

Release Notes

software release **3.1.5**

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KRYSTAL 4300
DIGITAL PICTURE MANIPULATOR

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Version **3.1.5**
May, 2000

Krystal 4300 Release Notes

Purpose of this Document

This document describes changes to the Krystal system when upgrading from 3.1.0, 3.1.1, or 3.1.2 software to 3.1.5 software. (Software versions 3.1.3 and 3.1.4 were for internal use only.) Software and hardware upgrade instructions are also included in this document.

CAUTION If you are running a software version earlier than 3.1.0, Krystal hardware must be modified to support this software release. You must upgrade the PLDs and Boot Roms. See the Krystal 3.1.0 Release Notes, or contact Grass Valley Group Customer Support if you need additional information.

Note The latest version of Krystal system software and the newest sets of Krystal effects should be available for downloading at the Grass Valley Group web site. Check this site before installation to ensure you have the current version.

Summary of Changes for Release 3.1.5

Two software defects were corrected in the Krystal 3.1.5 release:

- Corrected a Channel Hold problem. When an Effect Manager was power cycled or reset and an effect was recalled, Channel Hold enabled channels would disappear from the screen. The work around was to turn Channel Hold off and on for all channels in one effect, which made Channel Hold work for all subsequent effects. With the v3.1.3 software, channels do not disappear and Channel Hold works correctly.
- When in the Global Assignments Sub-menu (under the Input/Outputs Menu), if a Local Channel assignment was set to CLEAR ATTACHMENT, the Effect Manager would crash. All channel assignments now work correctly.

Only the Effects Manager software has changed in this release.

Known software problems in the Krystal 3.1.5 release are unchanged. Refer to the separate 3.1.2 *Krystal Release Notes Addendum*.

Software Installation

Software Versions

CAUTION This release operates only with Krystal hardware that has been updated for 3.1.0 or later software. Do not install this software on Krystal systems with un-modified hardware. Refer to the 3.1.0 Krystal Release Notes for specific hardware upgrade instructions.

Updating Release 3.1.2 Software

If you are running Krystal Release 3.1.2 software, you only need to update the Effect Manager software. You do not need to install the Control Panel, Comm Proc, Video Processor, Resource Manager, or Combiner software.

Updating Release 3.1.1 or 3.1.0 Software

If you are running Krystal Release 3.1.1 or 3.1.0 you should install all software on all the disks in this update package that are required for your system.

Software Release Package

The Krystal 3.1.5 Software Release Package consists of the following items:

- Software Update Kit which includes software on 6 floppy disks. Only the Effects Manager software has changed, and it is labeled Version 3.1.5. The 5 remaining disks are labeled Version 3.1.2.
- Krystal 3.1.5 Release Notes (this document).

Software Update Procedure

Summary

Allow approximately one hour to update your Krystal software. All components in the Krystal system must be updated to the same level of software.

Note One additional recommended step (save new Configuration files to a separate disk) has been added to the software installation procedure.

Updating your Krystal software involves the following steps:

- Save Configuration, Macro, and Effect files to disk.
- Update Control Panel software.
- Update remaining Krystal software.
- Clear keyframe memory.
- Reload Configuration, Macro, and Effect files.
- Calibrate lever arm and joystick.
- Save the new Configuration files to a separate disk.

Note Top menu buttons set to DPOP menus will lose these settings after you update the software. You will need to reset the DPOPs after the new Krystal software is installed.

Save Configuration, Macro, and Effect Files to Disk

If you have not already done so, you should always save your configuration files to disk before you install any hardware or software. You also must save to disk any Macros or Effects you want to use in the future. System memory is reinitialized when the software is updated, which destroys stored effects. System Configuration, User Pref, and Effects information resides in each Effect Manager. Panel Configuration and Macro information resides in each Krystal Control Panel.

Note More than one Effect Manager and Control Panel may exist in larger systems. We recommend you save the System Configuration, User Prefs, and Effects from every Effect Manager, and save the Panel Configuration and Macros from every Control Panel onto separate labeled disks before updating your software.

1. If necessary, acquire the Effect Manager.
2. Insert a formatted 1.44 MB disk into the Krystal Control Panel floppy disk drive. Press the **FILE OPER** top menu button, and then press the **SAVE/LOAD** soft button.
3. Select **SYS CFG** with the **FILE TYPE** soft button, and if necessary, select **ALL SYSTEM DATA** with the **SELECT/SCROLL** soft button, and then press **SAVE**. Rename the file if you wish, then press **OK** to save the file to disk. The disk drive light illuminates as the file is being saved. After a couple minutes the light will go out and the name of the saved file will appear on the screen.
4. Repeat the step above, selecting and saving the **USER PREF**, **Panel CFg**, and **Macro** files onto the same disk.

