



KRAMER ELECTRONICS LTD.

USER MANUAL

MODEL:

672T

UXGA Audio Optical
Transmitter

672R

UXGA Audio Optical
Receiver

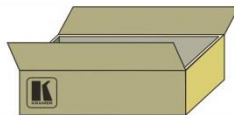


672T, 672R Quick Start Guide

This guide helps you install and use your product for the first time. For more detailed information, go to http://www.kramerelectronics.com/support/product_downloads.asp to download the latest manual or scan the QR code on the left.

Step 1: Check what's in the box

- ☒ **672T, 672R** UXGA Audio Optical Transmitter/Receiver
- ☒ 1 Power supply per unit (5V DC)
- ☒ 4 Rubber feet
- ☒ 1 Quick Start sheet



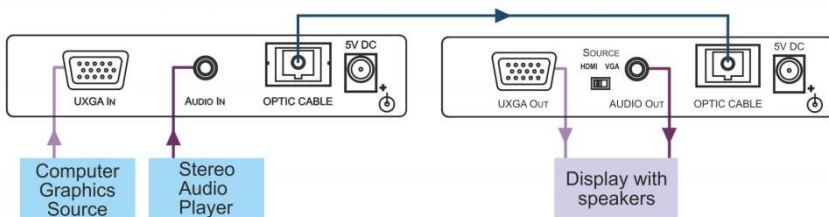
Save the original box and packaging materials in case you need to return your **672T, 672R** for service.

Step 2: Install the 672T, 672R

Attach the rubber feet and place on a table or mount the **672T, 672R** in a rack (using an optional RK-3T rack mount).

Step 3: Connect the inputs and outputs

Always switch off the power on each device before connecting it to your **672T, 672R**.



Always use Kramer high-performance cables for connecting AV equipment to the **672T, 672R**.

Step 4: Connect the power

Connect the 5V DC power adapter to the **672T, 672R** and plug the adapter into the mains electricity.



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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 video, audio, presentation, and broadcasting professionals 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 groups that are clearly defined by function: GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Routers; 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 Scalers; GROUP 8: Cables and Connectors; GROUP 9: Room Connectivity; GROUP 10: Accessories and Rack Adapters and GROUP 11: Sierra Products.

Congratulations on purchasing your Kramer **672T, 672R** *UXGA Audio Optical Transmitter/Receiver*, which is ideal for the following typical applications:

- 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

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



Go to http://www.kramerelectronics.com/support/product_downloads.asp to check for up-to-date user manuals, application programs, and to check if firmware upgrades are available (where appropriate).

2.1 Achieving the Best Performance

To achieve the best performance:

- Use only good quality connection cables (we recommend Kramer high-performance, high-resolution cables) to avoid interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables)
- Do not secure the cables in tight bundles or roll the slack into tight coils
- Avoid interference from neighboring electrical appliances that may adversely influence signal quality
- Position your Kramer **672T**, **672R** away from moisture, excessive sunlight and dust



This equipment is to be used only inside a building. It may only be connected to other equipment that is installed inside a building.

2.2 Safety Instructions



Caution: There are no operator serviceable parts inside the unit

Warning: Use only the Kramer Electronics input power wall adapter that is provided with the unit

Warning: Disconnect the power and unplug the unit from the wall before installing

Warning: 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

2.3 Recycling Kramer Products

The Waste Electrical and Electronic Equipment (WEEE) Directive 2002/96/EC aims to reduce the amount of WEEE sent for disposal to landfill or incineration by requiring it to be collected and recycled. To comply with the WEEE Directive, Kramer Electronics has made arrangements with the European Advanced Recycling Network (EARN) and will cover any costs of treatment, recycling and recovery of waste Kramer Electronics branded equipment on arrival at the EARN facility. For details of Kramer's recycling arrangements in your particular country go to our recycling pages at <http://www.kramerelectronics.com/support/recycling/>.

