Leap Motion TOP

SUMMARY

The Leap Motion TOP gets the image from the Leap Motion controller's cameras. To enable this feature the option **Allow Images** must be turned on in the Leap Motion Control Panel.

To connect with the device you will need to install the Ultraleap Tracking Software. For best performance, it is recommended to use the latest version Gemini drivers for Windows (v5.13.2 or greater) or MacOS (v5.14.0 or greater) that are available here: https://developer.leapmotion.com/tracking-software-download

Legacy version 2 or version 4 Orion drivers are also supported. See the API parameter details below for more information.

In addition to installing the driver, TouchDesigner must also be told where to find the tracking library. Installation instructions vary depending on the operating system:

On Windows: You can use the Library Folder parameter to point to the location of the LeapC.dll (Orion/Gemini) or LeapC.dll (Version 2/3) file on your system. The file is installed as part of the LeapSDK and the location may vary depending on the version and options selected during installation.

On MacOS: The library folder should point to the location of the Ultraleap tracking app. By default this is /Applications/Ultraleap Hand Tracking.app/ TouchDesigner will automatically find the library files inside the application's contents folder.

Tip: If using Gemini v5, the Leap Motion will only work in one orientation. By default the hands enter from the bottom of the camera view, though this can be changed in setting to invert the direction. This is an important distinction between Gemini V5 and the Orion/ V2/V4 APIs which could work in either orientation.

Note: TouchDesigner does not include a license to use the Leap Motion hardware or software. Make sure to check with the Ultraleap website regarding any applicable licenses you may need for your project.

See also Leap Motion, Leap Motion CHOP, leapmotionTOP Class

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Active `active` - If set, this TOP will capture data from the cameras.

API `api` - ▣ - Select between Leap Motion V2 or V4/V5 SDKs for tracking. V5 offers the fastest and most stable tracking, V2 offers some legacy features like gestures.

Library Folder `libfolder` - This parameter should point to the location of the library file (.dll on Windows) that corresponds to the selected API version. The dll file can be found in the driver kit downloaded from the Ultra Leap website inside the LeapSDK\lib\x64 folder. For V2, the file will be called 'Leap.dll' and for V4, it is called 'LeapC.dll'

For Gemini V5, first install the tracking software, then set this parameter to C:\Program Files\Ultraleap\LeapSDK\lib\x64 where it will find the LeapC.dll file.

Camera `camera` - Select between the two cameras on the Leap Motion Controller.

Flip X `flipx` - Flips the image in X.

Flip Y `flipy` - Flips the image in Y.

Image Correction `correction` - Corrects the image for lens distortion.

HMD Mode `hmd` - ▣ - Switches the device to Head Mounted Display mode.

PARAMETERS - COMMON PAGE

Output Resolution `outputresolution` - ▣ - quickly change the resolution of the TOP's data.

Resolution `resolution` - ▣ - Enabled only when the Resolution parameter is set to Custom Resolution. Some Generators like Constant and Ramp do not use inputs and only use this field to determine their size. The drop down menu on this control provides some commonly used resolutions.

Resolution Menu `resmenu` - A drop-down menu with some commonly used resolutions.

Use Global Res Multiplier `resmult` - Uses the Global Resolution Multiplier found in **Edit>Preferences>TOPs**. This multiplies all the TOPs resolutions by that set amount. This is handy when working on computers with different hardware specifications. If a project is designed on a desktop workstation with lots of graphics memory, a user on a laptop with only 64MB VRAM can set the Global Resolution Multiplier to a value of half or quarter so it runs at an acceptable speed. By checking this checkbox on, this TOP is affected by the global multiplier.

Output Aspect `outputaspect` - ▣ - Sets the image aspect ratio allowing any textures to be viewed in any size. Watch for unexpected results when compositing TOPs with different aspect ratios. (You can define images with non-square pixels using xres, yres, aspects, aspectx where xres/yres != aspects/aspectx.)

Aspect `aspect` - ▣ - Use when Output Aspect parameter is set to Custom Aspect.

Aspect Menu `aspectmenu` - A drop-down menu with some commonly used aspect ratios.

Input Smoothness `inputfiltertype` - ▣ - This controls pixel filtering on the input image of the TOP.

Fill Viewer `fillmode` - ▣ - Determine how the TOP image is displayed in the viewer.

NOTE: To get an understanding of how TOPs work with images, you will want to set this to **Native Resolution** as you lay down TOPs when starting out. This will let you see what is actually happening without any viewer resizing.

Viewer Smoothness `filtertype` - ▣ - This controls pixel filtering in the viewers.

Passes `npasses` - Duplicates the operation of the TOP the specified number of times. For every pass after the first it takes the result of the previous pass and replaces the node's first input with the result of the previous pass. One exception to this is the GLSL TOP, when using compute shaders, where the input will continue to be the connected TOP's image.

Channel Mask `chanmask` - Allows you to choose which channels (R, G, B, or A) the TOP will operate on. All channels are selected by default.

Pixel Format `format` - ▣ - Format used to store data for each channel in the image (ie. R, G, B, and A). Refer to Pixel Formats for more information.

INFO CHOP CHANNELS

Extra Information for the Leap Motion TOP can be accessed via an Info CHOP.

COMMON TOP INFO CHANNELS

- resx - Horizontal resolution of the TOP in pixels.
- resy - Vertical resolution of the TOP in pixels.
- aspectx - Horizontal aspect of the TOP.
- aspecty - Vertical aspect of the TOP.
- depth - Depth of 2D or 3D array if this TOP contains a 2D or 3D texture array.
- gpu_memory_used - Total amount of texture memory used by this TOP.

COMMON OPERATOR INFO CHANNELS

- total_cooks - Number of times the operator has cooked since the process started.
- cook_time - Duration of the last cook in milliseconds.
- cook_frame - Frame number when this operator was last cooked relative to the composition timeline.
- cook_abs_frame - Frame number when this operator was last cooked relative to the absolute time.
- cook_start_time - Time in milliseconds at which the operator started cooking in the frame it was cooked.
- cook_end_time - Time in milliseconds at which the operator finished cooking in the frame it was cooked.
- cooked_this_frame - 1 if operator was cooked this frame.
- warnings - Number of warnings in this operator if any.
- errors - Number of errors in this operator if any.

TouchDesigner Build: Latest

Category: TOPs