5. You will probably want to save your Effects onto a separate floppy disk. Remove the configuration backup disk and label it. Insert a new formatted floppy disk, select **EFFECTS** with the **FILE TYPE** soft button and **ALL** with the **SELECT/SCROLL** soft button. Rename the file if you wish, then press **OK** to save the file to disk. Remove the effects backup disk and label it. If all the effects do not fit, you will need to save them individually onto more than one disk.

Update Control Panel Software

Note Updating Control Panel software is not necessary for systems running Release 3.1.2 software.

1. Optional — connect an ASCII terminal to the J3 Diagnostic port (DB25/DTE) on the Control Panel. Communication settings for the communication port interface is 9.6 KBaud, 8, N, 1.
2. Make sure all Control Panels, Video Processors, and any System Controllers in the system are powered up and operating.
3. Insert the Control Panel Update Floppy labeled “Krystal Model 4300 Control Panel” into the Control Panel floppy drive.
4. Power cycle or reset the Control Panel. Resetting the Control Panel is performed by opening the panel cover and pressing the reset button on the left front of the circuit board in the bottom of the panel. The flat panel will go blank and the disk drive access LED will light. The top LED on the LED bar next to the fader (transition bar) will light and begin flashing.
5. If a terminal is connected to the panel, it may print out the error message “Floppy Disk Controller: command phase error.” This message may be safely ignored.
6. The panel software update will take 2.5 minutes. As more of the code is loaded into the panel, another one of four LEDs on the light bar will light (two at the top of the bar and two at the bottom of the bar). The blinking LED indicates the software installation process is working properly.
7. If a terminal is connected to the panel, it will list out the hex addresses of the blocks or memory being programmed. The addresses begin with \$80000 and end with an address less than \$280000.
8. When the panel software update is complete, the Control Panel will restart itself and the flat panel will display the Status menu.
9. Remove the floppy disk from the Krystal Control Panel drive.

Update Remaining Krystal Software

1. Before you update a system, make sure the dial switch at the front of the first channel's Video Processor module is set to "0." The Video Processor module is located in the second slot from the far-right in the Video Processor Frame. If the system has additional channels, make sure the second channel's Video Processor dial switch is set to "1" (Ch 3 set to "2", Ch 4 set to "3"). Leave the dial switches at these settings for proper operation.
2. Bring up the Software Update Menu by pressing the **SYSTEM SETUP** top menu button, then press **SYSTEM CONFIG, OK, SAVE/LOAD, SoftWare UPDATE**. This menu lists all of the Effects Managers on the network. Only Effect Managers that have an Op Mode of "App" or "Boot" can be updated (Figure 1).

Figure 1. Krystal Software Update - Effect Manager List

SOFTWARE UPDATE <input type="text"/>						
Effects Manager List						
System ID	Proc Type	Proc Name	IP Address	Op Mode	SW Version	Status
System 1	Effect Mgr	EM 1	192.65.13.94	App	V3.x.x	
System 2	Effect Mgr	EM 2	192.65.13.95	App	V3.x.x	
System 2	Effect Mgr	EM 3	192.65.13.96	App	V3.x.x	

SCROLL

SELECT/ SCROLL	UPDATE...	BEGIN UPDATE...	SHOW EM's...
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3. Select the system name with the **SELECT/SCROLL** soft button, press **UPDATE**, then press **OK** at the prompt. This displays a list of all of the Effect Managers, Communications Processors, and Video Processors associated with that system name (Figure 2). On a multi-channel system the Resource Manager and Combiner, if present, may also be displayed (Figure 3).

Figure 2. Typical Krystal Single-Channel Update Screen

SOFTWARE UPDATE <input type="text"/>						
Processor List--Manual Update						
System ID	Proc Type	Proc Name	IP Address	Op Mode	SW Version	Status
System 1	Effect Mgr	EM 1	192.65.13.94	App	V3.x.x	
	Comm Proc	EM 1 Com 1		App		
	Video Proc	Ch A		App		

SCROLL

SELECT/SCROLL
UPDATE,,,
BEGIN UPDATE...
SHOW EM's...

Figure 3. Typical Krystal Multi-Channel Update Screen

SOFTWARE UPDATE <input type="text"/>						
Processor List--Manual Update						
System ID	Proc Type	Proc Name	IP Address	Op Mode	SW Version	Status
System 2	Effect Mgr	EM 2	192.65.13.95	App	V3.x.x	
	Effect Mgr	EM 3	192.65.13.96	App	V3.x.x	
	Comm Proc	EM 1 Com 1		App	V3.x.x	
	Comm Proc	EM 2 Com 2		App	V3.x.x	
	Rsrc Mgr			App	V3.x.x	
	Video Proc	Ch A		App	V3.x.x	
	Video Proc	Ch B		App	V3.x.x	
	Video Proc	Ch C		App	V3.x.x	
	Video Proc	Ch D		App	V3.x.x	

SCROLL

SELECT/SCROLL
UPDATE...
BEGIN UPDATE...
SHOW EM's...

