

# DIRECTORY OF PRODUCTS

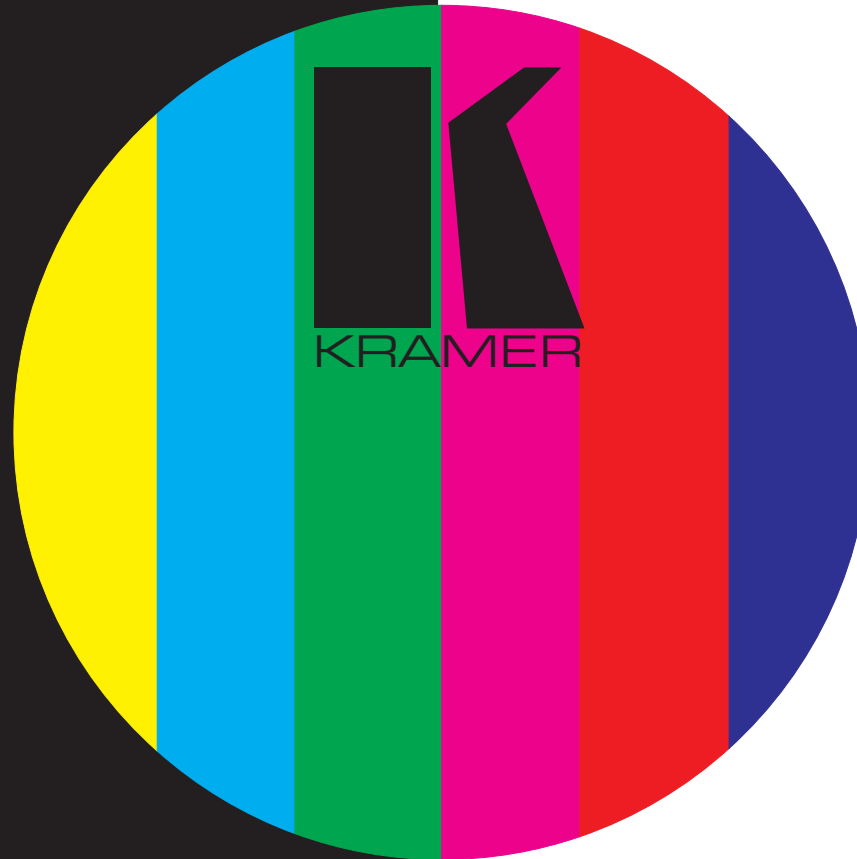
KRAMER



KRAMER

THE MILLENNIUM ISSUE

# THE KRAMER PDF CATALOG



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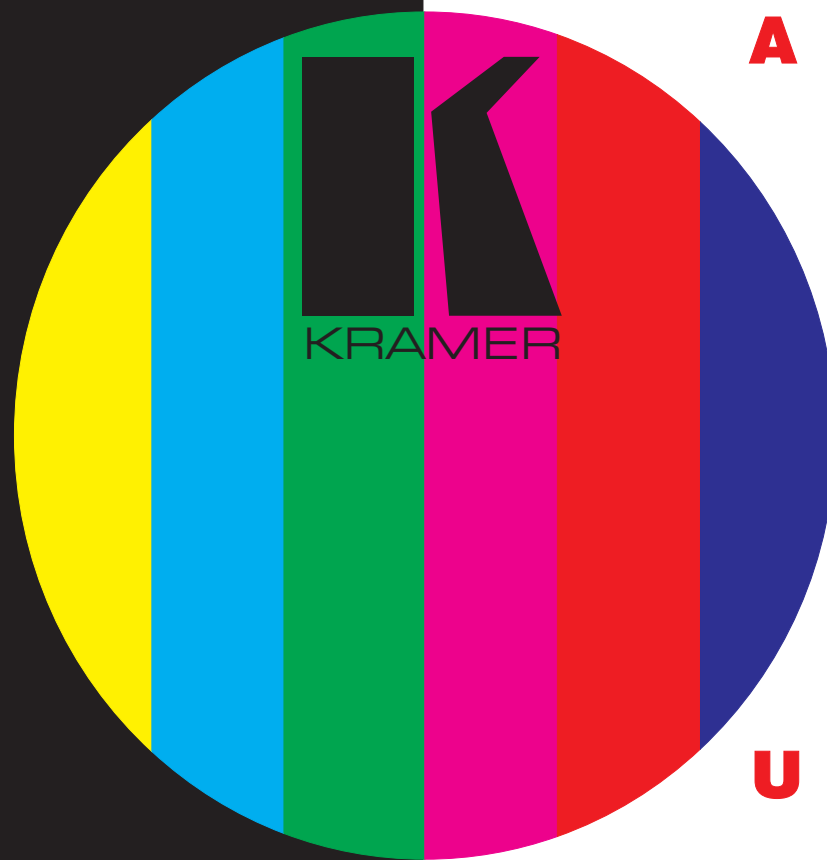
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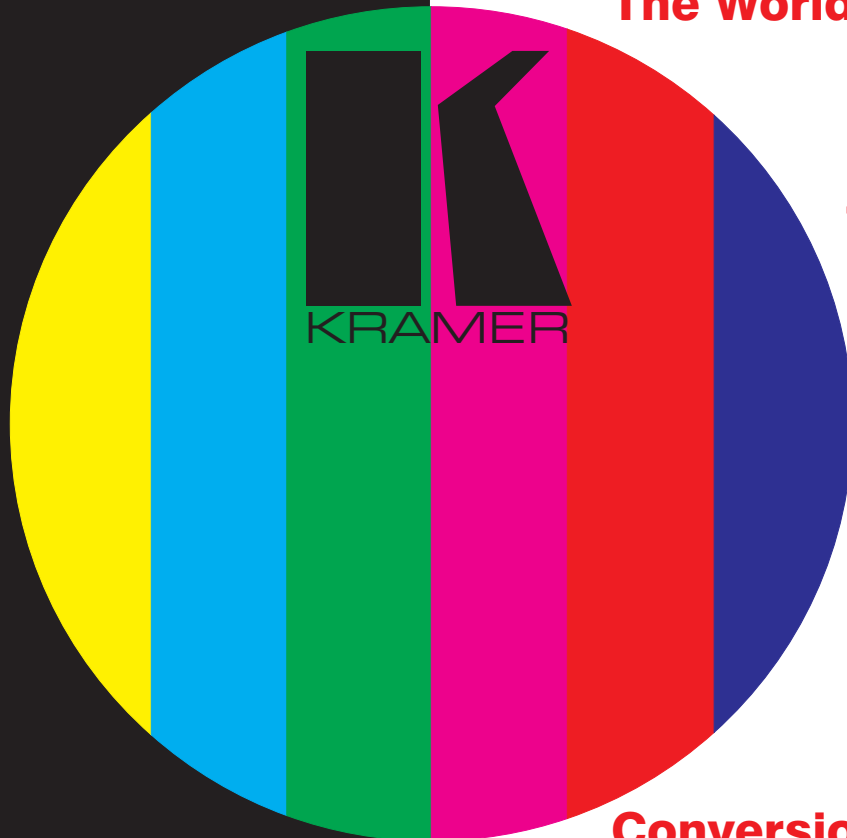
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# INTRODUCTION

