

**Kramer Electronics, Ltd.**



# **USER MANUAL**

**Model:**

**VS-12DPIR**

*1x2 DisplayPort Selector*

## Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
<b>2</b>	<b>Getting Started</b>	<b>1</b>
2.1	Quick Start	2
<b>3</b>	<b>Overview</b>	<b>3</b>
3.1	About DisplayPort	3
3.2	About HDCP	4
3.3	Recommendations for Best Performance	4
<b>4</b>	<b>Your VS-12DPIR 1x2 DisplayPort Selector</b>	<b>5</b>
<b>5</b>	<b>Connecting the VS-12DPIR 1x2 DisplayPort Selector</b>	<b>6</b>
5.1	Using the Remote Control Transmitter	7
5.2	Controlling via the REMOTE Terminal Block Connector	7
<b>6</b>	<b>Technical Specifications</b>	<b>8</b>

## Figures

Figure 1: VS-12DPIR 1x2 DisplayPort Selector	5
Figure 2: Connecting a VS-12DPIR 1x2 DisplayPort Selector	6
Figure 3: Connecting the REMOTE Input Select Connector	7

## Tables

Table 1: VS-12DPIR 1x2 DisplayPort Selector Features	5
Table 2: Technical Specifications of the VS-12DPIR	8

## 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 groups<sup>1</sup> that are clearly defined by function.

Congratulations on purchasing your Kramer DigiTOOLS® **VS-12DPIR** *1x2 DisplayPort Selector*. The **VS-12DPIR** is ideal for:

- Home theater, presentation and multimedia applications
- Rental and staging

The package includes the following items:

- **VS-12DPIR** *1x2 DisplayPort Selector*
- Power adapter (5V 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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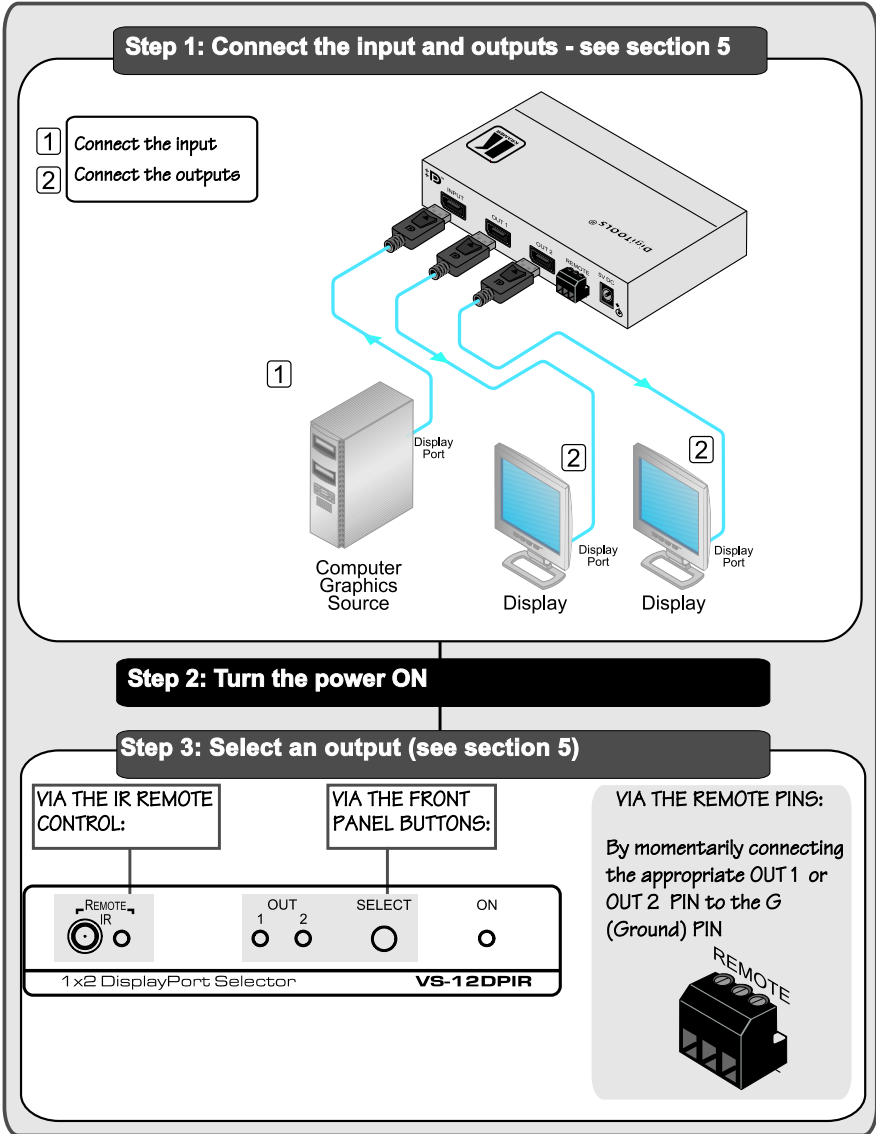
1 GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Matrix Switchers; GROUP 3: Control Systems; GROUP 4: Format/Standards Converters; GROUP 5: Range Extenders and Repeaters; GROUP 6: Specialty AV Products; GROUP 7: Scan Converters and Scalers; GROUP 8: Cables and Connectors; GROUP 9: Room Connectivity; GROUP 10: Accessories and Rack Adapters; GROUP 11: Sierra Products

