grass valley

Kalypso

VIDEO PRODUCTION CENTER

User Manual

SOFTWARE VERSION 15.0

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DECEMBER 2007

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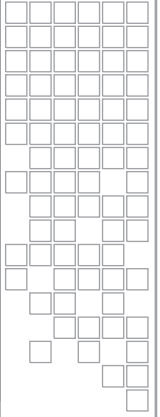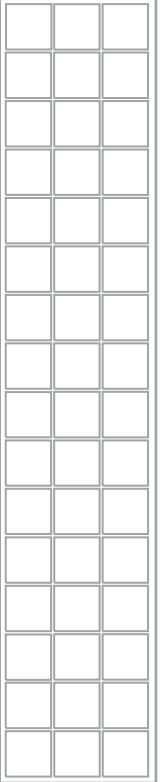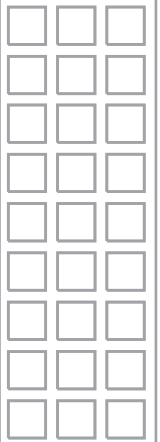
Kalypso

VIDEO PRODUCTION CENTER

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Grass Valley Web Site

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Online User Documentation — Current versions of product catalogs, brochures, data sheets, ordering guides, planning guides, manuals, and release notes in .pdf format can be downloaded.

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END-OF-LIFE PRODUCT RECYCLING NOTICE

Grass Valley's innovation and excellence in product design also extends to the programs we've established to manage the recycling of our products. Grass Valley has developed a comprehensive end-of-life product take back program for recycle or disposal of end-of-life products. Our program meets the requirements of the European Union's WEEE Directive, the United States Environmental Protection Agency, and U.S. state and local agencies.

Grass Valley's end-of-life product take back program assures proper disposal by use of Best Available Technology. This program accepts any Grass Valley branded equipment. Upon request, a Certificate of Recycling or a Certificate of Destruction, depending on the ultimate disposition of the product, can be sent to the requester.

Grass Valley will be responsible for all costs associated with recycling and disposal, including freight. However, you are responsible for the removal of the equipment from your facility and packing the equipment to make it ready for pickup.

For further information on the Grass Valley product take back system please contact Grass Valley at + 800 80 80 20 20 or +33 1 48 25 20 20 from most other countries. In the U.S. and Canada please call 800-547-8949 or 530-478-4148, and ask to be connected to the EH&S Department. Additional information concerning the program can be found at: www.thomsongrassvalley.com/environment

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Preface

About This Manual

This *Kalypso User Manual* is designed for operators of Kalypso systems. This manual is for Kalypso Classic, Kalypso HD, and Kalypso Duo systems.

Standard Documentation Set

The standard Kalypso documentation set consists of a:

- User Manual,
- Reference Manual,
- Installation & Service Manual, and
- Release Notes.

The *Kalypso User Manual* contains background information about the Kalypso Video Production Center, and describes operating procedures. This manual can be used while learning about Kalypso, and for enhancing your basic knowledge of the system.

The *Kalypso Reference Manual* contains comprehensive and concise information about the Kalypso panel controls and menus. Refer to this manual to learn the functions of specific Kalypso system controls.

The *Kalypso Installation & Service Manual* contains information about installing, configuring, and maintaining the system.

Note   Different Installation & Service Manuals ship with Kalypso Classic and Kalypso HD/Duo systems. Be sure to use the correct manual for your type of system.

The *Kalypso Release Notes* contain information about new features and system enhancements for a specific software version, and also includes software installation procedures. Always check the release notes for your current system software before you begin operating your system.

Other Documentation

The *Kalypso Machine Control Interfaces Installation Instructions*, provided with the KAL-IF-PROFILE and KAL-IF-VTR options, contains information about installing and configuring external machine control software.

The *Kalypso Emergency Bypass Option Instruction Manual*, shipped with the Emergency Bypass option hardware, contains information about installing, configuring, and operating this option.

The *Kalypso/Zodiak Protocols Manual* is available for developers and software engineers to use to design interfaces to the Kalypso system.

The *Kalypso/Zodiak Remote Aux Panel Update Instruction Manual* explains how to update the software of older 32-Crosspoint Remote Aux panels.

System Overview

Introduction

The Kalypso Video Production Center is much more than a switcher. The Kalypso system not only features powerful digital video switching, mixing, and keying with E-MEM, but also provides integrated control of other production devices (e.g., facility routers, external effects systems, DDRs). The Kalypso Video Production Center also has a flexible, scalable, and quickly reconfigurable architecture able to meet the demanding requirements of live production and post production applications.

Three different Kalypso systems are available; one supporting only standard definition video (Kalypso Classic), one supporting either high definition or standard definition video (Kalypso HD), and one supporting only standard definition video, but able to be upgraded to operate in either standard or high definition video (Kalypso Duo).

The Kalypso classic systems use different processing hardware from the HD and Duo systems, and so has a different Video Processor frame, but all systems use the same types of control panels.

Kalypso Classic Features

4-M/E Kalypso Classic Standard Features

- Selectable SD Formats,
  - 525i/59.94 (SMPTE 259M)
  - 625i/50 (SMPTE 259M)
- 16 auto-timed inputs (configured as single inputs or video/key pairs),
- Eight timed outputs (configured as single outputs or video/key pairs),
- Four identical Mix Effects (M/E) subsystems (3 M/E, 1 PGM PST),
- 32 Source Selection buttons on each M/E bus row,
- Four keyers per M/E, with Borderline on each keyer,

- YUV color correction on every bus,

- Status display on each M/E,

- Source name display standard on PGM PST,

- Effects Send (internal and external) available on every key bus,

- Unlimited re-entry,

- Look ahead and other preview modes,

- Touch screen Menu panel,

- Local Aux panel, with source name display standard,

- E-MEM (100 registers) with disk storage,

- Tally Module (64 tally contacts),

- Serial control of VTR/DDR (BVW 75 protocol)

- Router Interface,

- Hot swapable modules (including power supplies),

- Resource Sharing, and

- Macros.

4-M/E Kalypso Classic Options

Selected sets of options may be combined into packages for initial purchase. Individual options can be purchased and added to a Kalypso system at a later time. Some Kalypso system options contain hardware components and some are software enabled.

- Input modules (16 inputs each), up to 80 total inputs,

- Output modules (8 outputs each), up to 48 total outputs,

- Source Name displays for M/E 1, 2, and 3,

- Chromatte Advanced Dual Chroma Keyer, adds two floating chroma keyers, able to be assigned to any keyer in the system at any time. Up to eight dual chroma keyers (16 total) can be installed,

- FlexiKey Programmable Clean Feed, permits two independent program streams, using key substitution, through one or more M/Es,

- Internal Digital Picture Manipulator (iDPM) Transform Engine module, adds three channels of video/key digital effects. Up to two can be installed (for up to six channels),

- Kurl (for Transform Engine), with Splits and Mirrors,

- SuperStill, adds advanced Still Store capabilities with two inputs, eight outputs, animation, disk storage, and includes the Still Store

- application for image transfer to and from PCs,

- KlipCache (for SuperStill), increases cache storage capacity to about 1800 frames,

- DoubleTake, permits two completely independent M/E composites in a single M/E, producing the power of 8 M/Es in a 4-M/E system,

- Machine control of Profile VDR channels via Ethernet,

- Machine control of VTRs via Ethernet,

- AMP Serial Machine Control,

- Additional Tally Module, adding 64 more tally contacts,

- Backup Video Processor power supply,

- Redundant Main panel power supply,

- 32 and 24-Crosspoint Remote Aux panels,

- Shot Box,

- Emergency Bypass, and

- Net Central.

2-M/E Kalypso Classic Standard Features

The 2-M/E Kalypso system has the same features as the 4-M/E Kalypso system, with the following differences:

- One full featured M/E bank and one full featured PGM PST bank on the Main panel,

- 24 Source Selection buttons on each M/E bus row, and

- Local Aux panel functions incorporated into the Main panel.

2-M/E Kalypso Classic Options

The 2-M/E Kalypso system has the same options as the 4-M/E Kalypso system, with the following differences:

- Additional Output modules can be added, providing up to 40 outputs, and

- Up to two additional M/E modules can be installed, accessed from the M/E and PGM PST banks via delegation (an additional Crosspoint module is required).

Kalypso HD Features

4-M/E Kalypso HD Standard Features

- Selectable SD Formats,

    - 525i—59.94 (SMPTE 259M)

    - 625i—50 (SMPTE 259M)

    Note   The following available on Kalypso HD Models only. Kalypso Duo Models have SD production modes only.

- Selectable HD Formats,

    - 1080i—25,/29.97/30 (SMPTE 274M Table 1-4, 5, and 6)

    - 1080pSF—23.976/24/25/29.97/30 (SMPTE 211 Table 1-15, and 16)

    - 720p—50/59.94/60 (SMPTE 296 Table 1-1 and 2)

- 15 auto-timed inputs (configured as single inputs or video/key pairs),

- 48 timed outputs (configured as single outputs or video/key pairs),

- Four identical Mix Effects (M/E) subsystems (3 M/E, 1 PGM PST),

- 32 Source Selection buttons on each M/E bus row,

- Four keyers per M/E, with Borderline on each keyer,

- YUV color correction on every bus,

- Status display on each M/E,

- Source name display standard on PGM PST,

- Effects Send (internal only) available on every key bus,

- Unlimited re-entry,

- Look ahead and other preview modes,

- Touch screen Menu panel,

- Local Aux panel, with source name display standard,

- E-MEM (100 registers) with disk storage,

- 64 Tally outputs,

- Serial control of VTR/DDR (BVW 75 protocol)

- Router Interface,

- Hot swapable modules (including power supplies),

- Resource Sharing, and

- Macros.

4-M/E Kalypso HD System Options

Selected sets of options may be combined into packages for initial purchase. Individual options can be purchased and added to a Kalypso system at a later time. Some Kalypso system options contain hardware components and some are software enabled.

- Additional 15 groups of inputs, up to 90 total inputs,

- Source Name displays for M/E 1, 2, and 3,

- RGB Color Correction,

- Chromatte Advanced Dual Chroma Keyer, adds two floating chroma keyers, able to be assigned to any keyer in the system at any time. Up to eight dual chroma keyers (16 total) can be installed,

- FlexiKey Programmable Clean Feed, permits two independent program streams, using key substitution, through one or more M/Es,

- Internal Digital Picture Manipulator (iDPM) Transform Engine module, adds three channels of video/key digital effects. Up to two can be installed (for up to six channels),

- Kurl (for Transform Engine), with Splits and Mirrors,

- Transform Engine Advanced Effects option: Defocus, Glow, Lighting,

- SuperStill, adds advanced Still Store capabilities with two inputs, eight outputs, animation, disk storage, and includes the Still Store Loader application for image transfer to and from PCs,

- KlipCache (for SuperStill), increases cache storage capacity to 4.5 GB.

- DoubleTake, permits two completely independent M/E composites in a single M/E, producing the power of 8 M/Es in a 4-M/E system,

- RGB Color Corrector,

- Machine control of Profile VDR channels via Ethernet,

- Machine control of VTRs via Ethernet,

- AMP Serial Machine Control,

- Backup Video Processor power supply,

- Redundant Main panel power supply,

- 32 and 24-Crosspoint Remote Aux panels, and

- Shot Box.

2-M/E Kalypso HD System Standard Features

The 2-M/E Kalypso system has the same features as the 4-M/E Kalypso system, with the following differences:

- One full featured M/E bank and one full featured PGM PST bank on the Main panel,

- 24 Source Selection buttons on each M/E bus row,

- 24 timed outputs (configured as single outputs or video/key pairs), and

- Local Aux panel functions incorporated into the Main panel.

2-M/E Kalypso HD System Options

The 2-M/E Kalypso system has the same options as the 4-M/E Kalypso system, with the following differences:

- 2 - 3 M/E upgrade (2-M/E to 3-M/E, or 3-M/E to 4-M/E system), and

- 2 - 4 M/E upgrade (2-M/E to 4-M/E system).

Kalypso Duo Features and Options

The Kalypso Duo system is identical to the Kalypso HD system, except it operates only at SD resolution. The Kalypso Duo supports 525/59.94 and 625/50 video.

- A Kalypso Duo system can be upgraded into a standard Kalypso HD system (which supports both SD and HD formats) by purchasing and installing the KAL-UPG-DUO-HD-S software upgrade.

- Kalypso Duo systems also support the Emergency Bypass option.

External Interfaces Supported

All Kalypso systems support the following control interfaces and types of external devices:

- GPI Inputs and Outputs,

- Tally (contact closure),

- Peripheral Bus II Protocol,

- Facility Routers,

- External Digital Effects Systems, including CPL,

- Digital Disk Recorders,

- Video Tape Recorders,

- Character Generators, and

- Still Stores.

System Components

A Kalypso System consists of a Control Surface comprised of two or more control panels, a Video Processor frame, Video Processor Power Supply, and removable media drives. Several of the standard 4-M/E system components depicted in Figure 1 are also common to 2-M/E systems. Remote Aux panels and accessory satellite panels are available as options.

Figure 1. 4-M/E Kalypso System Components

Control Surface

The modular design of Kalypso control panels provides flexibility for mounting component panels in various environments, and allows the addition of specialized accessory control panels. A group of panels available to a single operator is called a Control Surface. A single Kalypso Video Production Center may have multiple Control Surfaces, allowing more than one operator to control some or all of the Kalypso system.

A Control Surface consists of at least two components, a Main panel and a Menu panel. The 4-M/E has a separate Local Aux panel, while the 2-M/E has a Local Aux subpanel integrated into the Main panel. A 1-M/E control surface is designed to operate in conjunction with a 4-M/E or 2-M/E Main panel as an accessory workstation (refer to Figure 2).

Figure 2. Kalypso Control Surface

4-M/E Kalypso System

4-M/E Main Panel

The Main panel provides real time button, knob, and lever arm control of the Kalypso system. The panel is organized into subpanels that contain groups of related controls (Figure 3).

Figure 3. Kalypso 4-M/E Main Panel

Connections to the Kalypso Processor and to other components of the Kalypso Control Surface are located on the rear of the Main panel (Figure 6).

Two models of 4-M/E Main panel exist. Late model designs shipping at the time of this manual's publication have the connections shown in Figure 4. This model Main panel works with the Enhanced Menu panel.

Figure 4. Late Model 4-M/E Main Panel, Rear View

Main panel power switches and the Main panel reset button are accessed by lifting the top of the Main panel (Figure 5). A redundant power supply can be installed into the tub of the Main panel as an option. The Main panel provides power to the separate Menu panel and Local Aux panel.

Figure 5. Late Model 4-M/E Main Panel Inside View

Earlier model 4-M/E Main panels have additional connectors (Figure 6) used with the original Kalypso Menu panel. If this model is modified for Enhanced Menu panel operation, the indicated connectors are inactive.

Figure 6. Early Model 4-M/E Main Panel, Rear View

AC In

SCSI*

Parallel
Port*

Mouse*

Keyboard*

Menu
Diagnostic*

Panel
Diagnostic

Menu
Controls*

Menu
Touchscreen*

Menu Display
SVGA Video Out*

Facility
LAN*

Panel
LAN

Satellite Control
Panels (12)

Menu Panel
Power

Local Aux Bus Power

(* Inactive on modified panels.)

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The early model Main panel power switches, reset buttons, and floppy drive are located under the Main panel lid (Figure 7).

Figure 7. Early Model 4-M/E Main Panel Inside View

Primary
Power Supply
On/Off Switch

Redundant
Power Supply
On/Off Switch

Power Distribution Board

Real Time (RT)
Processor Hard Drive
(may not be present)

Real Time (RT)
Processor

Main Panel
Reset Button

Main Panel
Boot Dial Switch

Menu Panel
Reset Button

Menu (NT)
Processor

NT Hard Drive

Floppy Disk
Drive

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The actual type and location of equipment installed in early model Main panels varies, depending on date of manufacture. Some earlier designs used Hard Disk drives with the Real Time (RT) processor, and some used Disk on Chip hardware. Also, drives may be mounted directly on the processor boards or on separate brackets. If modified for Enhanced Menu panel operation, unnecessary hardware is removed and some rear connectors become inactive.

Regardless of the equipment involved, the various model Kalypso systems generally operate identically, except late model systems do not have floppy disk drives.

Menu Panel

The Menu panel provides access to additional system controls that generally do not require real time adjustment. The Menu panel can be installed above or to either side of the Main panel, and should be oriented so the screen directly faces the operator. Additional Menu panels can also be configured with a Kalypso Control Surface.

Two models of Kalypso Menu panel exist, the Enhanced Menu panel and the Original Menu panel. The Enhanced Menu panel operates with late model Main panels (or modified early model panels). The Original Menu panel only works with unmodified early model Main panels.

The Enhanced Menu panel (Figure 8) includes a touch screen display, five knobs for adjusting parameter values, a cooling fan, and an internal CD-ROM drive. This model houses the Menu System Processor and runs the Windows XP operating system.

Note   There are two versions of the Enhanced Menu Panel. The newer version (as shown in Figure 8) has the second USB port on the front of the Menu panel and Windows XP installed. The older version has both USB ports on the rear of the Menu panel and Windows 2000 installed.

Figure 8. Enhanced Menu Panel, Front View

Ports located on the rear of the Menu panel (Figure 9) provide connections to the Main panel, Video Processor frame, an external Zip drive, a PS/2 mouse and keyboard, and other devices.

Figure 9. Enhanced Menu Panel, Bottom View of Connectors

The original Kalypso Menu panel (Figure 10) has a touch screen display and knobs for adjusting parameter values, and also includes Menu Selection buttons on the left. This model Menu panel runs the Windows NT operating system.

Figure 10. Original Menu Panel, Front View

The Menu System Processor for these models resides in the Main panel, and so extra connections are required for operation (Figure 11).

Figure 11. Original Menu Panel, Bottom View of Connectors

Power Cabling

The Menu panel normally receives its power from the Main panel. An optional brick style external power supply is available that allows the Menu panel to be powered independently from the Main panel (Figure 12). This same type of power supply can be used with the Local Aux panel.

Figure 12. Optional External Power Supply

Local Aux Panel

The Local Aux panel provides control of the Kalypso System Aux buses, Still Store source selection, some switched preview, and also supports

Router source selection and Emergency Bypass option operation (Figure 13).

Figure 13. Kalypso Local Aux Panel

Source Select Bus #1 (32) Emergency Bypass (4) (option) Bus #1 Delegation (15) Aux Bus Status Display (2 segments) M/E Select Bus #2 (4) Source Select Modifiers (6) for Bus #1

Source Select Bus #2 (32) Router Assignment (3) Gang Select Button Bus #2 Delegation (15) Source Name Display (4 segments) M/E Select Bus #2 (4) Source Select Modifiers (6) for Bus #2

Connections to the Kalypso Main panel are located on the bottom of the Local Aux panel (Figure 14).

Figure 14. Local Aux Panel, Bottom View of Connectors

The Local Aux panel is generally installed directly above the left side of the Main panel so the Source Select buttons are aligned, though it can be mounted in any convenient location.

If the Emergency Bypass option is installed, a redundant power supply for the Local Aux panel is available to ensure bypass operation even if the Main panel loses power.

Power Cabling

The Local Aux bus is normally powered from the Main panel. The Local Aux panel can also accept a redundant power source, and/or be powered separately from the Main panel using the same model optional power supply available for the Menu panel (see Figure 12 on page 32).

Removable Media Drives

Kalypso HD (only)

Kalypso HD systems ship with a USB Memory Stick, an Enhanced Menu panel equipped with a USB port in the front, and an internal CD-ROM drive.

Earlier Model Kalypso Systems

Different Removable Media Drives are provided, depending on the Kalypso model. Late model Kalypso systems ship with a USB 250 MB Zip drive that connects to the Menu panel, and a CD-ROM drive built into the Menu panel. If the Enhanced Menu panel Flush Mount kit is specified, an external USB CD-ROM drive is included.

Early model Kalypso systems shipped with three removable media drives which connect to the Main panel. Included are a SCSI CD-ROM drive, a 250 MB Zip drive (which is connected to the SCSI chain via the CD-ROM), and a standard 1.4 MB 3.5 in. floppy disk drive. The floppy drive is mounted in the Main panel tub and is not intended for routine user access.

2-M/E Main Panel

The 2-M/E Main panel is similar to the 4-M/E panel (Figure 15). Instead of 3 M/Es and a PGM PST, the 2-M/E Main panel has one M/E bank and one PGM PST bank, though three M/Es and PGM PST are accessible via delegation. Local Aux Bus control capabilities are also built in as a subpanel.

Figure 15. Kalypso 2-M/E Main Panel

Two models of 2-M/E Main panel exist. Late model systems operate with the Enhanced Menu panel, and early model systems operate with the Original Menu panel.

Late model Kalypso 2-M/E Main panels have connectors at the rear that are identical to those on a late model 4-M/E system, except there are additional Local Aux panel connections (Figure 16).

Figure 16. Late Model 2-M/E Main Panel, Rear View

The late model Kalypso 2-M/E Main panel power switches, reset buttons, and circuit boards (including the Local Aux panel) are accessed by lifting the top of the Main panel (Figure 17).

Figure 17. Late Model 2-M/E Main Panel, Inside View

Early model 2-M/E Main panel rear connectors are shown in Figure 18. If modified for Enhanced Menu panel operation the indicated connectors are inactive.

Figure 18. Early Model 2-M/E Main Panel, Rear View

Early model Kalypso 2-M/E Main panel power switches, reset buttons, floppy drive, and circuit boards (including the Local Aux panel) are shown in (Figure 19). Modified panels have unnecessary hardware removed.

Figure 19. Early Model 2-M/E Main Panel, Inside View

1-M/E Main Panel

A 1-M/E Main panel is intended to act as an accessory control surface for a 4-M/E or 2-M/E Kalypso system, not as the primary system control point. A 1-M/E Main panel can be used for pre- or post-production, or be used during live production to permit another operator to assist the TD. Intended uses for the 1 M/E panel include:

- Effects creation,

- Setup activities away from the main panel,

- Back room editing,

- Preselection and/or upstream effects playout, and

- Branding or other downstream activities.

Though the 1-M/E Main panel has only one M/E control bank, it can be delegated to control any of the M/Es of a 2 or 4-M/E Kalypso system.

Figure 20. Kalypso 1-M/E Main Panel

The 1-M/E Main panel's top lid is held closed with screws and is not designed to be opened by the operator. No user controls or field serviceable parts reside in the unit.

The 1-M/E Main panel has a reset button on the rear and one inside the lever arm slot, to permit easy reset when installed in a console.

Figure 21. Kalypso 1-M/E Main Panel, Rear View

Control Panel Options

Remote Aux Panels

Remote Aux panels provide control of selected Kalypso Aux buses from a remote location. Two models of 32-Crosspoint Remote Aux panels that employ Ethernet communications are currently available. Three models of older 24-Crosspoint Aux panels that use serial communications originally designed for Model 4000 switchers can also be modified for use with Kalypso systems. Any combination of these aux panels may be used.

32-Crosspoint Remote Aux Panels

Both 32-Crosspoint Remote Aux panel models are designed to select 64 external sources (32 unshifted and 32 shifted). The 1 RU panel (KAL-32AUX1) is dedicated to a single bus (Figure 22). The 2 RU panel (KAL-32AUX2) is multi-destination with 16 bus delegate buttons (Figure 23).

Figure 22. KAL-32AUX1 (1 RU) Remote Aux Panel

Figure 23. KAL-32AUX2 (2 RU) Remote Aux Panel

Display Area

Both 32-Crosspoint Panels have the same rear panel layout (Figure 24). These panels have a built-in power supply and use a standard removable AC power cable.

Figure 24. 32-Crosspoint Remote Aux Panel Rear View

AC Power   Camera Joystick Override   LAN

24-Crosspoint Remote Aux Panels

The three 24-Crosspoint panel models are designed to select 48 external sources (24 unshifted and 24 shifted). The 1 and 2 RU panels (KAL-24AUX1 and KAL-24AUX2) are dedicated to a single bus (Figure 25, Figure 26.) The 3 RU panel (KAL-24AUX3) panel is multi-destination with 18 bus delegate buttons (Figure 27).

Figure 25. KAL-24AUX1 (1 RU) Remote Aux Panel

Figure 26. KAL-24AUX2 (2 RU) Remote Aux Panel

Figure 27. KAL-24AUX3 (3 RU) Remote Aux Panel

All three 24-Crosspoint panels have the same rear panel layout (Figure 28).

Figure 28. 24-Crosspoint Remote Aux Panel Rear Panel

24-Crosspoint Remote Aux panels use an external, brick type power supply (Figure 29).

Figure 29. KAL-24AUX Power Supply

Shot Box Option

The E-MEM Shot Box is a separate panel used to rapidly recall previously built effects (Figure 30).

Figure 30. Kalypso Shot Box

The Shot Box can be powered from the Main panel through the cables provided. If located more than 3 m (10 ft) from the Main panel, an optional Satellite Panel extension kit is available that includes a brick type power supply.

Kalypso Classic Video Processor Frame

4-M/E Kalypso Classic Video Processor Frame

The Kalypso Classic Video Processor frame houses most of the system electronics, with slots in the front and rear that hold individual modules. The front bay holds system control, video routing, and signal processing modules. A fully loaded system is shown in Figure 31.

Figure 31. Fully Equipped Kalypso Classic Video Processor Frame Front View, Door Removed

CAUTION The front door of the Kalypso Video Processor must remain closed during normal system operation for proper cooling airflow.

The rear bay holds input and output modules and provides reference and system control connections. A fully loaded system is shown in Figure 32. Some of the modules illustrated are optional and may not be included in your Kalypso system. The slots on the rear of the Video Processor frame are numbered from right to left.

Figure 32. Fully Equipped Kalypso Classic Video Processor Frame, Rear View

The Kalypso system has been designed for easy maintenance. All modules of the same type are identical, and can be swapped with one another. Modules can be removed and replaced safely with the power on, simplifying troubleshooting to the module level.

2-M/E Kalypso Classic Video Processor Frame

The 2-M/E Kalypso Classic system uses the same frame hardware as the 4-M/E Kalypso system, except some slots are not filled in the standard configuration. Because only two M/Es are standard (M/E 1 and PGM PST), only two M/E modules and two crosspoint modules are provided (Figure 33).

The 2-M/E Kalypso system supports the Still Store and Transform Engine options, and up to two additional M/E modules can also be added.

Figure 33. Standard 2-M/E Kalypso Video Processor Frame, Front View

CAUTION The front door of the Kalypso Video Processor must remain closed during normal system operation for proper cooling airflow.

The standard 2-M/E Kalypso system includes one Input module and the Effects Send module to support video inputs and outputs (Figure 34). Up to four additional Input and Output modules can be installed. Slot B16 (labeled on the frame as Output 1, 1-8) is not available for use on a standard 2-M/E Kalypso system.

Figure 34. Standard 2-M/E Kalypso Video Processor Frame, Rear View

Kalypso Classic M/E Module Control Assignments

Table 1 shows how the Main panel banks are assigned to M/E modules in a factory configured Kalypso Classic Video Processor frame.

Table 1. Banks and M/E Module Locations

Bank	Video Processor Frame Slot	
	4-M/E	**2-M/E**
PGM PST	A 11	A 11
M/E 1	A 12	A 12
M/E 2	A 13	-
M/E 3	A 14	-

2-M/E Kalypso Classic systems ship with only two M/E modules standard, for control by the PGM PST and M/E 1 banks. Adding M/E modules in the slots listed allows delegated control of the added M/Es. An additional Crosspoint module in slot A9 is also required.

Note   The Resource Sharing feature permits the logical assignment of any Main panel bank to any physical M/E.

Kalypso HD/Duo Video Processor Frame

The Kalypso HD Video Processor frame houses most of the system electronic. Slots in the front hold system control, video routing, and signal processing modules. A fully loaded system is shown in Figure 35. 2-M/E Kalypso systems ship with only 2 M/E modules, and the Still Store and Transform Engine modules are optional.

Figure 35. Fully Equipped Kalypso Video Processor Frame Front View, Door Removed

Fan Drawer

Control Processor

Power Switch

Frame Reset Button

COM Boot Dial

Keyboard*

VGA Port*

Floppy Disk Drive*

* For Service Personnel Use Only

ON
OFF

0619_08_76_r3

Slot 1 Control Module — Air Filter — Slot 2 Still Store Module (optional) — Slots 3 Crosspoint Module — Slot 4 - 7 M/E Modules (M/E 3, 2, 1, PGM/PST) — Slot 8 - 9 Transform Engine Modules (2) (optional)

CAUTION The front door of the Kalypso Video Processor must remain closed during normal system operation for proper cooling airflow.

The rear of the Video Processor frame has input and output connectors and provides reference and system control connections ([Figure 36]).

Figure 36. Kalypso Video Processor Frame, Rear View

The Kalypso system has been designed for easy maintenance. All modules of the same type are identical, and can be swapped with one another. Modules can be removed and replaced safely with the power on, simplifying troubleshooting to the module level.

Kalypso Video Processor Power Supply

A separate Video Processor Power Supply provides power to the Kalypso Video Processor. The Video Processor Power Supply frame holds up to three Video Processor Power Supply modules (Figure 37). Two modules are required for system operation. The third module is an optional backup. Power supply modules can be installed in any slot in the Video Processor Power Supply frame.

Figure 37. Kalypso Video Processor Power Supply, Front View

Power Supply Modules (3)
2 Standard, 1 Option

Power Supply
Locking Screw(s)

8218_06_15_r0

Power connectors are located on the rear of the Video Processor Power Supply (Figure 38), including a special connector for feeding power to the Video Processor. Each module has its own power connection. Though not required, we recommend each module be plugged into a separate AC circuit.

Figure 38. Kalypso Video Processor Power Supply, Rear View

Chassis
Grounding Lug

DC Output to Video Processor Frame

AC Power (3)

8218_06_16_r0

Original Kalypso Video Processor Power Supply

Two modules are required for system operation. The third module is an optional backup. A locking bracket can be slid down to secure the modules in their slots.

Figure 39. Kalypso Video Processor Power Supply, Front View

| Module Locking Bracket | Power Supply Modules (3) 2 Standard, 1 Option | Power Supply Module Power Switches (3) |

Though not required, we recommend each module be plugged into a separate AC circuit.

Figure 40. Kalypso Video Processor Power Supply, Rear View

AC Power (3)

Chassis Grounding Lug   DC Output to Video Processor Frame

Video Processor Frame Options

Still Store Option

The Kalypso Still Store is used to grab, save, and display images. Still Store features include:

- Instant access to non-volatile stills (fixed names "Still 1", "Still 2", etc.),

- Up to 1800 full frame images,

- Full frame grab,

- Partial frame (fenced) grab

- Image positioning and cropping,

- Animation,

- Display entire frame, or on interlaced formats display each field with either field interpolation or replication,

- Video key pairs,

- Grabbed images can be placed in output (and cached) or saved to hard disk,

- Thumbnails,

- Eight outputs that can be used independently,

- Preview bus shows Still Store output #8,

- E-MEM control of still output loading, and

- Machine Control subpanel control of still output loading.

An additional KlipCache memory option is also available to increase the storage capacity of the Still Store cache.

Sources to be captured are selected on the Local Aux panel. That source can then be grabbed, repeatedly if necessary until the desired image is caught. The captured image is then saved to the Still Store hard disk. Any still image can be assigned to any of the eight Still Store outputs. These outputs are internal Kalypso system sources, which can be mapped to any desired source select buttons.

Transform Engine Option

The Kalypso Transform Engine option provides 3-D planar image translation and transformation from within the Kalypso system. Each Transform Engine module houses three Transform Engines. Up to two Transform Engine modules can be installed in a Kalypso system, permitting manipulation of six video and key pairs at the same time. A Global channel is also available on each M/E for easy control of complicated transforms. The

Kalypso system uses its Effects Send feature to supply translation and transformation capabilities to any keyer on any M/E.

Transform Engine features include:

- Source and Target space selection,

- 3-D Locate, Size Locate, Rotate, Spin, Locate Axis,

- Anti-alias filtering control through transform parameters,

- Aspect, Skew, Perspective,

- Post Transform,

- Global channel on each M/E and PGM PST, to which the Transform Engine channels in that M/E can be individually assigned,

- Raster Cropping,

- E-MEM keyframe control,

- Near/Far & Front/Back, with horizontal and vertical reverse selection, and

- Tally (performs on screen/off screen and front/back calculations to tally only on air images).

An additional software enabled Kurl/Splits and Mirrors Transform Engine optional feature is also available.

Kalypso Facility Example

A simplified diagram of a small live studio is shown in Figure 41. In this facility the Kalypso Video Production Center has control of a portion of the facility router for pre-selecting various sources into the switcher. The camera control operator is able to remotely control a Kalypso Aux bus for selecting camera views to shade. A Profile VDR operator also remotely controls an Aux bus for recording selected iso cameras. After the clips have been recorded to the Profile, the Technical Director at the Kalypso Main panel can select and roll the Profile clips from his location. This facility also has a Krystal DPM system configured for Effects Send. The Technical Director can recall and run DPM effects from the Kalypso Main panel.

Figure 41. Basic Live Production Studio System Configuration Example

Functional Overview

Kalypso System Control

System control for the Kalypso Video Production Center is designed for flexibility and simplicity. Ethernet and other standard data interfaces are used for system component interconnections. Multiple hard disks are included to permit storage of large numbers of data files. An OS drives the Menu panel touch screen, which is an SVGA monitor.

Late model 4-M/E Kalypso system control is shown in Figure 42.

Figure 42. Late Model 4-M/E Kalypso Control

Late model 2-M/E Kalypso system control is the same as the 4-M/E Kalypso system, except the Local Aux panel is built into the 2-M/E Main panel (Figure 43).

Figure 43. Late Model 2-M/E Kalypso Control

Early model Kalypso system control is shown in Figure 44 (4-M/E system) and Figure 45 (2-M/E system).

Figure 44. Early Model 4-M/E Kalypso Control

NOTES:
Control Panel, Facility, Still Store LAN: 10Base-T or 100Base-T Ethernet
Button Knob and Touch Screen Control: RS-232 Serial Async
Remote Aux Panels and Still Store are system options.

Figure 45. Early Model 2-M/E Kalypso Control.

Video Signal Flow

The Kalypso Video Production Center has been designed for operational flexibility. This is reflected in the basic system architecture. For example, all the outputs from every M/E are routed back to the video crosspoint matrix, making all these signals accessible to the entire system (see Figure 46 and Figure 47 for Kalypso Classic and Figure 48 for Kalypso HD). The only exception is Effects Send, where the outgoing signal is routed directly to its internal or external destination.

The Kalypso system does not have any dedicated inputs or outputs (except Black and Test outputs on Kalypso Classic systems). The inputs and outputs of the system can be assigned as needed. For example, after defining the program, preview, and any other necessary signal outputs, all the remaining outputs can be configured as Aux buses.

Kalypso Classic System Signal Flow

Figure 46. Simplified Kalypso Classic Video Flow Diagram (part 1)

Figure 47. Simplified Kalypso Classic Video Flow Diagram (part 2)

Kalypso HD System Signal Flow

Figure 48. Simplified Kalypso HD Video Flow Diagram

Concepts

Introduction

In general, any video switcher receives multiple video inputs, performs signal processing on selected input signals, and then outputs the processed video. Efficient real time switcher operation is essential for live production, and can save valuable time in post production environments as well. Several innovative concepts are employed in the Kalypso Video Production Center to enhance its operational speed and flexibility. Understanding these concepts, as well as basic switcher fundamentals, will help you take full advantage of the exceptional power of the Kalypso system.

Kalypso System Configuration Overview

The Kalypso Video Production Center is designed for operational flexibility, and can be configured to fit various applications. Different Kalypso systems can have different capabilities, or the same Kalypso system can be re-configured to have different capabilities at different times. The system has also been designed to support multiple users on the same system, but remains suitable for use by a single operator. For these reasons, it is important for you to have a basic understanding of how a Kalypso system is configured.

The way a Kalypso Video Production Center is wired into your facility affects the Kalypso system's capabilities. For example, the number and types of sources physically connected to the system obviously determines what video the system can handle. However, because Kalypso system inputs and outputs can be configured, once video cables are physically connected they need not be moved. Configuration settings also control many other capabilities that affect Kalypso system behavior.

Kalypso Video Production Center configuration information is divided into three areas, to simplify and increase the speed of reconfiguring the system. The basic areas of Kalypso configuration are:

- Engineering Setups (settings established by the engineer in charge that affect the entire system, which never need to be changed by operators),

- Suite Preferences (settings for a suite that affect all the operators working in that suite, that are designed to suit a particular show or production style and ensure a consistent working environment), and

- User Preferences (settings that give the operator the ability to customize his individual work surface to meet his personal preferences).

All Kalypso configuration settings are non-volatile. Disk save and load operations are available that allow users to store configuration information on removable media for easy transport and for use as backup copies.

Engineering Setups

Engineering Setups control how the Kalypso Video Production Center's major components behave and interact, and how the Kalypso system interacts with the rest of the facility. Engineering Setups are not likely to change on a daily basis and so are grouped separately from the Suite and User Preferences. Facility maintenance personnel or the engineer in charge of a production truck generally manages Engineering Setups.

Engineering Setups information includes:

- Networking IP addresses),

- Source definition (described later in this section),

- Output assignment (identifying which output connectors are Program, which are Preview, etc.),

- External device interfaces (DDRs, VTRs, DPM, Router, etc.),

- Control surface and suite definitions (identifying the operating panels present and their relationships to one another),

- Single Suite or (for Resource Sharing) Multi Suite operating mode, and

- Various other system functions.

Suite Preferences

A Kalypso suite corresponds to a control room, where there is a grouping of one or more control surfaces. Suite Preferences define how all the control surfaces associated with a Kalypso suite behave when they control the Kalypso system. Some parameters (for example, safe title displays) must be identical to all Kalypso users involved in a session. Suite Preferences can substantially change system behavior, not just a user's view of the system.

Suite Preferences are intended for day-to-day or session-to-session changes in Kalypso system operating behavior and so are open for modification by operators.

The Resource Sharing feature makes it possible to configure the Kalypso system with two suites, corresponding to two different work envrionments. Each suite can be operated with its own Suite Preferences settings.

Suite Preferences include:

- Source patching

- Pbus patching

- Safe title, preview behavior, etc.,

- Video specifications (525/60, 625/50, aspect ratio, etc.),

- Default Source Memory (initial keying and video processing settings used for each source on each bus),

- Default Keyframe (initial settings for many other user controls), and

- Various other suite preferences.

User Preferences

User Preferences allow users to customize a Kalypso control surface to suit their personal operational style. User Preferences apply to only one control surface, and only affect the behavior of the panel controls available to a single operator. User Preferences do not change Kalypso system capabilities.

The Resource Sharing feature makes it possible to configure each of the two two suites with two different control surfaces. Each control surface can run its own User Preferences settings.

User Preferences include:

- Source to button mapping (described later in this section),

- Aux bus delegation button mapping, and

- Various other user preferences.

Suite and User Preference Profiles

A set of preference settings can be chosen and saved as a *profile*. A saved profile can then be loaded to change all the preference settings at the same time. This feature is available only for Suite and User preferences, not Engineering setups. Suite and User preferences have separate profiles.

Profiles can be useful when different programs are being produced in the same control room. When the time arrives for the next show, loading a Suite

and a User profile created for that show allows instant reconfiguration of the Kalypso system.

Signal Routing

Inputs and Sources

Incoming video signals are connected to the Kalypso system via connectors on input modules located at the back of the Kalypso Video Processor frame. All inputs are serial digital (SMPTE 259M, CCIR 601). Signals from external devices not operating in this standard will need to be converted.

Some devices (for example, a camera providing serial digital output) may provide a video signal that can be received on a single connector. However, other devices may output multiple signals. For example, a character generator usually provides a signal with two components (commonly called *video* and *key*). Some incoming signals may also originate from devices the Kalypso system can control (Router, DPM, DDR).

For a Kalypso Video Production Center, the term *source* refers to all the video signals and other attributes associated with a device. This is a fundamental concept. The Kalypso system is based on sources, not input signals or crosspoints. Each source can be given a descriptive name, but has an ID number for absolute identification. The Kalypso system uses ID numbers, not source names or input connectors, to identify each source. Defining each source is an important aspect of the Kalypso system.

Source Definition

When the Kalypso system is first configured, all sources are defined so the incoming signals from each device can be used effectively. This is usually done by engineering personnel, not operators, and once set these definitions are not changed. A source definition data file tells the system how many signals a source has (video only, or video and key), which physical inputs to route whenever a particular source is selected, the default processing of the source's key signal (if present), and what external devices (if any) are associated with that source. Tally is another important attribute of a source. On-air tally relays are related to sources, not physical inputs or source select buttons. The source definition process includes assigning a name to each source. Once sources are defined, they are mapped to specific source selection buttons. The user is then able to select the source by pressing its button, and the Kalypso system automatically manages all the necessary signals, performs any default processing, and enables any additional control capabilities associated with that source.

Source definition data is stored as a part of Engineering Setups. Only one set of source definition data can be active on a Kalypso system at a time. Note that source definition is separate from source memory, which specifies what processing is to be applied to the source and can dynamically change during system operation.

Source to Button Mapping

Source to button mapping makes it possible to organize sources on Kalypso control panels in a preferred order. For example, cameras can be placed on the left side or the right side of the button row, whichever is preferred. Source mapping is distinct from source definition, as source mapping only involves the location of sources on the control panel and does not affect any capabilities defined for the sources. Note that E-MEM effects store the source IDs, not the source select buttons, so remapping sources will not change the appearance of recalled effects. On the Kalypso system, button mapping for each Main panel bank and Local Aux panel can be different.

Source Naming

Names can be given to sources. The Kalypso system actually supports different source naming schemes, with associated IDs, to accommodate different needs.

Engineering ID – An unchanging numeric value associated with a source. This value is used to unambiguously identify each source from an engineering perspective, regardless of how it may have been named. On-air tally uses Engineering IDs so the proper device always receives tally.

Engineering Name – An editable name that can be associated with a source, intended for use by facility engineers to ease source identification. An Engineering name may that of a particular hard wired device (Cam 1), or it may indicate a patch bay location or a router source or destination. Naming sources in this manner can help engineers configure and re-configure their facility wiring.

Logical ID – An unchanging numeric value associated with a source used in a production environment. Effects and source memory use Logical IDs.

Logical Name – An editable name that can be associated with a Logical ID, used as a convenience to the user to identify sources in a production environment.

Logical Nickname – An alternative editable name that can also be associated with a Logical ID. Generally Logical nicknames are short to make larger characters appear in the Kalypso system Source Name Displays. If both a Logical name and a Logical nickname are specified, the nickname appears only on the Source Name Displays.

Source Patching

The Kalypso system allows logical sources to be associated with different engineering sources. A source patch table is used to map Logical IDs to Engineering IDs. This table acts like a patch bay. It then becomes possible to use effects in different environments. For example, effects created in one production truck equipped with one set of devices can be used in a different truck with different devices by modifying the source patch table.

Source Memory

Keying and other parameters can be saved to a separate source memory for every Kalypso system source. These parameters can be applied automatically whenever that source is selected. See *Source Memory on page 105* for specific information.

Buses and Crosspoints

A *bus* is technically defined as a signal path where one of several available inputs can be selected to feed a single output. A *crosspoint* is an electronic switch that allows a signal to pass when the switch is closed. On video switchers, a bus can be constructed containing a series of crosspoints, which permits selecting which one of several incoming signals will be sent out the bus. In Figure 49, source 2 has been selected on the background A bus. This signal can now be called *background* video and is available for further processing.

Figure 49. Buses with Crosspoints

Buttons on a control panel can be used to control the switching of crosspoints. The buttons are usually arranged horizontally, making it easy to imagine the available signals coming in from the top, and the single bus output signal going out the right side.

In earlier generation switchers, the terms *crosspoint button* and *crosspoint bus* have been used in reference to control panel source selection. For a Kalypso system, the terms *source button* and *source bus* will be used. These terms better reflect a system operating philosophy that is based on sources rather than crosspoints. The Kalypso system does not directly associate a source select button with a physical crosspoint. The association goes first through

source to button mapping, then through source definition to find the physical inputs.

On the Kalypso system, a single source button can control crosspoints on different buses simultaneously. For example, during keying on an M/E, both the video and key signals of a source can be selected with a single button press. In this case two different crosspoints on separate buses (key fill bus and key cut bus) are actually switched when the button is pressed. In the upper part of Figure 50, the *video* component of source 2 in the figure has been selected on the key fill bus and becomes the *key fill* signal for subsequent keying. The key component of source 2 selected on the key cut bus becomes the *key cut* signal for keying. The lower part of Figure 50 shows how the same source (source 4) can be selected for both the key fill and key cut signals.

Figure 50. Multiple Crosspoint Control

Shifted Sources and Shift Preference

An operator may need to quickly access many sources during a production. However, a control panel has size limitations, since all the source selection buttons must remain within reach. To accommodate rapid selection of many sources, earlier generation video switchers often employed a mechanism similar to the shift key of a typewriter. On these switchers, holding down a Shift button on the control panel made an alternate set of sources available for selection. Which set of sources was available by default and which set was accessed with the Shift button (the shift preference) could be configured, but this setting generally applied to all the buses on the control

panel. This required the operator to account for the state of the Shift button before selecting any source.

The Kalypso system provides an improved mechanism for shifted and unshifted source selection, and allows setting individual shift preferences for each bus. The result is improved source selection flexibility, speed, and reliability.

On a 4-M/E Kalypso system, up to 72 sources can be mapped at one time, 36 to the unshifted source selection and reentry buttons, and 36 to those shifted buttons. Instead of a single modal Shift button, an additional Unshift button is available. Buses with a Shifted shift preference will select the shifted source when no modifier button is held down. Unshifted shift preference busses select the unshifted source when no button is held down. Holding down the Shift button while pressing a source button always selects the Shifted source for that bus, while holding down the Unshift button always selects the unshifted source. This selection is consistent regardless of the shift preference set for that bus. For example, holding down the Shift button for a bus with a Shifted shift preference still causes selection of shifted sources (same as no modifier button held down).

Each source selection bus on a Kalypso system can be individually config-ured with a shift preference that determines which set of sources are selected on that bus when a modifier button (**Unshift** or **Shift**) is not held down. This allows different sets of sources to be made available for imme-diate selection on different buses. Note that if only one source is mapped to a button, that source is selected regardless of the shift preference or Unshift or Shift hold downs.

It is recommended that shift preferences be set so they are easy to remember. For example, you can set all the buses to have an unshifted pref-erence. Or you can set only M/E 1 to a shifted preference, so you can quickly access these sources on that M/E. Another useful configuration is to have sources normally used for backgrounds (e.g. VTRs) mapped to unshifted buttons, and sources normally used as keys (e.g. character gener-ators) mapped to shifted buttons. Then you can then set all the background buses to an unshifted preference, and all the key buses to a shifted prefer-ence.All normal source selections can then be made without having to use the shift modifier buttons.

Mix/Effects (M/E)

An M/E is a subsystem of a video production switcher that can create a composite of two or more pictures. An M/E includes multiple source selec-tion buses and provides transition (mix and wipe) and keying capabilities on the selected signals. An M/E can be organized with the keying circuitry separate from the mixing circuitry, which permits Effect Send capabilities (see *Effects Send * for more information).

A simple basic M/E used in a typical switcher will be used as an example in the following discussion. A Kalypso M/E has added capabilities, but the basic principles described here will apply. See *Section 1 - System Overview* for a simplified diagram of the actual Kalypso M/E architecture.

Figure 51. Simplified Mix Effects (M/E) Subsystem

The basic M/E shown in Figure 51 has an A and a B background bus. These buses select the background video signals sent to the output of the M/E. Generally the source on the background A bus is the current background output, and the source on the background B bus is the background video that will be used next. During most transitions, portions of both backgrounds are output simultaneously. The keyers in the M/E allow the inclusion of additional material over the background. Wipe generators also exist, which create patterns used by the mixer for wipe transitions, or used by the keyers to modify the signals it sends the mixer. See *Transitions on page 75* and *Keying on page 79* for more information. The processed signal in an M/E is then sent to an M/E output, typically program or preview.

A video production switcher can have more than one M/E. For example, a 4-M/E Kalypso system has four (M/E 1, M/E 2, M/E 3, and PGM PST). Each Kalypso M/E actually is able to produce up to six outputs (Program A, Preview A, Program B, C, D, and Preview 2 that is shared by the three additional program outputs). These additional outputs allow great flexibility in configuring a Kalypso system for special purposes.

Re-Entry

Switchers with multiple M/Es generally have re-entry capabilities. Re-entry permits the switcher to select the output of one M/E for use as an input source to another M/E. The signals are routed internally.

The Kalypso system supports M/E re-entry in any order. For example, an output of M/E 2 can be sent to M/E 1, and an output of M/E 1 can be sent to M/E 3. Infinite looping re-entry (for example, M/E 1 sent to M/E 2 and M/E 2 sent back to M/E 1) is not allowed.

Alternate Buses and Delegation

Many earlier generation switchers had M/Es equipped with two keyers, and each M/E could accept two background sources. This permitted mixing or wiping between two backgrounds, and keying up to two additional sources over the background. Dedicated rows of control panel buttons were used to select these key and background signals.

Each Kalypso system M/E actually has four keyers, each handling a fill and a key signal, and each M/E can accept four background sources (A, B, Utility 1, and Utility 2). Providing 12 source selection rows for each M/E is impractical, as the panel would become too large for an operator to reach all the buses. For ease of use, Kalypso panels have alternate buses accessed by delegation, using source select modifier buttons. Holding down a modifier button changes which bus is affected by pressing a source select button. Each Kalypso M/E Status display shows all 12 source selections for that M/E, and clearly identifies which bus will be affected by source selection.

For example, on the Kalypso system you access Key 1 fill, Key 2 fill, Bkgd A, and Bkgd B without holding down a modifier. You access Key 3 fill, Key 4 fill, Utility 1 and Utility 2 by holding down the **Alt Buses** modifier. You access Keyer cut buses by holding down the **Key Split** modifier. Holding down combinations of modifiers are allowed, permitting for example the splitting of a key on a the Key 3 bus.

Utility Buses

Besides the standard A and B background inputs, each Kalypso M/E also accepts Utility 1 and Utility 2 inputs. Kalypso Utility buses can be used to select signals for special purposes, and have no relation to the background buses. For example, a video signal selected on a Utility bus can be used to fill a keyed Borderline border, to feed a custom pattern into a wipe generator, or create a custom border wash pattern.

Effects Send

Effects Send provides a method of integrating digital effects devices into an M/E subsystem. Effects Send switches the key cut and key fill outputs of the keyer of an M/E to a digital effects device for manipulation. The manipulated key cut and key fill outputs are then received and sent directly to the inputs of the mixer circuits of the M/E. Effects Send allows you to process a key effect as though the digital effects circuits were located inside the M/E itself.

On the Kalypso system, Effects Send is integrated into each M/E and is an extension of the keying control system (Figure 52).

Figure 52. Effects Send Diagram

The Kalypso Classic system supports both external and internal Effects Send. External Effects Send routes the key fill and key cut output signals from an M/E keyer to a separate, external digital effects system, like a Krystal DPM. The signals are manipulated by the external device and then sent directly back to that M/E's mixer inputs. If the Kalypso system is equipped with the Transform Engine option, an internal effects send loop can be used. This internal loop switches the M/E keyer outputs to the Kalypso Transform Engine, and then returns the manipulated signals directly back to that M/E's mixer. Kalypso HD systems only support internal Effects Send.

Outputs

Video production switchers generate several different video outputs (Program, Preview, etc.). A final program output from PGM PST is typically sent to the transmitter for broadcast and/or to DDRs or VTRs for recording. Individual M/E program and preview outputs and an additional switched preview output are sent to monitors in the control room. These outputs may also be routed elsewhere in the facility. Aux Bus outputs may also be used for special purposes.

Output Mapping

Unlike earlier generation switchers, nearly all the Kalypso system outputs are configurable. There are no dedicated output connectors (except Black and Test for slot 16). Any signal can be assigned to any output connector, which provides flexibility and control of the number of fixed and Aux bus outputs the system will have. A fixed output is always the same, while an Aux bus's output can change depending on what source has been selected on that bus. Once the fixed system outputs have been assigned, all the remaining outputs can be assigned for use with Aux Buses. When the

system is configured, the outgoing signals are assigned to connectors on output modules located at the back of the Kalypso Video Processor.

The most important difference between a fixed output and aux bus is that an operator has control over an aux bus but a fixed output always provides the same signal.

Aux Buses

Video production switcher Aux Buses can be used to select and route sources to specific destinations. For example, a source selected on an Aux Bus can be sent to an iso recorder for instant replay. This can be done directly by the Technical Director while he switches the program. Remote Aux panels can be used to give different operators control over one or more Aux Buses. It is also possible to assign control of an Aux Bus to an external device, like a DPM, and allow that device to directly switch sources as required.

On the Kalypso system, each Remote Aux Bus panel can have its own source to button mapping. Source name displays on the Local Aux panel show what source is currently available for each button. Aux Buses can also be configured in pairs, to send matching key cut and key fill signals to external devices.

Point Of Use

The Kalypso system can share some resources for use at different locations. The location where a resource is being used is called a *point of use*. Different types of resources are shared differently.

Floating resources (like Transform Engines) move between points of use, and the parameters controlling these resources are considered part of the point of use. These resources are used at only one point of use at a time. When the resource floats to the new location, its behavior changes. For example, a Transform Engine can be set for 0.25 Z rotation (parameter) on M/E 1 Key 2 (point of use). That same Transform Engine can then be assigned to M/E 2 Key 3 and set to a Z rotation of 0.0. When the Transform Engine is reassigned back to M/E 1 Key 2, the 0.25 Z rotation parameter will be restored.

Other Kalypso system resources behave differently. For example, wipe pattern generator resources can be used for an M/E wipe transition, as a preset pattern, as a mask, or at other points of use. It is also possible to assign the output of the same wipe pattern generator to different points of use at the same time. For efficient operation, the Kalypso system has divided the parameters controlling wipe pattern generators and related utility bus functions into two categories; *shared generator parameters* and *point of use parameters*. The set of parameters for the shared generator are

used by all points of use, so changing one of these parameters will affect all locations where that wipe pattern generator is being used at that time. Separate sets of point of use parameters, however, are maintained for each Kalypso system point of use (same as Transform Engines described above). These settings are used only by each individual point of use, so changing them will not affect any other point of use. For example, a wipe shape (box, circle, etc.) is a generator parameter, but the softness of the shape's edges is a point of use parameter. If the same wipe generator is used by both an M/E wipe transition and a preset pattern, adjusting softness at one point of use will not affect the other's softness settings. However, changing the pattern shape affects both locations.

Kalypso systems differ from the Grass Valley Model 4000 switchers in the division between wipe pattern generator and point of use. In the 4000, the edge is created as part of the generator so all points of use have the same softness and border width. The Kalypso system duplicates this circuitry allowing each point of use to have a different edge on the same basic wipe pattern shape.

Transitions

A transition is a change from one image to another. The Kalypso system supports three basic types of transitions:

- Cut

- Mix

- Wipe

A transition can be applied to the entire picture, or to only the background or keyed elements of the picture, and can include multiple elements. See *Current and Next Stack* for information on transitions involving more than one element.

Cut

A *cut* is an instantaneous switch from one image to another (between successive video fields or frames). The simplest type is a *hot cut*, accomplished by selecting a different source on a bus feeding an M/E output. This only changes that bus's contribution to the output, and does not change what elements may be involved in the output (the same buses are involved).

The Kalypso system also provides cut transitions, where the elements involved in a composite can be changed instantaneously. Different buses can be included or excluded, causing changes in the resulting composite image. Background cut transitions on an M/E are first selected on the Background B bus to allow previewing the upcoming picture before it is cut on-air.

Mix

A *mix* is a transition from one picture to another where the new picture fades in as the existing picture fades out. During a standard mix transition a superimposition of both pictures, each at a lower intensity, is visible.

The Kalypso system allows mixing from one background to another and to mix up to four separate keys on or off over a background. Background and key mixes can be done separately or simultaneously.

Mix Through Video

A Mix Through Video transition is a special mix transition that incorporates a third intermediate video source. This type of transition can mix from one video source, through a matte or Utility bus video source, to the final video source, all as one transition.

Non-Additive Mix, Full Additive Mix

Non Additive Mix (NAM) and Full Additive Mix (FAM) are special mix transitions that the Kalypso system supports besides normal crossfade transitions. Picture elements in NAM and FAM transitions are composited differently through the time of the transition(Figure 53).

Figure 53. Normal, NAM and FAM Mixes

NAM transitions pass only the brightest regions of each picture to the output. During the first half of a NAM transition the original picture retains its original intensity while the next picture mixes to full intensity. Brighter areas in the new picture replace any corresponding darker areas of the previous picture. During the second half of a NAM transition the previous picture mixes out of the darker areas of the new picture. FAM transitions also first fade a new picture to full intensity and then fade the old picture out, but both full intensity pictures are mixed together to the output during the transition. The resulting signal is clipped at white level to prevent generating illegal video.

Wipe

A *wipe* is a transition from one picture to another in which the edge of a shape moves across the screen, revealing the new picture. Wipe transitions can be applied to backgrounds, to keys, or to both simultaneously. A wipe transition shape can be selected from a variety of patterns, and these patterns can be adjusted in several ways (position, aspect ratios, edge attributes, etc.).

Each Kalypso M/E has two separate wipe systems, each of which can be assigned a different wipe pattern and be adjusted independently. These systems can each use one of the two available complex wipe pattern generators with advanced capabilities. It is also possible to combine these wipes to create extremely complicated wipe transition shapes, and generally this is used only by advanced operators. Utility bus video signals can also be used to generate a custom pattern for a wipe transition or other purposes.

Other Wipe Pattern Generator Uses

Wipe pattern generator circuitry can be used for purposes that do not involve transitions. Each Kalypso M/E has the two complex wipe pattern generators described above, and each of its four Keyers also has a simple pattern generator and a box pattern generator, making a total of six. These pattern generators can also be used for Preset Pattern, Masking, and Matte Washes.

Preset Black

Preset Black is a special type of transition, where the picture transitions to black, and then transitions out of black to the new picture. Preset Black is really two transitions, one to and one from black, and so requires two operator commands to complete. Preset Black can be used with any transition type (cut, mix, or wipe). The entire picture goes to black, even if all the transition elements involved in the picture were not selected.

Transition Rate

Cut transitions are instantaneous, but mix and wipe transitions have durations. Transition durations can be set in advance to a specific transition rate, and be initiated by pressing a button the control panel. It is also possible to manually control transitions using a lever arm.

On the Kalypso system, one transition rate can be assigned to the main transition of each M/E. This type of transition can be controlled by that M/E's lever arm. Each of the four keyers on each M/E can also be assigned its own transition rate, initiated with a separate Key Mix button on that M/E.

Flip Flop Background Buses

At the completion of a transition, the background buses swap their source selections (flip flop). This makes the upper bus always act as the on-air bus, and the lower bus act as a preset bus. The operator can reliably setup the next source on the lower bus without disturbing the source selected on the on-air upper bus.

For example, if a transition begins with source 1 on Background A and goes to source 2 on Background B, as soon at the transition to source 2 completes, source 2 will be taken to the Background A bus (without disturbing the output of that M/E). The source 1 selection will also be immediately taken to the Background B bus.

Look Ahead Preview

If a preview monitor is configured for Look Ahead Preview mode, the end result of the upcoming transition can be viewed on that monitor. This lets the operator know in advance what will occur for that next transition. The mode you select for each preview monitor depends on the number of monitors available and the individual requirements of the facility.

Current and Next Stack

Kalypso uses a current and next stack approach for transitions that involve multiple elements. The current stack is the current M/E output including any keys that are on. The next stack is defined by the current stack and whatever next transition elements have been selected. Look ahead preview always displays the next stack. Next transition elements affecting stacks are Keys 1 - 4, background, and key priority.

Kalypso transitions always occur from the current stack to the next stack. For example, if the current stack has Key 1 over Background A, and the next stack specifies Key 2 over Background B, a mix transition will occur between the composites (Key 1 over A to Key 2 over B). This is different from mixing Key 1 off, Key 2 on, and mixing between A and B at the same time, which would cause the keys to go transparent over their background during the transition. On the Kalypso system, opacity is retained throughout the transition, so midway through this example Key 1 remains fully keyed over Background A, and Key 2 is fully keyed over Background B. The transition occurs between these two fully keyed composites.

Key Priority and Transitions

The four keyers on a Kalypso M/E can be assigned priorities. This determines the layering of the keys. The highest priority key appears on top, while keyers with lower priority may be partially or fully hidden behind

those with higher key priorities. The backgrounds always have the lowest priority. Changes in key priority can be included as a part of a transition. Like any other transition, the current stack will transition to the key priority of the next stack. For example, suppose the current stack has Keys 1, 2, and 3 in that key priority order over Background A, and the next stack specifies key priority order 3, 2, 1. A mix transition will occur between the 1, 2, 3 composite order to the 3, 2, 1 composite order. All three keys will remain fully keyed over the background, and will mix to their new key priority order.

Keying

Keying inserts part of one picture into another to create a composite picture. Keying involves three signals:

- background,

- key cut, used to specify where to cut a hole in the background, and

- key fill, used to fill the hole in the background. The fill can be an incoming video signal or it can be an internally generated matte.

A separate key cut input signal is not necessarily required for keying. For example, a self key (also called a video key) uses the same input signal for both key cut and key fill.

The Kalypso system supports the following types of keys:

- Linear Key (fixed and adjustable)

- Luminance Key

- Preset Pattern

- Chroma Key (option)

The Kalypso system also supports self keys and split keys.

Matte Fill Key Example

One of the earliest keying techniques was to use an art card and camera to perform a luminance key with a matte fill. This type of key is a good example for explaining basic keying principles because three separate and independent incoming signals are used.

To insert a green logo into background video, the logo can be printed in white on black paper and a camera can be focused on it. The signal from the camera can be selected as the key cut signal and green matte video can be selected as the key fill signal sent to the keyer. The key cut signal is then adjusted (clipped) to ignore the black paper and use only the white logo shape to cut a hole in the background video. The keyer then shapes the key

fill to precisely match the logo-shaped hole cut in the background and fills it with green matte video. This creates a green logo inserted into the background (Figure 54). Because luminance values of the key cut signal are used to cut the hole in the background this is called a luminance key.

Figure 54. Matte Fill Luminance Keying Example

In this keying discussion illustrations rather than actual screen images are used for simplicity, and because the printing process has difficulty capturing the subtleties of soft key edges.

Shaping Video

In the matte key example above, the key fill signal was a full raster color that did not match the shape of the key cut signal. This key fill signal is accurately called *non-shaped* video, but may also be referred to as *unshaped* video since both signal types are processed identically during keying.

Some external devices (e.g., character generators) provide a key cut signal and an already processed companion key fill signal. A key fill signal that correctly matches the key cut signal is called *shaped* video. During keying, properly shaped key fill video can be summed with a background signal (with a hole cut) and achieve the desired result. When the shaping is performed by the source device, the Kalypso system can use a standard clip and gain setting defined during system configuration to create the key cut control signal, and so relieve the operator of having to adjust clip and gain manually.

