KRAMER ELECTRONICS LTD.

USER MANUAL

MODEL:

VP-501N
UXGA Scan Converter

P/N: 2900-300183 Rev 5

VP-501N 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

☑ The **VP-501N** UXGA Scan Converter   ☑ 1 Quick start guide
☑ 1 power adapter (12V DC input)
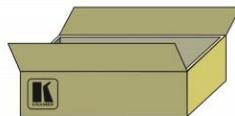
Save the original box and packaging materials in case your Kramer product needs to be returned to the factory for service.

Step 2: Install the VP-501N

Mount the **VP-501N** in a rack (using the optional RK-3T rack adapter) or place on a table.

Step 3: Connect the inputs and outputs

Always switch off the power to each device before connecting them to your **VP-501N**.
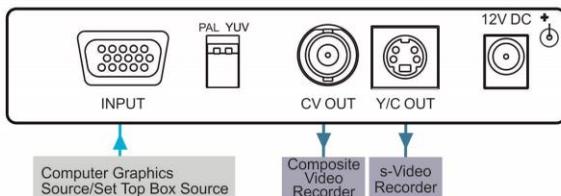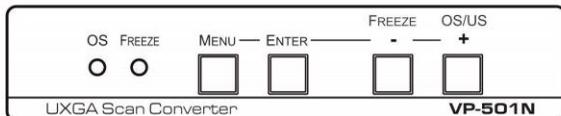

For best results, we recommend that you always use Kramer high-performance cables to connect AV equipment to your **VP-501N**.

Step 4: Connect the power

Connect the 12V DC power adapter to your **VP-501N** and plug the adapter into the mains electricity.

Step 5: Operate the VP-501N

Set the parameters using the front panel buttons and the On-screen Display (OSD):

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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 Video Products.

Congratulations on purchasing your Kramer TOOLS® **VP-501N** *UXGA Scan Converter.* The **VP-501N** is ideal for:

- Multimedia, board rooms, and video-conferencing
- Any application where high-quality conversion of graphical data signals to video signals is required

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-501N** 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 **VP−501N** is a scan converter for computer graphics and HDTV component video signals. It converts the input up to UXGA (1600x1200) and HDTV (1080p) to composite and s−Video (Y/C) signals simultaneously in either PAL or NTSC formats.

In particular, the **VP-501N** features:

- User-friendly front panel buttons for easy control of ProcAmp functions, flicker-reduction, image optimization, one-touch freezing, over-scanning and under-scanning

- Memory locations to save and recall up to four setups, including picture setup (brightness, contrast, saturation and flicker filter), input setup and output setup, zoom and advanced features

- Simultaneous high-quality composite video and s-Video (Y/C)

- Selectable video standard (PAL or NTSC)

