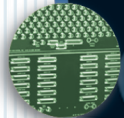




sierravideosystems

A KRAMER ELECTRONICS COMPANY

Catalog 2004





2004 - A Year of Changes

Sierra Video Systems is pleased to present its 20th anniversary product catalog. We began in 1984 with a handful of talented people and a vision for making video and audio products of exceptional quality, and we've come a long way from that small building near the Grass Valley airport. We've had great success over the years and have been fortunate to work for wonderful customers. It's clear that the original Sierra philosophy was the right one - building quality products that don't come back for customers who do. 2003 was the best year we've ever had.

2003 brought another significant milestone: the purchase of Sierra Video Systems by Kramer Electronics. Kramer Electronics is a leading manufacturer of audio, video and computer signal distribution, switching, conversion and processing equipment for both analog and digital applications. The Sierra Video Systems expertise in large matrix routing products and our multi-market appeal combined with Kramer's outstanding worldwide marketing capabilities make this the ideal match.

This combination also has some significant benefits for you, our valued customers. It means that you now have access to more products than ever before. When viewed in total, the Sierra and Kramer lines cover virtually every need in the world of audio, video and computer signal distribution, switching, conversion and processing. Furthermore, the combination of the resources of both companies means we have a much greater capacity to develop new products, improve existing ones and create efficiencies leading to cost savings. We're very excited about the new organization and our new capabilities.

We would like to thank all of our customers for the privilege of serving you for the last twenty years. We're anxiously looking forward to the next twenty!

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WHY SIERRA VIDEO SYSTEMS IS YOUR BEST CHOICE

HIGH QUALITY COMPONENTS

No matter which of our products you choose, you can be certain it has been built using the finest components and rigorously tested. Sierra products have been in continuous use in hundreds of installations for nearly two decades, providing reliable service year in and year out.

DON'T COMPROMISE - CUSTOMIZE

We are in the business of personalizing systems. With SVS, you really can have everything you want, the way you want it. Choose from a wide variety of frames and modular combinations that meet your needs. Looking for custom? If you don't see what you want in this catalog, give us a call!

SUPERIOR SERVICES FROM SVS:

- **Trade-in/Trade up**

Leverage your investment in Sierra Video Systems by trading-in or up as your needs grow. Each of our systems is designed to expand with you, using flexible plug-in modules.

- **Flexible Financing**

Easy ways to pay, from Net 30 terms, credit cards, or business lease options.

- **Dedicated Representatives and Sales Engineers**

When you're in the market for a new routing switcher or digital terminal equipment, you can rest assured our friendly, technically-grounded inside & field sales reps will be able to provide guidance to help you select the Sierra product that suits your facility's needs.

- **Dealer and Distributor Network**

Supportive sales network enables our customers to receive the best and most prompt quotes and customer service worldwide.

- **Shipping Options**

We work with many different carriers and will get your new Sierra product to you quickly and safely.

- **24 Hour Customer Service**



Yosemite 128128D

CUSTOMER SERVICE

Since 1984, Sierra Video Systems has been assisting customers and providing solutions for almost any application imaginable. We pride ourselves in our qualified customer service and technical support team that is skilled at answering your questions.

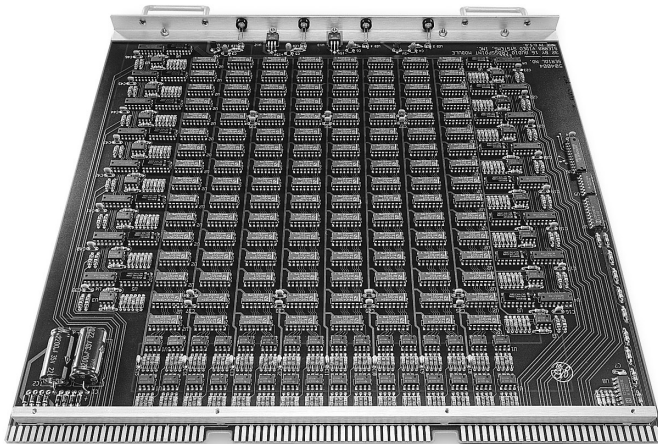
The Sierra Video Systems' Customer Service Department is directed by one of the most knowledgeable technical service engineers in the industry. Everyone knows that Kay Turner is the Jedi Master of technical support and customer service. With his 46-year background in routing switchers and the broadcast industry, Kay's qualified support team is more than happy to answer any question, about any installation, at any time.

We want you to be 100% happy with your new and old systems — that's what customer service is all about. Even with our remarkable 7-year service warranty, you can always rely on support from Sierra Video Systems. You can call direct during business hours and speak with a Technical Support Engineer. We also offer after-hours Tech Service; check our website for details. Plus, technical manuals and online help are also available 24 hours a day at www.sierravideo.com.

Whether you need immediate on-site guidance or have repair questions, contact the best real-time customer service in the business and their outstanding experience in the routing switcher and terminal equipment industries.

You can reach our Customer Service Department Monday through Friday, 8:00 a.m. to 5:00 P.M. (PST) at **(530) 478-1000** or access 24-hour online support: www.sierravideo.com.

- **Direct:** (530) 478-1000 ext.105 or ext.109
- **After hours:** (530) 888-3195
- **Fax:** (530) 478-1105
- **Email:** support@sierravideo.com
- **Online:** <http://www.sierravideo.com/support>
- **Mail:** Sierra Video Systems
P.O. Box 2462
Grass Valley, California 95945



Tahoe 32x16 Audio Module

TRADE-UP PROGRAM

TRADE-UP PLAN

Unique to SVS, this plan allows a generous credit for a customer's entire system when it is traded in for a larger Sierra Video Systems routing switcher. A typical trade-in customer has a Sierra Series 88VS routing switcher, three control panels and a serial interface adapter and he needs a Tahoe Series 1616VAAA system with more control panels. By trading in his current system, he would be eligible for a substantial trade-up allowance through his dealer. Systems that qualify for trade-up allowance are shown below:

CURRENT SYSTEM

Model 88 or 1212
 Any 16 or 20 input routing switcher
 Any 32 input routing switcher
 Any 64 input routing switcher

QUALIFYING TRADE-UPS

Any 16 input or larger routing switcher
 Any 32 input or larger routing switcher
 Any 64 input or larger routing switcher
 Any larger routing switcher

The allowances given depend on the date and price of the original SVS invoice (or current prices, whichever is less), exclusive of shipping and insurance charges. Note: This program is only valid for similar formatted systems, i.e. analog for analog or digital for digital. For Yosemite and Sierra Pro, contact the factory.

The allowance is as follows:

AGE OF ORIGINAL SYSTEM

Less than 1 year
 Between 1 to 2 years
 Between 2 to 3 years
 Between 3 to 4 years
 Between 4 to 7 years
 Over 7 years

TRADE-IN ALLOWANCE

80% of original price
 60% of original price
 40% of original price
 20% of original price
 10% of original price
 No allowance



NEW WARRANTY

Sierra Video Systems, herein referred to as SVS, provides the following limited warranty with its products:

- 1—SVS warrants that the equipment it manufactures is free from defects in material and workmanship.
- 2—This warranty begins on the day the product is shipped from SVS and will be in effect for seven years.
- 3—If the product is found to be defective during the term of this warranty, SVS will, at its option:
 - a) provide free replacement parts
 - b) repair the unit at SVS' facility
 - c) repair the unit at the customer's location
 - d) exchange the product for a product of the same type

During the warranty period, SVS will make every reasonable effort to support critical emergencies by supplying no-cost loan equipment while the defective unit is being repaired.

- 4—SVS will provide replacement parts and factory service at no charge.
- 5—Customer bears the cost of shipping products returned to SVS under this warranty. SVS will bear the cost of shipping repaired products or replacement parts to the customer.
- 6—This warranty will not be valid unless the customer has returned the Warranty Registration Card enclosed with the product.
- 7—Any customer returning a product for repair shall first obtain from SVS a Return Material Authorization (RMA) number.
- 8—This warranty does not apply if the product has been damaged by accident, abuse, misuse, misapplication or unauthorized modification.

EXCEPT AS SET FORTH ABOVE, NO OTHER WARRANTIES ARE EXPRESSED OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SVS EXPRESSLY DISCLAIMS ALL EXPRESSED OR IMPLIED WARRANTIES NOT STATED HEREIN. IN THE EVENT THE PRODUCT IS NOT FREE FROM DEFECTS AS WARRANTED ABOVE, THE PURCHASER'S SOLE REMEDY SHALL BE REPLACEMENT OR REPAIR AS PROVIDED ABOVE. UNDER NO CIRCUMSTANCES WILL SVS BE LIABLE TO THE PURCHASER OR ANY USER FOR ANY DAMAGES INCLUDING INCIDENTAL OR CONSEQUENTIAL DAMAGES, EXPENSE, LOST PROFITS, LOST SAVINGS OR OTHER DAMAGES ARISING OUT OF THE USE OF, OR INABILITY TO USE THE PRODUCT, EVEN IF SVS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

TO THE EXTENT THIS WARRANTY CONFLICTS WITH LOCAL LAW, LOCAL LAW SHALL ONLY APPLY TO SUCH CONFLICT.

ROUTING SWITCHER SELECTION GUIDE

MANZANITA FAMILY

	Frame or System	Description	Page
44VS	903146	4x4 one channel video + stereo audio	18
44C	903143	4x4 three channel (RGB or YUV) video	17
44CW	903143-20	4x4 three channel (RGB or YUV) wideband video	17
44CP	903160	4x4 three channel (RGB) video + sync	17
44CPW	903160-20	4x4 three channel (RGB or YUV) wideband video + sync	17
51C	903121	5x1 three channel (RGB or YUV) video	17
82VS	903149	8x2 one channel video + stereo audio	18
82C	903112	8x2 three channel (RGB or YUV) video	18
82CW	903112-20	8x2 three channel wideband (RGB) video	18
161VS	903135	16x1 one channel video + stereo audio	17
321V	903101	32x1 one channel video only	19
321S	903105	32x1 stereo audio	19

SIERRA FAMILY

	Frame or System	Description	Page
84VS	903109	8x4 one channel video + stereo audio	23
88V	903416	8x8 one channel video only	23
88V	903516	8x8 one channel video only(w/serial interface)	23
88VS	903047	8x8 one channel video + stereo audio	23
88VS	903048	8x8 one channel video + stereo audio(w/serial interface)	23
88S	903039	8x8 stereo audio	23
1616V	903115	16x16 one channel video only	24

SIERRA PRO FAMILY

Model and System	Description	Page
84V3	8x4 three channel component RGB	29
84V3S	8x4 three channel component RGB + Stereo	29
84V4	8x4 four channel component RGB + H or V	29
84V4S	8x4 four channel component RGB + H or V + Stereo	29
84V5	8x4 five channel component RGB + HV	29
84V5S	8x4 five channel component RGB + HV + Stereo	29
88V3	8x8 three channel component RGB	29
88V3S	8x8 three channel component RGB + Stereo	29
88V4	8x8 four channel component RGB + H or V	29
88V4S	8x8 four channel component RGB + H or V + Stereo	29
88V5	8x8 five channel component RGB + HV	29
88V5S	8x8 five channel component RGB + HV+ Stereo	29
1204V3	12x4 three channel component RGB	30
1204V3S	12x4 three channel component RGB + Stereo	30
1204V4	12x4 four channel component RGB + H or V	30
1204V4S	12x4 four channel component RGB + H or V + Stereo	30

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

**SIERRA PRO FAMILY (CONT.)**

Model or System	Description	Page
1204V5	12x4 five channel component RGB + HV	30
1204V5S	12x4 five channel component RGB + HV + Stereo	30
1208V3	12x8 three channel component RGB	30
1208V3S	12x8 three channel component RGB + Stereo	30
1208V4	12x8 four channel component RGB + H or V	30
1208V4S	12x8 four channel component RGB + H or V + Stereo	30
1208V5	12x8 five channel component RGB + HV	30
1208V5S	12x8 five channel component RGB + HV + Stereo	30
1608V3	16x8 three channel component RGB	31
1608V3S	16x8 three channel component RGB + Stereo	31
1608V4	16x8 four channel component RGB + H or V	31
1608V4S	16x8 four channel component RGB + H or V + Stereo	31
1608V5	16x8 five channel component RGB + HV	31
1608V5S	16x8 five channel component RGB + HV + Stereo	31
1616V3	16x16 three channel component RGB	32
1616V3S	16x16 three channel component RGB + Stereo	32
1616V4	16x16 four channel component RGB + H or V	32
1616V4S	16x16 four channel component RGB + H or V + Stereo	32
1616V5	16x16 five channel component RGB + HV	32
1616V5S	16x16 five channel component RGB + HV + Stereo	32
3216V3	32x16 three channel component RGB	33
3216V4	32x16 three channel component RGB + H or V	33
3216V5	32x16 three channel component RGB + HV	33
3216S	32x16 stereo audio	35
3232V3	32x32 three channel component RGB	34
3232V4	32x32 four channel component RGB + H or V	34
3232V5	32x32 five channel component RGB + HV	34
3232S	32x32 stereo audio	35

LASSEN FAMILY

Model or System	Description	Page
1602VS	1RU 16x2 composite video + stereo audio w/LCP	38
1602VSN	1RU 16x2 composite video + stereo audio No/LCP	38
1208VS	2RU 12x8 video + stereo audio	39
1212VS	2RU 12x12 video + stereo audio	39
1608VS	2RU 16x8 video + stereo audio	40
1616VS	2RU 16x16 video + stereo audio	40
3216VS	3RU 32x16 video + stereo audio	41
3232VS	3RU 32x32 video + stereo audio	41

Additional configurations available for the Lassen Family. For configuration assistance, please contact inside sales at (530) 478-1000 or check www.sierravideo.com.

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E = Digital (AES/EBU) audio channel.
P = Pulse channel for switching synchronizing signals.
S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
W = Wideband channel(s).
Y = Y-C or S-VHS video (2 channels, Y or C).

TAHOE FAMILY

	Frame or System	Description	Page
1616V	804040	16x16 one channel video only	45
1616V	804062	16x16 one channel video only	46
1616VA	804040	16x16 one channel video + one channel audio	45
1616VAA	804040	16x16 one channel video + two channel audio	45
1616VAAA	804056	16x16 one channel video + three channel audio	48
1616VAAAA	804056	16x16 one channel video + four channel audio	48
1616A	804040	16x16 one channel audio only	45
1616A	804058	16x16 one channel audio only	47
1616AA	804040	16x16 two channel audio	45
1616AA	804058	16x16 two channel audio	47
1616AAA	804056	16x16 three channel audio	48
1616AAA	804058	16x16 three channel audio	47
1616AAAA	804056	16x16 four channel audio	46
1616AAAA	804058	16x16 four channel audio	47
1632V	804062	16x32 one channel video only	48
1632A	804064	16x32 one channel audio only	49
1632AA	804064	16x32 two channel audio	49
1648V	804062	16x48 one channel video only	48
1648A	804064	16x48 one channel audio only	49
1648AA	804064	16x48 two channel audio	49
2010V	804030	20x10 one channel video only	50
2010VA	804030	20x10 one channel video + one channel audio	50
2010VAA	804030	20x10 one channel video + two channel audio	50
2020V	804030	20x20 one channel video only	50
2020VA	804030	20x20 one channel video + one channel audio	50
2020VAA	804030	20x20 one channel video + two channel audio	50
3208V	804005	32x8 one channel video only	52
3216V	804009	32x16 one channel video only	51
3216V	804005	32x16 one channel video only	52
3216VA	804009	32x16 one channel video + one channel audio	51
3216VAA	804009	32x16 one channel video + two channel audio	51
3216A	804007	32x16 one channel audio only	53
3216A	804009	32x16 one channel audio only	51
3216AA	804007	32x16 two channel audio	53
3216AA	804009	32x16 two channel audio	51
3224V	804005	32x24 one channel video only	52
3224C	804521	32x24 three channel (RGB or YUV) video	54
3232V	804005	32x32 one channel video only	52
3232V	804523	32x32 one channel video only	55
3232VAA	804523	32x32 one channel video + two channel audio	56
3232C	804521	32x32 three channel (RGB or YUV) video	54
3232CA	804521	32x32 three channel (RGB or YUV) video + one channel audio	54

**PRODUCT
KEY**

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 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

**TAHOE FAMILY (CONT.)**

	Frame or System	Description	Page
3232CAA	804521	32x32 three channel (RGB or YUV) video + two channel audio	54
3232A	804007	32x32 one channel audio only	53
3232AA	804007	32x32 two channel audio	53
3240V	804523	32x40 one channel video only	56
3248V	804523	32x48 one channel video only	56
3256V	804523	32x56 one channel video only	56
3264V	804523	32x64 one channel video only	55
3248VA	804523	32x48 one channel video + one channel audio	55
3248VAA	804523	32x48 one channel video + two channel audio	56
3264VA	804523	32x64 one channel video + one channel audio	56
3264VAA	804523	32x64 one channel video + two channel audio	56
3296V	804524	32x96 one channel video only	57
32104V	804524	32x104 one channel video only	57
32112V	804524	32x112 one channel video only	57
32120V	804524	32x120 one channel video only	57
32128V	804524	32x128 one channel video only	57
4808V	804023	48x8 one channel video	58
4816V	804023	48x16 one channel video	58
4816A	804027	48x16 one channel audio	59
4816AA	804027	48x16 two channel audio	59
4824V	804023	48x24 one channel video	58
4832V	804023	48x32 one channel video	58
4832A	804027	48x32 one channel audio	59
4832AA	804027	48x32 two channel audio	59
4840V	804023	48x40 one channel video	58
4848V	804023	48x48 one channel video	58
4848A	804027	48x48 one channel audio	59
4848AA	804027	48x48 two channel audio	59

SHASTA FAMILY

	Frame or System	Description	Page
402HD-LS	906042	4x2 "Live Switch" 1.485Gbps HD video	63
802HD-LS	906082	8x2 "Live Switch" 1.485Gbps HD video	63
1602HD-LS	906162	16x2 "Live Switch" 1.485Gbps HD video	63
88D	905098	8x8 serial digital video	65
88E	905043	8x8 serial digital audio (AES)	65
88HD	906008	8x8 1.485Gbps HD video	64
161D	905235	16x1 serial digital video	66
161HD	906161	16x1 1.485Gbps HD video	64
164HD	906164	16x4 1.485Gbps HD video	64
168HD	906168	16x8 1.485Gbps HD video	64
1616D	905016	1RU 16x16 serial digital video	66

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 Y = Y-C or S-VHS video (2 channels, Y or C).

SHASTA FAMILY (CONT.)

	Frame or System	Description	Page
1616HD	906016	16 x 16 1.485Gbps HD video	64
1616D	804040	3RU 16x16 serial digital video	67
1616DE	804040	16x16 serial digital video + digital audio	67
3216E	804007	32x16 one channel serial digital audio	69
3216EE	804007	32x16 two channel serial digital audio	69
1616E	804040	16x16 serial digital audio	67
1616DA	804040	16x16 serial digital video + one level analog audio	67
1616DEE	804040	16x16 serial digital video + two level analog audio	67
1616EE	804040	16x16 two level digital audio	67
1616DAA	804040	16x16 serial digital video + two level analog audio	67
3232D	805050	32x32 serial digital video	69
3232E	804007	32x32 one channel serial digital audio	69
3232EE	804007	32x16 two channel serial digital audio	69
3232DA	805050	32x32 serial digital video + one channel analog audio	69
3232DAA	805050	32x32 serial digital video + two channel analog audio	69
3232DE	805050	32x32 serial digital video + one level digital audio	69
3232DEE	805050	32x32 serial digital video + two level digital audio	69

YOSEMITE FAMILY

	Frame or System	Description	Page
3224V	812100	32x24 analog video	78
3232A	804109-10	32x32 analog audio	75
3232V	812102	32x32 analog video	77
3232E	804109-10	32x32 digital audio	81
3232D	812102	32x32 serial digital video	83
6448V	812100	64x48 analog video	78
6464A	804109-10	64x64 analog audio	75
6464V	812102	64x64 analog video	77
6464E	804109-10	64x64 digital audio	81
6464D	812102	64x64 serial digital video	83
6472V	812100	64x72 analog video	78
9696V	812100	96x96 analog video	78
128128A	804113-10	128x128 analog audio	76
128128V	812101	128x128 analog video	79
128128E	804113-10	128x128 digital audio	82
12864D	812101	128x64 serial digital video	84
128128D	812101	128x128 serial digital video	84
128256V	812101	128x256 analog video	79
128256D	812101	128x256 serial digital video	84

Additional configurations are available for the Yosemite Family. For configuration assistance, please contact inside sales at (530) 478-1000 or check www.sierravideo.com.

PRODUCT KEY

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E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).



SEQUOIA FAMILY

Model or System	Description	Page
10241024V	Up to 1024 x 1024 Large analog routing switcher	88

Optional configurations: 3232V, 3232A, 3232E, 3232D, 6464V, 6464HD, 6464D, 6464E, 128128V/D, 512512V/D.

CLASSIC SIERRA

The following Sierra Video Systems routing switchers and equipment are not illustrated in the 2004 catalog. These classic systems are still available but have become obsolete by newer products. Due to high demand, the classic system architecture is still available.

Model	Frame	Description
Manzanita		
324V	903130	Manzanita 32x4 video
324V	906630	Manzanita 32x4 video w/ RS-232 control
Sierra		
88CP	803061	Sierra 8x8 component video + sync
88CS	803061	Sierra 8x8 component video + stereo audio
88CSS	803061	Sierra 8x8 component video + two channel stereo audio
88CPSS	803061	Sierra 8x8 component video + sync + two channel stereo. audio
1212V	803097	Sierra 12x12 one channel video only
1212VA	803097	Sierra 12x12 one channel video + one channel audio
1212VAA	803097	Sierra 12x12 one channel video + two channel audio
1212VAAA	803097	Sierra 12x12 one channel video + three channel audio
1212VAAAA	803097	Sierra 12x12 one channel video + four channel audio
1212AA	803097	Sierra 12x12 two channel audio only
1212AAA	803097	Sierra 12x12 three channel audio
1212AAAA	803097	Sierra 12x12 four channel audio
1212Y	803099	Sierra 12x12 two channel (YC) video
1212C	803099	Sierra 12x12 three channel (RGB or YUV) video
164VA	803035	Sierra 16x4 one channel video + one channel audio
164VAA	803035	Sierra 16x4 one channel video + two channel audio
168VA	803035	Sierra 16x8 one channel video + one channel audio
168VAA	803035	Sierra 16x8 one channel video + two channel audio
168VAAA	803035	Sierra 16x8 one channel video + three channel audio
Sierra Control Panels		
803592		Sierra 12x1 single bus incandescent remote control panel
803572		Sierra 12x1 single bus LED remote control panel
803096		Sierra 12x12 XY incandescent remote control panel
803127		Sierra 12x12 XY LED remote control panel
803073		Sierra 16x8 XY incandescent remote control panel
803074		Sierra 16x8 XY LED remote control panel

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S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
W = Wideband channel(s).
Y = Y-C or S-VHS video (2 channels, Y or C).

CLASSIC SIERRA (CONT.)

The following Sierra Video Systems routing switchers and equipment are not illustrated in the 2004 catalog. These classic systems are still available but have become obsolete by newer products. Due to high demand, the classic system architecture is still available.

Model Frame Description

Sierra PRO

1616V3	904069	Sierra PRO 2RU Ruggedized 16x16 three channel component RGB
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Tahoe

1616V	804042	Tahoe 16x16 one channel video
1616Y	804042	Tahoe 16x16 two channel (YC) video
1616C	804042	Tahoe 16x16 three channel (RGB or YUV) video
1616H	804086	Tahoe 16-input Hub Controller
2010Y	804032	Tahoe 20x10 two channel (YV) video
2010C	804032	Tahoe 20x10 three channel (RGB or YUV) video
2020Y	804032	Tahoe 20x20 two channel (YV) video
2020C	804032	Tahoe 20x20 three channel (RGB or YUV) video
3208V	804012	Tahoe 32x8 one channel video
3208Y	804012	Tahoe 32x8 two channel (YV) video
3208C	804012	Tahoe 32x8 three channel (RGB or YUV) video
3216V	804012	Tahoe 32x16 one channel video
3216Y	804012	Tahoe 32x16 two channel (YV) video
3216C	804012	Tahoe 32x16 three channel (RGB or YUV) video

Support and Accessories

CM-3	902029	CM-3 serially component video mixer
B.O.B.-P	802136	Breakout Box Betacam Playback
B.O.B.-R	802236	Breakout Box Betacam Record

PRODUCT KEY

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 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

MANZANITA / SIERRA FAMILY

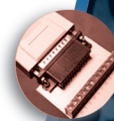
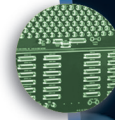
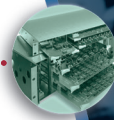
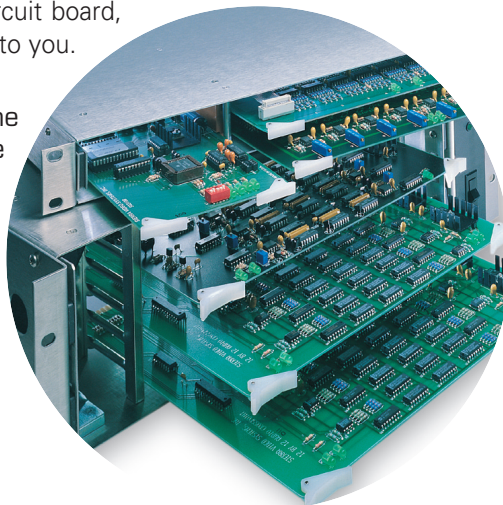


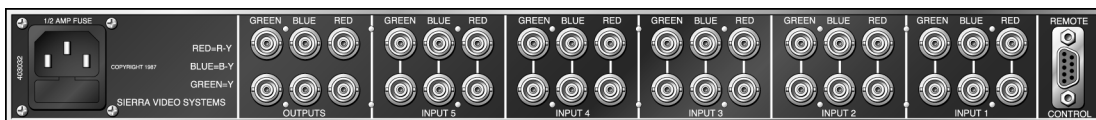
Our Manzanita Family of routing switchers is named after the small, durable tree that grows in the Sierra Mountains where we are based. Like their namesake, our Manzanita routing switchers are well adapted to tough conditions. For almost two decades, our Manzanita switchers have been the first choice for broadcast studios, systems integrators, post-production houses, and military applications. We have thousands of Manzanitas in place still providing flawless performance today.

- Compact 1RU high performance
- Analog composite video
- Analog 3 and 4 channel component video/audio
- AFV and video-only
- Modular designs for easy access
- Space saving local control panels on front covers
- Remote control panels available
- RS-232 serial interface controls

Manzanitas are compact, but they provide the same high performance video and audio signal processing as our larger routers. The Manzanitas share a modular design that makes servicing and troubleshooting easy. All of their active circuitry is on a single circuit board, which means lower cost to you.

For information on the Sierra Family, please see page 22.





MANZANITA 51C 903121

5 x 1 Component Video Routing Switcher has 5 RGB or YUV looping video inputs to two sets of identical outputs

- Bandwidth: 40 MHz • RS-232 serial control • Internal power supply

230 VAC input 903121-30



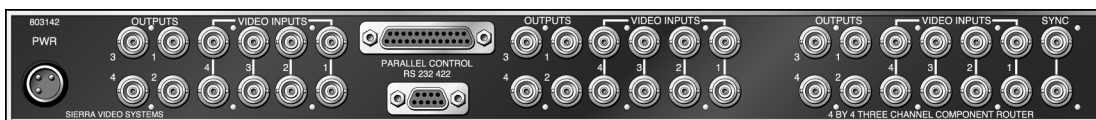
MANZANITA 161VS 903135

16 x 1 Video with Stereo Audio Routing Switcher has 16 terminating video inputs and one video output

- Stereo audio follow (AFV) • External power supply

RS-232 serial control
230 VAC input

803140
903135-30



MANZANITA 44C 903143

4 x 4 Component Video Routing Switcher has four looping RGB or YUV video inputs.

- Four independent switching busses with one output per bus
- Bandwidth: 40 MHz • RS-232 serial control • External power supply

230 VAC input

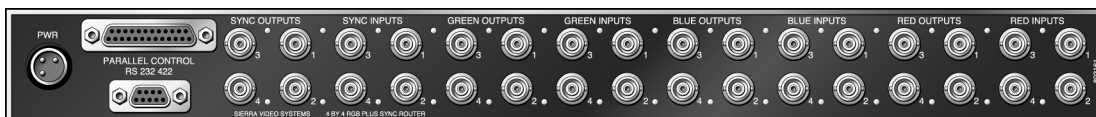
903143-30

WIDEBAND MANZANITA 44CW

WB 230 VAC input

903143-20

903143-40



MANZANITA 44CP 903160

4 x 4 RGB + Sync Routing Switcher has four terminating RGB video plus sync inputs.

- Four independent switching busses with one output per bus
- Bandwidth: 40 MHz • RS-232 serial control • External power supply

230 VAC input

903160-30

WIDEBAND MANZANITA 44CPW

WB 230 VAC input

903160-20

903160-40

Manzanita Control Panels See page 20

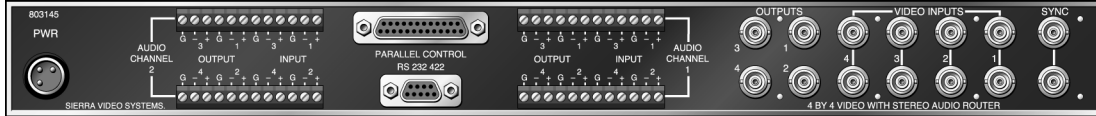
Manzanita Performance Specifications See page 26

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
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P = Pulse channel for switching synchronizing signals.
S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
W = Wideband channel(s).
Y = Y-C or S-VHS video (2 channels, Y or C).



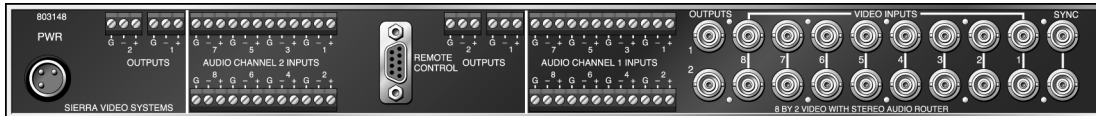
MANZANITA 44VS

903146

4 x 4 Video with Stereo Audio Routing Switcher has four looping video inputs and four independent switching busses with one output per bus

- Stereo audio follow
 - RS-232 serial control
 - External power supply
- 230 VAC input

903146-30



MANZANITA 82VS

903149

8 x 2 Video with Stereo Audio Routing Switcher has eight looping video inputs

- Two independent switching busses with one output per bus
- Stereo audio follow
- External power supply

RS-232 serial control
230 VAC input

803640
903149-30



MANZANITA 82C

903112

8 x 2 Component Video Routing Switcher has eight terminating RGB or YUV video inputs

- Two independent switching busses with one output per bus
- Bandwidth: 40 MHz
- External power supply

230 VAC input

903112-30

WIDEBAND MANZANITA 82CW

903112-20

RS-232 serial control
WB 230 VAC input

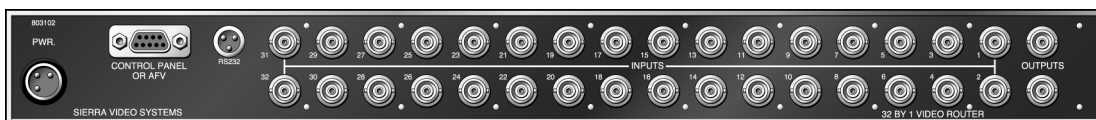
803640
903112-40

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
C = Component video (3 channels, YUV or RGB).
D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
P = Pulse channel for switching synchronizing signals.
S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
W = Wideband channel(s).
Y = Y-C or S-VHS video (2 channels, Y or C).

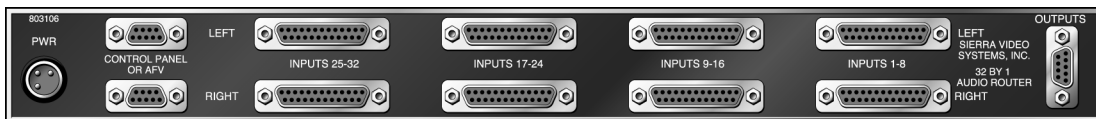


MANZANITA 321V 903101

32 x 1 Video Routing Switcher has 32 terminating video inputs, two video outputs

- RS-232 serial control
- External power supply

230 VAC input 903101-30



MANZANITA 321S 903105

32 x 1 Stereo Audio Routing Switcher can be used by itself or as an audio follow for either the Manzanita 321V or Manzanita 324V(See Classic Sierra Page 14) • External power supply

230 VAC input 903105-30

Manzanita Control Panels See page 20

Manzanita Performance Specifications See page 26

MANZANITA CONTROL PANELS

MANZANITA 44 CONTROL PANELS



Manzanita Quad 4 x 1 LED local control panel 803151



Manzanita Quad 4 x 1 LED remote control panel 803651

Control cables and accessories See DA's & Support Section

PRODUCT KEY

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E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

MANZANITA CONTROL PANELS

MANZANITA 51 CONTROL PANELS



Manzanita 5 x 1 LED local control panel

803123



Manzanita 5 x 1 LED remote control panel

803623

Control cables and accessories See DA's & Support Section

MANZANITA 82 CONTROL PANELS



Manzanita Dual 8 x 1 LED local control panel

803150



Manzanita Dual 8 x 1 LED remote control panel

803650



Manzanita Dual 8 x 1 Incandescent remote control panel

803153



Manzanita 8 x 1 Incandescent remote control panel

803154



Two 803154's connected: each control a bus

803654

Control cables and accessories See DA's & Support Section

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S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
W = Wideband channel(s).
Y = Y-C or S-VHS video (2 channels, Y or C).



MANZANITA CONTROL PANELS

MANZANITA 161 CONTROL PANELS



Manzanita 16 x 1 Single bus LED local control panel

803138



Manzanita 16 x 1 LED remote control panel

803638



Manzanita 16 x 1 Incandescent remote control panel

803139

Control cables and accessories See DA's & Support Section

MANZANITA 321 CONTROL PANELS



Manzanita 32 x 1 Single bus LED local control panel

803604



Manzanita 32 x 1 LED remote control panel

803104

Control cables and accessories See DA's & Support Section

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 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

SIERRA FAMILY



The Sierra Family is the next step up in both size and functionality from the Manzanita Family. This family consists of 8, 12, and 16 input analog routing switchers in a variety of composite video only, stereo audio, and AFV configurations. And like all Sierra Video Systems products, the Sierras are built with our trusted modular design approach to offer exceptional flexibility.

- 8, 12 and 16 input analog routers in a variety of standards
- Analog composite video
- AFV and video-only configurations
- Remote control panels can be daisy-chained to simplify system wiring
- Serial control system allows for multiple level control, providing audio breakaway (except 84VS/1RU 88VS)
- RS-232 serial interface option uses common SVS serial protocol
- CE and FCC compliant

SIERRA CONTROL SYSTEM

The Sierra Family expands upon the Manzanita style control system by using binary parallel-serial system for control panel interconnect. Sierra's feature a selection of remote control panels that can be daisy-chained to enable control of outputs or levels. The serial portion of the control system allows for controlling video and audio levels, AFV or breakaway (except 84VS/1RU 88VS).

SVS GROWS WITH YOU

If you are outgrowing your routing switcher, please consider our Trade-in/Trade-up Program (details on page 6 of this catalog). For larger frame sizes, our next range of switchers is our Tahoe Family, which offers matrix sizes up to 48x48 and includes our flexible three-port serial control system.

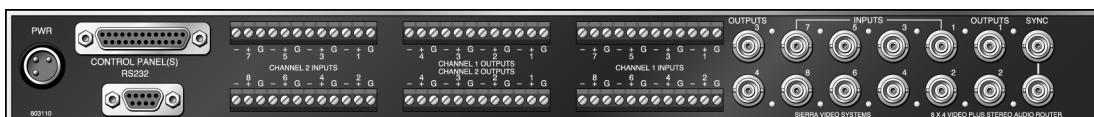


SIERRA 84VS

The Sierra 84VS is a compact 1RU(1.75") 8 x 4 video and stereo audio routing switcher. This flexible system employs audio-follow-video (AFV) switching and is suitable for either NTSC or PAL video standards. Video and two channels of balanced audio are all contained in one plug-in module.

The optional RS-232 serial interface allows you to use a PC or touch screen controller. Two single-bus and X-Y remote control panels with either incandescent or LED pushbuttons are available. Control panels and cables are ordered separately.

If you anticipate needing more than four outputs in the future, consider the Sierra 88VS. Check out the Sierra PRO 84V5S or 88V5S if you require component video or breakaway audio.



SIERRA 84VS 903109

8 x 4 video and stereo audio routing switcher	903109-30
230 VAC input	903109-30
Sierra 84VS with internal RS-232 serial interface	903609
230 VAC input	903609-30
Performance specifications . . . . .	.See page 27
Sierra control panels . . . . .	.See page 24

SIERRA 88VS

The Sierra 88VS is a compact 8 x 8 video and stereo audio routing switcher that fits into 1RU (1.75"). The system allows exceptional signal routing flexibility, including AFV or breakaway audio switching.

The unit is designed for NTSC or PAL standards and exceeds broadcast quality specifications. An internal serial interface adapter is available as an option. Control panels are separate, and some include an adapter for switching via the serial protocol. The RS-232 option and local control panel switching are locked in the AFV mode. Remote control panels can be used for breakaway or AFV switching. For component systems, check the Sierra PRO 88V5S.



SIERRA 88VS 903047

8 x 8 video and stereo audio routing switcher
1 - Sierra 88VS frame
1 - 8 x 8 video crosspoint module
1 - 8 x 8 stereo crosspoint module

SIERRA 88VS WITH RS-232 SERIAL INTERFACE 903048

8 x 8 video and stereo audio routing switcher with RS-232 serial interface
1 - Sierra 88VS frame
1 - 8 x 8 video crosspoint module w/RS-232 serial interface
1 - 8 x 8 stereo crosspoint module

Optional Configurations:

SIERRA 88V video	903416
SIERRA 88V with RS-232 serial interface	903516
SIERRA 88S stereo	903039
Performance specificationsSee page 27
Sierra control panelsSee page 24

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V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

SIERRA 1616V

The 1616V is a compact, cost-effective routing switcher in a 1RU(1.75") frame. It includes a built-in RS-232 serial interface for serial control using a touch screen controller from a PC, a touchscreen controller, or a third-party control panels.

The 1616V is not only compact: it's versatile. It can be controlled by remote control panels or by a local panel which fits right on the front of the frame (see below).



SIERRA 1616V 903115

16 x 16 video routing switcher

230 VAC ± 10% operation

903115-30

Performance specifications See page 27

SIERRA CONTROL PANELS

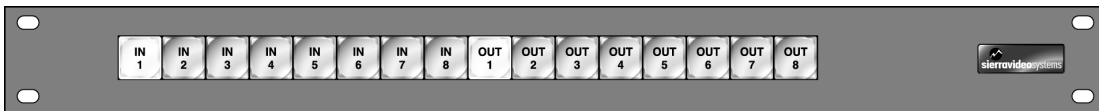
SIERRA 84 & 88 CONTROL PANELS



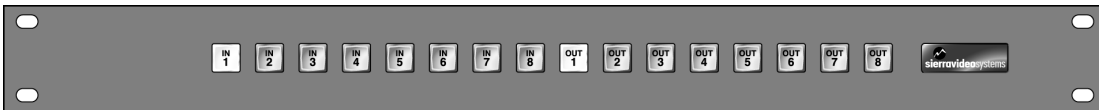
Sierra 8 x 1 Single bus incandescent remote control panel 803522



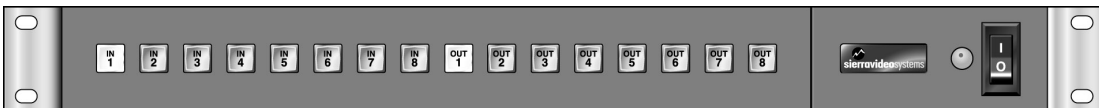
Sierra 8 x 1 Single bus LED remote control panel 803174



Sierra 8 x 8 XY Incandescent remote control panel with RS-232 interface 803087
803587



Sierra 8 x 8 XY LED remote control panel with RS-232 interface 803086
803586



Sierra 8 x 8 XY LED local control panel 803088

Control cables and accessories See DA's & Support Section

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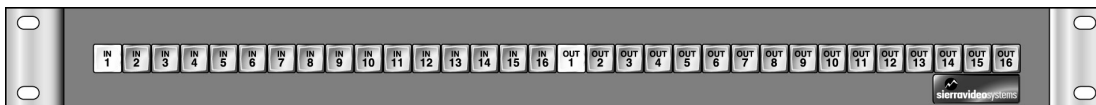
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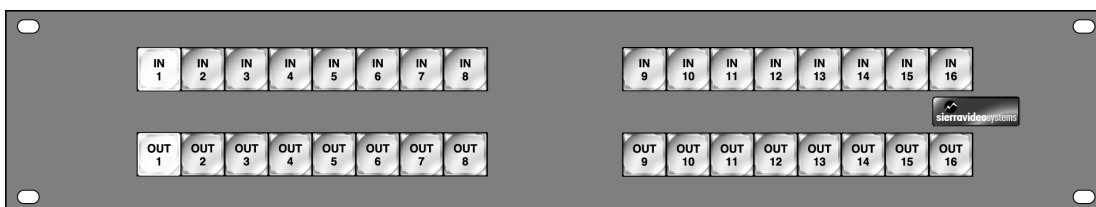
SIERRA CONTROL PANELS

SIERRA 1616V CONTROL PANELS



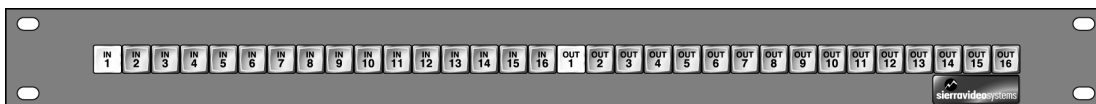
Sierra 16 x 16 XY LED local control panel

804548



Sierra 16 x 16 XY Incandescent remote control panel

803573



Sierra 16 x 16 XY LED remote control panel

803574

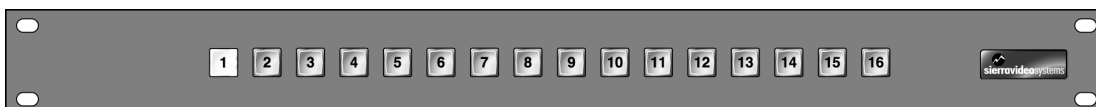
Control cables and accessories See DA's & Support Section

SIERRA 168VAAAA & 1616V CONTROL PANELS



Sierra 16 x 1 Single bus incandescent remote control panel

803092



Sierra 16 x 1 Single bus LED remote control panel

803072

Control cables and accessories See DA's & Support Section

PRODUCT KEY

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E = Digital (AES/EBU) audio channel.
P = Pulse channel for switching synchronizing signals.
S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
W = Wideband channel(s).
Y = Y-C or S-VHS video (2 channels, Y or C).

