Ross Video Limited

Synergy 100 MD
DIGITAL PRODUCTION SWITCHER

Operator's Manual

Software Issue: 7.2 MD-S100

ROSS

Live Production Technology™

Synergy 100 MD • Operator's Manual

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Important Regulatory and Safety Notices to Service Personnel

Before using this product and any associated equipment, refer to the "**Important Safety Instructions**" listed below to avoid personnel injury and to prevent product damage.

Product may require specific equipment, and/or installation procedures to be carried out to satisfy certain regulatory compliance requirements. Notices have been included in this publication to call attention to these specific requirements.

Symbol Meanings

⏚	**Protective Earth**	This symbol identifies a Protective Earth (PE) terminal, which is provided for connection of the supply system's protective earth (green or green/yellow) conductor.
⚠		This symbol on the equipment refers you to important operating and maintenance (servicing) instructions within the Product Manual Documentation. Failure to heed this information may present a major risk of damage or injury to persons or equipment.
⚠	**Warning**	The symbol with the word **"Warning"** within the equipment manual indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
⚠	**Caution**	The symbol with the word "**Caution**" within the equipment manual indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.
⚠	**Notice**	The symbol with the word "**Notice**" within the equipment manual indicates a situation which, if not avoided, may result in major or minor equipment damage or a situation which could place the equipment in a non-compliant operating state.
⚡	**Warning Hazardous Voltages**	This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product enclosure that may be of sufficient magnitude to constitute a risk of shock to persons.
⚠	**ESD Susceptibility**	This symbol is used to alert the user that an electrical or electronic device or assembly is susceptible to damage from an ESD event.

Important Safety Instructions

⚠ **Warning**

1) Read these instructions.

2) Keep these instructions.

3) Heed all warnings.

4) Follow all instructions.

5) Do not use this apparatus near water.

6) Clean only with a dry cloth.

7) Do not block any ventilation openings. Install in accordance with manufacturer's instructions.

8) Do not install near heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10) Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11) Only use attachments/accessories specified by the manufacturer.

12) Unplug this apparatus during lightning storms or when unused for long periods of time.

13) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects having fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

14) Do not expose this apparatus to dripping or splashing, and ensure that no objects filled with liquids, such as vases, are placed on the apparatus.

15) To completely disconnect this apparatus from the AC Mains, disconnect the power supply cord plug from the AC receptacle.

16) The mains plug of the power supply cord shall remain readily operable.

17) The MD or MD-X (Live Production Engine) chassis is to be rack mounted only.

Warning

18) **Indoor Use**: **WARNING**: To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

19) The safe operation of this product requires that a protective earth connection be provided. A grounding conductor in the equipment's supply cord provides this protective earth. To reduce the risk of electrical shock to the operator and service personnel, this ground conductor must be connected to an earthed ground.

20) **WARNING**: This apparatus, when equipped with multiple power supplies, can generate high leakage currents. To reduce the risk of electric shock, ensure that each individual supply cord is connected to its own separate branch circuit with an earth connection.

21) **CAUTION**: These service instructions are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so (Engineering Manual only).

Caution

22) This apparatus contains Lithium batteries, which if replaced incorrectly, or with an incorrect type, may cause an explosion. Replace only with the same type. Dispose of used batteries according to the manufacturer's instruction.

23) Service barriers within this product are intended to protect the operator and service personnel from hazardous voltages. For continued safety, replace all barriers after servicing.

24) Certain parts of this equipment still present a safety hazard with the power switch in the OFF position. To avoid electrical shock, disconnect all A/C power cords from the chassis' rear appliance connectors before servicing.

25) This product contains safety critical parts, which, if incorrectly replaced, may present a risk of fire or electrical shock. Components contained within the product's power supplies and power supply area are not intended to be customer-serviced and should be returned to the factory for repair.

26) To reduce the risk of fire, replacement fuses must be the same type and rating.

27) Use only power cords specified for this product and certified for the country of use. Refer to the Product Power Cord Requirement section that follows.

28) The safe operation of this equipment requires that the user heed and adhere to all installation and servicing instruction contained within the equipment's Engineering Manuals.

Product Power Cord Requirements

Caution

North American Line Voltages 100 - 120 Volt

This product is supplied with certified 10A/125V SVT type supply cords. Conductors are color coded white (neutral), black (line), and green or green/yellow (ground).

Operation of this equipment at line voltages exceeding 130V requires that alternative supply cords with appropriate voltage and current ratings be used.

International Line Voltages 200 - 240 Volts

This product has been designed for use with certified IEC 320- C13 10A/250V - **H03 VV-F3G 1.00mm^2** type line cord.

International product orders are supplied with a certified 10A/250V line cords, utilizing a molded 3-pin IEC 320-C13 type connector at one end and stripped conductors on the other. One line cord is provided. Conductors are CEE color coded; blue (neutral), brown (line), and green/yellow (ground).

Installation by a qualified electrician, of an appropriately approved A/C wall plug certified for the country of use, is required.

Alternatively, other IEC 320 C-13 type power cords may be used, provided that they meet the necessary safety certification requirements for the country in which they are to be used. Refer to the correctly specified line cord above.

EMC Notices

United States of America

FCC Part 15

This equipment has been tested and found to comply with the limits for a class A Digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Notice | Changes or modifications to this equipment not expressly approved by Ross Video Limited could void the user's authority to operate this equipment.

CANADA

This Class "A" digital apparatus complies with Canadian ICES-003.

Cet appariel numerique de la classe "A" est conforme a la norme NMB-003 du Canada.

EUROPE

This equipment is in compliance with the essential requirements and other relevant provisions of **CE Directive 93/68/EEC**.

INTERNATIONAL

This equipment has been tested to **CISPR 22:1997** along with amendments **A1:2000** and **A2:2002**, and found to comply with the limits for a Class A Digital device.

Notice   This is a Class A product. In domestic environments, this product may cause radio interference, in which case the user may have to take adequate measures.

General Handling Guidelines

- Careful handling, using proper ESD precautions, must be observed.

- Power down the system before PCB removal.

A Word About Static Discharge

Throughout the many procedures in this *Operator's Manual*, please observe all static discharge precautions.

Notice   Avoid handling the switcher circuit boards in high static environments such as carpeted areas, and when synthetic fiber clothing is worn. Touch the frame to dissipate static charge before removing boards from the frame, and exercise proper grounding precautions when working on circuit boards.

Warranty and Repair Policy

Ross Video Limited (Ross) warrants its switchers and related options, to be free from defects under normal use and service for a period of THREE YEARS from the date of shipment. Fader handle assemblies are warranted for the life of the product. If an item becomes defective within the warranty period Ross will repair or replace the defective item, as determined solely by Ross.

Warranty repairs will be conducted at Ross, with all shipping FOB Ross dock. If repairs are conducted at the customer site, reasonable out-of-pocket charges will apply. At the discretion of Ross, and on a temporary loan basis, plug in circuit boards or other replacement parts may be supplied free of charge while defective items undergo repair. Return packing, shipping, and special handling costs are the responsibility of the customer.

Software upgrades for switchers, as defined by Ross, may occur from time to time. Ross will notify customers of such upgrades and, subject to a customer-initiated request, such upgrades will be provided free of charge within three years of the original ship date, with shipping FOB Ross dock.

This warranty is void if products are subjected to misuse, neglect, accident, improper installation or application, or unauthorized modification.

In no event shall Ross Video Limited be liable for direct, indirect, special, incidental, or consequential damages (including loss of profit). Implied warranties, including that of merchantability and fitness for a particular purpose, are expressly limited to the duration of this warranty.

This warranty is TRANSFERABLE to subsequent owners, subject to Ross' notification of change of ownership.

Environmental Information

The equipment that you purchased required the extraction and use of natural resources for its production. It may contain hazardous substances that could impact health and the environment.

To avoid the potential release of those substances into the environment and to diminish the need for the extraction of natural resources, Ross Video encourages you to use the appropriate take-back systems. These systems will reuse or recycle most of the materials from your end-of-life equipment in an environmentally friendly and health conscious manner.

The crossed-out wheeled bin symbol invites you to use these systems.

If you need more information on the collection, reuse, and recycling systems, please contact your local or regional waste administration.

You can also contact Ross Video for more information on the environmental performances of our products.

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Introduction

A Word of Thanks

Congratulations on choosing the Ross **Synergy 100 MD Live Production Engine**. You have purchased the power and versatility of an advanced Multi-Level Effects (MLE®) digital switcher that is ready to take on all creative challenges in today's competitive broadcast environment. You will be pleased at how easily your Synergy 100 MD switcher fits into your working environment.

About This Manual

This manual covers the operation of the Synergy 100 MD switcher. The following chapters are included:

- The **Front Matter** of this manual includes information on the warranty and repair policy, and all regulatory and safety notices and compliance issues.

- Chapter 1, "**Introduction**" summarizes the manual and describes the components and features that comprise the switcher system.

- Chapter 2, "**Control Panel Introduction**" provides an overview of the Synergy 100 MD control panel. You will learn the various panel sections and details about basic functionality.

- Chapter 3, "**Using the Menu System**" provides an introduction to the menu system of the Synergy 100 MD switcher.

- Chapter 4, "**Switcher Basics**" presents basic operating rules and procedures regarding crosspoints, buses, knobs, and Fade to Black.

- Chapter 5, "**Transitions**" outlines operating procedures for manual transitions, cuts, dissolves, auto transitions, and a variety of other basic transition modes.

- Chapter 6, "**Pattern and Effects Control**" provides information and instructions for using the pattern generators and **Effects Control** groups of the switcher.

- Chapter 7, "**Keying**" provides instructions for using the **Effects Keyers** and **Downstream Keyer** of the Synergy 100 MD switcher.

- Chapter 8, "**Key Modifiers**" provides instructions for using all the various key modifiers, such as mattes, masks, and key invert.

- Chapter 9, "**Memory and Disk Functions**" provides instructions for using the **Memory System** and the Disk Store and Recall functions.

- Chapter 10, "**Peripheral Control and More**" provides instructions for using features such as GPIs, copy and swap functions, Remote Aux Panels, the **Preview Overlay**, and **Editor Interface** of the Synergy 100 MD switcher.

- Chapter 11, "**Global-Store**" provides instructions for transferring images to and from your switcher's hard drive using a WebDAV connection, and how to use these images in **Global-Store**.

- Chapter 12, "**Squeeze & Tease Basic Operation**" provides a basic introduction to the operation of the Squeeze & Tease MD option.

- Chapter 13, "**Position/Crop Functions**" provides instructions for Flying a DVE Key using the Squeeze & Tease MD option.

- Chapter 14, "**Advanced Positioning**" provides instructions for using the advanced positioning features of the Squeeze & Tease MD option.

- Chapter 15, "**Borders**" provides information for applying borders to your Squeeze & Tease DVE Keys.

- Chapter 16, "**Preprocessor Effects**" provides instructions for adding effects to Squeeze & Tease Keys.

- Chapter 17, "**Squeeze & Tease MD Sequences and Wipes**" provides detailed instructions for using the Squeeze & Tease MD **Sequences** and **Wipes**.

- Chapter 18, "**Lighting**" provides instructions for adding lighting effects to keys in **Squeeze & Tease**.

- Chapter 19, "**WARP Effects**" provides detailed instructions for applying WARP effects to keys.

- Appendix A, "**Menu Trees**" lists the various menu trees that are used within the Synergy 100 MD switcher.

- Appendix B, "**Synergy Effects**" briefly describes the pre-programmed wipes that are supplied when you purchase the Squeeze & Tease MD option.

- Appendix C, "**Hotkeys**" provides information on the system of hotkeys, or shortcut keys, on the Synergy 100 control panel.

- The **Glossary** provides a reference list of important switching and video terms used throughout this manual.

- An **Index** is also provided for your reference.

If, at any time, you have a question pertaining to the operation of your Ross Synergy 100 MD switcher, please contact us at the numbers listed in the front of this manual. Our technical staff is always available for consultation, training, or service.

Documentation Conventions

The following conventions are used throughout this manual:

- Rear panel connectors are indicated in bold-faced upper case letters. For example:

    The **AUX 1** connector is…

- Control Panel buttons are indicated in bold-faced upper case letters, using a sans-serif font. For example:

    Press **WIPE** to…

- Menu names on the preview overlay and switcher control panel areas are indicated in bold-faced text. For example:

    The **Inputs Menu** allows you to …

    The **Downstream Keyer** Group consists of …

- The "**Operating Tips**" table and "**Note**" table are used throughout this manual to provide customers with additional useful information. For example:

Operating Tip	As you switch between Key 1, Key 2, and the DSKs, the crosspoint buttons will indicate which sources are selected for that key. If you change a source, this will not affect the other selections.

Note	Fade to Black only affects the program output of the switcher. Aux Bus outputs or Clean Feed outputs will not be affected by Fade to Black.

- Asterisks (*) in Synergy 100 MD menu trees denote levels of association. For example, all items marked with two asterisks (**) are grouped together, all items marked with three asterisks (***) are grouped together, and so on.

Documentation Terms

The following terms are used throughout this manual:

- "**Switcher**" refers to the entire **Synergy 100 MD Live Production Engine**, consisting of its electronics frame and control panel.

- "**Frame**" and "**Electronics Frame**" both refer to the electronics chassis of **Synergy 100 MD Live Production Engine**.

- "**Operator**" and "**User**" refer to the person who uses the **Synergy 100 MD Live Production Engine**.

- "**Control Panel**" both refer to the large multi-button control panel of the **Synergy 100 MD Live Production Engine**.

- "**SDI**" refers to Serial Digital Video, a digital video signal that is distributed via a single coaxial cable with BNC connectors.

- "**HD-SDI**" refers to High Definition Serial Digital Interface video, a component digital video signal that is distributed via a single coaxial cable with BNC connectors.

- "**Video System**" refers to the mix of interconnected digital equipment (including the edit controller, VTRs, DVEs, etc.) in which the **Synergy 100 MD Live Production Engine** is included.

- "**DVE**" refers to an internal or external Digital Video Effects device that uses digital signal processing to create two or three dimensional wipe effects.

- "**Storage device**" refers to the hardware used to save and recall setups, configurations and registers of the **Synergy 100 MD Live Production Engine**. Examples of storage devices are the internal hard drive and a USB Drive.

Abbreviations

The following abbreviations are used throughout the text:

Abbreviation	Definition
A-D	Analog-to-Digital
AUX	Auxiliary
BKGD	Background Transition
CG	Character Generator
D-A	Digital-to-Analog
DA	Distribution Amplifier
DDR	Digital Disk Recorder
DDR (SDRAM)	Double Data Rate
DSK	Downstream Keyer
DVE	Digital Video Effects
DVR	Digital Video Recorder
HD	High Definition
ID	Identification
MD	Multi-definition
MLE	Multi-level Effects
PGM	Program Bus
PST	Preset Bus
PST PATT	Preset Pattern
PV	Preview
RU	Rack Unit
SD	Standard Definition
TD	Technical Director
VCR	Video Cassette Recorder
VDCP	Video Disk Communications Protocol
VTR	Video Tape Recorder

Related Publications

All Synergy 100 MD switchers come with a complete set of system documentation that includes an *Operator's Manual* and an *Engineering Manual*.

For a complete overview of the physical installation and system configuration of the Synergy 100 MD switcher, refer to the following publication:

• *Synergy 100 MD Engineering Manual*, Ross Part Number: 4400DR-101

Product Overview

Ross Video developed the Synergy 100 MD series for live news, live sports and live production. Because the switcher is the center of the action, it must be powerful and versatile, yet easy to operate. This operational simplicity frees operators to concentrate on the content — instead of the equipment.

The Synergy 100 MD series (our fifth generation of switchers) was designed with the direct input of video professionals experienced in news, sports, and mobile production. Key members of the Synergy 100 MD design team are part of an ongoing program where they demonstrate the product, assist with installations and provide operator training. As a result, the Synergy 100 MD line continues to advance Ross Video's traditions — power, ease of use and logical panel layouts.

Product Highlights

The following list summarizes the key features of the Synergy 100 MD:

- **Fully Digital System** — All switchers in the series are fully digital. This unique concept simplifies the design, minimizes the power requirements, and reduces the overall cost.

  By requiring all A-D and D-A conversion to be performed *outside* the system, digital noise stays *out* of the converters. In addition, customers are guaranteed the latest converter technology, *without* burdening the cost of the switcher, and *with* the added option to use those converters for other purposes — as they gradually convert to the digital domain.

- **Multi-Definition** — The Synergy 100 MD switcher allows you to work in either Standard Definition or High Definition, supporting 480i (SD 525), 576i (SD 625), 720p, 1080i, 1080p, and 1080pSF video formats.

- **Input Matrix** — The Synergy 100 MD comes standard with 16 multi-definition video inputs.

- **Stunning Styling in 4 Color Choices** — The Synergy 100 MD is sure to impress with sleek lines, subtle design accents, and colors to match your installation. Classic Black, Tech Silver, Sport Yellow, and Cool White – the choice is yours, but it won't be easy!

- **Powerful Compact MD Chassis** — The Synergy 100 MD multi-definition frame sets a new standard for small compact chassis capability. The Synergy 100 MD frame has the potential for 2.5 MLEs (2 Keyers and 1 DSK), 32 Multi-Definition Inputs, 16 Multi-Definition Configurable Outputs, 8 DVE Channels, 13 Internal Keyers, 11 Internal Ethernet-connected Media Stores, and 13 Classes of External Interfaces. Add Proc Amps, RGB Color Correctors, Utility Buses, FlexiClean™, Preview Overlay, Linux OS, and a whole lot more, and the result is nothing short of revolutionary.

- **Preview Overlay** — This powerful feature provides an intuitive way to set up the extended functions of the Synergy 100 MD. A graphical overlay on the switcher preview provides plain English set up and programming menus.

- **Ethernet Connectivity** — Upgrades can be done from a computer using an Ethernet port on the back of the frame. Images and animations can be copied from a computer to the switcher's internal hard drive for use by the Global-Store and MediaCache. The Ethernet port can also be used to transfer images and animations from the hard drive on the switcher to a computer. This allows images captures on the switcher to be used elsewhere in the studio.

- **DSKs** — The Synergy 100 MD has one standard Downstream Keyer. With the MultiDSK™ option installed, two additional Downstream Keyers are added. The DSK has full access to all 16 inputs.

- **Squeeze & Tease® MD** — Squeeze & Tease MD is a high quality, powerful multi-definition 3D DVE option. Great for sophisticated looking boxes, it allows every type of key to be squeezed or zoomed, cropped, repositioned, and rotated in 3D space. It can also perform 3D key or background transitions, or build sequences with complex timelines, keyframe editing, and quick "shot box" sequence recall. Squeeze & Tease MD comes equipped with a positionable light source, preprocessor effects such as defocus, mosaic, posterization, colorization, strobe, picture frame borders, object builder for slabs, timeline sequences with holds, and a lot more. Up to 4 channels of Squeeze & Tease MD can be added to the Synergy 100 MD.

- **Squeeze & Tease® MD WARP** — Stunning curvilinear transitions and creative effects are possible when this option, which provides warp capability to Squeeze & Tease MD, is added. Over 20 classes of modifiable WARP effects are included such as page turns, spheres, ripples, 3D hearts, stars, sandstorm, old film effects, and more.

- **UltraChrome™ Advanced Chroma Keying** — Our UltraChrome chroma keyer uses new Ross technology to perform detailed keying in the most demanding applications. The UltraChrome chroma keyer is a standard feature of the Synergy 100 MD.

- **3 Channel Global-Store™** — Three independent channels of stills are available. Thousands of stills and logos can be stored in the on-board hard drive and are transferable to other control-room devices via Ethernet using a WebDAV connection.

- **Powerful MLE** — Synergy 100 MD packs major effects and keying power into this small, versatile switcher. It has two fully featured keyers with luma, linear, preset pattern, and an advanced UltraChrome chroma keyer. Two advanced pattern generators include rotary wipes, matrix wipes, heart, and star.

- **Serial Tally Interface** — Interfacing to Under Monitor Display and Tally Systems is easy with this option. The Serial Tally Interface uses industry standard tally protocols to communicate tally information on an RS-422 serial port to other devices.

- **Small Audio Mixer Interface** — This powerful option is available for those who wish to control an audio mixer from the Synergy 100 MD panel, making an integrated A/V production possible.

- **Compatible with Synergy SD Panels** — The Synergy 100 MD frame connects to the same control panels as the economical Synergy SD frame.

- **Compatible with the Synergy MD-X Compact Rack Frame** — With the exception of the Input with Crosspoint board, all other boards used in the 3RU Synergy 100 MD compact rack frame also plug into the Synergy MD-X 8 RU rack frame. This allows for consistent operation, maintenance, and spare parts across the entire product line.

- **Hot Swappable Boards** — All boards in the Synergy 100 MD frame can be safely removed with the power on. If any card is plugged into the wrong slot, the board and system hardware will not be damaged. In addition, Synergy 100 MD was designed to support emergency swapping of some circuit boards even during live operation.

- **GVG Compatibility** — Those who grew up on the GVG 100 or 110 will find this powerful switcher astoundingly simple to learn. Not only will your hands fall right into place, the switcher drops right into the original GVG desk cutout and consumes the same 3RU as the original frame.

- **Remote Aux Bus Panels** — Up to 8 Remote Aux Panels can be added to the Synergy 100 MD.

- **Growth Path** — The same video-processing frame is used for our **Synergy MD 100**, **1**, **1.5**, **2**, and **2.5** MLE switchers. Buy a smaller system now and then add another MLE and a larger control panel as your needs grow.

- **Free Upgrades from the Web** — Software and even some hardware can be upgraded by downloading files from our web site.

- **Built to Last** — Ross Video warranties save thousands in operational costs over competitive products. It's no secret that Ross products are tough. They're built to handle years of demanding, continuous use. The Synergy 100 MD is backed by a comprehensive 3-year transferable warranty. The design of our fourth generation fader bars is so good that they are guaranteed for life.

Standard Features

The following features are standard in the Synergy 100 MD switcher:

Complete Control Panel

Regardless of what options are ordered, you will always receive a control panel with every button, knob, display, and light installed. This means that your Synergy 100 MD and your control room will look their very best - even if your budget is tight.

16 Multi-Definition Serial Digital Inputs

The Synergy 100 MD switcher comes standard with 16 serial digital inputs. Any input can be assigned to any of the 10 control panel pushbuttons - simplifying installation. In the event that the user would like the ability to access any of the 16 sources, one of the source buttons can be assigned as a "shift" button which, when held, shifts that row of sources to a second bank. Any of the inputs can be used for video or alpha channels.

16 Multi-Definition Timed Digital Outputs

Note   If the MultiDSK option is enabled, BNCs **B01** to **B06** are locked and cannot be reconfigured. **B07** defaults to Preview with Overlay.

In the Synergy 100 MD, every output is configurable. Output mapping will vary greatly from one installation to another depending upon local requirements, and whether MultiDSK is installed and enabled.

The following signals are available from the crosspoint matrix to the output cards in a standard system.

Crosspoint Matrix Video Signal	*Quantity*
Black	1
Standard Primary Inputs	16
Global-Store	3
Program	1
Preview	1

Crosspoint Matrix Video Signal	Quantity
FlexiClean Clean Feed	1
Preview Overlay	1
DSK 1	1
Total sources available	**25**

Every output is fully timed to provide consistent and adjustable output phasing.

Analog Reference Input

All Synergy 100 MD switchers use an analog reference that consists of a pair of looping reference BNC connectors, in addition to the standard 16 inputs, on the rear panel of the Video Input Board. Tri-level sync is recommended for HD applications. The same looping connector will accept standard color black as a reference in SD applications.

> **Note** If the reference loop is not used, it is recommended that the loopback BNC be terminated.

3 Channel Global-Store

Three independent channels of stills are available switcher-wide. Thousands of full screen stills and logos can be stored in the on-board hard drive and are transferable to other control-room devices via Ethernet using a WebDAV connection, which also comes standard with the Synergy 100 MD.

Global-Store comes standard with 256 Megabytes of RAM storage. This translates to at least 30 full screen 1080i images with key or 189 full screen 480i images with key. The number of images stored increase considerably when smaller, non-full screen images like logos are stored. Thousands of additional images can be loaded from the system hard drive.

One Full Multi-Definition MLE Effects System

Standard equipment on the Synergy 100 MD includes one full MLE (Multi-Level Effect) system. Two wipe generators come standard. The two Effects Keyers can matte fill, key invert, mask, Self Key, Linear Key, and Preset Pattern Key. A "floating" UltraChrome advanced Chroma Keyer is standard. The MLE also features five matte generators. Full preview is always available to reduce on-air surprises.

Copy and Swap Functions

The following convenient copy and swap functions are available as standard:

- **Copy Key** – allows you to copy the contents of one keyer to another keyer.
- **Swap Key** – allows you to swap the contents of one keyer with another keyer.

Two Pattern Generators

The Synergy 100 MD includes (as standard) two full functionality pattern generators equipped with extensive traditional, rotary, and matrix wipes, as well as preset pattern keys.

Keyer Configuration

The Synergy 100 MD comes equipped with 3 keyers – two Effects Keyers and a Downstream Keyer.

UltraChrome Advanced Chroma Keyer

The Effects Keyer comes equipped with a "floating" UltraChrome high quality chroma keyer produced by Ross.

The Ross UltraChrome™ (patent pending) uses advanced video processing technology to provide exceptional blue spill reduction and clean edges, even with difficult source material. Glass, smoke, translucent materials, and natural shadows are handled superbly. Setup is a breeze with single-touch auto chroma keying and intuitive touch-up controls. Chroma key shadows can either be extracted from the source image or simulated using the switcher's optional border generators.

FlexiClean™ MLE Clean Feed Output

This feature is used for bilingual and live-to-tape productions. It provides a second "program" output that is derived from a different location than the standard program output. A frequent application is the recording of shows for later airing without "call in" phone numbers inserted.

The clean feed can come from before or between the Keyers. The diagram below illustrates the possible clean feed configurations with the **MultiDSK™** (DSK 4 and DSK 5) installed.
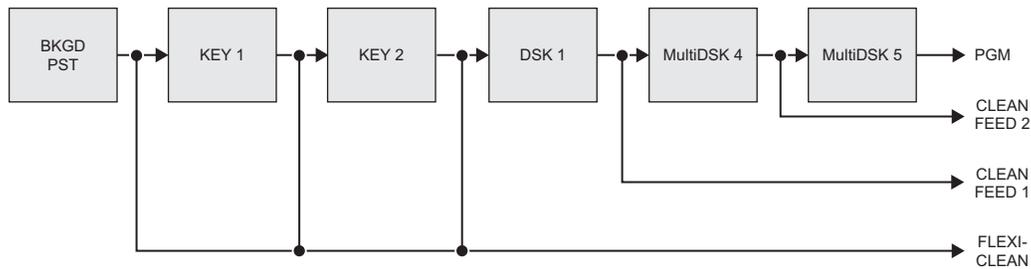
Clean Feed Modes in MultiDSK

Effects Functions (Preview Overlay)

The **Effects** function makes it possible to present various types of useful information on the two preview outputs. The overlay can be displayed according to user preferences. A variety of overlay information is available:

- The "**Safe Title and Safe Action Area**" overlay places a SMPTE standard safe title or safe action area indication over the switcher's main preview output.

    ~ Safe title is a box that outlines the area within which the vast majority of home TV sets will be able to read text.

    ~ Safe action area is a box that outlines the region within which viewers should be able to follow the action on the screen.

- The "**Center Cross Hairs**" overlay places cross hairs on the preview output to indicate the center of the picture. It is useful in the alignment of text and other information.

Powerful and Intuitive Control Panel

The Synergy 100 MD is packed with features that make it easy and enjoyable to put together a great production. Here's a quick list of product highlights:

- **Transition Preview** — This allows you to rehearse your next transition using a wipe or dissolve on the preview monitor before using it on air. A Ross Patent.

- **3 Axis Joystick** — This is the same high quality joystick used on all our switchers. Not only does this provide an intuitive and precise control over Squeeze & Tease MD and

MD WARP, but it's also, great for positioning and sizing borders, masks, preset patterns, and more.

- **PST BLACK Button** — This button, previously only found on large production switchers, makes a quick dip to black, followed by the next preset transition, a snap.

- **Protected Fade to Black Button** — Operators frequently push buttons without looking at the panel – they're too busy watching the action on the monitors. One button they really want to have a different feel is the **Fade to Black** button. To help them out, we put special ridges around it.

- **Trans Limit Button** — Another large switcher feature, this memorizes a mid transition hold for wipes and dissolves. When activated, the appropriate segment on the transition progress bar beside the fader will flash to show exactly where in the transition the hold will occur.

- **DVE Button** — Access to internally generated Squeeze & Tease MD and MD WARP wipes couldn't be easier. Access DVE transitions just like a wipe – press DVE, then a pattern button.

- **User Wipes** — When the next transition is a Wipe or DVE effect, double press one of the 10 pattern buttons to recall any of 10 user wipes or DVE effects, custom selected from more than a hundred possible effects.

- **Key Mem Button** — This ensures that your linear keys are always calibrated exactly as they were designed to look. If you want to "tweak" the clip and gain, turn Key Mem off to get a custom look.

- **Char Gen 1 and Char Gen 2 Buttons** — These are your customized CG hotkeys. Press either one and the DSK defaults its settings and selects the Character Generator of your choice.

- **Source Holds on Memory Recalls** — If you hold down a source button when you perform a memory recall, the memory comes back, but the background doesn't change. This is a great live feature that lets you switch a sophisticated and unpredictable production on the fly.

- **Auto DSK Drop** — The Synergy 100 MD can help you do two things at once when switching a fast paced show! When you take a new background directly to air on the background bus, the DSK can be programmed to automatically cut off at the same time.

- **Memory "Effects Dissolves"** — Memory recalls can be set to recall instantly, or to smoothly move all parameters from the current settings to the stored settings. This feature can be used to build custom 3D WARP effects with each memory location used to store a keyframe. For example, it's great for flipping WARP over-the-shoulder boxes forward to full screen!

- **Pop Up Help** — Don't you hate it when you press a button, nothing happens, and you don't have any idea why? We do too. On the Synergy 100 MD, a short help message pops up on the preview monitor to help you out when you have pushed an invalid sequence of buttons.

- **Tri-Color Buttons** — On air sources light red, other buttons light yellow, and buttons that currently apply to the joystick and Effects Control region light green. Easy to use, easy to learn, looks great.

- **Alphanumeric Displays** — There are three assignable regions in the upper panel – Effects Control, Mattes, and System Control. Dedicated alphanumeric displays keep you well informed as to how they're assigned.

- **Non-Sync Indicators** — These are great for system timing and advance warning of potential problems with a source. The bus names to the left of the source buttons glow green when everything's okay and yellow when a source is non-sync.

- **Shared Key Bus Indicators** — The Key Bus source buttons can be shared three ways – Key 1 sources, Key 2 sources, and DSK sources. Each keyer has its own independent bus. Illuminated labels to the left of the bus keep you fully informed.

- **Variable Button and Display Brightness** — Not all control rooms have identical lighting. The Synergy 100 MD buttons and displays can be custom set in the installation menus to just the right brightness level.

- **Built-in Panel Diagnostics** — The Synergy 100 MD panel comes complete with an easy to use suite of diagnostic tests. These are the same ones that we use to test it in our factory.

100 Event Memory System

The Synergy 100 MD is equipped with a standard 100-event memory registers for complete switcher snapshots. At the touch of a button, the entire switcher setup can be recalled using the numbered buttons in the **Effects Control Group**, or the **10** and **1** buttons (in conjunction with the **SEL** button) in the **System Control Group**.

All of these memories, including associated attributes, can be stored to the hard disk or a USB Drive, providing custom tailored memories for every operator and every show.

Effects Dissolves

All Synergy 100 MD memories can also be used as effects dissolves. This allows you to easily produce elaborate moving effects at the touch of a button – especially powerful with the Squeeze & Tease MD and MD WARP options.

5 Matte Generators

The Synergy 100 MD has five simple color generators for wipes, Effects Keyers 1 and 2, COLOR BKGD, and DSK key border. Two additional matte generators are added when you purchase Squeeze & Tease MD and/or MD WARP.These color generators allow you to adjust the hue, color saturation, and luminance of the BKGD, wipe pattern borders, Effects key fill, or the Downstream key border and matte fill.

Hard Disk Drive and USB Drive

Up to 100 switcher setups, including memory functions, switcher personalities, and installation parameters, can be stored to and recalled from the System Hard Drive or a USB Drive. This allows operators and technical staff to easily backup their switcher setups.

The system hard disk drive is located on the CPU Board in the Synergy 100 MD frame. Switcher settings can also be stored here for quick recall. This is the same hard disk drive that is used to store stills, logos, animated logos, and short video clips. Memories and graphics files are accessible over the 10/100 Ethernet network port for easy remote load and backup.

Switcher Setup Menus

Press the **MENU** button to bring up the setup and programming menus. These are presented in plain English and are designed for quick navigation. The menu can be over a blue background or transparent, showing the preview video behind it – this feature is user selectable.

Displays and Indicators

The Synergy 100 switcher always keeps you informed.

- **PGM** bus crosspoints are illuminated red, signifying "on-air" status, except when the panel is faded to black. In this case, the crosspoint LEDs will be orange.
- **PST** bus crosspoints are lit orange, except during a background transition, when they will be red.
- **KEY** bus crosspoints will be lit orange when the key is not on air, and red when the key is contributing to the program output.
- The secret-till-lit LEDs to the left of each crosspoint bus will be lit green when the source selected on the bus is synchronous, and orange if the source is non-synchronous.
- Functions that have control of the **Effects Control** groups will be lit green (e.g. **FLY KEY**).
- The **ON AIR** secret-till-lit LEDs in the **Effects Keyers** group and under the key and DSK transition buttons in the **Transition Control** group glow red when the key is on air.
- The **EDIT** secret-till-lit LED under the **MENU** button in the **System Control** group is lit when the **Editor** option is installed and enabled.
- The auto transition rate in the **System Control** group is constantly visible.
- When the switcher is in "memory mode", the last memory register accessed is displayed in the **System Control** group.
- The four-character **MODE** displays in the **Effects Control**, **Mattes**, and **System Control** groups, always inform you of which function has control of each group.
- The LEDs in the **Transition Progress Bar** show you how far the transition has progressed, and which direction the fader must travel to complete it.

General Purpose Interface

The Synergy 100 MD is equipped with ten dedicated GPI inputs. Each GPI input can be used to perform simple editing and switcher functions such as fade to black, an auto transition, and a memory recall.

Note | GPI outputs are not implemented as this time.

Emergency Bypass Relays

The Synergy 100 MD frame also includes 2 dedicated power-fail relays. These normally closed relays open in the event of a power failure, or other system fault that prevents a reliable program output (for example, removal of a Video Output card). These relays can be used to control an external emergency routing system.

Control Panel Tallies

Sixteen tallies come standard with the Synergy 100 MD control panel.

10 Meter Control Cable

The Synergy 100 MD control panel and rack frame are connected by a single, standard 8-pin flat-shielded Telco cable that uses RS-422 communication. The maximum cable length between the control panel and its rack frame is 1,000 feet or 305 meters.

Synergy Slots

The Synergy 100 MD incorporates a special mode in which pseudo-random information is statistically measured on a cumulative basis.

System Options

This section lists the options available for the Synergy 100 MD. All options can be easily installed in the field.

	Note	Refer to Chapter 15 "**Hardware Options**" in the *Synergy 100 MD Engineering Manual* for instructions on how to verify the status of your installed hardware options.

Conversion Frames

All switcher inputs and outputs are 10-bit 4:2:2 serial digital, including the system reference. Signal sources of other video formats must be converted to serial digital. Ross Video chose to do this conversion externally to ensure that the very latest conversion technology and most competitive pricing is available to our customers. An added bonus of external conversion is the ability to use those converters elsewhere in your facility as you eventually upgrade your switcher sources to serial digital. The table below lists the Ross products that qualify as converters.

Converter	*Description*
ADC-8032B	Analog Composite to SDI Digital Decoder
ADC-8032B-S	Analog Composite to SDI Digital Decoder with Frame Sync
ADC-8033	Analog Component to SDI Converter
ADC-8035	Dual Analog Composite to SDI Converter
CMA-8011A	SDI Component Monitoring Amplifier
CMA-8011A-7	SDI Component Monitoring Amplifier with 7 reclocked SDI Outputs
DAC-8013	SDI to Analog Component Converter
DAC-8016A	SDI to Analog Composite Converter
DAC-8016A-S	SDI to Analog Composite Converter with Frame Sync
DAC-8016A-SX	SDI to Analog Composite Converter with Frame Sync and X-Color Filter
DAC-8016A-X	SDI to Analog Composite Converter with X-Color Filter
QMA-8044	Quad SDI to Analog Composite Monitoring Amplifier
UMA-8017	Universal SDI Monitoring Amplifier

Please visit our web site or contact your Ross Video representative to obtain a current Ross Video Product Catalog for detailed information on our complete line of converters.

Squeeze & Tease MD Carrier

This is an optional carrier card equipped with a high performance DSP (Digital Signal Processing) module. One of these cards must be purchased in order to install the Squeeze & Tease MD or Squeeze & Tease MD WARP option cards.

Squeeze & Tease MD

One Squeeze & Tease MD option provides two channels of 3D planar effects. The Synergy 100 MD can have up to two of these options, providing an impressive 4 channels of 3D DVE.

Note	The Squeeze & Tease MD can only be installed on the Squeeze & Tease MD Carrier board.

The following are some of the functions you will be able to do with the Squeeze & Tease MD option:

Fly ANY kind of Key

Pressing the **FLY KEY** button easily activates Squeeze & Tease MD allowing you to transform self Keys, linear Keys, and chroma Keys. A comprehensive and intuitive menu is available where you can set up your desired effects. If you prefer, the 3-axis joystick can also be used to adjust your Key's parameters.

Preprocessor Effects

Preprocessor effects include wide range defocus with separate H and V controls, mosaic, posterization, colorization, and a strobe effect that allows you to vary the number of on and off frames to provide enhanced creative possibilities. All preprocessor effects are available to be combined simultaneously.

Lighting

All images and Keys can also have realistic natural lighting applied to them. Squeeze & Tease MD makes it easy with "quick presets", a positionable light source, and powerful ambient and min/max lighting controls.

Advanced Picture Frame Border Generator

Squeeze & Tease MD can add a picture frame to border over-the-shoulder boxes. This variable width border perfectly tracks all image resizing and special effects. The picture frame generator instantly adds a polished, professional look to your squeeze backs.

This picture frame can be the simple, single color type, or one of many picture frame effects including roman column, tubular, beveled, computer style, tri-color, and more. These picture frame effects have the following adjustable controls:

- hard or variable edge softness
- edge width/scaling
- inside/outside edge softness symmetry
- diagonal, horizontal, and vertical corner joint selection
- full control of all three picture frame color generators.

Advanced Planar Controls

The following advanced controls make building the ideal look for your show just that much easier:

- **Front Side/Back Side** — When you look at the backside of an effect, you can have it automatically select a different video signal on the Key bus. This makes it possible, for example, to rotate between 2 channels of still store in an over-the-shoulder box in a single Keyer, using only 1 channel of S&T MD.

- **Auto Flip** — When you rotate an image in normal mode, the backside appears upside down or mirrored. Turning on Auto Flip ensures that the front side of an image is always presented. This is great for the manipulation of still store and CG text.

- **Internal Key Combiner** — Squeeze backs can be combined and displayed in a single Keyer. This effectively adds additional Keyers to the Synergy MLE.

- **Key Combiner Priority Control** — Getting the channels the way you want them is easy with S&T MD. When several squeeze backs are combined in a single Keyer, you can choose fixed priorities, auto-priority, or intersecting planes. Auto-priority automatically calculates the channel priority based on their relative positions in 3D space. With the intersecting planes choice, channels will literally cut into one another channel hiding the portions that are hidden behind them.

Pre-Built Effects, User-Built Timelines, and Key Sequences

Squeeze & Tease MD ships with dozens of prebuilt effects that are ready to take to air. More effects can be downloaded from our website. All of these effects can be easily user modified to meet your needs. You can also build entirely new effects of your own from scratch.

Effects can be built to start when a macro button is pressed, when an auto transition is pressed, or can be run under manual fader control. Effects can be used as a transition, or as a sequence of Keyframes running inside one or more Keyers.

Squeeze & Tease MD WARP

Squeeze & Tease MD WARP adds extensive curvilinear effects to an MLE with Squeeze & Tease MD installed. These effects can be applied to transitions or Keys where a planar channel or Key-combined group of channels is being used.

	Note	The Synergy 100 MD Switcher will support only one S&T WARP option.

WARP Effects

WARP effects include such ones as page turn, ripple, wave, mirror, melt, lenses and many more.

The creative possibilities are endless as S&T MD WARP effects can be easily combined with preprocessor, planar transformation, lighting and picture frame effects.

Assignable Remote Aux Panels

A **Remote Aux Panel** is a self-contained switching unit that has its own power supply. It mounts in a 19-inch rack and fills one RU (Rack Unit).

An **Assignable Remote Aux Panel** controls multiple Aux Bus outputs.
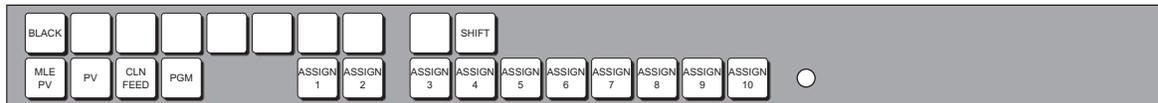
Synergy 100 MD Remote Aux Panel

The Remote Aux Panels include dedicated buttons for Preview, Program, Clean Feed, and for accessing multiple Aux Bus Outputs — plus a bright "on-air" LED.

The following features will affect the positioning of Remote Aux Panels in relation to the control panel:

- The **Assignable** Aux panel options include a 33-foot (10 meter) cable, but custom lengths, up to a maximum of 1000 feet or 305 meters (as limited by RS-422 specifications), between panels is possible. Contact Ross Video for details.

- The communications signal is re-buffered at each Remote Aux Panel.

- Remote Aux Panel assignments are performed using the control panel and menu system. Refer to the section "**Setting Up Remote Aux Panels**" in the *Synergy 100 MD Engineering Manual* for more information.

MultiDSK (DSK 4 and DSK 5)

This option adds a fourth and a fifth linear Downstream Keyer to the standard internal DSK. These Downstream Keyers have access to every video source, and are fully integrated into the transition system with full preview.

The hardware for this option resides on the Video Output Board, and will consume four Output BNCs to supply the DSKs with Video and Key sources.

Editor and Automation Interface

It is common to use an editor to control a video production switcher in linear editing and packaging applications. With the editor interface option, the Synergy 100 MD can interface to all popular editing systems. Any area of the switcher can be controlled using an RS-232 or RS-422 interface and industry-standard GVG 100, 200, or 4000 editor protocol. The editor can be used to read and write switcher functions including video input selection, pushbutton enable and disable, control settings, and memory registers. If complete control of all switcher parameters from an editor or remote device is necessary, this option is required.

| **Note** | An alternative to the serial interface is GPI triggers, which come standard with the Synergy 100 MD. GPIs can be programmed to press cut or auto transition buttons directly. |

Small Audio Mixer Interface

This option enables serial control for enhanced audio-follow-video from the Synergy 100 MD switcher over small audio mixers, allowing integrated A/V production possible.

You can purchase the small but powerful Yamaha 01V96 audio mixer console through any Ross Video distributor. This mixer has up to 16 analog inputs, 16 digital inputs, and a proven interface to our production switchers.

| **Note** | On the Synergy 100 MD switcher, this is a simple audio-follow-video interface. Larger Synergy MD/MD-X models offer a more comprehensive interface. |

Serial Tally Interface

This option enables Serial Tally Interface using industry standard protocols to Under Monitor Display and Tally Systems. The standard parallel tally interface will continue to operate normally when this option is enabled.

Control Panel Redundant Power

This provides a spare "quick swap" power supply for the Synergy 100 MD control panel. The control panel power supply consists of a custom external "brick" which includes a locking connector. It can be easily changed in a few seconds.

Frame Redundant Power

This option provides redundant power for those who have replaced or upgraded their frame and already have redundant power for their panel.

Spare Parts Kit

A **Spare Parts Kit** is available which provides switcher parts according to the following criteria:

- the part comes into frequent contact with the user

- the part can be easily damaged or may wear out with excessive use

- the part can be damaged by connecting excessive voltage to an external connector

- the part is used in system power management

- the part can be lost easily

Custom Cable for Main Control Panel

The **Control Panel** cable connects the control panel to the electronics frame. It is a shielded 8-pin RJ-45, CAT5 cable. The control panel and frame can be separated by a maximum of 300 meters.

A 10 meter control panel cable is supplied as standard with the switcher. If cable lengths other than 10 meters are needed, a custom cable can be ordered (by the meter).

A Word about Technical Support

At Ross Video, we take pride in the quality of our products, but if problems occur, help is as close as the nearest telephone.

Our 24 Hour Hot Line service ensures you have access to technical expertise around the clock. After-sales service and technical support is provided directly by Ross personnel. During business hours (eastern standard time), technical support personnel are available by telephone any time. After hours and on weekends, a direct emergency technical support phone line is available. If the technical support personnel who is on call does not answer this line immediately, a voice message can be left and the call will be returned shortly. These people are available to react to any problem and to do whatever is necessary to ensure customer satisfaction.

For **Technical Support**, call (+1) 613-652-4886 and, for **After Hours Emergency**, dial (+1) 613-349-0006.

Product Comparison Charts

As a comparison, the following tables detail the features and options that are available with the different Synergy MD switchers with no optional equipment.

Feature	100 MD	1 MD	1.5 MD	2 MD	2.5 MD
Number of MLEs	1	1	2	2	3
Number of MLE Keyers	2	2	2*	2	4*
Input BNCs	16	16 (+16)	16 (+16)	16 (+16)	16 (+16)
Output BNCs	16	16	16	16	16
Panel Accessible Inputs	16	30	32	32	32
UltraChrome Chroma Keying	Yes	Yes	MLE 1	MLE 1 and 2	MLE 1 and 2
Custom Control Buttons	None	24	17	17	30
Programmable Custom Controls	None	128	72	72	176
Number of MLE Keyers	2	2	2	2	4
Number of DSKs	1 (+2)	(+2)†	2 (+2)*	2 (+2)	2 (+2)*
DSK Self Keys	Yes	--	Yes	Yes	Yes
DSK PST PATT Keys	No	--	No	Yes	No
DSK Auto Select Key	Yes	--	Yes	Yes	Yes
DSK Chroma Key	No	--	No	Yes	No
Button Accessible Aux Buses on Control Panel	10	2	32	32	32
Mnemonics Available	No	No	Yes	Yes	Yes
Control Panel Tallies	16	16	36 (+36)	36 (+36)	36 (+36)

Numbers in ( ) represent optional upgrades that are available.

* There is reduced functionality on the Keyers of the Half MLE.

† The **Synergy 1 MD** does not have Downstream Keyers as standard. The MultiDSK option must be installed in order to use the Downstream Keys.

Control Panel Introduction

In This Chapter

This chapter provides an introduction to the Synergy 100 MD control panel. The following topics are discussed:

- Control Panel Sections
- Video Flow through the Switcher
- Switcher Timeout
- Resetting the Switcher
- Shutting Down the Switcher
- Restarting the Switcher

Control Panel Sections

The following figure displays a top view of the Synergy 100 MD control panel, with each control panel section identified. The legend beneath the illustration names each section.
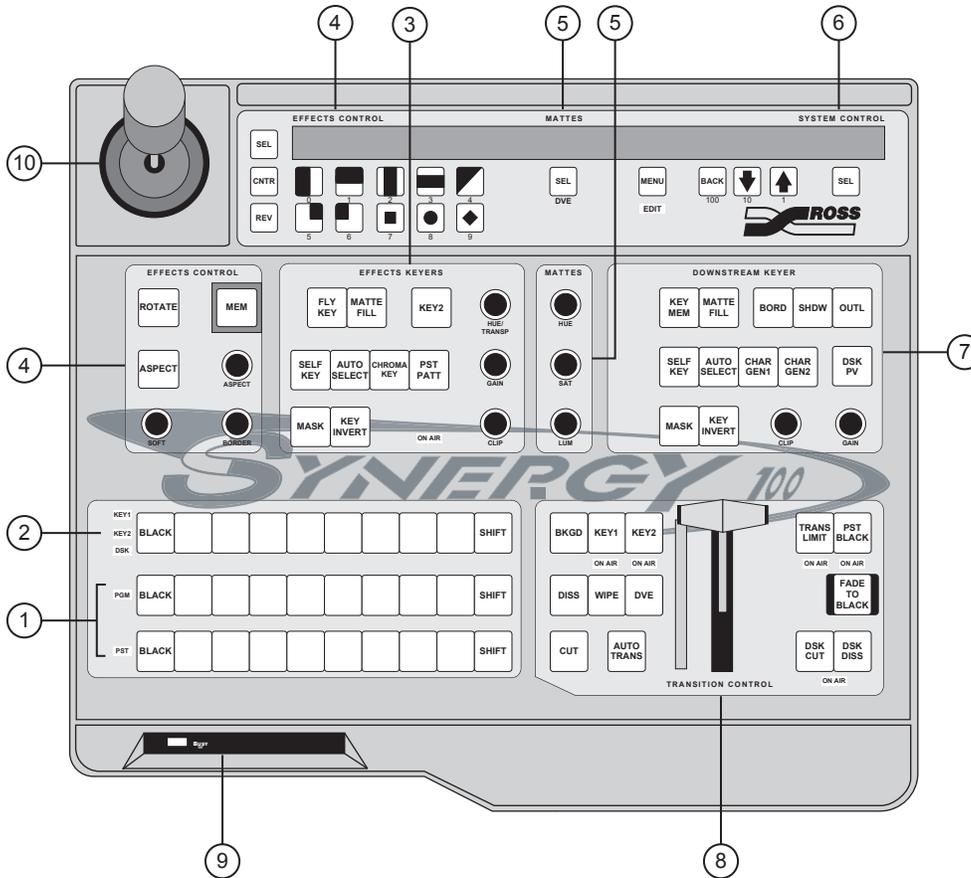
Synergy 100 MD Control Panel

1) Program/Preset Buses	5) Mattes Groups	8) Transition Control Group
2) Key Bus	6) System Control Group	9) USB Port
3) Effects Keyers Group	7) Downstream Keyer Group	10) Positioner
4) Memory and Effects Control Groups		

1. Program/Preset Buses

The **Program/Preset Buses** are two rows of crosspoint buttons (one button per video input source) that represent your primary switcher output selection area.

• The **Program** bus is the video source *currently on air*. This is the background image — that is, the image that is visually behind all other images (or farthest upstream, electronically).

• The **Preset** bus selects the source on the MLE that you are transitioning to — using a cut, dissolve, wipe or DVE transition.

2. **Key Bus**

   The **Key Bus** row is used to select key sources that can be keyed (electronically cut) into the background. The **Key** bus is *shared* between the three keyers (two **Effects Keyers** and a **Downstream Keyer**).

3. **Effects Keyers Group**

   The **Effects Keyers Group** allows you to select the key type and associated parameters for the Effects keys. Choose between **Self Key**, **Auto Select Key**, **Chroma Key,** and **PST PATT Key**. Within the group, you can also select a variety of key modifiers and parameters. When any button is selected in the group, the **Key** bus is assigned to the **Effects Keyers**.

   Electronically, the **Effects Keyers** are downstream (visually in front) of the background buses, but upstream (visually in back) of the **Downstream Keyer**.

   Note | The **Effects Keyers Group** is used to set up both Key 1 and Key 2. Each key can be set to a different key type, if desired, and have its own individual set of key modifiers and parameters.

4. **Memory and Effects Control Groups**

   The **Memory and Effects Control Groups** are *assignable* groups of controls that allow you to choose wipe patterns and adjust various parameters of the selected pattern. In addition, the pattern buttons are used to store and recall switcher parameters, and as a means of navigation within the switcher menu system.

5. **Mattes Groups**

   The **Mattes Groups** are *assignable* modules that allow you to adjust matte colors. By pressing any matte-related button on the switcher, or the **SEL** button beneath the **Mattes** display, the **Mattes** groups are assigned.

6. **System Control Group**

   The **System Control Group** includes the **SEL** button, which, when used in conjunction with the **100**, **10**, and **1** buttons, allows the user to navigate through the menu system and assign transition rates to AUTO TRANS, DSK DISS and FADE TO BLACK auto transitions. The **MENU** button is used to access the menu system of the **Synergy 100 MD** switcher.

7. **Downstream Keyer Group**

   The **Downstream Keyer Group** allows you to select the key type and associated parameters for the Downstream Key (DSK). Choose between **Self Key** or **Auto Select Key**.

   The **CLIP** knob adjusts the luminance, or *threshold*, level of the key and the **GAIN** knob adjusts the sharpness or softness of the edges of the key.

   With the **XFX Board with Dual Border** option installed, the **BORD**, **SHDW**, and **OUTL** buttons place a border, drop shadow or outline around the Key.

   Note | The **XFX Board with Dual Border** option is not yet implemented.

   In addition, there are **CHAR GEN1** and **CHAR GEN2** buttons, which allow you to pick your *favorite CGs* for immediate keying.

When any button is selected in the group, the **Key Bus** is assigned to the Downstream Keyer. An **ON AIR** LED under the **DSK CUT** and **DSK DISS** buttons in the **Transition Control Group**, indicates when the downstream key is contributing to the program output.

Electronically, the Downstream key is downstream (visually in front) of both the background buses and the Effects keys.

8. **Transition Control Group**

The **Transition Control Group** allows you to select the type of transition that you want to perform between the current scene and the next scene. You can transition *any combination* of the **Program/Preset** and **Key** buses using a cut, wipe, or dissolve.

The **DVE** button allows you to perform transitions using effects from an *optional* Squeeze & Tease daughter board. Transitions can be performed manually with the **Fader** or automatically with the **AUTO TRANS** button.

The **Fade to Black** button allows you to fade the switcher to black.

Note

If you have the **MultiDSK Option** installed, the **TRANS LIMIT** and **PST BLACK** buttons will be changed to **DSK4 DISS** and **DSK5 DISS**, respectively and the Transition Limit and PST Black features will be unavailable.

9. **USB Port**

The USB Port allows you to store and recall your entire switcher setup to and from a USB Drive.

10. **Positioner**

The **Positioner** allows you to position wipe patterns on screen. By pressing the **WIPE** button in the **Transition Control Group** or the **PST PATT** button in the **Effects Keyers** group, the **Positioner** is assigned. If the **Squeeze & Tease MD** or **Squeeze & Tease WARP MD** option is installed, the **Positioner** can be used to manipulate the X, Y, and in the case of the Squeeze & Tease WARP MD option, the Z position of a **Squeeze & Tease MD Key**.

Video Flow through the Switcher

The following diagram shows how video flows through your switcher, and illustrates the visual and electronic concepts of upstream and downstream video images.
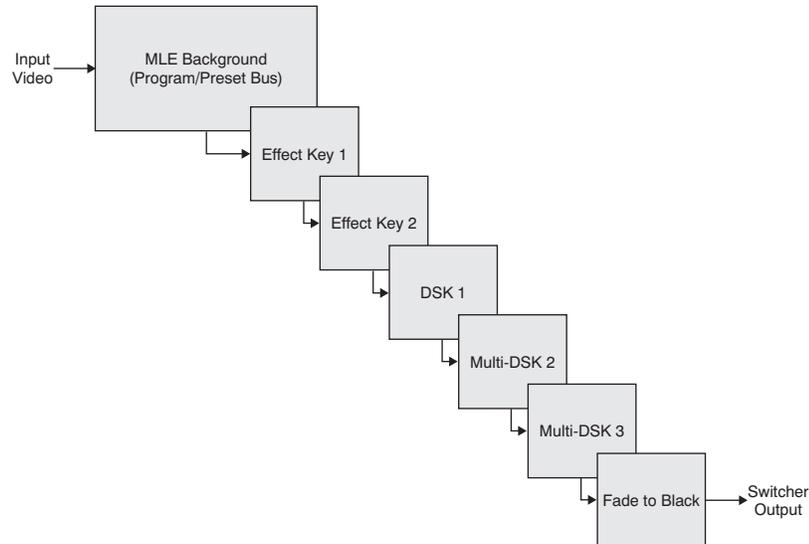
Synergy 100 MD Video Flow (with Optional MultiDSK installed)

The Synergy 100 MD is a single MLE switcher with 16 standard inputs. Video flows into the MLE, as indicated above, where crosspoints can be selected for effects creation.

The **Program** and **Preset** buses are electronically the farthest upstream, the Effects Keys appear mid stream and the Downstream Key appears downstream.

- Visually, all images on the Background bus appear *behind* both keyers. A key enabled on the Effects Keyer appears visually *over* the Background bus (and all transitions), but visually *under* the Downstream Keyer.

- A key enabled on the Downstream Keyer appears visually *over* the Background bus and the Effects Keys.

- The **Fade to Black** function is electronically downstream of the entire switcher. Regardless of the combination of keys selected, **Fade to Black** will visually take the entire switcher to black.

Switcher Timeout

If no control panel buttons are touched and no fader arms are moved for a period of 10 minutes, the switcher goes into a "sleep" mode and all lights are automatically turned off. This function is specifically designed to extend the life of the displays and the button LEDs.

If this timeout occurs, press any button or move the fader or joystick to "wake" the switcher and turn on all lights.

Note | The switcher does *not* act on a button push when it is coming out of "sleep" mode.

The factory default timeout interval is 10 minutes. For instructions on programming an alternate timeout interval, refer to the ***Synergy 100 MD Engineering Manual***.

Resetting the Switcher

If required, you can perform a software reset to clear all effects and crosspoint selections currently active.

⚠️⁎ **Important** Performing a Reset will set all crosspoints to Black, including the main PGM output.

The software reset function is performed in the **Effects Control Group** and **System Control Group**.
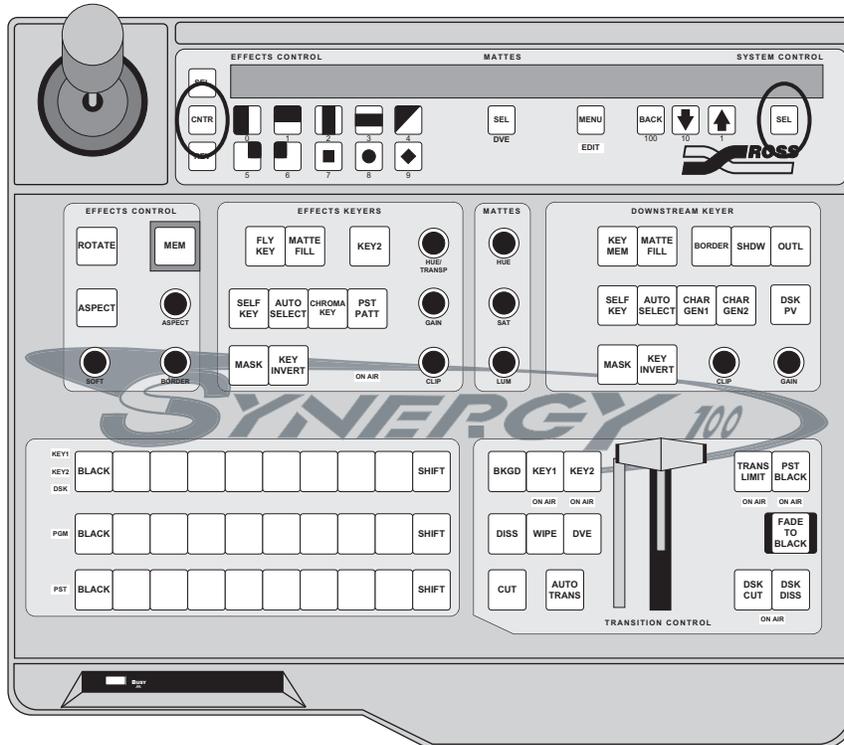
Software Reset Function

Press and hold the **CNTR** button in the **Effects Control Group** and the **SEL** button in the **System Control Group** to perform a software reset. Note the small "reset" symbols beside each button.

This resets the control panel to its default values. Switcher memory registers, personality registers, and installation registers are not affected by the reset, but all other switcher parameters, such as the current state of the panel, are reset. **BLACK** will be selected on all buses.

Shutting Down the Switcher

This section provides information and instructions for safely shutting down your Synergy 100 MD Switcher.

⚠ **Important**

Due to the sensitive electronics used in your Synergy 100 MD Switcher, you should not shutdown the switcher by turning off the power supplies. This could damage the switcher.

Use the following procedure to shutdown the switcher:

1. Navigate to the **Default Menu** as follows:

   • Press **MENU** to display the **Main Menu**.
   • Press **7. Options** to display the **Options Menu**.
   • Press **5. System Resets** to display the **System Resets Menu**.

```
System Resets
0. All
1. System Shutdown
2. System Restart
3. Inputs/Outputs
4. Restart Global-Store




MENU    100       10    1    SEL
Exit    Previous  Down  Up   Accept
```

Systems Resets Menu

2. Press **1. System Shutdown** to display the **System Shutdown Confirmation Screen**.

```
Are you sure you want to SHUTDOWN the system?

0. Confirm          1. Cancel




                    10    1    SEL
                    Down  Up   Accept
```
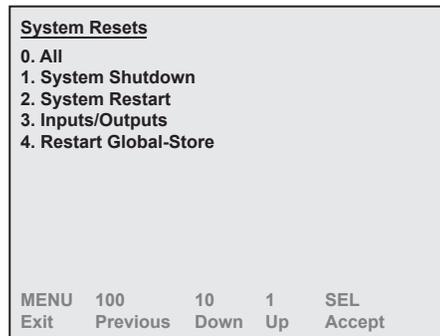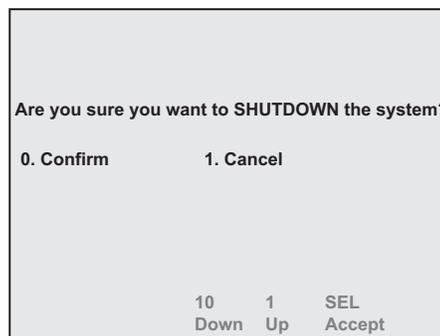
System Shutdown Confirmation Screen

3. Press **0. Confirm** to shutdown the switcher.

✓ **Operating Tip**

Press **1. Cancel** to *not* shutdown the switcher and return to the **Default Menu**.

This completes the procedure for shutting down the switcher.

Restarting the Switcher

This section provides information and instructions for safely restarting your Synergy 100 MD Switcher.

⚛ **Important**

Due to the sensitive electronics used in your Synergy 100 MD Switcher, you should not restart the switcher by turning the power supplies off and on again. This could damage the switcher.

Use the following procedure to restart the switcher:

1. Navigate to the **Default Menu** as follows:

   • Press **MENU** to display the **Main Menu**.

   • Press **7. Options** to display the **Options Menu**.

   • Press **5. System Resets** to display the **System Resets Menu**.

   ```
   System Resets
   0. All
   1. System Shutdown
   2. System Restart
   3. Inputs/Outputs
   4. Restart Global-Store




   MENU    100       10     1    SEL
   Exit    Previous   Down   Up   Accept
   ```
   Systems Resets Menu

2. Press **2. System Restart** to display the **System Restart Confirmation Screen**.

   ```



   Are you sure you want to RESTART the system?

   0. Confirm           1. Cancel




                        10     1    SEL
                        Down   Up   Accept
   ```
   System Restart Confirmation Screen
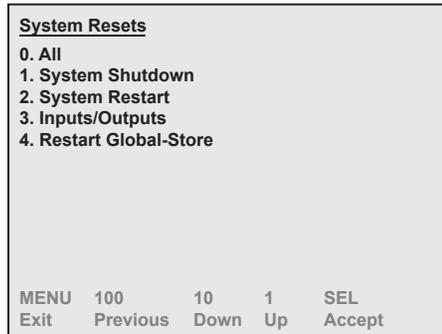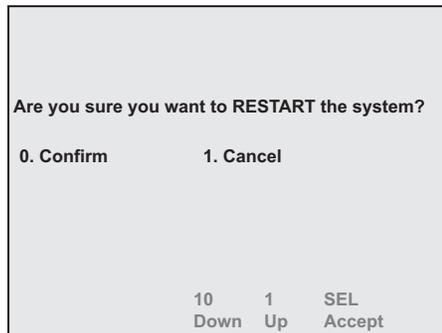
3. Press **0. Confirm** to restart the switcher.

✓ **Operating Tip**

Press **1. Cancel** to *not* restart the switcher and return to the **Default Menu**.

This completes the procedure for restarting the switcher.

Using the Menu System

In This Chapter

This chapter introduces the menu system of the Synergy 100 MD Switcher. The following topics are discussed:

- Menu System Basics
- Menu Information
- Navigation Menus
- Option Menus
- Split Menus
- Menu System Operation
- Help Features

Menu System Basics

The menu system is accessed using the **System Control Group** of the Synergy 100 MD control panel and displayed on the preview monitor as a **Preview Overlay**.

The following figure details the panel buttons that are used to access the menus.
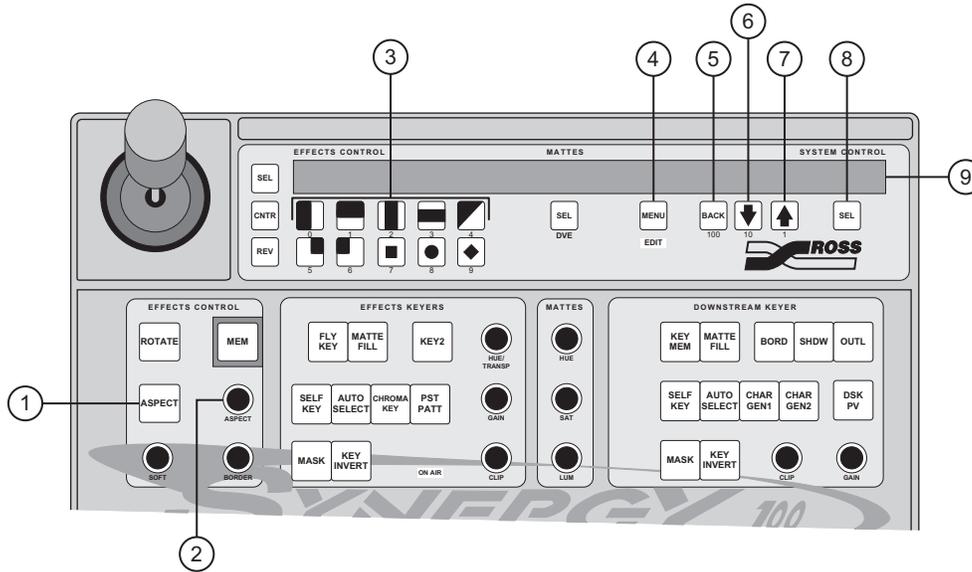
Synergy 100 MD Control Panel

1) ASPECT Button	4) MENU Button	7) UP (1)
2) SCROLL (ASPECT) Knob	5) BACK (100)	8) Right SEL Button
3) EFFECTS CONTROL Group	6) DOWN (10)	9) Display

1. ASPECT Button

The **ASPECT** button lights automatically to indicate that the **Aspect** knob is active and can be used to scroll through values in the menus.

2. SCROLL (ASPECT) Knob

The **Aspect** knob can be used to scroll through the menu values.

3. Effects Control Group

The **Pattern** buttons in the **Effects Control Group** allow you to use the menu system to navigate to sub-menus or select menu items by pressing the corresponding number. Refer to the section "**Menu System Operation**" on page 3–7 for more information.

4. MENU Button

The **MENU** button turns the menu system of the Synergy 100 MD on and off. When toggled on, the **MENU** button will light green and the **Main Menu** is displayed on the **Preview Monitor**.

Note   You must have a monitor connected to Preview with Overlay, **BNC C02**, in order to view the menu system. If you have the MultiDSK option installed, connect your monitor to **BNC C07**.

5. **BACK (100)**

   Pressing the **BACK (100)** button will return you to the *previous* menu or position in the menu tree.

6. ⬇ **(10)**

   Pressing the **DOWN ARROW (10)** button will scroll **DOWN** to the next item in a selection list or to the next menu item.

7. ⬆ **(1)**

   Pressing the **UP ARROW (1)** button will scroll **UP** to the next item in a selection list or to the next menu item.

8. **Right SEL Button**

   Pressing the right **SEL** button will **SELECT / ACCEPT** your option, setup, or position in the menu tree.

9. **Display**

   Once you have entered the menu system, **MENU** appears in the four-character **MODE** displays in the **Effects Control** and **System Control Groups**. This identifies the menu system as the area of the control panel that has control of the buttons and knobs in the **Effects Control** and **System Control Groups**.

Menu Information

There are 3 types of menus on the Synergy 100 MD Switcher that allow you to alter settings and configure inputs and outputs. These types are **Navigation Menus**, **Option Menus**, and **Split Menus**.

Navigation Menus

Navigation Menus, such as the **Main Menu**, are used strictly to navigate from menu to menu. They have no configuration options and will not change as you select different options.
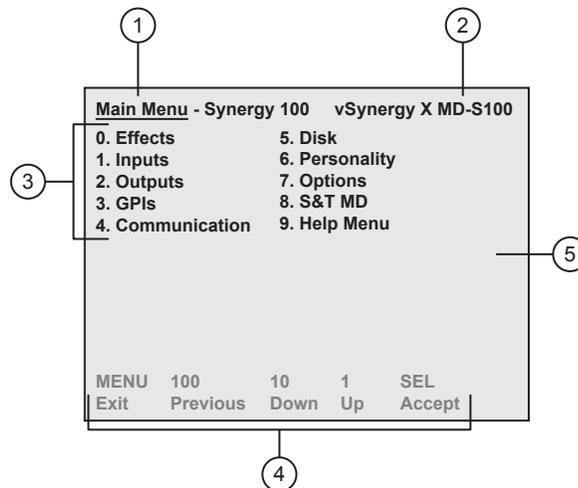
Navigation Menu Example — Main Menu

1) Menu Title	3) Menu Items (Headings)	5) Menu Background
2) Software Version (Main Menu Only)	4) Navigation Legend	

1. **Menu Title**

   Each menu is named in the upper left corner.

2. **Software Version**

   The **Main Menu** is the only one that displays the software version number in the upper right hand corner.

3. **Menu Items**

   Menu Items, or headings, can be selected to change their current settings, or used to navigate to sub-menus. Menu items that do not have selections next to them will take you to a sub-menu. Refer to the section "**Option Menus**" on page 3–4 for more information on menu selections.

   When a menu item is highlighted, this indicates that it is active and can be accessed using the right **SEL** button. When selected, the menu item or the selection for it, will change color to indicate that you can change the current configuration.

   Note | If a menu item is gray, it cannot be changed.

4. **Navigation Legend**

   The navigation legend provides information on how to navigate to the different sub-menus, or select menu items.

5. **Menu Background**

   The menu background can be turned on and off for some menus. When turned on, the images on the preview are not visible. This allows you to read the menu more easily.

   Note | Menus such as the **UltraChrome Parameters Menu** turn the menu background feature off so that you can preview your Chroma Key before taking it on-air.

Option Menus

Option Menus, such as the **Inputs Menu**, function in much the same way as the Navigation Menus, except that they allow you to configure specific settings on the switcher, as well as navigate to different menus. In many cases, these settings are dependent on each other, meaning that as you make a selection for one menu item, the other menu items will change to indicate the current setting. In the **Inputs BNC Config Menu**, for example, menu item **0. Output BNC** is used to select a BNC you want to configure. When menu item **0** is set to a BNC, all other menu items update to show the current configuration for the BNC you selected for **0. Input**.

```
Inputs
0. Input      BNC C01
1. Type       Off
2. AutoKey    Black
3. Shaped     No
4. Aud Chan1 Chan 1
5. Aud Chan2 Chan 2
6. Vid Format 720p 59.94



MENU  100      10      1    SEL
Exit  Previous Down    Up   Accept
```
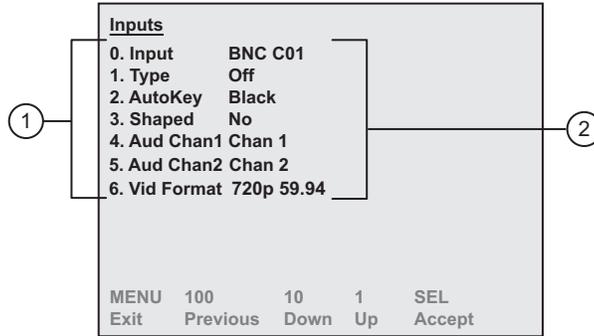
Option Menus Example — Inputs Menu

1. **Menu Items**

   Menu Items, or headings, can be selected to change their current settings, or used to navigate to sub-menus. Menu items that do not have selections next to them will take you to a sub-menu.

   When a menu item is highlighted, this indicates that it is active and can be accessed using the right **SEL** button. When selected, the menu item or the selection for it, will change color to indicate that you can change the current configuration.

2. **Menu Selections**

   Menu Selections indicate the current configuration of a menu item. The menu items can be changed, allowing you to assign different configurations to the switcher, or to other menu selections.

Split Menus

Split Menus, such as the **Network Setup Menu**, are used to adjust multiple or complex, options for a single menu item. Split Menus are identified by a vertical line that separates the menu items from the options. When a menu item is selected, the configurable option for that item are listed below the vertical line. In the **Network Setup Menu**, for example, when you select **4. Secondary DNS**, the option for this item is displayed below the vertical line. As this option has 4 numbers that are to be entered, it is considered a complex menu item.

```
Network Setup
0. IP Address        5. DHCP   Off
1. Subnet
2. Gateway
3. Primary DNS
4. Secondary DNS


      Secondary DNS: 0.0.0.0



Use Hue to select element, Sat to adjust value.
Exit menu and reboot for settings to take effect
```
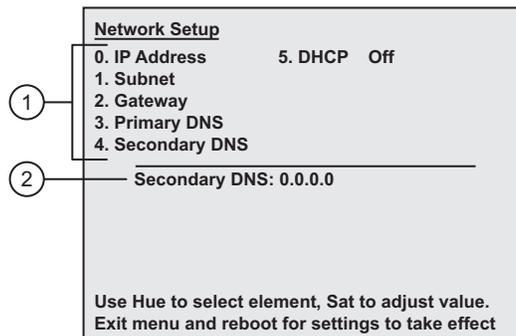
Navigation Menu Example — Network Setup Menu

1. **Menu Items**

   Menu Items, or headings, can be selected to change their current settings, or used to navigate to sub-menus. Menu items that do not have selections next to them will take

you to a sub-menu. Refer to the section "**Option Menus**" on page 3–4 for more information on menu selections.

When a menu item is highlighted, this indicates that it is active and can be accessed using the right **SEL** button. When selected, the menu item or the selection for it, will change color to indicate that you can change the current configuration.

2. Menu Selections

Menu Selections for some menus are separated from the menu items by a vertical line. This is often used when there are multiple selections for a single menu item, or if it is a complex selection with multiple parts, as in the case of the **Secondary DNS**.

This concludes the discussion on the types of menus on the Synergy 100 MD. For more information on using the menu system, refer to the section "**Menu System Operation**" on page 3–7.

Menu System Operation

The menu system on the Synergy 100 MD allows you to set up the various inputs and outputs, as well as communications with external devices and various peripheral settings for switcher operation.

In order to navigate through the menus of the Synergy 100 MD, you will have to learn how to access the menu system, navigate to the various menus on the switcher, and alter the settings you find on the menus.

The following example will show you how to navigate to the **Inputs Menu** and set up a particular Input BNC:
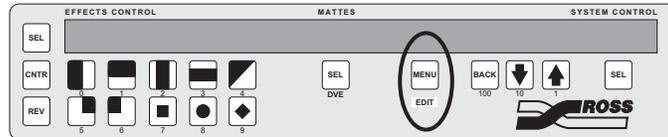
Menu Control Group — MENU Button

1. Press **MENU** in the **System Control Group** to display the **Main Menu**. The **MENU** button will light green and the **Main Menu** will be displayed on the **Preview Monitor**.
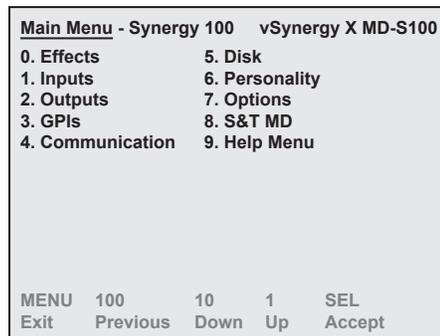
Main Menu

2. Navigate to the **Inputs Menu 1** as follows:

✓ **Operating Tip**

> Menu items that do not have a menu selection next to them, and are not part of a split menu, will display a sub-menu when selected.

•   The **Pattern** buttons in the **Effects Control Group** each have a number below them, corresponding to the numbers beside the menu items.
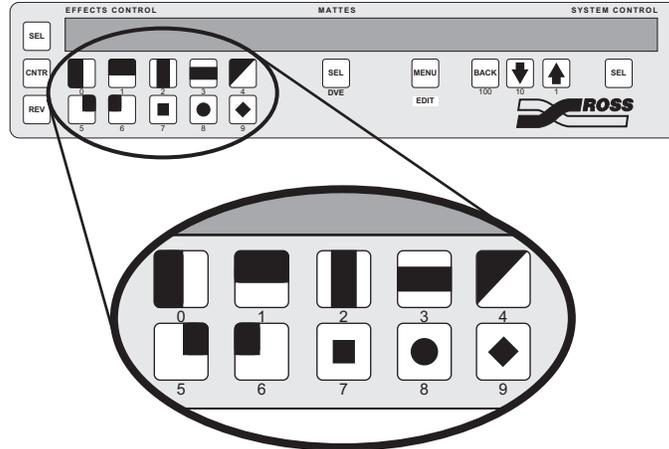
Effects Control Group — Pattern Button Numbers

- Press the **Pattern** button corresponding to the number next to the menu item that you want to select. In this case, press the pattern button with the **1** below it.

✓ **Operating Tip**

> Navigation instructions are identified by the number next to the menu item. In this example you will navigate to the **Input Menu 1**, so you would be instructed to press **1. Inputs** to display the **Inputs Menu 1**.

- The **Inputs Menu 1** is displayed instead of the **Main Menu**. If the **Inputs Menu 1** is not shown, you can press the **BACK** button to return to the **Main Menu**. The **BACK** button will return you to the previous menu, or de-select a menu item you have selected.
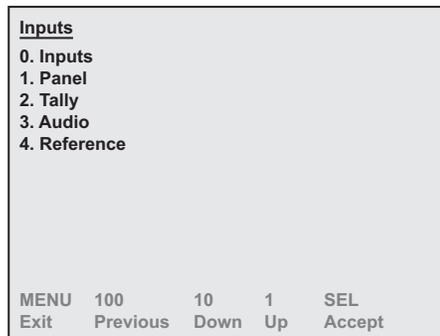
Inputs Menu 1

3. Press **0. Inputs** to display the **Inputs Menu 2**.

```
Inputs
0. Input        BNC C01
1. Type         Off
2. AutoKey      Black
3. Shaped       No
4. Aud Chan1 Chan 1
5. Aud Chan2 Chan 2
6. Vid Format 720p 59.94




MENU    100        10      1     SEL
Exit    Previous   Down    Up    Accept
```
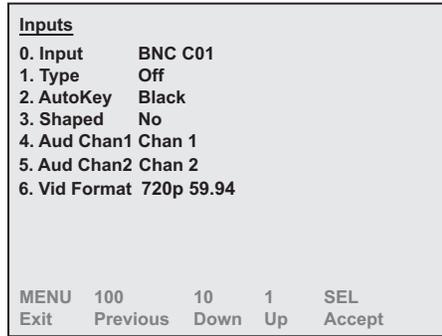
Inputs Menu 2

✓ **Operating Tip**

> If you are not at the correct menu, or want to start over again, you can either press **BACK** until the **Main Menu** is displayed, or press **MENU** to turn the menu system off, and then press **MENU** again to turn the menu system on again. When toggled on by the **MENU** button, the **Main Menu** is displayed on **Preview Monitor**.

- Now that you have navigated to the proper menu, you can select the Input BNC you want to set up.

4. Select **Input BNC C10** as follows:

   - Press **0. Input**.

   - Use the ⬇ and ⬆ buttons to select **BNC C10**.

   - Press the right **SEL** button to accept the new settings.

```
Inputs
0. Input        BNC C10
1. Type         Video
2. AutoKey      Black
3. Shaped       No
4. Aud Chan1 None
5. Aud Chan2 None
6. Vid Format 720p 59.94




MENU    100        10      1     SEL
Exit    Previous   Down    Up    Accept
```
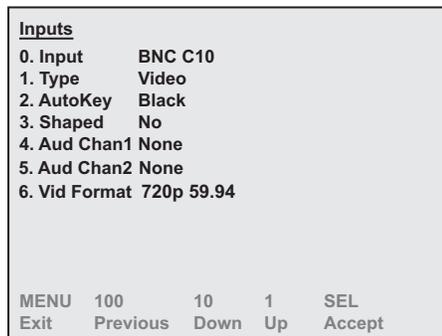
BNC C10 — Inputs Menu 2

- With **BNC C10** active, all the menu selections apply to this particular BNC. If you change the active BNC again, the menu selections will update to reflect the new BNC.

5. Change the **Type** for **BNC C10** to **Alpha** as follows:

   - Press **1. Type**.

   - Use the ⬇ and ⬆ buttons to select **Alpha**.

✓ **Operating Tip**

> **Alpha** — Select this option when an alpha signal (also known as a "Key" signal) is connected to the frame. Devices such as DVEs, Character Generators, Graphics (Paint) Systems, and Still Stores typically provide unique alpha signals.

