Kramer Electronics, Ltd.

USER MANUAL

Model:

VP-200NAK

1:2 XGA / Audio DA

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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[1], which are clearly defined by function. Congratulations on purchasing your Kramer TOOLS **VP-200NAK** *1:2 XGA / Audio DA,* which is ideal for:

- Rental and staging systems
- Schools, churches, corporate applications

The package includes the following items:

- **VP-200NAK** *1:2 XGA / Audio DA*
- Power adapter (12V DC Input) and 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]

2.1 Quick Start

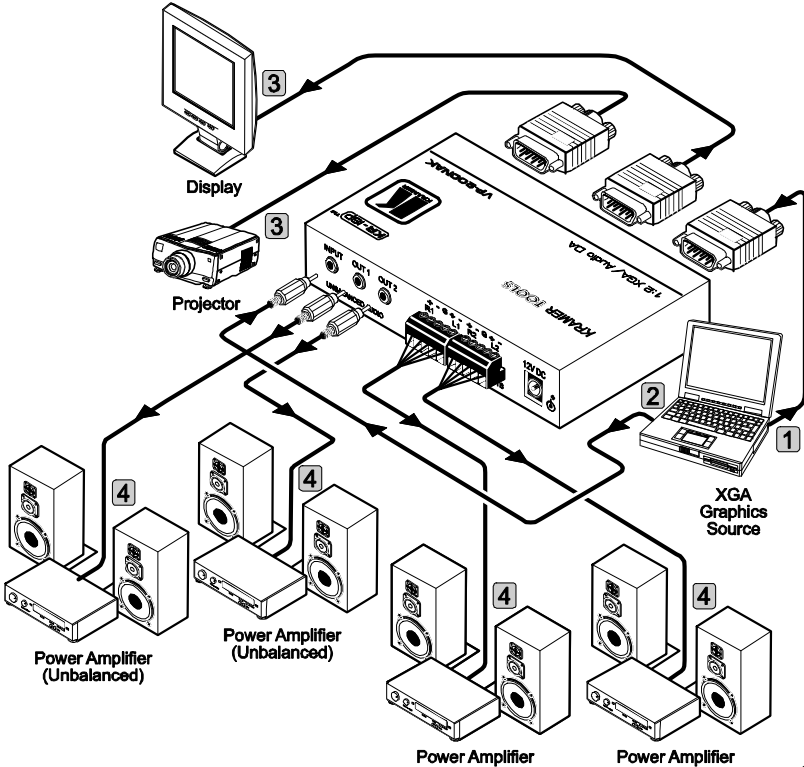This quick start chart summarizes the basic setup and operation steps.

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1 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

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

3 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 audio source to the UNBALANCED AUDIO INPUT

3 Connect the outputs to the acceptors:
- OUTPUT 1 to a display
- OUTPUT 2 to a projector

4 Connect the audio OUTPUTS to the audio acceptors

Display

Projector

VP-200XLN

KRAMER TOOLS
1:2 XGA/Audio DA

INPUT   OUT 1   OUT 2

UNBALANCED AUDIO

12V DC

XGA Graphics Source

Power Amplifier (Unbalanced)

Power Amplifier (Unbalanced)

Power Amplifier

Power Amplifier

Step 2: Connect the power

Step 3: Set the underside controls - see section 4

Set the ID Bit switch

Set the Hs and Vs polarity switches

ID BIT	Vs	Hs	XGA EQ.
OFF ON	NORMAL KR-ISP	NORMAL KR-ISP	◎

KR-iSP™
KRAMER INTEGRATED SYNC PROCESSING

AUDIO LEVEL
LEFT   RIGHT
◎   ◎
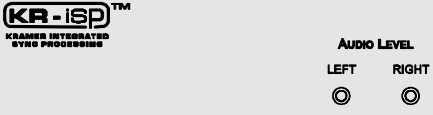
Adjust the EQ. level

Adjust the left and right audio levels

3   Overview

The Kramer TOOLS **VP-200NAK** is a 1:2 distribution amplifier for XGA and higher or lower resolution signals, as well as unbalanced stereo audio signals and/or balanced stereo audio signals, with a unique new feature. It includes the Kramer innovative integrated sync processing; KR - ISP™ technology, which lets you achieve a sharp, stable image when the sync level is too low, by restoring the sync signal waveform.

The **VP-200NAK** *1:2 XGA / Audio DA*:

- Accepts one XGA input, provides correct buffering and isolation, and then distributes the signal to two identical outputs on high-density 15 pin HD connectors
- Accepts an unbalanced stereo audio input, and simultaneously outputs two unbalanced stereo audio outputs on mini plug connectors, and two balanced stereo audio outputs on terminal block connectors
- With its video bandwidth exceeding 400MHz, ensures transparent operation at high-resolution graphics modes such as UXGA (1600x1200)
- Accepts analog or digital syncs[1] and provides ID Bit control[2] as well as separate controls for audio output level and XGA equalization
- Is 12VDC fed

Achieving the best performance means:

- 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 appliances and positioning your **VP-200NAK** away from moisture, excessive sunlight and dust

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Caution – No operator-serviceable parts inside unit.