MANZANITA AND SIERRA PERFORMANCE SPECIFICATIONS

VIDEO INPUT CHARACTERISTICS

Input Impedance	75 Ω s
Return Loss	40 dB @ 5 MHz
External Sync	200mV to 8 V p-p

VIDEO OUTPUT CHARACTERISTICS

Impedance	75 Ω s
Return Loss	35 dB @ 5 MHz
DC on Signal	\pm 50 mV

COMPOSITE VIDEO SYSTEM PERFORMANCE

Gain Adjust Range (Nominal level = 1 V p-p)	Unity \pm 2 dB
Frequency Response	\pm 0.1 dB, 30 Hz to 8 MHz +0/-3 dB to 40 MHz
Diff. Phase Error	\pm 0.1 degree @ 3.58 or 4.43 MHz
Diff. Gain Error	\pm 0.1 percent @ 3.58 or 4.43 MHz
Crosstalk	-60 dB @ 5 MHz (All hostile)
Signal-to-Noise Ratio	80 dB to 5 MHz

COMPONENT VIDEO SYSTEM PERFORMANCE

All Manzanitas and Sierras:

Gain Adjust Range (Nominal level = 1 V p-p)	Unity \pm 2dB
Diff. Phase/Gain Error	\pm 0.1 degree/ \pm 0.1% @ 5.0 MHz
Crosstalk	-60 dB @ 5 MHz (All hostile); 40 dB @ 40 MHz (Bracketed hostile)
Signal-to-Noise Ratio	80 dB to 5 MHz; 70 dB to 40 MHz
Rise Time	4 nanoseconds

WIDE BANDWIDTH ROUTING SWITCHERS:

Frequency Response	+0/-3 dB, 100 MHz to 200 MHz (Varies with model)
Rise Time	1 nanosecond

AUDIO INPUT CHARACTERISTICS

Maximum Input Level	Manzanita Series +18 dBm, All Others +24 dBm
Input Load Impedance	30K Ω s, balanced
Common Mode Rejection	40 dB @ 60 Hz

AUDIO OUTPUT CHARACTERISTICS

Maximum Source Output Level	Manzanita Series +18 dBm, All Others +24 dBm
Output Impedance	150 Ω s, balanced

AUDIO SYSTEM PERFORMANCE

Voltage Gain	Unity \pm 0.1 dB (High-Z load)
Frequency Response	20 to 20 KHz \pm 0.1 dB, -3 dB @ 100 KHz
S/N Ratio (20 to 20 KHz)	110 dB ref. to +24 dBm
Crosstalk (All inputs hostile)	80 dB @ 15 KHz
IM & THD (20 to 20 KHz)	0.05% to +24 dBm

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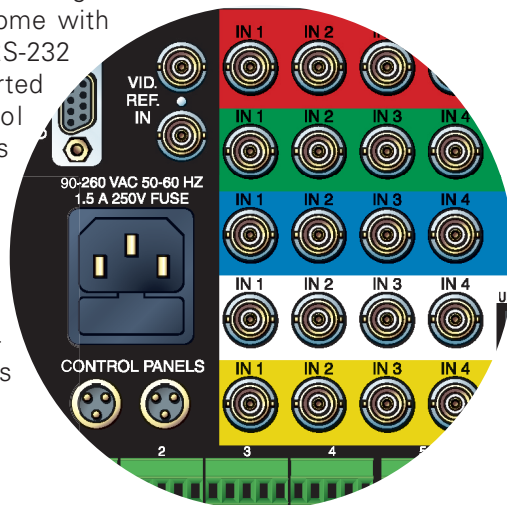
SIERRA PRO FAMILY



The Sierra PRO Family of component analog routing switchers offers high-bandwidth 3, 4 or 5 channel (RGB + HV) and stereo audio(S) matrix routing capability in a series of compact frames. Sierra PRO was designed specifically for presentation environments such as corporate boardrooms, live staging events, churches, and universities.

- RGBHV and Stereo audio in one frame
- Complete re-design for High Bandwidth and very low Crosstalk
- Sizes now include 8x4, 8x8, 12x4, 12x8, 16x8, 16x16, 32x16 and 32x32
- Audio gain adjustment for I/Os through standard front panel or serial port
- Balanced or Un-balanced audio
- RGB muting for clean routing to projectors and displays
- Multiple signal types controlled in same frame (Composite / S-Video / YC / YUV / RGBHV / Audio)

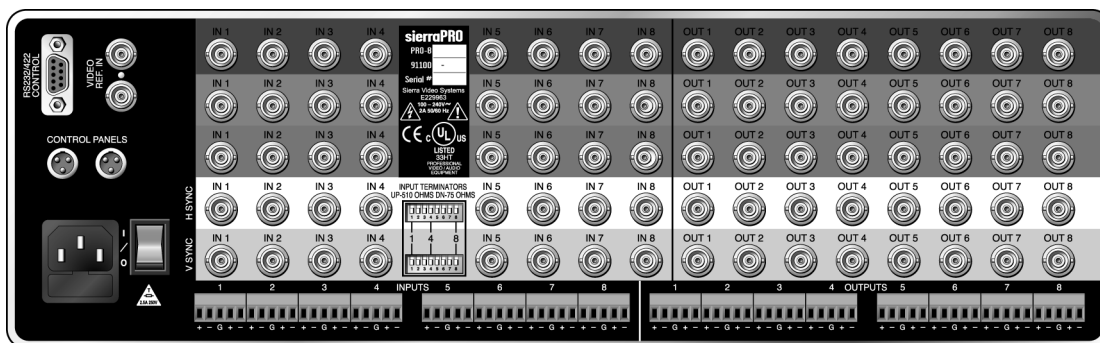
The Sierra PRO models feature a user-friendly, color-coded (RGB) rear panel layout for easy installation, and their own unique motherboard configuration options. Frames also come with serial control via an RS-232 serial interface supported by all major control systems. Sierra PRO's 400 MHz bandwidth supports most high-resolution sources. Front control panels and an extensive line of existing XY or single-bus remote control panels are available.





SIERRA PRO 88V5S AND 84V5S

The complete redesign of the new Sierra Pro88V5S and Pro 84V5S allows for high bandwidth routing with very low crosstalk. The frame is a compact 3RU (5.25") and allows control of multiple signal types including composite, S-Video, YUV, RGB+HV, and analog HD. This Sierra PRO system accommodates balanced or un-balanced audio, AFV, or Breakaway split routing allowing for RGB muting for seamless performance to projectors and displays. RS-232 serial control and a front local control panel is standard. Redundant power supplies and remote control are available. Specify model number i.e. 88V5S when ordering.



SIERRA PRO 88V5S

8 x 8 five-channel 400MHz wideband video + stereo audio routing switcher

911002-50

Optional Configurations:

- SIERRA PRO 88V4S — 8 x 8 four-channel video + stereo audio
- SIERRA PRO 88V3S — 8 x 8 three-channel video + stereo audio
- SIERRA PRO 88V5 — 8 x 8 five-channel video
- SIERRA PRO 88V4 — 8 x 8 four-channel video
- SIERRA PRO 88V3 — 8 x 8 three-channel video

SIERRA PRO 84V5S

8 x 4 five-channel 400MHz wideband video + stereo audio routing switcher

911004-50

Optional Configurations:

- SIERRA PRO 84V4S — 8 x 4 four-channel video + stereo audio
- SIERRA PRO 84V3S — 8 x 4 three-channel video + stereo audio
- SIERRA PRO 84V5 — 8 x 4 five-channel video
- SIERRA PRO 84V4 — 8 x 4 four-channel video
- SIERRA PRO 84V3 — 8 x 4 three-channel video

Redundant Power Supply

Add Model Letter R When Ordering i.e. 88V5SR
or Model Letter R When Ordering i.e. 84V5SR

External control panels See Control Panels Section

Mechanical and performance specifications See page 36

PRODUCT KEY

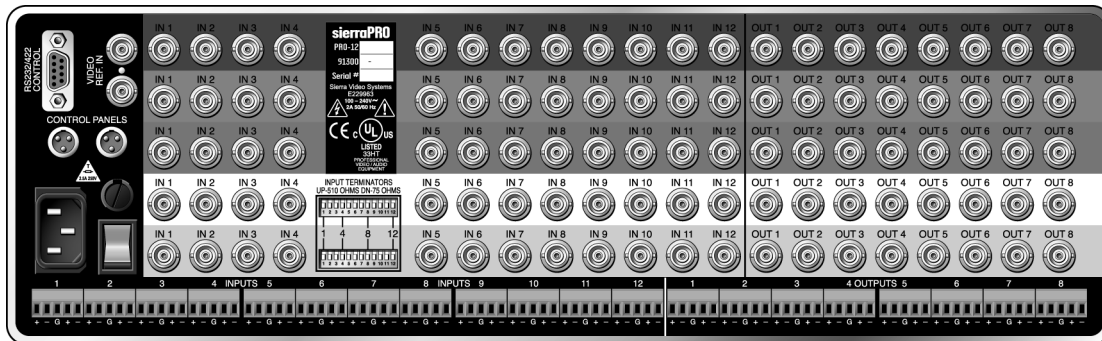
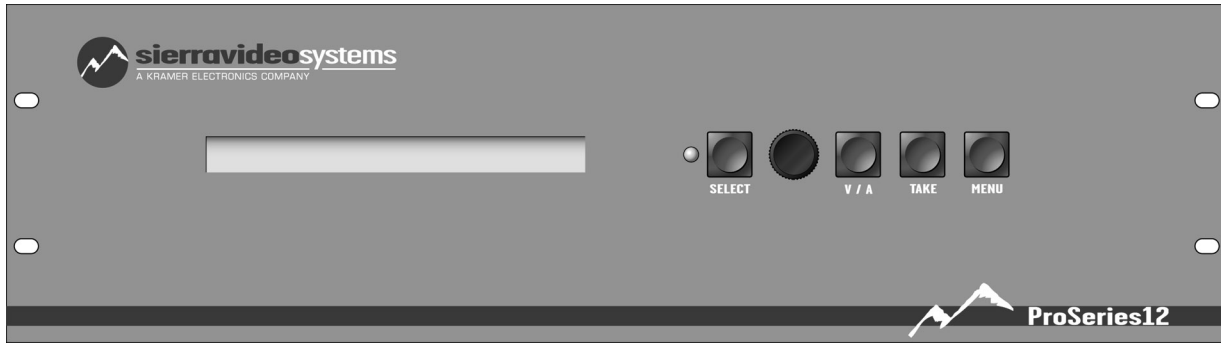
A = Monaural audio channel. Also suitable for time code.
C = Component video (3 channels, YUV or RGB).
D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
P = Pulse channel for switching synchronizing signals.
S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
W = Wideband channel(s).
Y = Y-C or S-VHS video (2 channels, Y or C).

SIERRA PRO 1208V5S AND 1204V5S

The complete redesign of the new Sierra Pro1208V5S and Pro 1204V5S allows for high bandwidth routing with very low crosstalk. The frame is a compact 3RU (5.25") and allows control of multiple signal types including composite, S-Video, YUV, RGB+HV, and analog HD. This Sierra PRO system accommodates balanced or un-balanced audio, AFV, or Breakaway split routing allowing for RGB muting for seamless performance to projectors and displays. RS-232 serial control and a front local control panel is standard. Redundant power supplies and remote control are available. Specify model number i.e. 1208V5S when ordering.



SIERRA PRO 1208V5S

12 x 8 five-channel 400MHz wideband video + stereo audio routing switcher

913002-50

Optional Configurations:

- SIERRA PRO 1208V4S — 12 x 8 four-channel video + stereo audio
- SIERRA PRO 1208V3S — 12 x 8 three-channel video + stereo audio
- SIERRA PRO 1208V5 — 12 x 8 five-channel video
- SIERRA PRO 1208V4 — 12 x 8 four-channel video
- SIERRA PRO 1208V3 — 12 x 8 three-channel video

SIERRA PRO 1204V5S

12 x 4 five-channel 400MHz wideband video + stereo audio routing switcher

913004-50

Optional Configurations:

- SIERRA PRO 1204V4S — 12 x 4 four-channel video + stereo audio
- SIERRA PRO 1204V3S — 12 x 4 three-channel video + stereo audio
- SIERRA PRO 1204V5 — 12 x 4 five-channel video
- SIERRA PRO 1204V4 — 12 x 4 four-channel video
- SIERRA PRO 1204V3 — 12 x 4 three-channel video

Redundant Power Supply

Add Model Letter R When Ordering i.e. 1208V5SR
or Model Letter R When Ordering i.e. 1204V5SR

External control panels See Control Panels Section

Mechanical and performance specifications See page 36

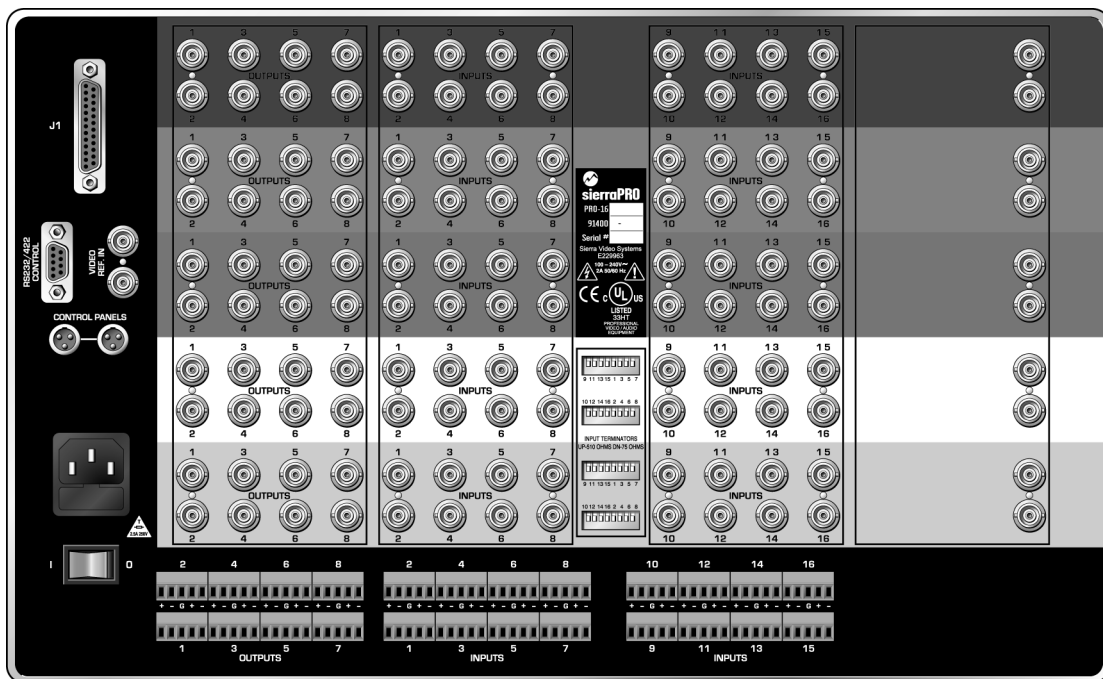
PRODUCT KEY

- A = Monaural audio channel. Also suitable for time code.
- E = Digital (AES/EBU) audio channel.
- V = Composite video (1 channel).
- C = Component video (3 channels, YUV or RGB).
- P = Pulse channel for switching synchronizing signals.
- W = Wideband channel(s).
- D = Serial digital video channel(s).
- S = Stereo audio channel switched as a pair.
- Y = Y-C or S-VHS video (2 channels, Y or C).



SIERRA PRO 1608V5S

The 1608V5S model is a compact 6RU (10.5") and is compatible with SVS's time-tested Tahoe control system for a variety of control options. The frame is depopulated from the 16x16 version and contains three 16x8 video crosspoint modules, up to 2 sync pulse switching modules, and an optional onboard stereo audio module. RS-232 serial control is standard. Available options include redundant power supplies and remote control.



SIERRA PRO 1608V5S

16 x 8 five-channel 400MHz wideband video + stereo audio routing switcher

914004-50

Optional Configurations:

- SIERRA PRO 1608V4S** — 16 x 8 four-channel video + stereo audio
- SIERRA PRO 1608V3S** — 16 x 8 three-channel video + stereo audio
- SIERRA PRO 1608V5** — 16 x 8 five-channel video
- SIERRA PRO 1608V4** — 16 x 8 four-channel video
- SIERRA PRO 1608V3** — 16 x 8 three-channel video

Redundant Power Supply

Add Model Letter R When Ordering i.e. 1608V5SR

Front panel control standard See illustration on page 35
 External control panels. See Control Panels Section
 Mechanical and performance specifications See page 36

PRODUCT KEY

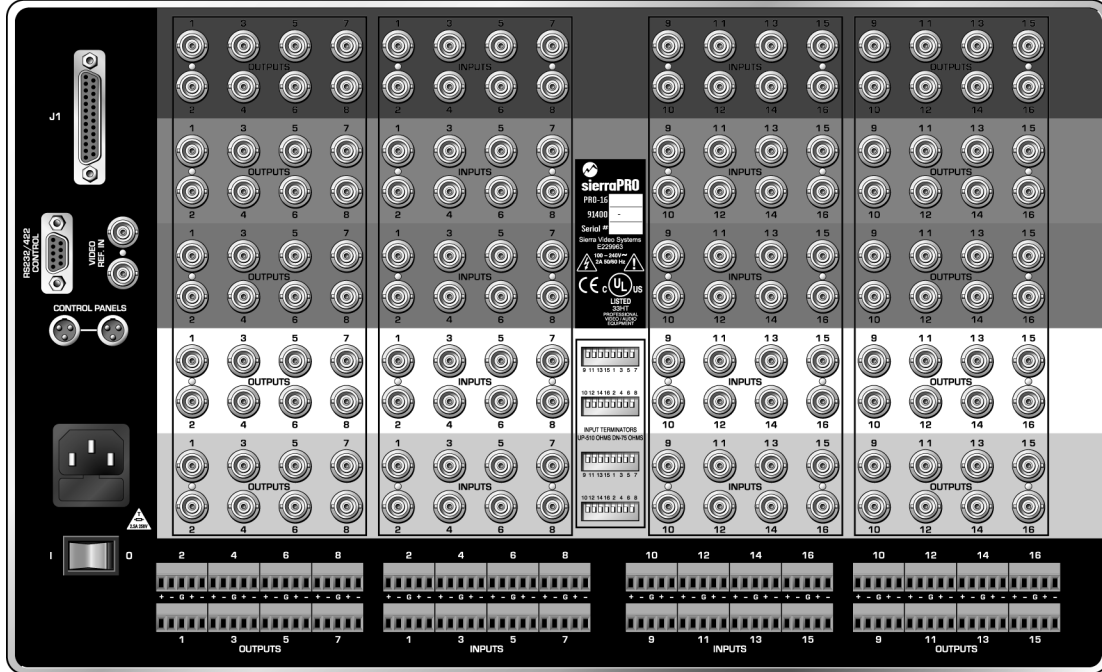
A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

SIERRA PRO 1616V5S

The 1616V5S model is a compact 6RU (10.5") and is compatible with SVS's time-tested Tahoe control system for a variety of control options. It contains up to three 16x16 video crosspoint modules, up to 2 sync pulse switching modules, and an optional onboard stereo audio module. RS-232 serial control is standard. Available options include redundant power supplies and remote control.



SIERRA PRO 1616V5S

16 x 16 five-channel 400MHz wideband video + stereo audio routing switcher

914002-50

Optional Configurations:

SIERRA PRO 1616V4S — 16 x 16 four-channel video + stereo audio

SIERRA PRO 1616V3S — 16 x 16 three-channel video + stereo audio

SIERRA PRO 1616V5 — 16 x 16 five-channel video

SIERRA PRO 1616V4 — 16 x 16 four-channel video

SIERRA PRO 1616V3 — 16 x 16 three-channel video

SIERRA PRO 1616V3-2RU — Special 2RU Ruggedized 3 channel RGB

904069

- 50MHz Video ModulesSubstitute module 504044-16
- Redundant Power SupplyAdd Model Letter R When Ordering i.e. 1616V5SR
- Front panel control standardSee illustration on page 35
- External control panelsSee Control Panels Section
- Mechanical and performance specificationsSee page 36

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
C = Component video (3 channels, YUV or RGB).
D = Serial digital video channel(s).

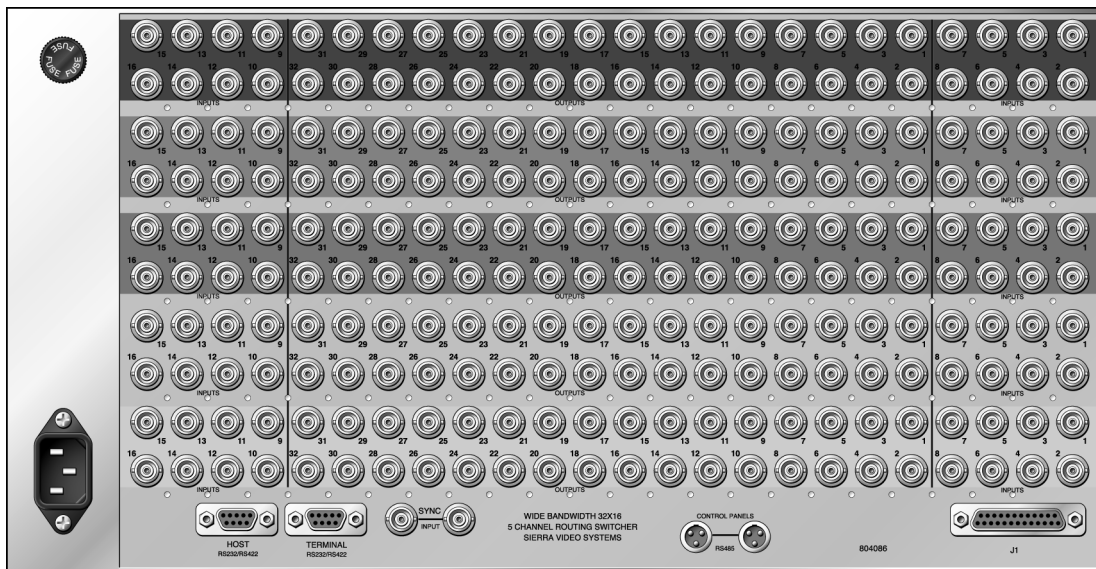
E = Digital (AES/EBU) audio channel.
P = Pulse channel for switching synchronizing signals.
S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
W = Wideband channel(s).
Y = Y-C or S-VHS video (2 channels, Y or C).



SIERRA PRO 3216V5

Designed to be as compact as possible, the 3216V5 model is 5RU (8.75") and fits into even the tightest installations. It contains three 32x16 video crosspoint modules and 2 sync pulse modules. Like the 1616V5S model, it is compatible with all Tahoe control systems, and is available with optional front panel control. Stereo audio is also available by linking a Pro 3216S frame. (See page 35.)



SIERRA PRO 3216V5

32 x 16 RGB+HV 400MHz wideband video routing switcher

- | | |
|--|-----------|
| 1 - Sierra Pro 3216V5 frame (5RU) | 804086 |
| 3 - 32x16 400MHz analog video crosspoint modules | 504088-71 |
| 2 - 32x16 sync pulse switching modules | 504089-10 |
| 1 - Three-port serial control module | 504001 |

Optional Configurations:

- SIERRA PRO 3216V4** — 3 channel RGB wideband, 1 channel pulse
- SIERRA PRO 3216V3** — 3 channel RGB wideband

Options for 3216V5 Systems:

Redundant power supplySubstitute frame 804086-31

Companion Audio Options:

Stereo audioAdd a Pro 3216S (illustrated on page 35)

Front panel control standard See illustration on page 35

External control panels See Control Panels Section

Performance specifications See page 36

PRODUCT KEY

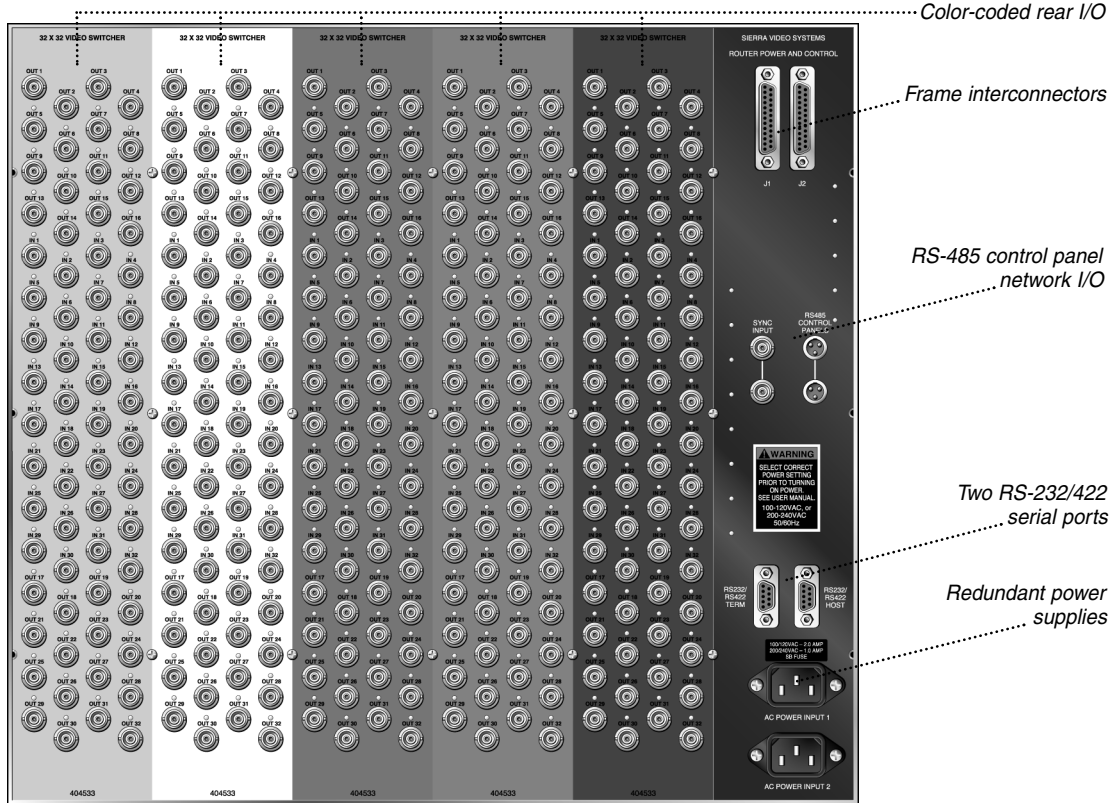
A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

SIERRA PRO 3232V5

The 3232V5 model is perfect for larger installations where more than 16 outputs are needed. The 3232V5 is housed in a 9RU (15.75") frame. It contains three 32x32 wideband video crosspoint modules, up to 2 sync pulse modules, redundant power supplies and RS-232 serial control. Front panel keypad control is standard, or, like all Sierra Pro models, a variety of remote control systems are available. Stereo audio is available by linking a Pro 3216S frame. (See page 35.)



SIERRA PRO 3232V5

32 x 32 RGB+HV 400Mhz wideband video routing switcher

- 1 - Sierra Pro 3232V5 frame 804530
- 3 - 32x32 400MHz analog video crosspoint modules 504088-20
- 2 - 32x32 sync pulse switching modules 504089-00
- 1 - Three-port serial control module 504001

Optional Configurations:

- SIERRA PRO 3232V4** — 3 channel RGB wideband, 1 channel pulse
- SIERRA PRO 3232V3** — 3 channel RGB wideband

Options for 3232V5 Systems:

- 230 VAC input804530-32

Companion Audio Options:

- Stereo audio Add a Pro 3232S (illustrated on page 35)
- Front panel control standard See illustration on page 35
- External control panels See Control Panels Section
- Performance specifications See page 36

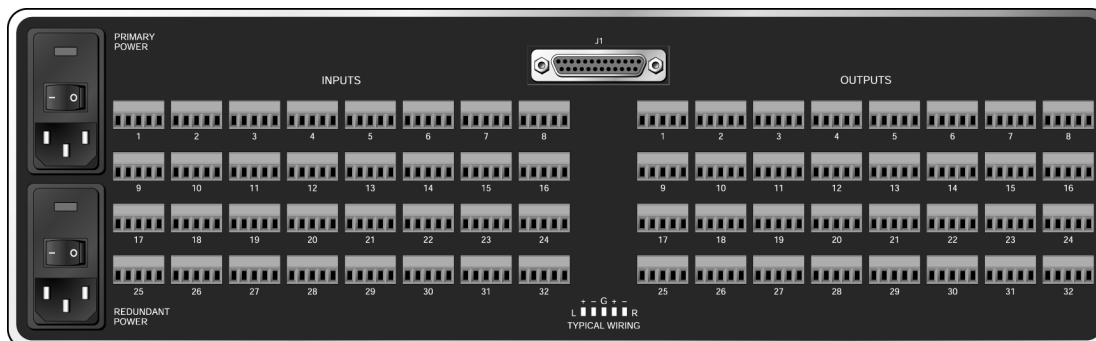
PRODUCT KEY

- A = Monaural audio channel. Also suitable for time code.
- E = Digital (AES/EBU) audio channel.
- V = Composite video (1 channel).
- C = Component video (3 channels, YUV or RGB).
- P = Pulse channel for switching synchronizing signals.
- W = Wideband channel(s).
- D = Serial digital video channel(s).
- S = Stereo audio channel switched as a pair.
- Y = Y-C or S-VHS video (2 channels, Y or C).



SIERRA PRO 3232S AND 3216S

The 3RU 3232S audio frame provides companion or stand alone stereo audio for 3216V5 and 3232V5 systems. The Sierra PRO audio frame uses two 32x16 or 32x32 audio crosspoint modules.



SIERRA PRO 3232S

32 x 32 stereo audio routing switcher

- 1 - Sierra Pro 3232S frame (3RU) 804096
- 2 - 32x32 stereo audio crosspoint modules 504097-00

SIERRA PRO 3216S

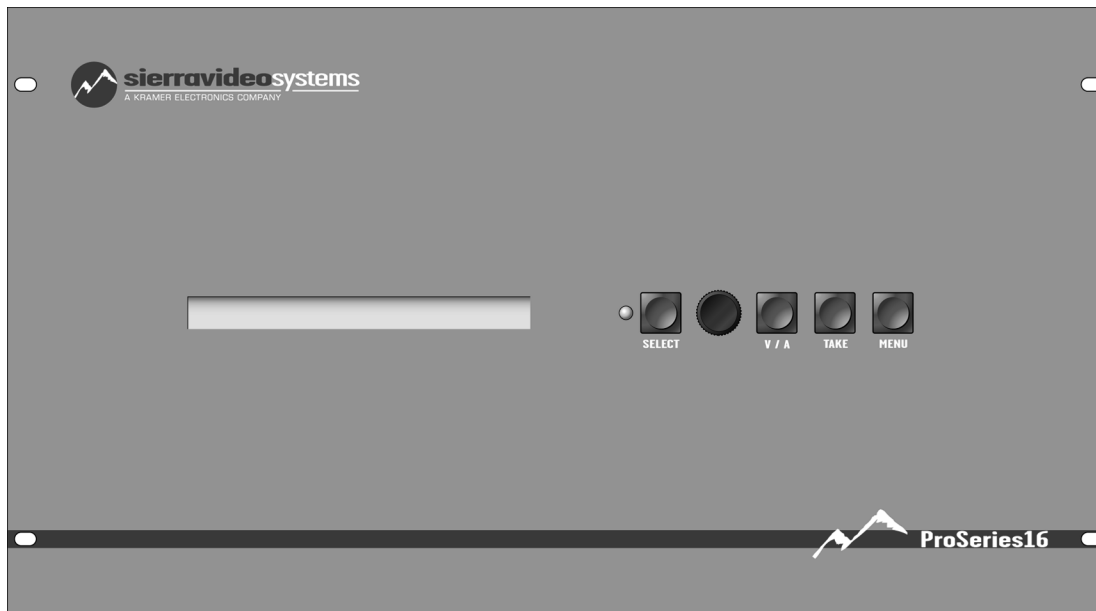
32 x 16 stereo audio routing switcher

- 1 - Sierra Pro 3216S frame (3RU) 804097
- 2 - 32x16 stereo audio crosspoint modules 504097-10

Options 3232S & 3216S Systems:

- Redundant power supplySubstitute frame 804096-31
- Mechanical and performance specifications See page 36

SIERRA PRO 16 AND 32 INPUT LOCAL CONTROL PANELS



SIERRA PRO 6RU LOCAL CONTROL PANEL (shown above for 16x08 & 16x16 systems)

Remote control panel options See Control Panels Section

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

SIERRA PRO PERFORMANCE SPECIFICATIONS

VIDEO

Input impedance	75 Ω s 1%
Input connector type	BNC
Video input level	300mV to 2.5V P-P
Pulse input level	
Series 8 and Series 12:	0.2V to 5V P-P
Series 16 and Series 32:	1V to 15V P-P
Video bandwidth	
Series 8 and Series 12	400MHz @ -3dB
Series 16 and Series 32	400MHz
Pulse rate	up to 200KHz
Crosstalk	
Series 8, Series 12 and Series 16	-80 dB @ 1MHz -47 dB @ 100MHz
Series 32	<30 dB @ 150MHz
1 input to many outputs	All electrical specifications remain the same
Video gain	Unity (adjustable per channel +/- 1.5dB)
Video output level	200mV to 2.5mv P-P
Pulse output level	\pm 2V P-P into 75 Ω s
Output impedance	75 Ω s
Output connector type	BNC
Operating temperature range	0 to 40 deg. C
Storage temperature range	-10 to +60 deg. C
Performance temperature range	10 to 30 deg. C
Humidity	0 to 100% RH non-condensing
Frequency Response	+0/-3 dB, 100 MHz to 200 MHz (Varies with model)
Pulse Rise Time	1-10 nanoseconds
Maximum Video Resolution	1280 x 1024 @ 80 Hz Refresh Rate

AUDIO

Maximum source output level	+24 dBm Balanced 18 dBu Un-balanced
Input impedance	>20K Ω s
Output impedance	
Series 8 and Series 12	50 Ω s Unbalanced, 100 Ω s Balanced
Series 16 and Series 32	150 Ω s, balanced
Voltage gain	
Series 8 and Series 12	Unity +/- 0.5 dB (Driving High-Z balanced output)
Series 16 and Series 32	Unity +/- 0.1 dB (Driving High-Z balanced output)
Frequency response	20 to 20 KHz +/- 0.1 dB, -3 dB @ 100 KHz
S/N Ratio (20 to 20 KHz)	
Series 8 and Series 12	> 90dB, output 21 dbu, balanced
Series 16 and Series 32	110 dB ref. to +24 dBm
Crosstalk (all inputs hostile)	
Series 8 and Series 12	> 80 dB @ 1 KHz
Series 16 and Series 32	80 dB @ 15 KHz
IM & THD (20 to 20 KHz)	0.05% to +24 dBm
Audio Connectors	Removable captive screw terminals

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

LASSEN FAMILY



Compact Broadcast Video & Audio Routing

Sierra Video's new Lassen Series video/audio routing switchers offers full-broadcast routing performance for space-constrained applications. These small and mid-size switchers provide optimal performance and features in a wide variety of matrix sizes. Our new switchers are an ideal part of live-to-air and post-production facilities, remote trucks, and corporate, scientific, military and educational installations.

The Lassen Series offers flexibility and adaptability to any application where space saving and economics are important. The Lassen Series offers adjustable audio gain & attenuation on a per-channel basis, the ability to select from our new SCP line of advanced, programmable control panels, and interface capability to other SVS router frames. The Lassen Series offers exceptional linear frequency response in critical, on-air switching environments.

Space-saving features

Lassen frames offer an internal power supply and have built in RS-232/RS-422 control. The additional data port allows for complete control of the routing switcher via Ethernet or dial-up using the simple SVS control system. All Lassen models come standard with front panel control and can be linked to any of the SCP Series control panels for ultimate control of any sized broadcast systems. The Lassen 1212VS and 1616VS frame is a mere 2RU with BNC connectors and Phoenix style audio connectors for easy installation. The Lassen 1602VS fits in just 1RU. The Lassen Series offers more control, a compact design, and flexibility in software management. Composite, digital, and stereo audio routing has never been more compact or powerful.

Features

- **Built-in Front Panel Control**
- **Small, compact designs**
- **Adjustable Audio Gain & Attenuation on a per-channel basis**
- **Ability to select from our new SCP line of advanced, programmable control panels.**
- **Interface capability to other router frames such as Shasta, Tahoe and Yosemite**
- **Convenient "Phoenix" style audio connectors**
- **RS-232/422 Serial Control Standard on all models**

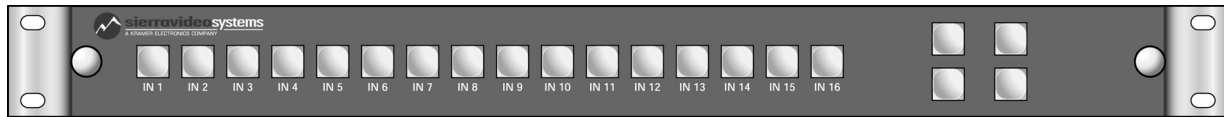


Before the Lassen Series, it was impractical to connect our small RS-422 machine control router to some of our smaller routers. The Lassen line makes that possible. In addition, the new Lassen routing switchers can be either a Master or a Slave in the control system. Meaning, you can add additional format levels to the Lassen control system, or you can add this router to an SVS router such as a Sierra PRO, Tahoe, Shasta, Sequoia, or Yosemite system

LASSEN 1602VS

Sierra Video Systems' 1602VS routing switcher offers composite analog video and stereo audio routing with optional DC clamping circuits in a compact 1RU frame. The DC clamping feature eliminates DC shift on the video, allowing for real-time switching between video sources without loss of sync. DC clamping circuits for all inputs are provided with a bypass option.

The 1602VS control system uses a front mounted CPU control module consisting of (16) source buttons, (2) Output selection buttons, (1) Audio button and (1) Video button used for breakaway switching. The switcher may be ordered with a blank front panel (no buttons) if desired.



LASSEN 1602VS

16 x 2 1RU analog composite video + stereo audio w/LCP routing switcher

Optional Configurations:

LASSEN 1602VSN — 16 x 2 analog composite video + stereo audio, No LCP

REAR PANEL CONNECTORS INCLUDE:

- 16 Input BNCs
- 2 Output BNCs with dual outputs
- 1 (looping) BNC Ext Reference input
- 16 input pair balanced Screw Terminal audio connectors
- 2 output pair balanced Screw Terminal audio connectors
- 1 DB 9 pin Serial interface connector
- 1 AC power inlet
- 2 RS 485 connectors RJ11 and /or Mini XLR

External control panels. See Control Panels Section

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

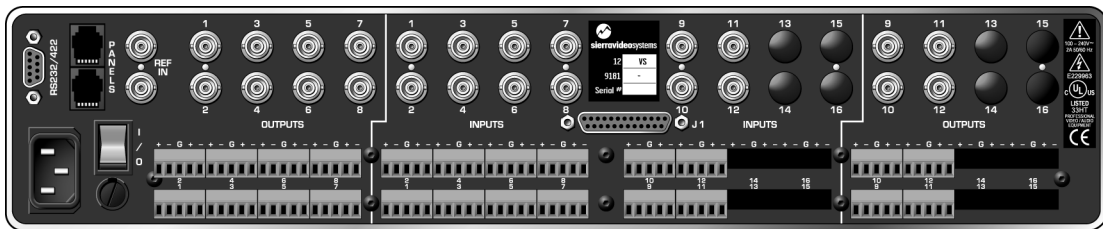
V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).



LASSEN 1212VS

The Lassen VS Series offers flexibility and adaptability to any application where saving space and economics are important. The 12 Series of compact analog video, digital video, analog audio, and AES/EBU audio routing switchers are available in attractive, compact 2RU frames. The Lassen VS Series routing switchers allow Composite Video with Stereo Audio (VS). These compact switchers accommodate stand-alone format operation, i.e. 1212V, two level distribution, i.e. 1212VS, with complete control in 2RU frame sizes.

The Lassen VS Series offers adjustable audio gain & attenuation on a per-channel basis, the ability to select from our new SCP line of advanced, programmable control panels, and interface capability to other SVS router frames. Lassen frames offer an internal power supply and have built in RS-232/RS-422 control.



LASSEN 1212VS

12 x 12 2RU video + stereo audio routing switcher

Optional Configurations:

LASSEN 1208VS — 12 x 8 video + stereo audio

LASSEN 1204VS — 12 x 4 video + stereo audio

External control panels See Control Panels Section
Mechanical and performance specifications See Page 42

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
C = Component video (3 channels, YUV or RGB).
D = Serial digital video channel(s).

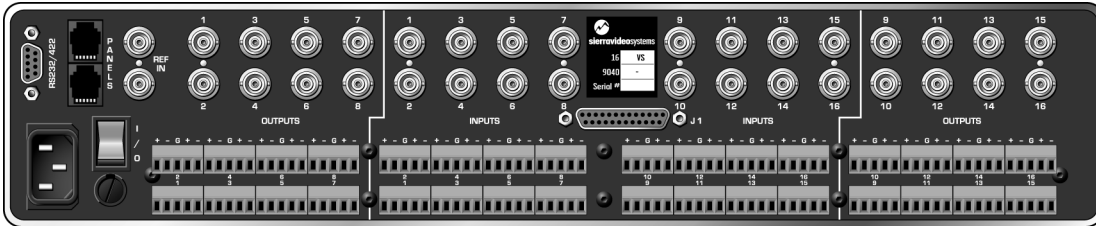
E = Digital (AES/EBU) audio channel.
P = Pulse channel for switching synchronizing signals.
S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
W = Wideband channel(s).
Y = Y-C or S-VHS video (2 channels, Y or C).

LASSEN 1616VS

The Lassen VS Series offers flexibility and adaptability to any application where saving space and economics are important. The 16 Series of compact analog video, digital video, analog audio, and AES/EBU audio routing switchers are available in attractive, compact 2RU frames. The Lassen VS Series routing switchers allow Composite Video with Stereo Audio Switching. These routers support Breakaway Stereo Audio (2 levels).

The Lassen VS Series offers adjustable audio gain & attenuation on a per-channel basis, the ability to select from our new SCP line of advanced, programmable control panels, and interface capability to other SVS router frames. Lassen VS frames offer an internal power supply and have built in RS-232/RS-422 control.



LASSEN 1616VS

16 x 16 2RU video + stereo audio routing switcher

Optional Configurations:

- LASSEN 1616V** — 16 x 16 video
- LASSEN 1608VS** — 16 x 8 video + stereo audio

External control panels See Control Panels Section
 Mechanical and performance specifications See Page 42

PRODUCT KEY

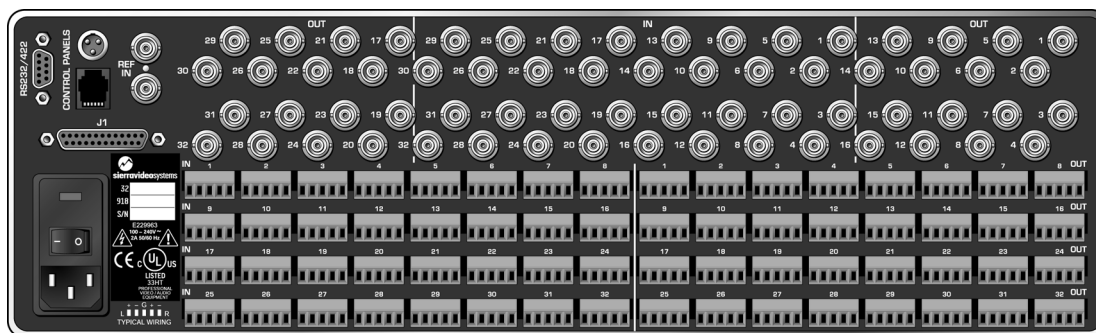
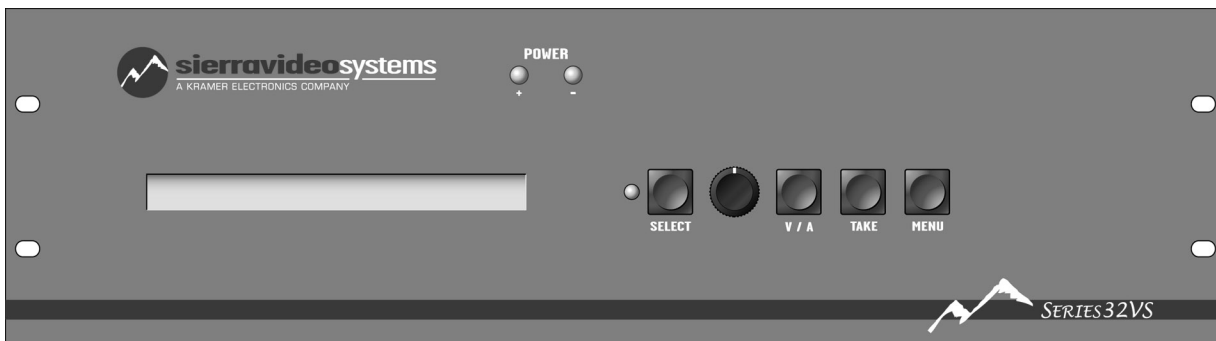
- A = Monaural audio channel. Also suitable for time code.
- E = Digital (AES/EBU) audio channel.
- V = Composite video (1 channel).
- C = Component video (3 channels, YUV or RGB).
- P = Pulse channel for switching synchronizing signals.
- W = Wideband channel(s).
- D = Serial digital video channel(s).
- S = Stereo audio channel switched as a pair.
- Y = Y-C or S-VHS video (2 channels, Y or C).



LASSEN 3232VS

We have fit 32 inputs and 32 outputs of video and audio into a compact 3RU frame with BNC connectors and Phoenix style audio connectors for easy installation. The 32 Series of compact analog video and analog audio are available in attractive, compact 2RU frames. The Lassen Series routing switchers allow Composite Video with Stereo Audio (VS) and 270Mbps Digital Video with AES/EBU or Stereo Audio. The 3232VS supports 3-level switching, i.e. VAA.

The VS Series offers adjustable audio gain & attenuation on a per-channel basis, the ability to select from our new SCP line of advanced, programmable control panels, and interface capability to other SVS router frames. Lassen VS frames offer an internal power supply and have built in RS-232/RS-422 control.



