KRAMER ELECTRONICS LTD.

USER MANUAL

MODEL:

VP-419xl
Video to SXGA/HD Scaler

P/N: 2900-000201 Rev 7

VP-419xl Quick Start Guide

This guide helps you install and use your product for the first time. For more detailed information, go to http://www.kramerelectronics.com/support/product_downloads.asp to download the latest manual or scan the QR code on the left.

Step 1: Check what's in the box

- ☑ **VP-419xl** Video to SXGA/HD Scaler
- ☑ 1 Power supply (12V DC)
- ☑ 4 Rubber feet
- ☑ 1 Quick Start sheet
- ☑ Kramer RC-IR3 Infrared Remote Control Transmitter with batteries and user manual
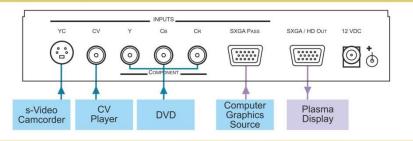
Save the original box and packaging materials in case you need to return your **VP-419xl** for service.

Step 2: Install the VP-419xl

Attach the rubber feet and place on a table or mount the **VP-419xl** in a rack (using an optional RK-1 rack mount).

Step 3: Connect the inputs and outputs

Always switch off the power on each device before connecting it to your **VP-419xl**.

INPUTS

| YC | CV | Y | CB | CR | SXGA PASS | SXGA / HD OUT | 12 VDC |

COMPONENT

s-Video Camcorder | CV Player | DVD | Computer Graphics Source | Plasma Display

Always use Kramer high-performance cables for connecting AV equipment to the **VP-419xl**.

Step 4: Connect the power

Connect the 12V DC power adapter to the **VP-419xl** and plug the adapter into the mains electricity.

Step 5: Operate the VP-419xl

Operate the **VP-419xl** via the front panel buttons, the OSD (on-screen display) or the remote control.

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1 Introduction

Welcome to Kramer Electronics! Since 1981, Kramer Electronics has been providing a world of unique, creative, and affordable solutions to the vast range of problems that confront video, audio, presentation, and broadcasting professionals on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better!

Our 1,000-plus different models now appear in 11 groups that are clearly defined by function: GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Routers; GROUP 3: Control Systems; GROUP 4: Format/Standards Converters; GROUP 5: Range Extenders and Repeaters; GROUP 6: Specialty AV Products; GROUP 7: Scan Converters and Scalers; GROUP 8: Cables and Connectors; GROUP 9: Room Connectivity; GROUP 10: Accessories and Rack Adapters and GROUP 11: Sierra Products.

Congratulations on purchasing your Kramer **VP-419xl** *Video to SXGA/HD Scaler*, which is ideal for the following typical applications:

- Projection systems in conference rooms, boardrooms, hotels and churches

- Home theater up-scaling

2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment

- Review the contents of this user manual

> Go to http://www.kramerelectronics.com/support/product_downloads.asp to check for up-to-date user manuals, application programs, and to check if firmware upgrades are available (where appropriate).

2.1 Achieving the Best Performance

To achieve the best performance:

- Use only good quality connection cables (we recommend Kramer high-performance, high-resolution cables) to avoid interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables)

- Do not secure the cables in tight bundles or roll the slack into tight coils

- Avoid interference from neighboring electrical appliances that may adversely influence signal quality

- Position your Kramer **VP-419xl** away from moisture, excessive sunlight and dust

> This equipment is to be used only inside a building. It may only be connected to other equipment that is installed inside a building.

2.2 Safety Instructions

Caution: There are no operator serviceable parts inside the unit

Warning: Use only the Kramer Electronics input power wall adapter that is provided with the unit

Warning: Disconnect the power and unplug the unit from the wall before installing

2.3 Recycling Kramer Products

The Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC aims to reduce the amount of WEEE sent for disposal to landfill or incineration by requiring it to be collected and recycled. To comply with the WEEE Directive, Kramer Electronics has made arrangements with the European Advanced Recycling Network (EARN) and will cover any costs of treatment, recycling and recovery of waste Kramer Electronics branded equipment on arrival at the EARN facility. For details of Kramer's recycling arrangements in your particular country go to our recycling pages at *http://www.kramerelectronics.com/support/recycling/*.

3 Overview

The Kramer **VP-419xl** *Video To SXGA/HD Scaler* is a high quality converter for up-scaling composite video, s-Video (YC), and SD component video to XGA and HD resolutions. It also has a computer graphics (XGA) input, which, when selected, is routed directly (bypassed) to the output. Video inputs are de-interlaced and scaled to the selected PC or HDTV resolutions, as follows:

The terminology XGA is used throughout this manual, where this implies any RGBHV signal on a 15-pin HD connector having a resolution from VGA up to SXGA.

