

## Kiva Presentation Server • Software Release Notes

Welcome to the Kiva Express Duet V9.3.1 Software Release Notes. Please read this document to find important information on areas of Kiva that may not be covered in the Getting Started Guide or the User Help system.

### CONTENTS

<b>VERSION HISTORY</b> .....	<b>2</b>	<b>KNOWN ISSUES</b> .....	<b>16</b>
VERSION 9.3.1 – SEPTEMBER 2024 .....	2	VERSION 9.3.1 – SEPTEMBER 2024.....	16
VERSION 9.3.0 – AUGUST 2024 .....	2	VERSION 9.3.0 – AUGUST 2024 .....	16
VERSION 9.2.4 – JULY 2024 .....	7	VERSION 9.2.4 – JULY 2024 .....	16
VERSION 9.2.3 – (SKIPPED).....	7	VERSION 9.2.3 (SKIPPED) .....	16
VERSION 9.2.2 – JUNE 2024 .....	7	VERSION 9.2.2 – JUNE 2024 .....	16
VERSION 9.2.1 – MARCH 2024.....	8	VERSION 9.2.1 – MARCH 2024.....	16
VERSION 9.2.0 – NOVEMBER 2023.....	9	VERSION 9.2.0 – NOVEMBER 2023.....	17
VERSION 9.1.0 – APRIL 2023 .....	15	VERSION 9.1.0 – APRIL 2023.....	17
		<b>GETTING HELP</b> .....	<b>17</b>

## VERSION HISTORY

### VERSION 9.3.1 – SEPTEMBER 2024

#### NEW FEATURES • (KIVA PRESENTATION SERVER)

No New Features

#### BUGS FIXED • (KIVA PRESENTATION SERVER)

##### 1. Kiva Presenter App: Quad Viewer SDI OUT Count-Down Display Playlist Items display incorrect “Trimmed Clips” Duration

The “Countdown” display on Quad Viewer SDI Out while airing a Playlist incorrectly displays “total clip length” instead of “trimmed clip length” for motion video items that have the “Head” and/or “Tail” trimmed on it. This issue is now fixed.

### VERSION 9.3.0 – AUGUST 2024

#### NEW FEATURES • (KIVA PRESENTATION SERVER)

##### 1. System: “Behind the scenes” Software License Tool

This new feature does not appear or affect User Operations—but rather is background ‘software hooks’ used by the Ross Factory and Ross Support to validate and program Software Licenses for Kiva products.

##### 2. System: Video Card Firmware Updater App Changes

This app appears when upgrading the Software version in your Ross video server product that also requires updating the Firmware on the Ross Video Cards fitted in the video server.

This app had small tweaks to have the product logos removed and the Ross logo added.

##### 3. System: Removed “Abekas” Logo and upgraded to latest “Ross” Grayscale Logo

These changes were made to the Kiva Config, Kiva Import, Kiva Presenter, and the AsRun Log Report Generator apps.

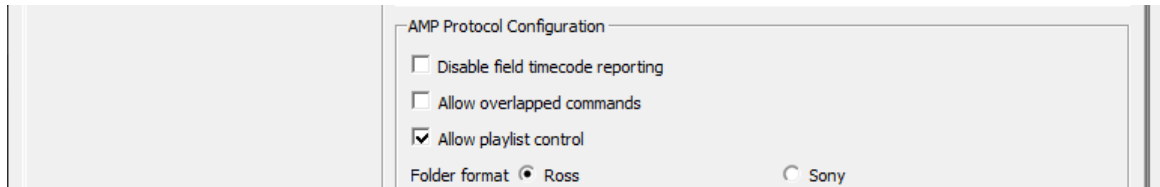
##### 4. System: Updated Third-Party Software Information in the “About” Dialogs

Third-Party License information and verbiage was updated to the most recent text within the “About” dialog within the Kiva Presenter app.

## 5. Kiva Config: AMP Protocol Folder Setting for Sony Switcher Control

Sony Switchers have implemented the “media folder listing” command set in the AMP remote control protocol slightly out of specification — so it’s different from how other switcher manufacturers have implemented these commands, including Ross.

On the RS422 tab, when “**AMP over Ethernet**” Protocol is active, a new “**Folder format**” radio button pair has been added near the bottom of the “**AMP Protocol Configuration**” section:



- Select the “**Ross**” radio button when controlling Kiva from any Ross Switcher (or any Non-Sony branded Switcher) while using AMP protocol.
- Select the “**Sony**” radio button when controlling Kiva from any Sony branded Switcher while using AMP protocol.

