HD Component Video/PC VGA

4-Way

Scaler / Converter

Operation Manual

1. Introduction

Ambery's new 4-Way HD Component Video/PC VGA Scaler (**model: AV-7**) is a high-performance universal video scaler to set the new benchmark for all HD video applications and computer image to HD conversion.
This unit provides an all-in-one solution for all HD/PC to PC/HD video resolution scaling, PC VGA to HDTV scan conversion and multiple video format conversion. With top grade HD video processor designed for connecting all HD video devices and computer applications to all digital flat panel displays or HDTVset, this unit answers right on the dilemma that many of you have faced between HDTV and PC.

All high definition video interconnect features that you will need from home theater to the computer video entertainments are seamlessly packed into this module in order to provide the superior video format conversion and image resolution enhancement with cinema quality video for greatest visual sensation.

With the new advanced up-converting technology, this new 4-Way video converter can deliver smooth and sharp video images for big screen display, which is a must-have feature when feeding video to projection system, HDTV, Plasma Panel, LCD TV and other digital flat panel displays.

6. Specifications

Input Format	RGBHV, YPbPr, YCbCr
Input Signal Levels	RGB @ 0.7V p-p, 75 ohm. H&V Sync @ 3-5Vp-p,TTL Y @ 1V p-p, 75 ohm. Pb,Cb,Pr, Cr @ 0.7V p-p, 75 ohm
Output Format	RGBHV, YPbPr
Output Signal Levels	RGB @ 0.7V p-p, 75 ohm. H&V Sync @ 3-5V p-p, TTL Y @ 1 V p-p, 75 ohm. Pb,Pr @ 0.7V p-p 75 ohm
Input/Output Connector Type	HD 15 Female
Control	Front Panel Buttons
Information Display	On Scerrn Display
Video Adjustments	Brightness, Contrast, Color, R-G-B Levels
Weight	10 oz. (280 grams)
Dimensions-HxWxD	1.2" x 3" x 5.5" (30 x 75 x 140mm)
Power Source	12VDC @ 800mA

Input Signal Specifications

PC Resolution		Vert Rate	Format	Scan Type
VGA	640 X 480	60,72,75,85 Hz	RGBHV	Progressive
VESA85	640 X 400	85 Hz	RGBHV	progressive
VGA70	720 X 400	70 Hz	RGBHV	Progressive
SVGA	800 X600	60,72, 75, 85 Hz	RGBHV	Progressive
XGA	1024X768	60, 70, 75, 85 Hz	RGBHV	Progressive
Mac	1152X864	70, 75 Hz	RGBHV	Progressive
WXGA	1280X768	60 Hz	RGBHV	Progressive
1280A	1280X960	60 Hz	RGBHV	Progressive
SXGA	1280X1024	60 ,75 Hz		
HDTV Resolutions		Vert Rate	Format	Scan Type
480p	720 x 480	60 Hz	YPbPr, RGBHV	Progressive
480i	720 x 480	60 Hz	YCbCr,RGBHV	Interlace
576p	720 x 576	50 Hz	YPbPr, RGBHV	Progressive
576i	720 x 576	50 Hz	YCbCr, RGBHV	Interlace
720p	1280 x 720	50,60 Hz	YPbPr, RGBHV	Progressive
1080i	1920 x 1080	50,60 Hz	YPbPr, RGBHV	Interlace

Output Signal Specifications

PC Resolution		Vert Rate	Format	Scan Type
VGA	640 X 480	60,72,75,85 Hz	RGBHV	Progressive
VESA85	640 X 400	85 Hz	RGBHV	progressive
VGA70	720 X 400	70 Hz	RGBHV	Progressive
SVGA	800 X600	60,72, 75, 85 Hz	RGBHV	Progressive
XGA	1024X768	60, 70, 75, 85 Hz	RGBHV	Progressive
Mac	1152X864	70, 75 Hz	RGBHV	Progressive
WXGA	1280X768	60 Hz	RGBHV	Progressive
1280A	1280X960	60 Hz	RGBHV	Progressive
SXGA	1280X1024	60, 75 Hz		
HDTV Resolutions		Vert Rate	Format	Scan Type
480p	720 x 480	60 Hz	YPbPr, RGBHV	Progressive
576p	720 x 576	60 Hz	YPbPr, RGBHV	Progressive
720p	1280 x 720	50,60 Hz	YPbPr, RGBHV	Progressive
1080i/540p	1920x1080	50,60 Hz	YPbPr, RGBHV	Pseudo Interlance