3 Overview

The **672T** and **672R** are an optical fiber transmitter and receiver for computer graphics signals up to UXGA and stereo audio signals. The **672T** converts the computer graphics and stereo audio signals to an optical signal, and the **672R** converts the optical signal back to computer graphics and stereo audio signals. Together, the **672T** and **672R** form a UXGA/audio transmitter/receiver over multimode fiber system.

The **672T** and **672R** pair features:

- A transmission range exceeding 1700 meters (more than 1 mile) over multimode optical cable
- 4.95Gbps (1.65Gbps per graphic channel) suitable for resolutions up to UXGA at 60Hz, and for all HD resolutions
- Regulation in accordance with Class 3R Laser Eye Safety in compliance with ANSI Z136 and IEC 60825-1:2007
- Full compatibility with the Kramer **670T/670R** and **671T/671R** HDMI/DVI transmitters and receivers for non-HDCP content
- 5V DC power adapters
- Housing in Kramer DigiTOOLS® enclosures

3.1 Defining the 672T, 672R UXGA Audio Optical Transmitter/Receiver

This section describes the:

- **672T UXGA Audio Optical Transmitter**, see [Section 3.1.1](#)
- **672R UXGA Audio Optical Receiver**, see [Section 3.1.2](#)

3.1.1 Your 672T UXGA Audio Optical Transmitter

Figure 1 defines the **672T UXGA Audio Optical Transmitter**.

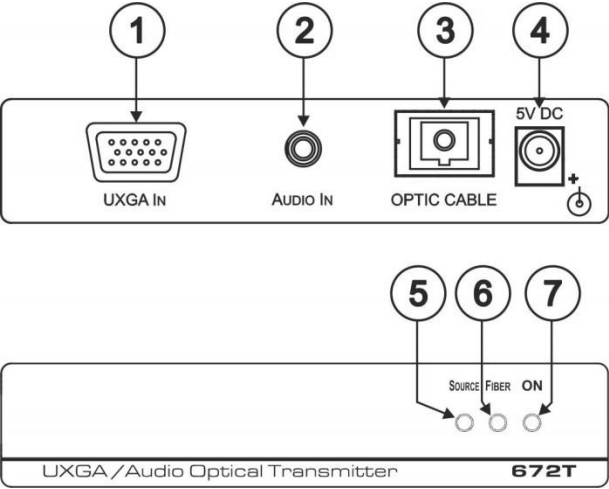


Figure 1: 672T DVI Optical Transmitter

#	Feature	Function
1	UXGA IN 15-pin HD Connector	Connects to the computer graphics source
2	AUDIO IN 3.5mm Mini Jack Connector	Connects to an unbalanced stereo audio source
3	OPTIC CABLE Connector	Connects to the optical connector on the 672R (before use remove the dust cap cover)
4	5V DC	+5V DC connector for powering the unit
5	SOURCE LED	Lights when a source is connected
6	FIBER LED	Lights when the fiber optic cable is connected
7	ON LED	Illuminates when receiving power

3.1.2 Your 671R DVI Optical Receiver

Figure 2 defines the **672R UXGA Audio Optical Receiver**.