If a key fill does not match the hole in the background (like in the matte key example above), the key fill needs to be shaped by the switcher. By multiplying the key fill signal with the key control signal the unwanted areas of

the fill can be made black, shaping the video to match the hole before it is summed with the background. Key fill video must be shaped using the key cut signal actually used to create the hole in the background. Video shaped with a different key cut signal will not key correctly.

The Kalypso system, as well as some external devices like DPMs, can also divide a shaped video signal by its own key signal. The result is called *unshaped* video. For optimum image quality, shaping and unshaping operations should be minimized. In general, devices should be installed and configured in a manner that prevents them from having to unshape incoming video just to reshape it again afterwards.

Specifying whether source signals are shaped or unshaped is part of the Kalypso system configuration process (source definition). Properly shaped video is an important aspect of keying. See *Properly and Improperly Shaped Video on page 91* for more information.

Note that an unshaped signal viewed directly will show harsh edge artifacts due to dividing by a small number. This is normal and expected. Keying this signal will clean up its appearance.

Key Control Signal Adjustment

During keying, the selected key cut signal can be converted into a key control signal. It is the key control signal that actually cuts the hole in the background video. Adjusting the key control signal (Clip and Gain) is essential in the keying process. The art of setting up a good key is to use just enough Gain to suppress any imperfections in the incoming key signals. Setting Gain too high can cause ragged key edges.

The Kalypso system provides two methods for adjusting the key control signal, Clip and Gain, and Clip Hi and Clip Lo. Note that the same basic keying process is controlled by either of these methods.

Clip and Gain

The Clip and Gain operation selects a threshold of the selected key cut video that will be used to cut the hole in the background video. Clip controls the threshold, and Gain controls the softness of the key edges and any translucent areas. High portions of the key cut signal specifies what video is retained, and low portions determine what video is removed. Intermediate levels specify a soft blend of the background and fill video (Figure 55).

Figure 55. Key Clip, Gain, and Key Control Signal

Clip and Gain control is appropriate for high gain keys (see below), to easily adjust where the relatively hard transition from background to fill occurs. In this mode, changing the Clip control moves the threshold up and down without affecting Gain, which is adjusted separately with its own Gain control.

High Gain, Low Gain, and Unity Gain

A high gain key has a narrow range, creating harder key edges. A low gain key has a wider range, creating softer key edges. Linear keys typically use minimal gain (also called unity gain) to completely preserve the soft edges of the keys (Figure 56). Note that the Kalypso system also supports keys that go below unity gain.

Figure 56. Keying Gain Values

On the Kalypso system, Gain has a percentage value. A Gain value of 50% requires a luminance change of 50% of the distance between black and white to produce a keying signal ranging from transparent to opaque. A gain value of 100% (unity gain) uses the entire range between black and white for this transparent to opaque transition. A gain value of 0% produces the hard key edges (a high gain key).

Clip Hi and Clip Lo

The Kalypso system also supports a Clip Hi and Clip Lo mechanism. With Clip Hi and Clip Lo, two thresholds are established. The upper threshold specifies at what point video will be completely removed from the background, and the lower threshold determines at what point background video will be retained completely intact (Figure 57).

Figure 57. Key Hi, Clip Lo vs. Clip and Gain

In this mode, Gain changes when either control is adjusted. The difference between the upper and lower keying thresholds is equivalent to gain:

Clip Hi = Clip + Gain/2

Clip Lo = Clip – Gain/2

Clip Hi and Lo control is more appropriate for low gain keys, to allow independent control of the two thresholds. For example, when adjusting a linear key the operator wants to control where the fill becomes opaque (Clip Hi) and where the fill becomes transparent (Clip Low). In Clip Hi/Lo mode adjusting the point of opacity does not change the point of transparency, and vice versa.

Clip, Gain, Clip Hi and Clip Low adjustments always interact. Changing one always results in changes to two other values. Changing Clip Hi or Clip Low changes both Clip and Gain, not just Gain.

S-Shaped Key Signals

On the Kalypso system, an S-shaping function is applied to the edges of luminance keys. S-shaping smooths the sharp corners of a luminance key control signal, which helps prevent banding artifacts. S-shaping a signal minimally affects the key edges, and does not move key thresholds or affect the overall gain of the key (Figure 58).

Figure 58. S-Shaped Luminance Key Control Signal

Key Control Signal

S-Shaped
Key Control Signal

S-shaping is generally not applied to linear keys because the external device usually applies an S-shaping function when it generates the key cut and key fill signals. S-shaping should not be applied twice.

Additional Keying Controls

The following additional controls are available for keying.

Key Invert

Keys can be inverted, causing holes to be cut in the background where a normal key retains the background, and vice versa. Key invert makes the white areas of the key cut signal produce transparency, and the black areas produce opacity, the opposite of a standard key.

Borderline

The Borderline feature generates borders around keys. The key signal is delayed and/or enlarged, and the extra bordering space can be filled with matte or video. Borderline can be adjusted in size, and in horizontal and vertical placement.Variations on Borderline include Shadow, Extrude, and Outline.

Masking

Masking defines areas that are protected from keying (Inhibit Mask) or always key (Force Mask). The shape of the mask can originate from a wipe pattern generator or by a selected mask signal (typically a key fill signal delivered via one of the Utility buses).

With the Kalypso SuperStore option, the mask signal can be a frozen page of video or a key fill. Complex mask shapes are often easier to draw by hand than to create with multiple wipe patterns. The Kalypso system supports drawing masks into a SuperStore page using a third party graphics tablet.

Opacity

The opacity of a key can be adjusted. When opacity is reduced below 100% some background video is allowed to show through areas where it is normally excluded. Key opacity is an adjustment to the overall intensity of the key, and is separate from Clip and Gain controls. Note that a common mistake is to set opacity to zero and forget that adjustment was made, which can cause confusion later when that key is selected but not visible.

Key Positioning

Key positioning allows slight adjustment of the horizontal position of the key cut signal relative to the key fill signal. This is useful if the timing of the two signals at the switcher inputs are not matched properly. This is generally only a problem if the cut or fill follow analog paths from source to switcher or if the source has video/key timing adjustments which have been set to compensate for other delays within the facility.

Key Size

Key size allows the key cut signal to be narrowed slightly. This can greatly enhance self keys and chroma keys that have been reshaped.

Coring

Coring helps reduce video noise in Chroma keys. Coring is used when a key fill signal has noise in areas that are supposed to be transparent. When noise exists in these areas it can appear in the background portion of the keyed composite. Coring replaces the noisy black areas outside the shaped fill with clean black before it is summed, eliminating the noise.

Show Key

Although the key control signal is not directly visible in the final video output, this signal can be previewed as a black and white image using the Show Key function. White areas of a show key indicate areas of complete opacity, black indicate complete transparency, and gray areas indicate translucent areas of the key. The whiter the show key signal, the more opaque the key will be. This key preview signal reflects all the adjustments that have been made to the key control signal.

Linear Key

A linear key typically uses separate key cut and key fill input signals that are intended to be used for linear keying. The key cut and key fill are usually anti-aliased (soft edged) shaped signals created by a character generator or graphics system. There may also be translucent areas intended to allow some background to show through the key (watermarks). The level of the key cut signal determines where and how deeply the hole will be cut

into the background. The intended soft edge and translucency of the key can then be faithfully reproduced (Figure 59).

Figure 59. Linear Keying

Note The soft edges in the illustrations in this part of the manual are simulated. The key edges are actually gradients, which allows these edges to blend smoothly with the background.

Fixed and Adjustable Linear Keys

The Kalypso system supports both fixed and adjustable linear keys. A fixed linear key uses clip and gain values defined in system configuration to create the key cut signal. Typically these values are Clip 50% and unity Gain (equivalent to Clip Hi 100%, Clip Lo 0%). Once fixed linear key values are defined, these sources can be used easily without the operator having to set up the key every time it is used.

An adjustable linear key provides the operator limited control over Clip and Gain (or Clip Hi/Lo) values. This lets the operator fine tune the settings if the normal fixed linear values are not producing a good enough key.

Luminance Key and Self Key

A luminance key uses the luminance of an incoming source to specify where to cut the hole in the background. The earlier example of a matte fill key is a type of luminance key. Luminance keying is typically done on sources that do not have an accompanying key cut signal, like a video camera. The key cut signal must be generated from the incoming video signal, using clip and gain controls. When only one source is used for both key cut and key fill, the key is called a Self key or Video key. The same key source signal is multiplied by the key cut signal to create the key fill, and then the signals are summed (Figure 60).

Figure 60. Luminance Keying (Self Key)

Clip and Gain (or Clip Hi/Lo) controls for luminance keys offer wide adjustment ranges. On the Kalypso system, an S-shaping function is also applied to the edges of luminance keys.

Chroma Key

A chroma key is a key that detects color (rather than luminance) in a video image and replaces it with a new background. For example, a reporter may be in a studio sitting in front of a backdrop with a blue or green backing color, and the new background can be a mountain scene. The completed chroma key consists the mountain scene replacing the backing color, creating the illusion that the reporter is sitting in front of the mountain (Figure 61).

Figure 61. Chroma Key (Additive or Multiplicative)

The terms foreground and background are often a source of confusion when used for chroma keys. Foreground refers to the people or objects in a chroma key scene that are in front of the colored backdrop. Background refers to the scene that will replace the backing color (same as a linear or luminance key) in the final picture. Background does *not* refer to the backdrop of the foreground scene.

Chroma keys are performed by suppressing the backing color in the foreground scene, cutting a hole in the background, and then combining the two processed signals. When conditions are ideal, complete suppression of the backing color is possible and the hole cut in the background will match the suppressed foreground, permitting these two signals to be added successfully. This is called an additive chroma key (used when the Kalypso system Foreground Reshaping feature is off). When conditions do not permit adequate backing color suppression, the foreground with its backing color suppressed can be multiplied by the keying signal to prevent contaminating areas of the background outside the keyed area. This is called a multiplicative chroma key (used when the Kalypso system Foreground Reshaping feature is on). Setting up a successful chroma key setup involves many more adjustments than other keys. No amount of adjustment, however, can overcome problems caused by an improperly set up studio chroma key scene.

Primary and Secondary Color Suppression

As described above, chroma key primary color suppression replaces the old backing color with black before replacing it with the new background video. It usually has a very low selectivity and therefore suppresses a wide range of colors. The goal is to suppress as much of the backing color as possible without affecting foreground regions.

Secondary suppression is essentially a second chroma keyer that can be used to deal with areas where the backing color passes through some translucent portion of the foreground object, like smoke or liquid. This also includes hair since fine detail often mixes with the backing color. The goal of secondary suppression is to restore the natural color of the foreground object. In general, medium to high selectivity values will be used.

Primary and secondary suppression adjustments are used to select the hue to be replaced and for adjusting the luminance and chrominance levels in the areas of the picture where suppression is applied.

Flare Suppression

Flare suppression can be used to compensate for backing color reflected onto foreground objects, or for lens flare (backing color reflections within the camera lens). In these cases, the foreground object will take on a slight greenish or bluish tint. Flare suppression subtracts a slight amount of the primary suppression color from the foreground.

Chroma Key Shadow Generator

The Kalypso system has a shadow generator that can be used to include shadows that fall on the backing area of the scene in the background. Shadow offset, range, and density controls are also available that offer control over the placement and appearance of the added shadow.

Preset Pattern

A preset pattern uses a wipe pattern generator, rather than an incoming key cut signal to define the hole cut in the background (Figure 62). Key clip and gain controls are not available for a preset pattern, but controls over the location, size, border, opacity, and edge softness are available.

Figure 62. Preset Pattern

Background

Pattern Key Cut

Key Fill

Background with Preset Pattern Inserted

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Split Key

A split key uses an alternative key cut signal for keying. On the Kalypso system, a key split is performed by selecting the desired key fill signal, then selecting an alternative signal to be used as the key cut (Figure 63).

Figure 63. Split Key

1	2	3	4	5
Video Only	Video Only	Video Key	Video Key	Video Key

Key Fill Bus

Key Cut Bus

Split Key, Alternative Key Cut Signal Selected

0618_00_36

Note that if the key fill video has been shaped by an external device, this previously shaped video will not match the different key cut signal selected

for the split key. Split keys normally treat the fill as unshaped since by definition a split key uses a fill that is not related to the cut. The Kalypso system gives the operator the ability to override this assumption for use when a cut and fill are brought into the switcher from two separate sources, such as a pair of DDRs producing related video and key signals.

Properly and Improperly Shaped Video

The following illustrations show the results of using correctly and incorrectly shaped video. In these examples, the video fill comes from a DPM that provides both a key signal and a fill video signal (a linear key). The DPM's key signal, fill video that has been set as a shaped output, and fill video set as unshaped is shown in Figure 64.

Figure 64. Video and Key Signals from DPM

DPM Key Signal   DPM Shaped Key Fill   DPM Unshaped Key Fill

When the shaping is configured properly (using either shaped or unshaped key fill) the desired output is the result (Figure 65).

Figure 65. Correctly Shaped DPM Key Example

When the DPM provides a shaped video output but the key is processed as though it were unshaped, the shaped video does not completely fill the key hole in the background so a dark halo appears around the key (Figure 66).

Figure 66. Incorrect Key with Dark Halo

In this case the shaped input is incorrectly shaped again, sometimes called a double-multiply (Figure 67).

Figure 67. Incorrect Keying with Shaped Input

When the DPM provides an unshaped video output but the key is processed as though it were shaped, excessive luminance occurs where the key fill video and key hole edges overlap, producing a white halo around the key (Figure 68).

Figure 68. Incorrect Key With White Halo

In this case the unshaped video fails to be shaped at all ([Figure 69](#))

Figure 69. Incorrect Keying with Unshaped Key Fill

Recognizing the appearance of improperly shaped video helps you know how to correct the problem should it occur.

E-MEM (Effects Memory)

Grass Valley developed the E-MEM (Effects Memory) system to provide a way of storing effects for later use. An effect defines parameter settings that determine how the selected video sources are processed. An E-MEM effect

is *learned* into an effect *register,* and can then be *recalled* at a later time with a single button press. Effects can be edited after they have been learned, and effect data can also be saved to and loaded from disk.

Work Buffer

The *work buffer* is a fundamental aspect of system operation. The work buffer contains the current state of the system, specifying the sources selected and the video processing applied to those sources. The work buffer tracks all the system parameters, including those that do not have controls delegated. As the operator delegates and alters control panel and menu settings, the associated parameters in the work buffer change. If any altered work buffer parameters affect the video outputs of the switcher, the appearance of these outputs will change accordingly.

Keyframe

A single set of processing control settings can be called a *keyframe*. A keyframe defines the state of all or a portion of the switcher. Keyframes are stored in E-MEM effect registers. Two types of information are associated with a keyframe:

- On/off settings, including source selections, and

- Parameter settings (variable adjustments).

For example, an effect can consist of a keyframe specifying source 1 on M/E-1's background A bus, source 2 on its background B bus, a horizontal wipe transition type, and a border. These are button settings, as they can be turned on and off. The border could be thick and colored red. These are parameter settings because a range of continuous values are available.

Note that this effect could be learned as a 30 frame effect dissolve (described later in this section), which also has a time value.

Effect Register, Work Buffer, and Current Effect

For clarity, the following description uses single keyframe effects. Multiple keyframe effects are discussed later (see page 96).

The Kalypso system has 100 E-MEM registers (numbered 0 - 99) able to store operational settings for immediate recall. Effect register data must be applied to the work buffer before these settings can affect the system. When an effect register is recalled, keyframe data is loaded into the work buffer, and that register number becomes the *current effect* (Figure 70). The current effect is an important concept, as it defines a relationship between the effect registers and the work buffer. Only a current effect can be run or edited.

Figure 70. Work Buffer and Current Effect

Work
Buffer

Effect 1
Settings

Effect 1
Recalled

Effect 1
Keyframe

Effect
Registers

0   1   2   99

Current
Effect

0618_00_37

The work buffer actually holds a copy of some of the effect register infor-
mation. When an operator changes a control setting manually, the work
buffer settings change but the effect register data itself remains unaltered
(Figure 71).

Figure 71. Work Buffer Operational Change

Work
Buffer

Settings
Modified

Operational
Change,
Effect Register
Unaffected

Effect 1
Keyframe
(no change)

Effect
Registers

0   1   2   99

Current
Effect

0618_00_38_r1

When an effect is learned, the current operational settings in the work
buffer are loaded into the specified effect register, overwriting any informa-
tion that was in that register. If a register different from the current effect is
learned, the information is loaded into it and that register becomes the
current effect. In this case the original effect register will not be altered, and
can be instantly recalled to return the system to its earlier state (Figure 72).

Figure 72. Learn Operation Changes Effect Register

Effect registers can be locked to prevent them from being altered, and they can be saved to disk and reloaded and recalled for use at a later time.

Banks and Registers

The Kalypso E-MEM and Master E-MEM control panels are optimized for rapid recall of effects during live production. The Kalypso system's 100 effect registers can be thought of as being organized into banks (numbered 0 to 9), with each bank containing ten registers (also numbered 0 to 9). For example, register 46 means bank 4, register 6. This organization is for user convenience, to allow immediate single button effect recall from ten different registers, and for clearing, copying, and saving to and from disk banks of registers with a single operation.

Multiple Keyframes and Timelines

A *timeline* is an arrangement of keyframes in linear time order. A multiple keyframe effect contains a series of two or more keyframes on a timeline. Each keyframe has a position on the timeline, specifying its location in time in the effect. The timespan from one keyframe to the next keyframe can be considered that keyframe's *duration*. The sum of these durations generally determine the total duration in time of the effect.

When a multiple keyframe effect is recalled from an E-MEM register, only its first keyframe is loaded into the work buffer (Figure 73). This is exactly the same as the recall of a single keyframe effect.

Figure 73. Keyframe Effect

The only difference between a single and multiple keyframe effect is a multiple keyframe effect can be run after it has been recalled. Running an effect changes the state of the system from keyframe to keyframe. During the effect run the values between the keyframes are usually interpolated (Figure 74).

Figure 74. Keyframe Effect Run

The interpolated work buffer values created during the effect run do not exist in the effect register. Instead, *path* information saved in the effect

determines the type of interpolation to be used between each pair of key-frames.

As each keyframe location is encountered on the timeline, the work buffer values at that moment in time will exactly match those specified by that keyframe in the effect register. Note that this is very similar to an effects dissolve and effects sequence of multiple registers, but keyframing uses only one register and also offers path control.

A keyframe in an effect can be changed by applying work buffer values back to the current effect register (Modify). The new values can modify an existing keyframe, or they can be inserted between keyframes (called *inserting on the path*). It is also possible to Learn, rather than Modify, an existing effect. However, the Learn operation overwrites all existing keyframes in the effect with one new set of work buffer values. A single keyframe effect is the result, and all the other keyframes in that effect are lost.

Effect Dissolve

Effect dissolve produces a smooth transition from the current state of the work buffer to the state defined in a recalled register. Effect dissolve first takes to the source and other button settings specified as a starting point in the effect register. The parameter settings in the work buffer then smoothly change so they match the settings of the recalled effect register. Effect dissolve can also simultaneously perform a transition to the specified ending sources at a specified duration. An interpolator is used to smoothly change the parameters settings involved in an effect dissolve. Before performing an effect dissolve, source and other button settings in the work buffer should be compatible with those in the effect dissolve register. This prevents an abrupt change when the new button settings are taken, and so permits smooth transitions between sources. One way this can be accomplished is by using two different, but complimentary, effect registers.

For example, if register 2 contains compatible button settings, it can be recalled into the work buffer. If an effect dissolve is then performed to register 3, the transition occurs and the parameters from register 2 in the work buffer are interpolated to those of register 3. Register 3 becomes the new current effect (Figure 75).

Figure 75. Effect Dissolve

Note that the effect dissolve does not occur directly between two registers, and the transition aspect is handled separately from the interpolated parameter values. If work buffer parameter settings are changed before an effect dissolve, the current modified work buffer values (but not the source and button settings) will be smoothly interpolated to the new register values.

Effect Sequence

Effect sequence allows the operator to chain a set of specified effect registers together. Recalling the first register can initiate a sequential recall of all the registers in the sequence. As each register is recalled, its settings will be applied to the work buffer and the appearance of the system's output signals will change if they are affected. Delays can be programmed that determine when the next register in the sequence will be recalled. Effect dissolves can also occur as each register is recalled, though this is not required (Figure 76).

Figure 76. Effects Sequence

In the above example, recalling effect 2 as a sequence will proceed from register 2 to register 0 to register 1 to register 3. A sequence can begin from any of the effect registers in the sequence. For example, in the above example if register 0 is recalled, the sequence will proceed from register 0 to register 1 to register 3.

Effect dissolves can occur within a sequence. The interpolator described earlier is used to smoothly change to the next register in the sequence.

E-MEM Levels

The E-MEM system is divided into functional areas, called *levels*. Each effect level corresponds to a specific set of system operational controls, or to an individual interface to an external device. Effect levels are used to allow the operator to store and recall settings for specific system control areas without disturbing settings for other control areas. For example, on a 4-M/E Kalypso system each M/E has its own level. Each level also has its own set of effect registers. The settings for M/E 1 can be recalled without changing the settings for M/E 2, M/E 3, or PGM PST. The work buffer is actually divided into sections that correspond to each effect level.

The earlier E-MEM discussion was simplified to explain basic concepts. Actually, register learn and recall operations and work buffer modifications apply to each level of an effect, though multiple levels of an effect can be changed simultaneously. Settings for each level's E-MEM register is applied to the corresponding level of the work buffer (Figure 77).

Figure 77. E-MEM Levels

If only one effect level is selected for a recall, the resulting change is only applied to its level in the work buffer. The other levels of the work buffer remain unaltered. Note that this makes is possible to have current effects from different registers, also called a *skewed effect* (Figure 78).

Figure 78. Single Level Recall

Master Timeline and Multiple Level Keyframe Effects

A *master timeline* exists to coordinate the activity of the individual level timelines. The master timeline contains a master timeline keyframe at every point in time where a keyframe exists on any of the level timelines. Keyframes from the levels are projected to the master timeline. If more than one level has a keyframe at a particular time, only one keyframe is projected to the master timeline. The master timeline keyframe can be considered a representation of the sum total of all the parameters in all the timelines that have keyframes at that point in time. However, the master timeline and its keyframes are an organizational tool only. Master timeline keyframes are not saved to a register or to the work buffer. The master timeline is constructed in real time, depending on what levels are in use by the effect.

When a multiple level keyframe effect is run, each level generally runs simultaneously, guided by the location of a *time cursor* on the master timeline. The time cursor represents the *current time* of the effect. As the time cursor moves, the work buffer is updated with the changing parameters. Figure 79 shows an effect with its time cursor located on master timeline keyframe 3.

Figure 79. Keyframe Effect and Master Timeline

An *edit cursor* is also available, which can be used during effect editing. Usually the time and edit cursors are superimposed on one another and move as one. When separated, editing actions occur at the edit cursor location.

Number of E-MEM Levels and Sublevels

The Kalypso E-MEM system has 19 levels. Fifteen of the E-MEM levels have dedicated Enable buttons in the Master E-MEM subpanel (M/E 1-3, Pgm Pst, Misc 1-7, DPM, and SS A-C). Each M/E also has an independent secondary level (available with the DoubleTake option) that is special. Secondary levels have no dedicated Master E-MEM Enable button. A secondary E-MEM level is attached to another level. This peer relationship is one directional. The Secondary level is controlled by the level to which it is attached, but not visa-versa.

The Kalypso E-MEM system also has several sublevels. E-MEM sublevels can be assigned to an E-MEM level, which provides flexibility in configuring the Kalypso E-MEM system to control desired portions of the switcher and related devices.

Each Aux bus, Still Store output, GPI output, PBus device, External Device, etc. is a sublevel. The associations of sublevels to levels is completely flexible. Any sublevel can be assigned to any level. For example, a DDR or PBus device can be mapped to an M/E level. This can be useful if, for example, a specific M/E is always used for a replay effect. The external device playing back the animation, a still store output and possibly other sublevels can all be assigned to that M/E's Primary level and the M/E E-MEM panel will control the entire effect. Sublevels can also be disconnected from E-MEM control by assigning them to no level.

Each M/E also has sublevels for each keyer, each complex wipe generator, each keyer's transform engine parameters, etc. Unlike other sublevels, all M/E sublevels are always mapped to either the M/E primary level or the M/E secondary level, based on the DoubleTake M/E partition information. The M/E partition boundary information is itself a special sublevel, but contains no key frames since changing the M/E partition within an effect is not possible.

Auto Recall and Effect Levels

The Kalypso system has an Auto Recall feature. This feature makes a recalled effect automatically enable all the levels (and associated sublevels) that were involved in that effect when the effect was learned. This is a useful feature, since is can be difficult to remember all the levels involved in every learned effect, and time is required to manually enable levels before recall. The Auto Recall feature is on by default, but can be turned off to permit manual level enabling.

300 Mode E-MEM Operation

The proceeding discussion explained the Normal E-MEM operating mode. 300 Mode is an alternative Master E-MEM method of operation that mimics the behavior of the Grass Valley Group Model 300 switcher. In this mode, Master E-MEM Learn operations store the register numbers of the individual M/Es, allowing the recall of different combinations of M/E registers with a single button press (Figure 80).

Figure 80. E-MEM 300 Mode Diagram

Default Keyframe

An important E-MEM concept is the Default Keyframe. A Default Keyframe is a standard collection of effect settings. When the work buffer is cleared, the initial settings it receives will be those defined as the Default Keyframe. The Default Keyframe does not alter effect registers and does not change current source selections or panel delegations, which should only be changed directly by the operator (Figure 81).

Figure 81. Default Keyframe

The operator can define exactly what these default settings should be (Suite Preference), and these settings can be stored and reused to meet varying requirements. A separate set of factory default settings also exist that cannot be changed, but may be loaded to the Default Keyframe and then to the work buffer, typically for system test and initial system installation.

Source Memory

Source memory is a Kalypso system feature that retains the last settings of keying and video processing parameters used for each source on each bus. Source memory permits the operator to hot cut from one key to another and retain the settings for each source. Source memory keying settings include Clip, Gain, Borderline, Mask, and many other parameters used for various keying functions. Video processing (proc amp) settings include Luminance, Chrominance, DC Offset, etc. The source memory feature can be turned on and off by the operator.

Work Buffer, E-MEM, and Source Memory

When source memory is on, it tracks the work buffer's source selection for each bus. Whenever a new source is selected on a bus, the last settings used by that new source are loaded into the work buffer from source memory. Source memory settings are automatically updated when corresponding values in the work buffer are changed. For example, suppose Source 1 has a clip level of 50%, and Source 2 has a clip level of 70%. Selecting Source 1 applies its last used source memory setting to the work buffer (50%). Adjusting its Clip level to 40% in the work buffer also modifies the corresponding source memory of Source 1. Selecting Source 2 recalls its last used

source memory settings (70%), not those used by Source 1. Selecting Source 1 again applies its modified setting of 40%, not its earlier setting or the setting used by Source 2 (Figure 82).

Figure 82. Source Memory and Work Buffer

Source memory is separate from the E-MEM system, though they are related to one another through the work buffer. When an effect is learned to a register, the keyer and video processing settings for the sources involved are saved to that register. When an effect register is recalled, the sources selected on a bus will use settings from the recalled register, not from source memory. This recall changes the work buffer. When source memory is on, the source memory for each source involved in the recall is updated with the changed work buffer values, and so each source memory will initially have the same values as the recalled register. Subsequent changes to work buffer settings will update the source memory of each source, but these changes are only saved to an E-MEM register if the effect is learned.

Source Memory Organization

Each source on each Kalypso bus has its own source memory. Source memory parameters for each source are organized into groups to allow some settings to be remembered and applied independently to meet different requirements (Figure 83).

Figure 83. Source Memory Organization

Because a Kalypso source may have two signals (key cut and key fill), different groups of source memory parameters are associated with each signal. The Kalypso system key buses always have key cut and key fill signals. The background A and B buses that do not have key cut signals do not use the key cut group of source memory parameters.

Source memory for the key fill signal has video processing (proc amp) parameters, and also specifies which key cut signal to use. Source memory for the key cut signal contains all the keying parameter settings. Some of these keying parameters are in turn organized into four subgroups, or key modes. These modes correspond to linear key, luminance key, chroma key, and preset pattern. A parameter specifying which of the four modes is being used is included in the key cut portion of source memory. This means with source memory on, selecting a source with a key fill and a key cut signal will automatically apply any proc amp settings to the key fill, select the last used key cut signal which specifies the key mode, and the last used key memory settings for that key mode will be applied to the key cut signal. This organizational structure allows source memory to retain different settings for the same source, and it also accommodates split keys.

Because each source on each bus has its own source memory, different settings can be used for the same source on different buses. For example, Camera 1 on M/E 1 Key 2 can be set up as a chroma key. At the same time, Camera 1 on M/E 1 Key 3 can be set up as a luminance key with a black

and white proc amp setup. Calling up that same source on different buses provides different keying effects.

Different source memory settings are retained for the different key modes. These different settings can be applied to the same source on the same bus, as needed. For example, a camera source on M/E 1 Key 1 can be setup for both a chroma key and a preset pattern. The operator can choose the key type for that source as the session requires. Choosing a chroma key will recall its latest chroma key source memory settings, which can then be altered without changing the preset pattern source memory settings. Choosing preset pattern on that same source and bus later in the session will recall its unaltered source memory settings.

When a key split is performed a different key cut signal is selected for use. On a Kalypso system with source memory on, that new key cut source's key mode and keyer settings will be used for the split key (Figure 84). This is different from the Grass Valley 4000 switcher, which associated its source memory only with the key fill signal.

Figure 84. Source Memory and Split Key

Default Source Memory and Factory Default Source Memory

Default source memory settings can be set for every Kalypso source, and these defaults can be restored by an operator when desired (Figure 82). The defaults for a source are not bus specific. The same default values for a source are used on every Kalypso bus. Default source memory is a Suite Preference.

A fixed factory default source memory that cannot be changed by the end user is also included in every Kalypso system. Factory default source

memory is provided to be a starting point for building a custom source memory set.

3-D Digital Effects Concepts

The Kalypso Transform Engine option provides 3-D planar image translation and transformation from within the Kalypso system. Image translation has special basic concepts and terminology you should understand in order to get the most out of using the option.

Translation and Transformation

Translation is a subset of transformation, and involves picture movement along the X, Y, and Z axis. The picture is simply relocated to a different place and does not change in actual size or shape (*Picture Translation on page 109*).

Figure 85. Picture Translation

X Axis Translate   **Y Axis Translate**   **Z Axis Translate**
                                                           (moved farther away)

Transformation includes translation, and also includes these other functions:

Size — Enlargement and reduction of the picture area while it remains in the same plane in 3-D space. This is different from picture translation in the Z axis, where the picture retains its original size, but appears smaller when moved away, and larger when moved closer.

Rotate — Picture rotation about the reference axis in the X, Y, and Z dimensions (Figure 86). Rotate is limited to ± one half revolution, and will always take the shortest path to the new position. Rotate uses Quaternian math to calculate the move with increased accuracy. Multiple rotations are performed with the Spin function.

Figure 86. Rotate

| X Rotate | Y Rotate | Z Axis Rotate |
| (Around Y Axis) | (Around X Axis) | |

Spin — Supports multiple rotations about the reference axis in the X, Y, and Z directions. Spin supports fractional values, and is similar to Rotate when the move is less than ±. one half revolution. Spin uses Euler math to calculate the move, which is not quite as precise as Quaternian, but permits multiple rotations. Spin applies transform values in Z, X, Y order, so editing effects in this axis order provides the best control of the effect.

Note Following broadcast conventions, moving the Joystick forward or back along the Joystick's Y axis rotates the top of the picture forward or back (a rotation about the X reference axis). Similarly, moving the Joystick left or right along the Joystick's X axis rotates the side picture left or right (a rotation about the Y reference axis).

Figure 87. Aspect, Skew, Perspective

| Aspect | Skew | Perspective |

Aspect — Scaling the X or Y components of the picture. X axis changes affect horizontal size, Y axis changes affect vertical size (Figure 87). Z axis changes affect both X and Y dimensions, and is the same as Size.

Skew — Slanting the picture in the X (horizontal) and Y (vertical) directions (Figure 87).

Perspective — Changing the viewer's apparent viewpoint of a picture. This only applies when a picture is tilted so part of it is farther from the viewer. The farther portion appears smaller than the closer portion, and the amount of perspective controls how much smaller the distant part is (Figure 87). Multi-channel perspective is discussed later in this section.

Axis Location

The axis location of the channel determines the center point of translations, spins, and rotations for that channel. You can move the axis to a new location to change the behavior of that channel. The axis location can be within or outside the screen area (Figure 88).

Figure 88. Frame of Reference Axis Locations

Z Axis Rotation at Different Axis Locations

Axis At Center of Picture **Axis Off Center of Picture** **Axis Off Screen**

Source and Target Space

The Kalypso Transform Engine uses source and target space frames of reference.

- Source space for a control channel uses that channel's coordinate system for reference.

- Target space for a channel uses the next higher level's coordinate system for reference.

Being able to use both source and target space can help make effects editing easier. One frame of reference may offer a simple and easy to understand context for a picture transform, while in another frame of reference the same transform may be difficult to understand and control. Kalypso Transform Engine effects can also employ both source and target space directed transforms simultaneously, which can create complex and beautiful effects.

The simplest example for source and target space concerns a channel that has been rotated while the global channel remains unchanged (Figure 89).

Figure 89. Source and Target Space

In this example the source space for the channel is referenced to the picture itself (tilted back at an angle) while the target space is referenced to the monitor screen (straight). X axis translations will move this picture differently, depending on whether source or target space is being used (Figure 90).

Figure 90. Source and Target Space Translation

**Source Translate
Along X-Axis**

**Target Translate
Along X-Axis**

If the channel is controlled by a global channel, and the global channel itself has been rotated, an X axis translation will depend on whether the channel itself or the global channel is being manipulated, and whether source or target space is being used (Figure 91 and Figure 92). Note that the target translate of the channel is the same as a source translate of the global channel.

Figure 91. Channel Translate with Global Rotated

**Logical Channel Source Translate
Along X-Axis**

**Logical Channel Target Translate
Along X-Axis**

Figure 92. Global Channel Translate with Global Rotated

**Global Channel Source Translate
Along X-Axis**

**Global Channel Target Translate
Along X-Axis**

Post Transform Space

Post transform (**Post Xform**) is a special transform function that only affects size and location operations. It does not change the perspective of the image (Figure 93). This can be used as a convenient method to quickly project pictures onto new locations of the screen. For example, if an image has the right perspective but is partially off screen, it can be brought back on screen without changing the perspective.

Figure 93. Post Transform Translation

**X Axis Translation
with Locate 3-D**

**X Axis Translation
with Post Xform**

All post transform functions are made relative to the monitor screen frame of reference. For example, a positive X post transform always moves to the right side of the screen.

Front and Back, Near and Far

Pictures manipulated by a Kalypso Transform Engine have front and back sides, each of which is revealed in turn as the picture spins or rotates. After a picture has been translated it can be difficult to determine which side was originally on the front and which was originally on the back. This distinction can be important when, for example, different sources are being selected for different sides of an effect.

The Kalypso system uses a "Near" and "Far" convention to ease system operation. Near is always the side of the picture that is visible (facing toward the viewer), and Far is the hidden side of the picture (facing away from the viewer). The current Near side can be either the front side or the back side of the picture, depending on orientation. For example, to change the source on the visible image, just change the Near side. To change the source on the hidden side, change the Far side. You don't need to know whether the image being changed is actually the front or back side.

Transform Numbering Systems

The Kalypso Transform Engine uses the following numbering systems to precisely define picture locations, picture size, and picture rotation and spin.

Screen Coordinates

The Kalypso Transform Engine accommodates two different aspect ratios, 4 x 3 and 16 x 9, selectable via the Video Standards menu. In 4 x 3 mode, the screen is six units high and eight units wide. In 16 x 9 mode, the screen is 18 units high and 32 units wide. The numbering system begins in the center of the screen, and has the standard horizontal X axis and the vertical Y axis (Figure 94). For simplicity, examples in this manual use the 4 x 3 aspect ratio.

These coordinates can be used for monitor screen locations (channel target space with default global channel), or they can be applied to picture locations (channel source space).

Figure 94. Screen Coordinates

Screen units are also used to define Z axis dimension depth in 3-D space. Positive Z axis values are back behind the picture, and negative values are in front of the picture (Figure 95).

Figure 95. Viewer Location in 3-D Space

For perspective calculations the factory default viewpoint places the viewer -16.67 screen units from the monitor screen surface (4 x 3 aspect ratio). In this case, moving a full screen image 16.67 screen units back behind the screen makes the picture appear half its normal size to the viewer.

Size

Picture size is defined relative to picture screen units. A size of 0.50 indicates a picture is one-half its full size.

Rotation

Rotation is measured fractionally with respect to 360°. A value of 0.25 indicates a rotation of 90 degrees; 0.50 indicates 180 degrees (maximum rotation). Rotation values can be positive or negative, which determines the direction of rotation.

Spin

Spins are measured in number of 360° rotations (up to 999). Fractional spin values are also supported. A single axis 0.50 spin is the same as a single axis 0.50 rotation. Spin values can be positive or negative, which determines the direction of spin.

Skew

Skew supports values of ±999, though extreme values will probably rarely be used.

Aspect

Aspect values are in percentage of the original size, with 1.0 = 100%, 0.5 = 50%, etc.

Perspective

Perspective supports values from 0-100, with 0.06 as the default.

Spin and Rotation Relationship

It is possible to use both Spin and Rotation at the same time in an effect. When both are used, the transforms are nested so that the values of one transform are applied after the previous transform values have been calculated. This nesting provides increased control of the effect dynamics. Source and Target space also affects the transform nesting order Figure 96.

Figure 96. Spin and Rotate Transform Nesting

Path Control

Paths

Keyframes specify parameter values at specific times in an effect. Most of the duration of an effect, however, occurs between these keyframes. The Kalypso system interpolates parameter values between keyframes (inbetweening). The trajectory, or path, a manipulated picture travels between keyframes is determined by how these inbetween values are interpolated. The Kalypso system offers you several path controls (Figure 97):

HOLD — No interpolation. Keyframes hold their values for their durations, then change all at once for the next keyframe.

LINEAR — Applies a linear interpolation between keyframes; no acceleration or deceleration is applied. Movement is mechanical with a constant velocity.

S-LINEAR — Applies a linear or straight line motion between keyframes, with acceleration and deceleration applied at the beginning and end of each keyframe. At each S-Linear keyframe the motion is stopped for two fields.

CURVE — This selection causes a rounded path through the keyframe. Paths are user adjustable with path modifiers (tension, continuity, and bias) described below.

Figure 97. Path Types

The path concept can also be applied to functions that do not move a picture across the screen, like matte hue changes. For these functions, the rate of change of the parameter follows the same path types above. For example, an S-Linear hue rotation will accelerate and decelerate the speed of the hue change at the beginning and end of the keyframe.

Tension, Continuity, and Bias Controls

When the **CURVE** parameter is selected, additional fine-tuning path controls become available:

TENSION — Controls the length of the tension vector. At a setting of 0.0, this imaginary line extends an equal distance into and out of the key-frame, and the path through the middle keyframe is curved.

CONTINUITY — Determines the angle of the path into and out of the key-frame.

BIAS — Determines whether the path will be pulled towards the previous or the following keyframe.

In the following examples, a physical path is shown between three key-frames. The first keyframe (KF1) is the upper left square; the last keyframe (KF3) is the lower right square. The adjustments in these examples are applied to the middle keyframe only (KF2).

Path Vectors

With respect to the path between keyframes, each keyframe is made up of three vector parameters as shown below. The soft knob controls act on these vector parameters to adjust the path into (entry) and out of (exit) the key-frame. The path through KF2 is parallel to an imaginary line drawn between KF1 and KF3 (Figure 98).

Figure 98. Path Vectors

Vector Values

Path vector setting values of ± 1.0 are available, same as the Grass Valley Kaleidoscope DPM.

Tension Control

In the example below, the keyframes comprise a right angle, so the **TENSION** control operates on a 45° line drawn through the keyframe. This line is referred to as the Tension Vector and is parallel to a line drawn between adjacent keyframes (Figure 99).

The **TENSION** soft knob controls the length of the tension vector. The length of the tension vector is inversely proportional to its parameter value. For example, at a Tension setting of 0 (zero), this imaginary line extends an equal distance into and out of the keyframe, and the path through the middle keyframe is curved. The unmodified KF2 is said to have a correction value of 0.0.

Figure 99. Tension Control Setting Zero

Tension
Vector

KF1

KF2

Tension = 0.0

0721_06_47_r0

KF3

In the example below, the **TENSION** control is increased to 1.0, so that the Tension vector is shortened to non-existence through KF2 (Figure 100). The path enters and leaves the middle keyframe in a straight line as it takes on an S-Linear motion; decelerating as it enters the middle keyframe and accelerating as it leaves.

Figure 100. Tension Control Setting 1.0

No Tension Vector

KF1

KF2

Tension = 1.0

KF3

0721_06_48_r0

In the example below, the **TENSION** control has been set to -1.0. This lengthens the Tension vector, causing the path through the middle keyframe to be longer and broader (Figure 101). The longer path will appear to make the image speed up through KF2 as it travels from KF1 to KF3.

Figure 101. Tension Control Setting -1.0

Tension
Vector

KF1

KF2

Tension = -1.0

KF3

0721_06_49_r0

Continuity Control

The continuity adjustment determines the angle of the path into and out of the keyframe. It is represented by a vector 90 degrees to the tension vector (Figure 102). The unmodified path shown is identical to the unmodified path of the other controls.

Figure 102. Continuity Control Setting Zero

With continuity set to 1.0, the entry path through the keyframe is pulled positively along the continuity vector. The effect of 1.0 continuity is that of motion dropping into and then out of the keyframe, similar to a bouncing ball (Figure 102).

Figure 103. Continuity Control Setting 1.0

With continuity set to -1.0, the paths between the keyframes become straight lines, accelerating into the keyframe and decelerating as it leaves the keyframe (Figure 104).

Figure 104. Continuity Control Setting -1.0

KF1 KF2 KF3

Continuity Vector

Continuity = -1.0

0721_06_52_r0

Bias Control

The **BIAS** control determines whether the path will be pulled towards the previous or the following keyframe. With extreme settings, all of the biasing will occur either before or after KF2. With bias set to 0 (zero), the curve through the keyframe is gentle as shown in Figure 105.

Note   A Tension vector must be present for Bias control to be available.

Figure 105. Bias Control Setting Zero

Tension Vector

Bias Vector

KF1 KF2

Bias = 0.0

KF3

0721_06_53_r0

With the bias set to 1.0, the path is pulled towards the following keyframe. Entry into and exit from the keyframe is a straight line from the previous

keyframe, and the path of the effect travels completely through KF2 before turning towards KF3 (Figure 106).

Figure 106.   Bias Control Setting 1.0

Entry
Bias

KF1

KF2

Tension
Vector

Bias = 1.0

KF3

0721_06_54_r0

With the bias set to -1.0, the path is pulled towards the previous keyframe. Entry into and exit from the keyframe is a straight line to the following key-frame (Figure 107).

Figure 107.   Bias Control Setting -1.0

Tension
Vector

Exit Bias

KF1

KF2

Bias = -1.0

KF3

0721_06_55_r0

System Operation

Introduction

A basic Kalypso system is equipped with a Main panel, a Local Aux panel, a Menu panel, and removable media drives. These separate control panel components make up a Kalypso *control surface*. A control surface is typically used by a single operator. Interactions occur between the components of the control surface. For example, changing controls on the Main panel can change the status of soft buttons on the Menu panel, and vice versa. Remote Aux panels are also available as an option. These remote panels are configured as separate control surfaces, and are typically used by different operators at different locations.

The basic Kalypso system is operated using button, knob, and lever controls on the Main and Aux panels, and button, touch screen, and knob controls on the Menu panel. Text and number entry is also possible via a standard PC computer keyboard. The Main and Aux panels are used during live operation for fast, real time control. The menus are generally used in conjunction with the panel controls to set up effects and for system configuration. Effects can be saved for future immediate recall, allowing fast and precise control of complex visual effects in real time.

The Kalypso Video Production Center is an extremely powerful and flexible production tool, but also provides basic operations available on a typical production switcher. Detailed explanation of basic operation is presented in *Appendix A-Tutorials*.

Main Panel Overview

4-M/E Main Panel

The 4-M/E Kalypso Main panel is designed for large scale live productions. Sources are selected in the four M/Es on the left side of the panel (M/E 1, 2, 3, and PGM PST). Transition, keying, and individual E-MEM control selections are made on the middle right. Delegated controls for various M/E modifiers are at the upper right. Master E-MEM and Transform controls reside on the lower right. Additional specialized control subpanels are available between M/E 3 and the PGM PST buses (Figure 108).

Figure 108. 4-M/E Main Panel and Subpanels

2-M/E Main Panel

The 2-M/E Main panel is similar to the 4-M/E panel (Figure 109). Instead of 3 M/Es and a PGM PST, the 2-M/E Main panel has one M/E bank and one PGM PST bank, though three M/Es and PGM PST are accessible via delegation. Local Aux Bus control capabilities are also built in as a subpanel. The controls on the 2-M/E Main subpanel are essentially identical to those on a 4-M/E panel, though they may be placed at different locations on the panel.

Figure 109. 2-M/E Main Panel and Subpanels

Delegation

Delegation permits a single group of buttons and knobs to control a large number of identical system functional areas, or *objects*. Delegation connects a group of controls, typically a subpanel, to a particular object. Delegation can greatly reduce confusion over which button to press or which knob to turn to control each object in the system.

Delegation on the Kalypso system provides exceptional ease of use and flexibility. The delegation mechanism has intelligent automatic delegation, individual delegation button groups, and a special set of M/E keyer delegation buttons in a column down the center of the Main panel. Together, these capabilities can automatically satisfy almost all of a user's delegation requirements, freeing the operator from manual delegation. Automatic delegation can be instantly disabled and enabled from the Main panel, and manual and momentary delegation remains available at any time.

Automatic Subpanel Delegation

Some Kalypso system control surface subpanels are closely related to one another. For example, when an operator adjusts a key in the Keyers subpanel, he also may wish to also adjust a color for that key in the Mattes subpanel. Or when a key is placed on air by a transition, source selection, or E-MEM recall, the operator may need to quickly adjust some of those keyer's parameters. Having to delegate each subpanel manually before making any changes can slow operational speed and increase the chance of an on-air error.

When an operator activates a particular object of the Kalypso system, one or more subpanels will automatically delegate to control the specific object involved. For example, selecting a key for the next transition on an M/E automatically delegates the Keyers subpanel to control that keyer in that M/E. Likewise, when the delegation of a subpanel changes (manually or through automatic delegation), related subpanels are also delegated automatically. For example, selecting a key for the next transition that has a matte fill active will automatically delegate the Mattes subpanel to control that keyers active matte. The operator can then make changes immediately and reliably, without fear of accidentally affecting another key that is on-air.

Automatic delegations available are listed in Table 2:

Table 2. Automatic Delegations

Subpanel Auto Delegated	Function Initiating Auto Delegation
Keyers and Masks subpanels	Keyer source selection
	Keyer selection for next transition
	Placing keyer on air.
	Pressing an M/E Keyer Delegation button
Mattes and Copy/Swap subpanels	Keyers/Masks sub panel delegation (manual or auto) with a matte active
	Activating a matte fill or borderline in the keyer subpanel
	Activating a wipe border
	Activating a wipe (e.g., in transition panel or keyer preset pattern) with a border active

Automatic delegation only occurs when the operator presses a button on the panel, and does not occur if the panel's state is changed by an external interface, like an edit controller.

Automatic delegations can be quickly disabled at any time on the Keyers and Mattes subpanels by turning off the **Auto Deleg** button.

M/E Keyer Manual Delegation Buttons

The M/E Keyer delegations buttons can be used to delegate the Keyers/Masks subpanel, Mattes subpanel, and/or the Transform subpanel to control an individual keyer of that M/E. This is an extremely powerful

feature, as complete delegation is instantly available with a single keystroke. When held down, these buttons also delegate the keyer source select rows to that keyer. For example, holding down the Key 3 button delegates the K1/K3 button row to control the Key 3 bus.

The M/E Keyer delegation buttons are located near the source select rows which control the keyer's inputs, and also in line with the keyer status displayed in the M/E status display. This provides a good correlation between the keyer of interest and its delegation button.

Multiple Keyer Delegations

The M/E Keyer Delegation buttons can delegate the Keyers, Mattes, Masks, and/or the Transform subpanels to more than one keyer. If a subpanel's controls have been delegated to multiple keyers, the subpanel delegation buttons will go off, to indicate a single keyer is not being controlled by that subpanel. The remaining subpanel buttons can only display status for one of the keyers (the first one pressed). Any changes now made will be applied to all the keyers involved. Any context sensitive delegation inside the subpanel will be based on the first keyer selected. For example, if Key 1 is a Chroma Key and Key 2 is a Preset Pattern, adjusting Clip should change the clip for both Key 1 and Key 2. However, since Key 2 does not u se Clip (being a Preset Pattern) it is unaffected. The size of the Preset Pattern will not change.

Subpanel Manual Delegation Buttons

The Keyers, Masks, Mattes, and Transform subpanels each have groups of buttons that delegate the controls in that subpanel to a particular object. The operator uses these buttons in each subpanel to choose exactly which object to control from that subpanel. The delegation buttons are arranged into one or more interlocked groups. For example, the Mattes subpanel has an M/E group, a Keyer group, and a selection for one of the three mattes associated with each keyer. Complete manual subpanel delegation may require a selection in each interlocked group (e.g., **M/E 3**, **Key 2**, **Borderline**).

Momentary Delegation

An operator may sometimes have subpanel controls delegated to a certain object, but need to make a quick change to a different object. For example, the M/E Keyer delegation buttons permit momentary delegation of the Keyers/Masks and Mattes subpanels. Pressing and holding one of these button for a preset period makes the delegation to that M/E's keyer last only as long as the button is held down. Upon release, the previous delegation is restored. The individual delegation buttons in the Keyers and Mattes subpanels also support momentary delegation. A user preference sets the hold down delay.

Source Select Bus Delegation

Source selection button rows can be delegated to control different source buses using the source select modifier buttons. For example, holding down the **Alt** button allows selection of Keyer 3 and Keyer 4 sources using the two rows of keyer buttons available on the Main panel.

DPOP and SPOP Menu Delegation

DPOP stands for Double Press Open. This is a form of automatic delegation where a specific menu is displayed on the Menu panel when a panel button is pressed twice in rapid succession. A menu can contain controls that do not exist on the Main panel. DPOP makes these additional menu controls readily available. If further delegation exists within the menu, for example to a specific keyer, that delegation occurs as well. If the menu is already open, a single press performs the menu delegation (a second button press is not required).

SPOP stands for Single Press Open. SPOP buttons operate similar to DPOP, but only a single button press is required.

Active DPOP and SPOP buttons and their menus are listed in Table 3.

Table 3. DPOP and SPOP Buttons

DPOP Button	Subpanel	Menu Displayed
Unshift, Shift	All M/E source select modifiers	Shift Preference menu
Wipe 1, Wipe 2	M/E Transition, Mattes subpanels	Wipe menu
C1 Wipe, C2 Wipe, Keyer Wipe	Mattes, Masks, Transform subpanels	
Bkgd 1, 2	Mattes subpanel	Matte menu
Key 1, 2, 3, 4	Mattes subpanel	Matte menu selected keyer delegated
M/E 1, 2, 3, Pgm Pst	Mattes subpanel	Matte menu selected M/E delegated
Borderline, Pst Pts Bord, Matte Fill	Mattes subpanel	Matte menu
Chr Key		Keyer Chroma Key menu
Pst Ptn		Wipe menu
Key 1, 2, 3, 4	Keyers subpanel	Keyer menu selected keyer delegated
M/E 1, 2, 3, Pgm Pst		Keyer menu, selected M/E delegated
Current Prior, Next Prior		Keyer menu, Priority
Router Assign	PGM PST bank	Router Select menu

Table 3. DPOP and SPOP Buttons - (continued)

DPOP Button	Subpanel	Menu Displayed
Global Ch		Transform menu
Locate 3-D	Transform subpanel	Transform menu, selected Transform delegated
Size Locate		
Rotate		
Locate Axis		
Aspect		
Spin		
Skew		
Perspective		
Post Transform		
Source Space		Transform menu, Source space
Target Space		Transform menu, Target space
SPOP Button	**Subpanel**	**Menu Displayed**
Loop Sel	Keyers subpanel	Effects Send menu

Many, but not all, of the buttons supporting DPOP are indicated with two triangles on the lower right of the button legend. Buttons supporting SPOP are indicated with a single triangle at that location. One exception to this labeling occurs for the Bank Selection buttons on the individual E-MEM subpanels, which do not open menus. These buttons display both a single and double triangle to indicate bank selections via single and double pressing these buttons.

Bank Delegation (2-M/E Main Panel Only)

The two banks on the 2-M/E Main panel can be delegated to control different M/Es (provided the Kalypso Video Processor is equipped with additional M/E modules).

Menu Panel Overview

Menu Panel Description

Two models of Kalypso Menu panel exist, the Enhanced Menu panel and the original Menu panel. These Menu panels are essentially identical operationally, except the Enhanced Menu panel has a built-in CD and the original Menu panel has hard menu selection buttons.

Touch Screen

CAUTION Do not apply any sharp or rigid object (no pens or pencils) to the touch screen display surface.

The Menu panel touch screen allows direct interaction with menu controls displayed on the screen. The screen is designed to work with a finger or other soft object. The touch screen is sensitive to a single pressure location only, so only one touch surface control can be adjusted at a time.

Menu Selection

Various Kalypso system operating menus are selected using the Home menu (Figure 110), which itself is accessed by touching the menu name on the top line of any menu. When a menu is accessed, it is initially displayed in the state it was in when last used.

Figure 110. Home Menu

The original Menu panel also has hard buttons on the left side that correspond to the soft buttons on the Home menu. The hard button for the currently displayed menu will be high tally.

Soft Knobs

Figure 111. Soft Knob and Pad

Knobs along the right side of the Menu panel can be used to dial in parameter values for functions displayed on the touch screen. When a knob is active, the touch screen displays the parameter name and its current value on a data pad (Figure 111). The parameter can be adjusted by turning the knob, or the data pad can be touched to bring up a numeric keypad.

Menu Screen Organization and Components

Kalypso system menus are context sensitive. They display different information and provide various types of controls depending on what area of the system is involved. A representative menu screen (Keyer Mode menu) is shown in Figure 112.

Figure 112. Keyer Mode Menu Example

Data Pads and Touch Buttons

The Kalypso system menus make extensive use of data pads. Data pads are active areas on the screen that display a summary of the status of an object, and when touched bring up additional controls and information for that object. In Figure 112, the data pad for M/E 1 Keyer 1 has been selected, causing the rest of the screen to display settings and controls for that keyer. A special pattern data pad also exists, which displays the shape of the current pattern (the circle shape in Figure 112). Touching this data pad brings up a wipes palette, from which wipe pattern generator shapes are selected.

Touch buttons are labeled by their function and do not display data. Examples of touch button functions include selecting an operating mode (**Preset Pattern** in Figure 112), or turning on an attribute (**Matte Fill** in Figure 112). Touching these buttons will immediately activate their function. Touch buttons can control on/off functions, and have an indicator on the left side (**Matte Fill** in Figure 112), or they can select from a group of parameters, and turn gold to indicate the state of that parameter (**Preset Pattern** in Figure 112). For on/off buttons, the color of the indicator shows the relative importance of the function. Green indicates this is a normal parameter and that either an on or off state is typical. Yellow indicates an active function that may change expected behavior. Red indicates an active function which significantly changes normal behavior.

Touch buttons and other elements on the screen colored gray are inactive.

Menu Top Line

The top line is identical in all the Kalypso system menus.

The left portion of the top line has two menu navigation buttons. The **Last Menu** button takes you to the last menu selected before the current menu, ignoring the Home menu. The **Home** button takes you to the Home menu.

The center portion of the top line identifies the name of the current menu.

The right portion of the top line is an operator notification area, where messages generated by the Kalypso system are displayed.

Menu Category Selection

Menu category selection touch buttons are arranged along the bottom of the screen (**Mode**, **B-Line**, **Priority**, etc. in the example). Touching one of these buttons takes you directly to that category. The currently selected category is shown by the green indicator on the touch button.

Some configuration menus have additional subcategory selections available at the left edge of the menu. The selected subcategory button is colored gold.

Delegation Group

Additional levels of delegation are needed in the Keyer menu, since it must control all 16 keyers. This highest level of delegation is located on the left side of the menu, as a 4 x 4 grid of data pads (four M/Es, each with four keyers). Data pads display limited status for a particular object. Touching a data pad delegates that object, and the rest of the menu will then display information and controls for only that object. The data pad of the selected object is colored gold.

Parameter Control Area

In the Keyer menu example, a Parameter Control area contains function selection touch buttons and soft knob pads for the selected operating mode. Function selection touch buttons either toggle on and off or are part of an interlocked group.The soft knob pads on the right allow individual parameter adjustments, as described earlier.

Numeric Keypad

Touching a soft knob pad or other single numeric parameter pad brings up a numeric keypad that can be used to enter exact values (Figure 113). You can also use a standard computer keyboard to enter information while this display is active.

Figure 113. Numeric Keypad

Alphanumeric Keypad

Touching the pad for a text parameter brings up an alphanumeric keypad (Figure 114). You can also use a standard computer keyboard to enter information while this display is active.

Figure 114. Alphanumeric keypad

Scrolling Lists

Figure 115. Scrolling List

When multiple items are available for selection, scrolling lists are used (Figure 115). On most menus, touching the up and down triangle buttons scrolls the list up or down one item. When the top or bottom of the list is reached, that button goes gray. Touching the green area above or below the white handle scrolls the list up or down one group of items. You can also drag the white handle to quickly scroll through the entire list on some menus.

Some menus have two scrolling lists, used to associate an item in one list to an item in the other list (Figure 116). Typically you choose an item on the left list, and the system automatically selects the item currently associated with it on the right list. You can then choose a different item from right list to change the association. Some of these menus have a **Lock** button for the right list. This prevents that list from scrolling to the currently associated item when an item on the left pane is selected. This does not prevent the selection of the associated item, but just keeps the list from scrolling. This allows you to quickly make multiple associations for items arranged near each other on the lists.

Figure 116. Paired Scroll Lists with Lock On

Menu and Panel Interactions

The Main panel, Local Aux panel, and Menu panel operate as a single control surface, and so these components interact with one another. Many controls on the Main panel are duplicated on the Menu panel screens. For example, a keyer can be set to use a Chroma key with a Main panel button or a Menu touch button. Other controls, like manual Chroma key settings, are only available on the Menu panel.

Double Press Open (DPOP) and Single Press Open (SPOP) are convenient ways to access related menus when working on the Main panel. Double pressing or single pressing certain buttons bring up particular menus.

Once that menu is displayed, delegation changes affecting that menu that are made on the Main panel will be tracked on the Menu panel. For example, if M/E 3 Key 1 is selected on a menu, and then M/E 3 Key 2 is selected on the Main panel, the menu display will change its delegation to M/E 3 Key 2. However, the reverse is not true. Changing delegations on the Menu panel does not change Main panel delegations.

When both the Main panel and the Menu panel are delegated to the same object (say, M/E 1, Key 1), changes can be made to that object from either panel. Once the change occurs, both panels will be updated to reflect the status of the object. Both panels do not need to be delegated to the same object to enact a change, however. Suppose the Main panel is delegated to control M/E 1, Key 1 while the Menu panel is delegated to M/E 2, Key 2. Changes made on the Menu panel will affect only M/E 2, Key 2, and changes made on the Main panel will affect only M/E 1 Key 1. When the delegation of either panel is changed to a new object, that object's current

status (which may have been changed since last shown) will be reflected on that panel.

Power Up

The Kalypso Video Processor power supply, Video Processor frame, and Main panel must be powered up for full system operation. The Menu panel and (on 4-M/E systems) the Local Aux panel receive their primary power from the Main panel.

Note   There are two models of Kalypso Video Power Supply. Please refer to *Kalypso Video Processor Power Supply on page 50* for more information.

1. Set all the power switches on the Video Processor Power Supply to On (Figure 117).

Figure 117.   Video Processor Power Supply, Front View

Power Supply
Switches (3)

2. Set the power switch on the Video Processor Frame to On (Figure 118 for Kalypso Classic systems, Figure 119 on Kalypso HD/Duo systems).

Figure 118.   Kalypso Classic Video Processor Frame, Front View, Door Open

Kalypso SD
Video Processor Frame
Power Switch

Figure 119. Kalypso HD/Duo Video Processor Frame, Front View, Door Open

Kalypso HD
Video Processor Frame
Power Switch

CAUTION The front door of the Kalypso Video Processor must remain closed during normal system operation for proper cooling airflow.

3. Set the power switch(es) in the Main Panel tub enclosure to On (Figure 120).

Figure 120. Main Panel, Lid Open

Primary
Power Supply
Switch

Redundant
Power Supply
Switch

When the Kalypso system powers up or is reset, the first system elements activated are the PGM PST buses, transition, and keying controls. This permits rapid on-air recovery of basic system operations. Sources can be cut, mixed, and wiped, and keys can be placed on and off air while the rest of the system initializes. The Menu panel system is the last item to initialize after system power up. When the system is completely ready for operation the Menu panel will display a Kalypso menu and the Main panel and Local Aux panels will report sources on their Source Name displays.

Note   If a **Frame Not Connected** or similar message appears on a panel, communication with the Video Processor frame has been interrupted. The frame may need to be powered up or reset, the IP Address may be incorrect, or some other LAN problem may exist that will need to be corrected.

Wait Time for NV Memory Update

Kalypso system NV memory is automatically updated on a regular basis, and NV memory is automatically loaded when the Video Processor frame is reset or rebooted.

Note   After making any configuration changes, wait at least 3 minutes before rebooting the Video Processor frame. This time is needed to ensure NV memory is updated with the changed values.

When configuration changes are made (Engineering Setups, Suite Prefs, User Prefs) these changes immediately affect Kalypso system operation, but the settings are not immediately transferred to NV memory. The changes are sent at the next regular NV memory update. This causes a short time lag from when configuration changes are made in a menu and when they are available for use during a frame reset. Waiting three minutes before resetting the frame allows time for two updates, and helps ensure the data is sent to the frame that the menu is communicating with.

Note   After changing between HD and SD operation or between Single and Multi Suite modes a Video Processor frame reset is required. For these two configuration changes you do not need to wait three minutes before resetting, provided the system has been in operation for at least three minutes after bootup to allow NV Memory saves to be enabled.

Default Keyframe

Default Keyframe settings are applied when an empty register is recalled and when the **Clear Work Buffer** button is pressed. The Default Keyframe menu is used to learn the current Kalypso panel state to the system's Default Keyframe (and to set the Default Keyframe back to factory settings). Individual settings for each M/Es are stored in the Default Keyframe, so different states can be saved for different M/Es, if desired.