LASSEN 3232VS

32 x 32 3RU video + stereo audio routing switcher 918001

Optional Configurations:

- LASSEN 3216VS** — 32 x 16 3RU video + stereo audio 918002
- LASSEN 3232V** — 32 x 32 3RU video only
- LASSEN 3216V** — 32 x 16 3RU video only
- LASSEN 3232VS** — 32 x 32 4RU video + stereo audio w/redundant PS 918003
- LASSEN 3216VS** — 32 x 16 4RU video + stereo audio w/redundant PS 918004

External control panels. See Control Panels Section
 Mechanical and performance specifications See Page 42

PRODUCT KEY

- A = Monaural audio channel. Also suitable for time code.
- E = Digital (AES/EBU) audio channel.
- V = Composite video (1 channel).
- C = Component video (3 channels, YUV or RGB).
- P = Pulse channel for switching synchronizing signals.
- W = Wideband channel(s).
- D = Serial digital video channel(s).
- S = Stereo audio channel switched as a pair.
- Y = Y-C or S-VHS video (2 channels, Y or C).

LASSEN VS PERFORMANCE SPECIFICATIONS

VIDEO

Input impedance	75 Ω s nominal
Input connector type	BNC
Video input level	300mV to 2.5V P-P
Video bandwidth	>300MHz @ -3dB
Crosstalk	80 dB @ 1MHz -47 dB @ 100MHz
1 input to many outputs	All electrical specifications remain the same
Video gain	Unity (adjustable per channel +/- 1.5dB)
Video output level	200mV to 2.5mv P-P
Output impedance	75 Ω s nominal
Output connector type	BNC
Operating temperature range	0 to 40 deg. C
Storage temperature range	-10 to +60 deg. C
Performance temperature range	10 to 30 deg. C
Humidity	0 to 100% RH non-condensing
Frequency Response	+0/-3 dB, 100 MHz to 200 MHz (Varies with model)

AUDIO

Maximum source output level	+24 dBm Balanced 18 dBu Un-balanced >20K Ω s
Input impedance	Differential Mode: 20K Ω s Single Ended Mode: 10K Ω s
Output impedance	Differential Mode: <100 Ω s Single Ended Mode: <50 Ω s
Voltage gain	Unity +/- 0.5 dB (Driving High-Z balanced output)
Frequency response	20 to 20 KHz +/- 0.1 dB, -3 dB @ 100 KHz
S/N Ratio (20 to 20 KHz)	< -90 dB, output +24 dBu, balanced
Crosstalk (all inputs hostile)	< -80 dB @ 1 KHz < -70 dB @ 20 KHz
IM & THD (20 to 20 KHz)	0.05% to +24 dBm
Maximum Signal Amplitude	Differential Mode: +24 dBu Single Ended Mode: +18 dBu
Audio Connectors	5-wire removable captive screw terminals

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

TAHOE FAMILY



Capable of meeting the most demanding applications of today's video professionals, the Tahoe Family is our most extensive line of analog routing switchers—setting the industry standard in mid-sized switchers for more than a decade. With over twenty frame styles to choose from, Tahoe frames can be populated with limited modules, providing flexibility for future expansion.

- 16, 20, 32 and 48 inputs in a variety of standards
- Analog component video/audio
- Analog composite video
- AFV and video-only configurations
- Y-C or S-VHS video (2 channels)
- RS-232 serial interface control; RS-485 control panel network
- Up to 64 panels on a simple twisted pair network
- Battery backed-up RAM protection of all personality and crosspoint information
- 256 salvo registers capable of holding a total of 2000 or more crosspoints

Multiple frames can be connected together (up to 8 levels) under the same Tahoe control system. For multiple frames, only one Tahoe serial control module is required. With high-end performance, modest prices and an extensive variety of models, the Tahoe Family offers significant features found nowhere else in this size or price range.

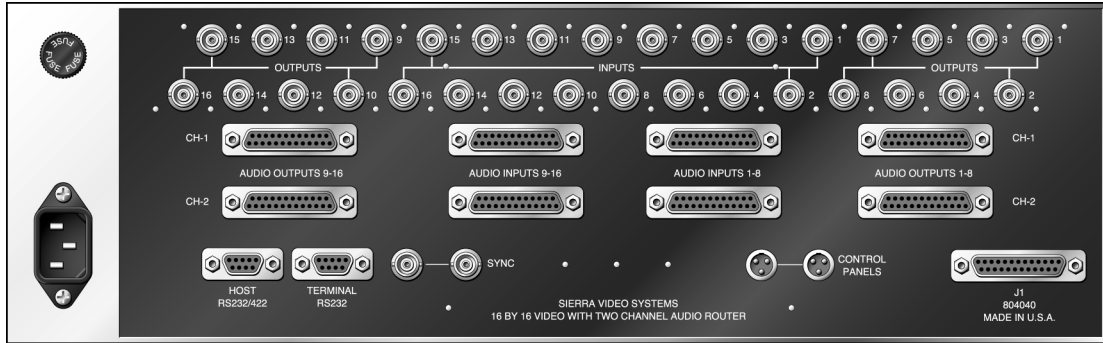




TAHOE 1616VAA

This popular Tahoe has a chassis measuring only 3RU (5.25") high. It holds one 16 x 16 video switching module and up to two 16 x 16 audio crosspoint boards. The three-port control host serial interface module is standard on the 1616VAA, as on all the Tahoe family members.

For configurations where a third or fourth channel of audio is needed, consider the 4RU Tahoe 1616VAAAA frame.



TAHOE 1616AA

16 x 16 two channel audio routing switcher

1 - Tahoe 1616VAA frame	804040
1 - serial control module	504001
2 - 16 x 16 audio crosspoint modules	504045

TAHOE 1616VAA

16 x 16 video routing switcher with two audio channel

1 - Tahoe 1616VAA frame	804040
1 - serial control module	504001
1 - 16 x 16 video crosspoint module	504044
2 - 16 x 16 audio crosspoint modules	504045

Optional Configurations:

- TAHOE 1616V
- TAHOE 1616VA
- TAHOE 1616A

Options for 1616VAA Systems:

- Redundant power supply, 115 VAC ± 10% Substitute frame 804040-41
- Redundant power supply, 230 VAC ± 10% Substitute frame 804040-42
- RS-422 host serial interface in lieu of RS-232 Specify when ordering
- Control panels See Control Panels Section
- Performance specifications. See page 60

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

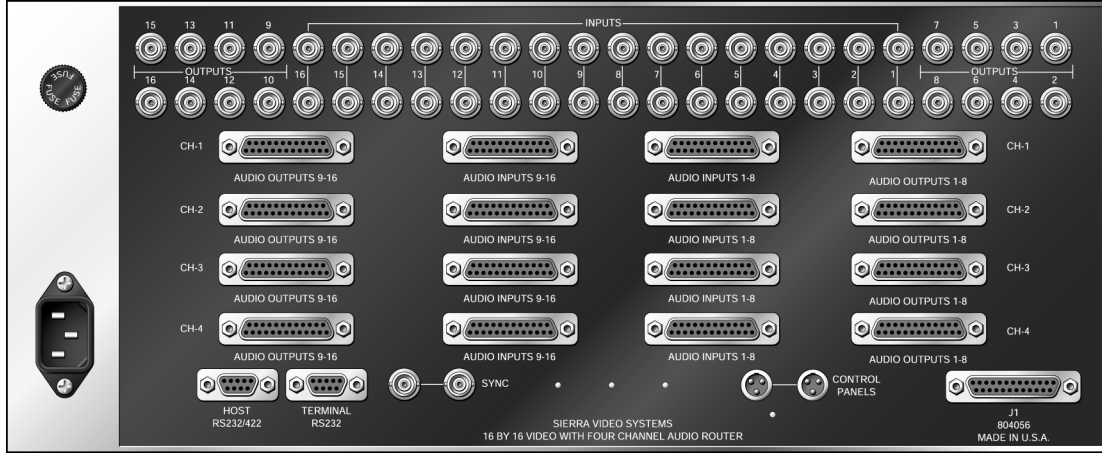
V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

TAHOE 1616VAAAA

This is the choice for composite video applications that require Quad sound, Dual-language programming, and extra audio levels for SMPTE/EBU time code.

A 4RU version of the Tahoe 1616, this frame holds one 16 x 16 video switching module and up to four audio crosspoint boards, along with its three-port serial control module. It also features looping inputs.

Tahoe 1616VAAAA can meet your early needs and grow with you into the future as you require three or four channels of 16 x 16 audio switching.



TAHOE 1616AAAA

16 x 16 four channel audio routing switcher

- 1 - Tahoe 1616VAAAA frame 804056
- 1 - serial control module 504001
- 4 - 16 x 16 audio crosspoint modules 504045

TAHOE 1616VAAAA

16 x 16 video routing switcher with four audio channels

- 1 - Tahoe 1616VAAAA frame 804056
- 1 - serial control module 504001
- 1 - 16 x 16 video crosspoint module 504044
- 4 - 16 x 16 audio crosspoint modules 504045

Optional Configurations:

TAHOE 1616VAAA

TAHOE 1616AAA

Options for 1616VAAAA Systems:

- Redundant power supply, 115 VAC ± 10% Substitute frame 804056-31
- Redundant power supply, 230 VAC ± 10% Substitute frame 804056-32
- RS-422 host serial interface in lieu of RS-232 I/O. Specify when ordering
- Control panels. See Control Panels Section
- Performance specifications. See page 60

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
C = Component video (3 channels, YUV or RGB).
D = Serial digital video channel(s).

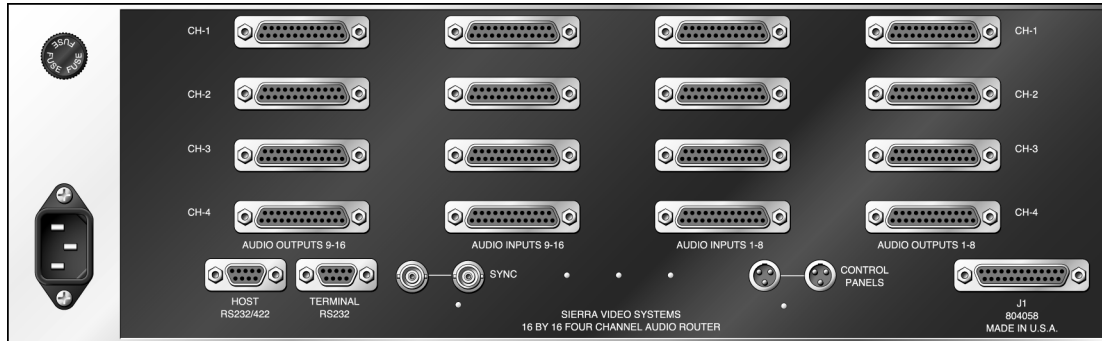
E = Digital (AES/EBU) audio channel.
P = Pulse channel for switching synchronizing signals.
S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
W = Wideband channel(s).
Y = Y-C or S-VHS video (2 channels, Y or C).



TAHOE 1616AAAA

This 3RU (5.25") chassis 16 x 16 audio routing switcher can accommodate up to 4 audio crosspoint switching modules. Plus, it has an RS-232 three-port serial interface module. It can be used as a stand-alone audio switching matrix, or it can be combined with other 16 x 16 routers to extend your system's audio or time code capabilities. When coupled with a 16 x 16 video matrix, no serial control module is needed in this frame.



TAHOE 1616AA

16 x 16 two channel audio routing switcher

1 - Tahoe 1616AAAA frame	804058
1 - serial control module	504001
2 - 16 x 16 audio crosspoint modules	504045

TAHOE 1616AAAA

16 x 16 four channel audio routing switcher

1 - Tahoe 1616AAAA frame	804058
1 - serial control module	504001
4 - 16 x 16 audio crosspoint modules	504045

Optional Configurations:

- TAHOE 1616A
- TAHOE 1616AAA

Options for 1616AAAA Systems:

Redundant power supply, 115 VAC ± 10%	Substitute frame 804058-31
Redundant power supply, 230 VAC ± 10%	Substitute frame 804058-32
RS-422 host serial interface in lieu of RS-232	Specify when ordering
Control panels	See Control Panels Section
Performance specifications	See page 60

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

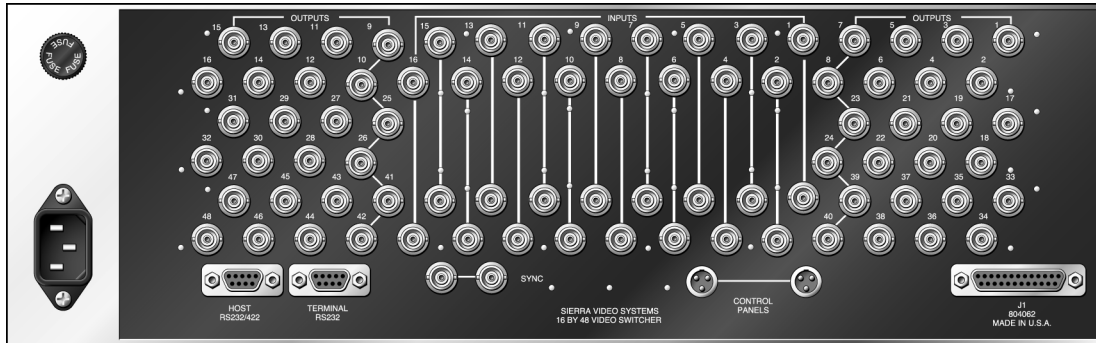
V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

TAHOE 1616V, 1632V, 1648V

The 3RU Tahoe 1648V frame is used for systems requiring more than 16 outputs. It's a single channel video routing switcher that uses a 3-port control system. Looping inputs provide a high degree of versatility, and remove the need for extra external distribution amplifiers in most installations. The 1648V can also be configured with fewer modules, paving the way for future expansion.

This versatile interface supports up to 64 pushbutton remote control panels, a terminal for setup and a host port for serial control. The host port allows control by a PC, an automation system or a touchscreen controller.

The companion Tahoe 1648AA audio frame is often control linked to the Tahoe 1648V video frame.



TAHOE 1616V

16 x 16 video routing switcher

1 - Tahoe 1648V frame	804062
1 - serial control module	504001
1 - 16 x 16 video crosspoint module	504044

TAHOE 1632V

16 x 32 video routing switcher

1 - Tahoe 1648V frame	804062
1 - serial control module	504001
2 - 16 x 16 video crosspoint modules	504044

TAHOE 1648V

16 x 48 video routing switcher

1 - Tahoe 1648V frame	804062
1 - serial control module	504001
3 - 16 x 16 video crosspoint modules	504044

Options for 1648V Systems:

- Redundant power supply, 115 VAC ± 10% Substitute frame 804062-31
- Redundant power supply, 230 VAC ± 10% Substitute frame 804062-32
- RS-422 host serial interface in lieu of RS-232 Specify when ordering
- Control panels See Control Panels Section
- Performance specifications See page 60

PRODUCT KEY

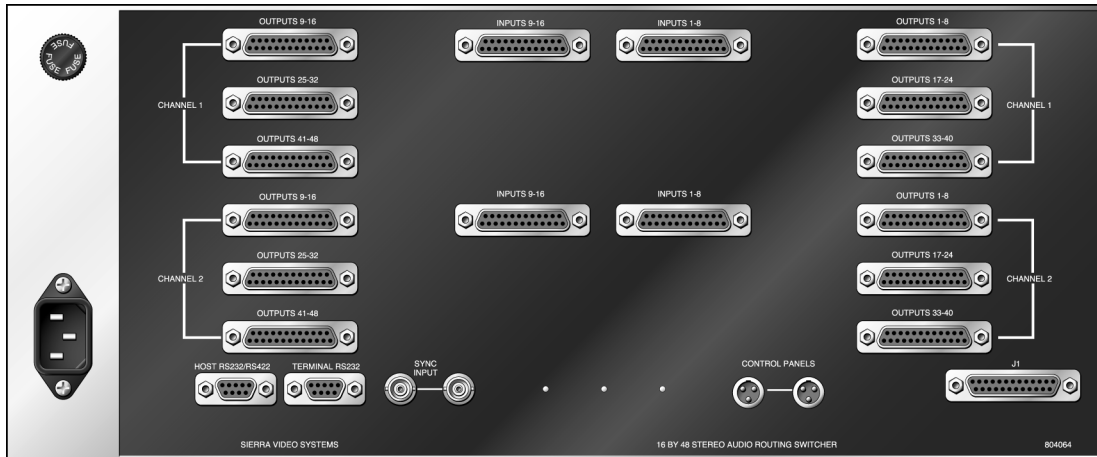
- A = Monaural audio channel. Also suitable for time code.
- E = Digital (AES/EBU) audio channel.
- V = Composite video (1 channel).
- C = Component video (3 channels, YUV or RGB).
- P = Pulse channel for switching synchronizing signals.
- W = Wideband channel(s).
- D = Serial digital video channel(s).
- S = Stereo audio channel switched as a pair.
- Y = Y-C or S-VHS video (2 channels, Y or C).



TAHOE 1648AA

This 4RU (7") frame supports up to six 16 x 16 audio crosspoint modules, making the 1648AA a great choice for single/dual channel or stereo audio applications. An RS-232 serial interface 3-port control system module enables control from a host computer.

The 1648AA supports up to 64 control panels using our Tahoe control system. They are frequently control linked to Tahoe family analog or Shasta family serial digital video routing switchers to build mixed-signal systems.



TAHOE 1632A

16 x 32 two channel audio routing switcher

1 - Tahoe 1648AA Frame	804064
1 - serial control module	504001
4 - 16 x 16 audio crosspoint modules	504045

TAHOE 1648AA

16 x 48 two channel audio routing switcher

1 - Tahoe 1648AA Frame	804064
1 - serial control module	504001
6 - 16 x 16 audio crosspoint modules	504045

Optional Configurations:

- TAHOE 1632A
- TAHOE 1648A

Options for 1648AA Systems:

Redundant power supply, 115 VAC ± 10%	.....	Substitute frame 804064-31
Redundant power supply, 230 VAC ± 10%	.....	Substitute frame 804064-32
RS-422 host serial interface in lieu of RS-232	.....	Specify when ordering
Control panels	.....	See Control Panels Section
Performance specifications.	.....	See page 60

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

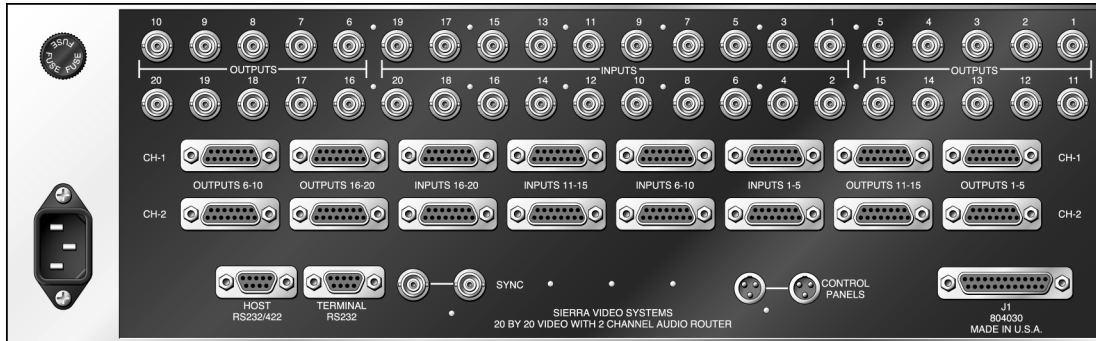
V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

TAHOE 2020VAA

Based on 20 x 10 switching modules, this 3RU (5.25") system can be configured as a 20 x 20 routing switcher simply by adding additional boards or submodules to the frame.

For system configurations requiring 20 video or audio outputs, two 20 x 10 video or audio crosspoint modules are used to make a 20 x 20 system. A variety of configurations can be created to meet your special needs—only our most popular systems are listed below.

As with all of the Tahoes, each signal level can be independently controlled through the three-port control system.



TAHOE 2010VAA

20 x 10 video routing switcher with two audio channels

1 - Tahoe 2020VAA frame	804030
1 - serial control module	504001
1 - 20 x 10 video crosspoint module	504034
2 - 20 x 10 audio crosspoint modules	504035

TAHOE 2020VAA

20 x 20 video routing switcher with two audio channels

1 - Tahoe 2020VAA frame	804030
1 - serial control module	504001
2 - 20 x 10 video crosspoint modules	504034
2 - 20 x 10 audio crosspoint modules	504035
2 - 20 x 10 audio crosspoint submodules	504038

Optional Configurations:

- TAHOE 2010V
- TAHOE 2010VA
- TAHOE 2020V
- TAHOE 2020VA

Options for 2020VAA Systems:

- Redundant power supply, 115 VAC ± 10% Substitute frame 804030-31
- Redundant power supply, 230 VAC ± 10% Substitute frame 804030-32
- RS-422 host serial interface in lieu of RS-232 Specify when ordering
- Control panels See Control Panels Section
- Performance specifications. See page 60

PRODUCT KEY

- A = Monaural audio channel. Also suitable for time code.
- C = Component video (3 channels, YUV or RGB).
- D = Serial digital video channel(s).
- E = Digital (AES/EBU) audio channel.
- P = Pulse channel for switching synchronizing signals.
- S = Stereo audio channel switched as a pair.
- V = Composite video (1 channel).
- W = Wideband channel(s).
- Y = Y-C or S-VHS video (2 channels, Y or C).

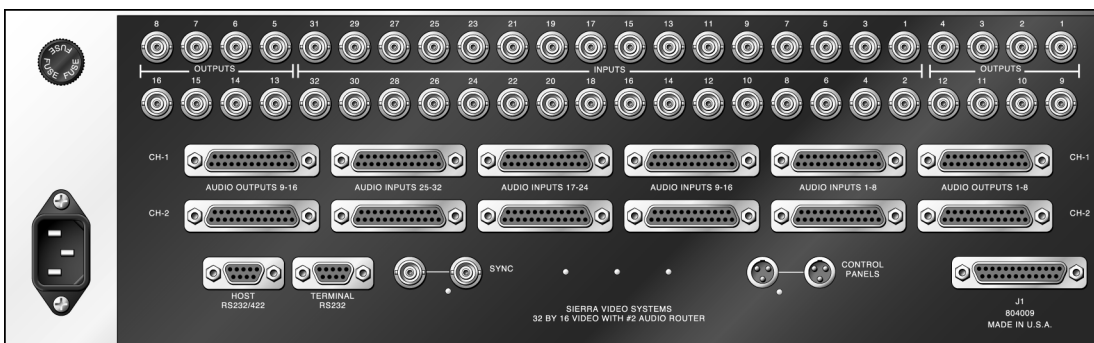


TAHOE 3216VAA

This 3RU (5.25") frame is still the most compact 32 input video plus stereo routing switcher in the world.

Based on 32 x 8 video switching modules and 32 x 16 audio boards, it includes our three-port control system serial interface module for complete switching flexibility.

An audio-only version of this frame (Tahoe 3216AA) can be operated either as a stand-alone or slaved to a component video-only frame. For applications requiring more than 16 outputs, consider using a combination of the Tahoe 3232V and 3232AA 3RU frames.



TAHOE 3216AA

32 x 16 two channel audio routing switcher

1 - Tahoe 3216VAA frame	804009
1 - serial control module	504001
2 - 32 x 16 audio crosspoint modules	504004

TAHOE 3216VAA

32 x 16 video routing switcher with two audio channels

1 - Tahoe 3216VAA frame	804009
1 - serial control module	504001
2 - 32 x 8 video crosspoint modules	504003
2 - 32 x 16 audio crosspoint modules	504004

Optional Configurations:

- TAHOE 3216V
- TAHOE 3216VA
- TAHOE 3216A

Options for 3216VAA Systems:

Redundant power supply, 115 VAC ± 10%	Substitute frame 804009-31
Redundant power supply, 230 VAC ± 10%	Substitute frame 804009-32
RS-422 host serial interface in lieu of RS-232	Specify when ordering
Control panels	See Control Panels Section
Performance specifications	See page 60

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

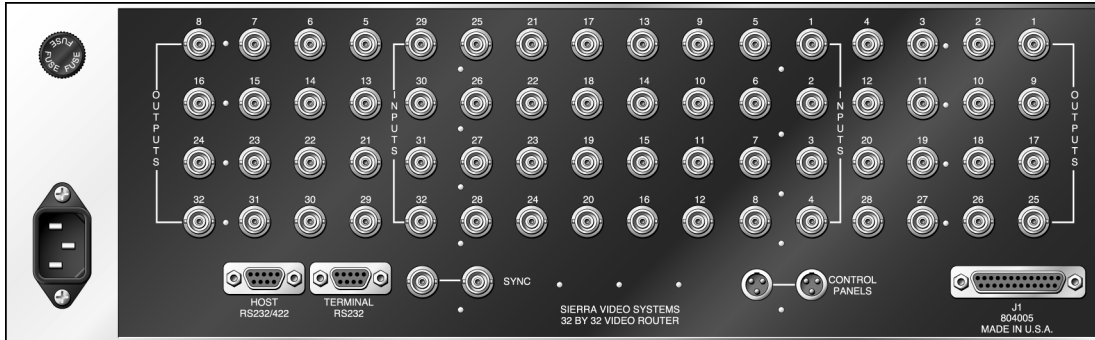
TAHOE 3232V

Flexible Expansion—This 3RU (5.25") 32-input chassis can be expanded in 8-output steps by increasing the number of 32 x 8 video crosspoint modules. It can be used by itself for single channel video routing switcher systems with 8, 16, 24 or 32 outputs.

It can also be control-linked to one or more Tahoe 3232AA frames to build multi-level VAA or VAAA systems. The 32 x 32 model results from four video crosspoint modules.

A companion audio-only frame can be coupled to this system to provide audio routing capabilities. (see the Tahoe 3232VAA)

For component video systems requiring of more than two channels of audio, consider one of our 9RU frames.



TAHOE 3216V

32 x 16 video routing switcher

1 - Tahoe 3232V frame	804005
1 - serial control module	504001
2 - 32 x 8 video crosspoint modules	504003

TAHOE 3232V

32 x 32 video routing switcher

1 - Tahoe 3232V frame	804005
1 - serial control module	504001
4 - 32 x 8 video crosspoint modules	50400

Optional Configurations:

TAHOE 3208V

TAHOE 3224V

Options for 3232V Systems:

Redundant power supply, 115 VAC ± 10%	Substitute frame 804005-31
Redundant power supply, 230 VAC ± 10%	Substitute frame 804005-3
RS-422 host serial interface in lieu of RS-232	Specify when ordering
Control panels	See Control Panels Section
Performance specifications.	See page 60

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
C = Component video (3 channels, YUV or RGB).
D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
P = Pulse channel for switching synchronizing signals.
S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
W = Wideband channel(s).
Y = Y-C or S-VHS video (2 channels, Y or C).



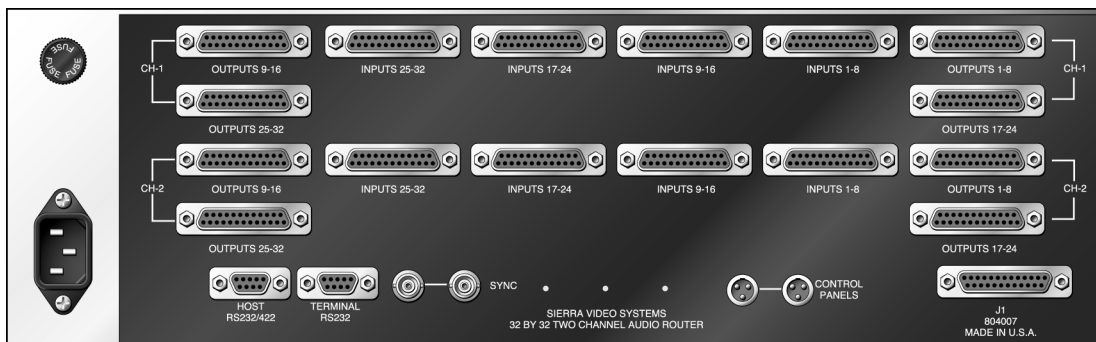
TAHOE 3232AA

This 3RU frame is available in monaural or dual channel audio versions for audio-only or video-with-audio routing applications. The system can be configured either as a 32 x 16 or a 32 x 32 model.

This frame can be used in two ways:

- By itself, for one or two channel audio routing switcher systems requiring 16 or 32 outputs
- Control-linked to one or more Tahoe 3232V systems to build multi-level VAA systems

When control linked to another system, Tahoe 3232AA doesn't need the 504001 serial control module. For system requirements of more than four channels of audio, one of our 9RU frames might be a better solution.



TAHOE 3216AA

32 x 16 two channel audio routing switcher

1 - Tahoe 3232AA frame	804007
1 - serial control module	504001
2 - 32 x 16 audio crosspoint modules	504004

TAHOE 3232AA

32 x 32 two channel audio routing switcher

1 - Tahoe 3232AA frame	804007
1 - serial control module	504001
4 - 32 x 16 audio crosspoint modules	504004

Optional Configurations:

- TAHOE 3216A
- TAHOE 3232A

Options for 3232AA Systems:

Redundant power supply, 115 VAC ± 10%	Substitute frame 804007-31
Redundant power supply, 230 VAC ± 10%	Substitute frame 804007-32
RS-422 host serial interface in lieu of RS-232	Specify when ordering
Control panels	See Control Panels Section
Performance specifications	See page 60

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

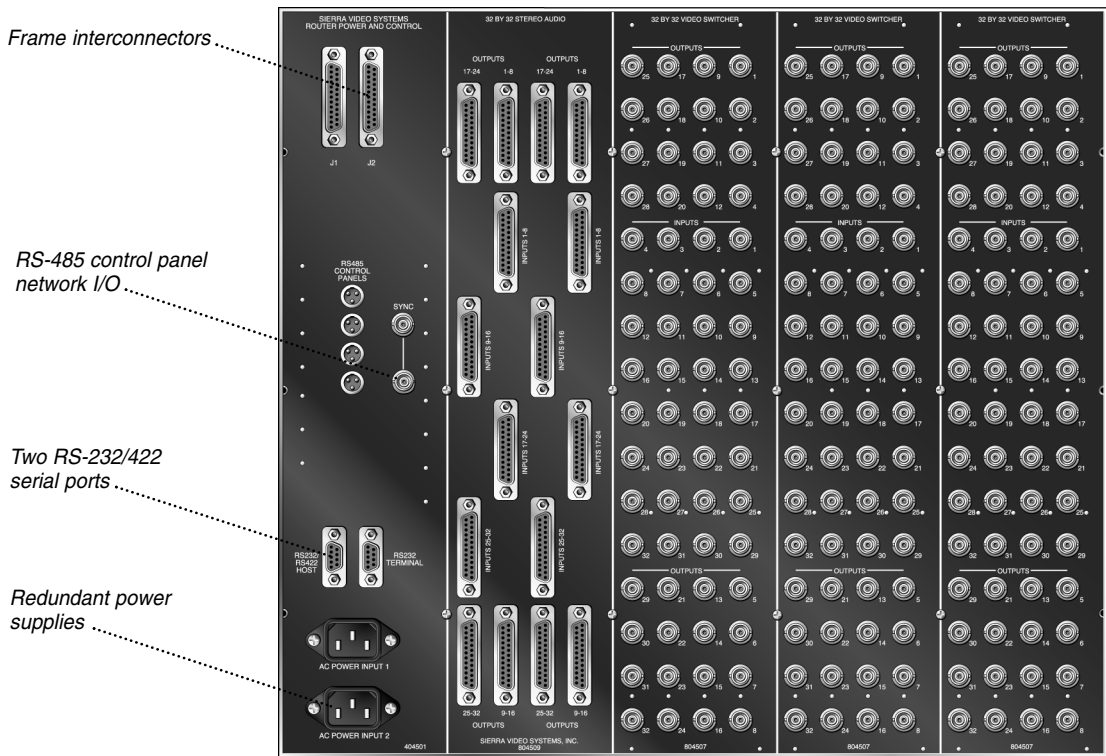
TAHOE 9RU FRAME: MAXIMUM FLEXIBILITY

The 3232CAA, 3264VAA and 32128V frames offer amazing flexibility and can be configured in numerous ways using our convenient front plug-in modules. These Tahoe modules can be interchanged or daisy-chained to house a number of possible audio or video inputs and outputs. With the Tahoe 9RU (15.75"), you can accommodate future expansion with one of the most flexible routing switchers in the industry.

- Component video • Audio-only • Stereo or dual channel audio • Video only • Video-plus-audio
- Standard three-port serial control module • Redundant power supplies and RS-232/422 standard

TAHOE 3232CAA

This 9RU frame accommodates up to four Tahoe 32 x 8 video crosspoint modules in each of three channels to make up a 32 x 32 component video routing switcher. This system can also be fitted with up to four of our 32 x 16 audio crosspoint modules providing for 32 x 16 or 32 x 32 matrix sizes in the two available audio channels.



TAHOE 3232CAA

32 x 32 component video routing switcher with two audio channels

- 1 - Tahoe 3232CAA frame 804521
- 1 - serial control module 504001
- 12 - 32 x 8 video crosspoint modules 504003
- 4 - 32 x 16 audio crosspoint modules 504004

Optional Configurations:

- TAHOE 3224C
- TAHOE 3232C
- TAHOE 3232CA

Options for 3232CAA Systems:

- Redundant power supply, 230 VAC ± 10% Substitute frame 804521-32
- RS-422 host serial interface in lieu of RS-232 Specify when ordering
- Control panels See Control Panels Section
- Performance specifications See page 60

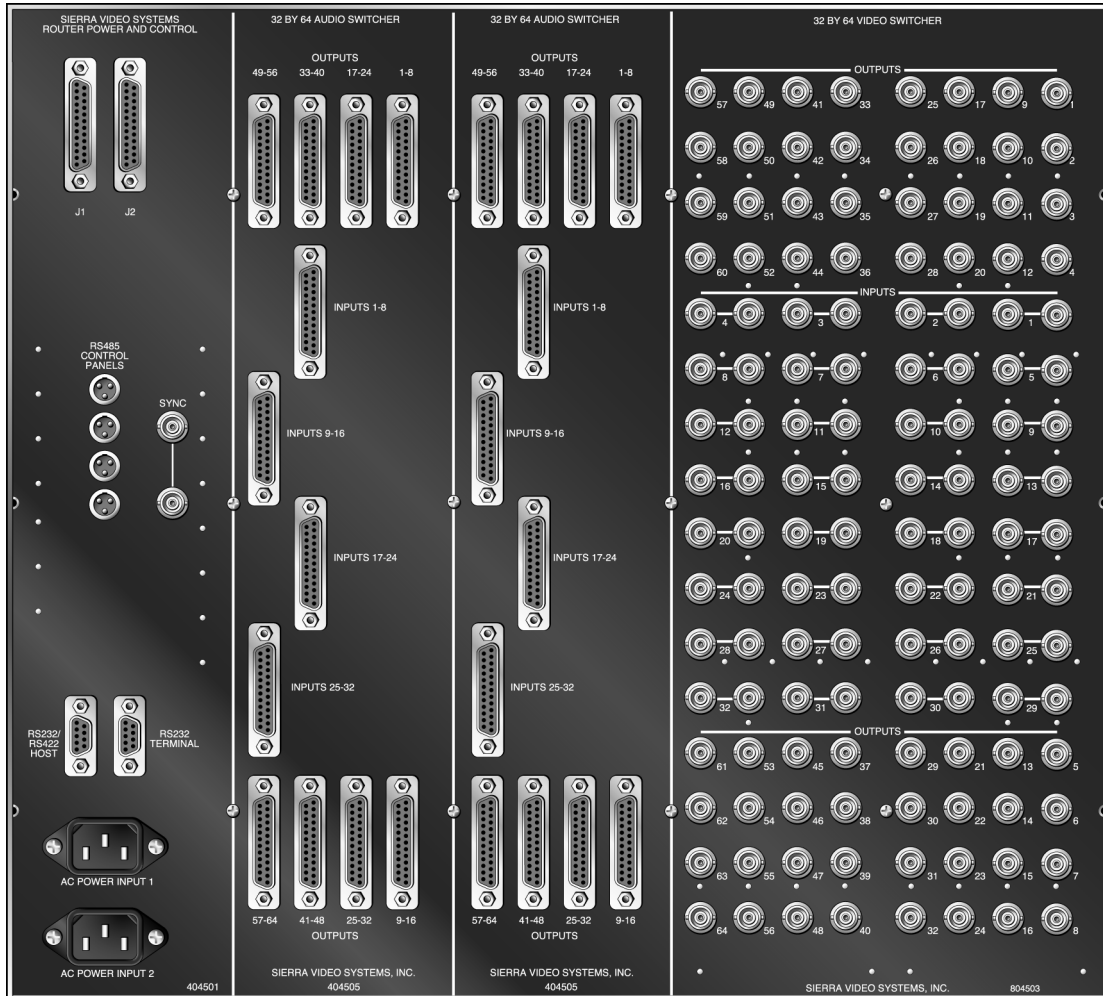
PRODUCT KEY

- A = Monaural audio channel. Also suitable for time code.
- C = Component video (3 channels, YUV or RGB).
- D = Serial digital video channel(s).
- E = Digital (AES/EBU) audio channel.
- P = Pulse channel for switching synchronizing signals.
- S = Stereo audio channel switched as a pair.
- V = Composite video (1 channel).
- W = Wideband channel(s).
- Y = Y-C or S-VHS video (2 channels, Y or C).



TAHOE 3264VAA

This 9RU (15.75") frame accommodates up to eight 32x8 video crosspoint modules and eight 32x16 audio crosspoint modules. Start with 32 inputs and populate outputs from 32, 40, 48, 56 up to 64 composite video and audio dual channel outputs.



TAHOE 3232V

32 x 32 video routing switcher

1 - Tahoe 3264VAA frame	804523
1 - serial control module	504001
4 - 32 x 8 video crosspoint modules	504003

TAHOE 3264V

32 x 64 video routing switcher

1 - Tahoe 3264VAA frame	804523
1 - serial control module	504001
8 - 32 x 8 video crosspoint modules	504003

TAHOE 3248VA

32 x 64 video routing switcher with one audio channel

1 - Tahoe 3264VAA frame	804523
1 - serial control module	504001
6 - 32 x 8 video crosspoint modules	504003
3 - 32 x 16 audio crosspoint modules	504004

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

TAHOE 3264VA

32 x 64 video routing switcher with one audio channel

1 - Tahoe 3264VAA frame	804523
1 - serial control module	504001
8 - 32 x 8 video crosspoint modules	504003
4 - 32 x 16 audio crosspoint modules	504004

TAHOE 3232VAA

32 x 32 video routing switcher with two audio channels

1 - Tahoe 3264VAA frame	804523
1 - serial control module	504001
4 - 32 x 8 video crosspoint modules	504003
4 - 32 x 16 audio crosspoint modules	504004

TAHOE 3264VAA

32 x 64 video routing switcher with two audio channels

1 - Tahoe 3264VAA frame	804523
1 - serial control module	504001
8 - 32 x 8 video crosspoint modules	504003
8 - 32 x 16 audio crosspoint modules	504004

Optional Configurations:

- TAHOE 3240V**
- TAHOE 3248V**
- TAHOE 3256V**
- TAHOE 3248VAA**

Options for 3264VAA Systems:

Redundant power supply, 230 VAC ± 10% Substitute frame 804523-32
 RS-422 host serial interface in lieu of RS-232 Specify when ordering
 Control panels See Control Panels Section
 Performance specifications. See page 60

Note: In addition to the above systems, this frame can be used for a number of one, two, three or four channel audio systems from 16 to 128 outputs.

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

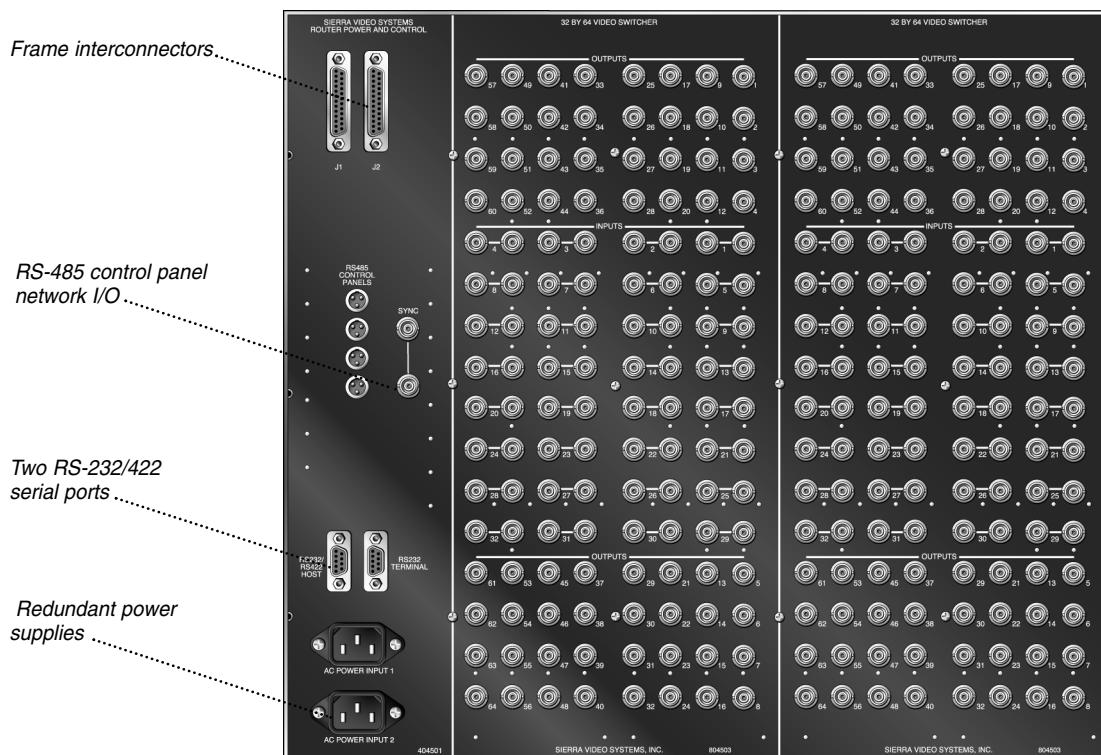
E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).



TAHOE 32128V

This 9RU (15.75") frame accommodates up to sixteen Tahoe 32x8 video crosspoint modules to make up a 32x128 composite video routing switcher. Start with 32 inputs and populate outputs from 96, 104, 112, 120 up to 128 composite video outputs.



TAHOE 32128V

32 x 128 video routing switcher

1 - Tahoe 32128V frame	804524
1 - serial control module	504001
16 - 32 x 8 video crosspoint modules	504003

TAHOE 3296V

32 x 96 video routing switcher

1 - Tahoe 32128V frame	804524
1 - serial control module	504001
12 - 32 x 8 video crosspoint modules	504003

Optional Configurations:

- TAHOE 32104V
- TAHOE 32112V
- TAHOE 32120V

Options for 32128V Systems:

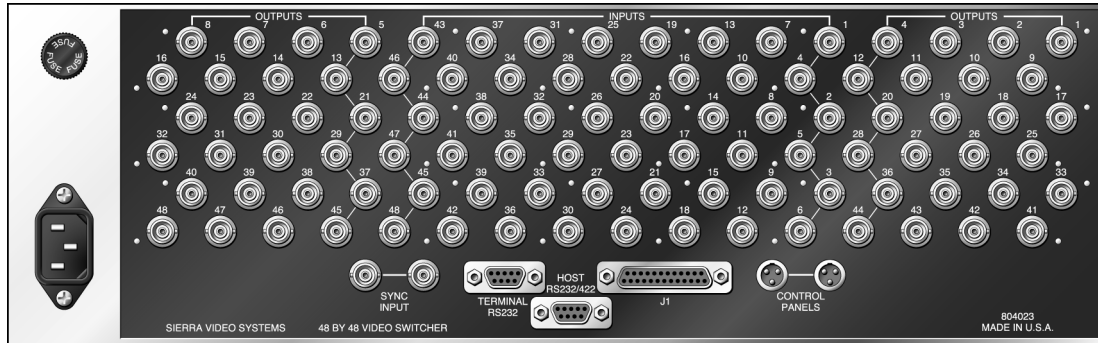
Redundant power supply, 230 VAC ± 10% Substitute frame 804524-32
 RS-422 host serial interface in lieu of RS-232 Specify when ordering
 Control panels See Control Panels Section
 Performance specifications. See page 60

PRODUCT KEY

- A = Monaural audio channel. Also suitable for time code.
- C = Component video (3 channels, YUV or RGB).
- D = Serial digital video channel(s).
- E = Digital (AES/EBU) audio channel.
- P = Pulse channel for switching synchronizing signals.
- S = Stereo audio channel switched as a pair.
- V = Composite video (1 channel).
- W = Wideband channel(s).
- Y = Y-C or S-VHS video (2 channels, Y or C).

