GRASS VALLEY GROUP

Release Notes

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KALYPSO
VIDEO PRODUCTION CENTER

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Contents

Kalypso Release Notes

Introduction . . . 1
New Features in Release 5.1 . . . 1
Changes in Release 5.1 . . . 2
  Earlier Changes in Release 5.0 . . . 2
  Electronic Documentation . . . 3
Hardware Installation . . . 3
  Control Processor RAM Upgrade . . . 3
  Keyer Subpanel Button Legend Changes . . . 4
  Transform Engine Option Installation . . . 5
    TE Module Installation . . . 5
    Transform Subpanel Button Locations . . . 6
  Kalypso System IP Addresses . . . 7
    Changing IP Addresses . . . 7
    Replacement Reference Module . . . 7
    Profile/OmniBus . . . 8
Software Installation . . . 9
  Software Versions . . . 9
    Upgrade From Version 5.0 Software . . . 9
    Upgrade From Version 4.X Software . . . 9
    Upgrade From Version 3.X Software . . . 9
    Upgrade From Version 2.X Software . . . 9
  Installing Kalypso System Software . . . 10
  Drain NVRAM Procedure . . . 15
  OmniBus Installation and Configuration . . . 16
Source Hold Operating Notes . . . 17
Path Control for Transform Engines . . . 18
  Introduction . . . 18
    Paths . . . 18
    Path Vectors . . . 20
    Vector Values . . . 20
    Tension Control . . . 20
    Continuity Control . . . 22
    Bias Control . . . 24
  Path Control Menus . . . 26
    Path Controls . . . 26
    Clear Transforms . . . 27
Source Memory On/Off Control . . . 28
Field Dominance Control . . . 29
    Command Processing . . . 29
Learn Modify Operating Notes . . . 30
Chroma Key Operating Notes . . . 31
  Auto Setup . . . 31
  Manual Chroma Key Adjustments . . . 32
    Primary Suppression . . . 33
    Key Controls . . . 34
    Secondary Color Suppression . . . 36

Other Chroma Key Controls 37

Kalypso 5.0 Release Notes

Introduction. 39
Hardware Installation 39
Firmware Change Procedure (Upgrade from 4.X and before only) 39
FrameMon Upgrade (Upgrade from 3.0.X and before only) 41
Touch Screen Software Update (Releases Earlier Than 3.X). 42
Local Aux Panel Button Changes (Releases Earlier Than 3.X) 44
Main Panel Configuration Switches. 45

Version 5.1

February, 2001

Kalypso Release Notes

Introduction

This document provides installation and other information specific to Kalypso Video Production Center Release 5.1 software.

In addition, a description of chroma key setup, including manual controls, is provided (page 31). These capabilities have been available since Release 3.0 but were not completely documented.

CAUTION Additional Control Processor RAM is required for Release 5.1. Installing this release without upgrading the RAM can cause unreliable system operation. See page 3 for RAM installation instructions.

Note Previously documented Non-Volatile RAM (NVRAM) reset procedures were incorrect. Clearing NVRAM is usually not required during software update. However, if you wish to clear NVRAM, see page 15 for the correct procedure.

Note Each E-MEM effect can hold a maximum of 64 keyframes.

New Features in Release 5.1

- Source Hold (see page 17)
- Path types for Transform Engines (see page 18)
- Transform Engine Clear Transforms controls available in the Transform Engine menu (see page 27).
- Source Memory On/Off control in the Source Memory menu (see page 28).

- Field dominance command control available in the Video Settings menu (page 29).
- EMEM Learn Modify (see page 30).

Changes in Release 5.1

- In Release 5.0 and before, Default Keyframe information was saved to NVRAM, and restored on power up or reset. In Release 5.1, Default Keyframe information is saved and loaded as a Suite Pref.
- Several control knob direction and scaling ranges have been made more consistent for ease of use.
- Background level controls have been added to the Daily Setups, E-MEM Prefs menu.
- When Learning an E-MEM Sequence, pressing a register number twice now removes the link to the next register, making it the last register in the sequence (same as the Model 4000 switcher).
- The Hierarchy menu has been renamed to Home.

Earlier Changes in Release 5.0

- The mapping of some Kalypso sources to DPM sources were changed in Release 5.0 (Table 1) to make them more compatible with GVeous using CPL. These changes are also in effect in Release 5.1. The same mapping is used with the Krystal CPL interface. Any DPM effects built with changed sources will not run with the intended source and will have to be rebuilt. CPL control of switcher aux buses (either GVeous or Krystal) can also be affected by this change.

Table 1. Kalypso Source ID to DPM Source Mapping

DPM Source Number	Kalypso Source Name	Kalypso Source ID Number
0	Black	118
1 through 57	1 through 57	1 through 57
58	Still Store 1	121
59	Still Store 2	122
60	M/E 1 pgA	93
61	M/E 2 pgA	99
62	M/E 3 pgA	105
63	PgPst pgA	111

Electronic Documentation

A complete set of Kalypso documentation (User Manual, Installation and Service Manual, Release Notes, and related documents) is included on the *Kalypso Documentation CD*. An OmniBus Installation Instruction manual is also available for Profile and VTR control options. These files are in .pdf format. The Adobe Acrobat Reader application, required to view the files, is also included on the CD-ROM for installation. The electronic documentation can be viewed on screen or printed out.

Note Hard copy versions of these manuals are available from Grass Valley Group Customer Service.

To View Electronic Documentation:

1. Insert the CD into any PC.
2. Open the **MANUALS.PDF** file.
3. Click on the document name or category. The document will open in Acrobat Reader, or you will go to another index page from which you can choose a document from that category.
4. To return to the index to select another document click the back arrow in the Acrobat Reader tool bar, or drop down the **File** menu and select **MANUALS.PDF**.

Hardware Installation

This document assumes an initial hardware installation has been completed. Refer to the Kalypso *Installation and Service Manual* for basic installation information.

Control Processor RAM Upgrade

256 MB of Control Processor RAM is required for Release 5.1. Installing this software without upgrading the RAM can cause unreliable Kalypso system operation. The required DIMM is included in the Release 5.1 software package. During the RAM upgrade, the Kalypso system will not be operational. Allow five minutes for this procedure (including reboot time).

CAUTION You must remove the existing DIMM and replace it with the new one. Do not leave in the old DIMM.

To Install Additional Control Module RAM:

1. Using antistatic precautions, remove the Control module from the Video Processor frame slot A1 and lay it on a static free flat surface, component side up.
2. Push out the tabs above and below the existing 128 MB DIMM, then tilt it sideways and remove the DIMM from the slot.
3. Insert the new 256 MB DIMM at a slight angle into the newly empty slot, and then tilt into position so it locks into place.
4. Replace the Control module into Video Processor frame slot A1.
5. Reboot the Video Processor frame by pressing the **Reset** button on the lower edge of the Control module.

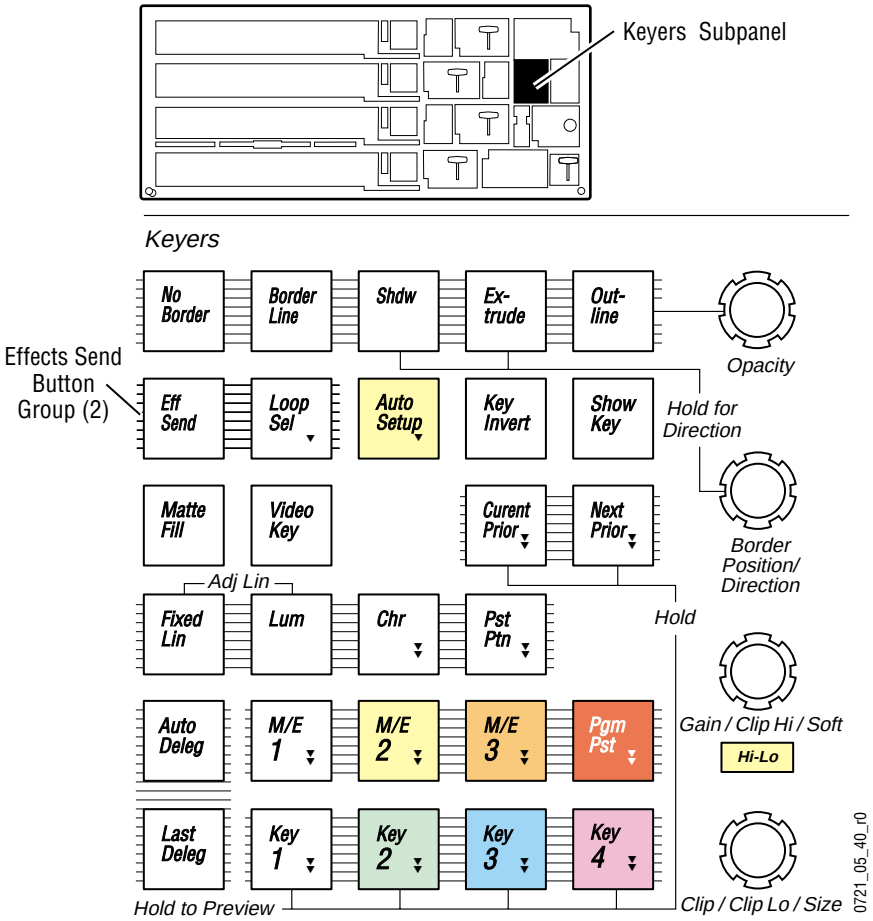
Keyer Subpanel Button Legend Changes

Two Keyers subpanel button functions have changed in Release 5.0. Replacement film for these buttons are included in the Release 5.1 software package. Remove the button overcap, replace with the new film, and replace the overcap.

- Replace **T-Form Loop** with **Eff Send**
- Replace **Ext Loop** with **Loop Sel**

The correct Keyers subpanel button placement is shown in Figure 1.