- Press the right **SEL** button to accept the new settings.

```
Inputs
0. Input        BNC C10
1. Type         Video
2. AutoKey      Black
3. Shaped       No
4. Aud Chan1 None
5. Aud Chan2 None
6. Vid Format 720p 59.94




MENU   100        10    1    SEL
Exit   Previous   Down  Up   Accept
```
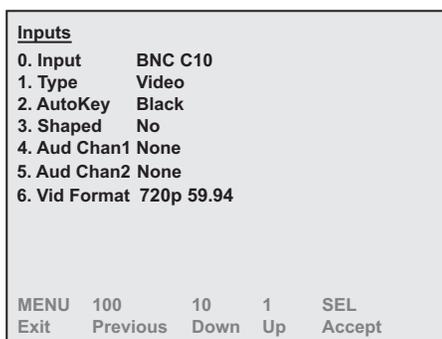
BNC C10 — Inputs Menu 2

- You have now set **BNC C10** up as an **Alpha**. Other configuration changes are made to this, and other menu items in the same manner as you have just performed. Now that you have finished configuring the BNC, you will want to exit the menu system.

6. Press **MENU** to display the **Installation Change Screen**. Whenever you change any of the switcher settings, you will be asked to confirm these changes when you exit the menu system. In this case, since we changed **BNC C10** to an **Alpha**, the switcher requires us to confirm this change.

```
WARNING!


You are about to change the switcher's
installation settings.
0. Confirm            1. Cancel




              10    1    SEL
              Down  Up   Accept
```
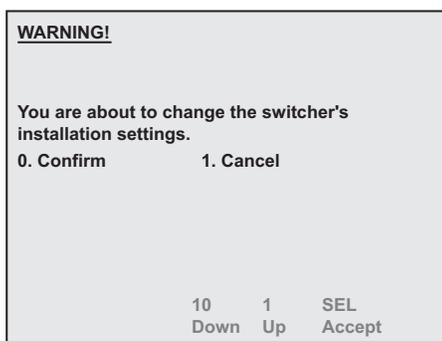
Installation Change Screen

7. Accept or cancel these changes as follows:

⚠ **Important** | As this has been an example, you should press **1. Cancel** so as not to change the setting of your Synergy 100 MD switcher.

- Press **0. Confirm** to accept the changes.
- Press **1. Cancel** to exit the menus safely, without making any changes. The system returns to the previously stored settings.

This completes the example procedure for navigating to the **Inputs Menu** and setting up a particular BNC.

Help Features

A help feature is provided for convenient online asisstance as you operate your Synergy 100 MD switcher.

Help Menu

The **Help Menu** provides a list of important "hidden" switcher functions. For example, you can access instructions to use the two-button **Copy Key** function.

When a function is selected, information about the requested function is displayed in the lower half of the menu screen.

Use the following procedure to access and browse the **Help Menu**:

1. Navigate to the **Help Menu** as follows:

    •   Press **MENU** to display the **Main Menu**.

    •   Press **9. Help Menu** to display the **Help Menu**.

```
Help Menu

                    Copy Key
                    Key Swap
                    Resetting the Switcher
                    Shift Buttons
                    Transition Preview

You can only copy key 1 onto key 2, except matte
fill color. Set up KEY 1, then press and hold the key
type button of KEY 1. Press KEY 2 Effects Keyers
group and release both buttons.

MENU    100        10      1      SEL
Exit    Previous   Down    Up     Accept
```
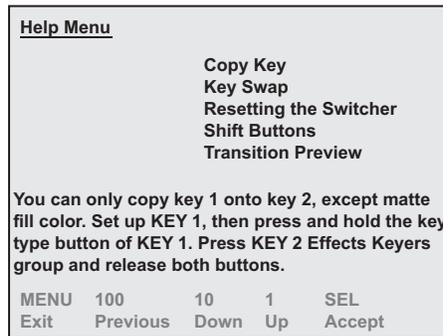
Help Menu

2. Use the ⬇ and ⬆ buttons to select a function, and view information about the function in the lower half of the menu screen.

This completes the procedure to access and browse the **Help Menu**.

Switcher Basics

In This Chapter

This chapter presents detailed *basic* switcher operating procedures, rules and methods.

The following topics are discussed:

- Switcher Personality
- Basic Switcher Functions
- Buttons
- Reverse SHIFT Mode
- Flip Flop Operations
- Key Bus
- On-Air Indicators
- Knobs
- Fade to Black
- Resetting the Switcher
- Software Reset
- Full Restart
- Shutting Down the Switcher

Switcher Personality

From the **Personality Menu** you can set a number of features that affect how the switcher will operate or react to certain situations. These include the ability to perform a transition preview, auto recall, or how the switcher will react to certain button presses, such as DSK drop or the menu button. You will also use the Personality Menu to set the sleep time for the switcher.

The following topics are discussed:

- Transition Preview

- DSK Drop

- Sleep Time

- Menu Button Operation

- Auto Recall

- Global-Store Memory Recall

- Isolate MultiDSK

Transition Preview

The Transition Preview (TransPV) feature allows you to preview a complete transition on the Preview Monitor, without affecting the Program output.

Use the following procedure to enable the transition preview feature.

1. Navigate to the **Personality Menu** as follows:

   - Press **MENU** to display the **Main Menu**.

   - Press **6. Personality** to display the **Personality Menu**.

```
Personality - Synergy 100

0. Trans PV      On           5. GstoreMem   On
1. DSK Drop                   6. Isolate DSK  Off
2. Sleep Time    10 min
3. Menu Bttn     Menu Only
4. AutoRcall     On




MENU    100          10     1      SEL
Exit    Previous     Down   Up     Accept
```

Personality Menu

2. Enable the transition preview feature as follows:

   - Press **0. Trans PV**.

   - Press the right **SEL** to toggle this feature **On** or **Off**.

✓ **Operating Tip**
> To perform a **Transition Preview**, press and *hold* the transition type button (**DISS** or **WIPE**) while performing the transition. The complete transition will be displayed on the Preview Monitor.

This completes the procedure for enabling the auto transition feature.

DSK Drop

The Downstream Keyer Drop (DSK Drop) feature allows you to have the DSK cut off-air whenever a new source is selected directly on the Program Bus. This means that is the DSK in on-air and you select any crosspoint on the Program Bus, the DSK will be cut off-air and the new source on the Program Bus will be cut on-air.

✎ **Note** The DSK Drop feature will not affect the DSK if a transition is performed on the Program Bus, or if the same crosspoint button on the Program Bus is pressed.

Use the following procedure to enable the DSK drop feature.

1. Navigate to the **Personality Menu** as follows:

    • Press **MENU** to display the **Main Menu**.

    • Press **6. Personality** to display the **Personality Menu**.

```
Personality - Synergy 100
0. Trans PV    On            5. GstoreMem   On
1. DSK Drop    Manual        6. Isolate DSK Off
2. Sleep Time  10 min
3. Menu Bttn   Menu Only
4. AutoRcall   On




MENU    100            10     1     SEL
Exit    Previous       Down   Up    Accept
```

Personality Menu

2. Enable the DSK drop feature as follows:

    • Press **1. DSK Drop**.

    • Press the right **SEL** button to toggle this feature between **Auto** or **Manual**.

        ~ **Auto** — Select this option to have the DSK automatically cut off-air when a new source is selected on the Program Bus.

        ~ **Manual** — Select this option to have the DSK take *no* action when a new source is selected on the Program Bus.

This completes the procedure for enabling the DSK drop feature.

Sleep Time

The Sleep Time feature allows you to set the amount of time that must pass without the control panel being used before the control panel goes into Sleep Mode. In sleep mode the buttons and displays on the control panel will not be lit and

✎ **Note** Having the switcher go into sleep mode, or pressing a button to bring the switcher out of sleep mode, will not affect the current settings of the switcher.

Use the following procedure to enable and set the sleep time feature.

    1.   Navigate to the **Personality Menu** as follows:

        •   Press **MENU** to display the **Main Menu**.

        •   Press **6. Personality** to display the **Personality Menu**.

```
Personality - Synergy 100

0. Trans PV     On            5. GstoreMem   On
1. DSK Drop                   6. Isolate DSK  Off
2. Sleep Time   10 min
3. Menu Bttn    Menu Only
4. AutoRcall    On




MENU    100        10      1      SEL
Exit    Previous   Down    Up     Accept
```

Personality Menu

    2.   Enable and set the sleep time feature as follows:

        •   Press **2. Sleep Time**.

        •   Use the ⬇ and ⬆ buttons to set the time interval that must pass before the switcher will go into sleep mode.

✏	**Note**	Setting the Sleep Time interval to **Off** will *disable* the Sleep Time feature.

        •   Press **SEL** in the **System Control Group** to accept the new setting.

This completes the procedure for enabling and setting the Sleep Time feature.

Menu Button Operation

The Menu Button feature allows you to set the action that is taken when the **MENU** button in the **System Control Group** is pressed. You can have the switcher bring up the menu system, or enter Edit mode when the button is pressed or double-pressed.

✏	**Note**	You must have an editor set up in the communications menu in order to be able to control the Synergy 100 MD switcher from an editor.

Use the following procedure to set the action taken when the **MENU** button is pressed.

    1.   Navigate to the **Personality Menu** as follows:

        •   Press **MENU** to display the **Main Menu**.

        •   Press **6. Personality** to display the **Personality Menu**.

```
Personality - Synergy 100

0. Trans PV      On            5. GstoreMem   On
1. DSK Drop                    6. Isolate DSK  Off
2. Sleep Time   10 min
3. Menu Bttn    Menu Only
4. AutoRcall    On




MENU    100          10      1    SEL
Exit    Previous     Down    Up   Accept
```

Personality Menu

2. Set the action taken when the **MENU** button is pressed as follows:

- Press **3. Menu Bttn**.

- Use the ⬇ and ⬆ buttons to set the action for the **MENU** button. You can choose between the following:

  ~ **Menu - Edit** — Select this option to have a *single* press of the **MENU** button bring up the **Menu**, and a *double-press* enable or disable the **Editor Mode**.

  ~ **Edit - Menu** — Select this option to have a *single* press of the **MENU** button enable or disable the **Editor Mode**, and a *double-press* bring up the **Menu**.

  ~ **Menu Only** — Select this option to have the **MENU** button bring up the **Menu** only. For this option you *cannot* enable or disable the **Editor Mode** with the **MENU** button.

✓ **Operating Tip**

> You can still enable or disable the **Editor Mode** from the **Effects Menu** with the **Menu Button** set to **Menu Only**.

- Press **SEL** in the **System Control Group** to accept the new setting.

This completes the procedure for setting the action that is taken when the **MENU** button is pressed.

Auto Recall

The Auto Recall feature allows you to have memory attributes, such as Effects Dissolve (**EFF DISS**), saved with the memory so that when the memory is recalled, and **Auto Recall** is active, **Effects Dissolve** will be toggled **On**.

Use the following procedure to enable the auto recall feature.

1. Navigate to the **Personality Menu** as follows:

- Press **MENU** to display the **Main Menu**.

- Press **6. Personality** to display the **Personality Menu**.

```
Personality - Synergy 100
0. Trans PV      On            5. GstoreMem   On
1. DSK Drop                    6. Isolate DSK  Off
2. Sleep Time   10 min
3. Menu Bttn    Menu Only
4. AutoRcall    On




MENU    100           10      1     SEL
Exit    Previous      Down    Up    Accept
```

Personality Menu

2. Enable the auto recall feature as follows:

- Press **4. AutoRcall**.
- Press **SEL** in the **System Control Group** to toggle this feature **On** or **Off**.

This completes the procedure for enabling the auto recall feature.

Global-Store Memory Recall

The **Global-Store Memory Recall** feature allows you to enable or disable Global-Store Memory Recalls on your switcher. Setting this feature to **ON** will recall the previously saved Global-Store memory. Setting this feature to **OFF** will prevent Global-Store Memory Recalls from being performed.

Use the following procedure to enable the **Global-Store Memory Recall** feature.

1. Navigate to the **Personality Menu** as follows:

- Press **MENU** to display the **Main Menu**.
- Press **6. Personality** to display the **Personality Menu**.

```
Personality - Synergy 100
0. Trans PV      On            5. GstoreMem   On
1. DSK Drop                    6. Isolate DSK  Off
2. Sleep Time   10 min
3. Menu Bttn    Menu Only
4. AutoRcall    On




MENU    100           10      1     SEL
Exit    Previous      Down    Up    Accept
```

Personality Menu

2. Enable the auto recall feature as follows:

- Press **5. GstoreMem**.
- Press **SEL** in the **System Control Group** to toggle this feature **On** or **Off**.

This completes the procedure for enabling the **Global-Store Memory Recall** feature.

Isolate MultiDSK

You can isolate the two MultiDSKs to prevent them from being affected by memory recalls and switcher soft-resets. Isolated MultiDSKs also can not be included in Program/Preset-MLE transitions (you can still transition them using the keys in the **Dowstream Keyer Group**. Isolated MultiDSKs are not affected by certain actions that you perform on the switcher as follows:

- **Memory Recalls** — Memory registers that were saved with MultiDSK sources and configurations will not overwrite the current MultiDSK settings when recalled. The non-MultiDSK settings in the memory registered will be recalled.

- **Switcher Soft-Reset** — Performing a switcher soft-reset will not return the MultiDSKs to a default state. All MultiDSK settings including the selected source, key type, and on-air status will be preserved.

- **Program/Preset MLE Transitions** — You can not include MultiDSKs in Program/Preset MLE transitions. You must transition the MultiDSKs on and off-air using only the buttons in the **Downstream Keyer Group**.

Use the following procedure to isolate your MultiDSKs:

1. Navigate to the **Personality Menu** as follows:

   - Press **MENU** to display the **Main Menu**.
   - Press **6. Personality** to display the **Personality Menu**.

```
Personality - Synergy 100

0. Trans PV      On              5. GstoreMem   On
1. DSK Drop      Manual          6. Isolate DSK  Off
2. Sleep Time    10 min
3. Menu Bttn     Menu Only
4. AutoRcall     On




MENU    100         10      1      SEL
Exit    Previous    Down    Up     Accept
```

Personality Menu

2. Press **6. Isolate DSK** to toggle this option on or off.

This completes the procedure to isolate your MultiDSKs.

Basic Switcher Functions

This section provides basic information and general rules regarding **Synergy 100 MD** operation. The following topics are discussed:

- Buttons
- Reverse SHIFT Mode
- Flip Flop Operations

Buttons

There are three basic types of buttons on the **Synergy 100 MD** switcher; **Crosspoint**, **Function**, and **Shift** buttons. These buttons will act in either a *latching* mode, or a *momentary* mode, depending on the action they are performing.

Button Modes

There are two basic modes of button operation on the switcher, *latching buttons*, such as crosspoint buttons, and *momentary buttons*, such as **CUT** or **AUTO TRANS** buttons. The latching buttons will illuminate when pressed and stay illuminated until either a certain function is performed, or another button is selected. For example, if you press a crosspoint button, it will remain lit until you press another crosspoint button in the same bus, or you perform a transition.

Momentary buttons will illuminate when they are pressed and then turn off on their own when their function has been completed. For example, if you press the **AUTO TRANS** button, it will illuminate and the switcher will perform a transition. When the transition is complete, the **AUTO TRANS** button will turn off, indicating that the Auto Transition has been completed.

Crosspoint Buttons

The crosspoint buttons are located on the **Key**, **Program**, and **Preset** buses on the control panel. These latching buttons tell the switcher which video source is selected on each bus. These video sources can be internally generated, such as **BLACK** and **COLOR BKGD**, or from external video sources that are connected to the frame via BNC connectors. Refer to Chapter 7, "**BNC Configuration and Check**" in the *Synergy 100 MD Engineering Manual* for details on setting up video sources.

Function Buttons

Function buttons make up the majority of the non-crosspoint buttons on the control panel and will perform a specific function when pressed. These buttons can act in either a latching or momentary mode, depending on the function the button is performing.

The latching buttons, such as the **AUTO SELECT** button in the **Effects Keyers Group**, will tell the switcher to act in a certain way, depending on the button, or button combination, that is pressed.

The momentary buttons, such as the **AUTO TRANS** button in the **Transition Control Group**, will tell the switcher to perform a certain task, and act upon the selections that have been made with the latching buttons.

SHIFT Buttons

There are three **SHIFT** buttons on the **Synergy 100 MD** control panel, one for each bus. These shift buttons are pressed and held in order to access video and key sources that have been mapped to

crosspoints *beyond* the number of available buttons on each bus. The mapping itself is performed during the installation procedure.

✎   **Note** | Active crosspoints **11** through **19** can only be accessed by using the **SHIFT** button. When you select a shifted crosspoint, both the crosspoint button and the shift button will remain lit.

Use the following procedure to select a shifted crosspoint on any bus:

1. Press and hold the **SHIFT** button.

2. Press the desired crosspoint.

3. Release both buttons.

The **SHIFT** button plus the selected source both stay lit, as indicated in the illustration below.

| KEY1 KEY2 DSK | BLACK | CAM 1 | CAM 2 | VTR 1 | VTR 2 | VTR 3 | CG 1 | CG 2 | Global Store1 | SHIFT |
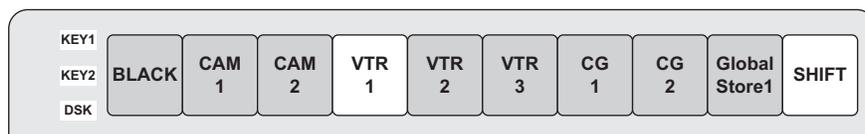
Key Bus — Shifted Crosspoint Selected

✔   **Operating Tip** | When a shifted crosspoint has been selected, pressing another crosspoint button without holding the **SHIFT** button will select an unshifted crosspoint.

Reverse SHIFT Mode

A special mode called **Reverse SHIFT** can be activated during switcher setup. Activating the **Reverse SHIFT** mode makes each **Key Bus** button shifted *all the time* — as the default state. For example, if you press any crosspoint button, without pressing the **SHIFT** button, the shifted crosspoint will be taken and the **SHIFT** button will be lit. If you hold the **SHIFT** button and press a crosspoint button, an unshifted crosspoint will be taken.

✎   **Note** | The Reverse Shift Mode applies to the **Key** bus only. Crosspoints on the **PGM** and **PST** buses will be unaffected.

Flip Flop Operations

The **Program** and **Preset** buses operate in flip-flop mode when a transition is performed. When you perform a **Cut**, **Dissolve**, or **Wipe** transition between the **Program** and **Preset** buses, the two lit crosspoint buttons *swap* places between the **PGM** and **PST** buses. This is called a flip-flop.

For example, if you select **CAM 2** on the **PGM** bus and **VTR 1** on the **PST** bus, **CAM 2** will be on-air and **VTR 1** will be taken on-air during the next **Background** transition.

✔   **Operating Tip** | A **Background** transition is between the **PGM** bus and **PST** bus, and does not involve the **Key** bus.
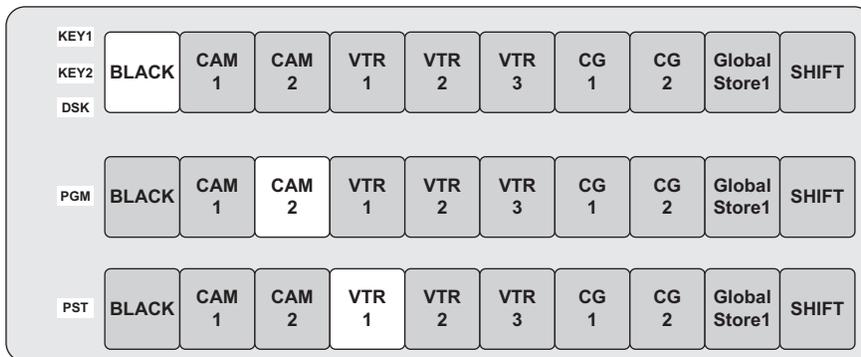
Flip-Flop Operation — Buses Before Transition

After the Background transition is performed, the two buses switch crosspoint selections so that **VTR 1** is now on the **PGM** bus and **CAM 2** in on the **PST** bus. This is a Flip-Flop.
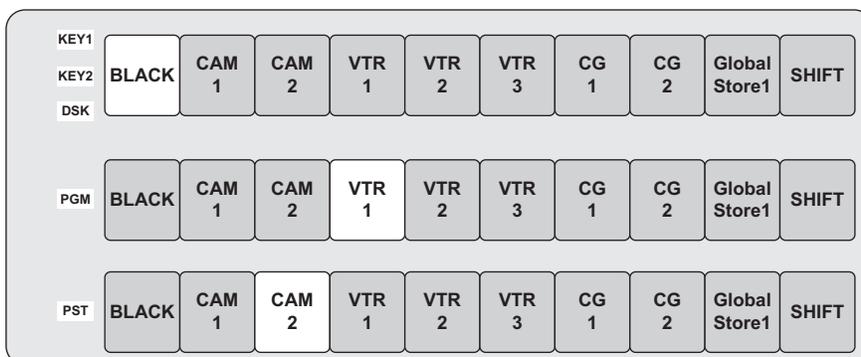
Flip-Flop Operation — Buses After Transition

If you were to perform another background transition, the crosspoint selections would Flip-Flip back to the original selections.

In this manner, the **PGM** bus *always* shows the crosspoint source that is on-air and the **PST** bus always shows the crosspoint source that will be taken on-air during the next Background transition.

Key Bus

The **Key Bus** is where you select the crosspoint source for **Key 1**, **Key 2**, and the **DSK**. The Keyer that has control of the Key Bus is indicated to the left of the bus by the illuminated name. In the case of the MultiDSK option, the DSK indicator will be lit, and the Key Bus will be assigned to the DSK that the Downstream Keyer Group is assigned to.
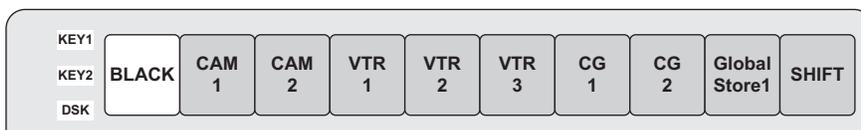
Key Bus

✓ **Operating Tip**

As you switch between Key 1, Key 2, and the DSKs, the crosspoint buttons will indicate which sources are selected for that key. If you change a source, this will not affect the other selections.

On-Air Indicators

There are several **ON AIR** indicators on the **Synergy 100 MD** control panel that indicate what is contributing to the main Program output at any one time. These indicators are located in the **Effects Keyers Group** and the **Transition Control Group**, as indicated in the following illustration.
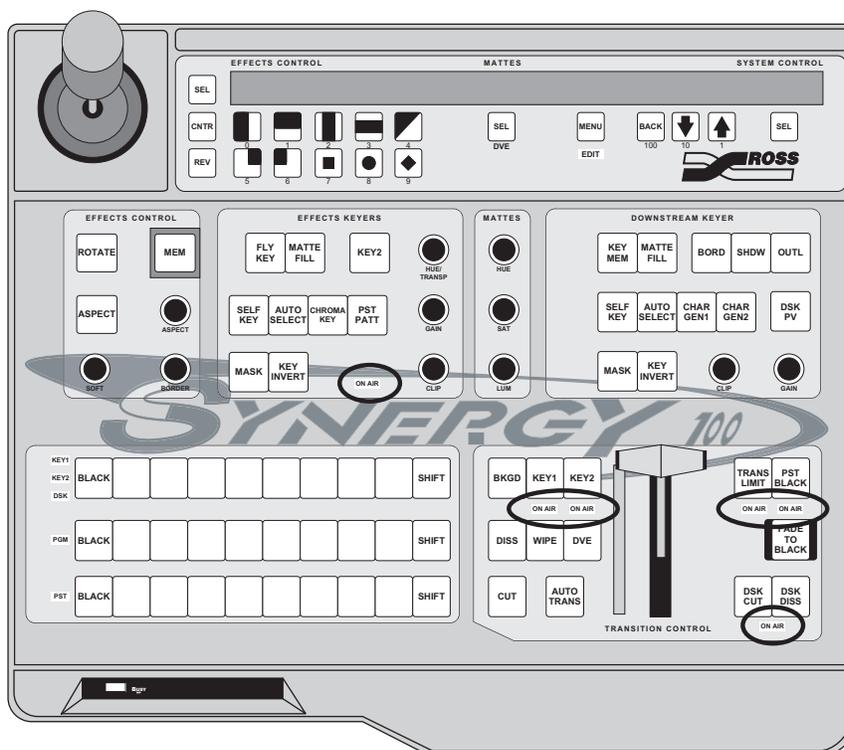
Synergy 100 MD — ON AIR Indicators

Effects Keyers Group

There is a single **ON AIR** indicator in the Effects Keyers Group that will be lit if the selected key in the group is contributing to the main program output. For example, if **Key 1** is on-air and **Key 2** is not, the **ON AIR** indicator will be lit when the **KEY2** button is not selected. This means that the **Effects Keyers Group** is controlling **Key 1**, which is on-air and so the **ON AIR** indicator will be lit. If you press the **KEY2** button to assign the **Effects Keyer Group** to **Key 2**, the **ON AIR** indicator will not be lit because **Key 2** is not on-air.

Transition Control Group

There are three **ON AIR** indicators in the **Transition Control Group** that show you if **Key 1**, **Key 2**, or **DSK 1** are on-air and contributing to the main program output.

✎ **Note** | If you have the MultiDSK option installed, the two **ON AIR** indicators below the **TRANS LIMIT** and **PST BLACK** buttons will show if **DSK4** or **DSK5** are on-air.

Crosspoint Buttons

When you select a crosspoint on the **Key**, **PGM**, or **PST** buses, the selected button will illuminate to show that it has been selected. If that bus is the **PGM** bus, or an on-air **Key** bus, the crosspoint button

will be lit **Red** to indicate that the crosspoint is contributing to the main program output. For example, if you select Key 1 for your next transition by pressing the **KEY1** button in the **Transition Control Group**, the **Key** bus will be assigned to **Key 1** and the lit crosspoint will be taken on-air with the next transition. If you perform a transition, you will see the crosspoint button change color from **White** to **Red**, indicating that it is now on-air.

Knobs

There are ten rotary, end-stop, knobs on the **Synergy 100 MD** control panel that allow you to adjust various values.
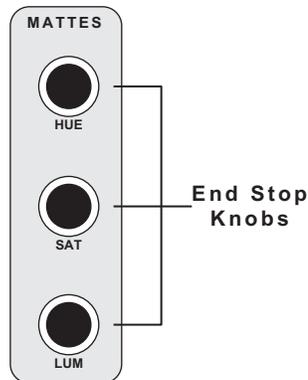
Mattes Group — End-Stop Knobs

Each of these knobs has an upper and lower limit that it cannot be turned past. When using the knobs, it may be necessary to re-synchronize the knob position with the electronic values you are adjusting.

✓	**Operating Tip**	To re-synchronize an **End-stop Knob**, turn the knob fully clockwise, then fully counter-clockwise. Full-range adjustments can now be made.

Fade to Black

The Fade to Black function allows you to perform an Auto Transition to Black for the entire Program output of the switcher. It is the last effect that the switcher is capable of performing before the final video signal is passed to the Program Output.

✎	**Note**	Fade to Black only affects the program output of the switcher. Aux Bus outputs or Clean Feed outputs will not be affected by Fade to Black.
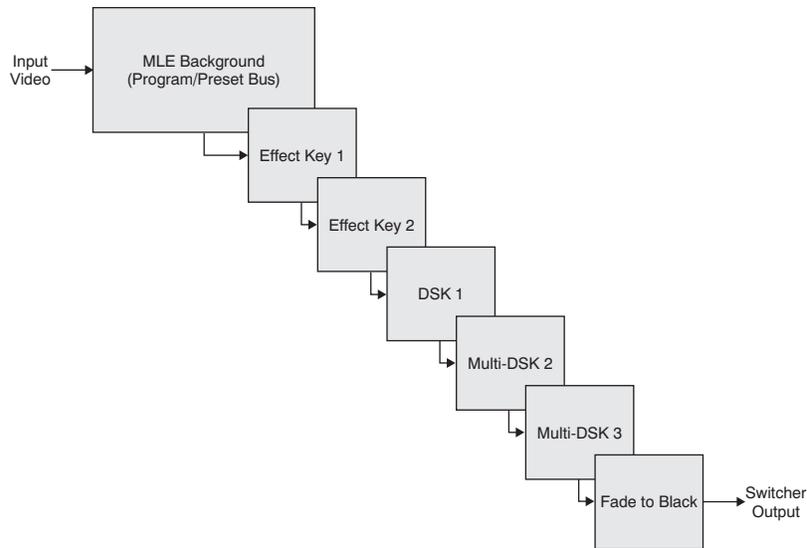
Video Flow Through the Switcher — Fade to Black

Performing a Fade to Black

Use the following procedure to perform a Fade to Black:

1. Set the Fade Rate for the Fade to Black as follows:
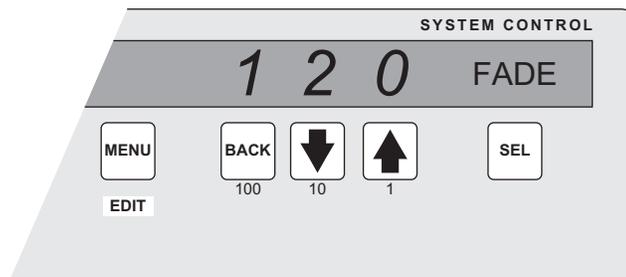
System Control Group — Fade Rate

- Press the **SEL** button in the **System Control Group** repeatedly until the word **FADE** appears in the **Mode Area**.
- Use the **100**, **10** and **1** buttons to set the rate for the transition in frames.

2. Press the **FADE TO BLACK** button in the **Transition Control Group**.

   The **FADE TO BLACK** button will illuminate as the transition is being performed

Note | If you want to cancel, or reverse, the Fade to Black, press the **FADE TO BLACK** button again and the fade will reverse.

The **FADE TO BLACK** button will flash **Red** when the fade to black transition has been completed.

Operating Tip | When the switcher is in Fade to Black, you can perform any other effects or transitions in order to prepare your shot for when you perform a Reverse Fade to Black and return to the normal program output.

3. Press the **FADE TO BLACK** button again to fade from black to the normal program output.

This completes the procedure for performing a Fade to Black operation.

Resetting the Switcher

If required, the Synergy 100 MD can be reset manually from the control panel. There are two types of resets:

- • A **Software Reset** affects software only

- • A **Full Reset** affects hardware and software simultaneously

Software Reset

The software reset function is performed in the **Effects Control** and **System Control** groups. Use the following figure for reference:

⚠ **Important** | Performing a Reset will set all crosspoints to Black, including the main PGM output.

Software Reset Function

Press and hold the **CNTR** button in the **Effects Control Group** and the **SEL** button in the **System Control Group** to perform a software reset. Note the small "reset" symbols beside each button.

This resets the control panel to its default values. Switcher memory registers, personality registers, and installation registers are not affected by the reset, but all other switcher parameters, such as the current state of the panel, are reset. **BLACK** will be selected on all buses.

Full Restart

This function performs both a hardware and a software reset simultaneously. Switcher memory registers, personality registers, installation registers, and custom control registers are not affected by the reset, but all other switcher parameters (for example, the current state of the panel) are reset. **BLACK** will be selected on all buses.

Important | It is not recommended to reset the frame by turning the power off and then on again as this may damage the hard disk.

Use the following procedure to perform a full restart of the switcher:

1. Navigate to the **System Resets Menu** as follows:

   • Press **MENU** to display the **Main Menu**.

   • Press **7. Options** to display the **Options Menu**.

   • Press **5. System Resets** to display the **System Resets Menu**.

   ```
   System Resets
   0. All
   1. System Shutdown
   2. System Restart
   3. Inputs/Outputs
   4. Restart Global-Store




   MENU    100        10     1     SEL
   Exit    Previous   Down   Up    Accept
   ```
   System Resets Menu

2. Press **2. System Restart** to display the **System Restart Confirmation Screen**.

   ```



   Are you sure you want to RESTART the system?

   0. Confirm            1. Cancel




             10     1     SEL
             Down   Up    Accept
   ```
   System Restart Confirmation Screen
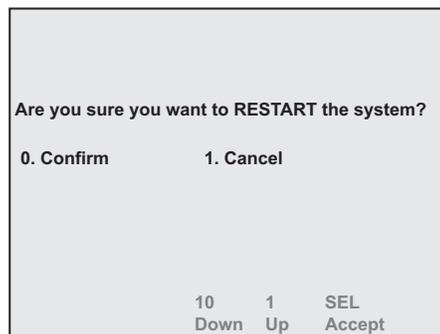
3. Press **0. Confirm** to restart the switcher.

Operating Tip | Press **1. Cancel** to *not* restart the switcher and return to the **Default Menu**.

This completes the procedure for restarting the switcher.

Shutting Down the Switcher

This function powers off the switcher, placing the CPU Board into a hibernation mode. In this mode it is safe to turn off all your power supplies and remove the CPU Board.

⚠ **Important** | It is not recommended to shut down the frame by turning the power off, as this may damage the hard disk.

Use the following procedure to shutdown the switcher:

1. Navigate to the **System Resets Menu** as follows:

    • Press **MENU** to display the **Main Menu**.

    • Press **7. Options** to display the **Options Menu**.

    • Press **5. System Resets** to display the **System Resets Menu**

```
System Resets
0. All
1. System Shutdown
2. System Restart
3. Inputs/Outputs
4. Restart Global-Store




MENU   100        10     1     SEL
Exit   Previous   Down   Up    Accept
```

System Resets Menu

2. Press **1. System Shutdown** to display the **System Shutdown Confirmation Screen**.

```
Are you sure you want to SHUTDOWN the system?

0. Confirm          1. Cancel




            10     1     SEL
            Down   Up    Accept
```
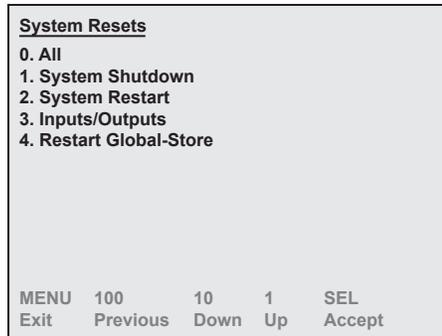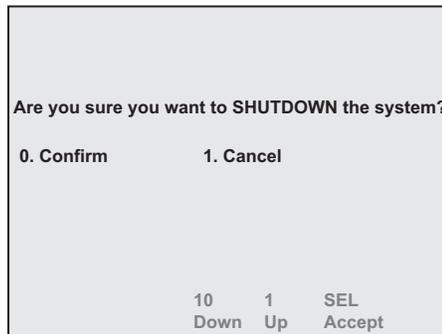
System Shutdown Confirmation Screen

3. Press **0. Confirm** to shutdown the switcher.

This completes the procedure for shutting down the switcher.

Transitions

In This Chapter

Transitions are the most frequently used switcher operations. The simplest transition is a direct selection of the next picture on the **PGM** (Program) bus, performed by pressing another crosspoint. This simple "cut" provides an instantaneous change but does *not* allow you to preview the next picture.

Other types of transitions involve the **PST** (Preset) bus and the controls in the **Transition Control Group**. Here, using cuts, dissolves, wipes, as well as DVE transitions, you have a full preview of the upcoming picture.

The following topics are discussed in this chapter:

- Transition Control Group
- Working with Next Transitions
- Example Transitions
- Eight Steps to a Flawless Transition
- Performing Auto Transitions
- Changing Auto Transition Rates
- Performing Manual Transitions
- Performing Cuts
- Performing Dissolves
- Performing a Transition Limit Effect
- Performing a Transition Preview
- Performing a Preset Black Transition

Transition Control Group

The **Transition Control Group** is where all **PGM**, **PST**, **Key**, and **DSK** transitions are set up and performed. You select which buses you want to take to air during the next transition, as well as how you want the transition to be performed.

Transition Control Group Overview

This section includes descriptions of the Transition Control Group of the Synergy 100 MD control panel.
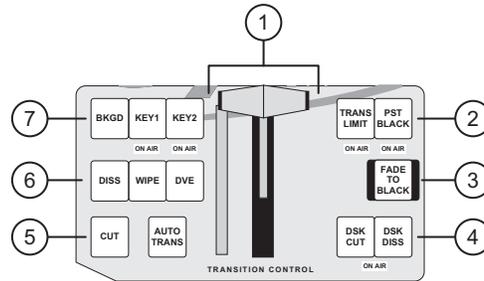
Transition Control Group

1) Fader Section	4) DSK Transition Section	7) Next Transition Section
2) Transition Parameter Section	5) Automatic Transition Buttons	
3) Fade To Black Button	6) Transition Type Section	

1. Fader Section
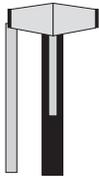
The **Fader** handle is used to perform manual transitions. The "type" of transition is based on the transition button that is selected in the **Transition Type Section**. The **Fader** performs one complete transition when it is moved from one limit to the other.

The **Transition Progress Bar** located to the left of the **Fader** indicates the direction of **Fader** travel during a transition. As the transition progresses, the LED segments of the bar will illuminate. For full or *partial* transitions (when the **Fader** is paused part-way through), the unlit portion of the bar indicates the direction that the **Fader** must be moved in order to complete the transition.

Note

It does not matter which limit you start or end the transition on, as long as you move the fader from one limit to the other, one full transition will be performed and the crosspoint selections on the PGM and PST buses will flip-flop.

2. Transition Parameter Section

The buttons in the **Transition Parameter Section** allow you to set the Transition Limit and Preset Black functions for the next transition.

Note

If you have the **MultiDSK** option, the **TRANS LIMIT** and **PST BLACK** buttons will be **DSK4 DISS** and **DSK5 DISS**, respectively. The Transition Limit or PST Black features will be disabled.

- The **TRANS LIMIT** button allows you to hold a transition at a selected position, between the two **Fader** end limits. The transition can then either be reversed,

manually continued, or cut to the end. Refer to the section "**Performing a Transition Limit Effect**" on page 5–12 for details. If the MultiDSK option is enabled, the **TRANS LIMIT** button is re-tasked as **DSK4 DISS**.

PST BLACK

• The **PST BLACK** button prepares a special two-stage transition that sets the **PST** bus to **Black** for the first transition and then returns the crosspoint selections to their original selections for the next transition. Refer to the section "**Performing a Preset Black Transition**" on page 5–14 for details.

3. Fade To Black Button

FADE TO BLACK

• The **FADE TO BLACK** button will initiate a Fade to Black transition, or return the switcher from a Fade to Black transition.

4. DSK Transition Section

The two buttons in the **DSK Transition Section** are used to initiate a transition of the Downstream Keyer.

DSK CUT

• The **DSK CUT** button performs a cut of the Downstream Keyer, either taking it instantly on-air or off-air.

DSK DISS

• The **DSK DISS** button performs a dissolve-type Auto Transition of the Downstream Keyer, taking it either on-air or off-air with a dissolve. The rate of the dissolve is set in the **System Control Group**. Refer to the section "**Changing Auto Transition Rates**" on page 5–9 for more information.

✎ **Note** > The **ON AIR** indicator below the two buttons will illuminate when **DSK 1** is on air.

5. Automatic Transition Buttons

CUT

• The **CUT** button performs a cut of the source selected in the **Next Transition Section**. For example, if the **BKGD** button is selected, indicating a **Background** transition is to be run, the transition is performed between the **PST** and **PGM** buses, taking the source selected on the **PST** bus instantly on-air. The PGM and PST buses flip-flop during the cut. Refer to the section "**Performing Cuts**" on page 5–10 for more information.

AUTO TRANS

• The **AUTO TRANS** button performs a transition of the source selected in the **Next Transition Section**. The type of transition that is performed is selected in the **Transition Type Section**. Refer to the section "**Performing Auto Transitions**" on page 5–8 for more information.

6. Transition Type Section

The buttons in the **Transition Type Section** allow you to choose the *type* of transition to perform during the next transition.

DISS

• The **DISS** button selects a dissolve as the transition type. When a dissolve is performed, the video signal on the **PST** bus gradually mixes into the video signal on the **PGM** bus. At the end of the transition, the **PST** video signal completely replaces the **PGM** video signal and the buses flip-flop.

The **DISS** button is mutually exclusive with the **WIPE** and **DVE** buttons. Refer to section "**Performing Dissolves**" on page 5–11 for more information.

WIPE

- The **WIPE** button selects a wipe as the transition type. When a wipe is performed, the video signal on the **PST** bus gradually replaces the video signal on the **PGM** bus using a wipe pattern chosen from the **Effects Control Group**. At the end of the transition the **PST** video signal completely replaces **PGM** video signal and the buses flip-flop.

  The **WIPE** button is mutually exclusive with the **DISS** and **DVE** buttons. Refer to the section "**Using Wipes**" on page 6–6 for more information.

DVE

- The **DVE** button assigns the next transition to the primary DVE.

7. Next Transition Section

The **Next Transition Section** includes three buttons that allow you to select the combination of buses that will be included in the *next transition*.

✓ **Operating Tip**

> To take more than one bus to air during a transition, simultaneously press the associated buttons. For example, to take the Background bus and Key 2 bus, simultaneously press the **BKGD** and **KEY2** buttons.

BKGD

- The **BKGD** button tells the switcher to include a **PGM**/**PST** transition during the next transition. The source selected on the **PST** bus will be selected on the **PGM** bus and taken on-air. Similarly, the source selected on the **PGM** bus will be selected on the **PST** bus and taken off-air.

KEY1

- The **KEY1** button tells the switcher to include **Key 1** during the next transition as follows:

  ~ If the **Key 1** is currently **off-air**, the next transition will take **Key 1** on-air.

  ~ If the **Key 1** is currently **on-air**, the next transition will take **Key 1** off-air.

KEY2

- The **KEY2** button tells the switcher to include **Key 2** during the next transition as follows:

  ~ If the **Key 2** is currently **off-air**, the next transition will take **Key 2** on-air.

  ~ If the **Key 2** is currently **on-air**, the next transition will take **Key 2** off-air.

Refer to the section below for more information on performing a transition.

Working with Next Transitions

The **Next Transition Section** consists of three buttons that allow you to select the combination of buses that will be included in the *next transition*. The section also includes two **ON AIR** indicators that show the state of the two keys.
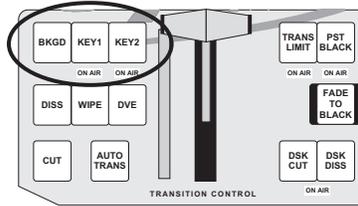
Transition Control Group — Next Transition Section

The **BKGD**, **KEY1**, and **KEY2** buttons are selected to define what you want to take on or off-air during the next transition. They can be selected in any combination, depending on the **Transition Type** you have selected and the **Key Type** you have selected for each key. Refer to the section "**Example Transitions**" on page 5–5 for more information on working with next transitions.

> ✎ **Note** A **MultiDSK4** and **MultiDSK5** transition can only be performed using the **DSK4 DISS** and **DSK5 DISS** buttons. Refer to the section "**Transition Control Group Overview**" on page 5–2 for details.

Example Transitions

The buttons that are selected in the Next Transition Section tell the switcher what to take on or off-air during the next transition. The following example runs through a series of transitions showing you how to combine Background and Key transitions:

> ✎ **Note** This example focuses on the Next Transition Section only. Although you can select crosspoint sources for the PGM, PST, and Key buses, the appearance of what you take to air may not be as expected due to the video flow rules. Refer to the section "**Introduction to Keying**" on page 7–2 for more information on setting up keys and how they will appear.

1. In the default state the **BKGD** button is selected.
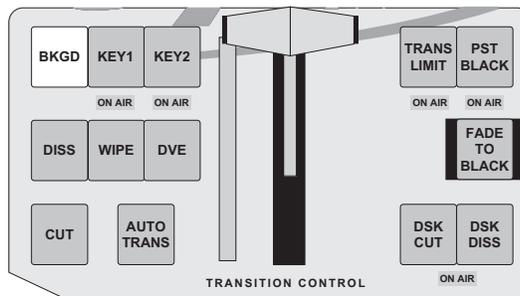
Performing a transition at this point will transition the **PGM** and **PST** buses only.

2. Press the **KEY2** button. Notice that the **BKGD** button is no longer lit.

BKGD KEY1 KEY2
ON AIR   ON AIR
DISS WIPE DVE
CUT   AUTO TRANS
TRANSITION CONTROL

TRANS LIMIT   PST BLACK
ON AIR   ON AIR
FADE TO BLACK
DSK CUT   DSK DISS
ON AIR
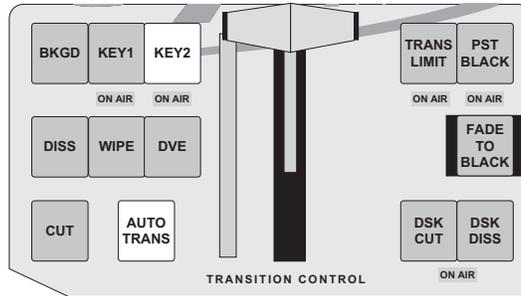
3. Press the **AUTO TRANS** button to perform a transition.

   The resulting transition will take **Key 2** on-air, and the **ON AIR** indicator below the **KEY2** button will be lit.

4. Simultaneously press the **BKGD** and **KEY1** buttons. Both buttons will now be lit.

BKGD KEY1 KEY2
ON AIR   ON AIR
DISS WIPE DVE
CUT   AUTO TRANS
TRANSITION CONTROL

TRANS LIMIT   PST BLACK
ON AIR   ON AIR
FADE TO BLACK
DSK CUT   DSK DISS
ON AIR
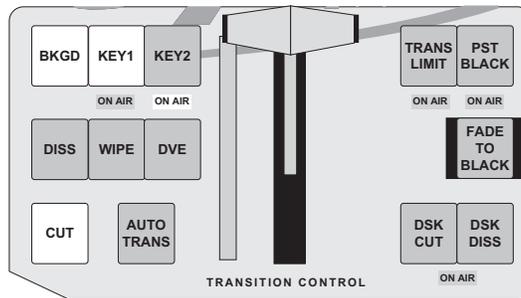
5. Press the **CUT** button to perform a transition.

   The resulting transition will take **Key 1** on-air, as well as perform a flip-flop of the **PGM**/**PST** buses. Notice that the **ON AIR** indicator below the **KEY1** button will be lit, and the **ON AIR** indicator below the **KEY2** button has not changed.

6. Press the **KEY2** button.

BKGD KEY1 KEY2
ON AIR   ON AIR
DISS WIPE DVE
CUT   AUTO TRANS
TR   L

TRANS LIMIT   PST BLACK
ON AIR   ON AIR
FADE TO BLACK
DSK CUT   DSK DISS
ON AIR
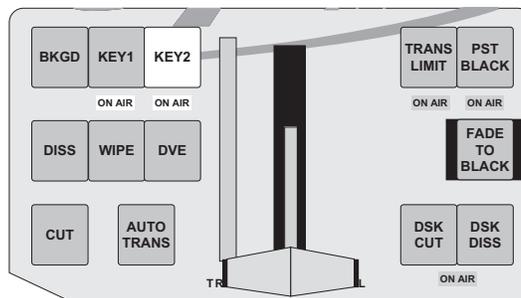
7. Move the **Fader Arm** from one limit to the other to perform a transition.

   The resulting transition will take **Key 2** off-air and the **ON AIR** indicator below the **KEY2** button will no longer be lit.

8. Simultaneously press the **BKGD**, **KEY1**, and **KEY2** buttons. All three buttons will now be lit.
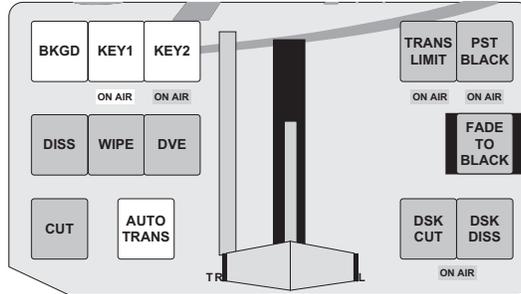
9. Press the **AUTO TRANS** button to perform a transition. Notice that both **ON AIR** indicators will be lit as the switcher transitions **Key 1** and **Key 2**.

    The resulting transition will take **Key 1** off-air, **Key 2** on-air, and perform a flip-flop of the **PGM**/**PST** buses. Notice that although we transitioned both keys, because **Key 1** was on-air and **Key 2** was off-air, the transition took **Key 1** off-air and **Key 2** on-air.
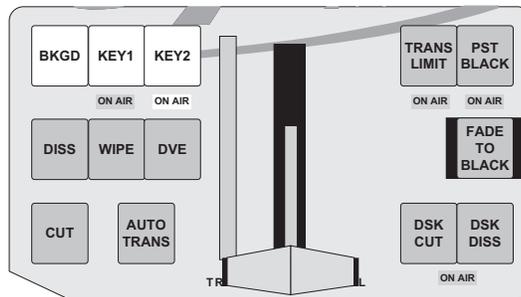
This completes the example transitions exercise. During this example we learned that you can perform different automatic or manual transitions on multiple sources. We also learned that a transition of multiple keys can produce different results, depending on whether the keys were on-air or not. Refer to the section "**Introduction to Keying**" on page 7–2 for more information on using keys.

✓	**Operating Tip**	The preview monitor output will show you the next scene. For example, if a key is currently *on-air* and the desired key button is lit, the preview monitor will show the key *off*.

Performing Transitions

This section includes information on performing auto transitions, manual transitions, cuts, dissolves, a transition limit effect, a Transition Preview, and a Preset Black transition. Information is also provided for preparing and running a transition.

Eight Steps to a Flawless Transition

The following steps will help you prepare and run a transition of either the **PGM**/**PST** buses, or any of the **Keys**:

1. Ensure that you have a **Preview** monitor connected.

2. Look at your **Program** monitor and determine which video elements you want to change — the background, Effects Keys, or a *combination* of the elements.

3. Press the desired "next transition" button(s).

4. Look at your **Preview** monitor and confirm that the monitor shows the desired video elements in the desired states (e.g., keys on, keys off, proper background video selected).

5. If one of the key elements is in the wrong state, press its associated "next transition" button and re-confirm the new composite image on **Preview**.

6. If you are bringing on a *new key*, ensure that the correct key source is selected and that it appears properly on **Preview**. If required, adjust the key source accordingly.

7. If the background image is wrong, select the correct image on the **PST** bus — or change the state of the **BKGD** button.

8. Once you have confirmed that the next image is correct on **Preview**, perform the transition — either manually with the **Fader**, or automatically using **CUT** or **AUTO TRANS**. Remember that the "next transition" buttons stay lit after the transition is complete.

Performing Auto Transitions

The **AUTO TRANS** button is used to run an automatic, timed, transition between the selected **Preview** and **Program** video signals. The following rules apply to Auto Transitions:

*   Auto Transition will perform a steady, timed transition from one video source to another.

*   Once started, an Auto Transition cannot be aborted back to the original video signal.

*   An Auto Transition can be completed by either pressing the **CUT** button, or moving the fader from one limit to the other.

*   If the fader is moved during an Auto Transition, the transition will pause until one of the following is done

    ~   The fader is moved to the opposite limit to complete the transition.

    ~   The fader is returned to the original limit without having taken control of the transition and the **AUTO TRANS** button is pressed again.:

    ~   The **CUT** button is pressed.

Note
> The **AUTO TRANS** button will remain lit until the transition has been completed, or the fader takes control of the transition.

Note

> If the Trans Limit function was active during the transition, the switcher will treat the point that the transition was stopped at as the Trans Limit for that particular transition.

- You can *not* initiate an Auto Transition or a Cut in the **Transition Control** group if the **Fader** is off its upper or lower limit.

Changing Auto Transition Rates

The rate at which an Auto Transition is run is set from the **System Control Group**. This value is in video frames and varies in time according to the video format you are using. If you are operating at 60 Hz, a single video frame is 1/30th of a second, whereas, at 50 Hz, a single video frame is 1/25th of a second. If you are using film, a video frame is 1/24th of a second.

Note that Transition Rates for MultiDSKs can only be set through the menu system. Refer to the section "**Setting MultiDSK Sources and Transition Rates**" on page 7–35 for more information.

Use the following procedure to set the Auto Transition Rate:

Note

> There is no way to cancel or undo your changes. If you do not want to keep your changes, you will have to follow the procedure to set the original rate again.

1. Press the right **SEL** button repeatedly until **AUTO** is displayed in the **Mode** area. If you want to adjust the **Fade to Black** rate, you would display **FADE** in the **Mode** area, and for **DSK Dissolve** you would display **DSK**. The rest of the procedure is the same.
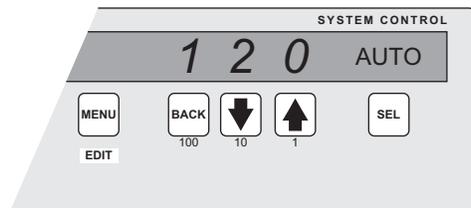
System Control Group

2. Use the **100**, **10** and **1** buttons to enter the desired Auto Transition rate, in frames, between **1** and **999**. The new rate is automatically updated and appears in the display.
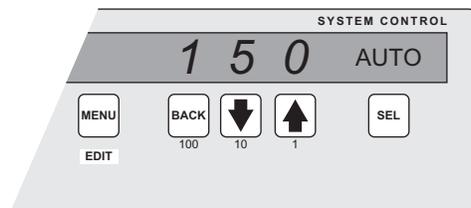
System Control Group

✓ **Operating Tip**

> If you press and hold one of the buttons, that value will reset back to the beginning.

This completes the procedure for setting the Auto Transition Rate. The switcher will use this rate for the next Auto Transition that is run.

Performing Manual Transitions

Use the following procedure to perform a manual transition:

1. Ensure that your **PGM** bus, **PST** bus, and keys are set up as desired.

2. In the **Next Transition Section**, select **BKGD**, **KEY1**, or **KEY2**, or any combination thereof as the next transition.

3. In the **Transition Type Section**, select the desired transition type — dissolve, wipe**,** or DVE effect.

4. Move the **Fader** from its current limit to the opposite limit. The speed at which you move the **Fader** determines the manual transition rate.

   • Remember that during a transition, the **Transition Progress Bar** LED segments illuminate as the **Fader** travels, with the unlit portion signifying the direction the **Fader** must be moved in order to complete the transition.

✎	**Note**	When the fader is off a limit, all buttons in the **Transition Control** group are disabled.

This completes the procedure for performing a manual transition.

Performing Cuts

A "background cut" is an instant switch between the **PGM** and **PST** buses. You can also perform a background cut simply by switching inputs on the **PGM** bus itself. This type of cut does *not* allow you to preview. Although we have used **BKGD** transitions between the **PGM** and **PST** buses as examples in the following procedure, remember that all types of transitions operate in the same manner, regardless of the **Next Transition** buttons selected.

Use the following procedure to perform a cut:

1. Select an input on the **PGM** bus.

✎	**Note**	If you double press a crosspoint button assigned to a Global-Store channel, the **Global-Store Menu** for that particular channel is displayed. You can use the menu to select an image and take it to air.

2. Select a different input on the **PST** bus.

3. In the **Next Transition Section**, select **BKGD** as the next transition. The figure below illustrates a *sample* setup and the associated monitor outputs — before the cut.
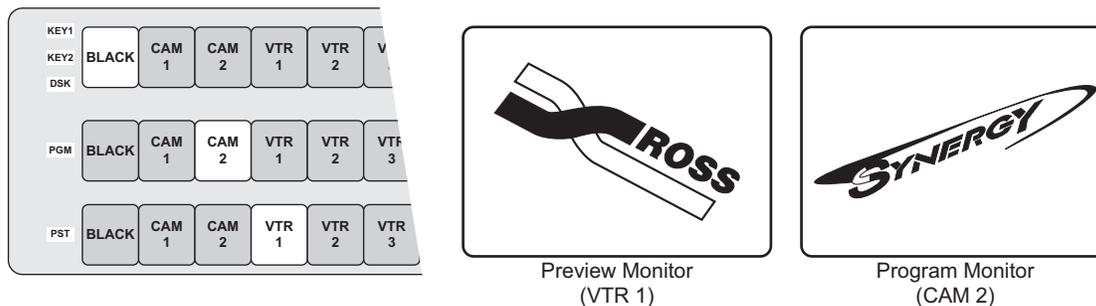
Sample Setup – Before a Cut

4. Press **CUT**. The inputs selected on the **PGM** and **PST** buses instantly exchange and the buses flip-flop. The figure below illustrates the MLE and monitor setup *after* the cut.

Preview Monitor
(CAM 2)

Program Monitor
(VTR 1)
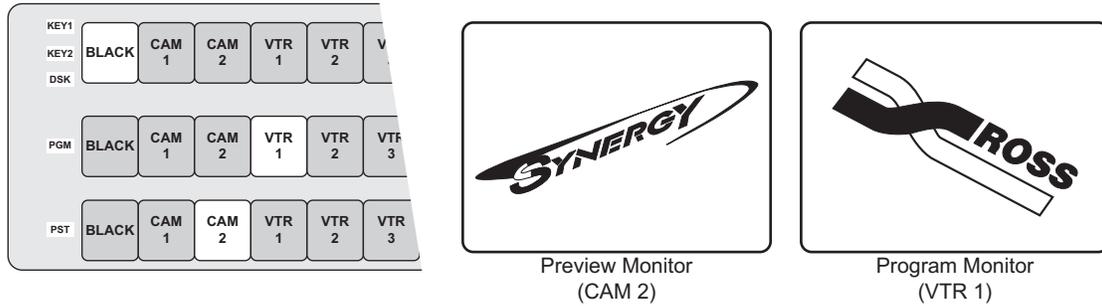
Sample Setup – After a Cut

5. Press **CUT** again to repeat the process and restore the original background.

This completes the procedure for performing a cut.

Performing Dissolves

In a "background dissolve" transition, the **PGM** bus video and **PST** bus video signals are gradually mixed together, until the **PST** bus video completely replaces the **PGM** bus video. Refer to the section "**Using Wipes**" on page 6–6 for complete instructions on performing wipe transitions.

Although we have used **BKGD** transitions between the **PGM** and **PST** buses as examples in the following procedure, remember that all types of transitions operate in the same manner, regardless of the **Next Transition** buttons selected.

Use the following procedure to perform a dissolve:

1. Select an input on the **PGM** bus.

2. Select a different input on the **PST** bus.

3. In the **Next Transition Section**, select **BKGD** as the next transition. The figure below illustrates a *sample* setup and the associated monitor outputs — before the dissolve.

Preview Monitor
(VTR 1)

Program Monitor
(CAM 2)
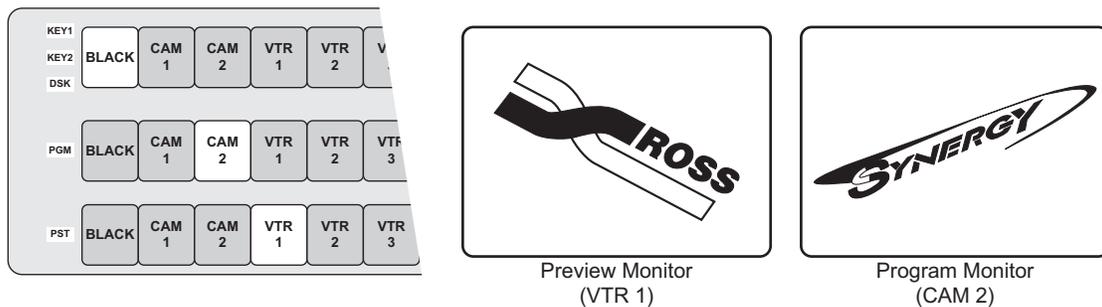
Sample Setup – Before the Dissolve

4. In the **Transition Type Section**, press **DISS**.

5. To perform a manual transition, move the **Fader** from limit to limit. To perform an auto transition, press the **AUTO TRANS** button. During either transition, the **PST** bus video signal gradually mixes into the **PGM** signal, as shown below.
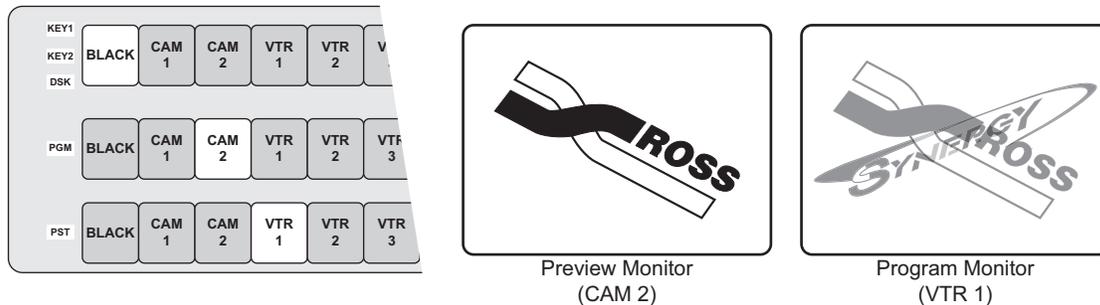
Sample Setup – Performing a Transition

At the end of the transition, the **PST** video completely replaces the **PGM** video and the buses flip-flop. The figure below illustrates the MLE and monitor setup *after* the dissolve.
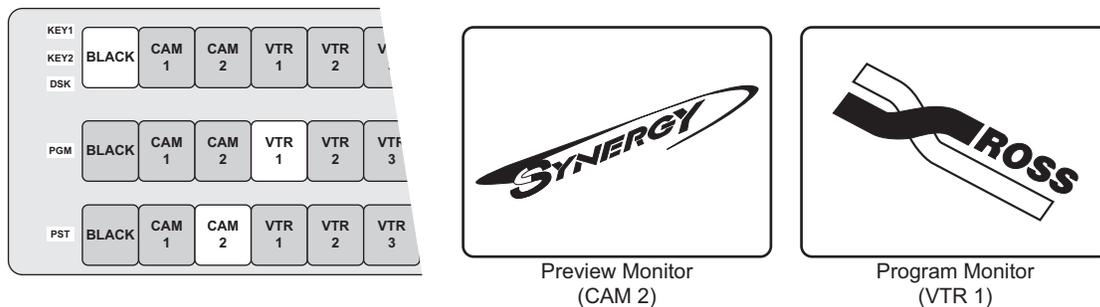
Sample Setup – After the Dissolve

Note | If a *very short* auto transition rate is selected (typically five frames or less), this may appear the same as a cut. This type of transition is often called a "soft cut".

This completes the procedure for performing a dissolve.

Performing a Transition Limit Effect

The **TRANS LIMIT** button in the **Transition Control Group** allows you to stop a transition at a position in between the two absolute **Fader** limits.

Note | If you have the MultiDSK option installed, refer to the section "**MultiDSK Operation**" on page 7–35 for information on performing transitions.

Use the following procedure to perform a transition limit effect:

1. Ensure the **Fader** is at an upper or lower limit and note the limit that you choose. The **Fader** must be returned to this limit in a subsequent step.

2. Select a dissolve or a wipe as your next transition.

3. Move the **Fader** and *manually* set the transition to the desired position.

   • In the case of a dissolve, visually set the desired mix (superimposition) between Program and Preset.

   • In the case of a wipe, visually set the desired *split screen* position between Program and Preset.

4. Leave the **Fader** at its preset position and press **TRANS LIMIT**. The button lights *momentarily* and the fader position is stored.

5. Move the **Fader** back to the limit selected in step 1.

6. Press **TRANS LIMIT** to turn on the **Transition Limit** function. A single LED in the **Transition Progress Bar** flashes, corresponding to the manually set position in step 3.

7. Use the **AUTO TRANS** button to perform the transition. The transition moves to the limit that you selected in step 3 and stops.

8. There are two ways to continue the transition:

   • Leave the **TRANS LIMIT** button turned on. When you use the **AUTO TRANS** button again, the transition reverses — and returns to its starting point.

   • Turn off the **TRANS LIMIT** button. When you use the **Fader** or **AUTO TRANS** again, the transition continues to its end.

This completes the procedure for performing a transition limit effect.

Performing a Transition Preview

The "transition preview mode" allows you to rehearse a complete preset-to-background transition without affecting the program output. When in this mode, the full transition occurs on **Preview**, leaving the **Program** output signal undisturbed. You can create, rehearse, and preview any transition. With the transition preview mode engaged, the **Fader** is effectively *disconnected* from program.

✔ **Operating Tip**

Transition preview mode is allows you to preview complete effects before taking them on-air.

Use the following procedure to perform a **Transition Preview**:

1. Select the desired **Next Transition** button or buttons, depending on which video elements you want to change.

2. Press and hold the desired **Transition Type** button, and use the **Fader** or **AUTO TRANS** to preview the current effect. Make any modifications desired.

3. Once you are satisfied with the effect, release the **Transition Type** button. The preview monitor reverts back to its look-ahead preview mode.

4. Perform the transition on air. The program output shows the exact effect as previewed previously on the preview monitor using "transition preview mode".

✎ **Note**

If there is a transition in progress when the **Transition Type** button is released, the preview monitor output will not return to its look-ahead preview mode until the transition is complete.

This completes the procedure for performing a **Transition Preview**.

Performing a Preset Black Transition

The **Preset Black** function is a special two-stage transition that allows you to take the switcher to black (or any other desired source) with the first transition, and then proceed to the next transition previously indicated. This function is quite useful for dipping the switcher to black or transitioning to a commercial.

Pressing **PST BLACK** causes the **BLACK** crosspoint to be selected on the **PST** bus, replacing the currently selected **PST** source. The buttons in the **Next Transition Section** *may change*, depending on what is currently on air.

✎	**Note**	If you have the MultiDSK option installed, refer to the section "**MultiDSK Operation**" on page 7–35 for information on performing transitions.

Preset Black Overview

There are two stages to a Preset Black transition:

- When you press **PST BLACK**, the switcher presets a dissolve to black. An alternate transition type can be selected, if desired. If a key or a combination of keys are on, but their "next transition" buttons are *not* lit, the switcher automatically lights the button for you.

  The **first transition** dissolves the switcher to black and dissolves off all keys. The buttons in the **Next Transition Section** then change, presetting the switcher with the original preview scene. This scene now appears on the **Preview** monitor.

- The **second transition** brings the switcher back up from black to the scene previously shown on **Preview** — regardless of the combination of background and key sources selected.

Performing a Preset Black Transition

Use the following procedure to perform a Preset Black transition:

1. Press **PST BLACK**. The preview monitor will now show a black picture.

2. Perform a transition with the **Fader**, **AUTO TRANS**, or **CUT**. The program transitions to black. Note that when black is reached, the switcher presets the scene previous to the black picture, and displays it on **Preview**.

3. Perform a second transition using the **Fader**, **AUTO TRANS**, or **CUT**. The switcher transitions to the previous scene, at the end of which the **PST BLACK** light turns off.

✓	**Operating Tip**	After Step 1, a *different source* other than black can be selected on **PST**. This would allow you to dip to **COLOR BKGD** (white, for example), for a creative "flash-frame" transition. In addition, **BLACK** can be *permanently* overridden by holding down the **PST BLACK** button while selecting the desired source on the **PST** bus.

This completes the procedure for performing a Preset Black transition.

Pattern and Effects Control

In This Chapter

This chapter provides information and instructions for using the **Effects Control Group** of the switcher. The following topics are discussed:

- Effects Control Groups
- Effects Control Modes
- Wipes
- Using Wipes
- Selecting Wipes
- Mattes Group

Effects Control Groups

The two **Effects Control Groups** are *assignable* groups of controls that allow you to choose wipe patterns, and adjust wipe parameters and key modifiers. For example, by pressing **WIPE**, or **FLY KEY**, the groups are assigned to that specific function.

The top **Effects Control Group** includes a four-character display labeled "**MODE**", and its associated **SEL** button. This display identifies which area or button on the switcher has control of the **Effects Control Groups**. In addition, the button of the controlling feature (for example, **WIPE** or **FLY KEY**) will illuminate green, instead of yellow.

The following figure illustrates the **Effects Control Groups** on the Synergy 100 MD control panel:

Effects Control Groups

Effects Control Modes

SEL
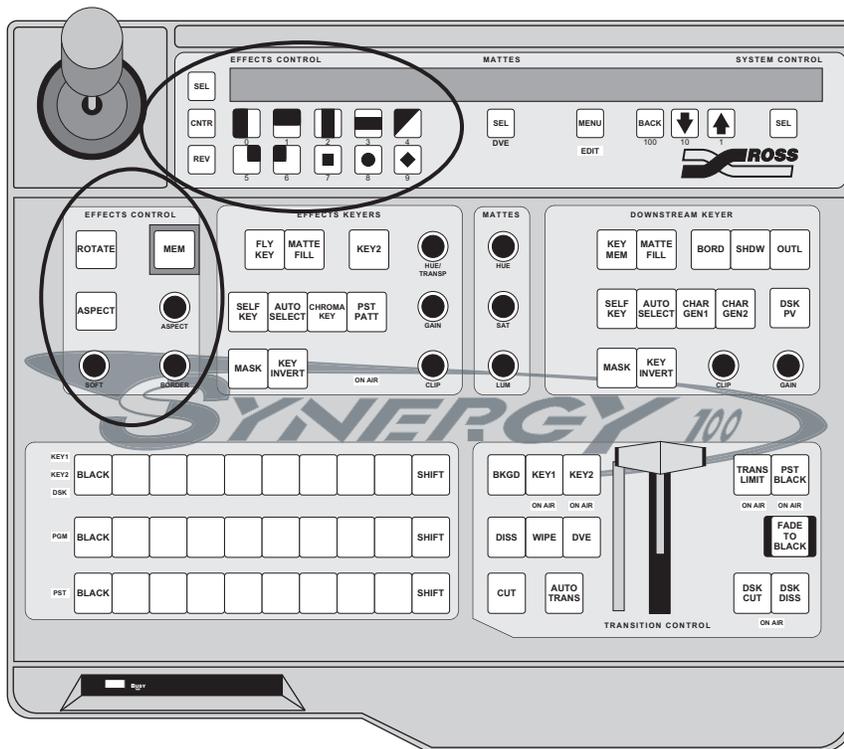
- The **SEL** button in the **Effects Control Group** allows you to cycle through several "modes", depending on the area or button which currently has control of the **Effects Control Groups**. The modes displayed are linked to the area or button selected, as outlined in the table on the following page.

  In addition, by holding down the **SEL** button and pressing one of the buttons listed in the following table, you can change the button that has control without having to toggle it on and off.

✎ **Note** | The **Squeeze & Tease WARP MD**, and **Dual Border Generator** options are not available at this time.

Effects Control Mode Table

Mode	Button Selected	Features Controlled
FLY1	**FLY KEY** in Effects Keyer, Key 1 (*1) (*3)	Size, aspect ratio, and position of flown key in Keyer 1
FLY2	**FLY KEY** in Effects Keyer, Key 2 (*1) (*3)	Size, aspect ratio, and position of flown key in Keyer 2
CRP1	**MASK** when a Squeeze & Tease MD Box is active in Effects Keyer, Key 1	Cropping all edges of the video in a Squeeze & Tease MD Box on Key 1
CRP2	**MASK** when a Squeeze & Tease MD Box is active in Effects Keyer, Key 2	Cropping all edges of the video in a Squeeze & Tease MD Box on Key 2
MSK1	**MASK** in the Effects Keyer, Key 1 (*2)	Masking areas of a Self, Auto Select, or UltraChrome Chroma key on Key 1
MSK2	**MASK** in the Effects Keyer, Key 2 (*2)	Masking areas of a Self, Auto Select, or UltraChrome Chroma key on Key 2
MSKd	**MASK** in the Downstream Keyer Group	Masking areas of a Self or Auto Select key in the Downstream Keyer
MEM"#"	**MEM** in the Effects Control Group	Access to the Memory Store and Recall features
WIPE	**WIPE** in the Transition Control Group	All Wipe controls, including pattern selection and modifiers
PP1	**PST PATT** (with **FLY KEY** off) in Effects Keyer, Key 1	All modifiers for the Preset Pattern key type on Key 1
PP2	**PST PATT** (with **FLY KEY** off) in Effects Keyer, Key 2	All modifiers for the Preset Pattern key type on Key 2
DVE	**DVE** in the Transition Control Group	Pattern selection and wipe direction for the Squeeze & Tease MD wipes
BORD	**BORD**, **SHDW**, or **OUTL** in the Downstream Keyer Group	All modifiers (softness, size, etc.) for the optional border generator on the DSK
ACK1	**CHROMA KEY** in Effects Keyer, Key 1	The Auto Chroma Key feature when setting up an UltraChrome Chroma Key on Key 1
ACK2	**CHROMA KEY** in Effects Keyer, Key 2	The Auto Chroma Key feature when setting up an UltraChrome Chroma Key on Key 2
NONE	*see next column	If any of the above features have control, turning them off will set the mode to NONE.
HIDE and SHOW	**SEL** to the left of the "Mode" display toggles between the two modes. (*4)	When in any Squeeze & Tease MD menu, sections of the menu can be hidden. If the mode is set to "HIDE", only the currently selected item, and its corresponding data values will remain displayed. "SHOW" displays the entire S&T MD menu and all data values.

Notes:

(*1) Selecting PST PATT in the keyer automatically turns on the FLY KEY.

(*2) Except when the key type is a Squeeze & Tease MD Box.

(*3) If you have the Squeeze & Tease WARP MD option installed, the key can also be rotated.

(*4) Only valid when in the S&T MD Menu.

Wipes

The **Effects Control Groups** also include *two* pattern generators:

- **Pattern Generator 1** is shared by the **Wipe Generator** and the **Preset Pattern Generator** for **KEY1** of the **Effects Keyers**. This pattern generator is *full-featured —* all wipe patterns are available.

	Note	The **Star** and **Heart** patterns and the **Matrix Wipes** are currently not implemented.

- **Pattern Generator 2** is used by the **Preset Pattern Generator** for **KEY2** of the **Effects Keyers**. This generator is restricted to the Classic wipe patterns, *minus* the circle, and the Rotary wipe patterns. Matrix wipes are *not* available.

	Note	Because **Pattern Generator 1** is shared, you cannot select a **WIPE** transition if **PST PATT** is selected on **Keyer 1**. Similarly, if **WIPE** is enabled and you select a **PST PATT** key type in **Keyer 1**, the **WIPE** button turns off and the transition type reverts to **DISS**.

The top **Effects Control Group** includes 10 buttons which display 10 "classic" wipes. In addition, each button provides access to any of the more than 60 "user" wipes available.

To select a wipe, press **WIPE** in the **Transition Control Group** and select the desired pattern button. Once selected, the pattern can be modified and used on air. A single press of a button will illuminate its LED, and select the wipe as pictured. If you double-press the button, the LED will flash, indicating "user wipe mode", and you will be able to choose any of the more than sixty wipes available.

Also included in the top **Effects Control Group** are the following two buttons:

- The **REV/LEARN** button controls the *direction* of the wipe. Three choices of wipe directions are available:

    - The default state of the **REV/LEARN** button is off. The wipe will proceed in the normal fashion, with the new picture being revealed from the black area (as shown on the pattern button) to the white area. The button's LED will not be lit.

    - Press **REV/LEARN** to set the direction of the wipe to reverse. The new picture is revealed from the white area to the black area. The button's LED will be on.

    - Double-press **REV/LEARN** to set the direction of the wipe to "flip-flop". Wipe direction is normal for the first transition, reverse for the second, then normal for the third, etc. The button's LED will be flashing.

- The **CNTR/EFF D** button is used to return borders, wipe positions, masks, and cropping features to their default state or position. In addition, it is used to default flying keys, including **Squeeze & Tease** boxes, to full screen. When recalling memories, this button enables you to perform an "effects dissolve" between two switcher setups.

The lower **Effects Control Group** provides two buttons and three "end-stop" knobs that modify the selected pattern.

	Important	Because the electrical position of an **End-stop Knob** can be overwritten by recalling a memory register, the electrical knob position may not match the knob's current physical position. In this case, the knob can still be adjusted but you may not have the full adjustment range available.

	Operating Tip	To fully re-synchronize the physical-to-electrical position of an **End-stop Knob**, turn the knob fully clockwise, then fully counter-clockwise. Full-range adjustments can now be made.

• The **BORDER** knob allows you to adjust pattern borders, from no border to full-screen borders on all wipe patterns, with the exception of pattern number 111, which does not accept a border. Refer to the section "**Selecting Wipes**" on page 6–7 for information on how to access additional patterns.

~ Turning the knob clockwise increases border width.

~ Turning the knob counter-clockwise decreases border width.

• The **SOFT** knob allows you to adjust pattern edge softness from hard-edge to full soft-edge on all patterns, with the exception of pattern number 111, which does not allow edge softness. Refer to the section "**Selecting Wipes**" on page 6–7 for information on how to access additional patterns.

~ Turning the knob clockwise increases edge softness.

~ Turning the knob counter-clockwise decreases edge softness.

• When the **ASPECT** button is lit, the adjacent knob can be used to adjust the aspect ratio of selected patterns.

~ Turning the knob clockwise increases the pattern's vertical aspect ratio, and, at the same time, reduces the horizontal aspect ratio.

~ Turning the knob counter-clockwise increases the pattern's horizontal aspect ratio, and, at the same time, reduces the vertical aspect ratio.

• The **ASPECT** button enables the use of the adjacent knob.

~ When the button is on, patterns with both horizontal and vertical angles to their edges can have their aspect ratios adjusted. Circles can be adjusted into ovals, squares into rectangles, etc.

~ When the button is off, all aspect ratio adjustment is removed and the pattern returns to its default shape.

Note the following points regarding the **ASPECT** button:

• If you adjust the aspect ratio of one pattern, then select another pattern that can *not* have its aspect adjusted, the **ASPECT** light will stay on until it is turned off manually by pressing the button.

• The **ROTATE** button enables the use of the positioner as a wipe pattern modifier.

~ When the button is on, certain patterns can be rotated a full 360 degrees.

~ When the button is off, all rotation is removed and the pattern returns to its default position.

Using Wipes

In a "background wipe" transition, the **PGM** bus video is gradually replaced with the **PST** bus video according to a wipe pattern pre-selected in the **Effects Control Group**.

Use the following procedure to perform a wipe:

1. Select an input on the **PGM** bus.

2. Select a different input on the **PST** bus.

3. In the **Transition Control** Group, select **BKGD** as the next transition. The following figure illustrates a *sample* setup and the associated monitor outputs — before the wipe.
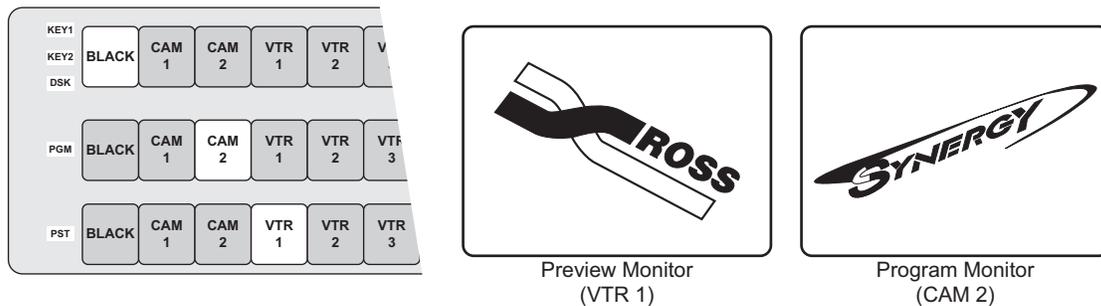
MLE and Monitor Setup – Before the Wipe

4. Press **WIPE**. This action causes the lamp on the **WIPE** button to illuminate yellow and automatically assigns the **Effects Control Groups** to the transition.

5. Press the pattern button for the desired wipe.

6. Choose the direction for the wipe. Select between normal, reverse, or flip-flop by pressing or double-pressing the **REV/LEARN** button.

7. Turn the **BORDER** knob fully clockwise, then fully counterclockwise. For this first exercise, this ensures that there is *no border*.

8. To perform a manual transition, move the **Fader** from limit to limit. To perform an auto transition, press the **AUTO TRANS** button. During the transition, the **PST** bus video signal gradually replaces the **PGM** signal using the selected wipe, as the following figure illustrates.
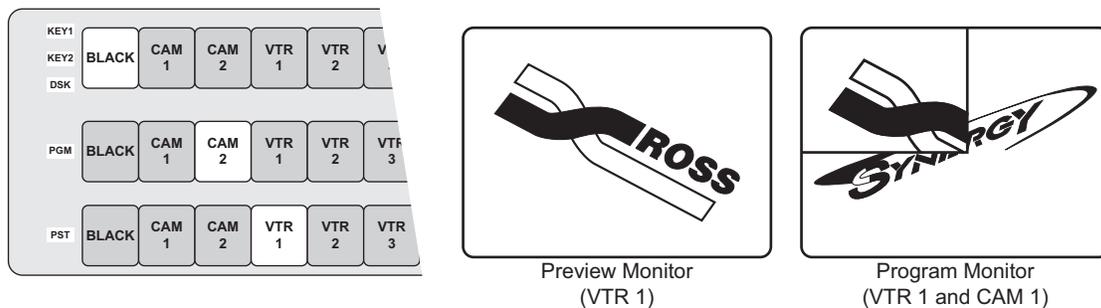
MLE and Monitor Setup – Performing a Transition

At the end of the transition, the **PST** video completely replaces the **PGM** video and the buses flip-flop.