The Default Keyframe menu is accessed by touching **Daily Setups**, **Suite Prefs**, **Default Keyframe** (Figure 121).

Figure 121. Default Keyframe Menu

To Learn a Default Keyframe:

1. Setup the entire Kalypso Main panel to the desired state.

2. Press the **Learn** button in the Default Keyframe pane.

Pressing the **Set** button overwrites the Default Keyframe with factory defaults.

Note   You should save your current Suite Profile, which includes the Default Keyframe settings, before resetting to factory defaults.

Button Mapping

Button mapping assigns video sources to source selection buttons (Source Button mapping). Button mapping is also used to assign Aux buses to delegation buttons (Aux Deleg mapping). This allows you customize the Main Panel, Local Aux panel, and each configured Remote Aux panels to meet your individual needs. Button mapping settings are included as part of

User Preferences, and can be saved and instantly loaded for use at any time (see *File Operations on page 155*).

The factory default button mappings for the local panels

Button mappings of the Main panel and Local Aux panel are set at the factory before shipment to the settings listed in Table 4 (4-M/E systems) and Table 5 (2-M/E systems).

Table 4. 4-M/E Factory Configured Source to Button Mapping

Panel Button	Unshifted	Shifted
Button 1	Black	Test
Buttons 2-31	Source 2 - 31	Source 34 - 63
Button 32	Bkgd 1	Bkgd 2

Table 5. 2-M/E Factory Configured Source to Button Mapping

Panel Button	Unshifted	Shifted
Button 1	Black	Test
Buttons 2-23	Source 2 - 23	Source 34 - 63
Button 24	Bkgd 1	Bkgd 2

If a Kalypso system's NV memory is cleared, local panel button mappings will revert to the 4-M/E factory default shown in Table 4.

Source Button Mapping

On the Kalypso system, each bank on the Main Panel can have its own independent source to button mapping, if desired. The Local Aux panel can also have different button mappings, as well as each Remote Aux panel. Typically button mappings on the Main Panel are set the same, for operating simplicity. However, in some situations individual bank mapping can be advantageous. For example, on a show with a large number of sources you can place all the DDR and VTR sources on one bank, all the cameras on another bank, etc., and then have direct access to any desired source. If you use this feature, your system should be equipped with source name displays on all banks so the different sources can be identified.

The Button Mapping menu is accessed by touching **Daily Setups**, **User Prefs**, **Button Mapping** (Figure 122).

Figure 122. Button Mapping Menu

The **Panel Type** delegation buttons are used to select the device to be mapped.

Local Panel Source Button Mapping

The Kalypso Main panel and Local Aux panel are considered local panels. Local panel button mappings can be defined the same for all the banks at once, or you can select individual local panel banks to map differently.

1. Select the **Local** Panel Type button (Figure 122).

2. Touch the labeled Bank button(s) of the banks you wish to map. You can select one, some, for all of the banks to be mapped. Notice that a button for the Local Aux panel is included with the other local banks.

3. Scroll the Button list in the central pane and touch the bank source button to be mapped in the center pane.

4. Scroll the Sources list on the right and touch the desired Kalypso source in the right pane. As the mappings change, the names of the different sources will appear on the source name displays on the Main Panel and/or Local Aux panel.

5. Repeat Step 3 and Step 4 until all the bank buttons have been mapped.

6. If you map a source to a button that is currently mapped to another source, a warning dialog box may appear (Figure 123).

Figure 123. Button Mapping Warning Dialog

- Selecting **Yes** maps the source to the button. The button originally mapped to that source becomes unassigned.

- Selecting **No** clears the window without making any changes.

- Selecting the check box allows mapping already assigned sources without bringing up the dialog box. Resetting the Menu panel automatically clears the check box.

Remote Aux Panel Source Button Mapping

Note   Remote Aux Panels must be installed and configured before their buttons can be mapped. Remote Aux Panels assigned to a control surface can only be configured when the Menu panel is accessing that control surface. Remote Aux Panels configured as Independent are only accessible when logged in as the EIC. See the separate *Kalypso Installation and Service Manual* for Remote Aux panel configuration procedures.

1. Select the **Remote** Panel Type button. This delegates the menu to control Remote Aux panels. The name of the last Remote Aux panel(s) selected for mapping appears in the Remote Panels data pad (Figure 124).

Figure 124. Remote Aux Panel Button Mapping Menu

2. Touch the Remote Panels data pad to bring up a selection menu, permitting the selection of one or more Remote Aux panels (Figure 125).

Figure 125. Remote Aux Panel Selection Menu

3. Individual Remote Aux panels are selected by touching the buttons in the large pane. Buttons on the right allow selection of a group of Remote Aux panels, by type. Only the same type of Remote Aux panel can be selected with the Select All buttons or individually. An attempt to select both a 24 button and a 32 button panel will be rejected with a message posted indicating the panels are not the same type.

4. After selecting the desired panel(s), touch **Done** to return to the previous menu (Figure 124 on page 145). When multiple Remote Aux panels are selected, changing a button's mapping applies that individual button's mapping to all the selected Remote Aux panels.

5. Use the same Local Panel button mapping procedure (page 143) to map the source buttons on the Aux panel. Select the Local Aux source button in the central pane, then select the Kalypso source in the right pane.

Note Button mapping settings for Remote Aux Panels assigned to a Control Surface are saved to the User Pref configuration file. Button mapping settings for Independent Remote Aux panels are saved to the Eng Setups configuration file.

Aux Bus Delegation Button Mapping

On multiple destination Local and Remote Aux panels, delegation buttons are used to select which Aux bus is delegated for control by that panel. You map Aux buses to delegation buttons using the Daily Setups - Aux Delegation menu, accessed by pressing **Daily Setups**, **User Prefs**, **Aux Deleg Mapping** (Figure 126).

Figure 126. Aux Bus Delegation Button Mapping Menu

To Map Local Aux Panel Delegation Buttons:

1. Touch the **Local** Panel type button.

2. Scroll the central pane and select the Aux Bus delegation button you wish to map.

3. Scroll the Aux Buses list on the right and select the desired Aux Bus for that delegation button.

To Map Remote Aux Panel Delegation Buttons:

1. Touch the **Remote** Panel type button.

2. Touch the Remote Aux Panel data pad and choose the Remote Aux panel to configure. Only one Remote Aux panel can be selected at a time.

3. Touch **Done** to return to the previous menu.

4. Scroll the central panel and select the Aux Bus delegation button you wish to map.

5. Scroll the Aux Buses list on the right and select the desired Aux Bus.

Note   Button delegation settings for Remote Aux Panels assigned to a Control Surface are saved to the User Pref configuration file. Button mapping settings for Independent Remote Aux panels are saved to the Eng Setups configuration file.

Source Patching

Source Names and Source Patching

Facility engineers need to know the exact routing of all the video signals connecting all the devices they are responsible for. These engineers need to be able to identify video signals in a way that will help them connect devices properly. Production personnel, on the other hand, are interested in the content they work with for their shows, and are generally not concerned about which individual device or routing path is used to make those signals available. They just need a way to identify the content and access it when they need it. To support these differing needs, two source naming mechanisms are available on Kalypso systems; Engineering and Logical.

Engineering names and Engineering IDs are intended to identify a source as it applies to a specific facility. In a truck, for example, cameras may be hard wired to the production switcher and might be given Engineering names 1, 2, and 3. Names like Patch 14 or Rtr 5 may be used for inputs that are patched or routed.

Logical names, Logical nicknames, and Logical IDs (set as a Suite Preference using the Source Patch menu) are intended to identify the use of a source for a particular show. For example, VTRs may be given Blue, Red, and Gold Logical names. DDR channels might be named A, B, and C. Cameras might be identified by the camera number and each operator's name (which may change from program to program). To support this added level of variability, both Logical names and Logical nicknames can be used to label sources differently for varying conditions.

The Kalypso system provides a way to map Engineering source IDs to Logical source IDs, using the Source Patch feature. By default this mapping is one-to-one, but this feature can be used to quickly set up production elements for use in a different facility. For example, a show's effects, DDR clips, and taped material may have been built in one production truck with one set of devices, but the next show is scheduled for a different truck. Pre-

viously, to use effects in the other truck the Technical Director (TD) would need to edit the engineering source definitions in the new truck so they exactly matched the old truck. In some cases six settings would have to be changed, and tally outputs would also need to be repatched. With the Kalypso 15.0 release, by remapping the Engineering sources of the devices in the new truck to the Logical sources used to build the effects, all the effects can be used without having to edit them. Source Patch can also be used to quickly swap out a defective device during a show without having to reconfigure the Engineering sources. In this case Logical names seen by the production personnel would be identical for that content, even though the actual device playing the material changed.

Name Display Hierarchy

Different source names may appear at different locations of the Kalypso system, depending on what names have been defined. The following rules are used to determine which name is displayed:

Only Engineering names or Engineering ID numbers appear in the Eng Setup menus. If an Engineering name has not been entered, the Engineering ID number is displayed on these menus.

Logical names and nicknames can appear on the Main panel, the Local and Remote Aux panels, and on the Menu panel. On M/E and Aux panel Source Name Displays, if a Logical nickname exists, that name for that source will be displayed. Otherwise, if a Logical name exists, that name will be displayed. Otherwise, if an Engineering name exists, that name will be displayed. Otherwise, the Logical ID number will be displayed. For other displays (M/E status and all menus) the above logic is also used, except if both a Logical name and a Logical nickname exists, the Logical name is shown on these displays, and the Logical nickname continues to appear on the Source Name Displays.

Naming Guidelines

It is not necessary to define an Engineering name, Logical name, and Logical nickname for every Kalypso source. It is generally a good practice to create the least number of names possible. This ensures consistency in the various displays and reduces the time needed to enter and edit the names. If you can create short Engineering names that work for both the production staff and engineering, complete naming consistency is assured. However, this level of simplicity is probably only feasible at a fixed installation where all the shows use the same source names.

The additional naming capabilities available on the Kalypso system can help make everyone's job easier. Operators often require program specific source names, but engineers may need technical names not of any value to the operators. Separate engineering and logical names solves this problem. Operators also may prefer to see short names on the Main panel. They know a particular group of buttons are the cameras, so a number is suffi-

cient. But in other contexts, more descriptive names may be necessary. Separate names and nicknames solves this problem.

Defining Logical names that fit well on the Source Name Displays makes it unnecessary to enter a Logical nickname, simplifying the naming process. However, should you want different information on the Source Name Displays, you can do this by entering both a Logical name and Logical nickname. For example, you may give the cameras Logical names that include the operator (C1 Bob, C2 Phil, and C3 Bill), but remove the operator names to the nicknames so the Source Name Displays show C1, C2, and C3 in larger characters. When both Logical names and nicknames are used, they should be similar to make it easy to recognize they represent the same source.

The Source Name Displays on the Main panel and Aux panels size the text for the best fit. The display can show up to three lines, using large, medium, and small font sizes. A space in a name forces a line break. Single letters and two numbers use the largest font size. Names like Cam 1 or VT 3 split to two lines and use the medium font. In the case of cameras, using only numbers (1, 2, 12) provides the largest size text. Character number and size (capital letters are wider, and W is wider than I) affects the display. For example, CAM 1 and Blue use the smallest font, but C1 and Blu use the medium font. XXXXXX uses two lines, but xxxxxx and IIIIII use only one line. When the Source Name Displays are set to display both shifted and unshifted names, only one line of text is available for each name. If a name overfills its allotted space, the end of the name is truncated. Some experimentation with capitalization and abbreviations may be required for the best fit and readability of names. In general the shorter the name the better.

Source names displayed on Menu buttons will look different from the same names on the Source Name Displays. The menus use only one font size, cannot show three lines of text, and may not show nicknames. The ends of long names are truncated on the menus. Should you define long names with qualifiers at the ends, indistinguishable source names on the menu buttons can result. Check the names on both the Source Name Displays and the Menu buttons as you define them to ensure each one appears unique. While it is possible to define the same name for different sources, this is obviously not recommended as it will cause considerable confusion.

If logical names are limited to numbers, make them the same as the logical ID number and patch them to the appropriate engineering source. This minimizes confusion between the name and the ID number.

Using Source Patching for Effects Portability

Source patching makes it possible to built effects on a Kalypso system in one facility or truck, and then use those effects on a different Kalypso system at another facility that has different Engineering source configurations. Building a Source Patch table prior to effects creation simplifies the migration of effects between facilities.

Plan out the sources you will use for a show, even ones that may not exist on the system where you are creating the effects. Build a list of Logical sources in the Source Patch menu without regard to the currently associated Engineering sources. After the list is built, map one of the facility's existing Engineering sources to each Logical source. If physical devices don't exist for some planned sources, substitute a dummy Engineering source. You can then build your effects and verify that they run properly. When you are satisfied with the effects, save the Suite Prefs and E-MEM effects you created to Zip disk. At the new facility, load these files into that Kalypso system. Do not load the Eng Setups of one facility into the other, as this will overwrite that facility's existing Engineering configuration.

Once the Suite Prefs and effects are loaded at the new facility, go to the Source Patch menu and map the appropriate Engineering sources of the new facility to the original list of Logical sources. Your effects should now run as previously designed without having to edit or rebuild them. When satisfied the effects run correctly at the new facility, save that Suite Prefs under a different name for use the next time you use this facility. Do not overwrite the original Suite Prefs, as you will need it when you return to the original facility.

Source Patching Procedure

1. Touch **Daily Setup**, **Suite Prefs**, **Source Patch** to go to the Source Patch menu ([Figure 127](#)).

Figure 127. Source Patch Menu

2. Select the Logical ID of the source you wish to change by either:

• Scrolling through the list with the Logical Source soft knob. This changes the current selection.

• Scroll through the list with the scroll bar on the right. This scrolls the list without changing the current selection. When the desired source appears on the menu, touch it's Logical ID button to select it.

3. Name the source by touching the **Logical Name** and/or **Logical Nickname** data pads and entering the desired names using the popup keypad (see *Naming Guidelines on page 149*).

4. If you wish to change the source patching, select an Engineering source to be associated with the currently selected Logical source with the Engineering Source soft knob (see *Using Source Patching for Effects Portability on page 150*).

Note   Source Patching is the bridge between engineering sources and logical sources. Both TD and EIC should make reference to this menu when resolving source issues. The mechanism is similar in concept to a physical patch panel. Effects and all source selections are based on logical sources. Tally and associations with external devices are based on engineering sources.

Tri-Color Source Name Display Setting

The Main panel and Local Aux panel source name displays can be set to display red, green, and amber colors, which can be applied either to the text or the background. One example of using color is to make the names of all the cameras appear green, all the character generators appear yellow, and the network feeds appear red.

To Assign Colors to a Source Name Display:

1. Touch **Daily Setups**, **Suite Prefs**, **Source Patch** to go to the Source Patch menu (Figure 127 on page 152).

2. Select the Logical ID of the desired source.

3. Select the desired color with the **Red**, **Green**, or **Amber** Display Color buttons at the bottom of the menu. The default is green letters on a dark background.

4. Selecting the **Inverse** button displays dark text over a colored background.

PBus Patching Procedure (Single Suite Mode)

PBus devices can now be patched, allowing easy reuse of E-MEM effects built on different Kalypso systems with different PBus port assignments.

Two different patching mechanism exist. In Single Suite mode a new PBus Patch menu is available, and in Multi Suite Mode the Acquire menu has been enhanced to support PBus patching (see *Setting Up Resource Sharing on page 340* for more Multi Suite Mode and Aquire menu information).

The PBus Patch menus is accessed via **Daily Setups**, **Suite Prefs**, **PBus Patch** (Figure 128).

Figure 128. PBus Patch Menu, Single Suite Mode

To patch the PBus devices, select a Logical ID of the device in the left pane, and then select the Physical PBus button on the right pane. The current mappings are reported in the central status boxes.

File Operations

The Kalypso system has a file browser. You can browse through selected folders on the local Kalypso Menu Processor hard disk, the Kalypso Video Processor frame hard disk, the optional Kalypso Still Store hard disk, and the entire network file hierarchy of mapped drives.

Features

The Kalypso file browser supports the following features:

*   Navigate through the C:\KalypsoUser folder on the local Menu Processor hard disk, the Frame:C:\User folder on the Video Processor frame hard disk, and access all mapped network drives including Zip disk,

*   Save and Load User Prefs, Suite Prefs, Source Memory, Eng Setup, E-MEM, R-MEM, Macro, and Still Store files,

*   Organize collections of files as Shows,

*   Sort files by name and type, and in reverse alphabetical order,

*   Create new folders,

*   Copy/Paste, and Delete files,

*   Rename files and folders, and

*   Select multiple files.

Introduction

Kalypso system files are *saved* to the location that has been navigated to with the browser, creating copies of the information currently in use by the Kalypso system. Files are *copied* from one location to another without affecting the current operation of the Kalypso system. File information is *loaded* to Kalypso system RAM, and this immediately affects the operation and capabilities of the Kalypso system.

File operations are available from several menus (File Ops, Daily Setups, Eng Setups, E-MEM, etc.). The same basic operating procedures are used at each location.

File Type Extensions

Kalypso files are named by the user when saved, and this name appears below the icon. The name of the type of file is included in the icon. The extension for each Kalypso system file type is listed in Table 6.

Table 6. Kalypso System File Extensions

Icon Example	File Type	Extension
	User Prefs	.GVU .GVW
	Suite Prefs	.GVS .GVZ
	Source Mem	.GVM
	Eng Setup	.GVE .GVN
	E-MEM Reg	.GVR
	R-MEM Reg	.GVY
	SS Image (includes SS Meta)	.GVI .GVA
	Macro Reg	.GVG
	Show Folders	.GVV

The extension is added to the file automatically when saved, but is not displayed as part of the file name itself. To prevent confusion, do not try to add an extension to the file name when saving files.

Non-Kalypso system files in the File Operations menus display their names without extension and show their standard Windows associated icons.

Kalypso Drive Access

The Kalypso File Operation menus can access the User directories located on the Frame hard drive, the Menu Processor hard drive, and the Still Store hard drive. Local and network drives mapped on the Menu processor Windows system are also accessible (including Zip). Standard Windows functionality automatically maps all local drives during startup. Mapping network drives to a drive letter using the Windows Explorer allows them to appear at the top of the File Operation menus on that menu system. If multiple menu systems are run on the same Kalypso system, each menu system's view of local vs. network drives will vary. Unless Windows is set up to share a local drive to other computers on the network, other menu systems will not display them. For this reason, the Menu Processor hard drive is not recommended for effects or configuration storage. Instead, store the files you wish to share on the Video Processor Frame hard drive. Files you do not want to share, or you wish to back up off the system, can be saved to Zip.

File Storage Organization

The file browser gives you great flexibility for choosing and creating storage locations for your files. Any number of folders can be created in various locations. File folders and the files themselves can be named in any manner. To prevent accidentally saving and loading incorrect files, your facility should establish file storage and naming conventions and follow them consistently.

The engineer in charge should create default User and Suite Prefs files that are not to be modified by anyone. These can provide a known starting point for users when they build their own preference files.

Experienced users may want to create their own sets of preference files and save only critical ones in the Frame User directory. Other files can be loaded using the browser from any directory or be placed on a personal Zip disk.

Use the Show feature to manages groups of files routinely used together for a particular production.

Save important files to Zip disk for backup, clearly label each disk (perhaps including the date), and store them in a safe place.

Formatting Zip Disks

If you have unformatted Zip disks, or Zip disks formatted for other platforms (e.g., Mac), they will need to be formatted for use on the Kalypso system. This is done using standard Windows disk operations. A mouse is required (to right click), and if you name the volume you will need a keyboard.

CAUTION Formatting will erase any existing data residing on the disk.

1. Insert the Zip disk to be formatted into the Kalypso system removable drive.

2. Go to the Windows desktop by touching the upper right message area of any Kalypso menu.

3. Double click **My Computer**, then right click on the Removable drive icon (usually D:).

4. Select **Format** from the drop down menu.

5. If you wish, name the disk by entering a Volume label.

6. Click **Start**, then **OK** at the precautionary message.

7. When done, a Format Complete dialog box will appear. Click **OK**.

8. Double click on the **Kalypso Menu** icon to return to normal system operation.

File Operations All Files Menu

The File Operations All Files menu is used for managing Kalypso system file storage. The menu is accessed from the Home menu via **File Ops, All Files** (Figure 129).

Note Copy/Paste and Move file operations are also available on the various Save-Load Menus for specific file types (Daily Setups, E-MEM, etc.).

Figure 129. File Operations Menu

Note Use clear naming conventions and logical directory structures when creating folders and renaming files so you can reliably reload the correct versions of these files when you need them.

Copy/Pasting Files

1. Navigate to the directory containing the file to be copied, using the buttons on the right.

2. Select the file(s) to be copied.

3. Touch the **Copy** button. A file display pane will split, and a new pane with its own scroll bar will appear below it. **Up**, **Top**, and **Open** navigation buttons will also appear for the lower pane (Figure 130). Files can only be pasted to the new lower pane. The **Delete**, **Create Folder**, and **Rename** functions apply to the upper pane only, and are inactive during a Copy/Paste operation.

Figure 130. File Operations Menu with Copy Pane

4. Navigate the lower pane to the desired directory, using its navigation buttons.

5. Touch the **Paste** button. A message indicating the file is being copied will be displayed, and when finished the lower pane will go away.

Moving Files

1. Follow the Copy/Paste procedure described above.

2. Select the original file in the original directory and press **Delete**.

Show File Operations

The File Ops Show menu (accessed from the Home menu via **File Ops**, **Show**) is used to create, save, and load Shows ([Figure 131](#)). A Show is a special collection of Kalypso files that can be managed as a group.

Figure 131. File Operations Show Menu

Create Show

Pressing the **Create Show** button opens a create show pane ([Figure 132](#)).

Figure 132. File Operations Show Create Menu

In this pane you enter the name of the Show (touch the Show Name data pad) and you can select which file types and which range of files will be included in the Show.

The **Select All** and **Deselect Al**l buttons select or deselect all the available file types. Touching on a file type button selects or deselects that individual type of file for loading. Touching on a lower data pad allows you to enter a range of files of that type to include in the show.

Pressing **Create** saves the show into the currently selected directory. The status of the operations are reported as they progress.

Choose Load

Pressing **Choose Load** brings up a pane that allows you to see what files are contained in the Show, and select which files to load. Buttons for files not present are grayed out. By default all the files in the Show are selected for load.

Figure 133. File Operations Choose Load Menu

The controls in this pane operate the same as the Create Show, except the **Load** button replaces the Create button.

Specify the file types and ranges of files you wish to load, then touch the **Load** button.

Update Show

Pressing **Update Show** brings up a pane that allows you to select specific files within a show to update.

Figure 134. File Operations Update Show Menu

Specify the file types and ranges of files you wish to update, then touch the **Update** button. The selected files in the show will be overwritten with the current Kalypso settings for those items.

Load Show

Pressing the **Load Show** button immediately loads all the files in the currently selected show into the Kalypso system. This operation will overwrite the existing settings that are currently being used. While the current work buffer and video outputs will not be affected, other aspects of system operation (source mapping, source name displays, available effects, etc.) will change depending on what files are being loaded.

CAUTION   Be sure the Show contains appropriate files before you load a Show, especially if the system is currently on-air. Choose Load can be used to inspect the Show and select files before loading.

Daily Setups Save-Load Menu

The Daily Setups Save-Load menu is used to save and load User Prefs, Suite Prefs, and Source Memory. Only these file formats are supported in this menu. The menu is accessed by touching **Daily Setups**, **Save Load** (Figure 135).

Figure 135. Daily Setups - Save Load Menu

The Daily Setups Save-Load menu is similar to the File Operations All Files menu, with a file display pane on the left and some of the same navigation and action buttons on the right. An additional Save and Load pane of controls is on the lower right.

To Save a Preference or Source Memory File:

1. Touch the button of the type of file you wish to save (User Pref, Suite Pref, or Source Memory).

2. Navigate to the desired destination directory and/or create a new folder for the file using the buttons in the upper right.

3. Touch the File Name data pad and enter the name you wish the saved file to have.

4. Touch the **Save** button.

To Load a Preference or Source Memory File:

1. Navigate to the directory containing the file you wish to load, using the buttons in the upper right. If the file is included in a Show, open the Show folder to access the desired file.

2. Touch the icon of the desired file so it is highlighted.

3. Touch the **Load** button.

CAUTION   The Load button immediately replaces information the Kalypso system is currently using with the selected file information. When configuration files are loaded, significant changes to Kalypso system operation are possible.

Access to Configuration Files Previously Saved as Profiles

The Profiles menu is not available in Kalypso 12.0 and later releases. Configuration files that were previously saved using the Profiles menu are still accessible, however. Simply navigate to the Profiles directory from the Daily Setups Save-Load menu.

Eng Setups Save-Load Menu

The Eng Setups Save-Load menu is used to save and load Engineering Setups information. Only this file format is supported in this menu. The menu is accessed by touching **Eng Setups**, **Save Load** (Figure 136).

Figure 136. Eng Setup Save-Load Menu

The Eng Setups Save-Load menu is similar to the Daily Setups Save-Load menu (page 164) and operates in the same way, except there is only one type of Engineering Setup file.

Set the desired parameters in the various Eng Setup menus, then name and save the setup into a file in a destination folder.

CAUTION   The Load button immediately replaces information the Kalypso system is currently using with the selected file information. When configuration files are loaded, significant changes to Kalypso system operation are possible.

EIC Login

A login procedure is required before any changes to Eng Setups parameters can be made. This restriction applies to loading Eng Setup configuration files. Each login session has a pre-determined time-out. A separate security feature can also be activated that requires entry of a password before Eng Setups changes can be made.

An **EIC not logged on - changes ignored** message appears at the top of each Eng Setups menu if you are not logged on. You can access all the menus and view the settings, but attempts to change them posts an **ACCESS DENIED** message. To make changes, you can login as the EIC with the EIC Login menu, accessed by touching **Daily Setups**, **EIC Login** (Figure 137).

Figure 137. EIC Login Menu

1. Use the soft knob or touch the Login Time data pad and enter a time duration for the EIC session. If no time is entered a default time of 60 minutes will be used.

2. Touch the **Login** button.

   a. If password security has not been activated you are immediately logged in and can modify the Eng Setups parameters for the specified time.

   b. If password security is active, a popup keypad appears into which you can enter the password. After the correct password is entered you will be logged in and can make changes for the specified time.

After logging in, an **EIC login active - changes allowed** message appears when you access an Eng Setup menu.

Note   If operating in Multi Suite mode, it is possible to login as the EIC to a different suite and/or control surface. See *Control Surface Login to Another Suite on page 351*.

EIC Login Shortcut

If while in an Engineering Setup menu you attempt to make a change when not logged in as the EIC, the EIC login popup appears (Figure 138), allowing you to login without having to navigate to the Daily Setups EIC login menu.

Figure 138. EIC Login Popup Screen

E-MEM Save-Load Menu

The E-MEM Save-Load menu is accessed by touching **E-MEM**, **Save Load** (Figure 139).

Figure 139. E-MEM Save-Load Menu

Saving and loading E-MEMs is similar to the file operations described above, except you can choose to save or load all the current E-MEMS, a range of E-MEMs, or a single E-MEM file.

E-MEM files are named by their bank and register number. For example, the filename for E-MEM register 5 in Bank 2 would appear as EMEM25. File names consist of the bank and register appended with .GVR. It is important that these files retain these names, as the number determines which register will receive the data when files are loaded. In fact, E-MEM files saved locally to the Frame:C drive cannot be renamed. If you try to rename an E-MEM file on the Frame:C drive an error message will appear in the message area. If for some reason an E-MEM file needs to be renamed, copy it to a local drive and rename it.

Saving E-MEMs

Save All E-MEMs

1. Go the E-MEM Save-Load Menu.

2. Navigate to the desired destination directory and/or create a new folder for the file using the buttons in the upper right.

3. Touch the **All** button, then touch the **Save** button.

All 100 registers will be saved into the directory named in the Target Location data pad.

Save E-MEM Range

1. Go the E-MEM Save-Load Menu.

2. Navigate to the desired destination directory and/or create a new folder for the file using the buttons in the upper right.

3. Touch the **Enter Reg(s)** button, then touch the Register(s) data pad. A keypad appears allowing the entry of a range of registers or banks (Figure 140).

Figure 140. File Operations Range Entry Window

4. Be sure to select the correct Entry Mode, either **Register** or **Bank**, on the lower left.

5. Enter the desired range of registers or banks on the keypad, using the **Next** and/or **Thru** buttons, then touch **Enter**.

6. Touch **Save**. The range displayed in the Registers data pad will be saved to the target location.

Loading E-MEMs

E-MEMs are loaded using the same methods as above, by touching the **Load** button instead of Save.

CAUTION The Load button immediately replaces existing E-MEM register data with the new E-MEM data. While this does not directly affect the work buffer, as soon as the register runs to the next keyframe or is recalled the work buffer will reflect the new data, and so can change the Kalypso system program output signals.

One additional method of loading E-MEMs is available, that permits loading registers with an offset.

Loading E-MEMs to a Different Set of Registers

1. Go the E -MEM Save-Load Menu.

2. Navigate to the desired destination directory and/or create a new folder for the file using the buttons in the upper right.

3. Touch the **Enter Reg(s)** button, then touch the Register(s) data pad. A keypad appears allowing the entry of a range of registers or banks.

4. Touch the **Start Reg** button so its green indicator illuminates. A Load To data pad appears (Figure 141).

Figure 141. File Operations Register(s) and Load To Text Entry Boxes

5. The **Load To** data pad. A Register range keypad appears (Figure 142).

Figure 142. File Operations Load To Keypad

6. Enter the number of the first register into which you wish to load the selected range of registers, then touch **Enter**.

7. Touch the **Load** button.

The range of registers will be loaded to the specified registers beginning with the register number shown in the Load To data pad.

Multi-Select Button

The **Multi-select** button (Figure 143) is useful for copying, pasting, loading, or saving multiple files from within the **Select Reg(s)** mode. When you select the **Multi-select** mode:

• The double-click function is disabled.

• You cannot change directories until you deselect the **Multiselect** button.

Figure 143. Multiselect Button Allows Selection of Multiple Files

System Control Concept

Controlling changes to the Kalypso system is an important operating concept. When the Kalypso system is on it is always outputting signals (though they may be black). During actual system operation you are changing the system from one state to another. This may be an abrupt change, or it may

be a smooth transition. In either case, you select the elements you wish to change, specify what the change will be, and apply that change of state to the Kalypso system.

Part of specifying what the change will be can include defining the way the system will transition from the previous state to the new one. For example, you can select a Mix transition type (which does not immediately cause any change to the video the system outputs), choose what elements will be affected by the change (which also does not change the outputs), and then enact the change, at which time the video output changes.

Once you have the system in a desired state, you can save that condition for reuse to an E-MEM register. With register keyframes you can also precisely control the dynamics of how an effect will change through time. Building E-MEM effects with known starting and ending states, and organizing these effects so they change only selected portions of the Kalypso system state, provides immense control over the video the Kalypso system outputs.

Additionally, many Kalypso system features have overrides that allow you to temporarily prevent a change from occurring. For example, a Hold can be imposed on a bus to prevent it from changing its source selection when an E-MEM effect is recalled. This offers even more system control, making it possible to build effects that can be used in a variety of situations.

Knowing how to select the areas to change, defining what that change will be, and saving appropriate states to E-MEM are the keys to successful Kalypso system operation.

Transitions

Manual Transitions

Manual transitions are preset with the next transition element buttons. Any elements that are active when a transition is performed will change state. Active keyers will transition from on-air to off-air or visa-versa. Background transitions will occur between the A and B buses with a flip flop at the end of transition, ensuring the A bus is always on-air and the B bus is off-air when a transition is not in progress. Any element not selected in the next transition element group retains its current state. Combinations of elements can be included in the same transition by selecting more than one transition element button.

Figure 144. Transition Subpanel

To Perform a Lever Arm Transition

Setup:

1. Select the next transition button(s) for the element(s) involved (**Bkgd**, **Key 1-4**, **Key Prior**.). Selecting one element button disables any others selected. Holding down one button while pressing another selects both elements, allowing all the transition elements to be activated if desired.

2. Select the type of transition (**Mix**, **Wipe 1**, or **Wipe 2**).

3. Select any new sources involved in the transition:
   - If performing a background transition, select the new source to transition to on the B bus.
   - If you are transitioning in a new key, select that new source on the key bus.
   - If you are changing key priority, specify a new key priority in the Keyer Priority menu.

4. If desired, select a transition modifier (**Trans PVW** or **Preset Black**).

Perform:

5. Move the transition lever arm. The picture will transition only the elements selected. Other elements will remain unchanged.

To Perform an Auto Transition

Setup:

1. Setup for an Auto Transition is the same as a lever arm transition (see page 175) with the following added step:

2. Specify the duration of the transition by turning on the **Trans Rate** button, selecting the flashing button of the desired element, and entering a value in <seconds • <frames> • <field> format (*Time Value Entry on page 178*). Different durations can be specified by repeating this process for each element.

Perform:

3. Press the **Auto Trans** button. The picture will transition only the elements selected at the specified rate(s). Other elements will remain unchanged.

Mix Through Video Transition

One common application of a Mix Through Video transition is to add a white flash to simulate a photographer's flashbulb. To set up a simple white flash effect do the following:

1. Go to the User Transition menu by double pressing the User Transition button (**User 1**, **User 2**, or **User 3**) on the M/E you wish to program. The User Transition menu will automatically be delegated to that function on that M/E.

2. Select the **Edit Matte** button in the Intermediate Video Source data pad to bring up the M/E Matte menu for the M/E you have selected

3. In the M/E Matte menu, select the **Matte** button in the Source pane in the Base Color pane.

4. Set the Brightness to 100% and the Saturation to 0% with either the soft knobs or the popup keypad to create a white matte. The matte will appear in the Base Color box.

5. Return to the User Transition menu by touching the **Last Menu** button.

6. In the M/E menu, touch the **Full Screen** button in the Intermediate Video Appears pane to create a full raster effect.

7. Change the Initial Mix Ends At to a lower number to sharpen the slope of the mix from the initial to the intermediate video as shown in Figure 145.

Figure 145. Camera Flash Mix Values

8. On the Main panel, select a video source on the corresponding M/E A bus and a different video source on the B bus to transition to.

9. Select the User Transition button used above in the corresponding M/E Transition subpanel. For a simple white flash between sources, select a **Bkgd** transition only (no key).

10. Use the Transition Lever Arm to run the white flash transition. Alternatively you can set the Transition Rate in the Transition subpanel to a fast rate to enhance the flashing effect, then press the **Auto Tran** button to perform the transition at the specified rate.

You can experiment with various different programmed values to vary the appearance and timing of the effect.

Transitions Using E-MEM

Transitions can also be built into E-MEMs. See *E-MEM Transitions on page 194*

Time Value Entry

Time values are input on the Kalypso Main Control Panel E-MEM and Master E-MEM subpanels in seconds, frames, odd field format, using the **Undo/•** button the separator (indicated below as "**•**") and the **Enter** button to complete the entry:

> **(seconds)**, **•**, **(frames)**, **•**, **(field)**, **Enter**

The default time entry is in frames. For example, a time of 15 frames (one half second on 60 hz systems) can be input simply by pressing:

> **15**, **Enter**

Entries in seconds can be entered by adding one separator. For example, a time of 1 second is input by pressing:

> **1**, **•**, **Enter**

An odd field is input by pressing **1** as the last entry. For example, a time of one second 15 frames and one field is input by pressing:

> **1**, **•**, **15**, **•**, **1**, **Enter**

After an odd field has been entered, it is represented with an "f" in the E-MEM readout. For example, the completed time above appears as `1:15f`. It is possible to enter values other than 1 as an odd field. The system will calculate and display the correct number frames and a single odd field.

To enter only fields, use two separators before the number. For example, a time of 30 fields (one half second on 60 hz systems) is entered by typing:

> **•**, **•**, **30**, **Enter**

You can actually enter any combination of seconds, frames and fields. The Kalypso system will do the conversion and display the result in seconds, frame, field format.

Decimal values for other non-time parameters are also input on the Master E-MEM subpanel with the numeric keys, the **Undo/•** button for the decimal, and the **Enter** button to complete the entry. If a default value exists for an entry, it can be input without typing in a value by pressing:

> **•**, **Enter**

The Kalypso Menu Panel also provides a touch activated keypad for entering values directly into menus, using similar procedures.

E-MEM Operations

Recalling Registers

The Kalypso system is optimized for rapid effects recall, generally accomplished with a single keystroke. To access a different bank, two keystrokes may be required.

Note   If recalling effects from the Master E-MEM subpanel with **Auto Recall** off, you first need to specify which levels you wish to control with the Enable buttons.

To Recall A Register in the Same Bank

1. Press the E-MEM subpanel keypad number of the desired register.

To Recall A Register from a Different Bank

On an Individual E-MEM Subpanel:

1. Press the **Bank X X** button of the desired bank. Pressing this button once selects the first numbered bank. Pressing the button twice rapidly selects the second numbered bank.

2. Press the E-MEM subpanel keypad number of the desired register.

Alternatively, you can press the ↑ **Bank** button, press the keypad number of the desired bank, then press the number of the register.

On the Master E-MEM Subpanel:

1. Press the **Bank X** button of the desired bank

2. Press the E-MEM subpanel keypad number of the desired register.

Alternatively, you can press the ↑ **Bank** button, press the keypad number of the desired bank, then press the number of the register.

To Clear the Current Register

When you build an effect you may want to start with an empty register.

1. Press **Get Eff, •, Enter**.

To Run an Effect

With Auto Run Off

1. Recall the desired effect.

2. Press **Run**.

With Auto Run On

1. Recall the desired effect. The effect will run as soon as it is recalled.

E-MEM Sequences

To Learn a Sequence of Registers

1. Press **Learn**, **Seq**.

2. Press the bank and register keypad buttons of the desired registers in the order you wish them to run.If you wish you can add a delay time at each register by pressing **Trans Rate** and entering a time value.

3. Press **Learn**.

To Play a Sequence of Registers

1. Press **Seq**.

2. Press the bank and register keypad button of the starting register.

To Break a Sequence

1. Press **Learn**, **Seq**.

2. Press the bank and register keypad button of the register to end the sequence.

3. Press the same bank and register button you just pressed.

Basic Effect Editing

Effect editing involves changing work buffer values using panel and/or menu controls, then applying these values to the effect. This discussion concerns basic effect editing, using the Master Timeline for the examples.

Inserting a Keyframe

The Insert Before and Insert After operations are used to insert new keyframes onto the timeline of an effect. The result of the Insert operation varies depending on whether the edit cursor is on an keyframe or between keyframes (on the path).

An inserted keyframe has both work buffer values and a duration. The keyframe duration is calculated by the Kalypso system (time to the next keyframe) and is not actually contained in the keyframe data. This permits added flexibility during effect editing.

Inserting on a Keyframe With Insert After

When the edit cursor is on a keyframe, pressing **Insert After** inserts a new keyframe after the current one. The insert occurs after the duration of the keyframe the cursor is on, at the next numbered Master Timeline keyframe location. This inserted keyframe's duration is, by default, the duration of the keyframe the cursor was positioned on before the insert, though this value can be changed by the operator (see page 185). The edit cursor also moves to the start of the new keyframe. This operation will increase the duration of the effect by the duration of the inserted keyframe. (Figure 146).

Figure 146.   Insert Before

Inserting on a Keyframe With Insert Before

When the edit cursor is on a keyframe, pressing **Insert Before** inserts a new keyframe at that time line location. The old keyframe, and all the keyframes that follow, are moved to the right the length of the new keyframe's duration. This operation will increase the duration of the effect by the duration of the inserted keyframe, which by default is the duration of the keyframe the cursor was originally positioned on before the insert, though this can be changed (see page 185). Note that keyframes are renumbered after the insert. In the example, what was keyframe #1 becomes keyframe #2 (Figure 147).

Figure 147. Insert Before

Edit Cursor On Keyframe

Insert Before

New
Keyframe

New
Keyframe Duration

Effect Duration Increased

0618_04_133_r0

Using Insert After or Insert Before on a Keyframe

In an existing effect, an Insert After at the keyframe 2 location would seem to be the same as an Insert Before at the keyframe 3 location, but this is usually not true. The work buffer material inserted into an effect is typically based on an existing keyframe, with some modifications. For Insert After keyframe 2, the starting point for the inserted work buffer data will be keyframe 2 values. For Insert Before keyframe 3, however, the inserted material will be based on keyframe 3 values. If the starting parameters in keyframe 2 and 3 are different from one another, the look of the resulting effect will vary depending on which Insert operation is performed.

Inserting on the Path

When the edit cursor is not positioned on a keyframe, the insert operation inserts a new keyframe at the current location. This is called *inserting on the path*. The default duration of new keyframe inserted on the path will be the time between the cursor location and the next keyframe on the Master Timeline. The **Insert After** and **Insert Before** buttons perform the same operation when you insert on the path.

Figure 148. Insert on Path

Note that after inserting on the path, the preceding keyframe's duration is shortened and the new keyframe's duration extends to the next keyframe. When keyframes are inserted on the path the overall effect duration does not change.

When an empty register is recalled, no keyframes exist yet for the cursor to be on or between. In this situation, because the cursor is not on a keyframe the Insert operation inserts on the path. This is why either Insert button can be pressed to create the first keyframe in a new effect.

Building an Effect By Inserting on the Path

You can build an entire effect by inserting every keyframe on the path. Keyframe durations will be automatically calculated by the system. This can be useful if you need to build an effect to match some pre-recorded material.

1. Review the recorded material and determine the times that keyframes are needed. In this example, keyframes are needed at 1.5 seconds, 2.5 seconds, and 3 seconds.

2. Bring up an empty register (**Learn**, **•**, **Enter**), set up the look for the first keyframe and then press either **Insert Before**, **Insert After** or **Modify** to add that keyframe to start the effect.

3. Press **Go To Time**, **1**, **•,15**, **Enter** to move the cursor one and a half seconds into the effect, set up the second keyframe and add it to the effect.

4. Press **Go To Time**, **2**, **•,15**, **Enter**, set up the third keyframe and add it.

5. Press **Go To Time**, **3**, **•**, **Enter**, set up the last keyframe and add it.

The effect will now exactly match the recorded material. Using E-MEM, you can run the effect and the recording simultaneously (see page 241).

Deleting a Keyframe

When the edit cursor is on a keyframe, pressing **Delete** removes that keyframe from the effect. The **Delete** button is inactive when the edit cursor is on the path.

Delete behavior is affected by Constant Duration mode. When Constant Duration is OFF, the duration of the deleted keyframe is also removed from the effect (time to the next keyframe). When Constant Duration is ON, the duration of the previous keyframe is increased by the deleted keyframe's duration, so the total duration of the effect is unchanged. After a delete operation, any keyframes following the deleted keyframe are renumbered accordingly (Figure 149).

Figure 149. Delete Keyframe

Note that after a **Delete** with Constant Duration ON the cursor is located on the path, not on a keyframe. You will need to move the cursor to a keyframe before you can use **Delete** again.

Editing a Keyframe Duration

Showing Keyframe Durations

Pressing the **KF Dur** button so it is illuminated assigns the keyframe duration value to the keypad. Once assigned, keyframe durations will be displayed on the Master E-MEM readout. When the cursor is moved from keyframe

to keyframe, the value will change to reflect the duration of the keyframe where the cursor is located. When the cursor is moved between keyframes, the duration shown is the distance from the current time to the next numbered Master Timeline keyframe. The time value displayed is used by default when a new keyframe is inserted into an effect.

Changing the Duration of a New Keyframe

The value for a new keyframe's duration may be set from the keypad. For example, the following procedure was used for Figure 150.

1. Move the edit cursor to the desired location in the effect, in this case on the path midway through a one second keyframe.

1. Press **KF Dur** so the button is lit.

2. Type a **1.0** duration value on the keypad and press **Enter** to change the value displayed on the readout.

Note   Pressing the **Trim** button will increase or decrease the duration value by the amount specified.

3. Press **Insert Before** or **Insert After** to insert the new keyframe with the specified duration.

Figure 150. Insert KF with Duration Specified

Edit Cursor On Path

| 0.00 | | 1.00 | 1.15 | | 3.00 |
| 1 | | 2 | 3 | | 4 |

KF Dur 0.15

Insert, With 1 Second KF Duration Entered

| 0.00 | 0.15 | New | 1.15 | 3.00 | | 3.15 |
| 1 | 2 | Keyframe | 3 | 4 | | 5 |

New
Keyframe Duration 1.00

Effect Duration Increased

0618_04_136_r0

Modifying an Existing Keyframe Duration

The duration of an existing keyframe can also be modified. For example, the following procedure was used for Figure 151.

1. Move the cursor to the keyframe whose duration you wish to modify. You cannot modify a keyframe duration when the cursor is on the path. In this case, the keyframe duration is 15 frames.

1. Press the **KF Dur** button so it is lit.

2. Type a **1.0** duration value on the keypad and press **Enter** to change the value displayed on the readout.

Note Pressing the **Trim** button will increase or decrease the duration value by the amount specified.

3. Press **Modify** to apply the new duration value to the keyframe.

Figure 151. Modifying an Existing KF Duration

Restoring KF Duration Default to the Keypad

The keypad retains the last duration value entered until it is changed on the keypad, or until the edit cursor is moved to a new location with a different duration. You can reset the keypad to the factory default one second duration at any time

1. Press the **KF Dur** button so it is lit.

2. Press • , **Enter**

Editing Effect Duration

When an effect is first created it has a "natural duration", which is the time indicated by the last keyframe. With the Effect Duration feature you can

make the overall length of the effect longer or shorter with a single com-
mand. Each keyframe duration in the effect will be increased or decreased
proportionately to match the new "forced duration".

Editing Effect Duration with the Main Panel

1. Select the effect whose duration you wish to change.

2. Touch the **Effect Dur** button on the Master E-MEM subpanel.

3. Type a new duration in Seconds • Frames • Field format and touch
    Enter. Entering a single value defaults to frames, and the third Field
    value is optional. Entering a **1** for the Field value specifies odd field. For
    example, **1.0.1** indicates 1 second, 0 frames, 1 field.

    •   Entering only a • restores the natural duration of the effect.

4. Touch the **Effect Dur** button again to turn off the function.

Editing Effect Duration with the Menu Panel

1. Select the effect whose duration you wish to change.

2. Touch **Timeline**, **Time Adjust** on the Menu panel to bring up the Timeline -
    Time Adjust menu (Figure 152).

Figure 152. Timeline - Time Adjust Menu

3. Touch the **Effect Dur** button to open a keypad (Figure 153).

Figure 153. Effect Duration Numeric Keypad

4. Type a new duration in Seconds • Frames • Field format and touch **Enter**.

- Entering only a • restores the natural duration of the effect.

5. The new Forced Duration of the event is showing the white box at the upper right-hand corner of the menu screen. (Figure 154).

Figure 154. Timeline - Time Adjust Menu, Forced Duration

Editing Effect Durations of Individual Levels

You can apply Forced Duration to individual levels by selecting only those levels for modification. In the example shown in Figure 155 the first three levels have been set to a Forced Duration of 5 seconds and the other levels remain at the Natural Duration of 4 seconds. The Natural and Forced Duration values are reported in the menu on the right-hand side of the screen. The Natural Duration values are indicated with the letter "N" to the right of the time display.

Figure 155. Timeline - Time Adjust Menu, Forced Duration of Individual Levels

E-MEM Modify All Operations

The Modify All function can be used to modify selected values of all the keyframes in an effect that are on levels delegated for editing. Keyframes on levels not delegated for editing are unaffected.

Modify All operations only affect parameters that have been modified in the work buffer from the values of the current position of the time cursor. Typically this position is the current keyframe, but it could be the interpolated state on the path between keyframes. If the cursor is on the path, the Modify All function will also add a keyframe to the effect at that location. Modifications to the work buffer are made by pressing a button, turning a knob, or entering a value with the key pad.

Two different types of Modify All functions are available:

- *Modify All Relative* operations calculate a difference between the current value at the time cursor position and the current work buffer value for each changed parameter. This difference is applied to all the affected key frames in the effect. For example, a hue change of 30 degrees will shift different hues by that amount, and will not change them to the same hue. This function is performed by double pressing the **Mod\MdAll** button in the Effects Edit subpanel of the Main panel.

- *Modify All Absolute* operations replace the current value of parameters of all affected keyframes in the effect with the current value of each changed parameter in the work buffer. For example, if a hue was changed 30 degrees to make it red, different hues on other keyframes will be changed to red, not shifted 30 degrees. Exact values, not differences, result. This function is performed by touching the **Mod All Absolute** button on the Timeline-Edit menu.

Mode changes are always absolute. Turning a function on turns it on for all affected keyframes, and does not toggle on functions off.

To perform a Modify All operation:

1. Delegate for editing the levels in the effect you wish to be affected by the modifications.

2. Move the time cursor to the location in the effect you wish to use as a baseline for the operation.

3. Change the desired parameters by pressing a button, turning a knob, or entering a value with the key pad.

4. Perform the desired relative or absolute modify operation:

   - To make relative changes, double press the **Mod/MdAll** button in the Effects Edit subpanel on the Main panel. The relative changes of the modified parameters will be applied to all the affected keyframes in the effect.

   - To make absolute changes, access the Timeline-Edit menu by touching **Timeline**, **Edit**, then touch the **Mod All Absolute** button. The absolute values of the modified parameters in the work buffer will be applied to all the affected keyframes in the effect.

E-MEM Learn Modify

Each E-MEM register contains header information, along with keyframe data. This header information applies to the entire effect and is not key-framable. Register header information includes:

- E-MEM enable group button selections (for Auto Recall)
- Effect Dissolve state (on or off)
- Effect Dissolve rate (seconds, frames, field)
- DPM effect number

When an effect is edited in the standard manner (**Insert**, **Mod**, **Mod All**), only keyframe data is affected. The header information does not change. In a standard **Learn** operation, all existing keyframe data is overwritten with a single keyframe, and new header information is saved.

Release 15.0 supports Learn Modify, which you can use to update E-MEM register header information without changing keyframe data. To use this feature, select the state of the desired header information, then press **Learn**, **Mod**. Examples are presented below:

To change the enable groups associated with Auto Recall:

Press **Auto Recall** so it is on, select the desired Master E-MEM Enable buttons for the desired groups of levels, then press **Learn**, **Mod**.

To change the Effect Dissolve rate of the current effect:

Press **Effect Dis** so it is on, then press **Trans Rate**, (type seconds, frames, fields), **Enter**, **Learn**, **Mod**.

To change DPM effect number:

Select a different effect on the external DPM, then press **Learn**, **Mod**.

Editing Path Control

Path control determines how interpolation is performed through key-frames. S-Linear, Linear, and Curve path types are supported, in addition to Path Hold. These path types provide fine control of the dynamics of the effect. See *Path Control on page 117* for background information.

To Change Path Control Values in an Effect:

1. Move to the location in the effect that you wish to change.

2. Go to the Path Types menu (**E-MEM**, **Path** or **Timeline**, **Path**) and delegate the desired Level(s), Sublevel(s), and Group(s). In Figure 156 the keyer wipe of Keyer 1 of M/E 1 has been selected for path control editing.

Figure 156. Interpolation Paths Menu

3. Choose the desired Path type (**S-Linear**, **Linear**, or **Curve**). If **Curve** is selected, you can use the soft knobs or data pads to change the values for **Tension**, **Continuity**, and **Bias**.

4. Add the new values to a keyframe in the effect with **Insert** or **Modify**, or Learn. You must change the keyframe, because current work buffer values are overwritten during the running of an effect.

5. Run the effect to see your changes.

General Curve Tips

Although adjusting the Curve path type Tension, Continuity, and Bias controls can feel like a guessing game, here are some general tips to help you build desired effects in a timely manner:

- Tension in the minus direction (up to -1.0) creates bigger, looser curves.

- Continuity at +1.0 is the same as S-Linear motion.

- Continuity in the plus direction gives a bigger bounce, with +2.0 a good value.

- Bias in the plus direction makes the curve happen after the keyframe.

- Bias in the minus direction makes the curve happen before the keyframe.

Cutting and Pasting Path Values

Being aware of how Curve values may change during editing can help you successfully fine tune the paths of edited effects.

- When keyframes are cut and pasted to and from the clipboard, the path type (Curve, Linear, S-Linear) is retained for each keyframe.

- When a block of Curve path keyframes are cut and pasted, the first and last keyframes in the block are given Tension = 1.0, Continuity = 0.0, and Bias = 0.0 values. This helps merge the path with neighboring path settings, since the Curve path requires three keyframes for proper calculation. Intermediate Curve path keyframes in the marked block retain their original values, since the neighboring keyframes required for the calculation exist.

- Cutting or copying a single keyframe with a Curve path type is handled the same as a first or last keyframe, and so this keyframe is given Tension = 1.0, Continuity = 0.0, and Bias = 0.0 values.

- If you paste a keyframe with a Curve path into the middle of an effect, reset Tension values to 0.0.

Controlling Smooth Path Windup

Effects with a curved transform path may move back slightly in the opposite direction when the move begins or ends. This "windup" is a characteristic of Curve path control, which is the factory default path type applied to new effect keyframes. Curve requires three keyframes for proper interpolation, so values for the previous (or next) keyframe affects the path through the next (or previous) keyframe.

There are several ways to change an effect so moves begin and end without any windup.

- Change the Path Type on the function keyframe to S-Linear.

- Set the Curve path Tension value on the function keyframe to 100.

- Set a Path Control menu Hold for the function on the previous keyframe.

E-MEM Transitions

Transitions can be built into E-MEM resisters. Recalling and running these E-MEMs will make the transitions occur as programmed. The lengths of transitions in effects is determined by keyframe duration, not the transition duration used for manual transitions. When you build effects with transitions, keep the E-MEM transition rules in mind, which are different from the rules used for manual transitions. The beginning and ending states of the buses and transition elements must be set properly.

Though background and keyer transitions are described here as separate procedures, effects can easily be built that include both background and key transitions in the same keyframe by selecting the appropriate next transition element buttons.

E-MEM Transition Rules

- A background transition will occur only when the **Bkgd** next transition element is selected on the initial keyframe AND the source selected on the B bus of the initial keyframe matches the source selected on the A bus of the following keyframe.

Note   The decision to perform a background transition is based on keyframe values, regardless of the state of Bus or Source Holds. If a Hold is active you will not be able to tell by looking at the currently selected sources whether a background transition will occur.

- A keyer transition will occur only when the **Key 1-4** background transition element(s) for the keyers involved are selected on the initial keyframe AND a keyer changes its on/off state at the following keyframe.

Note   In Kalypso Release 15.0 and earlier, E-MEM does not support key priority transitions (programmed mixes and wipes will cut to the new priority). This is a known problem that is scheduled to be corrected in a future software release. Key priority transitions are supported when performed directly on the Main panel and Menu panel.

- If Effects Dissolve is on, when an effect is recalled transitions will occur between the previous switcher state and the first keyframe of the effect, following the rules above. If Effects Dissolve is off effect recalls will cut to the first keyframe of the effect.

To Build Background E-MEM Transitions:

When building background transitions make sure the A and B background bus selections are consistent through out the effect. Otherwise the background video may cut to different sources when keyframes are encountered. Plan ahead to the next transition when you create keyframes in an effect that has multiple background transitions.

1. Go to the keyframe in the effect where you wish the background transition to begin.

Note   Adding new transition keyframes to the end of an effect is the easiest way to build effects containing background transitions, though using this method is not required.

2. Select the **Bkgd** next transition button.

3. Select the type of transition (**Mix**, **Wipe 1**, or **Wipe 2**).

4. Select the new source to transition to on the B bus.

5. Press **Modify** to change the keyframe to the values set above.

6. Perform the transition by moving the lever arm or pressing the **Auto Trans** button. This lets you preview how the transition will look (though the transition duration used may not match the keyframe duration specified).

Note Performing the transition is not required (pressing **Cut** accomplishes the same goal, which is to put the switcher into the next desired state). The transition type button selection and the keyframe duration determines how the transition will be performed when the effect runs.

7. If there will be another transition immediately following this one, select on the B bus the source that will transition to in the next keyframe. This prevents undesirable background cuts from occurring.

8. Press **Insert After** to add this keyframe to the effect.

9. Repeat the steps above for any additional background transitions.

10. Rewind and run the effect to check its operation. The transitions will occur as programmed.

11. After the effect runs properly, you can go back and modify keyframes with Source Holds where needed.

If unwanted background cuts occur, go to the keyframe where the cut occurs, identify the source selected on the A bus, go to the previous keyframe, select that same source on the B bus, and then press **Modify** to properly setup that source in that keyframe for that next transition.

To Build Keyer E-MEM Transitions:

Individual keyers transition on or off (there is no keyer preset bus). To cross fade between keys, use two keyers and have one key transition in while the other transitions out. You can include any combination of keys in a single transition, using the transition rules to determine the exact behavior of the transitioning keys.

1. Go to the keyframe in the effect where you wish the key transition(s) to begin.

2. Select the **Key 1-4** next transition button(s) for the keyer element(s) involved. Selected keys that are on will transition off, and keys that are off will transition on.

3. Select the type of transition (**Mix**, **Wipe 1**, or **Wipe 2**).

4. Press **Modify** to change the keyframe to the values set above.

5. Change the on/off state of the keys you wish to transition.

6. If you are transitioning in a new key, select the source on that key bus. If you are transitioning out a key, do NOT change the source selected on the key bus for that keyer (this prevents an unwanted cut).

7. Press **Insert After** to add this keyframe to the effect.

8. Repeat the steps above for any additional keyer transitions.

9. Rewind and run the effect to check its operation. The transition(s) will occur as programmed.

To Change the Length of an E-MEM Transition:

Change the keyframe duration of the first keyframe involved in that transition.

1. Go to the first keyframe for that transition.

2. Press **KF Dur** and then enter a value in <seconds • <frames> • <field> format.on the keypad.

3. Press **Modify**.

To Prevent Elements from Transitioning in E-MEMs:

To ensure a transition for an element does not occur, simply make sure the next transition button for that element is off in the keyframe by selecting another element's button.

To ensure no transition occurs at all at a keyframe (any changes will be cuts), you can select only the next transition button for a keyer and make sure its state does not change in the next keyframe. A change of state in a keyer is required for a transition to occur when the effect runs.

The transition rules have one subtle limitation. The next transition element buttons are an interlocked group. All these buttons cannot be turned off simultaneously (at least one element is always selected). This means you cannot uses these buttons to prevent any transition from occurring when all the elements are in use. To workaround this special case, add another keyframe to the effect to transition the keys with a one field transition (which is the same as a cut).

Return to Normal Technique:

A useful technique to use when building effects for use on-air is to first establish a normal switcher state for the particular show. This normal state could, for example, have only the **Bkgd** next transition element selected, a **Mix** transition type, all four keyers off, and one second transition durations. This normal state permits immediate cuts or dissolves to and from any element, probably the most common requirements during a live show.

Running the effect departs from the normal state to do whatever is required. When the effect comes to the end of its run, the next to last keyframe controls the transition that occurs at the end of the effect. The last keyframe has no following keyframe and so does not transition, and that keyframe effectively has no duration. You can set the next transition elements in this last keyframe to the normal state without fear of causing unanticipated transitions. This return to normal technique permits completely controllable seamless shifts between your effect recalls and runs and your live switching.

When building effects for the show, take care that the beginning and ending of every effect works well with the normal state. You also may wish to apply a Source Hold to the first keyframe to ensure the last source selected remains unchanged going into the effect.

Source Holds in Effects

During E-MEM recalls and effect runs sources can be programmed to change. Sometimes this is not desired, as an effect may be designed to run on the currently selected sources, not the particular sources used when the effect was built. Holds can be programmed into an effect with the Source Holds menu to prevent sources from changing when that effect is recalled. This form of hold is keyframeable, and so can be applied to specific portions of an effect.

To Set a Source Hold in a New Effect

1. Go to the Source Holds menu (**E-MEM**, **Source Holds**).

2. Select the buses you wish to hold by touching their labeled buttons on the menu so their green indicators illuminate (Figure 157).

Figure 157. Source Holds Menu

3. Press **Learn** on the Kalypso Main panel E-MEM subpanel, then press a bank and register number to create a new effect with a Source Hold in its one keyframe.

Source Hold, being a work buffer parameter, will be imposed on other keyframes as they are inserted, unless turned off in the Source Hold menu. You may want to start an effect with a Source Hold, so the existing sources will not change when the effect is recalled, then turn it off to enable source changes during the running of the remainder of the effect.

To Set a Source Hold in an Existing Effect

1. Locate the cursor on a keyframe in the effect where you wish to add a Source Hold.

2. Select the buses you wish to hold by touching their labeled buttons on the Source Holds menu so their green indicators illuminate.

3. Press **Modify** or **Insert** to add the Source Hold to the effect.

The Source Hold only applies to that keyframe, meaning the previously selected sources on the chosen buses will be held at that keyframe until the next keyframe lacking a Source Hold is encountered.

Reusing Effects

E-MEM effects can be built and saved for use later. It is important to realize that the Kalypso system operating environment affects how an effect will load and run. Just recalling a particular effect without considering the environment within which it runs does not guarantee that effect will look the same as when built. When the Kalypso system environment for an effect is compatible, however, the look of the effect should be exactly the same every time.

One of the most important aspects of the Kalypso environment to consider when reusing effects is Suite Preferences. In particular, the Source Patching and E-MEM Prefs must be compatible. Other Suite Prefs control the behavior of the switcher, but do not affect E-MEM compatibility.

Source patching is the mechanism to sort out facility specific differences in sources. Loading a Suite Pref file with preexisting Source Patch settings will not necessarily allow an effect to run as designed. The sources must be patched to compensate for different physical source definitions in each facility. For example, the replay VTR may be engineering source 12 in one truck and engineering source 27 in another. If the effect was built to expect the replay VTR on Logical source 12, then logical source 12 must be patched to source 27 in the other truck. Once all the re-patching is completed, effects saved from the first truck will call up the correct sources.

E-MEM Prefs control which E-MEM levels will control specific components of the switcher. For example, if Still Store Channel 2 is assigned to the SS A group in one facility and to Misc 7 in another, the effect may not include Channel 2 if Misc 7 is not included in the original effect. Mapping M/E partition boundary and secondary partitions is also critical to effect recall and run since it determines which M/E E-MEM panel (or Master E-MEM enable group) controls M/E partitioning.

The simplest way to guarantee Suite Pref settings are compatible is to save them when the effects are built, and reload them when you want to run those effects at a later time, making only the necessary modifications (like those for Source Patching described above). One common method is to save all the effects along with the Suite Pref and User Pref files for a particular show together on a Zip disk, and then reload them all the next time you work on that show. Note that User Prefs settings will not change how an effect runs, but will reproduce the control surface as it was when the effect was built so, for example, all the source buttons are arranged exactly where you want them.

Other Kalypso environment variables to consider for successful reuse of effects are listed below.

- All the external devices required are available for use (Profile VDRs, GVEous, PBus devices, GPI outputs, etc.).

- Correct clips loaded on the Profile or other DDRs.