## 6. Kiva Config App: Quad Viewer “Count Down” View assignable on a “per video card” Basis

**NOTE:** This feature is **not** fully completed. See **KNOWN ISSUES VERSION 9.3.1 – SEPTEMBER 2024**

No Known Issues

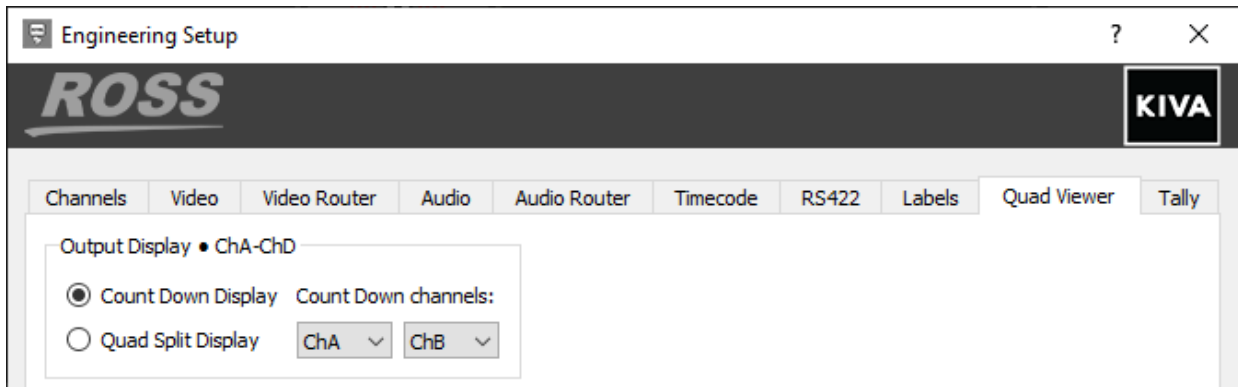
VERSION 9.3.0 – AUGUST 2024 on page 16 below.

The Quad Viewer HD-SDI output in the past could be configured for either “Quad Split” or “Count Down” display.

When set for “Count Down” display, even more controls are added to allow the two Count-Down Channels to be assigned to any available channel pair.

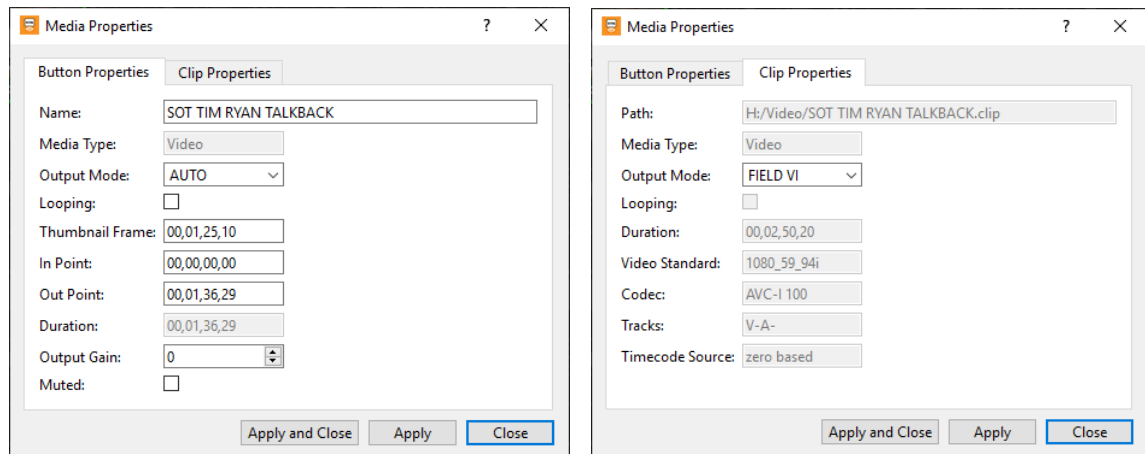
To display **the VIDEO PGM** and **VIDEO PWV** Players in the Count-Down Quad Viewer OUT, select these Channels as the **Count-Down channels** (as shown in screengrab below):

- **ChA & ChB**



## 7. Kiva Presenter App: Media Button “Properties” Dialog Expanded

The “Media Properties” dialog pop-up window is invoked after “right-clicking” on an occupied Media Button and then selecting the “Properties...” item:



This dialog has been divided into two “Tabs” with parameters grouped for:



- **Button Properties:** Parameters applied to media when it’s assigned to a given Media Button and loaded by the Media Button into a Video Player. The “Output Mode” parameter on the Button Properties will always ‘override’ the Output Mode parameter on the Clip Properties if they are set to a different value. When the “Output Mode” is set to “AUTO” then the “Output Mode” set in the Clip Properties tab will be used.
- **Clip Properties:** Parameters applied to underlying media that’s assigned to a given Media Button.

