CV-401H

HDMI to Video Scan Converter

OPERATIONS 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	SUMMARY OF CHANGE
VR0	25/04/2011	Preliminary Release
VS1	25/04/2012	Updated format/diagrams

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1. INTRODUCTION

The CV-401H is a HDMI to Video Scan Converter is designed to convert digital signal from HDMI source to an analogue Composite Video (CVBS) signal for use in an NTSC or PAL system, with additional L/R stereo audio output. This device provides a convenient conversion that allows the user to convert high definition video to standard resolution (480i or 576i) format, and then store on DVR or VCR machine.

The device is HDMI 1.2 & DVI 1.0 compliant and features a simple On Screen Display (OSD) menu, motion adaptive 3-D de-interlacing, 3D noise reduction, frame rate conversion, and adaptive contrast enhancement.

2. APPLICATIONS

- Convert HDMI video signal to a NTSC or PAL signal
- Convert digital audio signal to analog audio signal

3. PACKAGE CONTENTS

- HDMI to Video Scan Converter
- 5 V/1 A DC Power Adaptor
- Operation Manual

4. SYSTEM REQUIREMENTS

Video source equipment such as a Digital Camera or PC with HDMI output port, display (TV or monitor) with composite video & L/R audio input ports, HDMI cable and RCA cables.

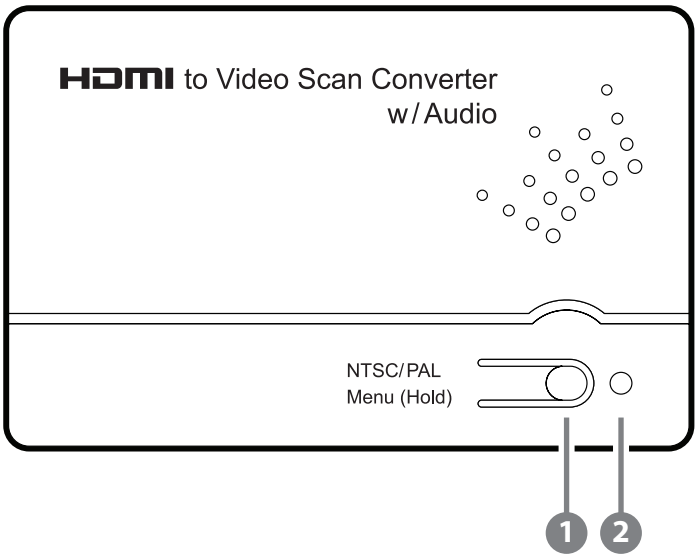
5. FEATURES

- HDMI 1.2 and DVI 1.0 compliant
- Converts video signal from HDMI source to NTSC or PAL signal
- Converts digital audio from HDMI source to analog stereo audio
- Accepts a wide range of HDTV input resolutions from 480i to 1080p, and PC resolutions from VGA@60Hz to WUXGA@60Hz (RB)
- Output picture can be of Underscan or Overscan aspect ratio
- Motion adaptive 3-D de-interlacing with pixel-by-pixel motion adaptive interpolation
- 3D noise reduction in both temporal and spatial domain
- Adaptive contrast enhancement

Note: This device does NOT convert HDCP. When receiving content that has HDCP encryption there will be no video output.

6. OPERATION CONTROLS AND FUNCTIONS

6.1 Top Panel



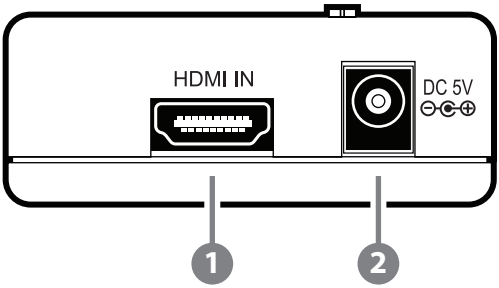
1. **NTSC/PAL MENU** (Hold): Press this button to bring up the On-Screen Display (OSD) which will display the input timing and the output TV format information.

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

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

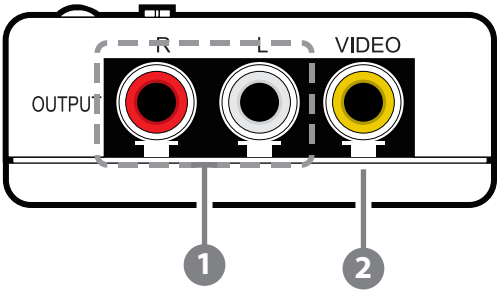
2. **Power LED**: This LED will illuminate in RED when the unit is connected to the power supply.

6.2 Left Panel



1. **HDMI IN:** Connect the HDMI IN port to the HDMI output port of your source equipment such as a DVD player or Set-top box. You can also use an HDMI to DVI cable to connect to the DVI output of your PC.
2. **DC 5V:** Plug the 5V DC power supply into the unit and connect the adaptor to AC wall outlet.

6.3 Right Panel



1. **OUTPUT L/R:** Connect the L/R stereo output ports to the input ports of active speakers or TV/monitor with corresponding audio inputs.
2. **OUTPUT VIDEO:** Connect the VIDEO output port to the composite video input port of your display such as HDTV or monitor.

6.3 OSD Menu

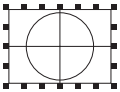
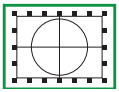
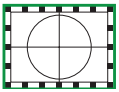
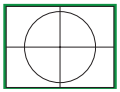
IN	1280×960 @60 (Input Timing)
OUT	NTSC (Output TV System)

Press the Menu button once to bring up the OSD and display the input (IN) & Output (OUT) information.

