CM-1391M
Video to DVI Scaler Box

Operation Manual

CM-1391M

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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	20101210	Preliminary Release

Table of Contents

1. *Introduction*

This professional video scaler is designed to convert Composite and S-Video to high definition DVI resolutions. It handles video input from TV systems of NTSC or PAL standards with many great features to enhance video performance on DVI display.

2. *Application*

* Digital/Analog composite signal display on DVI monitor
* Digital/Analog S-Video signal display on DVI monitor
* NTSC/PAL signal display on DVI monitor
* DVD/VCR signal display on DVI monitor

3. *Package Contents*

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

4. *System Requirements*

Input source equipment such as Set-Top-Box or DVD player and output DVI display with connection cables.

5. *Features*

1. Motion adaptive 3-D deinterlacing
2. Supports 3D Y/C separation, or 2D 5-Line (5H) Adaptive Comb
3. Advanced 3D motion adaptive deinterlace
4. Automatic 2：2/3：2 film mode detection
5. Supports 50Hz to 60Hz frame rate conversion
6. Video quality improvement：
   DCTI (Digital chroma transient improvement), DLTI (Digital luminance transient improvement), Black level extension
7. OSD menu for picture quality adjustment
8. Front Panel and IR remote control
9. Automatic NTSC/PAL video format detection

6. *Specifications*

Input Signal Levels	Video@1Vp-p, 75 ohm, Y@1 Vp-p, 75 ohm Color@ 0.7 Vp-p, 75 ohm
Output Format	Digital RGB
Output Connector	DVI-I Connector
Output Signal	Bit stream
Weight(g)	400
Dimensions(mm)	125(W) x 123(D) x 30(H)
Operating Temperature	0°C~40°C
Silkscreen Color	Process Blue
Power Consumption	4.5W

Output Signal Specifications

PC (RGBHV)			HDTV (RGBHV)		
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	1366 x 768	60Hz	480P-RGB	720 x 480	60Hz
WSXGA	1680 x 1050	60Hz			
SXGA	1280 x 1024	60Hz			
	1400 x 1050	60Hz			
	1680 x 1050@60RB	60Hz			
UXGA	1600 x 1200	60Hz			
WUXGA	1920 x 1200	60Hz			
	1920 x 1080@60RB	60Hz			

7. *Operation Controls and Functions*

Front Panel
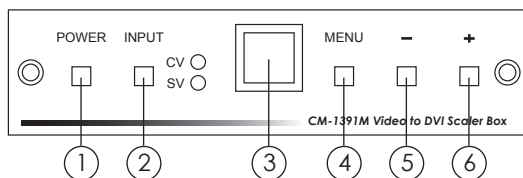
1. Power button and LED indicator:
Press the button once to power on the unit, Press again to power off.
when the unit is powered on, one of the input LEDs will illuminate depending on your last selection of input source before power off.
The factory default setting for the input is CV (composite video).
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.

Rear Panel
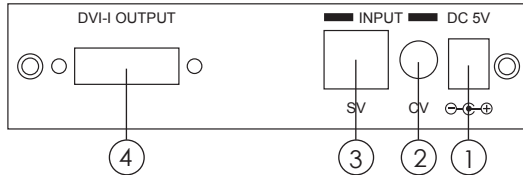
1. DC power jack: 5V 1A DC power input.

2. Composite Video: Use a Composite video cable to connect the composite video output of the source equipment to this composite video(CV) input 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. DVI output: The Video to DVI Scaler Box can output a variety of PC and HDTV progressive resolutions, in both digital and analog format through DVI-I connector.

Digital output: Connect Video to DVI Scaler Box's digital DVI output to the DVI input of your TV/display unit using a DVI to DVI cable.

Analog output: If you are to use Video to DVI Scaler Box's analog output to connect to the analog input of your PC or HDTV, you need to use a DVI to VGA adaptor to pull out analog signal from the DVI-I connector . The DVI to VGA adaptor is then connect to the VGA input of your display monitor through a VGA cable if output is PC resolution, or connect to the YPbPr input through a RCA adaptor cable if output is HD resolution.

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

8. Output Format

a. The format of digital DVI output is digital RGB for all resolutions.

PC (RGBHV)						
VGA	**-RGB**	640X480	60 Hz	**1080p-RGB**	1920x1080p	follow input source
SVGA	**-RGB**	800X600	60 Hz	**1080i-RGB**	1920x1080i	follow input source
XGA	**-RGB**	1024X768	60 Hz	**720p-RGB**	1280X720	follow input source
WXGA	**-RGB**	1280X768	60 Hz	**576p-RGB**	720X576	50 Hz
SXGA	**-RGB**	1280X1024	60 Hz	**480p-RGB**	720X480	60 Hz
UXGA	**-RGB**	1600 x 1200	60 Hz			
WUXGA	**-RGB**	1920 x 1200	60 Hz			

b. The format for analog PC output is RGB.

PC (RGBHV)			
VGA	-RGB	640X480	60 Hz
SVGA	-RGB	800X600	60 Hz
XGA	-RGB	1024X768	60 Hz
WXGA	-RGB	1280X768	60 Hz
SXGA	-RGB	1280X1024	60 Hz
UXGA	-RGB	1600 x 1200	60 Hz
WUXGA	-RGB	1920 x 1200	60 Hz

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 "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 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.