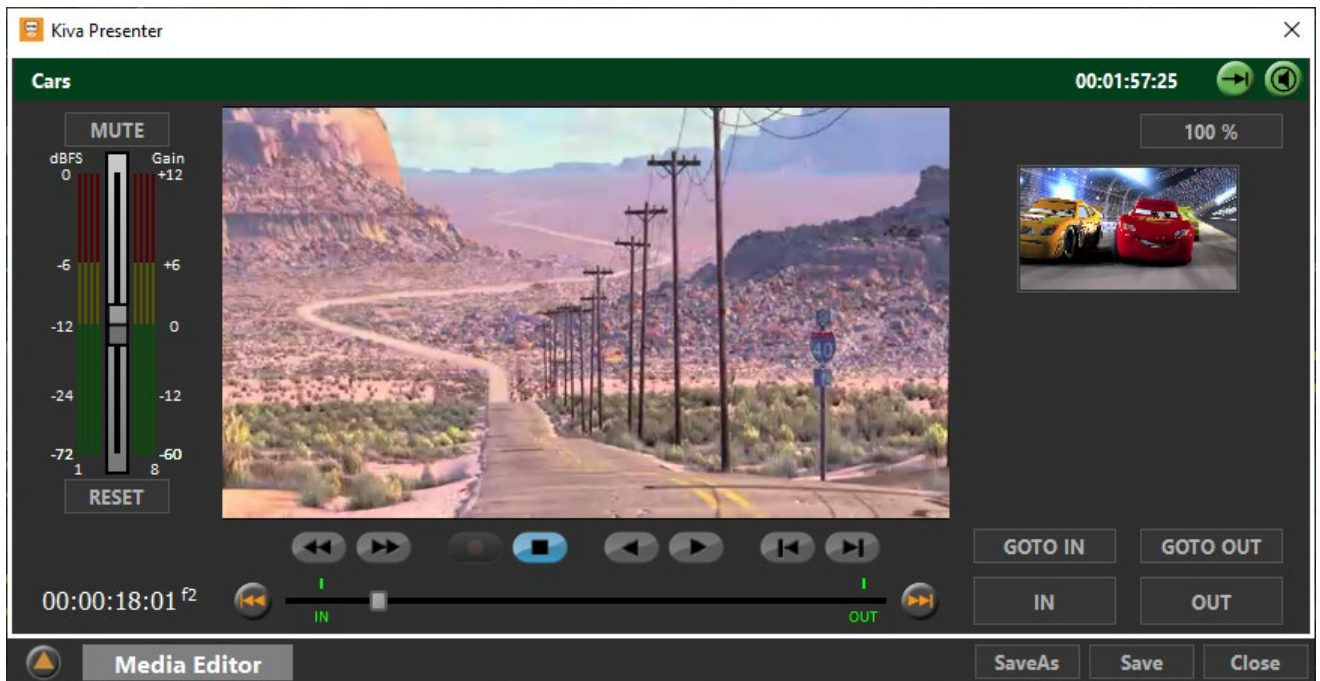
The parameters in the Button Properties tab that are not “grayed out” can be modified by the User — with exception of the “Name:” parameter.

## 8. Kiva Presenter App: New Media Button “Audio Mute” Function & Icon


A new function has been added to the Media Editor and Playlist Editor to allow Users to apply an audio MUTE function (and icon indicator) to these Media Buttons, which will also appear in the Video Players when a Media Button is loaded with this MUTE enabled.