4. Update items in the list by selecting the item, inserting the appropriate disk for that item, pressing **BEGIN UPDATE**, and then pressing **OK** at the prompt.

Note If an incorrect disk is inserted, the system reports “This is not a Software Update Disk. Insert another disk to try again.”

Release 3.1.2 Systems

Systems running 3.1.2 software only need the Effect Manager software installed. Update all the Effect Managers in your system.

Release 3.1.21, 3.1.2, and 3.1.0 Systems

Other systems should update all the items in the following order:

- a. Combiner (2 x 2 Combiner systems only. Not needed for Large System Controllers with 4 Channel Combiner.)
- b. Video Processor(s)
- c. Resource Manager (Multi-channel systems only)
- d. Effect Manager(s)
- e. Comm Proc(s)

As an update progresses, notes appear in the status area for that item giving information on the progress of the update. When finished, the status area reports the updated software version, the device reboots, and then you are prompted the update has completed. Press **OK** at this prompt.

5. Continue the update until all the items involved report their new software versions. If for any reason the system cannot update one of the items on the list, a prompt warns you of this. Selecting **OK** skips that item and continues to the next item in the list. Selecting **CANCEL** cancels the update. Selecting **SHOW EMS** returns back to the Effect Managers list.
6. When the update is finished, press the reset button on each of the updated modules in that system.

Note If any installed Proc Type shows “off-line” status, cycle power for the whole system.

7. If you have more than one system on the network to update, repeat the above steps with the remaining systems.

Clear Keyframe Memory

You must clear the Keyframe Memory on each Effect Manager after updating your software. This is accomplished with the following procedure.

1. Turn off the battery backup switch on each Effect Manager in your system (the switch is located near the Effects Manager reset button).
2. Power off the frame(s) housing the Effect Manager(s) and wait at least two (2) minutes for the memory to drain.
3. Set the battery switch back on (if desired), and power the frame(s) back up.

Power Cycle the Control Panel

1. Turn off the Control Panel and wait 30 seconds.
2. Turn the Control Panel back on.

Restore Configuration, Macro, and Effect Files

1. If necessary, acquire the Effect Manager.
2. Insert your system configuration disk into the Krystal Control Panel floppy disk drive. Press the **FILE OPER** top menu button, and then press **SAVE/LOAD**.
3. Select **SYS CFG** with the **FILE TYPE** soft button, select **ALL SYSTEM DATA** in the left scroll window and **CONFIG.KFG** in the right scroll window with the **SELECT/SCROLL** soft buttons below each window. Press **LOAD**, and then press **OK** at the prompt to restore the System Configuration to the Effect Manager.
4. For each of the remaining files on the disk (**PREFS.KPF**, **PANEL.KPC**, **MACROS.KMC**) select the matching type of file to restore with the **FILE TYPE** soft button, select the file name with the **SELECT/SCROLL** soft button, and then press **LOAD**. The User Prefs are restored to the Effect Manager, and the Panel Configuration and Macros are restored to the Control Panel.
5. If your effects are on a separate disk, you need to insert that floppy disk into the drive, then press **EXIT** and **SAVE/LOAD** so the panel can read the directory on the disk. Select **EFFECTS** with the **FILE TYPE** soft button, and if necessary select **ALL REGISTERS** and **EFFECTS.KFX** with the **SELECT/SCROLL** soft buttons. Then press **LOAD** and press **OK** at the prompt to restore the Effects to the Effect Manager. Remove the floppy disk from the drive.
6. Repeat the above procedure (as appropriate) with all the Krystal Control Panels and Effect Managers in your system.

Calibrate Control Panel

Perform Krystal Control Panel lever arm and joystick calibration whenever a software update has been installed. Failure to do this can result in frequent "limit exceeded" error messages and erratic lever arm or joystick behavior.

To calibrate the lever arm:

1. Select the top level **SYSTEM SETUP** button, then **PANEL CONFIG>**, then **CALIBRATE>**.
2. Select **CALIBRATE LEVER ARM... .**
3. Follow the directions displayed on the screen to move the lever arm to its limits and save the calibration.

To calibrate the joystick:

4. Select **CALIBRATE JOYSTICK... .**
5. Follow the directions displayed on the screen to move the joystick to its limits and save the calibration.

Save New Configuration Files to Disk

1. It is recommended that you now save your new Configuration files to a separate floppy disk, using the procedure described earlier. Store your older Configuration disk with your older software disks for reference. You do not need to re-save your Macro or Effect files.
2. Label the new configuration disk with the new software version, and store it along with the new software disks in a safe place.

Previous Documentation

The remainder of this section covers changes since Krystal 3.1.0 software, and repeats material presented in the previous Release Notes. All these changes remain enacted in the Krystal 3.1.5 software.

