

Video-Audio Switchers and Matrices

Kramer Electronics has a full line of Video/Audio Switchers and Matrices. They differ in the number of inputs and outputs, format of operation (Composite video, Component, Audio etc.) and switching method, (i.e., whether they switch during the vertical interval or not, whether they are electronically, RS-232 or mechanically controlled.)

The group includes three categories:

❑ **19-inch rack-mount Switchers and Matrices.**

These have full broadcast specifications. They are all manual and RS-232 controlled and offer superb specifications. Some have RS-422/485 and/or contact closure control options. They are all housed in rack-mountable enclosures.

❑ **Desktop Electronic Switchers.**

The Switchers in this family have full industrial specifications. Some have a *link* option for remote control, for activating one machine by another, or to extend the number of inputs by adding machines. They occupy very little desk space, and most have optional rack adaptors which house two units side-by-side in a 19" rack.

❑ **Mechanical Switchers and Matrices.**

These switchers have full industrial specifications and very moderate prices. Most are video/audio switchers, offering simple and economic solutions for every video/audio application. Due to unique design the video bandwidth is excellent. Some are 19" rack-mountable and some are smaller, with optional rack-mount adaptors.

Applications:

- ❖ Live Broadcast and studio signal routing.
- ❖ Video production routing.
- ❖ Add inputs to existing switchers and mixers.
- ❖ Showrooms, shops and point-of-sale, for equipment (cameras, VCRs, monitors) comparison.
- ❖ Remote source monitoring.
- ❖ For scanning alarm cameras in security applications.

TABLE 2.1: Switchers by Format**2.1.1: Switchers: Composite Video**

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
VS-24N	CV	Desktop	AUT	2.34	2	1	150 MHz	Standby AV switcher with Remote control.
VS-33V	CV	mini	VIS	2.35	3	1	46 MHz	Vertical Interval Switcher, 12 VDC feed.
VP-23	CV	19" 2U	E	5.9	4	1	470 MHz	Presentation switcher with 4 each VGA, Y/C, CV + audio inputs, 1 each outputs, + Mic in, talk-over, RS-232.
VS-401XL	CV	19" 1U	VIS	2.12	4	1	250 MHz	AV Switcher with RS-232/RS-485 and remote control.
VS-421	CV	Desktop	VIS	2.36	4	1	300 MHz	Video/Stereo/Balanced mono Vertical Interval + remote control option.
VS-411	CV	19" 1U	VIS	2.13	4	1	250 MHz	With RS-232/RS-485, Balanced Audio, remote control.
4x1V	CV	TOOL	M	9.13	4	1	400 MHz	On RCAs.
4x1VB	CV	TOOL	M	9.14	4	1	400 MHz	On BNCs.
VS-402	CV	19" 2U	VIS	2.14	4	2	40 MHz	Looping, with RS-232.
VS-44AV	CV	19" 1U	M	2.53	4	4	220 MHz	4 crosspoint mechanical AV Matrix.
VS-4E	CV	compact	M	2.54	4	4	475 MHz	4x4, single crosspoint AV switcher.
VS-6EII	CV	Desktop	E	2.41	4	4	8 MHz	Video / Audio Stereo Matrix.
VS-4X4YC	CV	19" 1U	VIS	2.16	4	4	50 MHz	Y/C - CV- Audio Stereo Matrix with RS-232.
VS-6YC	CV	19" 1U	E	2.15	4	4	37 MHz	Y/C - CV- Audio Stereo Matrix.
VS-55	CV	compact	E	2.37	5	1	270 MHz	expandable universal dual channel switcher with 12 VDC feed.
VS-55V	CV	compact	VIS	2.38	5	1	150 MHz	expandable Vertical Interval Video Switcher with 12 VDC feed.
VS-5X4	CV	19" 1U	VIS	2.17	5	4	30 MHz	CV/Audio Stereo programmable Matrix + RS-232 control.
VS-16A	CV	Desktop	E	2.43	6x2	1x2	540 MHz	Programmable Dual-channel Scanner with Remote and RS-485 control.
VS-601XL	CV	19" 1U	VIS	2.12	6	1	250 MHz	AV Switcher with RS-232/RS-485 and remote control.
VS-611	CV	19" 1U	VIS	2.13	6	1	250 MHz	With RS-232/RS-485, Balanced Audio, remote control.
VS-16N	CV	Desktop	VIS	2.42	6	1	40 MHz	Programmable Automatic Alarm Camera Scanner, Remote + RS-485.
VS-602	CV	19" 2U	VIS	2.14	6	2	40 MHz	Looping AV Matrix with RS-232 control.
VS-606XL	CV	19" 2U	VIS	2.18	6	6	200 MHz	CV / Audio Stereo Matrix with RS-232 / RS-485 control.
VS-646	CV	19" 2U	VIS	2.19	6	6	200 MHz	CV / Balanced Audio Stereo Matrix with RS-232/RS-485.
VS-801XL	CV	19" 1U	VIS	2.12	8	1	250 MHz	AV Switcher with RS-232/RS-485 and remote control.
VS-81AV	CV	19" 1U	M	2.49	8	1	400 MHz	Video + Audio Stereo Switcher.
VS-811	CV	19" 1U	VIS	2.13	8	1	250 MHz	With RS-232/RS-485, Balanced Audio, remote control.
VS-81V	CV	Desktop	M	2.45	8	1	400 MHz	Single crosspoint Video Switcher.
VS-802	CV	19" 2U	VIS	2.14	8	2	40 MHz	Looping AV Matrix with RS-232 control.
VS-84	CV	compact	m	2.51	8	4	200 MHz	Single crosspoint Video + Audio Stereo Switcher.
VS-808XL	CV	19" 2U	VIS	2.22	8	8	200 MHz	CV / Audio Stereo with RS-232 / RS-485 control.
VS-848	CV	19" 2U	VIS	2.23	8	8	200 MHz	CV / Balanced Audio Stereo Matrix with RS-232/RS-485.
VS-1001XL	CV	19" 1U	VIS	2.12	10	1	250 MHz	AV Switcher with RS-232/RS-485 and remote control.

2.1.1: Switchers: Composite Video (cont.)

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
VS-1011	CV	19" 1U	VIS	2.13	10	1	250 MHz	With RS-232/RS-485, Balanced Audio, remote control.
VS-1201XL	CV	19" 1U	VIS	2.12	12	1	250 MHz	AV Switcher with RS-232/RS-485 and remote control.
VS-1211	CV	19" 1U	VIS	2.13	12	1	250 MHz	With RS-232/RS-485, Balanced Audio, remote control.
VS-1202	CV	19" 2U	VIS	2.14	12	2	40 MHz	Looping AV Matrix with RS-232.
VS-1202YC	CV	19" 2U	VIS	2.24	12	2	37 MHz	Y/C-CV-Audio Stereo Matrix with RS-232.
VS-2016	CV	19" 1U	VIS	2.25	16	1	80 MHz	Expandable CV / Component Switcher with RS-232.
VS-2516	CV	19" 2U	VIS	2.26	16	16	69 MHz	CV-Y/C-YUV-RGBS expandable Matrix with RS-232.
VS-120	CV	19" 2U	VIS	2.29	20	2x1	25 MHz	Sequential AV Switcher/Scanner with RS-232 / RS-485 control.
VS-28	CV	19" 2U	AUT	2.30	8 x 2	8 x 1	500 MHz	Standby Switcher + remote + LED indication.

2.1.2: Switchers: Component Video

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
VS-2053	RGBHV	19" 1U	VIS	2.10	3	1	400 MHz	Delayed or Vertical Interval switching and RS-232.
VS-2031N	RGBS	19" 1U	E	2.9	3	1	550 MHz	With RS-232.
VS-2516	RGBS	19" 2U	VIS	2.26	4	4	69 MHz	CV-Y/C-YUV-RGBS expandable Matrix with RS-232.
VS-2516	YUV	19" 2U	VIS	2.26	5	5	69 MHz	CV-Y/C-YUV-RGBS expandable Matrix with RS-232.
VS-2042	YUV	19" 1U	VIS	2.11	4	2	75 MHz	YUV expandable Matrix with RS-232

2.1.3: Switchers: Accessories

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
VP-14	RS232	TOOL	NA	9.24	1	3	NA	Bi-directional and programmable port extender.
VP-43	RS232	TOOL	NA	9.25	1	2	NA	Range extender, 2 units extend RS-232 up to 1.2 km.
VS-1N	RS232	compact	E	2.44	1	1	NA	Remote Controller for switchers and matrices with RS-232.
VS-2000	RS-232 RS-485	19" 2U	E	2.31	7 1	7 1	NA	Remote Controller for all switchers and Matrices with RS-232/RS-422.
VS-3000	RS-232 RS-485	19" 2U	E	2.32	7 1	7 1	NA	Master programmable remote control. Remote contact closure and keyboard.
VS-4228	RS-422	19" 1U	E	2.33	8	8	NA	8 Port RS-422 Matrix with RS-232 and RS-485 control.

2.1.4: Switchers: Digital Video

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
SD-7308	SDI	19" 1U	VIS	6.6	8	1x4	NA	Multistandard 8x1 SDI Switcher and 1:4 SDI DA, with reclocking and equalization.
SD-7388	SDI	19" 2U	VIS	6.7	8	8	NA	A Multistandard 8 x 8 SDI Programmable matrix with analog and optional digital sync genlock input and RS-232/RS-485 control.
SD-7316	SDI	19" U	VIS	6.8	16	16	NA	A Multistandard 16 x 16 SDI Programmable matrix with analog and optional digital sync genlock input and RS-232/RS-485 control.

2.1.5: Switchers: VGA

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
VP-201	VGA	TOOL	M	9.21	2	1	320 MHz	2x1 Mechanical Switcher.
VP-211	VGA	TOOL	AUT	9.22	2	1	517 MHz	A VGA/audio "standby" automatic switcher.
VP-222	VGA	TOOL	M	9.23	2	2	365 MHz	2x1 Mechanical Switcher and a 1:2 DA.
VP-31	VGA	Desktop	E	5.10	3	1	450 MHz	3 x 1 VGA/XGA Switcher.
VP-32	VGA	Half 19"	E	5.11	3	2	300 MHz	3 x 1:2 VGA / Audio-stereo Switcher and DA.
VP-23	VGA	19" 2U	E	5.9	4	1	315 MHz	Presentation switcher with 4 each VGA, Y/C, CV + audio inputs, 1 each outputs, + Mic in, talk-over, RS-232.
VP-61RS	VGA	19" 1U	E	5.12	6	1	180 MHz	With RS-232.

2.1.6: Switchers: s-Video (Y/C)

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
4x1S	YC	TOOL	M	9.15	4	1	400 MHz	On 4P connectors.
VP-23	YC	19" 2U	E	5.9	4	1	260 MHz	Presentation switcher with 4 each VGA, Y/C, CV + audio inputs, 1 each outputs, + Mic in, talk-over, RS-232.
VS-4YC	YC	compact	M	2.55	4	4	280 MHz (Y)	Single crosspoint Y/C + Audio Stereo Switcher.
VS-4X4YC	YC	19" 1U	VIS	2.16	4	4	50 MHz	Y/C - CV- Audio Stereo Matrix with RS-232.
VS-6YC	YC	19" 1U	E	2.15	4	4	37 MHz	Y/C - CV- Audio Stereo Matrix.
VS-55YC	YC	compact	VIS	2.40	5	1	120 MHz	Expandable Vertical Interval Y/C Switcher with 12 VDC feed.
VS-81YC	YC	Desktop	M	2.46	8	1	375 MHz (Y)	Single crosspoint s-Video Switcher.
VS-81AYC	YC	19" 1U	M	2.50	8	1	350 MHz (Y)	Super-Video (Y/C) + Audio Stereo Switcher.
VS-2081S	YC	19" 1U	VIS	2.20	8	2x1	60 MHz (Y)	Expandable Y/C switcher + RS-232.
VS-84YC	YC	19" 1U	M	2.52	8	4	200 MHz	Single crosspoint Y/C + Audio Stereo Switcher.
VS-2516	YC	19" 2U	VIS	2.26	8	8	69 MHz	CV-Y/C-YUV-RGBS expandable Matrix with RS-232.
VS-1202YC	YC	19" 2U	VIS	2.24	12	2	37 MHz	Y/C-CV-Audio Stereo Matrix with RS-232.

2.1.7: Switchers: AUDIO

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
VS-55A	A	compact	E	2.39	5	1	20 kHz	Expandable Audio Stereo Switcher with 12 VDC feed.
VS-81X	A	Desktop	M	2.48	8	1	25 kHz	Single crosspoint Balanced Audio Switcher on XLRs.
VS-81A	A	Desktop	M	2.47	8	1	25 kHz	Single crosspoint Audio Stereo Switcher on RCAs.
VS-2481	A	19" 1U	E	2.21	8	2x1	20 kHz	Expandable Balanced Audio switcher on XLRs with RS-232.
VS-2216	A	19" 2U	E	2.27	16	16	20 kHz	Stereo expandable matrix + RS-232
VS-2616	A	19" 2U	E	2.28	16	16	20 kHz	Balanced Stereo Matrix + RS-232.
VP-23	A	19" 2U	E	5.9	4	1	40 kHz	Presentation switcher with 4 each VGA, Y/C, CV + audio inputs, 1 each outputs, + Mic in, talk-over, RS-232.