- Correct stills and clips cached on the Kalypso Still Store.

- If operating in Multi Suite mode, the suites should be setup for effect sharing by properly acquiring logical devices in each suite. Also sufficient resources need to be available in the suite. If resources are not acquired, those portions of the effect will be silently ignored. If resources are acquired after loading effects, the effects will need to be reloaded.

- If using a router interface, router sources and destinations need to be defined correctly and available, and any required R-MEMs loaded.

E-MEM 300 Mode

Overview

300 Mode is an alternative Master E-MEM method of operation that mimics the behavior of the Grass Valley Group Model 300 switcher. In this mode, Master E-MEM Learn operations store the register numbers of the individual M/Es, allowing the recall of different combinations of M/E registers with a single button press. In this operating mode Master E-MEM Learn operations do not change any existing contents of the individual M/E E-MEM registers. Only M/Es are affected. Other E-MEM levels (DPM, Still Store, etc.) behave the same in either Normal or 300 Mode. The current Master E-MEM operating mode is saved and loaded as a Suite Preference.
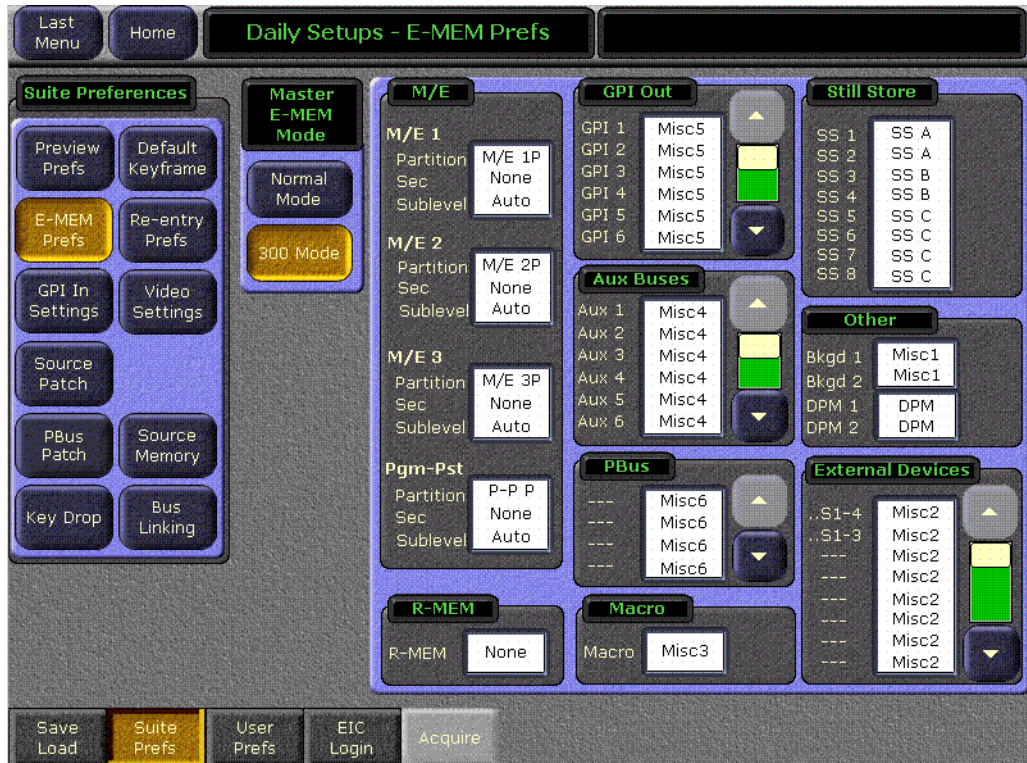
When operating in 300 Mode, the user Learns the first keyframe of each effect into individual M/E E-MEM registers using that M/E E-MEM subpanel. If an effect has additional keyframes, they are created using Master E-MEM keyframe editing (delegating that M/E and using Insert, Modify, etc.). When all the individual M/E effects registers are complete, the user selects the desired register on each individual M/E E-MEM subpanel, delegates the M/E levels involved, and then Learns that Master E-MEM register. Recalling that Master E-MEM register then brings up the individual M/E registers that were learned (along with the settings of any other non-M/E delegated levels).

In general, you will need to decide which Master E-MEM operating mode you wish to use, and then build all your effects for use in only that mode. While effects built in one Master E-MEM mode will recall and run on a system operating in the other mode, the results will probably not be what you expect. If you find your effects behaving oddly, check that the correct Master E-MEM operating mode is selected.

E-MEM Prefs Menu

The Master E-MEM operating mode is selected on the E-MEM Prefs menu, accessed via **Daily Setups**, **Suite Prefs**, **E-MEM Prefs** (Figure 158).

Figure 158. E-MEM Prefs Menu

300 Mode Operation

Use the following procedure to operate in Master E-MEM 300 Mode:

1. Select 300 Mode by going to the E-MEM Prefs menu (touch **Daily Setup**s, **Suite Prefs**, **E-MEM Prefs**) and touching **300 Mode**. Alternatively, you can recall a Suite Pref that was saved with this mode selected.

2. Setup the first keyframe on one of the M/Es, press the individual M/E's E-MEM **Learn** button, then select the bank and register on that subpanel to which you wish to save those settings.

3. If that effect will have multiple keyframes, delegate the Master E-MEM subpanel to only that M/E and edit the effect using keyframe editing, Inserting, Deleting, and Modifying keyframes as required.

4. Repeat Step 2 and Step 3 for all the effects you plan to use on that M/E.

5. Select a different M/E, and repeat the steps immediately above for all the effects for that M/E. Continue until you have built all the effects on all the M/Es you intend to use.

Note   Unlike Grass Valley 4000 switchers, Kalypso systems allow keyframe Inserts between keyframes. When you change Master E-MEM delegations, the effect time cursor does not move, so it may be between keyframes on the newly delegated M/E. On a 4000 switcher, since this location is not on a keyframe you would be prevented from inserting, but a Kalypso system allows this. When using 300 mode, check that you are at the correct location in the effect on a newly delegated M/E before you insert any keyframes.

6. Select the individual M/E registers you wish to recall together on each individual M/E E-MEM subpanel involved.

7. Delegate the Master E-MEM subpanel to the desired M/Es, press the Master E-MEM **Learn** button, then select the bank and register on the Master E-MEM subpanel to which you wish to save those settings.

8. Repeat the above step for all the combinations of M/E effects you wish to recall together, being sure to Learn them to different Master E-MEM registers.

9. To recall any of the desired combinations of M/E effects, simply press the appropriate Master E-MEM bank and register keypad buttons. You can use **Auto Recal**l to automatically delegate the levels involved in that effect.

Note   In 300 Mode, if an empty M/E register has work buffer values set but they haven't yet been learned on that individual M/E, performing a Learn on Master E-MEM will not save those settings to that register. Only the register number is saved for that Master E-MEM register in 300 Mode. There is no indication of this except the register will continue to report itself empty on the E-MEM readout displays.

E-MEM and Macro Interaction

Macros and E-MEMs can interact in two fundamentally different ways. An E-MEM can be programmed to execute one or more macros, or a macro can be created that recalls one or more E-MEMs. With care, operating both control mechanisms together can be extremely powerful. However, improper use can create infinite loops or other undesirable behavior. It is especially important that your Kalypso system be loaded with the correct E-MEMs and Macros and is operating in the correct mode, or unpredictable system behavior will result from the mismatched E-MEMs and macros.
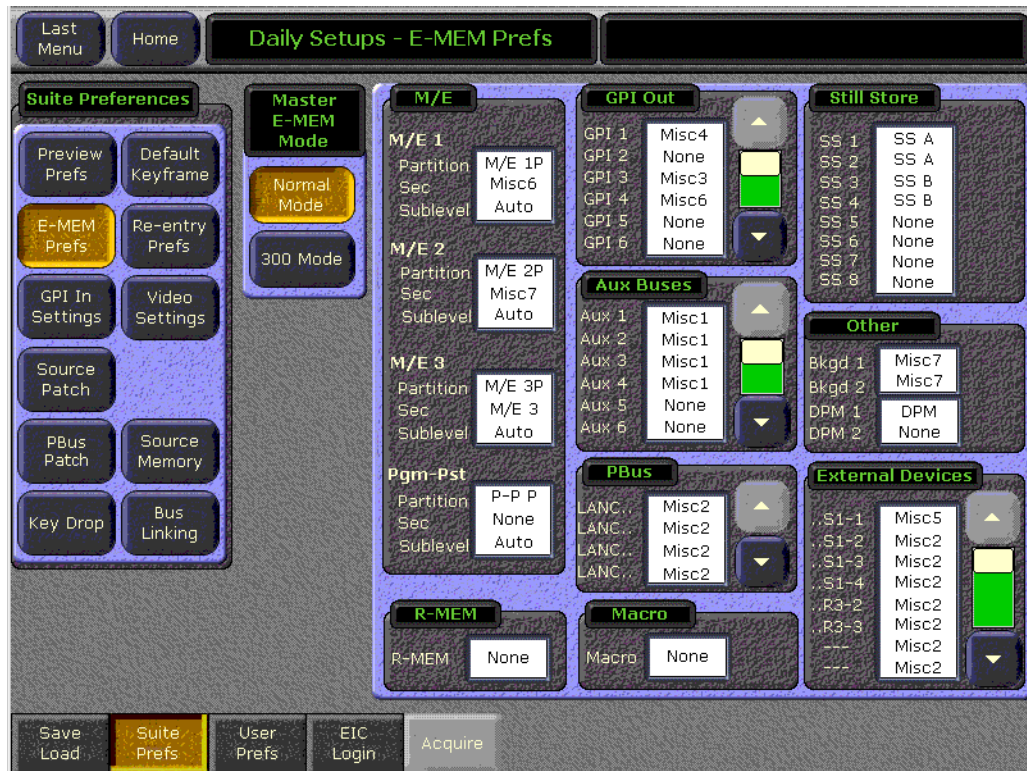
Macros in an E-MEM

A macro can be added to an E-MEM keyframe and be executed when that E-MEM register is recalled and run. Only the macro register number (and its Enabled state) is saved to the E-MEM register, not the actual macro commands. If a macro is subsequently changed, any E-MEM specifying that macro register will run the modified macro. See *E-MEM Recalls in a Macro on page 362* for related information.

E-MEM Prefs Macro Sublevel Assignment

A Macro sublevel can be assigned to any E-MEM level (default is **Misc 3**). This assignment is accomplished with the E-MEM Prefs menu, accessed via **Daily Setups**, **Suite Prefs**, **E-MEM** prefs (Figure 159).

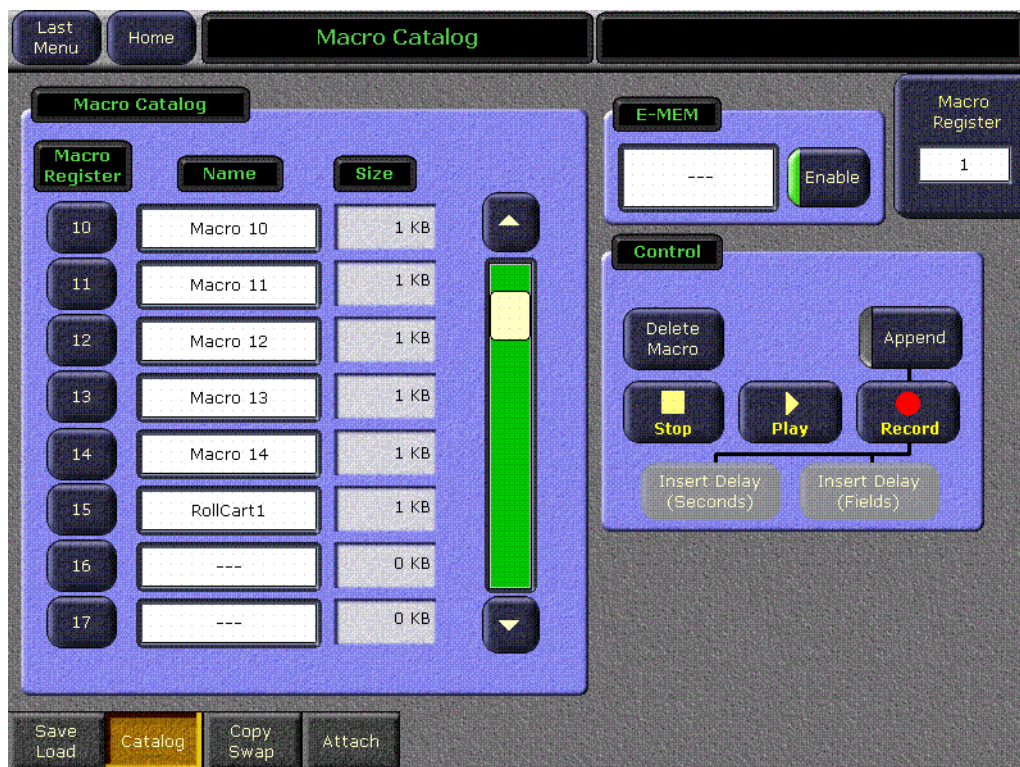*Figure 159. E-MEM Prefs Menu*

Preventing Assigned Macros from Running

If you want to be able to prevent any assigned macro from running in an effect, make sure the Macro sublevel is assigned to a separate level, and then enable or disable that level to turn all the E-MEM macros on or off.

To Add a Macro to an E-MEM

The Macro Catalog menu is used to add a macro register number and its Enabled state to an E-MEM effect. The menu is accessed via **E-MEM**, **Catalog** Figure 160).

Figure 160. Macro Catalog Menu

1. Touch the **E-MEM** data pad to open the Macro selection menu ([Figure 161](#)).

Figure 161. Macro Attach Selection Menu

2. Select the desired macro in the menu. The name of the selected macro appears in the data pad. The **Enable** button enables or disables that specific macro. It defaults to On whenever a macro is selected.

Note Do not attempt to use the Macro Catalog pane on the left or the Macro Register knob control on the right to associate a Macro to an E-MEM. The E-MEM data pad is used for this purpose.

3. Navigate to the desired location in the current effect.

4. **Insert** or **Modify** a keyframe to associate that macro and its enabled state to that location in the effect.

Background Matte

Background matte generators create colors, washes, and textures. These can be used, for example, as the backgrounds for keys.

Background mattes cannot use the wipe pattern generators available to keyer and wipe mattes, and cannot use Utility video as a wipe source.
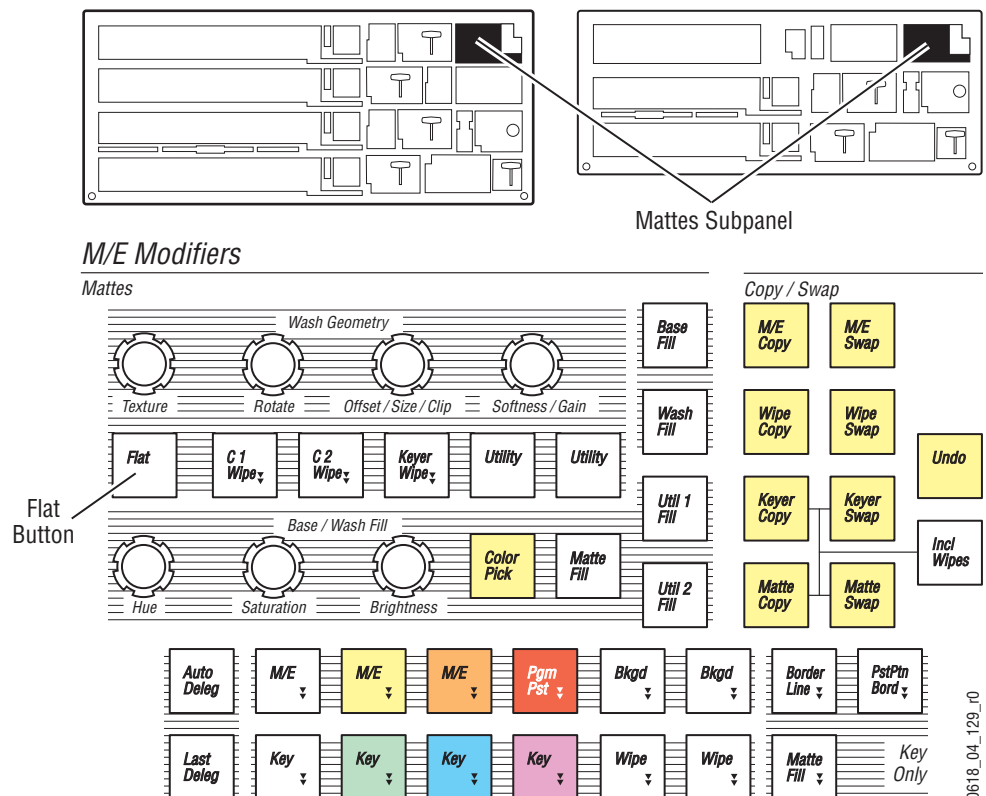
Instead background mattes employ a simple dedicated wipe generator that creates a single, straight line. This line can be manipulated, however, to create a wide variety of looks, including texture that is not available on the other mattes.

Background matte control is available from the Main panel (Mattes sub-panel) and from the Matte menu, which provides additional background texture parameter controls.

Matte Panel Controls

1. Select the **Bg 1** source on a background bus of any Main panel bank (its default location is the farthest right selector button). The Mattes subpanel will automatically be delegated to control that matte generator.

2. If necessary, make the matte visible on the preview monitor by selecting that bank on the Preview subpanel.

3. Press **Flat** in the Mattes subpanel. This selects a flat, single color matte (Figure 162). All subsequent matte controls are located in this subpanel.
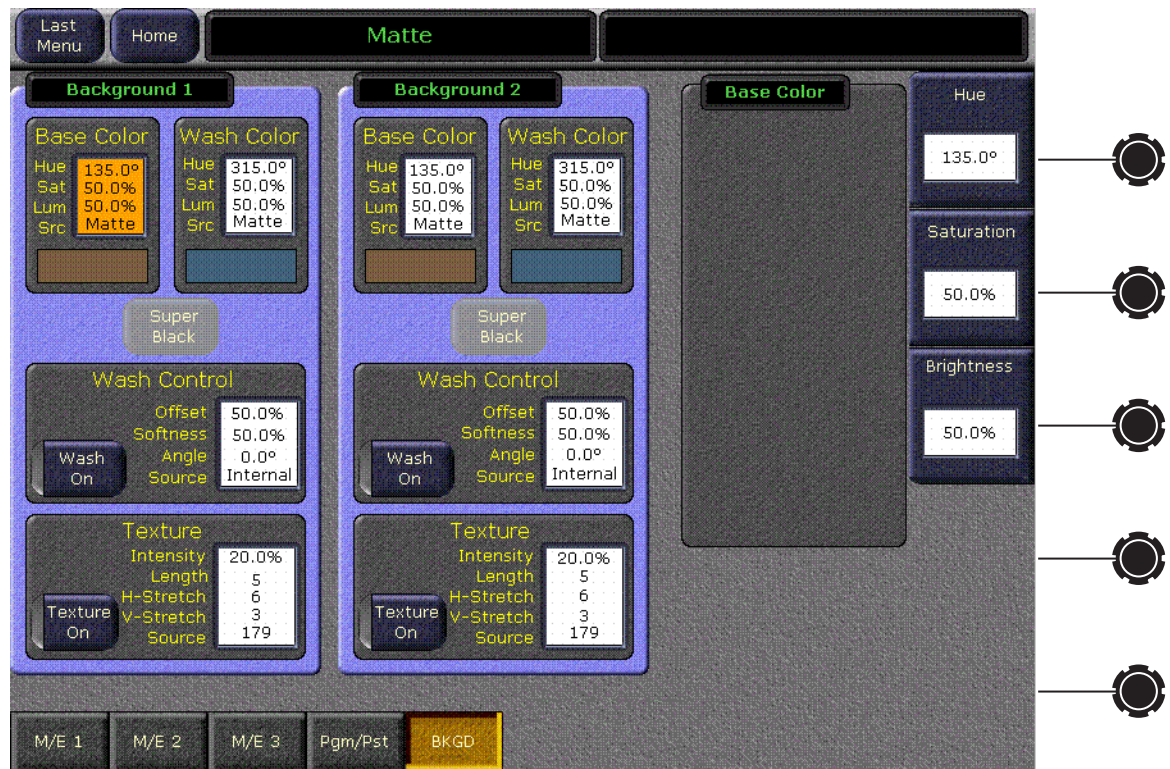
Figure 162. Mattes Subpanel

4. Adjust the **Hue**, **Saturation**, and **Brightness** knobs to make the matte the desired color. This adjusts the base fill color of the matte.

5. Press the **Keyer Wipe** button to select a wash matte type containing both base fill and wash fill colors. The **Keyer Wipe** button illuminates to indicated a wash has been selected (though the background matte is not using the keyer wipe pattern generator). Note that pressing the **C1 Wipe** or **C2 Wipe** button also selects a wash matte type and illuminates the **Keyer Wipe** button.

6. Press **Wash Fill** to delegate the Matte subpanel controls to the wash fill, and adjust the **Hue**, **Saturation**, and **Brightness** knobs to create a contrasting color. If only a single matte fill color is visible that doesn't change, adjust the **Offset** and/or **Softness** knobs to make the edge between the two colors visible on the screen, then adjust the wash fill color.

7. Adjust the **Rotation** knob to change the angle of the edge.

8. Adjust the **Texture** knob, to adjust the intensity of a pattern added to the edge. (More texture controls are available in the Matte menu).

Matte Menu Controls

Most of the controls in the Matte menu duplicate the controls in the Mattes subpanel.

1. Go to the Mattes menu by double pressing the **Bkgd 1** or **Bkgd 2** button in the Mattes subpanel.

2. If not already selected, touch the **Base Color** data pad of the desired Background (1 or 2). Use the top three soft knobs to adjust **Hue**, **Saturation**, and **Brightness** of the base fill color (Figure 163).
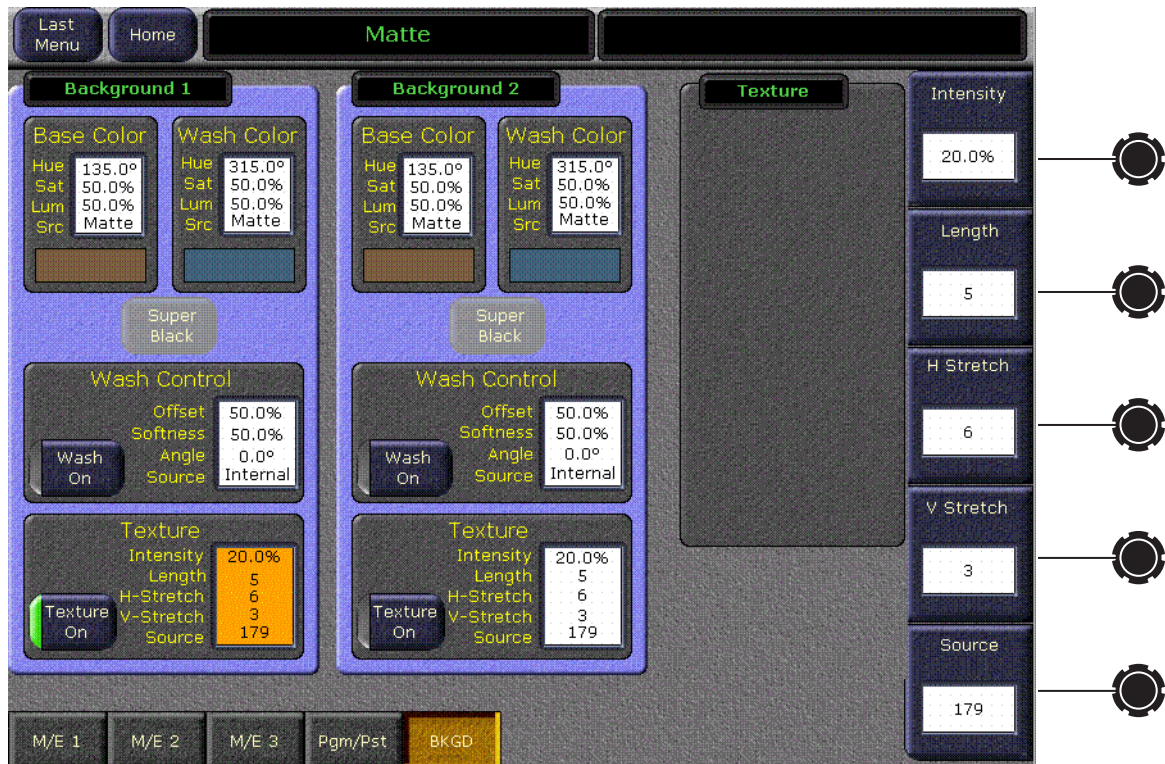
Figure 163. Matte Menu, Base Color Selected

3. Touch the **Wash On** button at the bottom so its indicator illuminates to create a wash matte.

4. Touch the **Wash Control** data pad to bring up **Offset**, **Softness**, and **Rotate** soft knob controls. If necessary, use the **Offset** and **Softness** knobs to make the wash edge visible on the screen. You can also turn on the **Rotate** button, and then adjust the angle of the edge using the **Rotate** soft knob.

5. Touch the **Wash Color** data pad to delegate the soft knobs on the right to adjust **Hue**, **Saturation**, and **Brightness** of the wash fill color.

6. Touch the **Texture** data pad to activate various texture knob controls. Texture can be toggled on and off with the **Texture On** button (Figure 164).

Figure 164. Matte Menu, Texture Selected

- **Intensity** controls the amount of added texture (which is also controlled by the Mattes subpanel **Texture** knob).

- **Length**, **H Stretch**, and **V Stretch** modify the characteristics of the edge texture.

- **Source** selects the seed value used to create the texture. Textures are generated by a pseudo random number generator, based on a seed value. The random numbers created are repeated to form various textures. 255 different seed values are available.

- While the appearance of a texture cannot be predicted from its seed value, if all texture parameter values are saved to E-MEM, recalling that register will exactly reproduce the original texture.

Because all background matte parameters are keyframeable, you can build effects with constantly changing backgrounds using multiple keyframes.

Split Key

Sometimes you may wish to use the key cut signal of one source with the key fill or video signal of another source. For example, you may have a Character Generator creating matte filled characters, but wish to use a different signal to fill the characters. A split key is used to accomplish this.

On the Kalypso system, the source select buses by default tally the key fill signal. When the **Split Key** button is held down the key cut signal is tallied.

To Perform a Split Key:

1. Set up a standard key by pressing one of the **Key 1-4** Transition Element buttons in the Transition subpanel, then selecting the source on that key bus that contains the fill signal you wish to use for the split key.

2. Hold down the **Split Key** source select modifier button, then press the key source select button of the source with the key cut signal you wish to use. The new key cut signal is then used with the selected key fill signal.

To Restore a Normal Key:

1. Determine what source is being used for the key fill signal.

   • Observe the key source select bus of the split key and see what source is currently selected, or

   • Look at the M/E Status display, which always shows the source names of any key cut signals.

2. Hold down the **Split Key** source select modifier button, then press the source button of the key fill signal identified above. The original key cut signal for that source is then used for that key.
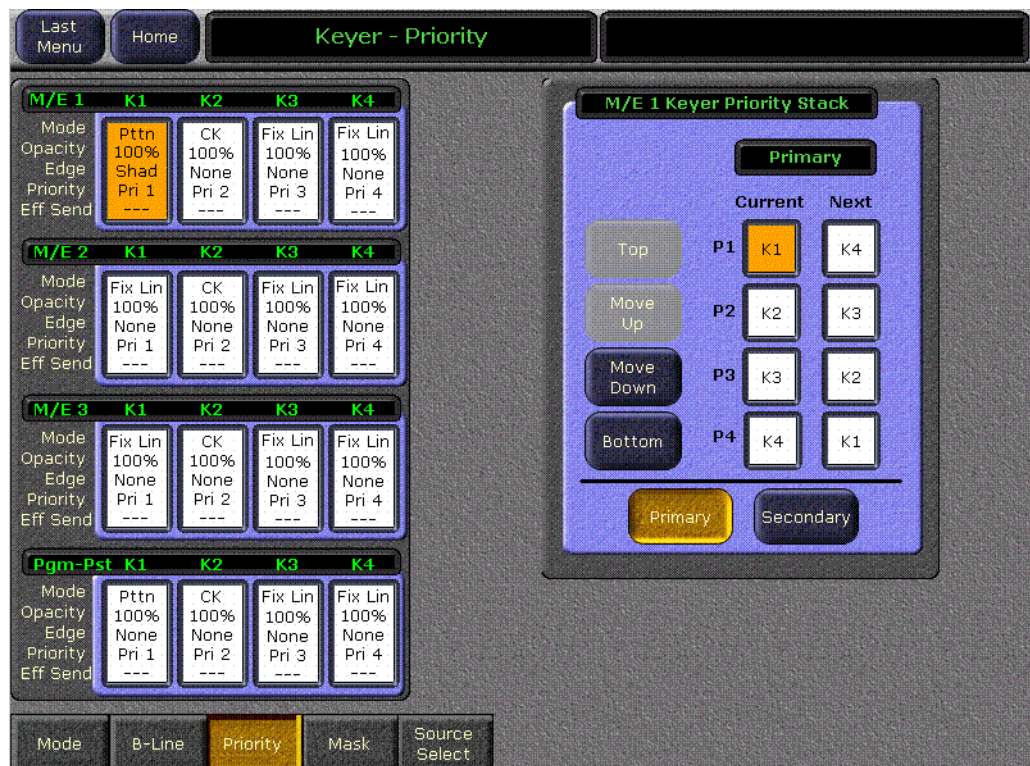
Keyer Priority

Video switchers with only two keyers per bank use a simple key over, key under mechanism to control the stacking of the keys. Only one key can be located over the other. The Kalypso system has four keyers per bank, so more complex stacking is possible. Keys can be placed between other keys, using key priority.

To Change the Current Keyer Priority:

1. Go to the Keyer-Priority menu by pressing the **Keyer** Menu panel button, then touch the **Priority** category selection button (Figure 165).

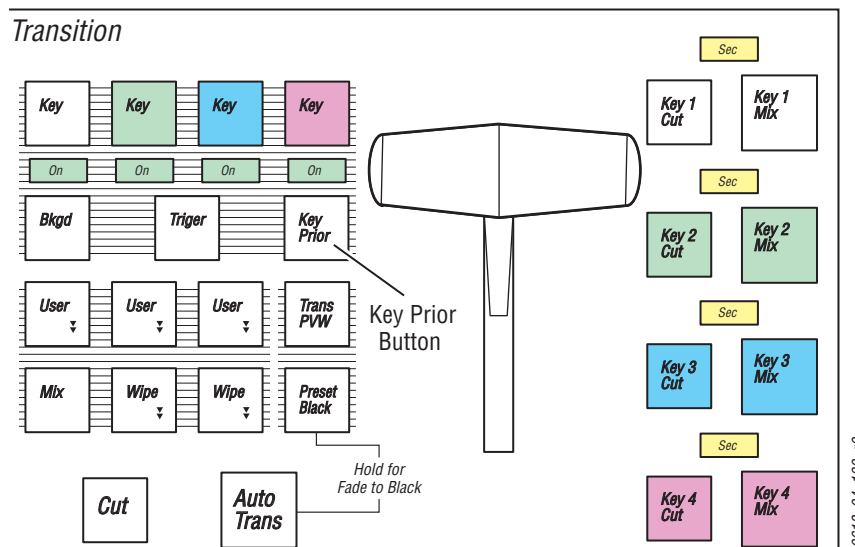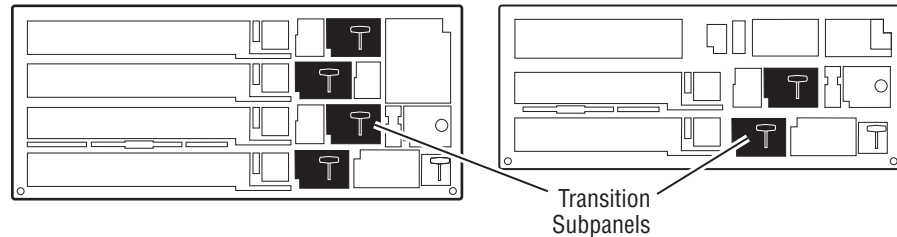*Figure 165. Keyer Priority Menu, Current Stack Selected*

2. If not already set up, turn on the desired keys and arrange them so they overlap, observing the Program monitor. This will make the changes in key priority visible. For demonstration purposes, you can use four preset pattern keys.

3. Select the keyer you wish to move in the stack in the Current column, then use the **Top**, **Move Up**, **Move Down**, and **Bottom** buttons on the left to place the key in the desired location. The key priority order changes immediately, as a cut.

To Transition Between Different Keyer Priorities:

Key priority transitions use a Current priority stack and a Next priority stack. The transition occurs between the two stacks.

1.   Press the **Key Prior** Transition Element button in the Transition subpanel.
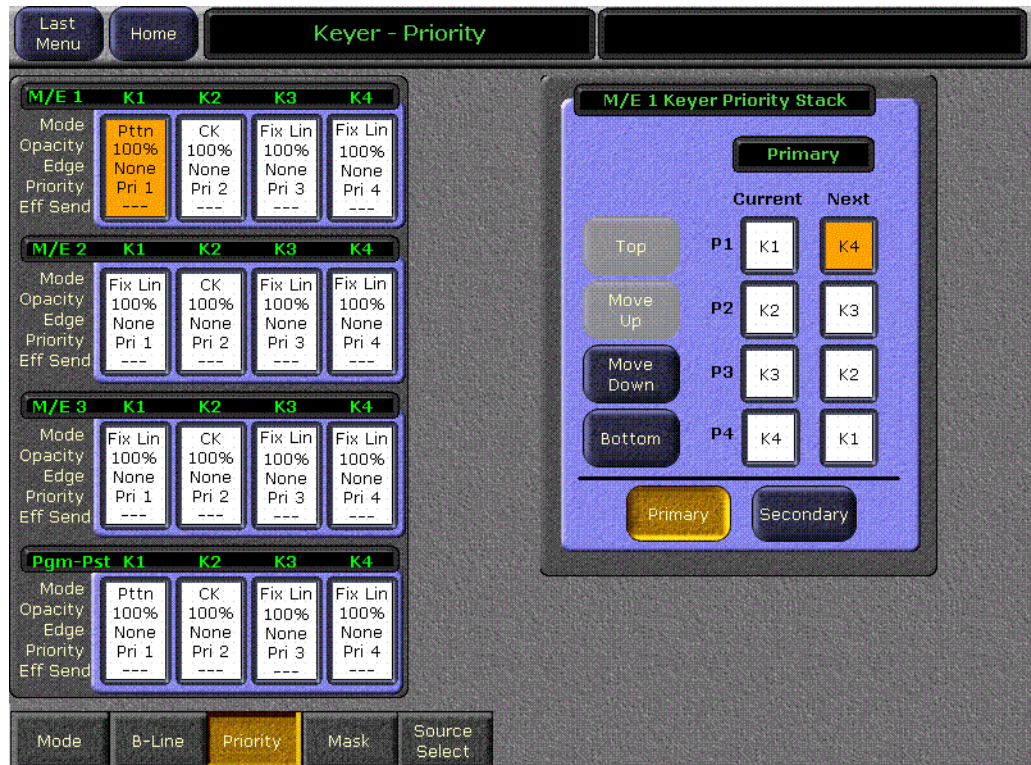
Figure 166.   Transition Subpanel

2.   If not already set up, turn on the desired keys and arrange them so they overlap, observing the Program monitor. This will make the changes in key priority visible. For demonstration purposes, you can use four preset pattern keys.

3.   Delegate that bank for preview in the Preview subpanel. This shows the end result of the transition (the Next priority).

4.   Go to the Keyer-Priority menu by pressing the **Keyer** Menu panel button, then touch the **Priority** category selection button.

5.   The current stack in the menu is automatically set to what is currently being output. You can change the Current priority stacking order if desired, as described on .

6. Set up the Next priority stacking order, selecting the keyers in the Next column and then using the **Top**, **Move Up**, **Move Down**, and **Bottom** buttons (Figure 167). The new stack will be visible on the preview monitor.

Figure 167. Keyer Priority Menu, Next Stack Selected

7. Select the type of transition, using the **Mix**, **Wipe 1**, or **Wipe 2** buttons in the Transition subpanel. If you selected a wipe, go to the Wipes menu by double pressing one of the **Wipe** buttons, and then select the pattern and any modifiers to be used with the wipe.

8. Move the lever arm or press the **Auto Trans** button in the Transition subpanel to perform the key priority transition. The transition is shown on the Program monitor.

Chroma Key Operating Notes

Introduction

The Kalypso system features chroma keyers with powerful controls. These controls offer subtle adjustments to allow successful keying of difficult subject matter (fine hair, smoke, translucent objects, etc.), and to overcome some problems resulting from imperfect chroma key set coloring or lighting. The Kalypso chroma key also has an Auto Setup feature that can create an excellent chroma key under most circumstances without the need for manual adjustment.

See *Chroma Key on page 88* for background information that can help you better understand the chroma key controls. The following information provides more detailed instructions on how to set up a chroma key using the Auto Setup feature and use the manual controls in the Keyer menu.

Auto Setup

The first step of setting up most chroma keys is to use Auto Setup. Auto Setup automates the first steps to achieving a chroma key. Auto Setup performs the following:

- Calculates primary suppression Hue and Luminance.

- Sets primary suppression Selectivity and Chroma to defaults.

- Calculates Clip Low, and sets Clip Hi to default.

- Sets all the secondary suppression values to duplicate the primary suppression values, but turns secondary suppression off.

- Changes Opacity temporarily to 100% to permit an accurate backing color sample, and then returns it to its original setting.

- Sets Key Position and Size values to default (0).

Two different Auto Setup algorithms are available, one for well designed and lighted sets (**Reshape** off), and the other for more challenging sets (**Reshape** on). Depending on individual circumstances, additional manual adjustments may be required after you use Auto Setup.
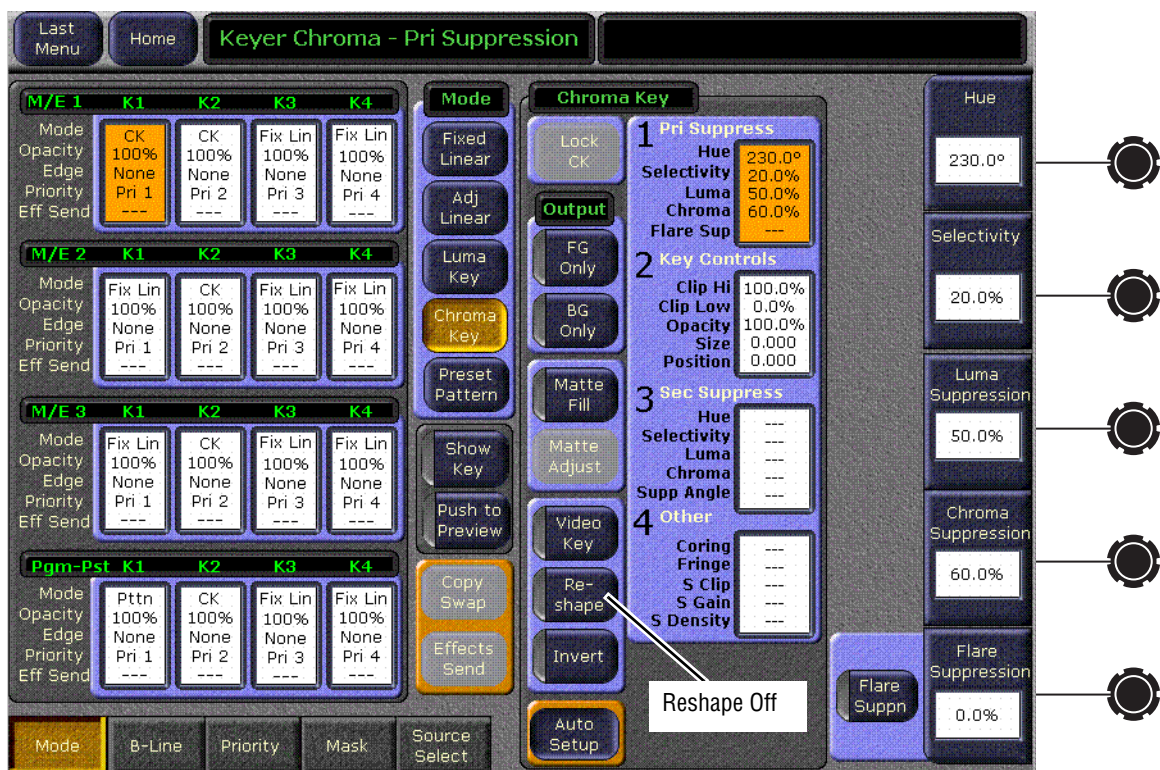
After an Auto Setup has been initiated, you can cancel it by pressing the **Auto Setup** button again, but the chroma key will retain the default settings imposed.

To Chroma Key Using Auto Setup:

1. Press one of the **Key 1-4** Transition buttons on an M/E to delegate the keyer you wish to use.

2. Choose on the selected keyer's key bus the chroma key source containing the chroma key backing color.

3. Select **Chroma** as the key type in the Keyers subpanel, if necessary (source memory may automatically select this key type).

4. Choose on the A bus the source that will be used to replace the backing color of the chroma key source.

5. Go to the Keyer menu (double press the **Keyer 1-4** button for that keyer in the Keyer subpanel) and make sure **Reshape** is off for the keyer you are using (Figure 168).

Figure 168. Keyer Menu, Chroma Key Reshape Off

6. Press the **Auto Setup** button on the Main panel. Preview for that M/E will now display the chroma key source with a superimposed cursor. The cursor actually represents a box of 16 x 16 pixels.

7. Use the joystick to position the cursor on the backing color. Select a darker area, if one exists, to optimize the backing color suppression.

8. Press the button on top of the joystick. The chroma key will be set up automatically using the average of the colors selected by the cursor box. Because **Reshape** was off, fine edges of the key will be preserved.

9. If this chroma key is acceptable, you are done. If set, lighting, or other conditions prevent the result from being acceptable, you need to decide whether to adjust the chroma key manually or use Auto Setup with Reshape.

    • Manual adjustment permits retention of fine edge detail (see *Manual Chroma Key Adjustments on page 217*). In particular, if there are problems with translucent areas (hair, smoke) secondary suppression controls can be useful (see page 221).

    • Auto Setup with Reshape produces a chroma key with harder edges, but accommodates wider set variations (see below).

To Chroma Key Using Auto Setup with Reshape:

If the set is lit unevenly or has other problems, Reshape is available to help solve the problem. A better alternative, if time permits, is to adjust the lighting on the set to even out the backing color. This may improve the key so that Reshape is not needed.

1. If you decide you must use Reshape, follow the Auto Setup procedure described above, but in Step 5 touch **Reshape** on in the Keyer menu to turn it on (its green indicator will illuminate). After selecting the backing color area and touching the top button on the joystick, the chroma key will be set up with coarser values better able to handle set variations.

2. If this chroma key is acceptable, you are done. If you are still not satisfied, you can fine tune the chroma key using manual adjustments.
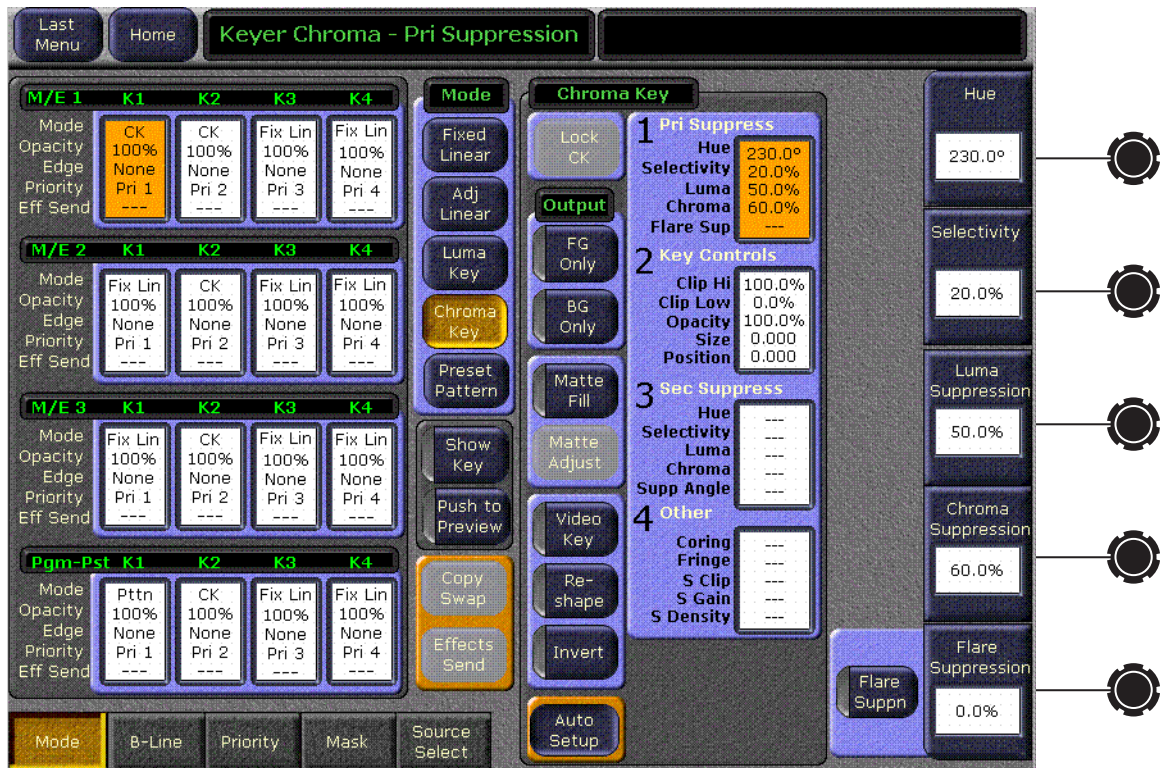
Manual Chroma Key Adjustments

If the Auto Setup of the hue fails to provide a suitable chroma key, additional controls are available in the Keyer Menu for fine tuning the key. Chroma key manual set up consists of choosing the best set of compromises to provide adequate detail and color fidelity to meet your needs. While using this menu you need to view the chroma key scene on a monitor. A vectorscope and waveform monitor can also be very useful when setting up a chroma key. During set up you need to focus your attention on particular areas of the foreground, background, and/or composite. The areas you look at will change depending on the individual controls being used. The **FG Only** and **BG Only** buttons can be used to remove extraneous picture information, allowing you to view only those areas of the composite.

Chroma key set up procedures follow a recommended order, as indicated by the numbered steps displayed on the menu. However, requirements can vary depending on each individual scene. You may need to go back to earlier steps and readjust previous settings to optimize the key. Understanding what the chroma key controls do will help you decide what adjustments are required for your individual situation.

Access Keyer Menu and Delegate Keyer

Press the **Keyer** Menu panel button, then touch the **Mode** category selection button to access the Keyer Chroma menu. You can also double press the **Chr** button in the Keyers subpanel to access this menu. Delegate the keyer you wish to set up on the left side of the screen, then touch the **Chroma Key** Mode button (Figure 169).

Figure 169. Keyer Chroma Menu, Pri Suppress Controls

Primary Suppression

Primary suppression is the most critical chroma key parameter, and the easiest to set. Auto Setup should take care of this, but manual adjustments can be made if desired. If primary suppression is set wrong, however, it will be impossible to achieve a good chroma key with the other controls.

Primary Suppression should be set while looking at the foreground. Ideally the backing color will appear as a small dot on the vector scope and a perfectly flat line on the waveform display, but this never occurs due to set lighting variations, shadows, etc. This means you will need to pick the best suppression for the overall look of the key.

1. Touch the stage 1 **Pri Suppress** data pad, if necessary, to activate these controls (Figure 169).

2. Adjust Hue, Selectivity, Chroma, and Luma primary suppression to eliminate the backing color.

    •   **Hue** can be set accurately with Auto Setup. **Hue** should center on the primary color of the backing area of the foreground scene. Depending on where **Luma** and **Chroma** primary suppression are set, adjusting **Hue** may not make any noticeable change on the scene. **Chroma** suppression should be preset to 100% and **Luma** set to 0%. Hue can then be tuned to remove the backing color.

    •   **Selectivity** may need to be increased if there are colors in the foreground image that are being suppressed. **Selectivity** should be set as low as possible without including colors that should not be suppressed. For example, when keying on green, a greenish yellow shirt might be affected by the suppression. If so, adjust the selectivity high enough to reject that color. Too high a selectivity is one of the classic causes of a noisy key. If the foreground subject is stationary, consider using a force mask instead of increasing selectivity.

    •   **Chroma** suppression can be set accurately with Auto Setup. To adjust, increase **Chroma** suppression and observe the backing color dot on the vector scope move toward the center. You want to center it exactly, so no chroma exists in the backing area. 100% chroma suppression is the correct setting for all chroma keys. At this point, you will probably see a line through the center of the vector scope. With increased selectivity, this line will become an arc.

    •   **Luma** suppression adjustments may be necessary if shading is visible in the backing area with **FG Only** selected, or if the shading adversely affects the background image. Primary Luma suppression is hardly ever desired when Reshape is on. To adjust, increase **Luma** suppression and observe the backing color move toward black. You want to make the backing color just black. Increasing this control too much will make the chroma key hard and noisy. When not enough, highlights will be added to the background. Note that incomplete luminance suppression is not necessarily bad. The highlights added to the background will match the shading on the backing wall, adding natural shadows and perhaps eliminating the need to add artificial shadows.

    •   All the above adjustments may need to be revisited later.

3. Another potential artifact of chroma keying is a tinting of the overall foreground subject due to lighting splash from the backing color or lens flare. **Flare Suppression** adds a small amount of color to the entire foreground image to cancel the splash or flare. Typically less than 2% of the backing color is needed to neutralize the flare.
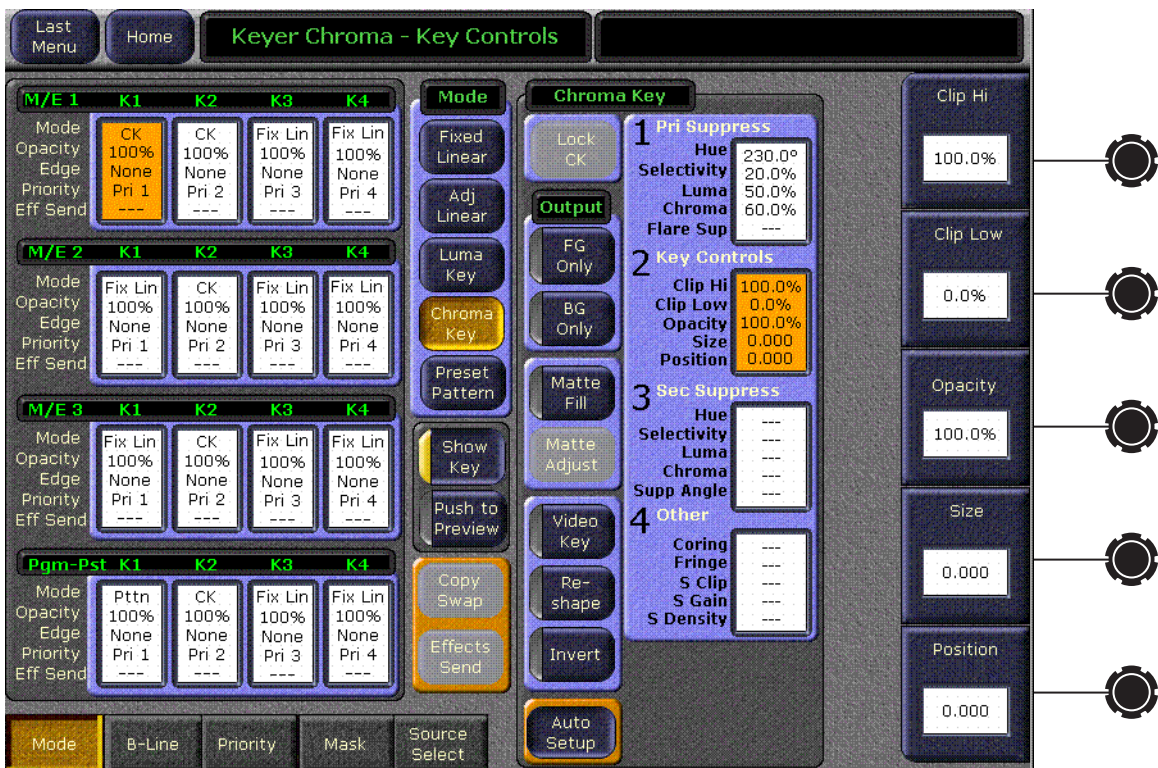
Key Controls

The purpose in adjusting **Clip H**i and **Clip Low** is to cause the proper hole to be cut in the background. All areas of the backing color should be full background while all areas of the foreground should make the background completely invisible. The easiest way to do this is to observe the key signal while making your adjustments.

The smaller the difference between **Clip Hi** and **Clip Lo**, the higher the keyer gain. High gain amplifies noise present in the transition between transparent and opaque. The correct setting is with **Clip Hi** and **Clip Lo** set to just barely achieve opacity and transparency, respectively.

1. Touch the stage 2 **Key Controls** data pad to activate these controls. You can now manually adjust keyer clipping controls.

2. Select **Show Key** in the Keyer menu (Figure 170) and look at the M/E preview output on a picture and waveform monitor.

Figure 170. Key Controls

3. Adjust **Clip Hi** so that all areas of the foreground objects are white. If **Clip Hi** is set too low (too far clockwise), much of the translucent areas will be forced to be fully opaque, hardening the key and darkening the transition area between background and foreground.

4. **Clip Low** can be set accurately with Auto Setup. Adjust **Clip Low** so that all areas of the backing color are black. If **Clip Lo** is set too high (too far counter-clockwise), translucent areas will be forced fully translucent, hardening the key.

Note   When adjusting clip levels, remember that areas on the edge of the foreground subject should show as shades of gray. Gray indicates areas of translucency, which is desirable in chroma keying.

5. Check the final results with **Show Key** off and the chroma keyer in normal mode (**FG Only** turned off). Note that incorrect adjustments can create a hard, noisy key.

6. If the chroma key now looks good, you are done. If dark edges are present, there may be too much primary **Luma** suppression or **Clip Hi** or **Clip Low** may be set improperly. If adjusting these parameters fails to solve the problem, you should consider activating the Reshape feature.

Reshape

Reshape is useful when shading variations exists in the backing color. A better alternative, if time permits, is to adjust the lighting on the set to even out the backing color. This may improve the key so that Reshape is not needed. Reshape helps with backing color suppression at the expense of a harder looking key with more noticeable edge artifacts.A drawback of Reshape is loss of detail in the keyed edge. For example, smoke and hair in the foreground will probably be lost.

1. Touch the **Reshape** button to activate this feature.

2. Set primary **Luma** suppression to 0.

3. You can now readjust the **Clip Hi** and **Clip Low** controls if necessary to fine tune the key as described above.

4. When **Reshape** is on, key resizing and positioning also become available to clean up the key edges.

   • **Size** narrows the key signal and can remove much of the blue or green edge on the foreground subject.

   • **Position** moves the key signal left and right, and can be used to reduce a color edge along only one side of the foreground.

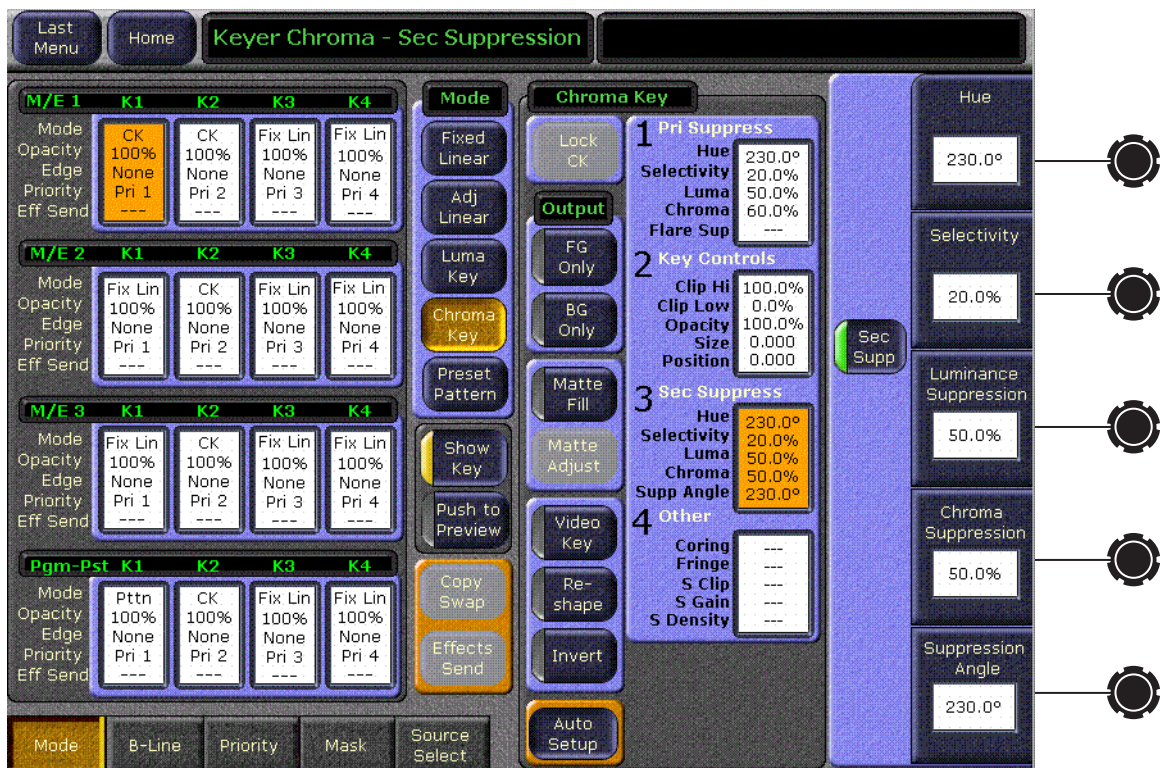## Secondary Color Suppression

Secondary color suppression is intended to improve the color of translucent areas (e.g., glass or smoke) or fine detail near the edge of a foreground subject (e.g., hair). These areas can be take on some of the backing color. Much less secondary suppression will be needed than is used for primary suppression, because the foreground color is only partially corrupted by the backing color. Because there is a mixture of backing color and fore-

ground color, the secondary suppression Hue and the direction (Angle) will be different from primary suppression. Primary suppression removes the backing color, while secondary suppression corrects the color in translucent areas.

Note   If Reshape has been applied, it is unlikely enough edge detail will remain to use secondary color suppression.

1. Touch the stage 3 **Sec Suppress** data pad and then touch the **Sec Supp** button to activate this feature (Figure 171).
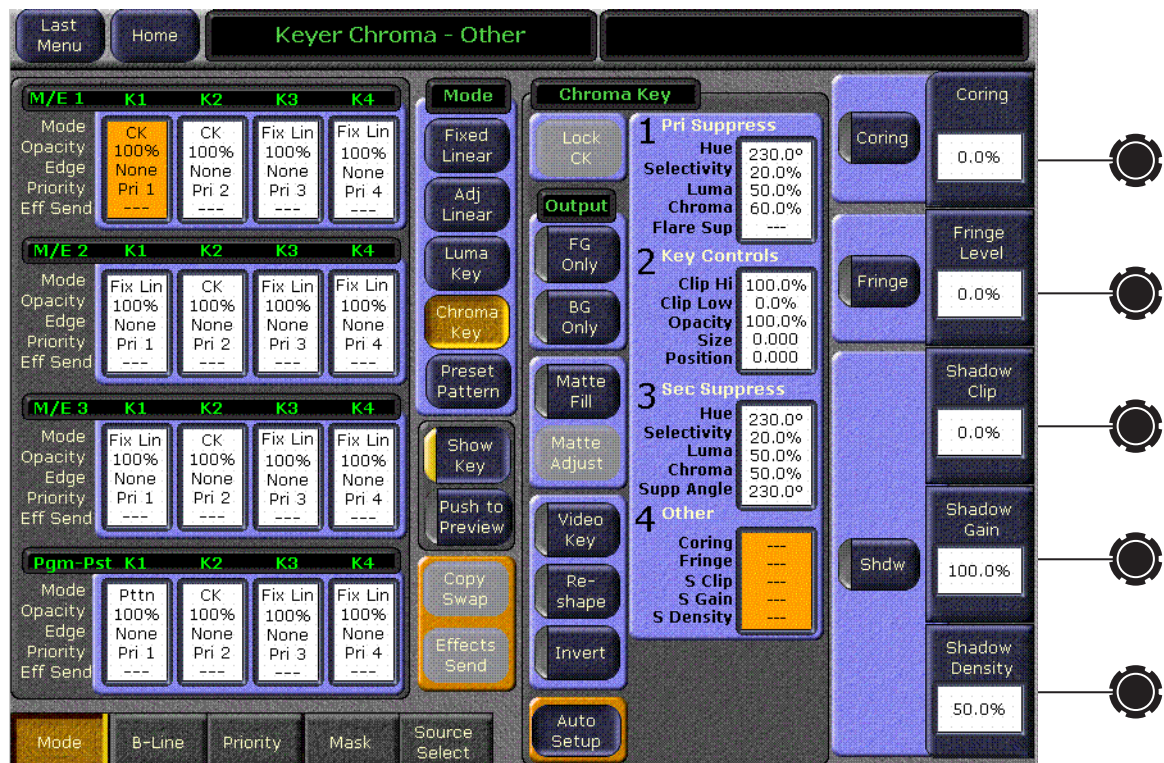
Figure 171. Sec Suppress Controls

2. Adjust secondary suppression **Hue** and **Selectivity** so that the translucent area is affected, but opaque areas of the foreground are not. The final hue will lie somewhere between the backing color (primary suppression hue) and the uncorrupted foreground color.

- When making this adjustment, it is helpful to turn the secondary **Chroma Suppression** to maximum, and the secondary **Suppression Angle** to produce an unnatural color in the affected area. This makes the changes to secondary suppression more obvious.

- Selectivity should be kept as wide as possible. You should only narrow selectivity (increase its value) if you cannot avoid changing opaque areas of the foreground.

3. Adjust the secondary **Angle** so that changing secondary **Chroma** suppression moves the color in the desired direction. You are trying to match the color of the translucent areas to an opaque (uncorrupted) area of the foreground subject.

4. Decrease secondary **Chroma** suppression for the best match between corrupted (translucent) and uncorrupted (opaque) areas. Interaction between secondary suppression Angle and Chroma suppression may require repeating these adjustments.

5. Increase secondary **Luma** suppression to balance lightness of the translucent and opaque areas.

6. Repeat secondary suppression Angle, Chroma suppression and Luma suppression for best results.

Other Chroma Key Controls

Additional chroma key controls are available by touching the stage 4 **Other** data pad (Figure 172). Coring, fringe, and shadow controls can be individually activated by touching the labeled buttons.

