MODELS:

**VS-41AV**
4x1 Audio-Video Switcher

**VS-101AV**
10x1 Video/Audio-Stereo Switcher

**VS-4X**
4x1 Balanced Audio Switcher

P/N: 2900-002009 Rev 2
VS-41AV, VS-101AV, VS-4X Quick Start Guide

This page guides you through a basic installation and first-time use of your products. For more detailed information, see the VS-41AV, VS-101AV, VS-4X User Manual. You can download the latest manual at http://www.kamerelectronics.com.

Step 1: Check what’s in the box

- VS-41AV or VS-101AV or VS-4X
- 4 Rubber feet
- 1 Quick Start sheet
- 1 User Manual

Save the original box and packaging in case your product needs to be returned to the factory for service.

Step 2: Install the VS-41AV, VS-101AV, VS-4X

Mount the VS-41AV in a rack (using the RK-81 rack adapter), mount the VS-4X in a rack (using the RK-4X rack adapter), mount the VS-101AV in a 19” rack, or place the unit on a table.

Step 3: Connect the inputs and outputs

Always use Kramer high-performance cables for connecting AV equipment to your products.

Step 4: Operate the Product

Press the INPUT SELECTOR button to switch the selected input to the output.
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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 that are clearly defined by function: 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 and GROUP 11: Sierra Products.

Congratulations on purchasing your Kramer VS-41AV, VS101AV, VS-4X switchers that are ideal for the following typical applications:

- Small editing systems
- Security, CCTV, and home theater systems
- Any application where a passive “hard-wired” signal path is preferred
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

Go to [http://www.kramerelectronics.com](http://www.kramerelectronics.com) 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 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 products away from moisture, excessive sunlight and dust
3 Overview

This section defines the three mechanical Kramer switchers:

- **VS-41AV** 4x1 Audio-Video Switcher (see Section 3.1)
- **VS-101AV** 10x1 Video/Audio-Stereo Switcher (see Section 3.2)
- **VS-4X** 4x1 Balanced Audio Switcher (see Section 3.3)
3.1 Defining the VS-41AV 4x1 Audio-Video Switcher

The VS-41AV is a high-performance mechanical switcher for composite video and unbalanced stereo audio signals. It switches any one of four inputs to a single output.

The VS-41AV features:

- High bandwidth of 520MHz (-3dB)
- Mechanical (passive) switching that requires no power
- Compact desktop size. Two units can be rack mounted side-by-side in a 1U rack space with the optional RK-81 adapter

Figure 1 defines the VS-41AV.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>INPUT SELECTOR Buttons (1-4)</td>
<td>Press to choose which input to switch to the output</td>
</tr>
<tr>
<td>VIDEO OUT BNC Connector</td>
<td>Connect to a composite video acceptor</td>
</tr>
<tr>
<td>VIDEO IN (1-4) RCA Connectors</td>
<td>Connect to up to 4 composite video sources</td>
</tr>
<tr>
<td>AUDIO OUT RCA Connectors</td>
<td>Connect the right and left channels to an unbalanced stereo audio acceptor</td>
</tr>
<tr>
<td>AUDIO IN (1-4) RCA Connectors</td>
<td>Connect the right and left channels to up to 4 unbalanced stereo audio sources</td>
</tr>
</tbody>
</table>
3.2 Defining the VS-101AV 10x1 Video/Audio-Stereo Switcher

The VS-101AV is a high-performance switcher for composite video and unbalanced audio signals. It switches any one of 10 composite video and unbalanced stereo audio signals to a single composite output.

The VS-101AV features:

- High bandwidth of 500MHz (-3dB)
- Mechanical (passive) switching that requires no power
- A standard 19” rack mount size of 1U.

Figure 2 defines the VS-101AV.

<table>
<thead>
<tr>
<th>#</th>
<th>Feature</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><em>INPUT SELECTOR</em> Buttons (1-10)</td>
<td>Press to choose which input to switch to the output</td>
</tr>
<tr>
<td>2</td>
<td><em>AUDIO OUT</em> RCA Connectors</td>
<td>Connect the right and left channels to an unbalanced stereo audio acceptor</td>
</tr>
<tr>
<td>3</td>
<td><em>AUDIO IN (1-10)</em> RCA Connectors</td>
<td>Connect the right and left channels to up to 10 unbalanced stereo audio sources</td>
</tr>
<tr>
<td>4</td>
<td><em>VIDEO OUT</em> BNC Connector</td>
<td>Connect to a composite video acceptor</td>
</tr>
<tr>
<td>5</td>
<td><em>VIDEO IN (1-10)</em> RCA Connectors</td>
<td>Connect to up to 10 composite video sources</td>
</tr>
</tbody>
</table>
### 3.3 Defining the VS-4X 4x1 Balanced Audio Switcher

The **VS-4X** is a high-performance switcher for balanced stereo audio signals on XLR connectors. It switches any one of four stereo signals to a single stereo output.

- Mechanical (passive) switching that requires no power
- Compact desktop size. Two units can be rack mounted side-by-side in a 1U rack space with the optional **RK-4X** adapter

**Figure 3** defines the **VS-4X**.

<table>
<thead>
<tr>
<th>#</th>
<th>Feature</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><em>INPUT SELECTOR</em> Buttons (1-4)</td>
<td>Press to choose which input to switch to the output</td>
</tr>
<tr>
<td>2</td>
<td><em>IN (1-4)</em> XLR Connectors</td>
<td>Connect the right and left channels to up to 4 balanced stereo audio sources</td>
</tr>
<tr>
<td>3</td>
<td><em>OUT</em> XLR Connectors</td>
<td>Connect the right and left channels to a balanced stereo audio acceptor</td>
</tr>
</tbody>
</table>
4 Connecting and Operating the Switchers

This section describes how to connect and operate the three mechanical Kramer switchers:

- **VS-41AV** 4x1 Audio-Video Switcher (see Section 4.1)
- **VS-101AV** 10x1 Video/Audio-Stereo Switcher (see Section 4.2)
- **VS-4X** 4x1 Balanced Audio Switcher (see Section 4.3)
4.1 Connecting the VS-41AV 4x1 Audio-Video Switcher

To connect the **VS-41AV** as illustrated in the example in Figure 4:

1. Connect up to 4 CV sources (for example, composite video players 1-4) to the VIDEO IN BNC connectors.

2. Connect up to 4 unbalanced stereo audio sources (for example, the audio output from composite video players 1-4) to the right and left channels of the AUDIO IN RCA connectors.