TABLE 2.2: Switchers by Inputs & Outputs

2.2.1: Switchers: 2 inputs

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
VS-24N	CV	compact	AUT	2.34	2	1	150 MHz	Standby AV switcher with Remote control.
VP-201	VGA	TOOL	M	9.21	2	1	320 MHz	2x1 Mechanical Switcher.
VP-222	VGA	TOOL	M	9.23	2	2	365 MHz	2x1 Mechanical Switcher and a 1:2 DA.
VP-211	VGA	TOOL	AUT	9.22	2	1	517 MHz	A VGA/audio "standby" automatic switcher.

2.2.2: Switchers: 3 inputs

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
VS-33V	CV	mini	VIS	2.35	3	1	46 MHz	Vertical Interval Switcher, 12 VDC feed.
VS-2053	RGBHV	19" 1U	VIS	2.10	3	1	400 MHz	Delayed or Vertical Interval switching and RS-232.
VS-2031N	RGBS	19" 1U	E	2.9	3	1	550 MHz	With RS-232.
VP-31	VGA	Desktop	E	5.10	3	1	450 MHz	3 x 1 VGA/XGA Switcher.
VP-32	VGA	Half 19"	E	5.11	3	2x1	300 MHz	3 x 1:2 VGA / Audio-stereo Switcher and DA.

2.2.3: Switchers: 4 X 1

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
VS-401XL	CV	19" 1U	VIS	2.12	4	1	250 MHz	AV Switcher with RS-232/RS-485 and remote control.
VS-421	CV	Desktop	VIS	2.36	4	1	300 MHz	Video/Stereo/Balanced mono Vertical Interval with remote control option.
VS-411	CV	19" 1U	VIS	2.13	4	1	250 MHz	With RS-232/RS-485, Balanced Audio, remote control.
4x1V	CV	TOOL	M	9.13	4	1	400 MHz	On RCAs.
4x1VB	CV	TOOL	M	9.14	4	1	400 MHz	On BNCs.
VP-23	VGA	19" 2U	E	5.9	4	1	315 MHz	Presentation switcher with 4 each VGA, Y/C, CV + audio inputs, 1 each outputs, + Mic in, talk-over, RS-232.
VP-23	CV	19" 2U	E	5.9	4	1	470 MHz	
VP-23	YC	19" 2U	E	5.9	4	1	260 MHz	
VP-23	A	19" 2U	E	5.9	4	1	40 kHz	
4x1S	YC	TOOL	M	9.15	4	1	400 MHz	On 4P connectors.

2.2.4: Switchers: 4 X 2

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
VS-402	CV	19" 2U	VIS	2.14	4	2	40 MHz	Looping, with RS-232.
VS-2042	YUV	19" 1U	VIS	2.11	4	2	75 MHz	YUV expandable Matrix with RS-232.

2.2.5: Switchers: 4 X 4

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
VS-44AV	CV	19" 1U	M	2.53	4	4	220 MHz	4 crosspoint mechanical AV Matrix.
VS-4E	CV	compact	M	2.54	4	4	475 MHz	4x4, single crosspoint AV switcher.
VS-6EII	CV	Desktop	E	2.41	4	4	8 MHz	Video / Audio Stereo Matrix.
VS-4X4YC	CV	19" 1U	VIS	2.16	4	4	50 MHz	Y/C - CV- Audio Stereo Matrix with RS-232.
VS-6YC	CV	19" 1U	E	2.15	4	4	37 MHz	Y/C - CV- Audio Stereo Matrix.
VS-2516	RGBS	19" 2U	VIS	2.26	4	4	69 MHz	CV-Y/C-YUV-RGBS expandable Matrix with RS-232.
VS-4YC	YC	compact	M	2.55	4	4	280 MHz (Y)	Single crosspoint Y/C + Audio Stereo Switcher.
VS-4X4YC	YC	19" 1U	VIS	2.16	4	4	50 MHz	Y/C - CV- Audio Stereo Matrix with RS-232.
VS-6YC	YC	19" 1U	E	2.15	4	4	37 MHz	Y/C - CV- Audio Stereo Matrix.

2.2.6: Switchers: 5 X 1

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
VS-55A	A	compact	E	2.39	5	1	20 kHz	Expandable Audio Stereo Switcher with 12 VDC feed.
VS-55	CV	compact	E	2.37	5x2	1x2	270 MHz	Expandable universal dual channel switcher, 12 VDC feed.
VS-55V	CV	compact	VIS	2.38	5	1	150 MHz	Expandable Vertical Interval Video Switcher, 12 VDC feed.
VS-55YC	YC	compact	VIS	2.40	5	1	120 MHz	Expandable Vertical Interval Y/C Switcher with 12 VDC feed.

2.2.7: Switchers: 5 X 4

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
VS-5X4	CV	19" 1U	VIS	2.17	5	4	30 MHz	CV/Audio Stereo programmable Matrix + RS-232 control.

2.2.8: Switchers: 5 X 5

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
VS-2516	YUV	19" 2U	VIS	2.26	5	5	69 MHz	CV-Y/C-YUV-RGBS expandable Matrix with RS-232.

2.2.9: Switchers: 6 X 1

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
VS-16A	CV	Desktop	E	2.43	6x2	1x2	540 MHz	Programmable Dual-channel Scanner with Remote and RS-485 control.
VS-601XL	CV	19" 1U	VIS	2.12	6	1	250 MHz	AV Switcher with RS-232/RS-485 and remote control.
VS-611	CV	19" 1U	VIS	2.13	6	1	250 MHz	With RS-232/RS-485, Balanced Audio, remote control.
VS-16N	CV	Desktop	VIS	2.42	6	1	40 MHz	Programmable Automatic Alarm Camera Scanner, Remote + RS-485 control.
VP-61RS	VGA	19" 1U	E	5.12	6	1	180 MHz	With RS-232.

2.2.10: Switchers: 6 X 2

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
VS-602	CV	19" 2U	VIS	2.14	6	2	40 MHz	Looping AV Matrix with RS-232 control.

2.2.11: Switchers: 6 X 6

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
VS-606XL	CV	19" 2U	VIS	2.18	6	6	200 MHz	CV / Audio Stereo Matrix with RS-232 / RS-485 control.
VS-646	CV	19" 2U	VIS	2.19	6	6	200 MHz	CV / Balanced Audio Stereo Matrix with RS-232/RS-485.

2.2.12: Switchers: 8 X 1

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
VS-81X	A	Desktop	M	2.48	8	1	25 kHz	Single crosspoint Balanced Audio Switcher on XLRs.
VS-81A	A	Desktop	M	2.47	8	1	25 kHz	Single crosspoint Audio Stereo Switcher on RCAs.
VS-801XL	CV	19" 1U	VIS	2.12	8	1	250 MHz	AV Switcher with RS-232/RS-485 and remote control.
VS-81AV	CV	19" 1U	M	2.49	8	1	400 MHz	Video + Audio Stereo Switcher.
VS-811	CV	19" 1U	VIS	2.13	8	1	250 MHz	With RS-232/RS-485, Balanced Audio, remote control.
VS-81V	CV	Desktop	M	2.45	8	1	400 MHz	Single crosspoint Video Switcher.
VS-81YC	CV	Desktop	M	2.46	8	1	375 MHz (Y)	Single crosspoint s-Video Switcher.
VS-28	CV	19" 2U	AUT	2.30	8 x 2	8 x 1	500 MHz	Standby Switcher + remote + LED indication.
VS-81AYC	YC	19" 1U"	M	2.50	8	1	350 MHz (Y)	Super-Video (Y/C) + Audio Stereo Switcher.

2.2.13: Switchers: 8 X 2

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
VS-802	CV	19" 2U	VIS	2.14	8	2	40 MHz	Looping AV Matrix with RS-232 control.

2.2.14: Switchers: 8 X 4

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
VS-84	CV	19" 1U	M	2.51	8	4	200 MHz	Single crosspoint Video + Audio Stereo Switcher.
VS-84YC	YC	19" 1U	M	2.52	8	4	200 MHz	Single crosspoint Y/C + Audio Stereo Switcher.

2.2.15: Switchers: 8 X 8

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
VS-808XL	CV	19" 2U	VIS	2.22	8	8	200 MHz	CV / Audio Stereo with RS-232 / RS-485 control.
VS-848	CV	19" 2U	VIS	2.23	8	8	200 MHz	CV / Balanced Audio Stereo Matrix with RS-232/RS-485 control.
VS-2516	YC	19" 2U	VIS	2.26	8	8	69 MHz	CV-Y/C-YUV-RGBS expandable Matrix with RS-232.

2.2.16: Switchers: 10 X 1

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
VS-1001XL	CV	19" 2U	VIS	2.12	10	1	250 MHz	AV Switcher with RS-232/RS-485 and remote control.
VS-1011	CV	19" 2U	VIS	2.13	10	1	250 MHz	With RS-232/RS-485, Balanced Audio, remote control.

2.2.17: Switchers: 12 X 1

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
VS-1201XL	CV	19" 2U	VIS	2.12	12	1	250 MHz	AV Switcher with RS-232/RS-485 and remote control.
VS-1211	CV	19" 2U	VIS	2.13	12	1	250 MHz	With RS-232/RS-485, Balanced Audio, remote control.

2.2.18: Switchers: 12 X 2

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
VS-1202	CV	19" 2U	VIS	2.14	12	2	40 MHz	Looping AV Matrix with RS-232.
VS-1202YC	CV	19" 2U	VIS	2.24	12	2	37 MHz	Y/C-CV-Audio Stereo Matrix with RS-232.
VS-1202YC	YC	19" 2U	VIS	2.24	12	2	37 MHz	Y/C-CV-Audio Stereo Matrix with RS-232.

2.2.19: Switchers: 16 X 1

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
VS-2016	CV	19" 1U	VIS	2.25	16	1	80 MHz	Expandable CV / Component Switcher with RS-232.

2.2.20: Switchers: 16 X 16

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
VS-2216	A	19" 2U	E	2.27	16	16	20 kHz	Stereo expandable matrix + RS-232
VS-2616	A	19" 2U	E	2.28	16	16	20 kHz	Balanced Stereo Matrix + RS-232.
VS-2516	CV	19" 2U	VIS	2.26	16	16	69 MHz	CV-Y/C-YUV-RGBS expandable Matrix with RS-232.
SD-7316	SDI	19" 2U	VIS	6.8	16	16	NA	A Multistandard 16 x 16 SDI Programmable matrix with analog and optional Digital sync genlock input and RS-232/RS-485 control.

2.2.21: Switchers: 20 X 1

Model	Format	Size	Type	Page	Inputs	Outputs	Bandwidth	Remarks
VS-120	CV	19" 2U	VIS	2.29	20	2 x 1	25 MHz	Sequential AV Switcher/Scanner with RS-232 / RS-485 control.

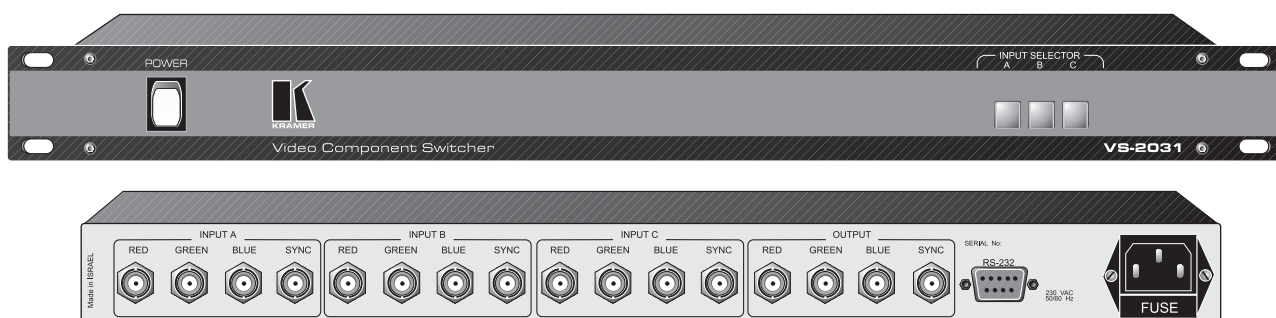


3x1 RGBS Switcher

VS-2031N

The Kramer **VS-2031N** is a high performance 3x1 switcher designed for component video signals such as RGBS using BNC connectors. One of three sources can be routed to one monitor, projector, or other receiving device. Since the signal path is passive using ultra-high quality relays, the **VS-2031N** can also operate in the reverse direction allowing a single source to be routed to any of three destinations.

The **VS-2031N** can be controlled by front panel buttons or by RS-232 commands from a touch-screen control system or PC. For applications requiring external control via a personal computer, K-Switch Windows™ compatible control software is included at no additional cost. Video bandwidth exceeding 550 MHz ensures that the **VS-2031N** remains transparent even in critical broadcast or high resolution applications.



