Emerge® VSS1000PD
PC/VGA-DVI Video Scaler

Installer/User Guide

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1.0 INTRODUCTION

The VSS1000PD video scaler is a high bandwidth, professional PC/component/DVI to digital DVI scaler that accepts PC generated RGB signals (up to WUXGA), HD component signals (480i up to 1080p) and DVI signals (up to WUXGA) and scales them to a DVI or PC output of 1080p/WUXGA. The inputs are DVI plus analog PC or HDTV in the formats of RGBHV, YPbPr, YCbCr and the outputs are digital DVI plus PC/HD. Outputs are 480i through 1080p or VGA to WUXGA.

1.2 FEATURES

The VSS1000PD has many features that enable it to perform in a superior manner. Among those features you will find:

- Digital DVI Output Resolutions to WUXGA.
- Video Outputs to 1080p
- PC RGB Outputs to WUXGA@60Hz
- Analog and Digital HDTV Inputs up to 1080p
- Analog and Digital PC inputs to WUXGA@60Hz
- DVI Inputs and Outputs are fully HDCP Compliant
- Both YPbPr and YCbCr HDTV Inputs Supported
- 3-D Motion Adaptive De-Interlace
- 3-D Noise Reduction
- 3:2 Pull-Down w/2:2 Pull-Down Recovery
- 8 Bit Triple-ADC/PLL
- On Screen Display
- Front Panel or Infrared Remote Control

2.0 SPECIFICATIONS

Video Inputs	
HDTV Video	Via 1x DVI Connector
PC RGB Video	Via 1x HD-15 Connector
Analog HDTV Video	Via 3x RCA Connectors
Video Inputs Supported	
Analog PC RGB	Up to WUXGA@60Hz
Digital PC RGB	Up to WUXGA@60Hz
Analog HDTV/RGB	YPbPr to 1080p
Digital HDTV	Up to 1080p
DVI	Up to WUXGA@60Hz
DVI/HDCP Frequency	Up to 165 MHz
Video Output	
DVI Digital HDTV Video	Via 1x DVI-I Connector
RGB Analog Video	Via 1x HD-15 Connector
Video Outputs Supported	
Digital PC RGB	Up to WUXGA@60Hz
Digital HDTV	Up to 1080p
Scaling Engine	
Number of Engines	Two (2)

Phased Lock Loops Employed	8-bit triple ADC
De-Interlace	3D Motion Adaptive
Noise Reduction	3D
Pull-Down	3:2 + 2:2 Recovery
HDCP Compliance	Yes
Image Component Processing	Full Time/Full Range
Mechanical	
Size (H-W-D)	1”x7.0”x5.1” (25.5x180x135mm)
Weight (Net)	11 Oz (312g)
Warranty	
Limited Warranty	2 Years Parts and Labor
Environmental	
Operating Temperature	0° to +50°C (+32° to +122°F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-10° to +60° C (+14° to +140° F)
Storage Humidity	10% to 90%, Non-condensing
Power Requirement	
External Power Supply	5VDC@2A
Regulatory Approvals	
Converter Unit	FCC, CE, RoHS
Power Supply	UL, CUL, CE, PSE, GS, RoHS
Accessories Included	
1x AC Power Adapter	Localized
1x Operations Manual	
1x Remote Control	Infrared Type
Optional Accessories	
Cables	Various Types and Lengths

2.1 Supported Input Formats and Resolutions

The VSS1000PD accepts component, PC and HDMI inputs including the audio associated with the inputs. The resolutions and formats processed for these inputs are as follows:

Component Input	
YPbPr	480i@60Hz, 576i@50Hz, 480p@50/60Hz, 576p@50Hz, 720p@50/60Hz, 1080i@50/60Hz, 1080p@50/60Hz
PC Input	
RGBHV	VGA@(60/72/75/85), SVGA@(56/60/72/75/85), XGA@(60/70/75/85), SXGA@(60/75/85), UXGA@60, WXGA@60(1280x800), WSXGA@60(1680x1050), WUXGA@60(1920x1200), WXGA+(1440x900)
HDMI Input	
Digital	VGA@(60/72/75/85), SVGA@(56/60/72/75/85), XGA@(60/70/75/85), SXGA@(60/75/85), UXGA@60, WXGA@60(1280x800), WSXGA@60(1680x1050), WUXGA@60(1920x1200), WXGA+(1440x900)