Figure 1. Keyers Subpanel



Transform Engine Option Installation

TE Module Installation

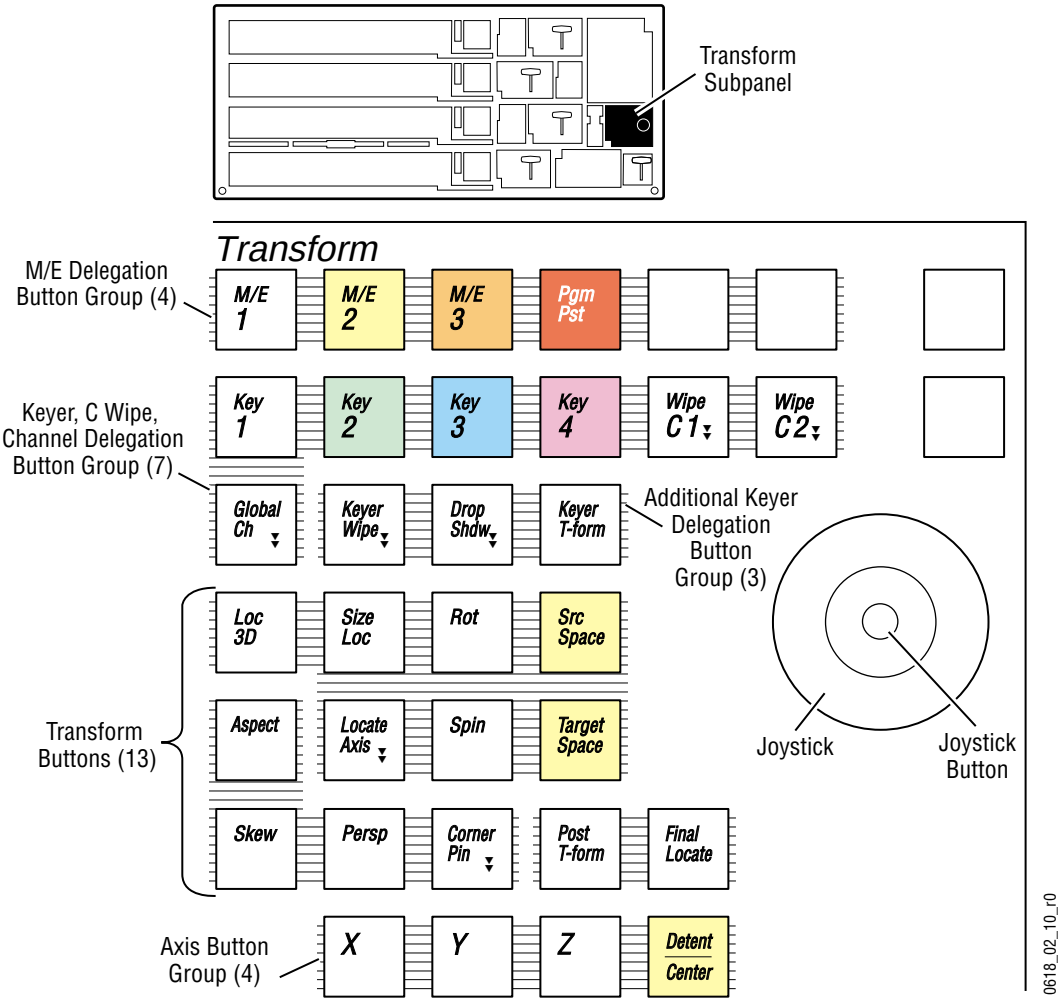
Up to two Transform Engine modules can be installed in the Kalypso Video Processor frame. Using anti-static practices, insert the modules into slots A-15 and A-16 behind the front door of the Video Processor frame. The module in Slot A-15 supports Transform Engines 1-3, and the module in slot A-16 supports Transform Engines 4-6.

Note If you must hot swap a Transform Engine module, the D8, D9, D10, D11, D12 LEDs on the module should start flashing after module insertion. If none of the LEDs are flashing after a few seconds, press the reset button (SW1) on the TE board.

Transform Subpanel Button Locations

Some early Kalypso systems shipped with incorrectly placed Transform subpanel buttons. The proper arrangement has the **Aspect** button left of the **Locate Axis** button, and the **Global Ch**, **Keyer Wipe**, **Drop Shdw**, and **Keyer T-Form** buttons left to right, as shown in Figure 2. If not correct, rearrange the buttons on your panel to the proper locations.

Figure 2. Transform Subpanel



Kalypso System IP Addresses

The Kalypso Video Production Center is shipped with default IP addresses (Table 2). These default addresses can be used if the Kalypso system is operating on a dedicated network with no other devices present. Note that these addresses can be changed during installation, and so your system may not be using the defaults:

Table 2. Default IP Addresses

Device	IP Address
Video Processor frame	192.168.0.20 (Facility LAN)
	192.168.1.21 (Panel LAN, not used in 5.1)
	192.168.0.22 (Still Store)
Main panel	192.168.0.26
Menu panel	192.168.0.25
	255.255.255.0 (Subnet Mask)
Local Aux panel	192.168.0.27

Note Though the Panel LAN is not used in Kalypso release 5.1, the Video Processor frame still requires a Panel LAN IP address that is different from the Facility LAN.

Changing IP Addresses

CAUTION If other devices are present on the network (including a different Kalypso system) make sure every device has a unique IP address before it is connected to the network.

If you change the IP address of a Kalypso device, the IP address settings stored in the other devices must also be changed so they match. See the *Kalypso Installation and Service Manual* for specific procedures for changing IP addresses.

Note The Video Processor frame IP address the Menu panel uses to communicate with the frame is set on the Menu panel in the Eng Setup-Misc menu. Press the **Eng Setup** button on the Menu panel, then touch the **Misc** category selection button to access this menu.

Replacement Reference Module

Video Processor IP addresses and other essential information resides in PROMs in the Reference In module (mounted in the rear of the Video Processor frame). If a Reference In module is swapped, the PROMs from the original module must be moved to the replacement module to prevent network communications problems and preserve authorization information.

Profile/OmniBus

If you install the OmniBus database file to use the Profile interface (KAL-IF-PROFILE), a default Profile Video Disk Recorder (VDR) IP address (192.168.0.10) and “Profile 1" name is configured automatically when the OmniBus software is loaded. The Profile used with the Kalypso system needs to be configured with this default address. Otherwise, the OmniBus system configuration needs to be changed. OmniBus configuration procedures are outside the scope of this document, but some information is available in the separate *OmniBus Interfaces Installation* manual included on the Kalypso documentation CD.

The VTR interface option (KAL-IF-VTR) also requires an IP address. The hardware for this option does not ship with a default address. This will need to be set by the installation engineer to an IP address that is compatible with the Kalypso and OmniBus system components.

Software Installation

Software Versions

Kalypso systems ship with the latest software installed. If Release 5.1 software is already installed, there is no need to update the system. Systems running Release 1.8.0 and later software can display the software versions of all their system components. Press the **Status/Diags** Menu panel button to access the Versions menu.

Kalypso systems running any software versions earlier than 5.1 should be updated. You can install Release 5.1 directly from any previous release, without having to install intermediate releases. Some additional upgrade steps may be required, depending on the version you are upgrading from.

Upgrade From Version 5.0 Software

- Install Release 5.1 software, see page 10.
- Keyers subpanel button legend changes, see page 4.

Upgrade From Version 4.X Software

All above steps, plus:

- Install replacement PROM, see page 39.

Upgrade From Version 3.X Software

CAUTION If you are upgrading from 3.0.X software, you must perform a FrameMon upgrade before installing 5.1 software.

All above steps, plus:

- Update the FrameMon kernel, see page 41.

Upgrade From Version 2.X Software

All above steps, plus:

- Update Touch Screen Software, see page 42.
- Local Aux button legend change, see page 44.
- Release 3.0 or later software must be installed before the Still Store software can be installed. Install all the software components except the Still Store, reset all the devices, then install only the Still Store software and power the Video Processor frame off and on (do not just reset the frame).

Installing Kalypso System Software

CAUTION Additional Control Processor RAM is required for Release 5.1. Installing this release without upgrading the RAM can cause unreliable system operation. See page 3 for RAM installation instructions.

The Kalypso Software Update Tool installs various software elements to the Menu panel, Video Processor frame, Main panel, and Local Aux panel. The Update Tool and all the associated software is provided on CD-ROM. The Update Tool is also installed on the Menu panel Windows NT system, and so can be run without the CD.

A complete Kalypso software install usually takes less than 15 minutes. However, if the new software requires an update to M/E module flash memory, an additional 30 minutes may be required.

A mouse and PC computer keyboard are useful for a standard software installation. However, if IP addresses are to be changed from their defaults, a mouse and keyboard are essential.

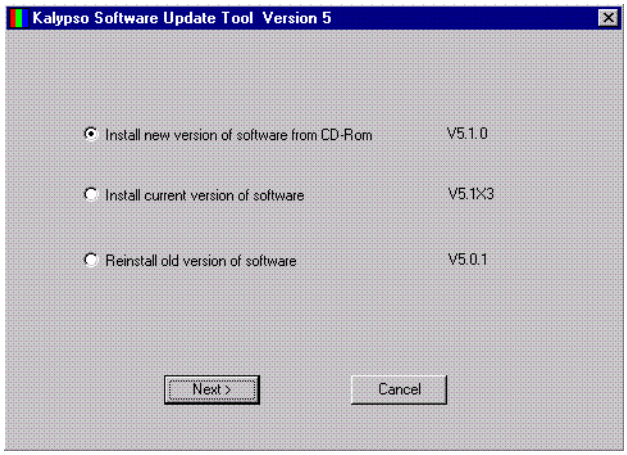
The basic Kalypso software installation will be discussed first. This procedure needs to be performed on all systems being updated.

Note A dialog box appears if the Menu panel touch screen driver is out of date or not installed. The driver can be installed immediately by cancelling the Kalypso software installation, or can be installed after you install the Kalypso software. See *Touch Screen Software Update (Releases Earlier Than 3.X)* on page 42 for instructions.

1. If you haven not already done so, save your system configuration files and E-MEM registers to disk as backup.
2. Exit the currently running Kalypso Menu software. Kalypso software is exited by touching the upper right message area of any Kalypso menu.

3. Insert the Kalypso Software CD into the CD-ROM drive. The Kalypso installation program will automatically load and the following Kalypso Software Update Tool screen appears (Figure 3).

Figure 3. Kalypso Install Screen 1

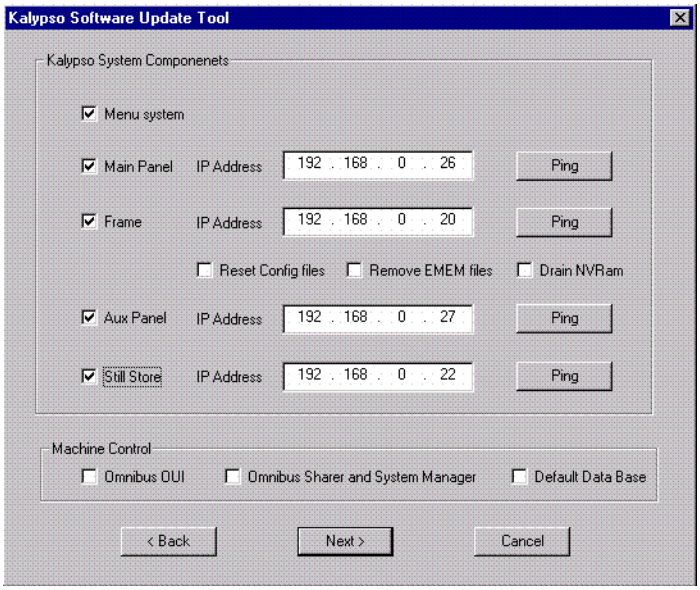


Three installation options are available.

