
Ross Video Limited



Operation Guide

Version 16-S1



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Cool Practical Technology™

The logo for Ross Video, featuring a stylized, bold, italicized "R" followed by the word "ROSS" in a bold, sans-serif font. Below this, the tagline "Cool Practical Technology™" is written in a smaller, bold, sans-serif font.

Synergy 1 • Operation Guide

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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 in to 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. This includes power-supply cord or plug damage, liquid being spilled or objects having fallen into the apparatus, the apparatus being exposed to rain or moisture, the apparatus having been dropped, or the apparatus not operating normally.
- 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 SD (Video Production Switcher) chassis is to be rack mounted only.
- 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. (Installation Guide only.)
- 22) This apparatus contains a Lithium battery, 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.



Warning

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 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 1.00mm²** 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 appareil numérique 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 guide, 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.

Company Address



Ross Video Limited

8 John Street
Iroquois, Ontario, K0E 1K0
Canada

Ross Video Incorporated

P.O. Box 880
Ogdensburg, New York
USA 13669-0880

General Business Office:	(+1) 613 • 652 • 4886
Fax:	(+1) 613 • 652 • 4425
Technical Support:	(+1) 613 • 652 • 4886
E-mail (Technical Support):	techsupport@rossvideo.com
E-mail (General Information):	solutions@rossvideo.com
Website:	http://www.rossvideo.com
After hours emergency:	(+1) 613 • 652 • 4886, ext. 333



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Introduction

A Word of Thanks

Congratulations on choosing the Ross **Synergy 1** digital video production switcher. 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 switcher fits into your working environment.

About This Guide

This guide covers the operation of the **Synergy 1** switcher. The following chapters are included:

- Chapter 1, “**Introduction**” summarizes the guide and describes the components and features that comprise the Synergy 1 system.
- Chapter 2, “**Control Panel Introduction**” provides an overview of the Synergy 1 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 switcher.
- Chapter 4, “**Switcher Basics**” presents basic operating rules and procedures regarding crosspoints, buses, knobs, and preview mode.
- Chapter 5, “**Background Transitions**” outlines operating procedures for Manual Transitions, Cuts, Dissolves, Auto Transitions and a variety of other basic background transition modes.
- Chapter 6, “**Pattern Control**” provides information and instructions for using the switcher’s **Pattern Control** group.
- Chapter 7, “**Keying**” provides instructions for using the Synergy switcher’s **Effects Keyer** and **Downstream Keyer**.
- Chapter 8, “**Memory Functions and More**” provides instructions for using the Synergy switcher’s **Global Memory System**, plus additional features such as **Preview Overlay** and **Aux Buses**.
- Chapter 9, “**DVE Send**” provides complete instructions for using the switcher’s **DVE Send** capability.
- Chapter 10, “**Ultimatte Insider**” provides instructions for operating the optional **Ultimatte Insider™** chroma keyer function.
- Chapter 11, “**Dual Aspectizer**” provides instructions for operating the optional **Dual Aspectizer**.
- Chapter 12, “**VTR Clip Control**” provides instructions for programming and running VTR, Video Server and Audio Server clips.
- Appendix A. “**Menu Trees**” lists the various menu trees that are used within the Synergy system.
- The **Glossary** provides a reference list of important switching and video terms used throughout this guide.
- An **Index** is also provided for your reference.

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

Documentation Conventions

The following conventions are used throughout this guide:

- 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 integral display panel are indicated in bold-faced text. For example:
The **Aux Bus Setup Menu** allows you to ...
- Soft key labels on the integral display are indicated in bold-faced text, using a sans-serif font. They are *not* indicated by the function key below the display that you press. For example:
Press **Accept New Name** to register ...

Documentation Terms

The following terms are used throughout this guide:

- “**Frame**” and “**Electronics Frame**” both refer to the Synergy 1’s two RU electronics frame.
- “**Operator**” and “**User**” refer to the person who uses the Synergy production switcher.
- “**Panel**” and “**Control Panel**” both refer to the Synergy 1 multi-button control panel.
- “**SDI**” refers to Serial Digital Interface, a digital video signal that is distributed via a single coaxial cable with BNC connectors.
- “**System**” refers to the entire Synergy system, consisting of its electronics frame and the Synergy 1 control panel.
- “**Video system**” refers to the mix of interconnected digital equipment (including the edit controller, VTRs, DVEs, etc.) in which the Synergy system is included.
- A “**1+0 DVE**” has a video connection *only* going from Synergy to the DVE. Both key and fill signals are connected from the DVE to Synergy.
- A “**1+1 DVE**” has both a video (fill) and a key (alpha) connection going from Synergy to the DVE. Both key and fill signals are connected from the DVE to Synergy.
- “**Primary DVE**” refers to the *one* DVE (either single or multi-channel) that is connected to the Synergy switcher via an RS-422 serial control. This type of connection allows you to run the DVE using *custom control* buttons, and by using the **DVE SEND** feature in the **Transition** group. You can also load DVE effects from the panel using the **Recall DVE** button in the **Global Memory System** group.
- “**Secondary DVE**” refers to any number of DVEs that are connected to the switcher using video and key connections only — with *no* RS-422 control. A secondary DVE *must* be controlled from its own local control panel or via GPI output pulses from the Synergy switcher.
- “**Storage device**” refers to a type of external device that can be used to save and recall configurations, setups and certain files to the Synergy switcher. Examples are a standard 1.44 MB high-density floppy disk and a USB key.

Abbreviations

The following abbreviations are used throughout the text:

Abbreviation	Definition
A-D	Analog-to-Digital
AUX	Auxiliary
BKGD	Background Bus
CG	Character Generator
D-A	Digital-to-Analog
DA	Distribution Amplifier
DDR	Digital Disk Recorder
DSK	Downstream Keyer
DVE	Digital Video Effects
DVR	Digital Video Recorder
ID	Identification
MLE	Multi-level Effects
PST	Preset Bus
PST PATT	Preset Pattern
PV	Preview
RU	Rack Unit
TD	Technical Director
VCR	Video Cassette Recorder
VDCP	Video Disk Communications Protocol
VTR	Video Tape Recorder

Product Overview

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

The Synergy series (our fourth generation of switchers), was designed with the direct input of video professionals experienced in news, sports, and mobile production. Key members of the Synergy 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 line continues to advance Ross Video's traditions — power, ease of use, and logical panel layouts.

Product Highlights

The following list summarizes the Synergy 1's key features:

- **Fully Digital System.** The Synergy 1 switcher is fully-digital, including the reference video connection. No analog input/output circuitry is provided. 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-Panel Flexibility.** For superb flexibility and versatility, the Synergy 1 frame is designed to operate with seven different control panels, four of which previously operated in an analog environment:
 - ~ GVG 100 (analog)
 - ~ GVG 110 (analog)
 - ~ RVS-210A (analog)
 - ~ RVS-216A (analog)
 - ~ RVS-210D (digital)
 - ~ RVS-216D (digital)
 - ~ Synergy 1 (digital)
 - ~ Synergy 100 (digital)
- **Large Input Matrix.** The Synergy 1 frame can accept up to 16 digital video inputs — not including black and two color background signals (which are generated internally). On the Synergy 1 panel with its 16 available crosspoints, you have several crosspoint layout options:
 - ~ Assuming that **Black, Color Background 1** and **Color Background 2** are mapped to crosspoints 1, 15 and 16, respectively, the panel gives you direct access to 13 inputs. All of the sources can be mapped internally, allowing you to associate key (alpha) signals with their respective fill sources.
 - ~ If you wish to map a **SHIFT** button to crosspoint 16, the panel gives you direct (and shifted) access to all 16 inputs. In this configuration you can also internally associate key and fill inputs, for full input matrix flexibility. **Compact Size.** The 2 RU frame accepts 16 inputs, one fully optioned MLE and ten untimed Aux buses.

Optionally, Aux buses 1 and 2 can be timed, leaving 8 untimed. There is no extender board available, but the frame top can be removed easily for servicing if required. The CPU board has convenient ejector handles on each side and plugs easily into the frame's backplane.

- **Low Power.** The power requirements are a maximum 180 Watts for the frame and 65 Watts for the control panel. The power supplies are designed for easy removal if an exchange is required.
- **Growth Path.** The Synergy 1 frame provides a versatile growth path, regardless of your entry point within the system. If you start with a Synergy 100, GVG 100, GVG 110, RVS-210A or 210D, RVS-216A or 216D control panel, you can move up to the Synergy 1 control panel and benefit from a full range of advanced features. If you start with the Synergy 1 control panel already in place, you can add two more Downstream Keyers for added flexibility and creativity in your productions. Furthermore, knowledge and skill gained on the Synergy 1 panel allows a seamless transition to the larger Synergy switchers — as operation is almost identical.
- **Powerful Keyers.** The Synergy 1 panel provides two powerful keyers as standard, with an optional third internal keyer and two optional downstream keyers available:
 - ~ The two **Keyers** each provide self (luminance), auto select (linear), preset pattern and chroma key capabilities. Key borders can be generated with an optional border card, if installed. With the optional Squeeze & Tease feature installed, the Keyers can also perform 2D or 3D DVE effects.
 - ~ With the optional **DVE Send** feature installed, a third internal keyer is activated which allows you to seamlessly run an external DVE from the Synergy 1 panel. Signals are routed from the Synergy 1 frame to the external DVE and then back into the frame for keying.
- **Squeeze & Tease.** A 2D or 3D DVE key can be built into each MLE keyer. With the option installed, every type of key can be repositioned, squeezed and zoomed.

With **2D**, you can simultaneously crop, reposition, flip, squeeze or zoom, border, *and* add a glowing transparent color-washed drop shadow to a key inside a *single* keyer.

With **3D**, you can simultaneously crop, rotate and reposition keys in 3D space, freeze moving video, border *and* create and move objects inside a *single* keyer.
- **Chroma Keying.** A standard feature in every keyer, all chroma keyers feature chroma suppression, hue rejection, plus natural and simulated shadows. Each is designed for use in today's fast-paced productions.
- **VTR Control.** This option allows you to select a VTR on the PST bus, recall a VTR timecode "clip" from memory, display the VTR's current time code on the preview monitor, roll it with a Custom Control button, and take it to air. Fast forward, rewind, and cue-to-timecode are also available on the control panel.
- **Custom Control Hot Buttons.** Twenty-four macro buttons have been positioned close to the operator for powerful single-touch control. You can recall any combination of switcher memories, button pushes, and external device control.
- **Two Pattern Generators (Standard).** The Synergy 1 is equipped with a primary pattern generator for creating wipes and preset patterns (PST PATT 1), plus a secondary pattern generator for PST PATT 2. The primary generators are equipped with extensive traditional, rotary and matrix wipes. In addition, a wide variety of creative "User" wipes are also available as standard.

- **Fully Featured “Background/Preset”.** The Background/Preset bus has *full effects capability* including wipes, DVE Send, chroma keys and preset patterns.
- **Advanced Display.** The Synergy 1 includes a large crisp display that is used to configure the switcher and to provide advanced operational features.
- **Preview Overlay.** This powerful feature presents VTR time code, a count up/down timer, source ID, safe title, and more. Displays are individually selectable on the preview monitor for quick reference.
- **External DVE Integration.** Using the **DVE Send** option, DVE effects from many popular DVEs are seamlessly integrated as switcher transitions. Push, slide, and warp keys, backgrounds or both without tying up keyers or worrying about Aux buses, signal paths, or tallies.
- **Upgrades from the Web.** Software (and even some hardware) can be upgraded by downloading files from our web site onto a floppy disk or USB key.
- **Rugged Construction.** Ross products are tough — they’re built to handle years of demanding, continuous use. In addition, the Synergy series is backed by a three year *transferable warranty*.

Standard Features

The following features are standard in *all* Synergy series switchers:

- **Complete Control Panel**
Regardless of what options are ordered, your control panel is always equipped with every button, knob, display and light. This means that your Synergy switcher and your control room will look their very best, even if your budget is tight.
- **Serial Digital Inputs**
Sixteen serial digital inputs are standard on the Synergy 1. Any input can be assigned to any button on the Preset bus, thus simplifying installation and your ability to customize the panel layout. Inputs can be used for video, alpha channel and keying.
- **Panel Tallies**
Sixteen panel tallies are standard on the Synergy 1.

Full MLE Effects

The Synergy 1 includes a *full-featured* MLE that includes the following features:

- Two wipe generators are standard.
- The MLE includes two keyers, both of which offer the following modes: matte fill, key invert, mask, self (luminance) key, auto select (linear) key, preset pattern key and chroma key.
- Both MLE keyers offer extensive optional bordering that works with every key type.
- The optional **Squeeze & Tease** feature can be installed in the MLE keyers, allowing you to squeeze or zoom any key or full screen image.
- The MLE features five comprehensive matte generators, two of which incorporate advanced *wash* capability.
- Full preview capability is provided.

Advanced Copy and Swap Functions

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

- **Copy/Swap Key** — allows you to copy or swap the contents of one keyer with another keyer.
- **Copy Matte** — allows you to copy the contents of a matte generator to any other matte location.

Pattern Generators

The Synergy 1 includes (as standard) both primary and secondary pattern generators that are used for wipe transitions and preset patterns. The primary generators are equipped with extensive traditional, rotary and matrix wipes. The secondary generators provide additional traditional patterns.

Chroma Keying

Chroma keying is available in each keyer. Each high quality chroma keyer features internal 4:4:4 chroma channel interpolation from any of the 4:2:2 inputs. Using the control panel, you can *directly* adjust the Chroma Key's clip, gain, hue, hue reject and chroma suppress. Using the menu system, you can control additional chroma suppression, natural shadow insertion and shadow transparency.

A “chroma key memory” button is available on the panel that instantly recalls a previously stored chroma key setup. Chroma key shadows can either be extracted from the source image or simulated using the optional switcher border generators.

Untimed Aux Buses

Ten untimed Aux buses are standard, each of which can be used to route video to monitors, still stores, tape machines, etc. If any destination requires a timed signal, as is necessary with external DVE integration, Aux Buses 1 and 2 can be converted to timed outputs. If Aux Bus 1 or 2 are left untimed, you can route any of the 16 *primary* inputs on the frame to either of these outputs. As well, Aux Buses 3 through 10 can still be used to route any untimed signals to other external sources, including internally generated black, clean feed (if the option is installed), or MLE program and preview outputs.



Note

Since the Synergy 1 frame generates its own internal black signal, selecting **BLACK** on an untimed Aux Bus will route to the output whatever is connected to your “**601 REF IN**” BNC, with the exception of Aux Bus 1 and 2. Refer to the table on page 1–10.

The following signals are available on an Aux Bus:

- **Black** (as supplied by the “601 REF IN” BNC), plus all primary inputs
- **DVE SEND** (to integrate external DVE effects into switcher transitions)
- **Clean Feed** (if the option is installed)
- **MLE PGM** and **PV** outputs

Aux Bus Capabilities by Timing Status

Aux Bus	Timing	Black	PV	DVE Send	Clean Feed	PGM
1	Timed	Black	Yes	Yes	Yes	Yes
	Untimed	N/A*	N/A	N/A	N/A	N/A
2	Timed	Black	Yes	Yes	Yes	Yes
	Untimed	N/A	N/A	N/A	N/A	N/A
3 - 10	Untimed	Ref	Yes	Yes	Yes	Yes

* Not Available

Standard Digital Outputs

The following table lists all standard Synergy 1 digital outputs:

Synergy 1 Digital Outputs

Output Type	Quantity
Program	2
Preview	2
Aux Bus	10
Total Outputs	14



Note

If the **Clean Feed** option is installed, an additional output is provided, for a total of 15 outputs.

Disk Drive and System Control

Using a standard high density 3.5 inch floppy disk, you can store and recall complete switcher setups that include memory functions, switcher personalities, custom control and installation parameters. For convenience and flexibility, each operator can store their switcher setups on their own PC-compatible disks.

Custom Control Macros

Using the Synergy's macro sequence feature, a series of button presses can be easily recorded and attached to any of the **Custom Control** buttons. You can step through complex show openings as easily as pressing one or two buttons. This feature eliminates confusing timeline programming and allows you to control remote devices or other optional switcher features.

For example, you can:

- Trigger a GPI to advance to the next page of your still store.
- Attach live DVE remote control commands such as *go to start*, *run forward* and *run reverse*.
- Play, stop or shuttle an external VTR or disk recorder.
- Set, start, reset or automate the integrated switcher time-clock.

Memory System

The Synergy 1 is equipped with a standard 100-event memory for complete switcher snapshots. At the touch of a button, the entire switcher (or simply a portion of the switcher) can be recalled directly from the **Global Memory System** keypad. You can also associate “attributes” with memory recalls. These could be dynamic “effects dissolves,” auto transitions or external device commands. All switcher memories can be stored on a storage device, such as a floppy disk or USB key for operator (and program content) convenience.

Matte Generators

The Synergy 1 has three simple color generators and two complex ones called **Washes**, that are capable of multi-color washes. Any one of the color generators can be assigned to COLOR BKGD 1 or 2, key fill 1 or 2, key border 1 or 2 or wipe pattern edges.

Displays and Indicators

The Synergy 1 switcher always keeps you informed.

- Bright red LEDs at the end of every bus indicate what is on air. Yellow non-sync LEDs warn you that an input is untimed.
- LEDs under the key transition buttons (and in the keyers themselves) glow red when the key is on air.
- Every auto transition rate is constantly visible — including the MLE transition rate, the dedicated keyer rates and the fade-to-black rate.
- The last memory number recalled is displayed along with an associated eight character memory name.

General Purpose Interface

The Synergy 1 is equipped with twelve dedicated GPI inputs and twelve dedicated GPI outputs.

- **GPI Inputs** allow the switcher to interface with peripheral equipment such as editors and DVEs. Each GPI input can be assigned to perform functions such as a fade-to-black or an MLE auto-transition. For more complex editing capabilities, the **Editor Interface** option is available.
- **GPI Outputs** are used to trigger remote events such as “Still Store Next Page.” They are tied to the switcher’s **Custom Control** buttons.
- The input GPIs can also be programmed to assist with Aux bus tallies, with the ability to trigger “on air” status each time a different input source is used in an effect. For more complex DVE integration, the **DVE Send and Remote Control** option is available.

Preview Overlay

The **Preview Overlay** feature makes it possible to present various types of useful information on one of the two preview outputs. The overlay is color coded and with the exception of safe title and center mark, can be positioned and displayed according to user preferences.

A variety of overlay information is available:

- The “**Source Identification**” overlay displays the name of the current program source, the current transition, followed by the name of the current preview source.

For example:

VTR 1 -W-> CAM 2

Please note that the preview source is shown in green letters, while the program source is shown in red letters.

- The “**VTR Timecode**” overlay displays the timecode of a VTR, disk recorder or other device when used as the current background of main preview output (for example, **12:59:59:23**). The remote port of the device must be connected to the switcher and the **VTR Remote Control Option** must be installed.
- The “**Safe Title and Safe Area**” overlay places a SMPTE standard safe title or safe 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 area is a box that outlines the region within which viewers should be able to follow action.
 - ~ Two horizontal lines inside the box indicate the minimum text size to ensure that the text (font) is legible on nearly all sizes of television receivers.
- The “**Center Cross Hairs**” overlay places cross hairs on the main preview output to indicate the center of the picture. It is useful in the alignment of text and other information.
- The “**Time Clock**” overlay places a count-down or count-up timer on the main preview output to time commercial durations or other events. Custom Control buttons on the panel can be assigned to reset, start, stop, or set the clock. A special “auto clock” mode is included that resets and starts the clock every time a transition occurs on air.
- The “**Mask Preview**” overlay places a thin outline on the main preview output around any active box mask.

Digital Reference

The Synergy 1 switcher uses a digital reference which is a separate input to the frame. Internal black is regenerated from the digital reference. If an analog reference is desired, Ross Video will optionally provide external conversion from the analog domain.

Synergy Slots

The Synergy 1 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 series. Note that all options can be easily installed in the field.



Note

Refer to the section, “**Installed Options Menus**” on page 3-10 for instructions on how to verify the status of your installed hardware and software options.

USB Removable Media Drive

The **USB Removable Media Drive** option replaces the floppy disk drive for the control panel, and supports industry standard USB keys. This option makes it possible to store and recall complete switcher setups including memory functions, switcher personalities, installation parameters, and more, to a USB key. This allows operators and technical staff to back up their switcher setups and easily transfer these settings to other Synergy production switchers.



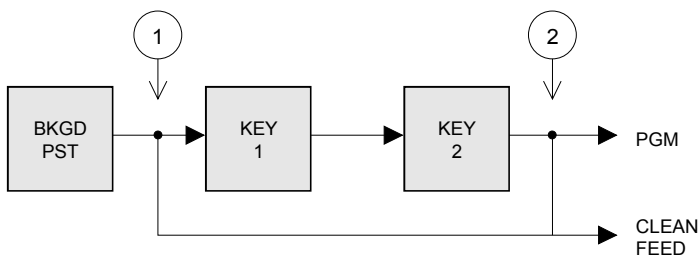
Note

This option requires version 16 or higher Synergy 1 SD software, and version 5 or higher of the control panel CPU board.

Clean Feed

The **Clean Feed** option provides an additional “program” output that is derived from a *different location* than the standard program output. It is used for bilingual and live-to-tape productions. Another frequent application is the recording of shows for later airing without “call in” phone numbers inserted. Note that the **Clean Feed** option is comprised of software plus a hardware “serializer” module that installs on the Frame CPU Board.

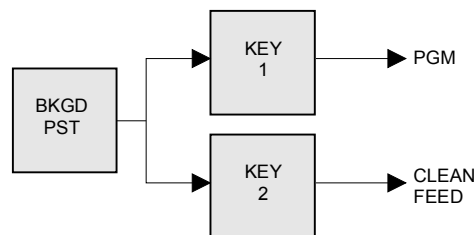
The **Clean Feed** output can be generated from many different locations in the video path. It can come from before or after the keys. Refer to the figure on below.



Basic Clean Feed Modes

1. At point **1** above, the clean feed output is pulled after the MLE’s background/preset bus, but *before* the two keys are added.
2. At point **2** above, the clean feed output is pulled downstream of the two MLE keys — effectively, an additional output.

For bilingual applications, “split” and “split follow” output modes provide KEY 1 over the BKGD/PST bus on the normal program output, and KEY 2 over the BKGD/PST bus on the clean feed output. Transitions on one keyer are slaved to the other. This configuration allows simultaneous broadcasts (such as English/Spanish, English/French) from a *single switcher*, as illustrated below:



Split Clean Feed Modes

In an advanced dual-output application (in conjunction with the switcher’s **Aspectizer** option), you can use **Clean Feed** to output signals in two aspect ratios:

- Key 1 outputs a signal in 4x3 aspect ratio, standard definition.

- Key 2 uses the **Aspectizer** option to output a signal in 16x9 anamorphic aspect ratio, standard definition.

Our enhanced clean feed capabilities also allow you to view the alpha feeding a selected keyer. The Clean Feed alpha output can be derived from any key type on a Key 1 or Key 2, or it can be derived from the last selected Chroma key on any keyer.



Note

The **AlphaNomadCK** option is not available when the **Dual Aspectizer** option is in Downstream Mode, as both require a Clean Feed output.

Squeeze & Tease

One **Squeeze & Tease** option puts the power of a 2D (two dimensional) or 3D (three dimensional) WARP DVE into a keyer.

One **Squeeze & Tease 2D** option can perform the following digital video effects — using only one keyer:

- Squeeze, crop, and reposition an image with variable colored borders.
- Squeeze, crop, and reposition a self key or a chroma key.
- Push on and push off any type of key as a transition.
- Squeeze, crop, and reposition an auto select key. Note that this function “steals” the other MLE keyer’s Squeeze & Tease option in order to process the alpha signal, but the remaining functionality of the other keyer is unaffected.
- Perform Squeeze & Tease wipes, such as push-offs, pull-ons, and other similar DVE transitions.

One **Squeeze & Tease WARP** option can perform the following digital video effects:

- 10 bit processing using sub-pixel motion for great looking pictures.
- Warp effects include page turn, ripple, wave, mirror, swirl, melt, twist, slats, spheres, lens, gnarl, organics, pixie dust, sand, and more.
- Squeeze, crop, rotate, and reposition any kind of key (except an Ultimatte key).
- Create objects (such as slabs) from two images and manipulate them in 3D space.
- On board, dual channel StillStore stores 30 – 512 frames of video (dependent upon image size).
- Preprocessor effects include defocus, mosaic, posterization, colorization, and strobe effects.
- Advanced picture frame borders can be simple, single color type, or fancy picture frame including Roman column, tubular, beveled, computer style, tri-color, and more.
- All images can have natural lighting effects applied using a positionable light source with ambient light min/max controls.

In addition to its DVE functionality, either full screen video or key signals can be frozen at the touch of a button — thus putting the power of a frame store into every keyer. If full screen video is frozen, it can be used as a background to the other MLE keyer. Alternatively, a character generator key can be frozen to free up your CG for further production.

Operationally, Squeeze & Tease is exceptionally easy to control. Most effects can be produced simply by pressing the **Fly Key** button and using the 3-axis joystick. Additional adjustment can be made through the menu system.

Please note:

- All 2D Squeeze & Tease effects can be bordered using the keyer's optional dual border generator.
- The **Squeeze & Tease 2D** or **WARP** option is a circuit card that installs on the Frame CPU Board.

Tally Outputs

There are 16 optional frame tally relays available. Any tally can be assigned to any video input or the program output. Note that the **Tallies** option comprises the hardware relays that install in the switcher frame.

Dual Border Generator

The **Dual Border Generator** option provides visually dynamic border, shadow and outline effects to both linear MLE keyers, with either hard or “glowing” edges. The option can also enhance self keys, chroma keys, and preset pattern keys. You can move the border to any position on the screen — even above the key. Borders are “flown” in real time with the joystick (just like wipe patterns and DVE effects). Please note:

- All border edge effects can be modified through the parameters of **X** and **Y** position, border size, border color (including color washes), density and glow (giving a soft defocused look).
- The **Dual Border Generator** option is comprised of software plus a “daughter board” that installs on the Frame CPU Board.

Editor Interface

The **Editor Interface Option** allows the Synergy 1 to interface with all popular editing systems. The option itself is comprised of software plus security codes and once installed, the switcher can be controlled using an RS232 or RS-422 interface and industry standard 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 GPI control is not sufficient and control of all switcher parameters from an editor is necessary, this option is required.

Animated Logo Generator (ALG)

The Animated Logo Generator (CDK-111A-M) option allows the user to send animated logos or full-screen stills from the ALG to the switcher. There you can perform any switcher effect on the logo or still image.

External Downstream Keyer (DSK)

The External Downstream Keyer (CDK-111A-M) option allows the user to key stills or animated logos downstream of the switcher's own internal downstream keyers. The Synergy switcher can utilize up to two external DSKs, each having independent PGM and PV outputs with true “look ahead” preview capability.

Still Store Interface

This option enables control over a still store. It allows a user to randomly access any still or clip under control from Synergy. Custom Control macros can also be created for quick and direct access to clips and switcher scene recalls.

Character Generator Interface

This option enables the serial ports for control over the Character Generator. It allows a user to load and run effects, load and navigate through a playlist or a CG template, and edit CG text directly from the Synergy control panel.

Small Audio Mixer Interface (16 and fewer Inputs)

This option enables serial control for enhanced audio follow video from Synergy over small audio mixers, making an integrated A/V production possible.

This protocol supports the associating of any audio input with any video input. It also supports easy audio voice-over control and audio level control from the Synergy panel.

Large Audio Mixer Interface (more than 16 Inputs)

This option enables serial control for enhanced audio follow video from Synergy over large audio mixers, making an integrated A/V production possible.

This protocol supports the associating of any audio input with any video input. It also supports easy audio voice-over control and audio level control from the Synergy panel.

Robotic Camera System Interface

This option enables serial control over robotic camera systems including pan, tilt, zoom, focus, and scene recalls.

Peripheral Interface II Protocol (PIP-II) Interface

This option enables communications with up to 24 peripheral devices on a single remote port.

Dual Aspectizer

The **Dual Aspectizer** option allows you to perform live, dual aspect ratio DTV production from the Synergy 1 panel. Using the Aspectizer's ability to convert aspect ratios on the fly, you can deliver a 16:9 format signal while simultaneously delivering your 4:3 NTSC signal. Aspectizer features include:

- 4:3 to 16:9 or 16:9 to 4:3 conversion on any input.
- Pan and scan, letterbox, and pillarbox formats, as well as intermediate formats such as 14:9, bordering and color background generators.
- Six of these formats can be repositioned on screen, either vertically, or horizontally depending on the format used.
- Functional control using quick presets.
- Complete flexibility with the ability to assign the Aspectizer to selected inputs, or the output.
- Full access to both the original and the aspect ratio converted images.

Note that the **Dual Aspectizer** option comprises software plus a “daughter board” that installs on the Frame CPU Board.



Note

The **Dual Aspectizer** option is mutually exclusive with the **Ultimatte Insider** option. Only one of the two can be installed at the same time.

Ultimatte Insider

Ultimatte Insider™ is a hardware option that adds true Ultimatte capability — directly *inside* the Synergy 1 switcher. The option is comprised of a hardware board designed by Ultimatte (the Oscar-winning industry leader in compositing technology), plus Ultimatte-specific menus for controlling the chroma key.

Note that the **Ultimatte Insider** option is comprised of software plus a “daughter board” that installs on the Frame CPU Board.



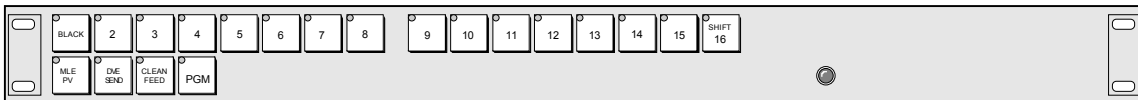
Note

The **Ultimatte Insider** option is mutually exclusive with the **Dual Aspectizer** option. Only one of the two can be installed.

Dedicated and Assignable Remote Aux Panels

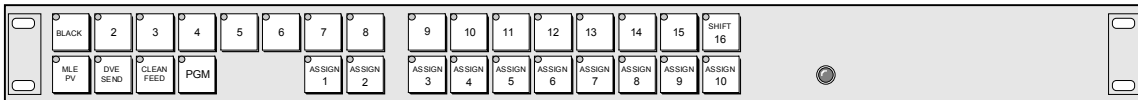
A **Remote Aux Panel** is a self-contained switching unit that has its own power supply. It mounts in a 19-inch rack and fills one RU (Rack Unit). There are two types of remote Aux panels available for the Synergy 1 switcher:

- A **Dedicated Remote Aux Panel** controls one Aux bus output. The following figure is a sample panel:



Dedicated Remote Aux Panel

- An **Assignable Remote Aux Panel** controls all 10 Aux bus outputs. The following figure is a sample panel:



Assignable Remote Aux Panel

In addition to the source buttons, each panel includes dedicated buttons for DVE Send, Clean Feed and Program, plus a bright “on air” LED. Assignable panels include buttons that are used to access the 10 Aux bus outputs.

The remote panel itself is connected to the rear of the switcher’s control panel via a single six-conductor telco control cable. Typical applications include routing signals to one or more DVE channels and switching a monitor between various signals.

Up to eight Aux panels can be connected to the frame in daisy-chain fashion. As well, an additional eight panels can be connected in the same daisy-chain fashion to the rear of the Synergy 1 Control Panel.

Please note:

- Both the **Dedicated** and **Assignable** Aux panel options include a 33 foot (10 meter) cable. Custom cable lengths are available.
- The maximum cable length between panels (as limited by RS-422 specifications) is 1000 feet (305 meters).

- The communications signal is re-buffered at each Aux panel.
- Aux panel assignments are performed using the control panel and menu system.



Note

Each **Remote Aux Panel** has an additional rear chassis connector that adds 8 GPI input ports per panel. These GPIs are a special feature that allow a camera operator to manually override the Aux panel selection via GPI trigger for purposes of camera matching. Refer to the section, “**Remote Aux Panels**” on page 8-39 for details.

VTR Remote Control

The **VTR Remote Control Option** controls VTRs, disk recorders, video servers, audio servers or other devices directly from the switcher panel. The option consists of software plus integrated circuits that install on the control panel’s “**Panel CPU**” board.

With the option installed, the following features are available:

- The control panel’s transition area includes a **ROLL VTR** button which, when set to **Play** mode and pressed, issues a *play* command to the device selected on the **PST** bus. The operator then manually transitions the source to air by moving the fader or by pressing the **CUT, AUTO TRANS**, or the device’s crosspoint on the **PGM** bus.

When the **ROLL VTR** button is set to **Arm** mode, the switcher is armed to automatically transition the device to air *after* the preroll interval has elapsed. The transition to air is initiated manually when the operator presses the **CUT, AUTO TRANS**, or the device’s bus crosspoint.

- The **Global Memory System** area includes the **VTR CLIP** button which allows you to recall clips (segments) from selected devices that are connected to Synergy. A clip consists of two pieces of information: a physical device (such as a VTR or video server) and a timecode or media ID.

Using the **VTR Clips Menu**, you can select a device and store a timecode in one of 100 registers. You can then press **VTR CLIP**, enter a clip register and cue the device (that is associated with the clip). You can then use the **ROLL VTR** button or your **Custom Control** buttons to roll the device with precision.

- VTR Remote Control can be tied into the **Custom Control** buttons. Any Custom Control button can be attached to functions such as play, stop, rewind, fast forward, frame advance, auto edit and standby off.

Router Control

The **Router Control Option** allows you to control an external routing switcher directly from the switcher panel. With the option installed, you can assign a BNC as the routing switcher and dial up the desired router crosspoint from the **Router Matrix Control Menu**. Setup parameters allow you to select the “type” of router, the router’s output BNC and the router’s level.

Serial Tally Interface

The **Serial Tally Protocol Option** allows you to set up communication parameters with tally system interface equipment using industry standard protocol. Note that the standard parallel tally interface will continue to operate normally when this option is enabled.

DVE Send and Remote Control

Synergy 1 is designed to integrate with most popular brands of DVEs *seamlessly* — as if they were part of the switcher during on air production. The **DVE Send and Remote Control Option** makes this possible.

The **DVE SEND** button in the **Transition Group** assigns the external DVE (the “primary” DVE) to the MLE — and selects **DVE Send** as the transition type (as opposed to wipe or dissolve). You can then select the next transition (using the **BKGD**, **KEY 1** and **KEY 2** buttons) and press the **AUTO TRANS** button.

DVE Send transitions do not consume a keyer and the switcher handles all Aux Bus and signal routing issues automatically. Please note:

- Depending upon the capability of the DVE itself, transitions can be run manually with the fader bar or automatically using **AUTO TRANS**.
- DVE effects can be recalled directly from the **Global Memory System** area or by pressing the **DVE** button in the **Pattern Control** group and then using the 40 pattern buttons as a DVE “shot box.”
- DVE effects can be recalled along with a memory register by pressing the **INCL DVE** button in the **Global Memory System** area.
- Tallies will always be correct — regardless of the complexity of the video signal routing.

Note that the **DVE Send** option requires the installation of the **Timed Aux Bus** option. Refer to the section, “**Understanding DVE Send Operations**” on page 9-2 for details on this feature.

Video Server Control

The **Video Server Control Option** controls up to four video servers directly from the switcher panel. Interfaced servers must use the standard Harris (Louth) VDCP, or the Sony (Betacam) protocol. With the option installed, the following functions are available:

- Using the **VTR Clips** menu, you can set up a list of server clips that you want to use on air, name them, preview them, trim each clip’s head and tail and enable (or disable) each clip for use. The menu also includes a timeline that lets you visually review the clip’s parameters.
- Once your clips are set up, you can choose a clip register from the **Global Memory System** area, select the video server on Preset and perform preview and cue operations with full transport control capability. On the display, in addition to the clip timeline, you can select any of your preset clips for use — in any order desired.
- The control panel’s transition area includes a **ROLL VTR** button which, when set to **Play** mode and pressed, issues a *play* command to the device selected on the **PST** bus. The operator then manually transitions the source to air by moving the fader or by pressing the **CUT**, **AUTO TRANS**, or the device’s crosspoint on the **PGM** bus.

When the **ROLL VTR** button is set to **Arm** mode, the switcher is armed to automatically transition the device to air *after* the preroll interval has elapsed. The transition to air is initiated manually when the operator presses the **CUT**, **AUTO TRANS**, or the device’s crosspoint on the **PGM** bus.

- Just like VTR Remote Control, Video Server Control can be tied into the **Custom Control** buttons.

Audio Server Control

The **Audio Server Control Option** controls up to four audio servers (such as the **Digicart** by 360 Systems) directly from the switcher panel. Interfaced audio servers must use Digicart protocol. With the option installed, the following functions are available:

- Using the **VTR Clips** menu, you can set up a list of Digicart audio clips that you want to use on air, name them, preview them and enable (or disable) each clip for use.
- Just like VTR and Video Server remote control, Audio Server Control can be tied into the **Custom Control** buttons. This is the preferred way to utilize Audio Server clips, with the ability to associate sound effects with transitions (such as DVE moves), and store them on custom control buttons for single-button audio/video effects.

Monitor Wall Interface

This software option adds the ability to interface between Synergy and a multi-image display system, providing advanced monitoring capabilities.

Using the Custom Control macro buttons, you can perform functions such as loading a preset layout, changing the input channel on a particular monitor, or editing dynamic text.

Timed Aux Bus

The Synergy 1 switcher offers two types of Aux bus outputs — untimed (standard) and timed (optional). The total number of Aux bus outputs remains fixed at 10.

- A standard **Untimed Aux Bus** output follows the timing of the input source with a short additional processing delay. For destination devices that are not sensitive to timing (such as monitors) or for those devices which have their own input synchronization (such as some DVEs), the Untimed Aux Bus outputs are ideal.



Note

Since the Synergy 1 frame generates its own internal black signal, selecting **BLACK** on an untimed Aux Bus will route to the output whatever is connected to your “**601 REF IN**” BNC, with the exception of Aux Bus 1 and 2.

- The **Timed Aux Bus** option allows you to convert two untimed Aux bus outputs (Aux 1 and Aux 2) to *timed* Aux bus outputs. When installed, a timed output ensures that all “synchronous” sources have stable timing relative to the switcher’s program output. This simplifies Digital to Analog conversion and system timing.

A “synchronous” source is defined as one within +/- one quarter line of the switcher reference. Sources outside of this window remain horizontally locked, but may be shifted vertically.

For destination devices that *are* sensitive to timing (such as a D-A converter), the **Timed Aux Bus** outputs are ideal.



Note

The Timed Aux Bus option is comprised of “serializer” and “deserializer” modules that install on the Frame CPU Board. Refer to Appendix D, “**Hardware Options**” of the *Synergy 1 Installation Guide*, for module installation procedures.

Downstream Keyers

One or two *external Downstream Keyers* (CDK-111A-M) can be added to the Synergy 1 system, each with the capability of being controlled fully from the control panel. In a fully configured system, four keyers (two MLE and two downstream) can be controlled from the panel's **Transition Section**.

Redundant Power

The **Redundant Power Supply** option provides protection against AC power failure in the control panel. With the option installed, complete failure of one power source will not affect control panel operation.

If the main AC power fails, the control panel instantly draws power from the remaining source. The transition from one power source to the other is transparent and has no effect on the switcher's output — a critical feature should one power source fail during an on-air broadcast.

There are two power fail indicator lights on the main panel. They indicate:

- loss of power or a fan failure in the frame.
- loss of redundant power in the control panel.

Conversion Frames

All switcher inputs and outputs are 10-bit SDI, 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.

Ross 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 relocked 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 website at <http://www.rossvideo.com> or contact your Ross Video representative to obtain a current Ross Video Product Catalog for detailed information on our complete line of converters.

Spare Parts Kit

A **Spare Parts Kit** is available that 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 Main Panel Cable

The **Main Panel** cable connects the control panel to the electronics frame. It is a shielded 8-pin telco cable and the ends are finished with the appropriate connectors. The control panel and frame can be separated by a maximum of 1,000 feet (305 meters).

A 33 foot (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, emergency technical support is available. A telephone answering device will provide the names and phone numbers of technical support and field service personnel who are on call. 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) 613-652-4886, ext. 333.

Product Comparison Charts

For your reference, following are detailed charts that compare the features and options that are available with the different control panel configurations of the Synergy 1.

Feature Comparison Chart

Feature	Synergy 1	Synergy100	GVG-100/ 110	RVS 210A/D	RVS 216A/D
100 Event Memory	Yes	Yes (*10)	Yes (*10)	Yes (*10)	Yes (*10)
# of Keyers	4 (*3)	3	2	2	3 (*4)
All 16 Inputs Accessible	Yes	Yes (*1)	Yes (*1)	No (*2)	Yes
Chroma Key Clip, Gain and Hue controls	Yes	Yes	Yes	Yes	Yes
Chroma Key Reject, Blue spill suppression controls	Yes	Yes	Yes (*8)	No (*9)	No (*9)
Custom Control (Macros)	Yes	No	No	No	No
DSK Borders	No (*6)	Yes	Yes	Yes	Yes
DSK DVE Send Transitions	No (*6)	No (*7)	No (*7)	Yes	Yes
DSK Still Store and Animated Logo Generator	Yes (*6)	No	No	No	No
DVE Send	Yes	No	Yes	Yes	Yes (*5)
Extended Wipe Patterns	Yes	Yes	Yes	Yes	Yes
Favorite CG Button	Yes	Yes	No	Yes	Yes
Internally Generated Black	Yes	Yes	Yes	Yes	Yes
Internally Generated Color BKGD	Yes	Yes	Yes	Yes	Yes
Key 1 Borders	Yes	No	No	No	No
Key 1 Squeeze & Tease	Yes	Yes	Yes	Yes	Yes
Non-Sync LEDs	Yes	Yes	No	Yes	Yes
Preview Overlay	Yes	Yes (*11)	Yes (*11)	Yes (*11)	Yes (*11)
Remote Aux Panel GPIs	Yes	No	No	No	No
Software Reset from Panel	Yes	Yes	No	No	No
Transition Preview	Yes	Yes	No	Yes	Yes

Notes:

- (*1) Panel supports **SHIFT** button.
- (*2) The hidden (inaccessible) inputs can be configured as key signals.
- (*3) 2 keyers are standard and 2 external DSKs are optional.
- (*4) The Encoded Chroma Key button becomes the MLE Key 2 button. In this mode, external DVE Sends are not available. The DSK “next transition” button becomes the MLE Key 2 button and the DSK is then controlled by dedicated buttons (for CUT, AUTO TRANS).
- (*5) In 2 Keyer mode only. Timed Aux Bus option must be installed.

(*6) DSKs on Synergy 1 are optional and external. They only have Self and Auto Select key capability.

(*7) DSK can only perform Mix and Cut transitions.

(*8) Variable via Chroma Key button hold down.

(*9) Fixed settings.

(*10) Bank selectable via the Auto Trans display.

(*11) Center mark and safe title only.

Option Comparison Chart

The following chart details which options are available with each Synergy 1 switcher configuration.

Option	Synergy 1	Synergy 100	GVG-100/110	RVS 210A/D / RVS 216A/D
Audio Server Control	Yes	No	No	No
Audio Mixer Control	Yes	Yes	No	No
Character Generator	Yes	No	No	No
Clean Feed	Yes	Yes	Yes	Yes
Dual Aspectizer	Yes	No	No	No
Dual Border Generator	Yes	Yes	Yes	Yes
DVE Send	Yes	No	Yes	Yes
Editor Interface	Yes	Yes	Yes	Yes
External DSKs (up to 2)	Yes	No	No	No
Frame Tallies	Yes	Yes	Yes	Yes
Panel Tallies	Yes (*2)	Yes (*2)	No	Yes (*2)
PIP-II Protocol Interface	Yes	No	No	No
Redundant Power	Yes (*3)	No	No	No
Remote Aux Panels	Yes	Yes	Yes	Yes
Remote Camera Control	Yes	No	No	No
Routing Switcher Control	Yes	No	No	No
Squeeze & Tease 2D	Yes	Yes	Yes	Yes
Squeeze & Tease WARP	Yes	Yes	No	No
Still Store Control	Yes	No	No	No
Timed Aux Buses	Yes (*1)	No	Yes (*1)	Yes (*1)
Ultimate Insider	Yes	Yes	No	No
Video Server Control	Yes	No	No	No
VTR Remote Control	Yes	No	No	No

Notes:

(*1) Aux 1 and Aux 2 can be timed.

(*2) Panel tallies are standard. See table below.

(*3) In the control panel only

Tally Comparison Chart

The following chart details the *optional* tally combinations that are available with each Synergy 1 switcher configuration.

Tally Configuration	Synergy 1	Synergy 100	GVG-100/10	RVS 210A/D	RVS 216A/D
Panel Tallies	16 (Standard)	16 (Standard)	—	8 (Standard)	14 (Standard)
Frame Tallies	16	16	16	16	16
Maximum Tallies	32	32	16	24	30

Control Panel Introduction

In This Chapter

This chapter provides an introduction to the Synergy 1 SD control panel. You will learn the various sections of the panel and details about the basic functionality of each section. The following topics are discussed:

- Control Panel Sections
- Video Flow through the Switcher
- Using a Keyboard
- Resetting the System
- Switcher Timeout

Control Panel Sections

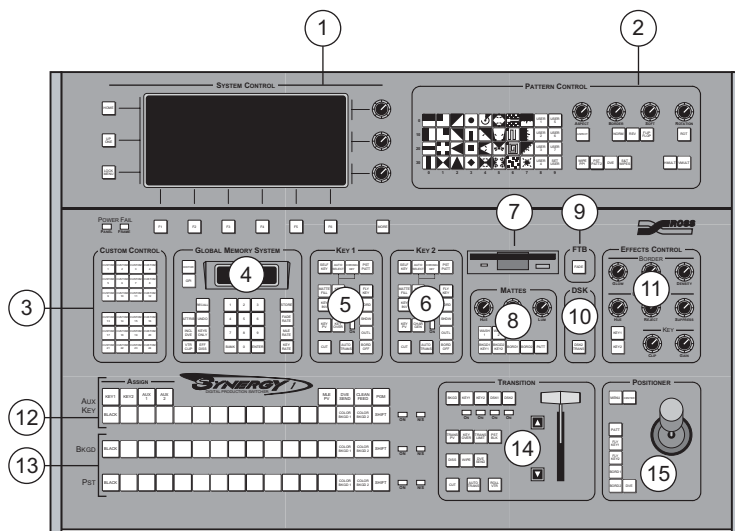
This section outlines the various sections of the Synergy 1 SD control panel.

Synergy 1 SD Control Panel Overviews

The following figures illustrate a top view of the Synergy 1 SD control panels, with each control panel section highlighted.

Synergy 1 — Floppy Disk Drive

The following figure illustrates the Synergy 1 SD control panel with a floppy disk drive installed.

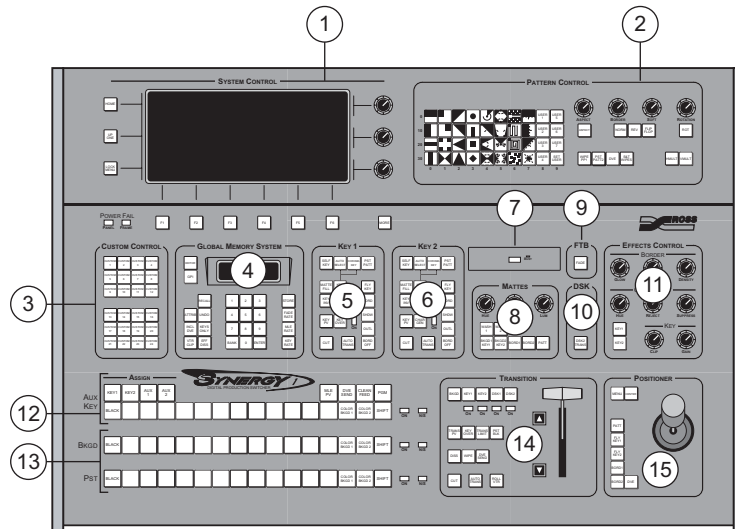


Synergy 1 Control Panel, Sectional View — Floppy Disk Drive

1) System Control Group	6) Key 2 Group	11) Effects Control Group
2) Pattern Control Group	7) Floppy Disk Drive	12) Aux Bus/Key Bus Group
3) Custom Control Group	8) Matte Control Group	13) Background/Preset Bus
4) Global Memory System Group	9) Fade to Black Group	14) Transition Group
5) Key 1 Group	10) Downstream Key Group	15) Positioner Group

Synergy 1 — USB Port

The following figure illustrates the Synergy 1 SD control panel with the **USB Removable Media Drive** option installed.



Synergy 1 Control Panel, Sectional View — USB Port

1) System Control Group	6) Key 2 Group	11) Effects Control Group
2) Pattern Control Group	7) USB Port	12) Aux Bus/Key Bus Group
3) Custom Control Group	8) Matte Control Group	13) Background/Presets Bus
4) Global Memory System Group	9) Fade to Black Group	14) Transition Group
5) Key 1 Group	10) Downstream Key Group	15) Positioner Group

The following are more detailed descriptions of each control panel section.

1. System Control Group

The **System Control Group** includes the **System Control Display**, a bright LCD screen that provides a variety of menus for system set up and operational functions. The display changes *automatically*, depending on certain functions that you select on the control panel or it can be navigated manually. Refer to the section “**Menu System Basics**” on page 3-3 for complete instructions on using the **System Control Group**.

2. Pattern Control Group

The **Pattern Control Group** is an *assignable* group of controls that allows you to choose wipe patterns and adjust various parameters of the selected pattern.

The group also includes a **DVE** button that essentially changes the pattern control array into a **DVE shot box** — for your system’s primary DVE. The **DVE Send and Remote Control Option** must be installed. Refer to the section “**Pattern Control Group**” on page 6-2 for details.

3. Custom Control Group

The **Custom Control** group provides an array of 24 buttons that can be programmed to perform specific functions such as peripheral device control, switcher memory recalls or switcher macros. A macro is essentially a series of button presses that can be played back in succession, at the touch of a single **Custom Control** button.

4. Global Memory System Group

The **Global Memory System** group is used to store and recall switcher memory registers. A memory register is basically a “snapshot” of the switcher. The group includes a status display and buttons for remote control. With the **VTR Remote Control Option** installed, you can also store and recall VTR timecode “clips” using the group’s **VTR CLIP** button.

5. Key 1 Group

The **Key 1 Group** allows you to select the key type and associated parameters for Key 1. Choose between **Self Key**, **Auto Select** (Linear Key), **Chroma Key** and **PST Pattern Key**. Within the group, you can also select a variety of parameters and key transitions. When any button is selected in the group, the **Key Bus** is assigned to Keyer 1. An **ON** LED is provided for tally.

Electronically, Key 1 is downstream (visually in front) of the background buses, but upstream (visually in back) of Key 2. The **KEY OVER** button allows you to change that priority.



Operating Tip

You can also change the priority of the two keyers in the **Key Setup Menus** by toggling the **Key Over** softkey between **On** and **Off**. Refer to the section “Using Keys” on page 7-13 for more information.

6. Key 2 Group

The **Key 2 Group** allows you to select the key type and associated parameters for Key 2. Choose between **Self Key**, **Auto Select** (Linear Key), **Chroma Key** and **PST Pattern Key**. Within the group, you can also select a variety of parameters and key transitions. When any button is selected in the group, the **Key Bus** is assigned to Keyer 2. An **ON** LED is provided for tally.

Electronically, Key 2 is downstream (visually in front) of the background buses and also downstream of Key 1. The **CHAR GEN** button allows you pick your *favorite CG* for immediate keying.

7. Floppy Disk Drive or USB Port

The Floppy Disk Drive allows you to store and recall memory, installation, VTR clip, custom control and personality registers.



Note

If you have the **USB Removable Media Drive** option installed, you will have a USB port instead of a floppy disk drive.

8. Matte Control Group

The **Matte Control Group** is an *assignable* module that allows you to adjust matte, border and wash generator colors. By pressing any matte-related button on the switcher, the **Matte Control Group** is assigned.

9. Fade to Black Group

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

10. Downstream Key Group

The **Downstream Key Group** provides two DSK transition buttons, one for each optional downstream (external) keyer. Each DSK allows you to key over output video,

immediately prior to the switcher's final video output. In addition to cut and dissolve functionality, each DSK supports **Self Key** and **Auto Select** key capabilities.

11. Effects Control Group

The **Effects Control Group** provides an array of controls that handle all of the switcher's frequently used analog-type parameters — such as border width and key clip. By pressing any button that has associated adjustable parameters, the **Effects Control Group** is assigned.

12. Aux Bus/Key Bus Group

The **Aux Bus/Key Bus Group** is a dual-function section:

- By pressing **AUX 1** or **AUX 2**, Aux Bus functionality is activated and the **Aux Bus Menu** appears. The bus row is now dedicated to assigning Aux Bus sources that are routed to specific *external* destinations such as DVE inputs and tape machines. The sources on the Aux Bus Crosspoint Row can be mapped in one of two ways. One method is to map the crosspoints identical (in both source and quantity) to those on the **Background** and **Preset** buses. You can also map BNCs differently than the MLE to the Aux Bus Crosspoint Row without changing the crosspoints on the MLE bus. Because the switcher includes 10 Aux buses, this row is *shared* between all 10 outputs. Outputs **AUX 1** and **AUX 2** can be assigned and selected *directly* on the bus row, while outputs **AUX 3** through **AUX 10** must be *selected* on the menu, but they can be assigned on the bus row.
- By pressing a **Key Assignment** button (**KEY 1** or **KEY 2**), key bus functionality is activated. The bus row is now dedicated to selecting key sources that can be keyed (electronically cut) into the background. The **Key Bus** is *shared* between the two keyers (Key 1 and 2). The appropriate button (**KEY 1** or **KEY 2**) lights when *any* button in either the **Key 1** group or **Key 2** group is pressed.

At the right-hand side of the bus are several LEDs:

- For tally information, the **ON AIR** LED lights red to indicate when a crosspoint selected on that bus is used as part of the output video.
- For bus status, the **N/S** LED lights yellow to indicate when a non-synchronous source has been selected on the bus.

13. Background/Preset Bus

The **Background/Preset Bus** is composed of two rows of crosspoint buttons (one per video input source) that represent your primary switcher output selection area.

- The **Background Bus** (labeled **BKGD**) is the video source *currently on air*. This is the switcher's background image — that is, the image that is visually behind all other images (or farthest upstream, electronically).
- The **Preset Bus** (labeled **PST**) selects the source on the MLE that you are transitioning to — using a cut, dissolve, wipe or DVE transition.

At the right-hand side of the bus are several LEDs:

- For tally information, the **ON AIR** LEDs (one per bus) light red to indicate when a crosspoint selected on that bus is used as part of the output video.
- For bus status, **N/S** LEDs (one per bus) light yellow to indicate when a non-synchronous source has been selected on the bus.

14. Transition Group

The **Transition Group** allows you to select the type of transition that you want to perform between the **BKGD** and **PST** buses. The buttons and controls are optimized for safe and easy operations during live on-air situations.

You can transition *any combination* of the **BKGD/PST**, **KEY 1** and **KEY 2** buses using a cut, wipe, or dissolve. The **DVE SEND** button also allows you to perform transitions using effects from the *primary* DVE. Transitions can be performed manually with the **Fader** or automatically with the **AUTO TRANS** button.

15. Positioner Group

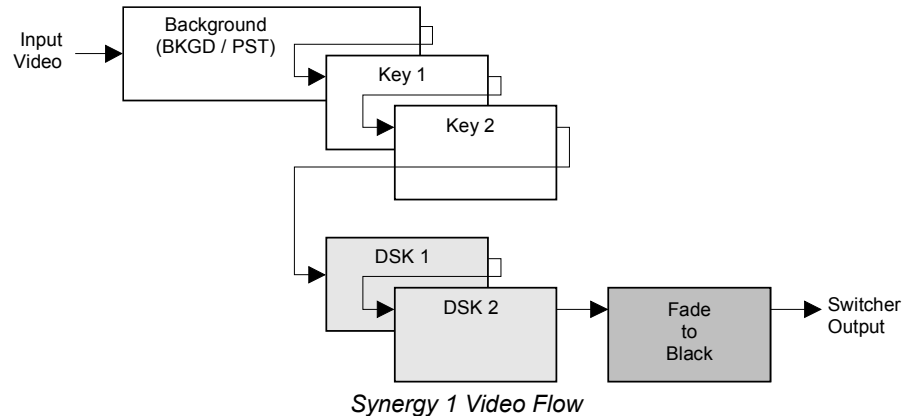
The **Positioner Group** allows you to position wipe patterns on screen. By pressing the **WIPE** button, the **Positioner Group** is assigned.

Note that if the **Squeeze & Tease 2D** or **3D** option is installed and the **FLY KEY** button is pressed on a Keyer, the Positioner can be used to manipulate the X and Y (and Z, if 3D) position of a “flying” key.

Video Flow through the Switcher

The following diagram illustrates how video flows through the Synergy Switcher. The drawing illustrates the switcher's visual and electronic concepts of upstream and downstream and are designed to help you visualize and understand the switcher's architecture *from a production standpoint*.

The following block diagram below illustrates the flow of video through the Synergy 1 SD Switcher:



Please note the following important points:

- The Synergy 1 is a single MLE switcher with 16 inputs. Video flows *into* the MLE as indicated above, where crosspoints can be selected for effects creation.
- The Background and Preset buses are electronically the farthest upstream, Key 1 is displayed mid stream and Key 2 is displayed downstream.
 - ~ Visually, all images on the background bus appear *behind* both keys.
 - ~ In the default state, a key enabled on Key 1 appears visually *over* the background bus (and all transitions), but visually *under* Key 2.
 - ~ In the default state, a key enabled on Key 2 appears visually *over* the background bus and Key 1.
 - ~ If the **KEY OVER** button is pressed in Key 1, the priority is changed and Key 1 appears visually *over* Key 2.



Operating Tip

You can also change the priority of the two keys in the **Key Setup Menus** by toggling the **Key Over** softkey between **On** and **Off**. Refer to the section “**Using Keys**” on page 7-13 for more information.

- ~ Optional External DSKs can be added downstream of the Keyers.
- ~ The **Fade to Black** module 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.

Using a Keyboard

The Synergy 1 Switcher can accommodate a standard PS/2 Keyboard that connects to the rear of the Control Panel. This keyboard allows you to emulate several system control buttons, as well as allow you to enter, or change, names.



Important







Do NOT place anything on your keyboard or place your keyboard in a position where any of the keys could be accidentally pressed. This could result in the Switcher acting unpredictably.

Using the Keyboard in System Control Menus

The keyboard can be used in place of the panel buttons and knobs to navigate through the menus and select values.

The following table illustrates the functions of the keys on the keyboard as they relate to the control panel buttons:

System Control Menus










Keyboard	Panel Key	Description
F1 – F6	F1 – F6	Performs whatever the softkey function is above the panel key.
SysRq & Break	 – HOME	Returns to the Main Menu 1-2 from whatever menu is currently displayed.
Esc	 – UP ONE	Back one menu.
Tab	 – MORE	Next screen in selected menu.
Insert & Delete	 – Top Knob (1) Horizontal	Small incremental movement of knob.
Home & End	 – Middle Knob (2) Vertical	Small incremental movement of knob.
Page Up & Page Down	 – Bottom Knob (3)	Small incremental movement of knob.

Using the Keyboard in Change Name Menus

The keyboard allows you to type alphanumeric characters in the various Change Name menus of the Switcher.

The table on page 2-9 illustrates the function of the keys on the keyboard as they relate to the control panel buttons in the change name menus. This table is provided as an example only, the corresponding function of the keyboard buttons will vary, depending on the menu you are accessing.

Change Name Menus

Keyboard	Panel Key	Description
Alphanumeric Keys		
Alphanumeric keys	a b c ... z A B C ... Z 0 1 2 ... "	Note: The keyboard allows the input of characters not available with selections on the display. For example ~ ' [] { } = +
Function Keys		
F1 & Space Bar	 – Space	Deletes the selected character and moves the cursor one space to the right.
F2 & ←	 – Prev Letter	Moves the cursor one space to the left.
F3 & →	 – Next Letter	Moves the cursor one space to the right.
F4	 – Preset Names	Displays the Preset Names Menu with a list of preset names to select from.
F5	 – Default	Returns the original default name.
F6 & Enter	 – Accept New Name	Replaces the default name with the new name.
Direction Keys		
Insert & Delete	 – Top Knob (1) Horizontal	Move the cursor left (Insert) or right (Delete).
Home & End	 – Middle Knob (2) Vertical	Move the cursor up (Home) or down (End).
↑ ↓	 – Bottom Knob (3)	Incremental increase (Up arrow) or decrease (Down arrow) to the value associated with the Bottom Knob (3).
Backspace	— No Panel Key —	Deletes the selected character and moves the cursor one space to the left.

Resetting the System

If required, the Synergy system can be reset manually from the frame. There are two types of resets:

- A **Full Reset** affects hardware and software simultaneously.
- A **Software Reset** affects software only.

Full Reset

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.

- To reset the frame and all system software, press the button labeled **RESET** on the front edge of the **Frame CPU Board**.

Refer to Chapter 2, “**Installation**” of the *Synergy 1 Installation Guide* for more information on the frame and control panel **RESET** switches.

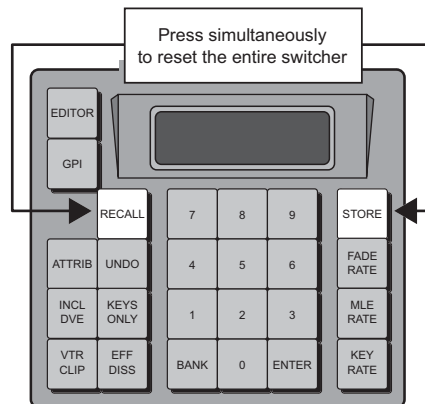


Note

It is not recommended to reset the frame by turning the power off and then on. If this is done, the frame software will be reloaded (reset) but the panel settings will come back to the point they were at before the loss of power.

Software Reset

The software reset function is performed in the **Global Memory System Group** on the switcher. Use the following figure for reference:



Global Memory System Group Reset Function

- To perform a full software reset, simultaneously press **STORE** and **RECALL**.

This will cause the panel settings to be reset to factory defaults. **BLACK** will be selected on all buses.

Switcher Timeout

If no control panel buttons are touched and no fader arms are moved for a period of 30 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 display and the button lamps.

If this timeout occurs, press any button or move any 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 30 minutes.

Using the Menu System

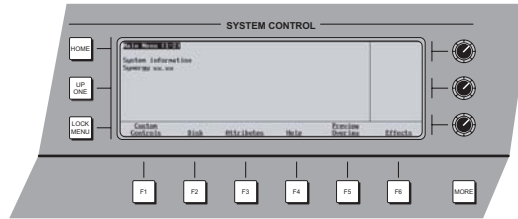
In This Chapter

This chapter provides an introduction to the Synergy switcher's menu system. The following topics are discussed:

- About the System Control Display
- Menu System Basics
- Positioner Icons
- Adjusting the Display
- Help Features
- Installed Options Menus
- Screen Capture

About the System Control Display

The **System Control** group is located at the top of the Control Panel.



Control Panel — System Control Group

The group includes a bright LCD screen that provides a variety of clear menus for various system setup and operational functions. The display is in fact a menu *tree*, with various branches that arrange switcher functions into concise categories.

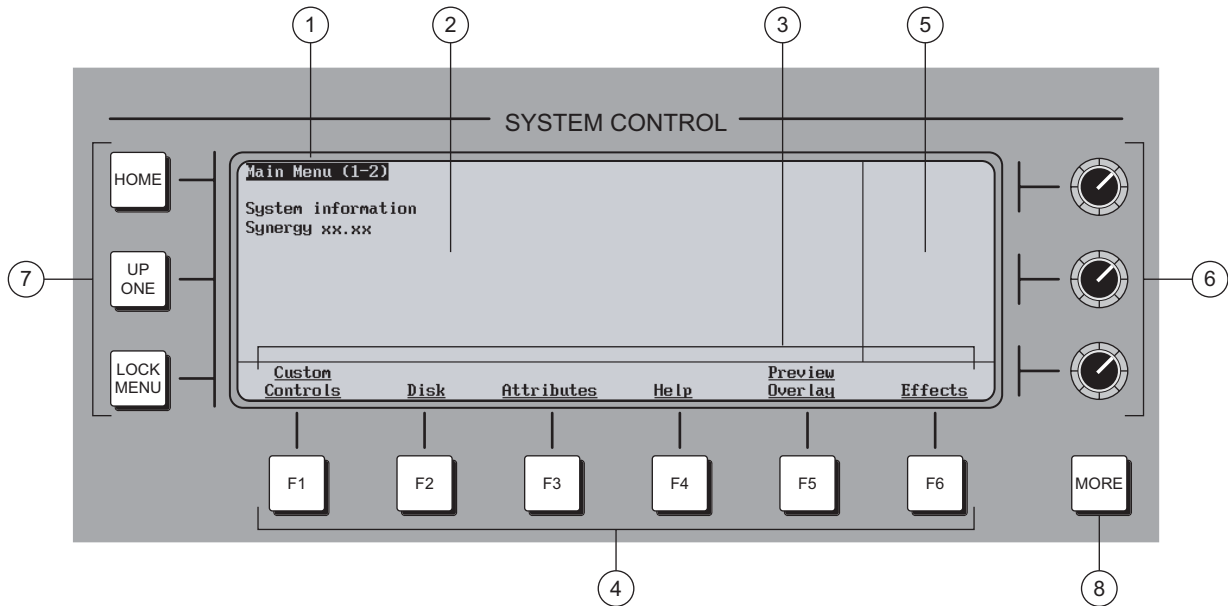
There are two ways that the display can change:

- The display changes *automatically*, depending on certain functions that you select on the panel. In this way, additional parameters are instantly available to you, as soon as you press a control panel button.
- You can also navigate the menu tree *manually* to reach the desired menu — simply by following the desired path through the menu tree.

The following section provides details on all buttons and functions in the **System Control Group**.

Menu System Basics

The following figure illustrates the **System Control** group. At the center of the group is the **System Control Display**, a bright LCD screen that provides a variety of clear menus for various system set up and operational functions.



System Control Group

1) Menu Name	4) Softkeys	7) Menu Control Buttons
2) Main Area	5) Scroll Area	8) MORE Button
3) Label Area	6) Scroll Knobs	

1. Menu Name

Each menu is named in the upper left corner. If numbers in parentheses appear after the name, for example **Main Menu 1-2**, it indicates that the current menu is number *one of two* — and that there are more functions available than can be displayed at one time.

On the **Main Menu** (accessible by pressing **HOME**), note that the software version is displayed below the menu name.

When parentheses are shown, the **MORE** button lights. Press **MORE** to display the second menu in the series. If the numbers (**2-2**) appear, it indicates that the current menu is number *two of two*. Press **MORE** to return to the first menu in the series.



Note

In this guide, multiple menus will simply be referred to using 1-2 or 2-2 to distinguish the various menus. For example, **Main Menu 1-2** and **Main Menu 2-2**.

2. Main Area

The large center area of the display is your main working area for each specific menu. It is typically reserved for status, text, mini “help” messages, descriptions of parameters, entry fields, etc.

3. Label Area

Labels on the bottom row represent *functions*, or will route you to further sub-menus. These labels change depending upon the selected mode and menu. A menu function is activated by pressing the corresponding **Soft Key**.



Note

In this guide, display functions are referred to by their *actual label names* and not by the soft key that is pressed (below the display). For example, the phrase "... press **Disk** ..." will be used, rather than "... press **Softkey #2** ..."

- A label that is underlined indicates that a sub-menu is available for that function. Pressing the button takes you one level down.
- Non-underlined labels are simply functions that you can activate by pressing the associated soft key or other screens that you can access within the same menu.

4. Softkeys

The six **Softkey** buttons below the display correspond to labels that appear in the **Label Area** of the display. Pressing a **Softkey** activates the selected function or switches to the selected menu.

5. Scroll Area

The right-hand section of the display (adjacent to the three **Scroll Knobs**) is reserved for functions that you can adjust conveniently with the scroll knobs. Up to three different adjustable parameters can appear in this section, each of which will be labeled accordingly.

When the three **Positioner Icons** appear in this area, you can adjust the selected function or parameter either with the **Scroll Knobs** or with the **Positioner** — for your convenience. Refer to the section, "**Positioner Icons**" on page 3-6 for details.

6. Scroll Knobs

The three scroll knobs are assignable. Depending upon the selected mode (and menu), the functions of the knobs *change* just like the display labels. When a function requires a knob to adjust a parameter, up to three labels (and their associated functions) will appear in the display's right-hand section — arranged vertically. Turn the appropriate knob to adjust the associated parameter.

In terms of knob "hierarchy," the top knob is the **master** and the bottom two knobs are **slaves**. When you change the top knob (for example, scrolling through inputs), the bottom knobs change in sync, showing the parameters for each selection chosen by the top knob. When you change one of the bottom two knobs, only *that* parameter changes.

7. Menu Control Buttons

To the left of the display, three buttons are provided to assist with navigating the menu system.

- **HOME** — Press to display the **Main Menu 1-2**.
- **UP ONE** — Press to take the display up one level in the menu tree. For example, if you press **Disk** to go one level down to the **Disk Menu**, press **UP ONE** to return up one level to the **Main Menu 1-2**.

- **LOCK MENU** — Press to lock the display on the current menu. Regardless of which control panel button is pressed, the display remains in its current location — it will *not* “auto-follow” a control panel selection.

8. MORE Button

The **MORE** button lights to indicate that additional menus (and functions) are available on the current level. The numbers in the menu name (**Main Menu 1-2**) will indicate how many additional menus are available. While the **softkeys** move you *vertically* through the menu system, **MORE** moves you horizontally.

Press **MORE** to display the next menu in the series, or to return to the first menu from the last.

Using the Keyboard in System Control Menus

The keyboard that plugs into the PS/2 port at the back of the control panel can be used in the place of the panel buttons and knobs to navigate through the menus and select values.









Important

Do NOT place anything on your keyboard or place your keyboard in a position where any of the keys could be accidentally pressed. This could result in the Switcher acting unpredictably.

The following table illustrates the functions of the keys on the keyboard as they relate to the control panel buttons:

System Control Menus

Keyboard	Panel Key	Description
F1 – F6	F1 – F6	Performs whatever the softkey function is above the panel key.
SysRq & Break	 – HOME	Returns to the Main Menu 1-2 from whatever menu is currently displayed.
Esc	 – UP ONE	Back one menu.
Tab	 – MORE	Next screen in selected menu.
Insert & Delete	 – Top Knob (1) Horizontal	Small incremental movement of knob.
Home & End	 – Middle Knob (2) Vertical	Small incremental movement of knob.
Page Up & Page Down	 – Bottom Knob (3)	Small incremental movement of knob.

Positioner Icons

When you select specific installation and operational menus, the **Positioner Icons** appear in the right-hand **Scroll Area**. (Typically, two or three icons are shown, depending upon the selected menu and function).

When these icons appear, you can adjust the selected function or parameter either with the **Scroll Knobs** or with the **Positioner**. In addition, when the **Positioner Icons** appear, the **MENU** button automatically lights in the **Positioner** group — indicating that **Positioner** control is temporarily assigned to the display, rather than to the MLE and *positionable* function.

A sample menu that includes the three icons is shown below.



Border Menu — with Positioner Icons



- a) When the left-right **Positioner Icon** appears, you can use the top **Knob** to adjust the selected function or you can move the **Positioner** *left* and *right*.



- b) When the up-down **Positioner Icon** appears, you can use the middle **Knob** to adjust the selected function or you can move the **Positioner** *up* and *down*.



- c) When the circular **Positioner Icon** appears, you can use the bottom **Knob** to adjust the selected function, or you can twist the **Positioner** knob *clockwise* and *counter-clockwise*.

When you turn the **MENU** button off, the **Positioner** once again is assigned to the current panel function and location.

Refer to the section “**Positioner Group**” on page 7-51 for additional information on the **Positioner** itself, and the three **Positioner Icons**.

Adjusting the Display

Use the following procedure to adjust the contrast of the display, for user preference as desired:

1. Navigate to the **Display Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**).
 - **MORE** (to display the **Main Menu 2-2**).
 - **Setup** (to display the **Setup Menu**).
 - **Display** (to display the **Display Menu**).



Display Menu — Large Display

2. Press **Large Display** to adjust contrast of the menu display.
 - Use the middle **Contrast** knob to adjust the contrast.

This completes the procedure to adjust the contrast of the display.

Help Features

Two help features provide convenient on-line assistance as you operate your Synergy switcher:

- Help Menu
- Pop-up Help

Help Menu

The **Help Menu** provides a list of important “hidden” switcher functions that require two-button combinations to access, such as Keyer copy functions. The **More Info Menu** provides more information about the highlighted function.

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

1. Navigate to the **Help Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**)



Note

Note that the menu displays the current software version.

Main Menu (1-2)					
System information Synergy 16.00-S1					
Custom Controls	Disk	Attributes	Help	Preview Overlay	Effects

Main Menu 1-2

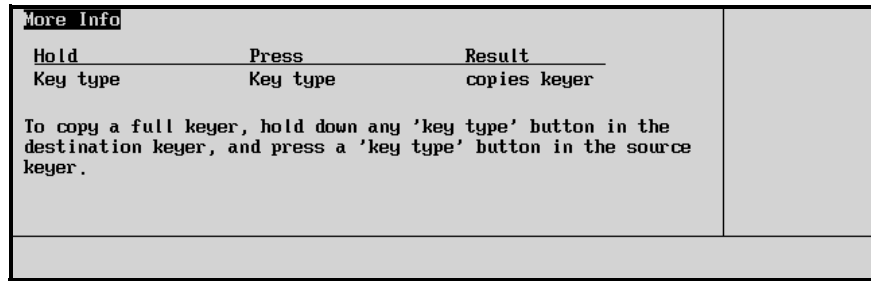
- Press **Help** to display the **Help Menu**.

Help Menu			Use Knob 2 to scroll list.
Hold	Press	Result	
Key type	Key type	copies keyer	
Key 1/Key 2	Key 1/Key 2	copies keyer	
Matte area	Crosspoint	copies color	
Key type	Key 1/Key 2	swaps keyers	
Key type	Crosspoint	split key	
Crosspoint	Memory punch pad	alters memory recall	
More Info	List S&T Wipes		

Help Menu

2. Use the middle **Selection** knob to select the switcher function that you want more information on.

3. Press **More Info** to display the **More Info Menu**.



More Info Menu

4. Exit the menu by pressing **HOME** or **UP ONE**.

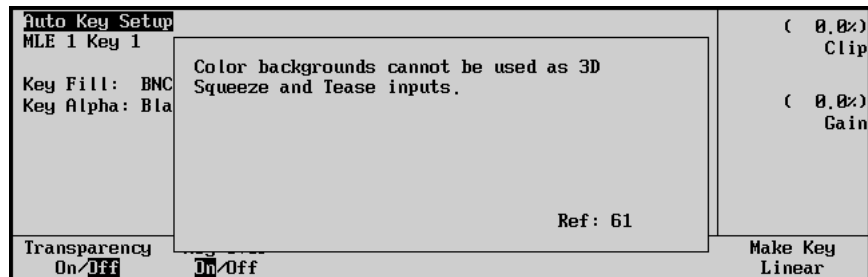
For information on the **List S&T Wipes** function of the **Help Menu**, refer to the section, “Using Wipes” on page 6-6.

If you have the **Squeeze & Tease 3D** option installed, pressing the **List S&T Wipes** softkey will display the **Squeeze & Tease 3D Menu**. Refer to the *Squeeze & Tease 3D Owner's Guide* for further details.

Pop-up Help

The **Pop-up Help** feature is designed to alert the operator when an illegal function is attempted. When an illegal action is performed, a **Pop-up Help** window is displayed. This window provides a brief explanation of why the operation can not be performed and a reference number that can be used when contacting Ross Technical support.

The following is an example of a Pop-up window.



Pop-up Help Menu



Note

The **Pop-up** window will *only* display while the related button is pressed. If a button related function is not operating properly, hold down the button to see if there is a related Pop-up window.

Installed Options Menus

Several important menus are available that allow you to verify all of the installed options in your Synergy switcher — with serial numbers as well as software option codes. The menus also display the revision levels of all system boards and allow you to install software options.



Important

Serial numbers allow Ross Video to properly track which options have been purchased by each customer. Serial numbers are installed in flash memory at the factory.

Refer to Chapter 2 of the *Synergy 1 Installation Guide* for instructions on how to install serial numbers, install software options, and store option codes.

The following topics are discussed in this section:

- Menu Access
- Software Options Menu
- Panel Boards Menu
- Frame Boards Menu
- Option Boards Menu

Menu Access

Navigate to the **Installed Options Menus** as follows:

- Press **HOME** (to display **Main Menu 1-2**)
- **MORE** (to display **Main Menu 2-2**)
- **Setup** (to display the **Setup Menu**)
- **Installed Options** (to display the **Installed Options Menu 1-2**)

Software Options Menu

The **Software Options Menu** allows you to view the software that is currently installed on the Synergy 1 SD Switcher.



Note

The menu is provided for information *only*. For information on installing software options, refer to the section “**Installing Software Options**” of the *Synergy 1 Installation Guide*.

Use the following procedure to check the *software* that is installed on your Synergy 1 Switcher:

1. Navigate to the **Installed Options Menus** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**)
 - **MORE** (to display the **Main Menu 2-2**)
 - **Setup** (to display the **Setup Menu**)
 - **Installed Options** (to display the **Installed Options Menu 1-2**)

2. Press **Software Options** to display the **Software Options Menu**.

Installed Options (1-2)					
Frame Serial Number: F123456789					
Editor Interface	:Yes	Peripheral Bus II	:Yes		
VTR Remote Control	:Yes	Still Store (Aprisa)	:Yes		
DVE Send and Remote CTRL	:Yes	Character Generator	:Yes		
Audio Server Control	:Yes	Small Audio Mixer	:Yes		
Video Server Control	:Yes	Large Audio Mixer	:Yes		
Router	:Yes	Robotic System	:Yes		
Serial Tally	:Yes	Monitor Wall	:No		
Software Options	Panel Boards	Frame Boards	Option Boards	Enter Serial Number	Add Option

Installed Options Menu 1-2 — Software Options Menu

The main area of the **Software Options Menu** lists the serial number of the frame at the top. This number is present at the top of *all* options menus. The main area also provides two columns of information:

- **Options** — This column lists the software options that can be installed on the system.
- **Enabled** — This column indicates whether or not the options is installed, or enabled.



Note

Verify that the list reflects the exact options that you have purchased. If not, please contact **Customer Service** for further information.

If a serial number appears at the top of the menu, please verify that this number matches the serial number printed on the rear of the Synergy main chassis. If another message is displayed where the serial number should be, take the following action:

- If the label “**Unknown**” appears, the frame is turned off. Please turn on the frame so that the serial number can be recognized.
- If the label “**00000**” appears, a serial number is required. our options will *temporarily* be activated so that you do not lose switcher functionality, but a valid serial number *must* be installed permanently. Refer to Chapter 2 of the **Synergy 1 Installation Guide** for more information.



Important

Serial numbers are unique, and pertain to *your switcher only*. The serial numbers cannot be exchanged, or entered on another switcher



Note

All software options are stored in the Frame. If control panels are swapped around, the enabled options will stay with the Frame — regardless of which panel is connected to it even for panel-based options such as **VTR Remote Control**.

Panel Boards Menu

The **Panel Boards Menu** allows you to view the panel boards that are currently installed on the control panel.



Note

The menu is provided for information *only* — no action can be taken.

Use the following procedure to check the *panel boards* that are installed on the control panel:

1. Navigate to the **Installed Options Menu 1-2** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**)
 - **MORE** (to display the **Main Menu 2-2**)

- **Setup** (to display the **Setup Menu**)
 - **Installed Options** (to display the **Installed Options Menu 1-2**)
2. Press **Panel Boards** to display the **Panel Boards Options Menu**.

Installed Options (1-2)				
Frame Serial Number:0000000				
Board	Rev	FPGA Rev		
4216-033 Panel CPU	X	4000x033.bit	1998/12/01	09:49:35
Software Options	Panel Boards	Frame Boards	Option Boards	Enter Serial Number

Use Knob 2 to scroll list.

Panel Boards Menu

The main area provides three columns of information that pertain to the boards installed in the panel:

- **Board** — This column each circuit board by part number and name.
- **Rev** — This column lists the hardware revision number of the board.
- **FPGA Rev** — This column lists the software revision number of the board.



Note

To run version 16 or higher Synergy 1 SD software, you require version 5 or higher of the control panel CPU board.

Frame Boards Menu

The **Frame Boards Menu** allows you to view the frame boards that are currently installed on the frame.



Note

The menu is provided for information *only* — no action can be taken.

Use the following procedure to check the *frame boards* that are installed on the control panel:

1. Navigate to the **Installed Options Menu 1-2** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**)
 - **MORE** (to display the **Main Menu 2-2**)
 - **Setup** (to display the **Setup Menu**)
 - **Installed Options** (to display the **Installed Options Menu 1-2**)
2. Press **Frame Boards** to display the **Frame Boards Options Menu**.

Installed Options (1-2)				
Frame Serial Number:0000000				
Board	Rev	FPGA Rev		
4216-001 Synergy1 Frame	1	s1frame.bit	2002/01/18	15:15:13
		s1bigvid.bit	2001/12/05	13:16:24
Software Options	Panel Boards	Frame Boards	Option Boards	Enter Serial Number

Use Knob 2 to scroll list.

Frame Boards Options Menu

The main area provides three columns of information that pertain to the boards installed in the frame:

- **Board** — This column lists each circuit board by part number and name.
- **Rev** — This column lists the hardware revision number of the board.
- **FPGA Rev** — This column lists the software revision number of the board.

Option Boards Menu

The **Option Boards Menu** allows you to view the option boards that are currently installed on the frame.



Note

The menu is provided for information *only* — no action can be taken.

Use the following procedure to check the *option boards* that are installed on the control panel:

1. Navigate to the **Installed Options Menus** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**)
 - **MORE** (to display the **Main Menu 2-2**)
 - **Setup** (to display the **Setup Menu**)
 - **Installed Options** (to display the **Installed Options Menu 1-2**)
2. Press **Frame Boards** to display the **Frame Boards Options Menu**.

Installed Options (1-2)				
Frame Serial Number:0000000				
Board	Rev	FPGA Rev		
MLE1	1	s1mle.bit 2000/09/29 10:53:29	Use Knob 2 to scroll list.	
Squeeze & Tease		4000-048.bit 2000/05/25 11:49:32		
Border card	X	s1bord.bit 2000/12/19 10:58:45		
Aspectizer				
Software Options	Panel Boards	Frame Boards	Option Boards	Enter Serial Number

Frame Boards Options Menu

The main area provides three columns of information that pertain to the optional boards that can be installed in the frame:

- **Board** — This column lists each circuit board by part number and name.
- **Rev** — This column lists the hardware revision number of the board.
- **FPGA Rev** — This column lists the software revision number of the board.

The status for MLE 1 reflects whether or not any of the available options are installed.

Screen Capture

Switcher users can take screen captures of the Synergy panel menus. The switcher saves the screen capture as a 16K bitmap file, which you can then import into other applications on your PC.

Use the following procedure to capture an image of the large menu display on the control panel:

1. Insert a storage device to save the screen capture to as follows:
 - Insert a pre-formatted 1.44 MB floppy disk into the disk drive of your switcher.**OR**
 - Insert a USB key into the USB port of your switcher. You must wait 5 seconds after inserting the USB key before you can save a screen capture to it.

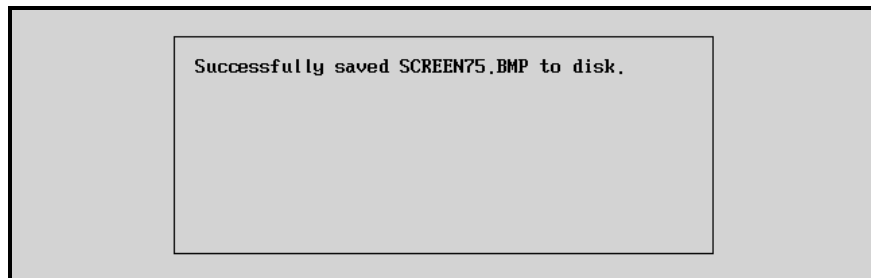


Note

You must have the **USB Removable Media Drive** option installed in order to save a screen capture to a USB key.

2. Navigate to the menu you wish to capture.
3. Simultaneously press the **FADE RATE** and **STORE** buttons in the **Global Memory System Group**.

The light on the drive will come on, the current menu freezes, and a popup message is displayed indicating that you have saved a SCREENXX.BMP file to your storage device. You can save from 00-99 files in sequence on a floppy disk.



Screen Capture Confirmation Pop-up Message



Caution

Do NOT remove the floppy disk or USB key from the switcher before the LED on the floppy drive or USB port goes out. Doing so may destroy the data on your floppy disk or USB key, as well as the data on the next one you insert into the switcher.

4. Eject the storage device.
5. On your PC, insert the storage device and open the files in any graphics application that supports bitmap files to view, rename, and reformat the menu screen captures.

Switcher Basics

In This Chapter

This chapter presents detailed *basic* switcher operating procedures, rules and methods. The following topics are discussed:

- Before Starting
- Software Reset – Control Panel Method
- Software Reset – Menu Method
- System Reset Notes
- Power Fail Indicators
- Power Failure Recovery
- Basic Switcher Functions
- General Button Rules
- Crosspoint Buttons
- SHIFT Button
- PRG/Key SHIFT Mode
- Flip-Flop Operations
- Key Bus
- Bus Indicators
- MLE Tally Setup
- Non-sync Indicators
- Knobs
- Using the Preview Bus
- Fade to Black
- Changing Fade to Black Rates

Before Starting

If you are unfamiliar with the operation of a multi-level effects switcher, it is *always* advisable to check the initial condition of the switcher’s control panel and *reset* the panel if required. By performing a software reset, you can guarantee a base default condition and eliminate any special setups that may be present on the panel (as left by the last TD). Two reset methods are provided below for all Synergy switchers.

Software Reset – Control Panel Method

Use the following method to perform a full software reset:

- Simultaneously press **STORE** and **RECALL** in the control panel’s **Global Memory System Group**.

Refer to the section, “**Resetting the System**” on page 2-10 for additional information.

Software Reset – Menu Method

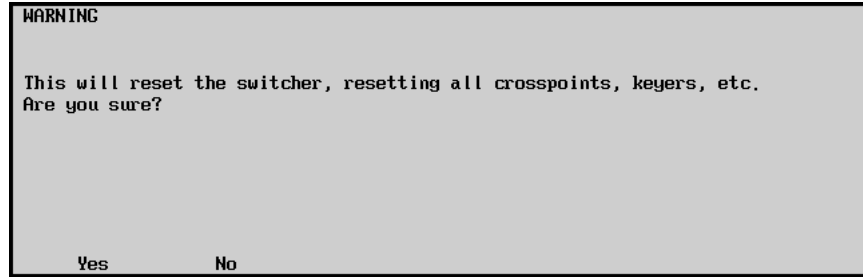
Use the following procedure to perform a full software reset:

1. Navigate to the **Installation Menu 2-2** as follows:
 - Press **HOME** (to display **Main Menu 1-2**)
 - **MORE** (to display **Main Menu 2**)
 - **Setup** (to display the **Setup Menu**)
 - **Installation** (to display **Installation Menu 1-2**)
 - **MORE** (to display **Installation Menu 2-2**)
2. Press **Recall Factory** to display the **Recall Factory Menu 1-2**.



Recall Factory Menu 1-2

3. Press **Switcher** to restore **Switcher Registers** (control panel settings) to their default values. The **Reset Switcher Warning Screen** is displayed.



Warning — Reset Switcher Registers

- Press **Yes** to reset all **Switcher Registers**. The control panel will be reset and all crosspoints and keyers will be cleared.
- Press **No** to retain the current set of **Switcher Registers** and exit the menu safely. The control panel will not be reset.

This completes the procedure to perform a full software reset.

System Reset Notes

Please note the following important points regarding the system reset function:

- Turning power on and off in either the control panel or the frame causes *that device* to reset — but *not* the other device. This feature ensures that the program video will not be adversely affected if the control panel loses power.
- If the frame *only* is turned off, the panel indicates a frame power failure on the **POWER FAIL** indicator LEDs. In addition, the control panel drops into diagnostic mode.

When frame power is restored, the power failure status indicator clears and the panel returns to the main menu with all control panel settings returned to their previous state.

Refer to the section “**Power Fail Indicators**” on page 4-3 for additional information on the two **POWER FAIL** LEDs.

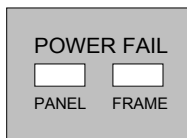


Note

The rack frame stores all installation, personality, custom control macros, memories, and the current video state. The control panel keeps track of the current menu and the settings of all buttons. Resetting the frame changes the current video state. Turning the control panel on and off will *not* reset the video state, because a frame reset has not been initiated.

Power Fail Indicators

Note that two important **POWER FAIL** indicator LEDs on the Control Panel mirror the condition of the four chassis “Power” LEDs and the panel’s power supply:



- **PANEL**: when lit, indicates that there is a fault with the control panel’s primary or secondary power supply.
- **FRAME**: when lit, indicates that there is a fault with the chassis primary supply, secondary supply, or fans.

Power Failure Recovery

The Synergy switcher's power failure recovery feature protects the *entire panel setup* in situations in which power is lost. When power is restored after a failure, all MLE setups return *exactly* as they were, immediately prior to the power failure. Please note:

- A loss of control panel power *only* has no effect on the frame, because the frame stores the current video state. When control panel power is restored, your setups will return to their previous state. Similarly, resetting the control panel *only* has no effect on the frame.
- Remember that resetting the frame *does* change the current video state, returning the frame and control panel to the “reset” state.
- After restoring power to the control panel, you may receive the error message “**USB Upgrade Failed**” if you have the **USB Removable Media Drive** option installed. Contact Ross Video Technical Support for more information on correcting the error.

Basic Switcher Functions

This section provides basic information and general rules regarding Synergy switcher operation. The following sections are included:

- General Button Rules
- Crosspoint Buttons
- SHIFT Button
- PRG/Key SHIFT Mode
- Flip-Flop Operations
- Key Bus
- Bus Indicators
- MLE Tally Setup
- Non-sync Indicators

General Button Rules

Please note the following general button rules:

- All button presses are *registered* (acknowledged) by the switcher when a selected button lights. Pressing a button can switch a crosspoint (and affect the video output), perform a transition, toggle a function, or have no affect (if the function is not valid for the current set up).
- Buttons can be *latching* (in the case of valid crosspoints and “toggle” functions such as key parameters) or *momentary* (in the case of transition buttons such as **CUT**).
- When you press a button and *hold it down*, the button lights to acknowledge the press — but after two seconds, it reverts to its proper state for the selected mode. This proper state could be on or off, depending upon the current set up.
- Pressing and *holding* one button, then pressing another is a valid mode. This sequence is used for functions such as “favorite CG”, various copy modes and **SHIFT**. Details are provided in each operational section.

Crosspoint Buttons

When a button (or crosspoint) is pressed on the **BKGD**, **PST** and **KEY** buses, a video source is selected. Video sources can be internally generated or derived from external sources (and connected to the chassis via BNC).



Note

If you press a crosspoint button that is assigned to an external device, the device control menu will be displayed.

Please note the following important rules:

- There are four internally generated sources available:
 - ~ **BLACK** (normally placed on the first or left-most crosspoint in a bus row).