Technical Specifications:

INPUTS:	3 component video (RGBS), 1Vpp/75 Ω on BNC type connectors. DB-9 connector for RS-232 control.
OUTPUTS:	1 component video (RGBS), 1Vpp/75 Ω on BNC type connectors.
BANDWIDTH:	Exceeding 550 MHz.
CROSSTALK:	-50 dB at 10MHz.
COUPLING:	Direct.
CONTROL:	3-illuminated front panel touch switches, RS-232 from PC.
SWITCH TIME:	3 msec. typical.
DIMENSIONS:	19 inch (W), 7 inch (D), 1U (H) rack mountable.
POWER SOURCE:	230 VAC, 50/60 Hz (115VAC U.S.A.) 5.8 VA.
WEIGHT:	2.5 Kg. (5.5 Lbs.) Approx.
ACCESSORIES:	Power cord, Windows 95/98 control software, Null modem adapter.

Typical Applications:

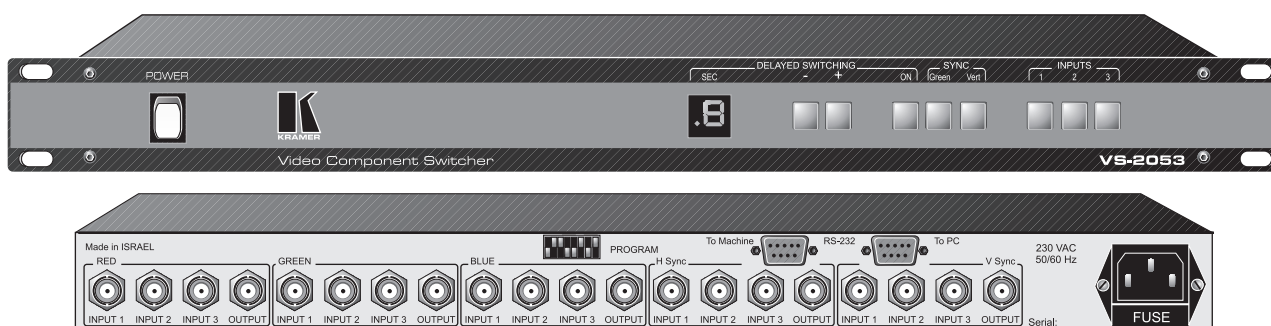
- ❖ *Component video switching in studio and post production applications.*
- ❖ *High resolution computer-video signal routing.*
- ❖ *Medical applications: routing high line rate signals generated by medical equipment requiring the widest bandwidth.*
- ❖ *Routing SDI or other very high frequency signals.*



3x1 RGBHV / Component Video Switcher **VS-2053**

The Kramer **VS-2053** is a high performance 3x1 switcher designed for component video signals such as RGBHV using BNC connectors. One of three RGBHV sources can be routed to one monitor, projector, or other receiving device. Two switching modes are provided for different applications. The vertical interval mode is designed for broadcast and production applications requiring glitch-free transitions between genlocked sources, and the delayed switching mode is designed to provide cleaner transitions when switching high resolution computer-video signals.

The **VS-2053** can be controlled by front panel buttons or by RS-232 from a touch screen system, personal computer, or other dedicated controllers. For systems requiring control via the serial port of a Windows™ based personal computer, Kramer's new K-Switch software is included at no additional cost. Video bandwidth exceeding 400 MHz ensures that the **VS-2053** remains transparent even in critical broadcast or computer graphics applications.



Technical Specifications:

INPUTS:	3x5 component video (R, G, B, Hs, Vs), 1V/0.7Vpp/75 Ω or TTL levels (SYNC) on BNCs.
OUTPUTS:	1 component video (R, G, B, Hs, Vs), 1V/0.7Vpp/75 Ω or TTL levels (SYNC) on BNCs.
BANDWIDTH:	Exceeding 400 MHz.
DIFF. GAIN:	0.1% (typical).
DIFF. PHASE:	0.07 Deg.
K-FACTOR:	<0.03%.
COUPLING:	DC.
SWITCH SYSTEM:	Vertical Interval or delayed (0.1 to 9 Sec.).
CONTROL:	Manual or RS-232.
VIDEO S/N RATIO:	73 dB.
DIMENSIONS:	19 inch (W), 7 inch (D), 1U (H) rack mountable.
POWER SOURCE:	230 VAC, 50/60 Hz (115VAC U.S.A.) 8.3 VA.
WEIGHT:	2.8 Kg. (6.2 Lbs.) Approx.
ACCESSORIES:	Power cord, Windows 95/98 control software, Null modem adapter.

Typical Applications:

- ❖ Any presentation or display system requiring 3x1 switching for RGBHV.
- ❖ Live studio routing and component switching for post-production applications.
- ❖ Multi-channel component switching by simultaneous operation of several VS-2053 units using RS-232.

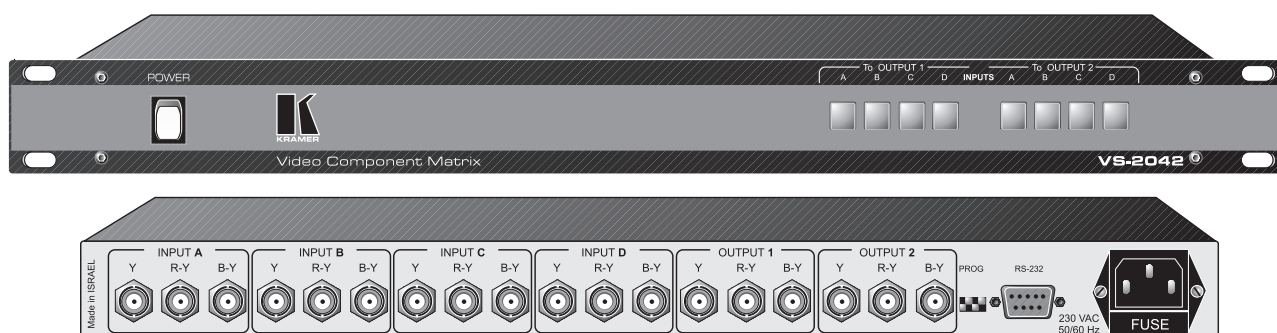


4x2 Component Video Matrix

VS-2042

The Kramer **VS-2042** is a 4x2 matrix switcher designed for component video signals such as Y/R-y/B-y and RGsB. Since switching is performed during the vertical interval, transitions are glitch-free when sources share a common reference sync. It is a true matrix allowing any of the four inputs to be routed to either or both outputs simultaneously.

The **VS-2042** can be controlled by front panel buttons or by RS-232 from a touch screen control system, personal computer, or other serial controllers. For systems requiring control via the serial port of a Windows™ based personal computer, Kramer's new K-Switch software is included at no additional cost. Designed for broadcast applications, the **VS-2042** signal bandwidth exceeds 75 MHz. Inputs and outputs are DC coupled for the highest signal quality.



Technical Specifications:

INPUTS:	4 Component Video (Y, R-Y, B-Y), 1V/0.7Vpp/75 Ω on BNCs.
OUTPUTS:	2 Component Video (Y, R-Y, B-Y), 1V/0.7Vpp/75 Ω on BNCs.
BANDWIDTH:	Exceeding 75 MHz.
DIFF. GAIN:	0.15%.
DIFF. PHASE:	0.25 Deg.
K-FACTOR:	0.3%.
CROSSTALK:	-50 dB at 10MHz.
COUPLING:	DC.
SWITCH SYSTEM:	Vertical interval.
CONTROL:	Manual or RS-232.
VIDEO S/N RATIO:	74 dB.
DIMENSIONS:	19 inch (W), 7 inch (D), 1U (H) rack mountable.
POWER SOURCE:	230 VAC, 50/60 Hz (115VAC U.S.A.) 11.5 VA.
WEIGHT:	2.9 Kg. (6.4 Lbs.) Approx.
ACCESSORIES:	Power cord, Windows 95/98 control software, Null modem adapter.

Typical Applications:

- ❖ *Component routing in live broadcast and post production applications.*
- ❖ *Computer graphics and medical applications.*
- ❖ *Multi-channel component switching by simultaneous operation of several VS-2042 units using RS-232.*



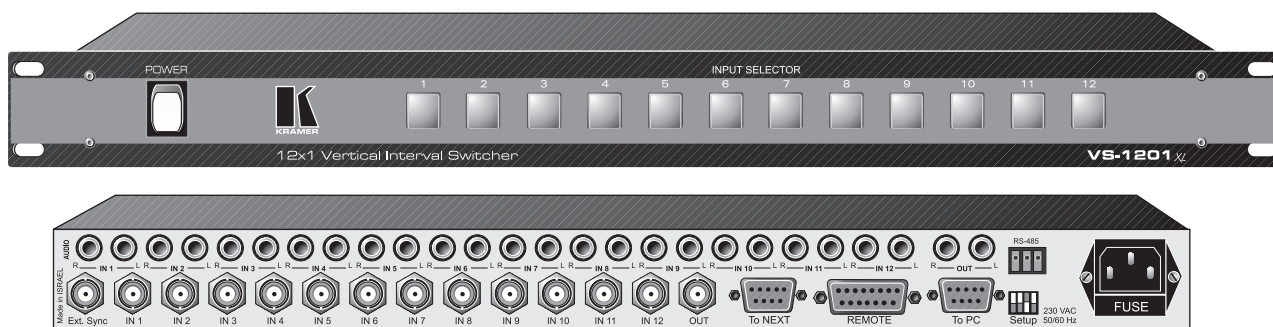
Vertical Interval Switchers

VS-1201xl/401xl

The Kramer **VS-1201xl**, **VS-1001xl**, **VS-801xl**, **VS-601xl** and **VS-401xl** are a family of high performance vertical interval switchers for composite video and stereo audio signals. One of 12 sources can be routed to one monitor, VCR, or other receiving device. Since switching is performed during the vertical interval, transitions are glitch-free when sources share a common reference sync.

There are a total of four ways to control the **VS-1201xl** family: front panel buttons, RS-232, RS-485, and contact closure. They are also designed to be combined for easily expansion for larger switching systems. For example, two **VS-1201xl**'s can be combined to form a 24x1, etc. Multiple units can also be operated in parallel for switching component signal formats. For example, two **VS-1201xl**'s could be linked to form a 12x1 switch for Y/C, three could be linked to switch YUV, etc.

The **VS-1201xl** family is dependable, rugged, and each fits in one vertical space of a standard 19" rack. Video bandwidth of 250MHz ensures that they remain transparent even in the most critical production, presentation, or broadcast applications.



Technical Specifications:

INPUTS:	12, 10, 8, 6, 4 composite / single component Video, 1Vpp/75 Ω , on BNCs	
	12, 10, 8, 6, 4 stereo audio, +4dBm, 10k Ω , on RCA connectors.	
	1 external sync input (or composite video) 1Vpp/75 Ω , on a BNC connector	
	RS-232 on 9pin D-sub, RS-485 on terminal block, contact closure on 15pin D.	
OUTPUTS:	1 composite / single component video, 1Vpp/75 Ω on a BNC.	
	1 stereo audio up to +28Vpp /50 Ω , (24dBm) on RCAs.	
BANDWIDTH (VIDEO):	250 MHz -3dB (typical).	BANDWIDTH (AUDIO): 55 kHz, -0.1dB.
NON LINEARITY:	Less than 0.1%.	AUDIO THD+NOISE: 0.02%.
DIFF. PHASE:	0.03 Deg.	2nd HARMONIC: <0.003% (1kHz).
DIFF. GAIN:	0.04%.	AUDIO CROSSTALK: -79 dB.
VIDEO S/N:	>77 dB.	AUDIO S/N RATIO: > 90 dB, Unweighted.
K-FACTOR:	<0.05%.	
CONTROLS:	12 illuminated front-panel touch switches, RS-232, RS-422, contact closure.	
DIMENSIONS:	19 inch (W), 7 inch (D) 1U (H) rack mountable.	
POWER SOURCE:	230 VAC, 50/60 Hz, (115VAC U.S.A.) 16 VA (VS-1211).	
WEIGHT:	3.1 Kg (6.88 Lbs.) Approx.	
ACCESSORIES:	Power cord, Windows 95/98 control software, Null modem adapter.	

Typical applications:

- ❖ *Video production studios.*
- ❖ *Live broadcast, for switching between cameras in real-time.*
- ❖ *CCTV and home theater systems.*



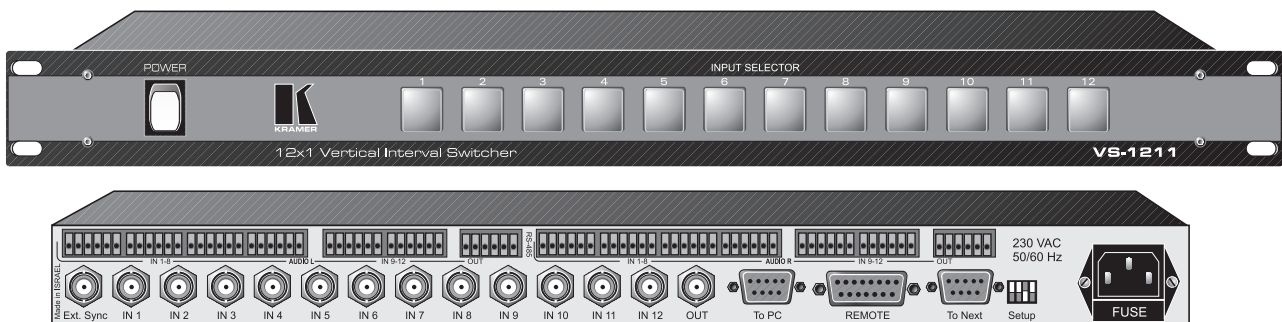
Vertical Interval Switchers

VS-1211/411

The Kramer **VS-1211**, **VS-1011**, **VS-811**, **VS-611**, and **VS-411** are a family of high performance vertical interval switchers for composite video and balanced stereo audio signals. One of 12 sources can be routed to one monitor, VCR, or other receiving device. Since switching is performed during the vertical interval, transitions are glitch-free when sources share a common reference sync.