- Install new version — Installs new software from CD-ROM only. Generally this is the option you should select.
- Install current version — Re-installs the currently loaded version of software. This is generally used to install the current software on new Kalypso hardware attached to the system. The CD-ROM disk is not required for this option.
- Reinstall old version — Installs the previously loaded software from a Kalypso system backup directory. This option is included for safety, and generally should not be necessary. The CD-ROM disk is not required for this option.

4. Select the installation option then touch the **Next>** button. The second Kalypso Software Update Tool screen will appear (Figure 4).

Figure 4. Kalypso Install Screen 2



The following five Kalypso system component installation options are available. Only the software of the selected targets will be affected.

- Menu System – Installs the Kalypso menu application software onto the NT system disk.
- Main Panel – Installs software to the Kalypso Main panel. For Release 5.1 the Main panel must be on the same LAN as the Menu system (the Facility LAN).
- Frame – Installs software to the Video Processor frame. The three extra check boxes (Reset Config Files, Remove EMEM files, Drain NVRam) are not used for normal software updates.

Note The **Drain NVRam** check box does not work reliably during a normal software update. See page 15 for the correct procedure.

Note The **Reset Config Files** and **Remove E-MEM** files check boxes do work during a software update, but these files are now compatible across different versions (including recent Beta releases) so should not need to be used.

- Aux Panel – Installs software to the Local Aux panel. For Release 5.1 the Local Aux panel must be on the same LAN as the Menu system and Main panel (the Facility LAN).
- Still Store – Installs software to the optional Still Store module.

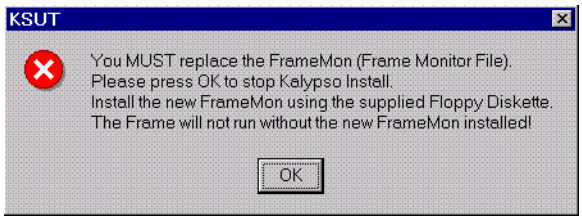
Note The Machine Control check boxes are used for OmniBus software installation only. See the *OmniBus Interfaces Installation* manual included on the Kalypso documentation CD for specific instructions.

5. Valid IP addresses must be specified so the software is installed to the correct destinations. You can confirm a device exists at the address with the **Ping** buttons on the screen. Use a standard computer keyboard and mouse connected to the ports on the rear of the Main panel to change the IP addresses, if necessary.

6. When the installation options and IP addresses are correct, touch the **Next>** button.

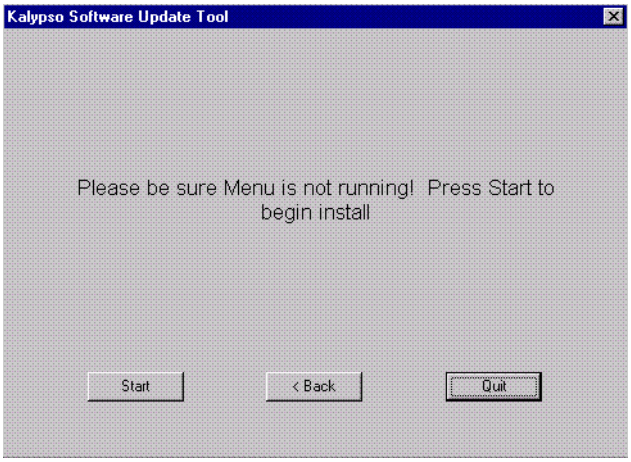
   - If an older FrameMon kernel is present, a message appears stating you must replace the FrameMon file (Figure 5). Press **OK** to stop the Kalypso installation, install the new FrameMon from floppy disk, and then install the Release 5.1 software. See *FrameMon Upgrade (Upgrade from 3.0.X and before only)* on page 41.

Figure 5. FrameMon Upgrade Warning Message



   - If the FrameMon kernel has been upgraded, the third Kalypso Software Update Tool screen will appear (Figure 6). The information on these remaining installation screens will vary, depending on what installation options have been selected.

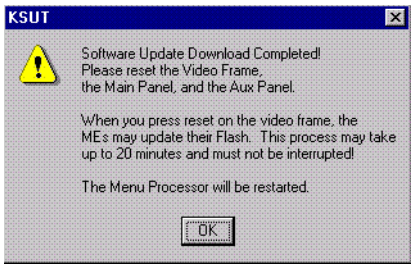
Figure 6. Kalypso Install Screen 3.



7. Click on the **Start** button to begin the actual file transfer to the selected targets. Clicking on the **Quit** button before the install has been started will exit without making any changes. During the installation process, a progress bar is displayed and the components being loaded are identified.

8. When the file transfers complete, a screen similar to Figure 7 appears indicating the need to reset hardware that has been updated. Select **OK**.

Figure 7. Kalypso Install Reset Prompt



CAUTION All components of the Kalpso system updated with new software (Menu system, Video Processor, Main panel, Local Aux panel) must be reset.

9. The Menu panel will automatically log off and back on to reset itself. You now need to reset all the other hardware system components you selected for update (see the *Kalypso Installation and Service Manual* for reset instructions).

Note If the new software includes M/E module flash memory updates, it may take up to 30 additional minutes for these Video Processor modules to initialize. The Kalypso system must not be disturbed during this process. Frame Not Connected messages will be displayed during module initialization. During the flash memory update LEDs on each M/E module display a unique counting sequence.

10. When Menu panel initialization completes (which may occur before the Video Processor initializes) the Kalypso Menu application will run and display its startup screen (Figure 8).

Figure 8. Kalypso Startup Screen



Drain NVRAM Procedure

To drain the Kalypso system NVRAM:

1. Set the Video Processor frame boot dial to position **1**.
2. Reset the Video Processor frame.
3. Run the Kalypso Install program.
4. Check the middle box on the first screen (**Install current version of software**), then press **Next**.
5. Check only the **Drain NVRam** box on the second installation screen. All other check boxes must be blank.
6. Press **Next** to continue, then press **Start**. The system's NVRAM will be cleared.
7. Set the Video Processor frame boot dial back to position **0**.
8. Reset the Video Processor frame.

OmniBus Installation and Configuration

OmniBus software installation and configuration (only needed for external machine control) is discussed in the separate *OmniBus Interfaces Installation* manual included on the Kalypso documentation CD.

Source Hold Operating Notes

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. Different types of holds are available for choosing which sources are subject to change during an effect recall and/or run:

- Source Override (holding down a source selection button),
- Bus Hold (turning on the **Hold** button on a bus on an M/E), and
- Source Hold (saving hold information in the effect itself).

A hold is imposed whenever one or more type of hold is in force.

Source Hold is available in Release 5.1, and is keyframable. Source Hold is controlled from a menu, accessed by pressing the **E-MEM** button on the Menu panel, then touching the **Source Holds** category selection button (Figure 9)

Figure 9. Source Holds Menu



Select the buses you wish to hold by touching its button to illuminate the green indicator, then learn, insert, or modify the keyframe. You can choose different buses to hold on each keyframe in your effect.

Path Control for Transform Engines

Introduction

In previous releases, only S-Linear Transform Engine path interpolation was supported. Release 5.1 supports full Transform Engine path control, which provides versatile and precise control of transform effect dynamics.

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 10):

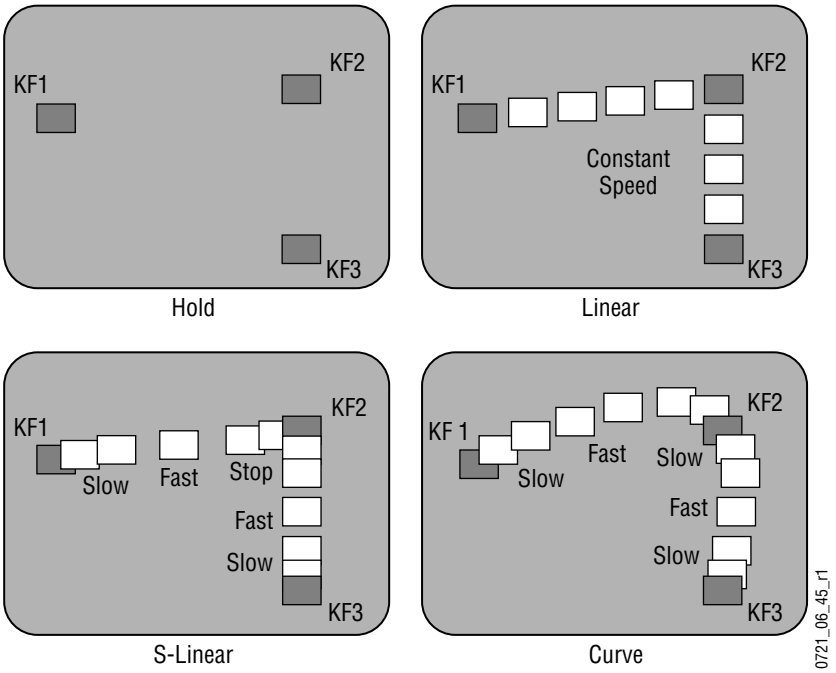
HOLD — No interpolation. Keyframes hold their values for their durations, then change all at once for the next keyframe.

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 10. 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 keyframe, and the path through the middle keyframe is curved.

CONTINUITY — Determines the angle of the path into and out of the keyframe.

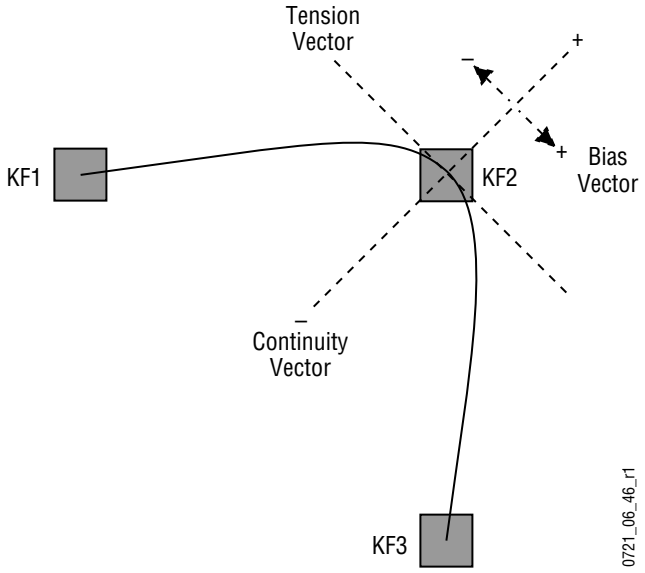
BIAS — Determines whether the path will be pulled towards the previous or the following keyframe.

In the following examples, a physical path is shown between three keyframes. 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 keyframe. The path through KF2 is parallel to an imaginary line drawn between KF1 and KF3 (Figure 11).

