

# Action Pro

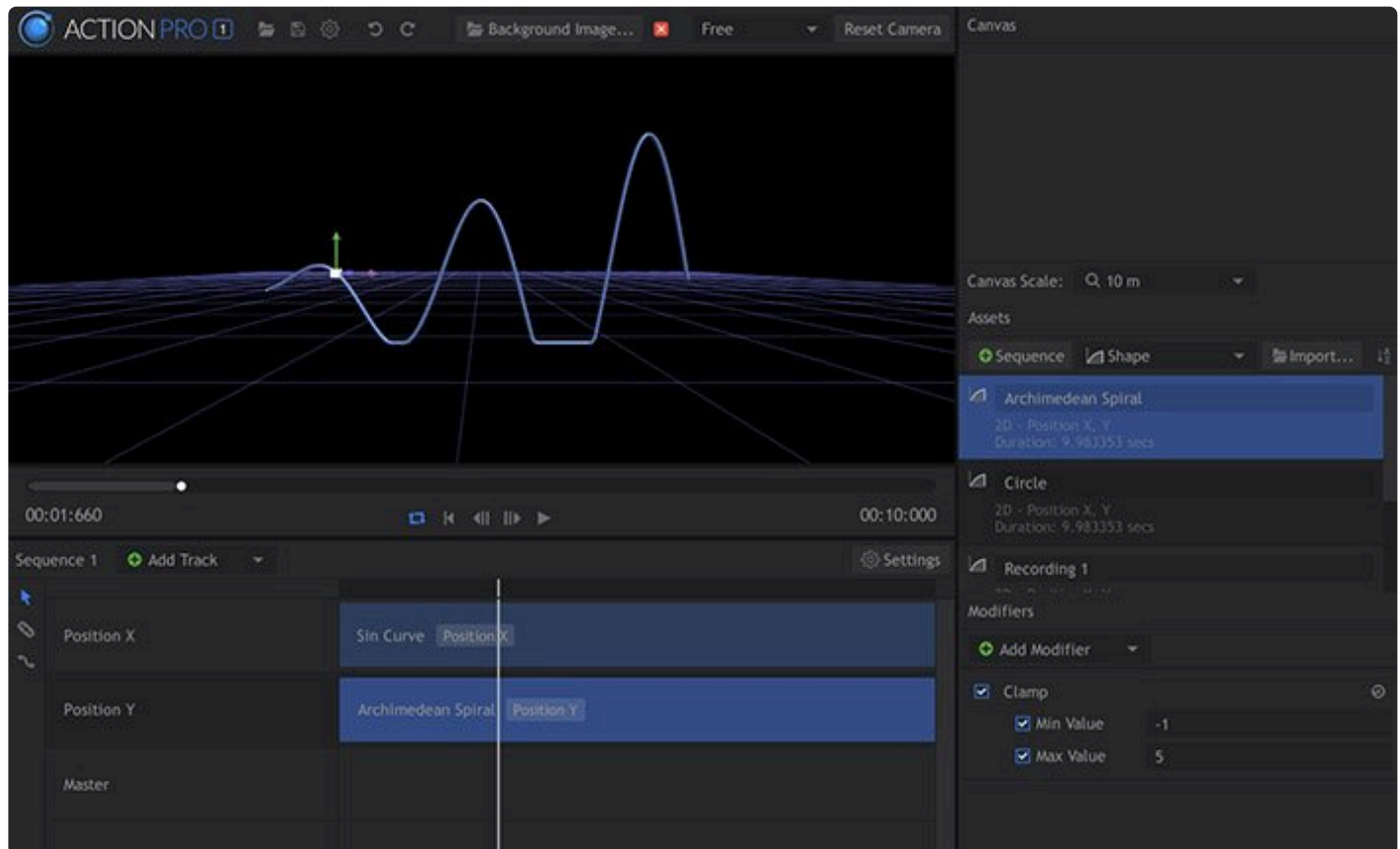
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FXHOME

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# 1. What is Action Pro?



Action Pro is a powerful tool for recording real-world movement and converting it into paths that can be used for animation in other software. Using a variety of input methods, including a mouse, mobile devices, Leap Motion or Virtual Reality hardware, you can record your movements directly into Action Pro in 2D or 3D. The paths created can then be refined, modified, or combined, and exported to a format that allows you to use them as motion paths for visual effects, motion graphics, or other animation.

In the past, creating complex 3D motion paths could be a difficult and complicated process. The innovative approach taken by Action Pro allows you to easily create complex paths by simply moving your hands. There has never been an easier way to convert the paths you visualize in your head into a digital format ready for use. The data recorded is frame independent, so it can be used in video projects at any frame rate to create smooth movement.

Examples of things you can do with Action Pro include:

- Draw on an iPad, iPhone, or Android device using the companion app, and record the path.

- Record paths with your mouse, then smooth the motion out to reduce bumps or wobble.
- Use your hand to create the motion of a spaceship landing, and then apply that movement to a 3D model to create the actual animation.

## 1.1. What's New

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Each update to Action Pro brings a combination of performance improvements and new or upgraded tools. For a detailed overview of what has changed in each update, please see the Update History page on our website:

[Action Pro Update History](#)

## 2. Getting Started, or How To Use Action Pro

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This section is designed to get you started in Action Pro immediately. It discusses the interface, so you know where to find each command or component, and their names, then covers the process of creating, editing and exporting an animation, and finally looks at how to put that animation to use in external video editing software.

The basic workflow in Action Pro is as follows:

1. Create a new Sequence in the Assets panel.
2. Create a new recording.
3. Edit the recording on the Sequence timeline, if necessary.
4. Export your Animation for use in HitFilm Pro or HitFilm Express.

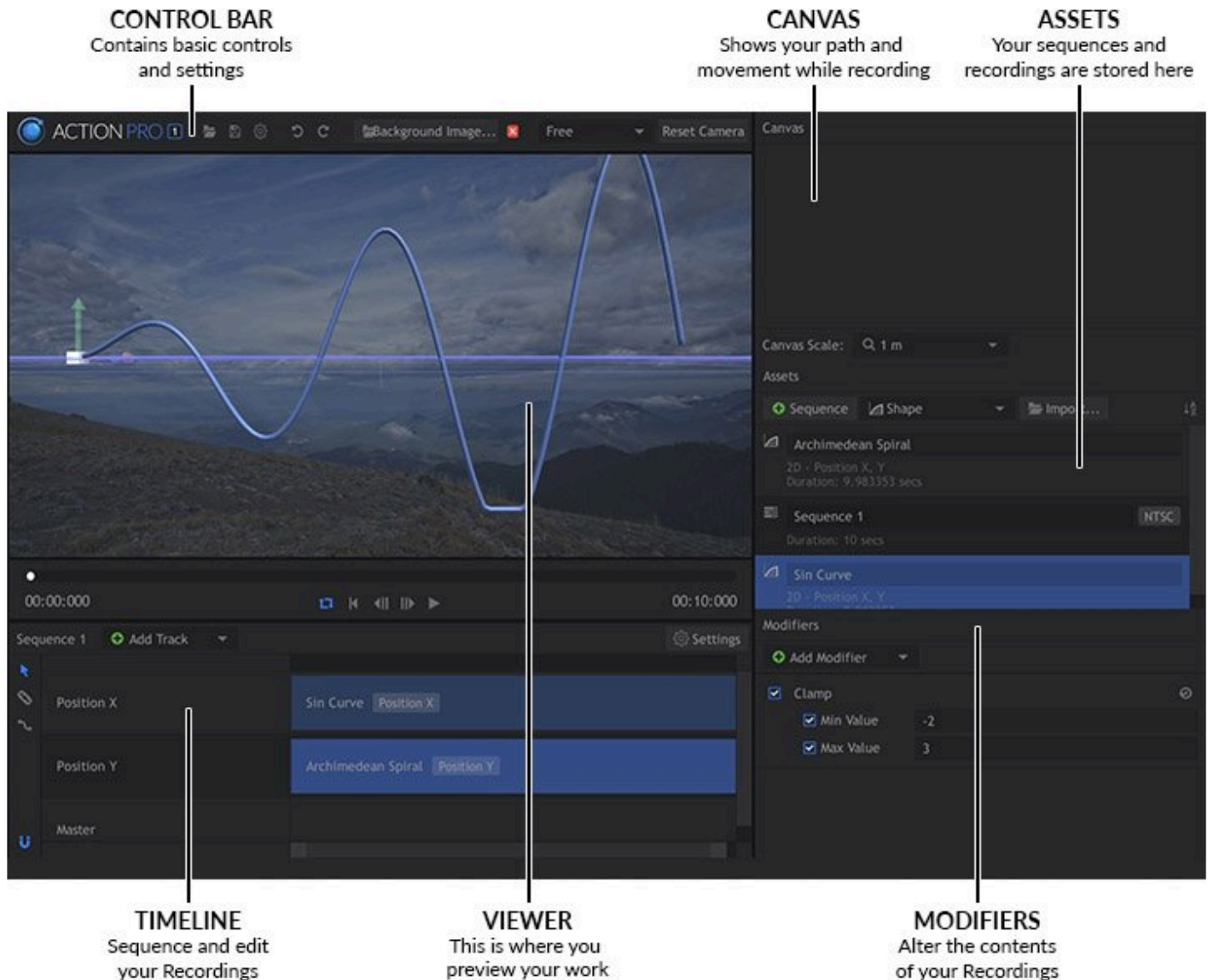
The next page covers the fundamentals of the interface, then we will jump right into the process.