2 Download up-to-date Kramer user manuals from our Web site at <http://www.kramerelectronics.com>

3 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 of the VS-12DPIR.



### 3 Overview

The high-quality **VS-12DPIR** accepts a DisplayPort (DP) input and distributes the signal to one of two selectable outputs.

In particular, the **VS-12DPIR**:

- Features up to 2.7Gbps bandwidth per graphic channel
- Has a maximum resolution of 2560x1600 pixels and a total maximum bandwidth of 10.8Gbps over four lanes
- Has a high-resolution and rich colors and transports audio and multiple video streams
- Passes the EDID signals from the display device to the source
- Is HDCP compliant
- Is 5V DC fed
- Can be controlled remotely

#### 3.1 About DisplayPort

DisplayPort (DP) is a digital display interface standard for the PC industry. It delivers the highest resolutions and sound quality.

In addition, DisplayPort:

- Provides a simple interface between a PC and a display, projector or TV
- Supports 1 to 4 data pairs ("lanes") at a transfer rate of 1.62Gb or 2.7Gb per second
- Has a maximum length of 15 meters for video transmission, at a resolution of 1080p/60Hz and 3 meters for full bandwidth transmission
- Video specs include a video path that supports 6 to 16 bits per color channel, a maximum resolution of 2560x1600 pixels and a total maximum bandwidth of 10.8Gbps over four lanes
- Is backward-compatible with HDMI, DVI (Digital Visual Interface) and VGA, via an appropriate adapter
- Version 1.1 supports HDCP (see section 3.2)
- Supports two-way communication over its auxiliary channel between the video source (for example, a PC) and the digital display, enabling new functionality such as automatic configuration and one-button play
- Replaces the interface needed between the PC and an external display, as well as the low voltage differential signaling (LVDS) interface in notebook computers, monitors, to connect to LCD panels

### 3.2 About HDCP

The High-Bandwidth Digital Content Protection (HDCP) standard<sup>1</sup> protects digital video and audio signals transmitted over DVI or HDMI connections between two HDCP-enabled devices to eliminate the reproduction of copyrighted material. To protect copyright holders (such as movie studios) from having their programs copied and shared, the HDCP standard provides for the secure and encrypted transmission of digital signals.

