



# What's New in ReelTime 3.5

November 3, 2000

## Welcome to Pinnacle Systems ReelTime 3.5

This document is intended to describe the five new major features in ReelTime v3.5, that being speed change, color correction, dual graphics support, a custom keyer, and a 3D Studio Max plug-in. Each of the first 4 new features can be used in real time, so no rendering is necessary in Premiere and SpeedRazor.

### Contents

- 1. Speed Change**
  - 1.1 Premiere
  - 1.2 Speed Razor
  - 1.3 Well, how does it work?
- 2. Color Correction**
  - 2.1 Premiere
  - 2.2 Speed Razor
- 3. Dual Graphics support**
  - 3.1 Premiere
  - 3.2 Speed Razor
- 4. Custom Keyer**
  - 4.1 Premiere
  - 4.2 Speed Razor
  - 4.3 Defining the Custom Keyer Screen
- 5. Animation Recorder**

## 1. Speed Change

Support for both slow motion and fast motion playback in real-time for both Premiere and Speed Razor. In order to achieve slow motion or fast motion in Premiere, the steps are easy.

### 1.1 Premiere

1. Select clip in timeline that you want to adjust speed change.
2. Go to the **Clip** menu and select **Speed**. This can also be achieved by selecting **Ctrl+Shift+R** or via the context menu by right clicking on the clip.
3. This will bring up the clip speed dialog window.
4. In the new rate field, enter a %. If you want half speed for slow motion, enter 50%, if you want fast motion, enter a % greater than 100%. Premiere accepts ranges from -32768 to 32767%, but for practical purposes Pinnacle recommends a % range of **1-200%**, based on disk performance. You can also enter a new duration as well in the new duration field if a duration rather than percentage is more important in your project.
5. Depending on the speed you selected, certain tweaks on a clip per clip basis may be necessary (read below). In order to improve playback performance, you might find that interlacing fields creates smoother playback. In order to do this, select the clip in the timeline, go to the clip menu, select video, then field options. Deselect the checkbox for Deinterlace when speed is below 100%. Again, this may not be necessary depending on disk performance and the type of clip.

### 1.2 Speed Razor

**Important Note:** You may change the speed of video clips on the Composition window timeline if they are not attached to audio. Adjust a clip's frame rate, length, or make it fit a gap in the timeline.

1. To change video speed, select a clip and in the Video tab of the **Item Info** window, click **CHANGE SPEED**, or choose **Media>Change Speed**.
2. In the **Change Video Speed** dialog box, you can choose new frame rate values, select the standard settings, or enter a value in the field. While the standard settings are  $\frac{1}{2}$  and  $\frac{1}{4}$  speed, you may speed or slow a clip to any rate with smooth playback.
3. Adjusting the frame rate automatically changes the clip length. A faster speed plays the clip in a shorter amount of time; a slower speed plays the clip in a longer amount of time. Similarly, adjusting **Speed Length** (typed in SMPTE timecode or Frame) automatically changes the clip's speed.
4. To create slow motion, enter a number lower than the original speed.
5. To create fast motion, enter a number higher than the original speed.
6. Since a slow motion clip will run longer you can stretch its length on the timeline. Conversely, a quickened clip runs faster and appears shorter on the timeline.
7. You may also have the selected clip adjust its speed to fit in a gap on the timeline. For example, if you have two clips with a timeline gap between them and you need to stretch an out-take shot between them, in-sync Speed Razor adjusts the frame rate to match the length, without affecting the other clips' position. This is useful when the out-take is a still image file or the speed change is not noticeable.

**Note:** Before changing the speed of a video clip, be sure to separate the clip from audio.

### 1.3 Well, how does it work?

Slow motion is achieved in software, and thus will not look perfect for every clip.

Some software packages take a Field approach and duplicate fields to lengthen the duration of a clip. Other software packages take a Frame approach and duplicate frames to extend the duration.

Field repetition is best used when there is fast motion in the source video clip, in which case the motion will look smoother than frame based slow motion. However, if there is little motion in the source video, and high contrast edges, especially diagonal lines, field based slow motion will make the edges look jagged.

Frame repetition is best used when there is not a lot of fast motion in the source video clip, in which case the edges in the video will look less jagged than field based slow motion. However, if there is fast motion in the source video, frame based slow motion will make the fast motion sequences look jerky.

It is very important to note that field based slow motion copies fields in software, and thus taxes your CPU as a playback resource. Frame based slow motion only relies on your disk system.

