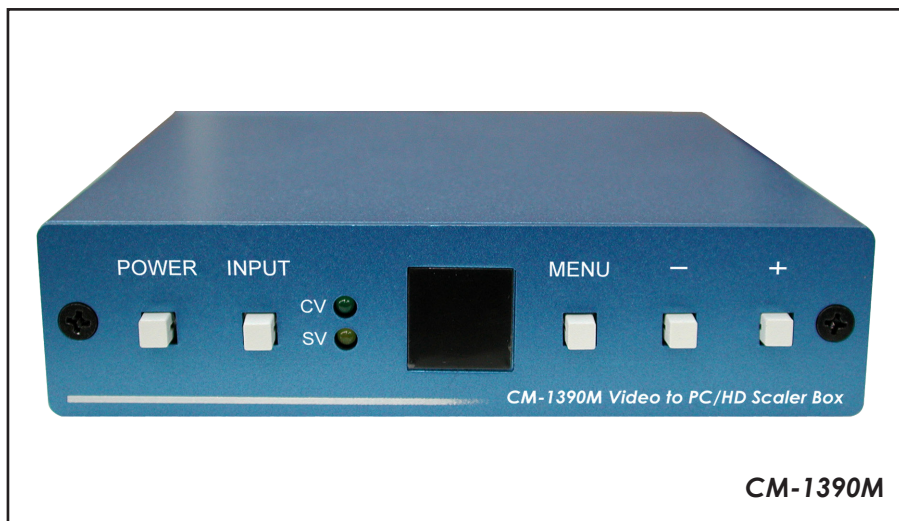


CM-1390M

Video to VGA with YPbPr Scaler Box

Operation Manual



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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**

Version No	Date	Summary of Change
VR0	20110111	Preliminary Release

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1. Introduction

This professional video scaler is designed to convert Composite and S-Video signal into PC(RGB) or HD(YPvPr) format, scales it up to a maximum output of WUXGA 1920 x 1200 @60RB (when used with a PC monitor) or 1080p resolution (when used with an HDTV display). Capable of handling NTSC and PAL TV standards, this device has many features to enhance the quality of your video.

2. Applications

- Showroom environment
- Education demo
- Installation usage

3. Package Contents

- Video to VGA with YPbPr scaler Box
- VGA to YPbPr/3RCA cable
- 5V DC power supply adaptor
- Operation Manual
- Remote Control

4. System Requirements

- Input source equipments with Composite and S-Video output connector(s)
- Output displays with VGA or VGA to YPbPr input connector(s)
- Connect with VGA to YPbPr adaptor, the system can support HD resolution to display which support YPbPr input.

5. Features

- Motion adaptive 3D Y/C separation comb filter (for composite video input only)
- 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
- Composite out supports 50Hz or 60Hz frame rate conversion (480p/576p excluded)
- Video quality improvement:
DCTI (Digital Chroma Transient Improvement), DLTI (Digital Luminance Transient Improvement)
Black level extension
- Average Picture Level (APL), Automatic Contrast Limiter (ACL) function supported
- OSD menu for picture quality adjustment
- Built-in 10-bit DAC for RGB or YPbPr output
- Front Panel and IR remote control
- Automatic NTSC/PAL video format detection and switching

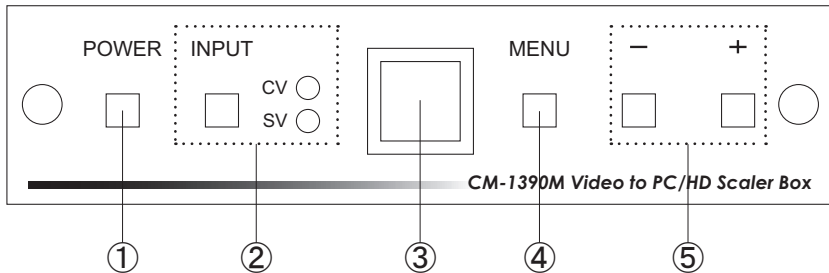
6. Specifications

Input Signal Levels	Video@1Vp-p, 75 ohm, Y@1Vp-p, 75 ohm, Color@0.7Vp-p, 75 ohm
Input Port	1 x Composite, 1 x S-Video
Output port	1 x VGA
Output Resolution	480i ~1080p 50/60 (with VGA to YPbPr adaptor), VGA~WUXGA
ESD Protection	Human Body model: $\pm 8\text{kV}$ (air-gap discharge) $\pm 4\text{kV}$ (contact discharge)
Dimensions (mm)	125(W) x 123(D) x 30(H)
Weight(g)	400
Chassis Material	Metal
Silkscreen Color	Blue
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 (no condensation)
Power Consumption	4.5/W (Max)

7. Operation Controls and Functions

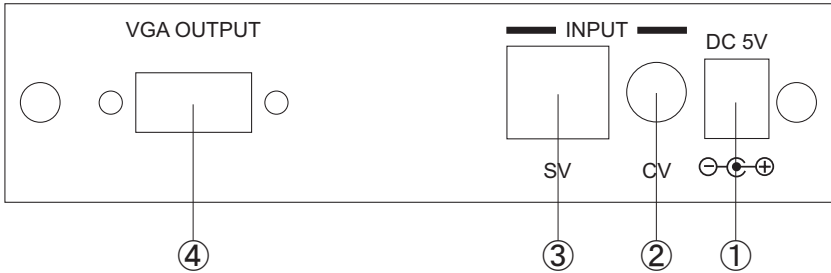
The following sections describe the hardware components of the unit.

