Video to HDMI Scaler Box

Operation Manual

CM-392

(1). *Introduction*

Congratulations on your purchase of the Cypress Video Scaler CM-392.
Our professional Video Scaler products have been serving the industry
for many years.
In addition to Video Scalers, Cypress offers a full line of high quality
PC multimedia,Standard Converters,Video Mixer, Time Base Correctors,
Video Processors,and HDMI/DVI devices.
Please visit www.cypress.com.tw to learn more details about
these products. This manual includes operation information on the CM-392 model.
Please read this to become familiar with the CM-392 and keep the manual
for possible reference in the future.
Cypress's CM-392 is designed to convert Composite and S-Video to
digital HDMI in a variety of HDTV resolutions. It handles video input from TV
systems of NTSC, PAL TV standards. Cypress CM-392 has many great features to
enhance video performance and is ideal for use in professional large
screen presentation.

(2). *Features*

* Motion adaptive 3D Y/C separation comb filter
  (for composite video input)
* 3D(frame Based) motion adaptive YNR/CNR noise reduction
  (for Y/C video input)
* Advanced 3D motion adaptive deinterlace
* Automatic 2 : 2/3 : 2 film mode detection
* Supports 50Hz to 60Hz frame rate conversion
* Video quality improvement :
  DCT1(Digital chroma transient improve),
  DLT1(Digital luminance transient improve),
  Black level extension
* Average picture level (APL), Automatic contrast limiter (ACL)
  function supported
* OSD menu for picture quality adjustment.
* Built in 8-bit DAC for RGB output.
* Front Panel and IR remote control.
* Automatic NTSC/PAL video format detection and switching.

(3) *This package includes*

1. Video Scaler Unit.
2. DC adaptor
3. User Manual
4. Remote Control
5. Lithium battery

(4). Operation Controls and Functions

Front Panel

POWER   INPUT

CV ◯
SV ◯

┌ 480p ┬ XGA ┐
MENU   −   +

CM-392 Video to HDMI Scaler Box

①   ②   ③   ④   ⑤   ⑥
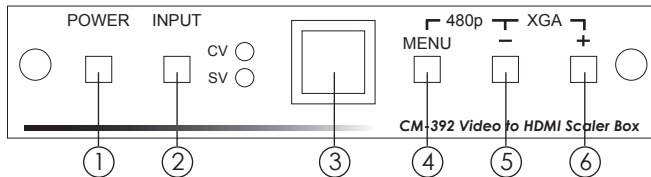
1. Power button and LED indicator:
Press the button once to power on the unit, press again to power off.
When the unit is powered on, one of the input LEDs will illuminate depending on
your last selection of input source before power off.
The factory default setting for the input is CV (composite video).
The green LED illuminates when composite video is selected.
The yellow LED illuminates when S-Video is selected.

2. Input select button:
Press the button to select your desired input source between composite
video and S- Video.

3. IR Sensor: Infrad remote control sensor.

**4. Menu/Enter:** This button serves two purposes.
  a. Press the button to bring up OSD main control menu as shown in the "OSD Operation".
  b. To act as a "enter" key to enter sub menu of you selected item or adjust
     value of the selected item.

5/6. +/- button: Press the button to move up or down the tick "V" to your
desired parameter. Or after a parameter is selected by pressing MENU/ENTER button,
press the button to alter the value of your selected parameter.

Note:
Once out of range, you can press "MENU" and "-" buttons together for
over 5 seconds to go back to HD factory default setting 480p. Or press"+" and "-"
button together for over 5 seconds to go back to PC factory default setting XGA.

Rear Panel

OUTPUT   INPUT   DC 5V
HDMI

R   L
AUDIO   SV   CV   ⊖ⵇⵇ⊕

⑤   ④   ③   ②   ①
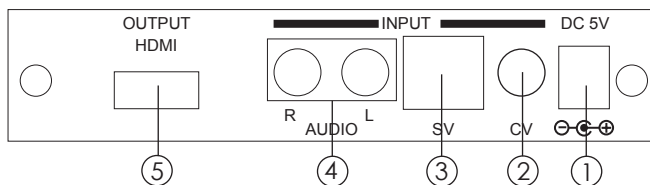
1. DC power jack: 5V 2A DC power input.

2. Composite Video: Use a Composite video cable to connect the composite video
output of the source equipment to this composite video(CV) input on the back
of the scaler.

3. S-Video: Use a S-Video cable to connect the S-Video output of the source
video equipment to this " S-Video" input on the back of the video scaler.
S-Video provides improved performance over composite video and is
recommended over composite.

4. Audio input jack: Analog L/R stereo format.

5. HDMI output: The CM-392 can output a variety of LCD and HDTV progressive
resolutions, through HDMI connector.
  Digital output: Connect CM-392's digital HDMI output to the HDMI input of your
TV/display unit using a HDMI to HDMI cable.

Note:
The CM-392's 1080i resolution can be displayed on the most of the monitors but
may not work with some HDTVs due to this 1080i output is 960x 540p @37MHz clock
rate which is half the standard 1080i clock rate.

(5). Output Format

The format of HDMI output is digital RGB for all resolutions

PC (RGB)			HDTV (RGB)		
VGA -RGB	640X480	60 Hz	1080i -RGB (pseudo)	960x540p *	60 Hz
SVGA -RGB	800X600	60 Hz			
XGA -RGB	1024X768	60 Hz	720p -RGB	1280X720	60 Hz
WXGA -RGB	1280X768	60 Hz	576p -RGB	720X576	50 Hz
SXGA -RGB	1280X1024	60 Hz	480p -RGB	720X480	60 Hz

* The standard 1080i resolution is 1920 x1080i with sampling rate at 74 MHz.
CM-392's 1080i output is 960x540p which is half of the standard resolution,
therefore may be not be accepted by some of the HDTVs.