PC: VGA, SVGA, XGA, SXGA, UXGA, WXGA, WXGA+, WSXGA+

HDTV: 480p, 576p, 720p50, 720p60, 1080i50, 1080i60, 1080p50, 1080p60

The **VP-419xl** *Video to SXGA/HD Scaler* also features:

- Automatic detection of NTSC, N4.43, PAL, PAL-M, PAL-N, SECAM video standards

- An On-Screen Display (OSD) for easy setup and adjustment, accessible via the IR remote control and via the front-panel buttons

- A high-performance adaptive 3D comb filter (for precise color management)

- Per-pixel motion compensated de-interlacing for artifact-free video images

- Automatic detection for 3:2 pulldown for 24fps film source material

- Frame rate conversion of 50Hz to 60Hz for PAL input signals

- A Vertical Temporal (VT) Filter for removing jagged artifacts

- Advanced color/luminance transient improvement circuitry

- A PC Input connector for easy integration into an existing system

- A built-in procamp for convenient signal adjustment

- A non-volatile memory that retains the last settings used

The machine is fed from an external 12V DC source, making it suitable for field operation.

Control your **VP-419xl**:

- Directly, via the front panel push buttons

- Remotely, from the infra-red remote control transmitter

3.1   Defining the VP-419xl Video to SXGA/HD Scaler
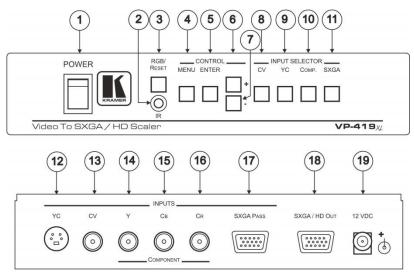
This section defines the **VP-419xl**.

Figure 1: VP-419xl Video to SXGA/HD Scaler

#	Feature		Function
1	*POWER* Switch		Switch for turning the unit ON or OFF
2	*IR* Receiver		Lights when receiving signals from the remote control transmitter
3	*RGB/RESET* Button		Illuminates when the output resolution is set to RGB. Press to set output to Y Pb Pr (the button no longer illuminates). Press and hold for more than 3 seconds to reset to VGA. Press and hold for 10 seconds to reset to 480p
4	*CONTROL*	*MENU* Button	Displays the OSD menu (see Section 5.2)
5		*ENTER* Button	Press to accept changes and change the SETUP parameters (see Section 5.2.3)
6		+ Button	Press to go up the menu list or adjust the PICTURE submenu values (see Section 5.2.2)
7		- Button	Press to go down the menu list or adjust the PICTURE submenu values (see Section 5.2.2)

#		Feature	Function
8	INPUT SELECTOR	CV Button	Press to select the composite video source
9		YC Button	Press to select the s-Video (YC) video source
10		COMP. Button	Press to select the component video source
11		SXGA Button	Press to select the SXGA source
12	INPUTS	YC 4-pin Connector	Connects to the s-Video source
13		CV RCA Connector	Connects to the composite video source
14		Y RCA Connector	Connects to the interlaced component video source
15		CB RCA Connector	Not compatible with progressive scan Y, Pb, Pr or HDTV
16		CR RCA Connector	For component video, connect all three connectors: Y, Cb, Cr (also known as YUV)
17		SXGA PASS 15-pin HD Connector	Connects to the VGA/Y, Pb, Pr source This PC input signal is not scaled, but is available for pass-through when the PC source is selected
18	SXGA / HD OUT 15-pin HD Connector		Connects to the SXGA or HDTV (component video) acceptor
19	12 VDC		+12V DC connector for powering the unit

4 Connecting the VP-419xl

> Always switch off the power to each device before connecting it to your **VP-419xl**. After connecting your **VP-419xl**, connect its power and then switch on the power to each device.

To connect the **VP-419xl** as illustrated in the example in Figure 2:

1. Connect an s-Video source (for example, an s-Video camcorder) to the INPUT 4-pin YC connector.

2. Connect a composite video source (for example, a composite video player) to the CV INPUT RCA connector.

3. Connect a component video source (for example, a DVD player) to the Y, Cb and Cr INPUT RCA connectors.

4. Connect an SXGA graphics source to the SXGA PASS INPUT 15-pin HD connector.
   This PC input signal is not scaled, but is available for pass-through when the PC Source is selected.