## 2. Color Correction

Now available is a Real-time **Color Correction** filter within Adobe Premiere and in-sync Speed Razor. High impact color effects and post-capture color re-balancing are now instantly real-time playable without rendering. This new filter provides fine control over brightness, contrast, hue, and saturation. Eye-catching special effects including tint, solarization, posterization, invert luma, and invert chroma are available with the click of a mouse.

### 2.1 Premiere

For both Premiere and Speed Razor, Color Correction filters are one stream, no key combination filters that can play back in real-time. In order to access the Pinnacle Color Correction filter in Premiere, follow these steps:

1. Select the clip in timeline that you want to apply the color correction filter to.
2. Go to the **Clip** menu and select **Filters**. This can also be accessed by selecting **Ctrl+F** or via the contextual menu when you right mouse click.
3. In the **Filters** menu, select **ReelTime Color Correction** under the available section, then click the **Add** button so that it appears on the current list.
4. Click **Ok** to open the color correction applet.



5. First thing that you will notice is that there are several controls for inverting the luminance, chrominance, as well as tint, solarization, and posterization options. There are also sliders to adjust brightness, contrast, hue, and saturation. Using the sliders or entering in values for each field can either set these. These values can be saved and loaded at any time by using the load/save buttons below. And lastly, there is a player preview (slider in the lower left hand corner; the 'P' is a play button) so that you can preview your color corrected clip prior to accepting the values. For a sample color correction test, please try the following:
  - a) With the applet open, depending on the type of clip being used, first experiment with the invert luminance or chrominance checkboxes. These can be selected/deselected and used in combination with any other setting, so if you find that the invert selections are too extreme, tweak with the brightness/contrast/hue/saturation sliders.
  - b) Now try tinting a clip based on a standard color wheel. Once the tint checkbox is selected, it automatically changes your clip to monochrome, as you can see by the color swatch changing to gray. In order to access the color wheel, click on the swatch. This will bring up the color wheel for available colors to be sampled. Pick a color and click ok. Now tweak again using the brightness/contrast/hue/saturation sliders.
  - c) After removing both of these selections, experiment with the solarization or posterization values. If you select the solarization checkbox, it will automatically bring up a separate solarize dialog, where you have even more controls over inverting solarization, or possibly changing the values for contrast, threshold, or range. Click ok when you are satisfied with the output results. For the posterization menu, it defaults to none. There is a range of 1-7, where 1 is the lightest posterization and 7 is the heaviest level of posterization.
  - d) Now preview any of these effects with the player preview. This will allow you to play back color corrected clips as well as scrub through areas for finer control. If you are color correcting a clip that is in A/B transition, keep in mind that the preview player will preview the A clip first followed by the B clip.
  - e) Save your settings and click ok to playback in the timeline.

## 2.2 Speed Razor

Speed Razor uses the same ReelTime color correction applet, but is considered more as an effect rather than a filter. The same rules apply in Speed Razor as they do in Premiere, except that it is accessed in a different way. In order to use the ReelTime Color Correct effect in Speed Razor, please do the following:

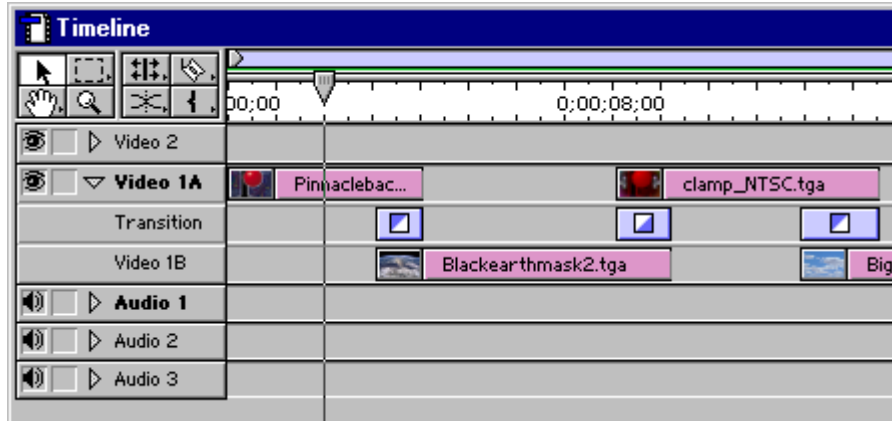
1. First add the Color Correction effect to your project bin for easier access. In order to do this, right mouse click in the bin and select **Add Effect**. Find the **\_ReelTimeColorCorrect.vfx** and add this to your bin.
2. Then drag a clip to your timeline on **V1**.
3. Drag the **ReelTime Color Correction** effect to **V2** (or any other track as long as it is above V1).
4. As soon as the effect is dragged to the timeline, the applet will appear.
5. It is identical in function and controls to the one in Premiere. See above.