Figure 172. Other Controls

Coring replaces any pixels in the luminance signal after primary suppression that are below the adjustable threshold with black. This eliminates noise resulting from incomplete suppression. While coring can improve some

keys, it can easily be over done. Coring thresholds much above black will affect dark grays that are actually part of the foreground subject, making the chroma key composite look unnatural.

Fringe is used to restore color to the gray portions of the foreground color resulting from secondary suppression adjustments. This control is only active when secondary suppression is on.

Shdw provides controls of shadows that fall on the backing. **Shadow Clip** and **Shadow Gain** allow selecting the range of the luminance portion of the foreground that produces a shadow. **Shadow Density** is an opacity control for the shadow and adjusts how much shadow is added to the background.

Pattern Mix

The Kalypso system can combine the complex wipe pattern generators (**Wipe 1** and **Wipe 2**), to create a wide variety of customized wipes.

To Create a Pattern Mix on Wipe 1:

1. Double press the **Wipe 1** button in the Transition subpanel. This selects **Wipe 1** as the next transition type, and also opens the Wipes menu with Wipe 1 delegated for control.

2. Select the Wipe 1 pattern to be used by touching the **Ptn** data pad in the C1 Generator pane, and then selecting one of the displayed patterns.

3. Select the Wipe 2 pattern by touching the delegation button in the W2 column, and then select a displayed pattern different from Wipe 1.

4. Touch the **Mix** data pad located to the right of Ptn data pad. Additional control buttons will appear at the bottom of the menu.

5. Delegate that bank for preview in the Preview subpanel.

6. Press the **Trans PVW** button in the Transition subpanel, and move the lever arm part way. This will display the Wipe 1 pattern on preview.

7. Touch the delegation button in the W1 column to delegate the menu to control the Wipe 1 pattern generator.

8. Touch the **Pattern Mix** button so its indicator illuminates. The preview monitor will now show the combined Mix 1 and Mix 2 pattern.

9. You can select the type of pattern mix with the Mix type buttons (**Mix**, **NAM +**, **NAM −**). The NAM buttons are used for And or Or pattern mixing.

10. You can also adjust the amount each wipe pattern contributes to the mix with the **Ratio** control. At 50%, each pattern contributes equally. At 25%, the other pattern contributes only 25% to the final pattern.

M/E Copy/Swap

Copy and Swap functions are available for M/Es. With Copy and Swap you can use the settings of one location at a different location in the system. This can be useful if, for example, a effect has been set up on M/E 1 but it needs to be placed on-air using M/E 2. You can quickly copy the M/E 1 settings to M/E 2 and place it on-air, freeing M/E 1 for another purpose. When an M/E copy or swap is performed, all the M/E settings are transferred. This includes the current source selections and all the settings for wipes, keyers, and mattes.

You use the Copy/Swap subpanel to copy and swap M/E settings (Figure 173).

Figure 173. Copy Swap Subpanel

Pressing the **M/E Copy** or **M/E Swap** button initiates the copy or swap operation, but nothing actually changes until the operation is completed using the delegation buttons in the Mattes subpanel.

To Copy an M/E:

1. Press **M/E Copy**.

2. Press the Mattes delegation button of the source M/E.

3. Press the Mattes delegation button of the destination M/E.

To Swap M/Es:

1. Press **M/E Swap**.

2. Press the Mattes delegation button of the first M/E to swap.

3. Press the Mattes delegation button of the other M/E to swap.

Undo Button

The **Undo** button in the Copy/Swap subpanel reverses a copy or swap operation that has been performed. Only one level of undo is supported. For example, pressing **Undo** a second times does not return the M/Es to their previous states before the first Undo was performed.

Control Panel Copy Swap Enhancements

With the release of Version 14.0, Keyer and Matte settings can now be copied and swapped directly on the Main panel. Wipe settings can now be copied with the Main panel as well. In previous software versions only entire M/E settings could be copied and swapped from the Main panel. Individual settings could be copied and swapped using the Copy Swap menus in earlier software and this capability remains available in the new software.

Copy Swap Subpanel Buttons

The Main panel **Wipe Copy, Keyer Copy, Keyer Swap**, **Matte Copy,** and **Matte Swap** buttons operate similarly to their **M/E** button counterparts above. The **Wipe Swap** button is inactive (refer to Figure 173).

The **Incl Wipes** button is used to include the wipe pattern information with Keyer and Matte copy and swap operations.

Main Panel Copy and Swap Operation

The general procedure consists of pressing the **Copy** or **Swap** button of the desired type, then pressing delegation buttons to specify exactly which settings to Copy or Swap. This may require a series of button presses to fully

identify which settings will be transferred. Groups of delegation buttons available at each step in the process will blink to help you identify which buttons to press. When the settings have been completely specified using the delegation buttons, the Copy or Swap operation occurs and then the delegation buttons return to their usual illumination state.

The most complicated Copy operation is shown below as an example. Other Copy and Swap operations will require fewer delegation button presses. This example involves copying a Complex Wipe pattern from the M/E 1 Primary partition to M/E 2 Secondary partition.

Copy M/E 3 Wipe 1 to M/E 2 Wipe 2 Example

1. Press the **Wipe Copy** button. This initiates the process of identifying which wipe settings to copy. The delegation buttons in the Copy/Swap subpanel illuminate.

2. Press the **M/E 3** delegation button. The other M/E delegation buttons go off, indicating M/E 3 has been selected to copy.

3. Press the **Wipe 1** delegation button. The Keyer and other Wipe delegation buttons go off and the Primary and Secondary delegation buttons on each M/E illuminate.

4. Press any illuminated **Pri** button. This completes the selection of the M/E 3, Wipe 1, Primary partition settings. The Copy Swap subpanel delegation buttons will now blink, indicating the target of the copy operation needs to be specified.

5. Press the following delegation buttons in order to begin specifying the target: **M/E 2**, **Wipe 2**, **Pri**. The Complex Wipe delegation buttons in the M/E Modifiers subpanel will then illuminate. You need to specify which Complex Wipe generator will receive the settings.

6. Press the **C1 Wipe** delegation. The Copy operation takes place and all the delegation buttons return to their usual tallies.

Other Copy and Paste Operations

The Wipe Swap button on the Main panel remains inactive in Release 15.0. A Copy Swap menu is available for other operations, however. See the separate *Kalypso Reference Manual* for information about the Copy Swap menu.

Bus Linking

Overview

Bus linking allows a source selection on one bus to change the source on another bus. Suite configuration settings permit the establishment of a one-to-one relationship between different buses (a *Controlling* bus can affect one other *Linked* bus). Once this link is established, sources on the Controlling bus can be associated with sources on the Linked bus, such that selecting that source on the Controlling bus causes the Linked bus to select that associated source.

Multiple sources on a Controlling bus can be associated with a single Linked bus source, so selecting any of those Controlling bus sources selects that same Linked bus source. Controlling bus sources can also be given no association, so selecting that Controlling bus source has no effect on the Linked bus.

The collection of all the source associations between two buses makes up a Link Mapping table. This table resides in the Controlling bus and determines what commands the Controlling bus will send to a Linked bus when a bus link is active. The Link Mapping table can be copied to another bus, permitting rapid setup of multiple bus links.

Examples

A typical use of Bus Linking is to have the buses of one M/E follow the selections on another with a few source substitutions. For example, if there's a special camera only used for the primary customer's feed, a Linked bus used for a secondary customer's feed might select a wide shot whenever that camera was selected on the Controlling bus.

Another example is to prevent feedback when selecting a studio wide shot. Many modern sets include monitors, and these will typically be fed from an aux bus of the switcher with program output selected. When the wide shot camera is selected on PGM-PST A bus, the camera might pick up the monitor wall and generate video feedback. This can be prevented by associating all source selections on PGM-PST A except the wide shot camera to select PGM-PST A on the aux bus. The wide shot camera source is then associated to an alternative graphics source on the aux bus appropriate to the show.

Another possibility is to program the M/E 3 A row as an extension of the PGM-PST A bus for shows that need instant access to more than 32 sources without pressing the Shift button. In this case M/E 3 A is the Controlling bus and PGM-PST A is the Linked bus. In this scenario, the easiest way to set this up is to link the buses and map the sources one to one, then set the shift preference for M/E 3 A to Shifted. An alternative method is to map

each source on M/E 3 A to a specific alternate source on PGM-PST A. Other M/E 3 buses could be linked for additional extended selection. A third alternative is to map all sources on M/E 3 A to select M/E 3 A on PGM-PST A.

Bus Linking Menu

The Bus Link menu allows the operator to set up bus links and source associations and enable the linking. This menu is accessed via Daily Setups, Suite Prefs, Bus Linking (Figure 174).

Figure 174.   Bus Linking Menu

The Bus Linking menu has two main panes, a Controlling bus pane on the left and a Linked bus pane on the right. Controls in these panes are used to select the buses to be linked and associate the sources between those buses. The Controlling bus pane shows the current source associations. Controls outside these panes on the right side of the menu are also available for making source associations and managing bus links.

As a general rule, the Bus Linking menu operates from a Controlling bus viewpoint. The basic steps to follow are to select the Controlling bus, select the Linked bus, enable the link, select the Controlling bus source, then select the Linked bus source. See *Source Associations on page 231* for more information.

Bus Picker

Touching the data pad at the top of either the Controlling Bus or Linked Bus pane facilitates selecting a bus via a popup bus picker (Figure 175).

Figure 175. Bus Picker Popup

The type of bus to display (**M/E Buses** or **Aux Buses**) is chosen with the Bus Type buttons at the bottom of the menu. When a Linked bus has been selected you can also choose **(none)** to define no bus link. Only valid buses will be displayed. Unavailable buses (those already linked to other buses) appear grayed out. Touching a bus button selects that bus for that pane. When a bus is selected, you return to the previous Bus Linking menu (Figure 174 on page 229), with the information in the scrolling lists updated to indicate the current status for the newly selected buses.

Buses are linked by selecting one in each pane and then turning on the **Link Enable** button in the Controlling bus pane. Note that the **Inhibit All Links** button in the lower right corner must also be off for the links to be active.

Bus Linking Restrictions

• The Switched Preview, Primary Preview, and Still Store input buses cannot be configured as Linked buses.

• An Aux bus associated with a DPM cannot be configured as a Controlling bus. However, these buses may be configured as Linked buses.

Source Associations

Selecting a button in the Controlling Bus pane delegates the Linked Bus pane to that Controlling source (Figure 174 on page 229). Selecting a button in the Linked Bus pane associates that new Linked bus source to the currently selected Controlling bus source. The **(none)** selection chooses no source link. A complete Link Mapping table is built by selecting each source in the Controlling Bus list, then selecting the appropriate source in the Linked Bus list.

Two soft knob controls on the upper right can be used to select sources to be associated. The top knob selects the source in the Controlling Bus pane, and the second knob selects the source in the Linked Bus pane.

The **Lock** button changes the behavior of the Linked Bus scrolling list. When **Lock** is Off, selecting a source in the Controlling Bus pane will scroll that list so the Linked source is visible in the pane. When **Lock** is On, selecting a source in the Controlling Bus panel the list will not scroll. The selected Linked source may not appear in the pane. This permits the rapid selection of adjacent Linked Bus sources without having to continually re-scroll that list.

Link Management

Individual bus links are enabled and disabled with the **Link Enable** button in the Controlling bus pane. When enabled, commands will be sent from the Controlling bus to the Linked bus, provided all links are not inhibited (see below).

Other controls on this menu can be used to manage bus links.

Bus Hold Inhibits Links – This control affects the behavior of the Main panel **Hold** button for all Linked buses. When **Bus Hold Inhibits Links** is On and the **Hold** button on a Linked bus is also On, that Linked bus will ignore bus link commands and will not change sources when Controlling bus sources change. Note that the **Hold** button retains its existing functionality, keeping that bus from changing sources when an E-MEM register is recalled.

Inhibit All Links – Overrides all **Link Enable** settings to disable all active bus links. This does not change the individual **Link Enable** settings, however. Turning **Disable All Links** off will re-enable any bus links with **Link Enable** on.

Shortcut Menu

Touching the **Display Shortcut Menu** button brings up a menu that can help reduce the time required to build Link Mapping tables (Figure 176).

Figure 176. Bus Linking Shortcut Menu

The current Controlling Bus and Linked Bus are identified in the data pads at the top of the pane.

Unity Mapping

All Sources One to One – Sets up a one-to-one mapping of Controlling bus sources to Linked bus sources. Useful when the linked sources mostly match the controlling bus sources.

All Sources to None – Sets all the Controlling bus link source mappings to (none). Useful when the controlling bus should only make a few changes to the linked bus (most controlling bus source selections do nothing to the linked bus).

Same Source Mapping

All the Controlling bus sources can be linked to the same Linked bus source, using the Same Source Mapping pane. Touching the **Set** button maps all the Controlling bus sources to the Linked bus source displayed in the data pad.

To choose a different Linked bus source for same source mapping, touch the Linked Bus Source data pad to go to the Bus Linking menu selection menu. Select the desired Linked Bus source from the scrolling list, then touch **Display Shortcut Menu** to return to the Shortcut menu. The Linked Bus source you selected is now displayed in the data pad and can be mapped to all the Controlling bus sources with the **Set** button.

Copy Link Mapping Table

The Link Mapping table of one bus can be copied to another bus. Touching the From This Bus and To This Bus data pads brings up the bus picker. Once the desired buses have been selected, touch the **Copy** button.

Note Link Mapping tables are active on Controlling buses only. If a list is copied to a Linked bus, the data is transferred but the table is ignored as long as that bus is not a Controlling bus. The Link Mapping table will become active on that bus should it later become a Controlling bus.

Display All Links Menu

Touching the **Display All Links** button on the Bus Linking menu brings up a scrolling list of all the defined bus links (Figure 177). This can be used to help manage the links. Buses that are not linked are not shown.

Figure 177. Bus Link Status

Link Enable – Enables the bus link, same as the Controlling bus **Link Enable** on the Bus Linking menu.

Break Link – Breaks the link between the buses. After the link is broken that pair of buses is deleted from the menu. It is therefore not possible to undo the Break Link operation.

Bus Linking Operation

Once the Bus Linking associations have been established and enabled, selecting a source on a Controlling bus that is associated with a source on a Linked bus will make the Linked bus select its associated source. The following special operating rules apply.

Source Override

Holding down a source select button on a Linked bus prevents that bus from changing its sources when Controlling bus source selections change.

Bus Pair Rules

Kalypso source selection buses can operate in pairs. M/E keyer buses operate in video fill/key cut mode. Aux buses can be configured in pairs, either as video fill/key cut or as video/video for external DPMs. When an bus pair is involved in bus linking, the following rules apply:

- Key cut selections on video fill/key cut bus pairs does not affect the key cut source on a linked bus (split key cut selections don't link).

- The fill/A side of the Controlling bus is always sent to the fill/A side of the Linked bus.

- If the Controlling bus is in video/video mode, the B side selection will be sent to the Linked bus.

- If the Linked bus is in video-video mode, a B side source change from the Controlling bus will change the Linked bus's B side.

- A video only bus behaves as if it is the A side of a bus pair.

Machine Control Operations

The Machine Control subpanel (Figure 178) can be used to control devices like DDRs, VTRs, still stores, character generators, etc. This subpanel can also control the Kalypso Still Store and GPIs to any external device. The Machine Control subpanel only controls devices that have been associated with Kalypso sources.

Figure 178. Machine Control Subpanel

Device Control Delegation

You can delegate machine control source selection to any Kalypso system Main panel bus (including the key buses). Once delegated to a bus, any source selected on that bus will be subject to Machine Control subpanel commands.

Note If a background bus is delegated for machine control, when the bus flip-flops during transitions, the Machine Control subpanel delegation will also change.

A bus is delegated for machine control using the **Set Deleg** button.

To Delegate Machine Control to a Bus with Set Deleg:

1. Press and hold down the **Set Deleg** button.

2. Select a source on the desired bus.

3. Release the **Set Deleg** button.

To Delegate Machine Control with a Source Select Button Hold Down:

A machine control device can be temporarily delegated to the Machine Control subpanel to that device.

1. Hold down the source selection button mapped to a machine control device on any Kalypso System Main panel bus. While that button is held down, Machine Control subpanel commands can then be issued to that device.

2. Release the source select button to return the Machine Control delegation to the bus last delegated for machine control.

Machine Control Commands

Once the machine control subpanel is delegated to a source, commands can be issued to that device.

Basic Commands

The **Play**, **Stop**, **Rewind**, **Fast Fwd**, and **Cue** buttons in the subpanel send these commands to the selected device.

Jogging a Clip or VTR

Holding down the **Stop** button while pressing the **Rewind** or **Fast Fwd** buttons jogs one frame forward and backward.

Selecting and Loading Clips

Pressing the **Prev Event** and **Next Event** buttons scrolls through a clip list reported by the device. When a clip that is not currently loaded is displayed in the readout (the **Cue/Load** button will go low tally), pressing **Cue/Load** loads that clip on the device.

Changing Delegations

When the machine control subpanel delegation changes to a different device, the first device continues to do what it was last commanded to do. As a simple example, a playing device will continue to play as the delegation changes. This also applies to mode selections like **Auto Start**, which will start a device when it goes on air. You can delegate the Machine Control subpanel to a device, turn its **Auto Start** on, then change the panel delegation. The device will still roll when it goes to air.

Gang Roll

Kalypso systems equipped configured properly support machine control of Profile DDRs and VTRs. Gang Roll permits rolling multiple external devices with the same set of panel controls. Devices can be linked so they play together at the same time (original and backup tapes, for example).

Note Kalypso Gang Roll does not synchronize multiple devices and there is a possibility devices may not respond to a Play or Stop command at precisely the same time. This may cause a slight offset in playback of multiple clips.

Devices are selected for Gang Roll on the Local Aux panel, and are then controlled together on the Machine Control subpanel.

Figure 179. Local Aux Panel

Gang Select
Button

Pressing the **Gang Select** button (Figure 179) on the Local Aux panel delegates the lower source selection bus to permit device selection. The source buttons for controllable devices only will go low tally to indicate they are available. Other source buttons on the bus will go off, and are inactive. Pressing a low tally source button includes it in the group to be controlled and the button goes high tally. You can select as many devices as are available. Pressing a high tally button de-selects the device from the group, and its button returns to low tally. Gang Roll remains active as long as at least one source is selected for the group. For example, you can delegate the Local Aux panel to control an Aux bus without affecting the selected group.

Figure 180. Machine Control Subpanel

Once a group of devices has been selected, the Machine Control subpanel controls (Figure 180) apply to the entire group. The display reports GANG CONTROL to indicate this special operating mode. The basic transport controls (Stop, Play, Rew, Fast Fwd, Forward Jog, Reverse Jog, Mark, and Cue are operational in Gang Roll mode.

Gang Roll is cancelled by holding down **Stop** and pressing **Play**, or holding down **Play** and pressing **Stop**. If both buttons are pressed simultaneously Gang Roll is canceled without rolling or stopping any devices.

Machine Control with the Menu Panel

The External Device Control menu, accessed via **Extern Device**, **Control** can be used for machine control (Figure 181).

Figure 181. External Device Control Menu

Standard **Cue**, **Stop** and **Play** controls are available for all devices configured for control.

Additional **Rewind**, **Fast Fwd**, and **Jog** controls are available in the larger control pane on the left. The **Swap** buttons transfer the control of devices between panes.

Loading Clips

External devices are controlled using various protocols (BVW, Odetics, AMP). These protocols have different capabilities, and specific models of external devices may support only specific protocols. The exact clip loading procedures, if available, will vary depending on the device model and protocol being employed.

In general, clips are loaded from the External Device Control menu by touching the **Program Clip** data pad in a machine control pane, and then selecting the clip from the list displayed.

Clip Directory (AMP Protocol)

On the External Device Control menu, touching a **Preset Clip** or **Program Clip** data pad brings up a menu from which you can select the desired folder and then choose a clip in that folder to load for playback (Figure 182). A similar menu is used with the Clip Browser on the External Device Event List menu, and for loading clips in the Timeline Events menu.

The Kalypso Machine Control subpanel always shows the clip list of the last selected folder. If you change a clip locally on the Profile DDR, that clip name will be updated on the Kalypso External Device menus. If the folder list or clip list are incomplete, re-enabling the device will fetch the entire folder and clip list.

Note Do not create file or folder names that have the pound character (#) along with either the dash (-) or underscore (_) character, and avoid blank spaces (for example, use "DeadEnd" not "Dead End". This can inhibit clip access.

Note A maximum of 20 folders is recommended along with a maximum of 20 clips per folder.

Figure 182. Folder and Clip Selection Menu

E-MEM Control of External Devices

Introduction

E-MEM effects can be used to:

- Load, cue, play, and stop DDR clips, and

- Cue, play, and stop tapes in VTRs.

Many functions available on the Machine Control subpanel can be performed with E-MEMs, but E-MEM device control offers greater precision. E-MEM device control is good for recalling the same clips repeatedly, and for integrating clips into specific switcher effects. Manual control is appropriate when different clips are used each time, and when clips are not used in a switcher effect (like rolling a news story and taking it directly to air.)

E-MEM device control operates independently from the manual controls on the Machine Control subpanel, but both mechanisms can be used together. For example, an E-MEM recall can make a VTR cue up, then the subpanel can be used to roll that tape.

E-MEM External device control utilizes *events*. External device events are different from other parameters in the Kalypso E-MEM system. Rather than defining a value at a keyframe and smoothing the transition between keyframes with interpolation, a device event consists of instructions sent to the external device at the time cursor passes the keyframe during an effect run. This similar to GPI and PBus triggers.

Controlling an external device typically requires spacing the instructions over two or more keyframes. The space between keyframes allows the device to respond to the first set of instructions. For example, a DDR or VTR takes time to load and cue before it can play. The effect must be built so that a play event does not occur until the device is ready, or the command will be executed late or not at all.

The Kalypso system does not play a DDR or VTR in sync along with the timeline as is done with digital effects devices controlled by CPL. Instead, the Kalypso system issues a play command and then lets the device manage its own playback. This means that if the Kalypso effect is lengthened or shortened, the device's playback may not line up with the effect as intended. Device playback does not speed up or slow down if the duration of the effect changes.

Configuration

Kalypso Machine Control option software must be installed and configured to permit either manual or E-MEM control of DDRs and VTRs. Sources will also need to be configured as external devices in Eng Setups. Refer to the separate *Machine Control Interfaces Installation Manual* for specific information.

E-MEM control for external devices is by default assigned to the **Misc 2** Master E-MEM subpanel enable group button. This can be changed using the Daily Setups E-MEM Prefs menu, accessed on the Menu panel by touching **Daily Setups**, **Suite Prefs**, **E-MEM Prefs**.

Operation

E-MEM device control is accomplished by:

* Associating an external device with an E-MEM enable group button (factory default is **Misc 2**),

* Enabling the E-MEM button for that enable group and, if editing the effect, delegating that enable group for editing,

* To run E-MEM device control effects, ensure the device(s) are Enabled for E-MEM control, using the External Devices Enables menu. Devices do not need to be enabled in this menu when building an effect, however, and in fact it may be desirable to disable them at that time.

* Specifying what device control events will be added to a keyframe in the effect, using the External Devices Timeline Events menu,

* Adding the device control keyframe to the effect (**Insert**, **Modify**, or **Learn**),

* Clear events after adding the keyframe, to prevent accidentally adding additional machine control commands to other keyframes,

* Specifying and adding additional device control keyframes if multiple keyframes are desired, clearing all devices each time, and

* Recalling and running the effect.

When the effect register is recalled, the first keyframe can, for example, command the device to load and cue. When the effect runs, the device can be commanded to play when a later keyframe with a play event is encountered on the timeline.

The device may not play if it has not fully cued when the effect is run. It is up to the operator to build the effect to accommodate cue and load time. Also, running effects with external device events backwards will not cause the clip or tape to play backwards. The order of the commands will be reversed and if the clip or tape plays at all it will not be at the anticipated time or direction.

Timecode Entry

Timecode is entered in hours, minutes, seconds, frames format, with optional • (dot) separators. Typing in partial values will enter the smaller value. For example, typing in **5** enters five frames (00:00:00:05). Typing in **5 •** enters five seconds (00:00:05:00). Typing in **5 • 4** enters five seconds and four frames (00:00:05:04). Typing in **5 • 4 • 3 • 2** enters five hours, four minutes, three seconds, and two frames (05:04:03:02).

You can enter timecode values without • (dot) separators. Simply enter the exact value. Leading zeros are ignored. For example, 00:02:00:11 can be entered by typing **2 0 0 1 1**, **0 2 0 0 1 1**, or **0 0 0 2 0 0 1 1**.

Multiple Events on the Same Keyframe

More than one external device event can be specified to occur in the same keyframe. If more than one event is specified, they are sent to the device in Load, Cue, Play order. For example, you can specify only **Load** which will make the device load to the start of the clip, or you can specify **Load** and **Cue** which will load and cue the device to the entered timecode. Both **Play** and **Stop** cannot be specified on the same keyframe, however. Turning one on automatically turns the other off.

Timeline Event Information and Work Buffer Values

The Event Summary and Events data pads update to show the current state of the work buffer. This indicates two things. First, it shows what events exist on each keyframe as it is encountered during effect run or time cursor navigation. Second, it shows what events will be added to the timeline if a new keyframe is inserted or one is modified. This is consistent with other work buffer parameters, but requires some discipline when working with events. For other parameters, inserting keyframes without changing values will result in no change between keyframes. But for events, this same practice will result in reissuing the event at each keyframe. It is a good practice to use the **Clear Events** or **Clear All Events** button after inserting or modifying a keyframe containing external device events. This prevents those same events from being duplicated when the next keyframe is inserted.

Examples

Preparation for Control

1. Turn on the **Misc 2** enable group button (or whichever button your machine control device has been associated with) and delegate it for effect editing in the Master E-MEM subpanel.

2. Go to the External Device Enables menu (**Ext Dev, Enables)** and set the device enable. (Figure 183).

Figure 183. External Device Enables Menu

- If you plan to run the effect and test its device control, make sure the device is enabled in the External Devices Enable menu.

- If you are just adding keyframes to the effect and do not want to actually run the device, make sure the device is disabled.

3. Go to the Timeline Events menu Figure 184), touch the **Clear All Events** button. This ensures only that device's events will be specified in the keyframe.

To Load, Cue, Play, and Stop a Clip:

1. Follow the *Preparation for Control* procedure above.

2. Go to the Timeline Events menu and touch the button of the desired device to delegate the menu to that device (Figure 184).

Figure 184. Timeline Events Menu, Device Delegated

3. Touch the **Load** button on the right. If the correct clip is not displayed, touch its data pad and select the clip from the list.

4. Enter the start timecode for the device:

- If you want to play the clip from its starting point, it will automatically cue to this location when loaded.

- If you do not want to play the clip from its starting point, either cue the device to the desired location using the Machine Control subpanel, or enter the timecode value manually.

5. Touch the **Cue** button to enter the timecode (Figure 185).

Figure 185. Timeline Events Menu, Cue Event Selected

6. Set up the Main panel to the desired state, making sure the DDR source is *not* selected on the PGM PST A bus.

7. Learn this state to an E-MEM register as the first keyframe of the effect.

8. Go to a point later in your effect giving sufficient time for the clip to load and cue. For example, to go three seconds in you can press **Go To Time**, **3**, **•**, **Enter**.

9. Touch the **Clear Events** button in the Events pane to deselect the old commands. This helps prevents accidental multiple load and cue commands in the same effect.

10. Touch the **Play** button on the Timeline Events menu.

11. Set up your control panel to the desired state, including selecting the DDR on the PGM-PST A bus.

12. Press **Insert** to add the keyframe information to the E-MEM register.

13. Go to a point later in your effect giving sufficient time for the desired material in the clip to play. For example, for a 20 second clip that started at three seconds, press **Go To Time**, **23**, **•**, **Enter**.

14. Touch the **Clear Events** button in the Events pane to deselect the old commands.

15. Touch the **Stop** button.

16. Set up your control panel to the desired state, including selecting an alternate source on the PGM-PST A bus.

17. Press **Insert** to add the keyframe information to the E-MEM register.

18. Touch the **Clear Events** button in the Events pane to deselect the commands.

19. Recall and run the register. The clip will load and cue, be taken on-air, play automatically, be taken off-air and then stop.

To Play a Video and Key Pair of Sources in Sync

1. Follow the *Preparation for Control* procedure on page 243.

2. Besides **Misc 2** (or whichever button your machine control device has been associated with), make sure **PGM PST** level is also enabled and delegated for editing on the Master E-MEM subpanel.

3. In the Timeline Events menu, delegate the device to be used for the video signal, and select **Load** and **Cue** events for it. Do not add these events to a keyframe yet.

4. Delegate the device to be used for the key signal, and select **Load** and **Cue** events for it.

5. Set up the Main panel so PGM PST **Key 1** is not on-air and the DDR source is not selected on the PGM PST A bus.

6. Add this to the first keyframe of the effect by pressing **Insert**.

7. Go to a later point in your effect giving sufficient time for the clips to load and cue. For example, press **Go To Time**, **3**, **•, Enter**.

8. Select PGM PST **Key 1** in the Next Transition area so it will mix on, and setup a split key with the two DDR channels.

9. Touch the **Clear Events** button in the Events pane to deselect the old commands.

10. Delegate the device playing the video and select a **Play** event for it.

11. Delegate the device playing the key and select a **Play** event for it.

12. Add these events to the same keyframe of the effect by pressing **Insert**.

13. Touch the **Clear Events** button on the Timeline Events menu to un-select the commands.

14. Put the PGM PST A bus in **Hold** to prevent the effect from changing its source.

15. Recall and run the effect. Both DDR channels will roll in sync and the system will mix the key on air at the instant they play.

To Load a Clip and Play On Air Later with Auto Start:

1. Follow the *Preparation for Control* procedure on .

2. In the Timeline Events menu, touch the button of the desired device to delegate the menu to that device.

3. Touch the **Load** button on the right. If the correct clip is not displayed, touch the data pad and select the clip from the list.

4. Set up the Main panel to the desired state, making sure the DDR source is *not* selected on the PGM PST A bus. DDRs cannot cue and buffer instantaneously, so should not be placed on-air immediately when the effect is recalled.

5. Learn this state to an E-MEM register.

6. Touch the **Clear Events** button on the right to un-select the Load command. This helps prevent accidentally creating unwanted load and cue commands when editing effects later.

7. Make sure the Machine Control subpanel is delegated to the appropriate device, then turn on the **Auto Start** button on the subpanel. Each device has its own auto start flag. Note that this is not a keyframeable E-MEM control, and so must be selected manually for use.

8. Recall the register. The clip will load.

9. After allowing sufficient time for the clip to load and buffer (which varies with different DDR models), take the DDR on-air. The clip will play automatically.

Because a Stop command was not entered, the clip will continue to play till it reaches its end, or is stopped with the Machine Control panel or by some other means.

Building an Event List

The event list editor is designed for speed and does not follow traditional editing operations. For example, a normal insert operation would have the operator select the insert point in the event list, select the clip to be inserted in the browser, and then press Insert Before or Insert After. Instead, the Event List editor makes insert and replace operations a mode and modifies what happens when a clip in the browser is touched. This allows an event list to be built by turning on Insert After, then touching clips in the order

they should appear in the event list. An insert operation is reduced from two button presses to only one.

1. Touch **Extern Device**, **Event List** to go to the External Device Event List menu.

2. Touch the **Insert** button so its indicator is illuminated.

3. Scroll the Clip Browser and touch the first clip for the list. It will be added to the Event List in the right pane, and the **Insert** button legend will change to **Insert After**.

4. Continue to select clips in the desired order with the **Insert After** button on to build the rest of the Event List.

5. If you need to re-arrange the order of the clips in the Event List, use the list editing buttons (**Move Up**, **Move Down**, etc.). Remember to first select the clip in the Event List where you wish the re-arrangement to occur before you use these buttons.

6. When the Event List is complete, it can be used for your production without saving it. The list will only reside in RAM, however, and so will be lost if the Kalypso system is reset.

7. To save the Event List for reuse in the future, touch **Save List**, navigate to the destination folder (creating a new one if desired), enter a name for the list, and then touch **Save**. This list can now

To Play a Video and Key Pair in Sync Using Device Links

The External Device Links menu is used to link devices so they can be controlled together from the Machine Control subpanel. For example, two DDR channels can be linked so they roll in sync, one playing the video signal and the other playing the key.

When loading or cuing linked devices, load and cue the primary device first. This also loads and cues the linked devices. Next, load and cue any linked devices individually. It is also helpful to set a Mark in point on each device so that when the primary device is cued, all devices cue up to the appropriate frame for subsequent sync roll.

1. Create a video clip and a key clip and set cue points so they are in sync.

2. Create a device link in the External Device Links menu. The device that will play the video clip is the primary device and the device for the key signal is the linked device. Enable that link.

3. Using the Machine Control subpanel, load the video clip on the primary device. That clip will load and cue on both devices.

4. Delegate the Machine Control subpanel to the linked device and load the key clip. The key clip will cue on that device.

5. Create a split key on a key bus using these two sources.

6. Select the key bus source select button for the split key source. A Machine Control subpanel play command will now play both devices in sync, and a cue command will cue both devices to their starting points. It is also possible to mark a new in point, if desired which will be applied to both the video and key sources.

Event List Automation

When combined with **Auto Start** and **Off Air Adv**, an event list provides a nearly automatic way to play out clips during a scripted show like a news cast. Once the event list is created and loaded into a DDR channel, taking the channel to air will play the current clip and taking the channel off air will cue up the next one.

When building event lists for fast paced shows, there may be no time to cue up the next clip on the same channel after the current one has run. In this case, splitting the rundown between event lists for two playout channels may be desirable. This may create management issues if the rundown order changes close to air. An alternative way to handle the situation is to load the same event list into two channels and use one as the primary playout channel and the second as a backup that can be cued to the next clip when back to back events with zero cue time occur

Event List News Rundown Suggestions

News programs often have last minute rundown changes. The Event List menu allows rapid manipulation of an event list while on-air.

- Event List clips can be played in random order. With **Auto Load** on, touching a clip in the Event List immediately loads that clip for play-back. When that clip finishes, the next one in the list loads normally.

- Clips in an event list can be reordered quickly. The **Move Up** and **Move Down** buttons allow a story to be selected and moved to a new location in the list. For example, if the next two stories need to be exchanged in playout order, selecting the next story loads it so it can be played immediately, then while that story is playing pressing **Move Up** reorders the list so the skipped story will be loaded next.

- Dumping a story can be done with **Delete**, however it is usually better to move abandoned stories to the end of the list just in case.

- Adding a story is simply an **Insert** operation.

- When an Event List is loaded, the Machine Control subpanel will scroll through the Event List and load only from there. The last entry in the readout is UNLOAD LIST which unloads the Event List.

Router Interface Operation

Introduction

The Kalypso system can interface with an external routing system. A routing system connects a *router source* (router input) to a *router destination* (router output). Changing the router source sends a different signal to the destination (called a *take*). A router destination can in turn be connected to a Kalypso input and be configured as a *routed Kalypso source* (called *switcher source* in this discussion and in the Kalypso menus). The router acts as a pre-selector for the switcher source, and so increases the number of inputs available to a button on a Kalypso system bus (Figure 186).

Figure 186. Router Source, Router Destination, and Routed Kalypso Source

Router signal switching is non-deterministic, as compared to source selections performed on a production switcher. For this reason, it is better to choose the desired router source in advance, then switch it on-air using switcher controls, rather than select a different router source while it is on-air.

An external router can be configured into *levels*, to allow the switching of multiple signals simultaneously. For example, video signals can be organized on one level, and key signals on another. By specifying both levels when giving a router take command, both the video and key signals of a source will be routed to their destinations.

Note   Kalypso system router take commands are only applied to all router levels. The external routing system's destinations must be configured with all router levels selected.

Router control panels can also *protect* router destinations from being changed by other control panels. A protected router destination cannot be changed by a different control panel, but may be changed by the panel that set the protection. Protections help prevent inappropriate router source changes. The Kalypso system can be considered a type of router control panel, and so the Kalypso system can protect router destinations. Kalypso system router protect commands are applied to all router levels.

The names of router sources appear on the Kalypso system source name displays. These names originate from the router system, and their text cannot be changed from the Kalypso system. If a routed Kalypso source has no connection to the router, an **X** appears in place of the router source name. If the router connection exists, but no source has yet been selected for that destination (which can occur during bootup), **No Src** appears.

Features

- Interfaces to the Grass Valley SMS 7000 routing system.
- Kalypso system configuration of routed Kalypso sources.
- Names of router sources are shown on Kalypso panel source name displays.
- Router source selection control via the Kalypso Local Aux panel (or Local Aux subpanel on 2-M/E systems), Main panel, and Menu panel.
- Protection types (None, Protect, and On Air).
- R-MEM control (see page 258).

Local Aux Panel Router Interface Operation

Note   Router interface operation becomes available after the Kalypso system and the external router have been properly configured. See the *Kalypso Installation and Service Manual* for additional information.

Controls

The Local Aux panel (or Local Aux subpanel on 2-M/E systems) can be placed in an alternative Router Assign mode for changing router sources used by switcher sources (Figure 187).

Figure 187. Local Aux Panel Router Interface Buttons

The **Router Assign** button on the Local Aux panel places that panel in Router Assign mode. All Aux Bus selection capabilities are disabled, replaced with router interface functions, and the button flashes to indicate this state. The Router light pipe also illuminates to show the current mode. Pressing **Router Assign** a second time exits Router Assign mode.

The **Shift** and **Unshift** buttons can be used to select switcher sources, same as standard source selection. These buttons are not active when selecting router sources to be used with the Kalypso sources.

The **Prev Page** and **Next Page** buttons navigate through a list of available router sources. Pressing each button advances to the previous or next group of sources.Up to 32 router sources (24 on 2-M/E systems) are available at a time. The names of the new router sources available for selection are shown on the middle source name displays.

The upper Aux Bus Delegation row of buttons can be used for direct access to one of 15 groups of 32 or 24 router sources. The bus ID display above each upper bus button shows the router source name for the first router source in the group. Pressing one of these buttons directly presents that group of router sources for selection on the lower source select bus.

Operation

Router source selection is a two step process. You first select the switcher source you wish to change, and then select the new router source for that destination. Router source selection may first involve accessing a page of sources, as there may be more than 64 (48 on 2M/E systems) router sources

available. Prompting in the lower left area of the panel indicates which step should be performed next.

1. Press the **Router Assign** button on the Local Aux panel to enter Router Assign Mode (the button blinks while in this mode). The source name displays will change to show only the routed Kalypso sources, with their current router source name. All other buttons and displays go dark.

2. Choose a switcher source by pressing its source select button. The **Shift** and **Unshift** buttons can be used to access additional switcher sources. After selection, the source name displays will change to show the names of the available router sources. The currently selected router source will be backlit in red.

3. Select a router source for the chosen switcher source by pressing the source select button displaying the name of the desired source. If there are more router sources available, you can use the **Prev Page** and **Next Page** buttons to choose different groups of router sources to select from. You can also directly choose a different group to select from on the upper Aux Bus Delegation row (see below). After selecting a router source, the system returns to Step 2 and you can select another switcher source to change.

4. When finished, press the **Router Assign** button on the Local Aux panel to return it to normal operation.

Direct Router Group Selection

If there are many router sources available, paging through the list may take more time than is available during a live production. Direct router group selection provides faster access. When there are more than 32 or 24 Router sources, they are alphabetically grouped and the first source in each group is displayed on the upper source name displays on the Local Aux panel.

After activating Router Assign mode and selecting the switcher source you wish to change, press the button on the upper bank for the appropriate group. That entire group will immediately appear on the middle source name displays, permitting quick selection.

Main Panel Router Interface Operation

Controls

The Main panel can also be placed in an alternative Router Assign mode for changing router sources used by switcher sources (Figure 188).

Note Main panel router control is not available on the 2-M/E Kalypso system because the Local Aux subpanel is incorporated into the panel.

Figure 188. 4-M/E Main Panel Router Interface Buttons

The **Router Assign** button on the Main panel is held down to place and keep the Main panel in Router Assign mode. When held down all normal panel operation is disabled, replaced with Router assign functions. Releasing the **Router Assign** button returns the Main panel to normal operation.

The source select buttons are used to choose the switcher source to change, and then the desired router source is selected (same as the Local Aux panel). Up to 30 router sources can be displayed at a time (two buttons are used for paging).

The last two buttons on the right of each bus provide **Prev Page** and **Next Page** functions, allowing additional groups of router sources to be displayed on each bus of the Main panel.

Direct router group selection is not available on the Main panel.

Operation

The router source selection process on the Main panel is essentially the same as the Local Aux panel.

1. Press and hold the **Router Assign** button on the Local Aux panel to enter Router Assign Mode.

2. Press a source selection button to choose the desired switcher source, using the **Shift** or **Unshift** buttons if necessary.

3. Press the router source button for the chosen switcher source, using the **Prev Page** and **Next Page** buttons if necessary.

4. After selecting a routed source, the system returns to Step 2 and you can select another switcher source to change.

5. Release the **Router Assign** button to return to normal operation.

Menu Panel Router Interface Operation

The Router Select menu provides a way to directly change router sources from the Menu panel. The Router Select menu is reached by pressing the **R-MEM** Menu panel button, then touching the **Router Select** category selection button (Figure 189).

Figure 189. Router Select Menu

The Switcher Source pane on the left is a scrolling list of switcher sources (only sources configured as routed Kalypso sources appear). Each button displays the Switcher Source ID number and source name.

The box next to each source shows the names of the router source and router destination. The currently selected switcher source on the list is

colored gold. Each switcher source also has a colored indicator showing the protection set by the Kalypso system: green for **None**, yellow for **Protect**, and red for **On Air.**

The Router Sources pane on the right is a scrolling list of all the available router sources. Communication with an external routing system is required before router sources will appear on this list. The router source button of the currently selected switcher source is automatically selected and colored gold.

To Change the Router Source of a Switcher Source:

1. Touch the desired switcher source button in the left pane. Its current router source will appear selected in the right pane.

2. Touch a different router source button in the right pane, scrolling the menu if necessary. The source change will be immediately enacted.

Router Source Keypad Selection

The Router Source data pad at the top of the right pane provides access to router sources by name. Touching this data pad opens an alphanumeric keypad, into which you can enter the name of the desired router source. The Router Source list will then scroll to and select that router source, changing that source's output signal. If an exact match is not found for the name entered, no change will occur.

Protection

The Protection area in the lower right corner of the switcher Source pane provides protection controls. These controls are used to send commands to the external router to protect or un-protect the router destination associated with the selected switcher source. The button for the current setting of the selected switcher source will be highlighted. The following protections are available:

- **None** – Source can be changed at any time by any control panel (green),

- **Protect** – Source cannot be changed by another control panel, but may be changed from the Kalypso system (yellow),

- **On Air** – The source cannot be changed by another control panel when it is on-air, but may be changed manually from the Kalypso system. The source will also not be changed by an R-MEM recall (red).

Note   External router system panels can place protections on router destinations. The first panel placing a protection controls that destination. The Kalypso system will not be able to change router sources feeding router destinations protected from another panel, and vice versa.

R-MEM

Introduction

R-MEM stands for router memory. With R-MEM you can use the Kalypso system to store groups of external router source selections for use later. One or all switcher sources can be selected for control, and the router source selections for all the selected switcher sources can be recalled and enacted quickly.

R-MEM operation is similar to E-MEM, in that information is learned into a register for later recall. Each R-MEM register holds a router source name for one or more switcher sources. R-MEM allows selectively enabling router destinations for control, and has Auto Recall, both similar to E-MEMs selection of enable groups.

R-MEM can be assigned to an E-MEM enable group, if desired, to provide E-MEM control of R-MEM functions (see *E-MEM Control of R-MEM on page 261*).

Features

- 100 R-MEM registers.

- Select 1 or more switcher sources for R-MEM control.

- Instantaneous Learn and Recall.

- Save To and Load From Disk.

- Auto Recall.

- Preview of R-MEM register source and destination names.

- E-MEM control of R-MEM, if desired.

R-MEM Menu Operation

R-MEM registers are learned, recalled, and previewed from the R-MEM menu. The R-MEM menu is accessed by pressing the **R-MEM** Menu panel button, then touching the **R-MEM** category selection button (Figure 190).

Figure 190. R-MEM Menu

The R-MEM menu has a mode pane on the upper left, a pane in the center listing the R-MEM registers available (the full register number is displayed on each register button), and a Router pane on the right showing the switcher sources, router sources and destinations, and protection status. Switcher sources configured as routed Kalypso sources appear in the right pane.

R-MEM Auto Recall

The R-MEM **Auto Recall** mode acts similar to the E-MEM Auto Recall. An R-MEM Auto Recall automatically changes only the switcher sources that were enabled when the register was learned.

Preview

When **Preview** mode is turned on, recalling a register will only display the R-MEM settings stored in that register. No switcher sources will change. This allows you to see what switcher sources will be affected by a register recall, and what the router sources and destinations will be after the recall.

When **Preview** is turned off, the right pane returns to displaying the current status, including any previously set enables.

To Learn an R-MEM Register:

1. Enable the switcher sources to be affected by R-MEM in the right pane. Selected switcher source buttons are green on the left. Only the selected sources will be saved to the R-MEM. You can use the **Enable All** and **Disable All** buttons above to select all or none of the switcher sources.

2. If you want the register to use Auto Recall, touch the **Auto Recall** button so its indicator illuminates.

3. Touch the **Learn** button in the Mode pane.

4. Touch the numbered Bank and Register buttons in the center pane to save the information to the selected register. Touch the bank button first if you are saving to a different bank. If the desired bank is already selected, you can touch just the Register button.

To Recall an R-MEM Register

1. Make sure the Preview mode button is not selected.

2. Turn the **Auto Recall** button on or off to control how the register is recalled.

3. Touch the Bank and Register buttons for the desired register. Touch the bank button first if you are recalling from a different bank, or just touch the Register button if in the same bank.

    a. If the **Auto Recall** button is on, the sources selected at the time the register was saved (with **Auto Recall** on) will be changed to the R-MEM values of that register. If **Auto Recall** was not on when the register was saved, the currently selected switcher sources will be changed.

    b. If the **Auto Recall** button is off, the sources currently selected in the Switcher source pane will be updated with the R-MEM values of that register.

Note   A switcher source that is currently on-air with an **On Air** protection status cannot be changed by an R-MEM recall. Either place the source off-air or select a different protection status to change the switcher source selection.

E-MEM Control of R-MEM

Introduction

R-MEM can be assigned to an E-MEM Enable group, to permit E-MEM control of R-MEM settings. R-MEM information is learned to the R-MEM level of an E-MEM register, allowing the selection of specified router sources when that E-MEM register is recalled. One R-MEM setting is supported per effect (R-MEM is not keyframeable). Because R-MEM is a level of E-MEM, there is a one-to-one correspondence between E-MEM and R-MEM registers. For example, settings in R-MEM register 10 only apply to E-MEM register 10. This is similar to the relationship between an individual M/E E-MEM and the Master E-MEM system. R-MEM information is added to an E-MEM register using the Learn operation or the Learn Mod operation.

R-MEM Disk Storage

While R-MEM is organized operationally as a level of an E-MEM register, R-MEM data is saved to disk separately, as R-MEM registers. This allows added flexibility. For example, the same E-MEM effect can use different router source selections or enables, depending on which R-MEM register has been loaded from disk.

R-MEM Enable Control and Auto Recall

R-MEM also provides an additional level of control. R-MEM has its own set of enables that control which Kalypso sources (router destinations) are affected by a recall operation. This aspect of R-MEM is like the enable groups used for Master E-MEM. The **Auto Recall** button on the R-MEM menu controls R-MEM recalls similar to the control the **Auto Recall** button on the Main panel Master E-MEM subpanel exerts over E-MEM recalls. These are separate functions affecting different control elements, however.

An example of using this is to control which router sources will be changed without having to learn a new E-MEM register for each variation. Suppose you learn an R-MEM specifying router sources for several switcher sources, create an E-MEM effect using those sources, and learn that E-MEM with the R-MEM Enable button selected. Recalling that E-MEM with the Master E-MEM **Auto Recall** button on will also recall that R-MEM. If the R-MEM **Auto Recall** button is also on, the enabled switcher sources will select the specified router sources. If the R-MEM **Auto Recall** button is off, only the switcher sources enabled on the R-MEM menu will be affected by the recall. Disabling all the switcher sources on the menu makes the E-MEM recall use the currently selected router sources, with no changes.

E-MEM Prefs Assignment

By default R-MEM is not assigned to any E-MEM Enable group button. You use the E-MEM Prefs menu (accessed via **Daily Setups**/**Suite Prefs**

/**E-MEM Prefs**), to make an assignment. Touch the R-MEM data pad, then select the desired Enable button.

Once this assignment has been made, recalling an E-MEM register on the Master E-MEM subpanel will recall that same number R-MEM register. Learning an E-MEM register on the Master E-MEM subpanel will also learn the same R-MEM register.

CAUTION   Make sure the R-MEM enable group you choose is only enabled when you actually need to use it during effect recalls. Confusing source selection button changes can occur otherwise. Using E-MEM Auto Recall can help control when groups are enabled.

Learning R-MEMs on the Main Panel

When R-MEM has been assigned to an E-MEM Enable button, learns can be performed from the Menu panel as well as the R-MEM menu.

Note   The Learn operation you will use erases any existing information in al the enabled levels of the current E-MEM register.

1. On the Master E-MEM subpanel select the Enable button to which R-MEM has been assigned. This enables R-MEM for the current effect register.

2. Setup the desired R-MEM state.

   a. Go to the R-MEM Router Select menu (accessed via **R-MEM**/**Router Select**) and select the router source to be used with each switcher source.

   b. Go to the R-MEM menu (touch the **R-MEM** category selection button) and enable the desired switcher sources. Select **Auto Recal**l if you want the ability to recall R-MEM settings for only the selected switcher sources.

3. Press the **Learn** button on the Main panel Master E-MEM subpanel, then press the Bank and Register keypad number of the desired register. This will save the current R-MEM setting in the menu to the header area of that E-MEM effect register and the first keyframe of the new effect will be created. The corresponding R-MEM register in the menu will also be updated.

Changing R-MEM on an Existing E-MEM Register

1. On the Master E-MEM subpanel recall the E-MEM register you wish to change.

2. On the Master E-MEM subpanel select the Enable button to which R-MEM has been assigned.

3. Setup the desired R-MEM state.

   a. Go to the R-MEM Router Select menu (accessed via **R-MEM**/**Router Select**) and select the router source to be used with each switcher source.

   b. Go to the R-MEM menu (touch the **R-MEM** category selection button) and enable the desired switcher sources. Select **Auto Recall** if you want the ability to recall R-MEM settings for only the selected switcher sources.

4. On the Master E-MEM subpanel press **Learn**, **Mod**. The R-MEM setting in the menu will be updated to the header area of that E-MEM effect register. Keyframes existing in the effect will remain unchanged. The corresponding R-MEM register in the menu will also be updated.

Loading R-MEM Registers

Like E-MEM registers, loading an R-MEM register from disk does not affect the current work buffer. If an effect is loaded in the work buffer and that register number containing different settings is loaded from disk, the register will need to be recalled before any changes in state occur.

Empty R-MEM Keyframes

If the R-MEM enable button is on when keyframes on other levels are inserted into the effect, R-MEM keyframes containing effectively no data will also be added to the effect and appear on the Timeline menu. These keyframes are only system artifacts and do not influence the running of the effect.

New Still Store Option Operation

System Overview

The redesigned Still Store is only supported in Kalypso Version 15.0 or later and is for *Kalypso HD/DUO* systems only.

New Features

New Still Store features with Kalypso Version 15.0 include:

*   The new Image Manager that provides centralized control of images.

*   Image Server that allows the operator to load stills and clips from external drives; laptops, removable media (USB, CD-ROM), any physical drive on a network.

*   Images can now be sent to an output without being saved to disk, including looped clips.

*   Stills and clips can now be kept and edited before they are saved to disk.

*   Current Saves and Loads can now be cancelled.

*   Images can be loaded directly to cache (not placed in an output first).

*   Still Store environments can now be saved and transported on removable media (USB, CD-ROM).

The Still Store Module

The Kalypso Still Store option module has:

*   The Image Manager to manage images and the Still Store environment,

*   Physical drives on the network as Image Servers,

*   Cache to permit real time playback of stills and clips, and

*   A built-in hard disk drive for image storage.

Figure 191 shows the basic system.

Figure 191. Kalypso Still Store System

Still Store Image Manager

New with Kalypso V15.0, Still Store uses the Image Manager to define and control the environment in which the Still Store operates and coordinates image files and images (see *Still Store Image Manager on page 265* for more information). Cache, Image Servers, and hard drives all serve to create the Image Manager environment.

The Image Manager allows the operator to create folders of images that can be shared by various shows. For example one directory could be created to hold the station's logos and clips and each show could have its own directory to hold common show logos and clips. Finally, the working directory can be used to hold the images for a specific instance of the show (such as a different directory for each day the show is broadcast).

The current state of the Image Manager is saved in the NVRAM (same content as the ENV file) and will be restored after a reboot. This state includes an image whether or not it was in cache. This allows the operator to reload the cache to its prior state before the reboot.

Working Directory

When a new working directory is selected, the system loads the images in that directory into the **Image Manager** scrolling list (see *Still Store Image Manager on page 265* for more information).

All images in the working directory must have a unique image ID. This image ID is used by macros and E-MEMs to identify the image to be loaded. This technique is being used instead of storing the full file path in macros and E-MEMs to make the show more portable by making it easier to resolve file path differences between studios.

The simplest user model is for the operator to place all images into the same directory and then to set the working directory to it.

Output

When an image is loaded to an output, the Image Manager determines if the image is in the cache. If not, it marks the output as pending a load, marks the image as pending a load to cache, and initiates the loading of the image into cache. An image loaded to an output will be loaded into cache first then loaded into the output.

Saving and Loading Still Store Environments

Environments can be saved and restored in the Save Load menu category. The environment consists of:

- A list of all images that were loaded into the cache at any point: these images can be viewed and selected for reloading in the Image Manager menu category.

- And **Reserved** images: a reserved image (displays the **Reserved** icon) is an image that was loaded from the working directory into cache or loaded from a directory located outside the current working directory.

Note   If you load a saved environment the Still Store manages "**Reserved**" images by replacing any images that have the same image ID in the Image Manager scrolling list.

Still Store Image Server and Disk Storage

Also new with V15.0 is the Image Server. An image server can be the Still Store hard drive (the default) or any external physical disk, loaded with Image Server Service Software (located on the System Software CD-ROM) on an accessible network. For example a Technical Director's laptop with a USB stick or a graphics PC mapped to a networked storage drive can both be Image Servers. Figure 192 illustrates this concept. See *Image Server Menu on page 297* for more information.

Images can be saved to disk from cache, or, and also new with V15.0, cached images can be edited and then saved to disk from cache (newly recorded images will be saved to the working directory). As with earlier versions, images can be loaded from disk back into cache for playback.

Figure 192. Kalypso Still Store System with External Storage

Image Server Service

The Image Server service runs on an external PC to allow it to communicate with the Still Store and allow you to add external image servers. This application is included on the Kalypso Software CD-ROM. For information on loading and configuring an image server, see *Image Server Service on page 299*.

Still Store Cache

Images are captured, recorded, or loaded into the cache. New with V15.0, once in cache a captured image can be played back directly from cache or edited and then played back from cache, without being saved as in previous versions.

Cache memory is used to enable real-time loading and recording of stills and clips. Input video is recorded to cache. An image must already have been loaded into the cache in order to support real-time loading of that image to an output. An entire clip must be loaded into cache in order to run that clip.

It is possible to load images directly into the cache, and remove individual images from the cache. If the image is locked, it will need to be unlocked. To unlock or override manual and automatic locks, see *Lock/Unlock Cache on page 289* and *Load/Unload Cache on page 290*. When loading images to cache, the system will automatically free up cache space if necessary. The system cannot remove any locked images from the cache unless the operator manually removes or overrides the locks.

A "temporary image" (the Keep function has not been used for the image), cannot be loaded into another output. The image remains loaded to the output that was monitoring the input while the image was recorded. If another output is selected to monitor the input, a recorded image will now be loaded to that output. The first output will retain its recorded image until it is unloaded.

When recording an image, the operator need not assign an image ID to the image, it will be done automatically. It can be changed at any time before a "Keep" of the image is performed. (Pressing the "Keep" button gives the image an image ID).

An image that is loaded to an output is automatically cached and locked. This would include a temporary image which had been recorded but not named and saved to disk. It is also possible to have an image in the cache which is not loaded to an output or saved to disk. This kind of image is also automatically locked. The operator may unlock this kind of image and remove it manually. The operator may manually lock or unlock any desired image (see *Lock/Unlock Cache on page 289*) in the cache.

Because a significant amount of time can be consumed caching images, the system does not automatically re-cache images in the working directory on system boot up or when loading a saved environment. The operator can have this done through an E-MEM, macro, or by pressing the **Prev In Cache** /**Select All**/**Load Selected** buttons in the Image Manager Menu.

There are several reasons for this:

- Since the operator is not likely to have been in that directory, you would not want the system to start reloading the wrong images,

- The time to reload images can be lengthy. This is something the operator needs to initiate, not the system,

- And the management ability of the cache is limited; it is difficult to unload individual cache entries as well as providing the ability to abort various operations which have been backgrounded.

Position, Crop, and Fenced Record

Position and crop controls affect how an image is displayed. Position controls relocate the image itself, and crop controls mask the sides of the image to display only a selected area. These controls do not change the actual image data saved to disk. Position and crop metadata is saved along with

the image file to define what position and crop values are to be applied to the image. This metadata can be overridden or edited to change how the image displays.

A fenced recording, on the other hand, saves only the selected portion of the image to disk. This can be used to reduce the amount of data saved, which increases the number of images able to be stored and improves loading speed. Fence size cannot be undone without re-recording the image.

Positioning and cropping is on line and pixel boundaries. An image cannot be moved perfectly smoothly with the Still Store (if smooth motion is desired use a Transform Engine).

Source Selection and Video Key Pairs

Sources are selected for capture using the Local Aux panel delegated to the Still Store Aux bus (select **Still Store**). The Still Store Aux bus always operates as a video/key pair. Still Store outputs used for capture and playback can be set up to operate as video/key pairs, or as video only. If the Still Store output being used for capture is set up for video only, any accompanying key signal on the Still Store Aux bus will be discarded. If a video only source is selected for a Still Store output pair, a duplicate of the video image will be captured to the key channel of the Still Store output pair. If the Local Aux panel is set up with a split key, that split key will be captured to a paired Still Store.

Shaped and Unshaped Still Store Video

The Still Store automatically adjusts for shaped and unshaped video (as specified by the source definition for the captured source), and the captured video will be processed as such all the way through to the final Kalypso system output. For example, suppose paired Still Store output 1-2 is keyed on an M/E. If a still that was captured as a shaped video/key pair is selected on that Still Store output, the M/E will automatically use shaped key processing. If a different still that was captured from an unshaped video/key pair source is selected on that Still Store output, the M/E will immediately switch to unshaped key processing. Shaping information is included in the metadata for each Still Store item.

Still Store Configuration

Kalypso Still Store outputs are internal sources. They are managed the same as standard external Kalypso sources, like cameras and VTRs, except Still Store outputs do not appear in the Eng Setup-Define Sources menu. They are available on the Eng Setup-Outputs menu, and so can be assigned to any output connector, and are also available on the Daily Setups-Button Mapping menu. Once a Still Store output has been mapped to a source selection button that Still Store source can be selected for use on that bus.

KlipCache Option

A KlipCache option is available that increases the still store storage capacity. The option consists of memory chips installed on the Still Store module, and a software authorization code must be entered to enable Kalypso HD/Duo KlipCache

The Kalypso HD/Duo KlipCache option increases the capacity of the cache from 512 MB to 4.5 GB. Tables presented later in this section describe the image capacities and animation durations this added memory supports.

HD/Duo Image File Size and Hard Disk Management

A progressive HD full raster Still Store still image requires about 2.4 MB of storage space. An interlace HD full frame Still Store still image requires about 5.4 MB of storage space. A video with key still image requires twice the storage space of each above. For a full raster animated clip, each field requires the above storage space, so HD animation files of any significant duration will become quite large. Table 7 shows the files sizes of full raster images and animations.

Table 7. Approximate Still Store Image Sizes

Image Type	Video Only		Video with Key	
HD	**720p**	**1080i**	**720p**	**1080i**
Full Raster Still	2.4 MB	5.4 MB	4.8 MB	10.8 MB
1 Sec. Animation	144 MB	162 MB	288 MB	324 MB
10 Sec. Animation	1.44 GB	1.62 GB	2.88 GB	3.24 GB
SD	**525i/60**	**625i/50**	**525i/60**	**625i/50**
Full Raster Still	1 MB	1.2 MB	2 MB	2.4 MB
1 Sec. Animation	30 MB		60 MB	
10 Sec. Animation	300 MB		600 MB	

Note   Fenced images (described later) are not full raster. Using fenced recordings reduces the storage requirements per image and improves access times.

The Kalypso HD/Duo Still Store hard disk drive has almost 40 GB of usable image storage capacity. The number of stills or length of animation that can be saved to disk varies. For example, the Still Store disk can hold over 16,000 full raster 720p video only stills, or over 3,600 full raster 1080i video with key stills. Still Store disk animation capacity varies from a total of 4.5 minutes of full raster 720p video only clips, to 2 minutes of full raster 1080i video with key clips. Approximately 38,000 full raster SD video only still images can be stored, or about 10.3 minutes of full raster SD video with key clips. Because the cache is smaller than the Still Store disk, all of the material stored on disk cannot be made available simultaneously for real-time play-back.

When the Still Store disk becomes filled, new Still Store material will not be able to be captured and saved for later playback. The **Delete** button on the Still Store menu and the File Ops menu can be used to manage the Still Store disk by deleting files that are no longer needed.

HD/Duo Still Store Cache Capacity

The standard Kalypso HD/Duo Still Store cache is equipped with 512 MB of RAM. The HD KlipCache option adds an additional 4 GB of RAM. Like the Still Store disk, the number of stills or length of animation that can be cached at the same time varies.

The cache is organized into pages. Each page corresponds to one field of video. Progressive full raster still images require one page, while interlaced still images require two. Video with key images require twice the number of pages. Animations (either progressive or interlace) can require 60 pages per second for playback. Table 8 shows the storage capacity of a standard Kalypso Still Store cache and one equipped with the KlipCache option. Due to file system limitations (4GB file size limit), the maximum length of a single clip may be slightly less than the total capacity of the cache, depending on format.

Table 8. Kalypso HD/Duo Still Store Cache Capacity

Cache	Image Type	Video Only		Video with Key	
Standard	**HD**	**720p**	**1080i**	**720p**	**1080i**
	Full Raster Stills	180	90	90	45
	Total Animation Time	3 Sec.		1.5 Sec.	
	SD	**525i/60**	**625i/50**	**525i/60**	**625i/50**
	Full Raster Stills	457		228	
	Total Animation Time	15 sec.	18 sec.	7.6 sec.	9.1 sec.
KlipCache Option	**HD**	**720p**	**1080i**	**720p**	**1080i**
	Full Raster Stills	1716	858	858	429
	Total Animation Time	28 sec.		14 sec.	
	Max Single Clip Length	28 sec.	26 sec.	14 sec.	13 sec.
	SD	**525i/60**	**625i/50**	**525i/60**	**625i/50**
	Full Raster Stills	4156		å2078	
	Total Animation Time	138 sec.	166 sec.	69 sec.	83 sec.
	Max Single Clip Length	136 sec.	145 sec.	68 sec.	72 sec.