Figure 11. Path Vectors



Vector Values

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

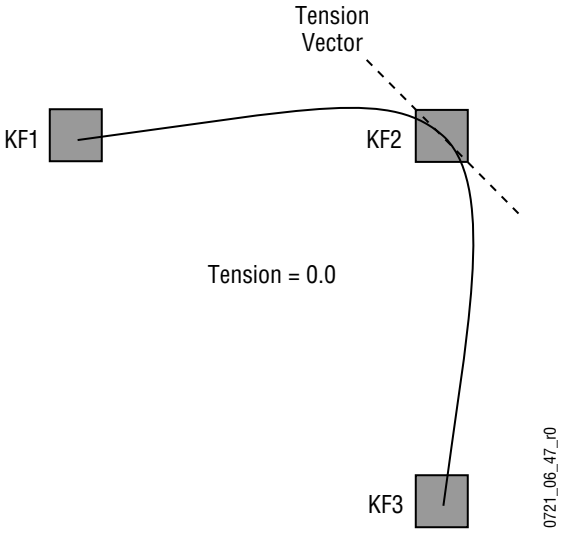
Tension Control

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 12).

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

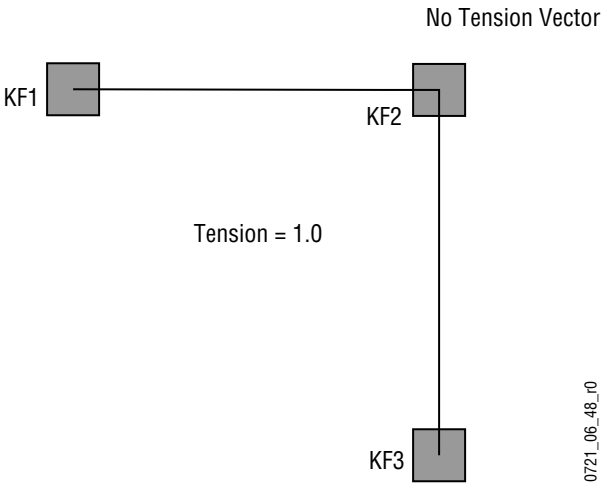
equal distance into and out of the keyframe, and the path through the middle keyframe is curved. The unmodified KF2 is said to have a correction value of 0.0.

Figure 12. Tension Control Setting Zero



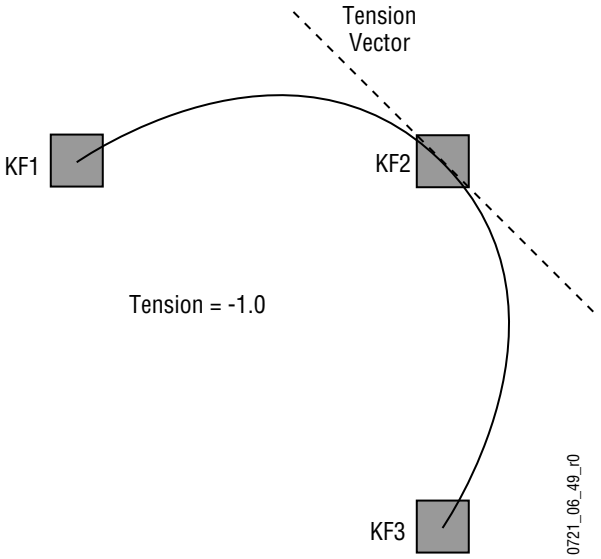
In the example below, the **TENSION** control is increased to 1.0, so that the Tension vector is shortened to non-existence through KF2 (Figure 13). The path enters and leaves the middle keyframe in a straight line as it takes on an S-Linear motion; decelerating as it enters the middle keyframe and accelerating as it leaves.

Figure 13. Tension Control Setting 1.0



In the example below, the **TENSION** control has been set to -1.0. This lengthens the Tension vector, causing the path through the middle key-frame to be longer and broader (Figure 14). The longer path will appear to make the image speed up through KF2 as it travels from KF1 to KF3.

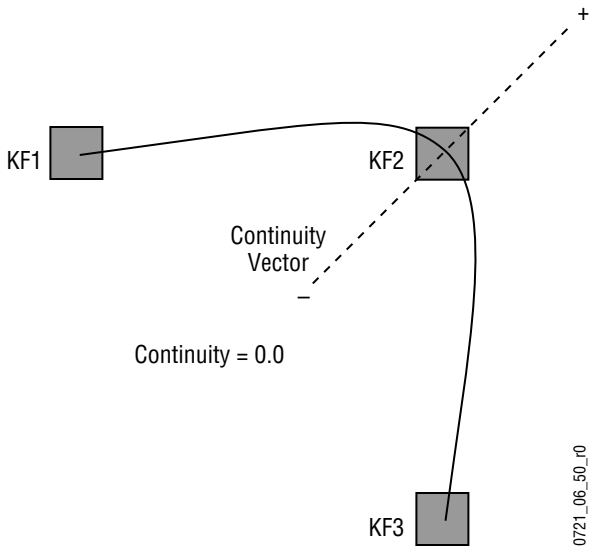
Figure 14. Tension Control Setting -1.0



Continuity Control

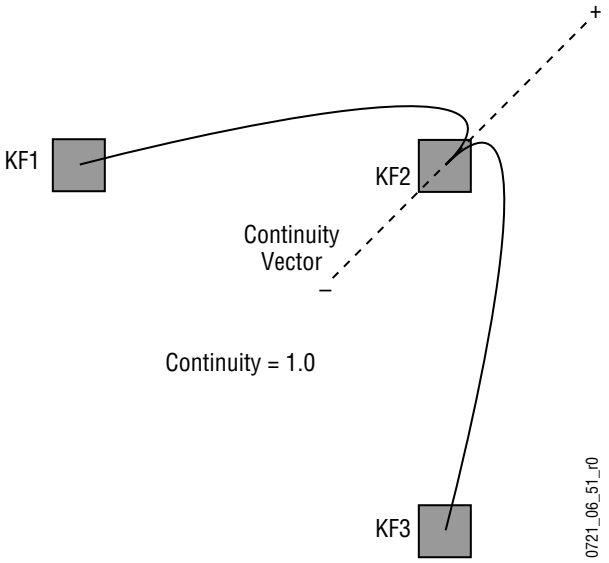
The continuity adjustment determines the angle of the path into and out of the keyframe. It is represented by a vector 90 degrees to the tension vector (Figure 15). The unmodified path shown is identical to the unmodified path of the other controls.

Figure 15. Continuity Control Setting Zero



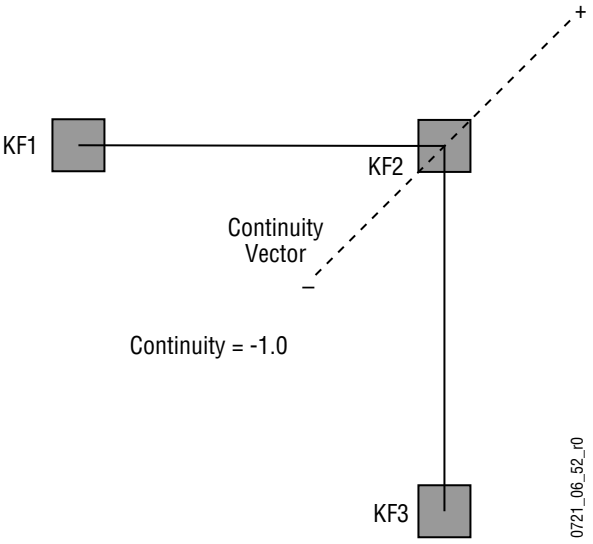
With continuity set to 1.0, the entry path through the keyframe is pulled positively along the continuity vector. The effect of 1.0 continuity is that of motion dropping into and then out of the keyframe, similar to a bouncing ball (Figure 15).

Figure 16. 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 17).

Figure 17. Continuity Control Setting -1.0

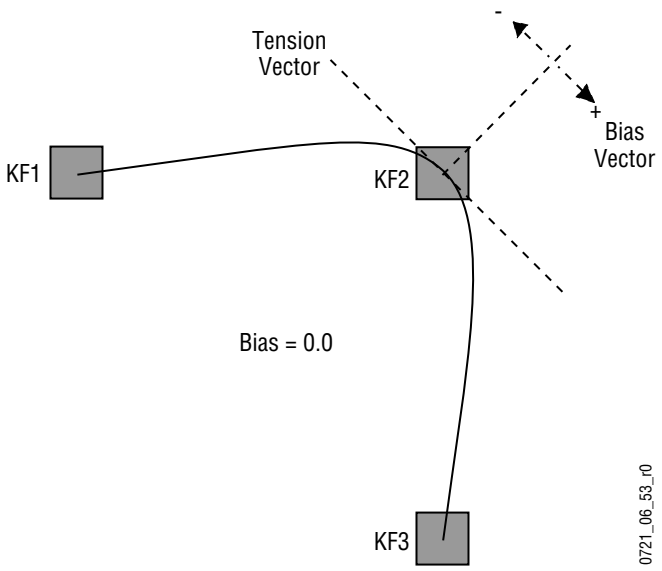


Bias Control

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 18.

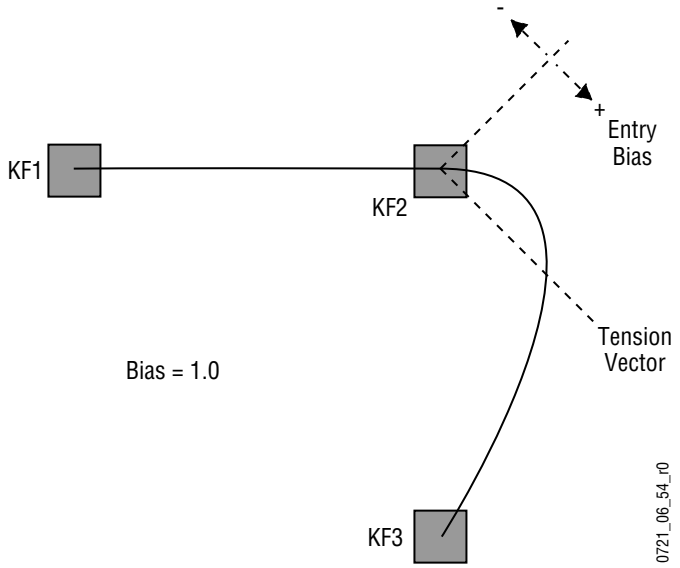
Note A Tension vector must be present for Bias control to be available.

