TrackSkull User Guide v2

LifeApe

Introduction

TrackSkull has helped many haunters create more realistic animatronic shows by allowing them record real-life motion. Everything that you record in TrackSkull can easily be imported into Brookshire Software's VSA, Light-O-Rama, or LifeApe's SceneBuilder for use on the ExtremeLife controller.

TrackSkull was developed as a tool to help the home haunters and professionals with their love of building 3-Axis skulls. The initial idea was to record input from a joystick and export this information to VSA. Since then, we've added support for the TrackIR motion capture system, real time output to most servo controller via "puppet mode", and other small tweaks and feedback systems. These additions have caused TrackSkull to go beyond being a simple tool and become a full-fledged software application.

As with all my software, TrackSkull will forever be an evolving application. Users are always welcome to submit ideas to me via email (nelson@lifeape.com) Enjoy!

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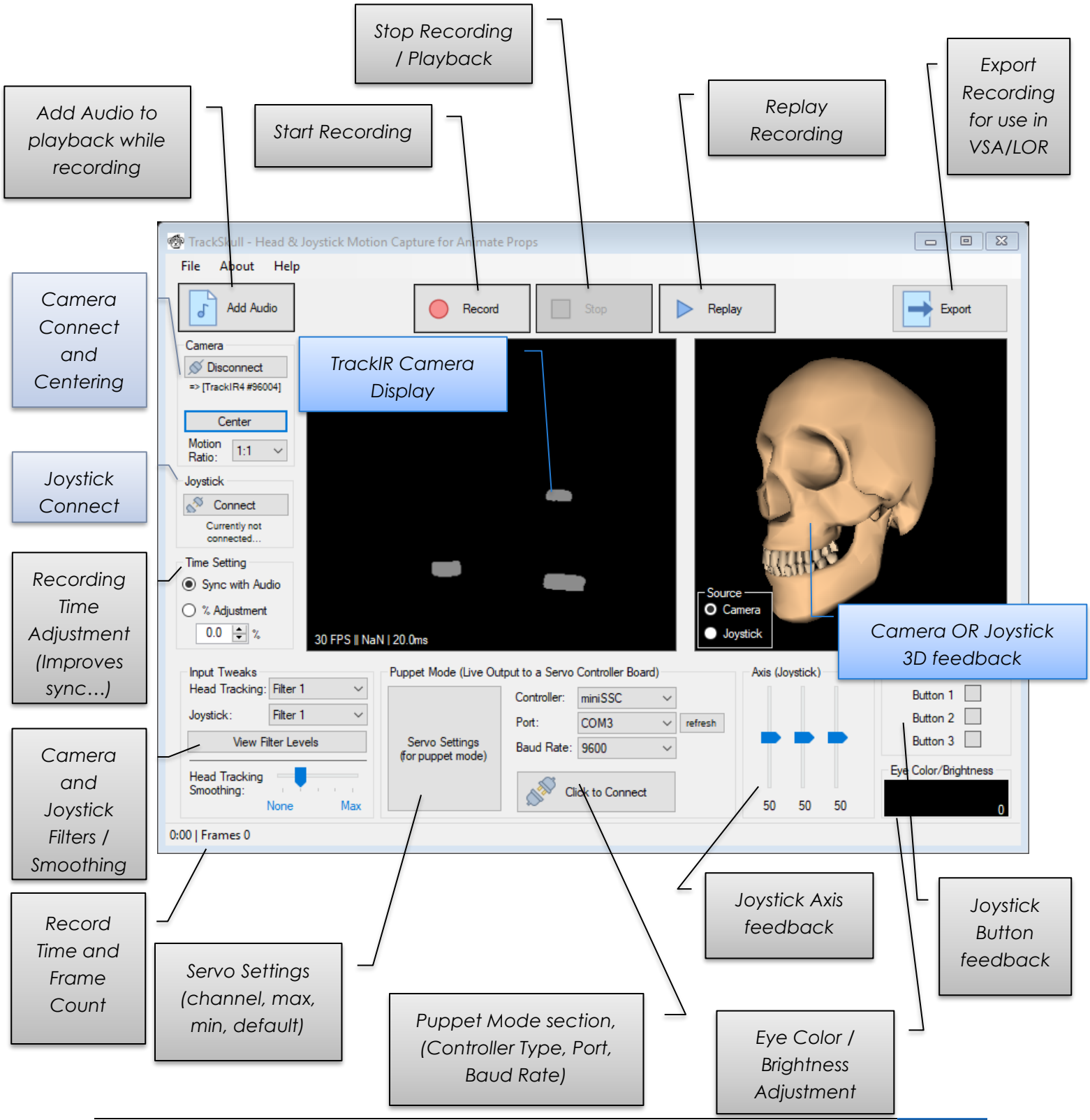
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Input Devices

