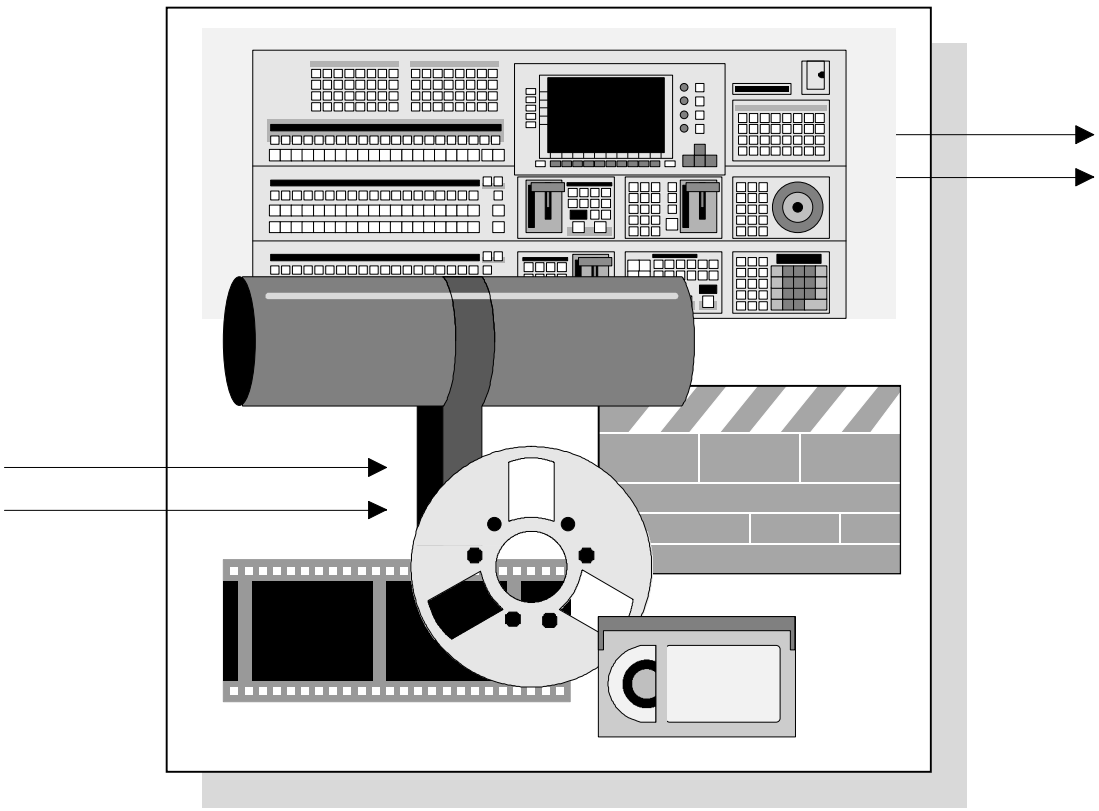
SONy

DVS-7200

Product Guide



SONy

DVS-7200 • Product Guide

Part Number BC-00603

Revision B, September 1997

Printed in U.S.A.

Copyright

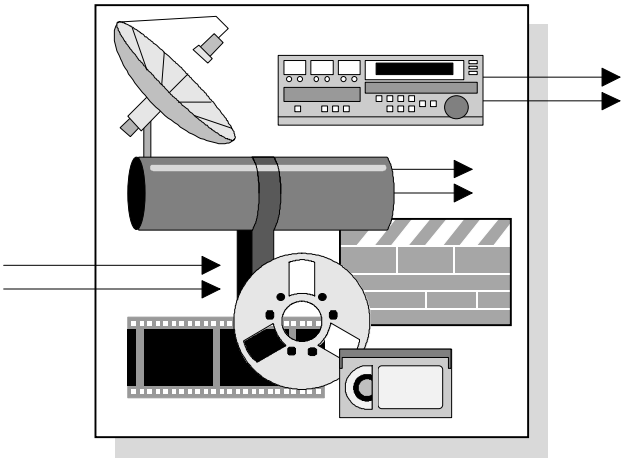
Notice to Users

Contents

Installation Guide 33

Introduction

About This Guide



Based on the successful DVS-7000 series platform, Sony's new DVS-7200 switcher adds a dynamic and powerful *mid-range* switcher to the product line.

The DVS-7200's image quality, superb keying, timeline control, and overall versatility pinpoints a broad range of applications, including studio production, post, and remote broadcast requirements. But above all, the DVS-7200 delivers its full range of features in a streamlined two M/E format — with all the input flexibility, customization capability, integrated performance, and ease of use that you've come to expect from Sony digital switchers.

To assist you with configuring the *optimum* mid-range SDI switcher for your customer's needs, this guide is divided into the following chapters:

- **Chapter 1 — Features and Benefits**

  This chapter provides detailed descriptions and concise explanations of the DVS-7200's basic and "power" features.

- **Chapter 2 — Configuration Guide**

  This chapter describes the DVS-7200's system components to assist with configuration planning. A convenient quotation request form is also included to simplify the ordering process.

- **Chapter 3 — Installation Guide**

  This chapter offers information and diagrams to assist with facility engineering and equipment integration requirements.

- **Appendix A — Feature List**

  This appendix provides a category-based description of DVS-7200 features and modes.

- **Appendix B — Related Resources**

  This appendix lists additional written and visual reference material available for further reading and research on the DVS-7200.

- **Appendix C — Sales and Service**

  This appendix provides basic information about Sony sales, service, emergency response, and software support.

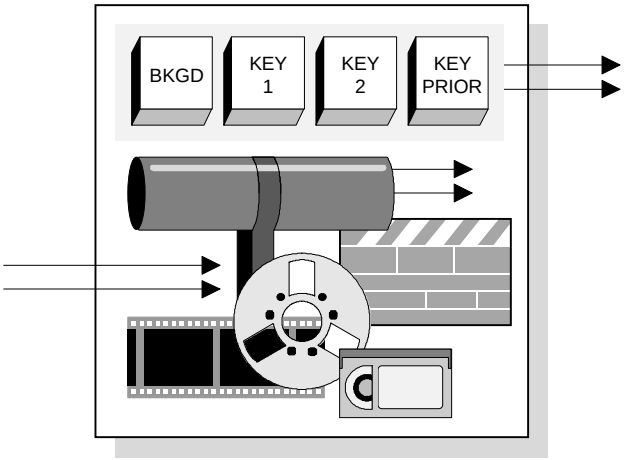
- **Glossary**

  The glossary provides a reference list of important video terms used throughout this guide.

A comprehensive "**Index**" is also provided for your reference.

Features and Benefits

DVS-7200 Feature Overview



This chapter outlines the DVS-7200's features, and includes discussions of the functionality and benefits of the switcher's basic and "power" tools. Concise explanations relating to the *importance* of each feature are provided.

The following sections are included:

- The "**Making Complex Tasks Simple**" section discusses the overall theme under which the DVS-7200 is designed.
- The "**Basic Tools**" section discusses a variety of important *fundamental* DVS-7200 features.
- The "**Power Tools**" section outlines the features that producers, editors and technical directors value *the most* on the DVS-7200.

For a finely focused approach to the switcher's features, refer to Appendix A, "**Feature List**." This appendix provides item-by-item feature descriptions.

Note that some features described in the following sections may apply only when Sony peripheral equipment is used.

Making Complex Tasks Simple

Regardless of the task, Sony has the *right digital switcher* for the application at hand. And whether the switcher is large-scale, mid-range, or compact in size, one important factor is constant across the product line — Sony switchers have the power to make *complex tasks simple*.

That benchmark principle holds true with the new DVS-7200. Here are just a few examples:

- **DME-LINK™** — the ability to run the DME-3000 or DME-7000 effects timeline from the switcher. This function simplifies operations with a simple push of the fader or the triggering of an E-File™.
- **Processed Key** — the ability to compose a key within the DVS-7200, route it to an external device (such as the DME) for processing, and re-enter it in the *same* DVS-7200 keyer. This feature reduces complex patching to a simple button press.
- **System Integration** — provides powerful production and editing tools in conjunction with the BVE-9100, BVE-2000, and DME-series effects devices. Through status reporting and the editing system's ability to *learn* switcher functions, this high level "system" function greatly simplifies the editor's day-to-day requirements.
- **Fingertip Menus** — an extremely simple and logical method of accessing menus. Simply double-press any control panel button that has an associated menu, and the system *instantly* jumps to that location on the display. Functions with associated menus such as keying, color background, frame memory, and timeline control are at your fingertips, without time-consuming menu navigation.
- **Router Interface** — the ability to control a Sony DVS-B Series routing switcher *directly* through the switcher's integral display. This feature places up to 128 sources at your fingertips, with the superb (and ultra-efficient) capability of storing router information along with switcher setups and snapshots.
- **Peripheral Interface** — using a widely adopted industry standard (Grass Valley Peripheral II), the DVS-7200 can control digital effects devices, still stores, and character generators with convenience.
- **Familiarity** — the DVS-7200's operating style simplifies the learning curve and enhances creativity at every turn.

As you review the DVS-7200 feature descriptions that follow, keep in mind how Sony's overall digital switcher principle rings true — *making complex tasks simple*.

Basic Tools

This section describes basic DVS-7200 features used in day-to-day production and post-production.

Control Panel

The DVS-7200's compact and modular control panel is similar in design and layout to the larger DVS-7000 series, but with *two* M/E (mix-effects) banks rather than three. This streamlined architecture includes two powerful keyers and a color background generator on *each* M/E, and the ability to add up to two optional DSKs (down-stream keyers). Fully-loaded, six simultaneous key layers are possible.

Like all Sony digital switchers, the DVS-7200's control panel is engineered for simplicity and ease-of-use. A large-scale display screen offers easy access to operational parameters, adjustments, and setup functions.

The control panel also supports a variety of optional sub-panels for memory recall control, DME control, DSK control, and E-File control. All sub-panels are identical in size, allowing their in-panel locations to be customized as required. In addition, optional Source Name Display Units are available for electronically labeling primary and auxiliary inputs — directly above the bus rows.

The control panel's benefits are as clear as the design — streamlined operations, comfort, and flexibility.

Input Flexibility

The DVS-7200 can be equipped with 12, 24, or 36 primary inputs and up to four component analog chroma key inputs. For flexibility, all SDI inputs can be switched (from the panel) between component digital (4:2:2) and composite digital (4*fsc*) operations. This versatile system allows you to edit, for example, with component DVW-500's in one session and composite DVR-20's in the next — seamlessly.

By adding the BKDS-7110 "Mother Board," you can also *customize* your input configuration with a mix of analog composite and serial digital input modules — up to three BKDS-7110 boards can be installed, and up to 12 input modules can be installed per board, in *any* combination. Even though the switcher's internal processing is *fully digital*, the analog composite input modules provide a convenient gateway for existing composite equipment.

Note that with the hybrid composite analog/digital configuration, when you switch to *component* digital operations, all composite analog inputs are temporarily disabled.

The bottom line is that the DVS-7200 is not restricted to one or two input configurations. You have the flexibility to configure the precise system to suit the customer's *current* requirements — and expand when future needs arise.

V-Proc

Because input configurations change from day-to-day, all inputs have an auto-timing window with an adjustment range of ± .4H. For simplicity and convenience, the "V-Proc" (Video Processing) feature allows adjustment of each input to compensate for common errors in image acquisition. Adjustments are provided for the following parameters:

- ± 200% adjustment range for video (4:2:2 / 4*fsc*)
- ± 200% adjustment range for luminance (4:2:2)
- ± 200% adjustment range for chrominance (4:2:2)
- -7.31 to +109.64 IRE adjustment range for black level (4:2:2)
- -42.86 to +140.00 IRE adjustment range for black level (4*fsc*)
- ± 180° adjustment range for hue (4:2:2)

V-Proc actually provides a greater control range than a TBC.

Output Flexibility

The DVS-7200 offers an impressive array of outputs:

- Four Program
- One Preview
- One Clean
- Fourteen Auxiliary outputs, including one Edit Preview
- Two M/E 1
- Two M/E 2

Best of all, by selecting the desired combination of output modules (BKDS-7161 Analog Composite or BKDS-7162 Digital Output), you can customize the format of *each* output listed above.

Whether you need a mix of composite analog and digital Aux bus outputs, or an all-digital system, the DVS-7200 makes it easy. Compared to switchers with *fixed* output configurations, the DVS-7200's flexibility literally adapts to the production or post production situation at hand.

Effect Keyers and DSK

In the DVS-7200, two powerful effect keyers are standard (per M/E), and up to two optional DSKs (Down Stream Keyer) can also be added. A variety of creative key "types" can be selected, as follows:

- **Luminance** — a high-gain key that derives the "hole-cutting" information from the full range of source luminance values.
- **Chroma** — a key in which the hole-cutting information is derived from a *color* rather than from a video level.
- **Linear** — a key that takes advantage of independent key signals provided by external devices such as character generators. Linear keyers have increased sensitivity to the key signal gain.

- **Clean** — a key that takes advantage of "shaped" video provided by devices such as digital video effects. Whereas a linear key is *multiplicative* in its ability to cut a hole, a "clean" key is *additive*.
- **Pattern** — a key that uses a wipe pattern (and all active pattern modifiers) to generate a key signal.

Keyers truly make the difference in switchers. There's rarely a production or commercial today that doesn't involve multi-layer keys — it's a requirement that can't be overlooked in switcher design. The DVS-7200's key processing capability is powerful, yet it's also simple to understand and operate. You can express your creativity and make a storyboard come true — without getting lost in menus.

Key Edge Adjustment

One aspect of the DVS-7200's high quality key processing is the ability to fine tune and optimize the key signal — independent of the "fill." Through the use of over-sampling, the key signal's width can be modified in sub-pixel units. Edges can be trimmed to add dimension and overall realism, and adjustments can be performed *independently* to the left and right key edges. Furthermore, because the process follows the *edge* itself, even irregularly shaped key signals benefit from Key Edge processing.

From simple mattes to complex chroma keys, the DVS-7200's Key Edge processing is another simple tool that yields visually powerful results.

Enhanced Wipe Generator

With the BKDS-2070 option, additional patterns (including matrix wipes) are added. These include Star, Heart, and the popular "Diamond Dust" wipe. The enhanced patterns can also be combined with the *primary* patterns — enabling you to create new custom wipes.

Snapshot, Effects Memory, and Storage

As the natural by-product of computer controlled switchers, the ability to *store and recall* control panel snapshots has become a fundamental production requirement. Clients come back to change things — sometimes more than once! Producers like their keys set up just one way — and *always* that way. And TDs (technical directors) like to work with special and often highly customized setups — even if the previous TD had a *completely* different control panel setup.

These typical situations are a breeze with the DVS-7200. TDs can store and recall up to 99 "snapshot" memories from the Master E-File panel, and recall up to 32 snapshots as dedicated functions from the optional Shot Box panel. You can even transition *between* snapshots. The snapshot data (as well as *setup* and *effects* data) can be archived on an integral floppy disk for long term storage. For live use or post, snapshots are directly accessible through the Master E-File panel, the Memory Recall panel or the Shot Box panel.

Superior Editor Interface

The DVS-7200 communicates with editing systems from most major manufacturers via serial interface, including Sony's BVE-2000 and BVE-9100. With most editors, a variety of basic editor-switcher control modes are available, including:

- Crosspoint assignment.
- Pattern selection.
- Transition and duration control.
- Basic switcher "learn" capability, with storage in the editor's EDL.
- GPI control for auto-transition and memory recall functions.

With the BVE-9100 specifically, Sony's superb *status reporting* adds many advanced modes:

- Precise Jog/Shuttle positioning of the switcher timeline.
- Advanced switcher timeline learn functions, with switcher status and transition data stored in the editor's EDL.
- Control of both switcher and DME keyframe data.
- Using the BKE-9402 Programmable Control Panel, virtually everything that can be controlled or adjusted in the switcher can be adjusted from the editor.

It's another aspect of Sony's system integration that contributes to the *simplicity* of working with a Sony system — *making complex tasks simple*.

Router Interface

Switchers like the DVS-7200 typically have a *limited* group of inputs available on the panel — facilities, however, typically have a *very large* pool of input sources controlled by a routing switcher. Depending on the daily requirements of a production, the TD is *constantly* called upon to change the array of switcher inputs.

In the past, this function was performed by manually operating external control panels. Now, with the DVS-7200, you can control a Sony DVS-B Series routing switcher *directly* from the DVS-7200's display — allowing *complete flexibility* with crosspoints, input assignments, and the switcher's 14 auxiliary buses.

Depending on routing switcher's configuration, up to 128 sources can be assigned to the switcher's 36 primary inputs and four analog component inputs. Router information is also stored with switcher setups and snapshots — which in turn provides operator convenience, efficiency, and highly precise effect recall functions. And when the DVS-B Series router and DVS-7200 switcher are married to the BVE-9100 (with its ability to store switcher setups in the EDL), effect recall achieves yet another level of convenience and precision.

In the time it *used to take* to manually re-patch a switcher's input configuration, on the DVS-7200 you can recall a snapshot that re-maps crosspoints, sets up the M/Es and initiates a transition — all with one button — *making complex tasks simple*.

Switchable System Standard

In addition to *feature* flexibility, the DVS-7200 also provides *standard and format* flexibility, as follows:

- When configured for component digital operation (4:2:2), you can operate in the 525 or 625 line standard. The appropriate system reference is required.
- When configured for composite digital operation (4*fsc*), you can operate in the 525 line standard.
- You can switch aspect ratios between 4:3 and 16:9.

Achieving this level of flexibility is equally easy — all standard and format switching is performed on the integral display screen.

Redundant Power Supplies

Power supplies just sit there and work — no moving parts, no trouble ever, and no need for a backup, right? Hindsight is wonderful, but *not* when the feed to Telco is black! A little redundancy goes a *long way*.

To this end, Sony offers optional redundant power supplies for both the switcher processor unit and the control panel. When a power supply problem is detected by the system's diagnostics, an operator warning appears and the automatic back-up system switches power supplies — with no signal interruption or loss of output.

The DVS-7200 offers superb features, and a little peace-of-mind, too.

Power Tools

This section outlines the features that operators value *the most* on the DVS-7200. Power tools not only simplify the daily job, but they add to that all-important category of *creativity* — the area in which a switcher's artistic and aesthetic capabilities are greater than the sum of its parts.

Timeline Effects

The only thing better than creating a beautiful switcher event — is creating a *series of events* along a timeline, and *editing* each event with exacting precision. The DVS-7200's timeline feature allows you to create and run switcher timelines for each M/E — *plus* the DSK — *plus* user functions such as auxiliary bus control.

In much the same way that you program effects on the DME, switcher timeline effects give you control over the path of wipe pattern position (including spline), the duration of individual events (or "keyframes"), and the relative timing between the various M/E and DSK timelines.

Up to 99 key frame registers are available. The feature allows you to copy, modify, and delete events, save and recall timelines, and preview the completed effects (individually or in combination) on the switcher's display panel. With timeline control, complex sequences that could *not* be performed live (nor repeated accurately) can now be programmed, edited and used in a production with ease.

Integrated DME Control

Console space is *definitely* at a premium in modern control rooms. With each new device taking up space, it seems that there's barely enough room for the director's script, let alone a DME control panel. The DVS-7200 reverses this trend with the addition of two optional switcher panels: the BKDS-7030 Key Frame Control Panel and the BKDS-7031 DME Control Panel.

These switcher "insert" panels *completely replace* the DME's own control panel. Together, they eliminate unnecessary console footprints, and provide an economical and highly convenient method of effects creation and control. In addition, the switcher's floppy drive can store DME setups, snapshots, and effects files — as well as switcher data. (Tell the director there's finally enough room for the script!)

In addition to Sony DME products, a wide variety of digital effects devices from other manufacturers such as Scitex DV (Abekas) and Tektronix-GVG can be controlled directly from the DVS-7200 control panel. This interface utilizes a widely adopted industry standard protocol (Grass Valley Peripheral II), and requires the BKDS-7001 control port expansion for the switcher's control panel.

Key Modifiers

A keyer that simply *keys* isn't good enough! When the client says "show me what you can do with this key," the technical director needs a creative toolbox from which to offer as many visual options as possible — far beyond basic borders and shadows.

To address this requirement, the DVS-7200 provides *extensive* key modifiers:

- Each keyer can access the M/E's wipe pattern generator, and a *separate* internal pattern generator for mask.
- Each keyer has an optional *dual* matte generator for border fill. This dual matte generator in turn has its own pattern generator.
- With the optional Key Border Generator installed, Border, Drop Border, Soft Edge, Shadow and Drop Shadow capabilities are added to the effect keyer. The option also provides continuous color, position, width, density and softness adjustments. The key border can be filled with the dual matte generator, or a live video source from the integrated M/E bank utility bus.
- Powerful "copy" functions allow you to transfer settings between keyers and matte generators with ease.

Now, with the DVS-7200, when the client says "nice, but let's see something else," the operator will never run out of creative ideas.

Advanced Chroma Keyer — FineChroma™

Sony's FineChroma technology, available with the optional BKDS-2031 and BKDS-2032 boards together, provides an advanced level of chroma key processing typically found in external chroma key devices only.

Each M/E can be equipped with a chroma keyer that delivers full 4:4:4:4 video and key processing, auto and manual modes, color cancellation, spot color correction, shadow and density control, *plus* a dual clip and gain feature that allows two separate clips in a single image.

You can also generate a dedicated key source for up to two cameras, providing a constant and convenient matte source as required.

Although the feature list is impressive, it's the *visual results* that make the difference. Whether you're keying transparent glass or working with an unevenly lit background, the DVS-7200's FineChroma technology delivers clear edges and a remarkable degree of visual realism on screen.

Dual Matte Generators with Color Mix Capability

Switchers stopped being *just* switchers (in the precise definition of the word) many years ago. They've evolved into a combination *switching device* and *artist's palette*, with the ability to mix sources, colors, and patterns as *required* to bring a storyboard or a production to life.

To this creative end, the DVS-7200 has provision for up to eight internal dual color matte generators — for Key-1 edge and Key-2 edge (for each M/E plus DSK), in addition to Wipe border and Color background (for each M/E). *Each of these matte generators* has color mix and wash capability, its own dedicated pattern generator, and extensive pattern modifiers. Rembrandt would be jealous.

Frame Memory

The highly versatile Frame Memory function provides storage and playback for two individual frames, divided *as needed* between video only, or video and key signals. A dedicated internal routing system is provided for *each frame*, independent of Aux bus operation.

Frame memories can be used for the following creative applications:

- Grabbing fields or frames.
- Layering.
- Creating custom masks.
- Storing matte and fill signals.
- Painting from a *user-supplied* graphics tablet.
- Re-positioning live or frozen images as a snapshot or animated as a keyframe effect. A mask can also be applied a live image using an internal dedicated wipe generator.
- Storing and manipulating *frozen* z-axis images (in conjunction with a DME's Depth Key processing).
- Keying and mixing between frames, filling with video from an internal auxiliary bus or matte generator, then routing the results to any desired internal or external switcher destination.

In much the same way that audio boards allow you to create *sub-mixes* upstream of the main mix, Frame Memories provide *video* sub-mix functions upstream of the buses, with the resulting capability — and creativity.

Auxiliary Buses

There's nothing special about Aux buses, right? Not true with the DVS-7200! Fourteen auxiliary buses are available, with the standard set of primary and M/E crosspoints as you might expect. Using a simple assignment menu, you can place the Frame Memories, Key mattes and fills, and even the clean chroma composited image on the Aux buses.

In fact, *every signal* that enters the switcher or is *internally generated* — can be placed on an Aux bus.

The DVS-7200's Aux bus feature is simple and logical. You can *sometimes* predict the signals you'll need before an edit session or production, but once you're in the midst of it, there's a confidence in knowing that *everything* is accessible via the Aux buses — on demand. Whether you're routing to DMEs, monitors, recorders or an Edit Preview feed, the DVS-7200 offers a total Aux bus delegation package.

Processed Key

The DVS-7200's Processed Key function is an "effects pathway" that solves the problem of routing signals to and from a DME digital effects system or color corrector, without complex patching. You can compose a chroma key for example, clip and adjust it, route it to the DME for manipulation, and then re-enter it in the *same* DVS-7200 keyer — with the simple press of a button.

Whether you're flying logos or re-sizing graphics, the Processed Key approach clearly illustrates the benefits of Sony's system integration concept. Best of all, the feature works with most other major manufacturer's DVEs that are equipped with a key channel.

DME-LINK™

For live field production and studio production, the DVS-7200's DME-LINK feature controls up to four Sony Digital Multi Effect systems through the switcher's control panel. Operators can run specified DME-3000 and DME-7000 effects by the switcher's fader or transition button — just like wipes and dissolves.

In post, it's easy — the BVE-9100 editing system sends out serial commands to initiate DME effects. But in *live* production, you simply don't have enough hands to trigger all the necessary devices.

With DME-LINK in the path, however, running the DME timeline is easy, and the switcher's internal transition rate overrides the rate programmed locally on the DME. Over 30 basic effects are available for single and multi-channel DME systems, and on the DME-7000 specifically, up to 12 user-defined digital effects can be used.

DME-LINK once again underscores the DVS-7200's benchmark principle — *making complex tasks simple*.

Bus Link Mode

The Bus Link Mode allows you to establish a relationship between the crosspoints of different switcher buses. The mode has valuable applications in both live and post production situations:

- With a link established in a live broadcast, for example, selecting camera one on M/E 2 could automatically select camera one on an Aux bus. Offsets can also be established through the use of up to five "link relationship tables" — allowing you to select the *same source* or a *different source* on another bus, as required.
- In post production, for example, the Bus Link Mode would allow you to automatically select M/E 2 key matte on Aux 13, each time M/E 2 is used as the program output source.

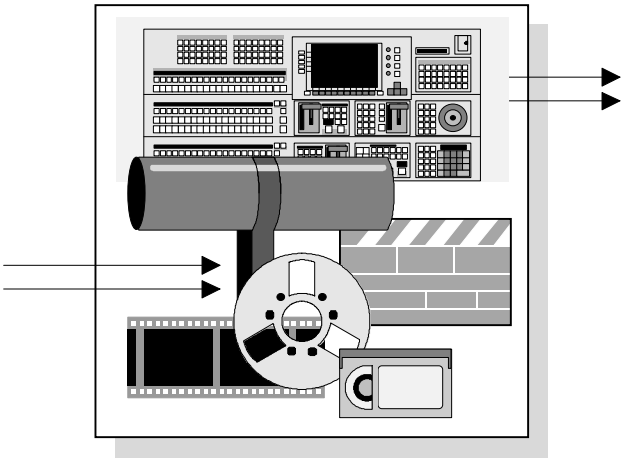
GPI Link Mode

The GPI Link Mode allows you to establish a relationship between switcher crosspoints and the switcher's GPI output ports. A variable timing relationship can be established between the crosspoint selection and GPI outputs. For a virtual studio application, for example, selecting a camera (on a switcher bus) would trigger a GPI pulse that in turn switches computer-generated virtual backgrounds. This action also delays the actual video switch by a certain number of fields — allowing the background and foreground to switch in sync.