5. Connect the SXGA/HD OUT 15-pin HD connector to a video acceptor (for example, a plasma display) as follows:

   - When connecting to an XGA acceptor (RGBHV), then connect to the acceptor's XGA connector

   - When connecting to a component acceptor (Y, Cb, Cr), then connect as shown in in the following table

PIN #	Signal
1	Cr
2	Y
3	Cb

6. Connect the 12V DC power adapter to the power socket and connect the adapter to the mains electricity (not shown in Figure 2).
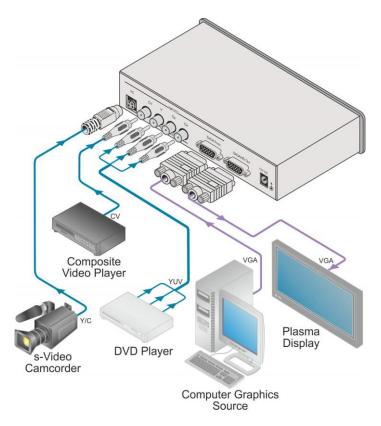
Figure 2: Connecting the VP-419xl Video to SXGA/HD Scaler

5 Controlling the VP-419xl

The **VP-419xl** can be controlled directly via the front panel buttons (see Section 5.1), via the OSD menu (see Section 5.2), and/or remotely from the infra-red remote control transmitter (see Section 5.3).

5.1 Controlling via the Front Panel Buttons

The **VP-419xl** includes the following control front panel buttons:

- An RGB/RESET button for setting the output to either RGB or Y, Pb, Pr or resetting the resolution to VGA or 480p
  Press for 3 seconds to reset to VGA and press for 10 seconds to reset to 480p

- CONTROL buttons, including the MENU, ENTER, + and – buttons

- INPUT SELECTOR buttons for selecting the required input (CV, YC, COMP. or SXGA)

5.2 Using the CONTROL Buttons

The CONTROL buttons let you control the **VP-419xl** via the OSD menu

- Press the MENU button to enter the menu
  The menu times out after 8 seconds.

- Press the ENTER button to accept changes and to change the menu settings

- Press the + and – buttons to move through the OSD menu, which is displayed on the video output, or adjust the PICTURE parameters

On the OSD menu, select EXIT to exit the menu.

5.2.1 The MAIN MENU

The following table defines the MAIN MENU features and functions.

Mode	Function
PICTURE	Set the picture parameters (contrast, brightness, color, hue, detail and reset), see Section 5.2.2
SOURCE	Select the desired input source: video, s-Video, Y, CB, CR or computer
RESOLUTION	After selecting the output type (by pressing the RGB/RESET button or via the OSD menu), select between the RGB output resolutions (VGA, SVGA, XGA, SXGA, UXGA, WXGA, WXGA+, WSXGA+) or the YPbPr output resolutions (480p, 576p, 720p or 1080i/p)
SETUP	Select the aspect, output, 3D enhance, digital NR, display and HV output (see Section 5.2.3)
INFORMATION	Displays the source, resolution and software version
EXIT	Select to exit the menu

5.2.2 The PICTURE Menu

The following table defines the PICTURE menu.

Parameter	Function	Range	Default
CONTRAST	Adjust the contrast	From 0 to 63	58
BRIGHT	Adjust the brightness	From 0 to 63	31
COLOR	Adjust the color	From 0 to 63	31
HUE	Adjust the hue	From 0 to 63	31
DETAIL	Adjust the sharpness	From 0 to 63	10
RESET	Select RESET and press ENTER to reset to the default parameters		
EXIT	Select to exit to the MAIN MENU		

5.2.3 The SETUP Menu

The following table defines the SETUP menu.

Parameter	Function
ASPECT	Select between STANDARD, 4:3 and 16:9 STANDARD outputs the signal in the same aspect ratio as the input aspect ratio. 4:3 and 16:9 always outputs as 4:3 and 16:9 respectively, regardless of the input aspect ratio
OUTPUT	Select a PC (RGB) output or an HDTV (Y, Pb, Pr) output
3D ENHANCE	Turn the 3D comb filter function ON or OFF When a video player or a non-standard video source is connected to the input, the output picture may jitter. If this occurs, turn the 3D Comb Filter to OFF.
DIGITAL NR	Turn the digital noise reduction function ON or OFF
DISPLAY	Set to ON to display the input standard and the output resolution on the screen all the time. Set to INFO to briefly display the input standard and the output resolution on the screen after a change is made Otherwise, set to OFF
HV OUTPUT	Select ON to send H and V synchronization when Y, Pb, Pr is selected for the output H and V are **always** sent when RGB is selected at the output
EXIT	Select to exit to the MAIN MENU

