CYP

CM-398HN

CV/SV to HDMI Converter with Audio Input

Operation Manual

HDMI®

HIGH-DEFINITION MULTIMEDIA INTERFACE

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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.

- Please completely disconnect the power when the unit is not in use to avoid wasting electricity.

VERSION HISTORY

REV.	DATE	SUMMARY OF CHANGE
Ver 1.00	2024/10/3	Initial Release

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1. INTRODUCTION

This Video to HDMI converter box can convert Composite Video or S-Video (NTSC, PAL or SECAM system) signals to a HDMI output. The device provides a full range of output resolutions, up to 1080p for HDTV resolutions, and UXGA for PC resolutions. With the use of the 3.5mm audio input, stereo audio may be embedded with video selection. Additionally, it features frame rate conversion, allowing users to view DVD, VCR or video game sources on an HD monitor or TV. Users can easily select the output resolution via switch on the unit.

2. APPLICATIONS

• Analog and digital source integration

• Upscaling standard definition video for high-definition displays

• Display a CV/SV signal with audio on a HD TV/monitor

• Display a VCR/Camcorder signal on a HD TV/monitor

3. PACKAGE CONTENTS

• 1× CV/SV to HDMI Converter with Audio Input

• 1× 5V/1.2A DC Power Adapter

• 1× Operation Manual

4. SYSTEM REQUIREMENTS

• S-video, or Composite Video source equipment such as medical equipment, media players, PCs, or set-top boxes

• HDMI receiving equipment such as HDTVs, monitors or audio amplifiers

5. FEATURES

- Operates in NTSC 3.58, PAL and SECAM system
- Supports output resolution:

  PC resolution: XGA, SXGA, UXGA

  Component resolutions: 480p, 576p, 720p@50/60, 1080p@50/60

  Note: Component resolution frame rate conversion supports output at 50 to 60Hz only. PC resolution supports frame rate output at 60Hz only.
- 3D (frame based) motion adaptive YNR/CNR noise reduction and de-interlace
- Automatic 2:2 & 3:2 film mode detection
- Plug and Play design, easy to setup and no driver software required

6. OPERATION CONTROLS AND FUNCTIONS

6.1 Top Panel

Video to HDMI

CV:Yellow
SV:Red

1
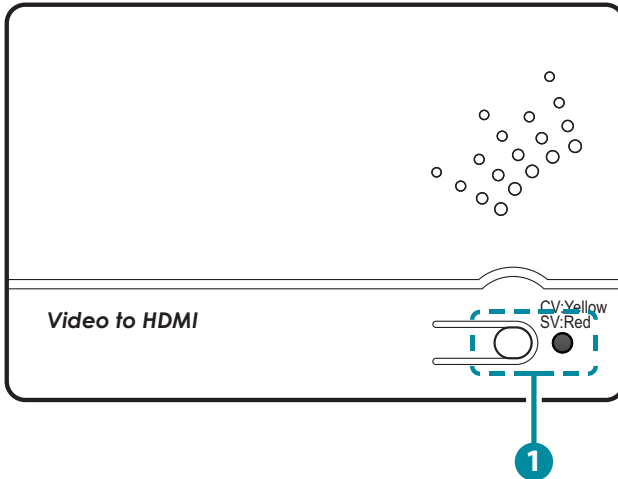
1 **CV/SV Button & LED:** Press this button to switch the input source between composite video and S-video. Pressing and holding this button for 3 seconds will activate the information OSD. The LED will illuminate yellow when switching to composite video and red when switch to S-video.

6.2 Front Panel

Mode
PC —— —— HD

1
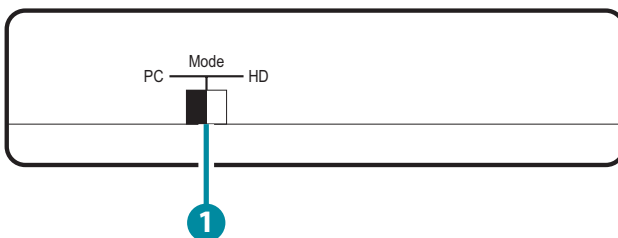
1 **Mode PC/HD Switch:** Set the switch to PC to output a standard PC signal. Set the switch to HD to output a component video signal.

