

**Kramer Electronics, Ltd.**



# **USER MANUAL**

**Model:**

**VS-211HDxl**

*3G HD-SDI Automatic Standby Switcher*



## 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> |
| <b>4</b> | <b>Your VS-211HDxl 3G HD-SDI Automatic Standby Switcher</b>    | <b>4</b> |
| <b>5</b> | <b>Using the VS-211HDxl</b>                                    | <b>5</b> |
| 5.1      | Connecting the VS-211HDxl 3G HD-SDI Automatic Standby Switcher | 5        |
| 5.2      | Selecting the Default Master Source Signal                     | 6        |
| 5.3      | Connecting the REMOTE Terminal Block Connector                 | 7        |
| <b>6</b> | <b>Technical Specifications</b>                                | <b>8</b> |

## Figures

|           |   |   |
|-----------|---|---|
| Figure 1: | VS-211HDxl 3G HD-SDI Automatic Standby Switcher             | 4 |
| Figure 2: | VS-211HDxl 3G HD-SDI Automatic Standby Switcher Connections | 6 |
| Figure 3: | REMOTE Terminal Block Connector                             | 7 |

## Tables

|          |  |   |
|----------|--|---|
| Table 1: | VS-211HDxl 3G HD-SDI Automatic Standby Switcher Features | 4 |
| Table 2: | Technical Specifications of the VS-211HDxl               | 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-211HDx1 3G HD-SDI Automatic Standby Switcher**. This product is ideal for providing backup switching for broadcast and post-production applications.

The package includes the following items:

- **VS-211HDx1 3G HD-SDI Automatic Standby Switcher**
- 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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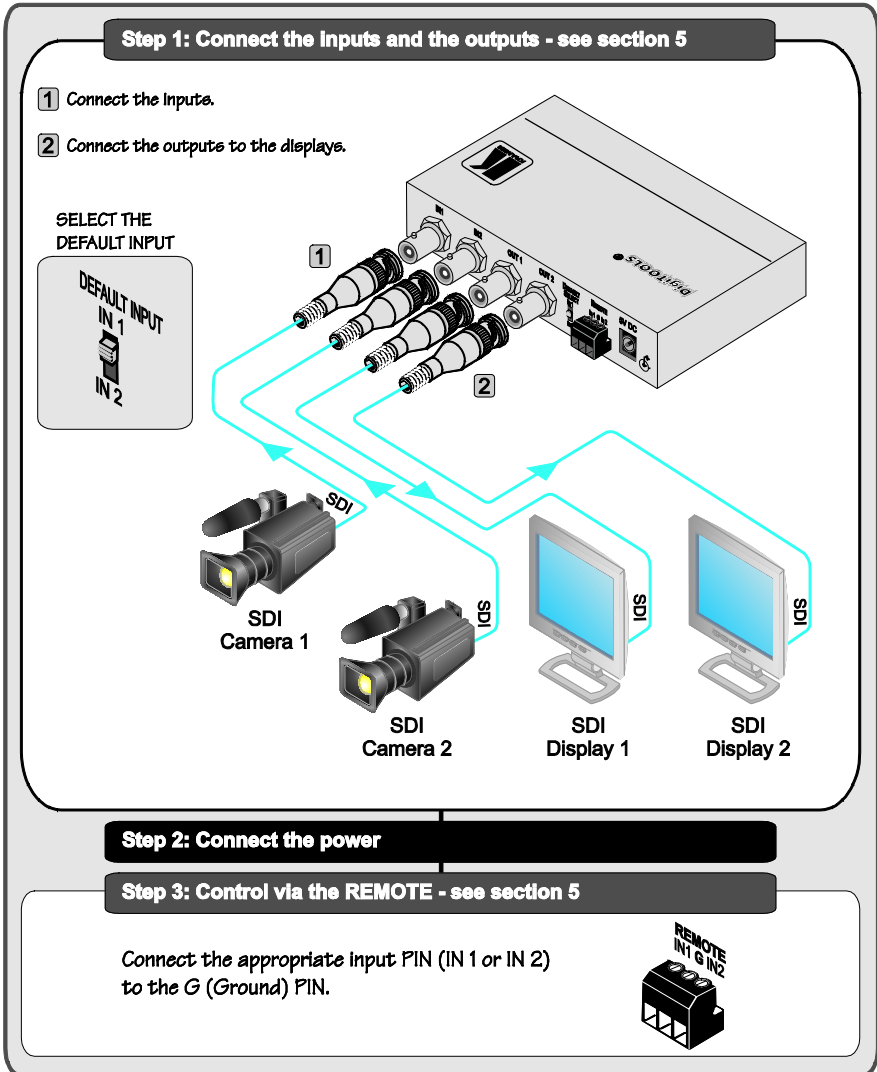
1 GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Matrix Switchers; GROUP 3: Control Systems; GROUP 4: Format/Standards Converters; GROUP 5: Range Extenders and Repeaters; GROUP 6: Specialty AV Products; GROUP 7: Scan Converters and Scalers; GROUP 8: Cables and Connectors; GROUP 9: Room Connectivity; 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.