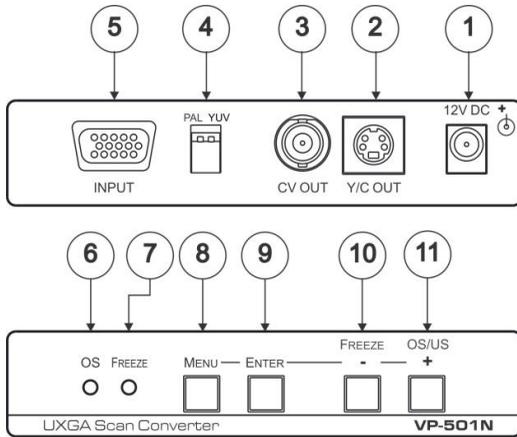- 12V DC power

3.1 Defining the VP-501N UXGA Scan Converter

Figure 1: VP-501N UXGA Scan Converter

#	Feature	Function
1	*12V DC* Power Connector	+12V DC connector for powering the unit
2	*Y/C OUT* 4-pin Connector	Connects to the s-Video acceptor
3	*CV OUT* BNC Connector	Connects to the composite video acceptor
4	PAL/YUV DIP-switch	Selects the video standard (OFF for PAL, ON for NTSC) and the color space standard (OFF for YUV, ON for RGB), see Section 5.6
5	*INPUT* 15-pin HD Connector	Connects to the computer graphics source
6	OS LED	Lights when the image is over-scanned The displayed image, when set correctly, is larger than the screen
7	FREEZE LED	Lights when the FREEZE button is pressed
8	MENU Button	Press to enter the menu and adjust the Scan Converter features
9	ENTER	Press ENTER to accept the settings
10	- / FREEZE Button	Press - to scroll down the menu; press FREEZE to freeze the video image and features. Press again to disable
11	+ / OS/US	Press + to scroll up the menu; press OS/US to toggle between over-scan and under-scan The image is smaller than the screen, leaving a border around the image

3.2 Input Resolutions

The **VP-501N** supports the following resolutions:

Supported Input Resolutions	
Resolution (VGA)	**Refresh Rate (Hz)**
640x480	60
800x600	60
1024x768	60
1152x864	75
1280x800	60
1280x1024	60
1280x1024	75
1366x768	60
1440x900	60
1400x1050	60
1600x1200	60
Resolution (Component)	**Refresh Rate (Hz)**
1080i	60
1080i	50
1080p	60
1080p	50
720p	60
720p	50
480p	60
576p	50

4 Connecting the VP-501N UXGA Scan Converter

Always switch OFF the power on each device before connecting it to your **VP-501N**. After connecting your **VP-501N**, connect its power and then switch on the power on each device.

To connect the **VP-501N**, as the example in Figure 2 shows, do the following:

1. Connect a computer graphics source to the 15-pin HD INPUT connector (for example, a PC as shown in Figure 2), or alternatively, connect a high definition source to the 15-pin HD INPUT connector (for example, a set top box as shown in Figure 3).
   To connect a high definition source, use a breakout cable such as the Kramer C-GM/3RVF. If you have a VGA to a 5BNC cable, use the RGB wires only.

2. Connect the Y/C OUT 4-pin connector to the Y/C acceptor (for example, an s-Video recorder) and/or the CV OUT BNC connector to the CV acceptor (for example, a composite video recorder).

3. Set the DIP-switches (see Section 5.6).

4. Connect the 12V DC power adapter to the power socket and connect the adapter to the mains electricity.

5. Adjust the scan converter features if required (see Section 5.2).

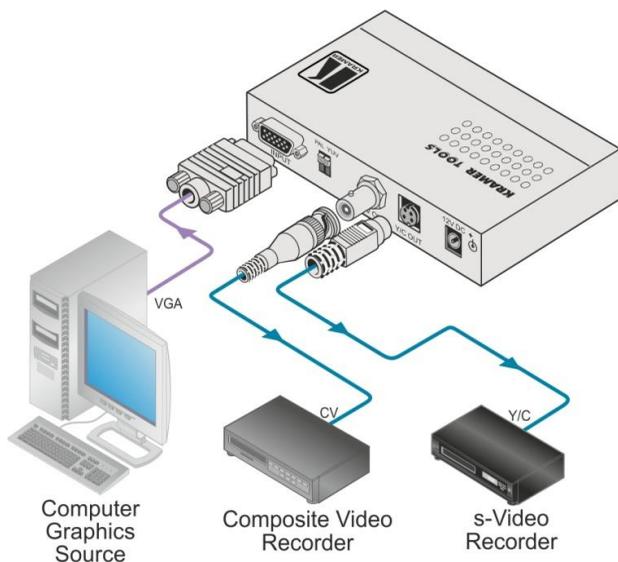Figure 2: Connecting a Computer Graphics Source to the VP-501N