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6.3 Left Panel
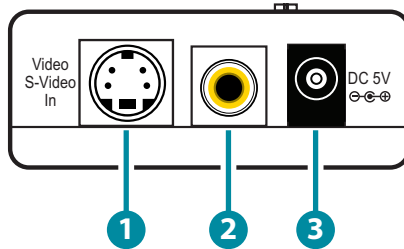
1 S-Video Input: Connect to s-video source equipment with stereo audio such as DVD players or VCRs.

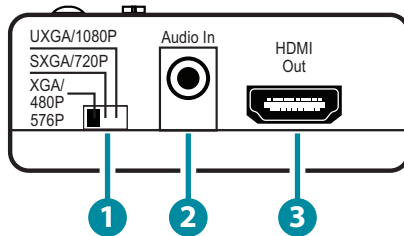*Note: The audio input ports are shared with the composite input*

2 Composite Video Input: Connect to composite video source equipment with stereo audio such as DVD players or VCRs.

Note: The audio input ports are shared with the s-video input

3 DC 5V: Plug the 5V DC power adapter into the unit and connect it to an AC wall outlet for power.

6.4 Right Panel

1 Output Resolution Switch: This switch allows the user to select output timing between PC and HD resolution.

Note: The resolution mode can be set via the front panel switch.

2 Audio In: Connect to the analog stereo output of a device such as an audio player or PC.

3 HDMI Output: Connect to an HDMI TV, monitor, or amplifier for digital video and audio output.
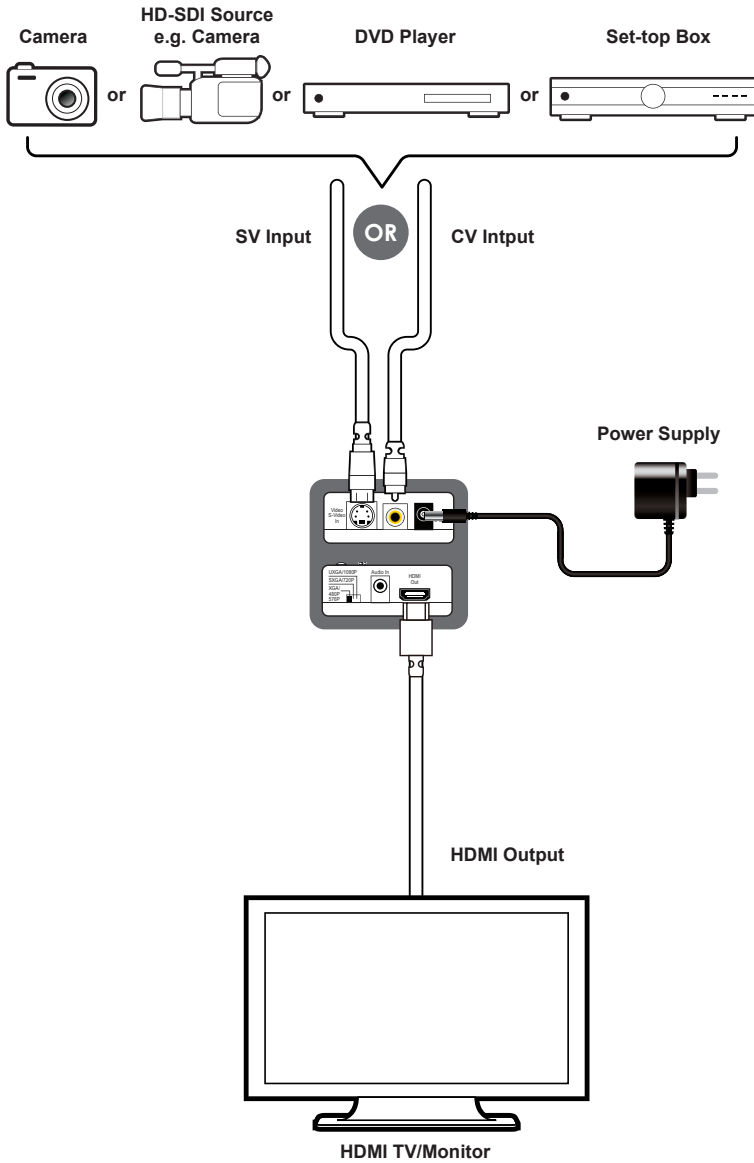
6.5 OSD Menu