The following figure illustrates the MLE and monitor setup *after* the wipe.
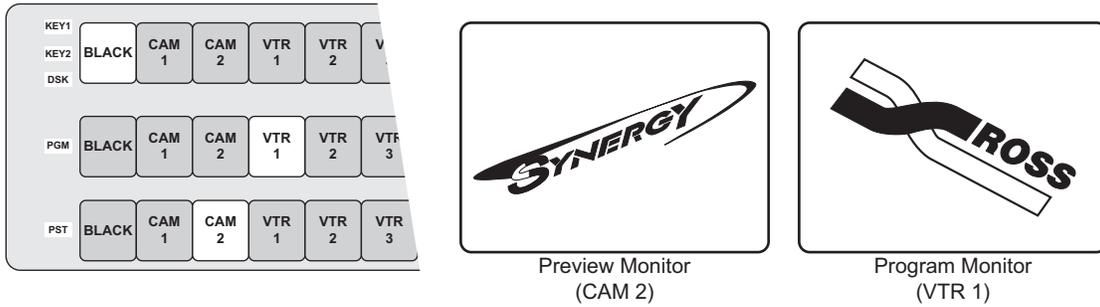
MLE and Monitor Setup – After the Wipe

 Note | Wipe borders can be modified to be any matte color. Refer to the section "**Mattes Group**" on page 6–10 for details.

Selecting Wipes

The **WIPE** feature of your switcher allows you to select from over 60 wipes, including those that are normally hidden from view on the panel.

Use the following procedure to select a **Wipe**:

1. In the **Transition Control Group**, press **WIPE**. The lamp on the button will illuminate green.

2. To choose one of the 10 patterns as shown in the **Effects Control Group**, press the desired button.
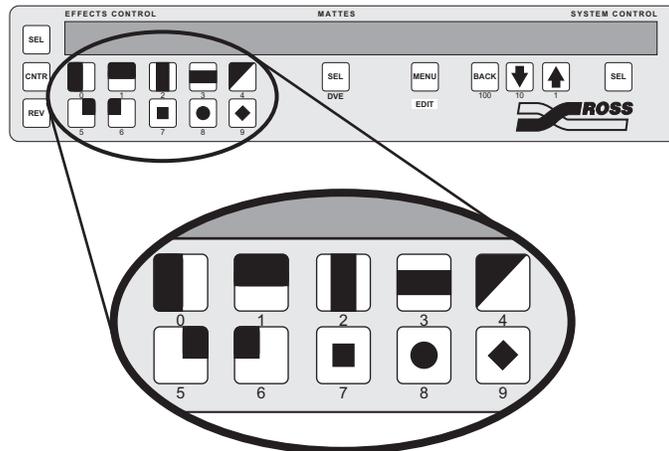
Pattern Buttons — Effects Control Group

3. To access the additional user wipe patterns, double press any of the pattern buttons. The selected LED will flash, and the current "extended wipe" pattern number will be displayed in the **System Control Group**.

4. You will now have control of the **System Control Group**, and can use the **100**, **10**, and **1** buttons to select the patterns as desired. Refer to the following figure:
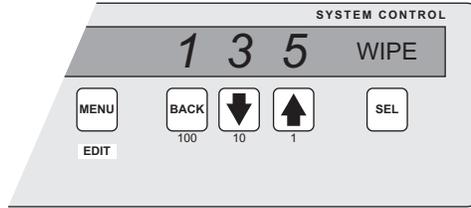
System Control Group

The first (hundreds) digit in the display represents the "class" of wipe. You can chose between the following classes of wipes:

✎ **Note** | Matrix and Special Wipes (Classes 2 and 3) are unavailable at this time.

- • **Class 0 Classic Wipes** — Refer to the section "**Classic Wipes**" on page 6–8 for a list of the available wipes.
- • **Class 1 Rotary Wipes** — Refer to the section "**Rotary Wipes**" on page 6–9 for a list of the available wipes.
- • **Class 3 Rotary Wipes** — Refer to the section "**Rotary Wipes**" on page 6–9 for a list of the available wipes.
- • **Class 4 Rotary Wipes** — Refer to the section "**Rotary Wipes**" on page 6–9 for a list of the available wipes.

The second two digits represent the number of the wipe.

5. Use the **100** button below the display to scroll through the classes. The **10** and **1** buttons are used to scroll through the wipe pattern numbers, represented by the last two (tens and units) digits in the display. Refer to the following sections for the available wipe patterns.

This completes the procedure for selecting a wipe.

Classic Wipes

The following figure illustrates the available "Classic" Wipes – Class 0.
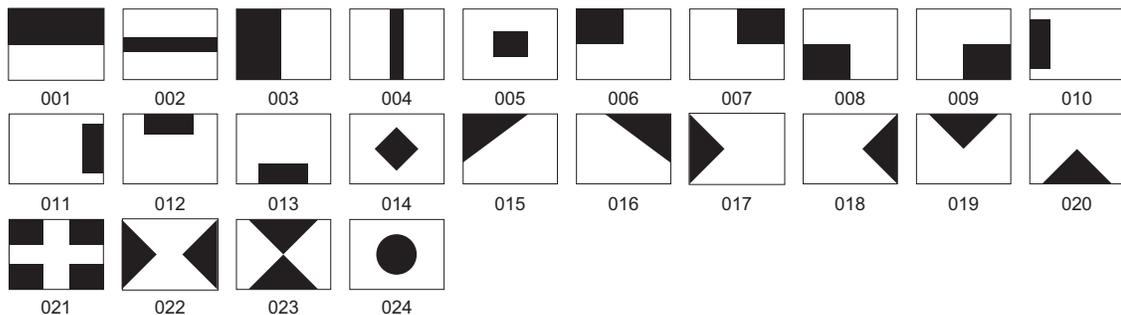
Classic Wipes – Class 0

Rotary Wipes

The following figure illustrates the available "Rotary" Wipes – Class 1.
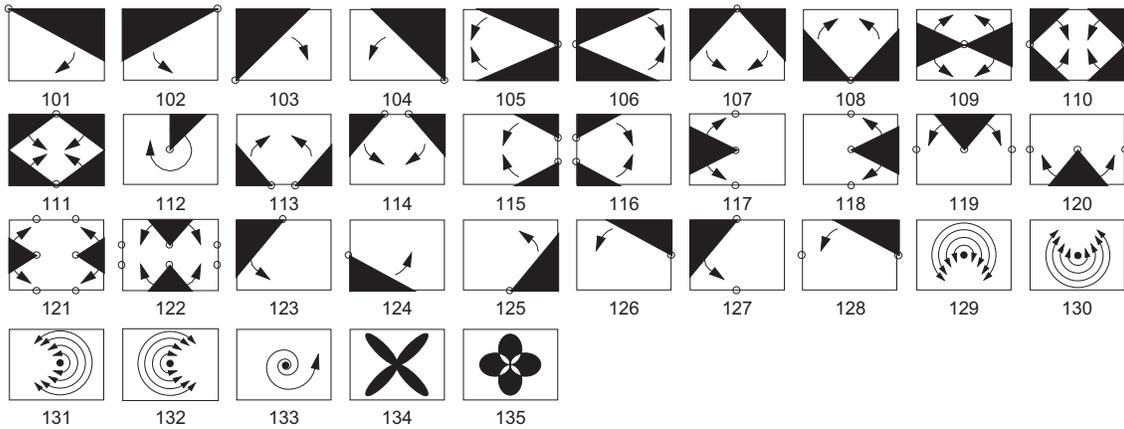
Rotary Wipes – Class 1

Matrix Wipes

✎	**Note**	Matrix Wipes (Class 2) are unavailable at this time.

The following figure illustrates the available "Matrix" Wipes – Class 2.
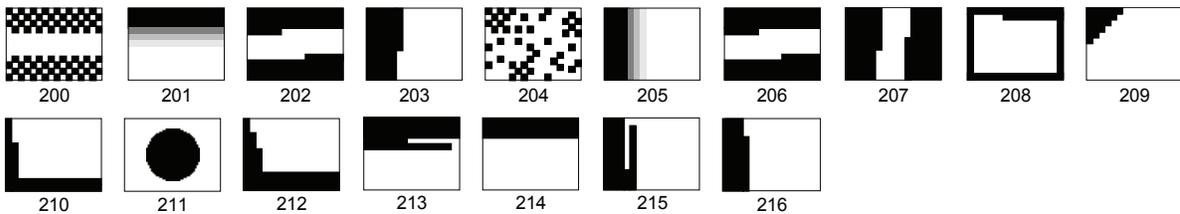
Matrix Wipes – Class 2

Special Wipes

✎	**Note**	Special Wipes (Class 3) are unavailable at this time.

The following figure illustrates the available "Special" Wipes – Class 3.
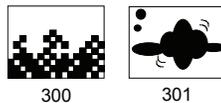
Wipe number 300 is the special animated "fire" wipe, and wipe number 301 is a "plasma" wipe.

Mattes Group

The **Mattes Groups** provides a set of *assignable* controls that allow you to select specific matte generators and adjust colors for wipe patterns, borders, the color background, and matte fills. The **Mattes Group** is assigned to a specific function by pressing a **PST PATT**, **WIPE**, **COLOR BKGD**, **BORD** or **MATTE FILL** button.

The following figure illustrates the **Mattes Groups**:
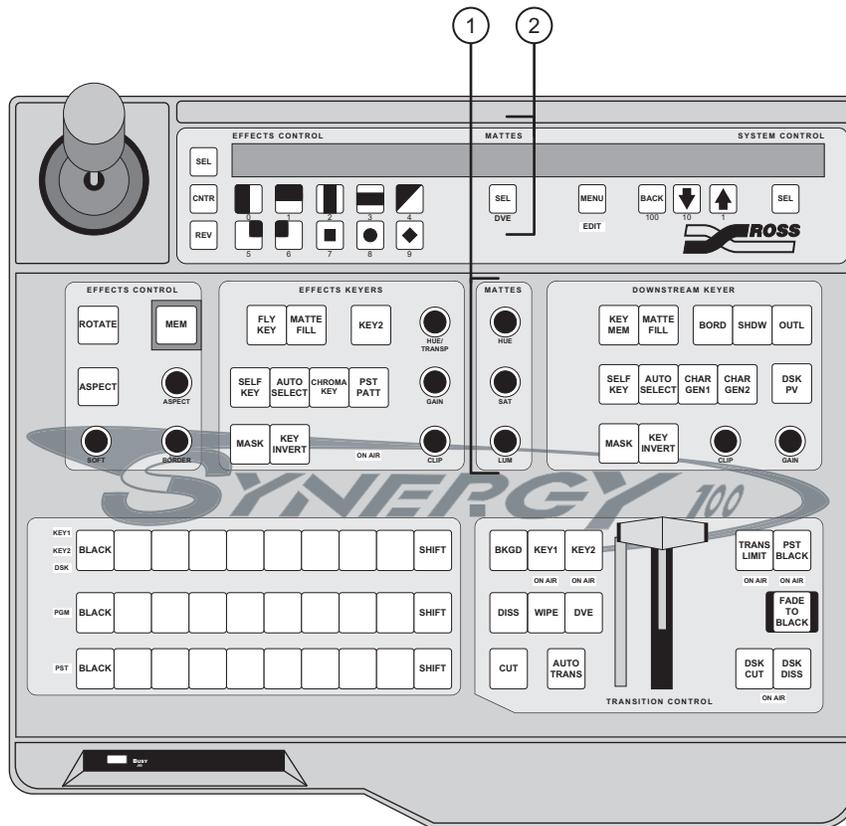
Mattes Groups

1) Matte Color Knobs	2) Matte Destination Section

1. Matte Color Knobs

The three **Matte Color Knobs** allow you to adjust the color of the selected matte generator. Each knob is an "end-stop" knob. Refer to the section "**Knobs**" on page 4–12 for additional information on end-stop knobs.

- Rotate the **HUE** knob to change the color of the selected matte generator. A full 360 degrees of hue adjustment is provided.

- Rotate the **SAT** knob to change the color saturation of the selected matte generator. Saturation can be adjusted from 0 (monochrome or no saturation) to 100 percent — full color saturation.

LUM

- Rotate the **LUM** knob to change the luminance of the selected matte generator. Luminance can be adjusted from **0** (minimum brightness, or black) to **100** percent (maximum brightness, or white).

2. Matte Destination Section

The **SEL** button in the **Matte Destination Section** allows you to select one of five standard matte generators. Each generator is capable of generating *one* color. The generators are selected automatically (as outlined below) or they can be selected manually.

SEL

- Press **SEL** in the **Mattes Group** and scroll through the options until **BKGD** appears in the display. This matte generator is automatically selected when the **COLOR BKGD** buttons on the bus rows are pressed.

  When **BKGD** is selected, you can adjust the selected **COLOR BKGD** color using the three **Matte Color** knobs.

Note

> The default **COLOR BKGD** color is blue.

- Press **SEL** in the **Mattes Group** and scroll through the options until **WIPE** appears in the display. This matte generator is automatically selected when the **WIPE** button in the **Transition Control Group** is pressed.

  When **WIPE** is selected, you can adjust the selected wipe border color using the three **Matte Color** knobs.

- Press **SEL** in the **Mattes Group** and scroll through the options until **DSK** appears in the display. This matte generator is used by the **Downstream Keyer's** matte fill generator. It is automatically selected when any of the buttons in the **Downstream Keyer Group** are pressed.

  When **DSK** is selected, you can adjust the downstream key's matte fill color using the three **Matte Color** knobs.

- Press **SEL** in the **Mattes Group** and scroll through the options until **KEY1** appears in the display. This matte generator is used by the **Effects Keyers** Key 1's matte fill. It is automatically selected when the following buttons are pressed:
  ~ Any of the buttons relating to Key 1 in the **Effects Keyer Group** except **PST PATT**.

  When **KEY1** is selected, you can adjust the Effects Key 1's matte fill color using the three **Matte Color** knobs.

Note

> If **PST PATT** is selected in the **Effects Keyers Group**, you can not select **MATTE FILL**.

- Press **SEL** in the **Mattes Group** and scroll through the options until **KEY2** appears in the display. This matte generator is used by the **Effects Keyers** Key 2's matte fill. It is automatically selected when the following buttons are pressed:
  ~ Any of the buttons relating to Key 2 in the **Effects Keyer Group** except **PST PATT**.

  When **KEY2** is selected, you can adjust the Effects Key 2's matte fill color using the three **Matte Color** knobs.

• Press **SEL** in the **Mattes Group** and scroll through the seven options until **S&T1** appears in the display. This matte generator is used by the **Squeeze & Tease MD** option for adjusting the color of the border around a Squeeze & Tease box. It is automatically selected when the **PST PATT** button for Keyer 1 in the **Effects Keyers Group** is pressed.

When **S&T1** is selected, you can adjust the Effects Key 1 **Squeeze & Tease** box's border color using the three **Matte Color** knobs.

• Press **SEL** in the **Mattes** Group and scroll through the seven options until **S&T2** appears in the display. This matte generator is used by the optional **Squeeze & Tease MD** option for adjusting the color of the border around a Squeeze & Tease box. It is automatically selected when the **PST PATT** button for Keyer 2 in the **Effects Keyers** Group is pressed.

When **S&T2** is selected, you can adjust the Effects Key 2 **Squeeze & Tease** box's border color using the three **Matte Color** knobs.

Keying

In This Chapter

This chapter provides instructions for using the Keys of your Synergy 100 MD Switcher. The following topics are discussed:

- Introduction to Keying
- Effects Keyers Group
- Downstream Keyer Group
- A Word About FlexiClean
- Performing a Self Key
- Performing an Auto Select Key
- Performing a Preset Pattern Key
- UltraChrome Chroma Keys
- Chroma Key Lighting Tips
- Split Keys
- MultiDSK Option
- Programming a Favorite CG
- Using Auto Transitions With Keys

Introduction to Keying

The "**Keying**" function allows you to insert (or electronically cut) portions of one scene into another or to place titles over background images. Two signals are required for a Key:

- The "**Key**" signal (also known as an *Alpha* signal) is used to electronically *cut* a hole in the background video.

- The "**Fill**" signal (also known as the *Key Foreground*) is used to electronically fill the hole created by the Key with video.

Visually, Keys appear as layers that can be built up to create the desired composite image. When working with Keys, the following rules apply:

- The MLE can generate two individual Keys that appear downstream of the Background. The priority of those Keys can be changed within the MLE itself.

- The MLE can generate one DSK (Downstream Key) that appears downstream of the Background and MLE Keys.

Refer to the section "**Video Flow through the Switcher**" on page 2-5 for additional information on basic video flow, MLE priority, and layering.

Key Group Basics

The Synergy 100 MD control panel includes two Key groups, the **Effects Keyers Group** and the **Downstream Keyer Group**. Please note the following *basic* rules regarding the two Key groups:

- For all Key types (except Preset Patterns) the **Key Bus** is used to select Key alpha and fill sources. Even though the *buttons* on the **Key Bus** are shared between the three Keyers, three sets of independent Keying electronics allow *each Keyer* to have its own Key and fill selections. For Preset Pattern Keys, the alpha signal is chosen by selecting a wipe pattern in the **Effects Control Group**.

Effects Keyers Group

The following figure illustrates the **Effects Keyers Group**.
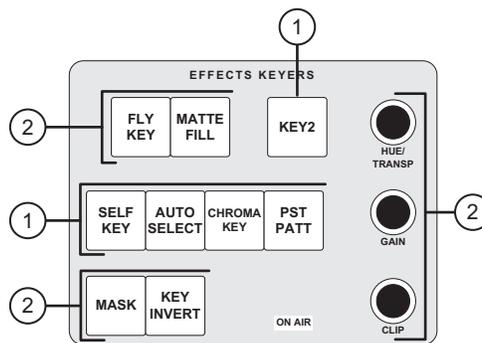
Effects Keyers Group

1) Key Type Section	2) Key Modifier Section	3) Key Assignment Section

The controls in the **Effects Keyers Group** allow you to choose Key types and a variety of Key modifiers.

1. Key Type Section

The **Key Type Section** provides four buttons that select the type of Key that will be inserted over the background video.

SELF KEY

- Press **SELF KEY** to select a "Self" Key type, also known as a *luminance* Key. With a Self Key, the luminance (or brightness) values of the Key source itself (as selected on the **Key Bus**) are used to cut the hole.

  The Key hole is filled with the *same video signal* as the Key cutter. The Key hole can also be filled with color matte. Self Keys are often used to Key images from tape as there is no separate alpha available.

AUTO SELECT

- Press **AUTO SELECT** to choose an "Auto Select" Key type, also known as a *linear* Key.

  With Auto Select Keys, two signals are used to cut and fill the hole, a Key (alpha) signal and a fill (video) signal. These signals originate from devices such as character generators, still stores, DVEs, and graphics systems.

  When you choose an Auto Select Key and press a Key source (on the **Key Bus**), the switcher *automatically* selects both the alpha and fill signals. These signals were *linked* together during the installation procedure. Refer to Chapter 7, "**BNC Configuration and Check**" in the *Synergy 100 MD Engineering Manual* for details.

CHROMA KEY

- Press **CHROMA KEY** to select an UltraChrome™ Chroma Key type. With a Chroma Key, the hole is cut based on a selected color value (hue) rather than on a luminance value or an alpha signal. The color is then electronically removed and replaced with background video from another image.

  Similar to Self Keys, the Chroma Key hole is filled from the *same video source* as the Key cutter, except that the fill is composed of all colors that remain *after* the selected Chroma Key color is removed. The hole can also be filled with color matte. Chroma Keys are typically used to Key the weathercaster over a weather map.

Note

Unlike analog switchers that require separate RGB signals to perform a Chroma Key, with the **Synergy 100 MD** switcher, you can Chroma Key on *any source* that you select on the **Key Bus**.

Operating Tip

Pressing the button that is currently *lit* in the **Key Type Section** is a quick way to *activate* a Keyer for adjustment, when both Keyers are in use.

PST PATT

- Press **PST PATT** to select a "Preset Pattern" Key type. With a Preset Pattern Key, the hole is cut based on a pattern that you select in the **Effects Control Group**. The pattern (which acts just like the alpha signal for an *auto select* Key) is filled with video from the **Key Bus**.

Note

If you have the **Squeeze & Tease MD Option** installed, this action will automatically turn on the **FLY KEY** button (in the Key Modifier Section), and apply a 3-D box effect to the Key.

2. Key Modifier Section

The buttons and knobs in the Key Modifier Section allow you to modify the Key that is currently selected.

KEY INVERT

- Press **KEY INVERT** to invert the polarity of the selected Key signal. For example, if a Self Key source has white letters on a black background, the white letters normally cut the hole. When **KEY INVERT** is pressed, the polarity of the signal is reversed and the *black background* cuts the hole. This function is often used to Key black text that is printed on a white background.

Note

All Key types can be inverted, except for **Squeeze & Tease MD** boxes.

MASK

- Press **MASK** to activate the **Mask** controls. These controls allow you to selectively eliminate unwanted portions of a Key signal, similar to the "crop" function found on many DVEs. Using an adjustable box pattern, you can size and position the mask to hide the top, bottom, left or right edges of the Key.

  In addition, the **REV/LEARN** button in the **Effects Control Group** can be used to invert the mask. All Key types *except* Preset Pattern Keys and **Squeeze & Tease MD** boxes can be masked.

FLY KEY

- Press **FLY KEY** to enable or disable the **Squeeze & Tease MD** or **Squeeze & Tease MD WARP** function, allowing you to apply 3-D DVE effects to any of the four Key types. If the **Squeeze & Tease MD** option is installed, the **FLY KEY** button will light automatically when **PST PATT** is pressed, but must be pressed manually to fly a **CHROMA KEY**, **AUTO SELECT** or **SELF KEY**.

Note

The **Squeeze & Tease MD** option has not yet been implemented. Contact Ross Video for more information.

Once enabled, you can control the size, horizontal and vertical position, and rotation of the flying Key. The **FLY KEY** button will not light if one of the options is not installed. If you have the **Squeeze & Tease MD** option installed, refer to the section "**Operational Overview**" on page 12-2 for instructions.

MATTE FILL

- Press **MATTE FILL** to fill the selected Key hole with a matte color, *instead* of the Key foreground video from the **Key Bus**. Use the controls in the **Mattes Group** to choose the hue, luminance, and saturation of the matte. Refer to the section "**Mattes Group**" on page 6-10 for more information on matte fill.

Note

All Key types *except* **Preset Pattern** Keys can be filled with Matte Color.

HUE/ TRANSP

- The **HUE/TRANSP** knob has two functions.

  ~ With a Chroma Key, the **Hue/Transp** knob is used to select the color that you want to Key out, this is essentially the color to be *replaced* by the background video. The knob rotates through the full 360-degree color spectrum.

  ~ If you are setting up a **Self Key** or **Auto Select Key**, the **HUE/TRANSP** knob is used to adjust the transparency of the Key.

CLIP

- Use the **CLIP** knob to adjust the luminance or *threshold* level of the Key. Only the areas of the source video that are *higher* than the setting of the threshold will cut a hole in the background video.

- Use the **GAIN** knob to adjust the gain of the Key. The control acts on all Keys and *softens* the Key edge, allowing you to adjust the way that the Key blends into the background.

✎ **Note**

> The **GAIN** function does not apply to **Squeeze & Tease MD** Keys.

3. Key Assignment Section

The button in the **Key Assignment Section** allows you to toggle control of all Key modifiers between the two Keys in the **Effects Keyers Group**.

KEY2

- Toggle the **KEY2** button **On** (lit) to assign the **Effects Keyers Group** to **Key 2**. To assign the **Effects Keyers Group** back to **Key 1**, toggle the **KEY2** button **Off** (unlit).

Downstream Keyer Group

The following figure illustrates the **Downstream Keyer Group** of the **Synergy 100 MD** control panel:

✎ **Note**

> If you have the MultiDSK option installed, **MultiDSK4** and **MultiDSK5** are not controlled from the **Downstream Keyer Group**. Refer to the section "**MultiDSK Operation**" on page 7-35 for details.
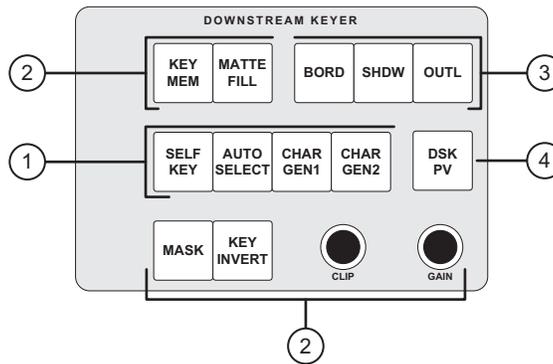
Synergy 100 Downstream Keyer Group

1) Key Type Section	3) Border Controls
2) Key Modifier Sections	4) DSK PV Button

1. Key Type Section

The **Key Type Section** provides two buttons that select the *type* of Key that will be inserted over background video.

SELF KEY

- Press **SELF KEY** to select a "Self" Key type, also known as a *luminance* Key. With a Self Key, the luminance (or brightness) values of the Key source itself (as selected on the **Key Bus**) are used to cut the hole.

  The Key hole is filled with the *same video signal* as the Key cutter or the hole can also be filled with color matte. Self Keys are often used to Key images from tape.

AUTO SELECT

- Press **AUTO SELECT** to choose an "Auto Select" Key type, also known as a *linear* Key.

With **Auto Select** Keys, two signals are used to cut and fill the hole. There is a Key (alpha) signal and a fill (video) signal. These signals originate from devices such as character generators, still stores, DVEs, or graphics systems.

When you choose an **Auto Select Key** and press a Key source (on the **Key Bus**), the switcher *automatically* selects both the alpha and fill signals. These signals were *linked* together during the installation procedure. Refer to Chapter 7 "**BNC Configuration and Check**" of the *Synergy 100 MD Engineering Manual* for information on assigning a Key alpha to a video input.

In addition to these buttons, there are two buttons used as hotkeys for your favorite Auto Select Keys originating from character generators, still stores, DVEs, or another desired source.

CHAR GEN1

- Press **CHAR GEN1** to select your most frequently used **Auto Select** Key, without having to hunt for it on the **Key Bus**. When pressed, the Key type and Key source are automatically selected, **KEY MEM** is turned **On** and Key modifiers are turned **Off** to provide a *clean* CG Key. Refer to the section "**Programming a Favorite CG**" on page 7-40 for more information.

CHAR GEN2

- Press **CHAR GEN2** to choose an alternate frequently used **Auto Select** Key. This button works in the same manner as **CHAR GEN1**.

2. Key Modifier Section

The buttons and knobs in the **Key Modifier Section** allow you to modify the Key that is currently selected.

KEY INVERT

- Press **KEY INVERT** to invert the polarity of the selected Key signal. For example, if a Self Key source has white letters on a black background, the white letters normally cut the hole. When **KEY INVERT** is pressed, the polarity of the signal is reversed and the *black background* cuts the hole. This function is often used to Key black text that is printed on a white background.

Note | All Key types can be inverted, except for **Squeeze & Tease MD** boxes.

KEY MEM

- The **KEY MEM** (memory) function applies to **Auto Select** Keys only. This function allows you to store and recall *one set* of clip and gain settings *per crosspoint*.

  The **KEY MEM** button turns on *automatically* when you press **AUTO SELECT** and choose an Auto Select Key source on the **Key Bus**. This function recalls the settings for the Key from memory. With the button lit, clip and gain settings are locked. If you toggle the **KEY MEM** button **Off**, the clip and gain setting will be *unlocked*, allowing you to make temporary adjustments to the settings of the linear Key. Toggling the button back **On** will *restore* the default settings for the Key source from memory.

  Although the default clip and gain settings were set during the switcher installation process, you can also use the **KEY MEM** button to store *new* default values for the selected linear Key source. Refer to the section "**Performing an Auto Select Key**" on page 7-10 for more information.

MASK

- Press **MASK** to activate the **Mask** controls. These controls allow you to selectively eliminate unwanted portions of a Key signal, similar to the "crop" function found on many DVEs. Using an adjustable box pattern, you can size and position the mask to hide the top, bottom, left or right edges of the Key.

In addition, the **REV/LEARN** button in the **Effects Control Group** can be used to invert the mask. Both the **Self Key** and **Auto Select** Key types can be masked.

MATTE FILL

• Press **MATTE FILL** to fill the selected Key hole with a matte color, *instead* of the Key foreground video from the **Key Bus**. Use the controls in the **Mattes Group** to choose the hue, luminance, and saturation of the matte. Refer to the section "**Mattes Group**" on page 6-10 for more information on matte fill.

✎ **Note** | Both **Auto Select** and **Self Key**s can be filled with Matte Color.

CLIP

• Use the **CLIP** knob to adjust the luminance or *threshold* level of the Key. Only the areas of the source video that are *higher* than the setting of the threshold will cut a hole in the background video.

GAIN

• Use the **GAIN** knob to adjust the gain of the Key. This control *softens* the Key edge, allowing you to adjust the way that the Key blends into the background. For **Auto Select** (linear) Keys, the adjustment ensures the correct Key transparency.

3. Border Controls

✎ **Note** | The **XFX Board Dual Border** option is not yet implemented.

BORD

• Press **BORD** to add a border behind the selected Key type. The border can appear as a simple *surrounding* border or as a detached shadow. Width, softness, color, and transparency are adjustable using the appropriate knobs in the **Effects Control Group** and **Mattes Group**.

SHDW

• Press **SHDW** to add a drop shadow behind the selected Key type, with variable width, softness, color, and transparency.

OUTL

• Press **OUTL** to add an outline around the selected Key type, with variable width, softness, color, and transparency. With **OUTL** selected, the Key fill is completely transparent.

4. DSK PV Button

DSK PV

• Press and hold the **DSK PV** button to preview your Downstream Keyer effect on the preview monitor. If the DSK1 is currently off-air, the preview monitor will show the downstream Keyer effect superimposed on top of the **Program** output. If DSK1 is currently on-air, the preview monitor will display the **Program** output without the DSK. This function is not available for the MultiDSK4 or MultiDSK5. Refer to the section "**MultiDSK Operation**" on page 7-35 for more information.

✎ **Note** | The **DSK PV** button is active only as long as the button is held down. When released, the preview monitor once again displays the Preview output (based on the "**Next Transition**" buttons selected) and the button will no longer be lit.

A Word About FlexiClean

FlexiClean allows you to set up your outputs to provide you with a second "program" output that is derived from a different location in the video stream than the standard program output. This feature is most commonly used for bilingual and live-to-tape production such as a call-in show where the rebroadcast does not show the phone numbers.

If you have the **MultiDSK** (**DSK4** and **DSK5**) option installed on a **Synergy 100 MD**, the **FlexiClean** output can be configured to pull the output from before each Key and DSK, independently, as illustrated below.
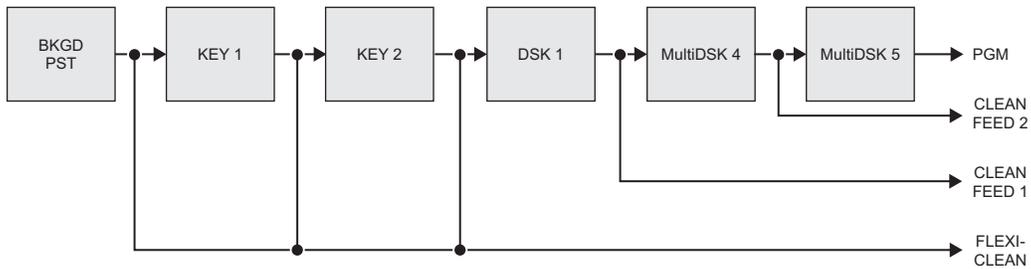
FlexiClean Modes — Program/Preset MLE with MultiDSK

Refer to Chapter 8, "**Output Configuration**", of the *Synergy 100 MD Engineering Manual* for full details.

Using Keys

This section includes detailed instructions for using Keys. Prior to proceeding, ensure that you have read the section "**Introduction to Keying**" on page 7-2 thoroughly.

✐	**Note**	If you have the MultiDSK option installed, refer to the section "**MultiDSK Operation**" on page 7-35 for using Keys in MultiDSK4 and MultiDSK 5.

Performing a Self Key

A **Self Key** is one in which the luminance (or brightness) values of the Key source itself are used to cut the hole.

Use the following procedure to perform a Self Key in Key 1:

✐	**Note**	This procedure will show you how to perform a **Self Key** in **Key 1**, the same procedure can be used to perform a **Self Key** in **Key 2** or **DSK 1**.

1. Select a background source on the **PGM** bus. This provides the background over which the Key will appear.

2. Press **KEY1** in the **Transition Control Group** to preview the Key. This step will also serve to assign the **Key** bus and **Effects Keyers Group** to **Key 1**.

3. Select a Key source on the **Key 1** bus.

4. Press **SELF KEY** in the **Effects Keyers Group**.

5. Adjust the Clip and Gain of the Key as follows:

✐	**Note**	If you select a different **Self Key** source, you will need to re-adjust the Clip and Gain of the source. However, each crosspoint will remember its own individual clip and gain setting.

   • Use the **CLIP** knob in the **Effects Keyers Group** to adjust the luminance of the Key. The lower the threshold setting, the more the Key is visible.

   • Use the **GAIN** knob in the **Effects Keyers Group** to adjust the softness of the edges of the Key.

✓	**Operating Tip**	Press and hold the **SELF KEY** button and press the **CENTER** button to return the **Clip** and **Gain** values to the default settings.

6. Select any additional Key modifiers you want to use. You can select between the following:

   • **MATTE FILL** — Select this button to fill the hole cut by the clip and gain of the source with a matte color.

   • **KEY INVERT** — Select this button to invert the Key polarity of the hole cut by the clip and gain of the source.

   • **MASK** — Select this button to activate the mask feature and mask out a rectangular part of the source video.

- **Border Effects** (in the **Downstream Keyer** only) — Select these effects to add borders, shadows and outlines to your Key.
  - **FLY KEY** — Select this option to activate the **Squeeze & Tease MD** option.

7. Perform a **CUT**, **AUTO TRANS**, or move the fader from one limit to the other to take your **Self Key** on-air.

Performing an Auto Select Key

An **Auto Select** (or "linear") **Key** is one in which two signals are used to cut and fill the hole. These are a Key (alpha) signal and a fill (video) signal. These signals originate from devices such as character generators, still stores, DVEs, and graphics systems.

If you are setting up an **Auto Select Key** in the **Effects Keyers Group**, you can adjust the **Clip** and **Gain** as needed. In the **Downstream Keyer Group** you will have to toggle the **KEY MEM** button **Off** before you will be able to adjust the **Clip** and **Gain** as needed.

Use the following procedure to perform an Auto Select Key in Key 2:

1. Select a background source on the **PGM** bus. This provides the background over which the Key will appear.

2. Press **KEY2** in the **Transition Control Group** to preview the Key. This step will also serve to assign the **Key** bus and the **Effects Keyers Group** to **Key 2**.

3. Select a Key source on the **Key 2** bus.

4. Press **AUTO SELECT** in the **Effects Keyers Group**.

5. Select any additional Key modifiers you want to use. You can select between the following:
   - **MATTE FILL** — Select this button to fill the hole cut by the alpha of the source with a matte color.
   - **KEY INVERT** — Select this button to invert the Key polarity of the hole cut by the alpha of the source.
   - **MASK** — Select this button to activate the mask feature and mask out a rectangular part of the source video (both alpha and fill).
   - **Border Effects** (in the **Downstream Keyer** only) — Select these effects to add borders, shadows and outlines to your Key.
   - **FLY KEY** — Select this option to activate the **Squeeze & Tease MD** option.

6. Perform a **CUT**, **AUTO TRANS**, or move the fader from one limit to the other to take your **Auto Select Key** on-air.

This completes the procedure for performing an Auto Select Key in Key 2.

Storing New Clip and Gain Settings

If the **KEY MEM** button is off, you can adjust the clip and gain settings of the Key on a temporary basis. The following procedure re-locks the clip and gain values, and stores the new settings in memory.

⚠	**Important**	There is no *undo* function. If you re-store clip and gain, you cannot recall previous values unless you recall settings from memory. Refer to the section "**Storing Memory Registers**" on page 9-3 for information.

Use the following procedure to permanently store the new clip and gain settings:

1. Ensure that the **KEY MEM** button is toggled **Off**.

2. Adjust **Clip** and **Gain** for the desired appearance.

✓ **Operating Tip** | Press and hold the **AUTO SELECT** button and press the **CENTER** button to return the **Clip** and **Gain** values to the default settings.

3. Press and *hold* the **AUTO SELECT** button.

4. Press **KEY MEM**.

5. Release both buttons.

This completes the procedure for storing the new clip and gain settings.

Performing a Preset Pattern Key

A **Preset Pattern** Key is one in which the hole is cut based on a wipe pattern that you select in the **Effects Control Group**. The pattern (which acts just like the alpha signal used with an *auto select* Key) is filled with video from the **Key Bus**.

✎ **Note** | You cannot perform a **Preset Pattern Key** in the **Downstream Keyer Group**.

There are a few rules that must be considered when applying a **PST PATT** Key, as follows:

• If you perform a Preset Pattern Key on **Key 1**, the pattern generator is *full-featured* (except matrix wipes) but it is shared with the **Wipe Generator**.

~ If you press **PST PATT** in **Key 1**, you cannot press **WIPE** in the **Transition Control Group**.

~ If **WIPE** is selected in the **Transition Control Group** and you press **PST PATT** in **Key 1**, the **WIPE** button is turned off and **DISS** is automatically lit.

• If you perform a Preset Pattern Key in **Key 2**, the pattern generator is *not shared*, but it *is* restricted to the first six columns of wipes.

✎ **Note** | Matrix wipes are not available.

Use the following procedure to perform a Preset Pattern Key in Key 1:

1. Select a background source on the **PGM** bus. This provides the background over which the Key will appear.

2. Press **KEY1** in the **Transition Control Group** to preview the Key. This step will also serve to assign the **Key** bus and **Effects Keyers Group** to **Key 1**.

3. Select a Key source on the **Key 1** bus.

4. Press **PST PATT** in the **Effects Keyers Group**.

5. Select the desired pattern in the **Effects Control Group**.

✓ **Operating Tip** | You can adjust the **Clip** and **Gain** as needed by using the **CLIP** and **GAIN** knobs in the **Effects Keyers Group**. You can also adjust the size and location of the pattern using the Positioner.

6. Select any additional Key modifiers you want to use. You can select between the following:

- **MATTE FILL** — You *cannot* Matte Fill a Preset Patter Key.
- **KEY INVERT** — Select this button to invert the polarity of Key.
- **MASK** — Select this button to activate the mask feature and mask out a rectangular part of the source video (both alpha and fill).
- **FLY KEY** — Select this option to activate the **Squeeze & Tease MD** option.

7. Perform a **CUT**, **AUTO TRANS**, or move the fader from one limit to the other to take your **Preset Pattern Key** on-air.

This completes the procedure for performing a Preset Pattern Key in Key 1.

UltraChrome Chroma Keys

This section provides instructions for performing an **UltraChrome™ Chroma Key** on a Synergy 100 MD switcher. An UltraChrome Chroma Keyer is available in each keyer, and can be used in either Key 1 or Key 2. A Chroma Key is one in which the hole is cut based on a color value (hue), rather than on a luminance value or an alpha signal. The color is electronically removed and replaced with background video from another image. You can UltraChrome on *any source* selected on the **Key Bus**.

> **Note** You cannot perform an UltraChrome Chroma Key in the **Downstream Keyer Group**.

The following topics are discussed in this section:

- Choosing an UltraChrome Operating Mode
- Performing an UltraChrome Chroma Key in Basic Mode
- Performing an UltraChrome Chroma Key in Advanced Mode
- Chroma Key Lighting Tips

Choosing an UltraChrome Operating Mode

The UltraChrome Chroma Keyer operates in one of two modes: **Basic** or **Advanced**.

> **Note** It is not recommended to switch between Basic and Advanced Modes during the creation or adjustment of a Chroma Key.

Basic Mode

Basic Mode allows you to define two areas of the image being keyed: a background and a foreground. The background is the part of the image that will be removed, allowing any underlying image to show through, while the foreground is any part of the image that will be kept. Basic Mode allows you to modify the colors used to define the background and foreground as well as some control over background "spill" onto your foreground subject and edge softness to help the foreground object blend into any underlying video. Beginning users and those who have simple Chroma Key needs should choose Basic Mode.

To create an UltraChrome Chroma Key in Basic Mode, proceed to the section "**Performing an UltraChrome Chroma Key in Basic Mode**" on page 7-14.

Advanced Mode

Advanced Mode allows much more control over the Chroma Keying process. Background areas can be defined as translucent areas and shadow areas, while transition areas are where the background and foreground areas meet. Advanced users and those with more demanding Chroma Key needs may use Advanced Mode. This mode allows you to control all aspects of the Chroma Keying process and gives you the ability to fine-tune properties such as shadows and transparency.

To create an UltraChrome Chroma Key in Advanced Mode, proceed to the section "**Performing an UltraChrome Chroma Key in Advanced Mode**" on page 7-19.

Performing an UltraChrome Chroma Key in Basic Mode

The following topics are discussed in this section:

- Creating an UltraChrome Chroma Key in Basic Mode
- Using the Color Map Preview in Basic Mode
- Adjusting an UltraChrome Chroma Key in Basic Mode

Creating an UltraChrome Chroma Key in Basic Mode

Use the following procedure to create an UltraChrome Chroma Key in Basic Mode:

1. Select a background source on the **PGM** bus. This provides the background over which the Key will appear.

2. Press **KEY1** in the **Transition Control Group** to preview the Key. This step will also serve to assign the **Key** bus and **Effects Keyers Group** to **Key 1**.

3. Select a Key source on the **Key 1** bus.

4. Press **CHROMA KEY** in the **Effects Keyers Group** to display the **UltraChrome Parameters Menu** on the preview overlay.

5. Select **Basic Mode** as follows:

    - Press **0. Color Pick**.
    - **Key Mode** — Use the **Hue** knob to select **Basic**.

6. Select a color to key out, or remove, as follows:

    - Press **0. Color Pick**.

```
UltraChrome Parameters

0. Color Pick          5. Softness
1. Initialize Key      6. Color Map    Off
2. Background
3. Foreground Range
4. Spill Suppress
  _____
     Color Pick          Key Mode: Basic
                         Color: Blue




  Use positioner or Hue, Sat, Lum to modify
```
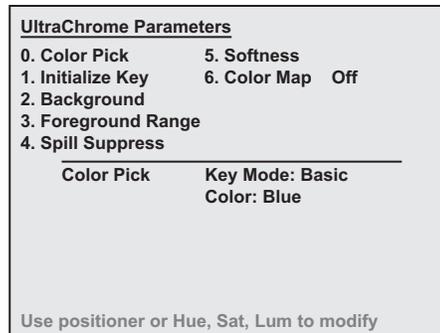
UltraChrome Parameters — Color Pick Menu

- **Color** — Use the **SAT** knob to select the color to be removed as follows:

    ~ **Blue** — Select this option to have blue removed from the video signal.

    ~ **Cyan** — Select this option to have cyan removed from the video signal.

    ~ **Green** — Select this option to have green removed from the video signal.

    ~ **Yellow** — Select this option to have yellow removed from the video signal.

    ~ **Red** — Select this option to have red removed from the video signal.

    ~ **Magenta** — Select this option to have magenta removed from the video signal.

7. Press **1. Initialize Key** to preview the Chroma Key.

Note	Every time **1. Initialize Key** is pressed, the switcher will reset all the Chroma Key parameters to their optimal default values for the video.

8. Select any additional Key modifiers you want to use. You can select between the following:

   • **MATTE FILL** — Select this button to fill the hole cut by the Chroma Key with a matte color.

   • **KEY INVERT** — Select this button to invert the polarity of the Chroma Key.

   • **MASK** — Select this button to activate the mask feature and mask out a rectangular part of the Chroma Key.

   • **FLY KEY** — Select this option to activate the **Squeeze & Tease MD** option.

9. Perform a **CUT**, **AUTO TRANS**, or move the fader from one limit to the other to take your **UltraChrome Chroma Key** on-air.

This completes the procedure for creating an UltraChrome Chroma Key in Basic Mode.

Using the Color Map Preview in Basic Mode

Adjusting a Chroma Key can be difficult when looking at the actual video signals as some adjustments have very subtle effect on the image. Using a Color Map preview gives you a visual representation of the various parts of your Chroma Key and makes for easier adjustments. The Color Map preview uses the Preview monitor to show a representation of the different UltraChrome regions. The Preview monitor will display the representation in the foreground of the Preview, but not over top of the Preview Overlay, while the feature is set to **On**.

Note	The Color Map is not displayed on-air with the Chroma Key.

The Color Map Preview, when in Basic Mode, shows the three different colored regions that represent the elements that the UltraChrome Chroma Keyer breaks an image into. The following table summarizes this breakdown.

Color Map Legend

Color	UltraChrome Element
Black	Foreground
Blue	Spill Suppression
Gray	Background

Use the following procedure to display the Color Map Preview in Basic Mode:

1. Create an UltraChrome Chroma Key as described in the section "**Creating an UltraChrome Chroma Key in Basic Mode**" on page 7-14.

2. Ensure the **UltraChrome Parameters Menu** is displayed.

3. Press **6. Color Map** to toggle this feature **On** or **Off**.

   • **Off** — This is the default mode. When the Color Map is toggled **Off**, the Chroma Key is displayed on the Preview monitor without the Color Map feature.

- **On** — When the Color Map is toggled **On**, the three different colored regions that the UltraChrome Keyer breaks an image down to are displayed on the Preview monitor. This Color Map serves as an aid when adjusting all of the parameters of your Chroma Key. Refer to the table on page 7-15 for more details.

This completes the procedure for displaying the Color Map Preview in Basic Mode. Next you will adjust your Chroma Key in Basic Mode.

Adjusting an UltraChrome Chroma Key in Basic Mode

Adjusting the values of a Chroma Key can be done at any time after you have initialized the Key. The following procedure assumes that you have already created and initialized the Key in Basic Mode and are attempting to improve the appearance of it.

An UltraChrome Chroma Key, when created in Basic Mode, enables you to adjust the following parameters:

- **Background** — Background elements are those areas in the source video that are the same color as the one you chose to key out.

- **Foreground** — Foreground elements are those pixels that are not within the Background ranges. This is the area with colors that will not be keyed out and will remain solid.

- **Spill Suppression** — Spill Suppression elements are those areas in the Foreground that have a noticeable tint of the Background color. This typically occurs around the edges of subjects as glow from the background blue or green-screen "spills" onto them. Adjusting this parameter will correct the amount of blue or green spill.

- **Edge Softness** — Edge Softness lets you apply varying degrees of softening to the foreground edges to help it blend in with the underlying background image.

You can use the knobs in the **Mattes Group** or the **Positioner** on the Synergy control panel to adjust the for adjusting the UltraChrome Chroma Key parameters as follows:

- Move the **Positioner** *left* or *right* (X-Axis) instead of the **Hue** knob

- Move the **Positioner** *up* or *down* (Y-Axis) instead of the **SAT** knob

- Move the **Positioner** *clockwise* or *counter-clockwise* (Z-Axis) instead of the **LUM** knob

Use the following procedure to adjust your UltraChrome Chroma Key in Basic Mode:

1. Create an UltraChrome Chroma Key as described in the section "**Creating an UltraChrome Chroma Key in Basic Mode**" on page 7-14.

2. Ensure the **UltraChrome Parameters Menu** is displayed.

Note | Every time **1. Initialize Key** is pressed, the switcher will reset all the Chroma Key parameters to their optimal default values for the video.

3. Press **2. Background** to display the **Background Menu**.

```
UltraChrome Parameters

0. Color Pick        5. Softness
1. Initialize Key    6. Color Map    Off
2. Background
3. Foreground Range
4. Spill Suppress
   ─────────────────────────────────
     Background      Gain: 0.0%




Use positioner or Hue, Sat, Lum to modify
```

UltraChrome Parameters — Background Menu

4. Adjust the Background of the UltraChrome Key as follows:

   • **Gain** — Use the **Hue** knob to adjust the Background in terms of translucency as follows:

      ~ Increasing the Gain value causes the Background to appear more opaque. For example, less of the selected Background color is removed.

      ~ Decreasing the Gain value causes the Background to appear more transparent. For example, more of the selected Background color is removed.

5. Press **3. Foreground Range** to display the **Foreground Range Menu**.

```
UltraChrome Parameters

0. Color Pick        5. Softness
1. Initialize Key    6. Color Map    Off
2. Background
3. Foreground Range
4. Spill Suppress
   ─────────────────────────────────
     Foreground Range    Clip: 52.2%
                         Hue: 66.7%
                         Reject: 26.5%



Use positioner or Hue, Sat, Lum to modify
```

UltraChrome Parameters — Foreground Range Menu

6. Adjust the Foreground Range of the UltraChrome Key as follows:

   • **Clip** — Use the **Hue** knob to adjust the range of saturation of the Foreground colors.

      ~ Increasing the clip value removes lower-saturated colors from the Foreground image, making the pixels more transparent.

      ~ Decreasing the clip value includes lower-saturated colors in the Foreground image, making the pixels less transparent.

   • **Hue** — Use the **SAT** knob to adjust the Foreground Range in terms of colors. This selects the central, or base, color for the Foreground.

      ~ Increasing the hue value moves counter-clockwise around the color wheel while selecting a base color.

~ Decreasing the hue value moves clockwise around the color wheel while selecting a base color.

<table>
<tr><td>✓</td><td>**Operating Tip**</td><td>You may wish to select a hue to set a base color to keep before using the other knobs to expand or contract the range of colors that will be kept in the foreground image.</td></tr>
</table>

• **Reject** — Use the **LUM** knob to include or reject adjacent hues to the base color.

~ Increasing the reject value decreases the amount of adjacent hues that are included in the Foreground.

~ Decreasing the reject value increases the amount of adjacent hues that are included in the Foreground.
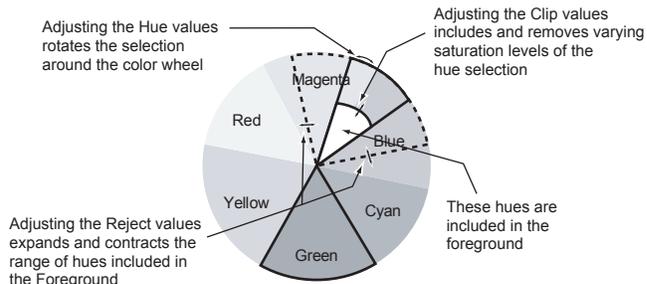
UltraChrome Color Wheel — Effects of Clip, Hue, and Reject

7. Press **4. Spill Suppress** to display the **UltraChrome Spill Suppress Menu**.
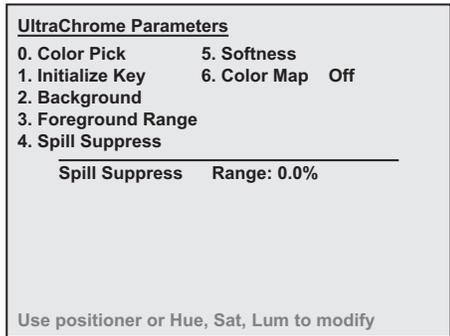
UltraChrome Parameters — Spill Suppress Menu

8. Adjust the pixels in the Foreground Range that have a noticeable tint of the Background color as follows:

• **Range** — Use the **Hue** knob to adjust the range of the Foreground colors to be corrected for Background color spill.

~ Increasing the range value causes more of the Foreground colors to be corrected for Background color spill.

~ Decreasing the range value causes fewer of the Foreground colors to be corrected for Background color spill.

9. Press **5. Softness** to display the **UltraChrome Edge Softness Menu**.

```
UltraChrome Parameters

0. Color Pick          5. Softness
1. Initialize Key      6. Color Map    Off
2. Background
3. Foreground Range
4. Spill Suppress
   _____

     Softness          Edge Softness: 0.0%




   Use positioner or Hue, Sat, Lum to modify
```
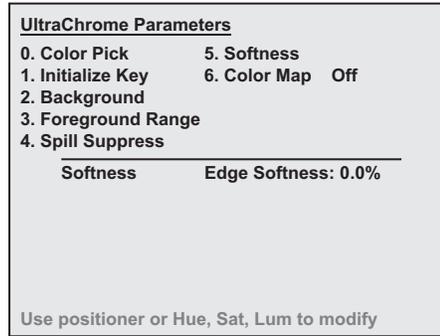
UltraChrome Parameters — Edge Softness Menu

10. Add edge softening to the Foreground image as follows:

- **Edge Softness** — Use the **Hue** knob to adjust the amount of softness applied to the Foreground image.

  ~ Increasing the softness value increases the amount of softness applied to the Foreground edges.

  ~ Decreasing the softness value decreases the amount of softness applied to the Foreground image. A value of 0.0% turns off Edge Softening.

11. Select any additional Key modifiers you want to use. You can select between the following:

- **MATTE FILL** — Select this button to fill the hole cut by the Chroma Key with a matte color.

- **KEY INVERT** — Select this button to invert the polarity of the Chroma Key.

- **MASK** — Select this button to activate the mask feature and mask out a rectangular part of the Chroma Key.

- **FLY KEY** — Select this option to activate the **Squeeze & Tease MD** option.

12. Perform a **CUT**, **AUTO TRANS**, or move the fader from one limit to the other to take your **UltraChrome Chroma Key** on-air.

This completes the procedure for creating and adjusting an UltraChrome Chroma Key in Basic Mode.

Performing an UltraChrome Chroma Key in Advanced Mode

An UltraChrome Chroma Key, when created in Advanced Mode, breaks the image into six elements, four of which determine, or partially determine, which part of the image is keyed out (removed). Those four elements are: Background, Shadows, Translucent Areas, and Transition Areas.

An UltraChrome Chroma Key, when created in Advanced Mode, enables you to adjust the following parameters:

- **Background** — Background elements are those areas in the source video that are the same color as the one you chose to key out. Note that the Shadow and Translucent Areas are completely contained within the Background Area.

- **Foreground** — Foreground elements are those areas in the selected base color. These areas will not be keyed out and will remain solid.

- **Shadow** — Shadow elements are those areas in the source video with colors that are within the Background range but with lower luminance values. You modify the Shadow

range to cover darker areas of the background, for example, where the foreground is casting a shadow on the background screen.

- **Translucent** — Translucent elements are those areas in the source video that are in the Background range but with higher luminance values than the Shadow range. You can control the upper-end of the Translucency range by selecting a wider hue-range to constrain the area. You can also control transparency of the Translucent Area.

- **Transition** — Transition elements are those areas in the source video with colors that are not within the Foreground, Translucency and Shadow ranges and are also not considered part of the Foreground area. These are typically the pixels near the edge of the Foreground where it blends into the background.

- **Spill Suppression** — Spill Suppression elements are those areas in the source video of in the Foreground that have a noticeable tint of the Background color. This typically occurs around the edges of subjects as glow from the background blue or green-screen "spills" onto them.

The following topics are discussed in this section:

- Creating an UltraChrome Chroma Key in Advanced Mode

- Using the Color Map Preview in Advanced Mode

- Adjusting an UltraChrome Chroma Key in Advanced Mode

- Tips for Chroma Key Fine-Tuning in Advanced Mode

Creating an UltraChrome Chroma Key in Advanced Mode

Use the following procedure to create and adjust an UltraChrome Chroma Key in Advanced Mode:

1. Select a background source on the **PGM** bus. This provides the background over which the Key will appear.

2. Press **KEY1** in the **Transition Control Group** to preview the Key. This step will also serve to assign the **Key** bus and **Effects Keyers Group** to **Key 1**.

3. Select a Key source on the **Key 1** bus.

4. Press **CHROMA KEY** in the **Effects Keyers Group** to display the **UltraChrome Parameters Menu** on the preview overlay.

5. Select **Advanced Mode** as follows:

   - Press **0. Color Pick**.

   - **Key Mode** — Use the **Hue** knob to select **Advanced**.

6. Press **0. Color Pick** to display the **Color Pick Menu**.

UltraChrome Parameters	
0. Color Pick	5. Background Range
1. Initialize Key	6. Foreground Range
2. Shadow	7. Spill Suppress
3. Translucency	8. Softness and Luma
4. Transition	9. Color Map Off

Color Pick   Key Mode: Advanced
Color: Blue

Use positioner or Hue, Sat, Lum to modify
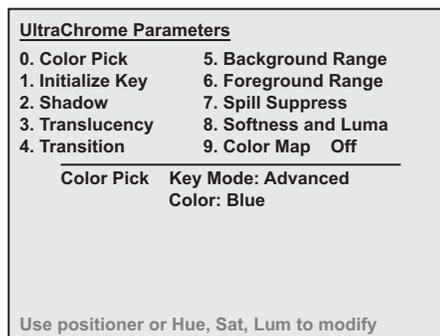
UltraChrome Parameters — Color Pick Menu

7. Select the color to be removed as follows:

- Press **0. Color Pick**.

- **Color** — Use the **SAT** knob to select the color you want to remove. You can select between the following:

  ~ **Blue** — Select this option to have blue removed from the video signal.

  ~ **Cyan** — Select this option to have cyan removed from the video signal.

  ~ **Green** — Select this option to have green removed from the video signal.

  ~ **Yellow** — Select this option to have yellow removed from the video signal.

  ~ **Red** — Select this option to have red removed from the video signal.

  ~ **Magenta** — Select this option to have magenta removed from the video signal.

8. Press **1. Initialize Key** to preview the Chroma Key.

✎	**Note**	Every time **1. Initialize Key** is pressed, the switcher will reset all the Chroma Key parameters to their optimal default values for the video.

9. Select any additional Key modifiers you want to use. You can select between the following:

- **MATTE FILL** — Select this button to fill the hole cut by the Chroma Key with a matte color.

- **KEY INVERT** — Select this button to invert the polarity of the Chroma Key.

- **MASK** — Select this button to activate the mask feature and mask out a rectangular part of the Chroma Key.

- **FLY KEY** — Select this option to activate the **Squeeze & Tease MD** option.

10. Perform a **CUT**, **AUTO TRANS**, or move the fader from one limit to the other to take your **UltraChrome Chroma Key** on-air.

This completes the procedure for creating an UltraChrome Chroma Key in Advanced Mode.

Using the Color Map Preview in Advanced Mode

Adjusting a Chroma Key can be difficult when looking at the actual video signals as some adjustments have very subtle effect on the image. Using a Color Map preview gives you a visual representation of the various parts of your Chroma Key and makes for easier adjustments. The Color Map preview uses the Preview monitor to show a color-coded representation of the different UltraChrome regions. The Preview monitor will display the colored representation in the foreground of the Preview, but not over top of the Preview Overlay, while the feature is set to **On** and the Chroma Key is on-air.

✎	**Note**	The Color Map is not displayed on-air with the Chroma Key.

The Color Map Preview, when in Basic Mode, shows the three different colored regions that represent the elements that the UltraChrome Chroma Keyer breaks an image into. The following table summarizes this breakdown.

Color Map Legend

Color	UltraChrome Element
Red	Background and Shadow
Green	Translucent
Black	Foreground
Blue	Spill Suppression
Gray	Transition

Use the following procedure to display the Color Map Preview in Advanced Mode:

1. Create an UltraChrome Chroma Key as described in the section "**Creating an UltraChrome Chroma Key in Advanced Mode**" on page 7-20.

2. Ensure the **UltraChrome Parameters Menu** is displayed.

3. Press **9. Color Map** to toggle this feature **On** or **Off**.

   • **Off** — This is the default mode. When the Color Map is toggled **Off**, the Chroma Key is displayed on the Preview monitor without the Color Map feature.

   • **On** — When the Color Map is toggled **On**, the different elements that the UltraChrome Keyer breaks an image down to are displayed as colored regions on the Preview monitor. This Color Map serves as an aid when adjusting all of the parameters of your Chroma Key. Refer to the above table for details.

This completes the procedure for display the Color Map Preview in Advanced Mode. Next you will adjust your UltraChrome Chroma Key.

Adjusting an UltraChrome Chroma Key in Advanced Mode

Adjusting the values of a Chroma Key can be done at any time after you have initialized the Key. The following procedure assumes that you have already created and initialized the Key in Advanced Mode and are attempting to improve the appearance of it.

You can use the knobs in the **Mattes Group** for adjusting UltraChrome Chroma Key parameters. You can also use the **Positioner** to adjust the UltraChrome parameters as follows:

   • Move the **Positioner** *left* or *right* (X-Axis) instead of the **Hue** knob

   • Move the **Positioner** *up* or *down* (Y-Axis) instead of the **SAT** knob

   • Move the **Positioner** *clockwise* or *counter-clockwise* (Z-Axis) instead of the **LUM** knob

Use the following procedure to adjust an UltraChrome Chroma Key in Advanced Mode:
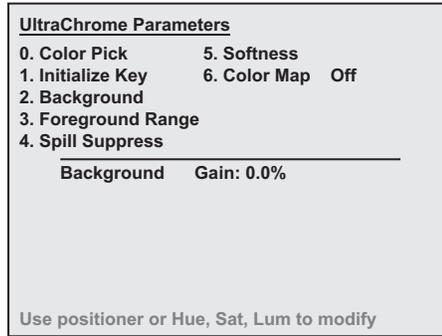
1. Create an UltraChrome Chroma Key as described in the section "**Creating an UltraChrome Chroma Key in Advanced Mode**" on page 7-20.

2. Ensure the **UltraChrome Parameters Menu** is displayed.
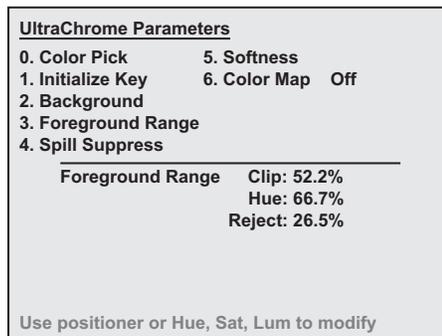
Note | Every time **1. Initialize Key** is pressed, the switcher will reset all the Chroma Key parameters to their optimal default values for the video.

3. Press **2. Shadow** to display the **Shadow Menu**.

```
UltraChrome Parameters

0. Color Pick          5. Background Range
1. Initialize Key      6. Foreground Range
2. Shadow              7. Spill Suppress
3. Translucency        8. Softness and Luma
4. Transition          9. Color Map   Off
   ─────────────────────────────────────
   Shadow    Range: 0.0%
                     Gain: 0.0%




   Use positioner or Hue, Sat, Lum to modify
```

UltraChrome Parameters — Shadow Menu

✓ **Operating Tip**

> Shadow adjustments allow you to extract a shadow from the background. This would be the actual shadow that the foreground subject is casting onto the screen.

4. Adjust the shadow properties that are considered shadows as follows:

   •   **Range** — Use the **Hue** knob to adjust the range of values that a Background color can have to be considered a shadow.

      ~   Increasing the range value widens the Shadow Area by including lower-luminance Background colors. The increased range comes as a result of colors moving from the Translucent Area to the Shadow Area.

      ~   Decreasing the range value narrows the Shadow Area by excluding higher-luminance colors. These excluded colors move back into the Translucent Area.

   •   **Gain** — Use the **SAT** knob to adjust the strength of the shadows, making them darker or lighter.

      ~   Increasing the gain value creates darker shadows.

      ~   Decreasing the gain value creates lighter shadows.

✎ **Note**

> If there are flaws and blemishes in the Chroma Key background, they will *also* appear as shadows. Normally, a superb set with careful lighting is required for natural Chroma Key shadows. Refer to the section "**Chroma Key Lighting Tips**" on page 7-30 for more information on lighting.

5. Press **3. Translucency** to display the **Translucency Menu**.

```
UltraChrome Parameters

0. Color Pick          5. Background Range
1. Initialize Key      6. Foreground Range
2. Shadow              7. Spill Suppress
3. Translucency        8. Softness and Luma
4. Transition          9. Color Map    Off
   ─────────────────────────────────────
   Translucency    Range: 0.0%
                           Gain: 0.0%




   Use positioner or Hue, Sat, Lum to modify
```

UltraChrome Parameters — Translucency Menu

Translucency settings allow you to adjust the appearance of clear items such as eye-glass lenses.

✓ **Operating Tip**

> Background colors that have a luminance value greater than the shadow limit, and chroma values that fall within the translucent limit, are considered translucent colors. Therefore, this area works in conjunction with the **Shadow** limit.

6. Adjust the range of Translucent colors of the UltraChrome Key as follows:

   • **Range** — Use the **Hue** knob to adjust the range of Translucent colors, as was initially determined by the Shadow Range.

      ~ Increasing the range value widens the Translucent Area by including more hues from the background range. Note that the lower-end of the luminance range is defined by the Shadow Range set in step 4.

      ~ Decreasing the range value narrows the Translucent Area by excluding hues.

   • **Gain** — Use the **SAT** knob to make the Translucent Areas more transparent or more opaque.

      ~ Increasing the gain value causes the Translucent colors to appear more opaque.

      ~ Decreasing the gain value causes the Translucent colors to appear more transparent.

7. Press **4. Transition** to display the **Transition Menu**.

UltraChrome Parameters

0. Color Pick	5. Background Range
1. Initialize Key	6. Foreground Range
2. Shadow	7. Spill Suppress
3. Translucency	8. Softness and Luma
4. Transition	9. Color Map Off

Transition   Gain: 0.0%

Use positioner or Hue, Sat, Lum to modify
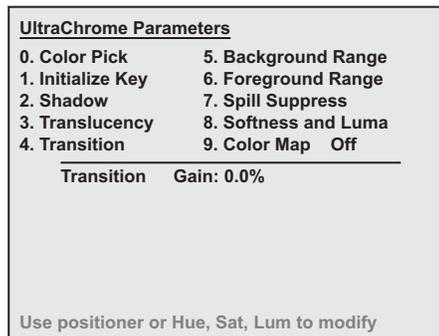
UltraChrome Parameters — Transition Menu

The Transition Area is the range of pixels that are left-over, such as those not in the Foreground, Shadow or Translucent areas. The Transition settings allow you to adjust the appearance of the Transition Area.

✎ **Note**

> Pixels with higher luminance than the Shadow range but with Hues outside the Translucency range will be Transition pixels even if the Hues are within the Background range.

8. Adjust the appearance of Transition Area pixels as follows:

   • **Gain** — Use the **Hue** knob to make the Transition Area pixels more transparent or more opaque.

      ~ Increasing the gain value makes the Transition Area pixels more opaque.

      ~ Decreasing the gain value makes the Transition Area pixels more transparent.

9. Press **5. Background Range** to display the **Background Range Menu**.

UltraChrome Parameters

0. Color Pick	**5. Background Range**
1. Initialize Key	**6. Foreground Range**
2. Shadow	**7. Spill Suppress**
3. Translucency	**8. Softness and Luma**
4. Transition	**9. Color Map Off**

Background Range Sat. range: 0.0%
Positive hue: 0.0%
Negative hue: 0.0%

Use positioner or Hue, Sat, Lum to modify
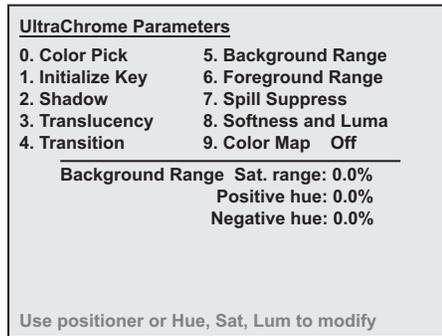
UltraChrome Parameters — Background Range Menu

✓ **Operating Tip**

> The Background area will typically need only very minor adjustment as most of the modification has been made by adjusting the Shadow and Translucent areas. However, changing this range may help expand or decrease these areas as they are completely contained in the Background range.

10. Adjust the range of hues and saturation levels that are included as part of the background as follows:

- **Sat. range** — Use the **Hue** knob to adjust the range of saturation values used for background colors that are close to the primary color. The higher the value, the larger the range of saturation levels.

  ~ Increasing the saturation range value causes a wider range of color saturation to be included in the background, and therefore, keyed out.

  ~ Decreasing the saturation range value causes less of a color saturation range to be included in the background. For example, only color saturations close to the nominal value are included in the background.

- **Positive hue** — Use the **SAT** knob to expand the hues included in the background counter-clockwise around the color wheel.

- **Negative hue** — Use the **LUM** knob to expand the hues included in the background counter-clockwise around the color wheel.
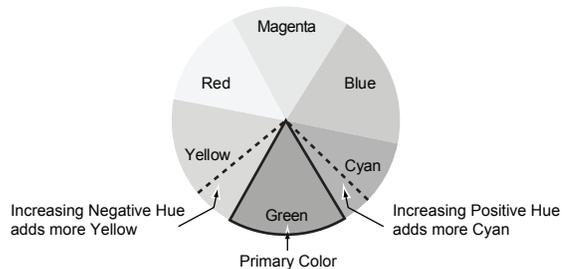
Effects of Positive and Negative Background Hue Adjustments

11. Press **6. Foreground Range** to display the **Foreground Range Menu**.

```
UltraChrome Parameters

0. Color Pick          5. Background Range
1. Initialize Key      6. Foreground Range
2. Shadow              7. Spill Suppress
3. Translucency        8. Softness and Luma
4. Transition          9. Color Map    Off
─────────────────────────────────────────
   Foreground Range    Clip: 0.0%
                        Hue: 0.0%
                     Reject: 0.0%




Use positioner or Hue, Sat, Lum to modify
```

UltraChrome Parameters — Foreground Range Menu

✓ **Operating Tip**

> The knobs associated with this menu directly control the range in which colors are considered foreground colors, and thus, Keyed fully on. Once the color pick process has finished, these values should require only minimal adjustments.

12. Adjust the Foreground Range of the UltraChrome Key as follows:

- **Clip** — Use the **Hue** knob to adjust the range of clipping of the Foreground colors.

    ~ Increasing the clip value removes lower-saturated colors from the Foreground image.

    ~ Decreasing the clip value includes lower-saturated colors in the Foreground image.

- **Hue** — Use the **SAT** knob to select the central, or base, color for the Foreground.

    ~ Increasing the hue value moves counter-clockwise around the color wheel while selecting a base color.

    ~ Decreasing the hue value moves clockwise around the color wheel while selecting a base color.

✓ **Operating Tip**

> You may wish to select a hue to set a base color to keep before using the other knobs to expand or contract the range of colors that will be kept in the foreground image.

- **Reject** — Use the **LUM** knob to include or reject adjacent hues to the base.

    ~ Increasing the reject value decreases the amount of adjacent hues that are included in the Foreground.

    ~ Decreasing the reject value increases the amount of adjacent hues that are included in the Foreground.

✎ **Note**

> You cannot rotate the Foreground area so that it falls in an area that is the same as the Background.

Adjusting the Hue values rotates the selection around the color wheel

Adjusting the Clip values includes and removes varying saturation levels of the hue selection

Magenta

Red

Blue

Yellow

Cyan

These hues are included in the foreground

Adjusting the Reject values expands and contracts the range of hues included in the Foreground

Green
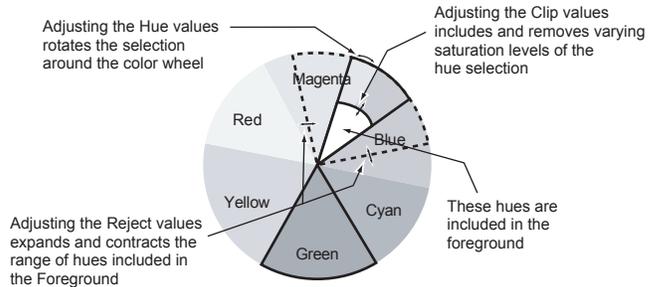
UltraChrome Color Wheel — Effects of Clip, Hue, and Reject

13. Press **7. Spill Suppress** to display the **Spill Suppress Menu**.

UltraChrome Parameters

0. Color Pick	**5. Background Range**
1. Initialize Key	**6. Foreground Range**
2. Shadow	**7. Spill Suppress**
3. Translucency	**8. Softness and Luma**
4. Transition	**9. Color Map Off**

Spill Suppress   Clip: 0.0%
Hue: 0.0%
Reject: 0.0%

Use positioner or Hue, Sat, Lum to modify

UltraChrome Parameters — Spill Suppress Menu

The Spill Suppress feature enables you to remove any color cast in your foreground image that is a result of background color "spilling" over into the foreground. For example, if there is a green color cast in your foreground image when using a green screen background.

14. Adjust the Spill Suppress parameters as follows:

- **Clip** — Use the **Hue** knob to adjust spill suppress clipping.

  ~ Increasing the clip value removes higher-saturated colors from spill suppress correction.

  ~ Decreasing the clip value includes higher-saturated colors in spill suppress correction. If your foreground image contains bright-colored areas that are suffering from background spill, decrease the clip value to have it corrected.

- **Hue** — Use the **SAT** knob to select the central, or base, color for spill suppress correction. If the color spill does not appear to be the same color as the background, use this control to adjust which hue is considered to be "spilled" into the foreground.

  ~ Increasing the hue value moves counter-clockwise around the color wheel while selecting a base color.

  ~ Decreasing the hue value moves clockwise around the color wheel while selecting a base color.

✓ **Operating Tip**

Adjust the **Hue** and **Reject** values first and then, if you cannot remove enough Background Spill from the Foreground of your image, reduce the **Clip** value.

- **Reject** — Use the **LUM** knob to include or reject adjacent hues to the base.

  ~ Increasing the reject value decreases the amount of adjacent hues that are included in spill correction.

  ~ Decreasing the reject value increases the amount of adjacent hues that are included in spill correction.

15. Press **7. Softness and Luma** to display the **Softness and Luma Menu**.

```
UltraChrome Parameters

0. Color Pick          5. Background Range
1. Initialize Key      6. Foreground Range
2. Shadow              7. Spill Suppress
3. Translucency        8. Softness and Luma
4. Transition          9. Color Map    Off

    Softness & Luma   Edge Softness: 0.0%
                        Reflections: 0.0%
                         Bkgd Luma: 0.0%



Use positioner or Hue, Sat, Lum to modify
```
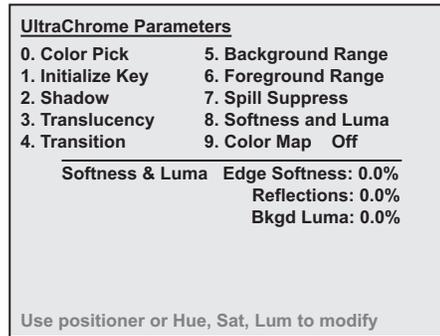
UltraChrome Parameters — Softness and Luma Menu

16. Adjust the Edge Softness and Luminance values as follows:

- **Edge Softness** — Use the **Hue** knob to add edge softening to the Foreground image and alpha channel. This may help blend the Foreground image with the underlying background video.

  ~ Increasing the softness value increases the amount of softness applied to the Foreground edges and alpha channel.

  ~ Decreasing the softness value decreases the amount of softness applied to the Foreground image and alpha channel. A value of 0.0% turns off edge softening.

- **Reflections** — Use the **SAT** knob to change the brightness of semi-transparent reflections, such as the reflections in eye-glass lenses.

  ~ Increasing the reflections value increases the brightness of semi-transparent reflections.

  ~ Decreasing the reflections value decreases the brightness of semi-transparent reflections.

- **Bkgd Luma** — Use the **LUM** knob to change the overall brightness of shadow, translucent, and transition areas. Use this to match shadow, translucent and transition brightness with foreground brightness.

  ~ Increasing the **Bkgd Luma** value increases the brightness of background, translucent, and transition areas.

  ~ Decreasing the **Bkgd Luma** value decreases the brightness of background, translucent, and transition areas.

17. Select any additional Key modifiers you want to use. You can select between the following:

- **MATTE FILL** — Select this button to fill the hole cut by the Chroma Key with a matte color.
- **KEY INVERT** — Select this button to invert the polarity of the Chroma Key.

- **MASK** — Select this button to activate the mask feature and mask out a rectangular part of the Chroma Key.

- **FLY KEY** — Select this option to activate the **Squeeze & Tease MD** option.

18. Perform a **CUT**, **AUTO TRANS**, or move the fader from one limit to the other to take your **UltraChrome Chroma Key** on-air.

This completes the procedure for creating an UltraChrome Chroma Key.

Tips for Chroma Key Fine-Tuning in Advanced Mode

The procedures in this section does not describe how to adjust a Chroma Key, but does show you the best method for solving common problems with a Chroma Key.

Use the following procedure to fine-tune your UltraChrome Chroma Key:

1. Select your **Primary Color**. This is the color you want to remove.

2. **Initialize** the Key.

3. Toggle the **Color Map** to **On** so that you can view the different elements of the Chroma Key.

4. Do **Shadows** exist on the Background?

   - **No** — Proceed to the next step.

   - **Yes** — Adjust the **Shadow Range** to **0.0%** so that the **Shadow Range** will be the same as the **Translucent Range**. The **Red** background will change to **Green**.

5. Are portions of the **Foreground** (Black) being Keyed out (Red or Green)? Red or Green spots will appear on the Black foreground.

   - **No** — Proceed to the next step.

   - **Yes** — Adjust the **Saturation Range** of the **Background** so that the Green and Red elements on the **Foreground** become Gray. You can further decrease the **Background** elements on the **Foreground** by adjusting the **Positive Hue** and **Negative Hue** of the **Background**.

6. Are portions of the **Transition Range** (Gray) appearing on the **Foreground** (Black)? Gray spots will appear on the Black foreground.

   - **No** — Proceed to the next step.

   - **Yes** — Adjust the **Clip** range of the **Foreground** so that the Gray elements on the **Foreground** become Black or Blue. You can further decrease the **Transition** elements on the **Foreground** by adjusting the **Hue** and **Reject** ranges.

7. Are portions of the **Background** (Red) being pushed to the **Foreground** (Black)? Black spots will appear on the Red background.

   - **No** — Proceed to the next step.

   - **Yes** — Adjust the **Clip** range of the **Foreground** so that the **Black** elements on the **Background** become Gray. You can further decrease the **Foreground** elements on the **Background** by adjusting the **Hue** and **Reject** ranges.

8. Are portions of the **Transition Range** (Gray) appearing on the **Background** (Red)? Gray spots will appear on the Red background.

   - **No** — Proceed to the next step.

   - **Yes** — Adjust the **Saturation Range** of the **Background** so that the Gray elements on the **Background** become Red or Green. You can further decrease the **Transition**

elements on the **Background** by adjusting the **Positive Hue** and **Negative Hue** of the **Background**.

9. Are there **Shadows** in the Chroma Key?

    •   **No** — Increase the **Translucency Gain** to increase the amount of detail, or decrease the **Translucency Gain** to have a cleaner **Background**.

    •   **Yes** — Increase the **Shadow Gain** to increase the amount of detail, or decrease the **Shadow Gain** to have a cleaner **Background**.

This completes the procedure for fine-tuning an UltraChrome Chroma Key.

Chroma Key Memory

Unlike Self Keys, Chroma Keys do not retain the clip and gain values with each crosspoint. Instead, there is only one set of values associated with the entire switcher at a given time. Therefore, each time you change the source of the Chroma Key, you will have to re-clip the Key as outlined above.

Chroma Key Lighting Tips

Achieving a good, clean Chroma Key is often considered one of the most challenging exercises in a studio. There are several elements that contribute to an effective Chroma Key including, lighting, distance of the talent from the background, type of background used, and the type of camera used. However, lighting is often considered the most important. Here are a few lighting hints which you may find helpful when setting up your Chroma Key.

Lighting the Background

•   There are several different kinds of lights typically used to light Chroma Key backgrounds. The most common are, cyclorama lights, soft lights, scoops, florescent lights, HMIs, and umbrella lights.

    For the most part, the one thing that they all have in common is the fact that they are "fill" type lights, as opposed to "Key" lights. These lights provide an even, diffused, flat light, which is critical in lighting Chroma Key backgrounds.

•   For best results, lights are usually hung in an even pattern from a grid above the background but space requirements may dictate the lights be positioned on stands beside the background. If side lighting is used, ensure the lights are positioned at equal distances from the background being lit, in order to achieve balance.

•   The number of lights used to light a background is directly related to the size of the background surface. Therefore, a larger, longer surface requires more lights than a smaller one. But whatever size of surface you are lighting, the most important point to remember is the background should be lit as evenly as possible to avoid "hot spots" in the Chroma Key.

•   When lighting the background, experienced lighting directors will check the background for hot spots, adjusting and readjusting the lights, using either a waveform monitor or a photographer's light meter. Waveform monitors are most useful since they display a graphical representation of the video level and any small variation in light level is immediately apparent. On the other hand, a light meter in the hands of an experienced professional can achieve the same results.

•   Generally speaking, best Chroma Key results are achieved with an even level of light on the background in the area of 60 – 75 IRE on a waveform monitor. However, conditions specific to your application may dictate a value outside of that range.

- If you only have access to Key type lights, you can simulate the effect of fill lights by bouncing a Key light off of a reflector and then on to the Chroma Key background. Also, you can use diffused glass, gels, or scrims to soften the light from a Key light. If you use any of these methods it's important to note that you will lose a significant amount of the original light intensity. Therefore, it takes more lights to reach the optimum IRE level required for a good Chroma Key.

Lighting the Foreground (Talent)

- You can maximize the quality of your Chroma Key if you separate the foreground (talent) from the background by 6 – 8 feet. This enables you to light the foreground and the background separately, thus reducing or avoiding "spill" and/or shadows.

  Separation also allows you more flexibility in how you light your talent. You may still choose to use a flat lighting technique, but with separation, the option exists to light your talent using a more dramatic 3-light, "Rembrandt style of lighting", typically used in other lighting applications. This style is characterized by three lights – a Key, a fill, and a back light.

- If spill does occur between the background and the foreground, a blue "halo" or "matte line" appears around the talent's shoulders and hair. This can be reduced or eliminated by using a yellow, straw, or amber colored light for the talent's back light. It will wash out or neutralize the blue reflection from the background on the back of the talent.

- As a general rule, it is good practice to light the foreground and the background to approximately the same IRE levels but this is often varied when dramatic lighting effects are required for the talent.

- And finally, be careful not to mix lights with different color temperatures on the same set (either foreground or background). The human eye and brain are able to deal with the subtle differences in color temperatures but cameras are not nearly that smart. If you must use lights with different color temperatures, make sure you use colored gels to compensate for the differences. Otherwise, you may experience holes in your Chroma Key that will be very difficult to remove.