There are a total of four ways to control the **VS-1211** family: front-panel buttons, RS-232, RS-485, and contact closure. They are also designed to be easily expandable for larger switching systems. For example, two **VS-1211's** can be combined to form a 24x1, etc. Multiple units can also be operated in parallel for switching component signal formats. For example, two **VS-1211's** could be linked to form a 12x1 switch for Y/C, three could be linked to switch YUV, etc.

The **VS-1211** family is dependable, rugged, and each fits in one vertical space of a standard 19" rack. Video bandwidth of at least 250MHz ensures that they remain transparent even in the most critical production, presentation, or broadcast applications.



Technical Specifications:

INPUTS:	12, 10, 8, 6, 4 Composite / single component Video, 1Vpp/75 Ω , on BNCs.		
	12, 10, 8, 6, 4 Audio- balanced stereo, +4dBm, 10kΩ, on 2-part, snap fit terminal blocks.		
	1 external sync input (or composite video) 1Vpp/75 Ω , on a BNC connector.		
	RS-232 DB-9 control socket, RS-485 terminal block, DB-15 for remote connector.		
OUTPUTS:	1 Composite / single component Video, 1Vpp/75 Ω on a BNC.		
	1 Audio- balanced stereo up to +28Vpp /50 Ω, (24dBm) on terminal blocks.		
BANDWIDTH (VIDEO):	250 MHz -3dB (typical).	BANDWIDTH (AUDIO):	55 kHz, -0.1dB.
NON LINEARITY:	Less than 0.1%.	AUDIO THD+NOISE:	0.013%.
DIFF. PHASE:	0.03 Deg.	2nd HARMONIC:	<0.003% (1kHz).
DIFF. GAIN:	0.04%	AUDIO CROSSTALK:	-79 dB.
LUMA S/N:	>77 dB.	AUDIO S/N RATIO:	> 95 dB, Unweighted.
K-FACTOR:	<0.05%.		
CONTROLS:	12 illuminated front-panel touch switches, RS-232, RS-485, contact closure.		
DIMENSIONS:	19-inch (W), 7-inch (D) 1U (H) rack mountable.		
POWER SOURCE:	230 VAC, 50/60 Hz, (115VAC U.S.A.) 16 VA (VS-1211).		
WEIGHT:	3.1 Kg (6.88 Lbs.) Approx.		
ACCESSORIES:	Power cord, Windows 95/98 control software, Null modem adapter.		

Typical applications:

- ❖ *Video production studios and professional presentation systems.*
- ❖ *Live broadcast, for switching between cameras in real-time.*
- ❖ *CCTV and security applications.*



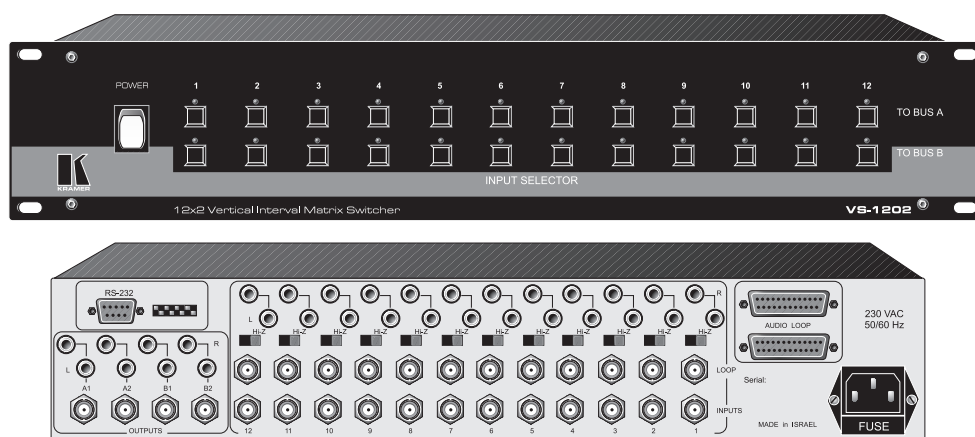
Vertical Interval Switchers

VS-402/1202

The Kramer **VS-1202**, **VS-802**, **VS-602** and **VS-402** are a family of high performance two output, vertical interval matrix switchers for composite video and stereo audio signals. Two of 12 inputs can be routed to either or both outputs simultaneously. Since switching is performed during the vertical interval, glitch-free transitions are provided when sources share a common reference sync.

The design features two independent sets of input select buttons, one set for each output, making it ideal for real-time applications requiring the ability to preview any input before committing it to a main output. The "02" family is also great for any application requiring a true two-output matrix. They are designed to be easily expandable for larger switching requirements. For example, two **VS-1202's** can be combined to form a 12x4 system, etc. All four versions of the 02 switchers can be ordered with or without RS-232 control capability.

The **VS-1202** family is dependable, rugged, and each fits in two vertical spaces of a standard 19" rack. Video bandwidth of 40MHz ensures that the unit remains transparent in almost any typical video application.



Technical Specifications:

INPUTS:	4, (6), (8), (12) composite video, looping, 1Vpp, 75 Ω on BNCs. 4, (6), (8), (12) stereo audio, looping, 1V Nom., 10k Ω on RCAs.	
OUTPUTS:	2 composite video, 1Vpp, 75 Ω on BNCs. 2 stereo audio, 1 V Nom., 100 Ω on RCAs.	
VIDEO BANDWIDTH:	40 MHz - 3 dB.	AUDIO BANDWIDTH: 20 kHz at - 3 dB.
VIDEO S/N RATIO:	Better than 75dB.	AUDIO S/N RATIO: 82 dB.
DIFF. GAIN:	1.1%.	AUDIO THD: 0.02 %.
DIFF. PHASE:	0.65 Deg.	
VIDEO CROSSTALK:	-65 dB (Sync), -40dB (C).	
K-FACTOR:	<0.05%.	
CONTROLS:	(8), (12), (16), (24) Illuminated touch switches or optional RS-232 control.	
DIMENSIONS:	19-inch (W), 7-inch (D) 2U (H) rack mountable.	
POWER SOURCE:	230VAC, 50/60 Hz 115 VAC (U.S.A.) 10.3 VA.	
WEIGHT:	3.9 Kg. (8.6 Lbs.) Approx.	
ACCESSORIES:	Power cord, Windows 95/98 control software, Null modem adapter.	

Typical applications:

- ❖ *Video production studios.*
- ❖ *Live broadcast or presentation applications such as switching between cameras in real-time.*
- ❖ *CCTV, home theater, and rental/staging applications.*



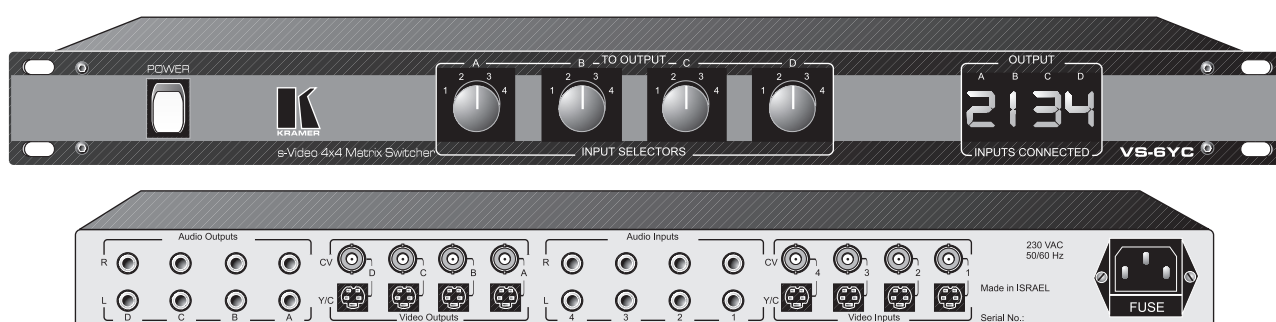
4x4 CV/s-Video & Audio Matrix

VS-6YC

The Kramer **VS-6YC** is a high quality 4x4 matrix switch for composite and/or s-Video and stereo audio signals. It is a true matrix, allowing the user to route any input to any or all outputs simultaneously.

The **VS-6YC** provides composite video and s-Video connectors allowing it to be used for either format. Mixing formats is possible but composite video sources would typically need to be routed to composite video outputs and, likewise, s-Video sources must be routed to s-Video outputs. It is very important to note that the VS-6YC does not perform any signal format conversion.

For intuitive user control, the front panel offers a dedicated rotary input select knob for each of the four outputs. The **VS-6YC** is easy to use, dependable, rugged, and fits in one vertical space of a standard 19" rack.



Technical Specifications:

INPUTS: 4 Video, 1Vpp / 75 Ω Composite (BNC), 1Vpp/75 Ω (Y), 0.3Vpp / 75 Ω (C) on 4P connectors.
4 Audio stereo 1Vpp / 10k Ω on RCAs.

OUTPUTS: 4 Video, 1Vpp / 75 Ω Composite (BNC), 1Vpp/75 Ω (Y), 0.3Vpp / 75 Ω (C) on 4P connectors.
4 Audio stereo 1Vpp / 100 Ω on RCAs.

VIDEO BANDWIDTH: 37 MHz.

AUDIO BANDWIDTH: 22 kHz.

DIFF. PHASE: 0.53 Deg.

MAX. VIDEO OUTPUT: 2Vpp/75 Ω .

VIDEO S/N RATIO: 72 dB.

AUDIO S/N RATIO: > 78 dB.

AUDIO THD: < 0.1%.

VIDEO CROSSTALK: -65dB (SYNC), -42dB (C).

CONTROL: 4 rotary control knobs.

DIMENSIONS: 19 inch (W), 7 inch (D), 1U (H) rack mountable.

POWER SOURCE: 230 VAC, 50/60 Hz (115VAC U.S.A.) 12 VA.

WEIGHT: 2.8 Kg. (6.2 Lbs.) Approx.

ACCESSORIES: Power cord.

Typical Applications:

- ❖ *Small video and audio editing systems.*
- ❖ *Any professional system requiring outstanding value in a true 4x4 matrix.*
- ❖ *Retail stores, restaurants and sports bars, home theaters.*

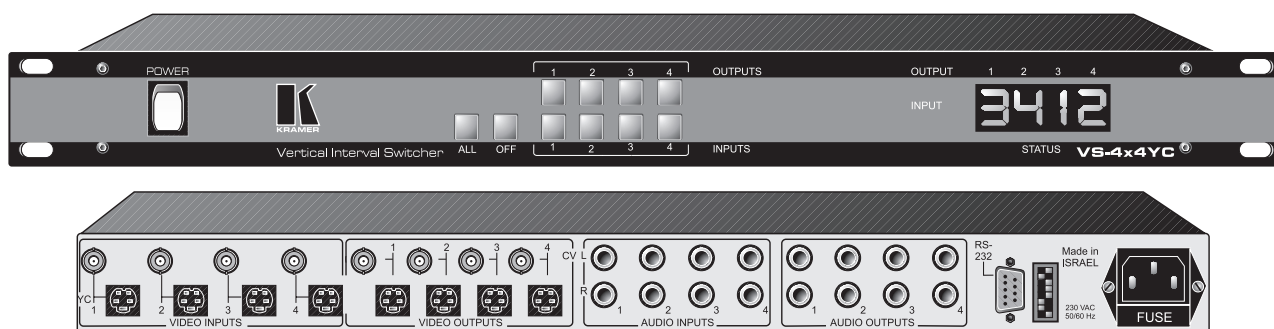


CV/s-Video Vertical Interval Matrix VS-4x4YC

The Kramer **VS-4x4YC** is a high performance 4x4 vertical interval matrix switch for composite and/or s-Video and stereo audio signals. It is a true matrix, allowing the user to route any input to any or all outputs simultaneously. Since the **VS-4x4YC** switches during the vertical interval, transitions are glitch-free when sources share a common reference sync.

The **VS-4x4YC** provides composite video and s-Video connectors allowing it to be used for either format. Mixing formats is possible but composite video sources would typically need to be routed to composite video outputs and, likewise, s-Video sources must be routed to s-Video outputs. It is very important to note that the **VS-4x4YC** does not perform any signal format conversion.

Like most Kramer switchers, the **VS-4x4YC** can be controlled by front panel buttons or RS-232 serial commands. For applications requiring remote control via a Windows-based personal computer, K-Switch software is provided at no additional cost. It is easy to use, dependable, rugged, and fits in one vertical space of a standard 19" rack.



