

Kramer Electronics, Ltd.



USER MANUAL

Models:

PT102A, 1:2 Audio DA

PT102S, 1:2 s-Video DA

PT102VN, 1:2 Video DA

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This addendum adds the following information to the user manual:

	Caution – No operator-serviceable parts inside unit.
	Warning – Use only the Kramer Electronics input power wall adapter that is provided with this unit ¹ .
	Warning – Disconnect power and unplug unit from wall before installing or removing device or servicing unit.

¹ For example: model number AD2512C, part number 2535-000251

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 distribution amplifiers, we also offer excellent switchers and matrices, remote controllers, presentation processors, interfaces and computer-related products.

Congratulations on purchasing your Kramer **PT102A 1:2 Audio DA**, **PT102S 1:2 s-Video DA**, and/or **PT102VN 1:2 Video DA** (distribution amplifier)—part of the new Pico TOOLS family of products for applications requiring uncompromising quality and compact size at an affordable price.

The **PT102A / PT102S / PT102VN** are ideal for:

- Audio video duplication studios
- Rental/staging, CCTV, and home theater use

Each package includes the following items:

- *1:2 DA (PT102A, PT102S, or PT102VN)*
- Power adapter (12V DC Input)¹ and mounting bracket
- This user manual²

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 cables³

¹ As an option, you can purchase the Kramer VA-50P 6 Port Universal 12-Volt Power Supply, enabling you to supply power to up to 6 Kramer devices that require 12VDC

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

³ The complete list of Kramer cables is on our Web site at <http://www.kramerelectronics.com> (click “Cables and Connectors” in the Products section)

3 Overview

The Pico TOOLS micro-sized high performance 1:2 distribution amplifiers that are described in this user manual include the following:

- **PT102A**, see section 3.1
- **PT102S**, see section 3.2
- **PT102VN**, see section 3.3

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 that may adversely influence signal quality and positioning your micro-sized 1:2 DA in a location free from moisture and away from excessive sunlight and dust

3.1 About the PT102A 1:2 Audio DA

The **PT102A 1:2 Audio DA** is a micro-sized high performance 1:2 distribution amplifier for unbalanced¹ stereo audio signals². The **PT102A**:

- Accepts a single input and distributes it to 2 identical outputs using 3.5mm mini connectors
- Has separate left and right gain controls for optimizing signal levels
- Is ideally suited to work with the Pico TOOLS **PT102VN 1:2 Video DA** and the Pico TOOLS **PT102S 1:2 s-Video DA**

Figure 1 and Table 1 define the **PT102A 1:2 Audio DA**:

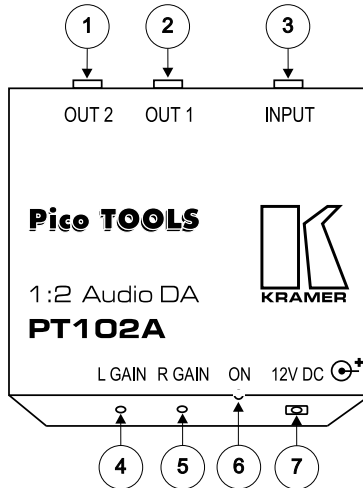


Figure 1: PT102A 1:2 Audio DA

Table 1: Features and Functions of the PT102A 1:2 Audio DA

#	Feature	Function
1	OUT 2 3.5mm Mini Connector	Connects to stereo audio acceptor 2
2	OUT 1 3.5mm Mini Connector	Connects to stereo audio acceptor 1
3	INPUT 5mm Mini Connector	Connects to the stereo audio source
4	L GAIN Trimmer	Adjusts ³ the output level of the left audio channel
5	R GAIN Trimmer	Adjusts ³ the output level of the right audio channel
6	ON LED	Illuminates when receiving power
7	12V DC	+12V DC connector for powering the unit

¹ You can use the PT102A to distribute a balanced mono audio signal, via readily available adapter cables

² For example, portable cassette and CD players

³ Insert a screwdriver into the hole and carefully rotate it, to trim the level

3.2 About the PT102S 1:2 s-Video DA

The **PT102S 1:2 s-Video DA** is a micro-sized high performance 1:2 distribution amplifier for *s-Video* (Y/C) signals. The **PT102S**:

- Accepts a single input and distributes it to 2 identical outputs using 4 pin connectors
- Has a bandwidth of 150 MHz, ensuring that it remains transparent even in the most critical applications
- Has separate chrominance and luminance gain controls
- Is ideally suited to work with the Pico TOOLS **PT102A 1:2 Audio DA**

