

K2 Dyno S 3.4

Topic Library

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Grass Valley Web Site

The <http://www.grassvalley.com/support> web site offers the following:

Online User Documentation — Current versions of product catalogs, brochures, data sheets, ordering guides, planning guides, manuals, and release notes are available.

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.

Recycling

Vist www.grassvalley.com for recycling information.

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Release Notes

Version 3.4

- **Enhanced support of DynoZoom** — Supports Pan & Zoom feature with 6x SSM, 1080p 3x SSM, and SD/HD formats in K2 Dyno S Replay Controller. Requires the DynoZoom Frame and GV DynoZoom software.
- **Monitor Tool** — Monitor Tool allows the delivery of streaming video and selected audio to the K2 Dyno S screen and headset port with touchscreen volume control.
- **Split Audio/Video editing in a playlist** — Supports the extension of audio or video to cross the edit point of two adjoining clips in a playlist.
- **Wipe transitions** — Enhanced mix effects with addition of wipe transitions with and without borders. Includes choices for color, thickness, and dithering.
- **Single mark gang recue** — Allows single mark to be applied to ganged channels, and selection of the mark point recued in ganged player channels.
- **T-bar PGM only mode** — Supports the use in PGM only mode of replay operation, so that T-bar control always remains with the PGM channel even when the PVW channel is selected.
- **Clip looping** — Enables clip properties to loop the clip during playback without adding the clip to a playlist.
- **Clip duration/timecode display** — Enables the selection of duration or mark-in timecode display for the clip below the thumbnail.
- **GPI triggers for playlist speeds** — Supports preset speeds of clips in a playlist and allows Switcher Timeline GPI triggers to be accurate. Prior versions of K2 Dyno S software ignored preset speeds and would play all clips at 100%.
- **Documentation** — The following additional changes have been made to the K2 Dyno S 3.4 Topic Library:
 - "About This Release" section renamed "Release Notes" and moved to top of Topic Library.
 - Topic Library republished 20141223 to remove duplicate topics.
 - Topic Library republished 20150218 to remove administrator credentials.

Not supported in this release

The following device and functionality is not supported with this version of K2 Dyno S software. Check with your Grass Valley representative regarding availability.

- The first-generation K2 Dyno Replay Controller is only supported up to version 3.2 of the K2 Dyno S software. Version 3.3 and above will only run in K2 Dyno S Replay Controllers.

Changes and features in previous releases

The following sections describe changes and features in past releases.

Version 3.3

- **4K/UHD workflow** — Supports 4K Ultra High Definition workflow. Allows the play of 4K live stream proxy from K2 Summit 3G system on the K2 Dyno S Replay Controller touchscreen.
- **4K/UHD Pan & Zoom** — Supports 4K/UHD Pan & Zoom feature in K2 Dyno S Replay Controller. Requires the DynoZoom Frame and GV DynoZoom software.
- **6x Super-Slo-Mo** — The K2 Dyno S Replay Controller supports 6x Super-Slow-Mo (SSM) workflow with LDX XtremeSpeed and LDX Compact XtremeSpeed 6x ultra slow-motion cameras. For playback, the AnySpeed™ playback function guarantees smooth replay at any speed from 0% to 200% using the T-bar.
- **6-in/2-out support** — Supports playback from 3-input Multi-Cam recorder which records video for each three 720p/1080i SDI inputs in a channel.
- **Documentation** — PDF manuals are replaced by an online HTML format Topic Library. Refer to [Topic Library replaces PDF manuals](#) on page 11.
- **Incompatibility with the first generation K2 Dyno Replay Controller** — The first-generation K2 Dyno Replay Controller is only supported up to version 3.2 of the K2 Dyno S software. Version 3.3 and above will only run in K2 Dyno S Replay Controllers.
- Topic Library republished 20141105 to restore missing topic [Not supported in this release](#) on page 7.

Version 3.2

- **Full Multi-Cam Angle Clips** - Provides proxy support for Multi-Cam Angle assets for GV STRATUS systems. *Sequence* assets look like *Clip* assets (Video, Audio, TC, ANC) to GV STRATUS.
- **Pre-roll** - This setting sets the pre-roll duration of a clip. The duration cannot exceed the guard band duration. Refer to K2 Dyno S Replay Controller User Manual for software version 3.2.
- **Post-roll** - This setting sets the post-roll duration of a clip. The OUT point marker is ignored. The playback stops at the end of the guard band marker. Refer to K2 Dyno S Replay Controller User Manual for software version 3.2.
- **Mark pauses** - This setting allows you to mark clip pauses. Use separate angle to set your mark in/out points for each clip angle. The guard band duration applies to each angle at the time of clip creation. Refer to K2 Dyno S Replay Controller User Manual for software version 3.2.
- **Per-angle keywords and ratings** - Each angle of a Highlight clip must have independent Keywords and Ratings associations.
- **Transition ramping** - Once a mix effect transition is applied, the outgoing clip needs to ramp up or down to realign with the incoming clip that must also ramp up or down. The ramping is applicable for the duration of the mix effect.
- **Exposed Timecode Sources** - All available Timecode sources may be exposed through Dyno.
 1. **Time of Day** - internally generated Windows System Clock timecode source.
 2. **Generated** - generated timecode source. Select either external LTC, ATC LTC, ATVC VITC, or internally generated user-entry.

- **User enhancements** – The following have been enhanced:
 1. Highlight clip remains selected after adding to a playlist.
 2. The angle of a clip may be selected or cued from the clip properties window.
 3. Each clip angle has its own Marks page in the clip properties window.
 4. Shared storage devices mapped on Windows sharing, can now be accessed as a Network Send destination.

Version 3.1

- **ShareFlex** - Supports sharing a K2 Dyno Replay Controller's record train from one K2 Summit system with another K2 Summit system over the network. Refer to [About ShareFlex](#) on page 13, [ShareFlex connections](#) on page 13 and to K2 Dyno S Replay Controller User Manual for software version 3.1.

Version 3.0

- **K2 Dyno S Replay Controller** – Improved finger gestures for a better user experience.
- **Favorites Bar** – It is best to think of the Favorites Bar as a “shortcut” location for clips, playlists, and record trains. When viewing the controller screen, drag your finger in a downward direction across the tabs on the left-hand side to reveal the Favorites Bar at the top. There you will see empty slots where you may place items, such as clips. To place a clip in the Favorites Bar, select a clip from a Highlight bin by placing your finger on it until it lights blue, then drag and drop it on an empty slot in the Favorites Bar. You may do the same with items in the Library, or even Playlists by navigating to the Playlist thumbnails and drag/drop into the Favorites Bar. A USB mouse can assist in the same way by mouse-click and drag/drop of items. To remove an item from the Favorites Bar, with the mouse only, right click and select “Remove.” It will delete the shortcut, but not the original clip. The Favorites Bar is virtually endless and you may swipe the bar from right to left or left to right. You may drag items from the Favorites Bar into an open Playlist. To hide the Favorites Bar, simply drag your finger an upward direction across the tabs on the left of the screen.
- **Favorites Tab** – Near the bottom of available tabs on the controller screen is the Favorites Tab. This area appears similar to a Highlight bin, but is designed to aid in managing items in the Favorites Bar. Items in the Favorites Tab do not create “hard” copies of items but rather shortcuts to those items. You may copy multiple clips at a time from Highlight bins and paste them in the Favorites Tab. To remove an item from the Favorites Tab, simply right-click on it with the mouse and select “Remove,” or select it with your finger once and press the Shift button then “Delete” key on the screen. It will delete the shortcut, but not the original clip. Deleting items from the Favorites Tab will not delete the original item, it will however, remove those items from the Favorites Bar.

Version compatibility

Versions qualified for compatibility with this version of K2 Dyno software are summarized in the following sections.

Compatible K2 Dyno S Replay Controller components

The following components reside on the K2 Dyno S Replay Controller and are compatible with this release of software as listed in the following table. Compatible versions are pre-installed on the K2 Dyno S Replay Controller when you receive it new from Grass Valley.

Component versions

Component	Version	Comments
K2 Dyno S System software	3.4	Licensing is required on multiple devices of the K2 Dyno S Replay System. Refer to About K2 Dyno S Replay System software licensing on page 14. NOTE: If staying in the same Operating System Image, simple upgrade steps may be performed. This version is not compatible with the first-generation K2 Dyno Replay Controller.
Operating System Image	3.1.3 and 3.4.3	For K2 Dyno S Replay Controller.

Compatible Grass Valley products

Grass Valley products are compatible with this version of K2 Dyno software as follows:

Product	Version	Comments
K2 system software	9.4	K2 system software versions lower than 9.4 are not compatible.
K2 Dyno Production Assistant	2.0.2.1870	—
SiteConfig	2.1.1.580 and higher	—
SiteConfig Discovery Agent	2.0.0.200	—

Additional notes

The following sections contain additional information about this release.


Topic Library replaces PDF manuals

Customer documentation for select Grass Valley products is now delivered as an online HTML format Topic Library, rather than as PDF manuals, with the following benefits:

- A unified search tool finds information anywhere in a product's documentation set. It is no longer necessary to search multiple PDF manuals.
- Extended workflows can be linked, even when the scope crosses multiple installation and operational scenarios. It is no longer necessary to jump between PDF manuals to follow the complete workflow.
- You can view the entire Topic Library offline by downloading as HTML or as PDF.
- Other usability enhancements.

Information previously found in PDF manuals is now found in the Topic Library. The content of a PDF manual is an expandable section in the Topic Library tree-view.

For example, the content of the "K2 Dyno S Replay Controller User Manual" PDF manual is in the Topic Library section highlighted in the following illustration.



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K2 DYNO S 3.4

Enter search terms

Search



Home > K2 Dyno S 3.4 Topic Library > Using K2 Dyno S Replay Controller

▼ K2 Dyno S 3.4 Topic Library

▢ About the K2 Dyno S Replay Controller

▶ Release Notes

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▶ Introduction

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- Shutting the system down
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Parent topic: K2 Dyno S 3.4 Topic Library

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For the K2 Dyno S Replay Controller product, find information as follows:



Information from this PDF manual...	Is in this Topic Library section:
"K2 Dyno S Replay Controller Release Notes"	Release Notes
"K2 Dyno S Replay Controller User Manual"	Using K2 Dyno S Replay Controller

A Topic Library is hosted online on the Grass Valley website. Access to a Topic Library is available at the same location as PDF manuals. For example, if a reader is accustomed to downloading PDF manuals on the Grass Valley website from a Product Software Download page or from a Product Documentation Library page, a link to the Topic Library is provided on the same page.

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A Topic Library provides several options for accessing information offline, as follows:

- Print a single topic or a group of topics with **Print topic**  or **Print topic and sub-topics**  toolbar buttons. If your printer options support creating a PDF file, you can create a PDF file rather than printing.
- Download the entire Topic Library as PDF file or as HTML. Access these options on the top-most Topic Library page.

About ShareFlex

ShareFlex allows a K2 Dyno S Replay Controller to share content across multiple standalone K2 Summit systems. The K2 Dyno S Replay Controller accesses the content directly over Gigabit Ethernet, with no need to transfer content between the K2 Summit systems. This allows a K2 Dyno S Replay Controller that is controlling a local K2 Summit system to cue remote clips, playlists, and record trains of a different K2 Summit system, without using remote channels.

You can share highlight clips instantly between K2 Summit systems. From your local K2 Dyno S Replay System, you can access a different K2 Summit system to view recorded content, make a clip from a record channel, load and play back a clip, retrieve content from the library, and place a clip in a local playlist.

Key features of ShareFlex are as follows:

- Sharing highlight clips between systems
- Viewing recorded content locally on a different K2 Summit system
- Making a clip from a different K2 Summit system's record channel
- Loading and playing back a clip from a different K2 Summit system
- Retrieving content from the library of a different K2 Summit system
- Placing a clip in a local playlist from different K2 Summit system

ShareFlex connections

A K2 Summit system supports up to four ShareFlex connections at the same time, one of which is guaranteed to be a real-time connection. The number of real-time connections depends on the number of active channel streams. ShareFlex connections beyond the real-time limit share the available network bandwidth, with performance similar to an FTP transfer. In addition, no more than eight total connections are supported.

Real-time connections act as if they are record channels on the K2 Summit system. The total number of active channel streams and real-time ShareFlex connections is subject to the supported channel stream limit for the given media type and bitrate.

The following examples are based on six DVCPROHD (DV100) channel streams, which is the maximum supported on a K2 Summit system.

- Example 1: Two channels are recording DVCPROHD and two channels are playing DVCPROHD. This totals to four real-time streams. That leaves two real-time connections available, and those are used as ShareFlex connections. The total is now six real-time streams, which is the maximum supported. For the remaining two ShareFlex connections supported, the connections are not real time. This means there is a wait, similar to that for an FTP transfer, for the desired asset to be available on the ShareFlex connected system.
- Example 2: Two ChannelFlex channels are recording DVCPROHD, which means each channel records two streams for a total of four real-time streams. In addition, two channels are playing DVCPROHD. The total is now six real-time streams, which is the maximum supported. However, since one real-time ShareFlex connection is guaranteed, there is another real-time connection available for ShareFlex only. The total is now seven connections. Since no more than eight total connections are supported, there is only one connection remaining for ShareFlex. This last ShareFlex connection is not a real-time connection.

Network usage on the network interface connector must be below 80% for ShareFlex to operate at these levels.

The following limitations also apply:

- Limited to the maximum disk bandwidth supported.
- Limited to the network bandwidth available.

About K2 Dyno S Replay System software licensing

K2 Dyno S Replay System software requires a license from Grass Valley for the K2 Dyno S Replay Controller as well as the K2 Summit/Solo system. Licensing is enforced on the K2 Summit/Solo system. No software version license is required on the control point PC.

K2 Summit systems that are used with ShareFlex require a ShareFlex license. K2 Dyno S Replay systems do not need a license to use ShareFlex.

You must obtain a permanent license from Grass Valley and install it on the K2 Summit/Solo system before the trial period expires. For more information on requesting a license, refer to the "Release Notes" section of the K2 Topic Library.

Passwords and security on the K2 Dyno S Replay Controller

No login is required for the Windows operating system or for the Dyno Replay application.

Importing and using keyword files

The keyword editor is included in the Dyno software folder. You can create keywords and import them to the K2 Dyno S Replay Controller as an XML file.

1. Insert the USB Flash drive in the K2 Dyno S Replay Controller.
2. On the touch screen, select **Library**.

3. Navigate to the drive and folder where the XML file with the keywords is located. (Default name, *Keywords.xml*.)
4. Press **Open**.
5. When asked to confirm, press **Yes**.

NOTE: *if you already have a keyword file in use on the Dyno, opening another one will override the original file.*

Operational considerations

- Make sure that you create a “first birthday” image of each K2 Dyno S Replay Controller shortly after installation and configuration is complete. Refer to the *K2 Dyno Replay Controller Service Manual* for procedures.
- Live mode latency and the time it takes to switch between video inputs is not the same for all compression types. HD has the shortest latency and long GOP MPEG types like XDCAM have more latency. The HD compression type provides the best performance overall.
- The Dyno/Summit Replay system allows you to switch between highlights with different compression types as well as mix types in a playlist. It takes a small amount of time for the player to switch between compression types, and this time should be considered when doing the following:
 - While switching compression types in a playlist, transitions are ignored.
 - When playing Super Slo-Mo material faster than its default speed (33% or 50%), there may be a short pause when switching to a compression type other than DVCPRO HD.
 - When playing back 3D (video + key) material, use a single compression type. Transitions are ignored when playing back 3D material.
- Decoding long GOP MPEG can take extra time depending on the position of the GOP at the start of the highlight. When you use AutoPlay to start a long GOP MPEG highlight, you may see a short pause before playback begins. Instead of using AutoPlay, select a highlight to pre-load it, and then press the **Take** button
- Flying M/E transitions are limited to 0.5 seconds or less. Playlist transitions can be up to 2 seconds long.
- Single Mark mode has been deferred.
- If you stop and then resume recording, do not create a highlight that spans the boundary between the old and new recording.
- The Dyno record loop algorithm allows you to record an event over several days. It does not allow you to loop forever. Some file system resources are consumed keeping track of the erased portions of the file and eventually run out. Please plan appropriately.
- When upgrading from a Dyno version before 2.0, highlight guard bands are preserved, but clip marks are not.
- If you are not able to get a session to go into Record, check at the Home screen in Dyno to see if there is available record space (sessions may need to be deleted to create adequate space). Incoming sources may not be in Sync. Stop the session, close AppCenter, route “locked” sources such as Black or Bars and restart AppCenter. Launch the session that was intended to be used.
- If sending a clip to an external storage device fails, permission to write to that location may not have been established. Through Windows, gain permission, or create a new folder while determining a Send Path in the Config/Network area of the Dyno. This will give the Dyno permission to write to that location.

Known Issues

The following limitations are present in this release of software. If you wish to obtain more information about these limitations, please mention the reference numbers.

PR26134	Description:	You cannot rename a session once it has started.
	Workaround:	Choose a session name when selecting channels.
PR40482	Description:	A K2 Summit system and K2 Dyno S Replay Controller cannot join an existing session (go Live) if the record channels have the same names as the record channels on the first K2 Summit system.
	Workaround:	On all K2 Summits that are to share sessions, use the AppCenter application to give the record channels unique names.
ncb00040614	Description:	In a playlist, the only valid transition in or out of a black filler is Dissolve, not Matte.
	Workaround:	No workaround.
ncb00040780	Description:	When operating a playlist in 3D (video + key) mode, pressing Take causes a slight delay in video playback while the clip switches.
	Workaround:	This is expected.
DE788	Description:	You cannot use Aux-audio in a playlist in Gang Mode.
ncb00040378	Workaround:	Select only the P1 or P2 channel that the Aux-audio playlist needs to air on.
US4196	Description:	In playlist when using Trim mode, clip information shows entire clip duration including guardbands.
	Workaround:	No workaround.
US3196	Description:	In playlist when using Shift+Divide thumbnail for divided clip takes on that of the original clip.
	Workaround:	No workaround.
US1586	Description:	Deleting clips is slow.
ncb00064356	Workaround:	No workaround. Rather than hide the process, the clip location is not fully available in the file system until the content is completely removed.
DE2596	Description:	Deleting a session takes time.
	Workaround:	Delete sessions prior to creating a new one as part of your pre-production process to allow for space to be created on the drives.
US2506	Description:	In playlist during a transition with off-speed clips, the speed of the outgoing clip is applied to the incoming clip through the transition.
	Workaround:	No workaround.

US1433 ncb00062744	Description:	Some character overlays in the multi-viewer do not appear even though they are applied.
	Workaround:	Resolution of the monitor is not able or set to a high enough rate. Increase the display resolution of the monitor. Minimum monitor resolution is 1024x768.
US1405 ncb00038934	Description:	In an open Highlight Bin, Shift + New does not create a new bin.
	Workaround:	Navigate to the area to view all Highlight Bins to create a new Highlight Bin.
DE4490 ncb00076307	Description:	When adding an external storage device to the K2 Summit system, Dyno does not “see” it.
	Workaround:	Plug the device directly into the K2 Dyno S Replay Controller.
DE7000	Description:	For users of Dyno software 2.0 and K2 Summit system Build 8.1, the system is configured to use only four audio track. Dyno playlists has eight audio track. Hence, Dyno playlists caused problems for the users to down stream equipment since the other four audio track does not have the associated audio file.
	Workaround:	Configure the K2 Summit Channels audio settings in order to record 8 audio channels and match the playlist configuration in Dyno, prior to exporting the playlists as MXF files.
DE6759	Description:	ShareFlex remote train/session stalls on a K2 SAN system.
	Workaround:	No workaround. The feature is not supported in the current release.
	Description:	The tOG application crashes after it is launched from the Dyno GUI.
	Workaround:	Do the following steps to restart the application: <ol style="list-style-type: none"> 1. Install tOG software. 2. Add Registry Application for tOG. 3. Start Dyno. 4. To launch the application, select the tOG icon.

Upgrading K2 Dyno S Replay Controller Software

This section contains the tasks necessary to upgrade the K2 Dyno S Replay Controller. Follow topics as appropriate for the upgrade.

This section also refers to the upgrade of the K2 system software in relation to any K2 Dyno requirements. The K2 Summit/Solo system must be upgraded to the compatible version before the K2 Dyno software upgrade. Instructions for performing the entire K2 system upgrade are provided in the "Release Notes" section of the K2 Topic Library.

K2 Dyno software version 3.4 requires K2 system software version 9.4. This version of K2 system software requires Windows 7 operating system. If the K2 Summit/Solo system you are upgrading is currently at a K2 system software version lower than 9.x, you need to upgrade the hardware on your K2 Summit/Solo system to support these requirements. Consult Grass Valley Support to upgrade the hardware on your K2 Summit/Solo system.

When installing/upgrading the K2 Dyno software, you must consider versions and compatibility for all K2 system components as listed in the Version Compatibility section in this Topic Library.

NOTE: *Please read these upgrade instructions completely before proceeding with any upgrades.*

About Dyno software

The software components in the K2 Dyno Replay system are as follows:

- Dyno Client software – This software is for the K2 Dyno Replay Controller application.
- Operating System Image – This is the Windows operating system image on which the K2 Dyno Replay Controller application runs.

The compatible version of K2 Summit system software has the required Dyno support embedded.

About K2 Dyno Replay Controller modes

The K2 Dyno Reply Controller operates in the following modes:

- Dyno mode – The Dyno application is automatically launched at start up.
- Maintenance mode – The Dyno application is closed and the Windows operating system desktop is available for system tasks such as network configuration, software update, and determining Windows Operating System version.

By default, the K2 Dyno Replay Controller is in the Dyno mode. You must manually put the unit in the maintenance mode. Switching to maintenance mode does not require a restart.

Determining Dyno software and the Operating System image versions

- To determine the current software version of a K2 Dyno S Replay Controller, do one of the following:
 - During system start up, find the version on the start up screen, in the lower-left area.
 - During a session, find the version on a panel of the Home screen.

- To determine the Windows Operating System (OS) image version of a K2 Dyno S Replay Controller, do the following:
 - In the Windows registry, find the version at the following location:

`HKEY_LOCAL_MACHINE\Software\Wow6432Node\Grass Valley Group\Base`

Acquiring Dyno and K2 System software

Refer to the Version Compatibility section earlier in this Topic Library for a summary of the required K2 system and other system versions needed for this Dyno software upgrade.

Download items at the URL listed below: http://www.grassvalley.com/dl/k2_dyno

1. Download both this Topic Library for this software update and the compatible the "Release Notes" section of the K2 Topic Library from the Download page.
2. Download the K2 Summit system software bundle depending on your target environment and the Discovery Agent software if needed.
3. Download the K2 Dyno Replay Controller software downloads, both the Dyno application and if necessary the K2 Dyno S Replay Controller base image (OS).
4. If you need the K2 Dyno S Replay Controller base image (OS), purchase the appropriate upgrade kit from Grass Valley.

Upgrade K2 Summit system for use with the K2 Dyno Replay Controller

Install the appropriate K2 system software bundle (Standalone or SAN) before installing the upgrade for the K2 Dyno S Replay Controller. Links for instructions for these K2 system upgrades and the K2 system software bundles are provided on the K2 Dyno download web page for convenience.

Verify the following tasks are done before upgrading the K2 Summit/Solo system.

- Always check the "Release Notes" section of the K2 Topic Library for any updated information regarding the K2 system upgrade process.
- Be sure you have a K2 system recovery image for the currently loaded software before upgrading the K2 system. Instructions for doing this are provided in the K2 system documentation.
- If upgrading from a K2 system software version earlier than 7.3, a SabreTooth license for this version is required. For information on obtaining a license, refer to the the "Release Notes" section of the K2 Topic Library.

Preparing to upgrade K2 Dyno S Replay Controller

Before upgrading a K2 Dyno S Replay Controller, verify the following:

- You have upgraded the K2 Summit system (and related K2 components) associated with this K2 Dyno S Replay Controller to the compatible K2 Summit system version according to the Version Compatibility table given in this Topic Library.
- You have access to the correct software installation bundle for this Dyno release, including the K2 Dyno S Replay Controller Client upgrade and if necessary the K2 Dyno S Replay Controller base image (OS).
- You have a recovery image for the K2 Dyno S Replay Controller at the current software version. This is on the memory stick included with the K2 Dyno S Replay Controller at initial shipment.

- Media access is stopped.
- A mouse must be attached to the K2 Dyno S Replay Controller.

Continue with upgrade topics as appropriate for your K2 Dyno S Replay Controller.

Upgrade K2 Dyno S Replay Controller

Do the tasks in this section to upgrade a K2 Dyno S Replay Controller.

Re-image K2 Dyno S Replay Controller

Do not do this task if:

- You are upgrading a first generation K2 Dyno Replay Controller
- You are upgrading a K2 Dyno S Replay Controller with an operating system image already at the version specified in the Version Compatibility section.

Do this task if:

- You are upgrading a K2 Dyno S Replay Controller with an operating system image that is not at the version specified in the Version Compatibility section.
1. Determine your current operating image version and proceed if a re-image is required.
 2. If you have not already done so, procure the latest "K2 Dyno S Controller Installation and Service Manual".
 3. This document is available on the K2 Dyno software download page.
 4. Reimage the K2 Dyno Replay Controller.

Follow instructions in "K2 Dyno S Controller Installation and Service Manual". Refer to the Service Procedures section entitled **Restoring from a generic recovery disk image**.

Related Topics

[Determining Dyno software and the Operating System image versions](#) on page 18

Install software on K2 Dyno Replay Controller

Stop all other applications and media access to K2 systems. This includes all record, play, and transfer operations.

1. Copy the directory that contains the Dyno Client software onto a portable USB drive such as a Flash drive.
2. Connect the USB drive to the K2 Dyno S Replay Controller and on the USB drive, locate and open the following file:

DynoSetup.exe

3. Follow the onscreen instructions, and work through each page.
4. Click **Next** and **Close** to complete the installation.
5. Remove the portable USB drive, if it is still connected.
6. Restart using standard Windows procedures.

Make recovery images

After you have upgraded software as instructed in these procedures and verified that your system is working properly, you should always make a recovery image of each of your upgraded computers. Use a sequence of tasks similar to those you followed for upgrading software so that as you take systems offline you manage redundancy, servers, and clients, as appropriate for your system.

Refer to the Grass Valley product's *Service Manual* for recovery image procedures.

Using K2 Dyno S Replay Controller

Introduction

What is the K2 Dyno S Replay System?

The K2 Dyno S Replay System is a control system for live event scenarios, with the following features:

- Quickly plays back recorded elements in both real time and slow motion
- Stores recorded segments for playback at a later time
- Assembles recorded segments in a playlist for playback with effect transitions
- Names segments and clips
- Attaches metadata to segments and clips
- Sends clips to other devices for external storage or further editing

System description

The K2 Dyno S Replay System has two main components: A K2 system and a K2 Dyno S Replay Controller.

K2 system



The K2 system can be a K2 Summit Production Client or a K2 Solo Media Server. The K2 Summit system has four video channel connections. Each channel can be configured as either a recorder or a player. The K2 Solo system has two video channel connections, making it one half of a K2 Summit system. With ChannelFlex (a feature of K2 AppCenter Elite), a record channel can be split to record two streams of video.

The K2 Dyno S Replay System supports both 3G and non-3G K2 Summit/Solo systems. The K2 Summit 3G system is pictured here.

The Dyno S Replay Controller controls the K2 system video streams no matter how the K2 system is configured.

K2 Dyno S Replay Controller



Many of the functions of the K2 Dyno S Replay Controller are operated from the large touch screen. Three key elements of the touch screen are Tabs, Slots, and Bins.

Tabs: The column of SoftKeys on the left side of the screen providing access to primary functions.



Figure 1: All tabs

Slots: The numbered storage locations for elements viewable under tabs such as highlights and playlists.

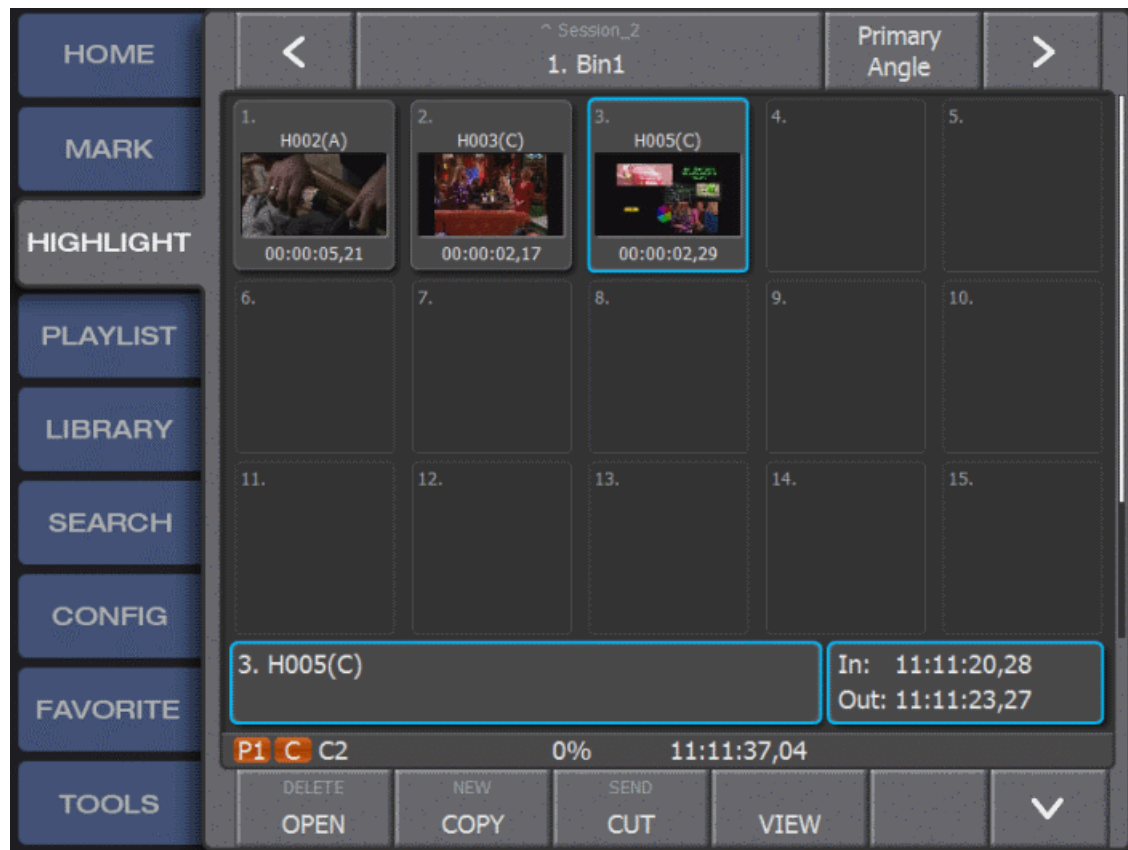


Figure 2: Slots displayed on Highlight screen

Bins: A collection of like items. A bin is similar to a PC Folder. You can have multiple bins with highlights, playlists, or search results. Additional bins are accessed on the touch screen by tapping the bar at the top of the screen that contains a bin name.

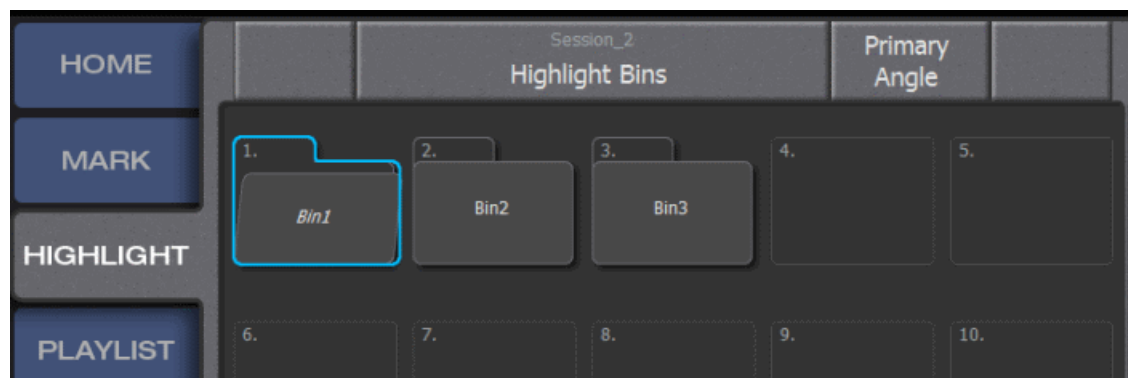


Figure 3: A collection of bins

Key terms

Terms	Description
Session	<p>The bin that holds all the items from a recording period. A session includes record streams, clips, playlists and anything created during the period of recording. A session is transient; it is not permanent. You can delete a session, but doing so deletes all elements of that period of recording.</p> <p>Session management is a key item for success in using the K2 Dyno Replay Controller. You can save a session and open another but in so doing you must consider recordable space. The contents of the session might take up a large amount of recordable space, since the session does include the complete record train.</p>
Clip	<p>A segment of video selected and saved for future use. It can be used for individual playback or for addition to a playlist. It can be configured to save just one record stream or all streams being recorded at the points that defined it.</p>

K2 Dyno Replay Controller features

The following features apply to the K2 Dyno Replay Controller system:

- Assembles recorded segments in a playlist for playback with effect transitions.
- Highlight, marks, and multiple pause point creation.
- Playlists with mix effect transitions per playout channel.
- Audio level controls for clips and record/play channels.
- Simple editor integration with edit-in-place or file transfer of content.
- Support SD, HD, and 3G replay system for file-based live production with K2 Summit 3G or K2 Solo 3G media servers.
- Playback of live stream proxy from K2 Summit 3G on the K2 Dyno touch screen.
- DynoZoom tool to pan, zoom, and extract Region-of-Interest in 4K, 6x SSM, 1080p 3x SSM, and SD/HD clips.
- Instant replay with LDX HS and LDX XS cameras for super slow-motion and ultra slow-motion acquisition.
- Smooth playback using the T-bar with AnySpeed™ playback function at any speed from 0% to 200% and at all speed transitions.
- Support 3D workflow in combining two record streams to playback as one 3D stream
- Content management integration with GV STRATUS nonlinear media production tools.
- Shared resources of multiple K2 Dyno systems either with ShareFlex peer-to-peer mode or with a K2 SAN.

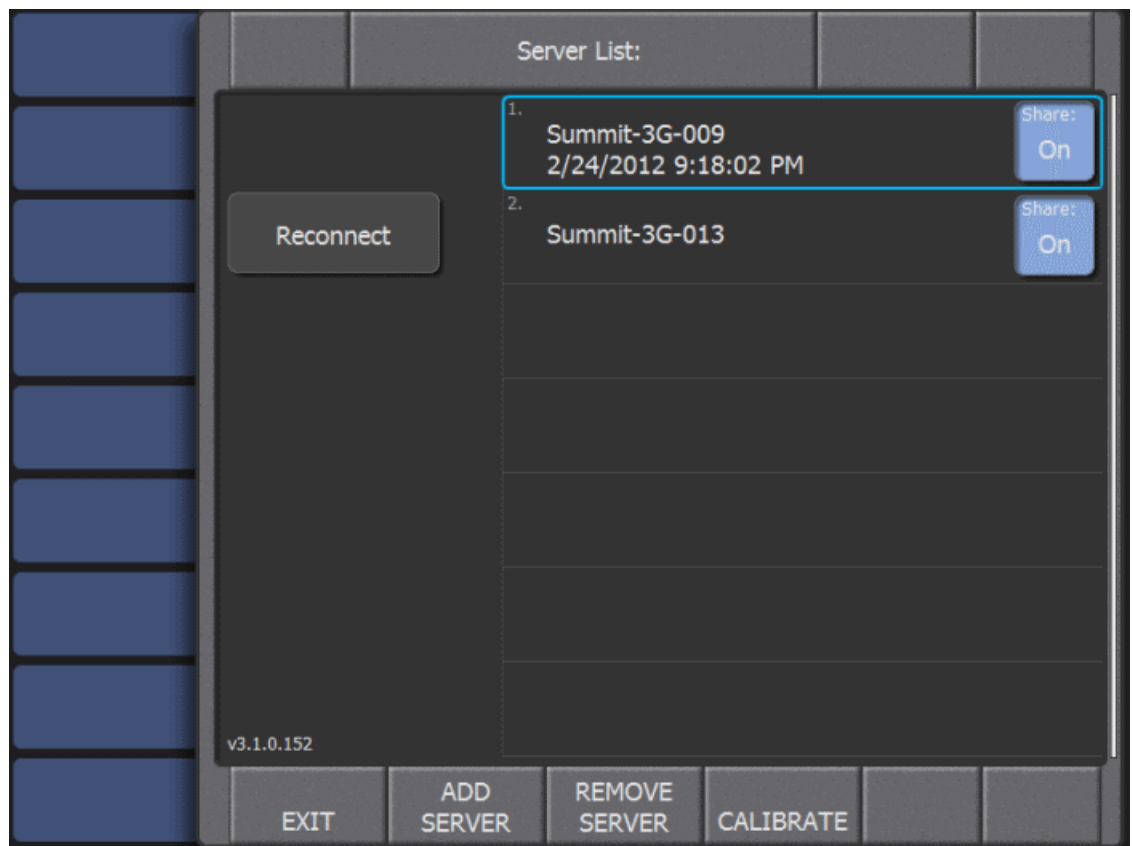
Dyno Startup

Starting up the K2 Dyno S Replay Controller

1. Power on the K2 Summit system.
The power button is the round black button on the front plate.
2. Power on the K2 Dyno S Replay Controller.
The power switch is located at the back to the right under the protection flap.
3. Log on to K2 AppCenter:
 - Default Username: Administrator
 - Password: The administrator password

NOTE: *The password is case sensitive.*

Upon successful login, a list of all K2 Summit systems available on the network appears.