Technical Specifications:

INPUTS:	4 video, 1Vpp/75 Ω Composite on BNCs, 4 Y/C - Y=1Vpp/75 Ω , C=0.3Vpp/75 Ω . 4 stereo audio 1Vpp/ 50k Ω on RCAs.
OUTPUTS:	4 video, 1Vpp/75 Ω composite on BNCs, 4 Y/C - Y=1Vpp/75 Ω , C=0.3Vpp/75 Ω . 4 stereo audio 1Vpp/100 Ω on RCAs.
VIDEO BANDWIDTH	50 MHz -3dB.
DIFF. GAIN:	0.15 %.
DIFF. PHASE:	0.1 Deg.
AUDIO BANDWIDTH:	10-100,000 Hz.
VIDEO S/N RATIO:	> 65 dB.
AUDIO S/N RATIO:	> 75 dB.
AUDIO THD:	<0.1%.
VIDEO CROSSTALK:	47dB Luma.
AUDIO CROSSTALK:	53 dB.
DIMENSIONS:	19 inch (W), 7 inch (D), 1U (H) rack mountable.
POWER SOURCE:	230 VAC (115VAC U.S.A.) 10.3VA.
WEIGHT:	2.9 Kg. (6.4 Lbs.) Approx.
ACCESSORIES:	Power cord, Windows 95/98 control software, Null modem adapter.

Typical Applications:

- ❖ *Small video and audio editing systems.*
- ❖ *Any professional display system requiring outstanding value in a true 4x4 matrix.*
- ❖ *Non-linear editing systems.*

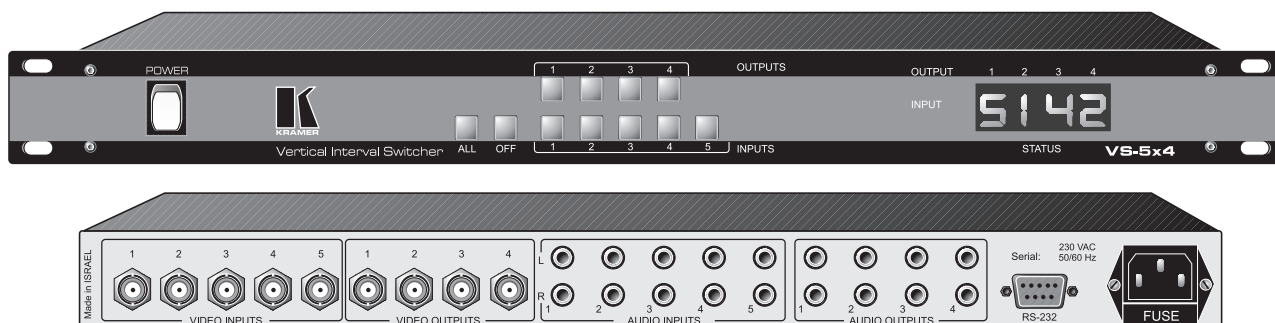


5x4 Vertical Interval A/V Matrix

VS-5x4

The Kramer **VS-5x4** is a high performance 5x4 vertical interval matrix switch for composite video and stereo audio signals. It is a true matrix, allowing the user to route any input to any or all outputs simultaneously. Since the **VS-5x4** switches during the vertical interval, transitions are glitch-free when sources share a common reference sync. Audio signals are always switched together with the corresponding video signal, and the large LED display makes it easy to see the current settings. Each audio output may be configured to have 0, 2, 4 or 6dB gain by using the front panel switches.

Like most Kramer switchers, the **VS-5x4** can be controlled by front panel buttons or RS-232 serial commands. For applications requiring remote control via a Windows-based personal computer, Kramer's new K-Switch software is provided at no additional cost. It is easy to use, dependable, rugged, and fits in one vertical space of a standard 19" rack.



Technical Specifications:

INPUTS:	5 video, 1Vpp/75Ω Composite on BNCs. 5 stereo audio 1Vpp/ 50kΩ on RCAs.
OUTPUTS:	4 video, 1Vpp/75Ω Composite on BNCs. 4 stereo audio 1Vpp/100Ω on RCAs.
VIDEO BANDWIDTH:	Exceeding 30 MHz.
AUDIO BANDWIDTH:	20-20000 Hz, -1dB.
DIFF. GAIN:	0.13%.
DIFF. PHASE:	0.8 Deg.
K-FACTOR:	<0.05%.
VIDEO S/N RATIO:	74 dB.
AUDIO S/N RATIO:	89 dB.
AUDIO THD:	0.02%.
VIDEO CROSSTALK:	-47dB Luma.
AUDIO CROSSTALK:	-53 dB.
DIMENSIONS:	19 inch (W), 7 inch (D), 1U (H) rack mountable.
POWER SOURCE:	230 VAC, 50/60Hz (115VAC U.S.A.) 6 VA.
WEIGHT:	2.7 Kg. (6 Lbs.) Approx.
ACCESSORIES:	Power cord, Windows 95/98 control software, Null modem adapter.

Typical Applications:

- ❖ *Small video and audio editing systems.*
- ❖ *Any professional display system requiring outstanding value in a true 5x4 matrix.*
- ❖ *Non-linear editing systems.*



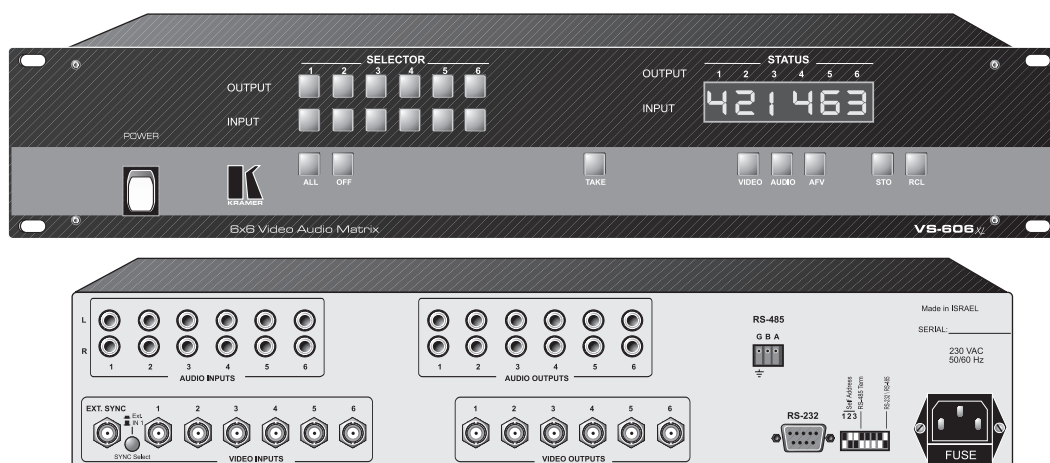
6x6 Vertical Interval A/V Matrix

VS-606xl

The Kramer **VS-606xl** is a high performance, 6x6 vertical interval matrix switcher for composite video and stereo audio signals. It is a true matrix, allowing the user to route any input to any or all outputs simultaneously. Since the **VS-606xl** switches during the vertical interval, transitions are glitch-free when sources share a common reference sync.

There are many updated features on this popular design including audio breakaway, which provides the ability to switch audio independently from video. Six preset memory locations are provided for quick access to common configurations. Also, the TAKE button allows the user to place multiple switches in a queue, then activate them with one touch of this button or a single serial command. Kramer's new **K-Switch** control software is included for applications where a Windows™ based PC is used to control the **VS-606xl**.

There are a total of three ways to control the **VS-606xl**: front-panel buttons, RS-232, and RS-485. It is dependable, rugged, and fits in two vertical spaces of a standard 19" rack. Video bandwidth of 200MHz ensures that the **VS-606xl** remains transparent even in the most critical applications.



Technical Specifications:

INPUTS:	6 composite video, 1Vpp/75Ω on BNCs. 1 sync/video genlock 1Vpp/75Ω with sync select switch. 6 stereo audio, +4dBm/62KΩ on RCAs.	
OUTPUTS:	6 composite video, 1Vpp/75Ω on BNCs. 6 stereo audio, +4dBm/50Ω (27 Vpp max.) on RCAs.	
VIDEO BANDWIDTH:	Exceeding 200 MHz.	AUDIO BANDWIDTH: Exceeding 100 kHz.
VIDEO CROSSTALK:	<50dB @ 5MHz.	NON LINEARITY: <0.1%.
VIDEO S/N:	74 dB.	AUDIO S/N: 88 dB Unweighted, (1Vpp).
CONTROL:	Manual, RS-232 or RS-485.	DIFF. GAIN: 0.05%.
AUDIO THD:	0.016% (1V, 1KHz).	DIFF. PHASE: 0.03 Deg.
SWITCHING:	Vertical Interval.	K-FACTOR: <0.05%.
DIMENSIONS:	19-inch (W), 7-inch (D) 2U (H) rack mountable.	
POWER SOURCE:	230 VAC, 50/60 Hz, (115VAC, U.S.A.) 11VA.	
WEIGHT:	3.4 Kg (7.5 Lbs.) Approx.	
ACCESSORIES:	Power cord, Windows 95/98 control software, Null modem adapter.	

Typical Applications:

- ❖ Any professional system requiring outstanding value in a 6x6 matrix.
- ❖ Production and duplications facilities, rental and staging.
- ❖ Security, CCTV, and home theater systems.



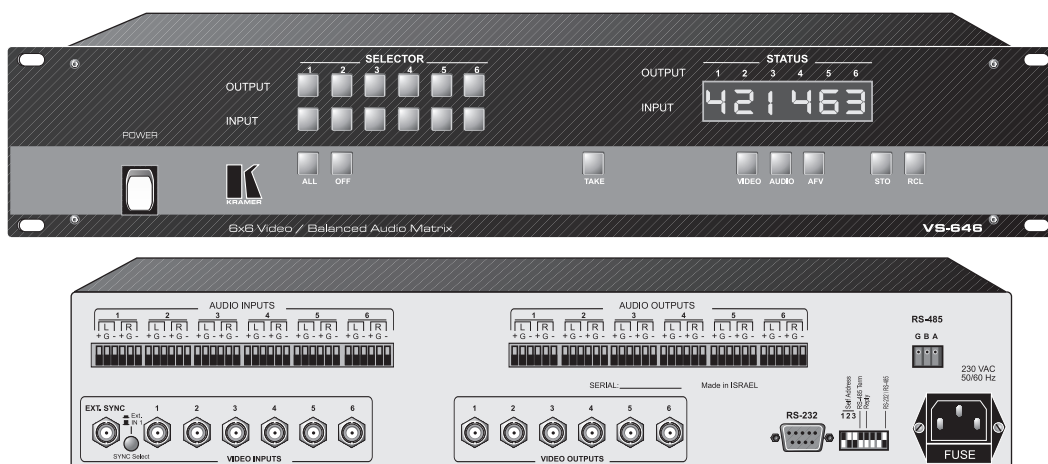
6x6 Balanced A/V Matrix Switcher

VS-646

The Kramer **VS-646** is a high performance, 6x6 vertical interval matrix switcher for composite video and balanced stereo audio signals. It is a true matrix, allowing the user to route any input to any or all outputs simultaneously. Since the **VS-646** switches during the vertical interval, transitions are glitch-free when sources share a common reference sync.

There are many updated features on this popular design including audio breakaway, which provides the ability to switch audio independently from video. Six preset memory locations are provided for quick access to common configurations. Also, the TAKE button allows the user to place multiple switches in a queue, then activate them with one touch of this button or a single serial command. Kramer's new **K-Switch** control software is included for applications where a Windows™ based PC is used to control the **VS-646**.

There are a total of three ways to control the **VS-646**; front-panel buttons, RS-232, and RS-485. It is dependable, rugged, and fits in two vertical spaces of a standard 19" rack. Video bandwidth of 200MHz ensures that the **VS-646** remains transparent even in the most critical applications.



Technical Specifications:

INPUTS: 6 composite video, 1Vpp/75Ω on BNCs. 1 Sync/Video Genlock 1Vpp/75Ω with sync select switch
6 balanced stereo audio, +4dBm/33 kΩ on detachable terminal blocks

OUTPUTS: 6 composite video, 1Vpp/75Ω on BNCs
6 balanced stereo audio, +4dBm/50Ω (24 Vpp max.) on detachable terminal blocks

VIDEO BANDWIDTH: Exceeding 200 MHz.

VIDEO CROSSTALK: <50dB @ 5MHz.

VIDEO S/N: 74 dB.

NON LINEARITY: <0.1%

DIFF. GAIN: 0.05%

DIFF. PHASE: 0.03 Deg

K-FACTOR: <0.05%.

CONTROL: Manual, RS-232 or RS-485

SWITCHING: Vertical Interval

DIMENSIONS: 19 inch (W), 7 inch (D) 2U (H) rack mountable

POWER SOURCE: 230 VAC, 50/60 Hz, (115VAC, U.S.A.), 14 VA.

WEIGHT: 3.4 Kg (7.5 Lbs.) Approx

ACCESSORIES: Power cord, Windows 95/98 control software, Null modem adapter.