## The World of Kramer



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## THE WORLD OF KRAMER

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Welcome to Kramer Electronics - a world of unique and smart solutions to the infinite range of problems confronting you, the video and audio professional, on a daily basis.

### MISSION STATEMENT

KRAMER IS COMMITTED TO SERVING THE NEEDS OF THE PROFESSIONAL BY DESIGNING, DEVELOPING AND DISTRIBUTING THE HIGHEST QUALITY VIDEO, AUDIO, VIDEO/AUDIO AND PC-RELATED DEVICES. THIS COMMITMENT IS BACKED BY A VISION, WHICH FOCUSES ON ANTICIPATING MARKET OPPORTUNITIES AND RAPIDLY DEVELOPING TECHNOLOGICAL SOLUTIONS TO FILL THEM. FURTHERMORE, KRAMER IS DEDICATED TO PROVIDING ITS CUSTOMERS WITH AN UNCOMPROMISING LEVEL OF SERVICE AND SUPPORT.

For 20 years, Kramer has been selling distribution amplifiers, switchers, matrix switchers, processors, encoders, decoders, transcoders, and a full range of interfaces in a variety of formats, sizes and price points. Kramer products can be found in high-profile professional and broadcast installations in more than 60 countries world-wide.

In Kramer's new operating facility in Jerusalem, Israel, the company has comprehensive sales, marketing, engineering, design and shipping departments. Kramer also maintains additional sales offices and warehouse facilities in Belgium, Great Britain and the United States.

Kramer award winning products are seen at more than 50 international and national trade shows annually, and are supported by an extensive public relations and media advertising campaign world-wide. Kramer is a member in good standing of prestigious organizations such as the International Communication Industries Association (ICIA), National Association of Broadcasters (NAB), National Systems Contractors Association (NSCA) and International Association of Broadcasting Manufacturers (IABM).

Founded in 1981, Kramer is a pioneer in the video industry, developing and distributing innovative products over the years. We take a great deal of pride in our accomplishments:

- 1981: Commenced operations.
- 1982: Opened European distribution facility.
- 1982: Introduced the first PAL video processor with image enhancement and color control.
- 1983: Patented Technologies: Automatic video noise gate, Color processor-screen splitter, and Symmetrical video boost/cut circuitry.
- 1984: Introduced the first combined video/audio processor.
- 1986: Achieved 14 cover stories on new products in leading European video magazines.

- 1988: Introduced the first PAL s-Video (YC) processors and DA's at Photokina in Germany.
- 1989: Launched the Kramer "VP" products line – pioneering computer graphics conversion and distribution.
- 1990: Implemented new Chip Technology in the Kramer "Broadcast" series of products.
- 1992: The "Broadcast" series installed in five leading broadcast studios in Europe.
- 1996: First to develop high bandwidth TP (twisted-pair) products.
- 1997: Opened US subsidiary.
- 1997: Developed fastest VGA graphics distribution amplifier.
- 1998: Patented the "Video Tester", a hand-held, battery operated, tester for video signal presence.
- 1998: Patented Kramer Tools, which receive "Reader's Choice Award" from Broadcast Engineering Magazine.
- 1999: The VP-800, a VGA/XGA Color Bar Generator, receives the "Pick Hit Award" from Video System Magazine at the NAB show in Las Vegas.

Above all else, we cherish our reputation for providing efficient, effective, smart and cost sensitive SOLUTIONS. To make finding these solutions easier, we have revised our catalog to better index the more than 250 different models in stock. Models appear in multiple tables to ensure you will be able to find a product to fit every application. For your added convenience, we have also included numerous diagrams of typical applications, as well as a glossary of the most current and most commonly used video and audio terms.