### 2.1. The Interface

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#### Interface

The Action Pro interface is comprised of six main sections, as labeled in this image.



Each section of the interface is explained briefly below. For complete information on each section, please see [All The Details](#)

- **Control Bar:** The **Control Bar** is where you will find the primary file management buttons and controls. Use these buttons to Open or Save project files. You can also adjust the Application Settings here, and Undo or Redo past actions.
- **Canvas:** The **Canvas** controls let you monitor motion while recording. If you are using the mobile app, a preview of the app is displayed here. You can also adjust the scale of the recording, to define how it fits into the 3D work space.
- **Assets:** The **Assets** panel is where everything you create in Action Pro is stored and organized. Animations that can be edited and exported, and Recordings of specific movements that can be

added into Animations will be listed here. You can create New assets, Import existing assets stored outside the software, and generate Primitives, predefined geometric paths which are useful in a variety of situations.

- **Timeline:** The **Timeline** is where you can open Animations and edit their contents. Add Recordings to your animation and manipulate their data to fine tune the results. Or combine multiple recordings to create a more complex animation.
- **Viewer:** The largest part of the interface is the **Viewer**, where you can see a visual representation of the movement you record. When editing on the timeline, the contents of the timeline is displayed in the Viewer. You can also load a background image for reference, to help with positioning and editing your recordings.
- **Modifiers:** You can add **Modifiers** to any asset selected on the timeline, to further manipulate its contents.

## 2.2. The Basic Process

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Let's jump straight into creating a new recording. You can find full details about each part of the process later in this manual, but right now, you probably want to actually get started, rather than sitting around reading a manual. So, let's do this.

### 1. Creating a Recording.

- a. In the Assets panel, click the **Sequence** button. This creates a new asset named Sequence 1. A Sequence serves as a timeline, where you can place and edit multiple recordings.
- b. Position the mouse in the center of the Canvas panel, and the cursor displays as a reticle, or crosshairs. Hold the mouse button down, and move the mouse in a small spiral. When you get through the spiral, release the mouse button to end the recording. We use a spiral for this example, but you can move the mouse in any path or shape you desire.
- c. When you release the mouse button, a new Recording will appear in the Assets panel.
  - i. You can click the name of any Recording or Animation to change its name. Click the name of Recording 1 and rename it Spiral.

### 2. Editing Your Recording. These next steps allow you to fine-tune the Recording.

- a. Double-click Sequence 1 to open it in timeline.
- b. Drag the Spiral recording from the Asset panel onto the Position X track of the timeline. Then, drag it from the Asset panel to the Position Y track as well.
- c. You may occasionally have bits at the start and end of your recordings that are unwanted or unnecessary. If you want to trim either end of your recording, position the mouse near the end of the recording, then click and drag to trim the end off of the clip.
  - i. Before trimming a clip, you can drag the playhead to find the point that you want to trim to.

3. **Export Your Sequence to HitFilm.** Once the contents of your Sequence are edited the way you want, and you are happy with it, you need to export the Sequence so you can use it to control your animation in HitFilm Pro or HitFilm Express.
  - a. On the timeline, click the Settings cog in the top right corner to open the Sequence Settings.
  - b. Select the frame rate of the timeline you want to use your Action Pro animation in. For this example you can leave it set to the default, but when using the motion paths with actual video files, you will want to match the frame rate of the video you are using. Click Apply to apply the settings and close the window.
  - c. In the Asset panel, right-click Sequence 1 and choose **Save As HitFilm Composite Shot...** from the menu.
  - d. Select a name and location for your saved file. Click Save to create the file.

## 2.3. Using Your Animation in External Software

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### Applying Your Animation Path

The last step of the process is to put our created animation path to use. We will use HitFilm Pro, which integrates tightly with Action Pro. HitFilm Express works equally well.

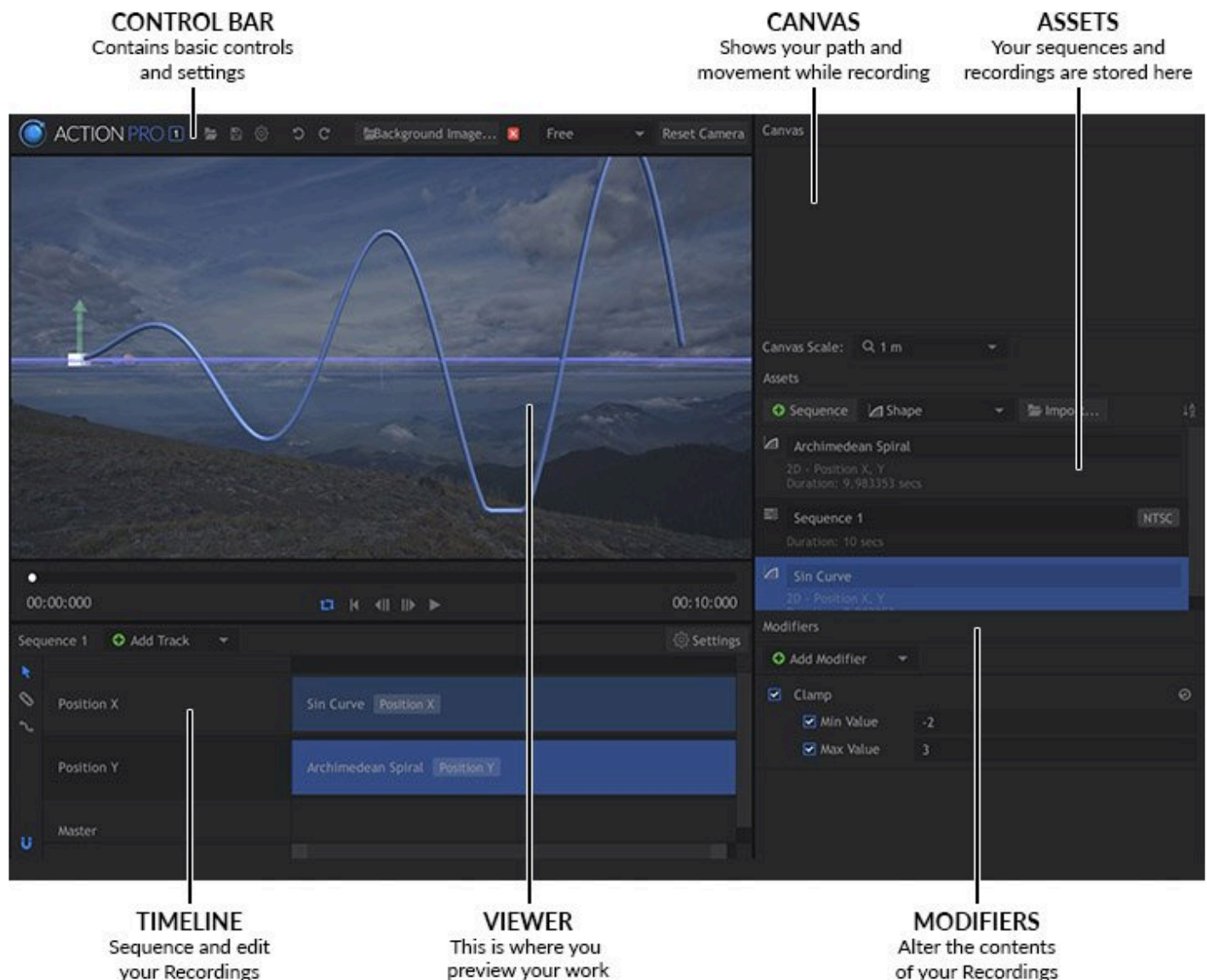
- Launch HitFilm, and create a new file.
- In the Media panel, select Import > Composite Shot and select the .hfps file we just exported from Action Pro. A new folder is added to the Media panel, containing a timeline with our movement stored inside.
- Now we need to apply this movement to something. For our example here, we will use a simple plane. On the timeline, select New > Plane. Set its size to 200 × 200 pixels. If you want to change its name or color, you can do that too. Click Ok when you are finished.
- Set the plane's Layer Dimensions to 3D plane, then parent the plane to Control Point #1.
- Already the plane will move based on our imported path. Double-click the Plane to open its controls, then in the Transform controls, right-click on Position and select Reset. This zeros out the plane's position relative to our Animation Point, so it uses the exact same movement as the path we imported.
- Play the timeline, and view the result.

