Legion II User Guide

Guide v1.3.8

Revised 5/20/2023

Table of contents

Minimum System Requirements

In today's world many people take playing videos on their computer for granted, thinking any computer should be able to do it easily. Well, this may be true for things like streaming Netflix or watching a YouTube video. Those streams are highly compressed and have very small bitstreams (avg. 3.5 MB/s) so yes most general-purpose PC's can handle that easily. However, we are working with files directly from the content producer. These files not only have minimal compression, but they are also presented at much greater resolution and color depth. This can result in bitstreams that measure in the hundreds of megabits, or for the very large, over a gig!

Keep in mind that single PCI bus lane on most laptops are PCIe 3.0 which can only handle 985 MB/s and they must also accommodate, at the same time, many other data packets not just the ones coming from our video.

Modern systems typically have at least 16 lanes but the number of lanes available on the chipset and CPU can vary greatly and bottleneck's can and do form. When they do our video stream can end up being stalled and/or data packets lost. This results in glitchy playback at best and not being able to maintain correct framerate at worst.

So, establishing what is a suitable minimum component standard can be difficult. We of course recommend using full desktop units with high quality components that are optimized by their manufacture for performance. But we also know that most of you want the convenience of a laptop. Well, the thing about laptops are they are primarily designed for efficiency and minimal power usage. Plus, there is no real standardization. You could have two systems, from two different manufacturers, both advertising the exact same internal components, but potentially exhibit much different performance levels.

Other than bitstream sizes there are several other stresses the system undergoes. Such as very large storage requirements and large memory usage when more and more files are pre-buffered for instant access and playback.

Let's not also forget the considerable changes the operating system goes through any time a program is installed sometimes having to make configuration changes to its own subsystems. These changes can have unforeseen consequences for us down the road.

With all that said, we cannot give any sort of guarantee as to will work best for your situation but we can at least give you a starting point to work from.

CPU:
Intel i7 8th Generation or greater (10 Core or greater i9 or Gen 10 thru 12 preferred.)
AMD Radeon HD 3000 or greater.

Hard Drive:
500Gb or greater (1Tb M.2 type design preferred.)

Memory:
Minium 16Gb but 32Gb or greater is preferred.

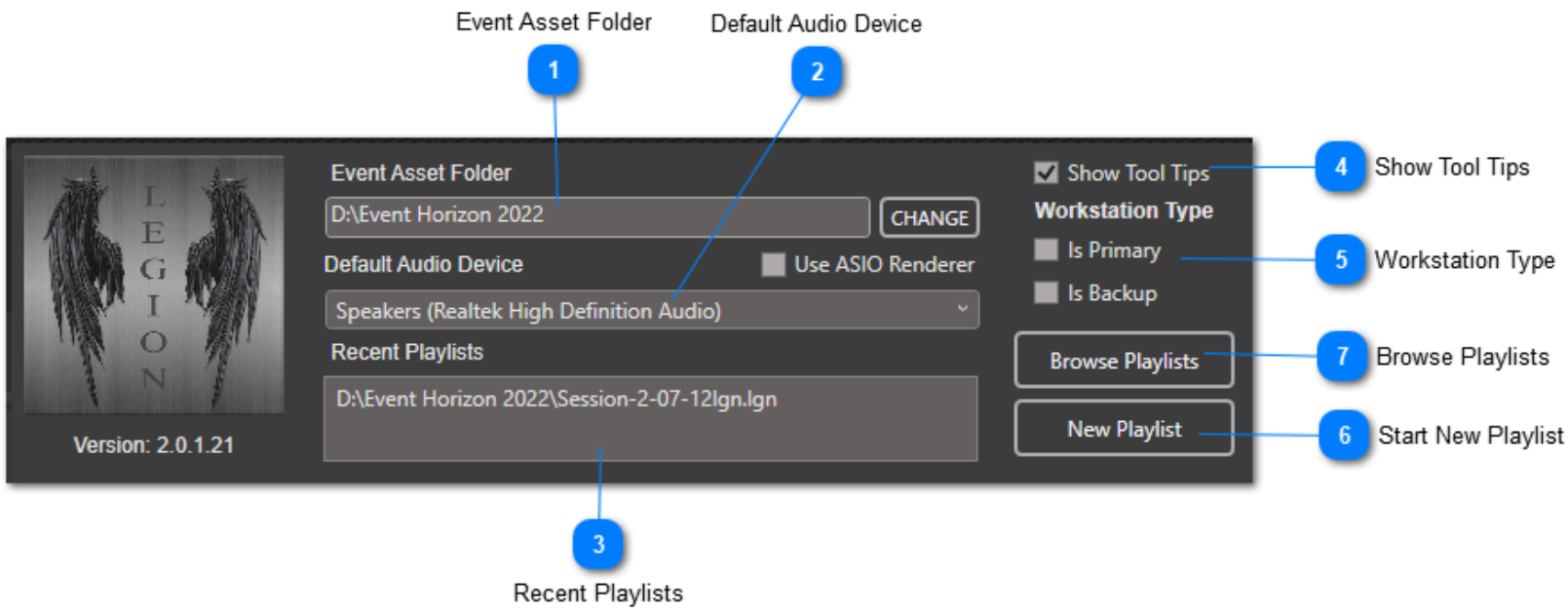
Must have dedicated GPU (not just an integrated CPU one):
Nvidia GTX 1080 based GPU or greater (Quadro preferred.)
AMD Radeon HD 3000 or greater (Pro versions preferred.)

OS:
Windows 10 Pro build 20H1 or greater or Win 10 LTSC build 1809 or greater.

As noted above there are way too many variables associated with the playing of high-resolution video material. However, we can say that you can never have enough computing power. So please consider that when working in the very demanding and competitive world of event productions, performance and reliability should greatly outweigh any sort of budgetary concerns.

Launch Control

When the program is started, the ‘Launch Control’ panel is modeled above the main application window.



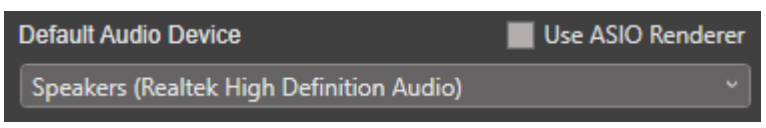
---

1 Event Asset Folder

Establishing the event asset folder is mandatory. To make transferring event files to other storage mediums or computers easier, all assets will be automatically copied into this folder even when resourcing files from other drives and/or folders.

NOTE: Files are copied leaving the original file intact at its source. To prevent excessive use of available drive space on your system it is recommended that you manually add needed event assets directly to the event folder and prevent the system from needing to create wasteful copies.

2 Default Audio Device



Every new asset added needs to know what audio output to use. In most cases you will probably use the same one. This where you can choose which will be that go-to default. This does not need to be the same one setup in Windows as its default. Although, if this is the first time using Legion or if a previously assigned output no longer exists, the app will automatically revert to the Windows default.

NOTE: After an asset has been added to the playlist you can override the default assignment and select a different output for that asset without affecting others.

Use ASIO Renderer:
If you are either using assets with multi-track audio embedded, (greater than two), or simply wish to use a single multi-output device, such as a Tascam or Presonus to handle all audio outputs for the entire playlist, enable this option and the system will instead employ an ASIO (Audio Stream Input/Output) renderer to compile the output stream.

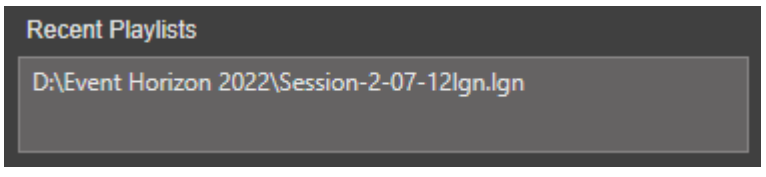
When enable the device list will now only contain a list of ASIO output device drivers currently installed on your system.

Installed with Legion is the MBSE Multichannel ASIO Renderer which is necessary to compile multiple audio streams into a single ASIO data stream. However, this is a third-party driver that requires a purchase of its own license. See: How to install or transfer the MBSE asio renderer license

NOTE: If instead of using an ASIO compatible device like a Tascam or PreSonus, you could take advantage of Blackmagic’s Decklink cards ability to have multiple audio tracks embedded into a single SDI output and de-embed them down stream. Decklink drivers include a simple WDM speaker driver which appears in the same list as the other standard stereo outputs.

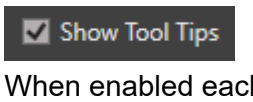
If choosing this approach, you would leave the ‘Use ASIO Renderer’ option unchecked. Also, unlike using the ASIO render, this method does not provide any custom channel routing, instead assignments will just be one to one.

3 Recent Playlists



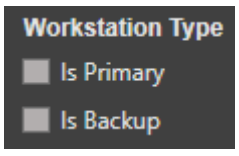
This list displays all playlists currently saved in the event asset folder. Double click an item to reload that file.

4 Show Tool Tips



When enabled each individual control will produce a helpful popup describing its purpose. Due to it sometimes interfering with mouse clicks, it is recommended that this feature be disabled once you feel comfortable with all aspects of the program.

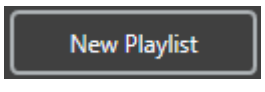
5 **Workstation Type**



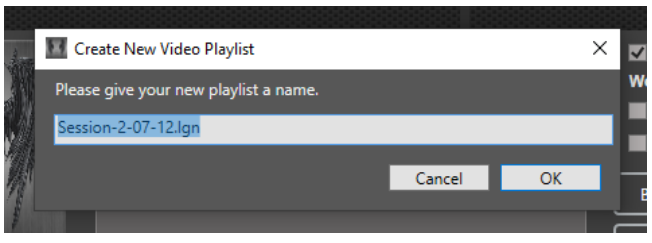
One of the program's key features is its ability to easily connect to another workstation and use it as a backup that will mimic the primary. If you wish to setup for this scenario select the appropriate role for each of the two workstations

NOTE: As long as the link between the two are enabled all transport commands and edits performed on the primary will instantly occur on the backup as well. Also, if an asset file is added to the primary playlist but does not exist on the backup, a copy of the file will automatically be transferred to the backup for you.

6 **Start New Playlist**



Click this to create a new playlist.



An input box will open. Simply type in a desired name and click 'OK'.

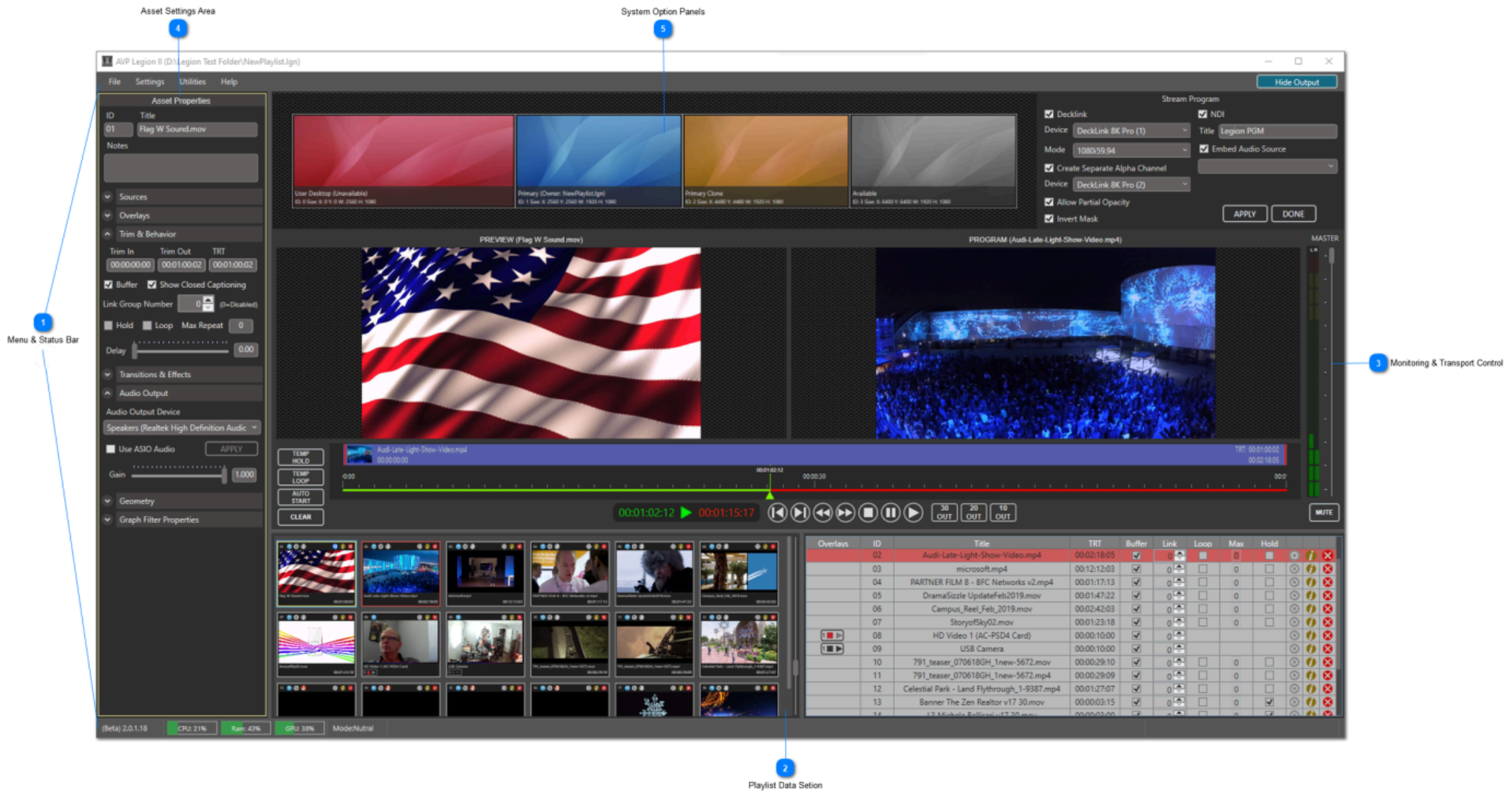
NOTE: Once this is selected the Launch Control will automatically close.

7 **Browse Playlists**

As the name implies, this opens a file browser where you can find a particular playlist file to open.

NOTE: Once a file is selected the Launch Control will automatically close.

Main Application Window

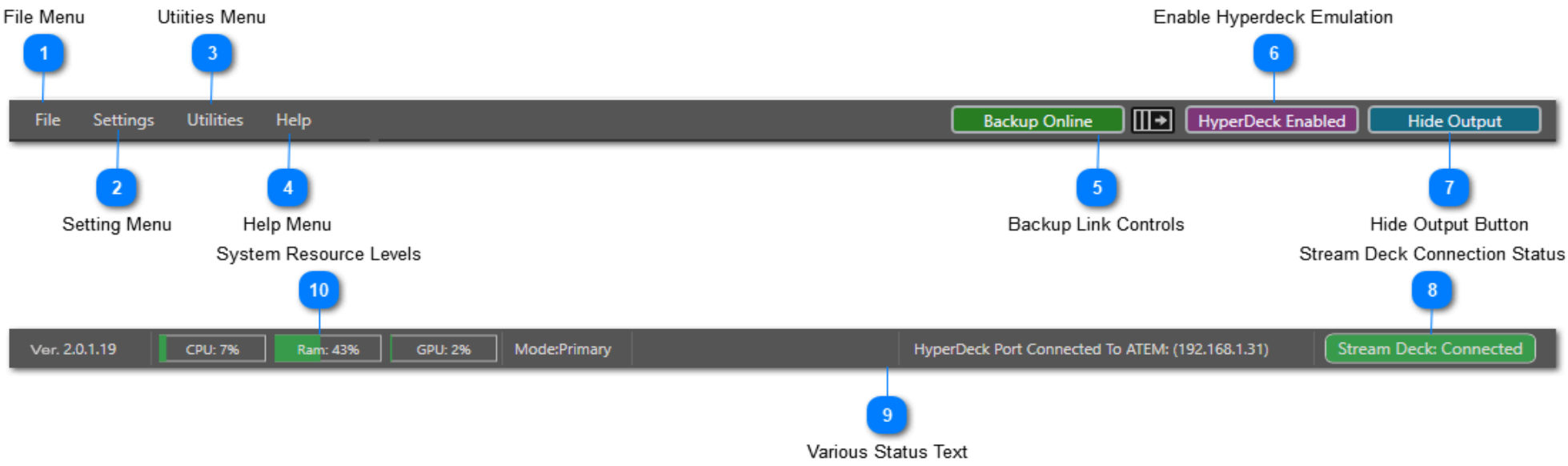


The primary interface is divided into five sections. Bellow are links that outline each in detail:

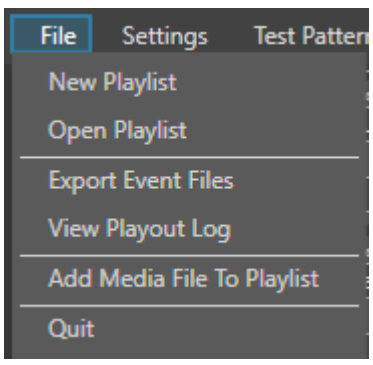
1. Menu & Status Bar
2. Playlist Data Area
3. Monitoring & Transport Area
4. Asset Settings Area
5. System Option Panels

TIP: Between each setion is a slim gray line. You can grab this with your mouse and drag it to resize the sections that each divide. These adjustments along with the overall size of the window are saved and will be recalled each time the app is started.

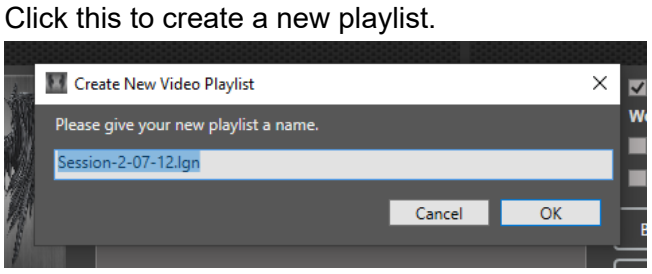
Menu & Status Bar



1 File Menu



New Playlist:
Click this to create a new playlist.



An input box will open. Simply type in a desired name and click ‘OK’. If there is already playlist open, this action will close it and load the new one.

Open Playlist:
Opens a file explorer allowing you to load an existing playlist file. If a playlist is aleady open, this action will replace it.

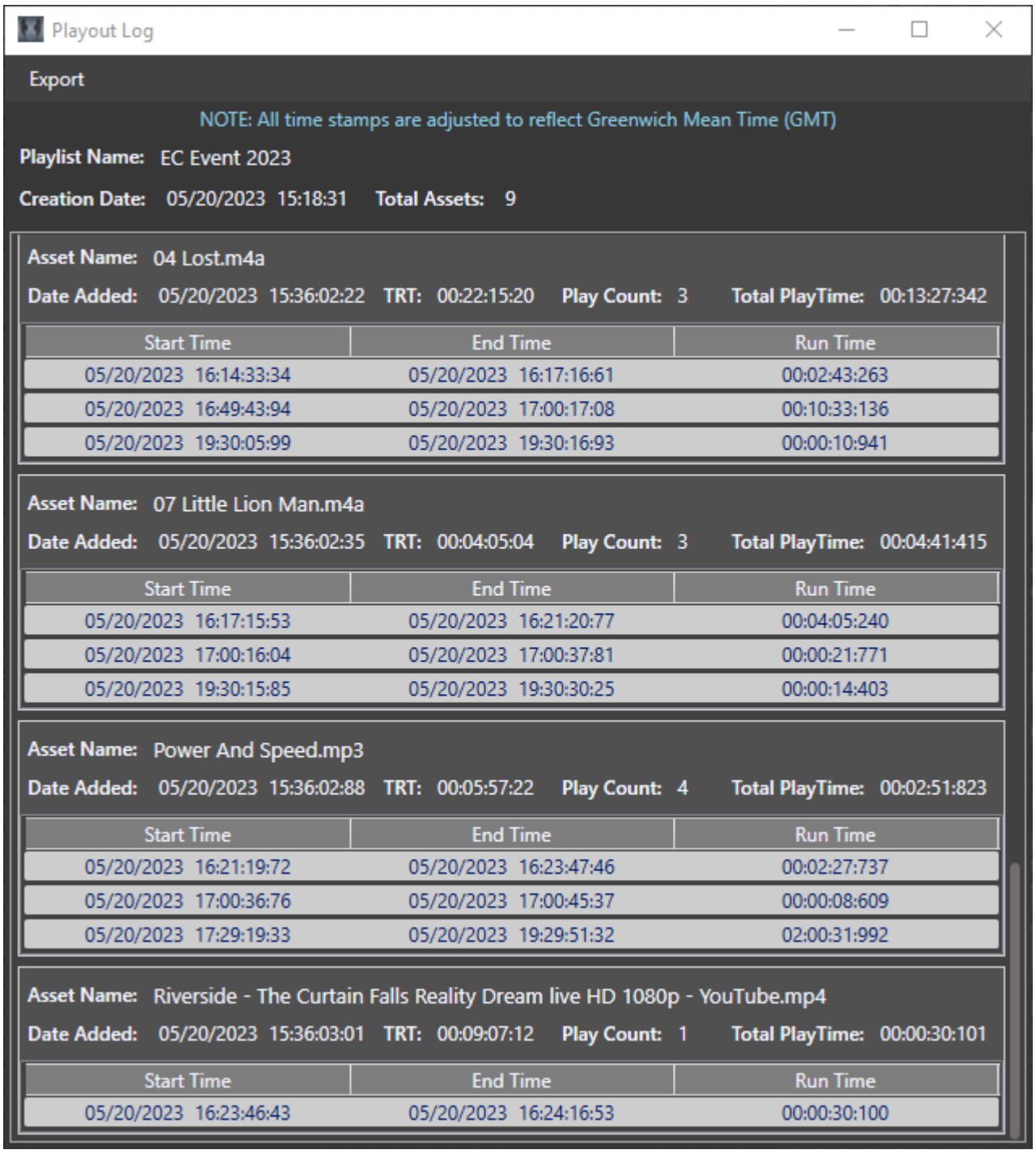
NOTE: You are free to save playlist files anywhere, but it is strongly recommended you keep them in the default event asset folder.

Export Event Files:
Utility to consolidate all current playlist asset files as well as the playlist itself and export them to a folder and drive of your choosing.

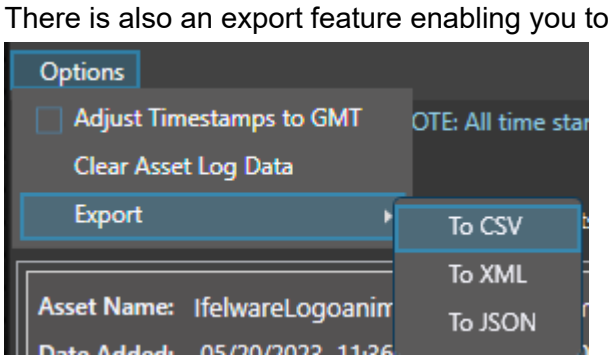
You can then take and copy the folder onto another computer and if equipped with Legion all you need to do is double click on the playlist file and an instance of Legion will launch automatically setting its default event folder path to this new path.

View Playout Log
If it is necessary to report asset usage to any rights-holding organizations, like ASCAP or BMI. Legion now can keep accurate date and time records of all playlist assets being shown.

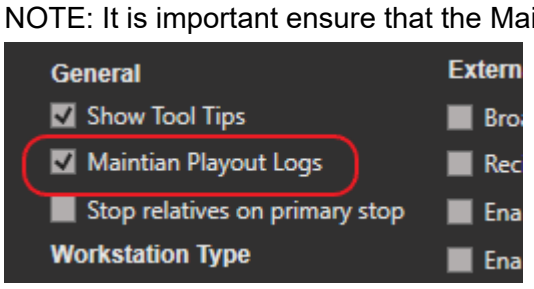
The data is easily viewed by simply clicking this menu item.



There is also an export feature enabling you to save the data to either a CSV, XML or JSON type file.



NOTE: It is important ensure that the Maintain Playout Log option located in global settings is checked.



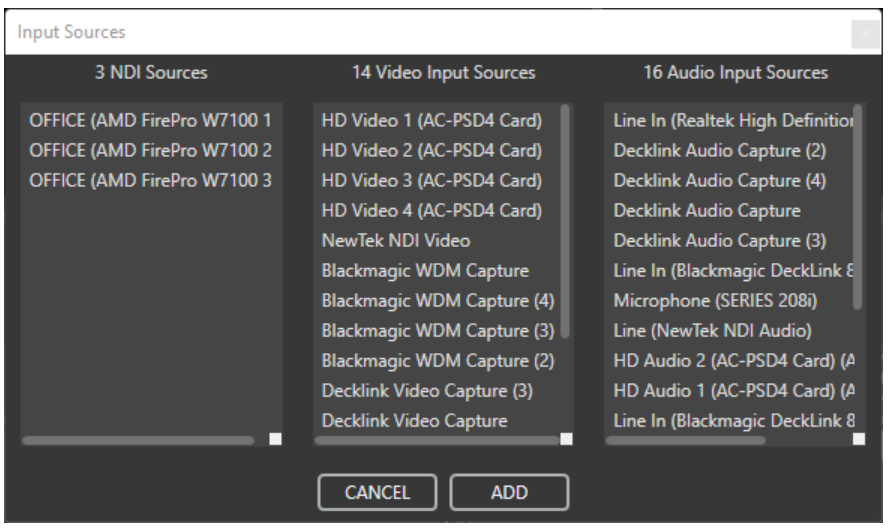
Add Media File To Playlist:
Opens a file explorer allowing you to choose a desired asset file and add it to the playlist. You are free to make multiple selections and load at the same time.

NOTE: It is important to remember that all assets belonging to any playlist must be kept in the event asset folder. This way all elements related to a playlist can be easily moved as one bundle and used on other computers without having to correct the file paths within the playlist.

By default, any file retrieved from other locations will automatically be copied and placed directly into the designated event folder.

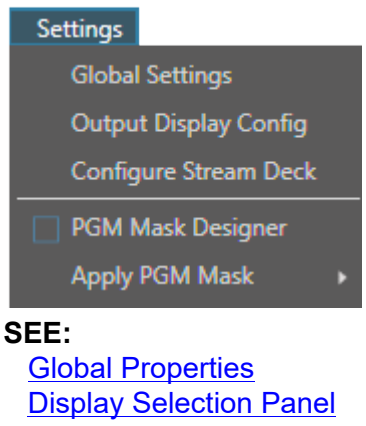
To prevent excessive use of available drive space on your system it is recommended that you manually add all needed assets directly to the event folder and prevent the system from needing to create wasteful copies.

Add Live Input Source To Playlist:
Will display a dialog window with list of all live capture source currently available. Select from the lists of sources the sources the ones you wish to add. You are free to make multiple selections and load at the same time.



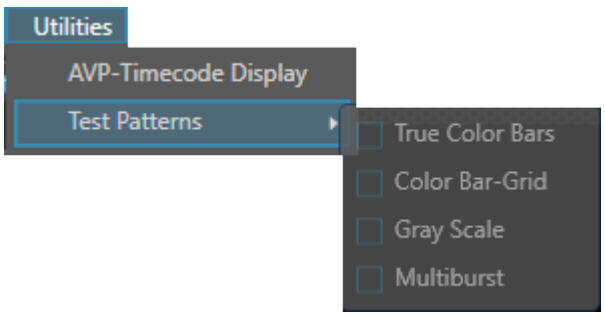
Quit:
Shuts down the entire program.

2 Setting Menu



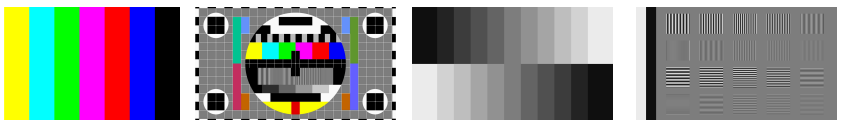
SEE:
[Global Properties]
[Display Selection Panel]
[Stream Deck Config Panel]
[Opacity Mask Editor]

3 Utiities Menu



Launch AVP Timecode Display:
Click this to launch an instance of the [AVP Timecode Display] program

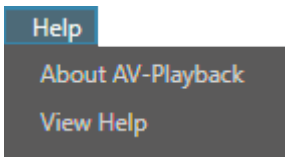
Test Patterns:



Here you can select to output a test pattern by selecting one from the sub menu. Simply click the same sub menu item to remove the test pattern.

NOTE: All test patterns will automatically remove itself anytime an asset is taken to program.

4 Help Menu



About AV-Playback:
Should be self explanitory.

View Help:
Your allready here.

5 Backup Link Controls

Refer to [How To Setup Backup Workstation] learn more.

6 Enable Hyperdeck Emulation

If currently connect to an ATEM or some other controller use the HyperDeck protocols to control AV-Playback, then you can toggle this button to enable or temporarily block external commands.

Refer to [HyperDeck Emulation] to learn more.

7 Hide Output Button

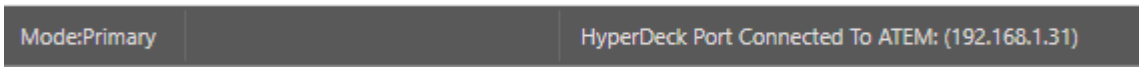
Use this to toggle whether the program output window is visible or not. When hidden, the physical output will show whatever image or color you have as set as your computer's display background.

8 Stream Deck Connection Status

This indicator will appear only when a Stream Deck control surface has been configured and enabled.

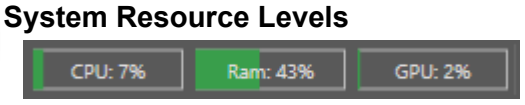
Refer to Stream Deck Config Panel to learn more.

9 Various Status Text



This zone displays status related to various running functions.

10 System Resource Levels



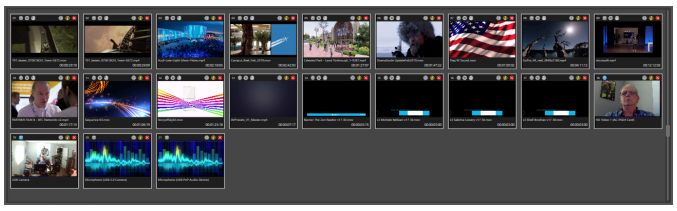
These gauges provide indication of just how much usage stress there is on your system's three most import components. Ample headroom for all three are critical in determining the quality and performance all playback assets. If any of these three components exceed 80 - 85% the gauge will turn red and status text will display a warning advising, you to try and disable buffering on as many playlist assets as you can.

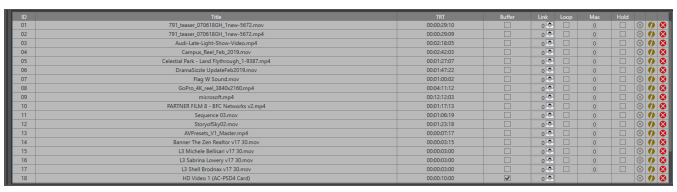
Playlist Data Area

As we all know a playlist is typically a collection of multi-media assets compiled in the form of a list or an array. Each asset can be played-out to an audience in a defined sequence or individually on demand.

Legion provides the user with two different types of controls to work from. One is a an array of what we call thumb panels. The other is a more conventional data table. You are free to work from either. Both provides the same level of control, so it is up to you as to which you prefer using.

Separating the two is a splitter bar that you can drag left or right to adjust how much of each you want visible.



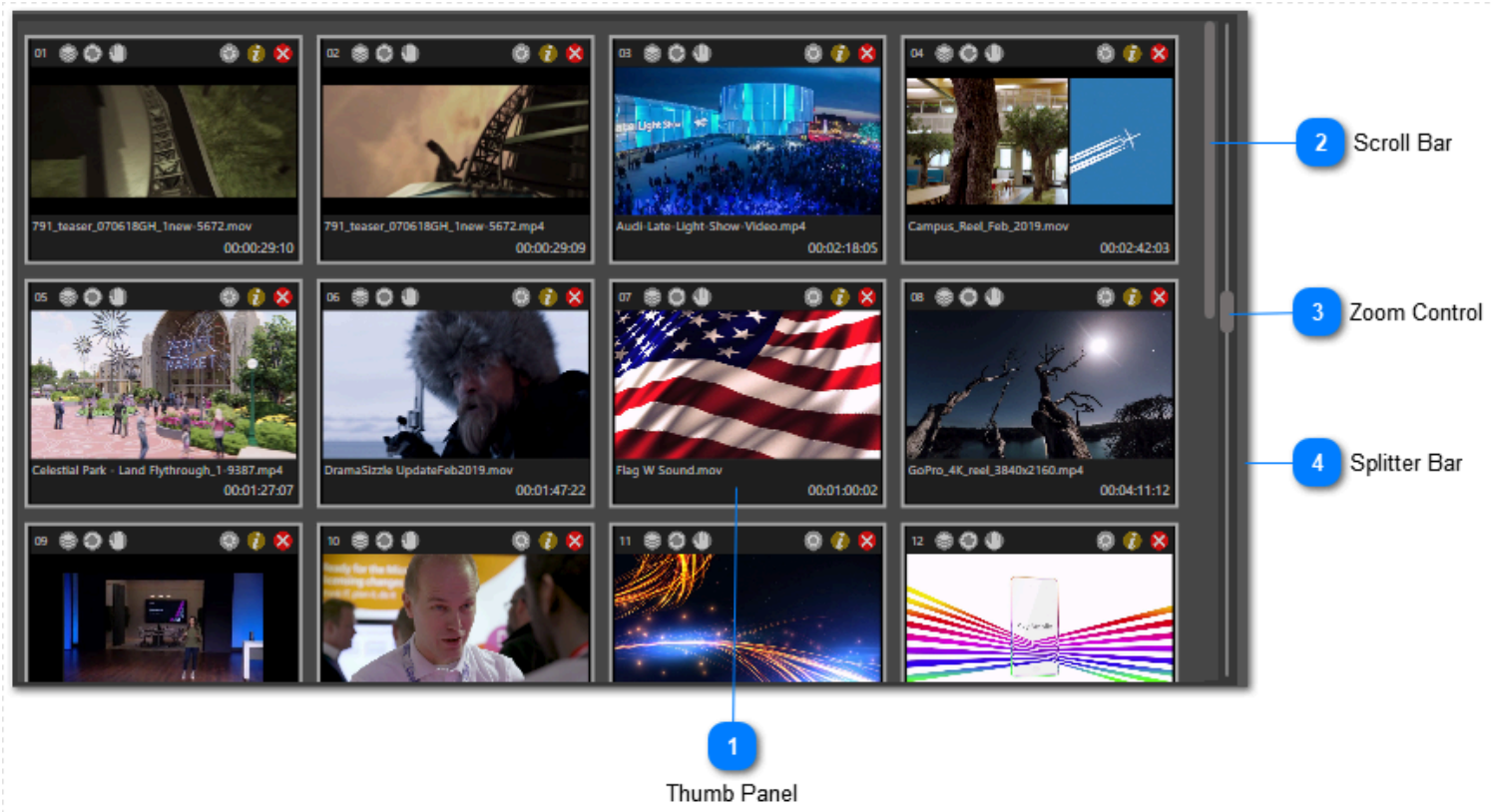


You can also expand the size of this entire section vertically by dragging the horizontal bar above. Changing the area's height will affect the size of the monitoring and transport section accordingly.

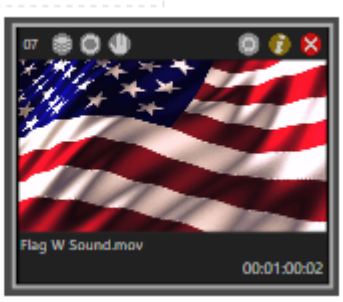
1 Thumb Panel Array

The array is made up of thumb panels, one for each asset in the playlist. To select an asset for play simply click on its image. When an asset is in preview a yellow border around the entire control will appear. Now when it is taken to program the border will turn red.

You can rearrange layout order by simply clicking on the one you want to move, drag it over another and then drop. The asset will now sit in the array after the one you dropped on. You can also make an exact copy of any file-based asset by holding down the ALT before and while you drag it. Now when you drop onto another thumb a full copy will be inserted ahead it.



1 Thumb Panel



The array is made up of thumb panels, one for each asset in the playlist. To select an asset for play simply click on its image. When an asset is in preview a yellow border around the entire control will appear. Now when it is taken to program the border will turn red.

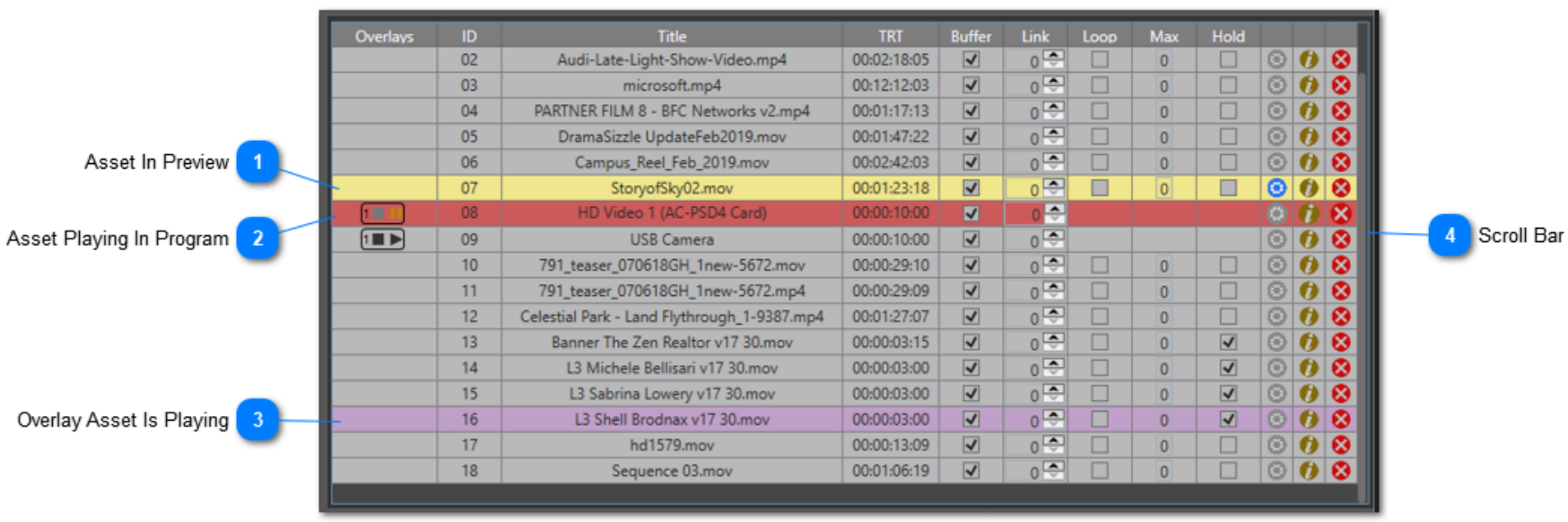
You can rearrange layout order by simply clicking on the one you want to move, drag it over another and then drop. The two will change place with each other. You can also make an exact copy of any file-based asset by holding down the ALT before and while you drag it. When you drop onto another thumb inserted ahead of the one you dropped it on.