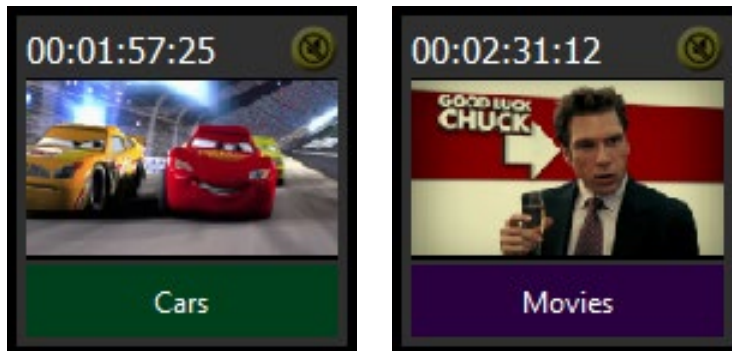
The new Audio MUTE button appears in the **upper right corner** of the Media Editor and Playlist Editor:

-  = Audio Unmuted
-  = Audio MUTED




After toggling this button to the desired setting, click the **“Save”** button to save that change to the given Media Button.

When the  MUTE setting is applied, this same icon (but **dimmed**) will appear in the **upper right corner** of the Media Button:



And when this Media Button is loaded into a Video Player, the audio from the motion clip will be automatically muted, and this Audio MUTE button will appear on the transport ribbon below the video image:



You may click this  button in the PVW Video Player and/or PGM Video Player at any time to “Unmute” the audio before and/or during clip playback.

When clicked, the button changes to the  “Unmute” state.

**9. Kiva Presenter App: “Select Media Clips” window hides “Single-Frame” media while assigning content to a motion Video Media Button**

When assigning motion content to a blank “Video Media Button” the “Select Media Clips” dialog window will appear. To help narrow down the content, all “still” (single-frame) media are now automatically hidden in the “Select Media Clips” dialog window — because it doesn’t make sense to assign still content to a motion Video Clip Media Button.

**BUGS FIXED • (KIVA PRESENTATION SERVER)**

**1. Kiva Presenter App: Hover over Media Button with Motion Video caused Rare App Crash**

If the proxy video generator had not yet finished rendering the proxy video for a given Media Button, hovering the mouse cursor over that Media Button in rare cases would crash the Kiva Presenter App. This issue is now fixed.

**2. Kiva Presenter App: Hot Key Editor incorrectly rejects valid multi-button shortcuts**

While entering Hot Key shortcuts in the Hot Key Editor, some multi-button shortcuts were incorrectly rejected. Additionally, a Pop-Up dialog would sometimes appear in the middle of typing a new Hot Key that would interrupt the entry. Both these issues are now fixed.



### 3. File Import App: The .AVI and .WMV media file extensions Ignored

While selecting media files to import within the “Add files to import queue” dialog window, any media files with the .AVI and .WMV file extensions were not listed in the window. This bug is now fixed, and these file types are now correctly listed.

### 4. File Import App: Image Shift when importing media files with non-standard raster size

When importing media files that contain a video raster size less than a standard size, that image raster would sometimes be shifted toward the left, right, top, or bottom — depending on the specific aspect ratio of that content. This is now accounted for, and the image for such media files is now properly centered within the active video raster.

## VERSION 9.2.4 – JULY 2024

### NEW FEATURES • (KIVA PRESENTATION SERVER)

No New Features

### BUGS FIXED • (KIVA PRESENTATION SERVER)

#### 1. System: Motherboard Intel Driver Issue causes rare Kiva Presenter App Crash and/or degraded app performance

Fixed a slow memory leak caused by a change to driver for the Intel GPU integrated into the computer motherboard. This leak had potential to degrade the GPU performance and/or cause a very rare crash of the Kiva Presenter App.

## VERSION 9.2.3 – (SKIPPED)

This version number was skipped.

## VERSION 9.2.2 – JUNE 2024

### NEW FEATURES • (KIVA PRESENTATION SERVER)

No New Features

### BUGS FIXED • (KIVA PRESENTATION SERVER)

No Bug Fixes

## VERSION 9.2.1 – MARCH 2024

### NEW FEATURES • (KIVA PRESENTION SERVER)

No New Features

### BUGS FIXED • (KIVA PRESENTION SERVER)

#### 1. **System: RossTalk RECEIVE Commands Inoperable after “Abekas SE” Service Restart**

When the Abekas SE service is manually restarted, the RossTalk service would not start up automatically afterward, resulting in RossTalk RECEIVE commands becoming disabled. This issue is now resolved; RossTalk service now automatically starts after restarting Abekas SE.

#### 2. **System: Chassis Service stops logging after a few hours**

The background Chassis Service diagnostic logger would halt logging errors after a few hours machine operation. This issue is now resolved. The Chassis Service now continuously logs all errors.