3. Connect the VIDEO OUT BNC connector to a CV acceptor (for example, a composite video recorder).

4. Connect the right and left channels of the AUDIO OUT RCA connectors to an audio acceptor (for example, the audio input to the composite video recorder).

![Figure 4: Connecting the VS-41AV](image)
4.2 Connecting the VS-101AV 10x1 Video/Audio-Stereo Switcher

To connect the **VS-101AV** as illustrated in the example in **Figure 5**:

1. Connect up to 10 CV sources (for example, composite video players 1-10) to the VIDEO IN BNC connectors.

2. Connect up to 10 unbalanced stereo audio sources (for example, the audio output from composite video players 1-10) to the right and left channels of the AUDIO IN RCA connectors.

3. Connect the VIDEO OUT BNC connector to a CV acceptor (for example, a composite video recorder).

4. Connect the right and left channels of the AUDIO OUT RCA connectors to an audio acceptor (for example, the audio input to the composite video recorder).

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**Figure 5: Connecting the VS-101AV**
4.3  Connecting the VS-4X 4x1 Balanced Audio Switcher

To connect the **VS-4X** as illustrated in the example in [Figure 6]:

1. Connect up to 4 balanced stereo audio sources (for example, balanced audio players 1-4) to the right and left channels of the IN XLR connectors.

2. Connect the right and left channels of the OUT XLR connectors to an audio acceptor (for example, a balanced stereo audio recorder).

![Figure 6: Connecting the VS-4X](image)

4.4  Operating the Switchers

To switch the desired input to the output, press the appropriate INPUT SELECTOR button. In the **VS-41AV** or **VS-101AV** switchers, audio and video inputs switch at the same time in audio-follow-video mode.
<table>
<thead>
<tr>
<th></th>
<th>VS-41AV</th>
<th>VS-101AV</th>
<th>VS-4X</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INPUTS:</strong></td>
<td>4 video, 1Vpp/75Ω on BNC connectors, 4 stereo audio, +4dBu typical, on RCA connectors</td>
<td>10 video, 1Vpp/75Ω on BNC connectors, 10 unbalanced stereo audio, +4dBu typical, on RCA connectors</td>
<td>4 balanced stereo audio, +4dBu typical, on XLR connectors</td>
</tr>
<tr>
<td><strong>OUTPUTS:</strong></td>
<td>1 video, 1Vpp/75Ω on a BNC connector, 1 stereo audio, +4dBu typical, on an RCA connector</td>
<td>1 video, 1Vpp/75Ω on a BNC connector, 1 unbalanced stereo audio, +4dBu typical, on an RCA connector</td>
<td>1 balanced stereo audio, +4dBu typical, on an XLR connector</td>
</tr>
<tr>
<td><strong>SWITCHING SYSTEM:</strong></td>
<td>Mechanical, &quot;Break-before-make&quot;, Audio- Follow-Video mode</td>
<td>Mechanical, &quot;Break-before-make&quot;, Audio- Follow-Video mode</td>
<td>Mechanical, &quot;Break-before-make&quot;</td>
</tr>
<tr>
<td><strong>BANDWIDTH:</strong></td>
<td>Video: 520MHz (–3dB) Audio: 100kHz (–3dB)</td>
<td>Video: 500MHz (–3dB) Audio: 100kHz (–3dB)</td>
<td>Audio: 100kHz (–3dB)</td>
</tr>
<tr>
<td><strong>CROSSPOINTS:</strong></td>
<td>4 for video, 4x2 for audio, 1 set active at any given time</td>
<td>10 for video, 10x2 for audio, 1 set active at any given time</td>
<td>4x2 for stereo audio</td>
</tr>
<tr>
<td><strong>SIGNAL LEVELS:</strong></td>
<td>Video: Up to 3Vpp Audio: +30dBu</td>
<td>Video: Up to 3Vpp Audio: +30dBu</td>
<td>Up to +30dBu</td>
</tr>
<tr>
<td><strong>DIMENSIONS (W, D, H):</strong></td>
<td>18.8cmx10.2cmx4.4cm (7.4” x 4” x 1.7”)</td>
<td>48.3cmx10.2cmx4.4cm (19” x 4” x 1U)</td>
<td>15.3cmx6.6cmx7.6cm (6” x 2.6” x 3”)</td>
</tr>
<tr>
<td><strong>WEIGHT:</strong></td>
<td>0.65kg (1.44lbs) approx</td>
<td>1.5kg (3.3lbs) approx</td>
<td>0.57kg (1.27lbs) approx</td>
</tr>
<tr>
<td><strong>OPTIONS:</strong></td>
<td>RK−81 19” rack adapter</td>
<td></td>
<td>RK−4X 19” rack adapter</td>
</tr>
</tbody>
</table>

Specifications are subject to change without notice at http://www.kramerelectronics.com
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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 damage or malfunction resulting from the installation 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.

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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

SAFETY WARNING
Disconnect the unit from the power supply before opening and servicing.