Keep the catalog close to use as a reference guide. You will be pleasantly surprised how often it will come in handy. If you come across an application or problem we missed - we welcome your suggestions. You can always find us via our web site: [www.kramerelectronics.com](http://www.kramerelectronics.com)

Dr. Joseph Kramer  
Managing Director

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VM-5ARII	1:5 AV Distributor, Looping CV / Component / Audio Stereo, with AC or DC coupling, 360 MHz.	1.9
VM-1010	1:10 or 2x1:5 Video, Looping programmable DA, with AC or DC coupling, 225 MHz.	1.10
VM-1110	1:10 Balanced Audio Mono, 1:5 stereo, 2 inputs, programmable, on XLRs, 100kHz.	1.11
VM-1610	1:10 Balanced Audio Stereo, 2 inputs, Looping, programmable, on terminal blocks, 100kHz.	1.12
VM-10ARII	1:10 AV Distributor, Looping CV / Component / Audio Stereo, with AC or DC coupling, 224 MHz.	1.13
VM-1411	1:10 AV, 2 inputs, Looping CV / Component / Balanced Audio Stereo, with AC or DC coupling, 224MHz.	1.14
VM-20ARII	1:20 AV, 4 inputs, Looping CV / Component/Audio Stereo, can be used as 1:20, 2x1:10, 4x1:5, 430 MHz.	1.15
VM-1021	1:20 Looping, CV/Component DA with AC or DC coupling and clamping, 350MHz.	1.16
VM-54	1:54 Looping, Video / Component DA, 3 inputs, can be used as 1:54, 3x1:18, 350 MHz.	1.17
VM-1042	1:2 RGBS / 4x1:2 Video Looping DA, 200 MHz.	1.18
VM-1044	1:4 RGBS / 4x1:4 Video DA, 320 MHz.	1.19
VM-1055	1:5 RGBHV / 5x1:5 Video DA, 300 MHz.	1.20
VM-5YC	1:5 Looping, Y/C - CV - Audio Stereo DA + conversion from Y/C to CV, 90 MHz.	1.21
VM-10YC	1:10 Looping, Y/C - CV - Audio Stereo DA + conversion from Y/C to CV, 50 MHz.	1.22
<b>Desktop DAs</b>		
VM-2N	1:2 AV Compact DA for analog and SDI (Serial Digital) video signals + audio stereo, 400 MHz.	1.23
VM-9S	1:2 Looping, CV/Audio Stereo Line amplifier with controls for video level and cable EQ. and audio, 84 MHz.	1.24
VM-9YC	1:2 looping, Y/C Line amplifier with separate front controls for Y (level and EQ.) and C (level and phase), 320 MHz.	1.25
VM-3V	1:3 Video, 12 Volts DC feed, mini sized, 60 MHz.	1.26
VM-3S	1:3 Y/C, 12 Volts DC feed, mini sized, 60 MHz (Y.)	1.27
VM-50V	1:5 Looping, Video, 12 Volts DC feed, compact, 480 MHz.	1.28
VM-50A	1:5 Looping, Audio stereo, 12 Volts DC feed, compact, 20 kHz.	1.29
VM-50YC	1:5 Looping, YC, 12 Volts DC feed, compact, 280 MHz (Y.)	1.30
VM-50H	1:5 Stereo Headphones, 1:10 mono, with 5 stereo controls, 12 Volts DC feed, 20 kHz.	1.31
VM-5S	1:5 CV / SDI (Serial) / Audio Stereo DA with AC/DC coupling, half 19" width, 350 MHz.	1.32
VM-5AD	1:5 Balanced/Unbalanced audio Amp + converter with level controls and Mic input option on XLRs, 20 kHz.	1.33
VM-42	4 x 1:4 Video Programmable CV DA + 4x1 Vertical Interval switcher (best for preview), 200 MHz.	1.34
VM-80A	1:8 or 2x1:4 Balanced Stereo-Audio Amplifier with front controls, half 19" width, 20 kHz.	1.35
VM-80V	1:8 or 2x1:4 Video, Looping, CV DA for Analog or SDI signals, half 19" width, 330 MHz.	1.36
VM-10AN	1:10 Looping, Video / Audio Stereo DA, with AC or DC coupling, 77 MHz.	1.37
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VS-2053	3x1 RGBHV Switcher with delayed or Vertical Interval switching and RS-232, 400 MHz.	2.10
VS-2042	4x2 YUV Matrix with RS-232 control, 75 MHz.	2.11
VS-401xl	4x1 Video / Audio stereo, RS-232, RS-485, front panel and remote contact closure controls, 250 MHz.	2.12
VS-411	4x1 Video / Balanced Audio stereo, RS-232, RS-485, front panel and remote contact closure controls, 250 MHz.	2.13
VS-402	4x2 Looping, Video Audio stereo Matrix, RS-232 and front panel controls, 40 MHz.	2.14
VS-6YC	4x4 YC / Video /Audio Stereo Matrix, rotary front panel controls, 37 MHz.	2.15