#### 3. **File Import App: File Import causes Color Shift**

An error in the color space conversion caused media file import to subtly shift colors of the imported media. This issue is now resolved; there is no longer any color shift when importing media files.

#### 4. **File Import App: App crash after several hundred media file imports**

A slow memory leak caused the File Import app to crash after several hundred media files are imported. This issue is now resolved; the File Import app no longer crashes.



## VERSION 9.2.0 – NOVEMBER 2023

### NEW FEATURES • (KIVA PRESENTION SERVER)

#### 1. Kiva Presenter App: Tally Feature now Supported

In earlier software versions, the remote Tally feature did not completely function. All functionality is now supported.

#### 2. Kiva Config App: Change Default Image upon “Unload Video Channel”

Prior to V9.2 Software, whenever a video channel transport was “Unloaded” that channel would be automatically loaded with “Internal Color Bars”.

A new feature has been added to the **Kiva Config** app on the **Channels** tab to allow the User to change the image that gets loaded upon a Channel Unload operation. The choices are:

- Color Bars (Default)
- Black
- Stored Still/Clip from Clip Library

**NOTE:** The “Stored Still or Clip” selection will present **all** .clip files stored in the Clip Library, including clips that are in video standards *different* from the video standard the video server is currently operating in. If a still or clip is chosen that’s in a *different* video standard, then when the Unload command is executed the “Color Bars” will be loaded instead (*because it’s impossible to load a .clip file that’s in another video standard*).

#### 3. Kiva Config App: Count-Down selection added

In the **Kiva Config** app on the **Quad Viewer** tab, a new “**Count Down**” radio button has been added to allow the Quad Viewer HD-SDI Output to be formatted with only two video panes with audio metering, timecode, and optional Channel Label with Tally indication.

However, the actual Count-Down function during playout of Clips and Playlist will be added in the upcoming V9.3 Software release. For the time being, the timecode in the “Count Down” Quad Viewer output will only “count up”.

#### 4. Kiva Config App: RossTalk Protocol • Change Port Number

In the **Kiva Config** app on the **RS422** tab, a new feature has been added to allow the “RossTalk port number” to be changed. The default port number is 7788.

The RossTalk port number can now be changed to a new port number ranging from 7788 to 7798 to help avoid duplicate RossTalk port numbers with other devices on the same Ethernet network.

### 5. Kiva Remote Control: Added RossTalk Receive Command: Load Playlist

A new RossTalk Receive command has been added to load Playlist media content into specific video player channel(s), with the following syntax:

<b>LOAD_PLAYLIST</b> <i>(pvw-channel:)pgm-channel:playlistname</i>	Load playlist in specific <i>channel</i> or <i>channels</i> (see: "Examples of Load Playlist Command" below)
--	--

#### Examples of Load Playlist Command

##### **LOAD\_PLAYLIST B:A:Sports\_Show**

Loads playlist titled "**Sports\_Show**" into **ChA** as PGM Player and with **ChB** as PVW Player. The **first** playlist item is loaded into **ChA**, while the **second** playlist item is loaded into **ChB**.

##### **LOAD\_PLAYLIST D:Good Morning Show**

Loads playlist titled "**Good Morning Show**" into **ChD** as PGM Player; first item is loaded into **ChD**.

### 6. Kiva Remote Control: Added RossTalk Receive Command: Loop Playlist

A new RossTalk Receive command has been added to loop all Playlist content in a specific video player channel, with the following syntax:

<b>LOOP_PLAYLIST</b> <i>channel:mode</i>	Enable Loop Playlist (see: "Examples of Loop Playlist Command" below)
--	---

#### Examples of Loop Playlist Command

These commands can be issued *during* playlist payout.

##### **LOOP\_PLAYLIST A:loop**

Enables "**loop**" command for playlist currently loaded in **ChA**.

##### **LOOP\_PLAYLIST A:off**

Disables "**loop**" command for playlist currently loaded in **ChA**.

### 7. Kiva Remote Control: RossTalk Receive Commands: 'forward slash' to indicate 'Folder'

While using RossTalk Receive commands that can include 'folders' and 'subfolders' in the video server's Clip Library, the 'forward slash' character ( / ) is now allowed, in addition to the 'back slash' character ( \ ), as has always been the case.