7.1 Front Panel



- 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 LED 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:
Infrared ray remote control sensor.
- ④ Menu/Enter: This button serves two purposes.
 - a. Press the button to select your desired input source between Composite Video and S-Video.
 - b. To act as a "Enter" key to enter sub menu of your selection item or to adjust value of the selected item.
- ⑤ +/- button:
Press the button to move up or down the tick "V" to your desired parameter. Or after a parameter is elected by pressing MENU/ENTER button, press the button to alter the value of your selected parameter. Press + button first and the MENU buttons for 2 second will switch the output resolution to XGA instantly, and press the - and MENU buttons for 2 second will switch to 480p.

7.2 Rear Panel



- ① DC power jack: Plug the DC 5V power supply into the splitter and connect the adaptor to AC wall outlet.
- ② CV (Composite Video) Input : Use a Composite Video cable to connect the Composite Video output of the source equipment to this Composite Video (CV) input of the scaler.
- ③ S-Video Input: 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 VGA output: Connect the VGA output port to the VGA input of the monitor for output PC timing or HDTV for output YPvPr timing. Use a VGA to YPbPr adaptor can output HD resolution.

Note: VGA to YPbPr adaptor is not included in the standard package and has to order separately.

8. Output Format

The format for analog PC output is RGB and for analog HD output is YPbPr.

PC (RGBHV)			HDTV (YPbPr)		
VGA	640 x 480	60Hz	1080p-RGB	1920 x 1080p	Follow input source and can convert 50Hz to 60Hz
SVGA	800 x 600	60Hz	1080i-RGB	1920 x 1080i	Follow input source and can convert 50Hz to 60Hz
XGA	1024 x 768	60Hz	720p-RGB	1280 x 720	Follow input source and can convert 50Hz to 60Hz
	1280 x 800	60Hz	576-RGB	720 x 576	50Hz
WXGA	1360 x 768	60Hz	480P-RGB	720 x 480	60Hz
WSXGA	1680 x 1050	60Hz			
	1440 x 900	60Hz			
SXGA	1280 x 1024	60Hz			
	1400 x 1050	60Hz			
	1680 x 1050@60RB	60Hz			
UXGA	1600 x 1200	60Hz			
WUXGA	1920 x 1200@RB	60Hz			
	1920 x 1080@60RB				

9. 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 "✓" to your desired parameter, the 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 "✓" 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 "✓" to cancel the selection, press MENU/ENTER to Exit.

Output Setup

When output Set up is selected a submenu as below appears:

- Output Setup
- ✓ Timing XGA
- Exit

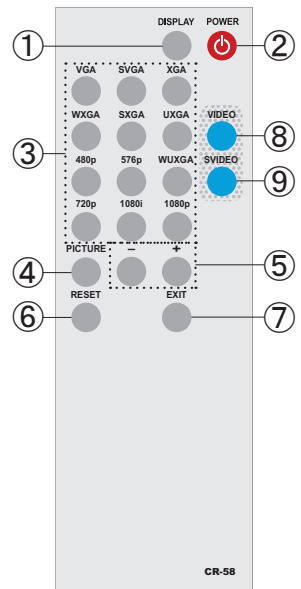
Press the "MENU/ENTER" button to enter into output timing select mode. Press +/- to toggle through a variety of output resolutions as below. Once your desired resolution is selected, press the MENU/ENTER to enter the resolution.

VGA	640x480	60Hz
SVGA	800x600	60Hz
XGA	1024x768	60Hz
	1280 x 800	60Hz
WXGA	1360x768	60Hz
WSXGA	1440x 900	60Hz
SXGA	1280x 1024	60Hz
	1400x1050	60Hz
	1680x1050	60Hz
	1600x1200	60Hz
UXGA	1920x1080	60Hz
WUXGA	1920x 1200	60Hz
480p	720x480	50Hz
576p	720x576	60Hz
720p	1280x720	Follow input source & can convert 50Hz
1080i	1920x1080i	Follow input source & can convert 50Hz
1080p	1920x1080p	Follow input source & can convert 50Hz
Native		

- Note:**
1. PC output timing do not supports frame rate conversion.
 2. Component output timing except 480p@60 and 576P@50 do not supports frame rate conversion, all timing supports frame rate conversion of 50 & 60Hz.
 3. Select Native under PC mode, the device will display the timing according to monitor's EDID Block #0. If under Composite mode, the output timing will be 720p@60Hz.

10. 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 ~1080p: Press to select your desired output resolution.
- ④ Picture: Press the button to enter picture adjust submenu. Use +/- button to move cursor " " up/down to select your desired parameter, press "Picture" again to confirm the selection.
- ⑤ +/-: Press to move up/down the cursor " " to select your desired parameter, or press to increase/decrease the setting values.
- ⑥ Reset: Press to reset all the setting back to factory default value.
- ⑦ Exit: To exit OSD.
- ⑧ Video: Press the button to select Composite Video input.
- ⑨ S-Video: Press the button to select S-Video input.



11. Connection and Installation

Analog Out: Connect to your TV through VGA or component interface in case your TV has no DVI input





Acronyms

Acronym

Complete Term

CV	Composite Video
NTSC	National Television System Committee
OSD	On-Screen-Display
PAL	Phase Alternating Line
RGB	Red Green Blue
SV	S-Video



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