Note   Fenced images (described later) are not full raster. Using fenced recordings reduces the storage requirements per image and improves access times.

When an uncached item is loaded to an output by the user, that item is cached automatically. When the cache becomes filled, the system automatically uncaches old material to make room for new.

HD/Duo Cache Load and Disk Save Times

Still Store images and clips are stored on disk. Time is required to load the data from disk to cache for display or playback, and to save the data to the disk. Images on disk are transferred to the cache automatically during normal operation. The transfer process is optimized in this direction, so caching from disk is quicker than saving to disk.

The actual time required to transfer files varies. Video only still images transfer fairly rapidly, requiring from about one-half second to two and one-half seconds depending on format. Animation clips, however, contain large amounts of data and can take considerably longer to load and save (Table 9).

Table 9.   Approximate HD/Duo Still Store Load and Save Times

Image Type	Load Time Required[a]		Save Time Required[a]	
HD	**720p**	**1080i**	**720p**	**1080i**
Full Raster Video Only Still	1 sec.	2.5 sec	3.5 sec.	7.5 sec.
1 Sec. Full Raster Animation	1 min. 10 sec.	1 min. 15 sec.	2.5 min.	3 min.
10 Sec. Full Raster Animation	12 min.	12.5 min.	25 min.	30 min.
SD	**525i/60**	**625i/50**	**525i/60**	**625i/50**
Full Raster Video Only Still	0.6 sec.	0.7 sec.	1.6 sec.	1.9 sec.
1 Sec. Full Raster Animation	18 sec.		33 sec.	
10 Sec. Full Raster Animation	3.0 min.		5.5 min.	

[a] Double the time for Video with Key stills or animations.

If a single HD animation were to fill a HD/Duo cache equipped with the KlipCache option (28 seconds of video), it would take about 33 minutes to load this clip from disk to the cache, and would take about 1 hour and 14 minutes to save this clip to disk.

Note   The Still Store Cache is completely cleared when the Video Processor frame or the Still Store module is reset.

Fenced Image Save and Load Times

Fenced images are not full raster, and so reduces storage requirements and improves access times. The approximate clip load and save times listed in Table 10 are multiples of real time. For example, a one second 720p video only clip that takes 70 seconds (1 min. 10 sec.) to load from disk to cache if full raster can be cached in 3 seconds if fenced at 1/25 size.

Table 10.   Approximate HD/Duo Video Only Animation Clip Load and Save Times

Video Only Raster Size	525i/625i		720p		1080i	
	Load Time[a]	Save Time[a]	Load Time[a]	Save Time[a]	Load Time[a]	Save Time[a]
Full	18 x	33 x	70 x	150 x	75 x	175 x
1/4	4 x	7 x	18 x	40 x	19 x	44 x

Table 10. Approximate HD/Duo Video Only Animation Clip Load and Save Times

Video Only Raster Size	525i/625i		720p		1080i	
	Load Time[a]	Save Time[a]	Load Time[a]	Save Time[a]	Load Time[a]	Save Time[a]
1/9	2 x	3 x	8 x	18 x	9 x	19 x
1/25	1 x	1 x	3 x	6 x	3 x	6 x

[a] Double the time multiple for Video with Key animations.

Note　　　An attempt to load a HD still or clip to a Still Store running in SD mode will fail with the message "Load Failed, Insufficient Memory".

Important Information

Still Store Software Version Mismatch

The internal protocol from the Kalypso HD/DUO Frame processor board to the Still Store board has changed from versions 14.0 and earlier, to 15.0. The Frame processor board will *not* communicate to the Still Store board unless both have V14.0 or earlier installed. For example, V15.0 is installed on the Frame and a Still Store option board is inserted into the Frame and it has V14.0 or earlier installed. The two boards will be unable to communicate.

If the boards are not communicating, the operator will be unable to tell what revision of Kalypso software is installed on the Still Store board.

Verify/Update the Frame Software

Verify that Kalypso V15.0 is installed on the Frame in the Status and Diags menu.

If Kalyspo V15.0 is not installed on the Frame (in this scenario, Still Store may have V15.0 installed but the Frame does not):

1. install V15.0 using the Kalypso Installation Software

2. Reboot the frame

If this does not resolve the problem, continue with these instructions.

Detecting a Still Store Software Version Mismatch

Note the following:

- Still Store Option board is installed correctly

- The Still Store menu indicates that Still Store is not connected (top right of menu)

- In the Status and Diags menu, there is no version number for Still Store and the menu indicates that Still Store is not ready (red text in the Still Store Software Version line item)

If these conditions exist, there may be a version mismatch.

Regressing and Updating the Software

With the Frame processor software at V15.0 or later, now it must be reverted back to an earlier version to communicate to the Still Store hardware with V14.0 or earlier installed.

1. Verify in the Status and Diags menu that the Frame software version is V15.0 or later.

2. If the Frame software is V15.0 or later, perform the following:

   a. Use the Kalypso Installation Software to install the latest version of V14.0 to the Frame.

   b. Reboot the Frame.

   Note   If the Frame and Still Store are still not communicating, this may not be the problem.

3. If the Frame and Still Store are communicating with V14.0, use the Kalypso Installation Software to install V15.0 or later on the Frame and Still Store (simultaneously).

4. If there are any Still Store spares, update those to V15.0 using the Kalypso Installation Software.

5. Reboot the Frame.

The Frame and Still Store should now communicate properly. If not, then there may be other issues.

Store Menu

The Still Store menu provides controls for the Kalypso system Still Store option. From the **Home** menu, touch the **Still Store** button.

Figure 193. Home Menu

There are five basic Still Store Menus now, two are existing with enhancements and three are new:

- Save Load (new)
- Playback (existing)
- Create Edit (existing)
- Image Manager (new)
- Image Server (new)

Still Store Save Load Menu

The Save Load menu category allows the operator to name, save, and load Still Store environments. A Still Store *environment* includes settings such as the selected working directory and saved, cached, and *reserved* images in the Image Manager scrolling list (see *Reserved Images*).

Images that have been in cache but are not reserved will be flagged as having been in cache by Still Store and can be viewed by pressing the **Prev In Cache** touch button in the Image Manager menu (see *Show Prev In Cache*) and reloaded if desired.

CAUTION   To speed environment file loading, it is highly recommended that disconnected image servers be removed from the list of configured **Image Servers** (see).

Touch **Still Store**, **Save Load** to access this menu.

Note   This menu is only for environmental files (show) operations. To perform image file operations (copy, save, delete), go to the **Image Server**/**Image Manager** menu categories.

Figure 194. Still Store Save/Load Menu

The Save/Load menu category is comprised of the Save/Load scrolling list on the left and three button group panes on the right (refer to Figure 194). The three button group panes on the right, from top to bottom are:

- The Navigation group, for navigating in directories and opening files,

- The File Management group, which has mode selection buttons for managing folders and files; copying, pasting, deleting, creating folders, renaming files and folders, and a **Multi-select** parameter selection button that allows the operator to select multiple environment files,

Note   The Multi-select touch button is only active for the File Management button group, it is not active for the StillStore Environment button group.

- And the Stillstore Environment group that allows the operator to name, save, and load an environment. The Stillstore Environment group has a **File Name** data pad and a **Save**, **Cancel** (a load), and **Load** touch buttons, as shown in Figure 195.

Figure 195. Still Store—Save/Load Menu, StillStore Environment Pane

The **File Name** button displays a keyboard for the operator to enter a name for the environment to be saved.

The **Save** button saves the current environment as a .env file to the folder shown at the top of the Save Load scrolling list.

The **Cancel** button cancels a save or load.

The **Load** button loads selected saved environment files to the system (it however does not load images, see *Load on page 290* for information on loading previously cached images).

Note   The Still Store environment is also part of the **Save Show** functionality in the File Ops Menu, refer to the *Kalypso Reference Manual* for more information.

Still Store Playback Menu

The Playback menu category remains in Version 15.0 but with significant enhancements. In addition to the existing functionality, the operator can now:

- Edit the image properties using the **Edit Properties** touch button. This feature allows the operator to edit or replace the image name/image ID. See Figure 196.

CAUTION   Changing the image/image ID will effect any macros or EMEMs that include that still or clip. Paths will have to be reestablished.

- Refresh the working directory with the **Refresh Work Dir** touch button. This refreshes any changes to the image so the current state is reflected in the image icons and ID.

- Clear reserved images with the **Clear All Reserved** touch button (see *Reserved Images on page 285* for more information on reserved images).

- Cancel all output operations with the **Cancel Output** touch button

- Selecting an image with the **Auto Load** parameter button on automatically loads the image.

Note   Deselect the **Auto Load** button before editing the properties of a still or clip.

For more information on the Playback Menu, see *Version 14.0, Kalypso HD User Manual*.

Touch **Still Store**, **Playback** to access this menu (Figure 196).

Figure 196. Still Store Playback Menu

Note   Still images or clips created in one video standard will not display correctly if loaded into a Kalypso system operating in another standard. Still Store images that do not match the current operating mode display an invalid icon.

Still Store Create Edit Menu

In V15.0, the Create Edit menu category remains in Still Store, however there are significant enhancements. As with the Playback category menu, the **Edit Properties**, **Refresh Work Dir**, and **Clear All Reserved** touch buttons have been added (refer to *Still Store Playback Menu on page 278* for more information), as well as other features discussed in this section.

For more information on the Create Edit Menu, see *Version 14.0, Kalypso HD User Manual.*

Touch **Still Store**, **Create Edit** to access this menu.

Figure 197. Still Store Create Edit Menu

The **Input Source** data pad is unchanged from previous versions.

The **Capture** button group pane has been reconfigured (top-middle). This group now contains the **Clear Image**, **Keep Image**, **Stop Grab**, and **Grab Still** touch buttons and the **Capture Setup** and **Capture** data pads.

Also, an **Available Time** counter has been added at the top right of the **Capture** selection touch button group.

The **Crop** and **Position** data pads remain and function as in past versions.

The **Clear Image** button clears the grabbed image.

The **Keep Image** button instantly moves the selected image to Image Manager where it can be edited.

CAUTION Keeping an image It does not save the image to hard disk. The operator must save the image in the Image Manager.

The **Stop Grab** button allows the operator to stop a continuous or timed recording.

The **Grab Still/Record Clip** button grabs a still or a clip (button legend is changed through the **Capture Setup** menu).

The **Capture Setup** button displays the **Capture Setup** sub-menu that allows the configuration of the Image Type (Still or Clip), Image Identifier (Image ID or Image Name), and the Capture Operation (Video Only or Video+Key), as shown in Figure 198.

Figure 198. Still Store—Create Edit, Capture Setup Data Pad

Selecting the **Capture** data pad button displays (right-side group) the **Continuous Record** parameter selection button, new with V15.0 and also displays soft knob labels and data pads for **Fence Size**, **Duration**, **Horizontal Fence**, and **Vertical Fence**, as shown in Figure 199.

Figure 199. Still Store—Create Edit, Capture Button.

The middle touch button group contains the **Show Buffer**, **Show Details**, and **Save Meta** parameter selection buttons, the **Save** touch button, and the **Position** and **Crop** data pads.

Show Buffer/E-E

The **Show Buffer** button has two functions, **Show Buffer** and **E-E**.

• **Show Buffer** parameter switches the grabbed image to the output

Note   The **Show Buffer** button is displayed when a grabbed image is in the buffer.

• **E-E** parameter connects the input source directly to the output

Show Details

Clips can now be edited before they are saved to disk.

The **Clip Time** data pad replaces the Begin/End data pad of previous versions. The addition of **Log Time** and **Key Offset** counters are also new for V15.0.

Selecting the **Show Details** parameter selection button:

- Shows the **Clip Details** pane (left) that allows the operator to set parameters and shows information about a selected clip, as shown in Figure 200.

- Shows the **Freeze Mode** touch button group, an existing feature (second pane from right, top). See the *Version 14.0, Kalypso HD User Manual* for more information.

Figure 200. Still Store—Create Edit, Show Details Button

Selecting the **Save Meta** touch button saves meta data changes to an image in output to the (cropping, fence size, etc.) meta data file on the hard disk.

Selecting the **Save** touch button saves images that have not been saved previously to hard disk.

Note   Images must be in an output in order to be saved unless they are newly grabbed or recorded.

Selecting the **Position** data pad:

- Shows the **Position** sub-group that contains the **Set Defaults** touch button.

- Shows the soft knob data pads for the **Horizontal** and **Vertical** positioning.

Selecting the **Set Defaults** button resets the horizontal and vertical position values to zero (0.000).

Selecting the **Crop** touch button:

- Displays the **Crop** sub-group (see Figure 201) that contains the **Production Aperture**, **Clean Aperture**, and **Done** touch buttons.

- Displays the soft knob data pads for **Top Crop**, **Bottom Crop**, **Left Crop**, and **Right Crop**.

Figure 201. Still Store—Create Edit, Crop Sub-Menu

Production Aperture

Selecting the **Production Aperture** touch button allows the maximum possible image area that can be supported by the video standard. However due to filtering and other operations, this method is prone to edge-related artifacts.

Clean Aperture

Selecting the **Clean Aperture** touch button reduces the image slightly to remove any edge-related artifacts and centers the image so there will be an equal number of pixels within the clean aperture to the left and right of the center point.

Still Store Image Manager Menu

From the Image Manager menu category, the operator can manage images, folders and directories, add or configure image servers, and filter the view in the Image Manager scrolling list (see Figure 202).

Images are flagged with icons when loaded into the Image Manager scrolling list that represent the characteristics of the image (refer to Figure 204 on page 288 for a description of icons), such as whether or not the image is in the working directory, cached, saved, or imported from another image server.

Reserved Images

Still Store treats Reserved images with the highest priority. A reserved image can only be removed from the Image Manager using the **Clear Reserved Images** touch button. Reserved images are marked with the "Reserved" icon if they fit one of the following criteria:

• Image is in the working directory and loaded into cache.

• Image is loaded from a directory other than the working directory into the Image Manager.

To view only reserved images or clear a reserved image, see *Show Reserved* and *Clear Reserved on page 296* for more information.

Touch **Still Store**, **Image Manager** from the Home menu.

Figure 202. Still Store Image Manager Menu

Image Manager Scrolling List and Selection Buttons

The **Image Manager** scrolling list is located on the left half of the Image Manager menu. The scroll bar is located just to the right and the provided **Lock** button (below the scroll bar) allows you to lock the scrolling list in any position which prevents auto-scrolling (refer to Figure 202).

The image selection buttons are described as follows:

The **Multi Select** button allows the operator to select multiple images in the Image Manager scrolling list, as shown in Figure 203.

Figure 203. Still Store—Image Manager, Multi Select Button

The **Deselect All** and **Select All** buttons deselect or select all images in the Image Manager scrolling list.

Note   The **Deselect All** and **Select All** buttons are only available when the **Multi Select** button is activated, refer to Figure 203. When **Multi Select** is *not* selected, the **Deselect All** and **Select All** buttons are gray and unselectable (the **Edit Properties** button is then available).

The following are located above the image selection buttons:

The **Edit Properties** button launches a keypad for editing or replacing the Image Label/Image ID. (The **Edit Properties** button is not available when the **Multi Select** button is activated.)

CAUTION   Image IDs and labels are key to how the new Still Store creates and recalls paths to images. Image IDs/labels *must* be unique otherwise there will be a conflict. *Image labels are for the user and will not effect functionality.*

The **Go To** button launches either a keypad or a keyboard (depending the Sort Type selected in the Legend & Options screen) where the operator can enter an Image ID/Image Label and go directly to that image (refer to Figure 204 on page 288).

Note   The operator can change the sort criteria to Image ID or image Label by pressing the **Legend & Options** button and selecting the "sort type".

The **Legends & Options** button (see Figure 202) launches a menu that has an icon legend on the left half describing what each icon represents for "images" (top section) and "outputs" (bottom section), as shown in Figure 204.

The right half of the menu contains the **View Style** touch button group and two **Sort** button groups.

- **View Style** touch buttons turn on and off the thumbnail view,

- **Sort Type** menu touch buttons turn on either sort by image ID or sort by image name, and

- The **Sort Filter** touch button, **No Invalid Vid Ref** allows only those images to display that have the same line rate as the current operating system. For example when operating in 720p mode, only 720p images are displayed.

Figure 204. Still Store—Legends & Options Menu

Cache Usage Pane

The Cache Usage pane, located top-middle of the Image Manager menu, provides storage capacity and locking status information about the cache (see Figure 205).

Figure 205. Still Store—Image Manager, Cache Usage Pane

Lock/Unlock Cache

A locked image cannot be unloaded from cache manually or by the system (when the cache becomes full) until it is unlocked (or overridden which will be explained later in this section).

There are two ways used by Still Store to lock cached images: "auto lock" which automatically locks an image when placed into an output, and "user lock" which is performed by selecting images and pressing the **Lock Selected** button in the Lock/Unlock Cache pane.

The Lock/Unlock Cache pane is divided into **Lock** and **Unlock**, see Figure 206.

Figure 206. Still Store—Image Manager, Lock/Unlock Cache Pane

Lock

The **Lock** section of the Lock/Unlock Cache pane contains the **Lock Selected** touch button and **Show Unlocked** parameter selection button.

Lock Selected

Selecting the **Lock Selected** touch button:

• Prevents images from being unloaded from the cache.

Note   When an image is "removed" or "unloaded" from the Image Manager scrolling list or cache, it is *not* deleted from where it is stored.

• Places a lock icon (refer to Figure 204) in the image's icon in the Image Manager scrolling list.

Note   Images can be locked whether or not they are in cache.

Show Unlocked

Selecting the **Show Unlocked** parameter selection button filters the Image Manager scrolling list to display only "unlocked" images.

The **unlock** section of the Lock/Unlock Cache pane contains the **Unlock Selected** and **Show Locked** buttons.

Unlock

Unlock Selected

Selecting the **Unlock Selected** touch button unlocks any image that has been selected in the Image Manager scrolling list.

Show Locked

Selecting the **Show Locked** parameter selection button filters the Image Manager scrolling list to show only "manually locked" images.

Load/Unload Cache

The **Load/Unload Cache** pane is divided into **Load** and **Unload** button groups, as shown in Figure 207.

Load

The **Load** section of the Load/Unload Cache pane contains the **From Image Server**, **Load Selected**, **Show Prev Load**, and **Show Uncached** buttons, as seen in Figure 207.

This button group provides control over what images are loaded into and unloaded out of the cache, from the Image Manager scrolling list.

Figure 207. Still Store—Image Manager, Load/Unload Cache Pane

From Image Server

Selecting the **From Image Server** touch button:

• Goes to the Image Server pane.

• Allows the operator to browse to and load images from any legitimate source to the output, cache (default), or Image Manager scrolling list, as shown in Figure 208.

Note Multi-select is not available when loading to an output and the operator must choose the output. This loads metadata then image data to the specified output.

• Returns to the Image Manager menu category with a press of the **Done** touch button, located lower right, as shown in Figure 208.

Figure 208. Still Store—Image Manager, Load/Unload, Load from Image Server

Load Selected

Selecting the **Load Selected** button loads selected images in the Image Manager scrolling list, into cache.

Show Prev In Cache

Selecting the **Show Prev In Cache** button shows the images that were in cache at the time the currently loaded environment was saved.

The current state of the Image Manager is saved in the NVRAM and will be restored after a reboot. This state includes an image whether or not it was in cache. This allows the operator to reload the cache to its pre-shutdown state.

Show Uncached Button

Selecting the **Show Uncached** button:

Selecting the **Show Uncached** button filters the Image Manager scrolling list to show only images that are not in cache.

The **Unload** section of the Load/Unload Cache pane contains three override buttons: **Output**, **User Locked**, and **Unsaved Image**, a selection button for the overrides titled **Unload Selected**, and a **Show Cache** button.

Unload

Unload Selected Button

Selecting the **Unload Selected** button unloads all selected images from cache.

Show Cache Button

Selecting the **Show Cache** button filters the Image Manager scrolling list to show only "cached" images.

Override Filter

Output Button

Selecting the **Output** button overrides the auto locks on images in output so they can be unloaded from cache.

User Locked Button

Selecting the **User Locked** button overrides user locks on images in cache so they can be unloaded from cache.

Unsaved Image Button

Selecting the **Unsaved Image** button overrides locks on unsaved captured images in cache so they can be unloaded from cache.

CAUTION If an unsaved image is removed from the Image Manager, that image is unrecoverable since there will no longer be any image data.

Conflict Resolution Pane

If a Still Store Environment file is loaded and images that are expected to be in the environment can not be found, then Conflicts are displayed. Conflict Resolution allows for new files to be selected and restore the paths to the environment.

The Conflict Resolution pane contains the **Conflict Resolution** button, see Figure 209.

Figure 209. Still Store—Image Manager, Conflict Resolution Pane

Show Conflicts Button

Selecting the **Show Conflicts** button in the upper-right hand corner (see Figure 202 on page 286):

Displays the **Show Conflicts** menu (left side of menu) which contains similar windows and controls as the Image Manager scrolling list and on the right a **Paths In Conflict** pane.

- The Paths In Conflict pane displays conflicted images in dialogue boxes with path information and the **Select Images**, **Browse to path for selected images**, **Refresh**, and **Done** buttons,

    - **Path Conflict Dialogue boxes** display the directory name, the IP address, and the port ID and the image path,

    - **Select Images** button selects all the images in the image pane,

    - **Browse to path for selected images** button allows the operator to locate images and restore or establish a new the path, if the images still exist,

    - **Refresh** button refreshes the menu after changes,

    - And the **Done** button returns to the Image Manager menu.

- And, as seen in Figure 210, when conflicts are displayed in the Paths In Conflict pane, the images in conflict are also visible in the scrolling list on the left with red outlines and question marks. The conflicted images ID number is also displayed to assist in repairing the path.

Figure 210. Image Manager—Conflict Resolution Pane, Button Result

View/Add Image Servers Pane

To view existing image servers or add additional image servers from any valid source.

The Image Servers pane contains the **Server Setup** button, see Figure 211.

Figure 211. Still Store—Image Manager, Image Servers Pane

Server Setup Button

Selecting the **Server Setup** button:

- Displays the Image Server menu, as shown in Figure 212.

- Allows the operator to test or "ping" a configured server.

- Allows the operator to view or add servers from any valid location.

Figure 212. Still Store—Image Manager, Image Servers Pane, View/Add Servers

Image Manager Pane

The Image Manager pane is divided into **Save**, **Remove**, and **Cancel Pending Operations**, see Figure 213.

Figure 213. Still Store—Image Manager, Image Manager Pane

Save

The **Save** section of the Image Manager pane contains the **Meta Data only**, (connected to) **Save Selected**, and **Show Unsaved** buttons.

Meta Data only

Selecting the **Meta Data only** button:

Selecting the **Meta Data only** button modifies the **Save Selected** button to save or update only the metadata file (the image and thumbnail files will not be re-saved) from selected images to the working directory (the default). This saves a significant amount of time compared to saving all three files.

Save Selected

Selecting the **Save Selected** button:

- Saves selected images to the appropriate location for each image.

- Can be modified to save only metadata files using the **Meta Data only** button.

Show Unsaved

Selecting the **Show Unsaved** button filters the Image Manager scrolling list to show only unsaved images.

CAUTION   If unsaved images are removed from the Image Manager scrolling list, they are permanently removed.

Reserved

The **Reserved** section of the Image Manager pane contains the **Clear Reserved** and **Show Reserved** buttons.

Show Reserved

Selecting the **Show Reserved** button filters the Image Manager scrolling list to display reserved images only.

Clear Reserved

Selecting the **Clear Reserved** button:

- If the image is in the working directory, and marked reserved, removes the image from cache and removes the "Reserved" icon.

- If the image is not in the working directory, removes the image from cache and removes the image from the Image Manager completely (unsaved images are permanently deleted from Still Store).

Cancel Pending Operations

The **Cancel Pending Operations** section of the Image Manager pane contains the **Cancel Selected** and **Show Pending** buttons.

Cancel Selected Button

Selecting the **Cancel Selected** button:

Cancels pending and in-process operations for selected images.

Show Pending Button

Selecting the **Show Pending** button filters the Image Manager scrolling list to show all images that have pending or in-process operations.

Image Server Menu

An image server can be the Still Store hard drive (the default) or any external physical disk loaded with Image Server Software on an accessible network.

The Image Server menu category is comprised of the Image Server scrolling list on the left and three button group panes on the right (see Figure 214). The four button group panes on the right, from top to bottom are:

- The Navigation group, for navigating in directories and opening files,

- The File Management group, which has mode selection buttons for managing folders and files; copying, pasting, deleting, creating folders, renaming files and folders, and a **Multi-select** parameter selection button that allows the operator to select multiple environment files,

- A pane for loading images with **Working Directory** button that allows the choice of loading images from the working directory (to load images from another directory, navigate to and choose another directory) and the **Load Images** button for executing the load action, and

- The **Select Working Directory** pane that contains the **Set as working dir** button and displays which directory is set as the **Current Working Directory.**

CAUTION   Images must be in the .gva/.gvg format. Images can be converted using the Still Store Loader software.

Touch **Still Store**, **Image Server** to access this menu.

Figure 214. Still Store—Image Server Menu

Operation

In general, the redesigned Still Store feature is operated by:

• Selecting a working directory: this loads all the stills and clips for that directory into the Image Manager,

• Selecting stills and clips from an external Image Server, or

• Selecting a source and grabbing a still or recording a clip (with fencing, cropping, and positioning if desired), and performing a "keep" to place the image in the Image Manager and in cache.

From the Image Manager, an image can be loaded into an output (which first places the image into cache), placed directly into cache, or saved.

The Still Store menus or the Machine Control subpanel on the control panel can be used to select stills and play clips. Still selection, clip playback, and other Still Store attributes can also be controlled by E-MEM.

Image Server Service

In order to connect to an external image server with Still Store, the Image Server software must be installed on the PC serving as the image server. The Image Server service software is available as a radio button choice on the V15.0 or later software CD.

CAUTION To speed image server connection and environment file loading, it is highly recommended that disconnected image servers be removed from the list of configured **Image Servers** (see Figure 212 on page 295).

Once installed, the Image Server software can be configured for mounting points and paths to stored images, as shown in Figure 215.

To navigate to the Image Server Configuration in Windows XP, perform the following steps (Image Service must be installed first):

1. Select the Start Menu

2. Select **Settings**/**Control Panel**/**Administrative Tools**

3. Double click on **Services**

4. Double click on **Image Server,** the Image Server Configuration dialog box will appear, as shown in Figure 215.

Figure 215. Still Store—Image Server, Software Configuration

Once the mount points and paths are established, the image server can be added and images can be imported into the Image Manager scrolling list, loaded to cache, or loaded to an output.

If images or the files that contain them are moved or deleted, the paths will be broken. For information on repairing path conflicts, refer to *Conflict Resolution Pane on page 293*.

Network Permissions for Image Servers

You may have to configure your network to allow Image Servers to be connected. The following assumes a Windows XP operating system.

To configure your network to allow Image Server service software to connect to an image server, perform the following steps:

1. Click on the Start menu and select Control Panel/Administrative Tools/Services

2. Double-click on the **Image Server** service

3. Select the **Log On** tab, as shown in Figure 216

4. Select the "**This account**" radio button

5. Enter and confirm password

6. Select the **Apply** button

7. A dialog box will appear verifying the change, click **OK**

8. Select the General tab

9. Click on **Stop**

10. Click on **Start** to restart the service with the changes

Figure 216. Still Store—Image Server Properties Dialog

Adding an Image Server

Image Servers can be added from the Image Manager menu, by selecting the **Server Setup** button in the View/Add Image Servers pane, see Figure 202, middle right of menu.

1. Select the **Server Setup** button in the Image Manager menu, see .

2. Enter the **Name**, **IP Address**, and **Port** of the image server to be added, see .

3. Select the **Add** button.

Figure 217. Still Store—Adding an Image Server

Input Source Selection

Still Store input sources can be selected using the Local Aux panel or from the Input Source menu, top center of Playback screen (see the *Kalypso User Manual* for more information).

1. Select a Still Store output on the Still Store menu.

2. Turn on monitoring.

3. Press the **Still Store** bus delegation button on the Local Aux panel.

4. Press the button for the desired source on the Local Aux panel source selection bus.

Note   Still Store supports split keys set up on the Local Aux panel.

Capturing a Still

Still Store uses the "Keep" function (**Keep Image** button) to place images into the Image Manager. Placing an image in the Image Manager does not "save" the image to disk, the **Save** button must be pressed to save an image to disk.

1. From the **Create Edit** menu, select an image in the scrolling list or in the Still Store output, as shown in *Still Store Create Edit Menu* .

2. Select the **Capture Setup** data pad and configure the image to be captured (refer to *Still Store Create Edit Menu* for more information).

3. Preview the selected Still Store output (if the input has a video and a key, the output must be in video/key *paired* mode).

4. Verify that the **E-E** button is available in the Create Edit menu and select it.

Note   If the **Show Buffer** button is present instead of **E-E**, either clear the image from the buffer or keep the image (with **Clear Image/Keep Image** buttons) to restore the **E-E** button. (E-E shows the input source directly to the output source).

5. Select the desired source for the still capture.

6. Select **Show Input**. The input source will appear on the monitor if being used for preview.

Figure 218. Still Store Create Edit Menu

7. Positioning, cropping, or a partial raster fencing of an image can be performed before pressing the **Keep** button. Select the corresponding data pad and specify the desired modifications.

Note   Verify that images will be grabbed (or grabbed and saved) into the correct folder, in the directory display located below the Image Manager scrolling list, lower-left. The image will be associated with the Working Directory path in the Image Manager.

8. Select the **Grab Still** button to capture the still image.

Once the still is grabbed, it can be saved using the **Save** button located at the bottom-left of the center-bottom pane (a save can be performed now or at any time).

Capturing a Clip

1. Follow steps Step 1 through Step 5 of the Still Capture procedure above.

2. Touch the **Capture Setup** data pad and enter a duration for the recording in frames or select the **Cont Record** button for a continuos recording (refer to Figure 198 on page 281 for more information).

Figure 219. Still Store Create Edit Menu, Recording Controls

CAUTION Long duration recordings can uncache a lot of other Still Store material, and saving long recordings can fill the cache with locked items, making other Still Store material inaccessible.

3. Controls are also available to specify a partial raster fenced recording and choose the placement (horizontal and vertical) of the area to be captured. Single frame fenced recordings are possible to save storage space.

Note The modifications listed above must be performed before recording the clip.

4. If your source is not live, cue the source material. If you are using an external device controlled by the Kalypso system (Profile VDR or VTR), you can cue and play the material using the Kalypso Machine Control subpanel.

5. To initiate the recording, touch the **Record Clip** button. If the source is not live you also need to play the source material. The recording will proceed for the specified duration, then stop (unless using continuous record, in which case the recording will stop when out of frames).

6. Positioning, cropping, or a partial raster fencing of an image must be done before a "Keep" is performed. Select the corresponding data pad and specify the desired modifications.

Note   Verify that images will be grabbed (or grabbed and saved) into the correct folder, in the directory display located below the Image Manager scrolling list, lower-left. The image will be associated with this path in the Image Manager.

Once the image is recorded, it can be saved using the **Save** button, located at the bottom-left of the center-bottom pane.

Marking Clip Begin and End Points

When an animation clip is recorded, there may be material at the beginning or end that should not go to air (black, etc.). The clip can be trimmed for playback.

1. With the clip loaded to a Still Store output and that output delegated, touch **Show Details** (Figure 220).

Figure 220. Still Store Create Edit Menu, Show Details

2. Using the **Jog Time** soft knob or the **Jog Forward** and **Jog Back** buttons, go to the first frame to be looped and press **Mark Begin**.

3. Go to the last frame to be played and press **Mark End**.

4. Touch **Save Meta** to save the clip with the modifications.

To Select a Thumbnail Image for a Clip

1. Go to the Still Store Create Edit menu.

2. Load a clip to an output.

3. Select **Show Details**.

4. Play or jog the clip to the desired frame.

5. Touch **Mark Thumb**. A red line on the Still Store menu time line graph indicates the location of the current thumbnail frame (Figure 221).

6. Touch **Save Meta** to save the clip with the modifications.

Figure 221. Still Store Menu, Clip Thumbnail Frame Selected

Looping Clip Playback

Looping can be used to repeat playback of a section of material in a clip.

1. With the clip loaded to a Still Store output and that output delegated, touch **Show Details**, then touch the **Loop** data pad bring up the loop controls (Figure 222).

Figure 222. Still Store Create Edit Menu, Loop Controls

2. Using the **Jog Time** soft knob or the **Jog Forward** and **Jog Back** buttons, go to the first frame to be looped and press **Loop To**.

3. Go to the last frame to be looped and press **Loop From**.

4. Set the number of repetitions of the loop with the **Count** soft knob. The first play through is not included in this number, so for example if you want the clip to play three times enter the number **2**. Entering any negative value creates an endless loop.

5. Touch **Save Meta** to save the clip with the modifications.

Selecting Loop Points

To avoid jumps at the loop point, the original source material (a graphics animation, for example) needs to have motion that repeats. In some cases the entire animation is designed to loop, in which case the **Loop To** point will match the begin point, and the **Loop From** point will match the end point. In

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other cases, the animation is designed with a non-looping head and/or tail, which can be used to transition into and out of the looping section. You will need to find appropriate loop points to make a looped clip of this type play seamlessly.

1. Find the repeating section of the clip and set a **Loop To** point on a frame just inside its start. The first frame of a repetitive section is not always the best choice.

1. Go to the frame later in the clip that matches the lop frame you just set.

2. Jog back one field, and set it as the **Loop From** point.

3. Set a negative loop count so the clip loops constantly and start playback. Watch the animation carefully at the loop point. If a jump is visible, adjust the Loop To and/or Loop From points using the soft knobs while the animation is running until the jump disappears.

4. Stop the clip playback, set the Count to the desired number of repeats, and touch **Save** to save the clip with the modifications.

Machine Control Subpanel Control

Kalypso Still Store stills and clips can be loaded to Still Store outputs and played using the Machine Control subpanel.

1. Delegate control to the Still Store output by selecting that source on the Pgm Pst B bus (or whatever bus has been delegated for control with the **Sel Deleg** button).

2. Use the Machine Control subpanel controls to Load Sill Store stills, or to Load, Cue, Play, Jog, and Stop Sill Store clips. You can also mark an in point from this subpanel. See the *Kalypso User Manual* for more information.

You can quickly cache multiple items with the Machine Control subpanel by loading the items in succession to the same Still Store output.

You can also use the Machine Control subpanel during Still Store clip recording to cue and play Profile VDR or VTR sources under Kalypso external device control.

Still Store E-MEM Operations

Still Store E-MEM Enable Buttons

Selected Still Store settings and parameters can be saved in E-MEM effects for reuse. The Still Store outputs are assigned by default to the E-MEM

enable buttons listed in Table 11. These assignments can be changed from the E-MEM Prefs menu.

Table 11. Default Still Store Output Channel E-MEM Assignments

Still Store Output Channels	E-MEM Enable Button
Ch1, 2	SS A
Ch 3, 4	SS B
Ch 5, 6, 7, 8	SS C

Still Store E-MEM Parameters

The following Still Store settings are keyframeable:

- Item load from the current folder to each Still Store output,

- Each Still Store output Video/Key Pair state (on or off),

- Position,

- Crop,

- Mark Points,

- Freeze Frame Mode, and

- **Start at KF** trigger.

Inserting or modifying a keyframe in an effect will save the above settings on that keyframe for that E-MEM level. These settings will be enacted later when the E-MEM register is recalled or run.

S-Linear path controls are applied to all interpolated Still Store E-MEM operations. Note that positioning and cropping is on line and pixel boundaries. These aspects of an image cannot be moved perfectly smoothly with the Still Store (if smooth motion is desired use a Transform Engine).

E-MEM Clip Playback

Each time a Still Store **Start at KF** trigger command is encountered in an effect, the clip is cued and plays from that cue point. You must make sure effect keyframes that follow the initial start trigger within the duration of the clip do not have **Start at KF** on, or the clip will be recued. Clips cannot be played backwards or paused.

If you want to create an effect that cues and plays a clip when an EMEM register is recalled, you can turn the **Start at KF** button on and then learn a new E-MEM register. This puts the trigger on the first keyframe of the effect. As with all E-MEM Still Store operations, the item will need to be cached in advance for proper playback.

File Operations File Copy

In version before 15.0, Still Store files consisted of three files: one for video/key data (.gvi extension), another for meta data (.gva extension), and a third thumbnail image (.bmp extension). Now with version 15.0 and later, the three files are treated as one image file.

To Copy Still Store Items:

1. Touch **Still Store**, **Image Server** to go to the Still Store Image Server menu.

2. Touch **Top**, if necessary, to go to the top of the file hierarchy (see *From Image Server on page 291* for more information) , then select a Directory icon (for information on loading an Image Server, see *Adding an Image Server on page 302*.

3. Use the navigation controls to go to the folder containing the items to be copied.

4. Open the folder, touch **Multi-Select** so it is enabled, then touch the image files for the item to be copied.

5. Touch **Copy**. A lower pane will appear.

6. Navigate to a destination on a different drive in the lower pane, using the lower navigation controls.

7. Touch **Paste**. The Menu system will not be usable during the transfer process.

File Operations Folder Copy

You can copy an existing folder that contains Still Store images to another drive.

If you know you will be transferring Still Store items at the time they are captured or recorded, you can create a new folder and save the items to it. Then you will be able to transfer only these items by copying the folder.

Still Store Loader

New with Version 15.0, the Still Store Loader application has been updated to allow the operator to export images into the Still Store hardware from a personal computer by converting any supported image types to the native Kalypso format (.gva/.gvi) file formats. And, the operator will now be able to create image sequences of video files and export them to the Still Store hardware. See *Appendix B-Still Store Loader* for more information.

Multi-Delegate Transform Engines Operation

New with Version 14.0, parameters for multiple Transform Engines can now be adjusted simultaneously on the Transform Engine menus, rather than having to change them separately for each Transform Engine. In addition, Effects Send for Transform Engines can now be activated or deactivated directly on the Transform Engine menu by double touching their delegation buttons.

Multiple Transform Engine Delegation

Figure 223. Transform Engine Menu, Multi-Select Enabled

Multi Select Button

When the **Multi Select** button is active, more than one Transform Engine or Global Channel can be selected for control on the menu. You cannot select a Transform Engine and a Global Channel at the same time, however. Only multiples of the same type can be selected. Adjustments to the parameters on the rest of the menu will be applied to all the selected Transform Engines or Channels.

When multiple Transform Engines are selected, parameter values for the first selected item (colored darker than the other items) will be displayed

on the menu. This is considered the master Transform Engine for display purposes.

When a feature (like Drop Shadow or Glow) in another Transform Engine menu is active, the name of the menu category selection buttons will be underlined. If that feature is ON for one or more of the delegated TEs but not for all, the underline will be broken.

As before, parameter changes made by entering values in datapads are absolute, while parameter changes made with the soft knob are relative

Main Panel and Menu Panel Delegation Interactions

Transform Engine delegation operations performed on the Transform Engine subpanel of the Main panel can affect the delegations on the Menu pane (see bullet items below), but the reverse is not true. Delegation button tally lights on the Main panel will not change when delegations are changed with the Transform Engine menu. The joystick and other Main panel button controls will only apply to those Transform Engines that have been delegated using the Main panel, even if multiple Transform Engines have been delegated using the Transform Engine Menu.

- If Transform Engine delegations are changed using the Main panel when the Transform Engine menu **Multi Select** button is On, multiple delegations will be accepted by the Menu. The last TE delegated from the panel becomes the new master (the master can be changed at the menu).

Note   When **Multi Select** is On and TEs are delegated from the panel to the current selection in the menu, previously delegated TEs are not deselected.

- If Transform Engine delegations are changed using the Main panel when the Transform Engine menu **Multi Select** button is Off, only the last touched Transform Engine delegation will be accepted by the Menu.

It has always been possible to delegate multiple Transform Engines in the same M/E for control on the Main panel, by holding down more than one delegation button in the Transform Engine subpanel. This feature is retained, but the existing limitation that the Transform Engines must be in the same M/E remains in force. If you wish to control Transform Engines in different M/Es, use the Transform Engine Menu. If you want to control multiple M/Es in the same M/E, you can use either the Main panel or the Menu.

Effects Send Double Touch Activation/Deactivation

Touching a Transform Engine Menu delegate button twice rapidly now turns Effects Send on or off for that Transform Engine. You no longer have to go to the Effects Send Menu or use the Main panel to activate/deactivate Effects Send for Transform Engine operations.

Delegation Matrix and Effects Send

All Transform Engine menus have a delegation matrix at the upper left (Figure 223 on page 312), used to choose which Keyer Transform Engine is to be controlled. Only Transform Engines assigned to keyers with Effects Send will appear in the delegation matrix. Transform Engines can be assigned to keyers with the Main panel, or from the Effects Send menu accessed via **M/E**, **Effects Send** (Figure 224).

Figure 224. Effects Send Menu

Managing Transform Engine Availability

Transform Engines are shared resources. They can automatically be assigned to any keyer when needed, by turning on Effects Send for that keyer. If all the Transform Engines are assigned, however, none will be available and you will not be able to create a Transform Engine effect on

another keyer. The following techniques will help ensure Transform Engines remain available.

- If you manually turn on Effects Send for a keyer using a Transform Engine, turn Effects Send off when you are done using that keyer.

- When building an effect using a Transform Engine that ends on an image that doesn't include the Transform Engine source, turn off Effects Send when you are finished with that source.

- When building an effect using a Transform Engine that ends by moving to a full opaque frame of that Transform Engine source, you can switch to that source direct and turn off the keyer and Effects Send at the end of the effect. There will be a one frame jump, due to the delay through the Transform Engine, but if the actual source image itself does not contain movement this jump will be hidden. You many need to add a single frame keyframe to the end of the effect to accomplish this switch.

- You can periodically go to the EFX Send menu (**M/E**, **Effects Send**) and turn off the **Efx Send Active** button for keyers not being used. Effects Send can also be turned off on the Main panel, but you need to first delegate the Keyers subpanel to the keyer with Effects Send active.

Page Turn Transition Effect

A page turn effect can act as a transition that falls over an image as an incoming key, or if the transformed key is already on can peel away to reveal a new image. These page turns are actually effects that run, not transitions. The Transition Lever Arm and Auto Trans button are not used.

Incoming Key Page Turn

1. Select the source to transition from on the A bus of the M/E.

2. Select the keyer transition element (Key 1-4) to be used on the Transition subpanel for that M/E.

3. Turn on that keyer in the Transition subpanel.

4. Press the **Effects Send** button in the Keyers subpanel to turn on Effects Send for that keyer.

Note   If you cannot turn on Effects Send, go to the Effects Send menu (**M/E/Effects Send**) menu and turn off Effects Send on a keyer not currently being used to free up a Transform Engine.

5. Select the page turn source to transition to on the keyer bus of that M/E. If **Auto Delegate** is on the Keyers subpanel will automatically delegate to control that keyer.

6. Go to the Transform Engine/Transform menu and press the **Clear All** button to clear any existing values.

7. Go to the Transform Engine/Kurl menu, delegate the keyer for the M/E, and select **Page Turn/Roll**. The keyed source should now display a partial page turn effect.

8. Touch the Page Fold/Opacity data pad, and adjust the **Radius**, **Angle**, and **Opacity** of the page turn to meet your needs. For a transition effect the Base Opacity should be 100%.

9. Adjust the **Offset** control so the keyed source is completely off the screen (a value of -6.0 will usually work with a 4 x 3 aspect ratio).

10. Learn this as the first keyframe of an effect (make sure the appropriate levels are enabled, then press **Learn** and enter Bank # and Register #).

11. Adjust the **Offset** control so the keyed source is completely fills the screen (a value of 5.0 will usually work).

12. Press **Insert After** to add this as the second keyframe of the effect.

13. Rewind and run the effect. The incoming key should page turn over the background.

You can use **Auto Run** to have the page turn effect run automatically when it is recalled. Once run to full screen, you can press **Rev** and the **Run** to make the page turn peel back to reveal the background. Or you can create an matching effect that starts with a full screen key and peels away (see below).

You can activate **Hold** on the A bus of the M/E to allow this effect to be used without changing the currently selected background source. A hold can also be programmed into the first frame of the effect using the Source Holds menu, which will make the effect always transition over the currently selected source.

Exiting Key Page Turn

You can create an effect that peels an image away by following the above procedure, but instead offset the first keyframe to full frame and offset the second keyframe entirely off the screen. To prevent a one frame jump due to the delay through the Transform Engine do not use **Auto Run** with this effect. Instead, specify the source selection for your page turn full screen keyed source in the effect and recall it in advance. You can then run the effect manually exactly when the page turn is required.

Page Turn Pair Effect

One powerful technique is to build an incoming page turn, add a pause, and build an exiting page turn all in the same effect. To add the pause, go

to the Timeline menu, move the cursor to the location of the pause, press **Pause At KF**, **Modify**. You can copy and paste the incoming page turn keyframes to build the exiting page turn. With **Auto Run** on you can then recall the effect to page turn on, and then later press **Run** to page turn off.

Building a Cube and Using Easy Cube

A 3-D cube can be created using three Transform Engine channels (only three channels are needed since only three sides of a cube are visible at a time). To create seamless cubes, use the negative crop value from one channel as the Source Z Locate of the other channel. Use the horizontal Crop values to determine the sides of a solid, and use the vertical Crop values to determine the top and bottom sides of the solid.

For example, the following procedure creates a half-size three sided cube using three keyers of an M/E.

1. Select on the A bus of the M/E the background image over which you wish to have the cube appear.

2. Select the sources for the three sides of the cube on three keyers of the M/E. You will use the **Alt** modifier button for the third keyer.

3. Turn on all three keyers on that M/E. You will see only one keyed image because the other two are hidden behind it.

4. Delegate all three keyers for control by the Keyers subpanel so you can apply the same values to them simultaneously. This can easily be done by pressing and holding down the Keyer Delegation buttons next to the M/E Status display for all three keyers so these buttons are illuminated. This delegates the Keyers subpanel and the Transform subpanel to all three keyers.

5. Turn on Effects Send for all three keyers by pressing the **Effects Send** button in the Keyers subpanel.

Note   If you cannot turn on Effects Send, go to the Effects Send menu (**M/E/Effects Send**) menu and turn off Effects Send on keyers not currently being used to free up Transform Engines. You may then need to re-delegate the subpanels to all three keyers with the Keyer Delegation buttons.

6. Delegate all three keyers again for control by the Transform subpanel, using the Keyer Delegation buttons as described above, or by pressing all three keyer delegation buttons at the same time in the Transform subpanel.

7. Set all three keyers to half-size on the Transform Subpanel. Press **Keyer T-Form**, **Size Loc**, **Z** to delegate the Master E-MEM keypad to control Z size. Then type **• 5** on the keypad and press **Enter**. The keyed images will be reduced in size, revealing part of the background.

8. You will now crop the sides of all the keys to make them square. This is done using the Transforms menu (press **Transform Engine**, **Transform**). Because the menu can control only one keyer at a time, the adjustments are made to each keyer individually.

9. Select the first keyer in the delegation matrix, turn on **Crop**, touch the Crop Edge data pad, and enter the following values. You may only need to change the Left and Right values, as default values for Top and Bottom are usually 3 and -3:

Table 12. Square Side Crops

Edge	Value
Top	3
Bottom	-3
Left	-3
Right	3

10. With the first keyer still selected, turn on the **Global** and **Easy Cube** functions on the menu. This prepares the keyer for cube manipulation. The key will be controllable with the global channel, and when the global channel is rotated the key side moving out of view will automatically translates to the visible front of the cube, simulating a complete six sided cube.

11. Repeat Step 9 and Step 10 for the other two keyers.

12. You now need to edit each key Z value to match the negative of the crop value. The second and third key sides will need to be rotated first.

13. On the Transform subpanel, press the delegation button of the first keyer so only that keyer is selected for that M/E, press **Keyer T-Form**, **Src Space**, **Loc 3D**, **Z**, then type **– 3** on the Master E-MEM subpanel and press **Enter**.

14. Select only the second keyer on the Transform subpanel, press **Rot**, **X**, then type **– • 2 5** on the keypad and press **Enter**.

15. With only the second keyer still selected, press **Loc 3D**, **Z**, then type **– 3** on the keypad and press **Enter**.

16. Select only the third keyer on the Transform subpanel, press **Rot**, **Y**, then type **• 2 5** on the keypad and press **Enter**.

17. With only the third keyer still selected, press **Loc 3D**, **Z**, then type **– 3** on the keypad and press **Enter**.

18. Go to the Transforms subpanel and press the **Global Ch** button to delegate control to the global channel. You can now select **Rot** on the subpanel and rotate the position of the cube with the joystick. When turned completely around you will see the cube is incomplete, with only three sides.

Alternatively, after selecting the background and key sources, turning on the keys, and turning on Effects Send (Step 1 through Step 4 on page page 315), the cube above can be created using only the Transform menu by entering the data in Table 13.

Table 13. Half Size Cube Data

Parameter	Key 1	Key 2	Key3
Global	On		
Easy Cube	On		
Crop	On		
Crop Edge	Top = 3 Bottom = -3 Left = -3 Right = 3		
Source/Target	Select Source Space		
Locate	X = 0 Y = 0 Z = -3 Size = 0.5		
Target Rot	X = 0 Y = 0 Z = 0	X = -0.25 Y = 0 Z = 0	X = 0 Y = 0.25 Z = 0

The above example is for a cube with centered crops. For crops that are not equidistant from the edges of the picture (3-D slab), take the negative crop, add it to the positive crop, divide by two, and use this value to move the axis for the side of the cube you are working on. This centers the axis so you can use the negative crop value rule described above to build your 3-D slab. When done, move the axis back to the center of the screen using Post Xform and entering a negative of the axis value.

Shot Box Option Operation

Introduction

The E-MEM Shot Box ([Figure 225](#)) is a separate panel that is designed for rapidly recalling previously built effects.

Figure 225. Kalypso Shot Box

The Shot box operates with Release 5.0 and higher software versions using the Editor protocol.

Features

- Single button delegation to M/E 1, 2, 3, or PGM/PST.
- Five pages of 20 registers allows access to all 100 registers.
- Register, page, and E-MEM readout display.
- Run and Auto Run controls.

Operation

Note   The legends silkscreened above the buttons are for the full function Shot Box and do not apply to initial Shot Box version operation.

Reset Shot Box

When the Video Processor frame is reset or powered off and on, it can lose communication with the Shot Box (the Editor Interface state may turn off).

The Shot Box panel must be reset to restore communication. The Shot Box can be reset by cycling power to the unit, or via keystrokes on the panel.

To Reset the Shot Box from the Panel:

1. Press **Page** to enter the page selection mode.

2. Press and hold the **Run** and **Auto Run** buttons simultaneously until the readout display goes blank.

3. Release the **Run** and **Auto Run** buttons.

Delegation Buttons

The three buttons to the left of the display delegate the Shot Box panel to M/E 1, M/E 2, or M/E 3, as labeled, or to Master E-MEM. When one button is illuminated, that M/E is subject to control. When all three buttons are off, the panel is delegated to Master E-MEM. These buttons are mutually exclusive, such that pressing one button turns off any other currently selected button, and pressing a currently selected button turns it off, delegating the panel to Master E-MEM.

Following standard Kalypso system operation, when the Shot Box is delegated to Master E-MEM with Auto Recall off, the Enable buttons on the Master E-MEM panel control what E-MEM levels are affected by a Shot Box register recall. When Auto Recall is on, the levels affected can vary with each Shot Box register recall, depending on what levels were enabled when the effect was learned.

Page Button

The **Page** button is used to gain access to five pages of 20 registers for each of the three M/Es and PGM/PST. Each page is accessed by pressing the **Page** button, then selecting the page number (**0** - **4**).

Table 14. Page Button Registers

Buttons Pressed		Registers Accessed
Page	0	0 - 19
Page	1	20 - 39
Page	2	40 - 59
Page	3	60 - 79
Page	4	80 - 99

The **Page** button is also used for resetting the panel and displaying versions.

Register Buttons

The 20 register buttons (labeled 0-19) correspond to the E-MEM registers selected for the delegated bank and page. Pressing one of these buttons selects that register for use. If **Auto Run** is on, the register will also run automatically.

Recalling Registers

To recall a different register from the same page range, simply press the **0-19** Shot Box button for the desired register.

To recall a register from a different page range, first specify the page and then the register number (Table 15).

Table 15. Examples of Recalling Registers from Different Pages

Register	Button Presses
5	Page, 0, 5
15	Page, 0, 15
25	Page, 1, 5
79	Page, 3, 19
80	Page, 4, 0

Once a page is selected, subsequent registers can be recalled from that page range with a single Shot Box register button press.

Run Buttons

The **Run** button runs the selected Master E-MEM register, just like pressing the Master E-MEM **Run** button on the Main panel. The **Run** button on the Shot Box does not light for the duration of the effect, as the **Run** button does on the Main panel (the Editor protocol does not support this). Instead, the **Run** button lights for one second to indicate the command has been sent.

The **Auto Run** button works the same as on the Main panel. When on, E-MEMs will run automatically when recalled from the Shot Box.

Note   The Shot Box **Run** and **Auto Run** buttons do not work when M/E 1, 2, or 3 is delegated. The Kalypso system currently supports effect run only on Master E-MEM.

Readout Display

The Shot Box Readout display shows which bank and page is currently selected, and which register was last selected from the shot box panel.

Version Display

Software and hardware versions can be reported on the Shot Box Readout display. Microcontroller code (M), PLD code (P), and the board hardware assembly (H) are shown.

To Display Versions:

1. Press **Page** to enter the page selection mode.

2. Press the **M/E 3** button. The versions will appear on the character display (for example, **M1.0 P1.0 H1.0**)

3. Press the **0** button to return to normal Shot Box operating mode.

DoubleTake Option Operation

Introduction

The DoubleTake option allows the operator to divide a Kalypso system M/E into two partitions (Primary and Secondary) by enabling Split Mode on that M/E. Each Split Mode M/E partition can be assigned resources (keyers and wipe generators) of that M/E. Each partition can be setup and controlled from the Main panel using the **Pri** and **Sec** delegation buttons, and each partition has its own E-MEM level, permitting precise independent control of M/E partition effects. A powerful aspect of DoubleTake is control of the partitioning resides in the E-MEM system itself. It is possible to create M/E partitions when needed with an effect recall, and then quickly return the M/Es to full functionality with another effect recall. The DoubleTake feature also provides Preview outputs for each partition

Putting M/Es in Split Mode essentially gives the operator more M/Es (up to eight on a 4-M/E Kalypso system), each with less functionality. This can be useful for some styles of production. In fast paced programs an operator may dedicate an M/E to a simple task for the duration of the show and never change it. DoubleTake provides a way to use some resources of an M/E for these set and forget requirements, and allow the operator to use the remaining resources of the M/E for other purposes.

An example of using DoubleTake in this manner is a shot clock at a sporting event. The shot clock composite requires only one or two keys plus a background and uses a fixed camera that doesn't move. During pre-production M/E 1 can be split and the Secondary partition can be set up with the shot clock composite. When the shot clock is needed during the show, that partition of the M/E is taken on-air. The Main panel M/E 1 controls can be delegated to the Primary partition and be used for other effects, which can be

set up, recalled, and run independently from the Secondary partition used for the shot clock (see for setup information for this scenario).

DoubleTake can also be used for other purposes. For example, complex composites could be built on the Secondary partition of an M/E by assigning all four keyers to that partition. The Primary partition of that M/E is then used only for background transitions between the A and B buses.

Splitting an M/E with DoubleTake is useful when independent control of each partition is desired, so E-MEM recalls and transitions only affect part of the M/E. If you want an alternate output from the same M/E but wish to have the effects and transitions track on both outputs, Programmable Clean Feed mode is probably the better choice.

DoubleTake Authorization

DoubleTake is a software enabled option. The option must be purchased and an authorization code must be entered to activate this feature.

Split Mode

The M/E Mode menu is used to activate Split Mode on an M/E and assign resources to the partitions. Touch **M/E, Mode** to access the menu, then select the desired M/E and touch **Split** to partition that M/E (Figure 226).

Figure 226. M/E Mode Menu, Split M/E Selected

In **Split** operating mode, the M/E is divided into Primary and Secondary partitions. The Primary partition has the Pgm A and Pgm C outputs that use the Background A and B buses, and the Secondary output has the Pgm B and D outputs that use the Utility buses. The Pgm Out columns on the menu are re-arranged when Split mode is selected to show the A and C Primary outputs on the left and the B and D Secondary outputs on the right.

The Secondary Assign pane is used to assign Keyers and Complex Wipe generators to the Secondary partition. Assignments made here affect what elements are learned and recalled by the E-MEM levels (see *Split M/Es and E-MEM Control on page 328*). Touching an item so its yellow indicator illuminates assigns it to the Secondary partition. The buttons for these items are then activated on the Secondary partition outputs. Unselected items remain assigned to the Primary partition. Note that keyers can be activated or deactivated (green button indicators on or off) on the individual outputs if desired, the same as in Programmable Clean Feed mode.

Note   Allocating Keyers 3, 4, and Complex Wipe Generator 2 to the Secondary partition provides a logical and even division of resources. This configuration also provides optimum Main Panel control delegations, as explained below.

Main Panel Controls

Main Panel M/E Partition Delegation

When an M/E has been split, the **Pri** and **Sec** delegation buttons on that M/E are activated.

Pri and Sec Delegation Buttons

The **Pri** and **Sec** buttons delegate the source selection buses, Transition subpanel, and E-MEM subpanel of that M/E to the selected partition. Pressing one of the **Pri** and **Sec** buttons deselects the other. At least one partition is always selected on a split M/E.

Delegating Both Partitions

Holding down one of the **Pri** and **Sec** buttons and pressing the other delegates both partitions. When the panel is delegated to both partitions, the E-MEM and Transition subpanels control both partitions simultaneously. Also, the button tally indicators in the Transition subpanel and the transition pattern shape displayed in the M/E Status display reports information for only the Primary partition.

Source Selection

When an M/E is split and its Main panel controls are delegated to only the Secondary partition, the alternate buses for that M/E are reversed. Keyer 3 and Keyer 4 sources are selected on the keyer buses and Util 1 and Util 2 sources are selected on the background buses by default. Holding down the **Alt Buses** button allows source selection on the other Keyer 1, Keyer 2, Bkgd A and Bkgd B buses. This works well for the typical situation where an M/E is split into equal partitions, with Keyer 1 and 2 assigned to the Primary partition and Keyer 3 and 4 assigned to the Secondary partition. The M/E status display also always indicates with triangle markers the current delegation for all the source selection button rows.

If both partitions are delegated, source selection behaves the same as when only the Primary partition has been delegated.

Secondary Partition Re-Entry Selection

The Secondary partition uses the Pgm B output. Re-entry of that output to a different destination M/E is accomplished the same as before. On the destination M/E, hold down the **Shift** button and press the re-entry button for

the split M/E. This selects the Secondary partition output for re-entry into that destination M/E.

It is also possible to map the output of secondary partition of one M/E to a crosspoint button on a different M/E using the Daily Setups Button Mapping menu. This permits quick single button press re-entry of that secondary partition's output directly on another M/E.

M/E Partition Preview

Preview outputs are available for both partitions of a Split M/E. In Release 15.0 the ___ **pvA** output of each bank is used for the Primary partition preview, and the ___ **pv2** output is used for the Secondary partition preview. These preview signals can be mapped to output connectors with the Output Assignments menu, accessed by touching **Eng Setup**, **Outputs**.

You can preview M/E partitions on switched preview using the Preview subpanel. Hold down the **Alt PVW** button while making the selection to view the Secondary partition preview of an M/E.

Transition Subpanel

When the Main panel controls of a split M/E are delegated to only one partition, the M/E's main transition system controls only that partition. Moving the Transition Lever Arm or pressing the **Auto Tran** or **Cut** buttons will affect only the delegated partition. Only elements assigned to that partition may be selected for the next transition. Keyers associated with the other partition may not be selected and therefore can not be included in the transition.

When a split M/E has been delegated to both partitions, all the controls become functional and simultaneous transitions in both partitions will occur for what ever elements are selected.

As an exception to the independence of the two partitions, the four **Key Cut** and **Key Mix** buttons can always be used regardless of partitioning and panel delegation. If a keyer is associated with the secondary partition, the **SEC** indicator above the keyer's cut and mix buttons illuminates to inform the operator that the keyers are not assigned to the primary partition.

Possible Out of Sync Transition Lever Arm

If a split M/E is delegated to a different partition when a transition is in progress, an out of sync condition of the transition lever arm will probably result. This situation is similar to recalling an E-MEM register that splits the screen with a transition wipe. The Transition Lever Arm will need to be re-synced (by moving the lever arm to a limit) before it can be used to finish the transition or start a new one.

M/E E-MEM Subpanel

When the M/E bank of a split M/E is delegated to one partition, that M/E's E-MEM subpanel will control only that partition's E-MEM registers. Recalling and running effects will only occur on the currently selected partition.

When the M/E bank and been delegated to both partitions, effect recalls and runs are initiated in both partitions and are controlled simultaneously.

Master E-MEM Subpanel

The Master E-MEM system controls M/E partitions differently, depending on the Kalypso system E-MEM Prefs settings.

If default settings are used (Boundary set to Primary, Partition set to None), the Master E-MEM subpanel will not be able to control the Secondary partition of a split M/E. Secondary partition E -MEM control is available from the M/E's E-MEM subpanel.

Alternatively, Secondary partition control can be configured to be linked to the Primary partition, in which case E-MEM operations on the Master E-MEM subpanel will affect both partitions, or it can be configured separately, permitting completely independent E-MEM control of each partition from the Master E-MEM subpanel.

Note See *Split M/E E-MEM Level Assignments on page 329* for specific information about the different configurations available.

Split M/E E-MEM Register Save to Disk

When effect registers are saved to disk, all the levels of that effect are saved, including information for both partitions of a split M/E.

M/E Copy

The Copy/Swap subpanel can be used to copy M/E settings from one location to another. M/E Copy and Swap operates on the entire M/E regardless of mode or secondary assignments. For example, if a source M/E is split and the destination M/E is not, after a copy both M/Es will be split. Swaps behave in a similar manner, with the split setting and resource assignments being swapped between the M/Es.

Split M/Es and E-MEM Control

When an M/E is split, the Primary and Secondary partitions each have their own essentially separate E-MEM system. How each of these partitions are controlled by E-MEM operations depends on the E-MEM Prefs settings for that M/E.

Partition Boundary

A vital aspect affecting split M/E operation is the partition boundary. The M/E Mode (Normal, Prog CF, Split) and any secondary assignment information is stored as partition boundary information in the E-MEM system itself. This makes it possible to change an M/E's mode with an E-MEM recall. This partition boundary information is maintained as a separate component to permit isolation between Primary and Secondary partitions. See *Partition Boundary Assignment *.