Example:

**(H:\Video) SPORTS\HOCKEY\Finals** *or* **(H:\Video) SPORTS\\HOCKEY\\Finals**

Can now be simply:

**(H:\Video) SPORTS/HOCKEY/Finals**

RossTalk Receive Commands affected by this change:

<b>CUE</b> <i>channel:clipname</i>	Load <i>clipname</i> on <i>channel</i>
<b>CUE</b> <i>channel:clipname:position</i>	Load <i>clipname</i> on <i>channel</i> and seek to <i>position</i>
<b>PLAY</b> <i>channel:clipname</i>	Load <i>clipname</i> and start playing
<b>PLAY</b> <i>channel:clipname:position</i>	Load <i>clipname</i> and start playing from <i>position</i>

<b>LOAD_PLAYLIST</b> ( <i>pvw-channel:pgm-channel:playlistname</i> )	Load <i>playlist</i> in specific <i>channel</i> or <i>channels</i>
--	--

**8. Kiva Remote Control: Added RossTalk Receive Command: TAKE**

A new RossTalk Receive command has been added to transition (“take”) media content within specific video player channel, with the following syntax:

<b>TAKE</b> <i>channel</i>	Take (transition) clip content in <i>channel</i> (see: “Examples of TAKE Command” below)
----------------------------	---

Examples of TAKE Command

**TAKE A**

While Playlist is loaded in ChB as (PVW) with ChA as (PGM): Transitions currently highlighted playlist item into ChA.

**9. Kiva Remote Control: Added RossTalk Receive Command: UP\_ONE\_ITEM**

A new RossTalk Receive command has been added to move an active Playlist’s “current item highlighting cursor” UP by one item in the Playlist, with the following syntax:

<b>UP_ONE_ITEM</b> <i>channel</i>	Move Playlist “current item highlighting cursor” for playlist active in <i>channel</i> UP by one item (see: “Example of UP_ONE_ITEM Command” below)
-----------------------------------	--

Examples of UP\_ONE\_ITEM Command

**UP\_ONE\_ITEM B**

While Playlist is loaded in ChB as (PVW) with ChA as (PGM): moves the “current item highlighting cursor” UP by one item within the playlist that’s currently active in ChB.

**10. Kiva Remote Control: Added RossTalk Receive Command: DOWN\_ONE\_ITEM**

A new RossTalk Receive command has been added to move an active Playlist’s “current item highlighting cursor” DOWN by one item in the Playlist, with the following syntax:

<b>DOWN_ONE_ITEM</b> <i>channel</i>	Move Playlist “current item highlighting cursor” for playlist active in <i>channel</i> DOWN by one item (see: “Example of DOWN_ONE_ITEM Command” below)
-------------------------------------	--

Examples of DOWN\_ONE\_ITEM Command

**DOWN\_ONE\_ITEM B**

While Playlist is loaded in ChB as (PVW) with ChA as (PGM): moves the “current item highlighting cursor” DOWN by one item within the playlist that’s currently active in ChB.

### 11. Kiva Remote Control: Added RossTalk Receive Command: RECUE\_TO\_FIRST\_ITEM

A new RossTalk Receive command has been added to move an active Playlist’s “current item highlighting cursor” to FIRST item in the Playlist, with the following syntax:

<p><b>RECUE_TO_FIRST_ITEM</b> <i>channel</i></p>	<p>Move Playlist “current item highlighting cursor” for playlist active in <i>channel</i> to FIRST item (see: “Example of RECUE_TO_FIRST_ITEM Command” below)</p>
--	---

Examples of RECUE\_TO\_FIRST\_ITEM Command

#### RECUE\_TO\_FIRST\_ITEM B

While Playlist is loaded in ChB as (PVW) with ChA as (PGM): moves the “current item highlighting cursor” to FIRST item within the playlist that’s currently active in ChB.

If you want the newly highlighted playlist item to transition into the PGM player, you’ll need to follow this RECUE command with a TAKE command.

### 12. Kiva Remote Control: Added RossTalk Receive Command: EJECT\_PLAYLIST

A new RossTalk Receive command has been added to unload (EJECT) a Playlist that’s currently loaded in the specified video channel, with the following syntax:

<p><b>EJECT_PLAYLIST</b> <i>channel</i></p>	<p>Unloads (Ejects) Playlist that’s currently loaded in <i>channel</i> (see: “Example of EJECT_PLAYLIST Command” below)</p>
---	---

Examples of EJECT\_PLAYLIST Command

#### EJECT\_PLAYLIST A

While Playlist is loaded in ChB as (PVW) with ChA as (PGM): halts playout of the active Playlist but keeps the currently playing item in ChA (PGM) playing out.

