



## Two (2) PCs Switchable Dual-Head DVI Optical KVM Extender



### *User Manual* *KVMX-100-TR*

## Manual Contents

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## Welcome!

Congratulations on your purchase of the KVMX-100-TR, Two (2) PCs Switchable Dual-head DVI Optical KVM Extender. This manual contains information that will assist you in installing and operating the product.

### Product Description

New Dual-head DVI optical KVM extender, KVMX-100-TR is designed to extend Dual DVI outputs with keyboard, mouse and bi-directional audio. But the key feature of 2:1 KVM switch function inside KVMX-100-TR enables users to select one between two (2) PCs as a host.

KVMX-100-TR transmits DVI, USB HID, RS232 and bi-directional stereo audio signal up to 1.0km (3280feet) over two (2) duplex LC single-mode fibers or 300m (985feet) over two (2) duplex LC multi-mode fibers.

Designed for high resolution performance, it guarantees lossless image quality and no frame dropping to deliver perfect graphic data transmission up to WUXGA (1,920x1,200) at 60Hz.

It provides Auto-mix EDID programming feature that reads EDID information from both local and remote side displays and then determines the lowest resolution of them. It makes the installation of KVMX-100-TR easy and flexible at any variable resolutions.

### Shipping Group of KVMX-100-TR

- One (1) Transmitter (Tx) and One (1) Receiver (Rx)
- Two (2) +12V/3A units (including AC cord).
- User Manual
- Option:** Remote console switch (KVMX-100-LO / KVMX-100-RE), 1RU mounting rack (OPSCR—1U), mounting bracket (OPMCB), Duplex LC Patch Cord (Single or Multi-mode glass fiber)

## Connection Diagram

This page describes the connections on the KVMX-100 Transmitter (Tx) and Receiver (Rx).

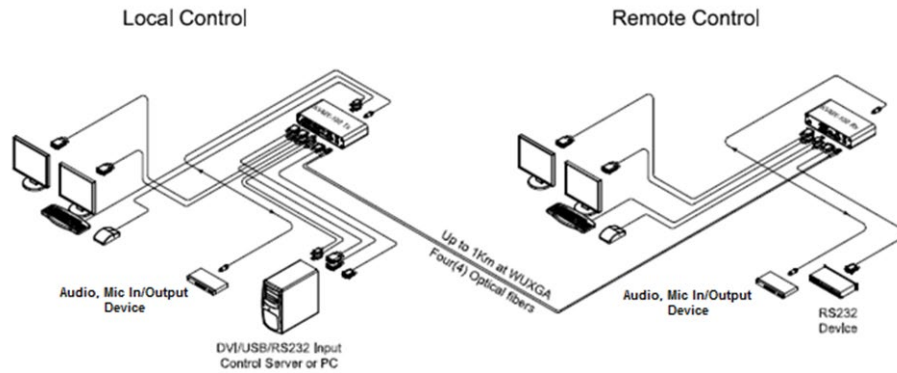


Figure 1– Connection Diagram for a PC, equipped dual DVI ports

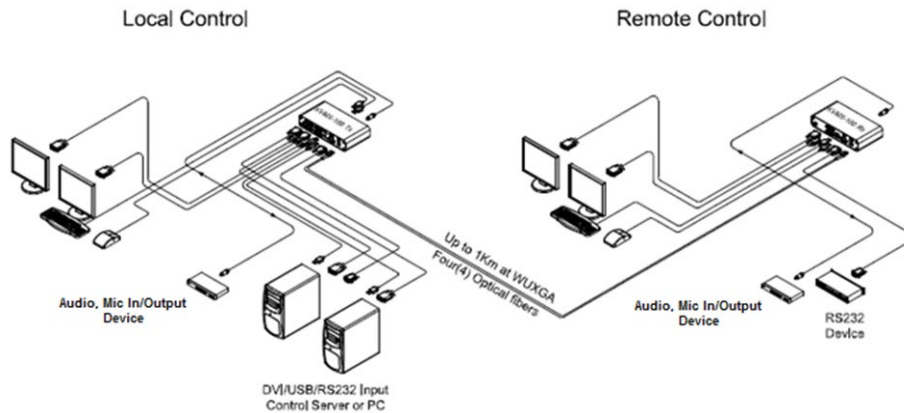


Figure 2– Connection Diagram for two (2) PCs, equipped each DVI port

## System Requirements for Setup

### □ Hardware requirements

- You must have a graphic controller card with a DVI port in your Windows/Mac (Mac is option), or SUN system. It should support the maximum graphic resolution feature of the display to be connected.
- In case of using a computer, no special memory size, CPU speed and chipsets are required.
- Proper initial trial of the entire platform with its application using a short length copper cable is recommended prior to install with the optical link.