In operation, the GPI Link can be advanced or delayed from the initial "press" of the switcher crosspoint.

Configuration Guide

DVS-7200 Configuration



To assist with configuration planning, this chapter describes the DVS-7200's system components. In addition, a convenient quotation request form is included to assist with pre-sales planning and to simplify the DVS-7200 ordering process.

The following sections are included:

- Basics
- Input Configuration
- Output Configuration
- Control Panel Options
- Options and Upgrades
- Training
- Order Guide
- Request Form

Basics

This section describes the basic components that comprise a DVS-7200 system.

DVS-7200 Video Effects Processor

The **DVS-7200** chassis houses the main video processing electronics, communication ports, and all input/output connectors. Multiple slots are provided for system options and upgrades. The processor can be equipped with up to 36 primary inputs and up to four component analog inputs for chroma key. In addition, by adding the **BKDS-7110** Input "Mother Board," a customer-defined portion of the 36 available inputs may be configured as composite analog. Refer to the "**Input Configuration**" section below for details.

In the "**Installation Guide**" chapter, refer to the "**DVS-7200 Chassis**" section for a chassis diagram and list of chassis specifications.

Note that RS-422 interconnect cables are *not* provided. In the "**Options and Upgrades**" section, see the "**System Cables, RS-422**" heading for part numbers and information. RS-422 interconnect cables have a maximum length of 100 meters.

BKDS-7015 Control Panel

The **BKDS-7015** Control Panel presents all switcher functions, crosspoints, auxiliary buses, and adjustments in a compact two M/E panel layout — easy to use and easy to master. The integral display screen, top menu control panel, and floppy disk drive are standard. Six positions are provided for modular optional sub-panels such as the Shot Box and the DME Control Panel.

In the "**Installation Guide**" chapter, refer to the "**DVS-7200 Control Panel**" section for a control panel diagram and list of specifications.

Note that RS-422 interconnect cables are *not* provided. In the "**Options and Upgrades**" section, see the "**System Cables, RS-422**" heading for part numbers and information. RS-422 interconnect cables have a maximum length of 100 meters.

BZS-7040 Operation Software with Manual

The **BZS-7040** operation software is required to initiate the DVS-7200. The software also drives the switcher's logical array of system, setup, and configuration menus.

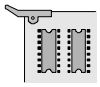
Input Configuration

This section describes the input boards that can be added to a DVS-7200 system.

- Three slots are provided for primary input boards (select any combination of the **BKDS-7102** and **BKDS 7110** boards). Up to three boards can be installed, for a maximum of 36 inputs.
- Two slots are provided for Chromakey Analog Component input boards (**BKDS-7133**).

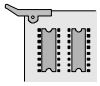
In the "**Request Forms**" section, refer to the "**DVS-7200 Input Configuration**" chart for a more detailed view of the switcher's input configurations.

BKDS-7102 12 Input Serial Digital Board



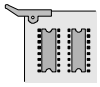
The **BKDS-7102** 12 Input Serial Digital Board provides 12 serial digital SMPTE 259M input signals. The board can be used for Composite (4*fsc*) or Component (4:2:2) signals, with all configuration performed from the control panel display.

BKDS-7110 Input "Mother Board"



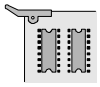
The **BKDS-7110** is a *blank* adaptor board that accepts up to 12 analog composite or serial digital "Daughter Boards" — in any combination. The board is required if you wish to operate with a mixture of analog composite and digital input signals.

BKDS-7111 Analog Composite "Daughter Board"



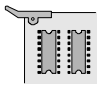
The **BKDS-7111** Analog Composite Daughter Board provides one analog composite color or monochrome input signal. The board installs onto the **BKDS-7110** (which accepts up to 12 Daughter Boards, maximum).

BKDS-7112 Serial Digital "Daughter Board"



The **BKDS-7112** Serial Digital Daughter Board provides one digital composite or digital component input signal. The board installs onto the **BKDS-7110** (which accepts up to 12 Daughter Boards, maximum).

BKDS-7133 Chroma Key Analog Component Input Board



The **BKDS-7133** Chroma Key Analog Component Input Board provides two analog component inputs. The system accepts up to two BKDS-7133 boards, for a maximum four analog component inputs. The inputs can be switched (via software) between the following four formats:

- **B-CAM (0)**: Betacam without setup
- **B-CAM (7.5)**: Betacam with setup
- **SMPTE**: SMPTE standard for component
- **RGB**: RGB plus sync, or sync on green

Output Configuration

This section describes the output boards that can be added to a DVS-7200. The switcher has a total of 19 outputs (comprised of individual outputs and "groups") that can be configured *individually*:

- One Program group (four individual outputs, configured as one)
- One Preview
- One Clean
- Thirteen Auxiliary
- One Edit Preview/Aux 14
- One M/E 1 group (two individual outputs, configured as one)
- One M/E 2 group (two individual outputs, configured as one)

Configuration is accomplished by installing the desired output module (either Analog Composite or SDI) on the standard **OUT-9** Mother Board included with the DVS-7200 electronics. Output module options are described below.

BKDS-7161 Analog Composite Output Module

The **BKDS-7161** Analog Composite Output Module provides one analog composite output. The board installs onto the **OUT-9** Mother Board (which is standard with the DVS-7200).

BKDS-7162 Digital Output Module

The **BKDS-7162** Digital Output Module provides one SDI output. The board installs onto the **OUT-9** Mother Board (which is standard with the DVS-7200).

Control Panel Options

This section describes the control panel options that can be added to a DVS-7200. In the "**System Interconnection Charts**" section, refer to the "**DVS-7200 Control Panel Connections Chart**" for an illustration of DVS-7200 control panel connections.

BKDS-7033 Memory Recall Control Panel

The **BKDS-7033** Memory Recall Panel (with mounting hardware and interconnect cables) can be installed in the DVS-7200 panel or in a **BKDS-7075** Remote Adaptor. The panel allows you to recall 32 snapshots, switcher setups, DME timelines or switcher timelines. See the "**Installation Guide**" section for a panel illustration.

BKDS-7340 DSK Board/Control Panel

The **BKDS-7340** DSK Board/Control Panel (with mounting hardware and interconnect cables) provides the electronics modules for two independent down stream keys and the associated control panel. See the "**Installation Guide**" section for an illustration of the panel.

BKDS-7030 Key Frame Control Panel

The **BKDS-7030** Key Frame Control Panel (with mounting hardware and interconnect cables) installs in the DVS-7200 panel. It provides keyframe timeline control for single and multi-channel DME systems. The **BZDM-3720** software is required to run the DME-3000; the **BZDM-7720** software is required to run the DME-7000. See "**Switcher Control Panel Configuration**" for software details. See the "**Installation Guide**" section for a panel illustration.

BKDS-7031 DME Control Panel

The **BKDS-7031** DME Control Panel (with mounting hardware and interconnect cables) installs in the DVS-7200 panel. It allows direct timeline control of both single and multi-channel DME systems. The **BZDM-3720** software is required to operate the DME-3000; the **BZDM-7720** software is required to run the DME-7000. See "**Switcher Control Panel Configuration**" for software details. See the "**Installation Guide**" section for a panel illustration.

BZDM-3720 Operation Software and Manual (DME-3000)

(DME-3000 only)

The **BZDM-3720** Operation Software and Manual (English) is required for operating the **BKDS-7030** and **BKDS-7031** sub-panels. See the "**Switcher Control Panel Configuration**" section below for important information.

BZDM-7720 Operation Software and Manual (DME-7000)

(DME-7000 only)

The **BZDM-7720** Operation Software and Manual (English) is required for operating the **BKDS-7030** and **BKDS-7031** sub-panels. See "**Switcher Control Panel Configuration**" below for important software information.

BKDS-7075 Control Panel Remote Adaptor

The **BKDS-7075** Control Panel Remote Adaptor allows you to locate the switcher's sub-panels (for example, the **BKDS-7033**, **BKDS-7031**, **BKDS-7030** and **BKDS-7060**) in remote locations near the main switcher control panel. A five meter interconnect cable is required (P/N 1-574-993-11). The longest cable length that can be connected with the Adaptor is ten meters (user supplied).

BKDS-7060 Remote Key Control Panel

The **BKDS-7060** Remote Key Control Panel provides remote control for the M/E keys, chroma keys, and downstream keys. Adjustment parameters for key source, key fill, clip, gain, and edge modifiers may be accessed with the BKDS-7060. The **BZS-7360** software is required to operate the BKDS-7060.

Note that RS-422 interconnect cables are *not* provided. In the "**Options and Upgrades**" section, see the "**System Cables, RS-422**" heading for part numbers and information. RS-422 interconnect cables have a maximum length of 100 meters.

BZS-7360 Remote Key Control Software

The **BZS-7360** Remote Key Control Software is required for operating the **BKDS-7060** Remote Key Control Panel.

BKDS-8060 Remote Panel Interface

The **BKDS-8060** Remote Panel Interface is the support interface and electronics for the **BKDS-8061** Shot Box Control unit and **BKDS-8062** Auxiliary Control Panel.

The **BKDS-8060** provides an RS-422 interface that can be used with several connectors on the DVS-7200 electronics chassis and control panel. The following configurations are possible with a single **BKDS-8060**:

- Two **BKDS-8061** units.
- One **BKDS-8061** and one **BKDS-8062** units.
- Up to four **BKDS-8062** units.
- Several **BKDS-8060** units may be connected in series via RS-422A looping connectors.

In the "**Installation Guide**" chapter, refer to the "**System Interconnection Charts**" section for a diagram of several control panel connection examples.

Note that RS-422 interconnect cables are *not* provided. In the "**Options and Upgrades**" section, see the "**System Cables, RS-422**" heading for part numbers and information. RS-422 interconnect cables have a maximum length of 100 meters.

BKDS-8061 Shot Box Control Unit

The **BKDS-8061** Shot Box Control Unit installs with the **BKDS-8060** Remote Panel Interface unit. Up to two BKDS-8061 panels can be housed (side-by-side) in one rack unit. A single BKDS-8061 provides 20 buttons for recalling switcher snapshots and effects. When two units are installed, 40 functions can be recalled. Note that a one-meter 15-pin interconnect cable is provided (RCC-5A).

BKDS-8062 Auxiliary Control Panel

The **BKDS-8062** Auxiliary Control panel installs with the **BKDS-8060** Remote Panel Interface unit. Up to 14 combined BKDS-8062 plus BKDS-8060 units can be connected to the DVS-7200 chassis for remote control of Aux buses 1 through 14.

The DVS-7200 supports five different configurations of crosspoint assignments for the BKDS-7015 control panel and BKDS-8062 — allowing multiple users to have unique crosspoint configurations. A single BKDS-8062 can access 20 dedicated crosspoints, or up to 38 dedicated crosspoints (via **SHIFT** button). Note that a one-meter 15-pin interconnect cable is provided (RCC-5A).

BKDS-2010 M/E Auxiliary Control Panel

The **BKDS-2010** M/E Auxiliary Control Panel effectively turns the DVS-7200 into *two* one-M/E switchers. The Auxiliary Control Panel (same as the DVS-2000C's Control Panel) connects to the processor chassis using an RS-422 interconnect. Note that RS-422 interconnect cables are *not* provided. In the "**Options and Upgrades**" section, see the "**System Cables, RS-422**" heading for part numbers and information. RS-422 interconnect cables have a maximum length of 100 meters.

In addition to providing redundancy, this option makes several valuable production configurations possible:

- For post production, you could run two edit bays — one controlling M/E 1 and the other using M/E 2.
- In a remote truck configuration, the director and TD could pre-tape with M/E 1, while the graphics area could perform pre-production tasks using M/E 2.

The **BKDS-2010** option requires the **BZS-7220** operation software.

BZS-7220 Auxiliary Panel Operation Software

The **BZS-7220** operation software is required to initiate the BKDS-2010 M/E 1 Auxiliary Control Panel. An operations manual is included.

Switcher Control Panel Configuration

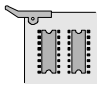
Note the following important points regarding the installation configurations with the **BKDS-7030** and **BKDS-7031** sub-panels:

- The **BKDS-7030** and **BKDS-7031** panels are recommended to be installed as a set.
- The **BKDS-7030** and **BKDS-7031** panels eliminate the need for the DME's **BKDM-3010** control panel (and associated software). However, the **BKDM-3010** may be included for greater flexibility.
- When the **BZDM-3720** operation software is installed to control the DME-3000, the **BZDM-3020** software is not required in your DME-3000 system — whether or not a **BKDM-3010** panel is included in the overall system configuration.
- When the **BZDM-7720** operation software is installed to control the DME-7000 system, the **BZDM-7020** software is not required in your DME-7000 — whether or not a **BKDM-3010** panel is included in the overall system configuration.
- In a system that includes *both* a DME-7000 and a DME-3000, the **BZDM-7020** software will function for both effects systems.

Options and Upgrades

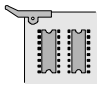
This section describes the optional boards and system upgrades that can be added to a DVS-7200 switcher.

BKDS-2031 Basic Chroma Key Board



The **BKDS-2031** Basic Chroma Key Board offers 4:4:4 over-sampling of Chroma Key signals for high quality FineChroma effects, including auto-adjust, color window, color cancellation, and foreground video adjustment. The system accepts one board per M/E.

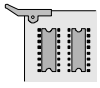
BKDS-2032 Chroma Key Upgrade Board



The **BKDS-2032** Chroma Key Upgrade Board adds enhanced capability to the BKDS-2031 in each M/E. When installed, two basic chroma keys may be performed (one per keyer per M/E). The BKDS-2031 and BKDS-2032 may also be used in an enhanced mode that handles uneven backgrounds with varying luminance levels. Enhancements for shadows and spot color correction are provided. The system accepts one **BKDS-2032** Chroma Key Upgrade board per M/E. *Note that the BKDS-2031 Basic Chroma Key Board is required.*

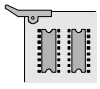
The option also provides **Clean Chroma Keys**, which are composited signals generated from a background and foreground signal. A Clean Chroma Key may be assigned as a direct switcher crosspoint *without* the use of an M/E Keyer. The Clean Chroma Key feature requires the **BKDS-7133** Analog Component Input Board.

BKDS-2041 Basic Frame Memory Board



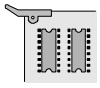
The **BKDS-2041** Basic Frame Memory Board provides two full color frame memories. The option includes Frame/Field freeze capability (GPI controllable), live picture placement, key mode for layering, last freeze recall, “paint” mode, and dedicated routing for each frame memory. Requires the **BKDS-7445** Frame Memory Adaptor Board.

BKDS-7445 Frame Memory Adaptor Board



The **BKDS-7445** Frame Memory Adaptor Board works in conjunction with the **BKDS-2041** Basic Frame Memory Board to provide two frames of storage. The adaptor board permits the BKDS-2041 to be installed in the DVS-7200 chassis.

BKDS-2070 Enhanced Wipe Option



The **BKDS-2070** Enhanced Wipe Option provides additional wipe patterns such as the Matrix, Heart, Star, and Diamond Dust wipes.

BKDS-7270 Key Border Option

The **BKDS-7270** Key Border Option provides key enhancements such as Shadow, Drop Shadow, Border, Soft Edge and Outline. Each option also includes an independent Dual Color Matte and Wipe generator that allows you to place a color wash into the key's edge. The system accepts one board per M/E plus the DSK.

BKDS-7280 M/E Key Signal Preview Board

The **BKDS-7280** M/E Key Signal Preview Board provides selectable output of the M/E mixed key preview signal to the Aux and Utility buses. The system accepts one board per M/E plus the DSK.

BKDS-7001 Control Port Expansion Board

The **BKDS-7001** Control Port Expansion Board (with mounting hardware and interconnect cables) adds an additional four RS-422 control ports to the DVS-7200 system. The board is required if you wish to control two or more channels of DME effects from the switcher panel, and is also required for the Peripheral II interface.

BKDS-7002 Source Name Display Unit

The **BKDS-7002** Source Name Display Unit (with mounting hardware and interconnect cables) provides the electronics and displays for M/E 1, M/E 2, and Aux bus crosspoints. When installed, all crosspoints on the panel are labeled with clear alpha-numeric characters.

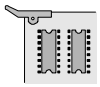
BKDS-7091 Redundant Power Supply — Control Panel

The **BKDS-7091** Redundant Power Supply for the Control Panel (with mounting hardware and interconnect cables) provides an auto-switching power source for the DVS-7200 control panel.

BKDS-7690 Redundant Power Supply — Processor

The **BKDS-7690** Redundant Power Supply for the Processor (with mounting hardware and interconnect cables) provides an auto-switching power source for the DVS-7200 electronics.

BKDS-7700 Tally Interface Unit



The **BKDS-7700** Tally Interface Unit provides 72 standard programmed tally relay outputs for the following switcher components:

- All 36 primary inputs
- 4 Analog Chroma Key inputs
- Up to 6 DME/DVE inputs
- Up to 48 External Devices

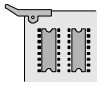
The unit can also be used to set conditional tallys for ISO record and other switcher functions. Up to 4 relay states may be set for each tally function. The BKDS-7700 also provides an "S-Bus" interface to the Sony DVS "B" series routing switchers. In this configuration, the "B" series is accessed directly from the DVS-7200's display for changing primary switcher crosspoints. Input labels and tally information automatically follows all routing switcher changes.

Note that the **BKDS-7700** is a separate rack mount chassis (3 RU) with power, and connects to the DVS-7200 via RS-422. Note that RS-422 interconnect cables are *not* provided. In the "**Options and Upgrades**" section, see the "**System Cables, RS-422**" heading for part numbers and information. RS-422 interconnect cables have a maximum length of 100 meters.

BZS-7720 Tally Interface Software

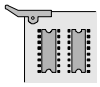
The **BKDS-7720** Tally Interface Software is required for the **BKDS-7700** Tally Interface Unit and router interface. Note that this software is installed with a PC, using an RS-232C interconnect cable (both items user-supplied).

BKDS-7701 Expansion Module



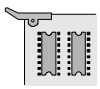
The **BKDS-7701** Expansion Module option, when installed in the BKDS-7700, increases the number of relay (tally) outputs from 72 to 216.

BKDS-7790 Redundant Power Supply — Tally



The **BKDS-7790** Redundant Power Supply (with mounting hardware and interconnect cables) provides an auto-switching power source for the BKDS-7700 Tally Interface Unit.

RPK-S7000K1 Spare Parts Kit



The **RPK-S7000K1** Spare Parts Kit provides spare parts for the DVS-7200 chassis, including replacement boards for the CPU, crosspoint control and M/E processors.

RCC-
5G, 10G, 30G

System Cables, RS-422

The RCC-series cables provide RS-422 interconnects for serial controlled devices. Three lengths are available:

- RCC-5G, 5 meters
- RCC-10G, 10 meters
- RCC-30G, 30 meters

RCC cables are required to connect the switcher chassis to RS-422 devices. Note that some devices include RS-422 cables as standard.

RCC-5A

System Cables, Interconnect

The RCC-5A cable (5-meter) provides a 15-pin interconnect for the BKDS-8060, BKDS-8061, and BKDS-8062.

BKD-RS15A
RMM-18DV

Rack Mount Kit — Switcher

The **BKD-RS15A** or **RMM-18DV** Rack Mount Kits allows the DVS-7200 to be rack-mounted in a standard 19" rack. Either kit can be used.

RMM-30

Rack Mount Kit — Tally

The RMM-30 Rack Mount Kit allows the **BKDS-7700** Tally Interface Unit to be rack-mounted in a standard 19" rack.

J-6189-230
J-6189-960

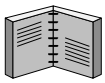
Extender Cards

Extender cards are available through Sony Service. Refer to "**Appendix C**, **Sales and Service**" for the location of your nearest Sony Service Center.

Training

This section describes training courses that are available for the DVS-7200 system.

NN-TRNG/GEN1C Training — General Product



This class provides one day (8 hours) of general BVE, DVS, or DME training at the customers location. The class is limited to 3 students, and is a pre-requisite for any additional DVS-7200 training. Additional training can be arranged by your local Sony Account Manager, or your regional Product Specialist.

Note: Includes instructor travel and accommodations.

Order Guide — DVS-7200

Fax Cover

To: _____

Fax #: _____

From: _____

Date: _____

Pages: _____

Message: _____

_____

_____

Customer Information

Company Name: _____

Address: _____

_____

Phone: _____

Fax: _____

Contact: _____

Title: _____

Instructions

The **Request Form** on the following page includes a table of all DVS-7200 system components. Use the table to configure the customer's optimum DVS-7200 switcher system.

Please perform the following steps:

- As a prerequisite, review the information in the "**Installation Guide**" chapter:
- Complete the customer information section above.
- In the **Request Forms** section, use the two charts as follows:
  - In the "**DVS-7200 Input Configuration**" chart, check off the *one* input configuration required (both quantity and format), then transfer the information and quantities to the "**DVS-7200 System Components**" chart.
  - In the "**DVS-7200 System Components**" chart, check off the basic and optional items required. *Recommended* items for a basic DVS-7200 system are marked with an **X** in the "**Rec**" column. Mark quantities (where appropriate), exceptions, and comments in the "**Notes**" column.
- Send the completed forms to your local Sony Sales Representative to receive a detailed DVS-7200 proposal. Refer to "**Appendix C. Sales and Service**" for a list of Sony Regional Sales Offices.
- For submitting the completed proposal, the area at the top of this page can be used as a convenient fax cover sheet.

Request Forms

This section includes the **DVS-7200 Input Configuration** chart, the **DVS-7200 Output Configuration** chart, and the **DVS-7200 System Components** chart.

DVS-7200 Input Configuration Chart

Check off the *one* input configuration required, note the quantity and format of input boards that support the desired configuration, then transfer the information (and quantities) to the "**DVS-7200 System Components**" chart.

Input Configuration Required	√	**BKDS-7102** 12 SDI Inputs	**BKDS-7110*** Input Mother Board	**BKDS-7111**** **BKDS-7112*****	**BKDS-7133** 2 Component Analog Inputs
12 SDI		1	—	—	—
12 SDI + 2 Analog Component		1	—	—	1
12 SDI + 4 Analog Component		1	—	—	2
12 SDI + up to 12 composite Analog / SDI		1	1	select up to 12 total 7111: ___ 7112: ___	—
12 SDI + up to 12 composite Analog / SDI + 2 Analog Component		1	1	select up to 12 total 7111: ___ 7112: ___	1
12 SDI + up to 12 composite Analog / SDI + 4 Analog Component		1	1	select up to 12 total 7111: ___ 7112: ___	2
12 SDI + up to 24 composite Analog / SDI		1	2	select up to 24 total 7111: ___ 7112: ___	—
12 SDI + up to 24 composite Analog / SDI + 2 Analog Component		1	2	select up to 24 total 7111: ___ 7112: ___	1
12 SDI + up to 24 composite Analog / SDI + 4 Analog Component		1	2	select up to 24 total 7111: ___ 7112: ___	2
24 SDI		2	—	—	—
24 SDI + 2 Analog Component		2	—	—	1
24 SDI + 4 Analog Component		2	—	—	2
24 SDI + up to 12 composite Analog / SDI		2	1	select up to 12 total 7111: ___ 7112: ___	—
24 SDI + up to 12 composite Analog / SDI + 2 Analog Component		2	1	select up to 12 total 7111: ___ 7112: ___	1
24 SDI + up to 12 composite Analog / SDI + 4 Analog Component		2	1	select up to 12 total 7111: ___ 7112: ___	2
36 SDI		3	—	—	—
36 SDI + 2 Analog Component		3	—	—	1
36 SDI + 4 Analog Component		3	—	—	2
Up to 36 composite Analog / SDI		0	3	select up to 36 total 7111: ___ 7112: ___	—

Notes:

* One BKDS-7110 Input Mother Board accepts up to 12 daughter boards, in any combination of formats.

** Analog Composite "Daughter Board" installs on BKDS-7110 Board. One input provided per daughter board.

*** SDI "Daughter Board" installs on BKDS-7110 Board. One input signal provided per daughter board.

DVS-7200 Output Configuration Chart

For each of the 19 configurable DVS-7200 outputs (comprised of individual outputs and "groups"), select the desired output format, either composite analog (**BKDS-7161**) or SDI (**BKDS-7162**). Then transfer the information (and quantities) to the "**DVS-7200 System Components**" chart. Output modules are installed on the **OUT-9** Mother Board.

DVS-7200 Output Configuration

System Output Select *one board* for each system output:	**BKDS-7161** Analog Composite Output Module √	**BKDS-7162** Digital Output Module √
Program group (four outputs, configured as one)		
Preview output		
Clean output		
Edit Preview output / Auxiliary 14 output		
Auxiliary 1 output		
Auxiliary 2 output		
Auxiliary 3 output		
Auxiliary 4 output		
Auxiliary 5 output		
Auxiliary 6 output		
Auxiliary 7 output		
Auxiliary 8 output		
Auxiliary 9 output		
Auxiliary 10 output		
Auxiliary 11 output		
Auxiliary 12 output		
Auxiliary 13 output		
M/E 1 group (two outputs, configured as one)		
M/E 2 group (two outputs, configured as one)		
	Total BKDS-7161: ____	Total BKDS-7162: ____

Note: The total number of **BKDS-7161** plus **BKDS-7162** output modules are not to exceed 19.

DVS-7200 System Components Chart

Check off the basic and optional items required. *Recommended* items for a basic DVS-7200 system are marked with an **X** in the "**Rec**" column. Mark quantities (where appropriate), exceptions, and comments in the "**Notes**" column.

DVS-7200 System Components

Part #	Description	Rec	√	Notes
Basics				
DVS-7200	Processor	X		
BKDS-7015	Control Panel	X		
BZS-7040	Operation Software with Manual	X		Required to initiate the DVS-7200
Input Configuration				
BKDS-7102	12 Input Serial Digital Board	X		
BKDS-7110	Input "Mother Board"			
BKDS-7111	Analog Composite "Daughter Board"			One input signal per board
BKDS-7112	Serial Digital "Daughter Board"			One input signal per board
BKDS-7133	Chromakey Analog Component Input Board			
Output Configuration				
BKDS-7161	Analog Composite Output Module			Quantity:
BKDS-7162	Digital Output Module			Quantity:
Control Panel Options				
BKDS-7033	Memory Recall Control Panel			
BKDS-7340	DSK Board/Control Panel			
BKDS-7030	Key Frame Control Panel			Sold as a set with BKDS-7031
BKDS-7031	DME Control Panel			Sold as a set with BKDS-7030
BZDM-3720	Operation Software and Manual (DME-3000)			Required for operating the BKDS-7030 and BKDS-7031
BZDM-7720	Operation Software and Manual (DME-7000)			Required for operating the BKDS-7030 and BKDS-7031
BKDS-7075	Control Panel Remote Adaptor			
BKDS-7060	Remote Key Control Panel			BZS-7360 software is required
BZS-7360	Remote Key Control Software			Required for operating BKDS-7060
BKDS-8060	Remote Panel Interface			
BKDS-8061	Shot Box Control Unit			Requires BKDS-8060
BKDS-8062	Auxiliary Control Panel			Requires BKDS-8060
BKDS-2010	M/E Auxiliary Control Panel			Requires BZS-7220
BZS-7220	Auxiliary Panel Operation Software			

continued ...