Each panel also contains pertinent information as well some additional function buttons. Click here for a detailed outline.

2 Conventional Data Table

As an alternative, you may prefer working from conventional data table instead.

Here assets are arranged in a list. Clicking most anywhere within a row will select that asset and take it to preview, except for cells containing checkboxes and buttons.

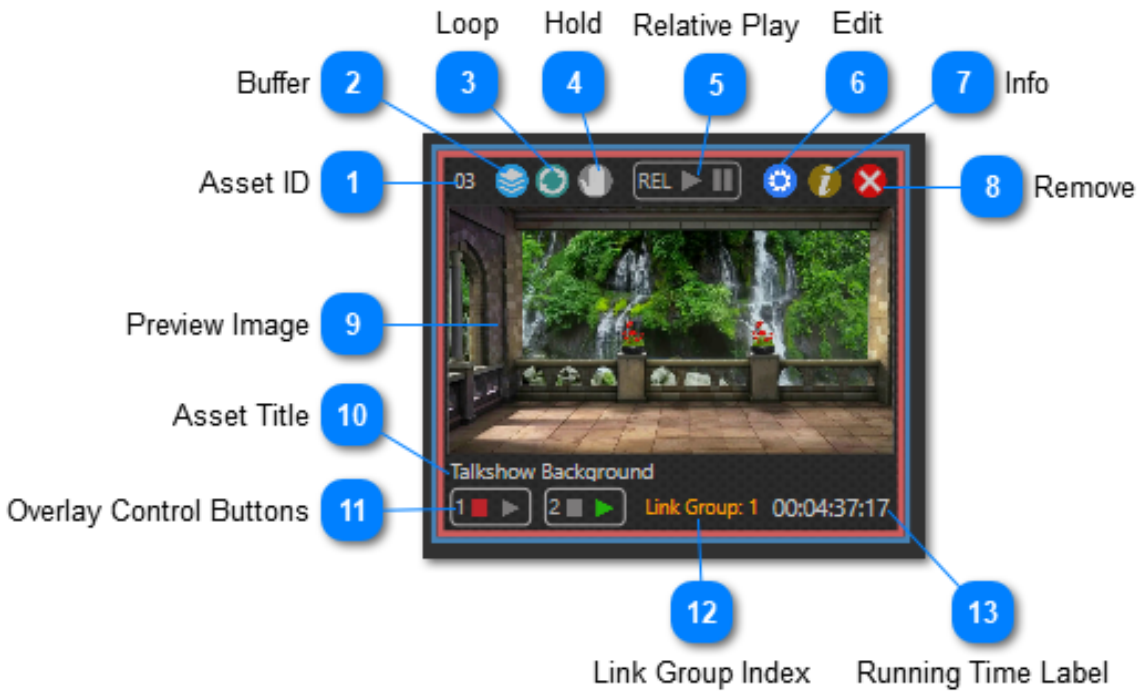


Once selected the row's back color will become yellow. This signifies the asset is now in standing by in preview. When taken to program the row color will turn to red. It should also be noted that anytime an overlay asset is playing its row color will purple.

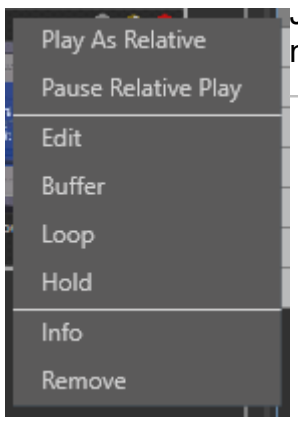
If you need to rearrange the order, simply click and drag the asset's row and drop it onto another. The asset will now appear in the list after the one you dropped on. You can also make an exact copy of any file-based asset by holding down the ALT before and while you drag it. Now when you drop onto another row a full copy will be inserted ahead of it.

Each row in the list provides access to some of an asset's properties which are laid out using a series of cells divided in columns. You are free to directly edit these properties at any time even if the asset is playing. Click here for a detailed description of each column.

Thumb Panel Detail



Right Click Popup Menu



Just want to point out that when you right click on any thumbnail panel a popup menu will appear. For the most part the menu emulates many of the functions the icon buttons provide also. Please refer the item bellow for more details

1 **Asset ID**

This read only text simply displays the asset's ID.

2 **Buffer**

This toggle button allows you to set whether the asset is open and loaded into memory or not.

NOTE: Before an asset can be played it must first be loaded into memory. If upon selecting an asset that hasn't alr system will open and buffer it at that time. Be aware this process may take a few moments before the asset can be

On the flip side, you should also pay close to attention to how much of your system's memory is available. Do this computer's memory doesn't become to saturated and performance suffers.

3 **Loop**

Use to instruct the asset to continually repeat until either the stop button is pressed or if Max Repeat is set to a numb will automatically stop once that number of iterations has been reached.

TIP: When enabled, the asset's in and out transitions as well as the hold flag will be disabled. If you wish to continu effects in between iterations, you will need to first set the repeat delay to at least match the amount of transition tir is done you are free to re-engage the loop feature.

Another tip is if you also set the max repeat, you can also go ahead and re-engage the hold feature. Now on the las will hold at the out trim point instead of stopping.

4 **Hold**

Unlike the temp hold which is one time only this toggle button sets whether the asset will always pause and remain v the out trim point. To clear and allow it to transition out, simply press the stop button.

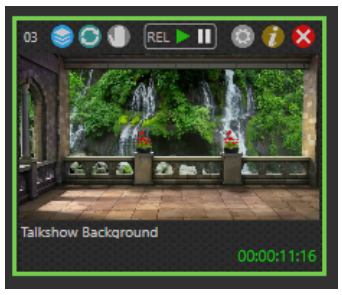
5 **Relative Play**

The reason we call this method of play relative, is because when playing an asset this way it will not replace any other asse playing, instead they play independent above all other layers. This function is handy for times when you need to randomly everything. Examples are elements like logo animations, lower thirds or even live news or social media feeds.

Control for these is basic you simply only have the ability to play, pause and stop. Also, when played the timeline has no co linking to another asset is not possible. Also, any overlay or background assignments will be ignored. However, most all ot looping and holds will still function as well as all transitions, treatments and geometry settings.

The play icon as well as the Play as Relative popup menu item toggles between play and stop. The pause icon / Pause Re between play and pause.

When playing using this method, it's thumb panel's outer border as well as its row in the data table will appear green. Also, running time can be viewed in all locations where the asset's TRT are represented.



Note: These controls are disabled anytime the asset is being played conventionally as well as when sitting in prev disabled if the primary asset playing in PGM has the same asset assigned to it as one of its overlays.

TIP: The recommended way to control relatives is by programing them as separate buttons on a Stream Deck. Ref Config Panel to lean how.

6 **Edit**

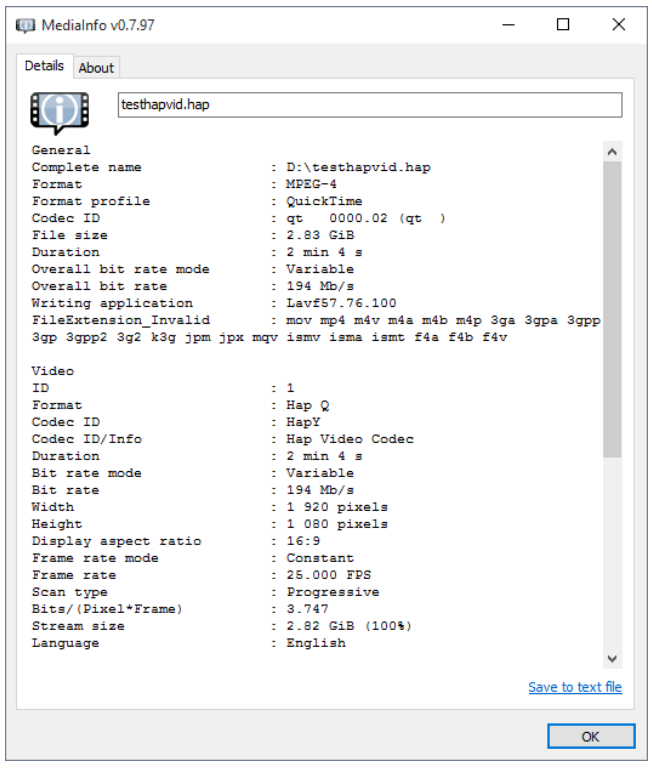
Normally this icon is gray but anytime the asset has edit focus the icon becomes blue. Also, a blue border will appea thumb panel.
When an asset has edit focus its thumbnail image will appear in the preview monitor, and you are free to make prop controls found in the assets settings area.

By default, any asset selected to be placed in preview will automatically assume edit focus and will remain even afte Although, if a different asset is taken to preview while the previous one is still playing in program, the newly selected focus.

Now if you want to give focus back to the one in program simply click anywhere on its thumb panel, but It is extreme that in order to safely select any other, including the one in preview, you must only click on this icon/button. Otherwis click anywhere else on the asset's thumb panel and it is the one currently in preview, you will end up deselecting it a preview slot. Also, If you, do it to any other, then that asset will be taken to preview replacing the one that was alread

7 **Info**

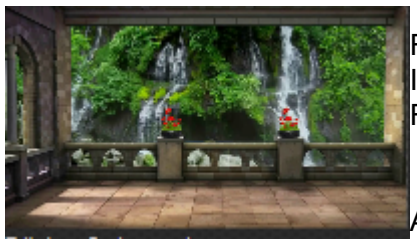
Click on this button to display detailed information of asset's file properties.



8 **Remove**

Click to permanently remove asset from the playlist.

9 **Preview Image**



For typical files types this image is simply the file's own static thumbnail.
In the case of a live video capture or NDI source this area will have an actual live monitor v
For audio capture sources and audio only files a generic default image will appear.

Any time a live video capture source is taken to preview, its live monitor feed will now move actual preview monitor space. For as long the source remains in preview, a generic image thumb panel. However, when the source is either taken to program or cleared entirely the live monitor feed will return back

TIP: As an alternative you can replace the image by way of capturing an image directly from the program output sc referring to the 'Sources' topic under 'Asset Settings Area'.

10 **Asset Title**

This read only text displays the asset's title.

11 **Overlay Control Buttons**

If on one asset we will call the base you choose to use other assets has an overlay. These basic tran
on the base's thumb panel. One for each of maximum two overlays there is a stop button to the left a
button on the right. Use these to manually control the overlay. Also, keep in mind that these are only
asset is playing.

12 **Link Group Index**

If the asset is a member of linked group this text appears to indicate which group number it is part of.

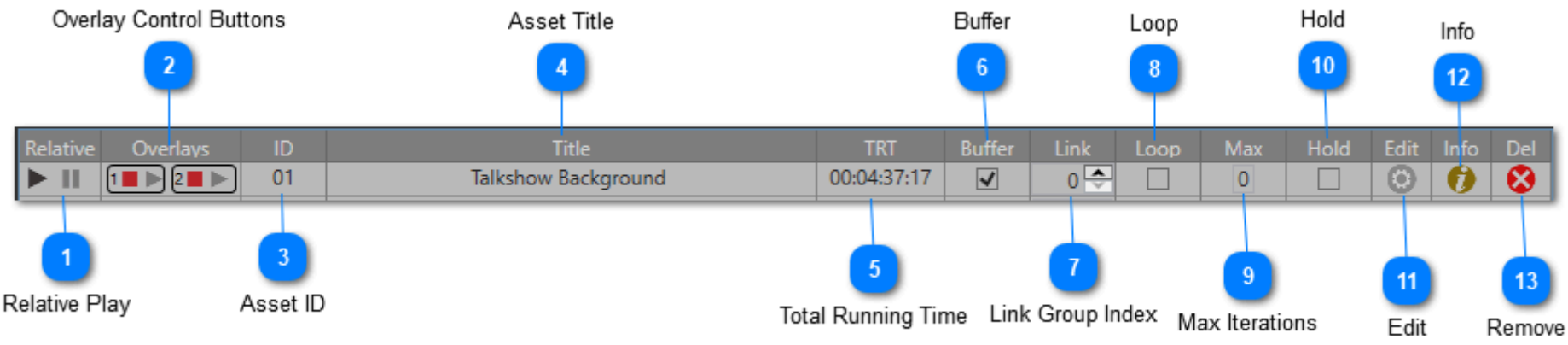
13 **Running Time Label**

In most cases this read only text simply shows total running time of either a video or audio file minus any trim

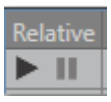
***NOTE: If this asset is a video or audio file that is also playing as an overlay for another asset or is playing as a rela
display in real time its own elapsed time.***

SEE ALSO:
[Data Grid Detail]

Data Grid Detail



Relative Play

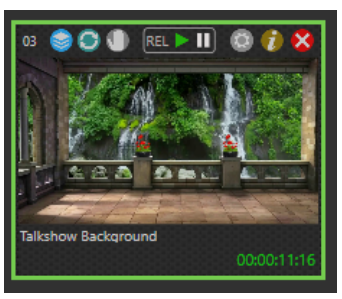


The reason we call this method of play relative, is because when playing an asset this way it will not replace any other assets that may be currently playing, instead they play independent above all other layers. This function is handy for times when you need to randomly play an asset on top of everything. Examples are elements like logo animations, lower thirds or even live news or social media feeds.

Control for these is basic you simply only have the ability to play, pause and stop. Also, when played the timeline has no control of them, this means linking to another asset is not possible. Also, any overlay or background assignments will be ignored. However, most all other properties like looping and holds will still function as well as all transitions, treatments and geometry settings.

The play icon toggles between play and stop. The pause icon toggles between play and pause.

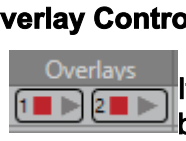
When playing using this method, it's thumb panel's outer border as well as its row in the data table will appear green. Also, its current elapsed running time can be viewed in all locations where the asset's TRT are represented.



Note: These controls are disabled anytime the asset is being played conventionally as well as when sitting in preview. They are also disabled if the primary asset playing in PGM has the same asset assigned to it as one of its overlays.

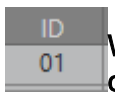
TIP: The recommended way to control relatives is by programing them as separate buttons on a Stream Deck. Refer to Stream Deck Config Panel to lean how.

Overlay Control Buttons



If on one asset we will call the base you choose to use other assets has an overlay. These basic transport controls will appear on the base's thumb panel. One for each of maximum two overlays there is a stop button to the left and a play/pause toggle button on the right. Use these to manually control the overlay. Also, keep in mind that these are only enable while the base asset is playing.

Asset ID

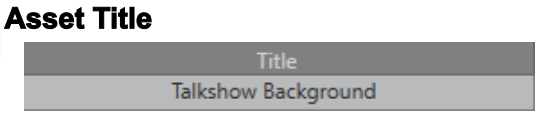


When an asset is added to the playlist a simple two-digit index number is assigned. Other than providing simple reference, it is also the characters you type when selecting an asset using a keyboard. It is also the code used in the writing of some external control commands.

The index number is just a default. You are free edit the ID to any alphanumeric combination you like by double clicking this field and typing in what you like. There are some rules though… You can only use letters A to Z and number 0 to 9. No special characters or punctuation marks allowed, and there must always be at least two or more characters. When using only numbers, any single digits most have a zero forward of it. It is also recommended that you limit it to no more than three characters. When done typing press the enter key.

TIP: To perform a selection using a keyboard, simply type the same characters in the ID within 3 seconds. Once the last character is typed that clip will be selected and placed into preview. However, if you miss type a character you will need to wait a few seconds for the buffer to clear before trying again.

Asset Title



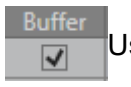
Displays the asset's title. By default, this is simply it's file name. However, you are free to edit the title by double clicking on the cell and then type in a title you prefer.

Total Running Time

This read only text simply shows the total running time of either a video or audio file minus any trim in and out amounts.

NOTE: If this asset is a video or audio file that is also playing as an overlay for another asset or is playing as a relative asset this will display in real time its own elapsed time.

6 **Buffer**



Use this checkbox to set whether the asset is open and loaded into memory or not.

NOTE: Before an asset can be played it must first be loaded into memory. If upon selecting an asset that hasn't already been buffered, the system will open and buffer it at that time. Be aware this process may take a few moments before the asset can be played.

On the flip side, you should also pay close to attention to how much of your system's memory is available. Do this to ensure that your computer's memory doesn't become to saturated and performance suffers.

7 **Link Group Index**

A link group is a set of assets that when linked to each other will play sequentially back-to-back. The index number is used to set multiple groups apart from one another.

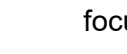
To setup a group change this number to something other than zero and set the same number on all other assets you want to play as a group. It is not required you have all the assets in a group right next to each other in the list, but the sequence always flows from top to bottom, so consider that when determining an assets placement in the list.

You can also instruct a group to continually repeat its sequence by enabling the loop flag on the last item in the group. Now when the last asset completes, the first will begin playing again and the sequence will continue.

You can setup as many groups as you like, just be sure to use a different number to set them apart.

NOTE: Anytime an asset belonging to a group is playing you will not be able manually select any other asset.

8 **Loop**

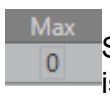


Check to instruct the asset to continually repeat until either the stop button is pressed or if Max Repeat is set to a number greater than zero, it will automatically stop once that number of iterations has been reached.

When enabled, it is assumed you are expecting to perform a seamless loop. To ensure that any, in and out transitions as well as the hold flag will be disabled. However, If you wish to continue using transition effects in between iterations, you will need to first set the repeat delay to at least match the amount of transition time or greater. Once that is done you are free to re-engage the loop feature.

TIP: If you also set the max repeat, you can also go ahead and re-engage the hold feature. Now on the last iteration, the asset will hold at the out trim point instead of stopping.

9 **Max Iterations**



Set this to a number greater than zero if you wish to limit the total number of iterations that will occur when either a single file or a link group is set to loop.

TIP: If you are limiting a linked group, you set this value only on the last asset for that group. The same one that has its loop function enabled.

10 **Hold**

Check this to instruct the asset to pause and remain visible once play reaches the out trim point. To clear and allow the asset to transition out, simply press the stop button.

11 **Edit**

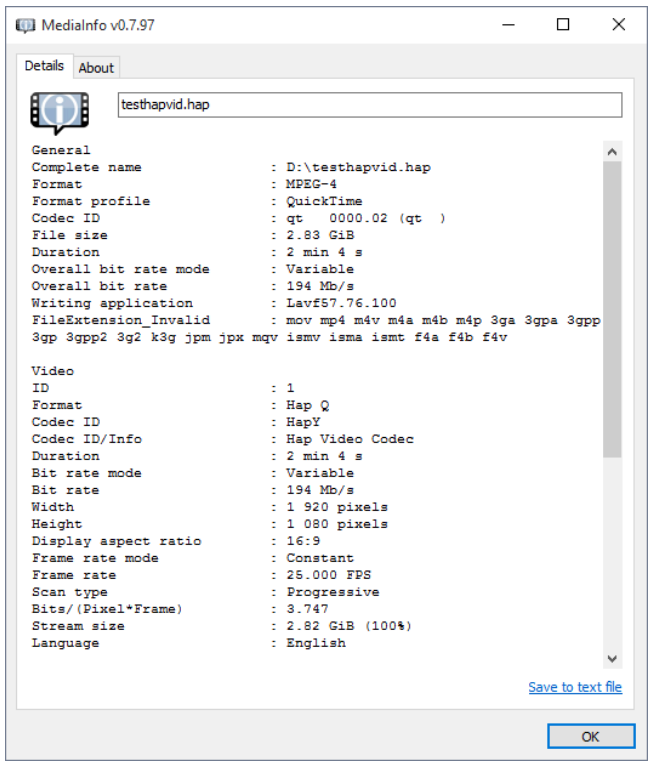

Normally this icon is gray but anytime the asset has edit focus the icon becomes blue. When an asset has edit focus its thumbnail image will appear in the preview monitor, and you are free to make property adjustments using controls found in the assets settings area.

By default, any asset selected to be placed in preview will automatically assume edit focus and will remain even after it is taken to program. Although, if a different asset is taken to preview while the previous one is still playing in program, the newly selected asset will assume edit focus.

Now if you want to give focus back to the one in program simply click anywhere on its thumb panel, but It is extremely important to remember that in order to safely select any other, including the one in preview, you must only click on this icon/button. Otherwise, if you inadvertently click anywhere else on the asset's thumb panel and it is the one currently in preview, you will end up deselecting it and removing it from the preview slot. Also, If you, do it to any other, then that asset will be taken to preview replacing the one that was already there.

12 **Info**


Click on this button to display detailed information of asset's file properties.



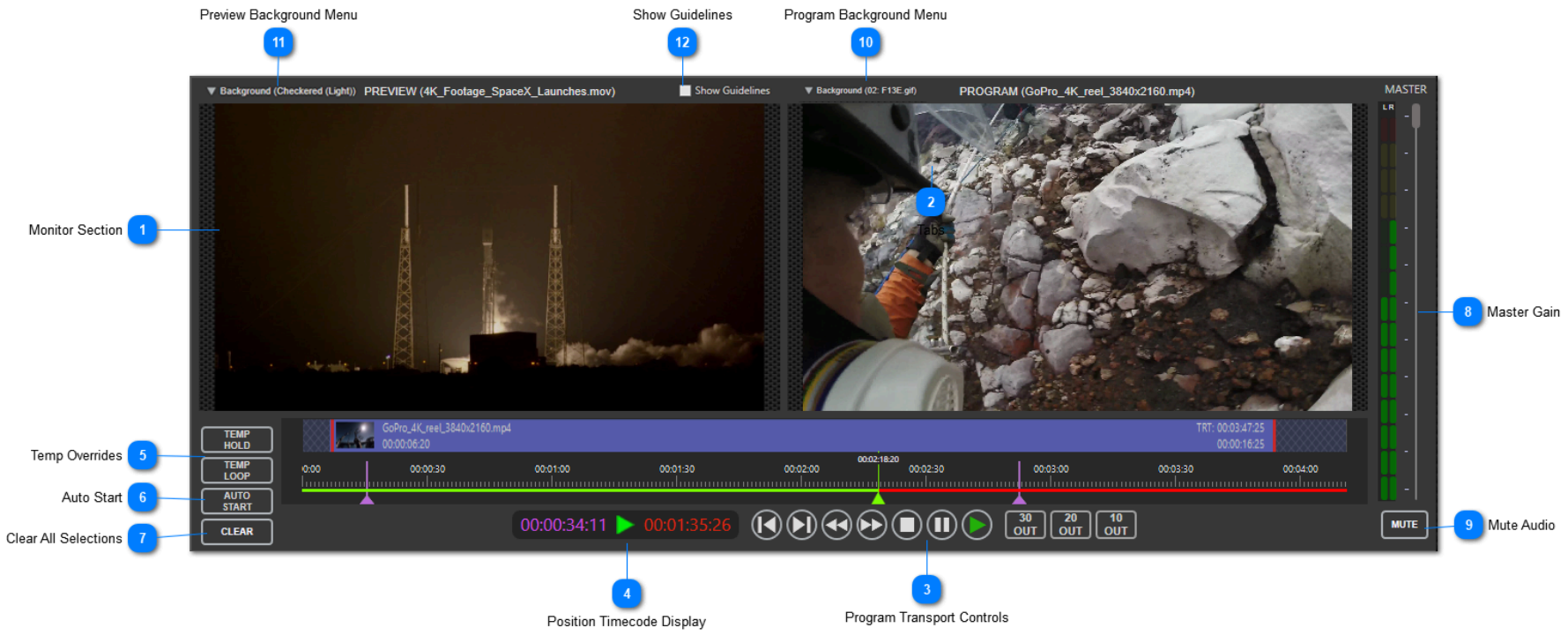
13 **Remove**

Click to permanently remove asset from the playlist.

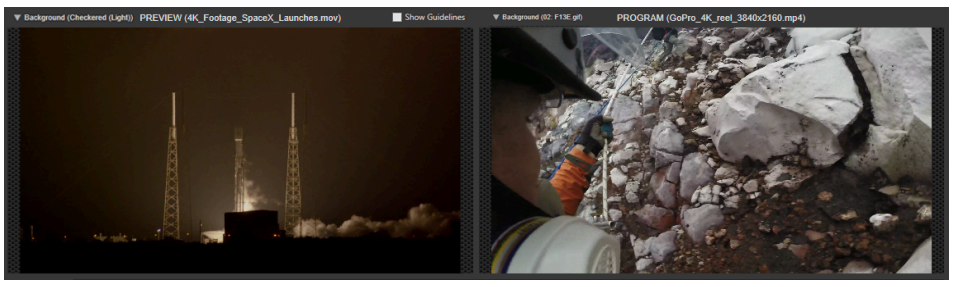
SEE ALSO:

Thumb Panel Detail

Monitoring & Transport Area



1 Monitor Section

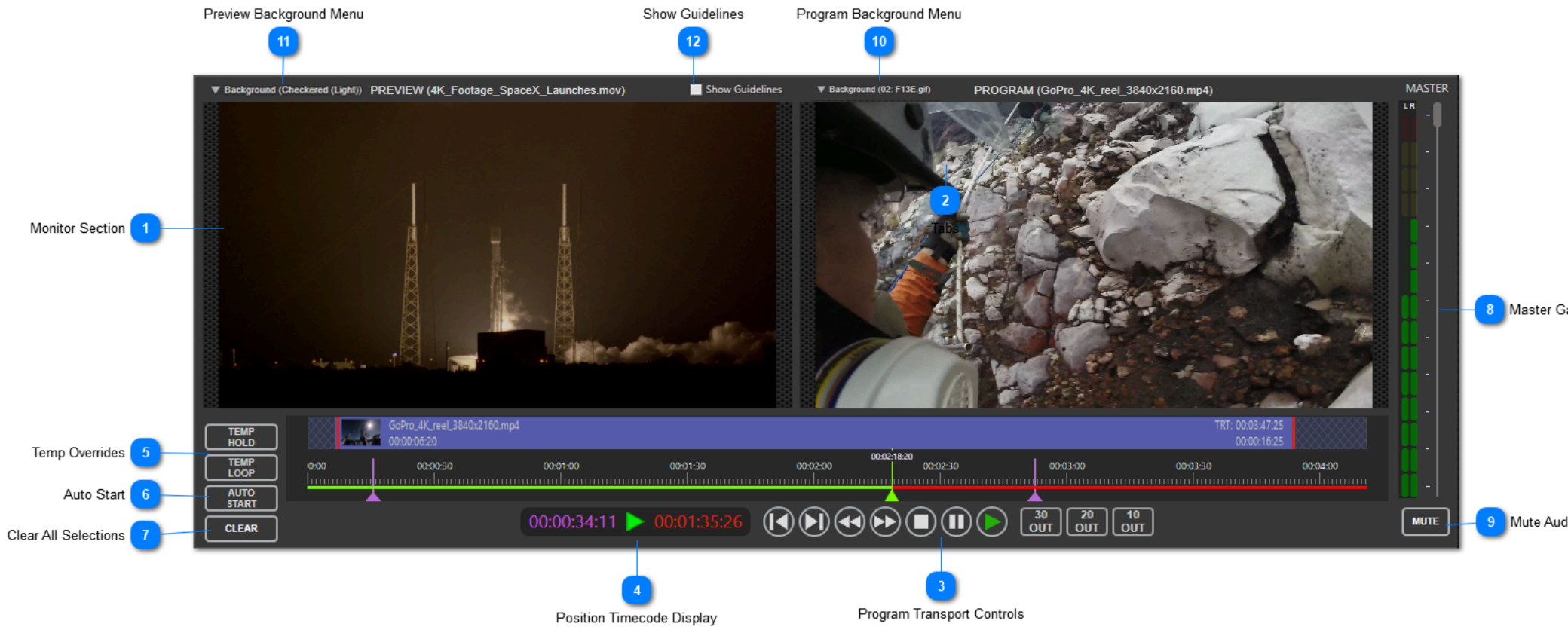


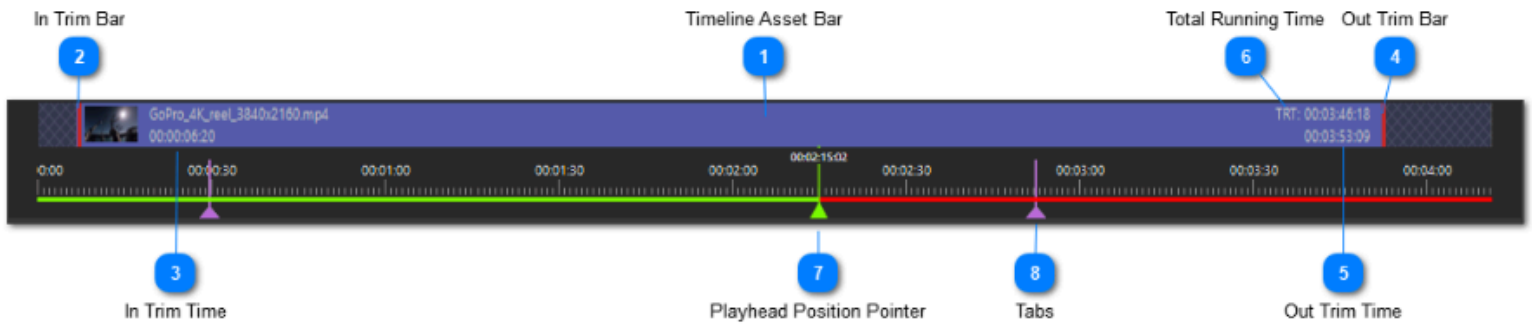
Preview:
When an asset's thumbnail control or its row in the data grid are clicked, the asset will be placed into the preview slot and wait to be taken to program. The asset's static thumbnail image will appear in the preview monitor on the left. This provides you with a visual representation as to which asset is now standing by.

For most assets, only a static image appears, and video files can not be played exclusively in preview. However, you can still take advantage of the image to aid in adjustment of properties like geometry, effect shaders and in the testing of transition effects.
Now if the asset is a source from video capture or NDI, its live source monitor view will appear in the preview.

Program:
The program view is simply a live clone of the actual program out, showing exactly what is occurring on screen.

The actual monitor surface will appear as a black rectangle floating on a static background. Both surfaces shape themselves to reflect the aspect ratio of your configured pixel space. They also automatically resize to fit within their respective boundaries when window size and/or splitter panels are repositioned.



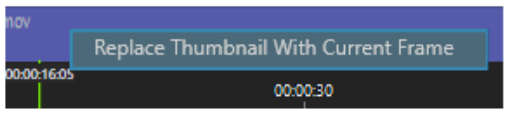


1 Timeline Asset Bar

This graphicly represents the assets entire duration span. The area in solid blue refers to the portion that is played. Trimming either the in or out point reduces the solid area. Trimmed space is shown as a dimmed crosshatch.

Sometimes you may feel the default thumbnail image extracted from a video file is not satisfactory. If that's the case, you can choose instead to replace it with another frame within the file.

To replace simply scrub to the frame you wish to use and then right click anywhere inside the asset bar and click this option.

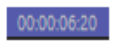


NOTE: The captured image is stored in the "Thumbnails" folder located in the app's root folder. (e.g., C:\IEW Solutions\Legion II\Thumbnails) and will remain there indefinitely. So, it is good practice to flush that folder after an event fully concludes or when these images are just no longer needed. Refer to Global Properties and see 'Clear Captured Thumbnail Images' to learn how.

2 In Trim Bar

Drag to a time point within the file where you want play to begin.

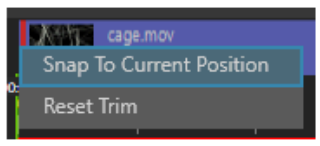
3 In Trim Time



Displays the relative time that has been trimmed off the front of the file and the actual point in the file where play will begin.

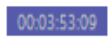
4 Out Trim Bar

Drag to a time point within the file where you to end play.



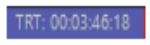
NOTE: Both the IN and OUT trim bars includes a right click menu that you can use to either snap the respective trim to the current play-head position or reset trim points back to either zero (IN) or native duration (OUT).

5 Out Trim Time



Display the time point within the file's overall duration that play will end.

6 Total Running Time



Displays assets running time after both in and out trim amounts have been subtracted from files original length.

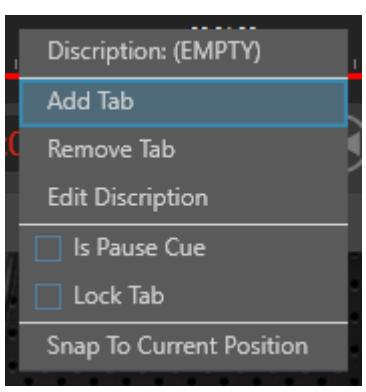
7 Playhead Position Pointer

The control tracks left to right in step with the playhead position. Timecode displayed at the top reflects the exact position in time. Click and drag it to manually set the current playhead position. You can also move it more precisely one frame at a time by hovering your mouse over the pointer and using your mouse wheel.

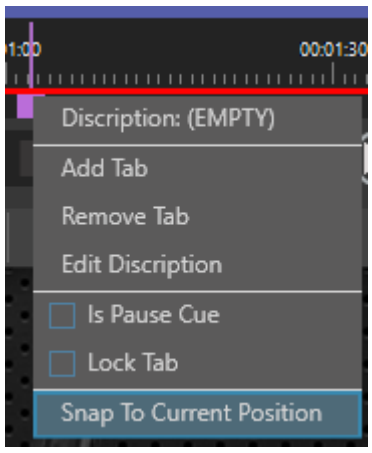
2 Tabs

Tabs are used to mark significant cue points within the asset play. These cue points can aid in countdown callouts for stage direction. (Visualization is described below in "Position Timecode Display".) They can also make it easy to navigate quickly to a specific timepoint with the Next & Previous Tab transport buttons.

Any number of tabs can be placed along the timeline. To add, simply point your mouse cursor over the timeline at approximately where you would like it to sit, then right click and a popup menu will appear.

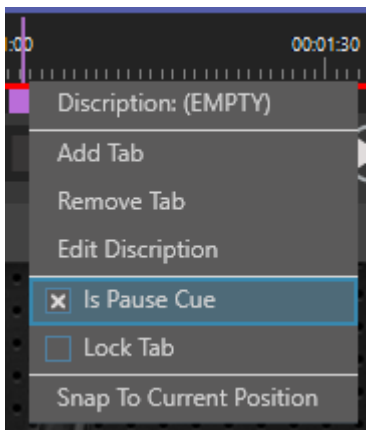


Now select "Add Tab". Once added, you can fine tune their position by click and drag them left or right or by hovering you mouse over the pointer and using the mouse wheel.



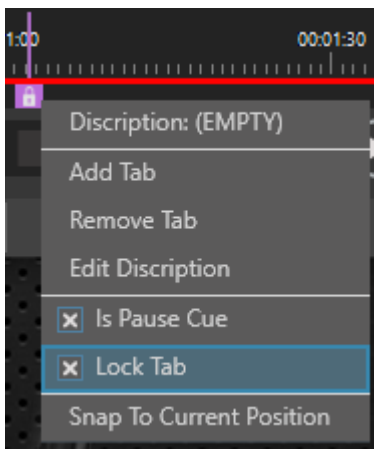
Another way is to move the playhead to the exact position you want and then right click on the tab. This time select “Snap To Current Position”.

A new feature is to use the tab as an automatic pause command.

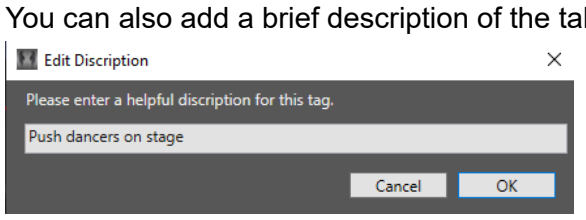


Now when the play head reaches this point, the asset will pause. To resume you can press the spacebar or click on the transport pause button.

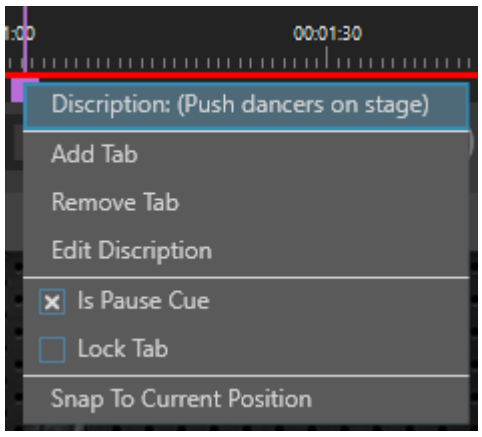
To ensure that the tab cannot be inadvertently moved or edited after it has been placed, check the Lock Tab option.



You can also add a brief description of the tabs purpose by again calling up the menu and click “Edit Description”.

