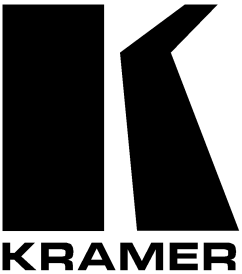
Kramer Electronics, Ltd.



USER MANUAL

Mechanical Switchers

Models:

VS-44AV,

VS-4E, VS-4YC,

VS-84, VS-84YC,

VS-81A, VS-81AV, VS-81AYC,

VS-81V, VS-81X, VS-81YC

Contents

1	**Introduction**	**1**
2	**Getting Started**	**1**
3	**Kramer Mechanical Switchers**	**1**
3.1	Your VS-4E 4x4 Video Audio Switcher	2
3.2	Your VS-4YC 4x4 s-Video Audio Switcher	3
3.3	Your VS-44AV 4x4 Video Audio Matrix	4
3.4	Your VS-81A 8x1 Audio Stereo Switcher	6
3.5	Your VS-81AV 8x1 Video/Audio-Stereo Switcher	7
3.6	Your VS-81AYC 8x1 s-Video/Audio-Stereo Switcher	8
3.7	Your VS-81V 8x1 Video Switcher	9
3.8	Your VS-81X 8x1 Balanced Audio Switcher	11
3.9	Your VS-81YC 8x1 s-Video Switcher	12
3.10	Your VS-84 8x4 Video Audio Switcher	13
3.11	Your VS-84YC 8x4 s-Video Audio Switcher	14
4	**Connecting Kramer Mechanical Switchers**	**16**
4.1	Connecting a VS-81YC s-Video Switcher	17
4.2	Connecting a VS-81X Balanced Audio Switcher	18

Figures

Figure 1: VS-4E 4x4 Video Audio Switcher 2
Figure 2: VS-4YC 4x4 s-Video Audio Switcher 4
Figure 3: VS-44AV 4x4 Video Audio Matrix Switcher 5
Figure 4: VS-81A 8x1 Audio Stereo Switcher 6
Figure 5: VS-81AV 8x1 Video/Audio-Stereo Switcher 7
Figure 6: VS-81AYC 8x1 s-Video/Audio-Stereo Switcher 9
Figure 7: VS-81V 8x1 Video Switcher 10
Figure 8: VS-81X 8x1 Balanced Audio Switcher 11
Figure 9: VS-81YC 8x1 s-Video Switcher 12
Figure 10: VS-84 8x4 Video Audio Switcher 14
Figure 11: VS-84YC 8x4 s-Video Audio Switcher 15
Figure 12: Connecting a VS-81YC s-Video Switcher 17
Figure 13: Connecting a VS-81X Balanced Audio Switcher 18

Tables

Table 1: VS-4E Front Panel Features and Functions 2
Table 2: VS-4E Rear Panel Features and Functions 3
Table 3: VS-4E Technical Specifications 3
Table 4: VS-4YC Front Panel Features and Functions 4
Table 5: VS-4YC Rear Panel Features and Functions 4
Table 6: VS-4YC Technical Specifications 4
Table 7: VS-44AV Front Panel Features and Functions 5
Table 8: VS-44AV Rear Panel Features and Functions 5
Table 9: VS-44AV Technical Specifications 5
Table 10: VS-81A Front Panel Features and Functions 6
Table 11: VS-81A Rear Panel Features and Functions 6
Table 12: VS-81A Technical Specifications 7
Table 13: VS-81AV Front Panel Features and Functions 8
Table 14: VS-81AV Rear Panel Features and Functions 8
Table 15: VS-81AV Technical Specifications 8
Table 16: VS-81AYC Front Panel Features and Functions 9
Table 17: VS-81AYC Rear Panel Features and Functions 9
Table 18: VS-81AYC Technical Specifications 9
Table 19: VS-81V Front Panel Features and Functions 10
Table 20: VS-81V Rear Panel Features and Functions 10
Table 21: VS-81V Technical Specifications 10
Table 22: VS-81X Front Panel Features and Functions 11
Table 23: VS-81X Rear Panel Features and Functions 11
Table 24: VS-81X Technical Specifications 12
Table 25: VS-81YC Front Panel Features and Functions 13
Table 26: VS-81YC Rear Panel Features and Functions 13
Table 27: VS-81YC Technical Specifications 13
Table 28: VS-84 Front Panel Features and Functions 14
Table 29: VS-84 Rear Panel Features and Functions 14
Table 30: VS-84 Technical Specifications 14
Table 31: VS-84YC Front Panel Features and Functions 15
Table 32: VS-84YC Rear Panel Features and Functions 15
Table 33: VS-84YC Technical Specifications 16

1 Introduction

Dedication by Kramer Electronics since 1981, to the development and manufacture of high quality video/audio equipment, makes the Kramer line an integral part of the finest production and presentation facilities in the world. In recent years, Kramer has redesigned and upgraded most of the line, making the best even better! The Kramer line of professional video/audio electronics is one of the most versatile and complete available, and is a true leader in terms of quality, workmanship, price/performance ratio and innovation. In addition to our high quality Kramer mechanical switchers, we also offer excellent distribution amplifiers, (electronic) switchers and matrices, interfaces, processors, remote controllers and computer -related products.