Figure 18. Bias Control Setting Zero



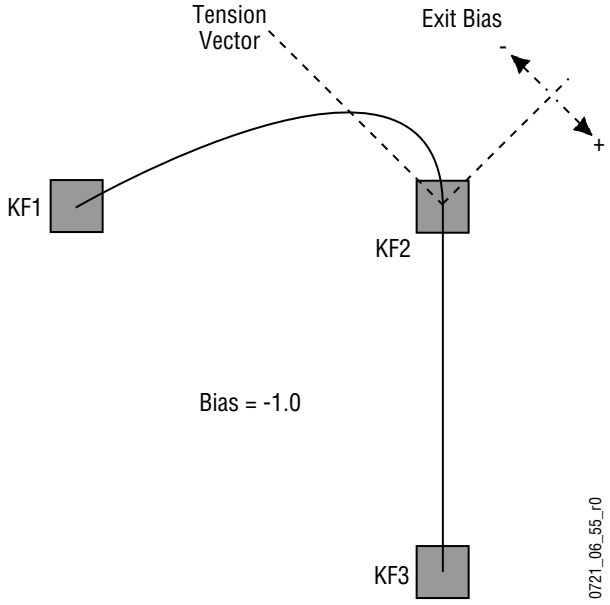
With the bias set to 1.0, the path is pulled towards the following keyframe. Entry into and exit from the keyframe is a straight line from the previous keyframe, and the path of the effect travels completely through KF2 before turning towards KF3 (Figure 19).

Figure 19. Bias Control Setting 1.0



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 keyframe (Figure 20).

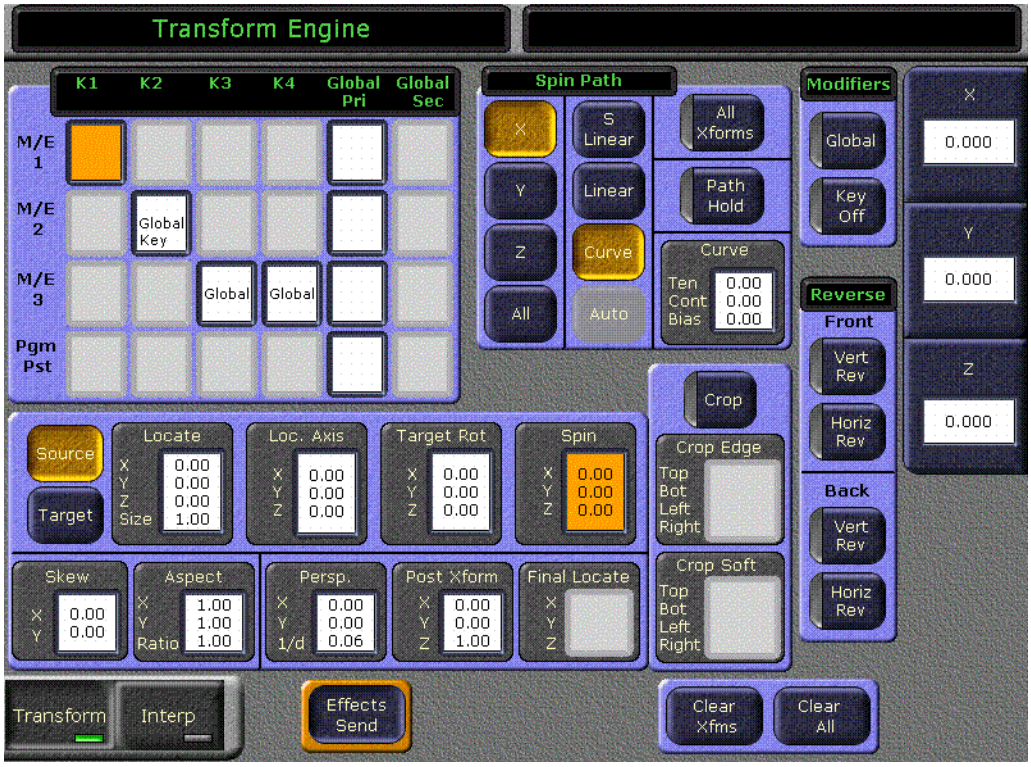
Figure 20. Bias Control Setting -1.0



Path Control Menus

In Release 5.1 Transform Path Control and Clear Transform controls are included in the Transform Engine Menu (Figure 21).

Figure 21. Transform Engine Menu



Path Controls

The path control pane is located to the right of the data pad delegation matrix. **S Linear**, **Linear**, and **Curve** interpolation touch buttons are available. When **Curve** is selected, soft knob controls for **Tension**, **Continuity**, and **Bias** soft knob become available. You can also turn off transform interpolation and hold each keyframe's values with the **Path Hold** touch button. See page 18 for an explanation of path controls.

To specify a path for a transform, select the category of transform with the data pads at the lower area of the screen. Then select the path type in the upper middle pane, which will be labeled with that transform category. When **Curve** is selected, use the soft knobs or associated data pads to enter values for tension, continuity, and bias. See page 20 for an explanation of these controls.

All transforms except **Spin** apply the same path control to all that transform's parameters. **Spin** allows different paths to be specified for each axis of the transform. When **Spin** is selected, the **X**, **Y**, **Z**, and **All** touch buttons are activated. The selected path will only be applied to the specified axis.

Clear Transforms

Two buttons located on the lower right side of the Transform Engine menu (Figure 21)are used to clear transform settings.

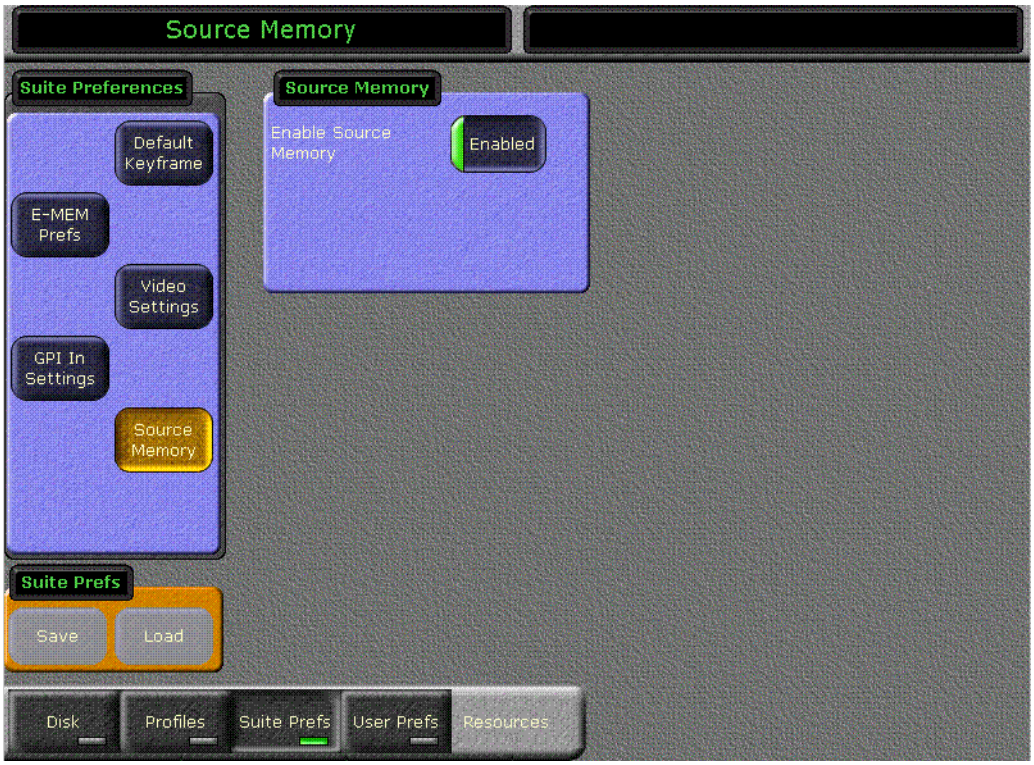
Clear Xfms – Sets all transform parameters of the delegated keyer (or global channel) to Default Keyframe values. The transform parameters reside in the panels below the data pad delegation matrix, and do not include Crop.

Clear All – Sets all transform parameters and all other menu settings, including Crop values, of the delegated keyer to Default Keyframe values.

Source Memory On/Off Control

The Source Memory menu has been added to Suite Prefs, allowing Source Memory to be enabled and disabled (Figure 22).

Figure 22. Source Memory Menu



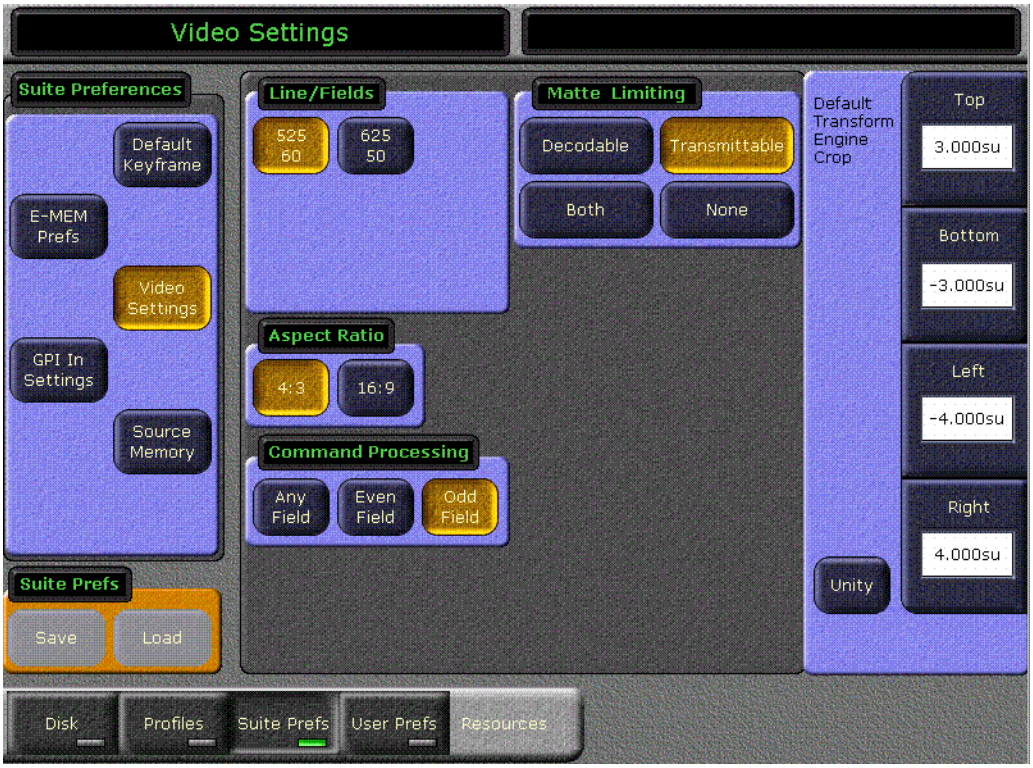
When **Enabled** (green indicator on the button is illuminated), key type and source memory settings will change as different sources are selected on that bus. When disabled (green indicator off), the current key type and source memory settings will not change when different sources are selected on that bus.