Additional Chroma Key Tips and Considerations

Along with lighting, there are a number of other studio elements that should be taken into account when setting up your Chroma Keys. They include, the background material itself, the camera and its setup, Keying from a prerecorded signal on VTR, and using compressed video sources.

- Green and blue are the two most common colors used for chroma Keying backgrounds and are equally effective. Blue was initially chosen because it is the complimentary color to flesh tone and, therefore, the easiest to Key out (we don't want to Key out the faces, do we …). Given today's technology, almost any color can be used but blue and green are still the most widely used.

- There are a number of different materials commonly used as Chroma Key backgrounds and each has its benefits. The most common are paper, fabric, and paint. Paper is not as durable but can be more cost effective and more easily set up than the other two. Paint takes time and must be applied in several coats to ensure a deep, complete covering, while fabric also takes time and must be mounted and hung properly. Contact your television set and lighting distributor for details on the material that best meets your budget and application.

- If you are creating your Chroma Key on a studio set, it is generally accepted that the quality of your Chroma Key is directly related to the quality of the camera shooting the scene. The background video can come from any number of sources and may be quite

acceptable but the foreground video is what is being Keyed and where your attention is most focused. Therefore, the camera must be as high a resolution and low in noise as your budget will allow. In the end, low cost cameras may never produce "acceptable" Chroma Key results no matter how well the lighting has been configured.

• As well, *never* shoot a Chroma Key with the detail turned on in your camera. Detail adds noise to the video signal and makes it much more difficult for the Chroma Key circuits to process the video. Turning on the camera detail is not the solution to a low light level – more lights are!

• And finally, a few other points for your consideration. Avoid using foreground Chroma Key sources from 4:1:1 formats, highly compressed material (more than 4 to 1), or composite analog recordings. The technical nature of their formats and storage algorithms defeat the Chroma Key circuits and will seldom deliver acceptable results.

Split Keys

A **Split Key** is one in which you assign a different *fill source* for a Key. This is a Key source that is different than the *default* Key/fill associations that are set up during installation and different from those that are set up *automatically* for the various Key types. Split Keys are typically used for creative montages and for Keying moving video *inside* Key shapes.

There are two different split Key functions:

- **Split Key** — A split Key allows you to hold (retain) the alpha signal of the Key and assign a new video source to fill the hole. A typical application is when you fill your character generator alpha signal with the live output from a VTR or camera.

- **Split Video** — A split video allows you to hold a (non-alpha) Key cutter and select a new video source to fill the hole. A typical application is when you fill your title camera's luminance Key signal with the live output from a VTR.

In both cases, a new *fill source* is assigned while the hole cutter is *held*. The following methods allow you to perform split Keys — without having to return to the **Inputs Menu** and change your Key/fill associations.

Performing a Split Key

The **Split Key** function allows you to hold the alpha signal of a Key and assign a new video source to fill the hole. A split Key can be formed in both of the Effects Keyers, and the DSK.

Use the following procedure to perform a split Key in Key 1:

1. Select a background source on the **PGM** bus. This provides the background over which the Key will appear.

2. Press **KEY1** in the **Transition Control Group** to preview the Key. This step will also serve to assign the **Key** bus and **Effects Keyers Group** to **Key 1**.

3. Select a Key source on the **Key 1** bus.

4. Press **AUTO SELECT** in the **Effects Keyers Group**.

5. Press and *hold* **AUTO SELECT**.

6. Select the new fill source on the **Key 1** bus.

7. Release both buttons.

✓ **Operating Tip** | Both buttons will now be lit on the **Key 1** bus. The selected Key alpha video source will still be lit, and the new split fill video source will be flashing.

8. Adjust the Clip and Gain of the Key as needed. Refer to the section "**Performing an Auto Select Key**" on page 7-10 for more information.

✎ **Note** | The **Split Key** function is a *temporary* assignment. If, after setting up the split Key, you press *any button* on the **Key Bus** or select another Key type, the split is removed and you must set up the split Key again. Pressing **AUTO SELECT** again *does not* re-establish the split Key.

This completes the procedure for performing a split Key in Key 1.

Performing a Split Video

The **Split Video** function allows you to hold a luminance Key cutter and assign a new video source to fill the hole.

Use the following procedure to perform a split video in Key 1:

1. Select a background source on the **PGM** bus. This provides the background over which the Key will appear.

2. Press **KEY1** in the **Transition Control Group** to preview the Key. This step will also serve to assign the **Key** bus and **Effects Keyers Group** to **Key 1**.

3. Select a Key source on the **Key 1** bus.

4. Press **SELF KEY** in the **Effects Keyers Group**.

5. Press and *hold* **SELF KEY**.

6. Select the new fill source on the **Key 1** bus.

7. Release both buttons.

✓ **Operating Tip** | Both buttons will now be lit on the **Key 1** bus. The selected Key alpha video source will still be lit, and the new split fill video source will be flashing.

8. The Key bus will now have two buttons lit:

9. Adjust the Clip and Gain of the Key as needed. Refer to the section "**Performing a Self Key**" on page 7-9 for more information.

✎ **Note** | The **Split Key** function is a *temporary* assignment. If, after setting up the split Key, you press *any button* on the **Key Bus** or select another Key type, the split is removed and you must set up the split Key again. Pressing **SELF KEY** again *does not* re-establish the split Key.

This completes the procedure for performing a split video in Key 1.

MultiDSK Option

The MultiDSK™ option adds two Downstream Keyers to the **Synergy 100 MD Switcher**. These two DSKs are named **DSK4**, and **DSK5**. MultiDSK is currently only available for Auto-Select Keys. When MultiDSK is enabled, BNCs **B01** to **B06** are locked, and Preview with Overlay is defaulted to BNC **B07**. Refer to the section "**MultiDSK Setup**" of your *Synergy 100 MD Engineering Manual* for information on output configurations for MultiDSK.

When your external Downstream Keyers option is configured, the **TRANS LIMIT** and **PST BLACK** buttons will become **DSK4 DISS**, and **DSK5 DISS**, respectively. To accommodate this, a **Key Caps Kit** is included with your option package. For new customers who purchase a new Synergy 100 MD Switcher with a downstream Keyer options package, the appropriate Key caps are installed in the panel before shipping.

The following topics are discussed in this section:

- MultiDSK Operation
- Setting MultiDSK Sources and Transition Rates
- DSK Drop
- Isolate MultiDSK
- MultiDSK Control Using a GPI

Refer to the section "**Downstream Keyer Group**" on page 7-5 for more information on performing a Downstream Key.

MultiDSK Operation

The addition of the MultiDSK option alters the functionality and appearance of some of the buttons on the control panel. the **TRANS LIMIT** and **PST BLACK** buttons become **DSK4 DISS**, and **DSK5 DISS**, respectively.

When the MultiDSK™ option is enabled, the **DSK4 DISS** and **DSK5 DISS** buttons allow you to dissolve the Keys on and off-air.

The new buttons for the MultiDSK option operate as follows:

- The **DSK4 DISS** button allows you to transition **Downstream Keyer 4** on and off-air. When the Key is on-air, the **ON AIR** indicator below the **DSK4** button in the **Transition Group** will be lit.

- The **DSK5 DISS** button allows you to transition **Downstream Keyer 5** on and off-air. When the Key is on-air, the **ON AIR** indicator below the **DSK5** button in the **Transition Group** will be lit.

Setting MultiDSK Sources and Transition Rates

The video source and transition rate for your MultiDSK option can be configured via the **MultiDSK Menu**.

The transition rate can be set between 0 and 999 frames. The default value is dependant on the video frame rate configured on your switcher. A rate of **0** indicates a cut transition is performed, instead of a dissolve transition.

Use the following procedure to set MultiDSK sources and transition rates:

1. Navigate to the **MultiDSK Menu** as follows:

    • Press **MENU** to display the **Main Menu**.

    • Press **0. Effects** to display the **Effects Menu**.

```
Effects

0. Editor        On      5. UltraChrome Parameters
1. GPIs          Off     6. Global-Store
2. Center        Off     7. MultiDSK
3. Safe Title    Off
4. Reserved




MENU    100         10      1     SEL
Exit    Previous    Down    Up    Accept
```
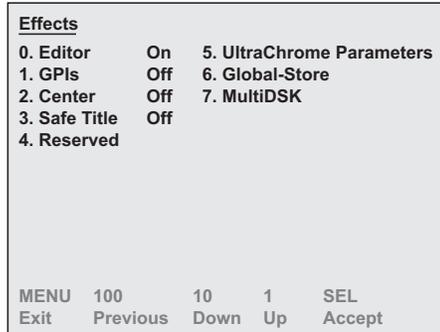
Effects Menu

2. Press **7. MultiDSK** to display the **MultiDSK Menu**.

```
MultiDSK

0. DSK4 Source    Black
1. DSK4 Rate      8
2. DSK5 Source    Black
3. DSK5 Rate      8




MENU    100         10      1     SEL
Exit    Previous    Down    Up    Accept
```
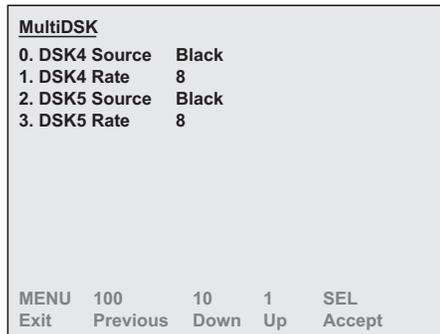
MultiDSK Menu

3. Set the source for **DSK4** as follows:

    • Press **0. DSK4 Source** to activate this menu item.

    • Use the ⬆ and ⬇ buttons or the **Aspect** knob to select a source.

    • Press **SEL** to save the setting.

4. Set the transition rate for **DSK4** as follows:

    • Press **1. DSK4 Rate** to activate this menu item.

    • Use the ⬆ and ⬇ buttons or the **Aspect** knob to select a rate between 0 - 999 frames.

    • Press **SEL** to save the setting.

5. Set the source for **DSK5** as follows:

    • Press **2. DSK5 Source** to activate this menu item.

    • Use the ⬆ and ⬇ buttons or the **Aspect** knob to select a source.

    • Press **SEL** to save the setting.

6. Set the transition rate for **DSK5** as follows:

    • Press **3. DSK5 Rate** to activate this menu item.

- Use the ⬆ and ⬇ buttons or the **Aspect** knob to select a rate between 0 - 999 frames.

- Press **SEL** to save the setting.

✓ **Operating Tip**

> Pressing **BACK** or **MENU** while changing a setting will abandon those changes in the **MultiDSK Menu**.

This completes the procedure to set MultiDSK sources and transition rates.

DSK Drop

The Downstream Keyer Drop (DSK Drop) feature allows you to have the DSK cut off-air whenever a new source is selected directly on the Program Bus. This means that if the DSK is on-air and you select any crosspoint on the Program Bus, the DSK will be cut off-air and the new source on the Program Bus will be cut on-air.

✎ **Note**

> The DSK Drop feature will not affect the DSK if a transition is performed on the Program Bus, or if the same crosspoint button on the Program Bus is pressed.

Use the following procedure to configure the **DSK Drop** mode:

1. Navigate to the **Personality Menu** as follows:

   - Press **MENU** to display the **Main Menu**.

   - Press **6. Personality** to display the **Personality Menu**.

```
Personality - Synergy 100

0. Trans PV     On          5. GstoreMem   On
1. DSK Drop     Manual      6. Isolate DSK  Off
2. Sleep Time   10 min
3. Menu Bttn    Menu Only
4. AutoRcall    On




MENU   100          10      1      SEL
Exit   Previous    Down    Up     Accept
```
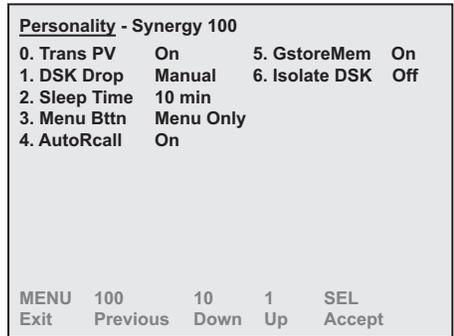
Personality Menu

2. Press **1. DSK Drop** to display the **DSK Drop Menu**.

```
DSK Drop

0. DSK3 Drop     Manual
1. DSK4 Drop     Manual
2. DSK5 Drop     Manual






MENU   100          10      1      SEL
Exit   Previous    Down    Up     Accept
```
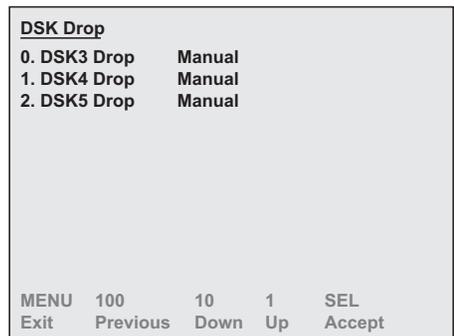
DSK Drop Menu

---

3. Press the corresponding number beside the DSK you wish to toggle between **Auto** and **Manual**.

This completes the procedure to configure the **DSK Drop** mode.

Isolate MultiDSK

You can isolate the two MultiDSKs to prevent them from being affected by memory recalls and switcher soft-resets. Isolated MultiDSKs also can not be included in Program/Preset-MLE transitions (you can still transition them using the keys in the **Downstream Keyer Group**). Isolated MultiDSKs are not affected by certain actions that you perform on the switcher as follows:

- **Memory Recalls** — Memory registers that were saved with MultiDSK sources and configurations will not overwrite the current MultiDSK settings when recalled. The non-MultiDSK settings in the memory registered will be recalled.

- **Switcher Soft-Reset** — Performing a switcher soft-reset will not return the MultiDSKs to a default state. All MultiDSK settings including the selected source, key type, and on-air status will be preserved.

- **Program/Preset MLE Transitions** — You can not include MultiDSKs in Program/Preset MLE transitions. You must transition the MultiDSKs on and off-air using only the buttons in the **Downstream Keyer Group**.

Use the following procedure to isolate your MultiDSKs:

1. Navigate to the **Personality Menu** as follows:

   - Press **MENU** to display the **Main Menu**.
   - Press **6. Personality** to display the **Personality Menu**.

```
Personality - Synergy 100

0. Trans PV      On           5. GstoreMem   On
1. DSK Drop      Manual       6. Isolate DSK Off
2. Sleep Time    10 min
3. Menu Bttn     Menu Only
4. AutoRcall     On




MENU    100          10      1     SEL
Exit    Previous     Down    Up    Accept
```

Personality Menu

2. Press **6. Isolate DSK** to toggle this option on or off.

This completes the procedure to isolate your MultiDSKs.

MultiDSK Control Using a GPI

MultiDSK transitions on the Synergy 100 MD switcher can be performed via a GPI. This feature is configured via the **Frame GPIs Menu**.

Use the following procedure to configure GPI control of the MultiDSK option:

1. Navigate to the **Personality Menu** as follows:

   - Press **MENU** to display the **Main Menu**.
   - Press **3. GPIs** to display the **GPIs Menu**.

```
GPIs
0. Frame GPIs




MENU    100        10    1    SEL
Exit    Previous   Down  Up   Accept
```
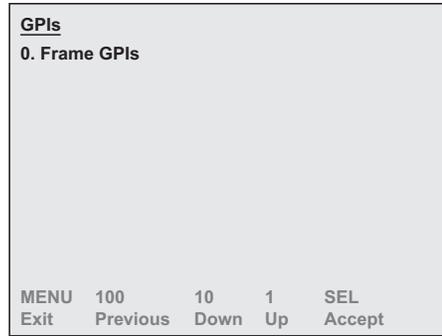
GPIs Menu

2. Press **0. Frame GPIs** to display the **Frame GPIs Menu**.

```
Frame GPIs
0. Input      GPI 1
1. Function   None
2. Area       MLE
3. Polarity   Low
4. Type       Level




MENU    100        10    1    SEL
Exit    Previous   Down  Up   Accept
```
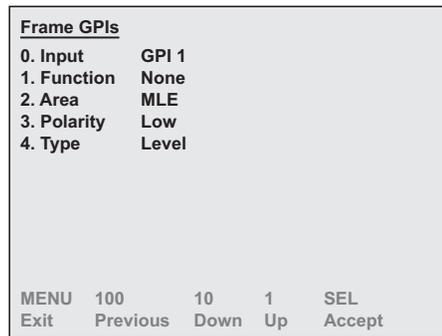
Frame GPIs Menu

3. Set the **Area** value as follows:

    •   Press **2. Area** to active this menu item.

    •   Use the ⬆ and ⬇ buttons or the **Aspect** knob to select **DSK4** or **DSK5**.

    •   Press **SEL** to save the setting.

4. Set the **Function** value as follows:

    •   Press **1. Function** to active this menu item.

    •   Use the ⬆ and ⬇ buttons or the **Aspect** knob to select **Cut** or **Auto Trans**.

    •   Press **SEL** to save the setting.

✓ **Operating Tip**   Pressing the **BACK** or **MENU** while changing a setting will abandon those changes in the **Frame GPIs Menu**.

This completes the procedure to configure GPI control of the MultiDSK option.

Programming a Favorite CG

This procedure allows you to select a "favorite" CG that you can place on the **CHAR GEN1** or **CHAR GEN2** buttons in the **Downstream Keyer Group**. The feature is designed so that you can select a "clean" CG in the **AUTO SELECT** mode, with no Key modifiers enabled.

Use the following procedure to program the **CHAR GEN1** button:

1. Press and *hold* **CHAR GEN1** in the **Downstream Keyer Group**.

2. Select the favorite CG source on the **Key Bus**.

3. Release both buttons.

This completes the procedure for assigning a source to **CHAR GEN1** button. The same procedure is applied to assigning a video source to the **CHAR GEN2** button. The selected CG source will be stored in memory and will be recalled each time **CHAR GEN1** is pressed.

	Note	If you have a simple or complex Key type already set up, when you press **CHAR GEN1** or **CHAR GEN2**, the entire Keyer is cleared. In addition to the favorite CG, the system will automatically select **AUTO SELECT** and **KEY MEM** (provided the Auto Select Key with the appropriate Key Memory values has been set up in the installation).

Using Auto Transitions With Keys

The **AUTO TRANS** button in the **Transition Control Group** is used to start an automatic (smooth) transition that takes the selected Key on or off-air. Refer to the section "**Performing Auto Transitions**" on page 5-8 for more information on performing an Auto Transition.

- Two *different* auto-transition rates can be used to dissolve or wipe a Key:

    ~ **Auto Rate** — If the **AUTO TRANS** button in the **Transition Control Group** is used in conjunction with the "next transition" buttons, the rate is controlled by the **AUTO** rate in the **System Control Group**.

    ~ **DSK Rate** — If the **DSK DISS** button in the **Transition Control Group** is used, the rate is controlled by the **DSK** rate in the **System Control Group**.

Each auto transition button has its own unique rate. This allows you to perform Key transitions and downstream Key transitions at different rates.

	Note	The time duration of a frame rate will vary, depending on the type of video format the switcher is running in. Refer to Chapter 2, "**System Architecture**", in the *Synergy 100 MD Engineering Manual* for more information.

For example, with an **AUTO** rate of 20 frames and a **DSK** rate of 15 frames, you could fade in a Key at 20 frames (using the **AUTO TRANS** button in the **Transition Control Group**) and fade out the downstream Key at 15 frames using the **DSK DISS** button in the **Transition Control Group**.

Refer to the section "**Changing Auto Transition Rates**" on page 5-9 for more information on changing the auto transition rates.

Key Auto Transition Notes

Please note the following important points regarding Key auto transitions:

- There are two ways to finish an Auto Transition that is already in progress:

    ~ Press **CUT** during the transition to finish the transition immediately.

    ~ Move the **Fader** from one limit to the other.

	Important	Once you move the **Fader** off-limit the transition will stop. If you continue to move the fader until the **AUTO TRANS** button goes out the transition control has been passed to the Fader. If you move the fader back to the original limit you can continue the transition by pressing the **AUTO TRANS** button again or by pressing the **CUT** button.

- You *cannot* perform an Auto Transition if the **Fader** is off its upper or lower limit.

- The **DSK** can only be transitioned using the **DSK DISS** or **DSK CUT** buttons. The position of the Fader or the next transition selections does not affect a Downstream Keyer transition.

- Wipes can *only* be performed on the **Effects Keyer** transition or **Background** transitions.

Key Modifiers

In This Chapter

This chapter provides instructions for using the keys of your Synergy 100 MD Switcher.

The following topics are discussed:

- Filling a Key with Matte
- Masking Keys
- Inverting Keys
- Flying Keys
- Positioner

Filling a Key with Matte

Use the following procedure to fill a key with matte color in Key 1:

✎ **Note** You cannot apply **MATTE FILL** to a **PST PATT** key. **Matte Fill** can be applied to all other key types.

1. Select a background source on the **PGM** bus. This provides the background over which the key will appear.

2. Press **KEY1** in the **Transition Control Group** to preview the key. This step will also serve to assign the **Key** bus and **Effects Keyers Group** to **Key 1**.

3. Select a key source on the **Key 1** bus.

4. Select either **SELF KEY**, **AUTO SELECT**, or **CHROMA KEY** in the **Effects Keyers Group**.

5. Press **MATTE FILL** in the **Effects Keyers Group**. The key fill will now be replaced with the current color from the matte generator.

6. Adjust the color of the matte as follows:

    •   **HUE** — Use the **HUE** knob in the **Mattes Group** to adjust the color of the matte generator.

    •   **SAT** — Use the **SAT** knob in the **Mattes Group** to adjust the color saturation. The saturation can be adjusted from monochrome, or no saturation, to full color saturation.

    •   **LUM** — Use the **LUM** knob in the **Mattes Group** to adjust the luminance of the color. The luminance can be adjusted from minimum brightness to maximum brightness.

7. Add additional key modifiers as required.

8. Perform a **CUT**, **AUTO TRANS**, or move the fader from one limit to the other to take your key on-air.

This completes the procedure for filling a key with matte color in Key 1. Refer to the section "**Mattes Group**" on page 6–10 for more detailed color instructions.

Masking Keys

Use the following procedure to mask a Key in Key 1:

1. Select a background source on the **PGM** bus. This provides the background over which the key will appear.

2. Press **KEY1** in the **Transition Control Group** to preview the key. This step will also serve to assign the **Key** bus and **Effects Keyers Group** to **Key 1**.

3. Select a key source on the **Key 1** bus.

4. Select either **SELF KEY**, **AUTO SELECT**, **CHROMA KEY**, or **PST PATT** in the **Effects Keyers Group**.

5. Press **MASK** in the **Effects Keyers Group**. The current settings of the mask generator will be applied to the key.

6. Adjust the size, position, and aspect of the mask as follows:

Note
> You can return the mask to the default size, position, and aspect by pressing the **CNTR** button in the **Effects Control Menu Group**.

   - **Size** — Twist the positioner to increase or decrease the size of the mask.
   - **Position** — Move the positioner **Up/Down** or **Left/Right** to place the mask where you want it.
   - **Aspect** — Use the **ASPECT** knob in the **Effects Control Group** to adjust the aspect of the mask.

7. Invert the mask as follows:

   - Press the **REV** button in the **Effects Control Menu Group** to invert the mask.

8. Add additional key modifiers as required.

9. Perform a **CUT**, **AUTO TRANS**, or move the fader from one limit to the other to take your key on-air.

This completes the procedure for masking a Key in Key 1.

Inverting Keys

Use the following procedure to invert a key in Key 1:

1. Select a background source on the **PGM** bus. This provides the background over which the key will appear.

2. Press **KEY1** in the **Transition Control Group** to preview the key. This step will also serve to assign the **Key** bus and **Effects Keyers Group** to **Key 1**.

3. Select a key source on the **Key 1** bus.

4. Select either **SELF KEY**, **AUTO SELECT**, **CHROMA KEY**, or **PST PATT** in the **Effects Keyers Group**.

5. Press **KEY INVERT** in the **Effects Keyers Group**. The polarity of the current key cut by the clip and gain values will be inverted.

6. Adjust the Clip and Gain of the key as follows:

    • Use the **CLIP** knob in the **Effects Keyers Group** to adjust the luminance of the key. The lower the threshold setting, the more the key is visible.

    • Use the **GAIN** knob in the **Effects Keyers Group** to adjust the softness of the edges of the key.

7. Add additional key modifiers as required.

8. Perform a **CUT**, **AUTO TRANS**, or move the fader from one limit to the other to take your key on-air.

This completes the procedure for inverting a key in Key 1.

Flying Keys

	Note	The Squeeze & Tease MD option must be installed in order to Fly a Key.

The Fly Key allows you to apply DVE effects to any of the four Key Types, with the ability to control the size, horizontal position, and vertical position. Refer to the section "**3D Guidelines**" on page 12–16 for more information on flying keys in Squeeze & Tease MD.

Positioner

The **Positioner** is an *assignable* module that allows you to manipulate the size and position of wipe patterns, Flying Keys, masks, crop edges, and adjust **PST PATT** keys, and adjust **Squeeze & Tease** Keys, depending upon the selected mode.

The control of the 3-axis **Positioner** (also known as a *joystick*) is illustrated below:

Up / Down
(Y-Axis) Movement:
Vertical Position Control

Left / Right
(X-Axis) Movement:
Horizontal Position Control

Clockwise /
Counter-clockwise
(Z-Axis) Movement:
Size Control

Positioner (Joystick)
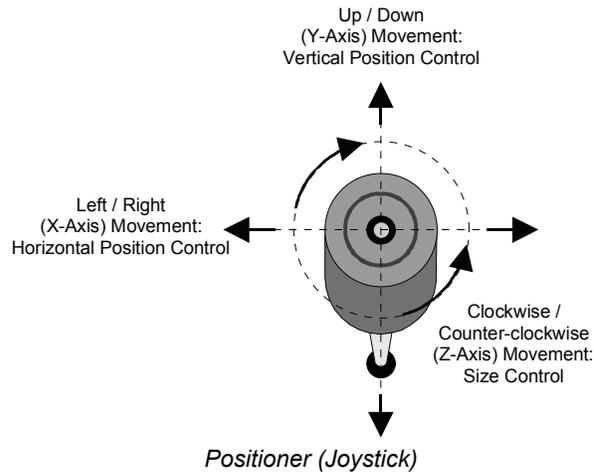
- Moving the **Positioner** *left* or *right* controls the horizontal position of the key or mask. It also controls the left and right edges of the Flying Key in cropping mode and the horizontal rotation of a flown key when the **Squeeze & Tease MD** option is installed.

- Moving the **Positioner** *up* or *dow*n controls the vertical position of the key or mask. It also controls the upper and lower edges of the Flying Key in cropping mode and the vertical rotation of a flown key when the **Squeeze & Tease MD** option is installed.

- Twisting the **Positioner** clockwise or counter-clockwise controls the size of the key or mask. It also provides a means of rotating the vertical and horizontal wipes when the **ROTATE** button is active and the planar (or Z-axis) rotation of a flown key when the **Squeeze & Tease MD** option is installed.

Memory and Disk Functions

In This Chapter

This chapter provides instructions for using your **Memory** and **Disk** functions. The following topics are discussed:

- Memory Functions
- Storing Memory Registers
- Recalling Memory Registers
- Effects Dissolve
- Using Storage Devices
- Disk Menu Tree
- Saving Registers
- Recalling Registers

Memory Functions

The memory system stores and recalls complete switcher set-ups including key source and fill information, wipe pattern selection, masking, transition rates, borders, key attributes, and color matte levels — all the control panel settings that comprise a typical built-up scene.

The memory controls consist of the **MEM** button, the **CNTR/EFF D** button, and the **REV/LEARN** button located in the **Effects Control Groups**. These buttons are used in conjunction with the **System Control Group** and the **Effects Control** pattern buttons.
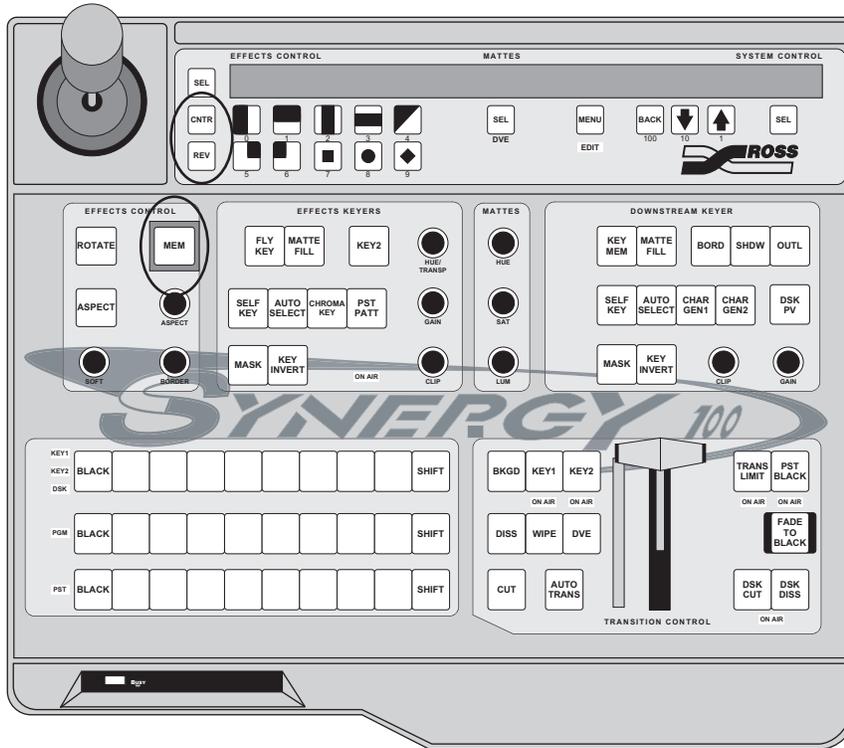
MEM, CNTR/EFF D, and REV/LEARN Buttons
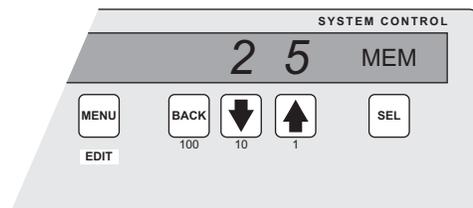
System Control Group — Memory Function

A memory register is a "snapshot" of the current state of the switcher. You can store up to **100** registers, numbered **00** to **99**. Memory registers are organized into 10 Banks, each containing 10 memory registers. The Bank is represented by the number in the tens position, and the memory register by the number in the ones position on the display in the **System Control Group**. The example above shows memory **25**, this is Bank **2**, Memory register **5**.

Banks are numbered from **0** through **9**, and the registers within each bank are also numbered **0** through **9**.

- • Bank **0** (registers **00** to **09**)

- • Bank **1** (registers **10** to **19**)

- • Bank **2** (registers **20** to **29**) etc.

MEM

When the **MEM** button in the **Effects Control Group** is pressed, the pattern buttons in the **Effects Control Group** allow you to store or recall the **10** memory registers in a selected Bank. To access different memory banks, use the **10** button in the **System Control Group**. One bank is active at any given time.
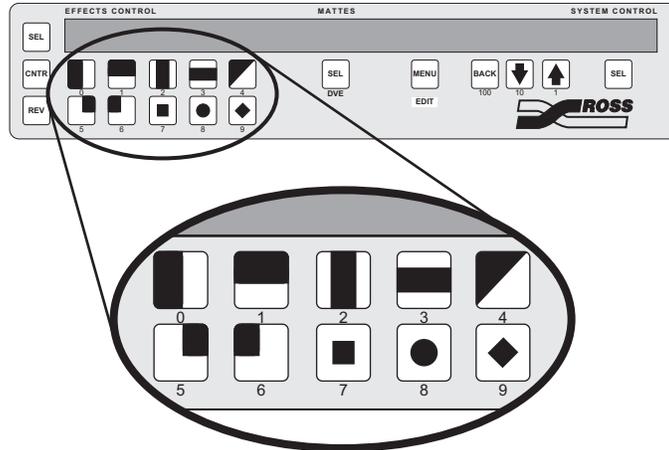
Effects Control Group — Pattern Buttons

Storing Memory Registers

Memories can be stored using either the Quick Store, or the Advanced Store method. The Quick Store method allows you to store memories to different registers in the same bank using just the Pattern Buttons. If you want to store memories to different banks, you should use the Advanced Store method. The Advanced Store method allows you to store memories to different registers in different banks using the **10** and **1** buttons in the **System Control Group**.

✎	Note	Remember that when you store a panel setup, you store *everything*, including all *underlying data*. For example, if you store a register that includes one or more keys, not only is the key data stored for the current on air keys, but data (e.g., clip and gain) is also stored for keys that are *not* currently on air.

Quick Store

Use the following procedure to save a memory using the quick store method:

1. Set up the switcher to the configuration you want to store.

2. Press the **MEM** button in the **Effects Control Group**. The button will illuminate green.

✎	Note	If you want to use an **Effects Dissolve** to recall this memory, you must toggle the **CNTR** (**EFF D**) button **On** before storing the memory. The **Auto Recall** feature must be on in order to store the Effects Dissolve with the memory. Refer to the Chapter "**Completing Setup**", in the *Synergy 100 MD Engineering Manual* for more information.

3. Use the **10** (⬇) button to select the Bank that you want to store the memory to. If the bank is already selected you do not have to change it.

| ✓ | **Operating Tip** | The memory bank is also displayed following the **MEM** on the display in the **Effects Control Group**. |
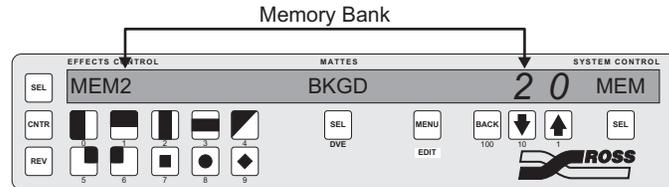
Menu Control Group — Memory Bank Selection

| ✓ | **Operating Tip** | A store operation can be canceled only if a memory location has not already been selected. Press **REV/LEARN** or **MEM** to abort the store operation. |

4. Press the **REV** (**LEARN**) button to enter memory store mode.

| ⁂ | **Important** | Storing a setup in a specific register overwrites any previous information that may have been contained in that register. |
| | | A store operation cannot be undone. |

5. Press the pattern button corresponding to the Memory Register you want to store the switcher setup to. The switcher setup is stored and the LED on the **REV/LEARN** button turns off.

This completes the procedure for storing a memory using the Quick Store method.

Advanced Store

Use the following procedure to save a memory using the advanced store method:

1. Set up the switcher to the configuration you want to store.

2. Press the **MEM** button in the **Effects Control Group**. The button will illuminate green.

| ✎ | **Note** | If you want to use an **Effects Dissolve** to recall this memory, you must toggle the **CNTR** (**EFF D**) button On before storing the memory. The **Auto Recall** feature must be on in order to store the Effects Dissolve with the memory. Refer to Chapter 10, "**Completing Setup**", in the *Synergy 100 MD Engineering Manual* for more information. |

3. Press the **REV** (**LEARN**) button to enter memory store mode.

4. Use the **10** (⬇) button to select the Bank that you want to store the memory to. If the bank is already selected you do not have to change it.

| ✓ | **Operating Tip** | The memory bank is also displayed following the **MEM** on the display in the **Effects Control Group**. |

Memory Bank

Menu Control Group — Memory Bank Selection

✓ **Operating Tip**

A store operation can be canceled only if a memory location has not already been selected. Press **REV** (**LEARN**) or **MEM** to abort the store operation.

5. Use the **1** (⬆) button to select the Memory Register that you want to store the memory to.

⚠ **Important**

Storing a setup in a specific register overwrites any previous information that may have been contained in that register.

A store operation cannot be undone.

6. Press the right **SEL** button, in the **System Control Group**, to store the memory. The switcher setup is stored and the LED on the **REV** (**LEARN**) button turns off.

✓ **Operating Tip**

If you want to store more memories in the same bank you can use the Quick Store method.

This completes the procedure for storing a memory using the Advanced Store method.

Recalling Memory Registers

Memories can be recalled using either the Quick Recall, or the Advanced Recall method. The Quick Recall method allows you to recall memories from different registers in the same bank using just the Pattern Buttons. If you want to recall memories from different banks, you should use the Advanced Recall method. The Advanced Recall method allows you to recall memories from different registers in different banks using the **10** and **1** buttons in the **System Control Group**.

Quick Recall

Use the following procedure to recall a memory using the Quick Recall method:

1. Press the **MEM** button in the **Effects Control Group**. The button will illuminate green.

2. Use the **10** (⬇) button to select the Bank that you want to recall the memory from. If the bank is already selected you do not have to change it.

✓ **Operating Tip**

The memory bank is also displayed following the **MEM** on the display in the **Effects Control Group**.
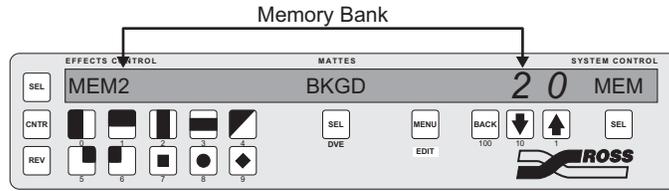
Menu Control Group — Memory Bank Selection

3. Press the pattern button corresponding to the Memory Register you want to recall the switcher setup from. The switcher setup is recalled.

Note | If this memory was stored with the **Effects Dissolve** feature activated, and the **AutoRcall** option is set to **On**, the **CNTR** (**EFF D**) button will be lit, and the current switcher setting will "slew" to the new recalled setting.

This completes the procedure for recalling a memory using the Quick Recall method.

Advanced Recall

Use the following procedure to perform an *advanced* recall:

1. Press the **MEM** button in the **Effects Control Group**. The button will illuminate green.

2. Press the **10** (⬇) button in the **System Control Group** to select the Bank that contains the memory register you want to recall.

3. Press the **1** (⬆) button in the **System Control Group** to select the Memory Register that you want to recall.

4. Press the right **SEL** button to recall the memory.

Note | If this memory was stored with the **Effects Dissolve** feature activated, and the **AutoRcall** option is set to **On**, the **CNTR** (**EFF D**) button will be lit, and the current switcher setting will "slew" to the new recalled setting.

Operating Tip | If you want to recall more memories from the same bank you can use the Quick Recall method.

This completes the procedure for recalling a memory using the Advanced Recall method.

Recall Register Notes

Please note the following important points regarding memory register recalls:

• After a recall, the panel responds to the recalled values and not to the current position of the knobs. This may result in the control knob reaching its mechanical stop before the full value is reached. If this happens, it will be necessary to rotate the knob away from the mechanical stop to a point where some change is again observed. At this point, the knob is will returned to normal operation. This makes it possible to make adjustments on the program output without observing any jump as the control knob is re-synchronized.

• When a register is recalled that includes an off-limit **Fader**, the system brings the effect back as a *temporary* "wipe limit." You can use the **AUTO TRANS** button to complete the transition.

- It is possible to recall a memory while retaining a current video crosspoint. This is accomplished by holding down the crosspoint of the video that you want to keep, and then recalling the desired memory. This feature applies to both Key buses and DSK bus, as well as the Background and Preset buses.

- It is possible to trigger a memory recall using a frame GPI input.

Effects Dissolve

The **CNTR** (**EFF D**) button in the **Effects Control Group** enables you to "slew" a switcher setup from its current setting to a new recalled setting. In DVE terms, an **Effects Dissolve** is a two-Keyframe effect in which the switcher interpolates between two different images (a source effect image and a destination effect image) at a given rate.

☑ **Operating Tip**

> The **Effects Dissolve** feature can be stored and automatically recalled with the memory. Refer to Chapter 10, "**Completing Setup**" in the *Synergy 100 MD Engineering Manual* for more information on setting up the Auto Recall feature.

Notes on Using Effects Dissolve

There are a number of points that must be considered when working with Effects Dissolves as follows:

- Only analog functions, such as border color, clip levels and pattern positions, slew between a current setting and a new recalled setting. When the **CNTR** (**EFF D**) button is armed, and the recall function is performed, the Synergy 100 MD first recalls all non-dissolving values prior to beginning the effects dissolve itself.

  This means that everything that is not an analog value, such as key priorities, crosspoints, patterns, next transition data, is recalled in the first frame of the effects dissolve, followed by all analog values in the second frame. Presetting the switcher with the correct backgrounds and priorities, immediately prior to performing the effects dissolve, guarantees the correct ending position for your effects.

- If the **CNTR** (**EFF D**) button is off, recalled effects cut between memories.

- The **Effects Dissolve** function is valid for recall operations only. Storage operations are not affected.

- The duration of the **Effects Dissolve** is governed by the transition rate that is programmed into the destination register. For example:

  ~ Effect #1 is a box Preset Pattern that is positioned in the upper left corner of the screen. It is stored in memory register **1** with a transition rate of **10** frames.

  ~ Effect #2 is a box Preset Pattern that is positioned in the upper right corner of the screen. It is stored in memory register **2** with a transition rate of **45** frames.

  If you cut to register **1** and then recall register **2** with an **Effects Dissolve**, the box wipe moves from the upper left corner to the upper right corner at a **45** frame duration.

- The **Effects Dissolve** function will *not* transform a circle wipe into a box wipe. For example:

  ~ Effect #3 is a circle Preset Pattern that is positioned in the center of the screen. It is stored in register **3** with a transition rate of **30** frames.

- If you cut to register **1** and then recall register **3**, with an **Effects Dissolve**, the system cuts to the circle wipe and then moves it from the upper left to the center at a **30** frame duration.

- You can slew as many functions within the MLE as desired.

Creating a Basic Effects Dissolve

In the example shown, both the source and destination effects are saved. It is not always necessary to save both the source and destination effect. You can slew from a current setting to a recalled setting that has been previously programmed.

Use the following procedure to perform a basic effects dissolve:

Note The duration of an Effects Dissolve is always the transition rate that was stored with the memory you are recalling.

1. Program an effect with the intention of performing an **Effects Dissolve** — that is, a *change* between two different analog settings (e.g., a wipe in two positions, a border with two unique colors, two different "Fly Key" positions).

   The following illustration displays a two-channel object as the first Keyframe in the effect.
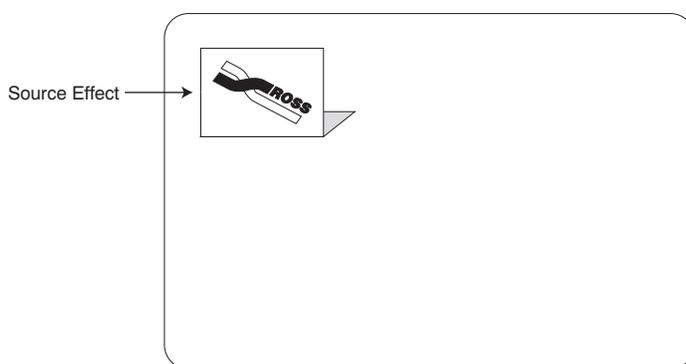
   Source Effect — First Keyframe

2. Enter the desired transition rate. Refer to the section "**Changing Auto Transition Rates**" on page 5–9 for more information.

3. Repeat steps 1 and 2 for the second effect (remember that two setups are required to perform an effects dissolve — essentially, a *source* effect and a *destination* effect).

   The following illustration displays the object that has been moved and rotated in 3D space.
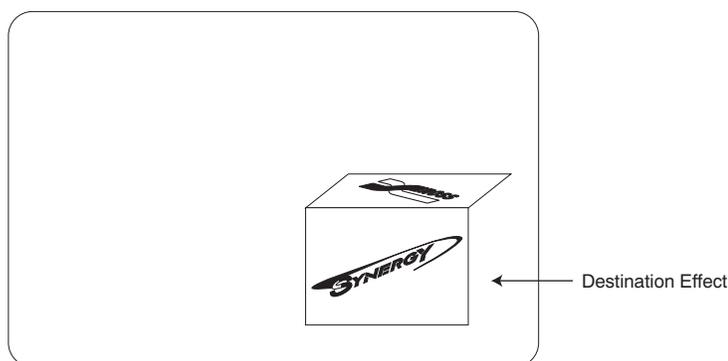
   Destination Effect — Second Keyframe

4. Recall the first setup from memory. Refer to the section "**Recalling Memory Registers**" on page 9–5 for more information.

5. To perform the **Effects Dissolve**, press **CNTR** (**EFF D**) and recall the second setup from memory. The system *first* recalls all non-dissolving values (with a cut) and then slews all analog values.

Location and Rotation Effects Dissolve
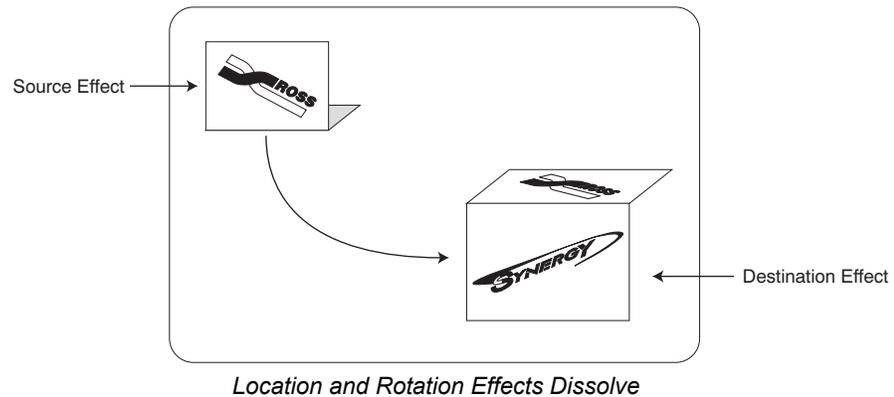
6. Repeat step 6 if you want to slew back to the *first setup* or to any additional registers that have been properly stored in preparation for the **Effects Dissolve** function. You can slew or cut between as many setups as desired, simply governed by the **CNTR** (**EFF D**) button and the way that the effect was programmed.

✔	**Operating Tip**	Pressing another memory button while an effects dissolve is in progress will cause the dissolve to stop and transition from its current state (midway between the original two memories) to the state of the destination effect. The menu will not show the image moving or changing while the effects dissolve is in progress. It will be updated with the new values once the dissolve is finished.

This completes the procedure for perform a basic effects dissolve.

Working with Channels and Objects

The following table can be used to predict how the **Effects Dissolve** will behave when working with various combinations of channels and objects.

✳	**Important**	Channels will not interpolate across Keyers. You cannot perform an Effects Dissolve from one Keyer to another.

Effects Dissolve Behavior Table

Scenario	Result
The source effect has *two* channels and the destination effect has *two* channels.	**Channel 1** will interpolate to the destination effect for **Channel 1**. **Channel 2** will interpolate to the destination effect for **Channel 2**. Note: This will occur no matter what video sources are assigned to **Channels 1** and **2**.

Effects Dissolve Behavior Table

Scenario	Result
The source effect has *two* channels, and the destination effect has only *one* channel.	The channel that is not contained in the destination effect will be cut off air at the start of the transition and the other channel will interpolate.
The source effect has *one* channel and the destination effect has *two* channels.	The channel that is not contained in the source effect will cut on (to its final state) at the start of the transition and the other channel will interpolate.
The source effect has only *one* channel in use, and the destination effect has a *different* channel in use.	The source channel will interpolate to the destination effect of the second channel (remember that both must be in the same Keyer).
The source effect has *one* channel, and you are recalling a destination effect with a *two-channel* object.	The second channel of the object will cut on (to its final state) at the start of the transition and the first channel will interpolate.
The source effect has *two* channels and you are recalling a destination effect with a *two-channel* object.	Both channels will transition to the destination effect and be made part of an object.

Using Storage Devices

This section provides instructions for storing and recalling Synergy 100 MD registers on a storage device, such as the internal hard drive of the switcher or a USB Drive.

Disk Menu Tree

The following figure illustrates the portion of the menu tree that is used for saving and recalling switcher setups.
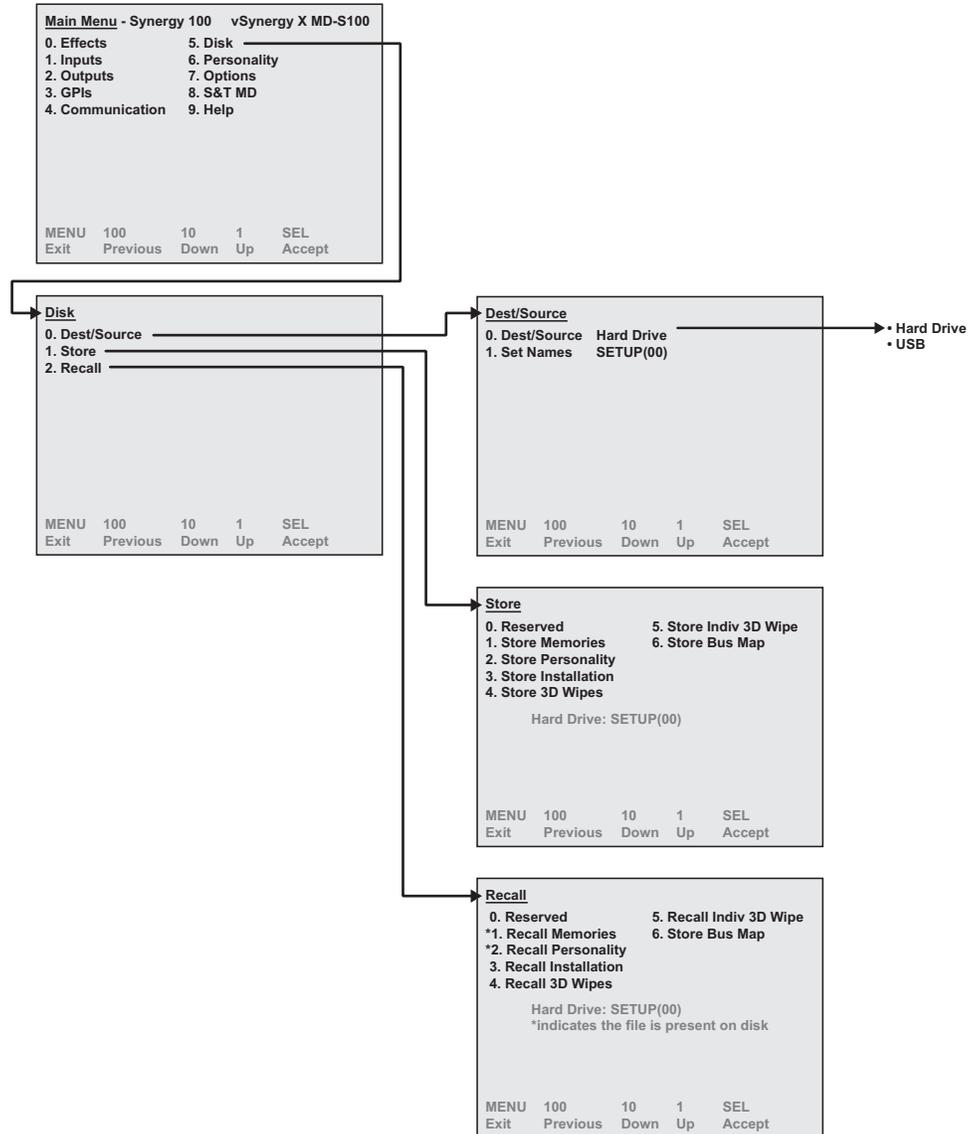
Disk Menu Tree

Saving Registers

For archive purposes, and to keep safe backup copies of your valuable switcher setups, it is recommended that you store your setups and registers to a storage device. The internal hard drive is capable of storing all categories of Synergy setup registers.

The following is a list of memory registers and their corresponding file names:

- **Memory Registers** (all 100) are stored in the file **MEMORYS.XML**.

- **Personality Registers** are stored in the file **PERS.XML**.

- **Installation Registers** are stored in the file **INSTALL.XML**.

- **Wipes Registers** (Squeeze & Tease MD) are stored in the file **ST3DSEQ.SYN**.

- **All Individual Memories Registers** are stored in the files **MEM##.SYN**, which identifies a regular switcher snapshot. Note that **##** represents the number of the memory register.

Note | Synergy files are designed in a proprietary compressed format that can only be read by Synergy switchers. However, the files can be copied and saved on a computer.

Saving Registers to a Storage Device

The **Disk Menu** allows you to **Recall** or **Store** various files to a specific drive and set. The **Current Switcher Setup Chosen** item indicates which set and which drive is being stored to or recalled from.

Use the following procedure to save registers to a storage device:

1. Navigate to the **Disk Menu** as follows:

   - Press **MENU** to display the **Main Menu**.

   - Press **5. Disk** to display the **Disk Menu**.

2. Press **0. Dest/Source** to display the **Dest/Source Menu**.

```
Dest/Source
0. Dest/Source        Hard Drive
1. Set Names          SETUP(00)




MENU    100      10     1     SEL
Exit    Previous Down   Up    Accept
```

Dest/Source Menu

3. Select the storage device you want to use to store your registers to as follows:

   - Press **0. Dest/Source**.

   - Use the ⬇ and ⬆ buttons to select the storage device you want to use. You can select between the following:

     ~ **Hard Drive** — This option will allow you to store the files on the internal hard drive.

~ **USB** — This option will allow you to recall the files from a USB Drive. You must wait 5 seconds after inserting the USB Drive into the USB Port before you can save or recall files. Refer to the section "**Notes on Using a USB Drive**" on page 9–16 for further information.

4. Select a setup, or location, for the storage of the files as follows:

   • Press **1. Set Names**.

   • Use the ⬇ and ⬆ buttons to select the **Setup** you want to use. You can select from **SETUP (00)** to **SETUP (99)**.

5. Press **BACK** to display the **Disk Menu**.

6. Press **1. Store** to display the **Store Menu**.

```
Store
0. Reserved              5. Store Indiv 3D Wipe
1. Store Memories        6. Store Bus Map
2. Store Personality
3. Store Installation
4. Store 3D Wipes

        Hard Drive: SETUP(00)




MENU    100        10     1     SEL
Exit    Previous   Down   Up    Accept
```

Store Menu

7. Select the category of registers that you want to save to a storage device. You can select between the following:

   • Press **1. Store Memories** to store only **Memory Registers**.

   • Press **2. Store Personality** to store only **Personality Registers**.

   • Press **3. Store Installation** to store only **Installation Registers**.

   • Press **4. Store 3D Wipes** to store only **3D Sequence Registers**.

   • Press **5. Store Indiv 3D Wipes** to store a specific **3D Sequence Register**.

   • Press **6. Store Bus Map** to store only the **Bus Map Register**. A Bus Map defines the video source, or internal video signal, that is assigned to each crosspoint button.

8. Confirm saving the selected category of registers to a storage device or cancel the procedure as follows:

   • Press **0. Yes** to save the selected category of registers.

   • Press **1. No** to exit the menus, without saving the selected category of registers to a storage device.

This completes the procedure for storing your setups to a storage device.

Recalling Registers

The Synergy 100 MD switcher allows you to recall all categories of registers from a storage device, or you can recall the desired individual category.

⚠	**Caution**	If you are going to recall *any* set of registers (e.g., memory), ensure that your *current* on-line set of registers are stored to another storage device or SETUP. If you have *not* stored them, they will be *overwritten* when you recall the files.

Use the following procedure to recall registers from a storage device:

1. Navigate to the **Disk Menu** as follows:

   • Press **MENU** to display the **Main Menu**.

   • Press **5. Disk** to display the **Disk Menu**.

2. Press **0. Dest/Source** to display the **Dest/Source Menu**.

```
Dest/Source
0. Dest/Source        Hard Drive
1. Set Names          SETUP(00)




MENU    100        10     1     SEL
Exit    Previous   Down   Up    Accept
```
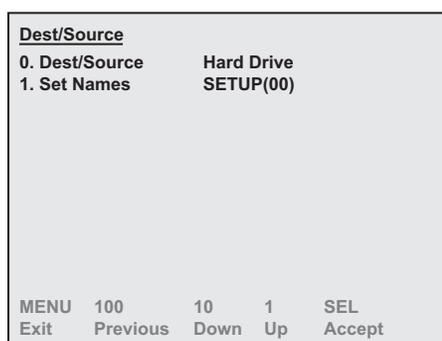
Dest/Source Menu

3. Select the storage device you want to use to store your registers to as follows:

   • Press **0. Dest/Source**.

   • Use the ⬇ and ⬆ buttons to select the storage device you want to use. You can select between the following:

       ~ **Hard Drive** — This option will allow you to recall the files from the internal hard drive.

       ~ **USB** — This option will allow you to recall the files from a USB Drive. You must wait 5 seconds after inserting the USB Drive into the USB Port before you can save or recall files. Refer to the section "**Notes on Using a USB Drive**" on page 9–16 for further information.

4. Select a setup, or location, as follows:

   • Press **1. Set Names**.

   • Use the ⬇ and ⬆ buttons to select the **Setup** you want to use. You can select from **SETUP (00)** to **SETUP (99)**.

5. Press **BACK** to display the **Disk Menu**.

6. Press **2. Recall** to display the **Recall Menu**.

```
Recall
0. Reserved              5. Recall Indiv 3D Wipe
1. Recall Memories       6. Recall Bus Map
2. Recall Personality
3. Recall Installation
*4. Recall 3D Wipes

         Hard Drive: SETUP(00)
         *indicates the file is present on disk




  100       10      1     SEL
  Previous   Down    Up    Accept
```
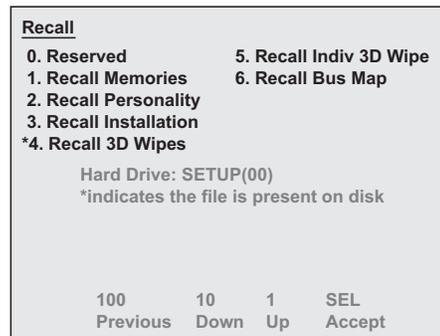
Recall Menu

7. Select the category of registers that you want to recall from the storage device. You can select between the following:

   • Press **1. Recall Memories** to recall only **Memory Registers**.

   • Press **2. Recall Personality** to recall only **Personality Registers**.

   • Press **3. Recall Installation** to recall only **Installation Registers**.

   • Press **4. Recall 3D Wipes** to recall only **3D Wipe Registers**.

   • Press **5. Recall Indiv 3D Wipe** to recall a specific **3D Wipe Register**.

   • Press **6. Recall Bus Map** to recall only the **Bus Map**. A Bus Map defines the video source, or internal video signal, that is assigned to each crosspoint button.

8. Confirm the recall of the selected category of registers from a storage device or cancel the procedure as follows:

   • Press **0. Yes** to recall the selected category of registers.

   • Press **1. No** to exit the menus, without making any changes. The system returns to the previously stored settings.

This completes the procedure for recalling your setups from a storage device.

Notes on Using a USB Drive

The Synergy 100 USB Port enables you to store and recall complete switcher setups including memory functions, switcher personalities, installation registers, and more, to a USB Drive.

⚛ **Important**   A decrease in performance will result from storing more than one set of Synergy files on your USB Drive.

Consider the following notes when using a USB Drive:

   • Write protect should be disabled on any USB Drive.

   • All Synergy files must be stored in the Root directory of the USB Drive.

   • Only DOS or Windows™ partitions in the USB Drive directory are supported.

   • You must wait 5 seconds after inserting the USB Drive into the USB port before you can save or recall files.

   • A delay can be expected when saving files to a USB Drive with more than half of the available memory allocated.

Peripheral Control and More

In This Chapter

This chapter provides information and instructions for using peripheral equipment with the Synergy 100 MD switcher. The following topics are discussed:

- GPI Control
- Using the Aux Bus
- Remote Aux Panels
- Preview Overlay
- Center Overlay
- Safe Title Overlay
- Editor Interface
- Copy and Swap Functions

GPI Control

The GPI function of the Synergy 100 MD switcher provides **10** input ports, each of which can be programmed for specific functions. A GPI input pulse can be associated with a specific area and button on the switcher, which triggers when that pulse is received from an external device.

Use the following procedure to enable the GPI input control function:

1. Navigate to the **Effects Menu** as follows:

   • Press **MENU** to display the **Main Menu**.

   ```
   Main Menu - Synergy 100    vSynergy X MD-S100

   0. Effects              5. Disk
   1. Inputs               6. Personality
   2. Outputs              7. Options
   3. GPIs                 8. S&T MD
   4. Communication        9. Help Menu




   MENU    100        10     1     SEL
   Exit    Previous   Down   Up    Accept
   ```
   Main Menu

   • Press **0. Effects** to display the **Effects Menu**.
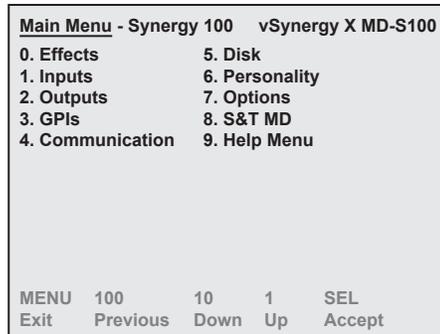
   ```
   Effects

   0. Editor       On    5. UltraChrome Parameters
   1. GPIs         Off   6. Global-Store
   2. Center       Off   7. MultiDSK
   3. Safe Title   Off
   4. Reserved




   MENU    100        10     1     SEL
   Exit    Previous   Down   Up    Accept
   ```
   Effects Menu

2. Press **1. GPIs** to toggle the GPI function **On** or **Off**.

This completes the procedure for enabling the GPI function.

Refer to Chapter 8, "**Output Configuration**" of the *Synergy 100 MD Engineering Manual* for more information on configuring your GPIs.

Using the Aux Bus

The Synergy 100 MD switcher provides **10 Aux Buses** that can be used to route video to monitors, Still Stores, as well as other devices. The video sources for these Aux Buses are selected using the Key Bus and the special Preset Bus crosspoints on the control panel.

Before you attempt to use the Aux Bus, ensure that each **Aux Bus** is properly connected to the desired external devices. Consult with your facility engineer, who can provide you with an **Auxiliary Output Worksheet** that lists the **Aux Bus** outputs and their destinations.

Use the following procedure to assign a crosspoint to an Aux Bus.

1. Enter Aux Bus mode as follows:

   • Press and hold the left **SEL** button in the **Effects Control Group** until **AUX#** appears on the display in the **Effects Control Group**. The "**#**" represents the Aux Bus that is currently selected.
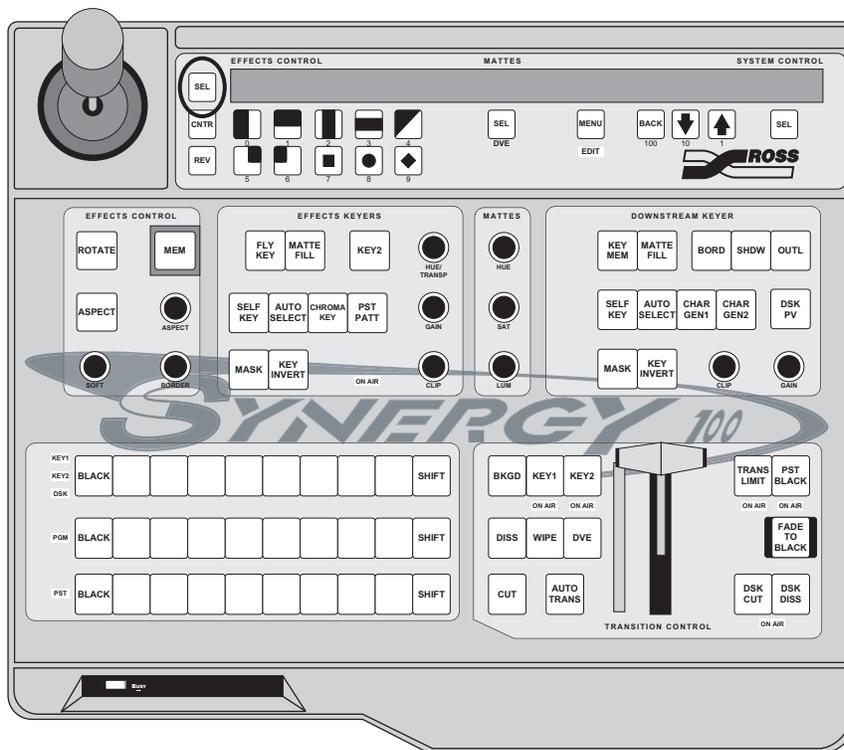
Effects Control Groups

2. Press the pattern button in the **Effects Control Group** that corresponds to the Aux Bus that you want to assign a crosspoint output to. You can select between **AUX0** through **AUX9**.
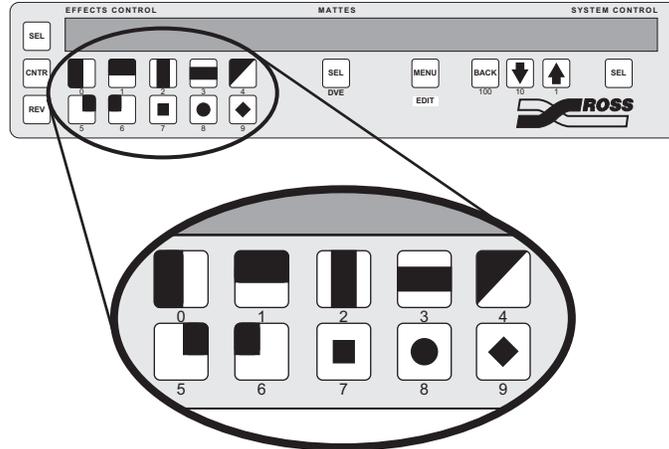
Pattern Buttons — Aux Bus Selection

The Crosspoint that is currently assigned to the selected Aux Bus will flash on the Key Bus.

3. Select the crosspoint button on the Key Bus that you want to assign to the Aux Bus.

4. Exit Aux Bus mode as follows:

    •   Press and hold the left **SEL** button in the **Effects Control Group** until the **AUX#** is no longer displayed.

This completes the procedure for assigning a crosspoint to an Aux Bus.

Remote Aux Panels

Remote Aux Panels are one-piece panels that provide remote control (or monitoring) capability of one (or more) of the Aux Buses on the Synergy 100 MD switcher. These panels are typically mounted close to the destination devices to which they route their sources. Video does not flow through the panels — the actual Aux Bus outputs originate from the frame using separate wiring paths to the destination devices.

Using an Assignable Remote Aux Panel

An **Assignable Remote Aux Panel** controls or monitors all Aux Bus outputs. Assignable Remote Aux Panels also include an **Aux Bus Assign** group that is used to select which Aux Bus the panel is controlling. All panel types include a bright "on-air" or "active" LED that indicates (when lit) that the Aux Bus controls a signal that forms a part of the program output.

In addition to crosspoints, the panels include dedicated "special" crosspoint buttons for Preview, Clean Feed, and Program. When the Synergy 100 control panel is tracking sources being routed by a Remote Aux Panel, the **MLE PV**, **CLN FEED**, and **PGM** crosspoints on the Remote Aux Panel correspond to the first, second, and third Preview Bus crosspoints, respectively.
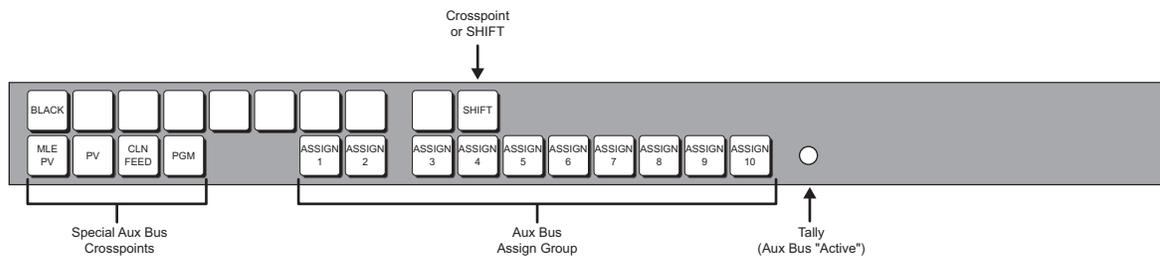
Assignable Remote Aux Panel

A single Remote Aux Panel can be configured for any of the of the **10** Aux Bus outputs. Each output can be placed in one of two modes:

- **Regular Mode** — This mode places the specific Aux Bus in Regular (Normal) Mode. The Bus can be selected and sources can be changed from the Synergy 100 control panel.

- **Follow Mode** — This mode places the specific Aux Bus in Follow (View Only) Mode. You can select the Bus in the Aux Bus Assign Group and follow what crosspoints are being selected remotely, but you cannot change crosspoints. In Follow Mode, the Bus is controlled from another location.

Consult with your facility engineer to learn what mode has been programmed for each Remote Aux Panel in your facility. Refer to the chapter "**Remote Aux Panels**" of the *Synergy 100 MD Engineering Manual*, for instructions on configuring your Remote Aux Panels.

Operating a Remote Aux Panel

Before attempting to use your Assignable Remote Aux Panel, ensure that it is properly connected to the Synergy 100 MD switcher.

Use the following procedure to operate a **Remote Aux Panel** in **Regular Mode**:

1. Ensure that the Aux Bus that is being controlled by the Remote Aux Panel is routed to the desired location or device.

✎ **Note** | If the Remote Aux Panel is in **Follow Mode**, you will not be able to change the output assigned from the control panel. You will be able to view different Aux Buses; however, you will not be able to alter the output.

2. Press **Assign 1** through **Assign 10** to assign the Remote Aux Panel to the corresponding Aux Bus. Refer to the following table to determine which Aux Bank and Bus is mapped to each button.
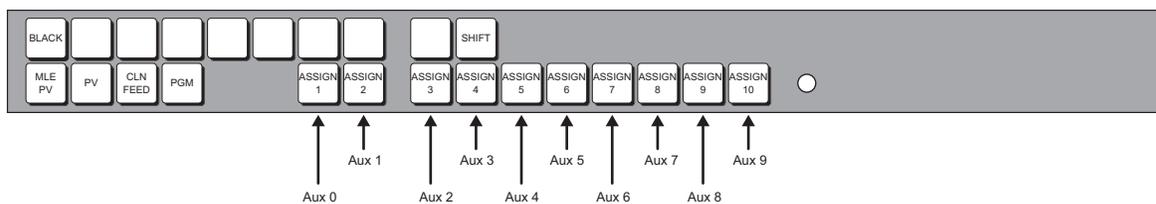
Remote Aux Panel — ASSIGN Buttons

3. Select the signal that you want to feed to the Aux Bus output BNC by using one of the following options:

   • Press a crosspoint button to route the associated video signal to the Aux Bus output BNC.

     ~ If the panel is configured to use shifted crosspoints, hold down the **SHIFT** button on the Remote Aux Panel, then press the desired crosspoint to select the shifted video signal.

     ~ Panels that are not configured to use shifted crosspoints assign the **SHIFT** button as the last of the regular crosspoints.

   • Selecting **BKGD Color** (Shifted button 1) on a Remote Aux Panel routes the Program output to the Aux Bus.

   • Press **CLN FEED** to route the Clean Feed output to the Aux Bus.

   • Press **PGM** to route the Program output to the Aux Bus.

✎ **Note** | The special crosspoints, such as **PV** and **CLN FEED**, do not support the shifted function.

This completes the procedure to operate a **Remote Aux Panel** in **Regular Mode**.

Preview Overlay

The Preview Overlay function allows you to place a graphic or menu over the selected preview source. The preview overlay includes the following:

- Center Overlay
- Safe Title Overlay

Center Overlay

The Center Overlay places cross hairs on the preview monitor to indicate the center of the picture, as shown below:

✓ **Operating Tip** | This overlay is useful for aligning text and other information (both horizontally and vertically).
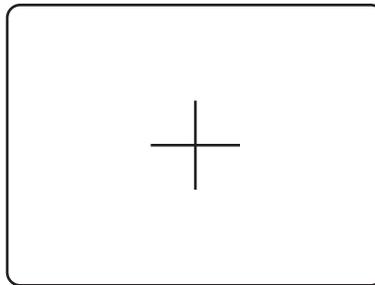
Preview Monitor — Center Overlay

Use the following procedure to turn the center overlay on or off:

1. Navigate to the **Effects Menu** as follows:

   - Press **MENU** to display the **Main Menu**.
   - Press **0. Effects** to display the **Effects Menu**.

Effects

0. Editor	**On**	**5. UltraChrome Parameters**
1. GPIs	**Off**	**6. Global-Store**
2. Center	**Off**	**7. MultiDSK**
3. Safe Title	**Off**	
4. Reserved		

MENU	100	10	1	SEL
Exit	Previous	Down	Up	Accept

Effects Menu

2. Press **Center** to toggle the Center Overlay **On** or **Off**.

This completes the procedure for toggling the Center Overlay on or off.

Safe Title Overlay

The Safe Title Overlay places a SMPTE standard Safe Title and Safe Action grid on the preview monitor.

- **Safe Title** — The Safe Title grid (inner box) outlines the area within which the vast majority of home TV sets will be able to read text.

- **Safe Action** — The Safe Action grid (outer box) outlines the region within which viewers should be able to follow action on the screen.
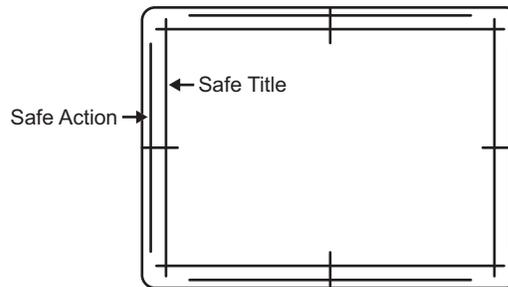
Preview Monitor — Safe Title Overlay

Use the following procedure to turn the safe title overlay on or off:

1. Navigate to the **Effects Menu** as follows:

   - Press **MENU** to display the **Main Menu**.

   - Press **0. Effects** to display the **Effects Menu**.

Effects Menu

2. Press **3. Safe Title** to toggle the Safe Title Overlay **On** or **Off**.

This completes the procedure for toggling the Safe Title Overlay on or off.

Editor Interface

The **Editor** option allows the Synergy 100 MD switcher to be controlled by an editing system using the GVG 100, GVG 200, or GVG 4000 protocol. The **Editor** software option must be enabled.

✎   **Note**   The Editor Option must be installed in order to be able to interface with an editing system. Refer to Chapter 6 "**Software Upgrades and Options**" in the *Synergy 100 MD Engineering Manual* to ensure that the **Editor option** is installed. If not, please contact Ross Video Technical Support for details.

Use the following procedure to turn the Editor feature on or off:

1. Navigate to the **Effects Menu** as follows:

    •   Press **MENU** to display the **Main Menu**.

    •   Press **0. Effects** to display the **Effects Menu**.

```
Effects

0. Editor       On      5. UltraChrome Parameters
1. GPIs         Off     6. Global-Store
2. Center       Off     7. MultiDSK
3. Safe Title   Off
4. Reserved




MENU   100         10     1     SEL
Exit   Previous    Down   Up    Accept
```
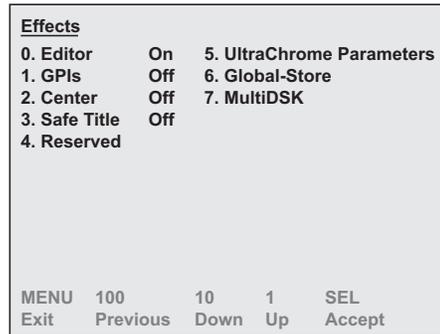
Effects Menu

2. Press **0. Editor** to toggle the Editor function **On** or **Off**.

This completes the procedure for toggling the Editor on or off.

✎   **Note**   The **Editor** can also be enabled by pressing (or double-pressing) the **MENU** button in the **System Control Group**. Refer to Chapter 10 "**Completing Setup**" in the *Synergy 100 MD Engineering Manual* for more information.

Refer to Chapter 9, "**Communication Setup**" of the *Synergy 100 MD Engineering Manual* for more information on setting up an editor with your Synergy 100 MD switcher.

Copy and Swap Functions

The Copy and Swap functions allow you to copy or swap various settings from Key to Key. For all copy functions, the *destination-source* rule applies. You select the *destination* for the copy and press and hold the appropriate button. With the destination selected, press the *source* button to copy the information.

✎ **Note** | You cannot copy or swap Key settings with the Downstream Keyer.

The following copy and swap functions are available:

- **Copy Key** — This function allows you to copy the contents of one Keyer to the other Keyer within the **Effects Keyers Group**.

- **Key Swap** — This function allows you to swap the entire contents of one Keyer with the contents of the other Keyer within the **Effects Keyer Group**.

Copy Key

The **Copy Key** function allows you to copy the entire contents of Key 1 to Key 2 in the **Effects Keyers Group**.

✎ **Note** | You can only copy Key 1 one into Key 2.

Use the following procedure to copy a the contents of Key 1 into Key 2:

1. Set up Key 1. This will assign the **Effects Keyers Group** to the Key you want to copy from.

2. Press and hold the **Key Type** button of the Key you want to copy.
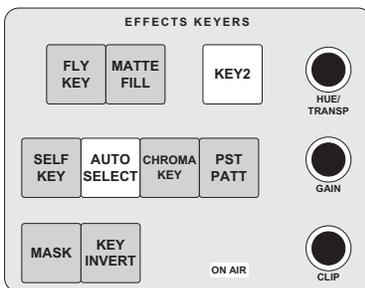
Effects Keyer – Copy Key

3. Press **KEY2** in the **Effects Keyers Group** to copy the contents of Key 1 to Key 2.

✎ **Note** | When you copy a Keyer to another Keyer, the entire contents (except matte fill color) of the source Keyer is copied to the destination, including the selected Key crosspoint.

4. Release both buttons.

This completes the procedure for copying Key 1 into Key 2.

Key Swap

The **Key Swap** function allows you to swap the entire contents of one Keyer with the contents of the other Keyer in the **Effects Keyers Group**.

Use the following procedure to swap a key:

1. Press and *hold* the **KEY2** button in the **Effects Keyers Group**.

2. Press **KEY1** in the **Transition Group**.
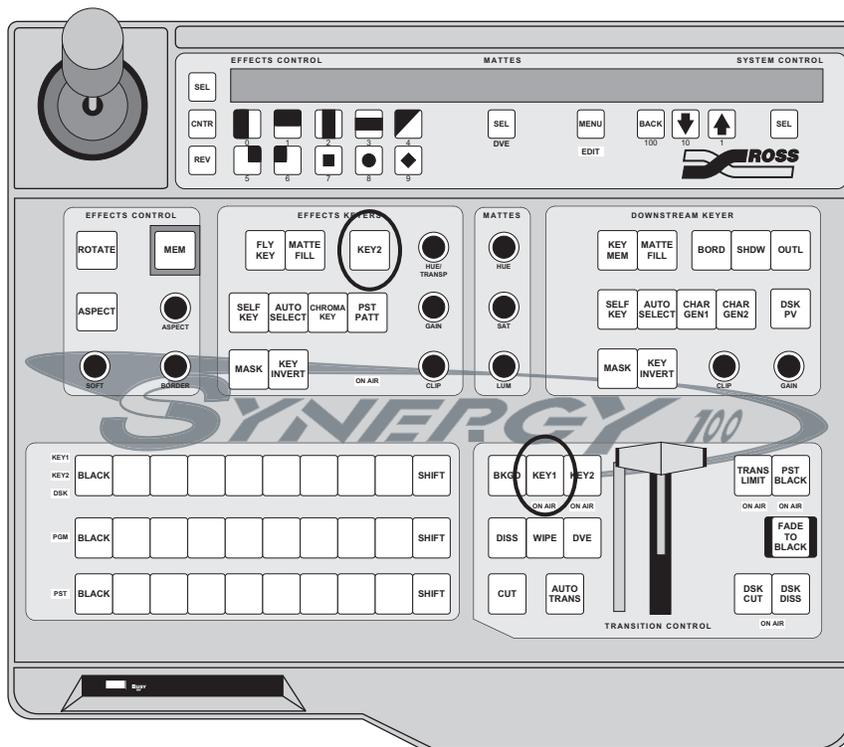
Control Panel — Key Swap Buttons

3. Release both buttons.

The Keyers swap their contents, as indicated by a pop-up message that appears on the preview monitor.

✏️	**Note**	This function can also be performed in the reverse order, pressing **KEY1** first, followed by the **KEY2** button.

This completes the procedure for swapping keys.

Global-Store

In This Chapter

This chapter provides instructions for transferring images to and from the hard drive of your Synergy 100 MD switcher using drag and drop, and how to use these images in the internal Global-Store.

The following topics are discussed:

- Preparing for Image Transfers
- Creating a Connection to Your Switcher
- Transferring Still Images and Animations
- Global-Store

Preparing for Image Transfers

Images are transferred to and from the Synergy 100 MD switcher using the WebDAV protocol. Stills and logos are stored on the switcher hard drive, and can be transferred to other control-room devices via Ethernet.

Image Specifications

Images must meet the following specifications and naming conventions:

File type

Images for the Synergy 100 MD switcher can be created in any graphic package that outputs compressed or uncompressed Targa files.

Still Image File Size

Still images can be created as either a 24-bit or 32-bit file:

- 24-bit file contains no alpha component
- 32-bit file contains an alpha component

Maximum size of a Still image single frame:

- 1080i format - 1920 pixels by 1080 lines
- 1080psf format - 1920 pixels by 1080 lines
- 720p format - 1280 pixels by 720 lines

Animated Image File Sizes

Animated images should be created as a 32-bit file with an alpha component.

Maximum size of an Animated image single frame:

- 1080i format - 1920 pixels by 1080 pixels
- 1080psf format - 1920 pixels by 1080 pixels
- 720p format - 1280 pixels by 720 pixels
- Animation - 128 MB maximum

Storage Capacity

The number of images that can be stored depends upon the size of the image being used. Full screen 1080i images take 5 times the storage of a 480i clip. However, a small, animated logo in 1080i will take much less storage than a full screen 480i clip. The MediaCache for Global-Store option increases the RAM capacity from 256MB to 1GB. This allows storage of up to 4 seconds of uncompressed 1080i playout or 25 Seconds of 480i playout.