- ~ **SHIFT** (always placed as the last or right-most crosspoint in a bus row).
- ~ **COLOR BKGD 1** (typically placed as the third or second to last crosspoint in a bus row).
- ~ **COLOR BKGD 2** (typically placed as the second to last crosspoint in a bus row or as the *shifted* crosspoint for **COLOR BKGD 1**).
- External sources can be *turned off* as part of switcher setup or placed on *more than one* crosspoint. Refer to Chapter 6, “**BNC Configuration and Check**” of the *Synergy 1 Installation Guide* for details.
- Selecting a crosspoint button assigned to a VTR device will enable you to enter a VTR Clip ID or Number using the keypad in the **Global Memory System**. Some devices allow you to also enter the VTR Clip ID on the keypad. For those devices, you can toggle between entering a **Clip ID** and a **Clip Number** by pressing the **VTR Clip** button.
- If you enabled the **L.A.S.T. (Look Ahead Serial Tally)** option, crosspoint selections on the Key Bus will be delayed by the specified number of fields. Refer to Chapter 7, “**Communications Setup**” in the *Synergy 1 Installation Guide* for instructions on how to enable the **L.A.S.T.** option.

SHIFT Button

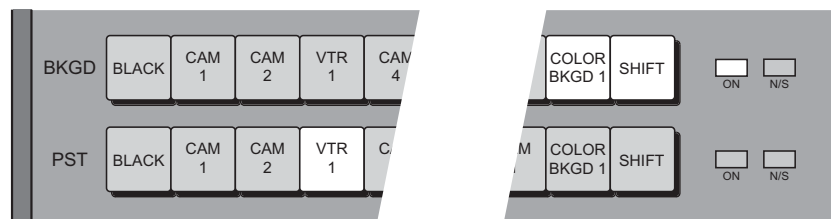
On each bus (including the **KEY** bus), the **SHIFT** button is used to access video and key sources that have been mapped to crosspoints *beyond* the number of available buttons. The mapping itself is performed during the installation procedure.

Excluding the **BLACK** crosspoint, note that active crosspoints **17** through **32** can only be accessed via **SHIFT**.

Use the following procedure to access a shifted source 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 following example:



Shifted Crosspoint Selected on BKGD

Please note:

- With a shifted source selected on a bus row, to take an *unshifted* source, simply press its button.
- With a shifted source selected, to take another shifted source, repeat the procedure above.
- If you press **SHIFT** and then decide *not* to select a source, simply release the **SHIFT** button. No change will occur on the bus.

PRG/Key SHIFT Mode

A special mode called **PRG/Key SHIFT** can be activated during switcher set up. Activating the **PRG/Key SHIFT** mode makes each **Key Bus** button shifted *all the time* — as its default state.

This effectively acts as a shift lock, giving you one-button access to the higher-numbered inputs on each **Key Bus** (without having to press **SHIFT** each time to reach them).

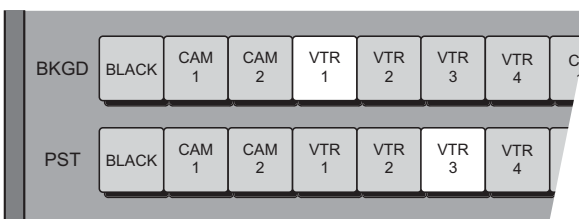
If the **PRG/Key SHIFT** mode has been implemented, you may notice that the crosspoint labels on each **KEY** bus will be *different* from the **BKGD** and **PST** bus labels.

Please consult with your facility's engineer to determine if the **PRG/Key SHIFT** mode is implemented. Refer to Chapter 6, “**BNC Configuration and Check**” of the *Synergy 1 Installation Guide* for additional information.

Flip-Flop Operations

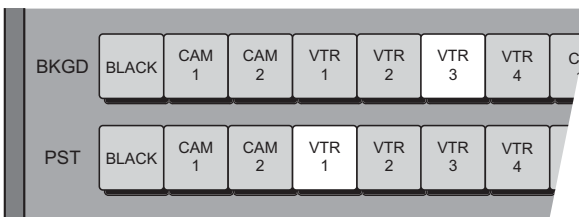
The **BKGD/PST** bus is configured to operate in flip-flop mode. When you perform a cut, dissolve or wipe transition between the **BKGD** and **PST** buses, the two selected sources *exchange* places. This is called a flip-flop.

For example, in the following figure, **VTR 1** is selected on the **BKGD** bus and **VTR 3** is selected on the **PST** bus.



Buses Prior to Transition

After the cut, dissolve or wipe transition is performed, the two buses flip-flop as shown below. **VTR 3** is now selected on the **BKGD** bus and **VTR 1** is selected on the **PST** bus.

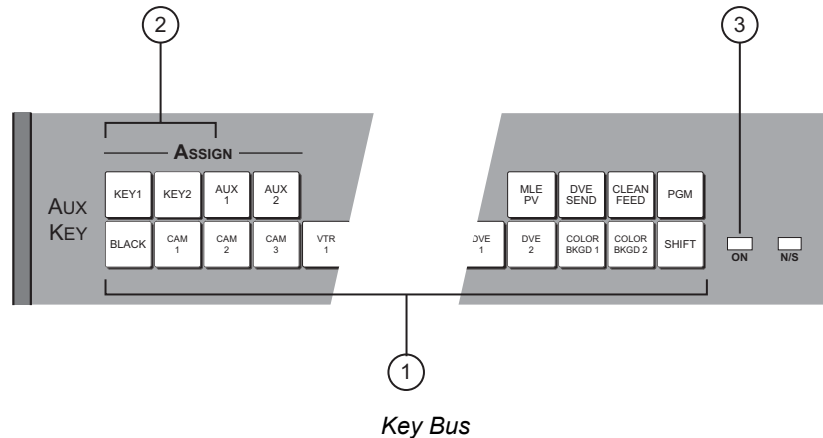


Buses Flip-flopped, after Transition

In this manner, the **BKGD** bus *always* provides the background output source and the **PST** bus always provides the *next* source to be brought to air with a transition. In addition, after a transition, the **PST** bus *always* shows the source last-selected on **BKGD**, until you change it.

Key Bus

The following figure is of the **Key Bus**:



1) Key Bus	2) Key Bus Selection Buttons	3) Key Bus On Air LED
------------	------------------------------	-----------------------

1. Key Bus

The Key Bus allows you to make key and fill selections on *both* MLE keyers — **Key 1** and **Key 2**. Even though the **Key Bus** buttons are *shared* between the two keyers, each keyer can have its own independent key and fill selections.



Note

If you press a Key crosspoint button that is assigned to an external device, the device control menu will be displayed. Pressing the button again will cycle through the device menus and the **Key Type Menu**.

Please note:

- Pressing any button in a keyer switches control of the **Key Bus** to *that keyer*.
- When the **Key Bus** is assigned to Key 1, changing a button on the bus has no effect on Key 2. Similarly, when the bus is assigned to Key 2, changing a button has no effect on Key 1.

2. Key Bus Selection Buttons

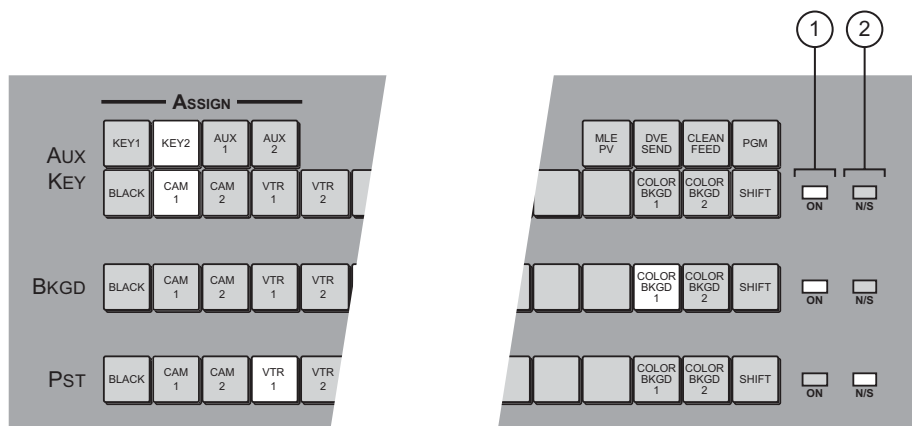
The two **Key Bus Selection** buttons select which keyer has control of the **Key Bus** buttons.

3. Key Bus On Air LED

The **Key Bus ON AIR** LED indicates, when lit, that the video feeding that keyer is on air and contributing to the switcher's main program output. When lit, the source selected on that bus will be tallied.

Bus Indicators

Two LED indicators are positioned at the end of each bus row:



Bus Row Indicators

1) On Air "Tally" LED 2) Non-Sync Indicator

1. On Air Tally LED

The **ON AIR** "Tally" LED indicates, when lit, that the video selected on that bus is contributing to the switcher's main program output. In addition, the source selected on that bus will be tallied. Refer to the section "**MLE Tally Setup**" on page 4-9 for additional details.

2. Non-Sync Indicator

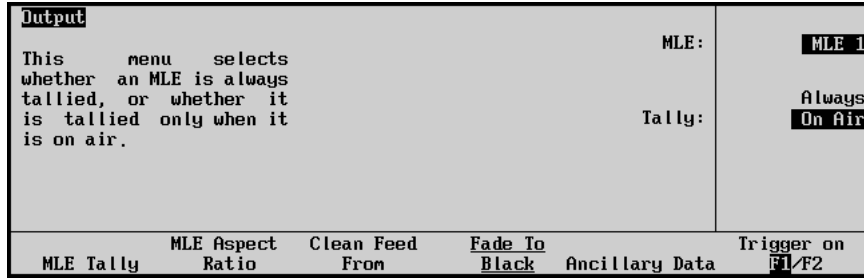
The **N/S** (Non-Sync) LED indicates, when lit, that the source selected on that specific bus is non-synchronous. Refer to the section "**Non-sync Indicators**" on page 4-10 for more information.

MLE Tally Setup

The **MLE Tally** feature allows you to force the MLE to always function as if it is on air — regardless of whether or not it is selected on the **BKGD/Presets Bus**.

Use the following procedure to select the desired tally function for the MLE:

1. Navigate to the **MLE Tally Menu** as follows:
 - Press **HOME** (to display **Main Menu 1-2**)
 - **MORE** (to display **Main Menu 2-2**)
 - **Setup** (to display the **Setup Menu**)
 - **Installation** (to display **Installation Menu 1-2**)
 - **Output** (to display the **Outputs Menu**)
 - **MLE Tally** (to display the **MLE Tally Menu**)



MLE Tally Menu

- Select the desired tally function as follows:
 - Use the top **MLE** knob to select the MLE you want to assign a tally function to.
 - Use the middle **Tally** knob to select the desired tally function. You can select between the following:
 - ~ **Always** — Use this option to tally the MLE regardless of what is selected on the switcher’s **Program/Preset Bus**. The MLE’s red **ON** LED will always be lit and all sources selected on the MLE will tally accordingly. Use this selection for multi-panel situations and dual-aspect ratio configurations, as discussed above.
 - ~ **On Air** — Use this option when you want the MLE to be tallied only when it is selected on the switcher’s **Program/Preset Bus**.



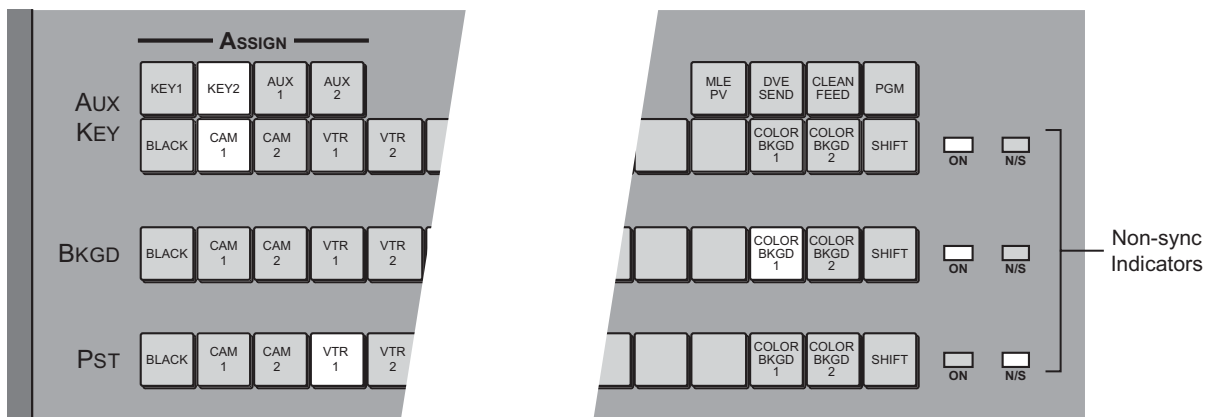
Note

Once selected, the MLE tally settings remain in effect until changed.

This completes the procedure to select the desired tally function for the MLE.

Non-sync Indicators

The **N/S** (Non-Sync) LEDs indicate (when lit), that the source selected on the adjacent bus is non-synchronous. This rule applies to all buses.

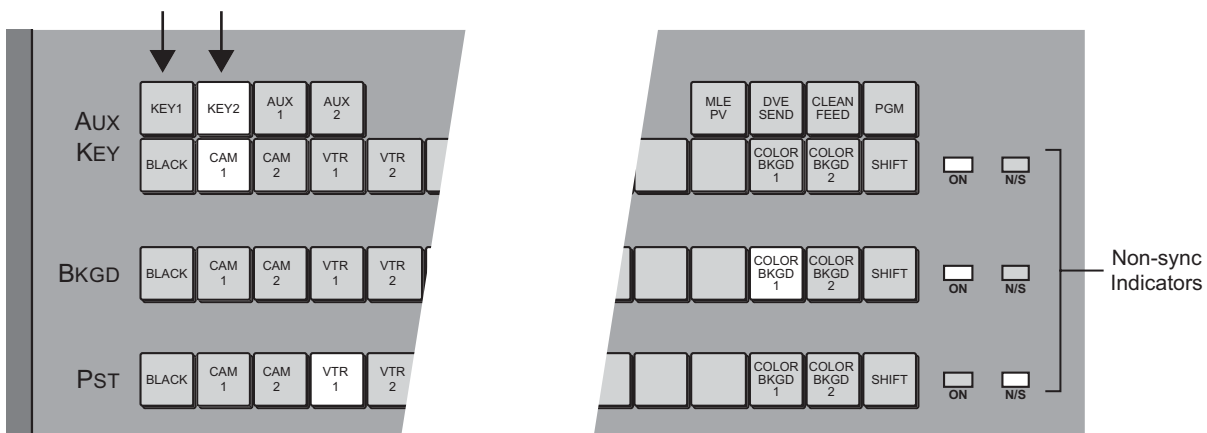


Non-Sync Indicators

The **N/S** LED serves as a *warning* only, indicating that the input’s timing should be fixed *at the source*. In this condition, with a non-sync LED lit, the source is still usable. You *can* perform cuts, dissolves and other effects — however, remember that the non-synchronous source will be shifted vertically and is not synchronous in relation to reference.

Please note:

- The MLE is always synchronous, with a fixed internal timing. Only individual sources can become non-synchronous.
- The **N/S** LED on the **Key Bus** is *shared* between the two MLE Keyers. Note that the **N/S** LED works in conjunction with the two **Key Bus Selection** buttons (which indicate the Keyer that has control).



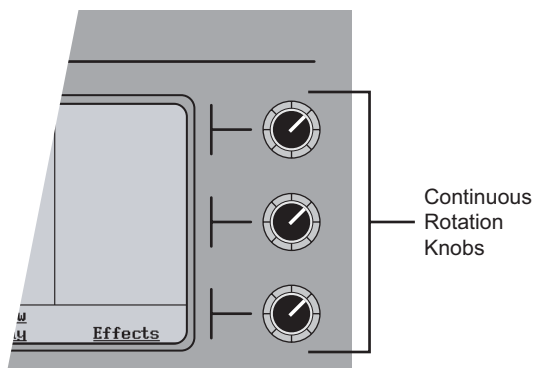
Non-Sync Indicators

If the **N/S** LED is on, check the **Key Bus Selection Buttons** to determine which specific Keyer is non-synchronous.

Knobs

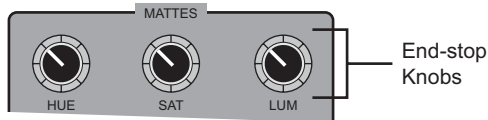
There are *two types* of rotary knobs used in all Synergy switchers:

- **Continuous Rotation Knobs** are used *only* in the **System Control** group, as shown in the following figure. These knobs are provided for adjusting set up menu parameters, scrolling various menu lists for switcher configuration and for certain functional adjustments such as key clips.



System Control Group — Continuous Rotation Knobs

- **End-stop knobs** are used in *all other locations* on the panel, as shown below in the **Mattes** group.



Mattes Group — End Stop Knobs

Note the following important points regarding **End-stop Knobs**:

- ~ All **End-stop Knobs** provide a definite *tactile* indication of the absolute upper and lower limits of the function being adjusted.
- ~ The electrical position of an **End-stop Knob** can be *overwritten* by memory recalls. As a result, the electrical knob position *may not match* the knob's current physical position. In this case, the knob can be adjusted but you may not have the full range available.



**Operating
Tip**

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

Using the Preview Bus

Although the Synergy 1 does not have a dedicated group of buttons for the **Preview Bus**, the system's two **PV** (Preview) outputs allow you to preview all crosspoints selected on the **PST** bus on your preview monitor. This in turn provides a “look-ahead” view of the selected output.

Note the following operational points:

- With a **PV** output properly connected to a monitor, press any **PST Bus** button to view the output on your preview monitor. This selection is helpful (and even essential) when you are adjusting keys and clips.
- In either the **Key 1** or **Key 2** group, press the **KEY PV** button to preview the Keyer's associated key source over the source currently selected on the **PST** bus. This function allows you to know the exact state of the switcher *after* the “next transition” is performed.

Fade to Black

The following topics are discussed in this section:

- Using Fade to Black
- Changing Fade to Black Rates
- Using the Fade to Black Menu

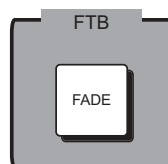
Using Fade to Black



Note

Performing a Fade to Black will not change the audio levels on a Remote Audio Mixer. Instead, Fade to Black turns off the Master Audio Control on the Remote Audio Mixer. On most mixers this means that a light simply goes out.

The switcher's basic “**Fade to Black**” function allows you to fade (auto-transition) the *entire* switcher output to black, including all downstream keys and all effects currently on air. The figure below illustrates the “**Fade to Black**” group.



Fade to Black Group

Press **FADE** to fade (auto transition) the switcher output to black, using the assigned Fade to Black rate. When the switcher is in black, press **FADE** again to fade the switcher up from black — back to the previous full on-air program output.

Please note the following important points regarding the **Fade to Black** function:

- Once the switcher is in black, it *stays* in black until the **FADE** button is pressed again.
- When the switcher is in black, the **FADE** button stays lit to indicate that the switcher is in full **Fade to Black** mode. In addition, the **BKGD** bus's on-air tally LED and any active keyer LEDs (that were previously lit in the on-air mode) will *flash* — as an extra attention-getting indication of the switcher's mode.
- If you are performing a long **FADE** (either *to* or *from* black) and you wish to change your mind, press **FADE** *again* (during the fade transition) to reverse direction — and return to the starting point (full program or full black).

Changing Fade to Black Rates

Use the following procedure to change the **Fade to Black** auto transition rates:

1. Note the current fade-to-black auto transition rate, as shown in the display of the **Global Memory System Group**.
2. Press the **FADE RATE** button in the **Global Memory System Group**.
3. Using the keypad (in the **Global Memory System Group**) enter the desired Fade to Black rate in frames — from **1** to **999**. The rate appears on the top line of the display and the **ENTER** button lights.

```
New FTB Rate:015
M:015 D:008 F:20
```

Fade-to-Black Rate Display

4. To accept the new rate, press **ENTER**. The display updates as shown below, the **ENTER** light turns off and the new rate is available for use.

```
REG:00 Memory0
M:015 D:008 F:20
```

Updated Fade-to-Black Rate

Please note:

- If you want to clear the rate and cancel the procedure, press the **FADE RATE** button *during* the entry process.
- If you want to enter a *different* rate prior to pressing **ENTER**, simply continue to type until the desired value is displayed.
- If you enter a rate greater than 2 digits (for example, 150 frames), the fade is displayed on the bottom line — but without the colon (for example, **F150**).

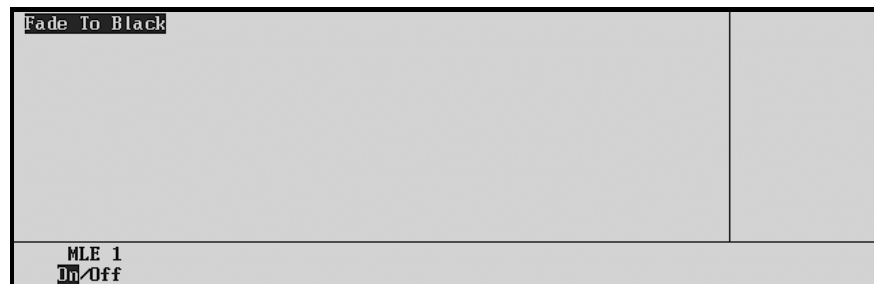
This completes the procedure to change the **Fade to Black** auto transition rates.

Using the Fade to Black Menu

The **Fade to Black Menu** allows you to set the MLE to Fade to Black — when a **Fade to Black** transition is initiated.

Use the following procedure to set the MLE to Fade to Black:

1. Navigate to the **Fade to Black Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**)
 - **MORE** (to display the **Main Menu 2-2**)
 - **Setup** (to display the **Setup Menu**)
 - **Installation** (to display the **Installation Menu 1-2**)
 - **Output** (to display the **Outputs Menu**)
 - **Fade to Black** (to display the **Fade to Black Menu**)



Fade to Black Menu

2. Toggle MLE 1 to **On** or **Off**, as required.

This completes the procedure to set the MLE to Fade to Black.

Background Transitions

In This Chapter

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

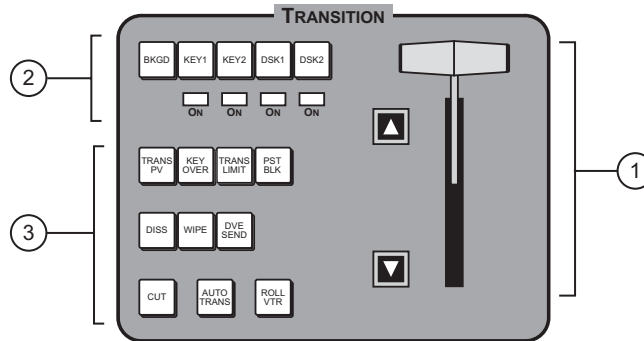
Other types of transitions involve the **PST** (Preset) bus and the controls in the **Transition Group**. Here, using cuts, dissolves, wipes, as well as DVE “send” transitions, you have a full preview of the upcoming picture.

The following topics are discussed in this chapter:

- Transition Group
- Using Manual Transitions
- Using Cuts
- Using Dissolves
- Working with Next Transitions
- Auto Transitions
- Preset Black
- White Flash
- Transition Preview
- Key Over
- Transition Limit

Transition Group

The following figure illustrates the **Transition** group.

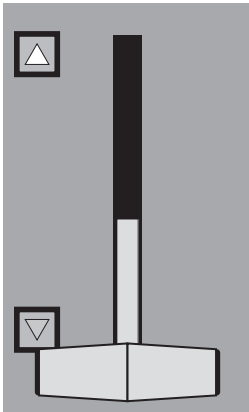


Transition Group

1) Fader Section	2) Next Transition Section	3) Transition Parameter Section
------------------	----------------------------	---------------------------------

Following are descriptions of each section.

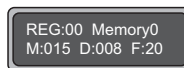
1. Fader Section



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 Parameter Section** — Dissolve, Wipe or DVE Send. The **Fader** performs one complete transition when it is moved from one limit to the other. Due to the switcher’s flip-flop architecture, it does not matter at which limit the transition begins. The BKGD bus *always* remains the program output.

Two LED indicators (**Up** arrow, **Down** arrow) located to the left of the **Fader** indicate the direction of **Fader** travel during a transition. For full or *partial* transitions (when the **Fader** is paused part-way through), the arrow that is lit indicates the direction that the **Fader** must be moved in order to complete the transition.

In the **Global Memory System** group, the bottom left hand field in the **Global Memory System** group’s display (**M:###**) indicates the current auto-transition rate (in frames). The **Global Memory System** group is also the location where the rate is programmed.



Global Memory System Display

2. Next Transition Section

The **Next Transition Section** includes five buttons that allow you to select the combination of actions that will be included in the *next transition*. All buttons are latching toggles — they can be enabled in any combination. When pressed, the output video is not affected — only the actions in the *next transition* are affected.



- Enable **BKGD** to include a transition between the **BKGD** and **PST** buses. When a manual or auto-transition is performed, the video selected on **PST** transitions to **BKGD**.



- Enable **KEY 1** to perform a transition of the MLE’s first keyer. Enable **KEY 2** to perform a transition of the second keyer.
 - ~ If the keyer is currently off, the transition brings on the key and the **ACTIVE** LED directly below the button lights red.
 - ~ If the keyer is currently on, the transition removes the key and the **ACTIVE** LED below turns off.



- If you have (up to 2) external DSKs installed, enable **DSK1** or **DSK2** to perform a transition of the selected DSK.
Remember that *any combination* of actions can be selected. Refer to the section, “**Working with Next Transitions**” on page 5-8 for information on the three **Next Transition** buttons and the **ACTIVE** LEDs.

3. Transition Parameter Section

The buttons in the **Transition Parameter Section** allow you to choose the *type* of transition, various transition attributes and initiate the transition itself.



- The **PST BLACK** button is a special two-stage transition that takes the switcher to black (or any other desired source), and then proceeds to the next transition previously indicated. Refer to the section, “**Working with Next Transitions**” on page 5-8 for details.



- The **ROLL VTR** button allows you to roll or “arm” a serial controlled device (such as a VTR, Video Server or Audio Server) that has been selected on an MLE. The button is located in all transition groups.

The function of the **ROLL VTR** button is determined by the **Roll VTR Mode** setting (on the **Personality Menu**):

- ~ If the **Roll VTR Mode** is set to **Play**, pressing **ROLL VTR** immediately plays the serial device(s) selected in the transition area (one device per bus) on the MLE. Here, the button is *momentary*. The transition that brings on the device(s) is initiated manually with the fader, automatically using **CUT** or **AUTO TRANS**, or via an external editor.
- ~ If the **Roll VTR Mode** is set to **Arm**, pressing **ROLL VTR** arms the switcher for a transition. When the transition is initiated by pressing a crosspoint on the **PGM** bus, with the fader, **CUT** or **AUTO TRANS**, or an external editor command, the device(s) (one device per bus) roll and are automatically taken to air *after* the preroll interval has elapsed. In Arm mode, the **ROLL VTR** button is *latching*, and it remains latched until toggled off manually.

To roll a VTR, the following prerequisites must be met:

- ~ The device must be connected to the control panel remote port via RS-422 or RS-232 serial communications.
- ~ The input “type” must be set to VTR, and the proper communications parameters must be set (on the **Communications Menu 1-2**).
- ~ Depending upon the device(s), the **VTR Remote Control Option**, **Video Server Control Option** or the **Audio Server Control Option** must be installed as appropriate. Any combination of the three options can be installed.
- ~ The VTR must be chosen on either the **PGM** or **PST** bus.

Note that if the VTR is not selected on either the **PGM** or **PST** bus and you press **ROLL VTR**, no action will be taken.

Refer to the section “**VTR Clip Control**” on page 12-2 for detailed instructions on programming and running VTR, Video Server and Audio Server clips.



- The **TRANS PV** (transition preview) button allows you to *rehearse* any preset-to-background transition without affecting the program output. Refer to the section “**Transition Preview**” on page 5-13 for details.
- The **KEY OVER** button allows you to change the priority of the MLE’s **Key 1** and **Key 2**. Refer to the section “**Key Over**” on page 5-13 for details.
- The **TRANS LIMIT** button allows you to stop a transition at a preset position — in between the two absolute **Fader** limits. Refer to the section, “**Transition Limit**” on page 5-14 for details.
- The **DISS** button selects a dissolve as the transition type. When the dissolve is performed, the video on the **PST** bus gradually mixes into the video on **BKGD**. At the end of the transition, **PST** video completely replaces **BKGD** and the buses flip-flop. The **DISS** button is mutually exclusive with the **WIPE** and **DVE SEND** buttons. Refer to the section, “**Using Dissolves**” on page 5-6 for instructions.



Note

When you press **AUTO TRANS** in **MLE Key Group 1** or **2**, the **DISS** button lights in the **Transition Group**. Refer to the section, “**Using Keys**” on page 7-13 for more information.



- The **WIPE** button selects a wipe as the transition. When performed, the video on the **PST** bus gradually replaces **BKGD** video using a wipe chosen from the **Pattern Control** group. At the transition’s end, **PST** video completely replaces **BKGD** and the buses flip-flop. The **WIPE** button is mutually exclusive with the **DISS** and **DVE SEND** buttons. Refer to the section, “**Using Wipes**” on page 6-6 for more details.
- The **DVE SEND** button assigns control of the primary DVE to the **Transition** group. This action allows you to control the DVE’s effect with the **Fader** or **AUTO TRANS** button — exactly as if it were an *internal* switcher effect. The **DVE SEND** button is mutually exclusive with **DISS** and **WIPE**.

Please note that the primary DVE must be connected to the switcher frame via RS-422 serial communications. The **DVE Send and Remote Control** option must be installed.

Refer to the section, ” “**Understanding DVE Send Operations**” on page 9-2 for complete details on the **DVE Send** feature.



Note

The Synergy switcher **DVE SEND** function is configurable to run with **Internal** or **External** DVEs. The default setting for the **DVE SEND** button, in version 14 or higher system software is **Internal**.

When the **DVE SEND** button is set to **Internal**:

- the **DVE SEND** button will *not* access an **External** DVE.
- pressing either the **DVE SEND** or **WIPE + DVE SEND** buttons will activate the **Internal** Squeeze & Tease DVE.

When the **DVE SEND** button is set to **External**:

- the **DVE SEND** button will *only* access an **External** DVE.
- pressing the **WIPE + DVE SEND** buttons will activate the **Internal** Squeeze & Tease DVE.

Refer to the section, “**Flying Keys in 2D**” on page 7-39 for complete 2D details. For complete 3D details, refer to the *Squeeze & Tease 3D/WARP Owner’s Guide*.



- The **CUT** button performs an instantaneous “cut” between the **PST** and **BKGD** bus sources. The buses flip-flop after the cut is performed. The button itself is *momentary* — it does not stay lit.



- For dissolves, wipes and DVE sends, **AUTO TRANS** performs an automatic transition between **PST** and **BKGD**. The button is *momentary* and stays lit only *during* the transition. Rates are entered in the **Global Memory System Group**.



Note

When you press **AUTO TRANS** in **MLE Key Group 1** or **2**, the **AUTO TRANS** button lights in the **Transition Group**.

Using Manual Transitions

Use the following procedure to perform a manual transition:

1. Check that your background/preview monitoring is set as needed. Refer to the section, “**Using the Preview Bus**” on page 4-13 for details.
2. Select an input on the **BKGD** bus.
3. Select a different input on the **PST** bus.
4. In the **Next Transition Section**, select **BKGD** as the next transition.
5. In the **Transition Parameter Section**, select the desired transition type — **DISS**, **WIPE**, **DVE SEND** or **WIPE and DVE SEND**.
6. 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 two LED indicators (**Up** arrow, **Down** arrow) show the direction of **Fader** travel — specifically, the direction that the **Fader** must be moved in order to complete the transition.

Refer to the section, “**Understanding DVE Send Operations**” on page 9-2 for complete details on using **DVE Send** transitions.

Using Cuts

A “background cut” is an instant switch between the **BKGD** and **PST** buses.

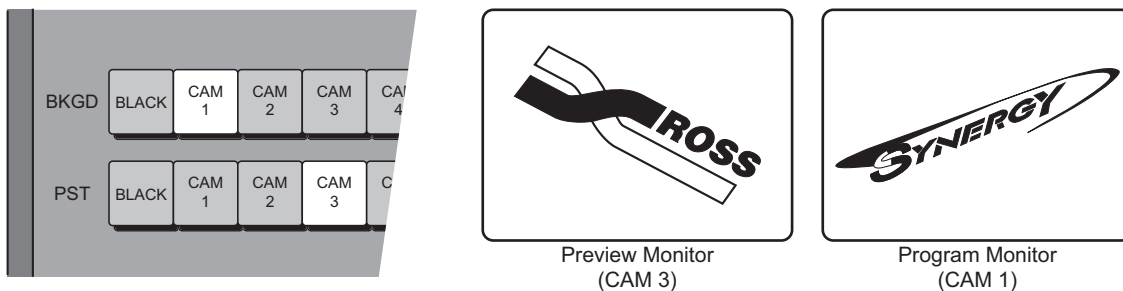


Note

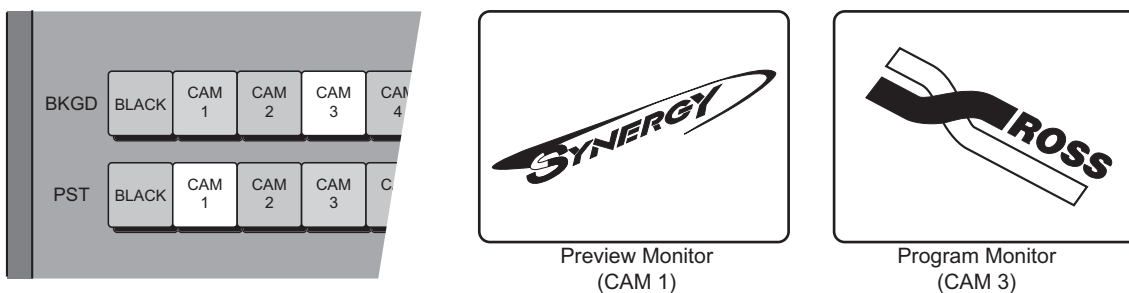
You can also perform a background cut simply by switching inputs on the **BKGD** bus itself. This type of cut does *not* allow you to preview the next picture.

Use the following procedure to perform a cut:

1. Ensure that your background/preview monitoring is set as needed. Refer to the section, “**Using the Preview Bus**” on page 4-13 for details.
2. Select an input on the **BKGD** bus.
3. Select a different input on the **PST** bus.
4. In the **Next Transition Section**, select **BKGD** as the next transition. The following figure illustrates a *sample* setup and the associated monitor outputs — before the cut.



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



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

This completes the procedure to perform a cut.

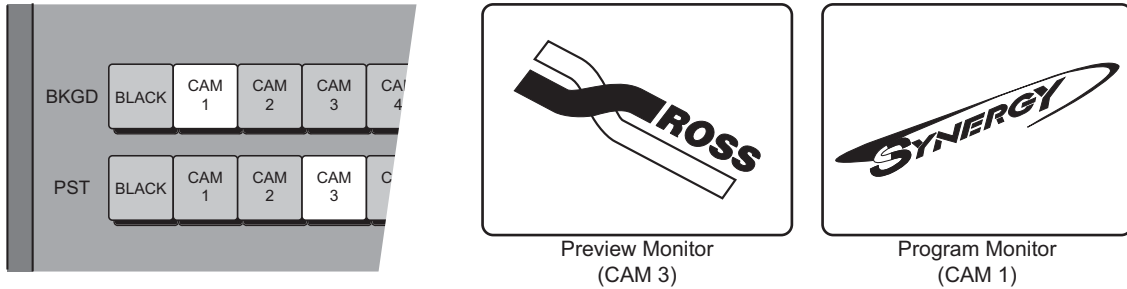
Using Dissolves

In a “background dissolve” transition, the **BKGD** bus video and **PST** bus video signals are gradually mixed together, until the **PST** bus video completely replaces the **BKGD** bus video.

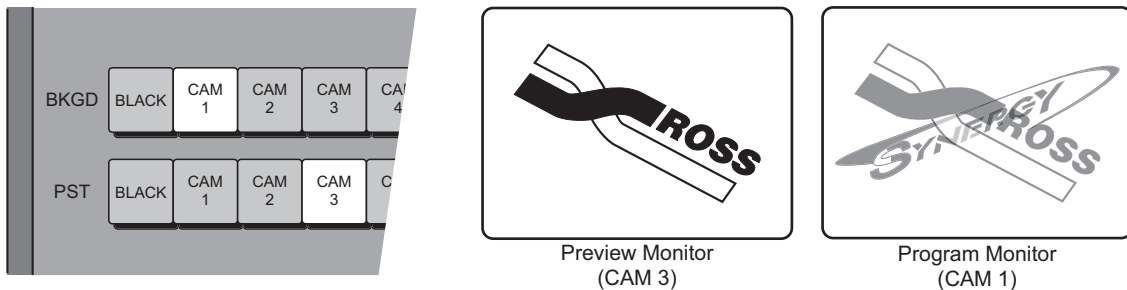
Use the following procedure to perform a dissolve:

1. Ensure that your background/preview monitoring is set as needed. Refer to the section, “**Using the Preview Bus**” on page 4-13 for details.

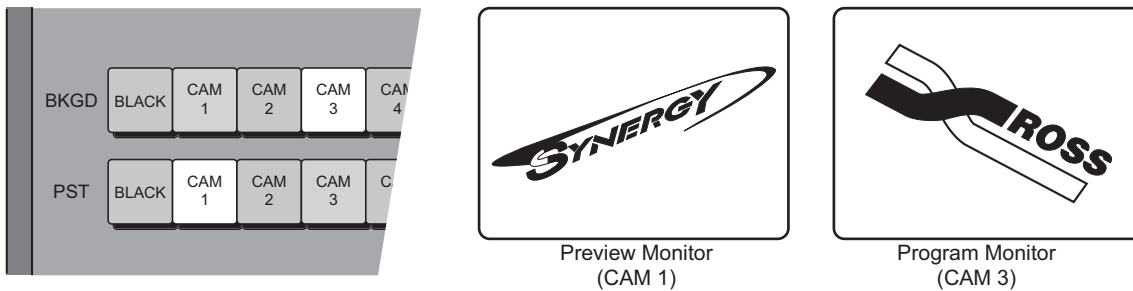
2. Select an input on the **BKGD** bus.
3. Select a different input on the **PST** bus.
4. In the **Next Transition Section**, select **BKGD** as the next transition. The following figure illustrates a *sample* setup and the associated monitor outputs — before the dissolve.



5. In the **Transition Parameter Section**, press **DISS**.
6. 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 mixes into the **BKGD** signal, as shown below.



At the end of the transition, the **PST** video completely replaces the **BKGD** video and the buses flip-flop. The following figure illustrates the MLE and monitor setup *after* the dissolve.



Please note the following important points regarding dissolves:

- 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”.

- During the dissolve, the **ON AIR** tallies (LEDs) at the end of both the **BKGD** and **PST** bus rows will be lit. This shows that *both* buses are contributing to the switcher output. At the end of the dissolve, after the flip-flop, only the **BKGD ON AIR** LED will be lit.



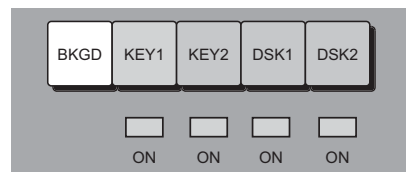
Note

You can not press **CUT** when the fader is off limit.

This completes the procedure to perform a dissolve.

Working with Next Transitions

The **Next Transition Section** includes five buttons that allow you to select the combination of actions that will be included in the *next transition*. The section also includes four **ACTIVE** LEDs that indicate the state of the associated key.



Next Transition Section

Please note the following important points:

- The five buttons define what you want to change on your program output. Any combination of the background and keys can be changed. You can change up to five elements as desired — simply by pressing the appropriate combination of buttons.
- If a button is lit, that element will change when the transition is performed, either manually (with the **Fader**) or automatically (with the **AUTO TRANS** or **CUT** button). When the transition has completed buttons that are lit will *stay lit* — until you change them.
- A “lit” *key* button should not be confused with the fact that you want a key to appear on air. Instead, it means that you want to change the *state* of the key. If a key button is lit, the key will change states. If a key’s state is on, the associated **ACTIVE** LED will be lit red.
- Each **ACTIVE** LED has two states:
 - ~ When the LED is **Off**, the associated key is turned off. It is *not* contributing to the output of the MLE or the switcher.
 - ~ When the LED is lit **Red**, the associated key is turned on. It is contributing to the program output of the entire switcher.
- The appearance (and state) of the **KEY 1** and **KEY 2 ACTIVE** LED is duplicated by the **ON** LEDs in the MLE keyer groups.



Operating Tip

Always check your preview monitor! The preview monitor output will *always* show you the next scene. For example, if a key’s state is currently *on* and the desired key button is lit, the preview monitor will show the key *off*.

Eight Steps to Flawless Transitions

Using the five “next transition” buttons, following are several easy steps for getting the images you want on air — flawlessly.

1. Ensure that you have a **Preview Monitor** connected.
2. Look at your **Program Monitor** and determine what video elements you want to change — the background, key 1, key 2, DSK 1, DSK 2, 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 correct key source is selected and that it appears properly on Preview. If required, adjust the key source(s) accordingly.
7. If the background image is wrong, select the correct image on the **PST** bus — or alternately, 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.

Auto Transitions

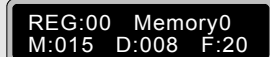
The **AUTO TRANS** button is used to start an automatic (smooth) transition between the selected **PST** and **BKGD** bus sources. Note the following important rules:

- An auto transition, once in progress, can *not* be paused.
- To “escape” from an auto transition in progress, you can either press **CUT** during the transition or manually pull the **Fader** in the proper direction. The “cut” action instantly completes the transition.
- You can *not* initiate an auto transition or a cut if the **Fader** is off its upper or lower limit.

Changing Auto Transition Rates

This section provides instructions for changing auto transition rates in the **Transition** group.

1. In the **Global Memory System** group, note the current transition rate in the display.



REG:00 Memory0
M:015 D:008 F:20

Global Memory System Display – Current Transition Rate

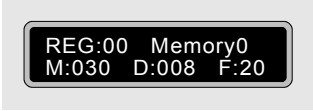
2. In the **Global Memory System** group, press the **MLE RATE** button.
3. Using the keypad, enter the desired rate in frames — from **1** to **999**. The rate appears on the display’s top line as you type and the **ENTER** button lights.



New MLE Rate:030
M:015 D:008 F:20

Global Memory System Display – Entering a New Rate

4. To accept the new rate, press **ENTER**. The display updates as shown below, the **ENTER** light turns off and the new rate is available for use.



REG:00 Memory0
M:030 D:008 F:20

Global Memory System Display – New Rate

Please note:

- To clear the rate and cancel the procedure, press the **MLE RATE** button *during* the entry process.
- To enter a *different* rate prior to pressing **ENTER**, simply continue to type until the desired value appears in the register.

Preset Black

The **Preset Black** function is a special two-stage transition that allows you to take the switcher to black (with the first transition) and then proceed to the next transition previously indicated. The function is quite useful for dipping the switcher quickly 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.

There are two stages to the transition:

- When you press **PST BLACK**, the switcher presets a dissolve to black. 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.

Use the following procedure to perform a **Preset Black** transition:

1. Select a source on the **BKGD** bus and a different source on **PST**. Enable any combination of keys.
2. Press **PST BLACK**. The preview monitor will now show a black picture.
3. 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 previous scene (from step 1) which also appears on **Preview**.

4. 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 2, 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 override can be stored to a floppy disk or USB key in the **Personality** register.

White Flash

White Flash is a single button effect that allows you to set the flash color and timing of a transition. Once enabled, this effect performs a double transition from **PGM** to **White Flash** to **PST** using a free background color generator to produce the White Flash instead of Preset Black. This is achieved by enabling the White Flash effect, setting the color and timing of the transition and using the **PST BLACK** button in the **Transition Group**.



Note

White Flash differs from Preset Black in that it automatically performs the transition when **PST BLACK** is pressed.

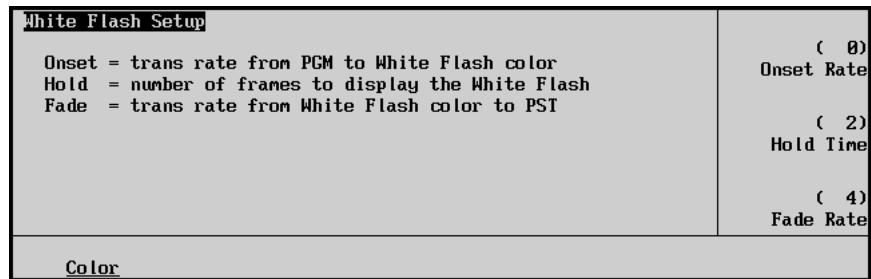
Use the following procedure to configure the White Flash effect:

1. Navigate to the **Personality Menu 1-3** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**).
 - **MORE** (to display the **Main Menu 2-2**).
 - **Setup** (to display the **Setup Menu**).
 - **Personality** (to display the **Personality Menu 1-3**).
2. Press **MORE** to display the **Personality Menu 2-3**.
3. Press **MORE** to display the **Personality Menu 3-3**.



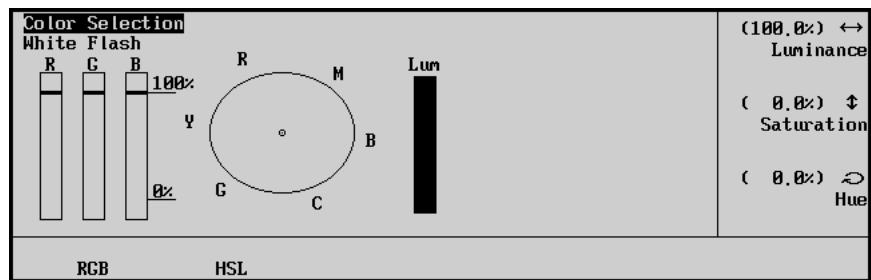
Personality Menu 2-3

- Toggle the **White Flash** softkey to **On** to display the **White Flash Setup Menu**.



White Flash Setup Menu

- Set the timing of the White Flash as follows:
 - Use the top **Onset Rate** knob to set the transition rate (0 to 150 frames) from **PGM** to the White Flash.
 - Use the middle **Hold Time** knob to set the length (in number of frames) of the White Flash before fading out.
 - Use the bottom **Fade Rate** knob to set the transition rate from the White Flash to **PST**.
- Press **Color** to display the **Color Selection Menu**.



Color Selection Menu



Note

The White Flash default is set to **HSL**. Press **RGB** if you wish to edit the White Flash in **RGB** colors.

- Use the **Color Selection Menu** to adjust the appearance of the White Flash:
 - Use the top **Luminance** knob to adjust the luminance level of the White Flash.
 - Use the middle **Saturation** knob to adjust the saturation level of the White Flash.
 - Use the bottom **Hue** knob to adjust the hue levels of the White Flash.



Operating Tip

You can turn the White Flash effect off by repeating steps 1 and 2 and toggling the **White Flash** softkey to **Off**.

This completes the procedure to configure the White Flash effect.

Transition Preview

Use the **TRANS PV** (transition preview) button, in the **Transition Group**, to rehearse a complete preset-to-program transition without affecting the selected program output. When **TRANS PV** is lit, the *full transition* occurs on the preview side of the MLE, leaving the PGM output signal undisturbed. In this mode, you can create, rehearse, and preview a transition, without affecting the program output. With **TRANS PV** engaged, the **Fader** is effectively *disconnected* from program.

Use the following procedure to utilize the **Transition Preview** function:

1. Select the desired **Next Transition** button or buttons, depending on which video elements you want to change.
2. Press the desired transition type. If you wish to preview a transition which involves only the background, all four transition types (dissolves, wipes, DVE Send, and S&T wipes) are available. If a key is involved in your next transition, only **DISS** and **WIPE** transition can be previewed.
3. Ensure that the **Fader** is at an upper or lower limit. The **TRANS PV** button cannot be enabled or disabled when the **Fader** (or **AUTO TRANS** button) is off a limit. This restriction prevents an effect from *popping* into or out of the program video.
4. Turn on the **TRANS PV** button. The *preview monitor* now displays the program output.
5. Use the **Fader** or **AUTO TRANS** to preview the current effect. Make any modifications desired to the combination of keys and/or background scenes — without affecting the program side of the MLE. Keep in mind the restrictions set out in step 2 above.
6. Once you are satisfied with the effect, move the **Fader** to either limit.
7. Turn off the **TRANS PV** button. The preview monitor reverts to its look-ahead preview mode.
8. Perform the transition on air. The program output shows the exact effect you just viewed on the preview monitor (using **Transition Preview** mode).

Please note the following important points:

- **Transition Preview** mode works regardless of whether the MLE is on air or not.
- **Transition Preview** mode is highly recommended for previewing complete effects, and in fact, is *critically important* for previewing **DVE SEND** effects.

This completes the procedure to utilize the **Transition Preview** function.

Key Over

There are three methods of changing the key priority:

- The **KEY OVER** button in the **Key 1** group changes the visual and electronic priority of **Key 1** from “under” to “over” **Key 2**. The key priority is changed as a *cut*.
 - When the **KEY OVER** button is off, **Key 2** is over **Key 1**.



- When the **KEY OVER** button is on, **Key 1** is over **Key 2**.



- The **KEY OVER** button in the **Transition** group changes the priority of the two keys as an *effect*, rather than as a cut.
- The **Key Over** softkey in the **Key Setup Menus** can be toggled between **On** and **Off**, enabling you to change the priority of the two keys. Refer to the section “**Using Keys**” on page 7-13 for more information.

Use the following procedure to perform a **Key Over** transition:

1. Ensure that both MLE keyers are on (not the DSKs).
2. Select the desired **DISS** or **WIPE** transition.
3. Enable the **KEY OVER** button.
4. Use the **Fader** or **AUTO TRANS** to perform the transition.

Please note the following important points regarding the **Transition** group’s **Key Over** function:

- The **Key Over** function works only when both MLE keys are on. If only one key is on, the **KEY OVER** button will not light.
- The **KEY OVER** button stays lit after the **Key Over** transition has completed.
- The **Key Over** function can be regarded as a fourth “next transition,” which is mutually exclusive with the **BKGD**, **KEY 1** and **KEY 2** buttons. When **KEY OVER** is pressed, all three “next transition” buttons automatically turn off.

Refer to the section, “**DVE Send and Keying**” on page 9-8 for additional details on the **KEY OVER** button, when used in conjunction with the **DVE Send** feature.

Transition Limit

The **TRANS LIMIT** (transition limit) button in the **Transition Group** allows you to stop a transition at a preset position — in between the two absolute **Fader** limits.

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, Wipe, or DVE Send 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 Background and Preset.
 - In the case of a wipe, visually set the desired *split screen* position between Background 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.
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 the full Preset Bus source.

This completes the procedure to perform a transition limit effect.

Pattern Control

In This Chapter

This chapter provides information and instructions for using the **Pattern Control** group of the Synergy 1 Switcher.

The following topics are discussed:

- Pattern Control Group
- Using Wipes
- Adjusting Matrix Wipes
- User Wipes
- Squeeze & Tease 2D Wipes
- Matte Group
- Creating Washes
- Creating a Pattern Border Color (or WIPE Border)
- Creating a Matte Fill Color
- Creating a Color Background Color

Pattern Control Group

The **Pattern Control** group which is located in the panel's top right-hand section includes *two* pattern generators:

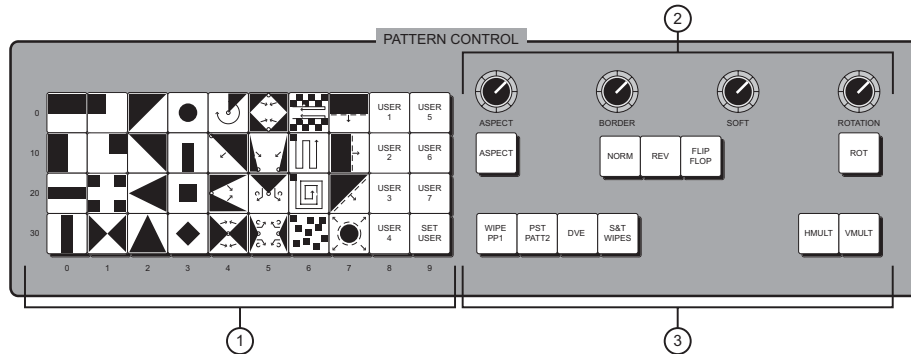
- Pattern generator 1 is *shared* between the **Wipe Generator** and the **Preset Pattern Generator in Keyer 1**. This pattern generator is *full-featured* — all wipe patterns are available.
- Pattern generator 2 is used *exclusively* by the **Preset Pattern Generator in Keyer 2**. This generator is restricted to the first six columns of patterns (as shown in the **Pattern Selection Section**), minus the circle. Matrix wipes are not available.



Note

Because pattern generator 1 is shared, if **PST PATT** is enabled in **Keyer 1**, you can not press **WIPE** in the **Transition** group. 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 following figure illustrates the **Pattern Control** group:



Pattern Control Group

1) Pattern Selection Section	2) Pattern Adjustment Section	3) Pattern Assignment Section
------------------------------	-------------------------------	-------------------------------

The **Pattern Control** group is an *assignable* group of controls that allows you to choose wipes and adjust wipe parameters. For example, by pressing **WIPE** or by pressing **PST PATT**, the group is assigned to that specific function.

1. Pattern Selection Section

The **Pattern Selection Section** is an array of 40 buttons, 39 which each represent an individual wipe pattern, and one **SET USER** button. There are no optional patterns. To select a wipe, press the desired button. Once selected, the pattern can be modified and used on air. The section displays 16 “classic” wipes, 8 rotary wipes, 8 matrix wipes and 7 user wipes.

When you select a matrix wipe, the **Matrix Menu** appears, allowing you to *customize* the selected matrix wipe as required. Refer to the section, “**Adjusting Matrix Wipes**” on page 6-7 for instructions.

Each of the “user” wipe buttons is essentially a memory register for a *hidden* wipe pattern that is chosen from the **User Wipe Menu**. Once selected, the wipe is stored on

one of the User Wipe buttons for instant access — just like a normal wipe. Refer to the section, “User Wipes” on page 6-9 for complete instructions.

Please note:

- When the **DVE Send and Remote Control Option** is installed and the **DVE** button is pressed, the **Pattern Selection Section** changes into a *DVE shot box*. Refer to the section, “**Understanding DVE Send Operations**” on page 9-2 for full details on the **DVE Send** feature.
- When the **Squeeze & Tease Option** is installed and the **DVE SEND** and **WIPE** buttons are pressed simultaneously in the **Transition Group**, the **Pattern Selection Section** changes into a *Squeeze & Tease shot box*. Refer to the section, “**Flying Keys in 2D**” on page 7-39 for full details on the **Squeeze & Tease Wipe** feature.

2. Pattern Adjustment Section

The **Pattern Adjustment Section** provides five buttons and four “end-stop” knobs that modify the selected pattern.



- The **ASPECT** button enables the use of the **ASPECT** knob.
 - ~ When the button is on, “closed” patterns with both horizontal and vertical 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:

- ~ The **ASPECT** button will *not* light if the select pattern can not have its aspect ratio adjusted.
- ~ 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.



- When the **ASPECT** button is lit, the **ASPECT** knob can be used to adjust the aspect ratio of selected “closed” patterns.
 - ~ Turning the knob clockwise increases the pattern’s vertical aspect ratio.
 - ~ Turning the knob counter-clockwise increases the pattern’s horizontal aspect ratio.



- The **BORDER** knob allows you to adjust pattern borders from no border to full-screen borders on all patterns, with the exception of the “rotary wipe”, pattern number 4, which does not accept a border.
 - ~ Turning the knob clockwise increases border width.
 - ~ Turning the knob counter-clockwise decreases the pattern’s border.



- The **SOFT** knob allows you to adjust pattern edge softness from hard-edge to full soft-edge on all patterns, with the exception of the “rotary wipe”, pattern number 4, which does not accept softness.
 - ~ Turning the knob clockwise increases edge softness.
 - ~ Turning the knob counter-clockwise decreases the pattern’s edge softness.
 - ~ When controlling preset patterns, the knob performs the same function as the **GAIN** knob (in the **Effects Control** group) — that is, *softening* the key edge

and adjusting how the pattern blends into the background. The control is duplicated here for operator convenience.



- The **ROT** button enables the use of the **ROTATION** knob.
 - ~ When the button is on, wipe patterns **00** and **07** (horizontal wipes) plus **10** and **17** (vertical wipes) can be rotated a full 360 degrees. Only these four patterns can be rotated.
 - ~ When the button is off, all rotation is removed and the pattern returns to its default position.



- The **ROTATION** knob allows you to rotate patterns (when the **ROT** button is lit).
 - ~ Turning the knob clockwise rotates the selected pattern clockwise.
 - ~ Turning the knob counter-clockwise rotates the selected pattern counter-clockwise.

Within the section, three buttons are also provided that control the *direction* and *modification* of the selected wipe. With the **DVE Send and Remote Control Option** installed, the **NORM**, **REV** and **FLIP FLOP** buttons control the *direction* of the DVE effect. Note that **NORM**, **REV** and **FLIP FLOP** are mutually exclusive.



- Press **NORM** to set the wipe direction to normal. The new picture is revealed from the black area (as shown on the pattern button) to the white area.

When **DVE SEND** is pressed, press **NORM** to run the DVE effect forward. The video on the **Background** bus will transition off with the effect, revealing the **Preset** bus.



- Press **REV** to set the direction of the wipe to reverse. The new picture is revealed from the white area to the black area. When **DVE SEND** is pressed, press **REV** to run the DVE effect in reverse. The video on **Preset** will transition on with a DVE effect, covering up the **Background** bus.



- Press **FLIP FLOP** to set the wipe direction to “flip flop” (also known as **Normal/Reverse**). Wipe direction is normal for the first transition, reverse for the second, then normal for the third, etc. When **DVE SEND** is pressed, press **FLIP FLOP** to run the DVE effect forward with the first transition, then reverse with the next transition. Refer to the section, “**Understanding DVE Send Operations**” on page 9-2 for details.

As an overall reminder about the knobs in the **Pattern Control** group, please note the following important point regarding end-stop knobs:

- Because an **End-stop Knob**'s electrical position 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 be adjusted but you may not have the full adjustment range available.



Operating Tip

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

3. Pattern Assignment Section

The **Pattern Assignment Section** provides a group of buttons that allow you to assign the **Pattern Control** group to individual functions.



- The **WIPE PP1** button assigns control of the **Pattern Control** group to pattern generator 1. This button is automatically selected whenever **WIPE** is pressed in the **Transition** group or when **PST PATT** is pressed in **Keyer 1**.



- The **PST PATT2** button assigns control of the **Pattern Control** group to pattern generator 2. This button is automatically selected whenever **PST PATT** is pressed in **Keyer 2**.



- The **DVE** button allows you to recall selected effects from the primary DVE and also changes the **Pattern Selection Section** into a DVE *shot box*. The **DVE Send and Remote Control Option** must be installed. Refer to the section, “**Understanding DVE Send Operations**” on page 9-2 for full details.



- The **S&T WIPES** button, when lit, alerts you that the **Pattern Control Group** is now in the Squeeze & Tease “shot box” mode. In this mode, you can perform push-offs, pull-ons and other similar DVE transitions. A **Squeeze & Tease 2D Option** must be installed. Refer to the section, “**Flying Keys in 2D**” on page 7-39 for details.



- The **HMULT** button allows you to horizontally multiply the number of wipe patterns that are visible on screen.
 - ~ Press the button repeatedly to cycle through several different levels of horizontal multiplication. The button lights when horizontal multiplication is active.
 - ~ Press and *hold* the button for 1 second to clear all horizontal and vertical multiplication.



- The **VMULT** button allows you to vertically multiply the number of wipe patterns that are visible on screen.
 - ~ Press the button repeatedly to cycle through several different levels of vertical multiplication. The button lights when vertical multiplication is active.
 - ~ Press and *hold* the button for 1 second to clear all horizontal and vertical multiplication.



Note

Vertical multiplication is not available for matrix wipe patterns.



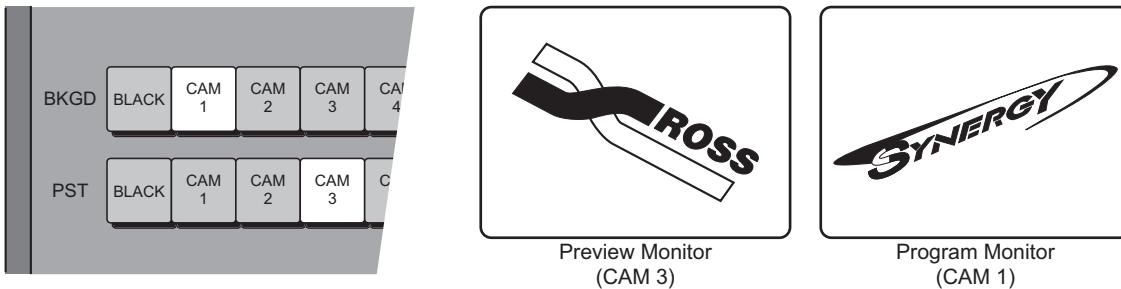
- The **SET USER** button calls up the **User Wipe Menu** which is used to select user wipes and assign them to one of the available “user” wipe buttons in the **Pattern Selection Section**. Refer to the section “**User Wipes**” on page 6-9 for complete instructions.

Using Wipes

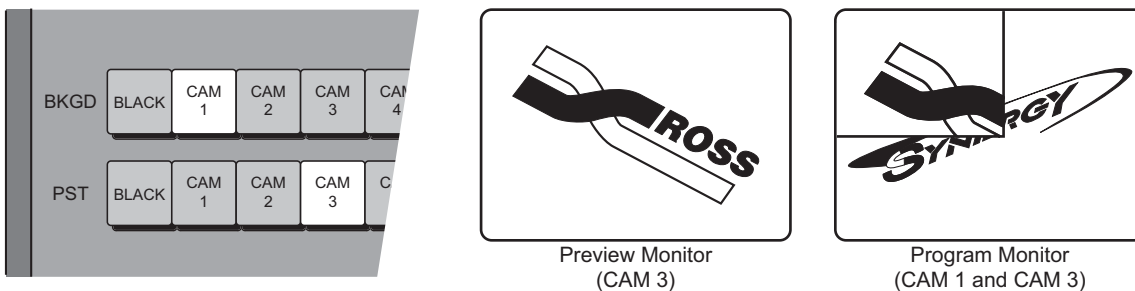
In a “background wipe” transition, the **BKGD** bus video is gradually replaced with the **PST** bus video according to a wipe pattern pre-selected from the **Pattern Selection Section** in the **Pattern Control** group.

Use the following procedure to perform a wipe:

1. Select an input on the **BKGD** bus.
2. Select a different input on the **PST** bus.
3. In the **Transition** group, select **BKGD** as the next transition. The following figure illustrates a *sample* setup and the associated monitor outputs — before the wipe.

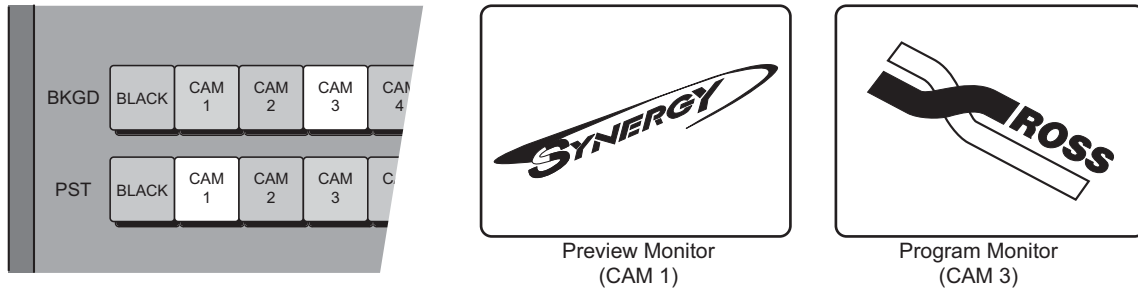


4. Press **WIPE**. This action automatically assigns the **Pattern Control** group to the transition.
5. In the **Pattern Selection Section**, press the button for the desired wipe pattern.
6. In the **Pattern Adjustment Section**, choose the direction for the wipe. Select between **NORM**, **REV** or **FLIP FLOP**.
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 **BKGD** signal using the selected wipe, as shown below.



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

The following figure illustrates the MLE and monitor setup *after* the wipe.



Please note the following important points regarding wipes:

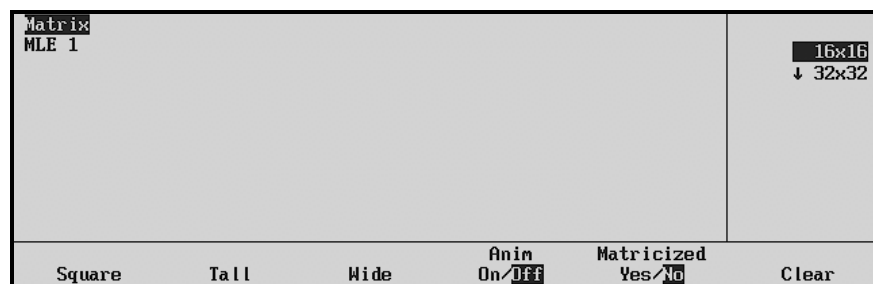
- During the wipe, the **ON AIR** indicators at the end of both the **BKGD** and **PST** bus rows will be lit. This shows that *both* buses are contributing to the switcher output. At the end of the wipe, after the flip-flop, only the **BKGD ON AIR** LED will be lit.
- Wipe borders can be modified to be any matte color. Refer to the section, “**Matte Group**” on page 6-14 for details.
- When you select a matrix wipe from the **Pattern Selection Section**, the **Matrix Menu** automatically appears on the display. This menu is *primarily* designed for adjusting matrix wipes, but it also allows you to “matricize” any *standard* wipe pattern. This feature essentially turns any standard pattern into a matrix wipe. Refer to the section, “**Matricized Wipes**” on page 6-9 for details.

Adjusting Matrix Wipes

When you select a matrix wipe from the **Pattern Selection Section**, the **Matrix Menu** automatically appears on the display.

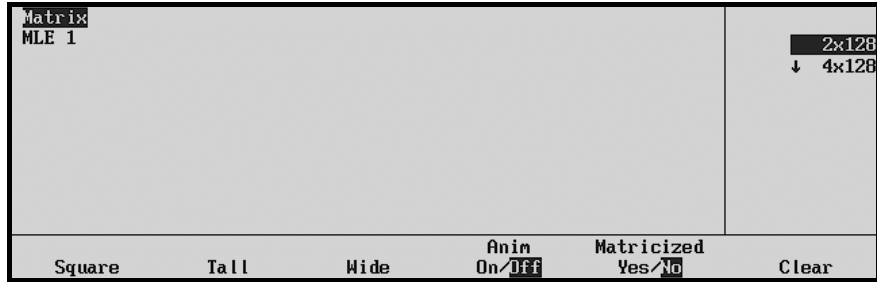
Use the following procedure to adjust or *customize* a matrix wipe:

1. Press **WIPE**.
2. In the **Pattern Control** group, choose the desired matrix wipe pattern. The **Matrix Menu** automatically is displayed.
3. Press **Square** to display the **Matrix Square Menu**.



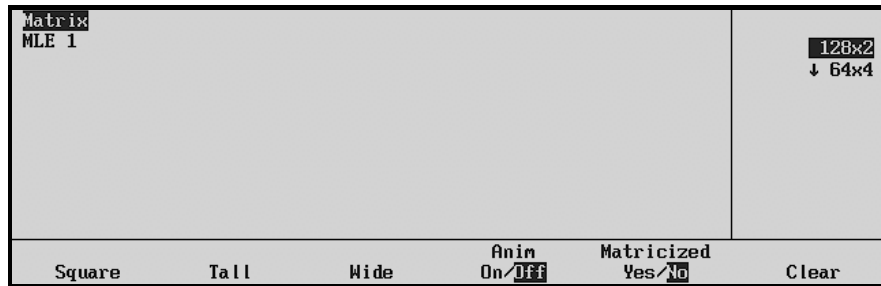
Matrix Square Menu

- Use the top knob to adjust the *size* (in pixels) of the matrix wipe squares (also known as “tiles”).
4. Press **Tall** to display the **Matrix Tall Menu**:



Matrix Tall Menu

- Use the top knob to adjust the height of the matrix wipe tiles.
5. Press **Wide** to display the **Matrix Wide Menu**.



Matrix Wide Menu

- Use the top knob to adjust the width of the matrix wipe tiles.
6. Toggle the fourth softkey to **Anim On** to display the **Matrix Animation Menu**.



Matrix Animation Menu

- Use the middle and bottom knobs to adjust the animation values of the matrix wipe. This feature essentially adds a visual *twinkle* to the edges of the selected matrix wipe.



Operating Tip

You can press **Clear** to remove all custom matrix wipe modification.

This completes the procedure to adjust or *customize* a matrix wipe.

Matricized Wipes

Using the **Matricize Wipe** feature, you can turn any standard pattern into a matrix wipe, with full functionality in positioning and modifying the custom “matricized” pattern.

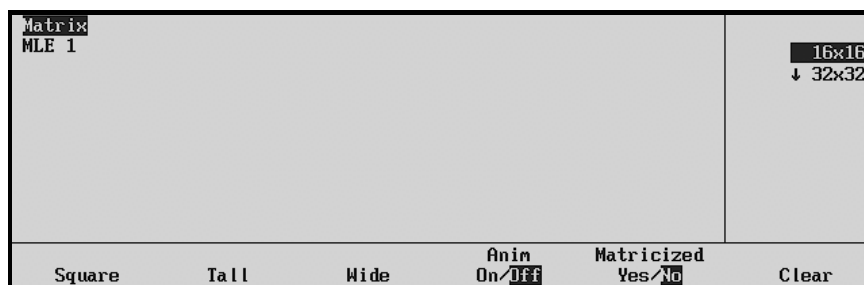
Use the following procedure to “Matricize” a wipe:

1. Navigate to the **Matrix Menu** as follows:
 - Press **HOME** (to display **Main Menu 1-2**)
 - **Effects** (to display **Effects Menu**)
 - **Patterns** (to display **Patterns Menu**)
 - **Matrix Wipes** (to display **Matrix Modify Menu**)
 - **Modify** (to display the **Matrix Menu**)



Operating Tip

You can also display the **Matrix Menu** by select any matrix wipe pattern.



Matrix Menu

2. Select the desired “standard” wipe pattern using the buttons in the **Pattern Selection Section**.
3. On the **Matrix Menu**, toggle **Matricized** to **Yes**.
4. Modify the matricized wipe in the normal manner, using all available wipe modifiers (including the modifiers for matrix wipes, such as **Square**, **Tall**, **Wide** and **Anim**). Note that all wipes on the switcher will be matricized at this point.
5. To disable the feature, toggle **Matricized** to **No**.

This completes the procedure to “Matricize” a wipe.

User Wipes

The switcher’s **User Wipe** feature allows you to select from over 60 additional wipes (that are normally hidden from view on the panel). Once selected, you can place the “user” wipe on one of the available **User Wipe** buttons in the **Pattern Selection Section**. The user wipes that you select are then available any time the specific User Wipe buttons are pressed.

The seven **User Wipe** buttons are “presets” that can be programmed with your favorite User Wipes and used in the normal manner to suit the requirements of your shows.



Operating Tip

A User Wipe is *not* a standard wipe with pattern modifiers applied — *that* function can easily be performed with memory presets.

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

1. Press **SET USER** in the **Pattern Control Group** to display the **User Wipe Menu**.



User Wipes Menu

2. Select the **User Wipe** button that you wish to program. Two methods are available:
 - In the **Pattern Control Group**, press one of the seven User Wipe buttons (**USER 1** through **USER 7**).
 - On the **User Wipe Menu**, use the top **Knob** to select the desired User Wipe button.
3. Use the middle knob to select one of four categories of User Wipes: **Classic**, **Rotary**, **Matrix** and **Special**.
4. Use the bottom **Knob** to select the desired wipe within the category. This action automatically assigns the wipe to the selected **User Wipe** button and stores your selection in on-line memory.



Operating Tip

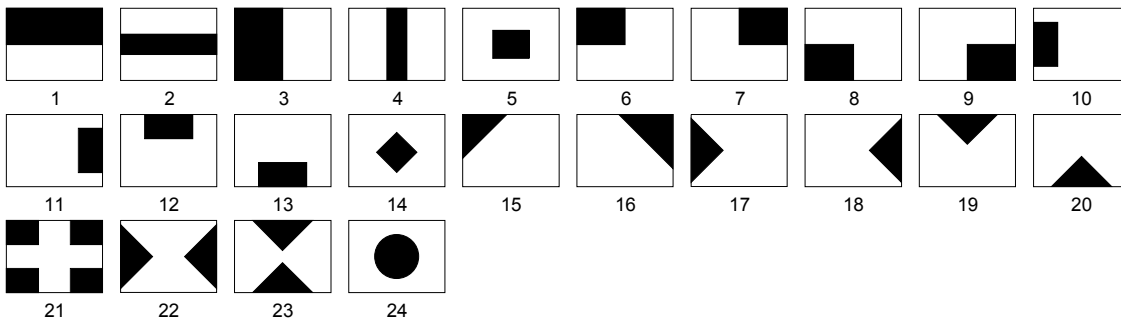
To view the wipe, select **Black** and **Color** on **BKGD** and **PST** and place the fader halfway through the transition.

5. Repeat steps 2 through 4 for all additional User Wipe buttons that you wish to program.
6. To use the wipe in production, select a User Wipe button as you would any of the other wipes in the **Pattern Selection Section**.

This completes the procedure to select a **User Wipe**.

Classic Wipes

The following figure illustrates the available “Classic” User Wipes.



Classic Wipes – Visual Representations and Wipe Numbers



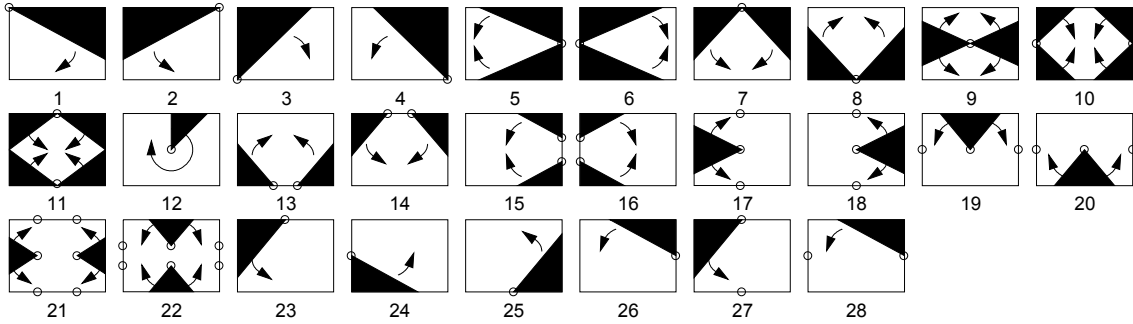
Note

The numbers under the wipe patterns indicate the *wipe number* as selected using the bottom knob in the scroll area of the **User Wipe Menu**.

The graphical representations of the wipes *do not* correspond with the patterns on the actual keys in the Pattern Control group.

Rotary Wipes

The following figure illustrates the available “Rotary” User Wipes:



Rotary Wipes – Visual Representations and Wipe Numbers.



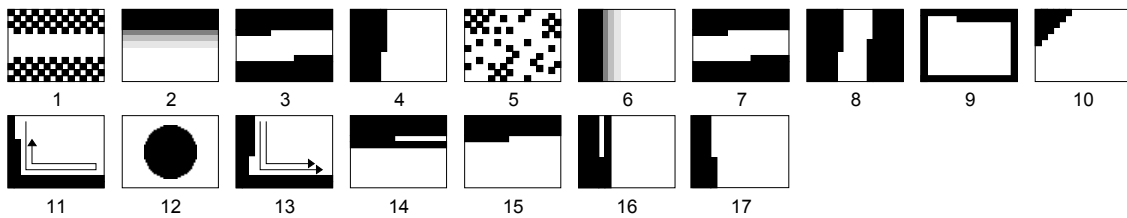
Note

The numbers under the wipe patterns indicate the *wipe number* as selected using the bottom knob in the scroll area of the **User Wipe Menu**.

The graphical representations of the wipes *do not* correspond with the patterns on the actual keys in the Pattern Control group.

Matrix Wipes

The following figure illustrates the available “Matrix” User Wipes.



Matrix Wipes – Visual Representations and Wipe Numbers



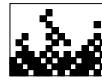
Note

The numbers under the wipe patterns indicate the *wipe number* as selected using the bottom knob in the scroll area of the **User Wipe Menu**.

The graphical representations of the wipes *do not* correspond with the patterns on the actual keys in the Pattern Control group.

Special Wipes

The following figure illustrates the available “Special” User Wipe.



1

User Wipe Button



Operating Tip

This wipe is the special animated “fire” wipe — give it a try! It looks especially good with horizontal matrix multiplication added.

Squeeze & Tease 2D Wipes

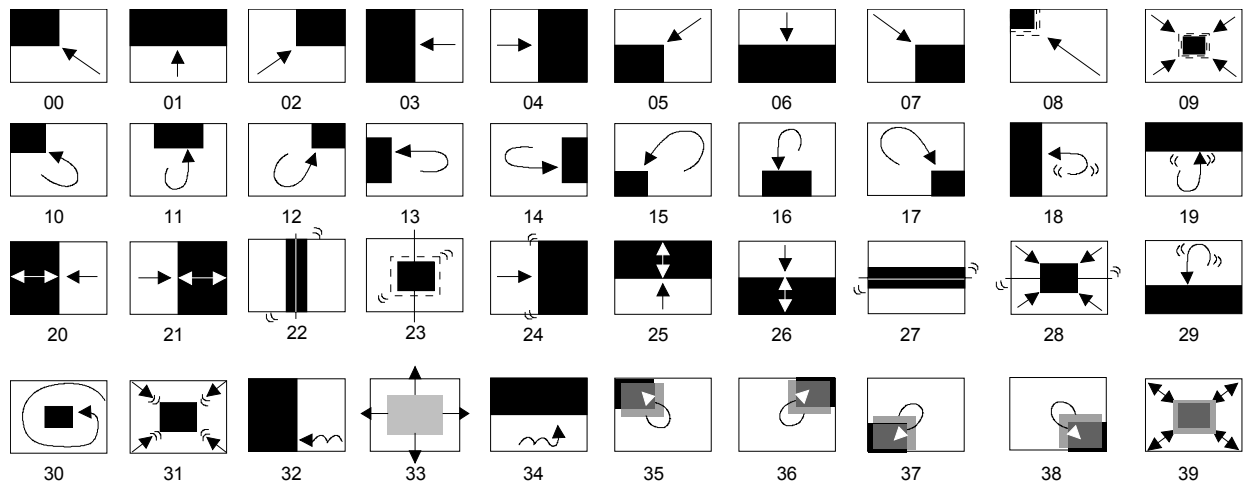
The **Squeeze & Tease 2D Wipe** function allows you to perform push-offs, pull-ons and other similar DVE transitions from within the MLE itself.

Use the following step to activate the **Squeeze & Tease 2D** wipes function:

- Press **DVE SEND** and **WIPE** at the same time in the **Transition Group**.

Both buttons illuminate, if a free **Squeeze & Tease** channel is available in the MLE. In the **Pattern Control** section, the **S&T WIPES** button lights, the MLE’s button lights, and the array of 40 wipe buttons becomes a **Squeeze & Tease** “shot box” — allowing you a choice of 40 different transitions. The **S&T WIPES** button alerts you that the section is now in **Squeeze & Tease** “shot box” mode.

The following figure illustrates the available “Squeeze & Tease” wipes.



Squeeze & Tease 2D Wipes - Visual Representations.



Note

The numbers under the wipe patterns indicate the position of the key in the Pattern Control group.

The graphical representations of the wipes **do not** correspond with the patterns on the actual keys in the Pattern Control group.

To view the Squeeze & Tease 2D wipes in the panel menu, press any of the 40 wipe buttons, or from the Main menu, press **Help**, then press **List S&T Wipes**.

The following image lists S&T 2D wipe names for the pictures above, as they appear in the panel menu when any wipe button is pressed.

Squeeze & Tease Wipes									
Push To Up Left	Push To Top	Push To Up Right	Push To Left	Push To Right	Push To BtnLeft	Push To Botton	Push To BtnRight	Squeeze Up Left	Squeeze Center
Fly To Up Left	Fly To Up Mid	Fly To Up Right	Fly To MidLeft	Fly To MidRight	Fly To BtnLeft	Fly To BtnMid	Fly To BtnRight	Spring To Left	Spring To Top
Squeeze Left	Squeeze Right	FlipOff Horzntl	FlipSqz OffHztl	Wobble ToRight	Squeeze Up	Squeeze Down	FlipOff Vertical	FlipSqz OffVtcl	Wobble To Btn
Circle OffCntr	Wobble OffCntr	Bounce OffLeft	Fly Through	Bounce Up	FlyZoom ToUpLft	FlyZoom ToUpRgt	FlyZoom ToBnLft	FlyZoom ToBnRgt	FlyZoom ToCntr

Squeeze & Tease 2D Wipes - Normal

The following table lists the S&T 2D wipe names that appear in the panel menu when any wipe button is pressed, and with the REV button pressed.

Squeeze & Tease Wipes									
PushFrm Up Left	PushFrm Top	PushFrm UpRight	PushFrm Left	PushFrm Right	PushFrm BtnLeft	PushFrm Botton	PushFrm BtnRight	ExpdFrm Up Left	ExpdFrm Center
Fly Frm Up Left	Fly Frm Up Mid	Fly Frm Up Right	Fly Frm MidLeft	Fly Frm MidRight	Fly Frm BtnLeft	Fly Frm BtnMid	Fly Frm BtnRight	Spring Frn Left	Spring Frn Top
Expand FrnLeft	Expand FrnRight	Flip On Horzntl	FlipSqz OnHzrtl	Wobble FrnRight	Expand Frn Top	Expand FrnBttm	Flip On Vertical	FlipSqz FrnVrtl	Wobble FrnBttm
Circle On Cntr	Wobble On Cntr	Bounce FrnLeft	Fly Back	Thousnd Pounds	FlyZoom FrnUpLft	FlyZoom FrnUpRgt	FlyZoom FrnBnLft	FlyZoom FrnBnRgt	FlyZoom FrnCntr

Squeeze & Tease 2D Wipes - Reversed

Select your foreground and background sources in the normal way, and experiment to discover the patterns that you like the best. Both manual and auto-transitions function just like a standard wipe.

Please note:

- The **Squeeze & Tease 2D or 3D WARP Option** is required to perform the Squeeze & Tease wipe (and 3D sequence) function.
- In the **Pattern Control** section, the **S&T WIPES** key cap must be installed. If you do not have this key cap, please contact **Technical Support**.
- When enabled, the mode selects a free channel, or two free channels as required. If channels are not available, you cannot select an S&T wipe.
- You can perform a Squeeze & Tease wipe individually on **BKGD**, **KEY 1** or **KEY 2**, but no *combination* of the transition selections are allowed.
- **BKGD** and **KEY** transitions only require one Squeeze & Tease channel to perform a Squeeze & Tease wipe. Wipes involving **Auto Select** keys require two channels.
- Color backgrounds cannot be used with Squeeze & Tease background wipes.
- If you want to perform a Squeeze & Tease wipe on **Key 1**, for example, and **Key 1** is *already* performing a **Fly Key**, the Squeeze & Tease wipe is allowed. If the keyer is *not* flying a key, the system temporarily borrows a single Squeeze & Tease channel (or two channels if you request an **Auto Select** key).



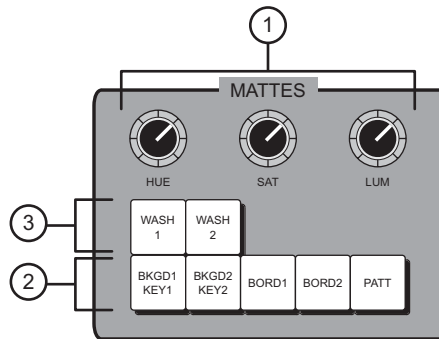
Note

The **Transition Preview** and **KEY OVER** modes are not available when performing Squeeze & Tease wipes.

Matte Group

The **Matte** group provides a set of *assignable* controls that allow you to select specific matte generators and adjust colors for wipe patterns, borders, washes and matte fills. By pressing a **WIPE**, **BORD** or **MATTE FILL** button, the **Matte** group is assigned to that specific function.

The following figure illustrates the **Matte** group:



Matte Group

1) Matte Color Knobs	2) Matte Destination Section	3) Wash 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 4-11 for additional information.



HUE



SAT



LUM

- Adjust the **HUE** knob to change the color of the selected matte generator. A full 360 degrees of hue adjustment is provided.
- Adjust 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.
- Adjust the **LUM** knob to change the luminance of the selected matte generator. Luminance can be adjusted from 0 (minimum brightness) to 100 percent (maximum brightness)

2. Matte Destination Section

The five buttons in the **Matte Destination Section** allow you to select one of five different matte generators. Each generator is capable of generating *one* background or fill color. The buttons are selected automatically (as outlined below) or they can be selected manually.

It is important to note that the two background matte generators (accessed by pressing **BKGD 1 KEY 1** or **BKGD 2 KEY 2**) are *completely independent*. This feature provides you with exceptional creative capacity for on-line production and memory recall situations.



- Press **BKGD 1 KEY 1** to select matte generator 1. This is a *shared* matte generator that is automatically selected when the following buttons are pressed:
 - ~ **COLOR BKGD 1** (on the bus row)
 - ~ **MATTE FILL** (in Keyer 1)
 - ~ **Key Types** (in Keyer 1)

When **BKGD 1 KEY 1** is selected, the color selection menu will appear on the panel screen and you can adjust the selected **BKGD KEY 1**, **MATTE FILL** or **KEY 1**, **PST PATT** border color using the three **Matte Color** knobs. You can also press a **WASH** button and assign a color wash to the destination.



Note

If **PST PATT** is selected in the key 1 group, you can not select **MATTE FILL** and the color selection menu will not appear.



- Press **BKGD 2 KEY 2** to select matte generator 2. This is a *shared* matte generator that is automatically selected when the following buttons are pressed:
 - ~ **COLOR BKGD 2** (on the bus row)
 - ~ **MATTE FILL** (in Keyer 2)
 - ~ **Key Types** (in Keyer 2)

When **BKGD 2 KEY 2** is selected, the color selection menu will appear on the panel screen and you can adjust the selected color background 2, key 2 matte fill or key 2 preset pattern border color using the three **Matte Color** knobs. You can also press a **Wash** button and assign a color wash to the destination.



Note

If **PST PATT** is selected in the key 2 group, you can not select **MATTE FILL** and the color selection menu will not appear.



- Press **BORD 1** to adjust the color of **Key 1**'s optional border and shadow generator. The **Dual Border Generator** option must be installed. The button is automatically selected when a border is enabled in Key 1. Refer to the section, "**Bordering Keys**" on page 7-47 for more information.



- Press **BORD 2** to adjust the color of **Key 2**'s optional border and shadow generator. The **Dual Border Generator** option must be installed. The button is automatically selected when a border is enabled in Key 2. Refer to the section, "**Bordering Keys**" on page 7-47 for more information.



- Press **PATT** to select the main matte generator for pattern border colors. This generator is independent of the other generators in the **Matte Destination Section**. The button is automatically selected when you press **WIPE**.

When pressed, you can adjust the pattern border color using the three **Matte Color** knobs. You can also press a **Wash** button and assign a color wash to the destination.

3. Wash Section

The two buttons in the **Wash Section** allow you to create *washes* (or "blends") between two different colors.



- Press **WASH 1** to enable wash background 1 for the selected destination matte generator.



- Press **WASH 2** to enable wash background 2 for the selected destination matte generator.

When a wash button is lit, the selected wash replaces the current single matte color. When the button is off, the original *single* matte color is restored.

Once a wash is created, the wash can be applied to one (or more) of the five destination matte generators. Refer to the section, “**Creating Washes**” on page 6-16 for more details.

Creating Washes

Use the following procedure to create a wash:

1. Choose the desired *function* for which you want to create a wash. For example:
 - Press **WIPE** to create a wash for a pattern border color.
 - Press **COLOR BKGD (1 or 2)** on the bus row to create a wash for a full screen color background.
 - Press **MATTE FILL** (in Keyer 1 or 2) to create a key fill wash.
 - Press **PST PATT** (in Keyer 1 or 2) to create a wash for a key preset pattern border fill signal.
 - Enable a *border* function in Keyer 1 or 2 (e.g., **BORD**, **OUTL**) to create a wash for a the key border.
2. In the **Matte** group, the proper matte destination button will be automatically selected.



Note

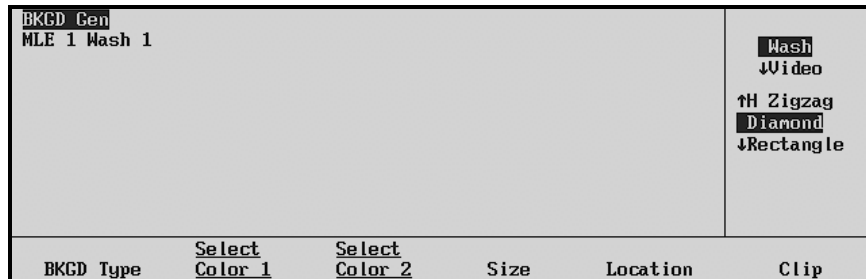
In the **Matte** group, you can also *manually* select the desired destination matte generator.
You can not put a **WASH** on a **PST PATT** fly key border.

3. Press **WASH 1** or **WASH 2** to display the **Wash Menu**.

BKGD Gen					
MLE 1 Wash 1					
BKGD Type	Select Color 1	Select Color 2	Size	Location	Clip

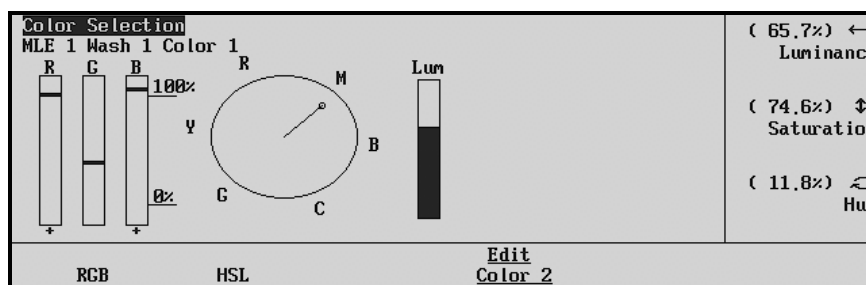
Wash Menu

4. Press **BKGD Type** to display the **Wash Background Type Menu**.



Wash Background Type Menu

5. Use the top **Wash Type** knob to select the “type” of wash. Choose between **Wash**, **Video**, **Noise** (simulated digital noise) and **SuperBlack**.
 - If **Wash** is selected, use the middle knob to select the “pattern” for the wash. Choose between the following:
 - ~ Vertical Zigzag
 - ~ Horizontal Zigzag
 - ~ Diamond
 - ~ Rectangle
 - ~ Solid diamond
 - ~ Cross
 - ~ Ramps
 - If **Video** is selected, use the middle knob to select the source of video. Choose between:
 - ~ Background Bus
 - ~ Key 1 Bus
 - ~ Key 2 Bus
6. Press **Select Color 1** to select the first color wash and display the **Wash Color 1 Menu**.



Wash Color 1 Menu

The **Wash Color 1 Menu** includes a graphical display to assist with the color selection. The display consists of a color wheel plus two types of bar graphs.



Note

The default **WASH 1** pattern is a black-to-blue vertical wash (with black at the top). The default **WASH 2** pattern is a silver-to-black vertical blind.