### □ Software requirements

- No special needs, if the DVI graphic controller and display peripheral are operational with the platform's OS and application.

## Installation

**Important:** Please keep the installation procedure below. Improper or no operation may result if the start-up sequence is not correctly followed.

### Step 1

Carefully unpack the contents of the shipping group.

### Step 2

Power on the PC(s) and displays.

### Step 3

Plug the 12V power adapters to the +12V DC jack on the rear side of Transmitter and Receiver.

### Step 4

#### IN case of a PC, equipped dual DVI ports

Connect the DVI-1 IN and 2 IN ports of Transmitter to the DVI outputs of a PC over two (2) DVI copper cables. Connect upper USB B port of Transmitter to PC over one (1) USB A-B cable for Keyboard and Mouse. Then, the status LED (blue) will be turned on

#### IN case of two PCs, equipped each DVI port

Connect the DVI-1 IN and 2 IN ports of Transmitter to the DVI output of two (2) PCs over two (2) DVI copper cables. Connect the Transmitter to PCs over two (2) USB A-B cables for Keyboard and Mouse. Then, the status LED (blue) will be turned on

If necessary, connect the RS-232 cable, audio, and mic cables to RS-232, audio IN/OUT, and mic IN/OUT connectors on the front side of Transmitter.

### Step 5

Connect the DVI-1 OUT and 2 OUT of Transmitter to the two (2) single-link DVI displays over DVI copper cables. Attach keyboard and mouse for local control. You may skip Step 5 if you don't need local control.

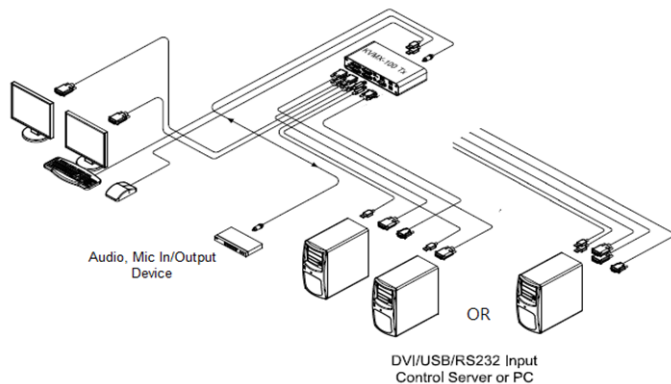


Figure 3– Connection of Transmitter

## 1-4 Installation

### Step 6

Connect the DVI-1 OUT and 2 OUT port of Receiver to the two (2) single-link DVI displays over DVI copper cables. Attach keyboard and mouse for remote control. If necessary, connect the RS-232 cable, audio IN/OUT, and mic IN/OUT connectors on the front side of Receiver.

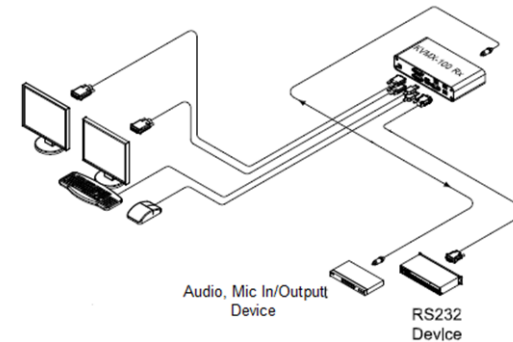


Figure 4– Connection of Receiver

### Step 7

Connect one (1) duplex LC fiber to each Optic A port, on the rear side of the Transmitter and Receiver. Then, the status LED (blue) of Optic A & Video 1 on the front side of both, will be turned on.

### Step 8

Connect another one (1) duplex LC fiber to each Optic B port, on the rear side of the Transmitter and Receiver. Then, the status LED (blue) of Optic B & Video 2 on the front side of both will be turned on.

**Note1:** each fiber channel shall be connected as Optic A to Optic A and Optic B to Optic B carefully.

**Note2:** 1) If PC-1 is turned off or is not connected, the status LED (blue) of Optic A & Video 1 on the front side of them, will be turned off. 2) If PC2 is turned off or not connected, the status LED (blue) of Optic B & Video 2 on the front side of them will be turned off.

