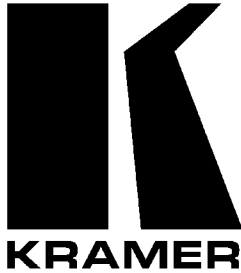


Kramer Electronics, Ltd.



USER MANUAL

Model:

465

Digital Audio Transcoder

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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 Digital Audio Converters, we also offer excellent amplifiers, remote controllers, industrial and broadcast switchers, processors, interfaces, Kramer TOOLS and computer -related products. Congratulations on purchasing your Kramer **465 Digital Audio Transcoder**. This product is ideal for the following typical applications:

- Video production and duplication studios
- Live broadcasting and editing

The package includes the following items:

- **465 Digital Audio Transcoder**
- Power adapter (12V DC Input)
- 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 Your Digital Audio Transcoder

The **465 Digital Audio Transcoder** is a high performance AES/EBU - S/PDIF digital audio transcoder (bi-directional converter) that converts a:

- Professional AES/EBU 110 Ω balanced electrical signal to a Toslink® S/PDIF optical signal¹ in one direction; and
- Toslink® S/PDIF optical signal to a professional AES/EBU 110 Ω balanced electrical signal in the other direction

¹ EIAJ optical cables, for example, Sony's POC-15A (not included in the package), consist of thin glass fibers that facilitate undistorted noise-free signals

In addition, the **465** Digital Audio Transcoder:

- Has transformer coupled electrical inputs and outputs
- Works with digital audio signals up to 96 kHz
- Converts the formats without changing the system bits or bit rates
- Can function as an amplifier to extend the range

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
- Positioning your Kramer **465** Digital Audio Transcoder in a location free from moisture and away from excessive sunlight and dust
- Closing the optical cable's connectors (when not in use) to protect them against exposure to dirt and dust

Figure 1 and Table 1 define the **465** Digital Audio Transcoder:

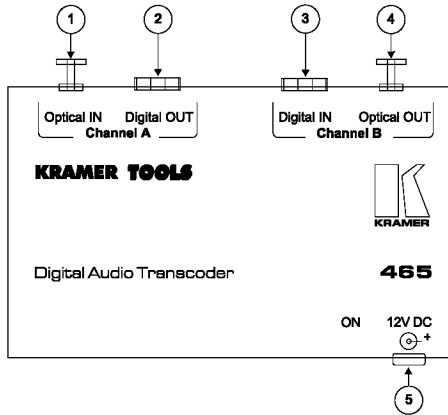


Figure 1: Describing the Digital Audio Transcoder

Table 1: Features and Functions of the Digital Audio Transcoder

#	Feature	Function
1	Optical IN	Optical input
2	Digital OUT	Digital output (Electrical)
3	Digital IN	Digital input (Electrical)
4	Optical OUT	Optical output
5	12V DC	+12V DC connector for powering the unit

4 Connecting the Digital Audio Transcoder

To convert a Toslink® S/PDIF optical signal to an AES/EBU 110 Ω balanced electrical signal:

1. Connect the Optical OUT port of the source unit to the Optical IN port of the Digital Audio Transcoder.
2. Connect the 3-wire cable to the detachable terminal block Digital OUT connector of the Digital Audio Transcoder and to the input of the destination unit.

To convert an AES/EBU 110 Ω balanced electrical signal to a Toslink® S/PDIF optical signal:

1. Connect the 3-wire cable to the OUT connector of a source unit and to the detachable terminal block Digital IN connector of the Digital Audio Transcoder.
2. Connect the Optical OUT port of the Digital Audio Transcoder to the Optical IN port of the destination unit.

Figures 2 to 5 illustrate examples of connecting the Digital Audio Transcoder:

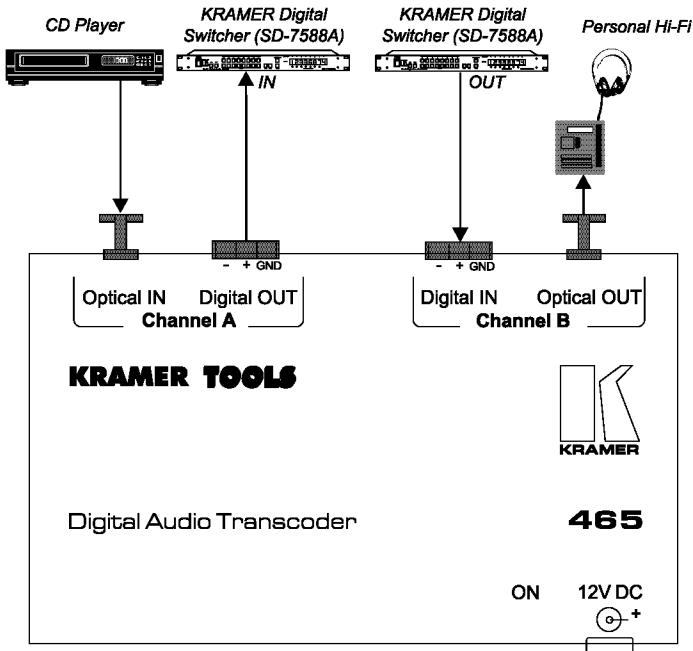


Figure 2: Connecting the Digital Audio Transcoder

Connecting the Digital Audio Transcoder

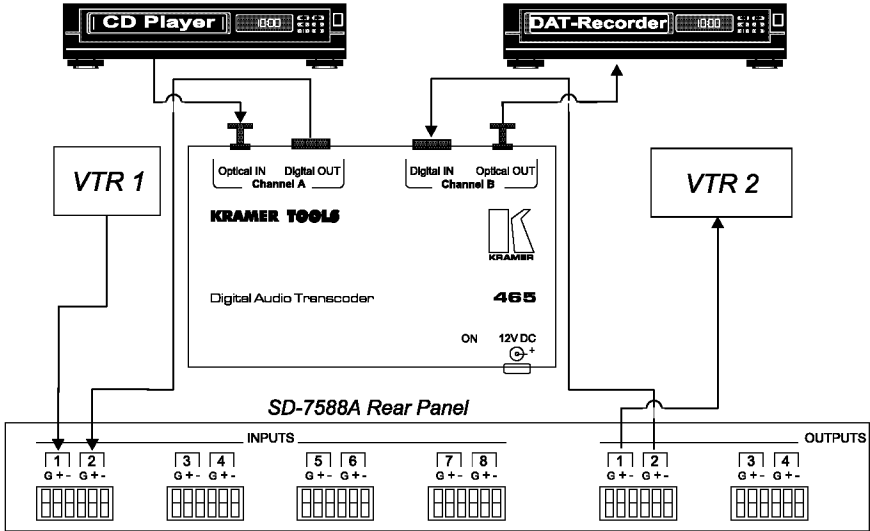


Figure 3: Detailed Digital Audio Transcoder Connections

Figure 4 illustrates how to use a **465** Digital Audio Transcoder as an optical amplifier. The maximum distance¹ between the CD Player and the Personal Hi-Fi extends up to 20 meters:

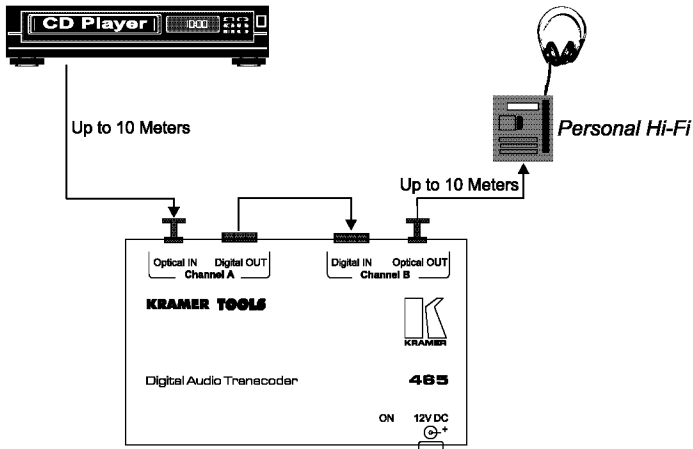


Figure 4: Extending the Range with a Digital Audio Transcoder

¹ Optical cables function up to distances of 10 meters. Electrical AES/EBU cables function up to distances of hundreds of meters, depending on the cables' quality, the environment and the input / output stages of the user's equipment

Connecting the Digital Audio Transcoder

You can also use the **465** Digital Audio Transcoder as an electrical amplifier, by connecting the Optical OUT port of the Digital Audio Transcoder to the Optical IN port.

Figure 5 illustrates using 2 **465** Digital Audio Transcoders to provide a total distance of 30 meters between the CD Player and the Personal Hi-Fi:

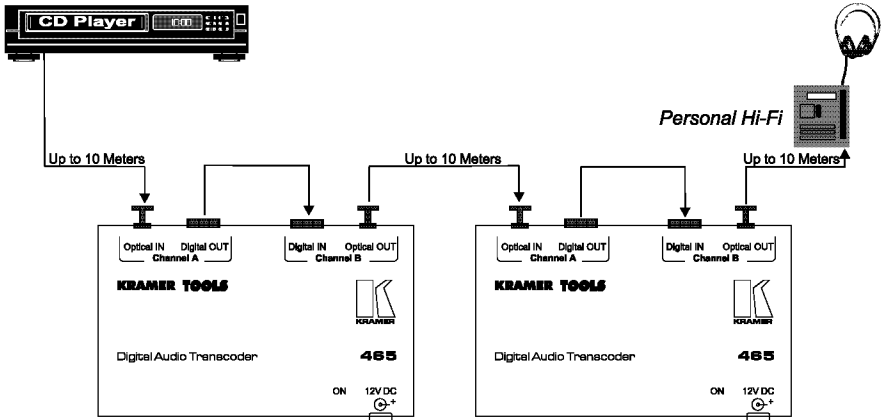


Figure 5: Extending the Range with 2 Digital Audio Transcoders

Table 2: Technical Specifications of the Digital Audio Transcoder

Optical IN / OUT	Toslink® conforming EIAJ standard CP-1201
Digital IN / OUT	Transformer coupled (Electrical) 110Ω AES / EBU on detachable terminal blocks
Sampling	32, 44.1, 48, 96 kHz sampling frequencies
Dimensions	12 cm x 7.5 cm x 2.5 cm (4.7" x 2.95" x 0.98", W, D, H)
Power Source	12 VDC, 60 mA
Weight	0.25 kg (0.6 lbs.) approx.
Accessories	Power supply, mounting bracket
Options	RK-T1 or RK-T3 rack mount kit

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.



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

We welcome your questions, comments and feedback.

Kramer Electronics, Ltd.

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