1080P Digital VGA RGB/HD Video Scaler

Operation Manual

Specifications:

HDMI 1.2 Compliant

Input format   **Output format**

Resolution	INPUT		
	Component	D-SUB	DVI/HDMI
480i/576i	V		*
480p/576p	V	V	V
720p@(60/50)	V	V	V
1080i@(60/50)	V		V
1080p@(60/50)	V	V	V
VGA@(60/72/75/85)		V	V
SVGA@(56/60/72/75/85)		V	V
XGA@(60/70/75/85)		V	V
SXGA@(60/75/85)		V	V
UXGA@60		V	V
WXGA@60(1280X800)		V	V
WSXGA@60(1680X1050)		V	V
WUXGA@60(1920X1200)		V	V

* 480i 30x2 / 576i 30x2

Resolution	OUTPUT	
	D-SUB	DVI/HDMI
480i/576i	V	*
480p/576p	V	V
720p@(60/50)	V	V
1080i@(60/50)	V	V
1080p@(60/50)	V	V
VGA@(60/72/75/85)	V(@60)	V(@60)
SVGA@(56/60/72/75/85)	V(@60)	V(@60)
XGA@(60/70/75/85)	V(@60)	V(@60)
SXGA@(60/75/85)	V(@60)	V(@60)
UXGA@60		V(@60)
WXGA@60(1280X800)	V	V
WSXGA@60(1680X1050)		V
WUXGA@60(1920X1200)		V

* 480i 30x2 / 576i 30x2

Input connectors:
- Component Video x 1 via 3 RCA jack
- PC VGA x 1 via 15 pin D-sub
- DVI x 1

Output connector:
- DVI x 1
-      PC VGA 15 pin D-sub x 1

Dimension: 180(W)x124(D)x25(H)mm

DC 5V 2.6 Amp

Note (PC): Available only when PC is selected as input.
To adjust picture quality, Use "+,-" to move the highlight bar to your desired adjust item, press the Menu/Enter to confirm your selection.
At this point, the selected parameter will turn red, you can then use +,- to increase or decrease the value of the parameter.
When adjustment is complete, press "Menu" to leave the parameter. Move the highlight bar to "Exit", then press Menu/Enter to exit.
Note: The "H-position" and "V-position" are only available when component or PC input is selected. Neither are available when the DVI input is selected.
Picture mode-there are 4 picture modes for customer to choose from.
    User: Select to adjust to your favorite setting and store it.
    Standard: Standard factory default setting for optimal display in a normal environment.
    Vivid: High saturation picture for optimal display in a bright room.
    Movie: Picture for comfortable low brightness display in a dark room.
Scale: select overscan when input source is SD or HD video to ensure no black band around screen border. Select underscan when input source is PC signal to ensure full picture content fall within screen border.
Noise Reduction: This function only works when input is analog RGB or component. It will not work for DVI input. There are four steps of Noise Reduction-Off, Low, Middle High. The Noise Reduction will remove the noise that results from analog to digital conversion and digital scaling processing.
H & V position: To adjust for best horizontal and vertical position of the picture in the screen.
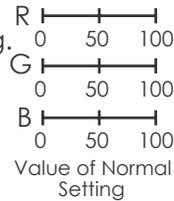
6.2 Color:
    User: Select to adjust to your favorite color temperature setting.
    Normal: Normal color tone setting where white is pure white.
    Warm: Warm color tone makes white reddish.
    Cool: Cool color tone makes white bluish.

R   0   50   100
G   0   50   100
B   0   50   100
Value of Normal Setting

6.3 Output: The HDV5 can output a wide variety of PC and HD resolutions. Refer to product specifications.
6.4 OSD Adjust:
    H.Position: Adjust the horizontal position of the OSD graphic.
    V.Position: Adjust the vertical position of the OSD graphic.
    Time out: Set a predetermined time to turn off OSD menu on the screen.
    Background: To select transparent or solid background of OSD graphic.
6.5 Information:
    Project: Show product model number.
    Input: Show resolution of the current input.
    Output: Show resolution of the output.
    Date: Show date of firmware version.

Table of contents

Introduction:

Congratulations on your purchase of this digital video scaler HDV5 model. Our professional video scaler products have been serving the display industry for many years.

In addition to video scalers, Ambery also offers a full line of PC Imaging

Multimedia converters, TV video standard converters, audio video switches, A/V distributors, HDMI/DVI and other SD/HDTV video processor products. This HDV5 model marks great advance in our High Definition video converter series. It is an absolute must for all HDTV entertainment systems and computer image conversion product. By providing the all-in-one solution for HD video resolution scaling up or down, PC VGA to HD conversion plus multiple video format conversion between SD and HD. Maximize your HDTV investment by enhancing videos to the supreme 1080P progressive scan HD resolution for LCD/DLP projectors, projection TVs, Home Theater Systems, LCD/TFT/CRT monitors, LCD TVs, Plasma and all other flat panel displays for professional large screen presentation.