The most recently connected K2 Summit system appears at the top of the list.

4. Select **Share** to share the local server.
 - If this is not the first time the K2 Summit system and the K2 Dyno S Replay Controller has been paired, K2 Dyno S Replay Controller gives you the option to reconnect to a local server.
 - If K2 Summit system and K2 Dyno S Replay Controller have been previously paired, proceed with your Session.
5. Select **Add Server** and type the name of the missing K2 Summit system, if the local K2 Summit system or any K2 Summit system fails to show up in the server registry.
6. For ShareFlex user, type in the K2 Summit system name used in the Host Table.

Open or New session

After configuring and choosing Servers, the next screen addresses Session options.

1. If you are entering a previous Session, select the Session to be reactivated and select **Open**.
The record, trains, highlights, and playlists of the Sessions are restored.
2. Select **New Session** if you are configuring a new Session.
By default, a new Session is created with the same channel configuration as the last Session.

About session channels

The centre of the screen is to define the channels of the server. The options available for configuration are limited to the settings on the server.

This setting is found on the server under the K2 AppCenter system flag, then see Channel and Type for the configuration information.

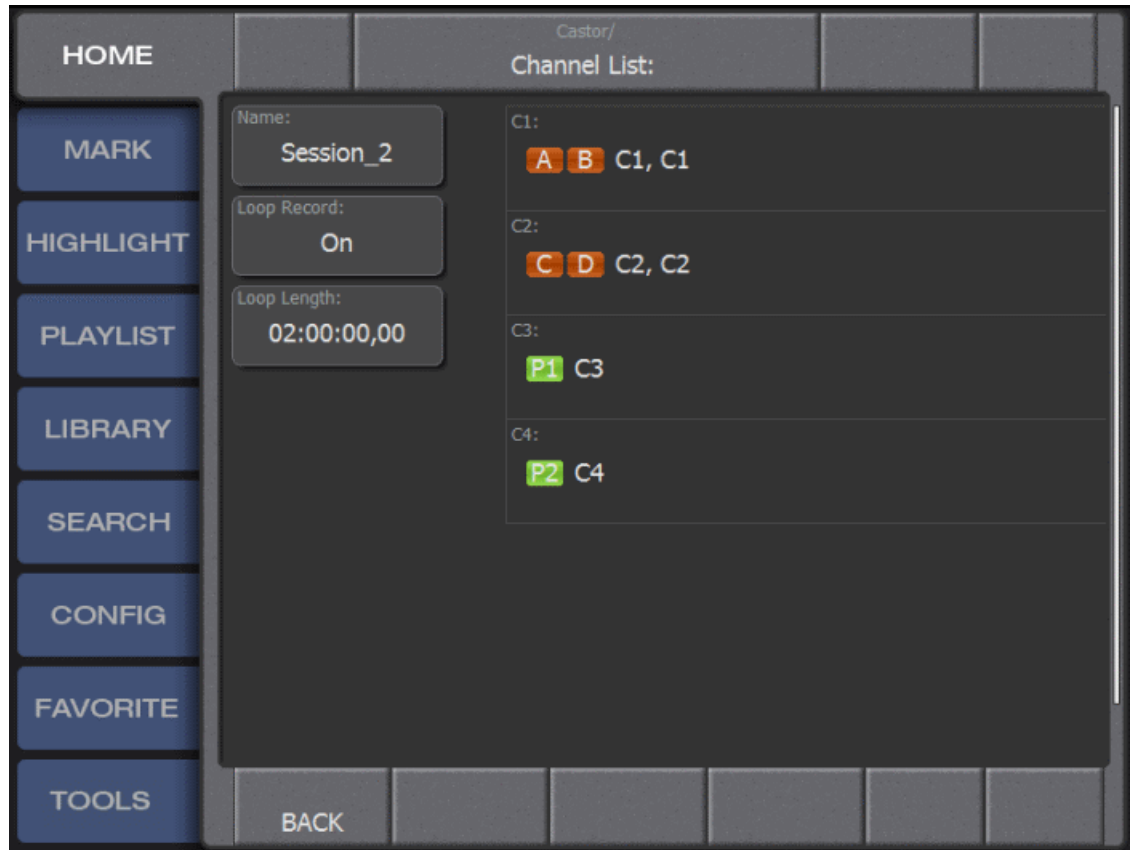
The first column of boxes is the **ON** or **OFF** selections for each channel. When a channel is **OFF**, the K2 Dyno S Replay Controller no longer controls that channel.

The next column defines the Channel function and, depending on the server setting, the choices can be Player, Recorder, or multichannel recorder.

Pressing **Start** launches the session but it will not place the server in a state of record.

Configure Session Channels

1. Select **Session name**.
A touch-screen keyboard displays.



2. Select the **Name** box, type a name for the session, and then press **Enter**.
3. Set Loop Record as follows:
 - a) Set the **Loop Record** box to **On** to recycle record space after a given record duration.
The Loop Length box is enabled.
 - b) Select the **Loop Length** box and type the record duration before the record train is recycled.
You cannot access the record train beyond this point.

When Loop Record is on, unreferenced media is discarded after the specified loop record length.
4. Press **Start** to begin the session.

To turn **Loop Record** on or off while the session is active, on the **CONFIG** screen select **CHAN LIST**.

About loop modes in K2, Dyno, and GV STRATUS

Support for loop modes varies on Grass Valley products.

Grass Valley products provide features for putting an asset into a loop mode. Products and their loop modes are as follows:

- K2 AppCenter:
 - Loop play: Allows the clip to play in a continuous loop until stopped.
 - Continuous record: Allows you to specify a fixed-length recording that records continuously. When the fixed length you specify is reached, AppCenter begins to erase the oldest media in 3 minute segments to make room for new media.
- GV STRATUS:
 - Loop play (Loop Playback): Loops the current asset between mark in to mark out.
- K2 Dyno:
 - Loop record (LoopRec): Same as K2 AppCenter Continuous record.

While the GV STRATUS application can access the same K2 Storage as K2 AppCenter and K2 Dyno, the GV STRATUS application does not support a recording loop mode. Therefore, in the GV STRATUS application, do not attempt to access an asset while it is in a loop record mode. The asset can be put into this type of loop mode by K2 Dyno or K2 AppCenter.

Deleting a Session during startup

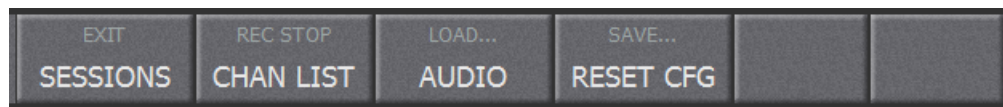
You can delete all non-essential Sessions from the Sessions list as follows:

1. Select the session from the list and tap **DELETE**.
2. To delete all Sessions currently on the server, press **Shift** function of the **DELETE**.

Deleting a session while in an active session

To recover space, delete the non-active sessions.

1. To delete the non-active sessions while in an active session, open the **CONFIG** screen.
2. Tap **SESSIONS**.



The Sessions list page appears, listing all Sessions currently on the server.

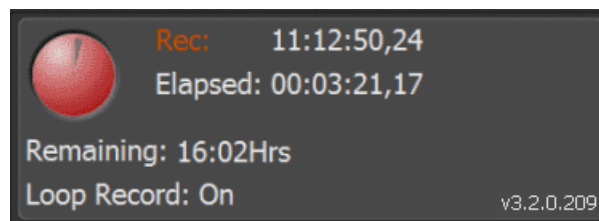
3. Select the session you are deleting and tap **DELETE**.
You cannot delete an active session, indicated by the word **in use** in yellow.

Home Screen


About the Record Status section



On the Home screen, the Record Status section displays key information about the recording status of the Dyno.



Status indicators are as follows:

Time Dome  Represents the record space available. In continuous record mode, the wedge shape grows as the record space is utilized. The larger the wedge, the smaller the amount of the record space is available.

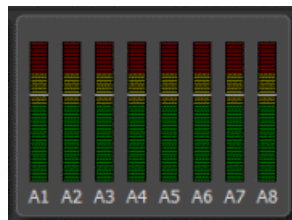
Rec: Red text indicates recording is underway.

Elapsed: The time that has passed since the start of the recording.

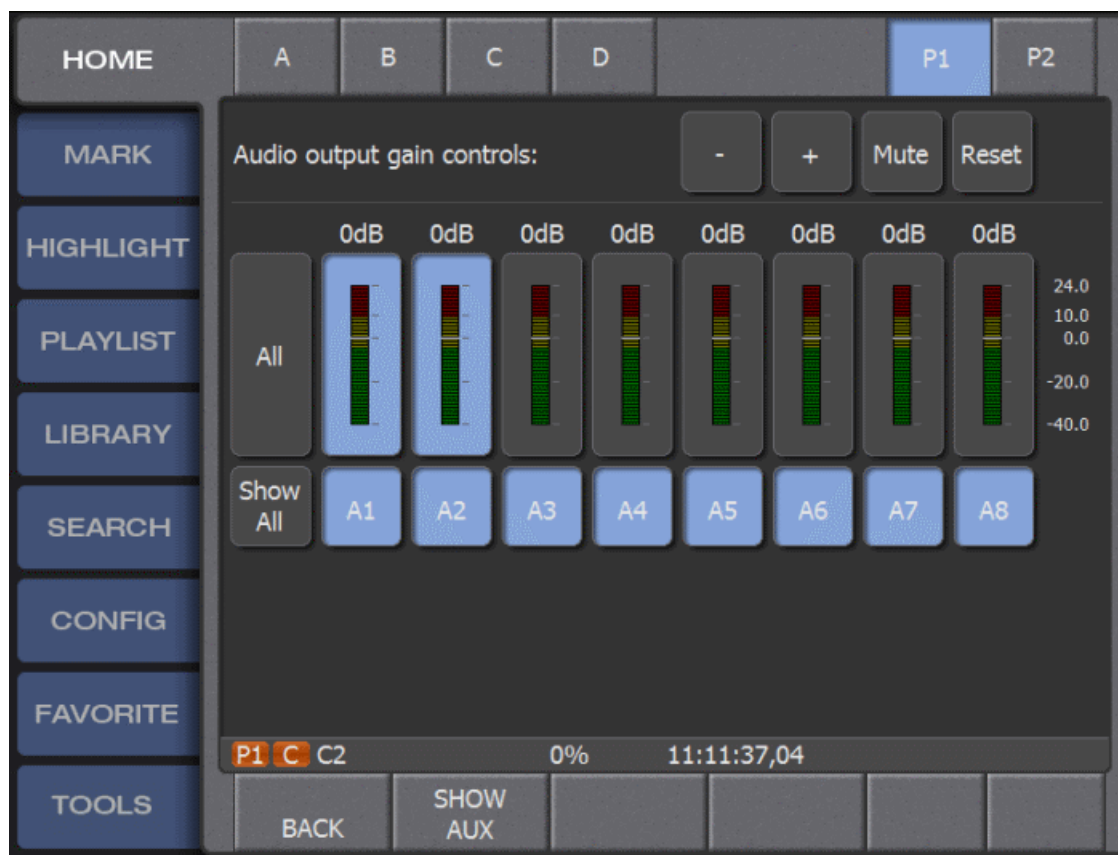
Remaining: The actual amount of record time available, where this record time is divided across the number of record streams in the configuration.

Adjusting audio output

1. On the **HOME** screen, tap the audio meters section.



The Audio panel opens.



The audio output adjustment is selected by default.

2. Tap audio meters to select the channels you are adjusting.

3. Adjust audio output on the selected channels as follows:

- Select **+** or **-** to change the audio output level.
- Select **Mute** to silence the audio output.
- Select **Reset** to restore both input and output audio to their default levels.

Adjusting the audio record levels

1. On the **HOME** screen, tap the audio meters section.



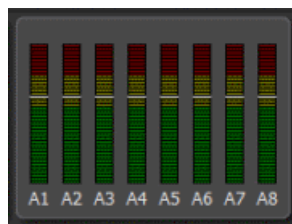
The Audio panel opens.

The audio output adjustment is selected by default.

2. Tap audio meters to select the record channels (A,B,C,D) with the record train you are adjusting.
3. Adjust audio record levels on the selected channels as follows:
 - Select **+** or **-** to change the audio record level.
 - Select **Reset** to restore both input and output audio to their default levels.

Assigning Aux Channels

1. On the **HOME** screen, tap the audio meters section.



The Audio panel opens.

2. Select **SHOW AUX**.

The Aux audio panel opens.

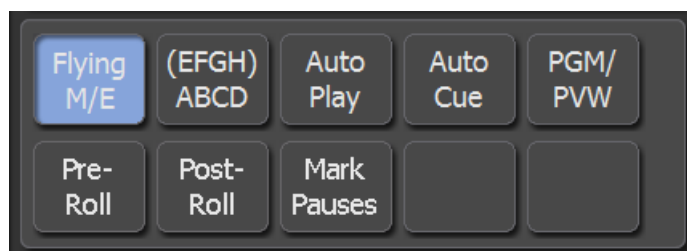


3. Select the pair of channels from the visible audio channels to be the source for Playlists Aux audio.
4. Select **BACK** to return to the Audio panel.

Setting Flying M/E

When Flying M/E is selected, you can preset effect transitions between playback channels. Effects are added when switching record streams during the replay of an item.

1. On the **HOME** screen, select **Flying M/E**.



2. To configure the effect for Flying M/E, select **CONFIG | EFFECTS**.
The Effects panel opens.

- For the **Flying ME** option, make changes to the effect duration and effect type as desired.

Related Topics

[Effects settings](#) on page 47

Setting ABCD(EFGH)

This setting grants default status to record channels to **EFGH** to the **ABCD** buttons. It also allows access to the upper channels without using the **Shift** key.

On the **HOME** screen, select **ABCD**.

**Setting Auto Play**

When this setting is selected, any cued element is immediately played.

On the **HOME** screen, select **Auto Play**.

**Related Topics**

[Recalling clips](#) on page 65

[DynoZoom, live monitoring, and GV STRATUS streaming](#) on page 110

Setting Auto Cue

When this setting is selected, an item is automatically cued with a tap.

On the **HOME** screen, select **Auto Cue**.



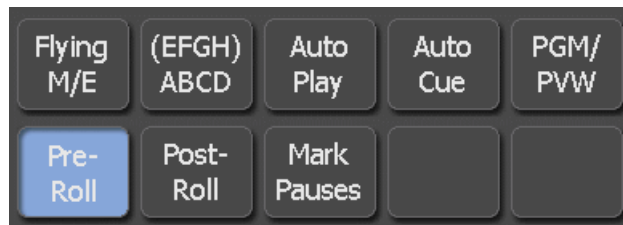
Related Topics

[Recalling clips](#) on page 65

Setting Pre-Roll

When this setting is selected, a pre-roll adds to the clip.

1. On the **HOME** screen, select **Pre-Roll**.



NOTE: *The Pre-Roll and clip duration cannot exceed the guard band duration.*

2. To configure the pre-roll duration, select **CONFIG | CLIP**.

Related Topics

[Clip settings](#) on page 45

Setting Post-Roll

When this setting is selected, a post-roll adds to the clip.

1. On the **HOME** screen, select **Post-Roll**.



NOTE: When the **Post-Roll** is turned on, the mark out point of the clip is ignored. The playback stops at the end of the guard band marker.

2. To configure the post-roll duration, select **CONFIG | CLIP**.

Related Topics

[Clip settings](#) on page 45

Setting Mark Pauses

When this setting is selected, you can mark clip pauses. Pauses registered in the Marks tab will now act as pause points.

Pauses can also become part of the property of a clip angle, and each angle can have its own pause points.

1. Play a clip, and select **Mark Pauses** on the **HOME** screen.



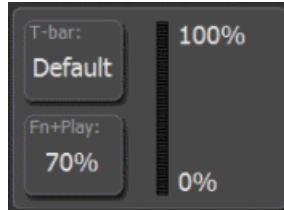
2. Use the Play button or T-bar to continue playback after the video has stopped.
3. To add a pause point to a clip angle, cue a clip and press Fn+Mark.

About the T-bar

The T-bar is a lever bar to control playback speed. When you touch the T-bar, it immediately takes control of the speed of the active player channel. Make sure you do not inadvertently touch the T-bar, as doing so changes the playback speed to the programmed speed of the T-bar. The T-bar can be preset with two playback speed configurations: default and alternate. The positions of bar operations can be fine-tuned.

Configuring T-bar settings: default and alternate

1. On the **HOME** screen, tap the T-bar section.



The T-bar panel opens.

2. To configure default T-bar settings, select **Default**.

The T-bar default configuration screen opens.



3. Change default settings as follows:

Options	Description
Maximum speed	Advance the T-bar to set the maximum speed and tap the top Set box.
Upper middle speed	Move the T-bar down to the top of the middle range and tap the upper middle Set box.
Lower middle speed	Move the T-bar lower down the bottom of the middle of the range and tap the lower middle Set box.
Minimum speed	Pull the T-bar back to the position of the desired minimum speed and tap the lower Set box.

4. To configure alternative T-bar settings, select **Alt**.
The T-bar alternative configuration screen opens.



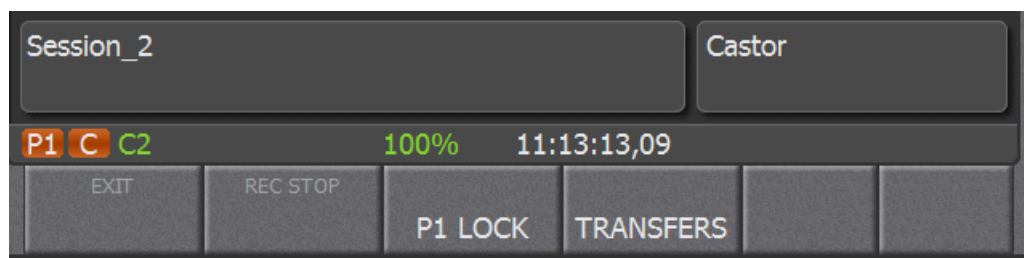
The four **Set** boxes set the custom speeds on the path of the T-bar, as indicated by their position on the graphic range bar.

5. Move the T-bar to a position and tap a **Set** box to change settings as follows:

Options	Description
Highest speed	Tap the top Set box to set the T-bar to top speed position. Select the adjacent speed button and enter a speed in percentage for this T-bar location, then press OK .
Upper middle speed	Move the T-bar down to the top of the middle range and tap the upper middle Set box. Select the adjacent speed button and enter a play back speed in percentage for the middle range of the T-bar, then press OK .
Lower middle speed	Move the T-bar lower down the bottom of the middle of the range and tap the lower middle Set box. The adjacent speed button displays the play back speed in percentage for the middle range of the T-bar.
Lowest speed	Move the T-bar to the lower limit and tap the lowest Set box. Select the adjacent speed button and enter a speed in percentage for this T-bar location, then press OK .

Stopping all recording processes

Open the **HOME** screen or the **CONFIG** screen, press the **Shift** button, then tap **REC STOP**.



Related Topics

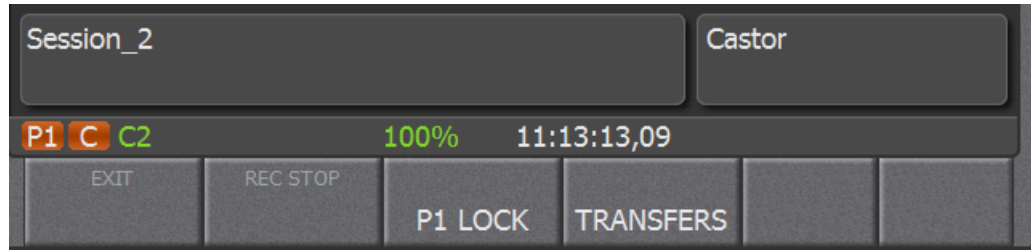
[Shutting the system down](#) on page 130

Locking player channels

When you lock the active player channel, either P1 or P2, you lock out all playback functions from the Dyno on that channel. It is possible to lock one playback channel and leave the other active or lock both playback channels.

NOTE: You cannot lock player channels while channels are ganged. Only P1 or P2 can be selected for locking.

Press the desired **P1** or **P2** button, then on the **HOME** screen, select **P1 LOCK** or **P2 LOCK** accordingly.



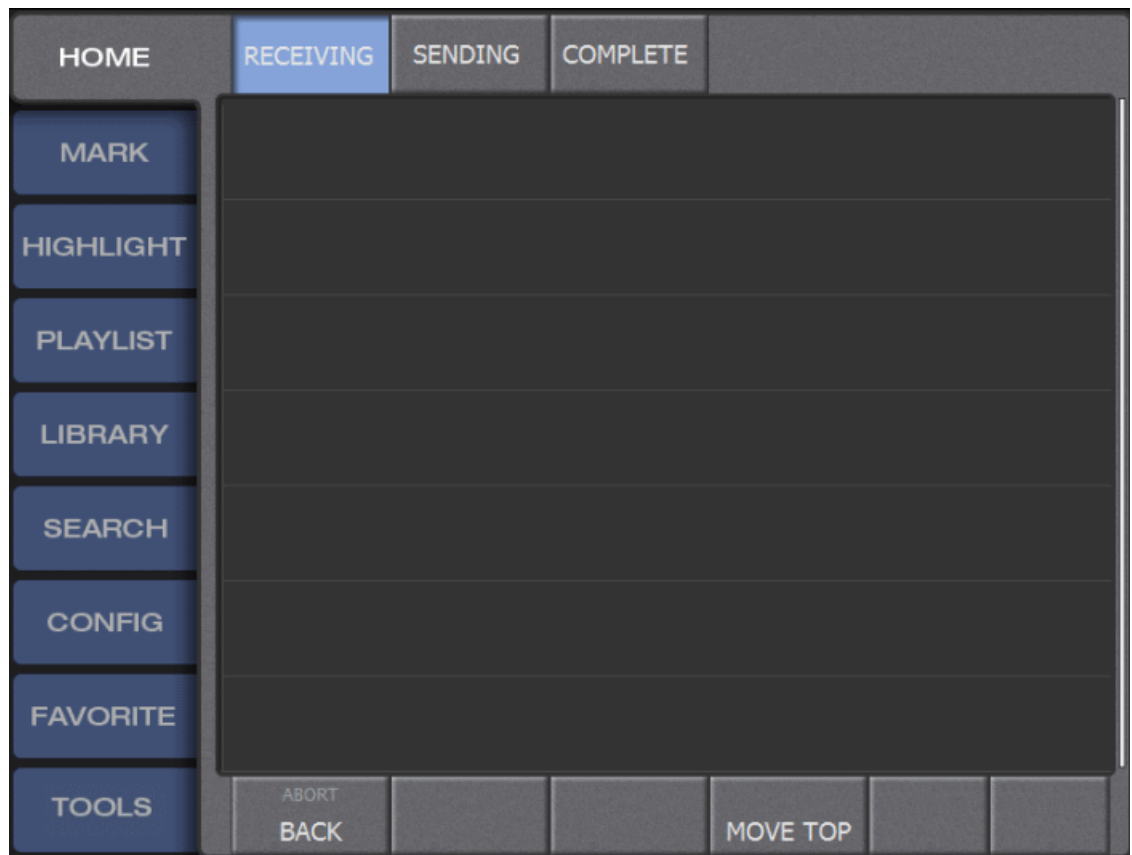
Related Topics

[Shutting the system down](#) on page 130

Monitoring and managing transfers

1. To monitor the transfers of elements both to and from the Dyno, on the **HOME** screen, tap **TRANSFERS**.

The Transfers panel opens.



2. To monitor the transfers functions, select any of the following:

Options	Description
Receiving	Displays the progress of incoming transfers and their location.
Sending	Monitors transfers that are sent to another location.
Completed	Shows all completed transfers.

3. To manage the transfers functions, select any of the following:

Options	Description
Move Top	Moves selected transfer to the next position in the list of potential transfers.
Abort	Press the Shift function of Abort to stop any selected transfer.

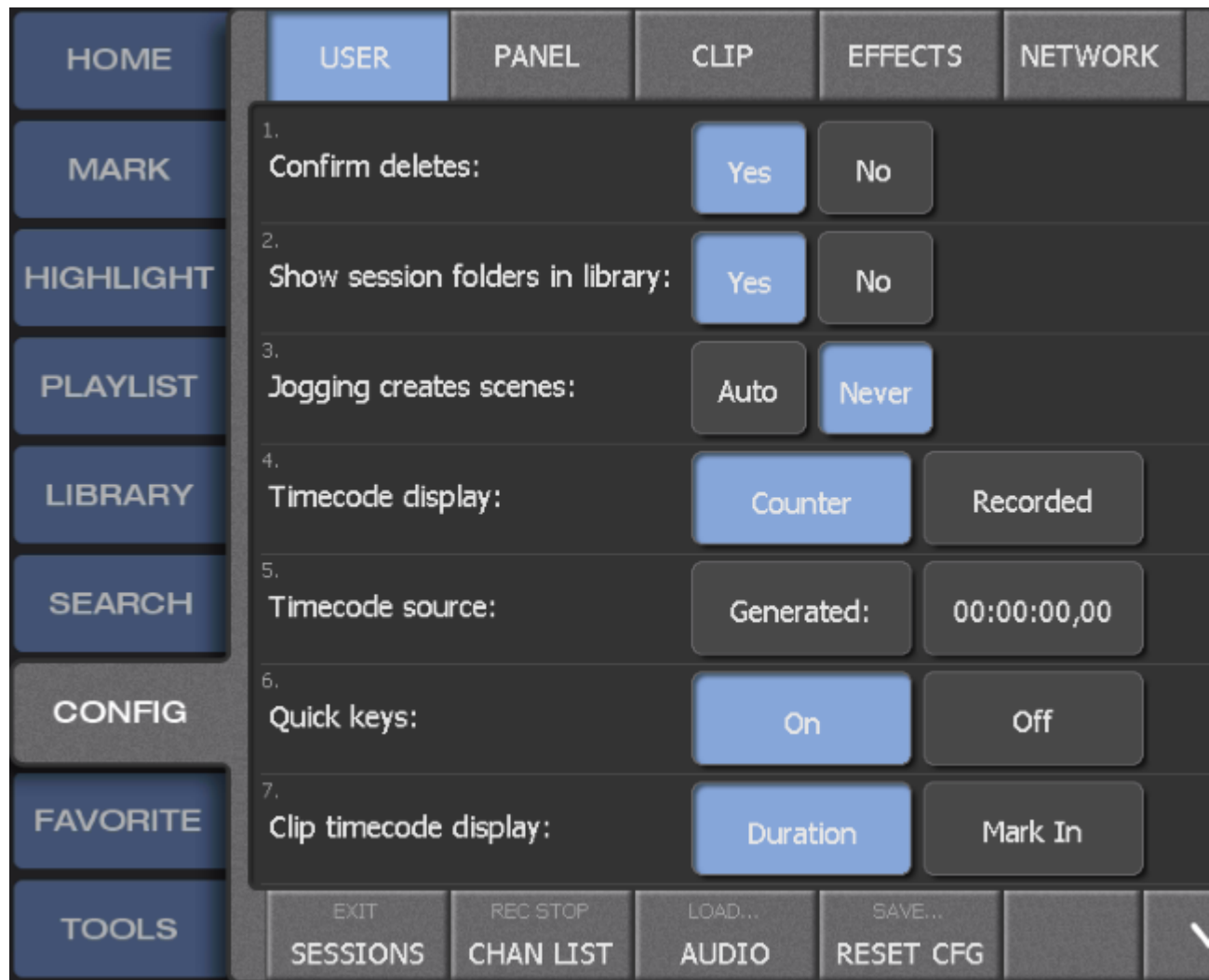
Related Topics

[Shutting the system down](#) on page 130

Configuration Screen

User Panel settings

To access these settings, tap **CONFIG | USER**.



Settings	Description
Confirm deletes	Yes adds an additional prompt before clips are deleted.
Show session folders in library	Yes displays all session folders under the Library tab for navigating purposes.
Jogging creates scenes	Auto creates a mark whenever the Job Knob is used to pause live. Enable SAVE SCENES on the MARK screen.
Timecode display	Counter displays a timecode that begins at 0 when the record starts. Recorded displays a timecode that begins randomly at any timecode when the record starts.
Timecode source	Time of Day is an internally generated timecode source. Generated is an externally generated timecode source. You can use LTC, ANC VITC, ANC LTC, Preset Generated Timecode, or Windows system clock as the timecode source.

Settings	Description
Quick keys	On enables additional keyboard functionality such as i for marking an in point, o for marking an out point and q for quick cue.
Clip timecode display	Duration displays the clip duration, while Mark In shows the mark in time in the clip timecode display.
T-bar controls PGM only	Yes enables T-bar operation only in PGM mode even when PVW is selected.

Panel settings

This panel adjusts the controls of the K2 Dyno S Replay Controller. To access these settings, tap **CONFIG | PANEL**.



Settings	Description
Fast-Jog multiplier	Affects the Jog Knob shuttle speed when the Shift Play function is engaged. The multiplier increases the Fast Jog function by 5x, 10x or 20x.
Knob sensitivity	Controls the response of the Jog Knob. Low gives the Jog Knob a more forgiving operation. High gives the Jog Knob a greater sensitivity to becoming active.

Settings	Description
Screen brightness	Determines the overall brightness of the screen. Adjusts the brightness for maximum visibility for the lighting of the room in which the Dyno is located. Low is a dim setting and High is the brightest setting.
Button brightness	Determines the brightness of the buttons. Adjusts the brightness for maximum visibility for the lighting of the room in which the Dyno is located. Low is a dim setting and High is the brightest setting.

Clip settings

To access these settings, tap **CONFIG | CLIP**.



Settings	Description
Default duration	Sets the length of a clip that has only an In point or an Out point.
Guard band (seconds)	Changes the length of material saved outside of a clip, beyond the set in/out points. 0 provides no extra material. 10 provides ten seconds of material.

Settings	Description
Pre-roll duration	Sets the pre-roll duration of a clip. The pre-roll duration cannot exceed the guard band. You can turn on and off the pre-roll setting at the Home screen.
Post-roll duration	Sets the post-roll duration of a clip. The post-roll duration cannot exceed the guard band. You can turn on and off the post-roll setting at the Home screen.
Save all highlight angles	All saves all the angles recorded of a clip. Primary Only saves only the active angle of a clip.
Separate angle	Marks set mark in/out points for each clip angle. The guard band duration applies to each angle at the time of clip creation. Names set the clip name for all clip angles. You can still set a specific name for a clip angle when the clip is cued. Data sets data such as ratings for each clip angle.
Use recycle bin	Provides a safety measure when deleting clips. Yes sends the data from the deleted clip to the recycle bin. The bin must be emptied before the clip is permanently deleted. No immediately and permanently deletes a clip selected for deletion.
Clip name seed	Specifies the default root convention automatically applied when creating a highlight. Default assigns the clip a name <i>H</i> (for highlight) then a number in the progression of clips created during a session. Time Code populates the default title with the Time Code or Counter number of the in point of the clip. Record Name populates the default title with the record channel name. Custom allows for the creation of a custom seed name for a clip.
Clip follow mode	This setting specifies the speed that a playlist clip plays when it follows an off speed (300% to 1%) clip. Default Speed restores playback to the speed defined for the following clip, or 100% if no speed is defined. Continue Speed continues at the speed of the preceding clip if the following clip has no speed defined.
Offspeed audio	Specifies audio behavior when playback speed changes. Yes continues the audio during offspeed play, with the resultant change to the pitch of the audio. No mutes the audio during offspeed play.
Save ShareFlex Angles	All saves all the angles recorded of a clip. Primary Only saves only the active angle of a clip.

Effects settings

These settings affect the transitions in a playlist.

1. On the **CONFIG** screen, tap **EFFECTS**.

The Effects panel opens.



2. To change the transition point, select one of the following **Use guard band for transitions** options:

Options	Description
Yes	Centers transitions at In and Out points, allowing video beyond the set points to be visible.
No	Ensures the transition is completed within the marked points of the clip. This affects the length of the playlist.

3. To change the transition duration for the Flying M/E and each of the five preset effects, do the following:
- In the first column enter a number less than 2:00 seconds but greater than or equal to 2 frames.
 - In the second column make settings as follows:

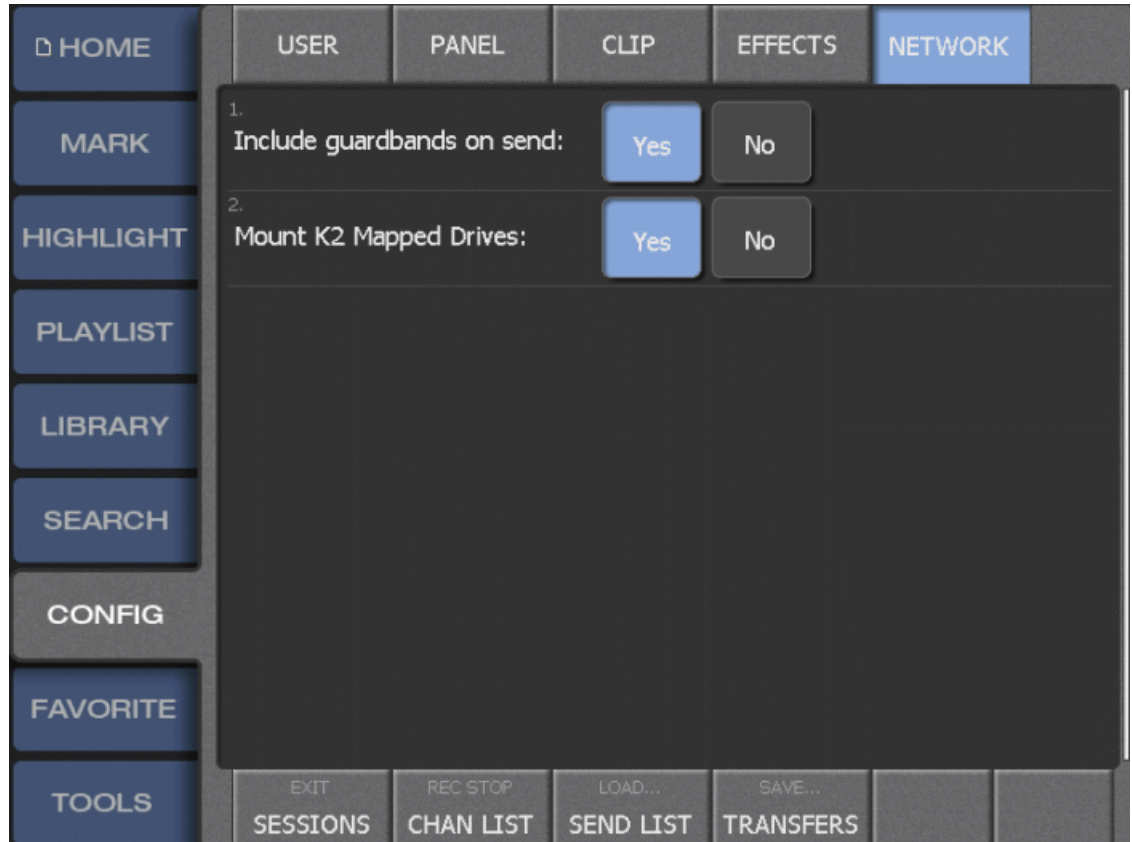
Video+Audio	Applies the transition to both output audio and video.
Audio Only	Applies the transition to the audio while video cuts.
Video Only	Applies the transition to the video while audio cuts.

