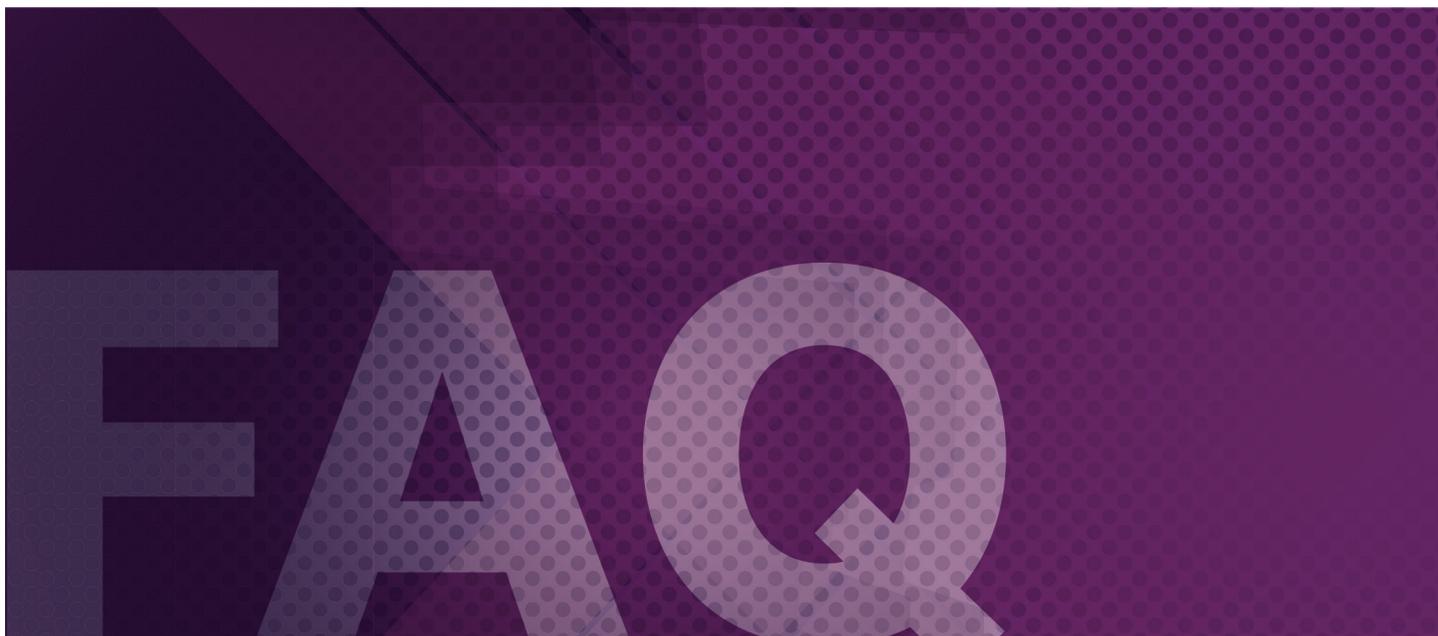


K2 Dyno Replay System



FEATURING
CHANNELFLEX®
AND
SHAREFLEX™



1 What are the best uses for the K2 Dyno Replay System from Grass Valley, a Belden Brand?

An efficient and cost-effective replay solution, K2 Dyno can replace legacy tape-based operations and is excellent for:

- OB vans – including split feed outputs
- Regional sports and other live event production
- Sports/news centers – feed records, split feeds, event recap
- Stadiums – internal production/“big screen” support
- Universities and league sports programs
- Studio production
- Action analysis
- Fly-pack systems

2 How does K2 Dyno address slow-motion acquisition?

K2 can integrate with LDX HiSpeed cameras for up to 3X speed super slow-motion replays, and the LDX XtremeSpeed for up to 6X speed ultra slow-motion replays. AnySpeed is an optimized Grass Valley technology that provides dynamic delivery of the smoothest playback at any speed from 0 to 200 percent. This can dramatically expand the ability of the operator to show compelling action during replays.

3 Does K2 Dyno work with the original K2 systems or only with K2 Summit?

The Grass Valley K2 Dyno S Replay Controller requires specific hardware features that are only available with the K2 Summit and K2 Solo media server families – specifically the instant replay and monitoring capabilities, mix effects and the bidirectional HD channels.