AUDIO BANDWIDTH: Exceeding 100 kHz

AUDIO S/N: 84 dB Unweighted, (1Vpp)

AUDIO THD: 0.025% (1V, 1kHz)

2nd HARMONIC: 0.013%

MAXIMAL AUDIO: 24 Vpp (>20dBm)

Typical Applications:

- ❖ Any professional system requiring outstanding value in a 6x6 matrix
- ❖ Production and duplications facilities, rental and staging
- ❖ Security, CCTV, and home theater systems

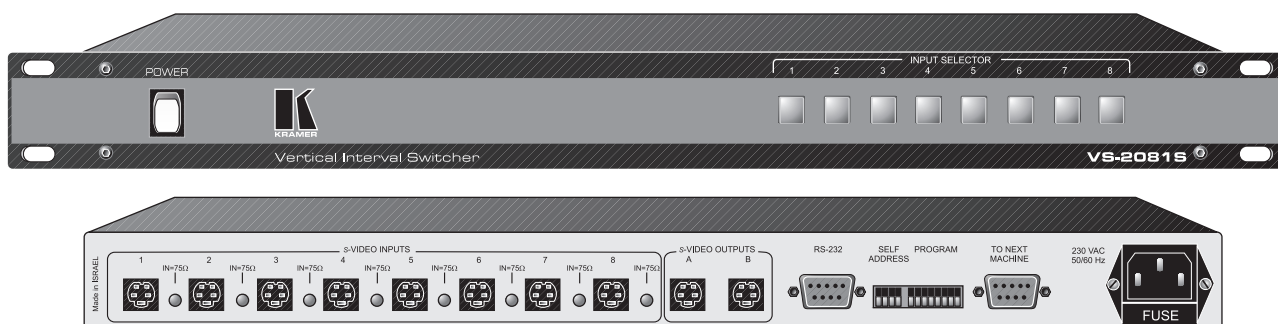


8x1 Vertical Interval Y/C Switcher VS-2081S

The Kramer **VS-2081S** is a high performance 8x1 vertical interval switcher for s-Video (Y/C) signals using 4 pin connectors. One of up to eight s-Video inputs can be routed to a single output. Although it is technically an 8x1 unit, two identical outputs are provided to simultaneously drive two monitors, projectors, or other receiving devices. Since switching is performed during the vertical interval, glitch-free transitions are provided when sources share a common reference sync.

The **VS-2081S** is designed to be easily expandable to create larger switching systems. For example, two units could be combined to form a 16x1, etc. Multiple **VS-2081S**'s operated in parallel can also be looped through to become 8x2, 8x3 etc.

The **VS-2081S** can be controlled by front panel buttons or by RS-232 serial commands. For systems requiring control via a Windows™ based personal computer, Kramer's new K-Switch software is included at no additional cost.



Technical Specifications:

INPUTS: 8 s-Video, 1Vpp/75 Ω (Y), 0.3Vpp/75 Ω (C) on 4P connectors with termination switches for looping.

OUTPUTS: 2 s-Video, 1Vpp/75 Ω (Y), 0.3Vpp/75 Ω (C) on 4P connectors.
1 DB-9 connector for control when cascading, 1 DB-9 connector for RS-232.

BANDWIDTH: Exceeding 60 MHz (Y -3dB).

VIDEO CROSSTALK: -50dB (Chroma).

DIFF. GAIN: 0.06%.

DIFF. PHASE: 0.12 Deg.

K-FACTOR: <0.05%.

LUMA S/N: 75 dB.

OUTPUT COUPLING: DC for Y, AC for C.

CONTROL: 8 illuminated front-panel touch switches, RS-232.

DIMENSIONS: 19 inch (W), 7 inch (D), 1U (H) rack mountable.

POWER SOURCE: 230 VAC, 50/60 Hz, (115VAC U.S.A.) 8.3 VA.

WEIGHT: 2.6 Kg. (5.8 Lbs.) Approx.

ACCESSORIES: Power cord, Windows 95/98 control software, Null modem adapter.

OPTIONS: Kramer model VS-2481 companion balanced audio switcher.

Typical Applications:

- ❖ Any professional A/V system requiring high quality s-Video switching.
- ❖ Live broadcast applications for switching between cameras in real-time.
- ❖ CCTV and security applications.

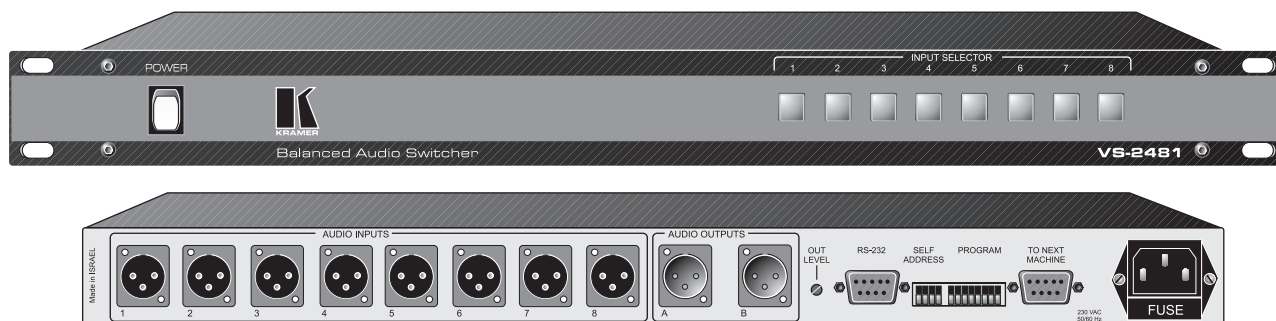


8x1 Balanced Audio Switcher

VS-2481

The Kramer **VS-2481** is a high performance 8x1 switcher for balanced audio signals using XLR connectors. One of up to eight balanced audio signals can be routed to the output. Although it is technically an 8x1 unit, two identical outputs are provided. Excellent audio performance makes it ideal for critical applications, and a rear-panel control is provided for setting optimum output levels. The **VS-2481** is designed to operate independently or as a companion to the Kramer s-Video switcher model **VS-2081S**.

Switching is microprocessor-based, and may be controlled by front-panel buttons or by RS-232. Software is included for applications requiring control via a Windows™ based personal computer. The **VS-2481** is designed to be easily expandable to create larger systems. For example, two units could be combined to form a 16x1, etc. Also, multiple **VS-2481**'s linked for parallel operation can form a multi-channel 8x1 system. Looping, and parallel control can create matrices such as 8x2, 8x3, etc.



Technical Specifications:

INPUTS:	8 balanced audio, +4dBm nom. acceptor dependent input impedance, on female XLR connectors.
OUTPUTS:	2 balanced audio, +4dBm, one fixed and one with level control on male XLR connectors. 1 DB-9 connector for control when cascading, 1 DB-9 connector for RS-232.
BANDWIDTH:	Exceeding 50 kHz (-3dB).
THD:	Controllable output - Less than 0.04%, @ 1kHz, second output- source dependent.
S/N:	>91 dB.
CROSSTALK:	Better than -50dB.
SWITCH RESPONSE:	Less than 3mS (when manually controlled).
CONTROL:	8 illuminated front-panel touch switches, RS-232.
DIMENSIONS:	19 inch (W), 7 inch (D), 1U (H) rack mountable.
POWER SOURCE:	230 VAC, 50/60 Hz, (115VAC U.S.A.) 4.1 VA.
WEIGHT:	2.6 Kg. (2.8 Lbs.) Approx.
ACCESSORIES:	Power cord, Windows 95/98 control software, Null modem adapter.
OPTIONS:	Kramer model VS-2081S companion switcher for s-Video.

Typical Applications:

- ❖ Any professional A/V system requiring XLR audio switching.
- ❖ Live broadcasting, for switching between sources in real-time.
- ❖ Audio recording studios.



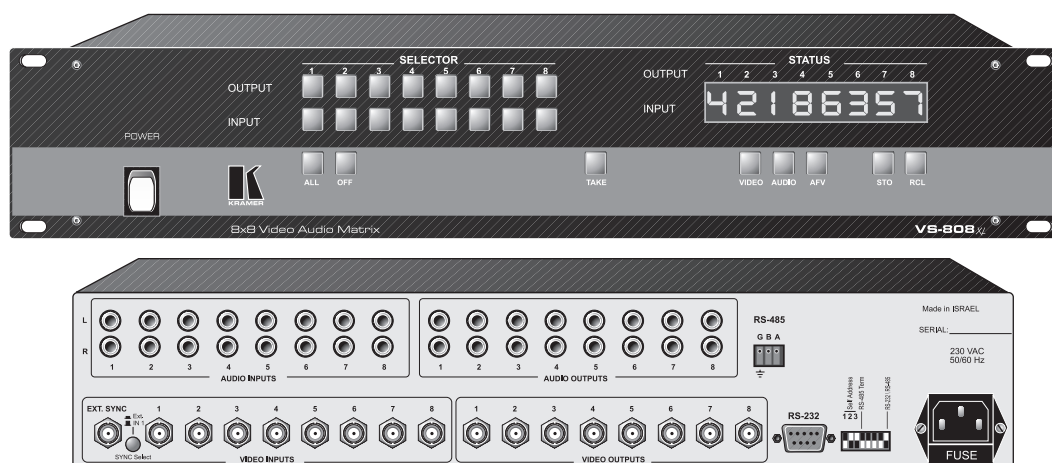
8x8 A/V Matrix Switcher

VS-808xl

The Kramer **VS-808xl** is a high performance, 8x8 vertical interval matrix switcher for composite video and stereo audio signals. It is a true matrix, allowing the user to route any input to any or all outputs simultaneously. Since the **VS-808xl** switches during the vertical interval, transitions are glitch-free when sources share a common reference sync.

There are many updated features on this popular design including audio breakaway, which provides the ability to switch audio independently from video. Eight preset memory locations are provided for quick access to common configurations. Also, the TAKE button allows the user to place multiple switches in a queue, then activate them with one touch of this button or a single serial command. Kramer's new **K-Switch** control software is included for applications where a Windows™ based PC is used to control the **VS-808xl**.

There are a total of three ways to control the **VS-808xl**; front-panel buttons, RS-232, and RS-485. It is dependable, rugged, and fits in two vertical spaces of a standard 19" rack. Video bandwidth of 200MHz ensures that the **VS-808xl** remains transparent even in the most critical applications.



Technical Specifications:

INPUTS:	8 Composite Video, 1Vpp/75Ω on BNCs. 1 Sync/Video Genlock 1Vpp/75Ω with sync select switch. 8 Audio Stereo, + 4dBm/33 KΩ on RCAs.	
OUTPUTS:	8 Composite Video, 1Vpp/75Ω on BNCs. 8 Audio Stereo, +4dBm/50Ω (24 Vpp max.) on RCAs.	
VIDEO BANDWIDTH:	Exceeding 200 MHz.	AUDIO BANDWIDTH: Exceeding 100 kHz.
VIDEO CROSSTALK:	<50dB @ 5MHz.	NON LINEARITY: <0.1%.
VIDEO S/N:	74 dB.	AUDIO S/N: 88 dB Unweighted, (1Vpp).
CONTROL:	Manual, RS-232 or RS-485.	DIFF. GAIN: 0.05%.
AUDIO THD:	0.016% (1V, 1kHz).	DIFF. PHASE: 0.03 Deg.
SWITCHING:	Vertical Interval.	K-FACTOR: <0.05%.
DIMENSIONS:	19 inch (W), 7 inch (D) 2U (H) rack mountable.	
POWER SOURCE:	230 VAC, 50/60 Hz, (115VAC, U.S.A.), 11 VA.	
WEIGHT:	3.5 Kg (7.8 Lbs.) Approx.	
ACCESSORIES:	Power cord, Windows 95/98 control software, Null modem adapter.	

Typical applications:

- ❖ Production studios.
- ❖ Audio / Video duplication facilities.
- ❖ Professional presentation systems.



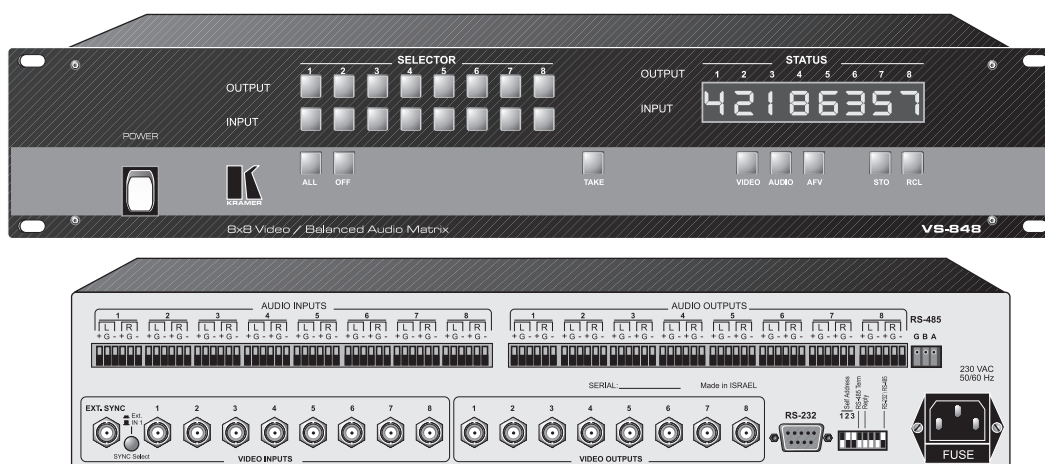
8x8 Balanced A/V Matrix Switcher

VS-848

The Kramer **VS-848** is a high performance, 8x8 vertical interval matrix switcher for composite video and balanced stereo audio signals. It is a true matrix, allowing the user to route any input to any or all outputs simultaneously. Since the **VS-848** switches during the vertical interval, transitions are glitch-free when sources share a common reference sync.