5.3 Using the Infra-Red Remote Control Transmitter

You can control the **VP-419xl** from the infra-red remote control transmitter, as Figure 3 defines:
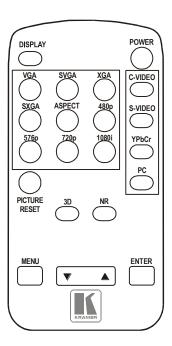

Figure 3: Infrared Remote Control Transmitter

Keys	Function
POWER	Turn power ON or OFF
DISPLAY	Turn input standard and output resolution information display ON or OFF
C-VIDEO	Select the composite video input
S-VIDEO	Select the s-Video input
YCbCr	Select the component video input
PC	Select the input PC to loop-through
VGA	Set the output resolution to 640x480
SVGA	Set the output resolution to 800x600
XGA	Set the output resolution to 1024x768
SXGA	Set the output resolution to 1280x1024
480p	Set the output resolution to 852x480p
576p	Set the output resolution to 852x576p
720p	Set the output resolution to 1280x720p
1080i	Set the output resolution to 1920x1080i
ASPECT	Select the standard, normal (4:3) or the wide (16:9) aspect ratio
PICTURE RESET	Press and hold for 2 seconds to reset all the ProcAmp settings (contrast, brightness and so on) In some versions, you need to be within the PICTURE menu to do this
3D	Turn the 3D enhance feature ON or OFF
NR	Turn the digital noise reduction feature ON or OFF
MENU	Enter the OSD menu
ENTER	Press to accept changes and to change SETUP parameters
▼ ▲	Press to adjust the picture parameters

6   Technical Specifications

INPUTS:	1 VGA/SVGA/XGA/SXGA on an 15-pin HD connector 1 composite video on an RCA connector 1 component video (Y, Cb, Cr) on RCA connectors 1 s-Video on a 4-pin YC connector
OUTPUT:	1 RGB/YPbPr on an 15-pin HD connector
OUTPUT RESOLUTIONS:	PC: VGA, SVGA, XGA, SXGA, UXGA, WXGA, WXGA+, WSXGA+, HDTV: 480p, 576p, 720p50, 720p60, 1080i50, 1080i60, 1080p50, 1080p60 Resolutions are 60Hz, except where noted.
OUTPUT REFRESH RATE:	60Hz for computer graphics resolutions, 50/60Hz for HDTV resolutions
PROCESSING DELAY:	2 frames
CONTROLS:	Front panel buttons and infrared remote for menu driven OSD control
ADDITIONAL CONTROLS:	Contrast, brightness, color, tint and sharpness; resolution, output image scaling, output mode, 3D comb filter function and aspect ratio
POWER CONSUMPTION:	12V DC, 500mA
OPERATING TEMPERATURE:	0° to +40°C (32° to 104°F)
STORAGE TEMPERATURE:	-40° to +70°C (-40° to 158°F)
HUMIDITY:	10% to 90%, RHL non-condensing
DIMENSIONS:	21.5cm x 16.3cm x 4.36cm (8.46" x 6.4" x 1.7") W, D, H
WEIGHT:	0.66kg (1.45lbs) approx.
ACCESSORIES:	Power supply, IR remote control
OPTIONS:	19" rack adapter RK-1
Specifications are subject to change without notice at http://www.kramerelectronics.com	

LIMITED WARRANTY

The warranty obligations of Kramer Electronics for this product are limited to the terms set forth below:

What is Covered

This limited warranty covers defects in materials and workmanship in this product.

What is Not Covered

This limited warranty does not cover any damage, deterioration or malfunction resulting from any alteration, modification, improper or unreasonable use or maintenance, misuse, abuse, accident, neglect, exposure to excess moisture, fire, improper packing and shipping (such claims must be presented to the carrier), lightning, power surges, or other acts of nature. This limited warranty does not cover any damage, deterioration or malfunction resulting from the installation or removal of this product from any installation, any unauthorized tampering with this product, any repairs attempted by anyone unauthorized by Kramer Electronics to make such repairs, or any other cause which does not relate directly to a defect in materials and/or workmanship of this product. This limited warranty does not cover cartons, equipment enclosures, cables or accessories used in conjunction with this product.

Without limiting any other exclusion herein, Kramer Electronics does not warrant that the product covered hereby, including, without limitation, the technology and/or integrated circuit(s) included in the product, will not become obsolete or that such items are or will remain compatible with any other product or technology with which the product may be used.

How Long Does this Coverage Last

Seven years as of this printing; please check our Web site for the most current and accurate warranty information.

