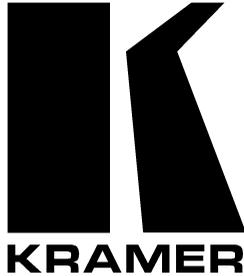


**Kramer Electronics, Ltd.**



# **USER MANUAL**

**Model:**

**VP-100**

*VGA/XGA to RGBHV Converter*

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## 1 Introduction

Welcome to Kramer Electronics (since 1981): a world of unique, creative and affordable solutions to the infinite range of problems that confront the video, audio and presentation professional on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better! Our 500-plus different models now appear in 8 Groups<sup>1</sup>, which are clearly defined by function.

Congratulations on purchasing your Kramer TOOLS **VP-100** *VGA/XGA to RGBHV Converter*. This product is ideal for the following typical applications:

- Any professional display system requiring up to UXGA signal splitting and conversion to BNC connectors
- Long distance graphics signal distribution

The package includes the following items:

- **VP-100** *VGA/XGA to RGBHV Converter*
- Power adapter (12V DC Input)
- This user manual

## 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<sup>2</sup>
- Use Kramer high performance high resolution cables<sup>3</sup>

### 2.1 Quick Start

This quick start chart summarizes the basic setup and operation steps.

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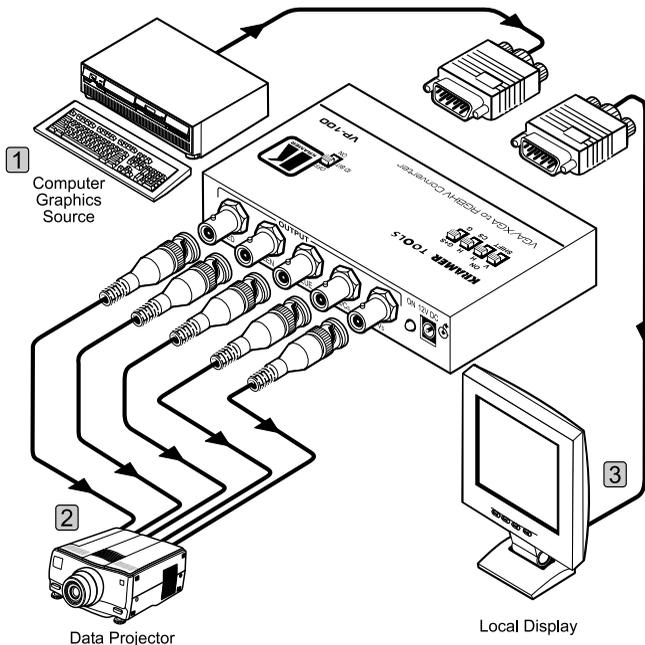
<sup>1</sup> GROUP 1: Distribution Amplifiers; GROUP 2: Video and Audio Switchers, Matrix Switchers and Controllers; GROUP 3: Video, Audio, VGA/XGA Processors; GROUP 4: Interfaces and Sync Processors; GROUP 5: Twisted Pair Interfaces; GROUP 6: Accessories and Rack Adapters; GROUP 7: Scan Converters and Scalers; and GROUP 8: Cables and Connectors

<sup>2</sup> Download up-to-date Kramer user manuals from the Internet at this URL: <http://www.kramerelectronics.com>

<sup>3</sup> The complete list of Kramer cables is on our Web site at <http://www.kramerelectronics.com>

**Step 1: Connect the input and the outputs - see section 5**

- 1 Connect a computer graphics source to the INPUT
- 2 Connect the OUTPUT to an RGBHV acceptor
- 3 Connect the LOOP connector to a local display

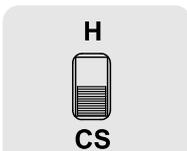


**Step 2: Set the switches - see section 5**

Set to ON to enable the V SHIFT potentiometer



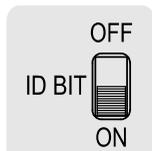
Set to ON to enable the H SHIFT potentiometer



Set to:  
• H: horizontal sync  
• CS: composite sync



Set to:  
• G + S: green and sync  
• G: green



Set the ID Bit switch

**Step 3: Connect the power**

### 3 Overview

The **VP-100 VGA/XGA to RGBHV Converter** is a high performance format converter for computer graphics video signals. It converts a computer graphics video signal on a 15-pin HD connector to either RGBS, RGSB, or RGBHV video signals on BNC connectors and simultaneously outputs it to an RGBHV acceptor and a local display.