5. Operation Controls and Functions

Picture Adjust: When it is selected the following adjust parameters will appear:

The adjustment range and factory preset vaule are as follows:

	Range	Default
Contrast	0-255	047
Bright	0-255	102
Color	0-255	064
Red	0-255	128
Green	0-255	128
Blue	0-255	128

Use + , - and MENU/Enter to adjust the value of your selected parameter.
Select Reset to reset all adjustments back to the factory preset value.

HV Adjust: When it is selected the following sub-menu appears.

Use + - to adjust the best horizontal and vertical position of the picture.

Overscan / Underscan: When you have the options of "**OVER**" and "**UNDER**" selected by the + and – buttons. Default setting is "**OVER**" for over scan mode, which helps fit the whole output screen perfectly within the borders of your display. If some areas of the PC screen fall outside of the TV display as seen being cropped, user can select "**UNDER**" for under scan mode for full screen display. Note that the under scan feature, if needed, only works for certain input/output resolution combinations.

OSD Adjust: When it is selected, you can adjust the Horizontal and Vertical position of the OSD menu.

System Information: When it is selected, it shows the input/output resolution and their vertical refresh rate on the screen.

System Info
INPUT: XGA 60
OUTPUT: XGA 75

Auto Adjust: When selected, unit will automatically adjust all parameters to the preset value.

Note:

* The default output resolution of this scaler is XGA(1024x768 pixels@60Hz).
* **At any time press "+" and "-" buttons simultaneously for a few seconds**, unit will be reset to the VGA output resolution at XGA/60Hz, and other settings back to factory default value. Control screen will be seen on VGA display via VGA cable connection.
* **At any time press "MENU" and "-" buttons simultaneously for a few seconds**, unit will be reset to the HD component video output resolution at 480P and other settings back to default. Control screen will be seen on TV via VGA to component adapter cable.

2. Features

1. All-in-1 solution for HDTV/PC video resolution up scaling and video format conversion.
2. The resolution of any PC or HDTV input can be scaled up or scaled down to any other PC or HDTV resolution, along with the frame rate converted to a selectable frequency.
3. 48 MB frame memory for frame rate conversion.
4. Easy converting video signal formats and resolutions between VGA and HD Component
5. Input: PC(VGA/SVGA/XGA/SXGA)+
   HDTV(480i/576i/480p/567p/720p/1080i), Fh: 60 to 85 Hz
   Output: PC(VGA/SVGA/XGA/SXGA)+
   HDTV(480p/576p/720p/1080i)
6. Input mode auto detection.
7. Input Setup allows for fine-tuning the output picture to a best condition through the adjustment of ADC sampling clock, and phase.
8. Easy- to- use push buttons and OSD menu control.
9. Supports last memory function., thus can memorized all customers' setting before power off and recall those setting on next power on.

10 4-way video processing: VGA to VGA scaling, VGA to HDTV component Video, HD Component Video to VGA/RGBHV, HD to HD scaling.

3. Package Content

The following items are included in the standard shipping package.

1. The 4-way HD component video/PC VGA video scaler unit x 1.
2. 15-Pin D-Sub PC VGA cable x 1.
3. 15-pin VGA to Component Video 3-RCA adapter cable x1.
4. AC power adaptor 12V 800mA, center positive.

Corporate web site: http://www.ambery.com
Customer service: support@ambery.com

4. Operation

Input connection:

This AV-7 universal video scaler model supports both PC VGA type and HD Component video type inputs.

For PC VGA input, please use the 15-pin D-sub cable to connect the output of a PC device to the input connector on the back of AV-7.

