

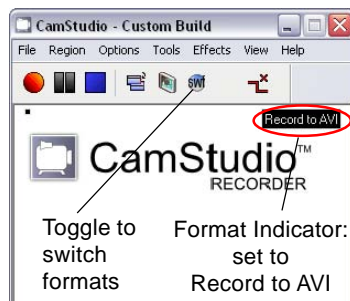
Creating a Full-Color 3D Video from a TNTmips Stereo View

You can create full-color 3D YouTube videos from screen recordings of your activities (editing, sketching, ...) in a TNTmips passive stereo view. You record the initial video of the line-interlaced stereo view using standard screen-recording software. You then process the video to convert each line-interlaced frame into separate left and right images placed above and below each other in the output video frame to create a 3D video. When you upload this reprocessed video to YouTube and identify it as 3D, anyone can then view it in stereo 3D using their available stereo viewing device (passive stereo, active shutter glasses, or anaglyph glasses).

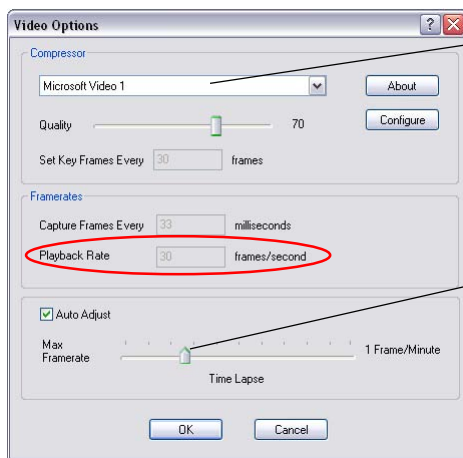
This document presents instructions on recording a screen video of a stereo view activity and converting it to 3D. The companion Technical Guide entitled *Posting and Configuring a 3D Video on YouTube* covers how to set up the 3D video for viewing on YouTube.

CamStudio Settings for Screen Recording

1) CamStudio can record to either AVI or Flash video formats. Make sure that Record to AVI is shown in the upper right corner of the CamStudio window canvas (see illustration to the right); if not, toggle the SWF icon button to switch the format.



2) Choose Options / Video Options to open the Video Options window. Set the options illustrated below, then press [OK].



Choose Microsoft Video 1 from the Compressor menu

With the Auto-Adjust checkbox turned on, adjust the Max Framerate slider until the Playback Rate value above (circled in red in the illustration) is about 30 frames / second.

3) Choose the directory where you want videos to be automatically saved by choosing Options / Program Options / Directory for Recording. You can choose from the Windows temporary directory (the default), the CamStudio installation directory, or an option to open a dialog to designate a directory of your choice.

4) By default CamStudio automatically names each recorded video using the date and time of recording. If desired, you can choose Options / Program Options / Name of AVI File to choose to be prompted for a name for the video file.

Software Used

- 1) Screencast recording software that can record video from the computer screen to AVI format. These instructions refer to the FREE **CamStudio** software for Windows (<http://camstudio.org> or <http://www.microimages.com/support/screen-recorder.htm>).
- 2) **StereoMovie Maker** (Windows, FREE, <http://stereo.jpn.org/eng/stvmkr/>) to convert the AVI-formatted video recorded from the interlaced (passive) stereo view to a 3D video with separate left and right images in each frame.

Set Up an Interlaced Stereo View in TNTmips for Recording

For an interesting stereo video, choose an area with a colorful reference image and local topographic relief. You have a wide choice of available reference data:

Reference Image

- Bing Maps Aerial
- MicroImages' web tilesets
- Your local tilesets or images

Terrain

- MicroImages' web terrain tilesets
- Your web terrain tilesets
- Your local DEMs

Consult the TechGuide entitled *Stereo Viewing: Use Any Popular 3D Display Method* for steps to configure the TNT view for line-interlaced passive stereo viewing.

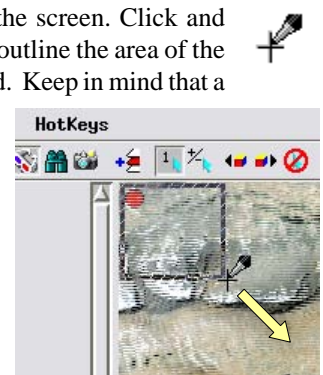
Anyone can view TNT displays in stereo without specialized hardware by using the anaglyph stereo mode with low-cost anaglyph glasses. Screen videos of anaglyph stereo views can be uploaded directly to YouTube without further processing. Anyone can then view these videos in stereo using anaglyph glasses. However, anaglyph videos cannot be viewed in stereo using other stereo viewing devices.

Recording a Screen Video Using CamStudio

- 1) Launch CamStudio and select the Region option from the Region menu. This setting lets you designate a rectangular portion of the screen to record to video.
- 2) Press the Record icon button (red ball on left end of toolbar).

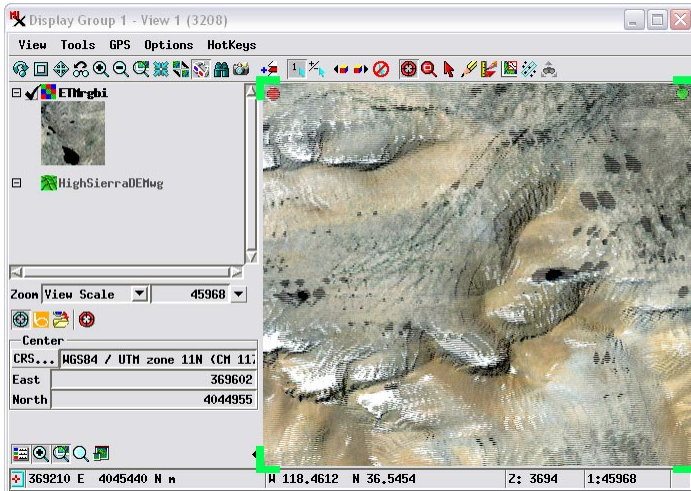


- 3) A crosshair cursor appears on the screen. Click and drag the cursor to open a box to outline the area of the View window you want to record. Keep in mind that a larger frame size increases the size of the final video file. In addition, you may wish to limit the recording region to the view canvas, as the labels and other controls on the View window will appear blurry in a stereo video after the conversion from interlaced frames to separate left-right images.