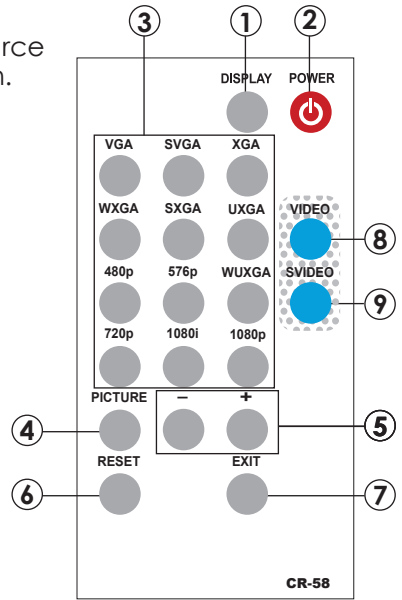|		
VGA	640x480	60Hz
SVGA	800x600	60Hz
XGA	1024x768	60Hz
WXGA	1280x768	60Hz
SXGA	1280x1024	60Hz
UXGA	1600x1200	60Hz
WUXGA	1920x1200	60Hz
480p	720x480	60Hz
576p	720x576	50Hz
720p	1280x720	follow input source and can convert 50Hz to 60Hz
1080i	1920x1080i	follow input source and can convert 50Hz to 60Hz
1080p	1920x1080p	follow input source and can convert 50Hz to 60Hz

10. DVI-I Pin Configuration

DVI-Integrated(DVI-I): Supports both analog and digital connections to the display. This 29-pin connector can carry single or dual-link all-digital video/data signals on 24 pins and uses 5 pins to carry analog video/data signals and ground.
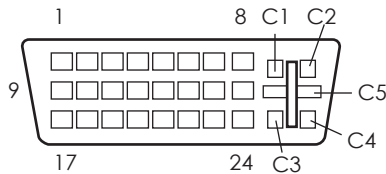
Combined Analog and Digital Connector Pin Assignments

Pin	Signal Assignment	Pin	Signal Assignment	Pin	Signal Assignment
1	T.M.D.S Data2-	9	T.M.D.S Data1-	17	T.M.D.S Data0-
2	T.M.D.S. Data2+	10	T.M.D.S. Data1+	18	T.M.D.S. Data0+
3	T.M.D.S. Data2 Shield	11	T.M.D.S. Data1 Shield	19	T.M.D.S. Data0 Shield
4	N.C.	12	N.C.	20	N.C.
5	N.C.	13	N.C.	21	N.C.
6	DDC Clock	14	+5V Power	22	T.M.D.S. Clock Shield
7	DDC Data	15	Ground (Return for +5V, Hsync, and Vsync)	23	T.M.D.S. Clock+
8	Analog Vertical Sync	16	Hot Plug Detect	24	T.M.D.S. Clock-
C1	Analog Red	C2	Analog Green	C3	Analog Blue
C4	Analog Horizontal Sync	C5	Analog Ground (Analog R,G,&B return)		

11. 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 (V) up/down to your desired parameter, press "Picture" again to confirm.

5. +/-: Press to move up/down the cursor (V) to your desired parameter,or press to increase/decrease the setting value.

6. Reset: Press to reset all setting back to factory default value.

7. Exit: To exit OSD.

8. Video: Press the button to select composite video input.

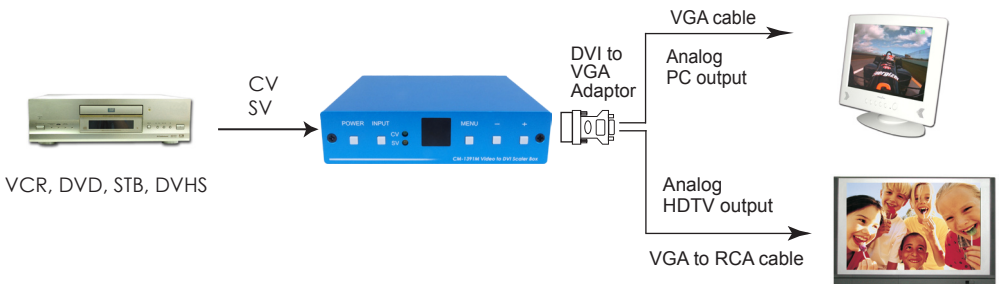**9. SVideo:** Press the button to select SVideo input.

③	①	②
	DISPLAY	POWER

VGA | SVGA | XGA

WXGA | SXGA | UXGA | VIDEO ⑧

480p | 576p | WUXGA | SVIDEO ⑨

720p | 1080i | 1080p

PICTURE | − | + ⑤

④

RESET | EXIT

⑥ | ⑦

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12. Connection and Installation

a. Digital Out: Connect to your TV through digital DVI interface

Video, SVideo

VCR, DVD, STB, DVHS

DVI Cable

DVI output

DVI Input

PC display Monitor, Projectors

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

CV SV

VCR, DVD, STB, DVHS

DVI to VGA Adaptor

VGA cable

Analog PC output

Analog HDTV output

VGA to RCA cable

Acronyms

A

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