Who is Covered

Only the original purchaser of this product is covered under this limited warranty. This limited warranty is not transferable to subsequent purchasers or owners of this product.

What Kramer Electronics will do

Kramer Electronics will, at its sole option, provide one of the following three remedies to whatever extent it shall deem necessary to satisfy a proper claim under this limited warranty:

1. Elect to repair or facilitate the repair of any defective parts within a reasonable period of time, free of any charge for the necessary parts and labor to complete the repair and restore this product to its proper operating condition. Kramer Electronics will also pay the shipping costs necessary to return this product once the repair is complete.

2. Replace this product with a direct replacement or with a similar product deemed by Kramer Electronics to perform substantially the same function as the original product.

3. Issue a refund of the original purchase price less depreciation to be determined based on the age of the product at the time remedy is sought under this limited warranty.

What Kramer Electronics will not do Under This Limited Warranty

If this product is returned to Kramer Electronics or the authorized dealer from which it was purchased or any other party authorized to repair Kramer Electronics products, this product must be insured during shipment, with the insurance and shipping charges prepaid by you. If this product is returned uninsured, you assume all risks of loss or damage during shipment. Kramer Electronics will not be responsible for any costs related to the removal or re-installation of this product from or into any installation. Kramer Electronics will not be responsible for any costs related to any setting up this product, any adjustment of user controls or any programming required for a specific installation of this product.

How to Obtain a Remedy under this Limited Warranty

To obtain a remedy under this limited warranty, you must contact either the authorized Kramer Electronics reseller from whom you purchased this product or the Kramer Electronics office nearest you. For a list of authorized Kramer Electronics resellers and/or Kramer Electronics authorized service providers, please visit our web site at www.kramerelectronics.com or contact the Kramer Electronics office nearest you.

In order to pursue any remedy under this limited warranty, you must possess an original, dated receipt as proof of purchase from an authorized Kramer Electronics reseller. If this product is returned under this limited warranty, a return authorization number, obtained from Kramer Electronics, will be required. You may also be directed to an authorized reseller or a person authorized by Kramer Electronics to repair the product.

If it is decided that this product should be returned directly to Kramer Electronics, this product should be properly packed, preferably in the original carton, for shipping. Cartons not bearing a return authorization number will be refused.

Limitation on Liability

THE MAXIMUM LIABILITY OF KRAMER ELECTRONICS UNDER THIS LIMITED WARRANTY SHALL NOT EXCEED THE ACTUAL PURCHASE PRICE PAID FOR THE PRODUCT. TO THE MAXIMUM EXTENT PERMITTED BY LAW, KRAMER ELECTRONICS IS NOT RESPONSIBLE FOR DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY OR CONDITION, OR UNDER ANY OTHER LEGAL THEORY. Some countries, districts or states do not allow the exclusion or limitation of relief, special, incidental, consequential or indirect damages, or the limitation of liability to specified amounts, so the above limitations or exclusions may not apply to you.

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IF ANY PRODUCT TO WHICH THIS LIMITED WARRANTY APPLIES IS A "CONSUMER PRODUCT" UNDER THE MAGNUSON-MOSS WARRANTY ACT (15 U.S.C.A. §2301, ET SEQ.) OR OTHER APPICABLE LAW, THE FOREGOING DISCLAIMER OF IMPLIED WARRANTIES SHALL NOT APPLY TO YOU, AND ALL IMPLIED WARRANTIES ON THIS PRODUCT, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR THE PARTICULAR PURPOSE, SHALL APPLY AS PROVIDED UNDER APPLICABLE LAW.

Other Conditions

This limited warranty gives you specific legal rights, and you may have other rights which vary from country to country or state to state.

This limited warranty is void if (i) the label bearing the serial number of this product has been removed or defaced, (ii) the product is not distributed by Kramer Electronics or (iii) this product is not purchased from an authorized Kramer Electronics reseller. If you are unsure whether a reseller is an authorized Kramer Electronics reseller, please visit our Web site at www.kramerelectronics.com or contact a Kramer Electronics office from the list at the end of this document.

Your rights under this limited warranty are not diminished if you do not complete and return the product registration form or complete and submit the online product registration form. Kramer Electronics thanks you for purchasing a Kramer Electronics product. We hope it will give you years of satisfaction.

For the latest information on our products and a list of Kramer distributors, visit our Web site where updates to this user manual may be found.

We welcome your questions, comments, and feedback.

Web site: www.kramerelectronics.com
E-mail: info@kramerel.com

CE

ISO 9001:2008
IQC

! SAFETY WARNING
Disconnect the unit from the power supply before opening and servicing