Product Features:

1. Total HDTV and HD PC solution with digital video outputs up to 1080P or 1920x1200 pixels for all digital flat panel displays.
2. Digital detail enhancement improves image details on a pixel-by-pixel basis, delivering SD that approaches HD quality.
3. Dual HDTV video scaling engines built in to ensure highest and sharp picture quality outputs.
4. Flexible analog RGB and digital RGB/HD outputs with selectable output output resolution from 480i to 1080p and 640x480 to 1920x1200 pixels.
5. Ultra high bandwidth to ensure error-free inputs and noise-free outputs.
6. Seamless input switching between various video sources. Individual input selection buttons available from the remote controller for fast transition.
7. Native output resolution ensures most optimal display resolution on your screen. When "Native" is selected as the output resolution, the HDV5 will automatically detect the native resolution of the display and send out the most optimal pixel timing to match TV's final display resolution.
8. Output picture adjustment on brightness, contrast, color, RGB level, and H-V position.
9. The DVI input is HDCP compliant which means if input is HDCP encrypted then DVI output is also HDCP encrypted.
10. Supports Overscan/Underscan modes for PC application and 4-level noise reduction(DNR) to product the clearest images.
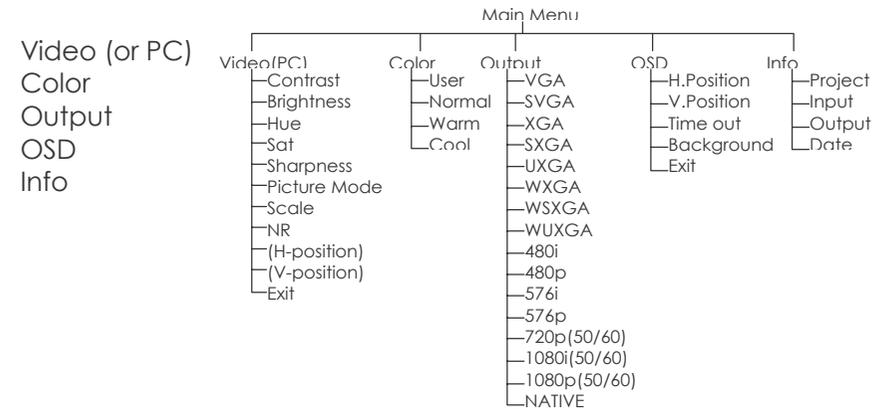
Package Content:

The following items are included in the standard package.
1. Digital Video Scaler.
2. VGA cable x 1
3. Component Video Cable x 1
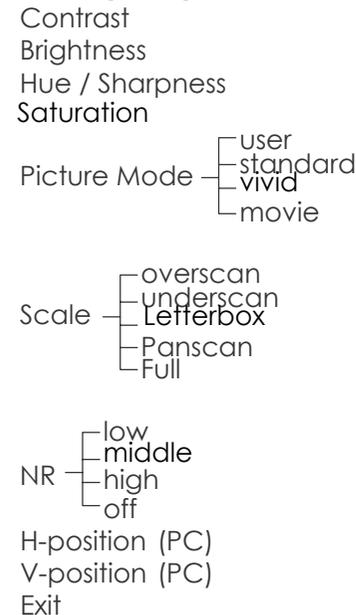4. AC power adaptor 5V/ 2A, center positive.

OSD Operation

After power on the unit, press the "menu" button will bring up the main menu as follows:

Main Menu

Video (or PC)
Color
Output
OSD
Info

Video(PC)
—Contrast
—Brightness
—Hue
—Sat
—Sharpness
—Picture Mode
—Scale
—NR
—(H-position)
—(V-position)
—Exit

Color
—User
—Normal
—Warm
—Cool

Output
—VGA
—SVGA
—XGA
—SXGA
—UXGA
—WXGA
—WSXGA
—WUXGA
—480i
—480p
—576i
—576p
—720p(50/60)
—1080i(50/60)
—1080p(50/60)
—NATIVE