To completely clear the Playlist from all playout channels, follow with another command:

#### EJECT\_PLAYLIST A

— or —

#### EJECT A

### 13. Kiva Presenter App: Audio PVW Player: Unload and Transport Controls enabled

While the Audio PGM Player is “empty” (Unloaded), the Kiva Presenter app now enables the audio player “transport controls” so the audio clip in the Audio PVW Player can be played, re-cued, and unloaded.

**14. Kiva Presenter App: Hot Key Editor multi-item selection to clear multiple Hot Keys**  
**Allow multi-select in Hotkey Editor so multiple shortcuts can be cleared at the same time.**

Multi-select is supported using Click, Shift+Click, and CTRL+Click in Description column; or drag-select anywhere in the table. After multiple items are selected, a “**Clear Shortcuts**” button appears; when clicked, the selected Hot Keys will be cleared.

**15. Kiva Presenter App: Output Mode added in Global Settings**

While the Kiva system is operating in an interlaced 1080i video standard, a new “Output Mode” button is now present in the **Global Settings** dialog that dictates the Output Mode of **Still** and **Video** clips when they are loaded into the PVW and PGM Video Players.

Details of the three settings:

- **Auto** (Default) Sets the Output Mode setting based on the Output Mode stored in the properties of the underlying .clip file (*discovered by “right-clicking” on the Video or Still Media Button and selecting the “Properties” item in the pop-up menu*).
- **Field VI** Sets the video output mode of **Video** and **Still** Media Button content to Field VI (Vertical Interpolator) when that Media Button is programmed with the “Auto” setting. Field VI output mode is useful for video clip content that has side-to-side motion and is being played at slower than 1X play speed.
- **Frame** Sets the video output mode of **Video** and **Still** Media Button content to Frame when that Media Button is programmed with the “Auto” setting. **Frame** output mode is useful for **Still** or motion **Video** graphic content that was originally rendered as **frame-based** content *without* interlace. For such content, the **Frame** Output Mode will remove “interlace jaggies” along edges of graphics content.

**16. Kiva Presenter App: Output Mode added in Media Editor**

While the Kiva system is operating in an interlaced 1080i video standard, a new “Output Mode” button is now present in the **Media Editor** that dictates the Output Mode of **Still** and **Video** clips when that media is loaded into the PVW and PGM Video Players. When set to “Auto”, this parameter will follow the Output Mode setting in the Global Settings dialog. When set to “Field VI” or “Frame”, this parameter will *override* the Output Mode setting in the **Global Settings** dialog.

Details of the three settings:

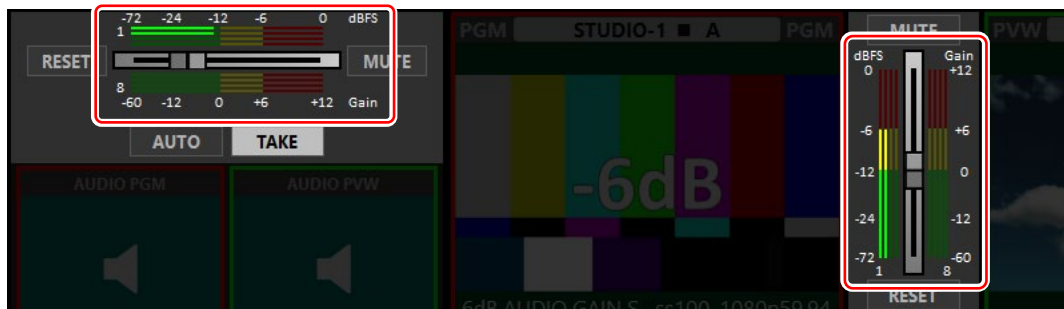
- **Auto** (Default) Sets the Output Mode based on the Output Mode setting in the **Global Settings** dialog; if that parameter is set to “Auto”, then uses the Output Mode stored in the properties of the underlying .clip file (*discovered by “right-clicking” on the Video or Still Media Button and selecting the “Properties” item in the pop-up menu*).

- **Field VI** Sets the Output Mode to Field VI (Vertical Interpolator) when the Still or Video media content is loaded in the PVW and PGM Video Players, which is useful for video clip content that has side-to-side motion and is being played at slower than 1X play speed.
- **Frame** Sets the Output Mode to Frame, which is useful for **Still** or motion **Video** graphic content that was originally rendered as **frame-based** content *without* interlace. For such content, the **Frame** Output Mode will remove “interlace jaggies” along edges of graphics content when it’s paused or stopped.