In particular, the **VP-100**:

- Provides local monitor loop-through, buffering, amplification, and sync processing for remote acceptor applications
- Accepts all typical graphic modes, including VGA, SVGA, XGA, SXGA, and UXGA and outputs RGSB, RGBS, or RGBHV
- Has a bandwidth of 350MHz that ensures transparent operation at multiple resolutions including UXGA
- Allows looping with a termination switch
- Includes cable EQ. control, Hs and Vs shift control and ID BIT control

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 **VP-100** away from moisture, excessive sunlight and dust



**Caution** – No operator-serviceable parts inside unit.

**Warning** – Use only the Kramer Electronics input power wall adapter that is provided with this unit<sup>1</sup>.

**Warning** – Disconnect power and unplug unit from wall before installing or removing device or servicing unit.

<sup>1</sup> For example: model number AD2512C, part number 2535-000251

## 4 Your VP-100 VGA/XGA to RGBHV Converter

Figure 1 and Table 1 define the **VP-100**:

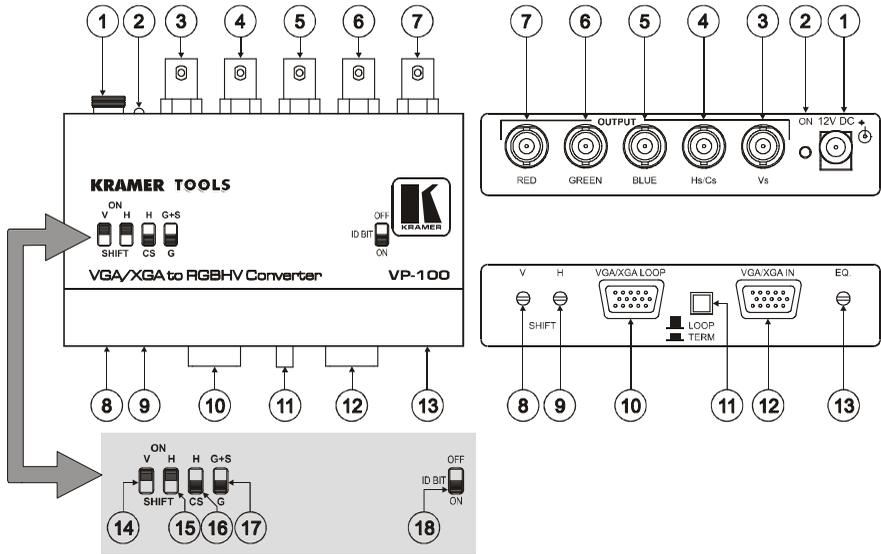


Figure 1: VP-100 VGA/XGA to RGBHV Converter

Table 1: Features and Functions of the VP-100 VGA/XGA to RGBHV Converter

#	Feature	Function	
1	12V DC	+12V DC connector for powering the unit	
2	ON LED	Illuminates when receiving power	
3	OUTPUT BNC Connectors	Vs	Connect the vertical sync BNC connector <sup>1</sup> to the Vs video acceptor
4		Hs/Cs	Connect the Horizontal or composite sync <sup>2</sup> BNC connector <sup>1</sup> to the Hs/Vs video acceptor
5		BLUE	Connect the amplified and buffered BLUE signal to the B video acceptor
6		GREEN	Connect the amplified and buffered GREEN signal to the G video acceptor. When item 17 is set to G+S, the GREEN BNC connector includes sync <sup>3</sup>
7		RED	Connect the amplified and buffered RED signal to the R video acceptor
8	V SHIFT Potentiometer	Adjust the vertical display to compensate for delay problems due to long and/or unequal cables (when item 14 is ON)	
9	H SHIFT <sup>4</sup> Potentiometer	Adjust the horizontal display to compensate for delay problems due to long and/or unequal cables (when item 15 is ON)	
10	VGA/XGA LOOP HD15F Connector	Connect to an additional acceptor to increase output availability	
11	LOOP TERM Button	Release to the LOOP position if the VGA/XGA LOOP output (item 10) is connected to an acceptor; press to the TERM position if is not connected	
12	VGA/XGA IN HD15F Connector	Connect to a computer graphics source	
13	EQ. <sup>5</sup> Potentiometer	Adjust the cable equalization of the BNC outputs	
14	SHIFT Switch	V (ON)	Slide the switch upward (ON) to enable the vertical sync potentiometer (item 8)
15		H (ON)	Slide the switch upward (ON) to enable the horizontal sync potentiometer (item 9)
16	H / CS Switch	Slide the switch upward (H) to select horizontal sync, slide downward (CS) to select composite sync at the Hs/Cs BNC connector (item 4)	
17	G+S or G Switch	Slide the switch upward (G+S) to select Green + Sync, slide downward (G) to select Green at the GREEN BNC connector (item 6)	
18	ID BIT Switch	Slide the switch upward to set to ON <sup>6</sup> ; slide downward to set to OFF	