7. Select the first wash color as follows:

- As desired, press **RGB** to use an RGB (Red, Green, Blue) graphic display.
- As desired, press **HSL** to use an HSL (Hue, Saturation, Luminance) graphic display.



Note

If **MATTE LIMIT** is selected as ON in the Personality menu of the Setup function, RGB will not be shown in the Wash Color menu and all color adjustments will be within the RGB color space. However, colors can be adjusted outside of the RGB color space by setting the **MATTE LIMIT** to OFF. The system default is OFF.

- Use the three knobs to adjust the first wash color's **Luminance**, **Saturation** and **Hue**, (or **Red**, **Green** and **Blue** components) respectively.



Note

You can *also* adjust the wash color in the **Matte Group**, using the dedicated **HUE**, **SAT** and **LUM** knobs. Both sets of controls work simultaneously.

8. Select the second wash color, if desired, as follows:

- Press **Edit Color 2** to display the **Wash Color 2 Menu**. Repeat step 4 for the second wash color.



Note

On the **Wash Color 2 Menu**, the softkey label changes to **Edit Color 1**. Otherwise, all controls are identical — however, you are not able to adjust **Wash Color 2** using the knobs in the **Matte Group**.

- As desired, press **RGB** to use an RGB (Red, Green, Blue) graphic display.
- As desired, press **HSL** to use an HSL (Hue, Saturation, Luminance) graphic display.
- Use the three knobs to adjust the first wash color's **Luminance**, **Saturation** and **Hue**, (or **Red**, **Green** and **Blue** components) respectively

9. Adjust the size of a selected wash pattern as follows:

- Ensure the desired wash is selected in the menu system.
- Press **Size** to display the **Wash Size Menu**.

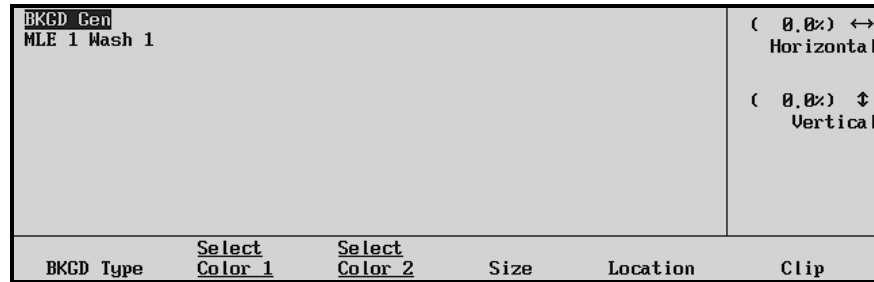
BKGD Gen MLE 1 Wash 1	(100.0%) ↔ Horizontal (97.0%) ↓ Vertical												
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; padding: 2px;">BKGD Type</th> <th style="text-align: center; padding: 2px;">Select Color 1</th> <th style="text-align: center; padding: 2px;">Select Color 2</th> <th style="text-align: center; padding: 2px;">Size</th> <th style="text-align: center; padding: 2px;">Location</th> <th style="text-align: center; padding: 2px;">Clip</th> </tr> </thead> <tbody> <tr> <td style="height: 20px;"> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	BKGD Type	Select Color 1	Select Color 2	Size	Location	Clip							
BKGD Type	Select Color 1	Select Color 2	Size	Location	Clip								

Wash Size Menu

- Use the top two knobs to adjust the horizontal and vertical size of the selected wash pattern. These controls vary the pattern's *frequency*.

10. Adjust the location of a selected wash pattern as follows:

- Ensure the desired wash is selected in the menu system.
- Press **Location** to display the **Wash Location Menu**.

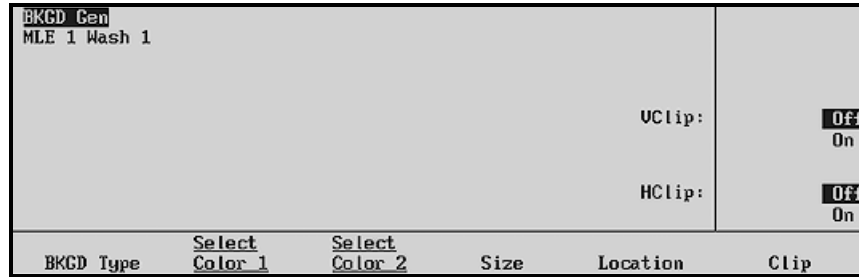


Wash Location Menu

- Use the top two knobs to adjust the horizontal and vertical location of the selected wash pattern. These controls vary the pattern's *offset*.

11. Adjust the horizontal and vertical wash clip as follows:

- Ensure the desired wash is selected in the menu system.
- Press **Clip** to display the **Wash Clip Menu**.



Wash Clip Menu

- Use the middle and bottom knobs to adjust the horizontal and vertical wash clip. Normally, washes have a smooth “flowing” appearance across the screen. The **HClip** and **VClip** functions add an abrupt change that reverses the pattern flow at each repeating point. Both **HClip** and **VClip** can be enabled simultaneously.
 - ~ Adjust the middle **VClip** knob to change pattern flow for vertical transitions.
 - ~ Adjust the top **HClip** knob to change pattern flow for horizontal transitions.

This completes the procedure for designing a wash color.

Please note:

- The steps (as outlined above) for creating **WASH 1** and **WASH 2** colors are identical. Either wash can be assigned to any of the five matte destinations.
- The switcher stores *only two* wash color setups — one for **WASH 1** and one for **WASH 2**.
- When **WASH 1** or **WASH 2** is lit, the selected wash color is applied — replacing the matte generator's single color. When **WASH 1** or **WASH 2** is turned off, the matte generator returns to its previous single color. If **WASH 1** or **WASH 2** is re-enabled for the selected matte generator, the wash is re-applied.

Creating a Pattern Border Color (or WIPE Border)

Use the following procedure to create a pattern border color:

1. Press **WIPE**.
2. In the **Pattern Control** group, choose the desired wipe pattern, wipe direction and wide modifiers (such as aspect ratio, border width, border softness and border rotation). Refer to the section, “**Pattern Control Group**” on page 6-2 for instructions.
3. In the **Matte** group, the **PATT** button will be automatically selected.
 - Use the three **Matte Color Knobs** to adjust the color of the pattern border matte generator.
 - If desired, press **WASH 1** or **WASH 2** to assign a wash color to the pattern border. Refer to the section, “**Creating Washes**” on page 6-16 for instructions.

This completes the procedure to create a pattern border color.

Creating a Matte Fill Color

Use the following procedure to create a matte fill color:

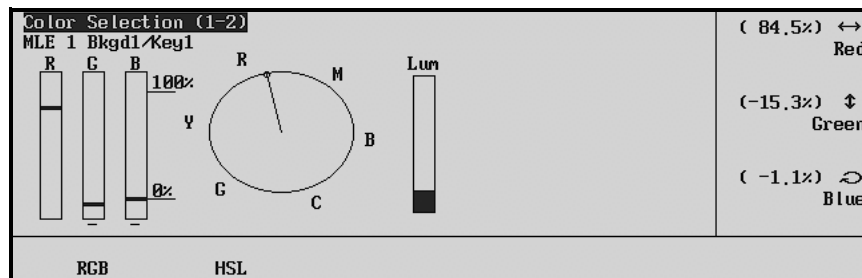
1. Set up a key using **Keyer 1** or **Keyer 2**.
2. In the selected keyer, press **MATTE FILL**.
3. In the **Matte** group, **BKGD 1 KEY 1** or **BKGD 2 KEY 2** will be automatically selected.
 - Use the three **Matte Color Knobs** to adjust the matte fill color.
 - If desired, press **WASH 1** or **WASH 2** to assign a wash color to the matte fill. Refer to the section, “**Creating Washes**” on page 6-16 for instructions.

This completes the procedure to create a matte fill color.

Creating a Color Background Color

Use the following procedure to create a full screen color background:

1. Press **COLOR BKGD 1** or **COLOR BKGD 2** on the **BKGD** or **PST** bus to display the **Background Color Menu**.



Background Color Menu — RGB Selection

The **Background Color Menu** includes a color wheel plus two types of bar graphs.

2. In the **Matte** group, the **BKGD 1 KEY 1** or **BKGD 2 KEY 2** button will be automatically selected.
 - Press **HSL** to display and adjust colors using a **Hue / Luminance / Saturation** display.
 - Press **RGB** to display and adjust colors using a **Red / Green / Blue** display.



Note

If **MATTE LIMIT** is selected as ON in the Personality Menu of the Setup function, RGB will not be shown in the Background Color Menu and all color adjustments will be within the RGB color space. However, colors can be adjusted outside of the RGB space by setting the **MATTE LIMIT** to OFF. The system default is OFF.

- Use the three **Matte Color Knobs** to adjust the color background.
- Press **WASH 1** or **WASH 2** to assign a wash color to the background. Refer to the section “**Creating Washes**” on page 6-16 for instructions.



Note

The default color background colors are as follows: **COLOR BKGD 1** is red; **COLOR BKGD 2** is blue.

This completes the procedure to create a full screen color background.

Keying

In This Chapter

This chapter provides instructions for using the **MLE Keyers** of a Synergy 1 Switcher. The following topics are discussed:

- Introduction to Keying
- Effects Control Group
- Using Keys
- Split Keys
- Performing a Downstream Key
- Using Auto Transitions
- Using Key Modifiers
- Positioner Group



Note

Refer to the section, “**Ultimatte Insider Operation**” on page 10-6 for instructions on operating the optional **Ultimatte Insider** chroma keyer.

For instructions on operating the optional **External DSK (CDK-111A-M)** external downstream keyer, refer to Appendix A. “**Synergy Effects**” in the *Squeeze & Tease 3D Owner’s Guide*.

For detailed keying instructions with this option installed, refer to the *Squeeze & Tease 3D Owner’s Guide*.

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 essentially 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 key signal’s hole with video.

Visually, keys appear as *layers* which can be built up to create the desired composite image. In all Synergy switchers, the following basic rules apply:

- The MLE can generate two individual keys which appear downstream of the background images. The priority of those keys can be changed.

Refer to the section, “**Video Flow through the Switcher**” on page 2-7 for additional information on basic video flow, MLE priority and layering.

Key Group Basics

The MLE includes *two* **Key** groups — **Key 1** and **Key 2**. 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 two keyers, two sets of independent keying electronics allow *each keyer* to have its own key and fill selections.

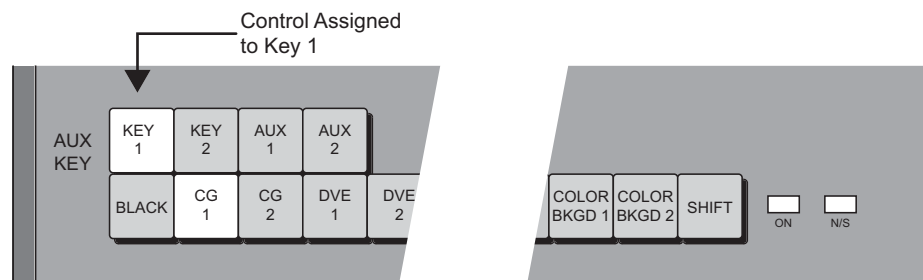
The two **Key Assignment** buttons (**KEY 1** and **KEY 2**) indicate which keyer currently controls the bus. (For Preset Pattern keys, the alpha signal is chosen by selecting a wipe pattern in the Pattern Group’s **Pattern Selection** section.)



Note

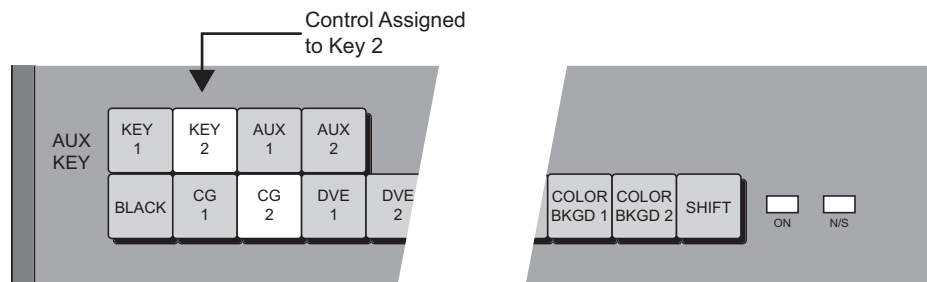
All standard rules for the **Key Bus**’s **ON AIR** and **N/S** LEDs apply. Refer to the section, “**Control Panel Sections**” on page 2-2 for complete descriptions.

- When *any button* is pressed in the **Key 1** group, the **KEY 1** assignment button lights to show that **Key 1** has control of the **Key Bus**.



Control Assigned to Key 1

- When *any button* is pressed in the **Key 2** group, the **KEY 2** assignment button lights to show that **Key 2** controls the **Key Bus**.



Control Assigned to Key 2

- Physically, there is only *one button* that differs between the two key groups and this button is in the *same position* in each group:
 - ~ The **Key 1** group has the **KEY OVER** button.
 - ~ The **Key 2** group has the **CHAR GEN** button.
- Functionally (besides the two different buttons listed above), there are two differences between the two key groups:
 - ~ **Key 1** shares its preset pattern generator with the **Wipe Generator**. This pattern generator is *full-featured* — all wipe patterns are available.
 - ~ **Key 2** has exclusive use of its preset pattern function. This generator is restricted to the first six columns of wipe patterns (as shown in the **Pattern Selection Section**), minus the circle. Matrix wipes are not available.

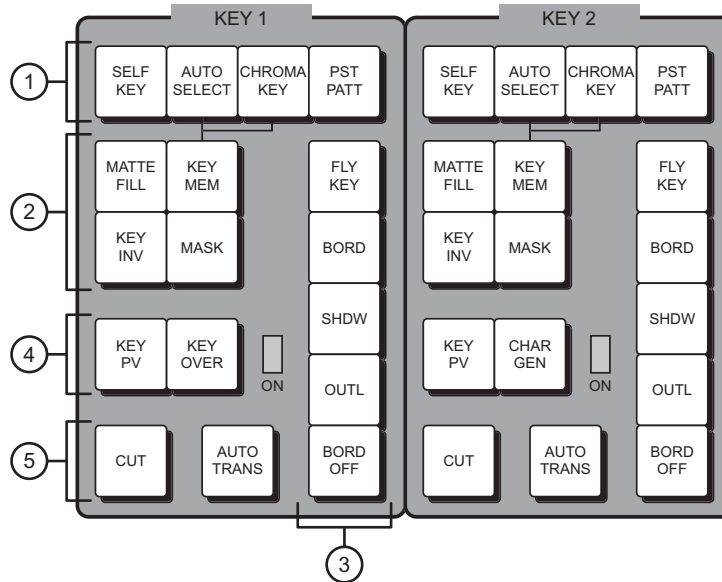


Note

Because pattern generator 1 is shared, if **PST PATT** is enabled in **Keyer 1**, you can not press the **WIPE** button in the **Transition** group. Similarly, if **WIPE** is enabled and you select **PST PATT** in **Keyer 1**, the **WIPE** button will turn off and **DISS** will be enabled.

MLE Key Groups

The following figure illustrates the two key groups.

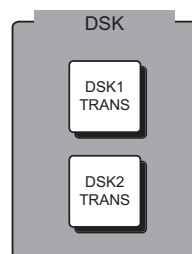


- | | | |
|---------------------------|---------------------------|---------------------------|
| 1) Key Type Section | 3) Key Modifier Section 2 | 5) Key Transition Section |
| 2) Key Modifier Section 1 | 4) Key Preview Section | |

The controls in each **Key Group** allow you to choose key types and key modifiers and insert the keys over a background using a cut or an automatic transition. Except for the **KEY OVER** and **CHAR GEN** buttons, the controls in the two groups are identical. Refer to the section, “**Key Functions**” on page 7-5 for complete details.

Downstream Key Groups

The following figure illustrates the **Downstream Key** group:



Downstream Key Group

Two **TRANS** buttons are provided for initiating auto-transitions.

Key Functions

This section provides detailed explanations of each area and button located in the **MLE Key** groups as described and illustrated above.

1. Key Type Section

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



- 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 typically 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 a title camera or occasionally from a VTR.



- 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 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 6, “**BNC Configuration and Check**” of the *Synergy 1 Installation Guide* for details.



- Press **CHROMA KEY** to select a “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 or to cleanly layer full-color images into a composite scene.



Note

Unlike analog switchers which require separate RGB signals to perform a Chroma Key, with Synergy switchers you can Chroma Key on *any key 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* the menu for that keyer for adjustment, when both keyers are in use.



- Press **PST PATT** to select a “Preset Pattern” key type. The hole is cut based on a wipe that you select in the **Pattern Control** group (using pattern generator 1 or 2). The pattern (which acts just like the *auto select* key’s alpha signal) is filled with video from the **Key Bus**.

Of the four key types, Preset Pattern keys have *minor differences* between **Key 1** and **Key 2**:

- ~ **Key 1**’s pattern generator is *full-featured*, but it is shared with the **Wipe Generator**. If you press **PST PATT** in **Key 1**, you can not press **WIPE** in the

Transition group. Similarly, if you have **WIPE** selected in the transition group and you press **PST PATT**, **WIPE** turns off.

- ~ **Key 2**'s pattern generator is *not shared* with other functions. It is restricted to the first six columns of wipe patterns, minus the circle. Matrix wipes are not available.

2. Key Modifier Section 1

The buttons in **Key Modifier Section 1** allow you to modify the key that is currently selected.



- Press **MATTE FILL** to fill the selected key hole with a matte color (or wash) — *instead* of the key foreground video from the **Key Bus**. All key types *except* Preset Pattern keys can be filled with matte color. Use the controls in the **Matte Group** to choose the matte's hue, luminance, saturation and (if desired) complex wash color. Refer to the section, "**Matte Group**" on page 6-14 for matte fill and color wash instructions.



- The **KEY MEM** (memory) function applies to Auto Select and Chroma Keys only. This function allows you to store and recall *one set* of favorite adjustments per key type.
 - ~ For each **Auto Select Key**, *one memory register per crosspoint* is provided that stores the key's clip and gain settings.
 - ~ For **Chroma Keys**, *one memory register* is provided for the entire switcher. This register stores *one set* of chroma key clip, gain, hue, reject and suppress settings.

The **KEY MEM** button affects each key type as follows:

~ Auto Select Keys

For Auto Select Keys, 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 key's settings from memory. With the button lit, clip and gain settings are locked. If you press **KEY MEM** to turn *off* the light, you *unlock* clip and gain, allowing you to make temporary adjustments to the linear key's settings. Turning the button back *on again* restores the key source's default settings 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 7-14 for details.

~ Chroma Keys

For Chroma Keys, press **KEY MEM** to recall all settings from the chroma key memory register. When you select a Chroma Key source, the **KEY MEM** button does *not* come on automatically. You can also use the **KEY MEM** button to store a *new* set of chroma key values. Refer to the section, "**Performing a Chroma Key**" on page 7-17 for details.



- 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. You can independently mask the top, bottom, left or right edges of the key, using a box pattern. All key types *except* Preset Pattern keys can be masked. Refer to the section "**Masking Keys**" on page 7-37 for information and instructions.



- Press **KEY INV** to invert the polarity of the selected key signal. For example, if a Self Key source (such as a title camera) has white letters on a black background, the white letters normally cut the hole. When **KEY INV** is pressed, the signal’s polarity 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 that all key types can be inverted.

3. Key Modifier Section 2

The buttons in **Key Modifier Section 2** provide *additional* modification options for the selected key.



- The **FLY KEY** button enables and disables the **Squeeze & Tease** function, allowing you to apply 2D or 3D DVE effects to any of the four key types. The button lights *automatically* when **PST PATT** is pressed, but must be pressed manually to fly a **CHROMA KEY**, **AUTO SELECT** or **SELF KEY**.

Once enabled, you can control the flying image’s size, horizontal and vertical position and much more. The **FLY KEY** button will not light if the option is not installed. Refer to the section, “**Flying Keys in 2D**” on page 7-39 for instructions.



- 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, color and transparency are adjustable.

The **Dual Border Generator** option must be installed. The **BORD** button will not light if the option is not installed. Refer to the section, “**Bordering Keys**” on page 7-47 for instructions.



- Press **SHDW** to add a drop shadow behind the selected key type, with variable width, color and transparency. The **Dual Border Generator** option must be installed.



- Press **OUTL** to add a outline around the selected key type, with variable width, color and transparency. With **OUTL** selected, the key fill is completely transparent. The **Dual Border Generator** option must be installed. The **OUTL** button will not light if the option is not installed. Refer to the section, “**Bordering Keys**” on page 7-47 for instructions.



- Press **BORD OFF** to turn off any selected border type. The **Dual Border Generator** option must be installed. The **BORD OFF** button will not light if the option is not installed. Refer to the section, “**Bordering Keys**” on page 7-47 for instructions.

4. Key Preview Section



- Press and *hold* **KEY PV** to momentarily take control of the preview monitor output, to show how the key would appear if **CUT** or **AUTO TRANS** is pressed. The button is also useful to simply *activate* a keyer for adjustment, when both keyers are in use. **KEY PV** is non-latching and *must* be held down to view the key’s preview.

The **Key Preview** function itself is necessary because each keyer does *not* have a button similar to the **Transition Group**’s **TRANS PV** (which rehearses transitions without affecting output). **Key Preview** can also be used as a *last-minute* check before taking a key to air and also when you want to quickly identify *which key is which* — when *both* keys are on-air simultaneously.



- (Key 1 group only) Press **KEY OVER** to change the priority of the two keyers with a *cut*. Normally, **Key 2** is *over* (visually on top of) **Key 1**. When **KEY OVER** is lit, **Key 1** is over **Key 2**.



Operating Tip

You can also change the priority of the two keyers in the **Key Setup Menus** by toggling the **Key Over** softkey between **On** and **Off**. Refer to the section “**Using Keys**” on page 7–20 for more information.



- (Key 2 group only) Press **CHAR GEN** to select your most frequently-used “favorite” character generator, 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 7-49 for instructions.



- The **ON** LED has two states:
 - ~ When the LED is **Off**, the keyer is turned off and *not* contributing to the output of the switcher.
 - ~ When the LED is lit **Red**, the keyer is turned on and contributing to the program output of the switcher.

Note that the state of the **ON** LED is duplicated by the associated keyer’s **ACTIVE** LED in the MLE’s **Transition Group** (directly under the **KEY 1** or **KEY 2** “next transition” button).

5. Key Transition Section

The buttons in the **Key Transition Section** provide you with two methods for taking the selected key on or off air:



- Press **CUT** to instantaneously “cut” the key on or off air.
 - ~ If the key is currently off, press **CUT** to cut the key on.
 - ~ If the key is on, press **CUT** to cut it off air.

The **CUT** button itself is *momentary* — it does not stay lit. Refer to the “**Key Cut Operating Tips**” on page 7-34 for additional important rules regarding the **CUT** button.



- Press **AUTO TRANS** to smoothly transition the key on or off air, using a dissolve (from 1 to 999 frames).
 - ~ If the key is currently off, press **AUTO TRANS** to dissolve the key on.
 - ~ If the key is on, press **AUTO TRANS** to dissolve the key off air.

The **AUTO TRANS** button is *momentary* — it stays lit only *during* the transition. Refer to the section, “**Using Auto Transitions**” on page 7-33 for more information on changing auto transition dissolve rates.



Note

When you press **AUTO TRANS** in MLE KEY 1 or MLE KEY 2, the following actions occur to show a key transition in progress:

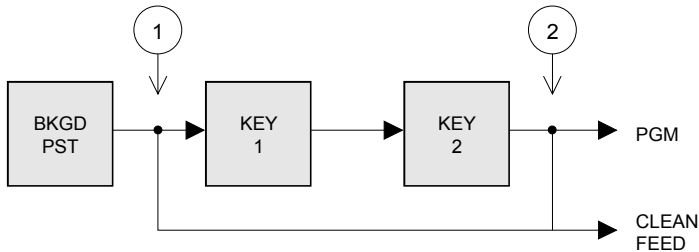
- The **DISS** button in the **Transition** group lights.
- The **KEY 1** or **KEY 2** button lights (as appropriate).

Refer to the section, “**Using Keys**” on page 7-13 for more information.

A Word About Clean Feed

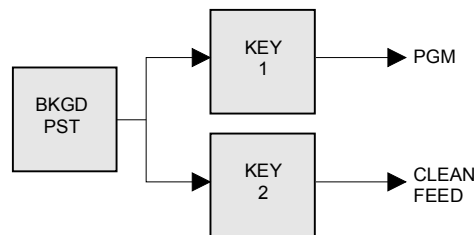
The **Clean Feed Menu** allows you to set up your MLE keyers in a special output mode.

- On the MLE, the **Clean Feed** output can be generated from any MLE keyer — from *before* or *after* the keyers as illustrated below. The point from which the feed is derived is software-configurable.



Basic Clean Feed Modes

- ~ At point **1** above, the clean feed output is pulled after the MLE's program/preset bus, but *before* the two keys are added.
 - ~ At point **2** above, the clean feed output is pulled downstream of the two MLE keyers — effectively, an additional output.
- If assigned to the keyers, the **Clean Feed** output can be configured in one of two ways:



Split Clean Feed Modes

- ~ In **Split** mode, program is sent out of **KEY 1** and Clean Feed out of **KEY 2**. Both Keys are independently switched.
 - ~ The **Split Follow** mode has the same routing as the **Split** mode, but both DSKs are slaved together. If you *cut* on **KEY 1**, **KEY 2** automatically cuts in sync. This special mode is very useful for switching a program with two simultaneous languages — using two different CGs.
- The **DVE Alpha** mode is not available for Synergy 1.
 - If the **AlphaNomadCK** mode is assigned on the **Clean Feed Menu**, the clean feed output will follow the last selected Chroma key. When a Chroma Key is selected on any Keyer in the MLE, the clean feed signal will change to the alpha signal for the selected Keyer.



Note

The **AlphaNomadCK** option is not available when the **Dual Aspectizer** option is in Downstream Mode, as both require a Clean Feed output.

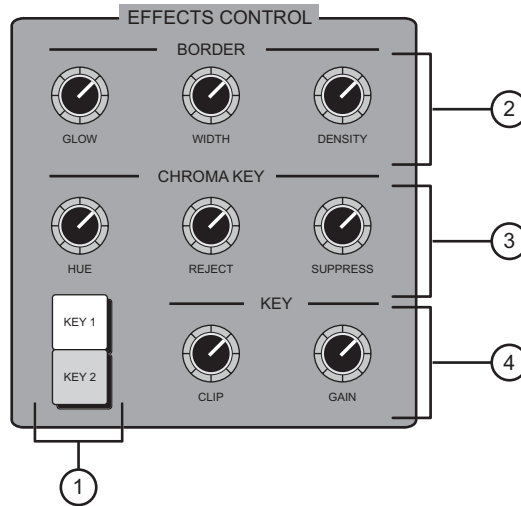
- If the **Alpha Key 1** mode is assigned on the **Clean Feed Menu**, the clean feed output will be the alpha for **Key 1** of the MLE.

- If the **Alpha Key 2** mode is assigned on the **Clean Feed Menu**, the clean feed output will be the alpha signal for **Key 2** of the MLE.

Please consult with your facility engineer to determine how your Synergy 1 switcher is configured. Refer to Chapter 9, “**Additional Installation Setups**” of the *Synergy 1 Installation Guide* for full details.

Effects Control Group

The following figure illustrates the **Effects Control** group.



- | | |
|---------------------------------------|------------------------|
| 1) Effects Control Assignment Section | 3) Chroma Key Section |
| 2) Border Control Section | 4) Key Control Section |

Following are descriptions of each section in the **Effects Control** group.

1. Effects Control Assignment Section

The **Effects Control Assignment Section** allows you to assign the group to individual keyers. Buttons are selected automatically or they can be selected manually.



- Press **KEY 1** to assign the group to control keys and borders in the **Key 1** group. The button lights *automatically* if any button is pressed in the **Key 1** group.



- Press **KEY 2** to assign the group to control keys and borders in the **Key 2** group. The button lights *automatically* if any button is pressed in the **Key 2** group.

2. Border Control Section

The three knobs in the **Border Control Section** allow you to adjust key border parameters. The **Dual Border Generator** option must be installed. The knobs are activated by enabling the **BORD**, **SHDW** or **OUTL** button in any keyer. Note that the knobs work in parallel with controls on the **Border Menu**.



GLOW



WIDTH



DENSITY

- Rotate the **GLOW** knob to adjust the “glow level” of the key border, shadow or outline — ranging from a hard edge to a soft edge.
- Rotate the **WIDTH** knob to adjust the “border size” for border, shadow and outline effects.
- Rotate the **DENSITY** knob to adjust the “density” (transparency) of the key border, shadow or outline.

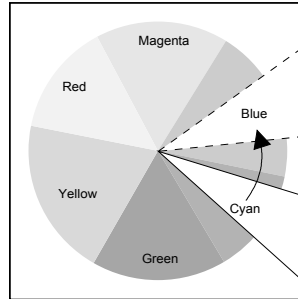
3. Chroma Key Section

The knobs in the **Chroma Key Section** allow you to adjust chroma key parameters whenever the **CHROMA KEY** button is active in a keyer.



HUE

- Rotate **HUE** to select the color that you want to key out — the color to be *replaced* by the background video. The knob rotates through the full 360 degree color spectrum.

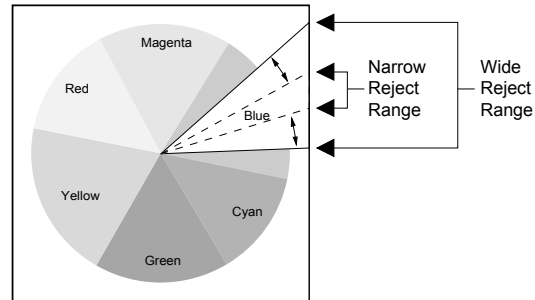


Chroma Key – Hue Indicator



REJECT

- Rotate **REJECT** to control the *width* of the hue. If you imagine a line that is centered on the hue (as selected with the **HUE** knob), **REJECT** widens or narrows the angle surrounding that line, allowing you to *fine tune* the color range that is keyed out.



Chroma Key –Hue Width Indicator



SUPPRESS

- Rotate **SUPPRESS** to adjust the amount of chroma that is retained in the key's foreground. The control works on the selected hue. This control is useful for eliminating blue or green spill (from a chroma key background) that falls on an actor's shoulders or hair.

4. Key Control Section

The knobs in the **Key Control Section** allow you to adjust key clip and gain levels. Both controls are activated for all keys (except PST PATT fly keys), but for Auto Select keys, the **KEY MEM** button must be off in order to adjust clip and gain.



CLIP

- Rotate **CLIP** to adjust the key's luminance or *threshold* level. 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

- Rotate **GAIN** to adjust the key's gain. The control acts on all keys (except PST PATT fly keys) and *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.

Using Keys

This section includes detailed instructions for using keys. Prior to proceeding, ensure that you have read the previous “**Key Functions**” section thoroughly.

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 on an MLE keyer:

1. Select an input on the **BKGD** bus. This provides the background over which the key will appear.
2. On the **Key Bus**, select the desired luminance key source (such as a title camera or VTR).
3. In the **Key 1** or **Key 2** group, press **SELF KEY**. The **Self Key Setup Menu** appears on the display. In the main area, **Key Fill** and **Key Alpha** sources are listed along with the *location* of the keyer.

Self Key Setup		(49.0%)
MLE 1 Key 1		Clip
Key Fill: BNC 6	(BNC 06)	
Key Alpha: BNC 6	(BNC 06)	(0.0%)
		Gain
Transparency	Key Over	Make Key
On/Off	On/Off	Linear

Self Key Setup Menu – Transparency Off

4. Adjust the key’s clip and gain in one of two places:
 - To adjust clip level, use the top knob in the **Display Section** or the **CLIP** knob in the **Effects Control Section**.
 - To adjust gain (softness), use the middle knob in the **Display Section** or the **GAIN** knob in the **Effects Control Section**.
5. If desired, adjust the key’s transparency by toggling Soft Key 1 to **Transparency On**. On the display, the **Transparency Field** appears:

Self Key Setup		(12.2%)
MLE 1 Key 1		Clip
Key Fill: BNC 6	(BNC 06)	
Key Alpha: BNC 6	(BNC 06)	(9.2%)
		Gain
		(0.0%)
		Transparency
Transparency	Key Over	Make Key
On/Off	On/Off	Linear

Self Key Setup Menu — Transparency On

- Use the bottom **Transparency** knob to adjust transparency from opaque (0%) to fully transparent (100%)
6. If desired, you can toggle the **Key Over** button between **On** and **Off** to change the priority of the two keyers as follows:

- **On** — Select **On** to change the priority to **Key 1**, setting it *over* (visually on top of) **Key 2**. The **KEY OVER** button in the **MLE Key 1 Group** will now be lit.
 - **Off** — Select **Off** to keep the priority as **Key 2** over **Key 1**. This is the default setting.
7. Select additional key modifiers as desired, using the controls in **Key Modifier Sections 1 and 2**. Modifiers include:
 - **MATTE FILL**
 - **KEY INV**
 - **MASK**
 - **FLY KEY**
 - Border Effects

Refer to the section, “**Using Key Modifiers**” on page 7-36 for details.
 8. If desired, preview the key by pressing **KEY PV**.
 9. Select the desired transition:
 - Press **CUT** (in the **Key** group) to cut the key on or off air. See the “**Key Cut Notes**” section for additional rules.
 - Select an auto transition rate, then press **AUTO TRANS** (in the **Key** group) to dissolve the key on (or off) air. Refer to the section, “**Using Auto Transitions**” on page 7-33 for instructions on selecting key dissolve rates. Refer to the section “**Key Auto Transition Operating Tips**” on page 7-34 for additional rules.
 - Use the proper **KEY 1** or **KEY 2** “next transition” button (in the **Transition Group**) to bring the key on or off air. Refer to the section, “**Working with Next Transitions**” on page 5-8 for instructions.

Self Key Operating Tips

Please note the following important point regarding self keys:

- If you select a different self key source, you will need to re-clip the source as outlined above. However, since a self key is remembered by its crosspoint, it can have multiple memories.



Note

The system allows you to enable the **FLY KEY** button (**Squeeze & Tease** mode) for a Self Key, provided that the other MLE keyer is not flying an Auto Select Key. You can also fly *two* Self Keys at a time.

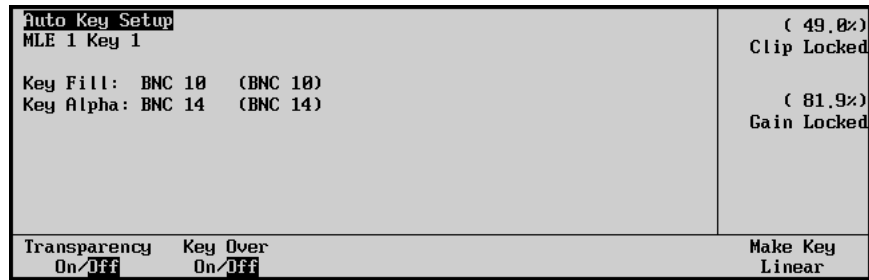
Performing an Auto Select Key

An Auto Select (or “linear”) key is one in which two signals are used to cut and fill the hole — a key (alpha) signal and a fill signal. These signals originate from devices such as character generators, still stores, DVEs and graphics systems.

Use the following procedure to perform an auto select key:

1. Select an input on the **BKGD** bus. This provides the background over which the linear key will appear.

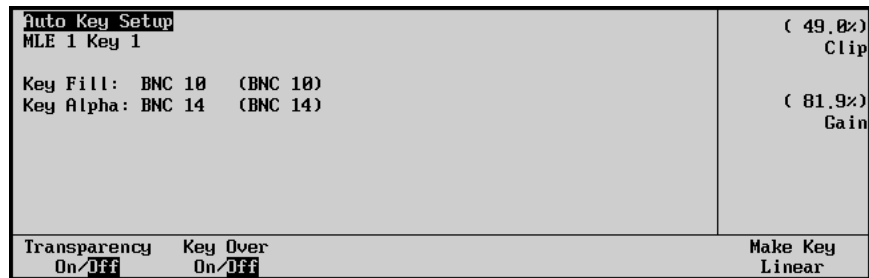
2. On the **Key Bus**, select the desired linear key source (such as a character generator or a DVE).
3. In the **Key 1** or **Key 2** group, press **AUTO SELECT**. The **Auto Key Setup Menu** appears on the display:



Auto Key Setup Menu

The menu lists the individual **Key Fill** and **Key Alpha** sources (which are linked during switcher installation), the *location* of the selected keyer and whether or not the key’s alpha signal is *shaped* (also determined during installation). On the panel, note that the **KEY MEM** button turns on automatically to indicate that clip and gain are locked. This state is also reflected by the “**Locked**” labels on the display.

4. The key’s clip and gain settings were set during the installation process. Typically, they should *not* need to be adjusted. If you *do* need to adjust them *temporarily*, turn off the **KEY MEM** button. The display changes to indicate that clip and gain are now *unlocked*.



Auto Key Setup Menu — Clip and Gain Unlocked

Adjust clip and gain in one of two places:

- To adjust clip level, use the top knob in the **Display Section** or the **CLIP** knob in the **Effects Control Section**.
- To adjust gain (softness), use the middle knob in the **Display Section** or the **GAIN** knob in the **Effects Control Section**.



Note

If you turn **KEY MEM** back on again, the previously stored values are recalled from memory.

Refer to the section, “**Auto Select Key Operating Tips**” on page 7-16 for instructions on re-storing new clip and gain settings for an Auto Select key.

5. If desired, adjust transparency by toggling Soft Key 1 to **Transparency On**. On the display, the **Transparency Field** appears.
 - Use the bottom knob to adjust transparency from opaque (0%) to fully transparent (100%).

6. If desired, you can toggle the **Key Over** button between **On** and **Off** to change the priority of the two keyers:
 - **On** — Select **On** to change the priority to **Key 1**, setting it *over* (visually on top of) **Key 2**. The **KEY OVER** button in the **MLE Key 1 Group** will now be lit.
 - **Off** — Select **Off** to keep the priority as **Key 2** over **Key 1**. This is the default setting.
7. Select and adjust additional key modifiers as desired, using the controls in **Key Modifier Sections 1 and 2**. Modifiers include:
 - **MATTE FILL**
 - **KEY INV**
 - **MASK**
 - **FLY KEY**
 - Border Effects

Refer to the section, “**Using Key Modifiers** ” on page 7-36 for details.
8. If desired, preview the key by pressing **KEY PV**.
9. Select the desired transition:
 - Press **CUT** (in the **Key** group) to cut the key on or off air. Refer to the section, “**Key Cut Operating Tips**” on page 7-34 for additional rules.
 - Select a transition rate, then press **AUTO TRANS** (in the **Key** group) to dissolve the key. Refer to the section, “**Using Auto Transitions**” on page 7-33 for instructions on changing dissolve rates.
 - Use the proper **KEY 1** or **KEY 2** “next transition” button (in the **Transition Group**) to bring the key on or off air. Refer to the section, “**Working with Next Transitions**” on page 5-8 for instructions on the three “next transition” buttons.

Auto Select Key Operating Tips

Please note the following important points regarding Auto Select (linear) keys:

- If you select a different linear key source, the **KEY MEM** button will automatically turn on.
- You can not enable the **FLY KEY** button (**Squeeze & Tease** mode) for an Auto Select key, if the other MLE keyer is already flying a key of any type (Self, Auto Select, Chroma or Preset Pattern). In addition, you can only fly *one* Auto Select key at a time.
- If the **KEY MEM** button is off, you can adjust the key’s clip and gain settings on a temporary basis. In this mode, if you want to permanently store the new clip and gain settings, use the following steps:
 - a) Ensure that **KEY MEM** is off.
 - b) Adjust clip and gain for the desired appearance.
 - c) Press and *hold* the **AUTO SELECT** button.
 - d) Press **KEY MEM** and release both buttons.

This 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 can not recall previous values unless you recall settings from memory. Refer to the sections “**Storing Memory Registers**” on page 8-5, and “**Recalling Memory Registers**” on page 8-7 for more information.

Performing a Chroma Key



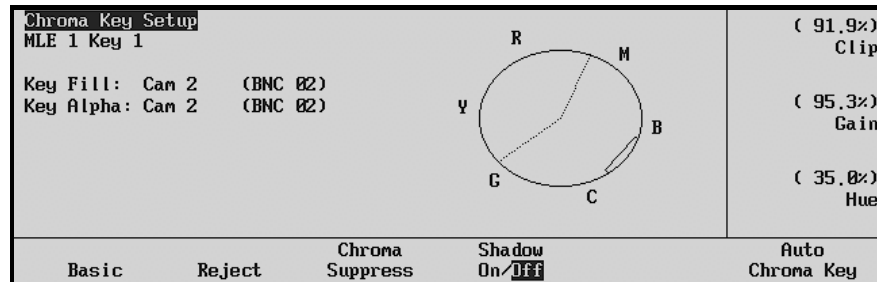
Note

This section provides instructions for performing a **Chroma Key** with the standard chroma key function of the Synergy switcher. Refer to the section, “**Ultimate Insider Operation**” on page 10-6 for instructions on using the optional **Ultimate Insider** function.

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. Remember that with Synergy switchers, you can Chroma Key on *any source* selected on the **Key Bus**.

Use the following procedure to perform a Chroma Key on an MLE keyer:

1. Select an input on the **BKGD** bus. This provides the background over which the Chroma Key will appear.
2. On the **Key Bus**, select the desired Chroma Key source (typically, a camera or a graphics system).
3. In the **Key 1** or **Key 2** group, press **CHROMA KEY**. The **Chroma Key Setup Menu** appears on the display. Note that the central status area provides a dynamic vectorscope graphic designed to assist you in quickly clipping chroma keys. As you adjust clip, gain and hue, the graphic updates in real time, accordingly.



Chroma Key Setup Menu — Basic Adjustments

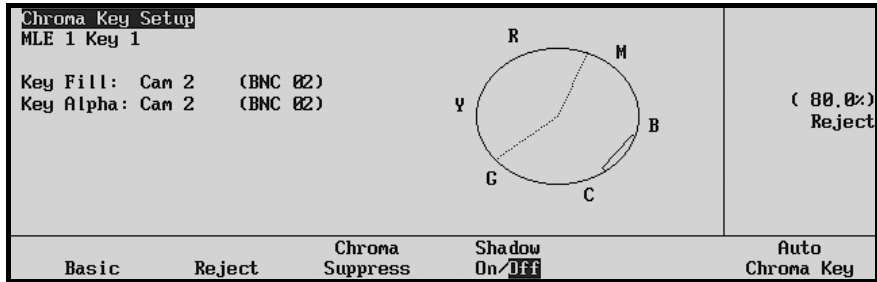
The menu also lists the individual **Key Fill** and **Key Alpha** sources (the *same source*), plus the *location* of the selected keyer.

4. Clip, gain and hue can be adjusted either with the display knobs or with the controls in the **Effects Control Section**. For **Display Section** adjustments, press the **Basic** softkey.
 - To adjust clip level (threshold), use the top knob in the **Display Section** or the **CLIP** knob in the **Effects Control Section**.
 - ~ Default value: **49.0%**
 - To adjust gain (softness), use the middle knob in the **Display Section** or the **GAIN** knob in the **Effects Control Section**.
 - ~ Default value: **81.9%**

- To select the color (hue) that you want to remove, use the bottom knob in the **Display Section** or the **HUE** knob in the **Effects Control Section**.
 ~ Default value: **34.9%** (blue)

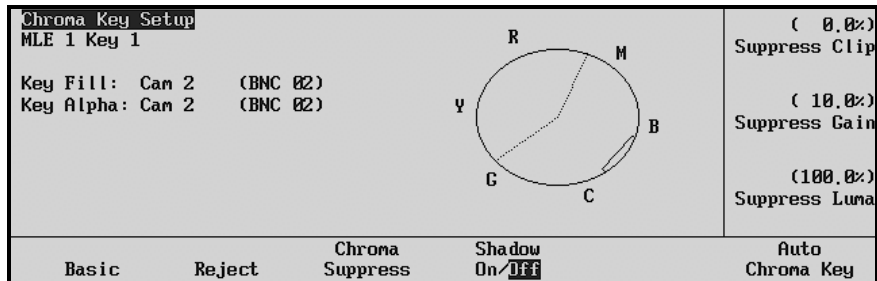
Refer to the section, “**Chroma Key Fine Tuning Tips**” on page 7-20 for a procedure for clipping Chroma Keys.

- The **Reject** parameter (the *width* of the selected hue) can be adjusted with a display knob or with a control in the **Effects Control Section**. For **Display Section** adjustments, press the **Reject** softkey.



Chroma Key Setup Menu — Reject Adjustments

- To adjust the reject level, use the middle knob in the **Display Section** or the **REJECT** knob in the **Effects Control Section**.
 ~ Default value: **80.0%**
- The **Chroma Suppress** parameter (the amount of chroma retained in the key’s foreground) can be adjusted with the display knobs or with a single “suppress” control in the **Effects Control Section**. For **Display Section** adjustments, press **Chroma Suppress**.



Chroma Key Setup Menu — Chroma Suppress Adjustments

- To adjust the threshold of the chroma suppression, use the top knob in the **Display Section (Suppress Clip)** or the **SUPPRESS** knob in the **Effects Control Section**.
 ~ Default value: **0.0%** (no suppression)
- To adjust suppression gain, use the middle **Suppress Gain** knob.
 ~ Default value: **9.9%**

- To adjust the brightness of the suppressed chroma, use the bottom knob in the **Display Section (Suppress Luma)**.
~ Default value: **100.0%**

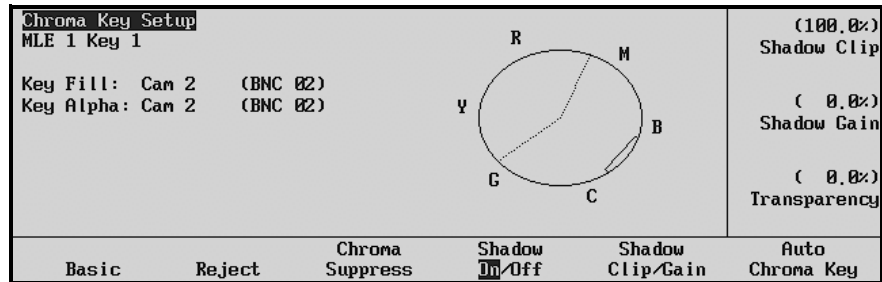


Note

The default values for **Suppress Gain** and **Suppress Luma** should be appropriate for the best possible chroma suppression in almost all cases. It is *not recommended* that you adjust these two knobs for the majority of chroma keying instances. Use **Suppress Clip** only to select the desired hue rejection.

- The **Shadow** adjustments allow you to extract a shadow from the chroma key source itself — typically, the actor’s actual shadow that is cast on the blue or green screen. Shadow can *only* be adjusted with three display knobs. Toggle the **Shadow** softkey to **On**.

The **Shadow Clip/Gain** menu item appears, indicating that the knobs have changed functionality to adjust these parameters.



Chroma Key Setup Menu — Shadow Adjustments

- Use the top **Shadow Clip** knob to adjust the shadow’s threshold.
- Use the middle **Shadow Gain** knob to adjust the gain (softness) of the shadow.
- Use the bottom **Transparency** knob to adjust the shadow’s transparency.



Note

If there are flaws and blemishes in the chroma key set’s background, they will *also* appear as shadows. Normally, a superb set with careful lighting is required for natural chroma key shadows.

- Select and adjust additional key modifiers as desired, using the controls in **Key Modifier Sections 1 and 2**. Modifiers include:

- MATTE FILL**
- KEY INV**
- MASK**
- FLY KEY**
- Border Effects

Refer to the section, “**Using Key Modifiers**” on page 7-36 for details.

- If desired, preview the key by pressing **KEY PV**.

10. Select the desired transition:

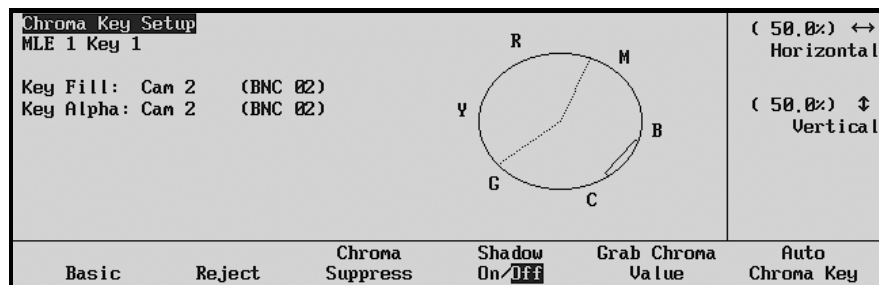
- Press **CUT** (in the **Key** group) to cut the key on or off air. Refer to the section, “**Key Cut Operating Tips**” on page 7-34 for additional rules.
- Select a transition rate, then press **AUTO TRANS** (in the **Key** group) to transition the key on or off. Refer to the section, “**Using Auto Transitions**” on page 7-33 for instructions on changing rates. Refer also to section “**Key Auto Transition Operating Tips**” on page 7-34 for additional rules.
- Use the proper **KEY 1** or **KEY 2** “next transition” button (in the **Transition Group**) to bring the key on or off air. Refer to the section, “**Working with Next Transitions**” on page 5-8 for instructions.

Auto Chroma Key

With the Auto Chroma Key function, you can select any color on the preview output and when you take that key to air, the selected color is keyed out and the background shows through the key.

Use the following procedure to perform an Auto Chroma Key.

1. In the desired **Key** group, press **Chroma Key**.
2. In the **Chroma Key Setup** menu, press **Auto Chroma Key**.



Chroma Key Setup Menu — Auto Chroma Key Settings

On the preview output, crosshairs appear over the output selected to key. On the menu the **Grab Chroma Value** menu item appears.

3. With the Positioner or the top **Horizontal** or middle **Vertical** knobs, move the crosshairs to select the color to key out.
4. Press the **Grab Chroma Value** softkey.

The key goes to air with the background showing through the selected color areas.

Please note the following important point regarding Chroma Keys:

- You can fly *two* Chroma Keys at a time (one in Key 1 and the other in Key 2) using the **FLY KEY** buttons (**Squeeze & Tease** mode). You can also fly a Chroma key plus a Preset Pattern Key or a Self Key. However, you can *not* enable the **FLY KEY** button if the other keyer is flying an Auto Select Key.
- Refer to the section, “**Ultimatte Insider Operation**” on page 10-6 for instructions on using the optional **Ultimatte Insider** function — an advanced chroma key function.

Chroma Key Fine Tuning Tips

To achieve the best looking key, you must adjust a set of parameters and then *return* to those parameters for subsequent adjustment — after other values have been set. Following is a set of *basic* steps for fine-tuning your Chroma Key:

1. Select **Black** as your background.
2. Choose your Chroma Key source on the **Key Bus** and press **CHROMA KEY**.
3. Turn **KEY INV** off.
4. Turn **GAIN** to zero (0.0%).
5. Turn **SUPPRESS** to zero (0.0%).
6. Toggle **SHADOW** off.
7. Set **REJECT** to the upper mid range (80.0%).
8. Set the **CLIP** very low (e.g., 1% - 2%), to a point where you see a prominent change on screen, even if only *portions* of the background are clipped out — and even if those portions are the incorrect color.
9. Rotate **HUE** until you begin to see the proper color *key out* (typically blue or green).
 - Note that position and continue turning until you move *beyond* that hue to another color.
 - Rotate the **HUE** knob back and position the knob in the *center* of this range — finding the spot where the maximum amount of the proper color is keyed out.
 - If you cannot key out the desired color at all (or even find a range of hues that work), widen the **REJECT** control (e.g., move from 80% down to 50%) and try again.
10. (optional) Select **MATTE FILL** and fill the key with white. This step will make clip and gain setup errors very visible.
11. Re-adjust **CLIP** to the maximum value possible — without bringing in shadows and other defects in the chroma key set. A value of 15% (or better) should lead to a very good key. Values that drop below 10% suggest that the set's background lighting needs to be improved.
12. Adjust **GAIN** to the maximum value possible — without making the key transparent and without bringing in the background. Getting the highest possible gain is essential for obtaining clean, smooth edges. If you can't get the edges smooth without bringing in the background (and the clip is above 10%), try reducing the clip slightly — and then increasing the gain slightly.
13. Turn off **MATTE FILL** (if you turned it on) and select the desired background for your key on the **BKGD** bus.
14. Ensure that **Suppress Clip** is set to 9.9% and **Suppress Luma** is set to 100%. Modifying these values may lead to slightly better chroma suppression, but it is generally not recommended. Feel free to experiment as desired.
15. Adjust **Suppress Clip** to remove any chroma spill that may appear around the key edges. Setting **Suppress Clip** too high *may* remove too much blue in the foreground image. Tightening the range of the **Reject** control (e.g., to the 90% range) may minimize this effect. In general, a **Suppress Clip** value of 100% produces the best result.
16. As a last step, toggle **Shadow** on (if required and if the set is of high quality) and adjust the shadow's clip, gain and transparency.

Refer to the section, “**Chroma Key Memory**” on page 7-22 for details on storing the Chroma Key settings, on a per-source basis.

Chroma Key Memory

For Chroma Keys, the **KEY MEM** button is used as a memory register for storing *one set* of clip and gain values. Unlike Auto Select keys, when you press **CHROMA KEY**, the **KEY MEM** button does *not* come on automatically.

The following rules apply:

- To store Chroma Key settings, ensure that your key is clipped as desired. Press and *hold* the **CHROMA KEY** button, then press **KEY MEM**. This procedure stores the settings in memory. They are now available for recall — in any keyer on the switcher.
- To recall stored settings, ensure that **CHROMA KEY** is selected. Simply press the **KEY MEM** button. The button lights momentarily and the stored settings are recalled to the panel. Note that this function is typically used for initial “starting point” adjustments or for returning to a default base setting, after making several adjustments.



Important

There is no *undo* function. If you recall Chroma Key settings by pressing **KEY MEM**, you can not recall the previous values unless you recall them from a memory register.

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 first of all eyeball the background for hot spots, adjusting and readjusting the lights, but then check their work 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 3 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. (Note: this technique is not applicable to Ultimatte, as Ultimatte has circuitry designed to remove blue spill.)
- 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 aren’t 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.

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 **Pattern 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**. Please note the following rules:

- When you press **PST PATT**, the system automatically selects **FLY KEY** and also selects a box wipe by default. To use a preset pattern key *without* the Fly Key mode enabled, simply press **FLY KEY**.



Note

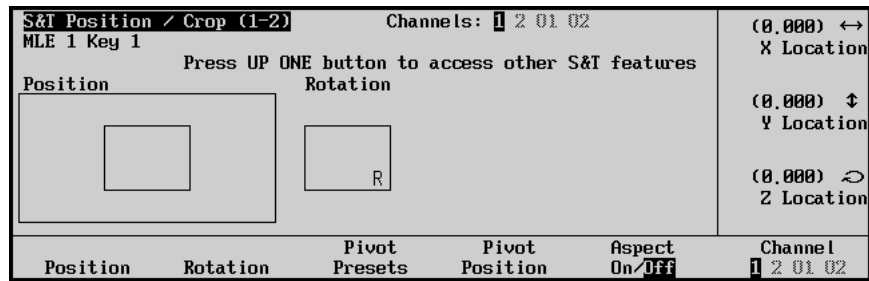
This section explains **Preset Pattern** keys *without* the Fly Key mode (**Squeeze & Tease 2D**) enabled. Refer to the section, “**Flying Keys in 2D**” on page 7-39 for instructions on using the Fly Key mode.

- If you perform a Preset Pattern key in **Key 1**, the pattern generator is *full-featured* but it is shared with the **Wipe Generator**.
 - ~ If you press **PST PATT** in **Key 1**, you can not press **WIPE** in the **Transition** group.
 - ~ If **WIPE** is selected in the **Transition** 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 (minus the circle). Matrix wipes are not available.

Use the following procedure to perform a Preset Pattern key:

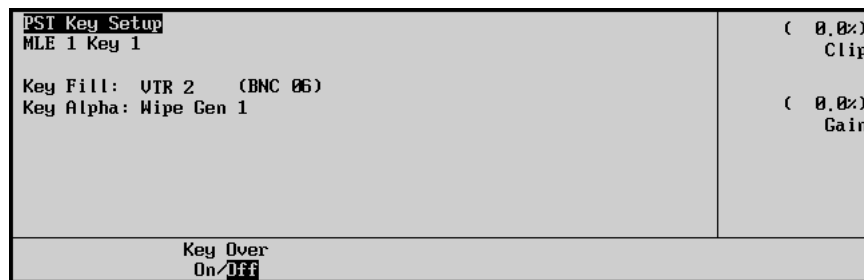
1. Select an input on the **BKGD** bus. This provides the background that will appear *outside* the wipe pattern (assuming **KEY INV** is off).
2. On the **Key Bus**, select the desired source that you want to appear *inside* the wipe pattern (assuming **KEY INV** is off).

- In the **Key 1** or **Key 2** group, press **PST PATT**. The Fly Key mode is automatically enabled and **Squeeze & Tease Position/Crop Menu 1-2** is displayed.



Squeeze & Tease Position/Crop Menu

- Press **FLY KEY** to *disable* the Fly Key mode and display the **PST Key Setup Menu**.



PST Key Setup Menu

In the main area of the menu, the menu lists the two individual **Key Fill** and **Key Alpha** sources, plus the *location* of the selected keyer.

Note that if you are using **Key 1**, **Wipe Gen 1** will be selected automatically. If you are using **Key 2**, **Wipe Gen 2** will be selected automatically.

- In the **Pattern Control Group**, select the desired wipe pattern.
- In the **Pattern Control Group**, adjust wipe parameters such as **ASPECT**, **BORDER**, **SOFT**, **ROTATION**, **NORM** and **REV**.
- If desired, you can toggle the **Key Over** button between **On** and **Off** to change the priority of the two keyers:
 - On** — Select **On** to change the priority to **Key 1**, setting it *over* (visually on top of) **Key 2**. The **KEY OVER** button in the **MLE Key 1 Group** will now be lit.
 - Off** — Select **Off** to keep the priority as **Key 2** over **Key 1**. This is the default setting.
- Adjust the key's clip and gain in one of two places:
 - To adjust clip level, use the top knob in the **Display Section** or the **CLIP** knob in the **Effects Control Section**.
 - To adjust gain, use the middle knob in the **Display Section** or the **GAIN** knob in the **Effects Control Section**.



Note

For convenience when adjusting preset patterns, the **SOFT** knob in the **Pattern Control** group *duplicates* the function of the **GAIN** knob in the **Effects Control Section**.

9. Select and adjust additional key modifiers as desired, using the controls in **Key Modifier Sections 1 and 2**. Modifiers include **KEY INV**, **FLY KEY** (see important note below), **POSITIONER** and Border Effects.

The **MATTE FILL** function is not available for Preset Pattern keys. Refer to the section, “**Using Key Modifiers**” on page 7-36 for details.



Important

The **FLY KEY** function can be regarded as a modifier, but it is important to note that it creates a *different type* of key when used in conjunction with preset patterns. When **FLY KEY** is enabled, the system creates a *bordered box* around the selected pattern — which can then be manipulated in 2D space. Special **Fly Key** modifiers are enabled (such as size, position, mirror and crop), but **Preset Pattern** modifiers (clip, gain, aspect, border and soft) are disabled. Refer to the section “**Flying Keys in 2D**” on page 7-39 for additional information.

10. If desired, preview the key by pressing **KEY PV**.
11. Select the desired transition:
 - Press **CUT** (in the **Key** group) to cut the key on or off air. Refer to the section, “**Key Cut Operating Tips**” on page 7-34 for additional rules.
 - Select a transition rate, then press **AUTO TRANS** (in the **Key** group) to dissolve the key on or off. Refer to the section, “**Using Auto Transitions**” on page 7-33 for instructions on changing transition rates. Refer also to the section, “**Key Auto Transition Operating Tips**” on page 7-34 for information.
 - Use the proper **KEY 1** or **KEY 2** “next transition” button (in the **Transition Group**) to bring the key on or off air. Refer to the section, “**Working with Next Transitions**” on page 5-8 for instructions on the three “next transition” buttons.

Preset Pattern Key Operating Tip

Please note the following important point regarding Preset Pattern Keys:

- You can fly *two* Preset Pattern Keys at a time (one in Key 1 and the other in Key 2) using the **FLY KEY** buttons (**Squeeze & Tease** mode). You can also fly a Chroma key or a Self Key plus a Preset Pattern Key. However, you can *not* enable the **FLY KEY** button if the other MLE keyer is flying an Auto Select Key.
- You can fly *two* 3D keys in one keyer as well as have a Self, Auto, Chroma, or Preset Pattern key enabled (not flown) in the other keyer.

Split Keys

A **Split Key** is one in which you assign a different *fill source* for a key — 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** — Split Key allows you to hold (retain) a key’s alpha signal and assign a new video source to fill the hole. A typical application is when you fill the alpha signal from a character generator with the live output from a VTR or camera.
- **Split Video** — 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 the luminance Key signal from your title camera 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 *quickly* and without having to return to the installation menus and change your Key/fill associations.



Note

The Split Key and Split Key Video functions are not yet implemented in the DSKs.

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.



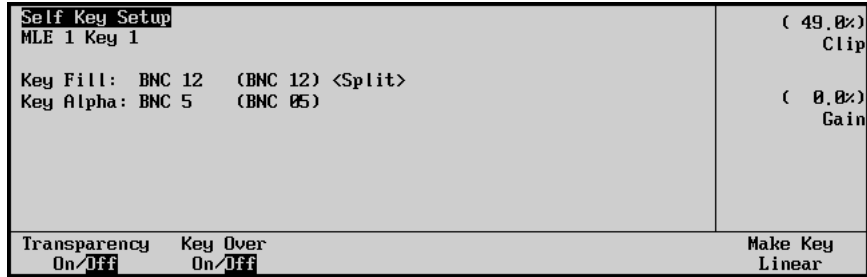
Note

The **Split Key** function is a *temporary* assignment. If, after setting up the Split Key, you press *any button* on the **Key Bus**, the split is released and you must set up the split again.

Use the following procedure to perform a Split Key:

1. Ensure that your program/preview monitoring is set as needed. Refer to the section “**Using the Preview Bus**” on page 4-13 for details.
2. Ensure that you have set up an Auto Select Key. Refer to the section “**Performing an Auto Select Key**” on page 7-14 for details.
3. Select an input on the **BKGD** bus. This provides the background over which the key will appear.
4. Select the desired *key* source (such as a character generator or DVE) on the **Key Bus**.
5. Press **AUTO SELECT** in the **Key 1** or **Key 2** group.
6. Press and *hold* the **AUTO SELECT** button and select the new fill source on the **Key Bus**.
7. Release both buttons.

The display now shows the selected key alpha plus the new “split” fill video source.



Sample Split Key Menu Display

- Adjust the Clip and Gain of the Key as desired. Refer to the section “Performing an Auto Select Key” on page 7-14 for instructions.



Note

If, after setting up the split, you select another Key type, the split is released and you must set it up again if desired. Pressing **AUTO SELECT** again *does not* re-establish the split.

- If desired, you can toggle the **Key Over** button between **On** and **Off** to change the priority of the two keyers:
 - On** — Select **On** to change the priority to **Key 1**, setting it *over* (visually on top of) **Key 2**. The **KEY OVER** button in the **MLE Key 1 Group** will now be lit.
 - Off** — Select **Off** to keep the priority as **Key 2** over **Key 1**. This is the default setting.

This completes the procedure to perform a Split Key.

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.



Note

The **Split Video** function is a *temporary* assignment. If, after setting up the Split Video, you press *any button* on the **Key Bus**, the split is released and you must set up the split again.

Use the following procedure to perform a Split Video:

- Ensure that your program/preview monitoring is set as needed. Refer to the section, “Using the Preview Bus” on page 4-13 for details.
- Select an input on the **BKGD** bus. This provides the background over which the Key will appear.
- Select the desired *luminance key* source (such as a VTR or title camera) on the **Key Bus**.
- Press **SELF KEY** in the **Key 1** or **Key 2** group.
- Press and *hold* the **SELF KEY** button and select the new fill source on the **Key Bus**.
- Release both buttons.

The display shows the luminance key plus the new “split” fill source.

Self Key Setup		(49.0%)
MLE 1 Key 1		Clip
Key Fill: BNC 9	(BNC 09) <Split>	(0.0%)
Key Alpha: Cam 6	(BNC 07)	Gain
Transparency	Key Over	Make Key
On/Off	On/Off	Linear

Sample Split Video Menu Display

7. Clip and modify the key in the normal manner. Refer to the section, “Performing an Auto Select Key” on page 7-14 for more information



Note

If, after setting up the split, you select another key type, the split is released and you must set it up again if desired. Pressing **SELF KEY** again *does not* re-establish the split.

8. If desired, you can toggle the **Key Over** button between **On** and **Off** to change the priority of the two keyers:
 - **On** — Select **On** to change the priority to **Key 1**, setting it *over* (visually on top of) **Key 2**. The **KEY OVER** button in the **MLE Key 1 Group** will now be lit.
 - **Off** — Select **Off** to keep the priority as **Key 2** over **Key 1**. This is the default setting.

This completes the procedure for performing a Split Video.

Performing a Downstream Key

This section provides instructions for setting up your downstream (CDK-111A-M) keys. If you have not yet installed your CDK-111A-M boards, refer to Chapter 3, “**Preliminary Cabling and Check**”, Chapter 9, “**Additional Installation Setups**”, and Chapter 7, “**Communications Setup**” of the *Synergy 1 Installation Guide*.



Note

If the user is displaying a downstream key, and a USB image transfer is initiated, the key will disappear from the display. When the transfer is complete, the user must re-display the key in order that the key be visible.

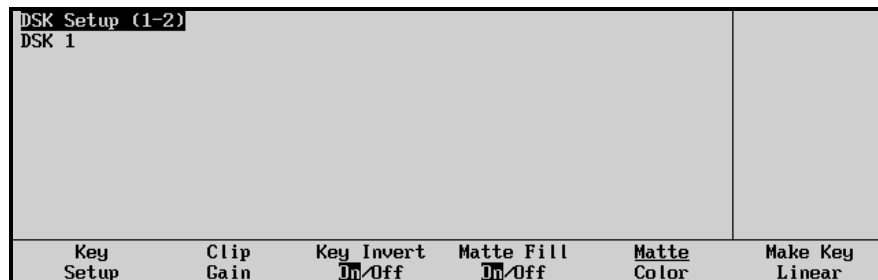
Use the following procedure to set up your DSKs:

1. Navigate to the **DSK Setup Menu 1-2** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**).
 - **Effects** (to display the **Effects Menu 1-2**).
 - **MORE** (to display the **Effects Menu 2-2**).
 - **DSKs** (to display the **DSK Setup Menu 1-2**).



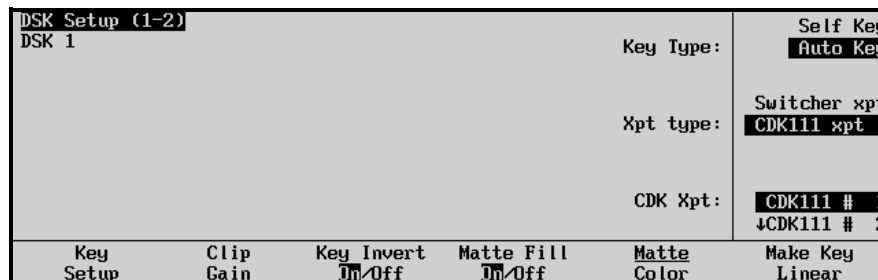
Operating Tip

You can also navigate to the **DSK Setup Menu** by pressing the **DSK1** or **DSK2** button in the **Transition Area**.



DSK Setup Menu 1-2

2. Press **Key Setup** to display the **Key Setup Menu**.



Key Setup Menu

3. Select a key type for a crosspoint as follows:
 - Use the top **Key Type** knob to select between a **Self Key** or an **Auto Select Key**.
 - Use the middle **Xpt type** knob to select a crosspoint. You can choose from the following:

- ~ **Switcher xpt** — When you select the switcher crosspoint, the bottom knob changes to a list of BNCs, from which you can select any of the sources that you have connected to your switcher. If you prefer, you can also hold the desired DSK button in the transition area, and select a crosspoint on the key bus. This will automatically change the **Xpt type** to switcher crosspoint, but will not select the key type.



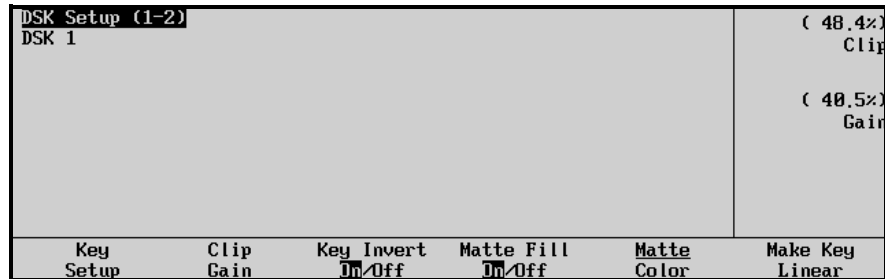
Note

Please ensure that the Aux Buses are correctly installed and configured. Otherwise, there will not be any switcher crosspoints available to you.

Since the Synergy 1 frame generates its own internal black signal, selecting **BLACK** on an Aux Bus will route to the DSK whatever is connected to your “**601 REF IN**” BNC. Refer to the section “**Untimed Aux Buses**” on page 1-9 for more details.

- ~ **CDK-111A-M xpt** — The CDK-111A-M crosspoint selection provides you with a list of images which are stored within the Internal Still Store RAM of the CDK-111A-M. If you wish to have access to these images, they must be downloaded to the boards using PC software. Please contact **Ross Video Customer Support** for details and the software.

4. Press **Clip Gain** to display the **Clip Gain Menu**.



DSK Setup Menu – Clip Gain

5. Adjust the clip and gain values of the key as follows:
 - Use the top **Clip** knob to adjust the clipping level of the Key.
 - Use the middle **Gain** knob to adjust the gain level, softness, of the Key.



Operating Tip

Press **Make Key Linear** to return the clip and gain values to the default settings.

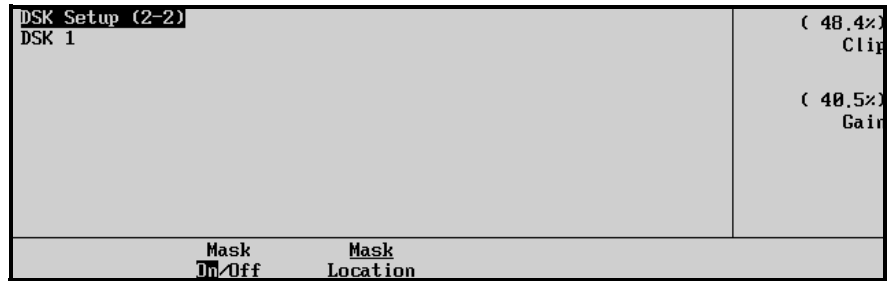
6. Press **Key Invert On/Off** to invert the polarity of the selected key signal. Note that both key types can be inverted.
7. Press **Matte Fill On/Off** to fill the selected key hole with a matte color — *instead* of the key foreground video from the **Key Bus**. Both key types can be filled with matte color.



Note

If you have the matte fill turned on, you will need to press the **Matte Color** softkey to display the **Color Selection Menu**. Use the knobs on the display (or the joystick, if you prefer) to adjust the hue, luminance, and saturation of the matte. Refer to the section “**Matte Group**” on page 6-14 for more information.

8. Press **MORE** to display **DSK Setup Menu 2-2**.



DSK Setup Menu 2-2

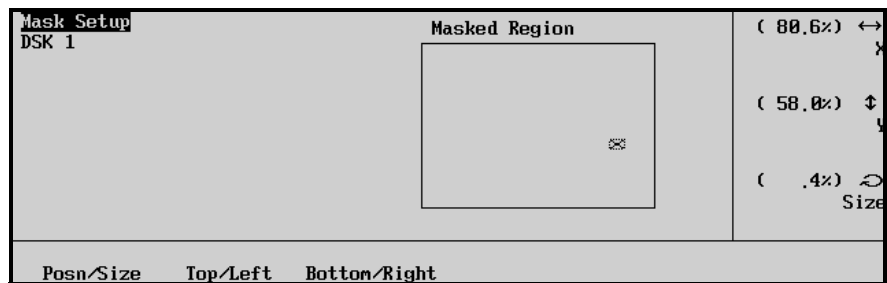
9. Mask out areas of the key as follows:

- Toggle **Mask On/Off** to **On**. The default setting is **Off**.
- Press **Mask Location** to display the **Mask Setup Menu**.



Note

Masking is only available if the external DSK has external sources on BNCs 7 and 8.



Mask Setup Menu

- Press the **Posn/Size** softkey to adjust the mask's position on the screen. Use the display's top, middle and bottom knobs to adjust the key's horizontal position, vertical position and size (zoom) respectively.
- Press the **Top/Left** softkey to adjust the position of the mask's top and left edges. The display's top knob adjusts the left edge, while the middle knob changes the position of the top edge.
- Press the **Bottom/Right** softkey to adjust the position of the mask's bottom and right edges. The display's top knob adjusts the right edge, while the middle knob changes the position of the bottom edge.

Using Auto Transitions

The **AUTO TRANS** buttons in the Key groups are used to start an automatic (smooth) transition that brings the selected key on or off air. Note the following important auto transition rules:

- Two *different* auto-transition rates can be used to dissolve a key:
 - ~ If the **AUTO TRANS** button in the **Transition Group** is used in conjunction with the “next transition” buttons, the rate is controlled by the **MLE RATE** button in the **Global Memory System Group**. The rate is displayed as **M:###** on the group’s display.
 - ~ If the **AUTO TRANS** button in a **Keyer** is used, that rate is controlled by the **KEY RATE** button in the **Global Memory System Group**. The key dissolve rate appears as **K:###** on the group’s display. This rate governs both keyers.

Each auto transition button has its own unique rate register — either rate can be used as required. This important feature allows you to perform background transitions and key transitions at different rates (typically, background transitions are *slower* than key transitions).

For example, with an MLE rate of 20 frames and a Key rate of 15 frames, you could fade in a key at 20 frames (using the **AUTO TRANS** button in the **Transition Group**) and fade out the key at 15 frames using the **AUTO TRANS** button in the **Key Group**.

The following sections discuss changing auto transition rates for the MLE and Downstream keyers only. Refer to the section “**Auto Transitions**” on page 5-9 for instructions on changing the auto transition rate in the **MLE Transition** group and **Program/Preset Transition** group.

Changing Key Rates

This section provides instructions for changing auto transition rates in the MLE’s **Key 1** and **Key 2** groups. The rate is the same for all keyers.


1. Note the current Key transition rate on the display in the **Global Memory System Group**. The key dissolve rate appears as **K:###**. This rate governs *all* keyers.
2. Press **KEY RATE** in the **Global Memory System Group**.
3. Using the keypad, enter the desired rate in frames — from **1** to **999**. The rate appears on the display’s top line as you type and the **ENTER** button lights.



New KEY Rate:030
M:015 K:008 F:20

Global Memory System Display – Entering a New Rate

4. To accept the new rate, press **ENTER**. The display updates as shown below, the **ENTER** light turns off and the new rate is available for use.



REG:00 Memory0
M:015 K:030 F:20

Global Memory System Display – Updated Rate

Please note:

- If you want to clear the rate and cancel the procedure, press any other “**RATE**” or “**STORE**” button *during* the entry process. This turns off the **ENTER** button and the Key rate remains unchanged.
- To enter a *different* rate prior to pressing **ENTER**, simply continue to type until the desired value appears in the register.

Key Auto Transition Operating Tips

Please note the following important points regarding key auto transitions:

- An auto transition, once in progress, can *not* be paused.
- To “escape” from an auto transition in progress, you can either press **CUT** during the transition or manually pull the **Fader** in the proper direction. The “cut” action instantly completes the transition.
- You can *not* initiate an auto transition or cut if the **Fader** is off its upper or lower limit.
- You can *not* initiate a keyer auto transition if an auto transition in the **Transition Group** is already in progress.
- If the **TRANS LIMIT** function is enabled and the transition is at the selected limit, you can *not* initiate a keyer auto transition.
- The keyer’s **CUT** and **AUTO TRANS** buttons are linked to those in the **Transition Group**. When you press **AUTO TRANS** in a keyer, the **DISS**, **AUTO TRANS** and appropriate “key” next transition button lights in the **Transition Group** — to indicate a key transition in progress. When the transition is finished, the buttons return to their previous states.
- Remember that you can transition the key with two different rates, depending on where you press the **AUTO TRANS** button — either in the **Keyer** or in the **Transition** group.
- You can not *wipe* a key using the buttons in the **Key 1** or **Key 2** group. This function must be performed in the **Transition Group**.

Key Cut Operating Tips

Key “cut” transitions using the **CUT** buttons in the **Keyer** groups cannot be performed when the Fader is off its upper or lower limit. Also, auto transitions (using the keyer **AUTO TRANS** buttons) cannot be performed at all when the fader is off a limit or when an auto transition is in progress.

The table below summarizes the functions of each keyer button in several specific MLE fader and keyer modes.

Keyer Transition Summary Table

Fader Mode	Auto Transition Mode	Next Transition Keyer Mode	Keyer Button Function	
			AUTO TRANS	CUT
On limit	Transition in progress	Keyer part of transition	Locked out	Completes the auto transition
On limit	Transition in progress	Keyer not part of transition	Locked out	Cuts the key on or off, as appropriate
Off limit	N/A	Keyer part of transition	Locked out	Locked out
Off limit	N/A	Keyer not part of transition	Locked out	Cuts the key on or off, as appropriate

Using Key Modifiers

This section provides basic instructions for using key modifiers. The following topics are discussed:

- Filling a Key with Matte
- Masking Keys
- Masking Keys with a Pattern Generator
- Inverting Keys
- Flying Keys in 2D
- Bordering Keys
- Programming a Favorite CG



Note

All key modifiers discussed in this section refer to Squeeze & Tease (S&T) 2D usage. Refer to the *Squeeze & Tease 3D Owner's Guide* to learn more about using the 3D S&T Key modifier.

Filling a Key with Matte

Use the following procedure to fill a key with matte color:



Note

All key types *except* Preset Pattern keys (either flown or not) can be filled with matte.

1. Set up the desired key type and source and clip the key using the controls in the **Effects Control Group**.
2. In the selected **MLE** keyer, press **MATTE FILL**. The matte generator's *current color* now fills the key hole.
3. Use the **HUE**, **SAT** and **LUM** controls in the **Matte Group** to modify the matte's hue, saturation and luminance, respectively.
4. If desired, press **WASH 1** or **WASH 2** to display the **Wash Menu**. This menu allows you to design a custom wash color with which to fill the key.
5. Add additional key modifiers as required, then select the desired manual or auto transition in the normal manner.

This completes the procedure to fill a key with matte color. Refer to the section, "**Matte Group**" on page 6-14 for more detailed color wash instructions.

Masking Keys

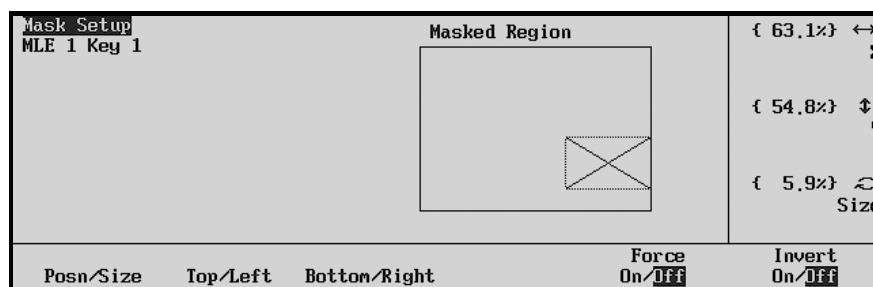
Use the following procedure to mask a key:



Note

All keys can be masked with the *exception* of Preset Pattern keys and Preset Pattern Fly keys.

1. Set up the desired key type and source, and clip the key using the controls in the **Effects Control Group**.
2. In the selected keyer, press **MASK**. The mask generator's current settings are applied to the key and the **MASK** menu appears on the menu display.
3. Alternatively, to access the **MASK** controls manually:
 - Press **HOME** (to display the **Main Menu 1-2**)
 - **Effects** (to display the **Effects Menu 1-2**)
 - **More** (to display **Effects Menu 2-2**)
 - **Mask** to display the **Mask Menu**:



Mask Menu

4. Press the **Posn/Size** softkey to adjust the mask's position on the screen. Use the display's top, middle and bottom knobs to adjust the key's horizontal position, vertical position and size (zoom) respectively.
5. Press the **Top/Left** softkey to adjust the position of the mask's top and left edges. The display's top knob adjusts the left edge, while the middle knob changes the position of the top edge.
6. Press the **Bottom/Right** softkey to adjust the position of the mask's bottom and right edges. The display's top knob adjusts the right edge, while the middle knob changes the position of the bottom edge.
7. Pressing the **Invert** softkey to the **On** position will invert or "reverse" the mask.
8. Pressing the **Force** softkey will "force" the masked portion of the signal onto the screen.



Note

All elements of the **MASK** can be adjusted using the three side **scroll knobs** or via the **positioner** on the panel. Refer to the section "**Positioner Group**" on page 7-51 for a complete explanation of the **positioner**.

This completes the procedure to mask a key.

Masking Keys with a Pattern Generator

While the Synergy does not directly support masking keys with a pattern generator, it is possible to achieve this effect by using a second keyer. Masking keys in this way allows you to generate a soft-edged mask using *any shape* available in the pattern generator — instead of just a hard-edged box.

Use the following procedure to mask a key with a pattern generator:



Note

This procedure uses both keyers and refers to them as the *first keyer* and the *second keyer*. However, you can choose *either keyer* to be the first keyer, as desired.

1. Select an input on the **BKGD** bus. This provides the background over which the key will appear.
2. In the first keyer, choose the desired key source and key type and follow the proper set of instructions for programming the key.
 - For instructions on programming a Self Key, refer to the section, “**Performing a Self Key**” on page 7–13.
 - For instructions on programming an Auto Select Key, refer to the section, “**Performing an Auto Select Key**” on page 7–14.
 - For instructions on programming a Chroma Key, refer to the section, “**Performing a Chroma Key**” on page 7–17.
 - For instructions on programming a Preset Pattern Key, refer to the section, “**Performing a Preset Pattern Key**” on page 7–24.
3. Set the second keyer in the MLE to be “on top” of first keyer you selected in step 2. Press **KEY OVER** if necessary.
4. Select **PST PATT** in the second keyer.
5. Note the source that is selected on the **BKGD** bus and select it as the key source for the second keyer.
6. Adjust the shape of the mask in the second keyer by using the available pattern “tools” in the **Pattern Control** and **Positioner** groups. In addition, ensure that key border is turned off.
7. Using the buttons in the “next transition” section, transition *both keys* to air simultaneously.

This completes the procedure to mask a key with a pattern generator.

Inverting Keys

Use the following procedure to invert a key:



Note

All key types can be inverted with the *exception* of Preset Pattern keys and Preset Pattern Fly keys.

1. Set up the desired key type and source and clip the key using the controls in the **Effects Control Group**.
2. In the selected **MLE** keyer, press **KEY INV**. The polarity of the selected key is now reversed.
3. Re-adjust the clip and gain settings of the key as required. This step is often necessary when a key is inverted.
4. Add additional key modifiers as required, then select the desired manual or auto transition in the normal manner.

This completes the procedure to invert a key.

Flying Keys in 2D



Note

For flying keys with the 3D Squeeze & Tease option installed, refer to the *Squeeze & Tease 3D/WARP Owner's Guide*.

The Fly Key function allows you to apply 2D DVE effects to any of the four key types, with the ability to control the key's size, horizontal position and vertical position. Note that all key types can be flown *except* Preset Pattern keys.

Use the following procedure to fly a key:

1. Ensure that the **Squeeze & Tease Option** is installed. The **FLY KEY** button will not light if the option is not installed.



Note

Refer to the section, "**Installed Options Menus**" on page 3-10 for instructions on how to verify the status of your installed hardware and software options.

Note the following important rules for the **FLY KEY** button. These rules apply to both MLE keyers:

- ~ You can only fly *one* **Auto Select Key** at a time. If one keyer is already flying an **Auto Select Key**, you can not enable the **FLY KEY** button in the other keyer.
 - ~ You can fly *any combination* of **Preset Pattern Keys**, **Chroma Keys** or **Self Keys** — one in keyer 1 and the other in keyer 2.
2. Set up the desired key type and source and clip the key using the controls in the **Effects Control** group.

- In the selected **MLE** keyer, press **FLY KEY**. The key is now re-routed through the *internal DVE*.

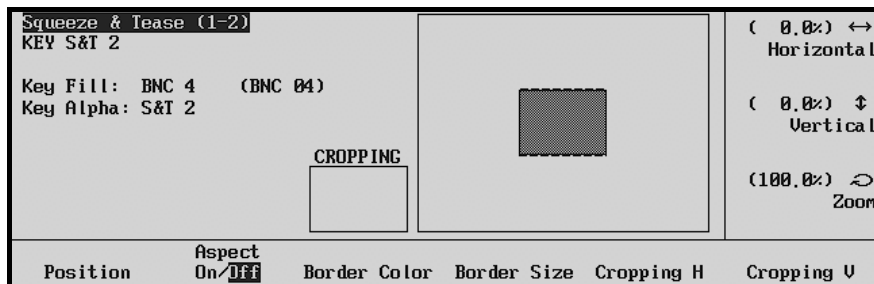


Note

When you press **PST PATT**, the system *automatically* selects **FLY KEY**, *automatically* selects a box wipe by default and displays the **Squeeze & Tease** menu.

- If the key is a **Self Key**, **Chroma Key** or **Auto Select Key**, you can now size and position the key and apply a variety of special Fly Key modifiers such as mirror, crop and freeze.
Each Fly Key modifier is detailed below. Clip and gain can be used in the normal manner.
- If the key is a **Preset Pattern Key**, the pattern itself does *not* become the border. Please note:
 - ~ **Preset Pattern** keys can be bordered using the keyer’s border controls. The **Dual Border Generator** option must be installed.
 - ~ **Preset Pattern** modifiers (for example, clip, gain, aspect, border, soft) do not affect what is on screen.
 - ~ **Fly Key** modifiers (for example, size, position, mirror, crop, freeze) are enabled using the **Squeeze & Tease Menu**.

When **FLY KEY** is pressed, **Squeeze & Tease Menu 1-2** is displayed.



Squeeze & Tease — Position Menu

The status area on the left displays the menu name, the location of the keyer, as well as complete key fill and alpha information. In the central status area, two graphics are provided to assist you in quickly visualizing the states of both the “source” and “target” **Squeeze & Tease** images:

- The small **Cropping** box shows the state of the source image (the key that you are flying). As you crop **H** and **V**, the Cropping box *dynamically* shows the position of the image’s four sides.
- The large **Raster** box shows the state of the full screen raster (or “target” area) and the relative position of the source image within the target. As you move horizontally and vertically (and as you zoom) the box dynamically shows an accurate representation of the image’s size and position.

Both graphics combine to provide quick visual status of all **Squeeze & Tease** parameters. As you switch between keyers, the graphics update instantly — an extremely useful feature when multiple **FLY KEY** images are on screen simultaneously.

4. Press the **Position** softkey to adjust the position of the key on the screen. Use the top, middle and bottom knobs of the display to adjust the horizontal position of the key, vertical position and size (zoom), respectively. You can also use the **Positioner** to adjust the key:
 - Move the Positioner *left* and *right* to control the key’s horizontal position on screen.
 - Move the Positioner *up* and *down* to control the key’s vertical position on screen.
 - Twist the Positioner’s top knob *clockwise* and *counter-clockwise* to zoom the key’s size in and out.

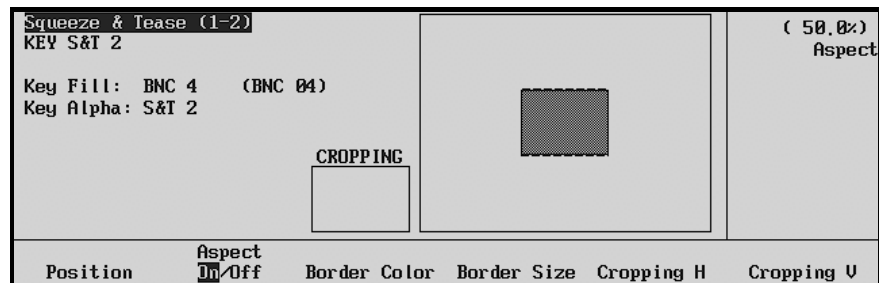


Note

You can reduce the size of the key to -6.6% or you can zoom the key out to 800% of its normal size.

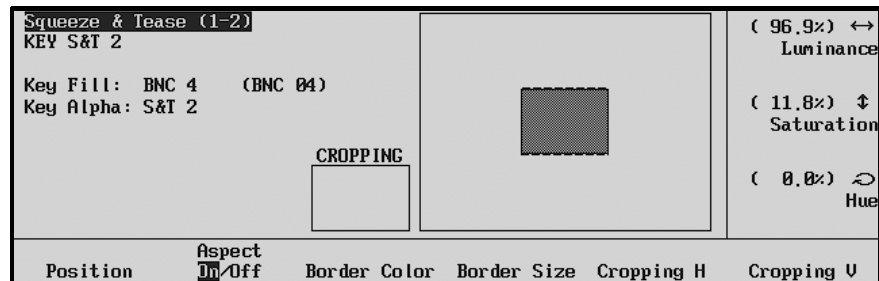
Refer to the section, “**Positioner Group**” on page 7-51 for additional information about the 3-axis positioner of the switcher.

5. Toggle **Aspect** to **On** to display the **Squeeze & Tease Aspect Menu**:



Squeeze & Tease — Aspect Menu

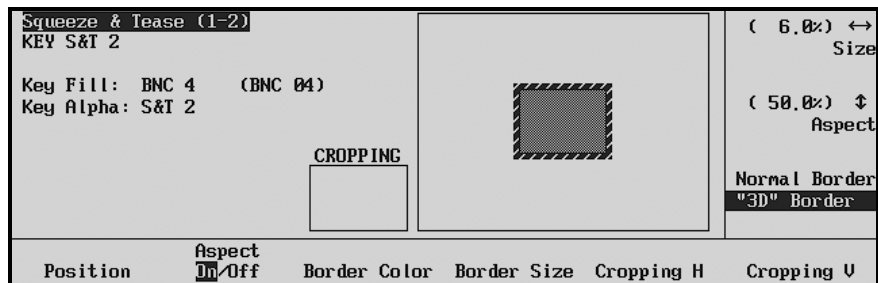
- Use the top **Aspect** knob to adjust the aspect ratio of the key.
 - To clear the aspect ratio back to default values, press the **CENTER** button in the **Positioner Group**.
6. Press **Border Color** to display the **Squeeze & Tease Border Color Menu**:



Squeeze & Tease — Border Color Menu

- For flying **Preset Pattern** keys *only*, use the display’s top, middle and bottom knobs to adjust the border color’s luminance, saturation and hue, respectively.

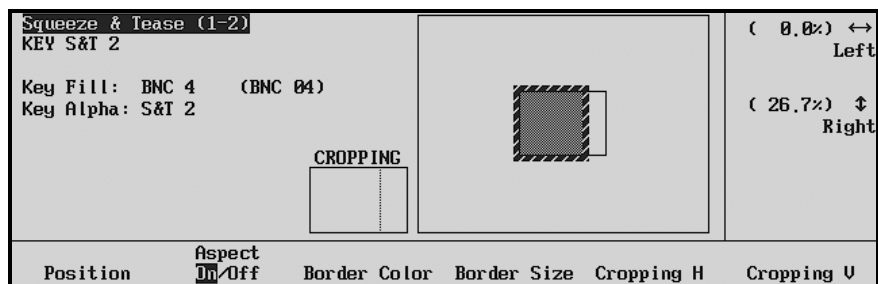
- Press **Border Size** to display the **Border Size Menu**.



