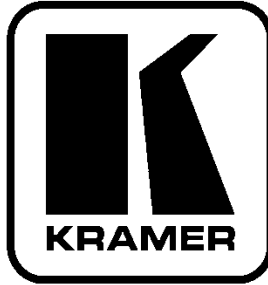


Kramer Electronics, Ltd.



USER MANUAL

Models:

671T, DVI Optical Transmitter

671R, DVI Optical Receiver

Contents

1	Introduction	1
2	Getting Started	1
2.1	Quick Start	2
3	Overview	3
3.1	Recommendations for Achieving the Best Performance	3
4	Your DVI Optical Transmitter and Receiver	4
4.1	Your 671T DVI Optical Transmitter	4
4.2	Your 671R DVI Optical Receiver	5
5	Connecting the 671T and 671R Transmitter/Receiver System	5
6	Technical Specifications	7

Figures

Figure 1:	671T DVI Optical Transmitter	4
Figure 2:	671R DVI Optical Receiver	5
Figure 3:	Connecting the 671T/671R Transmitter/Receiver System	6

Tables

Table 1:	671T DVI Optical Transmitter Features	4
Table 2:	671R DVI Optical Receiver Features	5
Table 3:	Technical Specifications of the 671T and the 671R	7

1 Introduction

Welcome to Kramer Electronics! Since 1981, Kramer Electronics has been providing a world of unique, creative, and affordable solutions to the vast range of problems that confront the video, audio, presentation, and broadcasting professional on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better! Our 1,000-plus different models now appear in 11 groups¹ that are clearly defined by function.

Congratulations on purchasing your Kramer DigiTOOLS® **671T DVI Optical Transmitter** and/or **671R DVI Optical Receiver** which are ideal for:

- Home theater, presentation and multimedia applications
- Long range multimedia distribution for cinemas, stores, and entertainment centers
- Video production and broadcast facilities
- Retail stores and other point-of-sale systems
- Transmission of DVI over multimode (OM3) fiber cable with SC connectors²

The package includes the following:

- **671T** and/or **671R**
- Power adapters (5V DC Input)
- This user manual³

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 cables⁴

1 GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Matrix Switchers; GROUP 3: Control Systems; GROUP 4: Format/Standards Converters; GROUP 5: Range Extenders and Repeaters; GROUP 6: Specialty AV Products; GROUP 7: Scan Converters and Sealers; GROUP 8: Cables and Connectors; GROUP 9: Room Connectivity; GROUP 10: Accessories and Rack Adapters; GROUP 11: Sierra Products

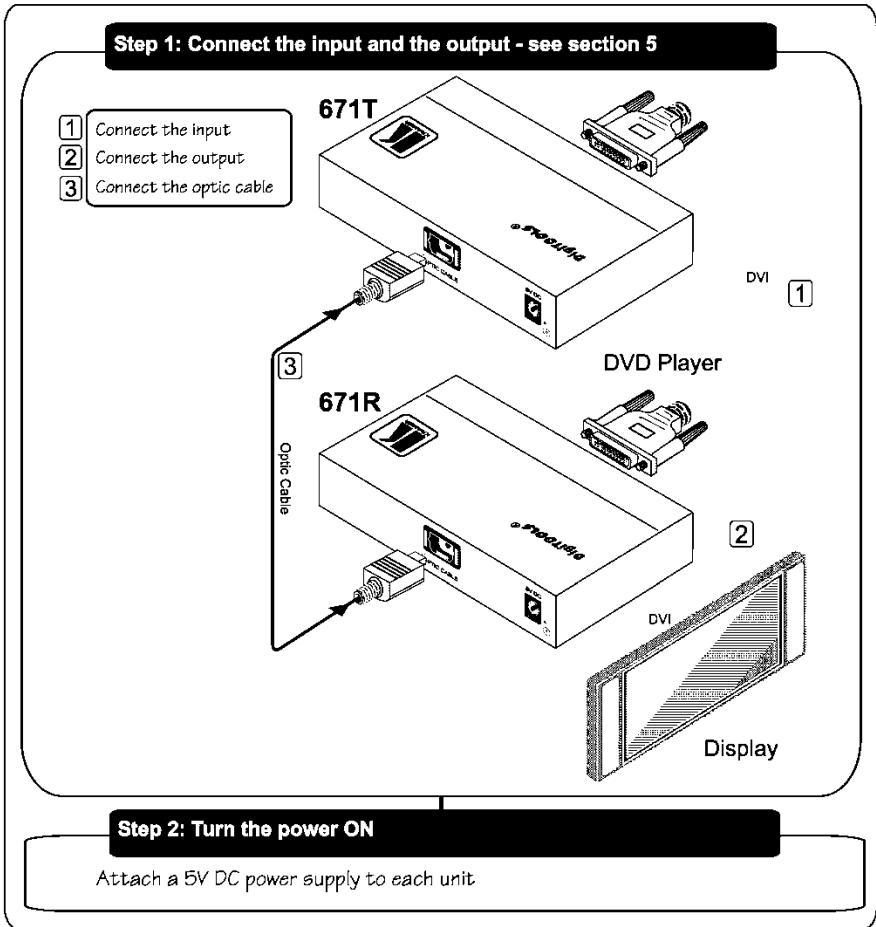
2 Not supplied with the machine

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

4 The complete list of Kramer cables is on our Web site at <http://www.kramerelectronics.com>

2.1 Quick Start

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



3 Overview

The **671T** converts the DVI signal to an optical signal, and the **671R** converts the optical signal back into a DVI signal. Together, the **671T** and **671R** form a DVI transmitter/receiver over multimode fiber system.