1 For amplified and buffered sync output

2 As determined by the switch (item 16)

3 Some machine formats include the vertical and horizontal sync on the GREEN signal

4 Data delay problems, especially with long RGBHV cables, occur when electronic signals travel via coaxial cable and the picture shifts mainly in the horizontal axis (due to unequal delays between the sync signals and data). Center the picture by adjusting the potentiometers for Vertical and Horizontal sync

5 Degradation and VGA/XGA signal loss can result from using long cables (due to stray capacitance), sometimes leading to a total loss of sharpness in high-resolution signals

6 The default. Enabling the notebook or laptop to output a VGA signal to an external VGA monitor

## 5 Connecting the VP-100

To connect the **VP-100**, as illustrated in the example in Figure 2, do the following:

1. Connect a graphic source (for example, a computer graphics source) to the VGA/XGA IN HD15F connector.
2. Connect the VGA/XGA LOOP HD15F connector to an acceptor (for example, a local display) and release the LOOP TERM switch<sup>1</sup>.
3. Connect the 5 OUTPUT BNC connectors (Vs, Hs/Cs, BLUE, GREEN, and RED) to an acceptor (for example, a data projector).

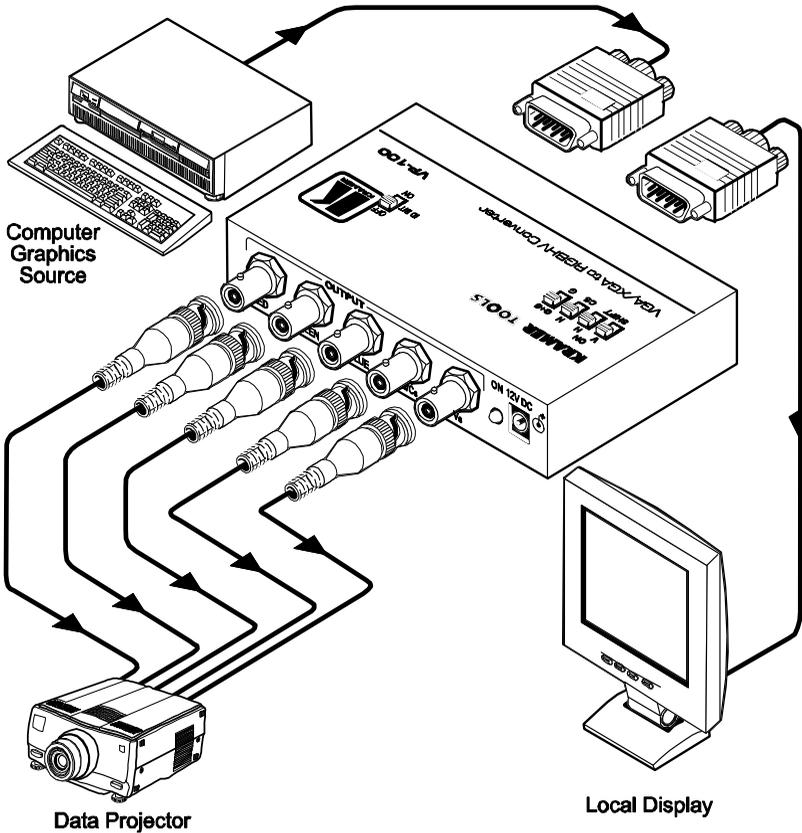


Figure 2: VP-100 VGA/XGA to RGBHV Converter Connections

<sup>1</sup> If no looping is required, push in the LOOP TERM button to the 75 ohm position

## 6 Technical Specifications

Table 2 includes the technical specifications:

*Table 2: Technical Specifications<sup>1</sup> of the VP-100 VGA/XGA to RGBHV Converter*

