Kramer Electronics, Ltd.

USER MANUAL

Models:

VP-501xl, *UXGA Scan Converter*

VP-502xl, *UXGA/HD Scan Converter*
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 the video, audio, presentation, and broadcasting professional 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\(^1\) that are clearly defined by function.

Thank you for purchasing the Kramer **VP-501xl UXGA Scan Converter/VP-502xl UXGA/HD Scan Converter**. This product is ideal for:

- Multimedia, board rooms, and video conferencing
- Any application where high quality conversion of graphical data signals to video signals is required
- Set-top box and HD conversion to SD video (**VP-502xl**)

The package includes the following items:

- **VP-501xl UXGA Scan Converter** or **VP-502xl UXGA/HD Scan Converter**
- Power adapter (12V DC Input)
- This user manual\(^2\)

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
- Use Kramer high performance high-resolution cables\(^3\)

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\(^1\) 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; GROUP 11: Sierra Products

\(^2\) Download up-to-date Kramer user manuals from our Web site at [http://www.kramerelectronics.com](http://www.kramerelectronics.com)

\(^3\) The complete list of Kramer cables is on our Web site at [http://www.kramerelectronics.com](http://www.kramerelectronics.com)
3 Overview

The Kramer **VP-501xl** is a high-quality scan converter for down-scaling computer graphics (VGA up to UXGA) to PAL or NTSC video.

The Kramer **VP-502xl** is a high-quality scan converter for down-scaling computer graphics and HD to PAL or NTSC video. It supports VGA up to UXGA, as well as the HD resolutions: 480p, 576p, 720p and 1080i. The input color space (RGB or YUV) is selected via a DIP-switch.\(^1\)

The high quality **VP-501xl/VP-502xl** 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\(^2\), input setup and output setup, zoom and advanced features
- Simultaneous high-quality composite video and s-Video (Y/C)
- Selectable the video standard (PAL or NTSC)
- An external 12V DC source

To achieve the best performance:

- Connect only good quality connection cables, thus avoiding interference, deterioration in signal quality due to poor matching, and elevated noise- levels (often associated with low quality cables)
- Avoid interference from neighboring electrical appliances and position your Kramer **VP-501xl/VP-502xl** away from moisture, excessive sunlight and dust

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1 See section 8.6
2 Brightness, contrast, saturation and flicker filter
Your VP-501xl

Figure 1 and Table 1 describe the VP-501xl.

![Figure 1: VP-501xl UXGA Scan Converter](image)

### Table 1: VP-501xl Features

<table>
<thead>
<tr>
<th>#</th>
<th>Feature</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12V DC</td>
<td>+12V DC connector for powering the unit</td>
</tr>
<tr>
<td>2</td>
<td>Y/C OUT 4-pin Connector</td>
<td>Connect to the s-Video acceptor</td>
</tr>
<tr>
<td>3</td>
<td>CV OUT BNC Connector</td>
<td>Connect to the composite video acceptor</td>
</tr>
<tr>
<td>4</td>
<td>PAL DIP-switch</td>
<td>Select the video standard (ON for PAL, OFF for NTSC) (see section 8.6)</td>
</tr>
<tr>
<td>5</td>
<td>INPUT 15-pin HD Connector</td>
<td>Connect to the computer graphics source</td>
</tr>
<tr>
<td>6</td>
<td>OS LED</td>
<td>Lights when the image is over-scanned(^1)</td>
</tr>
<tr>
<td>7</td>
<td>FREEZE, LED</td>
<td>Lights when the FREEZE button is pressed</td>
</tr>
<tr>
<td>8</td>
<td>MENU Button</td>
<td>Press to enter the menu and adjust the Scan Converter features</td>
</tr>
<tr>
<td>9</td>
<td>ENTER/AUTO IMAGE Button(^2)</td>
<td>Press ENTER to accept the settings; press AUTO IMAGE to acquire optimal screen display</td>
</tr>
<tr>
<td>10</td>
<td>- / FREEZE Button(^2)</td>
<td>Press - to scroll down the menu; press FREEZE to freeze the video image and features. Press again to disable</td>
</tr>
<tr>
<td>11</td>
<td>+ / OS/US Button(^2)</td>
<td>Press + to scroll up the menu; press OS/US to toggle between over-scan(^1) and under-scan(^3)</td>
</tr>
</tbody>
</table>