Each source's memory actually contains four separate groups of settings, one for each type of key (**Fixed Lin**, **Lum**, **Chr**, and **Pst Ptn**). Changing the key type of a currently selected source will select the source memory settings for that new key type, regardless of whether source memory is enabled or disabled.

Field Dominance Control

Release 5.1 supports control of field dominance. These controls reside in the Video Settings menu, accessed via **Daily Setups**, **Suite Prefs**, **Video Settings** (Figure 23).

Figure 23. Video Settings Menu



Command Processing

These controls determine when commands (like source selections or the initiation of mixes or wipes) will be enacted by the Kalypso system. These controls can be useful for consistent match frame editing.

Odd Field – The action will always occur at the start of the next odd field. This is the normal setting when the video output will be edited. It is compatible with most video editing systems that use the frame boundary for edits.

Any Field – The action will occur at the start of the next field, either even or odd. Use this setting if you are not going to edit the video output and want the fastest response.

Even Field – The action will always occur at the start of the next even field. This is probably only appropriate if your edit controller is set to edit in the middle of a frame.

Learn Modify Operating Notes

Each E-MEM register contains header information, along with keyframe data. This header information applies to the entire effect and is not keyframable. 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 5.1 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:

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**.

Chroma Key Operating Notes

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.

Section 3 - Concepts of the *Kalypso User Manual* includes chroma key background information useful for understanding the chroma key controls. The following information provides more detailed instructions on how to setup a chroma key using the Auto Setup feature and the manual controls in the Keyer menu.

Auto Setup

The first step of setting up most chroma keys is to use the **Auto Setup** button in the Keyers subpanel. You will select the chroma key backing color that will be replaced. Auto Setup automates the first steps to achieving a chroma key. Additional manual adjustments may be required after you use Auto Setup.

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. Press the **Auto Setup** button. Preview for that M/E will now display the chroma key source with a superimposed cross hair cursor. The cursor actually represents a box of 16 x 16 pixels.
6. Use the joystick to position the cursor on the backing color, then press the button on top of the joystick. The hue of the chroma key will setup automatically using the average of the colors selected by the cursor box.

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.

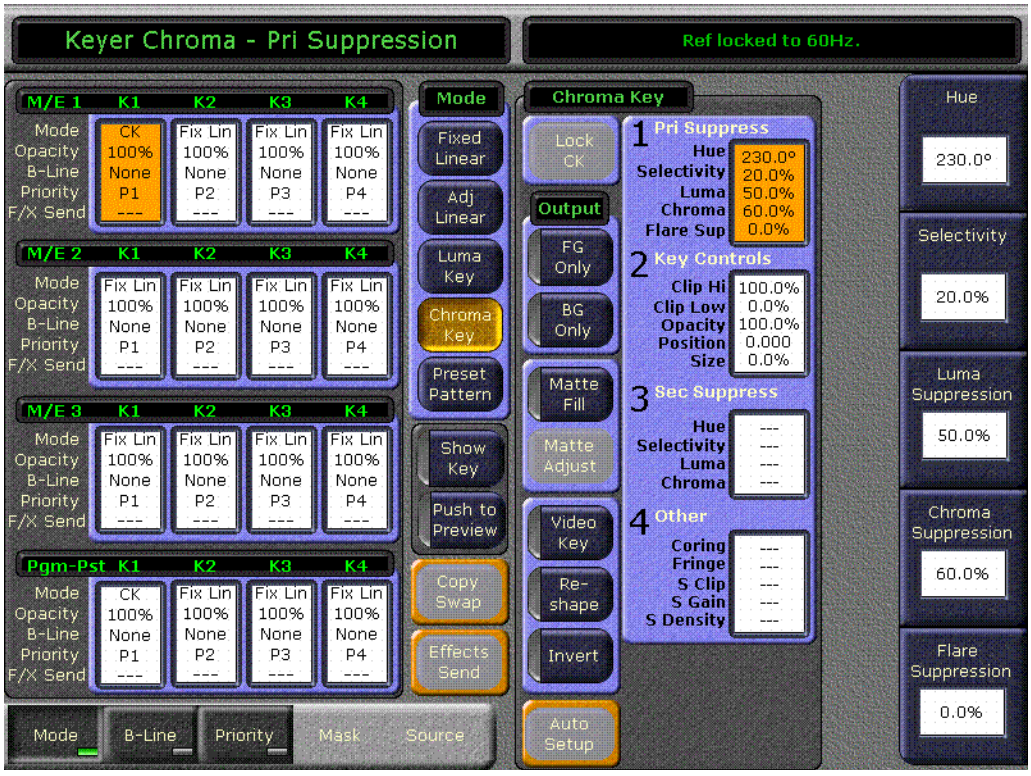
Manual Chroma Key Adjustments

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 setup 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 setup 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 setup 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.

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 setup on the left side of the screen, then touch the **Chroma Key** Mode button (Figure 24).

Figure 24. Keyer Chroma Menu, Pri Suppress Controls



Primary Suppression

Primary suppression is the most critical setting, and the easiest to do. Auto Setup should take care of this, but manual adjustments can be made if desired. However, if primary suppression is set wrong it will be impossible to achieve a good chroma key with the other controls. Touch the stage 1 **Pri Suppress** data pad to activate these controls (Figure 24).

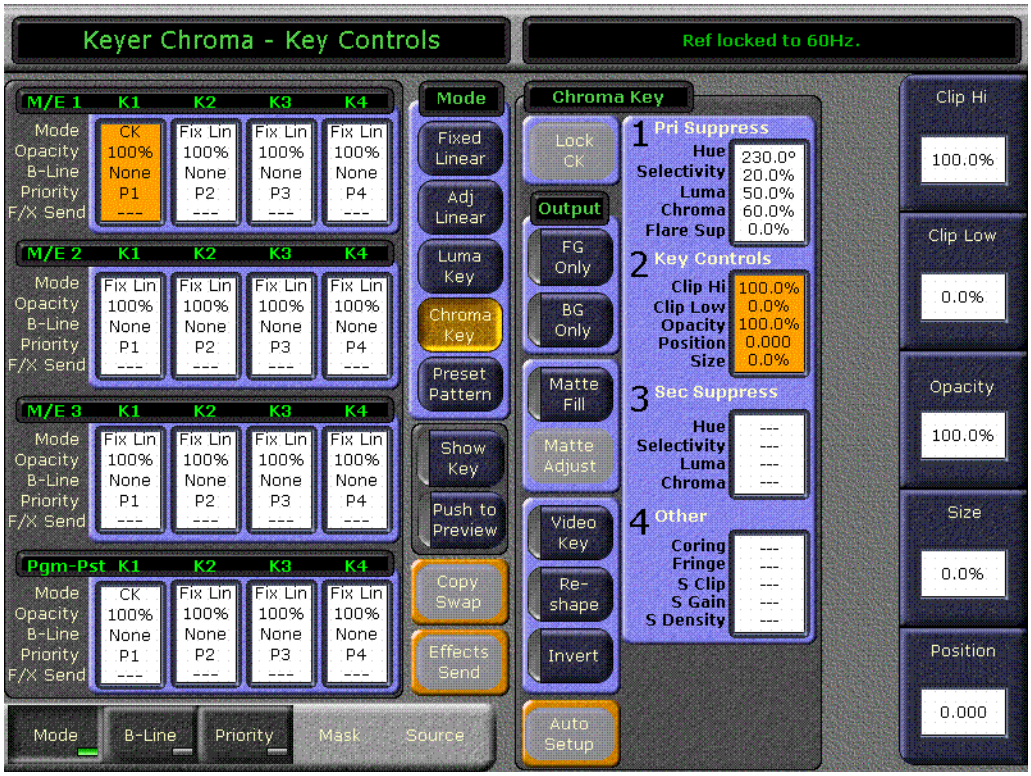
Hue, selectivity, luma, and chroma suppression eliminate the backing color. **Hue** should center on the primary color of the backing area of the foreground scene, and this is usually set with Auto Setup. **Selectivity** should be set as low as possible without including colors that should not be suppressed. **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. **Chroma Suppression** removes color from the backing area. 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. 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 these adjustments described here may need to be revisited later.

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

Touch the stage 2 **Key Controls** data pad to activate these controls (Figure 25). You can now manually adjust keyer clipping controls.

Figure 25. Key Controls



The purpose in adjusting **Clip Hi** 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.

1. Select **Show Key** in the Keyer menu and look at the M/E preview output on a picture and waveform monitor.

2. 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.

3. 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.

4. Check the final results with **Show Key** off and the chroma keyer in normal mode (**FG Only** and **BG Only** turned off). Note that incorrect adjustments can create a hard, noisy key.

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.

If the chroma key now looks good, you are done. However, if the key is still not acceptable, you should consider activating the Reshaping feature. Reshaping is valuable when shading exists in the backing color. If set lighting cannot be adjusted to eliminated this shading and the resultant highlights are not desirable, touch the **Reshape** button to activate this feature.

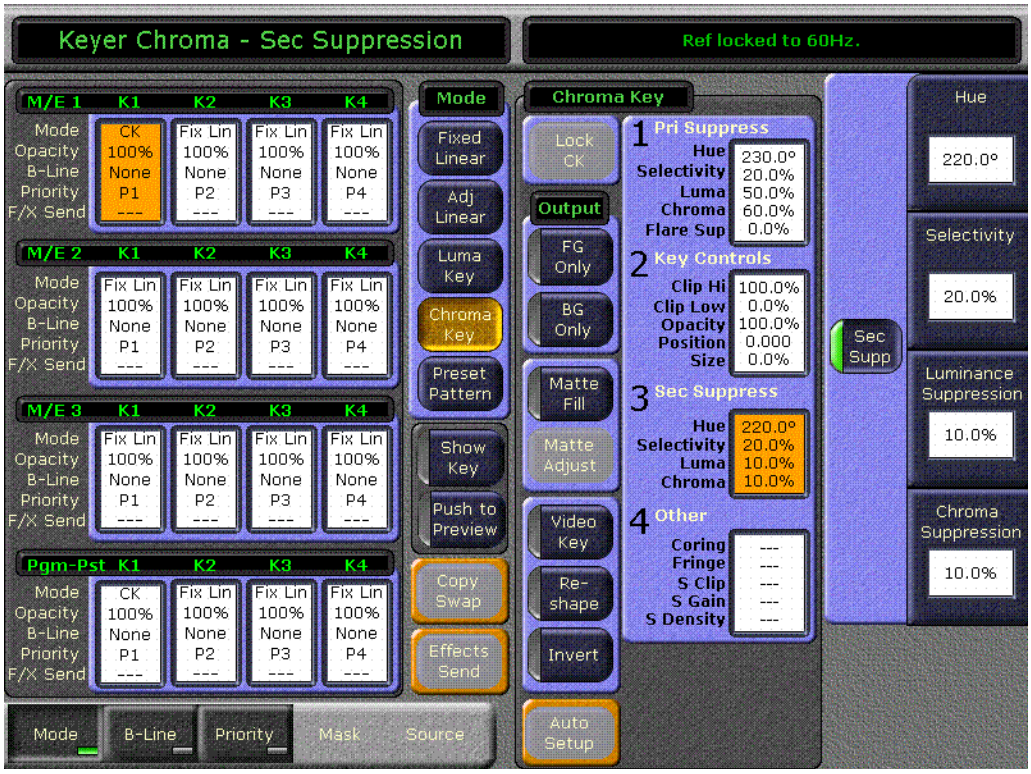
Reshaping helps with backing color suppression at the expense of a harder looking key with more noticeable edge artifacts. In some cases, black edge artifacts can be minimized by reducing the primary luminance suppression. A drawback of foreground reshaping is loss of detail in the keyed edge. Smoke and hair in the foreground will probably be lost. If time permits, adjusting the lighting on the set to even it out the backing color may improve the key so that foreground reshaping is not needed.