Squeeze & Tease — Border Size Menu

For flying **Preset Pattern** keys *only*:

- Use the display’s top and middle knobs to adjust the key’s border size and aspect ratio, respectively. Note that the display’s border size changes dynamically as you adjust.
 - Use the bottom knob to select a normal or “3D” border. When **3D Border** is selected, the border shrinks with the image, instead of *after* the image.
- Press **Cropping H** to display the **Squeeze & Tease Crop H Menu**.



Squeeze & Tease — Crop H Menu

For all flying keys, use the display’s top and middle knobs to crop the key’s left and right edges, respectively. Please note:

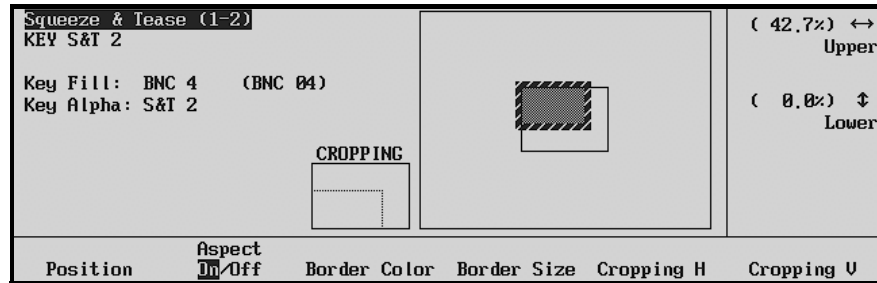
- The small **Cropping** box shows the source image’s original edge and the cropped edge (dotted line).
- The large **Raster** box shows the results of the cropping within the target space. Note that the border dynamically follows the cropped edge(s) of the source image.



Important

As you crop the right edge, the right edge moves towards the left on the display. However, as you crop the left edge, the right edge *once again* appears to move towards the left. This occurs because all fly key manipulations are registered (locked) to the upper left edge of the image. This feature gives you a constant and accurate frame of reference when manipulating fly key images and building effects.

- Press **Cropping V** to display the **Squeeze & Tease Crop V Menu**.

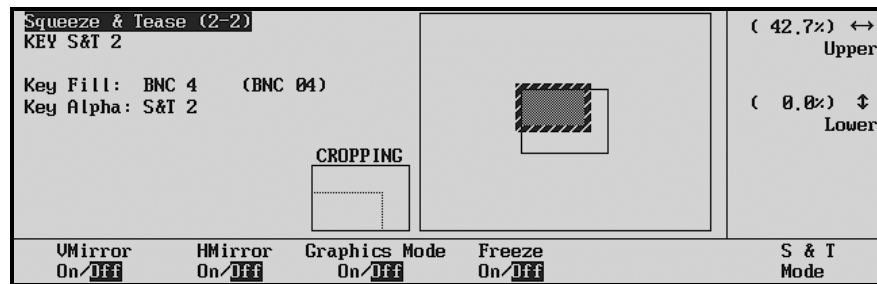


Squeeze & Tease — Crop V Menu

For all flying keys, use the display’s top and middle knobs to crop the key’s upper and lower edges, respectively. Please note:

- The **Cropping** and **Raster** boxes dynamically show the image’s cropped edges and the results within the target space.
- In target space, all manipulations are registered to the upper left edge of the image as described in the “important” note above.

- Press **MORE** to display **Squeeze & Tease Menu 2-2**.



Squeeze & Tease Menu 2-2

For all flying keys, **Squeeze & Tease Menu 2-2** provides the following controls:

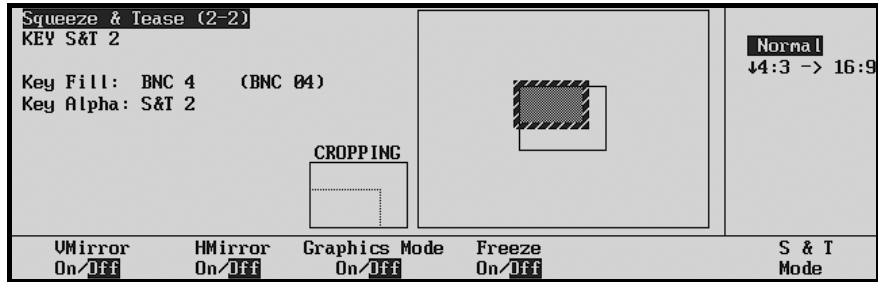
- Toggle the **VMirror** softkey to mirror the picture vertically.
- Toggle the **HMirror** softkey to mirror the picture horizontally.
- Toggle the **Graphics Mode** softkey to enable or disable the graphics mode — specifically for improved still images.
 - ~ When Graphics Mode is enabled *for still images*, vertical resolution is doubled. Image processing is at 30 fps.
 - ~ When disabled, image processing is at 60 fps.

Note that when a still image is moved (for example, with an *effects dissolve*), graphics mode is automatically turned off.

- Toggle the **Freeze** softkey to freeze or unfreeze the picture. In this mode, the **Squeeze & Tease** function acts like a frame store. Note that the label “**Frozen**” displays when the image is frozen.

11. Toggle the **S & T Mode** softkey to display the **Squeeze & Tease Menu 1-2**.

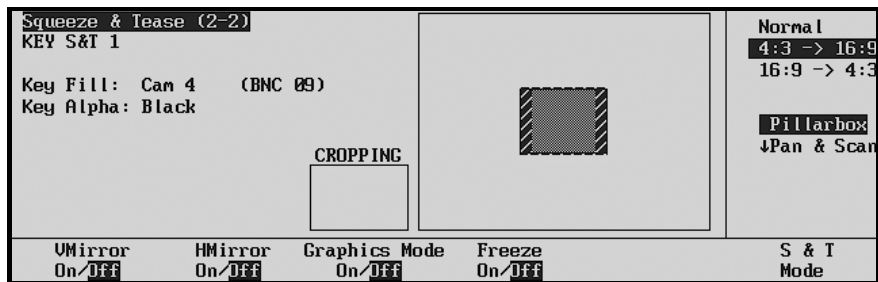
- Select **Normal** to keep the Squeeze & Tease image size at 4:3 aspect ratio.



Squeeze & Tease Menu 2-2 – Normal

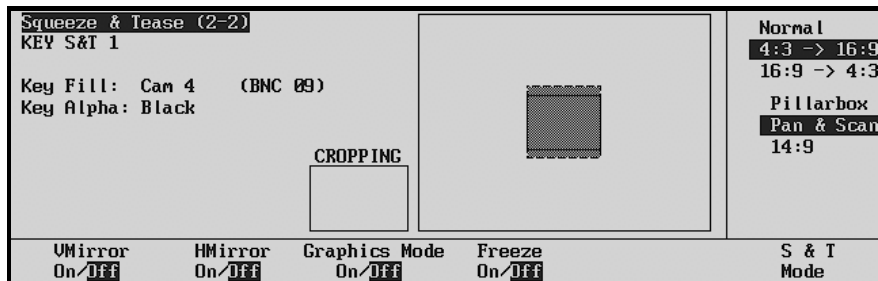
- Select **4:3->16:9** to adjust flying 4:3 Squeeze & Tease images to a 16:9 aspect ratio. In this mode, choose one of three options with the bottom knob:

~ Select **Pillarbox** to place black side panels on either side of the image.



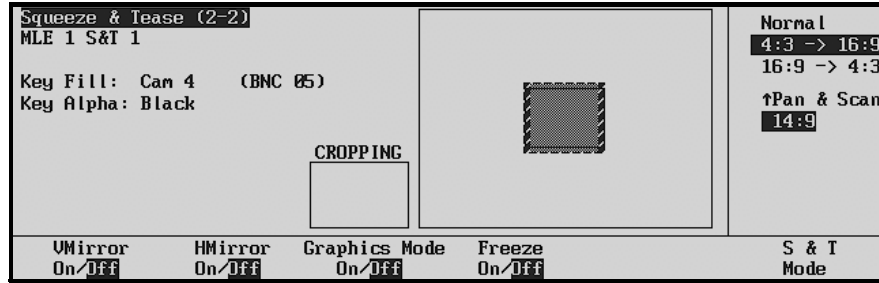
Squeeze & Tease Menu 2-2 – Pillarbox

~ Select **Pan & Scan** to allow you to *vertically* pan and scan the image, effectively focusing (or isolating) either the top or bottom portions of the image.



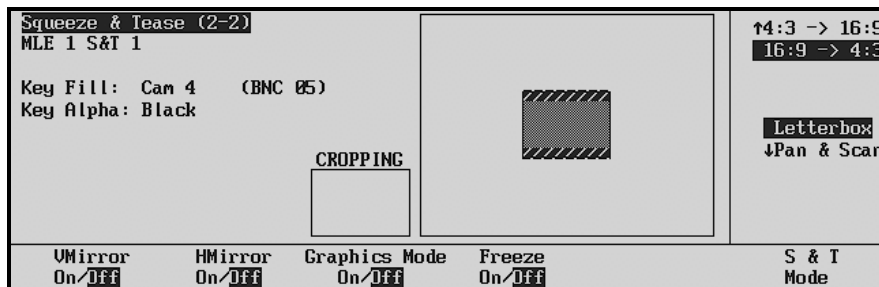
Squeeze & Tease Menu 2-2 – Pan and Scan

~ Select **14:9** to effectively view a *compromise* between the “Pillarbox” and “Pan & Scan” modes, using a slight amount of each manipulation.



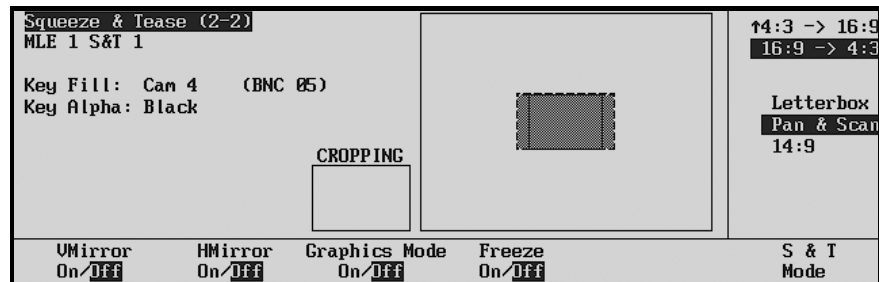
Squeeze & Tease Menu 2-2 – 14:9

- Select **16:9->4:3** to adjust flying 16:9 Squeeze & Tease images to a 4:3 aspect ratio. In this mode, choose one of three options with the bottom knob:
 - ~ Select **Letterbox** to place black panels on the top and bottom of the image.



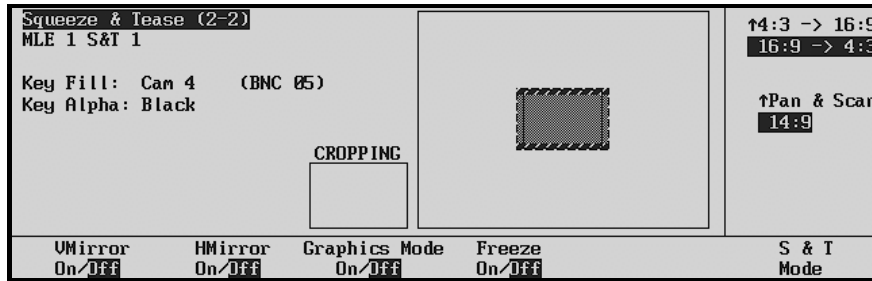
Squeeze & Tease Menu 2-2 - Letterbox

- ~ Select **Pan & Scan** to allow you to *horizontally* pan and scan the image, effectively focusing (or isolating) either the left or right portions of the image.



Squeeze & Tease Menu 2-2 – Pan and Scan

- ~ Select **14:9** to effectively view a *compromise* between the “Letterbox” and “Pan & Scan” modes, using a slight amount of each manipulation.



Squeeze & Tease Menu 2-2 – 14:9



Operating Tip

For a more visually interesting scene when using **S & T Mode** manipulations, reduce the border size to zero and place the resulting image over a background video of your choice.

12. Add additional key modifiers as required, then select the desired manual or auto transition in the normal manner.

This completes the procedure to fly a key.

Fly Key Operating Tips

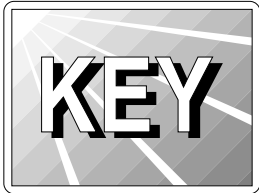
Note the following important points regarding the **Fly Key** function:

- If a key is processed using **Fly Key** but its *size* is not reduced, the image can be repositioned without *any picture degradation*.
- You can program a flying key to *move* from position to position, using an effects dissolve. Refer to the section “**Effects Dissolve**” on page 8-14 for details.
- If you are flying *both keys* and you need to adjust the one that is *not currently active*, simply press the **KEY PV** button to activate the desired keyer. If the key type is preset pattern, pressing the **PST PATT** button again automatically selects the **Squeeze & Tease Menu** and also selects the XYZ position on the **Positioner**.
- To clear the flying image back to default values, press the **CENTER** button in the **Positioner Group**. **Self** keys, **Auto Select** keys and **Chroma** keys clear to 1:1, with no manipulation. **Preset Pattern** keys clear to the upper left corner (for **Key 1**) and the upper right corner (for **Key 2**).
- Use the controls in the **Positioner Group** to move two flying keys simultaneously. Simply press **FLY KEY 1** and **FLY KEY 2** simultaneously and use the **Positioner** in the normal way.
- To use a preset pattern key without the Fly Key mode, press **FLY KEY** to disable the mode and display the **Preset Pattern Setup** menu
- 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, pressing **SELF KEY**, **AUTO SELECT** or **CHROMA KEY** automatically turns the Fly Key mode off and changes to the selected keying mode.

Bordering Keys

The **Key Border** function allows you to place borders, shadows and outlines around *any* MLE key type on the switcher. The **Dual Border Generator** option must be installed. The border buttons will not light if the option is not installed.

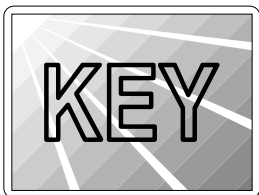
The following figures are samples of the three types of borders that can be created by the **Dual Border Generator**:



- Press **BORD** to add a border behind the selected key type. The border can *surround* the key or it can appear as detached shadow that can be offset to any distance and direction. Border width, color and transparency are all adjustable. If the **Ghost** menu function is enabled, the key fill is turned off.



- Press **SHDW** to add a drop shadow behind the selected key type. The shadow is *connected* to the key signal, instead of being detached. Shadow width, color and transparency are all adjustable. If the **Ghost** function is enabled, the key fill is turned off.



- Press **OUTL** to add an outline around the selected key type, with variable width, color and transparency. With **OUTL** selected, the key fill is completely transparent.

- Press **BORD OFF** to turn off any selected border type.

Use the following procedure to border a key:

1. Ensure that the **Dual Border Generator** option is installed.

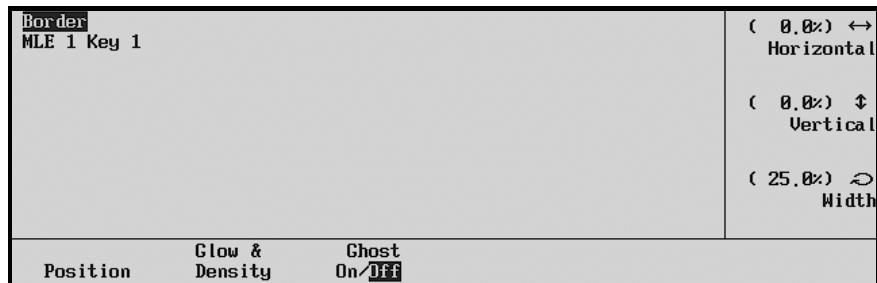


Note

Refer to the section, “**Installed Options Menus**” on page 3-10 for instructions on how to verify the status of your installed hardware and software options.

2. Set up the desired key type and source and clip the key using the controls in the **Effects Control** group.
3. In the selected MLE keyer, press **BORD** or **OUTL** to enable the border generator. The **Border Menu** appears on the display.
4. Press **CENTER** in the **Positioner** group to reset all border parameters to their default values, with the exception of the color. This step is an excellent starting point when adjusting borders, shadows and outlines.

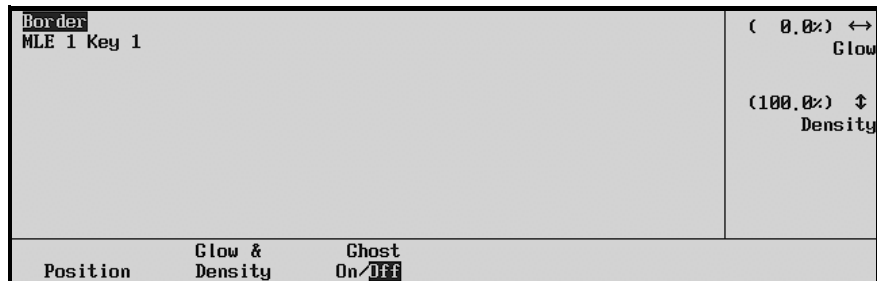
- Press **Position** to adjust border position and width.



Border Menu — Position

Use the display's top, middle and bottom knobs to adjust horizontal position, vertical position and width, respectively. You can also use the **Positioner** to adjust the parameters:

- Move the Positioner *left* and *right* to adjust horizontal position.
 - Move the Positioner *up* and *down* to adjust vertical position.
 - Twist the Positioner's top knob to adjust width. You can also use the **WIDTH** knob in the **Effects Control** group.
- Press **Glow & Density** to adjust border softness and transparency.



Border Menu — Glow and Density

Use the display's top and middle knobs to adjust glow (softness) and density, respectively. You can also use the **Positioner** or the two controls in the **Effects Control** group to adjust the parameters:

- Move the Positioner *left* and *right* to adjust the glow, from hard edge to soft edge. You can also use the **GLOW** knob in the **Effects Control** group.
- Move the Positioner *up* and *down* to adjust density (from opaque to fully transparent). You can also use the **DENSITY** knob in the **Effects Control** group.



Operating Tip

To create the widest possible border, set both the **WIDTH** and **GLOW** controls to their maximum settings.

- If a border (**BORD**) is selected, press the **Ghost On/Off** softkey to remove the key fill.



Note

It is no longer possible to perform the "Ghost" function on a Chroma Key.

8. Adjust border color using the controls in the **Mattes** group.
 - When **BORD** in **Key 1** is selected, **BORD 1** is automatically selected in the **Mattes** group.
 - When **BORD** in **Key 2** is selected, **BORD 2** is automatically selected in the **Mattes** group.

You can also create a *wash* as the border color. Refer to the section, “**Creating Washes**” on page 6-16 for instructions.

This completes the procedure to border a key.

Bordering Keys Operating Tips

Note the following important points regarding the **Fly Border** function:

- All types of MLE keys can be bordered, however, note that some preset patterns keys may exhibit a *repeated* border if the border is positioned too far away from the key source.
- Be sure to press the **CENTER** button (in the **Positioner Group**) prior to adjusting your borders initially. This action resets all parameters to their default values, with the exception of color.
- All border settings are stored and recalled to a floppy disk. In addition, the borders are *copied* when using the **Key Copy** functions. Refer to the section, “**Copy and Swap Functions**” on page 8-102 for details.



Note

If you have the **USB Removable Media Drive** option installed, you can save all border settings to a USB key.

- If a border is positioned *below* the key source, it reacts within the same field as the moving video. If the border is positioned *above* the key, it reacts one field later than the moving video.
- Use the controls in the **Positioner Group** to move two borders simultaneously. Simply press **BORD 1** and **BORD 2** simultaneously and use the **Positioner** in the normal way.

Programming a Favorite CG

This procedure allows you to select a “favorite” CG that you want to place on the **CHAR GEN** button in the **Key 2 Group**. The feature is designed so that you can quickly select a “clean” CG in the **Auto Select** mode, with no key modifiers enabled.



Note

If you have a simple or complex key type already set up when you press **CHAR GEN**, 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).

Use the following procedure to program the “favorite” CG button:

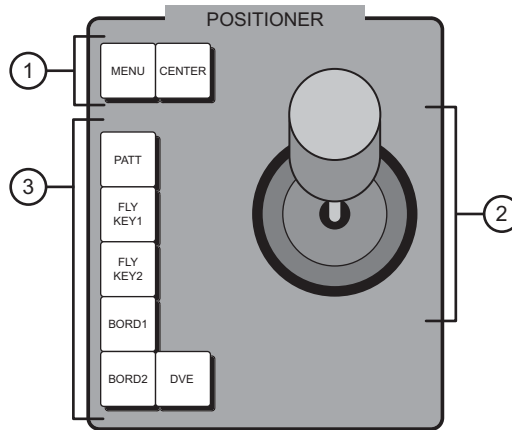
1. Press and *hold* the **CHAR GEN** button.
2. On the **Key Bus**, press the button for your most frequently-used CG.
3. Release both buttons.

The selected CG is now stored in memory and will be recalled each time **CHAR GEN** is pressed.

This completes the procedure to program the “favorite” CG button.

Positioner Group

The following figure illustrates the **Positioner** group:



1) Positioner Function Section 1

2) Positioner

3) Positioner Function Section 2

The **Positioner Group** is an *assignable* module that allows you to manipulate the position of wipe patterns, borders and flying keys — depending upon the selected mode.

1. Positioner Function Section 1



- Enable **MENU** to assign **Positioner** control to *menu* functions, temporarily disabling control over *positionable* functions. When the button is turned off, **Positioner** control (for a selected function) is restored. Note that when you select a menu that includes the three **Positioner Icons**, the **MENU** button *automatically* lights. Refer to the section, “**Positioner Icons**” on page 3-6 for additional details on the three **Positioner Icons**.



- Press **CENTER** to return the wipe, flying key or border to its default position, typically removing all X, Y and Z-axis offsets, crops, and horizontal and vertical flips from the image.

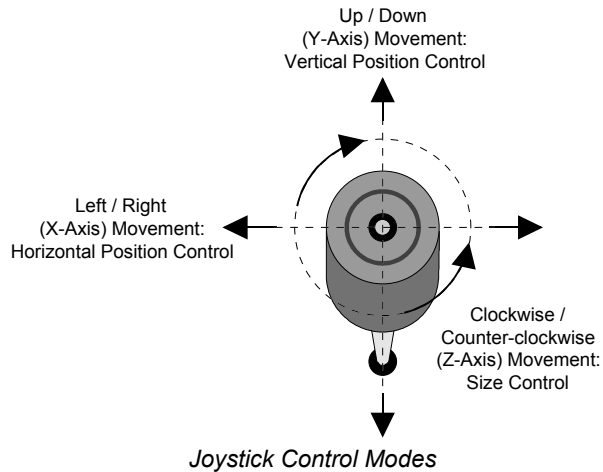
2. Positioner

The 3-axis **Positioner** (also known as a *joystick*) allows you to manipulate the position of various functions selected in the MLE.

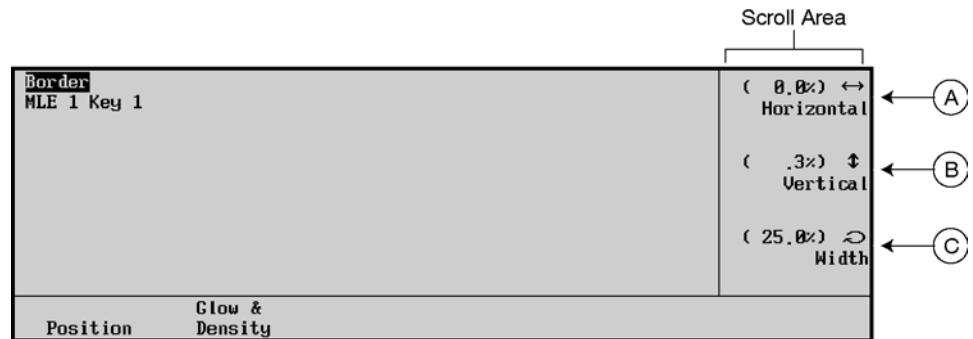
- When the **MENU** button is off, the positioner allows you to manipulate the position of wipe patterns, borders, and flying keys.

The **Positioner** controls the specific switcher *location* that is selected in the **Positioner Assignment Section** and the specific *function* that is selected in **Positioner Function Section 2**.

Joystick control in these modes is illustrated in the diagram, “**Joystick Control Modes**” on page 7-52.



- ~ For wipes and flying keys, move the **Positioner** *left* and *right* to control the image's horizontal position on screen.
 - ~ For wipes and flying keys, move the **Positioner** *up* and *down* to control the image's vertical position on screen.
 - ~ For flying keys only, twist the top knob *clockwise* and *counter-clockwise* to zoom the key's size in and out.
- When the **MENU** button is on, the **Positioner**'s current settings are temporarily ignored — but stored in memory. The **Positioner**'s function now applies to the current menu, with the ability to *duplicate* the function of the three menu knobs. This function *only applies* to selected installation and operational menus that display the three "**Positioner Icons**" in the right-hand **Scroll Area**. (Typically, two or three icons are shown, depending upon the current menu function).
 When you select a menu that includes the **Positioner Icons**, the **MENU** button automatically lights.
 Thus, when the **Positioner Icons** appear on a menu, you can adjust the selected function or parameter either with the scroll knobs or with the **Positioner**.
 A sample menu that includes the three icons as illustrated in the following figure.



Border Menu — with Positioner Icons



- A) When the left-right **Positioner Icon** appears, you can use the top **Knob** to adjust the selected function or you can move the **Positioner** *left* and *right*.
- B) When the up-down **Positioner Icon** appears, you can use the middle **Knob** to adjust the selected function or you can move the **Positioner** *up* and *down*.
- C) When the circular **Positioner Icon** appears, you can use the bottom **Knob** to adjust the selected function, or you can twist the **Positioner**'s knob *clockwise* and *counter-clockwise*.

When you turn the **MENU** button off, the **Positioner** once again is assigned to the current panel function and location.

3. Positioner Function Section 2



- Press **PATT** to switch **Positioner** control over to the MLE's pattern generator. Note that there is only one **PATT** button in the group, yet there are *two* pattern generators. To determine which pattern generator is controlled, check the **Pattern Control** group:
 - ~ If **WIPE PP1** is lit, pattern generator 1 is controlled.
 - ~ If **PST PATT2** is lit, pattern generator 2 is controlled.



- Press **FLY KEY 1** to switch **Positioner** control over to the MLE's **Key 1** group. The **Squeeze & Tease Menu** automatically appears. If **FLY KEY** is enabled and the **Positioner** is on (and the **Squeeze & Tease** option is installed), the key can be sized and positioned.



- Press **FLY KEY 2** to switch **Positioner** control over to the MLE's **Key 2** group. The **Squeeze & Tease Menu** automatically appears. If **FLY KEY** is enabled and the **Positioner** is on (and the **Squeeze & Tease** option is installed), the key can be sized and positioned.



Note

To move two flying keys at the same time, press **FLY KEY 1** and **FLY KEY 2** simultaneously.



- Press **BORD 1** to switch **Positioner** control over to the MLE's first custom border generator (for **Key 1**). The **Dual Border Generator** option must be installed.



- Press **BORD 2** to switch **Positioner** control over to the MLE's second custom border generator (for **Key 2**). The **Dual Border Generator** option must be installed.



Note

To move two borders at the same time, press **BORD 1** and **BORD 2** simultaneously.



- The Positioner's **DVE** function is used to jump from the currently selected menu and the **3D Sequence Menu**.

Memory Functions and More

In This Chapter

This chapter provides instructions for using the **Global Memory System** of the Synergy 1 switcher, plus additional features such as **Preview Overlay** and **Aux Buses**.

The following topics are discussed:

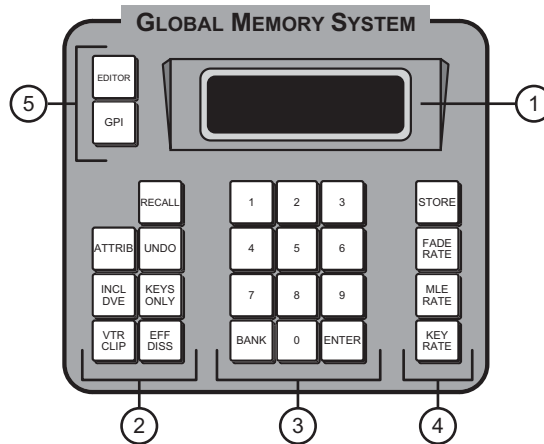
- Global Memory System Group
- Storing Memory Registers
- Recalling Memory Registers
- Memory Lock
- Naming Memory Registers
- Effects Dissolve
- Working with Storage Devices
- GPI Control
- Aux Bus Group
- Remote Aux Panels
- Custom Control
- Custom Control Functionality
- Preview Overlay Functions
- Editor Interface
- Still Store Interface
- Character Generator Interface
- Remote Camera Control Interface
- Aspect Ratio
- Copy and Swap Functions

Global Memory System Group

The **Global Memory System** group is used to store and recall switcher memory registers. Within the group, you can also control the switcher’s remote control functions, control a variety of MLE transition rates, and recall VTR “clips” from memory.

A memory register is a “snapshot” of the switcher — and up to 100 registers can be stored and recalled. A register can be as simple as the contents of the MLE’s keyer or as comprehensive as the contents of the entire switcher, including Aux buses and DVE settings.

The following figure illustrates the **Global Memory System Group**:



Global Memory System Group

1) Display	3) Keypad	5) Remote Section
2) Recall Section	4) Store Section	

Following are the explanations of the Global Memory System sections.

1. Display

The **Display** provides five data fields. All rates are indicated in frames:

- **REG:##** — Indicates the current memory register number.
- **Memory#** — Displays the current memory.

The preceding fields change when **S&T 3D** sequences are in use. Refer to the *Squeeze & Tease 3D/WARP Owner’s Guide* for further details.

- **M:###** — Indicates the Background/Presets MLE’s transition rate.
- **K:###** — Indicates the transition rate for keyers.
- **F:##** — Indicates the Fade to Black transition rate.

2. Recall Section

The **Recall Section** allows you to recall switcher memory registers. Refer to the section, “**Recalling Memory Registers**” on page 8-7 for complete instructions on memory recall operations.

- Press **RECALL** to initiate the process for recalling a memory register.





- When lit, **ATTRIB** indicates that the **Auto Recall** option in the **Personality** menu is enabled, and the switcher will recall the **Key Only** and **Effects Dissolve** settings as part of a memory recall operation.



- Press **UNDO** to *undo* the last memory recall operation, restoring the MLE to its state immediately prior to the recall. For example, if you had a “fly key” effect set up and then accidentally recalled a register that included a simple wipe, pressing **UNDO** would immediately restore the fly key effect.

UNDO turns on immediately after a memory recall has been performed, giving you *one chance* to undo the operation. However, the **UNDO** will remain on and allow the user up to 10 button presses after a recall, after which time the **UNDO** light turns off and the recall *can not be undone*. The fader bar does not affect the **UNDO** status.



- Enable **INCL DVE** to recall the DVE effect number (if any) that was stored in the selected memory register.

~ When lit, the next recall operation is “armed” to recall the DVE effect associated with your primary DVE. The button stays on until turned off manually.

~ When off, all data *except* for the DVE effect will be recalled. This function allows you to *retain* a selected DVE effect, yet recall a memory register.

Refer to the section, “**Recalling DVE Effects**” on page 9-9 for instructions.



- Enable **KEYS ONLY** to recall all memory register data *except* for the BKGD/PST crosspoints. This function allows you to retain (or hold) crosspoints, but change the keys that are layered on top.

Please note:

~ When **KEYS ONLY** is lit, the next recall operation is “armed” to perform a **Keys Only** function.

~ When off, the next recall operation recalls keys *and crosspoints*.



- Press **VTR CLIP** to recall VTR clips (segments) from a selected VTR that is connected to Synergy via RS-422 communications. The **VTR Remote Control Option** must be installed.

A VTR clip consists of two pieces of information: a physical VTR connected to the system and a timecode register. When a clip is recalled from memory, the VTR can be cued to the timecode and then rolled from the switcher panel itself. Refer to the section, “**VTR Clip Control**” on page 12-2 for details.



Note

Digicart (360 Systems) protocol has been added to the switcher. This function allows you to trigger audio clips from the Digicart in the same manner that you trigger VTR clips.



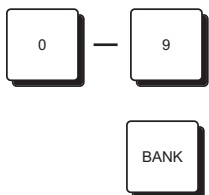
- Enable **EFF DISS** (effects dissolve) to change the way that effects are recalled. When the button is lit (armed) and an effect is recalled, the system first recalls all non-dissolving values such as crosspoint selection or wipe pattern selection, and then affects a dynamic change from the starting position to the recall position (or *slews*) of all dissolving *analog* functions such as border color, clip levels and pattern positions. This is done at a rate set by the **MLE TRANS RATE** in the recall memory.

Note that when **EFF DISS** is lit, the next recall is “armed” for an effects dissolve. When the register is recalled, the effect slews from its current settings to the recalled settings. When **EFF DISS** is off, the switcher cuts to the next register.

Refer to the section, “**Effects Dissolve**” on page 8-14 for instructions.

3. Keypad

The **Keypad** allows you to enter transition rates, fade rates, switcher memory registers, DVE register numbers and VTR clip numbers.



- Use buttons **0** through **9** for all numeric entry requirements, such as transition rates, fade rates, switcher memory registers, banks, DVE registers and VTR clips.
- Press **BANK** to select the bank of switcher memory registers that you want to store or recall. Ten banks of 10 registers each are provided, for a total of 100 registers:
 - ~ Bank 0 (registers **00** to **09**)
 - ~ Bank 1 (registers **10** to **19**)
 - ~ Bank 2 (registers **20** to **29**)
 - ~ Bank 3 (registers **30** to **39**)
 - ~ Bank 4 (registers **40** to **49**)
 - ~ Bank 5 (registers **50** to **59**)
 - ~ Bank 6 (registers **60** to **69**)
 - ~ Bank 7 (registers **70** to **79**)
 - ~ Bank 8 (registers **80** to **89**)
 - ~ Bank 9 (registers **90** to **99**)

Pressing **BANK** essentially advances the 10’s digit:

- ~ You can press **BANK** repeatedly, to advance by *one bank per press*. (For example, pressing **BANK**, **BANK** would change register **21** to **31**, then **41**.)
- ~ You can also press and *hold* **BANK**, then press the number of the desired bank to go *directly* to that bank. (For example, press **BANK**, **4** to select bank 4).

Refer to the section, “**Storing Memory Registers**” on page 8-5 and the section, “**Recalling Memory Registers**” on page 8-7 for memory function instructions.



- Press **ENTER** to *conclude* all numeric entry procedures such as storing memory registers, entering transition rates, fade rates, DVE registers and VTR clips. The button lights immediately when keypad buttons are pressed to indicate that an entry is pending. Note that **ENTER** is *not required* for memory recall functions — allowing you to quickly press just the bank and desired register — for rapid recalling of your setups.

4. Store Section

The **Store Section** allows you to store snapshots of the MLE and enter selected transition rates. Refer to the section, “**Storing Memory Registers**” on page 8-5 for complete *memory* instructions.



- Press **STORE** to initiate the process for storing a memory register.



- Press **FADE RATE** to change the switcher’s fade-to-black transition rate. Refer to the section, “**Changing Fade to Black Rates**” on page 4-14 for instructions.



- Press **MLE RATE** to change the transition rate performed in the **Transition** group. Refer to the section, “**Changing Auto Transition Rates**” on page 5-9 for details.



- Press **KEY RATE** to change transition rates for both MLE key groups. Refer to the section, “**Changing Key Rates**” on page 7-33 for details.

5. Remote Section

The **Remote Section** includes buttons for toggling remote control from external devices.



- Press **EDITOR** to toggle remote control from an external edit controller. The **Editor Interface Option** must be installed. When lit, remote control is enabled (but local operations can still be performed). When off, the switcher is entirely “local.” Refer to the section, “**Editor Interface**” on page 8-53 for details.



- Press **GPI** to toggle remote control from external GPI sources. The button controls GPI input pulses — output pulses are not affected. When the button is lit, remote GPI control is enabled. When the button is off, external GPI control is disabled. Refer to the section, “**GPI Control**” on page 8-31 for details.

Storing Memory Registers

This section provides instructions for storing memory registers. The Synergy switcher allows you to store 100 complete panel setups. When you store the switcher, you store everything — all transitions, rates, crosspoints, borders, keys, fader position, transition limits, clip levels, wash colors, fly key data, pattern multipliers, DVE registers, Effect Dissolve, Keys Only, Include DVE button settings, program and preview monitor outputs — everything.

In addition, *underlying data* is also stored. 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.

Use the following procedure to store switcher memory registers:

1. Set up the desired effect.
2. Press **STORE** in the **Global Memory System Group**.
3. On the keypad, enter the desired storage register. If required, select a memory register bank (the 10’s digit). Two methods are available:



Operating Tip

The next available unnamed memory register is now displayed in the **Global Memory System Group** if you have enabled the **Next Available Memory** option. You can save to this register or select another. Refer to Chapter 11 “**Additional Installation Setups**” in your *Synergy 1 Installation Guide* for setup instructions.

- Press **BANK** repeatedly, to advance by *one bank per press*.
- Press and *hold* **BANK**, then press the desired bank (**0** to **9**).

Once you select the bank, the number is displayed on the display (in the 10's digit column) and the **ENTER** button lights.



Note

If the desired bank is *already* selected, you need only select the register (from **0** to **9**).

- Select the register within the bank (the units or 1's digit), by pressing the number (from **0** to **9**).
4. Press **ENTER** to complete the procedure. The register is now stored in memory and the **ENTER** button light turns off.

This completes the procedure to store switcher memory registers.

Please note the following important points regarding memory register storage:

- If you wish to cancel the entire storage procedure at any point, simply turn off the **STORE** button by pressing a button in the **Recall** section or any of the buttons used for changing transition rates or **VTR CLIPS**.
- If you have enabled the **Next Available Memory** option in the **Personality Menu**:
 - ~ you can store a new memory to the next available register. The Synergy switcher will display the next unnamed available memory register in the **Global Memory System Group**.
 - ~ a popup message is displayed if there are no available registers in the selected memory bank.
- Storing a setup in a specific register overwrites any previous information that may have been contained in that register. There is no “undo” function with regard to storage.
- Refer to the section, “**Storing Registers with DVE Crosspoints**” on page 8-6 for important information regarding DVEs and **Aux Bus** assignments.

Storing Registers with DVE Crosspoints

When you store a memory register that includes a DVE effect, you *also* automatically store the DVE's associated **Aux Bus** crosspoints that are used to route input sources to the DVE. To store the DVE effect and its associated Aux bus crosspoints, the following important prerequisites must be fulfilled:

- A primary DVE must be connected to the switcher.
- The DVE effect number (that you wish to store) must be recalled immediately prior to storing the full effect to memory.
- The Aux bus must be assigned to the DVE.

Once stored, the effect and its Aux bus crosspoint can be recalled by pressing the **INCL DVE** button as part of the recall procedure. Refer to the section, “**Recalling Memory Registers**” on page 8-7 for instructions.

Please note the following important points:

- Whether you are using a “**1+0 DVE**” or a “**1+1 DVE**,” **Aux Bus** outputs 1 and 2 must be used to connect the primary DVE's video and key channels. Refer to the section “**Product Overview**” on page 1-6 for definitions of the above terms.

- Any **Aux Bus** can be associated with a secondary DVE, but you can not store secondary DVE effects.
- When a primary DVE effect is recalled, the Aux bus associations with *any device* will also be recalled. Aux buses not associated with devices (as determined during installation) will not be recalled under any circumstances.
- All Aux Bus-to-DVE associations are performed during switcher setup. Refer to Chapter 9, “**Additional Installation Setups**” of the *Synergy 1 Installation Guide* for more information.

Recalling Memory Registers

This section provides instructions for recalling memory registers.



Operating Tip

To avoid on air surprises, never recall registers to air. Always save your memories to the **PST** bus. Then, when you recall them, they can be transitioned to air.

The procedure to recall memory registers is very similar to the storage procedure, however, you have several options for the “type” of data that you wish to recall.

Use the following procedure to recall switcher memory registers:

1. Press **RECALL** in the **Recall Section** of the **Global Memory System Group**.
2. (*Optional*) Select the type of data that you want to include in the recall operation.
 - When lit, **ATTRIB** indicates that the **Auto Recall** option in the **Personality Menu** is enabled, and the switcher will recall the **Key Only**, **Incl DVE**, and **Effects Dissolve** settings as part of a memory recall operation.



Note

Key Only, **Incl DVE**, and **Effects Dissolve** settings are only recalled if the **Auto Recall** option is enabled. Refer to Chapter 9, “**Additional Installation Setups**” in the *Synergy 1 Installation Guide* for more information.

- Enable **INCL DVE** to recall the DVE effect number (if any) that was stored in the selected memory register.
 - Enable **KEYS ONLY** to recall all memory register information *except* for BKGD/PST bus crosspoints.
 - Enable **VTR CLIP** to recall VTR clip register data (consisting of physical VTRs and timecode registers) from the selected memory register. Refer to the section, “**Running VTR Clips**” on page 12-17 for more information. The **VTR Remote Control Option** must be installed.
 - Enable **EFF DISS** to recall all non-dissolving values first and then slew any stored analog functions from their current settings to the recalled settings.
3. On the keypad, enter the desired register to recall:
 - If required, select the bank. Two methods are available:
 - ~ Press **BANK** repeatedly, to advance by *one bank per press*.
 - ~ Press and *hold* **BANK**, then press the number of the desired bank (from **0** to **9**).

Once you select the bank, the number is displayed on the display (in the 10's digit column).



Note

If the desired bank is *already* selected, you need only select the register (from **0** to **9**) to immediately recall the setup.

- Select the register within the bank (the 1's digit) by pressing the number (from **0** to **9**). The number is displayed on the display and the effect is recalled. You *do not* need to press **ENTER**.

This completes the procedure to recall switcher memory registers.

Refer to the section, “**Recall Register Operating Tips**” on page 8-8 for important information regarding the recall procedure itself and the use of **UNDO**.

Recall Register Operating Tips

Please note the following important points regarding memory register recall:

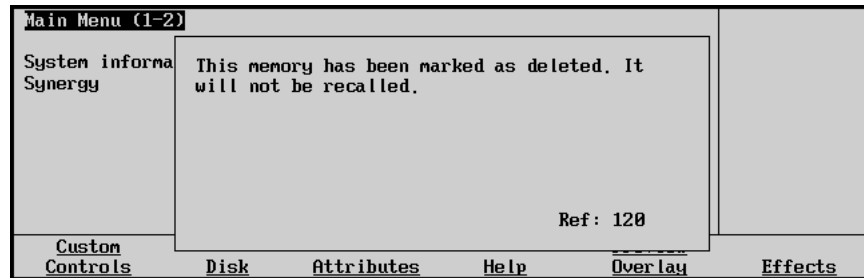
- If you accidentally recalled the wrong register, press **UNDO** to restore the MLE to its state immediately prior to the recall. The **UNDO** button turns on immediately after the recall has been performed, giving you *one chance* to undo the operation. However, the **UNDO** will remain on and allow the user up to 10 button presses after a recall, after which time the **UNDO** light turns off and the recall *can not be undone*. The fader bar does not affect the **UNDO** status.
- Recalling a register changes the displays in the **Global Memory System Group**.
- When a register is recalled that includes an off-limit **Fader**, the system brings the effect back as a *temporary* “**Transition Limit**.” You can use the **AUTO TRANS** button in the normal way to complete the transition or return the transition to its starting point. Please note:
 - ~ Any *actual* **Transition Limit** functions are recalled as originally programmed, whether or not the **TRANS LIMIT** button is lit.
 - ~ Similar to the actual **Transition Limit** function, with the *temporary* function note that “physical” and “electrical” **Fader** positions may not match when a register is recalled.
- If you recall a register and the display indicates **Memory # BAD** and simultaneously, all buttons in the affected keypads blink, it indicates that the memory location is corrupted. Press *any button* on the blinking keypad to clear the message and stop the blinking. The switcher will *not act* on this button press.
- 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 bus-and-hold feature applies to both key buses and DSK bus, as well as the background and preset buses.
- All empty version 16 memory registers are tagged as **Deleted**. Once you store a register to memory, the Synergy 1 Switcher automatically sets it to **Undeleted**, allowing you to recall it from the **Global Memory System Group**.



Note

By default, all empty pre-version 16 memory registers are tagged as **Undeleted**. Refer to the section, “**Deleting Memory Registers**” on page 8-13 information on deleting memory registers.

- If you attempt to recall a register that has been tagged with **Delete** in the **Memories Setup Menu** and the Recall Delete Memories feature is set to **No**, the following popup message is displayed:



Memory Deleted Popup Message

- ~ The popup message will remain displayed until you press another button on the switcher.
- ~ If you want to recall deleted memories, you must toggle the **Recall Delete Memories** feature to **Yes** in the **Personality Menu**. Refer to Chapter 11 “**Additional Installation Setups**” in the *Synergy Series Installation Guide* for information on enabling this feature.

System Reset Operating Tips

Remember that pressing **STORE** and **RECALL** simultaneously in the **Global Memory System Group** resets the entire switcher. Refer to the section, “**Resetting the System**” on page 2-10 for details.

Memory Lock

The switcher’s **Memory Lock** feature allows you to protect memory locations in active switcher memory (on-line memory). With a memory lock enabled, you can not overwrite the selected memory location until the location is unlocked.

There are two ways to perform a memory lock function:


- Memory Lock using the **Global Memory System Group**
- Memory Lock using the **Name Memories Menu**

Each function is described in the following subsections.

Memory Lock using the Global Memory Group

Use the following procedure to enable and disable Memory Locks:

1. In the **Global Memory Group**, press and *hold* the **STORE** button for one second. The **STORE** and **RECALL** buttons both light to indicate that the Memory Lock programming mode is active.
2. On the keypad, enter the bank and register that you want to lock (or unlock). Use standard procedures for selecting the memory bank and register. On the display of the **Global Memory Group** the lock status of the selected register is displayed. The following figure is a sample display:



Status: UNLOCKED
REG: 15 Memory 15

Global Memory Display - Unlocked Status

- **UNLOCKED** indicates that the selected register is unlocked. The register can be overwritten.
 - **LOCKED** indicates that the selected register is protected. The register can not be overwritten.
3. To toggle the lock status of the register, press the units digit of the register number *again* on the keypad. (i.e. if the register number is 59, press the 9 to lock it and then press the 9 again to unlock it)
 4. Repeat steps 2 and 3 to lock or unlock additional registers. Remember that the *first press* selects the register and displays its status, the *second press* (of the same register number) toggles the lock status.
 5. Press **BANK + ENTER**, while in the desired memory register bank, to lock all memories in that bank. For example, with a memory register in bank 0 selected, pressing **BANK + ENTER** will lock all memory registers from (00) to (09).



Important

An entire bank can only be **LOCKED** using this method. Individual memory registers can be toggled **LOCKED** or **UNLOCKED**. Access the **Attributes - Name Memories Menu** to set an entire bank to **UNLOCKED**.

6. Press **STORE** to exit the Memory Lock programming mode.

This completes the procedure to enable and disable Memory Locks using the Global Memory Group.

Please note the following important points regarding the Memory Lock feature:

- If you attempt to store into a locked register, the keypad flashes and the keypad display indicates **Memory [n] LOCKED**. Press any button on the keypad to stop the flashing.
- A locked memory register will be *overwritten* when a register is recalled from a floppy disk or a USB key.
- When you store and recall from a floppy disk or USB key, the Memory Lock attribute is stored and recalled along with the register and its contents.
- When you recall an individual memory from a floppy disk or a USB key to a locked memory location on the switcher, you are prompted to cancel or proceed.

Memory Lock using the Name Memories Menu

The **Name Memories Menu** is used to name any of the 100 available memory registers, and change the Lock/Unlock status of each register or bank of registers.

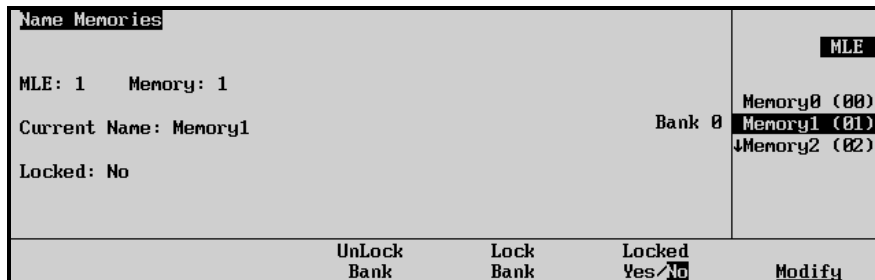
Use the following procedure to enable and disable Memory Locks:

1. Navigate to the **Attributes Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**)
 - **Attributes** (to display the **Attributes Menu**)



Attributes Menu

2. Press **Memories Setup** to display the **Name Memories Menu**.



Name Memories Menu

The **Register Status Display** (in the main area) shows the current register, the current name and the register's **Lock/Unlock** status.

- Use the middle **Bank** knob to select the register that you wish to change.
3. Toggle the **Locked Yes/No** softkey as follows:

- **Yes** — Select this option to lock the selected register.
- **No** — Select this option to unlocked the selected register.

The selected mode is displayed in the **Register Status Display**.

4. Repeat steps 3 and 4 to change additional registers.
5. Press **Lock Bank** to lock all the memories in the currently selected bank.

For example, when (00) is selected, pressing **Lock Bank** will lock all registers from (00) to (09) and **Yes** will be highlighted under **Locked** for each of the registers within the bank. Pressing **Unlock Bank** will remove the lock from the registers within the bank.

This completes the procedure to enable and disable Memory Locks using the Names Memory Menu.

Naming Memory Registers

The **Name Memories Menu** allows you to name (or rename) any of the 100 available memory registers.

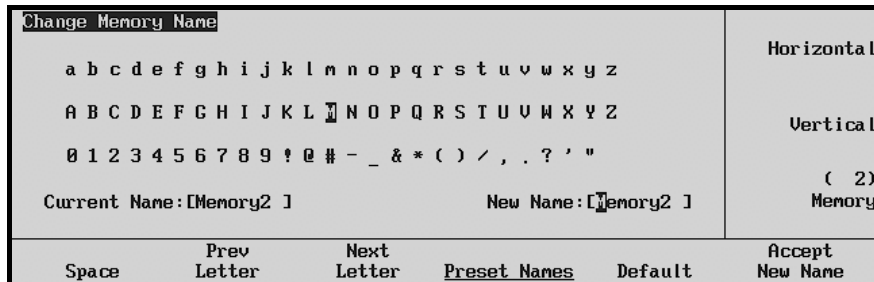
Use the following procedure to name a memory register:

1. Navigate to the **Name Memories Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**).
 - **Attributes** (to display the **Attributes Menu**).
 - **Memories Setup** (to display the **Name Memories Menu**).



Name Memories Menu

2. Use the middle **Bank** knob to select the register that you wish to change.
3. Press **Modify** to display the **Change Memory Name Menu**.



Change Memory Name Menu

4. Enter (or edit) the desired register name as follows:
 - Use the bottom **Memory** knob to select the desired register (**0** through **99**). As you scroll through the registers, the **Current Name** field tracks each name.
 - Use the top **Horizontal** knob to move the highlight horizontally.
 - Use the middle **Vertical** knob to move the highlight vertically.
 - Use the **Space**, **Prev Letter**, **Next Letter** and **Default** softkeys to edit the name as require.



Operating Tip

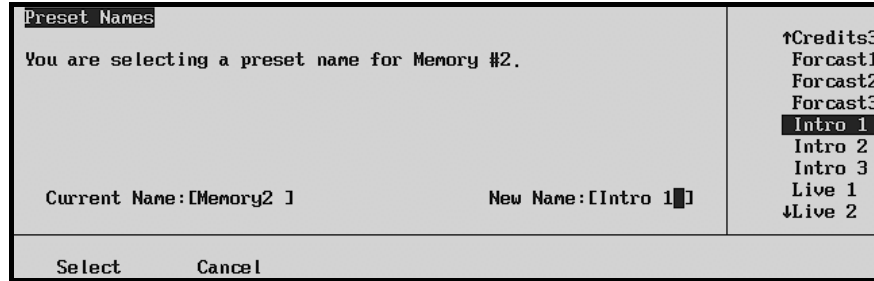
A Standard PS/2 keyboard can be used to perform the same actions as pressing or rotating the **System Control** buttons and knobs. Refer to the section, “Using a Keyboard” on page 2-8 for details.



Important

Do NOT place anything on your keyboard or place your keyboard in a position where any of the keys could be accidentally pressed. This could result in the Switcher acting unpredictably.

5. If desired, press **Preset Names** to select from a list of pre-programmed register names. The **Preset Names Menu** is displayed.



Preset Names Menu

6. Select a Preset Name as follows:
 - Use the middle **Knob** to scroll the list of names.
 - When the desired name is displayed, press **Select** to return to the **Change Memory Name Menu**.
7. Press **Accept New Name** to conclude the process.
8. Press **UP ONE** to return to the **Name Memories Menu**, where all new (or edited) memory names appear.
9. Repeat steps 2 through 7 to name additional registers.



Note

All register names appear in the individual **Memory Register Displays** along with the register number.

This completes the procedure to name a memory register.

Deleting Memory Registers

The **Delete Memory** option allows you to delete a memory register, making it unavailable to recall from the **Global Memory System Group**. This can be a temporary setting if you enable the Recall Deleted Memories feature in the **Personality Menu**. Once enabled, the Recall Deleted Memories feature enables you to recall any memory register including those tagged as **Deleted**. Refer to Chapter 9, “**Additional Installation Setups**” in the *Synergy 1 Installation Guide* for information on enabling the Recall Deleted Memories feature.

All empty version 16 memory registers are tagged as **Deleted**. Once you store a register to memory, the Synergy 1 Switcher automatically sets it to **Undeleted**, allowing you to recall it from the **Global Memory System Group**.

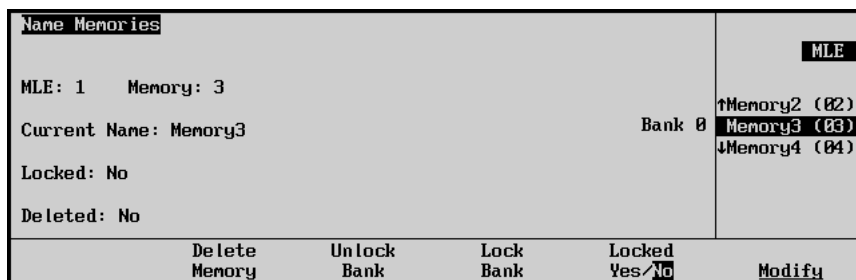


Note

By default, all empty pre-version 16 memory registers are tagged as **Undeleted**.

Use the following procedure to delete a memory register:

1. Navigate to the **Name Memories Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**).
 - **Attributes** (to display the **Attributes Menu**).
 - **Memories Setup** (to display the **Name Memories Menu**).



Name Memories Menu

2. Select the memory register to delete as follows:
 - Use the top **MLE** knob to select the MLE for the register that you want to delete.
 - Use the middle **Bank** knob to select the memory register.
3. Press **Delete Memory** to delete the selected memory register.

The **Deleted:** field in the Main Area of the menu will change from **No** to **Yes**.

This concludes the procedure to delete a memory register.

Effects Dissolve

The **EFF DISS (Effects Dissolve)** button allows 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 whereby the switcher interpolates between two different settings (a source effect and a destination effect) at a given rate. Please note:

- Only *analog* functions (for example, border color, clip levels and pattern positions) slew between a current setting and a new recalled setting. However, when the **EFF DISS** button is armed and the recall function is performed, the Synergy system *first* recalls all non-dissolving values *prior* to beginning the effects dissolve itself.

This means that everything that is *not* an analog value (for example, 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. By *presetting* the switcher with the correct backgrounds and priorities (immediately prior to performing the effects dissolve), this feature guarantees the correct ending position for your effects.

- If the **EFF DISS** button is off, recalled effects *cut* between registers.
- 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 wipe that is positioned in the upper left of the screen. It is stored in register 1 with a transition rate of 10 frames.
 - ~ Effect #2 is a box wipe that is positioned in the upper right of the screen. It is stored in 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 to the upper right 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 wipe 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.

Use the following procedure to perform an **Effects Dissolve**:

1. Program an effect with the intention of performing an **Effects Dissolve** — that is, a *change* between two different analog settings (for example, a wipe in two positions, a border with two unique colors, two different “fly key” positions).
2. Enter the desired transition rate. Refer to the section, “**Changing Auto Transition Rates**” on page 5-9 for instructions.
3. Store the effect in the desired memory register. Refer to the section, “**Storing Memory Registers**” on page 8-5 for instructions. Remember that the transition rate determines the duration of the **Effects Dissolve** — how long it takes to slew to *this setup*.
4. Repeat steps 1 through 3 for the second effect (remember that two setups are required to perform an effects dissolve — essentially, a *source* effect and a *destination* effect).
5. To perform the **Effects Dissolve**:
 - Recall the first setup from memory. Refer to the section, “**Recalling Memory Registers**” on page 8-7 for details.
 - Press **EFF DISS**.
 - Recall the second setup from memory.

The system *first* recalls all non-dissolving values (with a cut) and then slews all analog values.
6. Repeat step 5 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 **EFF DISS** button and the way that the effect was programmed.

This completes the procedure to perform an **Effects Dissolve**.

Working with Storage Devices

This section provides instructions for storing and recalling Synergy memory registers to a floppy disk or USB key. The following topics are discussed:

- Notes on Using a USB Key
- Saving Registers
- Saving Individual Memory Registers
- Saving Individual Custom Control Macros
- Saving Individual S&T 3D Sequences
- Recalling Registers
- Recalling Individual Memory Registers
- Recalling Individual Custom Control Macros
- Recalling Individual S&T 3D Sequences

Each topic is explained in detail below.



Note

You *cannot* store to or recall from a floppy disk or USB key, while a custom control function is playing.

Notes on Using a USB Key

This option replaces the floppy disk drive on the control panel, and supports industry standard USB keys. Once the option is installed, you can store and recall complete switcher setups including memory functions, switcher personalities, installation parameters, and more, to a USB key.



Important

A decrease in performance will result from storing more than one set of Synergy files on your USB key. One set of Synergy files should not comprise more than half of the available memory on your USB key.

Consider the following notes when using a USB key:

- Write protect should be disabled on any USB key.
- All Synergy files must be stored in the root directory of the USB key.
- Only DOS or Windows™ partitions in the USB root directory are supported.
- You can use a PC to transfer files between floppy disks and a USB key. Ensure that the switcher files are set in the root directory of the USB key before attempting to save and recall switcher setups.
- You must wait 5 seconds after inserting the USB key into the USB port before you can save or recall registers to it.
- A delay can be expected when saving files to a USB key with limited memory space.
- You may receive an “**USB Upgrade Failed**” error message when the Synergy control panel is powered on. Should you receive this error message, contact Ross Video Technical Support for instructions on how to correct the error.

Refer to Chapter 10, “**Completing Setup**” in the *Synergy 1 Installation Guide* to learn about the types of storage errors and methods to correct them.

Saving Registers

For archive purposes and simply to keep safe backup copies of your valuable switcher setups, it is recommended that you store your setups and registers to a storage device, such as a floppy disk or USB key. One storage device is capable of storing all categories of Synergy setup registers:

- **Memory Registers** are stored in the file **MEMORY.SYN**.
- **S&T 3D Memory Registers** are stored in the file **ST3DMEM.SYN**.
- **Custom Control Registers** are stored in the file **CUSTCTRL.SYN**.
- **Personality Registers** are stored in the file **PERS.SYN**.
- **VTR Clip Registers** are stored in the file **VTR.SYN**.
- **Installation Registers** are stored in the file **INSTALL.SYN**.
- **3D Sequence Registers** are stored in the file **ST3DSEQ.SYN**.
- **All Individual Memories Registers** are stored in the files **STMEM##.SYN**, which identifies a Squeeze & Tease 3D memory, and **MEM##.SYN**, which identifies a regular switcher snapshot. Note that **##** represents the number of the memory register.

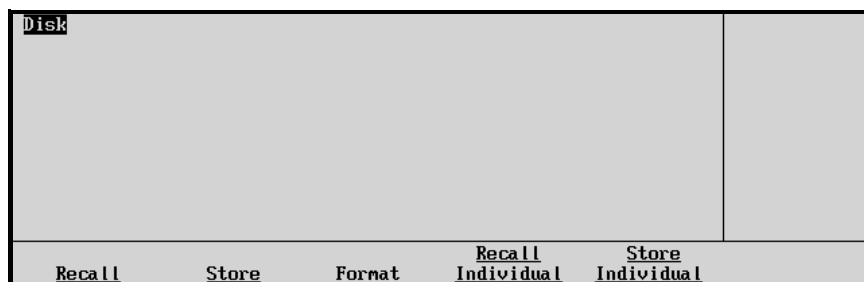


Note

Although one storage device is capable of storing all categories of Synergy registers, there is a physical limitation of 224 files in the root directory. Please keep this in mind if you are storing individual memories, custom controls and S&T 3D sequences to a storage device. Synergy disk 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 PC.

Use the following procedure to save registers to a storage device:

1. Navigate to the **Disk Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**)
 - Press **Disk** (to display the **Disk Menu**)



Disk Menu

2. Insert a storage device to save the registers to as follows:
 - Insert a pre-formatted 1.44 MB high-density floppy disk (or a disk that already contains memory registers) into the Synergy switcher's floppy disk drive.



Note

If the floppy disk is not formatted (or if you wish to completely erase all data from the disk), press **Format**. Follow the instructions on the display to format the floppy disk.

OR

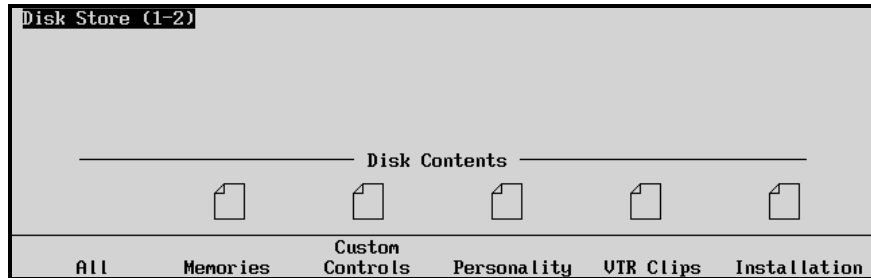
- Insert a USB key into the USB port of the Synergy switcher. You must wait 5 seconds after inserting the USB key into the USB port before you can save to it.



Note

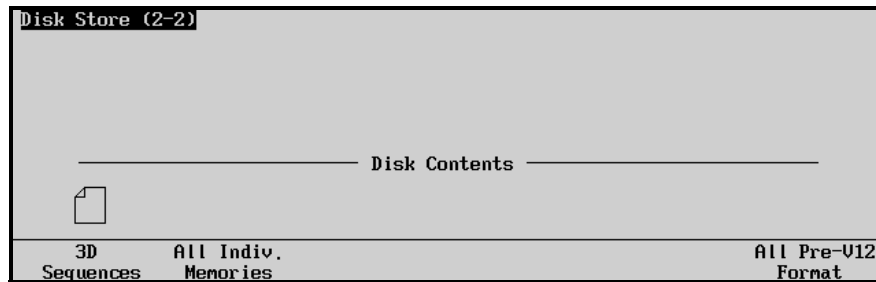
You must have the **USB Removable Media Drive** option installed in order to save registers to a USB key.

3. Press **Store** to display the **Disk Store Menu 1-2**.



Disk Store Menu 1-2

4. Press **MORE** to display the **Disk Store Menu 2-2**.



Disk Store Menu 2-2

If a **File Icon** appears above a softkey label (such as **3D Sequences**), the storage device contains a file of that type.



Note

If you select a category that already contains a file (as indicated by the **File Icon**), the category will be overwritten.

5. Select the category of registers that you want to store as follows:
 - Press **All** to store all categories of registers.
 - Press **Memories** to store only **Memory Registers**.
 - Press **Custom Controls** to store only **Custom Control Registers**.
 - Press **Personality** to store only **Personality Registers**.
 - Press **VTR Clips** to store only **VTR Clip Registers**.
 - Press **Installation** to store only **Installation Registers**.
 - Press **3D Sequences** to store only **3D Sequence Registers**.

- Press **All Indiv. Memories** to store only **Individual Memory Registers**.



Caution

Do NOT remove the floppy disk or USB key from the switcher before the LED on the disk drive or USB port goes out. Doing so may destroy the data on your floppy disk or USB key, as well as the data on the next one you insert into the switcher.



Important

Pressing **All Pre-v12 Format** stores all of the above registers to a storage device in a format that is compatible with switcher software versions earlier than version 12. Therefore, if you are downgrading your switcher software from version 12 to an earlier version, use this method to store all your switcher configurations to disk. Note that a disk created in this manner can still be loaded into version 12 or newer software, but it will load significantly slower than a disk that was saved using the **All** softkey.

If you have the **USB Removable Media Drive** option installed, you will need to transfer the pre-version 12 files onto floppy disks using a PC before downgrading your switcher.

6. Eject the storage device from the switcher.
7. Label the storage device and store it in a safe place.

This completes the procedure for saving your registers.

Saving Individual Memory Registers

Use the following procedure to save individual Memory Registers to a storage device:

1. Navigate to the **Disk Store Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**)
 - **Disk** (to display the **Disk Menu**)
 - **Store Individual** (to display the **Disk Store Menu**)

Disk Store Individual Items			To disk:
From switcher:			
Memory Register	CustCtrl Macro	S&T 3D Sequence	Store item

Disk Store Individual Items Menu

2. Insert a storage device to save the registers to as follows:
 - Insert a pre-formatted 1.44 MB high-density floppy disk (or a disk that already contains memory registers) into the floppy disk drive of the Synergy switcher.

OR

- Insert a USB key into the USB port of the Synergy Switcher. You must wait 5 seconds after inserting the USB key into the USB port before you can save to it



Note

You must have the **USB Removable Media Drive** option installed in order to save memory registers to a USB key.

3. Select the memory that you wish to save as follows:
 - Press **Memory Register**.
 - Use the top **To disk** knob to select the location to save the file.
 - Use the middle **From switcher** knob to select the current switcher memory location that you wish to save.

The **Memory Legend** indicates the meaning of the icons that appear by the files selected.

Disk Store Individual Items			↑ Men 01
Individual Squeeze & Tease 3D Memories WILL NOT store or recall with regular Memories.			Men 02
Memory Legend:			↓ Men 03
* = Memory is used			↑Memory1 (01)
☐ = Memory file exists on disk			Memory2 (02)
Memory Register	CustCtrl Macro	S&T 3D Sequence	↓Memory3 (03)
			Store item

Disk Store Individual Items Menu

4. Press the **Store Item** softkey to save the memory register file to your storage device.
 - When the file is saved, **Disk Store Individual Items Menu** is displayed, with a file icon beside the disk location where the memory register is saved.

Disk Store Individual Items			↑ Men 01
Individual Squeeze & Tease 3D Memories WILL NOT store or recall with regular Memories.			☐Men 02
Memory Legend:			↓ Men 03
* = Memory is used			↑Memory1 (01)
☐ = Memory file exists on disk			Memory2 (02)
Memory Register	CustCtrl Macro	S&T 3D Sequence	↓Memory3 (03)
			Store item

Disk Store Individual Items Menu



Caution

Do NOT remove the floppy disk or USB key from the switcher before the LED on the disk drive or USB port goes out. Doing so may destroy the data on your floppy disk or USB key, as well as the data on the next one you insert into the switcher.

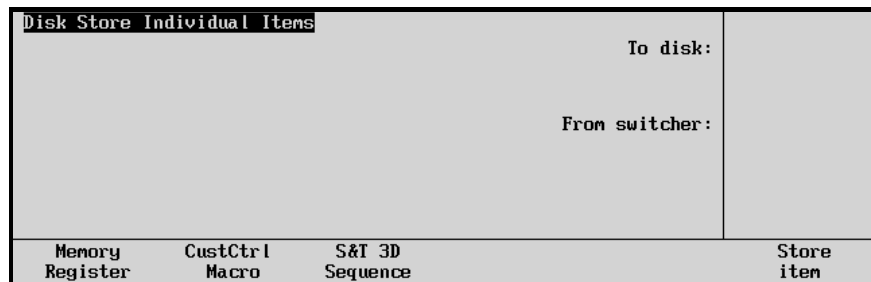
5. Eject the storage device from the switcher.
6. Label the storage device and store it in a safe place.

This completes the procedure for storing your individual memories to a storage device.

Saving Individual Custom Control Macros

Use the following procedure to copy and save individual custom control macros from the switcher to a storage device:

1. Navigate to the **Disk Store Individual Items Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**)
 - **Disk** (to display the **Disk Menu**)
 - **Store Individual** (to display the **Disk Store Individual Items Menu**)



Disk Store Individual Items Menu

2. Insert a storage device to save individual custom control macros as follows:
 - Insert a pre-formatted 1.44 MB high-density floppy disk (or a disk that already contains custom controls) into the floppy disk drive of the Synergy switcher.

OR

 - Insert a USB key into the USB port of the Synergy Switcher. You must wait 5 seconds after inserting the USB key into the USB port before you can save to it.



Note

You must have the **USB Removable Media Drive** option installed in order to save memory registers to a USB key.

3. Select the current switcher custom control that you wish to save as follows:
 - Press **CustCtrl Macro**.
 - Use the top **To disk** knob to select the location to save the file.
 - Use the middle **From switcher** knob to select the custom control you wish to save.

The **Custom Control Legend** indicates the meaning of the icons that appear by the files selected.

Disk Store Individual Items			To disk: <input type="checkbox"/> Bnk 1 Btn 01 <input type="checkbox"/> Bnk 1 Btn 02 <input checked="" type="checkbox"/> Bnk 1 Btn 03
Custom Control Legend: # = normal custom control button			From switcher: <input type="checkbox"/> Custom01 1#01 <input checked="" type="checkbox"/> Custom02 1#02 <input checked="" type="checkbox"/> Custom03 1#03
Memory Register	CustCtrl Macro	S&T 3D Sequence	Store item

Disk Store Individual Items Menu

4. Press the **Store Item** softkey to store the custom control macro file to a storage device.
 - When the file is saved, the **Disk Store Individual Items Menu** is displayed with a file icon beside the location where the macro is saved.

Disk Store Individual Items			To disk: <input checked="" type="checkbox"/> Bnk 1 Btn 01 <input type="checkbox"/> Bnk 1 Btn 02 <input type="checkbox"/> Bnk 1 Btn 03
Custom Control Legend: # = normal custom control button <input checked="" type="checkbox"/> = custom control exists on disk			From switcher: <input type="checkbox"/> Custom01 1#01 <input checked="" type="checkbox"/> Custom01 1#02 <input checked="" type="checkbox"/> Custom03 1#03
Memory Register	CustCtrl Macro	S&T 3D Sequence	Store item

Disk Store Individual Items Menu



Caution

Do NOT remove the floppy disk or USB key from the switcher before the LED on the disk drive or USB port goes out. Doing so may destroy the data on your floppy disk or USB key, as well as the data on the next one you insert into the switcher.

5. Eject the storage device from the switcher.
6. Label the storage device and store it in a safe place.

This completes the procedure for saving your individual macros to a storage device.

Saving Individual S&T 3D Sequences

Use this procedure to copy and save individual S&T 3D sequences from the switcher to a storage device:

1. Navigate to the **Disk Store Individual Items Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**).
 - **Disk** (to display the **Disk Menu**).
 - **Store Individual** (to display the **Disk Store Individual Items Menu**).



Disk Store Individual Items Menu

2. Insert a storage device to save individual S&T 3D sequences as follows:
 - Insert a pre-formatted 1.44 MB high-density floppy disk (or a disk that already contains S&T 3D sequences) into the floppy disk drive of the Synergy switcher.

OR

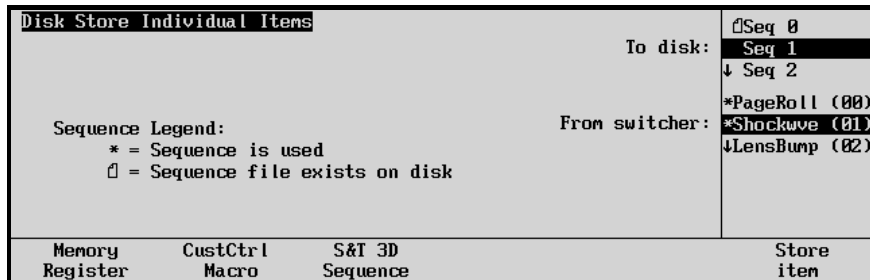
- Insert a USB key into the USB port of the Synergy Switcher. You must wait 5 seconds after inserting the USB key into the USB port before you can save sequences to it.



Note

You must have the **USB Removable Media Drive** option installed in order to use a USB key to save S&T 3D sequences.

3. Press **S&T 3D Sequence** to display the **Disk Store Individual Items Menu** with the available S&T 3D sequences listed.



Disk Store Individual Items — S&T 3D Sequence Menu

4. Select the sequence you wish to save as follows:
 - Use the top **To disk** knob, select the disk or USB location to save the file.
 - Use the middle **From switcher** knob, select the current S&T 3D Sequence location that you wish to save.

The **Sequence Legend** indicates the meaning of the icons that appear by the files selected.

5. Press the **Store Item** softkey to store the S&T 3D Sequence file.
 - When the file is saved, the **Disk Store Individual Items Menu** is displayed with a file icon beside the location where the memory register is saved.

Disk Store Individual Items			
			␣Seq 0
		To disk:	␣Seq 1
			↓ Seq 2
Sequence Legend:		From switcher:	*PageRoll (00)
* = Sequence is used			*Shockwve (01)
␣ = Sequence file exists on disk			↓LensBump (02)
Memory Register	CustCtrl Macro	S&T 3D Sequence	Store item

Disk Store Individual Items Menu



Caution

Do NOT remove the floppy disk or USB key from the switcher before the LED on the disk drive or USB port goes out. Doing so may destroy the data on your floppy disk or USB key, as well as the data on the next one you insert into the switcher.

6. Eject the storage device from the switcher.
7. Label the storage device and store it in a safe place.

This completes the procedure for saving your individual sequences to a storage device.

Recalling Registers

The Synergy system allows you to recall *all categories* of registers from a floppy disk or USB key, or you can simply recall the desired *individual* category.

Use the following procedure to recall registers from a storage device:

1. If you are going to recall *any* set of registers (for example, memory or custom control), ensure that your *current* on-line set of registers are saved to a backup. If you have *not* created a backup, they will be *overwritten* when you recall files from the floppy disk or USB key. Refer to the section “**Saving Registers**” on page 8-17 for details.
2. Navigate to the **Disk Recall Menu 1-2** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**)
 - **DISK** (to display the **Disk Menu**)
3. Insert the storage device to recall the register from as follows:
 - Insert the floppy disk that contains the registers into the floppy disk drive of the Synergy switcher.

OR

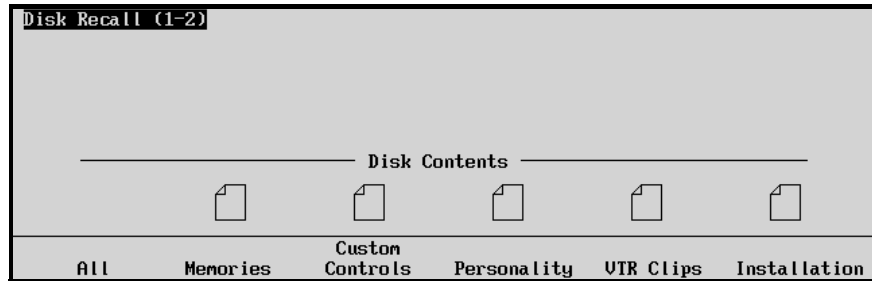
- Insert a USB key that contains the registers into the USB port of the Synergy switcher. You must wait 5 seconds after inserting the USB key into the USB port before you can recall registers from it.



Note

You must have the **USB Removable Media Drive** option installed in order to use a USB key to recall memory registers.

- Press **Recall** to display the **Disk Recall Menu 1-2**.



Disk Recall Menu 1-2

If a **File Icon** is displayed above a softkey label (such as **Memories**), the storage device contains a file of that type.

- Select the category of registers that you want to recall as follows:
 - Press **All** to recall all categories of registers.
 - Press **Memories** to recall only **Memory Registers**.
 - Press **Custom Controls** to recall only **Custom Control Registers**.
 - Press **Personality** to recall only **Personality Registers**.
 - Press **VTR Clips** to recall only **VTR Clip Registers**.
 - Press **Installation** to recall only **Installation Registers**.
 - Press **MORE** to display the **Disk Recall Menu 2-2**.



Disk Recall Menu 2-2

- ~ Press **3D Sequences** to recall only **3D Sequence Registers**.



Caution

Do NOT remove the floppy disk or USB key from the switcher before the LED on the disk drive or USB port goes out. Doing so may destroy the data on your floppy disk or USB key, as well as the data on the next one you insert into the switcher.

- Eject the storage device from the switcher.

This completes the procedure to recall registers from a storage device.

Recalling Individual Memory Registers

Use the following procedure to recall individual Memory Registers to the switcher:



Note

Only registers stored with the **Store Individual** method will be available to recall individually. Refer to the section “**Saving Individual Memory Registers**” on page 8-19 for more information.

1. If you are going to recall *any* set of registers (for example, memory or custom control), ensure that your *current* on-line set of registers are saved to a backup. If you have *not* created a backup, they will be *overwritten* when you recall files from the floppy disk or USB key. Refer to the section “**Saving Registers**” on page 8-17 for details.
2. Navigate to the **Disk Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**)
 - **DISK** (to display the **Disk Menu**)
3. Insert the storage device to recall the register from as follows:
 - Insert the floppy disk that contains the registers into the floppy disk drive of the Synergy switcher.

OR

- Insert a USB key that contains the registers into the USB port of the Synergy switcher. You must wait 5 seconds after inserting the USB key into the USB port before you can recall a register from it.



Note

You must have the **USB Removable Media Drive** option installed in order to use a USB key to recall memory registers.

4. Press **Recall Individual** to display the **Disk Recall Individual Items Menu**.

Disk Recall Individual Items			
	From disk:		
	To switcher:		
Memory Register	CustCtrl Macro	S&T 3D Sequence	Recall item

Disk Recall Individual Items Menu

5. Press **Memory Register** to display the **Recall Memory Register Menu**.

Disk Recall Individual Items			
Individual Squeeze & Tease 3D Memories WILL NOT store or recall with regular Memories.		From disk:	☐Men 00
Memory Legend: * = Memory is used ☐ = Memory file exists on disk		To switcher:	☐Men 02
			↑Memory1 (01)
			Memory2 (02)
			↓Memory3 (03)
Memory Register	CustCtrl Macro	S&T 3D Sequence	Recall item

Disk Recall Individual Items Menu — Recall Memory Register

6. Select the memory register to recall as follows:
 - Use the top **From disk** knob to select the location of the file on the floppy disk or USB key.
 - Use the middle **To switcher** knob to select the switcher location to recall the file to.

The **Memory Legend** indicates the meaning of the icons that appear by the files selected.

7. Press **Recall Item** to load the saved information to the switcher.



Note

When you recall an individual memory from a floppy disk or USB key to a locked memory location on the switcher, you are prompted to cancel or proceed.

When the file is saved, the **Recall Memory Register Menu** is displayed with a file icon beside the location where the macro is saved.

Memory Register	CustCtrl Macro	S&T 3D Sequence	Recall item
Disk Recall Individual Items Individual Squeeze & Tease 3D Memories WILL NOT store or recall with regular Memories. Memory Legend: * = Memory is used □ = Memory file exists on disk			From disk: □Men 00 □Men 02 To switcher: ↑Memory1 (01) *Memory2 (02) ↓Memory3 (03)

Disk Recall Individual items Menu



Caution

Do NOT remove the floppy disk or USB key from the switcher before the LED on the disk drive or USB port goes out. Doing so may destroy the data on your floppy disk or USB key, as well as the data on the next one you insert into the switcher.

8. Eject the storage device from the switcher.

This completes the procedure for recalling your individual memory registers.

Recalling Individual Custom Control Macros



Note

Only macros stored with the Store Individual method will be available to recall individually. Refer to the section “**Saving Individual Custom Control Macros**” on page 8-21 for details.

Use the following procedure to recall individual custom control macros to the switcher:

1. If you are going to recall *any* set of registers (for example, memory or custom control), ensure that your *current* on-line set of registers are saved to a backup. If you have *not* created a backup, they will be *overwritten* when you recall files from the floppy disk or USB key. Refer to the section “**Saving Registers**” on page 8-17 for details.

2. Navigate to the **Disk Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**)
 - **DISK** (to display the **Disk Menu**)
3. Insert the storage device to recall the macros from as follows:
 - Insert the floppy disk that contains custom control macros into the floppy disk drive of the Synergy switcher.

OR

- Insert a USB key that contains the custom control macros into the USB port of the Synergy switcher. You must wait 5 seconds after inserting the USB key into the USB port before you can recall macros from it.



Note

You must have the **USB Removable Media Drive** option installed in order to use a USB key to recall custom control macros.

4. Press **Recall Individual** to display the **Disk Recall Individual Items Menu**.

Disk Recall Individual Items			
From disk:			
To switcher:			
Memory Register	CustCtrl Macro	S&T 3D Sequence	Recall item

Disk Recall Individual Items Menu

5. Select the custom control macro to recall as follows:
 - Press **CustCtrl Macro**.
 - Use the middle **To switcher** knob to select the switcher location to place the file.
 - Use the top **From disk** knob to select the location of the file on the storage device.

The **Custom Control Legend** indicates the meaning of the icons that are displayed beside the files selected.

Disk Recall Individual Items			
From disk:			<div style="border: 1px solid black; padding: 2px;"> ⏏Bnk 1 Btn 01 ⏏Bnk 1 Btn 02 </div>
To switcher:			<div style="border: 1px solid black; padding: 2px;"> Custom01 1#01 Custom02 1#02 ↓Custom03 1#03 </div>
Custom Control Legend: # = normal custom control button ⏏ = custom control exists on disk			
Memory Register	CustCtrl Macro	S&T 3D Sequence	Recall item

Disk Recall Individual Items Menu

6. Press the **Recall Item** softkey to store the register or macro file to the selected location on the switcher.
 - When the file is loaded, the **Disk Recall Individual Items Menu** is displayed with an icon beside the switcher location.



Caution

Do NOT remove the floppy disk or USB key from the switcher before the LED on the disk drive or USB port goes out. Doing so may destroy the data on your floppy disk or USB key, as well as the data on the next one you insert into the switcher.

7. Eject the storage device from the switcher.

This completes the procedure for recalling your individual custom control macros to the Synergy switcher.

Recalling Individual S&T 3D Sequences



Note

Only sequences stored with the Store Individual method will be available to recall individually.

Sequences recalled from disks must have the naming convention of **STSEQxx.SEQ**. While it is recommended that you rename sequences (on a PC) with more mnemonic titles than this default style for storage purposes, in order to recall them to the switcher from a floppy disk or USB key, they must be renamed again to have the Ross Video convention. Keep a printed list of the file names for your records.

Use the following procedure to recall individual S&T 3D sequences from a storage device to the switcher:

1. If you are going to recall *any* set of registers (for example, memory or custom control), ensure that your *current* on-line set of registers are saved to a backup. If you have *not* created a backup, they will be *overwritten* when you recall files from the floppy disk or USB key. Refer to the section “**Saving Registers**” on page 8-17 for details.
2. Navigate to the **Disk Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**)
 - **DISK** (to display the **Disk Menu**)
3. Insert the storage device to recall the S&T 3D sequences from as follows:
 - Insert the floppy disk that contains sequences into the floppy disk drive of the Synergy switcher.

OR

 - Insert a USB key that contains the sequences into the USB port of the Synergy switcher. You must wait 5 seconds after inserting the USB key into the USB port before you can recall sequences from it.



Note

You must have the **USB Removable Media Drive** option installed in order to use a USB key to recall S&T 3D sequences.

4. Press **Recall Individual** to display the **Disk Recall Individual Items Menu**.

Disk Recall Individual Items			
			From disk:
			To switcher:
Memory Register	CustCtrl Macro	S&T 3D Sequence	Recall item

Disk Recall Individual Items Menu

5. Select the S&T 3D sequence to recall as follows:
 - Press **S&T 3D Sequence**.
 - Use the top **From disk** knob to select the location of the file on the floppy disk or USB key.
 - Use the middle **To switcher** knob to select the switcher location to recall the file to. The **Sequence Legend** indicates the meaning of the icons that appear by the files selected.

Disk Recall Individual Items			
			From disk: □Seq 0
			□Seq 1
Sequence Legend: * = Sequence is used □ = Sequence file exists on disk			To switcher: *PageRoll (00)
			*Shockwve (01)
			↓LensBump (02)
Memory Register	CustCtrl Macro	S&T 3D Sequence	Recall item

Disk Recall Individual Items Menu

6. Press the **Recall Item** softkey to recall the sequence to the Synergy switcher. When the file is saved, the **Disk Recall Individual Items Menu** is displayed, with a file icon beside the disk location where the macro is saved.

Disk Recall Individual Items			
			From disk: □Seq 0
			□Seq 1
Sequence Legend: * = Sequence is used □ = Sequence file exists on disk			To switcher: *PageRoll (00)
			*Shockwve (01)
			↓LensBump (02)
Memory Register	CustCtrl Macro	S&T 3D Sequence	Recall item

Disk Recall Individual Items Menu



Caution

Do NOT remove the floppy disk or USB key from the switcher before the LED on the disk drive or USB port goes out. Doing so may destroy the data on your floppy disk or USB key, as well as the data on the next one you insert into the switcher.

7. Eject the storage device from the switcher.

This completes the procedure for recalling your individual sequences to the Synergy switcher.

GPI Control

The Synergy switcher's GPI function provides 12 input ports and 12 output ports, each of which can be programmed for specific functions.

- The **GPI Input** function allows you to associate a GPI input pulse with an *area* and *button* on the switcher that you would like to trigger, when that specific pulse is received from an external device (for example, Auto Trans).
- The **GPI Output** function allows you to set up triggers that can be used to activate functions on remote devices (for example, Play Forward on a VTR or Advance to Next Still on a Still Store).

GPI Control — Area and Button



Note

Consult with your facility engineer as required. Verify the switcher locations and GPI assignments of your **GPI Input Worksheet**.

Use the following procedure to set up and trigger your GPI input functions:

1. Ensure that GPI lines are properly connected from the desired external devices to the Synergy switcher. Please consult with your facility engineer as required.
2. Ensure that each GPI line is properly set up using the **GPI Setup Menu**. Setup parameters include GPI number, trigger location on the switcher, transition type and polarity.

Refer to Chapter 9, “**Additional Installation Setups**” of the *Synergy 1 Installation Guide* for further instructions.

3. If you want to change a switcher location for a particular GPI input pulse, navigate to the **GPI Setup Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**).
 - **MORE** (to display **Main Menu 2-2**).
 - **Setup** (to display the **Setup Menu**).
 - **Installation** (to display **Installation Menu 1-2**).
 - **GPI I/O** (to display the **GPI Setup Menu**).
4. To set up your GPI Input ports, press **Inputs**. The **GPI Input Setup Menu** is displayed.

GPI I/O	
Use this menu to match GPI inputs to specific Cut, Auto Transition, Custom Control buttons, and Memory Recalls.	GPI Input: GPI #1 ↓GPI #2
	Function: OFF ↓Auto
	Area: MLE 1 Fade to black
Inputs	GPI Polarity Name Outputs Outputs Tally on GPIs View GPI I/O

GPI Input Setup Menu

The **GPI Input Setup Menu** allows you to associate each GPI Input with a *button* on the switcher that you would like to trigger.

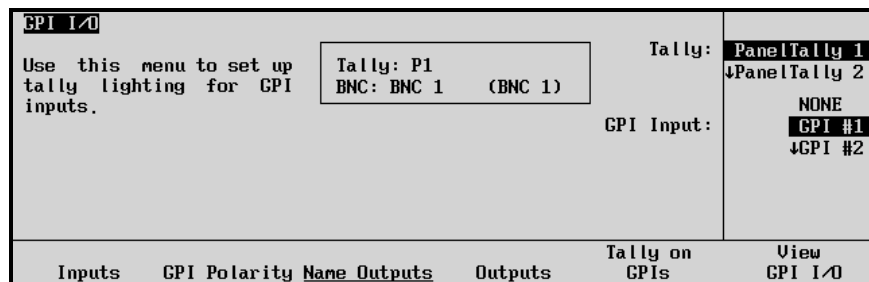
5. Use the top **GPI Input** knob to select the GPI Input port (**1 to 12**) to which you want to assign a transition type and location.
6. Use the middle **Function** knob to select between **Off, Auto, Cut, Cust Ctrl,** and **Mem Recall**.
 - When **OFF** is chosen, *nothing* will happen when an incoming pulse is received from an external device.
 - When **Auto** or **Cut** is chosen and the **MLE** is selected, the **CUT** or **AUTO TRANS** button in the **Transition Group** is triggered, respectively — when a GPI input pulse is received.
 - When **Auto** or **Cut** is chosen and the “**Fade to Black**” area is selected, the **CUT** or **FADE** button in the **Fade to Black** group is triggered, respectively — when a GPI input pulse is received.
7. If you selected **Cust Ctrl,** or **Mem Recall,** see the procedures for their GPI input control on the following pages.
8. Adjust the bottom **Area** knob to select the switcher area to trigger. Choose between the **MLE** and the **Fade to Black** group.
9. Repeat steps 5 through 8 for any additional GPI input ports that you wish to change.

This completes the procedure to set up and trigger your GPI input functions.

Trigger a Tally

Use the following procedure to set the GPI input to trigger a tally:

1. Navigate to the **GPI Setup Menu** as follows:
 - Press **HOME** (to display **Main Menu 1-2**).
 - **MORE** (to display **Main Menu 2-2**)
 - **Setup** (to display the **Setup Menu**)
 - **Installation** (to display **Installation Menu 1-2**)
 - **GPI I/O** (to display the **GPI Setup Menu**)
2. Press **Tally on GPIs** to display the **Tally on GPIs Menu**.



Tally On GPIs Menu

3. Specify a tally to be forced on by one of the GPI Inputs as follows:
 - Use the top **Tally** knob to select a tally type and number
 - Use the middle **GPI Input** knob to select which GPI Input (or “NONE”) should force the tally on.
4. Repeat step 3 to assign multiple tallies to a selected GPI Input.

5. Press **HOME** to confirm the setting.



Note

The same tally or tallies can be forced on by GPI inputs and by crosspoints settings. However, it is not possible to tell from the tally itself whether it has been activated by the GPI or a crosspoint.

This completes the procedure to set the GPI input to trigger a tally.

Trigger Custom Controls

Use the following procedure to set up and trigger custom controls with your GPI input function:

1. Navigate to the **GPI I/O Setup Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**)
 - **MORE** (to display **Main Menu 2-2**)
 - **Setup** (to display the **Setup Menu**)
 - **Installation** (to display **Installation Menu 1-2**)
 - **GPI I/O** (to display the **GPI Setup Menu**)

GPI I/O		GPI Input:	GPI #1
Use this menu to match GPI inputs to specific Cut, Auto Transition, Custom Control buttons, and Memory Recalls.		Function:	↓GPI #2
Custom Control Legend: # = normal custom control button		Cust Ctrl:	↑Cut Cust Ctrl Mem Recall
Inputs	GPI Polarity	Name	Outputs
		Tally on	View
		GPIs	GPI I/O

GPI Custom Control Setup Menu

2. Use the top **GPI Input** knob to select the GPI input you will use to trigger the custom control.
3. Use the middle **Function** knob to select the **Cust Ctrl** function.
Notice that the bottom knob label changes to **Cust Ctrl**.
4. Use the bottom **Cust Ctrl** knob to select the custom control you wish to have triggered by the selected GPI input. The list displays the default name, and the bank, status, and button number of the custom controls available.