TAHOE 4848V

The 3RU (5.25") Tahoe 4848V frame is used by itself for a single channel video routing switcher with 8, 16, 24, 32, 40 or 48 outputs. Or, it can also be control-linked to one or more 4848AA frames to build multi-level VAA or VAAAA systems. For component video, two additional 4848V frames can be added and the system can be controlled by one control module.



TAHOE 4808V

48 x 8 video routing switcher

1 - Tahoe 4848V frame	804023
1 - serial control module	504001
1 - 48 x 8 video crosspoint module	504022

TAHOE 4832V

48 x 32 video routing switcher

1 - Tahoe 4848V frame	804023
1 - serial control module	504001
4 - 48 x 8 video crosspoint module	504022

TAHOE 4848V

48 x 48 video routing switcher

1 - Tahoe 4848V frame	804023
1 - serial control module	504001
6 - 48 x 8 video crosspoint module	504022

Optional Configurations:

- TAHOE 4816V
- TAHOE 4824V
- TAHOE 4840V

Options for 4848V Systems:

- Redundant power supply, 115 VAC ± 10% Substitute frame 804023-31
- Redundant power supply, 230 VAC ± 10% Substitute frame 804023-32
- RS-422 host serial interface in lieu of RS-232 Specify when ordering
- Control panels See Control Panels Section
- Performance specifications. See page 60

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
C = Component video (3 channels, YUV or RGB).
D = Serial digital video channel(s).

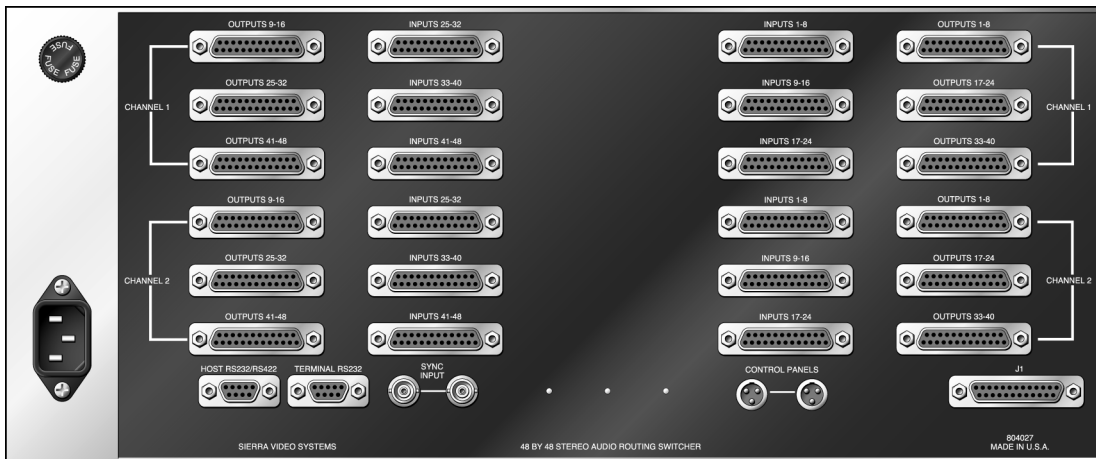
E = Digital (AES/EBU) audio channel.
P = Pulse channel for switching synchronizing signals.
S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
W = Wideband channel(s).
Y = Y-C or S-VHS video (2 channels, Y or C).



TAHOE 4848AA

The 4RU (7") Tahoe 4848AA frame can be used two ways. It can be used by itself for one or two channel audio routing switcher requiring 16, 32 or 48 outputs. Or it can also be control-linked to one or more 4848V switchers to configure a multi-level 4848VAA system. When control linked to another switcher, the model 4848AA does not require the 504001 serial control module.



TAHOE 4816A

48 x 16 one channel audio routing switcher

1 - Tahoe 4848AA frame	804027
1 - serial control module	504001
1 - 48 x 16 audio crosspoint module	504026

TAHOE 4848A

48 x 48 one channel audio routing switcher

1 - Tahoe 4848AA frame	804027
1 - serial control module	504001
3 - 48 x 16 audio crosspoint module	504026

TAHOE 4816AA

48 x 16 two channel audio routing switcher

1 - Tahoe 4848AA frame	804027
1 - serial control module	504001
2 - 48 x 16 audio crosspoint module	504026

TAHOE 4848AA

48 x 48 two channel audio routing switcher

1 - Tahoe 4848AA frame	804027
1 - serial control module	504001
6 - 48 x 16 audio crosspoint module	504026

Optional Configurations:

- TAHOE 4832A
- TAHOE 4832AA

Options for 4848AA Systems:

- Redundant power supply, 115 VAC ± 10% Substitute frame 804027-31
- Redundant power supply, 230 VAC ± 10% Substitute frame 804027-32
- RS-422 host serial interface in lieu of RS-232 Specify when ordering
- Control panels See Control Panels Section
- Performance specifications. See page 60

PRODUCT KEY

- A = Monaural audio channel. Also suitable for time code.
- C = Component video (3 channels, YUV or RGB).
- D = Serial digital video channel(s).
- E = Digital (AES/EBU) audio channel.
- P = Pulse channel for switching synchronizing signals.
- S = Stereo audio channel switched as a pair.
- V = Composite video (1 channel).
- W = Wideband channel(s).
- Y = Y-C or S-VHS video (2 channels, Y or C).

TAHOE FAMILY PERFORMANCE SPECIFICATIONS

VIDEO INPUT CHARACTERISTICS

Input Impedance	75 Ω s
Return Loss	40 dB @ 5 MHz
External Sync	200mV to 8 V p-p

VIDEO OUTPUT CHARACTERISTICS

Impedance	75 Ω s
Return Loss	35 dB @ 5 MHz
DC on Signal	\pm 50 mV

COMPOSITE VIDEO SYSTEM PERFORMANCE

Gain Adjust Range (Nominal level = 1 V p-p)	Unity \pm 2 dB
Frequency Response	\pm 0.1 dB, 30 Hz to 8 MHz +0/-3 dB to 40 MHz
Diff. Phase Error	\pm 0.1 degree @ 3.58 or 4.43 MHz
Diff. Gain Error	\pm 0.1 percent @ 3.58 or 4.43 MHz
Crosstalk	-60 dB @ 5 MHz (All hostile)
Signal-to-Noise Ratio	80 dB to 5 MHz

COMPONENT VIDEO SYSTEM PERFORMANCE

All Tahoes:

Gain Adjust Range (Nominal level = 1 V p-p)	Unity \pm 2dB
Diff. Phase/Gain Error	\pm 0.1 degree/ \pm 0.1% @ 5.0 MHz
Crosstalk	-60 dB @ 5 MHz (All hostile); 40 dB @ 40 MHz (Bracketed hostile)
Signal-to-Noise Ratio	80 dB to 5 MHz; 70 dB to 40 MHz
Rise Time	4 nanoseconds

AUDIO OUTPUT CHARACTERISTICS

Maximum Source Output Level	Manzanita Series +18 dBm, All Others +24 dBm
Output Impedance	150 Ω s, balanced

AUDIO SYSTEM PERFORMANCE

Voltage Gain	Unity \pm 0.1 dB (High-Z balanced output)
Frequency Response	20 to 20 KHz \pm 0.1 dB, -3 dB @ 100 KHz
S/N Ratio (20 to 20 KHz)	110 dB ref. to +24 dBm
Crosstalk (All inputs hostile)	80 dB @ 15 KHz
IM & THD (20 to 20 KHz)	0.05% to +24 dBm

TAHOE SERIES CONTROL SYSTEM CHARACTERISTICS

Control Panel Port (Port 1)	RS-485
Total Number of Panels Supported	64
Cable Type	2-wire shielded (Belden 8451 or equal)
Maximum Total Cable Length	5000 ft. (1500 m)
Terminal Port (Port 2)	RS-232 @ 9600 or 19.2K Baud
Host Port (Port 3)	RS-232 (RS-422 optional) @ 1.2K, 9.6K, 38.4K, and 115.2K bps

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

SHASTA FAMILY



Mt. Shasta is one of the highest mountains in the United States—a once-fiery volcano that rises into the skies in the far north of California. Covered with ice and snow year-round, it meets the demand posed by serious mountaineers. The Shastas are our rugged family of 1.465Gbps HD video, serial digital video, DVB-ASI, and AES/EBU audio routing switchers. Like the mountain, they are able to accommodate the most demanding applications.

New from SVS, the Shasta 1602HD Live Switch for “On-Air” switching with embedded audio. This 1RU frame is available as a 16x2, 8x2 and 4x2. The Shasta family offers serial digital matrix switching from 8x8 to 32x32. The Shasta family also offers DVB-ASI capability for CATV applications. All models feature 300M automatic cable equalization for data rates from 140 to 400Mbps. The Shasta 88D even accepts the new ATSC digital standard. For serial digital audio, the family can handle all standard audio data rates.

- 1.485Gbps HD video
- Serial digital video
- DVB-ASI
- AES/EBU digital and analog audio
- 8 basic frames, dozens of system configurations
- Frames accept any mix of digital & analog audio cross-point modules
- Variety of control panels from the new SCP control panels to Tahoe control systems



SHASTA



SHASTA 1602HD-LS LIVE SWITCH

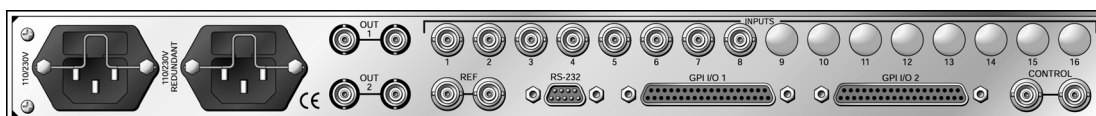
Ideal for any "On-Air" HD Broadcaster — The Shasta 1602HD-LS is a sophisticated HD router that provides for a "clean" switch of any HD video format with embedded audio signals. This routing switcher has some of the same circuitry found in expensive on-air production switchers. An adjustable audio fade is incorporated to give the user flexibility in finding the optimum transition rate and shape.

GPI I/O's allow for remote switching and tally monitoring. Redundant power supplies and RS-232 are standard. Available in 16x2, 8x2 and 4x2. 1RU.



SHASTA 1602HD-LS 906162

16 x 2 "Live Switch" 1.485Gbps HD video routing switcher with power supply



SHASTA 802HD-LS 906082

8 x 2 "Live Switch" 1.485Gbps HD video routing switcher with power supply

Optional Configurations:

SHASTA 402HD-LS 906042
 Performance specifications. See page 71



Shasta 1602HD-LS local control panel

SHASTA LS REMOTE CONTROL PANELS with RJ11 connectivity



Shasta 1602HD-LS remote control panel 806162



Shasta 802HD-LS remote control panel 806082



Shasta 402HD-LS remote control panel 806042

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

SHASTA

SHASTA 1616HD

The 1RU (1.75") 1616HD provides 1.485Gbps serial digital HDTV routing of 16 inputs to 16 outputs. This versatile frame can also be depopulated with fewer inputs and outputs to offer smaller and cost-effective HD routing. Configurations include 8 x 8, 16 x 1, 16 x 4, 16 x 8 and the fully populated 16 x 16.

This high density solution offers Tahoe control system compatibility for expansion to other frames or slave mode access from other Tahoe controllers. Two local RS-232/RS-422 ports allow versatile terminal and machine control interface while a local control panel option allows the entire routing solution (including user interface) to fit in one rack unit of space. The 1616HD data rate range extends down to include 270Mbps signals while providing automatic cable equalization for all 1.485Gbps inputs. The versatile vertical interval switching reference input accepts NTSC, PAL, composite sync, V drive, HD tri-level sync, and two non-standard composite sync signals used in the graphics industry.



SHASTA 1616HD

906016

16 x 16 1.485Gbps HD video routing switcher with power supply



SHASTA 88HD

906008

8 x 8 1.485Gbps HD video routing switcher with power supply

Optional Configurations:

SHASTA 161HD — 16 x 1 1.485Gbps HD video routing switcher	906161
SHASTA 164HD — 16 x 4 1.485Gbps HD video routing switcher	906164
SHASTA 168HD — 16 x 8 1.485Gbps HD video routing switcher	906168

Options for HD Systems:

230 VAC ± 10% operation	906XXX-30
Performance specifications	See page 72



Local control panel for all HD configurations

806011

Remote control panels

See Control Panels Section

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
C = Component video (3 channels, YUV or RGB).
D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
P = Pulse channel for switching synchronizing signals.
S = Stereo audio channel switched as a pair.

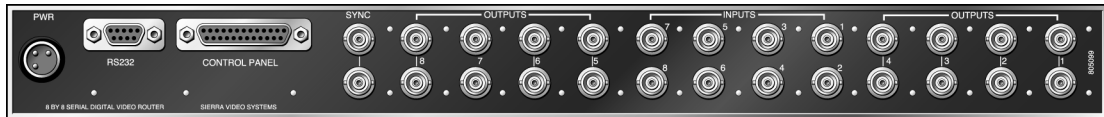
V = Composite video (1 channel).
W = Wideband channel(s).
Y = Y-C or S-VHS video (2 channels, Y or C).



SHASTA 88D

Shasta 88D is a compact 1RU, economical serial digital video switcher, ideal for applications such as monitor switching or VTR input selection. A variety of single bus and XY control panel options are available, as well as an RS-232 interface for external computer control. The 88D is powered by an external wall-mounted power supply with two outputs per channel.

Link the Shasta 88D with the Sierra 88VS 8 x 8 analog or the 88E 8 x 8 digital routing switcher for an efficient mixed-system configuration.



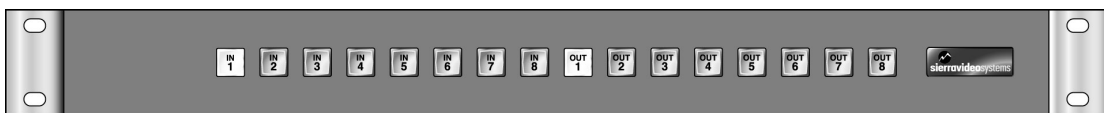
SHASTA 88D	905098
8 x 8 serial digital video routing switcher	
230 VAC ± 10% operation	905098-30
Shasta 88D equipped with internal serial interface	905598
230 VAC ± 10% operation	905598-30

SHASTA 88E

This 1RU design is an ideal routing switcher for either stand alone applications requiring the routing of AES digital audio, or for use in combination with the 88D to provide an AFV solution.



SHASTA 88E	905043
8 x 8 serial digital audio (AES) routing switcher	
Sierra 88S 8x8 analog stereo audio routing switcher	903039
Control panels (uses <u>Sierra 88</u> control panels)	See page 24
Performance specifications	See page 71



Local control panel for all 88D & 88S configurations	803686
Remote control panels	See Sierra Control page 24

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

SHASTA 161D

Shasta 161D is the smallest member of the Shasta family. This compact 1RU (1.75") design is an ideal routing switcher for stand alone applications requiring the routing of digital video for monitoring applications. A variety of single bus and XY control panel options are available, as well as an RS-232 interface for external computer control. The 161D is powered by an external wall-mounted power supply.



SHASTA 161D

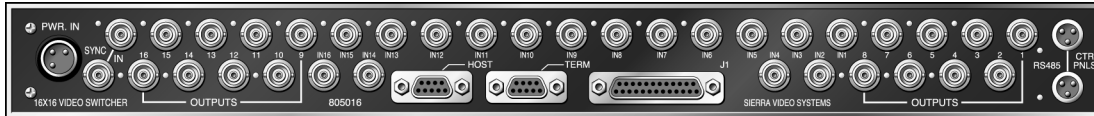
905235

16 x 1 serial digital video routing switcher

- RS-232 serial control 803140
- 230 VAC ± 10% operation 905235-30
- Control panels (uses Manzanita 161 control panels) See page 19
- Performance specifications. See page 71

SHASTA 1616D

Shasta 1616D consists of a single level of serial digital video. The 1616D system described below is a very compact 1RU video-only design. If you require audio switching, please see the 3RU 1616DEE systems.



SHASTA 1616D

905016

1RU 16 x 16 serial digital video routing switcher

- 230 VAC ± 10% operation 905016-30
- RS-422 serial interface option in lieu of RS-232 Specify when ordering
- Control panels See Control Panels Section
- Performance specifications. See page 71

PRODUCT KEY

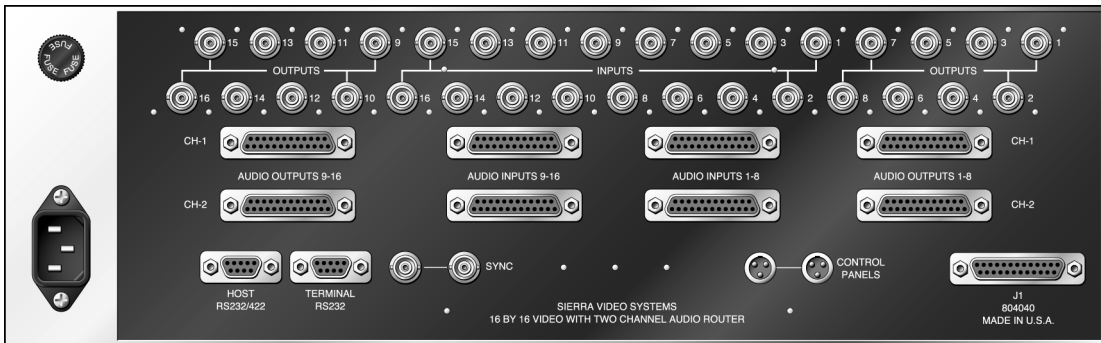
- A = Monaural audio channel. Also suitable for time code.
- E = Digital (AES/EBU) audio channel.
- V = Composite video (1 channel).
- C = Component video (3 channels, YUV or RGB).
- P = Pulse channel for switching synchronizing signals.
- W = Wideband channel(s).
- D = Serial digital video channel(s).
- S = Stereo audio channel switched as a pair.
- Y = Y-C or S-VHS video (2 channels, Y or C).



SHASTA 1616DEE AND 1616DAA

Ideal as main routing switchers for small broadcast facilities and radio stations, Shasta 1616DEE and Shasta 1616DAA are serial digital video switchers with up to two levels of digital or analog audio switching. This compact 3RU (5.25") frame can also be configured with only one channel SDI video or only one channel balanced AES/EBU audio for maximum flexibility. These unique routing switchers can also route DVB-ASI signals. Digital video input and output connectors are BNCs while audio I/Os are 25 pin "D" connectors.

Any 1616DEE routing switcher can be combined with other Sierra Video Systems 16 x 16 matrices—digital audio, analog audio, HD video, or analog video—as your system needs require. The 3RU 1616DEE will accept a 504001 serial control module for stand alone operation. They are compatible with a wide range of control options, including serial control panels, parallel control panels (using our Hub Controller) and serial computer control.



SHASTA 1616DEE

16 x 16 serial digital video & two level digital audio routing switcher

1 - 1616DEE frame	804040
1 - serial control module	504001
1 - 16 x 16 serial digital video crosspoint module	505015
2 - 16 x 16 serial digital audio crosspoint module	505106

SHASTA 1616EE

16 x 16 two level serial digital audio routing switcher

1 - 1616DEE frame	804040
1 - serial control module	504001
2 - 16 x 16 serial digital audio crosspoint module	505106

SHASTA 1616DAA

16 x 16 serial digital video & two level analog audio routing switcher

1 - 1616DEE frame	804040
1 - serial control module	504001
1 - 16 x 16 serial digital video crosspoint module	505015
2 - 16 x 16 analog audio crosspoint module	504045

(More configurations are listed on the following page)

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
C = Component video (3 channels, YUV or RGB).
D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
P = Pulse channel for switching synchronizing signals.
S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
W = Wideband channel(s).
Y = Y-C or S-VHS video (2 channels, Y or C).

SHASTA 1616DE

16 x 16 serial digital video & one level digital audio routing switcher

1 - 1616DEE frame	804040
1 - serial control module	504001
1 - 16 x 16 serial digital video crosspoint module	505015
1 - 16 x 16 serial digital audio crosspoint module	505106

SHASTA 1616E

16 x 16 one level serial digital audio routing switcher

1 - 1616DEE frame	804040
1 - serial control module	504001
1 - 16 x 16 serial digital audio crosspoint module	505106

SHASTA 1616DA

16 x 16 serial digital video & one level analog audio routing switcher

1 - 1616DEE frame	804040
1 - serial control module	504001
1 - 16 x 16 serial digital video crosspoint module	505015
1 - 16 x 16 analog audio crosspoint module	504045

SHASTA 1616D

16 x 16 serial digital video routing switcher

1 - 1616DEE frame	804040
1 - serial control module	504001
1 - 16 x 16 serial digital video crosspoint module	505015

Options for 1616DEE and 1616DAA Systems:

Redundant power supply, 115 VAC \pm 10%	Substitute frame 804040-41
Redundant power supply, 230 VAC \pm 10%	Substitute frame 804040-42
Control panels	See Control Panels Section
Performance specifications	See page 71

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).



SHASTA 3232DEE AND 3232DAA

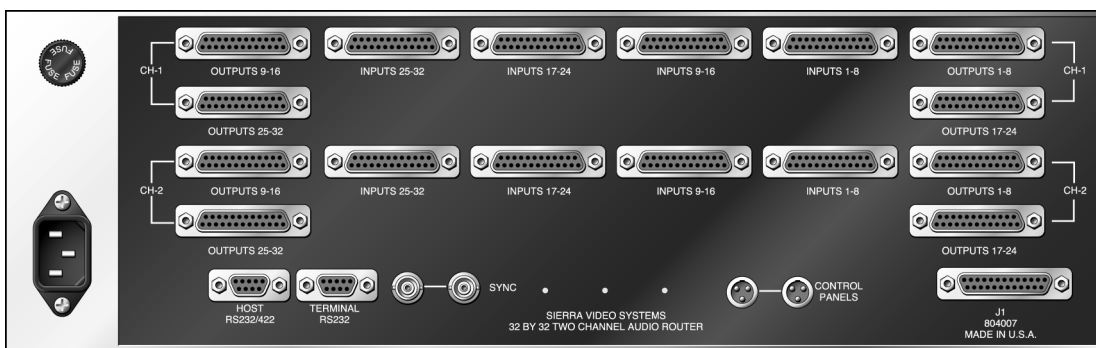
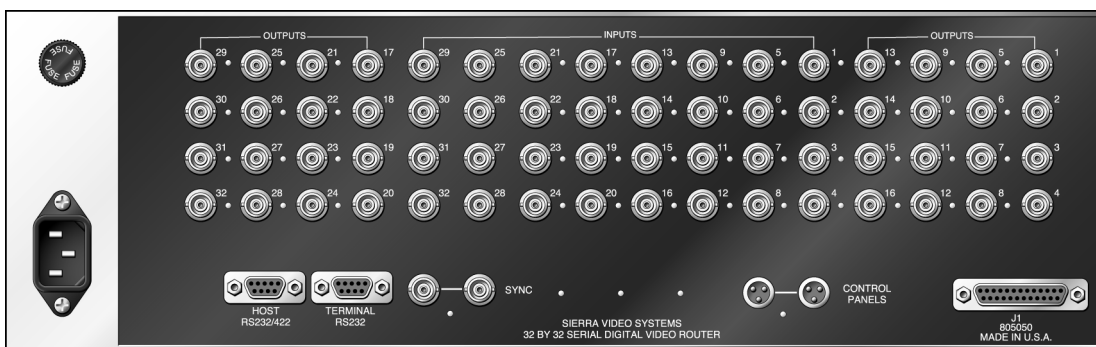
Shasta 3232 family of switching matrices can be combined to flexibly address the diverse switching requirements of today's digital and hybrid analog/digital facilities. The 3232D is a 32 x 32 serial digital video matrix that is housed in a 3RU frame. It is designed for applications where rack space is limited.

The companion 3RU audio frame can be configured as one or two levels of digital or analog audio. Video and audio frames can be used for standalone video-only or audio-only applications. Or, they can be combined in a variety of standard and custom configurations. They can also be combined with other SVS switching matrices to accommodate special system requirements.

Compatible with SVS Tahoe control panels, the Shasta 3232 features a dedicated serial port for control by an external computer.

Shasta 3232DEE consists of two separate 3RU frames: a unique 32 x 32 serial digital video switcher (805050) and a audio frame(804007). The 32 x 16 serial digital audio switching module is plug-in compatible with our analog audio switching module. This two-frame combination can be used to build an all-digital video plus audio routing switcher, as well as mixed systems with digital video and analog audio, or analog audio and digital audio.

A second 804007 can be linked to this system, further increasing the number of digital or analog audio channels.



(Configurations are listed on the following page)

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

SHASTA 3232DEE

32 x 32 serial digital video with two channel digital audio

1 - 3232D frame	805050
1 - 3232AA frame	804007
1 - serial control module	504001
1 - 32 x 32 digital video crosspoint module	505051
4 - 32 x 16 digital audio crosspoint modules	505052

SHASTA 3232DAA

32 x 32 serial digital video with two channel analog audio

1 - 3232D frame	805050
1 - 3232AA frame	804007
1 - serial control module	504001
1 - 32 x 32 digital video crosspoint module	505051
4 - 32 x 16 analog audio crosspoint modules	504004

SHASTA 3232D

32 x 32 serial digital video routing switcher

1 - 3232D frame	805050
1 - serial control module	504001
1 - 32 x 32 serial digital video crosspoint modules	505051

SHASTA 3216EE

32 x 16 two channel serial digital audio

1 - 3232EE frame	804007
1 - serial control module	504001
2 - 32 x 16 serial digital audio crosspoint modules	505052

Optional Configurations:

- SHASTA 3232DE** — digital video & digital audio
- SHASTA 3232DA** — digital video & analog audio
- SHASTA 3232EE** — two channel digital audio only
- SHASTA 3232E** — one channel digital audio only
- SHASTA 3216E** — one channel digital audio only

Options for 3232DEE & 3232DAA Systems:

- Redundant power supply, 115 VAC \pm 10% Substitute frame 805050-31
and frame 804007-31
- Redundant power supply, 230 VAC \pm 10% Substitute frame 805050-32
and frame 804007-32
- RS-422 host serial interface in lieu of RS-232 I/O
- Interconnect cable is required Length determined at time of order

Optional Remote Control Panels: See Control Panels Section

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
C = Component video (3 channels, YUV or RGB).
D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
P = Pulse channel for switching synchronizing signals.
S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
W = Wideband channel(s).
Y = Y-C or S-VHS video (2 channels, Y or C).



SHASTA FAMILY PERFORMANCE SPECIFICATIONS

HIGH DEFINITION ROUTERS

Data rates	200Mbps - 1.485Gbps SMPTE-259M, SMPTE-292
Data types	8 or 10-bit serial digital video
Input cable equalization	automatic up to 150 meters for 1.485 Gbps
Input return loss	>15dB @ 1.5 Gbps
Cable type	Belden 8281, PSF 1/3 or equivalent
Output level	800 mv p-p +/-10%
Output jitter	120 ps p-p worst case
Output return loss	>15dB @ 1.485 Gbps
Video I/O connectors	75 Ω s BNC
Number of outputs per channel	1
Frame Height	1RU (1.75")
Frame Depth	17"
Weight	20 lbs
Input Voltage	115 VAC or 230 VAC \pm 10%
Power Requirements	40 VA
Operating Temperature Range	0 - 40 degrees C

SERIAL DIGITAL VIDEO ROUTERS

Data rates	
88D	19Mbps to 400Mbps
16x1 and 16x16 through 32x32	143, 177, 270, and 360 Mbits/sec
Data types	8 or 10-bit serial digital video per SMPTE-259
Input cable equalization	300 meters to 143 & 177 Mbps 200 meters to 270 & 360 Mbits/sec
Input return loss	15dB @ 270 Mbps
Cable type	Belden 8281, PSF 1/3 or equivalent
Output level	800 mv +/-10%
Output jitter	500 ps p-p worst case
Output return loss	15dB @ 270 Mbps
I/O connectors	75 Ω BNC
Number of outputs per channel	
1RU 1616D, 3232D and 6464D	1 per channel
88D and 3RU 1616D	2 per channel

(More Performance Specifications are listed on the following page)

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
C = Component video (3 channels, YUV or RGB).
D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
P = Pulse channel for switching synchronizing signals.
S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
W = Wideband channel(s).
Y = Y-C or S-VHS video (2 channels, Y or C).

SHASTA FAMILY PERFORMANCE SPECIFICATIONS (CONT.)

SERIAL DIGITAL AUDIO ROUTERS

Data rate 100 Kbps – 8 Mbps
 Nominal signal level 6 V p-p
 Input return loss 35 dB @ 5 MHz
 Output return loss 30 dB @ 5 MHz
 Input/output impedance 110 Ωs
 Signal connectors except (6464E) 8 balanced lines per 25 pin "D", Switchcraft TA3M (6464E)

CONTROL

88DE local control, 25 pin D for remote panels, RS-232
 All other systems
 Control panel port
 Network type RS-485
 Maximum number of remote panels 64
 Recommended cable type Belden 8451 (shielded pair)
 Data rate9.6Kbps up to 10,000ft; 31.25Kps up to 5,000ft; 125Kps up to 2,000ft

TERMINAL PORT

Type RS-232
 Data rates 1.2, 2.4, 9.6 or 19.2Kbs

HOST PORT

Type RS-232 or RS-422
 Data rates 1.2K, 9.6K and 115.2Kbps

SHASTA

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

YOSEMITE FAMILY



The Yosemite Family of large-sized matrix routing switchers provides exceptional performance in compact frame designs ideal for Broadcast, CATV, Industrial, and Government applications. Ranging from 64x64 to 128x128 I/Os, frames can be expanded from 32x32 up to 128x256. Optional redundant power supplies and control processors are available with the standard front-loading and hot-swappable I/O modules. Yosemite systems switch multiple analog and digital signal formats, including AES/EBU synchronous or asynchronous audio, SDI video, monaural or stereo audio, analog composite video, analog component video, time code and machine control. Sierra Video Systems' building-block module design was specially applied to the Yosemite Family, providing an array of configurations to suit facilities in digital transition or anticipating future growth. Call SVS for pricing.

Analog Video Frame Sizes:

- 64 x 64
- 96 x 96
- 128 x 128

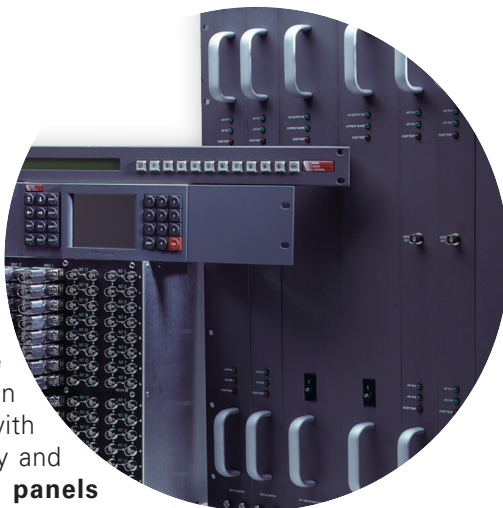
Serial Digital Video Frame Sizes:

- 64 x 64
- 128 x 128

Audio Frame Sizes:

- 64 x 64
- 128 x 128

The Yosemite Family control system incorporates many powerful features and numerous options. The Yosemite three-port controller can be directly interfaced with a wide variety of 10-key and alphanumeric **control panels** (see Control Panels Section), as well as supported by **third-party control systems** (See SVS System Partners page 148).



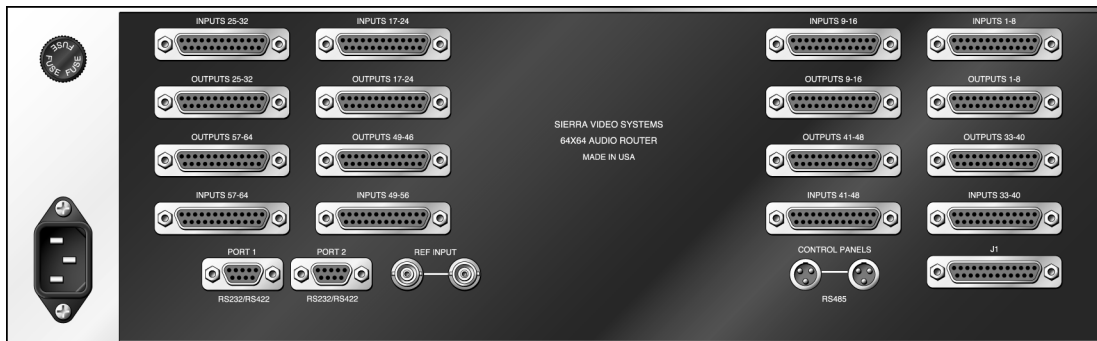


ANALOG AUDIO

The Yosemite analog audio frames come in two compact sizes: three and five RU. Multiple frames can be connected together to provide stereo audio and/or time code routing capability. All frames are loaded in increments of 32 inputs and/or outputs. All prices are per channel. *Note: For stand-alone audio, a serial control module must be ordered with the frame.*

YOSEMITE 6464A

This 3RU frame represents the most compact router design in the industry. Two audio switchers are needed for two audio channels (stereo).



YOSEMITE 6464A

64 x 64 analog audio routing switcher

1 - 6464A (3RU) frame	804109-10
2 - 32 channel input buffers	504101
2 - 128 x 32 analog audio crosspoint submodules	504102-10

YOSEMITE 3232A

32 x 32 analog audio routing switcher

1 - 6464A (3RU) frame	804109-10
1 - 32 channel input buffers	504101
1 - 128 x 32 analog audio crosspoint submodule	504102-10

Optional Configurations:

YOSEMITE 3264A

YOSEMITE 6432A

Options for 6464A Systems:

Optional serial control module for stand-alone operation	504001
Redundant power supply, 115 VAC ± 10%	Substitute frame 804109-41
Redundant power supply, 230 VAC ± 10%	Substitute frame 804109-42
Control panel options	See Control Panels Section
Performance specifications	See page 86

PRODUCT KEY

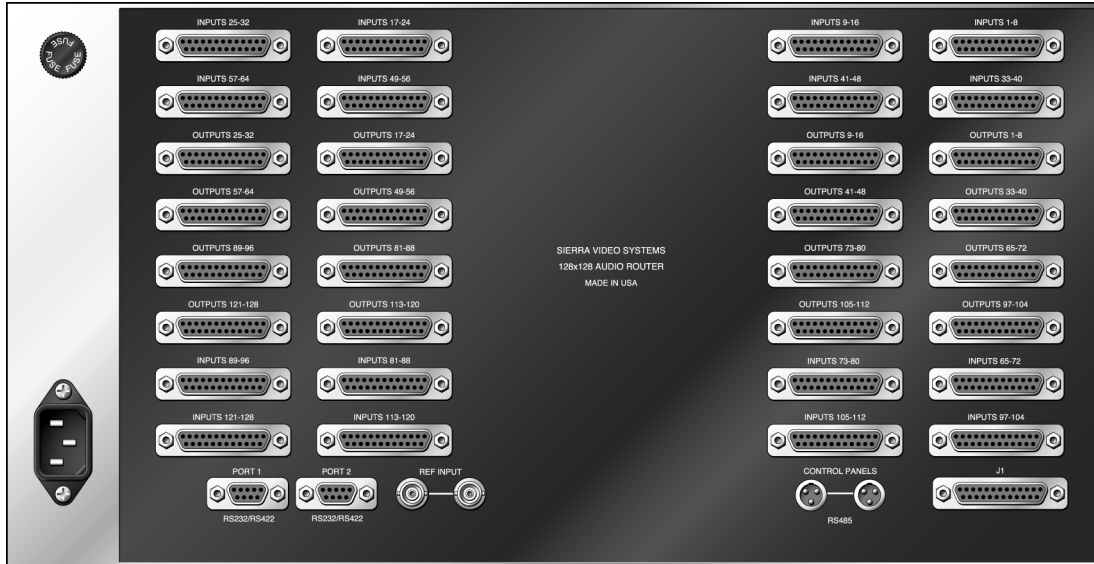
A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

YOSEMITE 128128A

Our largest analog audio router is still only a scant 5RU in size.



YOSEMITE 128128A

128 x 128 analog audio routing switcher

1 - 128128A (5RU) frame	804113-10
4 - 32 channel input buffers	504101
4 - 128 x 32 analog audio crosspoint submodules	504102-10

YOSEMITE 9696A

96 x 96 analog audio routing switcher

1 - 128128A (5RU) frame	804113-10
3 - 32 channel input buffers	504101
3 - 128 x 32 analog audio crosspoint submodules	504102-10

YOSEMITE 6464A

64 x 64 analog audio routing switcher

1 - 128128A (5RU) frame	804113-10
2 - 32 channel input buffers	504101
2 - 128 x 32 analog audio crosspoint submodules	504102-10

Optional Configurations:

YOSEMITE 3232A	YOSEMITE 9664A
YOSEMITE 3264A	YOSEMITE 64128A
YOSEMITE 6432A	YOSEMITE 12864A
YOSEMITE 3296A	YOSEMITE 96128A
YOSEMITE 9632A	YOSEMITE 12896A
YOSEMITE 6496A	

Options for 128128A Systems:

Optional serial control module for stand-alone operation.	504001
Redundant power supply, 115 VAC ± 10%	Substitute frame 804113-41
Redundant power supply, 230 VAC ± 10%	Substitute frame 804113-42
Control panel options	See Control Panels Section
Performance specifications.	See page 86

PRODUCT KEY

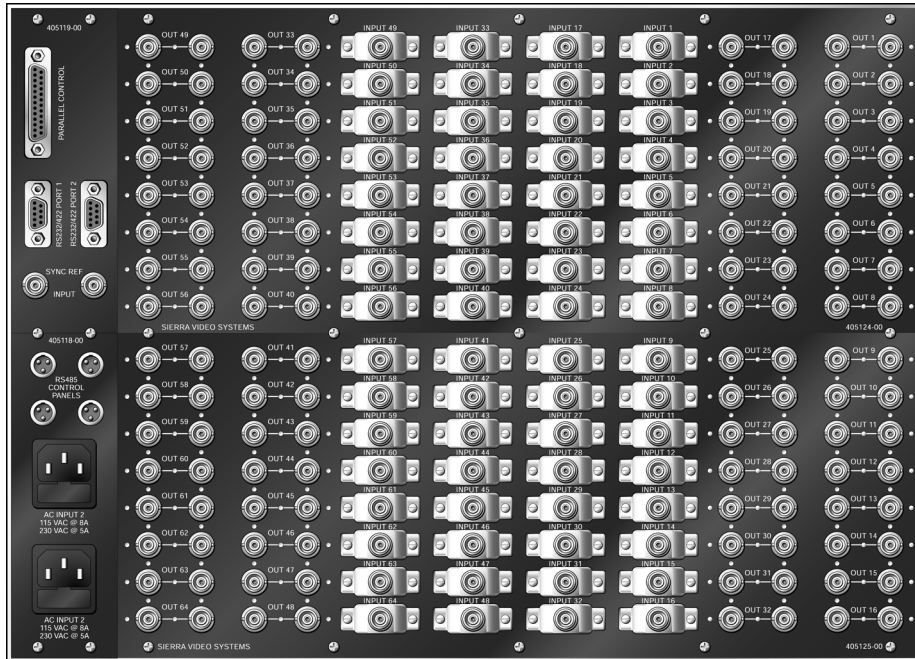
- A = Monaural audio channel. Also suitable for time code.
- C = Component video (3 channels, YUV or RGB).
- D = Serial digital video channel(s).
- E = Digital (AES/EBU) audio channel.
- P = Pulse channel for switching synchronizing signals.
- S = Stereo audio channel switched as a pair.
- V = Composite video (1 channel).
- W = Wideband channel(s).
- Y = Y-C or S-VHS video (2 channels, Y or C).



ANALOG VIDEO

YOSEMITE 6464V

This 7RU 6464V frame is a compact design that can be populated in either 32x32, 32x64, 64x32 or the full 64x64 configuration. Multiple frames can be networked to create component video systems.



YOSEMITE 6464V

64 x 64 analog video routing switcher

1 - 6464V (7RU) frame	812102
64 - analog input buffers	504120
4 - 32 x 32 analog video crosspoint submodules	504121
2 - 32 channel analog video output drivers	812116
1 - 64/128 control processor	505150
1 - power supply +5V/-5V @ 10A	812122

YOSEMITE 3232V

32 x 32 analog video routing switcher

1 - 6464V (7RU) frame	812102
32 - analog input buffers	504120
1 - 32 x 32 analog video crosspoint submodule	504121
1 - 32 channel analog video output driver	812116
1 - 64/128 control processor	505150
1 - power supply +5V/-5V @ 10A	812122

Optional Configurations:

YOSEMITE 3264V

YOSEMITE 6432V

Options for 6464V Systems:

Redundant power supply for 115V or 230V, order additional 812122
 For redundant control processors. order two 505150 + one 805151 frame
 Control panel options. See Control Panels Section
 Performance specifications. See page 86

PRODUCT KEY

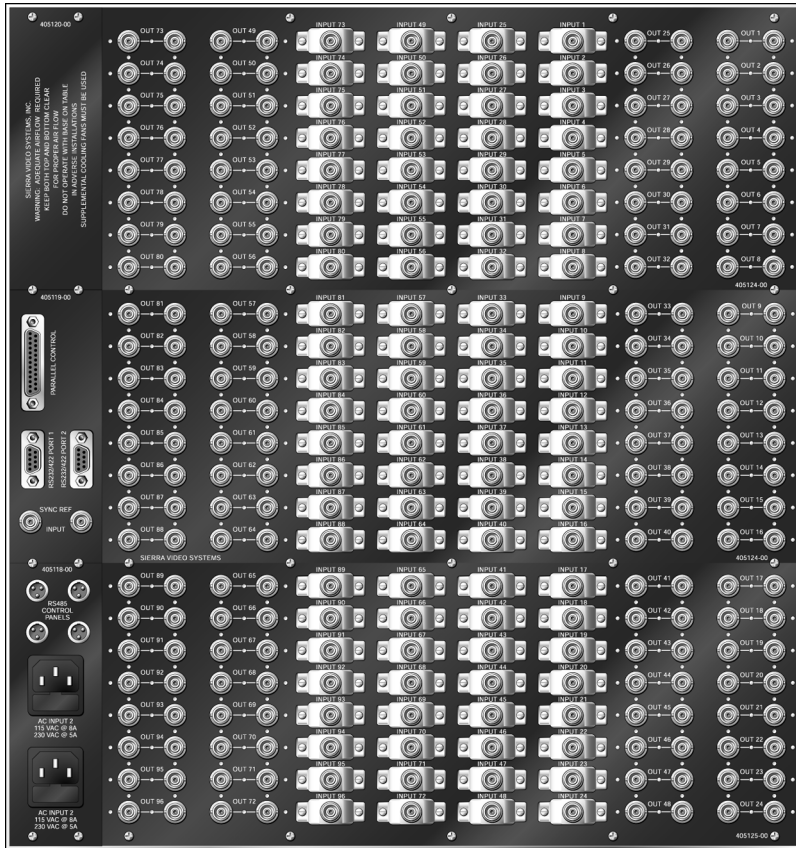
A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

YOSEMITE 9696V

A popular mid-size frame (11RU), the 9696V utilizes a 24-channel video output driver. Available configurations include 64x96, 64x72, 96x72 and 96x96.



