Kramer Electronics, Ltd.

USER MANUAL

Model:

VP-22

VGA/XGA Line Amplifier - Processor

Contents

Figures

Tables

1 Introduction

Dedication by Kramer Electronics since 1981, to the development and manufacture of high quality video/audio equipment, makes the Kramer line an integral part of the finest production and presentation facilities in the world. In recent years, Kramer has redesigned and upgraded most of the line, making the best even better! The Kramer line of professional video/audio electronics is one of the most versatile and complete available, and is a true leader in terms of quality, workmanship, price/performance ratio and innovation.

In addition to our high quality switchers and matrices, we also offer excellent distribution amplifiers, remote controllers, presentation processors, interfaces and computer-related products. Congratulations on purchasing your Kramer **VP-22** *VGA/XGA Line Amplifier - Processor*. This product is ideal for:

- Cable equalization and sync delay correction in high quality graphic systems
- Remote computer and workstation VGA distribution

The package includes the following items:

- **VP-22** *VGA/XGA Line Amplifier - Processor*
- Power cord
- This user manual
- Kramer concise product catalog/CD

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

3 Overview

Your high performance **VP-22** *VGA/XGA Line Amplifier - Processor* is a line amplifier and processor for VGA, SVGA, XGA, SXGA and other VGA modes.

In addition, the **VP-22** *VGA/XGA Line Amplifier - Processor*:

- Accepts a *VGA/XGA* -type input and provides 3 outputs, a passive *VGA/XGA* loop, an active *VGA/XGA*, and an active set of BNC outputs with selectable sync format

- Includes separate signal gain and high frequency compensation controls [1] for each of the 2 active outputs to adjust for long cable runs

- Includes control of horizontal and vertical sync delay (plus defeat switches) on the BNC coaxial outputs, with full sync proce ssing to provide RGsB, RGBS, or RGBHV

- Includes signal level control and cable equalization control for each channel independently

- With its video bandwidth of 350 MHz, ensures transparent operation at the highest resolutions

Achieving the best performance m eans:

- Connecting 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)

- Avoiding interference from neighboring electrical a ppliances that may adversely influence signal quality

- Positioning your Kramer **VP-22** *VGA/XGA Line Amplifier - Processor* in a location free from moisture and away from excessive sunlight and dust

4   Your VGA/XGA Line Amplifier - Processor

Figure 1 and Tables 1 and 2 define the **VP-22** *VGA/XGA Line Amplifier - Processor*:
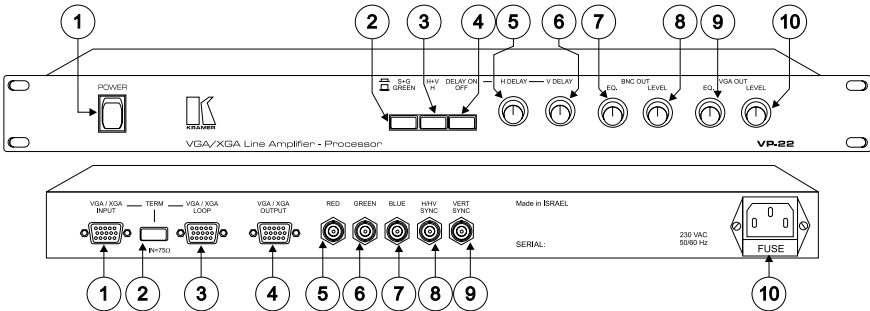

Figure 1: VP-22 VGA/XGA Line Amplifier – Processor

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1 You can adjust the gain and the cable equalization for the BNC and the VGA outputs, separately (without any cross effect between the controls of both channels), using the LEVEL and EQ. knobs, respectively

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Table 1: Front Panel VP-22 VGA/XGA Line Amplifier - Processor Features

#	Feature	Function
1	*POWER* Switch	Illuminated switch supplying power to the unit
2	S+*G / GREEN* Button	Pushing in includes composite sync on the Green BNC connector, releasing selects green signal output
3	*H+V / H* Button	Pushing in selects composite sync, releasing selects horizontal sync
4	*DELAY ON / OFF* Button	Pushing in sets *DELAY* to *ON*[1], releasing sets *DELAY* to *OFF*
5	H DELAY Knob	Adjusts the horizontal display to compensate for delay problems due to long and/or unequal cables
6	V DELAY Knob	Adjusts the vertical display to compensate for delay problems due to long and/or unequal cables
7	*BNC OUT EQ.* Knob	Adjusts the EQ. (equalization) compensation on the BNC OUT cables
8	*BNC OUT LEVEL* Knob	Adjusts the level on the BNC OUT cables
9	*VGA OUT EQ.* Knob	Adjusts the EQ. (equalization) compensation on the VGA OUT cable
10	*VGA OUT LEVEL* Knob	Adjusts the level on the VGA OUT cable

