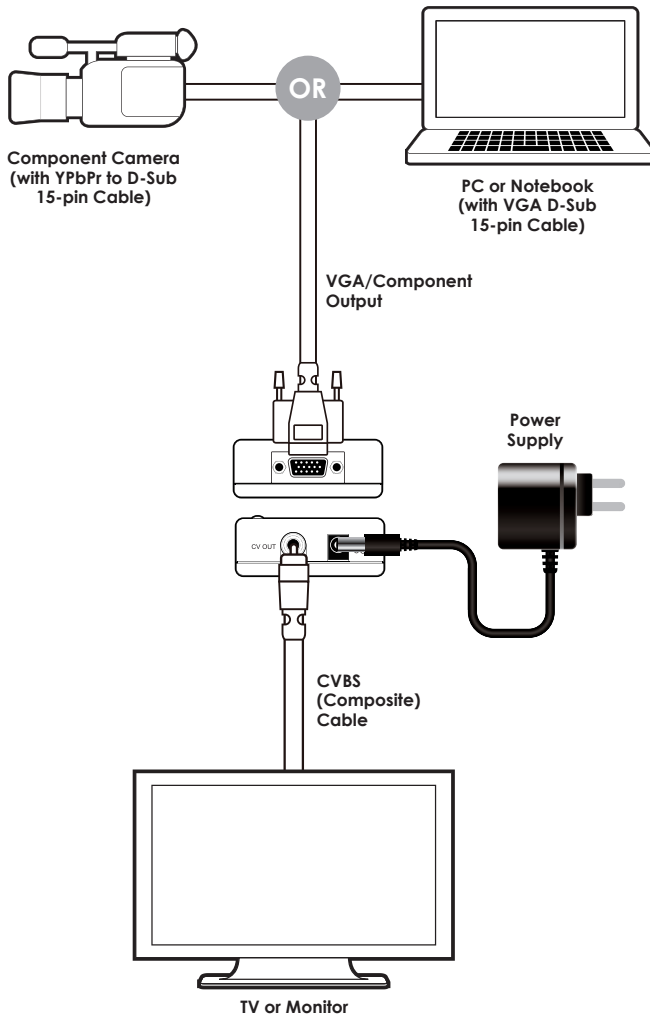
## 6.5 Supported Input Timing

|                  |           |                |
|------------------|-----------|----------------|
| <b>HD Timing</b> | 480i      | 60             |
|                  | 480p      | 60             |
|                  | 576i      | 50             |
|                  | 576p      | 50             |
|                  | 720p      | 50/60          |
|                  | 1080i     | 50/60          |
|                  | 1080p     | 50/60          |
| <b>PC Timing</b> | 640×480   | 60/72/75/85    |
|                  | 720×400   | 70             |
|                  | 800×600   | 56/60/72/75/85 |
|                  | 1024×768  | 60/70/75/85    |
|                  | 1152×864  | 70/75/85       |
|                  | 1280×720  | 59/60          |
|                  | 1280×768  | 60/60 (RB)     |
|                  | 1280×800  | 60/60 (RB)     |
|                  | 1280×960  | 59/60          |
|                  | 1280×1024 | 59/60          |
|                  | 1366×768  | 60/60 (RB)     |
|                  | 1440×900  | 60/60 (RB)     |
|                  | 1600×1200 | 60             |
|                  | 1680×1050 | 60/60 (RB)     |
|                  | 1920×1080 | 59/60          |
| 1920×1200        | 60 (RB)   |                |

**Note:**

1. If the input resolution is not supported, the OSD will show 'IN Not Support'.
2. The converter do NOT support the following conversion:
  - Interlace source signal conversion between 50/60 Hz
  - 480i and 1080i@60 to PAL frame rate conversion
  - 576i and 1080i@50 to NTSC frame rate conversion

## 7. CONNECTION DIAGRAM





## 8. SPECIFICATIONS

|                              |   |
|------------------------------|---|
| <b>Input Port</b>            | 1×VGA   |
| <b>Output Port</b>           | 1×CVBS (Composite Video)  |
| <b>Output Video</b>          | NTSC/PAL  |
| <b>ESD Protection</b>        | Human body model:<br>±8kV (air-gap discharge)<br>±6kV (contact discharge) |
| <b>Power Supply</b>          | 5V DC/1 A linear power adaptor (US/EU standards, CE/FCC/UL certified)     |
| <b>Dimensions</b>            | 64 mm (W)×104 mm (D)×26 mm (H)  |
| <b>Weight</b>                | 120 g   |
| <b>Chassis Material</b>      | Plastic   |
| <b>Silkscreen Color</b>      | White   |
| <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>Power Consumption</b>     | 3 W   |
| <b>Relative Humidity</b>     | 20~90% RH (non-condensing)  |

## 9. ACRONYMS

| ACRONYM     | COMPLETE TERM                        |
|-------------|--------------------------------------|
| <b>CRT</b>  | Cathode Ray Tube                     |
| <b>LCD</b>  | Liquid Crystal Display               |
| <b>NTSC</b> | National Television System Committee |
| <b>PAL</b>  | Phase Alternating Line               |
| <b>VGA</b>  | Video Graphics Array                 |



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