- In the third column make settings as follows:

Dissolve	Creates a cross fade between the two consecutive events.
Matte	Creates a flash of the selected color between the two events in the list. The duration of the flash is determined by the effect duration. To select the color, tap the adjacent color box and choose a color from the palette.
Wipe	Creates a bar traveling from one side to another between two consecutive events. To configure wipe settings, tap Set . Set the bar to move from left to right or from top to bottom. Turn Reverse on to set the bar to move from right to left or from bottom to the top. You can also set bar softness, border width, and color.

Configuration Network Tab from Transfer Setup

1. On the **CONFIG** screen, tap **NETWORK**.



2. For **Include guard bands on send**, tap **Yes** to include guard bands when transferring elements to external devices.
3. For **Mount K2 Mapped Drives**, tap **Yes** to automatically mount your K2 mapped drives after the start-up of K2 Summit and K2 AppCenter.
4. Tap **SEND LIST**.
The Transfer Destination panel opens and displays all active transfer rules currently set for the Session.
5. To create a new transfer rule, do the following:
 - a) Tap **BROWSE** to specify the destination of the transfer and initiate a new transfer rule.
 - b) Tap **ACCEPT** once you have selected the destination.
6. Configure transfer rules as follows:
 - a) Tap **On** or **Off** to activate or deactivate the transfer rule.
 - b) Tap the second column to transfer a specific or all angles.
 - c) Tap the third column to change the format received at the destination (MXF, GXF, QT).
 - d) Tap the fourth column to verify the transfer destination.

7. To create a new destination bin for a transfer, do the following:
 - a) Tap **BROWSE** to select the bin in which you are creating the destination bin.
 - b) Press **Shift** then tap **NEW**.
A new destination bin is created.
8. To delete a transfer rule, select the rule to be deleted and then press **Shift** and tap **DELETE**.

Related Topics

[*To map a source or destination drive for K2 system import/export*](#) on page 50

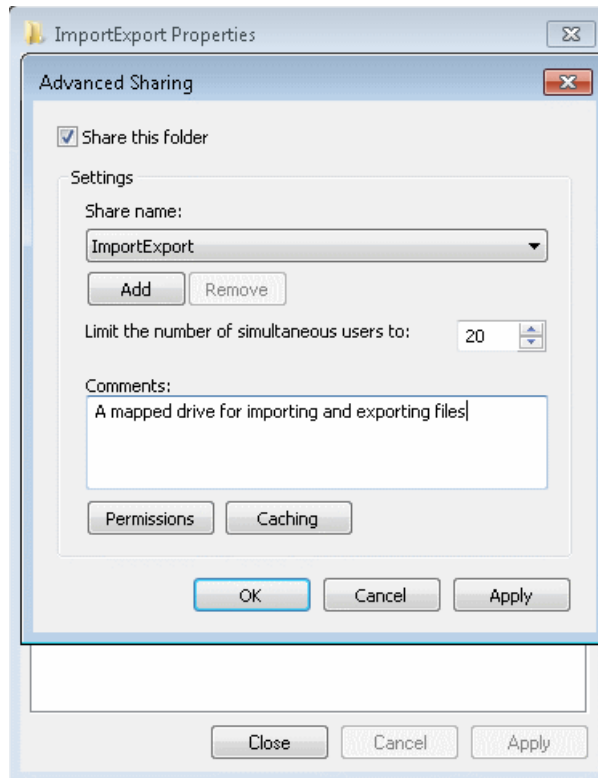
To map a source or destination drive for K2 system import/export

This procedure provides a mapped network drive for file import/export on the machine on which you are using AppCenter, such that you can use the drive as a verified source or destination via AppCenter's Import or Send To features. This is required in the following cases:

- When using AppCenter on a Control Point PC for any file import or export. You cannot use the local drive for file import or export on a Control Point PC.
 - When using AppCenter on a K2 Summit SAN-attached system for any file import or export. You cannot use the local drive for file import or export on a K2 Summit SAN-attached system.
 - When using AppCenter on an standalone K2 Summit/Solo system and the source or destination is not on the local K2 Summit/Solo system.
1. On the machine that is the source or destination, create a folder to be used for file import and export.

2. Share the folder using standard Windows procedures.

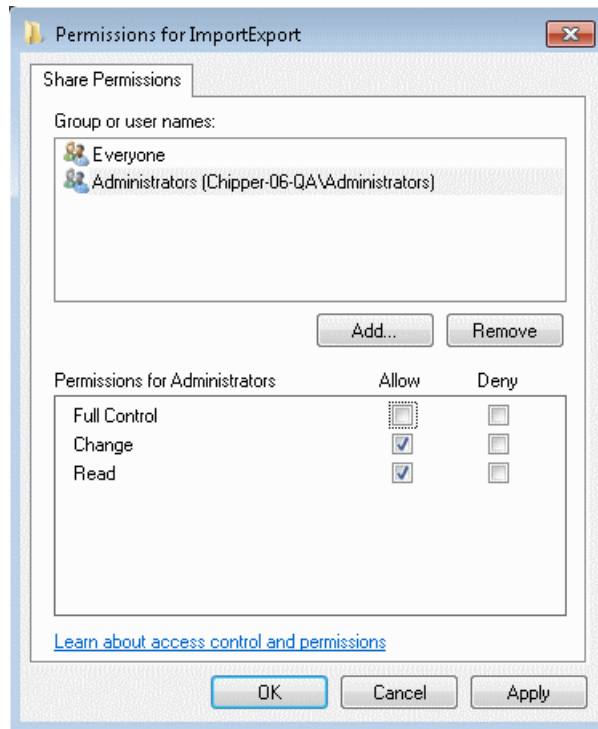
You must map drive of source device only, not K2 Summit/Solo system.



3. Make sure that permissions are set to allow read and write access to the appropriate user or group accounts, according to your site's security policies.

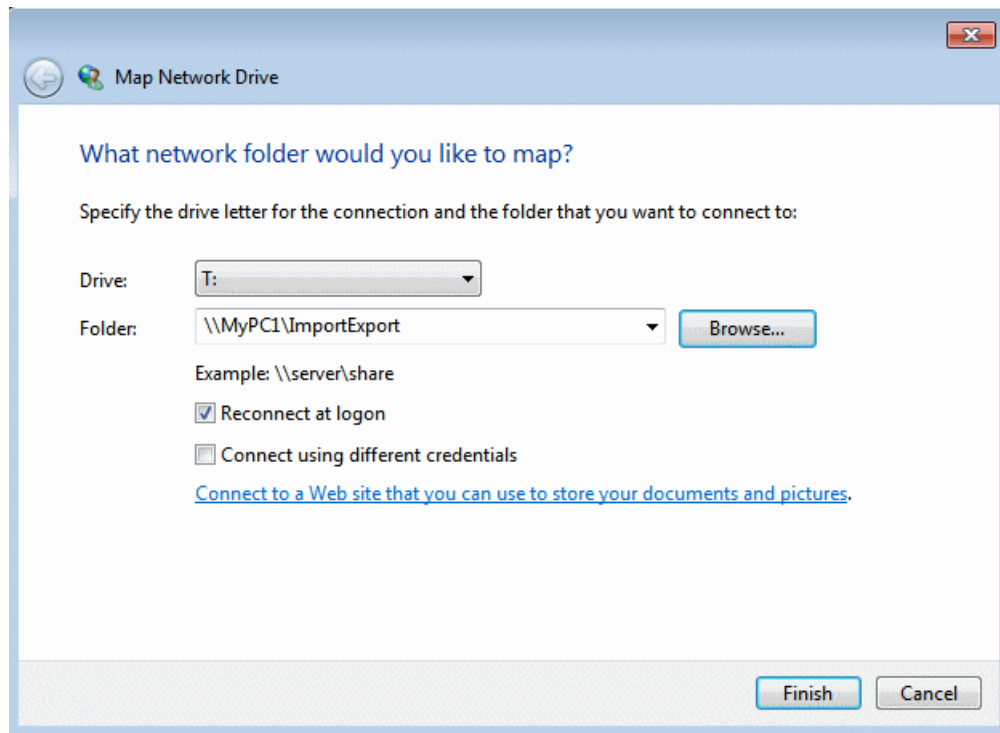
The folder must be shared to allow access by the user account that logs on to the K2 Summit/Solo system.

For example, if the GVAdmin user account logs on to the K2 Summit/Solo system, then the folder must be shared to allow access by the GVAdmin user account.



NOTE: A drive that you map for export must not require user credentials for access. If user credentials are required, the export transfer fails.

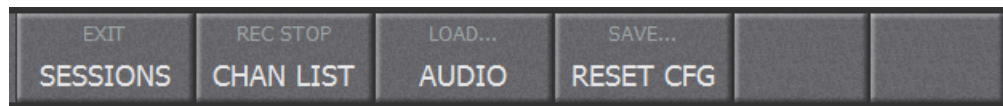
- On the machine on which you are using AppCenter, map the shared folder as a network drive. For example, if the shared folder is on *MyPCI*, map the T: drive to *\\MyPCI\ImportExport*.



You can now use the mapped network drive as a source or destination for file transfer using the AppCenter Import or Send To features.

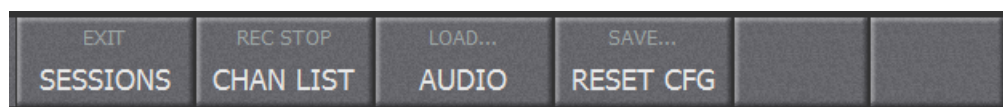
Revising record and play channel status

To view the current configuration on record and play back channels and revise the current status, on the **CONFIG** screen, tap **CHAN LIST**.



Resetting configuration

To resets all configuration screens to their factory default settings, on the **CONFIG** screen tap **RESET CFG**.



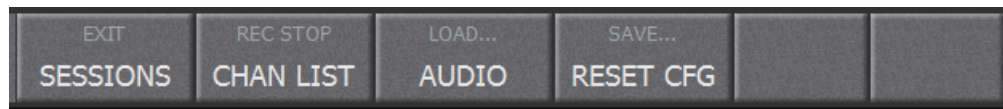
Exporting the Config information

You can save configuration settings and keywords tables to an external device. You can then load the settings and tables to another K2 Dyno S Replay Controller, or for use later on the same K2 Dyno S Replay Controller.

1. Connect the storage device to one of the USB ports on the front of the server.
2. To navigate and find the external storage device, press **Shift** then from the **CONFIG** screen, tap **SAVE**.
3. Once you have identified the location for storing the settings, tap **ACCEPT** to allow you to configure the files to be created on the external source.

Importing the Config information

1. Connect the external storage device that contains the configuration file you are importing.
2. Press **Shift**, then from the **CONFIG** screen, tap **LOAD**.



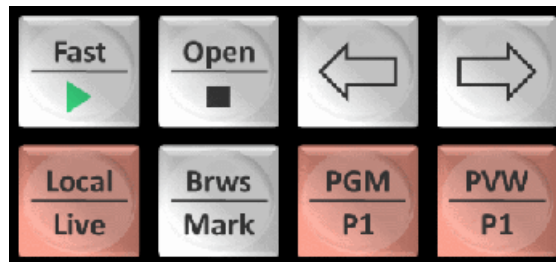
3. Navigate to the configuration file you are importing.
4. Select the configuration file and tap **ACCEPT**.

The configuration is loaded and the settings are in place.

Playback

Queueing both outputs

1. To control both playback channels, press **P1 | P2** buttons simultaneously. Both **P1 | P2** is lit in red.



2. To control both channels, use playback controls as follows:
 - T-Bar
 - Jog Knob
 - **Play** button

Playback options

The K2 Dyno S Replay Controller has four playback options:

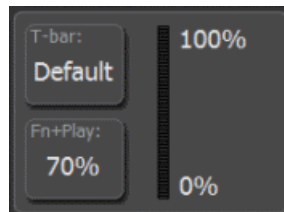
Table 1: Playback options

Option	Description
The Play button	Plays a recorded element or record stream. This is the primary way to place any player channel into a playback state. This works on a playlist, on a highlight, and on the active record trains. Supports the playback of SSM clip or playlist.
Alternate playback speed. Press and hold down the Fn key and then press the Play button.	Plays a recorded element or record stream at a pre-programmed alternate playback speed, as configured from the HOME screen.
T-bar	Immediately takes control of the speed of the active player channel. Make sure you do not inadvertently touch the T-bar, as doing so changes the playback speed to the programmed speed of the T-bar.
Alt T-bar	The T-bar can be preset with two playback speed configurations: default and alternate.

Configuring the alternative playback speed

An alternate speed can be pre-programmed into the **Play** button.

1. On the **HOME** screen, in the T-bar section, tap **Fn+Play**.



A number key pad opens.

2. Enter the desired alternate play back speed by percentage.
3. Tap **OK** to set the speed and close the number keypad.

PGM/PGM Playback in green and red

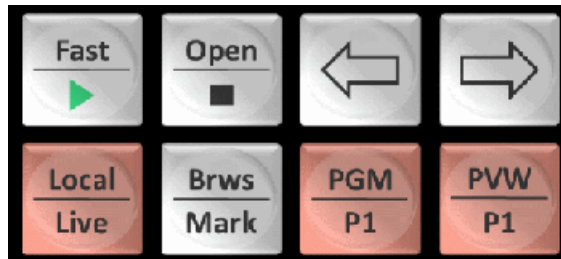
When **P1** or **P2** buttons are lit in green and red, do the following:



- a) Select **P1** or **P2** buttons from the K2 Dyno S Replay Controller.
- b) Use the Jog Knob to cue the record train on the selected player.
Jogging cues only the selected channel.
- c) To affect the selected channel, press the **Play** button on the cued record train.

PGM/PGM Playback in red and red

1. Press **P1** | **P2** buttons simultaneously to switch to Gang mode.



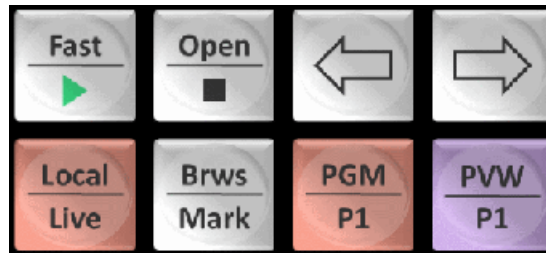
Both **P1** and **P2** buttons are lit in red

2. Use the Jog Knob to cue the record train.
Both player channels are affected.
3. Press the **Play** button while cued back on the train.
Both player channels play back in sync.

Using PGM or PVW

This setting configures the playback channels as dependent channels. P1 becomes the channel that plays to broadcast. P2 is used to preview or stage the next element to broadcast. Elements cued on P2 (PVW) are transferred to the P1(PGM) by using the **Take** button.

1. To get into the PGM or PVW mode, tap **PGM** or **PVW** on the Home screen or press **Shift | P1**.



In this mode, when a clip is cued, it appears on the P2 channel.

2. Use the Jog Knob to change the in-point of the clip to the point desired.
3. Press the **Take** button from the center stalk.

The clip is transferred to the P1 channel and play.

P2 is now ready for cueing the next element.

Going back to Live/Rec

1. To return to the record train at the point of the current record., select your player channel **P1** or **P2** button.
2. Press the **Live** button on the Right Bank of buttons.

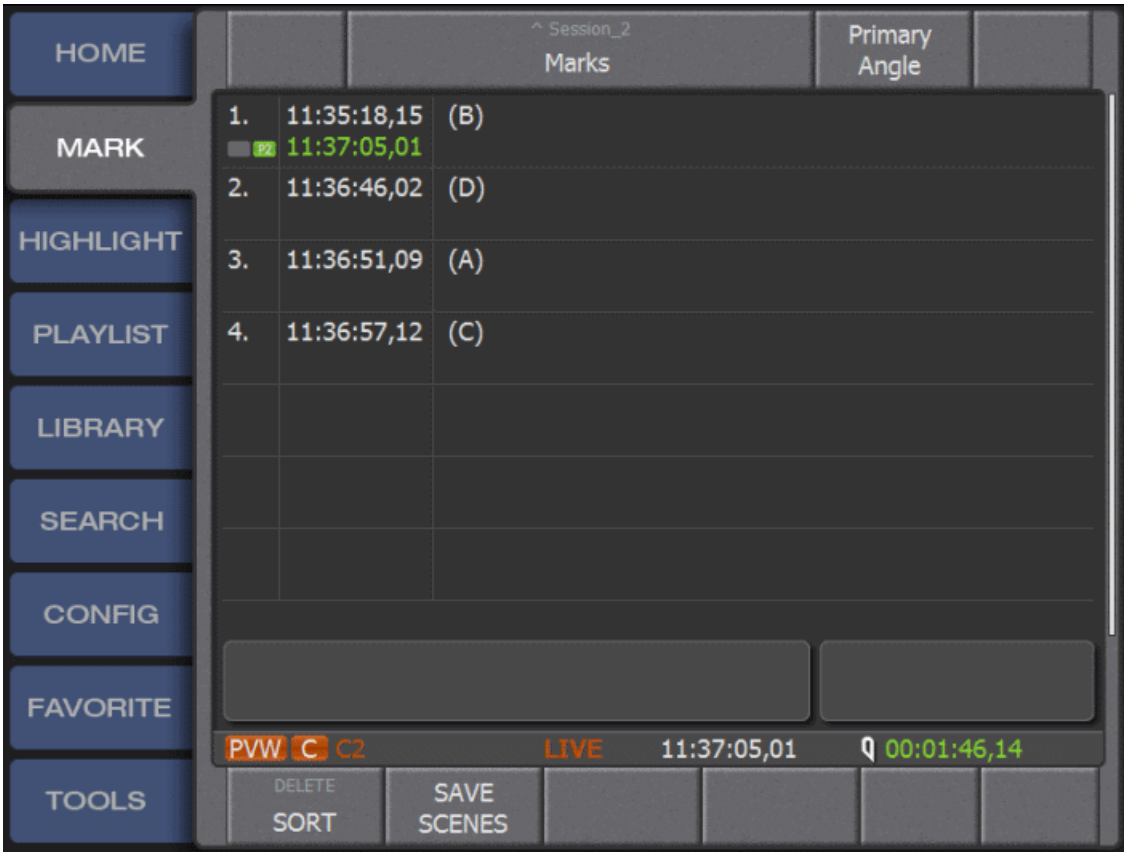
This takes the player channel to the current available recording of the active angle.

Marks

Marking function

The Mark screen displays the markers and scenes that are added to the record train.

- 1. To create a point at the current point of the active record train regardless of the location of the Player Channel **P1** or **P2**, press the **Mark** button.



- 2. To view the marks, open the **MARK** screen.
- 3. To add a mark to the point where the player is cued, press **Mark**.

4. To navigate marks with controller arrow keys, open the **MARK** screen.



- a) From the touch screen select a mark. When it is cued, it is outlined with an orange border.
- b) Press the left arrow button from the right bank of buttons to move the selection up the screen to the older timecoded marks.



- c) Press the right arrow button to move the selection down the screen to the newer or later timecoded marks.



If you have ganged Player channels, selection of a mark point displays in both Player channels.

5. To create a Highlight from Marks, select the mark and press the **Add HL** button.

A clip with default duration is created.

Create clips

Creating a clip

To create a clip, you must be on an active record channel.



1. Use the Jog Knob to find the point on the record stream where the clip is to begin.
2. On the center stalk, locate and then press **In** button to create the beginning of the clip.
3. Cue the video to the point on the record train that the clip will end.
4. On the center stalk, press **Out** button to end the clip.
5. Once you have entered the In and Out points of your clip, press the **Add HL** button on the left bank.

This stores the clip in the next available slot location in the active highlight bin.

6. Alternatively, open the **HIGHLIGHT** screen and do the following:
 - a) Enter the In and Out points of your clip.
 - b) Select the slot location for clip.
 - c) Save the clip in the selected slot location.

The clip is saved in a slot location you choose, rather than in the next available slot location only.

Trimming IN or OUT

1. To change the In or Out of a created clip, first cue the clip on a player channel P1 or P2.
2. Use the Jog Knob to find the new points for the clip.

You cannot move outside the cue points on the record train up to the limit of the guard band, as configured when you created the clip.

3. Once the new point is visible on the record train, press the desired **In** or **Out** button.

The new point is marked and the new duration of the clip is displayed in the clip's slot changes.

Creating a clip with one entry point

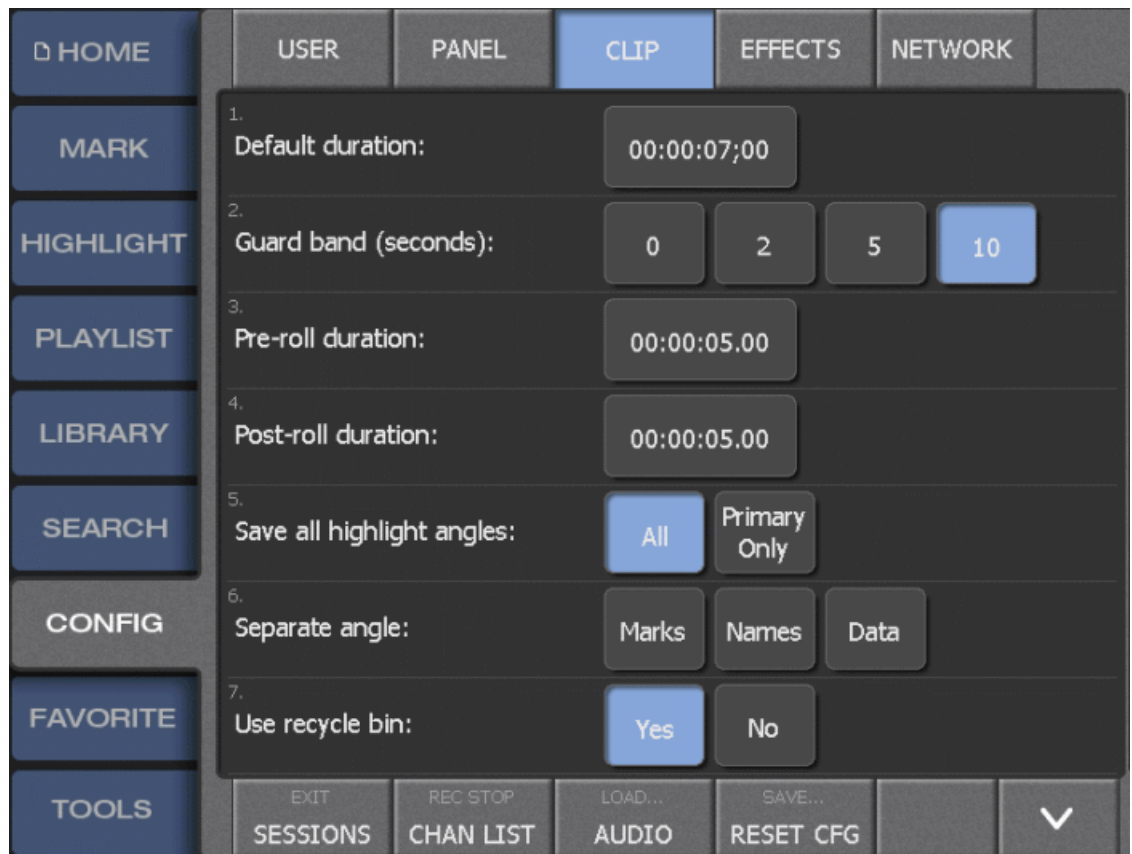
You can save a clip by using either an In point only or an Out point only.

1. Select only an **In** or **Out** point.
2. Press the **Add HL** button or select a slot in the highlight bin to form a default duration clip.

Setting the default duration for clips

You can set the length of a clip that has only an in or an out point.

1. On the **CONFIG** screen, tap **CLIP**.
The Clip panel opens.

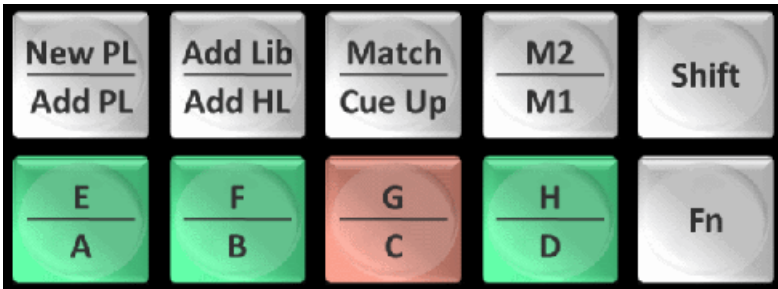


2. Tap the number box to the right of **Default duration**.
A number key pad opens.
3. Type in the desired duration of a default clip.
4. Tap **OK** to save settings and close.

Cue replay

Cueing a clip

1. To cue a selected highlight on the active channel, do the following:



- a) On the **HIGHLIGHT** screen, tap the slot of the desired clip.
 - b) Press the **Cue Up** button from the left bank.
2. To cue the clip on the selected player channel using the touch screen, select the clip slot of the desired clip with two taps.
 3. To return a clip to it's preset in or out points do the following:

Options	Description
Shift In	Restores the player channel to the In point of the highlight
Shift Out	Restores the player channel to the preset Out point of the clip

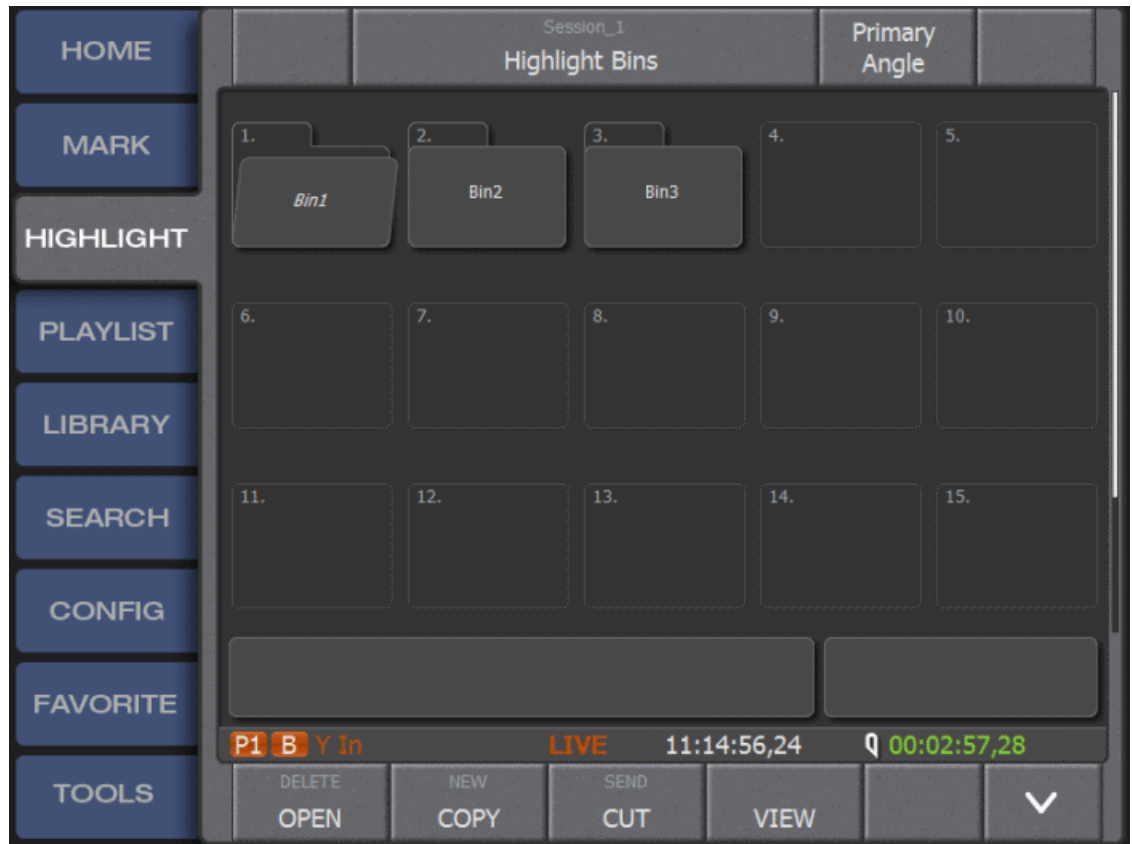
Changing angle

1. Choose a player Channel, use either **P1** or **P2**.
2. To make the corresponding record stream visible on the selected player channel, press a different **A-D** button or it's **Shift** function for angles E-G.

Highlights

Navigating the Highlight screen

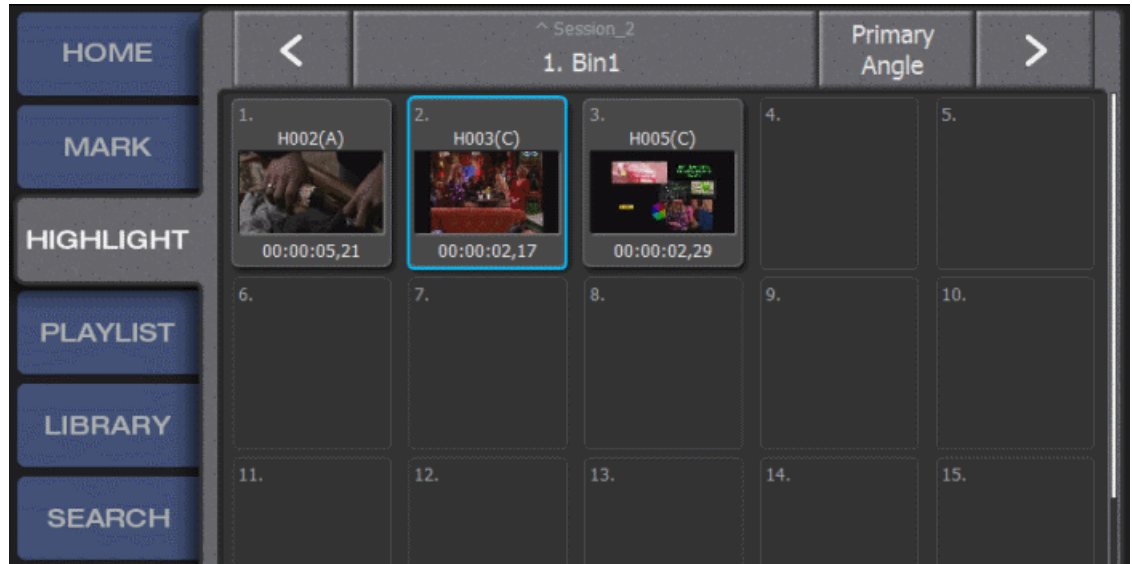
1. Open the **HIGHLIGHT** screen.



2. Tap the Bin title bar at the top of the screen.
All available bins are displayed.
3. To open, double-tap a bin.
The open bin is now the active bin on the **HIGHLIGHT** screen.

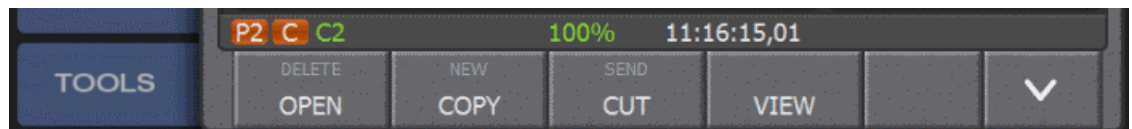
Changing clip views in a bin

1. Open the **HIGHLIGHT** screen.



By default, a thumbnail with title and duration is displayed for each highlight. The thumbnail picture from the In point of the clip.

2. To additionally display keywords, tap **VIEW**.



3. To hide the thumbnail and keywords and display only title and duration, tap **VIEW** again.
4. To return to the default view, tap **VIEW** again.

Changing the thumbnail

1. Open the **HIGHLIGHT** screen.



2. Cue the highlight with the thumbnail you are changing.
3. With the highlight selected, select the clip properties box in the lower right of the screen.
4. Cue the clip to the frame that is the desired thumbnail.
5. To change the thumbnail for the selected angle, tap the **Thumbnail** which is located below the angle thumbnails.

Recalling clips

Clips can be recalled in three ways: slot number, Auto Cue, and Auto Play.

1. To recall a clip by slot number, use the keyboard and type the bin number, type the slot number, and then press **Enter**.
2. To recall a clip by Auto Cue, on the **HOME** screen, select **Auto Cue**.
When this setting is selected, an item is automatically cued with one tap.

3. To recall a clip by Auto Play, on the Home page screen, select **Auto Play**.

When this setting is selected, any cued element is immediately played.

Auto Play requires a double-tap on the slot. When activated, the highlight is cued and immediately played. This allows multiple clips play seamlessly in succession.

Related Topics

[Setting Auto Play](#) on page 35

[DynoZoom, live monitoring, and GV STRATUS streaming](#) on page 110

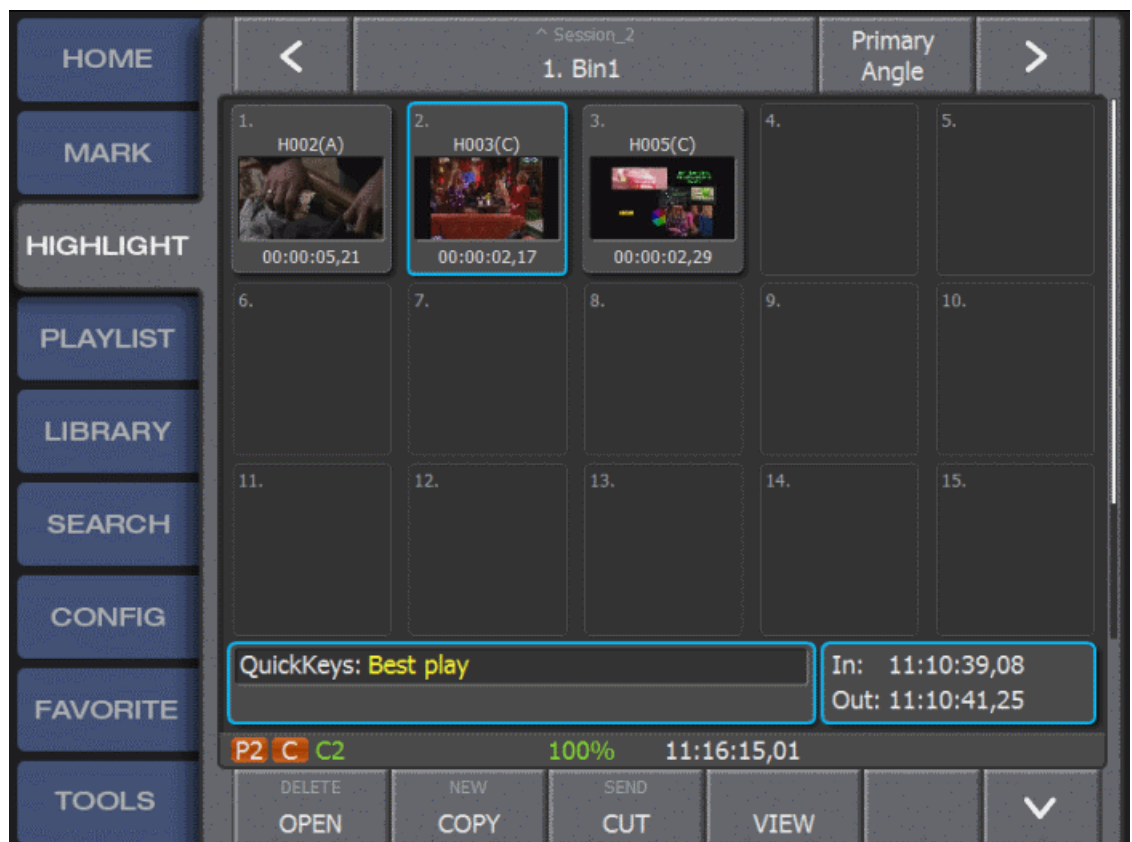
[Setting Auto Cue](#) on page 36

Naming a clip

When you create a clip, the K2 Dyno Replay Controller automatically names the clip. Then you can change the clip name as desired.