Figure 2 and Table 2 define the **PT102S 1:2 s-Video DA**:

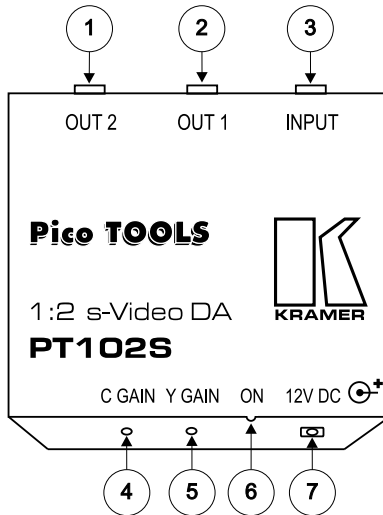


Figure 2: PT102S 1:2 s-Video DA

Table 2: Features and Functions of the PT102S 1:2 s-Video DA

#	Feature	Function
1	OUT 2 4p Connector	Connects to s-Video acceptor 2
2	OUT 1 4p Connector	Connects to s-Video acceptor 1
3	INPUT 4p Connector	Connects to the s-Video source
4	C GAIN Trimmer	Adjusts ¹ the chroma (chrominance) output level
5	Y GAIN Trimmer	Adjusts ¹ the luma (luminance) output level
6	ON LED	Illuminates when receiving power
7	12V DC	+12V DC connector for powering the unit

¹ Insert a screwdriver into the hole and carefully rotate it, to trim the level

3.3 About the PT102VN 1:2 Video DA

The **PT102VN 1:2 Video DA** is a micro-sized high performance 1:2 distribution amplifier for composite video signals. The **PT102VN**:

- Accepts a single input and distributes it to 2 identical outputs using BNC connectors
- Has a bandwidth of 470 MHz, ensuring that it remains transparent even in the most critical applications
- Has gain and equalization (EQ.) controls to compensate for cable losses
- Is ideally suited to work with the Pico TOOLS **PT102A 1:2 Audio DA**

Figure 3 and Table 3 define the **PT102VN 1:2 Video DA**:

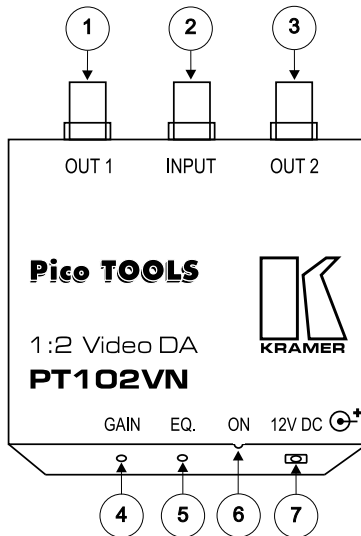


Figure 3: PT102VN 1:2 Video DA

Table 3: Features and Functions of the PT102VN 1:2 Video DA

#	Feature	Function
1	OUT 1 BNC Connector	Connects to composite video acceptor 1
2	INPUT BNC Connector	Connects to the composite video source
3	OUT 2 BNC Connector	Connects to the composite video acceptor 2
4	GAIN Trimmer	Adjusts ¹ the video signal level for outputs 1 and 2
5	EQ. Trimmer	Adjusts ¹ the cable compensation equalization level
6	ON LED	Illuminates when receiving power
7	12V DC	+12V DC connector for powering the unit

¹ Insert a screwdriver into the hole and carefully rotate it, to trim the level

4 Using the PT102VN 1:2 Video DA

You can connect your **PT102VN**:

- As a 1:2 video DA (see section 4.1)
- To a **4x1VB 4x1 High Resolution Video Switcher** to increase the number of inputs (see section 4.2)
- To two **105VB 1:5 High Resolution Video DA** units to increase the number of outputs (see section 4.3)

Note: similar principles apply when using the **PT102A** or the **PT102S**.

4.1 Connecting the PT102VN 1:2 Video DA

To connect the **PT102VN 1:2 Video DA**, as the example in Figure 4 illustrates, connect the following¹:

1. Connect a composite video source (for example, a VCR) to the INPUT BNC connector.
2. Connect the 2 OUT BNC connectors to up to 2 composite video acceptors, as follows:
 - Connect the OUT 1 connector to video acceptor 1 (for example, a projector)
 - Connect the OUT 2 connector to video acceptor 2 (for example, a monitor)
3. Connect the 12V DC power adapter to the power socket and connect the adapter to the mains electricity.
4. Adjust the output signal level and/or cable compensation equalization level, if required.