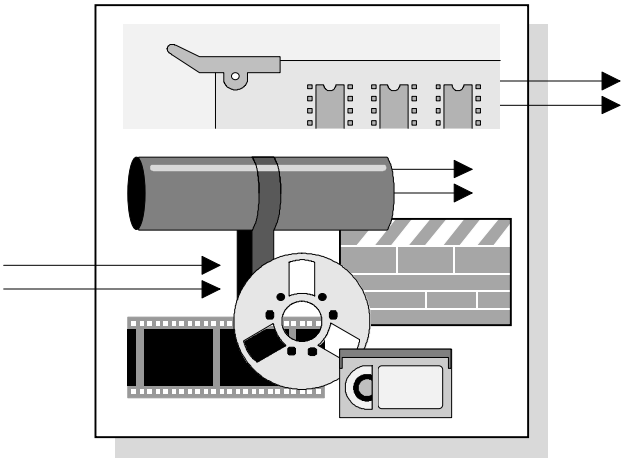
DVS-7200 System Components (continued)

Part #	Description	Rec	√	Notes
Options and Upgrades				
BKDS-2031	Basic Chroma Key Board			System accepts 1 per M/E
BKDS-2032	Chroma Key Upgrade Board			System accepts 1 per M/E. BKDS-2031 is required
BKDS-2041	Basic Frame Memory Board			Requires BKDS-7445
BKDS-7445	Frame Memory Adaptor Board			
BKDS-2070	Enhanced Wipe Option			System accepts 1 per M/E.
BKDS-7270	Key Border Option			System accepts 1 per M/E and P/P
BKDS-7280	M/E Key Signal Preview Board			System accepts 1 per M/E and P/P
BKDS-7001	Control Port Expansion Board			Required for P-II Interface
BKDS-7002	Source Name Display Unit			
BKDS-7091	Redundant Power Supply — Control Panel			
BKDS-7690	Redundant Power Supply — Processor			
BKDS-7700	Tally Interface Unit			Requires BZS-7720
BZS-7720	Software for BKDS-7700			
BKDS-7701	Tally Relay Expansion Board for BKDS-7700			
BKDS-7790	Redundant Power Supply — BKDS-7700			
RPK-S7000K1	Spare Parts Kit			
RCC-5G RCC-10G RCC-30G	5 meter RS-422 cable 10 meters RS-422 cable 30 meters RS-422 cable	User select		Select one per RS-422 control device interface
RCC-5A	5 meter interconnect cable for BKDS-8060, BKDS-8061, and BKDS-8062.			
1-574-993-11	5 meter interconnect cable (25-pin) for BKDS-7075			
BKD-RS15A RMM-18DV	Rack Mount Kit for Switcher			Either kit can be used.
RMM-30	Rack Mount Kit for Tally Interface Unit			
J-6189-230 J-6189-960	Extender Cards			
Training				
NN-TRNG/GEN1C	1 day general BVE, DVS, or DME training at the customers location. Class limited to 3 students.	X		Includes instructor travel and accommodations.

Note: Refer to "**Appendix B, Related Resources**" for details on ordering additional DVS-7200 operations and maintenance manuals.

Installation Guide

DVS-7200 Installation



This chapter provides information and diagrams to assist with facility engineering and equipment integration requirements. The following sections are included:

- The "**DVS-7200 Control Panel**" section provides detailed control panel diagrams, external dimensions, specifications, and detailed tables of connector pinouts.
- The "**DVS-7200 Chassis**" section provides detailed chassis diagrams, external dimensions, specifications, system timing requirements, and detailed tables of connector pinouts.
- The "**BKDS-7700 Chassis**" section provides detailed Tally Interface Unit diagrams, external dimensions, specifications, and detailed tables of connector pinouts.

At the end of this chapter, several detailed diagrams are also provided in the "**System Interconnection Charts**" section.

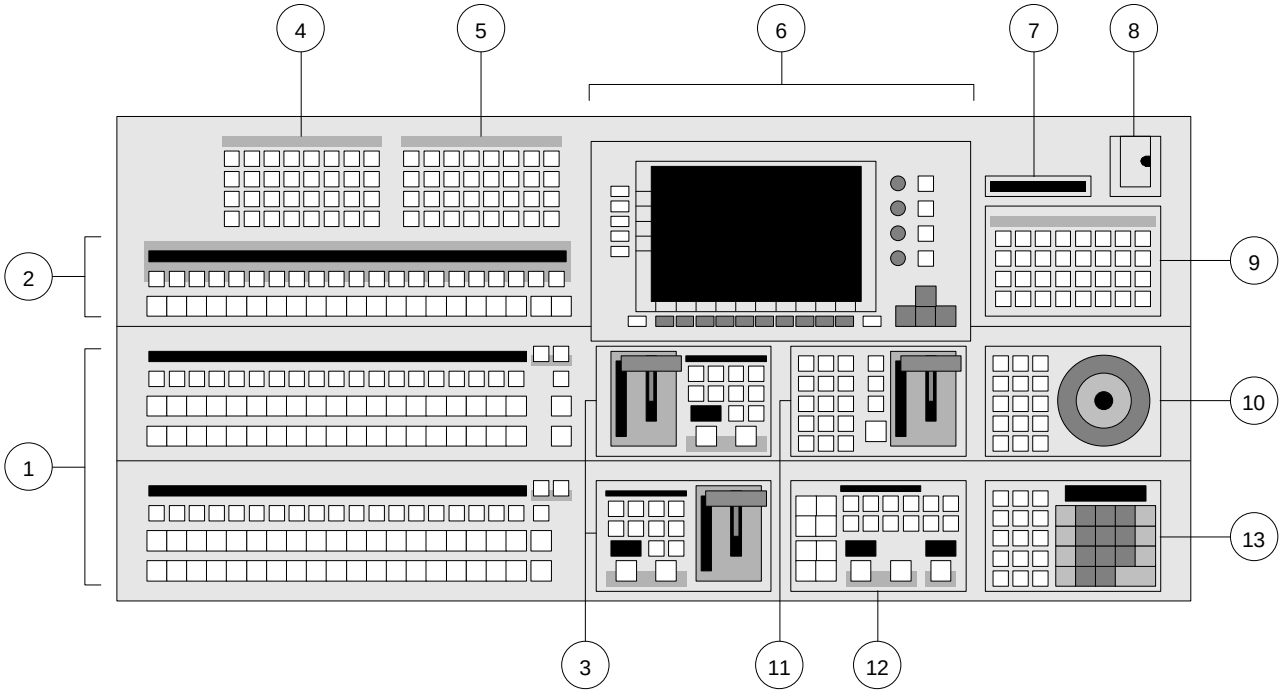
DVS-7200 Control Panel

This section includes the following areas:

- Control Panel Top View and Sub-Panels
- Control Panel External Dimensions
- Control Panel Specifications
- Control Panel Rear View
- Control Panel Connectors

Control Panel Top View

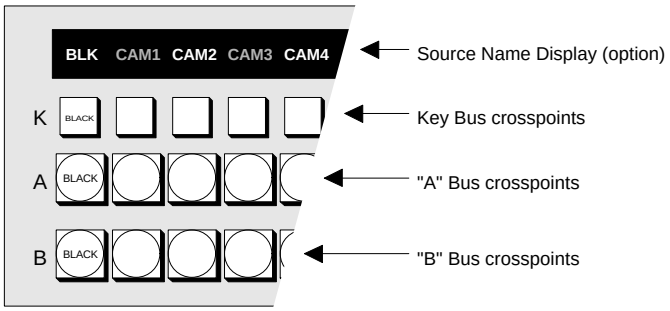
The figure below illustrates a top view of the DVS-7200 Control Panel.



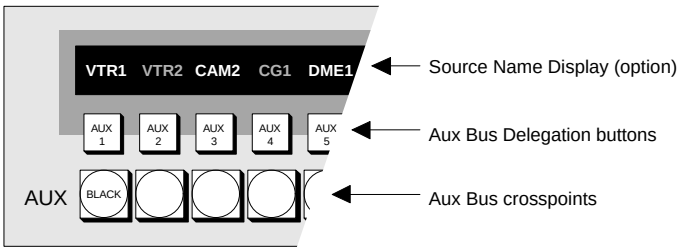
DVS-7200 Control Panel Top View

Front Control Panel components and sub-panels are listed (and illustrated) below:

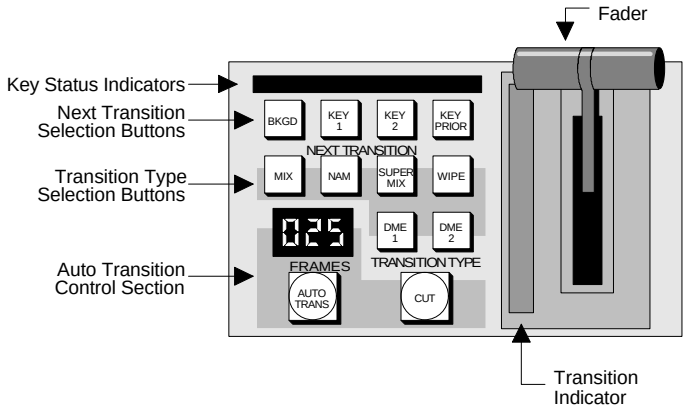
1. M/E (Mix/Effects) Banks 1 and 2



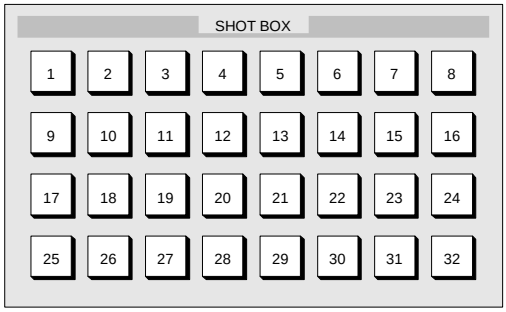
2. Aux (Auxiliary) Bus Bank



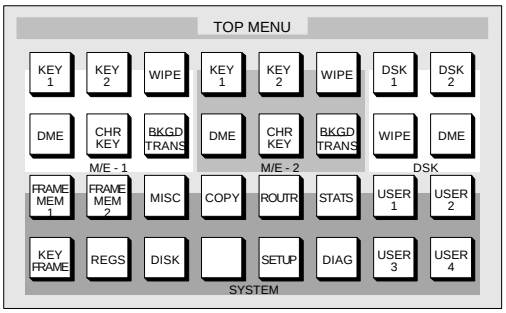
3. Transition Control Section



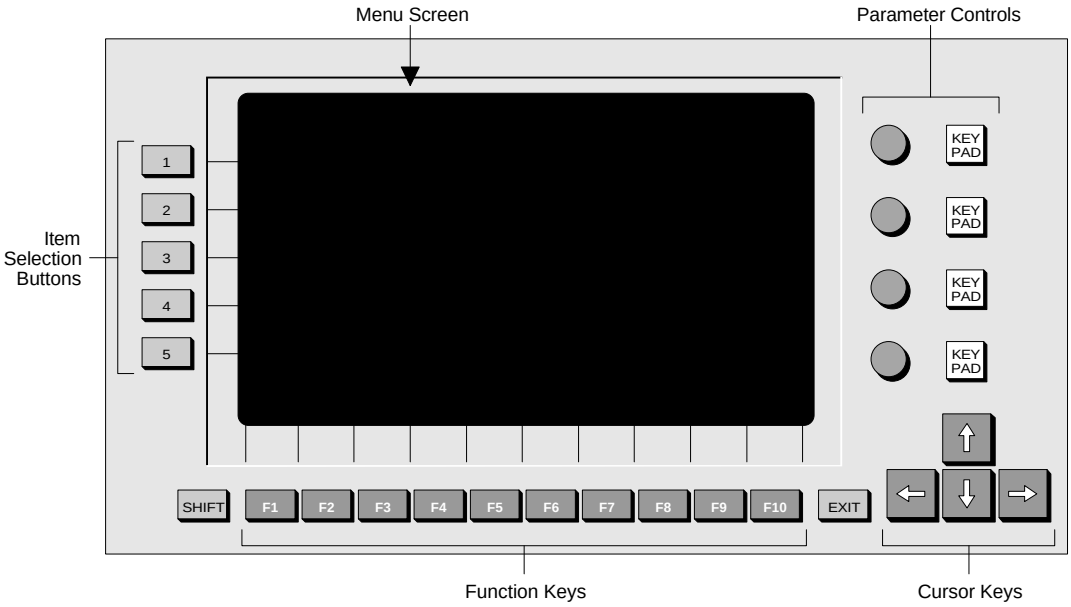
4. Shot Box Section (**BKDS-7033**)



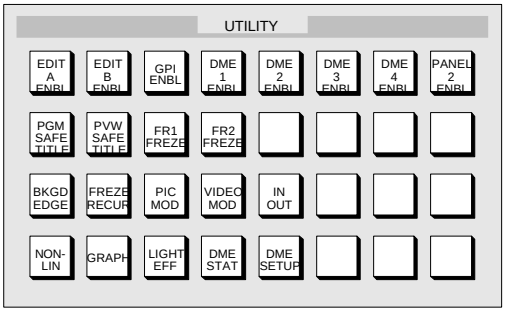
5. Top Menu Section



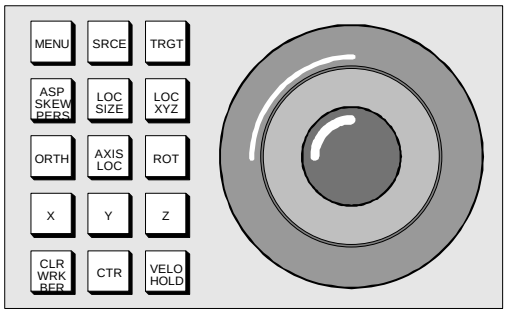
6. Menu Control Section



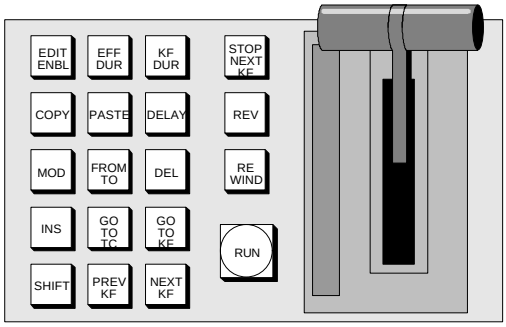
7. Floppy Disk Drive
8. Access Panel for Graphics Tablet Connector
9. Utility Section



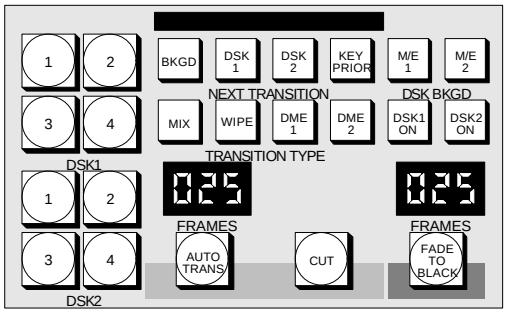
10. DME Control Panel (**BKDS-7031**)



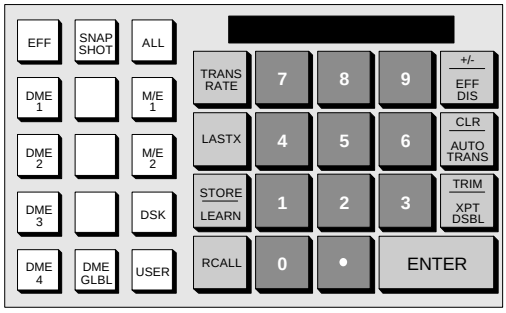
11. Key Frame Control Panel (**BKDS-7030**)



12. Downstream Keyer Section (**BKDS-7340**)

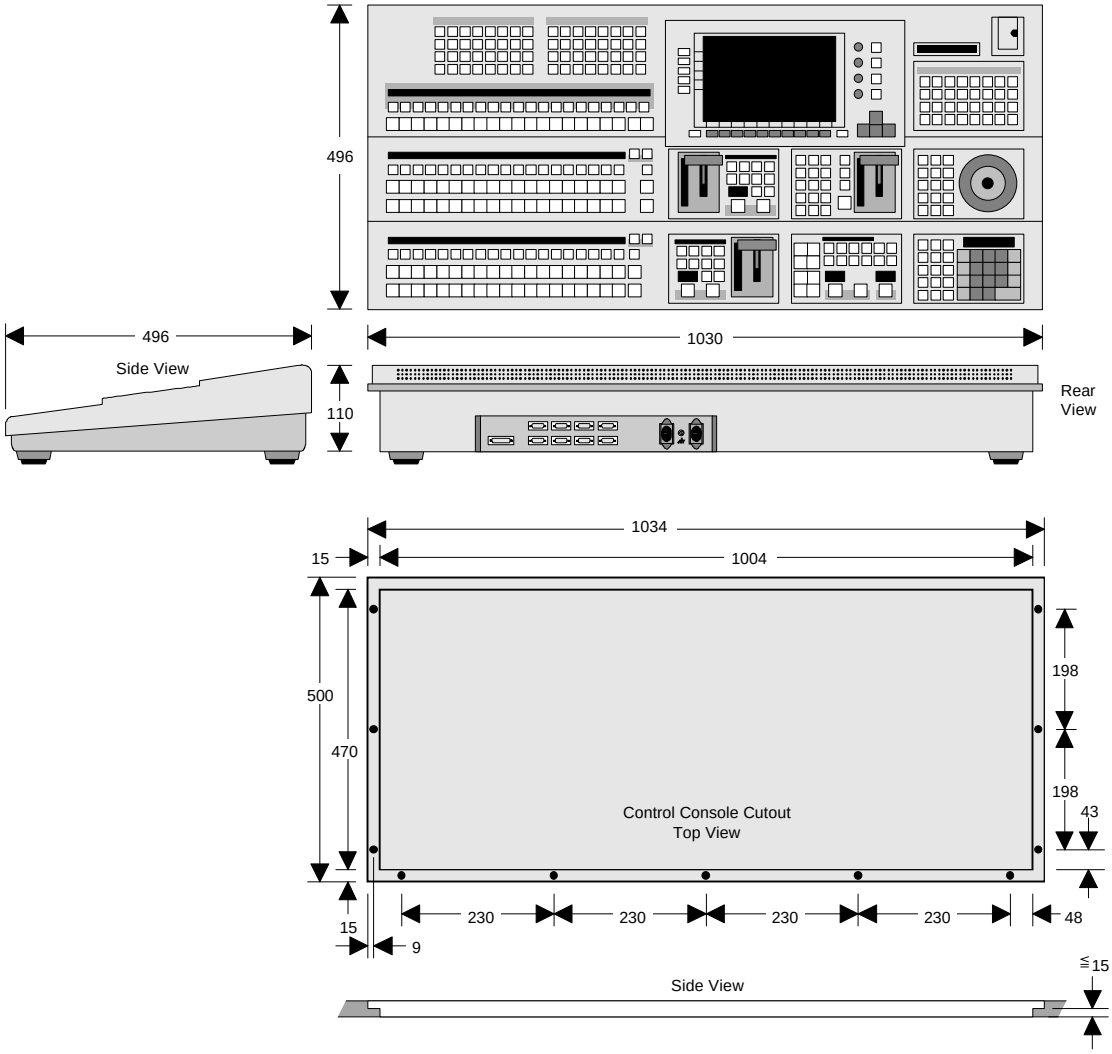


13. Master E-File Section with Numeric Keypad



Control Panel External Dimensions

The figure below illustrates external control panel dimensions and control panel cutout dimensions (in millimeters). Note that the illustrations shows all control panel options installed.



DVS-7200 External Control Panel Dimensions

Control Panel Specifications

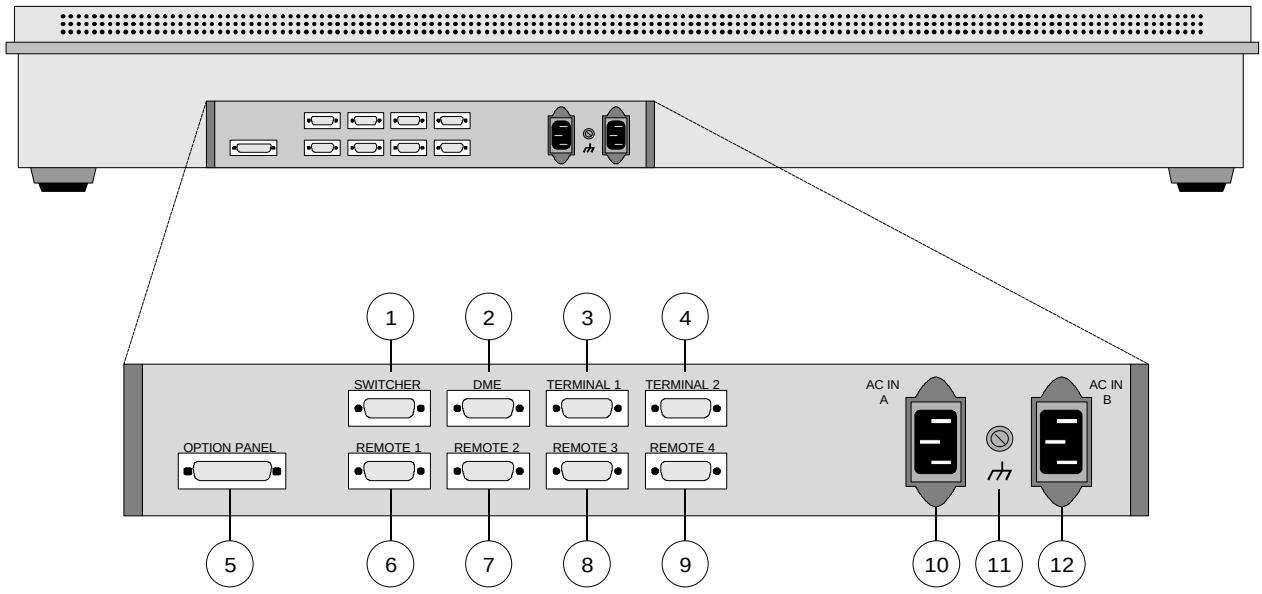
The following table lists Control Panel specifications:

DVS-7200 Control Panel Specifications

Parameter			Specification
Dimensions		mm: inches:	1030 (w) x 110 (h) x 496 (d) 40.55 (w) x 4.33 (h) x 19.53 (d)
Cutout Dimensions	(Outer)	mm: inches:	1034 (w) x 500 (d) 40.71 (w) x 19.69 (d)
	(Inner)	mm: inches:	1004 (w) x 15 (h) x 470 (d) 39.53 (w) x 0.59 (h) x 18.50 (d)
Weight			35 kg 77 lbs. 2 oz.
Operating temperature			+5°C to +40°C
Power requirements			AC 100 - 240V ± 10%, 50/60 Hz
Power consumption			7 to 3.5A
Connectors			
Option Panel			25-pin D-sub connector, female
Switcher			9-pin D-sub connector (RS-422A), female
DME			9-pin D-sub connector (RS-422A), female
Terminal 1			9-pin D-sub connector (RS-232C), female
Terminal 2			9-pin D-sub connector (RS-232C), female
Remote 1			9-pin D-sub connector (RS-422A), female
Remote 2			9-pin D-sub connector (RS-422A), female
Remote 3			9-pin D-sub connector (RS-422A), female
Remote 4			9-pin D-sub connector (RS-422A), female

Control Panel Rear View

The figure below illustrates a rear view of the DVS-7200 Control Panel.



DVS-7200 Control Panel Rear View

Rear Control Panel components are listed below:

1. **Switcher** (9-pin D-sub, female) RS-422A
2. **DME** (9-pin D-sub, female) RS-422A
3. **Terminal** 1 (9-pin D-sub, female) Wacom IV tablet or RS-232C
4. **Terminal 2** (9-pin D-sub, female) Wacom IV tablet or RS-232C
5. **Option Panel** (25-pin D-sub, female)
6. **Remote 1** (9-pin D-sub, female) RS-422A
7. **Remote 2** (9-pin D-sub, female) RS-422A
8. **Remote 3** (9-pin D-sub, female) RS-422A
9. **Remote 4** (9-pin D-sub, female) RS-422A
10. **AC In A**, 3-pin AC connector (Main Power Supply)
11. **Ground Terminal**
12. **AC In B**, 3-pin AC connector (Optional Backup Power Supply)

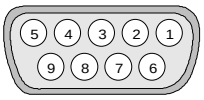
Control Panel Connectors

The following control panel connectors are listed in this section:

- Switcher
- DME
- Terminal 1, 2
- Remote 1 - 4
- Option Panel (25-pin D-sub, female)

RS-422A Switcher Connector Specifications

The table below lists specifications for the RS-422A **Switcher** connector:



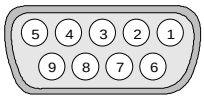
RS-422A Switcher Connector specifications (Female)

Pin #	Signal	Function
1	FG	Frame Ground
2	RX-A	Received data (–)
3	TX-B	Transmitted data (+)
4	GND	Common ground
5	Field (+)	Field signal input (+)
6	GND	Common ground
7	RX-B	Received data (+)
8	TX-A	Transmitted data (–)
9	Field (–)	Field signal input (–)

Note that RS-422 interconnect cables are *not* provided. In the "**Options and Upgrades**" section, see the "**System Cables, RS-422**" heading for part numbers and information. RS-422 interconnect cables have a maximum length of 100 meters.

RS-422A DME Connector Specifications

The table below lists specifications for the RS-422A **DME** connector:

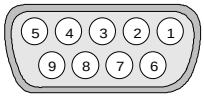


RS-422A DME Connector Specifications (Female)

Pin #	Signal	Function
1	FG	Frame Ground
2	RX-A	Received data (–)
3	TX-B	Transmitted data (+)
4	GND	Common ground
5	—	NC
6	GND	Common ground
7	RX-B	Received data (+)
8	TX-A	Transmitted data (–)
9	—	—

RS-232C Terminal 1, 2 Connector Specifications

The following table lists RS-232C **Terminal 1**, **2** connector specifications:



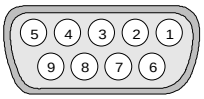
RS-232C Terminal 1, 2 Connector Specifications (Female)

Pin #	Signal	Function
1	DCD	Received line detector signal *
2	RX	Received data
3	TX	Transmitted data
4	DTR	Data terminal ready signal *
5	GND	Signal ground
6	DSR	Data set ready signal *
7	RTS	Request to send signal **
8	CTS	Clear to send signal **
9	—	—

Note: * Pins 1, 4, and 6 are shorted together on the **CN-1143** board.
** Pins 7 and 8 are shorted together on the **CN-1143** board.