YOSEMITE 9696V

96 x 96 analog video routing switcher

1 - 9696V (11RU) frame	812100
96 - analog input buffers	504120
12 - 32 x 24 analog video crosspoint submodules	504121-30
4 - 24 channel analog video output drivers	812117-00
1 - 64/128 control processor	505150
1 - power supply +5V/-5V @ 15A	812123

YOSEMITE 6472V

64 x 72 analog video routing switcher

1 - 9696V (11RU) frame	812100
64 - analog input buffers	504120
6 - 32 x 24 analog video crosspoint submodules	504121-30
3 - 24 channel analog video output drivers	812117-00
1 - 64/128 control processor	505150
1 - power supply +5V/-5V @ 15A	812123

Optional Configurations:

YOSEMITE 9672V	YOSEMITE 6496V
YOSEMITE 6448V	YOSEMITE 3224V

Options for 9696V Systems:

- Redundant power supply for 115V or 230V, order additional 812123
- For redundant control processors order two 505150
- Control panel options See Control Panels Section
- Performance specifications See page 86

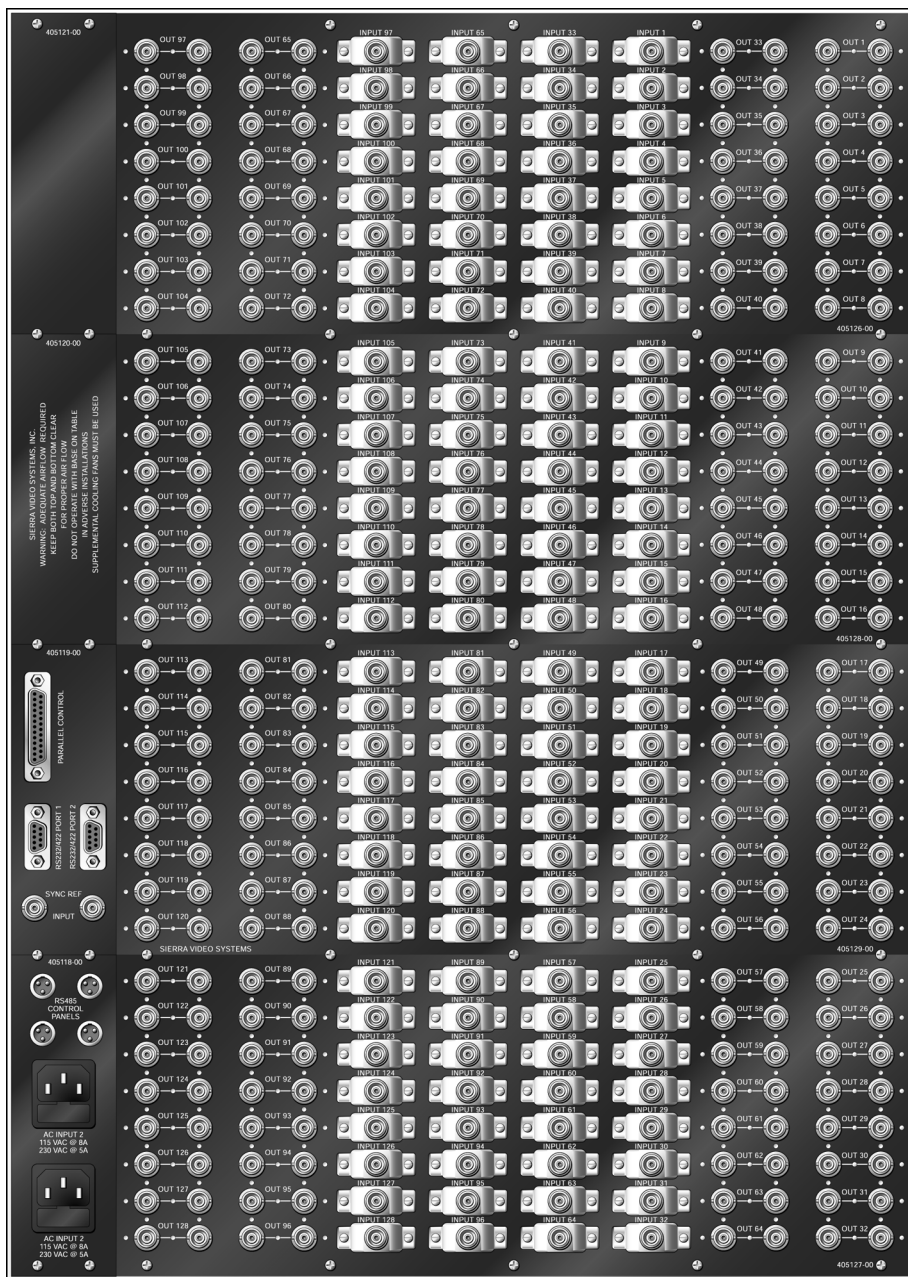
PRODUCT KEY	A = Monaural audio channel. Also suitable for time code.	E = Digital (AES/EBU) audio channel.	V = Composite video (1 channel).
	C = Component video (3 channels, YUV or RGB).	P = Pulse channel for switching synchronizing signals.	W = Wideband channel(s).
	D = Serial digital video channel(s).	S = Stereo audio channel switched as a pair.	Y = Y-C or S-VHS video (2 channels, Y or C).

YOSEMITE



YOSEMITE 128128V

The 128128V is our largest video routing switcher that utilizes a 32-channel video output driver. By looping two frames together, 256 outputs can be achieved for maximum flexibility.



YOSEMITE 128128V

128 x 128 analog video routing switcher

- 1 - 128128V (14RU) frame
- 128 - analog input buffers
- 16 - 32 x 32 analog video crosspoint submodules
- 4 - 32 channel analog video output drivers
- 1 - 64/128 control processor
- 1 - power supply +5V/-5V @ 20A

- 812101
- 504120
- 504121
- 812118
- 505150
- 812124

(Continued on the following page)

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

YOSEMITE 9696V

96 x 96 analog video routing switcher

1 - 128128V (14RU) frame	812101
96 - analog input buffers	504120
9 - 32 x 32 analog video crosspoint submodules	504121
3 - 32 channel analog video output drivers	812118
1 - 64/128 control processor	505150
1 - power supply +5V/-5V @ 20A	812124

YOSEMITE 6464V

64 x 64 analog video routing switcher

1 - 128128V (14RU) frame	812101
64 - analog input buffers	504120
4 - 32 x 32 analog video crosspoint submodules	504121
2 - 32 channel analog video output drivers	812118
1 - 64/128 control processor	505150
1 - power supply +5V/-5V @ 20A	812124

Optional Configurations:

YOSEMITE 3296V

YOSEMITE 9632V

YOSEMITE 6496V

YOSEMITE 9664V

YOSEMITE 64128V

YOSEMITE 12864V

YOSEMITE 96128V

YOSEMITE 12896V

YOSEMITE 128256V

Options for 128128V Systems:

Redundant power supply for 115V or 230V order additional 812124

For redundant control processors order two 505150

Control panel options See Control Panels Section

Performance specifications See page 86

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).



DIGITAL AUDIO

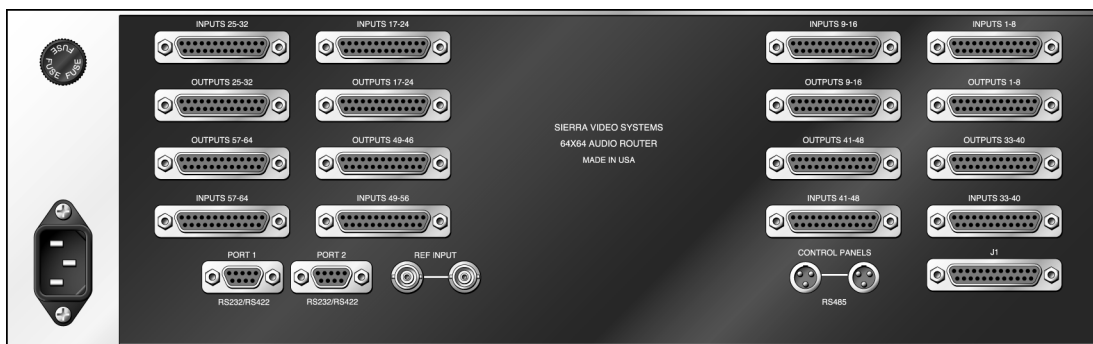
Our AES digital audio Yosemite frames are available in 3RU 64x64, 4RU 96x96, and 5RU 128x128 with both asynchronous and synchronous options. These digital audio AES/EBU compatible routers use high-frequency digital 110-Ohm balanced line receivers. They can also be ordered supporting S/PDIF single-ended signals with an input/output impedance of 75 ohm.

In applications where **asynchronous audio** is needed, our AES asynchronous module provides cost-effective, high performance routing of any data rate input at a signal frequency range of 100 KHz to 8 Mhz.

For synchronous audio applications, such as live switching environments, our new AES synchronous option contains an input synchronizing module and an internal synchronizing processor. The input sync module contains a sample rate converter that filters all audio stream inputs at any rate and converts to the desired output sample rate without the need for an external synchronizing source. The synchronous module also features a "bypass" mode, allowing the input synchronizing circuit to be bypassed on an input-by-input basis so that non-AES/EBU signals—such as Dolby AC-3 or MP-3—can pass through the router. To configure, substitute the 505114 input buffer with 505115 and add one synchronous clock generator(504001-40).

Our Yosemite AES digital audio frames can be populated with both 32-channel synchronous and asynchronous boards for complete audio flexibility.

YOSEMITE 6464E



YOSEMITE 6464E

64 x 64 digital audio routing switcher

1 - 6464E (3RU) frame	804109-10
2 - 32 channel input buffers	505114
2 - 128 x 32 digital audio crosspoint modules	505116

YOSEMITE 3232E

32 x 32 digital audio routing switcher

1 - 6464E (3RU) frame	804109-10
1 - 32 channel input buffer	505114
1 - 128 x 32 digital audio crosspoint module	505116

Optional Configurations:

YOSEMITE 3264E

YOSEMITE 6432E

Options for 6464E Systems:

Synchronous option	.....	Substitute input buffer 505115
Synchronous clock generator	.....	504001-40
Redundant power supply, 115 VAC ± 10%	.....	Substitute frame 804109-41
Redundant power supply, 230 VAC ± 10%	.....	Substitute frame 804109-42
75 Ω unbalanced option	.....	Call SVS
Control panel options	.....	See Control Panels Section
Performance specifications	.....	See page 85

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

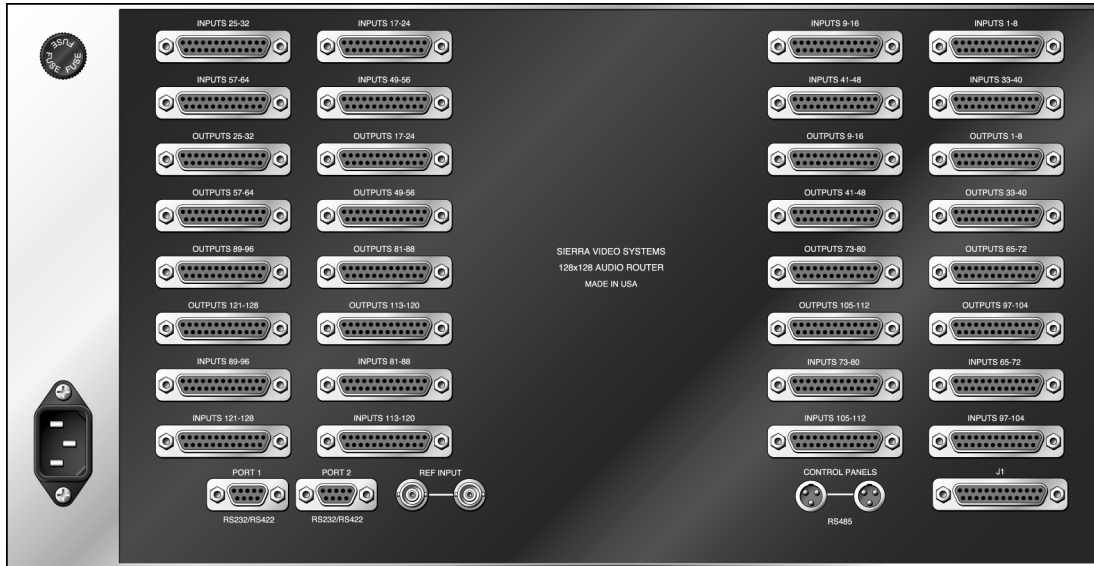
E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

YOSEMITE

YOSEMITE 128128E

A very compact (5RU) AES switcher frame that can accept either 75 Ohm unbalanced or 110 Ohm balanced inputs. This switcher can be operated either in a stand-alone configuration or as a level in a larger system.



YOSEMITE 128128E

128 x 128 digital audio routing switcher

1 - 128128E (5RU) frame	804113-10
4 - 32 channel input buffers	505114
4 - 128 x 32 digital audio crosspoint modules	505116

YOSEMITE 9696E

96 x 96 digital audio routing switcher

1 - 128128E (5RU) frame	804113-10
3 - 32 channel input buffers	505114
3 - 128 x 32 digital audio crosspoint modules	505116

YOSEMITE 6464E

64 x 64 digital audio routing switcher

1 - 128128E (5RU) frame	804113-10
2 - 32 channel input buffers	505114
2 - 128 x 32 digital audio crosspoint modules	505116

Optional Configurations:

YOSEMITE 3232E	YOSEMITE 6496E
YOSEMITE 3264E	YOSEMITE 9664E
YOSEMITE 6432E	YOSEMITE 64128E
YOSEMITE 3296E	YOSEMITE 96128E
YOSEMITE 9632E	YOSEMITE 12896E

Options for 128128E Systems:

Synchronous option	.....	Substitute input buffer 505115
Synchronous clock generator	.....	504001-40
Redundant power supply, 115 VAC ± 10%	.....	Substitute frame 804113-41
Redundant power supply, 230 VAC ± 10%	.....	Substitute frame 804113-42
75 Ω unbalanced option	.....	Call SVS
Control panel options	.....	See Control Panels Section
Performance specifications	.....	See page 86

PRODUCT KEY

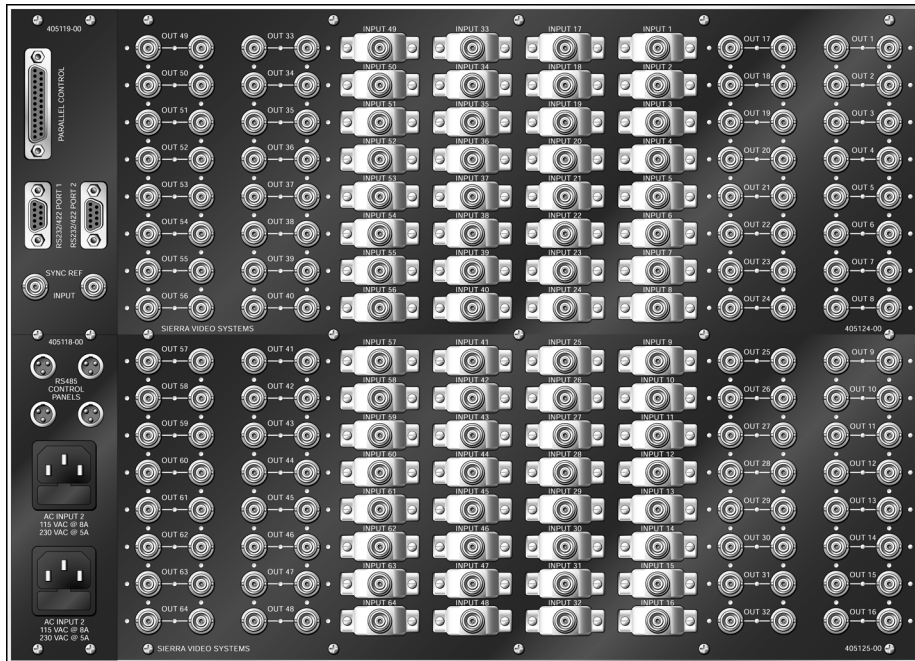
- A = Monaural audio channel. Also suitable for time code.
- C = Component video (3 channels, YUV or RGB).
- D = Serial digital video channel(s).
- E = Digital (AES/EBU) audio channel.
- P = Pulse channel for switching synchronizing signals.
- S = Stereo audio channel switched as a pair.
- V = Composite video (1 channel).
- W = Wideband channel(s).
- Y = Y-C or S-VHS video (2 channels, Y or C).



DIGITAL VIDEO

YOSEMITE 6464D

This 7RU digital video routing switcher consists of an input circuit with automatic cable equalization for each source, followed by a 1.5 GBs GaAs-based switch array. Each output channel includes a reclocking circuit to reduce jitter before each output cable driver circuit.



YOSEMITE 6464D

64 x 64 serial digital video routing switcher

1 - 6464D (7RU) frame	812102
64 - input SDI equalizer/buffers	505144
2 - 64 x 32 digital video crosspoint submodules	505145
2 - 32 channel digital video output drivers	812106
1 - 64/128 control processor	505150
1 - power supply +5V @ 50A	812110

YOSEMITE 3232D

32 x 32 serial digital video routing switcher

1 - 6464D (7RU) frame	812102
32 - input SDI equalizer/buffers	505144
1 - 64 x 32 digital video crosspoint submodule	505145
1 - 32 channel digital video output driver	812106
1 - 64/128 control processor	505150
1 - power supply +5V @ 50A	812110

Optional Configurations:

YOSEMITE 3264D

YOSEMITE 6432D

Options for 6464D Systems:

Redundant power supply for 115V or 230V, order additional 812110

For redundant control processors order two 505150
plus one 805151

Control panel options. See Control Panels Options

Performance specifications. See page 86

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
C = Component video (3 channels, YUV or RGB).
D = Serial digital video channel(s).

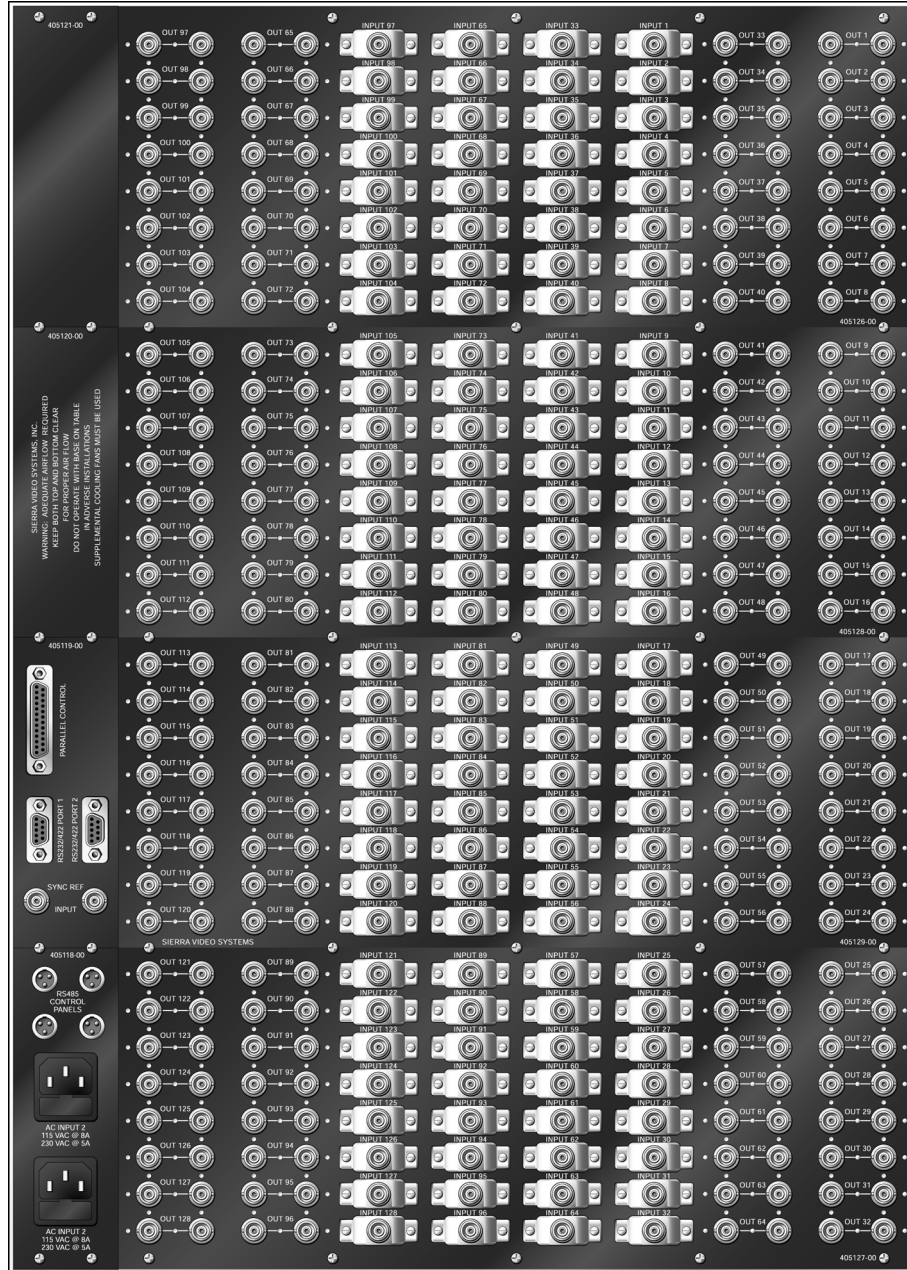
E = Digital (AES/EBU) audio channel.
P = Pulse channel for switching synchronizing signals.
S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
W = Wideband channel(s).
Y = Y-C or S-VHS video (2 channels, Y or C).

YOSEMITE

YOSEMITE 128128D

A compact (14RU) serial digital video routing switcher that is expandable from 64 x 64 in increments of 64 on the input side, and 32 on the output. By looping two frames together, 256 outputs can be achieved for maximum flexibility.



YOSEMITE 128128D

128 x 128 serial digital video routing switcher

- 1 - 128128D (14RU) frame 812101
- 128 - input SDI equalizer/buffers 505144
- 8 - 64 x 32 digital video crosspoint submodules 505145
- 4 - 32 channel digital video output drivers 812108
- 1 - 64/128 control processor 505150
- 1 - power supply +5V @ 100A 812111

(Continued on the following page)

PRODUCT KEY

- A = Monaural audio channel. Also suitable for time code.
- E = Digital (AES/EBU) audio channel.
- V = Composite video (1 channel).
- C = Component video (3 channels, YUV or RGB).
- P = Pulse channel for switching synchronizing signals.
- W = Wideband channel(s).
- D = Serial digital video channel(s).
- S = Stereo audio channel switched as a pair.
- Y = Y-C or S-VHS video (2 channels, Y or C).

YOSEMITE



YOSEMITE 12864D

128 x 64 serial digital video routing switcher

1 - 128128D (14RU) frame	812101
128 - input SDI equalizer/buffers	505144
4 - 64 x 32 digital video crosspoint submodules	505145
2 - 32 channel digital video output drivers	812108
1 - 64/128 control processor	505150
1 - power supply +5V @ 100A	812111

YOSEMITE 6464D

64 x 64 serial digital video routing switcher

1 - 128128D (14RU) frame	812101
64 - input SDI equalizer/buffers	505144
2 - 64 x 32 digital video crosspoint submodules	505145
2 - 32 channel digital video output drivers	812108
1 - 64/128 control processor	505150
1 - power supply +5V @ 100A	812111

Optional Configurations:

- YOSEMITE 6496D**
- YOSEMITE 64128D**
- YOSEMITE 12896D**
- YOSEMITE 128256D**

Options for 128128D Systems:

Redundant power supply for 115V or 230V, order additional 812111
 For redundant control processors order two 505150
 plus one 805151
 Control panel options See Control Panels Section
 Performance specifications See page 86

YOSEMITE 1RU REDUNDANT CONTROL PROCESSOR FRAME

Two types of control processors can be used to control the Yosemite routing switcher. The Sierra Video Systems 505150 module is the most popular in the Yosemite line. This control processor is installed in a video frame and can control the routers interconnected to the video frame.

For smaller systems with dual processor requirements, a 1RU (1.75") Dual Processor unit may be used (805151). Examples of this are a 64x64 video frame with restricted area or Yosemite audio frames. This 1RU processor frame may be used with any Yosemite or Tahoe-compatible routing switcher and acts as the processing unit, eliminating the processors from the main frames.

Dual or single processors can also be mounted outside of the Yosemite video and audio frames in this 1 rack unit processor frame. This 1RU processor frame is connected to either video or audio frames via a 25-conductor cable using the parallel control port.



YOSEMITE 1RU CONTROL PROCESSOR FRAME

805151

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

YOSEMITE FAMILY PERFORMANCE SPECIFICATIONS

SERIAL DIGITAL VIDEO ROUTERS

Data rates	143, 177, 270, and 360 Mbps per SMPTE-259 M-A,B,C,D
Data types	8 or 10-bit serial digital video
Input cable equalization	automatic up to 300 meters for 143, 177 and 270 Mbps 200 meters for 360 Mbps
Input return loss	15dB @ 270 Mbps
Cable type	Belden 8281, PSF 1/3 or equivalent
Output level	800 mv +/-10%
Output jitter	500 ps p-p worst case
Output return loss	13dB @ 270 Mbps
I/O connectors	75Ω BNC
Number of outputs per channel	2

SERIAL DIGITAL AUDIO ROUTERS

Data rate	100 Kbps – 8 Mbps
Nominal signal level	6 V p-p for 110 Ω systems 1V p-p for 75 Ω systems
Input return loss	35 dB @ 5 MHz
Output return loss	30 dB @ 5 MHz
Input/output impedance	75 or 110 Ωs
Signal connectors	8 balanced lines DB25 Plus removable terminal strips for 110 Ω system or BNC converter panels for 75 Ω systems

ANALOG VIDEO INPUT CHARACTERISTICS

Nominal Video Level:	1 V p-p
Maximum Video Level:	1.5 V p-p
Input Impedance:	75 Ωs
Return Loss:	≥40 dB @ 5 MHz
Superimposed DC:	± 5 V
External Sync:	Color Black to 4 V p-p

ANALOG VIDEO OUTPUT CHARACTERISTICS

Nominal Video Level:	1 V p-p
Maximum Video Level:	1.5 V p-p
Impedance:	75 Ωs
Return Loss:	≥35 dB @ 5 MHz
DC on Signal:	±50 mV

ANALOG VIDEO SYSTEM PERFORMANCE

Gain:	Unity (±2 dB adj.)
Response:	±0.1 dB to 5 MHz; +0/-3 dB, 5 – 50 MHz
Diff. Phase Error:	±0.1 degree @ 3.58 or 4.43 MHz
Diff. Gain Error:	±0.1 percent @ 3.58 or 4.43 MHz
Crosstalk Isolation (all hostile):	≥60 dB @ 5 MHz
Signal-to-Noise Ratio:	≥80 dB to 5 MHz
Response, wide bandwidth option:	+0/-3 dB to 200 MHz
Crosstalk, (adjacent hostile) wide bandwidth option:	≥45 dB @ 50 MHz

(continued on following page)

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

**YOSEMITE FAMILY PERFORMANCE SPECIFICATIONS (CONT.)****ANALOG AUDIO INPUT CHARACTERISTICS**

Nominal Input Level	+8 dBm (0 dBm = 0.775 Vrms)
Maximum Input Level	+24 dBm
Input Impedance	15k Ω s, balanced
Common Mode Rejection	\geq 40 dB @ 60 Hz

ANALOG AUDIO OUTPUT CHARACTERISTICS

Nominal Output Level	+8 dBm
Maximum Output Level	+24 dBm into 150 Ω s
Output Source Impedance	150 Ω s, balanced

ANALOG AUDIO SYSTEM PERFORMANCE

Voltage Gain	Unity \pm 0.1 dB (High-Z load)
Frequency Response	20Hz to 20 kHz \pm 0.1 dB
Bandwidth	100 kHz
S/N Ratio (20Hz to 20 kHz)	110 dB ref. to +24 dBm
Crosstalk Isolation (all inputs hostile)	\geq 80 dB @ 15 kHz
IM & THD (20Hz to 20 kHz)	\leq 0.05% to +24 dBm

CONTROL

Control panel port:

Network type	RS-485
Maximum number of remote panels	64
Recommended cable type	Belden 8451 (shielded pair)
Data rate	9.6 Kbps up to 10,000 ft, 31.25 Kbps up to 5,000 ft

Personality and host ports:

Type	RS-232/RS-422
Data rates	1.2, 2.4, 9.6, 19.2, 38.4, and 115.2 Kbps

MECHANICAL & OPERATIONAL CHARACTERISTICS

Frame Height:

64 Video frames	7RU (12.25")
96 Video frames	11RU (19.25")
128 Video frames	14RU (24.5")
64 Audio frames	3RU (5.25")
96 Audio frames	4RU (7.0")
128 Audio frames	5RU (8.75")

Frame Depth:

64D and 128D	12"
128E	16"

Weight:

64D	60 lbs
128D	125 lbs

Input Voltage:	115 VAC or 230 VAC \pm 10%
	(64D and 128D are auto-ranging, 128E is switch selectable)

Power Requirements:

64D	300 VA
128D	500 VA
128E	60 VA

Operating Temperature Range:	0 - 40 degrees C
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PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
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 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
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SEQUOIA FAMILY



The next level in multi-format routing...

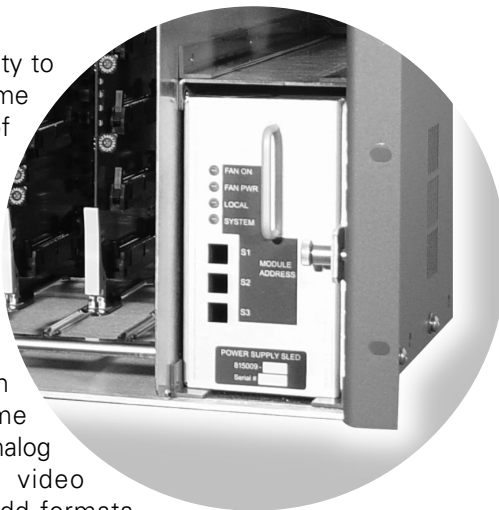
The Sequoia Family of multi-format matrix routing switchers is the next generation in affordable, large-scale distribution technology. SVS has designed a complete new line of matrix switchers offering mixed format flexibility, intelligent control, and linear expandability for broadcast, government, post-production, CATV head-ends, and AV professionals. Based on customer demand for larger routers, the new Sequoia Family accommodates customers' needs up to 1024x1024 in a compact efficient 7RU frame design.

Features:

- Multi-format configuration in compact 7RU frame
- Expand by 32x32 crosspoint modules
- Host 64x64 analog & 64x64 digital video in one frame
- Compatibility with Lassen, Sierra PRO, Tahoe, Shasta, Yosemite routing switchers
- RS-232 serial interface uses common 3-port SVS serial protocol
- Hot-swappable & redundant power supplies
- Mix and match signals
- Redundant control processors available

Mix & Match Signals

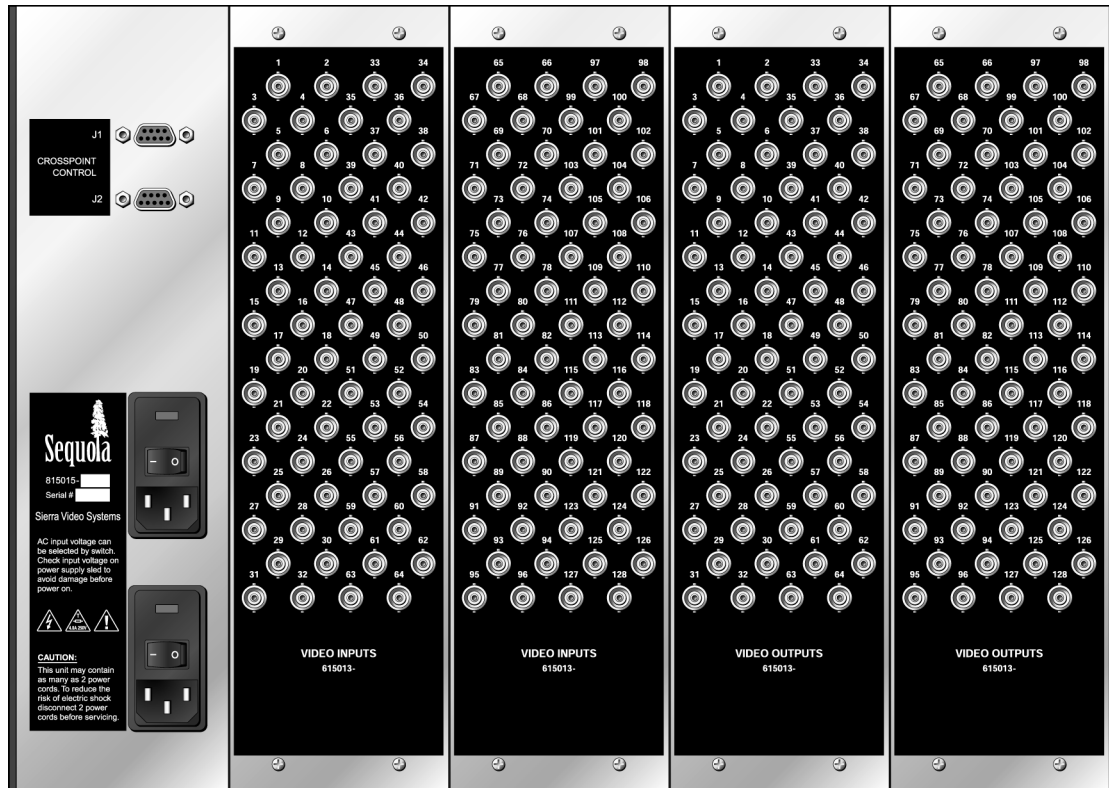
Sequoia features a unique ability to mix signal formats in the same frame. With up to 16 levels of control, you can mix analog composite, analog component, SDI, DVB/ASI, all within the same SVS system controller. Mixed format design is ideal for smaller installations too, allowing up to four video formats to fit in one 7RU frame. A single frame system will house a 64x64 analog video and a 64x64 digital video matrix. Adding frames will add formats and size up to 1024x1024 under one SVS control system. Sequoia is the perfect tool to support today's complex distribution environments.





SEQUOIA 7RU

The robust, analog frame is scalable up to 1024 x 1024 in increments of 32 inputs and outputs. Simply use the available 8 module slots to route virtually any format. It takes just eight modules to make a 512 x 512 digital video matrix. Or mix the signals to have four 128 x 128 matrices of digital video, digital audio, HD video, or stereo audio.



SEQUOIA 7RU

128 x 128 analog video matrix

815150

Optional Configurations:

- SEQUOIA 3232V
- SEQUOIA 3232D
- SEQUOIA 6464V
- SEQUOIA 512512V
- SEQUOIA 10241024V

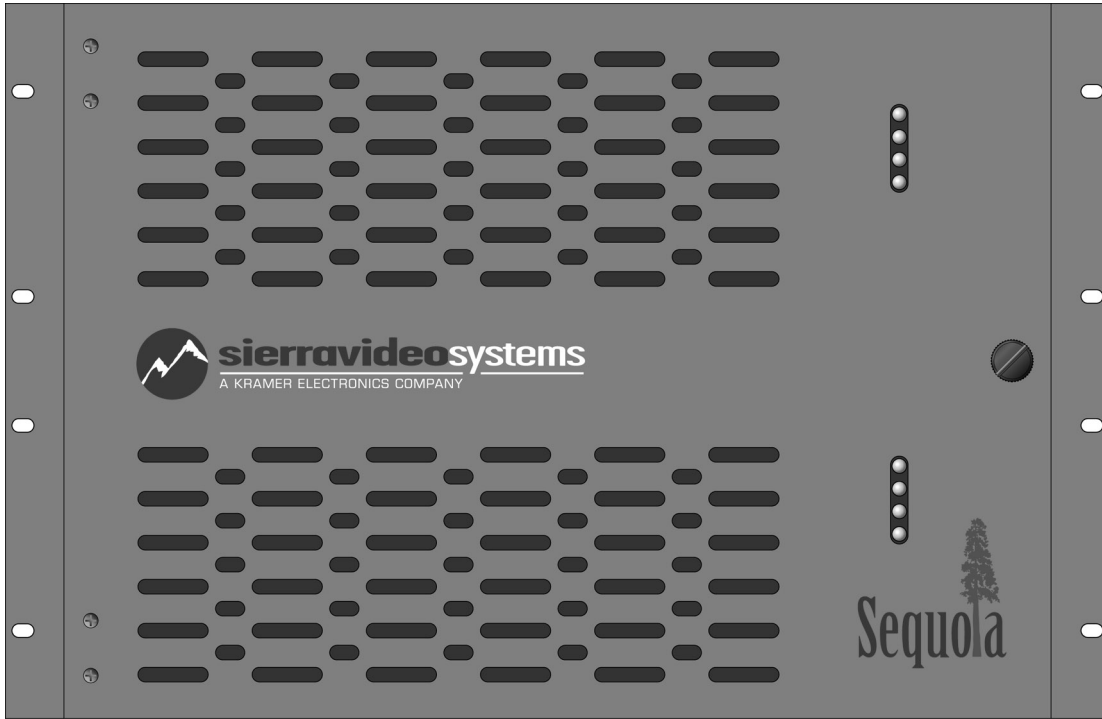
Sequoia 7RU Front Panel is illustrated on following page.

PRODUCT KEY

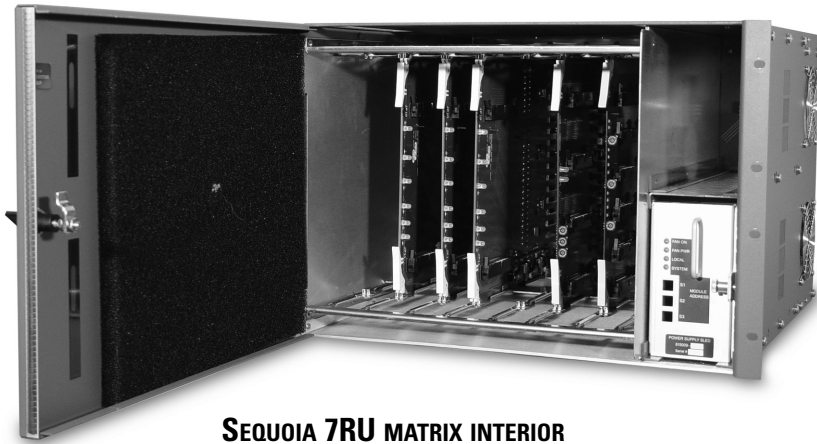
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V = Composite video (1 channel).
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 Y = Y-C or S-VHS video (2 channels, Y or C).



SEQUOIA 7RU FRONT PANEL



SEQUOIA 7RU MATRIX INTERIOR

SEQUOIA

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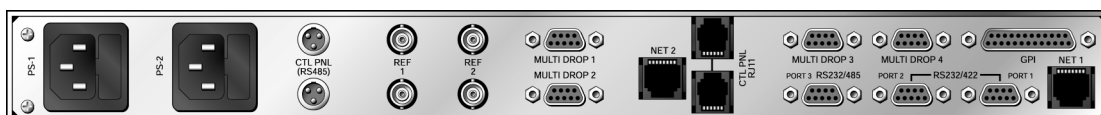
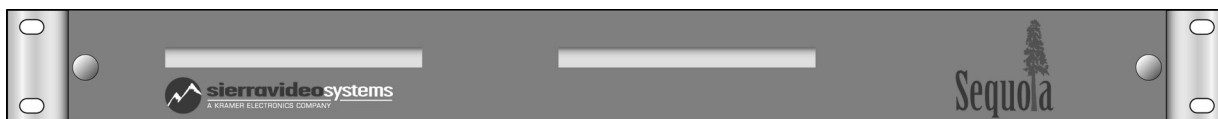
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Y = Y-C or S-VHS video (2 channels, Y or C).



SEQUOIA CPU FRAME 1RU

A separate 1RU Serial Control Processor frame is required. The frame has two slots for redundant processor configurations (optional), and comes with two power supplies standard and rear I/O communication connectors.



SEQUOIA CPU MODULE

CPU module

The module will provide all serial control for both internal and external serial control. All internal router control is via RS-232/422 communication managed by the system controller.

PROTOCOL TRANSLATOR 1RU

The Sierra Protocol Translator acts as a bridge between any SVS routing switcher and other manufacturer's routing control systems. The protocol translator can either allow a Sierra router to respond to another manufacturer's control system, or switch another router using the Sierra Control System. Development of new versions of this product is subject to the availability of other manufacturer's protocol.



PROTOCOL TRANSLATOR 1RU

919002-0

SEQUOIA

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SEQUOIA FAMILY PERFORMANCE SPECIFICATIONS

VIDEO INPUT CHARACTERISTICS

Nominal video level	1 V p-p
Maximum video level	1.5 V p-p
Input impedance	75 Ω s nominal
Return loss	40 dB @ 5 MHz
Superimposed DC	+/- 5 V
External Sync	.Color black to 4 V p-p

VIDEO OUTPUT CHARACTERISTICS

Nominal video level	1 V p-p
Maximum video level	1.5 V p-p
Input impedance	75 Ω s nominal
Return loss	35 dB @ 5 MHz
DC on signal	+/- 50 mV

VIDEO SYSTEM PERFORMANCE

Gain	Unity (+/- 2 dB adj.)
Response	+/- 0.1 dB Bandwidth = DC to 10 MHz, -3 dB bandwidth > 50 MHz
Differential phase error	+/- 0.1% @ 3.58 or 4.43 MHz
Differential gain error	+/- 0.1% @ 3.58 or 4.43 MHz
Crosstalk isolation (all hostile)	60 dB @ 5 MHz
Signal to noise ratio	>60 dB from 0 to 5 MHz
Response, wide bandwidth option	+0/-3 dB to 200 MHz
Crosstalk (adjacent hostile) wide bandwidth option	45 dB to 50 MHz

CONTROL PORT SPECIFICATIONS

CONTROL PANEL PORT (PORT 1) RS-485

Total number of panels supported	Up to 100
Cable type	2-wire shielded (Belden 8451 or equivalent)
Maximum cable length	5,000 ft. (1,500 m)

TERMINAL PORT (PORT 2) RS-232C (RS-422 OPTIONAL)

Data rates	1.2 Kbps, 2.4 Kbps, 9.6 Kbps, or 19.2 Kbps
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HOST PORT (PORT 3) RS-232C

Data rates	1.2 Kbps, 9.6 Kbps, 38.4 Kbps, or 115.2 Kbps
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MECHANICAL & OPERATIONAL CHARACTERISTICS

Frame height	7 RU (12.25")
Frame depth	16" (41 cm)
Operating temperature range	0 - 40 degrees C
Input voltage	115 VAC or 230 VAC +/- 10% (switch selectable)
Power requirements	80 - 400 VA per router frame

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CONTROL PANELS & SOFTWARE



A router is only as good as it's control system.

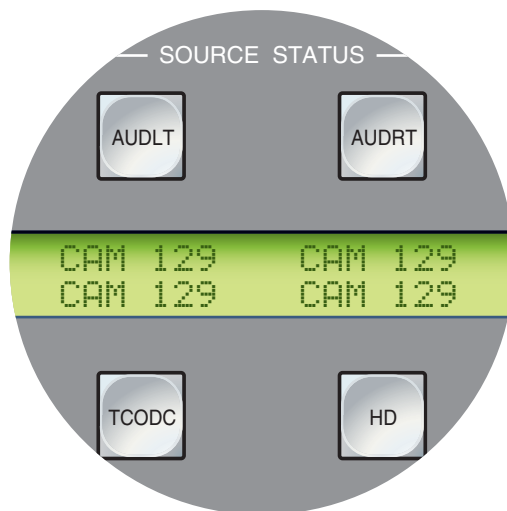
A good control system is reliable, yet flexible enough to allow the switcher to be controlled in a variety of ways. A solid control system will allow the use of a large number of different control panels, as well as third-party controllers and automation systems. Sierra Video Systems Tahoe / Yosemite control system gives you all of that, and more.

From simple pushbutton control panels to fully programmable panels customized to your individual installation, Sierra Video Systems offers a panel for every application.

Our software solutions range from our robust Graphical Router Interface Program (G.R.I.P.), an easy to use Windows™ program, to the full-featured IntelliPath™ facility management software.

Finally, our protocol is supported by nearly all of the third-party controller and automation suppliers, including the "e-Control" internet appliance from Crestron Electronics and the icon-based "software" from Buf Technologies.

The SVS control system gives you the flexibility and control options you need, no matter what your application may be.



CONTROL PANELS





THE SCP SERIES

THE FUTURE OF CONTROL

Introducing the SCP Series of programmable control panels. Six new panels are now available each with unlimited flexibility in design.

The SCP Series takes advantage of a powerful micro processor built on a board capable of handling the largest router database any facility can imagine. This elegant design manages fast error free serial communication with the router and up to 64 SVS control panels. Combined with a very cost effective I²C buss architecture, customers are offered a multitude of button configurations resulting in the most powerful user definable line of control panels the industry has to offer.

SCP Series panels are programmed using a free easy to operate Windows™ program. Our free version of G.R.I.P. software lets you choose your panel, select your functions and assign them to the buttons. Store these settings in memory or copy the configurations to multiple panels of the same type.

The SCP Series utilizes the popular industry standard VeeTronix brand LED buttons that are easily customized and labeled to your programmed settings. Our customers asked us for more powerful, flexible and custom defined control panels and SVS has the answer. The new SCP Series control panels are sure to become the new standard in control panel design.

SCP Series Standard Features include:

- Alpha/Numeric Labeling and Display
- Virtual or Physical status
- Programmable Buttons
- Label Utility
- Programming Software
- Category routing
- Router I/O Names
- Large LCD Displays
- Locks & Protects
- Passwords and Administration
- Program and Execute Salvos
- Paging and Scrolling
- Shift Keys
- Multiple Level Control
- A/V Breakaway
- Re-legendable Backlit Buttons

SCP Series Favorites include:

- **SCP-20** — Desktop keypad control panel
- **SCP-112** — Basic programmable LCD keypad control panel
- **SCP-132** — Push button with rotary control panel
- **SCP-150** — Push button control panel
- **SCP-224** — Advanced programmable LCD keypad control panel
- **SCP-240** — Multi-bus/ multi-level control panel

SCP-20 PROGRAMMABLE DESKTOP CONTROL PANEL

Using the advanced SCP processor this mobile control panel allows for reliable switching from workstations and control rooms. This trim solution features alphanumeric naming, display and programmable buttons in a 8 x 4 inch chassis. The backlit LCD display offers easy to read system information including: input/output names, locks, protects, paging, scrolling, and multiple level control. The SCP-20 will execute salvos. The slender answer to confined tabletop spaces; the SCP-20 offers many of the SCP features in a non-rack mounted, compact control panel.