2.2 Supported Output Resolutions

The VSS1000PD can provide a large number of output formats as shown in the following table:

VGA (Up to 100MHz)	HDMI/DVI (Up to 165MHz)	Resolution	i/ p*	Format
480i	480i	720x480	i	RGBHV
480p	480p	720x480	p	RGBHV
576i	576i	720x576	i	RGBHV
576p	576p	720x576	p	RGBHV
720p@(50/60)	720p@(50/60Hz)	1280x720	p	RGBHV
1080i@(50/60)	1080i@(50/60)	1920x1080	i	RGBHV
1080p@50/60)	1080p@(50/60)	1920x1080	p	RGBHV
VGA@60	VGA@60	640x480	p	RGBHV
SVGA@60	SVGA@60	800x600	p	RGBHV
XGA@60	XGA@60	1024x768	p	RGBHV
SXGA@60	SXGA@60	1280x1024	p	RGBHV
UXGA	UXGA@60	1600x1200	p	RGBHV
WXGA@60	WXGA@60	1280x800	p	RGBHV
WSXGA@60	WSXGA@60	1680x1050	p	RGBHV
WUXGA@60	WUXGA@60	1920x1200	p	RGBHV
WXGA+@60	WXGA+@60	1440x900	p	RGBHV

* NOTE: i / p = Interlaced / Progressive Scan

3.0 CHECKING PACKAGE CONTENTS

Before attempting to use this unit, please check the packaging and make certain the following items are contained in the shipping carton:

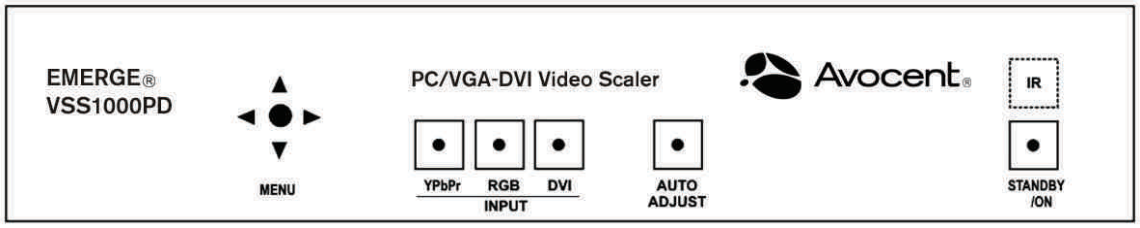
- 1x VSS1000PD scaler
- 1x power supply
- 1x IR remote control
- 1x user guide

Note: Please retain the original packing material should the need ever arise to return the unit. If you find any items are missing, contact your reseller or Avocent immediately.

4.0 CONNECTING THE HARDWARE

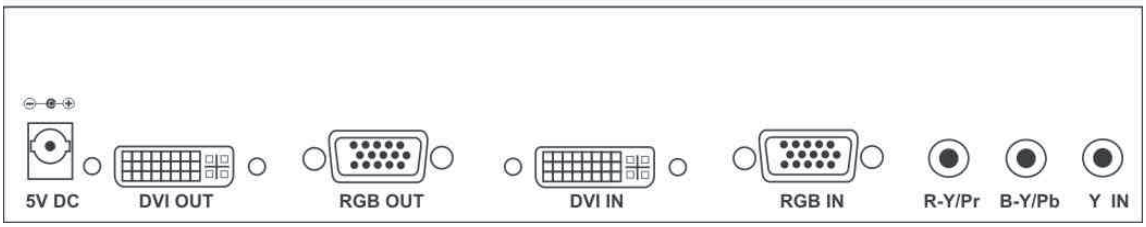
Referring to the drawings below, connect the proper cable (3x RCA to 3x RCA for YPbPr component input, HD-15 to HD-15 for PC input or DVI to DVI for DVI input) and then connect the AC power adaptor.

Next, study the panel drawings and connector/control descriptions below and become familiar with the control actions, connector functions and power requirements.