RS-422A Remote 1-4 Connector Specifications

The table below lists specifications for the RS-422A **Remote 1-4** connectors: *



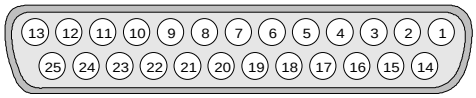
RS-422A Remote 1 - 4 Connector Specifications (Female)

Pin #	Signal	Function
1	FG	Frame Ground
2	RX-A	Received data (–)
3	TX-B	Transmitted data (+)
4	GND	Common ground
5	—	—
6	GND	Common ground
7	RX-B	Received data (+)
8	TX-A	Transmitted data (–)
9	—	—

Note: * Remote connectors 2, 3, and 4 are active only if the **BKDS-7001** board is installed.

Option Panel Connector Specifications

The following table lists **Option Panel** connector specifications.



Option Panel Connector Specifications (Female)

Pin #	Signal	Function
1	GND	Ground
2	+12 V	Power supply +12 V
3	SCLK	Serial clock for switch read and LED light
4	GND	Ground
5	WDT	LED light data
6	IWLD	Control signal for switch read and LED light
7	GND	Ground
8	TCLK	Serial clock for character display
9	TWDT	Indicate data for character display
10	GND	Ground
11	TBLANK	Disable signal for character display
12	GND	Ground
13	GND	Ground
14	+12 V	Power supply +12 V
15	+12 V	Power supply +12 V
16	BLANK	LED light disable signal
17	GND	Ground
18	SEQ	Control signal for switch read and LED light
19	RDT	Switch read data
20	GND	Ground
21	TSEQ	Control signal for character display
22	TQC:L	Control signal for character display
23	+12 V	Power supply +12 V
24	+12 V	Power supply +12 V
25	GND	Ground

Additional Control Panels

This section discusses the following additional control panels that can be added to the DVS-7200 system:

- **BKDS-2010** — M/E Auxiliary Control Panel
- **BKDS-7060** — Remote Key Control Panel
- **BKDS-8060** — Remote Panel Interface
- **BKDS-8061** — Shot Box Control Unit
- **BKDS-8062** — Auxiliary Control Panel

BKDS-2010 — M/E Auxiliary Control Panel

This section includes four areas:

- BKDS-2010 Control Panel Top View
- BKDS-2010 Control Panel Rear View
- BKDS-2010 Control Panel External Dimensions
- BKDS-2010 Control Panel Specifications
- BKDS-2010 Control Panel Connectors

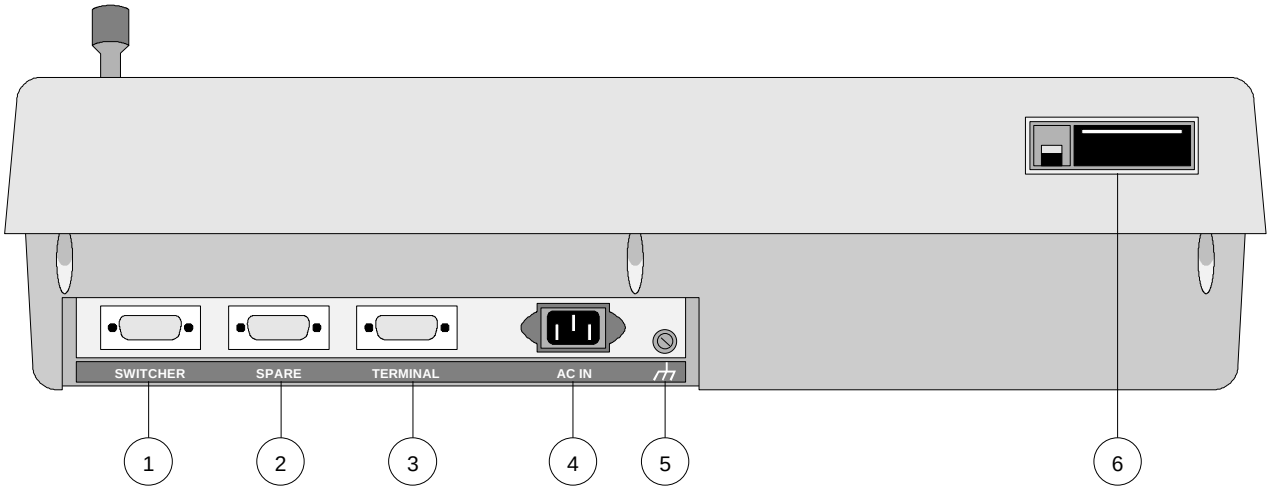
BKDS-2010 Control Panel Top View

The figure below illustrates a top view of the BKDS-2010 Control Panel.

BKDS-2010 Control Panel Top View

BKDS-2010 Control Panel Rear View

The figure below illustrates a rear view of the BKDS-2010 Control Panel.



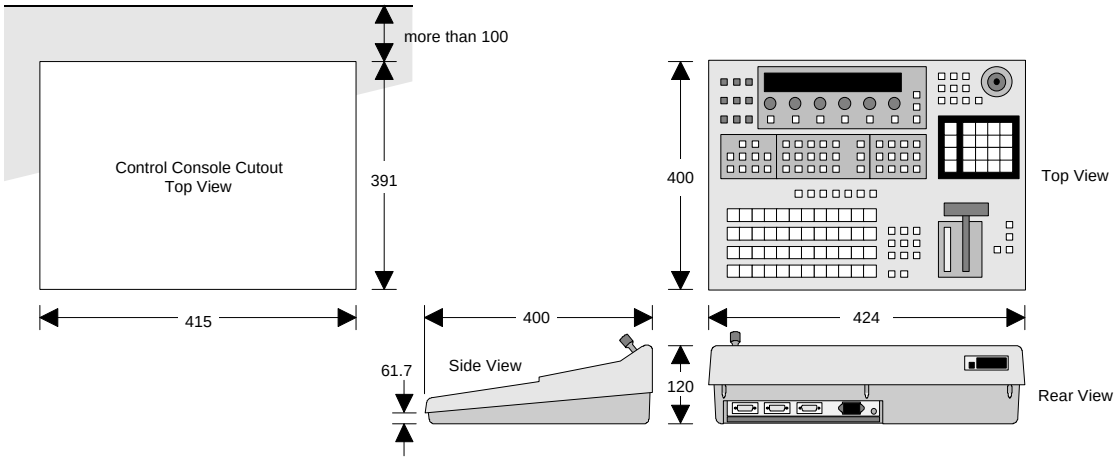
BKDS-2010 Control Panel Rear View

Rear Control Panel components are listed below:

1. Switcher (D-sub 9-pin) RS-422A
2. Spare (D-sub 9-pin) RS-422A. Not active.
3. Terminal (D-sub 9-pin) Wacom IV tablet or RS-232C
4. AC In, 3-pin AC connector
5. Ground terminal
6. Slot for optional Memory Pack

BKDS-2010 Control Panel External Dimensions

The figure below illustrates external BKDS-2010 dimensions (in millimeters):



BKDS-2010 External Control Panel Dimensions

BKDS-2010 Control Panel Specifications

The following table lists BKDS-2010 Control Panel specifications:

BKDS-2010 Control Panel Specifications

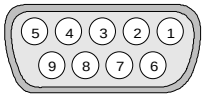
Parameter	Specification
Dimensions mm: inches:	424 (w) x 120 (h) x 400 (d) 16.75 (w) x 4.75 (h) x 15.75 (d)
Cutout Dimensions mm: inches:	415 (w) x 391 (d) 16.34 (w) x 15.39 (d)
Weight (approximate)	10.0 kg 22 lb. 1 oz.
Processor connector	9-pin D-sub connector (RS-422A)
Terminal connector	9-pin D-sub connector (RS-422A or RS-232C)
AC In	3-pin AC connector
Operating temperature	+5° to +40°C +41° to +104°F
For operation within specifications	+10° to +35°C 50° to +95°F
Power consumption	Max. 0.5A/0.3A (100-120V/200-240V)

BKDS-2010 Control Panel Connectors

The following BKDS-2010 control panel connectors are listed in this section:

- Switcher Connector
- Terminal Connector

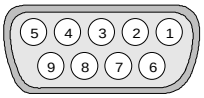
The table below lists specifications for the RS-422A **Switcher** connector:



BKDS-2010 RS-422A Control Panel Switcher Connector Specifications (Female)

Pin #	Signal	Function
1	FG	Frame Ground
2	RX-A	Received data (–) from Processor
3	TX-B	Transmitted data (+) to Processor
4	TX-COM	Signal Ground
5	VD (+)	VD signal input (+) from Processor
6	RX-COM	Signal Ground
7	RX-B	Received data (+) from Processor
8	TX-A	Transmitted data (–) to Processor
9	VD (–)	VD signal input (–) from Processor

The table below lists specifications for the RS-422A or RS-232C **Terminal** connector:



BKDS-2010 RS-422A or RS-232C Control Panel Terminal Connector Specifications (Female)

Pin #	Signal	Function
1	DCD	Received line signal detector signal
2	RX	Received data
3	TX	Transmitted data
4	DTR	Data terminal ready signal
5	GND	Signal ground
6	DSR	Data set ready signal
7	RTS	Request to send signal
8	CTS	Clear to send signal
9	—	—

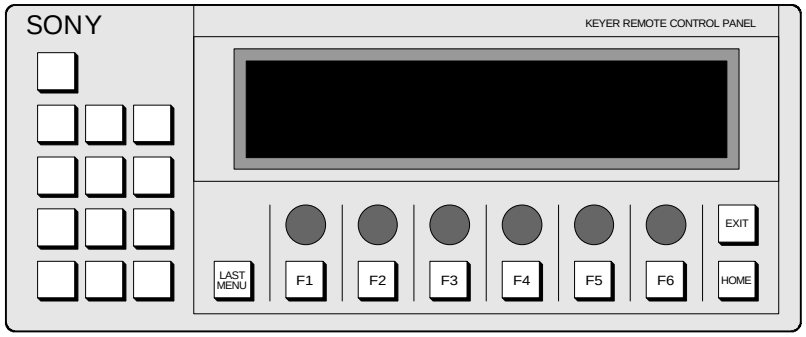
BKDS-7060 — Remote Key Control Panel

This section includes the following areas:

- BKDS-7060 Control Panel Top View
- BKDS-7060 Control Panel External Dimensions
- BKDS-7060 Control Panel Specifications
- BKDS-7060 Control Panel Rear View
- BKDS-7060 Control Panel Connectors
- BKDS-7060 Power Supply Front View
- BKDS-7060 Power Supply External Dimensions
- BKDS-7060 Power Supply Specifications
- BKDS-7060 Power Supply Rear View
- BKDS-7060 Power Supply Connectors

BKDS-7060 Control Panel Top View

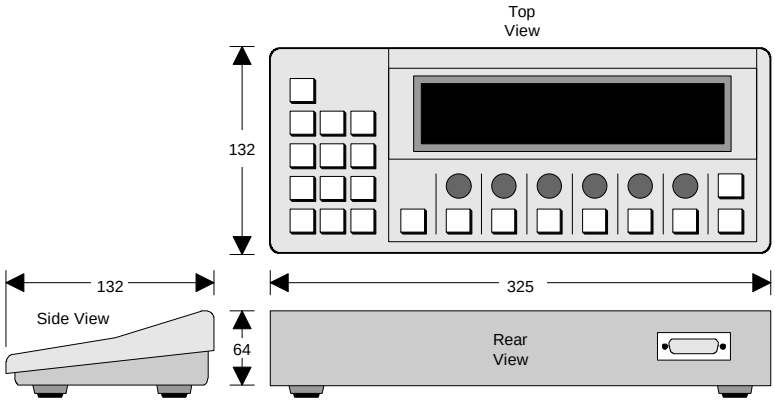
The figure below illustrates a top view of the BKDS-7060 Keyer Control Panel.



BKDS-7060 Control Panel Top View

BKDS-7060 Control Panel External Dimensions

The figure below illustrates external BKDS-7060 dimensions (in millimeters):



BKDS-7060 External Control Panel Dimensions

BKDS-7060 Control Panel Specifications

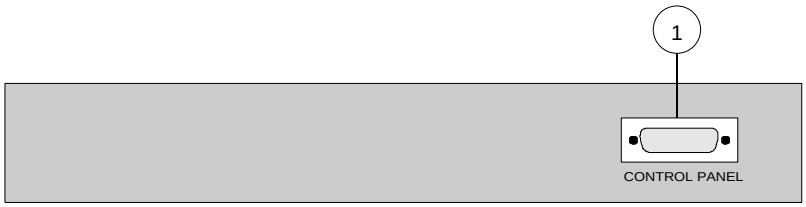
The following table lists BKDS-7060 Control Panel specifications:

BKDS-7060 Control Panel Specifications

Parameter		Specification
Dimensions	mm: inches:	325 (w) x 64 (h) x 132 (d) 12.80 (w) x 2.52 (h) x 5.20 (d)
Weight (approximate)		1.2 kg 2 lb. 11 oz.
Pig Tail Connector		15-pin D-sub connector (RS-232C) Male
Operating environment		+5°C to +40°C
Power consumption		Supplied by BKDS-7060 Power Supply

BKDS-7060 Control Panel Rear View

The figure below illustrates a rear view of the BKDS-7060 Keyer Control Panel.



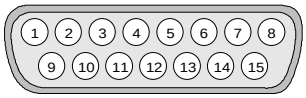
BKDS-7060 Control Panel Rear View

Rear Control Panel components are listed below:

1. Control Panel Connector (D-sub 15-pin male) RS-232C

BKDS-7060 Control Panel Connectors

The table below lists specifications for the RS-232C **Pig Tail** Connector:

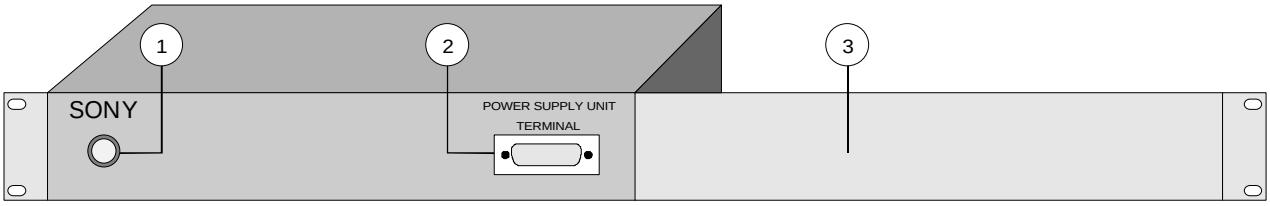


BKDS-7060 Control Panel RS-232C Pig Tail Connector Specifications (Male)

Pin #	Signal	Function
1	TX0	Transmitted data 0
2	TX1	Transmitted data 1
3	TX2	Transmitted data 2
4	VD	Transmitted VD signal
5	—	—
6	—	—
7	GND	Ground
8	+ 12V	Power supply
9	RX0	Received data 0
10	RX1	Received data 1
11	RX2	Received data 2
12	GND	Ground
13	—	—
14	GND	Ground
15	+ 12V	Power supply

BKDS-7060 Power Supply Front View

The figure below illustrates a front view of the Power Supply for the BKDS-7060.



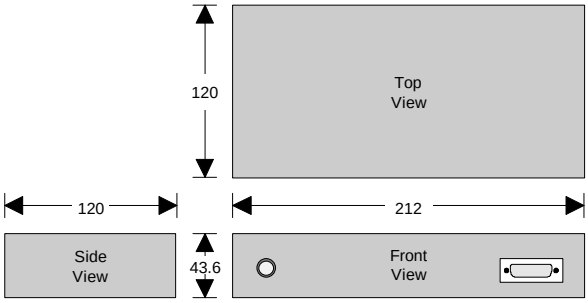
BKDS-7060 Power Supply Front View

Front Power Supply components are listed below:

1. Power Indicator
2. Terminal Connector (D-sub 9-pin female) RS-232C
3. Blank Panel for rack mounting

BKDS-7060 Power Supply External Dimensions

The figure below illustrates external Power Supply dimensions (in millimeters):



BKDS-7060 External Power Supply Dimensions

BKDS-7060 Power Supply Specifications

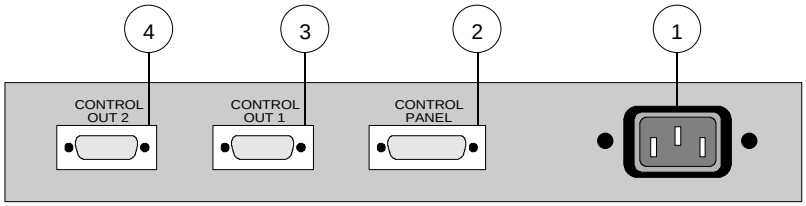
The following table lists BKDS-7060 Power Supply specifications:

BKDS-7060 Power Supply Specifications

Parameter	Specification
Dimensions mm: inches:	212 (w) x 43.6 (h) x 120 (d) 8.35 (w) x 1.72 (h) x 4.72 (d)
Weight (approximate)	1.2 kg 2 lb. 11 oz.
Terminal Connector (front panel)	9-pin D-sub connector (RS-232C) Female
Control Panel Connector (rear panel)	15-pin D-sub connector (RS-232C) Female
Control Out 1 Connector (rear panel)	9-pin D-sub connector (RS-422A) Female
Control Out 2 Connector (rear panel)	9-pin D-sub connector (RS-422A) Female
Operating environment	+5°C to +40°C
Power requirements	100 to 240 V AC ± 10%, 50/60 Hz
Current consumption	0.4 A (max.)

BKDS-7060 Power Supply Rear View

The figure below illustrates a rear view of the BKDS-7060 Power Supply.



BKDS-7060 Power Supply Rear View

Rear Power Supply components are listed below:

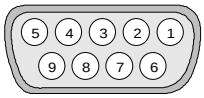
1. AC Input
2. Control Panel Connector (D-sub 15-pin female) RS-232C
3. Control Out 1 Connector (D-sub 9-pin female) RS-422A
4. Control Out 2 Connector (D-sub 9-pin female) RS-422A

BKDS-7060 Power Supply Connectors

The following BKDS-7060 Power Supply connectors are listed in this section:

- Terminal Connector
- Control Panel Connector
- Control Out 1, 2 Connector

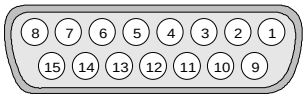
The table below lists specifications for the RS-232C **Terminal** connector:



BKDS-7060 Power Supply RS-232C Terminal Connector Specifications (Female)

Pin #	Signal	Function
1	DCD	Data carrier detect
2	RXD	Received data
3	TXD	Transmitted data
4	DTR	Data terminal ready
5	SG	Signal ground
6	DSR	Data set ready data
7	RTS	Request to send data
8	CTS	Clear to send data
9	—	—

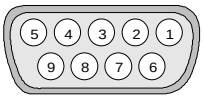
The table below lists specifications for the RS-232C **Control Panel** connector:



BKDS-7060 Power Supply RS-232C Control Panel Connector Specifications (Female)

Pin #	Signal	Function
1	RX0	Received data 0
2	RX1	Received data 1
3	RX2	Received data 2
4	VD	Transmitted VD signal
5	—	—
6	—	—
7	GND	Ground
8	+ 12V	Power supply
9	TX0	Transmitted data 0
10	TX1	Transmitted data 1
11	TX2	Transmitted data 2
12	GND	Ground
13	—	—
14	GND	Ground
15	+ 12V	Power supply

The table below lists specifications for the RS-422A **Control Out 1, 2** connectors:



BKDS-7060 Power Supply RS-422A Control Out 1, 2 Connector Specifications (Female)

Pin #	Signal	Function
1	FG	Frame Ground
2	RX-A	Received data (–)
3	TX-B	Transmitted data (+)
4	GND	Common ground
5	VD-B	Received VD signal (+)
6	GND	Common ground
7	RX-B	Received data (+)
8	TX-A	Transmitted data (–)
9	VD-A	Received VD signal (–)

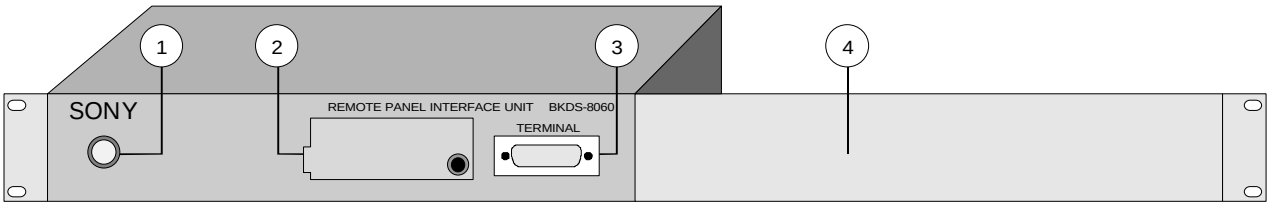
BKDS-8060 — Remote Panel Interface

This section includes the following areas:

- BKDS-8060 Front View
- BKDS-8060 Rear View
- BKDS-8060 External Dimensions
- BKDS-8060 Specifications
- BKDS-8060 Connectors

BKDS-8060 Front View

The figure below illustrates a front view of the BKDS-8060 Remote Panel Interface.



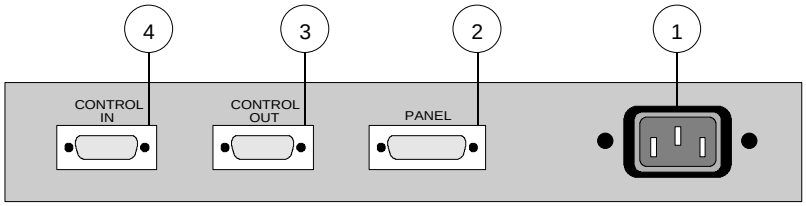
BKDS-8060 Remote Panel Interface Front View

Front BKDS-8060 components are listed below:

1. Power Indicator.
2. Switch Cover (for access to DIP switches).
3. Terminal Connector (D-sub 9-pin female) RS-232C.
4. Blank Panel for rack mounting. Note that two BKDS-8060 units can be rack-mounted together, side-by-side.

BKDS-8060 Rear View

The figure below illustrates a rear view of the BKDS-8060 Remote Panel Interface.



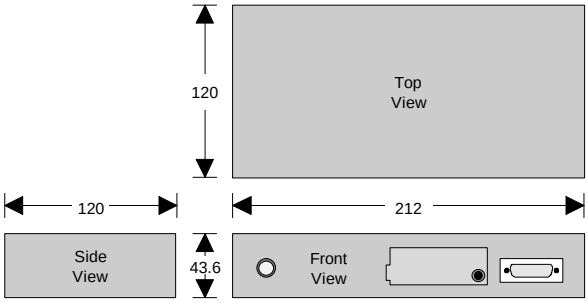
BKDS-8060 Remote Panel Interface Rear View

Rear BKDS-8060 components are listed below:

1. AC Input
2. Panel Connector (D-sub 15-pin female)
3. Control Out Connector (D-sub 9-pin female)
4. Control In Connector (D-sub 9-pin female)

BKDS-8060 External Dimensions

The figure below illustrates external Remote Panel dimensions (in millimeters):



BKDS-8060 External Remote Panel Interface Dimensions

BKDS-8060 Specifications

The following table lists BKDS-8060 Remote Panel Interface specifications:

BKDS-8060 Remote Panel Interface Specifications

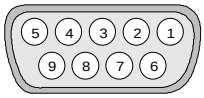
Parameter	Specification
Dimensions mm: inches:	212 (w) x 43.6 (h) x 120 (d) 8.35 (w) x 1.72 (h) x 4.72 (d)
Weight (approximate)	1.2 kg 2 lb. 11 oz.
Terminal Connector (front panel)	9-pin D-sub connector (RS-232C) Female
Panel Connector (rear panel)	15-pin D-sub connector (Control) Female
Control In Connector (rear panel)	9-pin D-sub connector (RS-422A) Female
Control Out Connector (rear panel)	9-pin D-sub connector (RS-422A) Female
Operating temperature	+5°C to +40°C
Storage temperature	-20°C to +70°C
Humidity	10% to 90%
Power requirements	100 to 240 V AC ± 10%, 50/60 Hz
Current consumption	5 W (max.)

BKDS-8060 Connectors

The following BKDS-8060 Remote Panel Interface connectors are listed:

- Terminal Connector
- Panel Connector
- Control In Connector
- Control Out Connector

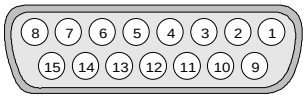
The table below lists specifications for the RS-232C **Terminal** connector:



BKDS-8060 Remote Panel Interface Terminal Connector Specifications (Female)

Pin #	Signal	Function
1	NC	No connection
2	TXD	Transmit data
3	RXD	Request to send signal
4	NC	No connection
5	GND	Signal ground
6	NC	No connection
7	CTS	Clear to send signal
8	RTS	Receive data
9	NC	No connection

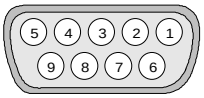
The table below lists specifications for the **Panel** control connector:



BKDS-8060 Remote Panel Interface Panel Connector Specifications (Female)

Pin #	Signal	Function
1	L; SCLK	Clock (negative logic)
2	GND	Signal ground
3	L; LOAD	Data latch signal (negative logic)
4	GND	Signal ground
5	L; RST	Reset signal (negative logic)
6	GND	Signal ground
7	+5 V	+5 V Power supply
8	+5 V	+5 V Power supply
9	L; LED	LED data (negative logic)
10	GND	Signal ground
11	L; SW	SW data (negative logic)
12	GND	Signal ground
13	GND	Signal ground
14	+5 V (LED)	+5 V Power supply (for LED lighting)
15	+5 V (LED)	+5 V Power supply (for LED lighting)

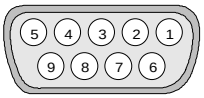
The table below lists specifications for the RS-422A **Control In** connector (controlled device):



BKDS-8060 Remote Panel Interface Control In Connector Specifications (Female)

Pin #	Signal	Function
1	GND	Signal ground
2	TX0 (–)	Transmit data (–) to switcher
3	RX0 (+)	Receive data (+) from switcher
4	GND	Signal ground
5	NC	No connection
6	GND	Signal ground
7	TX0 (+)	Transmit data (+) to switcher
8	RX0 (–)	Receive data (–) from switcher
9	GND	Signal ground

The table below lists specifications for the RS-422A **Control Out** connector (controlling device):



BKDS-8060 Remote Panel Interface Control Out Connector Specifications (Female)

Pin #	Signal	Function
1	GND	Signal ground
2	RX1 (–)	Receive data (–) from cascade connecting unit
3	TX1 (+)	Transmit data (+) to cascade connecting unit
4	GND	Signal ground
5	NC	No connection
6	GND	Signal ground
7	RX1 (+)	Receive data (+) from cascade connecting unit
8	TX1 (–)	Transmit data (–) to cascade connecting unit
9	GND	Signal ground

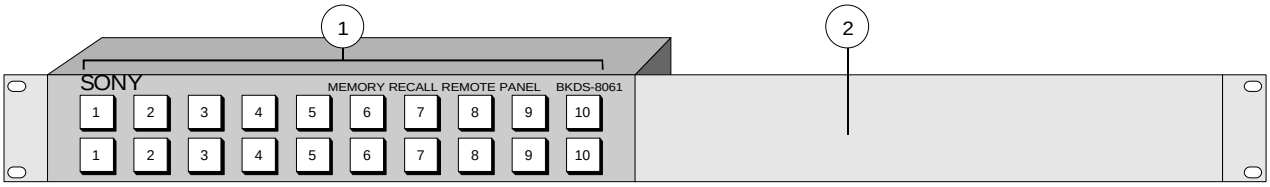
BKDS-8061 — Shot Box Control Unit

This section includes the following areas:

- BKDS-8061 Front View
- BKDS-8061 Rear View
- BKDS-8061 External Dimensions
- BKDS-8061 Specifications
- BKDS-8061 Connectors

BKDS-8061 Front View

The figure below illustrates a front view of the BKDS-8061 Shot Box Control Unit.