MODEL	FUNCTION	PAGE
<b>19 inch Rack-mount Switchers and Matrices (cont.)</b>		
VS-4X4YC	4x4 YC / Video / Audio Stereo Matrix with RS-232 and front panel controls, 50 MHz.	2.16
VS-5X4	5x4 Video / Audio stereo Matrix, RS-232 and front panel controls, audio levels are software controlled, 30 MHz.	2.17
VS-601xl	6x1 Video / Audio stereo, RS-232, RS-485, front panel and remote contact closure controls, 250 MHz.	2.12
VS-611	6x1 Video / Balanced Audio stereo, RS-232, RS-485, front panel and remote contact closure controls, 250 MHz.	2.13
VS-602	6x2 Looping, Video Audio stereo Matrix, RS-232 and front panel controls, 40 MHz.	2.14
VS-606xl	6x6 Video Audio stereo Matrix, RS-232, RS-485 and front panel controls, Genlock input, 200 MHz.	2.18
VS-646	6x6 Video Balanced Audio stereo Matrix, RS-232, RS-485 and front panel controls, Genlock input, 200 MHz.	2.19
VS-801xl	8x1 Video / Audio stereo, RS-232, RS-485, front panel and remote contact closure controls, 250 MHz.	2.12
VS-811	8x1 Video / Balanced Audio stereo, RS-232, RS-485, front panel and remote contact closure controls, 250 MHz.	2.13
VS-2081S	8x1 expandable Y/C switcher, RS-232 and front panel controls, 60 MHz (Y).	2.20
VS-2481	8x1 expandable Balanced Audio switcher on XLRs with RS-232 and front panel controls, 50 kHz.	2.21
VS-802	8x2 Looping, Video Audio stereo Matrix, RS-232 and front panel controls, 40 MHz.	2.14
VS-808xl	8x8 Video Audio stereo Matrix, RS-232, RS-485 and front panel controls, Genlock input, 200 MHz.	2.22
VS-848	8x8 Video Balanced Audio stereo Matrix, RS-232, RS-485 and front panel controls, Genlock input, 200 MHz.	2.23
VS-1001xl	10x1 Video / Audio stereo, RS-232, RS-485, front panel and remote contact closure controls, 250 MHz.	2.12
VS-1011	10x1 Video / Balanced Audio stereo, RS-232, RS-485, front panel and remote contact closure controls, 250 MHz.	2.13
VS-1201xl	12x1 Video / Audio stereo, RS-232, RS-485, front panel and remote contact closure controls, 250 MHz.	2.12
VS-1211	12x1 Video / Balanced Audio stereo, RS-232, RS-485, front panel and remote contact closure controls, 250 MHz.	2.13
VS-1202	12x2 Looping, Video Audio stereo Matrix, RS-232 and front panel controls, 40 MHz.	2.14
VS-1202YC	12x2 Y/C-CV-Audio Stereo Matrix with RS-232 and front panel controls, 37 MHz.	2.24
VS-2016	16x1 expandable Video Switcher with RS-232 and front panel controls, 80 MHz.	2.25
VS-2516	16x16 Video-Y/C-YUV-RGBS expandable Matrix with RS-232 and front panel controls, 69 MHz.	2.26
VS-2216	16x16 Audio stereo expandable Matrix with RS-232 and front panel controls, 20 kHz.	2.27
VS-2616	16x16 Balanced Audio stereo expandable Matrix with RS-232 and front panel controls, 20 kHz.	2.28
VS-120	20x1 AV Sequential automatic and manual Switcher/Scanner with RS-232 / RS-485 control, 25 MHz.	2.29
VS-28	8x1 AV Standby Switcher, contact closure remote control + LED status indication, 500 MHz.	2.30
VS-2000	Remote Controller for all Kramer switchers and Matrices with RS-232 and RS-422 controls.	2.31
VS-3000	Master Programmable remote control, with RS-232, RS-485, remote contact closure and remote keyboard.	2.32
VS-4228	8 Port RS-422 Matrix with front panel, RS-232 and RS-485 controls.	2.33
<b>Desktop Electronic Switchers &amp; Matrices</b>		
VS-24N	2x1 Video / Audio stereo Standby switcher with contact closure remote control option, 150 MHz.	2.34
VS-33V	3x1 Video Vertical Interval Switcher in mini enclosure and 12 VDC feed, 46 MHz.	2.35
VS-421	4x1 Video / Audio stereo / Balanced mono Vertical Interval with contact closure remote control option, 300 MHz.	2.36
VS-55	5x1 compact-size, expandable, universal Dual channel Switcher with 12 VDC feed, 270 MHz.	2.37
VS-55V	5x1 compact-size, expandable Vertical Interval Video Switcher with 12 VDC feed, 150 MHz.	2.38
VS-55A	5x1 compact-size, expandable Audio Stereo Switcher with 12 VDC feed, 20 kHz.	2.39
VS-55YC	5x1 compact-size, expandable Vertical Interval Y/C Switcher with 12 VDC feed, 120 MHz.	2.40
VS-6EII	4x4 desktop-size, Video / Audio stereo Matrix, 8 MHz.	2.41
VS-16N	6x1 Programmable Alarm / Vertical Interval Video Scanner with panel, remote and RS-485 controls, 40 MHz.	2.42
VS-16A	6x1 Programmable Dual channel Audio / universal Scanner with panel, remote and RS-485 controls, 540 MHz.	2.43
VS-1N	Remote Controller for switchers and matrices equipped with RS-232 using mechanical, contact closure switches.	2.44
<b>Mechanical Switchers</b>		
VS-81V	8x1, single crosspoint Video Switcher, 400 MHz.	2.45
VS-81YC	8x1, single crosspoint Y/C (s-Video) Switcher, 375 MHz (Y).	2.46
VS-81A	8x1, single crosspoint Audio Stereo Switcher on RCAs, 25 kHz.	2.47
VS-81X	8x1, single crosspoint Balanced Audio mono Switcher on XLRs, 25 kHz.	2.48
VS-81AV	8x1, single crosspoint Video / Audio stereo Switcher, 400 MHz.	2.49
VS-81AYC	8x1, single crosspoint Y/C (s-Video) / Audio stereo Switcher, 350 MHz (Y).	2.50
VS-84	8x4, single crosspoint Video / Audio stereo Switcher, 200 MHz.	2.51
VS-84YC	8x4, single crosspoint Y/C (s-Video) / Audio stereo Switcher, 200 MHz.	2.52
VS-44AV	4x4, 4 crosspoint Video / Audio stereo Matrix, 220 MHz.	2.53
VS-4E	4x4, single crosspoint Video / Audio stereo switcher, 475 MHz.	2.54
VS-4YC	4x4, single crosspoint Y/C (s-Video) / Audio stereo switcher, 280 MHz (Y).	2.55