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1 The displayed image, when set correctly, is larger than the screen
2 This button has dual functionality. When in the MENU mode, it functions according to the labeling above the button. When not in the MENU mode, the labeling below the button takes precedence
3 The image is smaller than the screen, leaving a border around the image
Your VP-502xl

Figure 2 and Table 2 describe the VP-502xl.

![Figure 2: VP-502xl UXGA/HD Scan Converter](image)

Table 2: VP-502xl Features

<table>
<thead>
<tr>
<th>#</th>
<th>Feature</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>12V DC</td>
<td>+12V DC connector for powering the unit</td>
</tr>
<tr>
<td>2</td>
<td>Y/C OUT 4-pin Connector</td>
<td>Connect to the s-Video acceptor</td>
</tr>
<tr>
<td>3</td>
<td>CV OUT BNC Connector</td>
<td>Connect to the composite video acceptor</td>
</tr>
<tr>
<td>4</td>
<td>YUV, PAL DIP-switches</td>
<td>Select the video standard (ON for PAL, OFF for NTSC) and the color space (ON for YUV, OFF for RGB) (see section 8.6)</td>
</tr>
<tr>
<td>5</td>
<td>INPUT 15-pin HD Connector</td>
<td>Connect to the computer graphics or HD source</td>
</tr>
<tr>
<td>6</td>
<td>OS LED</td>
<td>Lights when the image is over-scanned¹</td>
</tr>
<tr>
<td>7</td>
<td>FREEZE. LED</td>
<td>Lights When the FREEZE button is pressed</td>
</tr>
<tr>
<td>8</td>
<td>MENU Button</td>
<td>Press to enter the menu and adjust the Scan Converter features</td>
</tr>
<tr>
<td>9</td>
<td>ENTER / AUTO IMAGE Button²</td>
<td>Press ENTER to accept settings; press AUTO IMAGE to acquire optimal screen display</td>
</tr>
<tr>
<td>10</td>
<td>- / FREEZE Button</td>
<td>Press - to scroll down the menu; press FREEZE to freeze video image and features. Press again to disable</td>
</tr>
<tr>
<td>11</td>
<td>+ / OS/US Button</td>
<td>Press + to scroll up the menu; press OS/US to toggle between over-scan³ and under-scan³</td>
</tr>
</tbody>
</table>

1 The displayed image, when set correctly, is larger than the screen
2 This button has dual functionality. When in the MENU mode, it functions according to the labeling above the button. When not in the MENU mode, the labeling below the button takes precedence
3 The image is smaller than the screen, leaving a border around the image
Connecting the VP-501xl

To connect your **VP-501xl** as the example in Figure 3 illustrates, do the following:

1. Connect a computer graphics source to the 15-pin HD INPUT connector.
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 8.6).
4. Connect the 12V DC power adapter to the power socket and connect the adapter to the mains electricity.

Adjust the scan converter features if required (see section 8.3).

*Figure 3: Connecting the VP-501xl*

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1 Switch OFF the power on each device before connecting it to your VP-501xl. After powering up your VP-501xl, switch on the power on each device.
7 Connecting the VP-502xl

To connect your VP-502xl as the example in Figure 4 illustrates, do the following:\n
1. Connect a computer graphics source to the 15-pin HD INPUT connector (for example, a PC as shown in Figure 4), or alternatively, connect a high definition source to the 15-pin HD INPUT connector (for example, a set top box as shown in Figure 5).

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 8.6).

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

Adjust the scan converter features if required (see section 8.3).

---

1 Switch OFF the power on each device before connecting it to your VP-502xl. After powering up your VP-502xl, switch on the power on each device.