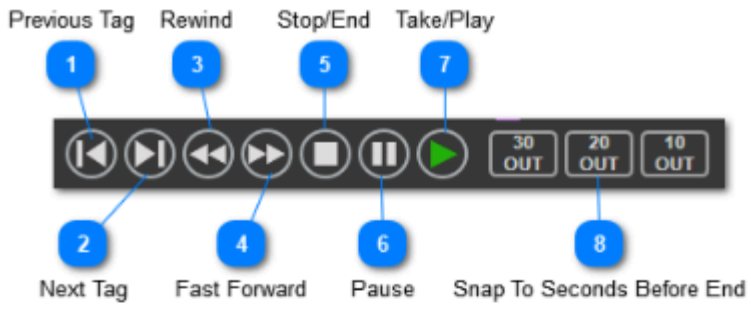


Simply type in what you need and click OK.



So now, if you need to remind yourself of what the tab represents, just right click on the tab and you will see your description.

3 Program Transport Controls



1 Previous Tag

Snap current position back to, if exisits, a previous tag. Otherwise, returns to the IN trim point

2 Next Tag

Snap current position forward to, if exisits, the next tag. Otherwise, snaps to the OUT trim point

3 Rewind

While pressed, current position will move backwards at a rapid pace.

4 Fast Forward

While pressed position will move forward at a faster than normal speed.

5 Stop/End

Stop play and return current position back to in trim point.

6 Pause

Toggles current state between pause and play.

7 Take/Play

Takes asset sitting in preview and pushes it to program then begins playing. You still use this button even when another asset is currently playing. When you do so, the two asset will transition between each other employing which ever effect was configured on each.

8 Snap To Seconds Before End

Snap current position to 30, 20 or 10 seconds before the out trim point.

4 Position Timecode Display

For most situations this displays both elapsed time on the left and a count down time on the right. Both reflect the current playhead position minus any in and out timings So even if you trim off 5 seconds from the start, the elapsed time will always begin at zero and countdown will show zero at the out trim point no matter how much is trimmed off the end.

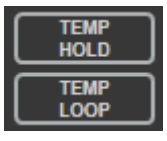
The countdown time on the right will always remain red in color. The left-hand display will generally appear green. However, if you have added any tags to the timeline the display color will change to purple. Also, when there are tags on the timeline, displayed time will be individual countdowns to the next tag position. Once the playhead has move past a tag it will begin counting to the next tag, and so on. If no more tags remain it will simply countdown to the end.

In between the time displays is an icon that indicates the current transport state:

In the case where you are looping an individual asset or a linked group. This icon appears:

Inside is the number of iterations that has occurred since repeat play began.

5 Temp Overrides



Use these to provide a onetime temporary hold at out point or continually repeat any video asset. The buttons remain disable until a video asset is finally taken to program. After the asset is playing you are free to engage either feature.

Temp Hold:
When pressed, the asset will continue but will pause and remain visible at its out trim point. The hold will remain until the stop button is pressed. Once stop is pressed, the asset will transition out and return to its starting point.

Temp Loop:
When pressed the asset will continue to its out trim point but upon reaching it, the playhead will instantly return to the start point and continuing to play. The asset will keep repeating until the stop button is pressed.

NOTE: During to loops all transition effect are canceled to keep the repeat as seamless as possible. However, when stopped the asset's out transition effect will occur.

For both buttons, once the asset has been stopped, these buttons will become disabled again.

6 **Auto Start**

When checked, upon selecting an asset, instead of brining it preview, the asset will automatically be taken directly to program and begin playing.

7 **Clear All Selections**

This will clear out all asset selections for preview as well as stop and clear any assets currently running in program.

8 **Master Gain**

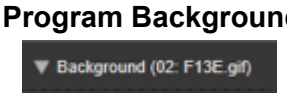
The master audio fader overrides the audio volume of all currently playing assets. This control cannot boost an individual asset's level, it can only temporarily reduce it.

WARNING: Adjustments made here are not saved and should not be used when unifying levels between assets. Refer to Audio Output to learn how to properly save an asset's audio gain.

9 **Mute Audio**

When engaged all audio sounds coming from any running assets will be muted. This includes overlays.

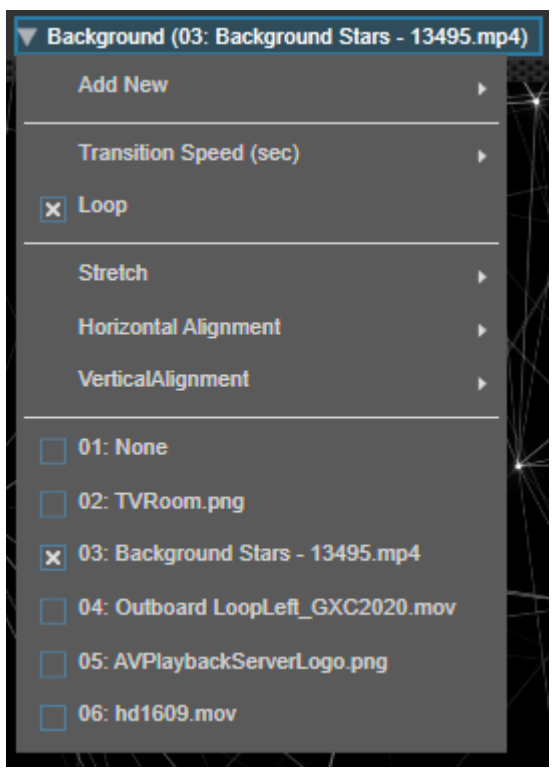
10 **Program Background Menu**



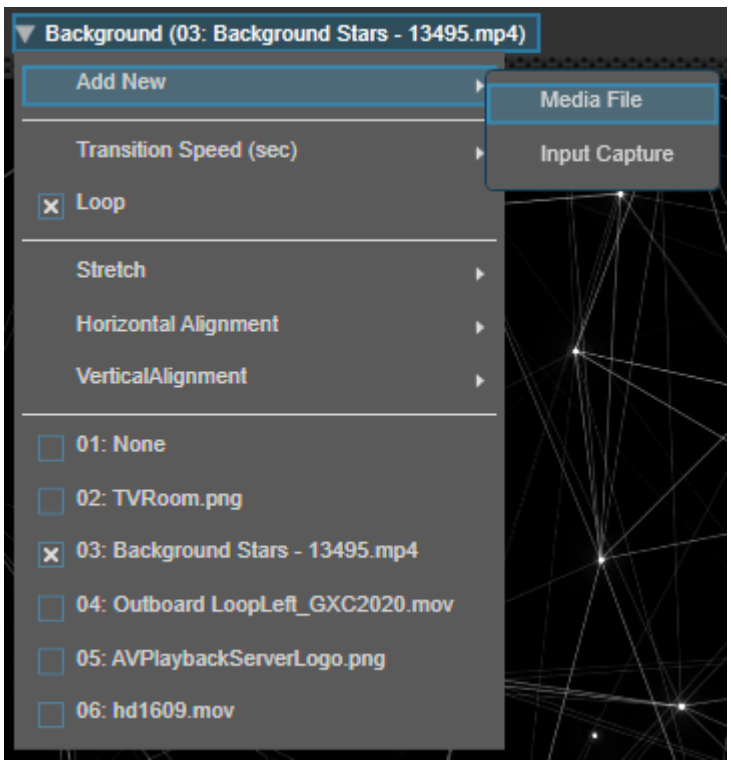
There is also the overall background layer you can take advantage of. This live background area encompasses the entire pixel space. You are free to use this space to display either still images, videos, or even live input capture.

You can use them globally in that it will always appear even when other playlist assets are being played or not. You can even assign a specific background to a primary asset and anytime they are played, the background will automatically appear. Refer to Overlays & Background and learn how to assign one to an asset.

This menu provides access to all aspects of setup and control of these program backgrounds.



Add New: Choose from its sub menu the type of element you want to add to the list of available backgrounds. Choose Media Files for videos, images, Giff animations, etc. or Input Capture from compatible capture devices or NDI.

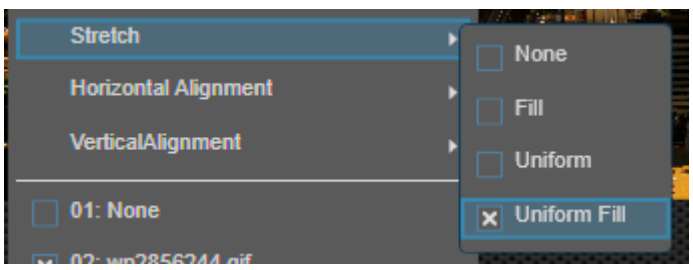


Transition Speed: Type the desired duration (seconds) at which the cross fade between background selections occurs.

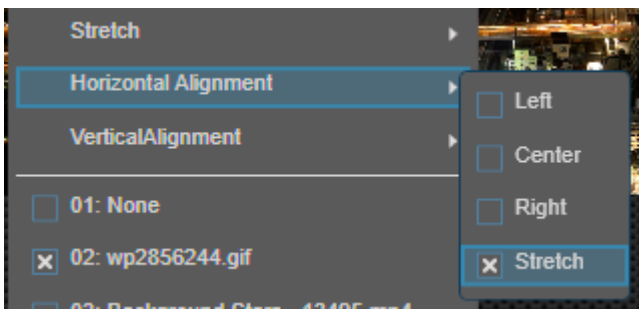
NOTE: This value for the most part is global, except in situations where a background has been assigned to appear with a single playlist asset, and that asset's own transition speed is faster. This value will get overridden to ensure the background will always appear at either the exact same time, as in the case of a Cut transition or a bit sooner when a timed transition effect is used.

Loop: In the case of an animation or video file, when checked the file infinitely repeat itself while visible.

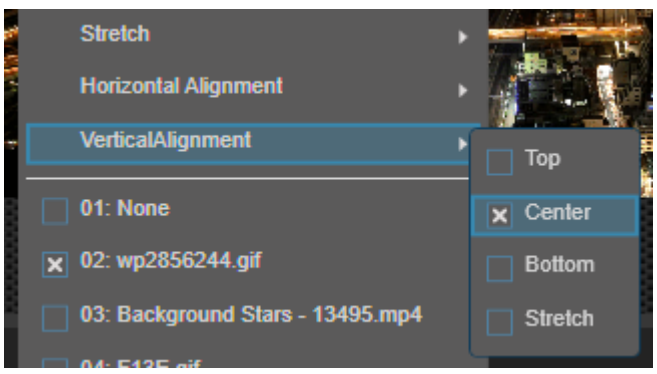
Stretch: Sets how an asset should be stretched to fill the destination rectangle. A value of Fill will cause your image to stretch to completely fill the output area. When the output area and the asset have different aspect ratios, the asset is distorted by this stretching. To make an asset preserve the aspect ratio of the image, set this property to Uniform (default) or Uniform Fill.



Horizontal Alignment: Sets the horizontal alignment characteristics applied to this asset when it is composed within the overall program space.

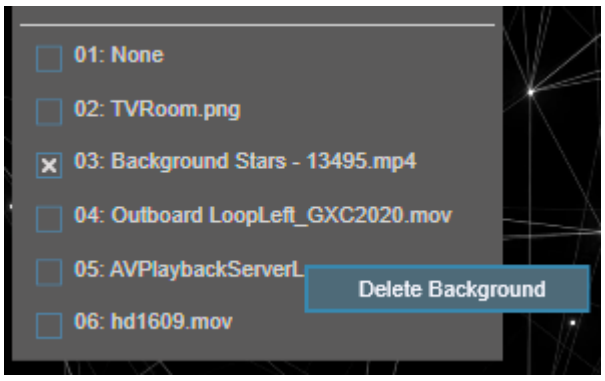


Vertical Alignment: Sets the vertical alignment characteristics applied to this asset when it is composed within the overall program space.



The remainder of the menu contains the complete list of all added background elements. Simply select one and that background will immediately transition into to view. Make note the list will always begin with "None". Clicking this returns the background to black.

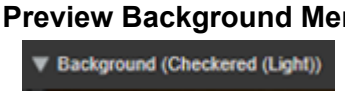
Deleting Backgrounds: To permanently remove an element from the list simply right click on the one you wish to remove and then clck on Delete Background

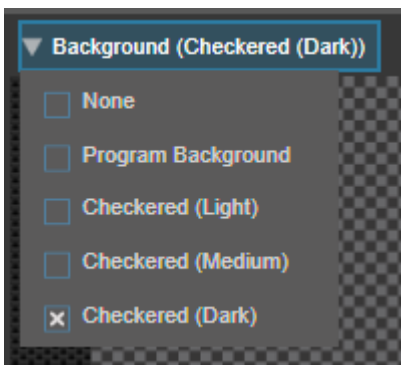


You will be asked if you are sure, if so, click Yes and it will be deleted from the system.

TIP: The selecting of backgrounds can also be performed by programing them directly into the Stream Deck Config Panel and call them up with the push of a button or by way of keyboard Shortkeys.

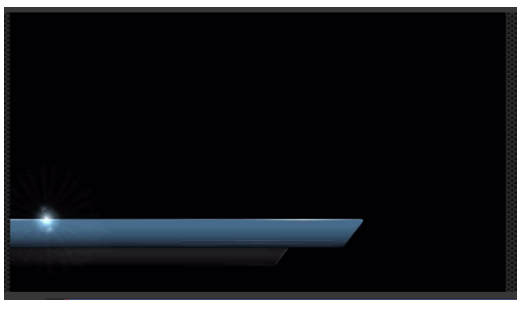
11 Preview Background Menu

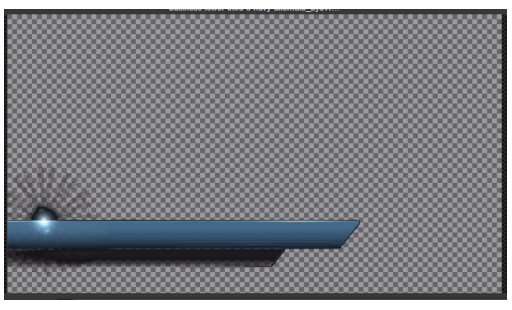




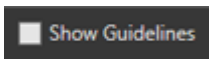
Program Background: If it helps, you can choose to also display the current program background in preview. When this option is selected, any changes to the default program background will be reflected here as well.

Checkered(*'shade'*): When tweaking alpha key values of transparent assets such as lower thirds or when setting drop shadow values, doing this on a black background leaves you guessing. So as an aid while the asset is in preview you can select a checkered tablecloth type background to help highlight transparent areas.

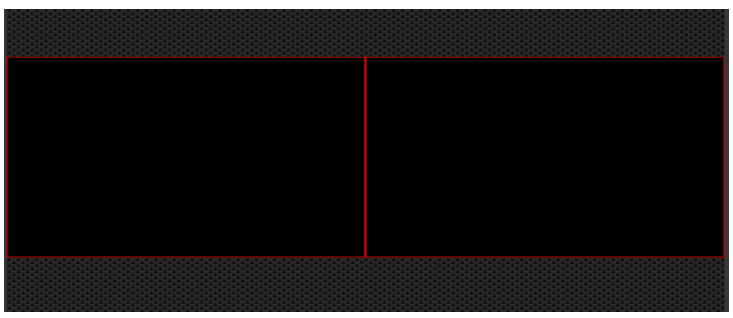




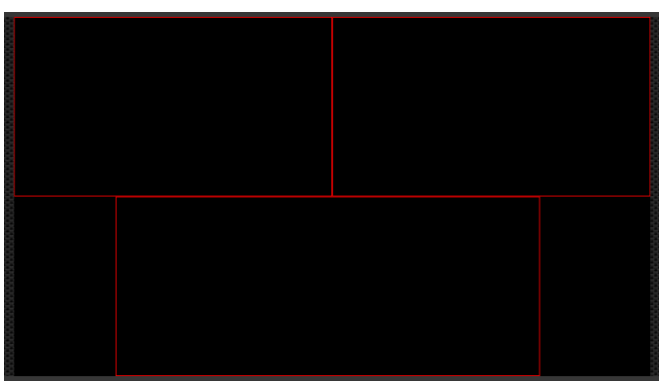
12 Show Guidelines



This feature is only available when output pixel spaces has been configured to span across multiple outputs. When enabled, a simple red outline will display in the preview space only and will provide accurate outlining of boundaries for each output.



Simple two output span. (3840x1080)



More unique 3 output configuration. (Top: 3840 x 1080 | Bottom: 2560x1080 centered w/ 640 px negative space on either side)

Asset Settings Area

This area contains a series of drop-down panels each dedicated to a set of properties or options for the asset that currently has edit focus.

First need to understand edit focus modes:

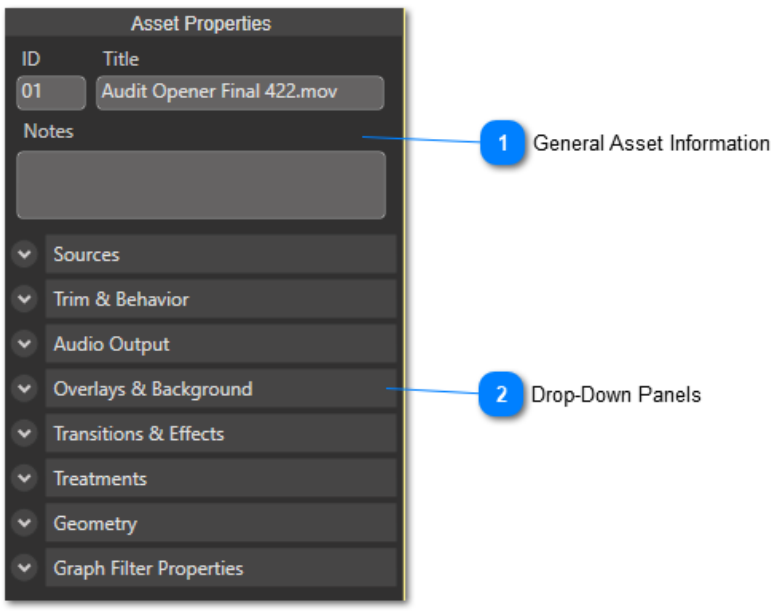
Edit focus is achieved in several ways and to help indicate which asset currently has focus, there is a colored outline that surrounds the whole property area and will change according to the selection status of an asset.

1) When an asset is first placed into the preview position, that asset will grab edit focus. This will be indicated by a yellow outline.

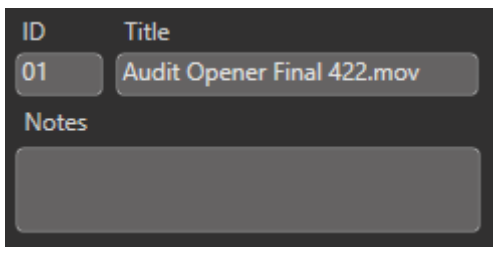
2) Once the asset has been taken to program and as long as no other asset is placed in preview, the surround color will become red and edit focus will remain on that asset.

3) Any other asset can obtain focus by clicking on the Edit button found on both each of the thumbnail controls and each asset row of the data grid. If the asset is not in either preview or program the outline will be blue.

NOTE: If you want focus to return to current program asset, simply click on that asset thumb or data grid row.



1 General Asset Information



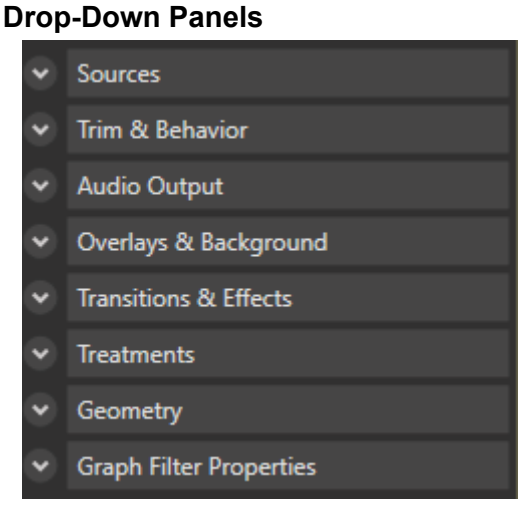
This area always remains visible and will populate anytime an asset has edit focus.

ID:
When an asset is added to the playlist a simple two-digit index number is assigned. you type when selecting an asset using a keyboard. It is also the code used in the w The index number is just a default. You are free edit the ID to any alphanumeric com you like. There are some rules though… You can only use letters A to Z and number and there must always be at least two or more characters. When using only numbers recommended that you limit it to no more than three characters. When done typing p TIP: To perform a selection using a keyboard, simply type the same characters in the will be selected and placed into preview. However, if you miss type a character you v trying again.

Title:
Displays the asset's title. By default, this is simply it's file name. However, you are fr

Notes:
If you choose, you can save any kind of user notes by typing them here.

2 Drop-Down Panels



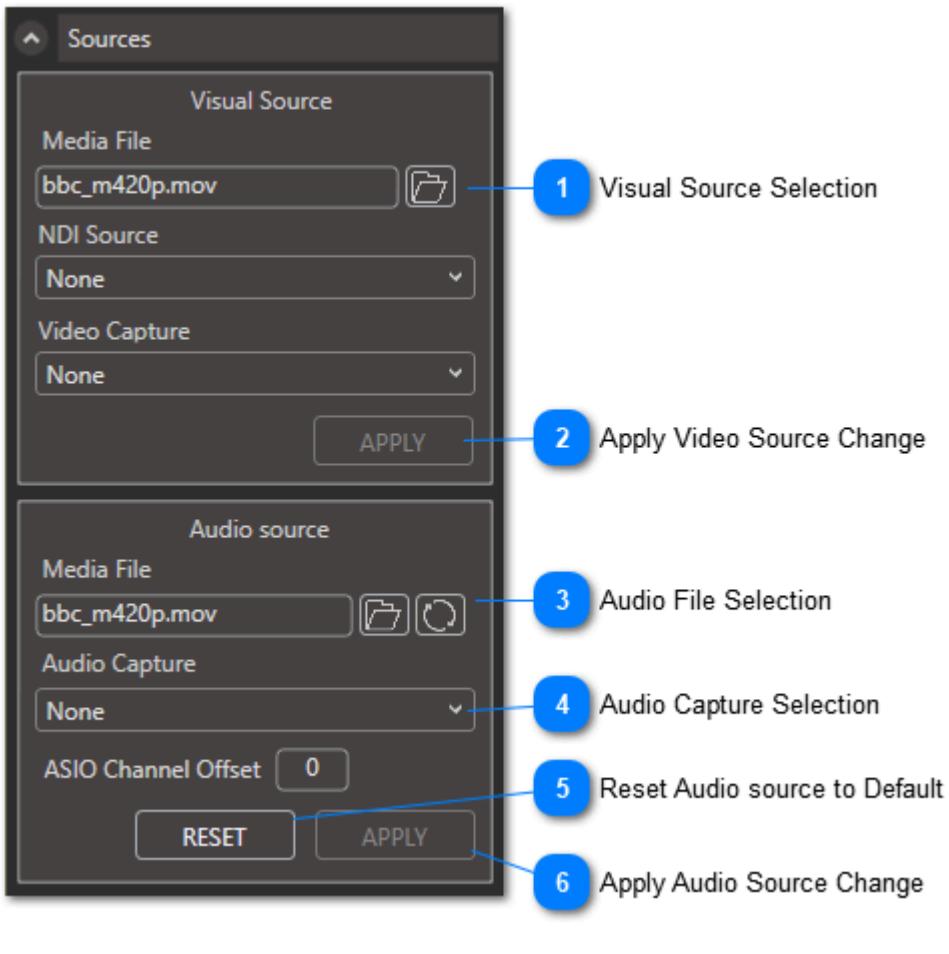
Click on a panel's title bar and it will be expanded exposing those particular properti

NOTE: Anytime there are no selected assets, all panels will collapse.

Each are described in great detail. Choose from the links below to review.

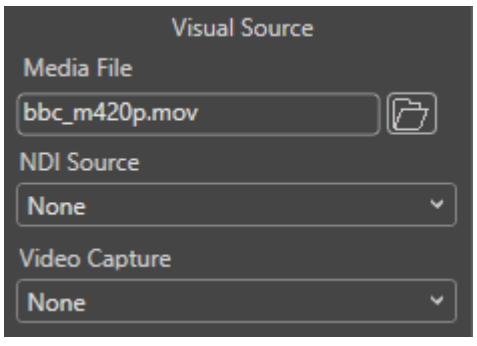
Sources

An exclusive feature of Legion is its ability to mix and match visual and audio sources of a single asset. You can think of an playlist asset more like a preset where multiple sources can be combined and played as one.



---

1 Visual Source Selection



In the section you find selectors for each of the three supported visual source types. An asset can only contain one visual source. Selecting from any one of these three types will remove any selection from the other two, this is signified by the word ‘None’ appearing in it place.

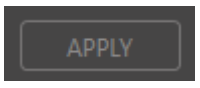
Media File:
If the asset’s visual is video or still image this field displays its file name. If for some reason you need to replace it but want to maintain other properties such as its geometry, you can click on the browse button and select a new one.

NDI Source:
If employing NDI as the visual source this drop-down list control will show that source’s title. You can change the feed to another by clicking and then choosing from the list of all other available NDI sources.

Video Capture:
Just like the NDI selector this list contains any available video capture devices. Same rules apply.

NOTE: A change to a visual source will not alter the assets current title or ID code but will change its default thumbnail image.

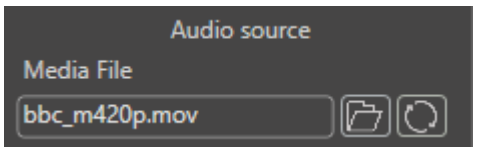
2 Apply Video Source Change



Changes above will not go into effect until you apply them using this button.

NOTE: Making a change like this will force stop the playing of any assets currently in program.

3 Audio File Selection



Like in the visual source section here we can choose from two different source types.

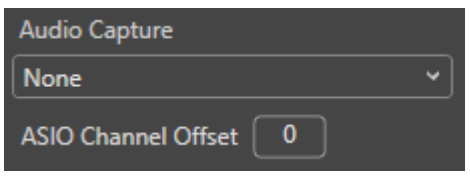
Media File:
In many cases the audio source would be the embedded audio tracks of a video file. If the visual source is a video file and no other change has been made, this will display the same file name as in the visual section. If you desire, you can browse for another audio type file and use it instead. You can even select another video file and use the audio tracks from it.

 **Loop Button:**

In cases where the audio file is shorter in running time that of the visual source or the visual is simply a still image, you can instruct the audio file to continually loop until the whole asset is stopped. For this feature to be used, you need to enable it before applying changes.

NOTE: When using a separate audio file other than the actual embedded tracks of the visual source, that file should not contain more than two audio channels.

4 **Audio Capture Selection**



Audio Capture:
Provides a list of all available audio capture sources. Like in the visual section, choosing a capture input will replace any audio media file.

TIP: In cases where the video source is a live camera feed, and you may want to select a capture source such as a microphone. That way, it will become active anytime the visual asset is taken to program.

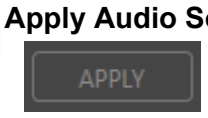
ASIO Channel Offset:
Unlike an audio file, you can select an ASIO capture device that may support numinous input channels. However, any source applied here can only utilize a single pair of inputs. So, if let's say your source is attached to inputs 3 & 4, you will need to instruct the system to offset the connection point by the number of channels between 1 and the first number of your source. In this case the number would be 2.

This property has no effect on conventional mono or stereo sources.

5 **Reset Audio source to Default**

Pressing this button will reset the source assignment back to asset's default. If the visual source is a video file or NDI stream the reset will return audio output to their embedded audio tracks. Other wise all references will show 'None' and audio will be mute.

6 **Apply Audio Source Change**

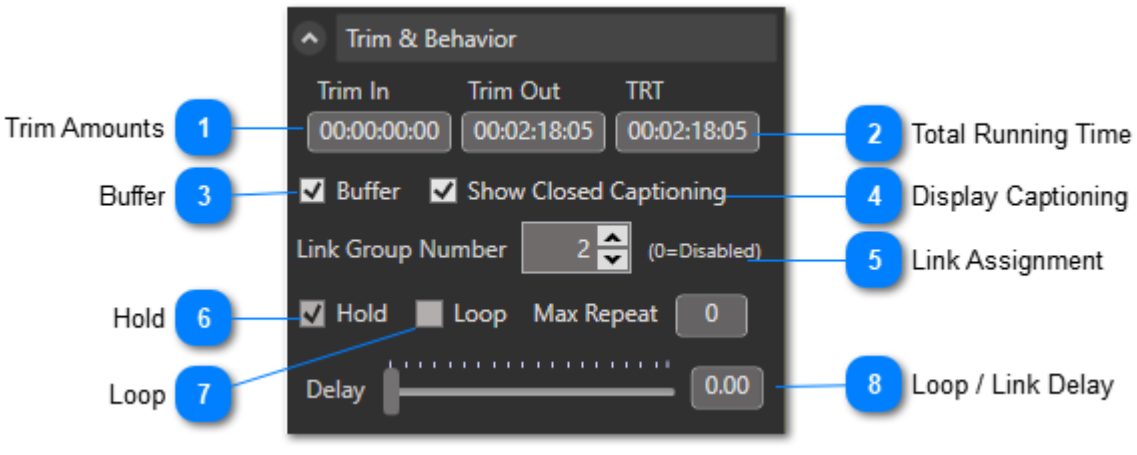


Changes above will not go into effect until you apply them using this button.

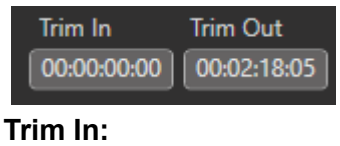
NOTE: Making a change like this require stopping any assets currently playing in program.

SEE ALSO:
Overlays
Trim & Behavior
Transitions
Audio Output
Geometry
Graph Filter Properties

Trim & Behavior



1 **Trim Amounts**

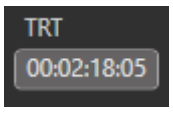


Trim In:
Displays the relative time that has been trimmed off the front of the file and the actual point in the file where play will begin.

Trim Out:
Display the time point within the file's overall duration that play will end.

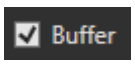
Both will allow you to type in an exact time code point. *(Hours:Minutes:Seconds;Frames)*
When done hit the enter key.

2 **Total Running Time**



This read only text simply shows the total running time of either a video or audio file minus any trim in and out amounts.

3 **Buffer**

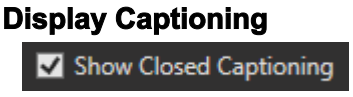


Use this checkbox to set whether the asset is open and loaded into memory or not.

NOTE: Before an asset can be played it must first be loaded into memory. If upon selecting an asset that hasn't already been buffered, the system will open and buffer it at that time. Be aware this process may take a few moments before the asset can be played.

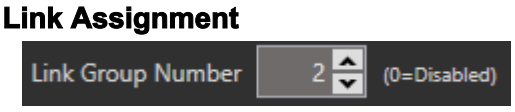
On the flip side, you should also pay close to attention to how much of your system's memory is available. Do this to ensure that your computer's memory doesn't become to saturated and performance suffers.

4 **Display Captioning**



Allows you choose whether the display any associated SRT based caption file if found.

5 **Link Assignment**



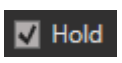
A link group is a set of assets that when linked to each other will play sequentially back-to-back. The index number is used to set multiple groups apart from one another.
To setup a group change this number to something other than zero and set the same number on all other assets you want to play as a group. It is not required you have all the assets in a group right next to each other in the list, but the sequence always flows from top to bottom, so consider that when determining an assets placement in the list.

You can also instruct a group to continually repeat its sequence by enabling the loop flag on the last item in the group. Now when the last asset completes, the first will begin playing again and the sequence will continue.

You can setup as many groups as you like, just be sure to use a different number to set them apart.

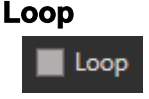
NOTE: Anytime an asset belonging to a group is playing you will not be able manually select any other asset.

6 **Hold**



Check this to instruct the asset to pause and remain visible once play reaches the out trim point. To clear and allow the asset to transition out, simply press the stop button.

7 **Loop**



Check to instruct the asset to continually repeat until either the stop button is pressed or if Max Repeat is set to a number greater than zero, it will automatically stop once that number of iterations has been reached.

When enabled, it is assumed you are expecting to perform a seamless loop. To ensure that any, in and out transitions as well as the hold flag will be disabled. However, If you wish to continue using transition effects in between iterations, you will need to first set the repeat delay to at least match the amount of transition time or greater. Once that is done you are free to re-engage the loop feature.

TIP: If you also set the max repeat, you can also go ahead and re-engage the hold feature. Now on the last iteration, the asset will hold at the out trim point instead of stopping.

8 **Loop / Link Delay**

This adjust how much pause delay time should occur between loop iteration or transitions between linked group assets.

SEE ALSO:

Sources
Overlays
Transitions
Audio Output
Geometry
Graph Filter Properties

Audio Output

In global settings we setup a default audio output device strategy. This default is used by all new assets when they are first added to the playlist. As an alternative, once the asset is in the playlist each are capable of being reassigned to any other available output independent from others. This can be handy when you need more outside mix control and/or routing of multitrack assets or with perhaps separate overlays that may inject their own sound effects.

In most situations your needs can be filled with a typical stereo processor like the integrated sound chip found in most computers. But in cases where assets have been incorporated with many more audio tracks then just a stereo pair, handling those require specialized renders and hardware devices. An industry standard that is used often is ASIO (Audio Stream Input/Output). Legion II supports either scenario.

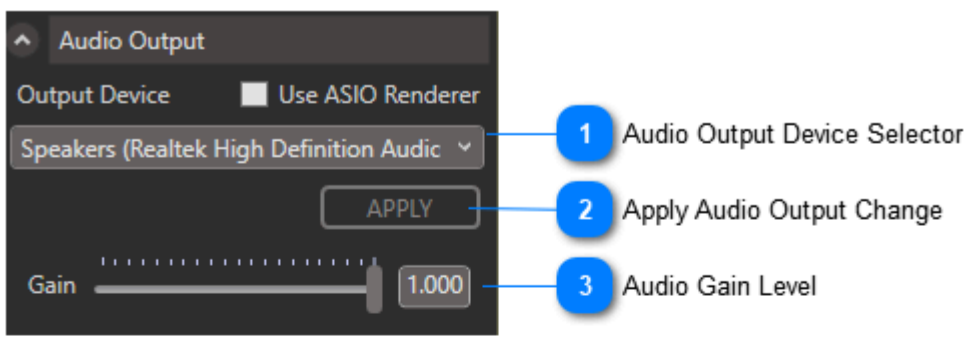
Installed with Legion is the MBSE Multichannel ASIO Renderer which is necessary to compile multiple audio streams into a single ASIO data stream. However, this is a third-party driver that requires a purchase of its own license. See: How to install or transfer the MBSE asio renderer license

NOTE: If instead of using an ASIO compatible device like a Tascam or PreSonus, you could take advantage of Blackmagic's Decklink cards ability to have multiple audio tracks embedded into a single SDI output and de-embed them down stream. Decklink drivers include a simple WDM speaker driver which appears in the same list as the other standard stereo outputs.

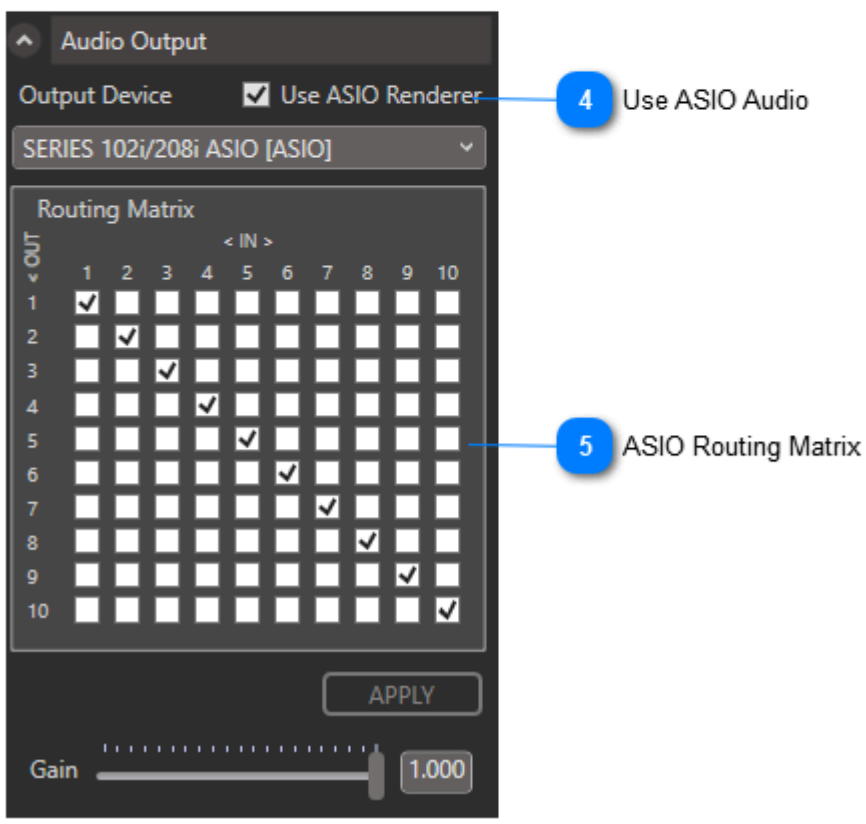
If choosing this approach, you would leave the 'Use ASIO Renderer' option unchecked. Also, unlike using the ASIO render, this method does not provide any custom channel routing, instead assignments will just be one to one.

Most assets just require a standard stereo output but when the ASIO renderer is employed, the panel expands reveal additional controls.

Typical stereo output



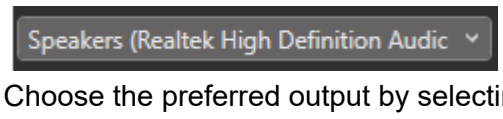
When the use of ASIO is employed



NOTE: If instead of using an external ASIO compatible device like a Tascam or PreSonus, you could take advantage of Blackmagic's Decklink cards ability to have multible audio tracks embedded into a single SDI output and de-embed them down stream. Decklink drivers include a simple WDM speaker driver which appears along with other stanard output . However, unlike ASIO this format does not provide any channel routing capability, instead asignments will just be one to one and this panel will just look like the simple layout shown above.

