

# K2 TimeDelay

## APPLICATION SOFTWARE



User Manual  
Software Version 9.0

# CERTIFICATE

Certificate Number: 510040.001

The Quality System of:

## Grass Valley USA, LLC and its Grass Valley Affiliates

Headquarters:

400 Providence Mine Road  
Nevada City, CA 95945  
United States

15655 SW Greystone Ct.  
Beaverton, OR 97006  
United States

Kapittelweg 10  
4827 HG Breda  
The Netherlands

2300 So. Decker Lake Blvd.  
Salt Lake City, UT 84119  
United States

Including its implementation, meets the requirements of the standard:

## ISO 9001:2008

Scope:

The design, manufacture and support of video and audio hardware and software products and related systems.

This Certificate is valid until: June 14, 2015  
This Certificate is valid as of: June 14, 2012  
Certified for the first time: June 14, 2000



H. Pierre Sallé  
President  
DEKRA Certification, Inc

The method of operation for quality certification is defined in the DEKRA General Terms And Conditions For Quality And Environmental Management Systems Certifications. Integral publication of this certificate is allowed.

DEKRA Certification, Inc.  
4377 County Line Road  
Chalfont, PA 18914  
Ph: (215)997-4519  
Fax: (215)997-3809  
CRT 001 042108

Accredited By:  
ANAB



# K2 TimeDelay

Application Software

User Manual  
Software Version 9.0

# Contacting Grass Valley

<b>International Support Center</b>	<b>United States/Canada</b>   +1 800 547 8949 or +1 530 478 4148
<b>Local Support Centers</b>	<b>N.America</b>   +1 800 547 8949 (Option 2) or +1 530 478 4148   <b>France:</b> +800 80 80 20 20 or +33 1 48 25 20 20
	<b>Asia</b>   <b>Hong Kong, Taiwan, Korea, Macau:</b> +852 2531 3000 <b>India:</b> 1800 200 3432 (within India) <b>Southeast Asia/Malaysia:</b> +603 7492 3033 <b>Southeast Asia/Singapore:</b> +65 6379 1771 <b>China:</b> +86 10 5883 7525
	<b>Australia:</b> 1300 721 495 <b>New Zealand:</b> 0800 846 676 <b>Outside Australia/New Zealand:</b> +61 3 8540 3650
	<b>Near East and Africa:</b> +800 8080 2020 or +33 1 48 25 20 20   <b>Central/South America:</b> +55 11 5509 3443
	<b>Europe</b>   <b>Armenia/Azerbaijan/Belarus/Kazakhstan/Kyrgyzstan/Moldova/Russia/Tajikistan/Turkmenistan/Ukraine/Uzbekistan</b> : +7 495 787 06 55 <b>Turkey:</b> +90 (0) 212 408 22 23 <b>N. Europe:</b> +44 844 338 7007, +44 (0) 20 8867 6305 <b>S. Europe/Italy:</b> +39 06 87 20 35 28 <b>S. Europe/Portugal:</b> +34 91 512 03 58 <b>S. Europe/Spain:</b> +34 91 512 03 50 <b>Belgium/Luxemburg:</b> +32 (0) 2 334 90 30 <b>Netherlands:</b> +31 (0) 76 57 21420 <b>Germany, Austria, Eastern Europe:</b> +49 6150 104 444 <b>UK, Ireland, Israel:</b> +44 844 338 7007

Copyright © Grass Valley USA, LLC. All rights reserved.  
This product may be covered by one or more U.S. and foreign patents.

## Grass Valley Web Site

The [www.grassvalley.com](http://www.grassvalley.com) web site offers the following:

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

**FAQ Database** — Solutions to problems and troubleshooting efforts can be found by searching our Frequently Asked Questions (FAQ) database.

