

CV-401H

HDMI to Video Scan Converter

Operation Manual



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• **Trademark Acknowledgments**

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• **Safety Precautions**

Please read all instructions before attempting to unpack or 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 module openings or empty slots, as you may damage parts.
- Do not attach the power supply cabling to building surfaces.
- Do not allow anything to rest on the power cabling or allow it to be abused by persons walking on it.
- To protect the equipment from overheating, do not block the slots and openings in the module housing that provide ventilation.

• **Revision History**

<u>Version No</u>	<u>Date</u>	<u>Summary of Change</u>
VR1	20110425	Preliminary Release

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1. Introduction

The HDMI to Video Scan Converter is designed to convert digital signal from HDMI source to analog signal of NTSC or PAL system, with additional L/R stereo audio output. This device provides a convenient application 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 it features many great functions such like motion adaptive 3-D de-interlacing, 3D noise reduction, frame rate conversion, adaptive contrast enhancement, and etc.

Furthermore, it has a simple on-screen display (OSD) menu that allows the user to access the display status including input / output information.

2. Applications

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

3. Package Contents

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

4. System Requirements

Video source equipment such as Digital Camera or PC with HDMI output port, display (TV or monitor) with composite video & L/R 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
- Frame rate conversion with arbitrary conversion ration
- Adaptive contrast enhancement

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

6. Specifications

Input Port	1 x HDMI,
Output Ports	1 x CVBS (Composite Video), 1 x L/R RCA Jacks
HDMI Input Audio	LPCM 2Ch, 48kHz
Output Video	NTSC/PAL
Output Audio	Stereo L/R
ESD Protection	Human body model: $\pm 8\text{kV}$ (air-gap discharge) $\pm 6\text{kV}$ (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(mm)	114 (W) x 65 (D) x 26 (H)
Weight(g)	120
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)

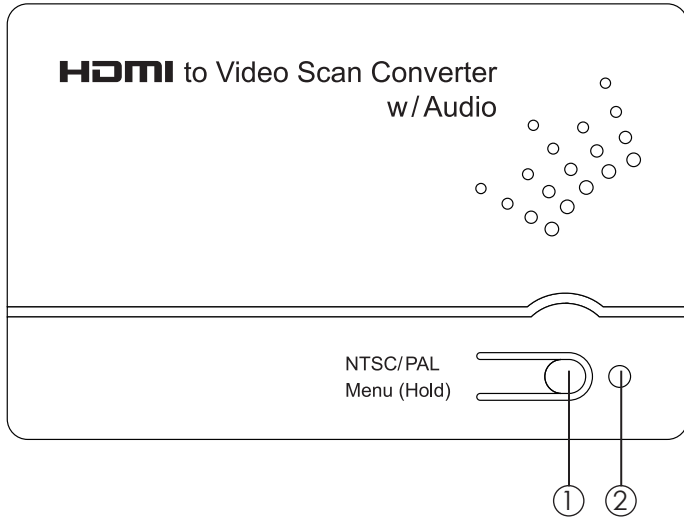
6.1 Support Input Timing

HD Timing	480i / 480p	60
	576i / 576p	50
	720p	50,60
	1080i	50,60
	1080p	50,60
PC Timing	640x480	60,72,75,85
	720x400	70
	800x600	56,60,72,75,85
	1024x768	60,70,75,85
	1152x864	70,75,85
	1280x720	60
	1280x768	60RB,60
	1280x800	60RB,60
	1280x960	60
	1280x1024	60
	1366x768	60RB,60
	1400x1050	60RB,60
	1440x900	60RB,60
	1600x1200	60
	1680x1050	60RB,60
	1920x1200	60RB

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

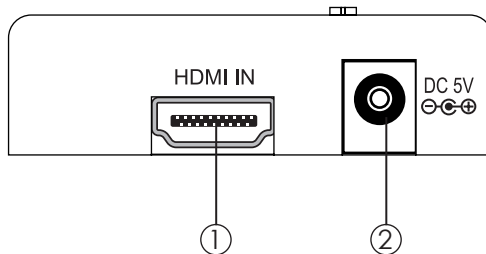
7. Operation Controls and Functions

7.1 Top Panel



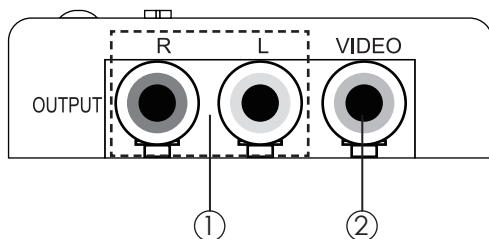
- ①. **NTSC/PAL MENU (Hold):** Press this button to bring up the OSD menu which provides the input timing and output TV system information. While the OSD menu is on, press the button again to switch output TV systems between NTSC and PAL. Press and hold this button for 3 seconds can get the OSD menu to enter the setting mode. Press the button repeatedly to cycle through the available settings.
- ②. **Power LED:** This LED will illuminate in RED when the power is on.

7.2 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 5 V DC power supply into the unit and connect the adaptor to AC wall outlet.

7.3 Right Panel



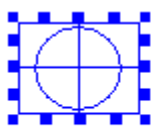
- ①. OUTPUT L/R: Connect the L/R stereo output ports to the input ports of active speakers or TV/monitor with corresponding support.
- ②. OUTPUT VIDEO: Connect the VIDEO output port to the composite video input port of your display such as HDTV or monitor.