Table 2: Rear Panel VP-22 VGA/XGA Line Amplifier - Processor Features

#		Feature	Function
1		*VGA / XGA INPUT* HD15F connector	Connects to the VGA/XGA source
2		*TERM* Button *IN=75Ω*	Push in to terminate with 75 Ω; release for looping
3		*VGA / XGA LOOP* HD15F connector	For looping to increase output availability
4		*VGA / XGA OUTPUT* HD15F connector	Connects to the VGA/XGA acceptor
5		*RED* BNC connector	Connects to the amplified and buffered red signal output
6	OUTPUT	*GREEN* BNC connector	Connects to the amplified and buffered green signal output. When the S+*G / GREEN* button is pushed in, the GREEN BNC connector includes composite sync
7		*BLUE* BNC connector	Connects to the amplified and buffered blue signal output
8		*H/HV SYNC* BNC connector	Connects to the amplified and buffered horizontal signal output. When the H+V / H button is pushed in, the horizontal BNC connector includes horizontal and vertical sync
9		*VERT SYNC* BNC connector	For amplified and buffered vertical sync output
10	Power Connector with *FUSE*		230 VAC 50/60 Hz power inlet

5 Connecting the VGA/XGA Line Amplifier - Processor

To connect your **VP-22**, as Figure 2 illustrates, do the following:

1. Connect the VGA / XGA source to the VGA / XGA INPUT connector.

2. If looping is needed, connect the VGA / XGA LOOP connector to a local VGA monitor and release the TERM button[2].

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1 Data delay problems, especially with long 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 pushing the DELAY ON switch in and adjusting the horizontal and vertical offset using the H DELAY and the V DELAY knobs (for the BNC outputs only)

2 When no looping is required, do not connect anything to the VGA/XGA LOOP connector and push the TERM button in

3. Connect the VGA / XGA OUTPUT connector to a remote VGA monitor.

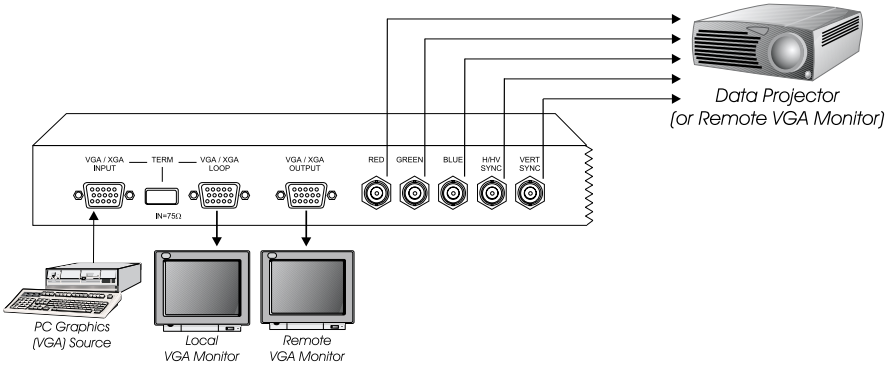4. Connect the 5 BNC output connectors to a data projector or to an additional remote VGA monitor.

Figure 2: VP-22 VGA/XGA Line Amplifier - Processor Connections

6 Technical Specifications

Table 3 includes the technical specifications:

Table 3: Technical Specifications of the VP-22 VGA/XGA Line Amplifier - Processor

Input:	1 VGA / XGA looping on HD 15F connectors with termination switch
Output:	1 VGA / XGA on an HD 15F connector, analog red, green (with or without sync), blue signals - 0.7 Vpp / 75Ω, H (or composite sync) and V syncs-TTL level, on BNC connectors
Video Bandwidth:	350 MHz -3dB
Diff. Gain:	0.05%
Diff. Phase:	0.05 Deg
K-Factor:	<0.05 % (EQ. Off)
S/N Ratio:	76 dB
Control:	Cable equalization up to +8 dB for each output set, level control up to +6 dB for each output set, horizontal and vertical delay control, H+V sync and sync on green front panel switches
Dimensions:	19 inch (W), 7 inch (D) 1U (H) rack mountable
Power Source:	230 VAC, 50 / 60 Hz, (115 VAC, U.S.A.), 4 VA Max
Weight:	2.4 kg. (5.3 lbs.) approx.
Accessories:	Power cord

LIMITED WARRANTY

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

HOW LONG IS THE WARRANTY

Labor and parts are warranted for three 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 deale r. 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.
2. Any product, on which the serial number has been de faced, 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 you 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 pro duct 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.

The list of Kramer distributors appears on our web site:
www.kramerelectronics.com

We welcome your questions, comments and feedback.