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<b>Video Audio Processors</b>		
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SP-11	A CV/YC processor with brightness, contrast, color, RGB, black level and definition controls, screen splitter.	3.4
SP-3001	A Component (YUV) Video processor + a 1:3 DA with screen splitter.	3.5
SP-4200	An audio ProcAmp, with noise reduction circuitry, compressor and amplifier to balanced audio levels.	3.6
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<b>Video and Audio Format Interfaces</b>		
FC-10	A Bi-directional CV to Y/C and Y/C to CV Transcoder, 12 VDC feed.	4.3
FC-10D	A Bi-directional CV to Y/C and Y/C to CV Digital, Comb filter Transcoder, 12 VDC feed.	4.4
FC-19	CV, YC to RGBS Decoder with dual outputs – BNCs and HD15F.	4.5
FC-4041C	RGBS, YUV to CV / YC looping video Encoder with Genlock.	4.6
FC-4042	RGBS / YUV, Bi-directional Component Video Transcoder.	4.7
FC-4043	CV / YC / YUV, Bi-directional Multistandard format Transcoder.	4.8
FC-4044	CV, YC to RGBS Multistandard Video Decoder.	4.9
FC-4208	4 Channels Balanced / Unbalanced Audio stereo Transcoder.	4.10
<b>Video Sync Processors</b>		
SG-6N	A compact sized, Sync Stabilizer for PAL and NTSC, 12 VDC feed.	4.11
SG-7	Cs, Hs, Vs Universal Sync Transcoder.	4.12
SG-9	A compact sized, video Black Burst Restorer and Sync Separator.	4.13
SG-11	A compact sized Sync to Green Adder / Separator.	4.14
SG-6003B	A Black Burst, Color Bar and Audio Tone Generator.	4.15
SG-6005	Digitally synthesized, Multistandard, RS-232 control, SCH and sync delay controls, Black /Bar / Audio Generator.	4.16
<b>GROUP 5: Presentation Products</b>		5.1
	Comparison table of Presentation Products	5.2
<b>Presentation Products</b>		
VP-2xl	1:2 VGA / Audio Stereo DA with VGA and audio controls, compact enclosure, 340 MHz.	5.3
VP-3	1:3 VGA DA, 350 MHz.	5.4
VP-4	1:4 VGA DA, 12 VDC feed, 350 MHz.	5.5
VP-6xl	1:6 VGA DA, 400 MHz.	5.6
VP-12xl	1:12 VGA DA, 300 MHz.	5.7
VP-22	1:2 VGA Line Amplifier / DA with delay and cable compensation controls, 350 MHz.	5.8
VP-23	A presentation switcher with 4 x CV, YC, VGA and audio inputs, Mic in, talk-over, RS-232 controlled, 315 MHz.	5.9
VP-31	3x1 VGA Switcher, desktop enclosure, 450 MHz.	5.10
VP-32	3x1 VGA / Audio Stereo Switcher, 1:2 DA, desktop enclosure, 300 MHz.	5.11
VP-61RS	6x1 VGA Switcher, RS-232, 180 MHz.	5.12
VP-101	A VGA to RGBS (BNC) Converter and Sync Combiner, compact enclosure, 12VDC feed, 300 MHz.	5.13
VP-102	A VGA to RGBS (BNC) Converter, Sync Combiner and Sync Adder to Green, compact enclosure, 315 MHz.	5.14
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<b>Serial Digital Products</b>		
SD-7108	1:8, Multistandard SDI DA, with reclocking and equalization.	6.3
SD-7208	1:8 SDI DA, Multistandard, Parallel inputs with reclocking and equalization.	6.4
SD-7816/B	1:16 or 2x1:8 AES/EBU Digital Audio DAs, with reclocking and equalization.	6.5
SD-7308	8x1 Multistandard SDI Switcher / 1:4 DA, with reclocking and equalization, front panel and RS-232 control.	6.6
SD-7388	A Multistandard 8x8 SDI Programmable matrix with analog and optional digital sync genlock, RS-232/RS-485.	6.7
SD-7316	A Multistandard 16x16 SDI Programmable matrix with analog and optional digital sync genlock, RS-232/RS-485.	6.8
SD-7401	Multistandard SDI to Analog converter 625/525 line, 10/8 bits with cable equalization and reclocking.	6.9