The **671T** and **671R** pair:

- Features a transmission range of 2000 meters (more than 6560ft) over multimode optical cable
- Supports up to 1.65Gbps bandwidth per graphic channel¹
- Is strictly regulated in accordance with Class 3R Laser Eye Safety in compliance with ANSI Z136 and IEC 60825-1:2007
- Is HDCP compliant
- Includes 5V DC power adapters and housing in Kramer DigiTOOLS[®] enclosures

3.1 Recommendations for Achieving the Best Performance

To achieve the best performance:

- Connect 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)
- Avoid interference from neighboring electrical appliances and position your **671T** and **671R** away from moisture, excessive sunlight and dust



Caution – No operator-serviceable parts inside unit.

Warning – Use only the Kramer Electronics input power wall adapter that is provided with this unit².

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

¹ Suitable for resolutions up to UXGA at 60Hz, and for all HD resolutions

² For example, part number 2535-052002

4 Your DVI Optical Transmitter and Receiver

This section describes the:

- **671T DVI Optical Transmitter**, see section 4.1
- **671R DVI Optical Receiver**, see section 4.2

4.1 Your 671T DVI Optical Transmitter

Figure 1 and Table 1 define the **671T DVI Optical Transmitter**:

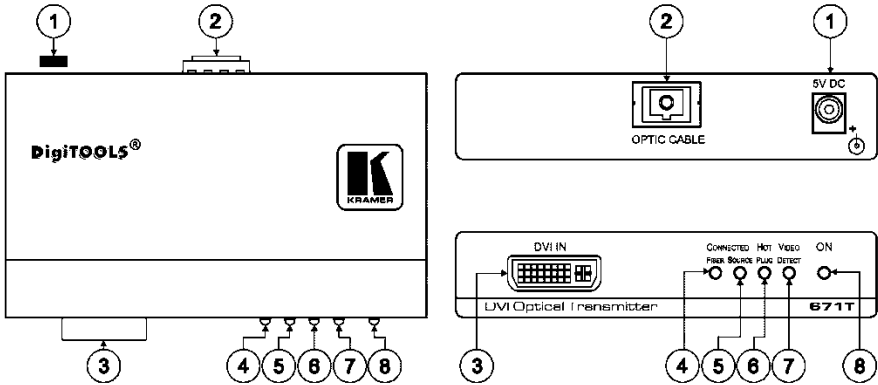


Figure 1: 671T DVI Optical Transmitter

Table 1: 671T DVI Optical Transmitter Features

#	Feature	Function
1	5V DC	+5V DC connector for powering the unit
2	OPTIC CABLE Connector ¹	Connects to the optical connector on the 671R
3	DVI IN DVI Connector	Connects to the DVI source
4	CONNECTED LED	Lights when the fiber optic cable is connected
5	FIBER SOURCE LED	Lights when a source is connected
6	HOT PLUG LED	Indicates a connected display on the receiver side
7	VIDEO DETECT LED	Indicates a valid video signal on the transmitter side
8	ON LED	Illuminates when receiving power

¹ With a dust cap cover

4.2 Your 671R DVI Optical Receiver

Figure 2 and Table 2 define the **671R DVI Optical Receiver**:

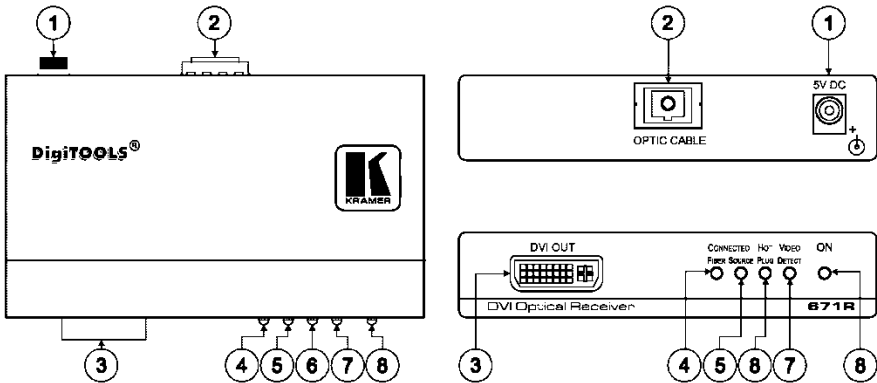


Figure 2: 671R DVI Optical Receiver

Table 2: 671R DVI Optical Receiver Features

#	Feature	Function	
1	5V DC	+5V DC connector for powering the unit	
2	OPTIC CABLE Connector	Connects to the optical connector on the 671T	
3	DVI OUT Connector ¹	Connects to the DVI acceptor	
4	CONNECTED LEDs	FIBER	Lights when the fiber optic cable is connected
5		SOURCE	Lights when a source is connected
6	HOT PLUG LED	Indicates a connected display on the receiver side	
7	VIDEO DETECT LED	Indicates a valid video signal on the transmitter side	
8	ON LED	Illuminates when receiving power	