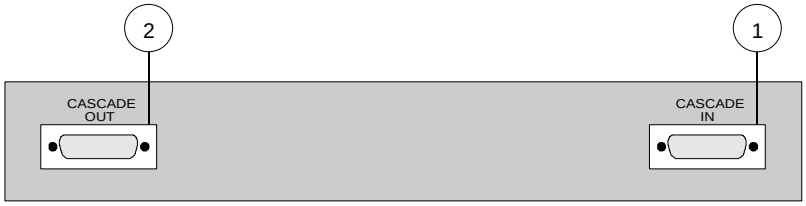
BKDS-8061 Shot Box Control Unit Front View

Front BKDS-8061 components are listed below:

1. Memory recall buttons
2. Blank Panel for rack mounting. Note that two BKDS-8061 units can be rack-mounted together, side-by-side.

BKDS-8061 Rear View

The figure below illustrates a rear view of the BKDS-8061 Shot Box Control Unit.



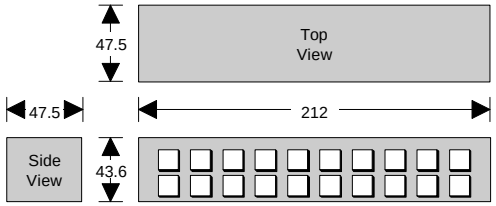
BKDS-8061 Shot Box Control Unit Rear View

Rear BKDS-8061 components are listed below:

1. Cascade In Connector (D-sub 15-pin male)
2. Cascade Out Connector (D-sub 15-pin female)

BKDS-8061 External Dimensions

The figure below shows external Shot Box Control Unit dimensions (in millimeters):



BKDS-8061 External Shot Box Control Unit Dimensions

BKDS-8061 Specifications

The following table lists BKDS-8061 Shot Box Control Unit specifications:

BKDS-8061 Shot Box Control Unit Specifications

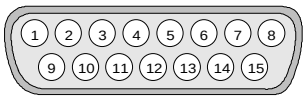
Parameter	Specification
Dimensions mm: inches:	212 (w) x 43.6 (h) x 47.5 (d) 8.35 (w) x 1.72 (h) x 1.87 (d)
Weight (approximate)	0.6 kg 1 lb. 5 oz.
Cascade In Connector	15-pin D-sub connector (Control) Male
Cascade Out Connector	15-pin D-sub connector (Control) Female
Operating temperature	+5°C to +40°C
Storage temperature	-20°C to +70°C
Humidity	10% to 90%
Power requirements	Supplied by BKDS-8060

BKDS-8061 Connectors

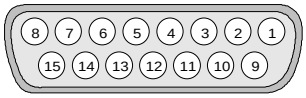
The following BKDS-8061 Shot Box Control Unit connectors are listed:

- Cascade In Connector
- Cascade Out Connector

The table below lists specifications for the **Cascade In** and **Cascade Out** control connectors. Pinouts are identical.



Cascade In — Male



Cascade Out — Female

BKDS-8061 Shot Box Control Unit Cascade In, Out Connector Specifications

Pin #	Signal	Function
1	L; SCLK	Clock (negative logic)
2	GND	Signal ground
3	L; LOAD	Data latch signal (negative logic)
4	GND	Signal ground
5	L; RST	Reset signal (negative logic)
6	GND	Signal ground
7	+5 V	+5 V Power supply
8	+5 V	+5 V Power supply
9	L; LED	LED data (negative logic)
10	GND	Signal ground
11	L; SW	SW data (negative logic)
12	GND	Signal ground
13	GND	Signal ground
14	+5 V (LED)	+5 V Power supply (for LED lighting)
15	+5 V (LED)	+5 V Power supply (for LED lighting)

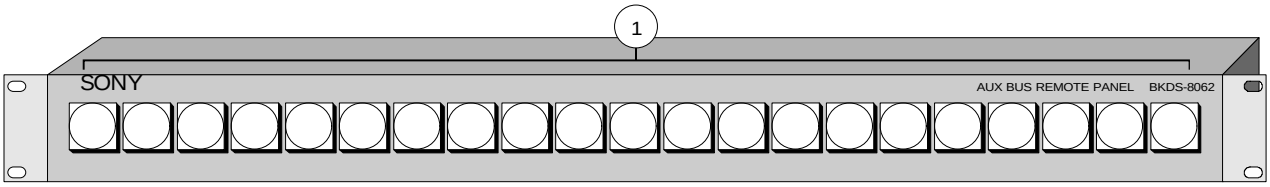
BKDS-8062 — Auxiliary Control Panel

This section includes the following areas:

- BKDS-8062 Front View
- BKDS-8062 Rear View
- BKDS-8062 External Dimensions
- BKDS-8062 Specifications
- BKDS-8062 Connectors

BKDS-8062 Front View

The figure below illustrates a front view of the BKDS-8062 Auxiliary Control Unit.



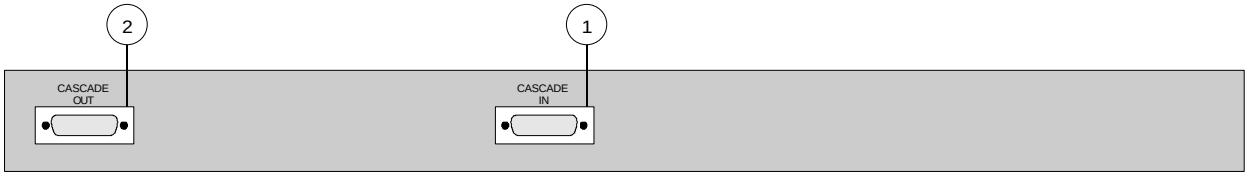
BKDS-8062 Auxiliary Control Unit Front View

Front BKDS-8062 components are listed below:

1. Auxiliary Bus Crosspoints

BKDS-8062 Rear View

The figure below illustrates a rear view of the BKDS-8062 Auxiliary Control Unit.



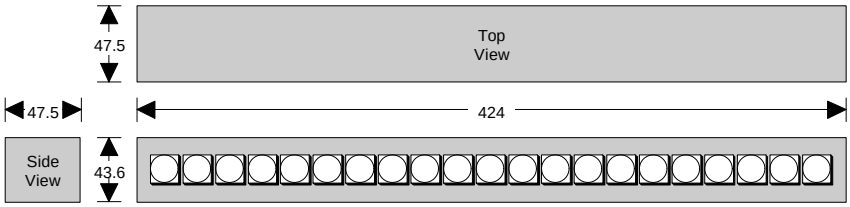
BKDS-8062 Auxiliary Control Unit Rear View

Rear BKDS-8062 components are listed below:

1. Cascade In Connector (D-sub 15-pin male)
2. Cascade Out Connector (D-sub 15-pin female)

BKDS-8062 External Dimensions

The figure below shows external Auxiliary Control Unit dimensions (in millimeters):



BKDS-8062 External Auxiliary Control Unit Dimensions

BKDS-8062 Specifications

The following table lists BKDS-8062 Auxiliary Control Unit specifications:

BKDS-8062 Auxiliary Control Unit Specifications

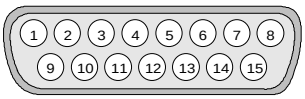
Parameter	Specification
Dimensions mm: inches:	424 (w) x 43.6 (h) x 47.5 (d) 16.69 (w) x 1.72 (h) x 1.87 (d)
Weight (approximate)	1.0 kg 2 lb. 3 oz.
Cascade In Connector	15-pin D-sub connector (Control) Male
Cascade Out Connector	15-pin D-sub connector (Control) Female
Operating temperature	+5°C to +40°C
Storage temperature	-20°C to +70°C
Humidity	10% to 90%
Power requirements	Supplied by BKDS-8060

BKDS-8062 Connectors

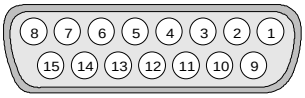
The following BKDS-8062 Auxiliary Control Unit connectors are listed:

- Cascade In Connector
- Cascade Out Connector

The table below lists specifications for the **Cascade In** and **Cascade Out** control connectors. Pinouts are identical.



Cascade In — Male



Cascade Out — Female

BKDS-8062 Auxiliary Control Unit Cascade In, Out Connector Specifications

Pin #	Signal	Function
1	L; SCLK	Clock (negative logic)
2	GND	Signal ground
3	L; LOAD	Data latch signal (negative logic)
4	GND	Signal ground
5	L; RST	Reset signal (negative logic)
6	GND	Signal ground
7	+5 V	+5 V Power supply
8	+5 V	+5 V Power supply
9	L; LED	LED data (negative logic)
10	GND	Signal ground
11	L; SW	SW data (negative logic)
12	GND	Signal ground
13	GND	Signal ground
14	+5 V (LED)	+5 V Power supply (for LED lighting)
15	+5 V (LED)	+5 V Power supply (for LED lighting)

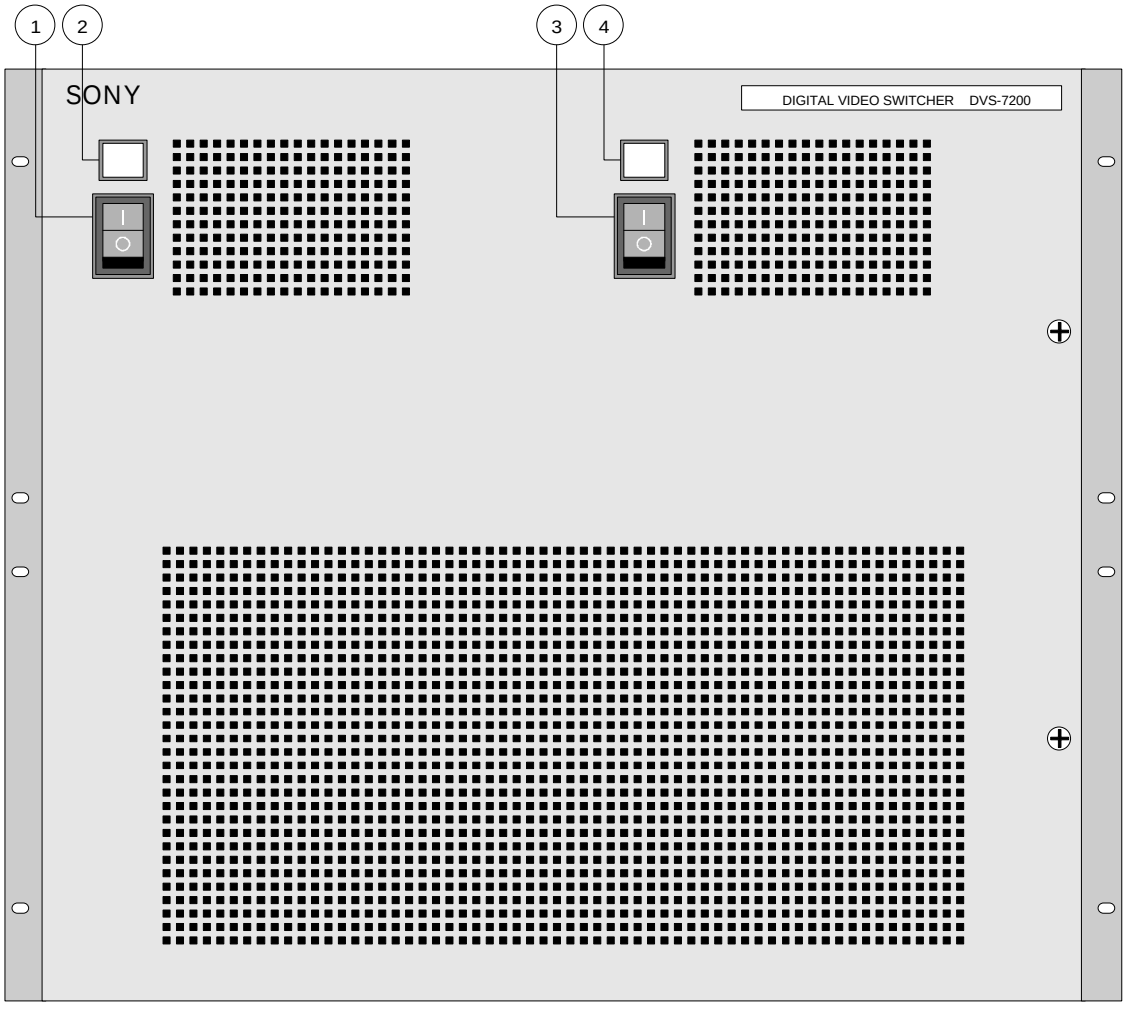
DVS-7200 Chassis

This section includes the following areas:

- Chassis Front View
- Chassis Rear View
- Chassis External Dimensions
- Chassis Specifications
- System Timing Requirements
- Chassis Connectors

Chassis Front View

The figure below illustrates a front view of the DVS-7200 chassis.



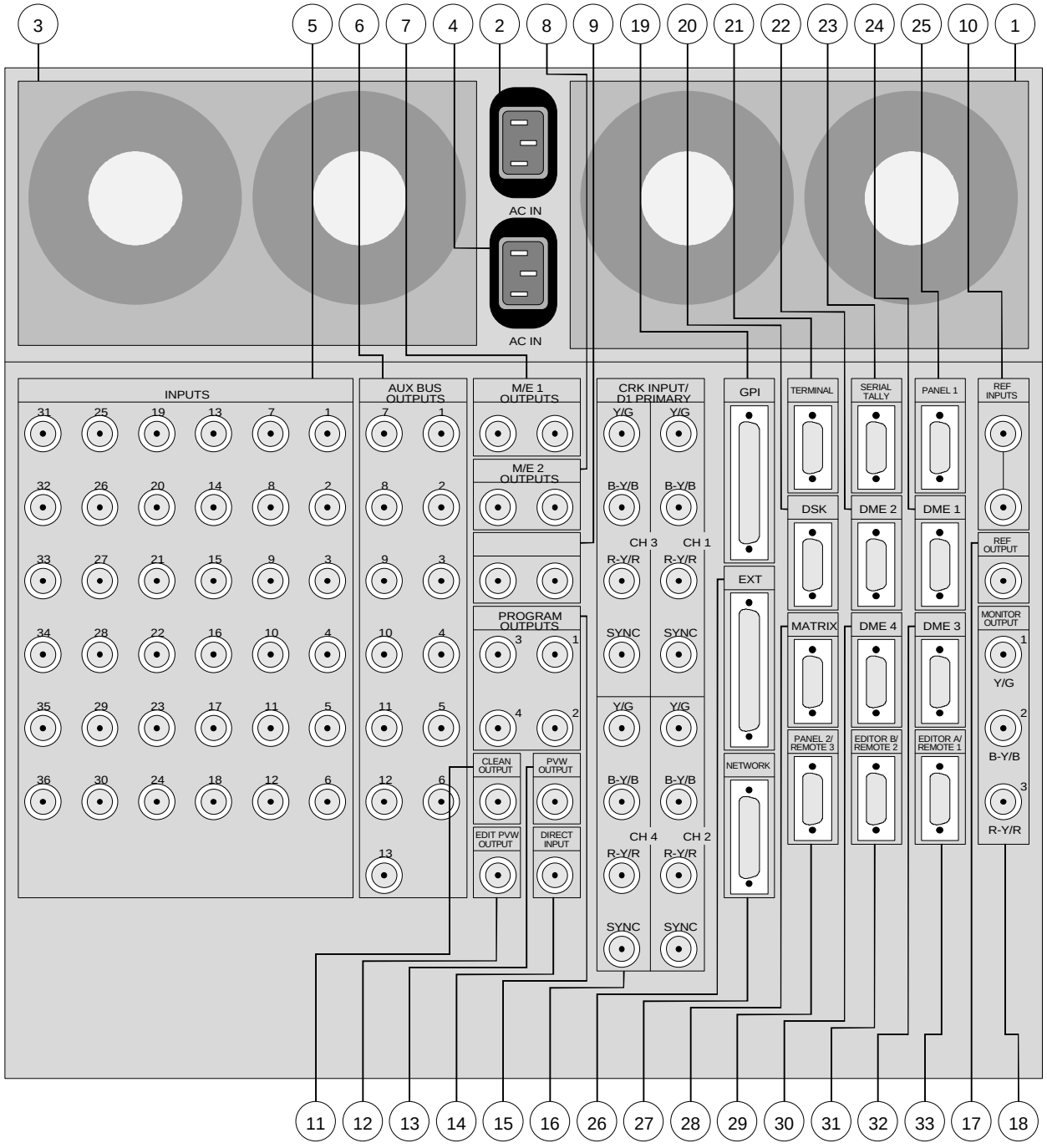
DVS-7200 Chassis — Front View

Front chassis components are listed below:

1. **Power Switch** (Supply 1)
2. **Power Indicator** (Supply 1)
3. **Power Switch** (Supply 2, Backup)
4. **Power Indicator** (Supply 2, Backup)

Chassis Rear View

The figure below illustrates a rear view of the DVS-7200 chassis.



DVS-7200 Chassis — Rear View

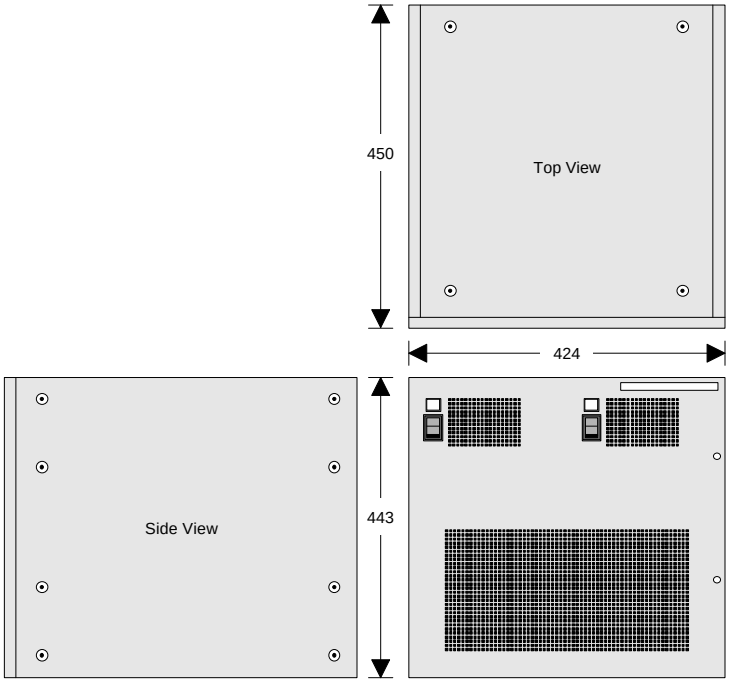
Rear chassis components are listed below:

1. **Cooling Fans** (Supply 1)
2. **AC In** (Supply 1)

3. **Cooling Fans** (Supply 2, Backup)
4. **AC In** (Supply 2, Backup)
5. **Primary Inputs** (1 - 36)
6. **Auxiliary Bus Outputs** (1 - 13)
7. **M/E 1 Outputs** (2, identical)
8. **M/E 2 Outputs** (2, identical)
9. Not active
10. **Reference Video Input**, **Reference Loop**
11. **Clean Output**
12. **Edit Preview / Auxiliary Bus 14 Output**
13. **Preview Output**
14. **Direct Input**
15. **Program Outputs** (4, identical)
16. **Chroma Key Inputs** (1 - 4), **D1 Primary Inputs**
17. **Reference Video Output**
18. **Monitor Output**. Not Active.
19. **GPI** (25-pin D-sub, female)
20. **DSK** (9-pin D-sub, female) RS-422A
21. **Terminal** (9-pin D-sub, female) RS-232C
22. **DME 2** (9-pin D-sub, female) RS-422A
23. **Serial Tally** (9-pin D-sub, female) RS-422A
24. **DME 1** (9-pin D-sub, female) RS-422A
25. **Panel 1** (9-pin D-sub, female) RS-422A
26. **EXT** (25-pin D-sub, female). Not Active.
27. **Network** (15-pin D-sub, female). Not Active.
28. **Matrix** (9-pin D-sub, female) RS-422A
29. **Panel 2 / Remote 3** (9-pin D-sub, female) RS-422A
30. **DME 4** (9-pin D-sub, female) RS-422A
31. **Editor B / Remote 2** (9-pin D-sub, female) RS-422A
32. **DME 3** (9-pin D-sub, female) RS-422A
33. **Editor A / Remote 1** (9-pin D-sub, female) RS-422A

Chassis External Dimensions

The figure below illustrates external chassis dimensions (in millimeters):



DVS-7200 External Chassis Dimensions

Chassis Specifications

The following table lists chassis specifications:

DVS-7200 Chassis Specifications

Parameter		Specification
Dimensions	mm: inches:	424 (w) x 443 (h) x 450 (d) 16.69 (w) x 17.44 (h) x 17.72 (d)
Weight		56 kg 123 lbs. 7 oz.
Operating temperature		+5°C to +40°C
Power requirement		AC 100 - 240V ± 10%, 50/60 Hz
Power consumption		7 to 3.5A
Connectors		
Primary Inputs		Serial digital video, BNC (x36), 75 ohms. Conforms to the SMPTE specification PN-259M.
	Signal level: Return loss:	800 mV ±10% 15 dB min. (5 - 270 MHz)
Chroma Key Inputs		Analog component video signal input, BNC (x16)
	Signal type: Signal level:	Y/B-Y/R-Y 9 (Betacam, SMPTE) / sync or G/B/R/sync 0 ±3 dB

DVS-7200 Chassis Specifications (continued)

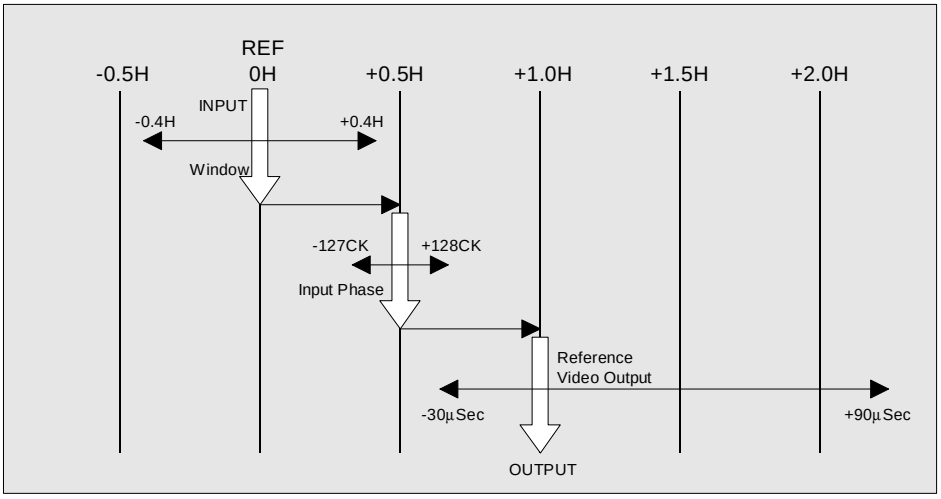
Parameter	Specification
Connectors (continued)	
Direct Input	Configurable, analog composite or digital
With BKDS-7162 for EDIT PVW output	Serial digital video signal output, BNC (x1), 75 ohms
Signal level:	800 mV ±10%
With BKDS-7161 for EDIT PVW output	Analog composite video signal output, BNC (x1), 75 ohms
Signal level:	0 ±3 dB
Auxiliary Bus Outputs	Configurable, analog composite or digital
With BKDS-7162	Serial digital video signal output, BNC (x13), 75 ohms
Signal level:	800 mV ±10%
Transmission rate:	270 Mbps (component)/143 Mbps (composite)
With BKDS-7161	Analog composite video signal output, BNC (x13), 75 ohms
Signal level:	1 Vp-p ±5%
Program Outputs	Configurable, analog composite or digital
With BKDS-7162	Serial digital video signal output, BNC (x4), 75 ohms
Signal level:	800 mV ±10%
Transmission rate:	270 Mbps (component)/143 Mbps (composite)
With BKDS-7161	Analog composite video signal output, BNC (x4), 75 ohms
Signal level:	1 Vp-p ±5%
M/E 1, M/E 2 Outputs	Configurable, analog composite or digital
With BKDS-7162	Serial digital video signal output, BNC (x2), 75 ohms
Signal level:	800 mV ±10%
Transmission rate:	270 Mbps (component)/143 Mbps (composite)
With BKDS-7161	Analog composite video signal output, BNC (x2), 75 ohms
Signal level:	1 Vp-p ±5%
Reference Video Input, Loop	Analog black burst or analog sync signal input, BNC (x2), 75 ohms, with loop-through.
Signal level:	0 ± 3 dB
SCH phase:	0° ± 30°
Reference Video Output	Analog black burst signal output, BNC (x1), 75 ohms.
Signal level - Sync:	285 mVp-p ±14 mV
Burst:	285 mVp-p ±14 mV
SCH phase:	0° ± 30°
	Analog sync signal output, BNC (x1), 75 ohms.
Signal level:	2 V ±0.5 V
Clean Output	Configurable, analog composite or digital
With BKDS-7162	Serial digital video signal output, BNC (x1), 75 ohms
Signal level:	800 mV ±10%
Transmission rate:	270 Mbps (component)/143 Mbps (composite)
With BKDS-7161	Analog composite video signal output, BNC (x1), 75 ohms
Signal level:	1 Vp-p ±5%
Edit Preview Output	Configurable, analog composite or digital
With BKDS-7162	Serial digital video signal output, BNC (x1), 75 ohms
Signal level:	800 mV ±10%
Transmission rate:	270 Mbps (component)/143 Mbps (composite)
With BKDS-7161	Analog composite video signal output, BNC (x1), 75 ohms
Signal level:	1 Vp-p ±5%
Preview Output	Configurable, analog composite or digital
With BKDS-7162	Serial digital video signal output, BNC (x1), 75 ohms
Signal level:	800 mV ±10%
Transmission rate:	270 Mbps (component)/143 Mbps (composite)
With BKDS-7161	Analog composite video signal output, BNC (x1), 75 ohms
Signal level:	1 Vp-p ±5%
GPI	25-pin D-sub, female
DSK	9-pin D-sub, female, RS-422A

DVS-7200 Chassis Specifications (continued)

Parameter		Specification
Connectors (continued)		
Matrix		9-pin D-sub, female, RS-422A
Terminal		9-pin D-sub, female, RS-232C
Serial Tally		9-pin D-sub, female, RS-422A
DME 1		9-pin D-sub, female, RS-422A
DME 2		9-pin D-sub, female, RS-422A
DME 3		9-pin D-sub, female, RS-422A
DME 4		9-pin D-sub, female, RS-422A
Panel 1		9-pin D-sub, female, RS-422A
Panel 2 / Remote 3		9-pin D-sub, female, RS-422A
Editor A / Remote 1		9-pin D-sub, female, RS-422A
Editor B / Remote 2		9-pin D-sub, female, RS-422A
Adjustable Parameters		
Key Edge	Left / Right Key Edges:	± 2 clock pulses
V-Proc	Video Gain:	-200 to +200 IRE (4:2:2 / 4*fsc*)
	Luminance Gain:	-200 to +200 IRE (4:2:2)
	Chrominance Gain:	-200 to +200 IRE (4:2:2)
	Black Level:	-7.31 to +109.64 IRE (4:2:2) -42.86 to +140.00 IRE (4*fsc*)
	Hue:	-180 degrees to + 180 degrees (4:2:2)
Analog Composite Video Characteristics		
Dynamic Phase		< 1°
Dynamic Gain		< 1.5 %
Sampling Frequency		14.32 MHz
Frequency Response		± .5 dB (5 Hz to 5 MHz)
K Factor		< 1 %
SN Ratio		-55 dB minimum
Quantization		10-bit

System Timing Requirements

The chart below shows input and output timing for the DVS-7200.