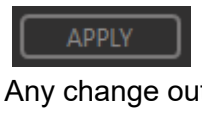
---

1 Audio Output Device Selector



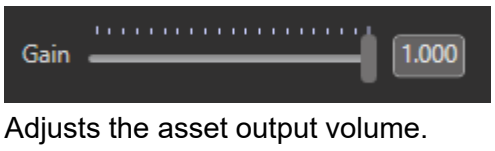
Choose the preferred output by selecting from this list that will show all stereo only output devices currently available on your system. When 'Use ASIO Audio' is checked, this will repopulate to provide only a list of ASIO compatible devices.

2 Apply Audio Output Change



Any change output assignment will not go into effect until you apply them using this button.

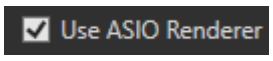
3 Audio Gain Level



Adjusts the asset output volume.

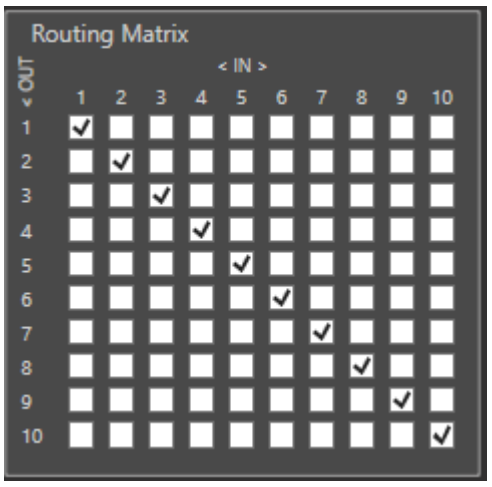
NOTE: When balancing output levels between other assets, this is the control you need to use for the adjustment to be saved. Do not use the app's master gain control for this purpose. Adjustments made there are only temporary.

4 **Use ASIO Audio**



Check this if you wish to employ the use of ASIO multichannel devices.

5 **ASIO Routing Matrix**



Once the ASIO drivers have been applied and the asset is rebuilt this matrix grid of checkboxes will automatically arrange itself to reflect the total number tracks being streamed from the file (In - Columns) and the number of available device output channels (Out - Rows).

Choose routing by clicking on the checkbox that lines up the input column with the desired output row. You can route any input one or all output channels. So, if all you want is the input to be connected to one output, be sure to uncheck all other boxes within the column.

You must click on the 'Apply' button to implement any change to routing.

SEE ALSO:

Sources
Overlays
Trim & Behavior
Transitions
Geometry
Graph Filter Properties

Overlays & Background

An overlay is simply one playlist asset playing atop another at the same time. Legion allows you to pre-assign up to two other assets that can be used over a base asset. These overlaying assets must already be included into the playlist as an entry of their own.

Since an overlay sits over the base asset, generally you would not want the overlay to completely obscure the base layer, that why assets like lower-third graphics are designed with parts being transparent or if the overlay is just a bug it would at need to be reduced in size.

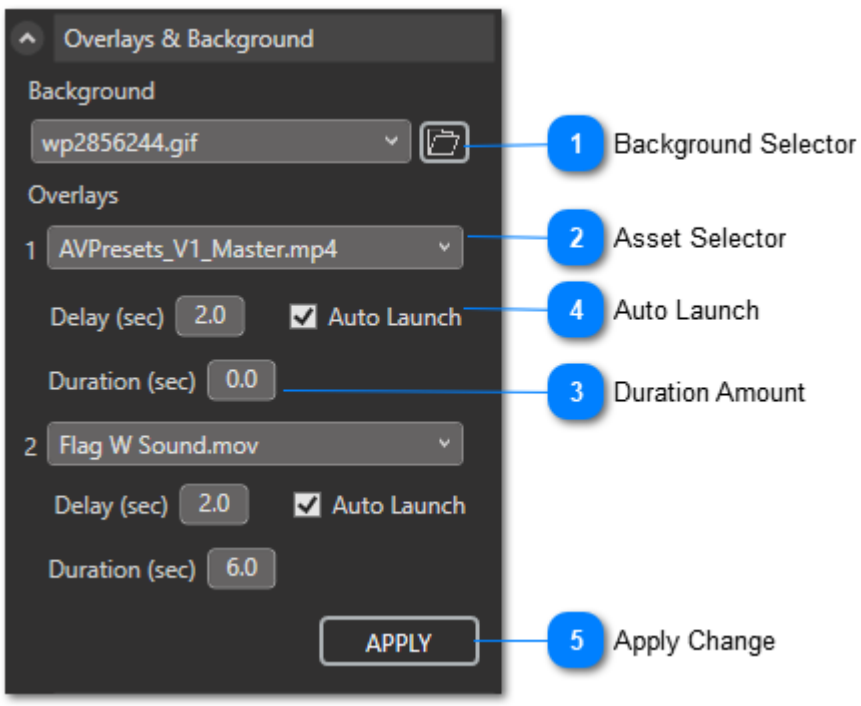
Having the overlay asset included into the playlist on its own allows it to take full advantage of all the features afforded to any other asset. This makes it easy to perform any needed adjustment to properties such as shaders effects, geometry settings, transition effects, time trims, looping, etc.

Once the overlay asset is ready, use following controls on the base asset to setup the assignments.

TIP: Refer to either of thess topics Thumb Panel Detail or Data Grid Detail to see controls that allow you to manually play and overlay.

In the opposite direction we have an additional layer that can be leveraged and that is the background area behind the primary asset. If the primary as well as all overlay assets are reduced to a size smaller than the overall pixel space size then the remaining space will simply be black. However, if you had included program background files, you could select one of those to always appear when this primary asset is taken to program and automatically fade out when the primary asset has ended.

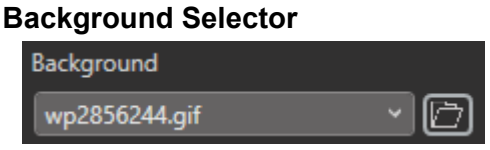
TIP: Refer to Monitoring & Transport Area for more details on adding and displaying backgrounds.



Since the setup is exactly the same for both overlay slots, we decided to just annotate one of them.

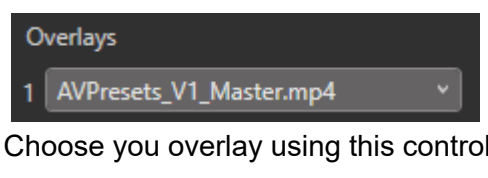
---

1 **Background Selector**



Choose from the list of already added program background assets to appear every time this primary asset is taken to program. For convenience, you can use the file browse button to add any additional files. Files added here will be included as part of the list of overall available backgrounds.

2 **Asset Selector**



Choose you overlay using this control that lists out all available assets.

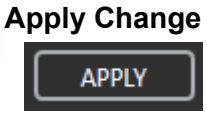
3 **Duration Amount**

Set the duration amount in seconds to a value greater than zero will force the overlay to automatically transition out once the amount of time has elapsed. Time begins as soon as the overlay is instructed to play. Elapsed time will always begin at zero any time the overlay is played. Setting the value back to zero will cause the overlay to remain visible until you manually tell it to stop.

4 **Auto Launch**

When the auto launch is checked, anytime the base asset begins playing in program the overlay will begin as well. You can however, delay that start by typing a value, in seconds, greater than zero into the delay text field.

5 **Apply Change**



Changes above will not go into effect until you apply them using this button.

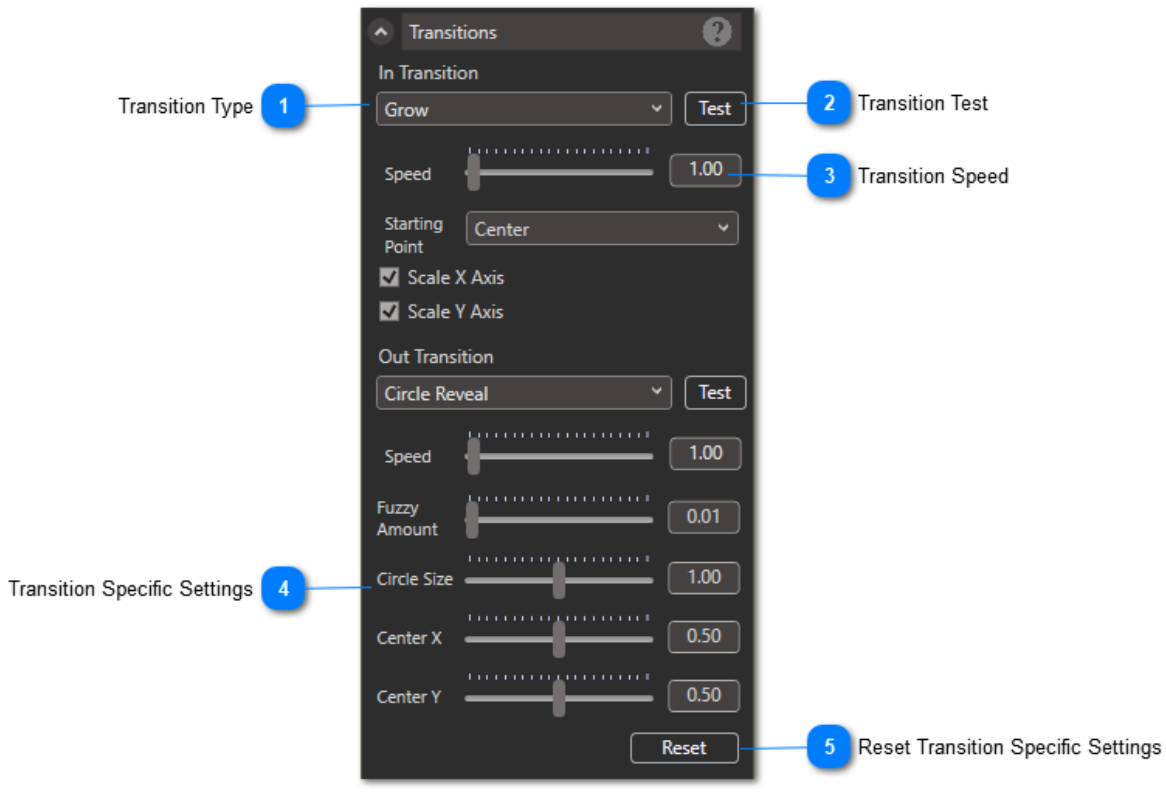
SEE ALSO:
Sources
Trim & Behavior
Audio Output
Transitions

Transitions

Anytime an asset is instructed to play as well as when it is stopped, its visibility on screen needs to switch in and out. Ordinarily this may be a simple cut, however, you can choose to use a more impactful visual effect as a better way to transition between visual states.

Legion provides an assortment of effects that can be employed. You can assign one effect type for the transition in and use a totally different one for the transition out. For this reason there are two separate sets of config controls one for IN and one for OUT.

Another feature you can take advantage of are the set of pixel shaders that provide different visual effects, some even with animation.



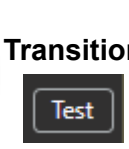
---

1 Transition Type

Select from this list which transition effect to use.

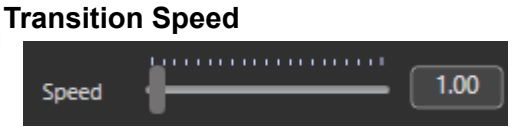
Available types:
Cut
Fade
Grow
Slide
Blinds
Blood
Circle Reveal
Paper Fold
Pixelate
Radial Wiggle
Ripple
Swirl

2 Transition Test



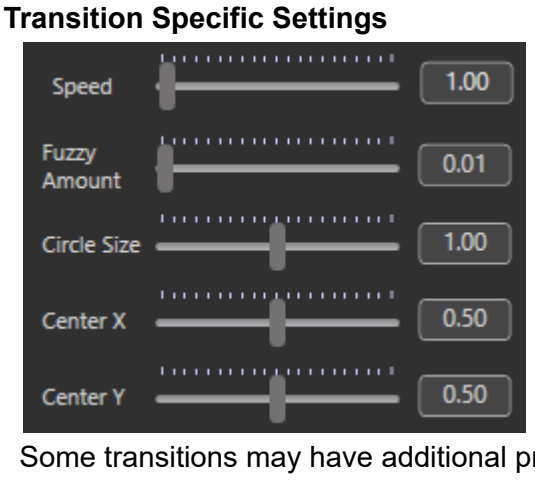
While in preview use this to sample the transition effect.

3 Transition Speed



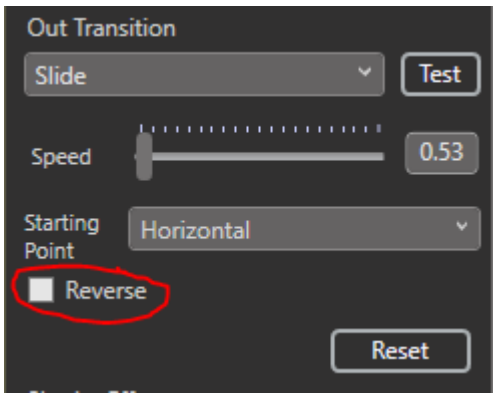
Use this to adjust, in seconds, the amount of time it will take for the transition to complete.

4 Transition Specific Settings



Some transitions may have additional properties that can be adjusted to tailor the effect to your liking. The array of controls and their purpose as well as their labeling vary from one to another. This space will expand or contact accordingly Hopefully they will be self-explanatory enough for you but don't forget you can always test the effect and visualize it for yourself.

It should also be noted that the direction of movement of most effects will be reversed for the OUT transition. So, for effects like ‘Slide”, if the IN traveled from left to right the OUT will move from right to left. This effect, as in some others, also display a ‘Reverse’ checkbox. When engaged it will essentially negate the natural reverse movement and cause it to continue moving out to the right.



5 **Reset Transition Specific Settings**

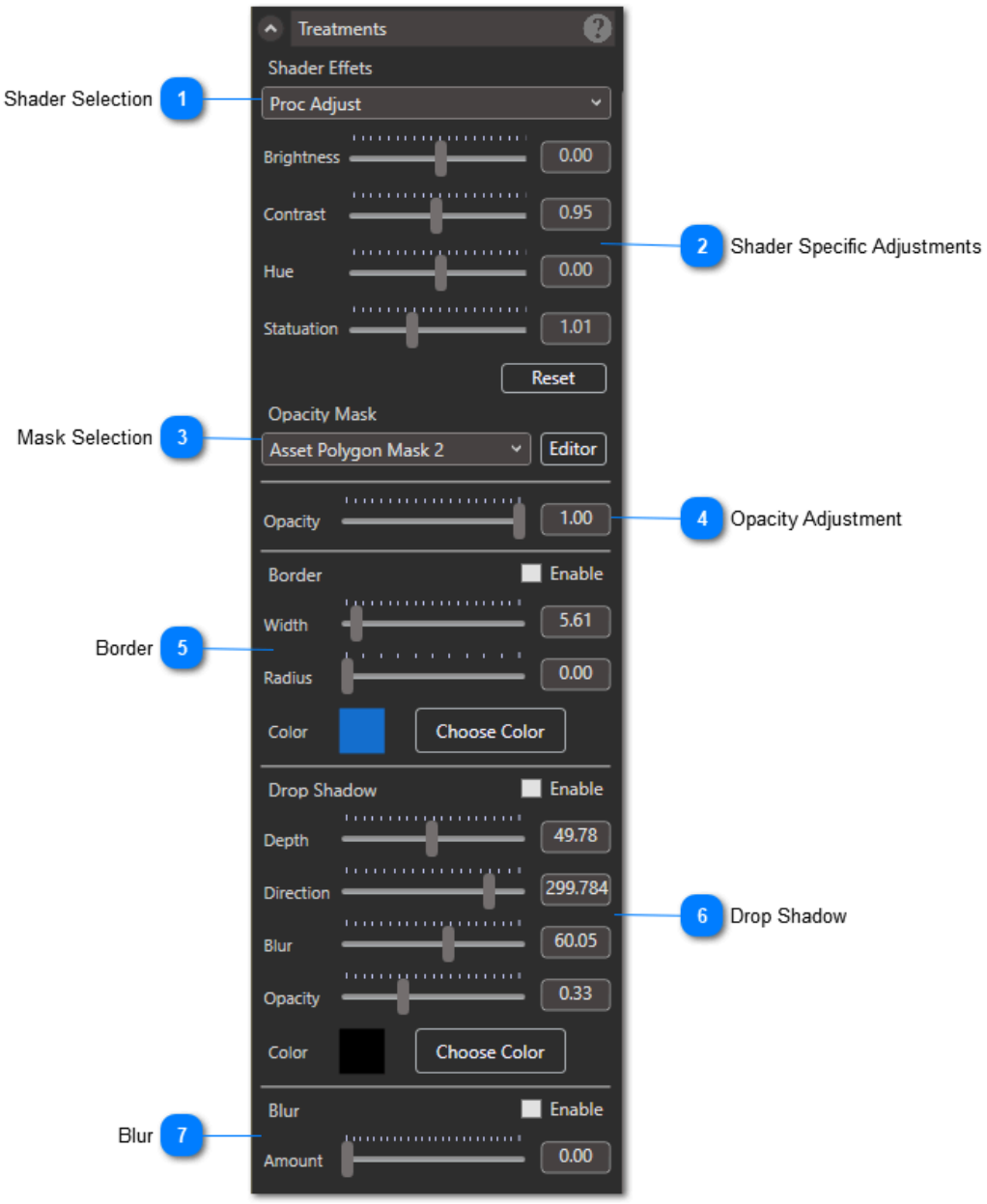
Press this to return effect settings back to their default.

SEE ALSO:

Sources
Overlays
Trim & Behavior
Audio Output
Geometry
Graph Filter Properties

Treatments

These optional treatments can be used to provide additional decorating effects to any visual playlist asset.



---

1 Shader Selection

Select from this list which shader effect to use.

Available types:

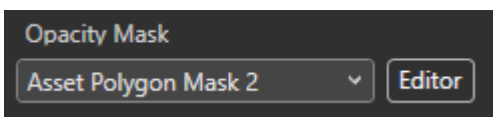
None
Alpha Key
Chroma Key
Grayscale
Invert
Proc Adjust
Sharpen
Gloom
Old Movie
Sphere
Embossed
Dot Matrix

2 Shader Specific Adjustments

Some shader effect may also have additional properties that can be adjusted.

NOTE: Any change to a shader will be evident immediately when the asset is in preview and even when playing in program. This means you can make changes on the fly without having to stop.

3 Mask Selection



Select from any previously created masks to be applied directly to the asset.

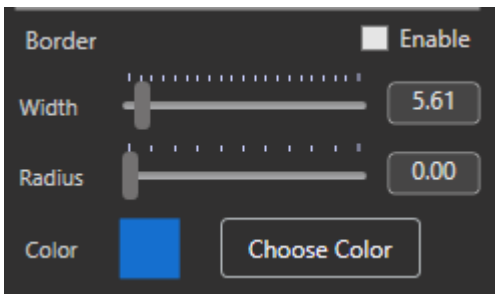
Click the Editor button to activate the preview mask editor.

Refer to [Opacity Mask Editor] and learn more about the creation and editing of opacity masks.

4 **Opacity Adjustment**

Use to adjust the assets overall opacity from 0.0 to 1.0. This will also any border or drop shadows.

5 **Border**



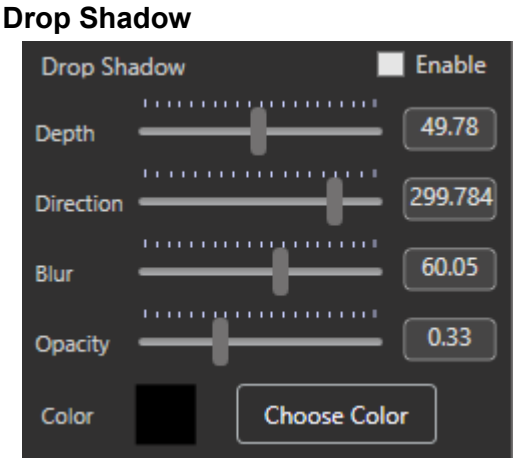
Borders can provide a pleasing aesthetic for PIP type layers, effectively framing the asset with a color of choice.

Width: Use this to adjust the thickness of the border. The value is in pixels and ranges between 0 and 100.

Radius: This can be used to round the corners of the border.  Since the effect also includes an alpha mask that clips the contents, increasing the amount can be used to provide a vignetting of the asset. In most cases the asset's aspect ratio is more rectangular so this clipping clip will appear more as an oval shape. However, if you combine it with some geometry crop adjustments you can achieve a perfect circle.

Color: Click the Choose Color to select the desired color of the border itself.

6 **Drop Shadow**



A drop shadow gives the impression that the frame containing an asset is raised above the layers behind it.

Depth: Adjusts the perceivable distance, in pixels, between the asset and the layers below it.
Direction: This adjusts the direction, in degrees, of where the shadow will appear around the asset container.
Blur: Use this to either sharpen or blur the focus of the shadow area. Blurring creates a softer and, in some cases, a more realistic effect.

Opacity: Adjust just how opaque the shadow effect appears.
Color: Click the Choose Color to display a color palette to pick color that will tint the shadow effect

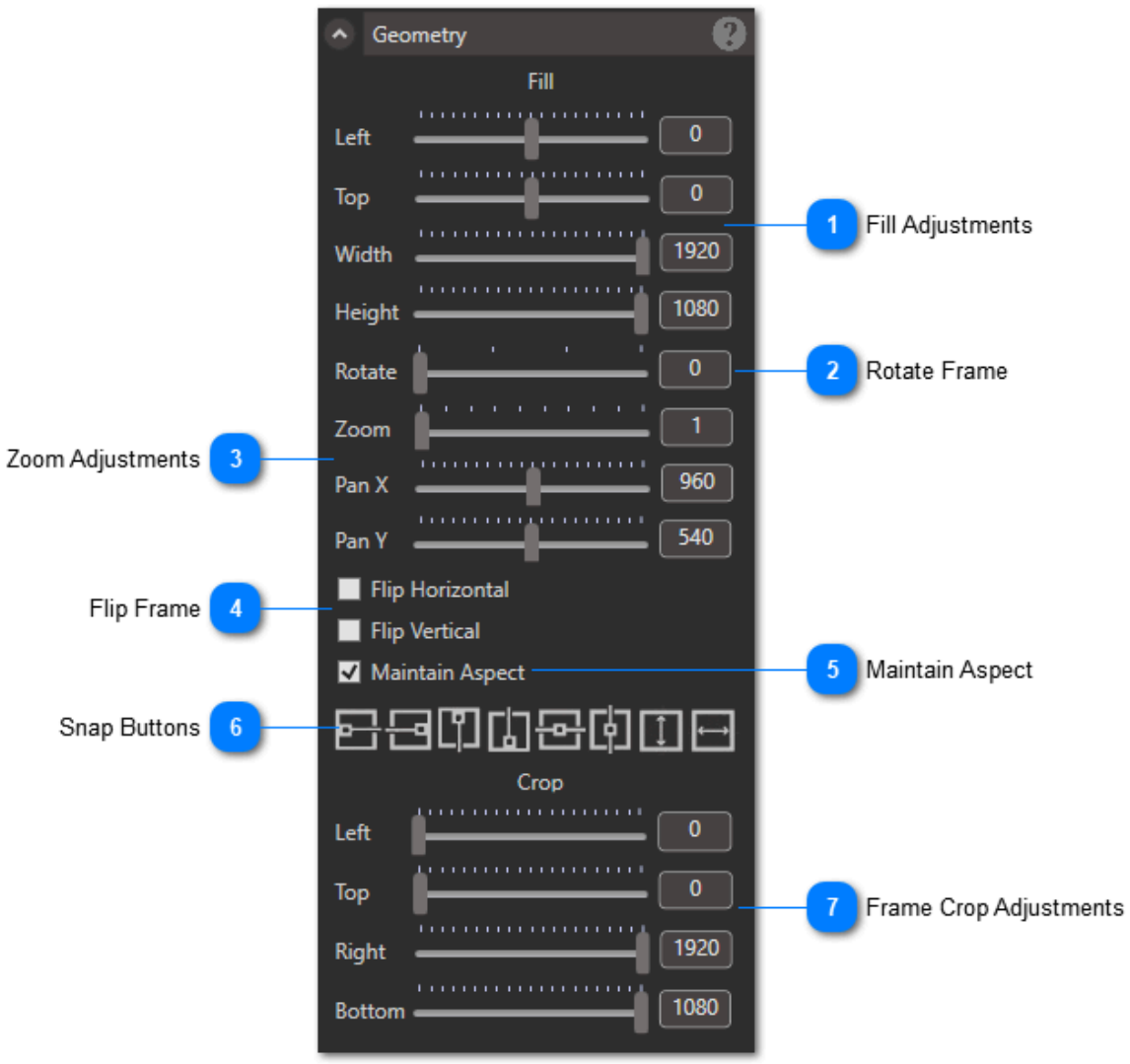
7 **Blur**

A desire to blur an asset my seem unlikely but when used on underlying layers it can create an interesting bokeh (depth of field) effect making layers appear as if in a 3D space.

Amount: Simply the percentage between 0 and 50% of applied effect.

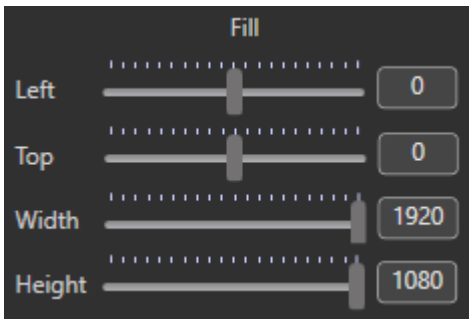
SEE ALSO:
Sources
Trim & Behavior
Audio Output
Overlays & Background
Opacity Mask Editor
Transitions
Geometry
Graph Filter Properties

Geometry



---

1 Fill Adjustments



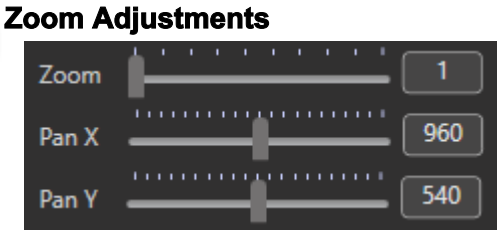
Fill adjustments alter the visible portion (frame) size and position within a fixed container (screen).

Left and Top minimums are a negative value of the assets native number of pixels width / height respectfully divided by 2. Where the max is the positive value equal assets total number of pixels width / height respectfully.

2 Rotate Frame

Adjusting this will rotate the frame up to 270 degrees within the confines of our container.

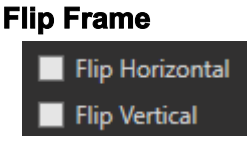
3 Zoom Adjustments



Zoom:
Zoom allows you to magnify the element (zoom in) up to 10 time its original size.
Value range is a decimal from 1 to 10.
Default = 1.

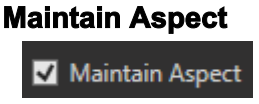
Pan X & Pan Y:
When zoom value is greater than 1, you can use Pan X shift the magnified area horizontally. Use Pan Y to shift vertically.
Value range is an integer from 0 to the assets native number of pixels wide (X) and height (Y).
Default = X and Y divided by 2 respectfully.

4 Flip Frame



These simply invert the frame on either the X or Y axis.

5 Maintain Aspect

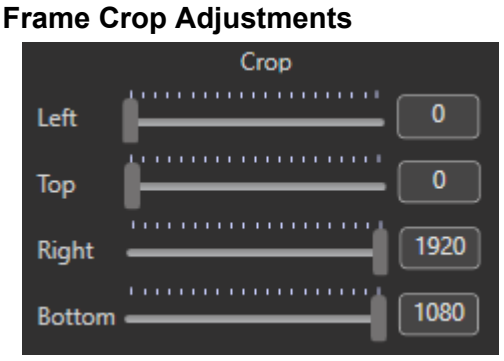


When checked the frame will always maintain the asset native aspect ratio. When enabled independent width and height adjustment are not available. Instead altering either will effect both.

6 **Snap Buttons**

Use these snap buttons to easily position our frame within the container.

7 **Frame Crop Adjustments**



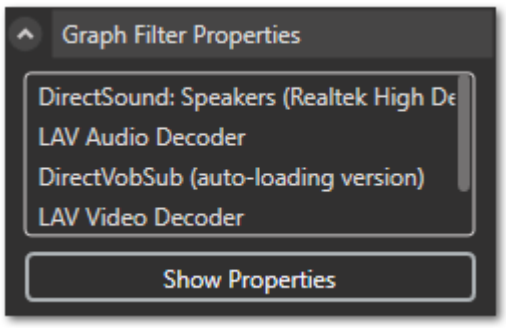
Use the following to blank out portions of our frame.

Value range is an integer from 0 to the assets native number of pixels wide (Left & Right) and height (Top & Bottom).

SEE ALSO:

Sources
Trim & Behavior
Audio Output
Overlays & Background
Transitions
Treatments
Graph Filter Properties

Graph Filter Properties



This list displays all graph filters currently in use by the asset.

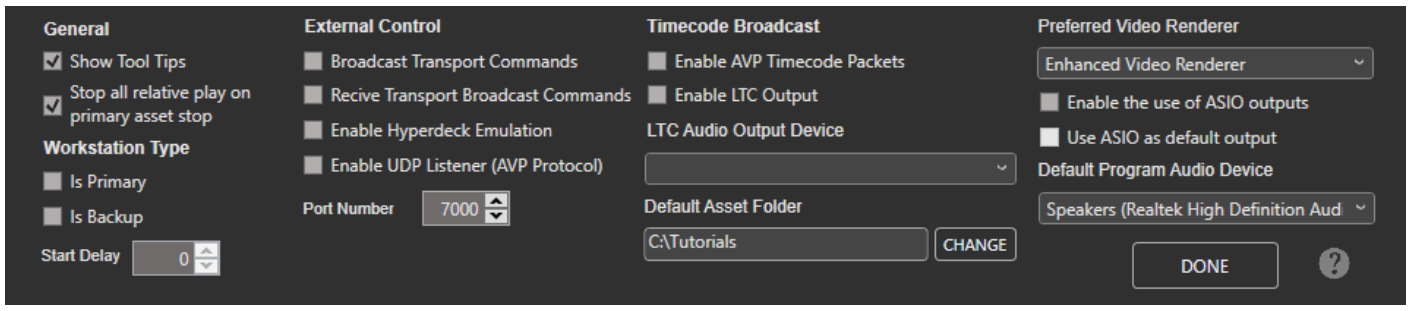
You can access their individual property page by either double clicking on a selection or by clicking once and then clicking the "Show Properties" button. At that point a dialog box containing any available property settings will appear.

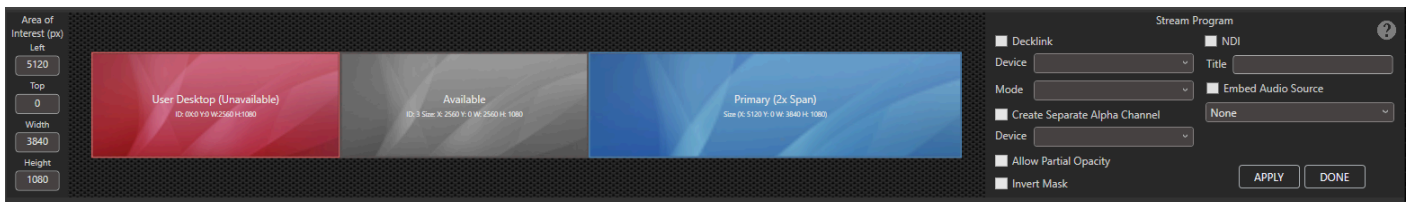
WARNING: Changes made to these filters are global in nature so all other asset using the same filter will be effected as well.

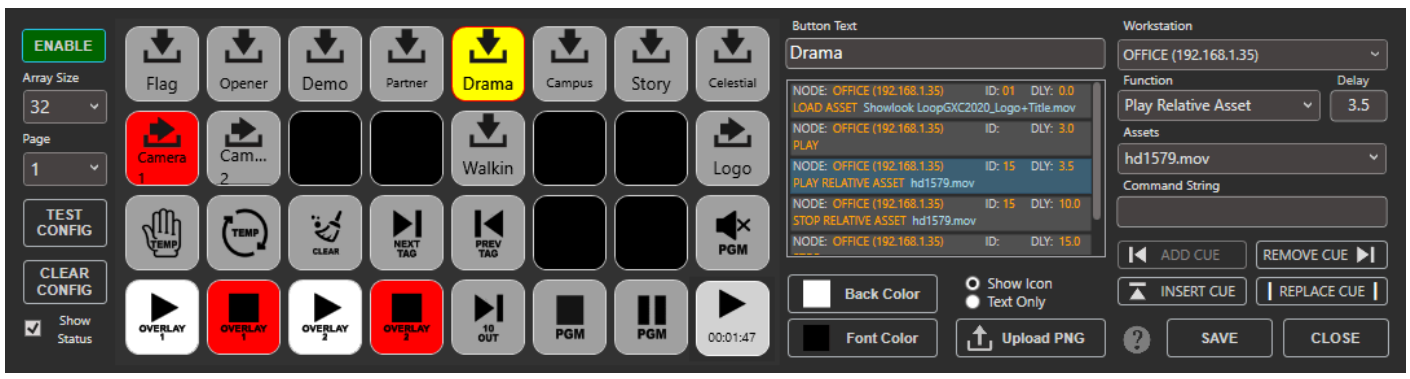
SEE ALSO:
Sources
Overlays
Trim & Behavior
Transition & Effects
Audio Output
Geometry

System Option Panels

These panels will appear at near the top of the main window. When any of these three panels are displayed, both the program monitoring and control area along with the playlist data area will shrink in height to make room. Conversely, when they are hidden the monitoring and playlist areas will return to their previous sizes.

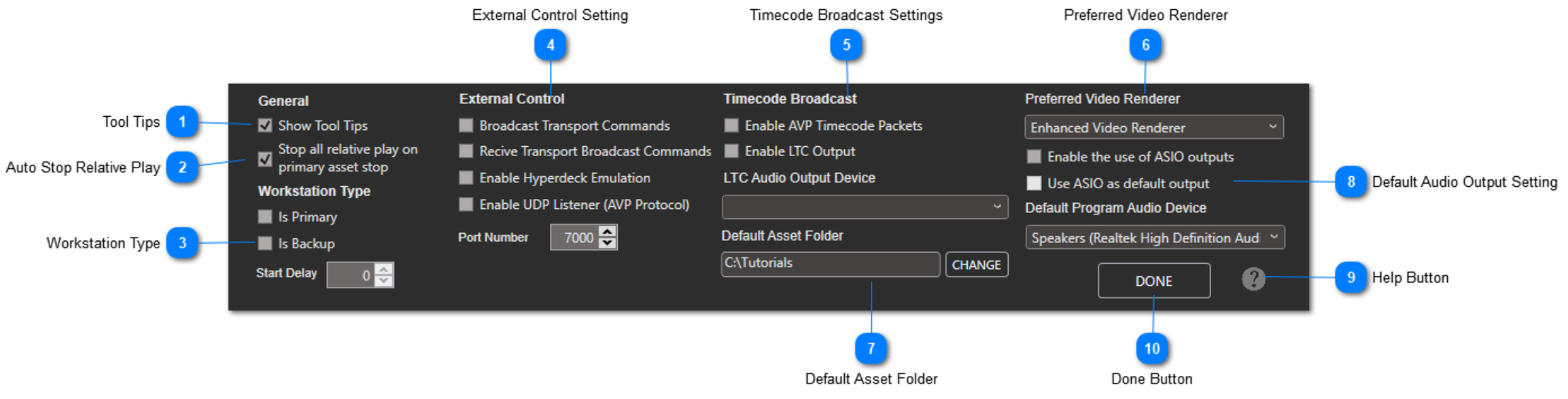






Note: When a panel is displayed, both the program monitoring and control area along with the playlist data area will shrink in height to make room. Conversely, when they are hidden the monitoring and playlist areas will return to their previous sizes.

Global Properties

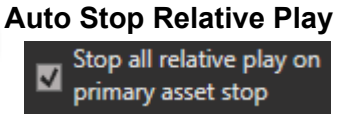


NOTE: Keep in mind that any changes made are saved in real time.

1 Tool Tips

When enabled each individual control will produce a helpful popup describing its purpose. Due to it sometimes interfering with mouse clicks, it is recommended that this feature be disabled once you feel comfortable with all aspects of the program.

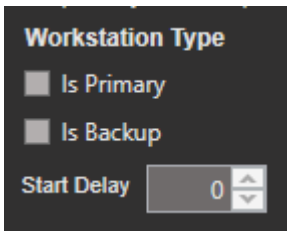
2 Auto Stop Relative Play



By default, when an asset is playing as relative or independent they are not affected by the primary transport controls. This means that even if a primary asset (one that has control over the timeline) comes to an end or is stopped manually, any relative playing assets will not be stopped and will continue playing until they end naturally or are manually stopped.
When this option is enabled, any assets playing as relative at the time will be instructed to stop along with the underlying primary asset.

NOTE: When the transport 'CLEAR' button is pressed all asset including relatives will be stopped no mater if this option is set or not.

3 Workstation Type

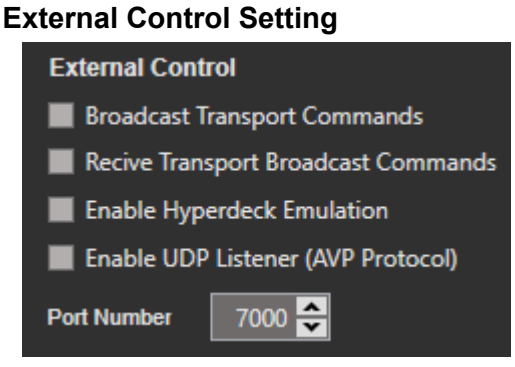


One of the program's key features is its ability to easily connect to another workstation and use it as a backup that will mimic the primary. If you wish to setup for this scenario select the appropriate role for each of the two workstations

Start Delay:
If workstation is designated to be the backup, you can choose to delay the start of play in sceconds. This can be handy when you prefer to stager play times between a primary and its backup. The default is 0.