INPUT Connector PINOUT

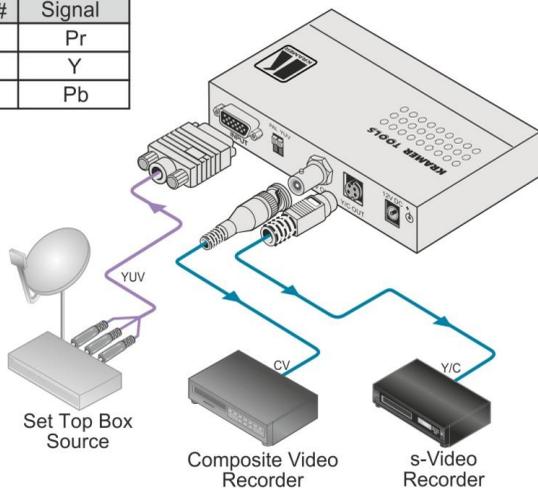| PIN #	Signal
1	Pr
2	Y
3	Pb

Figure 3: Connecting a High-Definition Source to the VP-501N

5 Operating the VP-501N UXGA Scan Converter

You can operate your **VP-501N** via the front panel buttons that function as:

- User-friendly front panel buttons for easy control of ProcAmp functions, flicker-reduction, image optimization, one-touch freezing, over-scanning and under-scanning

- Menu buttons: MENU, ENTER, – and +; or

- Quick-set buttons: FREEZE and OS/US (dual-purpose buttons)

This section describes how to:

- Use the quick-set buttons (see Section 5.1)

- Use the set of menu buttons (see Section 5.2)

- Use the Menu screen (see Section 5.3)

- Use the test patterns (see Section 5.4)

- Save and recall (see Section 5.5)

- Set the DIP-switches (see Section 5.6)

5.1 Using the Quick-Set Buttons

The following sub-sections describe the **VP-501N** quick set buttons.

5.1.1 Using the FREEZE Button

Press the FREEZE button to freeze the picture on the screen. The frozen picture is displayed regardless of the signal on the input to the unit. This lets you, for example, change the programs on the PC, and set up the next image.

By pressing the FREEZE button again, the frozen image will be replaced by the most current image on the input to the unit.

5.1.2 Using the OS/US Button

Press the OS/US button to toggle between over-scan and under-scan:

- Over-scan omits the border. The displayed image, when set correctly, is larger than the screen

  Making the data bigger and easier to read but running the risk of having some of it run off the edge of the screen

- Under-scan (sometimes know as the Compress mode) leaves a border around the image

  The image appears reduced in size with a margin around it so that none of the data gets lost

Over-scan   Under-scan

Figure 4: Over-scanned and Under-scanned images

5.2 Adjusting the Display via the Menu Buttons

The set of menu buttons (MENU, ENTER, − and +) let you adjust the screen settings. Use the menu buttons as follows:

- Press the MENU button to display the menu on the screen
  Pressing the MENU button disables the quick-set buttons (AUTO IMAGE, FREEZE and OS/US)

- Press the MENU button again each time you want to return to the previous menu level or exit the menu

- Press the + or - buttons to move up or down the menu respectively and select a parameter within the sub-menu

- Press ENTER to enter a sub-menu, save a setup and confirm factory reset

5.3 Using the Menu

Using the main menu, you can adjust the screen display (screen adjustments apply to both CV and Y/C displays). After pressing the MENU button (quick set-buttons are disabled), the main Menu (the menu times-out after 20 seconds of inactivity) appears on the screen. Use the menu buttons to scroll through the menu and make the required adjustments. Section 5.3.1 defines the menu items.

5.3.1 Menu Items

Menu Items	Function
Picture Setup	**Contrast** – set the contrast **Brightness** – set the brightness **Sharpness** – set the sharpness of the picture **Saturation** – set the color saturation **Flicker Filter** – set the flicker filter to reduce flickering The flicker filter essentially blends the value of vertically adjacent pixels to decrease the differences in adjacent odd/even lines. This dramatically reduces the noticeable image flicker, but equally as noticeably reduces the level of vertical detail as compared to the original computer display **Phase** – set the clock phase **Frequency** – set the clock sampling frequency
TV Output Setup	Set the **H Center**, **H Width**, **V Center** and **V Height** levels
VGA Input Setup	Set the **VGA Left**, **VGA Width**, **VGA Top** and **VGA Bottom** levels
Zoom	**Zoom** – set to ON to zoom the image; **H Pan** – when the zoom is ON, pan the horizontal position **V Pan** – when the zoom is ON, pan the vertical position
Advanced	**Test Pattern** – select from seven different test patterns (see Figure 5) **No Input** – select a test pattern to appear when no input is connected **Save** – save up to four setups **Recall** – recall one of the four saved setups **Factory reset**
Information	Displays the signal and the software version