The automatic name is based on the **CONFIG | CLIP** settings.

1. To change the name of a clip, select the clip and then on the keyboard, press **Enter**.



The clip title bar at the bottom of the screen is changed from the clip name to the word **QuickKeys** and a cursor appears.

2. Type the new name and press **Enter**.

The new name displays for the clip.

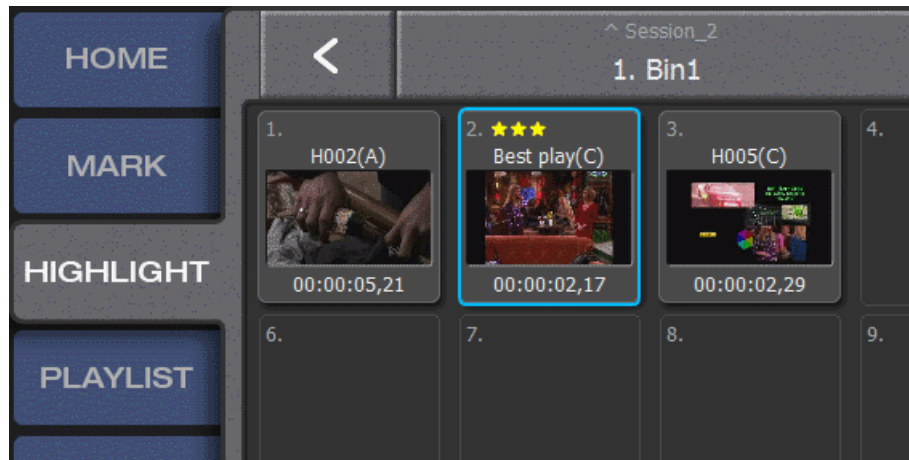
Related Topics

[Clip settings](#) on page 45

Adding Stars

The star rating system allows you to assign up to three stars to a highlight clip.

1. To assign a star to a highlight, select the clip with a tap.

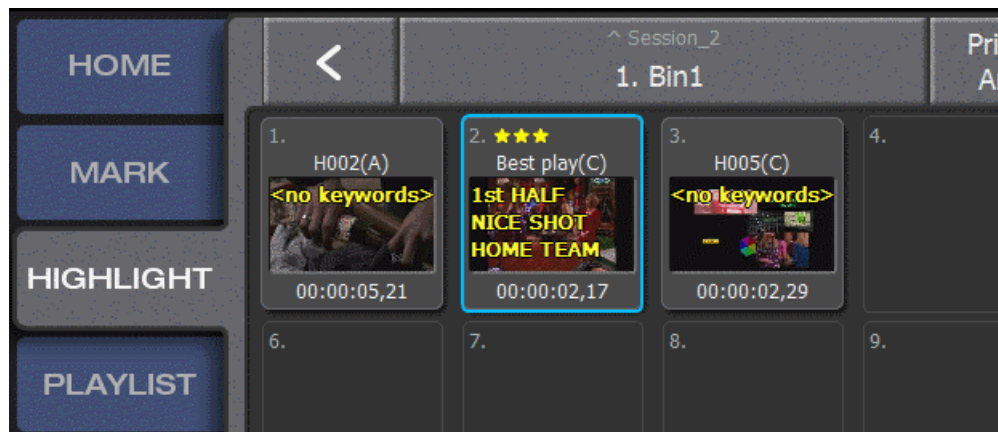


2. To add a star or stars to the clip, on the keyboard, press **F1** one time for each star.
3. To remove all the stars, press **F1** until stars are removed.

You can also add star ratings while adding keywords.

Adding keywords

1. Select the clip so that the slot is outlined in blue or cue it on a player channel.



2. Tap the clip title bar on the lower left of the touch screen.

The first table of keywords opens.

3. Select the desired keyword as follows:
- If the desired keyword is in the first table of keywords, select the keyword.
 - If the desired keyword is in the second or third table of keywords, first select the table, then select the keyword.

If **Auto Mode** is on, when you select a keyword, the next table of keywords automatically opens.

4. To adjust the star rating, on the keyboard press **F1**.

Editing keywords

To build a keyword table, you must create a highlight.

1. While the highlight selected is indicated by the blue outline around the slot, tap **highlight properties** near the bottom left of the screen.



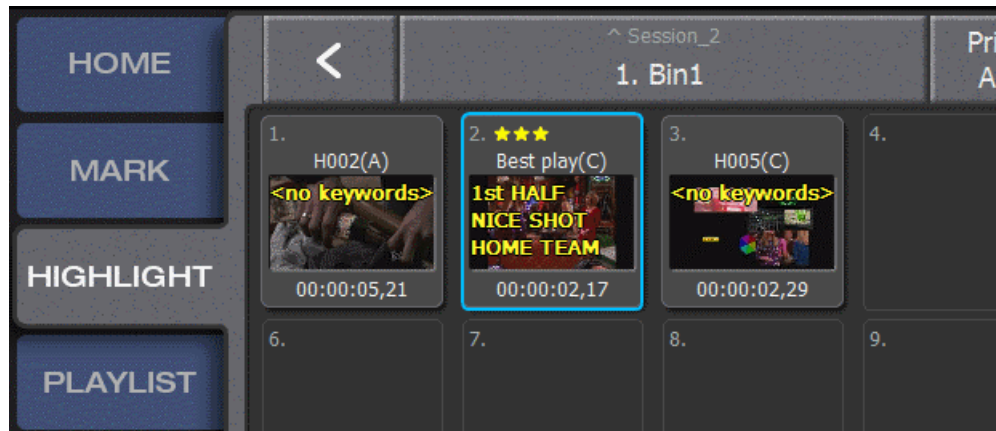
2. To make any changes to the existing keyword tables, select **EDIT**.
When you enter the **EDIT** mode, there are 5 tabs across the top of the touch screen.
3. To name the tab, tap the **tab** twice.
- a) To type the name of the selected tab, you can either use the touch screen keyboard or the standard Dyno keyboard.

4. Once named, press **ENTER** to set the tab name.
 Tabs are also a means of navigating Keyword numbers. Tab 1 contains slots 1-100, Tab 2 101-200 etc.
5. To delete the keywords and Tab title for the entire active table., select **Clear All**.
6. To enter a keyword, first enter the tab and the first box in the table is defaulted to the name given the tab.
7. Select the box with the tab name.
 A screen with a series of numbered slots without the / mark in the box is displayed.
8. To name the individual slot, use the touch screen keyboard.
9. To lock in the text, press **ENTER** once the correct keyword has been typed in.

Setting keyword Fkeys

You can assign a limited number of keywords to keyboard keys F2-F9. This allows quick access to the keywords.

1. Select the clip so that the slot is outlined in blue or cue it on a player channel.



2. Tap the clip title bar on the lower left of the touch screen.
 The first table of keywords appears.
3. Select a keyword and then on the keyboard press an Fkey (F2-F9) when the **Set Fkeys** (which is located on the lower strip) tab is lit.
 Next to the keywords is the slot number with the Fkey designation in parenthesis.
4. Verify that the correct Fkey is assigned.
5. To save the changes to the Fkeys, deselect **Set Fkeys**.

Looping a clip

1. On the **HIGHLIGHT** screen, select a clip.
 At the lower right of the screen, the clip properties box displays the clip's in and out timecode.

2. Tap the clip properties box.

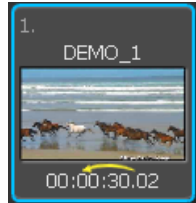
Clip properties display. By default, the **Loop** property is set to **Off**.

3. Tap **Loop**.

The clip loop property changes to **On**.

4. Tap **HIGHLIGHT** to view the clip again.

The yellow loop icon displays.



The clip loops when it is cued and set for playback.

NOTE: *The loop property is only applicable to clips, not playlists.*

Copying and moving clips

There are several ways to copy and move a clip within the same bin or between bins.

1. To move a clip using tap-and-drag within the current bin, on the **HIGHLIGHT** screen, do the following:

- a) Tap and hold a clip's slot so that the entire slot is blue.
- b) While holding down, drag the slot to its new position.

The clip is moved to the new position.

2. To copy a clip, on the **HIGHLIGHT** screen, do the following:

- a) Select a clip's slot so that the slot is outlined in blue.
- b) On the bottom strip, tap **COPY**.
- c) Select the destination slot location.
- d) On the bottom strip, tap **PASTE**.

The clip is copied to the destination slot location. The result is two independently editable versions of the clip: one in the original location and one in the destination slot location.

3. To move a clip using cut-and-move, on the **HIGHLIGHT** screen, do the following:

- a) Select a clip's slot so that the slot is outlined in blue.
- b) On the bottom strip, tap **CUT**.
- c) Select the destination slot location.
- d) On the bottom strip, tap **MOVE**.

The clip is moved to the destination slot location. This allows you to organize bins in a logical manner.

Renaming a Highlight bin

1. On the **HIGHLIGHT** screen, double-tap the Bin's title bar at the top of the screen.



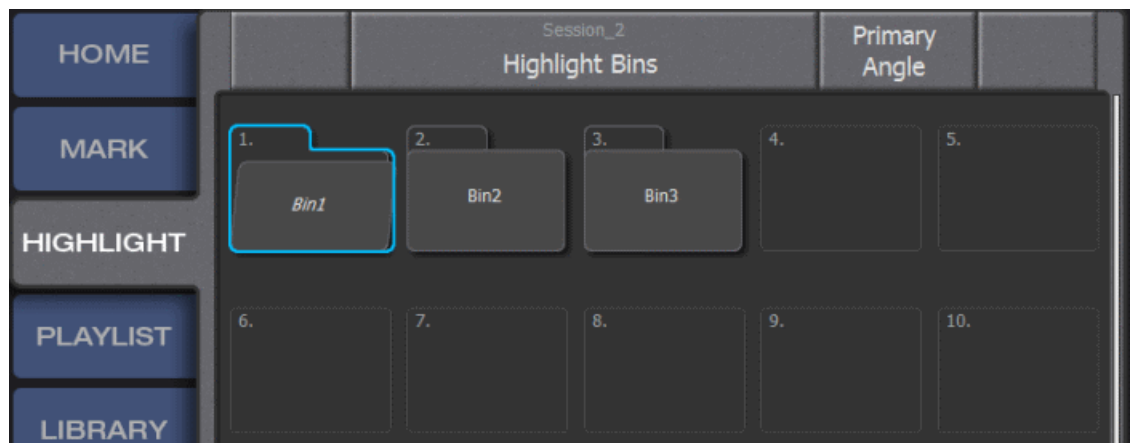
All bins on the active server are displayed.

By default, three bins appear. Each bin is represented by a folder icon. You can create additional bins as desired.

2. To name a bin, tap and hold the folder icon until it is outlined in blue.
3. On the keyboard, press **Enter**.
The Bin title tab at the bottom of the screen displays QuickKeys.
4. Type the new bin name.
5. On the keyboard, press **Enter** to save the new bin name.

Creating a new Highlight bin

1. On the **HIGHLIGHT** screen, double tap the Bin title tab.



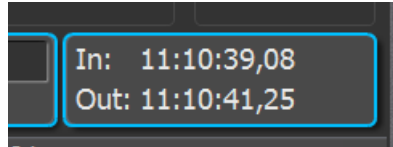
The Bins page opens, displaying a collection of folders representing bins.

2. From the bottom strip, tap **NEW**.
A new folder representing a new bin appears in the next available slot.
3. On the keyboard, press **Enter** and the word QuickKeys appears in the Bin title bar.
4. Type the name of the new Bin and then press **Enter**.

Changing Primary Angle

When Primary Angle is selected, you must assign the recorded angle that appears.

1. On player channel **P1** or **P2**, cue a created clip.



At the lower left of the touch screen, the clip properties box displays the clip's in and out timecode.

2. Tap the clip properties box.

Each available angle thumbnail is displayed. The primary angle is indicated by the word **primary** displayed on the thumbnail.

3. To change the primary angle, select the thumbnail of an available angle and tap **Primary** located under the thumbnail panel.

Recalling a clip and Match Frame operation from the record train

With this operation, as long as the record train is available, the player channel cues the record train to the cued timecode point. This returns to the record train without the limitations of the clip In point or Out point and allows cueing beyond the guardbands of the clip.

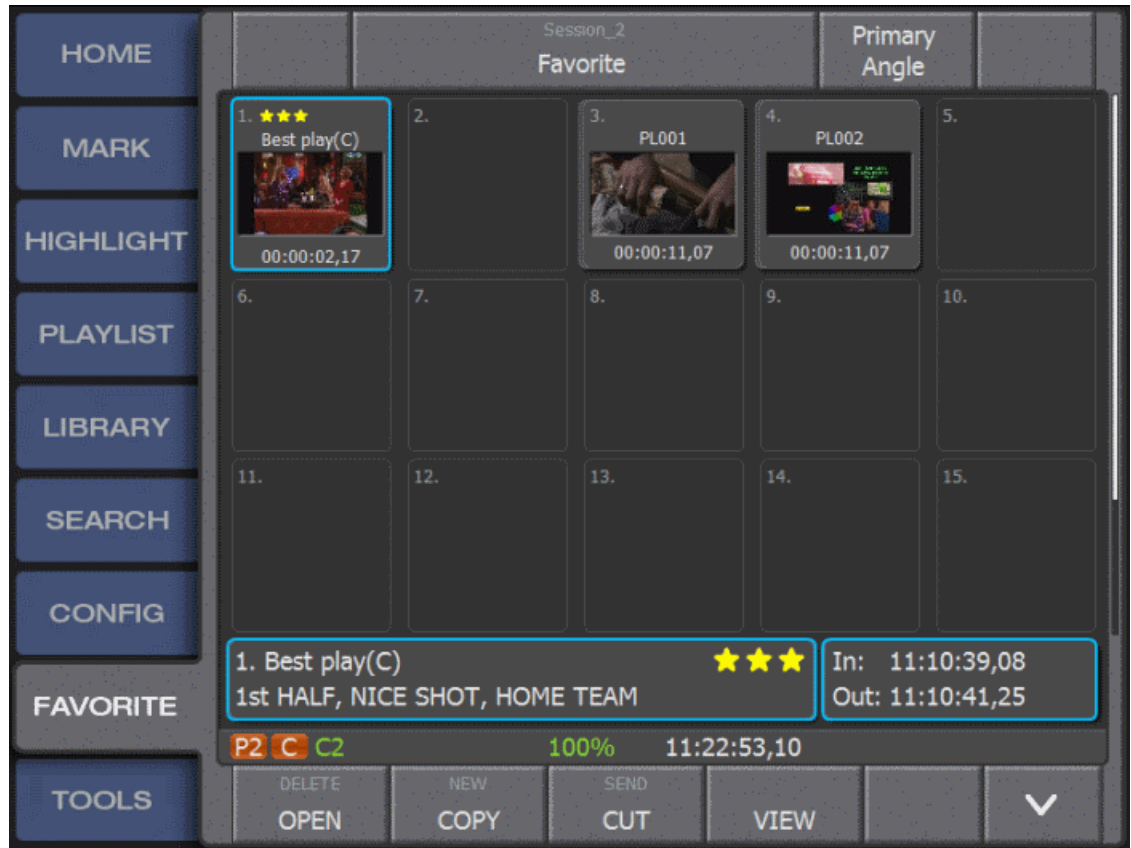
1. Select and cue a clip on a player channel.
2. Press **Shift | Match**.

Favorites

Using the Favorites screen

By default, you can select the **FAVORITE** tab to open the Favorite screen. This default behavior changes if you open the Favorite bar, which is displayed on any screen. If the Favorite bar is open, the **FAVORITE** tab is hidden and you cannot open the Favorite screen.

1. Open the **FAVORITE** screen.



2. To add elements such as Highlights, Playlists and Bins, use **CUT | MOVE** or **COPY | PASTE** functions.
3. Move your most useful elements to the top of the bin as desired.
4. Work with elements as follows:

Options	Description
Double tap a bin	Opens the bin
Double tap a playlist	Cues the list and opens the Playlist screen
Double tap a clip	Cues the clip, even if it is located on another server on the network.

Opening the Favorite bar

From any screen, you can open the Favorite bar. If the Favorite bar is open, the **FAVORITE** tab is hidden and you cannot open the Favorite screen.

1. To open the Favorite bar, tap-and-drag downward from the Tabs row or the Bin title bar.

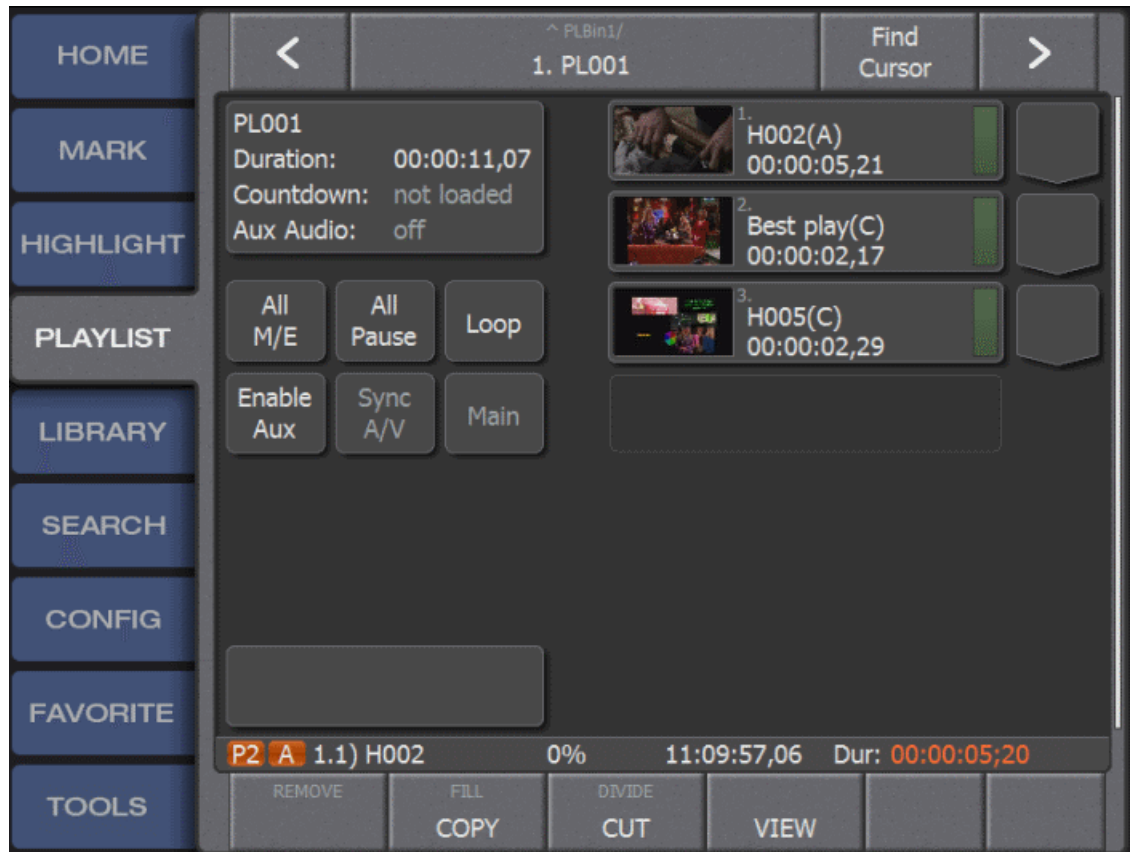


2. To open additional slots, tap the Favorite bar and drag left or right.
You can drag clips from the Favorite bar into a playlist.
3. To close the Favorite bar, tap-and-drag upward.

Playlists

Accessing Playlist mode

To access playlist mode, tap **PLAYLIST**.



- If you have not created any playlists, a playlist with no elements is displayed. You can add elements to the playlist.
- If you have created one or more playlists, the last active playlist is displayed.

Creating a new playlist

1. To create a new playlist, press **Shift | New PL**.
This clears the current Playlist from the screen and replaces it with an empty playlist.
2. Go to the tab that holds the source clips to be added either Highlight, Library or Search.
3. Select the clips to be added to the playlist.
4. Press **Add PL** to add events to the list.

Adding a clip to the end of a playlist

1. Open the **PLAYLIST** screen.

2. Load the playlist (either new or existing) that requires editing.
3. Go to the tab that has the source clips to be added, either Highlight, Library or Search.
4. Tap the clip to be added to the playlist.
5. To add the clip to the end of the active playlist, press **Add PL**.

Inserting a clip into the middle of a playlist

1. Open the **PLAYLIST** screen.
2. Load the existing playlist.
3. Tap the event in the list that plays subsequent to where the new clip is to be inserted.
The event is highlighted in blue.
4. Go to the tab that holds the source clips to be added such as Highlight, Library or Search.
5. Select the clip to be inserted into the list.
6. To add the clip to the selected location, press **Add PL**.

Adding a group of clips to a Playlist

1. Open the **PLAYLIST** screen.
2. Load a new or existing playlist.
3. Go to the tab that holds the source clips to be added either Highlight, Library or Search.
4. To add a series of consecutive clips, tap the first clip in the series.
5. Press and hold the **Shift** button, then tap the last clip in the series.
All the clips between these two slots are highlighted in blue.
6. To add the highlighted clips in an order from first to last to the playlist, press **Add PL**.

Adding multiple clips to a playlist

1. Open the **PLAYLIST** screen.
2. Load a new or existing playlist.
3. Go to the tab that holds the source clips to be added either Highlight, Library or Search.
4. To add a series of non-consecutive clips, tap the first clip in the series.
5. Press and hold **Fn**, then tap a series of clips in the order to be added to the playlist.
6. Release **Fn** once all the clips are highlighted in blue.
7. To add all the highlighted clips in order from first to last to the active playlist, press **Add PL**.

Moving events in a playlist

You can use either the VGA screen or the touch screen to move playlist events.

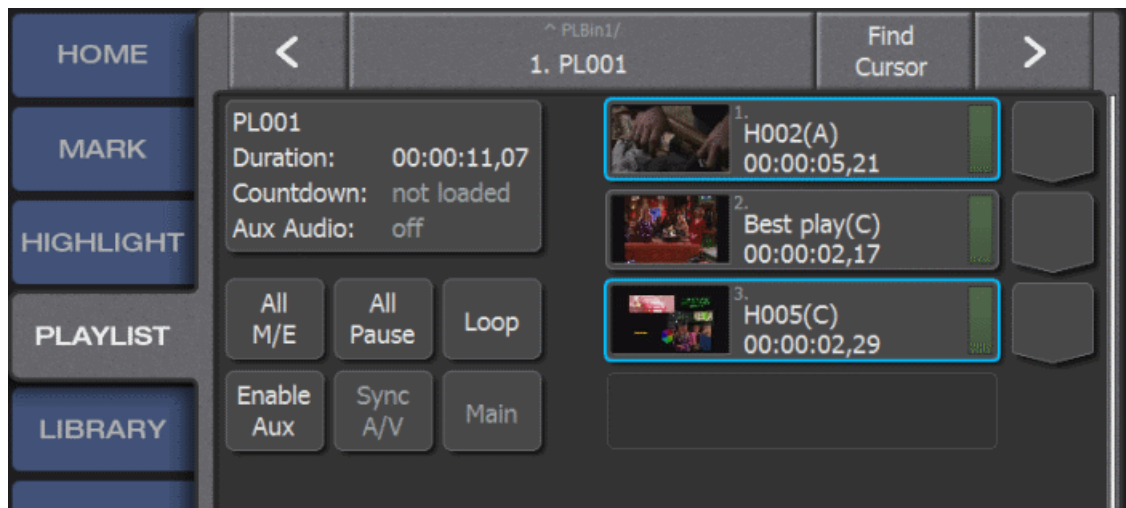
1. To use the VGA screen, do the following:
 - a) Find the playlist panel on the VGA screen that represents the list to be edited.



- b) Drag-and-drop the event to the new location.
2. To use the touch screen, do the following:
 - a) Open the **PLAYLIST** screen.
 - b) If the playlist to be edited is inactive, move the playlist to the active panel.
 - c) Drag the event to be moved to the new location in the list.

Moving multiple events in a playlist

There are several ways to move multiple events in a playlist.



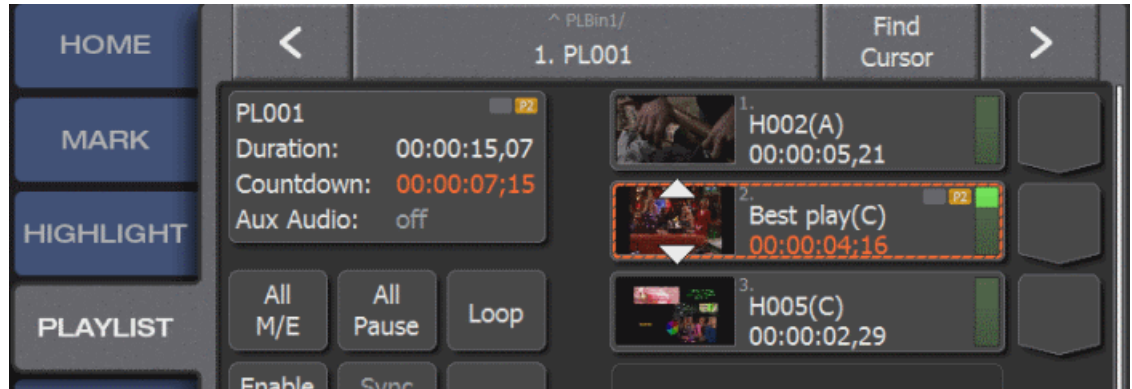
1. To move consecutive clips, do the following:
 - a) Select **Shift** and select the first and last of a group of consecutive clips.
The events are outlined in blue.
 - b) Tap **CUT** to remove the clips from the current playlist location.
The SoftKeys change to **MOVE** or **PASTE**.
 - c) Tap the event slot to select the destination location for the events to be moved.
 - d) Tap **MOVE** to insert the events in the list at selected location.
2. To move non-consecutive clips, do the following:
 - a) Press **Fn** and select each clip that you want to move.
The events are outlined in blue.
To select multiple non-consecutive clips, press and hold **Fn**.
 - b) Tap **CUT** to move the clips from their current playlist location.
The SoftKeys change to **MOVE** or **PASTE**.
 - c) Tap the event slot to select the destination location for the events to be moved.
 - d) Tap **MOVE** to insert the events in the list at selected location.

Shortening a clip in a playlist

1. Open the **PLAYLIST** screen.
2. Cue the playlist to be edited on a playlist channel.
3. To cue the event in the list that you are editing, double-tap the event slot.
The event is highlighted in orange.
4. Use the Jog Knob to cue the event within the clip to the new event In point or Out point.
5. Press **In** or **Out** respectively.
6. Press **Add PL**.
The duration of the event is now changed without affecting the original clip in the highlight bin.

Lengthening a clip in a playlist

1. Open the **PLAYLIST** screen.



2. Cue the playlist to be edited on a playlist channel.
3. To cue the event in the list that requires editing, double-tap the event slot until it is highlighted in orange.
4. Press **Shift | Trim/Take**.

On the touch screen, notice that the event is now marked with opposing up and down arrows and the progress bar is extended representing the guardband space that is now available.

5. Use the Jog Knob to cue the event within the clip to the new event In point or Out point.
6. Press **In** or **Out**.
7. Once the new **In** and/or **Out** points have been set, press **Take**.

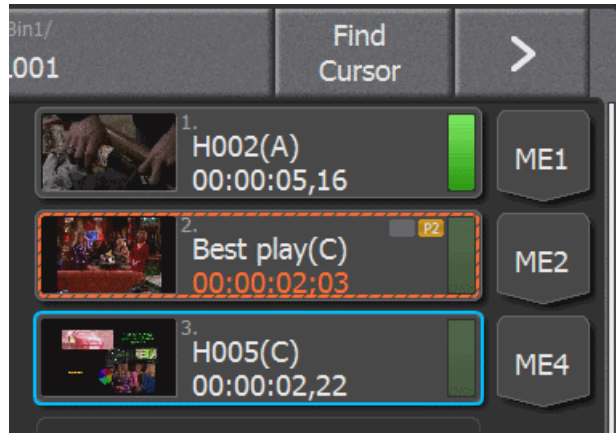
The event has a new duration without affecting the original clip in the highlight bin.

8. Alternatively, you may do the following to lengthen a clip in a playlist:
 - a) Repeat Steps 1 to 3 as above.
 - b) Press **Fn+In** to clear an in-point.
 - c) Use the Jog Knob to select a new in-point.
 - d) Press **In** to set a new In point
 - e) Press **Fn+Out** to clear the Out point.
 - f) Use the Jog Knob to select a new Out point.
 - g) Press **Out** to set new Out point.

Changes are immediately put into effect.

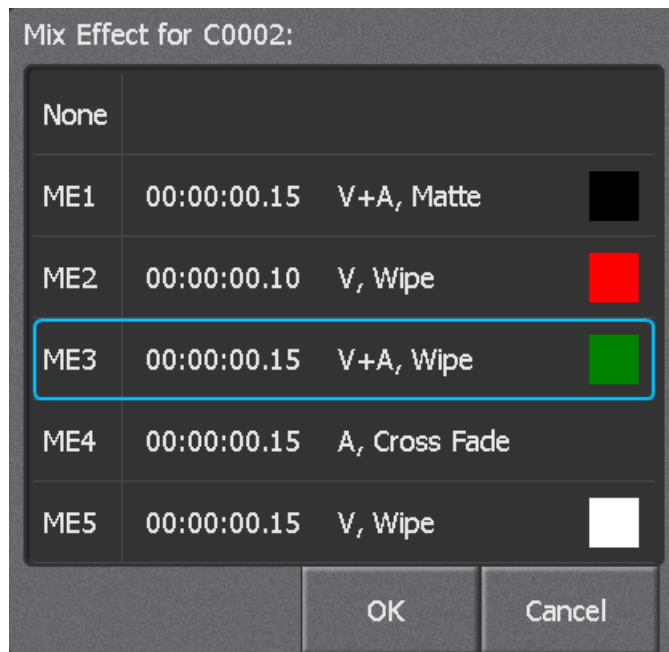
Adding M/E transitions to single playlist events

1. Open the **PLAYLIST** screen.



2. Select and cue the playlist to be edited.
On the far right of the touch screen are chevrons pointing downward for each event in the playlist.
3. Tap the chevron of an event to activate the M/E transition.

The **Mix Effect** dialog box displays all M/Es that have been set in **CONFIG | EFFECTS**.



4. Select the M/E that you want for the event and tap **OK**.
5. Repeat steps above to set the mix effect of other events in the playlist.

The transition happens after the event is playing and before the next event begins.

You can also use the VGA expansion screen for these operations.

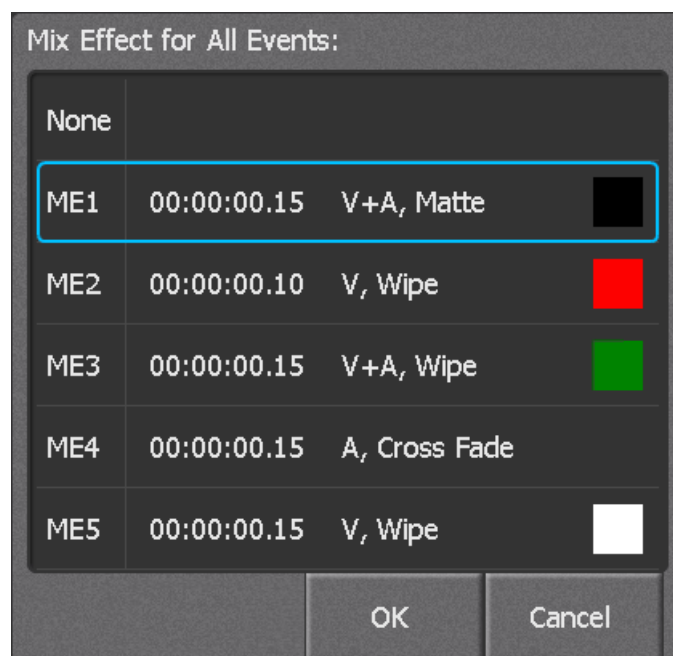
Related Topics

[Effects settings](#) on page 47

Adding M/E transitions to all playlist events

1. Open the **PLAYLIST** screen.
2. Select and cue the playlist to be edited.
3. To add M/E to all events in the active playlist, tap **All M/E**.

The **Mix Effect for All Events** dialog box displays all M/Es that have been set in **CONFIG 1 EFFECTS**.



4. Select the M/E for all events in the playlist and tap **OK**.

Chevrans of all events in the playlist display the selected M/E.

The same transition happens after each event is played and before the next event begins.

You can also use the VGA expansion screen for these operations.

Split audio editing in a playlist

- Clips in the playlist must have guard band material.

1. Open a playlist in the **PLAYLIST** screen.

2. Select a clip and jog into the content.

The light green vertical bar indicates your position in the clip.



3. To pull up video from the next clip in the list up while the selected clip's audio continues, do the following:

- a) Press **Shift + Trim**.

Dark green areas in the vertical bar indicate guard band material at the top and bottom of the clip.



Trim Video and **Trim Audio** buttons appear.

- b) Select **Trim Video**.



- c) Between the clip's in and out points, jog to the desired video end.



- d) Press **Out**.

The vertical bar splits below the out point, indicating the video pulled up from the next clip in the list. Also, a green arrow indicates the video pulled up and reports the length.



The audio plays for the original length of the selected clip, but at the video trim out point the video displayed comes from the next clip in the list.

4. Select another clip in the list and jog into the content.
5. To extend the audio from the previous clip in the list into the selected clip, do the following:
 - a) Press **Shift + Trim**.
 - b) Select **Trim Audio**.
 - c) Between the clip's in and out points, jog to the desired audio start.
 - d) Press **In**.

The vertical bar splits above the in point, indicating the audio pulled down from the preceding clip in the list. Also, a blue arrow indicates the audio pulled down and reports the length.



The selected clip's video plays at the beginning of the clip, but the clip's audio does not play at the beginning. Instead the previous clip's audio continues to play until the audio trim in point is reached, when the selected clip's audio begins to play.

If trim points overlap, the trim points from the clip higher in the list take precedence.

6. To clear the audio trim, do the following:

- a) Select the clip in the playlist.
- b) Go to the top of the clip.
- c) Press **Shift + Trim**.
- d) With neither **Trim Video** nor **Trim Audio** selected, press **In**.

The original in point is reset and the audio trim is eliminated.

7. To view split edit information and navigate, do the following:

- a) Press **Shift + Trim**.

Trimming information for the currently selected clip is displayed in the upper left corner of the screen.

A white staircase indicates split video and audio edits.



- b) Press arrow keys to navigate to edit decision points.

You can also use the VGA expansion screen for these operations.

Deleting a clip from a playlist

1. Open the **PLAYLIST** screen.
2. Select the playlist to be edited so that it is visible on the playlist screen.
3. Tap the event to be deleted so that it is outlined in blue.
4. To delete selected event from the playlist, press **Shift** then tap **REMOVE**.