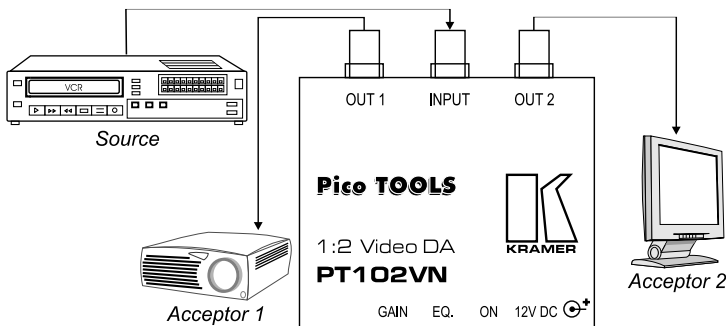


Figure 4: Connecting the PT102VN 1:2 Video DA

¹ Switch OFF the power on each device before connecting it to your PT102VN. After connecting your PT102VN, switch on its power and then switch on the power on each device

4.2 Increasing the Inputs

When it is necessary to handle more than one input, you can increase the number of inputs for example, from one to four, by connecting a **4x1VB 4x1 High Resolution Video Switcher**¹ in addition to the **PT102VN 1:2 Video DA**, as the example in Figure 5 illustrates:

1. Connect up to 4 sources to the 4 input connectors of the **4x1VB**.
2. Connect the **OUTPUT** connector of the **4x1VB** to the **INPUT** connector of the **PT102VN**.
3. Connect the output connectors of the **PT102VN** to up to 2 acceptors.
4. Select the desired input via the **INPUT SELECTOR** switch of the **4x1VB**.
5. Connect the 12V DC power adapter to the power socket of the **PT102VN** and connect the adapter to the mains electricity.
6. Adjust the output signal level and/or cable compensation equalization level of the **PT102VN**, if required.

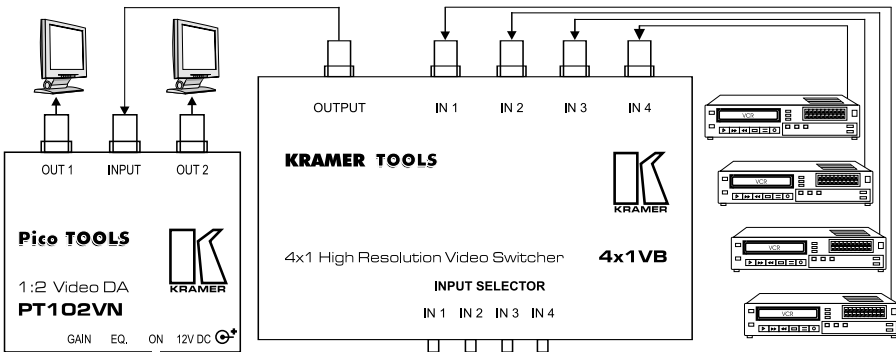


Figure 5: Increasing the Inputs: arranging a 4:2 DA

4.3 Increasing the Outputs

The **PT102VN** can be cascaded with other high quality distribution amplifiers to distribute a video source to more than two outputs. For example, you can increase the number of outputs from two to ten, by connecting a **PT102VN 1:2 Video DA** unit to two **105VB 1:5 High Resolution Video DA** units, forming a 1:10 DA, as the example in Figure 6 illustrates:

¹ A mechanical switcher that lets you select any input to route to one output via its **INPUT SELECTOR** buttons. Alternatively, you could connect the **PT102VN** to a video switcher with more than 4 inputs

To form a 1:10 DA, do the following:

1. Connect a source to the INPUT BNC connector of the **PT102VN**.
2. Connect the OUT 1 BNC connector of the **PT102VN** to the INPUT BNC connector of the first **105VB**.
3. Connect the OUT 2 BNC connector of the **PT102VN** to the INPUT BNC connector of the second **105VB**.
4. Connect the 5 OUT BNC connectors of the first **105VB** to the video acceptors 1 to 5, and connect the 5 OUT BNC connectors of the second **105VB** to the video acceptors 6 to 10.
5. Connect the 12V DC power adapter to the power socket and connect the adapter to the mains electricity (for the **PT102VN** and both **105VB** units).
6. Adjust the output signal level and/or cable compensation equalization level of the **PT102VN**, if required.