## 3. Dual Graphics Support

Simultaneous playback of dual graphics is now supported within Adobe Premiere and in-sync Speed Razor. This will find this useful for putting together still image sequences with transitions between the graphics. Four layer visual timelines with two graphics bitmaps, one AVI video clip, one roll/crawl, transitions, and keying are real-time playable. No longer will users have to create an "Optimized AVI" file for creating this type of timeline.

### 3.1 Premiere

All supported graphic formats can be used in the timeline to transition from one to another. As long as the graphics have enough space between the graphics they should all play back in ReelTime. Here is an example of what we support for dual graphics in Premiere

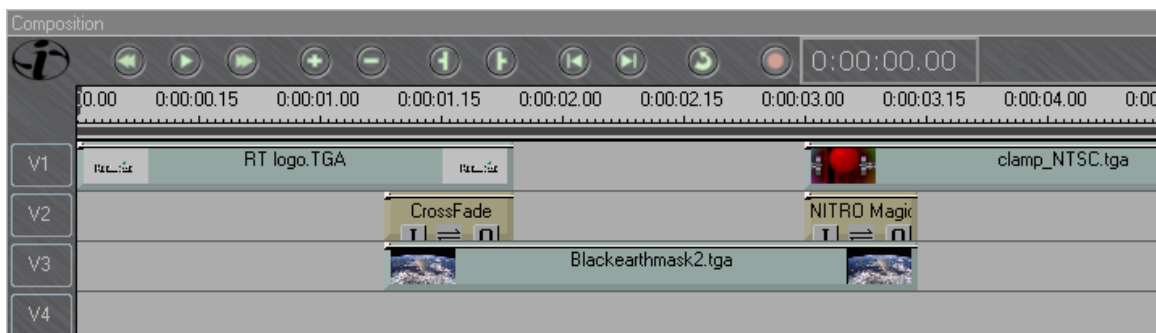


### 3.2 Speed Razor

Speed Razor treats 32 bit graphics differently than in Premiere. For example, if you create a timeline made up of graphics in Razor and attempt to transition to each one, you will need to perform an extra step. For each graphic, you will need to disable the mask option for each graphic. Users can do this by deselecting the enable mask option under the video tab. Otherwise a warning will appear that there are too many keyed layers. A maximum of 1 keyed layer is allowed. Once that is taken care of, any **Nitro Magic** transitions may need to be adjusted depending on how close the previous **Nitro Magic** transition is, since mainly graphics are usually short in length.

An example of this would be:

1. Import several graphics on the timeline
2. If you see that the timeline has marked this section red, it is because the mask needs to be disabled for this function to work correctly in real-time.
3. In order to do this; select the non-real time graphic in the timeline. In the Item Info window, select the video tab. Then deselect the enable mask checkbox.
4. If the timeline is still marked red, it could be that the graphics are still too close together on the timeline, so they will have to be spaced properly.
5. Once the timeline is not marked red, then they can be used with ReelTime transitions in real-time. The graphics will not look differently by disabling the mask, it's just a necessary step in SpeedRazor that is required.