There are many updated features on this popular design including audio breakaway, which provides the ability to switch audio independently from video. Eight preset memory locations are provided for quick access to common configurations. Also, the TAKE button allows the user to place multiple switches in a queue, then activate them with one touch of this button or a single serial command. Kramer's new **K-Switch** control software is included for applications where a Windows™ based PC is used to control the **VS-848**.

There are a total of three ways to control the **VS-848**; front-panel buttons, RS-232, and RS-485. It is dependable, rugged, and fits in two vertical spaces of a standard 19" rack. Video bandwidth of 200MHz ensures that the **VS-848** remains transparent even in the most critical applications.



Technical Specifications:

INPUTS:	8 composite video, 1Vpp/75Ω on BNCs. 1 Sync/Video Genlock 1Vpp/75Ω with sync select switch.	
	8 balanced stereo audio, +4dBm/33 kΩ on detachable terminal blocks.	
OUTPUTS:	8 composite video, 1Vpp/75Ω on BNCs.	
	8 balanced stereo audio, +4dBm/50Ω (24 Vpp max.) on detachable terminal blocks.	
VIDEO BANDWIDTH:	Exceeding 200 MHz.	AUDIO BANDWIDTH: Exceeding 100 kHz.
VIDEO CROSSTALK:	<50dB @ 5MHz.	AUDIO S/N: 84 dB Unweighted, (1Vpp)
VIDEO S/N:	74 dB.	AUDIO THD: 0.025% (1V, 1KHz).
NON LINEARITY:	<0.1%.	2nd HARMONIC: 0.013%.
DIFF. GAIN:	0.05%.	MAXIMAL AUDIO: 24 Vpp (>20dBm).
DIFF. PHASE:	0.03 Deg.	
K-FACTOR:	<0.05%.	
CONTROL:	Manual, RS-232 or RS-485.	
SWITCHING:	Vertical Interval.	
DIMENSIONS:	19 inch (W), 7 inch (D) 2U (H) rack mountable.	
POWER SOURCE:	230 VAC, 50/60 Hz, (115VAC, U.S.A.), 14 VA.	
WEIGHT:	3.5 Kg (7.8 Lbs.) Approx.	
ACCESSORIES:	Power cord, Windows 95/98 control software, Null modem adapter.	

Typical applications:

- ❖ Any professional system requiring outstanding value in a 8x8 matrix.
- ❖ Production and duplications facilities, rental and staging. Security, CCTV, and home theater systems.
- ❖ Production studio vertical interval routing between Genlocked sources.



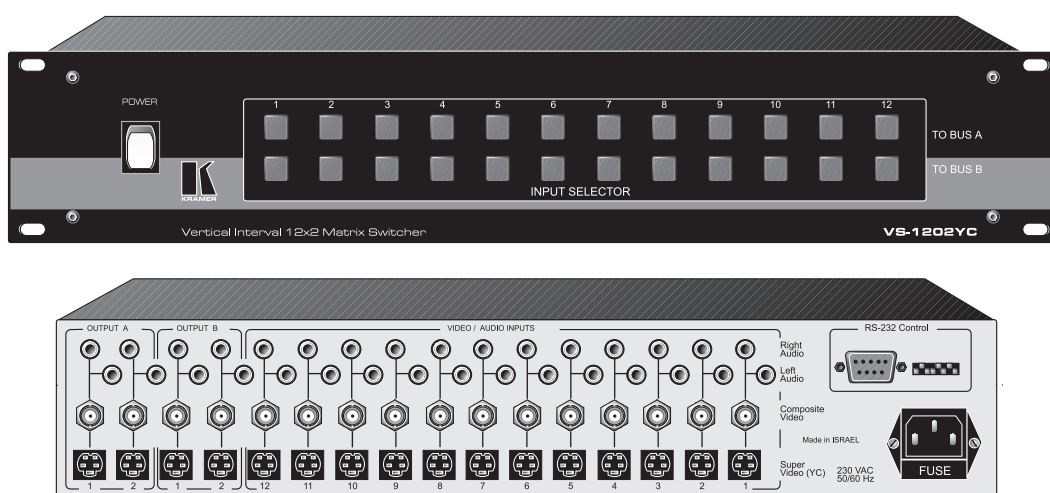
12x2 Vertical Interval Matrix

VS-1202YC

The Kramer **VS-1202YC** is a high performance 12x2 vertical interval matrix switcher for s-Video (Y/C) or composite video, and stereo audio signals. Two up to 12 inputs can be routed to either or both outputs simultaneously. Since switching is performed during the vertical interval, transitions are glitch-free when sources share a common reference sync.

The design features two independent sets of input select buttons, one set for each output, making it ideal for real-time applications requiring the ability to preview any input before committing it to a main output. Kramer's "02" family is also great for any application requiring a true two-output matrix. RS-232 control capability is standard on the **VS-1202YC**, and Windows control software is also provided at no additional cost.

The **VS-1202YC** is dependable, rugged, and fits in two vertical spaces of a standard 19" rack. Video bandwidth of 37MHz ensures transparent performance in almost any typical video application.



Technical Specifications:

INPUTS:	12 composite video 1Vpp/75 Ω on BNC type connectors. 12 YC, Y=1Vpp/75 Ω , C=0.3Vpp/75 Ω , on 4P connectors.		
	12 stereo audio 10K Ω on RCAs.		
OUTPUTS:	2x2 composite video, 1Vpp/75 Ω , 2x2 YC, Y=1Vpp/75 Ω , C=0.3Vpp/75 Ω .		
	2x2 stereo audio 1V/100 Ω on RCAs.		
VIDEO BANDWIDTH:	37 MHz -3dB.	CROSSTALK:	-40 dB at 5MHz.
OUTPUT COUPLING:	DC, clamped.	AUDIO THD:	0.02%.
DIFF. GAIN:	0.4%.	AUDIO S/N RATIO:	80 dB.
DIFF. PHASE:	0.9 Deg.	SWITCHING:	Vertical Interval.
VIDEO S/N RATIO:	74 dB.		
K-FACTOR:	<0.05%.		
CONTROL:	24 illuminated front-panel touch switches, RS-232.		
DIMENSIONS:	19-inch (W), 7-inch (D) 2U (H) rack mountable.		
POWER SOURCE:	230 VAC, 50/60 Hz (117VAC U.S.A.) 11.5 VA.		
WEIGHT:	3.7 Kg (8.2 Lbs.) Approx.		
ACCESSORIES:	Power cord, Windows 95/98 control software, Null modem adapter.		

Typical applications:

- ❖ Video production studios.
- ❖ Live broadcast or presentation applications such as switching between cameras in real-time.
- ❖ CCTV, home theater, and rental/staging applications.



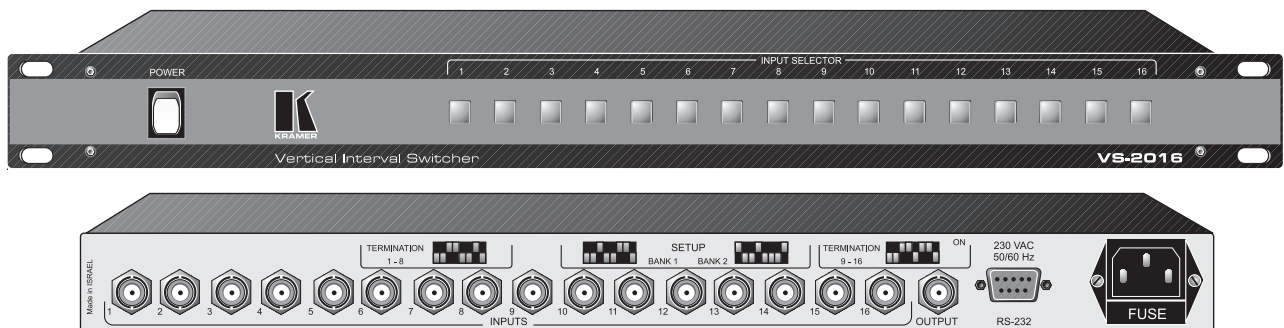
16x1 Vertical Interval Switcher

VS-2016

The Kramer **VS-2016** is a high performance 16x1 vertical interval switcher for composite video signals using BNC connectors. One up to 16 sources can be routed to one monitor, VCR, or other receiving device. Since switching is performed during the vertical interval, transitions are glitch-free when sources share a common reference sync.

The **VS-2016** is designed to be easily expandable to create larger switching systems. For example, two **VS-2016**'s can be combined to make a 32x1, etc. Multiple units can also be operated in parallel for switching component signal formats. For example, two **VS-2016**'s could be linked to form a 16x1 switch for Y/C, three could be linked to switch YUV, etc. It is RS-232 controllable, and comes with Kramer's new **K-Switch** Windows compatible control software at no additional cost.

The **VS-2016** is dependable, rugged, and fits in one vertical space of a standard 19" rack. Video bandwidth of at least 80 MHz ensures that it remains transparent in almost any video application.



Technical Specifications:

INPUTS:	16 composite / component video, 1Vpp/75 Ω , on BNC connectors.
OUTPUTS:	1 composite / component video, 1Vpp/75 Ω on a BNC connector.
BANDWIDTH (VIDEO):	Exceeding 80 MHz (-3dB).
DIFF. GAIN:	0.07%.
LUMA S/N:	74 dB.
DIFF. PHASE:	0.28 Deg.
K-FACTOR:	<0.05%.
OUTPUT COUPLING:	DC.
CROSSTALK:	-48dB (Chroma).
CONTROL:	16 front-panel touch switches, RS-232.
SWITCHING:	During Vertical Interval.
DIMENSIONS:	19 inch (W), 7 inch (D), 1U (H) rack mountable.
POWER SOURCE:	230 VAC 50/60 Hz (115VAC U.S.A.) 8.7 VA.
WEIGHT:	2.8 Kg. (6.2 Lbs.) Approx.
ACCESSORIES:	Power cord, Windows 95/98 control software, Null modem adapter.

Typical applications:

- ❖ *Video production studios.*
- ❖ *Live broadcast and presentation systems requiring switching between cameras in real-time.*
- ❖ *CCTV, home theater, and rental/staging applications.*



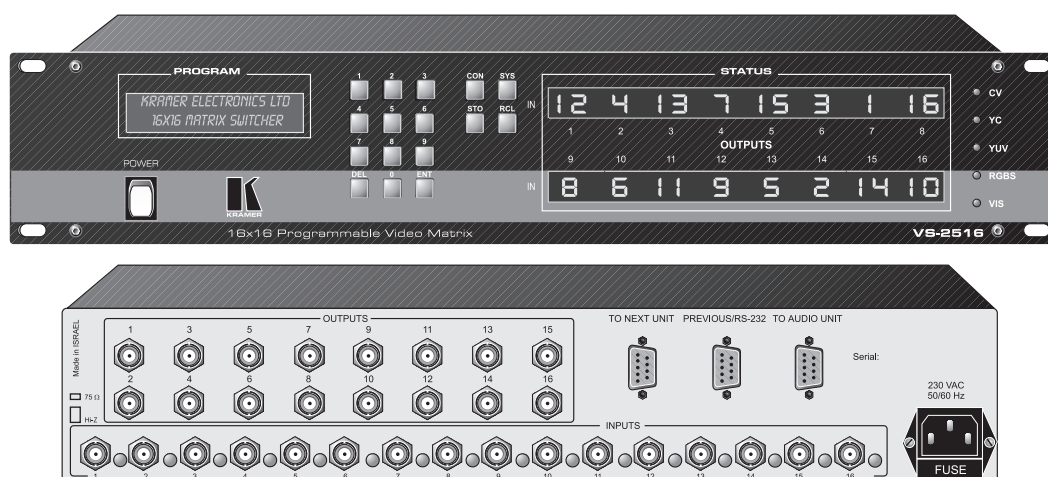
16x16 Video Matrix

VS-2516

The Kramer **VS-2516** is designed primarily as a high performance 16x16 vertical interval matrix switcher for composite video signals using BNC connectors, but can be configured for other signal formats as described below. It is a true matrix allowing any input to be routed to any or all outputs simultaneously. Since the **VS-2516** performs switches during the vertical interval, transitions are glitch-free when sources share a common reference sync. 15 non-volatile preset memory settings are provided for easy recall of common configurations.

In addition to its typical 16x16 operation, the **VS-2516** can be configured as an 8x8 for s-Video (YC), 5x5 for YUV, or 4x4 for RGBS signals. It is designed to be easily expandable to create larger switching systems. For example, two units can combine to form a 16x32 system, etc. Also, multiple **VS-2516**'s can be operated in parallel for larger multi-channel systems. For example, two units can be used as a 16x16 for s-Video.

