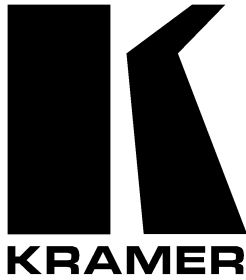


**Kramer Electronics, Ltd.**



# **USER MANUAL**

**Model:**

**VA-256D**

*Digital Audio Delay*

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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 350-plus different models now appear in 8 Groups<sup>1</sup>, which are clearly defined by function.

Congratulations on purchasing your **VA-256D**, which is ideal for audio/video broadcasting and production studios.

The package includes the following items:

- **VA-256D** *Digital Audio Delay*
- Power adapter (12V DC Input)
- This user manual<sup>2</sup>

## 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<sup>3</sup>

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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>

### 3 Overview

The Kramer **VA-256D** is a digital delay line that can be used as a coax-to-optical or optical-to-coax converter, as a coax or optical repeater, and as an audio delay line.

The high-performance **VA-256D**:

- Lets you adjust for lip sync errors so that the audio delay will match the video delay<sup>1</sup>
- Provides a user-programmable delay of the audio signal
- Is EIAJ CP1201, IEC-60958, AES3, S/PDIF compatible and supports 32kHz to 96kHz sample frequency range
- Is fully transparent to the digital stream, making it ideal for the most demanding audio applications including home cinema and professional audio applications (such as PCM, Dolby Digital, DTS, AES and so on)
- Is 12VDC fed and is housed in a DigiTOOLS enclosure

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 that may adversely influence signal quality and positioning the **VA-256D** away from moisture, excessive sunlight and dust

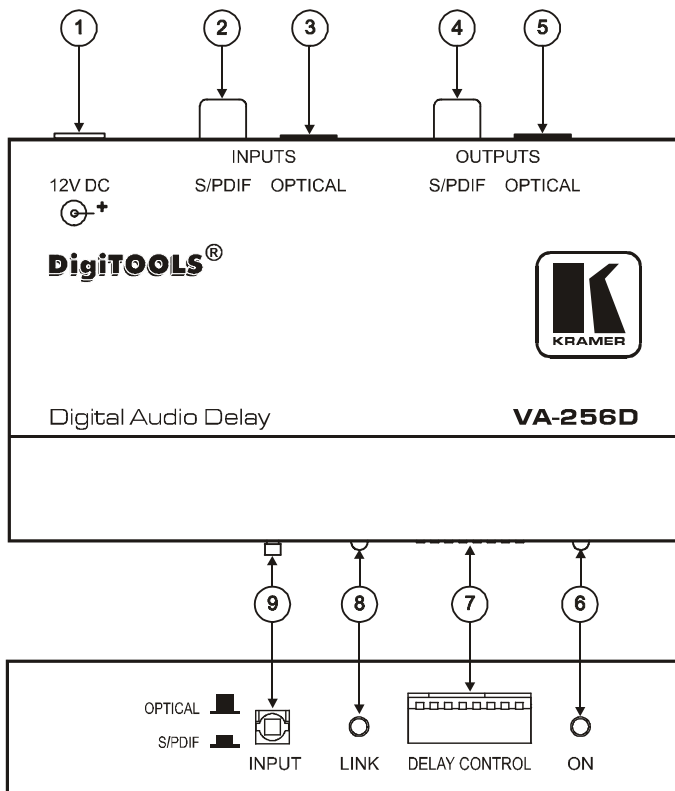
### 4 Your VA-256D Digital Audio Delay

Figure 1 and Table 1 define the **VA-256D** *Digital Audio Delay*:

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<sup>1</sup> An example of a TV broadcasting lip sync error is when the sound is heard before the speaker's lips move