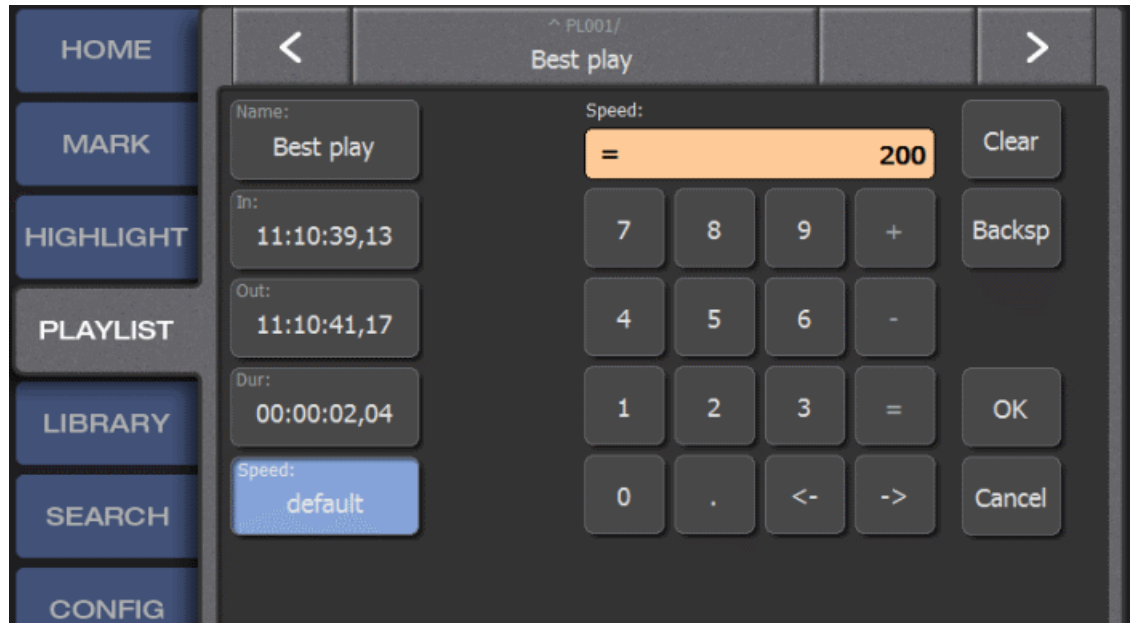
Removing a section of an event in a playlist

1. Open the **PLAYLIST** screen.
2. Select the playlist to be edited so that it is visible on the playlist screen.
3. Cue a clip in the playlist to the point to be divided.
4. To create a new end point for the clip and create a new clip beginning with the newly created end point of the previous clip, press **Shift** then tap **DIVIDE**.

5. Cue the new event to the new In point for the clip and press **In**.

Changing the speed of an event in a playlist

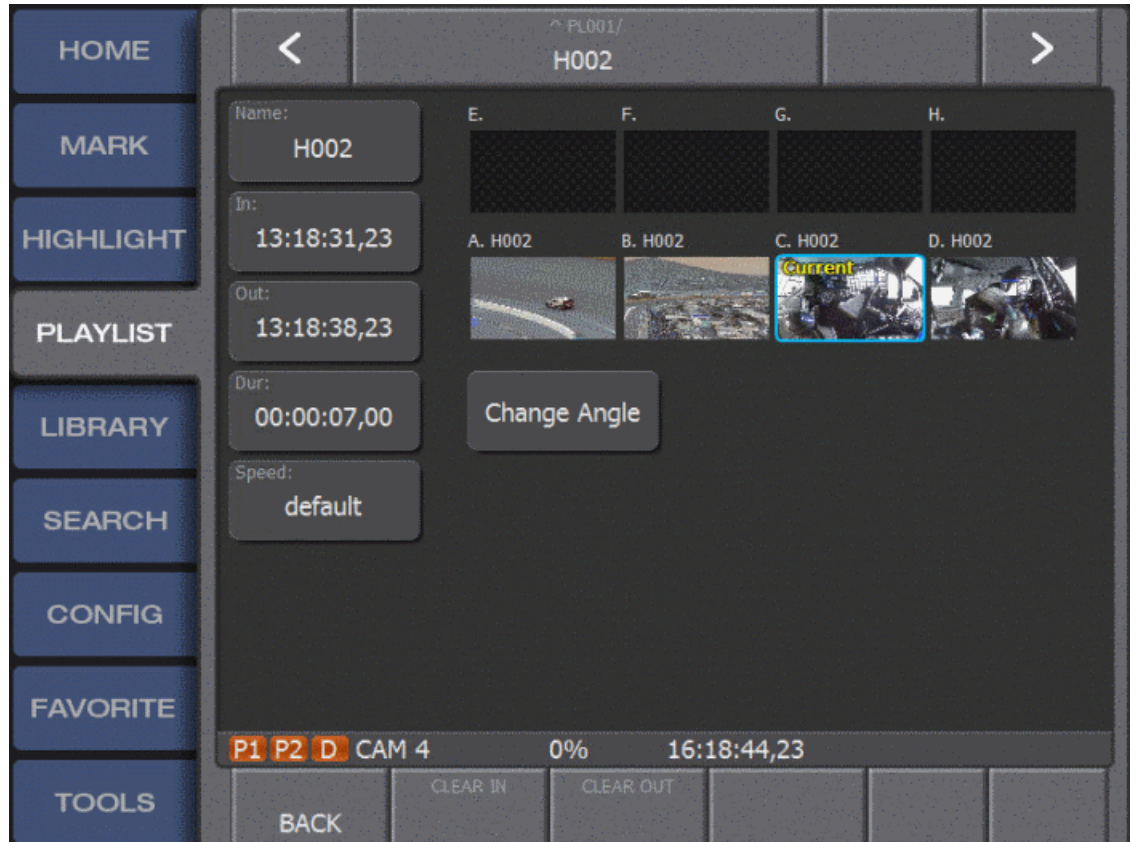
1. Open the **PLAYLIST** screen.



2. Select and cue the playlist to be edited.
3. Select the event to change with a tap so it is outlined in blue.
4. Select the Event Properties panel from the lower left corner of the touch screen.
5. On the Event Properties panel, select the speed slot at the bottom of the column of slots on the left side of the touch screen.
A number pad appears.
6. Enter the new speed as a percentage to be assigned to that specific event.
7. Select **Enter** to assign a new playback speed to that clip.

Changing the angle of a clip in a playlist

1. Open the **PLAYLIST** screen.



2. Select and cue the playlist to be edited.
3. Select the event to change with a tap so it is outlined in blue.
4. Select the Event Properties panel from the lower left corner of the touch screen.
On the Event Properties panel, notice the thumbnails of all available angles for that event, the angle that is currently in the playlist is marked with yellow text stating **Current**.
5. Tap the thumbnail of the new angle to be included in playlist.
6. Tap **Change Angle** which is located directly below the thumbnails.
The **Current** text is now moved to the new angle.
7. Tap **BACK** to return to the playlist.
The new angle thumbnail appears in the slot of the event.

Clearing the In or Out of an event in a playlist

Use the Clear In or Out to include the event guardbands in the playlist.

1. Open the **PLAYLIST** screen.
2. Select the playlist to be edited.

3. Select the event to be edited with a tap.
The event is outlined in blue.
4. Select the Event Properties panel from the lower left corner of the touch screen.
5. To move the In point of the event to the limit of the guardband, press **Shift** then tap **Clear In**.
6. To move the Out point of the event to the limit of the guardband, press **Shift** then tap **Clear Out**.

Cueing up a playlist

To ensure the playlist is active on the player channel desired, select the player and then go to the PLAYLIST screen to check the active list.

To cue up a playlist, do one of the following:

Options	Description
Press PL/ME one time	Enters the playlist.
Press PL/ME two times	Cues the playlist to last cued location.
Press PL/ME three times	Cues the playlist to the top of the first event in the list.

Playing back a playlist

Once a playlist is cued on a player channel, it is set to play.

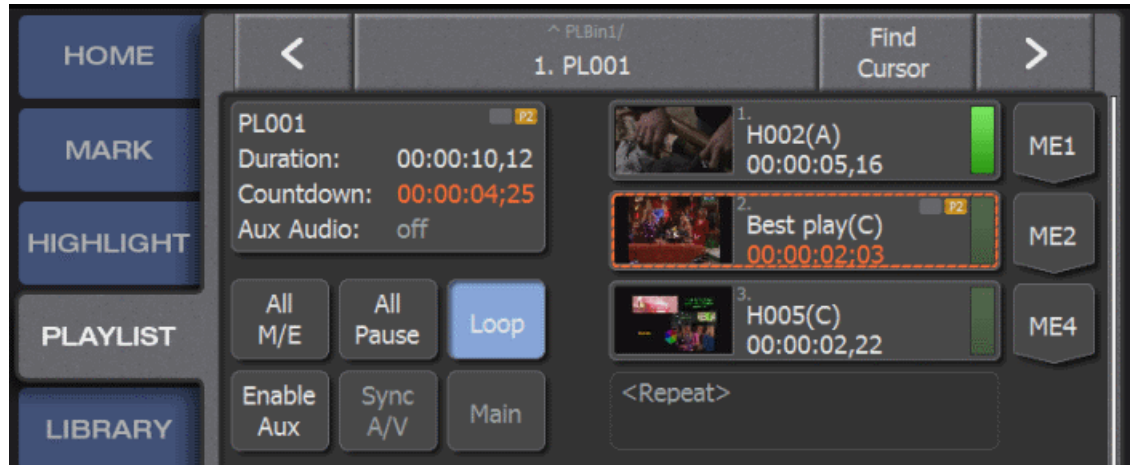
1. Press the Play button.
2. The list plays at the 100% or at the speed assigned to an event.
3. Move the position of the T-bar to take control of the playlist speed of playback.
4. Adjust the **T-bar** up and down to raise or lower the speed of playback.
5. Press **Fn | Play** to play the list at the preset speed set on the home page.

Jumping to a playlist event while playing back

1. Cue and play a list on a player channel.
2. While the list is playing, tap an event either farther down the list or before the playing event.
The selected event is outlined in blue.
3. Press **Take** to immediately take the playback of the list to the event selected.

Looping playlist

1. Open the **PLAYLIST** screen.



2. Select and cue an active playlist.
3. Tap **Loop**.

When the playlist reaches the conclusion, the list follows it's applied M/E transition and then returns to the first event in the list, continuing to play.

Renaming a playlist

1. Open the **PLAYLIST** screen.
2. Cue the playlist to be renamed so that it is active and visible on the touch screen.
3. Tap the playlist title bar at the top of the touch screen.
A box at the bottom of the bottom of the touch screen appears with the word **QuickKeys**.
4. Type in the new name of the playlist and then press **Enter** on the keyboard.

Finding the cursor

On the **PLAYLIST** screen a longer playlist can go beyond the boundaries of the screen, which obscures the cursor position.

To find the location of the cursor or selected element, tap **Find Cursor** at the top of the **PLAYLIST** screen.

The screen advances to the location of the currently selected element.

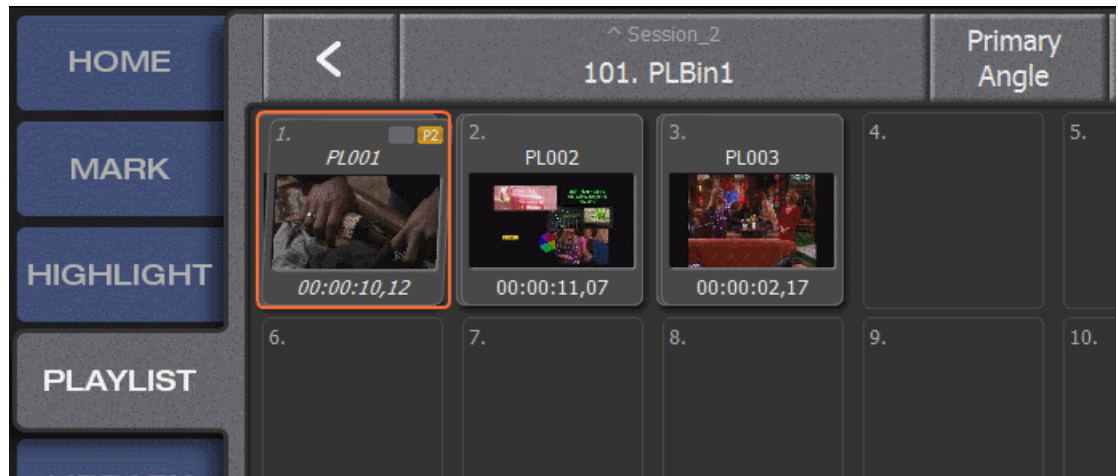
Navigating multiple playlists

1. Open the **PLAYLIST** screen.

2. If multiple playlists are available, use the < or > SoftKeys at the upper right and left of the touch screen.
 - Tap > to bring the next higher playlist slot location in the bin to the selected player panel.
 - Tap < to bring the next lower playlist slot location into the active player channel.

Viewing multiple playlists in a bin

1. To view all the playlist slots in a bin, double tap the playlist title bar at the top of the playlist screen.



The screen changes view, showing playlists in a manner similar to the default view of the Highlight screen.

2. To take the view up one level to show all the playlist bins available, tap the title bar.

Pausing a playlist

1. To add a pause to a single event in the playlist, press **Fn** and then select the event chevron.



P appears in the chevron next to the selected event. When the playlist playback reaches the event with the **P** in the chevron, the playback stops on the last frame of the event.

2. Press **Play**, **Fn | Play** or the move the **T-bar** to resume playback.
3. To assign a pause to all the events in the list, on the **PLAYLIST** screen, tap **All Pause**.

NOTE: *Mark Pauses on the Home screen does not work with clips in Playlist.*

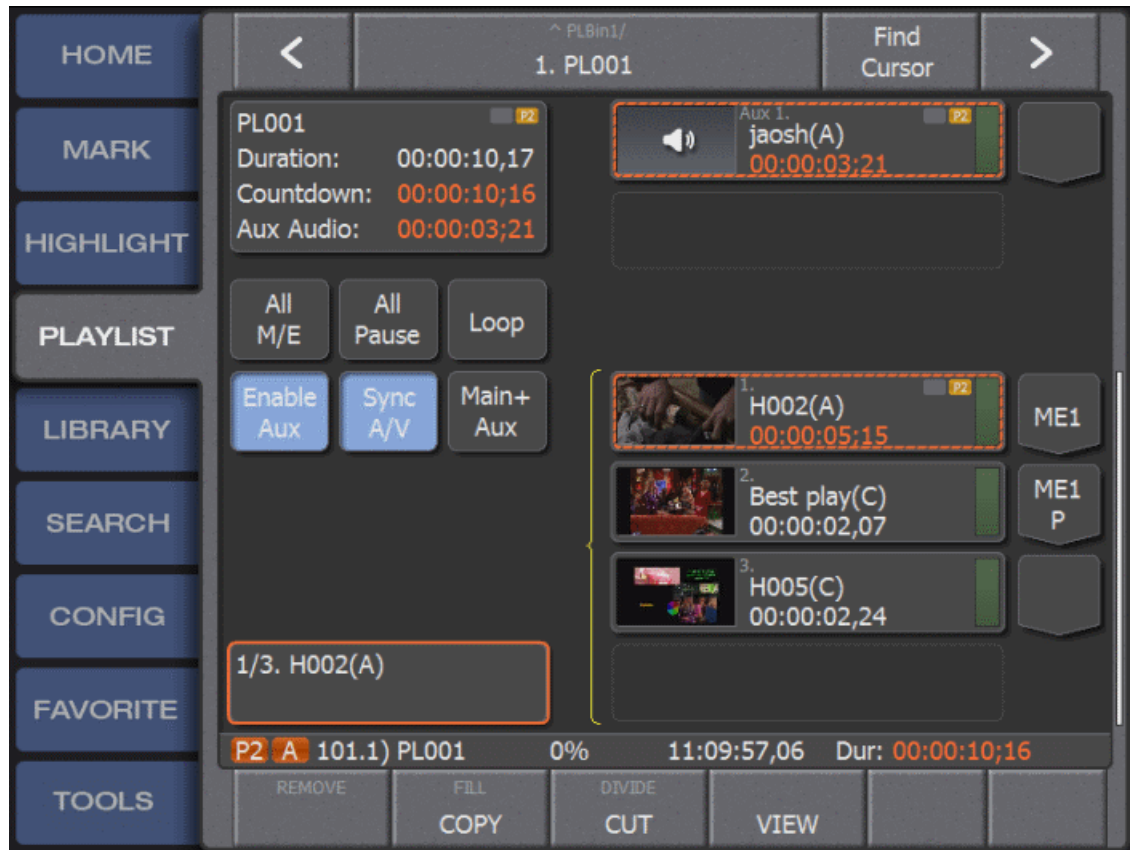
PGM/PVW Playlist

1. Tap **HOME** and then press **PGM/PVW**.
2. Tap the **PLAYLIST** tab and select an existing playlist.
3. Press **ME/PL** 3 times to cue the playlist.
Now notice that event 1 of the playlist is on **P1** while event 2 is cued on **P2**.
4. Select **Play** to enable the list to play with each event transferring from **P2** to **P1**.
Events on **P2** can be adjusted or cued while on **P2**.
5. Press **Take** to advance the list to break the **PGM/PVW** connection.
The Playlist is now played only from **P1**, no longer previewing events. **Take** can still be used to move clips over to the **P1** channel.
6. Putting **P2** in to **Live** and then pressing **Take** allows a playlist the ability to add a growing clip.

Aux Playlist

1. Tap the **HOME** tab.
2. Tap the Audio set up panel.
3. Tap the Aux Audio Panel from the bottom strip.
4. Tap the Audio channels where the Aux Audio is to appear.

5. Tap the **PLAYLIST** tab.



6. Tap **Enable Aux** (highlighted in blue above).
7. Tap **Main+Aux** to push the current playlist down the screen and reveal an additional Aux playlist at the top of the column.
8. To select the Aux clip portion of the list, tap the upper list.
The section shows yellow brackets indicating the Aux portion of the list is now active. Clips added to the playlist are now added to the Aux section as audio clips only.
9. To view more of the Aux list, tap **PLAYLIST view** to change the view to Aux.
The Main list is no longer visible as the Aux list fills the playlist column.
10. To keep Main and Aux lists tied together for editing, tap **Sync A/V** on the **PLAYLIST** tab.

ShareFlex

About ShareFlex

ShareFlex allows a K2 Dyno S Replay Controller to share content across multiple standalone K2 Summit systems. The K2 Dyno S Replay Controller accesses the content directly over Gigabit Ethernet, with no need to transfer content between the K2 Summit systems. This allows a K2 Dyno S Replay Controller that is controlling a local K2 Summit system to cue remote clips, playlists, and record trains of a different K2 Summit system, without using remote channels.

You can share highlight clips instantly between K2 Summit systems. From your local K2 Dyno S Replay System, you can access a different K2 Summit system to view recorded content, make a clip from a record channel, load and play back a clip, retrieve content from the library, and place a clip in a local playlist.

Key features of ShareFlex are as follows:

- Sharing highlight clips between systems
- Viewing recorded content locally on a different K2 Summit system
- Making a clip from a different K2 Summit system's record channel
- Loading and playing back a clip from a different K2 Summit system
- Retrieving content from the library of a different K2 Summit system
- Placing a clip in a local playlist from different K2 Summit system

ShareFlex connections

A K2 Summit system supports up to four ShareFlex connections at the same time, one of which is guaranteed to be a real-time connection. The number of real-time connections depends on the number of active channel streams. ShareFlex connections beyond the real-time limit share the available network bandwidth, with performance similar to an FTP transfer. In addition, no more than eight total connections are supported.

Real-time connections act as if they are record channels on the K2 Summit system. The total number of active channel streams and real-time ShareFlex connections is subject to the supported channel stream limit for the given media type and bitrate.

The following examples are based on six DVCPROHD (DV100) channel streams, which is the maximum supported on a K2 Summit system.

- Example 1: Two channels are recording DVCPROHD and two channels are playing DVCPROHD. This totals to four real-time streams. That leaves two real-time connections available, and those are used as ShareFlex connections. The total is now six real-time streams, which is the maximum supported. For the remaining two ShareFlex connections supported, the connections are not real time. This means there is a wait, similar to that for an FTP transfer, for the desired asset to be available on the ShareFlex connected system.
- Example 2: Two ChannelFlex channels are recording DVCPROHD, which means each channel records two streams for a total of four real-time streams. In addition, two channels are playing DVCPROHD. The total is now six real-time streams, which is the maximum supported. However, since one real-time ShareFlex connection is guaranteed, there is another real-time connection available for ShareFlex only. The total is now seven connections. Since no more than eight total connections are supported, there is only one connection remaining for ShareFlex. This last ShareFlex connection is not a real-time connection.

Network usage on the network interface connector must be below 80% for ShareFlex to operate at these levels.

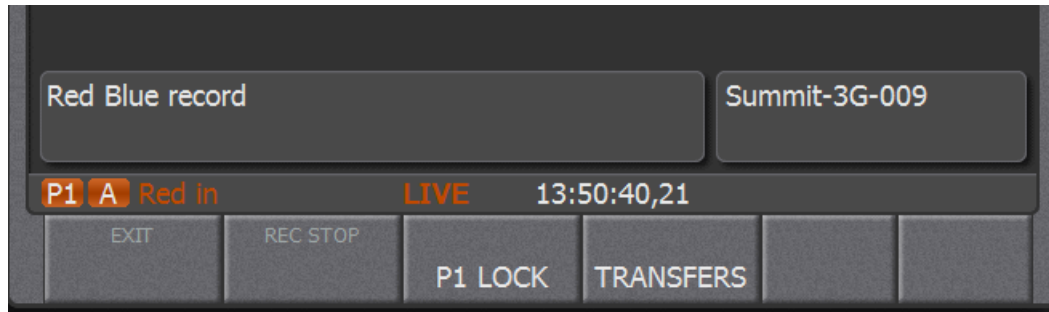
The following limitations also apply:

- Limited to the maximum disk bandwidth supported.
- Limited to the network bandwidth available.

Setting up ShareFlex

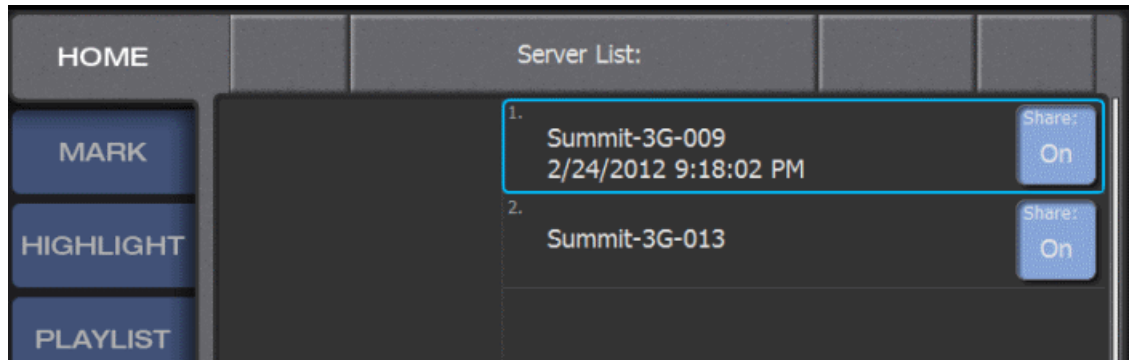
Before using ShareFlex, you must verify the following:

- Establish host tables on all connected devices
 - Ensure that all connected K2 Summit systems have a valid ShareFlex license
1. On the Home screen, tap the box that displays the K2 Summit system currently controlled..



The server list opens.

2. From the server list, select **ON** to enable ShareFlex sharing on K2 Summit systems.



Using ShareFlex with record trains

1. Select **P1** or **P2** while Live recording on a local K2 Summit system.

- Press **Shift | Brws** buttons to list available record sessions.



- To load the selected angle to your local playout channel, do one of the following:
 - Select a record train angle from the thumbnails available and tap **LOAD**.
 - Double-tap a thumbnail.
- Use the angle buttons to choose from the available streams associated with the selected record train.
- Use the Jog Knob, T-bar, or Play button to control the channel.
- Press **Shift | Local** buttons on the K2 Dyno S Replay Controller to return to local record trains.

If **P1** is selected to load remote record trains, local record trains and angles are still available under **P2**. Verify that connected K2 Summit systems have matching timecode for frame accurate matches to valid sources across record trains.

Accessing and using a remote session

- Select **P1** or **P2** on your local K2 Summit system.
- Press **Shift | Brws** buttons to list available record sessions.



3. To load a remote session to your local playout channel, do one of the following:
 - Select a session folder or a record train angle from the thumbnails available and tap **LOAD SESSION**.
 - Double tap the session folder icon.
4. Access content in one of the following ways:
 - Select from the Highlight bins to access and play clips
 - Select from Playlist bins to access, cue, play, and edit specific playlists

For future quick access, add the remote Highlight bins and Playlist bins to your local Favorites Bar.

Creating local clips from remote record trains

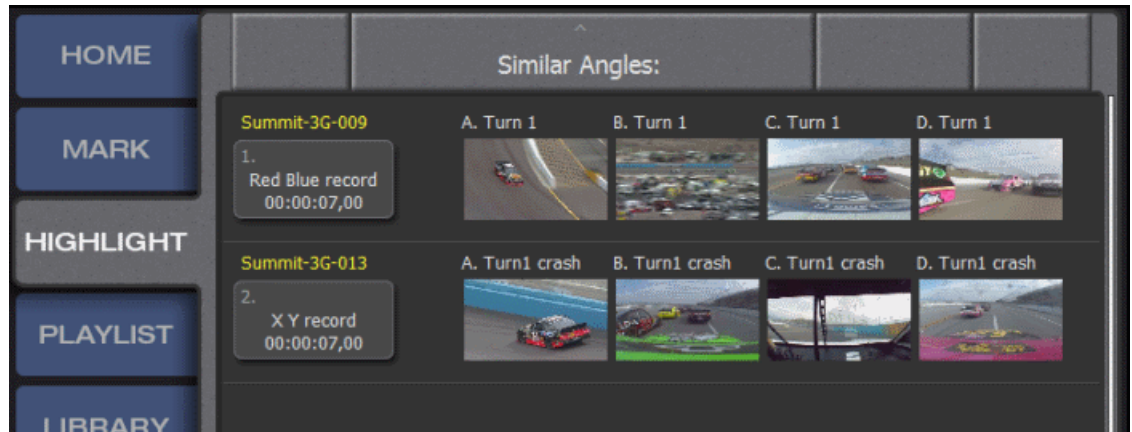
1. Select **P1** or **P2** on your local K2 Summit system.
2. To list the available record sessions, do one of the following:
 - Press **Shift | Brws** buttons
 - Open the **LIBRARY** screen to navigate to a shared Summit.
3. Select the desired session created by the remote K2 Dyno S Replay Controller.
4. Double-tap the record train to load the recording to a player channel.
5. Select an angle from which to create a clip.
6. To initiate a transfer of the clip material to your local K2 Summit system, mark an **In | Out** and add to the local Highlight Bin in one of the following ways:
 - Tap an empty slot
 - Press the **Add HL** button

An automatic FTP of the content is initiated.

Timecode matching a local clip with remote clips

1. On the K2 Dyno S Replay Controller, select **P1** or **P2**.
2. Select a local Highlight clip in a local Highlight bin.
3. On the K2 Dyno S Replay Controller, press **Fn | Cue Up** buttons.

- From the available matching clips and angles, double-tap a thumbnail to load the clip on the selected **P1** or **P2** channel.



- Use the Jog Knob, T-bar, or Play button to control the channel.
All angles associated with the clip are available with the angle buttons.
- Verify that connected K2 Summit systems have matching timecode for frame accurate matches to valid sources across record trains.
The in-point or out-point of the local clip must exist within the range of the guardbands of remote clips to be valid results.
- To access clips across the network by way of Library navigation, do the following:
 - Open the **LIBRARY** screen to navigate to a shared K2 Summit system.
 - Select the desired session created by the remote K2 Dyno S Replay Controller.
 - Open the remote Highlight Bin and locate the desired clip.
 - Select the clip in one of the following ways:
 - Double-tap the clip
 - Tap the clip and press the **Shift | Open** buttons on the K2 Dyno S Replay Controller.
- Use the angle buttons on the controller to select the desired angle for playback.
All angles associated with the clip are available.

For future quick access, add the remote Highlight bins and Playlist bins to your local Favorites Bar.

Using ShareFlex with playlists

Changing a remotely cued playlist affects the playlist at the local level. You cannot add local clips to remote playlists. When adding remote clips to a local playlist, an FTP transfer is required to allow local and remote clips to be combined.

- Open the **LIBRARY** screen to navigate to a shared K2 Summit system.
- Select the desired session created by the remote K2 Dyno Replay Controller.
- Open the remote Playlist Bin and locate the desired Playlist.

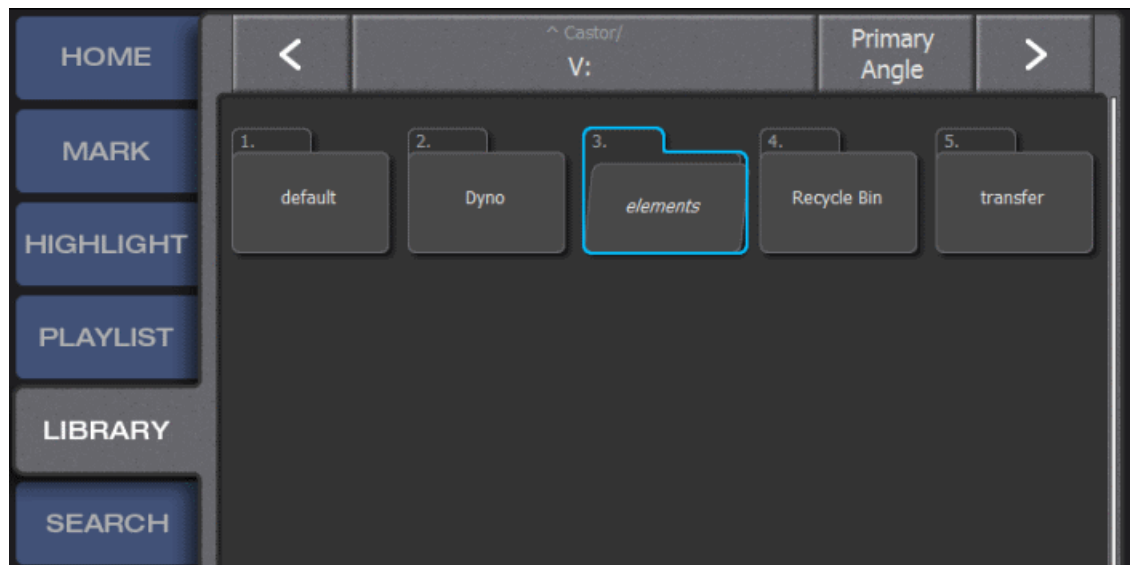
4. Select the playlist in one of the following ways:
 - Double-tap the playlist
 - Tap the playlist and press the **Shift | Open** buttons on the K2 Dyno S Replay Controller.
5. Press the **PL** button three times to cue for playback.

For future quick access, add the remote Highlight bins and Playlist bins to your local Favorites Bar.

Library

Saving to the Library

1. To save elements such as clips or playlists to the Library, select the element to be saved outside of the session.

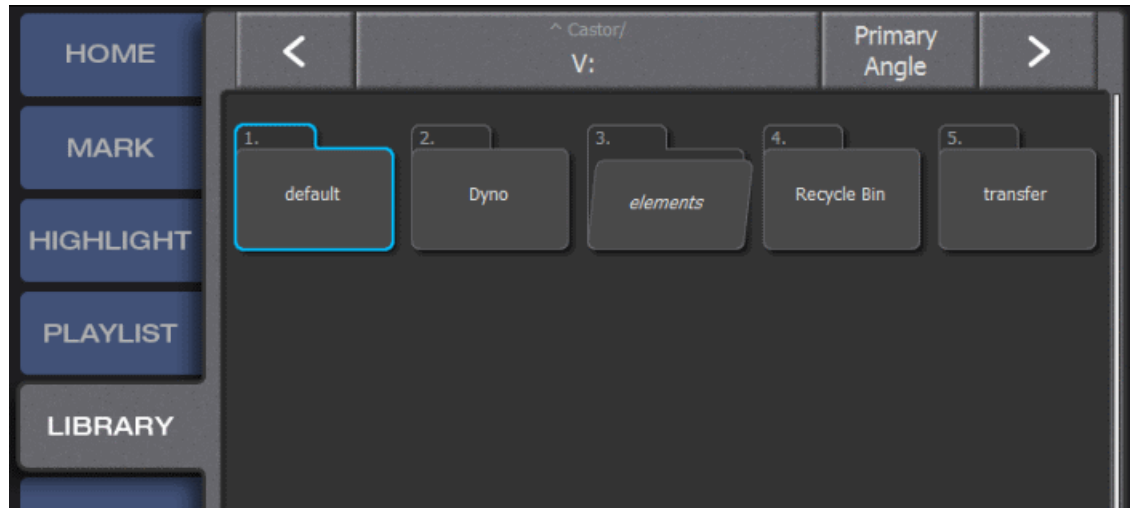


2. Press the **Add Lib** button to save the elements to the default bin in the V: drive.
With the **Add Lib** button, elements are always saved to the default bin. You cannot save elements to a different bin.

Navigating the Library

The Library is the storage for elements available beyond a session. It is also the gateway to the network.

1. Open the **LIBRARY** screen.



All elements added to the library appear in the default bin.

2. Double-tap the bin title bar at the top of the screen to display all bins on the V: drive.
3. Double-tap the title bar again, to display all the bins on the K2 Dyno S Replay Controller.
4. Double-tap the title bar again to display all the servers on the network.

Copying clips

Clips can be copied from Highlight bin to the Library and vice versa.

1. To copy clips from Highlight bin to Library, do the following:
 - a) Open the **HIGHLIGHT** screen.
 - b) Select the clip or clips to be sent to the library.
 - c) Press **Shift | Add Lib** buttons on the left bank of the K2 Dyno Replay Controller.

All clips selected are copied to the default bin in the Library. This allows access to the selected clips after closing the session.
2. To copy clips from the Library to a Highlight bin, do the following:
 - a) Open the **LIBRARY** screen.
 - b) Select the Library bin that contains the clips to be copied.
 - c) Select Library clip or clips that are to be copied to the Highlight bin.
 - d) Tap **COPY**.
 - e) Open the **LIBRARY** screen.
 - f) Tap the new slot location for the Library clips.
 - g) Tap **PASTE**.

Library clips are copied into the Highlight Bin.

Creating a new Library bin

1. Open the **LIBRARY** screen.
2. Double-tap the title bar to display bins.
3. Press the **Shift** button and **NEW**.

A new bin is created.

Importing files from a storage device to the Library

1. Open the **LIBRARY** screen and navigate to the desired location.
2. Select the file you are importing.
3. Tap **COPY**.
4. Select an open slot in one of the highlight bins and then tap **PASTE**.

Renaming files in the Library

1. Open the **LIBRARY** screen and open the bin containing clips to be renamed.
2. Tap the file to be renamed.
3. Press **Enter**.

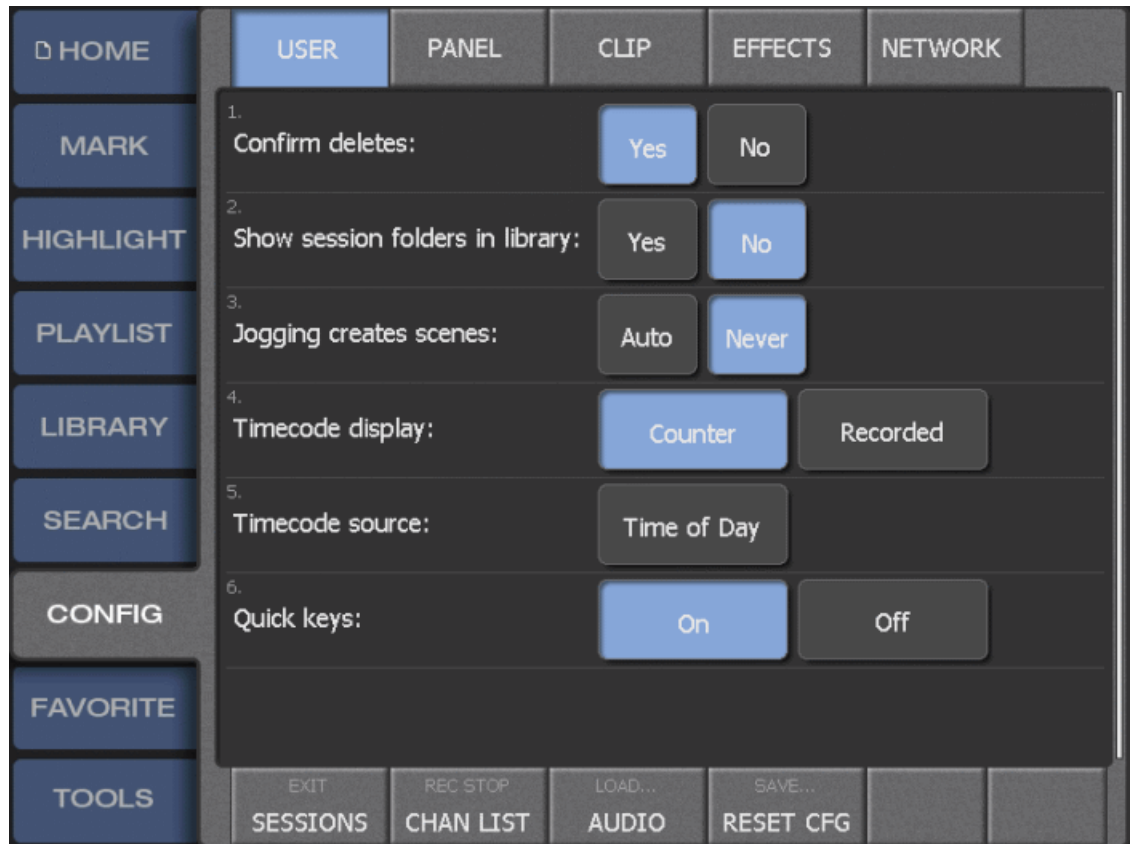
The word **QuickKeys** appears in the properties box at the bottom of the touch screen.