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). Touch the stage 3 **Sec Suppress** data pad and then touch the **Sec Supp** button to activate this feature (Figure 26).

Figure 26. Sec Suppress Controls



Secondary suppression is sometimes necessary because the color seen by the camera in these areas is significantly different from the backing color and the foreground color. You will need to look at the edges of the key when adjusting secondary color suppression. The goal is to restore a more natural appearance to hair or translucent areas. It should not be used to try to further suppress the main backing color areas away from the subject, as this will only exacerbate the primary suppression. Note that if foreground reshaping has been applied, it is unlikely that enough edge detail will remain to use secondary color suppression.

Secondary color suppression adjustments are highly subjective. Suppression hue will normally be close to but not equal to the primary hue. The secondary hue will shift in the direction the color is pulled by the foreground color in the edge. For example, a green backing color will be more yellow in areas near blonde hair. In order to avoid contaminating nearby areas not affected by backing color bleed, selectivity for secondary suppression is normally set fairly high. Too wide and you'll notice surrounding areas turning colors they should not. Keep in mind that secondary color suppres-

sion will work on any color regardless of the hue of the primary suppression. Secondary suppression levels will normally be fairly small. Secondary luminance suppression will depend on the relative luminance levels of the foreground and background images in the edge areas being affected.

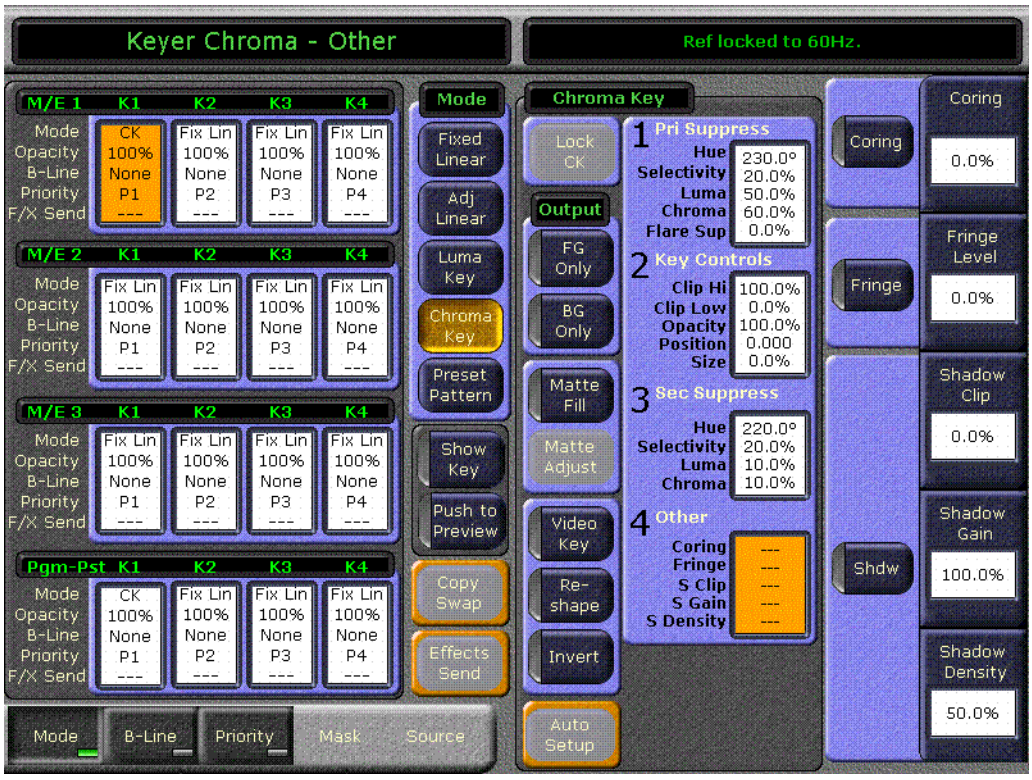
To set up secondary color suppression:

1. Observe the picture area you wish to affect.Turning **Chroma Suppression** all the way up will help make it obvious which areas are being affected.
2. Adjust secondary **Hue** and **Selectivity** so that the area you want to affect changes colors, but surrounding areas do not.
3. Turn **Chroma Suppression** down all the way, then bring it back up until the translucent areas of the foreground look natural.

Other Chroma Key Controls

Additional chroma key controls are available by touching the stage 4 **Other** data pad (Figure 27). Coring, fringe, and shadow controls can be individually activated by touching the labeled buttons.

Figure 27. Other Controls



Coring replaces any signal in the key area that is below the adjustable threshold with black. This eliminates noise resulting from incomplete suppression.

Fringe is used to restore color to the gray portions of the foreground color resulting from secondary suppression adjustments.

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.

Kalypso 5.0 Release Notes

Introduction

The following information from the previous release is included for those customers who need to upgrade software earlier than 5.1.

CAUTION The procedures in this section are not necessary if your Kalypso system is currently running Release 5.0 or 5.0.1.

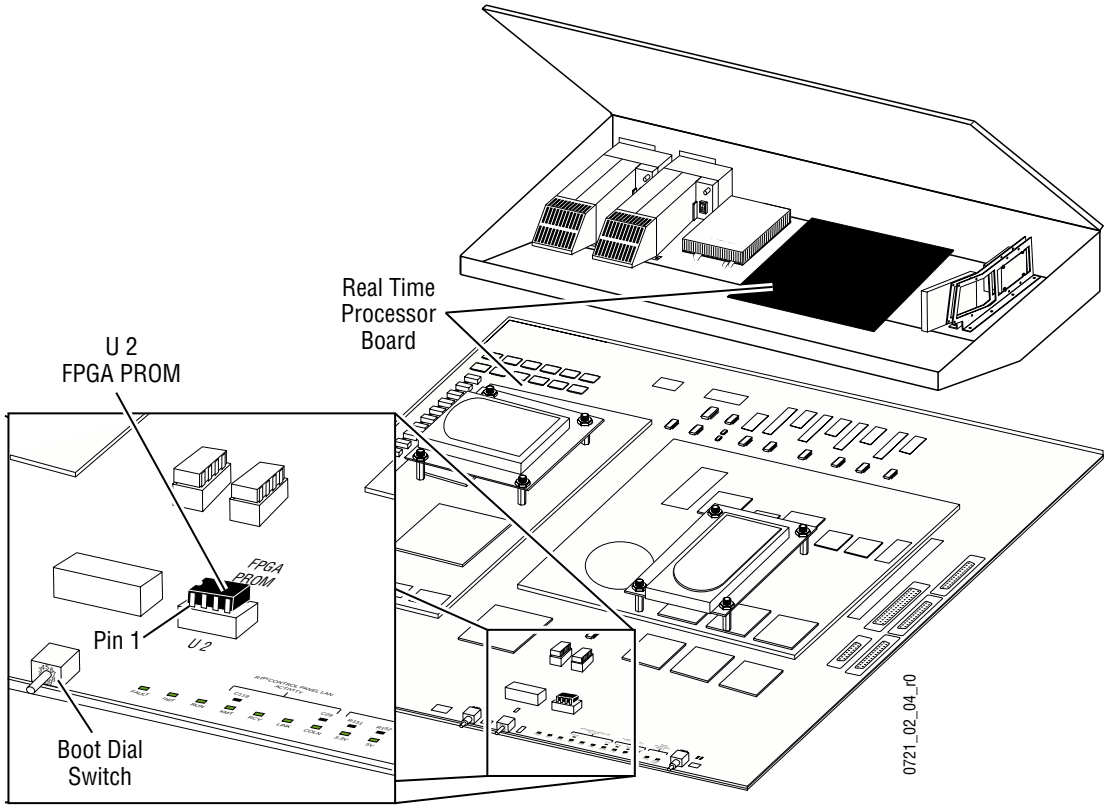
Hardware Installation

Firmware Change Procedure (Upgrade from 4.X and before only)

A socketed PROM on the RT Processor board in the Main panel needs to be replaced for the Kalypso 5.0 release (Figure 28). This change improves the smoothness of manual transitions. The new PROM (163-8185-02) was included with the Release 5.0 software package. Contact Grass Valley Group Customer Service if you need this part.

CAUTION The replacement PROM is not backward compatible. Save the old PROM should you want to downgrade to a software version earlier than 5.0.

Figure 28. U 2 Firmware Prom Location



To Change the U 2 PROM:

Note The PROM should be replaced after you have updated the system with the new Kalypso software.

1. Turn off all power (both power supplies if so equipped) on the Main panel.
2. Using anti-static practices, gently lift the U 2 PROM from its socket, using an extraction tool or small straight blade screwdriver. It is located near the Boot Dial switch on the Real Time Processor board. Save the PROM should you want to downgrade to a software version earlier than 5.0.
3. Gently insert the new PROM in the socket and seat it firmly, making sure the orienting notch is on the left, and pin 1 is in the lower left position.
4. Restore power to the Main panel.

FrameMon Upgrade (Upgrade from 3.0.X and before only)

CAUTION If you are upgrading from 3.0.X software, you must perform a FrameMon upgrade before installing 5.0 software. The Video Processor frame will not run with the older FrameMon version.

Previous Kalypso Video Processor frames shipped with a FrameMon bootable kernel allowing access to only 64 MB of RAM. In Releases 4.X and higher, FrameMon has been upgraded to support all 128 MB of installed RAM. If you have just received a new system with Release 4.X or higher installed you do not need to upgrade FrameMon.

You will need a mouse and keyboard attached to the Main panel for the FrameMon upgrade.

To Upgrade the FrameMon Kernel:

CAUTION The following steps must be performed in the order listed.