This completes the procedure to set up and trigger custom controls with your GPI input function.

Trigger a Memory Recall

Use the following procedure to set up and trigger memory recalls with your GPI input function:

1. Navigate to the **GPI I/O Setup Menu** as follows:
 - Press **HOME** (to display **Main Menu 1-2**)
 - **MORE** (to display **Main Menu 2-2**)
 - **Setup** (to display the **Setup Menu**)
 - **Installation** (to display **Installation Menu 1-2**)
 - **GPI I/O** (to display the **GPI Setup Menu**)

Inputs	GPI Polarity	Name	Outputs	Outputs	Tally on GPIs	View GPI I/O
GPI I/O Use this menu to match GPI inputs to specific Cut, Auto Transition, Custom Control buttons, and Memory Recalls.						
					GPI Input:	GPI #1 ↓GPI #2
					Function:	↑Cust Ctrl Mem Recall
					Memory:	Memory0 (00) ↓Memory1 (01)

GPI Memory Recall Menu

- Use the top **GPI Input** knob to select the GPI input you will use to trigger the memory recall.
- Use the middle **Function** knob to select the **Mem Recall** function.
Notice that the bottom knob label changes to **Memory**.
- Use the bottom **Memory** knob to select the memory you wish to have triggered by the selected GPI input.

This completes the procedure to set up and trigger memory recalls with your GPI input function.

Viewing GPI Input Information

Use the following procedure to view information for each GPI Input:

- Navigate to the **GPI I/O Setup Menu** as follows:
 - Press **HOME** (to display **Main Menu 1-2**)
 - MORE** (to display **Main Menu 2-2**)
 - Setup** (to display the **Setup Menu**)
 - Installation** (to display **Installation Menu 1-2**)
 - GPI I/O** (to display the **GPI Setup Menu**)
- Press **View GPI I/O** to display the **GPI I/O Information Menu**.

Inputs	GPI Polarity	Name	Outputs	Outputs	Tally on GPIs	View GPI I/O
GPI I/O Information						
<u>GPI#</u>					<u>Polarity</u>	
GPI 1	Triggers Mem Recall	Memory 0			Low	Use Knob 2 to scroll list.
Forces tally: 1						
GPI 2	Unassigned					
GPI 3	Unassigned					
GPI 4	Unassigned					
GPI 5	Unassigned					
GPI 6	Unassigned					

GPI I/O Information Menu

- Use the middle knob to scroll up and down to view the following information for each GPI Input on the menu:
 - Transition type
 - Switcher area
 - Custom control button
 - Polarity

- Operation assignments
- Associated Aux Bus, if assigned in the Aux Bus Setup
- Tallies the GPI forces, if any or multiple have been assigned

For each GPI Output, its name, trigger, and level are displayed.

4. To enable the switcher to receive (and act upon) a GPI input pulse, enable the **GPI** button in the **Remote Section** (within the **Global Memory System** group). When **GPI** is lit, remote GPI control is enabled (but local operations can still be performed). When the button is off, external GPI control is disabled.

This completes the procedure to view information for each GPI Input.

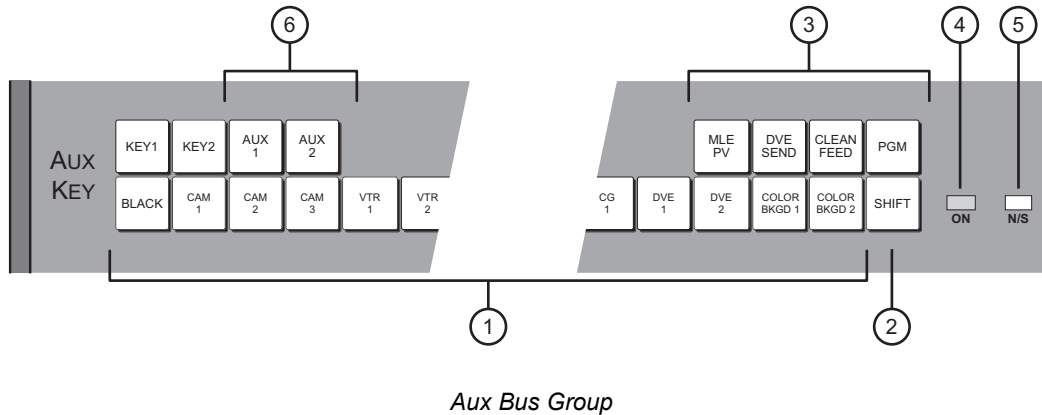
GPI Output Control

Each of the 12 GPI Outputs are *named* using the **GPI Output Setup Menu**. This function is performed by your facility engineer during switcher installation. Refer to Chapter 9, “**Additional Installation Setups**” of the *Synergy 1 Installation Guide* for instructions on naming each GPI output.

GPI Outputs are triggered by programming a custom control button. Refer to the section, “**Custom Control**” on page 8-42 for complete instructions.

Aux Bus Group

The Synergy 1 switcher provides 10 **Aux Buses**, each of which can be used to route video to monitors, DVEs, still stores, VTRs, etc. The following figure illustrates the **Aux Bus** group:



1) Aux Bus Crosspoint Row	3) Special Aux Bus Crosspoints	5) Non-Sync LED
2) Shift Button	4) On Air LED	6) Aux Bus Assign Group

1. Aux Bus Crosspoint Row

The sources on the **Aux Bus Crosspoint Row** can be mapped in one of two ways. One method is to map the crosspoints identical (in both name and quantity) to those on each switcher's **Background/Preset** buses. All sources are present. You can also map BNCs differently from the MLE to the **Aux Bus Crosspoint Row** without changing the crosspoints on the MLE bus.

Because the switcher includes 10 Aux buses, this row is *shared* between all Aux buses. When you select a specific bus in the **Aux Bus Assign Group** or on the **Aux Bus Menu**, and then choose a source on the **Aux Bus Crosspoint Row**, the selected source is routed to a specific external destination.



Note

You cannot select a crosspoint that is mapped to **OFF**, **NONE** or a **Color Background** on the Aux Bus. If attempted, a **Pop-Up Help** message will appear in the display.

2. Shift Button

The function of the **SHIFT** button is identical to those at the end of the **Background/Preset** bus. The button is used to access video and key sources that have been mapped to crosspoints *beyond* the number of available buttons. Due to the flexibility of the input mapping procedure (during switcher installation), all *desired* crosspoints can be made available — either on the shifted or unshifted bus rows.

Use the following procedure to access a shifted source on an **Aux Bus**:

- a) Press and hold the **SHIFT** button.
- b) Press the desired crosspoint.
- c) Release both buttons.

The **SHIFT** button plus the selected source both stay lit.

Please note:

- With a shifted source selected on an **Aux Bus**, to take an *unshifted* source, simply press its button.
- With a shifted source selected, to take another shifted source, repeat the procedure above.
- If you press **SHIFT** and then decide *not* to select a source, simply release the **SHIFT** button. No change will occur on the **Aux Bus**.

3. Special Aux Bus Crosspoints

The **Aux Bus** includes a section that is reserved for additional crosspoints that are not found on the **MLE** buses.

- **MLE PV** — Allows you to route the **MLE Preview** output to the assigned **Aux Bus** destination.
- **DVE SEND** — When lit, indicates that the **DVE SEND** button is lit in an the **Transition Group** and that a partially layered output of the **MLE** is being routed to the **DVE** to produce the required transition. The **DVE Send and Remote Control Option** must be installed. Refer to the section, “**Understanding DVE Send Operations**” on page 9-2 for instructions.
- **CLEAN FEED** — Allows you to route the **Clean Feed** output to the assigned **Aux Bus** destination. The **Clean Feed Option** must be installed.
- **PGM** — Allows you to route the **Program** output to the assigned **Aux Bus** destination.

4. On Air LED

The **ON AIR** LED indicates, when lit, that the video selected on the assigned **Aux Bus** is contributing to the switcher’s main program output. In addition, the source selected on that bus will be tallied. Refer to Chapter 9, “**Additional Installation Setups**” of the *Synergy 1 Installation Guide* for instructions on setting up Aux Bus tallies.

5. Non-Sync LED

The **N/S** LED indicates, when lit, that the source selected on that specific **Aux Bus** is non-synchronous. The **N/S** LED serves as a *warning* only, indicating that the input’s timing should be fixed *at the source*. When a non-sync LED is lit, the source is still usable, but it will be shifted vertically.

6. Aux Bus Assign Group

The **Aux Bus Assign** group allows you to determine the output to which the **Aux Bus Crosspoint Row** is assigned. For example, if **AUX 2** is lit, source selections are routed to the switcher’s Aux 2 output. When either **AUX 1** or **2** is pressed, the **Aux Bus Menu** is displayed which allows you to assign all ten buses.

Using the Aux Bus

Use the following procedure to use the **Aux Bus**:



Note

Consult with your facility engineer as required. He or she will provide you with an **Auxiliary Output Worksheet** that lists the **Aux Bus** outputs and their destinations.

1. Ensure that each **Aux Bus** is properly connected to the desired external devices.
2. In the **Aux Bus Assign Group**, press the button for the **Aux Bus** on which you want to select a source (**AUX 1** or **AUX 2**). If desired, on the **Aux Bus Menu** (which automatically is displayed when **AUX 1** or **AUX 2** is pressed), select **AUX 3** through **AUX 10**.

Aux Bus Control (1-2)					
<input checked="" type="checkbox"/> Include bus in next memory recall (requires INCL DVE on).					
<input checked="" type="checkbox"/> Aux 1:DVE send				Aux 6:Black	
<input checked="" type="checkbox"/> Aux 2:Black				Aux 7:Black	
Aux 3:Black				Aux 8:Black	
Aux 4:Black				Aux 9:Black	
Aux 5:Black				Aux 10:Black	
DVE send Aux 1	Black Aux 2	Black Aux 3	Black Aux 4	Black Aux 5	Black Aux 6

Aux Bus Control Menu

3. Using the **Aux Bus Crosspoint Row** or the **Special Aux Bus Crosspoints**, press the button for the desired source. Use the **SHIFT** button if required.

This completes the procedure to use the **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 switcher frame’s Aux buses. 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.

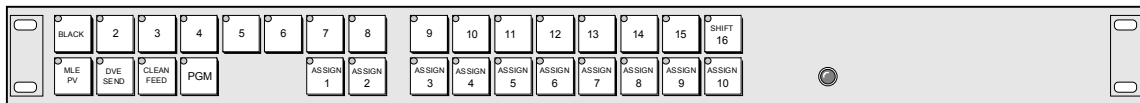
There are two types of remote Aux panels available for *each* Synergy switcher:

- A **Dedicated Remote Aux Panel** controls one Aux bus output. It allows you to route sources to *one destination only*.
- An **Assignable Remote Aux Panel** controls all 10 Aux bus outputs. It performs the *same function* as the switcher’s **Aux Bus** group.

The figures below illustrate the **Remote Aux Panels** for Synergy 1.

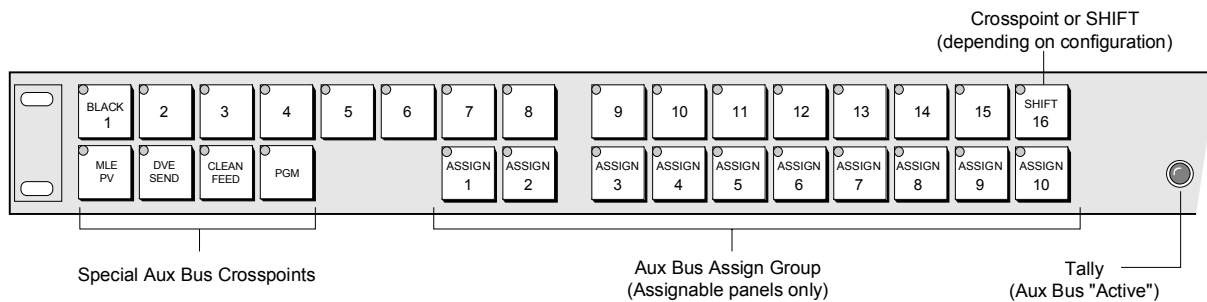


Dedicated Remote Aux Panel



Assignable Remote Aux Panel

In addition to crosspoints, the panels include dedicated “special” crosspoint buttons for MLE PV, DVE Send, Clean Feed and Program.



Remote Aux Bus Panel Button Groups

Assignable panels (only) 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.

During switcher installation, both types of **Remote Aux Panels** can be programmed to operate in certain special modes, as listed below.

- **Assignable** panels can be *individually configured* for each of the 10 **Aux Bus** outputs. Each output can be placed in one of two modes:
 - ~ **Regular Mode** — the remote Aux panel has full access. The bus can be selected and sources can be changed from both the remote Aux panel and the *local* control panel.
 - ~ **Follow Mode** — the associated Aux bus is in “view only” mode. You can select the bus and follow what crosspoints are being selected (remotely, by another user), but *you* can not change crosspoints from the current panel.
- **Dedicated** panels can be placed in one of two modes:
 - ~ **Regular Mode** — the selected Aux bus has full access. The bus can be selected and sources can be changed from both the remote Aux panel and the *local* control panel.
 - ~ **Follow Mode** — the associated Aux bus is in “view only” mode. You can follow what crosspoints are being selected (remotely, by another user), but *you* can not change crosspoints from the current dedicated panel.



Note

If an Aux Bus is set to Bus Follow (i.e., feeding a CDK-111, an Aspectizer, or an Ultimatte) or if it is assigned to an external DVE, you will not be able to change the crosspoints on the current remote Aux panel, regardless of the “rights” assigned to the panel.

Please consult with your facility engineer as required. He or she will let you know what operational mode has been programmed for each **Remote Aux Panel** in your facility. Refer to Chapter 9, “**Additional Installation Setups**” of the *Synergy 1 Installation Guide* for instructions on configuring remote Aux panel modes.



Note

A standard feature for the **Dedicated** and **Assignable** Remote Aux Panels allows a facility engineer to manually override the Aux panel selection via a GPI trigger. By overriding an Aux Bus directly from the CCU (Camera Control Unit), the engineer can manually switch to a camera for purposes of camera matching. Refer to Chapter 9, “**Additional Installation Setups**” of the *Synergy 1 Installation Guide* for details.

Using a Dedicated Remote Aux Panel

A **Dedicated Remote Aux Panel** controls one **Aux Bus** output only.

Use the following procedure to use a **Dedicated Remote Aux Panel**:

1. Ensure that the **Dedicated Aux Panel** is properly connected to the communication cabling chain that goes back to the Synergy panel or frame. Also ensure that the specific Aux Bus video output is connected to the input of the desired destination device.
2. Verify the following information (consult with your facility engineer as required):
 - Which specific **Aux Bus** output the dedicated panel is controlling.

- In which operational mode is the **Remote Aux Panel** working (**Regular Mode** or **Follow Mode**).
3. If the panel is in **Regular Mode**, you can switch crosspoints. Using the **Aux Bus Crosspoint Row** or the group of **Special Aux Bus Crosspoints**, press the button for the desired source.

**Note**

Since the Synergy 1 frame generates its own internal black signal, selecting **BLACK** on an untimed Aux Bus will route to the output whatever is connected to your “**601 REF IN**” BNC, with the exception of Aux Bus 1 and 2.

If the switcher panel is configured to use shifted crosspoints, hold down the **SHIFT** button on the remote panel, then press the desired crosspoint to select the *shifted* video source. Panels that are *not* configured to use shifted crosspoints typically assign the **SHIFT** button as the last of the regular crosspoints.

**Note**

The *special* crosspoints (such as **DVE SEND** and **CLEAN FEED**) do *not* support the shifted function.

Using an Assignable Remote Aux Panel

An **Assignable Remote Aux Panel** controls or monitors all 10 Aux bus outputs. It performs the *same function* as the switcher’s **Aux Bus** group.

Use the following procedure to use an **Assignable Remote Aux Panel**:

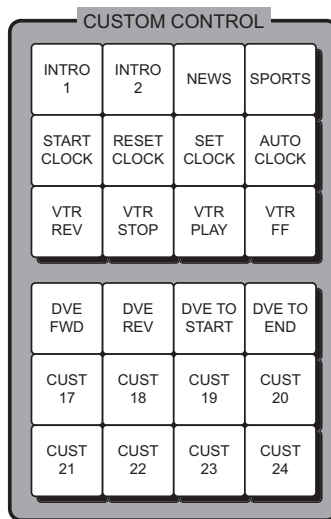
1. Ensure that the **Assignable Aux Panel** is properly connected to the communication cabling chain that goes back to the Synergy panel or frame. Also ensure that the specific Aux Bus video outputs are connected to the inputs of the desired destination devices.
2. Verify the following information (consult with your facility engineer as required):
 - Which operational mode has been programmed for each **Aux Bus** on the remote panel (**Regular** or **Follow Mode**).
3. If the remote panel is in **Regular Mode** (or **Follow mode**), select the **Aux Bus** that you want to control (or monitor) using the **Aux Bus Assign Group**.
4. Using the **Aux Bus Crosspoint Row** or the group of **Special Aux Bus Crosspoints**, press the button for the desired source. Use the **SHIFT** button if required.

This completes the procedure to use an **Assignable Remote Aux Panel**.

Custom Control

The switcher's **Custom Control** function allows you to program sequences of keystrokes (called "macros") and other special switcher functions — and store them in dedicated buttons in the **Custom Control** group. Once programmed, a macro can be played back simply by pressing *one button* in the **Custom Control** group. A custom control macro can be as simple as triggering an output GPI pulse or as complex as recalling a specific memory register, performing a switcher transition and flying a group of keys — all with one-button simplicity.

The following figure illustrates the **Custom Control Group**. Note that *sample* labels are provided.



Custom Control Group

A total of 24 custom control buttons are present on the panel. Up to 8 buttons can be used as banks to increase the total number of buttons available.

Custom Control Functionality

Custom control functionality falls into several different categories:

- **Custom Control Banks** — Up to eight banks can be enabled, and you can select *any* of the available Custom Control buttons on which to place the bank buttons themselves. Each bank stores a separate set of Custom Controls.
- **Control Panel Functions** — A custom control button can be programmed to play back a series of control panel button presses — such as recalling memory registers, initiating auto transitions, taking a selected source to air, bringing up a CG, and calling other custom control macros. In addition, the following functions are available:
 - ~ **VTR Functions** — A custom control button can be programmed to perform a specific transport command such as play, cue and rewind. Commands apply to serial controlled devices such as VTRs, Video Servers and Audio Servers. The **VTR Remote Control, Video Sever Control** or **Audio Sever Control** option must be installed, respectively. Any combination of options can be installed.
 - ~ **DVE Functions** — Using the primary DVE, a custom control button can be programmed to perform a specific DVE command such as play effect, frame advance, and stop. The **DVE Send and Remote Control Option** must be installed.

- ~ **Time Clock Functions** — A custom control button can be programmed to start, stop, or reset the preview overlay clock. The **Preview Overlay Option** must be installed.
- ~ **Special Functions** — A custom control button can be programmed to perform a variety of special functions controlling GPIs, audio external devices, menu retrieval, transitions, and inserting pauses and holds to the custom control.
- ~ **PIP II Functions** — A custom control button can be programmed to send messages to devices using this optional software feature.
- ~ **Robotic Camera Functions** — A custom control button can be programmed to recall cameras and specific shots. The **Robotic Camera Interface Option** must be installed.
- ~ **Monitor Wall Functions** — A custom control button can be programmed to change input channels, modify dynamic text and load a specific layout.
- **Naming Custom Controls** — A custom control function can be named for quick reference in the menus.
- **Editing Custom Controls** — A custom control macro can be viewed and modified by inserting or deleting events as desired.
- **Saving and Recalling Custom Controls** — A custom control function can be stored to and recalled from a floppy disk.
- **Deleting Custom Controls** — A custom control function can be deleted from a button.



Note

When recording a memory recall in a custom control macro, it may be necessary to add a pause of between 1-10 frames at the end of the macro. Refer to Chapter 8, “**Custom Controls**” of the *Synergy 1 Installation Guide* for details on inserting pauses in a custom control macro.

While recording a custom control macro, pressing the custom control button of an existing macro will record only the call to that button’s macro function, and will stop the recording in progress. Upon playback of the just-recorded macro, the called macro will be performed as the last function.

Refer to Chapter 8, “**Custom Controls**” in the *Synergy 1 Installation Guide* for complete instructions on programming your custom control buttons.

Preview Overlay Functions

The **Preview Overlay** function allows you to control a sophisticated character generator display that is displayed over the selected preview source.

This section provides detailed explanations of each of the following softkeys in the **Preview Overlay Menu**:

- **SOURCE ID** — Source Identification
- **VTR TC** — VTR Time Code
- **SAFE TITLE** — Safe Title
- **CENTER** — Center Cross Hairs
- **TIME CLOCK** — Time Clock
- **MASK PV** — Preview Mask



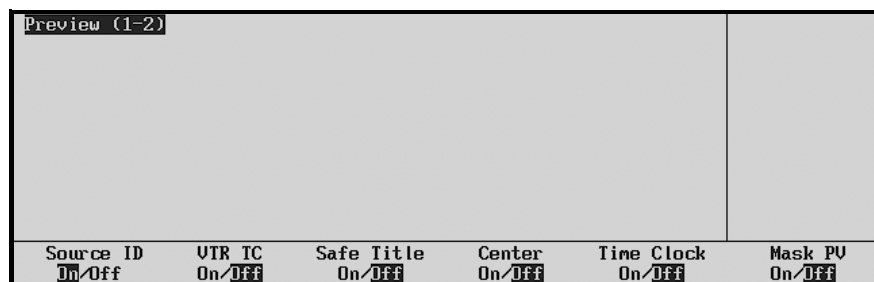
Important

- The **Preview Overlay Option** must be installed.
- Each softkey in the **Preview Overlay Menu** toggles a specific overlay function on and off.
- All functions are *additive*. They can be enabled or disabled in any combination desired.
- The entire overlay function works in conjunction with whatever source is selected in the **Preview Bus Group**.

Preview Overlay Menu

Navigate to the **Preview Overlay Menu** as follows:

- Press **HOME** (to display the **Main Menu 1-2**)
- **Preview Overlay** (to display the **Preview Overlay Menu 1-2**)



Preview Overlay Menu 1-2

Source ID

On the **Preview Overlay Menu**, press **SOURCE ID** to toggle the **Source Identification** overlay on and off. This overlay displays the name of the current program source, the current transition (and direction), followed by the name of the current preview source. For example:

VTR 1 -W-> CAM 2

CAM 1 -D-> MLE 3

Please note the following points about the **SOURCE ID** overlay:

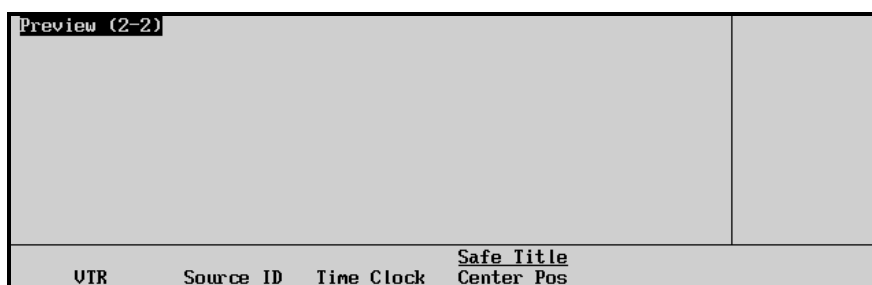
- The preview source is displayed on the right, in green letters. The program source is displayed on the left, in red letters.
- The following labels are used for transitions:
 - ~ **D** = dissolve
 - ~ **W** = wipe
 - ~ **S** = DVE send
 - ~ **ST** = S & T wipe

The transition label *does not* indicate the state of the three “next transition” buttons.

If you switch **Preview** sources, the overlay remains on screen and in the case of **Source ID**, the overlay *changes* to reflect the new **Preview** selection.

Use the following procedure to modify the position and size of the Source ID overlay:

1. Navigate to the **Preview Overlay Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**)
 - **Preview Overlay** (to display the **Preview Overlay Menu 1-2**)
2. Press **SOURCE ID** to toggle the **SOURCE ID ON/OFF** button to **On**.
3. Press **MORE** to display the **Preview Overlay Menu 2-2**.



Preview Menu 2-2

4. Press **SOURCE ID** to display the **Source ID Position Menu**.



Source ID Position Menu

- Use the top **X** knob to adjust the horizontal position of the overlay. You can also move the **Positioner** left and right.
 - Use the middle **Y** knob to adjust the vertical position of the overlay. You can also move the **Positioner** up and down.
5. Press **Done** to accept the new position and store it in “personality” memory.

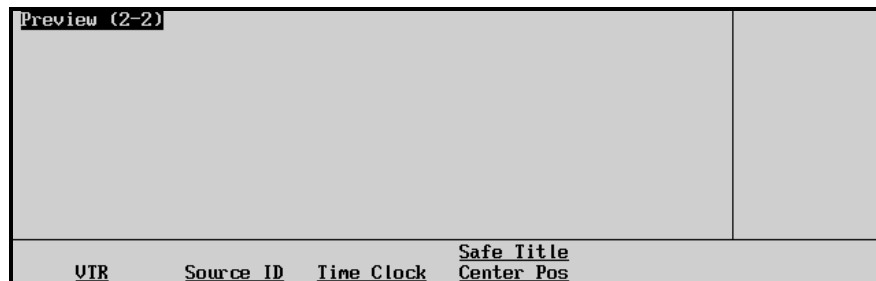
This completes the procedure to modify the position and size of the Source ID overlay.

VTR Timecode

On the **Preview Overlay Menu**, press **VTR TC** to toggle the **VTR Timecode** overlay that displays the timecode of a VTR, DDR or other serial-controlled device selected on the **Preset Bus** (for example, **12:59:59:23**). The remote port of the device must be connected to the switcher and the **VTR Remote Control Option** must be installed.

Use the following procedure to modify the position of the VTR Timecode overlay:

1. Navigate to the **Preview Overlay Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**)
 - **Preview Overlay** (to display the **Preview Overlay Menu 1-2**)
2. Press **VTR** to toggle the **VTR TC ON/OFF** button to **On**.
3. Press **MORE** to display the **Preview Overlay Menu 2-2**.



Preview Menu 2-2

4. Press **VTR** to display the **VTR Position Menu**.



VTR Position Menu

- Use the top **X** knob to adjust the overlay’s horizontal position. You can also move the **Positioner** left and right.
 - Use the middle **Y** knob to adjust the overlay’s vertical position. You can also move the **Positioner** up and down.
5. Press **Done** to accept the new position.

This completes the procedure to modify the position of the VTR Timecode overlay.

Notes on Using the VTR Timecode Overlay

Please note the following points:

- The VTR or other serial-controlled device must be selected on the **Preset Bus**.
- When selected, the timecode overlay is updated in real time.
- The overlay consists of a two-line display — the name of the currently selected VTR (top line) and the VTR’s timecode (bottom line).
- If the *color* of the VTR TC overlay is **yellow**, the video selected on the **Preset Bus** is the source VTR itself. If the color of the VTR TC overlay is **gray**, the video selected on **Preset does not match** the overlay’s timecode — a different source has been selected, but the system continues to update and display the timecode value.
- If **<VTR TIMEOUT>** is displayed, the switcher has lost communications with the VTR.
- The display is useful for determining if VTRs are properly cued and properly rolling after issuing “play” and “VTR Clip” commands.

Safe Title and Center Preview Overlay

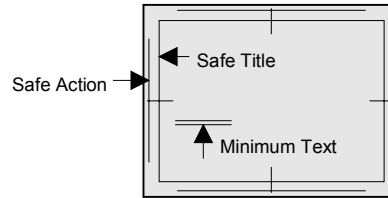
From the **Safe Title Setup Menu** you can modify the parameters of the following:

- **Center** — to reposition the **Center Cross Hairs**.
- **Top/Left** — to reposition the top or left **Safe Text** border.
- **Bottom/Right** — to reposition the bottom or right **Safe Text** border.
- **Safe Text** — to reposition the placement of the minimum text lines.
- **Modify Name** — to change the name of the **Safe ID**.
- **Reset** — to reset the parameters to their default values.

Refer to Chapter 10, “**Completing Setup**”, of the *Synergy 1 Installation Guide*, for detailed instructions on modifying and saving the settings.

Safe Title

On the **Preview Overlay Menu**, press **SAFE TITLE** to toggle the **Safe Title**, **Safe Area** and **Minimum Text** overlay on and off. This overlay places a SMPTE standard safe title and safe action grid on screen, as displayed in the following figure:



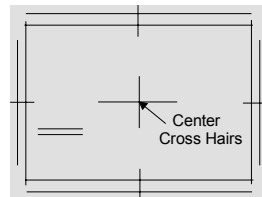
Safe Title Overlay

Please note the following points about the **SAFE TITLE** overlay:

- The “**Safe Title**” box (inner box) outlines the area that the vast majority of home TV sets will be able to read text.
- The “**Safe Action**” box (outer box) outlines the region that viewers should be able to follow action.
- The two small **Minimum Text** horizontal lines (also referred to as **Safe Text**), indicate the minimum font size that you can choose to ensure that text is legible on nearly all sizes of television receivers.

Center

On the **Preview Overlay Menu**, press **CENTER** to toggle the **Center Cross Hairs** overlay on and off. This overlay places Cross Hairs on the main preview output to indicate the center of the picture, as displayed in the following figure:



Center Cross Hair Overlay

- The **CENTER** overlay is useful for aligning text and other information (both horizontally and vertically).

Time Clock

The **Time Clock** overlay places a count-down, count-up, or count-down-then-up timer on the main preview output. This overlay timer can be used in the timing of commercials or other events.

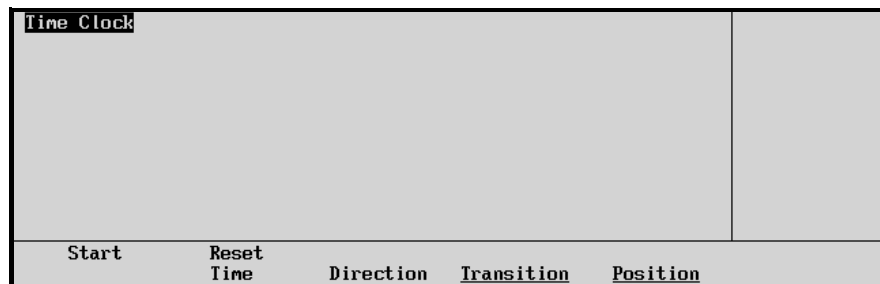
From the **Time Clock Main Menu** you can access the menus to modify the parameters of the following functions:

- **Start** — to start the clock counting up from zero, (or down from the preset time). When **Start** is pressed, the softkey label changes to **Stop**.
- **Reset Time** — to reset the clock to zero (for count-up mode), or to the preset time (for count-down mode).
- **Direction** — the count-up, count-down, or count-down-then-up direction of the clock.

- **Transition** — to start the count-up, count-down, or count-down-then-up clock based on a *switcher transition* or a *cut* from source to source on the MLE.
- **Position** — to modify the position and size of the **Time Clock** display.

Use the following procedure to modify the parameters of the **Time Clock**:

1. Navigate to the **Preview Overlay Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**)
 - **Preview Overlay** (to display the **Preview Overlay Menu 1-2**)
2. Press **TIME CLOCK ON/OFF** to toggle the **Time Clock** overlay on and off.
3. Press **MORE** to display the **Preview Overlay Menu 2-2**.
4. Press **TIME CLOCK** to display the **Time Clock Menu**.



Time Clock Menu

Start

For each of the counting modes, the following softkeys apply:

- Press **Start** to start the clock counting up from zero, or, down from the preset time. When **Start** is pressed, the softkey label changes to **Stop**.
- Press **Stop** to stop the clock at its current count.
- Press **Reset Time** to reset the clock to zero (for count-up mode), or to the preset time (for count-down mode).

Reset Time

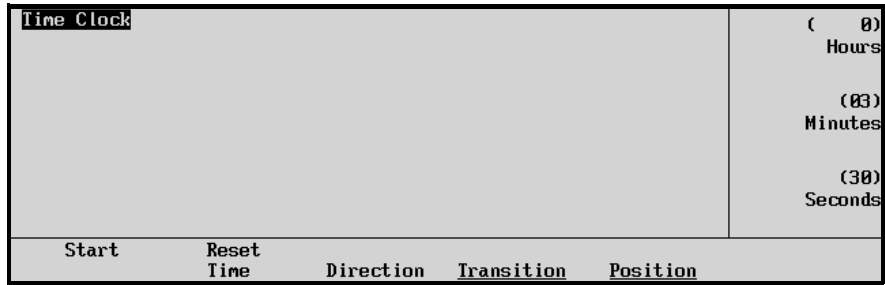


Important

The **Time Clock — Reset Time Menu** is only accessible (not greyed out) when the **Direction** is set to **Down** or **Down > Up**.

Use the following procedure to set a time for the clock to begin counting down from:

1. Navigate to the **Time Clock Main Menu** as previously described.
2. Press **Reset Time** to display the **Time Clock Menu — Reset Time Menu**.



Time Clock Menu – Reset Time

- Use the top **Hours** knob to preset the hours that the clock will Reset to and start counting from.
- Use the middle **Minutes** knob to preset the minutes that the clock will Reset to and start counting from.
- Use the top **Seconds** knob to preset the seconds that the clock will Reset to and start counting from.



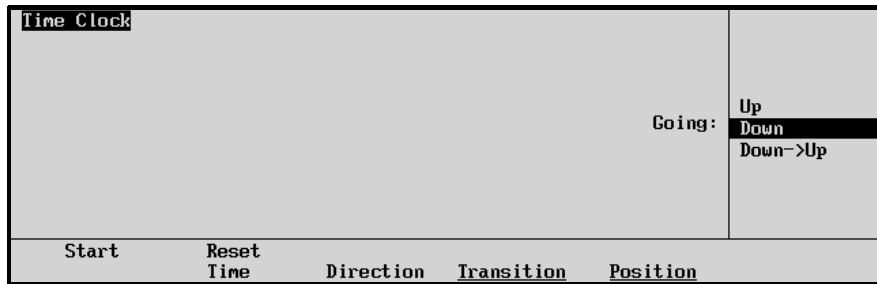
Note

If the hours are preset to a value greater than 23, the overlay display on the preview monitor will read in days, hours, minutes and seconds, up to a limit of 7 days. For example, 6:23:59:59,

This completes the procedure to set a time for the clock to begin counting down from.

Use the following procedure to modify the direction that the **Time Clock** will start counting from:

1. Navigate to the **Time Clock Main Menu** as previously described.
2. Press **Direction** to display the **Time Clock Direction Menu**



Time Clock Direction Menu

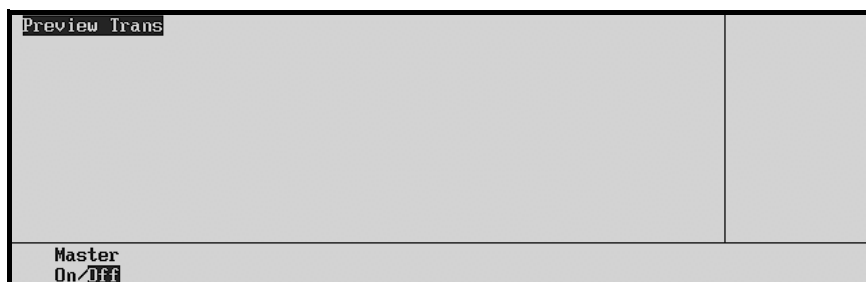
3. Set the time clock direction as follows:
 - Turn the middle **Going** knob to **Up** to set the time clock for counting up from zero to the preset reset time.
 - Turn the middle **Going** knob to **Down** to set the time clock for counting down from the preset reset time.
 - Turn the middle **Going** knob to **Down->Up** to set the time clock for counting down from the preset reset time to zero and then counting up until you press the **Stop** or **Reset Time** button.

In this mode, the counter is *blue* as it counts down and then changes to *red* as it counts up.

This completes the procedure to modify the direction that the **Time Clock** will start counting from.

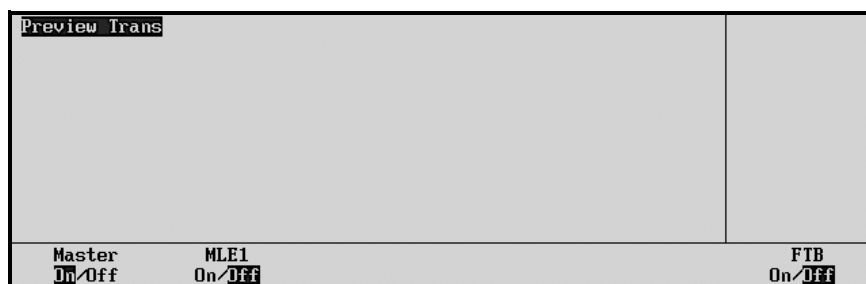
Use the following procedure to modify the MLE or FTB that the clock will start with:

1. Navigate to the **Time Clock Main Menu** as previously described.
2. Press **Transition** to display the **Preview Transition Menu**.



Preview Transition Menu 1-2

With the **Master** set to **Off**, the clock is started only when **Start** is pressed. When **Master** is set to **On**, two additional softkeys appear — **MLE1** and **FTB** are displayed on **Preview Transition Menu 2-2**.



Preview Transition Menu 2-2

Preview Transition Menu 2-2 allows you to start the count-up or count-down clock based on a *switcher transition* or a *cut* from source to source on the MLE. When the MLE or FTB are toggled **On**, any transition or cut performed in that location automatically resets and starts the clock.



Note

- a. For auto transitions such as wipes and dissolves, the clock will not reset and start until the *end* of the transition.
- b. For transitions performed with the **Fader**, the clock will not reset and start until the **Fader** reaches a limit.
- c. In the count-down mode, when the clock reaches zero, it stops and does not automatically wrap to the preset time.

Use the following procedure to modify the position of the **Time Clock** display:

1. Navigate to the **Time Clock Main Menu** as previously described.
2. Press **Position** to display the **Time Clock Position Menu**:

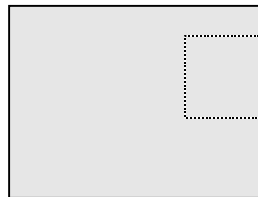


Time Clock Position Menu

- Use the top **X** knob to adjust the horizontal position of the clock. You can also move the **Positioner** left and right.
 - Use the middle **Y** knob to adjust the vertical position of the clock. You can also move the **Positioner** up and down.
3. Press **Done** to accept the new position and store it in the “personality” memory.

Mask PV

On the **Preview Overlay Menu**, press **MASK PV** to toggle the preview mask function on and off. This overlay places a thin “marquee-style” outline on the main preview output — around any active box mask. This function makes it easy to identify various masks, particularly when one may be placed near the edge of the screen.



Sample Mask Preview Overlay



Note

To suppress all elements of the **Preview Overlay Menu**, ensure that all overlays are toggled to the **Off** position.

Editor Interface

The **Editor Interface** button in the **Global Memory System** group allows the Synergy 1 Switcher to be controlled by an editing system using GVG 100, GVG 200, or GVG 4000 protocol.



- Toggle the **EDITOR** button **ON**, lit, to enable control of the Synergy 1 Switcher from an external edit controller. The **Editor Interface Option** must be installed. When lit, remote control is enabled (but local operations can still be performed). When off, the switcher is entirely “local.”

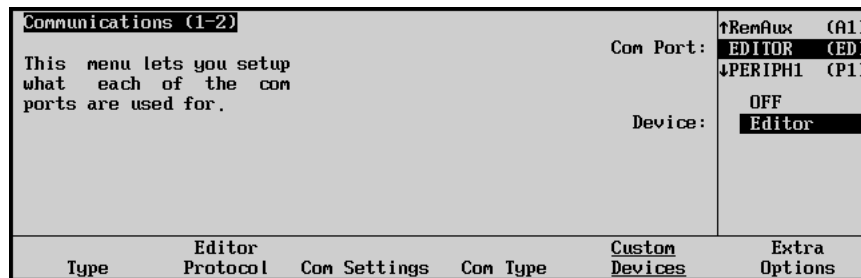


Note

Refer to Chapter 7, “**Communication Setup**” of the *Synergy 1 Installation Guide* for full set up instructions. Refer to your edit controller’s installation and operating manuals for details on the capabilities of your system’s remote switcher interface.

Use the following procedure to set up communications with an external editor:

1. Ensure that the **Editor Interface** option is installed. If not, please contact **Ross Video** for details. Refer to the section “**Installed Options Menus**” on page 3-10 for instructions on verifying the status of installed options.
2. Navigate to the **Communications Menu 1-2** as follows:
 - Press **HOME** (to display **Main Menu 1-2**)
 - **MORE** (to display **Main Menu 2-2**)
 - **Setup** (to display the **Setup Menu**)
 - **Installation** (to display **Installation Menu 1-2**)
 - **Communications** (to display the **Communications Menu 1-2**)
3. Press **Type** to display the **Communications Type Menu**.



Communications — Type Menu

4. Activate the Editor Port as follows:
 - Use the top **Com Port** knob to select the Editor port, **EDITOR (ED)**.
 - Use the middle **Device** knob to select **Editor**.
5. Press **Editor Protocol** to display the **Editor Protocol Menu**.

Communications (1-2)						
This menu lets you setup which devices are controlled by which ports.					Com Port:	↑RemAux (A1) EDITOR (ED)
					Device:	NONE GVG4000 ↓GVG100
Type	Editor Protocol	Com Settings	Com Type	Custom Devices	Extra Options	

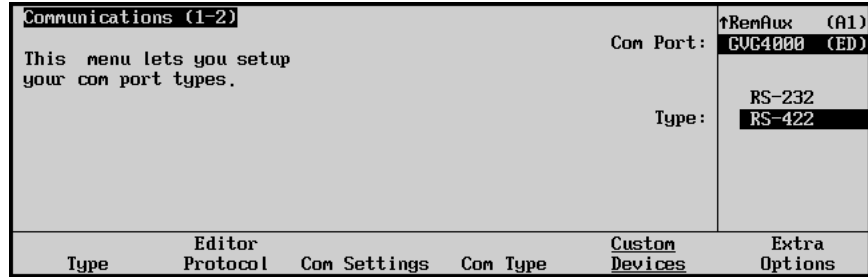
Communications — Editor Protocol Menu

6. Select the Editor protocol as follows:
 - Use the top **Com Port** knob to select the Editor.
 - Use the middle **Device** knob to select the Editor protocol used by the selected device. You can select from the following:
 - ~ **NONE** — Select this option when you are not connecting an Editor to the selected port.
 - ~ **GVG4000** — Select this option when you are connecting an Editor using the GVG4000 Editor protocol.
 - ~ **GVG100** — Select this option when you are connecting an Editor using the GVG100 Editor protocol.
 - ~ **GVG200** — Select this option when you are connecting an Editor using the GVG200 Editor protocol.
7. Press **Com Settings** to display the **Com Settings Menu**.

Communications (1-2)						
This menu lets you setup your com port parameters.					Com Port:	↑RemAux (A1) GVG4000 (ED)
					Baud:	↑19200 38400 ↓57600
					Parity:	NONE ODD EVEN
Type	Editor Protocol	Com Settings	Com Type	Custom Devices	Extra Options	

Communications — Com Settings Menu

8. Select the communications protocols for the Editor as follows:
 - Use the top **Com Port** knob to select the Editor you are setting the communications settings for.
 - Use the middle **Baud** knob to select baud rate for the Editor.
 - Use the bottom **Parity** knob to select the parity for the Editor.
9. Press **Com Type** to display the **Editor Com Type Menu**.



Communications — Com Type Menu

10. Select the type of serial communication that will be used to communicate with the Editor as follows:

- Use the top **Com Port** knob to select Editor you want to set the communication type for.
- Use the middle **Type** knob to select the type of serial communications (**RS-232** or **RS-422**) for the selected port.



Note

If you are using the GVG100 Editor protocol you will have to set the Extra Options. Refer to Chapter 7, “**Communication Setup**” of the *Synergy 1 Installation Guide* for more information.

This completes the procedure for setting up the communications with an Editor.

Still Store Interface

The Synergy 1 switcher interfaces with still store devices using Intelligent Interface protocol. You can access different stills that are stored on the still store device directly from the switcher.

Refer to Chapter 7, “**Communications Setup**” of the *Synergy 1 Installation Guide* for full configuration instructions. Refer to your still store’s installation and operating manuals for details of its functionality.

Changing the Still ID

Use the following procedure to change the Still ID that the still store device is sending to Synergy:

1. Press the still store crosspoint.

The **Global Memory System** area switches to **Still Store** mode, and the display area provides information pertaining to the still store’s output.



Still Store – Output Display

The upper line indicates the four digit number of the still that the still store device is sending to Synergy.

If Synergy has not received the requested Still ID from the still store, the line reads:

Still not loaded

The lower line indicates which channel the still store device is using to send stills to Synergy.



When the **Global Memory System** is in **Still Store** mode, the **VTR CLIP** button lights as an indicator.

2. Change the Still ID number by entering the new number using the **Global Memory System** number buttons.

When the new number shows in the display area, press the lit **ENTER** button.

The displayed four digit Still ID will return to the original value for a moment after the **ENTER** button is pressed. However, it updates to the new value after the still store cues the new still image.

Character Generator Interface

Synergy switchers interface with character generators. With the **Character Generator** software option installed, you can load and run effects, load and navigate through a playlist or a Character Generator (CG) template, and edit CG text directly from the Synergy control panel and keyboard.

The following configurations must be completed before the Synergy can be set up to control the Character Generator:

- Ensure that Character Generator BNCs are configured appropriately. Refer to Chapter 6, “**BNC Configuration and Check**” of the *Synergy 1 Installation Guide* for configuration instructions.
- Ensure that BNCs are associated to the Alpha. Refer to Chapter 6, “**BNC Configuration and Check**” of the *Synergy 1 Installation Guide* for configuration instructions.
- Ensure that the remote ports are configured appropriately. Refer to Chapter 7, “**Communications Setup**” of the *Synergy 1 Installation Guide* for configuration instructions.



Operating Tip

Refer to your specific Character Generator user guide for additional configuration details.

Leitch (Inscriber) Inca CG

This section provides information on operating your Leitch (Inscriber) Inca CG. The following topics are discussed:

- Navigating to the Character Generator Menu
- Selecting a Mode
- Using Sequence Mode
- Using Manual Mode
- Modifying Text
- Modifying Effects
- Selecting Channels

Navigating to the Character Generator Menu

Use one of the following methods to navigate to the **Character Generator Menu 1-2**:

Crosspoint Method

1. Assign the Character Generator to a crosspoint. (Refer to Chapter 6, “**BNC Configuration and Check**” of the *Synergy 1 Installation Guide* for detailed instructions on assigning crosspoints.)
2. Press the Character Generator crosspoint on the MLE to display the **Character Generator Menu 1-2**.

Char Gen: BNC 9		Channel: A (1-2)			
File: 1000.INS		Events Number: 16			
PU: One (1)		PGM: NONE			
1: Hon					
2: Space Shuttle					
3:		No Tags Info			
4:					
5:					
6:					
Folder/FileName: c:/autocg/demo/1000.INS					
Recall CG to PU	Recall CG to PGM	Change PU Text	Change PGM Text	Select Effect	Run Effect

Character Generator Menu 1-2

OR

Menu Tree Method

- Navigate to the **Remote Control Select Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**)
 - Effects** (to display the **Effects Menu 1-2**)
 - MORE** (to display the **Effects Menu 2-2**)
 - Remote Control Select** (to display the **Remote Control Select Menu**)

Remote Control Select				
Select a BNC to control via the Remote Menu, then press GO.				
				BNC: BNC 8 (8)
UTR Control	Router Control	Robotic Camera	CharGen	GO!!

Remote Control Select Menu

- Press **CharGen**, and **GO!!** to display the **Character Generator Menu 1-2**.

Char Gen: BNC 9		Channel: A (1-2)			
File: 1000.INS		Events Number: 16			
PU: One (1)		PGM: NONE			
1: Hon					
2: Space Shuttle					
3:		No Tags Info			
4:					
5:					
6:					
Folder/FileName: c:/autocg/demo/1000.INS					
Recall CG to PU	Recall CG to PGM	Change PU Text	Change PGM Text	Select Effect	Run Effect

Character Generator Menu 1-2

Selecting a Mode

The Leitch (Inscriber) Inca Character Generator can be operated in either Sequence Mode or Manual Mode:

- Sequence Mode** – This mode is used to select a sequence file (INS).
- Manual Mode** – This mode is used to modify individual pages on an as-required basis (ICG).

Selecting Sequence or Manual Mode

Use the following procedure to select the sequence or manual mode:

1. Navigate to the **Remote Control Select Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**)
 - **Effects** (to display the **Effects Menu 1-2**)
 - **MORE** (to display the **Effects Menu 2-2**)
 - **Remote Control Select** (to display the **Remote Control Select Menu**)
2. Press **CharGen** to display the **Character Generator Remote Control Menu**.
3. Press **GO!!** to display the **Character Generator Menu 1-2**.



Operating Tip

You can also press the Character Generator crosspoint on the MLE to display the **Character Generator Menu 1-2**.

Char Gen: BNC 9 Channel: A (1-2)		File: 1000,INS Events Number: 16		PU: One (1) PGM: NONE	
1: Hon		No Tags Info			
2: Space Shuttle					
3:					
4:					
5:					
6:					
Folder/FileName: c:/autocg/deno/1000,INS					
Recall CG to PU	Recall CG to PGM	Change PU Text	Change PGM Text	Select Effect	Run Effect

Character Generator Menu 1-2

4. Press **MORE** to display the **Character Generator Control Menu 2-2**.

Char Gen: BNC 8 Channel: A (2-2)		File: 1000,INS Events Number: 16		PU: 4 (4) PGM: 3 (3)	
1:		1: Lap 69			
2:		2: ar: 01 - Overdrive			
3:		3: *Allan Pepper			
4:		4:			
5:		5:			
6:		6:			
Folder/FileName: c:/autocg/deno/1000,INS					
Mode	Channel	View			Select
Seq./Man.	A/B	Lst./Crnt			File

Character Generator Control Menu 2-2

5. Toggle **Mode Seq./Man.** between **Seq.** and **Man.** as follows:
 - **Seq.** — Use this option to set the Inscrber CG to Sequence Mode.
 - **Man.** — Use this option to set the Inscrber CG to Manual Mode.

This concludes the procedure to select the Sequence or Manual mode.

Using Sequence Mode

This section includes instructions when the Inscribe CG is set to **Sequence Mode** in the Synergy menu system.

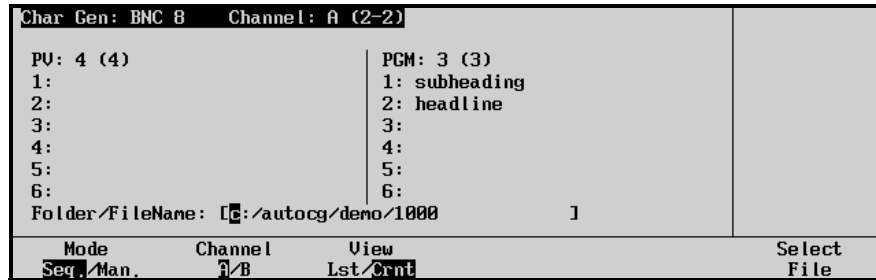
The following topics are discussed:

- Selecting a File
- Loading a Page
- Recalling an Event
- Running an Event

Selecting a File

Use the following procedure to select a file in sequence mode:

1. Ensure the Inscribe CG is set to **Sequence Mode** in the Synergy menu system. Refer to the section, “**Selecting a Mode**” on page 8-58 for details.
2. Press **Select File** to select the sequence file.



Character Generator Control Menu with Select File Highlighted

3. Use the keyboard to enter the address of the required sequence file.



Important

A standard PS/2 keyboard is required to input data. Contact Ross Video Technical Support for relevant information.



Important

Do NOT place anything on your keyboard or place your keyboard in a position where any of the keys could be accidentally pressed. This could result in the Switcher acting unpredictably.

Loading a Page

Use the following procedure to display a list of all events or the current program preview:

1. Ensure the Inscribe CG is set to **Sequence Mode** in the Synergy menu system. Refer to the section, “**Selecting a Mode**” on page 8-58 for details.
2. Press **View Lst/Crnt**, with the sequence (**Seq.**) mode selected in the **Character Generator Control Menu 2-2**, to select list (**Lst**) mode.

Char Gen: BNC 8		Channel: A (2-2)			
File: 1000.INS		Events Number: 16			
PU: 4 (4)		PGM: 3 (3)			
subheading: ROSS VIDEO				One	(1)
headline : VIDEO TOOLS				TWO	(2)
				3	(3)
				4	(4)
				5	(5)
				6	(6)
				↓17	(7)
Folder/FileName: c:/autocg/demo/1000.INS					
Mode	Channel	View	List To	List To	Select
Seq./Man.	A/B	Lst/Crnt	PU	PGM	File

Character Generator Control Menu – List Selected

- Use the middle **knob** to select an event from the current file.
- Press **List To PV**, with list (**Lst**) selected, to load the currently selected page to the Character Generator preview channel.

OR

Press **List to PGM**, with list (**Lst**) selected, to load the currently selected page to the Character Generator program channel.

This completes the procedure to display a list of all events or the current program preview.

Recalling an Event

Use the following procedure to recall the page selected in the preview or program channel as an event:

- Ensure the Inscribe CG is set to **Sequence Mode** in the Synergy menu system. Refer to the section, “**Selecting a Mode**” on page 8-58 for details.
- Press **MORE** to navigate to the **Character Generator Menu 1-2**.

The selected files tag information will be displayed in the PV or PGM column.

Char Gen: BNC 9		Channel: A (1-2)			
File: 1000.INS		Events Number: 16			
PU: One (1)		PGM: NONE			
1: Hom					
2: Space Shuttle					
3:				No Tags Info	
4:					
5:					
6:					
Folder/FileName: c:/autocg/demo/1000.INS					
Recall CG	Recall CG	Change PU	Change PGM	Select	Run
to PV	to PGM	Text	Text	Effect	Effect

Recall CG to PV - Character Generator Menu

- Press **Recall CG to PV** and select an event using the Synergy **Global Memory System** to recall it to the preview of the Character Generator.

OR

Press **Recall CG to PGM** and select a event using the Synergy **Global Memory System** to recall it to the program of the CG. This page is now available for keying.

This completes the procedure to recall the page selected in the preview or program channel as an event.

Running an Event

Use the following procedure to make the next event available for keying to air:

1. Ensure an event is loaded to the preview column.
2. Press **Run Effect** to advance the Character Generator page displayed in the preview (PV) column to the program (PGM) column. This action will automatically display the next page of the list in the preview column.

This completes the procedure to make the next event available for keying to air.

Using Manual Mode

This section includes instructions when the Inscribe CG is set to **Manual Mode** in the Synergy menu system.

The following topics are discussed:

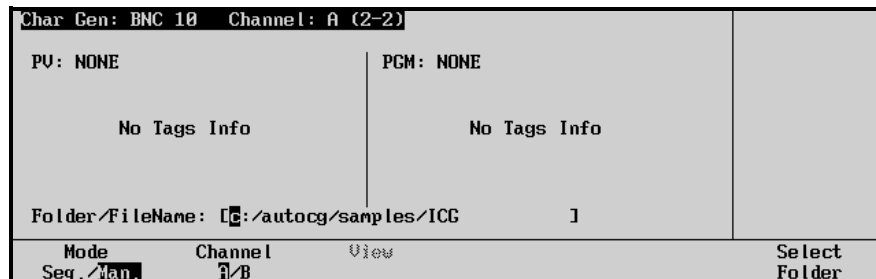
- Selecting a Folder
- Recalling a Page
- Running an Effect
- Modifying PGM Text
- Modifying PV Text
- Selecting Effects

Selecting a Folder

All pages that are recalled in manual mode will be searched for in the defined folder.

Use the following procedure to select a folder in manual mode:

1. Ensure the Inscribe CG is set to **Manual Mode** in the Synergy menu system. Refer to the section, “**Selecting a Mode**” on page 8-58 for details.
2. Press **MORE** to display the **Character Generator Control Menu 2-2**.



Character Generator Menu 2-2

3. Select a folder as follows:
 - Press **Select Folder**.
 - Use the keyboard to enter the path of the required folder.



Important

You will have to use the keyboard to enter the new path in the Folder/FileName line. A standard keyboard can be attached to the PS/2 port at the back of the Synergy control panel.



Important

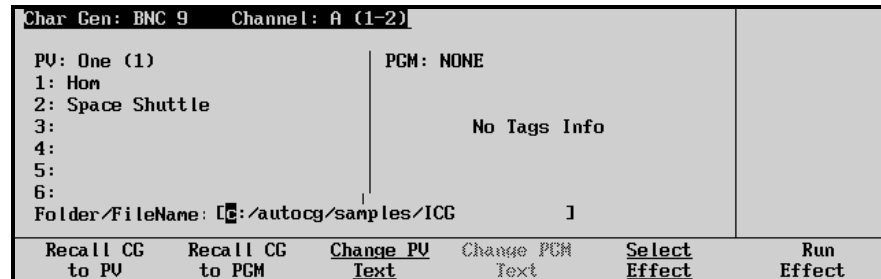
Do NOT place anything on your keyboard or place your keyboard in a position where any of the keys could be accidentally pressed. This could result in the Switcher acting unpredictably.

This completes the procedure to select a folder in manual mode.

Recalling a Page

Use the following procedure to recall a page to the Preview or Program channel of the Inscribe CG:

1. Ensure the Inscribe CG is set to **Manual Mode** in the Synergy menu system. Refer to the section, “**Selecting a Mode**” on page 8-58 for details.
2. Press **MORE**, with the folder loaded to the Character Generator to return to **Character Generator Menu 1-2**.



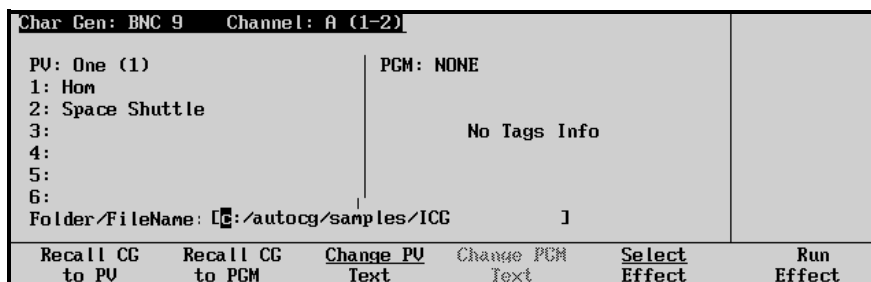
Character Generator Menu 1-2

3. Recall a page to the **Preview** channel of the Inscribe CG as follows:
 - Press **Recall CG to PV**.
 - Select a file using the Synergy **Global Memory System** to recall it to the preview of the Character Generator. This file's tag information will be displayed in the **PV** column.



Important

Files stored with non numerical names can not be recalled using this method. Refer to Chapter 8 “**Custom Controls**” of the *Synergy 1 Installation Guide* for configuration instructions.



Character Generator Menu – Recall CG to PV

4. Recall a page to the **Program** channel of the Inscribe CG as follows:
 - Press **Recall CG to PGM**.
 - Select a file using the Synergy **Global Memory System** to recall an event directly to the PGM bus. This event will be taken to air immediately.

This file's tag information will be displayed in the **PGM** column of the **Character Generator Menu 1-2**.

This concludes the procedure to recall a page to the Preview or Program channel of the Inscribe CG.

Running an Effect

Use the following procedure to move the effect, and its tag information, in the preview (**PV**) column to the program (**PGM**) column:

1. Ensure the Inscribe CG is set to **Manual Mode** in the Synergy menu system. Refer to the section, "**Selecting a Mode**" on page 8-58 for details.
2. Ensure a file is loaded to the Preview column of the **Character Generator Menu**.
3. Press **Run Effect** to advance the current preview file displayed in the preview (**PV**) column to the program (**PGM**) column. This action will automatically display the next file in the preview column.

Modifying Text

The text displayed in the preview (**PV**) column or program (**PGM**) column can be modified.



Important

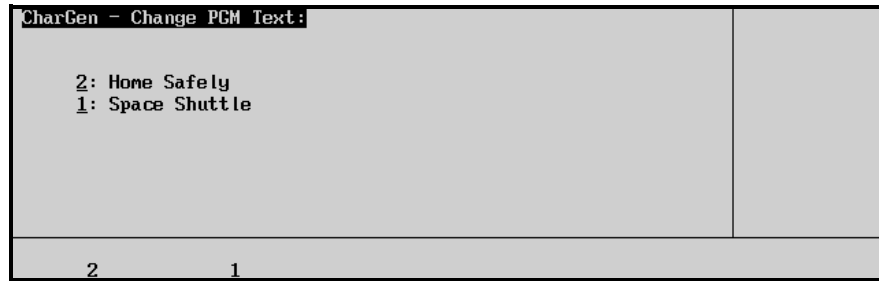
Character Generator parameters that are modified from the Synergy switcher are only in effect for the current session.

Modifying PGM Text

Use the following procedure to modify the Program (**PGM**) text:

1. Load a page to the **PGM** Channel of the Inscribe CG.
 - **Sequence Mode** — Refer to the section, "**Loading a Page**" on page 8-60 for instructions on loading a page while in Sequence Mode.
 - **Manual Mode** — Refer to the section, "**Recalling a Page**" on page 8-63 for instructions on loading a page while in Manual Mode.

2. Press **Change PGM Text** to display the **CharGen – Change PGM Text Menu**.



Change PGM Text Sub-Menu

3. Change the tag information for the event on air by pressing the applicable softkey and editing the text using the keyboard. The menu softkeys are renamed to coincide with the tag names.



Important

A standard PS/2 keyboard is required to input data. Contact Ross Video Technical Support for relevant information.



Important

Do NOT place anything on your keyboard or place your keyboard in a position where any of the keys could be accidentally pressed. This could result in the Switcher acting unpredictably.

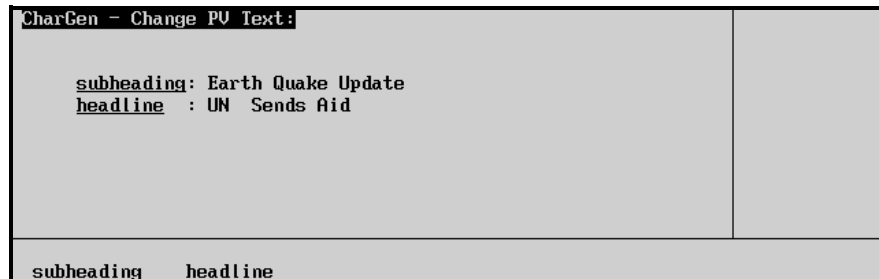
4. Press **UP ONE** to return to the **Character Generator Menu 1-2**.

This concludes the procedure to change the text of a loaded page in the PGM Channel of the Inscribe CG.

Modifying PV Text

Use the following procedure to modify the program (PV) text:

1. Load a page to the **PGM** Channel of the Inscribe CG.
 - **Sequence Mode** — Refer to the section, “**Loading a Page**” on page 8-60 for instructions on loading a page while in Sequence Mode.
 - **Manual Mode** — Refer to the section, “**Recalling a Page**” on page 8-63 for instructions on loading a page while in Manual Mode.
2. Press **Change PV Text** to display the **CharGen – Change PV Text Menu**.



Change PV Text Sub-Menu

3. Change the tag information for the event on the PV bus by pressing the applicable softkey and editing the text using the keyboard. The menu softkeys are renamed to coincide with the tag names.



Important

A standard PS/2 keyboard is required to input data. Contact Ross Video Technical support for relevant information.



Important

Do NOT place anything on your keyboard or place your keyboard in a position where any of the keys could be accidentally pressed. This could result in the Switcher acting unpredictably.

4. Press **UP ONE** to return to the **Character Generator Menu**.



Note

You will not be able to see animations or special effects, and only the first frame of an active texture will be displayed.

This concludes the procedure to change the PV text of a loaded page on the Inscrber CG.

Modifying Effects

The following effects can be modified and applied to the Preview video output of the Character Generator when it is transitioned to program output (PGM):

- Effect
- Pattern
- Speed
- Ease
- Reverse
- Row Direction.



Note

You will not be able to see animations or special effects, and only the first frame of an active texture will be displayed.

Selecting Effects



Important

Character Generator parameters that are modified from the Synergy switcher are only in effect for the current session.

Use the following procedure to select and modify effects:

1. Navigate to the **Remote Control Select Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**).
 - **Effects** (to display the **Effects Menu 1-2**).
 - **MORE** (to display the **Effects Menu 2-2**).
 - **Remote Control Select** (to display the **Remote Control Select Menu**).
2. Press **CharGen** to display the **Character Generator Remote Control Menu**.
3. Use the middle **BNC** knob to select the BNC for your device.

4. Press **GO!!** to display the **Character Generator Menu 1-2**.



Operating Tip

You can also press the Character Generator crosspoint on the MLE to display the **Character Generator Menu 1-2**.

Char Gen - Select Effect:					
Current Effect:					
Effect.....	Wipe				
Pattern.....	Vertical Slide Wipe				
Speed.....	15 frames	Effect:	Wipe		
Ease.....	No Ease				
Reverse.....	On				
Row Direction...	Up				
Effect	Pattern	Speed	Ease	Reverse On/Off	Row Direction

Character Generator – Select Effect Menu

5. Press **Select Effect** to display the **Character Generator – Select Effect Menu**.

Char Gen - Select Effect:					
Current Effect:					
Effect.....	Wipe				
Pattern.....	Vertical Slide Wipe				
Speed.....	15 frames	Effect:	Wipe		
Ease.....	No Ease				
Reverse.....	On				
Row Direction...	Up				
Effect	Pattern	Speed	Ease	Reverse On/Off	Row Direction

Char Gen Select Effect Menu

6. Select an effect to modify as follows:

- Press **Effect** to display the **Effect Menu**.

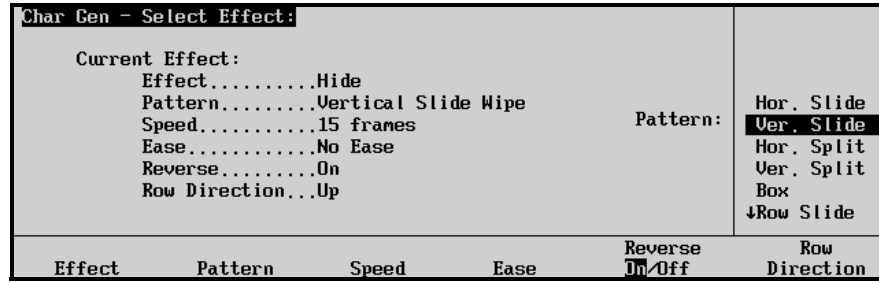
Char Gen - Select Effect:					
Current Effect:					
Effect.....	Hide				
Pattern.....	Vertical Slide Wipe				
Speed.....	15 frames	Effect:	Wipe		
Ease.....	No Ease				
Reverse.....	On				
Row Direction...	Up				
Effect	Pattern	Speed	Ease	Reverse On/Off	Row Direction

Char Gen Select Effect — Effect Menu

- Use the middle **Effect** knob to select an effect type. You can choose between the following:
 - ~ Wipe
 - ~ Push
 - ~ Hide
 - ~ Reveal
 - ~ Dissolve
 - ~ Cut

7. Select the pattern of the effect as follows:

- Press **Pattern** to display the **Char Gen – Select Effect, Pattern Menu**.

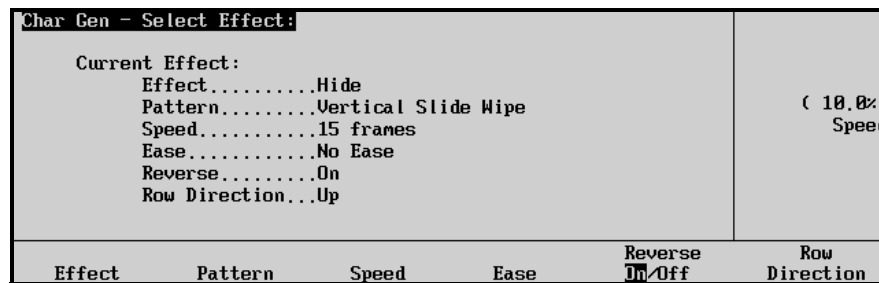


Char Gen - Select Effect, Pattern Menu

- Use the middle **Pattern** knob to choose from the following patterns:
 - ~ Horizontal Slide Wipe
 - ~ Vertical Slide Wipe
 - ~ Horizontal Split Wipe
 - ~ Vertical Split Wipe
 - ~ Box Wipe
 - ~ Row Slide/Wipe
 - ~ Row by Row Scanline
 - ~ Screen Scanline Wipe
 - ~ Pixel Wipe

8. Modify the number of frames it takes for the effect to conclude:

- Press **Speed** to display the **Character Generator, Select Effect – Speed Menu**.



Char Gen - Select Effect, with Speed changed, Menu

- Use the middle **Speed** knob to select the speed, in frames, for the transition to occur. Choose between 0 and 150 frames, inclusive.

9. Modify the result of Ease on the effect as follows:

- Press **Ease** to display the **Char Gen – Select Effect, Ease Menu**.

Char Gen – Select Effect:						
Current Effect:						
Effect.....	Hide					
Pattern.....	Vertical Slide Wipe					
Speed.....	15 frames			Ease:	No Ease	
Ease.....	Ease In				Ease In	
Reverse.....	On				Ease Out	
Row Direction...	Up				Ease In&Out	
Effect	Pattern	Speed	Ease	Reverse On/Off	Row Direction	

Char Gen - Select Effect - Ease Menu

- Use the middle **Ease** knob to select from the following Ease effects:
 - ~ No Ease
 - ~ Ease In
 - ~ Ease Out
 - ~ Ease In&Out

10. Reverse the direction of the effect as follows:

- Press **Reverse** to toggle **Reverse On** or **Reverse Off**.

Char Gen – Select Effect:						
Current Effect:						
Effect.....	Hide					
Pattern.....	Vertical Slide Wipe					
Speed.....	15 frames			Ease:	No Ease	
Ease.....	Ease Out				Ease Out	
Reverse.....	Off				Ease In&Out	
Row Direction...	Up					
Effect	Pattern	Speed	Ease	Reverse On/Off	Row Direction	

Char Gen - Select Effect - with Reverse Off

- ~ **On** — Select this option to perform the effect in reverse.
- ~ **Off** — Select this option to perform the effect in the normal forward direction.

11. Define the Direction of the row as follows:

- Press **Row Direction** to display the **Char Gen – Select Effect, Row Direction Menu**.

Char Gen – Select Effect:						
Current Effect:						
Effect.....	Hide					
Pattern.....	Vertical Slide Wipe					
Speed.....	15 frames			Row Direction:	Up	
Ease.....	Ease Out				Down	
Reverse.....	On				Left	
Row Direction...	Down				Right	
Effect	Pattern	Speed	Ease	Reverse On/Off	Row Direction	

Char Gen - Select Effect - Row Direction Menu

- Use the middle **Row Direction** knob to select the direction that you would like the rows of text to be transitioned off the screen. You can select from the following:
 - ~ Up
 - ~ Down
 - ~ Left
 - ~ Right
 - ~ Static

This completes the procedure to select and modify effects.

Selecting Channels

Use the following procedure to select the channel to setup:

1. Navigate to the **Remote Control Select Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**).
 - **Effects** (to display the **Effects Menu 1-2**).
 - **MORE** (to display the **Effects Menu 2-2**).
 - **Remote Control Select** (to display the **Remote Control Select Menu**).
2. Press **CharGen** to display the **Character Generator Remote Control Menu**.
3. Use the middle **BNC** knob to select the BNC for your device.
4. Press **GO!!** to display the **Character Generator Menu 1-2**.



Operating Tip

You can also press the Character Generator crosspoint on the MLE to display the **Character Generator Menu 1-2**.

5. Press **MORE** to display the **Character Generator Control Menu 2-2**.

Char Gen: BNC B		Channel: A (2-2)	
File: 1000.INS		Events Number: 16	
PU: 4 (4)		PGM: 3 (3)	
1:		1:	Lap 69
2:		2:	ar: 01 - Overdrive
3:		3:	+Allan Pepper
4:		4:	
5:		5:	
6:		6:	
Folder/FileName: c:/autocg/demo/1000.INS			
Mode	Channel	View	Select
Seq/Man.	A/B	Lst/Crnt	File

Character Generator Control Menu 2-2

6. Toggle the **Channel A/B** button between Channel **A** and **B** to select the channel output on the Inscribe CG.
 - **Channel A** — This option sets the output on the Inscribe CG to Channel A.
 - **Channel B** — This option sets the output on the Inscribe CG to Channel B.

This concludes the procedure to select the channel to setup.

Chyron Duet LEX

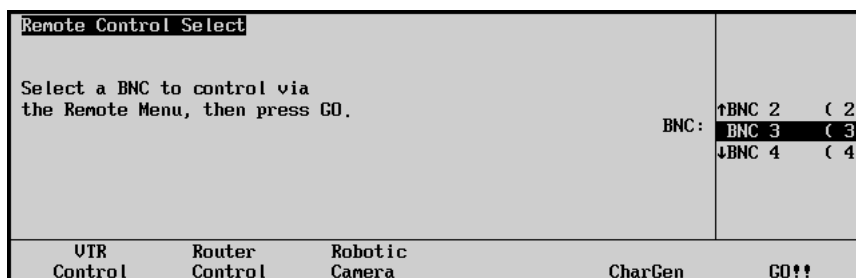
This section outlines the operation of the Chyron Duet LEX character generator. The following topics are discussed:

- Selecting a Folder
- Recalling a Template to Preview
- Recalling a Template to Program
- Changing Preview Text
- Changing PGM Text
- Swapping Preview and Program
- Playing Animation

Selecting a Folder

Use the following procedure to select a folder from the Chyron Duet LEX:

1. Navigate to the **Remote Control Select Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**).
 - **Effects** (to display the **Effects Menu 1-2**).
 - **MORE** (to display the **Effects Menu 2-2**).
 - **Remote Control Select** (to display the **Remote Control Select Menu**).



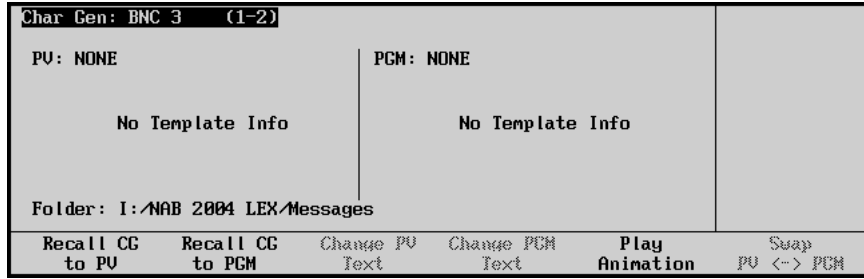
Remote Control Select Menu

2. Press **CharGen** to display the **Character Generator Remote Control Menu**.
3. Use the middle **BNC** knob to select the BNC for your device.
4. Press **GO!!** to display the **Character Generator Menu 1-2**.



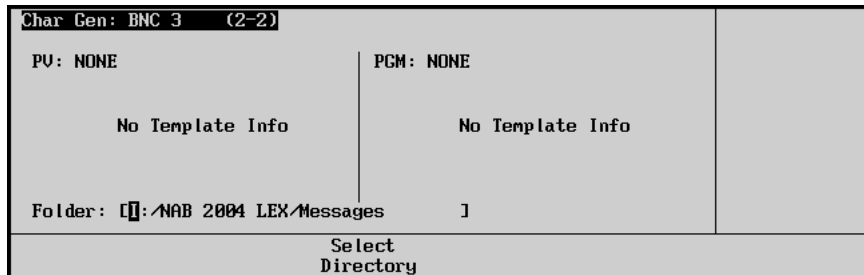
Operating Tip

You can also press the Character Generator crosspoint on the MLE to display the **Character Generator Menu 1-2**.



Character Generator Menu 1-2

5. Press **MORE** to display the **Character Generator Control Menu 2-2**.



Character Generator — Select Folder Menu

6. Select a folder as follows:
 - Press **Select Folder**.
 - Use the keyboard to enter the address of the required folder.



Important

A standard PS/2 keyboard is required to input data. Contact Ross Video Technical Support for relevant information.



Important

Do NOT place anything on your keyboard or place your keyboard in a position where any of the keys could be accidentally pressed. This could result in the Switcher acting unpredictably.

This concludes the procedure to recall a folder from the Chyron Duet LEX character generator.

Recalling a Template to Preview

To recall a template to the Preview (PV) output of the Chyron Duet LEX, you must first select the folder and then enter the template name.

Use the following procedure to recall a template to the Character Generator Preview:

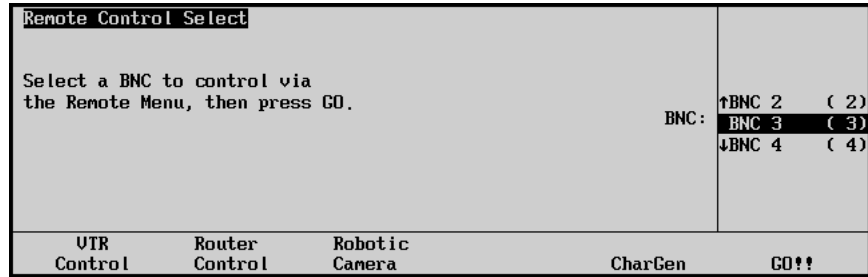


Note

This procedure recalls the selected template to the Preview of the Chyron Duet LEX *only* and NOT to the Preview Monitor of the Synergy 1 Switcher.

1. Navigate to the **Remote Control Select Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**).
 - **Effects** (to display the **Effects Menu 1-2**).
 - **MORE** (to display the **Effects Menu 2-2**).

- **Remote Control Select** (to display the **Remote Control Select Menu**).



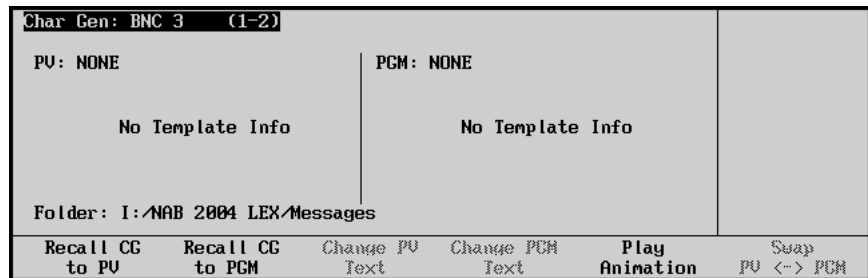
Remote Control Select Menu

2. Press **CharGen** to display the **Character Generator Remote Control Menu**.
3. Use the middle **BNC** knob to select the BNC for your device.
4. Press **GO!!** to display the **Character Generator Menu 1-2**.



Operating Tip

You can also press the Character Generator crosspoint on the MLE to display the **Character Generator Menu 1-2**.



Character Generator Menu 1-2

5. Select a folder as follows:
 - Press **MORE** to display the **Character Generator Control Menu 2-2**.
 - Press **Select Folder**.
 - Use the keyboard to enter the address of the required folder.



Important

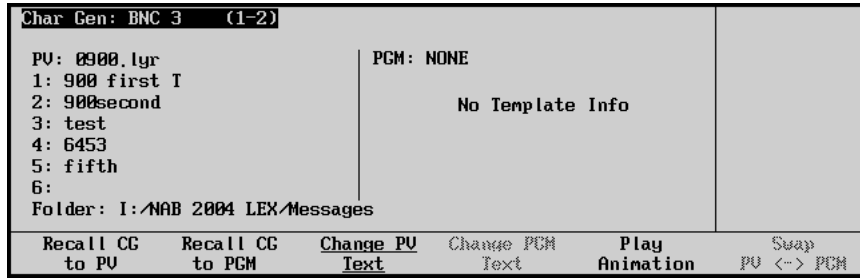
A standard PS/2 keyboard is required to input data. Contact Ross Video Technical Support for relevant information.



Important

Do NOT place anything on your keyboard or place your keyboard in a position where any of the keys could be accidentally pressed. This could result in the Switcher acting unpredictably.

6. Select a template as follows:
 - Press **MORE** to return to the **Character Generator Menu 1-2**.



Character Generator — Recall CG to PV Menu

- Press **Recall CG to PV**.
- Select a template using the Synergy **Global Memory System** to recall it to the Preview of the Chyron Duet LEX.



Important

Files stored with non numerical names cannot be recalled using this method. Refer to Chapter 8, “**Custom Controls**” in the *Synergy 1 Installation Guide* for configuration instructions.

The template information is displayed in the PV column of the **Character Generator Menu 1-2**.

This concludes the procedure to recall a template to the Preview of the Chyron Duet LEX.

Recalling a Template to Program

To recall a template to the PGM of the Chyron Duet LEX, you must first select the folder and then enter the template name using the Synergy **Character Generator Menu**.

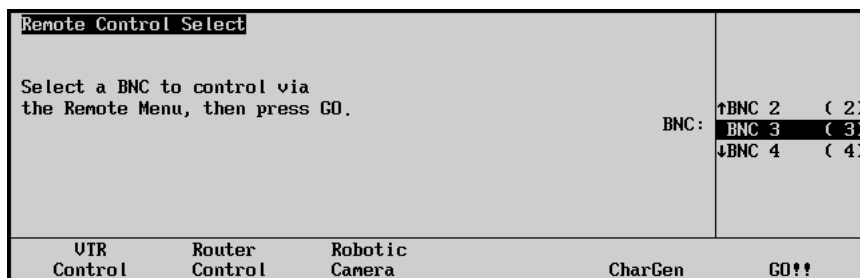


Important

This procedure will recall the selected template to the Program of the Synergy 1 Switcher if the BNC assigned to the Chyron Duet LEX is currently on air.

Use the following procedure to recall a template to the PGM of the Chyron Duet LEX:

1. Navigate to the **Remote Control Select Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**).
 - **Effects** (to display the **Effects Menu 1-2**).
 - **MORE** (to display the **Effects Menu 2-2**).
 - **Remote Control Select** (to display the **Remote Control Select Menu**).



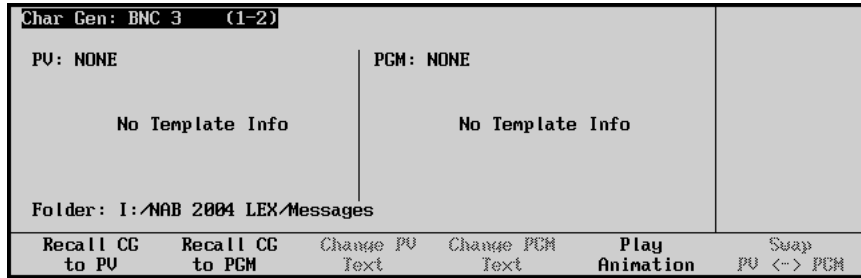
Remote Control Select Menu

2. Press **CharGen** to display the **Character Generator Remote Control Menu**.
3. Use the middle **BNC** knob to select the BNC for your device.
4. Press **GO!!** to display the **Character Generator Menu 1-2**.



Operating Tip

You can also press the Character Generator crosspoint on the MLE to display the **Character Generator Menu 1-2**.



Character Generator Menu 1-2

5. Select a folder as follows:
 - Press **MORE** to display the **Character Generator Control Menu 2-2**.
 - Press **Select Folder**.
 - Use the keyboard to enter the address of the required folder.



Important

A standard PS/2 keyboard is required to input data. Contact Ross Video Technical Support for relevant information.



Important

Do NOT place anything on your keyboard or place your keyboard in a position where any of the keys could be accidentally pressed. This could result in the Switcher acting unpredictably.

6. Select a template to recall to the Program of the Chyron Duet LEX as follows:
 - Press **MORE** to return to the **Character Generator Menu 1-2**.
 - Press **Recall CG to PGM**.
 - Select a template using the Synergy **Global Memory System**.



Important

Templates stored with non numerical names cannot be recalled using this method. Refer to Chapter 8, “**Custom Controls**” in the *Synergy 1 Installation Guide* for configuration instructions.

The template information is displayed in the PGM column of the **Character Generator Menu 1-2**.

Char Gen: BNC 3 (1-2)					
PU: 0900.lyr 1: 900 first I 2: 900second 3: test 4: 6453 5: fifth 6:	PGM: 0500.lyr 1: Have fun 2: 3: 4: 5: 6:				
Folder: I:\NAB 2004 LEX\Messages					
Recall CG to PU	Recall CG to PGM	Change PU Text	Change PGM Text	Play Animation	Swap PU <-> PGM

Character Generator Menu — Recall CG to PGM

This concludes the procedure to recall a template to the Program of the Chyron Duet LEX.

Text

You can modify text for loaded templates using the Synergy 1 Switcher menu system. The text displayed in either the Preview (**PV**) column or Program (**PGM**) column can be modified using a standard PS/2 keyboard connected to the Synergy Switcher.



Important

Character Generator parameters that are modified from the Synergy 1 Switcher are only in effect for the current session.

Changing Preview Text

Use the following procedure to change the Preview (**PV**) text for a loaded template on the Chyron Duet LEX:



Note

A standard PS/2 keyboard is required to input data.

1. Navigate to the **Remote Control Select Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**).
 - **Effects** (to display the **Effects Menu 1-2**).
 - **MORE** (to display the **Effects Menu 2-2**).
 - **Remote Control Select** (to display the **Remote Control Select Menu**).

Remote Control Select				
Select a BNC to control via the Remote Menu, then press GO.	BNC: ↑BNC 2 (2) BNC 3 (3) ↓BNC 4 (4)			
VTR Control	Router Control	Robotic Camera	CharGen	GO!!!

Remote Control Select Menu

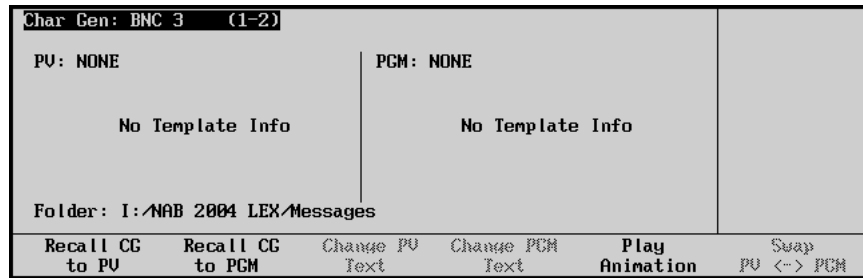
2. Press **CharGen** to display the **Character Generator Remote Control Menu**.
3. Use the middle **BNC** knob to select the BNC for your device.

- Press **GO!!** to display the **Character Generator Menu 1-2**.



Operating Tip

You can also press the Character Generator crosspoint on the MLE to display the **Character Generator Menu 1-2**.



Character Generator Menu 1-2

- Select a folder as follows:
 - Press **MORE** to display the **Character Generator Control Menu 2-2**.
 - Press **Select Folder**.
 - Use the keyboard to enter the address of the required folder.



Important

A standard PS/2 keyboard is required to input data. Contact Ross Video Technical Support for relevant information.



Important

Do NOT place anything on your keyboard or place your keyboard in a position where any of the keys could be accidentally pressed. This could result in the Switcher acting unpredictably.

- Recall a template to the **PV** column as follows:
 - Press **MORE** to return to the **Character Generator Menu 1-2**.
 - Press **Recall CG to PV**.
 - Select a template using the Synergy **Global Memory System** to recall it to the Preview of the Chyron Duet LEX.

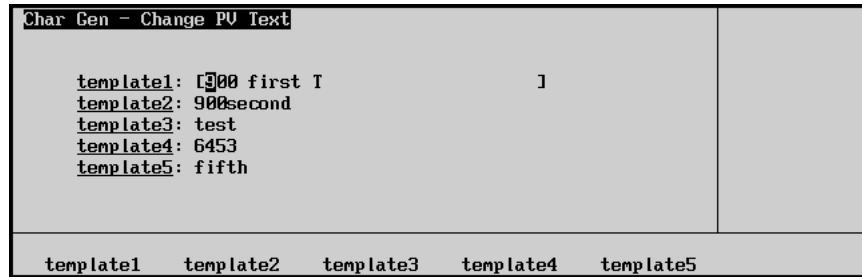


Important

Templates stored with non numerical names cannot be recalled using this method. Refer to Chapter 8, “**Custom Controls**” in the *Synergy 1 Installation Guide* for configuration instructions.

The template information is displayed in the PV column of the **Character Generator Menu 1-2**.

- Press **Change PV Text** to display the **Change PV Text Menu**.



Character Generator Menu — Change PV Text

- Change the text for the template on the Preview of the Chyron Duet LEX by pressing the applicable softkeys and editing the text using a standard PS/2 keyboard. The menu softkeys are renamed to coincide with the tag names.



Important

Do NOT place anything on your keyboard or place your keyboard in a position where any of the keys could be accidentally pressed. This could result in the Switcher acting unpredictably.

This concludes the procedure to change the Preview (**PV**) text for the Chyron Duet LEX.

Changing PGM Text

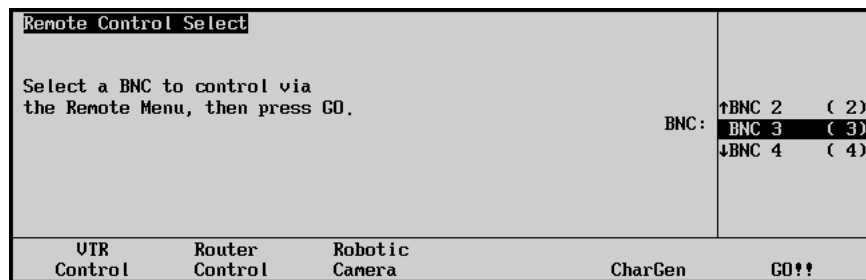
Use the following procedure to change the Program (**PGM**) text for a loaded template on the Chyron Duet LEX:



Note

A standard PS/2 keyboard is required to input data.

- Navigate to the **Remote Control Select Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**).
 - Effects** (to display the **Effects Menu 1-2**).
 - MORE** (to display the **Effects Menu 2-2**).
 - Remote Control Select** (to display the **Remote Control Select Menu**).



Remote Control Select Menu

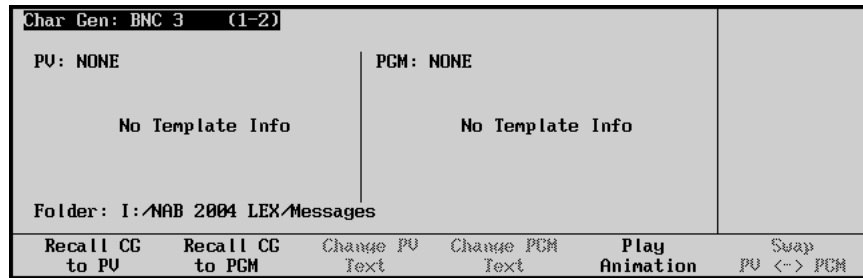
- Press **CharGen** to display the **Character Generator Remote Control Menu**.
- Use the middle **BNC** knob to select the BNC for your device.

- Press **GO!!** to display the **Character Generator Menu 1-2**.



Operating Tip

You can also press the Character Generator crosspoint on the MLE to display the **Character Generator Menu 1-2**.