4. Use the keyboard to enter the new name for the file.
5. Press **Enter** to save the new name.

Showing session folders in the Library

Session folders are in the Dyno Folder, which is on the V: drive).

On the **CONFIG** screen, tap **USER**.

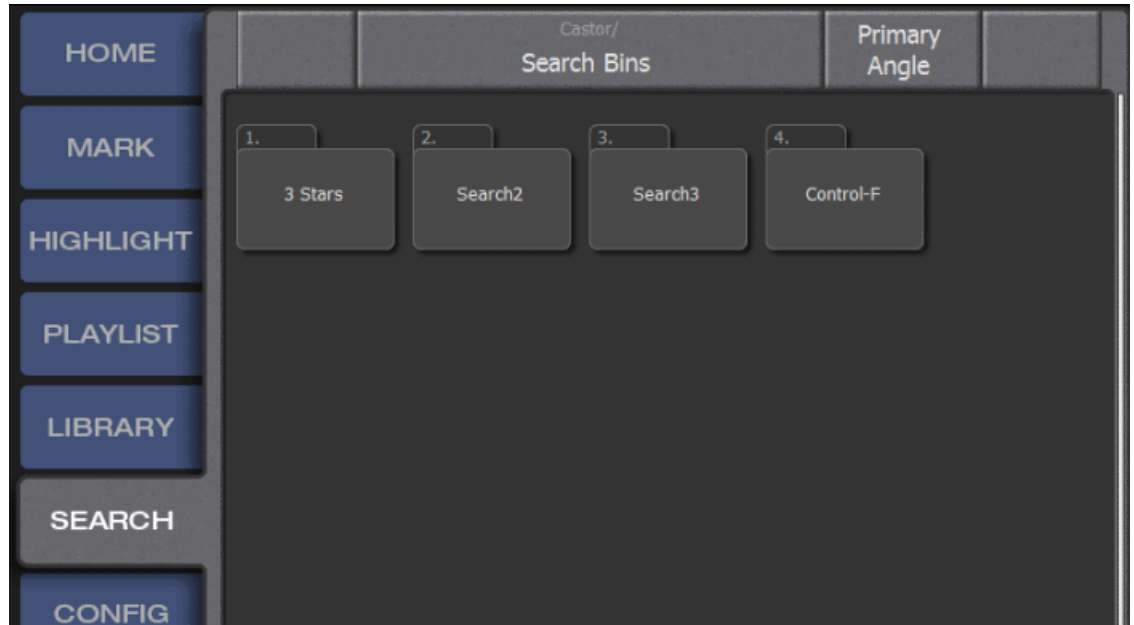


Set **Show session folders in library** to **Yes**.

Search function

Using the default 3-Star search folder

1. Go to the **SEARCH** tab.



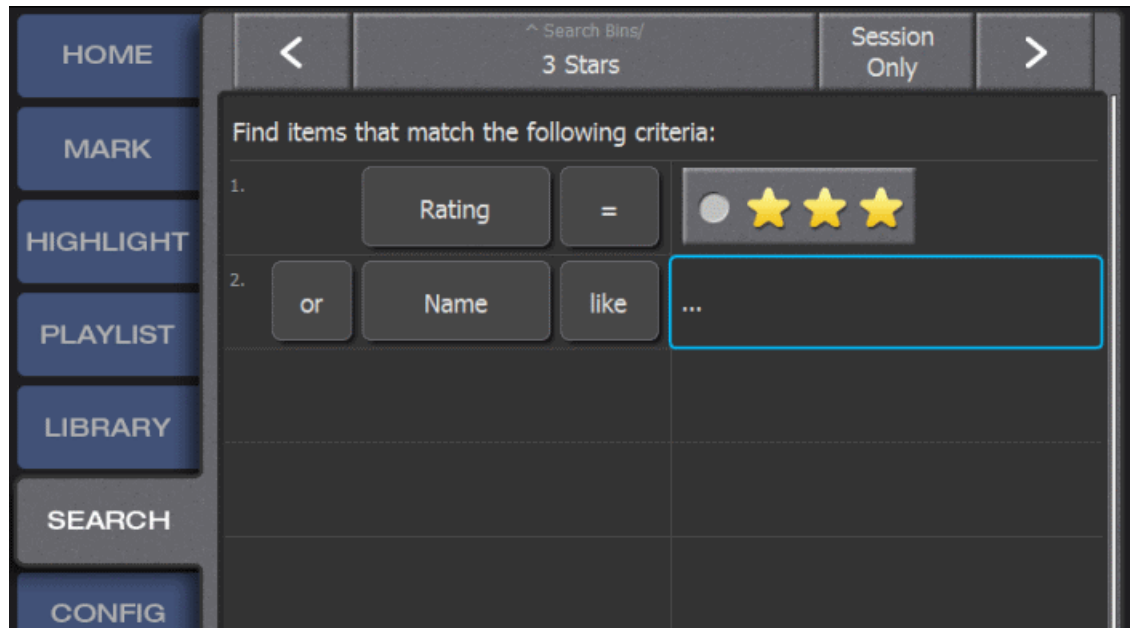
2. Locate the preset search bin named 3 Stars which is presented as a default.
3. Double tap on the 3 Stars bin.

When opened, the 3 Star bin contains all clips in the active highlight bin which have been assigned a 3 star rating.

Creating a new search folder

A simple search checks the name, tags, description, comments, and custom texts of the assets.

1. Go to the **SEARCH** tab.



2. From the bottom strip, locate the shift function **New**.
The display is changed to the criteria page.

3. To begin choosing your search criteria, tap the first box on the line cycling through the parameters.

Options	Description
Option 1 - Name	<ul style="list-style-type: none">• Select the third box by using the touch screen or physical keyboard and enter the name of the clip to be found.• Select Enter and the Clip name is presented in the third box.• Select Run and the results are displayed in the bin window.
Option 2 - Rating	<ul style="list-style-type: none">• The third box is populated by a Circle and 3 stars.• Use the touch screen to select the number of stars to be searched.• The circle selects no stars.• Select Run and the results are displayed in the bin window.
Option 3 - Keywords	<ul style="list-style-type: none">• Tap the third criteria box to advance the screen to the keywords page.• Select up to 3 keywords and then select Back softk from the bottom strip on the left.• Select Run and the results are displayed in the bin window.
Option 4 - Created	<ul style="list-style-type: none">• Select the third criteria box.• The screen presents options for selecting the date or time when the clip was created.• To bring up a calendar allowing for choice of creation date, select Created at the left of the screen.• Select Time if you want to search the clip timecode using the number pad.• Below Time, you can limit the search to the range entered on the number pad.• Select Run and the results are displayed in the bin window.

Adding Criteria

Additional search criteria can be added to narrow the search results further.

1. Once you have added the first criteria before selecting **Run**, select **Add** to add a new search criteria line.
2. To select clips with either search criteria, select **Or**.
3. To limit to clips meeting both search criteria, select **And**.

Deleting conditions

1. To delete a search criteria from a bin, double tap the bin to be edited.

2. From the bottom strip, select Shift Function **Criteria**.
3. Select the criteria line to be deleted.
4. If it takes you to a keyboard or a number pad, select **Back** from the bottom strip to return to the criteria page.
5. Once the Criteria box is outlined in blue, select Shift function **Remove** from the bottom strip.

Using Keyboard, (CTRL)(F) search function

1. Press and hold the **CTRL** button from the keyboard and then press the F key.
A keyboard is displayed on the screen.
2. Use the touch screen keyboard or the physical keyboard to enter a clip name.
3. Press **Enter** to show all clips using that Clip name.

Adding clips from search to a PL

1. Go to the results bin of a search.
2. Select the clip(s) to be added to the playlist.
3. Once the clips are outlined in blue, select **Add PL**.
Clip(s) are now part of the active playlist.
4. **Copy | Paste** can also be used to place clips into the playlist.

Tools

DynoZoom

DynoZoom system overview

The following diagrams illustrate typical K2 Dyno Replay Systems with DynoZoom.

Figure 4: 4K DynoZoom

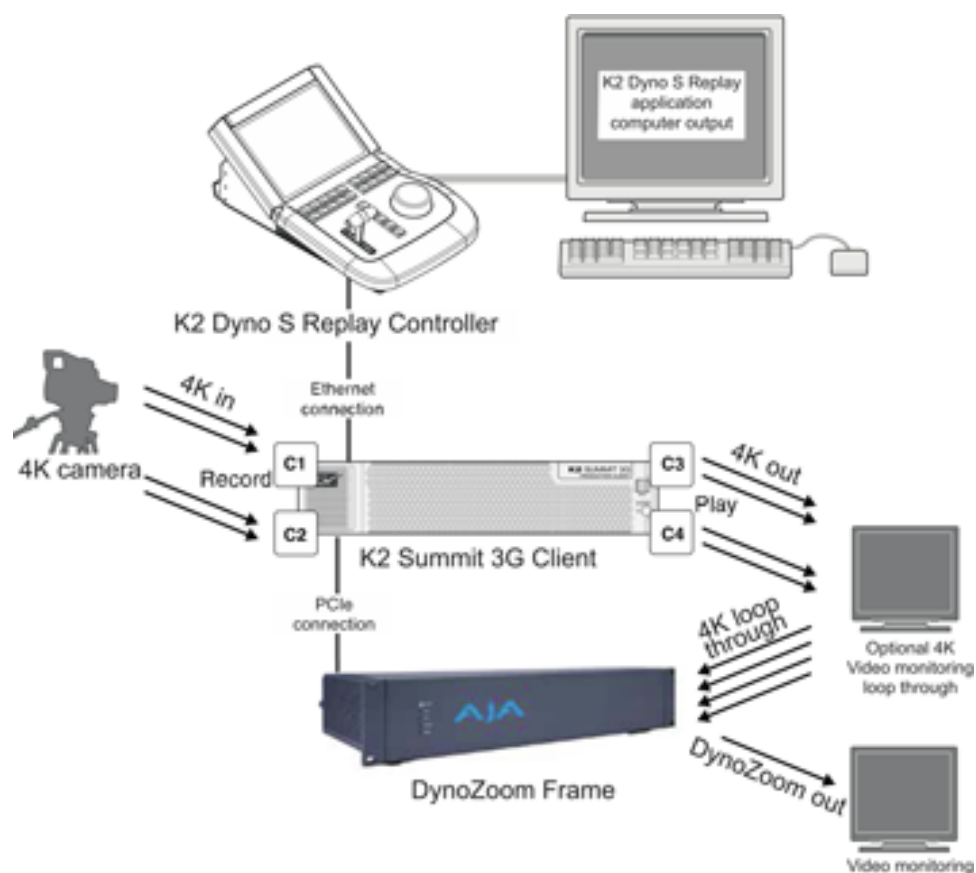
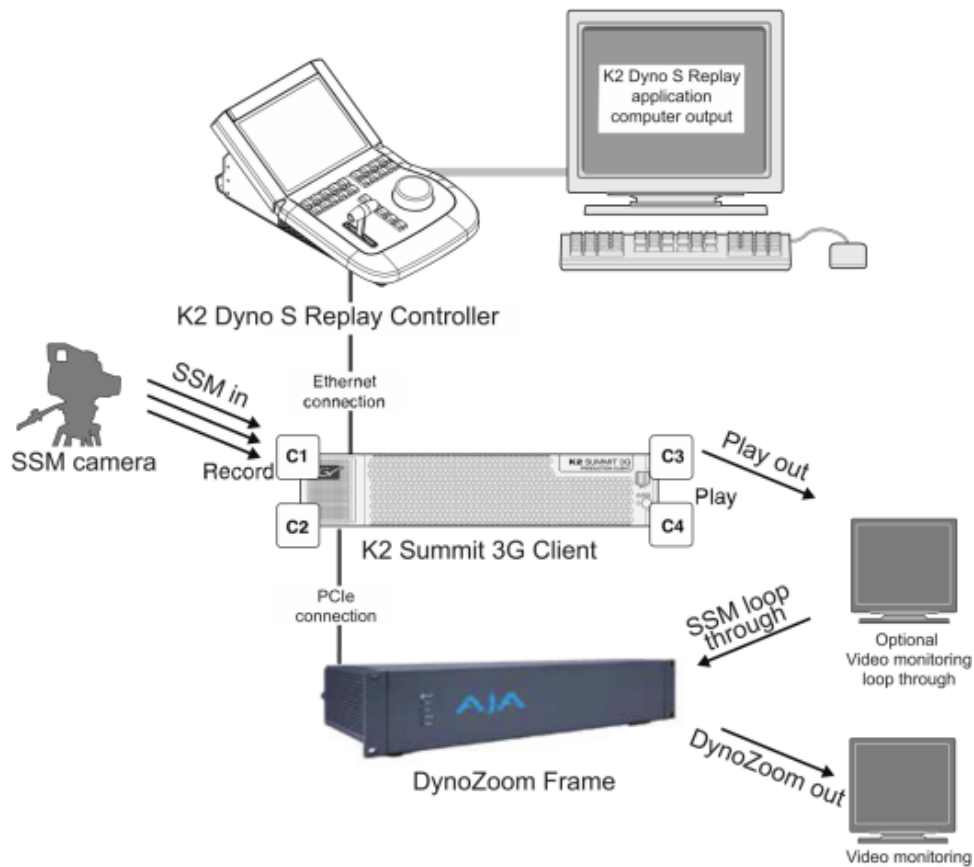


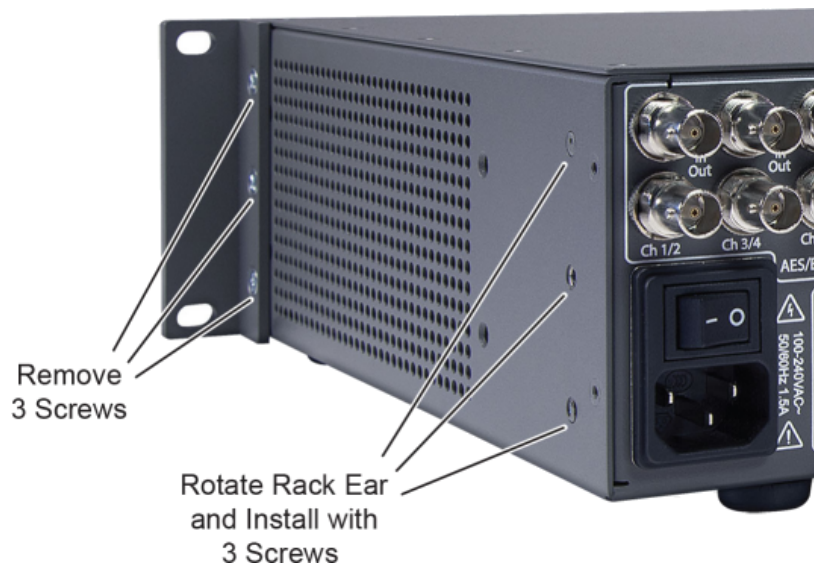
Figure 5: Super Slo-Mo DynoZoom



If required, you can have an Ethernet switch in the Ethernet connection path.

Racking the DynoZoom Frame

1. If desired, reverse the rack ears on each side of the frame so that the connectors face the front of the rack, as illustrated.



2. If the frame is installed immediately above other equipment in the rack, remove the rubber feet on the bottom of the frame for clearance if necessary.
3. Identify the rack space in which to install the frame.
Do not obstruct the side vents, and allow sufficient space within the equipment rack for airflow to and from the sides of the frame.



Allow 1RU air clearance below frame.

Internal air flow is directed by fans through the signal processing frame. From the front (LED indicator side) of the frame, the air flow direction is from right to left

4. Install the frame in the rack.

Cable K2 Summit system for DynoZoom

These cabling instructions apply to the following:

- K2 Summit 3G system with DynoZoom PCIe board.

Refer to "K2 Summit Production Client Quick Start Guide" for additional cabling details.

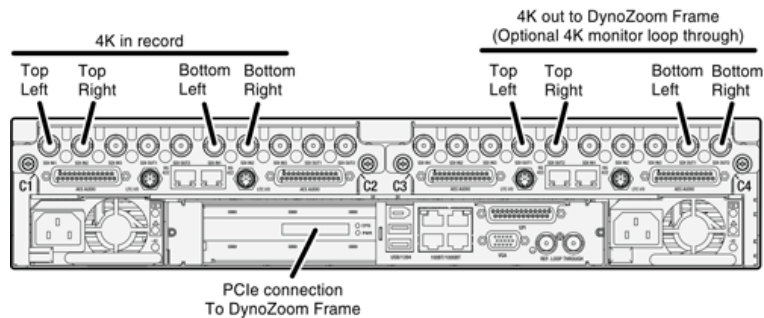


Figure 6: 4K cabling

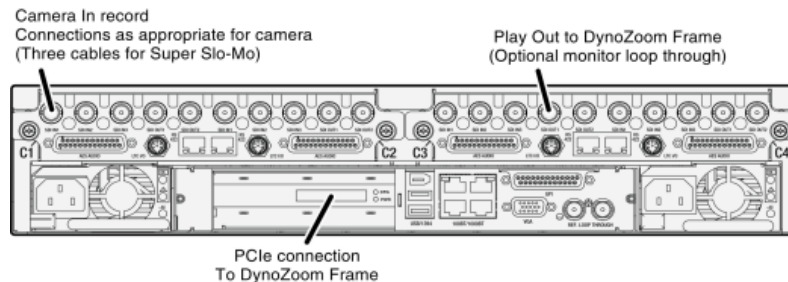


Figure 7: Basic cabling

Cable DynoZoom Frame

These cabling instructions apply to the following:

- DynoZoom Frame

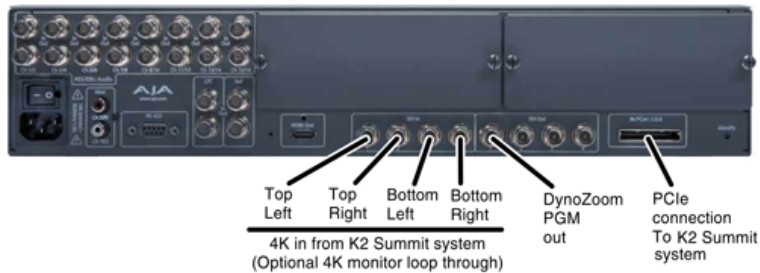


Figure 8: 4K cabling



Figure 9: Basic cabling

DynoZoom Frame Indicators



The DynoZoom Frame has LEDs indicating the following states:

- Power - When on (blue), the unit is powered up.
- Link - When on (blue), the driver is installed and working and communications has been established with the host computer.
- Ref - When on (blue), the device is locked to reference.
- Identify - Reserved for future use.
- Alarm - Lights red under any of the following conditions:
 - System main FPGA not loaded.
 - Frame over temperature.
 - Frame power voltage out of range failure

Powering up the DynoZoom Frame

The system cabling must be in place.

Power up the DynoZoom Frame.

The Power LED lights blue.

Next, power up the K2 Summit system. The Link LED on the DynoZoom Frame lights blue when communication is established.

DynoZoom, live monitoring, and GV STRATUS streaming

The K2 Summit system is configurable to generate one of the following types of live network streaming media:

- A proxy low bitrate stream, designed for good resolution with minimal network bandwidth impact. This is the stream used by the GV STRATUS system.
- A low-latency high bitrate stream, designed for fast performance. The bit-rate of this stream is adjustable. High bitrate streaming media and/or streaming from multiple K2 Summit system channels can overload network bandwidth. This is the stream used by the K2 Dyno Replay Controller for DynoZoom and for live monitoring.

The K2 Summit system interprets Proxy Setup settings in K2 AppCenter Configuration Manager to determine the type of streaming media generated from a channel, as follows:

- Proxy stream: Record proxy files set to Yes; Live network streaming set to Yes. For GV STRATUS, use these settings on all channels.
- Low-latency stream: Record proxy files set to No; Live network streaming set to Yes. For K2 Dyno Replay Controller live monitoring or DynoZoom, use these settings on your Program play channel.

In addition, if you use DynoZoom, in your Program play channel's Video Output settings, Pan+Zoom must be set to On.

It is important to control the bit-rate and the number of channels generating low-latency streaming traffic on your network, as it can affect the performance of transfers and other operations of your system.

Configuring 4K Channels on the K2 Summit system

This feature is part of the ChannelFlex Suite.

The following licenses must be installed:

- K2-APPCENTER-ELITE license
- K2-XDP-2HDL
- K2-XDP2-AVC-2CH
- K2-XDP2-3G-2CH (1080p). If using DynoZoom, two licenses are required to support two play and two record channels.
- K2-XDP2-UHDTV1 (4K). If using DynoZoom, two licenses are required to support two play and two record channels.

NOTE: On a K2 Summit system that supports DynoZoom, the DynoZoom board in the K2 Summit system and the DynoZoom Frame must be connected via PCIe and the DynoZoom Frame must be powered on before the K2 Summit system is powered on.

1. Open Configuration Manager and click **Channel**.
2. Select **C1**.

The screenshot shows the 'Configuration for localhost' window. On the left is a sidebar with tabs: System, Channel (selected), Ganging, GPI, Panel, Remote, and Security. The main area shows settings for channel C1. At the top, there are tabs for C1, C2, C3, and C4. The settings for C1 are as follows:

- Type:** 4K Recorder (Top)
- Name:** C1
- Proxy Setup:**
 - Live network streaming: No
- Recorder Setup:**
 - Video input format: 1080p 3G Level A
 - Compression format: AVC-Intra
 - AVC-Intra class: 100
- Video Input:**
 - Input type: SDI
- Ancillary data timecode inputs:**
 - ☒ Ancillary LTC present
 - ☒ Ancillary VITC present
- AFD Input Settings:**
 - Record AFD as clip property: Yes

On the right side of the window are buttons: Save, Load, Restore, OK, and Cancel.

3. For Type, select **4K Recorder (Top)**.

Only those settings supported by a 4K Recorder channel are displayed.

NOTE: If you have the AppCenter Elite license yet the 4K Recorder option does not appear, it means you do not have the 1080p license and the 4K license, which are also required.

When you set C1 to 4K Recorder (Top), C2 is automatically set to 4K Recorder (Bottom). No settings are available for configuration on C2, because they are automatically configured, dependent on C1 settings.

4. In the Proxy Setup setting, set **Live network streaming** to **No**.
5. If desired, assign a name to the channel.
6. To set the 4K player, select **C3**.
7. For Type, select **4K Player (Top)**.

Only those settings supported by a 4K Player channel are displayed.

When you set C3 to 4K Player (Top), C4 is automatically set to 4K Player (Bottom). No settings are available for configuration on C4, because they are automatically configured, dependent on C3 settings.

8. If desired, assign a name to the channel.

9. In the Proxy Setup setting, set **Live network streaming** to **Yes**.

The channel generates low-latency streaming media, which can be displayed on a K2 Dyno Replay Controller.

Set this on the Program channel only. Multiple channels generating low-latency streaming media can overload network bandwidth.

10. Set **Stream bitrate** to the lowest setting appropriate for your required image quality.

High bitrate streaming media can overload network bandwidth.

11. If operating with DynoZoom, in **Video Output** settings, for **Pan+Zoom**, select **On**.

Set this on the Program channel only. If set on multiple channels, it takes effect on the channel with the lowest channel number only.

12. Click **Save** and **OK** to close.

Related Topics

[DynoZoom, live monitoring, and GV STRATUS streaming](#) on page 110

[Setting Auto Play](#) on page 35

[Recalling clips](#) on page 65

Configuring DynoZoom Super Slo-Mo Channels on the K2 Summit system

This feature is part of the ChannelFlex Suite.

The following licenses must be installed:

- K2-APPCENTER-ELITE license
- K2-XDP-2HDL
- K2-XDP2-AVC-2CH
- K2-XDP2-3G-2CH (1080p).

NOTE: *On a K2 Summit system that supports DynoZoom, the DynoZoom board in the K2 Summit system and the DynoZoom Frame must be connected via PCIe and the DynoZoom Frame must be powered on before the K2 Summit system is powered on.*

1. Open Configuration Manager and click **Channel**.

2. Select **C1**.

Configuration for localhost

System

Channel

Ganging

GPI

Panel

Remote

Security

C1 C2 C3 C4

Type: [Super Slo-Mo Recorder](#)

Super Slo-Mo Rate: [6x Record Speed](#)

Name: [C1](#)

Proxy Setup:

Live network streaming: [No](#)

Stream bitrate: [1Mbps](#)

Recorder Setup:

Video input format: [720p](#)

Compression format: [AVC-Intra](#)

AVC-Intra class: [100](#)

Video Input:

Input type: [SDI](#)

☒ Video input present on SDI IN1

☒ Video input present on SDI IN2

☒ Video input present on SDI IN3

Save

Load

Restore

OK

Cancel

3. For Type, select **Super Slo-Mo Recorder**.

Only those settings supported by a Super Slo-Mo channel are displayed.

NOTE: If you have the AppCenter Elite license yet the Super Slo-Mo option does not appear, it means you do not have the HD license, which is required for Super Slo-Mo. You must also have the appropriate compression license, such as DV or AVC licenses.

4. For Super Slo-Mo Rate, select one of the following:

- **2x Record Speed**
- **3x Record Speed**
- **6x Record Speed**

5. If desired, assign a name to the channel.

6. In the Proxy Setup setting, set **Live network streaming** to **No**.

7. Select Video input format.

8. To configure a second Super Slo-Mo Recorder channel, select **C2** and repeat steps.9. To set a player channel, select **C3**.10. For Type, select **Player/Recorder**.

11. If desired, assign a name to the channel.

12. For **Record proxy files**, select **No**.

13. In the Proxy Setup setting, set **Live network streaming** to **Yes**.

The channel generates low-latency streaming media, which can be displayed on a K2 Dyno Replay Controller.

Set this on the Program channel only. Multiple channels generating low-latency streaming media can overload network bandwidth.

14. Set **Stream bitrate** to the lowest setting appropriate for your required image quality.

High bitrate streaming media can overload network bandwidth.

15. If operating with DynoZoom, in **Video Output** settings, for **Pan+Zoom**, select **On**.

Set this on the Program channel only. If set on multiple channels, it takes effect on the channel with the lowest channel number only.

16. To configure a second player channel, select **C4** and repeat steps as appropriate.

17. Click **Save** and **OK** to close.

Related Topics

[DynoZoom, live monitoring, and GV STRATUS streaming](#) on page 110

[Setting Auto Play](#) on page 35

[Recalling clips](#) on page 65

Configuring DynoZoom on the K2 Summit system

Use the GV DynoZoom application on the K2 Summit 3G system system to configure the DynoZoom Frame.

1. On the K2 Summit 3G system system, from the Windows operating system desktop, open the **GV DynoZoom** shortcut.

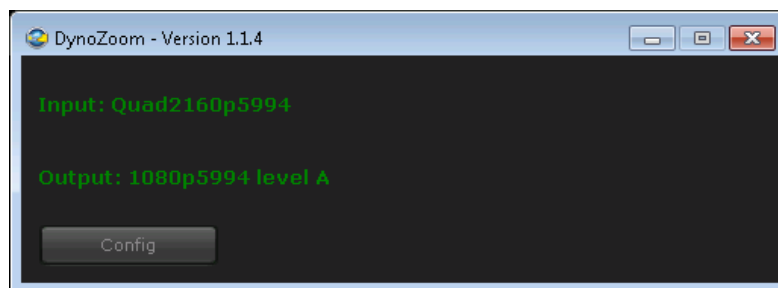
A DynoZoom application start up screen opens. Initial startup processes can take several minutes.

When start up process complete, the application opens in a minimized state, available on the Windows operating system taskbar.

By design, the DynoZoom application opens in a minimized state, so it does not interfere with your primary operation of the K2 Summit 3G system.

2. In the Windows operating system taskbar, click the DynoZoom taskbar button.

The GV DynoZoom application opens and reports configuration status.

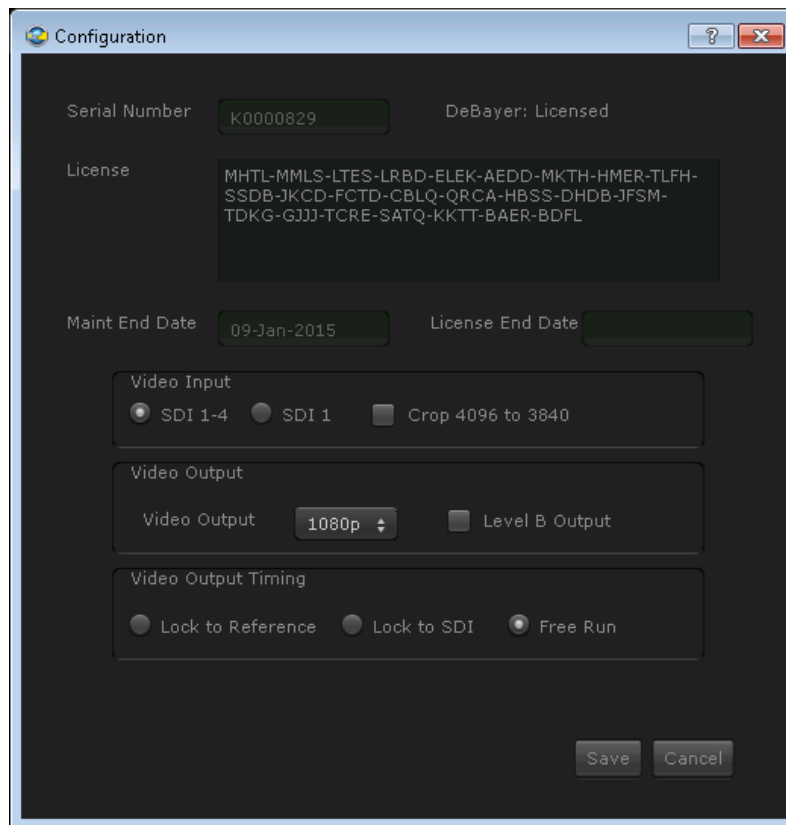


3. Verify current configuration status.

A green report indicates normal operation. A red report indicates an error condition, such as a 4K in/out cable disconnected.

4. Click **Config**.

The **Configuration** panel opens.



5. Set **Video Input** as follows:

Options	Description
SDI 1-4	4K format
SDI 1	All other formats

6. Set **Video Output** to your desired DynoZoom output format.

This format is delivered at the SDI Out 1 connector on the DynoZoom Frame.

You can also use the DynoZoom tool on the K2 Dyno Replay Controller to configure the DynoZoom output format.

7. Set **Video Output Timing** as appropriate for your system.
8. Click **Save**.

Ensure the GV DynoZoom application remains open and running on the K2 Summit 3G system during DynoZoom operations. If the application closes, operations fail. If desired, add the GV DynoZoom application to the Windows operating system Startup Programs so that it always opens after a system restart.

NOTE: *On a K2 Summit system that supports DynoZoom, the DynoZoom board in the K2 Summit system and the DynoZoom Frame must be connected via PCIe and the DynoZoom Frame must be powered on before the K2 Summit system is powered on.*

Turn off Flicks

Before opening the DynoZoom tool for the first time, on the K2 Dyno S Replay Controller, configure the Windows operating system Flicks utility.

1. On the K2 Dyno S Replay Controller, shut the system down by exiting to maintenance mode.
The Windows desktop is displayed.
2. In the Windows system tray, show hidden icons.
3. On the **Flicks** icon, press and hold.



4. Release to display a context menu.
5. In the context menu, select **Turn off flicks**.
6. Return to Dyno mode.

Once Flicks is turned off, the setting is retained. It is not necessary to configure again when opening the DynoZoom tool.

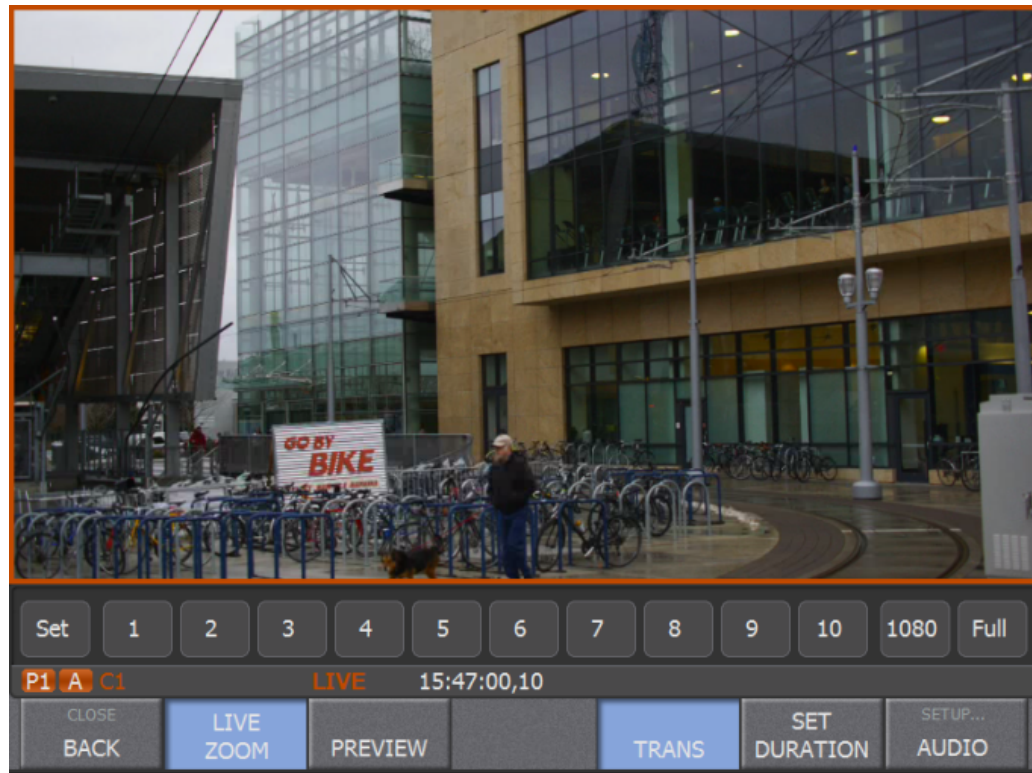
Related Topics

[Shutting the system down](#) on page 130

Opening DynoZoom

1. On the K2 Dyno S Replay Controller, connect to the DynoZoom K2 Summit system, if not already paired.
2. Configure a new session with the DynoZoom K2 Summit system.
3. Select **TOOLS**.

4. Double-tap **DynoZoom**.
The DynoZoom tool opens.



5. Select the operational mode as follows:
 - a) Select **LIVE ZOOM** to enter Live Zoom mode.



In Live Zoom mode you can manipulate the Region Of Interest (ROI), with pan transitions and preview, on the live record train.

- b) Once in Live Zoom mode, select **LIVE ZOOM** to toggle into Keyframe mode.



In Keyframe mode you can add keyframes to the live record train or to highlights/playlists.

While the DynoZoom tool is remains open, selecting **TOOLS** opens directly to the tool.