### Step 9

If the connectors are fully engaged, two (2) displays will be shown.

**Note3:** KVMX-100-TR reads EDID information of both local side and remote side displays and then, determines the lowest resolution of them for easy and flexible installation (Auto-mix EDID programming).

## 1-5 Installation

## Switch operation guide

User can switch and control Two (2) PCs as 2:1 KVM switch function at specific position such as local and remote side by operating the switch on the front panel of KVMX-100-TR.

Graphic data is always transmitted to not only local DVI-1 OUT and DV I- 2 OUT but also remote DVI-1 OUT and DV I- 2 OUT. However, USB port for keyboard and mouse is selectable for control at specific position.

### Local control

- Set the switch on the front of the Transmitter to the Local side, and the Local status LED (blue) of both will be turned on.
- Then, you can switch and control by setting the PC-1 and PC-2 switch on the front of Transmitter at Local side. If you set the switch from the PC-1 to the PC-2, the status LED (blue) of the PC-2 will be turned on, and you can control the PC-2 through the display, connected to **DVI-2 OUT** of the Transmitter.

On the contrary, if setting the switch from the PC-2 to the PC-1, the status LED (blue) of the PC-1 will be turned on, and you can control the PC-1 through the display, connected to **DVI-1 OUT**.

### Remote control

- Set the switch on the front of the Transmitter from the Local side to the Remote side, and the Remote status LED (blue) on the front side of both Transmitter and Receiver will be turned on.
- Then, you can switch and control by setting the PC-1 and PC-2 switch on the front of Receiver at Remote side. The next step is the same as Local control.

**Note:** If you need switching function with a PC (dual DVI ports), please set and choose the multi-display mode that you want. In this case, you can switch and control two (2) sources from a PC without any setting the switches.

## Switch operation guide

### Console switch control

- Connect the Console port in both Transmitter and Receiver to the Console port in both KVMX-100-LO and KVMX-100-RE over each one (1) console cable.
- Set the switch on the front side of both Transmitter and Receiver to the Console side.
- Then, you can switch and control by just pushing the PC-1 and PC-2 button on the KVMX-100-LO or KVMX-100-RE by setting the switch (Local or Remote) on the KVMX-100-LO. If you set the switch to the Local, the Local status LED (blue) of both sides will be turned on, and you can control both PC-1 and PC-2 by just pushing the PC-1 and PC-2 button at Local side.

On the contrary, if you set the switch from the Local to the Remote, the Remote status LED (blue) will be turned on, and you can control both PC-1 and PC-2 by just pushing the PC-1 and PC-2 button at Remote side.

**Note:** It is very useful to switch and control when KVMX-100-TR and displays are located far.

## Troubleshooting

### The display shows black screen.

- Ensure that all plugs and jacks used by external power supplies (both Opticis and others) are firmly connected. Ensure that the related LEDs are ON.
- Ensure that the transmitter and receiver are plugged correctly to a PC and display, respectively.
- Check if the PC and display(s) are powered on and properly booted.

### Screen is distorted or displays noises.

- Check if the graphic resolution is properly set. Go to the display properties of Windows and tap the settings.
- Ensure that the resolution sets less than WUXGA (1920x1200) at 60Hz refresh ratio.
- Reset the system. Disconnect and reconnect the optical fiber or 12V power adapters.

## Maintenance

No special maintenance is required for this and power adapters. Ensure that the power adapters are stored or used in a benign environment free from liquid or dirt contamination.

There are no user serviceable parts. Refer all service and repair issues to Opticis.

## Technical Support and Service

For commercial or general product support, contact your reseller. For technical service, contact Opticis by email [techsupp@opticis.com](mailto:techsupp@opticis.com) or visit its website at [www.opticis.com](http://www.opticis.com)