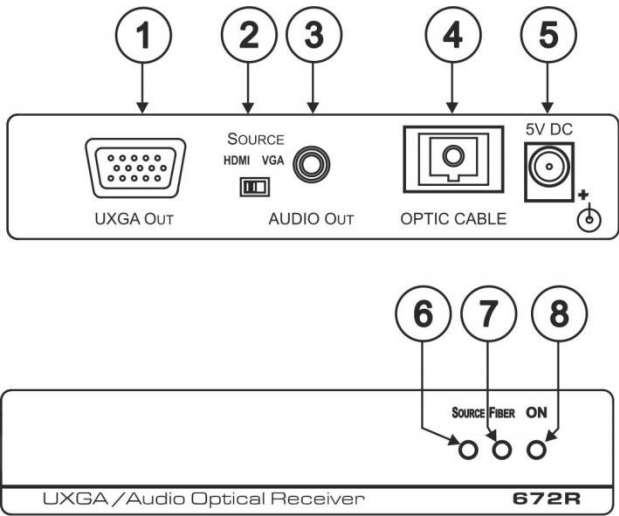


Figure 2: 672R DVI Optical Receiver

#	Feature	Function
1	UXGA OUT 15-pin HD Connector	Connects to the computer graphics acceptor
2	SOURCE HDMI/VGA Switch	Switch right for the VGA source When using the receiver with an HDMI transmitter (670T and 671T), set the switch to the left
3	AUDIO OUT 3.5mm Mini Jack Connector	Connects to an unbalanced stereo audio acceptor
4	OPTIC CABLE Connector	Connects to the optical connector on the 672T (before use remove the dust cap cover)
5	5V DC	+5V DC connector for powering the unit
6	SOURCE LED	Lights when a source is connected
7	FIBER LED	Lights when the fiber optic cable is connected
8	ON LED	Illuminates when receiving power

4 Connecting the 672T, 672R



Always switch off the power to each device before connecting it to your **672T, 672R**. After connecting your **672T, 672R**, connect its power and then switch on the power to each device.

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

To connect the **672T** and **672R**, do the following:

1. Connect a computer graphics source (for example, a computer graphics card on a PC) to the UXGA IN 15-pin HD connector.
2. Connect a stereo audio source (for example, a stereo audio player) to the AUDIO IN 3.5mm mini jack connector.
3. Connect the UXGA OUT 15-pin HD connector to a computer graphics acceptor (for example, an LCD display).
4. Connect the AUDIO OUT 3.5mm mini jack connector to a stereo audio acceptor (for example, the speakers of an LCD display).
5. On the **672R**, set the SOURCE switch to VGA. (If a Kramer **670T** or **671T** transmitter is connected to the **672R**, set the SOURCE switch to HDMI).
6. Remove the dust caps and connect the OPTIC CABLE connector of the **672T** to the OPTIC CABLE connector of the **672R**, via OM3 cabling (maximum range of 1700 meters (over 1 mile)).
7. 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](#)).

Note: A **672T** can be connected to Kramer's **670R** or **671R** to convert a VGA input to an HDMI/DVI output.