Refer to the following table for approximate storage capacity on the hard drive, based on format:

Storage Capacity

Format	Approximate Size (Bytes)	Number of Stills		1 GB Video (Seconds)
		256 MB	1 GB	
1080i 60 / 59.94 Hz	6,220,844	35	138	4.6
1080i 60 / 59.94 Hz with Alpha	8,294,444	26	104	3.5
1080i 50 Hz	6,220,844	35	138	5.5
1080i 50 Hz with Alpha	8,294,444	26	104	4.1
1080psf 24 / 23.97 Hz	6,220,844	35	138	5.7
1080psf 24 / 23.97 Hz with Alpha	8,294,444	26	104	4.3
1080p 24 Hz	6,220,844	35	138	5.7
1080p 24 Hz with Alpha	8,294,444	26	104	4.3
720p 60 / 59.94 Hz	2,765,339	78	311	5.2
720p 60 / 59.94 Hz with Alpha	3,686,939	58	233	3.9
720p 50 Hz	2,765,339	78	311	6.2
720p 50 Hz with Alpha	3,686,939	58	233	4.7
576i 50 Hz	1,244,699	173	690	23
576i 50 Hz with Alpha	1,659,419	129	518	17.3
480i 60 Hz	1,050,299	204	818	27.3
480i 60 Hz with Alpha	1,400,219	153	613	20.4

File Naming Conventions

This section describes how to properly name files, directories, animated images and folders.

File Names

All file and directory names can be up to 12 characters (not including the file extension). If the name has over 12 characters, the file or directory will not appear on the switcher panel. The filename can contain letters, numbers, and spaces. The characters **! @ # * ( ) / ,** (comma) **?** ' (apostrophe) **"** (quotation mark) cannot be used in the filename.

Animated Images

You must append an underscore (_) and a frame number to the filename before the *.tga* extension. The frame number must meet the following criteria:

- Each frame number must have between two and five digits.

- Each frame number must have the same number of digits (i.e., you must use leading zeros to pad the frame number length).

- The first frame number must be a series of zeros. Subsequent frames are numbered sequentially.

The example below shows the filenames for an animation called *DTVB*.

Sample file naming for an image with 90 frames:

- DTVB_0000.tga

- DTVB_0001.tga

- DTVB_0002.tga

- ...

- DTVB_0090.tga

Folders

Folder names can be up to 12 characters. If the name has over 12 characters, the folder, and any files contained within it, will not appear on the switcher panel. The filename can contain letters, numbers, and spaces. The characters **! @ # * ( ) / ,** (comma) **? '** (apostrophe) **"** (quotation mark) cannot be used in the filename

Creating a Connection to Your Switcher

Transferring still images and animations from your computer to your Synergy 100 MD switcher is accomplished just like you would copy or move files and folders on your computer (drag and drop). Before you can transfer files, however, you must establish a connection between your computer and switcher using the WebDAV protocol. WebDAV (Web-based Distributed Authoring and Versioning) is a set of HTTP protocol extensions for collaborative managing and editing of files on remote servers.

⚠	**Important**	The steps to create a WebDAV connection between your computer and switcher differ for each operating system and network configuration.
		If you need assistance in establishing a WebDAV connection, contact your IT department. The information provided below will allow them to successfully establish a connection.

Drag and drop of still images and animations between the switcher and a computer using the WebDAV protocol has been tested on the following operating systems:

- Microsoft® Windows® 98

- Microsoft Windows XP Professional with Service Pack 1

- Neon Library Version 0.24 or later, used by WebDAV clients such as Konqueror, Nautilus, and Cadaver

- Microsoft Windows 2000

- Mac® OS X 10.4 or later

The WebDAV mount point for your switcher is **http://*switcher_ip_address*/stills** where *switcher_ip_address* is the network TCP/IP address of your Synergy 100 MD switcher. For example, if your switcher has an IP address of 192.168.1.10, the WebDAV mount point would be **http://192.168.1.10/stills**. Refer to the section "**Network Setup**" in the chapter, "**Software Upgrades and Options**", of the *Synergy 100 MD Engineering Manual* for details on setting or determining the IP address of your switcher.

✎	**Note**	Windows XP requires you to add a "/#" to the end of the address when you access the switcher. For example, you would enter "http://switcher_ip_address/stills/#".

The user name and password for accessing the mount point is the same as you use for upgrading your switcher software. By default, the user name is **user** and the password is **password**. Refer to the section "**Changing the Synergy MD/X Web Interface Account**" in the chapter, "**Software Upgrades and Options**" of the *Synergy 100 MD Engineering Manual* for details on changing the user name and password.

You may wish to fill-in the table on the next page with the appropriate settings for your switcher to make it easier to re-create the WebDAV connection at a later date.

WebDAV Connection Information

Switcher Setting	Value
Switcher IP Address	. . .
Switcher WebDAV Mount point	(insert IP address from above) **http://** . . . **/stills**
User Name	
Password	

Alternate Connection Method

If you are unable to create a WebDAV connection to your switcher, you can create an FTP (File Transfer Protocol) connection to copy stills and animations.

The FTP mount point for your switcher is **ftp://*switcher_ip_address*** where *switcher_ip_address* is the network TCP/IP address of your Synergy MD/X switcher. For example, if your switcher has an IP address of 192.168.1.10, the FTP mount point would be **ftp://192.168.1.10**. Refer to the section "**Network Setup**" in the chapter, "**Software Upgrades and Options**", of the *Synergy 100 MD Engineering Manual* for details on setting or determining the IP address of your switcher.

The user name and password for accessing the FTP mount point are:

- username: **user**
- password: **password**

Note that these are **not** the same settings you use for accessing your switcher using the Synergy MD/X Web Interface. Even if you have changed the username or password for the Web Interface, the FTP user name and password does not change.

Transferring Still Images and Animations

Copying images to and from your switcher is just like copying files and folders on your computer. Once the WebDAV connection is established, you can drag and drop files and folders between your computer and switcher. Any computer with the WebDAV connection to your switcher can be used to drag and drop still images and animations.

⚠	**Important**	You should only use the WebDAV connection to transfer files between your switcher and computer. If you use the connection to rename, move, or copy images between directories on your switcher, the associated image properties will **not** be updated. Use the switcher panel to rename or move images between directories. Refer to the section "**Renaming a Still**" on page 11–11 and the section "**Managing Stills and Directories**" on page 11–13 for information.

Copying Still Images and Animations to your Switcher

Before copying images or animations to your switcher, ensure that you have named them properly. Refer to the section "**File Naming Conventions**" on page 11–3 for details.

Use the following procedure to copy still images and animations to your switcher:

1. Establish a WebDAV connection between your computer and switcher. Refer to the section "**Creating a Connection to Your Switcher**" on page 11–5 for details.

2. Open the connection to your switcher in a file-manager type window on your computer (different operating systems have different file management systems).

3. If you wish to create a sub-directory to store your images, do so now. Consult your IT department or operating system documentation if you need help creating directories.

✎	**Note**	You can only cascade **4** sub-directories from the root **/stills** directory.

4. Navigate to the sub-directory you wish to store your images in.

5. Open a second file-manager type window on your computer and navigate to the directory where the images or animations you wish to copy are stored.

6. Drag the image and animation files from this window to the window showing the contents of the destination directory on your switcher.

✎	**Note**	Some operating systems require you to press keys on your keyboard while dragging files to indicate you are copying rather than moving them. Consult your IT department or operating system documentation for details on your installation.

This completes the procedure for copying still images and animations to your switcher.

Copying Images and Animations from your Switcher

Before copying images or animations to your switcher, ensure that you have named them properly. Refer to the section "**File Naming Conventions**" on page 11–3 for details.

Use the following procedure to copy still images and animations from your switcher:

1. Establish a WebDAV connection between your computer and switcher. Refer to the section "**Creating a Connection to Your Switcher**" on page 11–5 for details.

2. Open the connection to your switcher in a file-manager type window on your computer (different operating systems have different file management systems) and navigate to the sub-directory where the images or animations you wish to copy are stored.

3. Open a second file-manager type window on your computer and navigate to the location on your computer where you wish to store the images or animations. Also, if you wish to create a sub-directory to store your images, do so now.

Note | You can only cascade **4** sub-directories from the root **/stills** directory.

4. Drag the image and animation files from the window showing the contents of your switcher to the window showing the contents of the sub-directory on your computer.

Note | Some operating systems require you to press keys on your keyboard while dragging files to indicate you are copying rather than moving them. Consult your IT department or operating system documentation for details on your installation.

This completes the procedure for copying still images and animations from your switcher.

Legacy Image and Animation Files

Important | This section only applies if you have upgraded your switcher from a version prior to **5.0**.

Versions of Synergy MD/X software prior to **5.0**, used a proprietary software package called ImageMover to handle the copying of still images and animations between your computer and switcher. ImageMover automatically appended the appropriate suffix to each file and also performed some conversions during the copy resulting in extra files being created on the switcher that are no longer used. These files were of the type:

•   ***.sti** and ***.stp** — These files were associated with still images

•   ***.ali** and ***.alp** — These files were associated with alpha channels

If you used ImageMover with previous versions of Synergy MD/X software, your switcher will likely contain some of these legacy files. You may delete them as they are no longer required for operation with software versions 5.0 or greater. Note, however, that if you delete these files and then revert to a switcher software version prior to 5.0, your Global-Store still images and animations will no longer be available.

Operating Tip | Some operating systems do not show file extensions by default. Enable the viewing of file extensions so you can differentiate between actual images and the **.sti, *.stp, *.ati*, and **.atp* legacy files. Consult your IT Department or operating system documentation for assistance.

Global-Store

Global-Store consists of three independent channels of stills that are available as inputs. Hundreds of full screen stills and logos can be stored on the hard drive, and to the Global-Store cache as needed.

Global-Store comes standard with 256 Megabytes of RAM storage. This translates to at least 30 full screen 1080i images with key. The number of images increases considerably when smaller images like logos are stored. Thousands of additional images can be loaded from the system hard drive.

Global-Store Menu Tree

The following figure illustrates the *portion* of the menu tree that is used for setting up using your three Global-Stores.
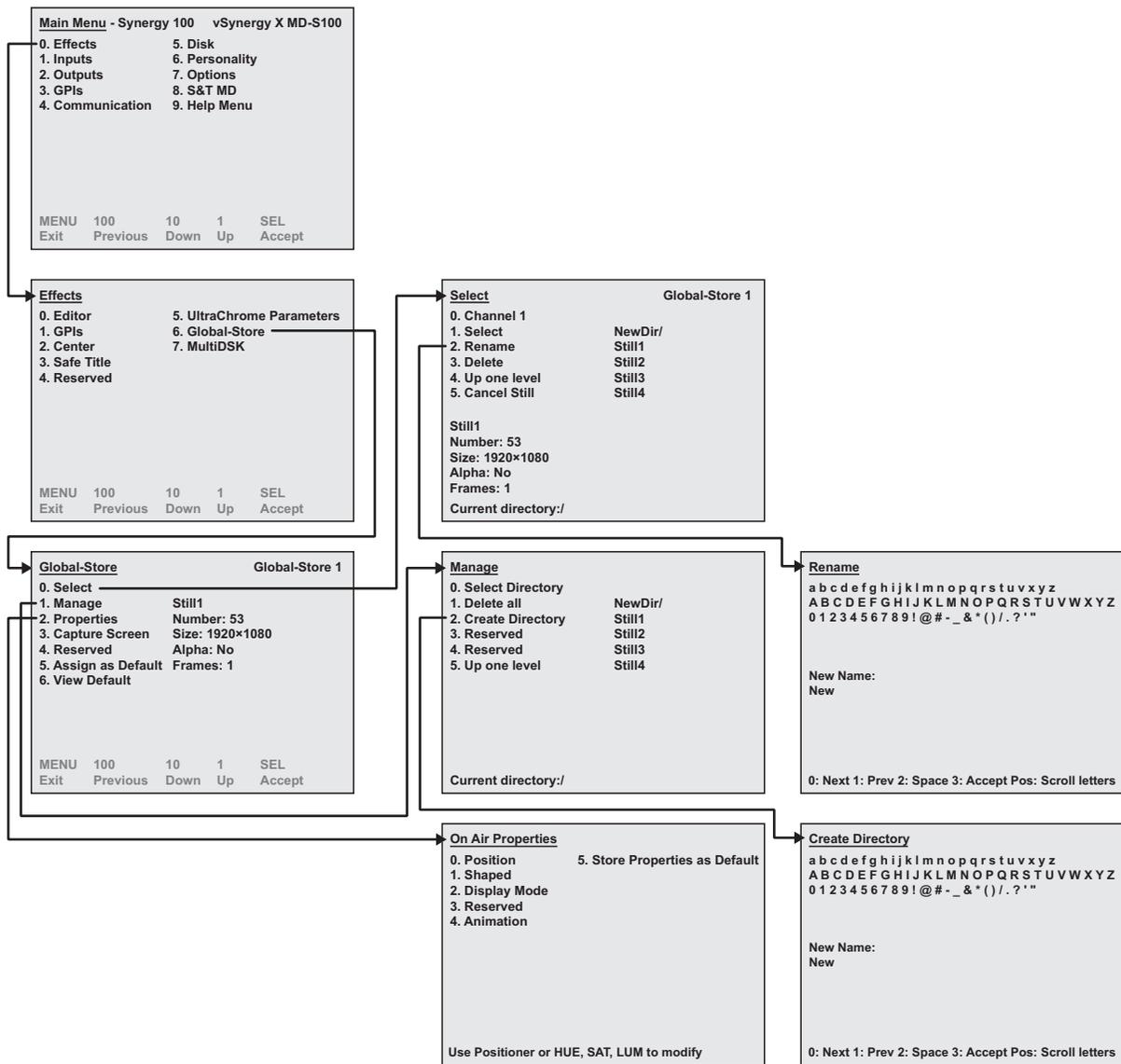
Global-Store Menu Tree

Selecting a Still for a Global-Store Channel

Selecting a still image allows you to assign a particular still from a directory on the hard drive and a Global-Store Channel. This image can then be taken on-air by selecting one of the three Global-Store crosspoints.

Use the following procedure to assign a still to a Global-Store channel:

1. Navigate to the **Global-Store Menu** as follows:

    • Press **MENU** to display the **Main Menu**.

    • Press **0. Effects** to display the **Effects Menu**.

    • Press **6. Global-Store** to display the **Global-Store Menu**.

Global-Store	Global-Store 1
0. Select	
1. Manage	**Still1**
2. Properties	**Number: 53**
3. Capture Screen	**Size: 1920×1080**
4. Reserved	**Alpha: No**
5. Assign as Default	**Frames: 1**
6. View Default	
MENU **100**	**10** **1** **SEL**
Exit Previous	Down Up Accept

Global-Store — Main Menu

2. Press **0. Select** to display the **Select Menu**.

Select	Global-Store 1
0. Channel 1	
1. Select	**NewDir/**
2. Rename	**Still1**
3. Delete	**Still2**
4. Up one level	**Still3**
5. Cancel Still	**Still4**
Still1	
Number: 53	
Size: 1920×1080	
Alpha: No	
Frames: 1	
Current directory:/	

Global-Store — Select Menu

3. Select the Global-Store channel you want to assign a still to as follows:

    • Press **0. Channel**.

    • Use the ⬇ and ⬆ buttons to select the desired channel (**1**-**3**).

✎ **Note** | As you select the channel you will notice that the Global-Store in the top right corner changes to indicate what Global-Store channel you are working in.

    • Press the right **SEL** button to accept the new setting.

4. Assign a still to the selected Global-Store channel as follows.

• Move the positioner up or down to select the still or directory you want.

✓ **Operating Tip**

To navigate between directories, use the positioner to select the directory you want to go down into and press **1. Select**, or press the **4. Up one level** button to go up to the higher level directory. The change will be shown in the **Current directory:/** line at the bottom.

• Press **1. Select**.

This completes the procedure for assigning a still to a Global-Store channel.

Renaming a Still

Use the following procedure to rename a still:

1. Navigate to the **Global-Store Menu** as follows:

• Press **MENU** to display the **Main Menu**.

• Press **0. Effects** to display the **Effects Menu**.

• Press **6. Global-Store** to display the **Global-Store Menu**.

```
Global-Store                      Global-Store 1
0. Select
1. Manage               Still1
2. Properties           Number: 53
3. Capture Screen       Size: 1920×1080
4. Reserved             Alpha: No
5. Assign as Default    Frames: 1
6. View Default




MENU    100        10      1      SEL
Exit    Previous   Down    Up     Accept
```

Global-Store — Main Menu

2. Press **0. Select** to display the **Select Menu**.

```
Select                            Global-Store 1
0. Channel 1
1. Select               NewDir/
2. Rename               Still1
3. Delete               Still2
4. Up one level         Still3
5. Cancel Still         Still4

Still1
Number: 53
Size: 1920×1080
Alpha: No
Frames: 1
Current directory:/
```
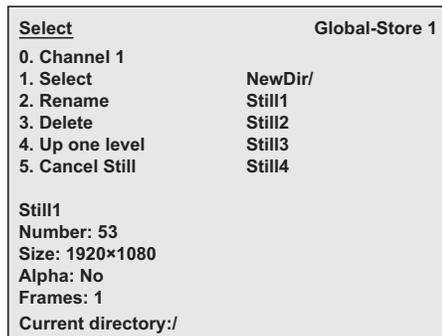
Global-Store — Select Menu

3. Press **2. Rename** to display the **Rename Menu**.

✎ **Note**

You cannot have multiple files of the same name in the same directory.

```
Rename

a b c d e f g h i j k l m n o p q r s t u v w x y z
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
0 1 2 3 4 5 6 7 8 9 ! @ # - _ & * ( ) / . ? ' "




New Name:
New



0: <- 1: -> 2: Space 3: Accept Aspect: Scroll letters
```

Global-Store — Rename Menu

Note | Certain punctuation characters may not be used in a name:
! **@** **#** **&** ***** **(** **)** **/** **,** (comma) **?** **'** (apostrophe) **"** (quotation marks).

- Use the positioner to scroll through the letters and highlight the letter you want to use. Any invalid characters on the same line as the currently highlighted character will appear dark grey and will be skipped as you scroll through the letters.

- Use the **0** button to select the previous letter in the name.

- Use the **1** button to select the next letter in the name.

- Use the **2** button to insert a space.

4. Press **3: Accept** to accept the new name.

Note | Any space characters will be converted to underscore characters (_) when the system accepts the name.

This completes the procedure for renaming a still.

Cancelling a Still from a Global-Store Channel

Cancelling a still image allows you to clear a particular still from a Global-Store channel.

Use the following procedure to cancel a still from a Global-Store channel:

1. Navigate to the **Global-Store Menu** as follows:

   - Press **MENU** to display the **Main Menu**.

   - Press **0. Effects** to display the **Effects Menu**.

   - Press **6. Global-Store** to display the **Global-Store Menu**.

```
Global-Store                    Global-Store 1
0. Select
1. Manage              Still1
2. Properties          Number: 53
3. Capture Screen      Size: 1920×1080
4. Reserved            Alpha: No
5. Assign as Default   Frames: 1
6. View Default




MENU    100            10    1    SEL
Exit    Previous       Down  Up   Accept
```

Global-Store — Main Menu

2. Press **0. Select** to display the **Select Menu**.

```
Select                          Global-Store 1
0. Channel 1
1. Select              NewDir/
2. Rename              Still1
3. Delete              Still2
4. Up one level        Still3
5. Cancel Still        Still4

Still1
Number: 53
Size: 1920×1080
Alpha: No
Frames: 1
Current directory:/
```
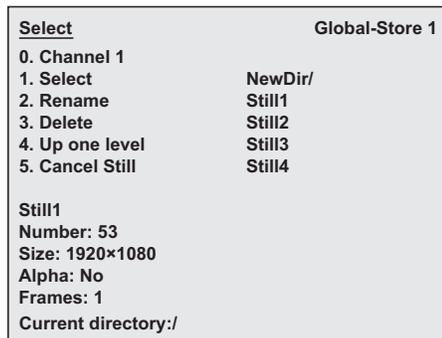
Global-Store — Select Menu

3. Select the Global-Store channel you want to clear a still to as follows:

   • Press **0. Channel**.

   • Use the ⬇ and ⬆ buttons to select the desired channel (**1**-**3**).

> ✎ **Note** As you select the channel you will notice that the Global-Store in the top right corner changes to indicate what Global-Store channel you are working in.

   • Press the right **SEL** button to accept the new setting.

4. Press **5. Cancel Still** to remove the currently loaded still from the selected channel.

This completes the procedure for clearing a still from a Global-Store channel.

Managing Stills and Directories

The **Manage Menu** allows you to manage your stills and directories on the hard drive.

Creating a Directory

Use the following procedure to create a directory:

1. Navigate to the **Global-Store Menu** as follows:

   • Press **MENU** to display the **Main Menu**.

   • Press **0. Effects** to display the **Effects Menu**.

• Press **6. Global-Store** to display the **Global-Store Menu**.

```
Global-Store                      Global-Store 1
0. Select
1. Manage              Still1
2. Properties          Number: 53
3. Capture Screen      Size: 1920×1080
4. Reserved            Alpha: No
5. Assign as Default   Frames: 1
6. View Default




MENU    100        10      1     SEL
Exit    Previous   Down    Up    Accept
```

Global-Store — Main Menu

2. Press **1. Manage** to display the **Manage Menu**.

```
Manage
0. Select Directory
1. Delete all          NewDir/
2. Create Directory    Still1
3. Reserved            Still2
4. Reserved            Still3
5. Up one level        Still4




Current directory:/
```

Global-Store — Manage Menu

3. Select the directory that you want to create a new directory in as follows:

✓ **Operating Tip** To navigate between directories, use the positioner to select the directory you want to go down into and press **1. Select Directory**, or press the **5. Up one level** button to go up to the higher level directory. The change will be shown in the **Current directory:/** line at the bottom.

• Use the positioner to select the directory you want to create a sub-directory in.

• Press **0. Select Directory**.

4. Press **2. Create Directory** to display the **Directory Menu**.

✎ **Note** You can only cascade **4** sub-directories from the root directory. If you have selected a sub-directory that is 4 sub-directories down from the root directory, the **2. Create Directory** button will appear gray and you will not be able to create another sub-directory at that level.

✎ **Note** You cannot have multiple directories of the same name in the same parent directory.

Create Directory

a b c d e f g h i j k l m n o p q r s t u v x y z
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
0 1 2 3 4 5 6 7 8 9 ! @ # - _ & * ( ) / . ? ' "

New Directory Name:
Dir02

0: Next 1: Prev 2: Space 3: Accept Pos: Scroll letters

Global-Store — Create Directory Menu

	Note	Certain punctuation characters may not be used in a name: **!** **@** **#** **&** ***** **(** **)** **/** **,** (comma) **?** **'** (apostrophe) **"** (quotation marks).

5. Enter the name of the new directory as follows:

   - Use the positioner to scroll through the letters and highlight the letter you want to use. Any invalid characters on the same line as the currently highlighted character will appear dark grey and will be skipped as you scroll through the letters.

   - Use the **0** button to select the previous letter in the name.

   - Use the **1** button to select the next letter in the name.

   - Use the **2** button to insert a space.

6. Press **3. Accept** to accept the new name and create the directory.

	Note	Any space characters will be converted to underscore characters (_) when the system accepts the name.

This completes the procedure for creating a directory.

Deleting All Stills in a Directory

Use the following procedure to delete all stills in a directory:

1. Navigate to the **Global-Store Menu** as follows:

   - Press **MENU** to display the **Main Menu**.

   - Press **0. Effects** to display the **Effects Menu**.

   - Press **6. Global-Store** to display the **Global-Store Menu**.

```
Global-Store                    Global-Store 1
0. Select
1. Manage              Still1
2. Properties          Number: 53
3. Capture Screen      Size: 1920×1080
4. Reserved            Alpha: No
5. Assign as Default   Frames: 1
6. View Default




MENU    100         10    1     SEL
Exit    Previous    Down  Up    Accept
```

Global-Store — Main Menu

2.   Press **1. Manage** to display the **Manage Menu**.

```
Manage
0. Select Directory
1. Delete all          NewDir/
2. Create Directory    Still1
3. Reserved            Still2
4. Reserved            Still3
5. Up one level        Still4




Current directory:/
```

Global-Store — Manage Menu

3.   Select the directory that you want to delete all the stills from:

> ✓ **Operating Tip**
>
> To navigate between directories, use the positioner to select the directory you want to go down into and press **1. Select Directory**, or press the **5. Up one level** button to go up to the higher level directory. The change will be shown in the **Current directory:/** line at the bottom.

• Use the positioner to select the directory you want to delete.

• Press **0. Select Directory**.

4.   Press **1. Delete All**.

This completes the procedure for deleting all the stills in the current directory.

Deleting an Individual Still or Directory

Use the following procedure to delete a still or directory:

> ✎ **Note**
>
> You cannot delete a directory if it has sub-directories or stills in it. Delete the contents first, then delete the empty directory.

1.   Navigate to the **Global-Store Menu** as follows:

• Press **MENU** to display the **Main Menu**.

• Press **0. Effects** to display the **Effects Menu**.

• Press **6. Global-Store** to display the **Global-Store Menu**.

```
Global-Store                 Global-Store 1
0. Select
1. Manage              Still1
2. Properties          Number: 53
3. Capture Screen      Size: 1920×1080
4. Reserved            Alpha: No
5. Assign as Default   Frames: 1
6. View Default




MENU    100        10     1      SEL
Exit    Previous   Down   Up     Accept
```

Global-Store — Main Menu

2. Press **0. Select** to display the **Select Menu**.

```
Select                      Global-Store 1
0. Channel 1
1. Select              NewDir/
2. Rename              Still1
3. Delete              Still2
4. Up one level        Still3
5. Cancel Still        Still4

Still1
Number: 53
Size: 1920×1080
Alpha: No
Frames: 1
Current directory:/
```
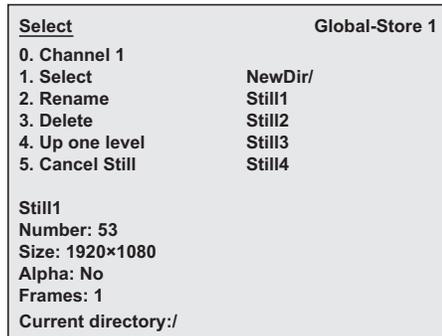
Global-Store — Select Menu

3. Delete a still or directory as follows:

✓ **Operating Tip**

> To navigate between directories, use the positioner to select the directory you want to go down into and press **1. Select**, or press the **4. Up one level** button to go up to the higher level directory. The change will be shown in the **Current directory:/** line at the bottom.
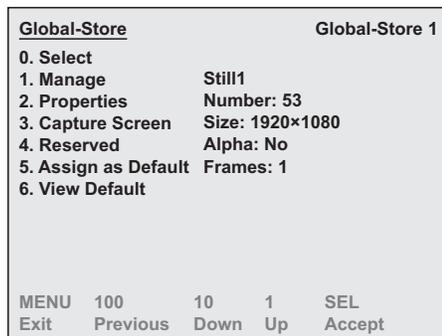
• Use the positioner to select the still or directory that you want to delete.

• Press **3. Delete**.

A confirmation screen will be displayed.

This completes the procedure for deleting an individual still or directory.

On Air Properties

The on-air properties menu allows you to adjust the position, clip, gain, display mode, animation and auto dissolve attributes of the selected still.

Adjusting On Air Properties

Use the following procedure to adjust the on-air properties of the stills in a Global-Store:

1. Navigate to the **Global-Store Menu** as follows:

• Press **MENU** to display the **Main Menu**.

• Press **0. Effects** to display the **Effects Menu**.

•   Press **6. Global-Store** to display the **Global-Store Menu**.

```
Global-Store                    Global-Store 1
0. Select
1. Manage                Still1
2. Properties            Number: 53
3. Capture Screen        Size: 1920×1080
4. Reserved              Alpha: No
5. Assign as Default     Frames: 1
6. View Default




MENU    100         10     1     SEL
Exit    Previous    Down   Up    Accept
```

Global-Store — Main Menu

2. Press **0. Select** to display the **Select Menu**.

```
Select                          Global-Store 1
0. Channel 1
1. Select                NewDir/
2. Rename                Still1
3. Delete                Still2
4. Up one level          Still3
5. Cancel Still          Still4

Still1
Number: 53
Size: 1920×1080
Alpha: No
Frames: 1
Current directory:/
```

Global-Store — Select Menu

3. Select the Global-Store channel you want to assign the still to as follows:

    •   Press **0. Channel**.

    •   Use the ⬇ and ⬆ buttons to select the desired channel (**1**-**3**).

✏	**Note**	As you select the channel you will notice that the Global-Store in the top right corner changes to indicate what Global-Store channel you are working in.

4. Select the still you want to adjust the on-air properties for as follows:

✔	**Operating Tip**	To navigate between directories, use the positioner to select the directory you want to go down into and press **1. Select**, or press the **4. Up one level** button to go up to the higher level directory. The change will be shown in the **Current directory:/** line at the bottom.

    •   Use the positioner to select the still you want to set as default.

    •   Press **1. Select** to assign the selected still to the Global-Store channel.

        A loading progress indicator displays while the still is loading.

5. Press **BACK** to display the **Global-Store Menu**.

6. Press **2. Properties** to display the **On Air Properties Menu**.

On Air Properties

0. Position   5. Store Properties as Default
1. Shaped
2. Display Mode
3. Reserved
4. Animation

Use Positioner or HUE, SAT, LUM to modify

Global-Store — On Air Properties Menu

7. Adjust the **Position** of the stills as follows:

   • Press **0. Position**.

On Air Properties

0. Position   5. Store Properties as Default
1. Shaped
2. Display Mode
3. Reserved
4. Animation
———————

              X-Posn: 0
              Y-Posn: 0

Use Positioner or HUE, SAT, LUM to modify

Global-Store — Position Menu

   • Move the positioner **Left** or **Right** to adjust the **X-Position** of the still image.
   • Move the positioner **Up** or **Down** to adjust the **Y-Position** of the still image.

8. Define the still as shaped or unshaped as follows:

   • Press **1. Shaped**.

On Air Properties

0. Position   5. Store Properties as Default
1. Shaped
2. Display Mode
3. Reserved
4. Animation
———————

        Shaped/Unshaped: Shaped

Use Positioner or HUE, SAT, LUM to modify

Global-Store — Shaped/Unshaped Menu

- Move the positioner **Up** or **Down** to select the **Shaped/Unshaped** mode you want to use. You can select between the following:

✎ **Note** | Select **Unshaped** if you are unsure about which mode to use. Unshaped allows the switcher to match the alpha and fill signals that the source device is generating.

~ **Shaped** — Select this option to have the switcher perform an *additive* Key. With Shaped Keys, the Key Alpha cuts a hole based on the monochrome value of the alpha. Shades of gray are translated into either white or black, giving the Key a hard edge.

~ **Unshaped** — Select this option to have the switcher perform a *multiplicative* Key. With an unshaped Key, the Key Alpha cuts a hole based on the gradient values of the alpha. Shades of gray are translated into transparency levels, giving the Key a soft edge. Unshaped Key alphas can also be considered true linear alphas.

9. Adjust the **Display Mode** of the still as follows:

- Press **2. Display Mode**.

```
On Air Properties
0. Position              5. Store Properties as Default
1. Shaped
2. Display Mode
3. Reserved
4. Animation


        Field/Frame:      Frame




Use Positioner or HUE, SAT, LUM to modify
```
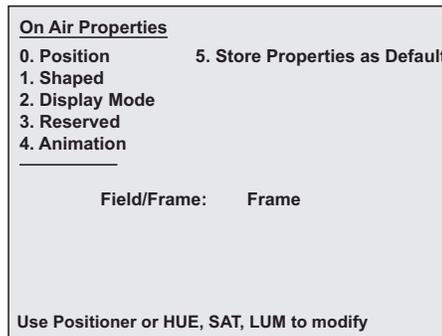
Global-Store — Display Mode Menu

- Move the positioner **Left** or **Right** to select the **Field/Frame** display mode you want to use. You can select between the following:

✎ **Note** | If you are operating in a progressive scan video format, the **Field1** and **Field2** options are not available.

~ **Frame** — Select this option to have the entire frame of the still image displayed.

~ **Field1** — Select this option to have field 1 of the still image displayed.

~ **Field2** — Select this option to have field 2 of the still image displayed.

~ **Swap** — Select this option to have field 1 and field 2 of the image swapped when they are displayed.

10. Set the **Animation** characteristics of an animation as follows:

- Press **4. Animation**.

```
┌─────────────────────────────────────────────┐
│ On Air Properties                           │
│                                             │
│ 0. Position          5. Store Properties as Default │
│ 1. Shaped                                   │
│ 2. Display Mode                             │
│ 3. Reserved                                 │
│ 4. Animation                                │
│ ─────────                                   │
│                                             │
│              Looping:  No                   │
│              Reverse:  No                   │
│              Autoplay: No                   │
│                                             │
│                                             │
│                                             │
│ Use Positioner or HUE, SAT, LUM to modify   │
└─────────────────────────────────────────────┘
```
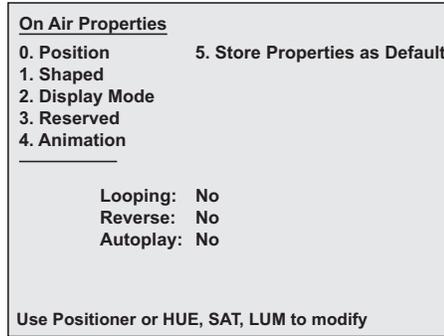
Global-Store — Animation Menu

- Move the positioner **Left** or **Right** to turn **Looping** on (**Yes**) or off (**No**). When looping is set to **Yes** an animation will start over at frame one when it finished.

- Move the positioner **Up** or **Down** to turn **Reverse** on (**Yes**) or off (**No**). When reverse is set to **Yes** an animation will play in reverse when it reaches the end.

- Twist the positioner knob **Clockwise** or **Counter-Clockwise** to turn **AutoPlay** on (**Yes**) or off (**No**). When **Autoplay** is set to **Yes** an animation automatically start to play when it is taken on-air.

This completes the procedure for adjusting the on-air properties of the stills in a Global-Store.

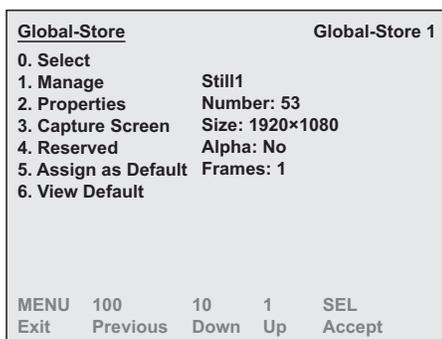## *Storing Default Global-Store Properties*

The on-air properties menu allows you to adjust the position, clip, gain, display mode, animation and auto dissolve attributes of the selected still. You can also set any changes you make to the still as default properties for that still.

Use the following procedure to store default still properties:

1. Navigate to the **Global-Store Menu** as follows:

   - Press **MENU** to display the **Main Menu**.

   - Press **0. Effects** to display the **Effects Menu**.

   - Press **6. Global-Store** to display the **Global-Store Menu**.

```
┌─────────────────────────────────────────────┐
│ Global-Store                    Global-Store 1 │
│                                             │
│ 0. Select                                   │
│ 1. Manage            Still1                  │
│ 2. Properties        Number: 53             │
│ 3. Capture Screen    Size: 1920×1080        │
│ 4. Reserved          Alpha: No              │
│ 5. Assign as Default Frames: 1              │
│ 6. View Default                             │
│                                             │
│                                             │
│                                             │
│ MENU   100      10    1     SEL             │
│ Exit   Previous Down  Up    Accept          │
└─────────────────────────────────────────────┘
```

Global-Store — Main Menu

2. Press **0. Select** to display the **Select Menu**.

```
Select                           Global-Store 1
0. Channel 1
1. Select                 NewDir/
2. Rename                 Still1
3. Delete                 Still2
4. Up one level           Still3
5. Cancel Still           Still4

Still1
Number: 53
Size: 1920×1080
Alpha: No
Frames: 1
Current directory:/
```

Global-Store — Select Menu

3. Select the Global-Store channel you want to assign the still to as follows:

    • Press **0. Channel**.

    • Use the ⬇ and ⬆ buttons to select the desired channel (**1**-**3**).

✎	**Note**	As you select the channel you will notice that the Global-Store in the top right corner changes to indicate what Global-Store channel you are working in.

4. Select the still you want to adjust the on-air properties for as follows:

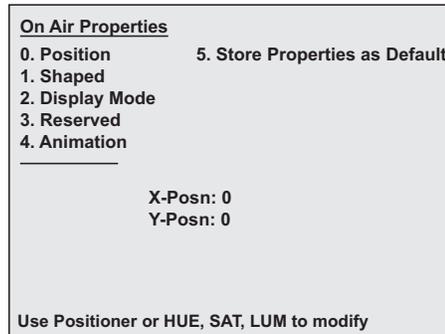| ✓	**Operating Tip**	To navigate between directories, use the positioner to select the directory you want to go down into and press **1. Select**, or press the **4. Up one level** button to go up to the higher level directory. The change will be shown in the **Current directory:/** line at the bottom.

    • Use the positioner to select the still you want to set as default.

    • Press **1. Select** to assign the selected still to the Global-Store channel.

      A loading progress indicator displays while the still is loading.

5. Press **BACK** to display the **Global-Store Menu**.

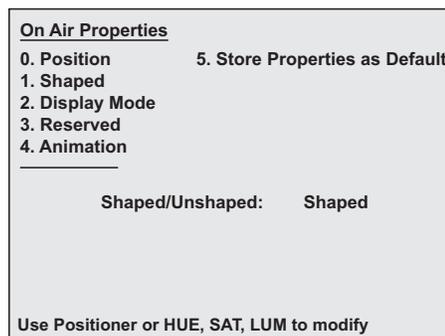6. Press **2. Properties** to display the **On Air Properties Menu**.

```
On Air Properties
0. Position        5. Store Properties as Default
1. Shaped
2. Display Mode
3. Reserved
4. Animation




Use Positioner or HUE, SAT, LUM to modify
```

Global-Store — On Air Properties Menu

7. Adjust the properties of the still as desired. Refer to the section "**Adjusting On Air Properties**" on page 11-17 for instructions on adjusting specific properties of the still.

8. Press. **5. Store Properties as Default** to save the adjusted properties of the still as default for that still.

This completes the procedure to store default still properties.

Default Stills

You can assign a still as being default for each Global-Store channel. When a still is set as default, it will be loaded into the assigned Global-Store channel on startup.

Assigning Default Stills

Use the following procedure to assign a still as default to a Global-Store Channel.

1. Navigate to the **Global-Store Menu** as follows:

   • Press **MENU** to display the **Main Menu**.

   • Press **0. Effects** to display the **Effects Menu**.

   • Press **6. Global-Store** to display the **Global-Store Menu**.

   ```
   Global-Store                          Global-Store 1
   0. Select
   1. Manage            Still1
   2. Properties        Number: 53
   3. Capture Screen    Size: 1920×1080
   4. Reserved          Alpha: No
   5. Assign as Default Frames: 1
   6. View Default




   MENU    100        10      1     SEL
   Exit    Previous   Down    Up    Accept
   ```

   Global-Store — Main Menu

2. Press **0. Select** to display the **Select Menu**.

   ```
   Select                                Global-Store 1
   0. Channel 1
   1. Select            NewDir/
   2. Rename            Still1
   3. Delete            Still2
   4. Up one level      Still3
   5. Cancel Still      Still4

   Still1
   Number: 53
   Size: 1920×1080
   Alpha: No
   Frames: 1
   Current directory:/
   ```
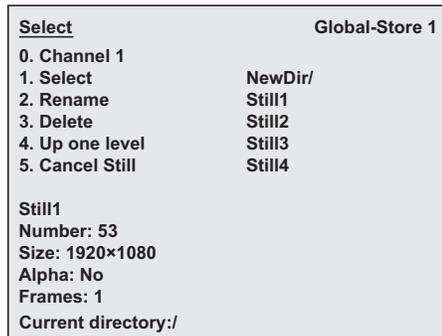
   Global-Store — Select Menu

3. Select the Global-Store channel you want to assign a default still to as follows:

   • Press **0. Channel**.

   • Use the ⬇ and ⬆ buttons to select the desired channel (**1**-**3**).

✎   **Note** | As you select the channel you will notice that the Global-Store in the top right corner changes to indicate what Global-Store channel you are working in.
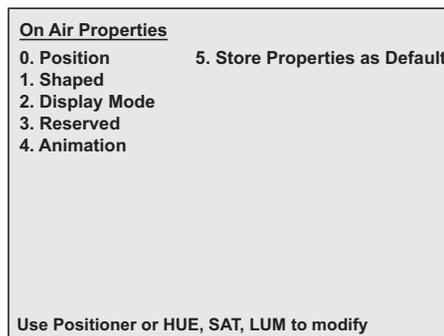
   • Press the right **SEL** button to accept the new setting.

4. Select the still you want to assign as default for the selected Global-Store channel.

✓ **Operating Tip**

> To navigate between directories, use the positioner to select the directory you want to go down into and press **1. Select**, or press the **4. Up one level** button to go up to the higher level directory. The change will be shown in the **Current directory:/** line at the bottom.

- Use the positioner to select the still you want to set as default.
- Press **1. Select** to assign the selected still to the Global-Store channel.

  A loading progress indicator displays while the still is loading.

5. Press **BACK** to display the **Global-Store Menu**.

6. Press **5. Assign as Default** to display the **Assign as Default Menu**.

Assign as Default	Global-Store 1
	New Default Still
	Still3
	Number: 34
100	
Previous	

Global-Store — Assign as Default Menu

The new default still has been assigned to the selected Global-Store channel. This completes the procedure for assigning a still as default for a Global-Store channel.

Viewing Default Stills

Use the following procedure to view the current default still for a Global-Store Channel.

1. Navigate to the **Global-Store Menu** as follows:

- Press **MENU** to display the **Main Menu**.
- Press **0. Effects** to display the **Effects Menu**.
- Press **6. Global-Store** to display the **Global-Store Menu**.

Global-Store				Global-Store 1
0. Select				
1. Manage	Still1			
2. Properties	Number: 53			
3. Capture Screen	Size: 1920×1080			
4. Reserved	Alpha: No			
5. Assign as Default	Frames: 1			
6. View Default				
MENU	100	10	1	SEL
Exit	Previous	Down	Up	Accept

Global-Store — Main Menu

2. Press **0. Select** to display the **Select Menu**.

```
Select                        Global-Store 1
0. Channel 1
1. Select                 NewDir/
2. Rename                 Still1
3. Delete                 Still2
4. Up one level           Still3
5. Cancel Still           Still4

Still1
Number: 53
Size: 1920×1080
Alpha: No
Frames: 1
Current directory:/
```

Global-Store — Select Menu

3. Select the Global-Store channel you want to view the current default still for:

   • Press **0. Channel**.

   • Use the ⬇ or ⬆ buttons to select the desired channel (**1**-**3**).

   • Press the right **SEL** button to accept the new setting.

4. Press **BACK** to display the **Global-Store Menu**.

5. Press **6. View Default** to display the **View Default Menu**.

```
View Default                  Global-Store 1

                    Still3
                    Number: 34




                    100
                    Previous
```

Global-Store — View Default Menu

This completes the procedure for viewing the default still for a Global-Store channel.

Capturing Stills

You can capture a still from your Preview output and save it as a still for later use. The image is saved as **CAPTURE0.TGA**, and includes all the information in the Preview output except any preview overlays.

✎ **Note**   If you wish to capture more than one still, you must transfer the last captured image file before capturing the next image because the file is overwritten each time a capture is performed. Refer to the section "**Transferring Still Images and Animations**" on page 11-7 for information on transferring files using a WebDAV connection.

Performing a Capture

Use the following procedure to capture a still from your Preview output as follows:

1. Navigate to the **Global-Store Menu** as follows:

    • Press **MENU** to display the **Main Menu**.

    • Press **0. Effects** to display the **Effects Menu**.

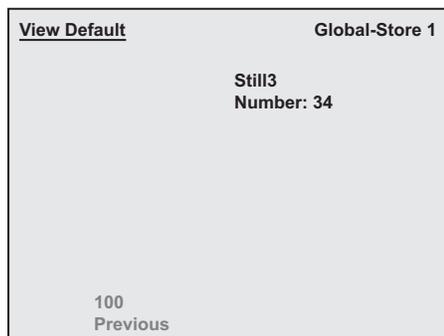   • Press **6. Global-Store** to display the **Global-Store Menu**.

Global-Store	Global-Store 1
0. Select	
1. Manage	**Still1**
2. Properties	**Number: 53**
3. Capture Screen	**Size: 1920×1080**
4. Reserved	**Alpha: No**
5. Assign as Default	**Frames: 1**
6. View Default	

MENU	100	10	1	SEL
Exit	Previous	Down	Up	Accept

Global-Store — Main Menu

2. Ensure the correct source output for the still image you wish to capture is selected on the Preview Bus.

3. Press **3. Capture Screen** to capture the still image. The softkey **3. Capture Screen** is grayed out while the capture is in progress.

This completes the procedure to capture a still image from your Preview output.

Restarting the Global-Store

The **System Resets Menu** includes the Restarting Global-Store function. This function resets the Synergy 100 MD Global-Store and video processor. Use this procedure if you are experiencing difficulties with the Preview Overlay, Global-Store, or as directed by Ross Video Technical Support.

Use the following procedure to restart your Global-Store to factory defaults:

1. Navigate to the **System Resets Menu** as follows:

    • Press **MENU** to display the **Main Menu**.

    • Press **7. Options** to display the **Options Menu**.

    • Press **5. System Resets** to display the **System Resets Menu**.

System Resets	
0. All	
1. System Shutdown	
2. System Restart	
3. Inputs/Outputs	
4. Restart Global-Store	

MENU	100	10	1	SEL
Exit	Previous	Down	Up	Accept
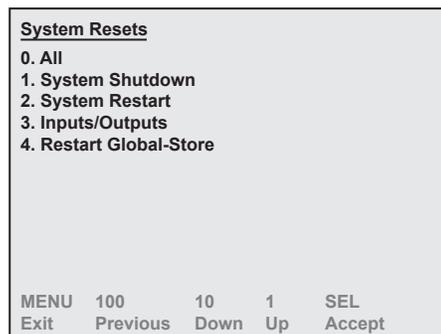
System Resets Menu

2. Press **4. Restart Global-Store** to display the **Restart Global-Store Confirmation Screen**.

3. Press **0. Confirm** to restart the Global-Store.

✓ **Operating Tip** | Press **1. Cancel** to *not* restart the Global-Store to the **System Resets Menu**.

This completes the procedure to restart your Global-Store to factory defaults.

Squeeze & Tease MD Basic Operation

In This Chapter

This chapter provides information for using the basic features of the **Squeeze & Tease MD** option.

The following topics are discussed in this chapter:

- Operational Overview
- Working in 3D Space
- Using the Positioner
- Using the Mattes Color Knobs
- Squeeze & Tease Menu System
- Squeeze & Tease MD Menu Tree
- 3D Guidelines
- Channel Listing
- Working with Channels
- Channel Management
- Channel Layering and Intersect
- Frontside/Backside Video
- Order of Channel Processing

Note　Refer to the section "**Introduction to Keying**" on page 7–2 for a complete description of Effects Keyers and Downstream Keyers. The operational descriptions provided in this chapter refer only to the 3D capabilities of Flying Keys.

Operational Overview

Squeeze & Tease MD operates by manipulating Keys in 3 dimensional space. This allows you to position Keys in front of or behind other Keys, and make Keys appear larger or smaller than they are, apply environmental effects to the Keys such as lighting, or apply video manipulation effects such as colorization. To apply any of the Squeeze & Tease MD effects to a Key, you must have the **FLY KEY** button in the **Effects Keyer Group** on. This tells the switcher to assign some of the Squeeze & Tease MD resources to the selected Keyer. When Squeeze & Tease MD resources are applied to a Keyer, the selected Key type (**Self Key**, **Auto Select**, **Chroma Key** or **PST PATT**) is said to be **Flying**. You can fly any type of Key, provided you have the available Squeeze & Tease channel resources to assign to the Keyer. Refer to the section "**3D Guidelines**" on page 12–16 for more information on Flying Keys.

When you fly a Key, the video signal for that Key is contained in a channel. By positioning or rotating, or applying other linear, environmental, or color effects to the channel, you are defining how you want the switcher to display the video signal for that flying Key.
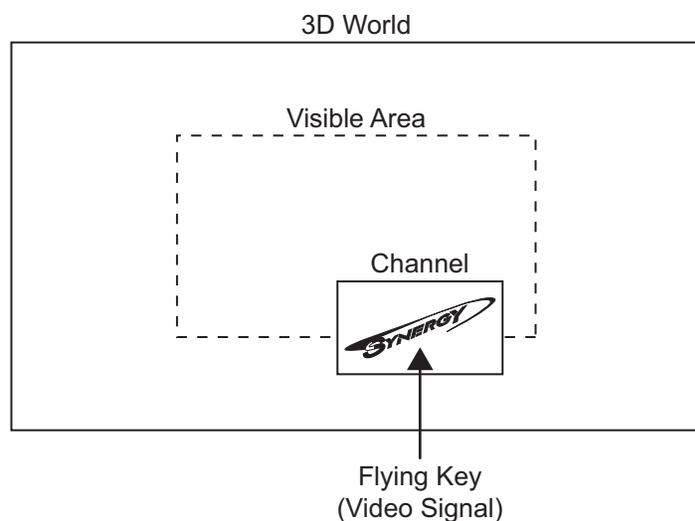
Channel Overview

The channel can be positioned anywhere in the virtual 3D world; however, it will only be visible on screen of it is within the Visible Area. This allows you to perform transition effects where the channel appears to fly in from one side. The channel is being taken from a position outside of the Visible Area into the Visible Area.

Working in 3D Space

In order to maximize the features of the **Squeeze & Tease MD** system, it helps to have a basic understanding of three-dimensional (3D) space. Three axes (X, Y, and Z) are used to define 3D space. The position of a channel on each of the three axes determines its location in 3D space.

- **X** — Refers to the horizontal (left-right) position of the channel on the screen.

- **Y** — Refers to the vertical (up-down) position of the channel on the screen.

- **Z** — Refers to the distance (forwards-backwards) of the channel on the screen.
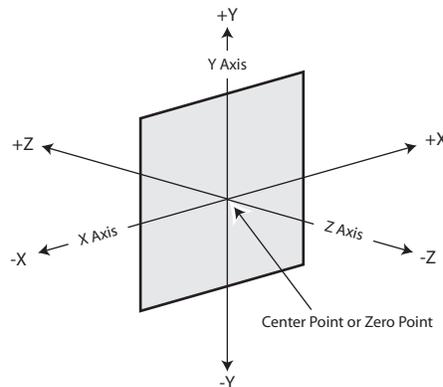
Basics of 3D Space

Channel Location in 3D Space

The center point of the screen is the zero point. Each axis has a positive and negative region.

- Moving a channel to the left of the center (or zero) point locates it in **-X space**.

- Moving a channel to the right of the center point locates it in **+X space**.

- Moving a channel below the center point locates it in **-Y space**.

- Moving a channel above the center point locates it in **+Y space**.

- Moving a channel closer to you locates it in **-Z space**.

- Moving a channel away from you locates it in **+Z space**.

Position Coordinates

The 3D space you work with in this system has upper and lower limits. *Position coordinates* are used to define a channel location in 3D space and are shown as a unit measurement on the menus. A change in position of **1.000** units is equal to a move of 1 full screen. For example, to move the channel 2 screens to the right, adjust the X-Axis value to **2.000**.

Changing the location of a channel in 3D space does not affect the size or shape of the channel image. However, when a channel is moved forward, it *appears* larger on the screen. When located at a greater distance in 3D space, it *appears* smaller.

Position coordinates can be adjusted using the joystick positioner or the knobs on the menu.

- You can move a channel **144.000** full screen widths in either direction on the **X-Axis**.

- You can move a channel **144.000** full screen heights in either direction on the **Y-Axis**.

- • You can move a channel **400.000** full screen widths in either direction on the **Z-Axis**.

You may want to think of the 3D working area as a cube with a defined width (X axis), height (Y axis), and depth (Z axis).

3D Space
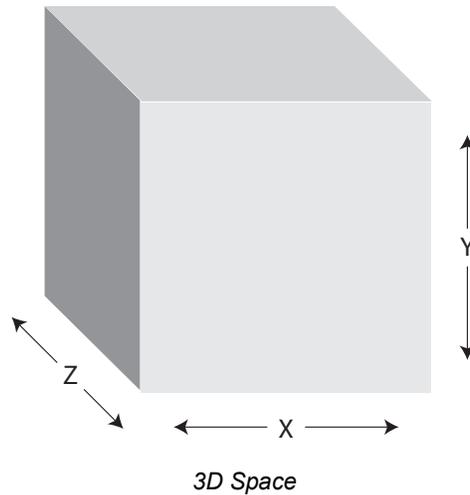
| ✎ | **Note** | The **Z-Axis** works somewhat differently than the other axes because it is the equivalent of **250** screen widths in each direction. Channels can be moved on the Z axis until they become so small they disappear from view. |

Screen and Channel Location

You can manipulate a channel in different ways within 3D space to achieve creative results.

When working with channels, keep in mind that 3D space extends beyond the visible area of the screen. Channels can be positioned and manipulated outside of the viewable area to create some interesting effects.

When viewing your work on a monitor, you may want to picture the 3D space as a cube with the visible area and the perspective point positioned within it.

The *viewpoint* is the point in space that the channel is viewed from.

The *visible area* is the area within 3D space that can be seen from the viewpoint. The following illustration displays how the visible area extends from the *viewpoint*.

Working in 3D Space – Top View
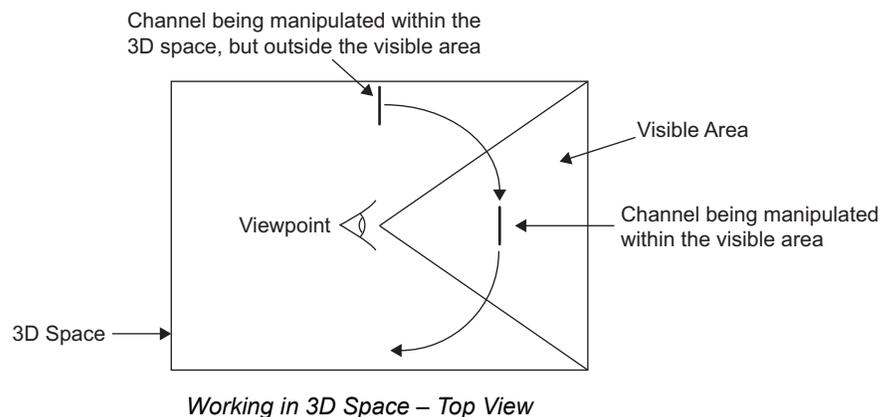
Channels can be manipulated outside the visible area to create specific effects. For example, a channel can be rotated in such a way that it appears to roll into view from a point outside the screen and roll out of view on the other side.

It is also possible to move a channel to a point behind the viewer. For example, you can manipulate a channel so that it appears to come towards the viewpoint and keeps going until it passes by the viewer. For this effect, the channel will get larger as it moves towards the viewpoint and then disappear.

You can also create a circular motion effect where the channel sweeps across the screen in a large arc that appears to continue behind the viewer.

Perspective

Since you are viewing 3D channels on a two-dimensional surface (the screen), it is important to recognize how depth is perceived. This involves understanding relative size, parallax and viewpoint perspective.

Relative Size

When working with the Z-Axis, channels that are closer appear larger than channels further away. Zooming the channel changes the distance between the channel and the viewpoint, but does not change the size of the channel. Channels that are closer will also appear over top of channels that are further away.
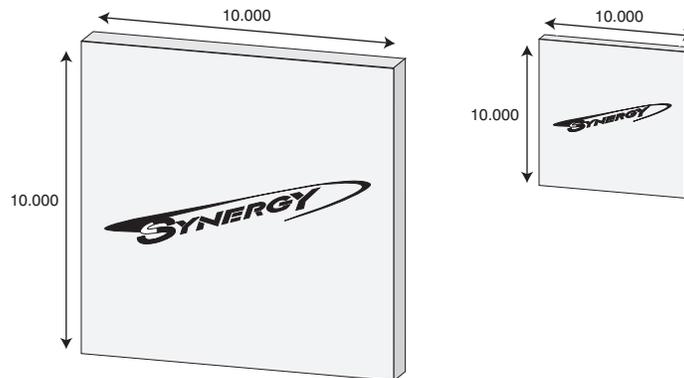
Relative Size of Two Channels on the Z-Axis

Parallax Effect

If you are manipulating two channels at once, you may notice that the channel closer to you appears to be moving faster than the one that is further away. This effect is known as motion parallax. It occurs because channels that are closer to you move farther across your field of view than channels in the distance.
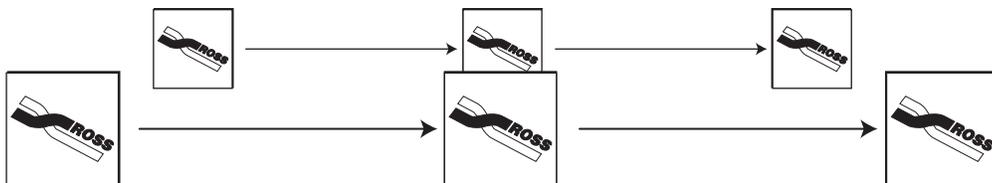
Parallax Effect

Although both channels are moving at the same rate, the closer channel will reach the end of the field of view first, giving the impression that it was moving faster.

Viewpoint and Perspective

Another effect you may notice when you move a channel left or right on the X-Axis is that it appears to change its angle of rotation. The channel appears to move in a sweeping motion, although its angle of rotation remains unchanged. This is because the viewpoint is not being moved along with the channel. Since the channel is moving but the viewpoint is not, you are seeing the channel from a different angle.
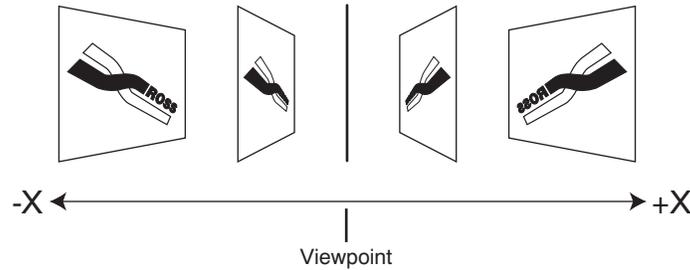
Movement and Perspective on the X-Axis

The same effect can be seen when moving a channel up or down on the Y-Axis when using a fixed viewpoint. If the channel is moved higher in 3D space, you see the channel as if you are looking up at it.
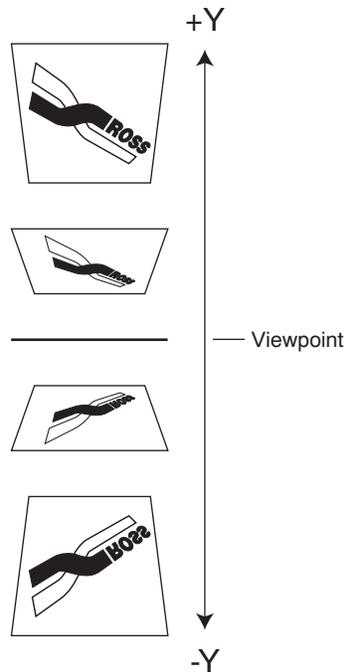
Movement and Perspective on the Y-Axis

In **Squeeze & Tease MD**, you can change the viewpoint to create a different perspective. You can also choose to have the viewpoint repositioned along with the channel to eliminate perspective effects.

Channel Rotation

Rotation can occur around the X, Y, or Z-Axes. Rotation values are shown as a spin number on the menus.

The *pivot point* of the rotation (point of rotation) can be set to any point on or off the plane of the channel to produce a variety of creative effects. The default pivot point is the center of the channel.

	Note	Changing the position of a channel in 3D space does not change the pivot point. The pivot point is relative to the channel. For example, if you adjust the pivot point to the top right-hand corner of the channel, then move the channel, the pivot point will still be at the top right-hand corner of the channel.

A rotation of **1.000** is equal to a **360⁰** rotation (one complete revolution).

- A rotation value of **0.250** is equal to a **90⁰** rotation.
- A rotation value of **0.500** is equal to a **180⁰** rotation.

Rotation can be adjusted from **0.001** to **20.000** in either direction (-20.000 to +20.000), so you can create an effect that involves up to 40 complete rotations. The greater the rotation value (negative or positive), the more times the channel will spin around the pivot point.

X-Axis Rotation

The channel rotates horizontally about the Y-Axis. A positive rotation will spin the channel from left to right and a negative rotation will spin it from right to left.
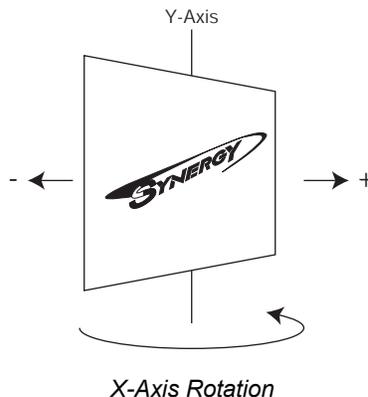
X-Axis Rotation

Y-Axis Rotation

The channel rotates vertically about the X-Axis. A positive rotation will spin the channel from top to bottom and a negative rotation will spin it from bottom to top.
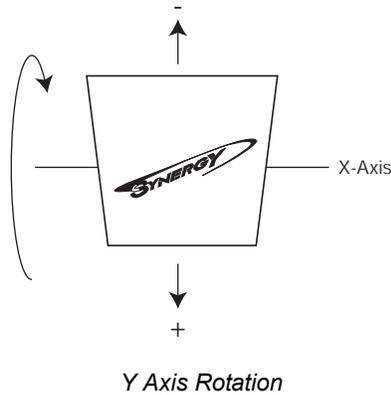
Y Axis Rotation

Z-Axis Rotation

The channel rotates about the Z-Axis. A positive rotation will spin the channel clockwise and a negative rotation will spin the channel counter-clockwise.
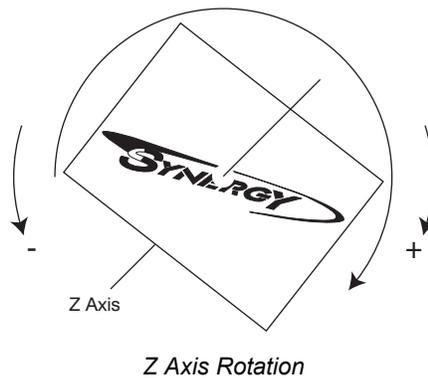
Z Axis Rotation

✎	**Note**	As you rotate a channel, the relative directions of rotation (the positive and negative rotation) may swap if you switch from one axis to another without centering the channel.

Channel Centering

The **CNTR** (**EFF D**) button in the **Effects Control Group** is used to reset the channel to the default values.

- • Press the **CNTR** (**EFF D**) button once to reset the values on the current menu.

- • Double-press the **CNTR** (**EFF D**) button to reset all of the channel values.

Control Options

When manipulating images in the **Squeeze & Tease MD** system, you have the option of controlling one channel, selecting multiple channels.

Single Channel

This control is used when you want to manipulate one image at a time.

Multiple Channels

Select both channels when you want to give the same command to both channels at the same time. Both channels can be selected when using any of the 3D tools such as crop, position, or rotation. If the channels selected have different values, for example, different positions in 3D space, the menu will indicate that the values are different and no position, rotation or cropping coordinates will be displayed. The menu will show the position of both channels in the 3D viewable field.

| **Note** | Keep in mind that adjusting position, rotation or cropping values will adjust each channel based on its current state. |

Selecting multiple channels is particularly useful if you want to move or rotate both Keyframes at the same rate. Each Keyframe will rotate around the pivot point you have selected for that channel.

Conclusion

The rest of this chapter deals with the operation of the **Squeeze & Tease MD** system. Now that you understand the basic concepts of how the system works, the best way to learn how to create specific effects is with some hands-on practice to get a "feel" for the system. Use the positioner to try different channel placements and experiment by changing the pivot point and rotation values. In the end, your knowledge of position and rotation coordinates will help you manipulate your channels creatively and accurately for repeatable results.

Using the Positioner

The 3-Axis **Positioner** (also known as the *joystick*) allows you to manipulate channels in 3D space. The movement of the positioner controls to the movement of channels or objects in 3D space. Some basic movements and their corresponding directions are illustrated below.

Up / Down
(Y Axis) Movement:
Vertical Position Control

Left / Right
(X Axis) Movement:
Horizontal Position Control

Clockwise /
Counter-clockwise
(Z Axis) Movement:
Distance Control
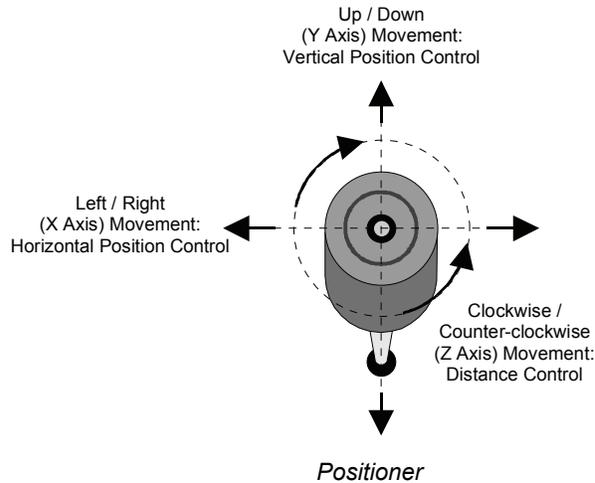
Positioner

- • **X-Axis** — Move the Positioner *left* or *right* to control the horizontal position or rotation of the channel.

- • **Y-Axis** — Move the Positioner *up* and *down* to control the vertical position or rotation of the channel.

- • **Z-Axis** — Twist the top portion of the Positioner *clockwise* and *counter-clockwise* to control the depth of the channel on the screen. Twisting the positioner *clockwise* zooms the channel toward you, while twisting it *counter-clockwise* zooms the channel away from you. When rotating a channel, twist the Positioner *clockwise* to rotate the channel clockwise, twist it *counter-clockwise* to rotate the channel counter-clockwise.

Using the Mattes Color Knobs

The **Mattes Color** knobs are used to select and fine tune menu parameters.

Mattes Color Knobs

Throughout the rest of this guide, the **Mattes Color** knobs are referred to as follows:

- The **HUE** knob

- The **SAT** knob

- The **LUM** knob

	Note	**Mattes Color** knobs are "end-stop" knobs and as such, the electrical position of the knob *may not match* the current physical position of the knob. When this happens a full range of adjustment may be unavailable. Therefore, you must re-synchronize each knob *before* adjusting a parameter.
		Re-synchronize a knob by turning it fully clockwise, then fully counter-clockwise a few times. Full-range adjustments can now be made.

Squeeze & Tease Menu System

This section provides an introduction to the **Squeeze & Tease MD** Menu system. A more detailed description of these menu functions is located in section "**3D Guidelines**" on page 12–16.

There are two possible ways to navigate to the **Squeeze & Tease MD Main Menu**. One way is through pressing associated Hotkeys, and the other way is through the **Main Menu**.

Through the Main Menu

You can navigate to the **S&T MD Menu** through the **Main Menu** if you are Flying a Key.

Use the following procedure to display the **S&T MD Menu**:

1. Press **MENU** to display the **Main Menu**.

```
Main Menu - Synergy 100      vSynergy X MD-S100
0. Effects                5. Disk
1. Inputs                 6. Personality
2. Outputs                7. Options
3. GPIs                   8. S&T MD
4. Communication          9. Help Menu




MENU    100       10      1      SEL
Exit    Previous   Down    Up     Accept
```

Main Menu

2. Press **8. S&T MD** to display the **S&T MD Menu**.

```
S&T MD
 0. Position/Crop         5. Lighting
 1. Border                6. Reserved
 2. Sequence              7. Warp
 3. Channel Management
 4. Preprocessor




MENU    100       10      1      SEL
Exit    Previous   Down    Up     Accept
```
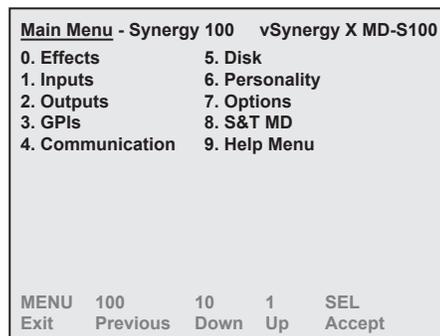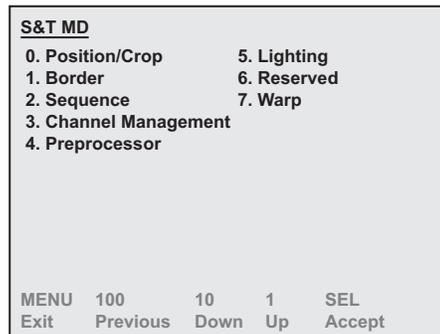
Squeeze & Tease MD Menu

The **S&T MD Menu** allows you to access all of the Squeeze & Tease functions. Channel listing conventions and instructions for assigning channels are discussed in the section "**3D Guidelines**" on page 12–16.

Hide Menus

The **Hide Menus** feature allows you to minimize the amount of information that is displayed on the preview overlay so that is doesn't obscure the channel you are trying to set up. You can toggle between **SHOW** and **HIDE** Mode by pressing the left **SEL** button, in the **Effects Control Group**.
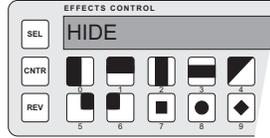
Left SEL Button — Hide Mode

Use the following procedure to toggle the Hide Mode:

✎ **Note** The Hide feature only applies to the Squeeze & Tease MD Menus. You must be on a Squeeze & Tease Menu in order to activate Hide Mode.

1. Navigate to the **Squeeze & Tease MD Menu** that you want to toggle the **Hide** feature on for. In this example we will use the **Position/Crop Menu**.

Position/Crop	1 2	Key 1
0. Position	5. Crop Horizontal	
1. Rotation	6. Crop Vertical	
2. Pivot Preset	7. Transp. Off	
3. Pivot Position	8. Freeze Off	
4. Aspect Off	9. Adv. Positioning	

MENU	100	10	1	SEL
Exit	Previous	Down	Up	Accept
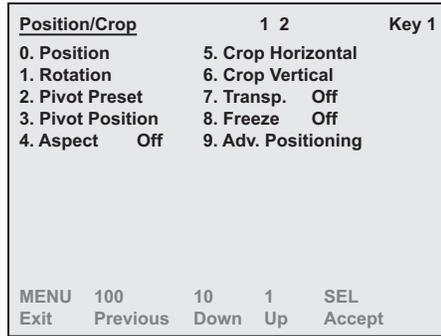
Position/Crop Menu — Show Mode

2. Press the left **SEL** button to toggle **HIDE Mode** to **On**.

Position X: 0.0   Y:0.0   Z:0.0
Press Effect "SEL" to show menu
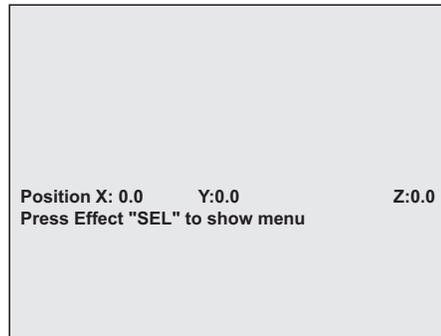
Position/Crop Menu — Hide Mode

3. Press the left **SEL** button to toggle **SHOW Mode** back on.

```
Position/Crop              1  2           Key 1
0. Position          5. Crop Horizontal
1. Rotation          6. Crop Vertical
2. Pivot Preset      7. Transp.    Off
3. Pivot Position    8. Freeze     Off
4. Aspect      Off   9. Adv. Positioning




MENU   100          10    1     SEL
Exit   Previous     Down  Up    Accept
```

Position/Crop Menu — Show Mode

This completes the procedure for toggling Hide Mode On and Off.

Squeeze & Tease MD Menu Tree

The following figure illustrates the *portion* of the menu tree that is used for configuring your Squeeze & Tease MD DVE.

```
Main Menu - Synergy 100    vSynergy X MD-S100
0. Effects              5. Disk
1. Inputs               6. Personality
2. Outputs              7. Options
3. GPIs                 8. S&T MD
4. Communication        9. Help Menu




MENU    100      10      1      SEL
Exit    Previous  Down    Up     Accept
```

```
S&T MD
0. Position/Crop        5. Lighting
1. Border               6. Reserved
2. Sequence             7. Warp
3. Channel Management
4. Preprocessor




MENU    100      10      1      SEL
Exit    Previous  Down    Up     Accept
```

```
Lighting
0. Lighting Setup None
1. Position
2. Presets
3. Auto Follow  On
4. Luminance Clipping




MENU    100      10      1      SEL
Exit    Previous  Down    Up     Accept
```

```
Channel Management    1 2          Key 1
0. Reserved         5. Front      Black( 1)
1. Channel 1 On     6. Back       Black( 1)
2. Channel 1 On     7. Auto Flip  None
3. Layering    Auto
4. Backside Video On


 Current S&T Channel Allocation:  1/4
 Trans 0  Key 1:1  Key 2:0


MENU    100      10      1      SEL
Exit    Previous  Down    Up     Accept
```

```
Position/Crop         1 2          Key 1
0. Position         5. Crop Horizontal
1. Rotation         6. Crop Vertical
2. Pivot Preset     7. Transp.    Off
3. Pivot Position   8. Freeze     Off
4. Aspect    Off    9. Adv. Positioning




MENU    100      10      1      SEL
Exit    Previous  Down    Up     Accept
```

```
Warp                  1 2          Key 1
0. Category    WARP Off
1. Warp List   WARP Off


Active Warp: WARP Off



MENU    100      10      1      SEL
Exit    Previous  Down    Up     Accept
```

```
Sequence              1 2          Key 1
0. Load/Save Seq.   5. Delete Keyframe
1. Previous Keyframe 6. Delete Workspace
2. Next Keyframe    7. Wipe Modifier
3. Insert Keyframe  8. Modify Keyframes
4. Overwrite Keyframe 9. Keyframe Parameters
                       **EMPTY**



MENU    100      10      1      SEL
Exit    Previous  Down    Up     Accept
```

```
Border                1 2          Key 1
0. Size             5. Auto Default  Off
1. Style
2. Corners
3. Color
4. Advanced




MENU    100      10      1      SEL
Exit    Previous  Down    Up     Accept
```

```
Preprocessor          1 2          Key 1
0. Defocus    Off
1. Mosaic     Off
2. Posterize  Off
3. Colorize   Off
4. Strobe     Off




MENU    100      10      1      SEL
Exit    Previous  Down    Up     Accept
```

```
Load/Save Seq.        1 2          Key 1
0. Load Sequence        None
1. Save Sequence        New Seq (00)
2. Delete Sequence  Seq.: New Seq (01)
3. Rename Sequence      Unused (02)
                        Unused (03)
                        Unused (04)



MENU    100      10      1      SEL
Exit    Previous  Down    Up     Accept
```

```
Keyframe Parameters   1 2          Key 1
0. Duration
1. Hold        Off
2. Spline Params


Type: Smooth
Frames: 30
Rotate: Normal


MENU    100      10      1      SEL
Exit    Previous  Down    Up     Accept
```

Squeeze & Tease MD Setup Menu Tree

3D Guidelines

The **Fly Key** function allows you to apply **3D DVE** effects to *all* of the Key types, with the ability to control the position and rotation of the Key along all three axes in 3D space.

	Note	Ensure that the **Squeeze & Tease MD** option is installed. Refer to Chapter 6 "**Software Upgrades and Options**" in your *Synergy 100 MD Engineering Manual* for instructions on how to verify the status of your installed hardware and software options.

Fly Key Rules

There are a number of important rules that apply to the operation of the **FLY KEY**. These rules apply to both the MLE Keyers and the Downstream Keyers:

- You can Fly any type of Key.

- You can Fly *any combination* of Keys.

- You can Fly a **Color Background**.

- You cannot Fly a **Downstream Key** (DSK).

- You cannot Fly a **MultiDSK Key** (MultiDSK option).

- Different Key Types require a different number of Squeeze & Tease channel resources to operate. The different Key Types and the required number of channels and resources is listed as follows:

  ~ **Self Keys** require **2** Squeeze & Tease channel resources and are shown as **1** Channel.

  ~ **Auto Select Keys** require **2** Squeeze & Tease channel resources and are shown as **1** Channel.

  ~ **Chroma Keys** require **2** Squeeze & Tease channel resources and are shown as **1** Channel.

  ~ **Preset Pattern Keys** require **1** Squeeze & Tease channel resources and are shown as **1** Channel.

- To use a preset pattern Key without the Fly Key mode, press **FLY KEY** to disable the mode.

- If **PST PATT** is already on and the **Fly Key** mode is off, pressing **PST PATT** again will not automatically enable **Fly Key**. This feature only works when you change to the **Preset Pattern** mode.

- If **FLY KEY** is enabled, changing the Key type to **Self Key**, **Auto Select** or **Chroma Key** automatically turns the **Fly Key** mode off and switches to the selected Keying mode.

- **Advanced Picture Frame Borders** can only be applied to **Preset Pattern Keys**.

Using Two Channels in Different Keys

You can manipulate both Squeeze & Tease channels simultaneously even when the channels belong to different keys.

The channels are selected using the **SEL/DVE** + **CH1+2** hotkey (refer to the section "**Using Hotkeys**" on page 22–3 for more information). The **Effects Control** display shows "**FLY+**" to indicate that both Keys are being manipulated (rather than "**FLY1**" or "**FLY2**", as when only a single key is being controlled).

FLY+ Mode

In **FLY+** mode, you can change the position, rotation, cropping, and aspect of both channels simultaneously by pressing the **ROTATE** and/or **ASPECT** buttons in the lower **Effects Control Group**. The **SOFT** and **BORDER** knobs can also be used to adjust the softness and size of the borders.

> **Note** You cannot adjust border color on two keys at once. If you have selected two channels in different keys, you must set the border color for each channel separately.

Using the Position/Crop Menu

In the **Position / Crop Menu**, when you select both keys, the display above the **SEL/DVE** button in the **Mattes Group** shows "**1+2**" to indicate that both keys are being manipulated.
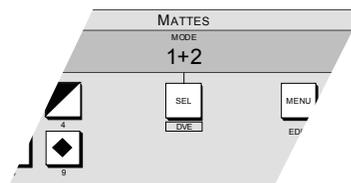
Mattes Group Label — Two Keys Selected

All items in the **Position / Crop Menu** can be manipulated except for "**Backside Video**". This feature can only be used with one key at a time. The selected key is indicated in the menu display.

All other Position / Crop changes are applied to both keys, however the menu on the Preview monitor displays information on a *single key only*.

Channel Listing

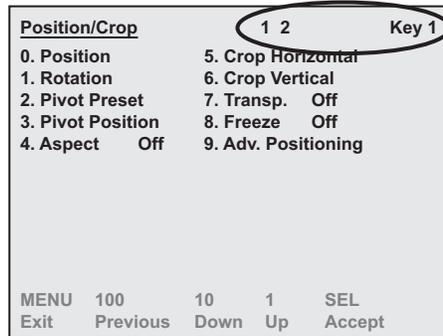There are specific naming conventions for the **Channel Listing** on the **Squeeze & Tease MD** menus. These conventions apply to how the different channels are referred to on the control panel. Beside the menu title is a **Channel Listing** that displays the status of the channels in the active Keyer.

```
Position/Crop               1 2          Key 1

0. Position          5. Crop Horizontal
1. Rotation          6. Crop Vertical
2. Pivot Preset      7. Transp.    Off
3. Pivot Position    8. Freeze     Off
4. Aspect     Off    9. Adv. Positioning




MENU   100      10      1      SEL
Exit   Previous  Down    Up     Accept
```

Position/Crop Menu — Channel Listing

The **Channel Listing** is displayed on each Squeeze & Tease menu to indicate how many channels, or objects, are active or assigned, and which Keyer you are currently working in.

1 2
Channels

Key 1
Active Keyer

> **Note** — Channel information is shown for the Active Keyer only. If you are in Key 1, only the active or assigned, channels for Key 1 are displayed.

Channel Status

The status of the channels and objects is indicated by the appearance of the items in the **Channel Listing**, representing the number of channels or objects that are available, or assigned, to the select Key. For example, if you assign two channels to a Key, the **1** and **2** will appear as assigned or active, representing the first and second channel that is assigned to the Key. If you remove the first channel from the Key (**1**), the remaining channel (**2**) will become the first channel (**1**) in the Key.

Channel status is shown as follows:

- **Active** — Active channels will appear **Green**. These are the channels that you are manipulating.

- **Assigned** — Assigned channels will appear **White**. These are the channels that have been assigned to the Key, but are not currently being manipulated.

Channels

The Channels section of the **Channel Listing** shows how many channels are currently assigned to the Key. These channels correspond to the Squeeze & Tease channel resources that the switcher can allocate to the selected Key. Although both Keyers are pulling from the same Squeeze & Tease channel resource pool, the channel listing for each Key are separate. This means that **Channel 1** on **Key 1** is separate and distinct from **Channel 1** on **Key 2**. For example, if you Fly a Key in **Key 1**, this will consume the first channel in that Key, and the **1** in the **Channel Listing** will change color to indicate this. If you then Fly a Key in **Key 2**, this will consume the first channel in that Key, and the **1** in the **Channel Listing** will change color to indicate this. A total of **4** Squeeze & Tease channels resources are available across **Key 1** and **Key 2**.