SCP-20 Programmable Desktop Control Panel

804020

SCP-112 BASIC PROGRAMMABLE LCD KEYPAD CONTROL PANEL

The SCP-112 design has improved upon a SVS workhorse standard. Enhanced by re-designing its large LCD display and upgrading its software, this panel gives users more readability and functionality. We added programmable buttons, salvo execution, category routing, locks and protects, and alpha/numeric labeling to its feature set. Our most popular control panel just got better while remaining easy to use and extremely affordable.



SCP-112 1RU Basic Programmable Control Panel

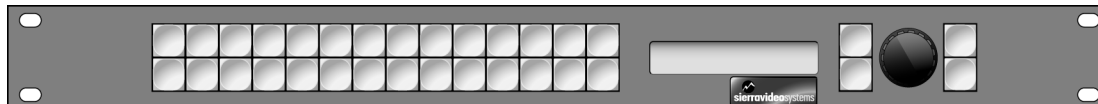
804112-00

SCP-112 control panel, 220 VAC \pm 10%

804112-30

SCP-132 PUSH BUTTON WITH ROTARY CONTROL PANEL

This programmable push button panel features a high quality rotary encoder for effortless scrolling through an LCD display of router status and information. Seamless selection of sources and destinations and other functions using the elegant rotary dial is this panel's forte. Every one of the other 32 buttons are also programmable. The LCD readout and fluid feel of the rotary knob will make the SCP-132 an engineer's favorite. Fast, intuitive, and user-friendly plus a very good value to price ratio.



SCP-132 1RU Push Button with Rotary Control Panel

804132-00

SCP-132 control panel, 220 VAC \pm 10%

804132-30

PRODUCT KEY

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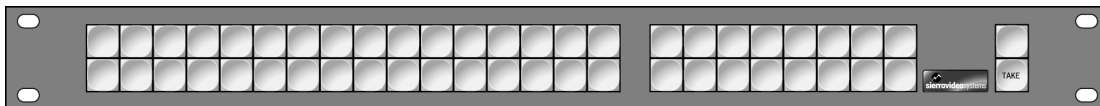
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 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).



SCP-150 PUSH BUTTON CONTROL PANEL

With 50 user-definable buttons, the SCP-150 is the most versatile of all our panels. The panel can work as an XY, Single-bus or any combination of I/O's. Each button can be assigned using programming software to configure a custom set of sources or destinations for each button. Salvos, Categories, and Breakaway (Level assign) are also programmable on the SCP-150. By combining two of these panels together, the operator can have single button access to 64 sources or destinations. A must in any truck or studio.



SCP-150 1RU Push Button Control Panel

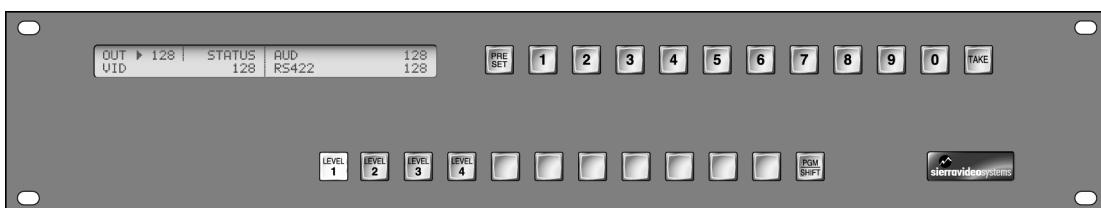
804150-00

SCP-150 control panel, 220 VAC \pm 10%

804150-30

SCP-224 ADVANCED PROGRAMMABLE LCD KEYPAD CONTROL PANEL

The SCP-224 operates much like the SCP-112 with twelve additional buttons for more programming features. The twelve programmable buttons provide users more flexibility and functionality for programming specific actions or series of dynamic buttons like hotkeys, salvos, single button takes. This panel can also be setup for One Button Take operation; perfect for a dub station; edit suite or any location in your facility.



SCP-224 2RU Advanced Programmable Control Panel

804224-00

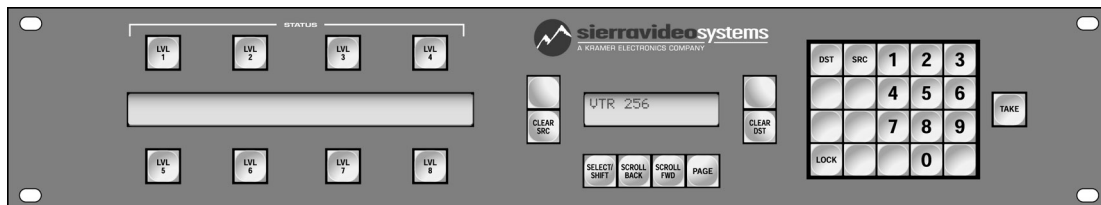
SCP-224 control panel, 220 VAC \pm 10%

804224-30

SCP-240 MULTI-BUS / MULTI-LEVEL CONTROL PANEL

Designed to be the new industry standard, the SCP-240 offers the best of flexibility and functionality. This Multi-bus / Multi-level control panel has up to eight busses or levels of status and routing information displayed on a large 2x80 character LCD display.

Programmable Category buttons surround a 10-key array. A second "Destination" LCD shows current output status along with a detailed message center for user feedback such as Lock & Protect warnings and Salvo register selections. With only a touch of a mouse, the panel can be transformed to operate as a Multi-bus eight or four panel for those facilities comfortable with this popular panel operation method.



SCP-240 2RU Multi-bus / Multi-level Control Panel

804240-00

SCP-240 control panel, 220 VAC \pm 10%

804240-30

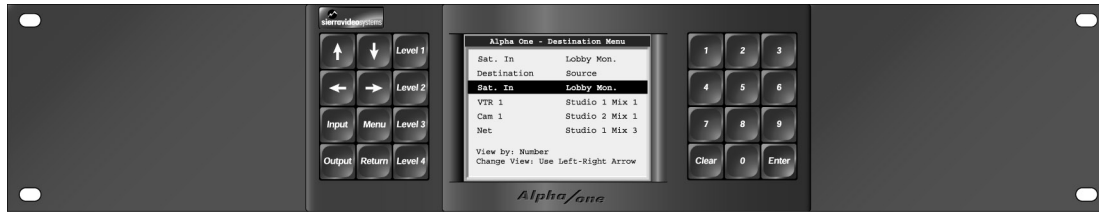
PRODUCT KEY

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W = Wideband channel(s).
Y = Y-C or S-VHS video (2 channels, Y or C).

ALPHA/ONE PLUS: ALPHANUMERIC CONTROL PANEL



Alpha/One Alphanumeric control panel	805009
Rack mounting kit to place two Alpha/Ones side by side	805029

The center of Alpha/One has a full-color high-resolution wide angle display. This allows you to see more routing switcher status information instantly.

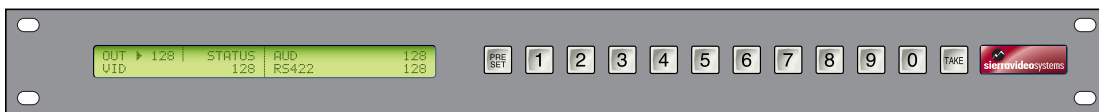
Alpha/One has a built-in Motorola MC68302 processor, providing a solid platform for a powerful operating system. Alpha/One works on the same type of RS-485 party line bus used for all Sierra PRO, Tahoe, Shasta and Yosemite family control panels.

All of the operating modes of Alpha/One control panel are set using the host routing switcher's RS-232 personality port. Alpha/One ships with a Microsoft Windows program, providing you the ability to edit all the control panel functions in your system.

Alpha/One system lockouts can be input, output and/or level. It includes a host of standard features, including:

- Single bus control
- Multi-bus control
- 8 output "bank" control
- Salvo switching
- Shot panel
- "Lists all inputs"
- "Status all outputs"

You can easily modify features, or add new ones to fit your needs. Personality information resides safely in the switcher's main control processor using battery-protected RAM.



1RU Standard Rackmount Keypad Control Panel	804011-01
control panel, 220 VAC \pm 10%	804011-30

This legacy control panel has been a favorite for many years. Input, outputs and levels are numbered. All inputs, outputs and levels are accessible.

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BUTTON PER SOURCE CONTROL PANELS

Button per source control panels come in a variety of configurations. A general description of the types of panels available follows. Illustrations for the 16, 20, 32 and 64 input variations of button per source control panels appear after the corresponding listing of each size routing switcher. For 8 or 12 input control panels, please contact SVS for customizable panels or use 16 input variations.

Single Bus

Assignable to one output and any combination of levels (as with all the button per input control panels), the single operation of pressing a switch selects the desired input.

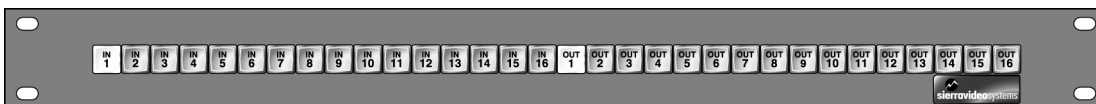
XY

Two groups of switches: First press an OUT switch to enable the desired output, then use the row of IN switches, the same as you would with a Single Bus control panel.

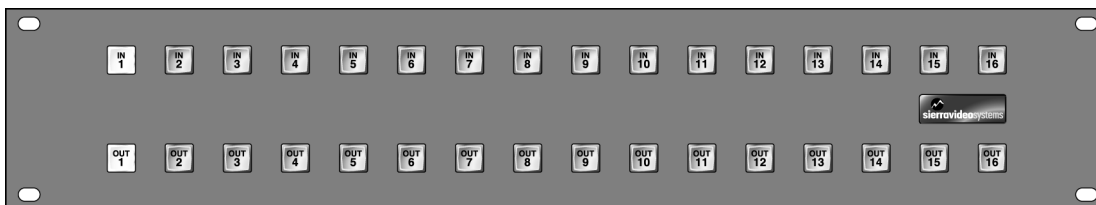
16 INPUT CONTROL PANELS



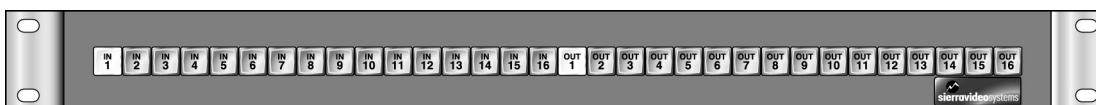
- 16 x 1 Single bus LED remote control panel 804047
- 16 x 1 Single bus LED remote control panel with joystick/chop 804647



- 16 x 16 XY LED remote control panel 804048



- 16 x 16 2RU XY LED remote control panel 804148



- 16 x 16 XY LED local control panel for Hub 804548

Control cables and accessories See DA's & Support Section

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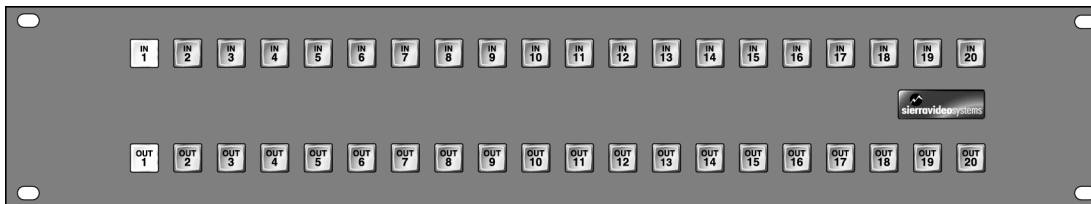
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20 INPUT CONTROL PANELS



20 x 1 Single bus LED remote control panel

804036

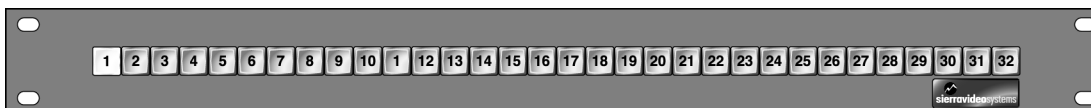


20 x 20 XY LED remote control panel

804037

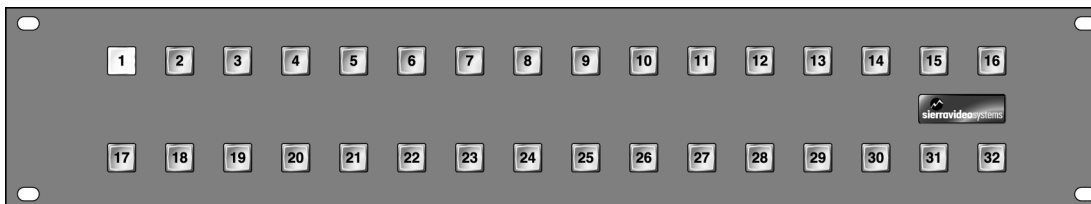
Control cables and accessories See DA's & Support

32 INPUT CONTROL PANELS



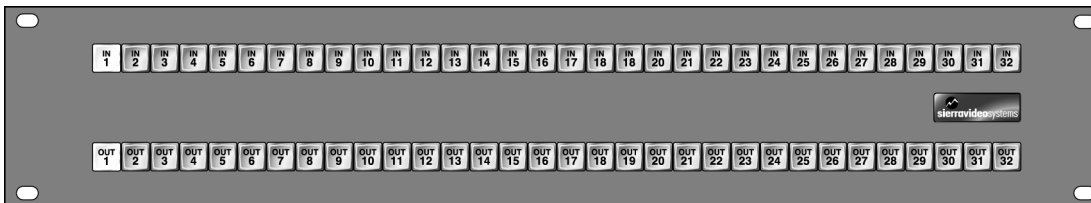
32 x 1 Single bus LED remote control panel

804014



32 x 1 2RU single bus LED remote control panel

804348



32 x 32 XY LED remote control panel

804015

32 x 32 XY LED remote control panel with joystick/chop

804615

Control cables and accessories See DA's & Support Section

CONTROL &
SOFTWARE

**PRODUCT
KEY**

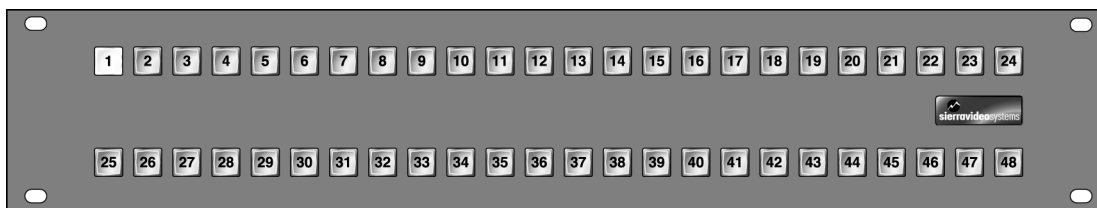
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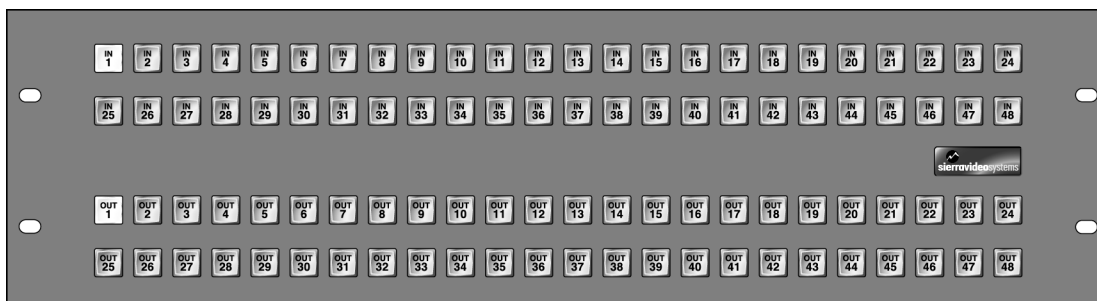


48 INPUT CONTROL PANELS



48 x 1 2RU Single bus LED remote control panel.

804084

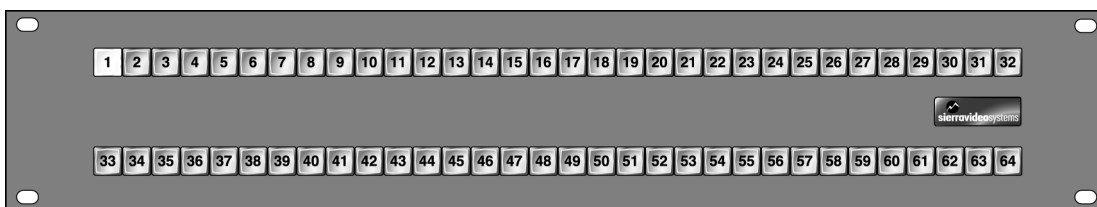


48 x 48 3RU XY LED remote control panel.

804085

Control cables and accessories See DA's & Support Section

64 INPUT CONTROL PANELS

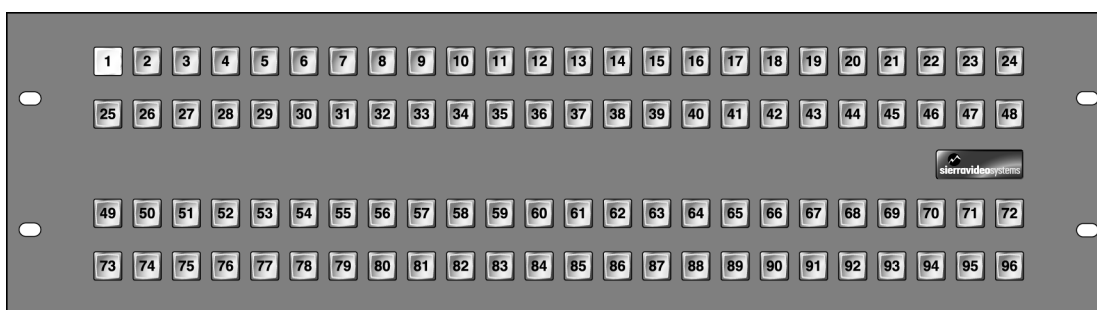


64 x 1 Single bus LED remote control panel

804715

Control cables and accessories See DA's & Support Section

96 INPUT CONTROL PANELS



96 x 1 Single bus LED remote control panel

804785

Control cables and accessories See DA's & Support Section

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ROUTER CONTROL SOFTWARE



From our Graphical Router Interface program (G.R.I.P.[™]) to the modular IntelliPath[™] facility management package, Sierra Video Systems offers a full range of software tools to control your SVS routing switcher.

G.R.I.P. & G.R.I.P.Net

G.R.I.P. uses a Windows-based graphical user interface (GUI) to allow users the ability to name sources and destinations, levels and set up personalities of individual control panels. Likewise, G.R.I.P. allows graphical communication with the router processor eliminating the need for antiquated terminal communication. Complimentary with each router purchase, G.R.I.P. also allows users to execute up to forty pre-loaded "salvos". The G.R.I.P.Net version of this software allows the use of a LAN network with user access and complete administrative control.

INTELLIPATH FACILITY MANAGEMENT SUITE

IntelliPath is a new graphical approach for routing control. This new modular software expands on the complimentary features of G.R.I.P. and incorporates powerful new features. Choose from modules that program and launch over 40 salvos or control multiple routers direct from your PC or any other PC on your network. IntelliPath allows you to configure tie-line management actions from one intuitive user screen. Administrative features determine network access, user IDs, and TCP/IP Ethernet control for access from any where in the world. IntelliPath robust and powerful interface builds on the concept of total control within one software application.

WEB, ETHERNET, AND TCP/IP CONTROL

Sierra Video Systems offers web control solutions other than G.R.I.P.Net and IntelliPath. From our simple Windows 2000 Server interface to third-party appliances, SVS can accommodate any need for network computer topology.



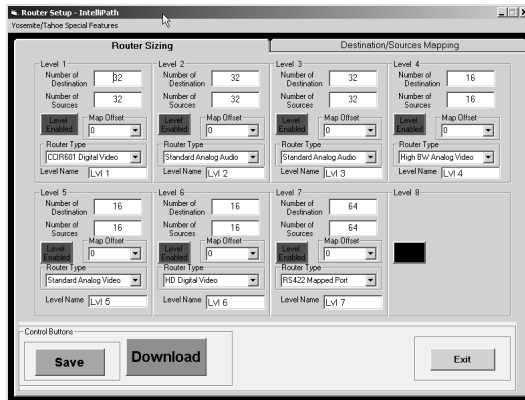
G.R.I.P. and GRIPNet

G.R.I.P. (GRAPHICAL ROUTER INTERFACE PROGRAM)

Sierra Video Systems has expanded G.R.I.P. routing control software to include powerful new features. Shipping with every SVS routing switcher free of charge, this updated Windows PC program allows you to completely customize your routing setup. New features include updated software screens for router setup that eliminate the need for outdated Terminal Mode communication and control.

- Eliminates the need for Terminal Mode
- Simple router configuration
- Naming & router control
- Salvo setup and control
- User-friendly GUI

The new G.R.I.P. GUI offers a myriad of information right on your PC. You can view the status and location of routing switchers, learn information about control panels, create up to 40 salvos, name destinations and sources, and create room groupings for all users. The G.R.I.P. program is a module of the IntelliPath Suite and can be upgraded at any time.



A copy of G.R.I.P. is mailed with every routing switcher. You can also download G.R.I.P. from our website, or contact SVS for a CD copy.

G.R.I.P. (Graphical Router Interface Program) 908002-02

GRIPNet

GRIPNet offers all of the aforementioned features of G.R.I.P. and expands them to a network based, client/server infrastructure. Able to run on local area networks only, GRIPNet allows you to share G.R.I.P. with multiple users with multiple levels of

access. Administration is only allowed on the server computer, but full level configuration access is given to every client. GRIPNet incorporates computer topology for basic use. For a complete network enabled control package, see IntelliPath's Network module on the following page.

G.R.I.P. Net 908009

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

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 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

INTELLIPATH FACILITY MANAGER SUITE

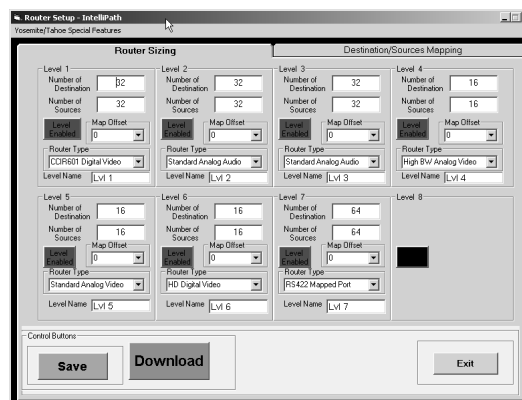
IntelliPath Facility Manager is a graphical routing switcher interface program. It is a simple, user-intuitive PC program that allows for unparalleled control and complete router management. IntelliPath software incorporates many add-on features to our standard control packages with even more functionality. IntelliPath modules include tie-line management, multiple router control, user-definable GUI's, router protocol translators, and a variety of standard network TCP/IP Ethernet operation panels for control and configuration anywhere in the world.

- Simple router configuration
- Easy passwords administration
- Naming & router control
- Salvo setup and control
- Panel configuration
- Network proxy server for TCP/IP

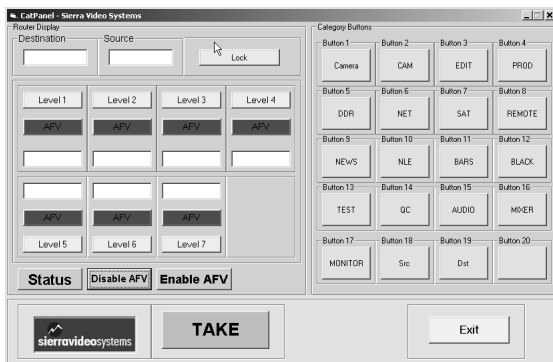


Standard Features and Modular Form

The IntelliPath system is based on a suite of Windows PC modules designed to meet any type of signal routing and path mapping requirements within the professional broadcast and video facility. The base IntelliPath module includes many standard G.R.I.P. features and allows for upgrades and add-ons. Basic features like naming, passwords administration, salvo setup, control panel configuration, and simple router configuration are all included in the base package. IntelliPath provides easy-to-use GUI screens in a variety of panel types and onscreen views. Expand IntelliPath software by adding new modules for new applications. Buy only what you need and upgrade at any time.



Router Sizing and Setup Screen



Control Panel & Category Setup

Router and Control Panel Configuration

IntelliPath is used to configure names, functions, and options on SVS routing switchers and control panels. Router sizing, naming, and level configuration is made easy. IntelliPath will automatically search for routers on your network and display the information that is available on the router processor. Likewise, any control panels available on the network can also be displayed, indicating the type of panel, its location, and other vital information. This PC windows program allows you to configure your entire network from one location.

More on IntelliPath on the following page.

PRODUCT KEY

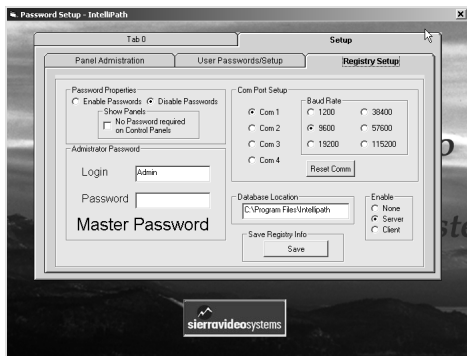
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INTELLIPATH FACILITY MANAGER SUITE (CONT.)



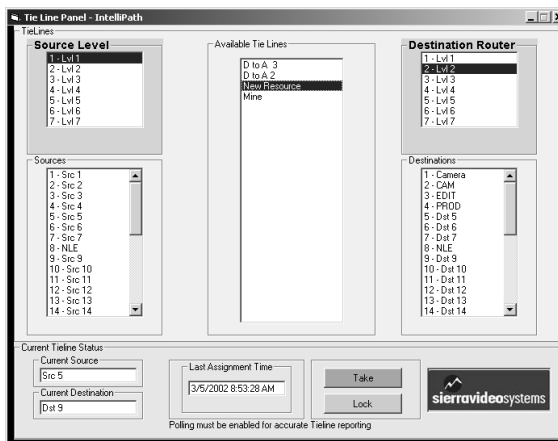
Network passwording and control

Network Module

Many facilities may require different locations and different access levels to the routing network. Optimize your work space by adding the IntelliPath client/server module. Able to run on a LAN/WAN configuration, this unique software comes with 10 user licenses standard. The program allows full to limited access to all the features in your software package. Configuration can be managed via the setup interface for both inputs and outputs from one or many terminals. This allows users to use multiple locations with personalized windows and customized access.

Tie-line Management Module

IntelliPath can be used to link multiple routing switchers together on a single network. The IntelliPath Tie-line Management module offers simplified control and graphical data to manage multiple "ties" on your network. A tie, for example, could be an analog source that needs to be routed to a digital destination. The Tie-line Manager allows you to set up a programmed action that will send the analog source directly to an A to D, and then to the digital router without the user activating the action. This module allows the user to graphically display each source router and each destination router and configure the necessary actions all on one screen. Simplify your facility and easily distribute multiple signal types using SVS IntelliPath.



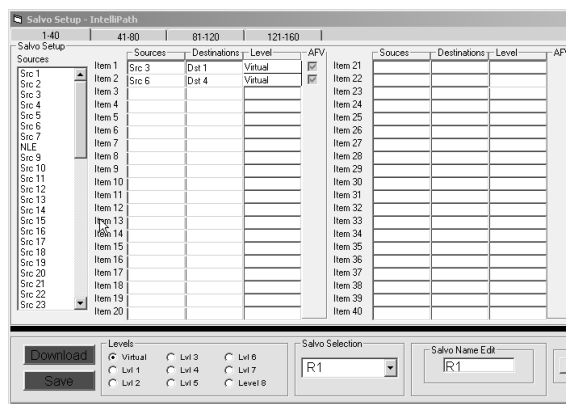
Tie-line Management made easy

Salvo Setup and Naming

IntelliPath offers simplified drag and drop salvo setup and control. Name up to 256 salvos and control each salvo on different levels and different routing switchers.

Router Protocol Translator Module

Consolidate control of third-party routing switchers and other devices under one primary SVS control system using the translator module. This attractive module allows you to upgrade to digital and incorporate legacy routing equipment with new routing systems. Consolidate control of multiple routing systems and slave other routing switchers to SVS systems.



Salvo Setup & Naming

IntelliPath Facility Manager..... 908100

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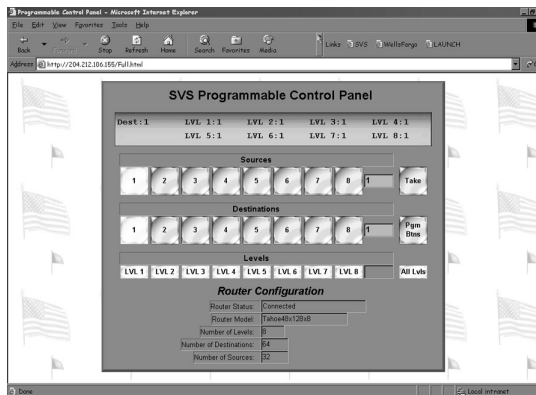
Ethernet TCP/IP Web Control Software

Sierra Video Systems offers two basic Web Control solutions beside the G.R.I.P.Net and IntelliPath solutions: SVS Ethernet TCP/IP Web Control Software, and the Crestron E-server. These web browser-based Java control systems allow TCP/IP routing control from anywhere in the world.

SVS Web Control Software*

Able to run on Windows or Macintosh, the SVS Ethernet Web software offers standard, break-away, and programmable control panels for different levels of configuration. Each panel is designed with multiple levels in mind. The Standard panel is the simplest, supplying easy takes in the least complicated manner. The Breakaway panel allows more complex switching but does not require the user to program any of the inputs or outputs. The fully programmable virtual e-server panel allows simple programming of many routing switcher functions.

* The SVS Web Control Software is only Windows 2000 Server compatible.



Ethernet TCP/IP Web Control Software 908006

Crestron E-server

The SVS/Crestron Web Solution uses Crestron E-server technology and proprietary java based software to create a virtual environment for SVS switchers to be Internet appliances. Similar to the above software, the Crestron Web Solution incorporates three different control panels for different levels of configuration but has associated hardware. The Crestron E-Server is a small black box with a serial port that can be connected to an SVS routing switcher. The box also has an Ethernet port that can be connected to a user's network. The user can set the E-Server to an IP address, and can then use Internet Explorer on a Windows or Macintosh system to browse to the E-Server's IP address. The browser will display web pages that contain simulated router control panels. By entering numbers and clicking buttons on these panels, the user can control most Tahoe, Shasta, Yosemite, and Sierra PRO routing systems.



Ethernet TCP/IP Web Control Software 908012

(Includes Crestron Internet Appliance Device, Software, and Manual)

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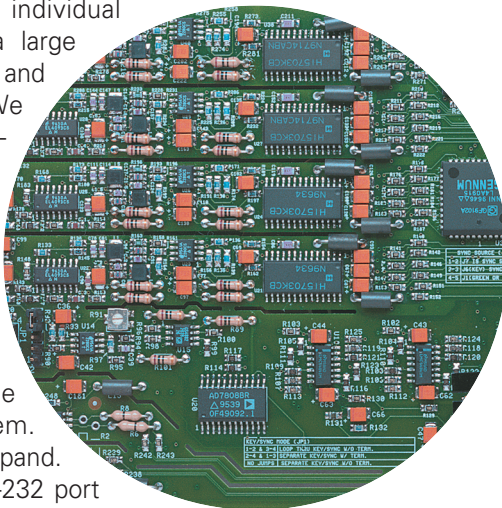
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DIGILINX™ FAMILY

DigiLinx™ is a family of modular analog and digital terminal equipment designed for both transition-to-digital and all digital facilities. The family includes serial digital video and audio delay, storage and frame sync modules, quality analog and digital converters, high definition re-clocking and equalizing DA's, and many other modules that complement large and complete systems. With over 20 different functions to choose from, DigiLinx™ provides a variety of solutions for your terminal equipment needs.

- Compact modular design
- 1RU and 3RU compact mounting frames
- High level of integration within each module
- Enables remote setting and monitoring of system modules from any PC
- SmartLinx™ interface allows control and integration of 170 DigiLinx™ modules

With DigiLinx™, control has never been so easy. Our unique design uses a total systems control approach with our own SmartLinx™ host control software. SmartLinx™ facilitates easy interrogation of individual DigiLinx™ modules in a large system without service and repair of extenders. We provide you with an easy-to-install Windows™ application program with every host adapter that guides you through a set-up of operating parameters. This enables you to monitor the status of any SmartLinx-capable module in your system. There is also room to expand. A single SmartLinx™ RS-232 port can control and monitor up to 170 DigiLinx modules.



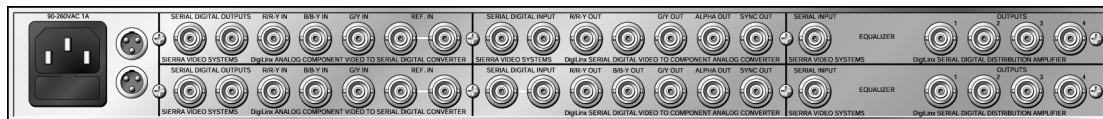


DIGILINX FRAMES

The DigiLinx™ family packs a lot into a very small space with a frame capacity of up to 6 modules in a single rack unit. Mounting frames are available in either 1RU or 3RU configurations.

1RU FRAME

The 1RU DigiLinx frame comes with a single built-in power supply. It can accept up to six single-width DigiLinx modules, or up to three double-width modules, in any combination. This frame also comes with an optional local control panel for applications where a complete SmartLinx control system is not necessary. Otherwise, by ordering the SmartLinx Host Adapter module, or the Alpha/One control panel with interface, the DigiLinx 1RU frame can be controlled via the SVS SmartLinx protocol and/or by using Windows with our SmartLinx application program.



1RU 6 module frame including power supply

807110

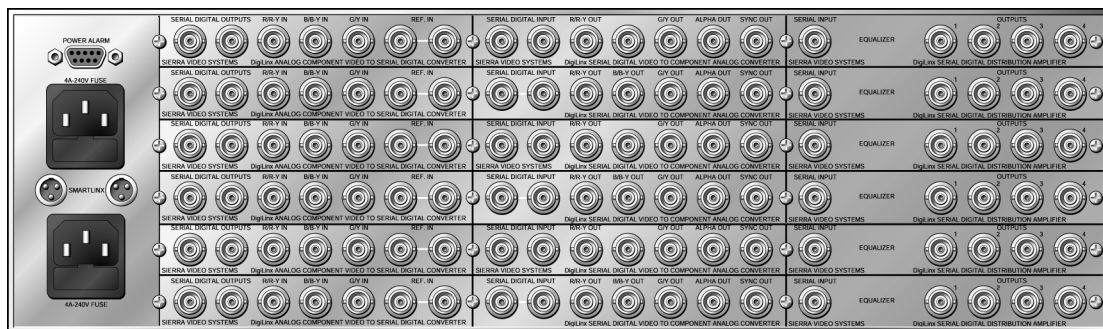


Local control panel for 807110

804711

3RU FRAME

The 3RU DigiLinx frame offers great flexibility because of its capacity to accommodate up to 18 single-width DigiLinx modules or 9 double-width modules. This 3RU frame is available with either single or redundant power supplies.



3RU 18 module frame

807120-01

3RU 18 module frame w/redundant power supply

807121

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 Y = Y-C or S-VHS video (2 channels, Y or C).

DIGILINX FRAME SPECIFICATIONS

807130 SPECIFICATIONS

AC input 115/230VAC 47-63Hz, +/- 10%, 5 to 25VA depending on modules ordered.
 Power supply output rating: +5VDC @ 5 Amps, +8VDC @ 1 Amp, -8VDC @ 1 Amp
 Operating temperature 0-30 Deg. C
 Operating humidity Up to 95% RH non-condensing
 Size 3.25H x 5.2W x 13.5D
 Weight 3 lbs./1.4Kg

807110 SPECIFICATIONS

AC input 90-250VAC 47-63Hz 5 to 100VA depending on modules ordered.
 Power supply output rating: +5VDC @ 10 Amps, +8VDC @ 3 Amps, -8VDC @ 1 Amp
 Operating temperature 0-30 Deg. C
 Operating humidity Up to 95% RH non-condensing
 Size 1RU x 18" depth
 Weight 12 lbs./5.4Kg

807120 SPECIFICATIONS

AC input 90-250VAC 47-63Hz 5 to 200VA depending on modules ordered.
 Universal Power Supply output rating: +5VDC @ 25 Amps, +8VDC @ 8 Amps, -8VDC @ 3 Amp
 Operating temperature 0-30 Deg. C
 Operating humidity Up to 95% RH non-condensing
 Size 3RU x 18" depth
 Weight28 lbs./12.7Kg

807121 SPECIFICATIONS

Power Input 100 to 240V, 50-60Hz, <100VA
 Power Output(max) +5V:25A, +8V:9A, -8V:2.5A
 Operating Temperature 0 to 50C non-condensing
 Operating Humidity 5-95% RH non-condensing
 Depth(from relay rack mount surface) 17 inches (432 mm)
 Height <5.25 inches (<134mm)
 Width <17.3 inches (<439mm)

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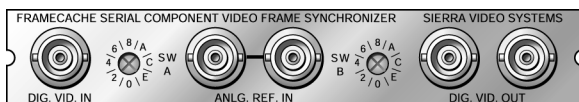


DIGILINX MODULES

DIGICACHE

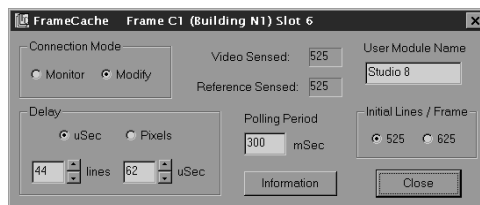
The DigiCache family of DigiLinx modules feature Serial Digital Video (SDI) input and output with an internal memory array. A wide variety of different module sub-types is possible, based on the configuration of the memory and signal processing. DigiCache modules can be accessed and controlled using SmartLinx. In addition, some DigiCache modules also have direct RS-232/RS-422 control.

FRAMECACHE – FRAME SYNCHRONIZER



This module is a frame synchronizer useful for bringing real-time, non-synchronized video into a synchronized video environment. FrameCache accepts a serial digital component video (270Mbps) input signal as well as an analog composite sync or video signal for output timing reference.

FrameCache produces a serial digital component video output signal which is synchronized with the analog composite sync input signal. Since the frame rate of the incoming video signal can be faster or slower than that of the outgoing video signal, an input video frame will be “dropped” or “repeated” when the input and output video frame rates do not match.



Ordinary frame synchronizers with smaller amounts of memory than FrameCache read and write from the same frame of video, allowing read-back video to jump from one frame of input video to another in the active portion of a video frame. This leads to unnatural artifacts during moving video sequences.

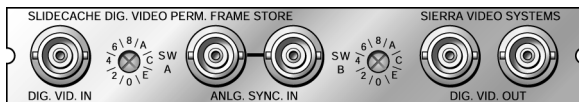
FrameCache solves this problem. The module contains more than three frames of video storage, ensuring that output video is not interrupted during active video by asynchronous video sources. The FrameCache module works in 525 and 625 line-per-frame environments.

FrameCache’s four frame mode allows output video to immediately freeze on a clean frame of input video when input video is interrupted.

FrameCache

547135-00

SLIDECACHE – NON-VOLATILE “SLIDE” STORAGE



Serial digital component, non-volatile “slide” storage

SlideCache is a product that uses Flash EPROM memory to present durable, commonly used images. It is exceptionally well suited for frequently used images that are rarely changed. Popular applications include station ID’s, PSA slides, EBS warning slides, and custom test patterns.

SlideCache now features SafetyNet, which automatically substitutes a permanent still image whenever an incoming live feed fails.

- Holds 1 525 or 625 image527135-00
- Holds 6 525 or 5 625 images527135-10
- Holds 12 525 or 10 625 images527135-20

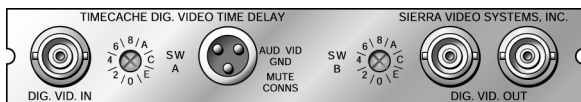
PRODUCT KEY

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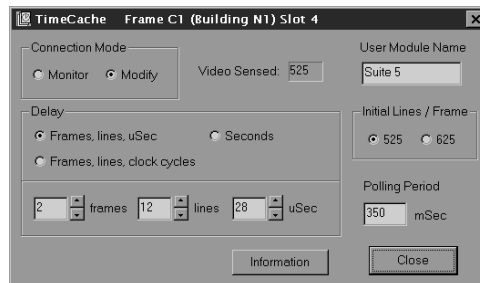
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TIMECACHE: VIDEO – VARIABLE DIGITAL VIDEO TIME DELAY



Serial digital component video input/output time delay module with memory options.

TimeCache brings multi-line processor outputs (such as production switchers, DVE's, and digital chroma keyers) back into time with house sync. The 8 and 16 Megabyte versions can be used to delay camera outputs in virtual studio systems to be in time with computer rendered backgrounds created 4 to 8 frames after corresponding camera movements. The 256 and 512 Megabyte versions provide "safety delays" of 7.4 or 14.9 seconds, respectively.

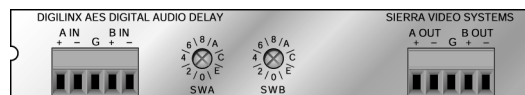


TimeCache provide this high density video delay by using standard DRAM IC's and DIMM sub-modules used in desktop PC's.

The input to output delay of TimeCache adjusts using rear panel switches; remote or local control panels that can be mounted in racks; and using the SmartLinx system. The delay can be set in one pixel increments. TimeCache works in both 525 and 625 line per frame environments.

w/.233 second delay	.....	.517135-00
w/.466 second delay	.....	.517135-10
w/.932 second delay	.....	.517135-20
w/1.86 second delay	.....	.517135-30
w/3.73 second delay	.....	.517135-40
w/7.46 second delay	.....	.517135-50
w/14.9 second delay	.....	.517135-60

TIMECACHE: AUDIO – VARIABLE AES DUAL DIGITAL AUDIO DELAY



This product accepts two independent 32 to 96K sample per second AES compliant digital audio streams and delays them by a user programmable amount of time. The delays for each of the two audio paths are independently adjustable with a maximum possible delay of 15 seconds. The minimum delay is roughly 10 microseconds. BNC and plug-in terminal strip audio I/O versions are available. The use of personal computer dynamic RAM allows this product to cost less than other delays offering only a few hundred milliseconds. Local control is available.

TimeCache: Audio with BNC's	507146-00
TimeCache: Audio with plug-in terminal strips	507146-10

507146 Specifications

Audio Input/Output Standard	.....	Unbalanced or balanced AES or P-DIF serial audio streams
Audio Input Connector	.....	BNC female or pluggable terminal strip
Audio Input Return Loss	.....	>30dB @ 4MHz(75 Ω referenced)
Audio Output Connector	.....	BNC female or pluggable terminal strip
Audio Output Jitter	.....	<250 nanoseconds peak-to-peak
Audio Delay	.....	.10 microseconds to 14.5 seconds (independent for each channel)
		10 microseconds to 0.5 seconds (economy version)
Power Consumption	.....	.5V, <1A; 8V, <.5A; -8V, <.05A
Operating Temperature Range	.....	.0 to 50 C, non-condensing
Operating Humidity Range0 to 95% RH, non-condensing

All specifications subject to change without notice.

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ANALOG COMPONENT-TO-SERIAL DIGITAL VIDEO CONVERTERS

The A-to-SDI converter module family uses an advanced design with features only available from Sierra Video Systems. This family (507101) is frequently used to convert analog cameras and component videotape machines for new serial digital video facilities. The RGB to 4:4:4 and RGB+K to 4:4:4:4 "Dual Links" (SMPTE RP175) application of this module family is particularly well-suited for telecine and analog-to-digital animation.

-The single-channel converter of this family accepts a variety of analog key signal formats, with or without sync, and then converts them into two identical 4:0:0 data streams.

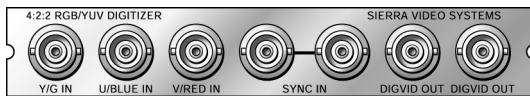
-The analog-to-digital sync timing module does not do A-to-D conversion; instead, it uses an analog composite sync or pulse level composite sync input to produce 2 variable advance/delay serial digital sync outputs.

-The three-channel version supports all three channel analog component video standards. This module can be used for either external sync or sync on the Y or Green channels; or either RGB or YUV inputs of all varieties. Internal switches select the default setting, and SmartLinx can switch the setting as it operates.