Split M/E E-MEM Level Assignments

When an M/E is split, essentially two separate E-MEMs systems are created. The primary partition is always associated with its own E-MEM level. The secondary partition can be associated with E-MEM levels in various ways. These settings affect how each split M/E's E-MEM subpanel and how the Master E-MEM subpanels are used to enact E-MEM control of the M/Es.

E-MEM Prefs Menu

The E-MEM Prefs menu is accessed by touching **Daily Setups**, **Suite Prefs**, **E-MEM Prefs** (Figure 227).

Figure 227. E-MEM Prefs Menu

The M/E and Pgm Pst data pads display the current partition control parameters for that element. On a new Kalypso system the default settings assigns the partition boundary to the Primary partition level, and has the Secondary partition unattached (set to **None**) as shown in Figure 227.

Touching the data pad of an M/E brings up a menu used to assign the partition boundary and the Secondary partition itself to E-MEM levels (see Figure 228).

Figure 228. E-MEM Levels Menu

Touching the Partition Boundary or Sec Level Attachment data pad and then touching one of the Level buttons assigns that element to that level.

Partition Boundary Assignment

The partition boundary information can be assigned to an E-MEM level, or not be assigned (None). Which level the partition boundary is associated

with controls the amount of isolation between Primary and Secondary partition E-MEM behavior.

- If the partition boundary is assigned to the Secondary partition, recalls by the Secondary partition splits that M/E. This setting would work with the shot clock example cited in the introduction ([page 323](#)), especially if the shot clock is used frequently and the remaining resources of that M/E are sufficient. Note that there is a chicken and egg aspect to this mapping. The M/E cannot be split from the Main panel by recalling a Secondary partition unless the M/E is already split. You will need to go to the M/E Mode menu and manually turn on Split mode to activate Secondary partition recalls from the Main panel. You will also need to manually turn Split mode off from the menu to restore all the resources to the Primary partition.

- If the partition boundary is assigned to the Primary partition E-MEM level, every E-MEM recall of the Primary partition of a split M/E imposes the M/E mode and the secondary resource assignments. E-MEM recalls of the Secondary partition will not change the current mode or alter any resource assignments. This mapping is useful in cases where split M/E mode is used occasionally during a show, but the M/E is normally used unsplit. Primary partition E-MEM recalls will split the M/E when desired and restores it when all resources are needed by the Primary partition. Note that all the effects built on the Primary partition will need to include consistent partition boundary information. If any change is made later in M/E partitioning, all the Primary partition effects will need to be edited.

- If the partition boundary is assigned to a different E-MEM level entirely, complete independence of the split M/E partitions results. This setting can be used to map all M/E partition boundaries to the same separate level. This level can be used to preset the partitioning of the entire switcher, and then Primary and Secondary E-MEM operations would not change the switcher settings.

- If the partition boundary is unassigned (none), E-MEM recalls will not affect the current M/E settings. Changes can only be done manually in the M/E Mode menu.

- If the M/E is not going to be used in split mode, the partition boundary should be mapped to the main E-MEM level. This will retain normal E-MEM operations for that unsplit M/E.

Secondary Level Attachment

The Primary partition is always associated with an M/E's main E-MEM level and has a dedicated button in the Master E-MEM subpanel (**M/E 1**,

M/E 2, **M/E 3**, **Pgm Ps**t). The Secondary partition, however, can be attached to different levels, or not be attached, depending on the desired behavior.

- If the Secondary partition is unassigned (none), E-MEM control is only available on that M/E's individual E-MEM subpanel when it has been delegated to the Secondary partition. The Master E-MEM subpanel will have no control of that Secondary partition.

- If the Secondary partition is attached to a level different from the Primary partition (a Misc level), then E-MEM control of the Secondary partition will be available from the Master E-MEM subpanel when that Misc level has been enabled. Control continues to be available from that M/E's individual E-MEM subpanel when it is delegated to the Secondary partition. One suggested mapping would map M/E 1 secondary to Misc 1, M/E 2 secondary to Misc 2, etc. so that the secondary partitions have separate Master E-MEM control. The layout of the enable buttons make this a logical attachment. To do this you may need to re-assign the Bkgd, External Devices, or any other levels assigned to the Misc buttons to ensure separate control of these functions. Another scenario is to assign all M/E partition boundaries to a common Misc level and use that single level to control all M/E partitioning and modes.

- If the Secondary partition is attached to the Primary partition level, E-MEM control of the two partitions will be linked together. Specifically, Master E-MEM operations for that level will always affect both partitions. When the individual M/E subpanel is delegated to the Primary partition, E-MEM operations will also affect both partitions. However, when the individual M/E subpanel is delegated to the Secondary partition, E-MEM operation will only affect the Secondary partition.

- If the M/E is not going to be used in split mode, the Secondary partition can be left unattached.

Default DoubleTake E-MEM Settings

The default Suite Pref settings assigns each M/E's partition boundary sublevel to the M/E's Primary level and leaves the M/E Secondary levels unattached. This default allows E-MEM to control the M/E as a single object until it is put in split mode. Then the Secondary level is only controlled by the individual M/E's E-MEM subpanel.

Using Unrestricted Re-Entry with Split M/E Mode

The Kalypso system normally restricts the re-entry of the outputs of an M/E back into the same M/E. This restriction can be defeated by touching **Daily Setups**, **Suite Prefs**, **Re-Entry Prefs**, then turning off the **Enabled** button.

Note   An M/E primary or secondary output re-entered into the same M/E will result in a downward 1 line shift in the video. Other re-entry combinations may cause similar timing shifts or feedback.

With this restriction removed, a secondary output can be selected on a keyer in the same M/E, and the operator can easily mix or wipe within the key on the re-entered half of the M/E.

If you want to key a lower third over an incoming video and then use an Internal DPM to position it over the shoulder of a newscaster, you can perform all of this in a single M/E.

1. Using Split M/E mode, assign Keyer 4 to the Secondary Partition. Select the incoming video for the over the shoulder on the utility bus for the Secondary Partition, select the lower third for the over the shoulder as the source for Key 4.

2. Now on Keyer 1 select the secondary partition as the source and put it on-air. Note that the video to be used as the over the shoulder has dropped a line. Now enable the Internal DPM. Use the Internal DPM controls to position it to be over the shoulder of the newscaster that is on the background video for the M/E.

In this instance, the line that was lost re-entering the Secondary into the Primary doesn't matter since the image is being repositioned and resized by the Internal DPM. You still have keyers 2 and 3 available for a final lower third on the whole image and another key left over all on a single M/E.

Split Layered Mode

Lamina™ Video Compositing, or Layered Mode, is a feature that allows the operator to composite up to four keys together to create a single video/key pair. These two signals to be routed in parallel to provide a much cleaner key than would normally be possible. This key pair can be re-entered into the switcher on another keyer to create more key layers on a different M/E. This compositing of keys can be done on either or both of the primary and secondary outputs.

Split Layered mode can be particularly useful. For instance, you can split M/E 1 and assign keyer 1 to the primary side and the other three keyers to the secondary side. On Pgm-Pst keyer 4, you can select M/E 1 secondary as the source for the keyer. You now have the six keys on Pgm-Pst, (M/E 4 – Key 1, 2 and 3 and M/E 1 – Key 2, 3 and 4 show up on M/E 4 Keyer 4.)

Layering is enabled on an M/E-by-M/E basis in the M/E Mode Menu. When enabled for the primary output, the A output has black selected as the background source and the C output acts as the key cut signal for the keyers selected for the primary output. Similarly, for the secondary output the B output has black selected as the background source and the D output

acts as the key cut signal for the keyers selected. Priority of the layers is set using normal keyer priority controls.

Figure 229. M/E Mode, Split Layered

Split Layered Mode Menu Controls

The Layered pane below the Mode pane is enabled only when the **Split** button is selected in the Mode pane. Selecting **Split**, then selecting the Primary (**Pri**) button sets the Primary partition to Layered mode. Likewise, selecting the Secondary (**Sec**) button sets the Secondary partition to Layered mode.

Main Panel Controls in Split Layered Mode

The **Pri** and **Sec** Main Panel buttons behave the same as they do in Split mode, with the exception that background bus selections are not used for the partition that is in Layered mode. The keyer source selections are allowed in Layered mode for the keyers that are assigned to the primary or the secondary partition delegated.

A/B bus selections do not feed backgrounds for a primary partition that is in Layered mode.

U1/U2 bus selections do not feed backgrounds for a secondary partition that is in Layered mode, but they can be used for key masks, video in borders, wipe pattern source, etc.

Resource Sharing

Introduction

The Resource Sharing feature permits the allocation of Kalypso system resources between two suites. This allows independent system operation from multiple locations without conflict.

Logical resource assignments allow the reuse of E-MEM effects in either suite regardless of which specific hardware resources were allocated.

Security provisions can restrict unauthorized access to a suite from a Menu panel in the other suite, or from a PC connected to the Kalypso system network.

Each suite can be run with its own suite preference settings, and two different user preference settings can operate simultaneously in each suite. These preferences can be saved and loaded, permitting reliable Kalypso system changes to meet varying requirements.

The current suite/resource relationships are maintained in non-volatile (NV) memory. If the Kalypso system powers down or is reset, resource allocations for each suite are restored when the system returns to operation.

Collaborative Resource Sharing

Collaborative resource sharing permits a group of operators to have simultaneous access to a resource. For example, a video operator may want access to an M/E so he can set up a chroma key, but the TD also wants control of that M/E so that he can put the chroma key on air. This type of sharing has always been available on Kalypso systems, simply by installing additional control panels, and does not require the Resource Sharing feature. However, prior to 8.0 software only one User Preference could be used on the entire Kalypso system at a time, which limited its usefulness (for example, source to button mapping had to be the same on all Main panels).

Corroborative system operation has inherent limitations. Since one operator can change the settings used by another operator, it is assumed the operators are in close communication with each other so they can avoid system control conflicts.

If two conflicting corroborative commands are sent, the Kalypso system ends in the state of the last command processed. For example, one operator could select a source on a bus of an M/E at nearly the same time another operator selects a different source on that same bus. The output of that M/E will momentarily display the first source and then switch to the last source selected, possibly causing an apparent flash on that output.

The Resource Sharing feature allows collaborative sharing of Kalypso system components with different User Preferences. For example, when a 1-M/E panel is used in a corroborative environment with a 4-M/E panel, the button mapping for the two panels must be different because of the different number of source buttons available.

Independent Resource Sharing

Independent resource sharing isolates an operator or group of operators from other operators, by defining two separate suites. When one suite has acquired a resource, only the operator or group of operators in that suite will be able to control it. An example of independent sharing is splitting a 4-M/E Kalypso system into two independent 2-bank switchers (Figure 230). The Resource Sharing feature makes this possible.

Figure 230. Independent Resource Sharing Example

When a suite acquires a physical resource (like an M/E) it uses that resource logically. For example, the M/E 2 physical resource can be used as a logical PGM PST bank. Each of the two switchers created can therefore

have their own PGM PST bank, and this allows effects built in one suite to operate correctly when loaded and run in the other suite. Effects will also run correctly in the same suite when run at a later time even if different physical resources have been acquired. Resources can be released by a suite. Once released, these resources can be acquired by the other suite. This permits dynamic reconfiguration of the system resources to meet varying operational requirements.

Suite

A suite is a grouping of one or more control surfaces (described below), and constitutes a coordinated working environment. Resources are attached to a suite rather than to individual control surfaces. All control surfaces in one suite have access to all resources assigned to that suite (collaborative sharing). Control surfaces in one suite are not able to control resources assigned to the other suite (independent sharing). Suites provide isolation from operators in the other suite. You will probably want to create separate suites for different control rooms, as indicated in Figure 231. Otherwise, an operator in the edit suite could affect the on air output from the live suite.

Figure 231. Suites and Control Surfaces Example

Control Surface

A control surface is generally a group of panels which interact and provide a single user a unified work surface. An example of this type of control surface is a Main panel, Menu panel, and Local Aux panel of a 4-M/E Kalypso system. These panels combine to form a Technical Director's (TD) control surface. Other panels like a shot box or additional menu can be added to a control surface.

A control surface may also consist of a single item. For example, a Menu panel (or a laptop computer running the Kalypso Menu application) can act as a separate control surface in a suite. This could be used by a Still Store operator to control the Kalypso's internal Still Store.

With Resource Sharing, up to two control surfaces can be created for each of the two suites. Each control surface can load its own User Prefs, so they can behave differently from one another. For example, different sources can be mapped to the source select buttons of the two control surfaces in the same suite, permitting quick access to different sources appropriate for each work location. If you need different User Prefs operating at the same time, separate control surfaces are indicated.

Control surfaces allow operators to collaborate on the same production while providing isolation between the operators themselves. For example, a small Main panel set up in the studio for rehearsals will need access to the same effects as the larger Main panel in the control room, but may need access to a specific set of sources. The smaller panel also requires a different button mapping. If a Menu panel is associated with each Main panel, the DPOP operations of one panel should affect its menu, not the other one.

Remote Aux panels are special in that they can be associated with a suite's control surface, or they can be associated with a suite but not with a control surface (independent). Independent Remote Aux panels have their own User Pref for button mapping and delegation mapping. This provides isolation of one user (a video operator for example) from the User Prefs of the TD.

Adding panels or menus to a control surface expands the capability of that control surface. Typical additions to a control surface would be Remote Aux panels or Kalypso Menu applications (typically on a laptop). When additional Menu applications are added to a control surface, only the primary menu interacts with the Main panel for DPOP operations.

Desired Resources

The Kalypso Resource Sharing feature employs a desired resources mechanism. Desired resources are those that are needed for a particular show. These resources can be specified in advance and saved as part of a Suite Pref. Preparation for a specific show can then be accomplished by simply loading the preference file, and then acquiring the desired resources with

the touch of a single button. It is not necessary to know what all these specific resources are and acquire them manually.

For example, an evening newscast probably needs all the switcher's resources. However, a noon cut-in might be switched with only M/E 3, PGM-PST, one chroma keyer, and two TEs. The Suite Pref for the evening newscast marks all resources as desired; while the noon cut-in Suite Pref marks only M/E 3, Pgm-Pst, one chroma keyer and two TEs as desired. Acquiring the resources necessary for these programs is then accomplished by loading the Suite Pref and touching Acquire Desired in the Acquire menu. The resources not acquired for the noon cut-in remain available for use by operators in the other Kalypso suite.

Logical Aux Buses

Each suite has its own set of numbered Logical Aux buses. This means effects built for one suite will run properly in the other as long as the physical connections for the same numbered logical Aux buses are similar. For example, if Aux bus 5 in one suite is used to feed that studio's monitor wall, using Aux bus 5 in the other suite to also feed that studio's monitor wall will make effects compatible between the suites. Note that these Aux buses have different internal paths and different physical connections, but share the same logical Aux bus number.

When Aux buses have been associated with an external device, like a DPM, when that external device is assigned to a suite the associated logical Aux bus assignments follow. Only one instance of each of these DPM assigned Aux bus numbers exist in the system, not two. Aux buses for DPMs are used either in suite 1 or suite 2 and are not logically assigned.

Remote Aux Panels

Remote Aux panels are set up as part of a particular suite. They then become another control surface of that suite, with functionality limited to controlling only the Aux buses assigned to that suite.

External Control Points

Some types of Kalypso system control originate from an external location, like an edit controller, or a GPI contact closure. The Resource Sharing feature accommodates these control points differently.

A separate editor port can be assigned to each suite. An edit controller connected to each port is considered part of only that suite, and controls only the resources currently acquired by that suite.

GPI inputs themselves are not assigned t o individual suites. Each suite can be configured to respond to particular GPI commands, with the other suite ignoring these commands.

Setting Up Resource Sharing

Preparation

Kalypso version 8.0 or later software must be installed on all the Kalypso system components. Existing configuration files from earlier versions of software will be converted for use when they are loaded on the Kalypso system.

Your Kalypso system should first be fully operational. The configuration files loaded above will accomplish this on an existing Kalypso system. For new customers, an initial system configuration will be required. This basic setup will become the baseline for Suite 1 operation. This includes having the Engineering Setup configured with the sources defined, Suite 1 outputs assigned, Suite 1 tally contacts connected and serial tally defined (if used), and any external interfaces (DPM, DDR, etc.) should be installed and operational that will be used in Suite 1.

Default Suite Prefs should also be defined and saved under a file name identifying its use for Suite 1. A default User Prefs file should also be defined and saved identifying it as a default setting for Control Surface A of Suite 1. All these files will become the starting point from which changes will be made to make full use of Resource Sharing.

When the above is accomplished and basic system functionality is confirmed, you can then activate Multi Suite mode, set up Suite 2, and more easily troubleshoot any configuration issues that may arise.

If you will be adding new Kalypso system components for use with Resource Sharing, all these components must be installed and configured on the network, using valid IP addresses. All control surfaces participating in Resource Sharing will also need to be in communication with the same Kalypso Video Processor frame. After the primary Main panel has been installed and its connectivity verified, one new panel should be installed and its connectivity also verified before you install any additional panels. This will make it easier to troubleshoot any IP addressing problems that may occur.

Prepare Worksheet

A worksheet is helpful for planning your multi-suite installation and configuration. The worksheet should list all panels and PCs running the Menu application, their IP addresses, and their Suite and Control Surface associations (if any). It should also list all Remote Aux panels, which Suite they belong to, and which Control Surface (if any) they should be associated with. Physical outputs should also be listed with their Suite association and which Fixed output or Aux bus they are associated with. This list should also list the destination of the output (main program out for the suite, Aux bus feeding the studio monitor wall, etc.).

Configure Control Surfaces

Control Surface definitions are part of Engineering Setups, apply to the entire Kalypso system, and so affect both suites.

1. Logon as the EIC using the Menu panel associated with what will be Suite 1.

2. Touch **Eng Setup**, **System**, **Suite Def** to go to the Suite Definition menu (Figure 232).

Figure 232. Suite Definition Menu, Initial Display

CAUTION   When logged in as the EIC, changes made to the Kalypso Node scrolling list of IP Addresses are sent to the Video Processor frame as they are entered. The existing IP connections used by the frame are retained temporarily, but resetting that node's device or the frame imposes the new address and the previous connection will be lost.

3. Enter the IP addresses of all Kalypso system components to be used as nodes for Resource Sharing with the IP Address data pads in the scrolling list. It is essential this information (at least for the Menu panel used for configuration) is entered before the frame is rebooted in Multi Suite mode, to ensure access to the system from that Menu panel. In Multi Suite mode panels will not connect to the frame unless their IP addresses are in the Node list.

Note The IP address fields in the scrolling list determines which panels are allowed to connect to the Video Processor frame, and any changes take effect when the frame is reset. These IP address fields are different from those in the Frame and Still Store panes, which apply to the Menu panel and take effect when the Kalypso Menu application is reloaded or the Menu panel is reset.

4. Name both suites in the Suite data pads at the bottom of the menu, and name each node with the Node Name data pads in the scrolling list. While naming suites and nodes is optional, it can help clarity where components are located, helping both users and the EIC.

5. Select the suite and control surface each node will be associated with by touching the labeled data pad in the scrolling list. Control Suite and Surface buttons will be displayed permitting this selection (Figure 233).

Figure 233. Control Suite and Control Surface Selection

6. Select **Multi Suite** mode (Figure 234).

Figure 234. Suite Definition Menu Example

7. Reset the Video Processor frame. The Kalypso system will boot to Multi-Suite mode. On the first bootup with this new configuration all system resources will be assigned to Suite 1.

8. Configure the following Engineering settings for use with suites, following the normal procedures described in the Kalypso Installation and Service Manual. Some of these settings now require specifying Suite and Control Surface selections:

- Outputs (assign fixed, switched preview, and any logical Aux bus outputs for each suite, being sure to connect the newly configured program and preview outputs to monitors in the new second suite),

- Ports & Devices (assign GPI outputs and Editor ports for each suite, if used),

- System, Aux Panel (assign Remote Aux panels a suite, and select a control surface or have that Aux panel be independent.), and

- Tally (assign tally relays and tally calculations for each suite, if used).

9. If a Kalypso system is run in Multi-Suite mode, restricted access to Eng Setups changes is essential (menu accessed via **Eng Setup**, **System**, **Security**). Without restrictions, an operator at any control surface can load an Eng Setup file that could remove the other suite's node information and/or switch to single suite mode. This could seriously impact operations in the other suite.

10. Save this Eng Setup configuration to disk, naming the file to identify it as the new default multi- suite engineering configuration for the facility.

Configure Defaults for Each Suite Preference

A Suite configuration applies to a suite, so you will configure each suite independently. The settings established here will be saved as defaults, so that each suite can be placed in a known state. Once in this state, modifications can be made for particular shows or projects.

PBus Devices can be released and acquired by each suite the same as other Kalypso system resources. By acquiring them in different listed order they become patched to different physical PBus ports.

1. On a Menu panel of Suite 1, go to the Acquire menu (**Daily Setups**, **Acquire**).

You will next select the devices desired for this suite's default. Which devices are selected for this new default depends on your individual facility. For example, if there are 4-M/E and a 2-M/E Main panels in separate rooms, you may want each suite to start with two M/Es, one a logical PGM PST and the other a logical M/E 3. Similarly, you could divide the remaining resources so that there are logical equivalents in each suite. For example, both suites could have a logical Bkgd 1 matte. This approach essentially creates two switchers, and effects built in one suite will run in the other suite. Alternatively, if you have 4-M/E and a 1-M/E Main panels, you may wish to start by giving three M/Es to the larger switcher and one M/E to the smaller. The EIC needs to discuss common needs with the TDs who will be using the Kalypso system and arrive at the exact settings for these defaults.

2. Select one of the logical devices in the scrolling list on the left (Pgm-Pst, for example), and then touch **Desired** to indicate you wish to use that device in the suite.

3. Continue specifying only the desired logical devices, then touch
Release Undesired to free unwanted resources, and touch **Acquire Desired** to
acquire only those resources (Figure 235). The other resources will be
available for use by the other suite.

Figure 235. Acquire Resources Menu Example

4. A message will appear if all the desired resources could not be
acquired. If this occurs, scroll through the list on the left to identify the
missing resources. Desired devices that are not acquired are colored
red. To resolve the problem, you can contact the other suite and ask to
have those resources released, or if a resource isn't really needed you
can mark it as undesired.

5. Make any other necessary adjustments to the remaining Suite Prefs for
Suite 1. No changes may be required, since these settings are the same
as were set previously in single suite mode. However, this may not be
the case. For example, you may want to set source patching to unity
with no logical names or nicknames, so that all sources are initially
named the same.

6. Save this Suite Pref to disk, being sure to name the file so you can
identify it is for Suite 1. Note that the desired resource list is saved. The
actual current acquisitions are not saved as part of a configuration file,
but are non-volatile and are restored after reset.

Note   Suite Prefs files should be saved as profiles for fast access, by saving them to the Frame:C:\User\profiles\suite or Zip Drive:\profiles\suite default directories. The names of the files appear in the scrolling list in the Profiles menu, so naming them for easy recognition is important.

7. On a Menu panel of Suite 2 (either work on the actual panel, or Login as the EIC to access that suite), go to the Acquire menu, set the desired resources, and touch **Acquire Desired** to acquire those resources. Then scroll through the list to ensure all the desired devices have been acquired. If there are any resource conflicts, you can dynamically share a resource between the suites by acquiring it when needed and releasing it when done.

8. Make any necessary adjustments to the Suite Prefs for Suite 2.

9. Save this Suite Pref to disk, naming the file so you can identify it is for the defaults for Suite 2.

Note   Suite Prefs files should be saved as profiles for fast access, by saving them to the Frame:C:\User\profiles\suite or Zip Drive:\profiles\suite default directories. The names of the files appear in the scrolling list in the Profiles menu, so naming them for easy recognition is important.

Later, when you build the Suite Preference for a particular show, you can add or remove desired resources to meet your individual requirements and save that Suite Pref named with the show title and suite name.

Configure User Prefs for Use In A Control Surface

Up to two control surfaces can be defined for each suite. Each control surface operates with its own User Prefs. The same User Prefs file can be loaded onto any control surface, or different configurations can be defined and saved for each control surface. Which approach is used depends on your facility requirements and the individual operator's working style.

1. On a Menu panel of a control surface of Suite 1, go the various User Prefs menus (accessed via **Daily Setups**, **User Prefs**) and set them as desired. In particular, you may want to set different button mappings on the Main panel and Local Aux panel buses for that control surface.

2. Save this User Pref to disk, naming the file so you can identify it is was defined for that suite and control surface.

Note   User Prefs files can be saved as profiles for rapid access, by saving them to the Frame:C:\User\profiles\user or Zip Drive:\profiles\user default directories. The names of the files appear in the scrolling list in the Profiles menu, so naming them for easy recognition is important.

3. If you wish to use different User Prefs for different control surfaces, either in the same suite or in different suites, use a Menu panel associated with each control surface to setup the User Prefs and save these file to disk, naming each so you can distinguish them from the others.

Using Resource Sharing

Engineering Setup Recommendations

Restrict Eng Setup Changes

Eng Setup Changes should be restricted, especially if you are running in Multi Suite mode, because of the changes to Kalypso system behavior that result when Eng Setups are changed or loaded. It is recommended the EIC impose this restriction if it has not already been done. This is accomplished in the Security Account Setup menu accessed via **Eng Setup**, **System**, **Security**.

Do Not Change the Suite Operating Mode

If a Kalypso system is configured to use Resource Sharing, it should be set to Multi Suite mode and left in that state. There is no need to change modes, since even in Multi Suite mode the Kalypso system can operate with all resources assigned to a single suite, same as for earlier Kalypso software versions.

CAUTION While it is possible to switch between modes, hardware resets are required and Node configuration information will be lost. if a second suite has been configured, switching to Single Suite mode also takes all Suite 2 outputs to black, assigns all resources to Suite 1, and gives all control surfaces, including those in Suite 2, access to all the resources now residing in Suite 1. A button press in another room could then change the on-air output of the Kalypso system! Any additional control surfaces should be disconnected from the network if for some reason you must switch to Single Suite mode.

Eng Setups Only Load Into Same Suite Mode

Eng Setup files can only be loaded into a Kalypso system running in the same Suites mode as that Eng Setup file. This prevents the operational problems described above. Attempts to load an Eng Setup file set to a different mode will abort and an **Attempt to change suite mode!** message will be displayed. Note that Eng Setup files created with versions before 8.0 are considered Single Suite configurations, so they cannot be loaded into a Kalypso system running in Multi Suite mode. If you must load a different Suite Mode Eng Setup file, select the same mode before loading the file.

Starting Work in a Resource Sharing Environment

These steps below assume that the Kalypso system has been previously set up for Resource Sharing operation. It is also assumed Suite and User Preferences have been saved for the show you will be working on. These configuration files are set up and saved using standard Kalypso operating methods described in the separate Kalypso Installation and Service Manual., Kalypso User Manual, and Kalypso Reference Manual.

To begin work:

1. Go to your control surface working environment and use your primary Menu panel to load the Suite Prefs for the show you will be working on. Make sure it is the correct file for that show and that control surface. This file may have been saved as a Profile, and if so will be easily accessible in the Profiles menu (**Daily Setups**, **Profiles**).

2. Load your User Pref for your control surface. Again, this may have been saved as a profile and if so will be easily accessible in the Profiles menu.

3. Go to the Acquire menu (**Daily Setups**, **Acquire**), touch **Release Undesired**, and then touch **Acquire Desired**.

4. A message will appear if all the desired resources could not be acquired. If this occurs, scroll through the list on the left to identify the missing resources. Desired devices that are not acquired are colored red. To resolve the problem, contact the other suite and ask to have those resources released. Once released, you can acquire them individually or touch **Acquire Desired** again.

5. After acquiring new resources, you must reload your effects.

You should now be ready to work on your show.

Note   When done with your work, if resources routinely pass back and forth between suites, go to the Acquire menu and touch **Release All** so that the other suite can access these resources. If resource allocations do not routinely change, leaving them acquired prevents the need to reload your effects.

Temporary Resource Acquisition and Release

If you need an additional resource temporarily:

1. Go to the Acquire menu (**Daily Setups**, **Acquire**).

2. Scroll the logical resources list on the left and touch the button of the resource needed.

3. Touch the **Acquire Any** button. If a physical resource of that type is available it will be acquired as that logical device.

4. After acquiring new resources, you must reload your effects.

5. When you are done with the temporary use of this resource, select that logical device and touch **Release** to free it for use elsewhere, or simply touch the **Release Undesired** button to release all these resources.

You can also release a resource temporarily for use elsewhere without disturbing the desired resources. For example, if the other suite needs an extra M/E, the TD can select one not currently being used and release the physical M/E for use in the other suite. That M/E still remains a desired resource, however. When the other suite is done with the M/E and releases it, touching **Acquire Desired** recaptures that M/E.

Temporary Acquisition vs. Desired Acquisition

For temporary use of a resource, do not touch the **Desired** button, as this marks that resource to be acquired whenever the **Acquire Desired** button is touched.

If you wish to always acquire a particular resource, mark it as **Desired** and save that Suite Prefs file. When that Suite Pref is loaded at a later time those marked resources will be listed as desired and will be acquired with the **Acquire Desired** button.

Resource Sharing and Main Panel Source Selection

Main panel M/E banks that have not acquired a physical M/E go dark and do not operate.

The re-entry buttons for M/Es not currently acquired still illuminate when pressed, but do not select the output of that M/E if it is being used in the other suite.

Resource Sharing and Menu Panel Operation

Many menus will display touch button items for un-acquired resources, and if touched these buttons will illuminate. However, changes made to that menu for un-acquired resources are ignored.

Resource Sharing and the Kalypso Still Store

Still Store Playback Operations

Still Store playback operations can be performed in both suites simultaneously. Pairs of Kalypso Still Store outputs can be acquired by a suite for exclusive use in that suite. If the Still Store outputs are acquired as the same logical output numbers, effects built with Still Store elements can be run correctly in either suite. Stills and animations cannot be loaded to Still Store outputs that are not acquired by that suite.

Stills and animations stored in the cache are available for use by either suite. Stills can be loaded simultaneously to different outputs in the same

or different suite for use on-air. Animations, however, only play at the correct speed when loaded to a single output regardless of suite (this is a known problem that will be addressed in a future software version). Operators working simultaneously in both suites must coordinate their use of animations to prevent playback problems.

Still Store Still Capture and Animation Record Operations

The Kalypso Still Store input can be acquired by either suite, but because there is only one input only one suite can use this resource at a time. After a suite captures the stills and animations needed there, the Still Store input can be released for acquisition and use by the other suite.

During save and load operations, other Still Store disk activity is not supported. This means if an operator in one suite loads a large animation, the operator in the other suite will not be able to save or load images until the that animation load completes. Operators working simultaneously in both suites must coordinate Still Store disk operations to prevent resource conflicts.

Still Store Cache Operations

For the Kalypso 15.0 software the entire Still Store cache is a shared resource. Changes made to the cache affect Still Store operations in both suites. For this reason, use care with the following actions.

Change Directory — Changing the directory makes all items not currently cached inaccessible to either suite. Both suites must use the same directory during simultaneous operation. If you change the directory in preparation for a different show, you should completely clear the cache and reload the items needed for the new show. This removes potentially confusing cached items and ensures the entire capacity of the cache is available for use.

Unlock All — All items loaded to Still Store outputs in both suites are unlocked with this command. Once unlocked, these items are subject to being purged from the cache, even if on-air. Items are purged when new item is loaded from either suite when the cache is filled. This means unlocked items loaded to an output in one suite could be taken off-air from a load operation performed in the other suite.

Unload All — All unlocked items are deleted from the cache with this command. Once deleted, these items will no longer be available for instant use in either suite. They will need to be reloaded before they can be used. Load operations may take a considerable amount of time, especially if long animations are involved.

Resource Sharing

Resource Sharing and E-MEM Operations

Master E-MEM Enable Buttons

The M/E Enable buttons in the Master E-MEM subpanel will illuminate when pressed, even if that M/E is not acquired. Keyframes cannot be added to an M/E that is not acquired however. Note that un-acquired M/E levels will appear on the Timeline menu, but they will be empty.

Insufficient Resources

With dynamic resource allocations, it is possible to create an E-MEM with one set of resources acquired, and load into an environment later with different available resources. While using logical resources ensures effects run properly when sufficient resources are available, there may be insufficient resources present for a particular effect. If this occurs, the E-MEM will load and the effect can run, but the unavailable resources will not be used. Acquiring the needed resources and reloading the effect (see below) will restore full E-MEM operation.

In Kalypso 15.0 software, when a resource is released the E-MEM information in NV memory for that resource is cleared, and that resource will be subsequently acquired in this condition. Because of this, effects must be reloaded whenever resources have been acquired. This corrects the initial empty effect condition of acquired resources.

Resource Sharing and Bus Linking

Bus links only operate within a suite. Bus links made to M/Es or Aux buses that are assigned to the other suites are not honored.

Resource Sharing and the 1-M/E Main Panel

To use Master E-MEM functions you must acquire an M/E as a logical PGM PST bank when using a 1-M/E Main panel for resource sharing. If you acquire only an M/E you will only be able to use only those M/E functions, which do not include effect editing or the Clear Work Buffer feature.

Resource Sharing and the Emergency Bypass Option

Only one Emergency Bypass system will operate properly with a Kalypso system, but it can be configured to use the Local Aux panel of either suite. Conflicts will occur if two Emergency Bypass systems are installed, as commands from either suite would affect the same router destinations.

Control Surface Login to Another Suite

With an EIC login, a Menu panel of a control surface in one suite (or a PC running the Menu application) can be used to access the other suite or the other control surface in the same suite, if necessary. This makes it possible

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to, for example, modify the suite or user preferences for a control surface lacking a menu application, like a 1 M/E Main panel.

EIC login also permits the manual reallocation of resources from any location. For example, suppose one suite acquired resources for a session, finished work, and was abandoned without releasing those resources. The EIC can login to that suite using a panel located in the other suite and release the needed resources. After logging back into the original suite, he can then acquire and use those released resources.

Logging off and back on restores the menu to its normally specified control surface.

Enhanced Network Security

Even if your Kalypso system does not have multiple panels arranged in two suites, you may wish to operate your system in Multi Suite mode for enhanced network security.

In Single Suite mode, any PC on the Kalypso network running the Kalypso Menu application can connect to the Kalypso Video Processor frame and controls its operation remotely. Obviously this can compromise on-air operations.

In Multi Suite mode, only devices with IP addresses set in the Suite Definition menu are allowed to control its assigned part of the Kalypso system. By default all resources are assigned to Suite 1, so this suite should be specified for all Kalypso nodes.

Macros

Introduction

Macros provide a mechanism to record a series of actions and then play them back by pressing a single button. Macro steps specify commands sent to the Video Processor frame, rather than simple button presses. Macros are fundamentally different from E-MEMs. E-MEMs store the complete state of a portion of the switcher (level and sublevel) into keyframes. For example, an E-MEM keyframe for M/E 1 captures all the source selections, keyer settings, transition type, wipe patterns, etc. for all the buses of M/E 1 at the time that keyframe was added to the E-MEM register. A macro, on the other hand, affects only the specific elements involved in the recording of that macro. For example, a macro can be recorded that sets up only the Preset bus with a particular source and selects a specific wipe pattern and transition rate. You can recall an E-MEM to put the M/E in a known state, and when you want to prepare that specific transition to just that source, simply play the macro. In this example, different macros can be recorded with different sources to allow rapid and reliable variations on the E-MEM effect that was originally recalled.

A macro can contain several steps. Macros are executed as quickly as possible in the order the steps are recorded, but there are no guarantees for timely execution. It is also possible to insert delays in a macro sequence during recording to accommodate external devices or allow for completion of internal system events.

Macros add enormous power and flexibility to the Kalypso system. Simple tasks can be recorded into a macro quickly and easily for rapid and reliable playback. Complex series of actions can also be programmed into a macro, but careful planning is required to ensure the macro accomplishes its intended actions for all the conditions under which it may be played back.

Note   Macro attachments are saved and loaded with User Prefs. One set of attachments exists for each control surface. Be sure the User Prefs you load are compatible with the Macro registers you are currently using, to avoid accidentally running incorrect attached Macros.

Macro Recording

Macros are recorded into macro registers. The Kalypso system has 100 macro registers. The number of steps in any specific macro or the total number of macro steps across all macros is limited only by the amount of available memory in the Video Processor frame. Macro registers can be saved to disk and reloaded, making the total number of pre-made macros available to a Kalypso system unlimited.

Macros apply to the point of use active during the macro recording. For example, recording a macro that turns on Matte Fill on M/E 1 Keyer 1 will

affect M/E 1 Keyer 1 when it is played back, regardless of what keyer the panel happens to be delegated to when the macro is played.

Macros record triggers, not the result of a trigger. For example, a macro containing a Key Mix transition, when run, will trigger the key transition from its current state to the other state. If the keyer is on, it will mix off, and if off, it will mix on.

Macro Playback

Macros can be played back from the currently delegated Macro row of source select buttons on the Main panel, and can be played back from the Macro menu. Macros can also be attached to other panel buttons for playback.

The number of macros available for immediate playback on the Macro row varies, depending on the number of buttons available. A 4-M/E Kalypso Main panel has 32 source select buttons, and 32 shifted source select buttons, totaling 64. The 2-M/E Main panel has 48, and the 1-M/E panel has 24. For consistency, the farthest left shifted macro button is always the 51st of the 100 macro registers available, regardless of panel type, and is considered the shift 1 macro. Note that all 100 macro registers can be played back from the Macro menu.

Macros can also be incorporated into E-MEMs and be executed when that E-MEM runs.

Macro Attachments

Macros can be attached to other Main panel buttons. Attached macros can either augment the button's normal function or replace it. A Pre Attach macro executes when the button is pressed, followed by the button's normal action. A Post Attach macro executes after the button's normal action. A Replace Attach macro substitutes the macro for the button's normal action. Any combination of Pre, Post, or Replace Attach macros can be associated with the same button. This makes it possible to have a single button press play three separate macros, though this is not a typical scenario.

Main Panel Macros Subpanel

The Macros subpanel has ten Macro buttons. On a 4-M/E Main panel these controls are located between M/E 3 and PGM PST. On a 1-M/E Main panel they are located at the center left of the panel (Figure 236).

Figure 236. 4-M/E and 1-M/E Macro Buttons

The Macros subpanel on the 2-M/E Main panel is located next to the Keyers subpanel, at the upper center part of the panel (Figure 237).

Figure 237. 2-M/E Macros Subpanel

Macro Button Function Summary

Brief descriptions of the Macro button functions are presented here. For a detailed description of each button, see the separate *Kalypso Reference Manual*.

The **Macro Deleg** button delegates a keyer source select button row (PGM PST K1/K3 is the default) for macro operations and reports that macro mode is active (high tally). On the Main panel, any keyer source

select button row on any M/E can be delegated for macro operations. This is accomplished by holding down the **Macro Deleg** button and pressing any keyer source select button on the desired row of the desired M/E. Macro names, when displayed, will also appear on this M/E.

Pressing **Show Macro** when macro mode is on displays the names of existing macros on the M/E delegated for macros. Holding down the **Shift** button while in this mode displays the shifted macro names.

The **Rec** button activates or terminates macro Record mode. In this mode, you select the macro register into which you wish to record, using the delegated keyer row, perform the desired actions, and then finish the recording by either pressing the **Rec** button again or pressing the macro register button.

During a macro recording, time delays can be inserted into macros. The **Insert Delay** button activates macro Insert Delay mode. In this mode the macro delegated M/E's source name displays show time durations which can be selected by pressing the corresponding keyer buttons.

The **Delete** button activates macro Delete mode. When delete mode is on, pressing a macro button deletes the macro associated with that button.

When macro mode is on, pressing a **Pre Attach**, **Post Attach**, or **Repl Attach** button activates attach mode. You then select the macro register of the desired macro and press the button to which you wish to attach that macro.

The **Show Attach** button activates a mode that low tally blinks panel buttons that have macros attached.

The **Attach Enable** button enables and disables all macro button attachments globally. When on, pressing panel buttons with macros attached will run those macros. When off, macros are only be played back by activating macro mode and pressing the macro register buttons, or with the Macro menu.

Macro Alternate Buttons

The PGM PST K1/K3 M/E re-entry buttons (the default macro row) are labeled with additional macro capabilities (Figure 238). When macro delegation is on, holding down one of these buttons momentarily activates Rec, Delay, or Delete macro mode. The functions of these alternate buttons follows to the keyer row and M/E delegated for macro operations.

Figure 238. PGM PST Macro Alternate Buttons

Macro Menus

The Macro menus provide access to many, but not all, Kalypso system macro functions. The Macro Menus are useful to access and use Macro registers are not available on the Main panel (registers 25 or 33 through 50). See the separate *Kalypso Reference Manual* for information about the Macro menus.

Using Macros

Delegating the Macro M/E and Keyer Row

1. Press and hold down the **Macro Deleg** button.

2. Press any keyer button on the keyer row of the desired M/E.

3. Release the **Macro Deleg** button.

Recording a Macro with the Main Panel

1. Turn on Macro record mode by pressing the **Rec** button.

2. Press the keyer row button of the desired macro register. Use the **Shift** button to access shifted macro registers.

3. Perform the steps you wish recorded into the macro, in the order they are to be performed, using the Main panel and/or the Menus.

4. Complete the recording by pressing the **Rec** button, or pressing the keyer row macro register button.

Recording a Macro with the Main Panel Alternate Button

1. With the **Macro Deleg** button illuminated, hold down the delegated **M/E 1/Rec** alternate macro button.

2. Press the keyer row button of the desired macro register. Use the **Shift** button to access shifted macro registers.

3. Release the **M/E 1/Rec** alternate macro button.

4. Perform the steps you wish recorded into the macro, in the order they are to be performed, using the Main panel and/or the Menus.

5. Complete the recording by pressing the blinking **Rec** button, or pressing the blinking keyer row macro register button.

Recording a Macro with the Menu Panel Macro Buttons

1. Go to the Macro Catalog menu (press **Macro**, **Catalog**).

2. Touch the Macro Register number button of the register you wish to record into on the scrolling list.

3. Touch the **Record** button.

4. Perform the steps you wish recorded into the macro, in the order they are to be performed, using the Main panel and/or the Menus.

5. Touch the **Stop** button to end the macro recording.

You can name the macro either before you record it, or after it has been recorded, by touching the name data pad for that macro register to bring up a keypad.

Inserting a Delay

While recording a macro, press the **Insert Delay** button or hold down the delegated **M/E 2/Delay** alternate macro button, then press the keyer source select button of the desired delay time. The **Shift** button changes the time intervals to fields. Multiple selections can be made to insert longer delays.

Playing Back a Macro Register

1. Turn on Macro mode with the **Macro Deleg** button. If not already on, you may also want to press the **Show Macro** button to display the macro names on the source name displays.

2. Select the macro to be played

   • On the Main panel, press the keyer button of the desired macro register. The **Shift** button accesses shifted macros.

   • On the Macro menu, touch the macro register button of the desired macro register, then touch the **Play** button.

Attaching a Macro to a Panel Button Using the Menu Panel

1. Press the **Pre Attach**, **Repl Attach**, or **Post Attach** button, depending on how you want to attach the macro.

2. Press the keyer row button of the desired macro register.

3. Press the panel button to which you wish to attach that macro.

Note In Kalypso software version 15.0, macros attach to physical buttons, not the delegated target of that button. This means, for example, if you attach a macro to the Chroma Key button, pressing that button runs the macro regardless of which keyer the Keyer subpanel has been delegated to control.

To attach multiple macros to the same button, select another attach mode, then select the macro register of the additional macro, then touch the button to which you wish to attach it. Up to three macros (one of each type) can be attached to the same button.

Attaching a Macro to a Panel Button Using the Menu

1. Go to the Macro Attach menu (touch **Macro**, **Attach**).

2. Select the button you wish to attach a macro to. You can either touch the physical panel button while **Show Attach** mode is active, which will scroll to and blink that button on the Macro Attach menu, or you can use the menu to select the panel section and then scroll the Macro Attachments list to display the desired button.

3. Touch the data pad for that button of the desired type of macro attachment (**Pre**, **Replace**, **Post**). The Macro Attach selection menu will appear.

4. Touch the menu button for the macro register to be attached. The selection menu will close and the name of the macro just attached will be displayed.

Playing an Attached Macro

1. Turn on the attachment playback feature by pressing the **Attach Enable** button so it is illuminated. You may also want to press the **Show Attach** button so that panel buttons with macros attached can be identified (they blink low tally).

2. Press the panel button that has the macro attached.

Removing a Macro Attachment

1. Press either the **Pre Attach**, **Repl Attach**, or **Post Attach** button. Any button can be pressed. All attachments will be removed.

1. Press the **Show Attach** button so that panel buttons with macros attached blink low tally.

2. Without selecting a macro register, press the blinking button that has the attachment you wish to remove. The blinking button will turn off.

3. Press **Show Attach** to turn off the mode.

Appending to a Macro with the Main Panel

1. Turn on Macro append mode by double pressing the **Rec** button.

2. Press the macro register button on the delegated keyer row of an existing macro to which you wish to append additional steps.

3. Perform the additional steps using the Main panel and/or the Menus.

4. Complete the append by pressing the blinking **Rec** button, or pressing the blinking keyer row macro register button.

Appending to a Macro with the Main Panel Alternate Button

1. With the **Macro Deleg** button illuminated, press the **M/E 1/Rec** alternate macro button twice and hold it down after the second press.

2. Press the macro register button on the delegated keyer row of an existing macro to which you wish to append additional steps.

3. Release the **M/E 1/Rec** alternate button.

4. Perform the additional steps using the Main panel and/or the Menus.

5. Complete the append by pressing the blinking **Rec** button, or pressing the blinking keyer row macro register button.

Appending to a Macro with the Menu Panel

1. Go to the Macro Catalog menu (press **Macro**, **Catalog**).

2. Touch the Macro Register number button of the register you wish to record additional steps into.

3. Touch the **Append** button.

4. Perform the additional steps, using the Main panel and/or the Menus.

5. Touch the **Stop** button to end the macro append.

Appending a Macro to Another Macro with the Menu Panel

1. Go to the Macro Catalog menu (press **Macro**, **Catalog**).

2. Touch the Macro Register number button of the register to which you wish to add the contents of another macro.

3. Touch the **Append** button.

4. Touch the Macro Register button of the Macro whose contents you wish to append to the selected Macro Register. An Append Macro pane will appear.

5. Confirm the macro register displayed is the one you wish to append. If you made a mistake you can choose a different macro register. When satisfied, touch the **Append Macro** button.

6. The contents of the indicated macro will be appended to the originally selected macro. Note that only the current contents of the macro is appended to another macro. Deleting or changing the source macro will not change the behavior of the macro that has received its contents through an append.

Saving Macro Registers

1. Go to the Macro Save-Load menu (touch **Macro**, **Save Load**).

2. Navigate to the folder into which you wish to save the Macro files. You can create a new folder if you wish.

3. Select **All Macros** or enter a range of macro register numbers.

4. Touch the **Save** button.

Note Only the macro registers themselves are saved with this procedure, not any macro attachments.

Loading Macro Registers

Macro registers are loaded similarly, by selecting the macro register file or a folder of macros in the Macro Save-Load menu and touching the **Load** button.

Note Only the macro registers themselves are loaded with this procedure, not any macro attachments.

Using a Macro for Multiple Copies or Swaps

When copying or swapping several settings in turn (copying an M/E to several other M/Es, for example) time may be required for one command to complete before the next command can be serviced. If you create a macro that performs multiple copy or swap operations, add a short delay after each operation to ensure each completes successfully. For example, to copy M/E 1 to M/E 2 and then copy M/E 1 to M/E 3 with a macro, include a short delay after the M/E 1 to M/E 2 copy.

Macros and E-MEMs

Macros and E-MEMs can interact in two fundamentally different ways. A Macro can be created that recalls one or more E-MEMs, or an E-MEM can be programmed to execute one or more Macros. With care, operating both control mechanisms together can be extremely powerful. However,

improper use can create infinite loops or other undesirable behavior. It is especially important that your Kalypso system be loaded with the correct E-MEMs and Macros and is operating in the correct mode, or unpredictable system behavior will result from the mismatched E-MEMs and macros.

E-MEM Recalls in a Macro

The state of the **Effects Dis** and **Seq** buttons are sent as part of each E-MEM recall command. When recording E-MEM recalls to a Macro, make sure these states are correct when you build the Macro. For example, if you want the E-MEM effect to automatically run as a Sequence, make sure that button is on when the E-MEM recall is recorded into the Macro.

Certain E-MEM commands that directly affect the work buffer require special field-rate processing. This ensures all necessary processing occurs once per field and is in sync with all the other changes occurring in that same field. Delays are needed for multiple time cursor changes (**Next KF**, **Prev KF**, **Begin**, **End**, **Go To KF**, **Go To Time**, and **Rewind**). If you wish to use two or more of these commands adjacent to each other in a macro, a delay of at least one frame between them is required for consistent system behavior.

See *Macros in an E-MEM on page 203* for related information.

Newton Modular Control

Introduction

The Newton modular control system provides comprehensive and consolidated real-time control of Grass Valley modular products. Some Newton functionality has been incorporated into the Kalypso Menu application. This makes it possible to control Grass Valley Gecko and Kameleon frame modular products from a Kalypso Menu panel or Menu on PC. The modular frames must reside on the same subnet as the Kalypso system (Figure 239).

Figure 239. Newton Modular Control Diagram

Installation on Kalypso

Kalypso's Newton interface is installed during the standard Kalypso installation procedure. The Newton menu (Figure 241 on page 365) is available on all Kalypso systems running 12.0 or newer software. However, a Newton system must be available on the Kalypso network, and configuration steps will be required before this menu becomes functional.

Newton Controls Configuration

Newton functionality within Kalypso can be configured with any PC on the Kalypso network. You use the Kalypso Software CD to install the necessary configuration tools by selecting the **NetConfig with Newton Configurator** option.

During this process, the NetConfig network configuration application and a Newton Configurator plug-in are installed. The tool is accessed by launching NetConfig and touching the Newton tab on the top menu bar (Figure 240).

Figure 240. NetConfig Newton Configurator Plug-in

The Configurator tool is used to define the functionality of Newton controls by creating a Newton configuration file. The Newton configuration establishes a one-to-one relationship of Newton channels to Kalypso physical inputs (BNC connectors on the Video Processor frame). Each Kalypso input/Newton channel can have up to five different setups defined. A default Newton configuration file with 96 channels (inputs) is provided with five empty setups for each channel. Using the configurator, control-

lable parameters in modules which are in the video path for each switcher input can be assigned to Kalypso Menu panel knobs. The user is then able to control those modules directly from the Kalypso system.

Refer to the separate *Newton Instruction Manual* and *NetConfig Instruction Manual* for specific information about how to configure the Newton controls. These manuals are included on the Kalypso Documentation CD, and are available for download from the Thomson Grass Valley website.

External Device Newton Menu Description

Once configured, module parameters can be adjusted on the Kalypso External Device Newton menu, which is accessed by touching **Extern Device**, **Newton** (Figure 241).

Figure 241. External Device Newton Menu

Selection of a module parameter to control is mediated though the Kalypso source selection mechanism. By selecting a source on the currently delegated Preview bus of the Kalypso's Main panel, the source's physical input, and that input's associated Newton channel controls are activated on the Kalypso's External Device menu.

Delegation Pvw Bus

The Delegation Pvw Bus pane is used to select which Preview bus will be used to select the Newton channel to be controlled.

Input Selector

When a video/key source is selected, you choose to control either the video input or the key input with the **Video** and **Key** buttons.

Setup Selector

The Setup buttons are used to select the desired set of controls from the setups defined for that channel. The menu displays asterisks for setups that have no parameters assigned.

Newton Channel Information

Channel – The number of the Kalypso input BNC used to select the current Newton channel is displayed.

Setup Name – The currently selected setup (1-5) is displayed in this pane.

Additional information identifying the currently selected channel module's name, frame, etc. is displayed below.

If multiple modules are daisy chained together in a Newton channel, the information displayed will be for the module with a parameter assigned to the top knob.

Newton Controls

On the right side of the menu the active control functions are identified. Direct knob control and datapad numeric entry are available. The menu displays asterisks for unconfigured controls. The status of the function for each control is also reported, with green indicating a connection exists and the data is valid, and red indicating no connection.

Accelerate Knobs – Selecting this button accelerates knob adjustments by a factor of 10, providing coarse and fine knob control.

Refer to the separate *Newton Instruction Manual* for specific information about Newton controls.

Appendix A

Tutorials

This appendix provides tutorials designed to help you learn basic Kalypso system operations. Included is a Fundamentals tutorial and a Basic Keyframe Edit tutorial.

Fundamentals Tutorial

Introduction

This Fundamentals tutorial proceeds step by step through specific basic procedures, and gives an explanation of each button pressed. To get the most out of this tutorial, run each exercise slowly and read all the material presented.

You should understand general video switcher operation and be acquainted with the Kalypso control surface layout before you do this tutorial. Refer to the earlier sections of this manual for general information.

This tutorial covers the following:

- Changing Suite and User Preference settings
- Saving and Loading Suite and User Profiles,
- Saving and Loading E-MEM effects,
- Clearing the Kalypso system,
- Source Selection and Background Cuts,
- Mix Background Transitions,
- Wipe Background Transitions, Transition Preview, Wipe Borders,
- Basic Keying,
- Key Transitions,
- Key Borders and Opacity, and
- Preset Pattern and Point of Use

This tutorial is designed to be run sequentially from beginning to end. You are directed to save files periodically to removable media. If you need to stop the tutorial, you can later resume from where you left off by reloading the files.

Requirements

For this tutorial the Kalypso system must be equipped with at least the following:

- One PGM monitor,

- One switched preview monitor, set to look ahead preview.,

- Three different video only sources. For this tutorial these sources will be referred to as **<Src 1>**, **<Src 2>**, **<Src 3>**.,

Note   Your video and key sources will have names specific for your facility. To make this tutorial easier for beginning operators, you may want to temporarily configure the nicknames of these sources to match the tutorial names.

- One Linear Key source (preferably a Character Generator with shaped video and key signals). For this tutorial it will be referred to as **<Key A>**,

- One Luminance Key source (video only, with a high contrast image). For this tutorial it will be referred to as **<Key B>**,

- A formatted Zip disk or USB stick, for saving configuration and effect files, and

- Kalypso system hardware must be completely installed and properly configured and be running the latest software.

Suite and User Configuration

Note   This tutorial assumes other users of your Kalypso system have already created and saved their own Suite and User Preference settings, and have saved any effects they plan to use in the future. You may want to confirm that the last users of the system have saved their files.

For this tutorial you will set some Kalypso system configuration settings to factory defaults, and may need to make other configuration changes to ensure the procedures work as described. After you are done working on the tutorial, other users can reload their own saved files to restore the Kalypso system to their desired operating condition.

Change Suite Preference Settings

In this exercise you will change the Default Keyframe setting (one component of Suite Preferences), and make sure Source Memory is on. Changes

made to Suite Preference settings immediately affect Kalypso system operation.

1. Touch **Daily Setups**, **Suite Prefs**, **Default Keyframe** on the Menu panel screen. The default Keyframe menu will appear (Figure 242).

Figure 242. Default Keyframe Menu

2. Touch the **Set** button. This applies factory settings to the current Default Keyframe. Existing settings will be lost (unless previously saved to disk). The factory default settings will later be applied to the Kalypso system's operating state using the **Clear WkBfr** button.

3. Touch the **Source Memory** subcategory button to go to the Source Memory menu (Figure 243).

Figure 243. Source Memory Menu

4. Make sure the **Enabled** button is selected (green indicator on). You will want Source Memory on for the tutorial so the keyer settings will change properly when different key sources are selected.

Change User Preference Settings

In this exercise you will ensure the Shift Prefs, Source Display, and Clip Hi-Lo Prefs (components of User Preferences) are set correctly for the tutorial.

Changes made to User Preference settings immediately affect Kalypso system operation.

1. Touch **User Prefs**, **Shift Prefs**. The Shift Preferences menu will appear (Figure 244).

Figure 244. Shift Preferences Menu

2. Make sure all the banks are set to **Unshifted** by touching each bank's data pad and then touching the **All Unshift** button on the lower right of the screen. This makes all the buses default to unshifted source selection.

3. Touch **Source Display** to go to the Source display menu (Figure 245).

Figure 245. Source Display Menu

4. Make sure all banks have **Unshifted** selected, by touching the buttons. This makes the source name displays of the banks default to show unshifted sources.

5. Touch **Clip Hi-Lo Prefs** to go to the Clip Hi-Lo Preferences menu (Figure 246).

Figure 246. Clip Hi-Lo Prefs Menu

6. Set the **Adj Linear Key** and **Chroma Key** clip modes to Clip Hi/Clip Low, and set the Luma Key clip mode to Clip and Gain, as shown in the figure.

Save User and Suite Preferences

The preference information you changed can be saved to any available file system location using the Daily Setups Save-Load menu, and can later be reloaded from that menu.

In this exercise you will save the files to removable media. Then if you take a break from the tutorial, you can take your files with you. When you return you can restore your settings and pick up exactly where you left off.

1. Insert your removable media, either a Zip disk or a USB stick.

    • If using a Zip disk, insert a formatted Zip disk into the Kalypso system removable drive. This should be your personal disk, since you will be saving files from the tutorial onto it for your use in the future. See *Formatting Zip Disks on page 157* for specific instructions.

    • If using a USB stick, insert a formatted USB stick into an available USB port on the Menu panel. Ports are located on the rear of the Menu panel (a USB extension cable can be used to make the port easier to access). On newer panels a port may be located on the front of the Menu panel.

2. Touch the **Save Load** category selection button to go to the Daily Setups Save-Load menu. If necessary, touch the button labeled **Top** at the upper right to go to the top of the file hierarchy (Figure 247).

Figure 247. Daily Setups Save-Load Menu

3. Either double touch the Removable Drive icon, or touch the icon and then touch **Open.**

4. Create a folder to save your files into. Touch **Create Folder**, type in a folder name (e.g., TUTORIAL), then touch **Enter**.

5. Double touch the **TUTORIAL** icon to open that folder (Figure 248). With a folder created and selected you can save your files to it.

Figure 248. Daily Setups Save Load Menu, Tutorial Folder Opened

6. Touch **User Pref**, touch the **File Name** data pad, type a file name (e.g., TUTOR1) on the popup keypad and then touch **Enter**.

7. Touch **Save**. The current User Preference information is saved to that location.

8. Touch **Suite Pref**, touch the **File Name** data pad, then type TUT_XX (replacing the XX with your initials) on the popup keypad and then touch **Enter**.

9. Touch **Save**. The current Suite Preference information is saved to that location.

You can now take the files with you by ejecting the Zip disk or removing the USB stick. This is a good practice, since it eliminates the chances of your files getting accidentally erased if they were stored on a Kalypso system drive.

Reloading User and Suite Preferences

1. Insert the Zip disk or USB stick.

2. Touch **Daily Setups**, **Save Load**, and navigate to the Removable Drive folder that has the preference files.

3. Touch the **User Prefs** icon with the tutorial file name you saved and touch **Load**.

4. Touch the **Suite Prefs** icon with the tutorial file name you saved and touch **Load**.

These preference settings are instantly reapplied to the Kalypso system.

Clear the Kalypso System

The Kalypso system controls should be placed in a known state for this tutorial. This is accomplished by clearing the Kalypso system's work buffer to the Default Keyframe (which has been set to factory settings). You will learn what settings are affected by clearing the work buffer, and what panel controls are unaffected. You will also set all the buses to black, and save this entire state to an E-MEM.

1. Press the **Sel All** button in the Master E-MEM subpanel (Figure 249) so all the Enable buttons are illuminated. If all the levels were already enabled, pressing the button turns them all off. If this occurs, press the button again to enable all the levels. With all the Enable buttons illuminated, all the E-MEM levels are enabled for the next action.

Figure 249. Master E-MEM Subpanel

2. Double press the **Clear WkBfr** button in the Effects Edit subpanel ([Figure 250](#)), by pressing the button twice within one second. This sets the work buffer settings of all the enabled levels to the currently defined Default Keyframe. Source memory settings are also set to their defaults. The current source selections, M/E modifier delegations, and Menu panel delegation are not affected.

Figure 250. Effect Edit Subpanel

3. Press the first source selection button on the left end of all four buses in each M/E 1-3, and PGM PST bank (Figure 251). If black has been mapped to these buttons and that bus's shift preferences is set to unshifted, each source name display will report `Black`. The PGM and switched preview monitors should now show a black screen (unless an alternate bus source has been selected).

Figure 251. Black Source Selection On All Buses

4. Hold down the **Alt Buses** button in the PGM PST Source Select Modifier area, below the M/E Status Display (Figure 252) and press all the first source selection button on the left of the PGM PST (four buttons total). This sets the PGM PST alternate buses to black.

Figure 252. PLGM PST Alt Buses Source Select Modifier

5. Repeat on M/E 1, 2, and 3 in turn (Figure 253), holding down the **Alt Buses** button of each M/E. This sets these alternate buses to black.

Figure 253. M/E Alt Buses Source Select Modifiers

6. If not already illuminated, press the **Auto Recall** button in the Master E-MEM subpanel so the button illuminates (Figure 249 on page 377). This prepares the next E-MEM learn to remember the currently enabled levels.

7. Press the following buttons in the Master E-MEM subpanel to save the effect to register 99:

      Lock/Learn, **Bank 9**, **9**

The system is now at its starting point for the rest of this tutorial, and the state has been saved to E-MEM for later use.

Note   In the rest of this fundamentals tutorial, the **Lock/Learn** button will be indicated as **Learn** for clarity. These exercises do not involve locking registers.

Save Your Effect To Removable Media

You should save your black starting point effect to prevent it from being accidentally overwritten. You will create a folder to hold your tutorial E-MEM files.

1. Insert your formatted media into the Kalypso system.

2. Touch **E-MEM**, **Save Load** to go to the E-MEM Save-Load menu. Touch the **Top** button. A menu similar to Figure 254 will appear.

Figure 254. E-MEM Menu

3. Double touch the Removable Drive icon to open it.

4. Touch Create folder, type Tu_emem and touch **Enter**.

5. Double touch the **Tu_emem** icon to open it.

6. Touch **Enter Reg(s)** touch the Register(s) data pad, type in 99 and touch **Enter**.

7. Touch **Save**. The EMEM99 file will be appear in the pane (Figure 255).

Figure 255. E-MEM File Saved to Removable Media

Reloading Saved Effects

Once saved to disk, E-MEM files can be reloaded individually or in groups.

Note   These procedures can be used later if the E-MEM registers you are using for the tutorial become overwritten.

To Load an Individual E-MEM file:

1. Touch **E-MEM**, **Save Load** on the Menu panel, and navigate through the file hierarchy to display the file on the screen.

2. Touch **Select Reg(s)**, then touch the icon to highlight the desired file.

3. Touch **Load**. The E-MEM file will overwrite that E-MEM register on the Kalypso system.

To Load Multiple E-MEM Files:

Follow the procedure above, but touch **Multi-select** to turn that function on. You can then select all the needed E-MEM files in a folder and load them at the same time.

