

CP-302MN Compact HDMI to HDMI Scaler Box



Operation Manual



DISCLAIMERS

The information in this manual has been carefully checked and is believed to be accurate. Cypress Technology assumes no responsibility for any infringements of patents or other rights of third parties which may result from its use.

Cypress Technology assumes no responsibility for any inaccuracies that may be contained in this document. Cypress also makes no commitment to update or to keep current the information contained in this document.

Cypress Technology reserves the right to make improvements to this document and/or product at any time and without notice.

COPYRIGHT NOTICE

No part of this document may be reproduced, transmitted, transcribed, stored in a retrieval system, or any of its part translated into any language or computer file, in any form or by any means—electronic, mechanical, magnetic, optical, chemical, manual, or otherwise—without express written permission and consent from Cypress Technology.

© Copyright 2016 by Cypress Technology.

All Rights Reserved.

TRADEMARK ACKNOWLEDGMENTS

All products or service names mentioned in this document may be trademarks of the companies with which they are associated.



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 | 28/03/16 | Preliminary release |
| | | |



CONTENTS

| 1. Introduction | 1 |
|--------------------------------------|----|
| 2. Applications | 1 |
| 3. Package Contents | 1 |
| 4. System Requirements | 1 |
| 5. Features | 2 |
| 6. Operation Controls and Functions. | 3 |
| 6.1 Top Panel | 3 |
| 6.2 Right Panels | 2 |
| 6.3 Left Panels | 4 |
| 6.4 Side Panel | |
| 6.5 OSD Menu | |
| 8. Specifications | 12 |
| 9. Timing | |



1. INTRODUCTION

The compact HDMI to HDMI Scaler box is designed to scale HDMI sources, either HD or PC resolution, to an alternative HDMI resolution (HD or PC). Both of maximum support input and output resolution is up to 1920 x 1200. The HDMI, HDCP and DVI are compliant which is perfect solution for the integration of sources where resolution and/or resolution type requires conversion. The video contrast, brightness, hue and saturation are able to be adjusted manually.

Most of audio formats are supported and plus audio mute function. Maximum audio sampling rate is up to 192 kHz. In addition, this compact scaler box supports native EDID. A simple on-screen display (OSD) allows the user to configure the device with ease.

2. APPLICATIONS

- Convert and integrate HD resolution output to PC systems
- Convert and integrate PC resolution output to HD systems
- Downscale Full HD (1080p) resolution output for HD Ready displays

3. PACKAGE CONTENTS

- HDMI to HDMI Scaler
- 1×5 V/2.6 A DC Power Adaptor
- · Operation Manual

4. SYSTEM REQUIREMENTS

Source equipment such as a PC/laptop or Blu-ray player and an HDTV or HD monitor with HDMI connection cables.

*Cable distance might affected by material or design of cable.



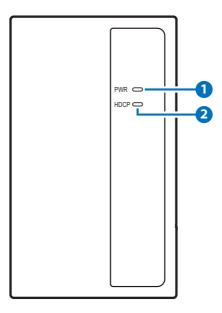
5. FEATURES

- HDMI 1.3, HDCP 1.4 and DVI 1.0 compliant
- Upscale the video signal from an HDMI source up to 1920x1200@60RB
- Accepts a wide range of input resolutions of 480i to 1080p (HDTV)
- Manual adjustments for contrast, brightness, hue and saturation are achievable
- Free run output mode that provides stable timing once no video input is present
- Maximum pixel rate of output is up to 165 MHz
- Maximum pixel rate of input is up to 225 MHz
- Support color space of RGB, YCbCr 444@ 8,10 and 12 bit and RGB can be color space converted to YCbCr for input and output RGB@8bit
- Supports audio formats of LCPM 8CH, AC3, DTS, Dolby True HD and DTS-HD bypass
- Support audio mute and maximum audio sampling rate of 192kHz
- Supports both of Frame rate and Format conversion
- Supports CEC bypass
- Supports Native EDID copies from sink device such as TV
- Easily firmware update via USB in field



6. OPERATION CONTROLS AND FUNCTIONS

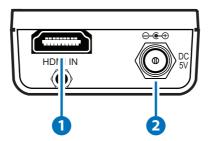
6.1 Top Panel



- 1 PWR: This LED will illuminate when the scaler box connected to a power supply. When LED flashing, the scaler box goes to "standby" mode.
- **2 HDCP:** This LED will illuminate when detected HDCP source.

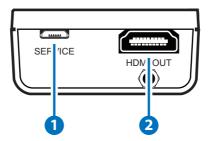


6.2 Right Panels



- 1 HDMI IN: Connect to an HDMI source such as a PC/Laptop or DVD player with an HDMI cable.
- **2 DC 5V:** Plug the 5V DC power supply into the unit and connect the adaptor to an AC outlet.