**Software Downloads** — Download software updates, drivers, and patches.



## END-OF-LIFE PRODUCT RECYCLING NOTICE

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

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

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



For further information on the Grass Valley product take back system please contact Grass Valley at + 800 80 80 20 20 or +33 1 48 25 20 20 from most other countries. In the U.S. and Canada please call 800-547-8949, and ask to be connected to the EH&S Department. Additional information concerning the program can be found at: [www.grassvalley.com/about/environmental-policy](http://www.grassvalley.com/about/environmental-policy)

001187401

# Contents

---

About K2 TimeDelay .....	7
K2 TimeDelay overview .....	7
K2 TimeDelay channel panes .....	9
K2 TimeDelay menu .....	9
K2 TimeDelay settings .....	11
Lock/Unlock AppCenter .....	12
K2 TimeDelay messages .....	12
Status Bar messages .....	12
Channel status .....	12
Error messages.....	12
Using K2 TimeDelay .....	13
Before using K2 TimeDelay .....	13
Starting a new session manually .....	14
Starting a new session automatically.....	14
Stopping a K2 TimeDelay session.....	14
Modifying the time of day timecode source.....	14
Adjusting K2 TimeDelay playback.....	15
Changing K2 TimeDelay audio levels.....	15
Recovering from K2 TimeDelay disruptions.....	16
Purging media with K2 TimeDelay .....	16
Using K2 TimeDelay clip in another application.....	17
<b>Appendix A Trademarks and Agreements</b>	
Trademarks .....	18
JPEG acknowledgement.....	18
<b>Index.....</b>	<b>19</b>



## About K2 TimeDelay

K2 TimeDelay is an optional control application that runs in the AppCenter application on your local K2 Summit Production Client. TimeDelay records incoming source material and delays the playback of the media. You can determine the length of the delay. The system notifies you if you have exceeded the limit of the available disk space. TimeDelay allows you to start recording on the assumption that you will make sufficient room manually. TimeDelay requires K2 Summit software version 7.1 or higher.

The record and play channels need to be on the same K2 system. Multiple sessions of TimeDelay can run simultaneously if there are enough record and playback channels on the K2. For example, in a K2 Summit Production Client with two record and two play channels, you could have two sessions of TimeDelay running, each with one recorder and one playback channel.

This section is divided into the following topics:

[“K2 TimeDelay overview” on page 7](#)

[“K2 TimeDelay channel panes” on page 9](#)

[“K2 TimeDelay menu” on page 10](#)

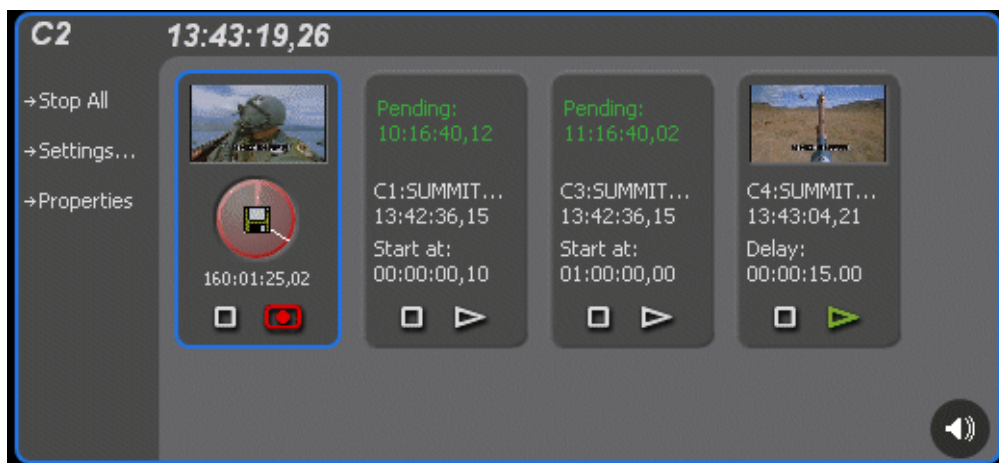
[“K2 TimeDelay settings” on page 11](#)

[“K2 TimeDelay messages” on page 12](#)