MODEL	FUNCTION	PAGE
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<b>Twisted-Pair Interfaces</b>		
TP-1N	Video to TP Line transmitter with level and HF controls in a compact enclosure.	7.3
TP-2N	TP to Video Looping Line receiver with level and HF controls in a compact enclosure.	7.4
TP-6	TP Line amplifier with level and HF controls in a mini enclosure, 12 VDC feed.	7.5
TP-11N	Video / Audio Stereo to TP Line transmitter in a compact enclosure.	7.6
TP-12N	TP to Video / Audio Stereo Line receiver in a compact enclosure.	7.7
<b>GROUP 8: Accessories</b>		8.1
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<b>Accessories</b>		
TESTER	A hand held, patented, beeper sized, video signal tester for easy and fast troubleshooting.	8.3
VA-11	A Video - Audio Stereo Combiner for routing 3 signals on one coax cable.	8.4
VA-12	A Video - Audio Stereo separator for extracting 3 signals transmitted on one coax cable.	8.5
OC-1N	A Video Optic Ground Isolator for ground problem elimination, in a compact enclosure.	8.6
VSI-232	A module inserted in Kramer switchers for RS-232 interface.	8.7
PIP-200	A Multistandard, CV / YC Picture-in-Picture Inserter with border, matte, inserted image size and RS-232 controls.	8.8
VA-15	A 4 input balanced audio mixer for Mic and Line levels, gain controls, phantom power, headphone monitor output.	8.9
VA-50P	A six-output DC power supply for "VM-50", "VS-55", "VM-3", "TP" series and KRAMER TOOLS.	8.10
RK 10/50	A family of 19" rack adapters for the Kramer desktop and "mini" machines.	NA
<b>GROUP 9: The Kramer Tools</b>		9.1
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<b>The Kramer Tools</b>		
123V	1:3 Differential input Line Amplifier / DA for hum removal, 55 MHz.	9.3
105A	A Stereo Audio DA on 3.5mm mini sockets.	9.4
105V	1:5 Video DA on RCAs, 280 MHz.	9.5
105VB	1:5 Video DA on BNCs, 280 MHz.	9.6
105S	1:5 YC DA on 4P connectors, 230 MHz (Y).	9.7
104L	1:4 Video Line Amp / DA with level and EQ. Controls, 420 MHz.	9.8
104M	1:4 Mono Mic /Line Amp / DA with adjustable gain and phantom power.	9.9
104R	1:4 RF DA, 40-800 MHz for MATV and CATV applications.	9.10
103AV	1:3 CV / Audio Stereo DA on BNCs (video) and 3.5mm mini plugs (audio), 320 MHz.	9.11
103YC	1:3 YC Line Amp / DA, 2 controls for "Y": level and EQ., and 1 level control for "C", 430 MHz.	9.12
4x1V	4x1 Mechanical Video Switcher on RCAs, 400 MHz.	9.13
4x1VB	4x1 Mechanical Video Switcher on BNCs, 400 MHz.	9.14
4x1S	4x1 YC Mechanical Switcher on 4P connectors, 400 MHz (Y).	9.15
401C	1:2 YC DA + YC to CV Coder and a 1:2 CV DA.	9.16
401D	CV to YC Decoder.	9.17
VP-200	1:2 VGA / XGA DA, 345 MHz.	9.18
VP-211	2x1 VGA / Audio stereo automatic Standby switcher, 500 MHz.	9.22
VP-222	2x1 VGA/XGA Switcher and a 1:2 DA, 365 MHz.	9.23
VP-300	1:3 VGA/XGA DA, 345 MHz.	9.19
VP-400	1:4 VGA/XGA DA, 345 MHz.	9.20
VP-201	2x1 Mechanical VGA/XGA Switcher, 320 MHz.	9.21
VP-14	1:3 RS-232 Bi-directional, Programmable Port Extender.	9.24
VP-43	RS-232 Range extender and RS-485 converter for up to 1.2 km range.	9.25
704	Video to single TP wire transmitter for up to 500 meters range.	9.26
705	Single TP wire to Video Receiver for up to 500 meters range.	9.26
707	Video / Audio mono to single TP wire transmitter.	9.27
708	Single TP wire to Video / Audio mono transmitter.	9.27
709	YC to dual TP wire Transmitter.	9.28
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MODEL	FUNCTION	PAGE
<b>The Kramer Tools (cont.)</b>		
711	Video / Audio Stereo to triple TP wire Transmitter.	9.29
712	Triple TP wire to Video / Audio Stereo Receiver.	9.29
611T	CV to Optic-Fiber Transmitter – up 5 km (Multimode version) or up to 25 km (Single mode version).	9.30
611R	Optic-Fiber to CV Receiver – up 5 km (Multimode version) or up to 25 km (Single mode version).	9.30
VP-800	VGA/XGA Color Bar Generator, 4 resolutions: 640x480, 800x600, 1024x768, 1280x1024.	9.31
VA-22	CV Transmitter / Audio Receiver, on a single coax cable.	9.32
VA-23	CV Receiver / Audio Transmitter, on a single coax cable.	9.32
PT-102A	1:2 Audio Stereo DA on 3.5 mm mini sockets, Matchbox size, 100 kHz.	9.33
PT-102V	1:2 CV DA on BNCs, Matchbox size, 430 MHz.	9.34
PT-102S	1:2 YC DA on 4P connectors, Matchbox size, 150 MHz (Y).	9.35
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103AV	9.11	SD-7816/B	6.5	VM-5AD	1.33	VS-2216	2.27
103YC	9.12	SG-11	4.14	VM-5ARII	1.9	VS-2481	2.21
104L	9.8	SG-6003B	4.15	VM-5S	1.32	VS-24N	2.34
104M	9.9	SG-6005	4.16	VM-5YC	1.21	VS-2516	2.26
104R	9.10	SG-6N	4.11	VM-80A	1.35	VS-2616	2.28
105A	9.4	SG-7	4.12	VM-80V	1.36	VS-28	2.30
105S	9.7	SG-9	4.13	VM-9S	1.24	VS-3000	2.32
105V	9.5	SP-11	3.4	VM-9YC	1.25	VS-33V	2.35
105VB	9.6	SP-3001	3.5	VP-101	5.13	VS-401xl	2.12
123V	9.3	SP-40	3.3	VP-102	5.14	VS-402	2.14
401C	9.16	SP-4200	3.6	VP-12xl	5.7	VS-411	2.13
401D	9.17	TESTER	8.3	VP-14	9.24	VS-421	2.36
4x1S	9.15	TP-11N	7.6	VP-200	9.18	VS-4228	2.33
4x1V	9.13	TP-12N	7.7	VP-201	9.21	VS-44AV	2.53
4x1VB	9.14	TP-1N	7.3	VP-211	9.22	VS-4E	2.54
611R	9.30	TP-2N	7.4	VP-22	5.8	VS-4X4YC	2.16
611T	9.30	TP-6	7.5	VP-222	9.23	VS-4YC	2.55
704	9.26	VA-11	8.4	VP-23	5.9	VS-55	2.37
705	9.26	VA-12	8.5	VP-2xl	5.3	VS-55A	2.39
707	9.27	VA-15	8.9	VP-3	5.4	VS-55V	2.38
708	9.27	VA-22	9.32	VP-300	9.19	VS-55YC	2.40
709	9.28	VA-23	9.32	VP-31	5.10	VS-5X4	2.17
710	9.28	VA-50P	8.10	VP-32	5.11	VS-601xl	2.12
711	9.29	VM-1010	1.10	VP-4	5.5	VS-602	2.14
712	9.29	VM-1015	1.8	VP-400	9.20	VS-606xl	2.18
FC-10	4.3	VM-1021	1.16	VP-43	9.25	VS-611	2.13
FC-10D	4.4	VM-1042	1.18	VP-61RS	5.12	VS-646	2.19
FC-19	4.5	VM-1044	1.19	VP-6xl	5.6	VS-6EII	2.41
FC-4041C	4.6	VM-1055	1.20	VP-800	9.31	VS-6YC	2.15
FC-4042	4.7	VM-10AN	1.37	VS-1001xl	2.12	VS-801xl	2.12
FC-4043	4.8	VM-10ARII	1.13	VS-1011	2.13	VS-802	2.14
FC-4044	4.9	VM-10YC	1.22	VS-120	2.29	VS-808xl	2.22
FC-4208	4.10	VM-1110	1.11	VS-1201xl	2.12	VS-811	2.13
OC-1N	8.6	VM-1411	1.14	VS-1202	2.14	VS-81A	2.47
PIP-200	8.8	VM-1610	1.12	VS-1202YC	2.24	VS-81AV	2.49
PT-102A	9.33	VM-20ARII	1.15	VS-1211	2.13	VS-81AYC	2.50
PT-102S	9.35	VM-2N	1.23	VS-16A	2.43	VS-81V	2.45
PT-102V	9.34	VM-3S	1.27	VS-16N	2.42	VS-81X	2.48
RK 10/50	NA	VM-3V	1.26	VS-1N	2.44	VS-81YC	2.46
SD-7108	6.3	VM-42	1.34	VS-2000	2.31	VS-84	2.51
SD-7208	6.4	VM-50A	1.29	VS-2016	2.25	VS-848	2.23
SD-7308	6.6	VM-50H	1.31	VS-2031N	2.9	VS-84YC	2.52
SD-7316	6.8	VM-50V	1.28	VS-2042	2.11	VSI-232	8.7
SD-7388	6.7	VM-50YC	1.30	VS-2053	2.10		
SD-7401	6.9	VM-54	1.17	VS-2081S	2.20		