OSD
—H.Position
—V.Position
—Time out
—Background
—Exit

Info
—Project
—Input
—Output
—Date

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

6.1 Video (or PC): When Video is selected a sub menu as below comes up.

Contrast
Brightness
Hue / Sharpness
Saturation

Picture Mode —
┌ user
├ standard
├ vivid
└ movie

Scale —
┌ overscan
├ underscan
├ Letterbox
├ Panscan
└ Full

NR —
┌ low
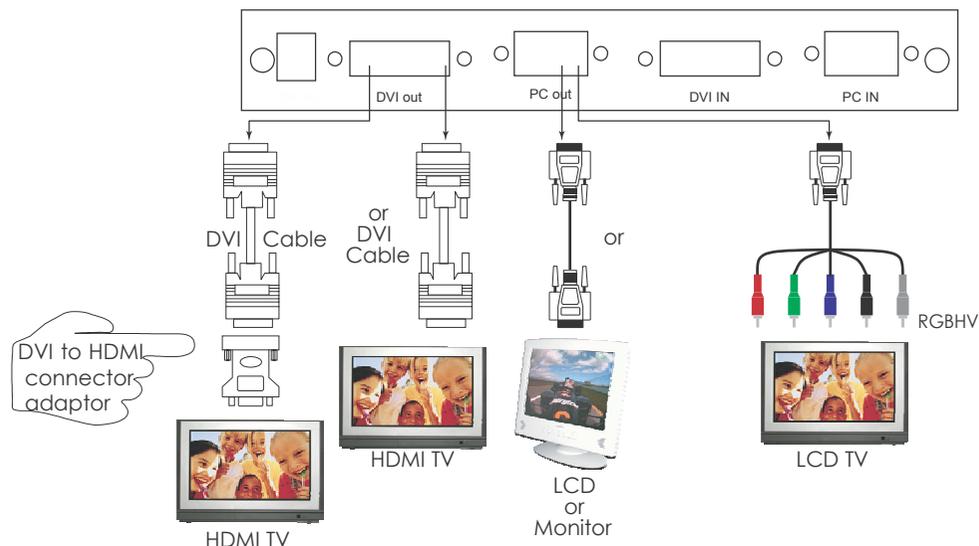├ middle
├ high
└ off

H-position (PC)
V-position (PC)
Exit

This unit accepts total of 3 video inputs, component video, PC and DVI(HDMI) inputs. The formats supported by these inputs are as follows:

- When connecting to a PC source, use a VGA 15-pin cable to connect the output of a computer to the VGA input of this unit.
- When connecting to a component source (either SD or HD resolution) use a component video cable to connect the component video output of a DVD or satellite receiver to the component video input of this unit.
- When connecting to a DVI source, use a DVI-I or DVI-D cable to connect the DVI output of a PC or DVI video source to the DVI input of this HDV5 model.
- When connecting to a HDMI source, use a HDMI to DVI cable to connect the the HDMI end to the HDMI video source, such as DVD or other media player. Next connect the DVI connector of the HDMI to DVI adapter cable to the DVI input of the HDV5 unit.
  This unit automatically detects the input resolution from the video source.
  To switch from one input source to another just press the input button on the front panel ("+") or on the remote control.
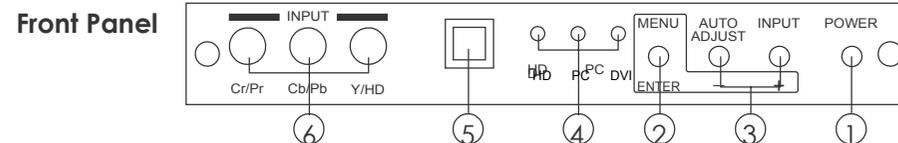
Output Connection

DVI out   PC out   DVI IN   PC IN

DVI Cable   or DVI Cable   or   RGBHV

DVI to HDMI connector adaptor

HDMI TV   HDMI TV   LCD or Monitor   LCD TV

This digital video scaler outputs various PC VGA, SD and HD resolutions in both digital and analog format simultaneously.
The digital output is available through the DVI output connector while the analog output is available through the PC VGA output connector.

Operation Controls and Functions

Front Panel

INPUT

Cr/Pr   Cb/Pb   Y/HD

MENU   AUTO ADJUST   INPUT   POWER

HD   PC   DVI   ENTER

⑥   ⑤   ④   ②   ③   ①

1. **Power:** Press the button to turn ON or turn OFF (standby) the power of the unit.
2. **Menu/Enter:** This button serves two purposes.
   a. Press the button to bring up OSD main menu as shown in the "OSD Operation". (page 7)
   b. To act as a "Enter" key to enter sub menu or to adjust setting value of the selected parameter.
3. **+/- button:**
   The buttons provide 3 functions:
   a. **Input select ("+"):** Press the "+" button repeatedly to select your desired input source. The input sources are toggled through in the following sequence.