In just a few moments we have created an animation path through the movement of our hand, and applied it to another object. This is a simple example of the power of Action Pro. As you work more with the software and dig into some of its more powerful features, you can learn more about them in this manual.



## 3. All the Details

This chapter gives a more in-depth, detailed look at each section of the software interface, and the options they contain. Where the previous chapter focuses on workflow, this chapter focuses on the tools and interface elements contained in the software, and thoroughly explains each one. The interface is examined one section at a time, as follows:



## [Control Bar](#)

## [Canvas](#)

## [Assets](#)

## [Timeline](#)

## [Viewer](#)

## [Modifiers](#)

# 3.1. Control Bar

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The Control bar contains buttons for commonly used commands and functions. Each is explained in detail below.



### Open

The Open button allows you to open previously saved projects. They can be stored anywhere on your computer or network, and accessed by clicking this button and navigating to their location.

### Save

Projects can be saved with this button. The first time you Save a project, you will be asked to select a location and name for the file. Subsequent saves will update the file in the previously selected location.

### Action Pro Settings

There are a number of settings you can modify that will affect behavior of the software globally, regardless of what project you are working in. Click the Settings icon in the top toolbar to open the Action Pro Settings dialog:

Action Pro Settings

Sequence Defaults

Length (in seconds): 10

Framerate: NTSC (30fps)

Export Settings

Resolution: HD 1080p (1920 x 1080 px)

HitFilm Rigging: Single Object

Scaler: 1

☒ Only export data where there is movement

Deactivate Cancel Apply

### Sequence Defaults

- **Length (in seconds):** Determines the default duration applied to each Sequence when it is created.
- **Framerate:** The movement recorded by Action Pro is frame independent, but to be used in video editing programs it needs to be converted to frames on export. This setting defines the default frame rate that will be used for each sequence when it is created. Regardless of the setting used here, you can edit the Framerate of individual Animations later, through their properties.

### Export Settings

- **Resolution:** The movement recorded in Action Pro is resolution independent, and needs to be scaled to fit into the video project you intend to use it in. This setting defines the default resolution that will be used when exporting the file. Regardless of the setting used here, you can edit the Resolution of individual Animations later, through their properties.
- **HitFilm Rigging:** Use this menu to choose how the motion will be rigged for use in HitFilm. There are two rigging options.
  - **Single Object:** Stores all the motion in a single point, which controls movement on the X, Y and

Z axes. This is the simplest option in many cases, as you have all the movement in one layer.

- **Multiple Parented Objects:** This option separates the X, Y and Z movement into individual points, so they can be manipulated or controlled separately in your video editor. A slightly more complicated setup gives you a finer degree of control over editing the movement later on.
- **Scaler:** Adjusts the overall size of the area covered by your movement, within the export resolution. In most cases, a setting of 0.1 is best for exporting to HitFilm.
- **Only Export data where there is movement:** Enabling this toggle will export only the section of the timeline that contains movement, so if any extraneous frames at the start or end, before or after the movement, will automatically be trimmed.

## General

- **Deactivate/Activate:** Provides access to the activation information for the software. If the software is not yet activated, the Activate button will appear here, and allow you to enter your license information. If the software is already activated, you can use the Deactivate button to deactivate the license, if you need to move the software to a different computer or re-install.
- **Cancel:** Closes the Settings dialog without applying any changes made to the settings while it was open.
- **Apply:** Saves the changes made within the settings dialog, and closes the dialog.


## Undo/Redo

You have probably used these commands in the past, in other applications. Undo removes the effects of your most recent action. You can press this button repeatedly to move backward through your Undo History. Redo restores the results of these actions after they have been undone.

## Select Background Image



You can select an image to place within the Canvas area of the interface, behind your motion path. Using a frame of the video file or project that you want to import the motion path into can be very helpful for positioning and scaling the motion path.

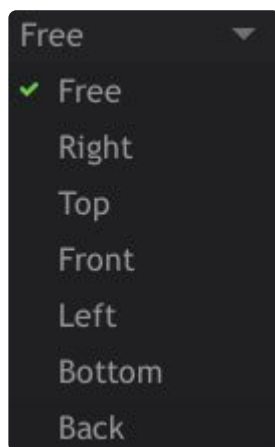
1. Click the **Background Image...** button. 
2. In the file browser window that opens, navigate to the image file that you wish to import and select it.
3. Click **Open** to import the image into Action Pro, and it will appear in the Viewer area.
4. Adjust the Viewer scale and position to get the view you desire.

## Clear Background Image

Click this button to remove the current background image from the Viewer.

## Camera Angle Menu

The Camera Angle menu is the primary control for adjusting your 3D view. The menu contains multiple options for your camera placement, which can be divided into two categories: Free View, which allows you full control over positioning of the camera, and Orthographic views, which includes all the other options that let you quickly access any specific side of the 3D environment.



- **Free:** Allows you to move the camera about freely to view your paths from any angle. There are specific controls that you can use to control the camera, depending on how you want the camera to move.
- **Orthographic Views (Right, Top, Front, Left, Bottom, Back):** Orthographic views represent the 3D environment from a direct-on 2-dimensional view, without any perspective being applied. The lack of perspective prevents distortion, so that the relative size and position of different points on the object, or different parts of the object, can be accurately understood.

### Moving the camera.

The cameras position and angle can be edited in any view, to control what area is visible. Orthographic views can be Translated and Trucked, but not Panned.

- **Right-click-drag** to move the camera up, down, left or right. This is known as **Translating** the camera.
- **CTRL+Right-click-drag** to rotate the camera. This leaves the camera in its current position and simply rotates it, giving the same result as moving a tripod head with the camera attached. This is

called **Panning**. You can pan around in any direction, but the camera's actual position doesn't change. Orthographic views cannot be panned.

- Rolling the **Mouse Wheel** slides the camera forward or backward, depending on the direction you roll the wheel. This type of movement is known as **Trucking** the camera.

## Reset Camera

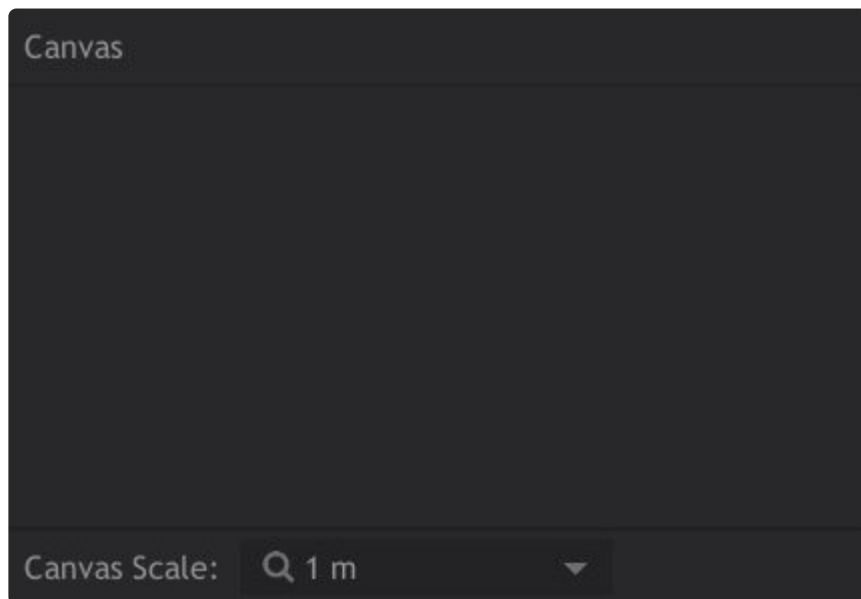
Reset Camera

This button resets the currently selected camera to its default position and angle.