Above the word “MENU” you’ll find a joystick/switch control that allows access to and adjustment of various operational items. Pressing the top of the joystick will bring up the menu On Screen Display (OSD) and moving the joystick will allow you to move to, select and then adjust the various functions.

The three buttons in the middle, YPbPr, RGB and DVI allow you to select the type of input you desire and the Auto Adjust button causes the scaler to position and size the image automatically. The Standby/On button is the power switch and above it is the IR sensor used with the included remote control.



1 **2** **3** **4** **5** **6**

1 Power Adaptor Jack – Connect the provided AC Adaptor here.
2 DVI Output – Connect to DVI capable device.
3 PC Out (RGB). Connect to PC Monitor or RGB capable Projector.
4 DVI In – Connect to output from DVI capable device.
5 PC In – Connect to a PC’s VGA (Monitor) out.
6 Component Video In

Connect the appropriate cables to the desired connector. Use only the highest quality cables for the input and output connections.

The VSS1000PD is able to automatically identify, accept and scale a host of input types and resolutions (including analog and PC type signals). The output however will be either DVI with a resolution of 480i to 1080p or RGB with resolutions from VGA to WUXGA. You must use a display device that is either DVI or RGB capable in order to use the output from this product. Since you can specify the output resolution, you’ll need to know the highest resolution your

destination device is capable of handling and set the VSS1000PD's output resolution accordingly.

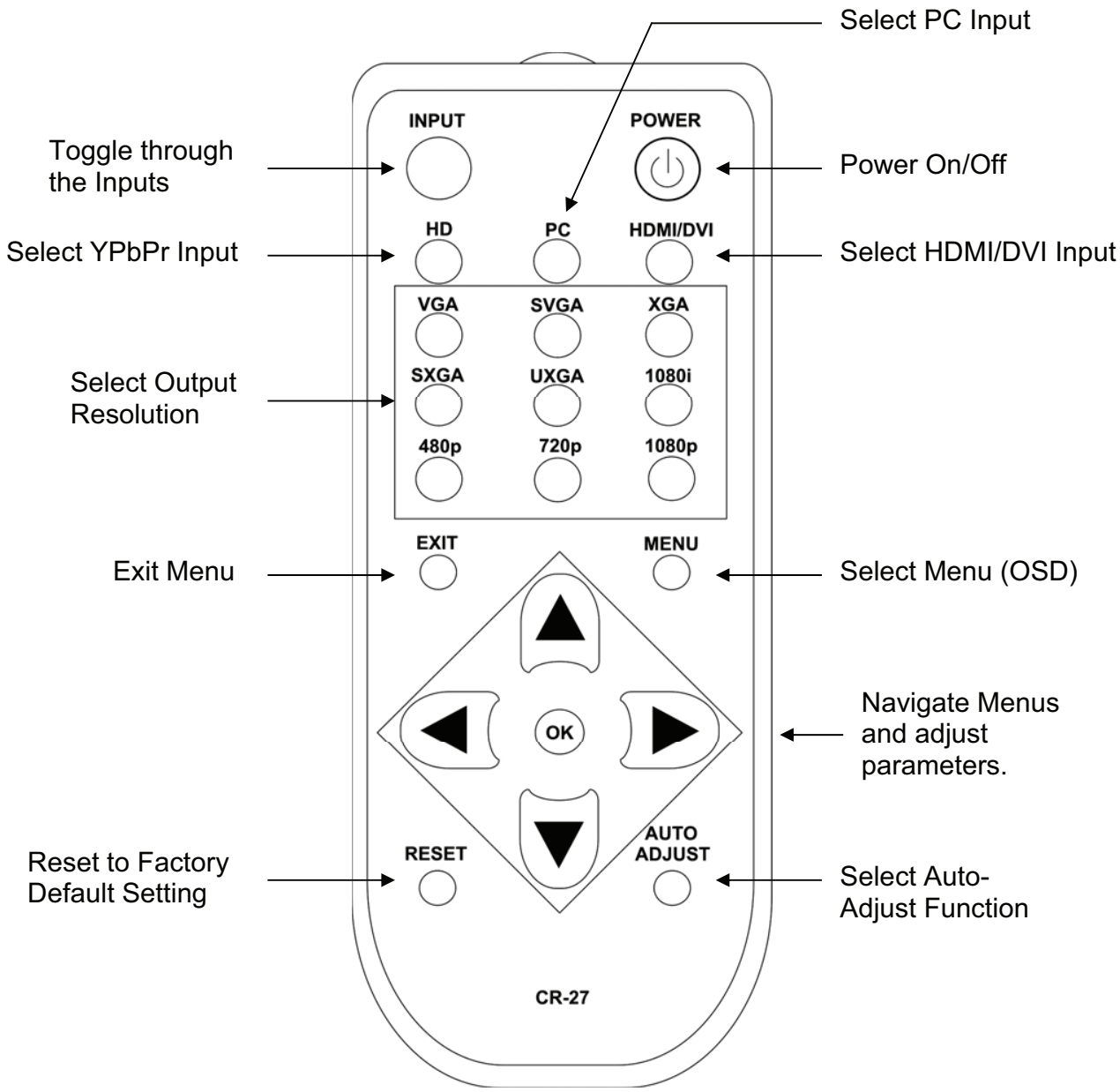
Note 1: The product features a special "twist-to-lock" DC power connector to prevent the power cable coming loose. Align the flanged barrel connector properly and insert fully into the keyed power socket. Once fully inserted, gently twist the connector 90 degrees to the right or left to securely lock it in place.