Summary of Changes for Release 3.1.2

There was only one change for the Krystal 3.1.2 release:

- Internal FPGA software was changed to support the new Y/C K/DS interpolator module (PN 066250). Krystal systems using these newer modules should run v3.1.2 or later Krystal software.

Summary of Changes for Release 3.1.1

New Features

- Channel Hold and Channel Hold Override ([page 13](#))

Operational Enhancements

- Krystal Release 3.1.1 gives you better control over when Freeze Override settings are saved. In 3.1.0, Freeze Override definitions were automatically saved as user defaults as soon as they were changed in the menus. You can now explicitly save Freeze Override user defaults using the **Define Freeze** soft button located in the Input Recursive and Motion Detection menus.
- A simplified Freeze menu has been added to the Input Recursive menu. Selecting **FREEZE** now gives the user a subset of the previous Freeze settings (**READ**, **DISPLAY FIELD**, **FREEZE SOURCE**). All the previously available controls are available by selecting **ADVNC FRZ** in the Input Recursive menu.
- The **Freeze 1** and **Freeze 2** override parameters are now saved as part of the user preferences file.
- An “Out of Memory” message is now displayed on the panel if the effect memory becomes full when loading effects from disk. A message is also displayed if a floppy disk becomes filled when saving files to disk.

- Splits menu items, which do not function when Kurl is in use, are now grayed out when a Kurl function is active.

Corrected Software Defects

- Release 3.1.1 supports Krystal DPM communication with the Model 2200-2i switcher. Krystal release 3.1.0 did not communicate properly with the 2200-2i switcher.
- Removed incorrect extraneous messages appearing in the status box e.g., MOD_LIMIT_EXCEEDED or INVALID_HW_IMAGE.
- When the **OFFSET** soft knob was used in the Timeline menu, the display would experience long delays when it was updated, and persistent error warnings would sound. The delays made the knob difficult to use effectively. In the current software the delays have been significantly reduced, making the knob much easier to use. If the timeline contains many keyframes, however, there may still be noticeable delays.
- When playing back a macro, the sixth button under the display would be “pressed” at the beginning of the macro playback. If the macro ended on a menu that used the sixth button, the value for that control would change. Macros now play back properly.
- Corrected a Krystal 200 protocol problem that made Philips Diamond DD20 switchers lose communication with Krystal systems.
- Corrected a rare panel lockup problem that would sometimes occur when editing scroll panes.
- In the File Save/Load menu, corrected a problem where the File Name list is not correctly updated when Load All Separate was selected.
- Corrected a Krystal-Switcher communications problem regarding logical channel tallies for primary and secondary combiner outputs.
- Communication between Sony BVE-9100 editor and Krystal when using Sony BVW 75 protocol has been improved. Sony editors had problems synchronizing to Krystal. Now preroll, match-frame edit, variable play, variable reverse, shuttle/jog/dynamic motion (forward and reverse), and the play at given speed functions operate correctly.
- Communication between VPE 151 editor and Krystal when using Sony BVW 75 protocol has been improved. VPE 151 editors had problems on preroll. Now preroll, match-frame edit, variable play, variable reverse, shuttle/jog/dynamic motion (forward and reverse), and the play at given speed functions operate correctly.
- Extreme values in some Kurl parameters created aliasing artifacts and jagged edges when using Radial Mode or Size Mod Mode in the Kurl Menu. Now the parameters are restricted to a range where these artifacts are not visible.

Operation with Model 2200-2i Switchers

CAUTION When operating a Model 2200-2i switcher with 6.0R3 software in conjunction with a Krystal DPM, you must use Krystal 3.1.1 or later software. Krystal 3.1.0 software is not compatible with 2200-2i switchers. Earlier iterations of the switcher software may in some cases be compatible with earlier generations of Krystal software. For example, 6.0R1 has been found to be compatible with Krystal 3.0.3 software. However, we highly recommend that you install switcher software 6.0R3 in conjunction with Krystal 3.1.1 or later software.

- If you are running a Krystal software version earlier than 3.1.0, you must modify the Krystal hardware to support 3.1.5 software. Model 2200-2i customers should follow the hardware update procedure described in the Krystal 3.1.0 Release Notes, but should *not* install the 3.1.0 software on their Krystal systems. After the hardware update, install the 3.1.5 Krystal software provided. Contact Grass Valley Group Products Customer Support if you need additional information.
- The Krystal Channel Hold and Loop functions are not supported from the Model 2200-2i switcher panel. Do not install the **Chan Hold** or **Loop** keycaps on Model 2200-2i control panels.
- If a Krystal effect is run from a switcher using E-MEMs, the switcher controls the running of the effect. Any Krystal Loop and Pause controls contained in the Krystal effect will be ignored.