## Product Specifications

### KVMX-100-TR Optical KVM Extender

OPTICAL INTERCONNECTION	
Number	Four (4) fiber
Connectors	Four (4) LC connector
Wavelength	1310/1550 nm
Operating Distance	Up to 1.0 km (3280feet) over LC single-mode Up to 300m (985feet) over LC multi-mode
VIDEO	
Supported Resolution	WUXGA (1920x1200)
Pixel data bit depth	8 bits per channel, 3 channels (RGB)
Connectors (Tx)	Two (2) female DVI-D for input
Connector (Rx)	Two (2) female DVI-D for local monitors Two (2) female DVI-D for remote monitors
USB	
Supported Standard	USB HID
Connectors (Tx)	Two (2) female USB-B for connection with PCs Two (2) female USB-A for local KM
Connector (Rx)	Two (2) female USB-A for remote KM
AUDIO (3.5mm jack)	
Connector (Tx)	One (1) Audio In & One (1) Audio Out One (1) Mic In & One (1) Mic Out
Connector (Rx)	One (1) Audio In & One (1) Audio Out One (1) Mic In & One (1) Mic Out
SERIAL DATA COMMUNICATION	
Connector (Tx)	One (1) female 9-pin Dsub
Connector (Rx)	One (1) male 9-pin Dsub
Supported Protocol	RS-232C

### □ Environmental Specifications

- Operating temperature: 0°C to 50°C
- Storage temperature: - 30°C to 70°C
- Humidity: 10% to 85%

### □ Dimensions (WDH): 216 x 112 x 44mm

### AC/DC Power Adapter

- **Power Input:** AC 100-240V, 50/60Hz, AC power cord with power jack.
- **Power Output:** +12 V, 3A SMPS DC-power Adapter
- **Cord DC Jack:** Core is 12 V and outer is GND.

## Features

- Switches and Controls Two (2) PCs – **2:1 KVM switch** function.
- Supports **two (2) single-link DVI displays** up to **WUXGA (1,920x1,200)** resolution at 60Hz.
- Transmits **DVI, USB HID, RS232 and audio signal** up to **1km (3280feet)** over two (2) duplex LC optical fibers.
- Operates with both single and multi-mode optical fibers.
  - Up to **1.0km (3280feet)** with two (2) duplex LC single-mode fibers
  - Up to **300m (985feet)** with two (2) duplex LC multi-mode fibers
- Offers DVI, USB **Loop through** ports for Local two (2) displays and Keyboard / Mouse.
- Supports **bi-directional stereo audio**.
- **Auto-mix EDID** programming
- Lossless Image Quality, with no Frame Dropping
- USB HID ports for keyboard and mouse
- Provides Serial Control Data: RS232C through 9pin D-sub connector.
- Remote console switch & 19” 1RU mounting rack as an option
- Certifications: CE / FCC

## 1-10 Features

## Firmware download

### Step 1

Please download the setup and firmware file.

**Note:** Opticis will provide the setup and firmware file, if the KVMX-100-TR program needs to be updated.

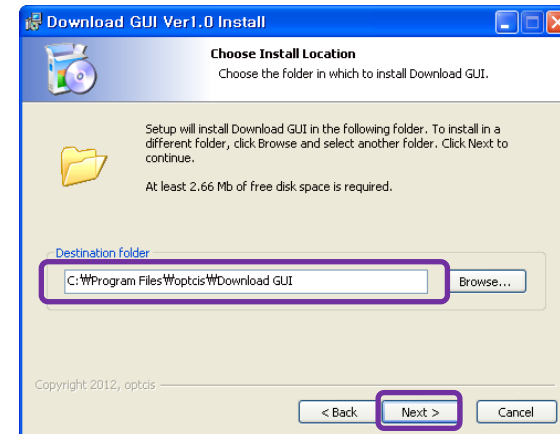
### Step 2

Click “Setup” file in DN\_GUI folder and select a language. Then, start setup wizard is shown as below. Click the “Next” button.



### Step 3

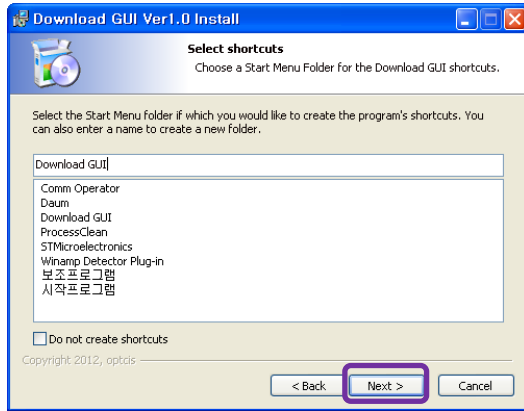
Choose install location and Click the “Next” button.



## 1-11 Firmware download

#### Step 4

Select shortcuts. (If you don't want it, check the blank box) Then, click the "Next" button.