## 3.2. Canvas

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The Canvas is where you adjust the settings and input devices used to create new recordings for use in your project.



By default, the software will automatically detect your mouse as an input device. A mouse records movement on two axes. Left and right movement of the mouse interprets directly to left on right movement onscreen, on the X axis. Forward and backward movement of the mouse translates to vertical movement onscreen, on the Y axis.

### Recording motion

To record motion of your mouse, just click the mouse button and move the mouse. A blue line will indicate the motion path, which will be recorded by the software automatically. Releasing the mouse button will end recording, and the motion path will be saved in a new Recording in the Asset panel.

## Canvas Scale

The canvas scale can be changed, to control how large your recordings appear when they are added to a Sequence. The motion path is recorded independent of resolution, so adjusting the scale does not affect the quality of the motion path. Choose the option which most closely corresponds to the distance the motion path will cover when used in your final composite.

- **10 cm:** Scales the recording so each unit of measurement is 10 centimeters.
- **1 m:** Scales the recording so each unit of measurement is 1 meter.
- **10 m:** Scales the recording so each unit of measurement is 10 meters.
- **100 m:** Scales the recording so each unit of measurement is 100 meters.

## iPad

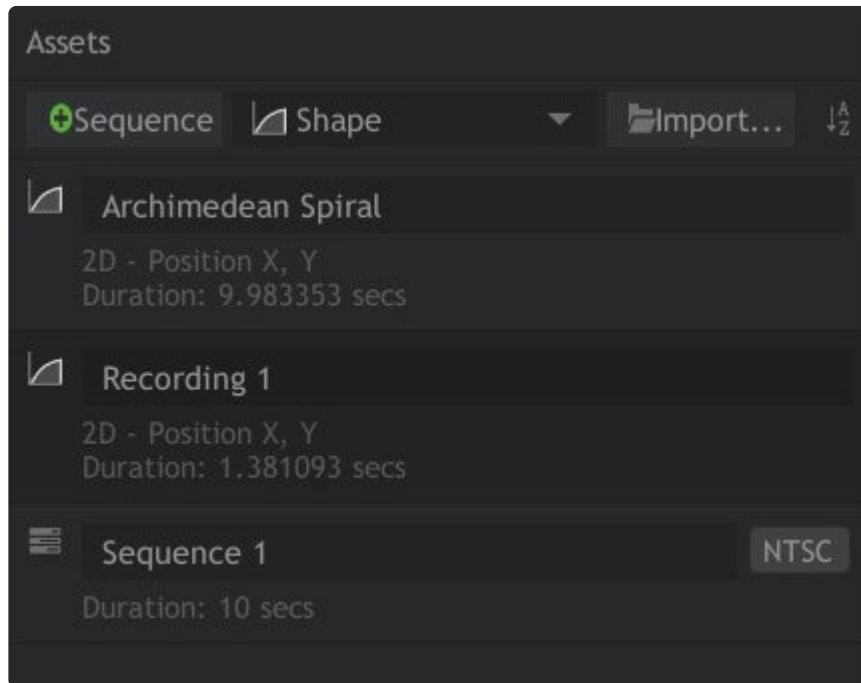
### Coming Soon

The mobile app can be use to link your phone or iPad to Action Pro, and record motion from the mobile device. When your device is linked, a preview of the device screen will be visible in the Canvas panel, so you can preview exactly what is happening on the device.

## 3.3. Assets





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The Assets panel is where you store all of the components that you work with in Action Pro. It is similar to the Media panel or Media bin in a video editor, only instead of video and audio files, it stores assets used to contain and process motion paths, including Recordings and Sequences.



## Controls

The top of the Assets panel contains several buttons and controls.

-  **Sequence** The **New Sequence** button creates a new sequence, using the Default settings currently selected in the Application Settings. The settings of the sequence can be edited after its creation by right-clicking the sequence and selecting Properties from the menu that opens.
-  **Shape** The **Shape Menu** gives you access to specific predefined shapes. Select any shape from the menu to create a recording containing a path in that specific shape.
  - **Circle:** Creates a simple circle.
  - **Sine Curve:** Creates a sine wave, or a line which curves back and forth at regular intervals and a fixed amplitude.
  - **Archimedean Spiral:** Creates a spiral emanating from a central point and expanding at a constant angular velocity.
-  **Import...** The **Import** button enables you to select Recordings that have been saved out of other projects, and import them into your current project.
-  You can change what **Sorting** is used within the Asset panel. Toggling this button changes the order of the list between alphabetical and reverse alphabetical order.



# Types of Assets

There are two types of Assets you will work with in Action Pro:

- **Recordings**
- **Sequences**

The purpose, features, and other details of each are discussed below.

## Sequences

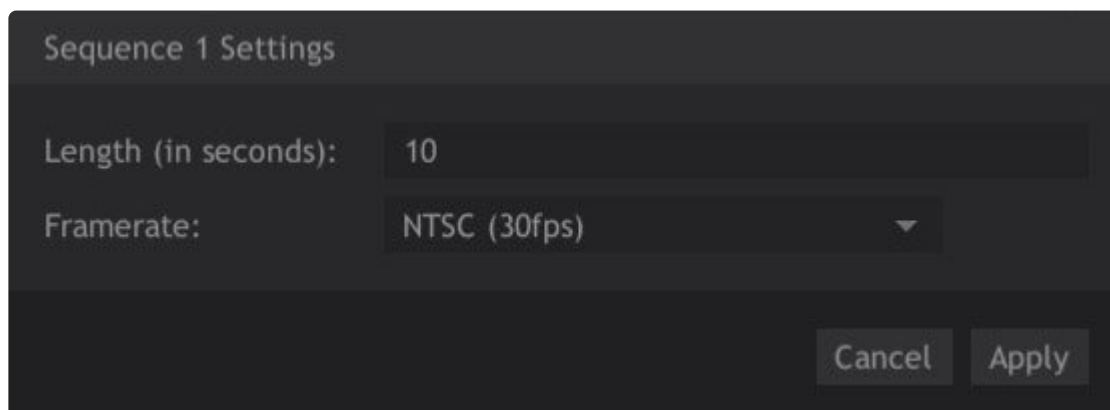


Sequences are timelines, where you can sequence, edit and combine recordings. You can create as many Sequences in a project as you wish. By default they are named sequentially (Sequence 1, Sequence 2, etc.), but you can click on the name of any sequence to rename it if you wish. If you are working with multiple sequences within a project, it is advisable to rename them logically as you create them, so you can easily identify the contents of each sequence by its name.

You can edit the settings of any sequence by right-clicking the sequence and choosing Properties from the menu.

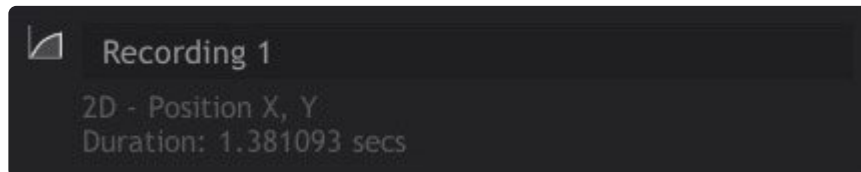
### Sequence Settings

The **Sequence Settings** allow you to view and edit properties of the individual sequence file. The default values for these properties are set in the main [Application Settings](#) window, but if you want to change the settings for a single animation file, you can do so here.



- **Length (in seconds):** Sets the overall length of the Animation in seconds.
- **Framerate:** The movement recorded by Action Pro is frame independent, but to be used in video editing programs it needs to be converted to frames on export. **Framerate** defines the frame rate that will be used to generate the keyframes in the exported file.

## Recordings



Recordings are individual motion paths which can be added into Sequences. Each path you create in Action Pro, regardless of the input device used to create it, is a Recording. By default recordings are named sequentially (Recording 1, Recording 2, etc.) but you can rename any recording by clicking on its name and typing in a new one. It is advisable to rename recordings as you create them, so you can easily identify each one in the Asset Panel at a glance.

## Organization

You can control how the assets are organized within the Asset Panel, to ensure you can easily find everything you need within your project.