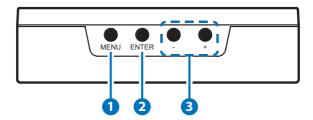
6.3 Left Panels



- 1 SERVICE: The slot is for manufacturer use only.
- **2 HDMI OUT:** Connect to an HDMI equipped TV/monitor for display of the HDMI source signal.



6.4 Side Panel



- 1 MENU: Press this key to enter menu, press again to return.
- **2 ENTER:** Press this key to confirm menu selection. Press "ENTER" key then plug the power in for factory reset.
- 3 +/-: When into menu selection, press "+" or "-" to navigate up and down, when no in OSD menu selection, press "+" to still the video or audio. Hold "-" then plug the power in, then the resolution will set up at 720p59.

6.5 OSD Menu

| Main Menu | Sub Menu | Description | Default |
|-------------------|---------------|--------------------------------------|---------|
| Picture Adjust | Contrast | To set picture contrast from 0~100. | 64 |
| | Brightness | To set brightness from 0~100. | 64 |
| | Saturation | To set saturation from 0~100. | 64 |
| | Hue | To set Hue from 0~100. | 64 |
| | Sharpness | To set picture sharpness from 0~100. | 16 |
| | Picture Reset | Reset picture adjustment status. | N/A |



| Main Menu | Sub Menu | Description | Default |
|------------|-------------|--|---------|
| Aspect | Full | Set picture aspect ratio. | Full |
| | 16:9 TV | | |
| | 4:3 TV | | |
| | 16:10 TV | | |
| | Keep Ratio | | |
| Overscan | Enable | To enable or disable over scan(Yes/No). | No |
| | H Size% | Horizontal percentages adjust (0~50%). | 0% |
| | V Size% | Vertical perventages adjust (0~50%). | 0% |
| Input EDID | Pref. Video | Set input EDID to first detail timing(800x600@60, 1024x768@60, 1280x720@60, 1280x800@60, 1366x768@60, 1920x1080@60, 1920x1200@60RB, Follow TV's 1st Detail Timing*). | 720p |



| Main Menu | Sub Menu | Description | Default |
|----------------------|--|--|-----------|
| | Pref. Audio | Set Input EDID audio data block. (LPCM 2CH, LPCM 6CH, LPCM 8CH, Bitstream, HD, Follow TV**) | Follow TV |
| Output Resolution | 480p, 576p, 720p50,720p59, 720p60, 1080p23, 1080p24, 1080p25, 1080p29,1080p30, 1080i50, 1080p50, 1080i59, 1080i60, 1080p59, 1080p60, 640x480, 800x600, 1024x768, 1280x800, 1280x1024, 1360x768, 1366x768, 1440x900, 1600x1200, 1680x1050, 1920x1200, | Set output resolution. | 720p59 |
| | 1600x900, 1600x1200, 1680x1050, | | |



| Main Menu | Sub Menu | Description | Default |
|-----------------|----------------|--|---------|
| HDCP | Input | Set input HDCP status. Set to On for HDCP supported; Off for HDCP non- supported, Auto for follow TV setting. | Auto |
| | Output | Set output HDCP status. Set to Follow Source for follow source setting; Protected for set HDCP out to On, Auto for remain last setting. | Auto |
| OSD Settings | H Position**** | Set H position from 0~100. | 10 |
| | V Position**** | Set V position from 0~100. | 5 |
| | Transparency | Set OSD transparent from 0~15. | 12 |
| | Menu Timeout | Set Menu timeout from 5~50 or set to Off for no timeout. | 20 |
| | Info. Timeout | Set Info timeout from 5~50 or set to Off for no timeout. | 10 |
| | Info. Display | Set Info display On/ Off | On |



| Main Menu | Sub Menu | Description | Default |
|---|-------------------|---|-------------|
| | Background | Set background color Grey, Cyan, Magenta or Yellow. | Grey |
| to Off, 3sec, 3 10sec, 20sec, 30sec, 1min, 3 3min, 4min, 5 10min, 15min | | Set stand by time to Off, 3sec, 5sec, 10sec, 20sec, 30sec, 1min, 2min, 3min, 4min, 5min, 10min, 15min, 20min, 25min, 30min | Off |
| | Mirror-V | Set mirror to On/Off | Off |
| | Still Options**** | Set still to Video, Video+Audio, Audio | Video+Audio |
| | Still Video**** | When video still, set to Still Video or Black Video | Still Video |
| Factory Reset | Yes , No | Perform device factory reset. | No |
| Information | Source Info. | To show Source information | N/A |
| | Sink Info | To show Sink information | N/A |
| | Firmware Version | To show device's correct firmware version. | N/A |

^{*} If TV native is not on the above preset resolution, then will set to 1280x720@60.