### K2 TimeDelay overview

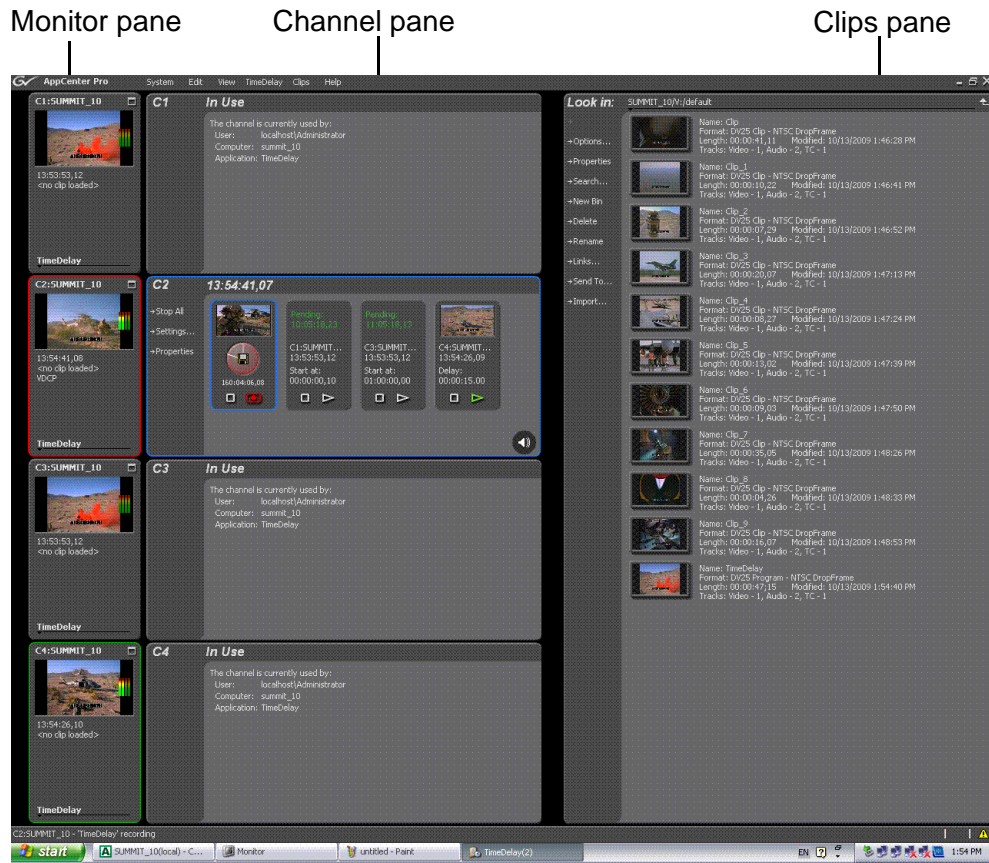
K2 TimeDelay allows you to view a summary of all the channels controlled by this TimeDelay session. When you select a channel, it is highlighted with a blue background; all other channels have a grey background. Only the selected channel responds to keyboard input such as using keyboard shortcuts to Play, Record, or Stop.

This section describes the graphical interface. The picture below shows the TimeDelay pane with 3 playback channels: C2 and C3 are pending; C4 has started playing. C1 is the selected channel.



Note that the play channels used by this session of K2 TimeDelay do not show the TimeDelay application to their right. Instead, they show that the channel is in use by the TimeDelay application running on the corresponding record channel. Use the recording channel to interact with the TimeDelay application. In the monitor pane, a red outline indicates a recording channel and a green outline indicates a channel that is currently playing media.

The following illustration shows a K2 Summit Production Client. C2 is recording (note the red outline around the monitor pane), C1 and C3 are pending, and C4 is playing out the media (note the green outline around monitor pane).



K2 TimeDelay is an optional application designed to interface with AppCenter. Since K2 TimeDelay is not a standalone application, the K2 TimeDelay documentation is provided to supplement the existing server documentation. This manual does not cover basic AppCenter tasks except where they overlap with TimeDelay functions.

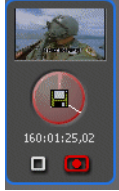
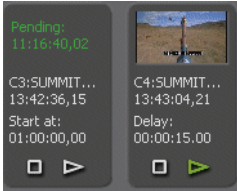
Once K2 TimeDelay is installed, AppCenter includes a TimeDelay item in the application droplist on all channels capable of recording.

For more information on installing K2 TimeDelay, see the *K2 TimeDelay Release Notes*.



## K2 TimeDelay channel panes

When the channel associated with a pane is selected, the pane is highlighted with a blue outline. This indicates that both the keyboard controls and the status bar now belong to this channel.