2 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.
8 Operating the VP-501xl/VP-502xl

You can operate your VP-501xl/VP-502xl via the front panel buttons, which are dual-purpose buttons¹ that function as:

- Quick-set buttons: AUTO IMAGE, FREEZE and OS/US; or
- Menu buttons: MENU, ENTER, – and +

This section describes how to:

- Use the quick set buttons (see section 8.1)
- Use the set of menu buttons (see section 8.2)
- Use the Menu screen (see section 8.3)
- Use the test patterns (see section 8.4)
- Save and recall (see section 8.5)
- Set the DIP-switches (see section 8.6)

¹ Except for the MENU button
8.1 Using the Quick-Set Buttons

The following sub-sections describe the VP-501xl and VP-502xl quick set buttons.

8.1.1 Using the AUTO IMAGE Button

The VP-501xl/VP-502xl assesses the image and improves the quality, by automatically adjusting the phase, frequency and position, when the AUTO IMAGE button is pressed.

For example, if your computer application switches resolutions (and frequency), press the AUTO IMAGE button to automatically improve the picture quality.

8.1.2 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 allows you, for example, to 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.

8.1.3 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\(^1\)
- Under-scan (sometimes know as the Compress mode) leaves a border around the image\(^2\)

![Over-scan](image1.png)  ![Under-scan](image2.png)

*Figure 6: Over-scanned and Under-scanned images*

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1 Making the data bigger and easier to read but running the risk of having some of it run off the edge of the screen
2 The image appears reduced in size with a margin around it so that none of the data gets lost
8.2 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
- 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
- Press ENTER to accept changes
- Before exiting the menu, you can save settings

8.3 Using the Menu

Using the main menu, you can adjust the screen display. After pressing the MENU button, the main Menu appears on the screen. Use the menu buttons to scroll through the menu and make the required adjustments. Table 3 defines the menu items.

Table 3: VP-501xl/VP-502xl Menu Items

<table>
<thead>
<tr>
<th>Menu Items</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Picture Setup</td>
<td>Set the Contrast, Brightness, Sharpness and Saturation levels;</td>
</tr>
<tr>
<td></td>
<td>Set the Flicker Filter for flicker reduction</td>
</tr>
<tr>
<td>TV Output Setup</td>
<td>Set the H Center, H Width, V Center and V Height levels</td>
</tr>
<tr>
<td>VGA Input Setup</td>
<td>Set the VGA Left, VGA Width, VGA Top and VGA Bottom levels</td>
</tr>
<tr>
<td>Zoom</td>
<td>Set the zoom to ON to zoom the image; when the zoom is selected, pan the H and V position</td>
</tr>
<tr>
<td>Advanced</td>
<td>Select from seven different Test Patterns (for example, see Figure 7);</td>
</tr>
<tr>
<td></td>
<td>Select a test pattern to appear when no input is connected; and</td>
</tr>
<tr>
<td></td>
<td>Save up to 4 setups and recall them</td>
</tr>
<tr>
<td>Information</td>
<td>Verifies the V Total Line, the H Timing, V Timing, and the software version</td>
</tr>
</tbody>
</table>

1 Pressing the MENU button disables the quick-set buttons (AUTO IMAGE, FREEZE and OS/US)
2 See section 8.5
3 Screen adjustments apply to both CV and Y/C displays
4 Quick set-buttons are disabled
5 The menu times-out after 20 seconds of inactivity
6 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.
7 To have a recalled setup appear after power cycling, you have to save that recalled setup once again before powering down the unit, since the unit “remembers” the last setting that was saved
8.4 Using Test Patterns

The Advanced menu lets you select Test Patterns and Save and Recall setups.

The VP-501xl/VP502xl stores 7 test patterns. From the Advanced menu, you can select a test pattern (from 1 to 7) to show on screen. Figure 7 shows test pattern number 1.

![Figure 7: Test Pattern Number 1](image)

You can set a test pattern to appear on the screen when there is no input connected to the VP-501xl/VP502xl. 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. For example, set No Input to 1 if you want test pattern 1 (as in Figure 7) to appear when there is no input connected to the unit.

8.5 Saving and Recalling

The VP-501xl/VP-502xl 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 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.