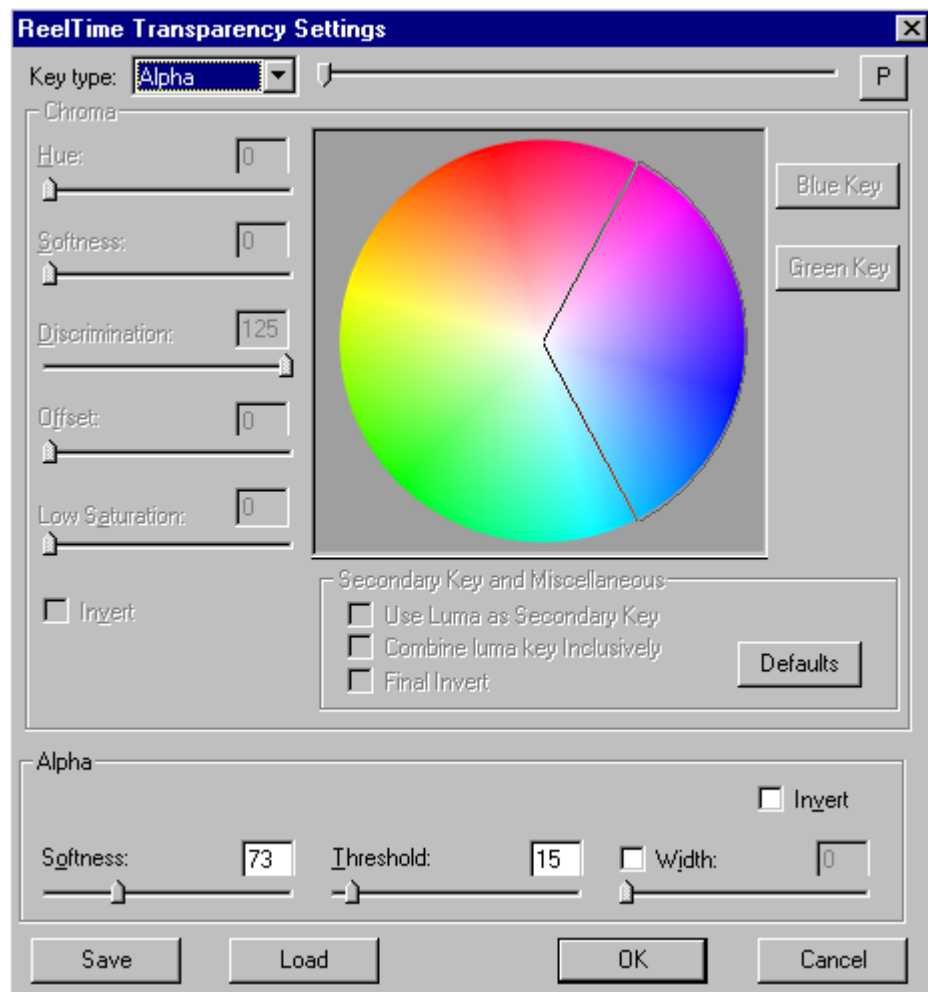
## 4. Custom Keyer

For Adobe Premiere users, the ReelTime Keyer filter for WYSIWYG real-time chroma, luma, and alpha keying is now available. Previously, this was only available with ReelTime and Speed Razor. Creating precise chroma or luma key settings is greatly assisted by the instantaneous visual feedback on the video monitor while manipulating sliders within the ReelTime Keyer filter. All the capabilities of the powerful ReelTime hardware chroma keyer are exposed, with fine control over hue, softness, discrimination, offset, low saturation. Secondary keying is provided to cut extraneous elements in the keyed source.

### 4.1 Premiere

In Premiere, the Keyer is treated as a filter. In order to access the Custom keyer, do the following:

1. First drag 2 clips into the timeline. For example, place the background video clip on V1A, and the foreground clip that you want to key on V2. Make sure that the foreground clip contains an alpha channel, if you plan on doing an alpha key.
2. Before the keyer filter is applied, the alpha channel needs to be enabled first. In order to do this, right mouse click on the foreground clip with the alpha channel and select **Video>Transparency**. In the **Key Type** menu, select Alpha channel and click **Ok**.
3. Now, on the same clip, right mouse click again, and select **Filters**.
4. In the **Filters** dialog, add the **ReelTime Transparency** filter and click **Ok**.
5. This should bring up the **ReelTime Transparency Settings** dialog