Warning – Use only the Kramer Electronics input power wall adapter that is provided with this unit[3].

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

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1 Via a pair of underside switches Note that both the Hs (horizontal sync) switch and the Vs (vertical sync) switch MUST be set identically

2 Via an underside switch Sometimes notebook computers refuse to output a VGA signal to an external VGA monitor By setting the ID BIT to ON, the notebook will output to an external VGA monitor

3 For example: model number AD2512C, part number 2535-000251

4 Your VP-200NAK 1:2 XGA / Audio DA

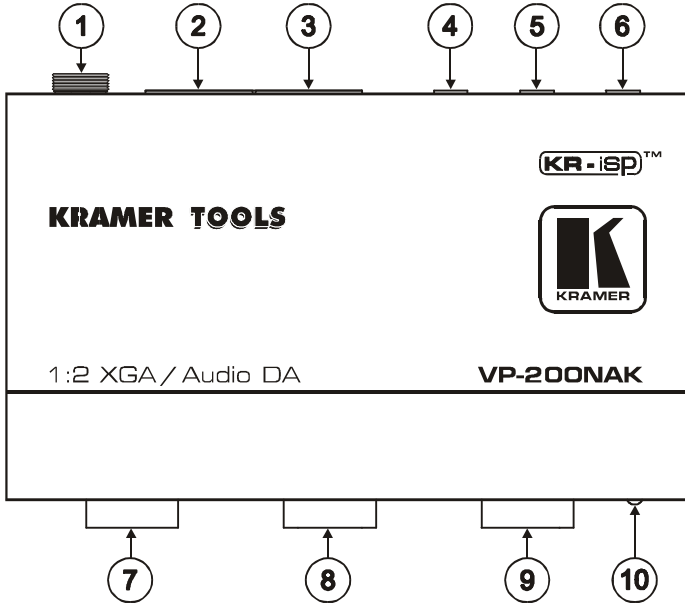Figure 1, Figure 2, Figure 3 and Table 1 define the **VP-200NAK**:

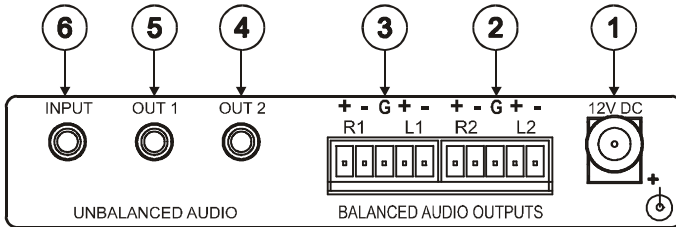
Figure 1: VP-200NAK 1:2 XGA / Audio DA
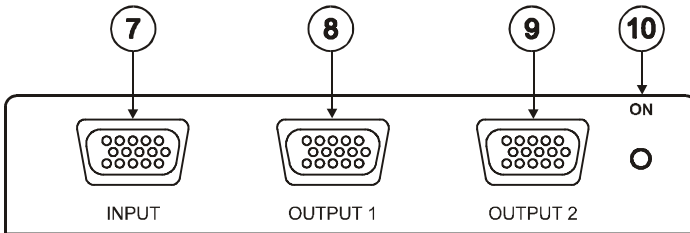

Figure 2: VP-200NAK (Top Side Panel)

Figure 3: VP-200NAK (Lower Side Panel)

Table 1: VP-200NAK 1:2 XGA / Audio DA Features

#	Feature		Function
1	*12V DC*		+12V DC connector for powering the unit
2	*BALANCED AUDIO OUTPUTS*	*R2, L2*	Connects balanced stereo audio to the audio acceptor 2
3	Terminal Block Connector	*R1, L1*	Connects balanced stereo audio to the audio acceptor 1
4	*UNBALANCED AUDIO*	OUT 2	Connects unbalanced stereo audio to the audio acceptor 2
5	3.5mm Mini plug Connectors	OUT 1	Connects unbalanced stereo audio to the audio acceptor 1
6		INPUT	Connects audio to the audio source
7	INPUT HD15F Connector		Connect to the computer graphics source
8	OUTPUT 1 HD15F Connector		Connect to the computer graphics acceptor 1
9	OUTPUT 2 HD15F Connector		Connect to the computer graphics acceptor 2
10	ON LED		Illuminates when receiving power