Source Selection and Background Cuts

In this exercise you will select external and internal sources and observe the operation of the source name displays, M/E status display, and source selection button tally lights. You will also select shifted and unshifted bus sources.

1. Set up the switcher.

    • If you have just cleared the system, go to Step 2. below.

    • If you cleared the system earlier and saved the effect and are now returning to the tutorial, make sure the **Auto Recall** button in the Master E-MEM subpanel is illuminated and press **Bank 9**, **9** to recall register 99.

    • If you haven't completed the previous exercise, do it now (see page 377).

2. While observing the program monitor, press the **<Src 1>** source selection button on the PGM PST A bus. The nickname of that source is shown in the source name display above the button. Figure 256 shows the source names used in this tutorial, but they will probably be different on your system.

Figure 256. PGM PST Source Selection, Background

When the source select button is pressed, that source instantly appears on the program monitor, and its source button goes high tally, indi-

cating it is being output. The button tally for **Black** on that bus will go off. This is a hot cut to a new source, without a preview. The PGM PST M/E status display will report **<Src 1>** for background bus A and **Black** for the other buses.

3. Press **Pgm Pst** on the Preview subpanel above the PGM PST bank (Figure 257). This makes the switched preview monitor display the PGM PST preview output, which is currently Black.

Figure 257. Preview Subpanel

4. Press the **<Src 2>** button on the PGM PST B bus. That source will appear on the preview monitor. Its source button will go low tally, indicating it has only been selected. The M/E status display will report **<Src 2>** for background bus B, with **<Src 1>** still reported for background bus A. This selects the next source to be used for a transition, and the end result of the transition appears on the preview monitor.

5. Make sure the **Bkgd** button in the PGM PST Transition subpanel (Figure 258) is illuminated (recalling register 99 should have done this already). This selects a background transition as the next action.

Figure 258. PGM PST Transition Subpanel

6. Look at the Program monitor and press the **Cut** button in the PGM PST Transition subpanel (Figure 258). **<Src 2>** instantly appears on the program monitor, and **<Src 1>** appears on the preview monitor. The source button tallies on PGM PST will flip flop, with the high tally button on the A bus indicating the currently selected output. The M/E status display now also reports **<Src 2>** for background bus A, and **<Src 1>** for background bus B.

Figure 259. Pgm Pst Source Select Modifiers

7. Hold down the **Shift** button in the PGM PST Source Select Modifier area, below the M/E Status Display (Figure 259). The first source selection button now reads **Test** instead of **Black** (if factory default source mappings are used for those buttons). If other shifted sources have been mapped to buttons, their names will also appear on the rest of the PGM PST bus A. For example, system **BG 2** may appear in place of **BG 1** on the last button on the right (factory default source mapping). For Release 15.0, the buttons for the source select buttons currently selected with the opposite shift preference will also blink. In this case, all the unshifted sources will blink when the **Shift** button is held down.

8. While still holding down the PGM PST **Shift** button, press the **Test** source selection button on the PGM PST A bus. The test signal instantly appears on the program monitor. This is a hot cut to a shifted source. The M/E status display reports **Test** for background bus A. When you release the **Shift** button, the source names will revert to their unshifted sources. For Release 15.0, only the shifted source you just selected will blink, because it was selected with the opposite shift preference.

9. Hold down the PGM PST **Unshift** button (Figure 259). The source name display will show the unshifted **Black** source. While holding down the **Unshift** button, press the **Black** source selection button and its signal will appear on the program monitor. Release the **Unshift** button and Black remains on the source name display with its button high tally.

10. Select **<Src 1>** on PGM PST A and **<Src 2>** on PGM PST B.

11. You will now Learn the current setup to register 90. If the **Auto Recall** button in the Master E-MEM subpanel is not illuminated, press it to turn it on. Press the **Sel All** button in the Master E-MEM subpanel so all the level group buttons go off, and then press only the **Pgm Pst** enable button. This delegates only that level for the next action. Now learn the register by pressing:

    Learn, **Bank 9**, **0**

12. If you are stopping the tutorial at this point, save your effects to removable media for use later (see page 381).

Mix Background Transitions

In this exercise you will perform mix transitions, change transition rates, and perform preset black transitions.

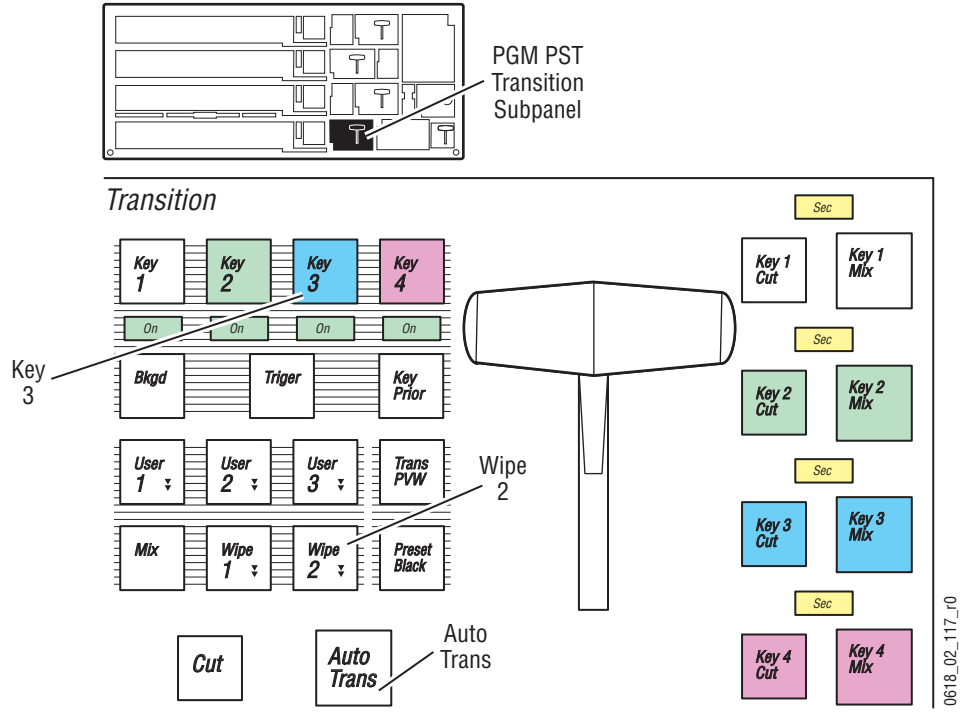1. Set up the switcher.

    *   If you just completed the exercise above, go to Step 2. below.

    *   If you completed the exercise above previously, make sure the **Auto Recall** button in the Master E-MEM subpanel is illuminated and press **Bank 9**, **9** to recall register 99 to clear the system. Then press **0** to recall the ending point of the last exercise. If this doesn't return the system to it's previous state, the registers were overwritten. Load the effects from removable media (see page 382) and then recall them.

    *   If you haven't done either of the above, set up the switcher manually to the following state:

        <Src 1> on the PGM PST A bus, **<Src 2>** on PGM PST B bus. Delegate only **Pgm Ps**t in the Master E-MEM subpanel.

2. Select **Pgm Pst** in the Preview subpanel, if it is not already selected (Figure 257 on page 384). This control is not affected by an E-MEM recall, and so retains its last setting.

3. Make sure only the **Bkgd** transition type button is selected in the PGM PST Transition. Also make sure the **Mix** transition type button subpanel is illuminated (Figure 260). Recalling register 99 should have already set these buttons.

Figure 260. PGM PST Transition Subpanel

4. Move the PGM PST lever arm slowly from one limit to the other, observing the Program monitor. The picture will mix from **<Src 1>** to **<Src 2>**, and at the end of the transition the bus will flip flop.

5. Press the **Auto Trans** button in the Transition subpanel. A mix from **<Src 2>** to **<Src 1>** takes place, at a default 1 second transition rate.

6. You will now change the Auto Transition rate to 2 seconds. Press **Trans Rate** in the Master E-MEM subpanel (Figure 261). The Auto Trans and Key Mix buttons will flash, indicating you should pick one for a rate change. Press the **Auto Trans** button, and then enter the following on the Master E-MEM keypad:

> **2, •, Enter**

The entry format is (**sec • frame •field**). In this case the • specifies seconds. Values entered without a • are interpreted as frames.

Figure 261. Master E-MEM Subpanel

7. Press the **Auto Trans** button in the PGM PST subpanel (Figure 260 on page 388). The mix transition **<Src 1>** to **<Src 2>** now takes two seconds.

8. Press the **Auto Trans** button and one second later press it again. The second press stops the transition midway. Press **Auto Trans** again to resume the transition.

9. Set the Auto Transition rate to 10 frames:

> **Trans Rate**, **Auto Trans**, **1**, **0**, **Enter**

When no • is used, frames are entered by default.

10. Press **Auto Trans** and observe the quick mix transition.

11. Set the Auto Transition rate back to 1 second:

> **Trans Rate**, **Auto Trans**, **1**, **•**, **Enter**

12. Press **Preset Black**, then press **Auto Trans**. The mix transition will go to black instead of the source selected on the B bus. A Preset Black transition requires two button presses to complete. Press **Auto Trans** again to complete the transition. The light on the Preset Black button will go off, automatically exiting the mode.

13. Again press **Preset Black** and then press **Auto Trans**. While in black, select **<Src 3>** on the B Bus. Now press **Auto Trans** and the mix transition will complete to the newly selected source. You can change to any source when midway through a Preset Black transition.

Wipe Background Transitions, Transition Preview, Wipe Borders

In this exercise you will perform wipe transitions, use transition preview, create a wipe border, and route video to a wipe border using a Utility bus.

1. Set up the switcher.

- If you just completed the exercise above, go to Step 2. below.

- If you completed the exercise above previously, make sure the **Auto Recall** button in the Master E-MEM subpanel is illuminated and press **Bank 9**, **9** to recall register 99 to clear the system. Then press **0** to recall the ending point of the first exercise. If this doesn't return the system to its previous state, the registers were overwritten. Load the effects from removable media (see page 382) and then recall them.

- If you haven't done either of the above, set up the switcher manually to the following state:

  <Src 1> on the PGM PST A bus, **<Src 2>** on PGM PST B bus. Delegate only **Pgm Pst** in the Master E-MEM subpanel.

2. Make sure **Pgm Pst** is selected in the Preview subpanel.

3. Press **Wipe 1** in the PGM PST Transition subpanel (Figure 262).

Figure 262. PGM PST Transition Subpanel

4. Observing the program monitor, move the PGM PST transition lever arm from one limit to the other. A wipe pattern is now used for the transition.

5. Press the PGM PST Transition subpanel **Wipe 1** button twice quickly. This DPOP (double press open) opens the Wipe menu on the Menu Panel. If necessary, touch the Pgm Pst PW1 delegation button in the lower left corner of the matrix. It will include a C1 in gold text, indicating it is currently using the Complex 1 wipe generator. If the available patterns are not displayed on the right side of the menu, touch the **Ptn** pattern symbol in the C1 Generator pane. (Figure 263).

Figure 263. Wipes Menu, Pgm Pst Wipe 1 Delegated, Vertical Wipe selected

6. Select the horizontal wipe pattern by touching its shape from the group on the right (Figure 264). The selected pattern is colored blue. Note that though the pattern's shape is vertical, it is called horizontal because the wipe will move horizontally.

Figure 264. Wipes Menu, PgmPst Wipe 1 Delegated, Horizontal Wipe selected

7. Observing the program monitor, press **Auto Trans**.The original picture will be replaced with the new one by a horizontal wipe of one second.

8. Press **Trans PVW**, (Figure 262 on page 391) and move the lever arm half way. This is a transition preview. A split screen appears on the preview monitor, while the program monitor is unchanged. You can now see the wipe pattern to adjust it without affecting the program output.

9. Touch the **Pgm Pst PW1** labeled data pad on the Wipes menu to bring up additional controls for that pattern (Figure 265). Touch the **Border** button on the upper right (the Border feature must be activated before its width can be adjusted). Now adjust the width of the border with the **Width** soft knob on the menu panel. Set it to about 20%.

Figure 265. Wipes Menu, Border Selected

Pgm Pst
PW1
Data Pad

10. Touch the **Softness** button on the lower right, and then touch the Softness data pad just above it to the right. Enter a value of **5** on the pop up keypad and then touch **Enter**. This softens the wipe edge to exactly that amount.

11. In the Mattes subpanel at the upper right corner of the panel (Figure 266), press the **Pgm Pst** delegation button, then press the **Wipe 1** delegation button on the lower part of the subpanel. The Matte subpanel on the Main panel is then delegated to that matte generator.

Figure 266. Mattes Subpanel

12. In the Mattes subpanel press the **Base Fill** button, press the **Matte Fill** button near the knobs in the center of the Mattes subpanel, and then adjust the **Hue**, **Saturation**, and **Brightness** knobs to create a light blue border color (Figure 266).

13. You will now perform these same actions using the Menu panel. In the Mattes subpanel, double press the **Wipe 1** button near the bottom of the subpanel. This is a DPOP to the Matte menu that will be automatically delegated to that matte generator (Figure 267). You can use the Menu panel knobs to change the Hue, Saturation, and Brightness of the matte.

Figure 267. Mattes Menu, Pgm Pst Wipe 1 (Pri) selected

14. Move the transition lever arm in the same direction as before to complete the Transition Preview (the Trans PVW button will go off). Now press the **Auto Trans** button to see the transition with the matte border.

15. Press **Trans PVW** again and move the lever arm half way to view the wipe pattern on the preview monitor.

16. You will now create a two colored wash within the border. In the Mattes subpanel, press the **C1 Wipe** button (Figure 266 on page 395). This selects a wash wipe that has two colored components. Turn the **Softness/Gain** knob to create a hard edge, if necessary, and turn the **Offset/Size/Clip** knob to offset the pattern so the edge is centered in the wipe.

17. Adjust the **Hue**, **Saturation**, and **Brightness** knobs in the Matte subpanel to change the color of the second wash component in the border. Make it different from, but complement the original border color. Then turn the **Softness/Gain** knob to create a pleasing wash between the two colors.

18. You will now select a video source to be added to the wipe border. On the PGM PST source selection modifiers bus (Figure 268), hold down the **Alt Buses** button and select **Src 3** on the A bus. This selects that signal on the Utility 1 bus. Because the **Alt Buses** button was held down, the program output was not affected. This source is not yet visible on either the program or preview monitors because they do not include Utility 1 video.

Figure 268. Source Selection Using Alt Buses Modifier Button

19. You will now replace one of the mattes in the border with the video you just selected. In the Mattes subpanel, press the **Util 1 Fill** button (Figure 266 on page 395). The **Matte Fill** button will go off, and the video you just selected on the Utility 1 bus will appear in the border of the wipe. You can now adjust the softness and offset of your video/matte wash. This can also be accomplished from the Matte menu by touching the **Utility 1** button.

20. Move the lever arm to complete the Transition Preview (the Trans PVW button will go off). Now press the **Auto Trans** button to see the actual video filled wipe transition.

21. Now experiment with other settings. For example, in the Wipe menu you can select different patterns, and you can see what the **Position**, **Rotate**, and **Modulation** controls do. In the Matte menu you can experiment with the **Rotate** and **Texture** controls.

Basic Keying

In this exercise you will perform a Fixed and Adjustable Linear Key and a Luminance Key (see page 215 for Chroma Key procedures). It is assumed you understand clip and gain key controls. For background information about keys, see *Keying on page 79*.

1. Set up the switcher.

   • If you just completed the exercise above, go to Step 2. below.

   • If you completed the exercise above previously, make sure the **Auto Recall** button in the Master E-MEM subpanel is illuminated and press **Bank 9**, **9** to recall register 99 to clear the system. Then press **0** to recall the ending point of the first exercise. If this doesn't return the system to it's previous state, the registers were overwritten. Load the effects from removable media (see page 382) and then recall them.

   • If you haven't done either of the above, set up the switcher manually to the following state:

   <Src 1> on the PGM PST A bus, **<Src 2>** on PGM PST B bus. Delegate only **Pgm Ps**t in the Master E-MEM subpanel.

2. Select **Pgm Pst** on the Preview subpanel, if necessary.

3. Select the **<Key A>** source select button on the upper PGM PST K1/K3 bus (Figure 269). For this tutorial this source should be configured as a fixed linear key (using both video and key signals). Selecting a key source automatically delegates the Keyers subpanel to control that keyer.

Figure 269. PGM PST Source Selection, Keyers

Appendix A — Tutorials

4. Source Memory will also probably have automatically selected a Fixed
Linear Key in the Keyers subpanel. Only the **Fixed Lin** button in that
group of four buttons should be illuminated (Figure 270). If not, press
only the **Fixed Lin** button to select that type of key.

Figure 270. Keyers Subpanel, Basic Keying Controls

5. Notice that there is no change in either the program or preview monitor at this time. This is because you haven't yet selected a key as an element for the next transition. Press the **Key 1** button in the PGM PST Transition subpanel (Figure 271).

Figure 271. PGM PST Transition Subpanel

6. The **Bkgd** button will go off and you should now see **<Key A>** keyed over **<Src 1>** on the preview monitor (the key is not over **<Src 2>** because the background is no longer part of the next transition). A hole is cut in the existing background with the key signal, and the hole is filled with the video signal. A fixed linear key should require no adjustment. Its settings are defined as part of its source definition.

7. To make a fine adjustment to this key, press and hold down the **Fixed Lin** button and also press the **Lum** button in the Keyers subpanel (Figure 270 on page 400). Both buttons will illuminate, indicating it is now an adjustable linear key. Use the **Clip/Clip Lo/Size** and **Gain/Clip Hi/Soft** knobs to adjust Clip Hi and Clip Lo through a limited range. This control mechanism was selected when you configured the system for the tutorial. See *Clip Hi and Clip Lo on page 83* for background information about clip controls.

8. After changing the clipping, press the **Fixed Lin** button. The key changes back to a Fixed Linear key and returns to its originally configured settings. The clipping knobs in the Keyers subpanel (**Clip/Clip Lo/Size** and **Gain/Clip Hi/Soft)** are inactive for a fixed linear key.

9. Select the **\<Key B\>** source select button on the PGM PST K2/K4 bus below the K1/3 bus (Figure 269 on page 399). On your system this source will probably be named differently. For the tutorial this source should be configured as a Luminance Key (using a video signal as key fill without an accompanying key signal). Source Memory will probably have automatically selected a Luminance Key in the Keyers subpanel, and only the **Lum** button should be illuminated. If the **Fixed Lin** button is also on, or a different key type is selected, press only the **Lum** button to select a Luminance Key.

10. Press the PGM PST Transition subpanel **Key 2** button (Figure 271 on page 401). The Key 1 button will go off and you should now see **\<Key B\>** keyed over **\<Src 1\>** on the preview monitor.

11. Use the **Clip/Clip Lo/Size** and **Gain/Clip Hi/Soft** knobs to adjust clip and gain of the Luminance Key. Note that a full range of clip and gain control is available. Clip and Gain, rather than Clip Hi and Clip Lo was selected when you configured the system for the tutorial. See *Clip Hi and Clip Lo on page 83* for background information about clip controls.

12. Press the Transition subpanel **Key 1** and **Key 2** buttons at the same time. Both buttons will illuminate and both keys will appear on the preview monitor. The Keyers subpanel will also be delegated to control the highest numbered key that was just selected (**Key 2**). Two keys have been selected for the next transition.

13. Now select the **\<Key A\>** source select button again on the PGM PST K1/3 bus. The Keyers subpanel automatically delegates to that keyer, and Source Memory remembers the last setting made for that key source so only the **Fixed Lin** button will be illuminated.

14. You will now re-adjust the clip and gain of the Luminance Key. Turning the **Clip/Clip Lo/Size** and **Gain/Clip Hi/Soft** knobs at this time will not do this because the Keyers subpanel is currently delegated to control **Key 1**, which is a Fixed Linear Key. Press the **P-P Key 2** button next to the PGM PST status display (Figure 272). This delegates the Keyer subpanel to control that keyer in that bank. You can now use the knobs to adjust its clip and gain. It is a good practice to routinely delegate the keyer this way to prevent accidental adjustments to the wrong keyer.

Figure 272. PGM PST Keyer Delegation Buttons

15. The Keyer menu on the Menu panel can also be used to delegate and adjust keys. On the Menu panel, press the **Keyer** Menu Selection button, then touch the **Mode** category button to access the Keyer menu. Then touch the **K 2** data pad in the Pgm Pst group at the bottom of the Keyer menu (Figure 273). The remaining controls on the menu then control that keyer. Note that the two top soft knobs in the menu control Clip Hi and Clip Low, which is a somewhat different control mechanism from the Clip and Gain used on the Main panel knob controls (see *Clip Hi and Clip Lo on page 83*).

Figure 273. Keyer Menu, PGM PST Key 2 Delegated

16. The Keyer menu is now delegated to control Key 2, while the Keyers subpanel on the Main panel is delegated to Key 1. Changes can now be made to a different keyer from each location. Note, however, that changing the Keyers subpanel delegation on the Main panel will automatically change the delegation in the Keyers menu. Watch the Keyer menu and touch the **P-P Key 1** delegation button on the Main panel. The menu delegation changes. The Main panel and Menu panel now control the same keyer.

17. Press only the **Key 1** button on the PGM PST Transition subpanel. Only **<Key A>** will be visible over the background on the preview monitor.

18. Learn this effect to register 91. Make sure the **Auto Recall** button is illuminated and only the **Pgm Pst** enable button is on (all other enable buttons off). Then with **Bank 9** still selected, press:

> **Learn**, **1**

19. With the effect saved, you can go back and experiment on your own with these and other controls.

Key Transitions

In this exercise you will transition keys on and off and set key transition rates.

1. Setup the switcher.

- If you just completed the exercise above, go to below.

- If you completed the exercise above previously, make sure the **Auto Recall** button in the Master E-MEM subpanel is illuminated and press **Bank 9**, **9** to recall register 99 to clear the system. Then press **1** to recall the ending point of the first exercise. If this doesn't return the system to it's previous state, the registers were overwritten. Load the effects from removable media (see) and then recall them.

- If you haven't done either of the above, clear the switcher by recalling register 99 (press **Bank 9**, **9**) and then set up the switcher manually to the following state:

  <Src 1> on the PGM PST A bus, **<Src 2>** on PGM PST B bus, **<Key A>** on PGM PST Key 1, **<Key B>** on PGM PST Key 2, only **Key 1** selected for the next transition. Delegate only **Pgm Ps**t in the Master E-MEM subpanel.

2. Select **Pgm Pst** on the Preview subpanel, if necessary.

3. If it is not already selected, press the **Mix** transition type button on the PGM PST Transition subpanel.

4. Observing the program monitor, press the **Auto Trans** button in the PGM PST Transition subpanel. **<Key 1>** will mix on the program monitor over the existing **<Src 1>** background in one second (if the transition rate hasn't been changed). The On indicator below the **Key 1** transition button illuminates and the **Key 1 Cut** button will also illuminate. The key is on-air.

5. Observing the program monitor, press the **Cut** button on the PGM PST Transition subpanel (Figure 274). The key will immediately be taken out of the picture.

Figure 274. PGM PST Transition Subpanel, Keyer Transitions

6. Observing the program monitor, press the **Key 1 Mix** button on the Transition subpanel (Figure 274). The key will mix on the program monitor, probably at a faster rate (the default is 7 frames). This is a separate transition system for only that keyer.

7. Observing the program monitor, press the **Key 1 Cut** button. The key will cut off the program monitor.

8. Now press the Transition subpanel **Bkgd** button and **Key 1** button at the same time(Figure 274). You have selected the background and one key for the next transition. **<Key A>** will be over **<Src 2>** on the preview monitor.

9. Observing the program monitor, press the **Auto Trans** button. The transition on the program monitor now includes a background mix to **<Src 2>** as well as mixing **<Key A>** on. Because this is a main transition, it takes one second.

10. Press the Transition subpanel **Key 1**, **Key 2**, and **Bkgd** buttons at the same time. You have now selected all three elements for the next transition, but only one of the keyers is on the program monitor.

11. Observing the program monitor, press **Auto Trans**. **<Key A>** will mix off, **<Key B>** will mix on, and the background will also mix to <**Src 1**>.

12. You will now change a Keyer transition rate, which is similar to setting the main transition rate. Press the Master E-MEM subpanel **Trans Rate** button. The **Auto Trans** and all four **Keyer Mix** buttons will flash. Press the flashing **Key 1 Mix** button, and type **4**, **5**, **Enter** on the Master E-MEM subpanel. Its rate is now 45 frames (one and one half seconds).

13. Observing the program monitor, press the **Key 1 Mix** button. **<Key A>** will mix on the program monitor in 45 frames. The background and other key is unaffected.

14. Observing the program monitor, press the **Key 2 Mix** button. **<Key 2>** will mix off at the original 7 frames rate. Each keyer's individual transition system can have different rates and controls only that keyer.

15. Keys can also be wiped on and off, using the main transition system. Press only the **Key 1** next transition button and press the **Wipe 1** button in the Transition subpanel. Then observing the program monitor, press the **Auto Trans** button. **<Key 1>** will wipe onto the background. Note that the individual keyer transition systems mix and cut, but cannot wipe.

16. Press the **Mix** button on the PGM PST Transition subpanel, and turn all the keys off, so only the backgrounds appear on the program and preview monitors.

17. Learn this effect to register 92. Make sure the **Auto Recall** button is illuminated and only the **Pgm Pst** enable button is on. Then with **Bank 9** selected, press:

> **Learn**, **2**

Key Borders and Opacity

In this exercise you will create various Borderline effects on a key.

1. Setup the switcher.

- If you just completed the exercise above, go to Step 2. below.

- If you completed the exercise above previously, make sure the **Auto Recall** button in the Master E-MEM subpanel is illuminated and press **Bank 9**, **9** to recall register 99 to clear the system. Then press **2** to recall the ending point of the last exercise. If this doesn't return the system to it's previous state, the registers were overwritten. Load the effects from removable media (see page 382) and then recall them.

- If you haven't done either of the above, clear the switcher by recalling register 99 (press **Bank 9**, **9**) and then set up the switcher manually to the following state: **<Src 1>** on the PGM PST A bus, **<Src 2>** on PGM PST B bus, **<Key A>** on PGM PST Key 1, **<Key B>** on PGM PST Key 2. Delegate only **Pgm Ps**t in the Master E-MEM sub-panel.

2. Select **Pgm Pst** on the Preview subpanel, if necessary.

3. Press only **Key 2** in the PGM PST Transition subpanel to select that key for the next transition. This also automatically delegates the Keyers subpanel to that keyer.

4. Press the **Border Line** button in the Keyers subpanel (Figure 275). This activates the Borderline feature and automatically delegates the Mattes subpanel to that keyer.

Figure 275. Keyers Subpanel, Borderline Controls

5. Turn the **Border/Position/Direction** knob in the Keyers subpanel to change the size of the border. Key borders have a limited size. Make the border as large as possible.

6. Turn the **Opacity** knob back and forth. The opacity of the entire key will change. Return the key to full opacity.

7. In the Mattes subpanel, make sure the **Border Line** button in the Key Only area is illuminated, which should have auto-delegated (Figure 276). Adjust the **Hue**, **Saturation**, and **Brightness** knobs to change the border to a dark color. You have now added a standard border around the key.

Figure 276. Mattes Subpanel, Keyer Borderline Auto Delegated

8. Press the **Shadow** button in the Keyers subpanel (Figure 275 on page 408). An offset border effect appears. Press and hold down the **Shadow** button and at the same time turn **Border/Position/Direction** knob. This changes the direction of the shadow.

9. While holding down the **Shadow** button, turn the **Opacity** knob. The knob now changes only the opacity of the shadow, not the key itself.

10. All these border controls are also available in the Keyers menu. Double press the **Key 2** button in the Keyers subpanel to access the Keyer menu, then touch the **B-Line** category button (Figure 277). Adjust the **Width**, **Opacity**, and **Direction** of the shadow border using these Menu panel soft knobs.

Figure 277. Keyer Borderline Menu

11. Learn this effect to register 93. Make sure the **Auto Recall** button is illuminated and only the **Pgm Pst** enable button is on. Then with **Bank 9** selected, press:

    Learn, **3**

12. With the effect saved, you can go back and experiment on your own with these and other controls. Try the **Extrude** and **Outline** buttons in the Keyers subpanel, using the same controls you just used for the **Borderline** and **Shadow** border types.

Preset Pattern

In this exercise you will create a preset pattern key using various patterns and border effects.

1. Setup the switcher.

    *   If you just completed the exercise above, go to Step 3

    *   If you completed the exercise above previously, recall register 93. With **Bank 9** selected, press **3**.

    *   If you haven't done either of the above, clear the switcher by recalling register 99 (press **Bank 9**, **9**) and then set up the switcher manually to the following state: **<Src 1>** on the PGM PST A bus, **<Src 2>** on PGM PST B bus, **<Key A>** on PGM PST Key 1, **<Key B>** on PGM PST Key 2. Delegate only **Pgm Pst** in the Master E-MEM sub-panel.

2. Make sure **<Src 1>** is on the PGM PST A bus, and **<Src 2>** is on the B bus.

3. You will now select **<Src 2>** on the PGM PST Key 3 bus. Do this by holding down the PGM PST **Alt Buses** source select modifier button (Figure 278) and selecting **<Src 2>** on the PGM PST K1/3 bus. This selects a source you used previously as a background on the alternate key bus used by Keyer 3.

Figure 278. PGM PST Source Select Modifiers

4. Press the **Key 3** button in the PGM PST Transition subpanel (Figure 279). The Keyers subpanel will automatically delegate to that keyer.

Figure 279. PGM PST Transition Subpanel

5. Double press the **Pst Ptn** button in the Keyers subpanel (Figure 280). This selects a Preset Pattern for that keyer, and also DPOPS to the Wipes menu (Figure 280).

Figure 280. Keyers Subpanel

6. On the Wipes menu, touch the PGM PST Key 3 button in the delegation matrix to delegate the menu to that keyer. The delegated keyer is colored blue. If necessary, touch the **Ptn** data pad to open the pattern selection panel. Then touch the square pattern to select it (Figure 281). The preview monitor will now show a square portion of **<Src 2>** preset pattern keyed over **<Src 1>**.

Figure 281. Wipes Menu, Box Preset Pattern

7. Turn the **Clip/Clip Lo/Size** knob in the Keyers subpanel (Figure 280 on page 413) to adjust the size of the preset pattern.

8. You can also adjust the size in the Wipes menu. Touch the Pgm Pst K3 data pad (labeled in green) on the lower left side of the menu below the delegation matrix. This brings up a pane of controls for that keyer (Figure 282).

Figure 282. Wipes Menu, Preset Pattern Size Control

9. Touch the **Size** soft knob data pad (Figure 282) and enter 25% in the pop up keypad. Alternatively, you can use the soft knob to adjust the size of the preset pattern. Make it relatively small, suitable for over the shoulder use.

10. You will now adjust the placement of the Preset Pattern. In the Transform subpanel (Figure 283) press the **Pgm Pst**, and **Key 3** buttons to delegate the keyer, and then press the **Keyer Wipe** button to delegate the joystick to control that wipe pattern. Move the joystick left, right, up, and down to move the pattern around the screen. Place the pattern in the upper left screen area.

Figure 283. Transform Subpanel

11. Learn this effect to register 94. Make sure the **Auto Recall** button is illuminated and only the **Pgm Pst** enable button is on. Then with **Bank 9** selected, press:

> **Learn**, **4**

12. With the effect saved, you can go back and experiment on your own with these and other controls.

This completes the fundamentals tutorial. If you saved your configuration and effects to removable media, you will be able to return to any stage of the tutorial and explore further at a later time, even if the effects on the Kalypso system get overwritten.

Note When you have finished the tutorial and no longer need the tutorial profile configuration files, delete them using the Daily Setups Save-Load menu. This helps keep the scrolling list short to allow faster access to regularly used profiles.

Basic Keyframe Effect Tutorial

Introduction

If you are new to keyframing, see *Multiple Keyframes and Timelines on page 96* for background information before you do this tutorial.

This tutorial is designed to be performed in its entirety. Exercise segments are given descriptive names, but the starting point of each one must be the end point of the previous segment. Dynamic effects will be performed. You will want to watch the output monitor when you rewind and run the effects.

Note   Each E-MEM effect can hold a maximum of 64 keyframes.

Requirements and Scope

The Kalypso system must be running Release 4.0 or later software. This tutorial is written for Pgm Pst, but can be done on any M/E as long as you can see the program output of that M/E. The tutorial also specifies using a specific register (95). You can substitute a different register if you wish.

Preparation

For this tutorial it is assumed that all Kalypso system configurations and effects that may be needed in the future have already been saved to disk. If this is not so, save them before beginning any of these tutorials. See *Suite and User Configuration on page 368*.

It also assumes you have a general understanding of switcher operations and are familiar with basic Kalypso system operation. If not, run through the *Fundamentals Tutorial on page 367* before beginning any of this tutorial.

Clear the Kalypso System

If a cleared Kalypso system state has been saved to register 99, recall this register. The cleared system has black selected on all buses, and each bank's Transition subpanel has **Bkgd** and **Mix** selected. Otherwise, see page 377 to clear the system to a known state.

Building and Running a Two Keyframe Effect

1. Press **Sel All** on the Master E-MEM subpanel until all the Enable buttons are off. Then press the **Pgm Pst** button to enable only that level.

2. On Pgm Pst, set up a Preset Pattern on Key 1, using a small box wipe pattern that can be moved about the screen (see *Preset Pattern on page 411*). Select a different contrasting background source on the A bus.

3. Press **Pgm Pst**, **Key 1**, **Keyer Wipe** in the Transform subpanel to delegate the joystick to control the keyer, and move the preset pattern box to the left center of the screen (Figure 284). At this time this state resides only in the work buffer. This is represented in the figure below as a blank box.

Figure 284.

4. Press **Learn**, **Bank**, **9**, **5** in the Master E-MEM subpanel to learn this work buffer state as keyframe #1 (KF 1) of a new effect in register 95. Note that this action deletes any existing effect information in that register. The fact that a keyframe now exists in the register is represented in the figure below by numbering the box (Figure 285).

Figure 285.

5. Move the box to the right side of the screen with the joystick (Figure 286). This is not a keyframe yet.

Figure 286.

6. Press **Insert After** in the Effects Edit subpanel to add a keyframe after the first keyframe. This becomes keyframe #2 (KF 2). The new keyframe is placed on the timeline after the duration of the first keyframe (one second default).

7. Observing the output monitor, press **Run** in the Effects Run subpanel. The effect will rewind to its start and run, moving the box from left to right across the screen in one second (Figure 287). All the intermediate positions have been interpolated by the system. The motion is S-Linear, and so accelerates and decelerates from a resting point at each keyframe.

Figure 287.

8. Observing the output monitor, press **Rew** in the Effects Run subpanel. The effect will rewind to its start.

9. Press **Rev** in the Effects Run subpanel so it illuminates, then press **Rew**. The effect will rewind backward to the end of the effect.

10. Press **Run**. The effect will run backward from the end to its beginning (Figure 288).

Figure 288.

11. Press **Rev** to turn off the reverse run feature.

12. Press **Auto Run** in the Master E-MEM subpanel so it illuminates. This will make effects run as soon as they are recalled.

13. Observing the output monitor, press **95** on the Master E-MEM subpanel keypad. The effect will recall and run automatically.

14. Press **Auto Run** to turn off this feature.

Modifying Existing Keyframes

1. Press **Begin** in the Effects Edit subpanel to go to the beginning of the effect, then move the box with the joystick to the upper left corner of the screen (Figure 289). At this time the change exists only in the work buffer. KF 1 has not changed.

Figure 289.

2. Press **Mod** in the Effects Edit subpanel. KF 1 has now been replaced the new work buffer state.

3. Observing the output monitor, press **Run**. The effect moves from the upper left corner smoothly to the right side of the screen, with the appropriate interpolation between the keyframes (Figure 290).

Figure 290.

4. Move the box to the lower right corner of the screen.

5. Without first pressing the Modify button, press **Run**. The effect rewinds and then runs to its original ending keyframe (not to your change). The change you made was lost because it only existed in the work buffer and wasn't applied to the keyframe.

6. Try again. Move the box to the lower right side of the screen, press **Mod**, and then press **Run**. The effect moves smoothly from upper left to lower right (Figure 291).

Figure 291.

7. Add a matte border to the preset pattern of KF 2 (turn on **Border** in the Wipes menu), then press **Mod**. This changes only KF 2 to have a border.

8. Observing the output monitor, press **Run**. The effect will rewind and run from KF 1 to KF 2 without a border, and then the border will pop on.

9. Press **Rew** to go to KF 1. Add a matte border to KF 1 as you did for KF 2, but then adjust the border width to zero and press **Mod**. This adds the border attribute to KF 1, but it will not be seen at that point in time because of its zero width.

10. Observing the output monitor, press **Run**. The effect will run with the border growing in size from KF 1 to KF 2. To have interpolation between keyframes, the attribute must be on for both keyframes.

11. Press **Rew** to go to KF 1. Adjust the border size to match that of KF 2, then press **Mod**.

12. Observing the output monitor, press **Run**. The effect will run with the border not changing size.

Inserting New Keyframes

1. Press **Go To KF**, **1**, **Enter** in the Master E-MEM subpanel to go to the first keyframe in the effect. When the Go To KF button is illuminated the Master E-MEM readout reports the keyframe number of the cursor location. In this mode, E-MEM recall and learn operations on the keypad are disabled. Pressing the illuminated **Go To KF** button turns the mode off.

2. Move the box down to the lower left corner of the screen (Figure 292).

Figure 292.

3. Press **Insert After**. A new keyframe is inserted after KF 1's duration (one second). The new keyframe is called KF 2 (and is reported in the readout) and has the same duration as KF 1. The last KF is now called KF 3, instead of KF 2. This action is called inserting on a keyframe.

4. Press **Rew** to rewind to the beginning of the effect.

5. Observing the output monitor, press **Run**. The effect now moves from KF 1 to the new KF 2 position, then moves to the original end state, now KF 3 (Figure 293). The total duration of the effect has increased by one second. Note that there is no need to press the Modify button, since keyframes are added to the register when inserted.

Figure 293.

6. While parked on the last keyframe, move the box to the upper right corner of the screen (Figure 294).

Figure 294.

7. Press **Insert Before**. A new keyframe (KF 3) is inserted at that point in time and given a duration of one second (the same duration as the keyframe it was inserted before). The last keyframe moves one second later in the effect and is now called KF 4.

8. Observing the output monitor, press **Run**. The effect now moves from the new KF 3 to KF 4 (Figure 295). The effect didn't rewind automatically because it was not parked at the end of the effect.

Figure 295.

9. Press **Run** again. The effect now moves through the two new keyframes, and ends at the exact same location as before, which is now KF 4 (Figure 296). The effect duration has again increased and totals three seconds (the duration of the last keyframe is not counted since the effect doesn't change after that keyframe is reached). Effect editing without changing the last keyframe is useful for creating effects that can be used one after another.

Figure 296.

10. Press **Go To Time**, **1**, **•**, **15**, **Enter** in the Master E-MEM subpanel. This moves to a point in time one and a half seconds into the effect, half way between KF 2 and KF 3. The box should be near the center of the screen (Figure 297).

Figure 297.

11. Press **Go To Time** to turn off time entry mode and return the keypad to normal operation. When the button is illuminated the Master E-MEM readout reports the effect time of the cursor location and E-MEM recall and learn operations on the keypad are disabled.

12. Press **Insert After**. A new keyframe (called KF 3) is inserted at that point in time between keyframes, with a duration that reaches to the next keyframe (now called KF 4). The new keyframe's duration is one half second, and the duration of KF 2 has been reduced to one half second. This action is called inserting on the path. Note that the **Insert Before** and **Mod** buttons can also be used to insert on the path and will produce the same result.

13. Press **Rew**, then press **Run**. The effect pauses at the new KF 3 position, but the entire effect runs in the same time as before (three seconds). No time is added to an effect when a keyframe is inserted on the path (Figure 298).

Figure 298.

Copying a Keyframe

Copying a keyframe to another location in an effect can be useful. In this example we will use the edit cursor to create an effect that returns to its starting point.

1. Press **Begin** to go to the start of the effect (Figure 299).

Figure 299.

2. Press **Edit Crsr** in the Effects Edit subpanel to free the edit cursor from the time cursor. You are now able to navigate (but not run) through the effect without altering the work buffer.

3. Press **End** in the Effects Edit subpanel to go to the end of the effect. Even though the edit cursor is now located on KF 5 on the timeline, the box hasn't moved from its original location because work buffer values haven't not changed.

4. Press **Insert After**. The work buffer values that had defined KF 1 are now inserted as KF 6 after KF 5.

5. Observing the output monitor, press **Run**. The effect will run through the effect, then return to its starting point. You can run the effect over and over without having the box jump between starting and ending positions (Figure 300).

Figure 300.

6. Press **Time Crsr** to join the two cursors back together for normal system operation.

Deleting Keyframes

1. Press **Begin**, **Next KF** to go to KF 2.

2. Press **Delete** in the Effects Edit subpanel. KF 2 is deleted from the work buffer and its register. Its duration is also removed, shortening the effect by one half second. The cursor moves to the next keyframe, which becomes the new KF 2 in the effect.

3. Press **Delete** again. This removes the other half second duration keyframe.

4. Press **End** to go to the last keyframe in the effect (which has the same settings as the KF 1).

5. Press **Delete**. Now there are only three keyframes in the effect.

6. Press **Rew, Run**. The box will move from the upper left to the upper right and then down, for a total duration of two seconds (Figure 301).

Figure 301.

Inserting Keyframes With Different Durations

1. Press **End** to go to KF 3.

2. Move the box to the lower center of the screen (Figure 302).

Figure 302.

3. Press **KF Dur**, **3**, **•**, **Enter** on the Master E-MEM subpanel to activate keyframe duration entry mode and enter three seconds into the work buffer. This prepares the system to insert the next keyframe 3 seconds later into the effect. Key frame duration actually affects placement of the next key frame on the timeline, not location of the current keyframe.

4. Press **Insert After** to insert KF 4 into the register.

5. Observing the output monitor, press **Run**. The box will move rapidly to KF 3, then slowly to KF 4 over a total of five seconds (Figure 303).

Figure 303.

6. Move the box to the lower left corner of the screen (Figure 304).

Figure 304.

7. Press **Insert After** to insert KF 5 into the register.

8. Observing the output monitor, press **Run**. The box will move rapidly to KF 3, then slowly to KF 4 and KF 5. The last keyframe duration entered is used for the insert (Figure 305).

Figure 305.

9. Move the box to the center of the screen (Figure 306).

Figure 306.

10. With the **KF Dur** button illuminated, press **1**, **•**, **Enter** to enter a one second keyframe duration into the work buffer.

11. Press **Insert After** to insert KF 6 into the register.

12. Observing the output monitor, press **Run**. The box will move rapidly to KF 3, slowly to KF 4 and KF 5, and rapidly to KF 6. Subsequent inserts will now use the default one second duration (Figure 307).

Figure 307.

13. Press **KF Dur** to turn off keyframe duration entry mode.

Still Store Loader

Introduction

New with Version 15.0, the Still Store Loader application has been updated to allow the operator to export images into the Still Store hardware from a personal computer by converting any supported image types to the native Kalypso format (.gva/.gvi) file formats. And, the operator will now be able to create image sequences of video files and export them to the Still Store hardware.

Note The new Still Store Loader has been tested with Windows XP and Vista operating systems only.

See Figure 308 for an example of the Still Store Loader main menu (stills are displayed in the **Stills** tab view).

Figure 308. Still Store Loader—Main Menu

Opening and Viewing Files

The new Still Store Loader provides the operator with the ability to open and view a variety of images from a networked drive or the Still Store hard drive. The operator will be able to browse through these resources before selecting files to import/export.

Supported Images

The three types of images supported by Still Store Loader are:

- Stills,
- Clips,
- And Image Sequences.

Supported File Formats

The new Still Store Loader works with the following file formats:

- GIF (.gif)
- JPG (.jpg/.jpeg)
- JPEG 2000 (.jp2/.j2k)
- TIF (.tif/.tiff)
- Windows Bitmap (.bmp/.wbmp)
- PNG (.png)
- Kalypso Native Image (.gva/.gvi)
- TARGA (.tga)
- PICT (.pict)

Video Files

The following video formats are supported by Still Store Loader:

- AVI
- QuickTime

Note The Still Store Loader will not perform temporal interpolation on video files. The frequency to which the application is set is the frequency at which the video will play back.

Video files will be loaded, converted, and displayed in the **Video** tab view (refer to).

Image Sequences

An **Image Sequence** is a collection of similarly named image files that when displayed in rapid succession, form a clip. The image files that make up the clip can consist of any of the image formats that are supported by the system.

The files that are part of the sequence must be located in the same directory, and have as their filenames a combination of the same characters for the name and the frame number for all the files in the sequence (for example MyAnimation01, MyAnimation02, MyAnimation03, etc.).

The first image of the sequence will be displayed in the **Sequence** tab view, as shown in Figure 309.

Once an image is selected, it can be viewed in the Image View Pane (center).

Figure 309. Still Store Loader—Sequence View

Listed from left to right, there are control buttons (refer to Figure 309) below the image viewer for:

- **Rewind**
- **Jog backward**
- **Play**
- **Stop**
- **Jog forward**
- **Fast Forward**

There is a progress bar just above the control buttons.

Interfacing with Still Store

With the new Still Store Loader, the operator can interface with Still Store to import and export files using an FTP connection. The base directory from which Still Store Loader interfaces with Still Store is **/User/**; the Still Store Loader will not be allowed above that directory level.

Exporting Files

Still Store Loader will convert files to the Still Store format when exported from a networked PC to the Still Store hardware using an FTP connection. If a separate key signal is defined it will also be converted and exported with the file. See *Exporting to Still Store on page 443* for more information.

CAUTION Turning on **Background Color** will *prevent* the key signal from being created or exported (see *Background Color on page 442*). Any transparency or black space outside the image will used to generate the key signal.

Supported Resolutions

Only supported SD and HD resolutions can be exported to Still Store. The supported resolutions are:

SD

- 525i with a 4x3 aspect ratio
- 625i with a 4x3 aspect ratio

HD

- 1080i @ 25Hz, 29.97Hz, and 30Hz with a 16x9 aspect ratio
- 720p @ 59.95Hz and 60Hz with a 16x9 aspect ratio

Importing Files

Files can be imported from Still Store and saved to a networked PC in the Still Store format using the Still Store Loader (files cannot be converted back to the original format). See *Importing from Still Store on page 444* for more information.

Operations

Installing Still Store Loader on a PC

The Still Store Loader software application can be installed on a networked PC for use with the Kalypso system. Typically Still Store Loader is installed on a computer located in the graphics department, to allow instant downloads of graphics to the Kalypso Still Store system.

CAUTION It is *not* recommended that the new Still Store Loader be installed on Kalypso Menu panels. To transfer stills from the Menu Panel, use the Menu application's file operations (copy, paste, etc.).

PC Requirements

The new Still Store Loader has been tested with Windows XP and Vista operating systems.

Installation Procedure

The Still Store Loader application is included on the Kalypso Software CD.

1. Close any open applications.

2. Insert the Kalypso Software CD into the drive of the system on which it will be installed and accept the license agreement.

3. When the initial Kalypso Software Update Tool screen appears, select **Still Store Loader** (Figure 310).

Figure 310. Kalypso Software Update, Still Store Loader Selected

4. Click on the **Install** button and follow the directions displayed on the screen. The installer program may offer you a choice of where to install the program (Figure 311). The default C:\Program Files\SsLoader folder location is recommended.

Figure 311. Still Store Loader Installation Destination

5. When the files have been loaded, the **Select Components** screen appears as shown in (Figure 312.

6. Check both the Java Runtime and Quick Time boxes as shown in Figure 312 and click on **Next**. Complete the instructions for loading Java and QuickTime.

Figure 312. Still Store Loader Select Components

The QuickTime application may display a dialog box such as the following in Figure 313. Click on the **Repair** button and then click on **Next** and then **Finish** to complete the QuickTime installation.

Figure 313. Still Store Loader QuickTime Repair Button

7. Click on **Finish** to complete the Still Store Loader installation.

Figure 314. Still Store Loader Installation Reset Computer

Remove the CD from the drive and store it in a safe place.

Formatting

Line Rate and **Background Color** are menu items located under the **Format** pull-down menu, as shown in Figure 315.

Line Rate

Allows the operator to set the line rate for the files to be exported into Still Store, as shown in Figure 315. The Image View pane parameters will resize based on the line rate.

Figure 315. Still Store Loader—Line Rate Formatting

Background Color

The Background color can be adjusted using the **Background Color** pop-up, as shown in Figure 316.

Figure 316. Still Store Loader—Background Color Formatting

1. From the **Format** menu, select **Enable** (Enable must be selected for color backgrounds to work).

2. Again from the **Format** menu, select **Background Color/Select**.

3. Choose a background color from the color pallet or from the HSB/RGB tabs and click on **OK**.

Settings

The **Settings** menu item allows the operator to enter an IP address to connect to the Still Store hardware

The **Settings** menu item is located under the **Tools** menu (refer to Figure 308).

1. Open the **Settings** dialog box by selecting **Tools/Settings**.

2. Enter the IP address for the Still Store hardware you wish to export image files to, as shown in Figure 317.

3. (Optional) Test the connection using the **Test Connection** button.

4. Click on **OK**.

Note If Still Store Loader detects an invalid IP address, it will continue to attempt connection for several seconds. If the address cannot be validated, a dialog box informing the operator of the failed attempt will appear.

Figure 317. Still Store Loader—Settings

Exporting to Still Store

1. Select an image file from the Stills, Video, or Sequence tab view.

2. Click on the **Export** quick button or select **Export** from the **File** pull-down menu (refer to Figure 308).

3. Navigate to the folder in Still Store you wish to place image files, as shown in Figure 318.

4. Use the default (**Use first available still number)** radio button or choose the **Select still number:** radio button (bottom of dialog box, see Figure 318).

   a. If you chose the **Select still number:** radio button, Still Store Loader will attempt to extract the image number and place it in the **Select still number**: field (see Figure 318).

5. Click on **Export** (see Figure 318), the image file will be loaded to the Still Store target folder.

Note   Export times vary, based on line rate.

Figure 318. Still Store Loader—Still Store Export Destination

Importing from Still Store

GVA/GVI files can be imported from Still Store into Still Store Loader or to a PC on a network.

1. Click on the **Import** quick button or select **Import** from the **File** pull-down menu (refer to Figure 308).

2. In the Destination field, select the Browse button and select a destination for the image file(s).

3. From the **Import** dialog box, select the folder to import (this will import any image files with supported formatting in the folder) or open the folder and select a single image file (imports only the selected image), as shown in Figure 318.

CAUTION Importing an image file from Still Store to a destination folder containing an image with the same image number, will overwrite that file (a warning will precede the overwrite).

Figure 319. Still Store Loader—Importing from Still Store

Glossary

Auto Transition

A transition having a predefined duration generally initiated by pressing a control panel button.

Aspect

The ratio of a picture's horizontal and vertical dimensions when correctly displayed (4:3, 16:9).

Background Bus

A row of buttons on an M/E used to select background video signals. Typically labeled A and B, with A representing the current output, and B representing the next output.

Background Transition

A transition between the background video signals selected on an M/E.

Background Video

Video that forms a background scene into which a key may be inserted.

Backing Color

The color in a chroma key scene that will be replaced with another video signal.

Bit Rate

The number of bits per second passed from one point to another.

Black

A black video signal generated within the switcher.

Box Wipe

A rectangular wipe pattern. For masking, the Kalypso system provides a special box wipe pattern generator allowing independent control of the placement of each side of the box.

Chroma

The depth or saturation of color. Chroma, hue, and luminance make up the three characteristics of television color.

Chroma Key

A video key effect in which one video signal is inserted in place of areas of a particular color in another video signal. Blue and green are the chroma key colors most frequently used.

Clean Feed

A final output of the switcher that does not include downstream key effects or fade to black. Also see *Programmable Clean Feed*.

Clip

A threshold level adjustment to which the keying attribute (luminance, chrominance) is compared for generating the internal key control signal. Clip, in conjunction with gain, sets the switching point between the background and the key fill. Also see *Gain*.

Clip High, Clip Low

An alternative to Clip and gain keying, providing independent control of the points where the background video and the key fill video are each fully visible.

Complex Wipe Pattern Generator

A wipe pattern generator with additional capabilities (for example, matrix wipes).

Component Video

A video signal that keeps color and luminance information separate. RGB; Y, R-Y, B-Y; and Y, Cr, Cb are examples of component video.

Composite Video

An encoded video signal that combines color information with luminance information. NTSC, PAL, and D-2 are examples of composite video.

Compositing

Combining two or more video signals together into one output signal.

Control Signal

A signal used to perform an alteration or transition of video signals. For example, control signals are used for keying, masking, and wipe transitions.

Control Surface

The set of controls available to a single operator. These controls may reside on separate but related control panels.

Cross Fade

See *Mix*.

Crosspoint

An electronic switch, usually controlled by a button on the panel, that allows video or audio to pass when the switch is closed.

Cut

An instantaneous switch from one picture to another. Switching circuitry allows cuts only during the vertical interval of the video signal to prevent disruption of the picture.

VDR (Video Disk Recorder)

A video recorder and playback device using hard disk storage in place of video tape.

Delegate

To assign panel controls to a particular operating function. Some panel controls (buttons, knobs, joystick) can affect more than one function. The operator can choose an alternative function by delegating the panel controls to that function (typically by pressing or holding down a panel button).

Deserializer

A device that converts serial digital information to parallel.

Dissolve

See *Mix*.

DPOP (Double Press Open)

Pressing a control panel button twice rapidly to open a related menu. On the Kalypso system, buttons supporting DPOP are labeled with a graphical indicator.

Effect

A setup of panel controls specifying the sources involved and any processing applied to those sources. Effects can be learned (saved) and recalled by the E-MEM effects memory system.

Effect Transition

Recalling an E-MEM effect so that a transition is automatically performed at the start of the recall.

Effects Processor

The portion of a switcher that performs mixes, wipes and cuts between background and/or effects key video signals.

E-MEM Effects Memory

A feature that permits control panel setups to be stored for later recall.

Engineering Setups

On the Kalypso system, a collection of configuration settings that establishes an essential baseline for system operation and integrates the Kalypso system into a facility.

Ethernet

A form of high speed data transport between devices on a network.

Fade To Black

A mix transition to black.

Field

One scan of an interlaced video image. In interlace systems, two fields are required to make a complete picture (video frame) because alternate lines are scanned.

Fill Video

A video signal which fills a hole cut in background video by a key control signal.

Fixed Linear Key

A linear key that uses predetermined Clip and gain settings that are not adjustable.

Flip-Flop

A transition where the sources selected on the background buses (for example, preset and program) of an M/E are exchanged at the end of a transition. The original preset bus source becomes selected on the program bus, and the original program bus source becomes selected on the preset bus.

FPGA

Field Programmable Gate Array.

Frame

One complete scan of a video image. For interlace video, alternate lines are scanned, and so a frame containing all the picture information consists of two fields.

Frame Rate

The number of frames presented per second. For interlace systems the frame rate is half the field presentation rate.

Gain

An amplification factor applied to a key control signal by a keyer that determines how much, if any, of the background and key fill video will be mixed together at the key edge areas. Low gain (1, or unity) generally results in a linear key.

General Purpose Interface (GPI)

An interface that allows limited remote control of some of a device's functions.

House Sync

Sync generated within a facility that is used as a reference for generating and/or timing other signals.

Hue

The location of a color on the color spectrum (i.e. red, yellow, green, blue). Chroma, hue, and luminance make up the three characteristics of television color.

Interlace

A system of video scanning where the odd and even numbered lines of a picture are presented consecutively as two separate interleaved fields. The two fields required to make a complete picture are called a frame.

Jitter

An undesirable variation in the timing of transitions in a digital signal.

Joystick

A hardware positioner with control of multiple axes.

Key

An effect where a portion of a background scene is replaced by a new video. Key cut and key fill signals are involved, though in some cases the same signal may be used for both (self key).

Key Cut

In key effects, the key cut signal is used to specify where to cut a hole in the background that will be filled with the key fill video. The key cut signal determines the shape of the key effect.

Key Fill

In key effects, the video signal which fills the hole cut in the background video.

Key Invert

Reversing the polarity of a key, such that material formerly keyed out will be keyed in, and vice versa.

Key Mask

A key mode which allows use of a wipe pattern generator to prevent some undesirable portions of the key cut signal from cutting holes in the background video.

Key Priority

The stacking order of multiple keys. The keyed signal with the highest priority appears in front of all the others. Keyed signals appear below higher priority keys and in front of lower priority keys, in a stack. A key priority transition changes the order of the keys without changing the background output.

Key Frame

A complete definition of an effect at a single point in time. Default keyframe values can be set for a suite.

Learn

To save a panel setup using E-MEM.

Linear Key

A key in which the keyer signal is faithfully reproduced in the final key effect. Linear keying preserves soft key edges, and generally has a gain of 1, or unity.

Look Ahead Preview

Video that shows the result of the currently setup next transition.

Looping, Loop-Through

An input that includes two connectors. One connector accepts the input signal, and the other connector is used as an output for connecting the input signal to another piece of equipment. On Kalypso, only the analog reference input is loop though.

Luminance

The brightness of the picture or area of the screen being considered. Chroma, hue, and luminance make up the three characteristics of television color.

Luminance Key

A key effect in which the portions of the key cut signal that are greater in luminance than the clip level cuts the hole in the background scene. Generally used when the key cut and key fill signals originate from the same source. Luminance key clip and gain is adjustable.

Mask

See *Key Mask*.

Matte

Internally-generated color video which can be adjusted for luminance, hue, and chroma. Matte can be used to fill areas of keys and borders.

Matte Fill

Using matte video to fill the hole of a key effect.

Matte Generator

A video generator that produces matte signals.

M/E

Abbreviation of mix/effects, pertaining to the circuitry and controls involved in compositing video signals.

Mix

A transition between two video signals in which one signal is faded down as the other is faded up.

Multiplier

A control circuit in which a control signal is multiplied with one or more input video signals. The resulting video output level varies from full on to full off according to the state of the control signal.

Object

An individual a functional area of a system, typically one of several having similar capabilities.

Pattern Border

A variable width border that occurs at the edges of a wipe pattern.

Pixel

A picture element. A pixel is a digital sample of the luminance and color values of a picture at a single point.

Preference

See *Suite Preference* and *User Preference*.

Profile

Model name of a Video Disk Recorder.

Point of Use

A location in the system where a resource is used. A resource is generally used at different locations at different times. However, with some resources it is possible to use the same resource at different locations at the same time.

Preset Bus

A row of source buttons used to select the source that will be output by that M/E during the next background transition. Also called the B bus.

Preset Pattern

A key effect in which a wipe pattern that has been preset to a desired size and location is used to cut the key hole. The characteristics of the pattern are set using pattern controls.

Preview

A video signal that is viewed before it is output by the switcher. See also *Look Ahead Preview* and *Switched Preview*.

Program Bus

A row of source buttons used to select the source for the current output of that M/E. Also called the A bus.

Programmable Clean Feed

A type of clean feed where different keys can be selected for inclusion or exclusion from the clean feed.

Recall

To restore a previous panel setup that has been learned using E-MEM.

Reclocking

The process of clocking the data with a re-generated clock to remove jitter.

Resource

A capability of the system, typically consisting of a set of circuitry.

Register

A place to store an effect.

Saturation

The degree of purity of a color. Adding white to a color reduces its degree of saturation.

Self Key

A key effect in which a single video signal serves as both the key cut and key fill.

Sequence

On the Kalypso system, a feature allowing a series of E-MEMs to be recalled in a specific order with a single command.

Serial Digital Video

Passing video data bits in serial form (one bit after another), along a single wire. Standard Definition serial digital video (SMPTE 259M) operates at 270 MBits/sec (2 x 13.5 MHz x 10 bits).

Serial Interface

An interface which allows the switcher to be controlled remotely by a computer editor or other serial controller. Data is passed serially between the editor and the switcher at selectable baud (transmission) rates.

Serializer

A device that converts parallel digital information to serial.

Soft Border

A wipe pattern border which is mixed on the edges to give a soft effect.

Soft Edge

A pattern edge between two video signals in which the signals are mixed for a soft effect.

Source

1) An external device providing video. A source may provide only one video signal, or it may provide two signals (key fill and key cut).

2) The video signal(s) from a source, along with the source definition information associated with that source. See *Source Definition*.

Source Definition

A definition of the video signals making up a source, the device type and name of source, and the default processing and other parameters to be used for that source. The Kalypso system is based on source selection, rather than choosing crosspoints.

Source Memory

A feature where the last keying and video processing settings for a source are retained and re-imposed when that source is re-selected. Default source memory values can be set for each source on each bus.

SPOP (Single Press Open)

Automatically opening a related menu when a control panel button is pressed. On the Kalypso system, buttons supporting SPOP are labeled with a graphical indicator.

Stack

See *Key Priority*.

Still Store

A device that captures, saves, and outputs a still video image. On the Kalypso system the the SuperStore option is a still store with additional capabilities, including animation.

Suite

One or more control surfaces configured for use on the same project.

Suite Preference

A collection of settings used to configure a suite to create a consistent working environment for all involved.

Switched Preview

An special output of the system connected to a dedicated monitor. The operator can select and switch various system video signals to that output to preview them.

Sync

(1) General term for a synchronizing signal or signal component. Digital systems generally employ an analog external timing reference signal (such as color black or tri-level sync) to synchronize different pieces of equipment. Within the digital signal itself, however, synchronizing information is carried by special digital codes inserted at the beginning and end of each active line.

(2) In analog television systems, sync is the portion of the video signal which occurs during blanking and is used to synchronize the operation of cameras, monitors, and other equipment. Horizontal sync occurs within the blanking period in each horizontal scanning line, and vertical sync occurs within the vertical blanking period. A color black signal is often used for synchronizing different pieces of analog equipment.

Tally

A light which lights up to indicate that the associated button has been selected or to indicate that the associated input to the switcher is on-air.

Terminate, Termination

To complete a circuit by connecting a resistive load to it.

Transition

A change from one picture to another. Cut, mix, and wipe are transitions.

User Preference

A collection of control surface configuration settings available to a user that allows customizing of the working environment.

Vertical Interval

The portion of the video signal that occurs between the end of one field or frame and the beginning of the next.

Video Fill

A video signal used to fill the hole made by a key cut signal.

Video Path

The path that video takes through the switcher.

Wash Matte

A type of matte that contains two elements rather than a single flat color. For example, a wash matte can have one color that mixes gradually across the screen to another color.

Wipe

A transition between two video signals that occurs in the shape of a selected pattern.

Wipe Pattern Generator

Circuitry that creates patterns that can be used to create wipe transitions, preset patterns, key masks, and matte washes.

Work Buffer

An active area of memory where the current effect parameters are stored, allowing the operator to use and modify the effect without changing the data stored E-MEM.

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