Congratulations on purchasing your Kramer mechanical switcher, which is ideal for a system in which 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

To achieve the best performance when using your Kramer mechanical switcher you should:

- Connect only good quality connection cables, thus avoiding interference, deterioration in signal quality, and elevated noise levels (often associated with low quality cables)
- Position your Kramer mechanical switcher in a location free from moisture and away from excessive sunlight and dust

3 Kramer Mechanical Switchers

This user manual describes the following Kramer mechanical switchers:

- **VS-4E**, *4x4 Video Audio Switcher* (refer to section 3.1 on page 2)
- **VS-4YC**, *4x4 s-Video Audio Switcher* (refer to section 3.2 on page 3)
- **VS-44AV**, *4x4 Video Audio Matrix* (refer to section 3.3 on page 4)
- **VS-81A**, *8x1 Audio Stereo Switcher* (refer to section 3.4 on page 6)
- **VS-81AV**, *8x1 Video/Audio-Stereo Switcher* (refer to section 3.5 on page 7)
- **VS-81AYC**, *8x1 s-Video/Audio-Stereo Switcher* (refer to section 3.6 on page 8)
- **VS-81V**, *8x1 Video Switcher* (refer to section 3.7 on page 9)

- **VS-81X**, *8x1 Balanced Audio Switcher* (refer to section 3.8 on page 11)
- **VS-81YC**, *8x1 s-Video Switcher* (refer to section 3.9 on page 12)
- **VS-84**, *8x4 Video Audio Switcher* (refer to section 3.10 on page 13)
- **VS-84YC**, *8x4 s-Video Audio Switcher* (refer to section 3.11 on page 14)

3.1 Your VS-4E 4x4 Video Audio Switcher

The Kramer **VS-4E** *4x4 Video Audio Switcher* is a high quality mechanical 4x4 switcher for composite video using BNC connectors and stereo audio, using RCA connectors. It is designed for applications requiring a compact desktop unit for routing video and audio independent from one another. The **VS-4E** can only provide one video signal path and one audio signal path at any given time. It cannot distribute a signal to multiple outputs simultaneously. High quality switching components and carefully designed circuits provide excellent isolation between inputs and make the **VS-4E** ideal for high frequency signals such as SDI (serial digital) and high resolution video signals. Its unpowered design is advantageous for applications in which various regulatory compliances would otherwise be required. Unselected video inputs are terminated via 75Ω resistors.

Figure 1 illustrates the VS-4E 4x4 Video Audio Switcher. Table 1 and Table 2 define the front and rear panels of the **VS-4E**, respectively. Table 3 includes the technical specifications for the **VS-4E**.

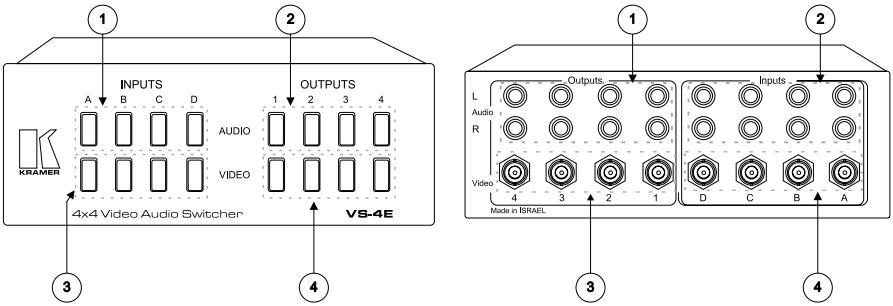


Figure 1: VS-4E 4x4 Video Audio Switcher

Table 1: VS-4E Front Panel Features and Functions

#	Feature	Function
1	*AUDIO INPUTS* Buttons	Select the audio source (from A to D)
2	*AUDIO OUTPUTS* Buttons	Select the audio acceptor (from 1 to 4)
3	*VIDEO INPUTS* Buttons	Select the video source (from A to D)
4	*VIDEO OUTPUTS* Buttons	Select the video acceptor (from 1 to 4)

Table 2: VS-4E Rear Panel Features and Functions

#	Feature	Function
1	*AUDIO OUTPUTS* RCA connectors	Connect to the left and right audio acceptors (from 1 to 4)
2	*AUDIO INPUTS* RCA connectors	Connect to the left and right audio sources (from A to D)
3	*VIDEO OUTPUTS* BNC connectors	Connect to the video acceptors (from 1 to 4)
4	*VIDEO INPUTS* BNC connectors	Connect to the video sources (from A to D)

Table 3: VS-4E Technical Specifications

Feature	Function
Inputs:	4 video, 1Vpp / 75Ω on BNC connectors 4 audio stereo, up to 36Vpp on RCA connectors
Outputs:	4 composite video, 1 Vpp / 75Ω on BNC connectors 4 audio stereo, up to 36Vpp on RCA connectors
Switching System:	Mechanical, break-before-make
Crosstalk:	-42 dB chroma, -60 dB sync
Bandwidth:	475 MHz -3dB (video), 100kHz-3dB (audio)
Dimensions:	18.8 cm x 7 cm x 7 cm (7.4" x 2.7" x 2.7"), W, D, H.
Weight:	0.65 kg. (1.4 lbs.) approx.
Options:	19" rack adapter RK-4E/S

3.2 Your VS-4YC 4x4 s-Video Audio Switcher

The Kramer **VS-4YC** *4x4 s-Video Audio Switcher* is a high quality mechanical 4x4 switcher for s-Video (Y/C) and stereo audio using 4 pin and RCA connectors. The **VS-4YC** is designed for applications requiring a compact desktop unit for routing s-Video and audio independently from one another. The **VS-4YC** can provide only one video signal path and one audio signal path at any given time. It cannot simultaneously distribute an input signal to multiple outputs. High quality switching components and carefully designed circuits provide excellent isolation between inputs. Its unpowered design is advantageous for applications in which various regulatory compliances would otherwise be required. Unselected video inputs are terminated via 75Ω resistors.

Figure 2 illustrates the **VS-4YC** *4x4 s-Video Audio Switcher*. Table 4 and Table 5 define the front and rear panels of the **VS-4YC**, respectively. Table 6 includes the technical specifications for the **VS-4YC**.