All functions of this unit can be controlled by using the OSD (On Screen Display) which is activated by switching setting or pressing the CV/SV button on the top of the unit for 3 seconds. Use the CV/SV button to navigate the OSD menu.

MAIN MENU	
1ST LEVEL	**2ND LEVEL**
IN/OUT information	[Current video timing]
PC Mode	
IN CVBS/SVIDEO	[Current video standard]
Monitor Info	[Current monitor Information]
Firmware version	[Current Firmware Version]
HD Mode	
50 to 60 timing convert	**Stop**
	Do
IN CVBS/SVIDEO	[Current video standard]
Firmware version	[Current Firmware Version]

1) **IN/OUT information:** Press the SV/CV switch button once to toggle between CV and SV. The input format and output resolution will be displayed. If the input source is disconnected, the OSD will show "No Signal".

2) **PC Mode:** When the device is in PC mode, the OSD will display the input format and output resolution, source detection, PC monitor information, and firmware version.

3) **HD Mode:** When the device is in HD mode, the OSD will display the input format and output resolution, frame rate conversion selection, and firmware version.
   Note: Set the convert to stop to output 576p. Set the convert to do to output 480p.

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7. CONNECTION DIAGRAM

Camera or **HD-SDI Source e.g. Camera** or **DVD Player** or **Set-top Box**

SV Input   OR   **CV Intput**

Power Supply

HDMI Output

HDMI TV/Monitor

8. SPECIFICATIONS

8.1 Technical Specifications

Input Ports	1×S-Video (4-Pin mini-DIN) 1×Composite Video (RCA) 1×Stereo Audio (3.5mm)
Output Ports	1×HDMI (Type-A)
Power Supply	5V/1.2A DC (US/EU standards, CE/FCC/UL certified)
ESD Protection (HBM)	±8kV (Air Discharge) ±4kV (Contact Discharge)
Dimensions (W×H×D)	162.6mm×33.5mm×164.5mm [Case Only] 162.6mm×33.5mm×164.5mm [All Inclusive]
Weight	100g
Chassis Material	Plastic
Chassis Color	Black
Operating Temperature	0˚C – 40˚C/32˚F – 104˚F
Storage Temperature	-20˚C – 60˚C/-4˚F – 140˚F
Relative Humidity	20 – 90% RH (Non-condensing)
Power Consumption	2.5W

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8.2 Video Specifications

Supported Resolutions (Hz)	Input CV/SV	Output HDMI
720×400p@70/85	×	×
640×480p@60/72/75/85	×	×
720×480i@60	✓	×
720×480p@60	×	✓
720×576i@50	✓	×
720×576p@50	×	✓
800×600p@56/60/72/75/85	×	×
848×480p@60	×	×
1024×768p@60/70/75/85	×	60
1152×864p@75	×	×
1280×720p@50/60	×	✓
1280×768p@60/75/85	×	×
1280×800p@60/75/85	×	×
1280×960p@60/85	×	×
1280×1024p@60/75/85	×	60
1360×768p@60	×	×
1366×768p@60	×	×
1400×1050p@60	×	×
1440×900p@60/75	×	×
1600×900p@60RB	×	×
1600×1200p@60	×	✓
1680×1050p@60	×	×
1920×1080i@50/60	×	×
1920×1080p@24/25/30	×	×
1920×1080p@50/60	×	✓
1920×1200p@60RB	×	×