### 3.3 Recommendations for Best Performance

To achieve the best performance:

- Use only good quality connection cables<sup>2</sup> to avoid 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 that may adversely influence signal quality and position your Kramer **VS-12DPIR** 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 unit<sup>3</sup>.

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

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<sup>1</sup> Developed by Intel

<sup>2</sup> Available from Kramer Electronics on our Web site at <http://www.kramerelectronics.com>

<sup>3</sup> For example, part number 2535-052002

## 4 Your VS-12DPIR 1x2 DisplayPort Selector

Figure 1 and Table 1 define the **VS-12DPIR 1x2 DisplayPort Selector**:

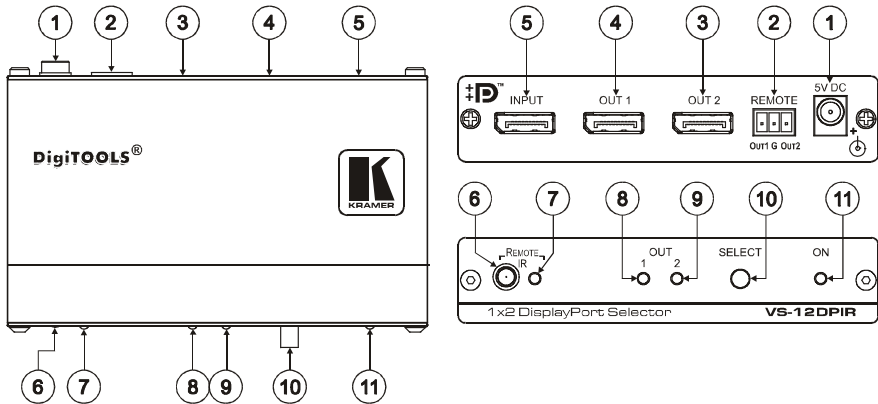


Figure 1: VS-12DPIR 1x2 DisplayPort Selector

Table 1: VS-12DPIR 1x2 DisplayPort Selector Features

#	Feature	Function	
1	5V DC	+5V DC connector for powering the unit	
2	REMOTE Terminal Block Connectors	Connect to a contact closure switch	
3	OUT 2 DisplayPort Connector	Connects to the DP acceptor 2	
4	OUT 1 DisplayPort Connector	Connects to the DP acceptor 1	
5	INPUT DisplayPort Connector	Connects to the DP source	
6	REMOTE IR	Receiver Window	Receives signals from the infrared remote control transmitter
7		LED	The red LED lights when receiving signals from the infrared remote control transmitter
8	OUT 1 LED	Illuminates when output 1 is selected	
9	OUT 2 LED	Illuminates when output 2 is selected	
10	SELECT Button	Press to select the active output	
11	ON LED	Illuminates when receiving power	

## 5 Connecting the VS-12DPIR 1x2 DisplayPort Selector

To connect the **VS-12DPIR**, as the example in Figure 2 shows, do the following<sup>1</sup>:

1. Connect the DP source (for example, a PC with a DP output) to the INPUT DP connector.
2. Connect the DP OUT connectors to up to two acceptors, as follows:
  - DP OUT 1 connector to a display
  - DP OUT 2 connector to a display
3. Connect the 5V DC power adapter to the power socket and connect the adapter to the mains electricity.