Character Generator Menu 1-2

- Select a folder as follows:
 - Press **MORE** to display the **Character Generator Menu 2-2**.
 - Press **Select Folder**.
 - Use the keyboard to enter the address of the required folder.



Important

A standard PS/2 keyboard is required to input data. Contact Ross Video Technical Support for relevant information.



Important

Do NOT place anything on your keyboard or place your keyboard in a position where any of the keys could be accidentally pressed. This could result in the Switcher acting unpredictably.

- Select a template as follows:
 - Press **MORE** to return to the **Character Generator Menu 1-2**.
 - Press **Recall CG to PGM**.
 - Select a template using the Synergy **Global Memory System** to recall it to the Program of the Chyron Duet LEX.

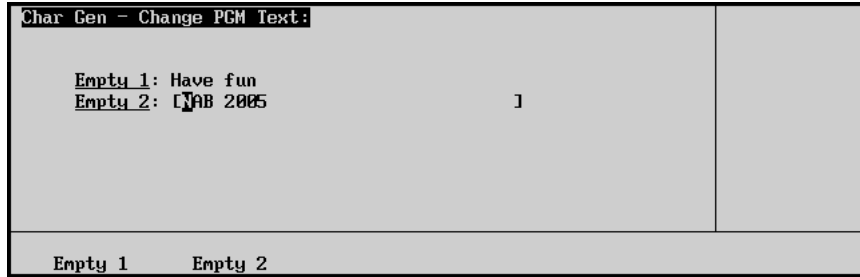


Important

Templates stored with non numerical names cannot be recalled using this method. Refer to Chapter 8, “**Custom Controls**” in the *Synergy 1 Installation Guide* for configuration instructions.

The text should now be displayed in the **PGM** column of the **Character Generator Menu 1-2**.

- Press **Change PGM Text** to display the **Change PGM Text Menu**.



Character Generator Menu — Change PGM Text

- Change the text for the event on air by pressing the applicable softkeys and editing the text using a standard PS/2 keyboard. The menu softkeys are renamed to coincide with the tag names.



Important

Do NOT place anything on your keyboard or place your keyboard in a position where any of the keys could be accidentally pressed. This could result in the Switcher acting unpredictably.

This concludes the procedure to change the Program (**PGM**) text for the Chyron Duet LEX.

Swapping Preview and Program

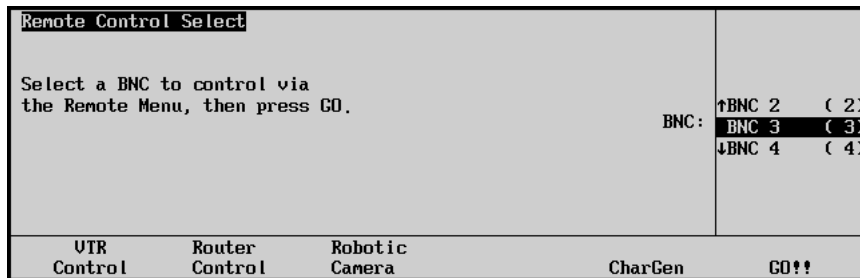
Use the following procedure to exchange what is loaded on the Chyron Duet LEX Preview (**PV**) with the file loaded on the Program (**PGM**):



Important

A standard PS/2 keyboard is required to input data. Contact Ross Video Technical Support for relevant information.

- Navigate to the **Remote Control Select Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**).
 - Effects** (to display the **Effects Menu 1-2**).
 - MORE** (to display the **Effects Menu 2-2**).
 - Remote Control Select** (to display the **Remote Control Select Menu**).



Remote Control Select Menu

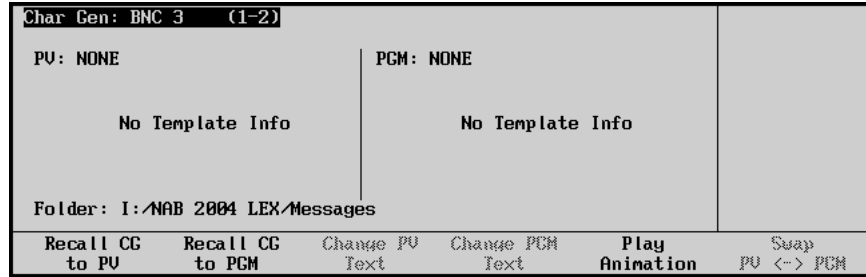
- Press **CharGen** to display the **Character Generator Remote Control Menu**.
- Use the middle **BNC** knob to select the BNC for your device.

- Press **GO!!** to display the **Character Generator Menu 1-2**.



Operating Tip

You can also press the Character Generator crosspoint on the MLE to display the **Character Generator Menu 1-2**.



Character Generator Menu 1-2

- Recall a template to the **PV** column as follows:
 - Press **MORE** to display the **Character Generator Control Menu 2-2**.
 - Press **Select Folder**.
 - Use the keyboard to enter the address of the required folder.



Important

Do NOT place anything on your keyboard or place your keyboard in a position where any of the keys could be accidentally pressed. This could result in the Switcher acting unpredictably.

- Press **MORE** to return to the **Character Generator Menu 1-2**.
- Press **Recall CG to PV**.

- Recall a template to the **PGM** column as follows:
 - Press **MORE** to display the **Character Generator Control Menu 2-2**.
 - Press **Select Folder**.
 - Use the standard PS/2 keyboard to enter the address of the required folder.



Important

Do NOT place anything on your keyboard or place your keyboard in a position where any of the keys could be accidentally pressed. This could result in the Switcher acting unpredictably.

- Press **MORE** to return to the **Character Generator Menu 1-2**.
- Press **Recall CG to PGM**.

- Toggle the **Swap PV/PGM** button to swap the templates for the **PV** and **PGM**.

This concludes the procedure to exchange a loaded template on the Preview (**PV**) of the Chyron Duet LEX with the loaded template on the Program (**PGM**).

Playing Animation

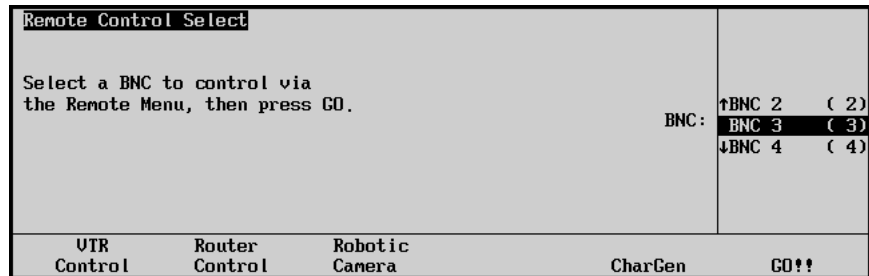
Use the following procedure to play an animation template:



Important

No other commands will be processed by the Chyron Duet LEX from the Synergy 1 Switcher until the animation is finished playing.

1. Navigate to the **Remote Control Select Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**).
 - **Effects** (to display the **Effects Menu 1-2**).
 - **MORE** (to display the **Effects Menu 2-2**).
 - **Remote Control Select** (to display the **Remote Control Select Menu**).



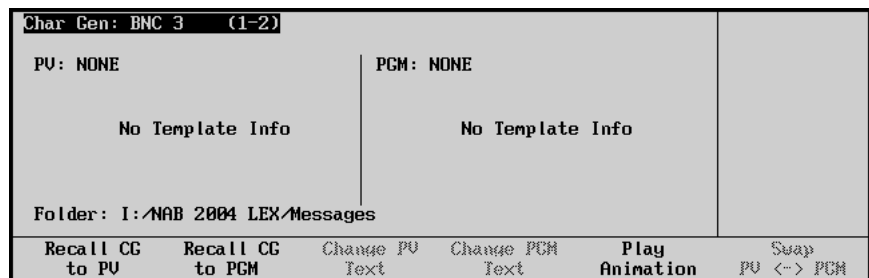
Remote Control Select Menu

2. Press **CharGen** to display the **Character Generator Remote Control Menu**.
3. Use the middle **BNC** knob to select the BNC for your device.
4. Press **GO!!** to display the **Character Generator Menu 1-2**.



Operating Tip

You can also press the Character Generator crosspoint on the MLE to display the **Character Generator Menu 1-2**.



Character Generator Menu 1-2

5. Select a folder from the CG as follows:
 - Press **MORE** to display the **Character Generator Control Menu 2-2**.
 - Press **Select Folder**.
 - Use the keyboard to enter the address of the required folder.



Important

A standard PS/2 keyboard is required to input data. Contact Ross Video Technical Support for relevant information.



Important

Do NOT place anything on your keyboard or place your keyboard in a position where any of the keys could be accidentally pressed. This could result in the Switcher acting unpredictably.

6. Select an animation template as follows:
 - Press **MORE** to return to the **Character Generator Menu 1-2**.
 - Press **Recall CG to PGM**.
 - Select a template using the Synergy **Global Memory System** to recall it to the Program of the Chyron Duet LEX.



Important

Files stored with non numerical names cannot be recalled using this method. Refer to Chapter 8, “**Custom Controls**” in the *Synergy 1 Installation Guide* for configuration instructions.

The template information is displayed in the PGM column of the **Character Generator Menu 1-2**.

7. Press **Play Animation** to enable the Synergy Switcher to play the selected template.

This concludes the procedure to play an animation file from the Chyron Duet LEX.

Remote Camera Control Interface

The Synergy 1 switcher interfaces with remote camera control devices. With the **Robotic System** software option installed, you can control cameras directly from the switcher.

Refer to Chapter 7, “**Communications Setup**” of the *Synergy 1 Installation Guide* for full configuration instructions. Refer to your camera controller’s installation and operating manuals for further configuration details.

Operation Overview

This section provides procedures to control specific robotic cameras from the Synergy Switcher.

The following remote cameras types are covered in this section:

- Telemeterics
- Radamec
- Canon
- Sony
- Eagle

Telemeterics Remote Camera Controller

Use the following procedure to control a Telemeterics Remote Camera from your Synergy 1 Switcher:

1. Navigate to the **Remote Control Select Menu** as follows:



Operating Tip

You can press the crosspoint button that is assigned to the **Remote Camera** you want to control to display the **Camera Head Control Menu** directly.

- Press **HOME** (to display the **Main Menu 1-2**).
 - **Effects** (to display the **Effects Menu 1-2**).
 - **MORE** (to display the **Effects Menu 2-2**).
 - **Remote Control Select** (to display the **Remote Control Select Menu**).
2. Press **Robotic Camera** to display the **Robotic Camera Menu**.
3. Use the middle **BNC** knob to select the BNC that the camera you want to control is connected to.
4. Press **GO!!** to display the **Camera Head Control Menu**.
5. Press **Pan/Tilt/Zoom** to display the **Pan/Tilt/Zoom Menu**.

Camera Head Control				
BNC: BNC 10 (10)		Pan:	(50.0%)	↔
Camera: Inetrics (R1) - Camera 1		Tilt:	(50.0%)	↕
		Zoom:	(50.0%)	↻
Pan/Tilt	Lens	Location	Store Shot	Recall Shot
Zoom				

Camera Head Control - Pan/Tilt/Zoom Menu

6. Adjust the Pan, Tilt, and Zoom of the selected camera as follows:



Operating Tip

You can use the positioner instead of the knobs to move the camera around quickly.

- Use the top **Pan** knob to have the camera turn right or left:
 - ~ **Pan Right** — Turn the **Pan** knob to the **right** (clockwise).
 - ~ **Pan Left** — Turn the **Pan** knob to the **left** (counter-clockwise).
- Use the middle **Tilt** knob to have the camera look up or down:
 - ~ **Tilt Up** — Turn the **Tilt** knob to the **right** (clockwise).
 - ~ **Tilt Down** — Turn the **Tilt** knob to the **left** (counter-clockwise).
- Use the bottom **Zoom** knob to have the camera zoom in or out:
 - ~ **Zoom In** — Turn the **Zoom** knob to the **right** (clockwise).
 - ~ **Zoom Out** — Turn the **Zoom** knob to the **left** (counter-clockwise).

7. Press **Lens** to display the **Lens Menu**.

Camera Head Control				
BNC: BNC 10 (10)		Iris:	(49.8%)	↔
Camera: Inetrics (R1) - Camera 1		Focus:	(50.0%)	↕
		Pedestal (Black):	(49.8%)	↻
Pan/Tilt	Lens	Location	Store Shot	Recall Shot
Zoom				

Camera Head Control - Lens Menu

8. Adjust the Iris, Focus and Pedestal of the camera as follows:



Note

On the **Telemetry Camera**, the **Iris Control** must be set to **manual** in order to be able to control it from the switcher.

- Use the top **Iris** knob to have the iris on the camera open and close:
 - ~ **Iris Open** — Turn the **Iris** knob to the **right** (clockwise).
 - ~ **Iris Closed** — Turn the **Iris** knob to the **left** (counter-clockwise).

- Use the middle **Focus** knob to have the camera focus in or out:
 - ~ **Focus Background** — Turn the **Focus** knob to the **right** (clockwise).
 - ~ **Focus Foreground** — Turn the **Focus** knob to the **left** (counter-clockwise).
 - Use the bottom **Pedestal (Black)** knob to adjust the Master Pedestal, or Black levels, for picture contrast and quality.
9. Press **Location** to display the **Location Menu**.

Camera Head Control					
BNC: BNC 10 (10) Camera: Metrics (R1) - Camera 1				Televator/Trolley:	(50.0%) ↔
				Dolly:	(50.0%) ↓
Pan/Tilt	Lens	Location	Store Shot	Recall Shot	
Zoom					

Camera Head Control - Location Menu

10. Adjust the Trolley, Televator or Dolly of the camera as follows:



Operating Tip

You can use the positioner instead of the knobs to move the camera around quickly.

- Use the top **Televator/Trolley** knob to have the camera move up or down on the Televator:
 - ~ **Camera UP** — Turn the **Televator/Trolley** knob to the **right** (clockwise) to extend the Televator up.
 - ~ **Camera Down** — Turn the **Televator/Trolley** knob to the **left** (counter-clockwise) to retract the televator down.
 - Use the middle **Dolly** knob to have the camera move on the Camera Track.
11. Press **Store Shot** to display the **Store Shot Menu**.

Camera Head Control					
BNC: BNC 10 (10) Camera: Metrics (R1) - Camera 1				Shot:	(1)
Pan/Tilt	Lens	Location	Store Shot	Recall Shot	Perform Store
Zoom					

Camera Head Control - Store Shot Menu

12. Store the current shot as follows:
- Use the middle **Shot** knob to choose a shot number in which to store the shot.
 - Press **Perform Store** to store the shot in the selected location.

13. Recall a stored shot as follows:

- Press **Recall Shot** to display the **Recall Shot Menu**.

Camera Head Control				
BNC: BNC 10 (10) Camera: Inetrics (R1) - Camera 1				
				Shot: (1)
Pan/Tilt Zoom	Lens	Location	Store Shot	Recall Shot
			Perform Recall	

Camera Head Control - Recall Shot Menu

- Use the middle **Shot** knob to choose a stored shot number to recall.
- Press **Perform Recall** to recall the shot from the selected location.

This completes the procedure for controlling a Telemeterics Remote Camera from the Synergy Switcher.

Radamec Robotic Camera Controller

Use the following procedure to control a Radamec Robotic Camera from your Synergy Switcher:

1. Navigate to the **Remote Control Select Menu** as follows:



Operating Tip

You can press the crosspoint button that is assigned to the **Robotic Camera** you want to control to display the **Camera Head Control Menu** directly.

- Press **HOME** (to display the **Main Menu 1-2**).
- **Effects** (to display the **Effects Menu 1-2**).
- **MORE** (to display the **Effects Menu 2-2**).
- **Remote Control Select** (to display the **Remote Control Select Menu**).

Remote Control Select				
Select a BNC to control via the Remote Menu, then press GO.				
				BNC: BNC 2 (2) BNC 4 (4)
UTR Control	Router Control	Robotic Camera	CharGen	GO!!

Remote Control Select — Robotic Camera Menu

2. Press **Robotic Camera** to display the **Robotic Camera Menu**.
3. Use the middle **BNC** knob to select the BNC that the camera you want to control is connected to.
4. Press **GO!!** to display the **Camera Head Control Menu**.

5. Press **Pan/Tilt/Zoom** to display the **Pan/Tilt/Zoom Menu**.

Camera Head Control				
BNC: BNC 4 (4)		Pan:	(50.0%)	↔
Camera: REMOTE 2C(2C) - Camera 2		Tilt:	(50.0%)	↕
		Zoom:	(0.0%)	↻
Pan/Tilt	Lens	Location	Store	Recall
Zoom			Shot	Shot

Camera Head Control - Pan/Tilt/Zoom Menu

6. Adjust the Pan, Tilt and Zoom of the camera as follows:



Operating Tip

You can use the positioner instead of the knobs to move the camera around quickly.

- Use the top **Pan** knob to have the camera turn right or left:
 - ~ **Pan Right** — Turn the **Pan** knob to the **right** (clockwise).
 - ~ **Pan Left** — Turn the **Pan** knob to the **left** (counter-clockwise).
 - Use the middle **Tilt** knob to have the camera look up or down:
 - ~ **Tilt Up** — Turn the **Tilt** knob to the **right** (clockwise).
 - ~ **Tilt Down** — Turn the **Tilt** knob to the **left** (counter-clockwise).
 - Use the bottom **Zoom** knob to have the camera zoom in or out:
 - ~ **Zoom In** — Turn the **Zoom** knob to the **right** (clockwise).
 - ~ **Zoom Out** — Turn the **Zoom** knob to the **left** (counter-clockwise).
7. Press **Lens** to display the **Lens Menu**.

Camera Head Control				
BNC: BNC 4 (4)		Iris:	(0.0%)	↔
Camera: REMOTE 2C(2C) - Camera 2		Focus:	(0.0%)	↕
		Pedestal (Black):	(0.0%)	↻
Pan/Tilt	Lens	Location	Store	Recall
Zoom			Shot	Shot

Camera Head Control - Lens Menu

8. Adjust the Iris, Focus and Pedestal of the camera as follows:



Operating Tip

You can use the positioner instead of the knobs to move the camera around quickly.

- Use the top **Iris** knob to have the iris on the camera open and close:
 - ~ **Iris Open** — Turn the **Iris** knob to the **right** (clockwise).
 - ~ **Iris Closed** — Turn the **Iris** knob to the **left** (counter-clockwise).

- Use the middle **Focus** knob to have the camera focus in or out:
 - ~ **Focus Background** — Turn the **Focus** knob to the **right** (clockwise).
 - ~ **Focus Foreground** — Turn the **Focus** knob to the **left** (counter-clockwise).
 - Use the bottom **Pedestal (Black)** knob to adjust the Master Pedestal, or Black levels, for picture contrast and quality.
9. Store the current shot as follows:
- Press **Store Shot** to display the **Store Shot Menu**.

Camera Head Control					
BNC: BNC 4 (4)					
Camera: REMOTE 2C(2C) - Camera 2					
					Shot: (1)
Pan/Tilt			Store	Recall	Perform
Zoom	Lens	Location	Shot	Shot	Store

Camera Head Control - Store Shot Menu

- Use the middle **Shot** knob to select the location (**1-64**) you wish to store the current shot.
 - Press **Perform Store** to store the shot in the selected location.
10. Recall a saved shot as follows:

- Press **Recall Shot** to display the **Recall Shot Menu**.

Camera Head Control					
BNC: BNC 4 (4)					
Camera: REMOTE 2C(2C) - Camera 2					
					Shot: (1)
Pan/Tilt			Store	Recall	Perform
Zoom	Lens	Location	Shot	Shot	Recall

Camera Head Control - Recall Shot Menu

- Use the middle **Shot** knob to select the location (**1-64**) you wish to recall a shot from.
- Press **Perform Recall** to recall the shot from the selected location.

This completes the procedure for controlling a Radamec Robotic Camera from the Synergy Switcher.

Canon Robotic Camera Controller



Important

When the Canon Robotic Camera recovers from a loss of power, it may automatically reset its values for positions such as Iris and Focus. These changes may not be updated in the Synergy Switcher menu system. Refer to your Canon camera documentation for more information.

Use the following procedure to control a Canon Robotic Camera from your Synergy Switcher:

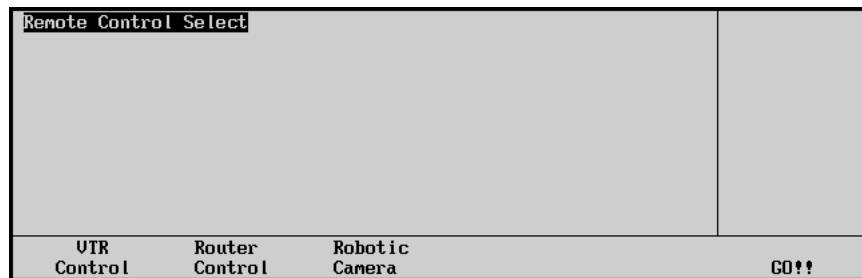
1. Navigate to the **Remote Control Select Menu** as follows:



Operating Tip

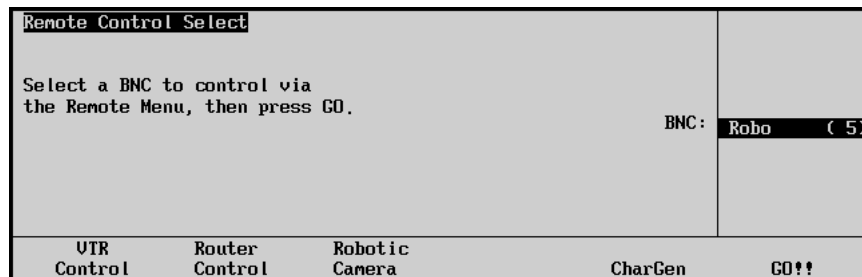
You can press the crosspoint button that is assigned to the **Robotic Camera** you want to control to display the **Camera Head Control Menu** directly.

- Press **HOME** (to display the **Main Menu 1-2**).
- **Effects** (to display the **Effects Menu 1-2**).
- **MORE** (to display the **Effects Menu 2-2**).
- **Remote Control Select** (to display the **Remote Control Select Menu**).



Remote Control Select Menu

2. Press **Robotic Camera** to display the **Robotic Camera Menu**.



Robotic Camera Menu

3. Use the middle **BNC** knob to select the BNC that the camera you want to control is connected to.
4. Press **GO!!** to display the **Camera Head Control Menu 1-2**.

- Press **Pan/Tilt/Zoom** to display the **Pan/Tilt/Zoom Menu**.

Camera Head Control (1-2)					
BNC: Robo (5) Camera: Canon (R4) - Camera 6			Pan:	(19.8%)	↔
			Tilt:	(86.6%)	↕
			Zoom:	(4.6%)	↻
Pan/Tilt Zoom	Lens	Run Wiper	Store Shot	Recall Shot	

Camera Head Control — Pan/Tilt/Zoom Menu

- Adjust the Pan, Tilt and Zoom of the camera as follows:



Operating Tip

You can use the Positioner instead of the knobs to move the camera around quickly.

- Use the top **Pan** knob to have the camera turn right or left:
 - ~ **Pan Right** — Turn the **Pan** knob to the **right** (clockwise).
 - ~ **Pan Left** — Turn the **Pan** knob to the **left** (counter-clockwise).
- Use the middle **Tilt** knob to have the camera look up or down:
 - ~ **Tilt Up** — Turn the **Tilt** knob to the **right** (clockwise).
 - ~ **Tilt Down** — Turn the **Tilt** knob to the **left** (counter-clockwise).
- Use the bottom **Zoom** knob to have the camera zoom in or out:
 - ~ **Zoom In** — Turn the **Zoom** knob to the **right** (clockwise).
 - ~ **Zoom Out** — Turn the **Zoom** knob to the **left** (counter-clockwise).

- Press **Lens** to display the **Lens Menu**.

Camera Head Control (1-2)					
BNC: Robo (5) Camera: Canon (R4) - Camera 6			Iris:	(0.0%)	↔
			Focus:	(50.0%)	↕
Pan/Tilt Zoom	Lens	Run Wiper	Store Shot	Recall Shot	Set To Manual

Camera Head Control — Lens Menu

- Toggle **Set to** between **Manual** and **Auto** as follows:
 - Manual** — Select this option to allow you to set the Lens values from the Synergy **Lens Menu**.
 - Auto** — Select this option to disable Synergy Switcher control over the Canon camera.



Note

When the Canon camera recovers from a loss of power, it may automatically reset its mode to **Auto** without updating the Synergy Switcher. Refer to your Canon camera documentation for more information.

9. Adjust the Iris and Focus of the camera as follows:

- Use the top **Iris** knob to have the iris on the camera open and close:
 - ~ **Iris Open** — Turn the **Iris** knob to the **right** (clockwise) to set a value up to 100%.
 - ~ **Iris Closed** — Turn the **Iris** knob to the **left** (counter-clockwise) to set a value up to 0%.



Important

When the Canon camera recovers from a loss of power, it may automatically set its Iris value to fully **Open**. This change may not be updated in the Synergy Switcher menu system. The Synergy Switcher may display the last Iris value before the loss of power on the Canon camera. Refer to your Canon camera documentation for more information.

- Use the middle **Focus** knob to have the camera focus in or out:
 - ~ **Focus Background** — Turn the **Focus** knob to the **right** (clockwise).
 - ~ **Focus Foreground** — Turn the **Focus** knob to the **left** (counter-clockwise).



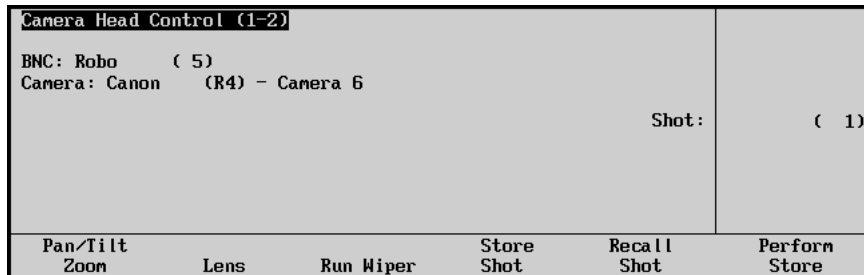
Note

When you manually adjust the **Focus** on the Canon camera, the new values may not be updated on the Synergy Switcher. Refer to your Canon camera documentation for more information.

10. Press **Run Wiper** to activate the Lens Wiper on the Canon robotic camera.

11. Store the current shot as follows:

- Press **Store Shot** to display the **Store Shot Menu**.



Camera Head Control - Store Shot Menu

- Use the middle **Shot** knob to select the location (**0-63**) you wish to store the current shot to.
- Press **Perform Store** to store the shot in the selected location.

12. Recall a stored shot as follows:

- Press **Recall Shot** to display the **Recall Shot Menu**.

Camera Head Control (1-2)					
BNC: Robo (5) Camera: Canon (R4) - Camera 6				Speed: (sec)	(3)
				Shot:	(1)
Pan/Tilt Zoom	Lens	Run Wiper	Store Shot	Recall Shot	Perform Recall

Camera Head Control - Recall Shot Menu

- Use the top **Speed (sec)** knob to set the time in seconds before the Synergy Switcher recalls the next shot.
- Use the middle **Shot** knob to select the location (**0-63**) you wish to recall a shot from.
- Press **Perform Recall** to recall the shot from the selected location.

This completes the procedure for controlling a Canon Robotic Camera from the Synergy Switcher.

Sony Robotic Camera Controller

Use the following procedure to control a Sony Robotic Camera from your Synergy Switcher:

1. Navigate to the **Remote Control Select Menu** as follows:



Operating Tip

You can press the crosspoint button that is assigned to the **Robotic Camera** you want to control to display the **Camera Head Control Menu** directly.

- Press **HOME** (to display the **Main Menu 1-2**).
 - **Effects** (to display the **Effects Menu 1-2**).
 - **MORE** (to display the **Effects Menu 2-2**).
 - **Remote Control Select** (to display the **Remote Control Select Menu**).
2. Press **Robotic Camera** to display the **Robotic Camera Menu**.

Remote Control Select					
Select a BNC to control via the Remote Menu, then press GO.				BNC:	BNC 9 (9) BNC 10 (10)
UTR Control	Router Control	Robotic Camera	CharGen	GO??	

Remote Control Select — Robotic Camera Menu

3. Use the middle **BNC** knob to select the BNC that the camera you want to control is connected to.

- Press **GO!!** to display the **Camera Head Control Menu 1-2**.

Camera Head Control (1-2)					
BNC: BNC 10 (10) Camera: Sony (R1) - Camera 2			Pan:	(74.7%)	↔
			Tilt:	(27.2%)	↕
			Zoom:	(0.0%)	↻
Pan/Tilt	Lens	Picture	Store	Recall	D-Zoom
Zoom			Shot	Shot	On/Off

Camera Head Control - Pan/Tilt/Zoom Menu

- Press **Pan/Tilt/Zoom** to display the **Pan/Tilt/Zoom Menu**.
- Adjust the Pan, Tilt and Zoom of the camera as follows:



Operating Tip

You can use the positioner instead of the knobs to move the camera around quickly.

- Use the top **Pan** knob to have the camera turn right or left:
 - ~ **Pan Right** — Turn the **Pan** knob to the **right** (clockwise).
 - ~ **Pan Left** — Turn the **Pan** knob to the **left** (counter-clockwise).
 - Use the middle **Tilt** knob to have the camera tilt up or down:
 - ~ **Tilt Up** — Turn the **Tilt** knob to the **right** (clockwise).
 - ~ **Tilt Down** — Turn the **Tilt** knob to the **left** (counter-clockwise).
 - Use the bottom **Zoom** knob to have the camera zoom in or out:
 - ~ **Zoom In** — Turn the **Zoom** knob to the **right** (clockwise).
 - ~ **Zoom Out** — Turn the **Zoom** knob to the **left** (counter-clockwise).
- Toggle the **D-Zoom** between **On** and **Off** as follows:
 - **On** — Select this option to set the Zoom feature to **Digital** with a zoom limit of 48x.
 - **Off** — Select this option turn the Digital Zoom feature off. The Zoom feature is now set to **Optical** with a zoom limit of 18x.



Operating Tip

Refer to the Sony documentation for more information on using the Digital Zoom feature of your robotic camera.

- Press **Lens** to display the **Lens Menu**.

Camera Head Control (1-2)					
BNC: BNC 10 (10) Camera: Sony (R1) - Camera 2			Iris:	(100.0%)	↔
			Focus:	(0.0%)	↕
			Shutter Speed:	(20.0%)	↻
Pan/Tilt	Lens	Picture	Store	Recall	Mode
Zoom			Shot	Shot	Auto/Manual

Camera Head Control - Lens Menu

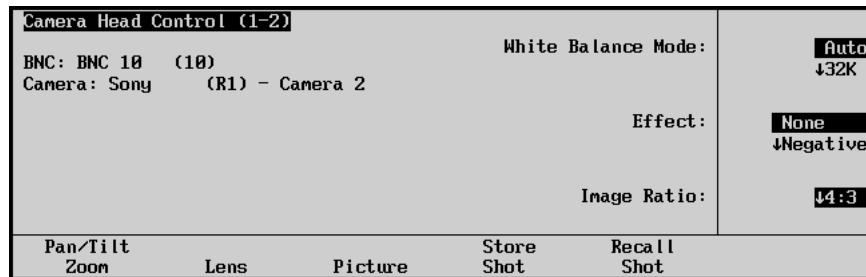
9. Toggle the **Mode** button between **Manual** and **Auto** as follows:
 - **Manual** — Select this option to allow you to set the Lens values from the Synergy Switcher. This option must be enabled to use the Synergy **Lens Menu**.
 - **Auto** — Select this option to have the robotic camera control the Lens values.
10. Adjust the Iris, Focus and Shutter speed of the camera as follows:
 - Use the top **Iris** knob to have the iris on the camera open and close:
 - ~ **Iris Open** — Turn the **Iris** knob to the **right** (clockwise).
 - ~ **Iris Closed** — Turn the **Iris** knob to the **left** (counter-clockwise).
 - Use the middle **Focus** knob to have the camera focus in or out:
 - ~ **Focus Background** — Turn the **Focus** knob to the **right** (clockwise).
 - ~ **Focus Foreground** — Turn the **Focus** knob to the **left** (counter-clockwise).
 - Use the bottom **Shutter Speed** knob to adjust the shutter speed of the camera.



Operating Tip

Refer to your robotic camera documentation for details on selecting the required shutter speed for your particular camera.

11. Press **Picture** to display the **Picture Menu**.



Camera Head Control - Picture Menu

12. Adjust the White Balance, Picture Effect or Image Ratio of the camera as follows:
 - Use the top **White Balance Mode** knob to match the mode the white balance color temperature with the light source. This creates an accurate reproduction of natural colors. You can choose from the following:
 - ~ **Auto** — Select this option to permit the camera to automatically find the best possible white balance.
 - ~ **32K** — Select this option to set the color temperature to 3200 Kelvin which is suitable for indoor lighting.
 - ~ **64K** — Select this option to set color temperature to 6400 Kelvin which is suitable for outdoor lighting.
 - Use the middle **Effect** knob to apply a special effect to the image. You can choose from the following:
 - ~ **None** — Select this option to ensure that no effects are applied.
 - ~ **Negative** — Select this option to display a brightness and color-converted form of the image.
 - ~ **Black and White (B&W)** — Select this option to display a gray-scale image.
 - Use the bottom **Image Ratio** knob to set the image ratio of the camera output.

13. Store the current shot as follows:

- Press **Store Shot** to display the **Store Shot Menu**.

Camera Head Control (1-2)					
BNC: BNC 10 (10) Camera: Sony (R1) - Camera 2					
Shot:					(1)
Pan/Tilt Zoom	Lens	Picture	Store Shot	Recall Shot	Perform Store

Camera Head Control - Store Shot Menu

- Use the middle **Shot** knob to select the location (**1-6**) you wish to store the current shot in.



Note

The Sony robotic camera can store and recall up to 6 shots.

- Press **Perform Store** to store the shot in the selected location.

14. Recall a saved shot as follows:

- Press **Recall Shot** to display the **Recall Shot Menu**.

Camera Head Control (1-2)					
BNC: BNC 10 (10) Camera: Sony (R1) - Camera 2					
Shot:					(1)
Pan/Tilt Zoom	Lens	Picture	Store Shot	Recall Shot	Perform Recall

Camera Head Control - Recall Shot Menu

- Use the middle **Shot** knob to select the shot (**1-6**) you wish to recall.
- Press **Perform Recall** to recall the shot from the selected location.

15. Press **MORE** to display the **Camera Head Control Menu 2-2**.

Camera Head Control (2-2)					
BNC: BNC 10 (10) Camera: Sony (R1) - Camera 2					
Shot:					(1)
IR Receive On/Off					

Camera Head Control Menu 2-2

16. Toggle the **IR Receive** button between **On** and **Off** as follows:



Important

The Synergy Switcher can control up to **8** robotic cameras whereas the Sony Infrared Remote Controller has a limit of **3**. Ensure that when the Infrared Remote Controller is enabled, that you are controlling the desired camera(s).

Refer to the Sony documentation for information on using the Infrared Remote Controller with multiple robotic cameras.

- **On** — Select this option to allow both the Synergy Switcher and the Sony Infrared Remote Controller to control up to 3 Sony robotic cameras. Any values changed by the Infrared Remote Controller are updated on the Synergy Switcher.
- **Off** — Select this option to turn the Infrared Remote Controller off. The Infrared Remote Controller is set to **Off** by default.

This completes the procedure for controlling a Sony robotic camera from the Synergy Switcher.

Eagle Pan Tilt System



Note

The knob values in the **Remote Control Select Menu** for the Eagle Pan Tilt System display velocity and not position. This means that as you adjust the camera, the change in values will be displayed in the **Remote Control Select Menu**. However, the values will return to 0 once you stop adjusting your camera.

Use the following procedure to control a Eagle Pan Tilt System from your Synergy 1 Switcher:

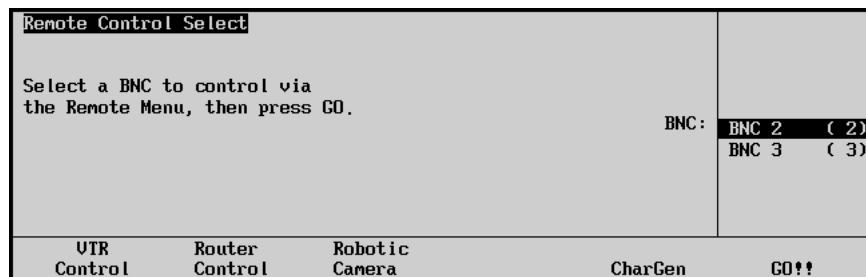
1. Navigate to the **Remote Control Select Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**).
 - **Effects** (to display the **Effects Menu 1-2**).
 - **MORE** (to display the **Effects Menu 2-2**).
 - **Remote Control Select** (to display the **Remote Control Select Menu**).



Operating Tip

You can also press the crosspoint button that is assigned to the **Eagle Pan Tilt System** you want to control to display the **Camera Head Control Menu** directly.

2. Press **Robotic Camera** to display the **Robotic Camera Menu**.



Remote Control Select — Robotic Camera Menu

3. Use the middle **BNC** knob to select the BNC that the camera you want to control is connected to.

4. Press **GO!!** to display the **Camera Head Control Menu 1-2**.
5. If you are using a Fujinon/Canon lens with your Eagle Pan Tilt System, you can toggle the **Lens Mode** as follows:
 - Press **MORE** to display the **Camera Head Control Menu 2-2**.
 - Toggle the **Lens Mode** to set the type of lens control as follows:
 - ~ **Speed** — Use this option to enable the Speed Mode for adjusting the lens. A message is displayed in the main area of the **Camera Head Control Menu** to toggle the Lens Mode to **Position** before attempting to save a prepared shot. This is the default setting.



Important

When you toggle the Lens Mode from **Speed** to **Position**, the Eagle Pan Tilt System returns to its default position. Refer to your Eagle documentation for details on this function.

- ~ **Position** — Use this option to enable the Position Mode for adjusting the lens. You must select this option before setting up and saving a shot.
 - Press **MORE** to display the **Camera Head Control Menu 1-2**.
6. Press **Pan/Tilt/Zoom** to display the **Pan/Tilt/Zoom Menu**.

Camera Head Control (1-2)				
BNC: BNC 2 (2)		Pan:	(0.0%)	↔
Camera: Eagle (R1) - Camera 1		Tilt:	(0.0%)	↕
		Zoom:	(0.0%)	↻
Pan/Tilt Zoom	Lens	Run Wiper	Store Shot	Recall Shot

Camera Head Control - Pan/Tilt/Zoom Menu

7. Adjust the Pan, Tilt and Zoom of the camera as follows:
 - Use the top **Pan** knob to have the camera turn right or left:
 - ~ **Pan Right** — Turn the **Pan** knob to the **right** (clockwise).
 - ~ **Pan Left** — Turn the **Pan** knob to the **left** (counter-clockwise).
 - Use the middle **Tilt** knob to have the camera tilt up or down:
 - ~ **Tilt Up** — Turn the **Tilt** knob to the **right** (clockwise).
 - ~ **Tilt Down** — Turn the **Tilt** knob to the **left** (counter-clockwise).
 - Use the bottom **Zoom** knob to have the camera zoom in or out:
 - ~ **Zoom In** — Turn the **Zoom** knob to the **right** (clockwise).
 - ~ **Zoom Out** — Turn the **Zoom** knob to the **left** (counter-clockwise).



Operating Tip

You can also use the positioner, instead of the knobs, to adjust the pan, tilt and zoom values.

- Press **Lens** to display the **Lens Menu**.

Camera Head Control (1-2)					
BNC: BNC 2 (2) Camera: Eagle (R1) - Camera 1				Iris:	(0.0%) ↔
				Focus:	(0.0%) ⇕
				Pedestal (Black):	(.4%) ↻
Pan/Tilt	Lens	Run Wiper	Store Shot	Recall Shot	Iris Mode
Zoom					Auto/Manual

Camera Head Control - Lens Menu

- Adjust the Iris, Focus and Pedestal of the camera as follows:
 - Toggle the **Iris Mode** to **Manual**.
 - Use the top **Iris** knob to have the iris on the camera open and close:
 - ~ **Iris Open** — Turn the **Iris** knob to the **right** (clockwise).
 - ~ **Iris Closed** — Turn the **Iris** knob to the **left** (counter-clockwise).
 - Use the middle **Focus** knob to have the camera focus in or out:
 - ~ **Focus Background** — Turn the **Focus** knob to the **right** (clockwise).
 - ~ **Focus Foreground** — Turn the **Focus** knob to the **left** (counter-clockwise).
 - Use the bottom **Pedestal (Black)** knob to adjust the Master Pedestal, or Black levels, for picture contrast and quality.
- Press and *hold* **Run Wiper** to activate the Lens Wiper on the camera connected to the Eagle Pan Tilt System.
- Store the current shot as follows:



Important

You must have the Lens Mode set to **Position**, before setting up and saving a shot.

Remember that when you toggle the Lens Mode between **Position** and **Speed**, the Eagle Pan Tilt System returns to its default position. Refer to your Eagle documentation for details on this function.

- Press **Store Shot** to display the **Store Shot Menu**.

Camera Head Control (1-2)					
BNC: BNC 2 (2) Camera: Eagle (R1) - Camera 1				Shot:	(1)
Pan/Tilt	Lens	Run Wiper	Store Shot	Recall Shot	Perform Store
Zoom					

Camera Head Control - Store Shot Menu

- Use the middle **Shot** knob to select the location (**1-31**) you wish to store the current shot to.
- Press **Perform Store** to store the shot in the selected location.

12. Recall a shot as follows:

- Press **Recall Shot** to display the **Recall Shot Menu**.

Camera Head Control (1-2)					
BNC: BNC 2 (2)					
Camera: Eagle (R1) - Camera 1					
Shot:					(2)
Pan/Tilt			Store	Recall	Perform
Zoom	Lens	Run Wiper	Shot	Shot	Recall

Camera Head Control - Recall Shot Menu

- Use the middle **Shot** knob to select the shot location (**1-31**) you wish to recall.
- Press **Perform Recall** to recall the selected shot.

This completes the procedure to control a Eagle Pan Tilt System from your Synergy 1 Switcher.

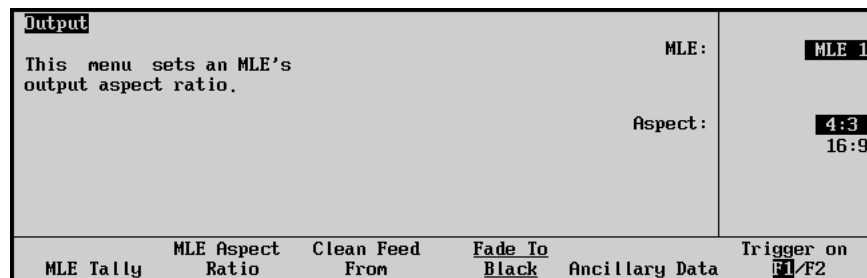
Aspect Ratio

In the **Output Menu**, the **MLE Aspect Ratio** function allows you to change the aspect ratio of the MLE. Affected switcher modes include:

- A circle wipe in 4:3 remains a circle in 16:9.
- 3D flown keys may change shape from squares to rectangles.

Use the following procedure is to set the MLE output:

1. Navigate to the **MLE Aspect Ratio Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**)
 - **MORE** (to display the **Main Menu 2-2**)
 - **Setup** (to display the **Setup Menu**)
 - **Installation** (to display the **Installation Menu 1-2**)
 - **Output** (to display the **Output Menu**)
 - **MLE Aspect Ratio** (to display the **MLE Aspect Ratio Menu**)



MLE Aspect Ratio Menu

2. Use the middle **Aspect** knob to select either **16:9** or **4:3** mode.

This completes the procedure to set the MLE output.

Copy and Swap Functions

The following copy and swap functions are available:

- **Copy Key** — allows you to copy the contents of a keyer to another key location.
- **Key Swap** — allows you to swap the entire contents of a keyer with another key location.
- **Copy Matte** — allows you to copy the contents of a matte generator to any other matte location.



Operating Tip

All copy functions use the easy “**Destination - Source**” method, in which the desired *destination* button is pressed first and held, followed by the source button (in the location from which you want to copy). Because the switcher senses the “held” button (**Destination**), the source button can be pressed without affecting the on-air status of the switcher.

Copy Key

The **Copy Key** function allows you to copy the entire contents of a keyer to the other key location. The *basic* key copy method is outlined below:

1. Press and *hold* any **Key Type** button in the *destination* **Key 1** or **Key 2** group.



2. Press any **Key Type** button in the *source* **Key 1** or **Key 2** group.
3. Release both buttons.

Note that when you copy a keyer to another keyer, the entire contents of the source keyer are copied to the destination — including the selected key crosspoint. For example, if you have an **AUTO SELECT** key enabled, the **CHROMA KEY** settings are also copied.



Operating Tip

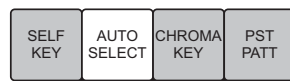
If you mix modes (**Transition** buttons and **Key Type** buttons), you get a *swap*. If you use similar modes (e.g., **Transition** buttons and **Transition** buttons or **Key Type** buttons and **Key Type** buttons), you get a *copy*.

Key Swap

The **Key Swap** function allows you to swap the entire contents of a keyer with the other key location.

Use the following procedure to swap a keyer:

1. Press and *hold* any **Key Type** button in the first keyer’s **Key Group**.



2. Press either **KEY 1** or **KEY 2** (the keyer that you did *not* select in step 1) in the **Transition Group**. The button that you select is the keyer that is swapped.
3. Release both buttons. Both selected keyers swap their contents.

Note the function can also be performed in the reverse order — pressing **KEY 1** or **KEY 2** first, followed by the **Key Type** button.

Copy Matte

The **Copy Matte** function allows you to copy the contents of a matte generator to another matte location on the switcher. Any button that is associated with a matte color can be used in the procedure.

The following buttons and locations are valid **destinations**:

- In the Mattes Group: **BKGD1, BKGD2, BORD1, BORD2, PATT**

The following buttons and locations are valid **sources**:

- In the MLE Transition Group: **WIPE**
- In the MLE Key Groups: **MATTE FILL, BORD**
- In the MLE Bus: **COLOR BKGD1, COLOR BKGD2**

Use the following procedure to copy a matte color:

1. Press and *hold* any button associated with a matte color in the *destination* **Matte Group**.



Note

Pressing **WIPE**, for this procedure, copies the *color* associated with the wipe edge.

2. Press **Color BKGD 1** or **2**. The selected matte color is copied to the destination.
3. Release both buttons.

This completes the procedure to copy a matte color.

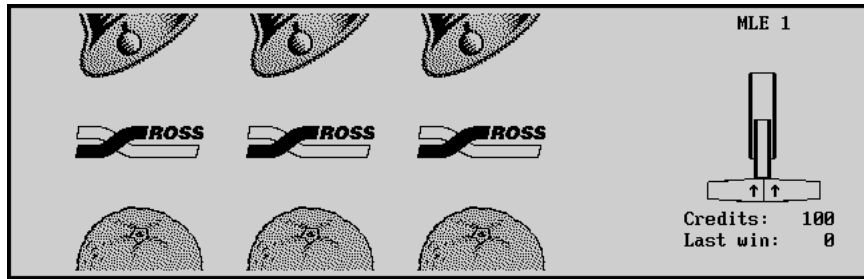
Synergy Slots

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

Use the following procedure to play the Synergy Slots:

1. Navigate to the **Fader Test Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**).
 - **MORE** (to display the **Main Menu 2-2**).
 - **Setup** (to display the **Setup Menu 1-2**).
 - **Panel Diagnostics** (to display the **Panel Diagnostics Menu 1-2**).
 - **Fader Test** (to display the **Fader Test Menu**)

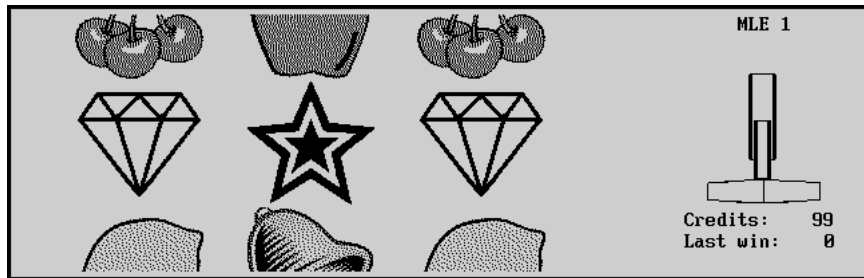
2. Press the **F6** softkey to display the **Synergy Slots Menu**.



Synergy Slots Menu

This action causes all button LEDs to turn off, with only the **F1** and **MORE** softkeys, and the **Fader** in the **Transition Area** of MLE 1 remaining active. The Fader serves as a “slot machine arm”.

3. Move the fader in the Transition Area of MLE 1 first to the upper limit and then to the lower limit.
 - This will cause the Synergy Slots to cycle for several seconds, and then settle on various pay line symbols.



Synergy Slots Menu — Pay line Symbols

- When a winning combination of pay line symbols occurs, the panel reacts as follows:
 - ~ the button LEDs on the lower area of the control panel flash randomly
 - ~ the number of credits won flashes with the new total number of credits on the **Synergy Slots Menu**
- Winning pay line symbol combinations award credits as per the payout table “**Pay Line Payout Table**” on page 8-105. The average payoff rate is approximately 239.4 percent.



Operating Tip

You can also press **MORE** to display the **Pay Line Payout Table**.

Pay Line Payout Table

Pay Line Symbols	Credit Payout
3 Ross Logos	1000
3 Lucky 7s	250
3 Oranges	30
3 Lemons	25
3 Apples	20
3 Cherries	20
3 Bells	15
3 Bars	15
3 Stars	10
3 Diamonds	10
2 Ross Logos	10
1 Ross Logo	3

- The amount of credits won on any one pull of the arm will determine the number of flashing buttons on the panel. There are three “levels” of a “win”. Refer to the “**LED Illumination Levels Table**” on page 8-105 for detailed information.
- The highest number of credits you can accumulate is 9999, and the lowest is 0.

LED Illumination Levels Table

Level	% of LEDs Illuminated	Credits Won
1	6.25%	< 10
2	12.5%	10 to 100
3	25%	> 100

- Exit the Synergy Slots as follows:
 - Press **HOME** to display the **Main Menu 1-2**.

OR

 - Press **UP ONE** to display the **Fader Test Menu**.

This concludes the procedure to play the Synergy Slots.

DVE Send

In This Chapter

This chapter provides detailed instructions on the **DVE Send** feature of the Synergy 1 switcher. The following topics are discussed:

- Understanding DVE Send Operations
- DVE Send Prerequisites
- Configuring a Primary DVE
- Multi-channel DVE Rules
- Performing a DVE Send Transition
- Valid DVE Transitions
- DVE Send Notes
- Recalling DVE Effects



Important

Refer to your *Squeeze & Tease 3D/WARP Owner's Guide*, for instructions concerning the operation and functionality of your **Internal Squeeze & Tease WARP** card.

Refer to Chapter 12, “**External DVEs**” of the *Synergy 1 Installation Guide*, for details on DVEs that interface to the Synergy 1 switcher and specific interface issues.

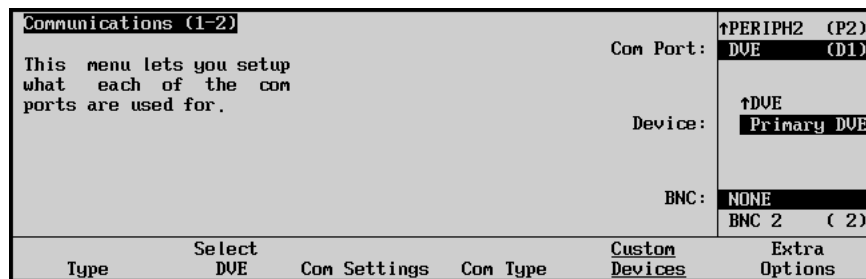
Understanding DVE Send Operations

The **DVE Send** mode allows you to perform fast and simple DVE transitions from the switcher panel — as easy as selecting a dissolve or a wipe. When you set up a **DVE Send** transition, you are electronically routing a specific set of signals from the MLE to the DVE for processing — and then *back* into the MLE for keying. On the MLE, the signals that you can send to the DVE are the various combinations of the three “next transition” buttons: **BKGD**, **KEY 1** and **KEY 2**.

DVE Send Prerequisites

To use the DVE Send mode, ensure that the following important prerequisites have been met:

- The **DVE Send** and **Remote Control** option must be properly installed in the switcher.
- Your **Primary DVE** must be properly configured. Note that you can select **Primary DVE** as the actual device on the **Communications Type Menu**, as shown below.



Communications Type Menu

Refer to Chapter 12, “**External DVEs**” of the *Synergy 1 Installation Guide* for instructions.

- The **Aux Buses** that you have chosen to route video (and key) to the DVE have been properly associated with BNCs. Refer to Chapter 9, “**Additional Installation Setups**” of the *Synergy 1 Installation Guide* for details.



Note

Aux Buses 1 and 2 must be used for the DVE fill and alpha signals.

Configuring a Primary DVE

Your primary DVE can be configured in one of two ways:

- A **1+0 DVE** has a video connection *only* going from Synergy to the DVE. Both a key signal and a fill signal are connected from the DVE to Synergy.
- A **1+1 DVE** has both a video (fill) and an key (alpha) connection going from Synergy to the DVE. Both a key signal and a fill signal are connected from the DVE to Synergy.

The method by which you configure your primary DVE greatly affects the capabilities of the DVE itself, when used in conjunction with the **DVE Send** feature. The table below illustrates the differences and limitations between the two types of DVE connections.

Differences Between DVE Connection Types

Setup Configuration	1+0 DVE	1+1 DVE
DVE's fill output is connected to a Synergy BNC input	Yes	Yes
DVE's key output is connected to a Synergy BNC input	Yes	Yes
DVE's serial port is assigned as the Primary DVE (Communications Type Menu)	Yes	Yes
Fill BNC type is assigned as DVE (BNC Type Menu)	Yes	Yes
Key BNC type is assigned as Alpha (BNC Type Menu)	Yes	Yes
Auto Key Setup associates the Key BNC with the Fill BNC (Auto Key Setup Menu)	Yes	Yes
Synergy Aux Bus Output is routed to the DVE's fill input	Yes	Yes
Synergy Aux Bus Output is routed to the DVE's key (alpha) input	No	Yes
"Fill" Aux Bus is associated with DVE fill BNC (Aux Bus Ext. Device Assign Menu)	Yes	Yes
"Key" Aux Bus is associated with DVE key BNC (Aux Bus Ext. Device Assign Menu)	No	Yes
DVE Send function allows you to fly the video channel	Yes	Yes
DVE Send function allows you to fly the video channel and the associated key channel	No	Yes

Note the following important points:

- If you connect your Primary DVE in **1+0** fashion, the output of one Aux bus (fill) is sent to the DVE. You will be able to fly the video channel, but you will *not* be able to fly an effect designed with video and key — such as flying a logo from a character generator.
- If you connect your Primary DVE in **1+1** fashion, the output of two Aux buses (key and fill) are sent to the DVE. You will have *no restrictions* in terms of video-only or video-plus-key effects.



Operating Tip

For maximum flexibility with **DVE Send** operations, it is highly recommended that you connect your Primary DVE in **1+1** fashion as outlined above.

Multi-channel DVE Rules

The DVE Send feature is primarily designed for single-channel DVEs, however, the following important rules also apply to multi-channel DVEs:

- For multi-channel DVEs that accept multiple key and fill *inputs*, you are free to assign additional Aux buses to route key and fill signals to the DVE. Keep in mind, however, that the **DVE Send** function automatically routes *one key and one fill* — additional signals beyond these must be *manually* routed to the DVE.
- If the Primary (multi-channel) DVE returns a *combined* key signal to Synergy switcher, you can use **DVE Send** in conjunction with multi-channel effects such as two-sided “slabs.” However, if the multi-channel DVE returns *separate* key signals, you will not be able to key multi-channel effects.

- In the *separate key* situation, **DVE Send** will not work — but you may be able to key the DVE manually (using two keyers) and then use a custom control button for your triggers.



Operating Tip

For maximum flexibility, it is recommended that you design each DVE effect (on the Primary DVE) with the **key channel enabled**. This setup allows you to perform video-only effects or video-plus-key effects without restriction and without re-configuring the switcher. In addition, for the best *visual* results, the effect's **keyframe 1** should be full screen and the effect's **last keyframe** should be fully *off screen*.

Performing a DVE Send Transition



Important

The Synergy switcher **DVE SEND** function is configurable to run with **Internal** or **External** DVEs. The default setting for the **DVE SEND** button, in version 14 or higher system software is **Internal**.

When the **DVE SEND** button is set to **Internal**:

- the **DVE SEND** button will *not* access an **External** DVE.
- pressing either the **DVE SEND** or **WIPE + DVE SEND** buttons will activate the **Internal** Squeeze & Tease DVE.

When the **DVE SEND** button is set to **External**:

- the **DVE SEND** button will *only* access an **External** DVE.
- pressing the **WIPE + DVE SEND** buttons will activate the **Internal** Squeeze & Tease DVE.

With all the prerequisites met (as listed in the preceding sections), use the following procedure to perform a **DVE Send** transition:

1. Ensure that the desired DVE effect is properly designed with both the video and key channels enabled.
2. Select the desired foreground and background sources.
3. Press **DVE SEND** in the **Transition Group**. This action assigns control of your *primary* DVE to the MLE and also activates Aux buses 1 and 2, and routes their video to the DVE.

When **DVE SEND** is pressed, the **DVE SEND** button automatically lights on Aux buses 1 and 2, indicating that a pre-keyed layer from the MLE is being routed to the DVE.



Note

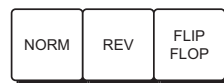
When you press **DVE SEND** in the **Transition Group**, the **DVE** button in the **Pattern Control Group** automatically lights — indicating that the pattern buttons (shot box) are now assigned for effect selection. Because there is only one primary DVE, there is only one **DVE** button in the group.

- If the DVE effect direction is *forward* (chosen by pressing **NORM** in the **Pattern Control Group**), the video on the **Background** bus will be routed to the DVE fill input.
- If the DVE effect direction is *reverse* (chosen by pressing **REV** in the **Pattern Control Group**), the video on the **Preset** bus will be routed to the DVE fill input.

- If the DVE is configured as **1+1**, the fill video’s associated alpha signal will be routed to the DVE on the second Aux bus.
 - ~ If the effect includes a **Background** transition, full screen white is sent on the second Aux bus.
 - ~ If the effect is a **Key 1**-only or **Key 2**-only transition, the associated alpha signal is sent on the second Aux bus.
 - If the DVE is configured as **1+0**, no alpha signal is sent at all.
4. If additional video channels are involved in the effect (e.g., a multi-channel effect), route them manually using the appropriate Aux buses. If you need to *override* the automatic Aux bus selections, select your sources manually on the appropriate Aux buses.
 5. Select the DVE effect in one of two ways:
 - In the **Pattern Control Group**, press the “shot box” button for the desired DVE effect.
 - Enter a two-digit number on the **Global Memory System** group’s keypad and press **ENTER**.

Refer to the section, “**Recalling DVE Effects**” on page 9-9 for additional instructions on recalling DVE effects and Aux bus crosspoints.

6. Choose the direction for the DVE effect using the three *direction* buttons in the **Pattern Control Group**:



Pattern Control Group

- Select **NORM** to run the effect forward. The video on the **Background** bus will transition off with the DVE effect, revealing the **Preset** bus underneath
 - Select **REV** to run the effect in reverse. The video on **Preset** will transition on with a DVE effect, covering up the **Background** bus.
 - Select **FLIP FLOP** to run the effect forward with the first transition, then reverse with the next transition.
7. In the **Transition Group**, use the three buttons (**BKGD**, **KEY 1** and **KEY 2**) in the **Next Transition** section to choose the combination of actions that you want to include in the **DVE Send** effect.



Important

Not all transition combinations are valid, depending on the type of DVE that is configured (**1+0** or **1+1**) and the actual buttons that are selected. Refer to the section, “**Valid DVE Transitions**” on page 9-6 for details.

By selecting a combination of buttons in the **Next Transition** section, you are electronically routing those signals from the MLE — to the DVE for processing — and then back into the MLE where they are keyed over the MLE (using the MLE’s third *hidden* keyer — reserved exclusively for **DVE Send**)!

8. Press **AUTO TRANS** to initiate the transition. Synergy performs a match-frame cut to keyer 3, cues the DVE to the starting keyframe of the effect and issues a “**Run Forward**” or “**Run Reverse**” command to the DVE as appropriate.

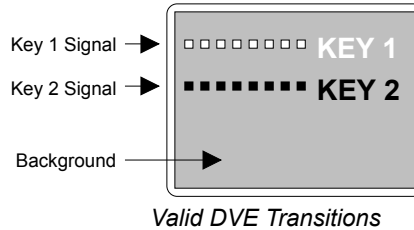


Note

DVEXtreme V2 protocol is now implemented for enhanced external DVEXtreme control. This protocol gives the Synergy switcher full fader and transition rate control of the DVE.

Valid DVE Transitions

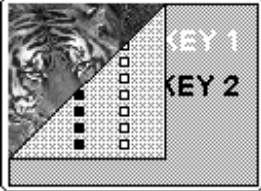
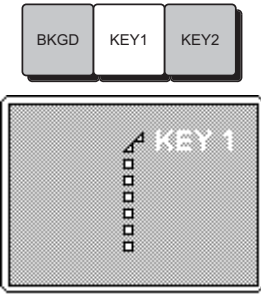
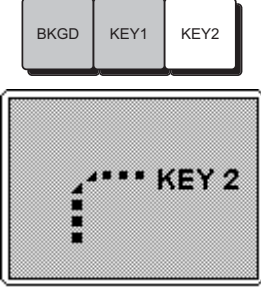

The following table indicates which transitions are valid — when using a **1+0** or **1+1** DVE and when choosing different combinations of the three *next transition* buttons (**BKGD**, **KEY 1** and **KEY 2**). Use the following figure for reference:



Valid DVE Transitions

Transition Description	Button Combination	1+0 DVE	1+1 DVE
<p>Background Only — the Background only flies. Key 1 and Key 2 are not affected if they are on screen.</p> <p>Background flies, revealing the preset bus underneath.</p>		Valid	Valid
<p>Background + Key 1 — Key 1 is pre-keyed over the Background and both are sent to the DVE as a full screen image. Key 2 is not affected if it is on screen.</p> <p>Background and Key 1 fly together, revealing the preset bus underneath.</p>		Valid	Valid
<p>Background + Key 2 — Key 2 is pre-keyed over the Background and both are sent to the DVE as a full screen image.</p> <p>Background and Key 2 (and Key 1 if it is on) fly together, revealing the preset bus (and Key 1 if it is on) underneath.</p>		Valid	Valid
<p>Background + Key 1 + Key 2 — Key 1 and Key 2 are pre-keyed over the Background and all are sent to the DVE as a full screen image.</p>		Valid	Valid

Valid DVE Transitions

Transition Description	Button Combination	1+0 DVE	1+1 DVE
Background, Key 1 and Key 2 fly together, revealing the preset bus underneath.			
Key 1 Only — Key 1 fill and Key 1 Alpha are sent to the DVE. Background and Key 2 are not affected. Key 1 only flies. Background and Key 2 are not affected. Valid only on 1+1 DVEs.		Not Valid	Valid *
Key 2 Only — Key 2 fill and Key 2 Alpha are sent to the DVE. Background and Key 1 are not affected Key 2 only flies. Background and Key 1 are not affected. Valid only on 1+1 DVEs.		Not Valid	Valid *
Key 1 + Key 2 — Not valid with <i>any</i> DVE configuration.		Not Valid	Not Valid

***Note:** This transition type is valid for all key types flown or not. Other key modifiers not yet fully implemented.

In the table above, “valid” means that you will visually see the type of transition that you would expect on the monitor — when the different combinations of *next transition* buttons are selected.

Note that you *can* select an invalid transition — and it will send video to the DVE — but you will not visually achieve the results that you want. This occurs because Synergy *pre-keys* the selected video prior to routing.

- In a **1+0** DVE, there is *no key signal* to extract and thus the only valid functions are those that include the background. Key-only transitions can be selected and run, but the background will always be pre-keyed along with the selected key — and a full screen image will fly.
- In a **1+1** DVE, the **Key 1 + Key 2** transition will not work, because Synergy can only route one alpha key signal to the DVE — not two.



Important

The **KEY OVER** button in the **Key 1** group changes the visual and electronic priority of **Key 1** from “under” to “over” **Key 2**. If this button is enabled, all rules as listed in the table above remain valid, except that the meanings of **Key 1** and **Key 2** are reversed.

DVE Send Notes

This section provides important **DVE Send** notes, arranged according to functional categories.

DVE Send and Custom Control

- Do *not* use **Custom Control** macros that are designed for running the DVE in conjunction with a **DVE Send** effect.

DVE Send and Keying

- Using a **Key 1** only or **Key 2** only DVE Send effect in conjunction with a **Preset Pattern** (with **Fly Key** enabled) results in an invalid effect. The background will be pre-keyed along with the preset pattern, instead of the preset pattern alone. The functionality for sending the “Fly Key” preset pattern *alone* to the DVE is not implemented.
- You can make any **1+1 DVE Send** effect look like a **1+0** effect simply by pressing the **BKGD** button (in the **Next Transition** group).
- If an **Auto Select** key is *already* flown using **Squeeze & Tease** and you now want to route it through the DVE using **DVE Send**, please note that the *order of processing* is as follows:
 - a) Video and alpha signals are routed to the DVE.
 - b) The DVE processes the signals and returns them to the MLE.
 - c) Video and alpha signals are then processed by the **Squeeze & Tease** circuitry.

Note that the result, visually, is that the DVE transition occurs within the screen’s **Squeeze & Tease** region.

- When using a chroma key in conjunction with **Squeeze & Tease** and **DVE Send**, the *order of processing* is as follows:
 - a) The blue screen background is routed to the DVE.
 - b) The DVE processes the signal and returns it to the MLE.
 - c) The signal is processed by the **Squeeze & Tease** circuitry.
 - d) The background is chroma keyed.

As with the previous example, visually, the DVE transition occurs within the screen’s **Squeeze & Tease** region.

DVE Send Aux Assignments

- If you perform a recall function that involves **DVE Send**, your Aux bus assignments will change, but the selected DVE effect will *not* be recalled. If you want the effect recalled as well, ensure that the **INCL DVE** button is enabled when the recall function is performed.

Protecting On Air DVEs and DVE Sends

- Recalling a **DVE Send** transition (or simply selecting one) changes the Aux bus assignments that are feeding the DVE. If the selected DVE was on-air (for example, in a keyer or on Program), changing the Aux bus assignment would cause an on-air glitch.

Therefore, if you have a primary DVE crosspoint selected that is *not* part of the recall function, all DVE Sends in the recalled register will be set to dissolve.

For example:

- ~ Prior to the recall, BNC 12 is selected on Aux 1 (with a fill signal) and BNC 14 is selected on Aux 2 (with an alpha signal). On the key bus, BNC 15 is selected (which is the crosspoint for the primary DVE).

A recall function that includes DVE Send is performed. If DVE Send was allowed to remain on for the recall, the settings for Aux buses 1 and 2 would be changed. Therefore, in this situation, the MLE is set to dissolve after the recall.

DVE Send and Aux Buses

- When a *successful* recall function is performed that includes a DVE Send transition, the Aux buses that are assigned to the primary DVE *change* to reflect the DVE Send.

Recalling DVE Effects

This section provides additional information about recalling DVE effects.

- **DVE Shot Box**

With the primary DVE properly configured, the **DVE** button in the **Pattern Control Group** is active. Pressing **DVE** turns the 40 pattern buttons into a DVE *shot box*, with the ability to instantly recall the first 40 DVE effects on your primary DVE — at the touch of a button.

The **DVE** button will *not* light unless the primary DVE is properly configured — and properly connected.

The following important rules apply:

- ~ The system remembers which DVE effect has been selected. For example, if you press **DVE** and select effect 10, then press **WIPE PP1** and select pattern 37, when you press **DVE** again, effect 10 will be selected.
- ~ If you manually recall an effect *locally* on the DVE itself, the buttons in the **Pattern Control Group** will *not* update.

- **Recall DVE Menu**

Pressing the **DVE** button calls up the **Recall DVE Menu** in the small **Global Memory System** group display.

When the **Recall DVE** menu is active, you can enter a two-digit number (between **00** and **99**) on the **Global Memory System** group's keypad and press **ENTER** to recall a DVE effect *numerically*.



Global Memory System Group Display

If the selected effect number is between **00** and **39**, the appropriate *shot box* button will light in the **Pattern Control Group**. Similarly, pressing a shot box button in the **Pattern Control Group** updates the small Global Memory display.

- **Storing and Recalling DVE Registers**

When the **DVE** button is lit in the **Pattern Control Group**, the active shot box button (or the effect number shown in the **Global Memory** display) indicates the DVE effect

that will be stored in a switcher memory register. If the **DVE** button is not lit, the system always stores the last DVE shot box button that was pressed.

Thus, when you perform a memory *recall* operation, the system automatically recalls the stored DVE effect — provided that the following criteria are met:

- ~ The DVE effect from your *primary DVE* must be stored in a register and the DVE effect number (that you wish to store) must be recalled immediately prior to storing the full effect to memory.
- ~ The **INCL DVE** button must be on.

For example:

- ~ If the **INCL DVE** button is on, the DVE effect (plus the other contents of the memory register) will be recalled.

- **Recalling Aux Bus Crosspoints**

If all the *recall* criteria have been met (as indicated above), the Aux bus crosspoints associated with the primary DVE will also be recalled when a memory recall operation is performed — effectively recalling the signals routed *to* the DVE. The association between an Aux bus and a device (BNC) is performed during setup on the **Aux Bus External Device Assignment Menu**.

Navigate to the **Aux Bus External Device Assignment Menu** as follows:

- ~ Press **HOME** (to display the **Main Menu 1-2**).
- ~ **MORE** (to display the **Main Menu 2-2**).
- ~ **Setup** (to display the **Setup Menu**).
- ~ **Installation** (to display the **Installation Menu 1-2**).
- ~ **Aux Bus** (to display the **Aux Bus Menu**).
- ~ **Ext Device Assign** (to display the **Aux Bus External Device Assignment Menu**).

Aux Bus (1-2)					
You may use the aux assign buttons to select an Aux Bus. Use the main PCM bus to select a crosspoint for modification, using the first button on the main PST bus as the shift.				Aux Bus:	Aux 1 (A01)
					↓Aux 2 (A02)
				BNC:	NONE
	↓BNC 1 (1)				
Local Panel	Ext Device Assign	Reroute Panels	Modify Name	GPI Tally Assign	Bus Follow Assign

Aux Bus — External Device Assignment Menu

The following important rules apply to Aux Buses, DVEs and memory register operations:

- ~ When we say that an Aux bus is stored or recalled, in fact, it means that the *crosspoint* selected on an Aux bus is stored in a memory register — or recalled from a register.
- ~ Aux buses that have no BNCs associated with them (as indicated by the label **NONE** on the **Aux Bus External Device Assignment Menu**) will *not* be stored or recalled under any circumstances.

- ~ If an Aux bus has an associated BNC (on the **Aux Bus External Device Assignment Menu**), it will always be stored when a memory storage operation is performed.
 - ~ If an Aux bus has an associated BNC and if all DVE *recall* criteria are met ...
 - DVE selected
 - **INCL DVE** button on
- ... then the Aux bus assignments will be recalled along with the DVE effect from a memory register. If both criteria are not met, Aux bus crosspoints will not be recalled.

Ultimatte Insider

In This Chapter

This chapter provides an overview and instructions for operating the optional **Ultimatte Insider** chroma keyer function. The following topics are discussed:

- Ultimatte Insider Option Overview
- Ultimatte Insider Setup
- Ultimatte Crosspoint Assignment Setup
- Ultimatte Insider Operation
- Ultimatte Insider Operating Tips

Refer to Appendix C. “**Hardware Options**” of the *Synergy 1 Installation Guide*, for details on installing an Ultimatte board in the frame.

Ultimatte Insider Option Overview

Ultimatte Insider™ is a hardware option that adds true Ultimatte capability — directly *inside* the Synergy switcher. The option is comprised of a hardware board designed by Ultimatte (the Oscar-winning industry leader in compositing technology), plus two Ultimatte-specific menus for controlling the chroma key.

Please note the following important points:

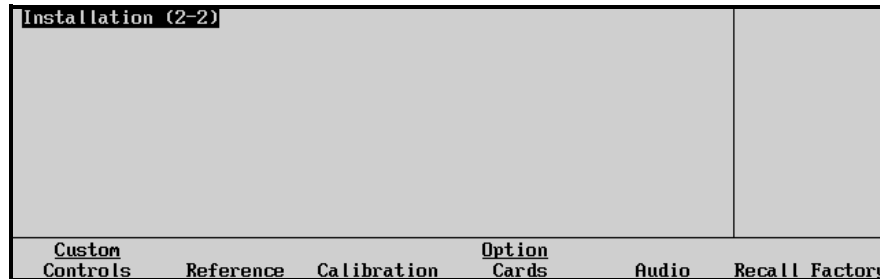
- The **Ultimatte Insider Board** creates one processed foreground and one processed key signal from a selected input video source.
- During the setup of the option, the **Ultimatte Insider** board is specifically designated to a keyer — either 1 or 2. As well, it can be assigned to any or all of the 16 physical BNC inputs.
- If the **Ultimatte Insider** is designated to Key 1 at installation, chroma key will not be available on Key 1. However, chroma key will be available on Key 2.

Ultimatte Insider Setup

Once the **Ultimatte Insider** board is properly installed, you can use the **Option Cards Menu** to assign a keyer to the Ultimatte function. Although this step is typically performed during switcher setup, if desired, you can change the assignment via the menu — depending upon your production’s requirements.

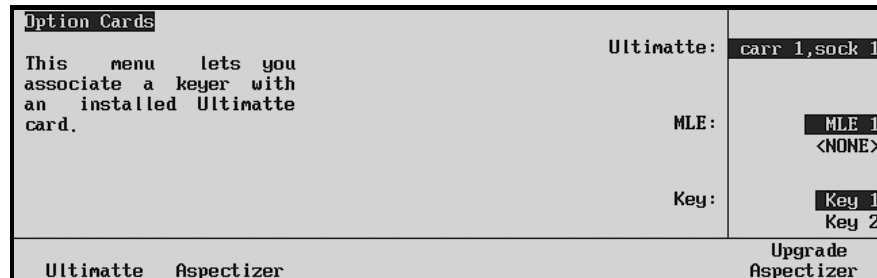
Use the following procedure to set up the Ultimatte:

1. Ensure that the **Ultimatte Insider** board is properly installed. Refer to Appendix C, “**Hardware Options**” of the *Synergy 1 Installation Guide*, for instructions.
2. Navigate to the **Installation Menu 2-2** as follows:
 - Press **HOME** (to display **Main Menu 1-2**)
 - **MORE** (to display **Main Menu 2-2**)
 - **Setup** (to display the **Setup Menu**)
 - **Installation** (to display **Installation Menu 1-2**)
 - **MORE** (to display **Installation Menu 2-2**)



Installation Menu 2-2

3. Press **Option Cards** to display the **Option Cards Menu**.
4. Press **Ultimatte** to display the **Ultimatte Option Card Menu**.



Option Cards – Ultimatte Menu

The **Ultimatte Option Card Menu** allows you to associate a specific keyer with the installed **Ultimatte Insider** board.



Note

Remember that the association is to a keyer and *not* to a specific input. Any of the inputs can be assigned as a chroma key source.

5. Use the bottom **Key** knob to associate the Ultimatte Insider capability to either **Key 1** or **Key 2**.

This completes the procedure for associating a keyer with an **Ultimatte Insider** board.

During switcher operations, when you select the keyer (as chosen above), select **Chroma Key** as the “type” and select one of the designated inputs on the **Key Bus**, the **Ultimatte Insider** menus will automatically be displayed.



Important

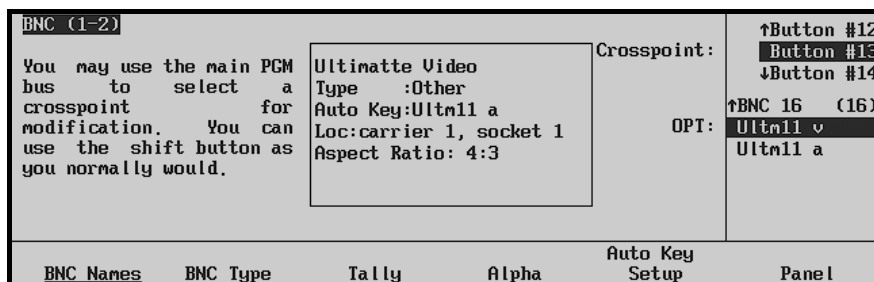
The source that you select on the **Key Bus** activates the Ultimatte menus and internally calls up the Ultimatte’s processed alpha and fill signals. The selected source’s panel button on the **Background** and **Preset** buses remains the original *unprocessed* video signal. Refer to the section, “**Ultimatte Crosspoint Assignment Setup**” on page 10-4 for instructions on how to place the Ultimatte’s *processed* signals on the panel.

Ultimatte Crosspoint Assignment Setup

To ensure the quality of the **Ultimatte Insider** board, you can assign the output of the card to a crosspoint.

Use the following procedure to set up the Ultimatte’s alpha and fill signals as a crosspoint source:

1. Ensure that the **Ultimatte Insider** board is properly associated to a keyer. Refer to the section, “**Ultimatte Insider Setup**” on page 10-3 for details.
2. Navigate to the **Panel Button Setup Menu** as follows:
 - Press **HOME** (to display **Main Menu 1-2**)
 - **MORE** (to display **Main Menu 2-2**)
 - **Setup** (to display the **Setup Menu**)
 - **Installation** (to display **Installation Menu 1-2**)
 - **BNC** (to display the **BNC Setup Menu**)
 - **Panel** (to display the **Panel Setup Menu**)
3. Use the **Crosspoint** knob to select the button on which you want to associate the Ultimatte’s processed fill (video) signal.
4. Use the **BNC** knob to select the desired internal Ultimatte video signal.
 - Note that the label **BNC** changes to **OPT** — indicating that this region of the menu is reserved for *internally generated signals* from the optional boards.



Panel Setup Menu

- Note that the suffix “**v**” indicates *video* (fill).

- In the **Status Box**, the system identifies the internal source (**Ultimatte Video**), the type (**Other**), the location of the optional board and the native aspect ratio (**4x3**).
 - Note that the internal Ultimatte alpha signal (e.g., **Ultm11 a**) is *automatically* associated with the video as the Auto Key alpha. The suffix “**a**” indicates *alpha*.
5. Press **HOME** to exit the installation menus
 6. Press **CONFIRM** to confirm your changes.

This completes the procedure for assigning the **Ultimatte Insider** output to a crosspoint. Refer to the section, “**Ultimatte Insider Operating Tips**” on page 10-15 for additional information.

Ultimatte Insider Operation

Use the following procedure to operate the **Ultimatte Insider** option:

1. Ensure that the **Ultimatte Insider** board is properly associated to the MLE and keyer.
2. Select the desired background source on the MLE.
3. Select a key source on the **Key Bus** — one that is included within the group of designated “Ultimatte” inputs. Usually all inputs are “designated”.
4. Press **Chroma Key** in the associated keyer. This choice automatically selects the output of the Ultimatte board, and displays **Ultimatte Insider Menu 1-2**.
5. Press **Primary** to display the **Ultimatte Primary Menu**.

ULTIMATTE-Insider (1-2)					Red
MLE 1 Key 1					Green
					Blue
Key Fill:	BNC 3	(BNC 03)			(100.0%)
Color:	Green	Shadow Noise:	100.0%	Matte Density	
Matte Density:	100.0%	Matte X-Size:	100.0%		
Black Gloss:	100.0%	Matte Y-Size:	100.0%		
Matte Gain:	100.0%	Matte X-Position:	100.0%	(100.0%)	
					Black Gloss
Primary	Auto Chroma Key	Color Pick	Matte Out Gain	Shadow Noise	Matte Size\Posn

Ultimatte Primary Menu

6. Press **Auto Chroma Key** to obtain the best *automatic* chroma key for the selected color. If the **Preview Overlay** option is installed in the switcher, the **Color Pick/Grab Color** button feature will be activated.
7. Press **Color Pick**. A set of cross hairs will appear on the preview monitor and the button designation will change to **Grab Color**. Move the crosshairs using the top and middle knobs or the Positioner joystick to the color desired for the **Chroma Key** transition, then press **Grab Color**. The selected color will now be the fill for the **Chroma Key**.
8. Press **Matte Out Gain** to display the **Ultimatte Matte Out Gain Menu**.

ULTIMATTE-Insider (1-2)					(100.0%)
MLE 1 Key 1					Matte Gain
Key Fill:	BNC 3	(BNC 03)			
Color:	Green	Shadow Noise:	100.0%		
Matte Density:	100.0%	Matte X-Size:	100.0%		
Black Gloss:	100.0%	Matte Y-Size:	100.0%		
Matte Gain:	100.0%	Matte X-Position:	100.0%		
Primary	Auto Chroma Key	Color Pick	Matte Out Gain	Shadow Noise	Matte Size\Posn

Ultimatte Matte Out Gain Menu

The **Matte Gain** control is a gain adjustment that affects only the processed matte output signal. This control does not have any effect on the matte signal used internally in the **Ultimatte Insider**.

- Use the top **Matte Gain** knob to adjust the gain of the matte output signal from the white end. The control can lower the matte output gain to 0%, or push it into the legal ceiling.
9. Press **Primary** to display the **Ultimatte Primary Menu**.

The **Ultimate Primary Menu** allows you to choose a primary chroma key color, adjust the matte density, and adjust black glossy reflections. The main area indicates the MLE and Keyer, and provides a detailed listing of the Ultimate parameters.

- Use the top **Color** knob to choose the color on which you want to key.
- Use the middle **Matte Density** knob to control the density (opacity) of the matte. This important step determines the level of separation that corresponds to the point at which the foreground is opaque. The default setting is one in which neutral colored foreground objects are opaque, but any color that is a shade of the backing color is partially transparent. Increasing the **Matte Density** level permits foreground objects that are the same shade as the backing color to be made opaque in the composite image.

For best results, lower the control until some portion of the foreground subject starts to become gray in the matte signal. Then increase the control until any area that should be opaque, has just become black in the matte signal. Do not advance the control too far, as it can cause hard, dark edges around your foreground subjects.

- Use the bottom **Black Gloss** knob to control black glossy foreground objects or surfaces that may be reflecting color from the backing. The control introduces a negative offset which helps interpret the object as a foreground object. Adjust the **Black Gloss** control while viewing the matte signal on the monitor. Increase the level only enough to make the black glossy area of the foreground subject appear solid black in the matte signal.

Note that using the **Black Gloss** control *may* permit the **Matte Density** control to be lowered. Readjust **Matte Density** after adjusting **Black Gloss** control to ensure that both controls are set *as low as possible*, without permitting print-through in the foreground. Do not advance the control too far, as it can cause hard, dark edges around your foreground subjects.

10. Press **Shadow Noise** to display the **Ultimate Shadow Noise Menu**.

ULTIMATE-Insider (1-2)					(100.0%)
MLE 1 Key 1					Shadow Noise
Key Fill:	BNC 3	(BNC 03)	Shadow Noise:	100.0%	
Color:	Green		Matte X-Size:	100.0%	
Matte Density:	100.0%		Matte Y-Size:	100.0%	
Black Gloss:	100.0%		Matte X-Position:	100.0%	
Matte Gain:	100.0%				
Primary	Auto Chroma Key	Color Pick	Matte Out Gain	Shadow Noise	Matte Size\Posn

Ultimate Shadow Noise Menu

- The top **Shadow Noise** control helps reduce noise in the shadow areas of the backing — noise that is noticeable in the composite image. The control also minimizes the effect of glare on the floor, in situations where the backing extends to cover the floor.

The control is a manual override for an automated function that substitutes the quieter blue foreground signal (for blue backing) for the matte signal — whenever the blue is *lower* than the matte signal.

Typically, the **Shadow Noise** control is left at its default setting. However, the following adjustments can be made:

- ~ Turning the control counter-clockwise can improve the noise reduction — while simultaneously increasing the density of the shadows cast by foreground objects.
- ~ Turning the control clockwise can lighten the density of shadows cast by foreground objects. However, if there is noise in the shadow area, it will be *more apparent* in the composite image when the control is turned in this direction.

11. Press **Matte Size/Posn** to display the **Ultimatte Matte Size and Position Menu**:

ULTIMATTE-Insider (1-2)					(100.0%)
MLE 1 Key 1					X-Size
Key Fill:	BNC 3	(BNC 03)			
Color:	Green		Shadow Noise:	100.0%	(100.0%)
Matte Density:	100.0%		Matte X-Size:	100.0%	Y-Size
Black Gloss:	100.0%		Matte Y-Size:	100.0%	
Matte Gain:	100.0%		Matte X-Position:	100.0%	(100.0%)
					X-Position
Primary	Auto Chroma Key	Color Pick	Matte Out Gain	Shadow Noise	Matte Size\Posn

Ultimatte Matte Size and Position Menu

This menu is typically used to remove undesired edges from the foreground subject caused by camera-generated edges (when “**detail**” is enabled on the camera) or by lens aberrations.

By decreasing the size of the matte or changing its position, edges can be cleaned up. Note, however, that loss of detail on the foreground subject may result.

- Use the top **X-Size** knob to adjust the size of the matte horizontally, in sub-pixel increments (up to 3 pixels).
- Use the middle **Y-Size** knob to adjust the size of the matte vertically, in sub-pixel increments (up to 3 pixels).
- Use the bottom **X-Position** knob to adjust the horizontal placement of the matte signal. This control adjusts the position (timing) of the Matte signal with respect to the foreground, in sub-pixel increments (up to 3 pixels).

12. Press **MORE** to display **Ultimatte Insider Menu 2-2**.

13. Press **Color Density** to display the **Ultimatte Color Density Menu**.

ULTIMATTE-Insider (2-2)					(100.0%)
MLE 1 Key 1					Red
Key Fill:	BNC 5	(BNC 05)			
Red Density:	100.0%		Gate 1/3:	100.0%	(100.0%)
Green Density:	100.0%		Gate 2:	100.0%	Green
White Balance:	100.0%		Veil Master:	100.0%	
Gray Balance:	100.0%		Red Veil:	100.0%	
Black Balance:	100.0%		Green Veil:	100.0%	
			Blue Veil:	100.0%	
Color Density	Flare Balance	Flare Gate	Veil Master	Veil Colors	MatteOutTie On/Off

Ultimatte Color Density Menu

The controls on the **Ultimatte Color Density Menu** allow you to “fine tune” the edges of the foreground image. The controls depend on the selected primary color:

- If **Green** is the primary color, controls are provided for **Red Density** and **Blue Density**.

- If **Blue** is the primary color, controls are provided for **Red Density** and **Green Density**.
- If **Red** is the primary color, controls are provided for **Green Density** and **Blue Density**.

Using the **Density** controls, it may be possible to improve the appearance of all edges in the composite. For example, reducing **Green Density** and **Red Density** settings improves the edges of green and red objects respectively, without compromising the edges of neutral colored objects (which are set by the **Matte Density** control).

Note that the **Density** controls *may* interact with the **Matte Density** control, depending on the colors present in foreground objects. In some cases, readjusting **Matte Density** may be required. Use care when reducing a **Density** control to avoid print-through in the foreground objects.

14. Press **Flare Balance** to display the **Ultimatte Flare Balance Menu**:

ULTIMATTE-Insider (2-2)				(100.0%)	
MLE 1 Key 1				White Balance	
Key Fill:	BNC 5	(BNC 05)			
Red Density:	100.0%	Gate 1/3:	100.0%		(100.0%)
Green Density:	100.0%	Gate 2:	100.0%		Gray Balance
White Balance:	100.0%	Veil Master:	100.0%		(100.0%)
Gray Balance:	100.0%	Red Veil:	100.0%		Black Balance
Black Balance:	100.0%	Green Veil:	100.0%		
		Blue Veil:	100.0%		
Color Density	Flare Balance	Flare Gate	Veil Master	Veil Colors	MatteOutTie On/Off

Ultimatte Flare Balance Menu

The **Ultimatte Flare Balance Menu** includes three controls that affect the overall flare suppression: **White Balance**, **Gray Balance**, and **Black Balance**. Each control influences certain parts of the foreground image, as indicated by the control name itself.

- Use the top **White Balance** knob to control the overall flare suppression from the “white” end. This control allows, for example, white foreground colors to have equal amounts of red, green and blue, or to be slightly warmer or cooler.
Adjusting the **White Balance** control makes light foreground colors warmer or cooler with minimal effect on darker colors. For example, when using a blue backing, the flare suppression logic can cause blond hair to look white around the edges. Adjusting **White Balance** can restore a warmer more natural color to the hair — without significantly affecting other colors.
- Use the middle **Gray Balance** knob to make mid-range foreground colors warmer or cooler with minimal effects on lighter and darker colors. In addition to controlling flare suppression at mid-level values, the **Gray Balance** control also provides you with an added degree of flexibility in suppressing flare and contamination from the backing onto the foreground subject.
- Use the bottom **Black Balance** knob to control the overall flare suppression from the “black” end. This control allows, for example, black foreground colors to have equal amounts of red, green and blue, or to be slightly warmer or cooler.
Adjusting the **Black Balance** control makes dark foreground colors warmer with minimal effects on lighter colors. For example, adjusting **Black Balance** can eliminate flares from most hair colors (blacks, browns and some blondes) with minimal effects on lighter colors.

Note that flare suppression may alter certain foreground colors. In most cases, this adjustment makes the foreground appear as if it is placed in front of a neutral (black)

backing and not a colored one, and overall, makes the composite more realistic (free of any influence from the backing color).

- Press **Flare Gate** to display the **Ultimate Flare Gate Menu**.

ULTIMATE-Insider (2-2)				(100.0%)
MLE 1 Key 1				Gate 1/3
Key Fill:	BNC 5	(BNC 05)		
Red Density:	100.0%	Gate 1/3:	100.0%	(100.0%)
Green Density:	100.0%	Gate 2:	100.0%	Gate 2
White Balance:	100.0%	Veil Master:	100.0%	
Gray Balance:	100.0%	Red Veil:	100.0%	
Black Balance:	100.0%	Green Veil:	100.0%	
		Blue Veil:	100.0%	
Color Density	Flare Balance	Flare Gate	Veil Master	Veil Colors
				MatteOutTie On <input type="checkbox"/>

Ultimate Flare Gate Menu

The **Ultimate Flare Gate Menu** provides three selective color gates: a combined **Gate 1/3** (Gate 1 or Gate 3) and **Gate 2**. Because alteration of foreground colors may not be acceptable via flare suppression, the “**Gate**” adjustments let you override the suppression so that “problem” colors can be used in the foreground. Problematic colors can be reproduced (with addition of some flare on certain colors), while maintaining full suppression on the rest. The effects of the Gate controls vary depending on the backing color.

The tables beginning on page 10–11, illustrate the benefits and trade-offs of each Gate adjustment. Columns 1 and 2 list the two Gate controls, and the varying degree of adjustment.