   YPbPr (YCbCr) → PC → DVI
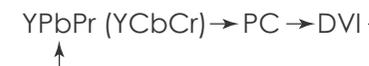
   b. **Auto Tune ("-"):** Press the "-" button to carry out picture auto adjust for analog inputs (component or PC). The HDV5 will fine tune the position (centering) and color of the output picture.
   c. When in the OSD menu mode: Press the +, - button to move up or down the highlight bar to your desired parameter. Or once a parameter is selected with MENU/Enter button, press the button to adjust setting value of your selected parameter.
4. **Input LED Indicators:** When one of the LED illuminates its corresponding source is being selected as input.
5. **IR Sensor:** Infrared remote control sensor.
6. **Component Input:** Connects this input connector to the Component output connector of your source equipment using the enclosed 3RCA to 3RCA cable.
   The HDV5 accepts both interlaced component input (480i, 576i) and De-interlaced progressive input (480p, 576p...1080p).
   The input range is 480i, 570i~1080i, 1080p.

Rear Panel

5V 2A   DVI OUT   D-SUB OUT   DVI IN   D-SUB IN

⑤   ④   ③   ②   ①
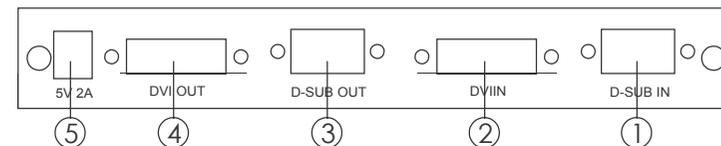
1. **PC input:** Connects this PC input connector to the VGA output of your PC. The acceptable PC resolutions range from VGA~WUXGA.

2. DVI/HDMI input: Connects this DVI input connector to the DVI output of your DVI source to the HDMI out of the HDMI device via HDMI to DVI cable. The DVI or HDMI input should be digital only and should not include analog RGB signal. The use of DVI-I connector is to ensure both DVI-I and DVI-D male connector of the DVI cable can fit into this input connector. The digital DVI input resolution can range from 480i~1080p, or VGA~WUXGA.

3. PC- D-sub out: The connector for scaled analog RGB output. Connect this output port to the analog PC RGB input of your monitor, or connect it to the RGBHV input of your HD display using D-sub to 5 BNC adaptor cable. (not included in the package)

Note: When input is a HDCP encrypted DVI signal this analog output will be turned off.

4. DVI output: Scaled digital DVI output. Connect this output to the DVI input or HDMI input of your Digital display.

Note: When input is a HDCP encrypted DVI signal the DVI output is also HDCP encrypted. The monitor/display that connected to this output also need to be HDCP compliant in order to get a nice and clean picture. A non-HDCP compliant display can only display non-HDCP signal and picture will become noise when input is a HDCP-encrypted signal.

5. Power jack: Connect to the 5V 2A DC power adaptor.

Remote Control and functions:

1. Power: Press the button once to power on the HDV5. Press again to enter standby mode.

2. Input: Press the button repeatedly to toggle through various input sources as follows.

Component → PC → DVI

3. HD input: Press the button to select component input.
4. PC input: Press the button to select PC input.
**5. HDMI/DVI input:** Press the button to select DVI (or HDMI) input.

Select buttons: Press any one of the button to directly select output resolution. For other output resolutions that are not covered by these buttons please enter Menu/Output page to select them.

7. MENU: Press the button to bring up OSD main menu page.
8. Exit: Press the button to exit from a sub menu or main menu.
9. Up/Down/Left/Right: Press the Up/Down button to move the highlight bar to your desired parameter during the OSD operation. Press the Left/Right button to increase/ decrease the setting value of a selected parameter.
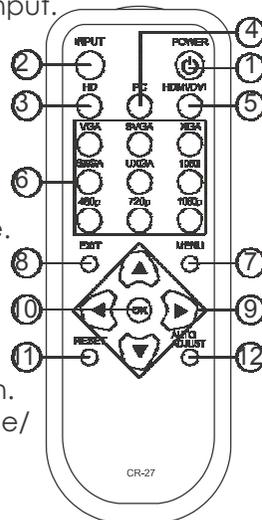
10. OK (Enter): Press the button to confirm your selection.
11. Reset: Press the button to reset the unit's firmware setting to the factory default value.
12. Auto Adjust: Press the button to optimize the position of the picture (picture centering) on the screen.

Installation:

Input Connection

Component in

Component out

DVD or Set Top Box

HDMI to DVI connector adaptor

DVI
HDMI
HDMI Cable

DVI out

HDMI out

PC

STB

PC

DVD

CR-27