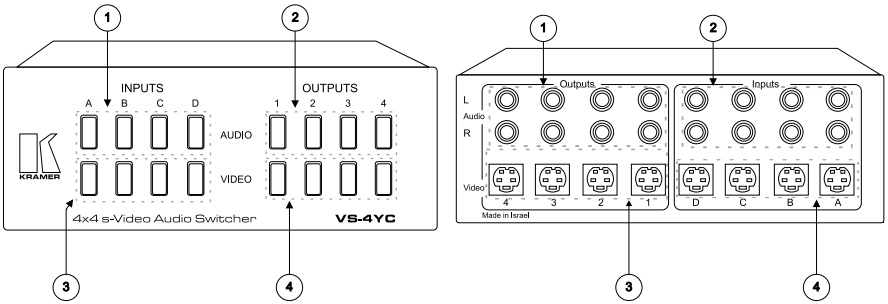


Figure 2: VS-4YC 4x4 s-Video Audio Switcher

Table 4: VS-4YC Front Panel Features and Functions

#	Feature	Function
1	*AUDIO INPUTS* Buttons	Select the audio source (from A to D)
2	*AUDIO OUTPUTS* Buttons	Select the audio acceptor (from 1 to 4)
3	*VIDEO INPUTS* Buttons	Select the s-Video source (from A to D)
4	*VIDEO OUTPUTS* Buttons	Select the s-Video acceptor (from 1 to 4)

Table 5: VS-4YC Rear Panel Features and Functions

#	Feature	Function
1	*AUDIO OUTPUTS* RCA connectors	Connect to the left and right audio acceptors (from 1 to 4)
2	*AUDIO INPUTS* RCA connectors	Connect to the left and right audio sources (from A to D)
3	*VIDEO OUTPUTS* 4p connectors	Connect to the s-Video acceptors (from 1 to 4)
4	*VIDEO INPUTS* 4p connectors	Connect to the s-Video sources (from A to D)

Table 6: VS-4YC Technical Specifications

Feature	Function
Inputs:	4 s-Video, 1Vpp / 75Ω (Y), 0.3 Vpp / 75Ω (C) on 4p type connectors 4 audio stereo, up to 36Vpp on RCA connectors
Outputs:	4 s-Video, 1Vpp / 75Ω (Y), 0.3 Vpp / 75Ω (C) on 4p type connectors 4 audio stereo, up to 36Vpp RCA connectors
Switching System:	Mechanical, break-before-make
Crosstalk:	-42 dB chroma, -60 dB sync
Bandwidth:	280 MHz -3dB (Y), 100kHz-3dB (audio)
Dimensions:	18.8 cm x 7 cm x 7 cm (7.4" x 2.7" x 2.7"), W, D, H.
Weight:	0.6 kg. (1.3 lbs.) approx.
Options:	19" rack adapter RK-4E/S

3.3 Your VS-44AV 4x4 Video Audio Matrix

The Kramer **VS-44AV** *4x4 Video Audio Matrix* is a high quality mechanical 4x4 matrix switcher for composite video and stereo audio signals. The **VS-44AV** is designed to simultaneously route up to 4 sources to any one of 4 available outputs. The **VS-44AV** is extremely unique in allowing 4 different

cross points of video and stereo audio to operate at the same time. However, it cannot simultaneously distribute an input signal to multiple outputs. The high quality input selector buttons are color-coded for easy identification and unselected inputs are terminated via 75Ω resistors.

Figure 3 illustrates the **VS-44AV** *4x4 Video Audio Matrix*. Table 7 and Table 8 define the front and rear panels of the **VS-44AV**, respectively. Table 9 includes the technical specifications for the **VS-44AV**.

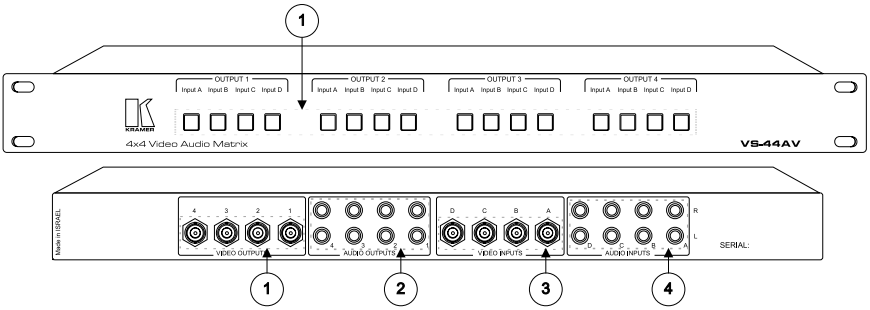


Figure 3: VS-44AV 4x4 Video Audio Matrix Switcher

Table 7: VS-44AV Front Panel Features and Functions

#	Feature	Function
1	*OUTPUT / INPUT Selector* Buttons	Select the video and audio source (from A to D) to route to each video/audio acceptor (from 1 to 4)

Table 8: VS-44AV Rear Panel Features and Functions

#	Feature	Function
1	*VIDEO OUTPUTS* BNC connectors	Connect to the video acceptors (from 1 to 4)
2	*AUDIO OUTPUTS* RCA connectors	Connect to the right and left audio acceptors (from 1 to 4)
3	*VIDEO INPUTS* BNC connectors	Connect to the video sources (from A to D)
4	*AUDIO INPUTS* RCA connectors	Connect to the right and left audio sources (from A to D)

Table 9: VS-44AV Technical Specifications

Feature	Function
Inputs:	4 Video, 1Vpp / 75Ω on BNC connectors 4 audio stereo, up to 36Vpp (typ.) on RCA connectors
Outputs:	4 Video, 1Vpp / 75Ω on BNC connectors 4 audio stereo, up to 36Vpp (typ.) on RCA connectors
Switching System:	Mechanical, break-before-make
Crosspoints:	16 for video, 16x2 for audio, 4 active at any given time
Crosstalk:	-42 dB @ 5MHz
Bandwidth:	220 MHz -3dB (Y), 100kHz-3dB (audio)
Dimensions:	19 inch (W), 4 inch (D), 1U (H) rack mountable
Weight:	1.6 kg. (3.5 lbs.) approx.

3.4 Your VS-81A 8x1 Audio Stereo Switcher

The Kramer **VS-81A**, *8x1 Audio Stereo Switcher* is a high quality mechanical 8x1 switcher for stereo audio using RCA connectors. The **VS-81A** is designed for applications requiring a compact desktop unit for routing stereo audio signals. High quality switching components provide excellent isolation between inputs. Its unpowered passive design is advantageous for applications in which various regulatory compliances would otherwise be required. The "hard-wired" passive signal path can also switch other signal formats.