For component video input, please use the 15-pin VGA to Component RCA adapter cable for connecting from the component video output of the HDTV device to the HD 15-pin VGA input connector of this scaler and the scaler will **automatically detect the mode and resolution of the user's PC/HDTV input.**

Output connection:

This universal scaler outputs a variety of PC VGA resolutions and HDTV resolutions.

When selecting a VGA resolution for output, please use the 15-pin VGA cable to connect from the HD 15-pin output of the AV-7 model to the VGA input of a display monitor.

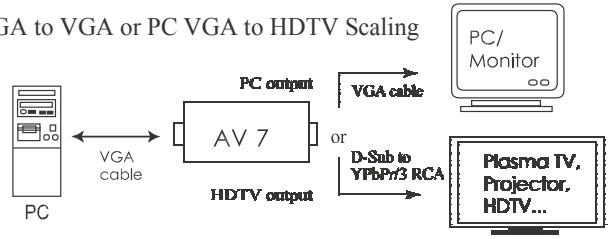
When selecting a HDTV resolution for output, please use the 15-pin VGA to 3 RCA component video adapter cable to connect from the HD 15-pin output of the AV-7 to the component video input of a HDTV display .

Note:

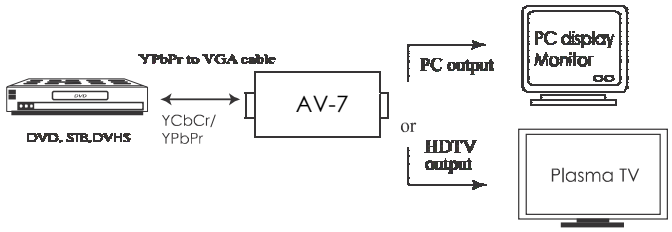
Use of wrong cable for your selected output will result in an abnormal picture on the screen.

Connection Block Diagram:

(a) PC VGA to VGA or PC VGA to HDTV Scaling

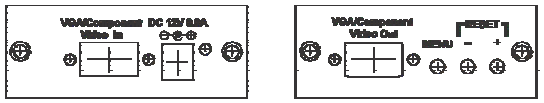


(b) HD Component to VGA or Component to Component Video Scaling



5. Operation Controls and Functions

Front Panel **Rear Panel**



Menu(Enter): Press the Menu button will bring up the OSD menu controls on the screen as follows:

→ **Input set up**
Output set up
Picture Adjust
HV Adjust
OSD Adjust
System Information
Auto Adjust
Exit

Use + or - to move the arrow cursor to your desired selection, then press MENU (Enter) to confirm your selection and enter into sub menu.

Input set up- When selected, a sub menu of clock and phase adjust as below will appear.

Use +, - to choose the parameter your want to adjust and then press the Menu(Enter) to highlight your selection. Once a parameter is highlighted, use +, - to increase or decrease the setting value.
Press Menu(Enter) again to leave the setting.
Move the arrow to exit then press Menu/Enter to Exit.

Output set up- When selected, the following sub-menu will appear, press + or - button to choose your desired PC VGA or HDTV output resolution from the following output resolution table.

Output Mode	**Setup XGA-60**

Output resolution:

PC		**HDTV**	
SXGA	1280 X 1024@60/75Hz	720p-RGB	1280X 720@60Hz
1280A	1280 X 960@60Hz	576p-RGB	720X 576@60Hz
XGA	1024 X 768@60/70/75/85Hz	480p-RGB	720 X 480@60Hz
WXGA	1280 X 768@60Hz	1080i-RGB	1920x1080@60Hz
SVGA	800 X 600@60/72/75/85Hz	720p-YPbPr	1280 X 720@50/60Hz
VGA	640 X 480@60/72/75/85Hz	576p-YPbPr	720 X 576@60Hz
VGA 70	720 X 400@70Hz	480p-YPbPr	720 X 480@60Hz
VESA 85	640 X 400@85Hz	1080i-YPbPr	1920x1080@50/60Hz
	1152 X 864@ 70/75Hz		