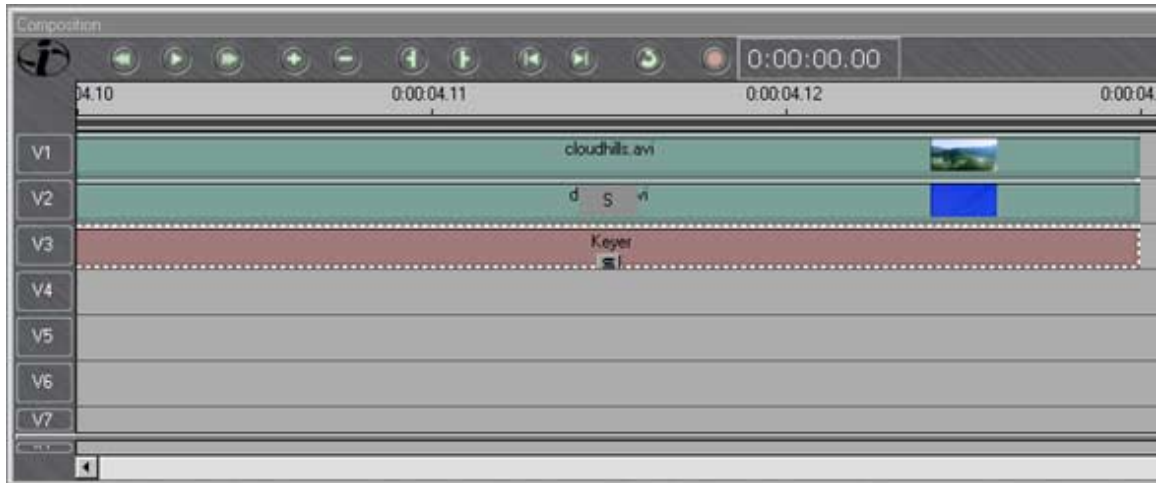


## 4.2 SpeedRazor

In SpeedRazor, it uses the same custom keyer as in Premiere, but it is accessed differently. In order to use this, please do the following:

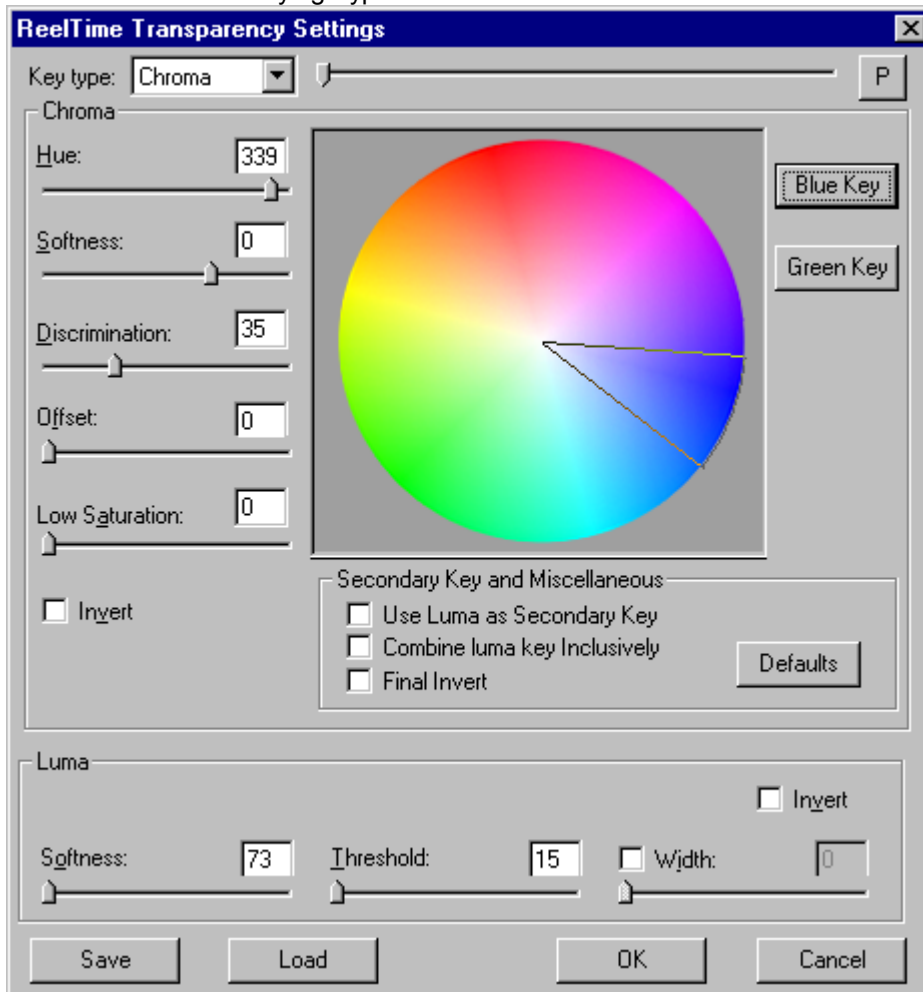
1. First, add 2 clips to your bin; the first one being the background clip, followed by the foreground clip with an alpha channel that you wish to key.
2. Then add the keyer effect to your bin. To do this, select **Add Effect**, then import **\_ReelTimeKeyer.vfx**.
3. In this example, we will build a blue screen **Chroma** key. To do this, place the background clip on **V1**, followed by the foreground clip on **V2**, then the **ReelTime Keyer** effect on **V3**.
4. As soon as the **ReelTime Keyer** effect is placed in the timeline, it will open up the keyer dialog.