Note	A single channel could be consuming 1 or 2 Squeeze & Tease channel resources, depending on the type of Key you are flying.

1 2
Channels
Key 1

Active Keyer

The Active Keyer section of the **Channel Listing** shows which Keyer is currently active. All channel manipulation will be applied to this Key. If both Keyers are selected, the Active Keyer will appear as **Key 1+2** on the menu.

Operating Tip	You can select both **Key 1** and **Key 2** at the same time by double-pressing the **KEY2** button in the **Effects Keyers Group**. Both Keys must be Flying.

1 2
Key 1
Active Keyer

Note	You can only Fly a Key in the Effects Keyer. Downstream Keys do not support Flying Keys.

Working with Channels

When you Fly a key, a channel is assigned to the keyer. That channel consumes one or two Squeeze & Tease channel resources, depending on the type of key you are flying. As you assign additional channels, more Squeeze & Tease channel resources are consumed until there are none available. You must unassign channels in order to reclaim Squeeze & Tease channel resources. Refer to the section "**Channel Status**" on page 12–18 for information on verifying the status of your channels.

Assigning Multiple Channels to a Flying Key

Your Synergy 100 MD switcher allows you to assign a second channel to Key 1 as long as there are sufficient Squeeze & Tease MD resources available.

Use the following procedure to *assign* and *unassign* channels to a key:

> **Note** The Squeeze & Tease MD option must be installed in order to be able to assign it to a Key.

1. Press **KEY1** in the **Transition Control Group**. This assigns the next available Channel to Key 1. The channel in use displays. If you are on one of the Squeeze & Tease menus, **Key 1** will be displayed in the **Channel Listing** section.

2. Select the **PST PATT** button in the **Effects Keyer Group**.

> **Note** **Self Keys**, **Auto Select Keys** and **Chroma Keys** require two channel resources from the same channel card to fly. One channel for the fill and another for the alpha.

3. Press **FLY KEY** in the **Effects Keyer Group** to assign a Channel to the Keyer and display the channel as in use.

4. Select a video source for the Fly Key by pressing a crosspoint button on the Key bus.

5. To assign a second Key to the same Keyer, press and *hold* **PST PATT** and press **FLY KEY**. This assigns Channel 2 to the Keyer.

6. To free up Squeeze & Tease resources, press and *hold* **PST PATT** and press **FLY KEY** to unassign the active Channel.

7. Select a different video signal for the Fly Key by pressing a different crosspoint button on the Key bus.

8. Press and hold the middle **SEL** button and press the crosspoint button with **Ch1+2** below it, the **Ch1+2** hotkey, to make both Channel 1 and 2 active.

9. Press and hold the middle **SEL** button and press the **Ch1** or **Ch2** hotkey to make that particular Channel active.

This completes the procedure to *assign* and *unassign* channels to a key.
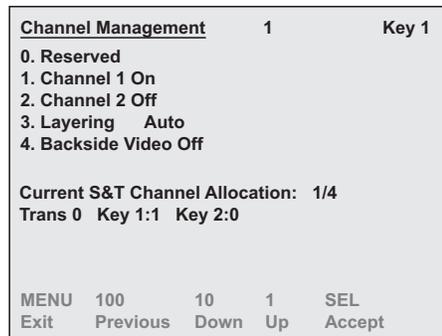
Channel Management

This section outlines how to select channels, change the order of the channel layers, run an Auto Flip effect, and configure Frontside/Backside effects.

Navigating to the Channel Management Menu

Your Synergy 100 MD switcher allows you to configure the properties of your Squeeze & Tease MD channels via the **Channel Management Menu**.

Use the following procedure to navigate to the **Channel Management Menu**:

1. Press **MENU** to display the **Main Menu**.

2. Press **8. S&T MD** to display the **S&T MD Menu**.

3. Press **3. Channel Mngmnt** to display the **Channel Management Menu**.

```
Channel Management          1              Key 1
0. Reserved
1. Channel 1 On
2. Channel 2 Off
3. Layering     Auto
4. Backside Video Off


Current S&T Channel Allocation:  1/4
Trans 0   Key 1:1   Key 2:0




MENU    100          10      1      SEL
Exit    Previous     Down    Up     Accept
```

Channel Management Menu

This completes the procedure to navigate to the **Channel Management Menu**.
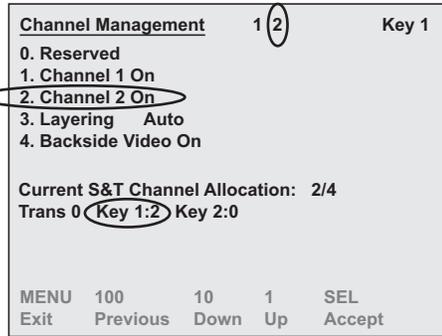
Channel Selection

Once you have created a Key Group, you can work with the two video channels simultaneously or individually.

Selecting a Channel

In the **Channel Management Menu**, each channel can be toggled on and off within the menu using **1. Channel 1** and **2. Channel 2** . When a Key Group is active, the status is displayed in **green** on the Synergy menu system.

Use the following procedure to activate or deactivate a channel in a Key Group:

1. Press **MENU** to display the **Main Menu**.

2. Press **8. S&T MD** to display the **S&T MD Menu**.

3. Press **3. Channel Mngmnt** to display the **Channel Management Menu**.

4. Activate or deactivate channels as follows:

   • Press **2. Channel 2** to toggle Channel 2 **On** or **Off**.

```
Channel Management          1 2              Key 1

0. Reserved
1. Channel 1 On
2. Channel 2 On
3. Layering      Auto
4. Backside Video On

Current S&T Channel Allocation:  2/4
Trans 0  Key 1:2  Key 2:0



MENU    100        10      1      SEL
Exit    Previous   Down    Up     Accept
```

Channel Management Menu— Channel 2 Status

The channel listing displays the active channels and Keys.

✎	**Note**	The **Current S&T Channel Allocation** field is updated to show the status when a channel is turned on or off. If not enough channels are available for the operation, a warning message is displayed.

This completes the procedure to activate or deactivate a channel in a Key Group.

Channel Layering and Intersect

Channel layering allows you to specify the video priority of multiple channels in the same Keyer. You can select one channel as always on top, always on bottom, or intersecting.
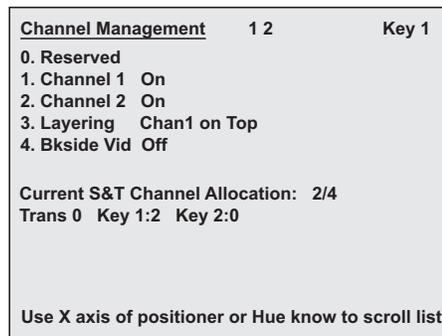
✎	**Note**	You must have *both* channels selected and in use by the current Keyer in order to apply the layering effect.

Use the following procedure to adjust the layer of images in the same Keyer:

1. Press **MENU** to display the **Main Menu**.

2. Press **8. S&T MD** to display the **S&T MD Menu**.

3. Press **3. Channel Mngmnt** to display the **Channel Management Menu**.

4. Press **3. Layering** to display the **Layering Menu**.

```
Channel Management      1 2                Key 1

0. Reserved
1. Channel 1   On
2. Channel 2   On
3. Layering    Chan1 on Top
4. Bkside Vid  Off

Current S&T Channel Allocation:  2/4
Trans 0   Key 1:2   Key 2:0




Use X axis of positioner or Hue know to scroll list
```

Channel Management Menu — Layering

5. Use the **HUE** knob, or move the **Positioner** *left* and *right*, to select one of the following channel layering options:

   • **Auto** — Channel layering is based on the Z position, or depth, in 3D space of each channel. The channel closest to the viewer is on top with no intersection. This is the default setting.

   • **Intersecting** — Both channels intersect.

   • **Chan1 on Top** — Channel 1 is always on top with no intersection.

   • **Chan2 on Top** — Channel 2 is always on top with no intersection.

This completes the procedure to adjust the layer of images in the same Keyer.

Frontside/Backside Video

When you rotate a flying key around to expose the back side of the Key, the video on the backside is a reverse of the video on the front of the Key. You can replace the back side of the Key with a different video source.

Activating Backside Video

Use the following procedure to activate the backside video on a Key:

1. Press **MENU** to display the **Main Menu**.

2. Press **8. S&T MD** to display the **S&T MD Menu**.

3. Press **3. Channel Mngmnt** to display the **Channel Management Menu**.

4. Press **4. Bkside Vid** to toggle Backside Video on.

```
Channel Management        1              Key 1

0. Reserved           5. Front        Black( 1)
1. Channel 1   On     6. Back         Black( 1)
2. Channel 2   Off    7. Auto Flip    None
3. Layering    None
4. Bkside Vid  On


Current S&T Channel Allocation:   1/4
Trans 0   Key 1:1   Key 2:0




Use X axis of positioner or Hue know to scroll list
```

Channel Management Menu — Backside Video

This completes the procedure to activate the backside video on a Key.

Selecting Crosspoints for Frontside/Backside Video

Use the following procedure to select crosspoint outputs for the Frontside and Backside Video options in the **Channel Management Menu**:

1. Press **MENU** to display the **Main Menu**.

2. Press **8. S&T MD** to display the **S&T MD Menu**.

3. Press **3. Channel Mngmnt** to display the **Channel Management Menu**.

4. Ensure that the **Backside Video** is activated on the **Channel Management Menu**.

5. Select a crosspoint for the Frontside Video as follows:

   • Press **5. Front**.

   • Use the **HUE** knob, or move the **Positioner** *left* and *right*, to select a crosspoint for the Fronstside video.

6. Select a crosspoint for the Backside Video as follows:

   • Press **6. Back**.

   • Use the **HUE** knob, or move the **Positioner** *left* and *right*, to select a crosspoint for the Backside video.

This completes the procedure to select crosspoints for the Frontside and Backside Video.

Auto Flip

If you rotate a Key so that the backside is visible, the video appears backwards. Auto Flip is used to flip the Key horizontally, vertically, or both. When using an image that contains text, this feature ensures that the text appears correctly at all times.

Use the following procedure to select an **Auto-Flip** option for Frontside/Backside Video:

1. Press **MENU** to display the **Main Menu**.

2. Press **8. S&T MD** to display the **S&T MD Menu**.

3. Press **3. Channel Mngmnt** to display the **Channel Management Menu**.

4. Press **4. Bkside Vid** to toggle Backside Video to **On**.

```
Channel Management        1              Key 1
0. Reserved          5. Front        Black( 1)
1. Channel 1   On    6. Back         Black( 1)
2. Channel 2   Off   7. Auto Flip    None
3. Layering    None
4. Bkside Vid  On


Current S&T Channel Allocation:  1/4
Trans 0   Key 1:1   Key 2:0




Use X axis of positioner or Hue know to scroll list
```

Channel Management Menu — Backside Video

5. Press **7. Auto Flip**.

6. Use the **HUE** knob, or move the **Positioner** *left* and *right*, to select one of the following options:

    •   **None** — The Frontside video appears **backwards** when the image is rotated.
    •   **H Flip** — The video is flipped **horizontally**.
    •   **V Flip** — The video is flipped **vertically**.
    •   **H-V Flip** — The video is flipped both **horizontally** and **vertically**.

This completes the procedure to select an **Auto-Flip** option for Frontside/Backside Video.

Using Frontside/Backside Video with Sequences

Crosspoints are not stored in the sequence itself; a sequence can be run on a different key, or with different crosspoints.

Use the following procedure to use **Frontside/Backside** and **Auto Flip** features in a sequence:

1. Load the sequence. Refer to section "**Loading a Sequence**" on page 17–20 for instructions on loading sequences.

2. In the **Channel Management Menu**, activate the Backside video for the desired channels to **On**.

    •   Press **5. Front** and select a front crosspoint.
    •   Press **6. Back** and select a back crosspoint.
    •   Press **7. Auto Flip** to select an Auto Flip option.

3. Run the sequence. The sequence will use the selected **Frontside/Backside** and **Auto Flip** settings.

This completes the procedure for using the **Frontside/Backside** and **Auto Flip** features in a sequence.

Using Frontside/Backside Video with Squeeze & Tease Wipes

When running a Squeeze & Tease Wipe, any Frontside/Backside and Auto Flip information contained in the wipe itself will not be recognized. In order to run Frontside/Backside and Auto Flip effects with a wipe, the effects will have to be applied to the wipe when it is loaded up.

Note   The Frontside/Backside Video feature cannot be used with background Squeeze & Tease Wipes.

Use the following procedure to use **Frontside/Backside** and **Auto Flip** features in a Squeeze & Tease Wipe:

1. Load the Squeeze & Tease Wipe. Refer to section "**Loading a Squeeze & Tease Wipe**" on page 17–31 for instructions on loading a Squeeze & Tease Wipe.

2. In the **Channel Management Menu**, activate the Backside video for the desired channels to **On**.

    •   Press **5. Front** and select a front crosspoint.

    •   Press **6. Back** and select a back crosspoint.

    •   Press **7. Auto Flip** to select an Auto Flip option.

Operating   You can make this process easy to repeat in the future by saving these
Tip   settings in a memory register and then recalling it as needed.

3. Run the Squeeze & Tease Wipe.

    The Squeeze & Tease Wipe will use the selected **Frontside/Backside** and **Auto Flip** settings.

This completes the procedure for using the **Frontside/Backside** and **Auto Flip** features in a Squeeze & Tease Wipe.

Order of Channel Processing

Squeeze & Tease MD uses four levels of processing for each channel. Keyframe effects are processed in the following order:

1. **Preprocessor Effects** (Defocus, Mosaic, Posterize, Colorize, Strobe)

2. **Planar Effects** (Positioning, Layering, Borders)

3. **Object Positioning** (if applicable)

4. **WARP Effects**

Position/Crop Functions

In This Chapter

This chapter provides detailed instructions for using the **Squeeze & Tease Position/Crop** functions.

The following topics are discussed in this chapter:

- Position/Crop Menu
- Channel Position
- Channel Pivot Location
- Channel Rotation
- Channel Aspect Ratio
- Cropping
- Transparency
- Freeze

Position/Crop Menu

The **Positioning** and **Cropping** of a channel is performed from the **Position/Crop Menu**. This menu can be accessed either through the menu system, or by using the **POSN** hotkey. Refer to the section "**Using Hotkeys**" on page 22–3 for more information on using hotkeys.

```
Position/Crop              1  2        Key 1
0. Position            5. Crop Horizontal
1. Rotation            6. Crop Vertical
2. Pivot Preset        7. Transp.    Off
3. Pivot Position      8. Freeze     Off
4. Aspect      Off     9. Adv. Positioning




MENU    100        10     1     SEL
Exit    Previous   Down   Up    Accept
```

Position/Crop Menu

Note   You must be Flying a Key to display the **Position/Crop Menu** for that Key.

From the **Position/Crop Menu** you can access the following features:

- Channel Position
- Channel Pivot Location
- Channel Aspect Ratio
- Cropping
- Transparency
- Freeze

Channel Position

The **Position Menu** allows you to adjust the position of the channel in the 3D space. You can use the Positioner or the **HUE**, **SAT** and **LUM** knob to adjust the position of the channel.

✓	**Operating Tip**	You can select both **Key 1** and **Key 2** at the same time by double-pressing the **KEY2** button in the **Effects Keyers Group**. Both Keys must be Flying.

Use the following procedure to adjust the position of a channel:

1. Navigate to the **Position/Crop Menu** as follows:

    • Press **FLY KEY** in the **Effects Keyers Group**.

✓	**Operating Tip**	You can use the **POSN** hotkey to display the **Position/Crop Menu** directly.

    • Press **MENU** to display the **Main Menu**.
    • Press **8. S&T MD** to display the **S&T MD Menu**.
    • Press **0. Position/Crop** to display the **Position/Crop Menu**.

2. Press **0. Position** to display the **Position Menu**.

```
Position/Crop              1 2 U O1 O2   Key 1

0. Position            5. Crop Horizontal
1. Rotation            6. Crop Vertical
2. Pivot Preset        7. Transp.    Off
3. Pivot Position      8. Freeze     Off
4. Aspect     Off      9. Adv. Positioning
_____
           Position X: 0.0
                    Y: 0.0
                    Z: 0.0



Use positioner or Hue, Sat, Lum to modify
```

Position/Crop — Position Menu

Use the **knobs** in the **Mattes Group** as follows to adjust the position of the channel:

    • **X-Axis** — Use the **HUE** knob to adjust the horizontal position. (Positive values move the channel to the right.)

    • **Y-Axis** — Use the **SAT** knob to adjust the vertical position. (Positive values move the channel up.)

    • **Z-Axis** — Use the **LUM** knob to adjust the distance the channel is from the center point. (Positive values move the channel away from you.)

Use the **Positioner** as follows to adjust the position of the channel:

✓	**Operating Tip**	Using the positioner allows you to move the channel into position more quickly than using the knobs.

    • **X-Axis** — Move the **Positioner** *left* or *right* to control the horizontal position of the channel on screen.

    • **Y-Axis** — Move the **Positioner** *up* or *down* to control the vertical position of the channel on screen.

- **Z-Axis** — Twist the **Positioner** knob *clockwise* and *counter-clockwise* to change the distance of the channel from the zero point (for example, move it closer or further away from you).

✓ **Operating Tip**

You can *not* change the *size* of the channel. You can only change the distance of the channel from the zero point.

This completes the procedure for adjusting the position of the key on the screen. Refer to the section "**Using the Positioner**" on page 12–10 for more information on the 3-axis positioner.

Channel Pivot Location

The **Point of Rotation** is the point in 3D space where the Key is rotated around. *Before* adjusting the rotation of the channel, ensure your **Point of Rotation** or **Pivot Point** is set. You can set the Pivot Point using a **Pivot Preset** or by selecting a location manually.

Pivot Preset

Choose the **Pivot Preset** option to select a preset pivot point for a channel (applies to channels only, does not apply to objects).

Use the following procedure to set the point of rotation using a preset point:

1. Navigate to the **Position/Crop Menu** as follows:

   • Press **FLY KEY** in the **Effects Keyers Group**.

   ✔ **Operating Tip** | You can use the **POSN** hotkey to display the **Position/Crop Menu** directly.

   • Press **MENU** to display the **Main Menu**.
   • Press **8. S&T MD** to display the **S&T MD Menu**.
   • Press **0. Position/Crop** to display the **Position/Crop Menu**.

2. Press **2. Pivot Preset** to display the **Pivot Preset Menu**.

```
Position/Crop            1  2  U  O1  O2   Key 1

0. Position          5. Crop Horizontal
1. Rotation          6. Crop Vertical
2. Pivot Preset      7. Transp.    Off
3. Pivot Position    8. Freeze     Off
4. Aspect     Off    9. Adv. Positioning

              Pivot Preset: Center




Use positioner or Hue, Sat, Lum to modify
```

Position/Crop — Pivot Preset Menu

3. Use the **HUE** knob, or move the **Positioner** *left* and *right*, to select the Pivot Preset you want to use.

This completes the procedure for setting the point of rotation using a preset point.

Pivot Position

Choose the **Pivot Position** option to move the pivot point to a different location in 3D space.

Use the following procedure to manually set the Pivot Point:

1. Navigate to the **Position/Crop Menu** as follows:

   • Press **FLY KEY** in the **Effects Keyers Group**.

✓ **Operating Tip**

> You can use the **POSN** hotkey to display the **Position/Crop Menu** directly.

   • Press **MENU** to display the **Main Menu**.
   • Press **8. S&T MD** to display the **S&T MD Menu**.
   • Press **0. Position/Crop** to display the **Position/Crop Menu**.

2. Press **3. Pivot Position** to display the **Pivot Position Menu**.

```
Position/Crop              1  2  U  O1  O2    Key 1

0. Position           5. Crop Horizontal
1. Rotation           6. Crop Vertical
2. Pivot Preset       7. Transp.    Off
3. Pivot Position     8. Freeze     Off
4. Aspect      Off    9. Adv. Positioning
                    _____
    Pivot Position X: 0.0
                   Y: 0.0
                   Z: 0.0



Use positioner or Hue, Sat, Lum to modify
```

Position/Crop — Pivot Position Menu

3. Select a specific **Pivot Point** as follows:

   • **X-Axis** — Use the **HUE** knob, or move the **Positioner** *left* and *right*, to move the pivot position along the **X-Axis**.
   • **Y-Axis** — Use the **SAT** knob, or move the **Positioner** *up* and *down*, to move the pivot position along the **Y-Axis**.
   • **Z-Axis** — Use the **LUM** knob, or twist the **Positioner** knob *clockwise* and *counter-clockwise*, to move the pivot position along **Z-Axis**.

This completes the procedure for manually setting the Pivot Point.

Channel Rotation

Once the **Pivot Point** has been selected, you can adjust the rotation of the channel.

Use the following procedure to adjust the rotation of the channel around the **Pivot Point**:

1. Navigate to the **Position/Crop Menu** as follows:

   • Press **FLY KEY** in the **Effects Keyers Group**.

   > ✓ **Operating Tip** — You can use the **POSN** hotkey to display the **Position/Crop Menu** directly.

   • Press **MENU** to display the **Main Menu**.

   • Press **8. S&T MD** to display the **S&T MD Menu**.

   • Press **0. Position/Crop** to display the **Position/Crop Menu**.

2. Press **1. Rotation** to display the **Rotation Menu**.

```
Position/Crop              1  2  U  O1 O2   Key 1

0. Position          5. Crop Horizontal
1. Rotation          6. Crop Vertical
2. Pivot Preset      7. Transp.    Off
3. Pivot Position    8. Freeze     Off
4. Aspect    Off     9. Adv. Positioning
         _____
              Rotation X: 0.0
                       Y: 0.0
                       Z: 0.0



Use positioner or Hue, Sat, Lum to modify
```

Position/Crop — Rotation Menu

3. Adjust the rotation of the channel as follows:

   • **X-Axis** — Use the **HUE** knob, or move the **Positioner** *left* and *right*, to rotate the channel horizontally around the **X-Axis**.

   • **Y-Axis** — Use the **SAT** knob, or move the **Positioner** *up* and *down*, to rotate the channel vertically around the **Y-Axis**.

   • **Z-Axis** — Use the **LUM** knob, or twist the **Positioner** knob *clockwise* and *counter-clockwise*, to rotate the channel around the **Z-Axis**.

This completes the procedure for adjusting the rotation of the channel around the **Pivot Point**.

Channel Aspect Ratio

The **Aspect** feature enables you to squeeze or stretch a channel image horizontally and/or vertically.

	Note	This feature can be used on channels only, if you are working with an object, the **Aspect** option will be unavailable.

Use the following procedure to adjust the aspect values of a channel image:

1. Navigate to the **Position/Crop Menu** as follows:

    *   Press **FLY KEY** in the **Effects Keyers Group**.

	Operating Tip	You can use the **POSN** hotkey to display the **Position/Crop Menu** directly.

    *   Press **MENU** to display the **Main Menu**.
    *   Press **8. S&T MD** to display the **S&T MD Menu**.
    *   Press **0. Position/Crop** to display the **Position/Crop Menu**.

2. Press **4. Aspect** to display the **Aspect Menu**.

```
Position/Crop                1  2  U  O1 O2   Key 1

0. Position            5. Crop Horizontal
1. Rotation            6. Crop Vertical
2. Pivot Preset        7. Transp.    Off
3. Pivot Position      8. Freeze     Off
4. Aspect      On      9. Adv. Positioning
_____
                 Aspect X: 100%
                        Y: 100%
                     Size: 100%



Use positioner or Hue, Sat, Lum to modify
```

Position/Crop — Aspect Menu

3. Adjust the size of the channel image as follows:

	Note	If the effect is not **On** (not yet in use), you must press **4. Aspect** again, to toggle to effect **On**.

    *   **X-Aspect —** Use the **HUE** knob, or move the **Positioner** *left* and *right*, to squeeze or stretch the channel image horizontally.
    *   **Y-Aspect —** Use the **SAT** knob, or move the **Positioner** *up* and *down*, to squeeze or stretch the channel image vertically.
    *   **Size** — Use the **LUM** knob, or twist the **Positioner** knob *clockwise* and *counter-clockwise*, to squeeze or stretch the channel image in both directions at the same time.

	Operating Tip	The Size function is independent of the X-Aspect and Y-Aspect. For example, if you set the X-Aspect to 2.000, the Y-Aspect to 1.000 and the Size to 2.000, the width of the channel image (X-Aspect) will be quadrupled and the height (Y-Aspect) will be doubled.

This completes the procedure for adjusting the aspect values of an channel image.

Cropping

Cropping a channel image allows you bring the sides of a channel image in, reducing the viewable area, but not changing the size of the channel image.

Crop Horizontal

Horizontal cropping allows you to adjust the left and right sides of the channel image.

Use the following procedure to crop the horizontal edges of the channel image:

1. Navigate to the **Position/Crop Menu** as follows:

   • Press **FLY KEY** in the **Effects Keyers Group**.

✓ **Operating Tip**

> You can use the **POSN** hotkey to display the **Position/Crop Menu** directly.

   • Press **MENU** to display the **Main Menu**.

   • Press **8. S&T MD** to display the **S&T MD Menu**.

   • Press **0. Position/Crop** to display the **Position/Crop Menu**.

2. Press **5. Crop Horizontal** to display the **Crop Horizontal Menu**.

```
Position/Crop              1  2  U  O1  O2   Key 1
0. Position             5. Crop Horizontal
1. Rotation             6. Crop Vertical
2. Pivot Preset         7. Transp.    Off
3. Pivot Position       8. Freeze     Off
4. Aspect      Off      9. Adv. Positioning
                    _____
          Crop Horizontal Left: 0.0%
                          Right: 0.0%




Use positioner or Hue, Sat, Lum to modify
```

Position/Crop — Crop Horizontal Menu

3. Adjust the left and right edges of the channel image as follows:

   • **Left** — Use the **HUE** knob, or move the **Positioner** *left* and *right*, to adjust the cropping on the left edge of the channel image. As the knob is turned, the left edge moves toward the right and crops the left edge of the channel image.

   • **Right** — Use the **SAT** knob, or move the **Positioner** *up* and *down*, to adjust the cropping on the right edge of the channel image. As the middle knob is turned, the right edge moves left and crops the right side of the channel image.

This completes the procedure for cropping the horizontal sides of the channel image.

Crop Vertical

Vertical cropping allows you to adjust the top and bottom edges of the channel image.

Use the following procedure to crop the vertical edges of the channel image:

1. Navigate to the **Position/Crop Menu** as follows:

   • Press **FLY KEY** in the **Effects Keyers Group**.

✓ **Operating Tip**

> You can use the **POSN** hotkey to display the **Position/Crop Menu** directly.

   • Press **MENU** to display the **Main Menu**.
   • Press **8. S&T MD** to display the **S&T MD Menu**.
   • Press **0. Position/Crop** to display the **Position/Crop Menu**.

2. Press **6. Crop Vertical** to display the **Crop Vertical Menu**.

```
Position/Crop              1 2 U O1 O2  Key 1

0. Position          5. Crop Horizontal
1. Rotation          6. Crop Vertical
2. Pivot Preset      7. Transp.    Off
3. Pivot Position    8. Freeze     Off
4. Aspect     Off    9. Adv. Positioning
_____
Crop Vertical Top: 0.0%
               Bottom: 0.0%




Use positioner or Hue, Sat, Lum to modify
```

Position/Crop — Crop Vertical Menu

3. Adjust the top and bottom edges of the channel image as follows:

   • **Top** — Use the **HUE** knob, or move the **Positioner** *left* and *right*, to adjust the cropping on the top edge of the channel image.
   • **Bottom** — Use the **SAT** knob, or move the **Positioner** *up* and *down*, to adjust the cropping on the lower edge of the channel image.

This completes the procedure for cropping the vertical edges of the channel image.

Transparency

The **Transparency** effect allows you to adjust the transparency of the channel image. You can make the channel image completely opaque (0% Transparency) or completely transparent (100% Transparency).

✎ **Note** | The Transparency feature is currently only available on Preset Pattern Keys.

Use the following procedure to adjust the transparency of a channel image:

1. Navigate to the **Position/Crop Menu** as follows:

    •   Press **FLY KEY** in the **Effects Keyers Group**.

✓ **Operating Tip** | You can use the **POSN** hotkey to display the **Position/Crop Menu** directly.

    •   Press **MENU** to display the **Main Menu**.
    •   Press **8. S&T MD** to display the **S&T MD Menu**.
    •   Press **0. Position/Crop** to display the **Position/Crop Menu**.

2. Press **7. Transp.** to display the **Transparency Menu**.

```
Position/Crop              1  2  U  O1  O2   Key 1

0. Position          5. Crop Horizontal
1. Rotation          6. Crop Vertical
2. Pivot Preset      7. Transp.    On
3. Pivot Position    8. Freeze     Off
4. Aspect    Off     9. Adv. Positioning
         _____
         Transparency: 0.0%




Use positioner or Hue, Sat, Lum to modify
```

Position/Crop — Transparency Menu

✎ **Note** | If the effect is not **On** (not yet in use), you must press **7. Transp.** again, to toggle to effect **On**.

3. Use the **HUE** knob, or move the **Positioner** *left* and *right*, to adjust the level of transparency as follows:

    •   **Fully Visible** — At **0.0%** transparency the channel image will appear as normal.
    •   **Semi Transparent** — As the transparency is adjusted from **0%** to **100%** the channel image will become more transparent.
    •   **Invisible** — At **100%** transparency the channel image will not be visible on screen.

This completes the procedure for adjusting the transparency of a channel image.

Freeze

The **Freeze** effect will pause the video of the current channel, creating a temporary still. While the video is frozen, you still have complete control over the channel, including position and rotation.

✎ **Note** | Freeze currently cannot be applied to multiple channels at once. If you need to freeze more than one channel, you will have to select each channel and freeze it individually.

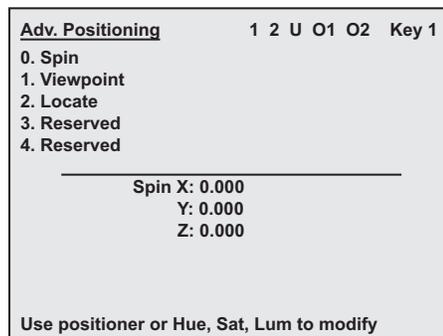Use the following procedure to freeze a channel image:

1. Navigate to the **Position/Crop Menu** as follows:

   • Press **FLY KEY** in the **Effects Keyers Group**.

✓ **Operating Tip** | You can use the **POSN** hotkey to display the **Position/Crop Menu** directly.

   • Press **MENU** to display the **Main Menu**.
   • Press **8. S&T MD** to display the **S&T MD Menu**.
   • Press **0. Position/Crop** to display the **Position/Crop Menu**.

2. Press **8. Freeze** to display the **Freeze Menu**.

```
Position/Crop              1 2 U O1 O2   Key 1

0. Position            5. Crop Horizontal
1. Rotation            6. Crop Vertical
2. Pivot Preset        7. Transp.    Off
3. Pivot Position      8. Freeze     On
4. Aspect      Off     9. Adv. Positioning




MENU    100        10     1     SEL
Exit    Previous   Down   Up    Accept
```

Position/Crop — Freeze Menu

✎ **Note** | If the effect is not **On** (not yet in use), you must press **8. Freeze** again, to toggle to effect **On**.

This completes the procedure for freezing a channel image.

✓ **Operating Tip** | When you move a channel from one Key to another, the channel will no longer be frozen. For example, if a channel is on Key 2 and you unfly it and then reallocate it to Key 1, the channel image will no longer be frozen.

Advanced Positioning

In This Chapter

This chapter provides detailed instructions for using the **Squeeze & Tease Advanced Positioning** functions.

The following topics are discussed in this chapter:

- Advanced Positioning Menu
- Spin
- Viewpoint
- Locate

Advanced Positioning Menu

The **Advanced Positioning** of a channel is performed from the **Adv. Positioning Menu**. This menu can be accessed either through the menu system, or by using the **POSN** hotkey. Refer to the section "**Using Hotkeys**" on page 22–3 for more information on using hotkeys.

✎ **Note** | If you use the **POSN** hotkey to navigate to the **Position/Crop Menu**, you will have to press **9. Adv. Positioning** to display the **Adv. Positioning Menu**.

```
Adv. Positioning          1  2  U  O1  O2   Key 1

0. Spin
1. Viewpoint
2. Locate
3. Backside Video   Off
4. Layering




MENU    100          10      1    SEL
Exit    Previous     Down    Up   Accept
```
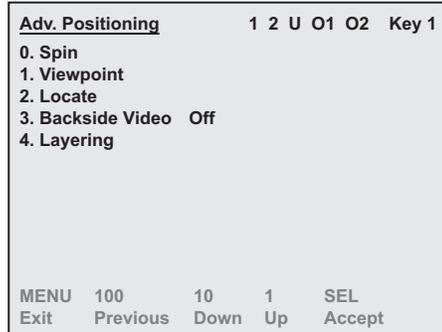
Position/Crop Menu

✎ **Note** | You must be Flying a Key to display the **Adv. Positioning Menu** for that Key.

From the **Adv. Positioning Menu** you can access the following features:

- Spin
- Viewpoint
- Locate

Spin

The **Spin** feature allows you to rotate a channel in 3D relative to the fixed reference frame of the screen (as opposed to a pivot point on the channel itself).
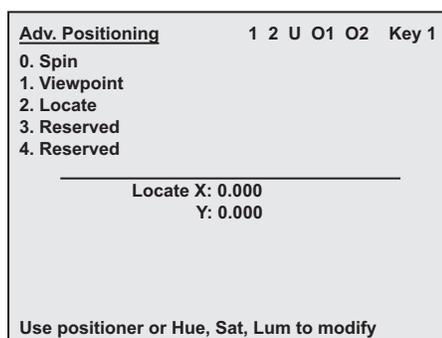
Use the following procedure to spin a channel:

1. Navigate to the **Adv. Positioning Menu** as follows:

   • Press **FLY KEY** in the **Effects Keyers Group**.

✓ **Operating Tip**
> You can use the **POSN** hotkey to navigate to the **Position/Crop Menu** and then press **9. Adv. Positioning** to display the **Adv. Positioning Menu**.

   • Press **MENU** to display the **Main Menu**.
   • Press **8. S&T MD** to display the **S&T MD Menu**.
   • Press **0. Position/Crop** to display the **Position/Crop Menu**.
   • Press **9. Advanced Positioning** to display the **Adv. Positioning Menu**.

2. Press **0. Spin** to display the **Spin Menu**.

```
Adv. Positioning          1  2  U  O1  O2   Key 1
0. Spin
1. Viewpoint
2. Locate
3. Reserved
4. Reserved
_____
            Spin X: 0.000
                 Y: 0.000
                 Z: 0.000



Use positioner or Hue, Sat, Lum to modify
```

Adv. Positioning — Spin Menu

3. Rotate the channel as follows:

   • **X-Spin** — Use the **HUE** knob, or move the **Positioner** *left* and *right*, to spin the channel around the **X-Axis** of the screen.
   • **Y-Spin** — Use the **SAT** knob, or move the **Positioner** *up* and *down*, to spin the channel around the **Y-Axis** of the screen.
   • **Z-Spin** — Use the **LUM** knob, or twist the **Positioner** knob *clockwise* and *counter-clockwise*, to spin the channel around the **Z-Axis** of the screen.

This completes the procedure for spinning a channel.

Viewpoint

The **Viewpoint** feature allows you to change the perspective, or point-of-view, of the channel on the screen. This feature can be used to create an effect where the channel appears to have a different vanishing point on the screen. Refer to the section "**Viewpoint and Perspective**" on page 12–6 for more information on viewpoint.

Use the following procedure to change the perspective of a channel:

1. Navigate to the **Adv. Positioning Menu** as follows:

   • Press **FLY KEY** in the **Effects Keyers Group**.

✔ **Operating Tip**

> You can use the **POSN** hotkey to navigate to the **Position/Crop Menu** and then press **9. Adv. Positioning** to display the **Adv. Positioning Menu**.

   • Press **MENU** to display the **Main Menu**.
   • Press **8. S&T MD** to display the **S&T MD Menu**.
   • Press **0. Position/Crop** to display the **Position/Crop Menu**.
   • Press **9. Advanced Positioning** to display the **Adv. Positioning Menu**.

2. Press **1. Viewpoint** to display the **Viewpoint Menu**.

```
Adv. Positioning          1 2 U O1 O2   Key 1
0. Spin
1. Viewpoint
2. Locate
3. Reserved
4. Reserved
   _____
              Viewpoint X: 0.000
                        Y: 0.000




Use positioner or Hue, Sat, Lum to modify
```
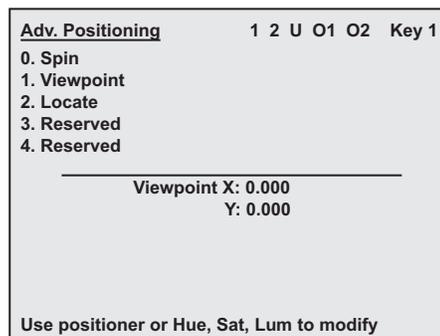
Adv. Positioning — Viewpoint Menu

3. Adjust the viewpoint as follows:

   • **X-Location** — Use the **HUE** knob, or move the **Positioner** *left* and *right*, to move the viewpoint left or right along the **X-Axis**.

   • **Y-Location** — Use the **SAT** knob, or move the **Positioner** *up* and *down*, to move the viewpoint up or down along the **Y-Axis**.

✎ **Note**

> Viewpoint cannot be used with objects. You must set the viewpoint for each channel before you create the object.

This completes the procedure for changing the perspective of a channel.

Locate

The **Locate** feature allows you to move the channel and the viewpoint together, at the same time. This feature is used when you want to move the channel without changing its appearance or shape. With Locate enabled, the apparent angle of the channel is always the same, so there is no change in perspective when the channel is moved in 3D space.

Use the following procedure to move the channel and viewpoint together:

1. Navigate to the **Adv. Positioning Menu** as follows:

   • Press **FLY KEY** in the **Effects Keyers Group**.

✓ **Operating Tip**

> You can use the **POSN** hotkey to navigate to the **Position/Crop Menu** and then press **9. Adv. Positioning** to display the **Adv. Positioning Menu**.

   • Press **MENU** to display the **Main Menu**.
   • Press **8. S&T MD** to display the **S&T MD Menu**.
   • Press **0. Position/Crop** to display the **Position/Crop Menu**.
   • Press **9. Advanced Positioning** to display the **Adv. Positioning Menu**.

2. Press **2. Locate** to display the **Locate Menu**.

```
Adv. Positioning          1  2  U  O1  O2   Key 1
0. Spin
1. Viewpoint
2. Locate
3. Reserved
4. Reserved
_____
            Locate X: 0.000
                   Y: 0.000




Use positioner or Hue, Sat, Lum to modify
```

Adv. Positioning — Locate Menu

3. Move the channel and viewpoint together as follows:

   • **X-Locate** — Use the **HUE** knob, or move the **Positioner** *left* and *right*, to move the channel and viewpoint left or right along the **X-Axis**.
   • **Y-Locate** — Use the **SAT** knob, or move the **Positioner** *up* and *down*, to move the channel and viewpoint up or down along the **Y-Axis**.

This completes the procedure for moving a channel and viewpoint together.

Borders

In This Chapter

This chapter provides instructions for applying **Advanced Picture Frame Borders** to Squeeze & Tease MD Flying Keys.

The following topics are discussed in this chapter:

- Picture Frame Borders Menu
- Border Size
- Border Appearance
- Border Texture and Corners
- Border Color
- Working with Multiple Channels

Picture Frame Borders Menu

Advanced Picture Frame Border are applied and adjusted from the **Border Menu**. This menu can be accessed either through the menu system, or by using the **BORDER** hotkey. Refer to the section "**Using Hotkeys**" on page 22–3 for more information on using hotkeys.

✎ **Note** | Advanced Picture Frame Borders can only be applied to Flying Preset Pattern Keys.

```
Border                    1  2        Key 1

0. Size            5. Auto Default    Off
1. Style
2. Corners
3. Color
4. Advanced




MENU    100        10     1    SEL
Exit    Previous   Down   Up   Accept
```
Border Menu

✎ **Note** | You must be Flying a Key to display the **Border Menu** for that Key.

From the **Border Menu** you can access the following features:

- Border Size
- Border Appearance
- Border Texture and Corners
- Border Color

Border Size

The **Size** feature allows you to adjust the size of the border.

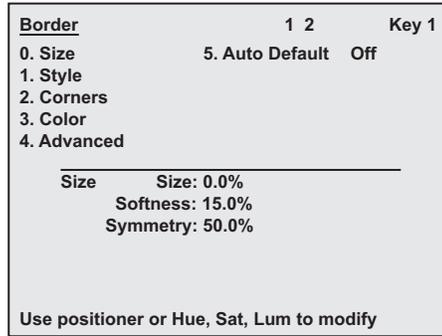Use the following procedure to adjust the size of a border:

1. Navigate to the **Border Menu** as follows:

    • Press **FLY KEY** in the **Effects Keyers Group**.

✔ **Operating Tip**
> You can use the **BORDER** hotkey to display the **Border Menu** directly.

    • Press **MENU** to display the **Main Menu**.
    • Press **8. S&T MD** to display the **S&T MD Menu**.
    • Press **1. Border** to display the **Border Menu**.

2. Press **0. Size** to display the **Size Menu**.

```
Border                          1  2        Key 1

0. Size              5. Auto Default   Off
1. Style
2. Corners
3. Color
4. Advanced
_____

Size         Size: 0.0%
             Softness: 15.0%
             Symmetry: 50.0%



Use positioner or Hue, Sat, Lum to modify
```
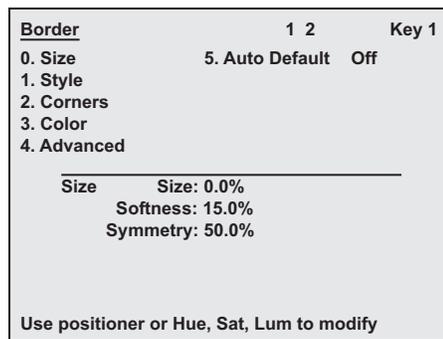
Border — Size Menu

3. Use the **HUE** knob, or move the **Positioner** *left* and *right*, to adjust the size of the border around the channel.

As you adjust the size of the border, it expands equally inwards from the edge of the channel. The graphic below shows the border in relation to the channel. The border is represented by a solid line and the outside edge of the channel is represented by the dashed line.
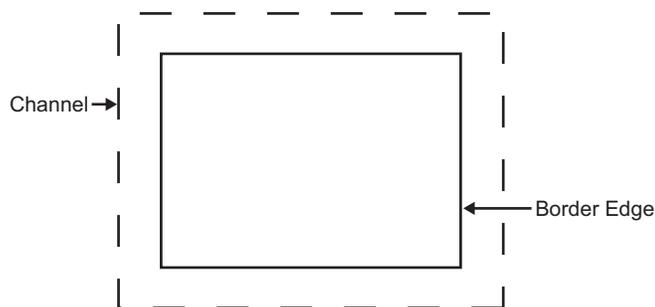
Border Size Graphic

This completes the procedure for adjusting the size of a border.

Border Appearance

The overall appearance of the border can be adjusted to give different effects. You can adjust the following properties of the channel border.

- Border Softness

- Border Symmetry

- Border Transparency

Border Softness

Border softness values are used to create a soft-edge effect on the inside of the border.

✓	**Operating Tip**	It is best to set the border size first, then adjust the softness. If the amount of softness exceeds the border size, the system increases the apparent size of the border.
		To create the widest possible border, adjust **Size** to the maximum setting and adjust **Softness** to the minimum setting.

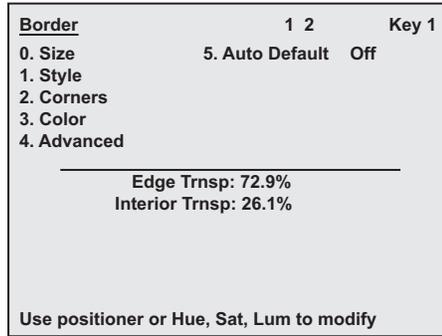Use the following procedure to adjust the softness of the border:

1. Navigate to the **Border Menu** as follows:

   - Press **FLY KEY** in the **Effects Keyers Group**.

✓	**Operating Tip**	You can use the **BORDER** hotkey to display the **Border Menu** directly.

   - Press **MENU** to display the **Main Menu**.
   - Press **8. S&T MD** to display the **S&T MD Menu**.
   - Press **1. Border** to display the **Border Menu**.

2. Press **0. Size** to display the **Size Menu**.

```
Border                        1  2        Key 1

0. Size              5. Auto Default   Off
1. Style
2. Corners
3. Color
4. Advanced
        _____
    Size      Size: 0.0%
             Softness: 15.0%
             Symmetry: 50.0%



Use positioner or Hue, Sat, Lum to modify
```
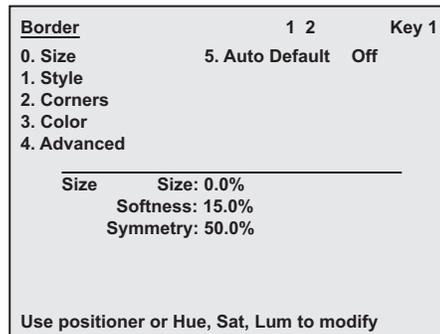
Border — Size Menu

3. Use the **SAT** knob, or move the **Positioner** *up* and *down*, to adjust the softness of the border. Softness is applied to the inner and outer edges of the channel, as well as the border.

Note   If no border has been applied to the channel, the **Softness** effect will be applied to the edges of the channel.

*   **Minimum Softness** — at **0.0%** the edges of the border are square.
*   **Maximum Softness** — at **100.0%** the edges of the border come together to form a point in the center.

Softness

In   Out

Softness

In   Out
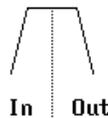
Border Softness at
72.0%
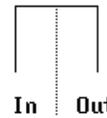
Border Softness at
0.0%

This completes the procedure for adjusting the softness of the border.

Border Symmetry

Symmetry is used to alter the center position of the channel border. As you adjust the symmetry, the relative center of the border expands outwards from the true center of the border. The default symmetry of **50%** sets the relative center to the true center of the border.

Use the following procedure to adjust the symmetry of the border:
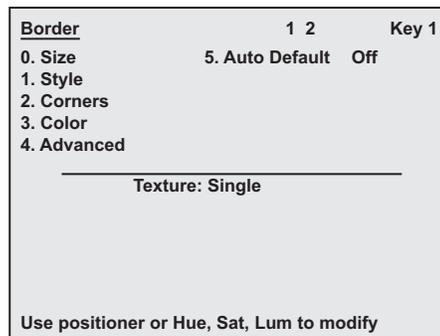
1. Navigate to the **Border Menu** as follows:

*   Press **FLY KEY** in the **Effects Keyers Group**.
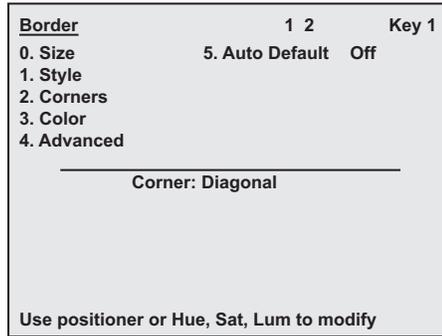
Operating Tip   You can use the **BORDER** hotkey to display the **Border Menu** directly.

*   Press **MENU** to display the **Main Menu**.
*   Press **8. S&T MD** to display the **S&T MD Menu**.
*   Press **1. Border** to display the **Border Menu**.

2. Press **0. Size** to display the **Size Menu**.

```
Border                        1  2        Key 1
0. Size              5. Auto Default   Off
1. Style
2. Corners
3. Color
4. Advanced
_____
   Size      Size: 0.0%
            Softness: 15.0%
            Symmetry: 50.0%



Use positioner or Hue, Sat, Lum to modify
```

Border — Size Menu

3. Use the **LUM** knob, or twist the **Positioner** knob *clockwise* and *counter-clockwise*, to adjust the softness symmetry of the border as follows:

   • **0.0%** — This will give you a hard inner edge. Adjustments to softness or transparency will be applied almost entirely to the interior edge of the border.

   • **100.0%** — This will give you a hard outer edge. Adjustments to softness or transparency will be applied almost entirely to the exterior edges of the border.

✎	**Note**	Softness symmetry is not available with horizontal or vertical corners, or when a border size of 0.0% is selected.

This completes the procedure for adjusting the symmetry of the border.

Border Transparency

There are two kinds of transparency that can be applied to the Flying Key border. Edge Transparency allows you to adjust the level of transparency of the outer and inner edges of the border. Interior Transparency allows you to adjust the level of transparency of the center of the border.

Use the following procedure to adjust the transparency of the border:

1. Navigate to the **Border Menu** as follows:

   • Press **FLY KEY** in the **Effects Keyers Group**.

✓	**Operating Tip**	You can use the **BORDER** hotkey to display the **Border Menu** directly.

   • Press **MENU** to display the **Main Menu**.

   • Press **8. S&T MD** to display the **S&T MD Menu**.

   • Press **1. Border** to display the **Border Menu**.

2. Press **4. Advanced** to display the **Advanced Menu**.

```
Border                          1 2          Key 1

0. Size                  5. Auto Default    Off
1. Style
2. Corners
3. Color
4. Advanced
_____
              Edge Trnsp: 72.9%
             Interior Trnsp: 26.1%




Use positioner or Hue, Sat, Lum to modify
```

Border — Advanced Menu

✓ **Operating Tip**

> If you adjust the Interior Transparency to the same level as the Edge Transparency, you will end up with an evenly transparent border.

3. Use the **HUE** knob, or move the **Positioner** *left* and *right*, to adjust the transparency of the outer and inner edges of the Flying Key border.

4. Use the **SAT** knob, or move the **Positioner** *up* and *down*, to adjust the transparency of the relative center of the Flying Key border.

This completes the procedure for adjusting the symmetry of the border.

Border Texture and Corners

A number of textures and corners (styles) can be applied to border to give them a unique appearance. Textures allow you to select the style, color and pattern of the border. Corners allows you to select how the corners of the border appear.

Border Texture Styles

Use the following procedure to apply border textures:

1. Navigate to the **Border Menu** as follows:

   • Press **FLY KEY** in the **Effects Keyers Group**.

✓ **Operating Tip**

> You can use the **BORDER** hotkey to display the **Border Menu** directly.

   • Press **MENU** to display the **Main Menu**.
   • Press **8. S&T MD** to display the **S&T MD Menu**.
   • Press **1. Border** to display the **Border Menu**.

2. Press **1. Style** to display the **Texture Style Menu**.

```
Border                    1  2        Key 1
0. Size            5. Auto Default   Off
1. Style
2. Corners
3. Color
4. Advanced
_____
          Texture: Single



Use positioner or Hue, Sat, Lum to modify
```

Border — Texture Style Menu

3. Use the **HUE** knob, or move the **Positioner** *left* and *right*, to select the texture you want to apply to the border.

This completes the procedure for applying a texture to a border.

Border Corners

Use the following procedure to apply corner styles:

1. Navigate to the **Border Menu** as follows:

   • Press **FLY KEY** in the **Effects Keyers Group**.

✓ **Operating Tip**

> You can use the **BORDER** hotkey to display the **Border Menu** directly.

   • Press **MENU** to display the **Main Menu**.
   • Press **8. S&T MD** to display the **S&T MD Menu**.

- Press **1. Border** to display the **Border Menu**.

2. Press **2. Corners** to display the **Corners Menu**.

```
Border                          1  2        Key 1

0. Size              5. Auto Default   Off
1. Style
2. Corners
3. Color
4. Advanced
     _____
             Corner: Diagonal




Use positioner or Hue, Sat, Lum to modify
```

Border — Corners Menu

3. Use the **HUE** knob, or move the **Positioner** *left* and *right*, to select the type of corner you want to apply to the border.

This completes the procedure for applying corner styles.

Border Color

The **Color** feature allows you to change the colors used in the border. This feature can be applied to either the active border or all the borders, depending on whether the **Auto Defaults** has been set to **On** or **Off**.

✎ **Note** | When you save a switcher setting, the **Auto Default** setting you have chosen for borders will not be saved as part of that setting.

Adjusting the Border Color

Use the following procedure to adjust the border colors:

✎ **Note** | If you want to preserve your color changes, you will have set **Auto Defaults** to **Off** before you change the colors. If you do not, the colors will switch back to the default values if you change the **Border Texture**.

1. Navigate to the **Border Menu** as follows:

    *   Press **FLY KEY** in the **Effects Keyers Group**.

    *   Press **MENU** to display the **Main Menu**.

    *   Press **8. S&T MD** to display the **S&T MD Menu**.

    *   Press **1. Border** to display the **Border Menu**.

✔ **Operating Tip** | You can use the **BORDER** hotkey to display the **Border Menu** directly.

2. Press **3. Color** to display the **Edit Color Menu**.

```
Edit Color                   1  2        Key 1
0. Edit Color1
1. Edit Color2
2. Edit Color3
3. Default Colors

  _____
  Edit Color1      Hue: 0.0%
                   Saturation: 0.0%
                   Luminance: 100.0%



Use positioner or Hue, Sat, Lum to modify
```
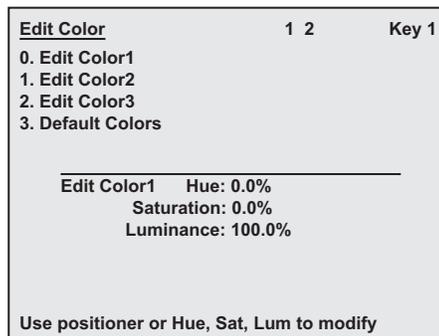
Border — Edit Color Menu

3. Press **Edit Color1**, **Edit Color2**, or **Edit Color3** to display the color information for that color.

4. Adjust the selected color as follows:

    *   **Hue** — Use the **HUE** knob, or move the **Positioner** *left* and *right*, to adjust the color of the border. A full 360 degrees of hue adjustment is provided.

- **Saturation** — Use the **SAT** knob, or move the **Positioner** *up* and *down*, to adjust the color saturation of the border. Saturation can be adjusted from **0.0%** (monochrome, or no saturation) to **100.0%** percent – full color saturation.

- **Luminance** — Use the **LUM** knob, or twist the **Positioner** knob *clockwise* and *counter-clockwise*, to adjust the luminance of the border. The luminance can be adjusted from **0.0%** (minimum brightness) to **100.0%** (maximum brightness).

5. Press **3. Default Colors** to return all the color values to the default settings.

Note   The **Default Colors** feature will remove any color adjustments you have made and return the color selections for the borders to the default setting.

This completes the procedure for adjusting the border colors.

Working with Multiple Channels

The following table shows how the Border effects behave when working with both channels selected.

✓ **Operating Tip**

When working with objects, the border must be applied to each channel separately.

When working with two channels, a quick way to give any border parameter equal values is to adjust the value to 100.0% with both channels selected. Then you can adjust the parameter to the desired value for both channels.

Multiple Channel Border Effects

Border Parameter	Scenario	Result
Size and Softness	All border values are the same for both channels.	The values are displayed. The joystick or knobs can be used to create the same sized border with the same softness values for both channels.
	Channel 1 and **Channel 2** border values are different.	A message is displayed to indicate the values are different. The values for Channel 1 are displayed. The joystick or knobs can be used to increase or decrease the border size or softness by an equal percentage.
Softness	All border values are the same for both channels.	The knob values are displayed. The knobs can be used to adjust the border softness for both channels.
	Channel 1 and **Channel 2** border values are different.	A message is displayed to indicate the values are different. The values for Channel 1 are displayed. The knobs can be used to increase or decrease the border softness by an equal percentage.
Color	All border values are the same for both channels	The knob values are displayed. The knobs can be used to adjust the border color for both channels.
	Channel 1 and **Channel 2** border values are different.	A message is displayed to indicate the values are different. The values for Channel 1 are displayed. The knobs can be used to increase or decrease border color values by an equal percentage.

Preprocessor Effects

In This Chapter

This chapter provides information for applying additional effects to channels in **Squeeze & Tease MD**. You can apply any combination of Preprocessor Effects to achieve the look you want.

Preprocessor Effects allow you to perform a number of static effects on a channel. These effects are applied directly to the channel and are not associated with another Squeeze & Tease effects, such as a wipe.

The following topic is discussed in this chapter:

- Preprocessor Effects Menu
- Defocus Effect
- Mosaic Effect
- Posterize Effect
- Colorize Effect
- Strobe Effect

Preprocessor Effects Menu

The **Preprocessor Effects** are performed from the **Preprocessor Menu**. This menu can be accessed either through the menu system, or by using the **PREPROC** hotkey. Refer to the section "**Using Hotkeys**" on page 22–3 for more information on using hotkeys.

```
Preprocessor                 1  2  U  O1  O2   Key 1
0. Defocus      Off
1. Mosaic       Off
2. Posterize    Off
3. Colorize     Off
4. Strobe       Off




MENU    100            10     1      SEL
Exit    Previous       Down   Up     Accept
```

Preprocessor Menu

| Note | You must be Flying a Key to display the **Preprocessor Menu** for that Key. |

From the **Preprocessor Menu** you can access the following features:

- Defocus Effect
- Mosaic Effect
- Posterize Effect
- Colorize Effect
- Strobe Effect

Defocus Effect

The **Defocus Effect** allows you to blur the channel image vertically and horizontally. The level of horizontal, vertical, and overall defocus is indicated.

Use the following procedure to apply the Defocus Effect to a channel image:

1. Navigate to the **Preprocessor Menu** as follows:

   • Press **FLY KEY** in the **Effects Keyers Group**.

✓ **Operating Tip**

> You can use the **PREPROC** hotkey to display the **Preprocessor Menu** directly.

   • Press **MENU** to display the **Main Menu**.
   • Press **8. S&T MD** to display the **S&T MD Menu**.
   • Press **3. Preprocessor** to display the **Preprocessor Menu**.

2. Press **0. Defocus** to display the **Defocus Menu**.

```
Preprocessor                1  2  U  O1 O2   Key 1

0. Defocus      On
1. Mosaic       Off
2. Posterize    Off
3. Colorize     Off
4. Strobe       Off
                         _____
       Defocus  Horizontal: 0.0%
                   Vertical: 0.0%
                    Overall



Use positioner or Hue, Sat, Lum to modify
```

Preprocessor — Defocus Menu

✎ **Note**

> If the effect is not **On** (not yet in use), you must press **0. Defocus** again, to toggle to effect **On**.

3. Adjust the level of defocus as follows:

   • **Horizontal** — Use the **HUE** knob, or move the **Positioner** *left* and *right*, to adjust the amount of *horizontal* defocus.
   • **Vertical** — Use the **SAT** knob, or move the **Positioner** *up* and *down*, to adjust the amount of *vertical* defocus.
   • **Overall** — Use the **LUM** knob, or twist the **Positioner** knob *clockwise* and *counter-clockwise*, to adjust *both* values by an equal percentage.

This completes the procedure for applying the Defocus Effect to a channel image.

Mosaic Effect

The **Mosaic Effect** allows you to transform the channel image into an arrangement of tiles. The size of the horizontal and vertical tiles is indicated.

Use the following procedure to apply the Mosaic Effect to a channel image:

1. Navigate to the **Preprocessor Menu** as follows:

    • Press **FLY KEY** in the **Effects Keyers Group**.

✓ **Operating Tip**
> You can use the **PREPROC** hotkey to display the **Preprocessor Menu** directly.

    • Press **MENU** to display the **Main Menu**.
    • Press **8. S&T MD** to display the **S&T MD Menu**.
    • Press **3. Preprocessor** to display the **Preprocessor Menu**.

2. Press **1. Mosaic** to display the **Mosaic Menu**.

```
Preprocessor              1  2  U  O1  O2   Key 1

0. Defocus      Off
1. Mosaic       On
2. Posterize    Off
3. Colorize     Off
4. Strobe       Off
                _____

     Mosaic   Horiz. Tiles: 0.0%
                Vert. Tiles: 0.0%
                    Overall



Use positioner or Hue, Sat, Lum to modify
```

Preprocessor — Mosaic Menu

✎ **Note**
> If the effect is not **On** (not yet in use), you must press **1. Mosaic** again, to toggle to effect **On**.

3. Adjust the size of the tiles as follows:

    • **Horizontal Tiles** — Use the **HUE** knob, or move the **Positioner** *left* and *right*, to adjust the size of the *horizontal* tiles in pixels.
    • **Vertical Tiles** — Use the **SAT** knob, or move the **Positioner** *up* and *down*, to adjust the size of the *vertical* tiles in pixels.
    • **Overall** — Use the **LUM** knob, or twist the **Positioner** knob *clockwise* and *counter-clockwise*, to adjust *both* values adjust both values equally.

This completes the procedure for applying the Mosaic Effect to a channel image.

Posterize Effect

The **Posterize Effect** allows you to adjust the areas of luminance and chrominance of the channel image. The levels of luminance and chrominance adjustment are indicated.

Use the following procedure to apply the Posterize Effect to a channel image:

1. Navigate to the **Preprocessor Menu** as follows:

    •   Press **FLY KEY** in the **Effects Keyers Group**.

✔   **Operating Tip**

> You can use the **PREPROC** hotkey to display the **Preprocessor Menu** directly.

    •   Press **MENU** to display the **Main Menu**.
    •   Press **8. S&T MD** to display the **S&T MD Menu**.
    •   Press **3. Preprocessor** to display the **Preprocessor Menu**.

2. Press **2. Posterize** to display the **Posterize Menu**.

```
Preprocessor              1 2 U O1 O2   Key 1

0. Defocus      Off
1. Mosaic       Off
2. Posterize    On
3. Colorize     Off
4. Strobe       Off
                      _____
      Posterize   Luma: 0.0%
                  Chroma: 0.0%
                  Overall



Use positioner or Hue, Sat, Lum to modify
```

Preprocessor — Posterize Menu

✎   **Note**

> If the effect is not **On** (not yet in use), you must press **2. Posterize** again, to toggle to effect **On**.

3. Adjust the posterize effect on the channel image as follows:

    •   **Luma** — Use the **HUE** knob, or move the **Positioner** *left* and *right*, to decrease the level of *luminance*.
    •   **Chroma** — Use the **SAT** knob, or move the **Positioner** *up* and *down*, to decrease the level of *chrominance*.
    •   **Overall** — Use the **LUM** knob, or twist the **Positioner** knob *clockwise* and *counter-clockwise*, to adjust the level of *both* luminance and chrominance equally.

This completes the procedure for applying the Posterize Effect to a channel image.

Colorize Effect

The **Colorize Effect** allows you to replace the color component of the channel image with a color of your choice. The levels of hue and saturation are indicated. The default color is gray.

Use the following procedure to apply the Colorize Effect to a channel image:

1. Navigate to the **Preprocessor Menu** as follows:

   • Press **FLY KEY** in the **Effects Keyers Group**.

✓	**Operating Tip**	You can use the **PREPROC** hotkey to display the **Preprocessor Menu** directly.

   • Press **MENU** to display the **Main Menu**.
   • Press **8. S&T MD** to display the **S&T MD Menu**.
   • Press **3. Preprocessor** to display the **Preprocessor Menu**.

2. Press **3. Colorize** to display the **Colorize Menu**.

```
Preprocessor              1  2  U  O1  O2   Key 1

0. Defocus      Off
1. Mosaic       Off
2. Posterize    Off
3. Colorize     On
4. Strobe       Off
                          _____
     Colorize       Hue: 0.0%
                    Saturation: 0.0%




Use positioner or Hue, Sat, Lum to modify
```

Preprocessor — Colorize Menu

✎	**Note**	If the effect is not **On** (not yet in use), you must press **3. Colorize** again, to toggle to effect **On**.

3. Apply a color effect as follows:

   • **Hue** — Use the **HUE** knob, or move the **Positioner** *left* and *right*, to adjust the color.
   • **Saturation** — Use the **SAT** knob, or move the **Positioner** *up* and *down*, to adjust the saturation of the color.
      ~ **Monochrome or no saturation** — set the value to **0%**.
      ~ **Full color saturation** — set the value to **100%**.

This completes the procedure for applying the Colorize Effect to a channel image.

Strobe Effect

The **Strobe Effect** allows you to alternate between freezing and running live video.

Use the following procedure to apply the **Strobe Effect**:

1. Navigate to the **Preprocessor Menu** as follows:

   • Press **FLY KEY** in the **Effects Keyers Group**.

✓ **Operating Tip**

> You can use the **PREPROC** hotkey to display the **Preprocessor Menu** directly.

   • Press **MENU** to display the **Main Menu**.
   • Press **8. S&T MD** to display the **S&T MD Menu**.
   • Press **3. Preprocessor** to display the **Preprocessor Menu**.

2. Press **4. Strobe** to display the **Strobe Menu**.

```
Preprocessor            1  2  U  O1  O2   Key 1

0. Defocus      Off
1. Mosaic       Off
2. Posterize    Off
3. Colorize     Off
4. Strobe       On
_____
    Strobe   Live Frames: 1
             Frozen Frames: 0
                    Mode: Frame



Use positioner or Hue, Sat, Lum to modify
```

Preprocessor — Strobe Menu

✎ **Note**

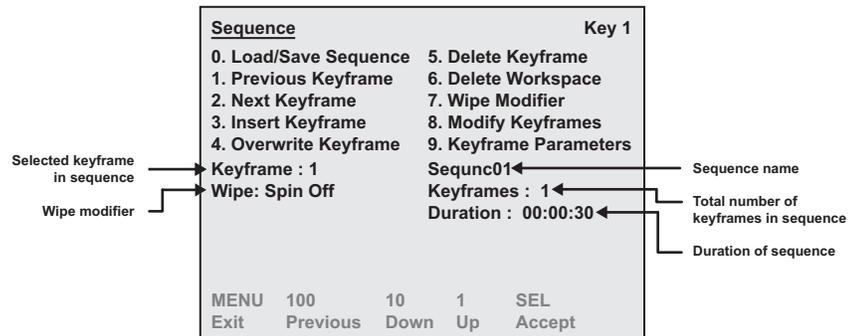> If the effect is not **On** (not yet in use), you must press **4. Strobe** again, to toggle to effect **On**.

3. Use the **LUM** knob, or twist the **Positioner** knob *clockwise* and *counter-clockwise*, to select the mode you want the strobe effect to operate in as follows:

✎ **Note**

> You will only be able to select **Frame** if you are using a **Progressive** video format.

   • **Frame** — Select this option to have the entire Frame, both Fields for interlaced video, of the channel image frozen.
   • **Field** — Select this option to have a Field of the channel image frozen.

4. Adjust the duration of the strobe effect as follows:

   • **Live Frames (Live Fields)** — Use the **HUE** knob, or move the **Positioner** *left* and *right*, to adjust the number of live Frames or Fields that will be displayed between the frozen channel images.
   • **Frozen Frames (Frozen Fields)** — Use the **SAT** knob, or move the **Positioner** *up* and *down*, to adjust the length of time, in Frames or Fields, that the channel image will be frozen for.

This completes the procedure for applying the Strobe Effect to a channel image.

Squeeze & Tease MD Sequences and Wipes

In This Chapter

This chapter provides detailed instructions for using the Squeeze & Tease MD **Sequences** and **Wipes**.

The following topics are discussed in this chapter:

- Introduction to Sequences
- Using the Sequence Menus
- Creating a Sequence
- Modifying the Keyframes of a Sequence
- Working with Sequences
- Running a Sequence
- Introduction to Squeeze & Tease Wipes
- Creating a Squeeze & Tease Wipe
- Running a Squeeze & Tease Wipe
- Storing Sequences and Wipes
- Recalling Sequences and Squeeze & Tease Wipes

Note   Refer to the section "**Squeeze & Tease MD Wipes and Sequences**" on page 21–2 for a description of each wipe and sequence supplied.

Introduction to Sequences

Sequences and Squeeze & Tease Wipes are two powerful groups of Squeeze & Tease effects. These effects allow you to create a combination of Key effects with wipes. When learning about these features, try using different combinations of **Squeeze & Tease** effects to produce original and creative sequences and wipes.

A Sequence is a series of effects (both single and multi-channel) that can be created, saved, and run directly from your switcher. You can use any of the 3D functions to manipulate the images in a sequence. For example, a sequence might consist of an image that rotates across the screen, moves to a specific location in 3D space and acquires a border.

Understanding Sequences

Sequences are created to run a series of image effects, using any combination of parameters such as position, cropping, rotation or borders. To make a sequence, you create a series of Keyframes that define the state and location of the image in 3D space. The system interpolates, or fills in, the images between the Keyframes to produce a fluid motion effect.

	Note	A sequence can *only* be run on a flying Key.

The following example demonstrates a simple sequence with four Keyframes:

1. The image starts in the bottom left corner.

2. The image moves to the position shown in Keyframe 1.

3. The image rotates and moves to the position in Keyframe 2.

4. The image moves to the position shown in Keyframe 3.

5. The image acquires a border and moves to the position shown in Keyframe 4.
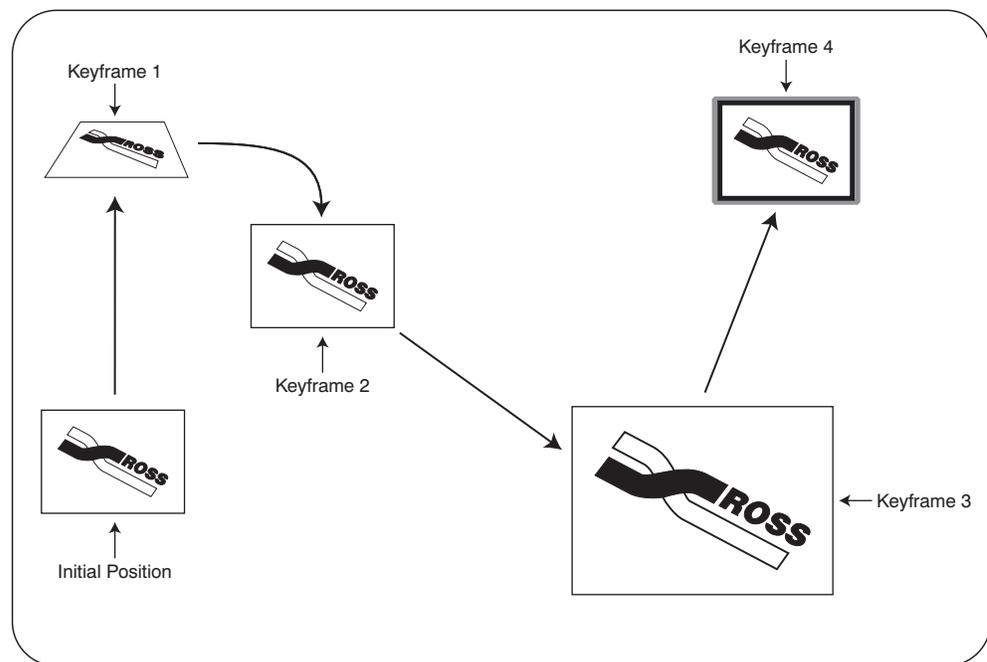
Example of a Four Keyframe Sequence

Keyframe Transitions

You can set the type of motion for each Keyframe to show how the image should move, or transition, to the next Keyframe:

- **Smooth motion** — The image accelerates slowly at the start and decelerates slowly at the end of the sequence. The motion between the Keyframes is a straight line.

- **Spline motion** — The image accelerates slowly at the start and decelerates slowly at the end of the sequence. The motion between the Keyframes is a user modifiable spline-curve that smoothly moves the image through each keyframe. Refer to the section "**Modifying Spline Motion**" on page 17–10 for information on changing spline motion parameters.

- **Linear motion** — The sequence moves from Keyframe to Keyframe at a constant velocity. This produces a step-motion effect.

You can also specify how quickly you want the sequence to move from Keyframe to Keyframe.

Using the Sequence Menus

The **Synergy 100 MD Sequence Menus** includes options to create and load sequences, modify the parameters of sequences, and save sequences for future use.

Navigating to the Sequence Menus

Use the following procedure to navigate to the **Sequence Menu**:

1. Press **MENU** to display the **Main Menu**.

2. Press **8. S&T MD** to display the **S&T MD Menu**.

3. Press **2. Sequence** to display the **Sequence Menu**.

```
Sequence                              Key 1
0. Load/Save Sequence   5. Delete Keyframe
1. Previous Keyframe     6. Delete Workspace
2. Next Keyframe         7. Wipe Modifier
3. Insert Keyframe       8. Modify Keyframes
4. Overwrite Keyframe    9. Keyframe Parameters




MENU    100      10      1      SEL
Exit    Previous Down    Up     Accept
```
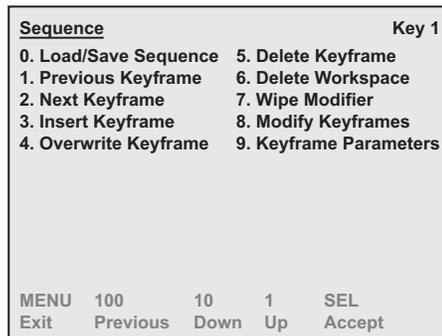
Sequence Menu

Overview of the Sequence Menus

When the **Sequence Menu** is initially accessed, the only actions available are to load a sequence from memory or to insert a keyframe.

```
Sequence                              Key 1
0. Load/Save Sequence   5. Delete Keyframe
1. Previous Keyframe     6. Delete Workspace
2. Next Keyframe         7. Wipe Modifier
3. Insert Keyframe       8. Modify Keyframes
4. Overwrite Keyframe    9. Keyframe Parameters
Keyframe : 1             Sequnc01
Wipe: Spin Off           Keyframes :  1
                         Duration :  00:00:30



MENU    100      10      1      SEL
Exit    Previous Down    Up     Accept
```

Selected keyframe in sequence → Keyframe : 1
Wipe modifier → Wipe: Spin Off
Sequence name → Sequnc01
Total number of keyframes in sequence → Keyframes : 1
Duration of sequence → Duration : 00:00:30

Sequence Menu — Insert Keyframe Menu

The **Sequence Menu** provides the following information about a sequence:

*   **Selected Keyframe** — This field indicates the current selected Keyframe in the sequence.

*   **Wipe Modifier** — This field indicates how the sequence ends if it is being used as a transition.

    Remember, the sequence rate determines how fast the sequence will play on the switcher when run via the **AUTO TRANS** button. When you create the sequence, you establish

its duration. This is the default sequence rate. If you want the sequence to run at a different rate, you can set a new rate manually. Refer to the section "**Running a Sequence**" on page 17–23 for detailed instructions.

- **Sequence Name —** This field indicates the sequence name. When creating a new sequence, "New Sequence" is set as a default title. Once a sequence has been saved, any changes to the sequence will be indicated by the word "Modified" appearing next to the sequence name. It disappears the next time you save the sequence.

- **Number of Keyframes** — This field indicates the number of Keyframes in the sequence.

- **Duration** — This field (shown in minutes, seconds, and frames), indicates the programmed duration of the sequence for the selected Key. The Duration only applies to the sequence.

Creating a Sequence

Sequences are created to move and modify an image in a series of predetermined effects. To create sequences, you work primarily with the various **Squeeze & Tease** menus. Refer to the section "**Using the Sequence Menus**" on page 17–4 for information on accessing the various **Squeeze & Tease** menus.

The following procedure explains how to create a simple, four Keyframe, sequence as shown below, using the hotkey system. If you prefer, you can use the Sequence Menus to create your sequences.
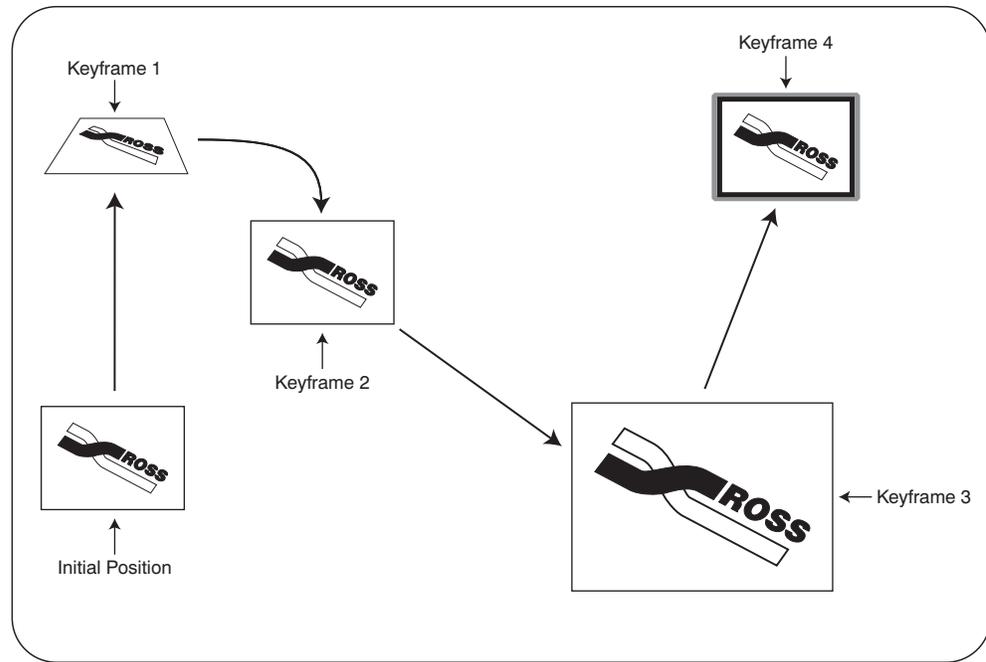
Sequence Example

Try experimenting with different effects and Keyframe durations to get a feel for the creative possibilities of the system.

Creating a Four Keyframe Sequence

Use the following procedure to create a simple, four Keyframe sequence:

1. Navigate to the **S&T MD Position/Crop Menu** as follows:

   • Press **FLY KEY** in the **Effects Keyers Group** to display the **S&T MD Menu**.

   • Press **0. Position/Crop** to display the **S&T MD Position/Crop Menu**.

2. In the **S&T MD Position/Crop Menu**, prepare the first Keyframe in the sequence. For example, the following illustration displays an image that has been positioned and rotated in 3D space. Refer to the section "**Position/Crop Menu**" on page 13–2 for details.

Squeeze & Tease – Keyframe 1

3. Press **SEL/DVE** and **Seq** to display the **Sequence Menu**.

4. If the timeline is not already empty, delete the existing workspace by pressing **6. Delete Workspace**.

5. Press **3. Insert Keyframe** to insert the first keyframe.

   By default, the first Keyframe has a duration of 0 frames. We will now create a slew to the first Keyframe. This duration will be the time it takes to slew from the initial position to the first keyframe when running the sequence forwards. It will also serve as the time it takes to slew from the first keyframe back to the initial position when running the sequence in reverse.

 Operating Tip

> You can adjust the **Tension**, **Bias**, and **Continuity** of a spline path using the procedures in section "**Adjusting Tension, Bias, and Continuity**" on page 17–12.

6. Create a slew to the first Keyframe as follows:

   • Press **9. Keyframe Parameters** to display the **Keyframe Parameters Menu**.

   • Press **0. Duration** to display the **Sequence Duration Menu**.
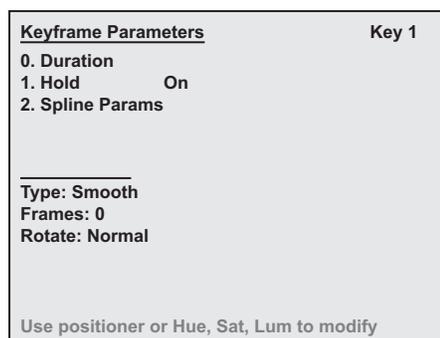
Keyframe Parameters — Sequence Duration Menu

   • Use the **SAT** knob to adjust the duration, in frames, to **30**.

   • Press **BACK** to return to the **Sequence Menu**.

   • Press **4. Overwrite Keyframe** to save your changes to the duration.

We will now program another Keyframe to continue the sequence. The image will be rotated from Keyframe 1 to the new Keyframe 2.

7. Program the new Keyframe 2 as follows:

   • Press **SEL/DVE** and **POSN** to return to the **Position Menu**.

   • Use the knobs or the Positioner to move and rotate the image to the desired position.
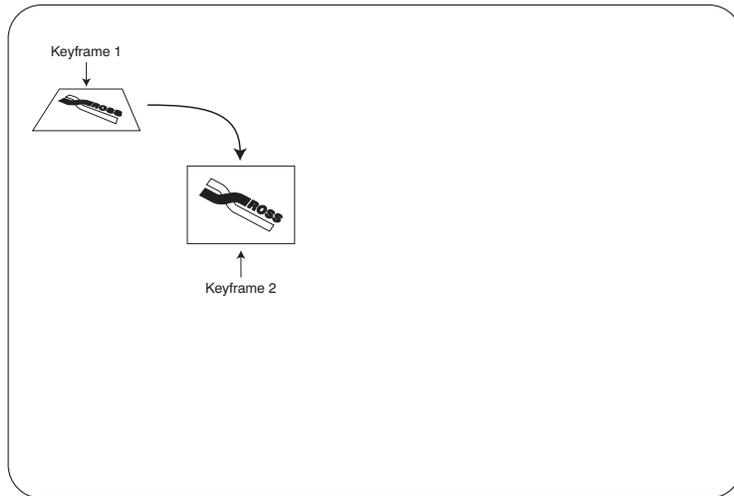
Squeeze & Tease – Keyframe 2

   • Press **SEL/DVE** and **Seq** to display the **Sequence Menu**.