NOTE: As long as the link between the two are enabled all transport commands and edits performed on the primary will instantly occur on the backup as well. Also, if an asset file is added to the primary playlist but does not exist on the backup, a copy of the file will automatically be transferred to the backup for you.

4 External Control Setting



Broadcast Transport Commands:
This feature provides a simple way to remotely trigger other Legion II workstations to work in unison with a single primary. This can be helpful when the presentation requires more outputs than are available on the primary computer or perhaps when multi-assets of varying aspect ratios are spanning over several screens. This can even provide reasonable degree of playback synchronization as well.

When checked all transport functions either from manual user input or by automated functions, will be broadcast via Ethernet UDP packets which then can be received by any other Legion II workstation that is listening for them.

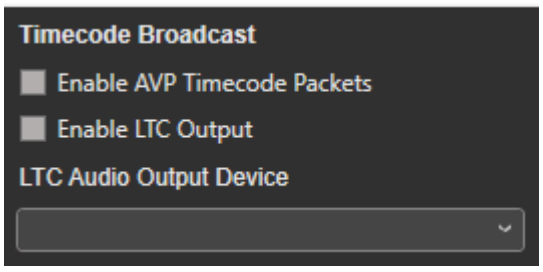
Recive Transport Broadcast Commands:
When checked all broadcasted transport commands will be received and performed locally.

Enable HyperDeck Emulation:
When enabled, Legion can be control directly from a Blackmagic ATEM switcher.
See: HyperDeck Emulation

Enable UDP Listener:

When enabled Legion can be controlled externally via an ethernet connection.
See: AVP Protocol Commands

5 **Timecode Broadcast Settings**

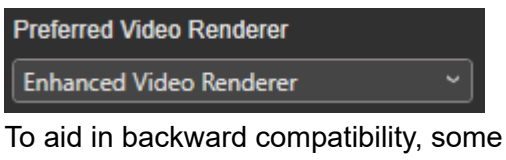


Enable AVP Timcode Packets:
When enabled a constant data stream containing current program time position is broadcasted thru the connected network and can be read by all running AVP Timecode Display apps on other computers.
See: AVP Timecode Display

Enable LTC Output:
Enable to output an actual Linear Time Code audio stream. However, before it can be enabled, you must first choose an available audio output device.

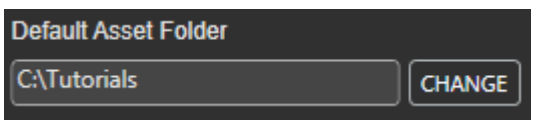
WARNING: Due to LTC's very high frequency modulation, it is recommended that you only use your computers embedded speaker out or an installed sound card. The stream may become unstable if you use any USB to audio type converters due to their slower response time. It is also important to prevent attaching to an output that is going to any speakers. The sound of an LTC stream can be very annoying.

6 **Preferred Video Renderer**



To aid in backward compatibility, some older computers might not be able to work with the default Enhanced Video Renderer. If you find that renderer refuses to work, you can choose the older Video Mixing Renderer from this list which should work.

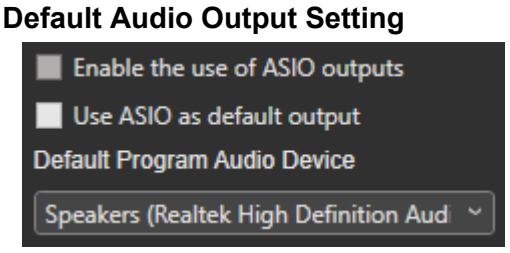
7 **Default Asset Folder**



Establishing a default asset folder is mandatory. To make transferring event files to other storage mediums or computers easier, all assets will be automatically copied into this folder even when resourcing files from other drives and/or folders.

NOTE: Files are copied leaving the original file intact at its source. To prevent excessive use of available drive space on your system it is recommended that you manually add needed event assets directly to the event folder and prevent the system from having to create wasteful copies.

8 **Default Audio Output Setting**



Every new asset added needs to know what audio output to use. In most cases you will probably use the same output. This where you can choose which will be the go-to default.

Default Program Audio Device:
If the app is newly installed or any previous selection has become unavailable, the system will revert to the standard audio output devices that has been set in Windows. However, clicking will reveal the list of all currently enabled audio playback devices found on the local computer. If desired, select the one that you wish to be used instead.

NOTE: After an asset has been added to the playlist you can override this default assignment and select a different output for that asset independently without affecting others.

Enable the use of ASIO outputs:
Check this to enable globally, the use of ASIO as an optional audio output.

If you are either using assets with multi-track audio embedded, (greater than two), or simply wish to use a single multi-output device, such as a Tascam or Presonus to handle all audio outputs for the entire playlist, enable this option and the system will instead employ an ASIO (Audio Stream Input/Output) renderer to compile the output stream.

Installed with Legion is the MBSE Multichannel ASIO Renderer which is necessary to compile multiple audio streams into a single ASIO data stream. However, this is a third-party driver and requires the purchase of its own license. See: How to install or transfer the MBSE asio renderer license

Use ASIO Output:
When enable the device list will now only contain a list of ASIO output device drivers currently installed on your system.

NOTE: If instead of using an ASIO compatible device like a Tascam or PreSonus, you could take advantage of Blackmagic's Decklink cards ability to have multiple audio tracks embedded into a single SDI output and de-embed them down stream. Decklink drivers include a simple WDM speaker driver which appears in the same list as the other standard stereo outputs. If choosing this approach, you would leave the 'Enable the use of ASIO outputs' option unchecked. Also, unlike using the ASIO render, this method does not provide any custom channel routing, instead assignments will just be one to one.

9 **Help Button**

Anytime you see one of these buttons near controls, clicking will display the relevant help file page.

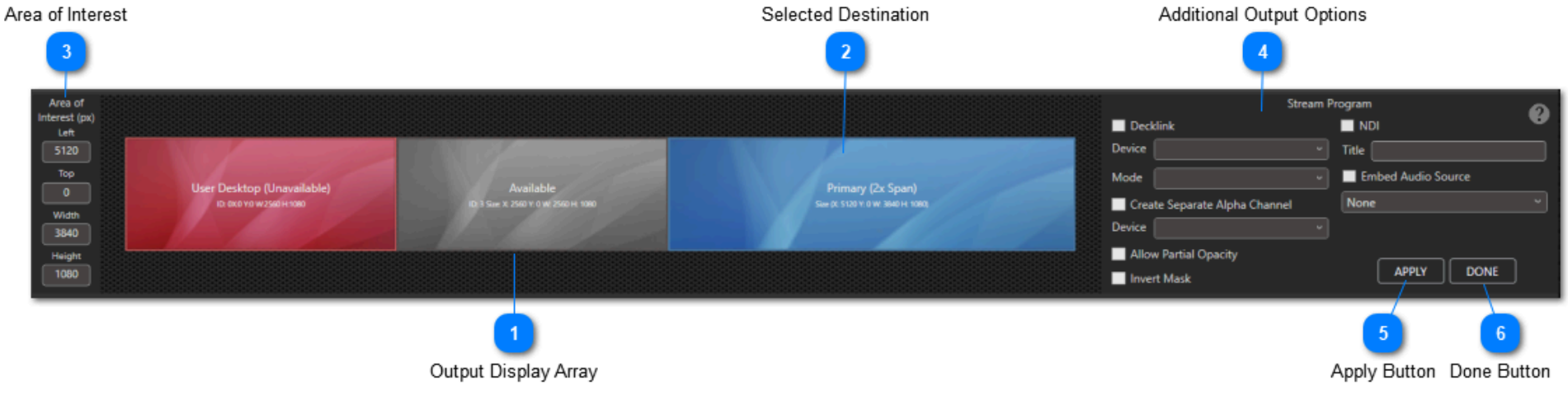
10 **Done Button**

Hides gobal setting panel.

NOTE: If any change to the default audio settings has occurred, you will be prompted to choose whether you want to automaticly apply the change to all current playlist assets. Doing this will initiate a reloading of the playlist.

SEE ALSO:
Display Selection Panel
Stream Deck Config Panel

Display Selection Panel



This panel appears over the clip thumbnails after you click ‘Select Video Display Output’ under the Settings menu.

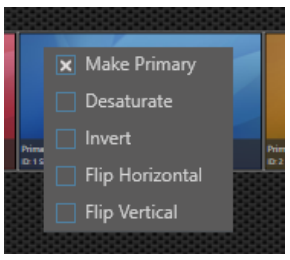
1 **Output Display Array**

The array is much like the one found in Windows “Display Settings” It illustrates the current layout (resolution size and position) of all attached monitor outputs. Legion constantly monitors for any changes to this layout and will update accordingly.

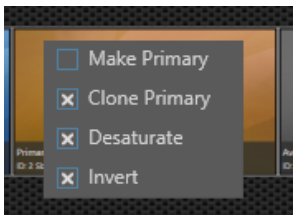
NOTE: To ensure proper setup, the output that has been designated the systems primary user desktop will appear as red and cannot be selected for use. Do not confuse this with Legion’s ‘Primary’ designation, that is simply the apps way illustrating the one that is selected for program out.

2 **Selected Destination**

Primary/Program:
To select the program output, simply right click on the desired display and select "Make Primary". When the primary is selected the tile will become blue.



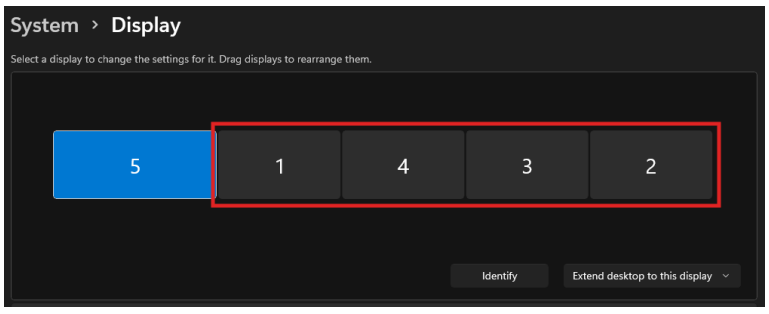
Cloned:
If needed, you can select another output to be a clone of the primary one. This can be handy in situations where a separate alpha mask is needed for a downstream key.
To select, right click on any gray tiles and select “Clone Primary”.



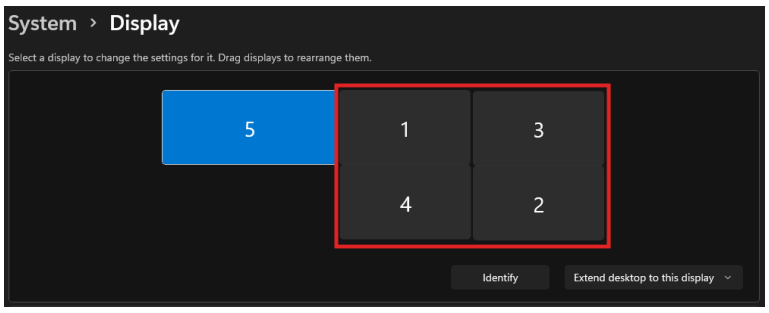
If the cloned output is to be used as an alpha key, that output will need to desaturate all color and/or invert its light and dark shades. Selecting either or both will affect the change.

Spanned:
Another feature is the ability to create spanned pixel spaces. A spanned space effectively extends a single program output across multiple display screens. This is useful when needing to display ultrawide resolutions that exceed the capability of a single output.

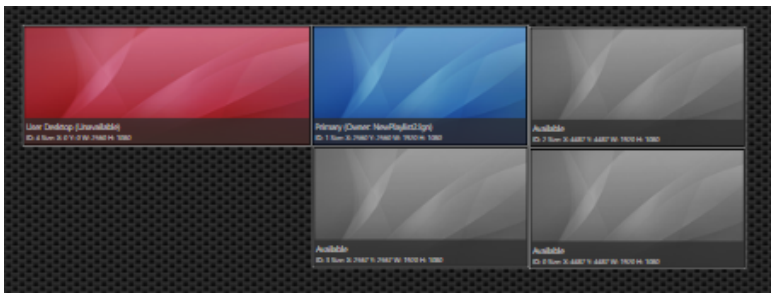
To prepare for a spanned space, first go to Windows Display Settings and ensure that all outputs you wish to use are aligned in the pattern that you require. For example, if you need to provide enough outputs to cover a resolution of 7680 x 1080 then you would need to arrange them all horizontally from left to match the physical arrangement of projectors keeping in mind the display index does not necessarily reflect their physical arrangement.



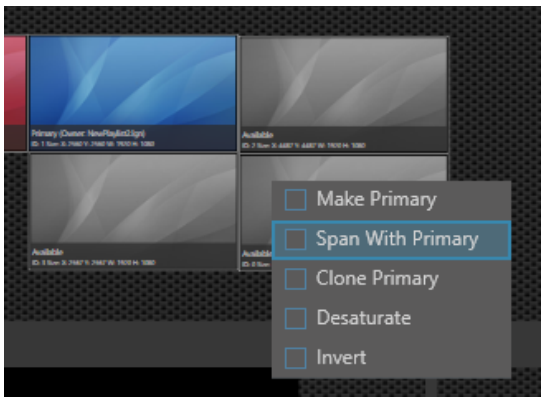
Another example would be like a video wall. You want to display 3840x2160 media using four 1920x1080 monitors.



Now once that has been done you can come back to Legion's display selection panel and setup the span by first selecting the top and left most output in your arrangement.to be the primary.

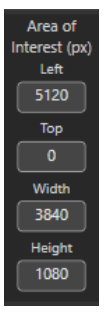


Next right click on the right and bottom most output and select "Span With Primary".



And now you should have one large output tile.

3 Area of Interest



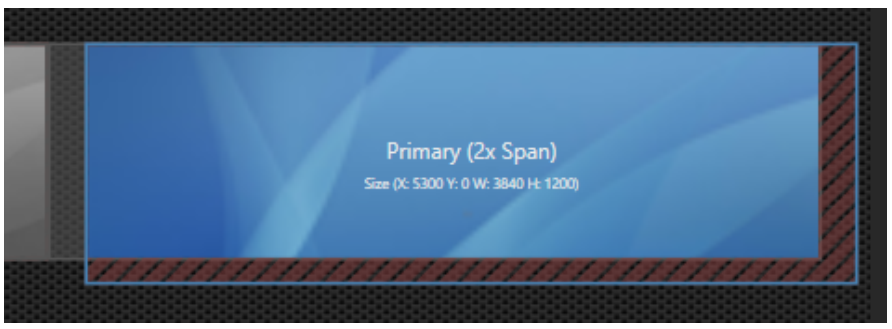
Area of interest outlines the position (Left & Top) and size (Width x Height) of the Primary/PGM rendering canvas. The positioning values are relative to the systems overall extended display space. It is important to remember that in Windows, 0 X or Left and 0 Y or Top are found at the top lefthand corner of the display that has been assigned as the user's primary desktop. In Legion this is displayed as the red tile.

Any positioning to the right or below the primary desktop display are positive numbers and ones to the left or above the primary desktop is reflected as negative a number.

After you first select which displays will be Legion's primary outputs (Including Spans), you are free to manually adjust these numbers. This is handy when outputting to an LED wall that has a nonstandard resolution or one that is smaller than the EDID being provided to the legion computer.

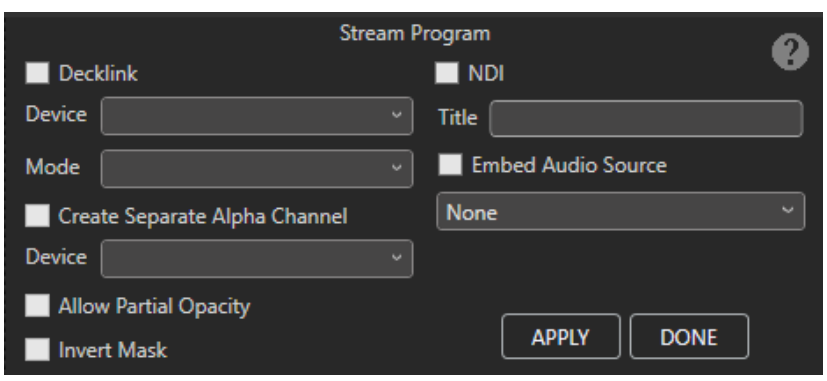
For example, we are providing media for an LED wall resolution of 3528 x 980 (3.6 aspect ratio) but are connected downstream to a device that can't provide a custom EDID for that resolution. In this case you would either span two standard 1080p outputs which totals to 3840x1080. This is OK but it may be tricky to work the asset geometry because Legion would produce a rendering canvas of that entire oversized space meaning the geometry fit and position snaps would be incorrect. The better way is to adjust the area of interest to match the wall's resolution. This also resizes the preview and program monitoring aspect to match as well as all snaps will now use the AOI as its parameters.

NOTE: If when adjusting the space goes out of bounds of the primary display space a red crosshatch pattern is seen in the overflow area.



4 **Additional Output Options**

You have to ability to also output all program activity directly to either a Decklink SDI output and/or NDI stream. This can be done whether or not you are already outputting to a conventional HDMI and/or DP type monitor.



Decklink:
Check to enable the use of a Deckink card as an output.

Device:
Select the appropriate Decklink output.

Mode:
Select the desired SDI resolution.

Create Separate Alpha Channel:
As it implies, check if you need to use another available Decklink SDI output for use as an additional alpha key mask that clones the primary SDI output.

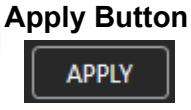
Allow Partial Opacity and Invert Mask:
Each are used to adjust the key's visual characteristics.

NDI:
Check to create an NDI stream of the program output.

Title:
This is the label that is visible on the receiving end designating the feed.

Embed Audio Source:
Check this to also send program audio with the video feed. Be sure to select the correct audio output device whose signal you want streamed.

5 **Apply Button**



Click to save and apply all changes immediately.

NOTE: Some changes may require the full shutdown of all program play and a posible need to restart of the app's video and/or streaming engine.

6 **Done Button**

Clicking simply closes the panel.

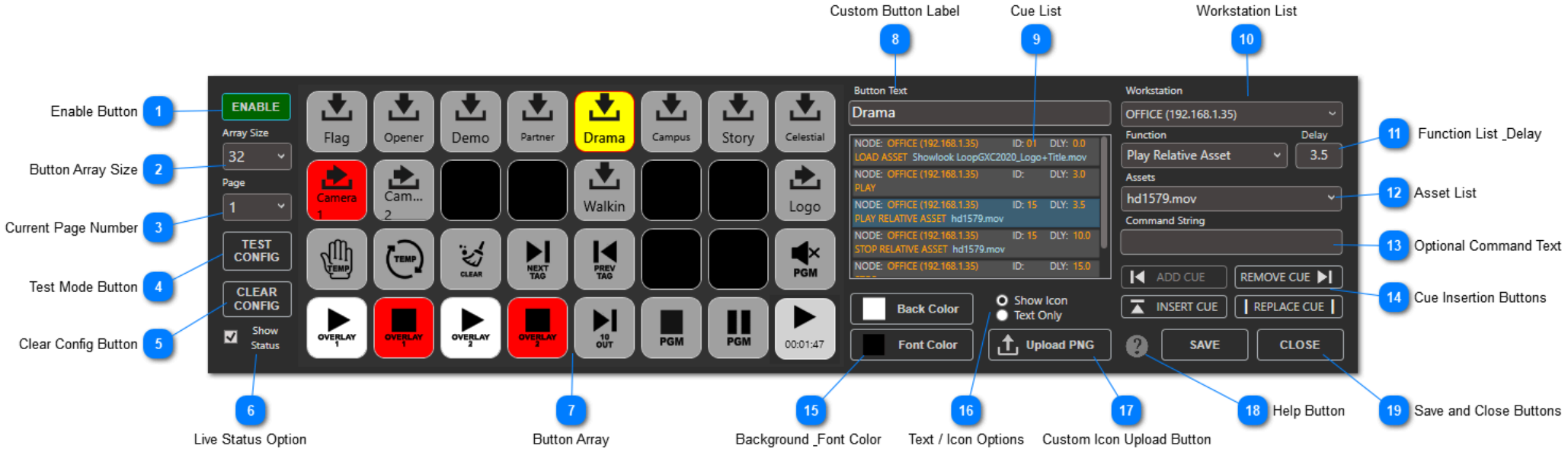
NOTE: Remember to click Apply before closing if you wish to save any changes.

SEE ALSO:
Global Properties
Stream Deck Config Panel

Stream Deck Config Panel

If a control surface to activate function remotely is needed, we recommend acquiring an Elgato Stream Deck and connect it via USB to the same computer Legion is running on. Legion is able to communicate with the unit without the need of any other external software.

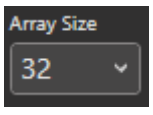
To setup, click on Settings||Configure Stream Deck located on main menu.



1 Enable Button

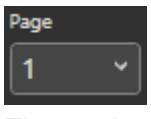
You can use this button at any time to toggle the connection of an attached Stream Deck. If no Stream Deck unit can be found on the system, then this button will be disabled.

2 Button Array Size



Selects the total number of available buttons shown. By default, the program detects which model of Stream Deck is connected (Stream Deck [15] & Stream Deck XL [32]) and displays the correct number of buttons. However, you can use this to override the automatic selection or to create your configuration before a Stream Deck is even connected.

3 Current Page Number



The total number of presets that can be saved is 64 so if a 32-button unit is used then you have a total of two pages that can be programed (32 x2). If a 15-button unit is employed, you have four pages. The control function list includes both previous and next page function that can be used on any button within the array. NOTE: As you are setting up your presets you will need to make sure that each page has the appropriate recall page function added.

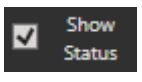
4 Test Mode Button

When enabled, clicking on any of the virtual buttons will perform its programed action. This must be disabled in order to make selections for editing of button's properties.

5 Clear Config Button

Wipes the entire Stream Deck configuration clean.

6 Live Status Option



When checked any buttons programed to perform certain transport functions (load clip, play, pause, stop, fast forward and rewind) will automatically change their background color to reflect that functions current status. The play buton will also show the current remaining time (HH:MM:SS) of what ever asset is playing. Other functions such as audio mute and activate preview will show their current status as well.

7 **Button Array**

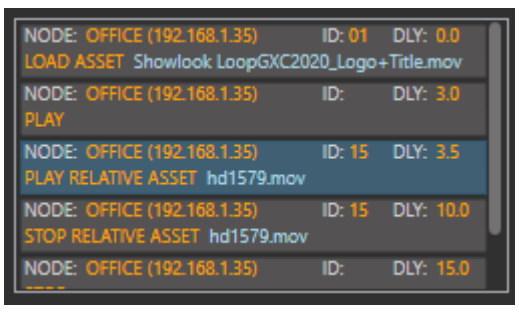
Click on any virtual button to select for editing. When selected its outline will turn red in color. You can also rearrange the order of any currently programed button to any other location within the array by left clicking and then dragging it to the desired location.

8 **Custom Button Label**

Use this to type in the desired button label. Font size will automatically adjust to fit the available space Click on the Font Color button to select a text color.

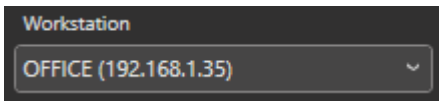
NOTE: If show icon option is enabled custom text is only available for commands that call up an asset. Use to replace the default asset title that is used if no custom text is applied.

9 **Cue List**



Each button can execute multiple commands. This list outlines all the cues added. To complete the program of a button at least one command must be added to this list. After a cue is placed in the list, selecting one will recall all its pertinent properties within the workstation, function, delay, and asset lists.

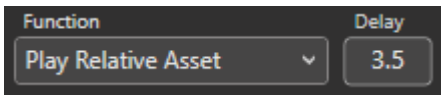
10 **Workstation List**



This list contains all Legion workstations visible on the network. The first entry will always be the local machine the stream deck is connected to. The list automatically updates when any other Legion instance is running on the same network and has their UDP (AVP Protocol) listener enabled.

You should always select the workstation before selecting a function command. If the command requires the selecting of an asset, once the workstation is selected the asset list will populate with only assets found on that unit.

11 **Function List & Delay**



Select from this list the desired function you would like to add as a cue..

Delay:
You can delay the execution of a cue by setting this value in the number of second you wish to delay. Remember the delay begins only after the cue before it is executed, not from when the button is pressed.

Available Functions:

Load Clip
Load an asset to be placed into preview / standby. When selected you must choose an asset from the "Playlist Asset" list

Load & Play Clip
Load an asset and have it immediately begin playing. After selecting you must choose an asset from the "Playlist Asset" list

Play
Program play.

Pause
Program pause.

Stop
Program stop.

GOTO 60
Move play-head to 60 seconds till end

GOTO 30
Move play-head to 30 seconds till end

GOTO 20
Move play-head to 20 seconds till end

GOTO 10
Move play-head to 10 seconds till end

Play/Pause Overlay 1 or 2 *
Play assigned overlay asset. Pressing button again while overlay is playing will cause it to pause. Press it again to resume play.

Stop Overlay 1 or 2 *
Stop assigned overlay asset.

NOTE: Durring operation overlay buttons will only become enable when the underlaying asset containing assigned overlays is currently playing in program.

Rewind
Move play-head rapidly in reverse.

Fast Forward
Move play-head forward in a faster than normal speed.

Set In
Set clip’s punch in point to the current play-head position.

Set Out
Set clip’s punch out point to the current play-head position.

Next Clip
Select the next media clip past the currently selected.

Previous Clip
Select the previous media clip past the currently selected.

Next Tag
Advance clip's position to the next cue tag from your current position.

Previous Tag
Reset clip's position to the previous cue tag from your current position. Note: Using this while the clip is running will only go back to the closest tag. To go back further you will need to pause playback.

Mute
Mute program audio.

Previous Page
Use to set currently displayed Stream Deck presets back to the previous programed page.

Next Page
Use to set currently displayed Stream Deck presets forward to the next programed page.

Clear All Selections
Use to clear the selection of all media clips. Any that were selected for ‘Preview’ or ‘Program’ removed from display.

Temp Loop
Toggle temp loop function.

Temp Hold
Toggle temp hold function.

Load Background
Display a particular program background. When selected you must choose a background asset from the “Playlist Asset” list.

Next Background
Display the next program background in the list.

Previous Background
Display the previous program background in the list.

Hide PGM
Toggle the visibility of the program output.

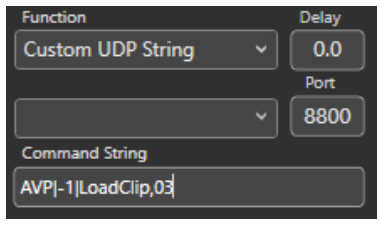
Play/Stop Relative Asset
Direct an asset to play independently overtop any other assets. Before adding to cue list you must choose an asset from the "Playlist Asset" list. Press again while relative is playing to stop.

Pause Relative Asset
Pause an asset that is playing relative/independently. Before adding to cue list you must choose the appropriate asset from the "Playlist Asset" list.

Stop All Relative Assets
Use to stop all assets that are currently playing as relatives/independents**.**

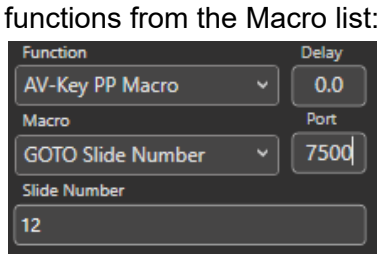
NOTE: When any of these remaining functions are selected an additional port number text box will appear. Enter the unique port number assigned to a particular instance listening on the same local network. No individual IP address is necessary since these packets our simply broadcasted across node addresses.

Send Custom UDP String
Use this to send a manually entered command protocol string to any device that can receive UDP data packets.



Optional AV-Key functions:
Use the following to handle remote instances of our free AV-Key app. AV-Key is a versatile windowless utility that enables you to remotely control applications that do not offer any direct way to control them remotely. It does this by emulating keystrokes.

AV-Key - PowerPoint Macro
To make programing simple we have included a list of prebuilt presets engineered specifically for PowerPoint. Simply choose any of the following functions from the Macro list:

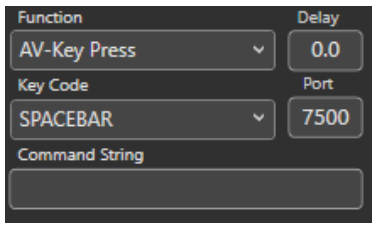


Launch From From Beginning
Launch From Current Slide
Next Slide
Previous Slide
First Slide
Last Slide
GOTO Slide Number

Next Hotspot
Previous Hotspot
Click Hotspot
Play | Pause Media
Stop Media
Next Bookmark
Previous Bookmark
Mute Audio
End Show

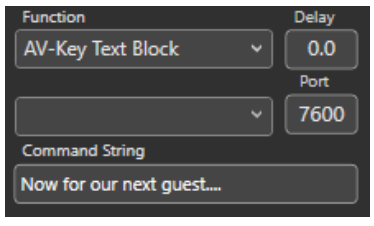
AV-Key - Key Press

Sends a single key code. Choose an available key code by simply selecting from the Keycode list.



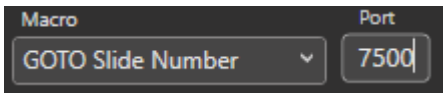
AV-Key - Send Text Block

With this command you can send entire block of text at the same time. If needed you can also embed anywhere within the string a special character or function key. This is done by using standard virtual key codes. To add a key code, place the key's decimal code between the following set of characters "[{“ + key code + “}]".



12 Asset List

When any Load Clip, Load & Play Clip, Load Background or Play/Stop Relative Asset functions are selected you must use this to select the desired media asset that will be recalled. This control is only enabled when those functions are selected.

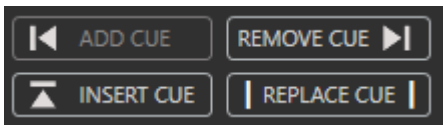


When any AV-Key or Send Custom UDP String functions are selected an additional port number text box will appear. Enter the unique port number assigned to a particular instance listening on the same local network. No individual IP address is necessary since these packets our simply broadcasted across node addresses.

13 Optional Command Text

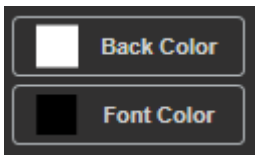
If either AV-Key PP Macro|| GOTO Slide Number or AV-Key Send Text Block or Send Custom UDP String functions are selected use this text box to enter the appropriate text string

14 Cue Insertion Buttons



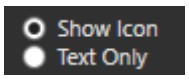
Use these buttons to manipulate individual cues within the list.

15 Background & Font Color



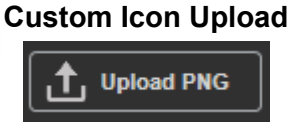
Use to select the desired background color.

16 Text / Icon Options



Each function comes with its own default icon that will be automatically used for display within the button. However, you can choose “Text Only ” and not display this icon only display custom text.

17 Custom Icon Upload Button



Click on this to browse for a custom image you may want to display instead of any text or default icon.

18 Help Button

Anytime you see one of these buttons near controls, clicking will display the relevant help file page.

19 **Save and Close Buttons**

Apply will store all changes to the current playlist. Click Done to close the configuration panel.

SEE ALSO:

Global Properties

Display Selection Panel

External Control

Opacity Mask Designer

Starting with versions 2.3 or greater Legion II has been equipped with a powerful but easy to use opacity mask generator.

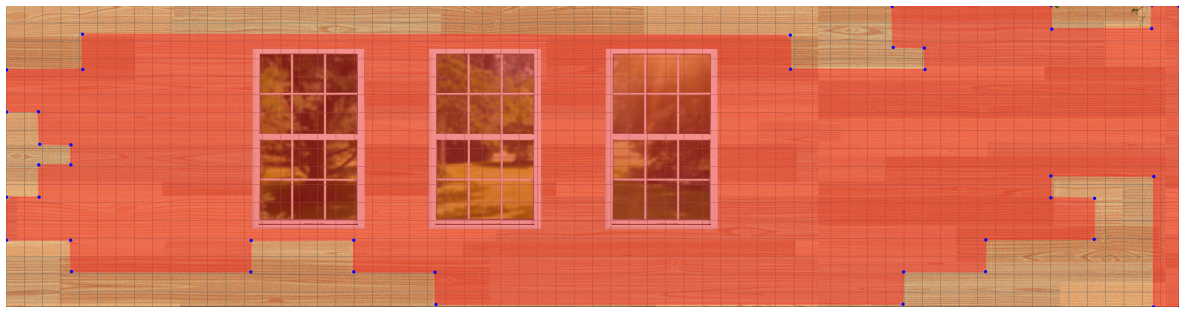
Opacity or clipping masks are used to make portions of an element or visual either transparent or partially transparent. Masks uses alpha channel information to specify how the source pixels of the object are blended into the destination target. The transparent portions of the mask indicate the areas where output is hidden, whereas the opaque portions of the mask indicate where the masked object is visible. The difference between opacity and clipping masks are clipping masks can only provide hard sharp edges, whereas an opacity mask allows for varying degrees of opacity within more complex paths.

Legion includes simple to use utilities for creating and applying masks globally to the entire program canvas, or ones simply designed for a single asset.

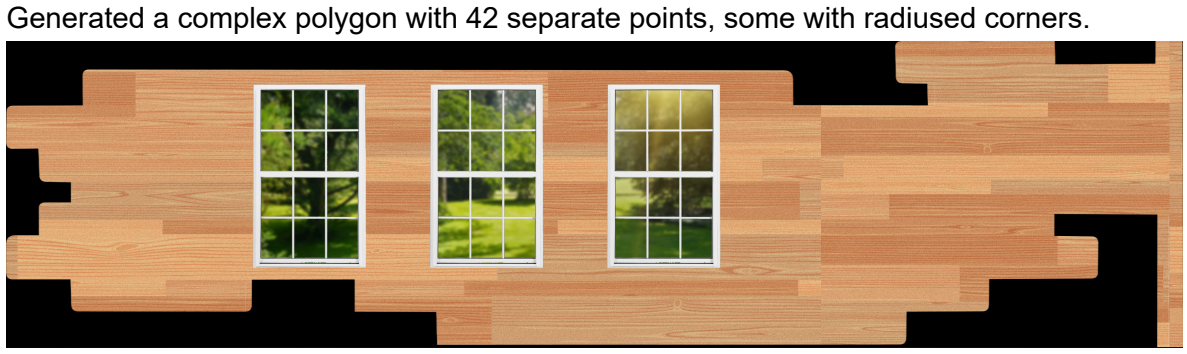
Global Program Mask:
When front projecting directly onto a non-standard screen surface such as a solid architectural structure, it may be important that projected light remains confined to only parts of the surface area we choose. This is where a opacity mask can help us do that.

Show producers can attempt to virtually generate the mask for us ahead of time in the studio but more than likely, it will never line up perfectly with the architectural piece once it's constructed and put in place. This is where Legion has an advantage. We can quickly generate the perfect mask because editing is performed directly on the actual program output space. So once the set is built and projection equipment is in place, we can project the designer tools directly on the real-life surface and work there.

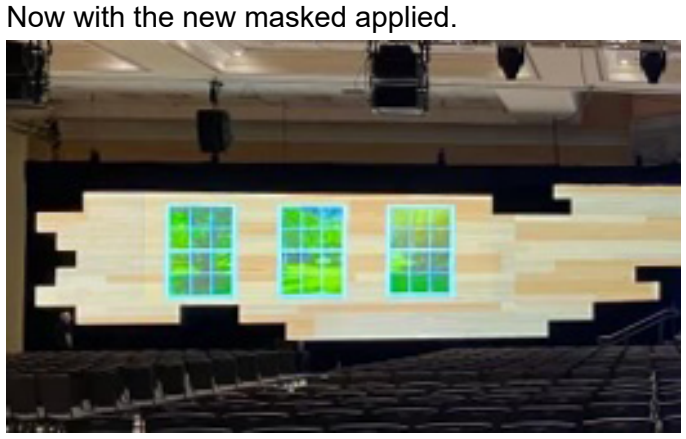
Here is a real-world example:



Generated a complex polygon with 42 separate points, some with radiused corners.



Now with the new masked applied.

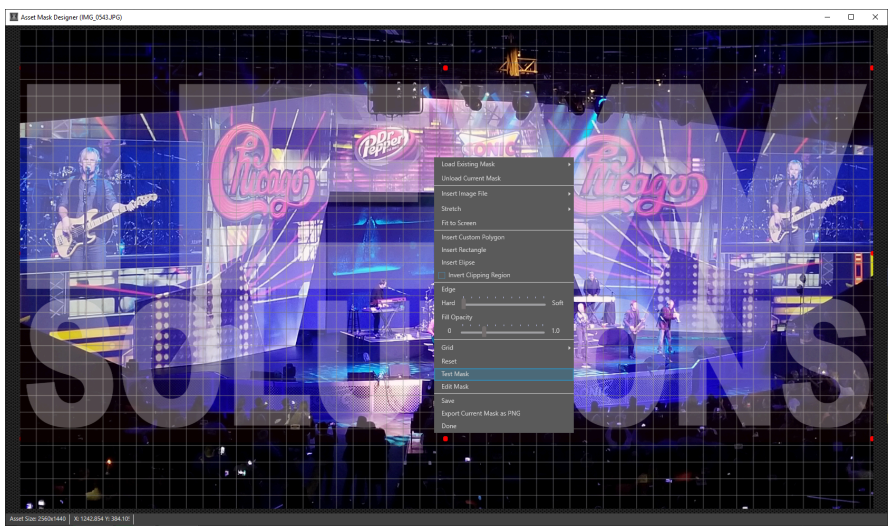


Final product.