### 3 Overview


The **VS-211HDxl** is a high-performance automatic standby switcher for SD/HD-SDI and 3G HD-SDI video signals. The **VS-211HDxl** automatically switches to the secondary input whenever the primary video signal is interrupted. If the primary signal reappears, the unit automatically switches back to the primary input.

In addition, the **VS-211HDxl** features:

- Maximum data rate of up to 2.97Gbps
- Multi-standard operation – SMPTE 259M, 292M and 424M compliance and support for data rates of 270Mbps, 1483.5Mbps, 1485Mbps and 2970Mbps
- A DEFAULT INPUT switch for selecting the default SDI master source signal
- Contact closure remote control for forced operation
- Active switching and has flexible sync detection and reconstruction circuitry

To achieve the best performance:

- Use only good quality connection cables<sup>1</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-211HDxl** away from moisture, excessive sunlight and dust

|   |   |
|---|---|
|  | <b>Caution:</b> No operator serviceable parts inside unit   |
|   | <b>Warning:</b> Use only the Kramer Electronics input power wall adapter that is provided with the unit               |
|   | <b>Warning:</b> Disconnect power and unplug unit from wall before installing or removing the device or servicing unit |

<sup>1</sup> Available from Kramer Electronics on our Web site at <http://www.kramerelectronics.com>

## 4 Your VS-211HDxl 3G HD-SDI Automatic Standby Switcher

[Figure 1](#) and [Table 1](#) define the VS-211HDxl:

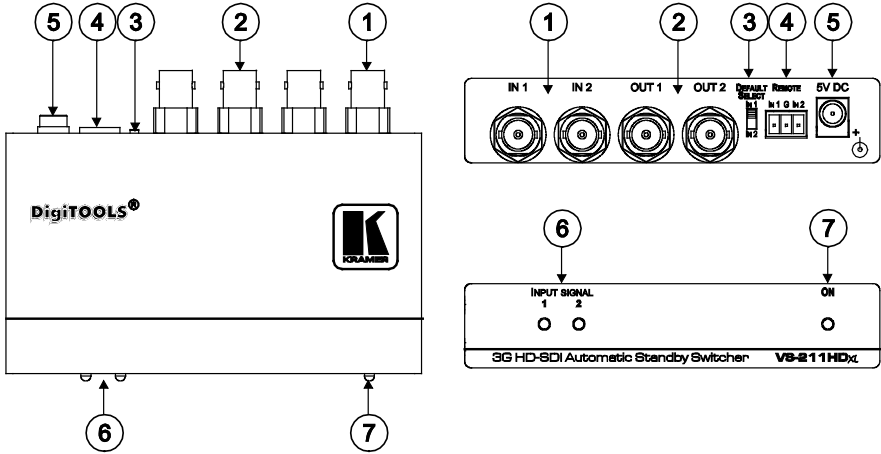


Figure 1: VS-211HDxl 3G HD-SDI Automatic Standby Switcher

Table 1: VS-211HDxl 3G HD-SDI Automatic Standby Switcher Features

| # | Feature  | Function  |
|---|--|---|
| 1 | IN 1, IN 2 BNC Connectors                      | Connect the SDI input sources 1 and 2             |
| 2 | OUT 1, OUT 2 BNC Connectors                    | Connect the SDI output acceptors 1 and 2          |
| 3 | DEFAULT INPUT Switch                           | Switch to select the default input (IN 1 or IN 2) |
| 4 | REMOTE IN 1 and IN 2 Terminal Block Connectors | Connect to a contact closure switch               |
| 5 | 5V DC  | +5V DC connector for powering the unit            |
| 6 | INPUT SIGNAL 1,2 LEDs                          | Illuminates when input is active                  |
| 7 | ON LED   | Illuminates when receiving power                  |

## 5 Using the VS-211HDxl

This section describes how to:

- Connect the **VS-211HDxl** (see section [5.1](#))
- Select the default master source signal (see section [5.2](#))
- Connect the REMOTE connector (see section [5.3](#))

### 5.1 Connecting the VS-211HDxl 3G HD-SDI Automatic Standby Switcher

To connect the **VS-211HDxl**, as illustrated in the example in [Figure 2](#), do the following<sup>1</sup>:

1. Connect SDI input source 1 (for example, SDI video camera 1) to the IN 1 BNC connector.
2. Connect SDI input source 2 (for example, SDI video camera 2) to the IN 2 BNC connector.
3. Connect SDI acceptor 1 (for example, SDI display 1) to the OUT 1 BNC connector.
4. Connect SDI acceptor 2 (for example, SDI display 2) to the OUT 2 BNC connector.
5. Set the DEFAULT INPUT switch to whichever input is the master input, as described in section [5.2](#).
6. If needed, connect remote switches to the REMOTE IN 1 and IN 2 terminal block connectors, as described in section [5.3](#).
7. Connect the 5V DC power adapter to the power socket and connect the adapter to the mains electricity.