5.4 Using the Test Patterns

The Advanced menu lets you select Test Patterns and Save and Recall setups. The **VP-501N** stores seven test patterns. From the Advanced menu, you can select a test pattern (from 1 to 7) to show on screen. Figure 5 shows one of the available test patterns.
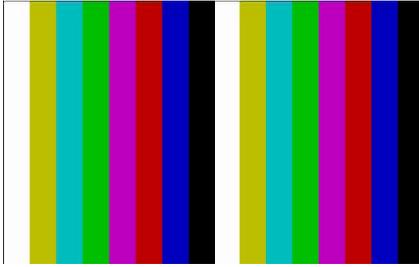
Figure 5: Test Pattern Example

You can set a test pattern to appear on the screen when there is no input connected to the **VP-501N**. To do so, enter the Advanced menu, select No Input and set a test pattern number. This test pattern will appear when there is no input connected.

5.5 Saving and Recalling

The **VP-501N** lets you save and recall up to four setups (from 0 to 3). The Save mode stores all the menu settings in one of the four Save setup numbers.

Saving Through the Advanced Menu

To save setup 1, for example:

1. Adjust the Picture Setup, the VGA Input Setup, the TV Output Setup, the Zoom and panning, and the No Input number.

2. In the Advanced menu, select Save and set to number 1.

3. Press ENTER.
   The setup is saved.

 When disconnecting the unit, the setup that was saved last will be stored and will reappear when connecting the unit once again.

Consider the following sequence, for example:

- A certain setup is saved to 1

- A different setup is saved to 2

- Setup 1 is recalled

- The unit is disconnected

- The unit is reconnected

- Setup 2 appears (since it was saved last)

5.5.1 Saving When Exiting the Menu

Whenever a change to the setup is made, you are prompted to save the changes (the Save Setting item does not timeout, it remains until No or Yes is selected), be it recalling a different setup, or changing the Zoom mode:

- Select No to cancel setup changes

- Select Yes to save setup changes
  Changes are saved to the setup number currently appearing next to the Save item (note that your setup will be saved to one of the four setups and overwrites the previous setup associated with this setup number)

5.5.2 Recalling a Setup

To recall a setup select Recall from the advanced menu and select the setup number you want to recall.

5.6 Setting the DIP-Switches

Figure 6 describes the factory default DIP-switches setting for the **VP-501N**:

PAL YUV

Figure 6: VP-501N DIP-Switches

DIP	Function	Description
1	PAL/NTSC	Determines the video standard to be used: to select PAL, set to OFF (up) to select NTSC, set to ON (down)
2	YUV/RGB	Determines the input color space to be used: to select YUV, set to OFF (up) to select RGB, set to ON (down)

6 Technical Specifications

INPUT:	1 x VGA/UXGA, analog component HD on an 15-pin HD connector
OUTPUTS:	1 composite video 1Vpp/75Ω on a BNC connector 1 Y/C (s-Video) 1Vpp/75Ω (Y), 0.3Vpp/75Ω (C) on a 4-pin connector
MAX. OUTPUT LEVEL:	VGA up to UXGA; 480p, 576p, 720p, 1080p
CONTROLS:	Front panel and OSD: ProcAmp video controls, freeze, underscan / overscan, 8 color bars
POWER CONSUMPTION:	12V DC, 380mA
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:	12cm x 7.5cm x 2.5cm (4.7" x 2.95" x 0.98", W, D, H)
WEIGHT:	0.3kg (0.67lbs) approx.
ACCESSORIES:	Power supply, mounting bracket
OPTIONS:	19" rack adapter RK-3T
Specifications are subject to change without notice Go to our Web site at http://www.kramerelectronics.com to access the list of resolutions	

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.

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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

$C\,E$

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

P/N: 2900-300183   Rev: 5