Figure 4 illustrates the **VS-81A**, *8x1 Audio Stereo Switcher*. Table 10 and Table 11 define the front and rear panels of the **VS-81A**, respectively. Table 12 includes the technical specifications for the **VS-81A**.

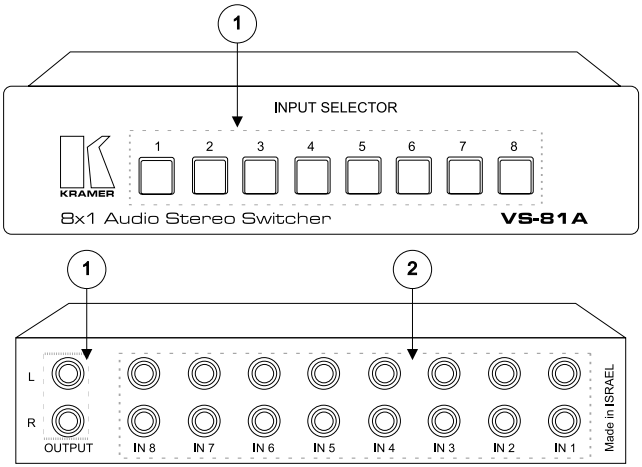


Figure 4: VS-81A 8x1 Audio Stereo Switcher

Table 10: VS-81A Front Panel Features and Functions

#	Feature	Function
1	*INPUT Selector* Buttons	Select the audio source (from 1 to 8) to route to the output

Table 11: VS-81A Rear Panel Features and Functions

#	Feature	Function
1	*AUDIO OUTPUT* RCA connectors	Connect to the audio acceptor (left and right)
2	*AUDIO INPUTS* RCA connectors	Connect to the audio sources (left and right) (from 1 to 8)

Table 12: VS-81A Technical Specifications

Feature	Function
Inputs:	8 audio stereo, on RCA connectors
Output:	1 audio stereo, on an RCA connector
Switching System:	Mechanical, break-before-make
Crosspoints:	1 of 8
Signal Levels:	Up to +30dBm
Bandwidth:	25 kHz - 3dB
Dimensions:	18.8 cm x 10.2 cm x 4.4 cm (7.4" x 4" x 1.7"), W, D, H.
Weight:	0.64 kg. (1.4 lbs.) approx.
Options:	19" rack adapter RK-81

3.5 Your VS-81AV 8x1 Video/Audio-Stereo Switcher

The Kramer **VS-81AV**, *8x1 Video/Audio-Stereo Switcher* is a high quality mechanical 8x1 switcher for composite video and stereo audio signals. The **VS-81AV** is designed for applications requiring an unpowered rack mountable unit for routing of video and stereo audio signals. Audio is always switched together with the corresponding video signal and unselected video inputs are terminated via 75Ω resistors. High quality switching components provide excellent isolation between inputs. Its unpowered passive design is advantageous for applications in which various regulatory compliances would otherwise be required. The "hard-wired" signal path offers excellent bandwidth, and can switch other signal formats.

Figure 5 illustrates the VS-81AV, 8x1 Video/Audio-Stereo Switcher. Table 13 and Table 14 define the front and rear panels of the VS-81AV, respectively. Table 15 includes the technical specifications for the VS-81AV.

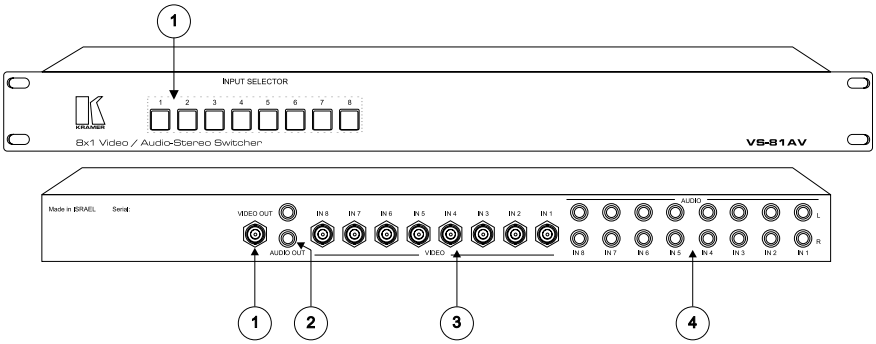


Figure 5: VS-81AV 8x1 Video/Audio-Stereo Switcher

Table 13: VS-81AV Front Panel Features and Functions

#	Feature	Function
1	*INPUT Selector* Buttons	Select the video/audio source (from 1 to 8) to route to the output

Table 14: VS-81AV Rear Panel Features and Functions

#	Feature	Function
1	*VIDEO OUT* BNC connector	Connects to the video acceptor
2	*AUDIO OUT* RCA connectors	Connect to the left and right audio acceptor
3	*VIDEO* inputs BNC connector	Connect to the video sources (from 1 to 8)
4	*AUDIO* inputs RCA connectors	Connect to the left and right audio sources (from 1 to 8)

Table 15: VS-81AV Technical Specifications

Feature	Function
Inputs:	8 video, 1Vpp / 75Ω nom. on BNC connectors 8 audio stereo, 1Vpp nom. on RCA connectors
Output:	1 video, 1Vpp / 75Ω nom. on a BNC connector 1 audio stereo, 1Vpp nom. on an RCA connector
Switching System:	Mechanical, break-before-make
Crosspoints:	1 of 8
Signal Levels:	Up to 3Vpp video, +30dBm audio
Bandwidth:	Video: 400MHz –3dB; Audio: 100kHz - 3dB
Dimensions:	19 inch (W), 4 inch (D), 1U (H) rack mountable
Weight:	1.5 kg. (3.3 lbs.) approx.