## 17. Kiva Presenter App: Audio Meter Scaling Changes

The Audio Meters in Kiva Presenter have had three changes made:

- Audio Meters level scaling was adjusted to correct a 12dB offset with respect standard audio reference scaling.
- Added new “**dBFS**” (*Decibel Full Scale*) audio level scale and scale label to Audio Meters.
- Added new “**Gain**” label to existing audio level scales to Audio Meters.



## BUGS FIXED • (KIVA PRESENTATION SERVER)

### 1. File Import: Thumbnail & Proxy Video service slow to start

Thumbnail image and Proxy Video generation now starts immediately as soon as file import completes.

### 2. File Import: Duplicate Proxy Video

Fixed issue where duplicate Proxy Video clips could be generated from the same underlying clip file.

### 3. File Import: Photoshop (PSD) media file support

Fixed bug that prevented Photoshop files (.PSD) from being imported. These files now import.

### 4. Kiva Presenter App: Rare Crash

Fixed app crash that was quite rare but happened most often while playing out Playlists of Stills.

**5. Kiva Presenter App: Audio paused in Audio PGM Player unexpectedly plays**

When an audio clip is paused in the Audio PGM Player, loading a Playlist into the Video PGM Player caused the audio clip in the Audio PGM Player to resume playing.

**VERSION 9.1.0 – APRIL 2023**

**NEW FEATURES • (KIVA PRESENTION SERVER)**

Introduced brand-new product to market: **Kiva Express Duet**

**BUGS FIXED • (KIVA PRESENTION SERVER)**

No Bug Fixes



## KNOWN ISSUES

### VERSION 9.3.1 – SEPTEMBER 2024

No Known Issues

### VERSION 9.3.0 – AUGUST 2024

#### 1. Quad Viewer SDI OUT set to new “Count-Down” Display

This feature is not fully completed. The following issues will be experienced:

- a. While presenting contents from a PLAYLIST Media Button **without** Playlist Loop:
  - When STILLS Media with DURATION are in the Playlist, the DURATION in the Quad Viewer Count-Down display will indicate an incorrect duration of “0.01” in the PVW Player and “0.00” in the PGM Player
  - When VIDEO Media with trimmed IN and/or OUT points are included in the Playlist, the DURATION in the Quad Viewer Count-Down display will indicate an incorrect duration of the “total clip duration” instead of the “trimmed clip duration” in both the PVW Player and PGM Player.
  - When the FINAL item in the Playlist transitions into the VIDEO PGM Player, the Quad Viewer SDI-OUT Count-Down display reverts to “timecode count-up” display.

#### WORK-AROUND

- ✓ None.

### VERSION 9.2.4 – JULY 2024

No Known Issues

### VERSION 9.2.3 (SKIPPED)

This version number was skipped.

### VERSION 9.2.2 – JUNE 2024

No Known Issues

### VERSION 9.2.1 – MARCH 2024

No Known Issues

## VERSION 9.2.0 – NOVEMBER 2023

No Known Issues

## VERSION 9.1.0 – APRIL 2023

### 1. Kiva Presenter Audio Meters display only 8-Track Audio

Even when the new 14-Track Audio is enabled, the Audio Meters in the Kiva Presenter app will only display 8-Tracks of audio. This will be remedied in a future software release. It should be noted the Audio Meters in the Quad Viewer HD-SDI OUT will display 14-Tracks of audio.

## GETTING HELP

- Ross Online Kiva Help on the Web: [Kiva Online Help](#)
- Ross Support on the Web: <https://support.rossvideo.com/hc/en-us>
- Our 24-hour hotline service provides access to technical expertise around the clock. After-sales service and technical support is provided directly by Ross Video personnel...
  - **During business hours (Eastern Standard Time):**

Ross Technical Support personnel are available by telephone:

    - **Technical Support: (+1) 613-652-4886**
    - **After Hours Emergency: (+1) 613-349-0006**
  - **After hours and on weekends:**

Emergency technical support is available. A telephone-answering device will provide the names and phone numbers of technical support and field service personnel who are on call. Ross staff are available to react to any problem and to do whatever is necessary to ensure customer satisfaction.
  - **Serious issues needing urgent attention and tracking:**

Please ensure you are given a ticket number and refer to this number in follow-up communications.