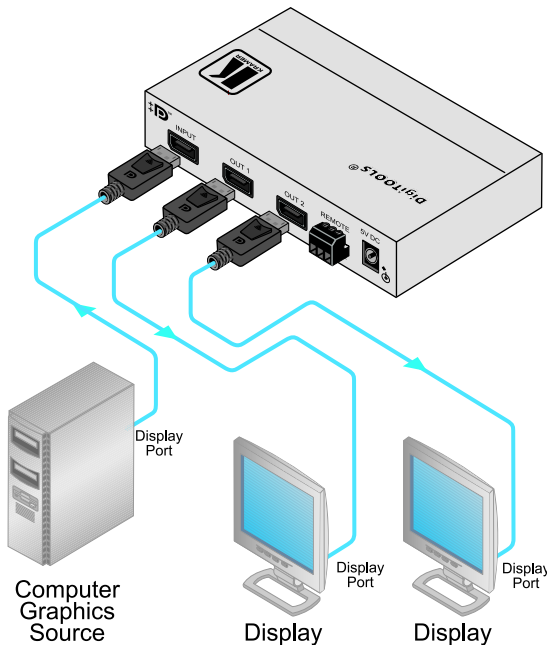


Figure 2: Connecting a VS-12DPIR 1x2 DisplayPort Selector

<sup>1</sup> Switch OFF the power on each device before connecting it to your VS-12DPIR. After connecting your VS-12DPIR, switch on its power and then switch on the power on each device



## 5.1 Using the Remote Control Transmitter

You can use the remote control transmitter<sup>1</sup> to select OUTPUT 1 or 2. Before doing so, set it to work with the **VS-12DPIR** by assigning a GROUP number.

To assign the GROUP number on the remote control transmitter, do the following:

1. Point the remote control transmitter at the remote receiver (item 10 in Figure 1 / Table 1) and press the GROUP key.
2. Press key 11.  
This sets and saves the group number.

To select OUTPUT 1 or 2 via the remote control transmitter, press key 1 or 2.

## 5.2 Controlling via the REMOTE Terminal Block Connector

The contact closure remote control pins operate in a similar way to the output SELECT button. Using the contact closure remote control lets you select an output by remote control. To do so, temporarily connect the required input (OUT1 or OUT2) pin on the REMOTE terminal block connector to the G (ground) pin, as illustrated in the examples in Figure 3.

**DO NOT** connect more than one PIN to the G PIN at the same time

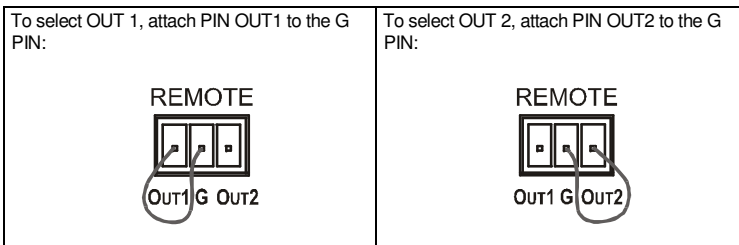


Figure 3: Connecting the REMOTE Input Select Connector

<sup>1</sup> The setup parameters for the remote control transmitter are as follows: router number = 1 (default); group number = 11, single digit mode (default), video (default). For further details, see the RC-IR2 user manual

## 6 Technical Specifications

Table 2 includes the technical specifications<sup>1</sup> of the **VS-12DPIR**:

*Table 2: Technical Specifications of the VS-12DPIR*

INPUT:	1 DisplayPort Connector
OUTPUTS:	2 DisplayPort Connectors
BANDWIDTH:	Supports up to 2.7Gbps bandwidth per graphic channel
COMPLIANCE WITH HDMI STANDARD:	Supports: DisplayPort 1.1 and HDCP 1.3
CONTROLS:	Output select button, IR remote control, contact closure remote control pins
INDICATOR LEDs:	OUT 1, OUT 2, and ON LEDs
POWER SOURCE:	5V DC, 70mA
DIMENSIONS:	12cm x 7.15cm x 2.44cm (4.7" x 2.81" 0.96") W, D, H
WEIGHT:	0.3kg (0.67lbs) approx.
ACCESSORIES:	Power supply, bracket installation kit
OPTIONS:	Kramer DisplayPort cables <sup>2</sup>

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

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

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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 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](http://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 installation 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 your 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:  
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)



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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.**

Web site: [www.kramerelectronics.com](http://www.kramerelectronics.com)

E-mail: [info@kramerel.com](mailto:info@kramerel.com)

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