Kramer offers companion units to add audio capability to any system based on the **VS-2516**. The **VS-2616** is designed for balanced audio signals, and the **VS-2216** is the unbalanced version. Both use detachable screw terminal blocks for audio connections. Control is performed by simple front panel buttons or RS-232 serial commands from touch screen systems, personal computer, or other dedicated serial controllers.



Technical Specifications:

INPUTS:	16 composite video, or 8 s-Video (YC), or 4 RGBS, or 5 YUV, 1Vpp/75Ω.		
OUTPUTS:	16 composite video, or 8 s-Video, or 4 RGBS, or 5 YUV, 1Vpp/75 Ω.		
VIDEO BANDWIDTH:	69 MHz.		
CROSSTALK:	Less than 40dB (Chroma).		
COUPLING:	DC.	DIFF. GAIN:	Less than 0.07%.
VIDEO S/N:	Better than 75 dB.	DIFF. PHASE:	0.15 Deg.
SWITCHING:	Vertical Interval or immediate.	K-FACTOR:	0.1%.
CONTROL:	Front panel switches, RS-232.		
INTERFACE:	RS-232.		
STORAGE CAPACITY:	15 presets.		
DIMENSIONS:	19 inch (W), 7 inch (D), 2U (H) rack mountable.		
POWER SOURCE:	230 VAC, 50/60 Hz (115VAC, U.S.A.) 22VA.		
WEIGHT:	4.6Kg. (10.2 Lbs.) Approx.		
ACCESSORIES:	Power cord, Windows 95/98 control software, Null modem adapter.		
OPTIONS:	Kramer model VS-2216 or VS-2616 companion audio units.		

Typical Applications:

- ❖ Any professional display system requiring video signal routing.
- ❖ Broadcast and production facilities.
- ❖ Rental and staging applications.

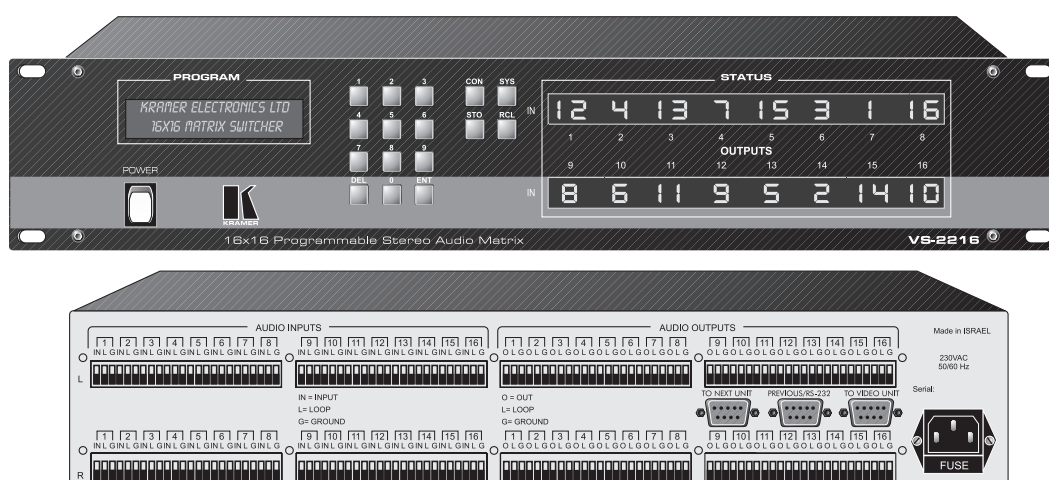


16x16 Stereo Audio Matrix

VS-2216

The Kramer **VS-2216** is a high performance 16x16 matrix switch for unbalanced stereo audio signals using detachable screw terminal connectors. It is a true matrix allowing any input to be routed to any or all outputs simultaneously. The **VS-2216** is designed to operate independently, or as a companion to the Kramer **VS-2516** video matrix switch. It offers excellent audio performance, easy to use front panel, large LED I/O display, and 15 non-volatile user-programmable preset memory settings.

The **VS-2216** can be controlled by front panel buttons, RS-232, or by the link with a Kramer **VS-2516** video matrix switch. For applications requiring control via a personal computer, Kramer's Windows™ compatible control software is included at no additional cost. Inputs and outputs can be looped to form larger systems such as 16x32, 32x48 etc.



Technical Specifications:

INPUTS:	16 stereo audio, looping, 50k ohms input impedance on terminal blocks.
OUTPUTS:	16 stereo audio, 50 ohms impedance on terminal blocks.
AUDIO BANDWIDTH:	Exceeding 40 kHz.
CROSSTALK:	Less than 70dB (1kHz).
THD:	Less than 0.1%.
COUPLING:	AC.
MAX. SIGNAL LEVEL:	12Vpp.
AUDIO S/N:	Better than 85 dB (+4dBm).
CONTROL:	Microprocessor and EEPROM.
INTERFACE:	RS-232.
STORAGE CAPACITY:	15 presets.
DIMENSIONS:	19 inch (W), 7 inch (D), 2U (H) rack mountable.
POWER SOURCE:	230 VAC, 50/60 Hz, (115VAC, U.S.A.) 9.2 VA.
WEIGHT:	3.6 Kg. (8 Lbs.) Approx.
ACCESSORIES:	Power cord, Windows 95/98 control software, Null modem adapter.
OPTIONS:	Kramer VS-2516 reconfigurable video matrix switch.

Typical Applications:

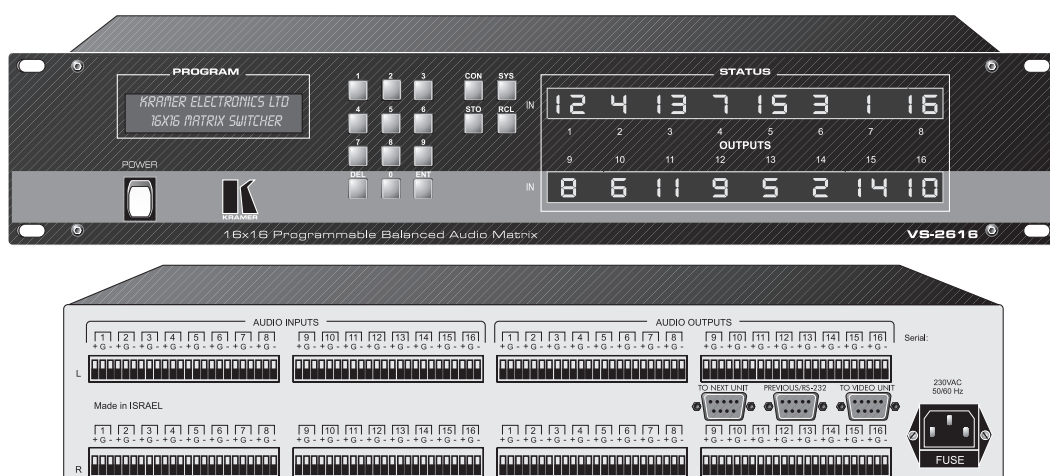
- ❖ Any professional presentation system requiring 16x16 audio routing.
- ❖ Production and broadcast applications.
- ❖ Retail stores, restaurants, and sports bars.



16x16 Balanced Stereo Matrix

VS-2616

The Kramer **VS-2616** is a high performance 16x16 matrix switcher for balanced stereo audio signals using detachable screw terminal connectors. It is a true matrix allowing any input to be routed to any or all outputs simultaneously. The **VS-2616** is designed to operate independently, or as a companion to the Kramer **VS-2516** video matrix switch. It offers excellent audio performance, easy to use front panel, large LED I/O display, and 15 non-volatile user-programmable preset memory settings. The **VS-2616** can be controlled by front panel buttons, RS-232, or by the link with a Kramer **VS-2516** video matrix switch. For applications requiring control via a personal computer, Kramer's Windows™ compatible software is included at no additional cost. For creating larger systems, inputs can be looped to form 16x32, 16x48, and other sizes.



Technical Specifications:

INPUTS: 16-Balanced Stereo Audio, looping, 5k Ω input impedance on terminal blocks, +4dBm nom.
OUTPUTS: 16 Balanced Stereo Audio, 50 Ohms on terminal blocks, +4dBm nom.
AUDIO BANDWIDTH: Exceeding 40 kHz.
CROSSTALK: Less than 70dB (1kHz).
THD: Less than 0.1%.
COUPLING: AC.
MAX. SIGNAL LEVEL: 20 Vpp.
AUDIO S/N: Better than 85 dB (+15 dBm).
CONTROL: Front panel switches, RS-232.
STORAGE CAPACITY: 15 presets.
DIMENSIONS: 19 inch (W), 7 inch (D), 2U (H) rack mountable.
POWER SOURCE: 230 VAC, 50/60 Hz, (115VAC, U.S.A.) 9.2 VA.
WEIGHT: 3.6 Kg. (8 Lbs.) Approx.
ACCESSORIES: Power cord, Windows 95/98 control software, Null modem adapter.
OPTIONS: Kramer VS-2516 reconfigurable video matrix switch.

Typical Applications:

- ❖ Any professional system requiring 16x16 audio routing.
- ❖ Production and broadcast applications.
- ❖ Retail stores, restaurants, and sports bars.
- ❖ Recording studios.

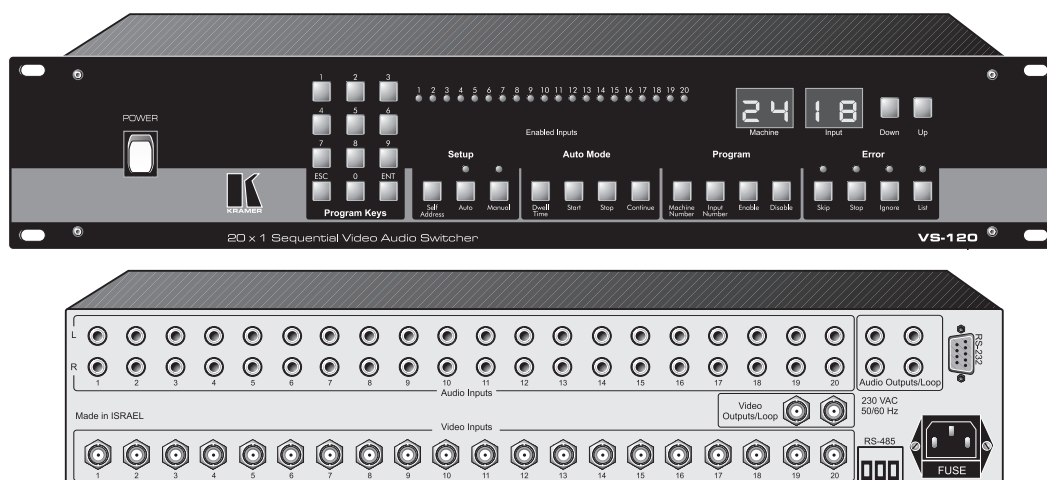


20x1 Video-Audio Scanner

VS-120

The Kramer **VS-120** is a programmable scanning video switcher designed to sequentially cycle through up to 20 video and stereo audio sources. Operating stand-alone it accepts up to 20 inputs, but multiple **VS-120's** can be cascaded to allow as many as 2000 sources to be monitored. It is ideal as a quality control tool in video duplication facilities as well as a sophisticated alarm camera scanner. Switching is performed during the vertical interval for glitch-free transitions between genlocked sources.

The **VS-120** can be controlled by front panel buttons, RS-232, or RS-485 commands transmitted by a touch screen system, personal computer, or other serial controller. Operation is fully microprocessor controlled. It is rugged, dependable, and is housed in a professional rack mountable enclosure, which occupies two vertical spaces in a standard 19" rack.



Technical Specifications:

INPUTS:	20 video 1Vpp/75 Ω on BNC connectors.
	20 stereo audio, 1Vpp/50k Ω on RCA connectors.
OUTPUTS:	1 video, 1Vpp / 75 Ω on 2 BNCs, parallel connected.
	1 stereo audio, 1Vpp/100 Ω on 2x2 RCAs, parallel connected.
	DB-9 for RS-232, 3 binding posts for RS-485.
DISPLAY:	4 seven-segment display LEDs, 20 LED status display.
CONTROLS:	12 key keypad control, 17 touch switch setup controls, RS-232, RS-485.
SWITCHING:	Vertical Interval.
ERROR DETECTION:	Sync detection.
AUDIO BANDWIDTH:	20 kHz -1dB.
K-FACTOR:	<0.05%.
DIMENSION:	19 inch (W), 7 inch (D), 2U (H) rack mountable.
POWER:	230 VAC, 50/60 Hz (115 VAC, U.S.A) 6.7 VA.
WEIGHT:	4.1 Kg. (9.1 Lbs.) Approx.
ACCESSORIES:	Power cord, Windows 95/98 control software, Null modem adapter.

Typical Applications:

- ❖ Fully programmable, EPROM/NOV RAM memory for setup saves and recalls.
- ❖ Automatic error detection (sync failure or disconnection) in security systems.
- ❖ Monitoring in large duplication systems.