### Sorting

Toggling this button in the control bar at the top of the panel changes the order of the list, between alphabetical and reverse alphabetical order.

### Renaming Assets

You can rename any Sequence or Recording by clicking on its name, and typing in the new name you wish to use.

### Deleting Assets

Any Sequence or Recording contained in the Assets panel can be deleted by clicking on the asset to select it, then pressing **Delete** on your keyboard. You can also right-click any asset and select Delete from the contextual menu to remove it.

# Exporting

To use the data you record and edit in Action Pro, you need to Export it to a format that can be used by external software. At present, Export is only available to HitFilm but more formats and support for other programs will be added as development of the software continues.

## Exporting a Sequence for use in HitFilm

1. Right-click the sequence in the Asset panel, and select **Save as HitFilm Composite Shot...**
2. In the dialog that opens, enter a name and location for the saved file.
3. Click Save to export the file.
  - a. For details on using the exported file in HitFilm, see [Using Your Animation in External Software](#).

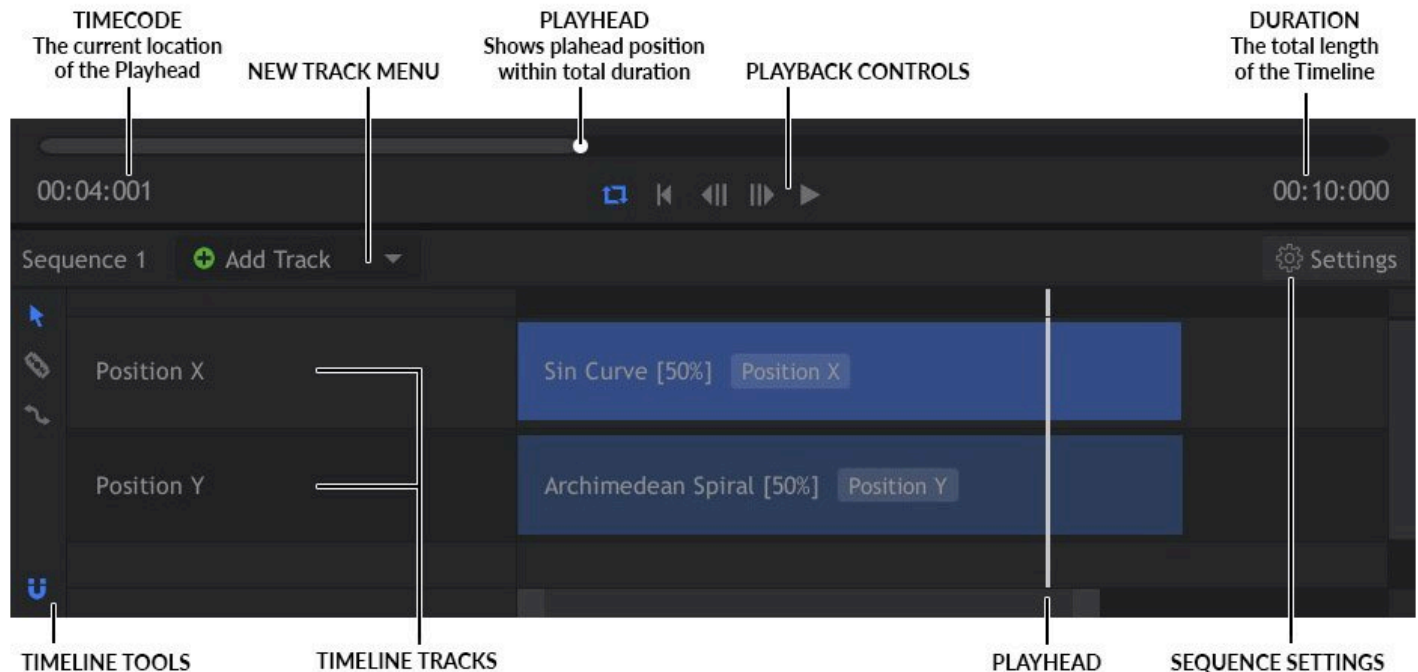
## Exporting a Recording for use in other Action Pro projects

1. Right-click the recording in the Asset panel, and select **Export Recording...**
2. In the dialog that opens, enter a name and location for the saved file.
3. Click Save to export the file.
4. The Import button at the top of the Asset Panel can now be used to import the file you just created into any project.

## 3.4. Timeline

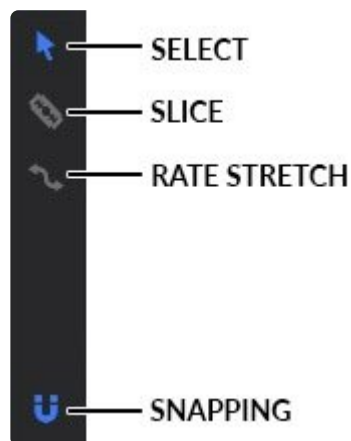
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The Timeline is where you can open Animations and edit their contents. You can add Recordings to the Animation, and to edit the Recordings' length and properties. The contents of the timeline are displayed in the Viewer.







At the top of the timeline, next to the timecode, is the Playhead. This thin vertical line can be dragged left or right to move through the duration of the timeline. When the Zoom level of the timeline is increased, the Playhead will split. The top bar of the timeline always represents the entire duration of the timeline, and shows the playhead's position in relation to the entire duration. It is never affected by changes to the zoom level. The timeline tracks, when zoomed, will be longer than the visible timeline, and the playhead line intersecting the tracks will be positioned based on the zoom level.

## Timeline Tools

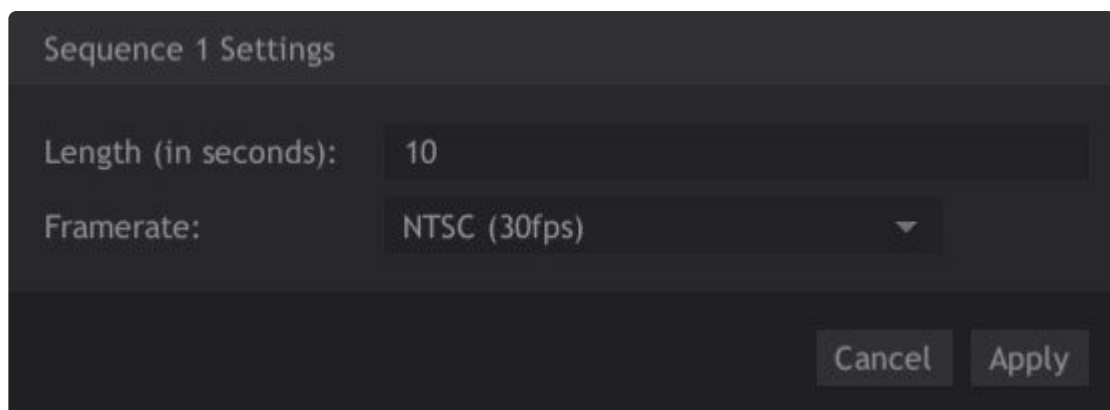


Down the left hand side of the timeline you can find the Timeline Tools.

-  **Select:** The Select tool is the most commonly used timeline tool, and serves several purposes.
  - **Selection:** Its primary use, and the one it is named for, is selecting individual elements on the timeline for manipulation.
  - **Move:** When an item is selected, you can move the cursor to the middle of the object and move the object on the timeline.
  - **Trim:** When the cursor is moved to the end of an object, you can drag to trim the end of the clip.
-  **Slice:** The slice tool allows you to cut assets on the timeline into multiple sections. Click on any timeline asset to cut it at the cursor location.
-  **Rate Stretch:** Use the Rate Stretch tool to change the speed at which your recordings play back. With the Rate Stretch tool selected, drag the end of any recording to change its rate. The new rate will be displayed on the timeline object, as a percentage for the original. Rates lower than 100% will play slower than the original, and rates higher than 100% will play faster than the original.
-  **Snapping:** The Snap option makes it easy to align objects on the timeline. When snap is enabled, any object you move will detect when its end are approaching the end of any other object, and will automatically snap to align the ends. If you want full control of the exact positioning of an object, you can toggle snapping off.

## Sequence Settings

The Settings for any individual Sequence can be accessed on the timeline, by clicking the Settings cog. If you do not see the Settings cog, open a Sequence onto the timeline. The default values for these properties are set in the main [Application Settings](#) window, but if you want to change the settings for a single animation file, you can do so here.