Channel Hold Operating Notes

The Channel Hold feature allows Krystal operators to selectively hold a channel at a desired location and appearance during an effect run. The held channel's state does not need to be an effect keyframe, and the operator can reposition the held channel to a new location or change its appearance (border, hue, etc.) if necessary. The channel remains at its last held location and condition until the hold is released.

Holds can be applied to more than one channel at a time, including any or all the Logical channels. A hold can also be applied to the Camera channel, in which case only Combiner parameter values are held. The Channel Hold feature does not affect the behavior of the Global channels.

Note The Channel Hold feature is available on Krystal DPM control panels only, and is not accessible on Model 2200-2i switcher control panels.

Types of Channel Hold

Two different types of holds are available:

- Channel Hold Override
- Channel Hold.

Channel Hold Override is used to hold one or more channels indefinitely. Channel Hold Override remains in force for that channel regardless of what effect is loaded and run.

Channel Hold is used when the operator wishes to control holds on an effect by effect basis. Unlike Channel Hold Override, Channel Hold is local to the effect, and can be saved to, copied between, and loaded from Krystal registers and floppy disks. These operations include Channel Hold data and exclude Channel Hold Override data. For example, if the current effect has a Channel Hold, and a new effect is loaded that does not have a Channel Hold for that channel, that channel will return to normal system operation (provided a Channel Hold Override is not active for that channel). Note that when an effect containing a Channel Hold is loaded, the held channel retains its current state in the work buffer, not the state it was in when the effect was saved. Channel Hold is stored in the header information of an effect, and so does not require modify operations. Setting a Channel Hold is all that is required to make it part of the effect.

Channel Holds and Channel Hold Overrides can be set and released "live" during effect runs. If, during an effect run, a channel that was being held is released, it will be enabled to run its timeline if keyframes are present. The channel will commence its run from its effect location at the time the hold was released. This may cause a jump from its held position to its defined state at that point in the timeline.

Rewind does not affect held channels.

Setting Channel Holds

Channel Hold is controlled using a new **Chan Hold** button (located to the left of the **Loop Enable** button), in conjunction with the existing channel **Enable** and **Macro** buttons. The Enable buttons are used to control Channel Holds, and the Macro buttons are used to control Channel Hold Overrides. The **Macro Shift** button is used to control Channel Hold Override for the camera channel.

To set a Channel Hold Override:

1. Hold down the **Chan Hold** button.
2. Press the **Macro** button for the desired channel.

To set a Channel Hold for an individual effect:

1. Hold down the **Chan Hold** button.
2. Press the **Enable** button for the desired channel.

Note that setting both a Channel Hold and a Channel Hold Override for a channel is redundant for the currently loaded effect. However, if a new effect is loaded, the Channel Hold Override has precedence and will continue to hold that channel regardless of the Channel Override state of the channel in the newly loaded effect.

Clearing Channel Hold Selections

Channel Hold and Channel Hold Override settings can be cleared with the **Clear Work Buffer** button.

- To clear all the Channel Hold Overrides, hold down the **Chan Hold** button and press **Clear Work Buffer** once.
- To clear all the Channel Hold Override and all the Channel Holds in the current effect, hold down the **Chan Hold** button and press **Clear Work Buffer** twice.

Channel Hold Tallies

The **Chan Hold** button itself tallies On and Off. This is for display purposes only, and does not activate or deactivate the Channel Hold feature. The tally state of the **Chan Hold** button affects the tallies on the **Enable** and **Macro** buttons, as described below.

When **Chan Hold** is ON, the tally on the Enable button row indicates the Channel Hold state (On or Off) for that channel in the effect. A high-tally on the Macro row indicates the Channel Hold Override state (On or Off) of that channel.

When **Chan Hold** is OFF, the tally on the Enable row returns to normal operation, indicating the enabled channels. A low-tally on the Macro row indicates the Channel Hold Override state of that channel.

Note that Channel Hold Override settings are always indicated by the Macro buttons, regardless of whether the **Chan Hold** button is On or Off. The operator is always informed of this important condition, which affects the run state of all subsequently loaded effects.

Macro Operations and Channel Hold

Macros can be run when the Chan Hold button is either On or Off by pressing the **Macro** buttons. Macros cannot be run when the **Chan Hold** button is being held down, however, as this delegates the Macro row to selecting channels for Channel Hold Override.

Each **Macro** button will go high tally temporarily as the macro runs, and then return to its former state. If a Channel Hold Override is active for that channel, the **Macro** button will remain at high tally or will go low tally after the Macro finishes its run. If the **Macro Shift** button is selected and the Camera channel has a Channel Hold Override set, the **Macro Shift** button flashes to indicate that two states are present simultaneously.

Channel Hold on Unacquired Channels

Channel Hold functions are not dependent on channels being acquired. The operator can set or release Channel Holds or Channel Hold Overrides on any channel at any time (except for the Global channels which are not affected by the Channel Hold feature).