Channel	Description
Record channel (selected channel) 	<p>The record channel pane contains a thumbnail, time dome, and stop and record controls. The thumbnail for the currently recording asset is displayed above the time dome. If no thumbnail can be found or created, an icon is displayed indicating that there is no thumbnail available. Unlike the thumbnail in the Recorder application, this thumbnail is updated every 10–20 seconds to reflect the current record position.</p> <p>The Time Dome control graphically displays the remaining storage and shows estimated remaining time available on the drive. A filled Time Dome represents no storage remaining. A “sweep second hand” shows that recording is in progress. This is represented as a white line on the Time Dome that sweeps through a complete revolution every ten seconds.</p> <p>The Record and Stop controls manually start and stop the TimeDelay session. This starts and stops all channels currently controlled by that TimeDelay session, including the playback channels. A selected channel is indicated by a blue outline.</p>
Play channels (pending and playing) 	<p>Each play channel contains a thumbnail, the channel and machine name, timecode, preset delay value, and stop and play controls. Before playback starts, the play channel displays a countdown in place of the thumbnail. After playback starts, the thumbnail appears, and is updated every 10–20 seconds to represent a roughly current playback position.</p> <p>The Play and Stop controls can be used to manually start and stop playback. When you press Play, the delay changes to indicate the appropriate time differential. When you press Stop and then press Play, playback does not resume where it was paused. Instead, playback jumps to the correct delay position.</p> <p>If you pause a play channel that was started with Start At, it automatically switches to Delay to maintain the initial offset. If you pause a play channel pause or stop a playing channel, then go to the Settings dialog box to change that channel from Delay to Start At, you must hit Play for the change to take effect.</p>

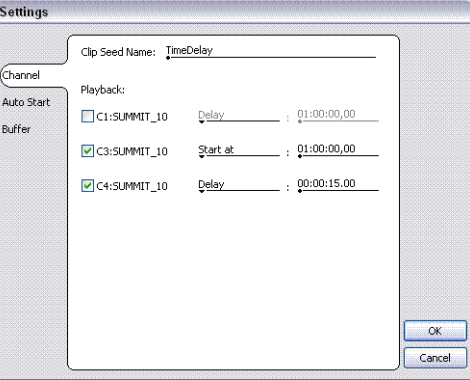
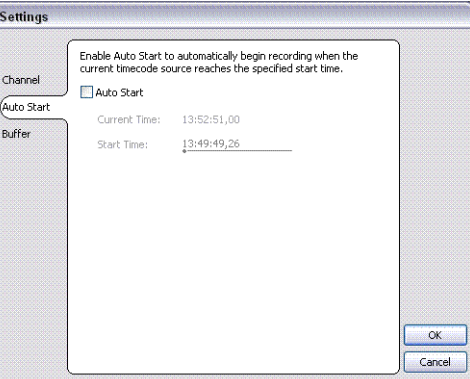
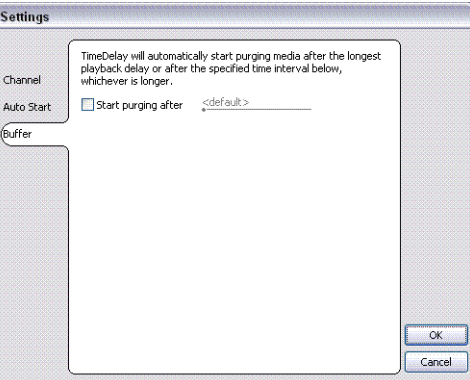
---

## K2 TimeDelay menu

When the K2 TimeDelay application is active, a TimeDelay menu appears in AppCenter's main window. The following table describes the menu items.

Menu item	Description
Stop All/Start	This menu item and the corresponding tool bar control toggle between Start and Stop All, depending on whether or not a TimeDelay session is in progress. It has the same effect as the Record and Stop controls on the record channel pane.
Properties	Displays the properties for the program that is being recorded in a dialog box.
Settings	Opens the TimeDelay Settings dialog box.