DVS-7200 System Phase Timing Chart

Please note the following important points:

- Values apply to input video, input key, and external input signals.
- Switcher video outputs are delayed by 1H to the reference signal. Note that 1H = one horizontal line. One horizontal line = 63.5 µSec.
- Reference video output phase control is provided in the setup menu within a range of -30 µSec to +90 µSec from input video reference.
- The input video signals can be automatically corrected for a range of ±0.4H relative to input video reference.
- Fine adjustment is possible for independent input channels from -127 clocks to +128 clocks relative to input video reference. Note that one clock = 74 nSec.

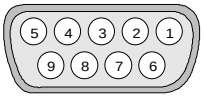
Chassis Connectors

The following chassis connectors are listed in this section:

- DSK
- Terminal
- Serial Tally
- Matrix
- DME 1 - 4
- Panel 1
- Panel 2 / Remote 3
- Editor A / Remote 1
- Editor B / Remote 2
- GPI

RS-422A DSK Connector Specifications

The following table lists RS-422A **DSK** connector specifications:

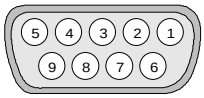


RS-422A DSK Connector Specifications (Female)

Pin #	Signal	Function
1	FG	Frame Ground
2	DSK TX-A	Transmitted data (–)
3	DSK RX-B	Received data (+)
4	GND	Common ground
5	—	—
6	GND	Common ground
7	DSK TX-B	Transmitted data (+)
8	DSK RX-A	Received data (–)
9	FG	Frame Ground

RS-232C Terminal Connector Specifications

The following table lists RS-232C **Terminal** connector specifications:



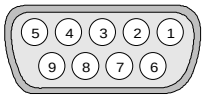
RS-232C Terminal Connector Specifications (Female)

Pin #	Signal	Function
1	DCD	Data Carrier detect *
2	RXD	Received data
3	TXD	Transmitted data
4	DTR	Data terminal ready *
5	SG	Signal ground
6	DSR	Data set ready *
7	RTS	Request to send
8	CTS	Clear to send
9	—	—

Note: * Pins 1, 4, and 6 are shorted together on the **CN-1146** board.

RS-422A Serial Tally Connector Specifications

The following table lists RS-422A **Serial Tally** connector specifications:

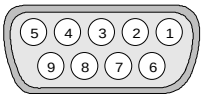


RS-422A Serial Tally Connector Specifications (Female)

Pin #	Signal	Function
1	FG	Frame ground
2	Serial Tally RX-A	Received data (–)
3	Serial Tally TX-B	Transmitted data (+)
4	GND	Common ground
5	—	—
6	GND	Common ground
7	Serial Tally RX-B	Received data (+)
8	Serial Tally TX-A	Transmitted data (–)
9	FG	Frame ground

RS-422A Matrix Connector Specifications

The following table lists RS-422A **Matrix** connector specifications:

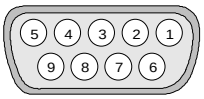


RS-422A Matrix Connector Specifications (Female)

Pin #	Signal	Function
1	FG	Frame Ground
2	MTX TX-A	Received data (–)
3	MTX RX-B	Transmitted data (+)
4	GND	Common ground
5	—	—
6	GND	Common ground
7	MTX TX-B	Received data (+)
8	MTX RX-A	Transmitted data (–)
9	FG	Frame Ground

RS-422A DME Connector Specifications

The following table lists specifications for the RS-422A **DME** connectors 1 - 4:

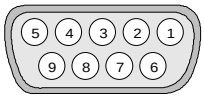


RS-422A DME Connectors (1 - 4) Specifications (Female)

Pin #	Signal	Function
1	FG	Frame Ground
2	DME 1 - 4 TX-A	Transmitted data (–)
3	DME 1 - 4 RX-B	Received data (+)
4	GND	Common ground
5	—	—
6	GND	Common ground
7	DME 1 - 4 TX-B	Transmitted data (+)
8	DME 1 - 4 RX-A	Received data (–)
9	FG	Frame Ground

RS-422A Panel 1 Connector Specifications

The following table lists specifications for the RS-422A **Panel 1** connector:

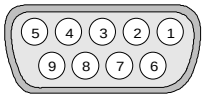


RS-422A Panel 1 Connector Specifications (Female)

Pin #	Signal	Function
1	GND	Frame Ground
2	CON TX-A	Transmitted data (–)
3	CON RX-B	Received data (+)
4	GND	Common ground
5	VD-B	Transmitted VD signal (+)
6	GND	Common ground
7	CON TX-B	Transmitted data (+)
8	CON RX-A	Received data (–)
9	VD-A	Transmitted VD signal (–)

RS-422A Panel 2/Remote 3 Connector Specifications

The following table lists RS-422A **Panel 2/Remote 3** connector specifications:

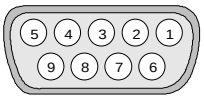


RS-422A Panel 2/Remote 3 Connector Specifications (Female)

Pin #	Signal	Function
1	GND	Frame Ground
2	CON TX-A	Transmitted data (–)
3	CON RX-B	Received data (+)
4	GND	Common ground
5	VD-B	Transmitted VD signal (+)
6	GND	Common ground
7	CON TX-B	Transmitted data (+)
8	CON RX-A	Received data (–)
9	VD-A	Transmitted VD signal (–)

RS-422A Editor A/Remote 1 Connector Specifications

The table below lists specifications for the RS-422A **Editor A/Remote 1** connector:

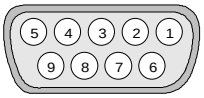


RS-422A Editor A/Remote 1 Connector Specifications (Female)

Pin #	Signal	Function
1	FG	Frame Ground
2	Edit A TX-A	Transmitted data (–)
3	Edit A RX-B	Received data (+)
4	GND	Common ground
5	—	—
6	GND	Common ground
7	Edit A TX-B	Transmitted data (+)
8	Edit A RX-A	Received data (–)
9	FG	Frame Ground

RS-422A Editor B/Remote 2 Connector Specifications

The table below lists specifications for the RS-422A **Editor B/Remote 2** connector:

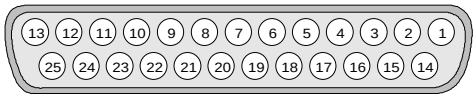


RS-422A Editor B/Remote 2 Connector Specifications (Female)

Pin #	Signal	Function
1	FG	Frame Ground
2	Edit B TX-A	Transmitted data (–)
3	Edit B RX-B	Received data (+)
4	GND	Common ground
5	—	—
6	GND	Common ground
7	Edit B TX-B	Transmitted data (+)
8	Edit B RX-A	Received data (–)
9	FG	Frame Ground

GPI Connector Specifications

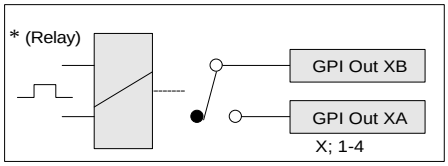
The following table lists **GPI** connector specifications.

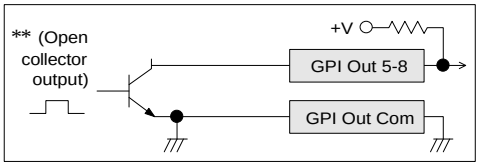


GPI Connector Specifications (Female)

Pin #	Signal	Function
1	GND	Ground
2	GND	Ground
3	GPI In 2	General purpose relay input
4	GPI In 4	
5	GPI In 6	
6	GPI In 8	
7	GPI Out 1B	General purpose relay output (B) *
8	GPI Out 2B	
9	GPI Out 3B	
10	GPI Out 4B	
11	GPI Out 6	General purpose open collector output **
12	GPI Out 8	
13	GPI Out Com	Ground for open collector output
14	GND	Ground
15	GPI In 1	General purpose input
16	GPI In 3	
17	GPI In 5	
18	GPI In 7	
19	GPI Out 1A	General purpose relay output (A) *
20	GPI Out 2A	
21	GPI Out 3A	
22	GPI Out 4A	
23	GPI Out 5	General purpose open collector output **
24	GPI Out 7	
25	GPI Out Com	Ground for open collector output

Note: A and B of the same number constitute a pair of relay contacts.





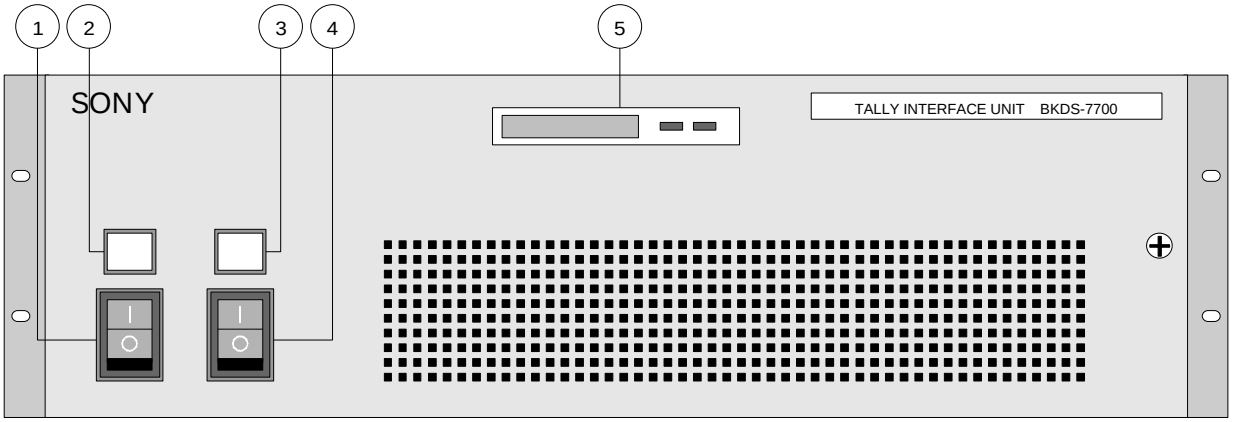
BKDS-7700 Chassis

This section includes the following areas:

- BKDS-7700 Chassis Front View
- BKDS-7700 Chassis Rear View
- BKDS-7700 Chassis External Dimensions
- BKDS-7700 Chassis Specifications
- BKDS-7700 Chassis Connectors

BKDS-7700 Chassis Front View

The figure below illustrates a front view of the BKDS-7700 chassis.



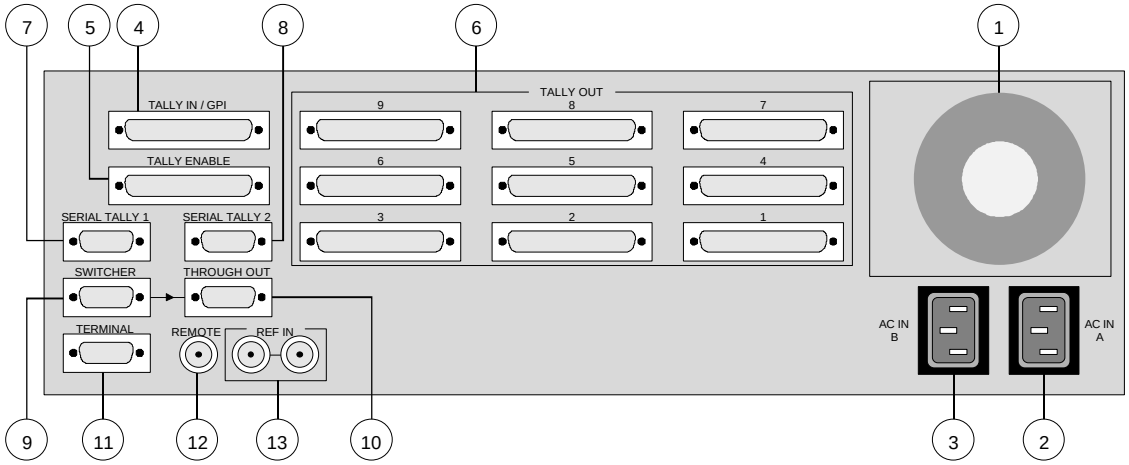
BKDS-7700 Chassis — Front View

Front chassis components are listed below:

1. **Power Switch** (Supply 1)
2. **Power Indicator** (Supply 1)
3. **Power Switch** (Supply 2, Backup)
4. **Power Indicator** (Supply 2, Backup)
5. **Operations Status and Program Selector Button**

BKDS-7700 Chassis Rear View

The figure below illustrates a rear view of the BKDS-7700 chassis.



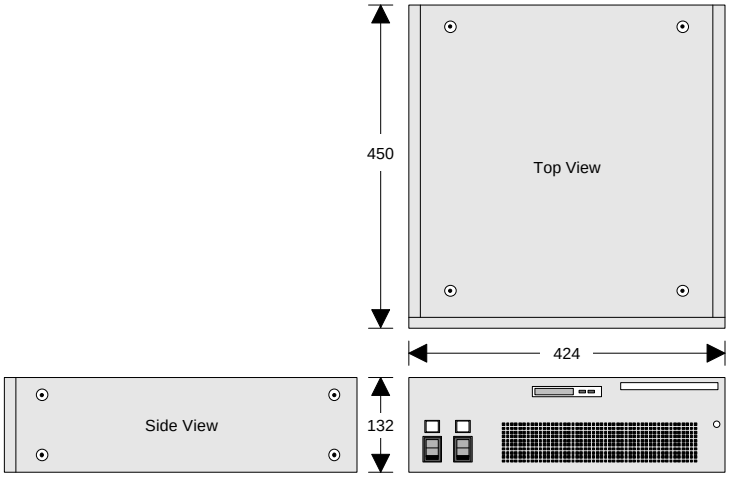
BKDS-7700 Chassis — Rear View

Rear chassis components are listed below:

1. **Cooling Fans**
2. **AC In** (Supply 1)
3. **AC In** (Supply 2, Backup)
4. **Tally In / GPI** (50-pin D-sub, female)
5. **Tally Enable** (50-pin D-sub, female)
6. **Tally Out (1 - 9)** 50-pin D-sub, female
7. **Serial Tally 1** (9-pin D-sub, female) RS-422A
8. **Serial Tally 2** (9-pin D-sub, female) RS-422A
9. **Switcher** (9-pin D-sub, female) RS-422A
10. **Through Out** (9-pin D-sub, female) RS-422A
11. **Terminal** (9-pin D-sub, female) RS-232C
12. **Remote** (BNC)
13. **Reference In, Loop** (BNC)

BKDS-7700 Chassis External Dimensions

The figure below illustrates external BKDS-7700 chassis dimensions (in millimeters):



BKDS-7700 External Chassis Dimensions

BKDS-7700 Chassis Specifications

The following table lists BKDS-7700 chassis specifications:

BKDS-7700 Chassis Specifications

Parameter	Specification
Dimensions mm: inches:	424 (w) x 132 (h) x 450 (d) 16.69 (w) x 5.20 (h) x 17.72 (d)
Weight	13 kg (28 lbs. 11 oz.) with all option boards installed
Operating temperature	+5°C to +40°C
Power requirement	AC 100 - 240V ± 10%, 50/60 Hz
Power consumption	1.0 Amps (maximum) with all option boards installed
Connectors	
Reference In	BNC
Remote	BNC
Tally In / GPI	50-pin D-sub, female, RS-422A
Tally Enable	50-pin D-sub, female, RS-422A
Tally Out (1 - 9)	50-pin D-sub, female, RS-422A
Terminal	9-pin D-sub, female, RS-232C
Switcher	9-pin D-sub, female, RS-422A
Through Out	9-pin D-sub, female, RS-422A
Serial Tally 1	9-pin D-sub, female, RS-422A
Serial Tally 2	9-pin D-sub, female, RS-422A

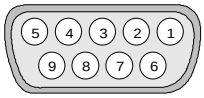
BKDS-7700 Chassis Connectors

The following BKDS-7700 chassis connectors are listed in this section:

- Terminal
- Switcher
- Through Out
- Serial Tally 1, 2
- Tally In / GPI
- Tally Enable
- Tally Out 1 - 9

BKDS-7700 Terminal Connector Specifications

The following table lists RS-232C **Terminal** connector specifications:

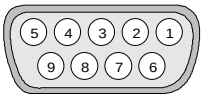


RS-232C Terminal Connector Specifications (Female)

Pin #	Signal	Function
1	DCD	Data carrier detect
2	RXD	Receive data
3	TXD	Transmitted data
4	DTR	Data terminal ready
5	GND	Ground
6	DSR	Data set ready
7	RTS	Request to send
8	CTS	Clear to send
9	—	—

BKDS-7700 Switcher Connector Specifications

The following table lists RS-422A **Switcher** connector specifications:

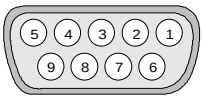


RS-422A Switcher Connector Specifications (Female)

Pin #	Signal	Function
1	FG	Frame Ground
2	TX-A	Transmitted data (–)
3	RX-B	Received data (+)
4	GND	Common ground
5	VD-B	VD signal (+)
6	GND	Common ground
7	TX-B	Transmitted data (+)
8	RX-A	Received data (–)
9	VD-A	VD signal (–)

BKDS-7700 Through Out Connector Specifications

The following table lists RS-422A **Through Out** connector specifications:

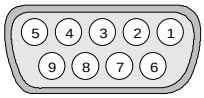


RS-422A Through Out Connector Specifications (Female)

Pin #	Signal	Function
1	FG	Frame Ground
2	RX-A	Received data (–)
3	TX-B	Transmitted data (+)
4	GND	Common ground
5	VD-B	Transmitting VD signal (+)
6	GND	Common ground
7	RX-B	Received data (+)
8	TX-A	Transmitted data (–)
9	VD-A	Transmitting VD signal (–)

BKDS-7700 Serial Tally 1, 2 Connector Specifications

The following table lists RS-422A **Serial Tally 1**, **2** connector specifications:

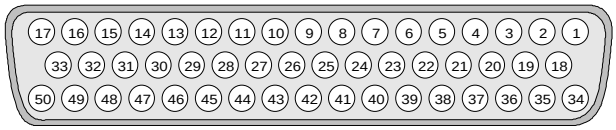


RS-422A Serial Tally 1, 2 Connector Specifications (Female)

Pin #	Signal	Function
1	FG	Frame Ground
2	RX-A	Received data (–)
3	TX-B	Transmitted data (+)
4	GND	Common ground
5	—	—
6	GND	Common ground
7	RX-B	Received data (+)
8	TX-A	Transmitted data (–)
9	FG	Frame Ground

BKDS-7700 Tally In/GPI Connector Specifications

The following table lists RS-422A **Tally In/GPI** connector specifications:

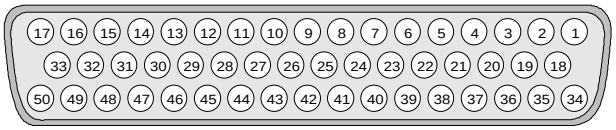


RS-422A Tally In/GPI Connector Specifications (Female)

Pin #	Signal	Function	Pin #	Signal	Function
1	Tally In 1	Parallel Tally Inputs	26	P-In 10	Parallel Inputs
2	Tally In 2		27	P-In 11	
3	Tally In 3		28	P-In 12	
4	Tally In 4		29	P-In 13	
5	Tally In 5		30	P-In 14	
6	Tally In 6		31	P-In 15	
7	Tally In 7		32	P-In 16	
8	Tally In 8		33	P-In 17	
9	Tally In 9		34	P-In 18	
10	Tally In 10		35	P-In 19	
11	Tally In 11		36	P-In 20	
12	Tally In 12		37	P-In 21	
13	Tally In 13		38	P-In 22	
14	Tally In 14		39	P-In 23	
15	Tally In 15		40	P-In 24	
16	Tally In 16		41	P-In 25	
17	P-In 1	Parallel Inputs	42	P-In 26	
18	P-In 2		43	P-In 27	
19	P-In 3		44	P-In 28	
20	P-In 4		45	P-In 29	
21	P-In 5		46	P-In 30	
22	P-In 6		47	P-In 31	
23	P-In 7		48	P-In 32	
24	P-In 8		49	GND	Ground
25	P-In 9		50	GND	Ground

BKDS-7700 Tally Enable Connector Specifications

The following table lists RS-422A **Tally Enable** connector specifications:

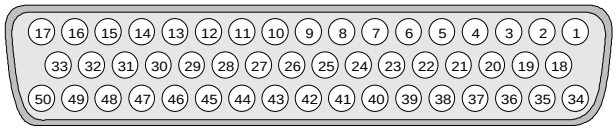


RS-422A Tally Enable Connector Specifications (Female)

Pin #	Signal	Function	Pin #	Signal	Function
1	Enable 1	Tally Enable Inputs	26	Enable 26	Tally Enable Inputs
2	Enable 2		27	Enable 27	
3	Enable 3		28	Enable 28	
4	Enable 4		29	Enable 29	
5	Enable 5		30	Enable 30	
6	Enable 6		31	Enable 31	
7	Enable 7		32	Enable 32	
8	Enable 8		33	Enable 33	
9	Enable 9		34	Enable 34	
10	Enable 10		35	Enable 35	
11	Enable 11		36	Enable 36	
12	Enable 12		37	Enable 37	
13	Enable 13		38	Enable 38	
14	Enable 14		39	Enable 39	
15	Enable 15		40	Enable 40	
16	Enable 16		41	Enable 41	
17	Enable 17		42	Enable 42	
18	Enable 18		43	Enable 43	
19	Enable 19		44	Enable 44	
20	Enable 20		45	Enable 45	
21	Enable 21		46	Enable 46	
22	Enable 22		47	Enable 47	
23	Enable 23		48	Enable 48	
24	Enable 24		49	GND	Ground
25	Enable 25		50	GND	Ground

BKDS-7700 Tally Out 1-9 Connector Specifications

The following table lists RS-422A **Tally Out 1-9** connector specifications:



RS-422A Tally Out 1-9 Connector Specifications (Female)

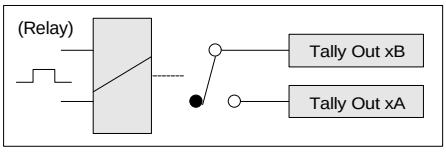
Pin #	Signal Name	Tally Out Connector # 1	2	3	4	5	6	7	8	9	Function
1	Tally Out:	1A	25A	49A	73A	97A	121A	145A	169A	193A	Tally Outputs
2	Tally Out:	1B	25B	49B	73B	97B	121B	145B	169B	193B	
3	Tally Out:	4A	28A	52A	76A	100A	124A	148A	172A	196A	
4	Tally Out:	4B	28B	52B	76B	100B	124B	148B	172B	196B	
5	Tally Out:	7A	31A	55A	79A	103A	127A	151A	175A	199A	
6	Tally Out:	7B	31B	55B	79B	103B	127B	151B	175B	199B	
7	Tally Out:	10A	34A	58A	82A	106A	130A	154A	178A	202A	
8	Tally Out:	10B	34B	58B	82B	106B	130B	154B	178B	202B	
9	Tally Out:	13A	37A	61A	85A	109A	133A	157A	181A	205A	
10	Tally Out:	13B	37B	61B	85B	109B	133B	157B	181B	205B	
11	Tally Out:	16A	40A	64A	88A	112A	136A	160A	184A	208A	
12	Tally Out:	16B	40B	64B	88B	112B	136B	160B	184B	208B	
13	Tally Out:	19A	43A	67A	91A	115A	139A	163A	187A	211A	
14	Tally Out:	19B	43B	67B	91B	115B	139B	163B	187B	211B	
15	Tally Out:	11A	46A	70A	94A	118A	142A	166A	190A	214A	
16	Tally Out:	22B	46B	70B	94B	118B	142B	166B	190B	214B	
17		GND	GND	GND	GND	GND	GND	GND	GND	GND	Ground
18	Tally Out:	2A	26A	50A	74A	98A	122A	146A	170A	194A	Tally Outputs
19	Tally Out:	2B	26B	50B	74B	98B	122B	146B	170B	194B	
20	Tally Out:	5A	29A	53A	77A	101A	125A	149A	173A	197A	
21	Tally Out:	5B	29B	53B	77B	101B	125B	149B	173B	197B	
22	Tally Out:	8A	32A	56A	80A	104A	128A	152A	176A	200A	
23	Tally Out:	8B	32B	56B	80B	104B	128B	152B	176B	200B	
24	Tally Out:	11A	35A	59A	83A	107A	131A	155A	179A	203A	
25	Tally Out:	11B	35B	59B	83B	107B	131B	155B	179B	203B	

RS-422A Tally Out 1-9 Connector Specifications (continued)

Pin #	Signal Name	Tally Out Connector # 1	2	3	4	5	6	7	8	9	Function
26	Tally Out:	14A	38A	62A	86A	110A	134A	158A	182A	206A	Tally Outputs
27	Tally Out:	14B	38B	62B	86B	110B	134B	158B	182B	206B	
28	Tally Out:	17A	41A	65A	89A	113A	137A	161A	185A	209A	
29	Tally Out:	17B	41B	65B	89B	113B	137B	161B	185B	209B	
30	Tally Out:	20A	44A	68A	92A	116A	140A	164A	188A	212A	
31	Tally Out:	20B	44B	68B	92B	116B	140B	164B	188B	212B	
32	Tally Out:	23A	47A	71A	95A	119A	143A	167A	191A	215A	
33	Tally Out:	23B	47B	71B	95B	119B	143B	167B	191B	215B	
34	Tally Out:	3A	27A	51A	75A	99A	123A	147A	171A	195A	
35	Tally Out:	3B	27B	51B	75B	99B	123B	147B	171B	195B	
36	Tally Out:	6A	30A	54A	78A	102A	126A	150A	174A	198A	
37	Tally Out:	6B	30B	54B	78B	102B	126B	150B	174B	198B	
38	Tally Out:	9A	33A	57A	81A	105A	129A	153A	177A	201A	
39	Tally Out:	9B	33B	57B	81B	105B	129B	153B	177B	201B	
40	Tally Out:	12A	36A	60A	84A	108A	132A	156A	180A	204A	
41	Tally Out:	12B	36B	60B	84B	108B	132B	156B	180B	204B	
42	Tally Out:	15A	39A	63A	87A	111A	135A	159A	183A	207A	
43	Tally Out:	15B	39B	63B	87B	111B	135B	159B	183B	207B	
44	Tally Out:	18A	42A	66A	90A	114A	138A	162A	186A	210A	
45	Tally Out:	18B	42B	66B	90B	114B	138B	162B	186B	210B	
46	Tally Out:	21A	45A	69A	93A	117A	141A	165A	189A	213A	
47	Tally Out:	21B	45B	69B	93B	117B	141B	165B	189B	213B	
48	Tally Out:	24A	48A	72A	96A	120A	144A	168A	192A	216A	
49	Tally Out:	24B	48B	72B	96B	120B	144B	168B	192B	216B	
50		GND	GND	GND	GND	GND	GND	GND	GND	GND	Ground

Notes:

- Relay contact 30V 0.1 A
- A and B of the same number constitute a pair of relay contacts.



