Kramer Electronics, Ltd.

USER MANUAL

Model:

6241HDxl

4x1 3G HD-SDI Switcher

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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 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[1] that are clearly defined by function.

Thank you for purchasing the Kramer DigiTOOLS® **6241HDxl** *4x1 3G HD-SDI Switcher,* which is ideal for:

- Video broadcast studios for signal routing
- Non-linear editing suites
- Video production studios

Each package includes the following items:

- **6241HDxl** *4x1 3G HD-SDI Switcher*
- Power supply (5V DC)
- This user manual[2]

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
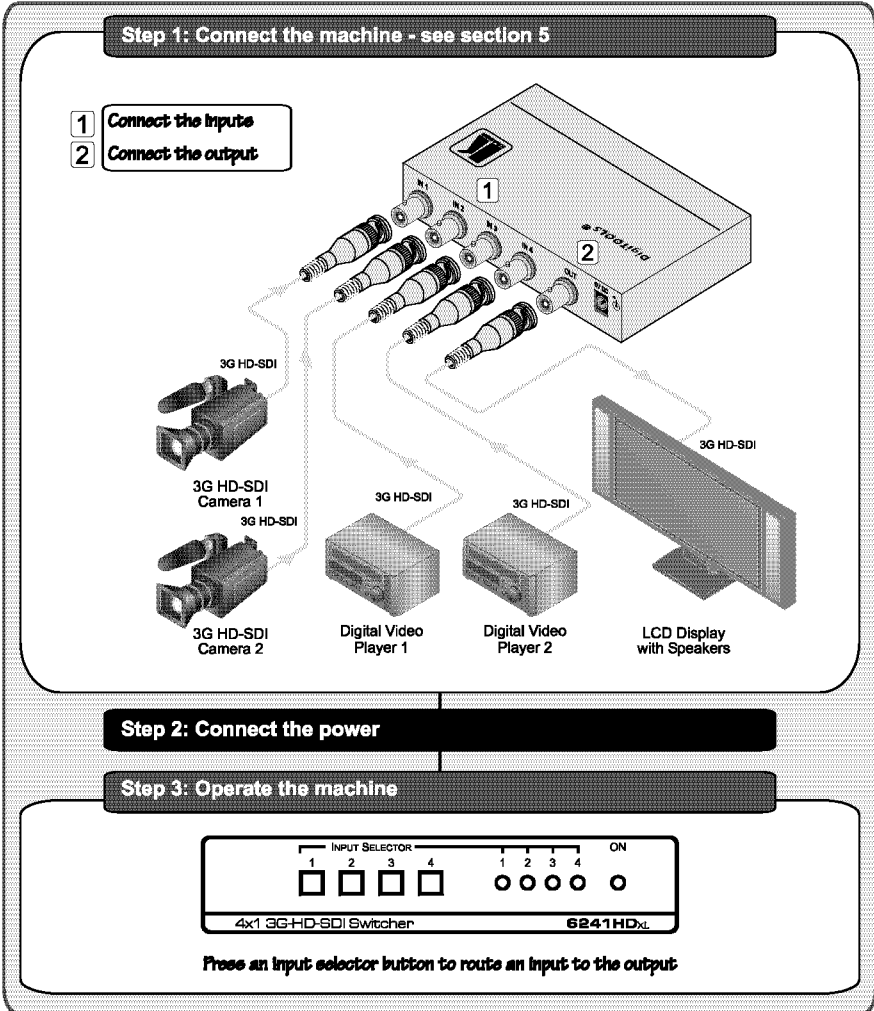- Use Kramer high-performance high-resolution cables[3]

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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 are available from http://www.kramerelectronics.com

3 The complete list of Kramer cables is available from http://www.kramerelectronics.com

2.1 Quick Start

This quick start chart summarizes the basic setup and operation steps.

Step 1: Connect the machine - see section 5

1 Connect the Inputs
2 Connect the output

3G HD-SDI

3G HD-SDI
Camera 1

3G HD-SDI

3G HD-SDI
Camera 2

3G HD-SDI

Digital Video
Player 1

3G HD-SDI

Digital Video
Player 2

3G HD-SDI

3G HD-SDI

LCD Display
with Speakers

Step 2: Connect the power

Step 3: Operate the machine

INPUT SELECTOR   ON
1 2 3 4   1 2 3 4

4x1 3G-HD-SDI Switcher   6241HD xL

Press an input selector button to route an input to the output

3   Overview

The **6241HDxl** *4x1 3G HD-SDI Switcher* is a high-performance switcher for 3G HD-SDI serial digital video signals. It takes any one of four 3G HD-SDI inputs, applies reclocking and equalization, and outputs the signal to one 3G HD-SDI output.