For example, consider a three-channel effect that was programmed with Channel Holds on channels 2 and 3. If this effect is recalled with only the first two channels acquired, effect Channel Holds will be in force for both channels 2 and 3, even though channel 3 is not acquired. The operator can release the Channel Hold on channel 3, or set or release Channel Holds on any other channels, as desired.

Note that the Enable row indicates the current Channel Hold state when the **Chan Hold** button is lit. Turn this button off to display the current Enabled statuses for the channels.

Freeze Override Operating Notes

The new **Freeze 1** and **Freeze 2** buttons permit override control of Krystal Input Recursive and Motion Detection functions.

Note Freeze Override was introduced in Krystal 3.1.0 software with a slightly different menu structure and save mechanism. Changes enacted in 3.1.1 software are listed earlier in this document. The following describes Krystal 3.1.1 and 3.1.5 software Freeze Override operation.

Overview

The Krystal Input Recursive feature has several parameters (including Freeze and Motion Decay effects), which are keyframeable and can be applied to channels on an individual basis. These parameters are controlled from the Input Recursive menu. The Krystal system also has parameters for Motion Detection, which are controlled from the Motion Detection menu.

The Freeze Override feature adds independent memory storage for two additional sets of Input Recursive and Motion Detection parameters, Freeze 1 and Freeze 2. Settings from these menus can be saved to these separate storage locations, and then invoked at any time by pressing the **Freeze 1** or **Freeze 2** Control Panel override buttons. Unlike the basic Input Recursive and Motion Detection features, Freeze Override is not keyframeable. A Freeze Override can be applied to individual channels in an effect, depending on delegation. The Freeze Override button tally reports the status of the current Krystal display channel (first channel delegated).

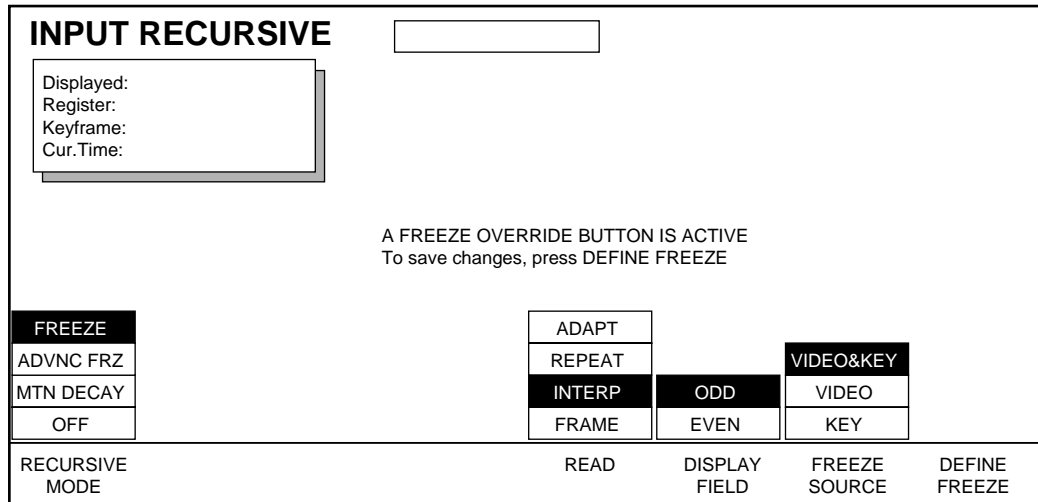
Freeze Override settings are not saved to the Krystal work buffer or in effects, but are saved as part of the user preference file. Once Freeze Override has been turned on for a channel it will remain on until turned off by the user. Pressing the **Clear Work Buffer** button or loading a new register will *not* clear any Freeze Override settings in force.

When the Freeze Override function is active (**Freeze 1** or **Freeze 2** button lit), any changes made in these menus are immediately enacted and can be used for the currently selected Freeze Override. If the changes are not saved, turning the Freeze button off and back on restores the previously defined Freeze Override settings for that button. Changes are saved as user defaults with the **Define Freeze** soft button. These settings will then be enacted the next time that Freeze Override function is enabled.