#### Step 5

Click "Install" button and then, the installation will be completed.

#### Step 6

Check the box "Launch Download GUI" and click the "Finish" button.

#### Step 7

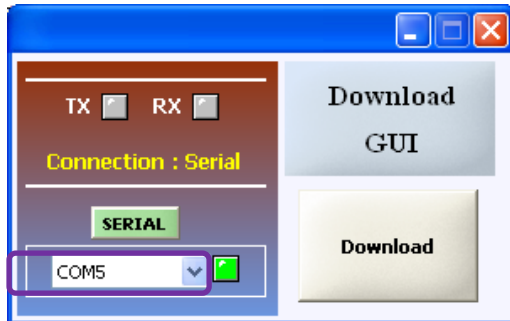
Then, the Download GUI is completed to install the firmware download.

#### Step 8

Power on the Transmitter or Receiver and connect a PC to Service port on the front side of Transmitter or Receiver over Mini-USB cable.

#### Step 9

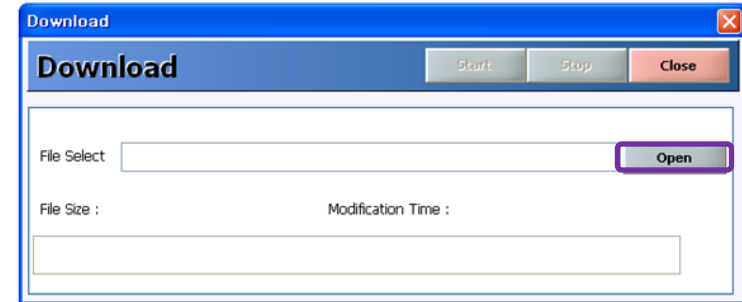
Operate Download GUI and select Comport to select communication port of PC. Then, click "Download" button.



### 1-12 Firmware download

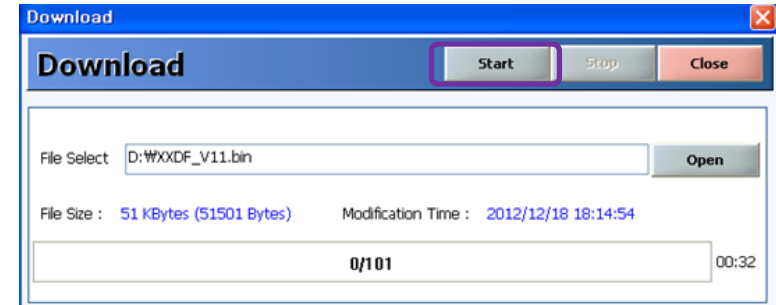
#### Step 10

Click "Open" button and select download file (bin. Format)



#### Step 11

Click "Start" button. Then the firmware will be downloaded



#### Step 12

The firmware download is completed and its status will be shown as below.



#### Step 13

Please close the program and reboot KVMX-100-TR to run it under new firmware program.

### 1-13 Firmware download



## Warranty Information up

### 1 (One) Year Warranty

Opticis warrants this KVMX-100-TR to be free from defects in workmanship and materials, under normal use and service, for a period of one (1) year from the date of purchase from Opticis or its authorized resellers.

If a product does not work as warranted during the applicable warranty period, Opticis shall, at its option and expense, repair the defective product or part, deliver to customer an equivalent product or part to replace the defective item, or refund to customer the purchase price paid for the defective product.

All products that are replaced will become the property of Opticis.

Replacement products may be new or reconditioned.

Any replaced or repaired product or part has a ninety (90) day warranty or the remainder of the initial warranty period, whichever is longer.

Opticis shall not be responsible for any software, firmware, information, or memory data of customer contained in, stored on, or integrated with any products returned to Opticis for repair under warranty or not.

### Warranty Limitation and Exclusion

Opticis shall have no further obligation under the foregoing limited warranty if the product has been damaged due to abuse, misuse, neglect, accident, unusual physical or electrical stress, unauthorized modifications, tampering, alterations, or service other than by Opticis or its authorized agents, causes other than from ordinary use or failure to properly use the product in the application for which said product is intended.

### Dispose of Old Electrical & Electronic Equipment

(Applicable in the European Union and other European countries with separate systems)



This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product.

The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

### 1-14 Warranty Information

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For technical support, check with the Opticis web site [www.opticis.com](http://www.opticis.com) or contact [techsupp@opticis.com](mailto:techsupp@opticis.com)