Related Topics

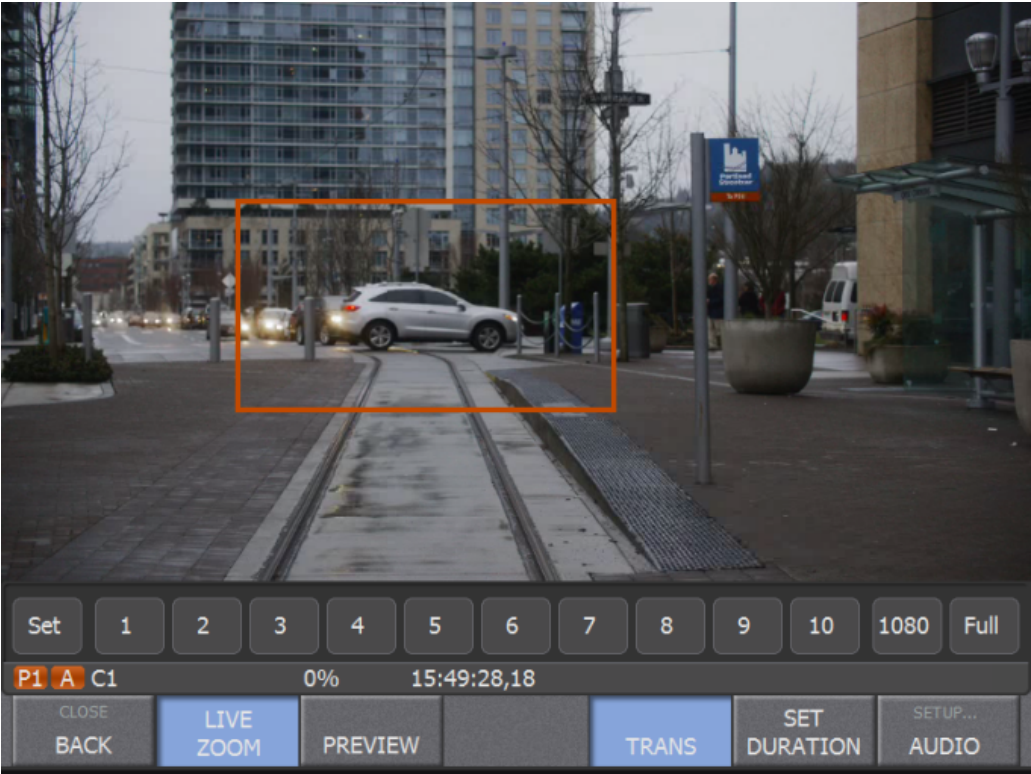
[Monitoring audio](#) on page 126

Manipulating the Region of Interest (ROI)

1. Open the DynoZoom tool with video displayed.
An orange color border appears. The border defines the Region of Interest (ROI).

2. Use gestures on the touch screen as follows:

Options	Description
Two-finger pinch, stretch, and slide	Resize and move ROI
One-finger slide	Move ROI
Two-finger tap	Toggles between sized ROI and full size (auto-takes while in preview mode)
Double-tap	ROI pans to tapped location (auto-takes while in preview mode)



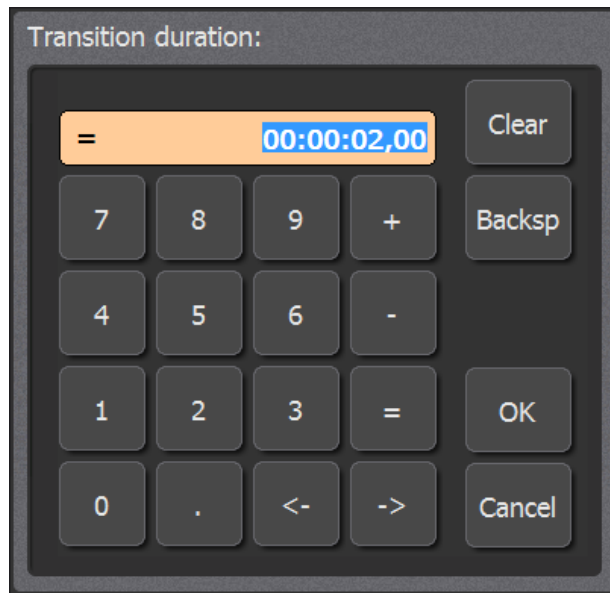
3. To set the ROI to default sizes, do the following:
- Select **Full** to expand the ROI to the full size.
 - If 4K, select **720** or **1080** (depending on the currently configured DynoZoom output format) to set the ROI centered at the default output size.
 - If not 4K, select **Half** to expand the ROI to the half size

Adding a pan transition

1. Open the DynoZoom tool with video displayed.
2. Select **TRANS** to enable transitions.

3. Select **SET DURATION**.

The **Transition duration** dialog box opens.



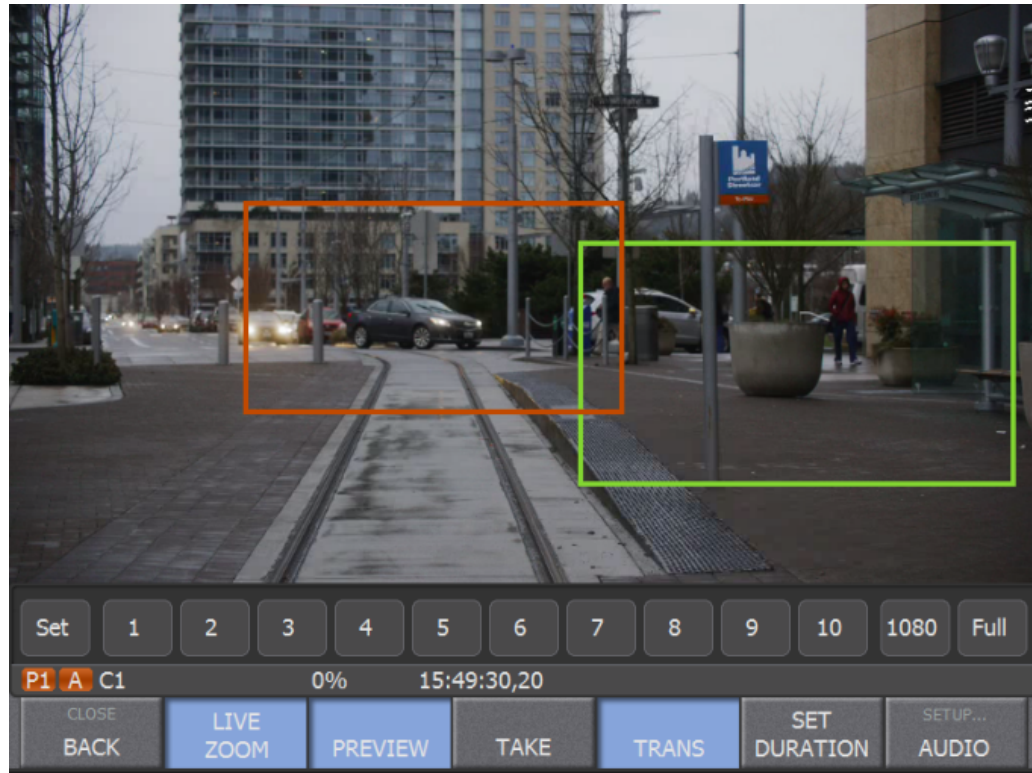
4. Configure the desired duration time and then select **OK** to save settings and close.

When transitions are enabled, pan actions transition with the configured duration.

Previewing actions

1. Open the DynoZoom tool with video displayed.
2. Select **PREVIEW** to enter preview mode.
A preview ROI with a green color border appears.

3. Manipulate the preview ROI to the desired shot.




4. To preview, do one of the following:

- Select **TAKE**
- Double-tap the preview ROI

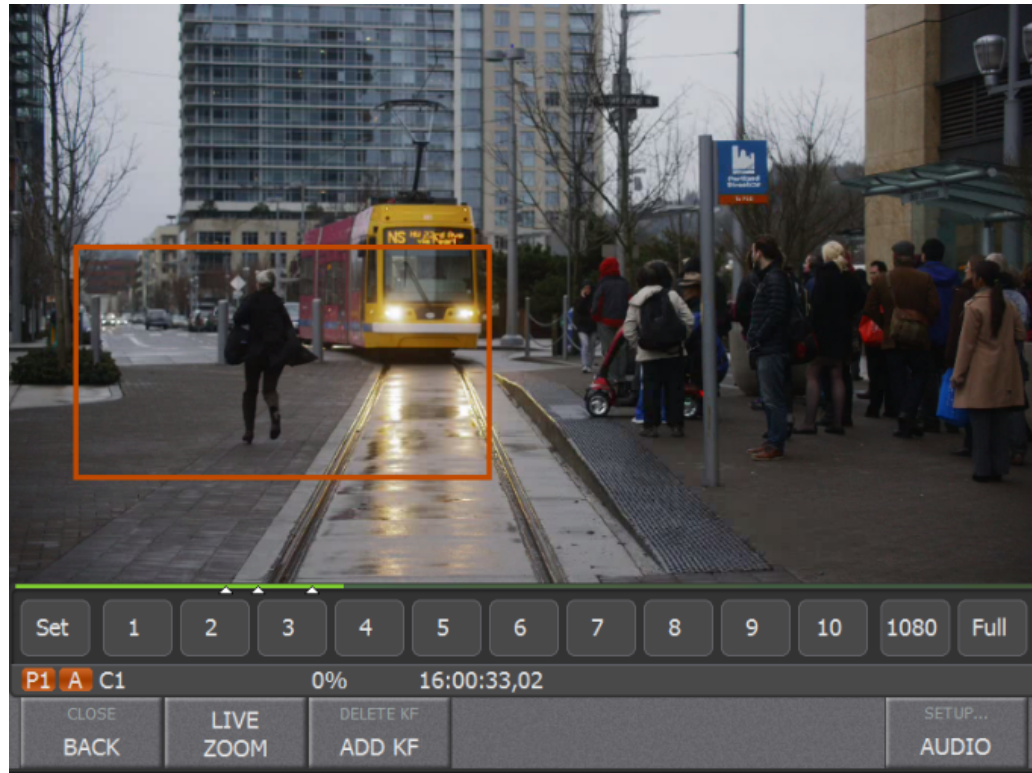
The ROI pans to the preview.

Setting and navigating keyframes

1. Open the DynoZoom tool with live, highlight, or playlist video displayed.
2. Navigate the timeline to the desired shot and set the ROI.
3. Select **ADD KF**.

A keyframe is added to the timeline. An indicator  identifies its location.

- Repeat steps to add additional keyframes.



- Press previous and next arrow buttons to jump between keyframes.
- Press **Play** to play a highlight or playlist with keyframes.
The play output automatically pans between keyframes.
- To delete a keyframe, do the following:
 - Press previous and next arrow buttons to jump to the keyframe.
The timeline location must be exactly centered on the keyframe.
 - Press **Shift**.
 - Select **DELETE KF**.
The keyframe is deleted.

Keyframes are saved with the live record train or highlight/playlist. If a highlight is copied or added to a playlist, keyframes are retained. If a looping live record train, keyframes are lost when the record train loops to the beginning.

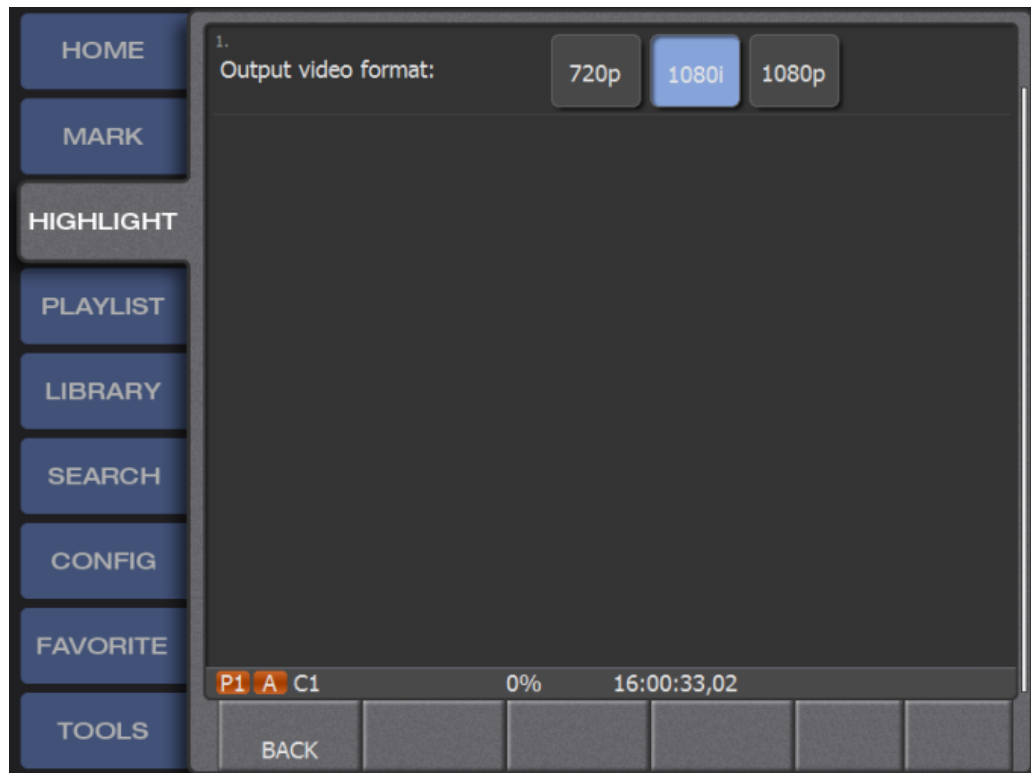
Configuring DynoZoom output video format on the K2 Dyno Replay Controller

Use the DynoZoom tool on the K2 Dyno Replay Controller to configure the output format on the DynoZoom Frame.

- On the K2 Dyno Replay Controller, open the DynoZoom tool.

2. Press **Shift** and tap **SETUP**.

The **Output video format** screen opens.



3. Select the desired format.

This format is delivered at the SDI Out 1 connector on the DynoZoom Frame.

You can also use the GV DynoZoom application on the K2 Summit 3G system system to configure the DynoZoom output format.

Related Topics

[Monitoring audio](#) on page 126

Live monitoring

The K2 Summit system is configurable to generate a low-latency high bitrate stream, designed for fast performance. This streaming video and audio media can be monitored live on the K2 Dyno Replay Controller touch screen and audio jack. If you have DynoZoom, this live monitoring is part of your DynoZoom operations. If you do not have DynoZoom, you can still do basic live monitoring.

Configuring a live monitoring channel on the K2 Summit system

This feature is part of the ChannelFlex Suite.

The following licenses must be installed:

- K2-APPCENTER-ELITE license

If you do not have DynoZoom, you can still do basic live monitoring.

1. Open Configuration Manager and click **Channel**.
2. Select your Program play channel.
3. For Type, select **Player/Recorder**.
4. If desired, assign a name to the channel.
5. For **Record proxy files**, select **No**.
6. In the Proxy Setup setting, set **Live network streaming** to **Yes**.

The channel generates low-latency streaming media, which can be displayed on a K2 Dyno Replay Controller.

Set this on the Program channel only. Multiple channels generating low-latency streaming media can overload network bandwidth.

7. Set **Stream bitrate** to the lowest setting appropriate for your required image quality.

High bitrate streaming media can overload network bandwidth.

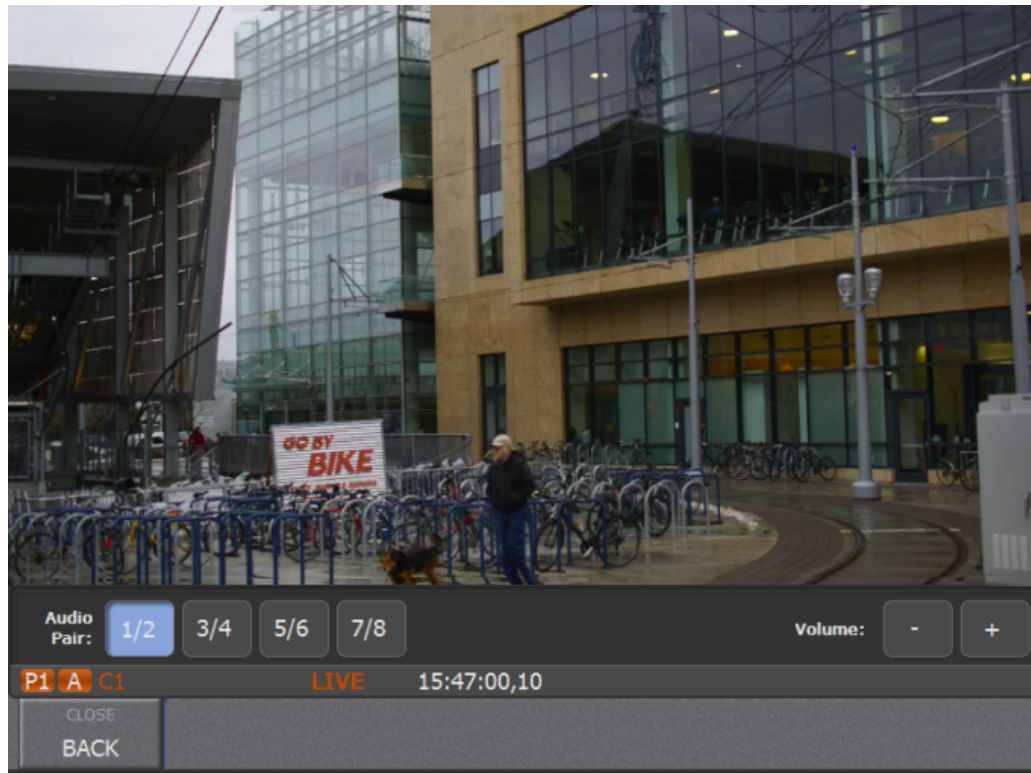
8. Click **Save** and **OK** to close.

Opening live monitoring

1. On the K2 Dyno S Replay Controller select **TOOLS**.

2. Double-tap **Monitor**.

The live monitoring tool opens.



While the live monitoring tool remains open, selecting **TOOLS** opens directly to the tool.

Related Topics

[Monitoring audio](#) on page 126

Monitoring audio

1. If you have not already done so, connect headphones or some other speaker system to the K2 Dyno Replay Controller audio jack.
The current program output audio plays.
2. On the K2 Dyno S Replay Controller select **TOOLS**.
3. Access audio monitoring controls as follows:
 - If you have DynoZoom, double-tap **DynoZoom** then select **Audio**.
 - If you do not have DynoZoom, double-tap **Monitor**.

Audio controls are displayed at the bottom of the screen.

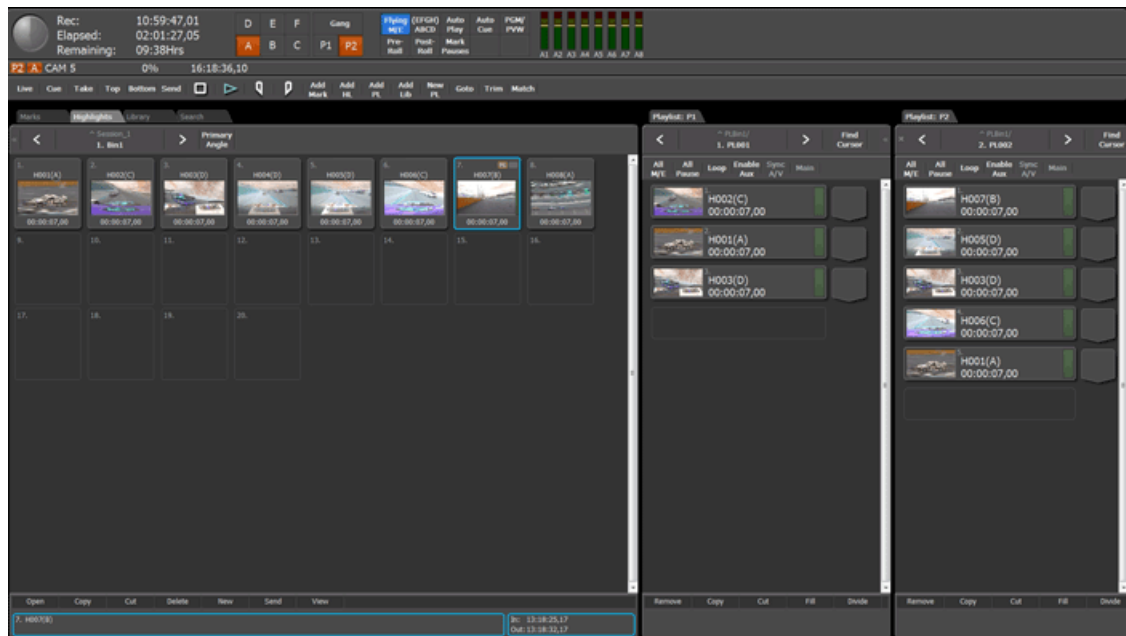


4. Select the audio pair and adjust volume as desired.

VGA Expansion Screen

About the VGA screen

The VGA Expansion screen provides a broad end view of the K2 Dyno S Replay Controller functions. The horizontal panel across the top of the screen provides a combination of functions defined on both the touch screen and the control panel. Tapping the Live, Cue, Take, Top, Bottom, and Send buttons performs the same functions as the respective K2 Dyno S Replay Controller buttons.



Navigating the VGA screen

1. To select the Marks, Highlights, Library or Search bin contents of the left panel, click on the respective tab at the top of the panel.
2. To change the contents of a Playlist Panel on the right side of the screen, click the respective tab and then select < or > SoftKeys that bracket the Playlist title.

This is cycled through playlists in the active bin, causing each list in succession to be active on the K2 Dyno S Replay Controller.

Dragging and dropping clips into Playlist

1. On the VGA screen, click either the Marks, Highlights, Library or Search tab and then select the bin containing the desired clip.



2. On the VGA Playlist panel, select the playlist to be edited.
3. Drag the desired bin clip into the desired position in the playlist panel.

When the clip is in the playlist panel, a shaded bar appears between the two events indicating where the clip is to be added.

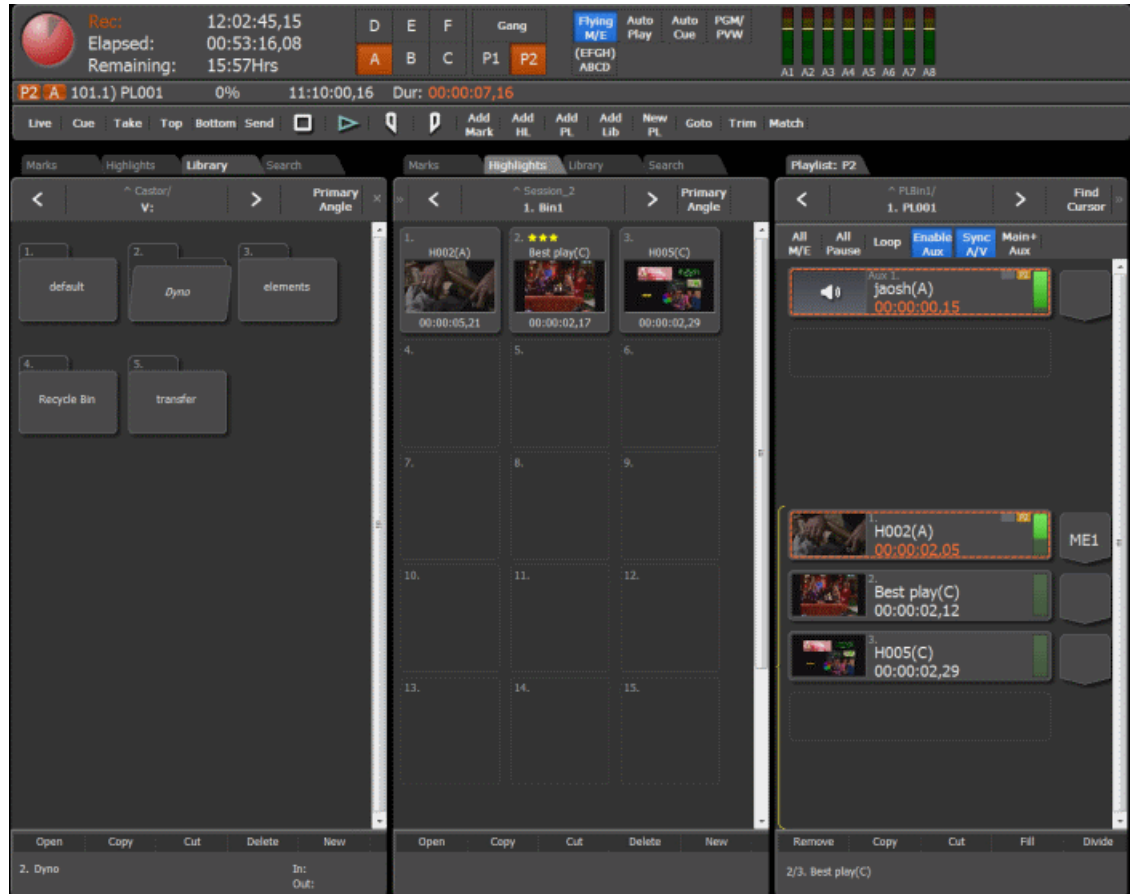
4. When the bar is in the correct location, release the mouse button and the list is updated with the additional clip.

Right-clicking clips in the Bins and Playlists

Right-click on a clip or an event, and then click the desired function.

Showing more than one bin

1. To add an additional Bin Panel, locate << on the left of the bin title at the top of the screen.

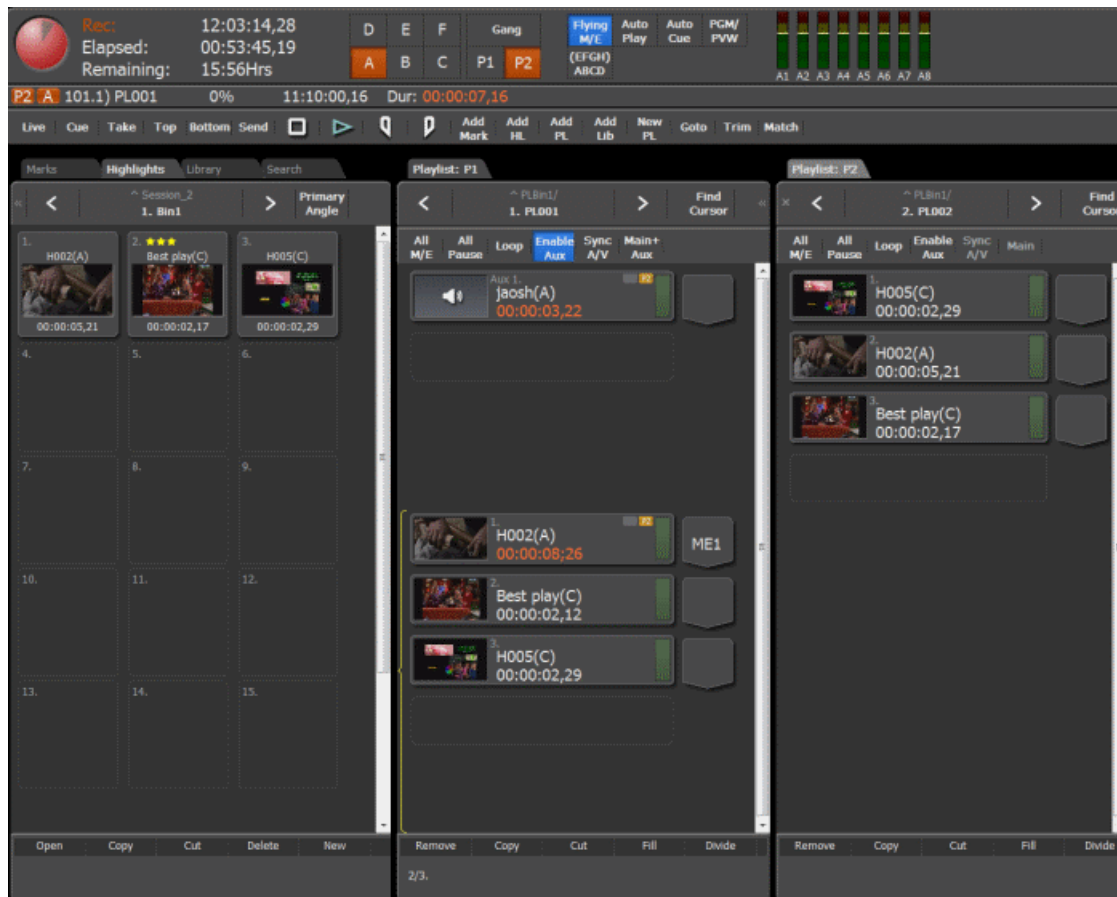


It compresses the view of the current bin panel and adds another bin panel to the left side of the screen.

2. To remove the second Bin Panel, click >> on top of the original bin or the x on top of the new Bin Panel.

Showing more than one playlist

1. To add a second playlist panel, left click > at the far right top of the Playlist panel.



It brings a second playlist to the VGA screen as an additional Panel on the right side of the screen. In the scenario of two player channels, the original list is associated with **P1** and the new panel with **P2**.

2. To hide the new panel, click the small **x** at the top of the playlist panel.

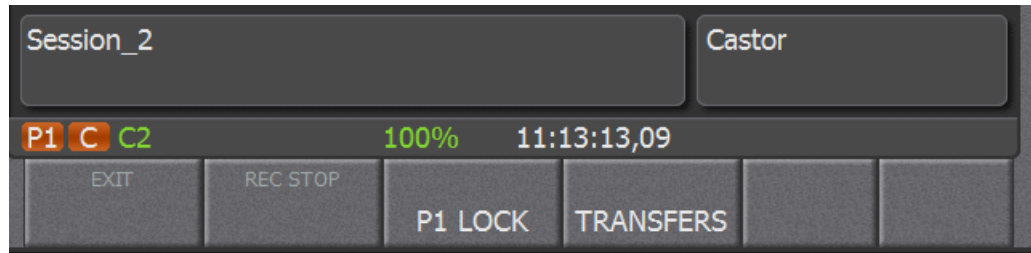
Shutting the system down

Shutting the system down

There are three modes to shut down the system:

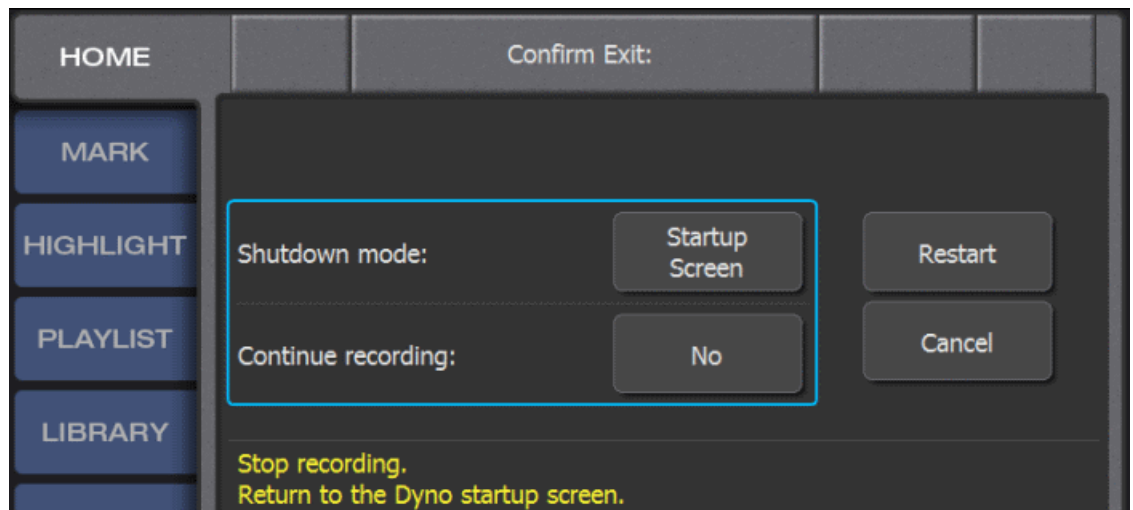
- Exit to Startup screen
- Exit to Shutdown

- Exit to Maintenance
1. Press the **Shift** button and then from the **HOME** screen or the **CONFIG** screen, tap **EXIT**.



This is the first step in shutting down the K2 Dyno S Replay Controller in three different modes. The **Confirm Exit** panel opens. The default shutdown mode is the Startup screen.

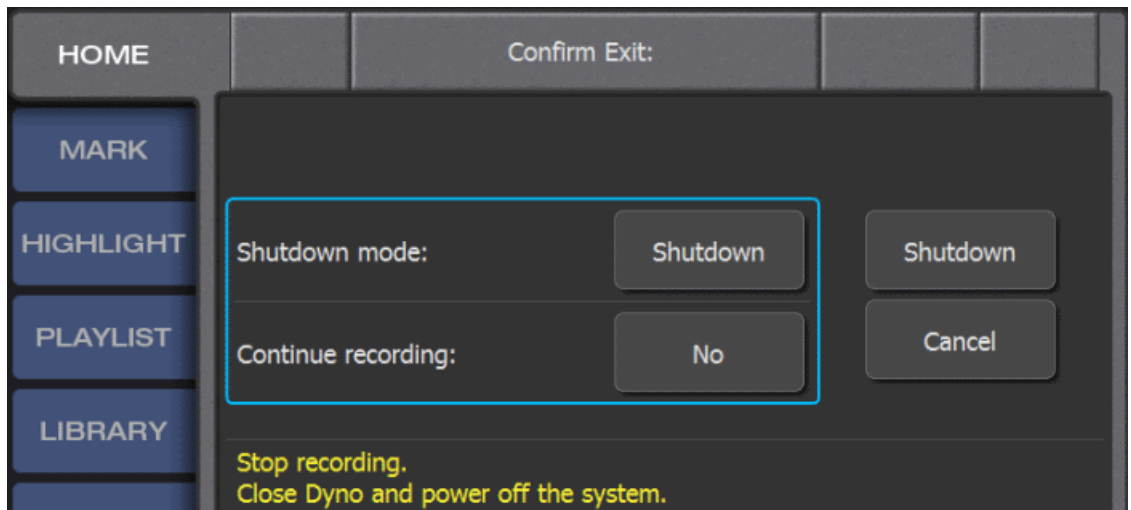
2. To exit to Startup screen, do the following:
 - a) Open the **Confirm Exit** panel, as instructed by the steps earlier in this procedure.



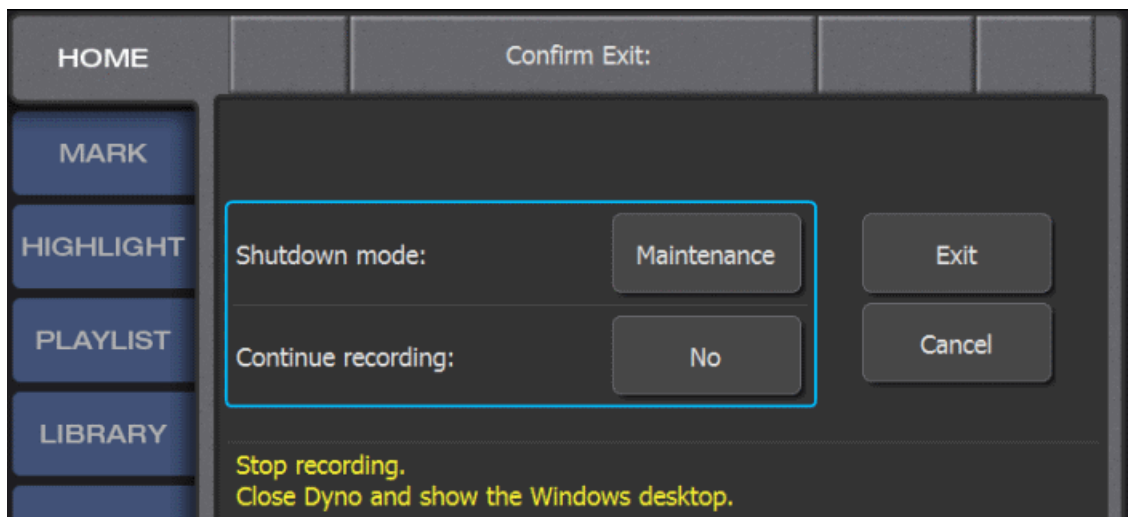
- b) Tap **Cancel** to abort the Exit command and return to the previous session.
- c) Tap **Restart** to continue to exit.