NTSC	
PAL	
Underscan 1	
Underscan 2	
Overscan	
Aspect Adj	Full Screen
	Letterbox
	Pan & Scan
	Auto TV 4:3
	Auto TV 16:9

Press 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 no button is pressed for a few seconds, the display on the OSD will disappear and the display will output the selected display mode.

Below is the example of the scan selection result.

				
Source	TV	Underscan1	Underscan2	Overscan

Aspect Adjustment: There are total of 5 different aspect ratio adjustments: Full Screen, Letterbox, Pan & Scan and Auto TV 4:3 & Auto TV 16:9.

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

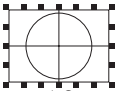
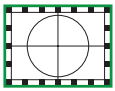
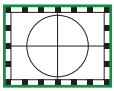
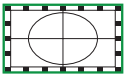
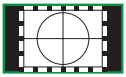
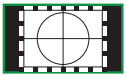
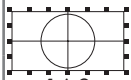
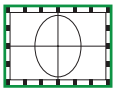
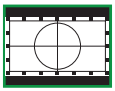
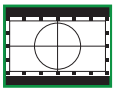
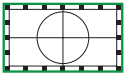
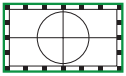
Letterbox: To fit a 16:9 formatted video signal on a 4:3 display. Horizontal Black bars will be displayed above and below the image

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:

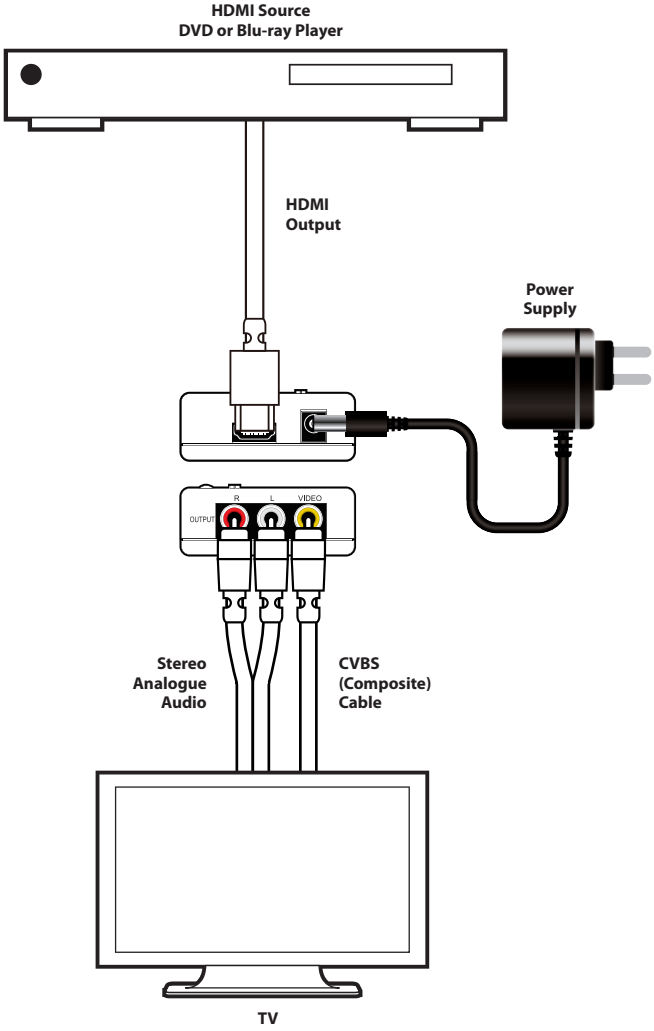
Source TV	Aspect Adjust	Full Screen	Letterbox	Pan&Scan	Auto TV 4:3	Auto TV 16:9
 4:3	4:3		✕	✕		✕
	16:9		✕		✕	
 16:9	4:3			✕		✕
	16:9		✕	✕	✕	

6.4 Support Input Timing

HD Timing	480i/480p	60
	576i/576p	50
	720p	50,60
	1080i	50,60
	1080p	50,60
PC Timing	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	60
	1280×768	60RB,60
	1280×800	60RB,60
	1280×960	60
	1280×1024	60
	1366×768	60RB,60
	1400×1050	60RB,60
	1440×900	60RB,60
	1600×1200	60
	1680×1050	60RB,60
	1920×1200	60RB

Note: When the input timing is not supported, the OSD will display "IN Not Support".

7. CONNECTION DIAGRAM



8. SPECIFICATIONS

Input Port	1×HDMI	
Output Ports	1×CVBS (Composite Video) 1×L/R Stereo RCA Jacks (Analog Audio)	
HDMI Input Audio	LPCM 2Ch, 48kHz	
Output Video	NTSC/PAL	
Output Audio	Stereo L/R	
ESD Protection	Human body model:	±8kV (air-gap discharge) ±6kV (contact discharge)
Power Supply	5V DC/1A linear power adaptor (US/EU standards, CE/FCC/UL certified) or 5V/1.2A switching power adaptor (with universal plug, CE/FCC/UL certified)	
Dimensions	114mm (W)×65mm (D)×26mm (H)	
Weight	120g	
Chassis Material	Plastic	
Silkscreen Color	White	
Operating Temperature	0 °C~40 °C/32 °F~104 °F	
Storage Temperature	−20 °C~60 °C/−4 °F~140 °F	
Power Consumption	4.7W	
Relative Humidity	20~90% RH (non-condensing)	

9. ACRONYMS

ACRONYM	COMPLETE TERM
CAT5e	Category 5 Cable
CAT6	Category 6 cable
CEC	Consumer Electronics Control
DVI	Digital Visual Interface
HDCP	High-bandwidth Digital content protection
HDMI	High Definition Multimedia Interface
IR	Infrared

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