3.6 Your VS-81AYC 8x1 s-Video/Audio-Stereo Switcher

The Kramer **VS-81AYC**, *8x1 s-Video/Audio-Stereo Switcher* is a high quality mechanical 8x1 switcher for s-Video (Y/C) and stereo audio signals using 4 pin and RCA connectors. The **VS-81AYC** is designed for applications requiring an unpowered rack mountable unit for routing of s-Video (Y/C) and stereo audio signals. Audio is always switched together with the corresponding s-Video (Y/C) signal and unselected video inputs are terminated via 75Ω resistors. High quality switching components provide excellent isolation between inputs. Its unpowered passive design is advantageous for applications in which various regulatory compliances would otherwise be required. The "hard-wired" signal path offers excellent bandwidth, and can switch other signal formats.

Figure 6 illustrates the **VS-81AYC**, *8x1 s-Video/Audio-Stereo Switcher*. Table 16 and Table 17 define the front and rear panels of the **VS-81AYC**, respectively. Table 18 includes the technical specifications for the **VS-81AYC**.

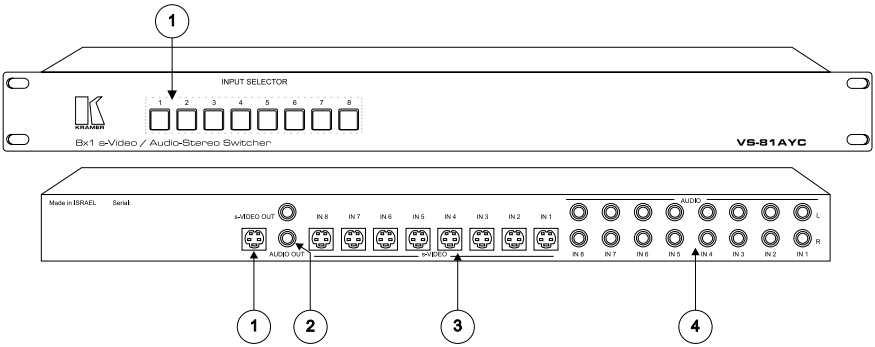


Figure 6: VS-81AYC 8x1 s-Video/Audio-Stereo Switcher

Table 16: VS-81AYC Front Panel Features and Functions

#	Feature	Function
1	*INPUT Selector* Buttons	Select the s-Video/audio source (from 1 to 8) to route to the output

Table 17: VS-81AYC Rear Panel Features and Functions

#	Feature	Function
1	*s-VIDEO OUT* 4p connector	Connects to the s-VIDEO acceptor
2	*AUDIO OUT* RCA connectors	Connect to the left and right audio acceptor
3	*s-VIDEO* inputs 4p connector	Connect to the s-VIDEO sources (from 1 to 8)
4	*AUDIO* inputs RCA connectors	Connect to the left and right audio sources (from 1 to 8)

Table 18: VS-81AYC Technical Specifications

Feature	Function
Inputs:	8 s-Video, 1Vpp / 75Ω (Y), 0.3 Vpp / 75Ω (C) nom. on 4p connectors 8 audio stereo, Vpp nom. on RCA connectors
Outputs:	1 s-Video, 1Vpp / 75Ω (Y), 0.3 Vpp / 75Ω (C) nom on a 4p connector 1 audio stereo, Vpp nom on RCA connectors
Switching System:	Mechanical, break-before-make
Crosspoints:	1 of 8
Signal Levels:	Up to 3Vpp video, +30dBm audio
Bandwidth:	Video: 350MHz –3dB(Y); Audio: 100kHz - 3dB
Dimensions:	19 inch (W), 4 inch (D), 1U (H) rack mountable
Weight:	1.4 kg. (3.1 lbs.) approx.

3.7 Your VS-81V 8x1 Video Switcher

The Kramer **VS-81V**, *8x1 Video Switcher* is a high quality mechanical 8x1 switcher for composite video using BNC connectors. The **VS-81V** is designed for applications requiring a compact desktop unit for routing composite video signals. High quality switching components and caref ully designed circuits provide excellent isolation between inputs and unselected

inputs are terminated via 75Ω resistors. Its unpowered design is advantageous for applications in which various regulatory compliances would otherwise be required. The passive "hard-wired" signal path offers very high bandwidth and can also switch other signal formats.

Figure 7 illustrates the **VS-81V**, *8x1 Video Switcher*. Table 19 and Table 20 define the front and rear panels of the **VS-81V**, respectively. Table 21 includes the technical specifications for the **VS-81V**.

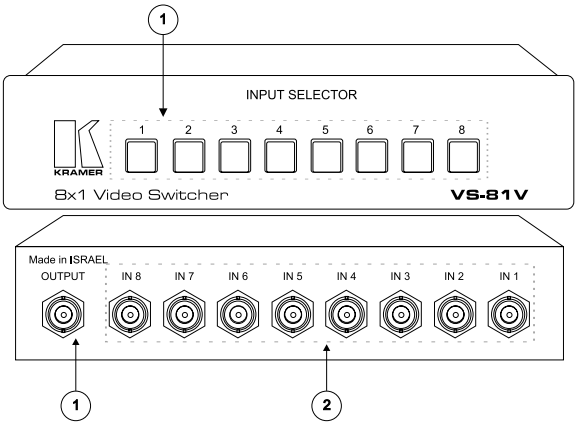


Figure 7: VS-81V 8x1 Video Switcher

Table 19: VS-81V Front Panel Features and Functions

#	Feature	Function
1	*INPUT Selector* Buttons	Select the video source (from 1 to 8) to route to the output

Table 20: VS-81V Rear Panel Features and Functions

#	Feature	Function
1	*VIDEO OUTPUT* BNC connector	Connect to the video acceptor
2	*VIDEO* inputs BNC connectors	Connect to the video sources (from 1 to 8)

Table 21: VS-81V Technical Specifications

Feature	Function
Inputs:	8 video, 1Vpp / 75Ω nom. on BNC connectors
Outputs:	1 video, 1 Vpp / 75Ω nom. on a BNC connector
Switching System:	Mechanical, break-before-make
Crosspoints:	1 of 8
Video Crosstalk:	-47 dB @ 5MHz
Frequency Response:	400 MHz -3dB
Dimensions:	18.8 cm x 10.2 cm x 4.4 cm (7.4" x 4" x 1.7"), W, D, H.
Weight:	0.72 kg. (1.6 lbs.) approx.
Options:	19" rack adapter RK-81

3.8 Your VS-81X 8x1 Balanced Audio Switcher

The Kramer **VS-81X**, *8x1 Balanced Audio Switcher* is a high quality mechanical 8x1 switcher for mono balanced audio using XLR connectors. The **VS-81X** is designed for applications requiring a compact desktop unit for routing audio signals. High quality switching components provide excellent isolation between inputs. Its unpowered passive design is advantageous for applications in which various regulatory compliances would otherwise be required. The "hard-wired" signal path can also switch other signal formats.