INPUTS:	Looping analog red, green, blue signals: 0.7Vpp/75Ω, H and V sync, TTL level, on HD15F connector
OUTPUTS:	1 x analog red, green (with or without composite sync), blue signals: 0.7Vpp/75Ω, H and V sync, TTL level (Hi-Z load) or analog level (75Ω load), on BNC connectors. Composite sync - TTL level (Hi-Z load) or analog level (75Ω load)
BANDWIDTH (-3dB):	350MHz
S/N RATIO:	71dB
DIFF. GAIN:	0.07%
DIFF. PHASE:	0.03 Deg.
K-FACTOR:	< 0.05%
CONTROLS:	Cable EQ. control, H and V sync switches and controls, G / sync on green switch, Hs / Cs switch, ID BIT switch, input termination switch; EQ. control: 0 to +9.7dB @5MHz
DIMENSIONS:	12cm x 7.15cm x 2.44cm (4.72" x 2.81" x 0.96"), W, D, H
POWER SOURCE:	12 VDC, 60mA
WEIGHT:	0.3kg (0.67lbs.) approx.
ACCESSORIES:	Power supply, mounting bracket
OPTIONS:	19" rack adapters

<sup>1</sup> Specifications are subject to change without notice

## LIMITED WARRANTY

Kramer Electronics (hereafter *Kramer*) warrants this product free from defects in material and workmanship under the following terms.

### HOW LONG IS THE WARRANTY

Labor and parts are warranted for seven years from the date of the first customer purchase.

### WHO IS PROTECTED?

Only the first purchase customer may enforce this warranty.

### WHAT IS COVERED AND WHAT IS NOT COVERED

Except as below, this warranty covers all defects in material or workmanship in this product. The following are not covered by the warranty:

1. Any product which is not distributed by Kramer, or which is not purchased from an authorized Kramer dealer. If you are uncertain as to whether a dealer is authorized, please contact Kramer at one of the agents listed in the Web site [www.kramerelectronics.com](http://www.kramerelectronics.com).
2. Any product, on which the serial number has been defaced, modified or removed.
3. Damage, deterioration or malfunction resulting from:
  - i) Accident, misuse, abuse, neglect, fire, water, lightning or other acts of nature
  - ii) Product modification, or failure to follow instructions supplied with the product
  - iii) Repair or attempted repair by anyone not authorized by Kramer
  - iv) Any shipment of the product (claims must be presented to the carrier)
  - v) Removal or installation of the product
  - vi) Any other cause, which does not relate to a product defect
  - vii) Cartons, equipment enclosures, cables or accessories used in conjunction with the product

### WHAT WE WILL PAY FOR AND WHAT WE WILL NOT PAY FOR

We will pay labor and material expenses for covered items. We will not pay for the following:

1. Removal or installations charges.
2. Costs of initial technical adjustments (set-up), including adjustment of user controls or programming. These costs are the responsibility of the Kramer dealer from whom the product was purchased.
3. Shipping charges.

### HOW YOU CAN GET WARRANTY SERVICE

1. To obtain service on your product, you must take or ship it prepaid to any authorized Kramer service center.
2. Whenever warranty service is required, the original dated invoice (or a copy) must be presented as proof of warranty coverage, and should be included in any shipment of the product. Please also include in any mailing a contact name, company, address, and a description of the problem(s).
3. For the name of the nearest Kramer authorized service center, consult your authorized dealer.

### LIMITATION OF IMPLIED WARRANTIES

All implied warranties, including warranties of merchantability and fitness for a particular purpose, are limited in duration to the length of this warranty.

### EXCLUSION OF DAMAGES

The liability of Kramer for any effective products is limited to the repair or replacement of the product at our option. Kramer shall not be liable for:

1. Damage to other property caused by defects in this product, damages based upon inconvenience, loss of use of the product, loss of time, commercial loss; or:
2. Any other damages, whether incidental, consequential or otherwise. Some countries may not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights, which vary from place to place.

**NOTE:** All products returned to Kramer for service must have prior approval. This may be obtained from your dealer.

This equipment has been tested to determine compliance with the requirements of:

- EN-50081: "Electromagnetic compatibility (EMC);  
generic emission standard.  
Part 1: Residential, commercial and light industry"  
EN-50082: "Electromagnetic compatibility (EMC) generic immunity standard.  
Part 1: Residential, commercial and light industry environment".  
CFR-47: FCC Rules and Regulations:  
Part 15: "Radio frequency devices  
Subpart B Unintentional radiators"

### CAUTION!

- Servicing the machines can only be done by an authorized Kramer technician. Any user who makes changes or modifications to the unit without the expressed approval of the manufacturer will void user authority to operate the equipment.
- Use the supplied DC power supply to feed power to the machine.
- Please use recommended interconnection cables to connect the machine to other components.



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**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.**



**Caution**

**Safety Warning:**

Disconnect the unit from the power supply before opening/servicing.



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**Kramer Electronics, Ltd.**

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