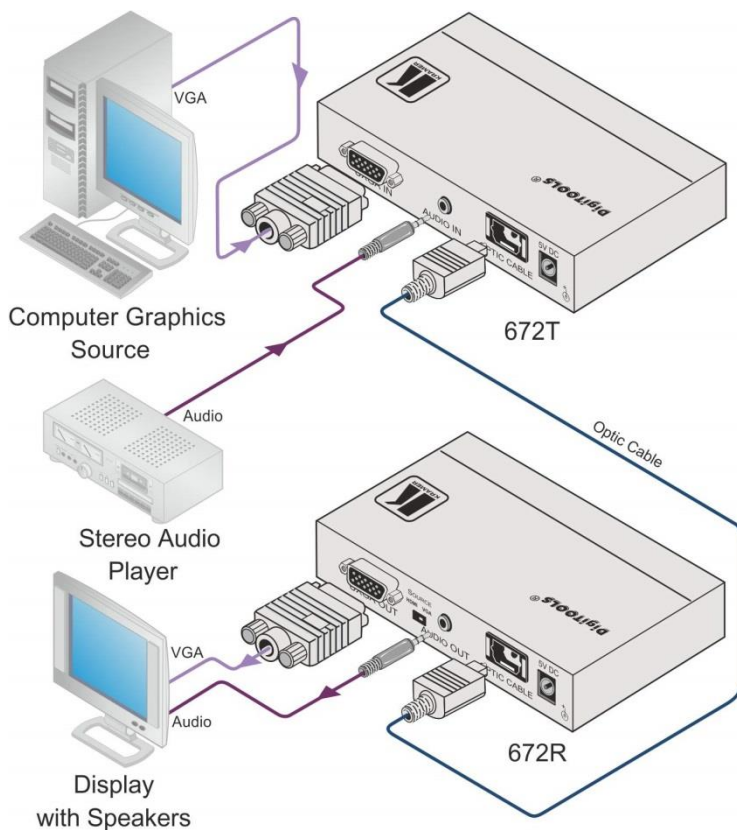


Figure 3: Connecting the 672T/672R Transmitter/Receiver System

5 Technical Specifications

	672T	672R
INPUTS:	1 VGA on a 15-pin HD connector, 1 unbalanced stereo audio on a 3.5mm connector	1 fiber optic on an SC connector for multimode (OM3) fiber cable
OUTPUTS:	1 fiber optic on an SC connector for multimode (OM3) fiber cable	1 VGA on a 15-pin HD connector, 1 unbalanced stereo audio on a 3.5mm connector
BANDWIDTH:	4.95Gbps (1.65Gbps per graphic channel)	
EXTENSION LIMIT:	More than 1700m (over 1mi) for UXGA (1600x1200) and 1080p	
INSERTION LOSS FROM TRANSMITTER TO RECEIVER:	Must not exceed 10dB	
CONTROL:	HDMI or UXGA source switch	
INDICATOR LEDs:	Source, fiber and ON LEDs	
POWER SOURCE:	5V DC, 670mA	5V DC, 490mA
OPERATING TEMPERATURE:	0° to +40°C (32° to 104°F)	
STORAGE TEMPERATURE:	-40° to +70°C (-40° to 158°F)	
HUMIDITY:	10% to 90%, RHL non-condensing	
DIMENSIONS:	12cm x 6.95cm x 2.cm (4.7" x 2.74" x 1.0", W, D, H)	
WEIGHT:	0.3kg (0.67lbs) approx. each	
ACCESSORIES:	2 power supplies (5V/2A), 2 bracket installation kits	
OPTIONS:	RK-3T 19" rack adapter	
Specifications are subject to change without notice at http://www.kramerelectronics.com		

LIMITED WARRANTY

The warranty obligations of Kramer Electronics for this product are limited to the terms set forth below:

What is Covered

This limited warranty covers defects in materials and workmanship in this product.

What is Not Covered

This limited warranty does not cover any damage, deterioration or malfunction resulting from any alteration, modification, improper or unreasonable use or maintenance, misuse, abuse, accident, neglect, exposure to excess moisture, fire, improper packing and shipping (such claims must be presented to the carrier), lightning, power surges, or other acts of nature. This limited warranty does not cover any damage, deterioration or malfunction resulting from the installation or removal of this product from any installation, any unauthorized tampering with this product, any repairs attempted by anyone unauthorized by Kramer Electronics to make such repairs, or any other cause which does not relate directly to a defect in materials and/or workmanship of this product. This limited warranty does not cover cartons, equipment enclosures, cables or accessories used in conjunction with this product.

Without limiting any other exclusion herein, Kramer Electronics does not warrant that the product covered hereby, including, without limitation, the technology and/or integrated circuit(s) included in the product, will not become obsolete or that such items are or will remain compatible with any other product or technology with which the product may be used.

How Long Does this Coverage Last

Seven years as of this printing; please check our Web site for the most current and accurate warranty information.

Who is Covered

Only the original purchaser of this product is covered under this limited warranty. This limited warranty is not transferable to subsequent purchasers or owners of this product.

What Kramer Electronics will do

Kramer Electronics will, at its sole option, provide one of the following three remedies to whatever extent it shall deem necessary to satisfy a proper claim under this limited warranty:

1. Elect to repair or facilitate the repair of any defective parts within a reasonable period of time, free of any charge for the necessary parts and labor to complete the repair and restore this product to its proper operating condition. Kramer Electronics will also pay the shipping costs necessary to return this product once the repair is complete.
2. Replace this product with a direct replacement or with a similar product deemed by Kramer Electronics to perform substantially the same function as the original product.
3. Issue a refund of the original purchase price less depreciation to be determined based on the age of the product at the time remedy is sought under this limited warranty.