Figure 8 illustrates the **VS-81X**, *8x1 Balanced Audio Switcher*. Table 22 and Table 23 define the front and rear panels of the **VS-81X**, respectively. Table 24 includes the technical specifications for the **VS-81X**.

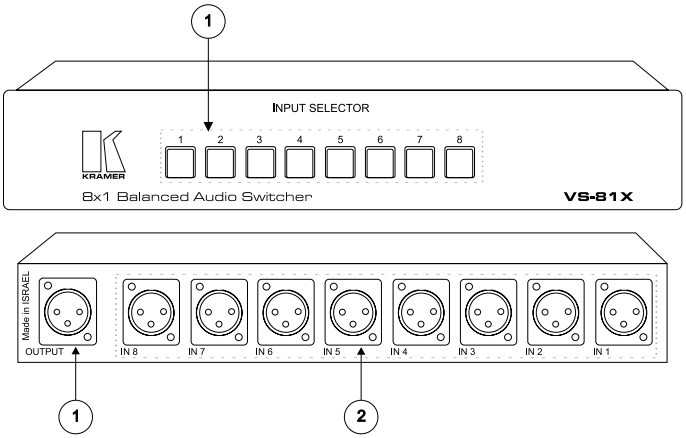


Figure 8: VS-81X 8x1 Balanced Audio Switcher

Table 22: VS-81X Front Panel Features and Functions

#	Feature	Function
1	*INPUT Selector* Buttons	Select the audio source (from 1 to 8) to route to the output

Table 23: VS-81X Rear Panel Features and Functions

#	Feature	Function
1	*AUDIO OUTPUT* XLR connector	Connect to the audio acceptor
2	*AUDIO* inputs XLR connectors	Connect to the audio sources (from 1 to 8)

Table 24: VS-81X Technical Specifications

Feature	Function
Inputs:	8 balanced audio, line or mic level, on XLR connectors
Output:	1 balanced audio, line or mic level, on an XLR connector
Switching System:	Mechanical, break-before-make
Crosspoints:	1 of 8
Signal Levels:	Up to +30dBm
Bandwidth:	25 kHz - 3dB
Dimensions:	25.5 cm x 10.2 cm x 4.5 cm (10" x 4" x 1.7"), W, D, H.
Weight:	0.82 kg. (1.8 lbs.) approx.
Options:	19" rack adapter RK-81X

3.9 Your VS-81YC 8x1 s-Video Switcher

The Kramer **VS-81YC**, *8x1 s-Video Switcher* is a high quality mechanical 8x1 switcher for s-Video (Y/C) using 4p connectors. The **VS-81YC** is designed for applications requiring a compact desktop unit for routing one of up to 8 s-Video sources to one monitor, projector, or other receiving device. High quality switching components provide excellent isolation between inputs and unselected inputs are terminated via 75Ω resistors. Its unpowered passive design is advantageous for applications in which various regulatory compliances would otherwise be required. The "hard-wired" signal path offers very high bandwidth and can switch other signal formats.

Figure 9 illustrates the **VS-81YC**, *8x1 s-Video Switcher*. Table 25 and Table 26 define the front and rear panels of the **VS-81YC**, respectively. Table 27 includes the technical specifications for the **VS-81YC**.

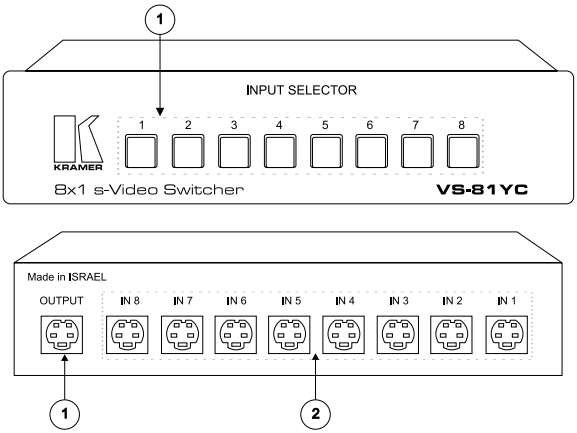


Figure 9: VS-81YC 8x1 s-Video Switcher

Table 25: VS-81YC Front Panel Features and Functions

#	Feature	Function
1	*INPUT Selector* Buttons	Select the s-Video source (from 1 to 8) to route to the output

Table 26: VS-81YC Rear Panel Features and Functions

#	Feature	Function
1	*s-VIDEO OUT* 4p connector	Connects to the s-VIDEO acceptor
2	*s-VIDEO* inputs 4p connectors	Connect to the s-VIDEO sources (from 1 to 8)

Table 27: VS-81YC Technical Specifications

Feature	Function
Inputs:	8 s-Video, 1Vpp/75Ω (Y), 0.3Vpp / 75Ω (C) nom. on 4p connectors
Output:	1 s-Video, 1Vpp/75Ω (Y), 0.3Vpp / 75Ω (C) nom. on a 4p connector
Switching System:	Mechanical, break-before-make
Crosspoints:	1 of 8
Video Crosstalk:	-50 dB (Y), -44 dB (C)
Frequency Response:	375 MHz - 3dB
Dimensions:	18.8 cm x 10.2 cm x 4.4 cm (7.4" x 4" x 1.7"), W, D, H.
Weight:	0.6 kg. (1.3 lbs.) approx.
Options:	19" rack adapter RK-81

3.10 Your VS-84 8x4 Video Audio Switcher

The Kramer **VS-84**, *8x4 Video Audio Switcher* is a high quality mechanical 8x4 switcher for composite video using BNC connectors, and stereo audio using RCA connectors. The **VS-84** routes any one of up to 8 sources to any one of 4 outputs. Audio is always switched together with the corresponding video signal. The **VS-84** can only provide one video and audio signal path at any given time. It cannot simultaneously distribute a signal to multiple outputs. High quality switching components and careful design provide excellent isolation between inputs. The passive design of the **VS-84** makes it suitable for other signal formats. Also, its unpowered design is advantageous for applications in which various regulatory compliances would otherwise be required. Unselected video inputs are terminated via 75 Ω resistors.