## K2 TimeDelay settings

Setting	Description
Channel	<p>Allows you to select the playback channel(s). Up to three checkboxes might be available, depending on the number of channels available.</p> <p>Provides a default clip seed name of TimeDelay. You can enter a clip seed name of up to 28 characters.</p>
	
Auto Start	<p>Enables Auto Start to begin recording automatically when the current timecode source reaches the designated start time.</p>
	
Buffer	<p>K2 TimeDelay automatically determines the buffer size. By default, the record buffer size is based on the largest playback delay. You can customize the buffer size, but it must always be larger than the minimum buffer size.</p>
	

## Lock/Unlock AppCenter

The Lock/Unlock feature in AppCenter Workstation allows you to lock the entire AppCenter application.

It could be useful after the TimeDelay starts running in order to prevent any accidental interference with its operation.

To lock the AppCenter, select Lock from the AppCenter System menu.

When AppCenter is unlocked it does not respond to keyboard or mouse input (except to unlock AppCenter). However, the status of any application in AppCenter, including TimeDelay, is still updated as normal.

To unlock AppCenter, do the following:

1. Press any key on the keyboard, or click the left mouse button anywhere in the AppCenter window.
2. A dialog appears to confirm that you want to unlock AppCenter. Click **Yes**.

## K2 TimeDelay messages

This section is divided into the following topics:

["Status Bar messages" on page 12](#)

["Channel status" on page 12](#)

["Error messages" on page 12](#)

### Status Bar messages

The K2 TimeDelay application displays status information and error messages on the AppCenter status bar.

### Channel status

The K2 TimeDelay application displays status messages on the AppCenter status bar for the active channel. The message describes whether the channel is recording, playing, pending, or stopped.

The messages have this format:

<channel>: <machine> - '<timedelay session name>' message.

### Error messages

The K2 TimeDelay application displays error messages in the AppCenter status bar. For example, if recording fails for some reason after a record session has begun.

## Using K2 TimeDelay

This section is divided into the following topics:

- [“Before using K2 TimeDelay” on page 13](#)
- [“Starting a new session manually” on page 14](#)
- [“Starting a new session automatically” on page 14](#)
- [“Stopping a K2 TimeDelay session” on page 14](#)
- [“Modifying the time of day timecode source” on page 14](#)
- [“Adjusting K2 TimeDelay playback” on page 15](#)
- [“Changing K2 TimeDelay audio levels” on page 15](#)
- [“Recovering from K2 TimeDelay disruptions” on page 16](#)
- [“Purging media with K2 TimeDelay” on page 16](#)
- [“Using K2 TimeDelay clip in another application” on page 17](#)

### Before using K2 TimeDelay

Before you can access K2 TimeDelay, you need to log on to a K2 Summit Production Client or K2 Media Solo Server and launch AppCenter. (You can set up AppCenter to log you in automatically. For more information, see the *K2 AppCenter User Manual*.) When AppCenter is started, an application is launched for each channel. To change the application running on a channel, select a new application from the channel’s application drop-down list. TimeDelay only appears in a channel’s drop-down list if that channel is capable of recording.

A TimeDelay session uses one record channel and one or more play channels. To interact with the TimeDelay application, you must activate the record channel that it is using. To activate the channel, you can select the channel from inside the channel status pane or click on the TimeDelay application in the applications pane.

To start TimeDelay on a channel, follow these steps:

1. Select the channel you want to record on.
2. Select TimeDelay from the channel’s application drop-down list. (If the channel is not capable of recording, TimeDelay does not display as an option.)
3. The K2 TimeDelay application starts. In the Settings dialog box, select the play channel or channels for this TimeDelay session.
4. Specify the playback start time either in terms of delay or give an exact start time.
5. (Optional) Set up the AutoStart or Buffer. For more information, see [“K2 TimeDelay settings” on page 11](#).
6. Click **OK**. The settings do not take affect until you click **OK**.

***NOTE:** If any of the selected channels are actively playing or recording, a confirmation message box appears before TimeDelay commandeers the channel.*

## Starting a new session manually

If you are already in the K2 TimeDelay application, you can start a new session manually. To start a new session, do the following:

1. If any channel controlled by TimeDelay is still running, click the Stop control on the record channel.
2. You can click the Settings button to open the TimeDelay Settings dialog to setup the new session. Otherwise, the last settings are used.
3. Click the Record control on the record channel, click the Start tool bar control, or select the Start menu item. The play channel(s) will start their delay session.