4 Can multiple K2 Dyno systems share resources?

Yes. K2 Dyno is the only system that can operate on a true SAN architecture, giving every user instant access to highlights, playlists and record channels of all connected replay systems. In addition, the SAN can simultaneously provide bandwidth for edit-in-place operations and large numbers of file transfers. An entire production team can work collaboratively in parallel with no waiting for tasks to finish, adding to the team’s efficiency.

However, a SAN implementation may not be suitable for all replay environments. Therefore, multiple K2 Dyno Replay Systems can also be networked together and used with networked sharing of media and record channels. With the ShareFlex mode integrated into K2 Summit 3G, highlight clips can be instantly shared between systems. Operators can 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 — all from another connected K2 Dyno Replay System. With this feature set, multiple K2 Dyno Replay Systems can be combined together in a single collaborative implementation to cover any level of live event.

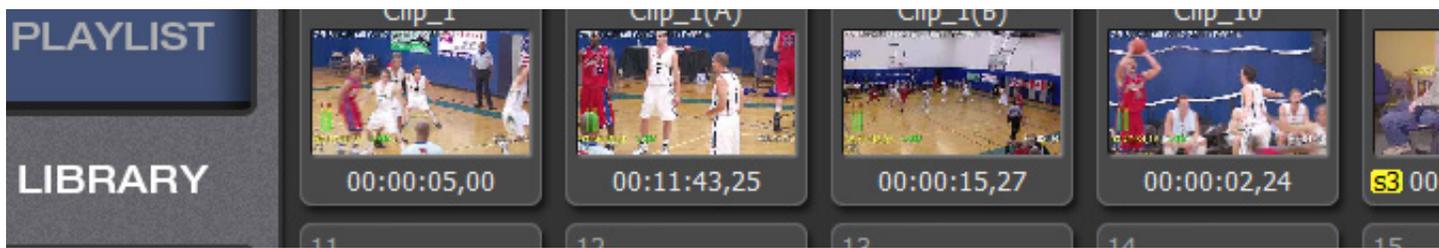
5 With what networking and storage does the K2 Dyno Replay System interface?

K2 Dyno integrates the latest in standard off-the-shelf IT standards and components. Gigabit Ethernet networking is incorporated in all devices, and tasks like file transfers can occur even in the background with guaranteed, managed bandwidth using common FTP operations. Local storage is supported with enterprise-class SAS hard drive or SSD RAID configurations. Files can be imported and exported across a network as well as with common USB and NAS storage devices. Production professionals can choose standard cost-effective storage solutions that can interface with K2 Dyno as well as editors or archive systems.

6 Why should I change to K2 Dyno?

The K2 Dyno Replay System brings replay operations into the future with a state-of-the-art operating system, intuitive touchscreen control, standard IT networking and physical controller and server hardware based on innovative information technology.

Amazingly, given the level of functionality, K2 Dyno offers a low price point, increasing access to a high-quality replay system.



7 How easy is it to learn the K2 Dyno system?

K2 Dyno makes it easy for personnel of all types to use the system lending greater focus on the creative process. Ongoing input from respected replay operators drives user interface and tactile feature design, delivering a product that is easy and quick to learn. With 30 minutes of training, a seasoned operator can do many basic replay operations on-air. On average, there are over 200 new certified K2 Dyno operators every year.

8 How does K2 Dyno address the need for content management?

Prior to a live production, a simple off-line utility can be used to build metadata tags for items such as player names and scoring activities. During an event these tags can quickly be applied, searched for and new ones added. Other metadata such as textual clip names, rankings and icons can be entered as well. In a melt, all accumulated metadata will be saved and can be transferred along with the media content. Content can be aggregated into different bins and sent to removable storage or network destinations.

Metadata from K2 Dyno can also be exchanged with GV STRATUS and EDIUS systems. For third-party integration, metadata can be exchanged with Apple Final Cut Pro 7 and Avid Media Composer editing systems, and through XML translation can be used with asset management and archive systems.