Input Recursive Freeze Menus

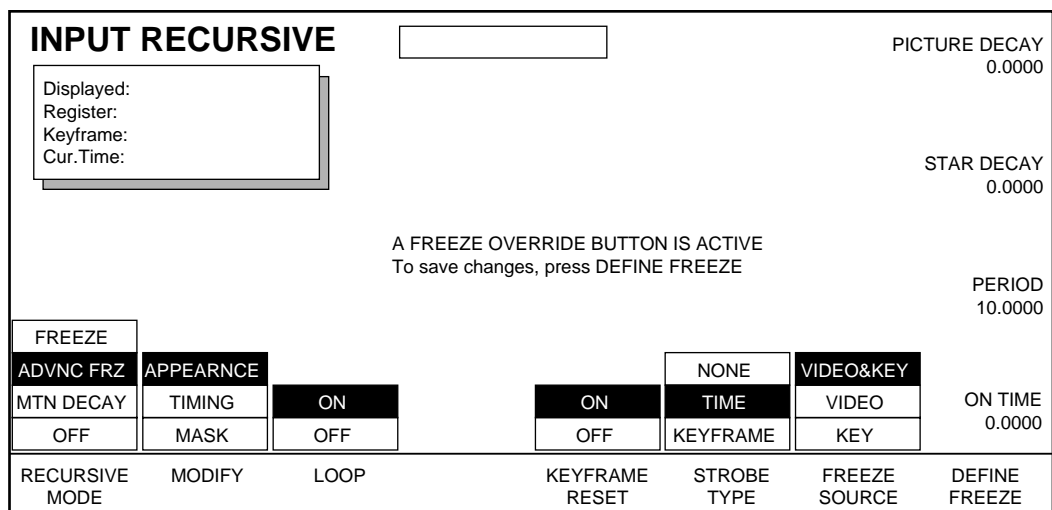
Two menus are now available for Input Recursive freeze. A simplified menu containing a subset of commonly selected freeze functions is available by pressing **Picture \ INPUT RECURSIVE >** and then pressing **RECURSIVE MODE** to select **FREEZE** (Figure 4).

Figure 4. Simplified Input Recursive Freeze Menu



All the previously available freeze functions are now accessed by selecting the **ADV FRZ** item in the Input Recursive menu (Figure 5).

Figure 5. Advanced Input Recursive Freeze Menu



DEFINE FREEZE — This button only appears in the Input Recursive menu when one of the Freeze Override buttons is lit.

Note The **DEFINE FREEZE** button also appears in the Motion Detection menu when one of the Freeze Override buttons is lit (**Input/Output \ MOTION DETECTION**). Pressing this button in either the Input Recursive or Motion Detection menu will save all the settings for both menus as the user default for that Freeze Override button.

Using Freeze Override

To modify the Freeze Override memory settings:

1. Press the **Freeze 1** Control Panel override button so it is lit.
2. Press **Picture \ INPUT RECURSIVE >** to go to the Input Recursive menu, or press **Input/Output \ MOTION DETECTION** to go to the Motion Detection menu. When a freeze override button is lit, the menu will display the settings for that override memory.
3. Change the settings in the menu. Your change will immediately take effect, and these settings will remain in force as long as the **Freeze 1** button remains lit.
4. If you wish to save these settings for future use, press the **Define Freeze** soft button. The settings will now be the default override settings when the **Freeze 1** button is turned off and back on.
5. Press the **Freeze 1** button to turn it OFF. The previously defined Input Recursive or Motion Detection settings will be restored.
6. Press the **Freeze 2** Control Panel override button and repeat the above steps with different settings for the second override memory.

To restore the factory default Freeze Override settings:

1. Press **User Tools \ WORK BUF PREFS >** to go to the Work Buffer Prefs menu.
2. Press **FREEZE DEFAULT...** , then select **OK** at the prompt. Factory default values (all off) will immediately be assigned to both freeze override memories.

Easy Cube Documentation Correction

The “Creating a Solid Cube” procedure described in the Krystal User Manual (Appendix A - Tips and Techniques) includes incorrect values. The transform values for channels 2 and 3 (procedure steps 4 and 5) must be negative for proper Easy Cube feature operation. The correct solid cube creation procedure is presented below:

1. Delegate Channels 1, 2, and 3 only, press **Source, Size/Locate, Z**, type **• 5** on the keypad and press **Enter**.
2. Go to the Crop Menu (**Picture Frame \ CROP >**) press **CROP MODE** to select **BOX**, press **ADJUST** to select **ALL SIDES**, transfer the **POSITION ALL SIDES** soft knob control to the keypad, then type **2 • 5 Enter**. This sets the crops to Left -2.5, Right +2.5, Top +2.5, Bottom -2.5.
3. Delegate only Ch 1, press **Locate 3D, Z**, type **- 2 • 5 Enter**.
4. Delegate only Ch 2, press **Rotate, X**, type **- • 2 5** on the keypad and press **Enter**. Press **Locate 3D, Z**, type **- 2 • 5 Enter**.
5. Delegate only Ch 3, press **Rotate, Y**, type **- • 2 5** on the keypad and press **Enter**. Press **Locate 3D, Z**, type **- 2 • 5 Enter**.

If you now Delegate only a Global channel to which all three channels are assigned and press **Rotate**, you can turn the cube to see all three sides. Press **Target, Locate 3D** and you can move the cube around on the screen. You can also turn on the Easy Cube feature (**View \ EASY CUBE**) to automatically translate the three channels to the opposite side as the cube rotates, forming the illusion of a complete, six sided cube.