## Starting a new session automatically

The TimeDelay process can be started automatically at a specific timecode value, regardless of the timecode source.

To automatically start TimeDelay, do the following:

1. To open the TimeDelay Settings dialog box, click on Settings button or select **TimeDelay | Settings**.
2. Select the Auto Start tab.
3. Check the Auto Start checkbox.
4. In the Start Time field, enter the appropriate start time. The start time must be at least 10 seconds ahead of the current time.
5. Click **OK** to close the TimeDelay Settings dialog box. The record is not scheduled until you press **OK**.

When auto start is activated, a countdown is shown in place of the thumbnail for the record channel.

## Stopping a K2 TimeDelay session

To stop the TimeDelay session, do one of the following:

- Click the Stop All tool bar button.  
— or —
- Select the Stop All menu item.  
— or —
- Click the Stop control on the record channel.

## Modifying the time of day timecode source

The time of day timecode is displayed in the upper-left of the TimeDelay title bar. It is used to schedule playback (and record when using the auto start feature) and is the timecode recorded to the TimeDelay clip.

**NOTE:** To ensure frame accuracy, Grass Valley recommends using an external timecode source such as LITC.

To modify the time of day source, do the following:

1. Select **System | Configuration**.
2. Select the System tab.
3. In the Time Of Day section, select the source.
4. Click **OK** to close the Configuration dialog box.

## Adjusting K2 TimeDelay playback

Use the TimeDelay Settings dialog box to modify the start time either in terms of delay or give a specific start time. Once you have clicked the **OK** button, TimeDelay adjusts the playback in one of two ways:

- If playback has not started, TimeDelay schedules the playback as usual.  
— or —
- If playback has already started, clicking the **OK** button causes TimeDelay to stop the playback on that channel, cue to the new delay offset, and begin playback at the new position.

The maximum delay allowed is 23:59:59;29. If a delay larger than the maximum is entered, TimeDelay converts the entered value to less than the maximum. For example, if you enter a value of 24:10:59;29 TimeDelay converts it to 00:10:59;29. If you enter a value of 25:10:59;29 TimeDelay converts it to 01:10:59;29.

Playback delays that are too small are automatically adjusted to the closest valid value. The minimum playback delay is based on the video server that the TimeDelay channels reside on; it is summarized in the following table.

Video server	Minimum playback delay (seconds)
K2 Summit Production Client with internal storage or K2 Solo Media Server	15
K2 Summit Production with external storage	25

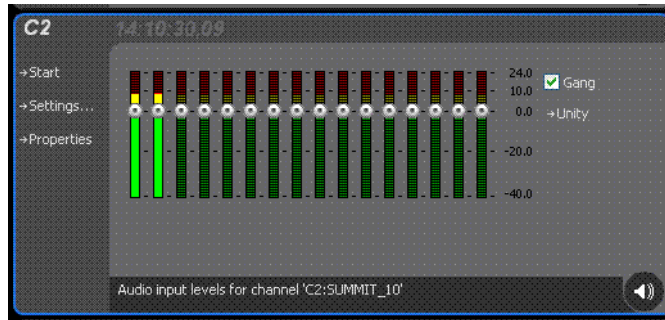
You can modify the length of the K2 TimeDelay playback delay. The system notifies you if you have exceeded the limit of the available disk space. TimeDelay allows you to start recording on the assumption that you will make sufficient room manually.

## Changing K2 TimeDelay audio levels

You can modify the audio levels for the record channel or any one of the playback channels independently. To open the Meters window, select the TimeDelay channel and click on the Meters button in the lower right-hand corner.



This window contains a meter for each audio input or output (depending on the current channel selection) that displays the audio level.



Each audio meter indicates the final (adjusted) audio level on the audio input or output for that track. A decibel scale is displayed alongside the sliders.

To adjust the input gain for the record channel or the output gain for a play channel, move the slider on the meter. To snap all the gain levels back to Unity default, click the Unity button. To change all gain levels proportionately when any one of them is moved, click the Gang checkbox.