## Your VA-256D Digital Audio Delay



*Figure 1: VA-256D Digital Audio Delay*

*Table 1: Features and Functions of the VA-256D Digital Audio Delay*

#	Feature	Function	
1	12V DC	+12V DC connector for powering the unit	
2	INPUTS	S/PDIF RCA Connector	Connect to the digital audio source
3		OPTICAL Connector	Connect to the digital audio source
4	OUTPUTS	S/PDIF	Connect to the digital audio acceptor
5		OPTICAL	Connect to the digital audio acceptor
6	ON LED	Illuminates when receiving power	
7	DELAY CONTROL Dipswitches	Dipswitches for setup of the delay time <sup>1</sup>	
8	LINK LED	Illuminates when the audio is locked	
9	INPUT Button	Push in to select the S/PDIF source, release to select the OPTICAL source link	

<sup>1</sup> Ranging from 0 to 682 milliseconds in increments of 2.6 milliseconds (see section 5.1)

## 5 Using the VA-256D Digital Audio Delay

To adjust a lip sync error when using a scaler, use the **VA-256D**, as the example in Figure 2 illustrates:

1. Connect the audio outputs of the DVD players to the S/PDIF and/or OPTICAL INPUTS on the **VA-256D**.
2. Connect the S/PDIF and/or OPTICAL OUTPUTS on the **VA-256D** to the audio input on the audio receiver (for example an AV receiver).
3. Connect the 12V DC power adapter to the power socket and connect the adapter to the mains electricity.
4. Set the Delay Control dipswitches, as section 5.1 describes.
5. Push in the INPUT button (item 9 in Figure 1) to select to select the S/PDIF source, release it to select the optical source<sup>1</sup>.

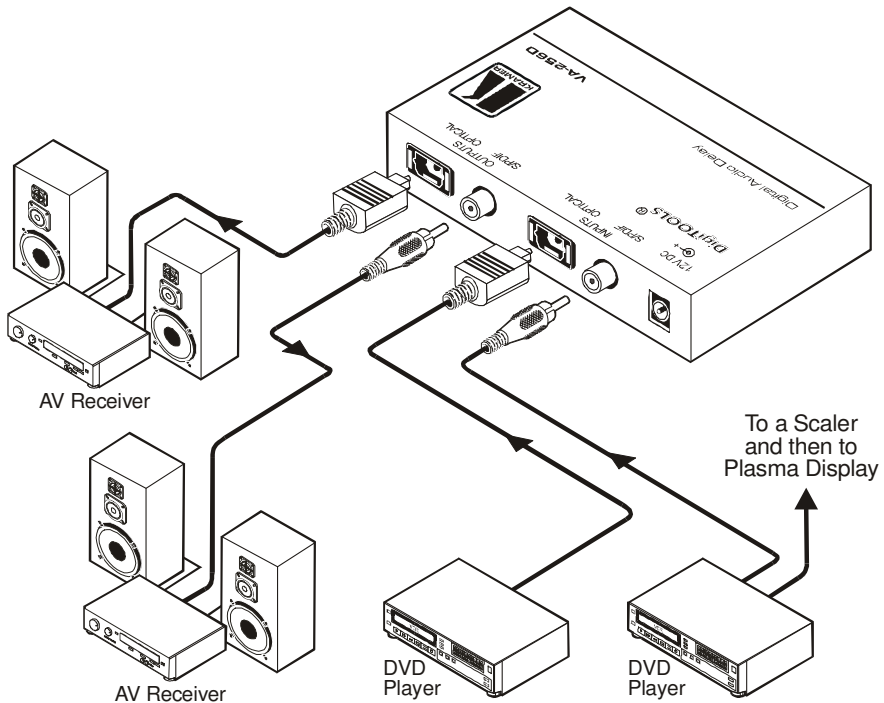


Figure 2: Connecting the VA-256D Digital Audio Delay

<sup>1</sup> Both outputs are available

## 5.1 Setting the Delay Control Dipswitches

By default, the **VA-256D** dipswitches are set to ON. Set the delay time, according to the sample rate<sup>1</sup>, using the Delay Control dipswitches, as Table 2 defines.