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- When the recording box is the desired size, release the mouse button to begin recording. CamStudio indicates the screen area being recorded by marking the corners with thick green lines (see illustration below).

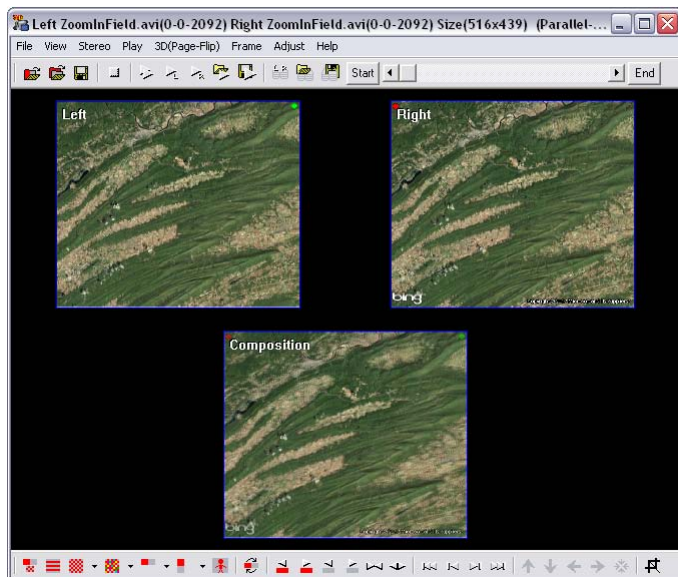


- Perform your activity in the View. Try to use slow, smooth actions and minimize extraneous mouse cursor movements.
- When your activity is complete, press the Stop icon button (blue square icon) on the CamStudio window.

Converting a Screen Video of Interlaced Stereo to 3D

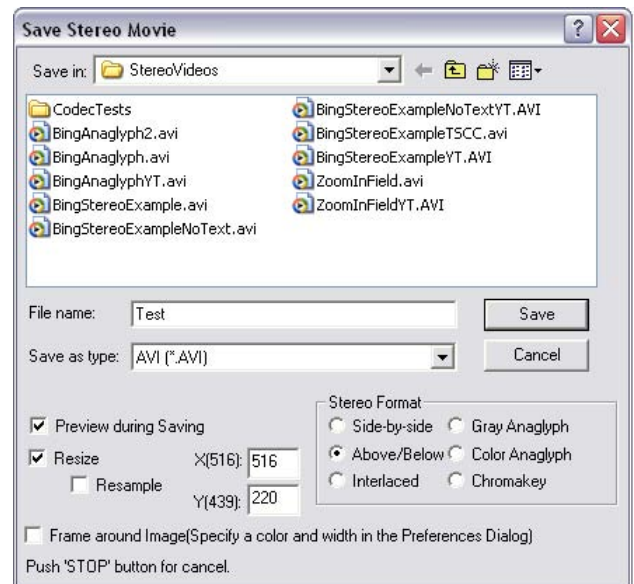
Stereo Movie Maker is used to process the 2D video of your interlaced stereo View frames into a 3D stereo movie that conforms to YouTube specifications. The left and right image lines of each line-interlaced frame are extracted into contiguous left and right images that are written into single frames with one image above the other. Stereo Movie Maker automatically resamples each extracted image to the same size as the original full interlaced frame. For proper viewing in YouTube, the left and right images must be downsized in the Y direction by a factor of two so that the resulting stereo image has the same aspect ratio as the original video.

- Launch Stereo Movie Maker.
- Choose File / Open Stereo Movie and select your AVI file. The frame size of your video (width x height) is shown in the window's title bar following the name of the selected file. The



canvas in the Stereo Movie Maker window automatically shows the first frame of your video. The original interlaced image is shown at the bottom (labeled "Composition") and the extracted Left and Right images are shown in the upper part of the window (see illustration in bottom left corner of this page).

- Choose File / Save Stereo Movie.
- In the Save Stereo Movie window (see illustration below):
 - Navigate to the desired output directory and enter a name in the File Name field
 - Choose Above/Below in the Stereo Format box
 - Turn on the Resize checkbox, which exposes fields labeled X and Y. The numbers in parentheses following the labels are the number of columns (X) and lines (Y) in your video.
 - In the X field, enter the X value shown in parentheses.
 - For the Y field, divide the full frame height by 2, round to the nearest integer, and enter the result. This setting is necessary to produce a 3D video that preserves the correct aspect ratio in YouTube.
 - Press the Save button.



- A Video Compression window opens; choose Indio® Video 5.10 from the Compressor menu. This compressor reduces the stored size of the video without introducing excessive blurring. Press OK to start recording.
- The scroll bar at the top of the Stereo Movie Maker window moves to the right as the video is processed, and each frame is previewed in the window's canvas. When the rendering is complete, you are ready to upload the processed video file to YouTube (see the TechGuide entitled *Stereo Viewing: Posting and Configuring a 3D Video on YouTube*).