-The four-channel version combines both sets of features from the single and three-channel converters. This product can produce separate 4:2:2 and 4:0:0 key signals simultaneously. It can also produce the 4:4:4:4 SMPTE RP175 "Dual Link" signal set.

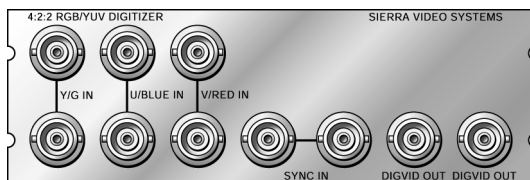
These converters make full use of the onboard processor which sets all aligned steps. The processor controlled functions are set via the Windows SmartLinx program; the optional local control panel; or third-party programs adapted to our SmartLinx protocol.

Up to 6 four-channel A-to-SDI modules can be housed in a single 1RU space, including power supply and local SmartLinx control. This makes this module family the highest density conversion product on the market.



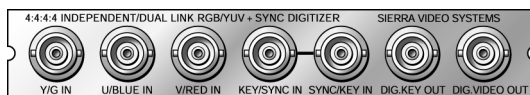
Three channel A to SDI converter

507101-10



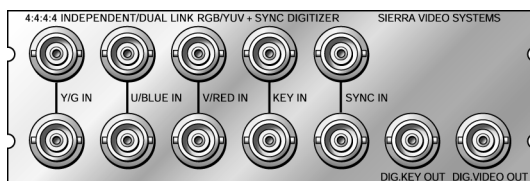
Above with looping RGB/YUV inputs

507101-50



Four channel A to SDI converter

507101-00



Above with looping RGB/YUV inputs

507101-60

PRODUCT KEY

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SERIAL DIGITAL-TO-ANALOG COMPONENT VIDEO CONVERTERS

The SDI-to-A converter module family is comprised of precision serial digital video-to-analog component video converters. Like their A-to-SDI counterpart, these modules are based on an advanced design with unique features.

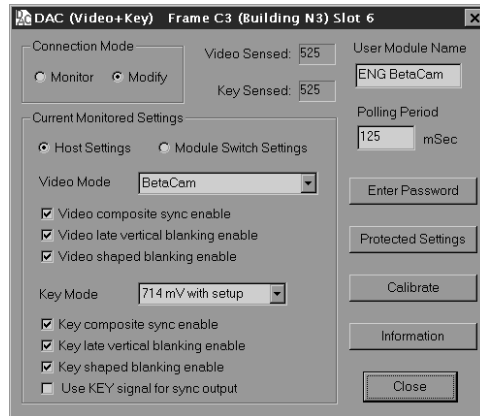
This converter family (507102) is an excellent fit in applications where further analog processing will be made. Appropriate applications include the conversion of "D1" material for use in an analog component video production facility; SDI-to-large screen presentation displays when line-doublers are used; or for the main interface between a SDI facility and a high quality NTSC or PAL broadcast encoder.

The most popular version of these converters is the SDI-to-YUV/RGB converter. It converts one 4:2:2 SDI ITU-601 data stream to either RGB or YUV. YUV vs. RGB mode and sync and blanking modes are all user-selectable using internal default condition switches, or SmartLinX.

Our 4-channel SDI-to-A converter is a two-input version for SDI ITU-601 data streams. This allows one SDI input to be converted into an RGB or YUV analog signal set, and the second SDI input is converted into an analog key/alpha signal.

A simple converter version is also available for 4:0:0 SDI-to-Alpha/Key plus sync only.

The SDI-to-A converters have an on-board processor which warrants no mechanical adjustments for setting mode, gain, or offsets. These processor-controlled functions are set via the Windows SmartLinX program; the optional local control panel; or third-party programs adapted to our SmartLinX protocol.



4:2:2 SDI to YUV/RGB converter

507102-10



Four channel SDI to A converter

507102-00

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**507101 ADC FAMILY GENERAL SPECIFICATIONS**

Input level	1V p-p composite or 700mv nc
Input Impedance	75Ω 1%
Input return loss	35dB @ 5MHz

Frequency response

Y/Green/Key channels	100KHz-5.75MHz, ±0.1dB
U/V/Red/Blue channels	100KHz-5.75MHz, ±0.1dB(4:4:4 modes)
U/V/Red/Blue channels	100KHz-2.75MHz, ±0.1dB(4:2:2 modes)

Delay tilt

Y/Green/Key channels	100KHz-5.75MHz, < 8nsec
U/V/Red/Blue channels	100KHz-5.75MHz, < 8nsec(4:4:4 modes)
U/V/Red/Blue channels	100KHz-2.75MHz, < 8nsec(4:2:2 modes)
Temporal Skew	< 8nsec spread across all four inputs in all modes
Digital Video Precision	10 bits
Digitization Accuracy	< 0.2% error on all inputs in all modes(all gains and offsets independently calibrated)
Sync to Video Skew-Adjustable	±4.7usec with < 5nsec resolution (except sync timing module)
Sync timing module	±15 TV lines with < 5nsec resolution
Digital Video/Key output swing	800mV, +/-50mV
Output return loss:	<15dB @ 270MBs
Digital Video/Key jitter	<400psec peak to peak per SMPTE measurement specification, 10 Hz filter
Operating Temperature	0 to 70C
Guaranteed Calibrated Temperature	20 to 40C
Operating Humidity	5-95% RH(non-condensing)
Size	4.5" wide x 12" long x .8" high (1.6" high with Looping Inputs)
Typical power required	+5V @ 1,000 ma, +8V @ 475 ma, -8V @ 100 ma

507102 DAC FAMILY GENERAL SPECIFICATIONS

Input return loss	<15dB @ 270MBs
Input equalization range	200m of Belden 8281 or equiv.
Output level	1V p-p composite or 700mv nc
Output Impedance	75Ω 1%
Output return loss	35dB @ 5MHz

Frequency response

Y/Green/Key channels	100KHz-5.75MHz, ±0.1dB
U/V/Red/Blue channels	100KHz-5.75MHz, ±0.1dB(4:4:4 modes)
U/V/Red/Blue channels	100KHz-2.75MHz, ±0.1dB(4:2:2 modes)

Delay tilt

Y/Green/Key channels	100KHz-5.75MHz, < 8nsec
Temporal Skew	< 8nsec spread across all four inputs in all modes
Digital Video Precision	10 bits
Digitization Accuracy	< 0.2% error on all inputs in all modes(all gains and offsets independently calibrated)
Sync to Video Skew	< 5nsec error from digital video definitions
Operating Temperature	0 to 70C
Guaranteed Calibrated Temperature	20 to 40C
Operating Humidity	5-95% RH(non-condensing)
Size	4.5" wide x 12" long x .8" high (1.6" high with Looping Inputs)
Typical power required	+5V @ 1,000 mA, +8V @ 375 mA, -8V @ 85 mA

PRODUCT KEY

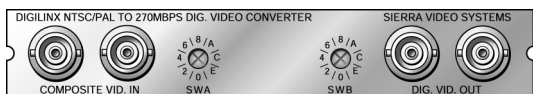
A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

ANALOG COMPOSITE-TO-270MBPS DIGITAL VIDEO CONVERTER

The 507109 combines professional 10 bit processing, high density (6 modules per rack unit), automatic multi-standard versatility, and SmartLinx accessibility into a single solution for analog composite video conversion applications. On-board precision references and EEPROM stored calibration provide stable performance while networked remote control offers ease of in-system adjustment. Built in cropping controls allow the user to remove undesirable source noise at the active picture boundaries. PAL or NTSC input formats are automatically selected as source material changes. Sophisticated adaptive decoding provides 3 line comb filtering with notch decoding to automatically select the best process for changing program content. Adjustments can be made via rear panel switches, an LCD control panel (in the 1RU frame), or SmartLinx Windows 95/98/NT software.



Analog Composite to 270Mbps Digital Converter

507109

507109 SPECIFICATIONS

Video Input Standard	.....	PAL or NTSC
Video Input Connector	.....	BNC female
Video Input Return Loss	.....	>35dB @ 5MHZ(75 Ω referenced)
Video Output Standard	.....	SMPTE 259M
Video Digitizer/Decode Diff. Gain	.....	<0.5%
Video Digitizer/Decode Diff. Ph.	.....	<1 degree
Video Input/Process Precision	.....	10 bits
Video Output Connector	.....	BNC female
Video Output Jitter	.....	<350 picoseconds peak-to-peak
Video Delay	.....	2H + 15 microseconds
Power Consumption	.....	5V, <1.5A; 8V, <.8A; -8V, <0.15A
Operating Temperature Range	.....	0 to 50 C, non-condensing
Operating Humidity Range	.....	0 to 95% RH, non-condensing

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
C = Component video (3 channels, YUV or RGB).
D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
P = Pulse channel for switching synchronizing signals.
S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
W = Wideband channel(s).
Y = Y-C or S-VHS video (2 channels, Y or C).



270Mbps Digital-to-Analog Composite Video Converter

The 507108 combines professional 10 bit processing, high density (6 modules per rack unit), automatic multi-standard versatility, and SmartLinX accessibility into a single solution for digital component video to analog composite video conversion applications. On-board precision references and EEPROM stored calibration provide stable performance while networked remote control offers ease of in-system adjustment. Built-in cropping controls allow the user to remove undesirable source noise at the active picture boundaries. PAL or NTSC output formats are automatically selected as source material changes. Built-in test signals are also available via local or remote selection. Adjustments can be made via rear panel switches, an LCD control panel (in the 1RU frame), or SmartLinX Windows 95/98/NT software.



270Mbps Digital to Analog Composite Converter

507108

507108 SPECIFICATIONS

Video Input Standard	SMPTE 259M
Video Input Connector	BNC female
Video Input Return Loss	>15dB @ 270MHz(75 Ω referenced)
Video Input Range	200m(Belden 8281 or equiv.)
Video Output Standard	PAL or NTSC
Video Output Diff. Gain	<0.5%
Video Output Diff. Phase	<1 degree
Video Output Precision	10 bits
Video Output Connector	BNC female
Video Output Jitter	<.05 nanoseconds peak-to-peak
Video Delay	2H + 15 microseconds
Power Consumption	5V, <1.5A; 8V, <.8A; -8V, <0.15A
Operating Temperature Range	0 to 50 C, non-condensing
Operating Humidity Range	0 to 95% RH, non-condensing

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
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HIGH DEFINITION DIGITAL VIDEO RECLOCKING DAs

The 507126 High Definition Reclocking Digital Video DA accepts SMPTE 292 1.485Gbps and 1.485/1.001Gbps digital video signals and provides up to six outputs. These rates allow for transmission of 1080i and 720p digital video standards in 60 Hz or 59.94 Hz plants.

Reclocking DA's provide AGC and automatic cable equalization, like equalizing DA's while adding the additional feature of embedded clock regeneration. This means that the clock signal embedded within the serial video stream is extracted, reduced in jitter content (using a phase locked loop), then used to re-clock the equalized video data. The reclocking circuitry sends its output to cable drivers which provide up to 6 outputs. The result is a signal which can be sent on for another long section of cable without the device at the end of the cable run experiencing data errors.

Reclocking DA's can be fed to one another, allowing signal runs far beyond the range of a single copper cable. In an application involving only one signal being fed to a destination receiving no other signals of the same type through a cable with no sharp bends, 150 meters of range or more of copper cable run can be achieved. In real world environments, crosstalk and cable bends will typically limit a single cable run to 100 meters. Thus, a 300 meter cable run should contain a reclocking DA 100 meters from the source, and another reclocking DA 100 meters from the first DA. Note that a DA at the destination is generally not useful, since the equalizing and reclocking functions are built into devices such as production switchers, VTR's, and encoders.



High definition digital video reclocking DA

507126-06

HIGH DEFINITION DIGITAL VIDEO EQUALIZING DAs

Unlike other High Definition Digital Video DA's, the 507119 will accept a wide range of data rates, encompassing serial digital video standards from 144Mbps to 1.485Gbps (and everything in between!). This provides conformance with the new high definition standards while allowing for use with the intermediate 360 and 540Mbps standards.

Our High Definition Equalizing DA's are appropriate when a serial source provides an insufficient number of outputs to meet your needs. For example, if a test generator only has two outputs, but six pieces of equipment in the same room need this signal, an equalizing DA will provide low levels of jitter to all loads at minimal cost.

The 507119 HD equalizing DA's are based on fourth-generation high speed serial digital equalizer technology, which compensates for the high frequency loss of cable lengths of up to 50 meters. After the high frequency restoration stage, the equalizer uses a 50% slicing circuit to produce standard peak-to-peak levels and risetimes.

Remember that equalizing DA's should not be fed to each other, because they do not contain reclocking Phase Locked Loops ("PLLs") to reduce jitter which might be added by equalizer-only DA's.

Keep in mind that in many applications, equalization may be all that is needed. An equalizing DA less than 10 meters (of cable) away from a video serializer will perform as well as or better than a reclocking DA in the same application.



High definition digital video equalizing DA

507119-06

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
C = Component video (3 channels, YUV or RGB).
D = Serial digital video channel(s).

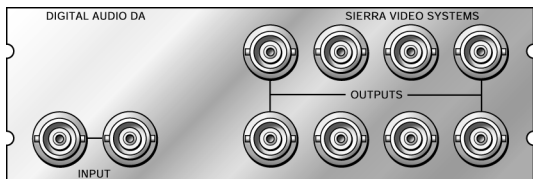
E = Digital (AES/EBU) audio channel.
P = Pulse channel for switching synchronizing signals.
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V = Composite video (1 channel).
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Y = Y-C or S-VHS video (2 channels, Y or C).

DIGITAL AUDIO DA (AES UNBALANCED)

The Sierra Video 507530-08 is an eight output AES/EBU S/PDIF Digital Audio Distribution Amplifier for use with 75 Ω cabling to route signals. Using 75 Ω coax allows the user one cable type to distribute either video and digital audio within a facility.

A looping input connection makes it simple to add multiple DAs when more than 8 outputs are required. Conforming with the industry standard for AES/EBU S/PDIF signals with sampling rates anywhere from 32 KHz to 96 KHz makes this product ideal for the future as other equipment supporting higher sampling rates becomes the norm.



Digital audio DA (AES unbalanced)

507530-08

507126 SPECIFICATIONS

Data Rates	1.485Gbps, 1.485/1.001Gbps
Input Cable Length Range (for Belden 8281)	0 to 100 meters
Return Loss (input & outputs)	>15dB from 100KHz to 1.5GHz
Number of outputs	6
Output Jitter (with 100 meters Belden 8281)	<200psec. p-p
Power Consumption	<0.5A @ 5V provided by DigiLinx frame power supply
Operating Temperature	0-70C
Operating Humidity	5 to 95% RH (non-condensing)

507119 SPECIFICATIONS

Data Rate Range (for custom clock rates)	<140-1500Mbps
Equalization range for Belden 8281	50M up to 1500Mbps
Return Loss (in & out)	>15db from 100 KHz to 1500 MHz
Number of outputs	6
Jitter	<200p seconds with input driven through < 50M of Belden 8281
Operating Temperature	0 to 70C
Operating Humidity	5 to 95% RH (non condensing)
Power Consumption	<0.5A @ 5V provided by DigiLinx frame power supply

507530-08 SPECIFICATIONS

Inputs

Connector	BNC looping
Impedance	75 Ω * (required external terminator)
Signal Level	1 V p-p
Sampling Freq	22 - 96 KHz

Outputs

Number	8
Connector	BNC
Impedance	75 Ω
Level	1 V p-p

Performance

Jitter	< 10 nsec
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PRODUCT KEY

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DIGITAL VIDEO RECLOCKING DAs

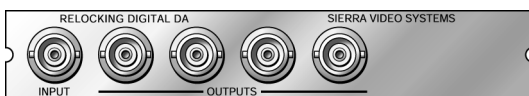
Reclocking DA's help to compensate for jitter induced by long cable runs. Frequencies travel down a cable at different speeds, causing the shapes and spacing of pulses to create "perceived" jitter at the end of long cable runs (>50 meters). The 507114 reclocking DA reduces jitter sufficiently for all of the "far end" loads at a lower cost than an equalizing DA with three long, high quality cables.

The 507114 reclocking DA consists of a reclocking circuit, plus the equalizing function seen on the 507112. The output of the equalizer's slicing circuit locks a high frequency VCO (Voltage Controlled Oscillator). The VCO output is used as a clock input to a flip-flop circuit which stores the state of the digital input wave form during each bit period. The process removes the phase jitter that results from dispersion of the incoming cable and slicing errors in the equalizer circuit.

The number of times SVS reclocking equalizers can be chained together depends on the desired design margins. A string of 10 can pass video error-free. Any reclocking DA output locally drives the input of any SVS equalizing DA, meeting the needs of any load up to 50 meters.

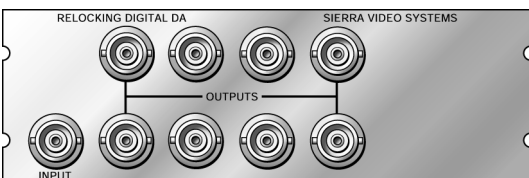
These performance estimates assume that low frequency jitter in the signal that feeds the SVS DA's is small (<300ps p-p). Low frequency jitter components (those with significant sideband energy at 25, 30, 50, or 60 Hz) are generally not attenuated through the use of equalizing or reclocking DA's. These signals are usually "cleaned up" by de-serializing, reclocking at the parallel video rate, and then re-serializing the resulting data stream.

Maximum cable length for a serial digital video signal depends on the data rate of the signal being transmitted. The same error rate which can be achieved at 200 meters at 270 Mbps will be achievable with 300 meters at 144Mbps, when using Belden 8281 cable. In addition, any jitter present at the input to the cable will be added to the jitter produced by dispersion within the cable itself. The reclocking module supports the four common TV industry data rates.



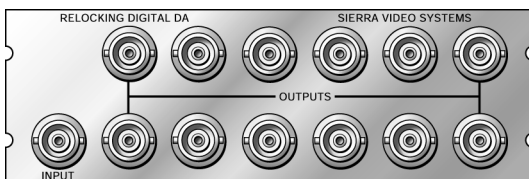
4-output reclocking digital DA

507114-04



8-output reclocking digital DA

507114-08



12-output reclocking digital DA

507114-12

Options for Reclocking DAs:

- RS-485 adapter for any of the above systems 507116
- Performance specifications. See following page

PRODUCT KEY

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V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

DIGITAL VIDEO EQUALIZING DAs

Equalizing DAs are appropriate when a serial source provides an insufficient number of outputs to meet your needs. For example, if a test generator only has two outputs, but six pieces of equipment in the same room need this signal, an equalizing DA will provide low levels of jitter to all loads at minimal cost.

The 507112 equalizing DAs are based on third-generation high speed serial digital equalizer technology, which compensates for the high frequency loss of cable lengths of up to 50 meters. After the high frequency restoration stage, the equalizer uses a 50% slicing circuit to produce standard peak-to-peak levels and rise times.

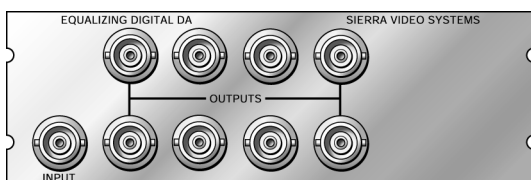
Remember that equalizing DA's should not be fed to each other, because they do not contain reclocking Phase Locked Loops ("PLLs") to reduce jitter which might be added by equalizer-only DA's.

Keep in mind that in many applications equalization may be all that is needed.



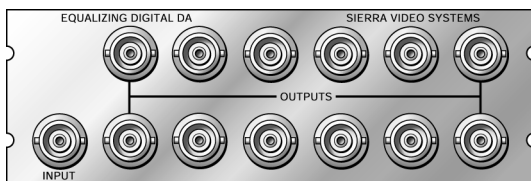
4-output equalizing digital DA

507112-04



8-output equalizing digital DA

507112-08



12-output equalizing digital DA

507112-12

507112 SPECIFICATIONS

Data Rate Range (for custom clock rates)	<50-600Mbps
Equalization range for Belden 8281	300M up to 177Mbps, 200M @ 200 > 400Mbps, 100M @ 600Mbps
Return Loss (in & out)	>15db from 100 KHz to 500 MHz
Jitter	<400p seconds with input driven through < 50M of Belden 8281
Operating Temperature	0 to 70C
Guaranteed Calibrated Temperature	20 to 40C
Operating Humidity	5 to 95% RH (non condensing)

507114 SPECIFICATIONS (PREVIOUS PAGE)

Data Rates (default)	143, 177, 270 and 360Mbps
Equalization range for Belden 8281	300M @ 143Mbps, 300M @ 177Mbps, 200M @ 270Mbps, 150M @ 360Mbps
Data Rate Range (for custom clock rates)	50-600Mbps
Return Loss (in & out)	>15db from 100 KHz to 500 MHz
Jitter	<400p seconds with input driven through < 200M of Belden 8281
Operating Temperature	0 to 70C
Guaranteed Calibrated Temperature	20 to 40C
Operating Humidity	5 to 95% RH (non condensing)

PRODUCT KEY

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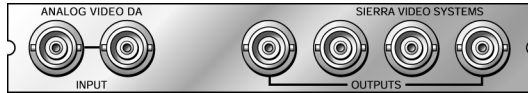
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P = Pulse channel for switching synchronizing signals.
S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
W = Wideband channel(s).
Y = Y-C or S-VHS video (2 channels, Y or C).



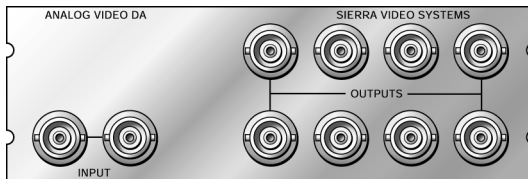
ANALOG VIDEO DAs

The 507030 wide bandwidth linear video distribution amplifier is ideal when a few analog DAs are needed in an otherwise all-digital facility. Many digital video devices still use an analog genlock reference. A lot of monitoring is done as either analog composite or analog component video. These are typical situations where the 507030 analog DigiLinX Distribution Amplifier module is a perfect solution.



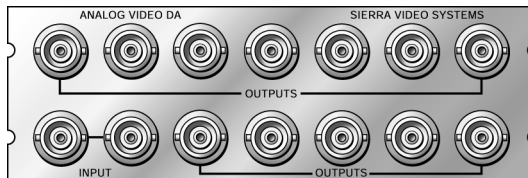
4-output fanout video DA

507030-04



8-output fanout video DA

507030-08



12-output fanout video DA

507030-12

507030 SPECIFICATIONS

Nominal Input Video Level	1 V p-p
Maximum Input Video Level	1.5 V p-p
Input Impedance	High-Z, looping
Input Return Loss	40 dB @ 5 MHz
Superimposed Input DC	± 5 V
Impedance	75 Ωs
Output Return Loss	35 dB @ 5 MHz
DC On Signal	± 50 mV
Isolation Between Outputs	30 dB @ 5 MHz
Nominal Gain	Unity
Gain Adjustment Range	± 3 dB
Frequency Response	± 0.1 dB to 5 MHz; + 0/-3 dB, 5-60 MHz
Differential Phase Error	± 0.1 degree @ 3.58 or 4.43 MHz
Differential Gain Error	± 0.1 percent @ 3.58 or 4.43 MHz
Signal-to-Noise Ratio	80 dB to 5 MHz

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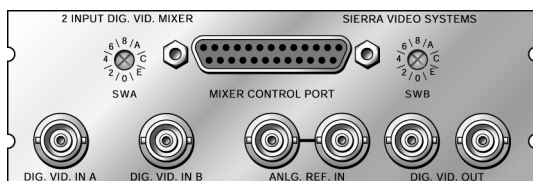
V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

DigiLinx Dissolver Digital Video Mixer

The Dissolver performs dissolve functions between two 270 Mbps component serial digital video signals. The output can also perform a "fade to black" operation using either externally provided video source or internally generated "black" signal. Dissolve rates are user programmable via an RS-232/RS-422 control port and transitions can be triggered via the same control port or one of nine General Purpose Input (GPI) pins which are activated by way of simple momentary connections to ground.

Both inputs to the Dissolver are automatically retimed to an adjustable phase sync generator which is synchronized to an external analog video reference. The auto-timers have a +/- 1/2 line range relative to the adjustable phase reference. Delay through the mixer is roughly 0.5H (assuming inputs are centered in their auto-timing range).

Analog reference to internal reference timing is adjustable via local controls. SmartLinx controllers also have the ability to set dissolve ratios and to trigger transitions. The Dissolver is a "two slot" DigiLinx module, providing a rear panel 25 pin D connector for direct access to GPI's and local serial control.



DigiLinx Dissolver digital video mixer

507144-00

507144 SPECIFICATIONS

Video Input Standard	..... SMPTE 259M
Video Input Connector	..... BNC female
Video Input Return Loss	..... >15dB @ 270MHz(75 Ω referenced)
Video Input Range	..... Source must be within 200 meters of input when using Belden 8281 or equiv.
Video Output Standard	..... SMPTE 259M
Video Output Connector	..... BNC female
Video Output Jitter	..... <350 picoseconds peak-to-peak with 10 Hz high pass filter
Ref.-Output Delay Adj. Res.	..... 37nsec.(one 27MHz clock cycle)
Ref.-Output Delay Adj. Range	..... One video frame period
Video. Delay	..... 1.5 microseconds to 1 horizontal line period plus 1.5 microseconds
Power Consumption	..... 5V, <1.5A; 8V, <0.8A; -8V, <0.15A
Operating Temperature Range	..... 0 to 50 C
Operating Humidity Range	..... 0 to 95% RH, (non-condensing)

Specifications may be subject to change.

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
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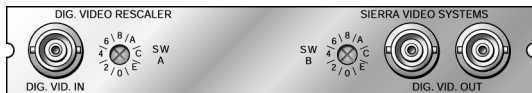


FITN-100 SKIRT GENERATOR

The Skirt Generator consists of two modules, an aspect ratio re-scaler module and a video insertion module. The re-scaler accepts a 4:3 aspect ratio 270Mbps SMPTE 259M video signal and produces a 16:9 aspect ratio corrected 270Mbps SMPTE 259M video signal suitable for use in a wide screen format. The insertion module combines this main video signal with a second 270Mbps SMPTE 259M video signal which typically contains graphics to be displayed in the skirt video area. The main aspect ratio compensated material can be positioned anywhere within the widescreen format image via rear panel controls. Additional features include placing adjustable width borders between the main video and the surrounding skirt video, a user controllable border matte generator, and adjustable width garbage masking for the main video edges.

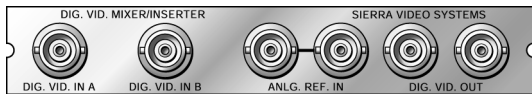


The Skirt Generator produces two images on the screen simultaneously. Separate video sources are used for the main video and the "skirt area."



RE-scaler module

587135



Mixer/inserter module

587144

DigiLinx 1RU Frame

807110

SKIRT GENERATOR SPECIFICATIONS

Video Input Standard	SMPTE 259M
Video Input Connector	BNC female
Video Input Return Loss	>15dB @ 270MHz(75 Ω referenced)
Video Input Range	Source must be within 200 meters of input when using Belden 8281 or equiv.
Video Output Standard	SMPTE 259M
Video Output Connector	BNC female
Video Output Jitter	<350 picoseconds peak-to-peak with 10 Hz high pass filter
Power Consumption	5V, <1.5A; 8V, <0.5A; -8V, <0.15A
Operating Temperature Range	0 to 50 C, non-condensing
Operating Humidity Range	0 to 95% RH

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
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E = Digital (AES/EBU) audio channel.
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SMARTLINX PROTOCOL

Operation and maintenance are exceptionally important issues in system design. One dynamic that is recently coming into play is that terminal equipment is becoming increasingly reliable, but at the same time it's becoming more complex. The DigiLinX™ product family addresses these issues through our exclusive SmartLinX control system.

SmartLinX protocol simplifies the ability for external control devices and third-party systems to access remote control of various DigiLinX™ modules. Most of our DigiLinX modules have a SmartLinX RS-485 port, and DigiLinX™ frames are equipped with an RS-485 network. Each frame and module slot has a unique identification address, allowing up to 170 DigiLinX™ modules to be combined on a single RS-485 SmartLinX network.



Typical SmartLinX main screen

SmartLinX can control complex DigiLinX™ mode functions, such as DigiCache delay and YUV/RGB selection for A-to-D and D-to-A conversions. Our SmartLinX Host Adapter module provides fast polling of all SmartLinX-capable modules on the network. The SmartLinX RS-232 protocol can be used with or without our graphics-rich SmartLinX Windows 95/98/NT software program, which is provided free of charge to our SmartLinX host adapter customers.

SMARTLINX HOST ADAPTER

The SmartLinX Host Adapter module allows any computer with an RS-232 or RS-422 serial data port to control or monitor a collection of up to 170 DigiLinX modules on the SmartLinX network through its own microprocessor. The Host Adapter can simply be plugged into a DigiLinX frame to connect to that frame's SmartLinX network, and an additional SmartLinX connector (which is hardwired to the network) is provided on the module itself for additional versatility.

A single Host Adapter module can simultaneously support two computers with its two separate serial port connectors. PC compatible RS-232 connections to 9-pin serial ports can be made with a simple "mouse extension" cable found in most computer stores. Sierra Video Systems provides users with Windows 95/98/NT software at no charge to supply easy access to all module functions through graphics-friendly SmartLinX control screens.



SmartLinX RS-485 to RS-232 host adapter module

507125

507125 HOST ADAPTER SPECIFICATIONS

SmartLinX Bus type	125Kbps multidrop RS-485
Bus size	up to 170 modules
RS-232/RS-422 data rates	up to 115 Kbps
RS-232/RS-422 data format	asynch., 8 data bits, 1 stop bit, no parity
Flow control	CTS/RTS (RS-232 only) or software
Host Port A interface	RS-232, 9 pin IBM PC pin compatible
Host Port B interface	RS-232,RS-422 9 pin IBM PC pin compatible (for RS-232)
Module size	.1 DigiLinX frame 'slot'
Power Consumption	<1A @ 5V provided by DigiLinX frame power supply
Operating Temperature	0-70C
Operating Humidity	5 to 95% RH (non-condensing)

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
C = Component video (3 channels, YUV or RGB).
D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
P = Pulse channel for switching synchronizing signals.
S = Stereo audio channel switched as a pair.

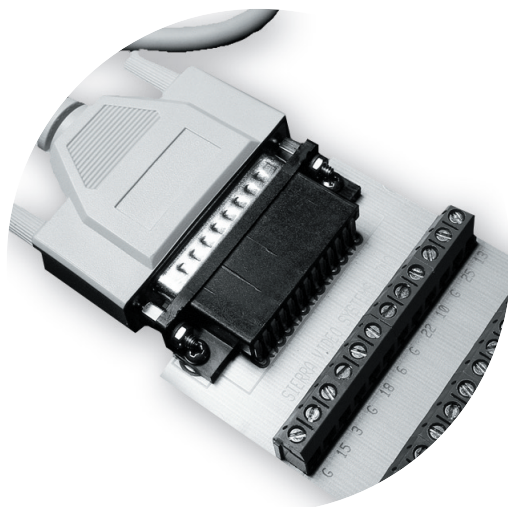
V = Composite video (1 channel).
W = Wideband channel(s).
Y = Y-C or S-VHS video (2 channels, Y or C).

DA's & SUPPORT



Sierra Video Systems offers a variety of distribution amplifiers and support products. We offer a complete selection of DAs and RS-422 routing control systems as well as format converters, video keyers and mixers, cables, fanout adapters, and other important accessories. You will find that SVS offers everything you need to configure a complete system. Also, learn more about SVS System Partners and find out how our routers can be integrated with other leading technology companies and their products.

- Delta and Series 10 DAs
- Video Format Converters
- RS-422 Routing Switchers
- Kramer Support Products
- Accessories: fanout adapters, extenders, terminators
- Cables
- SVS System Partners



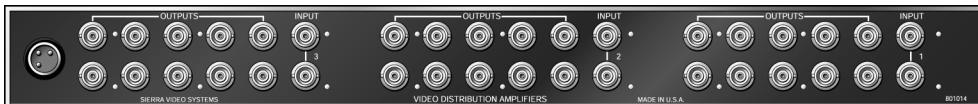


DISTRIBUTION AMPLIFIERS

Sierra Video Systems makes a complete line of high performance 10-output video and audio distribution amplifiers (DA's) for broadcast, production and presentation applications. SVS DA's are still being used daily after being in service for over 19 years. Many of our DA's are reinstalled again in other capacities, extending their lives even further. We offer the Delta Series three channel video distribution amplifier for analog component video and computer graphics applications. These cost-effective plug-in amplifiers offer reliable, high-end performance at a very attractive price. Each member of our DA family is a plug-in module for installation in a 19 inch rack mounting chassis. Each module uses a state of the art design to ensure the low distortion and wide bandwidth essential for transparent performance. Our DA's comprise an extensive family of video and audio distribution amplifiers with 10 outputs each. Rack mounting frames which accept 3, 10 and 20 modules are also available.

SERIES 10V-3

1RU (1.75") **Series 10 Video Distribution Mounting Frame** accepts one, two or three Series 10 Video modules. External power supply.

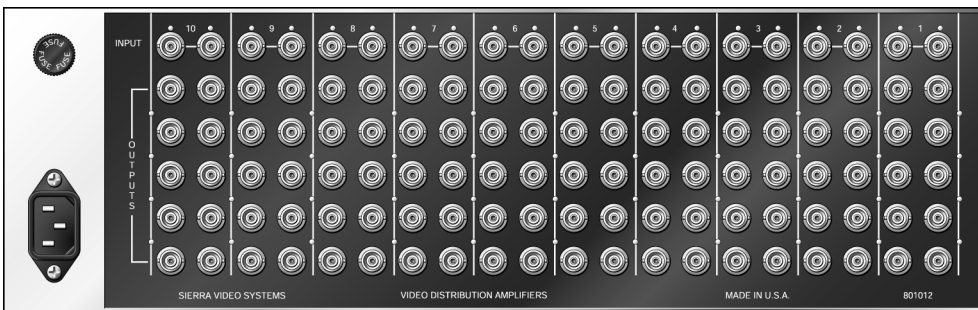


SERIES 10V-3 FRAME

801014-01

SERIES 10V-10

3RU (5.25") **Series 10 Video Distribution Mounting Frame** accepts up to ten Series 10 Video modules. Internal power supply.



SERIES 10V-10 FRAME

801012-30

Redundant power supply

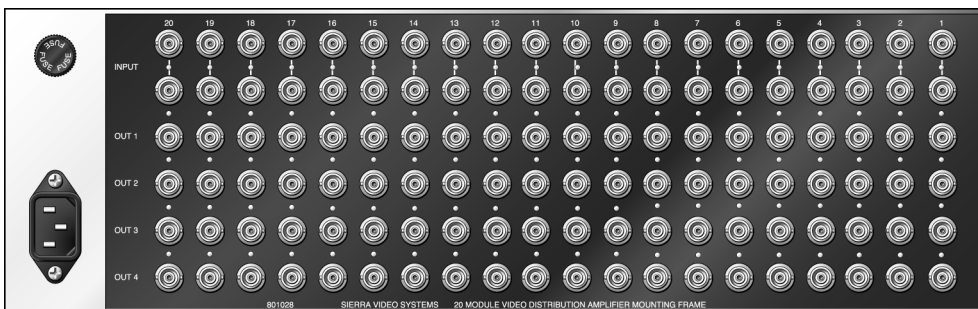
Substitute frame 801012-31

10-SLOT VIDEO DISTRIBUTION AMPLIFIER - 48V DC

801012-48

SERIES 10V-20

3RU (5.25") **Series 10 Video Distribution Mounting Frame** accepts up to twenty Series 10 Video modules. Internal power supply. Looping inputs and four outputs per module.



SERIES 10V-20 FRAME

801028

Redundant power supply

Substitute Frame 801028-31

20-SLOT VIDEO DISTRIBUTION AMPLIFIER - 48V DC

801028-48

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
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 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

501011 BASIC VIDEO DA

This is the most popular member of the Series 10 family. It employs advanced design to obtain wide bandwidth with very low distortion specifications. The 501011-20 wideband version provides distribution with 100 MHz bandwidth.

BASIC VIDEO DISTRIBUTION AMPLIFIER	501011
Wideband video distribution amplifier	501011-20

501519 DIFFERENTIAL INPUT VIDEO DA

The 501519 eliminates the effects of power line hum caused by circulating ground currents in the coaxial cable shield. The differential input circuitry also rejects unwanted common-mode signals induced by stray magnetic fields and electrostatic interference.

DIFFERENTIAL-INPUT VIDEO DISTRIBUTION AMPLIFIER	501519
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501019 EQUALIZING VIDEO DA

The coaxial cable used in distributing video signals is not a perfect transmission medium. For signals of primary importance, lengths of 50 feet (15 meters) or more should be equalized to restore the higher-frequency detail in the video signal and to preserve signal quality. The adjustable equalization range of the 501019 is up to 300 meters of RG59. All other specifications are the same as the 501011/501519. Please be sure to specify cable type and length.

EQUALIZING VIDEO DISTRIBUTION AMPLIFIER	501019
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501022 PULSE DA

The 501022 is specifically designed to drive 10 loads with 4 V p-p composite sync and similar drive pulses.

PULSE DISTRIBUTION AMPLIFIER	501022
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501011 Basic DA Specifications

Nominal Input Video Level1 V p-p
Maximum Input Video Level 1.5 V p-p
Input Impedance	..... High-Z, looping
Input Return Loss	..... 40 dB @ 5 MHz
Superimposed Input DC	..... ± 5 V
Impedance	..... 75 Ωs
Output Return Loss	..... 35 dB @ 5 MHz
DC On Signal	..... ± 50 mV
Isolation Between Outputs	..... 30 dB @ 5 MHz
Nominal Gain	..... Unity
Gain Adjustment Range	..... ± 3 dB
Frequency Response	..... ± 0.1 dB to 5 MHz; + 0/-3 dB, 5-60 MHz
Frequency Response (Wideband DA)	..... +0/-3 dB to 100 MHz
Differential Phase Error	..... ± 0.1 degree @ 3.58 or 4.43 MHz
Differential Gain Error	..... ± 0.1 percent @ 3.58 or 4.43 MHz
Signal-to-Noise Ratio	..... 80 dB to 5 MHz

501519 Specifications (same as 501011 unless noted):

Common Mode Rejection (Equalizing and Differential-Input DA's)	..... 40 dB @ 60 Hz
Common Mode Voltage Range ± 5 V

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
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D = Serial digital video channel(s).

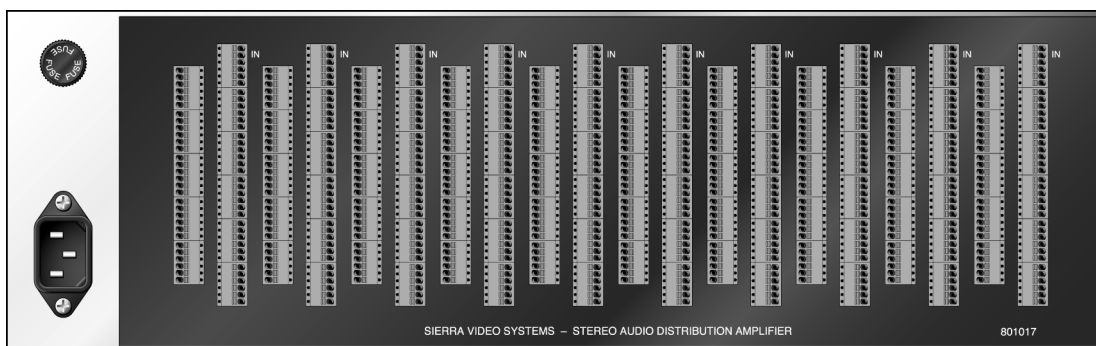
E = Digital (AES/EBU) audio channel.
P = Pulse channel for switching synchronizing signals.
S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
W = Wideband channel(s).
Y = Y-C or S-VHS video (2 channels, Y or C).



SERIES 10 AUDIO DAs

3RU (5.25") **Series 10 Audio Distribution Mounting Frame** accepts up to ten Series 10 stereo audio modules. Ten outputs per module. Internal power supply.



SERIES 10 AUDIO DISTRIBUTION AMPLIFIER FRAME	801017
Redundant power supply	Substitute Frame 801017-31
SERIES 10 AUDIO DISTRIBUTION AMPLIFIER FRAME - 48V DC	801017-48

501026 STEREO AUDIO DA WITH ADJUSTABLE GAIN

The 501026 is a low cost high performance audio distribution amplifier in the SVS Series 10 family of products. The 10 identical outputs and excellent specifications make this an ideal choice for sending analog audio signals throughout a facility. These newly updated DAs replace our basic audio DAs. You can order mono or stereo audio with output impedance equal to 600 Ohm balanced or choose <20 Ohm balanced.

FEATURES:

- Balanced High Impedance low noise input
- 10 low impedance outputs
- Extremely flat frequency response
- Virtually 0% distortion
- Front module adjustable gain control
- High precision, low noise components used throughout

STEREO AUDIO DA WITH ADJUSTABLE GAIN	501026-20
Output impedance: < 20 Ohm balanced	
STEREO AUDIO DA WITH ADJUSTABLE GAIN	501026-40
Output impedance: =600 Ohm balanced	
MONO AUDIO DA WITH ADJUSTABLE GAIN	501026-10
Output impedance: < 20 Ohm balanced	
MONO AUDIO DA WITH ADJUSTABLE GAIN	501026-30
Output impedance: =600 Ohm balanced	

SPECIFICATIONS

Input

Impedance > 40 KΩs balanced or 600 Ω balanced (jumper selectable)
 Level +24 dBu max
 CMRR > 70 db

Output

Impedance < 20 Ω balanced
 Level +24 dBu Max

Frequency Response ± 0.1db 10 Hz -20 KHz

Distortion Harmonic < 0.02% 20Hz to 20KHz at all levels < +24 dBu
 < 0.008% @ 1KHz 0dBu output level
 IM < 0.01% @ 0dBu output level

Noise < 86 dBu 20Hz - 20Khz unweighted

Gain Range Continuously Adjustable from +20 dBu to -3 dBu

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
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RS-422 Port Routers

Large routing switcher installations frequently use RS-422 machine control routing. Our RS-422 Series machine control routing switchers allow centrally located, shared resources that feed the central routing switcher system to have their control ports routed when needed. These resources include tape machines, DDR's and servers.

The SVS RS-422 port routing switchers are used with Tahoe, Sierra Pro (12x8 and up), Shasta, and Yosemite control systems. The 16 port router is linked to one of these systems where only 16 ports are needed, and controlled as a separate level. The 64 port frame can also be linked to one of these systems, or it can standalone with its own serial control module (504001).

RS-422 PORT SUPPORT ROUTING SWITCHERS

The RS-422 Series is a modular design, based on increments of 16 ports. Two frame sizes are available:

- **1RU 16 port frame, ideally suited to small systems**
- **4RU 64 port frame for mid-size systems and for very large installations**

By ordering only the quantity of 16 port I/O modules needed in any size system between 16 to 64 ports, it's easy to configure and very cost effective.

These switchers are "port" rather than "XY" designs. A 32 x 32 XY RS-422 router would have a total of 64 RS-422 connectors. 32 of these would be designated to be Sources or Machines and the other 32 would be outputs or controller connections.

A 64 port system has the same total number of connectors, but unlike the XY system any connector, or "port," can be connected to any other connector. In the case of tape machines this feature allows a machine to control another tape machine which is set to remote. A 64 port system can be thought of as a 32 x 32 XY. It can also be used as a 48 x 16 or a 56 x 8, etc.

The 1RU RS-422 16 port system includes RS-232 serial control. The control follows the same protocol used on our video and audio routing switchers.

The 4RU RS-422 64 port system consists of four 16 port I/O modules and a control processor. The control processor is based on the same design used in our Tahoe Family routing switchers. The controller has an RS-485 control panel party line bus, an RS-232 personality port, an RS-232/RS-422 host port and a parallel control connector for easy integration with other Sierra Video Systems video and audio routing switchers which have parallel control output connectors.

Mapping is one special feature of the 64 port system's control. The RS-422 I/O ports are assigned to individual inputs and outputs of the corresponding video router by means of the personality port. This allows the RS-422 level of a large routing switcher to be configured with only as many RS-422 ports as your system needs: you don't need an RS-422 matrix as large as the video level.

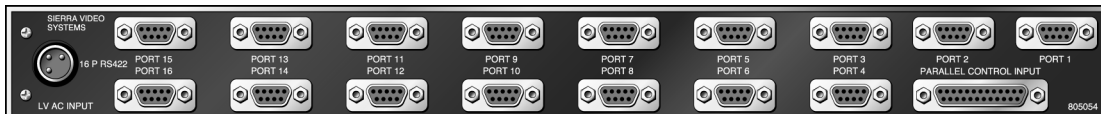
In the 64 port system each of the 16 port I/O modules has a 16 x 64 / 64 x 16 switching matrix, eliminating the need for any additional switching modules.