4.1 The Machine Underside

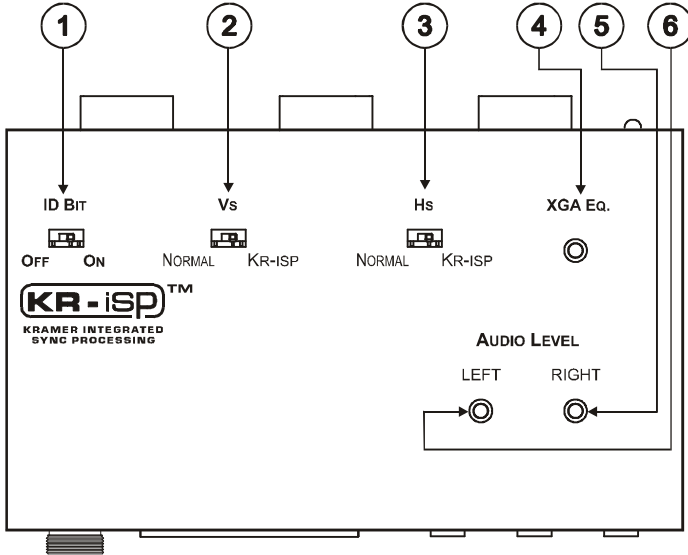Figure 4 and Table 2 define the underside of the **VP-200NAK**:

Figure 4: VP-200NAK 1:2 XGA / Audio DA (Underside)

Table 2: VP-200NAK 1:2 XGA / Audio DA Underside Features

#	Feature		Function
1	*ID Bit* Switch		Slide to the right to set to ON[1]; to the left to set to OFF
2	*Vs Switch*		Slide the switch to the left (NORMAL) for standard polarity; slide the switch to the right (KR-ISP[2]) to KR-ISP for crisp polarity
3	*Hs Switch*		Slide the switch to the left (NORMAL) for standard polarity; slide the switch to the right (KR-ISP[2]) to KR-ISP for crisp polarity
4	*XGA EQ.* Trimmer		Adjusts[3] the XGA EQ. (equalization) compensation
5	*AUDIO LEVEL* Trimmers	*RIGHT*	Adjusts[3] the right output signal level
6		*LEFT*	Adjusts[3] the left output signal level

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

2 By default, both switches are set to KR-ISP

3 Insert a screwdriver into the small hole and carefully rotate it, trimming the level

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5   Connecting the VP-200NAK 1:2 XGA / Audio DA

To connect your **VP-200NAK** *1:2 XGA / Audio DA*, as the example in Figure 5 illustrates, do the following[1]:

1. Connect a computer graphics source to the INPUT HD15F connector.

2. Connect[2] the OUTPUT HD15F connectors to up to two acceptors, as follows:
   - Connect the OUTPUT 1 connector to acceptor 1 (for example, a display)
   - Connect the OUTPUT 2 connector to acceptor 2 (for example, a projector)

3. Connect the unbalanced audio source (for example, the computer graphics source audio) to the UNBALANCED AUDIO INPUT 3.5mm mini Jack connector.

4. Connect the UNBALANCED AUDIO OUT 1 and OUT 2, 3.5mm mini jack connectors, to up to two unbalanced audio acceptors (for example, power amplifiers).

5. Connect[2] the BALANCED AUDIO OUTPUT (R1, L1 and R2, L2) terminal block connectors to up to two balanced audio acceptors (for example, power amplifiers).

6. Connect the 12V DC power adapter to the power socket and connect the adapter to the mains electricity (not shown in Figure 5).

7. If required, on the underside of the **VP-200NAK**:
   - Set the Hs and Vs switches
   - Set the ID Bit switch to ON
   - Adjust[3] the right and left audio signal levels
   - Adjust[3] the XGA EQ. level

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1 Switch OFF the power on each device before connecting it to your VP-200NAK After powering up your VP-200NAK, switch on the power on each device