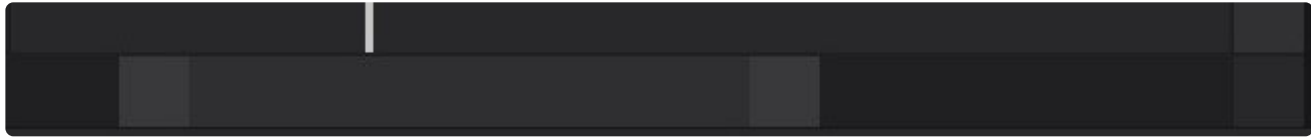
The image shows a dark-themed dialog box titled "Sequence 1 Settings". It contains two input fields: "Length (in seconds):" with the value "10" and "Framerate:" with a dropdown menu showing "NTSC (30fps)". At the bottom right, there are two buttons: "Cancel" and "Apply".

- **Length (in seconds):** Sets the overall length of the Animation in seconds.
- **Framerate:** The movement recorded by Action Pro is frame independent, but to be used in video editing programs it needs to be converted to frames on export. **Framerate** defines the frame rate that

will be used to generate the keyframes in the exported file.

## Navigating the Timeline

At the bottom of the timeline is the scroll bar.



Each end of the scroll bar handle has a square Zoom control. You can control the zoom level of the timeline by dragging these zoom controls. Dragging the scroll bar shorter will zoom in on the timeline, showing a smaller portion of the timeline in greater detail. Dragging the scroll bar longer will zoom out, showing more of the timeline.

## Framerate Independence

Video typically runs at 24 or 30 frames per second (fps), and rarely exceeds 60 fps. Action Pro, in contrast, records your movements in a continuous stream, logging the position at thousands of points per second. This allows the motion data in your Recordings to be adapted to any video frame rate with smooth results. It also means that there is plenty of data available to work from when smoothing or otherwise manipulating the motion paths.

The Previous Frame and Next Frame buttons in the Viewer Transport controls therefore operate based on the Export Framerate of the current Animation.

## Non-destructive Trimming

Whenever you edit or trim your recordings on the Timeline, the source files are not affected. So all your recorded motion data remains permanently available to you. Any portions that have been trimmed off of your recordings on the timeline can be reclaimed by adjusting the trim locations.

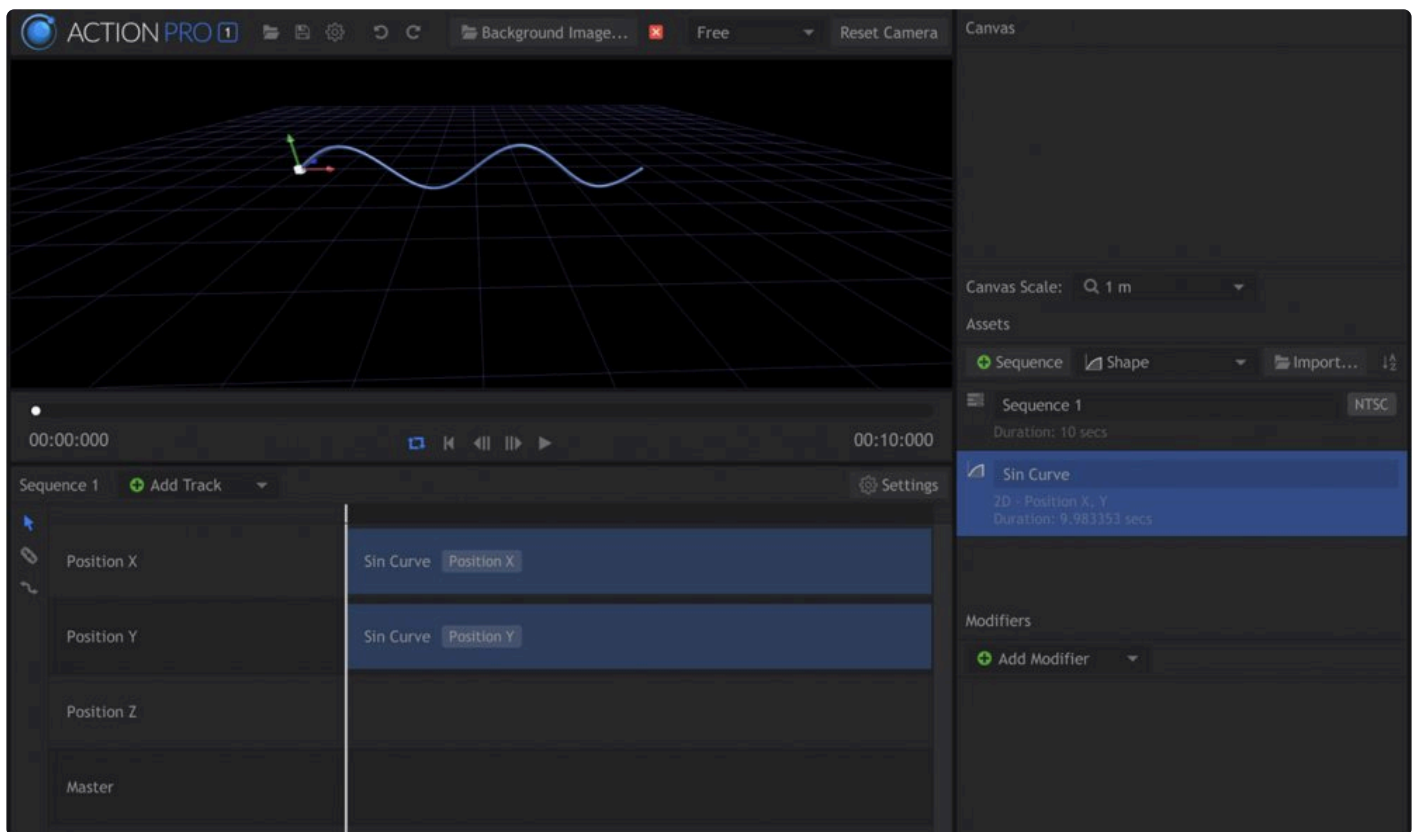
## Reassigning Properties to Other Tracks

If you wish to reassign data from one property of a track to a different property, you can do so on the timeline.