   • Press **3. Insert Keyframe** to insert Keyframe 2.

8. Program the new Keyframe 3 as follows:

   • Press **SEL/DVE** and **POSN** to return to the **Position Menu**.

   • Use the knobs or the Positioner to move the image to the desired position.
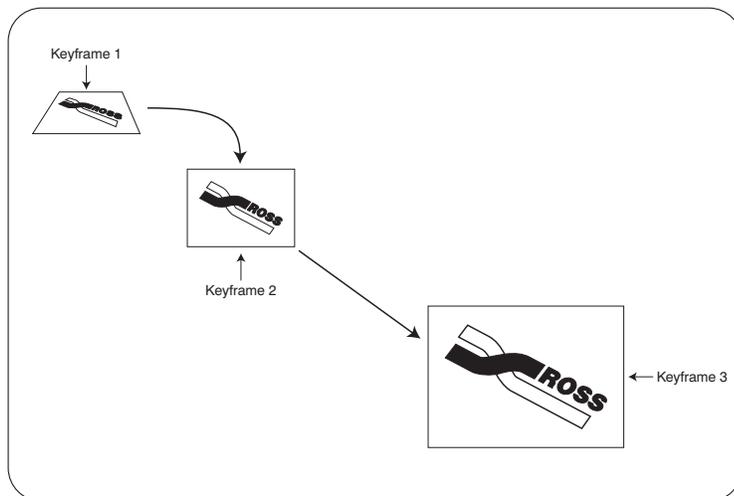
Squeeze & Tease – Keyframe 3

   • Press **SEL/DVE** and **Seq** to display the **Sequence Menu**.

   • Press **3. Insert Keyframe** to insert Keyframe 3.

9. Program the new Keyframe 4 as follows:

- Press **SEL/DVE** and **POSN** to return to the **Position Menu**.
- Use the knobs or the Positioner to move the image to the desired position.

10. If desired, apply a border to the image.
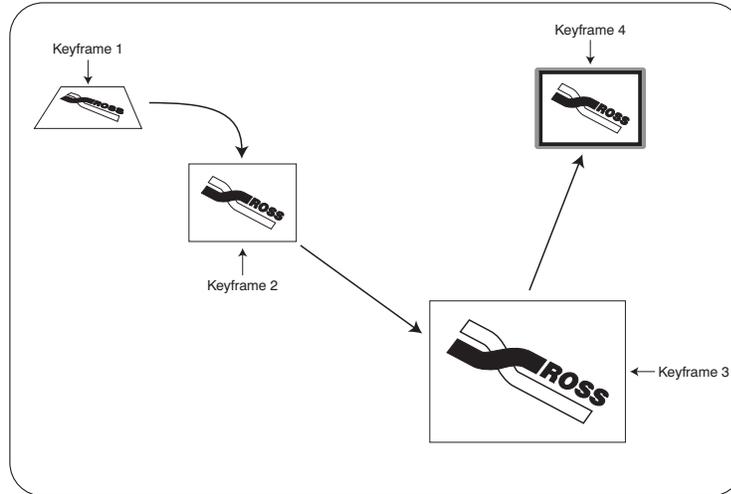
Squeeze & Tease – Keyframe 4

11. Insert Keyframe 4 as follows:

- Press **SEL/DVE** and **Seq** to display the **Sequence Menu**.
- Press **3. Insert Keyframe** to insert Keyframe 4.

12. Save your sequence as follows:

- Press **SEL/DVE** and **LOAD SEQ** to display the **Load/Save Seq. Menu**.

Load/Save Seq. Menu

✎ **Note** | The sequence number in brackets indicates the position of the sequence in the list.

- Use the knobs to select a sequence position in the list.
- Press **1. Save Sequence** to save the sequence in that position.

  For ease of use, you should give each sequence a unique, descriptive name. Refer to the section "**Renaming a Sequence**" on page 17–21 for information on renaming a sequence.

This completes the procedure to create a simple, four Keyframe sequence.

Modifying Spline Motion

Spline motion differs from **Smooth** and **Linear** motion in that the image does not follow a straight line between keyframes. Rather, the image follows a curving (spline) path that smoothly takes it from keyframe to keyframe.

This section includes an overview of the spline path, the three parameters of spline motion, and how to adjust these parameters.

Spline Motion Overview

The figure below shows three keyframes and two sample paths that an image would take as it moved between them: a spline path and a linear, or smooth, path.

Spline Path through Keyframes
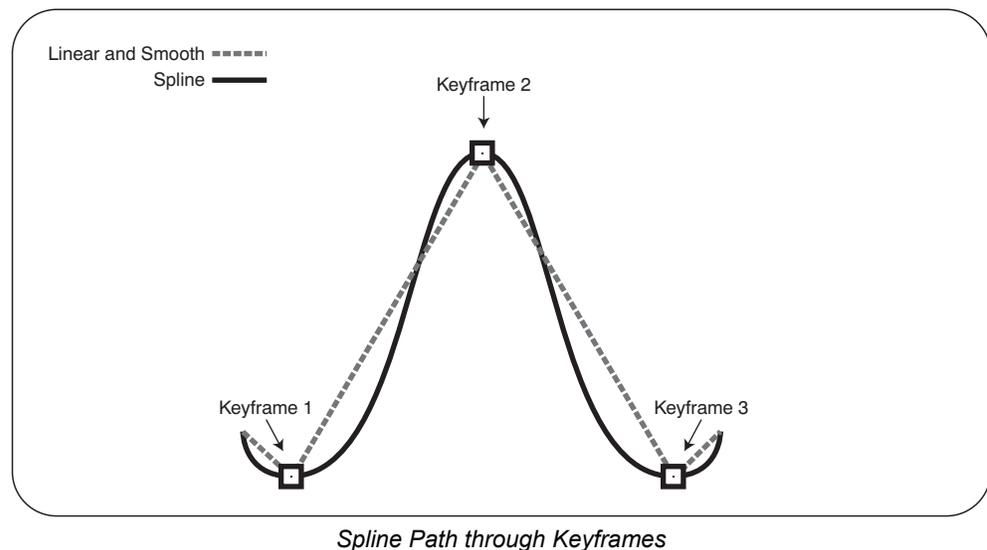
Notice that the spline path between keyframes is smooth and continuous with no abrupt direction changes. The linear and smooth path is a series of straight lines between keyframes resulting in abrupt directional changes at the keyframes. Getting fluid motion between keyframes requires using spline motion.

The initial spline path between keyframes is determined by the switcher based on where you place your keyframes. You can control this path to a certain extent by modifying three parameters: **Tension**, **Bias**, and **Continuity**.

Tension

Tension affects how tight or loose the curve is. Lower tension gives a looser, more sweeping curve while tightening the tension brings the curve closer to a straight line. The figure below shows examples of various tension effects on a standard spline path.
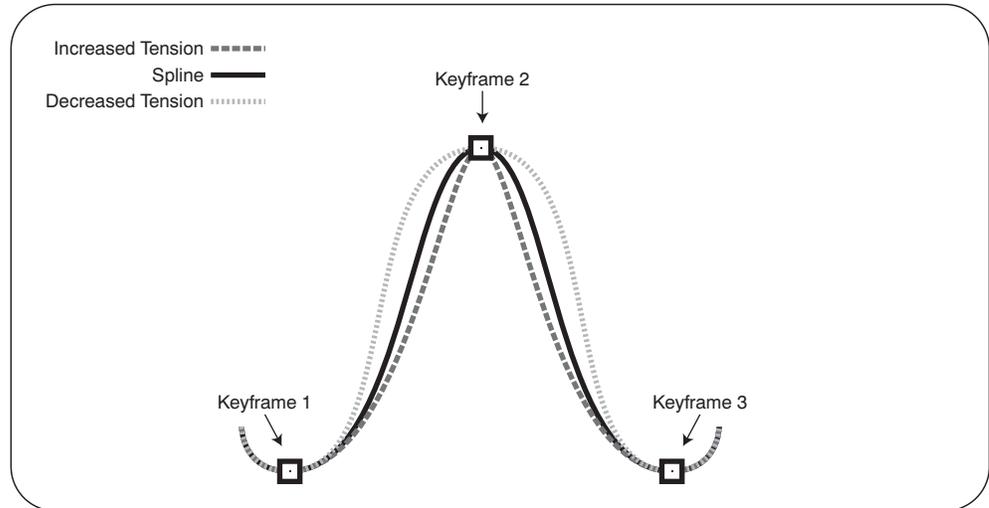
Tension Effects on a Spline

Notice how the decreased tension spline follows a more sweeping path between keyframes than the standard spline. The increased tension spline tightens up the curves and, as you can see, makes a more direct path between keyframes.

Bias

Bias balances how much influence the previous and next keyframes have on the spline through the current keyframe. Increased bias places more importance on the smoothness between the previous and current points, while a decreased bias places more importance on the smoothness between the current and next points. The figure below shows the effect of increased and decreased bias on a standard spline path.
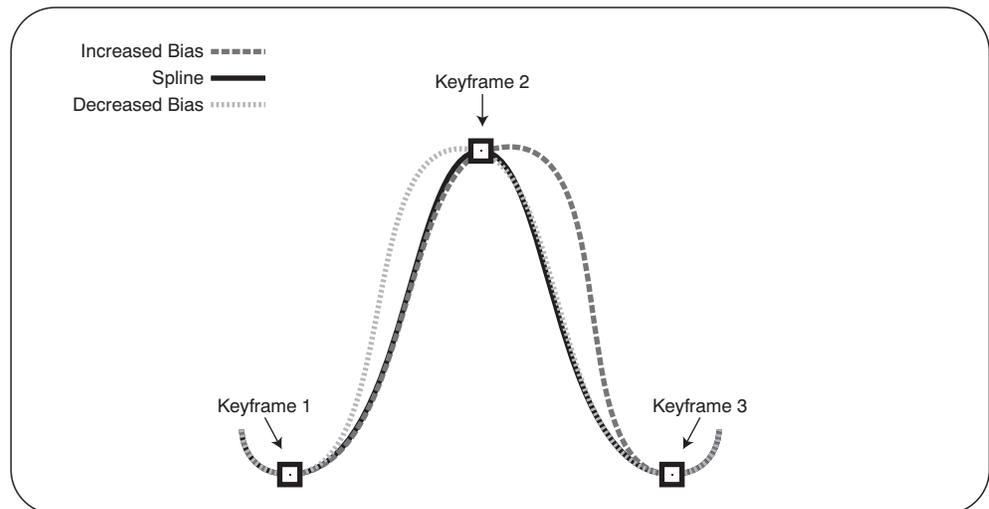
Bias Effects on a Spline

Notice how increasing the bias shifts the bulge of the curve to the right of keyframe 2 while decreasing the bias shifts the bulge to the left.

Continuity

Continuity affects how smoothly the path passes through the keyframes. The standard spline path moves smoothly through each keyframe but by adjusting the continuity, you can make the path effectively come to a point at a keyframe and then abruptly move away towards the next keyframe. The figure below shows the effects of continuity on a spline path far better than an explanation.
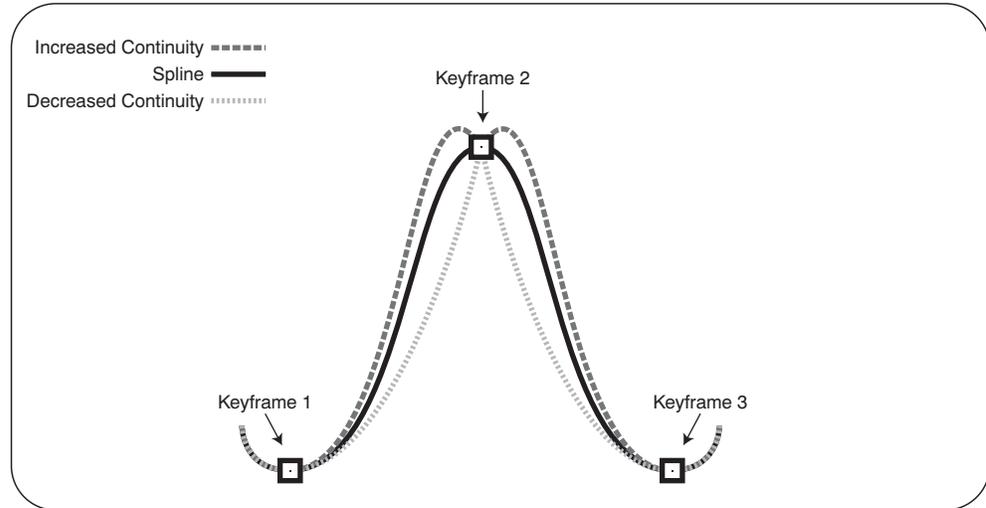
Continuity Effects on a Spline

Notice how increasing the continuity causes the path to overshoot the keyframe and then quickly sweep back into it. Then, the path abruptly leaves the keyframe position before returning to a smooth path.

Decreasing the continuity causes the path to smoothly sweep into a keyframe. Then, the path abruptly changes directions, towards the keyframe, before returning to a smooth path.

Adjusting Tension, Bias, and Continuity

Adjusting the **Tension**, **Bias**, and **Continuity** allow you to tailor the spline path to suit your needs. Try playing with various combinations of values to see how they affect your sequence's motion between keyframes.

Use the following procedure to adjust the **Tension**, **Bias**, and **Continuity** of a spline path:

1. Create a new sequence. Refer to the section "**Creating a Sequence**" on page 17–6 if you need help in creating a sequence.

2. Navigate to the **Spline Parameters Menu** as follows:

   • Press **SEL/DVE** and **Seq** to display the **Sequence Menu**.

   • Press **9. Keyframe Parameters** to display the **Keyframe Parameters Menu**.

   • Press **2. Spline Params** to display the **Spline Parameters Menu**.

```
Keyframe Parameters                          Key 1

0. Duration        30
1. Hold            Off
2. Spline Params

_____
Spline Params:  Tension: 0.030
                Bias: -1.000
                Continunity: 0.000



Use positioner or Hue, Sat, Lum to modify
```

Spline Parameters Menu

3. Use the **HUE** knob to change the tension of the spline path at the current keyframe.

4. Use the **SAT** knob to change the bias of the spline path at the current keyframe.

5. Use the **LUM** knob to change the continuity of the spline path at the current keyframe.

This completes the procedure for adjusting the **Tension**, **Bias**, and **Continuity** of a spline path.

Modifying the Keyframes of a Sequence

The **Modify Keyframes** feature enables you to edit a Keyframe and apply that change to the entire sequence, current or previous keyframes, or current and subsequent Keyframes.

The range of keyframes to modify is configured through the **Modify Keyframes Menu**, which is accessed through the **Sequence Menu**.

> ✎ **Note** For information on modifying a single keyframe in a sequence, refer to the section "**Overwriting a Keyframe**" on page 17–17.

Modifying Multiple Keyframes in a Sequence

The following procedure explains how to modify keyframes in a simple, four Keyframe, sequence. We will reposition Keyframe 2 and apply those changes to Keyframes 3 and 4.

When modifying a sequence where multiple channels are assigned in a Keyframe, parameters for each channel are calculated separately. The total number of parameters modified is displayed in the **Modify Keyframes Menu** until **Perform Modify** is pressed. Once modified, the value resets to 0. Refer to the section "**Working with Channels**" on page 12–20 for information on using multiple channels in a keyer.

> ✎ **Note** Lighting parameters cannot be modified across multiple keyframes at this time.

Use the following procedure to modify the range of Keyframes in a sequence using the **Modify Keyframe** function:

1. Create or load the sequence similar to the four Keyframe sequence you created in the section "**Creating a Four Keyframe Sequence**" on page 17–6.

2. Press **2. Next Keyframe** on the **Sequence Menu** to advance to the second Keyframe in the sequence.

3. Navigate to the **Position/Crop Menu** as follows:

   • Press **BACK** to display the **Squeeze & Tease MD Menu**.

   • Press **0. Position/Crop** to display the **Position/Crop Menu**.

> ✎ **Note** You must be Flying a Key to display the **Position/Crop Menu** for that Key.

```
Position/Crop                1  2        Key 1

0. Position          5. Crop Horizontal
1. Rotation          6. Crop Vertical
2. Pivot Preset      7. Transp.    Off
3. Pivot Position    8. Freeze     Off
4. Aspect     Off    9. Adv. Positioning




MENU    100         10     1     SEL
Exit    Previous    Down   Up    Accept
```

Position/Crop Menu

4. Adjust the channel(s) as required. Refer to the section "**Position/Crop Menu**" on page 13–2 for details.

5. Navigate to the **Modify Keyframes Menu** as follows:

    *   Press **BACK** to display the **S&T MD Menu**.

    *   Press **2. Sequence** to display the **Sequence Menu**.

    *   Press **8. Modify Keyframes** to display the **Modify Keyframes Menu**.

```
Modify Keyframes          1   2              Key 1
0. Modify Type:  Relative
1. Modify Range
2. Perform Modify


                          Sequenc01
Current Keyframe: 2       Total Keyframes:  4
Keyframes to be Modified: 2-4
Number of Modified Keyframe Parameters: 3



Use positioner or Hue, Sat, Lum to modify
```
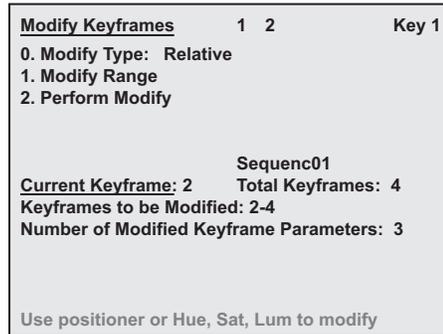
Modify Keyframes Menu

6. Select the type of modification as follows:

    *   Press **0. Modify Type**.

    *   Use the **HUE** knob to select a Modify Type. You can select between the following:

        ~ **Relative** — Changes all parameters by the same value, relative to their original values. For example, changing the location of an image changes the image in all the selected Keyframes by the same amount, relative to their starting position.

        ~ **Absolute** — Changes all parameters to the exact same value for all Keyframes specified. For example, adjusting the location of an image will set that image in all selected Keyframes to the same location.

7. Set the Keyframe Range you want to apply the changes to as follows:

    *   Press **1. Modify Range**.

    *   Use the **HUE** knob to select the first keyframe in the range to be modified. In the example above, Keyframe 2 is the first to be modified.

    *   Use the **SAT** knob to select the last keyframe in the range to be modified. In the example above, the changes will be applied to Keyframes 2, 3, and 4 inclusive.

8. Press **2. Perform Modify**.

9. Save your sequence as follows:

    *   Press **SEL/DVE** and **LOAD SEQ** to display the **Load/Save Seq. Menu**.

```
Load/Save Seq.                        Key 1
0. Load Sequence          None
1. Save Sequence    Seq.: New Seq (00)
2. Delete Sequence        New Seq (01)
3. Rename Sequence        Unused (02)
                          Unused (03)
SEQ : New Seq (00)        Unused (04)
Keyframes: 2
Channels: 0
Duration: 00:01:00




Use positioner or Hue, Sat, Lum to modify
```

Load/Save Seq. Menu

- Use the knobs to select a sequence position in the list.

- Press **1. Save Sequence** to save the sequence in that position.

🖉	**Note**	Only the Keyframes in the selected range will be modified. If you wish to modify a Keyframe that is not in the chosen range, you will have to save changes to that keyframe using the **Overwrite Keyframe** feature. Refer to the section "**Overwriting a Keyframe**" on page 17–17 for details on using this feature.

This completes the procedure to modify the range of keyframes in a sequence using the **Modify Keyframe** function.

Overwriting a Keyframe

This section outlines how to modify a single keyframe that is not in a chosen range of a sequence. For example, you have applied a change to the X-position of Keyframes 3 to 5 in a sequence that includes a total of five Keyframes. You now require to change the Y-position of Keyframe 2 in the same sequence.

Use the following procedure to overwrite a Keyframe:

1. Ensure the sequence is loaded. Refer to the section "**Loading a Sequence**" on page 17–20 for instructions.

2. Make your changes to the selected Keyframe parameters.

3. Press **4. Overwrite Keyframe**. The keyframe is replaced with the new parameters.

4. Save your sequence as follows:

    • Press **SEL/DVE** and **LOAD SEQ** to display the **Load/Save Seq. Menu**.

    • Use the knobs to select a sequence position in the list.

    • Press **1. Save Sequence** to save the sequence.

This completes the procedure to overwrite a Keyframe using the Overwrite Keyframe feature.

Adding a Hold to a Sequence

You can insert a **Hold** at the end of any Keyframe. A **Hold** differs from a Keyframe **Duration** in that it requires manual input to continue by pressing the **AUTO TRANS** button.

⚠	Important	A **Hold** is only implemented when running a sequence using **AUTO TRANS**.

Adding a Hold to a Sequence

Use the following procedure to add a Hold to a sequence:

1. Navigate to the **Sequence Menu** as follows:

    • Press **FLY KEY** in the **Effects Keyers Group** to display the **S&T MD Menu**.

    • Press **2. Sequences** to display the **Sequence Menu**.

```
Sequence                          Key 1
0. Load/Save Sequence   5. Delete Keyframe
1. Previous Keyframe     6. Delete Workspace
2. Next Keyframe         7. Wipe Modifier
3. Insert Keyframe       8. Modify Keyframes
4. Overwrite Keyframe    9. Keyframe Parameters




MENU    100       10      1     SEL
Exit    Previous   Down    Up    Accept
```

Sequence Menu

2. Program the Keyframe. Refer to the section "**Creating a Sequence**" on page 17–6 for more information.

3. Press **2. Next Keyframe** or **1. Previous Keyframe** until you reach the Keyframe you want the sequence to hold at.

4. Press **9. Keyframe Parameters** on the **Sequence Menu**.

5. Press **1. Hold** to display the **Hold Menu**.

```
Keyframe Parameters               Key 1
0. Duration      30
1. Hold          On
2. Spline Params

_____
Hold:   On




Use positioner or Hue, Sat, Lum to modify
```

Keyframe Parameters — Hold Menu

6. Add a Hold to the sequence as follows:

   • Use the ⬇ and ⬆ buttons to select **On**.

   • Press the right **SEL** button to accept the new settings.

7. Save your sequence as follows:
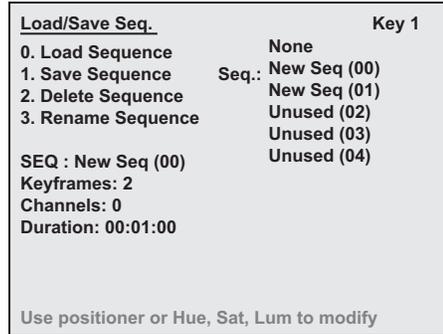
   • Press **SEL/DVE** and **LOAD SEQ** to display the **Load/Save Seq. Menu**.

```
Load/Save Seq.                          Key 1
0. Load Sequence          None
1. Save Sequence    Seq.: New Seq (00)
2. Delete Sequence        New Seq (01)
3. Rename Sequence        Unused (02)
                          Unused (03)
SEQ : New Seq (00)        Unused (04)
Keyframes: 2
Channels: 0
Duration: 00:01:00



Use positioner or Hue, Sat, Lum to modify
```

Load/Save Seq. Menu

Note   The sequence number in brackets indicates the position of the sequence in the list.

   • Use the knobs to select a sequence position in the list.

   • Press **1. Save Sequence** to save the sequence in that position.

8. For ease of use, you should give each sequence a unique, descriptive name. Refer to the section "**Renaming a Sequence**" on page 17–21 for information on renaming a sequence.

This completes the procedure to add a Hold to a sequence.

Working with Sequences

This section discusses how to load, rename, and delete sequences. Additional operational notes are also included.

Loading a Sequence

Use the following procedure to load any of the available sequences:

1. Navigate to the **Sequence Menu** as follows:

   - Press **FLY KEY** in the **Effects Keyers Group** to display the **S&T MD Menu**.

   - Press **2. Sequences** to display the **Sequence Menu**.

```
Sequence                              Key 1

0. Load/Save Sequence    5. Delete Keyframe
1. Previous Keyframe      6. Delete Workspace
2. Next Keyframe          7. Wipe Modifier
3. Insert Keyframe        8. Modify Keyframes
4. Overwrite Keyframe     9. Keyframe Parameters




MENU    100          10      1      SEL
Exit    Previous     Down    Up     Accept
```

Sequence Menu

2. Load the sequence as follows:

   - Press **0. Load/Save Sequence** to display the **Load/Save Seq. Menu**.

```
Load/Save Seq.                        Key 1

0. Load Sequence          None
1. Save Sequence     Seq.: New Seq (00)
2. Delete Sequence        New Seq (01)
3. Rename Sequence        Unused (02)
                          Unused (03)
SEQ : New Seq (00)        Unused (04)
Keyframes: 2
Channels: 0
Duration: 00:01:00



Use positioner or Hue, Sat, Lum to modify
```

Load/Save Seq. Menu

   - Use the knobs to select the sequence from the list.

   - Press **0. Load Sequence** to load the sequence and display the **Sequence Menu**. The sequence appears in the workspace.

This completes the procedure to load any of the available sequences from memory.

Renaming a Sequence

Use the following procedure to rename a sequence:

1. Navigate to the **Sequence Menu** as follows:

    *   Press **MENU** to display the **Main Menu**.

    *   Press **8. S&T MD** to display the **S&T MD Menu**.

    *   Press **2. Sequence** to display the **Sequence Menu**.

2. Load the sequence you want to rename as follows:

    *   Press **0. Load/Save Sequence** to display the **Load/Save Seq. Menu**.

```
Load/Save Seq.                        Key 1
0. Load Sequence          None
1. Save Sequence    Seq.: New Seq (00)
2. Delete Sequence        New Seq (01)
3. Rename Sequence        Unused (02)
                          Unused (03)
SEQ : New Seq (00)        Unused (04)
Keyframes: 2
Channels: 0
Duration: 00:01:00




Use positioner or Hue, Sat, Lum to modify
```
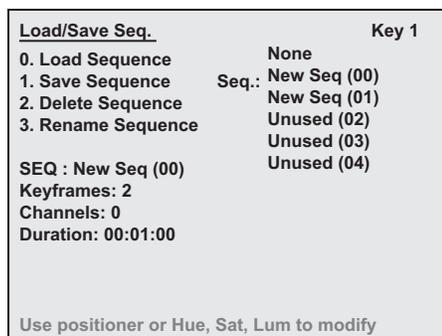
Load/Save Seq. Menu

*   Use the knobs to select the sequence from the list.

3. Rename the sequence as follows:

    *   Press **0. Load Sequence**.

    *   Press **3. Rename Sequence** to display the **Rename Sequence Menu**.

```
Rename Sequence
a b c d e f g h i j k l m n o p q r s t u v w x y z
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
0 1 2 3 4 5 6 7 8 9 ! @ # - _ & * ( ) / . ? ' "




Current Name: New Seq (00)
New Name: Sequnc01




0: <- 1: -> 2: Space 3: Accept Aspect: Scroll letters
```
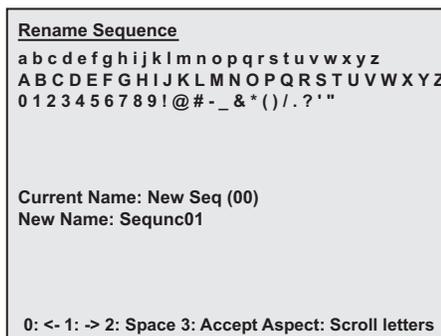
Rename Sequence Menu

*   Use the **ASPECT** knob in the **Effects Control Group** to scroll through the letters and highlight the letter you want to use. Any invalid characters on the same line as the currently highlighted character will appear dark grey and will be skipped as you scroll through the letters.

4. When you are finished entering the sequence name, press **3. Accept**.

This completes the procedure to rename any of the available sequences.

Deleting a Sequence

Use the following procedure to delete a sequence:

1. Navigate to the **Load/Save Seq. Menu**. Refer to the section "**Loading a Sequence**" on page 17–20 for details.

2. From the **Load/Save Seq. Menu**, press **2. Delete Sequence** to display a confirmation message.

3. When prompted with the message:

    • Press **0. Confirm** to continue with the deletion.

    • Press **1. Cancel** to terminate the deletion.

This completes the procedure to delete a sequences.

Previewing a Sequence

You can review the sequence on your preview monitor before you bring it to air.

Use the following procedure to preview your sequence before you bring it to air:

1. Fly the Key with the sequence loaded and select it in the next **Transition** area of your switcher.

2. Press the **DISS**, **WIPE** and **DVE SEND** buttons at the same time to display the **Runtime Menu**.

3. Run the sequence on the preview monitor using the **Auto Trans** button or the **Fader**.

This completes the procedure to preview your sequence before you bring it to air.

Sequence Memory Notes

Please note the following important points regarding saving and loading sequences:

    • The switcher enables you to store up to 100 sequences.

    • You can store up to 800 Keyframes in total.

    • Each sequence can have up to 25 Keyframes.

Running a Sequence

The **System Control Group** indicates the programmed sequence rate in frames. If the sequence has been manually set to run at a different rate, the text on the **Display** in the **System Control Group** alternates between **AUTS** and **OVER**.

✓ **Operating Tip**

> Double-pressing the **DISS**, **WIPE** and **DVE SEND** buttons at the same time displays a list of sequences for quick access via the **Pattern Control Group**. Refer to the section "**Programming Pattern Control Buttons**" on page 17–26 for more information.

Use the fader to run the sequence manually

Press **DISS**, **WIPE**, **DVE** to prepare to run the sequence

Use this button to cut a key on or off

BKGD	KEY1	KEY2		TRANS LIMIT	PST BLACK
	ON AIR	ON AIR		ON AIR	ON AIR
DISS	WIPE	DVE			FADE TO BLACK
CUT	AUTO TRANS			DSK CUT	DSK DISS
			TRANSITION CONTROL		ON AIR

Use this button to run the sequence automatically
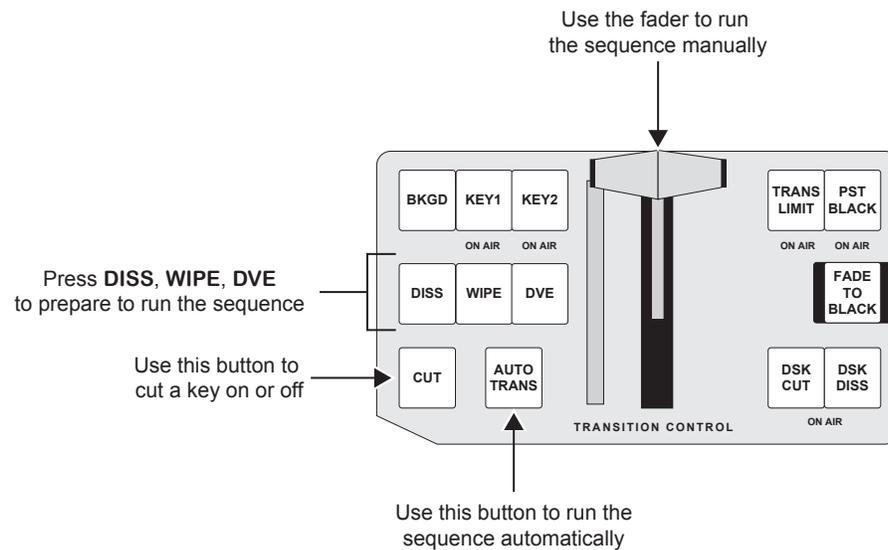
Running a Sequence

Remember, the sequence rate determines how fast the sequence will run on the switcher. When you create the sequence, you establish its duration. This rate is the default sequence rate. If you want the sequence to run at a different rate, you can set a new rate manually.

✎ **Note**

> When attempting to run a sequence on a background rather than a key, it will automatically run as a dissolve.
>
> You cannot select **PST Black** or **Trans PV** with sequence mode.

Running a Sequence at the Default Rate

Use the following procedure to run the sequence at the default sequence rate:

1. Ensure the sequence is loaded. Refer to the section "**Loading a Sequence**" on page 17–20 for instructions.

2. Press the **DISS**, **WIPE** and **DVE SEND** buttons at the same time.

✓ **Operating Tip**

> You can also press **SEL/DVE** and **RUN FWD** or **SEL/DVE** and **RUN REV**. You must have a Fly-Key selected as the next transition.
>
> Keep in mind when the sequence runs in reverse, it snaps to the last keyframe in the sequence.

3. Run the sequence using the fader or buttons in the **Transition Control Group** as follows

    •   Use the **AUTO TRANS** button to run the sequence automatically.

    •   Use the **Fader** to run the sequence manually. The fader movement controls the rate that the sequence is run in.

    •   Use the **CUT** button to cut a Key on or off.

⚠️ **Important**

> If a Hold is inserted in the sequence it will only be implemented when running a sequence using Auto Trans. Refer to the section "**Adding a Hold to a Sequence**" on page 17–18 for more information.

This completes the procedure to run a sequence.

Running a Sequence at a Specific Rate

The **System Control Group** shows the time in the numeric display and **AUT1** and/or **AUT2** as the text flag.

When a sequence is actually in progress in Auto Trans mode, the **MODE** display shows **AUTS** and the numeric display shows the duration of the sequence. If both keys are transitioning, the numeric display shows the longer of the two durations.

Use the following procedure to select a specific rate:

1. Ensure the sequence is loaded. Refer to the section "**Loading a Sequence**" on page 17–20 for instructions.

2. Note the current transition rate in the display of the **System Control Group**. If the rate is not showing, press the **MENU/EDIT** button to turn the menu off and display the transition rate.
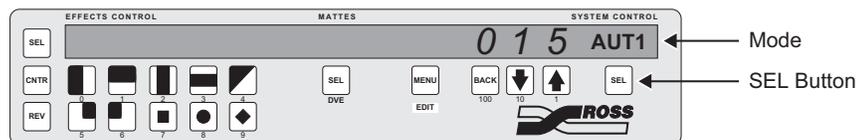
System Control Group — Current Transition Rate

3. Press the **SEL** button in the **System Control Group**.

4. Use the ⬇ and ⬆ buttons to scroll to the desired rate in frames — from **1** to **999**. The new rate is updated automatically in the display.
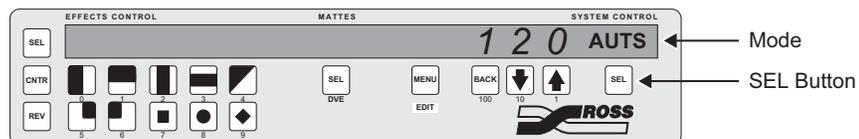
System Control Group — New Rate Display

This completes the procedure to run the sequence at a specific rate. When both keys are selected for sequence transition, the panel displays both sequence durations, alternating; when only one key is selected, its duration is shown.

Running a Sequence with a Hold

A Hold inserted in a sequence requires manual input to continue when the sequence is being run.

Use the following procedure to run a sequence with a Hold:

1. Load a sequence. Refer to the section "**Loading a Sequence**" on page 17–20 for details.

2. Run the sequence using **AUTO TRANS**. Refer to the section "**Running a Sequence**" on page 17–23 for details.

    When you run the sequence, it will stop when it reaches the point where the **Hold** was inserted.

3. Press the flashing **AUTO TRANS** button to continue running the sequence.

    The sequence will continue as saved.

This completes the procedure to run a sequence with a Hold.

Using the Pattern Control Buttons

Pattern Buttons 8 and **9** are sometimes used by the system when loading a sequence using the menus. Keep this in mind when assigning sequences to these **Pattern Buttons**, as they may be overwritten.

- If you load a sequence in Key 1, the system checks whether there is a pattern button associated with that sequence. If no button is associated with the sequence, the system will use **Pattern Button 8** (overwriting the program previously assigned to that button).

- If you load a sequence in Key 2, the system checks whether there is a pattern button associated with that sequence. If no button is associated with the sequence, the system will use **Pattern Button 9** (overwriting the program previously assigned to that button).

- If you press **WIPE** with the key flown, double-pressing the assigned pattern button will assign the sequence to a wipe. Pressing the **AUTO TRANS** button will then run the wipe. Moving the fader handle runs the wipe at a speed controlled by the fader movement.

Programming Pattern Control Buttons

The sequences you create and save can be mapped to buttons in the **Pattern Control Group**.

Use the following procedure to map a sequence to a Pattern Control button:

1. Ensure the sequence is loaded. Refer to the section "**Loading a Sequence**" on page 17–20 for instructions.

2. Press the **DISS**, **WIPE** and **DVE SEND** buttons at the same time.

3. Double-press the **Pattern Button** you want to program.

4. Using the ⬇ and ⬆ buttons in the **System Control Group**, scroll to the desired sequence number.

5. Press **SEL** in the **System Control Group** to save the assignment.

This completes the procedure to program pattern buttons.

Introduction to Squeeze & Tease Wipes

A Squeeze & Tease Wipe is a transition that brings a Key on-air or moves a Key off-air.

For your convenience, a set of pre-programmed sequences and Squeeze & Tease Wipes are supplied on the Product Resources CD (the sequences and Squeeze & Tease Wipes are pre-installed for you when you purchase a new switcher).

To load the sequences onto your switcher, you must copy the Squeeze & Tease Wipes from the CD to a USB Drive. Then, you may recall them on your switcher control panel. Refer to the section "**Recalling an Entire Set of Sequences**" on page 17–37 for more information.

Understanding Squeeze & Tease MD Wipes

Squeeze & Tease Wipes are used to change the status of a Key (on air or off air) and can be done on Keys or Backgrounds. You can use the standard Squeeze & Tease Wipes provided with Squeeze & Tease or create your own customized wipe patterns. Customized Squeeze & Tease Wipes can be saved and recalled for later use.

Squeeze & Tease Wipes are built in much the same way as sequences, but with a few additional rules. To create a customized Squeeze & Tease Wipe, it is important that you have read and understood the section discussing sequences. Refer to the section "**Working with Sequences**" on page 17–20.

To build a Squeeze & Tease Wipe, you should start with a full screen, centered image. This is for creating the Squeeze & Tease Wipe only — when it is actually running, the image will not necessarily be full-screen or centered. What you are building is the pattern of effects that will be applied to the image. You create Keyframes for the effects you want and select a Squeeze & Tease MD Wipe modifier. The **Squeeze & Tease MD Wipe Modifier** feature determines the method used to bring the image off-air:

- **Knife Edge** — the image rotates so that it is edge-on to the viewer and cannot be seen
- **Slide Off** — the image moves off screen
- **Spin Off** — the image turns out of the picture
- **None** — a user-specified method such as distance or cropping

The following example shows a simple background wipe with three Keyframes. In this example:
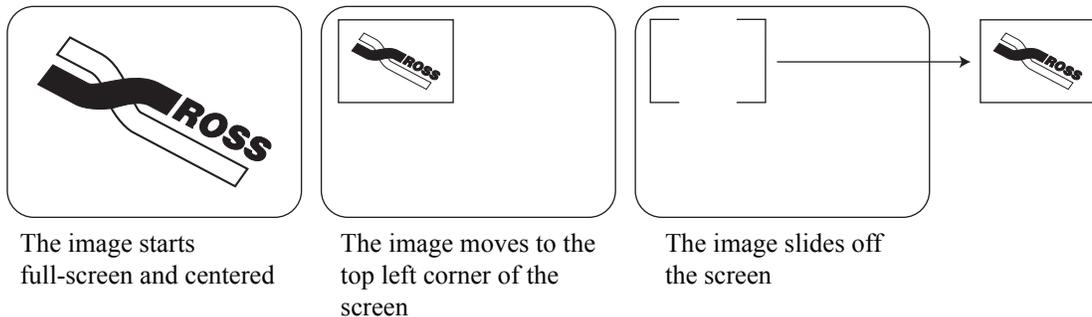
The image starts
full-screen and centered

The image moves to the
top left corner of the
screen

The image slides off
the screen

Example of a Background Wipe

As with sequences, you can set the type of motion for each Keyframe to indicate how that Keyframe should move to the next Keyframe:

- **Smooth motion** — The image accelerates slowly at the start and decelerates slowly at the end of the sequence. The motion between the Keyframes is a straight line.

- **Spline motion** — The image accelerates slowly at the start and decelerates slowly at the end of the sequence. The motion between the Keyframes is a user modifiable spline-curve that smoothly moves the image through each keyframe. Refer to the section "**Modifying Spline Motion**" on page 17–10 for information on modifying spline motion paths.

- **Linear motion** — The sequence moves from Keyframe to Keyframe at a constant velocity. This produces a step-motion effect.

You may want to experiment with different types of motion when creating your wipe to see which type will work best with the effect you are trying to produce.

You can also specify how quickly you want the image to move from Keyframe to Keyframe.

Note

When you are building a Squeeze & Tease Wipe, you use the same menus as when you are creating a sequence. Basically, you are creating a sequence, then running this as a Squeeze & Tease Wipe. If you are not familiar with these menus, refer to the section "**Working with Sequences**" on page 17–20 for detailed descriptions.

Creating a Squeeze & Tease Wipe

The process for building a Key Squeeze & Tease Wipe or a Background Squeeze & Tease Wipe is the same. To build a Squeeze & Tease Wipe, you create the pattern that the image will follow. When you run the Squeeze & Tease Wipe on a Key, the image follows the shape of the pattern you have created, so it does not matter where the Key is on the screen when you apply the wipe.

⚛	**Important**	Squeeze & Tease Wipe motions are relative by default. Images will move a relative amount based on your wipe keyframes so different sized images or images starting in different places will not follow identical paths for the same wipe.

Sometimes the image needs to travel further to get off screen than at other times (depending on its starting location). When you use a preset, for example, **Slide Off**, the system creates a virtual "last Keyframe" to put the image where it should be in order to move it off screen. Refer to the following example when creating your Squeeze & Tease wipe.

The key image starts in its current position

The key image moves to the top left corner of the screen

The key image slides off the screen
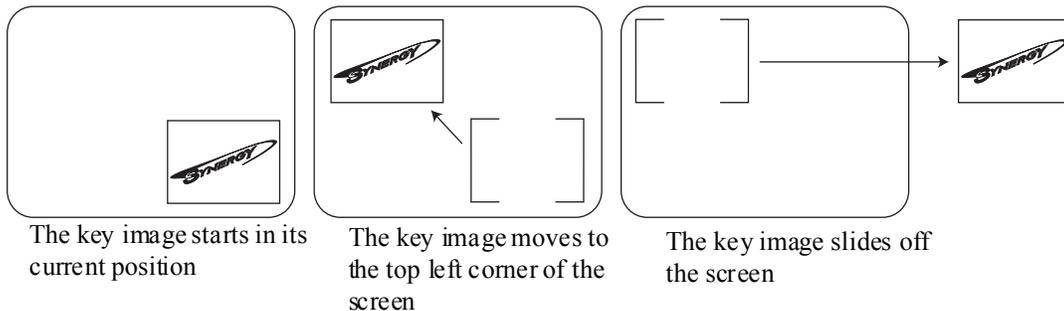
Creating a Squeeze & Tease Wipe

This section shows you how to create a simple wipe that starts with a Key in lower right corner of the screen. The Key is then moved to the upper left corner, followed by it sliding off the screen to the right.

Use the following procedure to create a Squeeze & Tease Wipe:

1. Create and insert the first Keyframe in the sequence, refer to the section "**Creating a Sequence**" on page 17–6 for details.

2. Adjust any parameters for the first Keyframe (duration or type of motion). The system fills in the frames between the Keyframes to create the effect.

✎	**Note**	When this is the first Keyframe in the sequence, delete the existing workspace if the timeline is not already empty.

3. Create the second Keyframe as follows:

- Press **SEL/DVE** and **POSN** to display the **Position Menu**.

- Use the knobs, or the **Positioner**, to move away from the viewer and into the top left-hand corner of the screen.

- Press **SEL/DVE** and **INS KF**.

  The Keyframe is added to the sequence. Adjust any parameters for the Keyframe (number of frames or type of motion). The system fills in the frames between the keyframes to create the effect.

4. Press **SEL/DVE** and **SEQ** to display the **Sequence Menu**.

5. Press **7. Wipe Modifier** to display the **Wipe Modifier Menu**. The Wipe Modifier selections are displayed at the bottom of the **Sequence Menu**.

```
Sequence                                    Key 1

0. Load/Save Sequence    5. Delete Keyframe
1. Previous Keyframe      6. Delete Workspace
2. Next Keyframe          7. Wipe Modifier
3. Insert Keyframe        8. Modify Keyframe
4. Overwrite Keyframe     9. Keyframe Parameters
_____

Keyframe: 1               Sequnc01
Wipe: Slide Off           Keyframes :  5
                          Duration :  00:04:22


MENU    100          10      1      SEL
Exit    Previous     Down    Up     Accept
```

Wipe Modifier Menu

6. Use the **HUE** knob to select the type of wipe that will be used to move the image off of the screen. The available wipes are as follows:

- **Knife Edge** — This wipe finishes with the image edge-on to the viewer.

- **Slide Off** — This wipe moves the image directly off the screen. This is done by changing the location of the image on the X-Axis and/or the Y-Axis. This is the default wipe.

- **Spin Off** — This wipe rotates the image off the screen. The rotation between the second-last Keyframe and the final Keyframe determines the direction and amount of rotation.

- **Dissolve** — This wipe dissolves the image out of view by taking on a transparency of 100%. Use the **Dissolve At** knob to indicate where in the timeline you want the dissolve to begin, for example, set **Dissolve At** to 75% to begin the dissolve 75% of the way through the wipe.

- **None** — This wipe takes the image off the screen using a parameter other than X or Y position or rotation. When you use the **None** modifier, you must set the parameters so that the image will end off screen no matter what its starting position.

  To use this wipe, select **None**, then create a Keyframe where the image is off the screen. The most common ways to achieve this are as follows:

  ~ Adjusting the Z location so that the image appears to move away from the viewer until it disappears (positive Z location).

  ~ Adjusting the Z location so that the image appears to move toward the viewer until it disappears (negative Z location).

~ Cropping the image horizontally, vertically, or both until it appears to disappear from view.

	Note	When you use the **None** modifier, the system does not compensate for the starting position of the image when the wipe is applied. It runs the pattern exactly as it was set up.

Sometimes the image needs to travel further to get off screen than at other times (depending on its starting location). When you use a preset, for example, **Slide Off**, the system creates a virtual "last Keyframe" to put the image where it should be in order to move it off screen.

7. Save your changes as follows:

   • Press **0. Load/Save Seq.** to display the **Load/Save Sequence Menu**.
   • Use the knobs to select a position in the list.
   • Press **1. Save Sequence** to save the wipe.

This completes the procedure to create a Squeeze & Tease Wipe.

The system does not differentiate between sequence memories and wipe memories. It is suggested that you give each wipe a unique descriptive name to make it easy to identify. Refer to the section "**Renaming a Sequence**" on page 17–21 for information on renaming sequences.

	Operating Tip	Like sequences, Squeeze & Tease Wipes can contain **Holds** that pause playback until you press the **AUTO TRANS** button. Refer to the section "**Adding a Hold to a Sequence**" on page 17–18 for information on inserting a **Hold** into your wipe.

Loading a Squeeze & Tease Wipe

Use the following procedure to load any of the available Squeeze & Tease Wipes:

1. Navigate to the **Sequence Menu** as follows:

   • Press **FLY KEY** in the **Effects Keyers Group** to display the **S&T MD Menu**.
   • Press **2. Sequences** to display the **Sequence Menu**.

```
Sequence                              Key 1

0. Load/Save Sequence   5. Delete Keyframe
1. Previous Keyframe     6. Delete Workspace
2. Next Keyframe         7. Wipe Modifier
3. Insert Keyframe       8. Reserved
4. Overwrite Keyframe    9. Keyframe Parameters
                            **EMPTY**




MENU    100       10      1     SEL
Exit    Previous  Down    Up    Accept
```

Sequence Menu

2. Press **0. Load/Save Sequence** to display the **Load/Save Sequence Menu**.

3. Use the knobs, or the positioner, to select the sequence from the list.

4. Press **0. Load Sequence**. The sequence appears in the workspace.

This completes the procedure to load any of the available Squeeze & Tease Wipes.

Running a Squeeze & Tease Wipe

When running a Squeeze & Tease Wipe transition, the system dynamically allocates channels to produce the appropriate effect. If there are not enough channels available to complete the Squeeze & Tease Wipe, a dissolve is performed. Once the Squeeze & Tease Wipe is complete, the internally allocated channels are freed for you to use.

Running a Squeeze & Tease Wipe

Use the following procedure to run a Squeeze & Tease Wipe:

1. Ensure the Squeeze & Tease Wipe is loaded. Refer to the section "**Loading a Squeeze & Tease Wipe**" on page 9–29 for more information.

2. Press the **WIPE** and **DVE** buttons at the same time.

3. Run the wipe using one of the following methods:

   • Press the **AUTO TRANS** button to run the Squeeze & Tease Wipe automatically.

   • Use the **Fader** to run it manually. Manually, the Squeeze & Tease Wipe always ends at the end of the Fader movement (up or down).
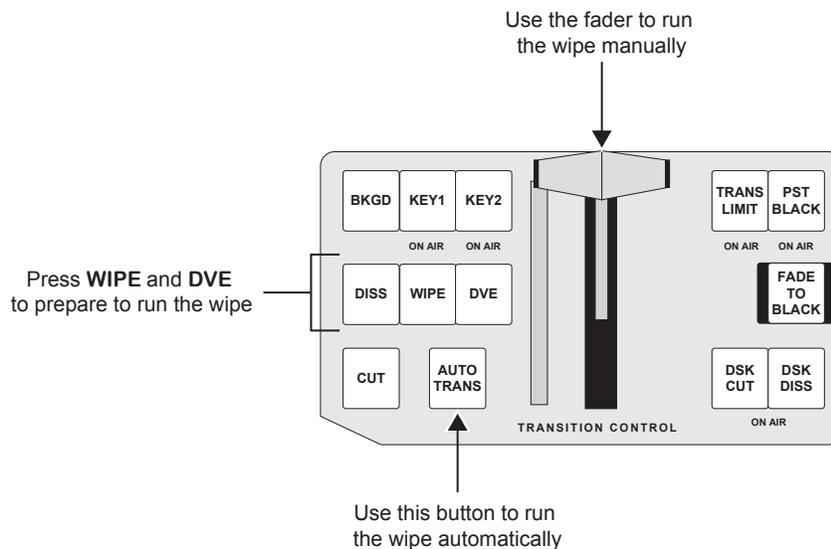
Running the Squeeze & Tease Wipe

This competes the procedure for running a sequence. In the last Keyframe, the image will be off screen. At the end of the Squeeze & Tease Wipe, the Key cuts off-air.

Notes on Running a Squeeze & Tease Wipe

Note the following points when running a Squeeze & Tease Wipe:

• You can change the rate at which the Squeeze & Tease Wipe runs. Refer to the section "**Running a Sequence**" on page 17–23 for more information.

• You can Squeeze & Tease Wipe a Key whether the **FLY KEY** is on or not so you do not have to remember to press **FLY KEY** before performing a wipe.

Storing Sequences and Wipes

For archive purposes, and to keep safe backup copies of your sequences and Squeeze & Tease Wipes, you should store your entire set of sequences and Squeeze & Tease Wipes to the switcher's hard drive or a USB Drive.

You can store the entire set of registers or you may store individual sequences, Squeeze & Tease Wipes and memories. Synergy files are designed in a proprietary compressed format that can only be read by a Synergy switcher. However, the files can be copied and saved on a computer.

	Note	Both sequences and Squeeze & Tease Wipes are stored as sequences in the system.

The following topics are discussed in this section:

- Storing Squeeze & Tease Sequences
- Storing Individual Squeeze & Tease Sequences

Storing Squeeze & Tease Sequences

An entire set of sequences are stored as the single file **ST3DSEQ.TZA**.

Use the following procedure to store the entire set of sequence registers as one file:

1. If you are using a USB Drive, plug it into the USB port on the front of the switcher. Wait at least 5 seconds to allow the system to recognize the USB Drive.

2. Navigate to the **Dest/Source Menu** as follows:

   - Press **MENU** to display the **Main Menu**.
   - Press **5. Disk** to display the **Disk Menu**.
   - Press **0. Dest/Source** to display the **Dest/Source Menu**.

```
Dest/Source
0. Dest/Source        Hard Drive
1. Set Names          SETUP(00)




MENU    100       10     1     SEL
Exit    Previous  Down   Up    Accept
```

Dest/Source Menu

3. Select the storage device you want to use to store your set of sequences to as follows:

   - Press **0. Dest/Source**.
   - Use the ⬇ and ⬆ buttons to select the storage device you want to use. You can select between the following:
     - ~ **Hard Drive** — This option will allow you to store the files on the internal hard drive. There are 100 (**00** through **99**) setups available to store files.
     - ~ **USB** — This option will allow you to recall the files from a USB Drive. You must wait 5 seconds after inserting the USB Drive into the USB Port before

you can save or recall files. Refer to the section "**Notes on Using a USB Drive**" on page 9–16 for further information.

4. Select a setup, or location, for the storage of the files as follows:

   • Press **1. Set Names**.

   • Use the ⬇ and ⬆ buttons to select the **Setup** you want to use. You can select from **SETUP (00)** to **SETUP (99)**.

5. Press **BACK** to display the **Disk Menu**.

6. Press **1. Store** to display the **Store Menu**.

```
Store

0. Reserved              5. Store Indiv 3D Wipe
1. Store Memories        6. Store Bus Map
2. Store Personality
3. Store Installation
4. Store 3D Wipes

        Hard Drive: SETUP(00)




MENU   100        10     1     SEL
Exit   Previous   Down   Up    Accept
```

Store Menu

7. Press **4. Store 3D Wipes**.

⚠ **Caution** | Do NOT remove a USB Drive from the switcher before the LED on the USB port goes out. Doing so may destroy the data on your USB Drive, as well as the data on the next one you insert into the USB port.

8. Confirm saving the wipes to a storage device or cancel the procedure as follows:

   • Press **0. Yes** to save the wipes.

   • Press **1. No** to exit the menus, without saving the wipes to a storage device.

This completes the procedure to store the entire set of sequence registers as one file.

Storing Individual Squeeze & Tease Sequences

When you save a specific 3D sequence, it is saved as a single file named **STSEQ##.TZA**. The **##** is the number of the sequence you have selected to store to a storage device.

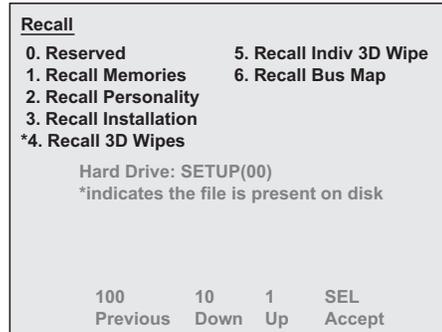Use the following procedure to store a specific 3D sequence:

1. If you are using a USB Drive, plug it into the USB port on the front of the switcher. Wait at least 5 seconds to allow the system to recognize the USB Drive.

2. Navigate to the **Dest/Source Menu** as follows:

   • Press **MENU** to display the **Main Menu**.

   • Press **5. Disk** to display the **Disk Menu**.

   • Press **0. Dest/Source** to display the **Dest/Source Menu**.

```
Dest/Source

0. Dest/Source        Hard Drive
1. Set Names          SETUP(00)




MENU    100       10     1     SEL
Exit    Previous  Down   Up    Accept
```

Dest/Source Menu

3. Select the storage device you want to use to store your set of sequences to as follows:

    • Press **0. Dest/Source**.

    • Use the ⬇ and ⬆ buttons to select the storage device you want to use. You can select between the following:

        ~ **Hard Drive** — This option will allow you to store the files on the internal hard drive. There are 100 (**00** through **99**) setups available to store files.

        ~ **USB** — This option will allow you to recall the files from a USB Drive. You must wait 5 seconds after inserting the USB Drive into the USB Port before you can save or recall files. Refer to the section "**Notes on Using a USB Drive**" on page 9–16 for further information.

4. Select a setup, or location, for the storage of the files as follows:

    • Press **1. Set Names**.

    • Use the ⬇ and ⬆ buttons to select the **Setup** you want to use. You can select from **SETUP (00)** to **SETUP (99)**.

5. Press **BACK** to display the **Disk Menu**.

6. Press **1. Store** to display the **Store Menu**.

```
Store

0. Reserved              5. Store Indiv 3D Wipe
1. Store Memories        6. Store Bus Map
2. Store Personality
3. Store Installation
4. Store 3D Wipes

        Hard Drive: SETUP(00)




MENU    100       10     1     SEL
Exit    Previous  Down   Up    Accept
```

Store Menu

7. Press **5. Store Indiv. 3D Wipe** to display the **Store Individual Items Menu**.

8. Select the sequence and the location to save it to as follows:

    • Use the **HUE** knob to select the switcher sequence number that you want to save to the storage device.

    • Use the **SAT** knob to select the storage device location for the sequence you want to save.

9. Press **SEL** in the **System Control Group**.

⚠ **Caution** | Do NOT remove a USB Drive from the switcher before the LED on the USB port goes out. Doing so may destroy the data on your USB Drive, as well as the data on the next one you insert into the USB port.

This completes the procedure to save a specific 3D sequence.

Recalling Sequences and Squeeze & Tease Wipes

Use the following procedure to recall sequences and Squeeze & Tease Wipes from the switcher hard drive or a USB Drive. Both sequences and Squeeze & Tease Wipes are stored as sequences in the system. Sequence registers are in the file **ST3DSEQ.TZA**.

⚛	**Important**	If you are going to recall the entire set of sequence registers, ensure that your *current* on-line set of sequence registers is stored on the switcher hard drive or a USB Drive. If you have *not* stored them, they will be *overwritten* when you recall a new file.

You can recall the entire set of registers or you can recall individual sequences and wipes, as desired.

Recalling an Entire Set of Sequences

Use the following procedure to recall an entire set of sequences:

1. If you are using a USB Drive, plug it into the USB port on the front of the switcher. Wait at least 5 seconds to allow the system to recognize the USB Drive.

2. Navigate to the **Dest/Source Menu** as follows:

    *   Press **MENU** to display the **Main Menu**.
    *   Press **5. Disk** to display the **Disk Menu**.
    *   Press **0. Dest/Source** to display the **Dest/Source Menu**.

```
Dest/Source
0. Dest/Source          Hard Drive
1. Set Names            SETUP(00)




MENU   100        10     1     SEL
Exit   Previous   Down   Up    Accept
```
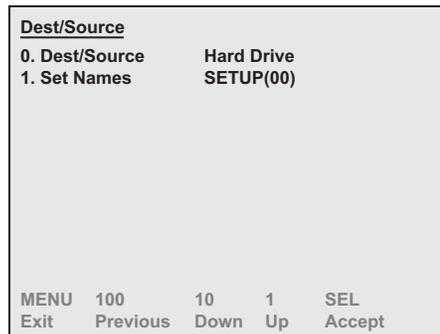
Dest/Source Menu

3. Select the storage device you want to recall your set of sequences from as follows:

    *   Press **0. Dest/Source**.
    *   Use the ⬇ and ⬆ buttons to select the storage device you want to use. You can select between the following:
        ~   **Hard Drive** — This option will allow you to recall the files on the internal hard drive.
        ~   **USB** — This option will allow you to recall the files from a USB Drive. You must wait 5 seconds after inserting the USB Drive into the USB Port before you can recall files. Refer to the section "**Notes on Using a USB Drive**" on page 9–16 for further information.

4. Select a setup, or location, of the files as follows:

- Press **1. Set Names**.
- Use the ↓ and ↑ buttons to select the **Setup** you want to use.

5. Press **BACK** to display the **Disk Menu**.

6. Press **2. Recall** to display the **Recall Menu**.

<div style="border:1px solid #000; padding:10px;">

Recall

0. Reserved	**5. Recall Indiv 3D Wipe**
1. Recall Memories	**6. Recall Bus Map**
2. Recall Personality	
3. Recall Installation	
*4. Recall 3D Wipes	

Hard Drive: SETUP(00)
*indicates the file is present on disk

100	10	1	SEL
Previous	Down	Up	Accept

</div>

Recall Menu

7. Press **4. Recall 3D Wipes**.

8. Confirm recalling the 3D Wipes to a storage device as follows:

- Press **0. Yes** to recall the 3D Wipes.
- Press **1. No** to exit the menus, without recalling the 3D Wipes.

This completes the procedure to recall an entire set of 3D Wipes.

Recalling a Specific Squeeze & Tease Wipe

Use the following procedure to recall a specific Squeeze & Tease Wipe:

1. Navigate to the **Dest/Source Menu** as follows:

- Press **MENU** to display the **Main Menu**.
- Press **5. Disk** to display the **Disk Menu**.
- Press **0. Dest/Source** to display the **Dest/Source Menu**.

<div style="border:1px solid #000; padding:10px;">

Dest/Source

0. Dest/Source	**Hard Drive**
1. Set Names	**SETUP(00)**

MENU	100	10	1	SEL
Exit	Previous	Down	Up	Accept

</div>
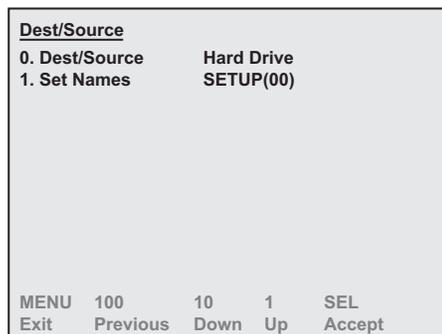
Dest/Source Menu

2. Select the storage device you want to recall your Wipe from as follows:

*   Press **0. Dest/Source**.

*   Use the ⬇ and ⬆ buttons to select the storage device you want to use. You can select between the following:

    ~ **Hard Drive** — This option will allow you to recall the files on the internal hard drive.

    ~ **USB** — This option will allow you to recall the files from a USB Drive. You must wait 5 seconds after inserting the USB Drive into the USB Port before you can recall files. Refer to the section "**Notes on Using a USB Drive**" on page 9–16 for further information.

3. Select the setup, or location, of the files as follows:

*   Press **1. Set Names**.

*   Use the ⬇ and ⬆ buttons to select the **Setup**.

4. Press **BACK** to display the **Disk Menu**.

5. Press **2. Recall** to display the **Recall Menu**.

```
Recall

 0. Reserved              *5. Recall Indiv 3D Wipe
 1. Recall Memories        6. Recall Bus Map
 2. Recall Personality
 3. Recall Installation
*4. Recall 3D Wipes

         Hard Drive: SETUP(00)
         *indicates the file is present on disk




    100        10     1      SEL
    Previous   Down   Up     Accept
```
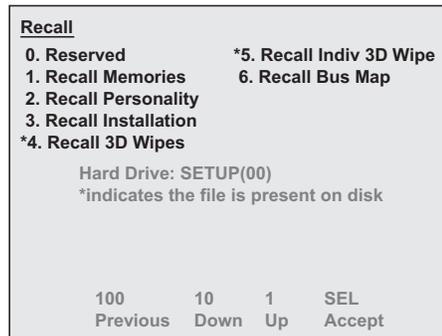
Recall Menu

6. Press **5. Recall Indiv 3D Wipe** to recall a specific **Squeeze & Tease Wipe**.

7. Confirm the recall as follows:

*   Press **0. Yes** to recall the selected category of registers.

*   Press **1. No** to exit the menus, without making any changes. The system returns to the previously stored settings.

This completes the procedure for recalling a specific 3D Wipe.

Lighting

In This Chapter

This chapter provides instructions for adding lighting effects to keys in **Squeeze & Tease MD**. These lighting effects are based on a model that contains *directional* light and *ambient* light.

Directional light emits light in all directions, much like a light bulb. The amount of light on the image decreases with the distance the light is from the image. It can be used to define sharp edges and deepen shadows in your image, to give an appearance of depth. You can adjust the position and intensity of the directional light to vary the appearance of your image.

Ambient light is used to set the lighting level for the entire image. It illuminates the image with a flat, uniform light, like daylight in the real world. The lighting model enables you to control the level of ambient light for different overall effects.

You can set the *Luminance Thresholds* for the maximum and minimum light levels to fine-tune your lighting.

Lighting parameters can be individually set or a number of presets may be used to quickly create lighting effects.

The following topics are discussed in this chapter:

- Using the Lighting Menus
- Lighting Setup
- Working with Multiple Channels

Note   The instructions in this chapter use the hotkey method to access the main functions of **Squeeze & Tease MD**. You may also use the menu system to access these functions.

Using the Lighting Menus

Use the following procedure to access the **Lighting Menus**:

1. Press **FLY KEY** in the **Effects Keyers Group**.

2. Press **SEL/DVE** + **Light** to display the **Lighting Menu**.

```
Lighting                    12          Key 1
0. Lighting Setup       None
1. Position
2. Presets
3. Auto Follow   On
4. Luminance Clipping
```
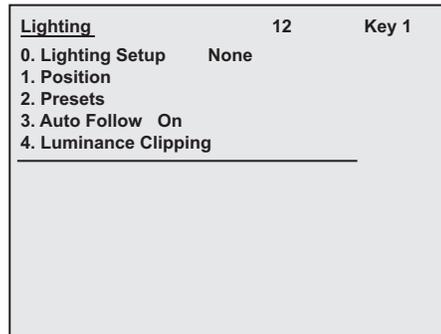
Lighting Menu

3. To access each menu item, use the pattern buttons in the **Effects Control Group**.

4. To adjust **Lighting** parameters, use the positioner or **Mattes Color** knobs.

This completes the procedure to access the **Lighting Menu**.

Lighting Setup

This section describes how to adjust the following parameters:

- Lighting Model
- Position
- Presets
- Auto Follow
- Luminance Clipping

Lighting Model

Use the following procedure to select the type of lighting:

1. Navigate to the **Lighting Menu** as follows:

   - Press **FLY KEY** in the **Effects Keyers Group**.
   - Press **SEL/DVE**+ **Light** to display the **Lighting Menu**.

2. Set the **Lighting Setup** option by toggling **0. Lighting Setup** to one of the following:

   - **None** — Use this option to turn the lighting model off. If the source is set to **None**, the lighting parameters are not enabled.
   - **Natural** — Use this option to enable the lighting model.

```
Lighting                  12        Key 1
0. Lighting Setup    Natural
1. Position
2. Presets
3. Auto Follow   On
4. Luminance Clipping
_____

 Lighting Setup

   Intensity: 31.9%
   Ambient: 55.0%


Use positioner or Hue, Sat, Lum to modify
```
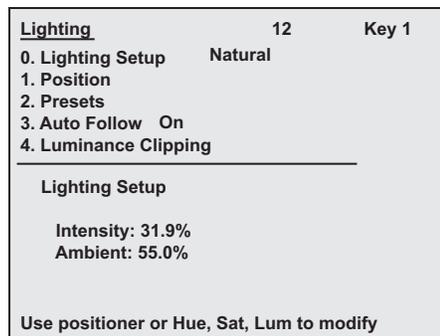
Lighting Setup — Lighting Menu

3. Adjust the lighting using the following knobs:

   - Use the **HUE** knob, or move the **Positioner** *left* and *right*, to adjust the intensity of the directional light.
   - Use or **SAT** knob, or move the **Positioner** *up* and *down*, to adjust the ambient light level. For increased shadows and high contrast, use a low Ambient light level.

✔ **Operating Tip**

> To give the image a more "flattened" effect, increase the Ambient light level. To rely exclusively on directional light, set the Ambient light to zero.

This completes the procedure to select the type of lighting.

Position

You can position the light anywhere in 3D space, including locations in front of or behind the image. The values for each parameter are displayed in the lower half of the menu.

Use the following procedure to adjust the position of the directional light:

1. Navigate to the **Lighting Menu** as follows:

    *   Press **FLY KEY** in the **Effects Keyers Group**.

    *   Press **SEL/DVE**+ **Light** to display the **Lighting Menu**.

2. Press **1. Position** to display the **Position of Directional Light Menu**.

```
Lighting                        12        Key 1
0. Lighting Setup     Natural
1. Position
2. Presets
3. Auto Follow   On
4. Luminance Clipping
_____

    Position

    X:        0.000
    Y:        0.000
    Z:        1.000


Use positioner or Hue, Sat, Lum to modify
```

Position — Lighting Menu

3. Adjust the lights X, Y, and Z co-ordinates as follows:

    *   Use the **HUE** knob, or move the **Positioner** *left* and *right*, to control the horizontal position of the light on screen.

    *   Use the **SAT** knob, or move the **Positioner** *up* and *down*, to control the vertical position of the light on screen.

    *   Use the **LUM** knob, or move the **Positioner** *clockwise* and *counter-clockwise*, to change the position of the light on the Z-Axis.

This completes the procedure to adjust the position of the directional light.

Presets

Create a directional light by selecting one of the preset directional lights. Presets include predefined directional light positions, and Intensity and Ambient-level presets, such as Dim or Ambient Only.

Use the following procedure to use one of the lighting presets:

1. Navigate to the **Lighting Menu** as follows:

    *   Press **FLY KEY** in the **Effects Keyers Group**.

    *   Press **SEL/DVE**+ **Light** to display the **Lighting Menu**.

2. Press **2. Presets** to display the **Presets Menu**.

```
Lighting                    12          Key 1
0. Lighting Setup      Natural
1. Position
2. Presets
3. Auto Follow    On
4. Luminance Clipping
                                    _____

   Presets          Custom




   Use x axis of positioner or Hue knob to scroll list
```
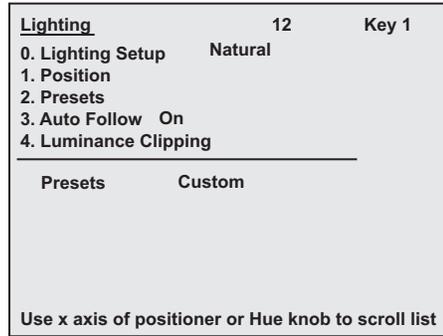
Presets — Lighting Menu

3. Use the **HUE** knob, or move the **Positioner** *left* and *right*, to select a preset as follows:

   - **Custom** — Use this preset to control the lighting parameters individually to create a custom effect. This is the default setting.

   - **Center** — Use this preset to create a light source centred directly above the key image. The light fades off towards the bottom of the image.

   - **Top Left** — Use this preset to create a light source above and to the left of the key image. The light fades off towards the bottom right corner of the image.

   - **Top Right** — Use this preset to create a light source above and to the right of the key image. The light fades off towards the bottom left corner of the image.

   - **Close** — Use this preset to create a light source centered above but quite close to the key image. This creates a brighter, washed-out effect.

   - **Dim** — Use this preset to create a low-intensity directional light with low ambient light.

   - **Ambient Only** — Use this preset to rely on ambient light only. This preset does not produce a lighting effect; it simply turns the lighting model on. It is often used with wipes and sequences.

This completes the procedure to apply a lighting preset.

Notes on Using Lighting Presets

Refer to the following notes when applying a lighting preset:

   - When creating a 3D sequence or wipe with lighting effects, use the **Ambient Only** preset on the first keyframe. This produces no noticeable lighting effect, but ensures that the lighting model is turned **On** – so that any lighting effects you define flow smoothly.

   - You can also start with one of the presets provided (for example, **Dim**, **Ambient Only**). Then press **2. Presets** and use the top knob to select the desired option.

   - When running wipes, set the lighting to **None** before you run the wipe if you want to use the lighting effects you applied when you created the wipe. Setting the lighting to **Natural** will override any lighting effects in the wipe itself.

Auto Follow

The Auto Follow feature allows you to set how you want the light to move with the image when you are using a sequence or wipe.

Use the following procedure to enable the Auto Follow feature:

1. Navigate to the **Lighting Menu** as follows:

   • Press **FLY KEY** in the **Effects Keyers Group**.

   • Press **SEL/DVE**+ **Light** to display the **Lighting Menu**.

2. Press **3. Auto Follow** to display the **Auto Follow Menu**.

```
Lighting                     12        Key 1
0. Lighting Setup    Natural
1. Position
2. Presets
3. Auto Follow   On
4. Luminance Clipping



Use positioner or Hue, Sat, Lum to modify
```
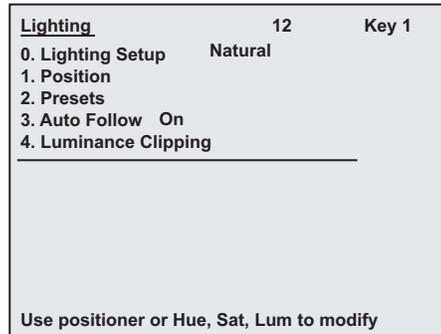
Auto Follow — Lighting Menu

3. Set the **Auto Follow** option by toggling **3. Auto Follow** to one of the following:

   • **On** — Use this option to have the light source keep its relative position, based on the center of the key. This helps to keep the lighting constant when moving an image in a sequence or wipe. If the image rotates, however, you will see the light move as the plane is rotated.

   • **Off** — Use this option to have the light source keeps to the position coordinates you have defined, regardless of the location of the image.

This completes the procedure to enable the Auto Follow feature.

Luminance Clipping

Minimum brightness is represented by **0.0%** and **100.0%** represents maximum brightness. For example, if you set the light to a high intensity, this may produce some washout on screen.

Luminance Clipping

In this instance, you would clip the maximum light to a lower level. If the image appears too dark, adjust the minimum light level to a higher setting.

Use the following procedure to clip the maximum light and minimum light levels of an image:

1. Navigate to the **Lighting Menu** as follows:

   • Press **FLY KEY** in the **Effects Keyers Group**.

   • Press **SEL/DVE**+ **Light** to display the **Lighting Menu**.

2. Press **4. Luminance Clipping** to display the **Luminance Clipping Menu**.

```
Lighting                    12          Key 1
0. Lighting Setup      Natural
1. Position
2. Presets
3. Auto Follow   On
4. Luminance Clipping
_____

  Luminance Clipping

    Min. Light: 10.0%
    Max. Light: 70.0%



Use positioner or Hue, Sat, Lum to modify
```
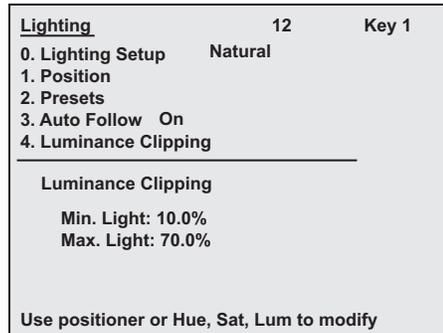
Luminance Clipping — Lighting Menu

3. Use the **Mattes Color** knobs to adjust luminance clipping. The values for each parameter are displayed in the lower half of the menu.

   • Use the **HUE** knob, or move the **Positioner** *left* and *right*, to adjust the minimum luminance threshold.

   • Use the **SAT** knob, or move the **Positioner** *up* and *down*, to adjust the maximum luminance threshold.

This completes the procedure to clip the maximum light and minimum light levels of an image.

Working with Multiple Channels

You can apply and adjust lighting effects on two channels at the same time.

Use the following procedure to apply and adjust lighting effects on multiple channels:

1. Navigate to the **Lighting Menu** as follows:

    • Press **FLY KEY** in the **Effects Keyers** group.

    • Press **SEL/DVE**+ **Light** to display the **Lighting Menu**.

2. Press **SEL/DVE** + **Ch1+2** to select both channels.

The following table shows how the Lighting effects behave when working with both channels selected.

| | Note | When working with two channels, a quick way to give any lighting parameter equal values is to adjust the value to 100.0% with both channels selected. Then you can adjust the parameter to the desired value for both channels. |

Lighting Effects Behavior

Lighting Parameter	Scenario	Result
Position	Coordinates are the same for both channels.	The values are displayed. The joystick or knobs can be used to position the light source for both channels.
	Channel 1 and **Channel 2** have different light source positions.	A message is displayed to indicate the values are different. The values for Channel 1 are displayed. The joystick or knobs can be used to change the position coordinates by an equal percentage.
Intensity and Ambient Light Levels	All values are the same for both channels.	The values are displayed. The knobs can be used to adjust the levels for both channels.
Luminance Clipping	All values are the same for both channels	The values are displayed. The knobs can be used to adjust the thresholds for both channels.

WARP Effects

In This Chapter

Squeeze & Tease MD provides a complete range of WARP effects such as page turn with adjustable curl, ripple, globe, splits, and many more. You can combine WARP with pre-processor effects like defocus or colorization to produce dramatic effects. WARP can be used with stills or live video. In order to use WARP effects, the Squeeze & Tease MD WARP option and WARP card(s) must be installed in your switcher.

Note Squeeze & Tease MD WARP cannot be used with a 1080p video format at this time.

This chapter provides detailed instructions for applying WARP effects to keys. The following topics are discussed in this chapter:

- Selecting and Working with WARP Effects

Also, the following WARP effects are discussed in this chapter:

• Film	• Page Roll
• Globe	• Pixie Dust
• Heart	• Ripple
• Lens Flare	• Split
• Melt	• Star
• Obscure	• Stretch

Selecting and Working with WARP Effects

The following sections describe each type of WARP and provide specific instructions for adjusting the WARP parameters. The instructions in this chapter use the hotkey method to access the main functions of **Squeeze & Tease MD**. You may also use the menu system to access these functions.

✓ **Operating Tip**

> When using a WARP effect as a wipe, you can apply it to a background or a key. You can use a WARP effect in a sequence and have the values interpolate between keyframes.

Use the following procedure to access the **WARP Menus**:

1. Press **FLY KEY** in the **Effects Keyers** group.

2. Press **SEL/DVE** + **WARP** to display the **S&T MD WARP Menu**.

⚠ **Important**

> When the **FLY KEY** is not enabled, an error message displays. You must first enable the **FLY KEY** before attempting to continue.

```
Warp                              Key 1
0. Category   WARP Off
1. Warp List  WARP Off




     Active Warp:   WARP Off


```
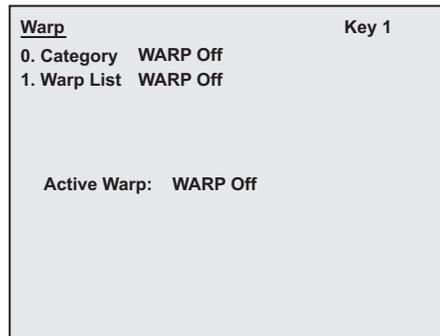
S&T MD — Default WARP Menu

3. Press **0. Category**.

4. Use the ⬆ and ⬇ buttons to select the desired WARP effect.

5. Press the right **SEL** button to display that WARP effects menu.

✓ **Operating Tip**

> If desired, you can use the **Positioner** to make general adjustments to a particular parameter, then use the **Matte Color** knobs for fine-tuning.
>
> When working with an image, each time you select a new type of WARP, the parameters return to their default values.

This completes the procedure for access the **WARP Menus**.

WARP Resources

A WARP card installed in your switcher provides a single WARP resource. WARP resources are used when applying WARP effects to three areas corresponding to the Background, Key 1, and Key 2 buses. One WARP resource is required to deliver a WARP effect in any of the three areas and only one WARP resource can be used in each area at a time. There is one notable exception: when a WARP is used as a wipe transition on the background bus and either or both Key 1 and Key 2, only a single WARP resource is used. This allows you to apply a WARP to a key and use a second WARP as a wipe transition on that key as long as the background is set to transition as well.

The table below illustrates various scenarios and the number of WARP resources required.

WARP Resources Used under Various Scenarios

Scenario	WARP Resources Required
Applying a WARP Effect to a key	1
Running a Sequence containing a WARP effect on a key	1
Running a Squeeze & Tease MD Wipe with a WARP effect on...	
• Background bus	1
• Background bus + Key 1 Bus	1
• Background bus + Key 2 Bus	1
• Background bus + Key 1 and Key 2 Bus	1
• Key 1 Bus	1
• Key 2 Bus	1
• Key 1 + Key 2 Bus	2

Freeing WARP Resources

If you try to use a WARP effect when all the WARP resources are in use, a warning message appears on your menu allowing you to choose how the resource conflict is resolved.


```
Warning!                           Key 1

Warps are currently in use:
Warp 1 - Used by MLE 1 - Key 1
Warp 2 - Used by MLE 1 - Key 2

Do you wish to free a Warp resource?

0. Warp 1                  5. Cancel
1. Warp 2
```
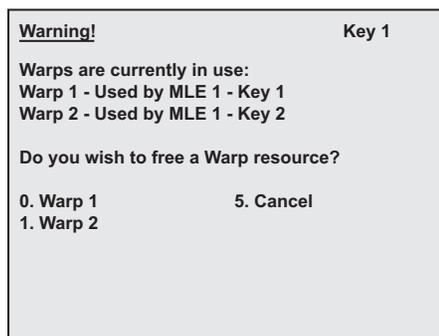
Freeing Resources

You have the following options:

- **0. WARP 1** — Frees the first WARP resource from whatever effect it is being used for and applies it to the new effect.

- **5. Cancel** — Does not free either WARP resource. The new effect is not performed.

If the WARP effect you are trying to apply requires two WARP resources, the following pop-up message displays:

```
There are not enough channels available to perform a Dual Layer WARP.
```

You must free resources manually in order to create your dual layer WARP effect.

Freeing WARP resources has different effects depending on what the resource is being used for. If the WARP resource is being used as part of a sequence, the sequence is unloaded when the WARP resource is freed. If the resource is being used as a wipe transition, the transition is switched to a dissolve when the WARP resources is freed.

Once sufficient WARP resources are freed, the new WARP effect is retried unless it is being initiated as a result of one of the following:

- Memory Register Recall
- Key Copy or Swap

In these cases, the action proceeds without the associated WARP effect applied.

WARP Effects

This section describes each WARP effect available for use. Each effect has specific settings which you can modify to change the appearance of the effect. Experiment with different settings to see how they affect the appearance of each WARP effect.

⚠✱ **Important** | When working with Squeeze & Tease WARP effects, keep in mind that the parameters are applied based on the whole screen area (as if the image were full screen). If your key is not at full screen, the WARP effect may not appear as expected or desired.