## Recovering from K2 TimeDelay disruptions

If K2 TimeDelay is disrupted, due to a power outage, like when both power cords are pulled, it restarts automatically at the correct position. (To restart TimeDelay without logging in, you need to configure auto login in Appcenter. For more information, see the *K2 AppCenter User Manual*.)

To initiate auto recovery, AppCenter must be restarted, either manually or automatically on reboot. TimeDelay reloads the clip, jumps to the correct position, and begins recording or playback depending on which operations were in progress during the failure. It fills in black video where the system was not recording, so that the clip length and delays are exactly maintained.

## Purging media with K2 TimeDelay

By default, K2 TimeDelay automatically starts purging media after the longest playback delay, but you can specify a longer time interval after which purging will begin. This could be useful if you want to use the underlying clip in another application, potentially on another server that shares the same storage. The purge interval is the period between the start of recording and the start of the media purge.

You are notified if there is not enough disk space to support recording for this time interval. If so, the application allows the record to start on the assumption that you will make sufficient room manually. If the server runs out of storage, recording stops.

To set the time interval for purging, do the following:



1. Click the Settings button or select Settings menu item from the Menu to open the TimeDelay Settings dialog box.
2. Select the Buffer page.
3. Check the Start purging after check box and enter a time interval. If the specified time interval is shorter than the longest playback delay, then purging does not begin until after the longest playback delay.
4. Click **OK** to close the TimeDelay Settings dialog box.

## Using K2 TimeDelay clip in another application

The clip recorded by K2 TimeDelay can be used in other applications, in a similar manner to any other clip on the system. For example, you can load it into the Player application and play it or create subclips from it.

***NOTE:** When the purge interval is reached, the oldest media is purged. The first frames will be deleted as the session continues along. For more information on purging media, see “Purging media with K2 TimeDelay,” on page 16.*



## ***Trademarks and Agreements***

This section contains the following topics:

- [“Trademarks”](#)
- [“JPEG acknowledgement”](#)

## Trademarks

Grass Valley, STRATUS, K2, Aurora, Summit, ChannelFlex, Dyno, Solo, ClipStore, Infinity, Turbo, Profile, Profile XP, NetCentral, NewsBrowse, NewsEdit, NewsQ, NewsShare, NewsQ Pro, and Media Manager are either registered trademarks or trademarks of Grass Valley USA, LLC. in the United States and/or other countries. Grass Valley USA, LLC. products are covered by U.S. and foreign patents, issued and pending. Additional information regarding Grass Valley USA, LLC. trademarks and other proprietary rights may be found at [www.grassvalley.com](http://www.grassvalley.com). Other trademarks and logos used in this document are either registered trademarks or trademarks of the manufacturers or vendors of the associated products, such as Microsoft® Windows® operating system, Windows Media® player, Internet Explorer® internet browser, and SQL Server™. QuickTime and the QuickTime logo are trademarks or registered trademarks of Apple Computer, Inc., used under license therefrom.



## JPEG acknowledgement

This software is based in part on the work of the Independent JPEG Group.

# Index

---

## A

AppCenter  
    keyboard shortcuts 18  
appcenter, lock/unlock 12  
audio levels, changing 15  
auto start 11  
autorecovery 16

## B

buffer 11

## C

channel 11  
channel buttons 9  
channel status 12  
clip, using in other applications 17

## D

delay  
    maximum allowed 15  
    minimum playback 15  
disruption of TimeDelay session 16  
documentation online 4

## E

error messages 12

## F

FAQ database 4  
frequently asked questions 4

## G

Grass Valley web site 4

## K

keyboard shortcuts 17, 18

## M

menu 9

## O

online documentation 4

## P

playback  
    adjusting 15  
    maximum allowed delay 15  
    minimum delay 15  
properties 9  
purging media 16

## R

restarting automatically 16

## S

settings 10, 11  
shortcuts, keyboard 18  
software download from web 4  
starting TimeDelay  
    automatically 14  
    manually 14  
status bar messages 12  
Stop All/Start 9  
stopping TimeDelay 14

## T

timecode source, modifying 14  
TimeDelay overview 7

## U

Using K2 TimeDelay 13

## W

web site documentation 4  
web site FAQ database 4  
web site Grass Valley 4  
web site software download 4