Backing Color: Blue

Flare Gate Adjustment Table — Backing Color: Blue

Gate 1/3	Gate 2	Benefits	Trade-Offs
0%	0%	<ul style="list-style-type: none"> Removes Blue Spill while permitting some shades of blue to be reproduced in the foreground. Allows BLUE to exceed GREEN by the amount GREEN exceeds RED. 	<ul style="list-style-type: none"> Unable to reproduce Magenta in foreground (or any shade of pink in which the Blue should exceed Green.) Magenta will be reproduced as Red. Unable to remove blue spill from green foreground objects.
100%	0%	<ul style="list-style-type: none"> Removes Blue Spill from Green foreground objects as well as all other foreground colors. Limits BLUE to the LOWER of RED or GREEN. 	<ul style="list-style-type: none"> Unable to reproduce Cyan or Magenta in foreground. Cyan will be reproduced as Green. Magenta will be reproduced as Red.
0%	100%	<ul style="list-style-type: none"> Permits reproduction of Magenta in the foreground (and any shade of Pink in which Blue exceeds Green). Allows BLUE to exceed GREEN by the amount RED exceeds GREEN (or by the amount GREEN exceeds RED when RED is lower than GREEN). 	<ul style="list-style-type: none"> Will not remove Blue Spill from shades of Red in the foreground. Will not completely remove Blue Spill from shades of Green in the foreground.
100%	100%	<ul style="list-style-type: none"> Removes Blue Spill from shades of Green in the foreground. Permits reproduction of Magenta in foreground. BLUE is limited to the level of RED regardless of the level of GREEN. 	<ul style="list-style-type: none"> Cannot reproduce shades of Blue in the foreground. Cyan will become Green. Cannot remove Blue Spill from Red or Yellow. (Blue spill will desaturate Yellows.)

Backing Color: Green

Flare Gate Adjustment Table — Backing Color: Green

Gate 1/3	Gate 2	Benefits	Trade-Offs
0%	0%	<ul style="list-style-type: none"> Removes Green Spill while permitting some shades of Green to be reproduced in the foreground. Allows GREEN to exceed BLUE by the amount BLUE exceeds RED. 	<ul style="list-style-type: none"> Unable to reproduce Yellow in foreground (or any shade of Brown in which the Green should exceed Blue.) Yellow will be reproduced as Red. Unable to remove Green Spill from Blue foreground objects.
100%	0%	<ul style="list-style-type: none"> Removes Green Spill from Blue foreground objects as well as all other foreground colors. Limits GREEN to the LOWER of RED or BLUE. 	<ul style="list-style-type: none"> Unable to reproduce Cyan or Yellow in foreground. Cyan will be reproduced as Blue. Yellow will be reproduced as Red.
0%	100%	<ul style="list-style-type: none"> Permits reproduction of Yellow in foreground (and any shade of Brown which Green exceeds Blue). Allows GREEN to exceed BLUE by the amount RED exceeds BLUE (or by the amount BLUE exceeds RED when RED is lower than BLUE). 	<ul style="list-style-type: none"> Will not remove Green Spill from shades of Red in the foreground. Will not completely remove Green Spill from shades of Purple in the foreground.
100%	100%	<ul style="list-style-type: none"> Removes Green Spill from shades of Blue in the foreground. Permits reproduction of Yellow in foreground. GREEN is limited to the level of RED regardless of the level of BLUE. 	<ul style="list-style-type: none"> Cannot reproduce shades of Green in the foreground. Cyan will become Blue. Cannot remove Green Spill from Magenta or Red. (Green Spill will desaturate Magentas.)

Backing Color: Red

Flare Gate Adjustment Table — Backing Color: Red

Gate 1/3	Gate 2	Benefits	Trade-Offs
0%	0%	<ul style="list-style-type: none"> Removes Red Spill while permitting some shades of Red to be reproduced in the foreground. Allows RED to exceed GREEN by the amount GREEN exceeds BLUE. 	<ul style="list-style-type: none"> Unable to reproduce Magenta in foreground (or any shade of pink in which the Red should exceed Green.) Magenta will be reproduced as Blue. Unable to remove Red spill from Green foreground objects.
100%	0%	<ul style="list-style-type: none"> Removes Red Spill from Green foreground objects as well as all other foreground colors. Limits RED to the LOWER of BLUE or GREEN. 	<ul style="list-style-type: none"> Unable to reproduce Magenta or Yellow in foreground. Magenta will be reproduced as Blue. Yellow will be reproduced as Green.
0%	100%	<ul style="list-style-type: none"> Permits reproduction of Magenta in foreground (and any shade of Pink in which Red exceeds Green). Allows RED to exceed GREEN by the amount BLUE exceeds GREEN (or by the amount GREEN exceeds BLUE when BLUE is lower than GREEN). 	<ul style="list-style-type: none"> Will not remove Red Spill from shades of Blue in the foreground. Will not completely remove Red Spill from shades of Green in the foreground.
100%	100%	<ul style="list-style-type: none"> Removes Red Spill from shades of Green in the foreground. Permits reproduction of Magenta in foreground. RED is limited to the level of BLUE regardless of the level of GREEN. 	<ul style="list-style-type: none"> Cannot reproduce shades of Red in the foreground. Yellow will become Green. Cannot remove Red Spill from Blue or Cyan. (Red Spill will desaturate Cyan.)

16. Press **Veil Master** to display the **Ultimatte Veil Master Menu**.

ULTIMATTE-Insider (2-2)				(100.0%)
MLE 1 Key 1				Veil Master
Key Fill:	BNC 5	(BNC 05)		
Red Density:	100.0%	Gate 1/3:	100.0%	
Green Density:	100.0%	Gate 2:	100.0%	
White Balance:	100.0%	Veil Master:	100.0%	
Gray Balance:	100.0%	Red Veil:	100.0%	
Black Balance:	100.0%	Green Veil:	100.0%	
		Blue Veil:	100.0%	
Color Density	Flare Balance	Flare Gate	Veil Master	Veil Colors
				MatteOutTie On/Off

Ultimatte Veil Master Menu

The term “**Veiling**” describes the discoloration of the background scene in a composite image, which is caused by traces of the backing color in the processed foreground.

If the backing color is consistent, and if RGB ratios *track* from the backing’s bright to dark areas, the **Ultimatte Insider** automatically removes all traces of the backing color in the foreground. The **Veil** controls override this automatic function in order to compensate for slight inconsistencies in the backing color.

- Use the top **Veil Master** knob to override the entire automated circuit, and manually increase or decrease the **Red**, **Green**, and **Blue Veil** levels equally. If one color has been adjusted independently, the **Veil Master** control maintains the same relationships with the other two.

17. Press **Veil Colors** to display the **Ultimatte Veil Colors Menu**.

ULTIMATTE Insider (2-2)					(100.0%)
MLE 1 Key 1					Red Veil
Key Fill:	BNC 5	(BNC 05)			
Red Density:	100.0%	Gate 1/3:	100.0%		(100.0%)
Green Density:	100.0%	Gate 2:	100.0%		Green Veil
White Balance:	100.0%	Veil Master:	100.0%		
Gray Balance:	100.0%	Red Veil:	100.0%		(100.0%)
Black Balance:	100.0%	Green Veil:	100.0%		Blue Veil
		Blue Veil:	100.0%		
Color Density	Flare Balance	Flare Gate	Veil Master	Veil Colors	MatteOutTie On/Off

Ultimatte Veil Colors Menu

In order to compensate for inconsistencies in the backing color, the **Ultimatte Veil Colors Menu** provides individual RGB veil adjustments. *Increasing* levels can cause discoloration in the background scene. *Decreasing* levels can compensate for variations in the backing color, but may cause dark edges on the foreground.

- Use the top **Red Veil** knob to manually override the red component of the automated circuit that suppresses the backing color of the composite image.
- Use the middle **Green Veil** knob to manually override the green component of the automated circuit.
- Use the bottom **Blue Veil** knob to manually override the Blue component of the automated circuit.

18. Press **MatteOutTie On/OFF** to tie the **Matte Out** to the intensity of the **Veil Colors**.

ULTIMATTE Insider (2-2)					(100.0%)
MLE 1 Key 1					Red Veil
Key Fill:	BNC 5	(BNC 05)			
Red Density:	100.0%	Gate 1/3:	100.0%		(100.0%)
Green Density:	100.0%	Gate 2:	100.0%		Green Veil
White Balance:	100.0%	Veil Master:	100.0%		
Gray Balance:	100.0%	Red Veil:	100.0%		(100.0%)
Black Balance:	100.0%	Green Veil:	100.0%		Blue Veil
		Blue Veil:	100.0%		
Color Density	Flare Balance	Flare Gate	Veil Master	Veil Colors	MatteOutTie On/Off

Ultimatte Matte Out Tie On/Off Menu

This completes the procedure to operate the **Ultimatte Insider** option.

Ultimatte Insider Operating Tips

Please note the following important points regarding the operation of the Ultimatte Insider option:

- When setting up the Ultimatte key, note that Synergy 1's **CLIP** and **GAIN** knobs are disabled when using the "**Shaped Key**". Key adjustments are made through the Ultimatte menu options.
- Any key source can be selected that is included within the group of designated inputs. In this situation, when **Chroma Key** is pressed, the Ultimatte is automatically selected. If any *other* key source is selected and **Chroma Key** is pressed, Synergy's standard **Chroma Key Menu** appears.
- If you copy an Ultimatte keyer to the other keyer and it does *not* have an Ultimatte board associated with it, the system copies the key but sets up an **Auto Select** key (using the Ultimatte's processed alpha and fill signals). In this situation, if you have not performed a panel button association with the Ultimatte output (as detailed in the section "**Ultimatte Insider Setup**" on page 10-3) the system fills the key with black.
- If you copy a regular (non-Ultimatte) Chroma Key to the other keyer and it *does* have an Ultimatte installed, the result is a standard Chroma Key. Note that this is the only way to perform a standard Chroma Key on an Ultimatte keyer. To switch the keyer back to Ultimatte mode, select a different "Ultimatte" key source, or press **Self Key** and then press **Chroma Key** again. However, pressing the *same source* or pressing **Chroma Key** first will not change the mode — these are safe buttons.

Dual Aspectizer

In This Chapter

This chapter provides instruction for operating the optional **Dual Aspectizer**, or simply the **Aspectizer**. The following topics are discussed:

- Dual Aspectizer Option and Overview
- Dual Aspectizer Mode Descriptions
- Dual Aspectizer Mode Comparisons
- Dual Aspectizer Setup
- Input Mode Setup
- Input Mode Menus
- Input Mode Operation
- Bus Mode Setup
- Bus Mode Menus
- Bus Mode Operation
- Downstream Mode Setup
- Downstream Mode Menus

For instructions on physically installing the **Aspectizer** board, refer to the section, “**Dual Aspectizer Board Installation**” in Appendix C of the *Synergy 1 Installation Guide*.



Note

If you wish to upgrade your switcher to include this option, please contact **Ross Video Customer Service** for ordering information.

Dual Aspectizer Option and Overview

The **Dual Aspectizer** hardware option allows the user to perform live dual aspect ratio DTV production from a Synergy 1 panel. The **Aspectizer**, as it is more commonly referred to, dynamically converts the aspect ratio of a video signal in real time, *within* the switcher itself. Conversions can occur from 4:3 to 16:9 and vice-versa.

The **Dual Aspectizer Board** is a **two-channel** board capable of aspectizing either two independent BNC inputs or a “bus-pair” (for example, **BKGD (PGM)** and **PST** bus) on the MLE.

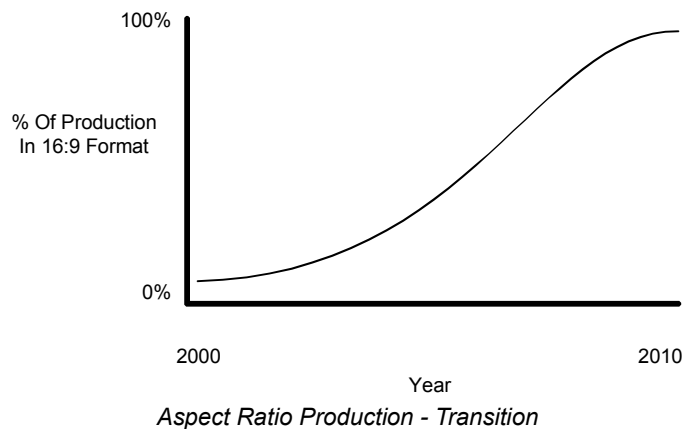
Dual Aspect Ratio Production Overview

Now that DTV has become a reality, we have begun the transition from the traditional 4:3 world of production to the innovative 16:9 wide-screen world. Television can now take its rightful place beside motion picture film as an equal visual partner.

What is the best path to follow during the transition? Is it merely a question of continuing to produce with a 4:3 mindset and simply converting the picture to a 16:9 format or should we look at this as an opportunity to rethink our production concepts in general and explore how to best take advantage of the additional visual real estate?

Ultimately this is a production issue, not just a conversion issue. It will be management and the production people, from network executives, to station managers, to news directors, to senior producers who will decide how this new 16:9 “look” will be handled. And as always has been the case in the past, the station engineers and technical personnel will be assigned the task of getting it to air.

If we chart the transition from one aspect ratio to the other, starting in today’s predominantly 4:3 production world and finishing several years from now as a predominantly 16:9 production world, the graph would look something like this:



In the next few years, market and legislative pressures will drive the transition and compel the facilities to accelerate the change. Most places will phase in 16:9 production over a few years by first introducing a few 16:9 inputs into the production mix and converting them to 4:3. Then in a year or so, having the benefit of some experience with dual aspect ratio production, they will make a major change over to the 16:9 world.

However, some facilities will no doubt make the change all at once, changing from a 4:3 to a 16:9 production capability in one fell swoop. Some will offer dual aspect ratio outputs to feed separate transmitters, some will not. It will depend upon many factors, but however your facility decides to effect the change, we do know that the next few years of transition will be as exciting as they are challenging.

In order to make the transition as smooth as possible, each facility should begin the process by having a clearly defined vision of where they want to go in terms of the 16:9 world. Defining that vision has to start with the most important question of all:

Question

What are your production goals?

You have to have a strong, clear understanding of where you want to end up, so that you can develop a well thought out plan to get there. As part of defining your overall production goals, you'll have to answer questions like:

- What are management's expectations?
- How do they want you to operate?
- What do you want your "look" to be?
- Are you an affiliate?
- Do you have to fit into a network's style?
- How long do you have to make the transition?
- Will you be feeding one transmitter or two?

And once some of these big picture questions have been asked, you'll have to get into the more subtle technical questions like:

- How many inputs are there with a different aspect ratio?
- Do you want to do memory recalls that involve aspect ratio manipulation?
- Should I operate in Input Mode or Bus Mode or Downstream Mode?

The answers to these and a host of other questions will provide you with a framework to plan a cost effective and orderly transition into a new era of production.

Dual Aspectizer Mode Descriptions

Each facility has its own unique set of parameters that will dictate its method of operation in the dual aspect ratio world. Although there are as many different ways to operate with dual aspect ratios as there are facilities, for the sake of this discussion, we have grouped them into three main categories:

1. Single Output Production – Input Mode
2. Single Output Production – Bus Mode
3. Dual Output Production – Downstream Mode

The words *primary* and *secondary* describe the two outputs in the dual output situation. These words are for description purposes only and are not meant to represent a priority of one over the other. Likewise, whenever an aspect ratio is defined, it is used as an example to illustrate one situation. The example would be just as appropriate if the aspect ratios were reversed.

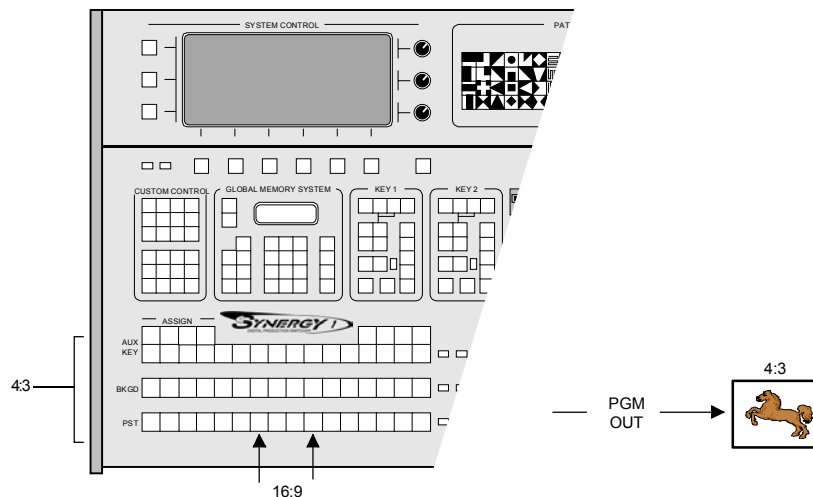
In the following examples, whenever an aspect ratio is defined, it is used as an example to illustrate one situation. The example would be just as appropriate if the aspect ratios were reversed.

The term **Aspectizer look** or simply **look** is used to describe the different visual possibilities available when 4:3 video is converted to 16:9 or vice versa (for example, Letterbox, Pillarbox). A full description of the different **looks** follow later in the chapter.

If your situation does not fit exactly into one of our examples and you have questions about how you would like your facility to operate, please call your Ross Video service representative for assistance.

Single Output Production – Input Mode

This method of operation is characterized by a single **PGM** output, which is the same aspect ratio as the MLE and most of the inputs. However, one or two of the inputs have a different aspect ratio from the rest. These are sent to the **Aspectizer**, converted to the aspect ratio of the output, given an aspectized **look** and then typically, but not always, remain unchanged during the course of the production.



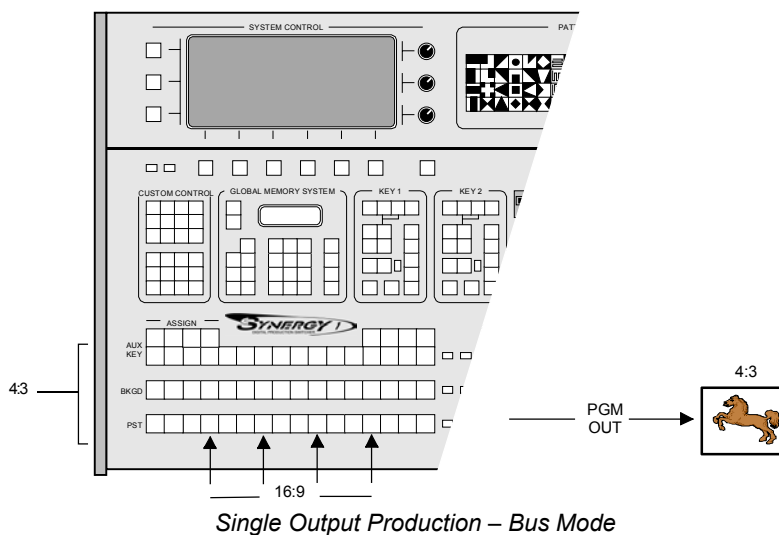
Single Output Production – Input Mode

In the above configuration, the **Aspectizer** would be setup in **Input Mode**.

A complete description of how to setup and operate your switcher in **Input Mode** is discussed later in this chapter.

Single Output Production – Bus Mode

This mode uses a single **PGM** output, which is the same aspect ratio as the MLE. In this example, a number of inputs have aspect ratios that are different from the MLE. In this case, the bus-pair (usually the **BKGD (PGM)** and **PST** buses) on the MLE is sent to the **Aspectizer** in **Bus Mode**. Then, whenever a crosspoint is selected on the MLE, a comparison of the aspect ratio of the input and the MLE is done and if they are the same, the signal is passed through the **Aspectizer** without any change. Subsequently, if the aspect ratios are different, the **Aspectizer** becomes *active* and the signal is aspectized to the predetermined **look** selected.



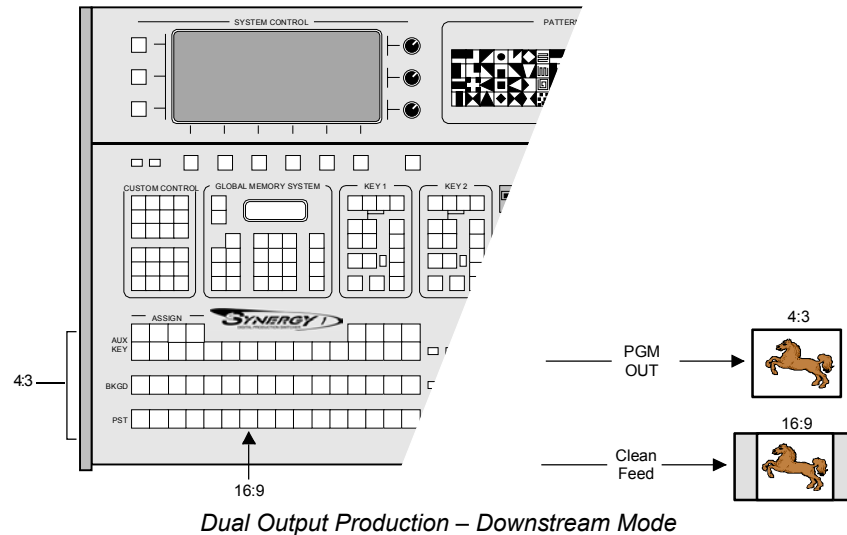
A complete description of how to setup and operate your switcher in **Bus Mode** is discussed in the section, “**Bus Mode Setup**” on page 11-23.

Dual Output Production – Downstream Mode

This method of operation is characterized by dual outputs – the *primary* (4:3) from the **PGM** out and the *secondary* (16:9) from the **Clean Feed**. However, the MLE and the inputs have the same aspect ratios, with the possible exception of one input that may be different. This is sent to the **Aspectizer**, converted to the aspect ratio of the primary output, given an aspectized **look** and then typically, but not always, remains unchanged during the course of the production.

The secondary output (16:9) on the other hand, is simply an aspectized version of the primary and available from the **Clean Feed** output.

One of the main advantages of this mode is that the TD has complete *internal* control over the aspectized **look** of the output, since like the other modes, all of the aspectizing is being done inside the switcher.



A complete description of how to setup and operate your switcher in **Downstream Mode** is discussed in the section, “**Downstream Mode Setup**” on page 11-39.



Note

The **AlphaNomadCK** option is not available when the **Dual Aspectizer** option is in Downstream Mode, as both require a Clean Feed output.

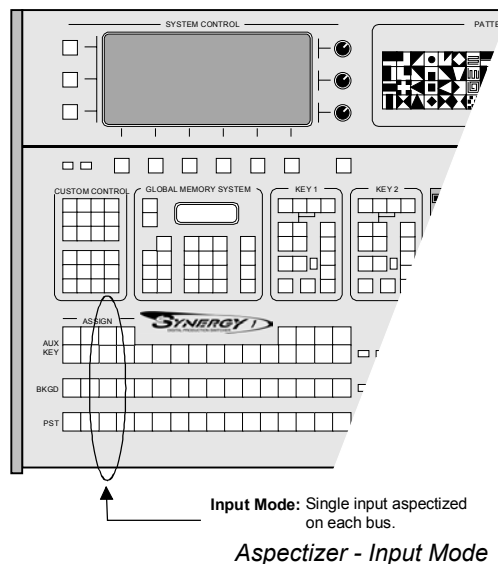
Dual Aspectizer Mode Comparisons

As part of the planning process for dual aspect ratio production, there are several other questions that need to be addressed in order to decide whether your facility should operate in **Input Mode**, **Bus Mode** or **Downstream Mode**. The right choice will ultimately depend upon your particular set of circumstances.

The following points will not make the choice for you but will outline some of the considerations that should be taken into account as you go through the decision making process.

Input Mode

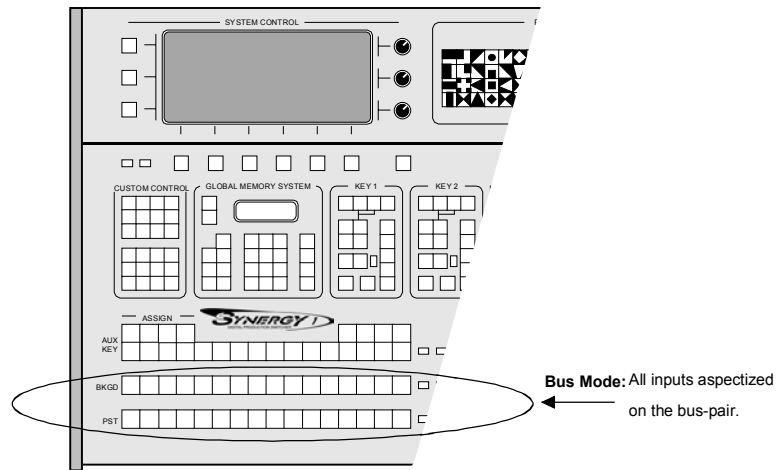
In **Input Mode**, you can aspectize up to two inputs.



- Each input that is assigned to an **Aspectizer** is aspectized on each of the three buses of the MLE – in other words, *vertically*.
- Used for both single and dual aspect ratio output production.
- Each **Aspectizer** will aspectize two inputs independently, on two separate channels.
- Each aspectized input retains its own unique characteristics.
- Since the **Aspectizer** settings in **Input Mode** are stored in **Personalities**, individual **Aspectizer** settings do not follow in **Memory Recalls**.
- **Input Mode** is usually used when the number of inputs requiring aspectization is 2 or less.

Bus Mode

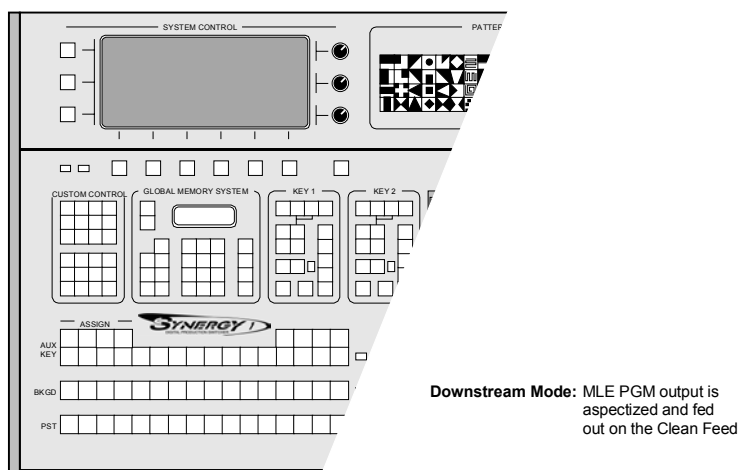
In **Bus Mode**, you can aspectize all the inputs on a bus-pair – namely the **BKGD (PGM)** and **PST**, or the fill and alpha channels of the KEY bus.



Aspectizer – Bus Mode

- Each input on a bus-pair that is assigned to an **Aspectizer** is aspectized along the MLE – in other words, *horizontally*.
- **Bus Mode** *links* two buses *together* on the MLE to create a bus-pair.
- Each bus-pair shares the same **Aspectizer** characteristics.
- Since the **Aspectizer** settings are stored to **Memories** in **Bus Mode**, the setups can be used in **Memory Recalls**.
- Any bus-pair on the MLE is assigned to the **Aspectizer** in **Bus Mode**.
- **Bus Mode** is usually used when the number of inputs requiring aspectization are more than two.

Downstream Mode



Aspectizer – Downstream Mode

- Only used for dual aspect ratio output configurations.
- Can be used in conjunction with **Input Mode**.
- In effect, aspectizes a **PGM** output downstream of the switcher.
- Has no effect on any input or the MLE during the production process.
- The **Clean Feed** provides the Downstream Mode output.

Conclusion

The rest of this chapter deals with the operation of your **Aspectizer**. However, before you continue, do yourself a favor and make sure that everyone in your production facility truly understands the benefits that can be gained with a well-thought-out transition plan. Take the time to think about tomorrow's requirements. Make an informed decision as to which of the output production formats will best serve your operational requirements in the years to come, because if you are not sure today where you are going, you'll never know when you get there.

Dual Aspectizer Setup



Note

Before the **Aspectizer** option will function properly, the following steps must be completed.

- Refer to Chapter 6, “**BNC Configuration and Check**” in the *Synergy 1 Installation Guide* for detailed instructions on how to:
- **Name BNC Inputs** – a complete explanation of how to connect the physical switcher inputs, including reference, video and alpha.
- **Set up BNC Types** – a complete explanation of how to associate each physical BNC connector with an input *type*.
- **Set Up Panel Buttons** — a complete explanation of how to map each BNC connector to a physical button on the control panel.
- **Set Up BNC Aspect Ratios** – a complete explanation of how to setup the *native aspect ratios* of a BNC input and the MLE output.

Refer to Chapter 9, “**Additional Installation Setups**” in the *Synergy 1 Installation Guide* for detailed instructions on how to:

- **Set Up MLE Aspect Ratios** – a complete explanation of how to set up the *native aspect ratio* of the MLE’s output.

After the switcher inputs and outputs have been configured as per the above, use the following procedure to set up the **Aspectizer** for operation:

1. Ensure that the **Aspectizer** is properly installed and recognized by the system.
2. Navigate to the main **Aspectizer Menu** as follows:
 - Press **HOME** (to display **Main Menu 1-2**)
 - **MORE** (to display **Main Menu 2-2**)
 - **Setup** (to display **Setup Menu**)
 - **Installation** (to display **Installation Menu 1-2**)
 - **MORE** (to display **Installation Menu 2-2**)
 - **Option Cards** (to display **Option Cards Menu**)
 - **Aspectizer** (to display **Aspectizer Setup Options Menu**)

Option Cards	
This menu lets you decide how your Aspectizer will work.	Aspectizer Channel: Carr1, Sock1A Carr1, Sock1B
	Mode: Not In Use ↓Input
Ultimate Aspectizer	Upgrade Aspectizer

Main Aspectizer Menu

The **Aspectizer Setup Options Menu** allows you to configure your **Aspectizer** and defines:

- Where the **Aspectizer Board** is physically located
- What mode it is in
- Which BNCs you wish to aspectize

There are three operational modes for the **Aspectizer** – **Input**, **Bus** and **Downstream**.

Please note that there is also a **Not In Use** mode that can be selected to *turn off* the specific **Aspectizer**.



Note

There are two other softkeys on the **Option Cards Menu** – **Ultimatte** and **Upgrade Aspectizer**.

- The **Ultimatte** softkey will take you into the **Ultimatte** setup menus.
- The **Upgrade Aspectizer** softkey is reserved for use at the factory and is *not* designed for user set up.

The **Ultimatte Insider** option is mutually exclusive with the **Dual Aspectizer** option. Only one of the two can be installed.

Input Mode Setup

In **Input Mode**, the user assigns one or two input BNCs to the dual channel **Aspectizer**. The BNCs are treated independently throughout the switcher. When either of these inputs is selected on the MLE, its aspect ratio is compared to that of the MLE, and if different, is sent through the **Aspectizer**. In other words, in **Input Mode** an input is aspectized *vertically* through the three buses.

All information and values associated with an **Aspectizer** in **Input Mode** are stored in the switcher's **Personality Registers**.

Option Cards	
This menu lets you decide how your Aspectizer will work.	Aspectizer Channel: Carr1, Sock1A Carr1, Sock1E
	Mode: Not In Use Input
	↓Bus
	↑BNC 9 (9)
	BNC: Filn (10)
	↓BNC 11 (11)
Ultimate Aspectizer	Upgrade Aspectizer

Aspectizer Menu – Input Mode

Once you have entered the **Aspectizer Setup Menu**, as described in the previous section, use the following procedure to configure the **Aspectizer** in **Input Mode**:

1. Use the top **Aspectizer Channel** knob to select the **Channel** that you want to define. Each channel of the **Aspectizer** is defined as **Carr1** and **Socket** number – either **SockA** or **SockB**.
2. Use the middle **MODE** knob to select the mode you wish to achieve – in this case **INPUT**. Selecting **INPUT** will change the bottom knob to **BNC**.
3. Use the bottom **BNC** knob to assign a BNC to the channel selected in Step 1.
4. Repeat steps 1 through 3 for the second channel of the **Aspectizer**.

This completes the **Aspectizer** setup procedure for **Input Mode**. Following are additional notes on **Input Mode** menus and operational examples.

Input Mode Menus

Dealing with inputs having different aspect ratios adds a new dimension to the TD's already hectic life. This is especially true when an input is being fed from a router or some other device that can send signals with different aspect ratios. The **Aspectizer** option provides the flexibility and ease of operation that is critical to the success of your production.

Input Mode is most often used when the aspect ratio of up to two inputs and your MLE are different. These different inputs are sent to the **Aspectizer**, setup with an aspectized **look** and typically, but not always, neither the **look** nor the aspect ratio are changed during the course of the production. However, there is provision for an easy change of aspect ratio when the situation arises using the **Input Ratio 16:9/4:3** toggle. This will be discussed later in the chapter.

Once you have configured your switcher in **Input Mode**, there are two ways to enter the operational **Aspectizer Menu**:

1. Navigate to the **Select Aspectizer Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**)
 - **Effects** (to display the **Effects Menu**)
 - **Aspectizer** (to display the **Select Aspectizer Menu**)



Select Aspectizer Menu

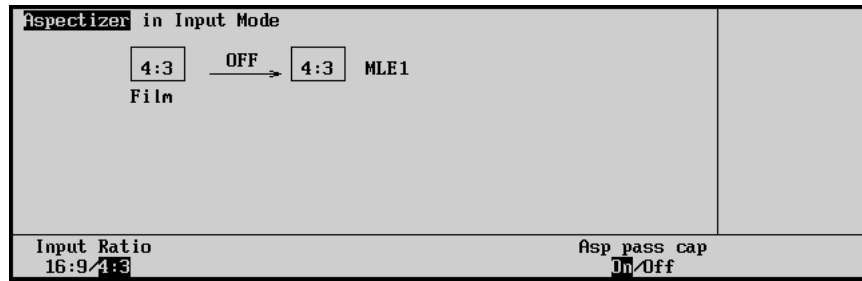
- Use the top knob to highlight the input that you wish to select, and
- Press **Modify**. Note, only the inputs that have previously been configured for an **Aspectizer** will be displayed,

OR

2. **Double press** the input that you wish to select. However, if the **Aspectizer** menu is already up, a *single press* will change the display. (If you would like to change the default speed of the *double press* function, please refer to Chapter 9, “**Additional Installation Setups**” in the *Synergy 1 Installation Guide* for setup instructions).

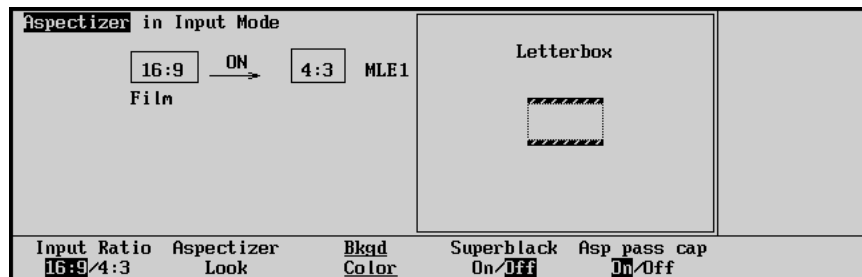
In either case, one of the two following menus will be displayed, depending upon the relationship of the input and the MLE aspect ratios.

1. If the aspect ratios of the input and the MLE are the same, the following menu is displayed.



Aspectizer in Input Mode – Same Aspect Ratios

- The title of the menu is in the top left and indicates that the **Aspectizer** is in **Input Mode**.
 - The main body of the menu will display two boxes. The box on the left represents the input. The input's name is beneath the box and its aspect ratio is shown inside the box.
 - An arrow joins the boxes with the word **OFF** above the line, indicating that the **Aspectizer** is *not* active.
2. If the aspect ratios of the input and the MLE are different, the following menu will be displayed.

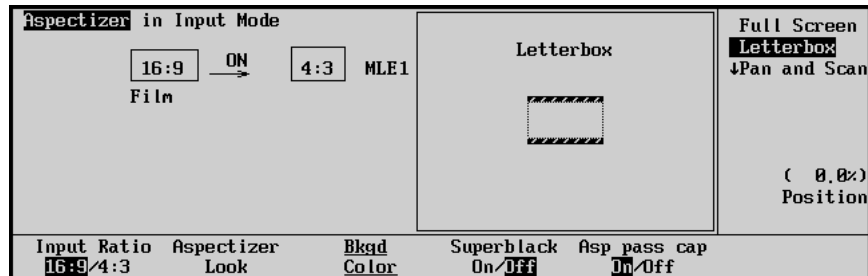


Aspectizer in Input Mode – Different Aspect Ratios

- The title of the menu is shown in the top left and indicates that the **Aspectizer** is in **Input Mode**.
- The main body of the menu will display two boxes. The box on the left represents the input. The input's name is beneath the box and its aspect ratio is shown inside the box.
- Next to the input box is an arrow pointing from left to right. Since the aspect ratios of the input and the MLE are not the same, the arrow is animated (moving from left to right) with the word **ON** above the line. This indicates that the **Aspectizer** is *active* on the MLE and the input video is being processed.
- To the right of the arrow is a box that shows the aspect ratio of the MLE.
- Inside the large box is a graphical representation the **Aspectizer look** that is presently selected and being applied to the input. (See **Aspectizer Look** softkey below).

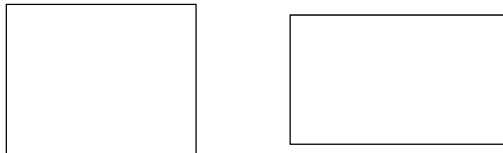
There are four softkey labels in the **Label Area**:

- **Input Ratio 16:9/4:3 toggle:** the aspect ratio of the selected input is highlighted in reverse lettering. Pressing this softkey toggles or changes the defined aspect ratio of the input. This in turn will change all of the input/MLE relationships and change the display.
- Pressing the **Aspectizer Look** softkey will display the different **looks** available in either aspect ratio configuration. The **looks** are displayed on the right hand side of the menu.



Aspectizer Looks

- In all, there are seven **looks** to choose from, depending on the combination of input and output aspect ratios. They are selectable by rotating the top knob.
- Six of these **looks** can be repositioned on screen, either vertically or horizontally depending on the **look**. These movable looks are **Letterbox**, **Pillarbox**, the two **Pan and Scan** looks, and the two **14:9** looks (one each for 16:9 to 4:3 aspect ratio, and one each for 4:3 to 16:9 aspect ratio). Rotate the bottom **Position** knob to move the aspectized output, as desired.
- **Full Screen:** when selected, the input is passed through the **Aspectizer** without making any change to the video.



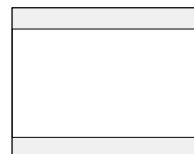
4:3 and 16:9 Full Screen



Note

Selecting **Full Screen** when the input and MLE aspect ratios are *different* will produce a distorted picture.

- **Letterbox:** this is the default look for a 16:9 input signal that is selected when the MLE is set at 4:3.



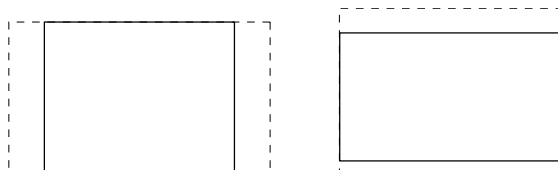
4:3 Letterbox

- **Pillarbox:** this is the default look for a 4:3 input signal that is selected when the MLE is set at 16:9.



16:9 Pillarbox

- **Pan and Scan:** this look can be applied to either a 16:9 signal that is selected when the MLE is set at 4:3, or a 4:3 input that is selected when the MLE is set at 16:9.

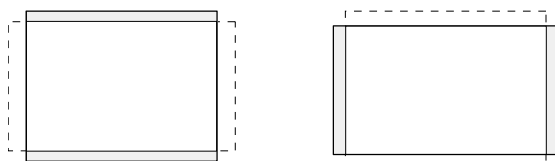


16:9 Input selected on 4:3 MLE

4:3 Input selected on 16:9 MLE

Pan and Scan

- **14:9** this look can be applied to either a 16:9 signal that is selected when the MLE is set at 4:3, or a 4:3 input that is selected when the MLE is set at 16:9. The **14:9 look** is a compromise between a **Letterbox** or **Pillarbox** and a **Pan and Scan**.



16:9 Input selected on 4:3 MLE

4:3 Input selected on 16:9 MLE

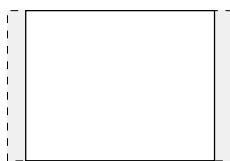
14:9

- **14:9 Wide:** this look can be applied to a 4:3 input that is selected when the MLE is set at 16:9. The **14:9 Wide look** displays the same image as **14:9**, but eliminates the black pillars at the left and right by expanding the image horizontally so it fills the screen.



14:9 Wide

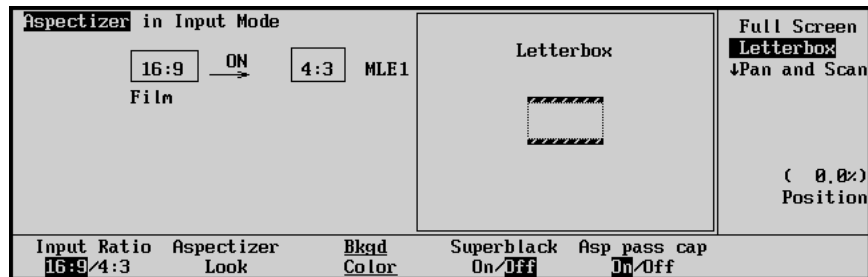
- **14:9 Tall:** this look can be applied to a 16:9 input that is selected when the MLE is set at 4:3. The **14:9 Tall look** displays the same image as **14:9**, but eliminates the black panels at the top and bottom by expanding the image vertically so it fills the screen.



14:9 Tall

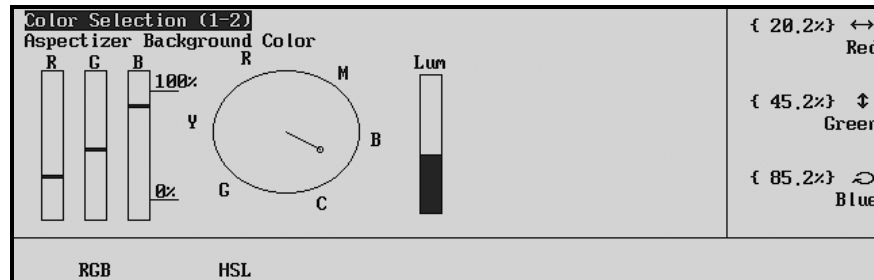
Please note the following important points regarding **Aspectizer** looks:

- ~ If the **MENU** button in the **Positioner Group** is lit, the *joystick* can be used to control the vertical and horizontal movement of the image.
- ~ Pressing the **CENTER** button in the **Positioner Group** will restore a repositioned image to its default position.
- **Superblack On/Off:** some of the **Aspectizer looks** have portions of the screen that are not filled with video from either signal (i.e. **Letterbox**, **Pillarbox**, etc.). The user has the option of filling these areas with Superblack or any color. The default is black. Pressing the **Superblack On/Off** softkey to **Off** will add the **Bkgd Color** softkey as follows:



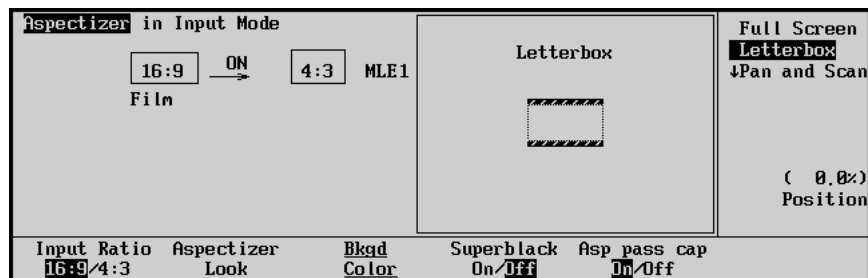
Superblack On/Off Menu

- Pressing the **Bkgd Color** softkey will display the familiar color menu used in other areas of the switcher.



Aspectizer Background Color Menu

- Notice that there is a menu sub-title that defines the menu as the **Aspectizer Background Color**. The color can be adjusted in either RGB or HSL space by pressing the corresponding softkey and rotating the knobs on the right.
- **Asp pass cap On/Off:** The **Asp pass cap** softkey is a toggle button for use when passing video with closed captioning through a **Dual Aspectizer Board**.



Asp pass cap On/Off Menu

Choose between:

- ~ **On** — When **Asp pass cap** is set to **On**, the video signal passes through the **Dual Aspectizer** while the line of closed captioning is routed around it. This path prevents distortion of the closed captioning.
- ~ **Off** — When **Asp pass cap** is set to **Off**, the video signal is passed through the Aspectizer in the normal manner. This setting should be used when the video signal that you are “aspectizing” does not have a line of closed captioning inserted.



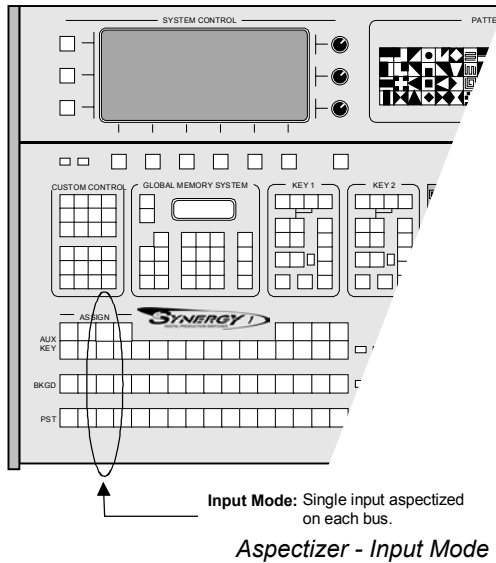
Note

The default setting is **On**.

For information on the **Dual Aspectizer** option, refer to Appendix C, “**Hardware Options**” of the *Synergy 1 Installation Guide*.

Input Mode Operation

When operating in **Input Mode**, the most important thing to remember is that each input that is being sent to the **Aspectizer** is aspectized on each bus of the MLE. In other words, you can think of **Input Mode** as being *vertical* in nature.



Whenever a designated input is selected on a bus, a comparison of the aspect ratio of the input and the MLE takes place. When they are the same, the input's signal is passed through the **Aspectizer** without any change. When the aspect ratios are different, the **Aspectizer** becomes *active* and the operator is given the opportunity to change various characteristics of the image.

Keeping track of what is on air, with which **look**, can be challenging to even the most experienced TD. To help you keep track of all the possibilities, **warnings** have been built into the menus, thus reducing the potential for on air mistakes.

Input Mode Warning – General Rule

In **Input Mode**, the following **warning** will be displayed whenever an aspectized input is selected on the **BKGD** bus.

WARNING: This input is selected On Air. Changes will affect MLE 1.

The **warning** notifies you that if you make any changes to the **Aspectizer**, the changes will affect the on air signal.

The best way to explain **Input Mode** operation is to look at a few examples.

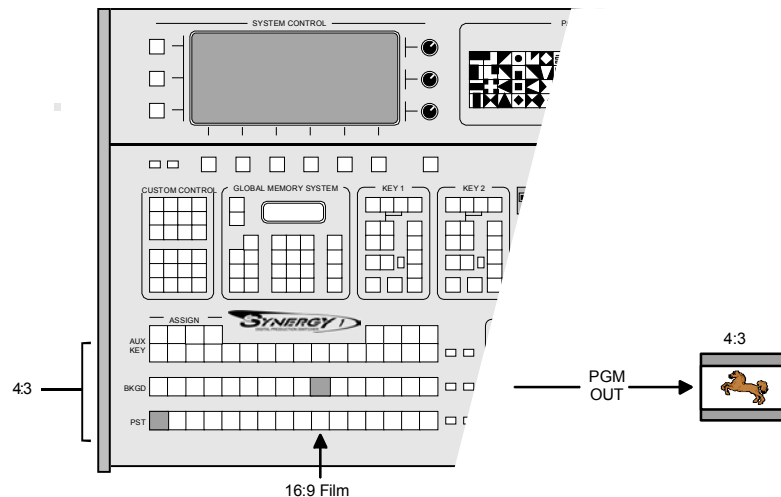
Single Output Production – Input Mode

The assumptions for the **examples** that follow are:

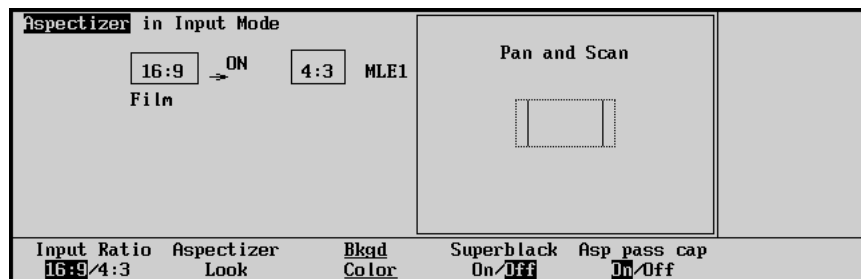
- All inputs are defined as having a 4:3 aspect ratio, with the exception of **Film** and **Router**.
- **Film** (BNC 10) is defined as having a 16:9 aspect ratio.
- **Router** (BNC 12) can be a 4:3 or a 16:9 aspect ratio, depending upon its source.
- **Film** has been assigned to channel **A** of the **Aspectizer** in **Input Mode**.
- **Router** has been assigned to channel **B** of the **Aspectizer** in **Input Mode**.
- The **MLE** is defined as having a 4:3 aspect ratio.

Example 1.1

In this first example, **Film** (BNC 10) is selected on the **BKGD** bus of the **MLE**. Remember that a single press of the crosspoint selects the input on the switcher but the **Aspectizer** menu, if not already up, will only be displayed if you *double press* the input or follow the path to the **Aspectizer** through the menu tree.



Input Mode Example 1.1 – Switcher Setup



Input Mode Example 1.1 – Operation

The menu displays the fact that the **Aspectizer** is in **Input Mode** and is *active*, since the aspect ratios of **Film** and the **MLE** are different. This is noted by the animated arrow between the 16:9 box of **Film** and the 4:3 box of the **MLE**. As well, the word **ON** is displayed above the line. The **Aspectizer look** is **Pan and Scan** and is applied to a 16:9 signal that is selected on a 4:3 **MLE**.

A **warning** will notify you that if you make any changes to the **Aspectizer**, the changes will affect the on air signal. There are no **warnings** in this case because **Film** is not selected on any on air MLE.

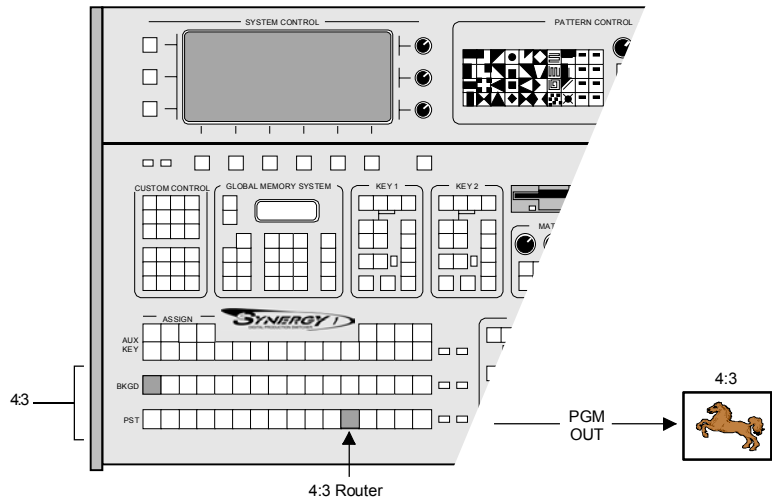
Example 1.2

In this second example, **Router** is selected on the **PST** bus of the MLE in order to preview the video.

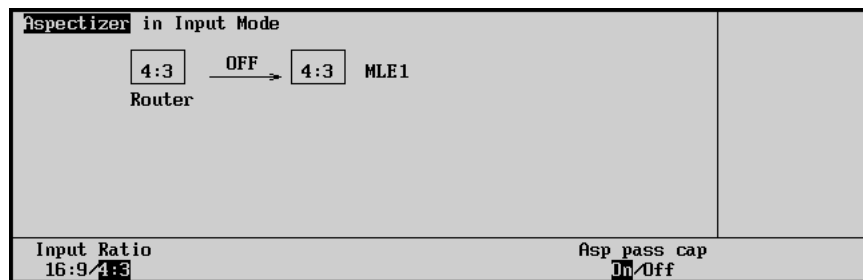


Note

The menu in **Input Mode** does *not* indicate whether an input is selected on the **BKGD** or **PST** bus.



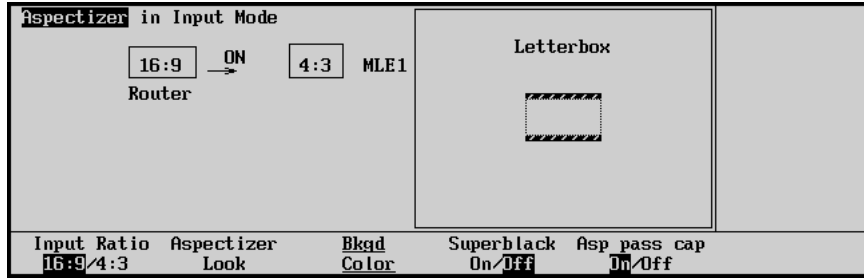
Input Mode Example 1.2 -- Setup



Input Mode Example 1.2 – Operation

The menu displays the fact that the **Aspectizer** is in **Input Mode**. This time the **Aspectizer** is *not* active, since the aspect ratios of the input (**Router**) and the MLE are the same.

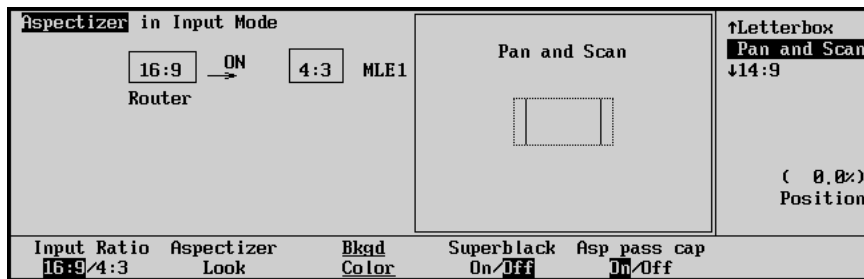
However, imagine that upon viewing the preview it is discovered that the **Router** input is now sending a 16:9 signal. Toggling or changing the aspect ratio to 16:9 will produce the following menu.



Input Mode Example 1.2A – Operation

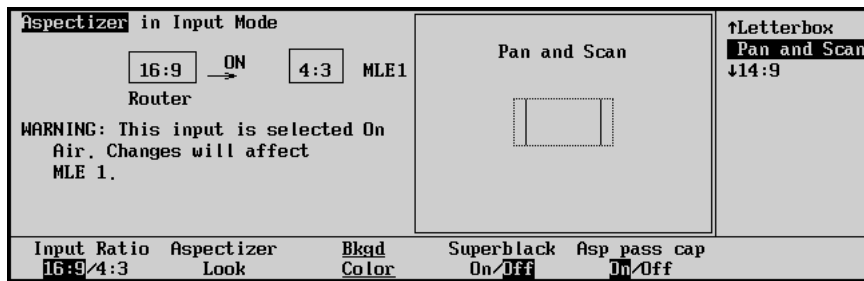
Notice that the **Aspectizer** is active since the aspect ratios are now different. As well, the softkeys for **Aspectizer Look**, **Bkgd Color**, **Superblack** and **Asp pass cap** will be displayed, allowing you to make any of these changes.

Change the **look** to **Pan and Scan** by rotating the top knob on the right. The menu will change as follows:



Input Mode Example 1.2B – Operation

Now that **Router** has been previewed and set up, if it is taken to air directly on the **BKGD (PGM)** bus, the following menu will be displayed:



Input Mode Example 1.2C – Operation



Note

The **warning** message on the menu indicates that the **Router** is selected on the MLE, and any change to the **Aspectizer** (i.e. input aspect ratio, look or Bkgd color) will happen on air.

Bus Mode Setup

In **Bus Mode**, the user assigns a bus-pair on the MLE to the **Aspectizer**. Each bus of the pair feeds an **Aspectizer** channel. Usually it is the **BKGD (PGM)** and **PST** buses. However, the respective fill and alpha channels of **Key1** or **Key2** also constitute a bus-pair and can be assigned as the two inputs.

All information and values associated with an **Aspectizer** in **Bus Mode** are stored in the switcher's **Memory Registers**, with the exception of the **16:9/4:3 toggle** information, which is stored in the **Personality Registers**.

Use the following procedure to configure the **Aspectizer** in **Bus Mode**:

1. Ensure that the **Aspectizer** is properly installed and recognized by the system.
2. Navigate to the **Option Cards Menu** as follows:
 - Press **HOME** (to display **Main Menu 1-2**).
 - **MORE** (to display **Main Menu 2-2**).
 - **Setup** (to display the **Setup Menu**).
 - **Installation** (to display **Installation Menu 1-2**).
 - **MORE** (to display **Installation Menu 2-2**).
 - **Option Cards** (to display **Option Cards Menu**).
3. Press **Aspectizer** to display the **Aspectizer Setup Option Cards Menu**.



Aspectizer Installation Menu – Bus Mode

The **Aspectizer Setup Option Cards Menu** allows you to configure your **Aspectizer** and define where the **Aspectizer Board** is physically located, what mode it is in and which buses you wish to aspectize.

4. Configure the **Aspectizer** in Bus Mode as follows:
 - Use the top **Aspectizer Channel** knob to select the **Channel** that you want to define. Each channel of the **Aspectizer** is defined by **Carr1** and **Socket** number – **SockA** and **SockB**.
 - Use the middle **Mode** knob to select the mode you wish to make active – in this case **BUS**. Selecting **BUS** will change the bottom knob to **BUS**.
 - Use the bottom **Bus** knob to select the **MLE** and the bus-pair that you wish to aspectize. Note that for the MLE there are three bus-pairs as setup choices for channel A and B of the **Aspectizer**:
 - ~ **PGM+PST** buses
 - ~ **Key1**, which includes both the fill and alpha channels, and
 - ~ **Key2**, which includes both the fill and alpha channels.

This completes the **Aspectizer** setup procedure for **Bus Mode**.

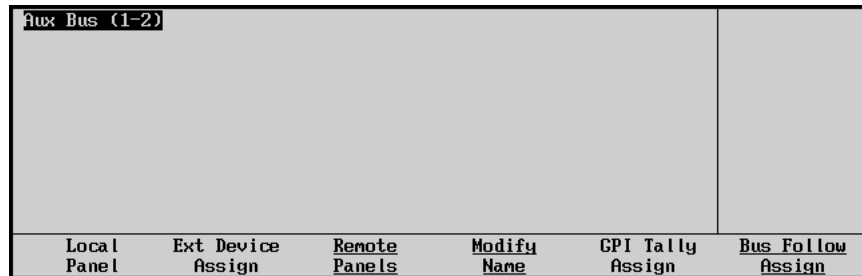
Two **Aux Buses** are required for **Bus Mode** operation. These **Aux Buses** must be “fed back” into *any* two of the BNC inputs. In turn, these **Aux Buses** become unavailable for any other use.

On the rear of the Synergy 1 frame, connect two *untimed* **Aux Bus** outputs to the two **BNC** inputs using industry standard coaxial cable.

The first step is to set the selected **Aux Buses** to **Bus Follow** mode. This is accomplished in the **Aux Bus Menu**.

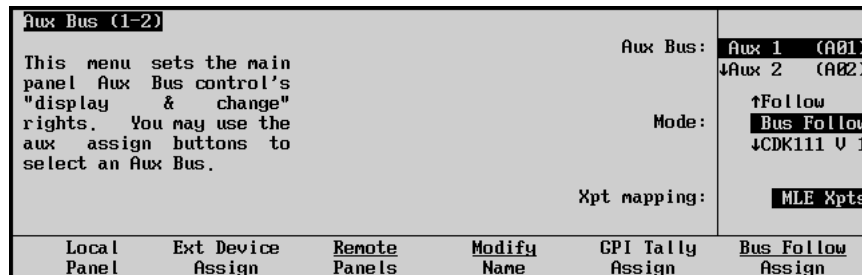
Use the following procedure to set your **Aux Buses** to **Bus Follow** mode:

1. Navigate to the **Aux Bus Setup Menu 1-2** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**)
 - **MORE** (to display the **Main Menu 2-2**)
 - **Setup** (to display the **Setup Menu**)
 - **Installation** (to display the **Installation Menu 1-2**)
 - **Aux Bus** (to display the **Aux Bus Setup Menu 1-2**)



Aux Bus Setup Menu

- The **Main Area** and **Scroll Area** are both blank.
 - The **Label Area** provides five Aux Bus setup options.
2. Press **Local Panel** to display the **Local Panel Setup Menu**.



Aux Bus – Local Panel Setup Menu

The **Local Panel Setup Menu** allows you to assign specific switching parameters or “rights” for each of the **12 Aux Buses** that are accessible in the **Aux Bus Assign Group**. Each **Aux Bus** can be set up individually.

For a comprehensive explanation of **Aux Bus Setup** parameters and options, refer to Chapter 9, “**Additional Installation Setups**” in the *Synergy 1 Installation Guide*.

3. Define the mode for the **Aux Buses** as follows:
 - Use the top **Aux Bus** knob to the **Aux Bus** number that you wish to assign.
 - Use the middle **Mode** knob to **Bus Follow**.
4. Repeat step 2 for the second **Aux Bus** that you wish to assign.

In the next step, you must tell the switcher which bus, on which MLE, you want the **Aux Bus** to follow.

5. Press the **Bus Follow Assign** button in the **Aux Bus Menu** to display the **Bus Follow Menu**.

Bus Follow mode directs the **Aux Bus** to follow your selections on a specified MLE and bus.



Note

In **Bus Follow** mode, the user is “locked out” of the designated **Aux Bus** and cannot make selections on the **Aux Bus** panel itself.

Use the following procedure to assign a bus and its MLE for the **Aux Bus** to follow:



Bus Follow – Bus Assign Menu

1. Pressing **Bus Assign** will display the aux buses that have previously been designated as being in **Bus Follow** mode. In keeping with our example, we have assigned **Aux Bus #2** and **Aux Bus #6** to **Bus Follow**.
 - Use the top **Aux Bus** knob to select the **Aux Bus** number that you wish to assign to an MLE.
 - Use the middle **MLE** knob to select **MLE1**.
 - Use the bottom **BUS** knob to select the actual **Bus** that you want the **Aux Bus** to follow.
2. Repeat step 1 for the second **Aux Bus** number.

The final step in configuring your **Aspectizer** in **Bus Mode** involves assigning or routing the **Aux Bus** back into the appropriate **BNC** input.

Use the following procedure to assign the **Aux Bus** back into the **BNC** input:

1. Press **BNC Assign** to display the **BNC Assign Menu**.

Bus Follow	
This menu lets you assign the BNC that will be fed by the following Aux Bus.	Aux Bus: Aux 1 (A01)
	↑BNC 10 (10)
	BNC 11 (11)
	↓BNC 12 (12)
Bus Assign	BNC Assign

Bus Follow – BNC Assign Menu

- Use the top **Aux Bus** knob to select the **Aux Bus** that you wish to route back into an input. Only the previously assigned **Aux Buses** will be available for selection.
 - Use the middle **BNC** knob to select the **BNC** input that will accept the **Aux Bus** as its source.
2. Repeat step 1 for the other **Aux Bus**.

In the case of our example, we chose **Aux Bus #3** to feed back into **BNC 15** and **Aux Bus #4** to feed back into **BNC 16**.

This completes the **Aspectizer** setup procedures for **Bus Mode**. Following are additional notes on **Bus Mode** menus and operational examples.

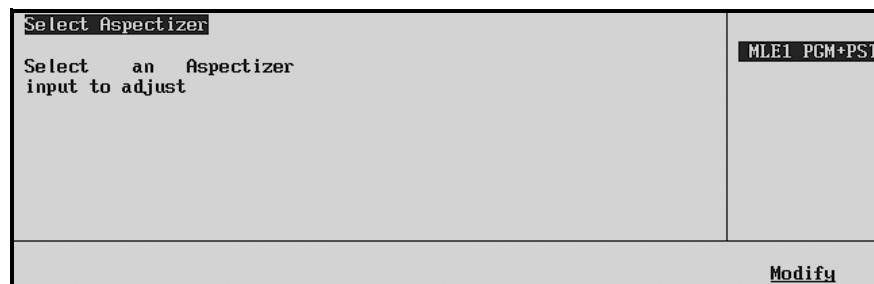
Bus Mode Menus

Bus Mode typically is used when you have a number of inputs with aspect ratios different from that of the **PGM** out and you want to have those inputs aspectized with a common **look** and then forget about them. In this case, once the switcher is configured properly, the TD will not have to worry about aspectization and can devote time to the task at hand.

In **Bus Mode**, the bus-pair are setup initially with an aspectized **look** and normally, would not be changed during the course of the production. However, there is provision for an easy change of an input's aspect ratio when the situation arises using the **16:9/4:3 toggle**. This will be discussed later in the chapter.

Once you have configured your switcher in **Bus Mode**, there are two ways to enter the operational **Aspectizer Menu**:

1. Navigate to the **Select Aspectizer Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**)
 - **Effects** (to display the **Effects Menu**)
 - **Aspectizer** (to display the **Select Aspectizer Menu**)



Select Aspectizer Menu

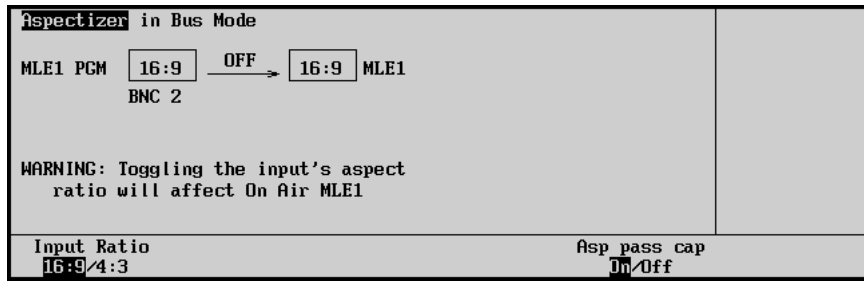
- Press **Modify**. Note, only the bus-pair that has previously been configured for an **Aspectizer** will be displayed,

OR

2. **Double press** the input that you wish to select on one of the buses on the aspectized bus-pair. However, if the **Aspectizer** menu is already up, a *single press* will change the display. (If you would like to change the default speed of the *double press* function, please refer to Chapter 9, “**Additional Installation Setups**” in the *Synergy 1 Installation Guide* for setup instructions).

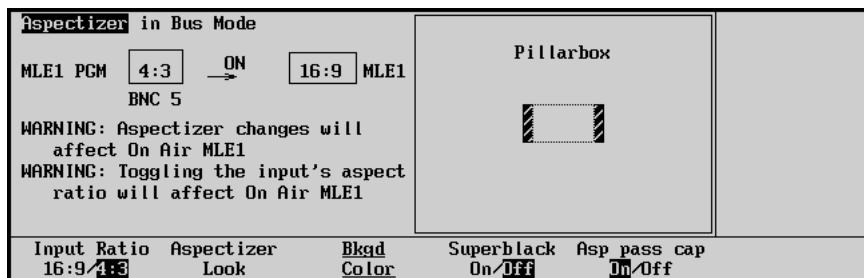
In either case, one of the two following menus will be displayed, depending upon the relationship of the input and the MLE aspect ratios.

1. If the aspect ratios of the input and the MLE are the same, the following menu is displayed:



Aspectizer Bus Mode – Same Aspect Ratios

- The title of the menu is shown in the top left and indicates that the **Aspectizer** is in **Bus Mode**.
 - Underneath the title, the MLE number and the bus that the input is selected upon is shown.
 - The main body of the menu will display two boxes. The box on the left represents the input. The input's name is beneath the box and its aspect ratio is shown inside the box.
 - An arrow joins the boxes with the word **OFF** above the line, indicating that the **Aspectizer** is *not* active.
 - The MLE number that the input is selected on is shown to the right. The aspect ratio of the MLE is shown inside the box.
 - A **warning** notifies you that if you toggle the **Input Ratio**, the changes will affect the on air signal. A more complete discussion of **Bus Mode Warnings** appears later in this chapter.
2. If the aspect ratios of the input and the MLE are different, the following menu is displayed.



Aspectizer Bus Mode – Different Aspect Ratios

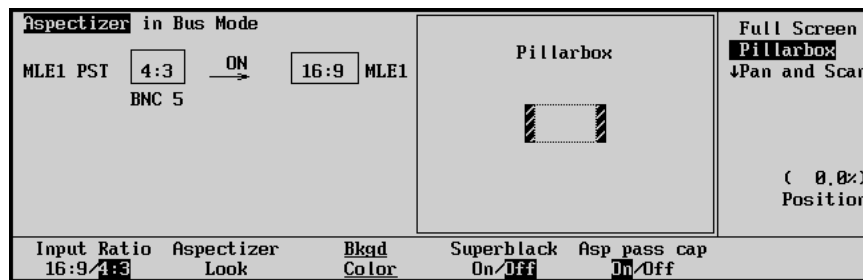
- The title of the menu is shown in the top left and indicates that the **Aspectizer** is in **Bus Mode**.
- Underneath the title, the MLE number and the bus that the input is selected upon is shown.
- The main body of the menu has expanded to include some additional information. The box on the left represents the input. The input's name is beneath the box and its aspect ratio is shown inside the box.
- Next to the input box is an arrow pointing from left to right. Since the aspect ratios of the input and the MLE are not the same, the arrow is animated (moving from left

to right) with the word **ON** above the line. This indicates that the **Aspectizer** is *active* on the MLE and the input video is being processed.

- To the right of the arrow is a box that shows the aspect ratio of the MLE. The MLE number is beside the box.
- Inside the large box is a graphical representation of the **Aspectizer look** that is presently selected and being applied to the input. (See **Aspectizer Look** softkey below).
- A **warning** notifies you that if you make any changes to the **Aspectizer look**, the changes will affect the on air signal.
- A **warning** notifies you that if you toggle the **Aspectizer's Input Ratio**, the changes will affect the on air signal.

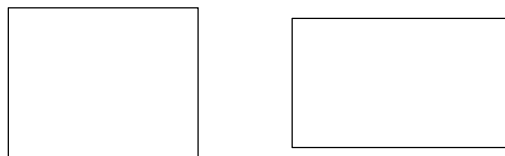
There are four softkey labels in the **Label Area**:

- **Input Ratio 16:9/4:3 toggle:** the aspect ratio of the selected input is highlighted in reverse lettering. Pressing this softkey toggles or changes the defined aspect ratio of the input. This will change the input/MLE relationship and change the display.
- Pressing the **Aspectizer Look** softkey will display the different **looks** available on the right hand side of the menu.



Aspectizer Looks

- In all, there are seven **looks** to choose from, depending upon the particular combination of input and output aspect ratios. They are selectable by rotating the top knob.
- Six of these **looks** can be repositioned on screen, either vertically or horizontally depending on the **look**. These movable looks are **Letterbox**, **Pillarbox**, the two **Pan and Scan** looks, and the two **14:9** looks (one each for 16:9 to 4:3 aspect ratio, and one each for 4:3 to 16:9 aspect ratio). Rotate the bottom **Position** knob to move the aspectized output, as desired.
- **Full Screen:** when selected, the input is passed through the **Aspectizer** without making any change to the video.



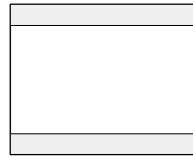
4:3 and 16:9 Full Screen



Note

Selecting **Full Screen** when the input and MLE aspect ratios are *different* will produce a distorted picture.

- **Letterbox:** this is the default look for a 16:9 input signal that is selected when the MLE is set at 4:3.



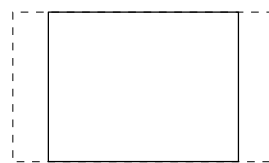
4:3 Letterbox

- **Pillarbox:** this is the default look for a 4:3 input signal that is selected when the MLE is set at 16:9.



16:9 Pillarbox

- **Pan and Scan:** this look can be applied to either a 16:9 signal that is selected when the MLE is set at 4:3, or a 4:3 input that is selected when the MLE is set at 16:9.



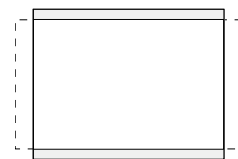
16:9 Input selected on 4:3 MLE



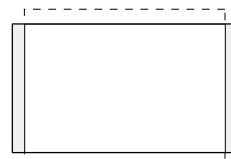
4:3 Input selected on 16:9 MLE

Pan and Scan

- **14:9** this look can be applied to either a 16:9 signal that is selected when the MLE is set at 4:3, or a 4:3 input that is selected when the MLE is set at 16:9. The **14:9 look** is a compromise between a **Letterbox** or **Pillarbox** and a **Pan and Scan**.



16:9 Input selected on 4:3 MLE



4:3 Input selected on 16:9 MLE

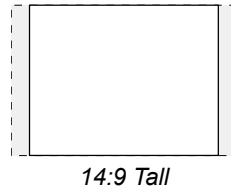
14:9

- **14:9 Wide:** this look can be applied to a 4:3 input that is selected when the MLE is set at 16:9. The **14:9 Wide look** displays the same image as **14:9**, but eliminates the black pillars at the left and right by expanding the image horizontally so it fills the screen.

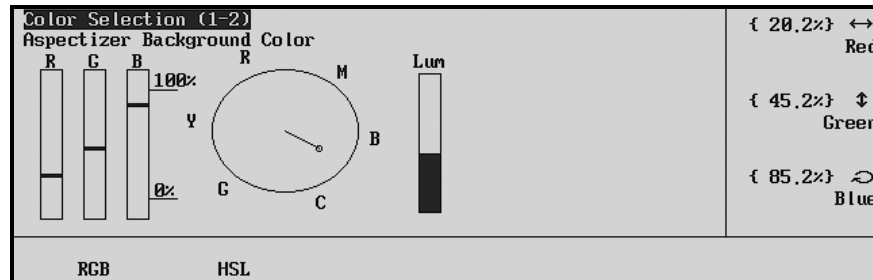


14:9 Wide

- **14:9 Tall:** this look can be applied to a 16:9 input that is selected when the MLE is set at 4:3. The **14:9 Tall look** displays the same image as **14:9**, but eliminates the black panels at the top and bottom by expanding the image vertically so it fills the screen.



- Pressing the **Bkgd Color** softkey will display the familiar color menu used in other areas of the switcher.



Aspectizer Background Color Menu

- ~ Notice that there is a menu sub-title that defines the menu as the **Aspectizer Background Color**. The color can be adjusted in either RGB or HSL space by pressing the corresponding softkey and rotating the knobs on the right.

Please note the following important points regarding **Aspectizer** looks:

- ~ If the **MENU** button in the **Positioner Group** is lit, the *joystick* can be used to control the vertical and horizontal movement of the image.
- ~ Pressing the **CENTER** button in the **Positioner Group** will restore a repositioned image to its default position.
- ~ In Bus mode, repositioned **Aspectizer looks** can be saved as memories, and recalled using the Effects Dissolve feature.
- ~ In Bus mode, repositioned **Aspectizer looks** can be saved to a floppy disk.

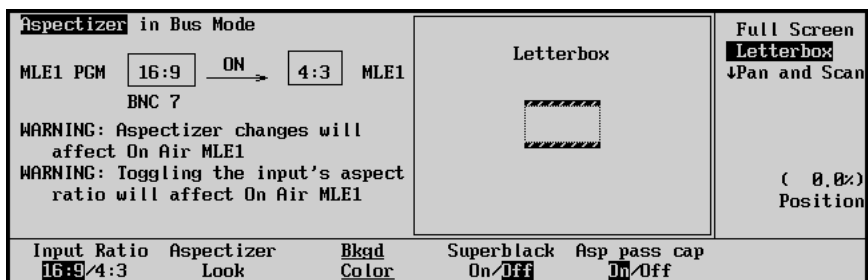


Note

If you have the **USB Removable Media Drive** option installed, you can save the **Aspectizer looks** to a USB key.

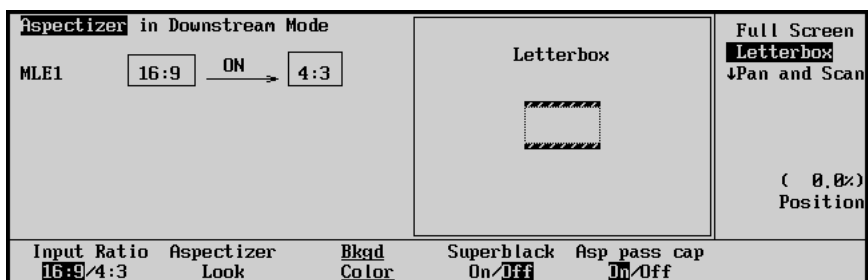
- **Superblack On/Off:** some of the **Aspectizer looks** have portions of the screen that are not filled with video from either signal (i.e. **Letterbox**, **Pillarbox**, etc.). You have the option of filling these areas with Superblack or any color. The default is black.

Pressing the **Superblack On/Off** softkey to **Off** will add the **Bkgd Color** softkey as follows:



Superblack On/Off Menu

- **Asp pass cap On/Off:** The **Asp pass cap** softkey is a toggle button for use when passing video with closed captioning through a **Dual Aspectizer Board**.



Aspectizer in Downstream Mode

Choose between:

- ~ **On** — When **Asp pass cap** is set to **On**, the video signal passes through the **Dual Aspectizer** while the line of closed captioning is routed around it. This path prevents distortion of the closed captioning.
- ~ **Off** — When **Asp pass cap** is set to **Off**, the video signal is passed through the Aspectizer in the normal manner. This setting should be used when the video signal that you are “aspectizing” does not have a line of closed captioning inserted.

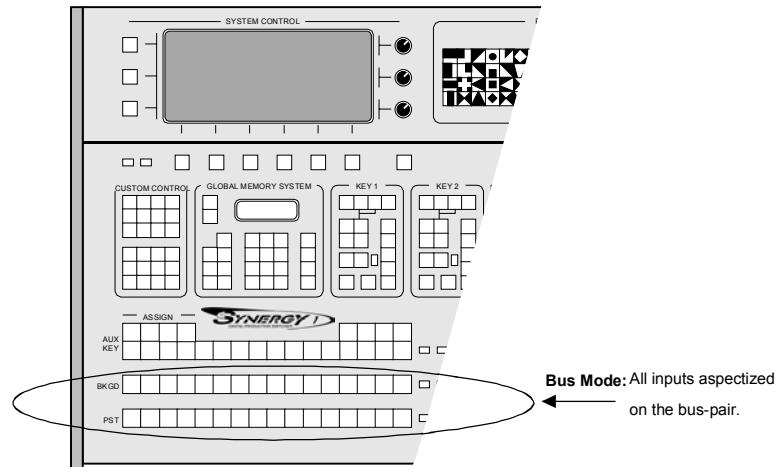


Note

The default setting is **On**.

Bus Mode Operation

When operating in full **Bus Mode**, the most important thing to remember is that every crosspoint on the designated bus-pair is being sent to the **Aspectizer**. In other words, you can think of **Bus Mode** as being *horizontal* in nature.



Aspectizer – Bus Mode

Whenever an input is selected on the MLE that is configured in **Bus Mode**, a comparison of the aspect ratio of the input and the MLE takes place. When they are the same, the input's signal is passed through the **Aspectizer** without any change. When the aspect ratios are different, the **Aspectizer** becomes *active* and the operator is given the opportunity to change various characteristics of the image.



Note

The menus always reflect the characteristics of the last input selected, whether on the **BKGD** or **PST** bus.

Keeping track of what is on air, with which **look**, can be challenging to even the most experienced TD. To help you keep track of all the possibilities, **warnings** have been built into the menus, thus reducing the potential for on air mistakes.

Bus Mode Warnings – General Rules

Since the two **Aspectizer** channels are linked together in **Bus Mode**, changing the characteristics or aspect ratio of one may affect the other. Therefore, the following **warnings** will be displayed if the selected input is contributing to on air:

WARNING: Aspectizer changes will affect On Air MLE1

The **warning** indicates that an input is selected on the **BKGD (PGM)** bus of the MLE, and any change to the **Aspectizer** (i.e. input aspect ratio, look or Bkgd color) will happen on air.

WARNING: Toggling the input's aspect ratio will affect On Air MLE1.

The **warning** indicates that if you toggle the **Aspectizer's Input Ratio**, the changes will affect the on air signal.

The best way to explain **Bus Mode** operation is to look at a few examples.

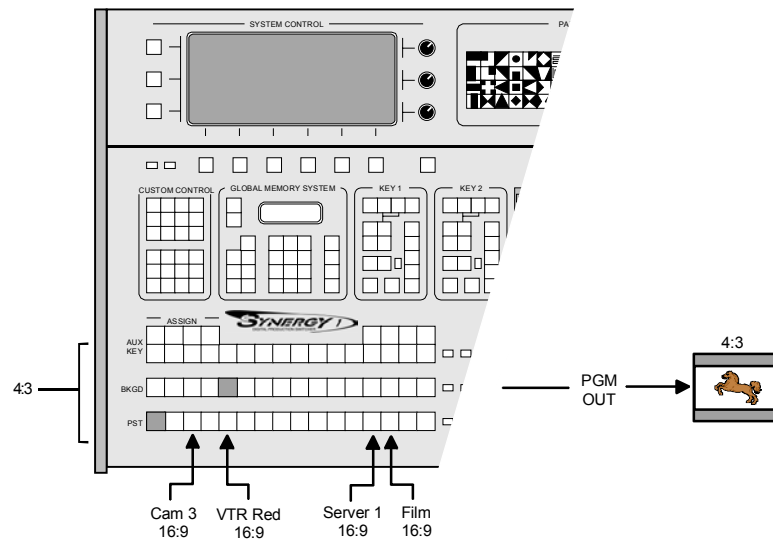
Single Output Production – Bus Mode

The assumptions for the **examples** that follow are:

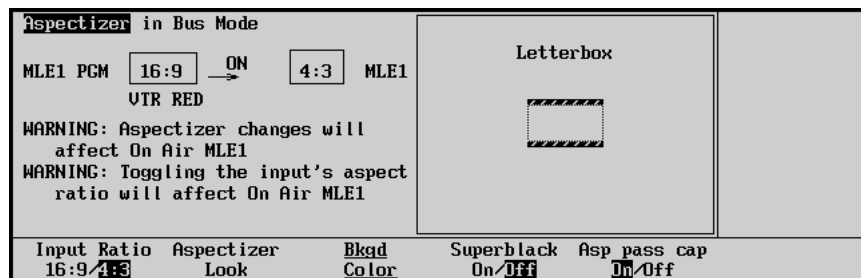
- The **BKGD** and **PST** bus have been assigned to the **Aspectizer in Bus Mode**.
- All inputs are defined as having a 4:3 aspect ratio, with the exception of **Cam 3** (BNC 3), **VTR Red** (BNC 5), **Server 1** (BNC 13), and **Film** (BNC 14), which are 16:9.
- The **MLE** is defined as having a 4:3 aspect ratio.

Example 2.1

In this example, **VTR Red** (16:9, BNC 5) is selected on the **BKGD** bus of **MLE1**. Remember that a single press of the crosspoint selects the input on the switcher but if the **Aspectizer Menu** is not already up, the menu will only be displayed if you *double press* the input or follow the path to the **Aspectizer** through the menu tree.



Bus Mode Example 2.1 – Switcher Setup



Bus Mode Example 2.1 – PGM Bus Menu

The menu displays the fact that **VTR Red** is selected on the **BKGD** (PGM) bus. In addition, the **Aspectizer** is in **Bus Mode** and is *active*, since the aspect ratios of **VTR Red** and **MLE1** are

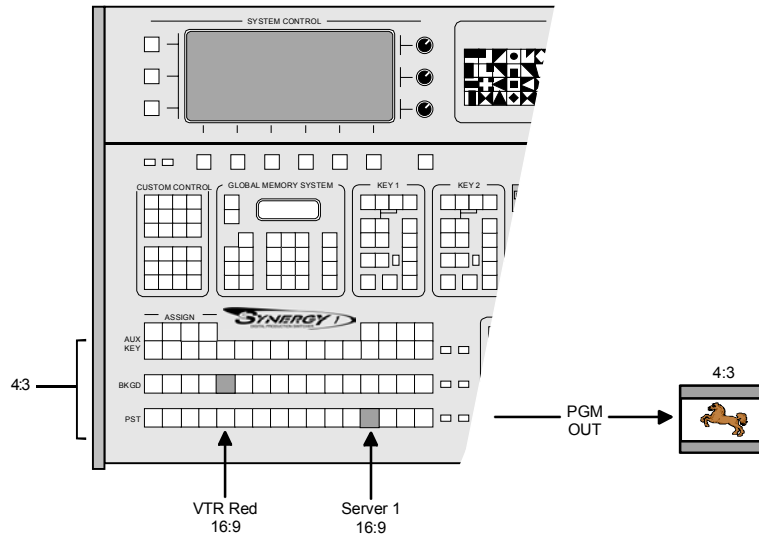
different. This is noted by the animated arrow between the 16:9 box of **VTR Red** and the 4:3 box of **MLE1**. As well, the word **ON** is displayed above the arrow. The **Aspectizer look** is **Letterbox** and black is filling the horizontal bars above and below the video.

Warnings

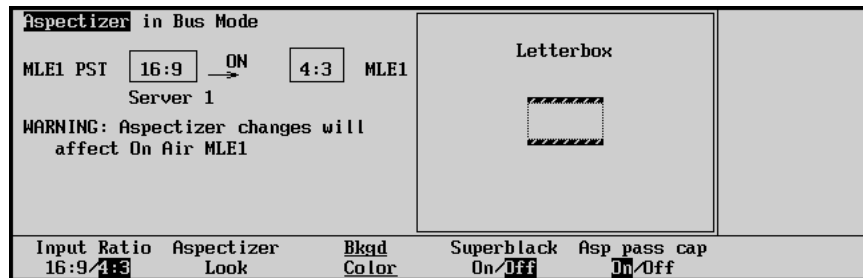
- A **warning** notifies you that if you make any changes to the **Aspectizer look**, the changes will affect the on air signal.
- A **warning** notifies you that if you toggle the **Aspectizer's Input Ratio**, the changes will affect the on air signal.

Example 2.2

In this example, you have **VTR Red** (16:9, BNC 5) selected on the **BKGD** bus, as in Example 2.1. Now you select **Server 1** (16:9, BNC 13) on the **PST** bus in order to preview the server's output video. When you select **Server 1**, the menu changes to reflect the settings for that input.



Bus Mode Example 2.2 – Switcher Setup



Bus Mode Example 2.2 – PST Bus Menu

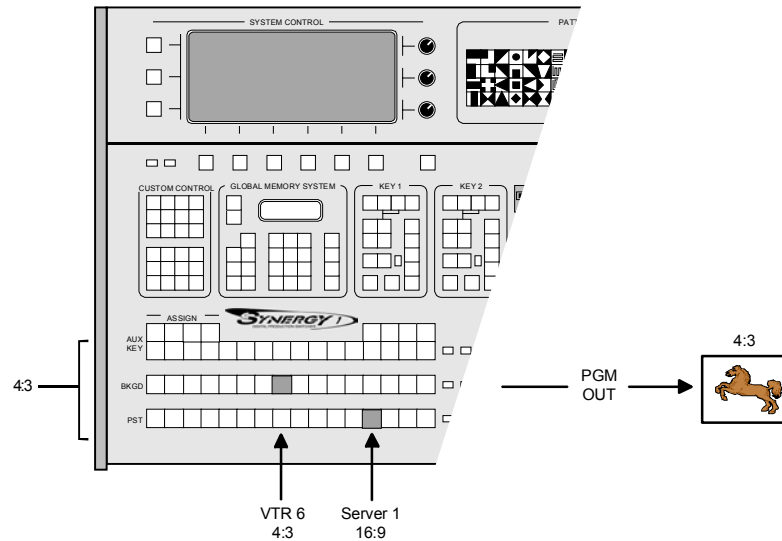
The menu displays the fact that **Server 1** is selected on the **PST** bus. In addition, the **Aspectizer** is in **Bus Mode** and is *active*, since the aspect ratios of **Server 1** and the **MLE** are different. This is noted by the animated arrow between the 16:9 box of **Server 1** and the 4:3 box of the **MLE**. As well, the word **ON** is displayed above the arrow. The **Aspectizer look** is **Letterbox** and black is filling the horizontal bars above and below the video.

Warning

- Even though **Server 1** is selected on the **PST** bus, a **warning** is displayed to notify you that the **Aspectizer** is active on the **BKGD** bus. Remember that the **BKGD** and **PST** buses are linked together in **Bus Mode** and share the same **Aspectizer** characteristics. Therefore, if any of the characteristics were changed for **Server 1**, with the exception of its aspect ratio, the same change would happen on air to **VTR Red**.

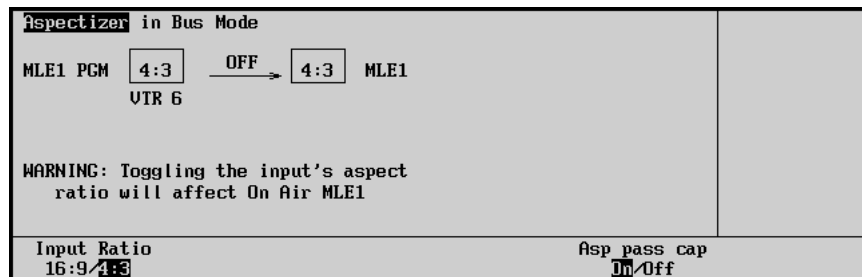
Example 2.3

In this example, **VTR 6** (4:3, BNC 8) is now the on air input selected on the **BKGD** bus, and **Server 1** (16:9, BNC 13) is selected on the **PST** bus, as in Example 2.2.



Bus Mode Example 2.3 – Switcher Setup

Selecting **VTR 6** (4:3, BNC 8) on the **BKGD** bus displays the following menu:



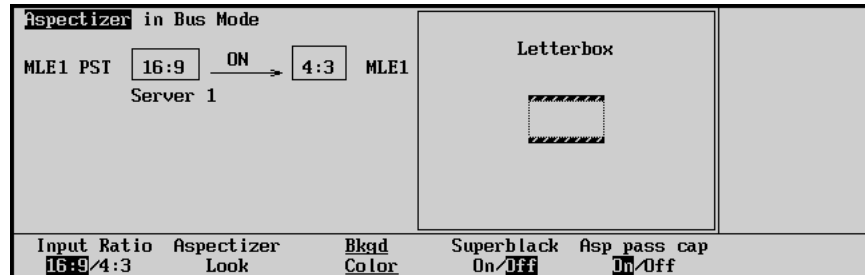
Bus Mode Example 2.3 – PGM Bus Menu

The menu displays the fact that **VTR 6** is selected on the **BKGD** (PGM) bus. In addition, the **Aspectizer** is in **Bus Mode** and is *not* active, since the aspect ratios of **VTR 6** and the **MLE** are the same. This is noted by the stationary arrow between the 4:3 box of **VTR 6** and the 4:3 box of the **MLE**. As well, the word **OFF** is displayed above the arrow.

Warning

- A **warning** notifies you that if you toggle the **Aspectizer's Input Ratio** while on the **BKGD (PGM)** bus, the changes will affect the current **VTR 6** on air signal.

However, selecting **Server 1** (16:9, BNC 13) on the **PST** bus changes the display and the following menu is displayed:



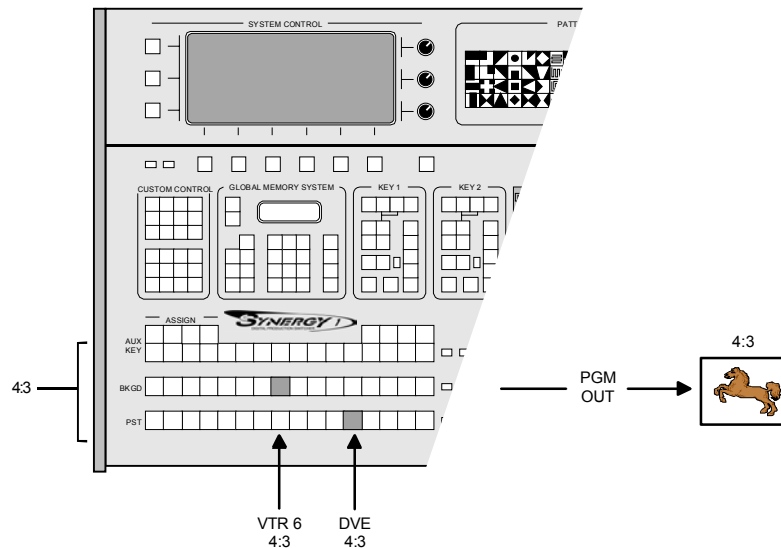
Bus Mode Example 2.3 – PST Bus Menu

The menu displays the fact that **Server 1** is selected on the **PST** bus. In addition, the **Aspectizer** is in **Bus Mode** and is *active*, since the aspect ratios of **Server 1** and the **MLE** are different. This is noted by the animated arrow between the 16:9 box of **Server 1** and the 4:3 box of the **MLE**. As well, the word **ON** is displayed above the arrow.