---

1 The Save mode saves the Picture setup, the TV Output setup, the VGA Input Setup, the Zoom setup, and the advanced setup (test patterns)
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)

8.5.1 Saving When Exiting the Menu

Whenever a change in the setup is performed, you are prompted to save the changes\(^1\), be it recalling a different setup, or changing the Zoom mode:

- Select No to cancel setup changes
- Select Yes to save setup changes.
  Changes will be saved to the setup number currently appearing next to the Save item\(^2\)

8.5.2 Recalling a Setup

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

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\(^1\) The Save Setting item does not timeout, it remains until No or Yes is selected

\(^2\) You should be aware that your setup will be saved to one of the 4 setups and will overwrite the previous setup associated with this setup number
8.6 Setting the DIP-Switches

Figure 8 and Table 4 describe the factory default DIP-switches setting for the VP-501xl:

![DIP-Switches](image)

**Figure 8: VP-501xl DIP-Switches**

<table>
<thead>
<tr>
<th>DIP</th>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1   | PAL/NTSC | Determines the video standard to be used:  
|     |          | Set to ON (down) to select PAL  
|     |          | Set to OFF (up) to select NTSC |
| 2   | N.U.     | Not Used    |

Table 4: VP-501xl DIP-Switch Settings

Figure 9 and Table 5 describe the factory default DIP-switches setting for the VP-502xl:

![DIP-Switches](image)

**Figure 9: VP-502xl DIP-Switches**

<table>
<thead>
<tr>
<th>DIP</th>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1   | PAL/NTSC | Determines the video standard to be used:  
|     |          | Set to ON (down) to select PAL  
|     |          | Set to OFF (up) to select NTSC |
| 2   | YUV/RGB  | Determines the input color space to be used:  
|     |          | Set to ON (down) to select YUV  
|     |          | Set to OFF (up) to select RGB |

Table 5: VP-502xl DIP-Switch Settings
9 Technical Specifications

Table 6 includes the technical specifications.

Table 6: Technical Specifications\(^1\) of the VP-501xl/VP-502xl

| INPUTS:                               | VP-501xl: 1 x VGA/UXGA on a 15-pin HD connector |
|                                       | VP-502xl: 1 x VGA/UXGA, analog component HD on an 15-pin HD connector |
| OUTPUTS:                              | 1 composite video 1Vpp/75\(\Omega\) on a BNC connector |
|                                       | 1 Y/C (s-Video) 1Vpp/75\(\Omega\) (Y), 0.3Vpp/75\(\Omega\) (C) on a 4-pin connector |
| MAX. OUTPUT LEVEL:                    | 1Vpp |
| INPUT RESOLUTIONS:                    | VP-501xl: VGA up to UXGA |
|                                       | VP-502xl: VGA up to UXGA; 480p, 576p, 720p, 1080i (for 1080i, does not support 50Hz) |
| CONTROLS:                             | Front panel and OSD: ProcAmp video controls, Freeze, Underscan / Overscan, Auto-image, 8 color bars |
| POWER SOURCE:                         | 12V DC, 270mA |
| DIMENSIONS:                           | 12cm x 7.5cm x 2.5cm (4.7” x 2.95” x 0.98”, W, D, H) |
| WEIGHT:                               | 0.3 kg. (0.67 lbs.) approx |
| ACCESSORIES:                          | Power supply, mounting bracket |
| OPTIONS:                              | 19” rack adapters RK-T1, RK-T3 ; VGA to 3RCA breakout cable C-GM/3RVF |

\(^1\) Specifications are subject to change without notice
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 owner), 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 workmanship of this product. This limited warranty does not cover cartons, equipment enclosures, cables or accessories used in conjunction with this product.

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 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 bear 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.

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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 setup up this product, any adjustment of user controls or any programming required for a specific installation of this product.

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In order to pursue any remedy under this 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.

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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: [www.kramerelectronics.com](http://www.kramerelectronics.com) where updates to this user manual may be found.  
We welcome your questions, comments and feedback.

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**Safety Warning:**
Disconnect the unit from the power supply before opening/servicing.

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