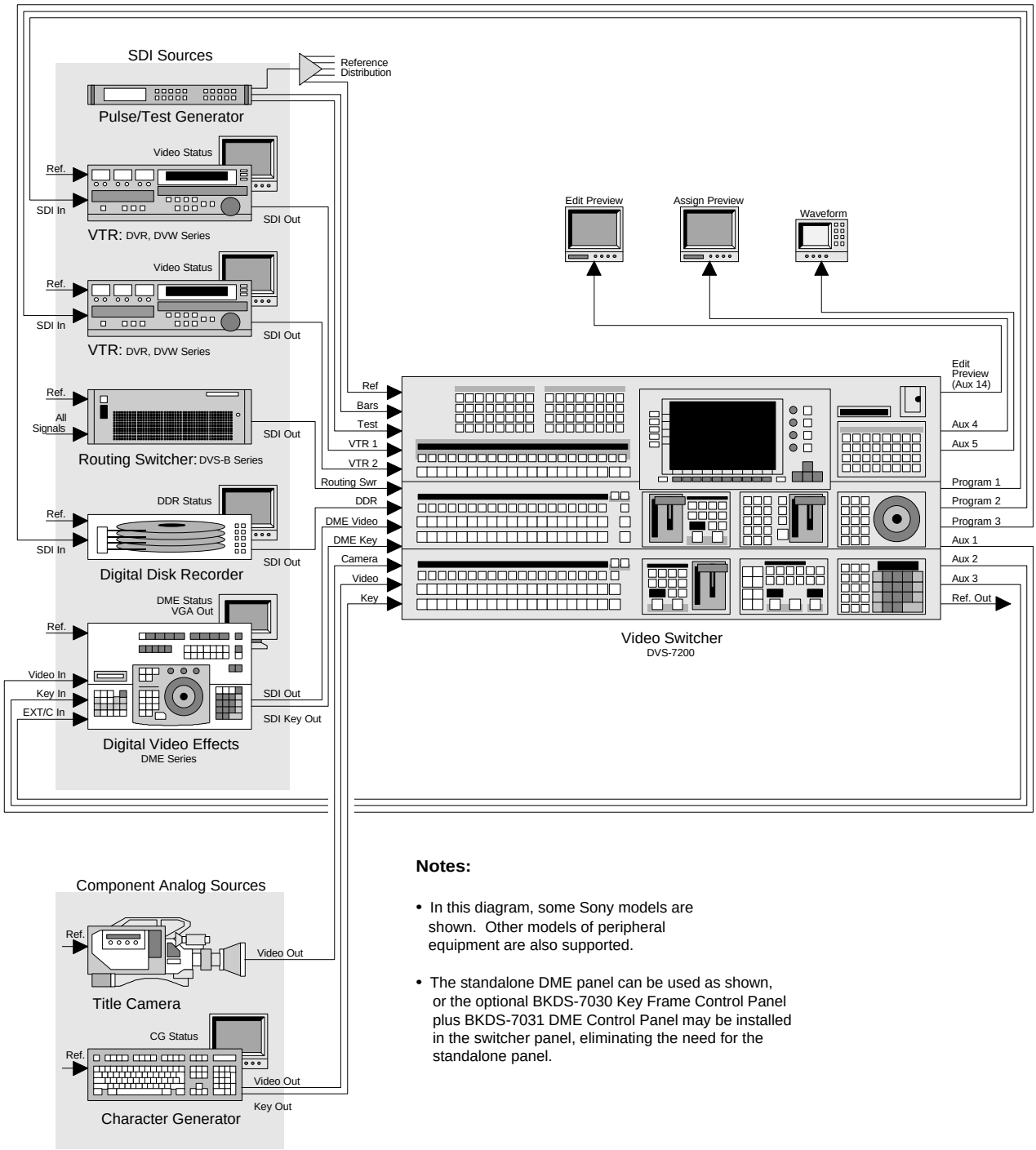
System Interconnection Charts

This section includes a variety of detailed system interconnection charts, as follows:

- DVS-7200 System Interconnection Chart — Video
- DVS-7200 System Interconnection Chart — Control
- DVS-7200 Control Panel Connections Chart
- DVS-7200 Video Paths with Router Chart
- DVS-7200 Switcher - Router Interface Chart
- DVS-7200 with ScitexDV (Abekas) Dveous A-5100

DVS-7200 System Interconnection Chart — Video

The simplified diagram below illustrates a *typical* DVS-7200 system. Video connections only are shown.

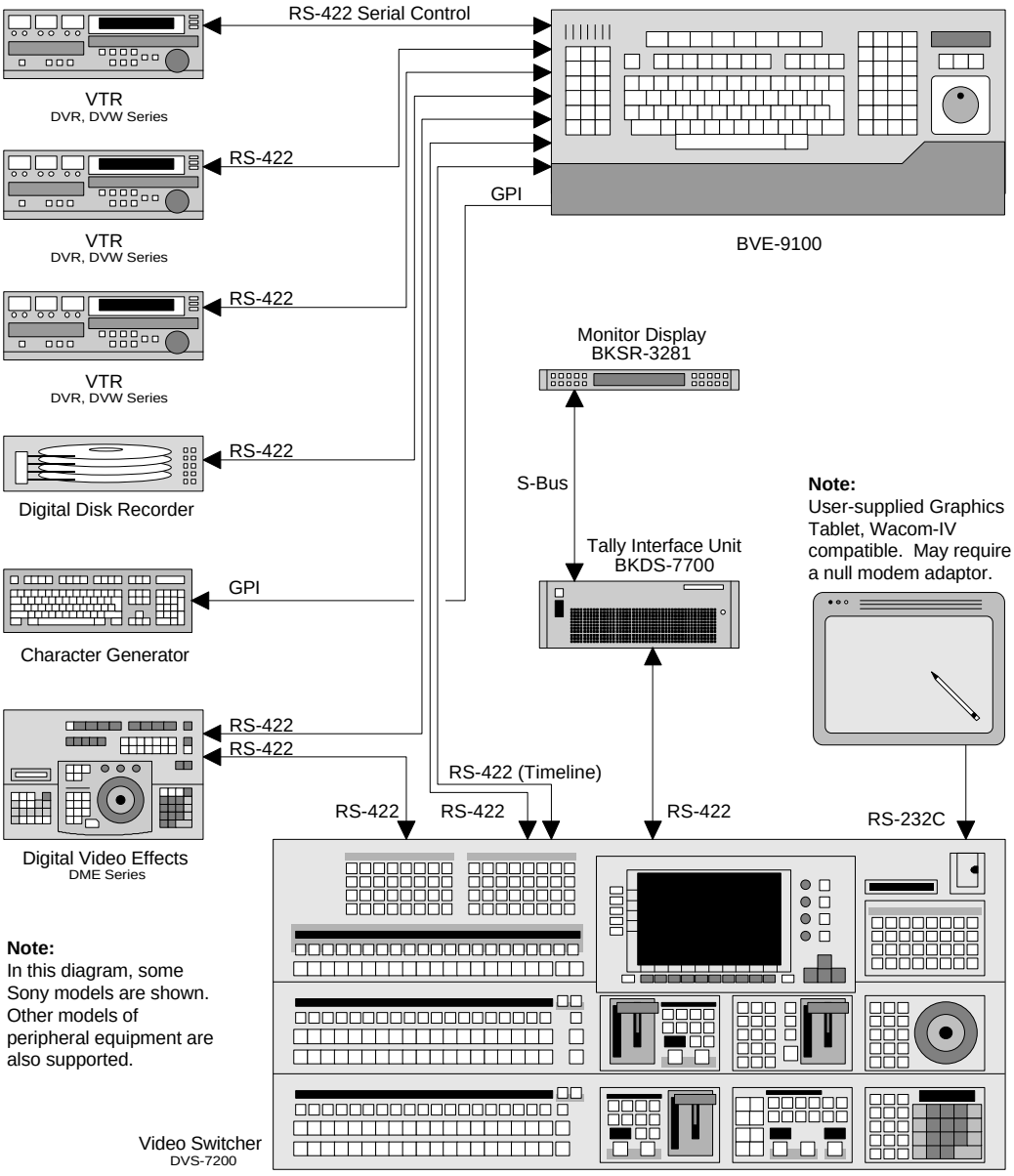


Notes:

- In this diagram, some Sony models are shown. Other models of peripheral equipment are also supported.
- The standalone DME panel can be used as shown, or the optional BKDS-7030 Key Frame Control Panel plus BKDS-7031 DME Control Panel may be installed in the switcher panel, eliminating the need for the standalone panel.

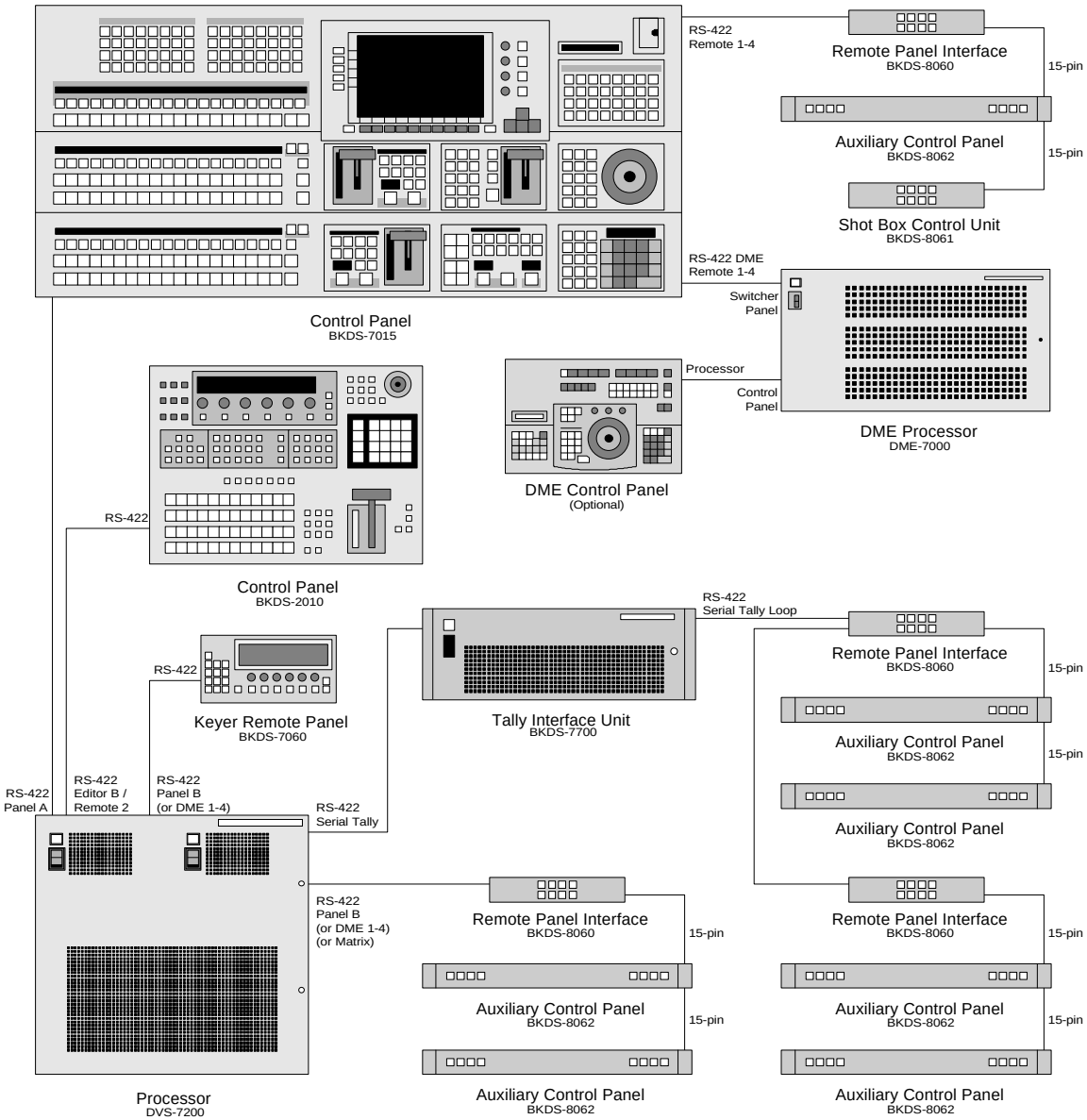
DVS-7200 System Interconnection Chart — Control

The simplified diagram below illustrates a *typical* DVS-7200 system. Control, GPI, and S-Bus connections are shown.



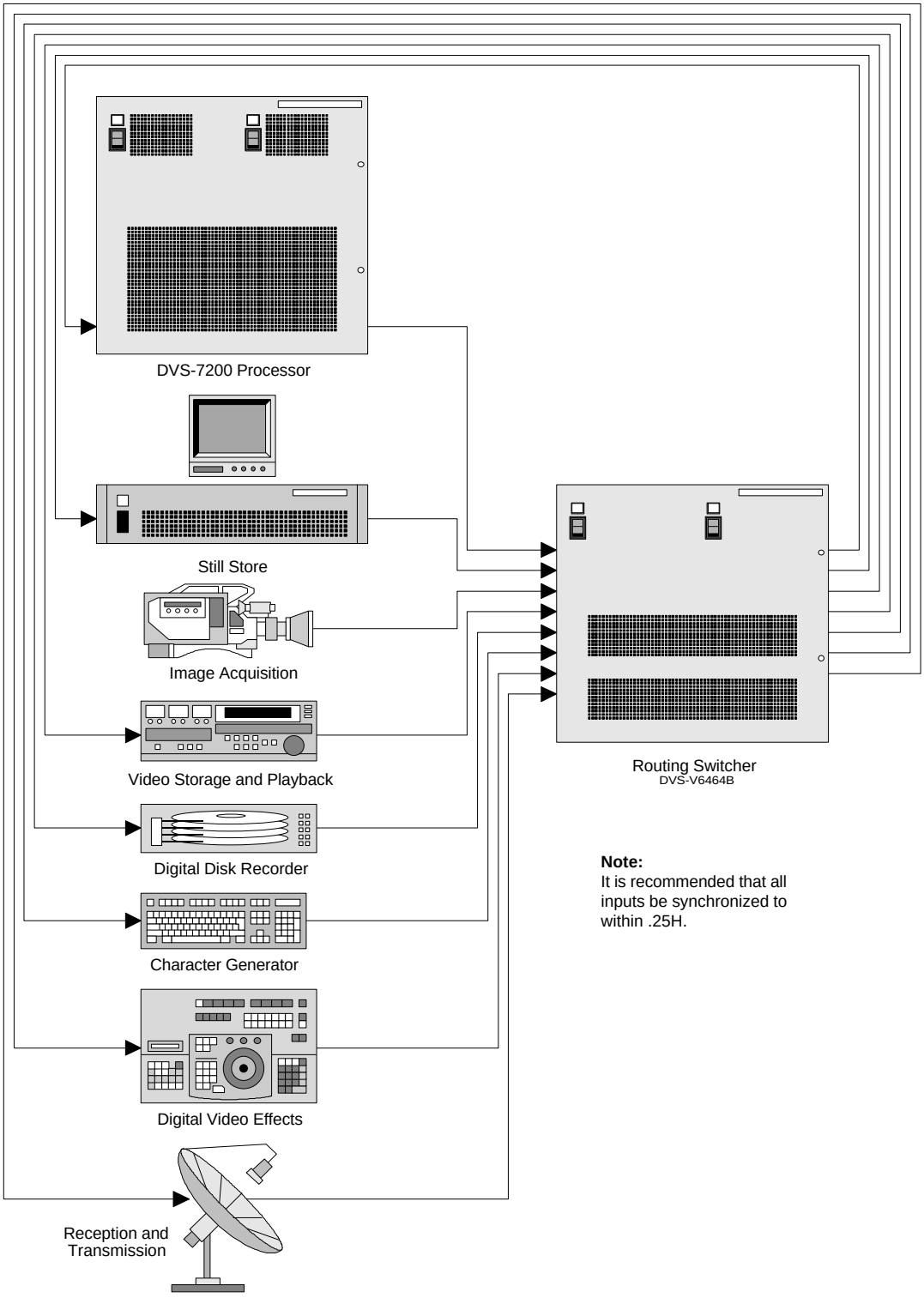
DVS-7200 Control Panel Connections Chart

The simplified diagram below illustrates a variety of DVS-7200 control panel connections, using RS-422 connectors on both the chassis and control panel. Note the use of loops to extend the system's capabilities.



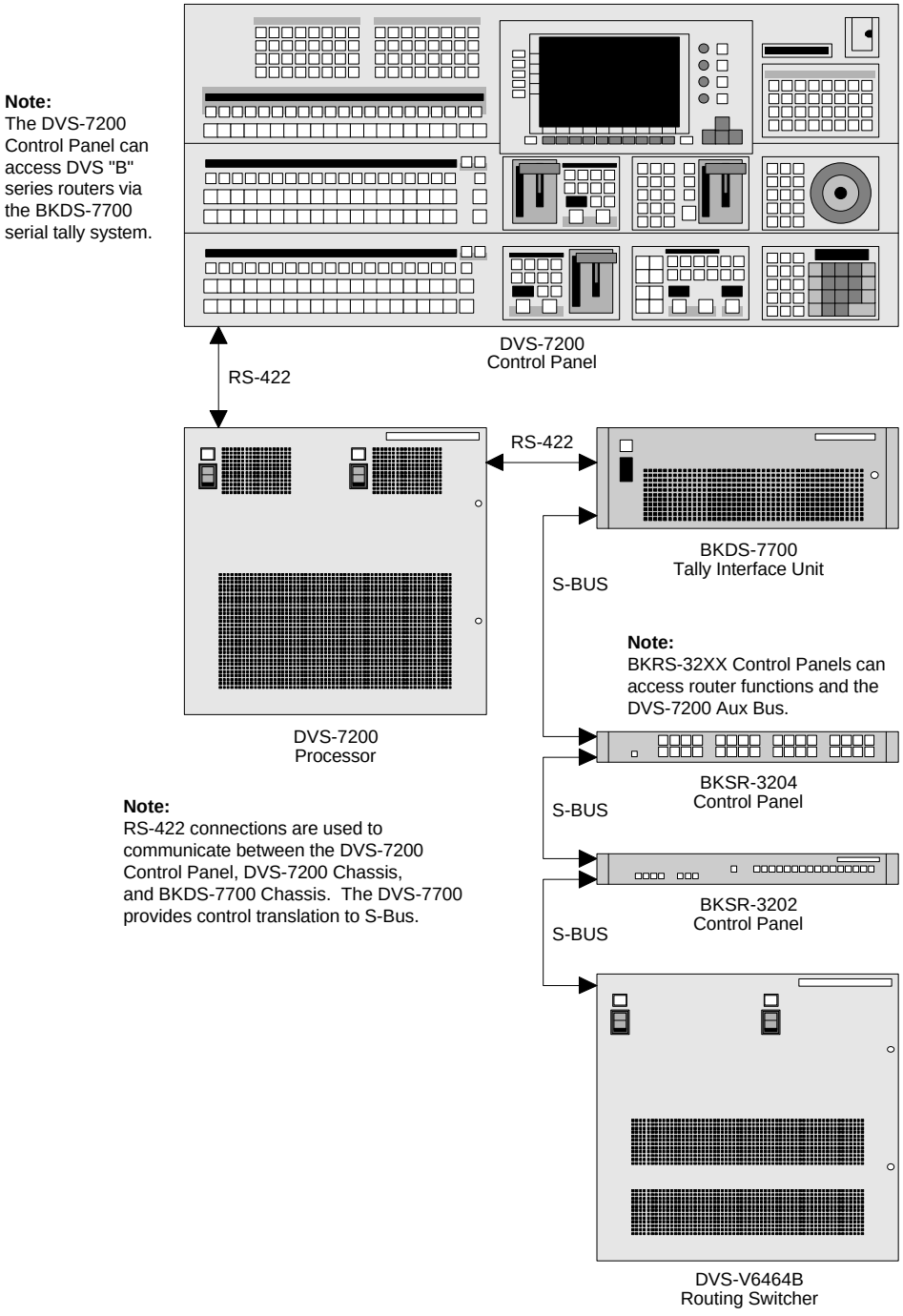
DVS-7200 Video Paths with Router Chart

The simplified diagram below shows the interconnection between a DVS-V6464B routing switcher and a variety of typical video sources, *including* the DVS-7200.



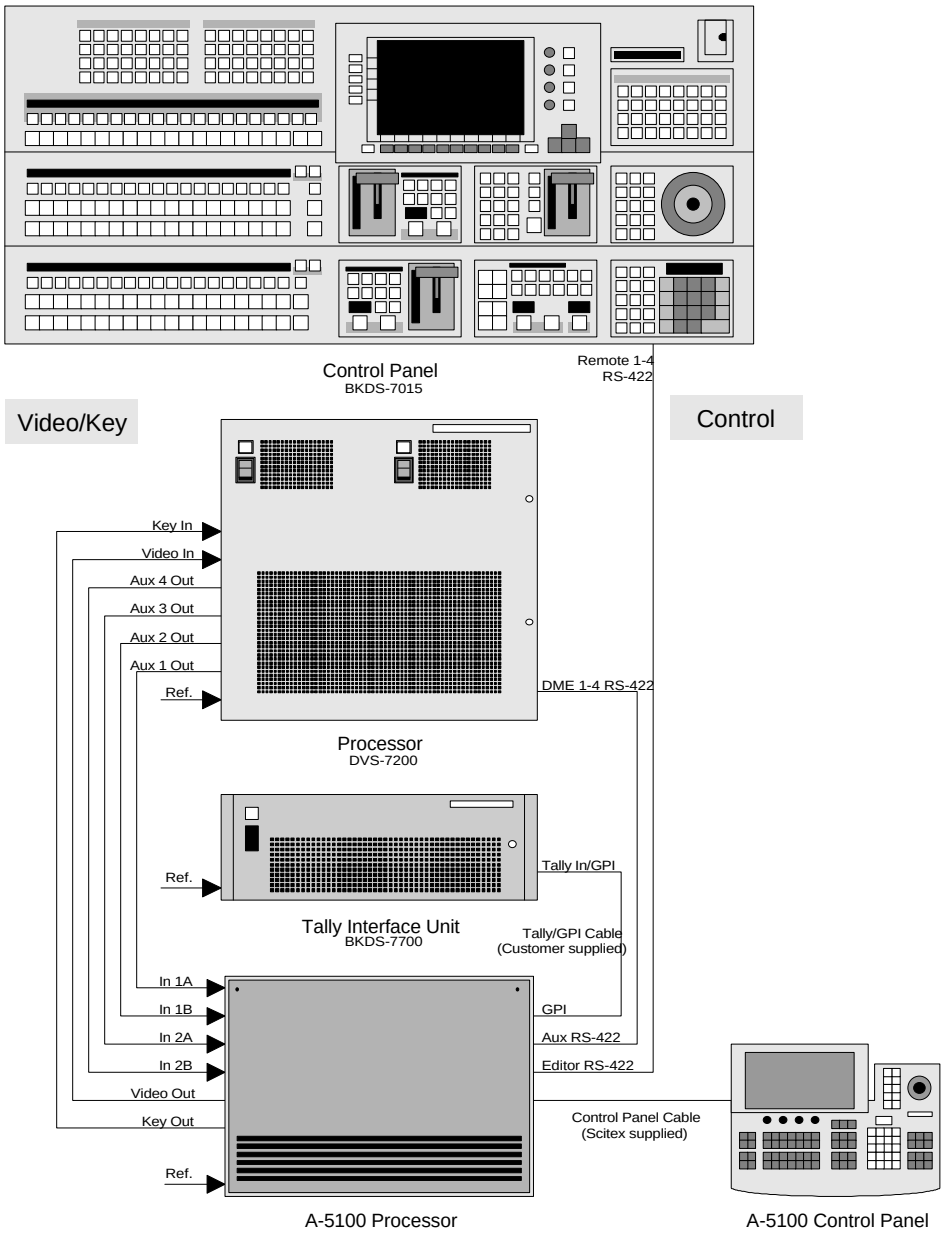
DVS-7200 Switcher - Router Interface Chart

The simplified diagram below illustrates the S-Bus and RS-422 control interconnection between a DVS-V6464B routing switcher and the DVS-7200.



DVS-7200 with ScitexDV (Abekas) Dveous A-5100

The simplified diagram below shows a typical interconnection between a DVS-7200 and a ScitexDV Dveous A-5100.