9 Which video compression formats does K2 Dyno support?

The K2 Dyno Replay System is based on K2 Summit 3G and K2 Solo 3G media server families. Therefore, all systems support DV, DVCPRO 25, DVCPRO 50, DVCPRO HD, MPEG-2 and XDCAM SD and HD formats. AVC-Intra 50 Mb and 100 Mb, AVC-Intra Class 100 1080p50/60 Level A, as well as DNxHD formats are also available as software options. For live action, intra-frame formats such as DVCPRO and AVC-Intra are ideal, and deliver superb image quality.

10 Does K2 Dyno support super slow-motion?

Yes. K2 AppCenter Elite with ChannelFlex enables 2X and 3X super slow-motion. Two channels of HD super slow-motion operations can be performed in a single K2 Summit/K2 Summit 3G. Using the Grass Valley LDX HiSpeed (LDX HS) cameras, 3X super slow-motion can be acquired in 720p, 1080i and 1080p. Using the Grass Valley LDX XtremeSpeed (LDX XS) cameras provides ultra-high frame rate acquisition (6X) for fast action applications in 720p and 1080i.

11 How are users provided feedback on operational processes and system status?

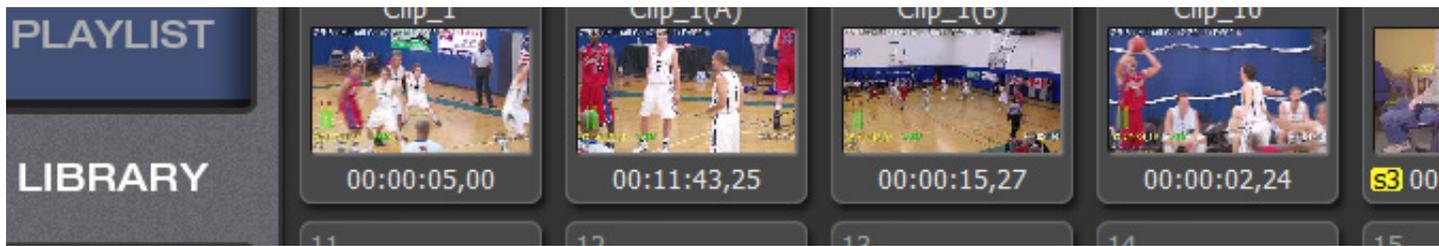
The ergonomic control panels features a large touchscreen interface and colored buttons. The controller can connect one or two DVI display monitors to show further interface components. The K2 Summit or K2 Solo includes a VGA multiviewer displaying both video and on-screen status text. This same text data can also be displayed on secondary SDI outputs for each channel.

12 Can a single system be operated with more than one K2 Dyno controller?

Two controllers can be used to control a single K2 Summit/K2 Summit 3G client. The software is configurable to choose which channels each controller will manage. Also, two K2 Dyno S controllers may share the same record session and input channels, but have independent control of an output channel from the same K2 Summit 3G client.

13 Does the K2 Dyno S controller integrate with any other products?

Yes. The K2 Dyno S controller permits the advanced EDIUS nonlinear editing application to run directly on the device with open access to clips and playlists created by the operator. EDIUS can export a timeline as a clip back to the K2 Summit 3G for playout to air. RT Software's tOG graphics and telestration software also interacts directly with the K2 Dyno S touchscreen and the operator may add many different lines, shadows, spot zoom or other features directly to the video output channel of the tOG server.



Some key points about K2 Dyno:

- K2 Dyno is designed to optimize file-based production with easy setup, import/export of material, metadata management and packaging for production reuse
- Up to 2 channels of HD super slow-motion in a single system
- Mix effects (e.g., dissolves, fades) play out on each output channel
- Support for synchronized key/fill and 3D in a single channel
- Automatic up/down/cross/aspect ratio conversions for mixed resolution and format playout
- There is an integrated multiviewer as well as SDI monitoring
- Complex playlists can be created, with auxiliary audio tracks
- The K2 platform provides MFX and MOV file wrapping/unwrapping so content can easily be shared with other systems such as Avid editing and archives with no special equipment or processes
- K2 Dyno has a rich metadata environment for fast and easy set-up and entry. Operations are optimized to quickly search, find and transfer material to be repurposed for further use
- K2 Dyno replay systems have both USB and Gigabit Ethernet connectivity. Standard, off-the-shelf IT storage devices can be used
- K2 Dyno S easily integrates with EDIUS and tOG graphic overlay/telestration systems.



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