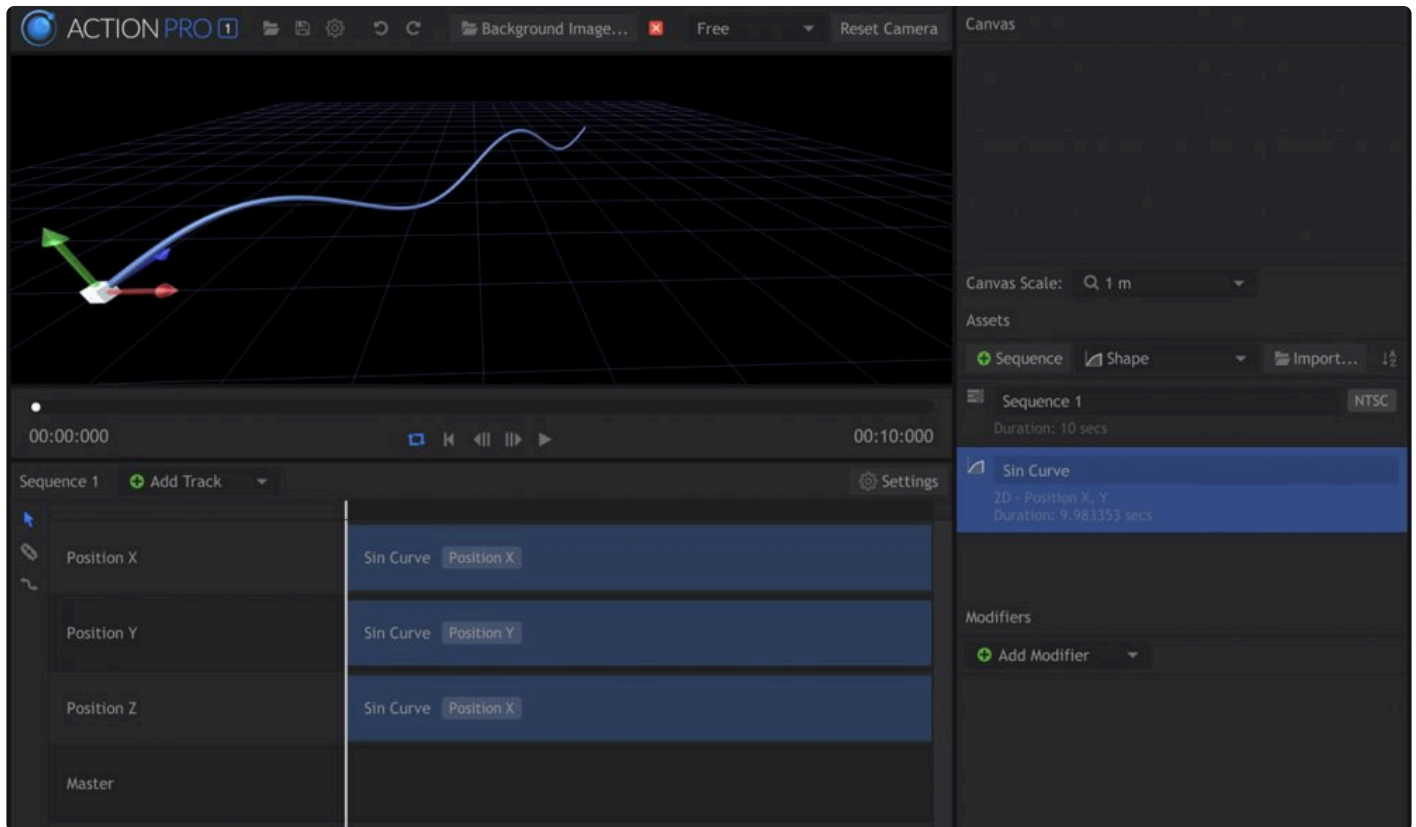


Each recording can contain multiple properties. For example, the most basic recording you can create, using your mouse, contains data in two properties, Position X (left to right) and Position Y (top to bottom). When working in 3D, there is also a Position Z (front to back) property that can be used. Data in any property can be reassigned to a different track, though, giving you full control over how the recorded data is used and applied.

Let's look at an example to better understand how this works.

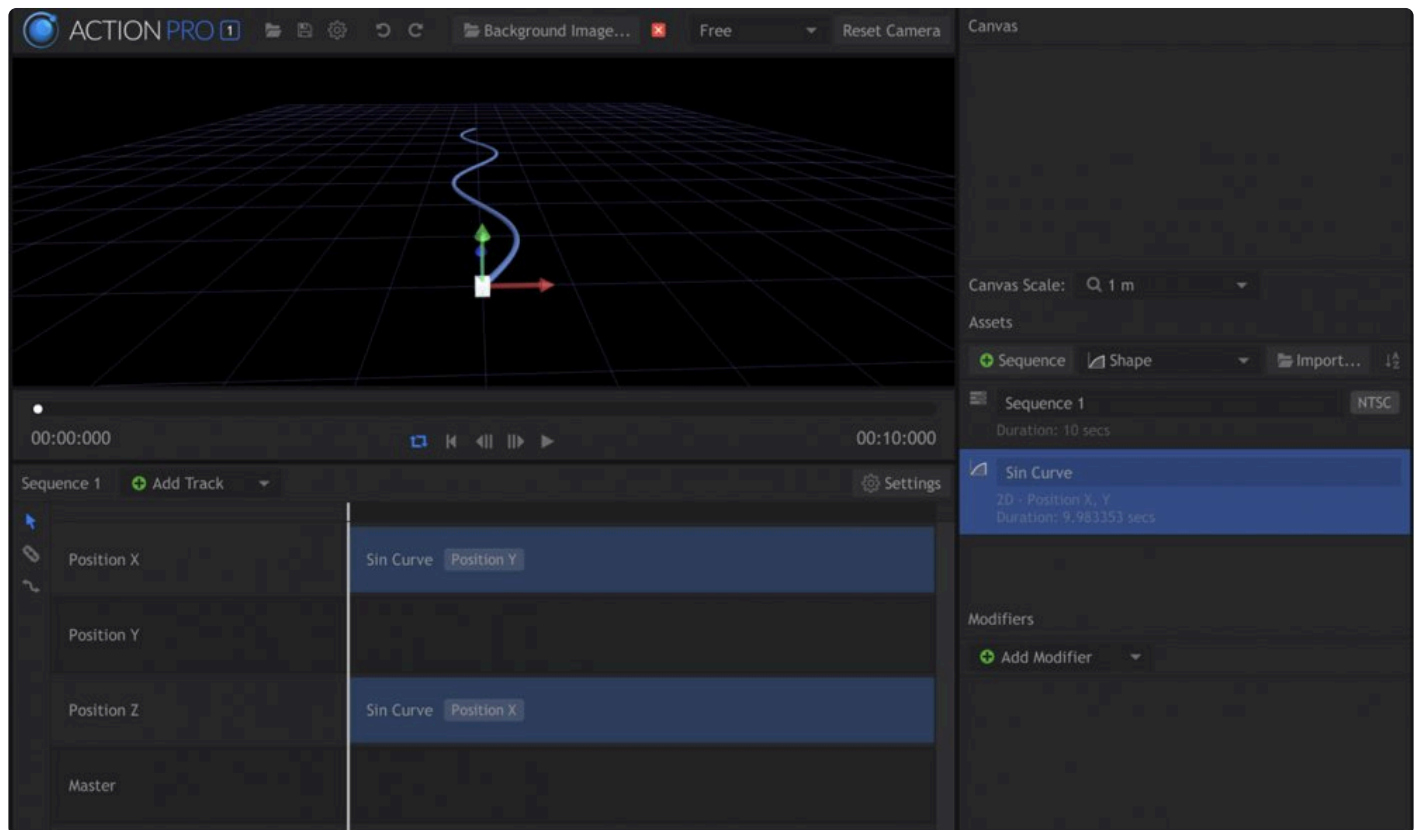


For this example, we will use the Sine Curve shape. This is a 2D shape, so the movement all occurs on the X axis (left to right) and Y axis (top to bottom). We can create a Position Z track on the timeline, but our shape contains no Z (front to back) movement. So if we drag the Sine Curve to the Z track, the X property is used. On the timeline, each track indicates which property and axis it currently uses. We can right-click and use the menu to reassign data from the X or Y tracks onto the Z axis.



In this second image, the Sine Curve has been added to the Position Z track. Since there is no Z data in this recording, the Position X data is used. Now the curve starts near the camera on the left, and moves farther from the camera as it crosses the frame.