Figure 10 illustrates the **VS-84**, *8x4 Video Audio Switcher*. Table 28 and Table 29 define the front and rear panels of the **VS-84**, respectively. Table 30 includes the technical specifications for the **VS-84**.

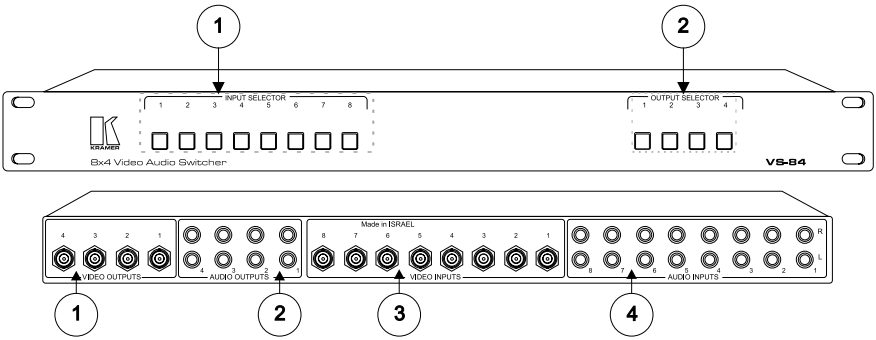


Figure 10: VS-84 8x4 Video Audio Switcher

Table 28: VS-84 Front Panel Features and Functions

#	Feature	Function
1	*INPUT Selector* Buttons	Select the video/audio source (from 1 to 8)
2	*OUTPUT Selector* Buttons	Select the video/audio acceptor (from 1 to 4)

Table 29: VS-84 Rear Panel Features and Functions

#	Feature	Function
1	*VIDEO OUTPUTS* BNC connectors	Connects to the video acceptors (from 1 to 4)
2	*AUDIO OUTPUTS* RCA connectors	Connect to the left and right audio acceptors (from 1 to 4)
3	*VIDEO INPUTS* BNC connector	Connect to the video sources (from 1 to 8)
4	*AUDIO INPUTS* RCA connectors	Connect to the left and right audio sources (from 1 to 8)

Table 30: VS-84 Technical Specifications

Feature	Function
Inputs:	8 video, 1Vpp / 75Ω nom. on BNC connectors 8 audio stereo, up to 36Vpp on RCA connectors
Outputs:	4 video, 1Vpp / 75Ω nom. on BNC connectors 4 audio stereo, up to 36Vpp on RCA connectors
Switching System:	Mechanical, break-before-make
Crosspoints:	32 for video, 32 x 2 for audio, 1 set active at any given time
Video Crosstalk:	-42 dB chroma, -60 dB sync
Bandwidth:	Video: 200MHz –3dB; Audio: 100kHz - 3dB
Dimensions:	19 inch (W), 4 inch (D), 1U (H) rack mountable
Weight:	1.6 kg. (3.5 lbs.) approx.

3.11 Your VS-84YC 8x4 s-Video Audio Switcher

The Kramer **VS-84YC**, *8x4 s-Video Audio Switcher* is a high quality rack mountable, mechanical 8x4 switcher for s-Video (Y/C) and stereo audio signals, using 4 pin and RCA connectors. The **VS-84YC** is designed to route any one of up to 8 sources to any one of 4 outputs using 4p connectors for s-Video and RCA connectors for audio. Audio is always switched together

with the corresponding s-Video (Y/C) signal and unselected video inputs are terminated via 75Ω resistors. The **VS-84YC** can only provide one s-Video and audio signal path at any given time. It cannot simultaneously distribute a signal to multiple outputs. High quality switching components and careful design provide excellent isolation between inputs and the passive design of the **VS-84YC** makes it suitable for other signal formats. Its unpowered design is advantageous for applications in which various regulatory compliances would otherwise be required.

Figure 11 illustrates the **VS-84YC**, *8x4 s-Video Audio Switcher*. Table 31 and Table 32 define the front and rear panels of the **VS-84YC**, respectively. Table 33 includes the technical specifications for the **VS-84YC**.

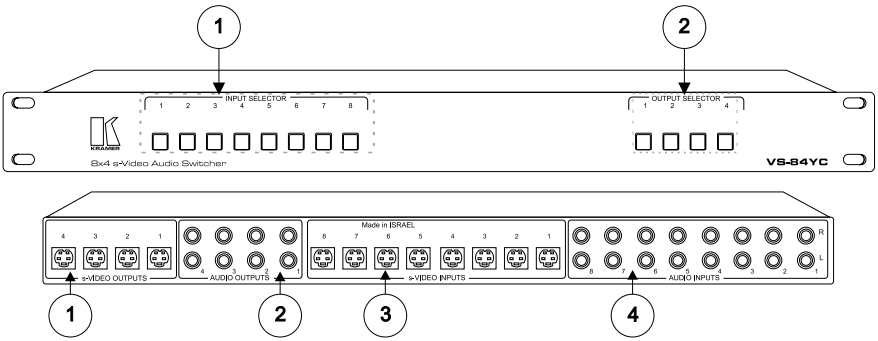


Figure 11: VS-84YC 8x4 s-Video Audio Switcher

Table 31: VS-84YC Front Panel Features and Functions

#	Feature	Function
1	*INPUT SELECTOR* Buttons	Select the s-Video /audio source (from 1 to 8)
2	*OUTPUT SELECTOR* Buttons	Select the s-Video /audio acceptor (from 1 to 4)