8. OSD Menu

IN	1280 x 960 @60 (Input Timing)	Press the button on the top panel to bring up the OSD menu which provides the input timing and output TV system information.
OUT	NTSC (Output TV System)	

NTSC		Press and hold the button on the top panel for 3 seconds to bring up the OSD menu and enter the setting mode. Press the button repeatedly to cycle through the available settings. Once the settings have been made, simply leave the OSD menu along, after few seconds it will disappear and your new settings will be applied to the output accordingly.
PAL		
Underscan 1		
Underscan 2		
Overscan		
Aspect Adj	Full Screen	
	Letterbox	
	Pan & Scan	
	Auto TV 4:3	
	Auto TV 16:9	

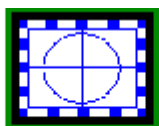
Below is the example of the scan selection result.



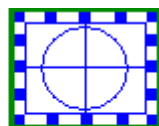
Source



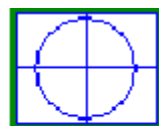
TV



Underscan1



Underscan2



Overscan

Aspect Adjustment: There are total 5 different options available in the Aspect setting – Full Screen, Letterbox, Pan & Scan, Auto TV 4:3, and Auto TV 16:9.

Full Screen: Stretches the image to fill the screen entirely.

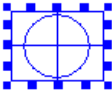

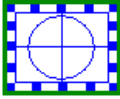
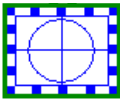

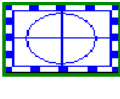


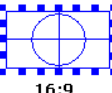

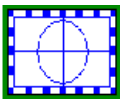
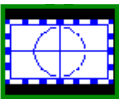
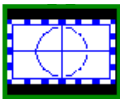

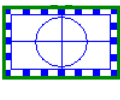
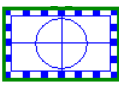
Letterbox: Stretches the image of 16:9 aspect ratio, on top and bottom, to fit with 4:3 output display.

Pan & Scan: Crops the image of 16:9 aspect ratio, on left and right, to fit with 4:3 output display.

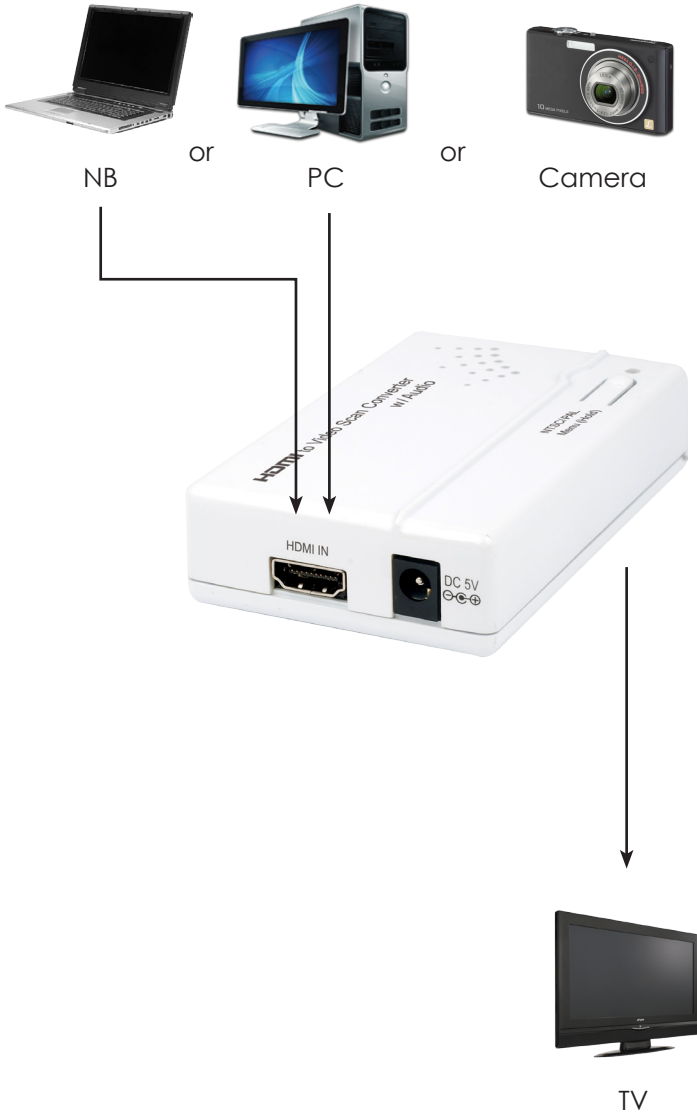
Auto TV 4:3: Automatically detects the aspect ratio (4:3 or 16:9) of input signal, and adjusts the image to fit with 4:3 output display.

Auto TV 16:9: Automatically detects the aspect ratio (4:3 or 16:9) of input signal, and adjusts the image to fit with 16:9 output display.

Blow is the sample chart of the Aspect Adjustment results:

Aspect Adj Source TV		Full Screen	Letterbox	Pan&Scan	Auto TV 4:3	Auto TV 16:9
 4:3	 4:3		X	X		X
	 16:9		X		X	
 16:9	 4:3			X		X
	 16:9		X	X	X	

9. Connection and Installation





Acronyms

Acronym

Complete Term

HDMI

High-Definition Multimedia Interface

NTSC

National Television System Committee

PAL

Phase Alternating Line

LPCM

Linear Pulse-Code Modulation

CVBS

Composite video (Color, Video, Blanking, and Sync)



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