What Kramer Electronics will not do Under This Limited Warranty

If this product is returned to Kramer Electronics or the authorized dealer from which it was purchased or any other party authorized to repair Kramer Electronics products, this product must be insured during shipment, with the insurance and shipping charges prepaid by you. If this product is returned uninsured, you assume all risks of loss or damage during shipment. Kramer Electronics will not be responsible for any costs related to the removal or re-installation of this product from or into any installation. Kramer Electronics will not be responsible for any costs related to any setting up this product, any adjustment of user controls or any programming required for a specific installation of this product.

How to Obtain a Remedy under this Limited Warranty

To obtain a remedy under this limited warranty, you must contact either the authorized Kramer Electronics reseller from whom you purchased this product or the Kramer Electronics office nearest you. For a list of authorized Kramer Electronics resellers and/or Kramer Electronics authorized service providers, please visit our web site at www.kramerelectronics.com or contact the Kramer Electronics office nearest you.

In order to pursue any remedy under this limited warranty, you must possess an original, dated receipt as proof of purchase from an authorized Kramer Electronics reseller. If this product is returned under this limited warranty, a return authorization number, obtained from Kramer Electronics, will be required. You may also be directed to an authorized reseller or a person authorized by Kramer Electronics to repair the product.

If it is decided that this product should be returned directly to Kramer Electronics, this product should be properly packed, preferably in the original carton, for shipping. Cartons not bearing a return authorization number will be refused.

Limitation on Liability

THE MAXIMUM LIABILITY OF KRAMER ELECTRONICS UNDER THIS LIMITED WARRANTY SHALL NOT EXCEED THE ACTUAL PURCHASE PRICE PAID FOR THE PRODUCT. TO THE MAXIMUM EXTENT PERMITTED BY LAW, KRAMER ELECTRONICS IS NOT RESPONSIBLE FOR DIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES RESULTING FROM ANY BREACH OF WARRANTY OR CONDITION, OR UNDER ANY OTHER LEGAL THEORY. Some countries, districts or states do not allow the exclusion or limitation of relief, special, incidental, consequential or indirect damages, or the limitation of liability to specified amounts, so the above limitations or exclusions may not apply to you.

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IF ANY PRODUCT TO WHICH THIS LIMITED WARRANTY APPLIES IS A "CONSUMER PRODUCT" UNDER THE MAGNUSON-MOSS WARRANTY ACT (15 U.S.C.A. §2301, ET SEQ.) OR OTHER APPLICABLE LAW, THE FOREGOING DISCLAIMER OF IMPLIED WARRANTIES SHALL NOT APPLY TO YOU, AND ALL IMPLIED WARRANTIES ON THIS PRODUCT, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR THE PARTICULAR PURPOSE, SHALL APPLY AS PROVIDED UNDER APPLICABLE LAW.

Other Conditions

This limited warranty gives you specific legal rights, and you may have other rights which vary from country to country or state to state.

This limited warranty is void if (i) the label bearing the serial number of this product has been removed or defaced, (ii) the product is not distributed by Kramer Electronics or (iii) this product is not purchased from an authorized Kramer Electronics reseller. If you are unsure whether a reseller is an authorized Kramer Electronics reseller, please visit our Web site at www.kramerelectronics.com or contact a Kramer Electronics office from the list at the end of this document.

Your rights under this limited warranty are not diminished if you do not complete and return the product registration form or complete and submit the online product registration form. Kramer Electronics thanks you for purchasing a Kramer Electronics product. We hope it will give you years of satisfaction.



For the latest information on our products and a list of Kramer distributors, visit our Web site where updates to this user manual may be found.

We welcome your questions, comments, and feedback.

Web site: www.kramerelectronics.com

E-mail: info@kramerel.com

CE



SAFETY WARNING

Disconnect the unit from the power supply before opening and servicing



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Rev: 4