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<sup>1</sup> Switch OFF the power on each device before connecting it to your VS-211HDxl. After powering up your VS-211HDxl, switch on the power on each device

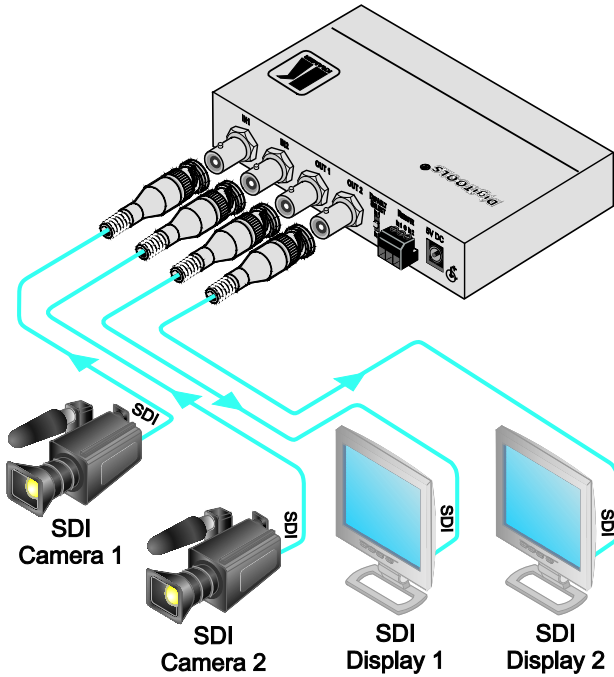


Figure 2: VS-211HDxl 3G HD-SDI Automatic Standby Switcher Connections

## 5.2 Selecting the Default Master Source Signal

When active input sources are connected to IN 1 and IN 2, the DEFAULT INPUT switch setting determines the default master input source.

- If the master input signal is not detected, the **VS-211HDxl** automatically activates the standby input
  - If IN 1 is the default input and it fails, IN 2 activates
  - If IN 2 is the default input and it fails, IN 1 activates
- If the master input reactivates while the standby input is active, the unit automatically switches back to the master input
  - If IN 2 is active while IN 1 is the default input and IN 1 reactivates, IN 1 reactivates
  - If IN 1 is active while IN 2 is the default input and IN 2 reactivates, IN 2 reactivates

### 5.3 Connecting the REMOTE Terminal Block Connector

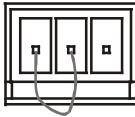
Regardless of the default input switch setting, you can force the switching of the active input by remote control. To do this, connect the appropriate REMOTE input terminal block connector pins to a contact closure switch<sup>1</sup> (see [Figure 3](#)).

- To force IN 1: connect REMOTE IN1 to PIN G (ground)
- To force IN 2: connect REMOTE IN2 to PIN G (ground)

Do not connect both the REMOTE IN1 and the REMOTE IN2  
to PIN G simultaneously

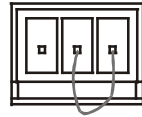
Attach PIN IN1 to  
PIN G to activate  
INPUT 1

REMOTE  
IN1 G IN2



Attach PIN IN2 to  
PIN G to activate  
INPUT 2

REMOTE  
IN1 G IN2



*Figure 3: REMOTE Terminal Block Connector*

<sup>1</sup> Note that the connection should be permanent, since the VS-211HDxl reverts to an automatic switcher when the connection is removed

## 6 Technical Specifications

[Table 2](#) includes the technical specifications:

*Table 2: Technical Specifications<sup>1</sup> of the VS-211HDxl*

|                    |  |
|--------------------|--|
| INPUTS:            | 2 x 3G HD-SDI video on BNC connectors                          |
| OUTPUTS:           | 2 x 3G HD-SDI video on BNC connectors                          |
| MAX. OUTPUT LEVEL: | 800mVpp /75Ω   |
| DATA RATE:         | Up to 2.97Gbps   |
| CONTROLS:          | Contact closure remote control, input default selection switch |
| COUPLING:          | AC   |
| POWER SOURCE:      | 5V DC, 400mA   |
| DIMENSIONS:        | 12cm x 7.2cm x 2.4cm (4.7" x 2.8" x 1.0") W, D, H              |
| WEIGHT:            | 0.3kg (0.7lbs)   |
| ACCESSORIES:       | Power supply, mounting bracket                                 |
| OPTIONS:           | 19" rack adapter   |

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

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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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