Note 2: To realize maximum quality and performance, use only the highest quality cables with the VSS1000PD. Low quality cables will cause degradation of the signal quality and limit the distance between both the source and display devices and the VSS1000PD.

5.0 OPERATING THE UNIT

The VSS1000PD can be operated from either the front panel controls or via the included infrared remote control.

Since infrared is the control method used most often by the majority of users, please take the time to familiarize yourself with the location and function of the various control buttons on the controller.



5.1 Using the On Screen Display Menus

Regardless of whether you operate the VSS1000PD from the front panel or the remote controller, you will need to become familiar with the OSD (On Screen Display) menu structure if you wish to take full advantage of the capability of the product.

5.1.1 Menu Navigation

If you are using the front panel control method, you can select the desired function by pressing the tip of the joystick immediately above the MENU legend to bring up the On Screen Display and then move the joystick to navigate to the desired function. Once at the desired function, press the tip of the joystick to make the selection and then move the joystick (left or right) to make the actual adjustment. Once you've made the adjustment, press the top of the joystick a last time to save your adjustment. Escape from the OSD menu modes is accomplished by positioning the cursor over the word "Exit" in any menu and then pressing the top of the joystick.

From the IR remote controller, press the menu key to activate the OSD, use the arrow buttons to navigate to the selection you want and then use the arrow buttons and the "OK" button to make your adjustment or selection. Press the "Exit" button to escape from the OSD mode.

5.1.2 Menu Structure

The main structure is as follows:

Main Menu

Video (Or PC)	**Color**	**Output**	**OSD**	**Info**
Contrast	User	VGA	H. Position	Project
Brightness	Normal	SVGA	V. Position	Input
Hue	Warm	XGA	Time Out	Output
Sat	Cool	SXGA	Background	Date
Sharpness		UXGA	Exit	
Picture Mode		WXGA		
Scale		WSXGA		
NR		WUXGA		
H-Position[1]		WXGA+		
V-Position[1]		480i		
Exit		480p		
		576i		
PC Menu[1]		576p		

H-Position[2]	720p (50/60)
V-Position[2]	1080i (50/60)
Exit	1080p (50/60)
	Native

Note 1: *The PC sub-menu is only visible when you have selected PC as your source.*

Note 2: *H-Position and V-Position are only available when PC mode is selected.* The Video and PC menus appear when Video or PC modes are selected as an input. Depending on the mode, additional functionality will be exposed when the following functions are selected: **Picture Mode:** User, Standard and Movie., **Scale:** Overscan, Underscan Letterbox and Full Screen., **Noise Reduction:** Low, Middle, High and Off.

The Color sub-menu calls up four presets that cause the picture to take on a specific characteristic. Some people prefer the picture to have a slightly reddish ("Warm") appearance. This looks more lifelike to them. Others want a bluish ("Cool") hue and still others want to adjust the picture and save it as a "User" appearance. Finally, there is "Normal" which is an appearance that was created using special image analysis equipment and is therefore considered a standard appearance.