^{**} If TV is DVI, then input EDID will be DVI.

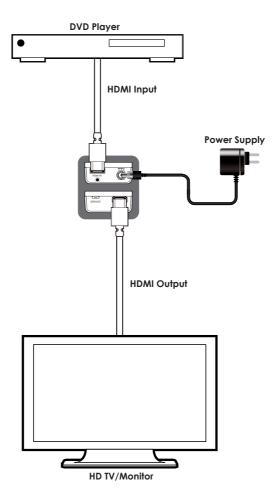
^{***} Device will read TV's EDID automatically, and set to native timing, if



- native timing cannot be supported, then will set to 720p59.
- **** When H POSITION set to 95 or ab more, INFO. will be at right of MENU.
 - When V POSITION set to 95 or more, INFO. will be at bottom of MENU.
- ***** When set to still, choose the option of still. Video= still the video or to black out video, audio remains normal, Aud0= video remains rolling, but audio mute, Video + Audio= to still or black out the video and audio mute. When switch output timing, the still status will automatically disable.



7. CONNECTION DIAGRAM





8. SPECIFICATIONS

Maximum Pixel Rate 165 MHz (output) / 225MHz (input)

Input Ports 1×HDMI

1×Mini USB(Service only)

Output Ports 1×HDMI

LED on top plates 1 x Power LED

1 x LED for HDCP status

Audio Sampling Rate 44.1, 48, 96,192 kHz

 HDMI Cable In
 10 m/1080p@12-bit

 HDMI Cable Out
 10 m/1080p@8-bit

ESD Protection Human body model:

±8 kV (Air-gap discharge)

±6 kV (Contact discharge)

Power Supply 5V / 2.6A

Dimensions 98(L)x51(W)x22.5(H)mm jack included

85(L)x50(W)x22.5(H)mm jack exclude

Weight 75 g

Chassis Material Plastic
Silkscreen Color Black

Operating Temperature $0^{\circ}\text{C} \sim 40^{\circ}\text{C}/32^{\circ}\text{F} \sim 104^{\circ}\text{F}$

Storage Temperature $-20^{\circ}\text{C} \sim 60^{\circ}\text{C}/-4^{\circ}\text{F} \sim 140^{\circ}\text{F}$

Relative Humidity 20~90% RH (non-condensing)

Power Consumption 2.42 W



9. TIMING

| DVI AND HDMI SUPPORTED RESOLUTIONS | INPUT | OUTPUT |
|------------------------------------|-------|--------|
| 480i@59 | ✓ | |
| 480p@59 | ✓ | ✓ |
| 480p@60 | ✓ | |
| 576i@50 | ✓ | |
| 576p@50 | ✓ | ✓ |
| 720p@24/25/30/50/60 | ✓ | |
| 720p@50/59/60 | ✓ | ✓ |
| 1080i@50/60 | ✓ | ✓ |
| 1080i@59 | ✓ | ✓ |
| 1080p@24/25/30/50/60 | ✓ | ✓ |
| 1080p@23/29/59 | ✓ | ✓ |
| 640x480@60 | ✓ | ✓ |
| 640x480@60/72/75/85 | ✓ | |
| 720x400@70 | ✓ | |
| 800x600@60 | ✓ | ✓ |
| 800x600@56/60/72/75/85 | ✓ | |
| 1024x768@60 | ✓ | ✓ |
| 1024x768@60/70/75/85 | ✓ | |
| 1152x864@70/75/85 | ✓ | |
| 1280x720@60cvt | ✓ | |
| 1280x768@60RB,60,75 | ✓ | |
| 1280x800@60RB/60/75 | ✓ | |
| 1280x800@60 | ✓ | ✓ |
| 1280x960@60/85 | ✓ | |
| 1280x1024@60 | ✓ | ✓ |
| 1280x1024@60/60cvt/75/85 | ✓ | |
| 1360x768@60 | ✓ | ✓ |



| DVI AND HDMI SUPPORTED RESOLUTIONS | INPUT | OUTPUT |
|------------------------------------|-------|--------|
| 1366x768@60 | ✓ | ✓ |
| 1366x768@60RB/60 | ✓ | |
| 1400x1050@60RB/60 | ✓ | |
| 1400x1050@60 | ✓ | ✓ |
| 1440x900@60RB/60/75 | ✓ | |
| 1440x900@60 | ✓ | ✓ |
| 1600x900@60RB | ✓ | ✓ |
| 1600x1200@60 | ✓ | ✓ |
| 1680x1050@60RB | ✓ | |
| 1680x1050@60 | ✓ | ✓ |
| 1920x1200@60RB | ✓ | ✓ |
| NATIVE | | ✓ |