The K2 Dyno S Replay Controller restarts accordingly and displays the Server list, ready to configure a new session.

3. To exit to Shutdown, do the following:
 - a) Open the **Confirm Exit** panel, as instructed by the steps earlier in this procedure.



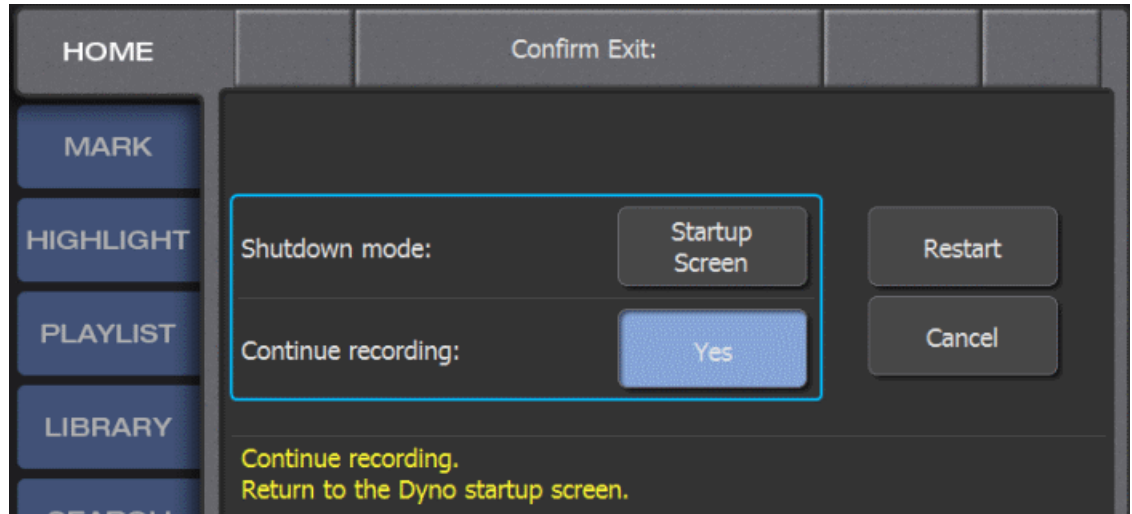
- b) Next to the Shutdown mode prompt, tap until it displays **Shutdown**.
 - c) Tap **Cancel** to abort the Exit command and return to the previous session.
 - d) Tap **Shutdown** to continue to exit.
- The K2 Dyno S Replay Controller powers off.
4. To exit to Maintenance, do the following:
 - a) Open the **Confirm Exit** panel, as instructed by the steps earlier in this procedure.



- b) Next to the Shutdown mode prompt, tap until it displays **Maintenance**.
When **Maintenance** is selected, the key on the right of the blue box changes to **Exit**.
 - c) Tap **Cancel** to abort the Exit command and return to the previous session.
 - d) Tap **Exit** to continue to exit.
The computer leaves the Dyno mode and the Windows operating system desktop is displayed.
 - e) To return to the Dyno mode from the Windows operating system desktop, double-tap the **Dyno S** icon on the desktop.

Rebooting the Dyno and continue recording

1. Go to the **HOME** page.



2. From the bottom strip, select Shift Function **Exit**.
If required, the server can remain in record mode despite the state of the Dyno.
3. To continue recording and rebooting Dyno, tap next to the **Continue Recording** prompt until it displays **Yes**.
Dyno can be shut down or restarted at this point without interrupting the record train.

Rejoining a session

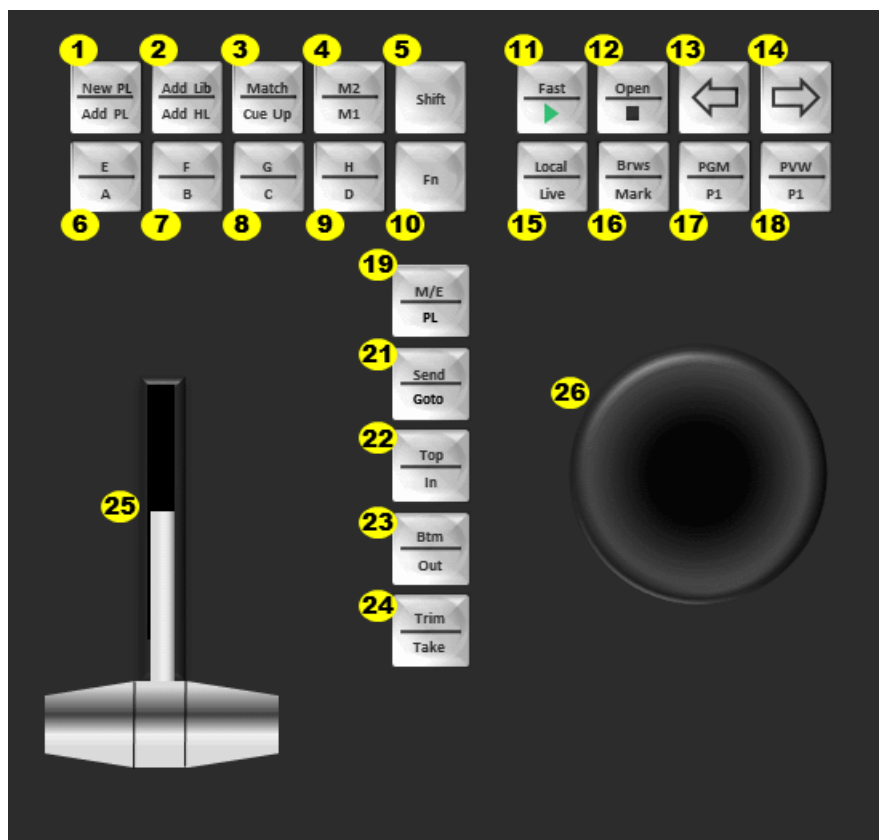
To rejoin a session that has been stopped but is still present on the Dyno, do the following:

1. Restart the Dyno.
2. Reconnect to the Server containing the Session to be reactivated.
3. Select the Session from the list on the right side of the screen.
4. To launch the session and restore it's elements, select **Open Session**.





Appendix

Button and keyboard names and functions

Some buttons have function names at the top and bottom. To use a bottom function, just press the desired button. To use a top function, press the **Shift** button, and then press the desired button.



No.	Name	Function
1	New PL	Creates and displays a new playlist.
	Add PL	Stores the selected item to a playlist.
2	Add Lib	Stores the selected item to a library.
	Add HL	Stores the selected item to a highlight.
3	Match	Moves the playback pointer to the position with the same timecode on the record train for the current angle.
	Cue Up	Cues up to the selected item.
4	M2	(Future use)
	M1	(Future use)
5	Shift	Performs the function indicated at the top of the buttons, or to perform the functions indicated at the top of the menu panels that are displayed at the bottom of the touch screen.
6	E	Switch E and continue.
	A	Switch A and continue.

No.	Name	Function
7	F	Switch F and continue.
	B	Switch B and continue.
8	G	Switch G and continue.
	C	Switch C and continue.
9	H	Switch H and continue.
	D	Switch D and continue.
10	Fn	Turns to the function mode. If you press the Fn button and then press a corresponding button, the button action that is performed may be different from the normal one.
11	Fast	Fast Jog mode On/Off.
		Playback 100% speed.
12	Open	Opens the bin or playlist. Cues an asset.
		Stops the playback.
13		Cues previous and continue.
14		Cues next and continue.
15	Local	Controls your replay in still, slow motion, or normal playout mode.
	Live	Go LIVE mode.
16	Brws	Opens Browse menu.
	Mark	Adds mark.
17	PGM	On-air program mode or Multi-channel mode toggle.
	P1	Select P1 channel (Gang off).

No.	Name	Function
18	PVW	On-air preview mode or Multi-channel mode toggle
	P2	Select P2 channel (Gang off).
19	M/E	Flying M/E On/Off
	PL	Displays the Playlist screen.
21	Send	Transfer.
	Goto	Opens goto window.
22	Top	Go to the beginning of the item.
	In	Mark In.
23	Btm	Go to the end of the item.
	Out	Mark Out.
24	Trim	Enter trim mode, Cancel.
	Take	Close, skip. In PGM/PVW mode push to air.
25	T-Bar	Moving the T-Bar permits playback speed control.
26	Jog Knob	Turning the Jog Knob permits scrubbing (forward and backwards playback).

Functions when you press each quick keys are listed below:

Quick key	Result
Q	Cue
M	AddMark
A	AddHL
P	AddPL
T	Take
I	MarkIn
O	MarkOut
J	Reverse Play (-100%)
K	Stop
L	Play (100%)
←	Navigate left
→	Navigate right

Functions for keyboard shortcuts are listed below:

Keystroke	Result
F1	Star rating
F2-F9	Keywords
Enter+[name]+Enter	Rename
[1 through 0]+Enter	Select shotbox
Alt+1 through Alt+6	Cue angle A through F
Alt+9	Gang Player 1
Alt+0	Gang Player 2
Ctrl+L	Live
Ctrl+Alt+L	Fn+Play(50% play)
Ctrl+Alt+9	Share Player 1
Ctrl+Alt+0	Share Player 2
Ctrl+I	Clear In/Out
Ctrl+O	Open
Ctrl+M	AddMark
Ctrl+P	Playlist screen
Ctrl+G	Goto
Ctrl+N or Shift+P	NewPL
Ctrl+S	Send
Shift+L	Local
Shift+I	Top
Shift+O	Bottom
Shift+M	Browse
Shift+Q	Match
Shift+T	Trim

Grass Valley Knowledge Base


Visit the Grass Valley Knowledge Base site for technical articles and FAQs (Frequently Asked Questions) about Grass Valley systems and products.

[*Grass Valley Knowledge Base*](#)

Safety Summary

Safety Summary


Read and follow the important safety information below, noting especially those instructions related to risk of fire, electric shock or injury to persons. Additional specific warnings not listed here may be found throughout the manual.


 **WARNING:** Any instructions in this manual that require opening the equipment cover or enclosure are for use by qualified service personnel only. To reduce the risk of electric shock, do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

Safety terms and symbols

Terms in this manual

Safety-related statements may appear in this manual in the following form:

 **WARNING:** Warning statements identify conditions or practices that may result in personal injury or loss of life.

 **CAUTION:** Caution statements identify conditions or practices that may result in damage to equipment or other property, or which may cause equipment crucial to your business environment to become temporarily non-operational.

Terms on the product

These terms may appear on the product:


DANGER — A personal injury hazard is immediately accessible as you read the marking.


WARNING — A personal injury hazard exists but is not immediately accessible as you read the marking.


CAUTION — A hazard to property, product, and other equipment is present.


Symbols on the product



The following symbols may appear on the product:

 Indicates that dangerous high voltage is present within the equipment enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

 Indicates that user, operator or service technician should refer to product manual(s) for important operating, maintenance, or service instructions.

 This is a prompt to note fuse rating when replacing fuse(s). The fuse referenced in the text must be replaced with one having the ratings indicated.

 Identifies a protective grounding terminal which must be connected to earth ground prior to making any other equipment connections.

	Identifies an external protective grounding terminal which may be connected to earth ground as a supplement to an internal grounding terminal.
	Indicates that static sensitive components are present which may be damaged by electrostatic discharge. Use anti-static procedures, equipment and surfaces during servicing.

Warnings

The following warning statements identify conditions or practices that can result in personal injury or loss of life.

Dangerous voltage or current may be present — Disconnect power and remove battery (if applicable) before removing protective panels, soldering, or replacing components.

Do not service alone — Do not internally service this product unless another person capable of rendering first aid and resuscitation is present.

Remove jewelry — Prior to servicing, remove jewelry such as rings, watches, and other metallic objects.

Avoid exposed circuitry — Do not touch exposed connections, components or circuitry when power is present.

Use proper power cord — Use only the power cord supplied or specified for this product.

Ground product — Connect the grounding conductor of the power cord to earth ground.

Operate only with covers and enclosure panels in place — Do not operate this product when covers or enclosure panels are removed.

Use correct fuse — Use only the fuse type and rating specified for this product.

Use only in dry environment — Do not operate in wet or damp conditions.

Use only in non-explosive environment — Do not operate this product in an explosive atmosphere.

High leakage current may be present — Earth connection of product is essential before connecting power.

Dual power supplies may be present — Be certain to plug each power supply cord into a separate branch circuit employing a separate service ground. Disconnect both power supply cords prior to servicing.

Double pole neutral fusing — Disconnect mains power prior to servicing.

Use proper lift points — Do not use door latches to lift or move equipment.

Avoid mechanical hazards — Allow all rotating devices to come to a stop before servicing.

Cautions

The following caution statements identify conditions or practices that can result in damage to equipment or other property

Use correct power source — Do not operate this product from a power source that applies more than the voltage specified for the product.

Use correct voltage setting — If this product lacks auto-ranging power supplies, before applying power ensure that the each power supply is set to match the power source.

Provide proper ventilation — To prevent product overheating, provide equipment ventilation in accordance with installation instructions.

Use anti-static procedures — Static sensitive components are present which may be damaged by electrostatic discharge. Use anti-static procedures, equipment and surfaces during servicing.

Do not operate with suspected equipment failure — If you suspect product damage or equipment failure, have the equipment inspected by qualified service personnel.

Ensure mains disconnect — If mains switch is not provided, the power cord(s) of this equipment provide the means of disconnection. The socket outlet must be installed near the equipment and must be easily accessible. Verify that all mains power is disconnected before installing or removing power supplies and/or options.

Route cable properly — Route power cords and other cables so that they are not likely to be damaged. Properly support heavy cable bundles to avoid connector damage.

Use correct power supply cords — Power cords for this equipment, if provided, meet all North American electrical codes. Operation of this equipment at voltages exceeding 130 VAC requires power supply cords which comply with NEMA configurations. International power cords, if provided, have the approval of the country of use.

Use correct replacement battery — This product may contain batteries. To reduce the risk of explosion, check polarity and replace only with the same or equivalent type recommended by manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Troubleshoot only to board level — Circuit boards in this product are densely populated with surface mount technology (SMT) components and application specific integrated circuits (ASICs). As a result, circuit board repair at the component level is very difficult in the field, if not impossible. For warranty compliance, do not troubleshoot systems beyond the board level.

Sicherheit – Überblick

Lesen und befolgen Sie die wichtigen Sicherheitsinformationen dieses Abschnitts. Beachten Sie insbesondere die Anweisungen bezüglich

Brand-, Stromschlag- und Verletzungsgefahren. Weitere spezifische, hier nicht aufgeführte Warnungen finden Sie im gesamten Handbuch.



WARNUNG: Alle Anweisungen in diesem Handbuch, die das Abnehmen der Geräteabdeckung oder des Gerätegehäuses erfordern, dürfen nur von qualifiziertem Servicepersonal ausgeführt werden. Um die Stromschlaggefahr zu verringern, führen Sie keine Wartungsarbeiten außer den in den Bedienungsanleitungen genannten Arbeiten aus, es sei denn, Sie besitzen die entsprechende Qualifikationen für diese Arbeiten.


Sicherheit – Begriffe und Symbole

In diesem Handbuch verwendete Begriffe

Sicherheitsrelevante Hinweise können in diesem Handbuch in der folgenden Form auftauchen:



WARNUNG: Warnungen weisen auf Situationen oder Vorgehensweisen hin, die Verletzungs- oder Lebensgefahr bergen.

 **VORSICHT:** *Vorsichtshinweise weisen auf Situationen oder Vorgehensweisen hin, die zu Schäden an Ausrüstungskomponenten oder anderen Gegenständen oder zum zeitweisen Ausfall wichtiger Komponenten in der Arbeitsumgebung führen können.*

Hinweise am Produkt

Die folgenden Hinweise können sich am Produkt befinden:







GEFAHR – Wenn Sie diesen Begriff lesen, besteht ein unmittelbares Verletzungsrisiko.

WARNUNG – Wenn Sie diesen Begriff lesen, besteht ein mittelbares Verletzungsrisiko.

VORSICHT – Es besteht ein Risiko für Objekte in der Umgebung, den Mixer selbst oder andere Ausrüstungskomponenten.

Symbole am Produkt

Die folgenden Symbole können sich am Produkt befinden:

	Weist auf eine gefährliche Hochspannung im Gerätegehäuse hin, die stark genug sein kann, um eine Stromschlaggefahr darzustellen.
	Weist darauf hin, dass der Benutzer, Bediener oder Servicetechniker wichtige Bedienungs-, Wartungs- oder Serviceanweisungen in den Produkthandbüchern lesen sollte.
	Dies ist eine Aufforderung, beim Wechsel von Sicherungen auf deren Nennwert zu achten. Die im Text angegebene Sicherung muss durch eine Sicherung ersetzt werden, die die angegebenen Nennwerte besitzt.
	Weist auf eine Schutzerdungsklemme hin, die mit dem Erdungskontakt verbunden werden muss, bevor weitere Ausrüstungskomponenten angeschlossen werden.
	Weist auf eine externe Schutzerdungsklemme hin, die als Ergänzung zu einem internen Erdungskontakt an die Erde angeschlossen werden kann.
	Weist darauf hin, dass es statisch empfindliche Komponenten gibt, die durch eine elektrostatische Entladung beschädigt werden können. Verwenden Sie antistatische Prozeduren, Ausrüstung und Oberflächen während der Wartung.

Warnungen

Die folgenden Warnungen weisen auf Bedingungen oder Vorgehensweisen hin, die Verletzungs- oder Lebensgefahr bergen:

Gefährliche Spannungen oder Ströme – Schalten Sie den Strom ab, und entfernen Sie ggf. die Batterie, bevor sie Schutzabdeckungen abnehmen, löten oder Komponenten austauschen.

Servicearbeiten nicht alleine ausführen – Führen Sie interne Servicearbeiten nur aus, wenn eine weitere Person anwesend ist, die erste Hilfe leisten und Wiederbelebungsmaßnahmen einleiten kann.

Schmuck abnehmen – Legen Sie vor Servicearbeiten Schmuck wie Ringe, Uhren und andere metallische Objekte ab.

Keine offen liegenden Leiter berühren – Berühren Sie bei eingeschalteter Stromzufuhr keine offen liegenden Leitungen, Komponenten oder Schaltungen.

Richtiges Netzkabel verwenden – Verwenden Sie nur das mitgelieferte Netzkabel oder ein Netzkabel, das den Spezifikationen für dieses Produkt entspricht.

Gerät erden – Schließen Sie den Erdleiter des Netzkabels an den Erdungskontakt an.

Gerät nur mit angebrachten Abdeckungen und Gehäuseseiten betreiben – Schalten Sie dieses Gerät nicht ein, wenn die Abdeckungen oder Gehäuseseiten entfernt wurden.

Richtige Sicherung verwenden – Verwenden Sie nur Sicherungen, deren Typ und Nennwert den Spezifikationen für dieses Produkt entsprechen.

Gerät nur in trockener Umgebung verwenden – Betreiben Sie das Gerät nicht in nassen oder feuchten Umgebungen.

Gerät nur verwenden, wenn keine Explosionsgefahr besteht – Verwenden Sie dieses Produkt nur in Umgebungen, in denen keinerlei Explosionsgefahr besteht.

Hohe Kriechströme – Das Gerät muss vor dem Einschalten unbedingt geerdet werden.

Doppelte Spannungsversorgung kann vorhanden sein – Schließen Sie die beiden Anschlußkabel an getrennte Stromkreise an. Vor Servicearbeiten sind beide Anschlußkabel vom Netz zu trennen.

Zweipolige, neutrale Sicherung – Schalten Sie den Netzstrom ab, bevor Sie mit den Servicearbeiten beginnen.

Fassen Sie das Gerät beim Transport richtig an – Halten Sie das Gerät beim Transport nicht an Türen oder anderen beweglichen Teilen fest.

Gefahr durch mechanische Teile – Warten Sie, bis der Lüfter vollständig zum Halt gekommen ist, bevor Sie mit den Servicearbeiten beginnen.

Vorsicht

Die folgenden Vorsichtshinweise weisen auf Bedingungen oder Vorgehensweisen hin, die zu Schäden an Ausrüstungskomponenten oder anderen Gegenständen führen können:

Gerät nicht öffnen – Durch das unbefugte Öffnen wird die Garantie ungültig.

Richtige Spannungsquelle verwenden – Betreiben Sie das Gerät nicht an einer Spannungsquelle, die eine höhere Spannung liefert als in den Spezifikationen für dieses Produkt angegeben.

Gerät ausreichend belüften – Um eine Überhitzung des Geräts zu vermeiden, müssen die Ausrüstungskomponenten entsprechend den Installationsanweisungen belüftet werden. Legen Sie kein Papier unter das Gerät. Es könnte die Belüftung behindern. Platzieren Sie das Gerät auf einer ebenen Oberfläche.

Antistatische Vorkehrungen treffen – Es gibt statisch empfindliche Komponenten, die durch eine elektrostatische Entladung beschädigt werden können. Verwenden Sie antistatische Prozeduren, Ausrüstung und Oberflächen während der Wartung.

CF-Karte nicht mit einem PC verwenden – Die CF-Karte ist speziell formatiert. Die auf der CF-Karte gespeicherte Software könnte gelöscht werden.

Gerät nicht bei eventuellem Ausrüstungsfehler betreiben – Wenn Sie einen Produktschaden oder Ausrüstungsfehler vermuten, lassen Sie die Komponente von einem qualifizierten Servicetechniker untersuchen.

Kabel richtig verlegen – Verlegen Sie Netzkabel und andere Kabel so, dass Sie nicht beschädigt werden. Stützen Sie schwere Kabelbündel ordnungsgemäß ab, damit die Anschlüsse nicht beschädigt werden.

Richtige Netzkabel verwenden – Wenn Netzkabel mitgeliefert wurden, erfüllen diese alle nationalen elektrischen Normen. Der Betrieb dieses Geräts mit Spannungen über 130 V AC erfordert Netzkabel, die NEMA-Konfigurationen entsprechen. Wenn internationale Netzkabel mitgeliefert wurden, sind diese für das Verwendungsland zugelassen.

Richtige Ersatzbatterie verwenden – Dieses Gerät enthält eine Batterie. Um die Explosionsgefahr zu verringern, prüfen Sie die Polarität und tauschen die Batterie nur gegen eine Batterie desselben Typs oder eines gleichwertigen, vom Hersteller empfohlenen Typs aus. Entsorgen Sie gebrauchte Batterien entsprechend den Anweisungen des Batterieherstellers.

Das Gerät enthält keine Teile, die vom Benutzer gewartet werden können. Wenden Sie sich bei Problemen bitte an den nächsten Händler.

Consignes de sécurité

Il est recommandé de lire, de bien comprendre et surtout de respecter les informations relatives à la sécurité qui sont exposées ci-après, notamment les consignes destinées à prévenir les risques d'incendie, les décharges électriques et les blessures aux personnes. Les avertissements complémentaires, qui ne sont pas nécessairement repris ci-dessous, mais présents dans toutes les sections du manuel, sont également à prendre en considération.



AVERTISSEMENT: *Toutes les instructions présentes dans ce manuel qui concernent l'ouverture des capots ou des logements de cet équipement sont destinées exclusivement à des membres qualifiés du personnel de maintenance. Afin de diminuer les risques de décharges électriques, ne procédez à aucune intervention d'entretien autre que celles contenues dans le manuel de l'utilisateur, à moins que vous ne soyez habilité pour le faire.*

Consignes et symboles de sécurité

Termes utilisés dans ce manuel

Les consignes de sécurité présentées dans ce manuel peuvent apparaître sous les formes suivantes :



AVERTISSEMENT: *Les avertissements signalent des conditions ou des pratiques susceptibles d'occasionner des blessures graves, voire même fatales.*



MISE EN GARDE: *Les mises en garde signalent des conditions ou des pratiques susceptibles d'occasionner un endommagement à l'équipement ou aux installations, ou de rendre l'équipement temporairement non opérationnel, ce qui peut porter préjudice à vos activités.*

Signalétique apposée sur le produit

La signalétique suivante peut être apposée sur le produit :







DANGER — risque de danger imminent pour l'utilisateur.

AVERTISSEMENT — Risque de danger non imminent pour l'utilisateur.

MISE EN GARDE — Risque d'endommagement du produit, des installations ou des autres équipements.

Symboles apposés sur le produit

Les symboles suivants peuvent être apposés sur le produit :

	Signale la présence d'une tension élevée et dangereuse dans le boîtier de l'équipement ; cette tension peut être suffisante pour constituer un risque de décharge électrique.
	Signale que l'utilisateur, l'opérateur ou le technicien de maintenance doit faire référence au(x) manuel(s) pour prendre connaissance des instructions d'utilisation, de maintenance ou d'entretien.
	Il s'agit d'une invite à prendre note du calibre du fusible lors du remplacement de ce dernier. Le fusible auquel il est fait référence dans le texte doit être remplacé par un fusible du même calibre.
	Identifie une borne de protection de mise à la masse qui doit être raccordée correctement avant de procéder au raccordement des autres équipements.
	Identifie une borne de protection de mise à la masse qui peut être connectée en tant que borne de mise à la masse supplémentaire.
	Signale la présence de composants sensibles à l'électricité statique et qui sont susceptibles d'être endommagés par une décharge électrostatique. Utilisez des procédures, des équipements et des surfaces antistatiques durant les interventions d'entretien.

Avertissements

Les avertissements suivants signalent des conditions ou des pratiques susceptibles d'occasionner des blessures graves, voire même fatales :

Présence possible de tensions ou de courants dangereux — Mettez hors tension, débranchez et retirez la pile (le cas échéant) avant de déposer les couvercles de protection, de défaire une soudure ou de remplacer des composants.

Ne procédez pas seul à une intervention d'entretien — Ne réalisez pas une intervention d'entretien interne sur ce produit si une personne n'est pas présente pour fournir les premiers soins en cas d'accident.

Retirez tous vos bijoux — Avant de procéder à une intervention d'entretien, retirez tous vos bijoux, notamment les bagues, la montre ou tout autre objet métallique.

Évitez tout contact avec les circuits exposés — Évitez tout contact avec les connexions, les composants ou les circuits exposés s'ils sont sous tension.

Utilisez le cordon d'alimentation approprié — Utilisez exclusivement le cordon d'alimentation fourni avec ce produit ou spécifié pour ce produit.

Raccordez le produit à la masse — Raccordez le conducteur de masse du cordon d'alimentation à la borne de masse de la prise secteur.

Utilisez le produit lorsque les couvercles et les capots sont en place — N'utilisez pas ce produit si les couvercles et les capots sont déposés.

Utilisez le bon fusible — Utilisez exclusivement un fusible du type et du calibre spécifiés pour ce produit.

Utilisez ce produit exclusivement dans un environnement sec — N'utilisez pas ce produit dans un environnement humide.

Utilisez ce produit exclusivement dans un environnement non explosible — N'utilisez pas ce produit dans un environnement dont l'atmosphère est explosible.

Présence possible de courants de fuite — Un raccordement à la masse est indispensable avant la mise sous tension.

Deux alimentations peuvent être présentes dans l'équipement — Assurez vous que chaque cordon d'alimentation est raccordé à des circuits de terre séparés. Débranchez les deux cordons d'alimentation avant toute intervention.

Fusion neutre bipolaire — Débranchez l'alimentation principale avant de procéder à une intervention d'entretien.

Utilisez les points de levage appropriés — Ne pas utiliser les verrous de la porte pour lever ou déplacer l'équipement.

Évitez les dangers mécaniques — Laissez le ventilateur s'arrêter avant de procéder à une intervention d'entretien.

Mises en garde

Les mises en garde suivantes signalent les conditions et les pratiques susceptibles d'occasionner des endommagements à l'équipement et aux installations :

N'ouvrez pas l'appareil — Toute ouverture prohibée de l'appareil aura pour effet d'annuler la garantie.

Utilisez la source d'alimentation adéquate — Ne branchez pas ce produit à une source d'alimentation qui utilise une tension supérieure à la tension nominale spécifiée pour ce produit.

Assurez une ventilation adéquate — Pour éviter toute surchauffe du produit, assurez une ventilation de l'équipement conformément aux instructions d'installation. Ne déposez aucun document sous l'appareil – ils peuvent gêner la ventilation. Placez l'appareil sur une surface plane.

Utilisez des procédures antistatiques - Les composants sensibles à l'électricité statique présents dans l'équipement sont susceptibles d'être endommagés par une décharge électrostatique. Utilisez des procédures, des équipements et des surfaces antistatiques durant les interventions d'entretien.

N'utilisez pas la carte CF avec un PC — La carte CF a été spécialement formatée. Le logiciel enregistré sur la carte CF risque d'être effacé.

N'utilisez pas l'équipement si un dysfonctionnement est suspecté — Si vous suspectez un dysfonctionnement du produit, faites inspecter celui-ci par un membre qualifié du personnel d'entretien.

Acheminez les câbles correctement — Acheminez les câbles d'alimentation et les autres câbles de manière à ce qu'ils ne risquent pas d'être endommagés. Supportez correctement les enroulements de câbles afin de ne pas endommager les connecteurs.

Utilisez les cordons d'alimentation adéquats — Les cordons d'alimentation de cet équipement, s'ils sont fournis, satisfont aux exigences de toutes les réglementations régionales. L'utilisation de cet équipement à des tensions dépassant les 130 V en c.a. requiert des cordons d'alimentation qui satisfont aux exigences des configurations NEMA. Les cordons internationaux, s'ils sont fournis, ont reçu l'approbation du pays dans lequel l'équipement est utilisé.

Utilisez une pile de remplacement adéquate — Ce produit renferme une pile. Pour réduire le risque d'explosion, vérifiez la polarité et ne remplacez la pile que par une pile du même type, recommandée par le fabricant. Mettez les piles usagées au rebut conformément aux instructions du fabricant des piles.

Cette unité ne contient aucune partie qui peut faire l'objet d'un entretien par l'utilisateur. Si un problème survient, veuillez contacter votre distributeur local.

Certifications and compliances

Canadian certified power cords

Canadian approval includes the products and power cords appropriate for use in the North America power network. All other power cords supplied are approved for the country of use.

FCC emission control

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. Changes or modifications not expressly approved by Grass Valley can affect emission compliance and could void the user's authority to operate this equipment.

Canadian EMC Notice of Compliance

This digital apparatus does not exceed the Class A limits for radio noise emissions from digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

EN55103 1/2 Class A warning

This product has been evaluated for Electromagnetic Compatibility under the EN 55103-1/2 standards for Emissions and Immunity and meets the requirements for E4 environment.

This product complies with Class A (E4 environment). In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

FCC emission limits

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesirable operation.

Laser compliance

Laser safety requirements

This product may contain a Class 1 certified laser device. Operating this product outside specifications or altering its original design may result in hazardous radiation exposure, and may be considered

an act of modifying or new manufacturing of a laser product under U.S. regulations contained in 21CFR Chapter 1, subchapter J or CENELEC regulations in HD 482 S1. People performing such an act are required by law to recertify and reidentify this product in accordance with provisions of 21CFR subchapter J for distribution within the U.S.A., and in accordance with CENELEC HD 482 S1 for distribution within countries using the IEC 825 standard.

Laser safety

Laser safety in the United States is regulated by the Center for Devices and Radiological Health (CDRH). The laser safety regulations are published in the “Laser Product Performance Standard,” Code of Federal Regulation (CFR), Title 21, Subchapter J.

The International Electrotechnical Commission (IEC) Standard 825, “Radiation of Laser Products, Equipment Classification, Requirements and User’s Guide,” governs laser products outside the United States. Europe and member nations of the European Free Trade Association fall under the jurisdiction of the Comité Européen de Normalization Electrotechnique (CENELEC).

Safety certification

This product has been evaluated and meets the following Safety Certification Standards:

Standard	Designed/tested for compliance with:
ANSI/UL 60950-1	Safety of Information Technology Equipment, including Electrical Business Equipment (Second edition 2007).
IEC 60950-1 with CB cert.	Safety of Information Technology Equipment, including Electrical Business Equipment (Second edition, 2005).
CAN/CSA C22.2 No. 60950-1	Safety of Information Technology Equipment, including Electrical Business Equipment (Second edition 2007).
BS EN 60950-1	Safety of Information Technology Equipment, including Electrical Business Equipment 2006.

ESD Protection

Electronics today are more susceptible to electrostatic discharge (ESD) damage than older equipment. Damage to equipment can occur by ESD fields that are smaller than you can feel. Implementing the information in this section will help you protect the investment that you have made in purchasing Grass Valley equipment. This section contains Grass Valley’s recommended ESD guidelines that should be followed when handling electrostatic discharge sensitive (ESDS) items. These minimal recommendations are based on the information in the [Sources of ESD and Risks](#) on page 149 area. The information in [Grounding Requirements for Personnel](#) on page 149 is provided to assist you in selecting an appropriate grounding method.

Recommended ESD Guidelines

Follow these guidelines when handling Grass Valley equipment:

- Only trained personnel that are connected to a grounding system should handle ESDS items.

- Do not open any protective bag, box, or special shipping packaging until you have been grounded.
NOTE: When a Personal Grounding strap is unavailable, as an absolute minimum, touch a metal object that is touching the floor (for example, a table, frame, or rack) to discharge any static energy before touching an ESDS item.
- Open the anti-static packaging by slitting any existing adhesive tapes. Do not tear the tapes off.
- Remove the ESDS item by holding it by its edges or by a metal panel.
- Do not touch the components of an ESDS item unless it is absolutely necessary to configure or repair the item.
- Keep the ESDS work area clear of all nonessential items such as coffee cups, pens, wrappers and personal items as these items can discharge static. If you need to set an ESDS item down, place it on an anti-static mat or on the anti-static packaging.

Sources of ESD and Risks

The following information identifies possible sources of electrostatic discharge and can be used to help establish an ESD policy.

Personnel

One of the largest sources of static is personnel. The static can be released from a person's clothing and shoes.

Environment

The environment includes the humidity and floors in a work area. The humidity level must be controlled and should not be allowed to fluctuate over a broad range. Relative humidity (RH) is a major part in determining the level of static that is being generated. For example, at 10% - 20% RH a person walking across a carpeted floor can develop 35kV; yet when the relative humidity is increased to 70% - 80%, the person can only generate 1.5kV.

Static is generated as personnel move (or as equipment is moved) across a floor's surface. Carpeted and waxed vinyl floors contribute to static build up.

Work Surfaces

Painted or vinyl-covered tables, chairs, conveyor belts, racks, carts, anodized surfaces, plexiglass covers, and shelving are all static generators.

Equipment

Any equipment commonly found in an ESD work area, such as solder guns, heat guns, blowers, etc., should be grounded.

Materials

Plastic work holders, foam, plastic tote boxes, pens, packaging containers and other items commonly found at workstations can generate static electricity.

Grounding Requirements for Personnel

The information in this section is provided to assist you in selecting a grounding method. This information is taken from ANSI/ESD S20.20-2007 (Revision of ANSI/ESD S20.20-1999).

Product Qualification

Personnel Grounding Technical Requirement	Test Method	Required Limits
Wrist Strap System*	ANSI/ESD S1.1 (Section 5.11)	$< 3.5 \times 10^7$ ohm
Flooring / Footwear System – Method 1	ANSI/ESD STM97.1	$< 3.5 \times 10^7$ ohm
Flooring / Footwear System – Method 2 (both required)	ANSI/ESD STM97.1	$< 10^9$ ohm
	ANSI/ESD STM97.2	< 100 V

Product qualification is normally conducted during the initial selection of ESD control products and materials. Any of the following methods can be used: product specification review, independent laboratory evaluation, or internal laboratory evaluation.

Compliance Verification

Personnel Grounding Technical Requirement	Test Method	Required Limits
Wrist Strap System*	ESD TR53 Wrist Strap Section	$< 3.5 \times 10^7$ ohm
Flooring / Footwear System – Method 1	ESD TR53 Flooring Section and ESD TR53 Footwear Section	$< 3.5 \times 10^7$ ohm
Flooring / Footwear System – Method 2 (both required)	ESD TR53 Flooring Section and ESD TR53 Footwear Section	$< 1.0 \times 10^9$ ohm

* For situations where an ESD garment is used as part of the wrist strap grounding path, the total system resistance, including the person, garment, and grounding cord, must be less than 3.5×10^7 ohm.

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