Since this is applied directly to our output space, everything that is now played out to program will only appear within the mask boundaries.

Single Asset Masks:
Unlike a global mask an asset mask is applied only to the asset itself. Once assigned it remains it any time it is shown and adheres to all other visual asset adjustments that might be made such as geometry.

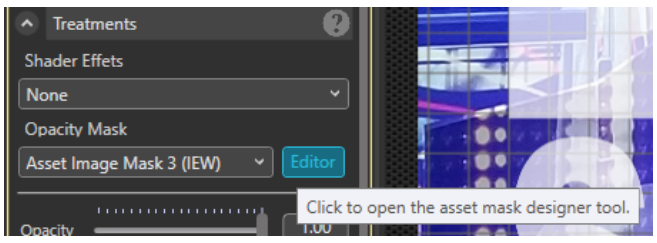
Instead of the designer appearing directly within our output program space, like it does for the building of a global mask, there is a separate utility window you use to create asset masks.



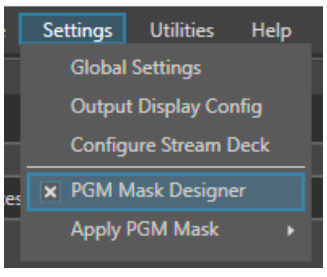
Mask Designer Tools

Launching the designer utility:

To create one for an asset, once an asset is taken to preview you can launch the designer by going to Asset Properties / Treatments then click on the 'Editor' button.



For global masks you can launch its desigener by going to the main Settings menu and select PGM Mask Designer.



Notice next to each is list of all currently created masks. In either case selecting from the list will immediately change the current mask file respectfully.

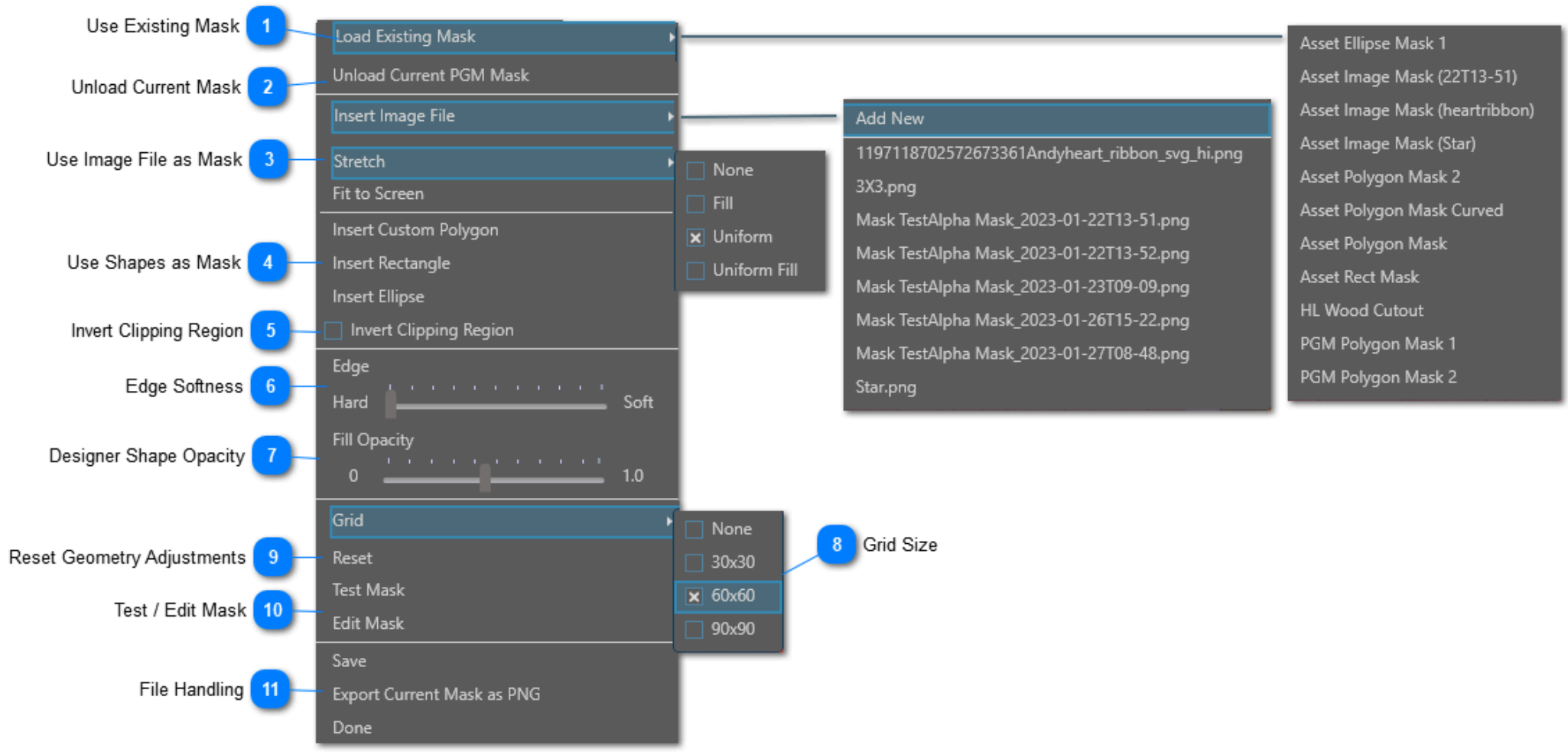
NOTE: Keep in mind the global mask designer appears directly on the PGM output space. This means if signal flow is only going downstream to projection, and you do not have a live monitor backstage with you will need to position yourself out in front of the projection screen.

Designer Canvas:

Once activated a grid will appear on the either program output for global masks or within the preview monitor for asset masks.You can choose between three different grid sizes or disable the grid altogether.

If an existing mask is currently assigned to PGM, the designer will automatically load the editable version of it.

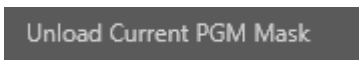
Designer Menu:



1 Use Existing Mask

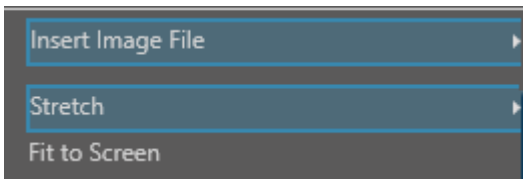
If If you wish to re-edit an already created mask you can select it from this list. Be aware that this only effects the designer canvas. If program already has a mask in place this will not change at first. However, when exiting the designer, you will be asked then if you want it to replace current mask.

2 Unload Current Mask



Removes the existing mask if one has been previously assigned.

3 Use Image File as Mask



One option is to make a mask utilizing a PNG image file. The mask is generated by creating an outline around all its opaque areas. The level of transparency we inevitably see in the final content after the mask is applied is determined by any and all variations in opacity levels within the image, we use to make the mask. This means the only file type we can use are ones that support transparency such as PNG or GIF.

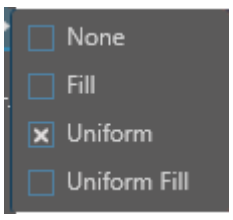
Insert Image File:
Clicking reveals a sub menu

Add New opens a file browser. When one is selected it will first be copied into the Masks sub folder, (Folder is automatically created and placed under the event show folder.) then the image will be placed onto the design canvas.

The reminder lists any available image files currently saved in the Masks folder.

NOTE: You are encouraged to manually place all image files you will need ahead of time into the Masks folder. This way it saves you from having to import them one at a time.

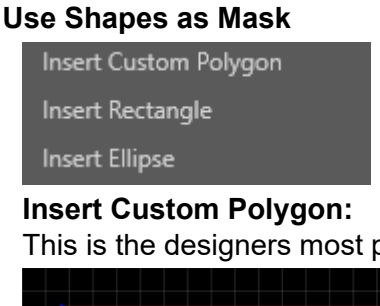
Stretch:



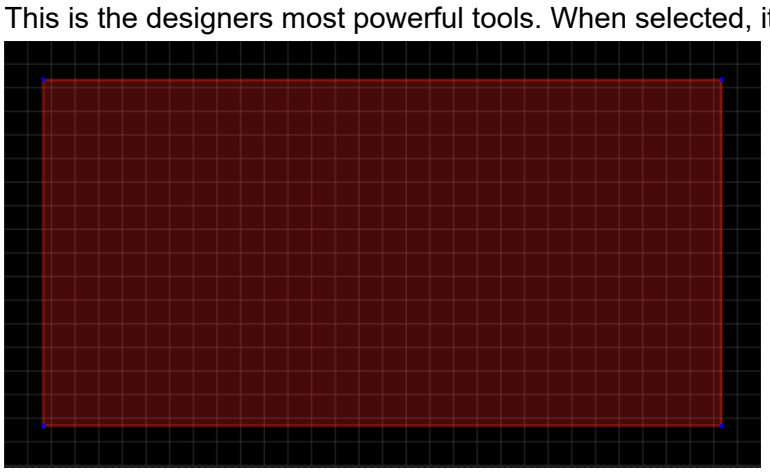
Use to select how an Image should be stretched to fill the destination rectangle.
None: The content preserves its original size.
Fill: The content is resized to fill the destination dimensions. The aspect ratio is not preserved.
Uniform: The content is resized to fit in the destination dimensions while it preserves its native aspect ratio.
Uniform Fill: The content is resized to fill the destination dimensions while it preserves its native aspect ratio. If the aspect ratio of the destination rectangle differs from the source, the source content is clipped to fit in the destination dimensions.

Fit to Screen:
Use to force the containing rectangle to fill the entire space.

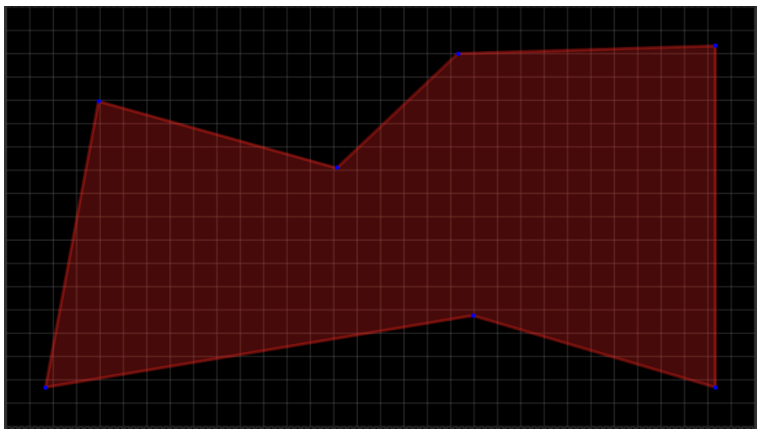
4 Use Shapes as Mask



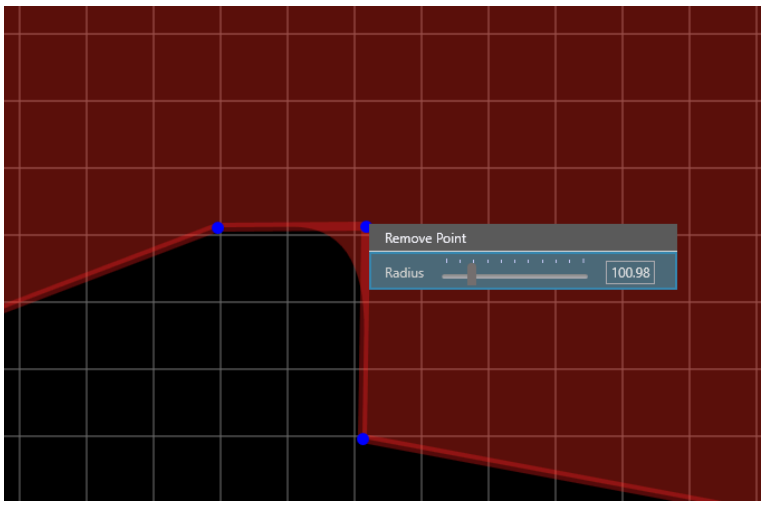
Insert Custom Polygon:
This is the designers most powerful tools. When selected, it starts with a simple rectangle with pick points at its four corners.



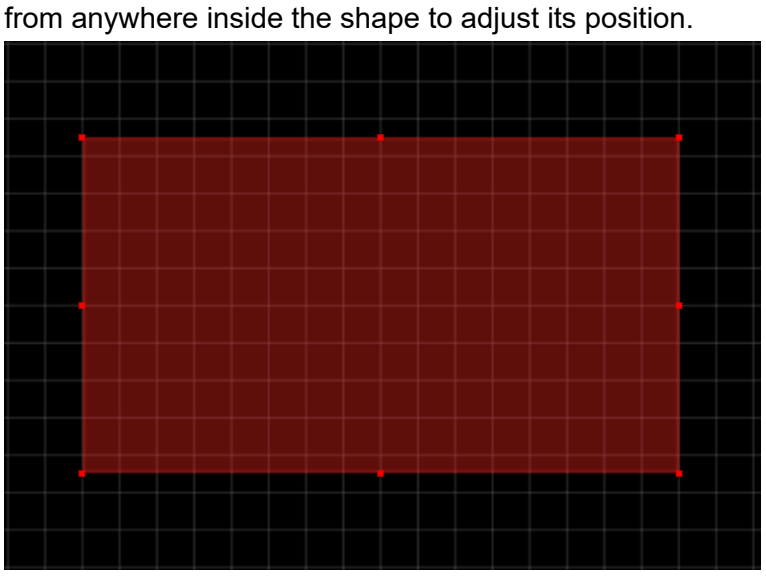
To manipulate, click down on a point and drag it to where you need it. You can add additional adjustment points by simply left clicking anywhere along the line between points. There is no limit to how many points you can add.



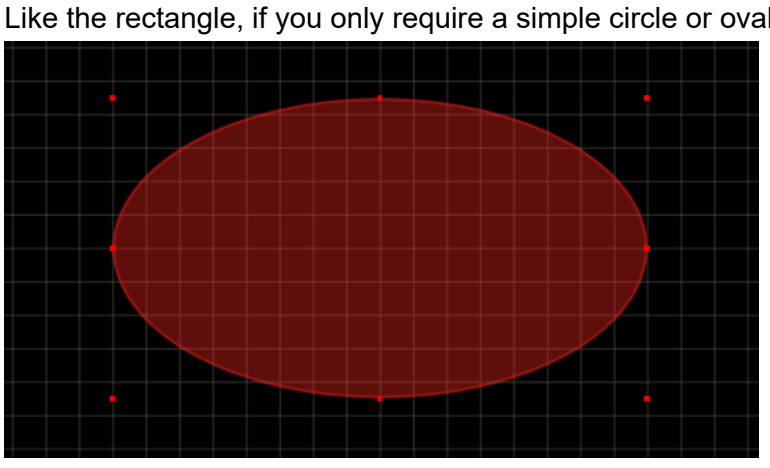
Right click on any point to reveal a popup menu with two options either to remove the and the other allows us to add a smooth radius at the corner point.



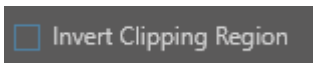
Insert Rectangle:
Use when only a simple four-sided rectangle is all that is needed. Surrounding the frame are 9 pick points you can click and drag to resize it. Click and drag from anywhere inside the shape to adjust its position.



Insert Elipse:
Like the rectangle, if you only require a simple circle or oval then chose this. Manipulate it the same as you would the rectangle.



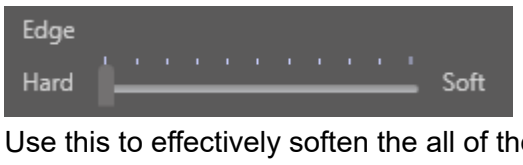
5 **Invert Clipping Region**



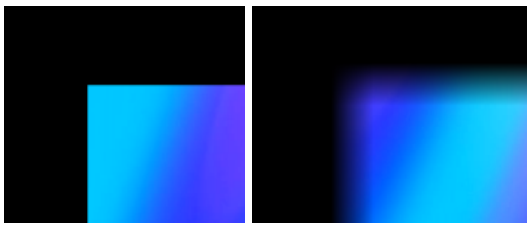
This option toggles between whether transparency effect of the mask is inside our shape or the remaining area outside of it.

NOTE: This feature is only available when using shapes, it is not available when using an image file. In addition, when enabled, edge softness will be disabled, and any adjustments will be ignored.

6 **Edge Softness**



Use this to effectively soften the all of the mask’s edges.



Sharp *Soft*

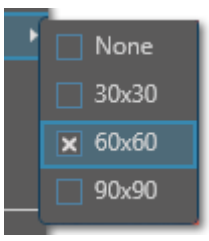
7 **Designer Shape Opacity**

Use to set to the fill opacity of the shape or image while designing. Makes easier to not completely obscure the area underneath that is being traced.

This setting doesn't affect the fill area of the finished mask. If the mask is a basic geometric shape it will always be filled with a solid white.

NOTE: If the mask is created using an Image file, along with the fully transparent areas creating a complete cut, any other areas within the image that are semi-transparent will cause masked asset to be semi-transparent in those area as well.

8 **Grid Size**

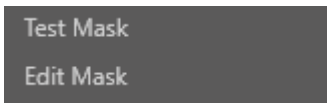


Select the desired grid density in pixels. .

9 **Reset Geometry Adjustments**

Resets the geometry back to the default settings (e.g., The same dimensions as when shape or image was first inserted onto the canvas.)

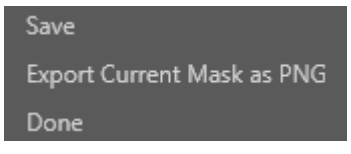
10 **Test / Edit Mask**



To help visually see the mask at work click **Test Mask**. This will temporarily hide the designer grid as well as all point elements and apply the worked mask to the asset or PGM space.'

Use **Edit Mask** to bring back the designer and resume work.

11 **File Handling**



Save: Save worked mask as a raw file. All raw mask files are kept in a sub folder named Raw under the event's Mask folder.

Export Current Mask: This function transforms the raw mask into its own PNG image file. The file can then be imported into other switching devices and/or software that supports using opacity masks. Saved file is stored in the event's Masks folder.

Done: Closes designer. If current work has not already been saved you will be prompted to save it at time.

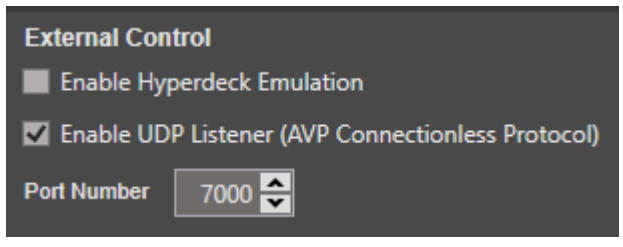
External Control

There is several ways that Legion can be controlled externally. The following describes how to use these features

---

AVP Protocol Commands

To begin communicating with Legion from an external controller, first go to Global Settings and enable the UDP listener. After which the listener will begin immediately waiting for command strings on the default port number ‘7000’



NOTE: If you find that port 7000 conflicts with other software apps running on the same computer, you can go ahead and change it using the "Port Number" selection control. Once you have completed the change the port will automatically refresh itself and begin listening on the newly assigned port.

The control protocol is in simple ASCII text strings and is not case sensitive. I do, however, use case formatting in the following explanations simply to reflect clean document formatting.

Every command string needs to start with the prefix “AVP”, followed by '-1' encased between two pipe characters “|” .
Example: AVP|-1|

Following the opening character string, proceed immediately with the command string. Some commands require an additional integer value. Separate the command name and the number value with a comma “,”.

NOTE: If your choosen control software removes commas from all command strings (e.g Universe V3) you can replace the use of a comma with a space " " instead.

Load clip to standby: ‘LoadClip’ + ‘,’ + ## (asset ID)
NOTE: Asset ID is whatever is currently appearing in the asset's ID column.
Complete example loading asset whose ID is '03': AVP|-1|LoadClip,03

Start playing program: ‘PgmStart’ + ‘,’ + ## (asset ID)
Set asset ID to ‘-1’ to start the clip currently sitting in standby.
Or if you use a legitimate asset ID this command load asset and take it straight to program, bypassing the ‘LoadClip’ function.
Note: There may be a slight delay when taking a clip straight to program. This is due to the fact that it must still be placed into standby first before it is executed to program.
Example to play asset currently in preview: AVP|-1|PgmStart,-1
Example to load asset with ID '2A' and take it straight to program: AVP|-1|PgmStart,2A

Stop program: ‘PgmStop’
Complete example to stop clip: AVP|-1|PgmStop

Pause program: PgmPause’
Complete example to stop clip: AVP|-1|PgmPause
Note: The pause command is a toggle, simply send the command again to resume program play.

Play / Stop asset as relative: ‘RelativeStart’ + ‘,’ + ## (asset ID)
This command will instruct an asset to play independently on top of any other asset that may be playing. All asset trims, loop & hold properties will apply.
Since this toggles between play and stop send this same command to end play.
You must use a legitimate asset ID.
Example relative playing clip ID '2A' straight to program: AVP|-1|RelativeStart,2A

Pause relative asset: ‘RelativePause’ + ‘,’ + ## (asset ID)
To pause an asset that is running as relative.
You must use a legitimate asset ID.
Example stopping relative play of clip ID '2A' straight to program: AVP|-1|RelativePause,2A

Playing an overlay asset: ‘PlayOverlay’ + ‘,’ + # (1 or 2)
Set the operational flag to either ‘1’ or '2' in order to start that corresponding overlay.
Note: This command can also be used a toggle between pause and play, simply send the command again to flip between the two states.
Example to play overlay 1: AVP|-1|PlayOverlay,1

Stop overlay: ‘StopOverlay’ + ‘,’ + # (1 or 2)
Complete example to stop overlay 1: AVP|-1|StopOverlay,1

Warning: Overlay commands only work when the underlaying asset that has overlays assigned to it is currently playing in program. Any other time the commands are ignored.

Fast forward clip: ‘FForward’
Set the operational flag to the desired faster then normal speed.
The range of speed is entered as an integer value between 1000 to 4000. (1000 = normal and 4000 = 4X faster)
To end the fast forward and resume normal play speed then set flag to '0'
Complete example to start fast forward on the currently selected clip to 3.5X speed: AVP|-1|FForward,3500
To end fast forward on the currently selected clip: AVP|-1|FForward,0

Rewind clip: ‘Rewind’
Set the operational flag to activate or deactivate rewind. (1 = On , 0 = Off)
Complete example to begin rewind of the currently selected clip: AVP|-1|Rewind,1
To end and resume nomal play: AVP|-1|Rewind,0
Note: The pause command is a toggle, simply send the command again to resume play.

Set current position: ‘SetPosition’ + ‘,’ + **timecode*
*The current position is formatted as a timecode string (‘hh:mm:ss:ff’.)
Complete example to set clip position to 30 seconds and 12 frames: AVP|-1|SetPosition,00:00:30:12

Advance to time out: ‘GotoTimeOut’ + ‘,’ + ## (operational flag)
Set the operational flag using numbers 1 to 4 (1=60sec, 2=30sec, 3= 20sec, 4=10sec)
Complete example to advance to 10 seconds out: AVP|-1|GotoTimeOut,4

Load Background: ‘LoadBG’ + ‘,’ + ## (index)
Set desired background index to the actual position the file appears in the background menu. (0 = Black)
Complete example to display background 3: AVP|-1|LoadBG,3

Next Background: ‘NextBG’
Use to simply display the next background in the list.
Complete example to stop overlay 1: AVP|-1|NextBG

Previous Background: ‘PreviousBG’
Use to simply display the previous background in the list.
Complete example to stop overlay 1: AVP|-1|PreviousBG

Advance to next tag: ‘NextClip’
Complete example to select the next clip: AVP|-1|NextClip

Go back to previous tag: ‘PrevClip’
Complete example to select the previous clip: AVP|-1|PrevClip

Advance to next tag: ‘NextTag’
Complete example to advance to next tag marker: AVP|-1|NextTag

Go back to previous tag: ‘PrevTag’
Complete example to advance to the previous tag marker: AVP|1|PrevTag

Enable Temp Hold: ‘TmpHold’
Complete example to togle the temp hold: AVP|-1| TmpHold
Note: The command is a toggle, simply send the command again to disable.

Enable Temp Loop: ‘TmpLoop’
Complete example to togle the temp looping: AVP|-1| TmpLoop
Note: The command is a toggle, simply send the command again to disable.

Mute PGM Audio: ‘Mute’
Complete example to toggle mute: AVP|1| Mute
Note: The mute command is a toggle, simply send the command again to unmute.

Clear All Selected: ‘Clear’
Complete example to clear all selected: AVP|1| Clear

Hide Program Output: ‘HidePGM’
Complete example to toggle between whether program output is visible or not: AVP|-1| HidePGM

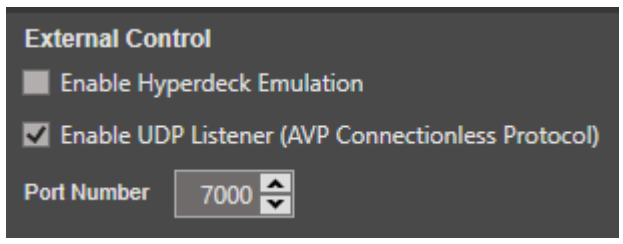
Enable Auto Start: ‘AutoStart’
Complete example to togle the auto start feature: AVP|-1| AutoStart
Note: The command is a toggle, simply send the command again to disable.

SEE ALSO
HyperDeck Emulation
Stream Deck Config Panel

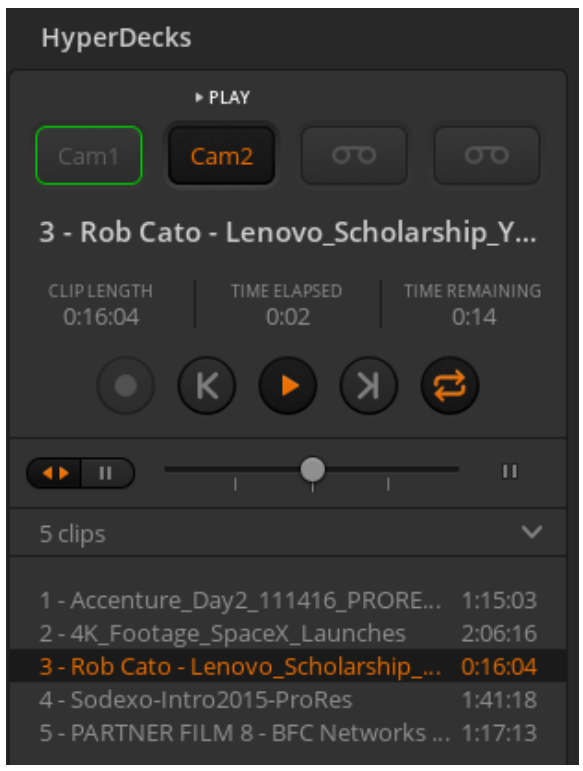
HyperDeck Emulation

Blackmagic ATEM users will really appreciate this feature.

When “HyperDeck Emulation” is enabled, AVP presents itself on the network and to an ATEM switcher as if it was an actual HyperDeck video play unit. This means that you can use the ATEM’s built-in deck control feature to control Legion II.



To enable, first go to Global Settings and select Enable Hyperdeck Emulation. After which the system will immediately begin waiting for an ATEM to atempt connection.



There is an enormous potential of having a robust play-out solution like AV-Playback integrate directly with an ATEM switcher. Now you can take advantage of the switcher’s autoplay feature This feature automatically instructs Legion to play anytime the assigned input is selected. On top of that, last minute file additions can be added to an event playlist with so much more ease. No more worrying about whether the file is the correct resolution or frame rate, since the output is a computer display, the feed into the switcher’s HDMI port will always remain the same. All the current transport controls in the ATEM are enabled including the jog and shuttle. The ATEM will even be able to update automatically when clips are either added or removed from the AVP playlist.

SEE ALSO
AVP Protocol Commands
Stream Deck Config Panel

Shortkeys

Operational Commands:

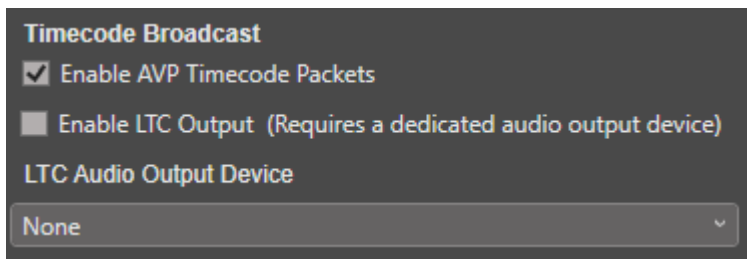
Shortcut	Command	Description
↑ UP ARROW	Previous Asset	Select previous clip and place in standby.
↓ DOWN ARROW	Next Asset.	Select next clip and place standby.
##	Select asset by ID to place in standby / preview for play to program.	Type the same characters that appear in the clip's ID column within 3 seconds. Once the last character is typed the asset will be selected and placed on standby. **NOTE: If you miss type a character you will need to wait a few seconds for the buffer to be cleared before retyping.**
E + ##	Select asset by ID giving it edit focus.	While holding down the 'e' key type the same characters that appear in the clip's ID column within 3 seconds. Once the last character is typed edit focus will be assigned to that asset. **NOTE: If you miss type a character you will need to wait a few seconds for the buffer to be cleared before retyping.**
[+ ##	Play/Stop relative asset. Use function to toggle between play and stop.	While holding down the left square bracket type the same characters that appear in the clip's ID column within 3 seconds. Once the last character is typed the asset will immediately begin playing independent on top of all other assets currently playing. **NOTE: If you miss type a character you will need to wait a few seconds for the buffer to be cleared before retyping.**
] + ##	Pause relative asset.	While holding down the right square bracket type the same characters that appear in the clip's ID column within 3 seconds. Once the last character is typed that relative playing asset will pause. **NOTE: If you miss type a character you will need to wait a few seconds for the buffer to be cleared before retyping.**
B + ##	Select background by index	While holding down the 'b' key type the index number as it appears in the background list within 3 seconds. Once the last character is typed that background will appear. **NOTE: If you miss type a character you will need to wait a few seconds for the buffer to be cleared before retyping.**
B + PAGE UP	Select previous background	Causes the current background index to go back 1 and display that background.
B + PAGE DOWN	Select next background	Causes the current background index to advance 1 and display that background.
ENTER	Start playback	Starts playback from punch in point.
SPACE	Pause playback	Function is a toggle. press again to resume.
ESC	End playback	Ends playback and returns to punch in point.
SHIFT + ESC	Stop all relative assets	Ends playback of all assets currently playing relative/ independent..
RIGHT ARROW	Advance program position forward	Advance current position 1 frame. Hold key to quickly repeat.
LEFT ARROW	Move Program Position Back	Rewind current position 1 frame. Hold key to quickly repeat.
TAB	Next Cue Tag	Jump position forward to next cue tag.
SHIFT + TAB	Previous Cue Tag	Jump position back to previous cue tag.
HOME	Goto In Point	Jump position back to current punch in point.
END	Goto Out Point	Jump position forward to current punch out point.
DELETE	Remove asset	Permanently deletes the selected asset from playlist
F1	Preview 10 Seconds Out	Advances current position to 10 seconds before end of clip
F2	Preview 20 Seconds Out	Advances current position to 20 seconds before end of clip
F3	Preview 30 Seconds Out	Advances current position to 30 seconds before end of clip
F4	Play Overlay 1	Toggle overlay 1 between play or pause.
F5	Stop Overlay 1	Ends overlay 1 and returns it to it's punch in point.
F7	Play Overlay 2	Toggle overlay 2 between play or pause.
F8	Stop Overlay 2	Ends overlay 2 and returns it to it's punch in point.
ALT + I	Set Punch In Point	Set in point to the current scrub bar location.
ALT + O	Set Punch Out Point	Set out point to the current scrub bar location.
ALT + T	Insert Cue Tag	Set tag at current scrub bar location.
ALT + L	Toggle Temp Loop	Function is a toggle. press again to disable.
ALT + F	Toggle Temp Hold	Function is a toggle. press again to disable.
+	Increase Master Volume	Increase current master gain 1%.. Hold key to quickly repeat.
-	Decrease Master Volume	Decrease current master gain 1%.. Hold key to quickly repeat.
M	Mute Audio	Function is a toggle. press again to un-mute.
C	Clear All Selected	Clears the selection of all clips and closes any open clips.

H	Toggle Hide PGM	Toggles the visibility of the program output.
F1	10 Seconds Out	Advances current position to 10 seconds before the end of clip
F2	20 Seconds Out	Advances current position to 20 seconds before the end of clip
F3	30 Seconds Out	Advances current position to 30 seconds before the end of clip
F6	60 Seconds Out	Advances current position to 60 seconds before the end of clip
?	Toggles the display of tooltips	Toggles whether or not to allow the displaying of contrrol tooltips.

AVP Timecode Display

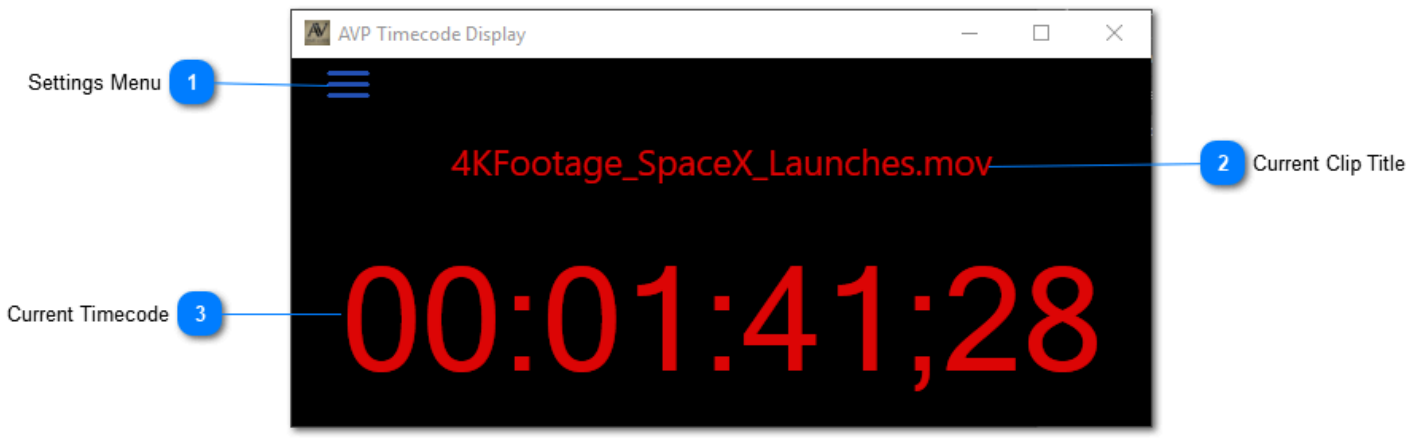
This easy to use self-contained app can be freely distributed without license to any other networked workstation and provide its user with a live timecode display of any currently running Legion II unit that has been set to broadcast their position data.

First you will need to enable the timecode broadcast in the Legion instance you want monitored. On that unit go to the "Settings" menu and then click on "Global Properties". Now make sure the "Enable AVP Timecode Packets" option is checked and click "Done".



Next you will need to copy the executable file on all the PC's you want to display the reader on. We have provided an easy link labeled "AV-Timecode Display Source Folder" under 'Legion II' in your Windows start menu. A file explorer of the folder will appear, simply copy "AVPTimecodeDisplay.exe" to a thumb drive.This file is self-contained and does not require of any sort of invasive installation. All you need to do simply copy onto the desktop of the receiving computers and then just double click it to launch.

It may seem self-explanatory, but remember that each receiving computer must be on the same network with the Legion workstation and share the same sub-net address.

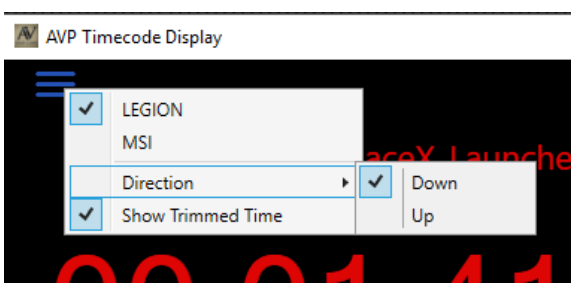


SEE: Global Properties

---

1 Settings Menu

Click this to display the setting menu.



Available Play Unit List:
All currently broadcasting play unit will appear here. Click on the desired workstation to set its activity as the one being displayed.

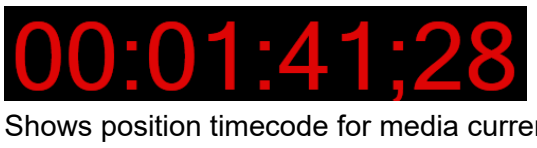
Direction:
Select from its sub menu whether the time display will be either counting down or up with elapsed time.

Show Trimmed Time:
When checked time will reflect position data relative to duration between any punch in and out points.

2 Current Clip Title

Show the title of media currently in program for the connected play unit.

3 Current Timecode



Shows position timecode for media currently in program on the connected play unit.

The text color shows red when time is counting down and green when viewing elapsed time.

SEE ALSO
Global Properties

How To's

As with any complex program, step by step instructions are vital in ensuring proper operation.

Below are links to a few written tutorials that cover what you need to get started.

We also offer number of video tutorials on our IEW Solutions YouTube channel, each delving into these subjects and more.
https://www.youtube.com/channel/UCz941LVUW_Y70NBY0CeEtEw

Configure your computer for best graphic performance

Some PC desktops and most all high-quality laptops are equipped with two separate GPU's a general purpose Integrated one that is basically a subcomponent of the actual CPU chip and a much more powerful Discrete one. The discrete GPU in a desktop is typically a separate graphics card. However, for laptops, manufactures acquire a chip from Nvidia or AMD and embed it directly into their motherboard design.