Control Panel Keycap Change

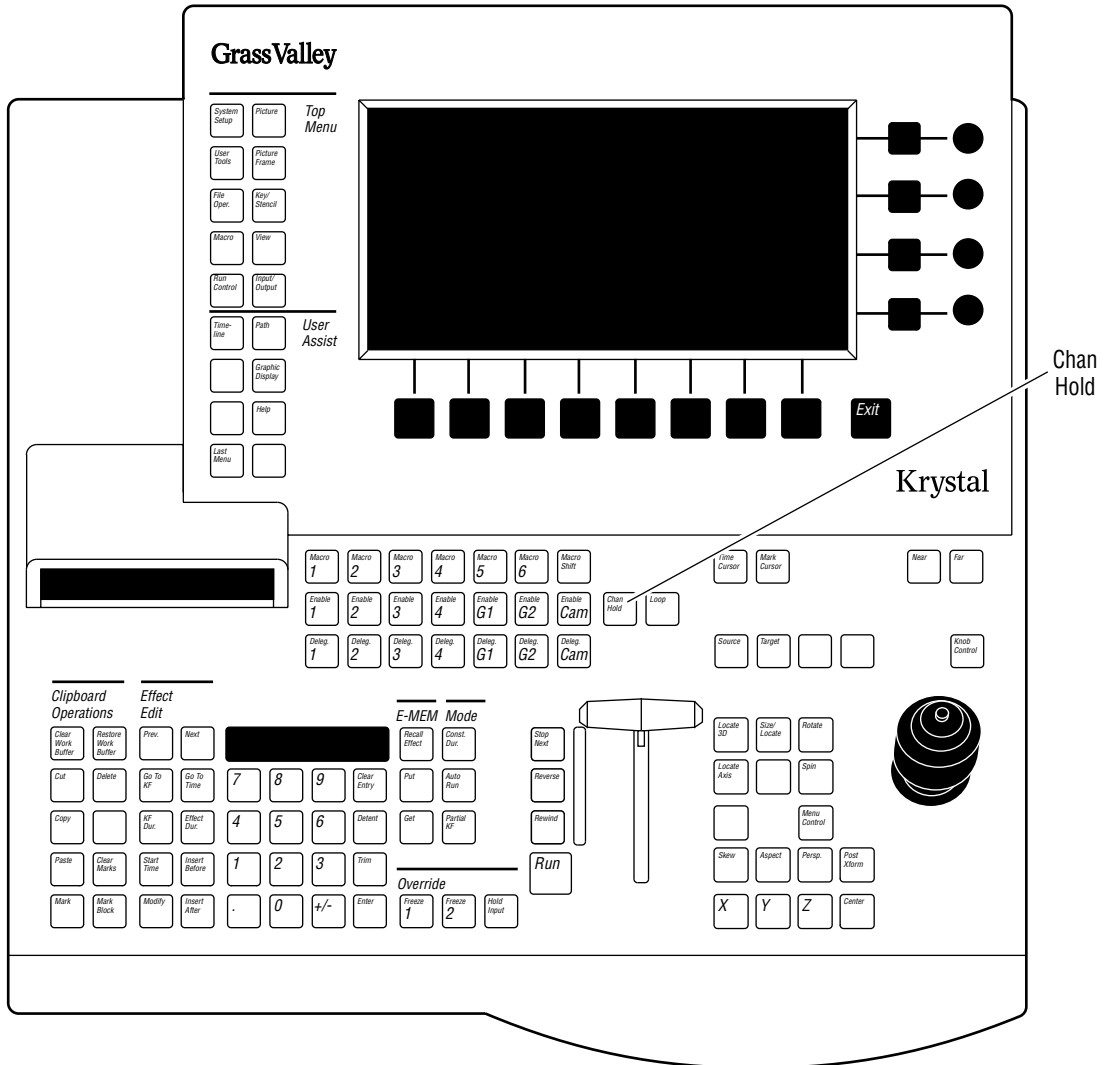
If you are upgrading from 3.1.0 directly to 3.1.5 Krystal software, a control panel keycap and LED need to be replaced. Contact Grass Valley Group Customer Support if you need this keycap and LED.

Replacement Procedure

1. Remove the blank white keycap immediately to the right of the **Enable** button row (the left button above the lever arm).
2. Use needle nosed pliers to remove the white LED from the bottom of the exposed button switch and replace it with the orange LED supplied with the upgrade kit, being careful to align the contact wires correctly.
3. Replace the keycap with the **Chan Hold** keycap supplied.

When the keycap has been replaced, the Krystal Control Panel should appear as shown in Figure 6.

Figure 6. Replacement Keycap Locations





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