Table 2: Setting the Delay Control Time using the Delay Control Dipswitches

msec				DIP								Step	Binary Value
32 kHz	44.1 kHz	48 kHz	96 kHz	1	2	3	4	5	6	7	8		
0	0	0	0	ON	ON	ON	ON	ON	ON	ON	ON	0	0
3.9	2.8	2.6	1.3	ON	ON	ON	ON	ON	ON	ON	OFF	1	1
8	5.7	5.3	2/6	ON	ON	ON	ON	ON	ON	OFF	ON	2	10
12	8.7	8	4	ON	ON	ON	ON	ON	ON	OFF	OFF	3	11
16	11.6	10.7	5.3	ON	ON	ON	ON	ON	OFF	ON	ON	4	100
20.1	14.6	13.4	6.7	ON	ON	ON	ON	ON	OFF	ON	OFF	5	101
22.4	17.4	16	8	ON	ON	ON	ON	ON	OFF	OFF	ON	6	110
28	20.3	18.7	9.3	ON	ON	ON	ON	ON	OFF	OFF	OFF	7	111
32.1	23.3	21.4	10.7	ON	ON	ON	ON	OFF	ON	ON	ON	8	1000
36	26.1	24	12	ON	ON	ON	ON	OFF	ON	ON	OFF	9	1001
40	29	26.7	13.3	ON	ON	ON	ON	OFF	ON	OFF	ON	10	1010
60	43.5	40	20	ON	ON	ON	ON	OFF	OFF	OFF	OFF	15	1111
80.2	58.2	53.5	26.7	ON	ON	ON	OFF	ON	OFF	ON	ON	20	10100
100	73	67	33.5	ON	ON	ON	OFF	OFF	ON	ON	OFF	25	11001
140	102	93.6	46.8	ON	ON	OFF	ON	ON	ON	OFF	OFF	35	100011
180	131	120	60	ON	ON	OFF	ON	OFF	OFF	ON	OFF	45	101101
220	160	147	73.5	ON	ON	OFF	OFF	ON	OFF	OFF	OFF	55	110111
301	219	201	100	ON	OFF	ON	ON	OFF	ON	OFF	OFF	75	1001011
400	291	267	133	ON	OFF	OFF	ON	ON	OFF	ON	ON	100	1100100
501	363	334	167	ON	OFF	OFF	OFF	OFF	OFF	ON	OFF	125	1111101
601	436	401	200	OFF	ON	ON	OFF	ON	OFF	OFF	ON	150	10010110
702	509	468	234	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF	175	10101111
802	582	535	267	OFF	OFF	ON	ON	OFF	ON	ON	ON	200	11001000
903	655	602	301	OFF	OFF	OFF	ON	ON	ON	ON	OFF	225	11100001
1003	728	669	334	OFF	OFF	OFF	OFF	OFF	ON	OFF	ON	250	11111010
1023	742	682	341	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	255	11111111

<sup>1</sup> 32kHz, 44.1kHz, 48kHz or 96kHz

## 6 Technical Specifications

Table 3 includes the technical specifications:

*Table 3: Technical Specifications<sup>1</sup> of the VA-256D Digital Audio Delay*

INPUTS:	1 S/PDIF input on an RCA connector; 1 Toslink optical connector
OUTPUTS:	1 S/PDIF output on an RCA connector; 1 Toslink optical connector
AUDIO SIGNAL COMPATIBILITY:	Digital Audio (S/PDIF): All current broadcast/DVD standards, including Dolby Digital, EX, DTS, ES and PCM Audio sample rates of 32kHz, 44.1kHz, 48kHz (standard DVD) and 96kHz (DTS 96/24)
AUDIO DELAY CAPABILITIES (DIPSWITCH SETTINGS):	0-999ms for 32kHz sample rate signals 0-740ms for 44.1kHz sample rate signals 0-680ms for 48kHz sample rate signals 0-340ms for 96kHz sample rate signals
POWER SOURCE:	12V DC, 300mA
DIMENSIONS:	12 cm x 7.5 cm x 2.5 cm (4.7" x 2.95" 0.98", W, D, H)
WEIGHT:	0.3 kg (0.67 lbs.) approx.
ACCESSORIES:	Power adapter, mounting bracket
OPTIONS:	19" rack adapters: RK-T1, RK-T3

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



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## 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](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 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](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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