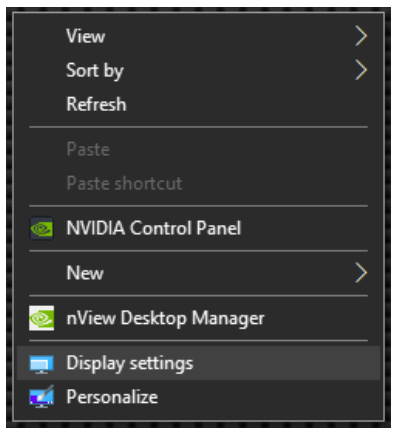
In the wild-wild west of laptop manufactures, system architecture can vary significantly, but one thing though that is pretty much a given, especially in older ones, is that the laptop's own screen is directly wired to the integrated GPU and any external outputs (DP & HDMI) are fed from the discrete one. Beware, most USB-C / Thunderbolt adaptors are handled via the CPU and its integrated GPU.

The operating system is now responsible for choosing which one to use for each application. Most of the time it chooses based on which display is the primary desktop, because that is the domain in which the OS resides in. So, if we keep the primary desktop on the laptop's integrated monitor, by default when an application is launched, the OS assigns the integrated GPU to support the app's graphics needs.

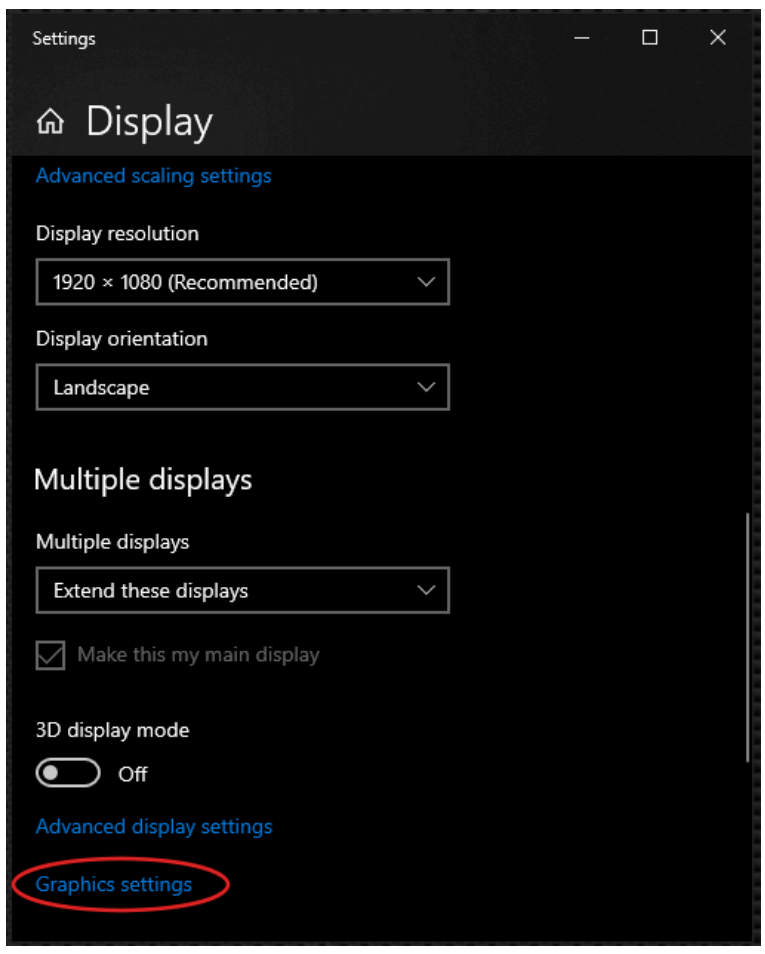
Since we are working with high resolution videos with minimal compression, the integrated GPU in most situations can't handle these large bitstreams the way a discrete one can. This may result in poor playback performance. Previously both Nvidia and AMD had offered a way to forcefully assign applications to run on either the Discrete or Integrated GPU. However, since Windows 10 version 1803 and later now provide the ability to set graphics performance per application internally, both manufactures has begun to stop including this feature in their driver set.

Customizing Graphics Performance Preference for a Desktop App

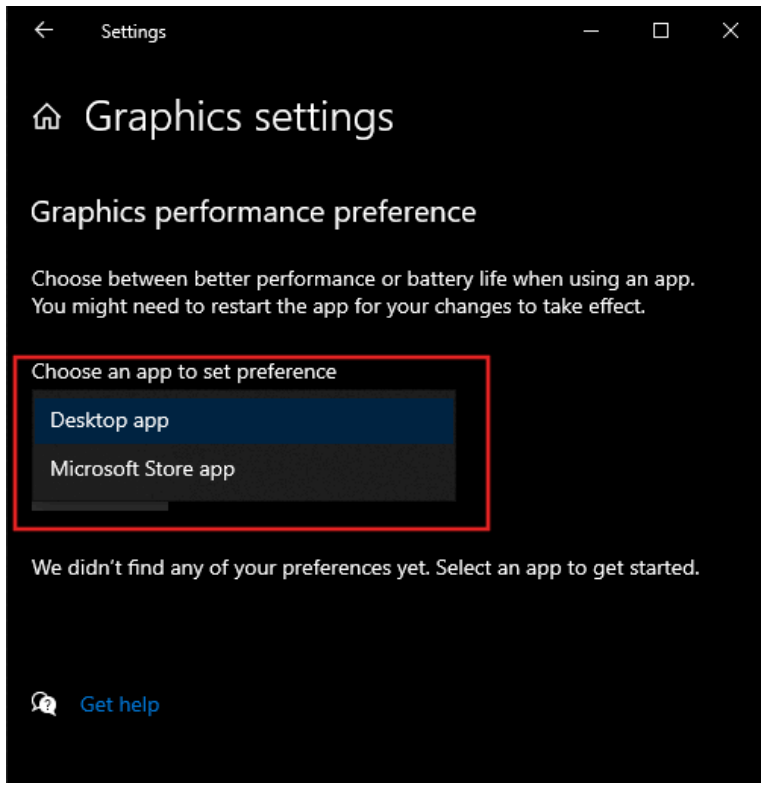
Right-click on the Desktop and select Display settings.



Select Graphics settings



Under "Choose and app..." Click the down arrow.

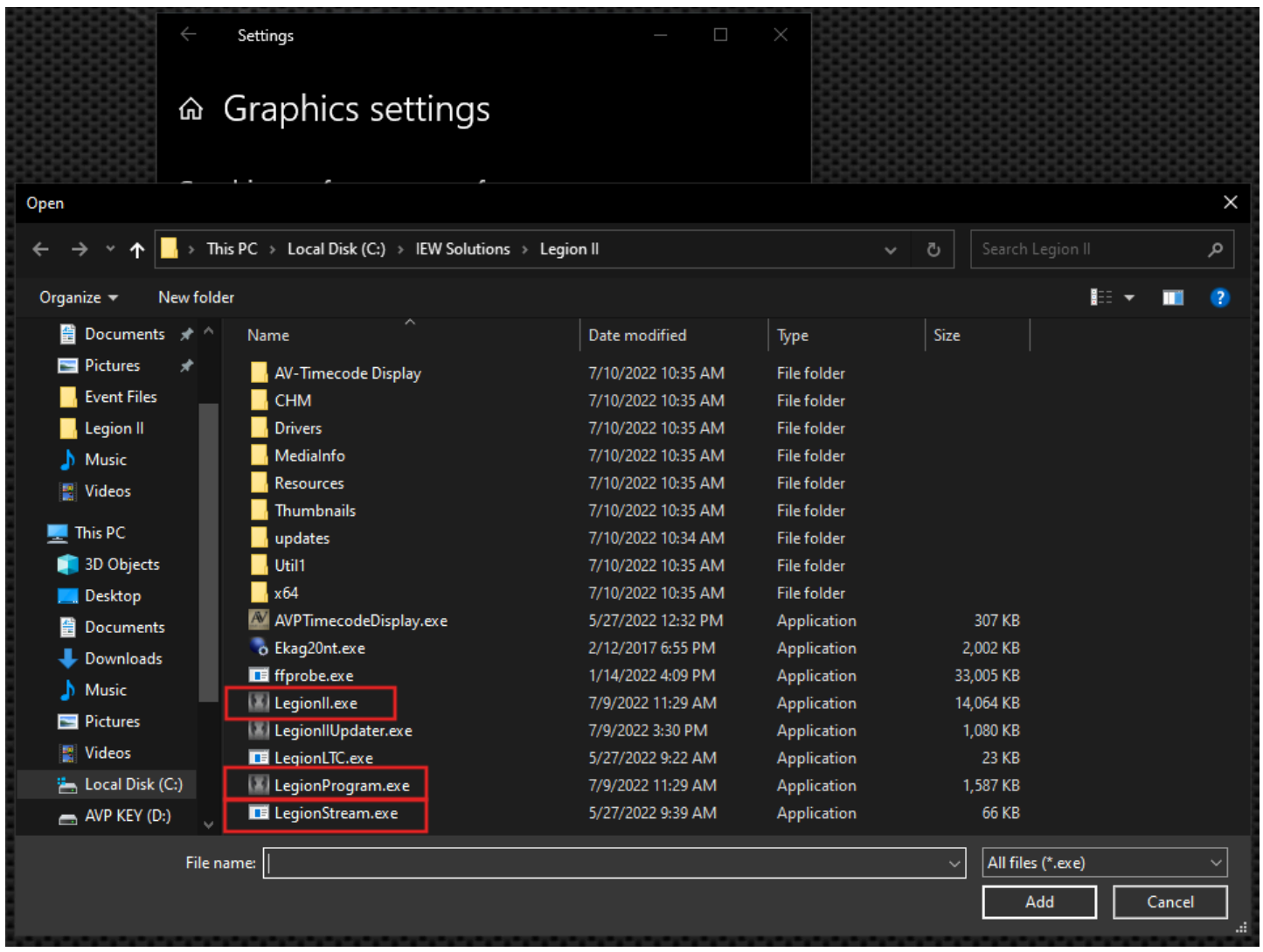


Specify the app type:
- Microsoft Store app – Universal applications installed from Microsoft Windows Store.
- Desktop app – Classic applications not installed from Microsoft Windows Store.

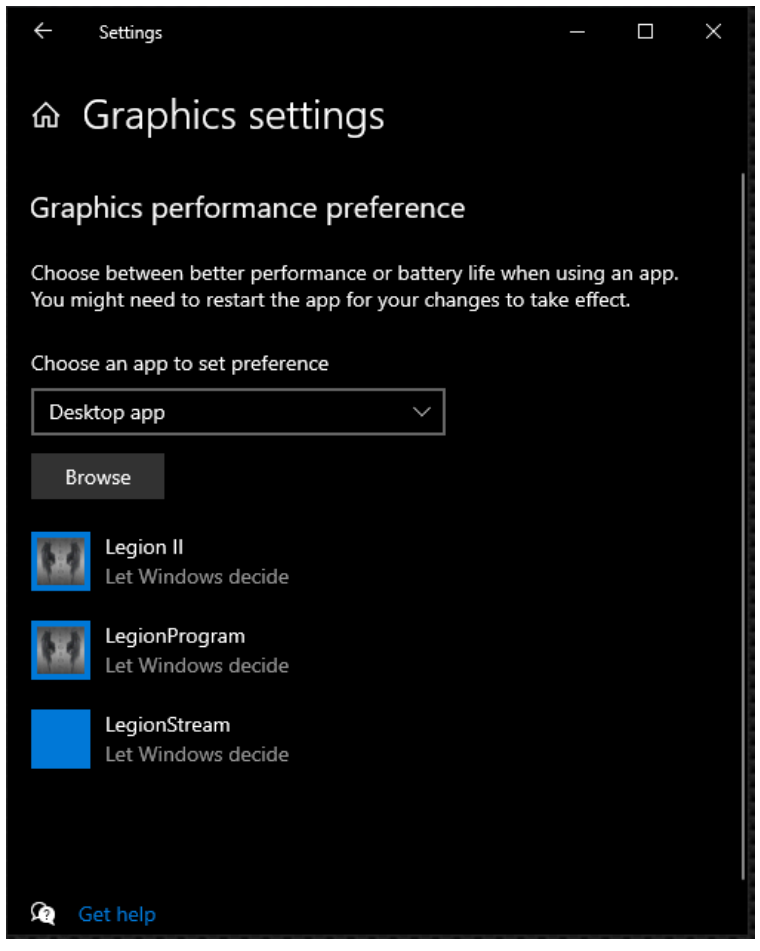
NOTE! On systems running Windows 10 version prior to 1903, Desktop app and Microsoft Store app will be listed as Classic app and Universal app, respectively.

For us we need to choose "Desktop app".

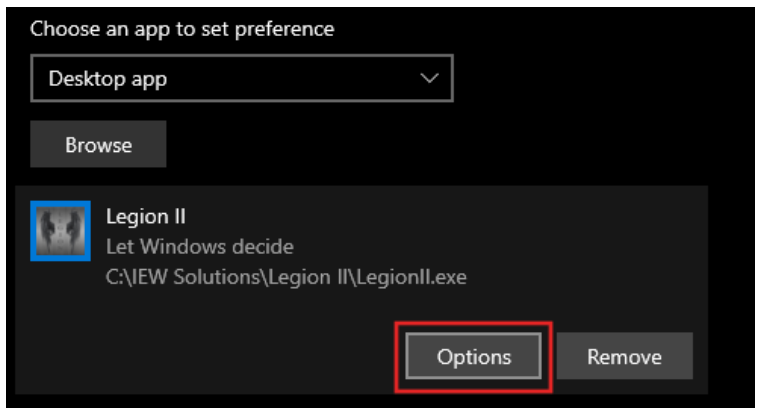
Next click on the "Browse" button.



In File Explorer, select the desired application's executable file and click Add. There are three executable files we need add, "LegionII.exe", "LegionProgram.exe" and "LegionStream.exe". You will need to do each one at a time.

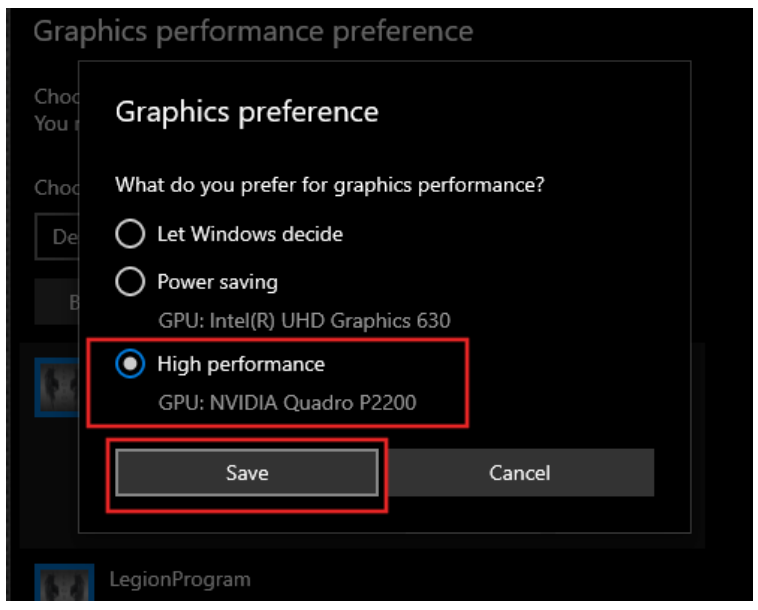


Now one at a time, select one of the three and click Options.



The Graphic preference menu should appear, with the following options to choose from:
- Let Windows decide – Automatically selects the Integrated GPU when running 2D apps and the Discrete GPU when running 3D apps. This is the default setting.
- Power saving – Selects the integrated GPU, which provides lower performance but consumes less power.
- High performance – Selects the discrete GPU, which provides better performance but consumes more power.

In our case, be sure to choose the “High Performance” setting and click Save.



After all three have been set Legion will now have the discreet GPU handle most of the rendering needs.

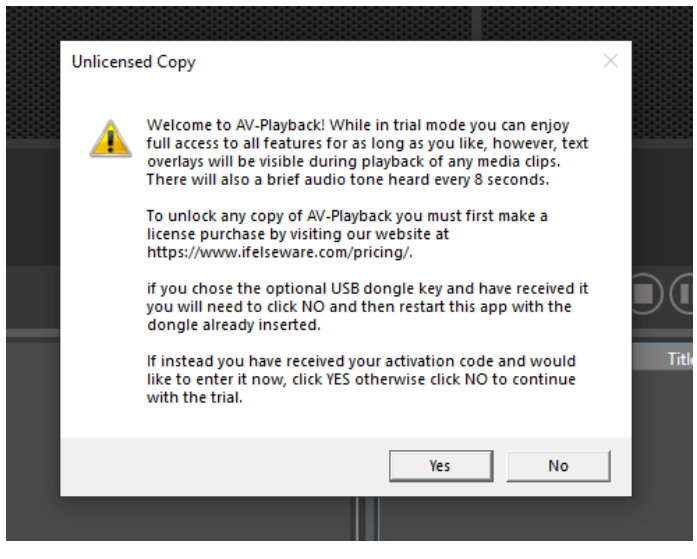
Getting Started

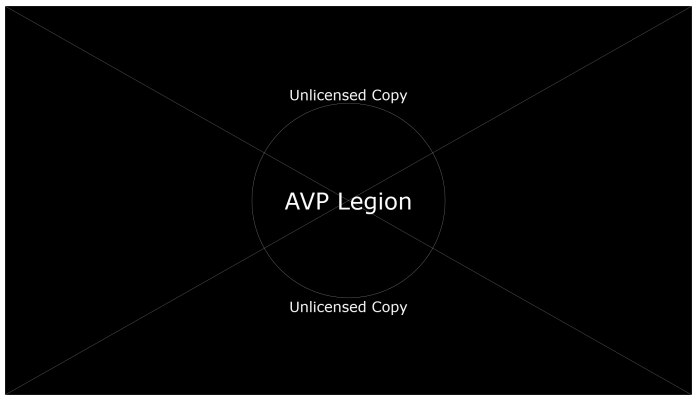
The purpose of this guide is to provide a basic outline Legion's layout as well as some step-by-step instructions on creating a playlist, assigning your outputs, adding assets and finally how to display them to your audience.

This guide is assuming you have already installed the program, so we won't bore you with that part. We are also going to assume this is the first time the Legion app has been launched on your computer.

First step is to launch Legion II by double clicking on its desktop icon.

Anytime the app is launched and unable to find a valid license key on the system this dialog will appear.

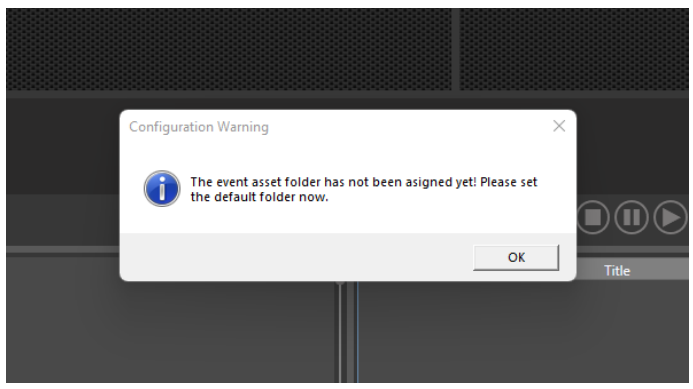




It is to inform you that while operating in a trial mode a water mark will appear over the program output as well as a brief tone will be heard every 8 seconds.

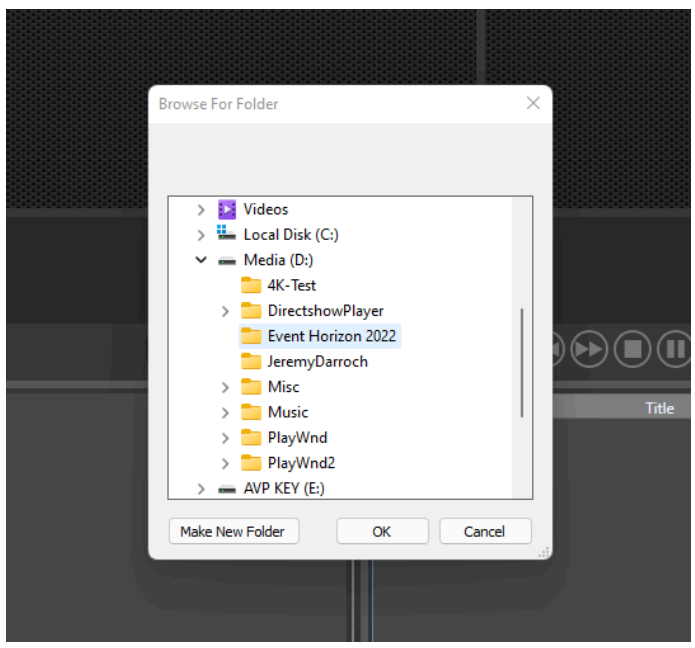
You can refer to How to install or transfer an online license to learn how to install a license. For now, you can just click 'NO'.

The next prompt to appear is a dialog box asking you to assign the event asset folder.



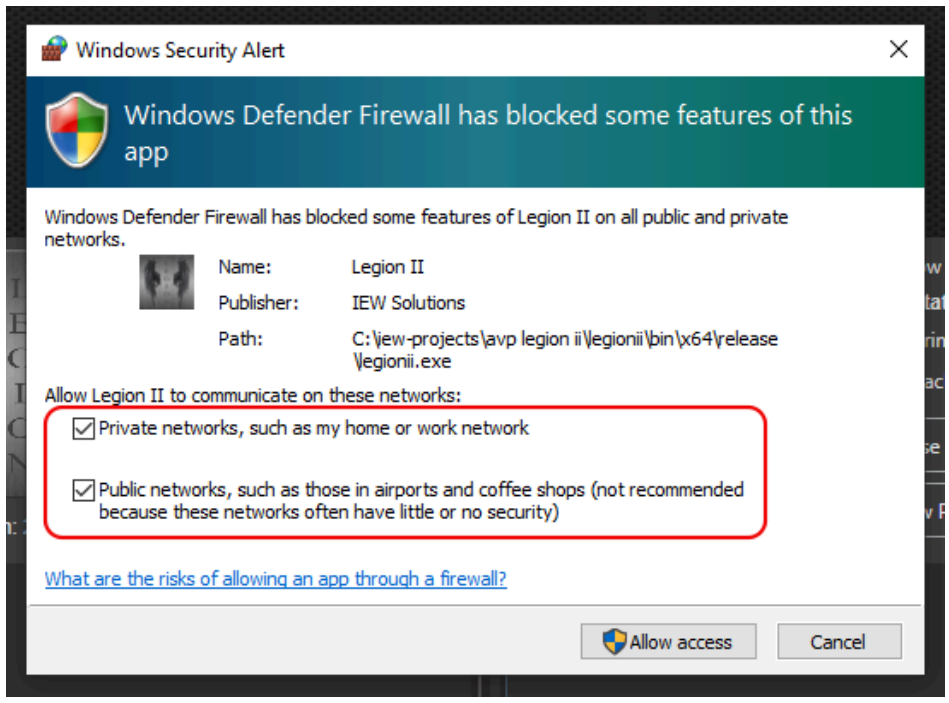
Just so you know, the folder you choose is where all files, including playlist files, are going to be saved. Even if you retrieve assets from other locations, anytime you add a file to the playlist, that file will automatically be copied and placed into this folder.

Click 'OK' and a folder browser will appear. You can use this to either select an existing folder or create a new one. If creating a new one, be sure to select it before clicking the 'OK' button.



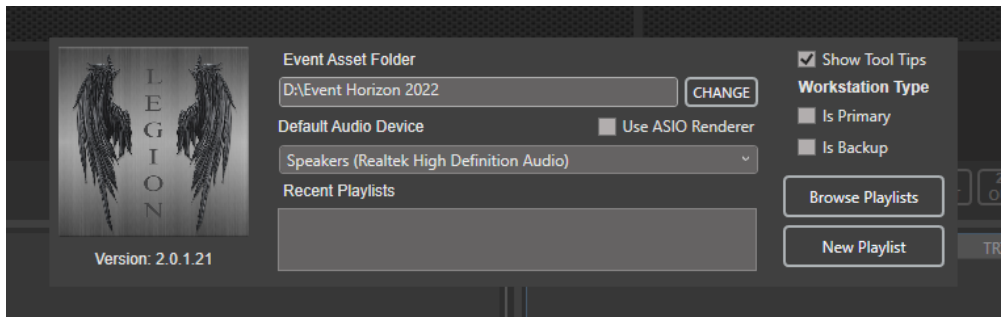
Since Legion relies heavily on the use of UDP packets to communicate with its many different components, and because this may be the first time the app has been launched, Windows will need to ask you for permission to allow it through the firewall.

NOTE: To make sure you do not have trouble in the future with varying network topographies, it is wise to enable for both Private & Public networks.



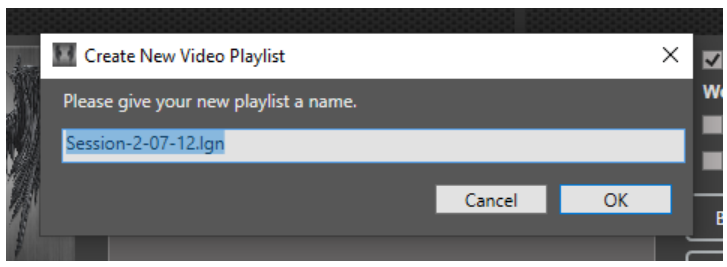
Typically, you only need to do this once. However, anytime a new update with a different version number is installed you will prompted to do this again. Also, when a few more of Legion's functions become active, there will be more of these same prompts popping up.

Now we finally get to the launch control.

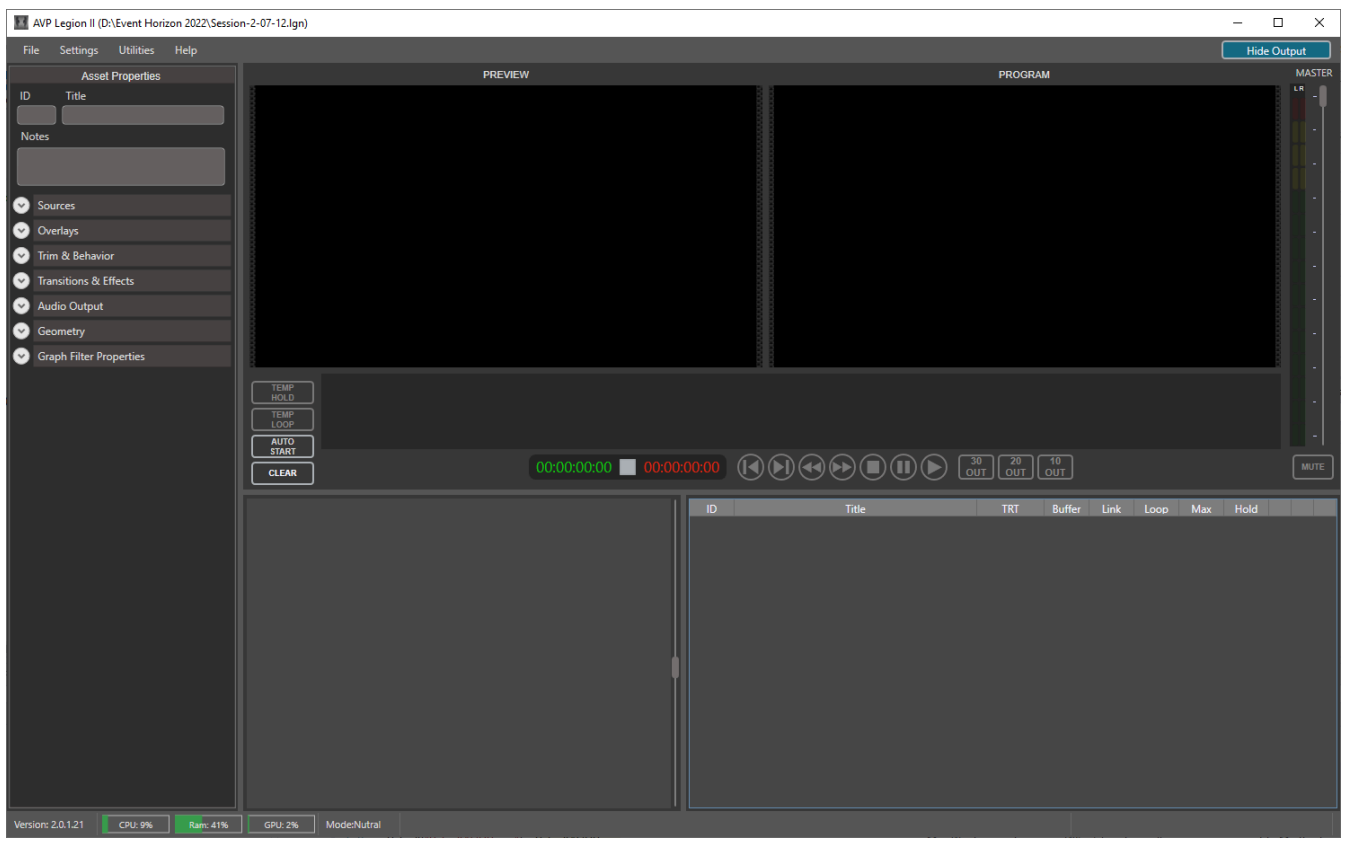


The launch control gives you easy access to some important settings that need to be set before the app can continue. For the most part, since the asset folder has already been set and the default audio output, if not changed, will display the output that is set as the default in Windows.
Please refer to Launch Control and get more detailed info on the launch control panel.

All we need to do now is create a playlist. Click on 'New Playlist' and type in a title for it and click 'OK'.



At this point the launch panel disappears revealing a very empty interface.



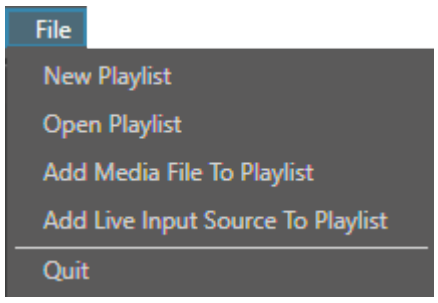
Typically, this is when you may want to assign your program output. This is especially important when you have several active displays attached to the computer. By default, anytime a new playlist is created the system will search for the first available output and configure you program pixel space to match that display's resolution. If the one chosen is not the one you want you will need reasign it by going to the 'Settings' menu and clicking on "Output Display Config".

Refer to Display Selection Panel to learn more about configuring the program output.

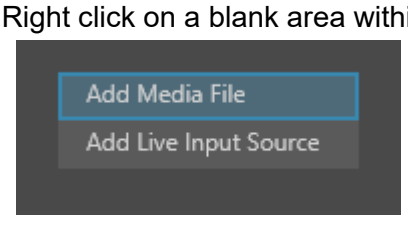
NOTE: The app will never allow the Windows primary desktop to be used so, If perhaps you're on a laptop and have no external monitors connected, the system will create a virtual space so you can at least review assets using the program confidence monitor.

Now that the output has been set let's add our first asset. There are three different way you can go about adding files:

1) In the main menu click on File || Add Media File To Playlist.



2) Right click on a blank area within the thumbnail array or data table panels.



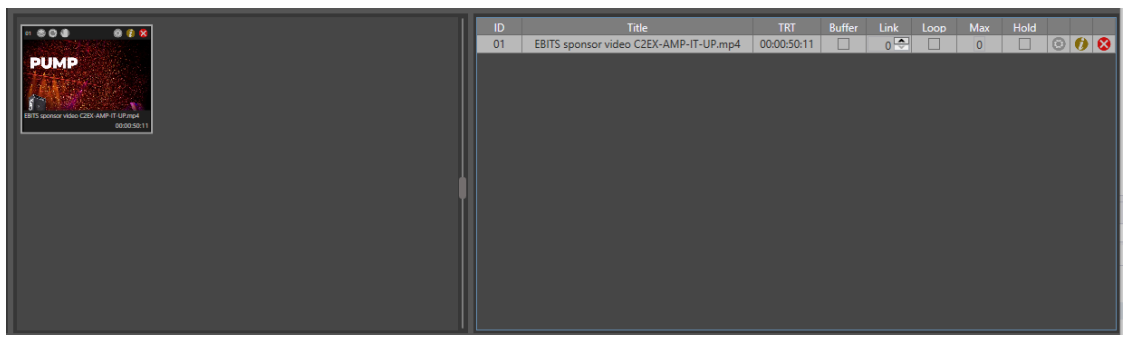
3) Using Window File Explorer select and drag media files directly to a blank area on the thumbnail array panel.

NOTE: It is important to remember that all assets belonging to a playlist must be kept in the event asset folder. This way all elements related to a playlist can be easily moved as one bundle and used on other computers without having to correct the file paths within the playlist.

By default, any file retrieved from other locations will automatically be copied and placed directly into the designated event folder.

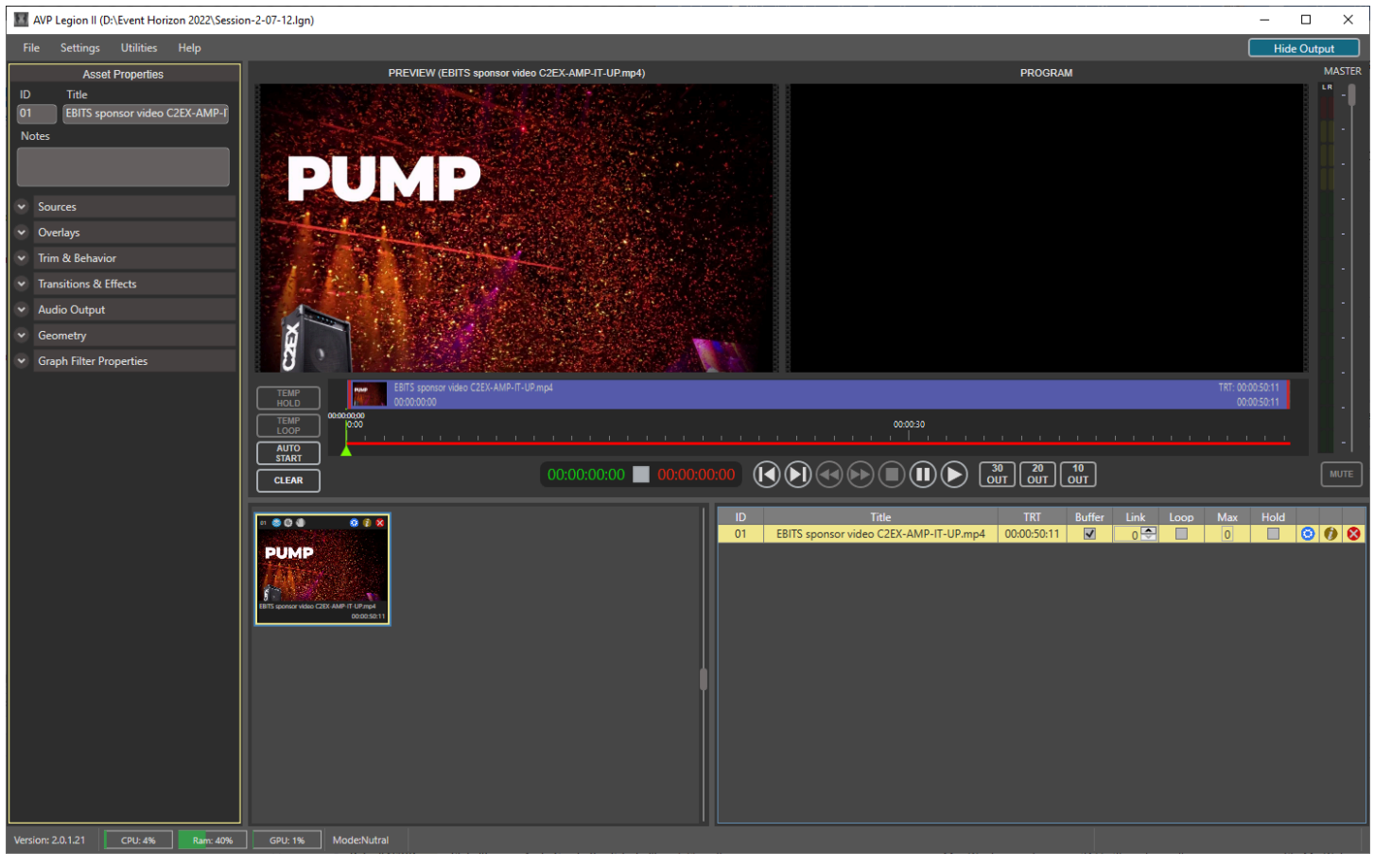
To prevent excessive use of available drive space on your system it is recommended that you manually add all needed assets directly to the event folder and prevent the system from needing to create wasteful copies.

Once the asset is loaded, we now see both a new thumbnail control as well as a new entry in the data table. Each in their own way, provides you with a cataloging of all playlist entries.