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 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

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 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

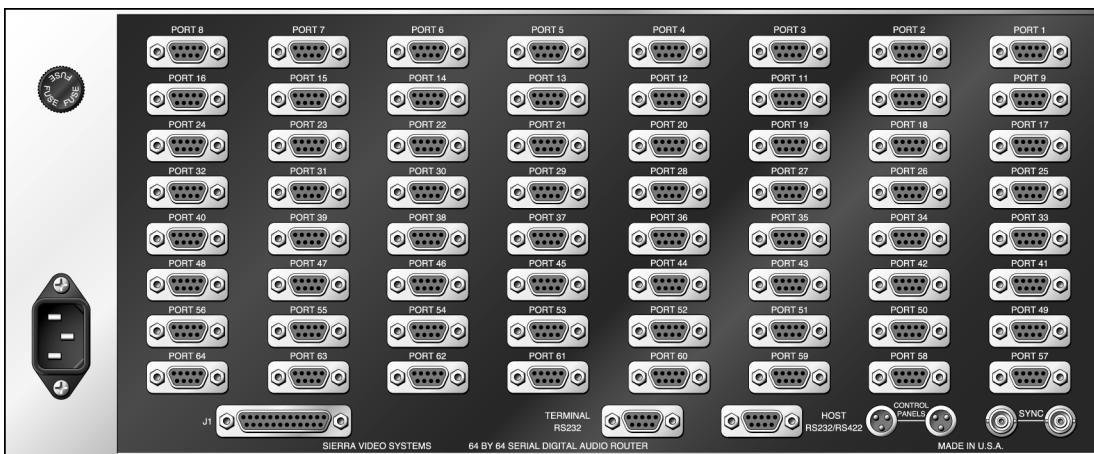


16 PORT RS-422

805054

16 Port RS-422 machine control 1RU routing switcher

with m/s tracking ports. For use only as a "level" under a Tahoe or Yosemite processor. This frame can not be used in a "stand-alone" mode.



64 PORT RS-422

805064

64 Port RS-422 frame 4RU without control module

(Order 16 Port I/O modules separately)

Serial control module

504001

16 Port I/O Module with Port Tracking

505057

Options for RS-422 Machine Control Routers:

230VAC operation for 805054 (16 Port RS-422) PW22002

RS-422 MACHINE CONTROL ROUTER SPECIFICATIONS

I/O connector type one 9 pin female D per "port"
 Data rate 300 bps through 250 Kbps
 Nominal data rate 8.4 Kbps

Mechanical/Electrical

805054

Power input 115 VAC / 60 Hz or 230 VAC / 50-60 Hz.
 Power consumption 20 VA
 Size 1RU x 10" deep

805064

Power input 115 VAC / 60 Hz or 230 VAC / 50-60 Hz.
 Power consumption 80 VA
 Size 4RU x 16" deep

PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
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 P = Pulse channel for switching synchronizing signals.
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DELTA VIDEO FORMAT CONVERTERS & DAs

With the growing mix of RGB and color difference video formats, there is a big need to convert signals from one format to another. Cameras, monitors, computers, character generators and large screen projectors use the red, green and blue (RGB) component video format. Betacam, MII VTRs, and most component video production switchers use YUV (also known as Y/R-Y/B-Y). Our Delta Series format converters are the ideal bridge between these formats.

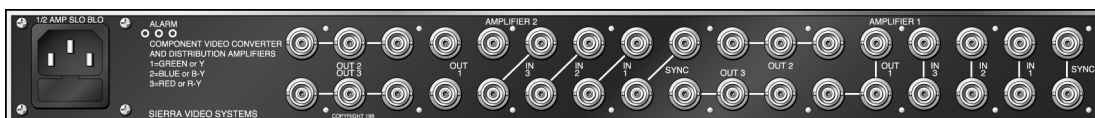
Delta uses a modular design. Plug-in format conversion modules and rack-mounting frames need to be ordered separately. The easy to install frames are shipped with the selected modules already in place.

Two Delta frames are available to meet your needs. The 1RU high frame accepts one or two modules. Each input is looping, and for each output there are three individual feeds. We also offer a 3RU frame that accepts up to ten modules. This frame has terminating inputs and two feeds per output.

The Delta CB converts from RGB to YUV. In addition to the RGB-to-YUV transform, the Delta CB includes circuits to add sync and setup to the output of the Y channel. Sync comes from either sync-on-green or the external sync input. (502005-20)

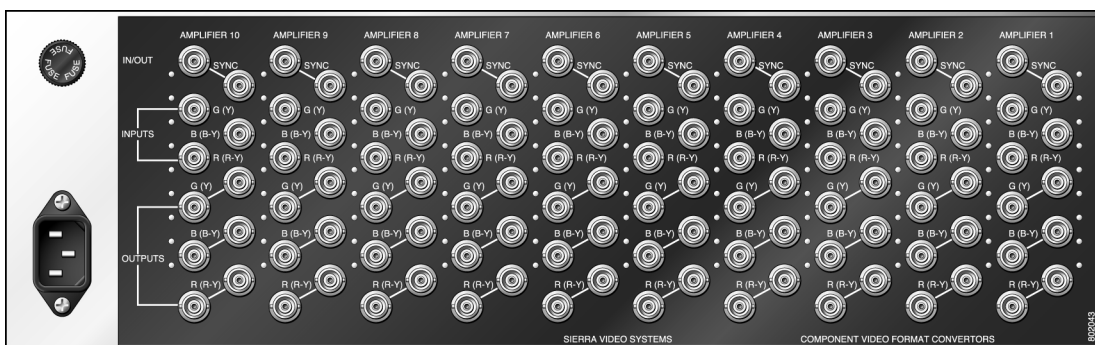
The Delta BC Converts YUV to RGB plus Sync. The Delta BC obtains sync from the Y channel input and provides a separate sync output. Both models are calibrated to one of four signal level standards, depending on the region of the world and the component video signal specified. Formats include NTSC/Betacam, NTSC/MII, PAL/Betacam, and SMPTE/EBU N-10 & PAL MII standards. (502027-20)

The Delta 33 module is a three-channel, plug-in compatible video DA with the two Delta frames and Delta RGB to YUV and YUV to RGB converter modules. The Delta 33 DA has a wide bandwidth to handle analog HDTV (40 MHz) and most wideband RGB video from graphics workstations. The Delta-33 consists of three identical distribution amplifiers on the same plug-in module. When used in the 802008 frame, there are three outputs per channel (9 total per module) and when used in the 3RU 802043 frame there are only two outputs per channel. The inputs are each self-terminating rather than looping. (502007)



1RU frame holds 2 Delta modules

802008



3RU frame holds 10 Delta modules

802043

Delta CB RGB plus sync to YUV format converter module

502005-20

Delta BC YUV to RGB plus sync format converter module

502027-20

Delta 33 component video DA module

502007

	NTSC Betacam®
Lines/Field Rate	525/59.94
Split-Field Color Bar Amplitude*	75%
RGB Color Bar Amplitude	0-525 mV
Luminance (Y) Range	54-714 mV
Sync Level	-286 mV
Chrominance (U,V) Range	700 mV p-p

* White reference bar amplitude = 100% (700 mV)

PRODUCT KEY

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Y = Y-C or S-VHS video (2 channels, Y or C).



KRAMER DAS

VM-1010

1:10 DUAL MODE VIDEO DISTRIBUTION AMPLIFIER

The Kramer VM-1010 is a high performance distribution amplifier for composite video signals on BNC connectors. Using a simple front panel switch, it can be configured either as a single 1:10 DA, or as two separate 1:5s. In either mode its purpose is to provide identical outputs to drive multiple monitors, projectors or other receiving devices.

The looping connectors located adjacent to each input may be used as an additional output in some cases, and can make it easy to create larger systems. Rear panel switches allow the user to select DC or AC output coupling for maximum flexibility. The VM-1010 is housed in a rugged, professional rack mountable enclosure with an internal power supply allowing the use of a standard, detachable power cord.

Typical Applications:

- Broadcast, duplication, and production facilities
- Retail stores, delivering an identical picture to several monitors
- Computer RGB or video component distribution using several machines operating in parallel
- CCTV and security applications



KRAMER VM-1010

1:10 Dual Mode Video Distribution Amplifier

Technical Specifications: VM-1010

INPUTS: 2 composite/component video, looping, 1Vpp/75 Ω on BNCs with termination switch.
 OUTPUTS: 2x5 composite / component video, 1 Vpp / 75Ω on BNCs.
 NON-LINEARITY: 0.2%.
 VIDEO BANDWIDTH: 225 MHz -3dB.
 COUPLING: DC or AC (user selectable).
 DIFF. GAIN: 0.2 %.
 DIFF. PHASE: 0.04 Deg.
 MAX. VIDEO OUTPUT: 1.8 Vpp.
 CONTROL: Level front trimmers: -1.4dB/+2.5dB, EQ. trimmers: 0/+2.5dB @ 4.4 MHz.
 K-FACTOR: <0.05%.
 VIDEO S/N RATIO: > 77 dB.
 DIMENSIONS: 19-inch (W), 7-inch (D) 1U (H) rack mountable.
 POWER SOURCE: 230VAC 50/60 Hz (115V U.S.A.), 10.3 VA.
 WEIGHT: 1.98 kg (4.4 lbs.) Approx.

KRAMER DAS

6104 SDI

1:4 SERIAL VIDEO DISTRIBUTION AMPLIFIER

The Kramer 6104 is an adjustment-free, equalized, reclocking, multi-standard Serial Video Distribution Amplifier. The machine provides automatic equalization for losses on Ohm co-axial cable (up to 100s of meters of cable - depending on the cable and the video standard), and reclocks the output to provide 4 low-jitter, serial digital outputs.

Standard recognition is automatic with 4fsc PAL, 4fsc NTSC, Component 4:2:2, and high-definition 16:9 (wide-screen) standards all being recognized. The machine operates for both 10-bit and 8-bit video, automatically recognizing the word length. The 6104 is part of the new Kramer DIGITools family of compact, high quality, and cost-effective solutions for a variety of applications.

Typical Applications:

- SDI production studios for signal distribution and equalization
- Broadcast studios for On-Air operation
- SDI field production



KRAMER 6104

1:4 Serial Video Distribution Amplifier

Technical Specifications: 6104

INPUT:	1 SMPTE-259M Serial Video, 75 Ω on a BNC
OUTPUTS:	4 reclocked SMPTE-259M Serial Video, 75Ω on BNCs
RESOLUTION:	8 or 10-bits, automatic
OPERATION STANDARDS:	143Mb/s (4fsc NTSC), 177Mb/s (4fsc PAL) 270Mb/s (4:2:2 Component) 360Mb/s (4:2:2 Widescreen)
EQUALIZATION and RECLOCKING:	Automatic up to 30 dB of cable loss
DISPLAY:	Power ON LED
DIMENSIONS (W,D,H):	12 x 7.5 x 2.5 (cm) 4.7" x 2.95" x 0.98" (W, D, H.)
WEIGHT:	0.3kg. (0.67 lbs.) Approx.
POWER SOURCE:	12VDC, 250 mA
OPTIONS:	RK-T1, RK-T3 rack adapters



KRAMER SWITCHERS

6241 SDI

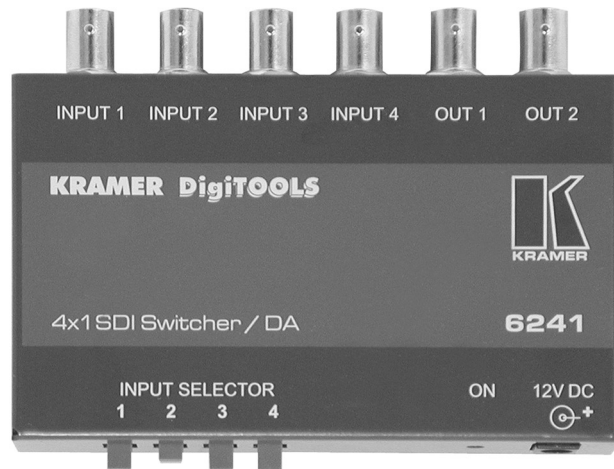
4x1:2 SERIAL DIGITAL VIDEO SWITCHER

The Kramer 6241 is an adjustment-free, cable-equalized, reclocking, multi-standard 4x1:2 Serial Digital Video Switcher. The machine provides automatic equalization for losses on 75-Ohm co-axial cable (up to 100s of meters of cable, depending on cable quality and the video standard), and reclocks the output to provide 2 low-jitter, serial digital outputs. Standard recognition is automatic, with 4fsc PAL, 4fsc NTSC, component 4:2:2, and 16:9 (wide-screen) standards all being recognized.

The machine operates for both 10-bit and 8-bit video, automatically recognizing the word length. Two simultaneous outputs make this machine function as a 4x1 switcher as well as 1:2 distribution amplifier. The 6241 is a part of the Kramer DigiTOOLS™ family of compact, high quality, and cost-effective solutions for a variety of applications.

Typical Applications:

- Video broadcast studios for On-Air switching and signal routing
- Non-linear editing suites
- Video production studios, for connecting various sources to acceptors



KRAMER 6241

4x1:2 Serial Digital Video Switcher

Technical Specifications: 6241

INPUTS:	4 x SMPTE - 259M serial video, 75 Ω on BNCs
OUTPUTS:	2 reclocked SMPTE-259M outputs, 75 Ωs on BNCs
RESOLUTION:	10-bit or 8-bit, automatic according to input resolution
STANDARDS:	4fsc PAL, 4fsc NTSC, 4:2:2 (525/625), and 360Mb/s widescreen (525/625)
EQUALIZATION:	Automatic for up to 300m for 270 Mb/s using Belden 8281 cable
RECLOCKING:	Automatic, according to input standard
CONTROLS:	4 front panel switches
DISPLAY:	Power ON LED
DIMENSIONS (W,D,H):	12 x 7.5 x 2.5 (cm) 4.7" x 2.95" x 0.98" (W, D, H.)
WEIGHT:	0.3kg. (0.67 lbs.) Approx.
POWER SOURCE:	12VDC, 250 mA.
OPTIONS:	RK-T1, RK-T3 19" rack adapters

KRAMER SWITCHERS

6602 AES

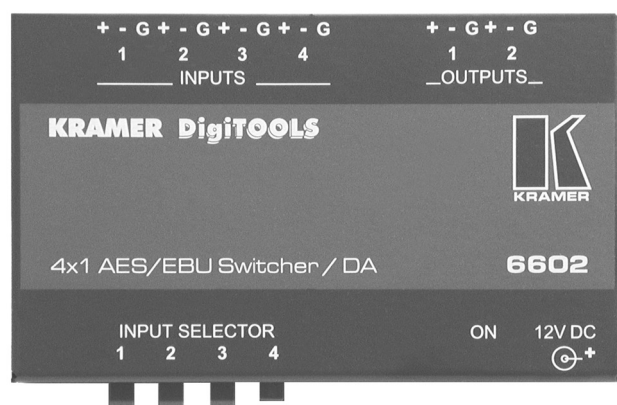
4x1:2 SERIAL DIGITAL AUDIO SWITCHER

The Kramer 6602 is an adjustment-free, cable-equalized, reclocking, multi-standard 4x1 Digital Audio Switcher. It provides automatic equalization for losses on 110-Ohm twisted pair cable and reclocks each output to provide 2 low-jitter digital outputs. It supports AES/EBU, IEC 958, S/PDIF and EIAJ CP340/1201 professional and consumer formats with sampling frequencies up to 96 kHz.

All inputs and outputs are transformer coupled - supporting 110-Ohm twisted pair cable on detachable terminal block connectors. Two simultaneous outputs make this machine function both as a 1:2 distribution amplifier and a 4x1 switcher. The 6602 is a part of the Kramer DigiTOOLS™ family of compact, high quality, and cost-effective solutions for a variety of applications.

Typical Applications:

- Video broadcast studios for On-Air switching and signal routing
- Non-linear editing suites
- Video production studios, for connecting various sources to acceptors



KRAMER 6602

4x1:2 Serial Digital Audio Switcher

Technical Specifications: 6602

INPUTS:	4 x equalized Digital Audio, 110 Ω on detachable terminal, transformer coupled
OUTPUTS:	2 x reclocked Digital Audio, 110 Ω on detachable terminal, transformer coupled
SAMPLING:	32, 44.1, 48, 96 kHz sampling frequencies
STANDARDS:	AES/EBU, IEC 958, S/PDIF and EIAJ CP340/1201
EQUALIZATION:	automatic up to 200mv eye pattern
CONTROLS:	4 front panel switches
DISPLAY:	Power ON LED
DIMENSIONS (W,D,H):	12 x 7.5 x 2.5 cm 4.7" x 2.95" x 0.98" (W, D, H.)
WEIGHT:	0.3kg. (0.67 lbs.) Approx.
POWER SOURCE:	12VDC, 250 mA.
OPTIONS:	RK-T1, RK-T3 19" rack adapters



KRAMER INTERFACES/CONVERTERS

FC-2000

AUDIO FORMAT TRANSCODER/SRC

The Kramer FC-2000 is an adjustment-free multi-standard Serial Digital to analog Audio converter; analog Audio to Serial Digital converter; and a Digital scan rate converter. It accepts any serial digital audio signal – AES/EBU, AES-ID3, S/PDIF and TosLink optical, and provides automatic equalization and reclocking prior to conversion. After conversion it outputs stereo balanced analog audio on XLR connectors. It accepts stereo balanced audio on XLR connectors converts it and outputs it to serial digital audio – AES/EBU, AES-ID3, S/PDIF and TosLink optical. Scan rate conversion can be done for digital inputs, converting to rates in the 32kHz to 96kHz range.

In addition, it can synchronize the digital output with one of the SYNC inputs – composite video or AES/EBU. The conversion ratio between analog and digital can be preset separately in both directions (–12dB, –14dB, –20dB and –24dB to 0 dbFS). The system bit – professional or consumer - for the digital output can be set from front panel. The FC-2000 supports AES/EBU, IEC 958, S/PDIF and EIAJ CP340/1201 professional and consumer formats with sampling frequencies up to 96 kHz. The unique universalism of the unit makes it applicable for any audio conversion in professional audio/video studios. Along with the extensive control switches and LED readouts, it is a true all-in-one, easy-to-use professional audio tool.

Typical Applications:

- Broadcast and production studios
- Professional audio post-production studios
- Digital/analog audio authoring and production



KRAMER FC-2000

Audio Format Transcoder/SRC

Technical Specifications: FC-2000

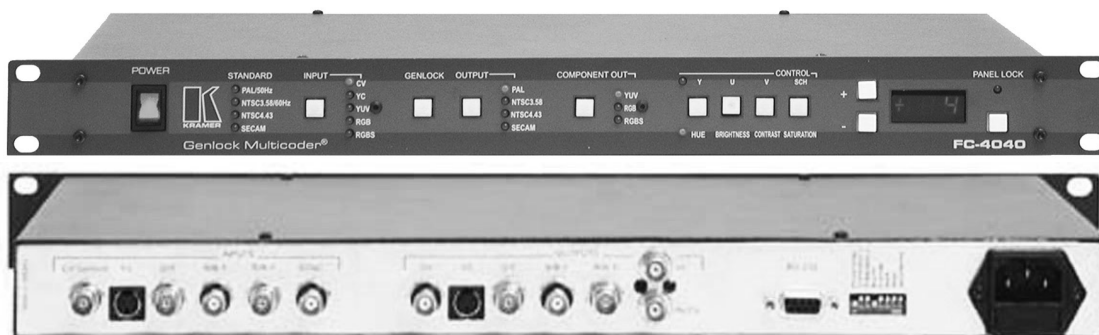
INPUTS:	..... Analog balanced - XLR-F 20dB max on 30 K Ω AES/EBU 110 Ω - detachable terminal block, transformer coupled AES-ID3 75 Ω – BNC, transformer coupled S/PDIF 75 Ω – RCA Optical - Toslink
REFERENCE INPUTS:	..... AES/EBU 110 Ω - detachable terminal block, transformer coupled. Video 75 Ω – BNC
OUTPUTS:	..... Analog balanced - XLR-M 20dB max AES/EBU 110 Ω - detachable terminal block, transformer coupled AES-ID3 75 Ω – BNC, transformer coupled S/PDIF 75 Ω – RCA Optical - Toslink
DYNAMIC RANGE:	..... > 80dB in both directions
BANDWIDTH (-3dB):	..... 20 kHz
SAMPLE RATES:	..... 32, 44.1, 48, 96 kHz
S/N RATIO:	..... 85 dB
CONTROLS:	..... Input signal selector, reference signal selector, conversion rate
AUDIO THD + NOISE:	..... <0.02% unweighted
POWER SOURCE:	..... 230VAC 50/60 Hz (115VAC USA) 20VA
DIMENSIONS:	..... 19 inch (W), 7 inch (D), 1U (H) rack mountable
WEIGHT:	..... 2.5 kg (5.5 lbs) approx.
ACCESSORIES:	..... Power cord

KRAMER INTERFACES/CONVERTERS

FC-4040 MULTIFORMAT CONVERTER

The Kramer FC-4040 is a high quality, multi-standard converter designed to encode and / or decode a video signal and simultaneously output it in the most commonly used video formats. The unit accepts composite, s-Video (YC), component video inputs, and then codes it to all those formats. The component input may be RGsB, RGBS or Y/R-Y/B-Y, and the user may select the format of the component output. The FC-4040 is a multi-standard device, automatically recognizing the incoming video standard, and the user selects the output standard.

Standard conversion between PAL and SECAM is possible, as is conversion between NTSC3 and NTSC4. The color subcarrier of the composite and YC outputs may be genlocked to an external video source, or generated by highly accurate oscillators. The machine allows user-friendly adjustment of the video parameters, and the front-panel may be locked to prevent tampering with the adjustments and other settings. The unit may be controlled via RS-232, and its settings are stored in non-volatile memory on power down, and recalled when the machine is turned on again.



KRAMER FC-4040 Multiformat Converter

Technical Specifications: FC-4040

INPUTS:	CV / genlock: 1Vpp / 75Ω on BNC connector; YC: 1Vpp / 75Ω (Y); 0.3Vpp / 75Ω (C) on 4P connector; component: RGB: 0.7 Vpp / 75Ω on BNC connectors; composite sync: 0.3 Vpp / 75Ω on a BNC connector; (R, R-Y, B-Y): 1V, 0.7V, 0.7 Vpp / 75Ω on BNC connectors.
OUTPUTS:	CV: 1Vpp / 75Ω on BNC connector; YC: 1Vpp / Ω (Y); 0.3Vpp / Ω (C) on 4P connector; component: RGB: 0.7 Vpp / Ω on BNC connectors; H / V / composite sync: 5V unloaded, or 1Vpp / Ω on BNC connector, (R, R-Y, B-Y): 1V, 0.7V, 0.7 Vpp / 75Ω on BNC connectors.
CONTROLS:	Input, output standard and component format selection; genlock and panel lock enable; hue, brightness, contrast and saturation control - via front panel touch switches or RS-232.
DIFF. GAIN:	0.33% NTSC.
DIFF. PHASE:	0.25 Deg.
K-FACTOR:	<0.4%.
Y/C DELAY:	<20 nS.
BANDWIDTH:	>5.5 MHz. (Y, CV)
SCH PHASE:	<0.6 Deg.
DIMENSIONS:	19 inch (W), 7inch (D), 1U (H) rack mountable.
POWER SOURCE:	230 VAC, 50/60 Hz., (115VAC, U.S.A.) 10 VA.
WEIGHT:	2.6 kg. (5.8 lbs.) approx.



KRAMER INTERFACES/CONVERTERS

KRAMER SG-6005

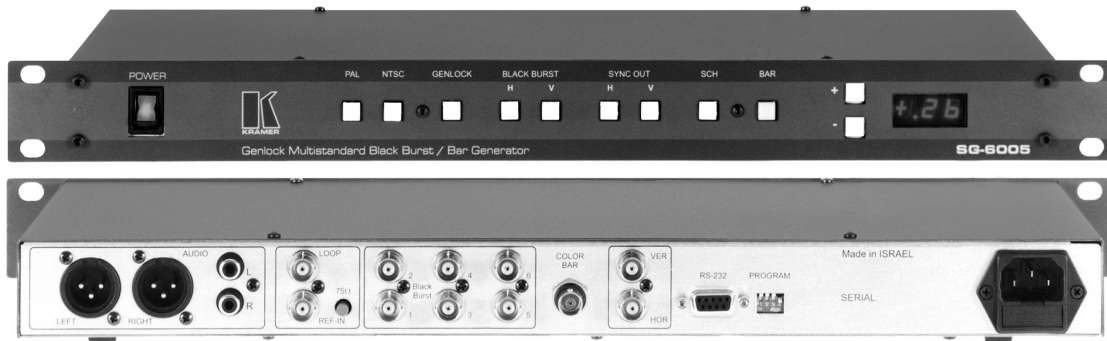
BLACK BURST/BAR/AUDIO GENERATOR

The Kramer SG-6005 is a broadcast quality multi-standard black burst, color bar, sync and audio generator designed for a variety of video studio applications. It is exceptionally full featured, offering six identical black burst outputs, a color bar output, a user programmable color matte, horizontal and vertical sync outputs, as well as balanced and unbalanced 1 kHz, crystal stabilized audio outputs. The unit maybe genlocked to an external video reference or it may operate as a stand-alone generator based on its high precision timing components.

It uses digital synthesis technology for signal generation and allows full SCH/Phase control, delay of output relative to the genlock input and additional delay of the sync outputs. The SG-6005 may be RS-232 controlled from a PC, and firmware is easily upgraded using a computer. The required SCH/Phase shifts and delay may be displayed on a large seven-segment LED display. The number of outputs may be increased by using a Kramer video distribution amplifier like the VM-1010, VM-1015, or VM-1021, etc.

Typical Applications:

- Studio master genlock to one stable source
- Black or color bar reference for professional video cameras that need a stable reference
- Test and alignment tool for professional video / audio equipment
- Color bar generator as filler for recording in a duplication studio



KRAMER SG-6005

Black burst/bar/audio generator

Technical Specifications: SG-6005

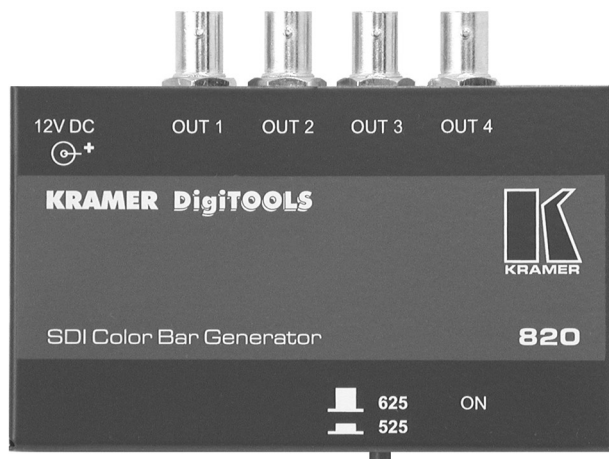
INPUT: 1 genlock video, looping, 1Vpp / 75Ω, on BNCs with a termination switch.
 OUTPUTS: 6 black burst signals, 0.3 Vpp / 75Ω, (sync) 1 color bar output 1Vpp / 75Ω,
 2x 1kHz, +4dBm /47Ω outputs on XLRs, 2x 1kHz, 1Vpp/100Ω outputs, RCAs
 COLOR BAR: 13 selectable patterns.
 CONTROLS: H control: +/- 1/2 Line, 37 nS steps;
 V control: 15.5 lines, 1/2 line steps.
 SCH control: 360 Degrees, by front touch switches.
 RS-232 control and software update.
 PHASE ERROR: Less than 1 degree.
 SYNC OSCILLATOR: Crystal controlled.
 SC OSCILLATOR: Crystal controlled.
 SYNC/SC: Fully Genlocked.
 S/N RATIO: >73dB
 STABILITY: 1 PPM.
 DIMENSIONS: 19 inch (W), 7 inch (D), 1U (H) rack mountable.
 POWER SOURCE: 230 VAC, 50/60 Hz, (115VAC, U.S.A.) 10 VA.
 WEIGHT: 2.5 kg. (5.5 lbs.) Approx.
 ACCESSORIES: Power cord.
 OPTIONS: Kramer distribution amplifiers for additional burst or bar outputs.

KRAMER INTERFACES / CONVERTERS

KRAMER 820 SDI COLOR BAR GENERATOR

The KRAMER 820 SDI Color Bar Generator is a unique, high quality color bar generator of the KRAMER DigiTOOLS™ family for testing and aligning SDI (Digital Video) equipment, such as monitors and recorders. The 820 generates a color bar in the two most common SDI formats: 525 line (60Hz frame rate), and 625 line (50Hz frame rate).

The 820 provides four identical equalized, low-jitter SDI signals for any professional use, and due to its digital signal synthesis, the stability of the machines output is suitable for the most professional demanding applications. The 820 is housed in the small KRAMER TOOLS enclosure and is DC fed, making it suitable for field operation as well.



KRAMER 820 SDI color bar generator

Technical Specifications: FC-2000

OUTPUTS:	4 X SMPTE 259M, ITU-R BT.601 75% color bar on BNC's, 0.8Vpp / 75Ω
CONTROL:	625 / 525 line selector switch
JITTER:	< 360ps.
DIMENSIONS:	12 cm x 7.5 cm x 2.5 cm (4.7 inch x 2.95 inch 0.98 inch, W, D, H)
POWER SOURCE:	12 VDC, 95 mA.
WEIGHT:	0.3 kg. (0.67 lbs.) Approx.
ACCESSORIES:	RK-T1, RK-T3, 19" rack adapters



KRAMER ACCESSORIES

KRAMER VA-2002

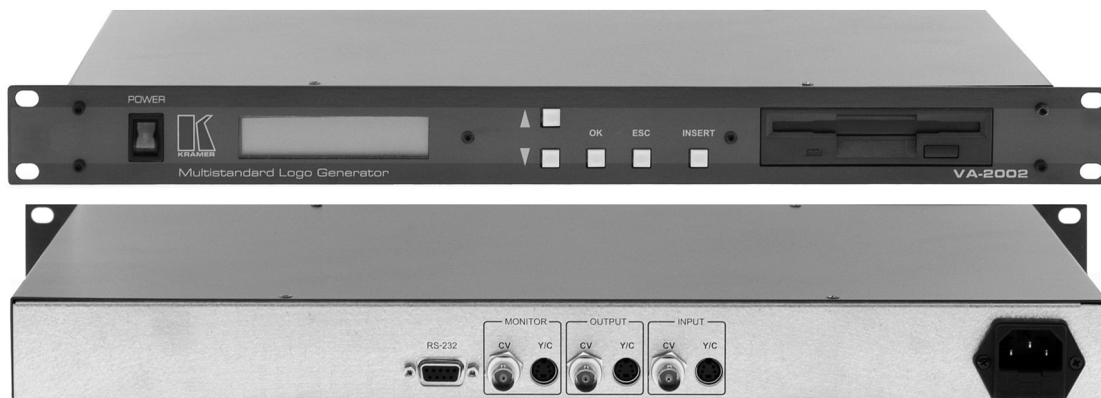
VIDEO LOGO GENERATOR & INSERTER

The KRAMER VA-2002 Video Logo Generator and Inserter is a unique, high quality multi-standard color logo inserter for composite and S-video. The machine provides a selectable composite video and S-video (Y/C) input, inserts a logo into the video signal, and outputs to both composite video and S-video simultaneously. Up to 9 logos may be stored simultaneously in non-volatile memory in the unit.

An LCD window and touch-switches on the front-panel are used for navigating and controlling the numerous functions of the unit, and the user may also implement these functions via the RS-232 port. Firmware upgrades to the unit can be easily downloaded to Flash memory. A versatile software package for creating logos (on a PC operating under Windows™) is provided with the unit. The logos may be downloaded to the VA-2002 via a floppy disk, or RS-232.

Typical Applications:

- Video broadcast studios for logo insertion in On-Air broadcasting
- Video production facilities, for producer or client logo insertion
- Points of sale, shops, security, hospitals, uiversities, hotels, CCTV and other applications, which need source indentification



KRAMER VA-2002

Video logo generator and inserter

Technical Specifications: FC-2000

INPUTS:	1 CV, 1Vpp/75 Ω or 1 YC, "Y"=1Vpp / 75 Ω, "C"=0.3Vpp / 75 Ω
OUTPUTS:	2 of each: CV, 1Vpp / 75 Ωs and YC, "Y"=1Vpp / 75 Ωs, "C"=0.3Vpp / 75 Ωs
MAX. OUTPUT LEVEL:	1 Vpp/75 Ωs CV or "Y"
BANDWIDTH (-3dB):	5.5 MHz, CV or "Y"
DIFF. GAIN:	<2.7%
DIFF. PHASE:	<0.6 deg.
K-FACTOR:	<1.5%
S/N RATIO:	63 dB
CONTROLS:	5 front panel buttons, RS-232
COUPLING:	AC.
POWER SOURCE:	100-230 VAC, 50/60 Hz, 12VA max.
DIMENSIONS:	19-inch (W), 8.6-inch (D) 1U (H) rack-mountable
WEIGHT:	3.2 kg. (7.1 lbs.)

KRAMER ACCESSORIES

KRAMER VP-706SC VGA/SVGA/XGA/SXGA/UXGA Scan Converter WITH RS-232 AND GENLOCK

The Kramer VP-706SC is a real-time, computer-video scan converter designed to take the VGA (640 x 480), SVGA (800 x 600), XGA (1024 x 768), SXGA (1280 x 1024) and UXGA (1600 x 1200) resolution output of a computer and convert it to NTSC or PAL video. The 1U high, rack-mountable VP-706SC includes RS-232 control, a 15-pin HD input with a loop-through for the computer's local monitor, composite video (BNC), S-video (4-pin din), component video & RGBHV outputs, three-level six-line flicker reduction, Horizontal & Vertical shift and sizing controls, and compatibility with any VGA or SVGA computer signal, from 24-100 KHz Horizontal and up to 150 Hz vertical refresh rate.

Its 24-bit color sampling features true-color and real-time image reproduction. And, like all Kramer scan converters, the VP-706SC features auto-scanning input signal detection and AutoTrak™ - Kramer's unique auto-set-up button that automatically sizes, shifts and centers to output signal on your video monitor or projector, a feature not found on any other scan converter at or near it's price-point. The VP-706SC is the perfect combination of features, performance and compatibility in a rack-mountable, metal enclosure with front panel LED, On-screen menu adjustment capability, RS-232 control and IR remote control. The Machine has a genlock input with loop.



KRAMER VP-706SC VGA/SVGA/XGA/SXGA/UXGA Scan Converter with RS-232 and Genlock

Technical Specifications: VP-706SC

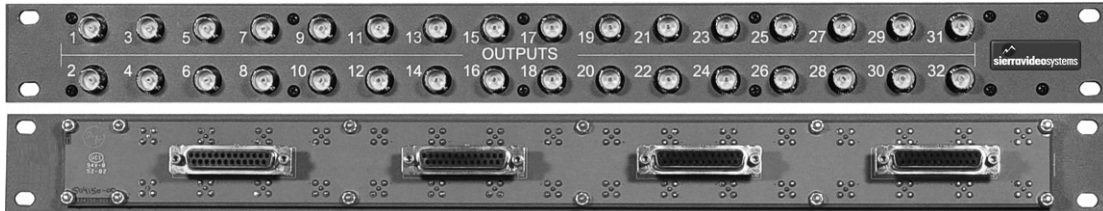
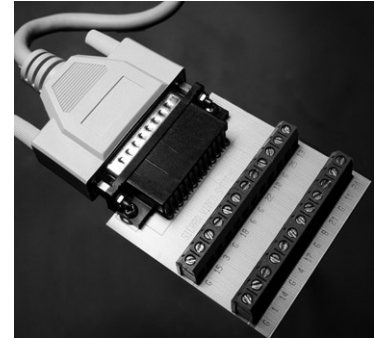
INPUT:	1 VGA/SVGA/XGA/SXGA input on a 15pin HD connector
OUTPUTS:	NTSC or PAL (selectable)
	1 Composite video on a BNC
	1 S-video on a 4-pin din connector
	1 RGBS or RGBHV output on BNC connectors
	1 Component Video (YUV) output (y, r-y, b-y) on BNC connectors
	1 VGA / SVGA / XGA / SXGA / UXGA on a 15-pin connector (for local monitor)
RESOLUTION:	VGA (640 x 480), SVGA (800 x 600) and XGA (1024 x 768) compatibility with 24-bit color sampling (16.8 million colors)
FREQUENCY:	24-100 KHz horizontal, auto scanning. 40-150 Hz Vertical, auto scanning.
IMPEDANCE:	All 75 Ω
GENLOCK:	Standard 1V p-p Composite signal Blackburst
CONTROLS:	IR and RS-232
POWER SOURCE:	100-240 Volt (50/60 Hz) supply with IEC power connector
DIMENSIONS:	4.5 cm.(H) x 48.2cm(W) x 17 cm(D) (1.75" x 19" x 6.75") (including rack ears) approx.
WEIGHT:	2.3 Kg. (5-pounds) approx.
ACCESSORIES:	Includes one 6' (1.8m) composite video cable, one 6' (1.8m) S-video cable, one 6' (1.8m) VGA cable, an IR remote control, user's manual and an IEC power cable.



SVS ACCESSORIES

AUDIO FANOUT ADAPTERS

25-pin D-connector to terminal strips	803155	\$35
(Includes 12" interconnecting cable with D-connectors)		
15-pin D-connector to terminal strips	803156	\$40
(Used with 20x20 audio only)		
Pigtail Adapter DB25	AC2513PX*	\$50/1st M, \$10/M
"X*" = Meters in length		



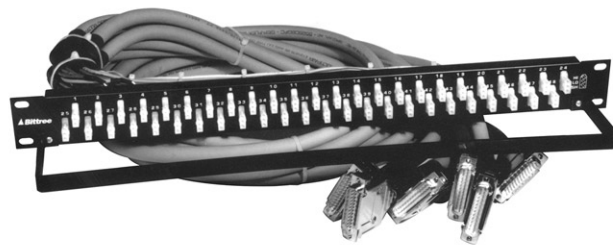
AES audio output adapter panel, DB25 to BNC	AC110BNC75
AES audio input adapter panel, BNC to DB25	AC75BNC110
(Option for AES routers to convert 110 Ω to 75 Ω for unbalanced digital audio. Rear-rack mountable that supports 32 inputs or outputs.)	

75 OHM TERMINATORS

BNC Terminators, 75 Ωs, 1%, pkg. of 25	AC70004
BNC Terminators, 75 Ωs, 1%, pkg. of 100	AC70005

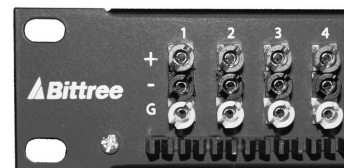
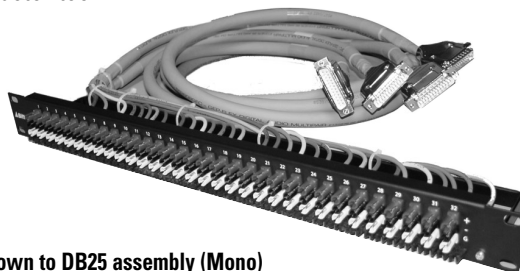
AUDIO INTERFACE WIRING ASSEMBLY

Provides easy integration of SVS audio routers that use DB25 pin connectors reducing installation cost. Each panel has 6 pre-wired DB25 connectors (8 channels each) terminated into a Bittree (E3) rack-mount interface panel (1RU). Can be used with either analog or AES/EBU audio.



Built by Bittree for Sierra Video Systems, a lacing bar and mating E3 hardware is included. Additional configurations and custom sizes available upon request.

Bittree mono audio interfacing wiring assembly	AC625DB
Bittree stereo audio interfacing wiring assembly (88VS, 321S)	AC625DB-01
Punch Down to DB25 assembly (Stereo)	AC25M4S
Bittree crimp tool	ACK2MA-01
Pin insert tool	AC06174204
Pin extractor tool	AC06187704



Punch Down to DB25 assembly (Mono)	AC25M4M
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PRODUCT KEY

A = Monaural audio channel. Also suitable for time code.
 C = Component video (3 channels, YUV or RGB).
 D = Serial digital video channel(s).

E = Digital (AES/EBU) audio channel.
 P = Pulse channel for switching synchronizing signals.
 S = Stereo audio channel switched as a pair.

V = Composite video (1 channel).
 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

EXTENDERS

Delta X	502999
Use with 501011, 501019, 501020, 501021, 501022, 501025, 502007 and 502108	
Manzanita X	510399
Use with 903101, 903105, 903109, 903112, 903130, 903135, 903143, 904146, 903149 and 804046	
Sierra X	503999
Use with 903121, 503001, 503009, 503016, 503039, 503044, 503060, 902011, 902028, 902029 and 902038	
Tahoe X	504999
Use with all Tahoe crosspoint modules and the 504001 controller	
Yosemite X	
Option for 804109-10, 804111-10, 804113-10 (All A/E Fames)	
Extender for audio input buffer	504029
Extender for audio crosspoint.	504199
Extender for optional 504001 local processor	504999
Extender for 505150	505199
Option for 812102, 812100, 812101 (V/D Fames)	
Extender for video 812102 (6464V/D)	504099-40
Extender for video 812100 (analog only 9696V)	504099-60
Extender for video 812101 (128128V/D)	504099-80

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CONTROL CABLES

MANZANITA

9 wire male to male

Used on all Manzanita Family routing switchers except the Manzanita 44's.

Control panel cable, 3 meters, 9-conductor	AC10309
Control panel cable, 8 meters, 9-conductor	AC10809
Control panel cable, 15 meters, 9-conductor	AC11509
Custom length cable order	ACXXX09

where XXX is the length in meters. \$20 for the first meter + \$2.00 per additional meter.

SIERRA AND SIERRA PRO 88V5

25 wire male to male

Used on all Sierra Series routing switchers and the Manzanita Family 44's

Control panel cable, 3 meters, 25-conductor	AC10325
Control panel cable, 8 meters, 25-conductor	AC10825
Control panel cable, 15 meters, 25-conductor	AC11525
Custom length cable order	ACXXX25

where XXX is the length in meters. \$20 for the first meter + \$2.20 per additional meter.

TAHOE, SHASTA (except 161D, 88D), YOSEMITE AND SIERRA PRO (1208V5 and up)

Twisted Pair with shield

Used for all RS485 party line control panels

Control panel cable, 1 meter, shielded pair.	AC20103
Control panel cable, 3 meters, shielded pair.	AC20303
Control panel cable, 15 meters, shielded pair.	AC21503
Connector kit, 2 ea. mini-XLR (Switchcraft TA3F or equal)	AC70001
Connector kit, 10 ea. mini-XLR (Switchcraft TA3F or equal)	AC70002
Cable kit, 10 ea. mini-XLR connectors w/150 m. shielded pair cable	AC70003

Serial interface cables for terminal and host ports

Macintosh to SVS 9-pin, 1 meter	AC50107
Macintosh to SVS 3-pin, 1 meter	AC50108
9-pin IBM-AT to 9-pin SVS, 8 meters	AC50801
9-pin IBM-AT to 3-pin SVS, 8 meters	AC50804
25-pin IBM to 9-pin SVS, 8 meters.	AC50802
25-pin IBM to 3-pin SVS, 8 meters.	AC50805
ASCII Terminal to 9-pin SVS, 8 meters.	AC50803

Interconnect cables for all models, please contact SVS for more information.

For more information, please contact SVS at (530) 478-1000 or visit us online @ www.sierravideo.com

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SVS SYSTEM PARTNERS



www.crispincorp.com



www.sundancedigital.com



www.harris.com



www.nverzion.com



www.amx.com



www.buftek.com



www.crestron.com



www.dnfcontrols.com



www.vistacontrol.com



www.leightronix.com



SYNERGY Broadcast Systems

www.synergybroadcast.com

PRODUCT KEY

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 W = Wideband channel(s).
 Y = Y-C or S-VHS video (2 channels, Y or C).

COMPANY STATISTICS

Type of Business	Designers and Manufacturers of Video and Audio Routing Switchers and Terminal Equipment	
Headquarters	Grass Valley, California ("Video Valley")	
Years in Business	20	
Products in Use	More than 25,000 +	
Delivery Time	Overnight to 6 weeks	
Warranty	7 years	
Trade-Up	Up to 80% allowance	
Channels	Direct, Regional Managers Europe/Asia.....35+ Distributors Kramer Electronics U.S & International Dealers	
Customer Base	Broadcast Cable TV Pro Video	Industrial Gov't./Military Education
Customer Service	Best in the business	
Benefits	Dependability Price/Performance Expandability	



Catalog 2004



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