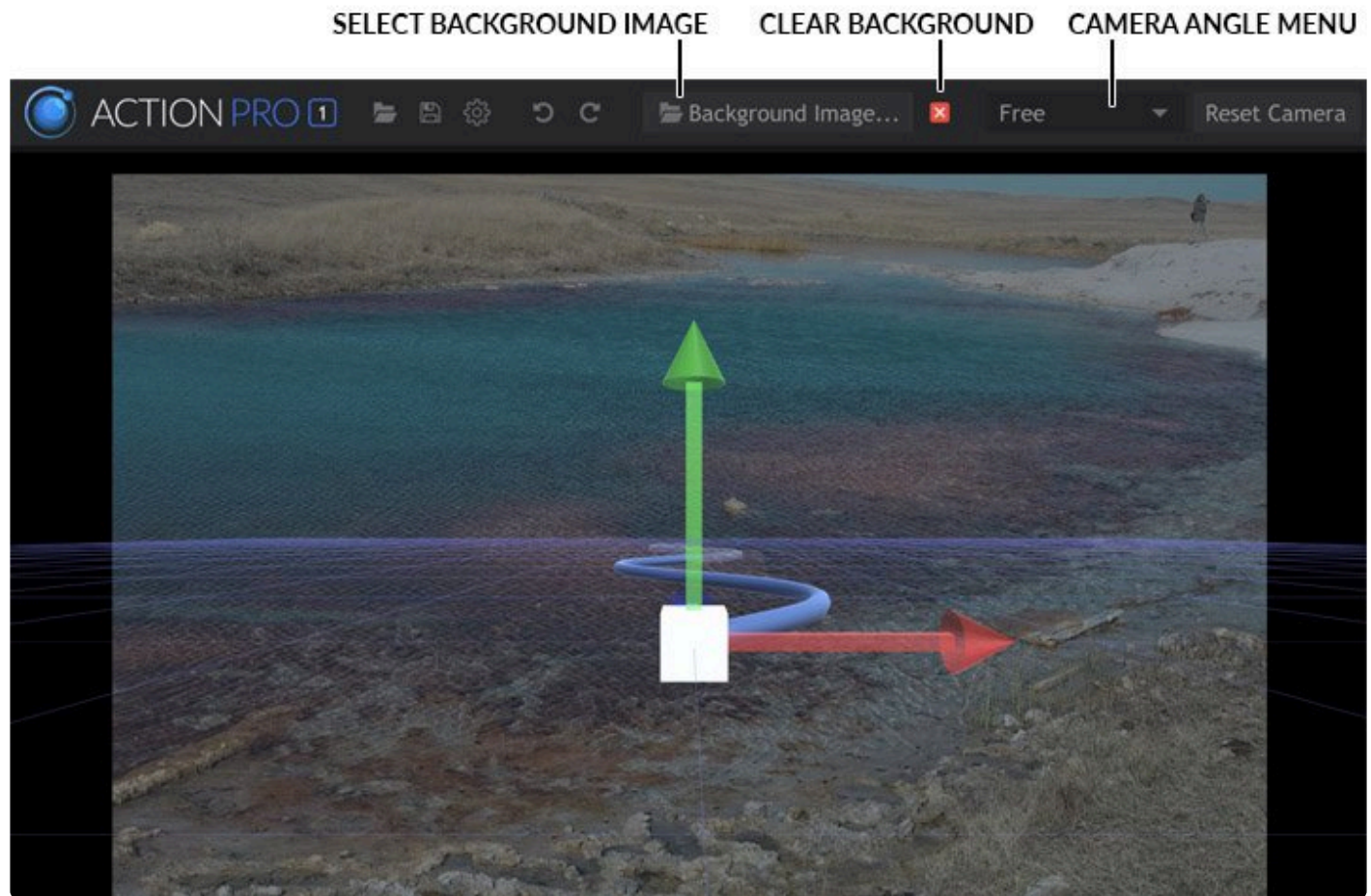


In this third image, we have deleted the contents of the Position Y track, and reassigned the Position X track to use the Position Y data. So now the Y channel is flat, but the X channel still contains the movement that was originally in the Y channel. So by reassigning these channels, we have converted the vertical Sine Curve shape to a horizontal sine curve, lying on the ground plane like a snake.

Using the same basic process, you can reassign data from any position axis to a different axis. And for recordings with both Position and Rotation data recorded, you can also move data from one type of property to another.

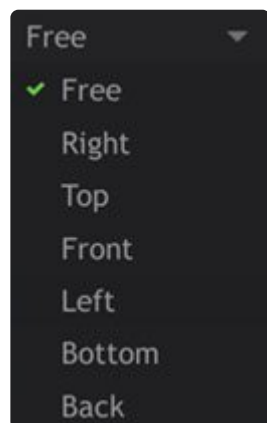
## 3.5. Viewer

The Viewer is where you can see a visual representation of your recorded paths. It provides full 3D control over the views as well, so you can see and control your motion oaths from any angle



## View Menu

The View menu is the primary control for adjusting your 3D view. The menu contains multiple options for your camera placement, which can be divided into two categories: Free View, and all the others, which are known as Orthographic views.



## Free

**Free** view allows you to move the camera about freely to view your paths from any angle. There are specific controls that you can use to control the camera, depending on how you want the camera to move.

- **Right-click** and drag to move the camera up, down, left or right. This is known as Translating the camera.
- **CTRL+Right-click** and drag to rotate the camera. This leaves the camera in its current position and simply rotates it, giving the same result as moving a tripod head with the camera attached. You can pan around in any direction, but the camera's actual position doesn't change.
- Rolling the **Mouse Wheel** trucks the camera forward or backward, depending on the direction you roll the wheel.

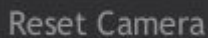
Using these three controls you can place the camera in any position you wish. However, if you wish to quickly access any specific side of the 3D environment, you can select the corresponding view from the View Menu.

## Orthographic Views (Right, Top, Front, Left, Bottom, Back)

Orthographic views represent an object from a direct-on view, without any perspective being applied. The lack of perspective prevents distortion, so that the relative size and position of different points on the object, or different parts of the object, can be accurately understood. Orthographic views can be translated or zoomed, but cannot be rotated.

- **Right-click** and drag to move the camera up, down, left or right. This is known as Translating the camera.
- Rolling the **Mouse Wheel** trucks the camera forward or backward, depending on the direction you roll the wheel.

## Reset Camera

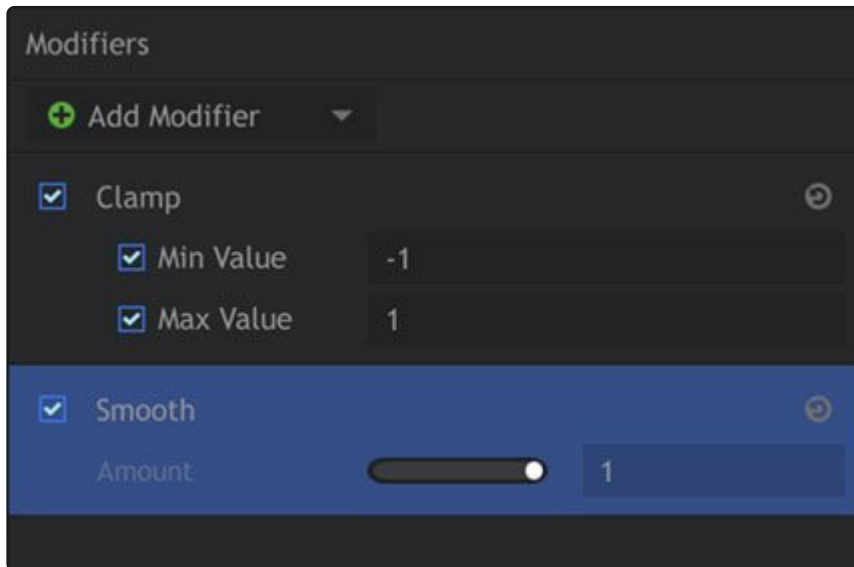
A rectangular button with a dark background and light-colored text that reads "Reset Camera".

This button resets the currently selected camera to its default settings.

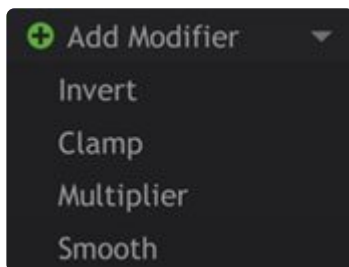
## 3.6. Modifiers

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The Modifiers panel displays controls specifically for modifying the data contained in your recordings.

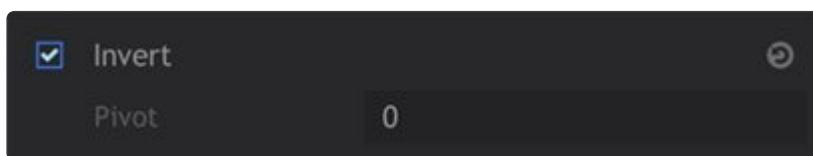


The modifier panel is contextual, meaning it will display controls for the object currently selected on the timeline. By default there are no modifiers applied to any object, but you can use the **Add Modifier** menu to add any modifier to the currently selected object.



## Invert

**Invert** reverses the positive and negative values contained in the property.



- **Pivot:** Changing this setting from 0 to a positive or negative value will offset the inversion so it is centered at that value.

## Clamp

**Clamp** allow you to put a hard limit on the values contained in the property. Minimum and maximum values can be clamped independently, for finer control.



- **Minimum Value:** Sets the highest value allowed in the property.
- **Maximum Value:** Sets the lowest value allowed in the property.

## Multiplier

The **Multiplier** modifier allows you to change the range of the values in the recording, to increase or decrease the movement.



- **Amount:** Each value contained in the property will be multiplied by the number you enter here, and the product is the new value that will be used.

## Smooth

**Smooth** allows you to reduce any small variations in direction of movement. This can help eliminate unwanted wobbles and create a stronger, smoother path for your animation to follow.



The default setting of 1.0 is unsmoothed, so every detail and nuance of your movement that is contained in the recording is present. The more you reduce the Smooth setting, the more smoothing will be applied to the path.

## 4. Troubleshooting

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### **I can't add my recording to the timeline.**

Make sure you have opened a Sequence timeline. In the Assets panel, Double-click the Sequence that you wish to add the recording to, and the sequence timeline will open. Then try adding your recording to the timeline again.