## Conversion Table Between NEW and OLD Product Names:

NEW NAME	OLD NAME	NEW NAME	OLD NAME	NEW NAME	OLD NAME	NEW NAME	OLD NAME
103AV	103AV	SG-7	KR-7	VP-12xl	VP-12	VS-4X4YC	SIS-4X4
103YC	103YC	SG-9	KR-9	VP-14	VP-14	VS-4YC	VM-4S
104L	104L	SP-11	VS-11EIV	VP-200	VP-200	VS-55	55
104M	104M	SP-3001	BC-3001	VP-201	VP-201	VS-55A	55A
104R	104R	SP-40	SV-40	VP-211	NEW ITEM	VS-55V	55VN
105A	105A	SP-4200	BC-4200	VP-22	VP-20/N	VS-55YC	55S
105S	105S	TESTER	TESTER	VP-222	NEW ITEM	VS-5X4	VIS-5X4
105V	105V	TP-11N	TP-11N	VP-23	NEW ITEM	VS-601xl	VS-601N
105VB	105VB	TP-12N	TP-12N	VP-2xl	VP-2	VS-602	VS-602N
123V	123V	TP-1N	TP-1N	VP-3	VP-3	VS-606xl	VS-606
401C	401C	TP-2N	TP-2N	VP-300	VP-300	VS-611	NEW ITEM
401D	401D	TP-6	TP-6	VP-31	VP-31	VS-646	NEW ITEM
4x1S	4x1S	VA-11	VM-11AV	VP-32	VP-32	VS-6EII	VS-6EII
4x1V	4x1V	VA-12	VM-12AV	VP-4	VP-4	VS-6YC	SV-6E
4x1VB	4x1VB	VA-15	VM-15	VP-400	VP-400	VS-801xl	VS-801N
611R	611R	VA-22	NEW ITEM	VP-43	VP-43	VS-802	VS-802N
611T	611T	VA-23	NEW ITEM	VP-61RS	VP-61RS	VS-808xl	VS-808
704	704	VA-50P	50P	VP-6xl	VP-6	VS-811	NEW ITEM
705	705	VM-1010	BC-1010	VP-800	VP-800	VS-81A	VM-81A
707	707	VM-1015	BC-1015	VS-1001xl	NEW ITEM	VS-81AV	VM-81AV
708	708	VM-1021	BC-1020	VS-1011	NEW ITEM	VS-81AYC	VM-81AS
709	709	VM-1042	BC-1042	VS-120	VS-120	VS-81V	VM-81V
710	710	VM-1044	BC-1044N	VS-1201xl	NEW ITEM	VS-81X	VM-81X
711	711	VM-1055	BC-1055	VS-1202	VS-1202N	VS-81YC	VM-81S
712	712	VM-10AN	VM-10AN	VS-1202YC	VS-1202S	VS-84	VM-84
FC-10	KR-10	VM-10ARII	VM-10ARN	VS-1211	NEW ITEM	VS-848	NEW ITEM
FC-10D	KR-10D	VM-10YC	SV-10N	VS-16A	NEW ITEM	VS-84YC	VM-84S
FC-19	VM-19	VM-1110	BC-1110	VS-16N	VS-16N	VSI-232	VSI-232
FC-4041C	BC-4041C	VM-1411	BC-1410	VS-1N	VS-1N		
FC-4042	BC-4042	VM-1610	NEW ITEM	VS-2000	BC-2000		
FC-4043	BC-4043	VM-20ARII	VM-20AR	VS-2016	BC-2016		
FC-4044	BC-4044	VM-2N	VM-2N	VS-2031N	BC-2031N		
FC-4208	BC-4208	VM-3S	VM-3S	VS-2042	BC-2042		
OC-1N	OC-1N	VM-3V	VM-3V	VS-2053	BC-2053		
PIP-200	PIP-200	VM-42	VM-42	VS-2081S	BC-2081S		
PT-102A	PT-102A	VM-50A	50A	VS-2216	BC-2216		
PT-102S	PT-102S	VM-50H	50H	VS-2481	BC-2481		
PT-102V	PT-102V	VM-50V	50VN	VS-24N	VM-24N		
RK 10/50	RK 10/50	VM-50YC	50SN	VS-2516	BC-2516		
SD-7108	BC-7108	VM-54	VM-50R	VS-2616	BC-2616		
SD-7208	BC-7208	VM-5AD	AD-5/N	VS-28	VM-28		
SD-7308	BC-7308	VM-5ARII	VM-5ARN	VS-3000	NEW ITEM		
SD-7316	BC-7316	VM-5S	VM-6N/S	VS-33V	VM-33V		
SD-7388	NEW ITEM	VM-5YC	SV-5N	VS-401xl	VS-401N		
SD-7401	BC-7401	VM-80A	80A	VS-402	VS-402N		
SD-7816/B	NEW ITEM	VM-80V	80V	VS-411	NEW ITEM		
SG-11	KR-11	VM-9S	VM-9S	VS-421	VS-421		
SG-6003B	BC-6003B	VM-9YC	NEW ITEM	VS-4228	NEW ITEM		
SG-6005	NEW ITEM	VP-101	KR-1	VS-44AV	VS-44AV		
SG-6N	KR-6N	VP-102	KR-2	VS-4E	VM-4E		