**Example** (for Blue Chroma Key): For the **Key Type**, select **Chroma**, then click **Blue Key** button and preview it before clicking **Ok**.



### 4.3 Defining the Custom Keyer Screen

Here is the different Keying Types and their controls defined.



1. Key Type: Three choices here, **Chroma**, **Luma**, or **Alpha**.  
Note: With a **Chroma Key Type**, you can enable a secondary **Luma Key**.
2. Preview scrub bar and 'P' (play) button.  
Scrubbing or pressing the 'P' (play) button lets you preview the key to the video output on the ReelTime board (ie, no preview appears on the computer screen).
3. **Chroma** controls.  
The **Chroma** control section contains many adjustments for fine tuning your Chroma key.
  - a) **Hue** – Either by adjusting the slider or directly inputting a value, changes can be made to the value of the Hue of the color used to key.
  - b) **Softness** – Either by adjusting the slider or directly inputting a value, changes can be made to the softness around the edge of the key.
  - c) **Discrimination** – This control discriminates between the hue centered on, and the surrounding hues on the color wheel. As you increase the amount of discrimination, you allow more of the surrounding hues to be keyed out along with the selected hue. Visually, it widens the color wedge without having an effect on saturation.
  - d) **Offset** – Increasing offset allows less of low color saturation levels AND less of the surrounding hues on the color wheel. Visually, the color wedge gets symmetrically smaller.

- e) **Low Saturation** – This increases or decreases the low color saturation levels - trimming the inner tip of the color wedge. This has a clipping effect on low saturation colors.
  - f) **Blue Key** – Pushing this button will change the Chroma to center on the blue color value.
  - g) **Green Key** – Pushing this button will change the Chroma to center on the green color value.
  - h) **Invert** – Lets you invert the **Chroma** key.
  - i) **Secondary Key & Misc.** – Three check boxes that let you enable several features:
    - i. **Use Luma Secondary Key** - enable a secondary key (activates the Luma controls)
    - ii. **Combine Luma Key Inclusively**
    - iii. **Final Invert** - apply a final inverse effect.
  - j) **Default** – The **Default** button returns the **Chroma** key settings back to the factory settings.
4. **Luma/Alpha** controls.  
The **Luma/Alpha** control section contains the adjustments for the **Luma**, both for primary and secondary, and **Alpha** keys.
- a) **Softness** - Controls the clip softness at the selected threshold. A setting of 0 (zero) is a hard edge; a setting of 255 is a completely soft edge. As softness is adjusted, the threshold is not affected.
  - b) **Threshold** - Controls the cutoff point at which luminance/Alpha key values key through or "clip." As the threshold increases, brighter values or higher Alpha key values clip. As threshold is adjusted, the softness is not affected.
  - c) **Width** - With Width **unchecked**, the upper range of the Mask is locked at 255. With Width **checked**, the system allows both upper and lower clip points. The Width scroll bar varies the width of the clip range - from wide to narrow. With Width **checked**, threshold adjustments vary the position of the entire range, while softness adjustments vary the slope of the upper and lower boundaries together. The slope of both boundaries is always equal. If the Width is **unchecked**, the upper range is once again fixed at 255, but the Width value is retained.
  - d) **Invert** - Inverts the key.
5. **Save** and **Load** keys.  
The **Save** button will allow you to save the settings for a specific key and the **Load** button allows you to load already saved keys.

## 5. Animation Recorder

Animation Recorder is rendering plug-in providing improved workflow for Discreet 3D Studio MAX users. Animation Recorder allows ReelTime users to render larger than 2GB AVI files from within MAX with control over data rate. Users may view rendered clips directly in MAX and scrub frames or fields. ReelTime clips may be rotoscoped onto MAX objects. Animation Recorder eliminates the need to painstakingly render sequential TGA files with MAX and then "make movie" in Premiere. Animation Recorder renders true 29.97 fps NTSC clips directly within MAX, eliminating previous problems with 30.0 fps clips.

Please see the Animation Recorder User Guide for detailed information about this New feature of ReelTime Family v3.5. The manual will be found here, once installed:

C:\Program Files\ReelTime\animationrecorderuserguide.pdf

Updated versions, as they come out, can be found at the Pinnacle Systems website, under ReelTime:

<http://www.pinnaclesys.com/Support/>