5 Connecting the 671T and 671R Transmitter/Receiver System

To connect the **671T** and **671R**, as illustrated in the example in Figure 3, do the following:

1. Connect a DVI source (for example a DVD player) to the DVI IN connector.
2. Connect the DVI OUT connector to a DVI acceptor (for example, an LCD display).
3. Remove the dust caps and connect the OPTIC CABLE connector of the **671T** to the OPTIC CABLE connector of the **671R**, via OM3 cabling² (maximum range of 2000 meters (6560ft)).

¹ With a dust cap cover

² With SC connectors

4. Connect the 5V DC power adapter to the power socket on each unit and connect the adapter to the mains electricity (not shown in Figure 3).

Avoid direct eye exposure into the optic connectors when powered, although this product is regulated strictly enough to operate under the Laser Class 3R for eye safety

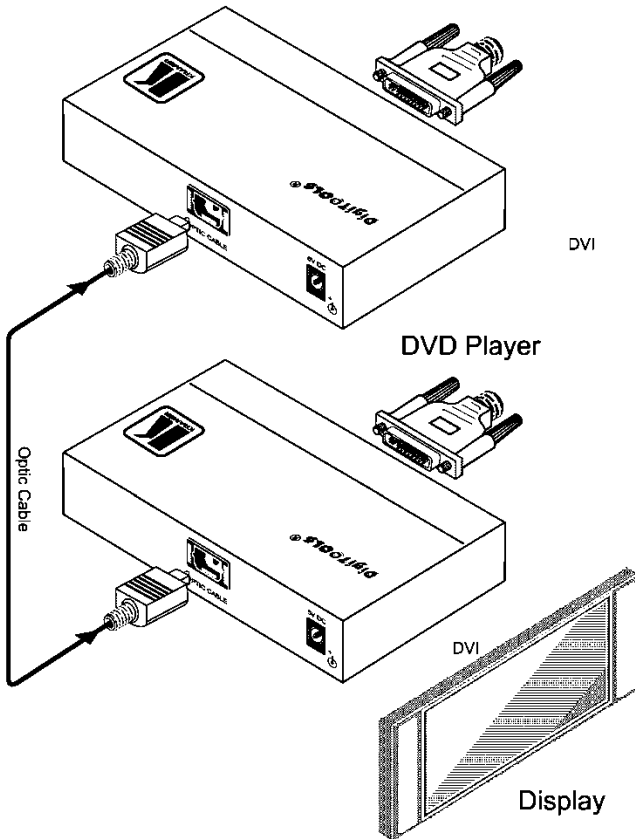


Figure 3: Connecting the 671T/671R Transmitter/Receiver System

6 Technical Specifications

Table 3 includes the technical specifications¹.

Table 3: Technical Specifications of the 671T and the 671R

	671T	671R
INPUTS:	DVI Connector	1 optical connector
OUTPUTS:	1 optical connector	DVI Connector
BANDWIDTH:	Supports up to 1.65Gbps bandwidth per graphic channel	
EXTENSION LIMIT:	2000m (>6560 feet) for UXGA (1600x1200) and 1080p	
FIBER-OPTIC CONNECTION:	SC connectors for multimode (OM3) fiber cable	
INDICATOR LEDs:	Video, source, acceptor fiber and on LEDs	
POWER SOURCE:	5V DC, 250mA	5V DC, 400mA
DIMENSIONS:	12cm x 7.95cm x 2.76cm (4.7" x 3.1" x 1.08", W, D, H)	
WEIGHT:	0.3kg (0.67lbs) approx. each	
ACCESSORIES:	2 power supplies (5V/2A), 2 bracket installation kits	
OPTIONS:	DVI/DVI male-to-male cable ²	

¹ Specifications are subject to change without notice

² The complete list of Kramer cables is on our Web site at <http://www.kramerelectronics.com>

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, or on which the WARRANTY VOID IF TAMPERED sticker has been torn, reattached, removed or otherwise interfered with.
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.
* FCC and CE approved using STP cable (for twisted pair products)



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.



Caution

Safety Warning:

Disconnect the unit from the power supply before opening/servicing.

Class 3R Laser Compliance



CLASS 3R LASER PRODUCT

This product complies with “ANSI Z136” and “IEC 60825-1:2007”.



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