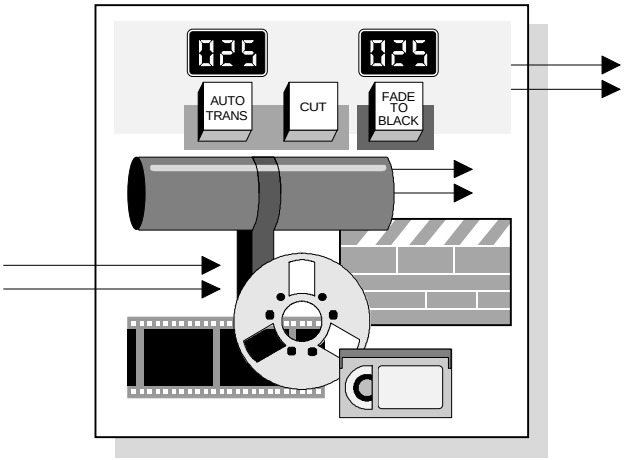


Note the following important points regarding the system shown above:

- The DVS-7200 control panel remote port is configured for P-II protocol.
- The Dveous editor port is configured for P-II protocol. Refer to the ***Dveous User's Guide*** for details.
- The Dveous Aux port is configured for Sony Aux bus protocol. Refer to the ***Dveous User's Guide*** for details.

Appendix A. Feature List

DVS-7200 — Feature Review



This Appendix provides a table of DVS-7200 features, along with brief descriptions of each. All features are cross-referenced in the index.

Note that all features discussed in this section use Sony terminology.

DVS-7200 Features

The following features are available with the DVS-7200 switcher.

DVS-7200 Features

Feature	Description
Compact Control Panel	The DVS-7200's compact and modular control panel offers streamlined operations, comfort, and flexibility in a two M/E configuration. Additional space savings can also be achieved through fully-integrated DME operation, eliminating the need for an additional control panel.
4*fsc* / 4:2:2 operation	When configured for component digital operation (4:2:2), you can operate in the 525 or 625 line standard (with the appropriate reference). When configured for composite digital operation (4*fsc*), you can operate in the 525 line standard. You can switch aspect ratios between 4:3 and 16:9.
Optional input capability	Thirty-six optional inputs can be configured using a combination of SDI and/or composite analog formats. Optional input boards are required.
Component Analog Chromakey	Up to four Component Analog Chromakey Inputs can be added. Optional input boards are required.
4 Program outputs	Four identical program video outputs are provided.
2 Effects Keyers per M/E	Two standard effects keyers are provided per M/E, each of which has the capability of Linear, Luminance, Clean (self-key), Pattern Key, and Priority keys.
Optional DSK	Two optional DSK (Downstream Keyers) can be added. The option includes the DSK board plus a control panel insert, and provides the same capabilities as the effects keyers.
EL Panel (Electro Luminescent)	A clear, bright screen provides easy access to operational parameters, adjustments, and setups.
Master E-File Panel	The Master E-File panel allows the user to enter wipe patterns, enter transition rates, and store and recall effects and panel snapshots from one convenient location.
Editor Interface	The switcher communicates with the BVE-2000 and BVE-9100 editing systems via serial interface, and Sony's *status reporting* feature. When used with BVE-9100, switcher timelines may be recalled and manipulated for motion, search, and jog functions.
DME Interface	The DME interface (DME-LINK) enables specified DME-3000 and DME-7000 effects to be run by the switcher's fader — just like wipes and dissolves. You can also control the Auxiliary bus from the DME.
Integrated DME Control	For effects creation with Sony DMEs, two optional panels (BKDS-7030 and BKDS-7031) can be added to the switcher panel. These panels completely replace the DME's control panel, eliminating unnecessary control room footprints, saving space, and providing an economical and convenient method of effects creation and control. In addition, the switcher's floppy drive can store DME setups, snapshots, and effects files — as well as switcher data.

DVS-7200 Features (continued)

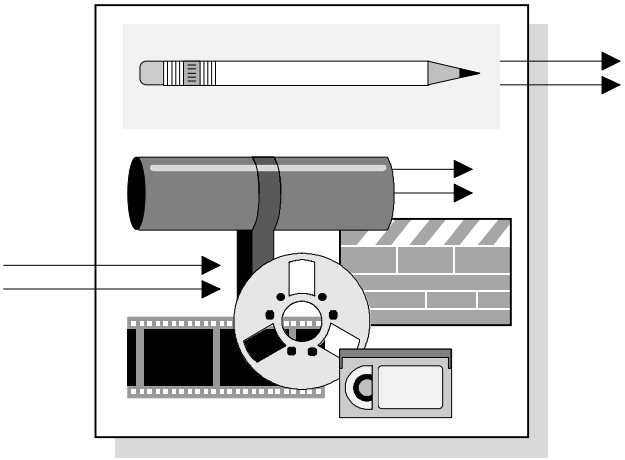
Feature	Description
14 Wipe/Pattern Generators	Fourteen independent wipe/pattern generators are provided, for the primary mix/effects bus as well as the switcher's keyers, border generators, color background mattes, key mask and sub mask.
24 Basic Wipe Patterns	A basic set of 24 wipe patterns are included. Extensive pattern modifiers are provided.
11 Enhanced Wipe Patterns	An additional set of 11 patterns are included with the BKDS-2070 option (star, heart, matrix and diamond dust), and can be added to each M/E's processor. Extensive pattern modifiers are provided.
8 dual color matte generators	Eight independent dual color matte generators are provided for primary color backgrounds, pattern borders, and key border — with the M/E and DSK border generator options installed. Each includes a dedicated pattern generator for creating washes.
Utility Bus	This feature allows you to insert a separate video signal inside wipe and key borders.
Snapshot memories	This feature provides the ability to store and recall 99 control panel snapshots through the Master E-File panel.
Effect memories	When the BKDS-7030 is installed, effects memories are enabled for the creation of switcher timelines. You can create and run switcher timelines for each M/E — *plus* the DSK — *plus* user functions such as auxiliary bus control. DME effects may be combined with switcher effects and recalled using the Master E-File panel and the Shot Box option.
Router Interface	This option controls a Sony DVS-B Series routing switcher *directly* through the switcher's EL display. You can control up to 128 sources, and store router information along with switcher setups and snapshots.
V-Proc	A video processing system that allows you to adjust each input's levels to compensate for errors in image acquisition.
Clean Chroma plus FineChroma	When the BKDS-2031 plus the BKDS-2032 options are installed into any M/E processor, several advanced chroma key capabilities are enabled. These capabilities emulate several of the functions found in external chroma key systems.
Process Key	The standard Processed Key function provides an "effects pathway" to and from a DME or color corrector. Keys can be routed to the DME for manipulation, and then re-entered in the *same* switcher keyer. The feature works with most other major manufacturer's DVEs that are equipped with a key channel.
Key Priority	The Key Priority function allows you to dynamically change which key appears *over* (visually in front), and which appears *under* (visually behind) in the M/E keyers and DSK. In addition, Key Priority transitions can be applied as a mix, wipe, super mix, or non-additive mix (NAM).
Source Name Display	The BKDS-7002 Source Name Display Unit provides the electronics and displays for M/E 1, M/E 2, and Aux bus crosspoints. When installed, all panel crosspoints are labeled with alpha-numeric characters.

DVS-7200 Features (continued)

Feature	Description
Preview Functions	Rather than limit you to a single preview function, the DVS-7200 allows you to preview any key (over a constant background), the clean M/E or Program/Preset feed (without keys), the key matte signal, the process key, the key preview itself, and auto preview.
User Utility	In the control panel's Utility Section, any button can be assigned to perform a variety of "direct access" functions for speed and user convenience. These functions include single-button menu retrieval (from any switcher menu level), DME menu assignment (with the BKDS-7030 and BKDS-7031), and instant triggering of any menu driven function (such as frame-memory freeze).
Multiple Control Panel Crosspoint Assignment	When the BKDS-2010 (M/E Auxiliary Control Panel) option is included, you can assign any of five different crosspoint configurations for control panels — allowing you to work with completely different sets of crosspoints simultaneously, and change crosspoint sets as required for your production.
Frame Memory	This function provides storage for two individual frames, divided *as needed* between video only, or video and key signals. Frame memories can be used for grabbing fields or frames, layering, creating custom masks, storing matte and fill signals, painting, and re-positioning live or frozen images.

Appendix B. Related Resources

Related Resources



The following resource information is included in this Appendix:

- Printed Media
- Audio/Video Media

Printed Media

One set of Installation, Operation, and Maintenance (Part 1) Manuals are provided with each DVS-7200 system. If you wish to order additional manuals (or, if you wish to order manuals *prior* to the hardware shipment), the following list provides all required part numbers.

Use the following printed publications for more information on the DVS-7200:

- Refer to the ***DVS-7200 Product Brochure*** for an overall discussion of the product and its features, system configurations, and specifications.

  P/N: **BC-00618**

- Refer to the ***DVS-7200 User's Guide E1*** for a discussion of all operating issues.

  P/N: **3-859-591-01**

- Refer to the ***DVS-7200 Technical Operations Manual*** for a discussion of technical operating issues.

  P/N: **3-859-590-01**

- Refer to the ***DVS-7200 E1 Installation Guide*** for a discussion of all installation issues.

  P/N: **3-192-660-02**

- Refer to the ***DVS-7200 E1 Part 1 Maintenance Guide*** for a discussion of maintenance issues.

  P/N: **3-192-659-01**

- Refer to the ***DVS-7000/7200 Vol. 1 E1 Part 2 Maintenance Guide*** for a discussion of maintenance issues.

  P/N: **9-967-615-01**

- Refer to the ***DVS-7000/7200 Vol. 2 E1 Part 2 Maintenance Guide*** for a discussion of maintenance issues.

  P/N: **9-967-616-01**

- Refer to the ***DVS-7000/7200 Vol. 3 E1 Part 2 Maintenance Guide*** for a discussion of maintenance issues.

  P/N: **9-967-617-01**

- Refer to the ***DVS-7000/7200 Vol. 4 E1 Part 2 Maintenance Guide*** for a discussion of maintenance issues.

  P/N: **9-967-618-01**

- Refer to the ***DVS-7000/7200 Vol. 5 E1 Part 2 Maintenance Guide*** for a discussion of maintenance issues.

  P/N: **9-967-624-01**

- Refer to the ***BVE-9100 Product Guide*** for a discussion of the BVE-9100's features, benefits, configuration and installation requirements.

  P/N: **BC-00583**

- Refer to the ***DME-7000 DME-3000 Product Guide*** for a comprehensive discussion of the DME system's features, benefits, configuration and installation requirements.

  P/N: **BC-00584**

- Refer to the ***DVS Series Interface Protocol*** document for a discussion of switcher protocol issues.

  P/N: **9-967-262-21**

Audio/Video Media

Use the following audio/video publications for additional reference information on the DVS-7200:

- Refer to the ***DVS-7000 Demonstration Videotape*** for a comprehensive introduction to the DVS-7000 series' capabilities.

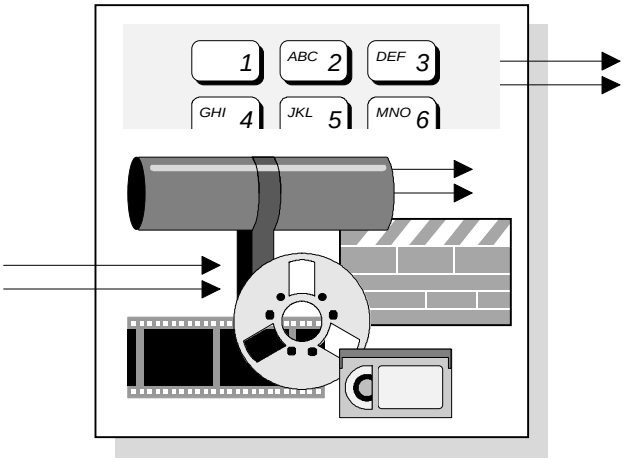
  P/N: **BC-00559**

- Refer to the ***BVE-9100 Demonstration Videotape*** for an in-depth demonstration of the BVE-9100 system.

  P/N: **BC-00556**

Appendix C. Sales and Service

General Information and Reference



The following information is included in this Appendix:

- Regional Sales Offices
- Regional Service Centers
- National Parts Centers
- Emergency Response System
- SUPPORTNET℠
- SOFTWAREPLUS℠

Regional Sales Offices

Sony Regional Sales Offices are located in the following areas:

- **Northeast Regional Sales Office**

  123 W. Tryon Ave.
  Teaneck, NJ 07666
  Main Number: (201) 833-5300
  Fax Number: (201) 833-5850

- **Southeast Regional Sales Office**

  3175 A. Northwoods Parkway
  Norcross, GA 30071
  Main Number: (770) 263-9888
  Fax Number: (770) 441-8870

- **Midwest Regional Sales Office**

  1200 North Arlington Heights Road
  Itasca, IL 60143
  Main Number: (630) 773-6000
  Fax Number: (630) 773-7623

- **Southwest Regional Sales Office**

  8400 Esters Blvd., Suite 500
  Irving, TX 75063-2214
  Main Number: (972) 915-3100
  Fax Number: (972) 915-3235

- **West Regional Sales Office**

  10833 Valley View Street
  Cypress, CA 90630-0016
  Main Number: (714) 220-9100
  Fax Number: (714) 229-4159

Regional Service Centers

Sony Regional Service Centers are located in the following areas:

- **Northeast Regional Service Center**

  123 W. Tryon Ave.
  Teaneck, NJ 07666
  Main Number: (201) 833-5300

- **Southeast Regional Service Center**

  3175 A. Northwoods Parkway
  Norcross, GA 30071
  Main Number: (770) 263-8016

- **Midwest Regional Service Center**

  1200 North Arlington Heights Road
  Itasca, IL 60143
  Main Number: (630) 773-6037

- **Southwest Regional Service Center**

  8400 Esters Blvd., Suite 500
  Irving, TX 75063-2214
  Main Number: (972) 915-3220

- **West Regional Service Center**

  10833 Valley View Street
  Cypress, CA 90630-0016
  Main Number: (714) 229-4100

National Parts Centers

Sony National Parts Centers are located in the following cities:

- **San Jose, CA**

  For Broadcast parts:
  (800) 538-7550

- **Kansas City, MO**

  For Professional Audio parts:
  (800) 331-6679, (800) 654-0962 (in MO)

  For Business/Industrial parts:
  (816) 891-7550, (816) 891-7435 (after-hours)

Emergency Response System

Use Sony's Emergency Response System for after-hours technical support.

1. Call (408) 435-8910
2. Using a touch-tone phone, select the desired primary category from the four (4) menu selections, then the appropriate secondary category. If a selection is not made from a touch-tone phone, the system will terminate the call.

   Menu 1: Technical Assistance for Broadcast and Audio/Video Production Products

   1 Digital Video or Type C Recorders

   2 Betacam® or Umatic® Products

   3 Video Editors or Switchers

   4 Library Management System™ or Betacart® Systems

   5 Professional Audio

   6 Camera or Monitor Products

   7 High Definition Video Systems

   8 Repeat Primary Menu Selections

   Menu 2: Technical Assistance for Other Business and Professional Products

   1 Videoconferencing Systems

   2 Jumbotron® Systems

   3 Medical Systems

   4 Repeat Primary Menu Selections

   Menu 3: Emergency Parts System

   Menu 4: Repeat Primary Menu Selections

3. When prompted, leave your name, company, a telephone number where you can be reached, model number, and a brief description of the problem. A Sony product specialist will return your call within 60 minutes.

SUPPORTNET[SM]

The SUPPORTNET[SM] program brings all the expertise, responsiveness, and commitment of the company together in a comprehensive package to ensure continued customer satisfaction. In addition to Time and Materials (T&M) service, which is available to customers who require support on a per-call basis, a variety of programs are available to meet varying needs:

- **UpTime APS**

  Improves uptime and ease of care, thanks to professional on-site hardware support by Sony engineers and optional application support.

- **Technical Education**

  Sony technical training enhances the customer's knowledge of the Sony products and their maintenance. This enables the customer to take a more active role in maximizing the potential of the product.

- **Technical Publications**

  Technical Bulletins are published monthly with timely information regarding the servicing and maintenance of Sony products. A CD ROM is available with all Technical Bulletins, parts pricing, and selected exploded diagram views. Tech manuals are also available.

Optional software Application Support provides the following:

- Maintenance and enhancement releases. This item does *not* include software sold separately or product options.
- Telephone support for software and application issues.
- Discounts on selected new and optional software products.
- Automatic enrollment in SOFTWAREPLUS[SM] service program.

SOFTWAREPLUS[SM]

Purchasers of Sony Production Systems products are automatically enrolled into the SOFTWAREPLUS[SM] program. This service includes the following:

- Notification of software releases
- Tracking of each customer's unique system configuration and software requirements.
- Access to the latest software release information, including current versions, features, and pricing.
- Product registration for warranty software upgrades.
- Authorized upgrade pricing.

The telephone number for SOFTWAREPLUS[SM] is **(408) 955-6300**.

Glossary

4:2:2

The ratio between the digital component video sampling frequencies, specified in CCIR-601, for main digital studio equipment. The frequencies are 13.5 MHz for Luminance, and 6.75 MHz for each of the two Chrominance signals.

4:2:2:4

A signal which consists of a 4:2:2 signal for Luminance and Chrominance information plus a key signal sampled at the same rate as the luminance signal.

4:4:4:4

A digital video signal which has identical sampling rates for the luminance, chrominance, and key signals.

Archive Recorder

Also known as “cache” recorder. Special designation for a recorder in which all events are recorded sequentially, without overlaps. Used to preserve each layer during complex multi-layer sequences.

Auxiliary Bus

Also called “Aux” buses, auxiliary buses are extra switching buses that allow video signals connected to the switcher to be routed to external equipment such as digital effects systems and VTRs. Some switchers such as the DVS-7200 have multiple Aux buses as an option.

B-roll

Essentially a copy of a clip or a sequence. Without the availability of pre-read, the “to” and “from” sources in a transition must be on separate reels. If they are not, a B-roll must be made in order to perform the transition.

Background

One of the video sources involved in keying. Specifically, the background video is the signal which has portions of it *replaced* with the key (or foreground) signal. Using chroma key as an example in a weathercast, the background is the weather map and the foreground is the weathercaster. The foreground signal is often referred to as cutting a “hole” in the background video signal.

Border

In switcher terminology, a thickened edging, similar to a picture frame, placed around a key signal, a digital effect, or the edges of a wipe pattern. Typically, the thickness, softness, and color of the border are completely adjustable.

Bus

A means by which one input can be selected from among several different inputs. The output of the bus is then sent to a specific destination, either internal or external to the switcher. A minimum of two buses are required to perform a simple mix, wipe, or key operation.

CCIR-601

CCIR Recommendation 601, "Encoding Parameters of Digital Television for Studios," is a recommendation adopted in 1986 by the CCIR (Comite Consulatif International des Radio-communications) which concerned digital component video systems in the 525 and 625 line standards. The document specifies sampling rates for digital video.

Chroma Key

A type of key where the hole-cutting information is derived from a *color* rather than from a video level. A common example of chroma key is when the weathercaster appears to be standing in front of a map. The map is an electronic signal, and the weathercaster is in fact standing in front of a solid blue or green screen. The Chroma Key process electronically subtracts the color from the foreground image, and replaces it with video from the background image to form a *composite* image.

Cleanup

A list management tool that cleans up problems in the EDL, including overlaps and gaps. Cleanup is used to streamline the auto-assembly and re-edit process for maximum efficiency, guaranteeing that the *numeric* EDL matches the *visual* program as recorded on tape.

Clip

Also know as a "segment" or "scene." Describes a continuous length of source footage, long or short, the duration of which is defined by an inpoint (head frame) and an outpoint (tail frame).

Crosspoint

The video switch which selects the source required on a particular switcher bus.

Depth Key

A DVS-7200 option that permits keys in the *third dimension*, using the "Z" axis or *depth* axis in XYZ coordinate space. Depth information can be derived from a full-screen video source, a key source, the main mask, a subsidiary mask, or by using "Z-data" from the DME-3000 or DME-7000. The feature allows you to perform *visually* complex keys without the need for complex masks, timelines, and repeated priority switching.

Digital Video

Video which is described by discrete voltage levels (represented by numbers) as opposed to the infinite range of values possible with analog video. Among its advantages, Digital Video may be copied with little or no change from one generation to the next.

Distributed Processing

A software technique whereby the master processor (Main CPU) delegates lesser tasks to other CPU's in the system, thereby freeing its time for more important work.

DMC Motion Memory

Also called Dynamic Motion Control. The ability for the BVE-9100 editing system to learn (and repeat) the precise playback speed and direction of a VTR during a slow motion sequence. Both simple events, with a single slow-motion speed, and complex events, with ramping speed, freezes, and direction changes fall into the DMC category.

DME

Sony's term for Digital Multi-Effects.

Downstream Keyer

Also called a DSK, a downstream keyer electronically appears after all other switcher functions — visually on top of all other layers and buses. Any operations performed on the switcher M/Es will not affect the downstream key video.

E-File™

The Sony trademarked system for switcher effects memory. One E-File contains a "snapshot" of the switcher control panel, including all settings and crosspoint selections.

Edit Data Page

Also known as the Edit Screen, the BVE-9100's main operating menu in which the editor sets up events and transitions, marks timecode, and manages the EDL.

Editor

An electronic device for controlling and synchronizing a variety of broadcast production components with frame accuracy. Used to produce television programs. Also called an "editing system."

EDL

Edit Decision List. A single file stored on the editing system's hard disk that contains information for each event used in a video program. When re-editing is required, this information is used to re-create events, exactly as they were initially recorded. EDL events are comprised of data fields, such as source and record VTR

inpoints, outpoints, reel numbers, mode (V, A1, A2), transitions (Cut, Dissolve, Wipe), and peripheral device effects data. There can be multiple EDL files on disk.

Effects Pathway

A switcher feature in which video from a keyer is routed to external devices (for example, a DME), and then returned to the switcher for additional processing. Sony's term for the Effects Pathway is Processed Key.

Ethernet

A computerized network (and system of protocols and commands) for transferring data between electronic devices.

Fader Arm

The lever on a switcher that manually controls the progress of an effect. The position of the level typically controls the amount of the A-Bus signal and the B-Bus signal that contributes to the mix, wipe, or key. On the DVS-7200, the Fader Arm also controls the DME timeline.

GPI (General Purpose Interface)

A communications port that controls "triggering" with frame-accuracy. Typically used with devices that do not have serial control capability. On an editing system, the GPI port typically *sends* trigger pulses to peripheral devices. On devices such as switchers and digital effects, the GPI port typically *receives* triggers from the editor.

GUI

Graphical User Interface. A term that describes a status display based on graphics and icons, rather than strictly on numbers and letters.

Initialization Menu

A secondary BVE-9100 menu used to set up EDL specifications and overall system "preferences" such as preroll and color framing.

Interface

A set of software instructions that allows the editing system to control a peripheral device such as a VTR, ATR, DVE or switcher. The better the interface, the greater the ease with which the operator can assemble a program.

Key Clip, Gain, Density

Also called "Clip," in switcher terminology, the process of fine-tuning a key — of any type (luminance, linear, or chroma). Clipping sets the threshold for the hole-cutting circuitry, while "gain" defines the range and sensitivity of adjustment. The "density" is the transparency or opacity of the key, as revealed over a background. A hole will be cut in the Background video in any location where the Foreground luminance level is greater than the clip level. "Fill" video replaces the holes.

Key Fill

The video which fills the hole cut by the keying circuitry. Typically, switchers provide a variety of choices for the fill source — internal mattes, external video, or "self" fill are several examples.

Key Mask

A key modification system that protects a portion of the foreground video from being keyed. Most switchers allow you to mask keys with the internal pattern system and associated modifiers.

Key Signal

The signal that electronically cuts the hole in the Background video signal. Key signals can be switcher-generated or originate from external sources such as the DME or character generators.

Keyframe

In a digital effects device, a point along a timeline where an action or change occurs. In a DVE, such as the DME-7000, keyframes occur at specific points of image manipulation. The BVE-9100 controls keyframe timelines for a variety of devices including the DME-series digital effects units and DVS-series switchers.

Keying

The process of superimposing video from one source (the Foreground) on top of another source (the Background). A variety of key "types" are available in most switchers, including Self Key, Linear Key, Chroma Key, and Key Mask.

List management

A set of software tools for manipulating EDL timecode numbers. Tools include the ability to move, copy, and renumber events (and blocks of events), clean overlaps and sort the list.

M/E

Mix/Effects or Mix Effects Amplifier. The portion (or "bank") of a video switcher where video signals are processed to select sources and create mixes, fades, wipes, keys, and other special effects.

Master/Slave Mode

Also known as "Sync Jog." A method for locking two or more source devices together in an edit event. Typically used in situations where the matte is on one reel, and the fill is on another.

Peripheral device

Any device connected to the BVE-9100 via serial communications or GPI. Category includes VTRs, ATRs, Video Switchers, Audio Mixers, Color Correctors, DVEs, and DDRs.

Pre-Read

Also known as “read before write.” The ability for a digital VTR to read digital information (audio and video) off tape - prior to writing the data back on tape.

Preset Bus

The switcher bus that selects the video that will appear *next* on-line or on-air.

Program Bus

The switcher bus that selects the on-line or on-air output signal.

Serial Digital Video

Also called SDI, a digital representation of the video signal that is distributed via a single coaxial cable with BNC connectors. This format is more desirable and cost-effective than a parallel interface which requires multi-conductor cable.

Setup Menu

A secondary BVE-9100 menu used to set up devices, crosspoint assignments and I/O (input/output) communications.

Status reporting

A system of bi-directional communications that allows the panel status of peripheral devices to be reported to (and stored in) the BVE-9100’s EDL in real-time.

TBC

Time Base Corrector. A device used to stabilize a VTR's unstable image. Includes controls for adjusting the brightness, black level, color hue, and color saturation of the video playback.

Time Track

A powerful, software-based feature for finding matching video frames in the EDL. Match frames enable you to synchronize machines and perform clean, seamless transitions in a program. The BVE-9100 has a variety of Time Track modes.

Timecode

A numeric method for identifying video frames with precision. Each frame of video is assigned an unique 8-digit number (hours, seconds, minutes, frames). Enables precise match-frame editing transitions.

Trace

A list management tool that traces back to “original” source reel timecode numbers across multiple EDLs. Let’s say that master tape #1 is a rough cut. If master tape #1 is next used as a source in the second cut (producing master tape #2), the original source reel timecodes are *one EDL generation back*. If the process is repeated again, the original numbers get farther away, but they’re not lost. If you

want to assemble the show using the original source reels, the trace program is used to “recover” the original source in and outpoints.

Index

C

D

R

S

SONy

DVS-7200 • Product Guide

Part Number BC-00603
Revision B