Table 32: VS-84YC Rear Panel Features and Functions

#	Feature	Function
1	*s-VIDEO OUTPUTS* 4p connectors	Connects to the s-video acceptors (from 1 to 4)
2	*AUDIO OUTPUTS* RCA connectors	Connect to the left and right audio acceptors (from 1 to 4)
3	*s-VIDEO INPUTS* 4p connectors	Connect to the s-video sources (from 1 to 8)
4	*AUDIO INPUTS* RCA connectors	Connect to the left and right audio sources (from 1 to 8)

Table 33: VS-84YC Technical Specifications

Feature	Function
Inputs:	8 s-Video (YC), 1Vpp / 75Ω for Y, 0.3Vpp / 75Ω for C on 4p connectors 8 stereo audio, up to 36Vpp on RCA connectors
Outputs:	4 s-Video (YC), 1Vpp / 75Ω for Y, 0.3Vpp / 75Ω for C on 4p connectors 4 stereo audio, up to 36Vpp on RCA connectors
Switching System:	Mechanical, break-before-make
Crosspoints:	32 for video, 32 x 2 for audio, 1 set active at any given time
Signal Levels:	Up to 3Vpp video, +30dBm audio
Video Crosstalk:	-42 dB chroma, -60dB sync
Bandwidth:	Video: 200 MHz -3dB; audio: 100 kHz -3dB
Dimensions:	19 inch (W), 4 inch (D), 1U (H) rack mountable
Weight:	1.6 kg. (3.5 lbs.) approx.

4 Connecting Kramer Mechanical Switchers

Section 4.1 describes how to connect a mechanical video switcher, for example, the **VS-81YC** *s-Video Switcher*. Section 4.2 describes how to connect a mechanical audio switcher, for example, the **VS-81X** *Balanced Audio Switcher*.

4.1 Connecting a VS-81YC s-Video Switcher

To connect your **VS-81YC** *s-Video switcher*, as Figure 12 illustrates:

1. Connect up to 8 s-Video sources to the appropriate 4p input connectors.
2. Connect the 4p OUTPUT connector to the s-Video acceptor.
   Pushing a front panel INPUT selector button routes that s-Video source to the s-Video acceptor.

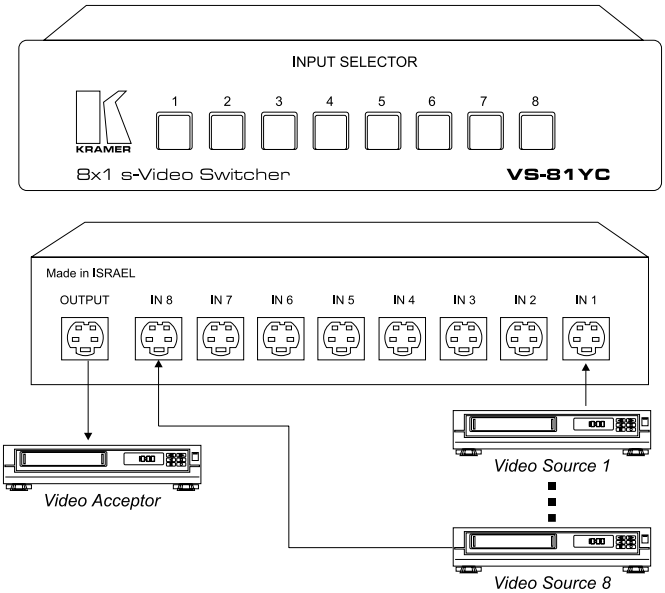


Figure 12: Connecting a VS-81YC s-Video Switcher

4.2 Connecting a VS-81X Balanced Audio Switcher

To connect your **VS-81X** *Balanced Audio Switcher*, as Figure 13 illustrates:

1. Connect up to 8 balanced audio sources to the XLR input connectors.
2. Connect the XLR OUTPUT connector to the audio acceptor.
   Pushing a front panel INPUT selector button routes that balanced audio source to the balanced audio acceptor.

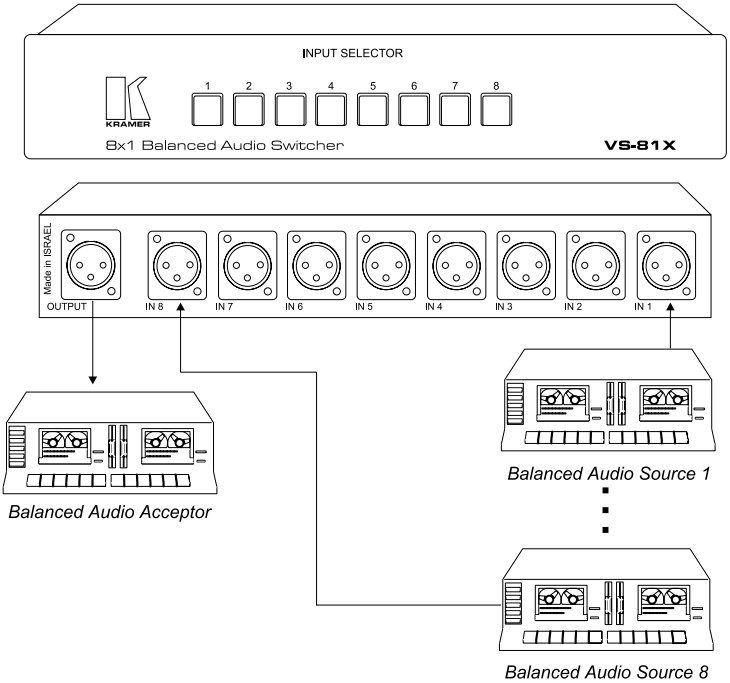


Figure 13: Connecting a VS-81X Balanced Audio Switcher

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 three 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.
2. Any product, on which the serial number has been defaced, modified or removed.
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 installations 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 you 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:	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.

The list of Kramer distributors appears on our web site:
www.kramerelectronics.com

We welcome your questions, comments and feedback.

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