(6). OSD Operation

After power on the unit , press the menu button to bring up the main menu page as below:

Main Menu
√ **Picture adj.**
   Output Setup
   Exit

Use +,- button to move "V" to your desired parameter, then press MENU/ENTER to enter into sub-menu of your selected parameter.

Picture Adjust
When Picture Adjust is selected a sub menu as below comes up.

	Default	**Range**
Bright	16	1-31
√ **Contrast**	16	1-31
Color	16	1-31
Tint	16	1-31
Sharp	05	1-19
Default	OK	
Exit		

USE +,- to move the tick (V) to your desired adjust item, press the Menu/Enter to confirm your selection.
At this point, the selected parameter will turn red, and you can use +,- to increase or decrease the value of the parameter.
When adjustment is complete, press "Menu" to leave the parameter. Move the tick "V" to "Exit", then press menu/enter to exit.

Output Setup
When Output Setup is selected a submenu as below appears:

      Output Setup
  √ **Timing XGA**
      Exit

Press the " MENU/ENTER" button to enter into output timing select mode.
Press +,- to toggle through a variety of output resolutions as below.
Once your desired resolution is selected, press the menu/enter
to enter the resolution.

	Resolution	Vertical rate
VGA	640x480	60Hz
SVGA	800x600	60Hz
XGA	1024x768	60Hz
WXGA	1280x768	60Hz
SXGA	1280x1024	60Hz
480p	720x480	60Hz
576p	720x576	50Hz
720p	1280x720	60Hz
1080i (pseudo)	960x540p *	60Hz

**Note: All output resolutions except 576p have 60Hz vertical rate,
the 576p resolution has 50Hz vertical rate.**

(7). HDMI Pin Configuration
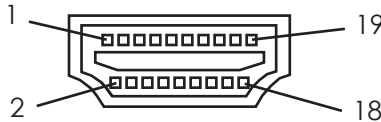
Pin#	Function Assignment	Pin#	Function Assignment
1	TMDS Data2+	2	TMDS Data2 Shield
3	TMDS Data2-	4	TMDS Data1+
5	TMDS Data1 Shield	6	TMDS Data1-
7	TMDS Data0+	8	TMDS Data0 Shield
9	TMDS Data0-	10	TMDS Clock+
11	TMDS Clock Shield	12	TMDS Clock-
13	CEC	14	Reserved (N.C. on device)
15	SCL	16	SDA
17	DDC/CEC Ground	18	+5V Power
19	Hot Plug Detect		

(8). Remote Control

1. Display: Press the button to display input source and output resolution on the screen.
2. Power: Power ON/OFF button.
3. VGA~1080i: Press the buttons to select your desired output resolution.
4. Picture: Press the button to enter picture adjust submenu. Use +,- button to move cursor (V) up/down to your desired parameter, press "Picture" again to confirm.
5. +/-: Press the buttons to move up/down the cursor (V) to your desired parameter, or press to increase/decrease the setting value.
6. Reset: Press the button to reset all setting back to factory default value.
7. Exit: To exit OSD.
8. Video: Press the button to select composite video input.
9. SVideo: Press the button to select SVideo input.
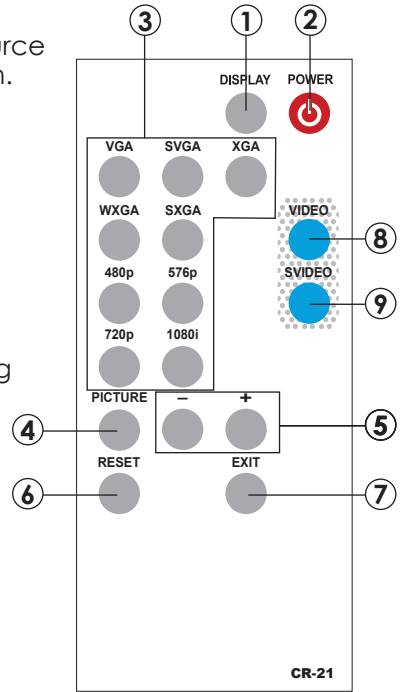
(9). Specifications

Input signal levels	Video@1Vp-p, 75 ohm, Y@1 Vp-p, 75 ohm Color@ 0.7 Vp-p, 75 ohm
Output Fomat	Digital RGB
Output Connector	HDMI type A female
Output Singnal	Bit stream
Weight	400 grams
Dimensions	125(W) x 123(D) x 30(H) mm

Output Signal Specifications

PC Resolutions	Vert Rate	Scan Type	Format Digital out Pin 1~19
VGA 640 X 480	60 Hz	Progressive	RGB
SVGA 800 X600	60 Hz	progressive	RGB
XGA 1024X768	60 Hz	Progressive	RGB
WXGA 1280X768	60 Hz	Progressive	RGB
SXGA 1280X1024	60 Hz	Progressive	RGB
HDTV Resolutions	Vert Rate	Scan Type	
480p 720 x 480	60 Hz	Progressive	RGB
576p 720 x 576	50 Hz	Progressive	RGB
720p 1280 x 720	60 Hz	Progressive	RGB
1080i 960x540p (pseudo)	60 Hz	Progressive	RGB

(10). Installation

Digital Out: Connect to your TV through digital HDMI interface

Video,
SVideo

HDMI Cable

VCR, DVD, STB, DVHS

HDMI
output

HDMI
Input

LCD display,
Projectors, Plasma