Supported Resolutions (Hz)	Input	Output
	CV/SV	HDMI
2560×1440p@60RB	×	×
2560×1600p@60RB	×	×
2048×1080p@24/25/30	×	×
2048×1080p@50/60	×	×
3840×2160p@24/25/30	×	×
3840×2160p@50/60 (4:2:0)	×	×
3840×2160p@24, HDR10	×	×
3840×2160p@50/60 (4:2:0),HDR10	×	×
3840×2160p@50/60	×	×
4096×2160p@24/25/30	×	×
4096×2160p@50/60 (4:2:0)	×	×
4096×2160p@24, HDR10	×	×
4096×2160p@50/60 (4:2:0),HDR10	×	×
4096×2160p@50/60	×	×

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8.3 Audio Specifications

8.3.1 Digital Audio

HDMI Output	
LPCM	
Max Channels	2 Channels
Sampling Rate (kHz)	32, 44.1, 48, 88.2, 96, 176.4, 192
Bitstream	
Supported Formats	None

8.3.2 Analog Audio

Analog Input	
Max Audio Level	2Vrms
Impedance	1kΩ
Type	Unbalanced

8.4 Cable Specifications

Cable Length	HD	FHD	4K UHD	4K UHD⁺	8K UHD
High Speed HDMI Cable					
HDMI Output	15m	10m	✕	✕	✕

Bandwidth Category Examples:

- **HD Video**
  - 720p@60Hz
  - HDMI transmission rates lower than 3Gbps
  - HD-SDI (SMPTE 292M, 1.485Gbps)
- **FHD Video**
  - 1080p@60Hz
  - HDMI transmission rates between 3Gbps and 5.3Gbps
  - 3G-SDI (SMPTE 424M, 2.970Gbps)
- **4K UHD Video**
  - 4K@24/25/30Hz (8-bit color) & 4K@50/60Hz (4:2:0, 8-bit color)
  - HDMI transmission rates between 5.3Gbps and 10.2Gbps
  - 6G-SDI (SMPTE ST 2081, 6Gbps)
- **4K UHD⁺ Video**
  - 1080p@120Hz (10/12-bit HDR)
  - 4K@50/60Hz (4:4:4, 8-bit) & 4K@50/60Hz (4:2:0, 10/12-bit HDR)
  - HDMI transmission rates between 10.2Gbps and 18Gbps
  - 12G-SDI (SMPTE ST 2082, 12Gbps)
- **8K UHD Video**
  - 4K@120Hz (10/12-bit HDR)
  - 8K@24/25/30Hz (10/12-bit HDR) & 8K@50/60Hz (4:2:0, 8-bit color)
  - HDMI transmission rates between 18Gbps and 48Gbps
  - 24G-SDI (SMPTE ST 2083, 24Gbps)

9. ACRONYMS

ACRONYM	COMPLETE TERM
ADC	Analog-to-Digital Converter
AV	Audio/Video
CV	Composite Video
dB	Decibel
DVI	Digital Visual Interface
HD	High-Definition
HDMI	High-Definition Multimedia Interface
HDTV	High-Definition Television
kHz	Kilohertz
LPCM	Linear Pulse-Code Modulation
NTSC	National Television System Committee
OSD	On-Screen Display
PAL	Phase Alternating Line
PC	Personal Computer
SECAM	Sequential Color and Memory
SNR	Signal-to-Noise Ratio
STB	Set-top Box
SV	S-video
SXGA	Super extended Graphics Array
THD+N	Total Harmonic Distortion Plus Noise
UXGA	Ultra-extended Graphics Array
VCR	Video Cassette Recording
VGA	Video Graphics Array
Vrms	Voltage Root-mean-square
XGA	Extended Graphics Array