2 When only one output is required, use either of the outputs, and leave the other output unconnected

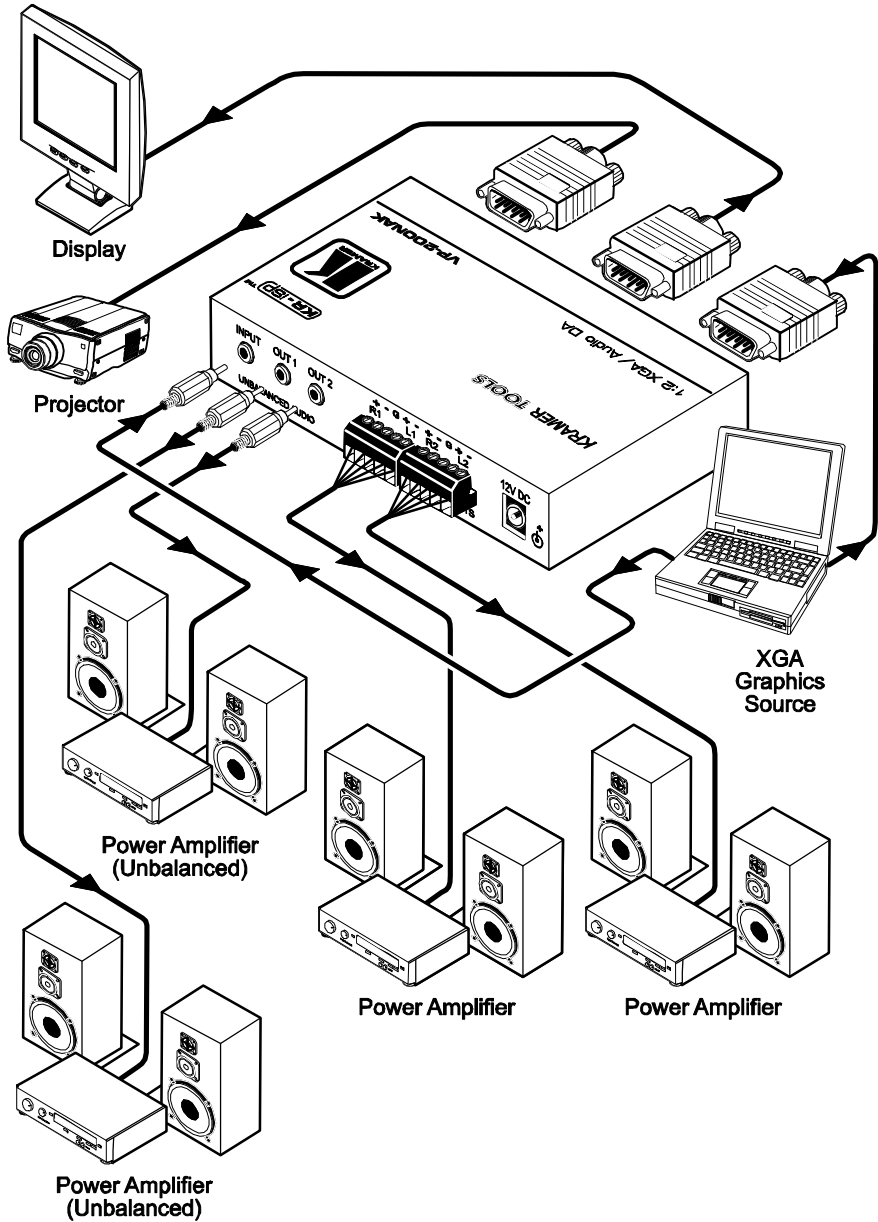3 Insert a screwdriver into the small hole and carefully rotate it, trimming the OUTPUT level

Figure 5: Connecting the VP-200NAK 1:2 XGA / Audio DA

6 Technical Specifications

Table 3 includes the technical specifications:

Table 3: Technical Specifications[1] of the VP-200NAK 1:2 XGA / Audio DA

INPUT:	1 XGA on an HD15F connector 1 unbalanced audio stereo on a 3.5mm mini jack audio connector	
OUTPUTS:	2 XGA on HD15F connectors 2 unbalanced audio stereo on 3.5mm mini jack audio connectors 2 balanced audio stereo on detachable terminal blocks	
MAX. OUTPUT LEVEL:	VIDEO: 2.5Vpp	Audio: 7.2Vpp, balanced and unbalanced
BANDWIDTH (-3dB):	Video: 425MHz	AUDIO: >100kHz, balanced and unbalanced
DIFF. GAIN:	0.74%	
DIFF. PHASE:	0.16 Deg.	
K-FACTOR:	<0.05%	
S/N RATIO:	VIDEO: 72dB @5MHz	AUDIO: 89dB (unbalanced); 93dB (balanced)
CROSSTALK:	-49dB XGA into audio @5MHz	
CONTROLS:	VIDEO: XGA EQ: 0dB to 4.8dB @50MHz; ID BIT switch; Hs and Vs switches for setting the sync (normal or KR-ISP)	AUDIO: R+L -91dB to 6.3dB
COUPLING:	VIDEO: DC	AUDIO: AC at the output; DC at the input
AUDIO THD + NOISE:	0.026% (unbalanced); 0 016% (balanced)	
AUDIO 2nd HARMONIC:	0.004% (unbalanced); 0 002% (balanced)	
POWER SOURCE:	12 VDC, 100mA	
DIMENSIONS:	12cm x 7.18cm x 2.42cm (4.7" x 2.8" x 0.95"), W, D, H	
WEIGHT:	0.3 kg. (0.67 lbs.) approx.	
ACCESSORIES:	Power supply, mounting bracket	
OPTIONS:	19" rack adapters	

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1 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

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 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 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, where updates to this user manual may be found. We welcome your questions, comments and feedback.

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

Caution