The Output sub-menu allows you to specify the resolution you want the VSS1000PD to produce. As an example, if you are using a DVI display device that can only accept a 1080i HDTV input signal, you would want to set the output resolution to 1080i. Keep in mind that setting the resolution can cause an apparent malfunction if you select a resolution that your display device cannot reproduce. *Make certain your display device can reproduce the resolution you desire BEFORE you select it.*

The OSD sub-menu allows you to customize the way the On Screen Display appears when it has been accessed. This is a personal preference matter. You can change the default if you wish or simply leave it at the factory setting.

Lastly, the Info sub-menu contains technical information. If you have problems with the VSS1000PD and require assistance, the technician may ask you to read information from this menu to him as part of the troubleshooting process.

6.0 TROUBLESHOOTING

If the VSS1000PD Scaler does not appear to be functioning, make certain that the source and all other devices connected to the unit are functioning correctly by connecting each device currently connected to the VSS1000PD's outputs directly to the source using a short length of cable. (In other words, bypass the VSS1000PD to make certain that the problem is not with the source or destination devices.) If the signal is present under those conditions, make certain

that the power is present to the VSS1000PD. If it is, check all cables for damage. Cables should be undamaged, as short as possible and should be premium quality.

Note: It is strongly recommended that you use premium cables in order to achieve maximum distance cable runs and the best performance possible. Use of low quality cables will seriously degrade the performance of the VSS1000PD *Scaler.*

As a final step before contacting technical support, use the IR remote and press the RESET button which will return the unit to the default settings.

After trying the above suggestions should the problem still persist, contact your dealer for additional suggestions before contacting Avocent. Should the dealer's technical personnel be unable to assist you, contact Avocent via our support website: ***http://avocent.com/support.*** Create a technical support request on the site and our support team will respond within a short period of time.

7.0 LIMITED WARRANTY

LIMITED WARRANTY – With the exceptions noted in the next paragraph, Avocent Corp. warrants the original purchaser that the equipment it manufactures or sells will be free from defects in materials and workmanship for a period of two years from the date of purchase. Full warranty details are available on the Avocent web site.

LIMITATIONS - All products sold are "as is" and the above Limited Warranty is in lieu of all other warranties for this product, expressed or implied, and is strictly limited to two years from the date of purchase. Avocent Corp. assumes no liability to distributors, resellers or end-users or any third parties for any loss of use, revenue or profit.

Avocent Corp. makes no other representation of warranty as to fitness for the purpose or merchantability or otherwise in respect of any of the products sold. The liability of Avocent Corp. with respect to any defective products will be limited to the repair or replacement of such products. In no event shall Avocent Corp. be responsible or liable for any damage arising from the use of such defective products whether such damages be direct, indirect, consequential or otherwise, and whether such damages are incurred by the reseller, end-user or any third party.

8.0 REGULATORY COMPLIANCE

Emissions: EN 55103-1: 1997 (Electromagnetic compatibility. Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use. Emission)

EN 61000-3-2:2000+A1:2001+A2:2005 (Limits for Harmonic Currents Emissions)

EN 61000-3-3:2000+A1:2001+A2:2005 (Limitation of voltage fluctuations and flicker in low-voltage supply systems)

Immunity: EN55103-2: 1997 (Electromagnetic compatibility. Product family standard for audio, video, audio-visual and entertainment lighting control apparatus for professional use. Immunity)

FCC Statement

Class A Device: This equipment has been tested and found to comply with the limits for a Class A digital device pursuant to Part 15 of the FCC Rules. These limits are designed to provide a reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the Instruction Manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Caution: This equipment is intended for use in the manner prescribed in the Instruction Manual. Any user changes or modifications not expressly approved by Avocent Corporation could void the user's authority to operate the equipment. Connecting this equipment to external devices requires no specially shielded cabling for FCC compliance. The Instruction Manual shows or describes the proper connection of this equipment for operation that insures FCC compliance.

Direct all inquiries regarding FCC compliance to:

Avocent Corporation
4991 Corporate Dr.
Huntsville, AL 35805

This Product and Power Adapter is RoHS Compliant.

Where AV and IT Meet

590-585-501A