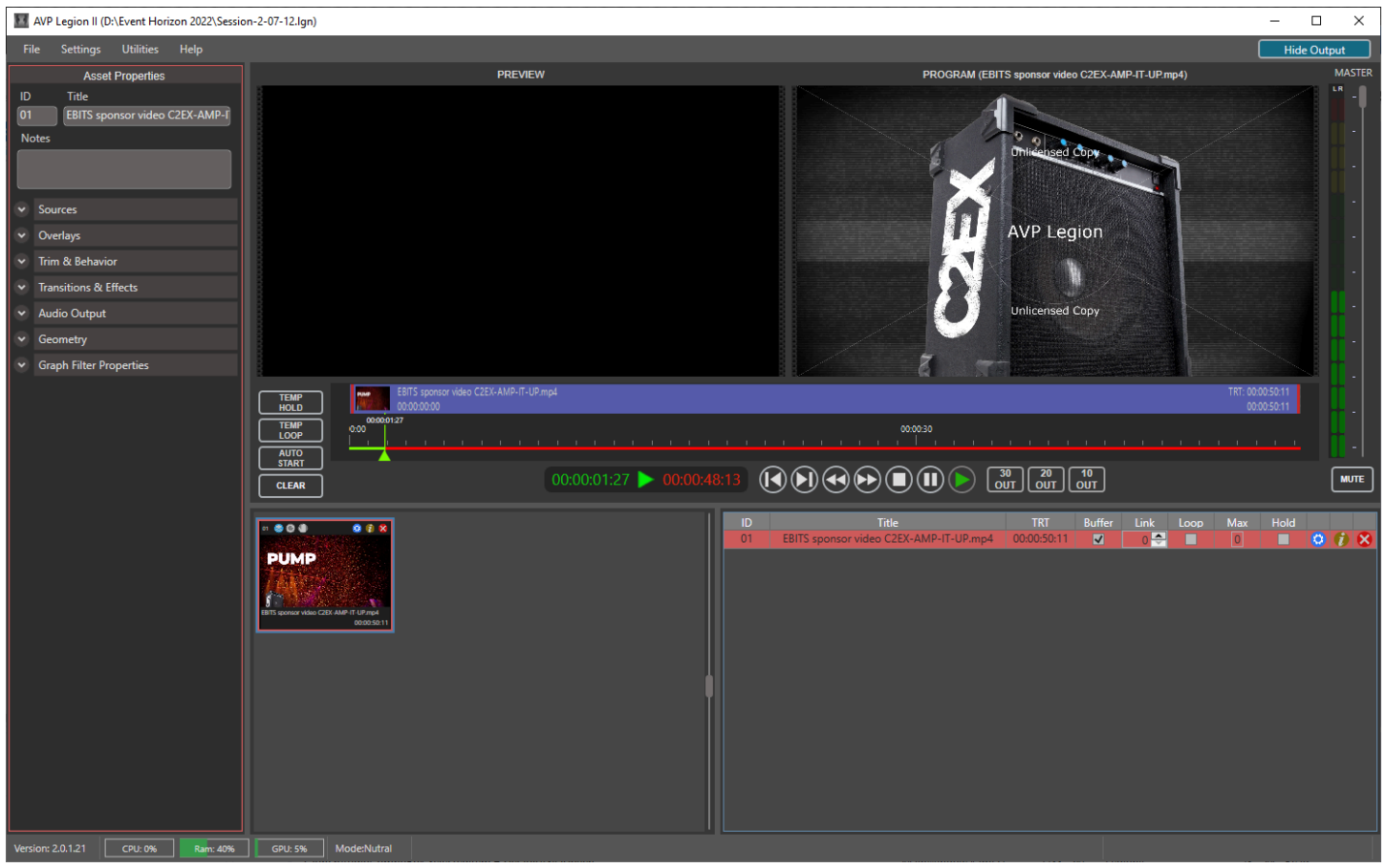


Refer to Playlist Data Area to learn more about the ways assets are cataloged and manipulated.

Now all that's left is to play the new asset. Start by clicking on either the thumb control or its row in the data table.
You will now see that the asset is sitting in preview, ready to be taken to program. You will also notice that the border around the thumbnail and list row are now yellow. This is another way to recognize which is currently in preview.

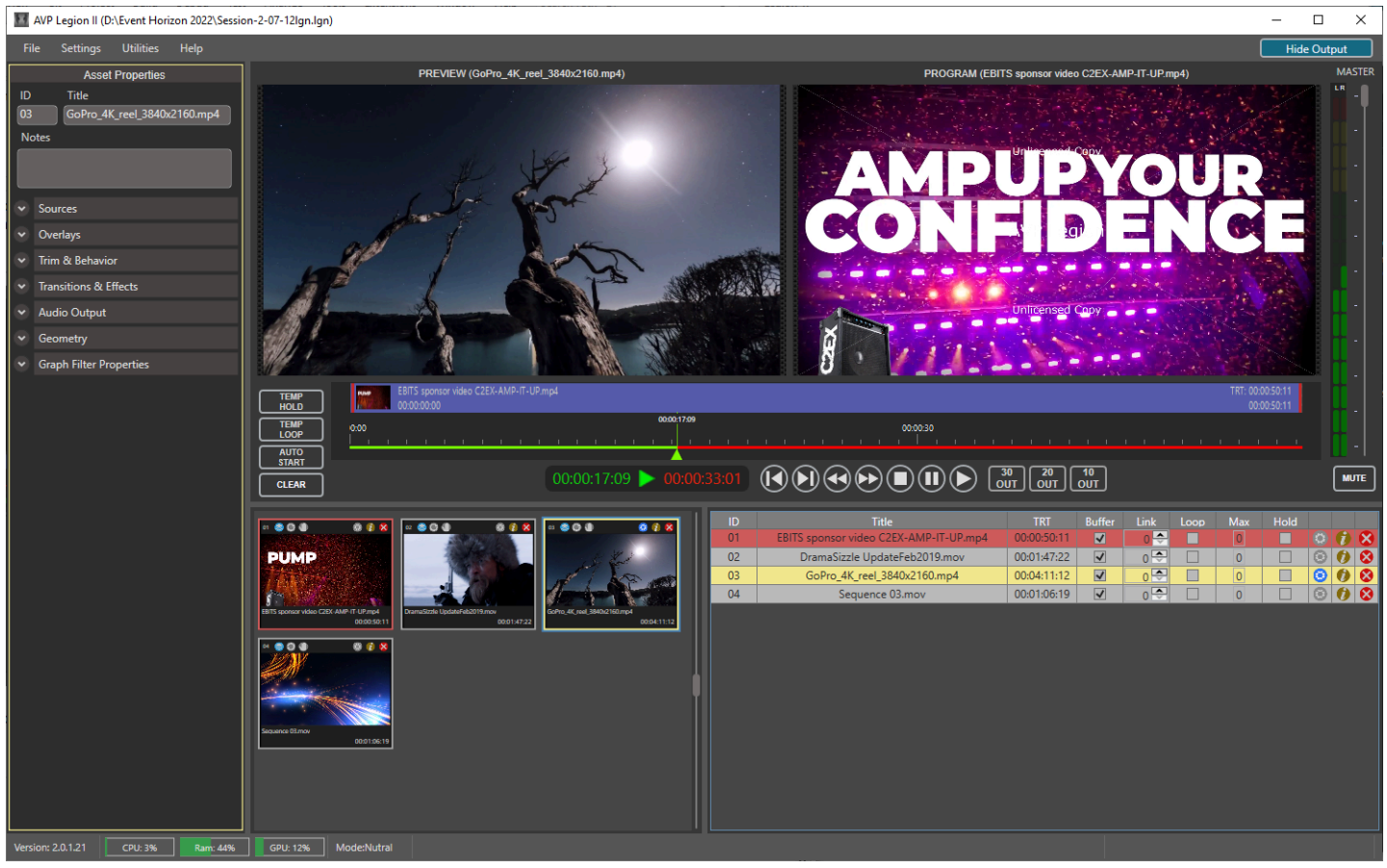


To take the asset to program and let play, simply click on the transport play button. Once in program you will see that the border and row color have now turned red. This signifies it is now playing in program. You will also see that the preview window has cleared and is now ready to accept another asset to be selected and placed in line for the next play cue..

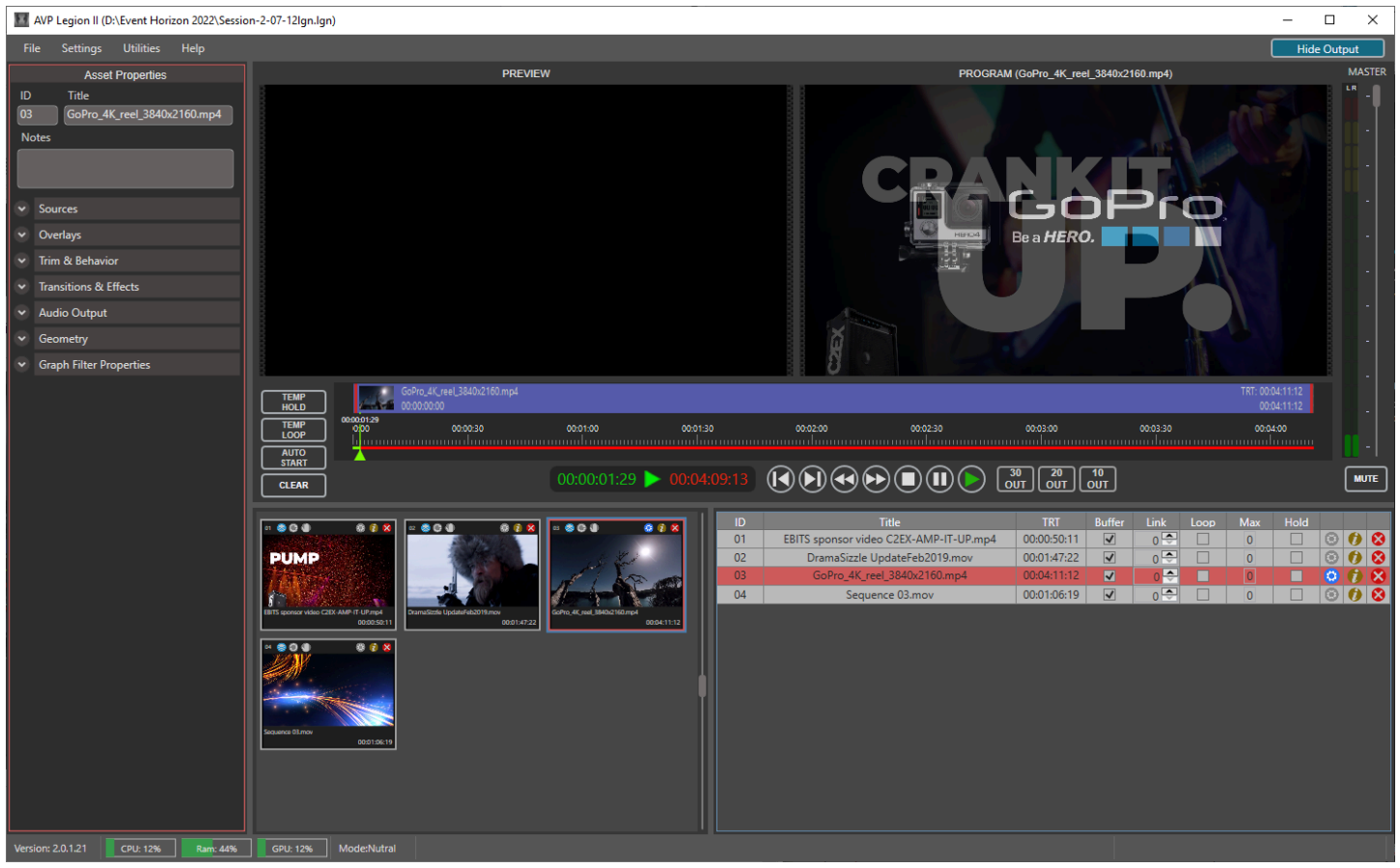


What’s left is to repeat steps above and continue building your playlist.

Here we have a few more and when we select another while one is playing you can see the next one standing by to be taken.



If we want, we can now click on the play button and when we do a default cross-fade between to two will now occur. When the transition is done the previous clip is now stopped and reset to its starting point and the new file continues until it is stops.



Select another to wash rinse and repeat.

SEE ALSO

[Main Window]

[Launch Control]

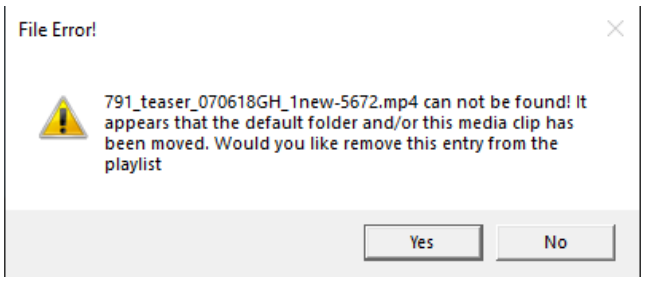
Handling media files

Here we discuss Legion's new strict enforcement of a centralized media file folder strategy and how you benefit.

Centralized file storage:

In previous versions, anytime a file was added to the playlist, the full path to its original location would be stored. When a playlist asset was selected to play, the system would find the file using this individual file path. For the most part this worked okay, but if that file was ever moved from that location the system would not be able to find it and would error anytime you tried calling it up. This is even more problematic if you needed to transfer an entire event to another computer. First off you would need to go hunting for them possibly in numerous locations, then pilling them into a single portable drive.

Fine you now have downloaded the files on the portable to the new computer. But if you didn't place them using the exact same drive and folder paths, anytime you try load the original playlist, none of the embedded file paths will match. Consequently, causing repeated errors as the system tries to load each one.



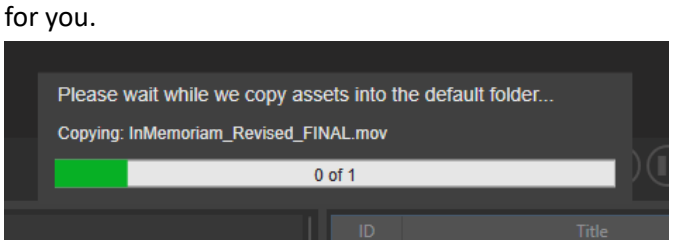
Now you have no choice but to rebuild the entire playlist from scratch.

By insisting that every file be contained in one folder, ('Event Asset Folder'), the playlist does not need to keep track of all the various locations instead it just only stores the file name itself. The path where the file came from is striped off. Now when a file is called up, the system only must query the one default event folder to find it.

Now if we need to move all the event files to another computer, or just move it to another drive, we simply copy the one folder and move it. Remember the actual playlist XML files are also contained in that same folder.

You may be now asking… Well, what if the actual path to the event folder isn't the same as what it was on the previous computer? It's simple, when you launch Legion and get to the launch control panel, change the 'Event Asset Folder' to point at the new folder location. As soon as you do that the 'Recent Playlist' list box should repopulate showing any playlist contained in that folder. Just double click the one you want, and everything will load as if it was still at the old location.

Don't worry Legion will go about enforcing this policy without asking you to jump thru hoops. You can still grab a file from a thumb drive or any other drive or folder location even from one on remote network. Its just that when you ask it to be included in the playlist Legion will end up making a copy and automatically place it into the assigned event folder for you.



NOTE: To prevent excessive use of available drive space on your system it is recommended that you manually add all needed assets directly to the event folder and prevent the system from needing to create wasteful copies.

SEE ALSO

Launch Control

Global Properties

Setup a primary & backup configuration

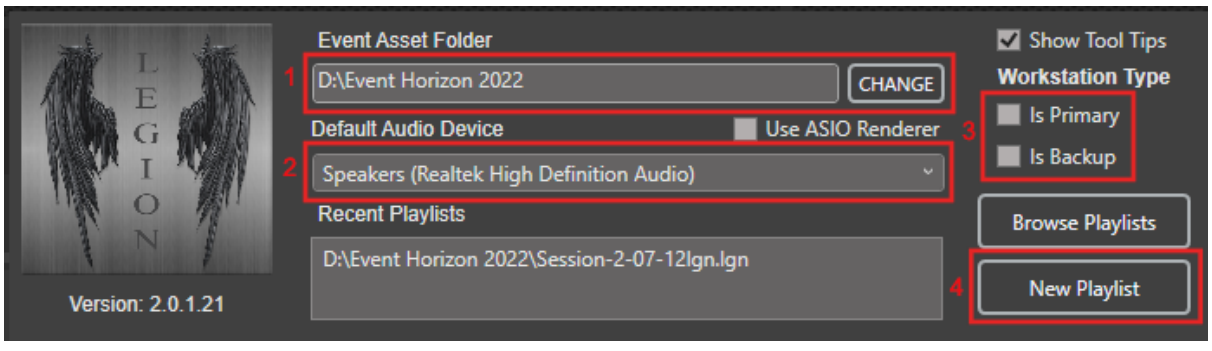
Instrumental in the success of a live multi-media event, is to have a backup solution for many of the supporting systems involved. This tutorial outlines the steps you need to take in order to make a secondary workstation act as a direct backup and is ready to take over when necessary.

Another unique feature of this app is the fact that when the link between the primary and backup is enabled, any edits made to the playlist along with changes made to its assets are automatically duplicated on the backup unit. This saves you from having to manually perform those same edits on the backup.

Communication between nodes is handled using a basic ethernet connection. So, the first thing we need to do is make sure one has been established where both are sharing the same sub net IP's. Unlike earlier A/V-Playback versions, Legion II no longer requires both machines to have inconvenient usernames and passwords for Windows login. Nor do we need to deal with aggravation of ensuring that network file sharing is configured properly. Now all file transfers can be performed internally.

So now that we have two separate networked computers, and each have a copy of Legion II installed we can begin.

Go ahead and launch Legion on both and hold when the launch control panel appears.



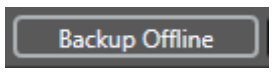
1) Let's make sure that each have an appropriate asset folder established. Just so you know the folder name and locations do not need to be the same, but it might be a good idea to do so at least to give your work flow some continuity.

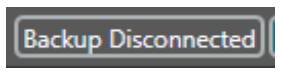
2) Next be sure that the correct audio output is selected especially on the backup unit.

It should be noted that if the primary playlist happens to be utilizing different audio outputs for various assets or if using a multichannel ASIO output device, it is being assumed that the backup may not have these exact same devices available. With that in mind all backup assets are stripped of those settings and will only use this chosen default.

3) Next is to designate which is the primary and which is the backup by checking the appropriate option under 'Workstation Type'.

4) Now all you need to do is create a new playlist for both instances. **Be sure the file name used on the backup is exactly the same as the primary one.**

OK, now we see some additional buttons appear near the top right. This one 

on the primary and this one 

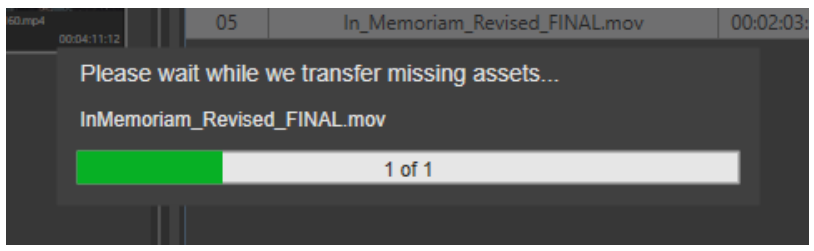
on the backup. These buttons provide you current link status as well giving you a way toggle the connection. Clicking this button from either workstaion will effect the same change.

When the link is enabled the the primary will look like this, 

and the backup is like this 

. If you want, you can go ahead and enable the link now.

OK, now we can build our playlist. From this point forward you only need to work from the primary unit.
As files are added you will see those same assets appear in the backup's playlist. Here is the cool thing… If actual file doesn't currently exist in the backup's event folder, the system will automatically transfer a copy of the file to the backup for you.



Once an asset file is done loading on both machines, you free click on it in the primary machine taking it to preview. Remember, when a new file is added, it still needs to be buffered. When you take it to preview, it will buffer on both. Now you can take it to program, and it will begin playing on the backup as well.

TIP: Play between the two will be close in time but more than likely they will not be in absolute sync. However, we have found that after the asset is in preview, if you click on the pause button instead of the play button, when you click pause again the two will run very close to perfect sync.

Going forward from here:
From this point, most of the activities performed on the primary will be duplicated on the backup as well. This includes all program transport functions, (preview commands are not transferred.) and any individual property adjustments performed on all media assets.

There are however times when you may need to perform a forced update of the backup's playlist. Like when loading on the primary, a preexisting playlist which does not exist already on the backup.
In this situation, you can, go ahead and create a new blank playlist on the backup unit then after loading the existing playlist on the primary go ahead and click this  button that sits next to the "Backup Online" button. While it is working the buttons will look like this 

When done updating buttons will return normal colors and you are ready to proceed.

WARNING: Any time you perform a forced refresh playback on both machines will stop and all selections for preview and program will be cleared.

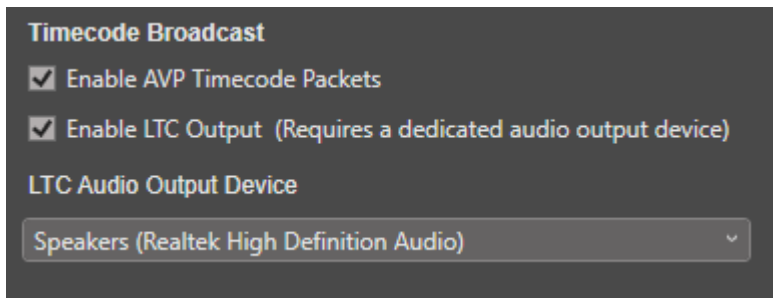
Output LTC timecode

When it is necessary to trigger remote device functions at precise moments durring an asset's playback, most high-end lighting consoles as well other production equipment need to receive an LTC timecode signal tied to the media's current running time. They use it as the clock needed to coordinate the execution of individual script cues.

Legion can output this signal easily without needing the media file to contain a separate embedded timecode track. Instead, Legion has its own built-in generator and like the AVP Timecode packet network stream, the generator is always transmitting a signal. Both streams update their actual time packets based on the current position time stamp of which ever video or audio file is currently playing out to program. This update occurs in sync with the files frame rate.

Linear (or Longitudinal) Timecode (LTC) is an encoding of SMPTE timecode data in an audio signal. So, for us to transmit it we will need an additional audio output device available to the computer. Due to LTC's very high frequency modulation, it is recommended that you only use your computers embedded speaker out or an installed sound card. The stream may become unstable if you use any USB to audio type converters due to their potentially slower response time. It would be better served if you use the USB device as your primary audio output instead.

Setup:
To enable go to the "Settings" menu and select "Global Properties" and check both "Enable AVP Timecode Packets".



Next you need to select the audio output device you want to use then check "Enable LTC Output". As soon as the setting are made the output signal will begin.

WARNING: It is important to prevent attaching to an output that is going to any speakers. The sound of an LTC stream can be very annoying.

Anytime, the enable checkbox or audio device are changed, the function will automatically reset.

The signal will remain running constantly even when no media is playing. It will remain on until either you disable it, or the app is closed.

During moments when nothing is playing the timecode readout will simply be zero. The important part is the receiving device never losses a signal. This prevents the need for any sort of old-school pre-rolling of media in order to establish a sync lock at the receiving end, potentially before the first cue is to be taken.

As with most other functions in Legion, once the change is made, they are saved. So, the LTC signal will automatically resume anytime the app is restarted.

SEE ALSO
Global Properties
AVP Timecode Display

How to install or transfer an online license

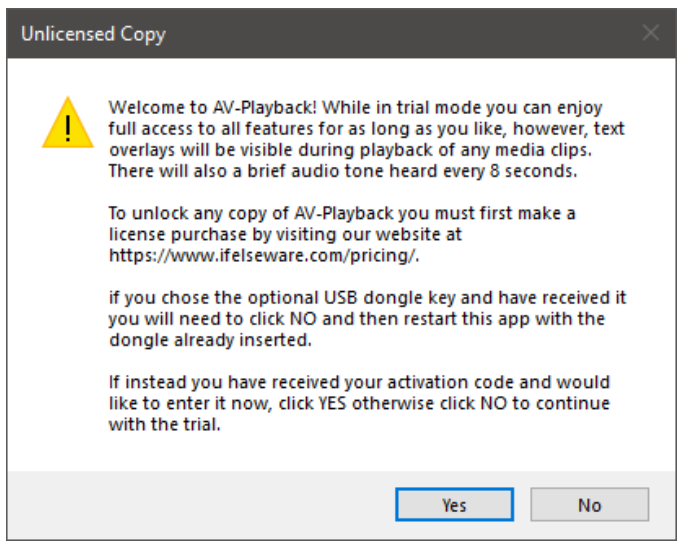
Activating for the first time:

For customers that did not purchase a USB license dongle and instead choose to activate their copy using our online activation server, please follow these simple steps:

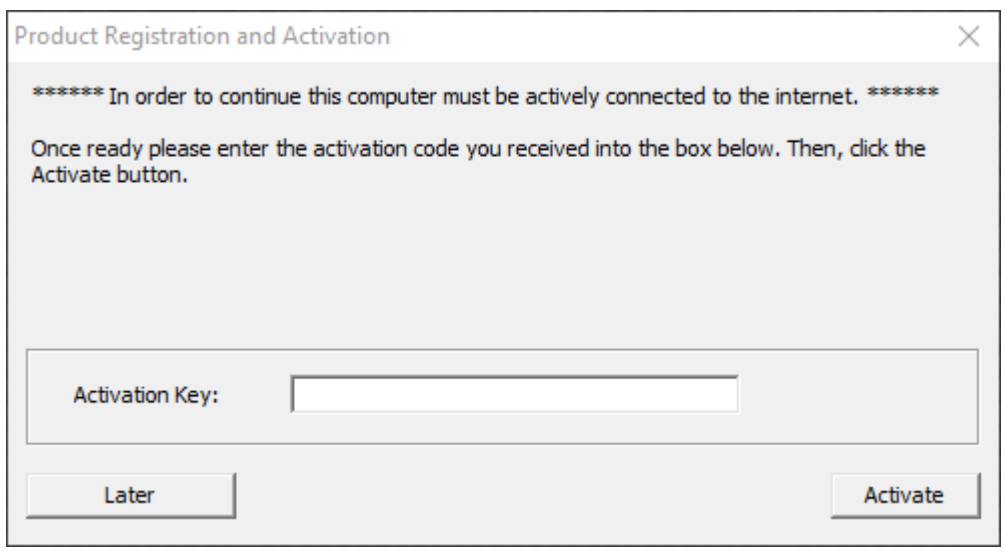
1) First ensure that your computer is connected to the internet.

2) Launch the Legion II app.

3) Anytime no license is detected on the computer this popup window will appear.



3) Go ahead and click the “Yes” button.



4) When this Registration & Activation dialog appears. Go ahead and insert the activation code you received into the text box labeled "Activation Key" and then click "Activate".

If all goes well you will see a small dialog confirming your license has been activated.

TIP: Before you continue you may want to close Legion and relaunch it to ensure that it truly recognizes the active license.

WARNING: If you purchased multiple licenses, it is very important you keep an accurate record of which key code was used to activate each computer. In order to transfer a license later you will need that exact same code used to activate.

It is also very important to remember to properly deactivate the license before you attempt to reformat and/or reinstall windows. Not doing so will make the license invalid and you may be required to purchase a new one to get back up and running again.

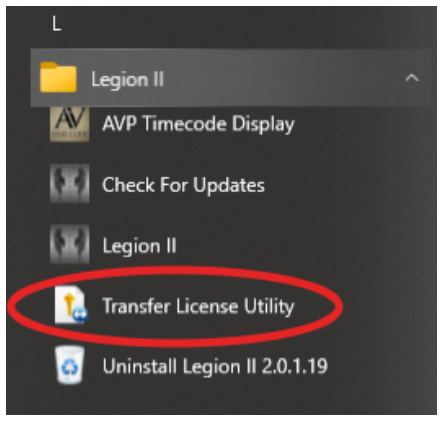
Transfer a license:

it is still possible to transfer the embedded license to another computer by following these simple steps.

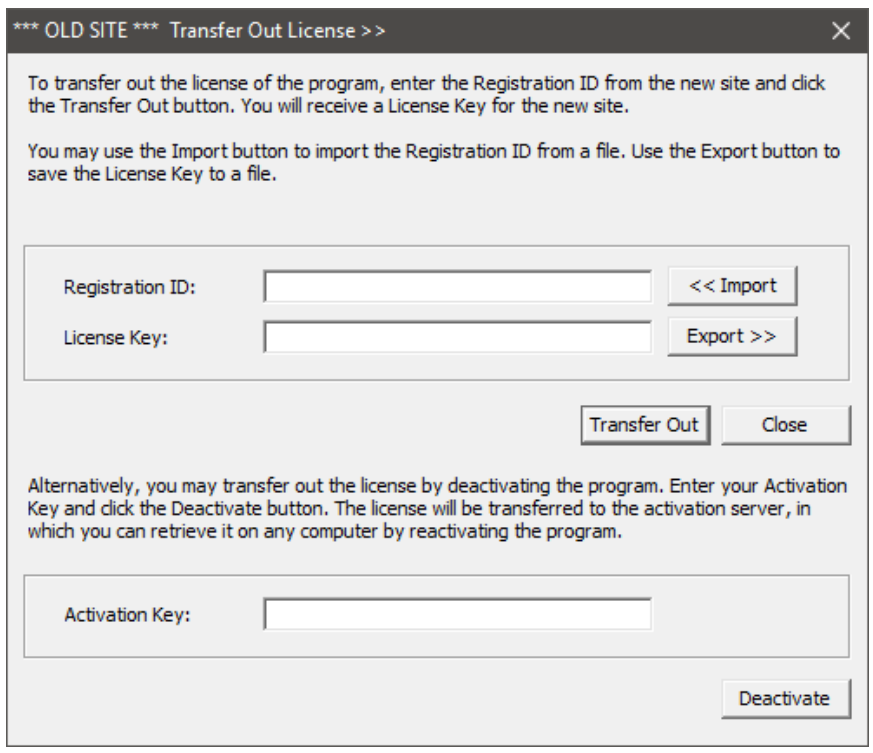
1) First you will need to ensure that both the old and new computers are connected to the internet.

2) Next ensure the Legion application closed on both.

3) On the unit you are wanting to transfer from, go to its Windows ‘Start’ menu, scroll down and click on “Legion II” then click on “Transfer License Utility”.



This window will now appear:



2) Enter the activation key you used originally into text box labeled Activation Key and click Deactivate.

3) At this point the current license status is encoded into the License Key and then sent back to the server. The Key on the present computer has now been destroyed.

You are now free to reuse that activation key on the new compter.

SEE ALSO:
How to install or transfer the MBSE asio renderer license

How to install or transfer the MBSE asio renderer license

In order to properly compile all the separate audio streams used in a multi-track wav or ProRes mov into a stream that can then be decoded by multi-channel sound card, we need to utilize a very specialized ASIO rendering filter. Installed with every copy of Legion II a copy of the MBSE Multichannel Asio Renderer.

The MBSE filter performs the necessary combining of streams, plus it also gives us the ability to perform custom channel routing.

We however did not create this filter, it instead was written by Michael Buchberger, an Austrian software developer. Regrettably this driver is not freeware and does requires the purchase of an additional license in order to continue using it past the ten-day free trial period.

The license can be purchased as an option when purchasing Legion II. However, it you chose not to do that at the time you can go directly to https://www.mb-software.at/product/multichannelasiorenderer/ and purchase one online there.

WARNING: Just like Legion's online activated license, this license is also directly linked to a specific computer. So, it is very important keep track of which license key goes with a which computer.

It is also very important to remember to properly deactivate both licenses before you attempt to reformat and/or reinstall windows. Not doing so will make the license invalid and you may be required to purchase new ones to get back up and running again.

Activating for the first time:

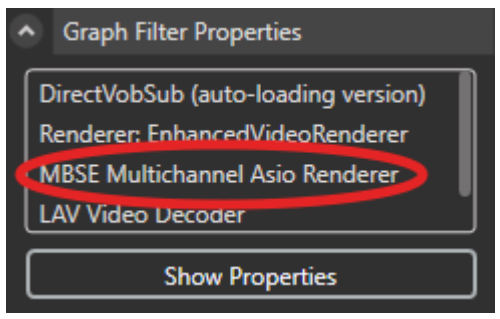
In order to install a license, you first need to access its property pages. To do this, follow these steps:

1) First ensure your computer is connected to the internet.

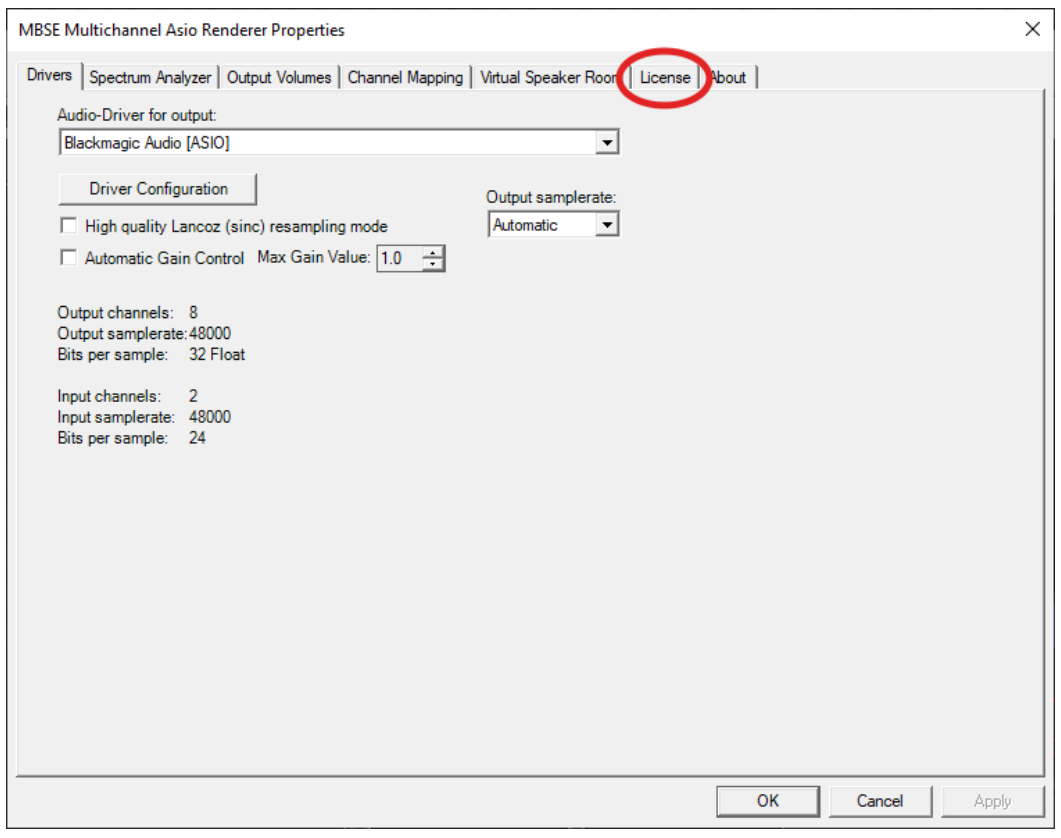
2) Open either an existing Legion playlist or create a new one with at least one video asset.

3) Select the asset and go to the "Audio Output" settings panel and configure it to use ASIO. Be sure to select "MBSE Multichannel Asio Renderer" before applying the change.

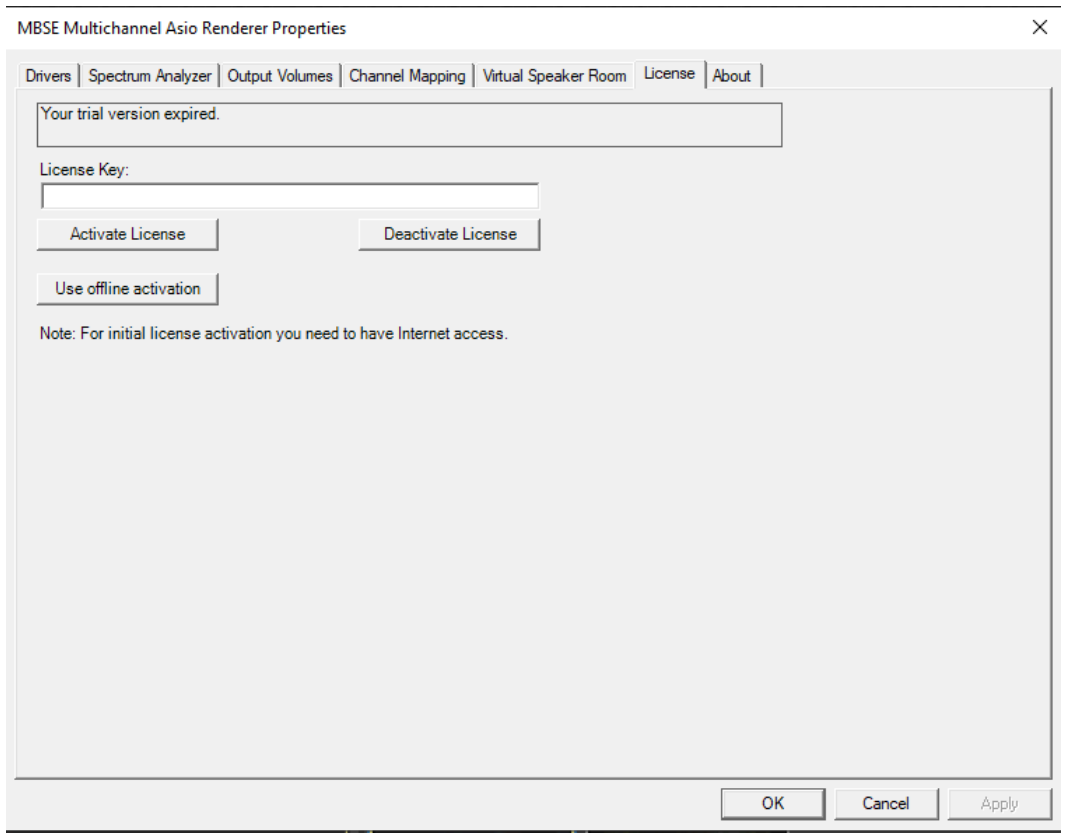
4) After the change is applied go to the "Graph Filter Properties" settings panel and double click on "MBSE Multichannel Asio Renderer".



5) Now click on the "License" tab.



6) Insert the separate MBSE activation key into the text box labeled "License Key". (Do not confuse it with the key used to activate Legion.)



7) Click on “Activate License”.

If all goes well, you will see a conformation dialog appear.

Transfer a license:

It is possible to transfer the license to another computer by following these simple steps.

1) First you will need to ensure that both the old and new computers are connected to the internet.

2) On the unit you are wanting to transfer from, open Legion and get back to the MBSE properties dialog using steps outlined above for activation.

3) Again, insert the key code that belongs to the compter.

4) This time though clcik on "Deactivate License".

You are now free to use the key code to activete on the new compter.

SEE ALSO:
How to install or transfer an online license