## Conversion Table Between OLD and NEW Product Names:

OLD NAME	NEW NAME	OLD NAME	NEW NAME	OLD NAME	NEW NAME	OLD NAME	NEW NAME
103AV	103AV	BC-2081S	VS-2081S	VM-20AR	VM-20ARII	VS-606	VS-606xl
103YC	103YC	BC-2216	VS-2216	VM-24N	VS-24N	VS-6EII	VS-6EII
104L	104L	BC-2481	VS-2481	VM-28	VS-28	VS-801N	VS-801xl
104M	104M	BC-2516	VS-2516	VM-2N	VM-2N	VS-802N	VS-802
104R	104R	BC-2616	VS-2616	VM-33V	VS-33V	VS-808	VS-808xl
105A	105A	BC-3001	SP-3001	VM-3S	VM-3S	VSI-232	VSI-232
105S	105S	BC-4041C	FC-4041C	VM-3V	VM-3V		
105V	105V	BC-4042	FC-4042	VM-42	VM-42		
105VB	105VB	BC-4043	FC-4043	VM-4E	VS-4E		
123V	123V	BC-4044	FC-4044	VM-4S	VS-4YC		
401C	401C	BC-4200	SP-4200	VM-50R	VM-54		
401D	401D	BC-4208	FC-4208	VM-5ARN	VM-5ARII		
4x1S	4x1S	BC-6003B	SG-6003B	VM-6N/S	VM-5S		
4x1V	4x1V	BC-7108	SD-7108	VM-81A	VS-81A		
4x1VB	4x1VB	BC-7208	SD-7208	VM-81AS	VS-81AYC		
50A	VM-50A	BC-7308	SD-7308	VM-81AV	VS-81AV		
50H	VM-50H	BC-7316	SD-7316	VM-81S	VS-81YC		
50P	VA-50P	BC-7401	SD-7401	VM-81V	VS-81V		
50SN	VM-50YC	KR-1	VP-101	VM-81X	VS-81X		
50VN	VM-50V	KR-10	FC-10	VM-84	VS-84		
55	VS-55	KR-10D	FC-10D	VM-84S	VS-84YC		
55A	VS-55A	KR-11	SG-11	VM-9S	VM-9S		
55S	VS-55YC	KR-2	VP-102	VP-12	VP-12xl		
55VN	VS-55V	KR-6N	SG-6N	VP-14	VP-14		
611R	611R	KR-7	SG-7	VP-2	VP-2xl		
611T	611T	KR-9	SG-9	VP-20/N	VP-22		
704	704	OC-1N	OC-1N	VP-200	VP-200		
705	705	PIP-200	PIP-200	VP-201	VP-201		
707	707	PT-102A	PT-102A	VP-3	VP-3		
708	708	PT-102S	PT-102S	VP-300	VP-300		
709	709	PT-102V	PT-102V	VP-31	VP-31		
710	710	RK 10/50	RK 10/50	VP-32	VP-32		
711	711	SIS-4X4	VS-4X4YC	VP-4	VP-4		
712	712	SV-10N	VM-10YC	VP-400	VP-400		
80A	VM-80A	SV-40	SP-40	VP-43	VP-43		
80V	VM-80V	SV-5N	VM-5YC	VP-6	VP-6xl		
AD-5/N	VM-5AD	SV-6E	VS-6YC	VP-61RS	VP-61RS		
BC-1010	VM-1010	TESTER	TESTER	VP-800	VP-800		
BC-1015	VM-1015	TP-11N	TP-11N	VS-11EIV	SP-11		
BC-1020	VM-1021	TP-12N	TP-12N	VS-120	VS-120		
BC-1042	VM-1042	TP-1N	TP-1N	VS-1202N	VS-1202		
BC-1044N	VM-1044	TP-2N	TP-2N	VS-1202S	VS-1202YC		
BC-1055	VM-1055	TP-6	TP-6	VS-16N	VS-16N		
BC-1110	VM-1110	VIS-5X4	VS-5X4	VS-1N	VS-1N		
BC-1410	VM-1411	VM-10AN	VM-10AN	VS-401N	VS-401xl		
BC-2000	VS-2000	VM-10ARN	VM-10ARII	VS-402N	VS-402		
BC-2016	VS-2016	VM-11AV	VA-11	VS-421	VS-421		
BC-2031N	VS-2031N	VM-12AV	VA-12	VS-44AV	VS-44AV		
BC-2042	VS-2042	VM-15	VA-15	VS-601N	VS-601xl		
BC-2053	VS-2053	VM-19	FC-19	VS-602N	VS-602		