1. Reset the Video Processor Frame using the engineering boot dial setting.
   a. Turn the Video Processor frame Control module **COMM Boot** dial switch (the lower dial) to position **1**. Position 1 boots the control processor operating system without launching the Kalypso application, to permit software update if the application hangs repeatedly.
   b. Press the **Reset** button and allow at least 10 seconds for the system to reboot. The frame must be reset after changing the boot switch position. Simply moving the switch does not affect a running system.
2. Install the new FrameMon kernel.
   a. Exit the Kalypso application by touching the upper right message area on the Menu display.
   b. Insert the FrameMon floppy disk into the Main Panel floppy drive inside the tub.
   c. Run **`A:InstallFrameMon.exe`**.
   d. Remove the floppy disk.
3. Reset the Video Processor frame again, using the operation boot dial setting.
   a. Turn the Video Processor frame **COMM Boot** dial switch to position **0**.
   b. Press the **Reset** button and allow at least 10 seconds for the system to reboot.

4. Confirm FrameMon upgraded successfully.
   - If the Video Processor frame reboots and the Kalypso Main panel controls operate, the upgrade was successful. Proceed to *Installing Kalypso System Software* on page 10.
   - If after reboot **NO COMMUNICATION WITH FRAME** appears on the Main panel and it fails to operate, the FrameMon did not upgrade. Do not proceed with the Kalypso software installation. See *FrameMon Correction* on page 42.

FrameMon Correction

If the FrameMon upgrade did not complete, first try to reinstall FrameMon making sure network communications is present.

1. Reset the Video Processor frame again with the engineering setting (Step 1 on page 41). Be sure to first set the **COMM Boot** dial switch to 1 and then reset the Video Processor frame.
2. Load the install program on the Menu panel (double click the Kalypso Install icon on the NT desktop), go to the second screen and ensure the **Frame** IP address is correct.
3. **Ping** the Video Processor frame from the install program.
   - If **Ping** is successful, continue with the FrameMon upgrade (Step 2 on page 41).
   - If **Ping** fails, contact Grass Valley Group Customer Support for assistance.
4. Confirm FrameMon upgraded successfully.
   - If this time the Video Processor frame does reboot and the Kalypso Main panel controls operate, the upgrade was successful. Proceed to *Installing Kalypso System Software* below.
   - If after reboot **NO COMMUNICATION WITH FRAME** again appears on the Main panel and it fails to operate, an earlier hard drive may be installed that does not support the FrameMon upgrade. Do not proceed with the Kalypso software installation. Contact Grass Valley Group Customer Support for assistance.

Touch Screen Software Update (Releases Earlier Than 3.X)

New Kalypso systems shipping with 5.0 software installed have an updated touch screen driver. This driver replaces a driver that on systems earlier than 3.0 caused problems that occasionally caused Blue Screen failures.

If you have a Kalypso system software earlier than 3.0, you should update the driver using a floppy disk provided by the Grass Valley Group. The driver is also available for download at ftp://ftp.grassvalley-group.com/pub/switcher/Kalypso/ FieldModNotes. The file to download is MMNT310C.EXE.

The following procedure is only required for these older systems, and only needs to be performed once for each Kalypso system Menu panel. You must first uninstall the old driver before installing the new driver.

To Uninstall the Old Driver

1. Exit the Kalypso or Omnibus window if either is currently displayed.
2. Connect a keyboard to the back of the Kalypso Main panel.
3. Logon as administrator:
   a. Press **Ctrl/Alt/Del** simultaneously.
   b. When prompted, hold down the **Shift** key, select **Logoff**, select **OK**, and continue holding the **Shift** key until the logon screen displays.
   c. Logon as administrator (password: kalypso).
4. If displayed, exit the Kalypso Main Menu by clicking in the upper right corner.
5. Uninstall the older ELO version 3.0 Touchscreen Driver (MonitorMice for Windows NT):
   a. In the Windows task bar, select:

      START > SETTINGS > CONTROL PANEL > ADD/REMOVE PROGRAMS

   b. Select **MONITORMICE FOR WINDOWS NT** and click **ADD/REMOVE**.
   c. Follow the prompts for the uninstall process.
6. Restart the system when prompted to do so. You will be logged on as administrator (password: kalypso).

Note You are automatically logged on as administrator only if you logged on in Step 3 using the administrator password (kalypso) supplied to you when you received your system. If you changed the default password since receiving your system, you will not be automatically logged on.

To Install the New Driver

7. Close the Kalypso Main window and Omnibus Main window (if running).
8. Insert the floppy disk containing the new driver file into the Kalypso panel floppy drive.

9. Access the A drive and double-click on the file MMNT310C.EXE to extract the driver.
   a. Make sure the **Overwrite Files Without Prompting** and **When Done Unzipping Run: NOTEPAD README.TXT** boxes are checked.
   b. Select **UNZIP**.
   c. Accept the default to extract the installation files to the **C:\Elont** directory.
   d. If you choose not to read the Readme.txt file, close it.
10. Install the new driver:
    a. Access the **C:\Elont** directory.
    b. Double-click on Setup.exe.
    c. Follow the installation prompts and accept all defaults.
    d. When prompted to restart your computer, remove the floppy from the Kalypso floppy drive and click **Finish**.
11. After system restart (still logged on as Administrator), set the calibration by following the instructions in the **CALIBRATION** menu display.
12. Following calibration, logon as Kalypso:
    a. Press **Ctrl/Alt/Del** simultaneously.
    b. When prompted, select **Logoff**.
    c. Press the **Shift** key until the logon screen displays.
    d. Logon as Kalypso (password: Kalypso).

Following installation of the new driver, perform random tasks on the Kalypso Menu panel. If no Blue Screen failure occurs, the software update successfully corrected the problem. Should the Kalypso Menu panel exhibit a Blue Screen failure following this procedure, the Menu panel processor should be replaced. Contact Field Service should processor replacement be necessary.

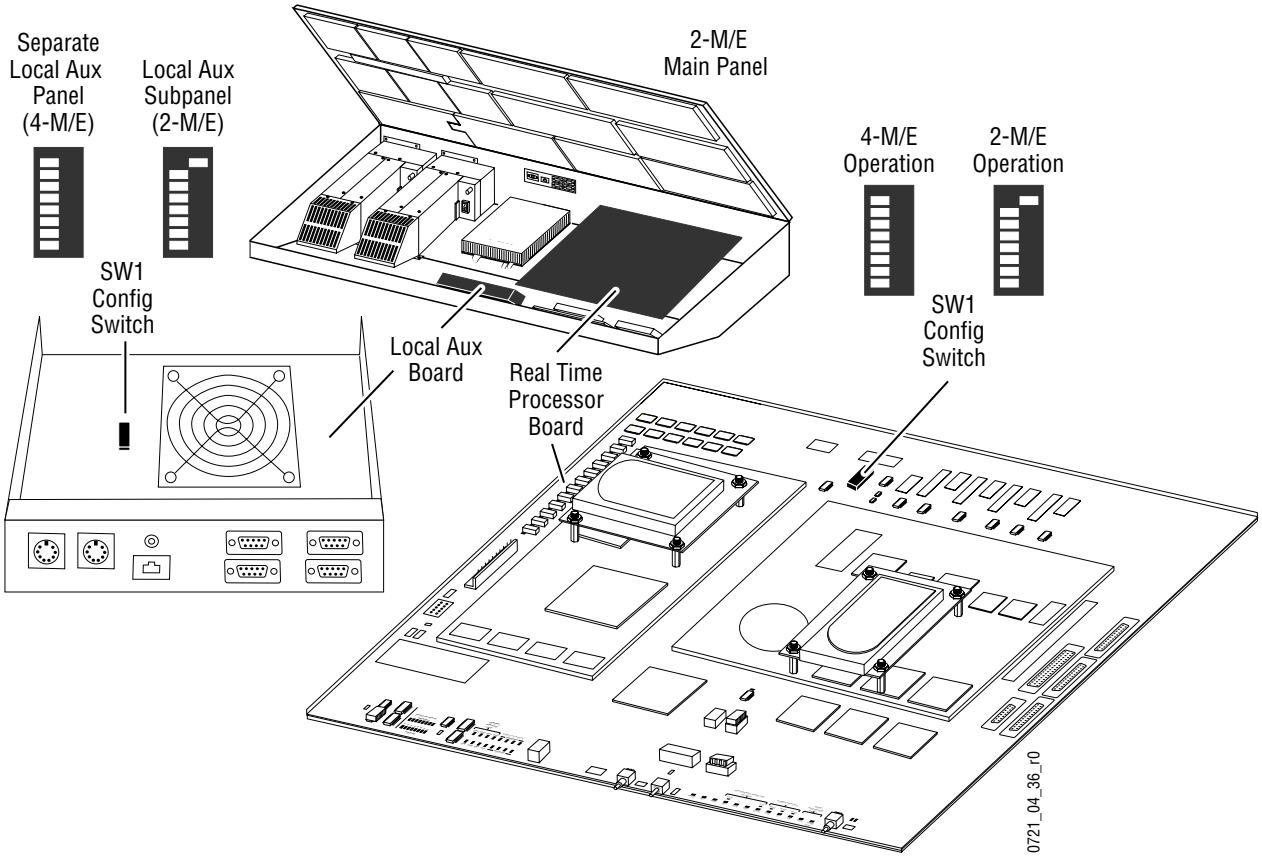
Local Aux Panel Button Changes (Releases Earlier Than 3.X)

Four Local Aux panel buttons have changed to support the Still Store option. Replacement film button legends were included with the 3.0 software release package. Remove the overcap from the two **SS 1** buttons, replace the old legend with the new **Aux 13** film, and replace the overcap. Remove the overcap from the two **SS 2** buttons, replace the old legend with the new **Still Store** film, and replace the overcap.

Main Panel Configuration Switches

A DIP configuration switch on the RT Processor board in the tub of the Main panel is used to set the panel for 4-M/E or 2-M/E operation (Figure 29). This switch is set at the factory for the correct panel type and should not need to be changed. If the switch is in the wrong position (a replacement board may have been installed) incorrect software will load during an update and the panel will not operate. If this occurs, set the switch correctly and reinstall the panel software. The uppermost switch 1 (nearest the panel hinge) is set to the left (off) for 4-M/E operation, and to the right (on) for 2-M/E operation. All other switches should be off.

Figure 29. Configuration Switches



A DIP configuration switch located on the Aux panel board inside the 2-M/E Main panel (Figure 29) also controls software loading during an update. On 2-M/E systems this switch is set at the factory for Local Aux subpanel operation, rather than for the separate Local Aux panel used by 4-M/E systems. The uppermost switch 1 (farthest into the tub) is set to the right (on) for 2-M/E operation. All other switches should be off. The same switch resides inside the separate Local Aux panel used by 4-M/E systems, but it is not accessible to the user. This switch is set at the factory to the left (off) for 4-M/E operation.