Notice there is no warning in this situation, since the input selected on the **BKGD (PGM)** bus (**VTR 6**) is not being aspectized.

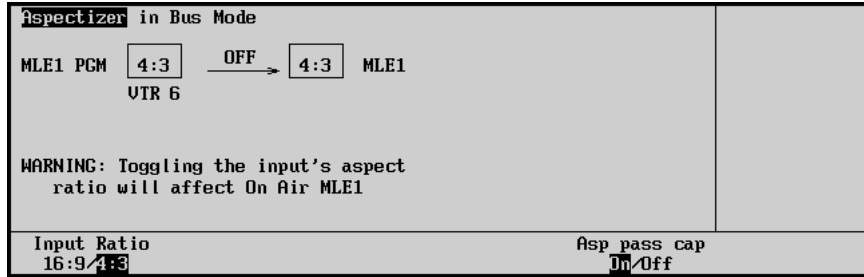
Example 2.4

Continuing with this example, we have **VTR 6** (4:3, BNC 8) as the on air input selected on the **BKGD** bus, and now **DVE** (4:3, BNC 12) is selected on the **PST** bus.



Bus Mode Example 2.4 – Switcher Setup

Taking **VTR 6** (4:3, BNC 8) to air on the **BKGD** bus displays the following menu:



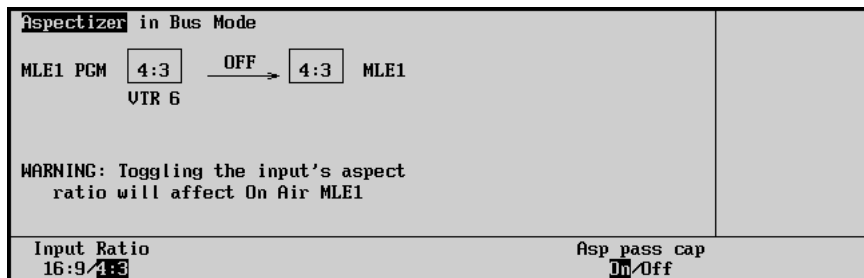
Bus Mode Example 2.4 – PGM Bus Menu

The menu displays the fact that **VTR 6** is selected on the **BKGD (PGM)** bus. In addition, the **Aspectizer** is in **Bus Mode** and is *not* active, since the aspect ratios of **VTR 6** and the **MLE** are the same. This is noted by the stationary arrow between the 4:3 box of **VTR 6** and the 4:3 box of the **MLE**. As well, the word **OFF** is displayed above the arrow.

Warning

- A **warning** notifies you that if you toggle the **Aspectizer's Input Ratio**, the changes will affect the current **VTR 6** on air signal.

Selecting **DVE** (4:3, BNC 10) on the **PST** bus displays the following menu:



Bus Mode Example 2.4 – PST Bus Menu

The menu displays the fact that **DVE** is selected on the **PST** bus. In addition, the **Aspectizer** is in **Bus Mode** and is *not* active, since the aspect ratios of **DVE** and the **MLE** are the same. This is noted by the stationary arrow between the 4:3 box of **DVE** and the 4:3 box of the **MLE**. As well, the word **OFF** is displayed above the arrow.

Downstream Mode Setup

Downstream Mode is only used when you require two BKGD outputs with different aspect ratios. It is the easiest and most economical way to have dual aspect ratio outputs.

Use the following procedure to setup the **Aspectizer** in **Downstream Mode**:

1. Navigate to the **Aspectizer Menu** as follows:
 - Press **HOME** (to display **Main Menu 1-2**)
 - **MORE** (to display **Main Menu 2-2**)
 - **Setup** (to display the **Setup Menu**)
 - **Installation** (to display **Installation Menu 1-2**)
 - **MORE** (to display **Installation Menu 2-2**)
 - **Option Cards** (to display **Option Cards Menu**)
 - **Aspectizer** (to display the **Aspectizer Setup Option Cards Menu**)

Option Cards		Aspectizer Channel:	Carr1, Sock1A
This menu lets you decide how your Aspectizer will work.		Mode:	Downstream
			Upgrade Aspectizer
Ultimate Aspectizer			

Aspectizer Installation Menu – Downstream Mode

The **Aspectizer Setup Option Cards Menu** allows you to configure your **Aspectizer** and defines where the **Aspectizer Board** is physically located and what mode it is in.

2. Use the top **Aspectizer Channel** knob to select the **Channel** that you want to define. Each channel of the **Aspectizer** is defined as **Carr1** and **Socket** number – **SockA** and **SockB**.
3. Use the middle **Mode** knob to choose the mode you wish to make active – in this case **Downstream**.



Note

Only one channel, either **1A** or **1B** of the **Aspectizer** is required for **Downstream Mode**. The other channel is available for use with an input in **Input Mode**.



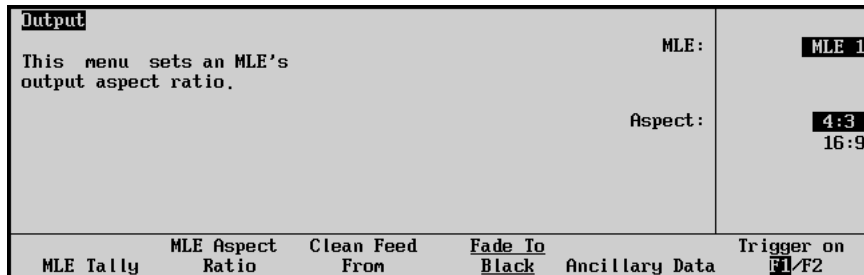
Note

When working in **Downstream Mode**, the possibility exists to *double aspectize* an input on the **Downstream Clean Feed** output. This situation will occur if the second channel of the **Aspectizer** is configured in **Input Mode** and that input is on air.

In **Downstream Mode**, the **Aspectizer** uses the output aspect ratio of the **PGM** output to determine which way to do the conversion.

Use the following procedure to set the output aspect ratio of the MLE:

1. Navigate to the **Output Menu** as follows:
 - Press **HOME** (to display **Main Menu 1-2**)
 - **MORE** (to display **Main Menu 2-2**)
 - **Setup** (to display the **Setup Menu**)
 - **Installation** (to display **Installation Menu 1-2**)
 - **Output** (to display the **Output Menu**)
2. Press the **MLE Aspect Ratio** softkey.
3. Use the middle **Aspect** knob to the appropriate aspect ratio – either 4:3 or 16:9.



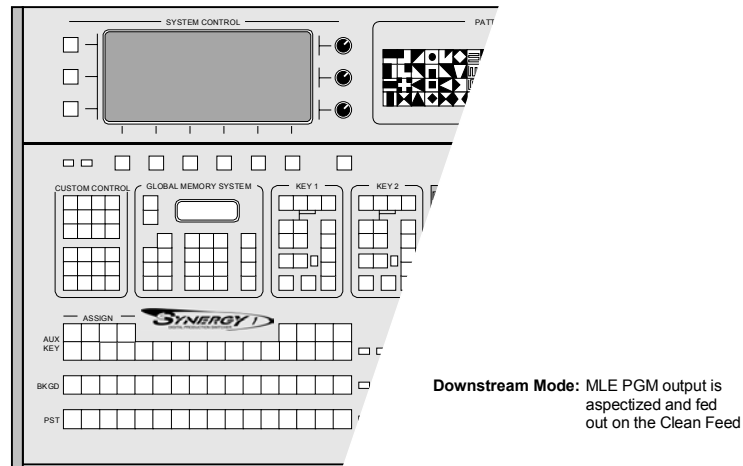
MLE Aspect Ratio Menu

The **Aspectizer** will convert the signal from the chosen aspect to the opposite one.

This completes the **Aspectizer** setup procedure for **Downstream Mode**. Following are additional notes on **Downstream Mode** menus and operational examples.

Downstream Mode Menus

Downstream Mode is only used when dual aspect ratio outputs are required. Usually this requirement would be associated with feeding two transmitters – one in 4:3 and the other in 16:9, although other applications could be possible.



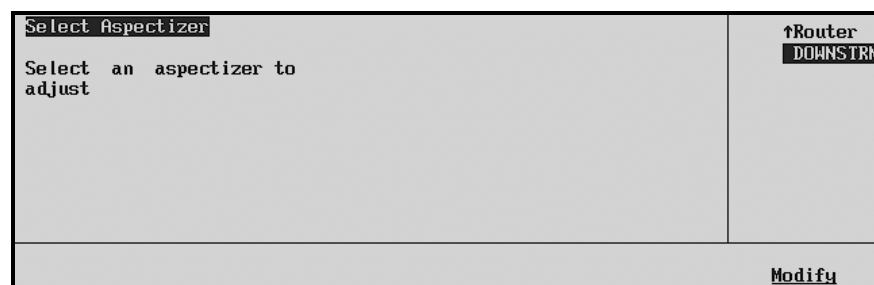
Aspectizer – Downstream Mode

Downstream Mode can be combined with **Input Mode**.

Once **Downstream Mode** has been chosen as the operational mode for dual aspect ratio outputs, it would be unusual to change the **look** during the course of the production but there is provision to do so if required.

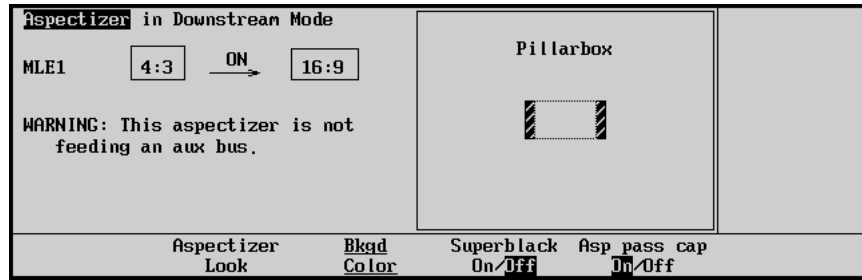
Once you have configured your switcher in **Downstream Mode**, enter the **Aspectizer Menu**:

1. Navigate to the **Select Aspectizer Menu** as follows:
 - Press **HOME** (to display **Main Menu 1-2**)
 - **Effects** (to display **Effects Menu**)
 - **Aspectizer** (to display **Select Aspectizer Menu**)



Select Aspectizer Menu

- Use the top knob to highlight the input that you wish to select, and
- Press **Modify** to display the **Aspectizer in Downstream Mode Menu**.



Aspectizer in Downstream Mode

- The title of the menu is shown in the top left and indicates that the **Aspectizer** is in **Downstream Mode**.
- The main body of the menu has expanded to include some additional information. The box on the left depicts the aspect ratio of the **MLE PGM** output and names it.
- The **Aspectizer** is always *active* in **Downstream Mode** and, therefore, the arrow between the boxes is moving and **ON** is displayed above the line.
- The box on the right displays the output aspect ratio of the **Aspectizer**, which is being fed to **Clean Feed**.

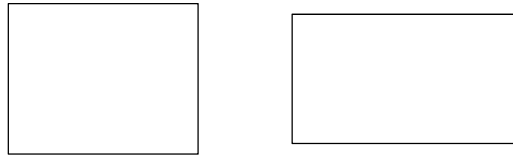


Note

The output aspect ratio of the **Aspectizer in Downstream Mode** is *automatically* set to the opposite aspect ratio of the **MLE PGM** and can *not* be toggled.

- A **warning** notifies you that the **Aspectizer** is feeding the **Clean Feed**.
- Inside the large box is a graphical representation of the **Aspectizer look** that is presently selected and being sent to the **Clean Feed**.
- Pressing the **Aspectizer Look** softkey will display the different **looks** available on the right hand side of the menu.
 - In all, there are seven **looks** to choose from, depending upon the particular combination of input and output aspect ratios. They are selectable by rotating the top knob.
 - Six of these **looks** can be repositioned on screen, either vertically or horizontally depending on the **look**. These movable looks are **Letterbox**, **Pillarbox**, the two **Pan and Scan** looks, and the two **14:9** looks (one each for 16:9 to 4:3 aspect ratio, and one each for 4:3 to 16:9 aspect ratio). Rotate the bottom **Position** knob to move the aspectized output, as desired.

- ~ **Full Screen:** when selected, the input is passed through the **Aspectizer** without making any change to the video.



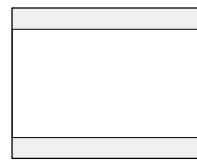
4:3 and 16:9 Full Screen



Note

Selecting **Full Screen** when the input and MLE aspect ratios are *different* will produce a distorted picture.

- ~ **Letterbox:** this is the default look for a 16:9 input signal that is selected when the MLE is set at 4:3.



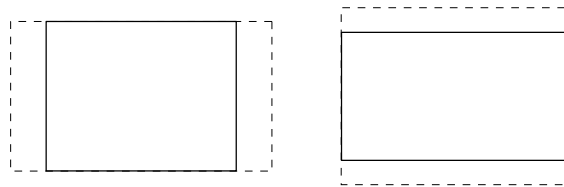
4:3 Letterbox

- ~ **Pillarbox:** this is the default look for a 4:3 input signal that is selected when the MLE is set at 16:9.



16:9 Pillarbox

- ~ **Pan and Scan:** this look can be applied to either a 16:9 signal that is selected when the MLE is set at 4:3, or a 4:3 input that is selected when the MLE is set at 16:9.

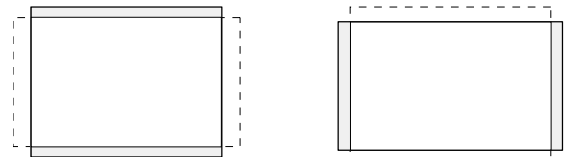


16:9 Input selected on 4:3 MLE

4:3 Input selected on 16:9 MLE

Pan and Scan

- ~ **14:9** this look can be applied to either a 16:9 signal that is selected when the MLE is set at 4:3, or a 4:3 input that is selected when the MLE is set at 16:9. The **14:9 look** is a compromise between a **Letterbox** or **Pillarbox** and a **Pan and Scan**.

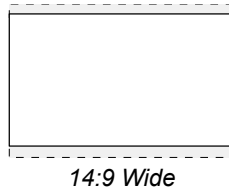


16:9 Input selected on 4:3 MLE

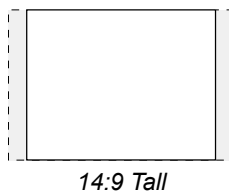
4:3 Input selected on 16:9 MLE

14:9

- ~ **14:9 Wide:** this look can be applied to a 4:3 input that is selected when the MLE is set at 16:9. The **14:9 Wide look** displays the same image as **14:9**, but eliminates the black pillars at the left and right by expanding the image horizontally so it fills the screen.

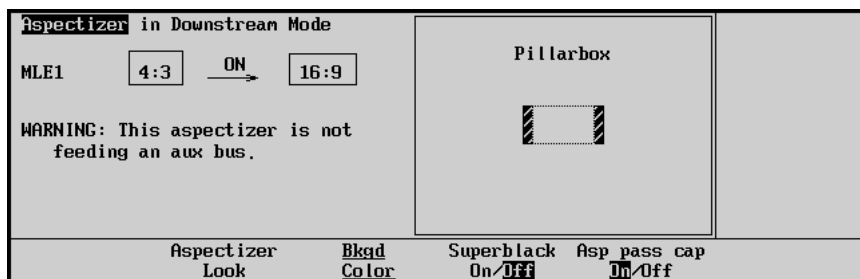


- ~ **14:9 Tall:** this look can be applied to a 16:9 input that is selected when the MLE is set at 4:3. The **14:9 Tall look** displays the same image as **14:9**, but eliminates the black panels at the top and bottom by expanding the image vertically so it fills the screen.



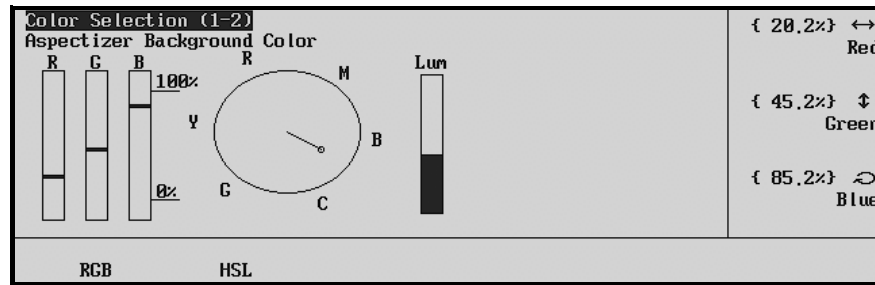
Please note the following important points regarding **Aspectizer** looks:

- ~ If the **MENU** button in the **Positioner Group** is lit, the *joystick* can be used to control the vertical and horizontal movement of the image.
- ~ Pressing the **CENTER** button in the **Positioner Group** will restore a repositioned image to its default position.
- **Superblack On/Off:** some of the **Aspectizer looks** have portions of the screen that are not filled with video from either signal (i.e. **Letterbox**, **Pillarbox**, etc.). The user has the option of filling these areas with Superblack or any color.
 - ~ The default is black. Pressing the **Superblack On/Off** softkey to **Off** will add the **Bkgd Color** softkey as follows:



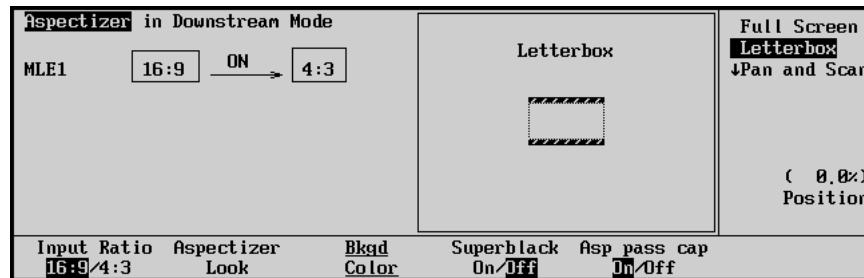
Aspectizer in Downstream Mode

- Pressing the **Bkgd Color** softkey will display the familiar color menu used in other areas of the switcher.



Aspectizer Background Color Menu 1-2

- Notice that there is a menu sub-title that defines the menu as the **Aspectizer Background Color**. The color can be adjusted in either RGB or HSL space by pressing the corresponding softkey and rotating the knobs on the right.
- Asp pass cap On/Off**: The **Asp pass cap** softkey is a toggle button for use when passing video with closed captioning through a **Dual Aspectizer Board**.



Aspectizer in Downstream Mode

Choose between:

- On** — When **Asp pass cap** is set to **On**, the video signal passes through the **Dual Aspectizer** while the line of closed captioning is routed around it. This path prevents distortion of the closed captioning.
- Off** — When **Asp pass cap** is set to **Off**, the video signal is passed through the Aspectizer in the normal manner. This setting should be used when the video signal that you are “aspectizing” does not have a line of closed captioning inserted.



Note

The default setting is **On**.

Once you have configured your **Aspectizer** for **look** and **Bkgd Color**, there are no other operational considerations in **Downstream Mode**.

This completes the **Aspectizer** discussion for **Downstream Mode**.

VTR Clip Control

In This Chapter

This chapter provides instructions for programming and running VTR, Video Server and Audio Server clips. Instructions are also provided for controlling Routing Switchers. The following topics are discussed:

- VTR Clip Control
- Clip Control Overview
- VTR Communications Setup
- Programming VTR Custom Control Buttons
- Programming Clips
- Programming VTR Clips
- Programming Audio Server Clips
- Programming Video Server Clips
- Running VTR Clips
- Application Notes



Note

If you are using the **Leitch VR 300** series of Video Servers, please review the section, “**Application Notes**” on page 12-22 for important information regarding Clip performance.

VTR Clip Control

The overall **VTR Clip Control** function allows you to set up, recall and run clips from three categories of serially controlled devices: **VTRs**, **Video Servers** and **Audio Servers**. Each device must be connected to Synergy via RS-422 communications and properly set up using a series of installation setup menus.

Please note the following prerequisites for proper clip control operation:

- **VTR Clip Control**
For proper operation with **VTRs** (and other serially controlled transports such as **DDRs**), the **VTR Remote Control Option** must be installed. Each serially controlled VTR must be assigned as a VTR during installation and assigned **Betacam** Protocol.
- **Audio Server Clip Control**
For proper operation with **Audio Servers**, the **Audio Server Control Option** must be installed. Each serially controlled audio server must be assigned as a VTR during installation and assigned **Digicart** Protocol.
- **Video Server Clip Control**
For proper operation with **Video Servers**, the **Video Server Control Option** must be installed. Each serially controlled video server must be assigned as a VTR during installation and assigned Video Disk Communications Protocol (**VDCP**).

Clip Control Overview

Four procedures are used to properly set up and play clips from a VTR, Audio Server or Video Server:

- **VTR Communications Setup**
This step involves setting up the device's BNC name, communications, protocol and preroll interval.
- **Programming VTR Custom Control Buttons**
This step allows you to assign dedicated custom control buttons to specific transport control (and clip) functions. The step is recommended for **Audio Servers**, but optional for **VTRs** and **Video Servers**.
- **Programming VTR Clips**
A VTR Clip typically consists of two pieces of information: a physical device connected to the system and a timecode register. Additional data is also included for Video and Audio Servers. Using the **VTR Clips Menu**, you can select a serial controlled device, and then program, name, preview and store clips in one of 100 clip registers.
- **Running VTR Clips**
Once clip data is stored, you can press **VTR CLIP** in the **Global Memory System** group, enter a clip register, cue the device (that is associated with the clip) and bring the clip to air.



Two different methods can then be used to play clips on air:

- ~ Clips can be run (played) manually, using either a **Custom Control** button or the dedicated transport control softkeys in the **Remote Control Menu**.

- ~ Using the **ROLL VTR** button in Play mode, clips can be brought to air manually by the operator.
- ~ Using the **ROLL VTR** button in Arm mode, clips can be brought to air automatically using the transition area buttons.

Each procedure is explained in detail in the following sections.



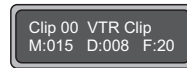
Important

Clips for VTRs, Video Servers and Audio Servers are saved in memory only upon exit of the **VTR Clips Menu**, but you can *also* store **VTR Clip Registers** to a floppy disk or USB key. Note also that in a power failure situation, all clip registers are protected.

Using the Global Memory System Keypad

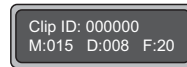
There are two methods to recall VTR Clips using the keypad in the **Global Memory System** of the Synergy Switcher:

- **VTR Clip Number** — The **VTR Clip Number** is a 2 digit number that is created using the Synergy **VTR Clips Menu**. Refer to the section, “**Programming Clips**” on page 12-8 for more information. When selecting a crosspoint associated with any VTR device, the keypad in the **Global Memory System** will be set to **VTR Clip Number** mode.



VTR Clip Number

- **VTR Clip ID** — The **VTR Clip ID** is a 6 digit number that is established on the external device. Leading zeros cannot be specified when entering VTR Clip ID. For example, entering **12** on the **Global Memory System** keypad will load **Clip 12** from the device and not Clip 000012.

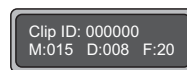


VTR Clip ID

- ~ All VTR devices that support the VTR Clip ID mode can toggle back to the VTR Clip Number mode by pressing the **VTR Clip** button.
- ~ All devices using VDCP protocol, *except* for the EVS maXS, support the VTR Clip ID feature.
- ~ The Accom APR/ClipStore supports the VTR Clip ID feature *if* the Clip ID on the device is numeric.

Use the following procedure to access a **VTR Clip** from an external device using the Synergy **Global Memory System**:

1. Toggle the **VTR Clip** button in the **Global Memory System** to display the VTR Clip ID screen.



VTR Clip ID

2. Enter the VTR Clip ID using the keypad in the **Global Memory System**.

Clip ID: 000012
M:015 D:008 F:20

VTR Clip ID

3. Press **Enter** in the **Global Memory System**.

This completes the procedure to access a **VTR Clip** from an external device using the Synergy **Global Memory System**.

VTR Communications Setup

Use the following procedure to ensure proper communications for VTRs, Video Servers and Audio Servers:

1. Ensure that each serial controlled device that you want to use for clip control is properly assigned as a “VTR” on the **BNC Type Menu**.

Refer to the “**Setting Up BNC Types**” section in Chapter 6, “**BNC Configuration and Check**” of the *Synergy 1 Installation Guide* for instructions.

2. Use the **BNC Names Menu** to properly identify each BNC. When using the setup menus and especially the **Preview Overlay**, these names will help you to *visually* identify actual sources rather than simply BNC numbers. For example, by naming a BNC **Server2** instead of BNC-12, both setup and on-air operation will be easier.

Refer to Chapter 6, “**BNC Configuration and Check**” of the *Synergy 1 Installation Guide* for complete instructions.

3. Ensure that each serially controlled device is physically connected to the desired Synergy remote control port.

Refer to Chapter 8, “**Communication Setup**” of the *Synergy 1 Installation Guide* for details.

4. Ensure that all desired remote control options are properly installed.

Refer to the following sections in Chapter 2, “**Installation**” of the *Synergy 1 Installation Guide* for details:

- For VTR control, refer to the “**Installing Software Options**” section .
 - For Video Server control, refer to the “**Installing Software Options**” section.
 - For Audio Server control, refer to the “**Installing Software Options**” section.
5. Navigate to the **Communications Menu 1-2** to set up communications:
 - Press **HOME** (to display **Main Menu 1-2**).
 - **MORE** (to display **Main Menu 2-2**).
 - **Setup** (to display the **Setup Menu**).
 - **Installation** (to display **Installation Menu 1-2**).
 - **Communications**. (to display **Communications Menu 1-2**).

6. Press **Type** to display the **Communications Type Menu**.

Communications (1-2)		Com Port:	REMOTE 1 (R1)
This menu lets you setup what each of the com ports are used for.		Device:	OFF
		BNC:	UVR (CLIP)
			Router
			NONE
			BNC ? (?)
Type	Select Device	Com Settings	Com Type
		Custom Devices	Extra Options

Communications Type Menu

7. Assign com port(s) to devices, and select their associated BNC inputs as follows:
- Use the top **Com Port** knob to select the remote control port that you wish to assign.
 - Use the middle **Device** knob to select the category **VTR (CLIP)**.
 - Use the bottom **BNC** knob to select the specific BNC to which the device is physically connected.

Repeat for each serial controlled device that is connected to a com port.

8. Press **Select Device** to display the **Select Device Menu**.

Communications (1-2)		Com Port:	REMOTE 1 (R1)
This menu lets you setup which devices are controlled by which ports.		Device:	↑DigiCart
		UVR Preroll:	UDCP
			↓CUSTOM0
			(0)
			Frames
Type	Select Device	Com Settings	Com Type
		Custom Devices	Extra Options

Select VTR (Clip) Menu

9. Associate each remote control port (that has a VTR connected) with a protocol as follows:
- Use the top **Com Port** knob to select the remote control port.
 - Use the middle **Device** knob to select the correct protocol.
 - ~ For VTRs, select **Betacam**.
 - ~ For Video Servers, select **VDCP**.
 - ~ For Audio Servers, select **DigiCart**.
 - Use the bottom **VTR Preroll** knob to select the device's preroll interval (in frames). Repeat step 9 for each device that is connected to a com port.



Note

VTR Preroll applies to VTRs and Video Servers only. It is not normally applied to Audio Servers because they are not normally associated with a BNC. If an Audio Server is associated with a BNC, then it can be included as part of an Arm mode **ROLL VTR** transition, allowing the audio to be heard during the preroll before the transition. An Audio Server cannot use the same BNC as another VTR or Server because only one VTR or Server or Audio Server per BNC is allowed.

For VTRs and Video Servers, the preroll value will be applied when the **ROLL VTR** button is in Arm mode and the device is taken to air with a cut, auto-transition, or hot-punching the associated crosspoint. Hot-punching two times before the preroll delay is complete takes the crosspoint immediately to air. Selecting **CUT** or **AUTO TRANS** in the keyer area applies the preroll even when not on air.

When the transition is performed, the system will *wait* the selected preroll interval, before taking the transition to air.

10. Press **Com Settings** to display the **Com Settings Menu**.

Communications (1-2)		Com Port:	UDCP (R1)
This menu lets you setup your com port parameters.		Baud:	↑19200 38400 ↓57600
		Parity:	NONE ODD EVEN
Type	Select Device	Con Settings	Con Type
		Custom Devices	Extra Options

Com Settings Menu.



Important

The baud rate and parity for most serial devices should already be correctly set. Use these controls only if required.

- Use the top **Com Port** knob to select the remote control port.
- Use the middle **Baud** knob to select the port's baud rate.
- Use the bottom **Parity** knob to select the port's parity.

Repeat for each serial device that is connected to a com port.

11. Press **Com Type** to display the **Com Type Menu**.

Communications (1-2)		Com Port:	UDCP (R1)
This menu lets you setup your com port types.		Type:	RS-232 RS-422 JRS-232 Null
Type	Select Device	Con Settings	Con Type
		Custom Devices	Extra Options

Communications — Com Type Menu

- Use the top **Com Port** knob to select the remote control port.
- Use the middle **Type** knob to select the type of serial communications (**RS-232** or **RS-422**) for the selected port.

Repeat for each serial device that is connected to a com port.

Programming VTR Custom Control Buttons



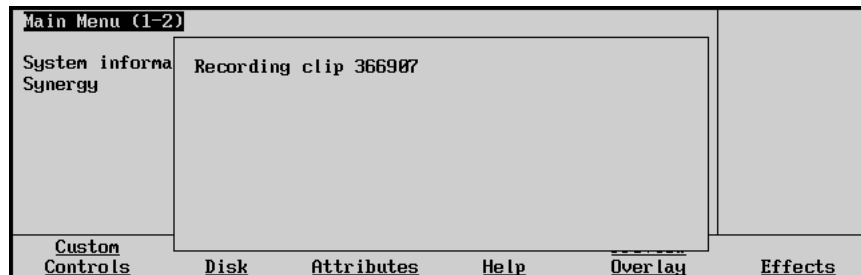
Note

This step is recommended for **Audio Servers**, but optional for **VTRs** and **Video Servers**.

When you set up your VTR, Video Server and Audio Server clips using the **VTR Clips Menu**, transport control commands (such as **PLAY** and **STOP**) are located on the menu *as standard*. In addition, when you recall VTR and Video Server clips from memory for use during on-air production, transport control commands are *also* present on the individual **Remote Control** menus.

With these facts in mind, you may (or may not) want to program these standard commands on individual custom control buttons for VTRs and Video Servers. Remember that custom control buttons *do* give you the ability to string groups of commands together (including transport controls and the ability to cue specific clips repeatedly). Please note:

- For automatic device control during transitions, remember that the **ROLL VTR** button (in Arm mode) in the MLE's **Transition Group** automatically rolls the device that is selected on any bus in the MLE.
- For the **Digicart** Audio Server, which does not have a **Remote Control Menu**, programming a group of **Custom Control** buttons is recommended.
- If you do choose to program **Custom Control** buttons, at the minimum, you should program *four* functions: **PLAY**, **STOP**, **FF** and **REV**. These will allow you to control the selected device from the switcher panel, once the clip has been cued.
- If you choose to program **Custom Control** buttons with a **RECORD** function for a VDCP device you can program a **STOP** function in one of three ways:
 - ~ Program a **STOP** macro for the *same* Custom Control button.
 - ~ Program a **STOP** macro for a *separate* Custom Control button.
 - ~ Assign a **Record Time** in the **Communications — Extra Options Menu** that is applied to all Custom Controls for the selected device. Refer to Chapter 7, “**Communications Setup**” in the *Synergy Series Installation Guide* for more information.
- If you play a Custom Control button programmed with a **RECORD** function for a video server, a pop-up message is displayed. A sample is shown below.



Recording VTR Custom Control Pop-up Message

The Clip ID, a number automatically generated by the switcher, is also displayed on the popup message for your reference.



Note

You may encounter a slight delay after pressing the Custom Control button and the beginning of the recording. This is due to the time the video server requires to initialize the record command.

Refer to the “**VTR Functions**” section in Chapter 8, “**Custom Controls**” of the *Synergy 1 Installation Guide* for detailed instructions.

Programming Clips

The next step in VTR clip operations is to program VTR, Video Server and Audio Server clips using the **VTR Clips Menu**. The menu is a *programming* menu, rather than a live menu — designed to set up clips for later use on-air.

This menu allows you to perform the following functions:

- Select a serial controlled device and a clip number.
- Grab or enter a timecode (and other device-specific data), name the clip, and store it in a clip register. Up to 100 clips can be stored (using registers **00** to **99**).
- Cue and preview each clip.
- For Video Servers, trim the clip’s inpoint and outpoint.

Procedures are provided below for programming VTR clips, Video Server clips and Audio Server clips. The steps vary slightly for each device, because the **VTR Clips Menu** *changes* depending upon the selected device.

Programming VTR Clips

Use the following procedure to program VTR clips:

1. Ensure that all previous setup steps have been performed. If not, refer to the section “**VTR Communications Setup**” on page 12-4 for instructions.
2. Navigate to the **VTR Clips Menu 1-2** as follows:
 - Press **HOME** (to display **Main Menu 1-2**)
 - **MORE** (to display **Main Menu 2-2**)
 - **VTR Clips** (to display **VTR Clips Menu 1-2**)
3. Press **Clip Type** to display the **Clip Type Menu**.

VTR Clips (1-2)						↑ VTR Clip (02)
Clip: 03 Clip Name: "VTR Clip"					Clip	VTR Clip (03)
Device: VTR 2 (R1)					Device	VTR Clip (04)
Timecode: 00:00:00:00					Device	VTR 2 (R1)
						Server 1 (R2)
						Clip Enabled
						Clip Disabled
Clip Type	Name Clip	Hours Minutes	Seconds Frames	Grab Timecode	Cue to Timecode	

VTR Clips Menu 1-2

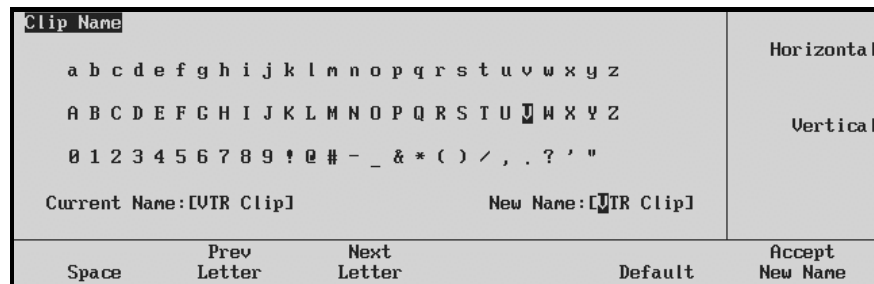
4. Enable a VTR clip as follows:

- Use the top **Clip** knob to select the clip register that you want to program (**00** through **99**).
- Use the middle **Device** knob to select a VTR.

The VTR's remote control port appears in parentheses. Once the device is selected, the **VTR Clips Menu** changes to show softkey labels and status fields that are *specific* to programming "VTR" clips only.

- Use the bottom **Enable/Disable** knob to determine if you want the clip to appear in the **Remote Control Menu** (for on-air use), or to be disabled for use at a later time. If the clip is disabled, it will *not* appear on the **Remote Control Menu**, but you can still enter all required clip parameters. This step can also be used simply to enable a clip that is already programmed.

5. Press **Name Clip** to display the **Clip Name Menu**.



Clip Name Menu

- When you name the VTR clip, its new name will appear in your list of clip registers, in the **Global Memory System's** display, and on the **Remote Control Menu**.



Operating Tip

A Standard PS/2 keyboard can be used to perform the same actions as pressing or rotating the **System Control** buttons and knobs. Refer to the section "Using a Keyboard" on page 2-8 for details.



Important

Do NOT place anything on your keyboard or place your keyboard in a position where any of the keys could be accidentally pressed. This could result in the Switcher acting unpredictably.

6. Name a VTR clip as follows:

- Use the **Horizontal** and **Vertical** knobs (in conjunction with the editing softkeys) to enter the desired clip name.
- Press **Accept New Name** to complete the naming procedure and return to **VTR Clips Menu 1**.

On **VTR Clips Menu 1-2**, the selected name now appears in the status area and adjacent to the highlighted **Clip**.

VTR Clips (1-2)						↑VTR Clip (02)
Clip: 03 Clip Name: "Show "						Show (03)
Device: VTR 2 (R1)						↓VTR Clip (04)
Timecode: 00:00:00:00						VTR 2 (R1)
						Server 1 (R2)
						Clip Enabled
						Clip Disabled
Clip Type	Name Clip	Hours Minutes	Seconds Frames	Grab	Timecode	Cue to Timecode

VTR Clips Menu 1-2

7. Select the timecode for the VTR clip as follows:

- Press **Hours Minutes**.
 - ~ Use the middle **Hours** knob to select the hours value.
 - ~ Use the bottom **Minutes** knob to select the minutes. The values appear in the **Timecode** field in the status area as you select them.

VTR Clips (1-2)						(1) Hours
Clip: 03 Clip Name: "Show "						(17) Minutes
Device: VTR 2 (R1)						
Timecode: 01:17:00:00						
Clip Type	Name Clip	Hours Minutes	Seconds Frames	Grab	Timecode	Cue to Timecode

VTR Clips Menu 1-2 — Enter Timecode

- Press **Seconds Frames**.
 - ~ Use the middle **Seconds** knob to select the seconds.
 - ~ Use the bottom **Frames** knob to select the frames.

VTR Clips (1-2)						(42) Seconds
Clip: 03 Clip Name: "Show "						(2) Frames
Device: VTR 2 (R1)						
Timecode: 01:17:42:02						
Clip Type	Name Clip	Hours Minutes	Seconds Frames	Grab	Timecode	Cue to Timecode

VTR Clips Menu — Enter Timecode

- Press **Cue to Timecode** to cue the VTR to the new timecode value.



Operating Tip

You can also *grab a timecode* using the following method:

- Press **MORE** to display **VTR Clips Menu 2-2**.
- Cue the VTR to the desired timecode using the available transport controls: **Rewind**, **Back Frame**, **Pause**, **Play**, **Ahead Frame** and **Fast Forward**.
- When the VTR is paused on the desired frame, press **MORE** to return to **VTR Clips Menu 1-2**.

- Repeat steps 3 through 5 for any additional VTR clip registers that you wish to program. In addition to programming new clips, remember that these steps can also be used to edit existing clip registers.



Note

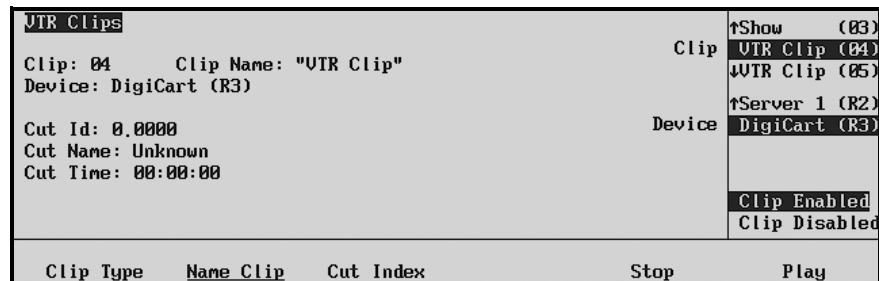
VTR clips are saved in memory *only* upon exit of the **VTR Clips Menu**, but you can also store them to a storage device such as a floppy disk or USB key.

This completes the procedure for programming VTR clips.

Programming Audio Server Clips

Use the following procedure to program Audio Server clips:

- Ensure that all previous setup steps have been performed. If not, refer to the section “**VTR Communications Setup**” on page 12-4, for instructions.
- Navigate to the **VTR Clips Menu** as follows:
 - Press **HOME** (to display **Main Menu 1-2**)
 - MORE** (to display **Main Menu 2-2**)
 - VTR Clips** (to display **VTR Clips Menu**)
- Press **Clip Type** to display the **Clip Type Menu**.



VTR Clips Menu

- Use the top **Clip** knob to select the clip register (**00** through **99**).
- Use the middle **Device** knob to select an Audio Server.

The Audio Server’s remote control port appears in parentheses. Once the device is selected, the **VTR Clips Menu** *changes* to show softkey labels and status fields that are *specific* to programming “Audio Server” clips only.



Note

The bottom **Enable/Disable** function can be ignored. Because there is no **Remote Control Menu** for Audio Servers, all DigiCart clips must be run from **Custom Control** buttons.

- Press **Name Clip** to give the Audio Server clip a name — one that you want to appear in your list of clip registers and in the **Global Memory System’s** display. On the **Clip Name Menu**, use the **Horizontal** and **Vertical** knobs plus the editing softkeys to enter the desired name.

Press **Accept New Name** to return to **VTR Clips Menu**, where the new name is displayed in the status area and adjacent to the highlighted **Clip** (in the right-hand column).

VTR Clips		Clip	↑Show (03)
Clip: 04	Clip Name: "BirdClip"		BirdClip (04)
Device: DigiCart (R3)			↓VTR Clip (05)
Cut Id: 0.0000		Device	↑Server 1 (R2)
Cut Name: Unknown			DigiCart (R3)
Cut Time: 00:00:00			
			Clip Enabled
			Clip Disabled
Clip Type	Name Clip	Cut Index	Stop Play

VTR Clips Menu

5. Press **Cut Index** to select the clip's ID. DigiCart cuts are identified by a drive, directory and cut rather than by timecode.

VTR Clips		(1)
Clip: 04	Clip Name: "BirdClip"	Drive
Device: DigiCart (R3)		(5)
Cut Id: 1.5005		Directory
Cut Name: Unknown		(5)
Cut Time: 00:00:00		Cut
Clip Type	Name Clip	Cut Index
		Stop Play

VTR Clips Menu — Enter Cut ID

- Use the top **Drive** knob to select the desired drive on the DigiCart.
- Use the middle **Directory** knob to select the desired directory within the drive.
- Use the bottom **Cut** knob to select the desired cut within the directory.

The numeric values appear in the **Cut ID** field in the status area as you select them. Once the ID is entered, the **Cut Name** and **Cut Time** values will be retrieved from the DigiCart.

6. To play the clip without using Custom Control buttons, press **Play** and **Stop** as desired.
7. Repeat steps 3 through 5 for any additional Audio Server clips that you wish to program. In addition to programming new clips, remember that these steps can also be used to edit existing clip registers.



Note

Audio Server clips are saved in memory *only* upon exit of the **VTR Clips Menu**, but you can also store them to a floppy disk or USB key.

This completes the procedure for programming Audio Server clips.

Programming Video Server Clips

Use the following procedure to program Video Server clips:

1. Ensure that all previous setup procedures have been performed. Refer to the section, “**VTR Communications Setup**” on page 12-4 for setup instructions.
2. Navigate to the **VTR Clips – Clip Type Menu** as follows:
 - Press **HOME** (to display the **Main Menu 1-2**)
 - **MORE** (to display the **Main Menu 2-2**)
 - **VTR Clips** (to display the **VTR Clips Menu**)
 - **Clip Type** (to display the **VTR Clips – Clip Type Menu**)

VTR Clips (1-2)		Clip	↑ VTR Clip (07)
Clip: 08	Clip Name: "VTR Clip"		U VTR Clip (08)
Device: BNC 8	(R1)		U VTR Clip (09)
ID: "ID"		Device	BNC 8 (R1)
Duration: Unknown			U VDCP (R2)
			Clip Enabled
			Clip Disabled
Clip Type	Name Clip	Enter ID	Choose ID
			Inpoint
			Outpoint
			Cue

VTR Clips – Clip Type Menu

3. Select a clip register as follows:
 - Use the top **Clip** knob to select the clip register that you want to program (**00** through **99**).
 - Use the middle **Device** knob to select a Video Server.
The remote control port of the Video Server is displayed in parentheses. When the device is selected, the **VTR Clips Menu** *changes* to display softkey labels, status fields and timeline that are *specific* to programming “Video Server” clips only.
 - Use the bottom **Enable/Disable** knob to determine if you want the clip to display in the **Remote Control Menu** (for on-air use), or to be disabled for later use. When the clip is disabled, it is *not* displayed on the **Remote Control Menu**, however you can still enter all required clip parameters.
4. Press **Name Clip** to display the **Clip Name Menu**.

Clip Name		Horizontal
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: [VTR Clip]	New Name: [U VTR Clip]	Vertical
Space	Prev Letter	Next Letter
		Default
		Accept New Name

Clip Name Menu

5. Name a clip as follows:
 - Use the **Clip Name Menu** to give the Video Server clip a name — one that you want to appear in your list of clip registers, in the **Global Memory System's** display, and on the **Remote Control Menu**.
 - Use the **Horizontal** and **Vertical** knobs plus the editing softkeys to enter the desired name.
 - Press **Accept New Name** to return to the **VTR Clips Menu 1-2**, where the new name is displayed.

VTR Clips (1-2)		Clip	Pinnacle (00)
Clip: 00	Clip Name: "Pinnacle"	VTR Clip (01)	
Device: Pinnacle (R1)		Device	Pinnacle (R1)
ID: "ID"			
Duration: Unknown			Clip Enabled
			Clip Disabled
Clip Type	Name Clip	Enter ID	Choose ID
		Inpoint	Outpoint
			Cue

VTR Clips Menu 1-2

6. Press **Enter ID**, if you *already* know the 8-character clip ID as previously determined on the server itself, to enter the ID and display the **Enter VDCP ID Menu**.

Enter VDCP ID		Horizontal
a b c d e f g h i j k l 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		Vertical
0 1 2 3 4 5 6 7 8 9 ! @ # - _ & * () / , . ? ' "		
Current Name: [ID]	New Name: [ID]	
Space	Prev Letter	Next Letter
		Accept New Name

Enter VDCP ID Menu

7. Enter a clip ID as follows:
 - Use the **Horizontal** and **Vertical** knobs plus the editing softkeys to enter the desired ID.



Operating Tip

A Standard PS/2 keyboard can be used to perform the same actions as pressing or rotating the **System Control** buttons and knobs. Refer to the section "Using a Keyboard" on page 2-8 for details.

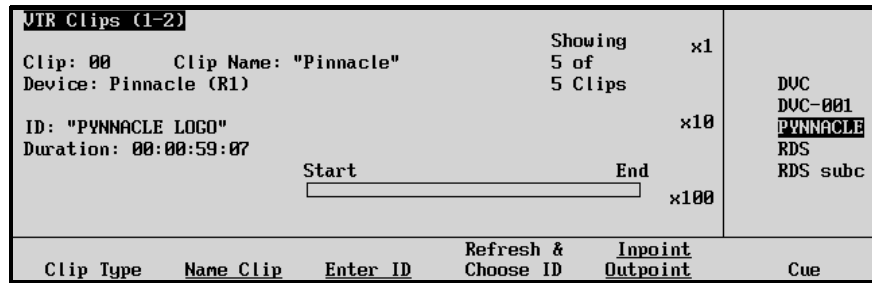


Important

Do NOT place anything on your keyboard or place your keyboard in a position where any of the keys could be accidentally pressed. This could result in the Switcher acting unpredictably.

8. Press **Accept New Name** to return to **VTR Clips Menu**, where the new ID now appears in the status area and in the right-hand column.

- Press **Choose ID** if you want to choose the ID from a list that was previously loaded from the Video Server (by Synergy), and that now resides in Synergy memory.



VTR Clips Menu — Choosing ID from List

The right-hand column displays Synergy’s current list of clips (as loaded from the Server), and the status area shows the number of clips currently in memory (for example, **Showing 100 of 100 Clips**).

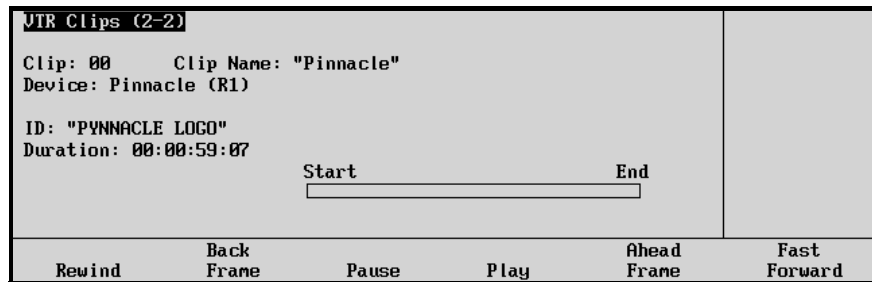
Use the **x1**, **x10** and **x100** softkeys to scroll quickly through the list as required. In the status area, the **ID** and **Duration** fields automatically update as you scroll, and each clip’s head frame will be visible if you have the Server selected on Preset.

- Note that when you pressed **Choose ID** in step 6, the softkey label changed to **Refresh & Choose ID**. If you want to refresh (reload) Synergy’s clip list, press **Refresh & Choose ID**. This function is useful if new clips have recently been loaded on the selected Server.

The display indicates the progress of the loading operation (for example, **Loading 15 of 104 Clips**), and when complete, you can use the **x1**, **x10** and **x100** softkeys to scroll through the list and choose a clip.

When a clip is loaded, the status bar of the Timeline indicates that the segment is cued to the top (or **Start**) frame.

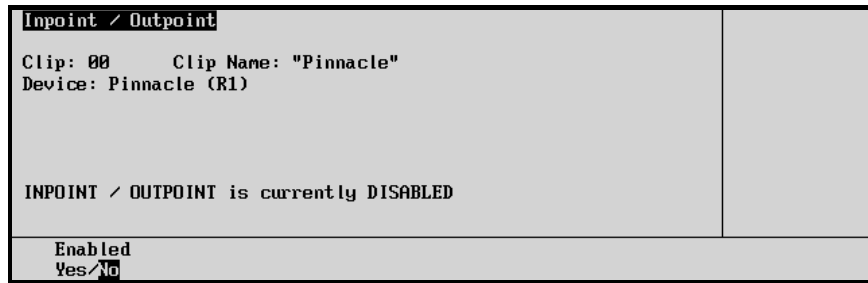
- To play the clip, press **MORE** to display **VTR Clips Menu 2-2**.



VTR Clips Menu 2 — Video Server Transport Controls

- Play the Video Server clip as desired, using the available transport controls: **Rewind**, **Back Frame**, **Pause**, **Play**, **Ahead Frame** and **Fast Forward**. As the clip plays, the bar on the timeline changes accordingly.
- If you pause the clip in the middle, you can quickly cue the clip by pressing **MORE**, the pressing **Cue** on **VTR Clips Menu 1-2**.

12. If you want to trim the clip's inpoint and outpoint, navigate to **VTR Clips Menu 1-2** and press **Inpoint Outpoint** to display the **Inpoint/Outpoint Menu**.

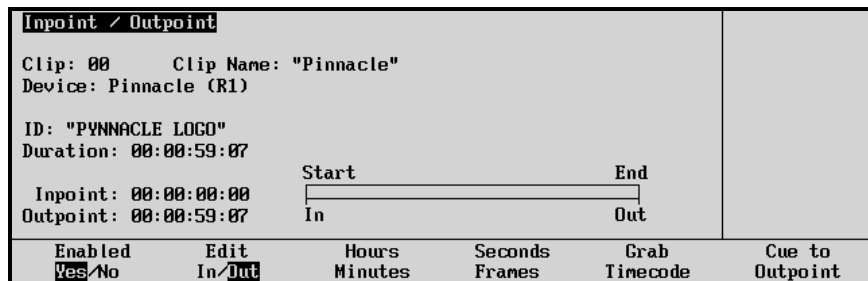


Inpoint/Outpoint Menu — Disabled

The **Enabled** softkey allows you to trim the clip's start and end frames, or revert back to the clip's original marks as stored on the Video Server.

If you choose different start and end frames to use on air, the clip's original points remain unchanged on the Video Server. In this way, you can create sub-clips from a long master Video Server clip — directly on the Synergy. You can also simply trim a clip to choose more desirable points as required.

- Toggle the **Enabled** softkey to **Yes** in order to trim the clip's start and end frames. Please continue with step 10.
 - Toggle the **Enabled** softkey to **No** in order to revert back to the clip's original timecode marks. The label "**Inpoint/Outpoint is currently Disabled**" appears in the status area. Any trims that were previously entered while the menu was enabled are safely stored in memory. If at some point you toggle back to **Yes**, the trimmed marks will automatically re-appear.
13. With the **Enabled** softkey toggled to **Yes**, the full **Inpoint/Outpoint Menu** appears.



Inpoint/Outpoint Menu — Enabled

- Toggle the **Edit** softkey to **In** or **Out** as required, in order to edit (or trim) the clip's inpoint or outpoint, respectively.
- For the selected edit point (**In** or **Out**), the user can set a timecode using the **Hours**, **Minutes**, **Seconds** and **Frames** softkeys in combination with the middle and bottom knobs. The values appear in the **Inpoint** or **Outpoint** field as appropriate. To verify that the selected timecode is correct, press **Cue to Inpoint** or **Cue to Outpoint** as required to cue the server.
- To grab a timecode for the selected point (**In** or **Out**), press **MORE** to display **VTR Clips Menu 2-2**. Use the available transport controls to cue the server to the desired frame.

When the Server is paused on the desired frame, press **MORE** to return to the **Inpoint/Outpoint Menu**, then press **Grab Timecode** to complete the procedure. The grabbed value now appears in the **Inpoint** or **Outpoint** field as appropriate.

- To complete the procedure, press **UP ONE** to return to **VTR Clips Menu 1-2**, where the new inpoint and outpoint will be displayed — provided that the **Enabled** softkey is toggled to **Yes**.
14. Repeat steps 3 through 10 for any additional Video Server clip registers that you wish to program. Remember that these steps can also be used to edit existing clip registers.



Note

Video Server clips are saved in memory *only* upon exit of the **VTR Clips Menu**, but you can also store them to a floppy disk or USB key.

This completes the procedure for programming Video Server clips.

Running VTR Clips

Once all VTR, Audio Server and Video Server clip registers have been programmed, the final step is to use the **VTR CLIP** button to recall your clips and run them.

Use the following procedure to use VTR, Video Server and Audio Server clips on air:

1. Ensure that the clips you want to use are properly set up on the **VTR Clips Menu 1**, and that all desired VTR and Video Server clips are “enabled.” Only the enabled VTR and Video Server clips will appear on the **Remote Control Menu**.



Note

There is no **Remote Control Menu** for Audio Server clips. To run an Audio Server clip, select the clip as shown in step 5, then run the clip using **Custom Control** buttons.

2. Ensure that you can monitor the VTR or Video Server’s timecode on the **Preview** monitor:
 - Select the VTR or Video Server on the **Preset Bus**.
 - On the **Preview Overlay Menu**, select **VTR TC** to toggle the “VTR Timecode” overlay.
3. Select the VTR or Video Server (that you want to cue) on any bus. Note that you may wish to select the device on **Preset** so that you can preview the VTR or Video Server.
4. Ensure that your “next transition” includes **BKGD**.
5. Press **VTR CLIP** in the **Global Memory System Group**.
 - Using the keypad, enter the clip register number (from **00** to **99**).

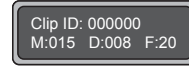


Note

You cannot access a clip from the EVS maXS video server using the keypad in the **Global Memory System Group** because its Clip IDs are not numeric. Refer to the section “**Programming Video Server Clips**” on page 12-13 for more information on using the **Synergy VTR Clip Menu**.



VTR Clip ID



VTR Clip Number

The display shows the clip register and the clip name (as entered on the **VTR Clips Menu**), and the **Remote Control Menu** for VTRs or Video Server clips *automatically* appears.

- The following figure illustrates a sample **Remote Control Menu** for VTR clips.

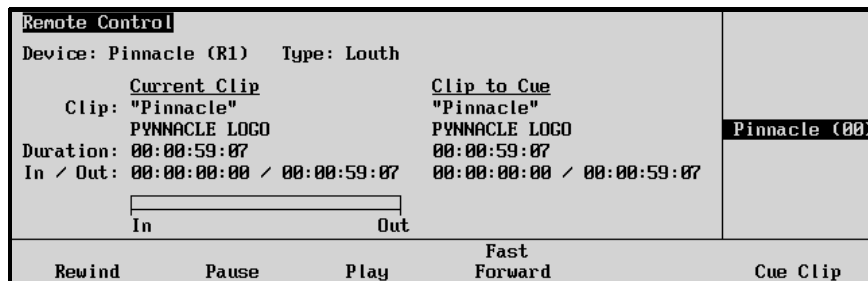


Remote Control Menu for VTR Clips

The **Remote Control Menu** (for VTRs) displays three columns of information plus transport control softkeys.

- ~ **Column 1** (on the left) displays the selected clip name, its starting timecode value plus its current timecode location.
- ~ **Column 2** displays information for the clip that is selected with the middle scroll knob — from the list in Column 3. The clip name plus its starting timecode value is shown.
- ~ **Column 3** displays the list of filtered (enabled) VTR clips, as selected on **VTR Clips Menu 1**.

- The following figure illustrates a sample **Remote Control Menu** for Video Server clips.



Remote Control Menu for Video Server Clips

The **Remote Control Menu** (for Video Servers) displays three columns of information, the clip's timeline, plus transport control softkeys

- ~ **Column 1** (on the left) displays the selected clip name, its ID, the clip duration plus the selected inpoint and outpoint. The **In/Out Field** only appears if the **Inpoint/Outpoint Menu** was left *enabled* as the clip was programmed.
- ~ **Column 2** displays information for the clip that is selected with the middle scroll knob — from the list in Column 3. The clip name, ID and duration are

shown. Just like column 1, the **In/Out Field** only appears if the **Inpoint/Outpoint Menu** was left *enabled* — otherwise, the label **None Set** appears.

- ~ **Column 3** displays the list of filtered (enabled) Video Server clips, as selected on **VTR Clips Menu 1**. The last recalled clip, as selected on the **Global Memory System** by toggling the **VTR Clip** button, is labeled as **(ID)**.
6. To play or preview the clip manually from the menu, use the available transport control commands as required: **Rewind**, **Play**, **Pause** and **Fast Forward**.
 7. To run a VTR Clip in *slow motion*, refer to section “**VTR Play Speed Control – Slow Motion**” on page 12-20.
 8. To cue the current clip, or to cue another clip for playback, rotate the center knob and select a clip from the list, and press **Cue Clip**. Remember that the list is filtered based on the clips that were enabled on **VTR Clips Menu**.
 9. To roll the VTR or Video Server *manually* from the control panel, the following steps are required:
 - Set the **Roll VTR Mode** to **Play** as follows:
 - ~ Press **HOME** (to display the **Main Menu 1-2**)
 - ~ **MORE** (to display the **Main Menu 2-2**)
 - ~ **Setup** (to display the **Setup Menu**)
 - ~ **Personality** (to display the **Personality Menu 1-3**)
 - ~ Toggle the **Roll VTR Mode** softkey to **Play**.

In this mode, the **ROLL VTR** button’s action is *momentary*.
 - Ensure that the VTR or Server is selected on the PST bus, then press **ROLL VTR**. This action immediately plays the device. The transition that brings on the device must be initiated manually with the **Fader** or automatically using **CUT** or **AUTO TRANS**.
 10. To roll the VTR or Video Server *automatically* from the control panel using a transition, the following steps are required:
 - Set the **Roll VTR Mode** to **Arm** as follows:
 - ~ Press **HOME** (to display the **Main Menu 1-2**)
 - ~ **MORE** (to display the **Main Menu 2-2**)
 - ~ **Setup** (to display the **Setup Menu**)
 - ~ **Personality** (to display the **Personality Menu 1-3**)
 - ~ Toggle the **Roll VTR Mode** softkey to **Arm**.

The **ROLL VTR** button is *latching*, and it remains latched until toggled off manually.
 - Press the **ROLL VTR** button to arm the switcher. Then select, as desired, a VTR associated crosspoint for one or more of the two Keys and the PST bus, including MLE re-entries. Each bus can only deal with one VTR/Server, so at most three devices can be rolled at the same time.
 - When you press **CUT** or **AUTO TRANS** in the transition area of the MLE, the VTRs and/or Servers will roll. The switcher will then start the transition at the end of the largest pre-roll of all the devices.

Please note the following important points regarding the use of clips on air:

- The **ROLL VTR** button is not included in memory recall functions.
- The **ROLL VTR** button can be used to roll VTRs and Servers selected on *any* bus on the MLE. Re-entry selections that include a VTR or Video Server are also allowed.
- If you set the **ROLL VTR** to Arm mode and then select a VTR or Video Server directly on the **PGM** bus, the VTR/Server immediately rolls. Once the preroll is complete, the source will be taken to air. In this case, selecting the VTR or Server *once* activates preroll, but pressing the source *twice* bypasses the preroll wait and takes the device to air immediately. The hot-punch **ROLL VTR** in Arm mode works only if the MLE is already on air.



Note

If you take a VTR/Server to air using the **ROLL VTR** button in Arm mode, the device continues to roll until the **Pause** or the **Stop** button is pressed.

If you do not stop the VTR/Server and you take another source on PGM, and then retake the rolling VTR/Server, it will come to air only after the preroll time has elapsed again.

- If the **ROLL VTR** button is armed and the fader is used to start the transition, the preroll interval is ignored.
- The **Remote Control Menu** can be reached manually as follows:
 - ~ Press **HOME** (to display the **Main Menu 1-2**)
 - ~ **Effects** (to display the **Effects Menu**)
 - ~ **Remote Control Select** (to display the **Remote Control Select Menu**)
 - ~ On the **Remote Control Select Menu**, used the middle knob to select the desired device.
 - ~ Press **Go to Remote Menu**.

VTR Play Speed Control – Slow Motion

When running VTR Clips, press **Play Speed** to control the playing speed of the VTR Clip, either forward or reverse in slow motion.

Remote Control					
Device: BNC 28 (R1) Type: Betacam					
Current Clip		Clip to Cue		(100.0%) Speed	
Clip: "VTR Clip"		"VTR Clip"			
Timecode: 10:18:46:03		10:18:46:03			
Current: 10:12:02:20					
Speed: 100%				VTR Clip (00)	
Rewind	Pause	Play	Fast Forward	Play Speed	Cue Clip

Remote Control Slow Motion Menu

- Use the bottom knob to select the VTR Clip whose play speed and direction you wish to adjust.
- Use the middle **Speed** knob to set the direction and rate at which the clip will play.
 - ~ **200%** = fast play speed
 - ~ **100%** = normal play speed
 - ~ **0%** = tape pause
 - ~ **-100%** = normal play speed in reverse
 - ~ **-200%** = fast play speed in reverse
- Double press **Play Speed** to return to 100% speed.

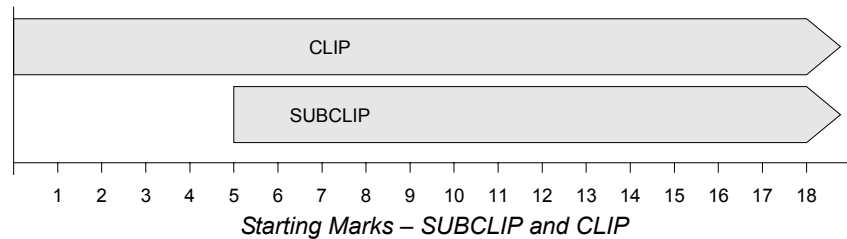
Application Notes

The following technical discussion applies to the **Leitch VR 300** series of Video Servers only. The discussion is accurate as of the printing of this version of the Synergy Series Operation's Guide (March, 2000).

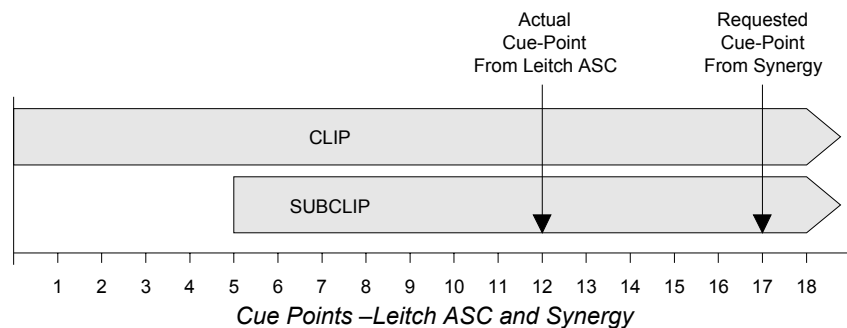
Using Clips and Subclips on the Leitch VR 300

A bug exists on the Leitch VR series of servers, and it appears in Leitch software versions 2.70 and earlier. Regarding inpoints and outpoints, the Leitch VR 300 uses the wrong "zero timecode" to cue clips that are requested from Synergy. Specifically:

- Assuming a master clip named "**CLIP**," the Leitch VR 300 allows the user to construct a *subclip* of **CLIP**, with a working name of **SUBCLIP**. This function is performed on the Leitch itself.
- For this example, **SUBCLIP** has a starting mark that occurs 5 seconds into **CLIP**.



- When **SUBCLIP** is cued from Synergy, and no inpoint or outpoint is marked on Synergy's **Inpoint/Outpoint Menu**, there is no problem with cueing.
- However, when Synergy attempts to cue **SUBCLIP** with an inpoint of 12 seconds, the clip actually cues with an inpoint of 7 seconds — 12 seconds from the inpoint of the parent clip (**CLIP**), rather than from the inpoint of **SUBCLIP**.



- There are several work-arounds:
 - ~ If you use subclips that have been entered on the Leitch VR 300, do not use inpoint/outpoint marking from Synergy.
 - ~ Do not use subclips at all (as programmed on the Leitch VR 300). Instead, only use the parent clips, and program subclips using Synergy's inpoint/outpoint marking.
 - ~ If you must use subclips from the Leitch VR 300, make allowances for the error as described above. Look at the starting mark of the subclip (e.g., 5 seconds), and *add* that value to Synergy's inpoint or outpoint mark.
- As a recommendation, please check your Leitch VR 300 software version, and verify if the problem as described above occurs. If so, use one of the work-arounds listed above.

Appendix A. Menu Trees

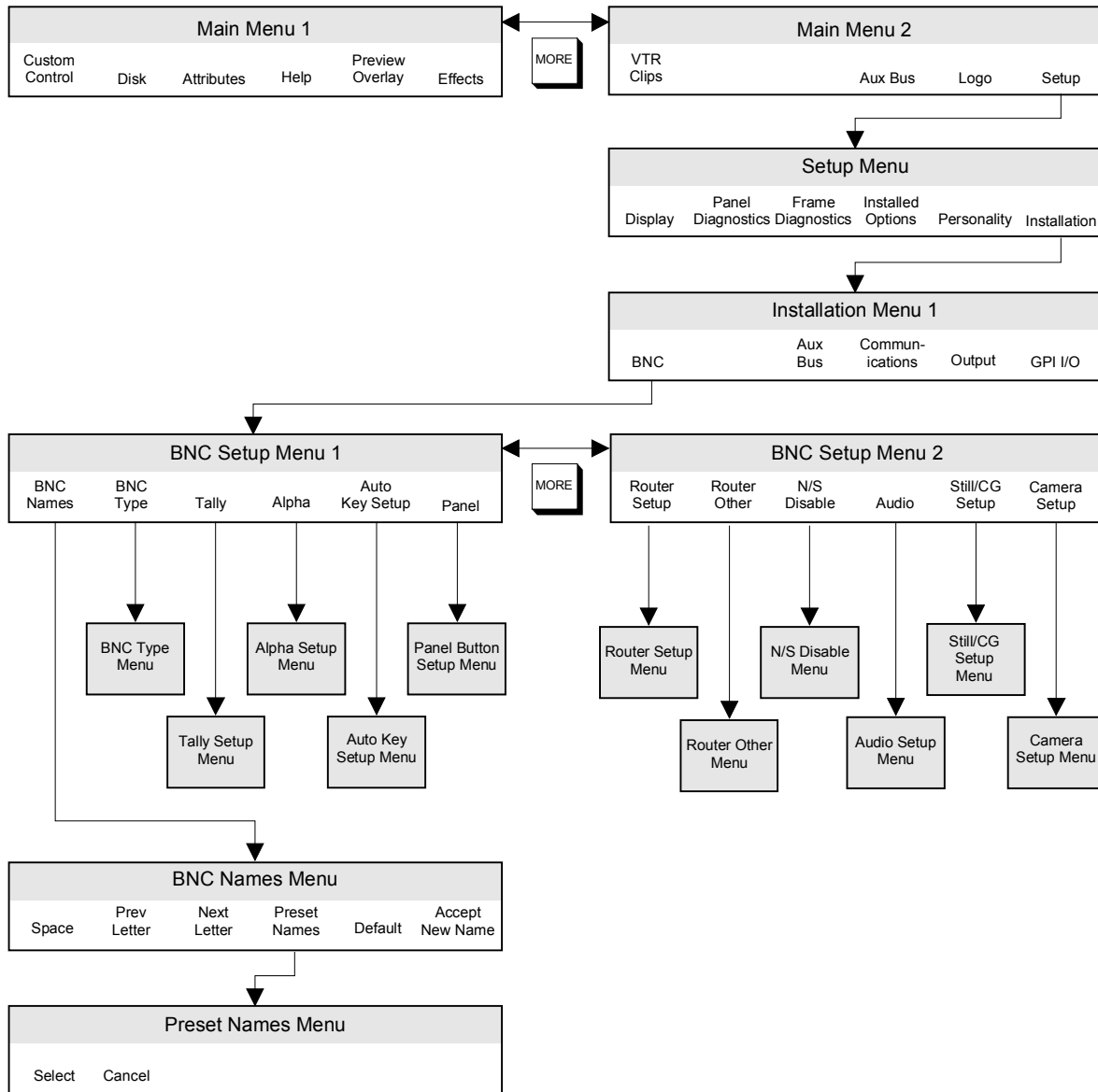
In This Appendix

For your reference, this appendix lists the various menu trees that are used within the Synergy system. The following topics are discussed:

- BNC Configuration Menu Tree
- Installation Setup Menu Tree
- Communications Menu Tree
- Custom Control Menu Tree
- Custom Control Banks Menu Tree
- Disk Menu Tree
- Recall Factory Menu Tree

BNC Configuration Menu Tree

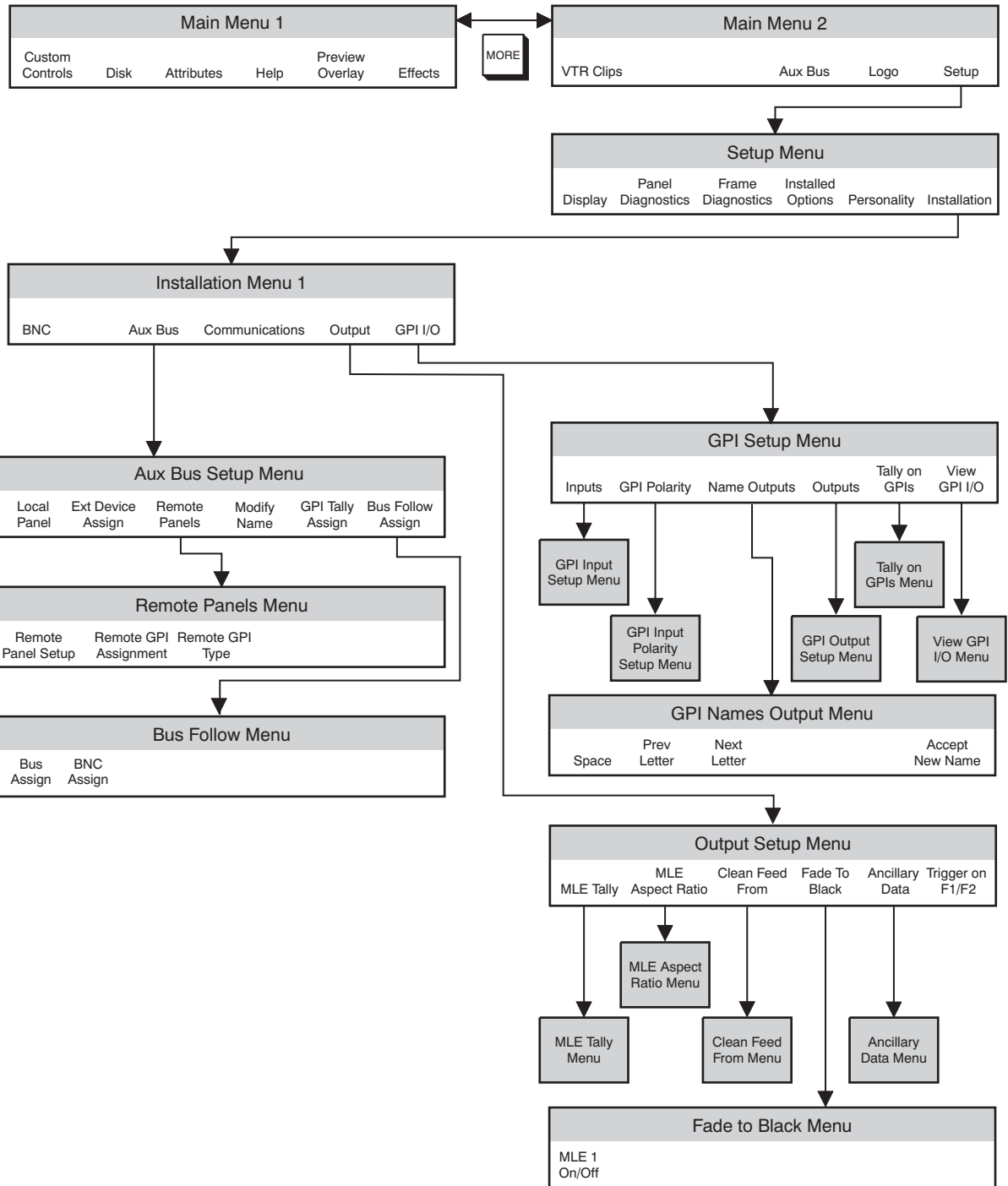
The following figure illustrates the *portion* of the menu tree that is used to configure BNC connectors — specifically, the path used to reach the **BNC Setup Menu** and other associated setup menus.



BNC Configuration Menu Tree

Installation Setup Menu Tree

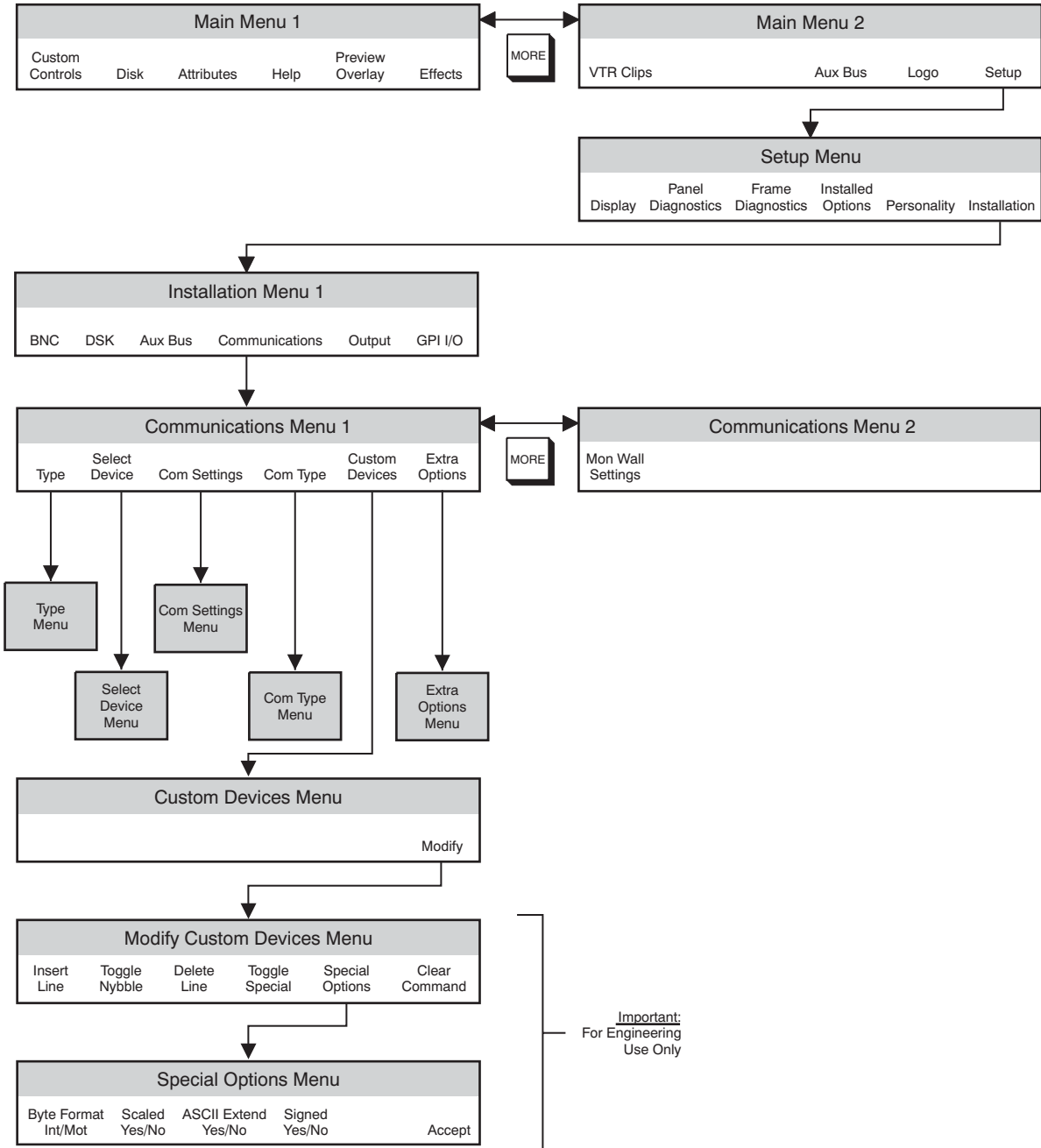
The following figure illustrates the *portion* of the menu tree that is used for additional installation setup procedures.



Installation Setup Menu Tree

Communications Menu Tree

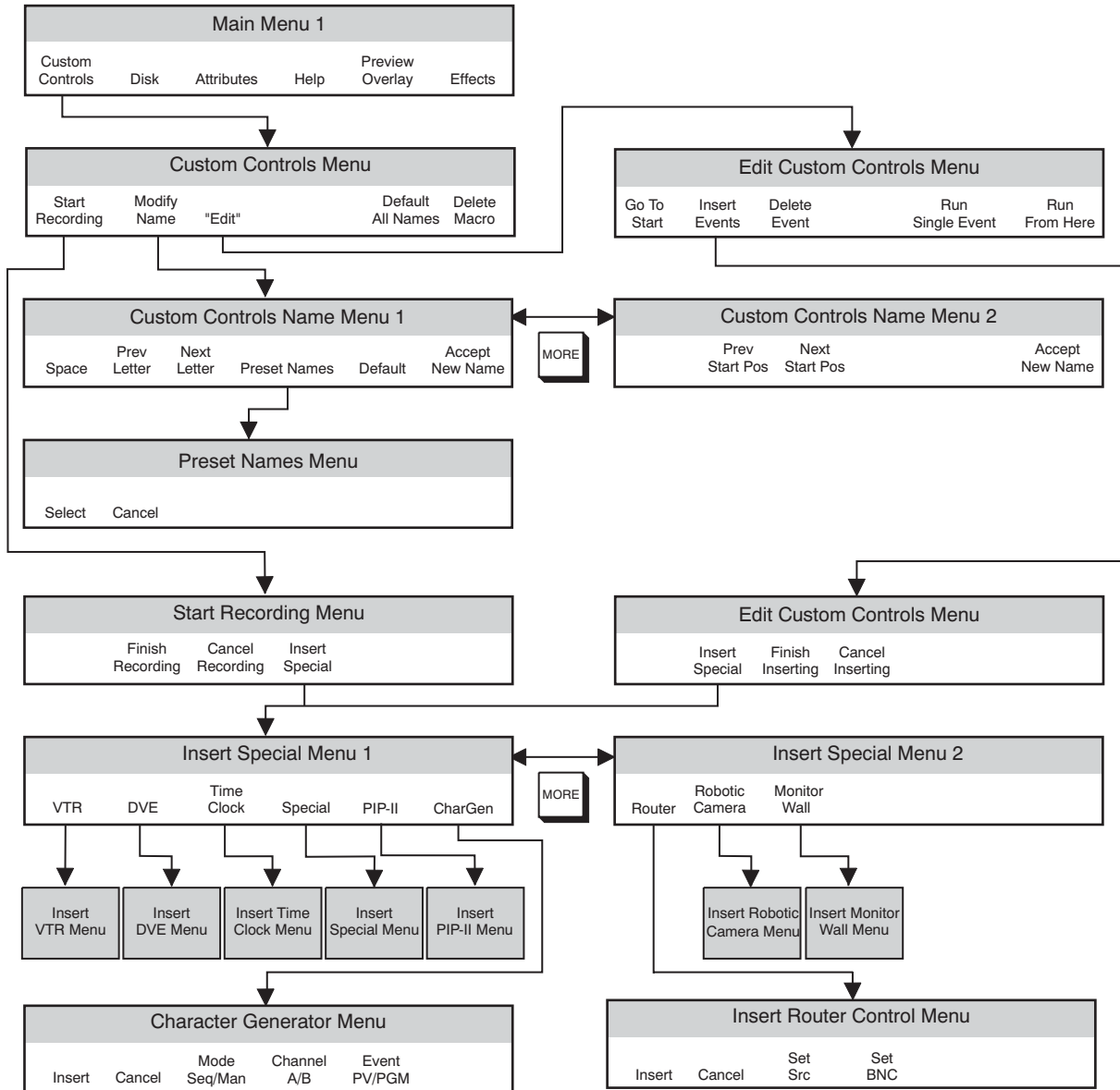
The following figure illustrates the *portion* of the Synergy menu tree that is used for communications setup procedures.



Communications Menu Tree

Custom Control Menu Tree

The following figure illustrates the *portion* of the Synergy menu tree that is used for programming custom control buttons.

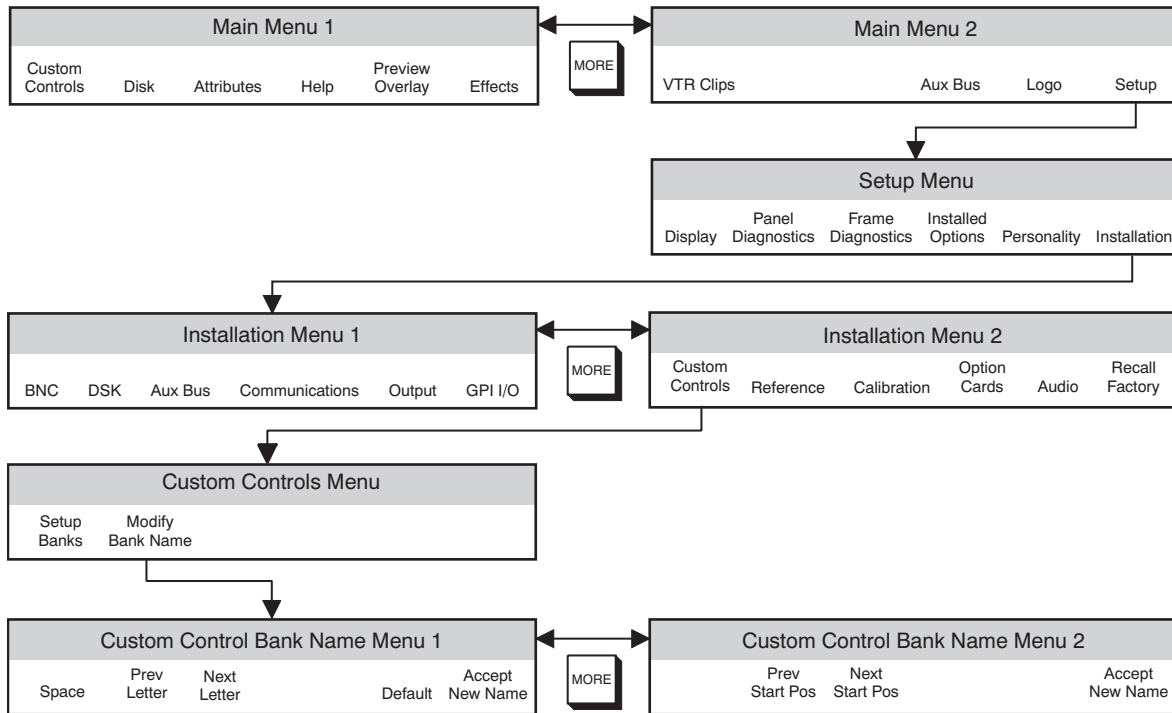


"Edit" only shows up as a soft key if the custom control button currently selected in the System Control Group has already been programmed with a macro.

Custom Control Menu Tree

Custom Control Banks Menu Tree

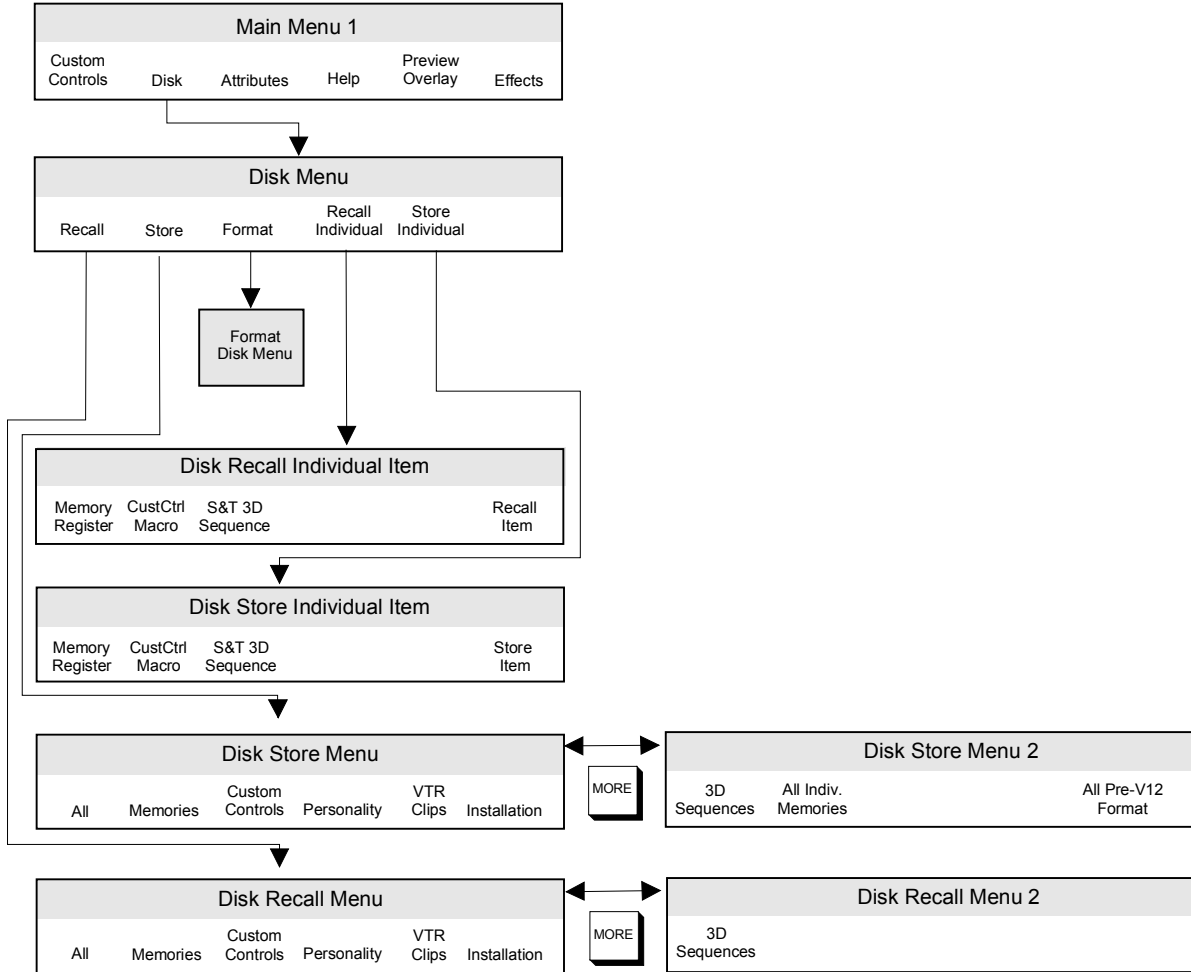
The following figure illustrates the *portion* of the Synergy 1 menu tree that is used for setting up Custom Control banks.



Custom Control Bank Setup Menu Tree

Disk Menu Tree

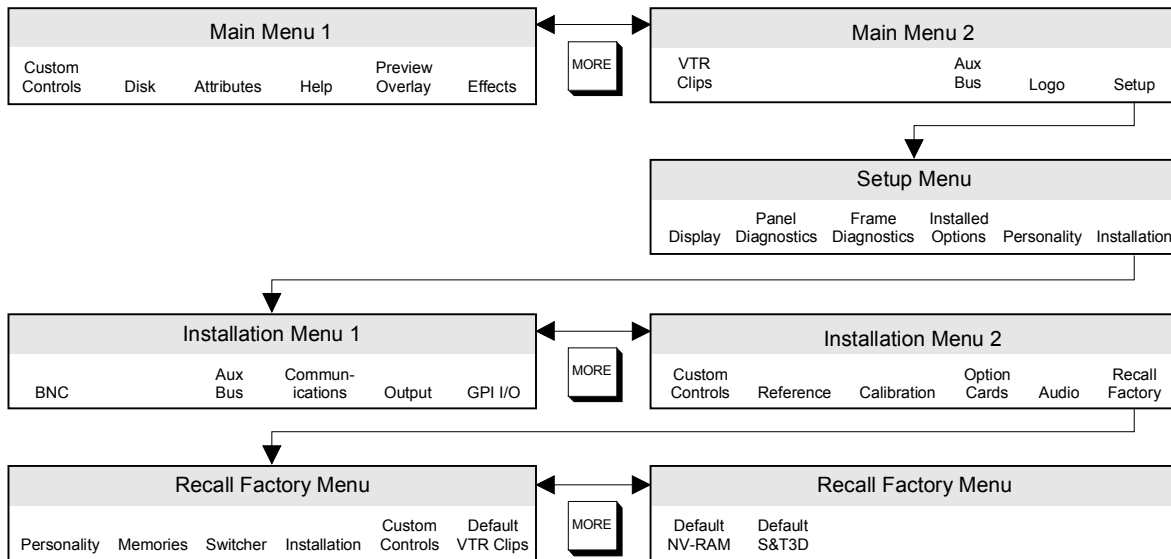
The following figure illustrates the *portion* of the menu tree that is used for saving and recalling switcher setups.



Disk Menu Tree

Recall Factory Menu Tree

The following figure illustrates the *portion* of the menu tree that is used for recalling factory default settings.



Recall Factory Menu Tree

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 INV** push-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. Our switcher’s **KEY MEM** button allows the user to store the CLIP and GAIN settings required to match the incoming key signal to the keyer’s requirements.

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.

Null Modem

Null Modem describes the ability to swap the pinout designations for transmitting (Tx) and receiving (Rx) signals and is used for cabling between devices which use the same pinouts.

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 which 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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