For each WARP presented here:

- Use the **Pattern Buttons** in the **Effects Control Group** to access each menu item.

- Use the **Mattes Color** knobs to adjust WARP parameters

Film

This WARP has the following parameters that can be adjusted:

- **Film** — This parameter selects from a variety of film presets, add noises, and modify the resolution of the effect.

- **Defects** — This parameter adjusts the type and number of defects to the effect.

- **Light** — This parameter adjusts the lighting of the effect.

- **Color** — This parameter adjusts the color of the effect.

- **Sensitivity** — This parameter adjusts the color and luminance of the effect.

```
Warp                                      Key 1
0. Category   Favorites    5. Film
1. Warp List  Film         6. Defects
                           7. Light
                           8. Color
                           9. Sensitivity


   Active Warp:   Film
```

WARP Menu — Film

Film Parameters

⚠ **Important** | The Film WARP will only be visible, and its parameters adjustable, after selecting a preset with the **Film Presets** (**HUE**) knob.

The Film parameters are accessed by pressing **5. Film** on the **Film WARP Menu**.

```
Warp                                    Key 1
0. Category    Favorites    5. Film
1. Warp List   Film         6. Defects
                            7. Light
                            8. Color
                            9. Sensitivity
Film:
           Film Presets: None
           Noise: 0.0%
           Resolution: 0.0%



Use positioner or Hue, Sat, Lum to modify
```

Film WARP Menu — Film Parameters

- Use the **HUE** knob to select the effect from the following list of Film Presets:

  - None
  - Late 1800's
  - 1900's
  - 1910's
  - 1920's
  - Early Color

  - Old Color
  - Pale Color
  - Oversaturated
  - Color Fade
  - Amateur
  - VHS

- Use the **SAT** knob to adjust the amount of noise added to the effect.

- Use the **LUM** knob to adjust the resolution the effect.

Defects Parameters

The Defects parameters are accessed by pressing **6. Defects** on the **Film WARP Menu**.

```
Warp                                    Key 1
0. Category    Favorites    5. Film
1. Warp List   Film         6. Defects
                            7. Light
                            8. Color
                            9. Sensitivity
Defects:
           Line Scratch: 0.0%
           Rand. Scratch: 0.0%
           Film Jump: 0.0%


Use positioner or Hue, Sat, Lum to modify
```

Film WARP Menu — Defects Parameters

- Use the **HUE** knob to modify the number of scratch lines in the effect.

- Use the **SAT** knob to modify the number of random scratches in the effect.

- Use the **LUM** knob to modify the number of times the film will jump in the effect.

Light Parameters

The Light parameters are accessed by pressing **7. Light** on the **Film WARP Menu**.

```
Warp                                    Key 1
0. Category   Favorites    5. Film
1. Warp List  Film         6. Defects
                           7. Light
                           8. Color
                           9. Sensitivity
Light:
           Flash: 0.0%
           Intensity: 0.0%
           Radius: 0.0%


Use positioner or Hue, Sat, Lum to modify
```
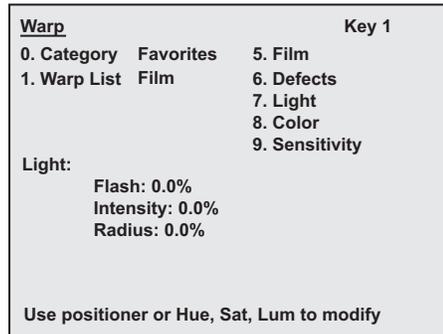
Film WARP Menu — Light Parameters

- Use the **HUE** knob to modify the number of times the effect flashes.

- Use the **SAT** knob to modify the intensity of light on the effect.

- Use the **LUM** knob to modify the radius of the effect.

Color Parameters

The Color parameters are accessed by pressing **8. Color** on the **Film WARP Menu**.

```
Warp                                    Key 1
0. Category   Favorites    5. Film
1. Warp List  Film         6. Defects
                           7. Light
                           8. Color
                           9. Sensitivity
Color:
           Hue: 0.0%
           Saturation: 0.0%
           Luminance: 0.0%


Use positioner or Hue, Sat, Lum to modify
```
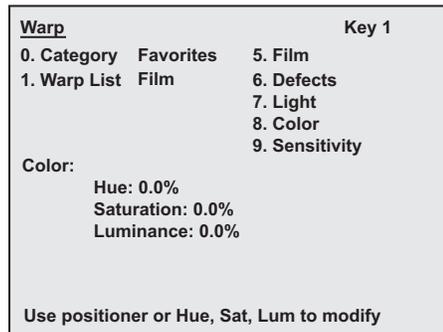
Film WARP Menu — Color Parameters

- Use the **HUE** knob to modify the hue of the effect.

- Use the **SAT** knob to modify the saturation of color on the effect.

- Use the **LUM** knob to modify the luminance of the effect.

Sensitivity Parameters

The sensitivity parameters are accessed by pressing **9. Sensitivity** on the **Film WARP Menu**.

```
Warp                                    Key 1

0. Category    Favorites    5. Film
1. Warp List   Film         6. Defects
                            7. Light
                            8. Color
                            9. Sensitivity
Sensitivity:
        Red: 0.000
        Blue: 0.000
        Luma Contrast: 0.0%



Use positioner or Hue, Sat, Lum to modify
```

Film WARP Menu — Sensitivity Parameters

- Use the **HUE** knob to adjust the amount of red in the effect.

- Use the **SAT** knob to adjust the amount of blue in the effect.

- Use the **LUM** knob to modify the luminance contrast in the effect.

Globe

This WARP has the following parameters that can be adjusted:

- **Rotation** — This parameter adjusts the rotation of the effect along either the X or Y-Axis to create the globe effect.

- **Position** — This parameter adjusts the position of the effect.

- **Movement** — This parameter adjusts the continuous rotation of the effect.

- **Lighting** — This parameter adjusts the lighting of the effect.

- **Light Pos.** — This parameter adjusts the position of the lighting effect.

```
Warp                                    Key 1

0. Category    Favorites    5. Rotation
1. Warp List   Globe        6. Position
                            7. Movement
                            8. Lighting
                            9. Light Pos.


 Active Warp:   Globe




```

WARP Menu — Globe

Rotation Parameters

The Rotation parameters are accessed by pressing **5. Rotation** on the **Globe WARP Menu**.

```
Warp                                    Key 1

0. Category   Favorites    5. Rotation
1. Warp List  Globe        6. Position
                           7. Movement
                           8. Lighting
                           9. Light Pos.

 Rotation:
         X-Rot: 0.000
         Y-Rot: 0.000
         Creation: 0.0%



Use positioner or Hue, Sat, Lum to modify
```

Globe WARP Menu — Rotation Parameters

- • Use the **HUE** knob to rotate the effect along the X-Axis.

- • Use the **SAT** knob to rotate the effect along the Y-Axis.

- • Use the **LUM** knob to create the effect. The Globe effect must be completely created before any of the other parameters will function.

Position Parameters

The Position parameters are accessed by pressing **6. Position** on the **Globe WARP Menu**.

```
Warp                                    Key 1

0. Category   Favorites    5. Rotation
1. Warp List  Globe        6. Position
                           7. Movement
                           8. Lighting
                           9. Light Pos.

 Position:
         X-Pos: 51.0%
         Y-Pos: 51.7%
         Z-Pos: 50.0%



Use positioner or Hue, Sat, Lum to modify
```

Globe WARP Menu — Position Parameters

- • Use the **HUE** knob to move the effect along the X-Axis.

- • Use the **SAT** knob to move the effect along the Y-Axis.

✎	**Note**	The center point of the screen is 50.00%.

- • Use the bottom **LUM** knob to move the effect around the Z-Axis.

Movement Parameters

The Movement parameters are accessed by pressing **7. Movement** on the **Globe WARP Menu**.

```
Warp                              Key 1
0. Category    Favorites    5. Rotation
1. Warp List   Globe        6. Position
                            7. Movement
                            8. Lighting
                            9. Light Pos.
 Movement:
          X-Rate: 0.000
          Y-Rate: 0.000




Use positioner or Hue, Sat, Lum to modify
```

Globe WARP Menu — Movement Parameters

- Use the **HUE** knob to set the rate of continuous rotation around the Y-Axis (horizontal rotation).

- Use the **SAT** knob to set the rate of continuous rotation around the X-Axis (vertical rotation).

	Note	Values of 0.000 mean no continuous rotation is applied.

Lighting Parameters

The Lighting parameters are accessed by pressing **8. Lighting** on the **Globe WARP Menu**.

```
Warp                              Key 1
0. Category    Favorites    5. Rotation
1. Warp List   Globe        6. Position
                            7. Movement
                            8. Lighting
                            9. Light Pos.
 Lighting:
          Highlight: 25.0%
          Shadow: 100.0%
          Type: None



Use positioner or Hue, Sat, Lum to modify
```

Globe WARP Menu — Lighting Parameters

- Use the **HUE** knob to adjust the brightness and visibility of the lighting highlight. Increasing values produces a brighter highlight.

- Use the **SAT** knob to adjust the shadow effect on the globe. Increasing values cause the areas of the globe not lit by the light source to appear darker.

- Use the **LUM** knob to select the type of light source:

  ~ **None** – Use this option to disable the light source. Flat lighting is used.

  ~ **Natural** – Use this option to apply a soft, natural-looking light source.

  ~ **White** – Use this option to apply a harsh, white light source.

Lighting Position Parameters

The Lighting Position parameters are accessed by pressing **9. Lighting Pos.** on the **Globe WARP Menu**.

```
Warp                                    Key 1

0. Category    Favorites    5. Rotation
1. Warp List   Globe        6. Position
                            7. Movement
                            8. Lighting
                            9. Light Pos.

 Light Pos.:
            Gleam Size: 2.5%
            Z-Rot: 0.125
            X-Y Rot: 0.625




Use positioner or Hue, Sat, Lum to modify
```

Globe WARP Menu — Lighting Position Parameters

- Use the **HUE** knob to adjust the size of the gleam effect produced by the simulated light source.

- Use the **SAT** knob to rotate the simulated light source along the Z-Axis.

- Use the **LUM** knob to rotate the simulated light source along the X and Y-Axis.

Heart

This WARP has the following parameters that can be adjusted:

- **Position** — This parameter adjusts the position and size of the effect.

- **Rotation** — This parameter adjusts the rotation of the effect along either the X, Y or Z Axis.

- **Border** — This parameter adjusts the border size.

- **Border Color** — This parameter adjusts the luminance, saturation and hue of the border.

- **Movement** — This parameter adjusts the rotation along the X, Y or Z Axis.

```
Warp                                    Key 1

0. Category    Favorites    5. Position
1. Warp List   Heart        6. Rotation
                            7. Border
                            8. Border Color
                            9. Movement

 Active Warp:   Heart
```

WARP Menu — Heart

Position Parameters

The Position parameters are accessed by pressing **5. Position** on the **Heart WARP Menu**.

```
Warp                                    Key 1
0. Category    Favorites    5. Position
1. Warp List   Heart        6. Rotation
                            7. Border
                            8. Border Color
                            9. Movement


   Active Warp:    Heart
```

Heart WARP Menu— Position Parameters

- Use the **HUE** knob to position the center point of the heart along the X-Axis.

- Use the **SAT** knob to position the center point of the heart along the Y-Axis.

- Use the **LUM** knob to create and change the size of the heart.

Rotation Parameters

The Rotation parameters are accessed by pressing **6. Rotation** on the **Heart WARP Menu**.

```
Warp                                    Key 1
0. Category    Favorites    5. Position
1. Warp List   Heart        6. Rotation
                            7. Border
                            8. Border Color
                            9. Movement
 Rotation:
           X-Rotation: 0.000
           Y-Rotation: 0.000
           Z-Rotation: 0.000


Use positioner or Hue, Sat, Lum to modify
```

Heart WARP Menu — Rotation Parameters

- Use the **HUE** knob to adjust the direction and number of rotations along the X-Axis.

- Use the **SAT** knob to adjust the direction and number of rotations along the Y-Axis.

- Use the **LUM** knob to adjust the direction and number of rotations along the Z-Axis.

Border Parameters

The Border parameters are accessed by pressing **7. Border** on the **Heart WARP Menu**.

```
Warp                              Key 1
0. Category    Favorites    5. Position
1. Warp List   Heart        6. Rotation
                            7. Border
                            8. Border Color
                            9. Movement
 Border:
          Size: 50




Use positioner or Hue, Sat, Lum to modify
```

Heart WARP Menu — Border Parameters

- Use the **LUM** knob to adjust the size of the border.

Border Color Parameters

The Border Color parameters are accessed by pressing **8. Border Color** on the **Heart WARP Menu**.

```
Warp                              Key 1
0. Category    Favorites    5. Position
1. Warp List   Heart        6. Rotation
                            7. Border
                            8. Border Color
                            9. Movement
 Border Color:
          Hue: 0.0%
          Saturation: 100.0%
          Luminance: 100.0%



Use positioner or Hue, Sat, Lum to modify
```

Heart WARP Menu — Border Color Parameters

- Use the **HUE** knob to adjust the hue of the border color.
- Use the **SAT** knob to adjust the saturation of the border color.
- Use the **LUM** knob to adjust the luminance of the border color.

Movement Parameters

The Movement parameters are accessed by pressing **9. Movement** on the **Heart WARP Menu**.

```
Warp                                      Key 1
0. Category   Favorites      5. Position
1. Warp List  Heart          6. Rotation
                             7. Border
                             8. Border Color
                             9. Movement
 Movement:
          X-Rate: 0.000
          Y-Rate: 0.000
          Z-Rate: 0.000



Use positioner or Hue, Sat, Lum to modify
```

Heart WARP Menu — Movement Parameters

- Use the **HUE** knob to adjust the direction and rate of rotation along the X-Axis.

- Use the **SAT** knob to adjust the direction and rate of rotation along the Y-Axis.

- Use the **LUM** knob to adjust the direction and rate of rotation along the Z-Axis.

Lens Flare

This WARP allows you to add a point light source and a series of lens flare effects to the video. The following parameters can be adjusted:

- **Position** — This parameter adjusts the size and position of the light source and flares.

- **Lighting** — This parameter adjusts washout lighting color, brightness and amount of glare of the light source.

- **Placement** — This parameter adjusts the placement of the lens flares.

- **Color** — This parameter adjusts the luminance, saturation and hue levels.

- **Flare Options** — This parameter adjusts the number of lens flares and to select a lighting source type.

```
Warp                                      Key 1
0. Category   Favorites       5. Position
1. Warp List  Lens Flare      6. Lighting
                             7. Placement
                             8. Color
                             9. Flare Options

 Active Warp:   Lens Flare



```

WARP Menu — Lens Flare

Position Parameters

The Lighting parameters are accessed by pressing **6. Lighting** on the **Lens Flare WARP Menu**.

```
Warp                                    Key 1
0. Category    Favorites    5. Position
1. Warp List   Lens Flare   6. Lighting
                            7. Placement
                            8. Color
                            9. Flare Options
 Position:
            Center (X): 60.0%
            Center (Y): 35.0%
            Size: 100.0%



Use positioner or Hue, Sat, Lum to modify
```

Lens Flare WARP Menu — Position Parameters

- Use the **HUE** knob to adjust the position of the light source along the X-Axis.

- Use the **SAT** knob to adjust the position of the light source along the Y-Axis.

- Use the **LUM** knob to adjust the size of the flares.

Lighting Parameters

The Lighting parameters are accessed by pressing **6. Lighting** on the **Lens Flare WARP Menu**.

```
Warp                                    Key 1
0. Category    Favorites    5. Position
1. Warp List   Lens Flare   6. Lighting
                            7. Placement
                            8. Color
                            9. Flare Options
 Lighting:
            Fade: White
            Brightness: 100.0%



Use positioner or Hue, Sat, Lum to modify
```

Lens Flare WARP Menu — Lighting Parameters

- Use the **HUE** knob to select the color of the washout lighting.

- Use the **SAT** knob to adjust the brightness of the light source, flares, and washout lighting.

Placement Parameters

The Lighting parameters are accessed by pressing **6. Lighting** on the **Lens Flare WARP Menu**.

```
Warp                                    Key 1

0. Category    Favorites    5. Position
1. Warp List   Lens Flare   6. Lighting
                            7. Placement
                            8. Color
                            9. Flare Options
 Placement:
            Auto-follow: On
            Angle: 100.0%
            Distance: 100.0%



Use positioner or Hue, Sat, Lum to modify
```

Lens Flare WARP Menu —Placement Parameters

- Use the **HUE** knob to enable the flare to follow the key or not (On or Off).

- Use the **SAT** knob to adjust the angle of the light source.

- Use the **LUM** knob to adjust the distance of the light source.

Color Parameters

The Color parameters are accessed by pressing **8. Color** on the **Lens Flare WARP Menu**.

```
Warp                                    Key 1

0. Category    Favorites    5. Position
1. Warp List   Lens Flare   6. Lighting
                            7. Placement
                            8. Color
                            9. Flare Options
 Color:
            Hue: 52.0%
            Saturation: 75.0%
            Luminance: 75.0%



Use positioner or Hue, Sat, Lum to modify
```

Lens Flare WARP Menu— Color Parameters

- Use the **HUE** knob to adjust the hue.

- Use the **SAT** knob to adjust the saturation.

- Use the **LUM** knob to adjust the luminance.

Flare Options Parameters

The Flare Options parameters are accessed by pressing **9. Flare Options** on the **Lens Flare WARP Menu**.

```
Warp                                    Key 1
0. Category   Favorites     5. Position
1. Warp List  Lens Flare    6. Lighting
                            7. Placement
                            8. Color
                            9. Flare Options
 Flare Options:
         Aspect: 52.0%
         Flare: Type 1
         Flares: 2


Use positioner or Hue, Sat, Lum to modify
```

Lens Flare WARP Menu — Flare Options Parameters

- Use the **HUE** knob to adjust the aspect ratio of the effect.
- Use the **SAT** knob to select the lighting source type.
- Use the **LUM** knob to adjust the number of lens flares from 0 to 4.

Melt

This WARP has the following parameters that can be adjusted:

- **Melt** — This parameter adjusts the direction and amplitude of the melt.
- **Modulation** — This parameter adjusts the size and number of waves in the melt.
- **Curve** — This parameter adjusts the amount of curve in the melt.

```
Warp                                    Key 1
0. Category   Favorites     5. Melt
1. Warp List  Melt          6. Modulation
                            7. Curve



 Active Warp:   Melt



```

WARP Menu — Melt

Melt Parameters

The Melt parameters are accessed by pressing **5. Melt** on the **Melt WARP Menu**.

```
Warp                                    Key 1
0. Category   Favorites    5. Melt
1. Warp List  Melt         6. Modulation
                           7. Curve


 Melt:
              Type: Block-Expands
              Direction: Down
              Amplitude: 0



Use positioner or Hue, Sat, Lum to modify
```

Melt WARP Menu — Melt Parameters

- Use the **HUE** knob to select the type of melt: Block Expands, Block Shrinks, Hole Expands, or Hole Shrinks.

- Use the **SAT** knob to indicate the direction of the melt: Up, Down, Right, or Left.

- Use the **LUM** knob to adjust the height of the individual waves in the melt effect.

Modulation Parameters

The Modulation parameters are accessed by pressing **6. Modulation** on the **Melt WARP Menu**.

```
Warp                                    Key 1
0. Category   Favorites    5. Melt
1. Warp List  Melt         6. Modulation
                           7. Curve


 Modulation:
              Frequency: 25
              Peak: 25
              Lateral Dist.: 200



Use positioner or Hue, Sat, Lum to modify
```

Melt WARP Menu — Modulation Parameters

- Use the **HUE** knob to adjust the number of melting waves in the effect.

- Use the **SAT** knob to adjust the size of the melting waves.

- Use the **LUM** knob to shrink or expand the video, based on the type of melt you have selected.

Curve Parameters

The Curve parameters are accessed by pressing **7. Curve** on the **Melt WARP Menu**.

```
Warp                                    Key 1
0. Category    Favorites     5. Melt
1. Warp List   Melt          6. Modulation
                             7. Curve


 Curve:
            Slope: 0
            Phase: 0




Use positioner or Hue, Sat, Lum to modify
```

Melt WARP Menu — Curve Parameters

• Use the **HUE** knob to adjust the angle of the curve.

✓ **Operating Tip** | You can use this parameter to apply a tilt effect.

• Use the **SAT** knob to move the wave across the image.

Obscure

This WARP allows you to obscure a section of video using a mosaic pattern. The following parameters can be adjusted:

• **Pixelation** — This parameter adjusts the size of the mosaic tiles.

• **Position** — This parameter adjusts the position of the obscured video.

• **Shape** — This parameter adjusts the shape of the mosaic tile.

• **Effects** — This parameter adjusts the lighting effects.

```
Warp                                    Key 1
0. Category    Favorites     5. Pixelation
1. Warp List   Obscure       6. Position
                             7. Shape
                             8. Effects


 Active Warp:   Obscure




```

WARP Menu — Obscure

Pixelation Parameters

The Pixelation parameters are accessed by pressing **5. Pixelation** on the **Obscure WARP Menu**.

```
Warp                                      Key 1
0. Category   Favorites      5. Pixelation
1. Warp List  Obscure        6. Position
                             7. Shape
                             8. Effects

 Pixelation:
          (X): 0.0%
          (Y): 0.0%
          Overall: 0.0%



Use positioner or Hue, Sat, Lum to modify
```

Obscure WARP Menu — Pixelation Parameters

- Use the **HUE** knob to adjust the tiles along the X-Axis.

- Use the **SAT** knob to adjust the tiles along the Y-Axis.

- Use the **LUM** knob to adjust overall tiles.

Position Parameters

The Position parameters are accessed by pressing **6. Position** on the **Obscure WARP Menu**.

```
Warp                                      Key 1
0. Category   Favorites      5. Pixelation
1. Warp List  Obscure        6. Position
                             7. Shape
                             8. Effects

 Position:
          Center (X): 50.0%
          Center (Y): 50.0%
          Size: 80.0%



Use positioner or Hue, Sat, Lum to modify
```

Obscure WARP Menu — Position Parameters

- Use the **HUE** knob to adjust the position of the video along the X-Axis.

- Use the **SAT** knob to adjust the position of the video alone the Y-Axis.

- Use the **LUM** knob to adjust the size of the effect.

Shape Parameters

The Shape parameters are accessed by pressing **7. Shape** on the Obscure **WARP Menu**.

```
Warp                                    Key 1
0. Category   Favorites    5. Pixelation
1. Warp List  Obscure      6. Position
                           7. Shape
                           8. Effects

 Shape:
             Aspect: 50.0%
             Shape: Ellipse




Use positioner or Hue, Sat, Lum to modify
```

Obscure WARP Menu — Shape Parameters

- Use the **HUE** knob to adjust the aspect ratio of the effect.

- Use the **SAT** knob to select an ellipse or rectangle shape.

Effects Parameters

The Effects parameters are accessed by pressing **8. Effects** on the **Obscure WARP Menu**.

```
Warp                                    Key 1
0. Category   Favorites    5. Pixelation
1. Warp List  Obscure      6. Position
                           7. Shape
                           8. Effects

 Effects:
             Background: Hide
             Edge Effect: Off
             Angle (Deg.): 45



Use positioner or Hue, Sat, Lum to modify
```

Obscure WARP Menu — Effects Parameters

- Use the **HUE** knob to change the background between **Hide** and **Show**.

- Use the **SAT** knob to toggle the lighting on or off.

- Use the **LUM** knob to adjust the angle (in degrees) of the lighting for the effect.

Page Roll

✔ **Operating Tip** | The Page Roll WARP can be used in wipes or other effects.

This WARP has the following parameters that can be adjusted.

- **Position** — This parameter adjusts the fold of the page turn.

- **Light** — This parameter adjusts the on-board lighting.

```
Warp                                    Key 1
0. Category    Favorites     5. Position
1. Warp List   Page Roll     6. Light




   Active Warp:   Page Roll



```
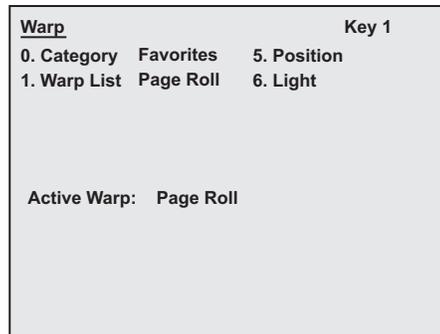
WARP Menu — Page Roll

⚹ **Important** | When working with Page Roll, keep in mind that the parameters are applied based on the whole screen area (as if the image were full screen). This means that if you change the page turn parameters, then move the image along the Z-Axis (so it appears smaller) you will not see any part of the effect that is happening where there is no key video.

Position Parameters

The Position parameters are accessed by pressing **5. Position** on the **Page Roll WARP Menu**.

```
Warp                                    Key 1
0. Category    Favorites     5. Position
1. Warp List   Page Roll     6. Light


  Position:
           Roll: 0.0%
           Radius: 20.2%
           Angle: 0.125


Use positioner or Hue, Sat, Lum to modify
```
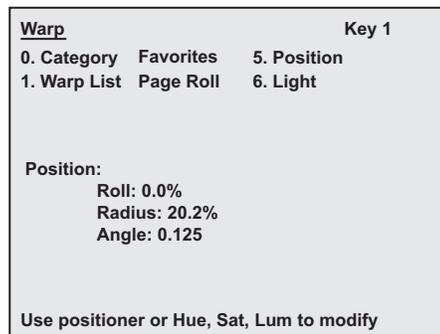
Page Roll WARP Menu — Position Parameters

- Use the **HUE** knob to adjust the roll of the page turn on the image.

- Use the **SAT** knob to adjust the radius of the fold. This indicates whether the fold is wide or narrow.

- Use the **LUM** knob to adjust the angle or axis of the fold. This specifies the corner at which the fold begins.

Light Parameters

The Light parameters are accessed by pressing **6. Light** on the **Page Roll WARP Menu**.

```
Warp                                    Key 1
0. Category    Favorites     5. Position
1. Warp List   Page Roll     6. Light



 Light:
           Gleam: 50.1%
           Shadow: 33.3%
           Model: Natural


Use positioner or Hue, Sat, Lum to modify
```
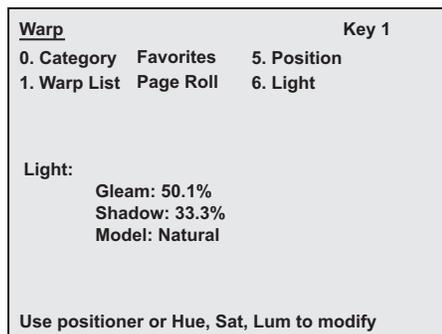
Page Roll WARP Menu — Light Parameters

- Use the **HUE** knob to adjust the intensity of the light that appears on the curve at the top of the fold.

- Use the **SAT** knob to adjust the amount of shadow on top and underneath the fold's curve.

- Use the **LUM** knob to select the type of light you want to use.

  ~ **Natural —** Select this option to select a light that brightens the area.

  ~ **White** — Select this option to blend the area of the image with white light.

Pixie Dust

This WARP has the following parameters that can be adjusted:

- **Position** — This parameter adjusts the area on the image where the effect appears.

- **Shape** — This parameter adjusts the shape of the area where the effect appears (rectangle or oval).

- **Randomness** — This parameter adjusts the amount of random particle distribution in the effect.

```
Warp                                    Key 1
0. Category    Favorites     5. Position
1. Warp List   Pixie Dust    6. Shape
                             7. Randomness



 Active Warp:    Pixie Dust
```

WARP Menu — Pixie Dust

Position Parameters

The Position parameters are accessed by pressing **5. Position** on the **Pixie Dust WARP Menu**.

```
Warp                                    Key 1
0. Category   Favorites    5. Position
1. Warp List  Pixie Dust   6. Shape
                           7. Randomness


 Position:
          (X): 50.1%
          (Y): 42.0%
          Size: 62.5%



Use positioner or Hue, Sat, Lum to modify
```

Pixie Dust WARP Menu — Position Parameters

- Use the **HUE** knob to define the horizontal position of the effect on the image.

- Use the **SAT** knob to define the vertical position of the effect on the image.

- Use the **LUM** knob to define the size of the effect.

Shape Parameters

The Shape parameters are accessed by pressing **6. Shape** on the **Pixie Dust WARP Menu**.

```
Warp                                    Key 1
0. Category   Favorites    5. Position
1. Warp List  Pixie Dust   6. Shape
                           7. Randomness


 Shape:
          Aspect: 50.0%
          Pattern: Rectangle



Use positioner or Hue, Sat, Lum to modify
```

Pixie Dust WARP Menu — Shape Parameters

- Use the **HUE** knob to change the aspect ratio of the area where the effect appears.

- Use the **LUM** knob to select the shape of the effect.

Randomness Parameters

The Randomness parameters are accessed by pressing **7. Randomness** on the **Pixie Dust WARP Menu**.

```
Warp                                    Key 1
0. Category    Favorites    5. Position
1. Warp List   Pixie Dust   6. Shape
                            7. Randomness


 Randomness:
         Variation: 0.0%
         Softening: 20.0%
         Movement: Yes


Use positioner or Hue, Sat, Lum to modify
```
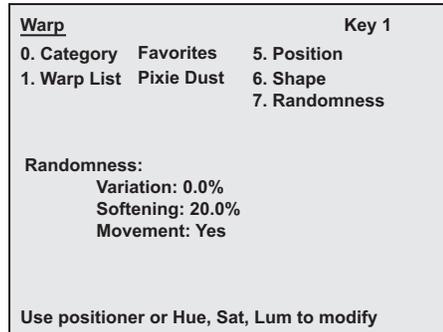
Pixie Dust WARP Menu — Randomness Parameters

- Use the **HUE** knob to adjust the amount of variation in the random distribution of particles in the effect. The greater the variation, the fuzzier the image appears.

- Use the **SAT** knob to adjust the amount of softening around the edges of the effect.

- Use the **LUM** knob to adjust the movement of particles.

    ~ **Fixed** — Adjust the amount of randomness defined using the **Variation** parameter.

    ~ **Animate** — Adjusts the random distribution of particles in the effect.

Ripple

This WARP has the following parameters that can be adjusted:

- **Wave** — This parameter adjusts the amplitude and frequency of the ripples.

- **Position** — This parameter adjusts the position of the ripple effect.

- **Lighting —** This parameter adjusts the lighting on the effect.

- **Movement —** This parameter adjusts the type of movement you want in the effect.

```
Warp                                    Key 1
0. Category    Favorites    5. Wave
1. Warp List   Ripple       6. Position
                            7. Lighting
                            8. Movement


 Active Warp:   Ripple
```

WARP Menu — Ripple

Wave Parameters

The Wave parameters are accessed by pressing **5. Wave** on the **Ripple WARP Menu**.

```
Warp                                    Key 1
0. Category   Favorites    5. Wave
1. Warp List  Ripple       6. Position
                           7. Lighting
                           8. Movement

 Wave:
              Amplitude: 0.0%
              Frequency: 78.3%




Use positioner or Hue, Sat, Lum to modify
```

Ripple WARP Menu — Wave Parameters

- Use the **HUE** knob to adjust the perceived height of the waves.

- Use the **SAT** knob to adjust the width of the waves.

Position Parameters

The Position parameters are accessed by pressing **6. Position** on the **Ripple WARP Menu**.

```
Warp                                    Key 1
0. Category   Favorites    5. Wave
1. Warp List  Ripple       6. Position
                           7. Lighting
                           8. Movement

 Position:
              X-Center: 50.0%
              Y-Center: 50.0%




Use positioner or Hue, Sat, Lum to modify
```

Ripple WARP Menu — Position Parameters

- Use the **HUE** knob to adjust the horizontal position of the ripple.

- Use the **SAT** knob to adjust the vertical position of the ripple.

Lighting Parameters

The Lighting parameters are accessed by pressing **7. Lighting** on the **Ripple WARP Menu**.

```
Warp                              Key 1
0. Category   Favorites    5. Wave
1. Warp List  Ripple       6. Position
                           7. Lighting
                           8. Movement

 Lighting:
            Intensity: 0.0%




Use positioner or Hue, Sat, Lum to modify
```
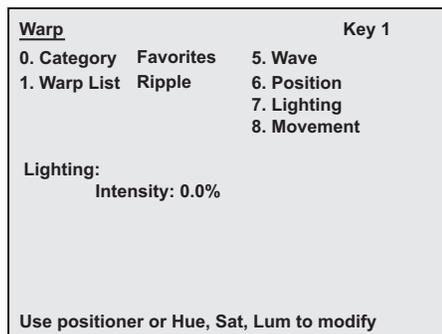
Ripple WARP Menu — Lighting Parameter

- Use the **HUE** knob to adjust the intensity of light on the wave of the ripple.

Movement Parameters

The Movement parameters are accessed by pressing **8. Movement** on the **Ripple WARP Menu**.

```
Warp                              Key 1
0. Category   Favorites    5. Wave
1. Warp List  Ripple       6. Position
                           7. Lighting
                           8. Movement

 Movement:
            Continuous: 0.0%
            Water Drop: 0.0%



Use positioner or Hue, Sat, Lum to modify
```
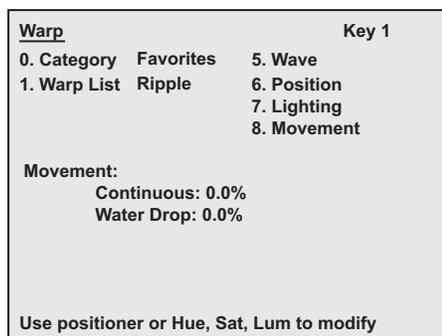
Ripple WARP Menu — Movement Parameters

- Use the **HUE** knob to create continuous wave motion.
- Use the **SAT** knob to create a water drop effect

Sand

This WARP has the following parameters that can be adjusted:

- **Sand** —This parameter adjusts the amount and direction of the sand effect.
- **Wind** — This parameter adjusts the amount and direction of the wind.
- **Edge Peaks** — This parameter adjusts the edge peaks of the effect.
- **Edge Curve —** This parameter adjusts the edge curve of the effect.

```
Warp                          Key 1
0. Category   Favorites   5. Sand
1. Warp List  Sand        6. Wind
                          7. Edge Peaks
                          8. Edge Curves


  Active Warp:   Sand
```

WARP Menu — Sand Effect

Sand Parameters

The Sand parameters are accessed by pressing **5. Sand** on the **Sand WARP Menu**.

```
Warp                          Key 1
0. Category   Favorites   5. Sand
1. Warp List  Sand        6. Wind
                          7. Edge Peaks
                          8. Edge Curves


  Active Warp:   Sand
```

Sand WARP Menu — Sand Parameters

- • Use the **HUE** knob to select the direction of the blowing sand.

- • Use the **SAT** knob to adjust the opacity of the grains of sand.

- • Use the **LUM** knob to adjust the amount of displacement in the effect.

Wind Parameters

The Wind parameters are accessed by pressing **6. Wind** on the **Sand WARP Menu**.

```
Warp                          Key 1
0. Category   Favorites   5. Sand
1. Warp List  Sand        6. Wind
                          7. Edge Peaks
                          8. Edge Curves

 Wind:
            Oscillation: 300
            Velocity: 25
            Direction: 35


 Use positioner or Hue, Sat, Lum to modify
```

Sand WARP Menu— Wind Parameters

- Use the **HUE** knob to adjust the amount of oscillation in the blowing sand.

- Use the **SAT** knob to adjust the velocity or wind speed.

- Use the **LUM** knob to adjust the direction of the wind.

Edge Peaks

The Edge Peaks parameters are accessed by pressing **7. Edge Peaks** on the **Sand WARP Menu**.

```
Warp                                Key 1
0. Category   Favorites    5. Sand
1. Warp List  Sand         6. Wind
                           7. Edge Peaks
                           8. Edge Curves

 Edge Peaks:
          Frequency: 1700
          Amplitude: 1600




Use positioner or Hue, Sat, Lum to modify
```

Sand WARP Menu — Edge Peaks

- Use the **HUE** knob to adjust the frequency or number of peaks at the edges of the effect.

- Use the **SAT** knob to adjust the size of the waves at the edges of the effect.

Edge Curves

The Edge Curves parameters are accessed by pressing **8. Edge Curves** on the **Sand WARP Menu**.

```
Warp                                Key 1
0. Category   Favorites    5. Sand
1. Warp List  Sand         6. Wind
                           7. Edge Peaks
                           8. Edge Curves

 Edge Curves:
          Slope: 0
          Phase: 0




Use positioner or Hue, Sat, Lum to modify
```

Sand WARP Menu — Edge Curves

- Use the **HUE** knob to adjust the slope of the waves at the edge of the effect.

- Use the **SAT** knob to move the edges of the waves across the image.

Split

This WARP has the following parameters that can be adjusted:

- **Movement** — This parameter adjusts direction and size of the split.

- **Axis** — This parameter adjusts the position and angle of the split.

```
Warp                              Key 1
0. Category   Favorites    5. Movement
1. Warp List  Split        6. Axis




   Active Warp:    Split



```

WARP Menu — Split Effect

Movement Parameters

The Movement parameters are accessed by pressing **5. Movement** on the **Split WARP Menu**.

```
Warp                              Key 1
0. Category   Favorites    5. Movement
1. Warp List  Split        6. Axis



  Movement:
          Movement Horizontal: 50.0%
          Amplitude: 25.0%



Use positioner or Hue, Sat, Lum to modify
```
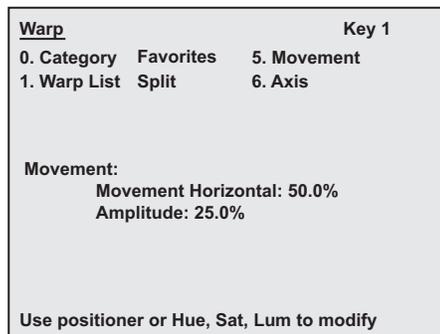
Split WARP Menu — Movement Parameters

- Use the **HUE** knob to select the direction of the split.

- Use the **SAT** knob to adjust the size of the split.

Axis Parameters

The Axis parameters are accessed by pressing **6. Axis** on the **Split WARP Menu**.

```
Warp                              Key 1
0. Category   Favorites    5. Movement
1. Warp List  Split        6. Axis



  Axis:
          Position: 0
          Angle: 0.000



Use positioner or Hue, Sat, Lum to modify
```
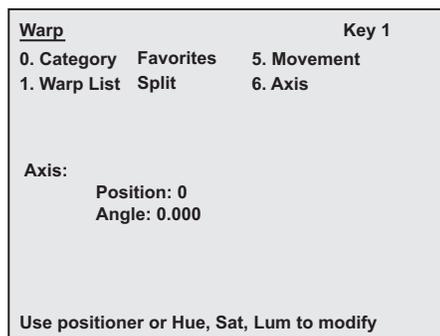
Split WARP Menu — Axis Parameters

- Use the **SAT** knob to adjust the position of the split on the image.

- Use the **LUM** knob to adjust the angle of the split.

Star

This WARP has the following parameters that can be adjusted:

- **Position** — This parameter adjusts the position and size of the effect.
- **Rotation** — This parameter adjusts the rotation of the effect along either the X, Y or Z-Axis.
- **Shape** — This parameter adjusts the number and size of points to the star and the border size.
- **Border Color** — This parameter adjusts the luminance, saturation and hue of the border.
- **Movement** — This parameter adjusts the rotation of the effect along the X, Y or Z-Axis.

```
Warp                            Key 1

0. Category   Favorites    5. Position
1. Warp List  Star         6. Rotation
                           7. Shape
                           8. Border Color
                           9. Movement


   Active Warp:   Star
```

WARP Menu — Star

Position Parameters

The Position parameters are accessed by pressing **5. Position** on the **Star WARP Menu**.

```
Warp                            Key 1

0. Category   Favorites    5. Position
1. Warp List  Star         6. Rotation
                           7. Shape
                           8. Border Color
                           9. Movement
 Position:
         X-Pos.: 50.00
         Y-Pos.: 50.00
         Size/Creation: 200.00


Use positioner or Hue, Sat, Lum to modify
```

Star WARP Menu — Position Parameters

- Use the **HUE** knob to position the center point of the star along the X-Axis.

- Use the **SAT** knob to position the center point of the star along the Y-Axis.

- Use the **LUM** knob to change the size of the star.

Rotation Parameters

The Rotation parameters are accessed by pressing **6. Rotation** on the **Star WARP Menu**.

```
Warp                                 Key 1
0. Category   Favorites    5. Position
1. Warp List  Star         6. Rotation
                           7. Shape
                           8. Border Color
                           9. Movement
 Rotation:
            X-Rotation: 0.000
            Y-Rotation: 0.000
            Z-Rotation: 0.000


Use positioner or Hue, Sat, Lum to modify
```

Star WARP Menu — Rotation Parameters

- • Use the **HUE** knob to adjust the direction and number of rotations along the X-Axis.

- • Use the **SAT** knob to adjust the direction and number of rotations along the Y-Axis.

- • Use the **LUM** knob to adjust the direction and number of rotations along the Z-Axis.

Shape Parameters

The Shape parameters are accessed by pressing **7. Shape** on the **Star WARP Menu**.

```
Warp                                 Key 1
0. Category   Favorites    5. Position
1. Warp List  Star         6. Rotation
                           7. Shape
                           8. Border Color
                           9. Movement
 Shape:
            Num Pts: 5
            Pt. Size: 33.3
            Border Size: 0.00


Use positioner or Hue, Sat, Lum to modify
```

Star WARP Menu — Shape Parameters

- • Use the **HUE** knob to modify the number of points in the star.

- • Use the **SAT** knob to modify the point size.

- • Use the **LUM** knob to adjust the size of the border.

Border Color Parameters

The Border Color parameters are accessed by pressing **8. Border Color** on the **Star WARP Menu**.

```
Warp                                    Key 1
0. Category   Favorites      5. Position
1. Warp List  Star           6. Rotation
                             7. Shape
                             8. Border Color
                             9. Movement
 Border Color:
         Hue: 0.0%
         Saturation: 0.0%
         Luminance: 100.0%


Use positioner or Hue, Sat, Lum to modify
```

Star WARP Menu — Border Color Parameters

- Use the **HUE** knob to adjust the hue of the border color.

- Use the **SAT** knob to adjust the saturation of the border color.

- Use the **LUM** knob to adjust the luminance of the border color.

Movement Parameters

The Movement parameters are accessed by pressing **9. Movement** on the **Star WARP Menu**.

```
Warp                                    Key 1
0. Category   Favorites      5. Position
1. Warp List  Star           6. Rotation
                             7. Shape
                             8. Border Color
                             9. Movement
 Movement:
         X-Rate: 0.000
         Y-Rate: 0.000
         Z-Rate: 0.000


Use positioner or Hue, Sat, Lum to modify
```

Star WARP Menu — Movement Parameters

- Use the **HUE** knob to adjust the direction and rate of rotation along the X-Axis.

- Use the **SAT** knob to adjust the direction and rate of rotation along the Y-Axis.

- Use the **LUM** knob to adjust the direction and rate of rotation along the Z-Axis.

Stretch

This WARP has the following parameter that can be adjusted:

- **Aspect** — This parameter adjusts the aspect of the effect along the X or Y Axis.

```
Warp                                Key 1
0. Category    Favorites    5. Aspect
1. Warp List   Stretch




   Active Warp:   Stretch



```
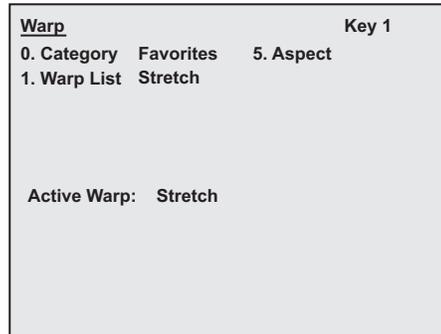
WARP Menu — Stretch

Aspect Parameters

The Aspect parameters are accessed by pressing **5. Aspect** on the **Stretch WARP Menu**.

```
Warp                                Key 1
0. Category    Favorites    5. Aspect
1. Warp List   Stretch


 Aspect:
          X-Aspect: 1.00
          Y-Aspect: 1.00



Use positioner or Hue, Sat, Lum to modify
```
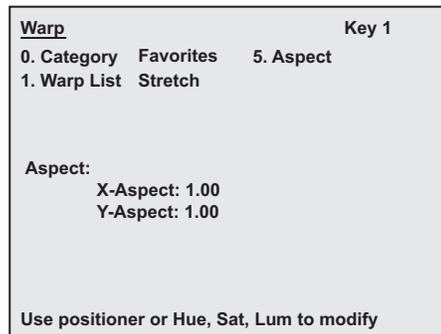
Stretch WARP Menu — Aspect Parameters

- Use the **HUE** knob to adjust the aspect of the effect along the X-Axis.

- Use the **SAT** knob to adjust the aspect of the effect along the Y-Axis.

Appendix A. Menu Trees

In This Appendix

This appendix lists the various menu trees that are used to set up the configurable areas of your Synergy 100 MD switcher.

Note   Asterisks (*) in the Synergy 100 MD menu trees denote levels of association. For example, all items marked with two asterisks (**) are grouped together, all items marked with three asterisks (***) are grouped together, and so on.

The following topics are discussed:

- Effects Menu Tree
- Options Menu Tree
- BNC Configuration Menu Tree
- Output BNC Configuration Menu Tree
- Personality Menu Tree
- GPI Setup Menu Tree
- Editor Communication Menu Tree
- Audio Communication Menu Tree
- Serial Tally Communication Menu Tree
- Disk Menu Tree
- Global-Store Menu Tree
- Squeeze & Tease MD Menu Tree
- Help Menu Tree

Effects Menu Tree

The following figure illustrates the *portion* of the menu that is used identify hardware options and software options that are installed on the switcher, as well as access the menus for the UltraChrome™ and Squeeze & Tease MD™ features.

Main Menu - Synergy 100   vSynergy X MD-S100

0. Effects	5. Disk
1. Inputs	6. Personality
2. Outputs	7. Options
3. GPIs	8. S&T MD
4. Communication	9. Help Menu

MENU	100	10	1	SEL
Exit	Previous	Down	Up	Accept

Effects

0. Editor	On	5. UltraChrome Parameters
1. GPIs	Off	6. Global-Store
2. Center	Off	7. MultiDSK*
3. Safe Title	Off	
4. Reserved		

MENU	100	10	1	SEL
Exit	Previous	Down	Up	Accept

UltraChrome Parameters

0. Color Pick	5. Softness
1. Initialize Key	6. Color Map Off
2. Background	
3. Foreground Range	
4. Spill Suppress	

Color Pick   Key Mode: Basic
                  Color: Blue

Use positioner or Hue, Sat, Lum to modify

Global-Store   Global-Store 1

0. Select	
1. Manage	CAPTURES
2. Properties	Number: 53
3. Capture Screen	Size: 1920×1080
4. Reserved	Alpha: No
5. Assign as Default	Frames: 1
6. View Default	

MENU	100	10	1	SEL
Exit	Previous	Down	Up	Accept

MultiDSK

0. DSK4 Source	Black	
1. DSK4 Rate	8	
2. DSK5 Source	Black	
3. DSK5 Rate	8	

MENU	100	10	1	SEL
Exit	Previous	Down	Up	Accept

* The MultiDSK menu appears only
   if the MultiDSK option is enabled.

Effects Menu Trees

Options Menu Tree

The following figure illustrates the *portion* of the menu that is used to set up the network communication with the switcher and add software options.

```
Main Menu - Synergy 100    vSynergy X MD-S100

0. Effects           5. Disk
1. Inputs            6. Personality
2. Outputs           7. Options
3. GPIs              8. S&T MD
4. Communication     9. Help Menu




MENU    100       10     1     SEL
Exit    Previous  Down   Up    Accept
```

```
Options    S/N:XXXXXXXXXX

0. Network Setup          5. System Resets
1. Software Options
2. Panel ID       XXXX-X
3. Panel SW       X.X
4. Frame ID       XXXX-X

Jul 19 2007   12:14:26




MENU    100       10     1     SEL
Exit    Previous  Down   Up    Accept
```

```
System Resets

0. All
1. System Shutdown
2. System Restart
3. Inputs/Outputs
4. Restart Global-Store




MENU    100       10     1     SEL
Exit    Previous  Down   Up    Accept
```

```
Network Setup

0. IP Address      5. DHCP      Off
1. Subnet
2. Gateway
3. Primary DNS
4. Secondary DNS
    IP Address 10.0.2.200



Use Hue to select element, Sat to adjust value.
Exit menu and rebootf or settings to take effect.
```

```
Software Options - S/N:XXXXXXXXXX

0. List
1. Add
2. Remove


Jul19 2007 12:14:26




MENU    100       10     1     SEL
Exit    Previous  Down   Up    Accept
```

Options Menu Tree

BNC Configuration Menu Tree

The following figure illustrates the *portion* of the menu tree that is used to configure your BNC inputs.

Main Menu - Synergy 100   vSynergy X MD-S100

0. Effects	5. Disk
1. Inputs	6. Personality
2. Outputs	7. Options
3. GPIs	8. S&T MD
4. Communication	9. Help Menu

MENU 100 10 1 SEL
Exit Previous Down Up Accept

Panel

0. Button   1 ──────────── • 1 - 10
1. Input   Black   • SHIFT 1 - 10

• None
• BKGD
• Black
• Shift
• RevShift
• Global-Store 1 - 3
• BNC C01 - D16

MENU 100 10 1 SEL
Exit Previous Down Up Accept

Inputs

0. Inputs
1. Panel
2. Tally
3. Audio
4. Reference

MENU 100 10 1 SEL
Exit Previous Down Up Accept

Tally

0. Tally   Panel 1 ──────── • Panel 1 - 16
1. Input   BNC C01
2. Type   On Air

• None
• BNC C01 - C16
• Global-Store 1 - 3

• Off
• On Air
• Preview
• Aux 0 - 9

MENU 100 10 1 SEL
Exit Previous Down Up Accept

Inputs

0. Input	BNC C01
1. Type	Off
2. AutoKey	Black
3. Shaped	No
4. Aud Chan1	Chan 1
5. Aud Chan2	Chan 2
6. Vid Format	720p 59.94

• BNC C01 - C16
• Global-Store 1 - 3

• Off
• Video
• Alpha

• Black
• BNC C01 - C16
• Global-Store 1 - 3

• Yes/No

• None
• Channel 1 - 16
• Group 1 - 6

MENU 100 10 1 SEL
Exit Previous Down Up Accept

Audio

0. Channel   Chan 1 ──────── • Chan 1 - 16
1. Level   75%
2. Groups

• 0% - 100%

MENU 100 10 1 SEL
Exit Previous Down Up Accept

• 480i	• 720p 25	• 1080p 24
• 480i 16:9	• 720p 24	• 1080p 23.98
• 576i	• 720p 23.98	• 1080pSF 30
• 576i 16:9	• 1080i 60	• 1080pSF 29.97
• 720p 60	• 1080i 59.94	• 1080pSF 25
• 720p 59.94	• 1080i 50	• 1080pSF 24
• 720p 50	• 1080p 30	• 1080pSF 23.98
• 720p 30	• 1080p 29.97	
• 720p 29.97	• 1080p 25	

Groups

0. Group   Group 1 ──────── • Group 1 - 6
1. Channel 1   None
2. Channel 2   Chan 15
3. Channel 3   Chan 9

• None
• Channel 1 - 16

• None
• Channel 1 - 16

• None
• Channel 1 - 16

MENU 100 10 1 SEL
Exit Previous Down Up Accept

Reference

0. Ref Format	720p 59.94
1. Input Ref	Board C
2. Video Format	720p 59.95
3. Reference	Int

Format: 720p 59.94
60 frames/sec
Scan Type: Progressive
Full Frame Res: 1650×750
Active Video: 1280×720
Switching Line: 7
Pixel Aspect Ratio: 1.00

• 480i	• 1080i 59.94
• 480i 16:9	• 1080i 50
• 576i	• 1080pSF 24
• 576i 16:9	• 1080pSF 23.98
• 720p 50	• 1080p 24
• 720p 59.94	

• Board C

• 480i	• 1080i 59.94
• 480i 16:9	• 1080i 50
• 576i	• 1080pSF 24
• 576i 16:9	• 1080pSF 23.98
• 720p 50	• 1080p 24
• 720p 59.94	

• Int
• Ext

MENU 100 10 1 SEL
Exit Previous Down Up Accept

BNC Configuration Setup Menu Tree

Output BNC Configuration Menu Tree

The following figure illustrates the *portion* of the menu tree that is used to configure your BNC outputs.

```
Main Menu - Synergy 100    vSynergy X MD-S100

0. Effects          5. Disk
1. Inputs           6. Personality
2. Outputs          7. Options
3. GPIs             8. S&T MD
4. Communication    9. Help Menu




MENU    100      10     1    SEL
Exit    Previous  Down   Up   Accept
```

```
Outputs

0. Output BNC Config
1. Output Setup
2. Switching on      F1




MENU    100      10     1    SEL
Exit    Previous  Down   Up   Accept
```
• F1
• F2

```
Output BNC Config

0. Output BNC   BNC B01
1. Video        Program




MENU    100      10     1    SEL
Exit    Previous  Down   Up   Accept
```
• BNC B01 - B16

• Program
  • PRV w/ OVL
  • PRV w/o OVL
  • Clean Feed
  • Aux Bus 0 - 9
  • Multiclean 1 - 5
  • MultiDSK PV

```
Output Setup

0. Clean        BeforeKey
1. MultiDSK     On
2. RemAuxPrg    Off




MENU    100      10     1    SEL
Exit    Previous  Down   Up   Accept
```
• BeforeKeys
• BetweenKey1&2
• BeforeDSK

• On
• Off

• Off
• On

Output BNC Configuration Setup Menu Tree

Personality Menu Tree

The following figure illustrates the *portion* of the menu tree that is used for additional installation setup procedures.

Personality Menu Tree

GPI Setup Menu Tree

The following figure illustrates the *portion* of the menu tree that is used for GPI setup procedures.
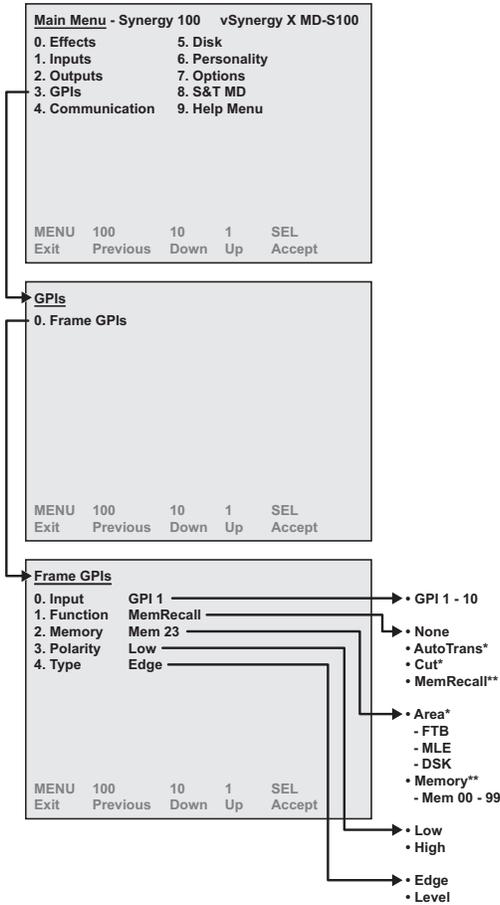
Main Menu - Synergy 100   vSynergy X MD-S100

0. Effects   5. Disk
1. Inputs   6. Personality
2. Outputs   7. Options
3. GPIs   8. S&T MD
4. Communication   9. Help Menu

| MENU | 100 | 10 | 1 | SEL |
| Exit | Previous | Down | Up | Accept |

GPIs

0. Frame GPIs

| MENU | 100 | 10 | 1 | SEL |
| Exit | Previous | Down | Up | Accept |

Frame GPIs

0. Input   GPI 1 ———————————————→ • GPI 1 - 10
1. Function   MemRecall
2. Memory   Mem 23 ————————————————→ • None
3. Polarity   Low   • AutoTrans*
4. Type   Edge   • Cut*
                                         • MemRecall**

                                       → • Area*
                                           - FTB
                                           - MLE
                                           - DSK
                                         • Memory**
                                           - Mem 00 - 99

| MENU | 100 | 10 | 1 | SEL |
| Exit | Previous | Down | Up | Accept |

                                       → • Low
                                         • High

                                       → • Edge
                                         • Level

GPI Setup Menu Tree

Editor Communication Menu Tree

The following figure illustrates the *portion* of the menu tree that is used for setting up communication with external editors.
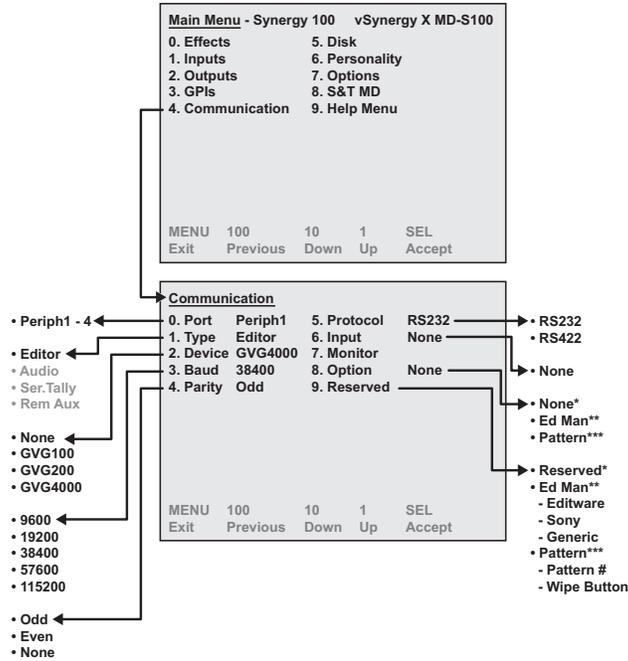
Editor Communication Setup Menu Tree

Audio Communication Menu Tree

The following figure illustrates the *portion* of the menu tree that is used for setting up communication with audio mixers.
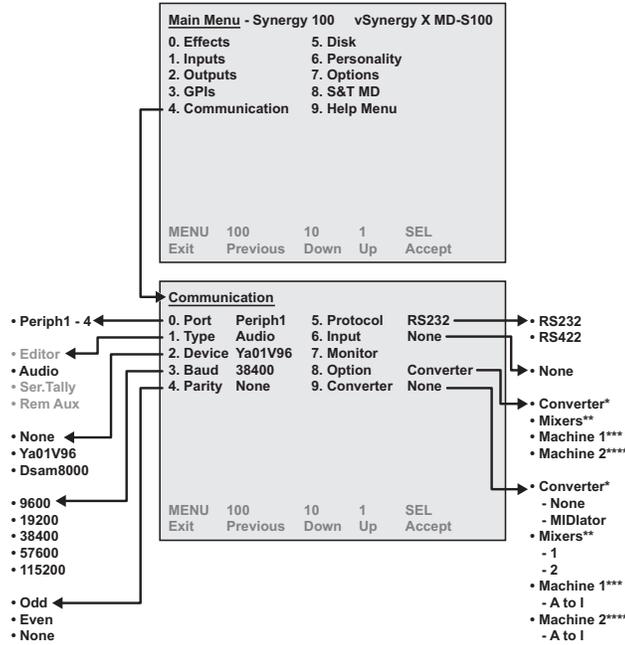
Audio Communication Setup Menu Tree

Serial Tally Communication Menu Tree

The following figure illustrates the portion of the menu tree that is used for setting up serial tally communication parameters.

```
Main Menu - Synergy 100      vSynergy X MD-S100

0. Effects              5. Disk
1. Inputs               6. Personality
2. Outputs              7. Options
3. GPIs                 8. S&T MD
4. Communication        9. Help Menu




MENU     100        10     1      SEL
Exit     Previous   Down   Up     Accept
```

```
Communication

• Periph1 - 4 ◄—  0. Port    Periph1   5. Protocol   RS422 —►  • RS232
                  1. Type    Ser.Tally 6. Input      None  —►  • RS422
  • Editor    ◄—  2. Device  Contrib   7. Monitor
  • Audio         3. Baud    115200    8. Option     Rate  —►  • None
  • Ser.Tally     4. Parity  None      9. Rate       24    —►
  • Rem Aux                                                    • Rate*
                                                              • Data Txfr**
  • None      ◄—                                               • Start***
  • Contrib                                                    • At Black****

  • 9600                                                       • Rate*
  • 19200                                                        - 2 - 60
  • 38400                                                      • Data Txfr**
  • 57600         MENU     100        10     1      SEL          - Normal
  • 115200        Exit     Previous   Down   Up     Accept       - Complete
                                                                 - Minimal
  • Odd       ◄—                                               • Start***
  • Even                                                         - None
  • None                                                         - Init
                                                              • At Black****
                                                                - All Off
                                                                - Active On
```

Serial Tally Communication Setup Menu Tree

Disk Menu Tree

The following figure illustrates the *portion* of the menu tree that is used for storing and recalling your switcher installation setup, memories, personality, and 3D wipes to and from a storage device.

```
Main Menu - Synergy 100    vSynergy X MD-S100

0. Effects           5. Disk
1. Inputs            6. Personality
2. Outputs           7. Options
3. GPIs              8. S&T MD
4. Communication     9. Help




MENU    100      10     1     SEL
Exit    Previous  Down   Up    Accept
```

```
Disk

0. Dest/Source
1. Store
2. Recall




MENU    100      10     1     SEL
Exit    Previous  Down   Up    Accept
```

```
Dest/Source

0. Dest/Source   Hard Drive
1. Set Names     SETUP(00)





MENU    100      10     1     SEL
Exit    Previous  Down   Up    Accept
```

• Hard Drive
• USB

```
Store

0. Reserved            5. Store Indiv 3D Wipe
1. Store Memories      6. Store Bus Map
2. Store Personality
3. Store Installation
4. Store 3D Wipes

        Hard Drive: SETUP(00)



MENU    100      10     1     SEL
Exit    Previous  Down   Up    Accept
```

```
Recall

 0. Reserved            5. Recall Indiv 3D Wipe
*1. Recall Memories     6. Store Bus Map
*2. Recall Personality
 3. Recall Installation
 4. Recall 3D Wipes

        Hard Drive: SETUP(00)
        *indicates the file is present on disk


MENU    100      10     1     SEL
Exit    Previous  Down   Up    Accept
```

Disk Menu Tree

Global-Store Menu Tree

The following figure illustrates the *portion* of the menu tree that is used for setting up using your three Global-Stores.

Global-Store Menu Tree

Squeeze & Tease MD Menu Tree

The following figure illustrates the *portion* of the menu tree that is used for configuring your Squeeze & Tease MD option.

```
Main Menu - Synergy 100    vSynergy X MD-S100
0. Effects              5. Disk
1. Inputs               6. Personality
2. Outputs              7. Options
3. GPIs                 8. S&T MD
4. Communication        9. Help Menu




MENU    100      10    1     SEL
Exit    Previous  Down  Up    Accept
```

```
S&T MD
0. Position/Crop        5. Lighting
1. Border               6. Reserved
2. Sequence             7. Warp
3. Channel Management
4. Preprocessor




MENU    100      10    1     SEL
Exit    Previous  Down  Up    Accept
```

```
Lighting
0. Lighting Setup None
1. Position
2. Presets
3. Auto Follow  On
4. Luminance Clipping




MENU    100      10    1     SEL
Exit    Previous  Down  Up    Accept
```

```
Channel Management   1 2          Key 1
0. Reserved          5. Front      Black( 1)
1. Channel 1 On      6. Back       Black( 1)
2. Channel 1 On      7. Auto Flip  None
3. Layering    Auto
4. Backside Video On




MENU    100      10    1     SEL
Exit    Previous  Down  Up    Accept
```

```
Position/Crop        1 2          Key 1
0. Position          5. Crop Horizontal
1. Rotation          6. Crop Vertical
2. Pivot Preset      7. Transp.   Off
3. Pivot Position    8. Freeze    Off
4. Aspect     Off    9. Adv. Positioning




MENU    100      10    1     SEL
Exit    Previous  Down  Up    Accept
```

```
Warp                 1 2          Key 1
0. Category    WARP Off
1. Warp List   WARP Off


Active Warp: WARP Off




MENU    100      10    1     SEL
Exit    Previous  Down  Up    Accept
```

```
Sequence             1 2          Key 1
0. Load/Save Seq.    5. Delete Keyframe
1. Previous Keyframe 6. Delete Workspace
2. Next Keyframe     7. Wipe Modifier
3. Insert Keyframe   8. Modify Keyframes
4. Overwrite Keyframe 9. Keyframe Parameters
                        **EMPTY**




MENU    100      10    1     SEL
Exit    Previous  Down  Up    Accept
```

```
Border               1 2          Key 1
0. Size              5. Auto Default  Off
1. Style
2. Corners
3. Color
4. Advanced




MENU    100      10    1     SEL
Exit    Previous  Down  Up    Accept
```

```
Preprocessor         1 2          Key 1
0. Defocus    Off
1. Mosaic     Off
2. Posterize  Off
3. Colorize   Off
4. Strobe     Off




MENU    100      10    1     SEL
Exit    Previous  Down  Up    Accept
```

```
Load/Save Seq.       1 2          Key 1
0. Load Sequence       None
1. Save Sequence       New Seq (00)
2. Delete Sequence  Seq.: New Seq (01)
3. Rename Sequence     Unused (02)
                       Unused (03)
                       Unused (04)




MENU    100      10    1     SEL
Exit    Previous  Down  Up    Accept
```

```
Keyframe Parameters  1 2          Key 1
0. Duration
1. Hold          Off
2. Spline Params


Type: Smooth
Frames: 30
Rotate: Normal




MENU    100      10    1     SEL
Exit    Previous  Down  Up    Accept
```

Squeeze & Tease MD Setup Menu Tree

Help Menu Tree

The following figure illustrates the *portion* of the menu tree that is used to access the Help feature of your Synergy 100 MD switcher.

Help Menu Tree

Appendix B. Synergy Effects

In This Appendix

This appendix briefly describes the pre-programmed Squeeze & Tease Wipes and sequences that are supplied on the Product Resources CD.

Squeeze & Tease MD Wipes and Sequences

After the Squeeze & Tease Wipes and Sequences have been loaded, you can replace or delete them as required. The following chart describes the provided wipes and sequences.

⚠ **Important** | The following descriptions refer to background wipes as PGM transitions to PST when used as a Normal transition.

Squeeze & Tease Wipes and Sequences Chart

Number	Name	Description
00	PushLt	Push left
01	PushRt	Push right
02	PushUp	Push up
03	PushDn	Push down
04	PushUpLt	Push to upper left corner
05	PushUpRt	Push to upper right corner
06	PushDnLt	Push to lower left corner
07	PushDnRt	Push to lower right corner
08	RotateX	Rotate in X to a knife edge
09	RotateY	Rotate in Y to a knife edge
10	SwingRt	Pivot point on right edge, rotate in X to the right and back
11	SwingLt	Pivot point on left edge, rotate in X to the left and back
12	SwingUp	Pivot point on top edge, rotate in Y up and back
13	SwingDwn	Pivot point on bottom edge, rotate in Y down and back
14	SwngUpLt	Pivot point on top edge, rotate up and then left
15	SwngUpRt	Pivot point on top edge, rotate up and then right
16	SwngDnLt	Pivot point on top edge, rotate down and then left
17	SwngDnRt	Pivot point on top edge, rotate down and then right
18	RotXBack	Push away while rotating in X
19	RotYBack	Push away while rotating in Y
20	DiveRt	Rotate back and right
21	DiveLt	Rotate back and left
22	DiveUp	Rotate back and up
23	DiveDn	Rotate back and down
24	WalkDown	Move back, then walk the video down
25	WalkUp	Move back, then walk the video up
26	AspectX	Compress horizontally to knife edge and back
27	AspectY	Compress vertically to knife edge and back

Squeeze & Tease Wipes and Sequences Chart

Number	Name	Description
28	ZoomOut	Push towards then back
29	ZoomIn	Push away then back
30	DfocusRt	Defocus then push right
31	DfocusLt	Defocus then push left
32	MosaicLt	Mosaic tiles then push left
33	MosaicRt	Mosaic tiles then push right
34	TwirlLft	Twirl around Y and push left
35	TwirlRgt	Twirl around Y and push right
36	KnifEdge	Twirl to knife edge
37	Tornado	Video gets stuck in a tornado
38	SpinOut	Spin and push towards then back
39	SpinIn	Spin and push away then back
40	TopLtUp	Pivot point top left corner, rotate and push up then back
41	TopLtDn	Pivot point top left corner, rotate and push down then back
42	TopRtUp	Pivot point top right corner, rotate and push up then back
43	TopRtDn	Pivot point top right corner, rotate and push down then back
44	BtmLtUp	Pivot point bottom left corner, rotate and push up then back
45	BtmLtDn	Pivot point bottom left corner, rotate and push down then back
46	BtmRtUp	Pivot point bottom right corner, rotate and push up then back
47	BtmRtDn	Pivot point bottom right, rotate and push down then back
48	10000lbs	Video falls, then bounces (when run in reverse)
49	NailFall	Video swings on nail point, then falls to ground
50	SpinLtUp	Pivot on left center then up
51	SpinLtDn	Pivot on left center then down
52	SpinRtUp	Pivot on right center then up
53	SpinRtDn	Pivot on right center then down
54	SpinUpLt	Pivot on top then left
55	SpinUpRt	Pivot on top then right
56	SpinDnLt	Pivot on bottom then left
57	SpinDnRt	Pivot on bottom then right
58	Sepia Spn	Move away to 3/4 size, change color to sepia, then rotate in X to a knife edge
59	Photo	Move away to 3/4 size, light flash, followed by a lighting effect with blur, defocus and sepia while rotating in Y

Appendix C. Hotkeys

In This Appendix

This appendix provides information on the Hotkeys available for accessing the main Squeeze & Tease menus and functions.

The following topics are discussed in this appendix:

- Overview
- Using Hotkeys
- Hotkey Functions

Overview

The primary Squeeze & Tease menus can be accessed directly using a system of hotkeys (shortcut keys) on the Synergy 100 control panel.

Hotkey Labels

Hotkeys are indicated by the labels below the crosspoint buttons on the Key, PGM, and PST buses. Refer to the section "**Basic Switcher Functions**" on page 4–8 for general button rules.
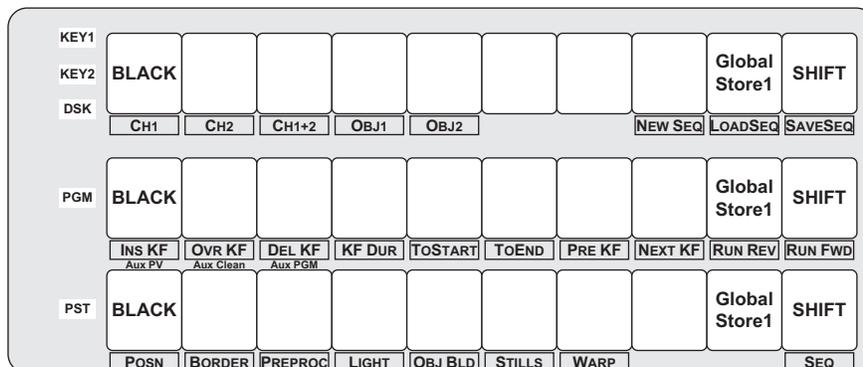
Squeeze & Tease Hotkeys

Using Hotkeys

Hotkeys are activated by pressing and holding the middle **SEL** button and then pressing the crosspoint button corresponding to the hotkey you want to activate. The Hotkey functionality is only available for Flying Keys.

Using Hotkeys

Use the following procedure to use a hotkey on the Synergy 100 control panel:

1. Ensure that you are flying a key.

2. Press and *hold* the middle **SEL** button, in the **Mattes** section of the **Menu Control Group**.

> ✓ **Operating Tip**
>
> You can latch the middle **SEL** in hotkey mode by double-pressing it. Double-pressing it again will take it out of hotkey mode.
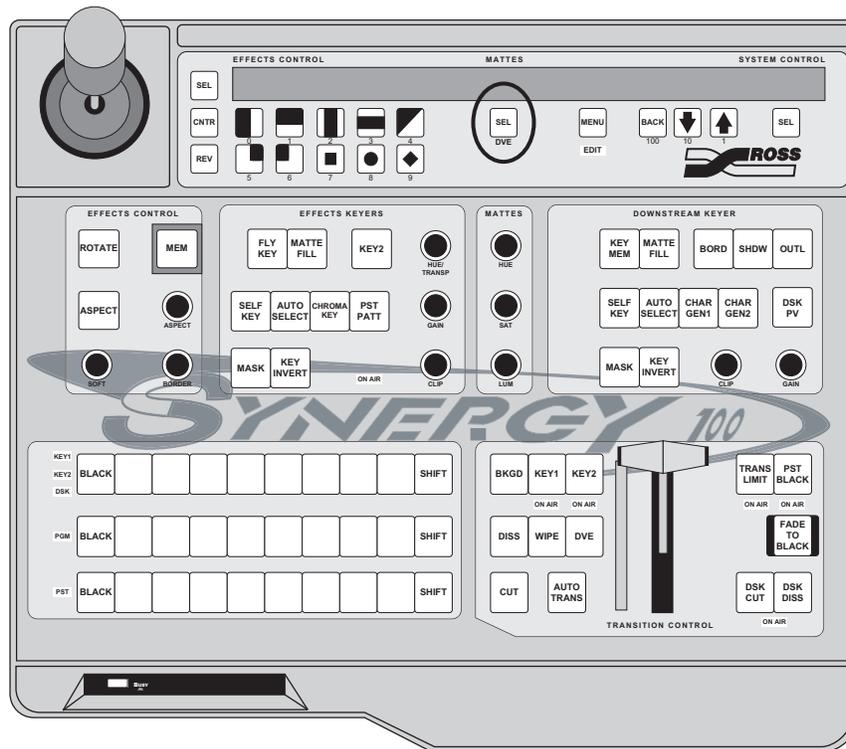
Synergy 100 Control Panel — Middle SEL Button

3. Press the crosspoint button that corresponds to the hotkey you want to activate. Refer to the section "**Hotkey Functions**" on page 22–4 for a list of the available hotkey functions on the Synergy 100 control panel.

4. Release the middle **SEL** button. Once you have activated the hotkey, you no longer need to hold down the **SEL** button.

5. Edit the channel as needed and exit the menu as you would normally.

This completes the procedure for activating a hotkey.

Hotkey Functions

The following tables list the Squeeze & Tease functions accessible using hotkey combinations on the Synergy 100 control panel.

Channel Selection Hotkeys

This table describes the hotkey functions used when selecting channels.

Channel Selection Hotkeys

Function	Hotkey Location	Hotkey	Crosspoint
Select Channel 1 in the active Keyer	**KEY Bus**	**CH1**	1
Select Channel 2 in the active Keyer	**KEY Bus**	**CH2**	2
Select both channels in the active Keyer	**KEY Bus**	**CH1+2**	3

Menu Hotkeys

The following table lists the hotkeys available for displaying the Squeeze & Tease MD main menus.

Menu Hotkeys

Function	Hotkey Location	Hotkey	Crosspoint
Global-Store Menu	**PST Bus**	**STILLS**	6
Lighting Menu	**PST Bus**	**LIGHT**	4
Position/Crop Menu	**PST Bus**	**POSN**	1
Preprocessor Menu	**PST Bus**	**PREPROC**	3
Rotation Menu	**PST Bus**	**BORDER**	2
Sequence Main Menu	**PST Bus**	**SEQ**	10
Warp Menu	**PST Bus**	**WARP**	7

Sequences Hotkeys

The following table lists the hotkeys available when working with sequences.

Sequences Hotkeys

Function	Hotkey Location	Hotkey	Crosspoint
Delete Keyframe	**PGM Bus**	**DEL KF**	3
Display Sequence Menu	**PST Bus**	**SEQ**	10
Go to End of Sequence	**PGM Bus**	**TOEND**	6
Go to Start of Sequence	**PGM Bus**	**TOSTART**	5
Insert Keyframe	**PGM Bus**	**INS KF**	1
Keyframe Duration	**PGM Bus**	**KF DUR**	4
Load Sequence	**KEY Bus**	**LOADSEQ**	9
New Sequence	**KEY Bus**	**NEWSEQ**	8
Next Keyframe	**PGM Bus**	**NEXT KF**	8
Overwrite Keyframe	**PGM Bus**	**OVR KF**	2
Previous Keyframe	**PGM Bus**	**PREV KF**	7
Run Sequence Forward	**PGM Bus**	**RUN FWD**	10
Run Sequence in Reverse	**PGM Bus**	**RUN REV**	9
Save Sequence	**KEY Bus**	**SAVESEQ**	10

Glossary of Terms

Active Video Lines — All video lines not occurring in the vertical blanking interval; the portion of the video signal that contains picture information.

Aspect Ratio — The numerical ratio of picture width to height, for example, 4:3 or 16:9.

Auto Transition — An automatic transition in which the manual movement of the fader handle is simulated electronically. The transition starts when the **AUTO TRANS** button is pressed and takes place over a pre-selected time period measured in frames.

Border — Effects created around the edges of a pattern or on a keyer. If an optional dual border generator card is installed, several border, shadow, and outline effects are available on that keyer as well.

Border Generator — Circuitry which generates various border effects on keys created by the switcher.

Chroma Key — An effect in which video from one source replaces video of a specific hue in a second video source. The blue and green hues are most commonly used for chroma keying.

Chrominance — The "depth" or saturation of a color. The three characteristics of a TV color signal are chrominance, luminance and hue.

Cut — An instantaneous switch from one video signal to another.

Dissolve — A transition from one video signal to another in which one signal is faded down while the other is simultaneously faded up. The term "mix" is often used interchangeably with "dissolve".

Downstream Keyer (DSK) — A keyer that places a key "downstream" of the MLE effects system output. This "top level" effect usually consists of a character generator title.

External Key — A video input (non-primary video) used to produce a key effect. Examples of external key sources are character generators and cameras.

Fade to Black — A controlled change of the on-air picture signal level down to black level.

Field — One half of a complete picture (or frame) interval containing all of the odd, or all of the even lines in interlaced scanning. One scan of a TV screen is called a "field"; two fields are required to make a complete picture (which is a "frame").

Field Frequency — The rate at which one complete field is scanned, approximately 50 times per second in 625 video or 60 times per second in 525 video.

Frame — One complete picture consisting of two fields of interlaced scanning lines.

GPI — An abbreviation for General Purpose Interface, a device which typically allows remote control of the switcher's automatic transition functions.

Hue — The characteristic of a color signal that determines whether the color is red, yellow, green, blue, purple, etc. (the three characteristics of a TV color signal are chrominance, luminance, and hue). White, black, and gray are not considered hues.

Internal Key — The use of a primary input to produce a key effect.

Key — An effect produced by "cutting a hole" in background video, then filling the hole with video or matte from another source. Key source video cuts the hole, key fill video fills the hole. The video signal used for cut and fill can come from the same or separate sources.

Key Fill — A video input which is timed to "fill the hole" provided by the key source video. An example of key fill is the video output of a character generator.

Key Invert — An effect which reverses the polarity of the key source so that the holes in the background are cut by dark areas of the key source instead of bright areas. The **KEY INVERT** button selects this effect.

Key Mask — A keying technique in which a pattern is combined with the key source to block out unwanted portions of the key source.

Key Source — The video signal which "cuts a hole" in the background video to make a key effect possible. Also called "Key Video". In practice, this signal controls when a video mixer circuit will switch from background to key fill video.

Key Video — See Key Source.

Linear Keys — Linear keys make it possible to fully specify the transparency of a key from opaque, through transparent, to fully off. The transparency is specified by the key signal (also known as the "hole cutter" or "alpha channel") that is associated with the key fill. A keyer capable of a linear key converts the key signal voltage directly to the transparency effect on the screen.

Line Frequency — The number of horizontal scans per second. For 525 line 60 Hz systems, this is approximately 15734 scans per second.

Luminance Key — An effect in which video from one source is replaced by video that exceeds a set level in a second video source.

Mask — See Key Mask.

Matte — A solid color signal which is generated by the switcher and can be adjusted for hue, saturation, and luminance levels.

Matte Key — A key effect in which the fill video is matte, provided by one of the switcher's matte generators.

Memory — The memory feature provides storage and recall of complete switcher setups.

MIX — See Dissolve.

MLE — An abbreviation for multi-level effects.

PGM Output — The on-air video output of the system.

Primary Input — Video sources selected by the control panel push-buttons for the crosspoint buses. These buses are normally labeled "KEY", "PGM", and "PST".

PV Output — A switcher output which shows the scene that will go on-air when the next automatic or manual transition takes place.

Self Key — A key effect in which the same video signal serves as both the key signal and key fill.

Soft Edge — A pattern edge effect produced by mixing key source and key fill signals in such a way that the edge of the pattern is not sharp.

Split Screen — An effect in which a wipe pattern provides the key source signal. This is known as a "preset pattern" key.

Tally — An indicator that illuminates when the associated push-button or control is selected or is on-air.

Termination — A means of closing a circuit by connecting a resistive load to it. In video systems, a termination is typically a 75 ohm resistive load.

Transition — A controlled change from one video input to another video input or black. The change can occur through a wipe, cut, dissolve or "DVE Send" effect.

Transition Preview — A transition seen only on the preview monitor. It may be observed and adjusted without disturbing the program or "on-air" output.

Video — The electrical signal produced by a television camera, character generator or other image source. The signal amplitude varies in relation to the tonal scale from black to white presented at the source. White produces the highest amplitude; black produces the lowest signal amplitude.

Wipe — A transition from one video signal to another, in which the change proceeds according to the shape of a specific pattern. A moving transition line separates the two picture signals.

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