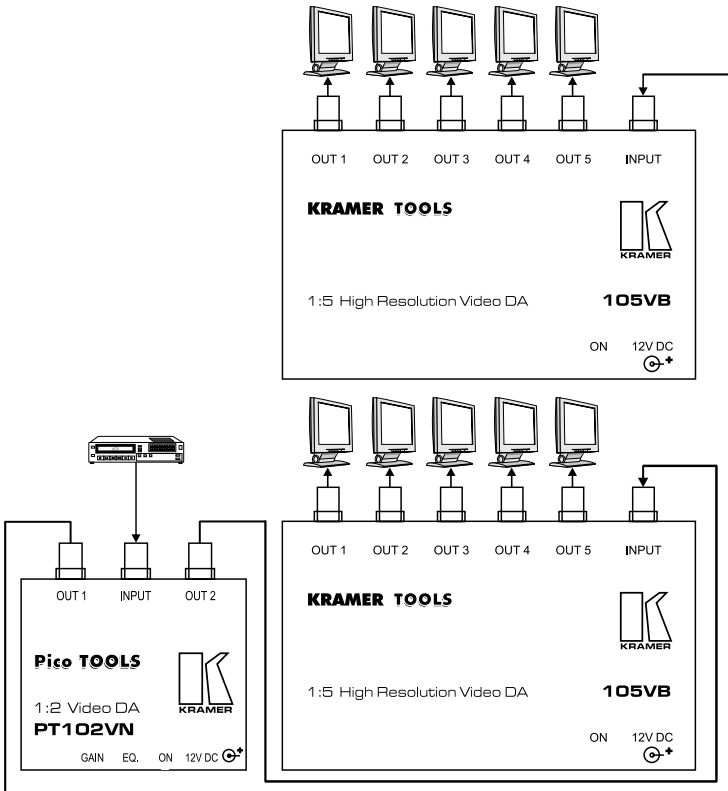


Figure 6: Increasing the Outputs: arranging a 1:10 DA

5 Technical Specifications

Table 4 includes the technical specifications:

Table 4: Technical Specifications¹ of the PT102A / PT102S / PT102VN

	PT102A	PT102S	PT102VN
INPUTS:	1 audio stereo, 1Vpp/20kΩ on a 3.5mm mini plug connector	1 s-Video, 1Vpp /75Ω(Y), 0.3Vpp /75Ω (C), on a 4p connector	1 Video, 1Vpp /75Ω on a BNC connector
OUTPUTS:	2 audio stereo, 1Vpp/150Ω on 3.5mm mini plug connectors	2 s-Video, 1Vpp /75Ω(Y), 0.3Vpp /75Ω (C), on a 4p connectors	2 Video, 1Vpp /75Ω on BNC connectors
MAX. OUTPUT LEVEL:	6 Vpp	2 Vpp	2 Vpp
BANDWIDTH (-3dB):	100 kHz	150 MHz	470 MHz
DIFF. GAIN:	Not applicable	< 0.03%	0.05%
DIFF. PHASE:	Not applicable	0.03 Deg.	0.05 Deg.
K-FACTOR:	Not applicable	<0.05%	<0.05%
S/N RATIO:	71.6dB	78dB	76dB
CONTROLS:	Gain: -50dB to +18.8dB	Gain: -1.9dB to +4.9dB (Y and C)	Gain: -1.2dB to +6dB, EQ.: 0 to + 7.5dB, 50 MHz
COUPLING:	AC		
AUDIO THD + NOISE:	0.017%, 1kHz	Not applicable	
POWER SOURCE:	12VDC, 30mA		12VDC, 26mA
DIMENSIONS:	6 cm x 6.5 cm x 2.5 cm (2.36" x 2.56" x 1") W, D, H.		
WEIGHT:	0.14 kg (0.31 lbs.) approx.		
ACCESSORIES:	Power supply, mounting bracket		
OPTIONS:	VA-50P 6 Port Universal 12-Volt Power Supply with 6 outlets		

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 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 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.



For the latest information on our products and a list of Kramer distributors, visit our Web site: www.kramerelectronics.com.

**Updates to this user manual may be found at
<http://www.kramerelectronics.com/manuals.html>.**

We welcome your questions, comments and feedback.



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P/N: 2900-002159 REV 2