The **6241HDxl** features:

- A maximum data rate up to 2.97Gbps
- HDTV compatibility
- SMPTE 259M, 344M, 292M and 424M compliance
- Adjustment-free operation
- Automatic equalization for losses on 75Ω coaxial cable[1]
- Reclocking the input signal to provide a low-jitter, serial digital output
- 8-bit and 10-bit video operation with automatic word length recognition
- Unmodified transmission of all signal information (including embedded information) from the inputs to the output

To achieve the best performance:

- Use only good quality connection cables[2] 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 **6241HDxl** 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 the unit
Warning:	Disconnect power and unplug unit from wall before installing or removing the device or servicing unit

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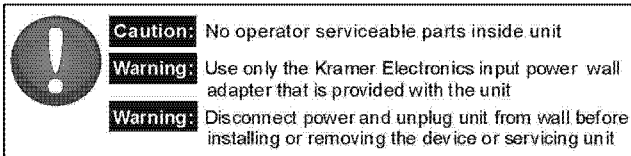
1 Up to hundreds of meters of cable (depending on the cable quality and the video standard)

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

4   Defining the 6241HDxl 4x1 3G HD-SDI Switcher
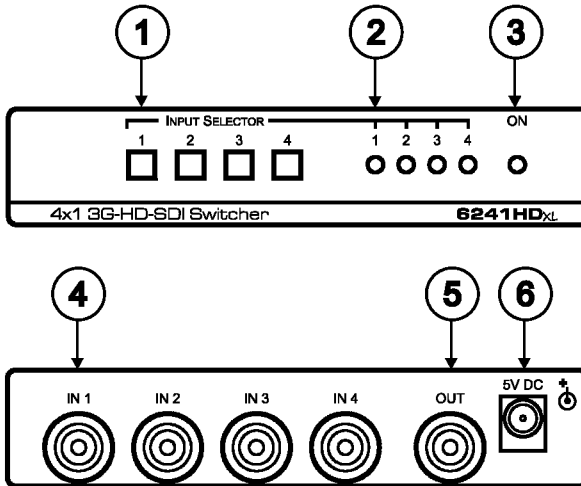
Figure 1 and Table 1 define the unit.

Figure 1: 6241HDxl 4x1 3G HD-SDI Switcher Front and Rear Panels

Table 1: 6241HDxl 4x1 3G HD-SDI Switcher Front and Rear Panel Functions

#	Feature	Function
1	*INPUT SELECTOR* Buttons	Select the serial digital video source (from 1 to 4)
2	*INPUT SELECTOR* LEDs	Lights for the selected input (from 1 to 4)
3	*ON* LED	Lights when receiving power
4	*INPUT* BNC Connectors	Connect to the serial digital video sources (75Ω) (1 to 4)
5	*OUT* BNC Connector	Connect to the serial digital video acceptor (75Ω)
6	*5V DC*	Connect to the power adapter, center pin positive

5   Connecting the 6241HDxl 4x1 3G HD-SDI Switcher

To connect your 6241HDxl *4x1 SDI Switcher*, as illustrated in Figure 2:

1. Connect up to four serial digital video sources (for example, two 3G HD-SDI digital broadcast cameras and two digital video players) to the four serial digital video IN BNC connectors[1].

2. Connect the serial digital video OUT BNC connector to the serial digital video acceptor (for example, a 3G HD-SDI digital monitor).

3. Connect the power adapter to the power socket and connect the adapter to the mains electricity.
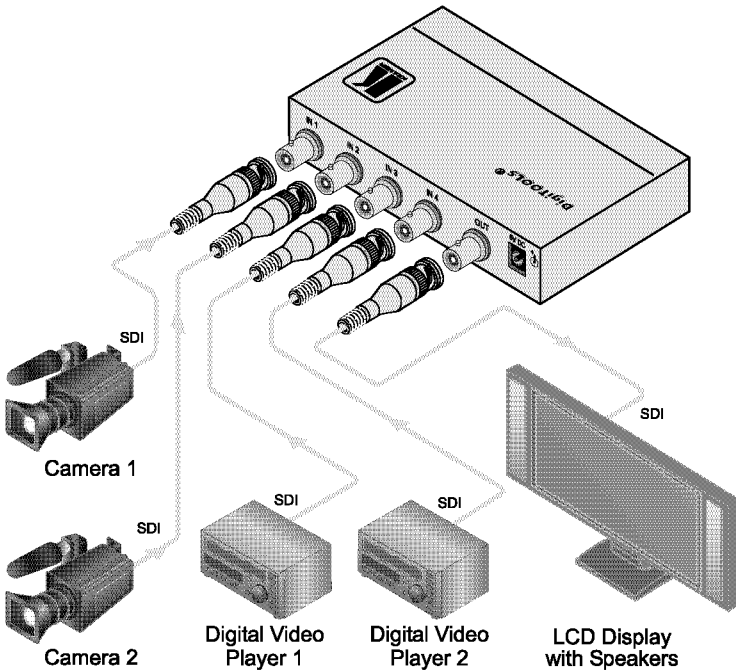
Figure 2: Connecting the 6241HDxl 4x1 3G HD-SDI Switcher

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1 You do not have to connect all the inputs

6 Technical Specifications

The **6241HDxl** technical specifications are shown in Table 2.

Table 2: 6241HDxl Technical Specifications[1]

INPUTS:	4 SMPTE 259M/344M/292M/424M serial digital video (75Ω) on BNC connectors
OUTPUT:	1 SMPTE 259M/344M/292M/424M serial digital video (75Ω) on BNC connector
MAX. DATA RATE:	2.97Gbps
MAX. OUTPUT LEVEL:	800mVpp/75Ω
EQUALIZATION:	Automatic equalization for losses on 75Ω coaxial cable
DIMENSIONS:	12cm x 7.5cm x 2.5cm (4.7" x 2.95" x 0.98") W, D, H
POWER SOURCE:	5V DC, 510mA
WEIGHT:	0.25kg (0.6lbs) approx.
ACCESSORIES:	Power supply, mounting bracket
OPTIONS:	RK-T1 or RK-T3 rack mount kit

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[1] Specifications are subject to change without notice

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:	FCC* Rules and Regulations: 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)

For the latest information on our products and a list of Kramer distributors visit 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.