The following devices can be used for acquiring real-life positioning data that can be used by TrackSkull. The devices that are supported are the NaturalPoint TrackIR 4:Pro, TrackIR 5, and any Windows compatible USB joystick.

TrackIR Camera (Version 4:Pro OR Version 5)

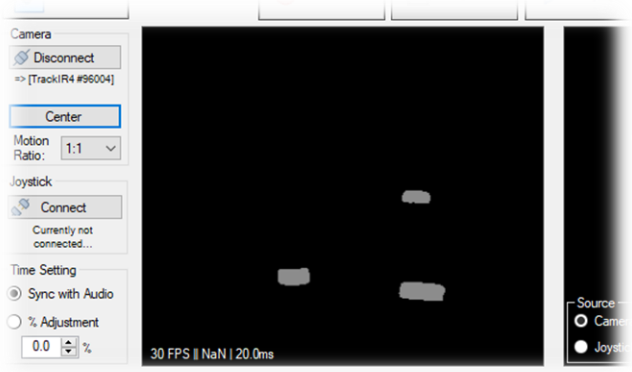
The NaturalPoint TrackIR camera system consists of a special IR camera and reflective sensors you wear that captures your own heads position (up to 6 Degrees of freedom).

Installation:

Install the drivers and software that shipped with the TrackIR system. TrackSkull will access the camera via these drivers.

Next time you open TrackSkull, it will automatically detect and connect to the camera. If not, you can hit [Connect] from the "Camera" section on the left-hand side.

Attach the reflective sensors to your hat and stand/sit in front of the camera, you should see 3 dots within the TrackIR display within TrackSkull, these are the 3 reflective sensors on your hat.



Where to buy:

https://amzn.to/2orxQkc - *Amazon: TrackIR 5*

Joysticks

Any USB joystick that Windows recognizes should work with TrackSkull.

For example: Logitech Extreme 3D Pro (pictured on the left) or Logitech Attack 3 (on right)

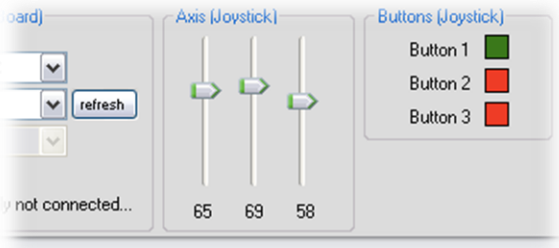
The advantage of the Extreme 3D is TrackSkull can utilize the "Twisting" handle action of the joystick rather than the throttle.

Installation:

Typically Windows will automatically detect and install native drivers for Joysticks. If you have any trouble, check with the joystick manufacturer for specific drivers.

Next time you open TrackSkull, it will automatically detect and connect to the Joystick. If not, you can click [Connect] from the "Joystick" box on the left-hand side.

You should see the 3 Axis and 3 boxes on the bottom right-hand corner within TrackSkull respond to your joystick movements.



Where to buy:

Logitech Extreme 3D – *Great twist handle feature.*

Filtering and Options

Using a Joystick or the TrackIR system sometimes doesn't give you the smoothest of motions. That's where filters come in!

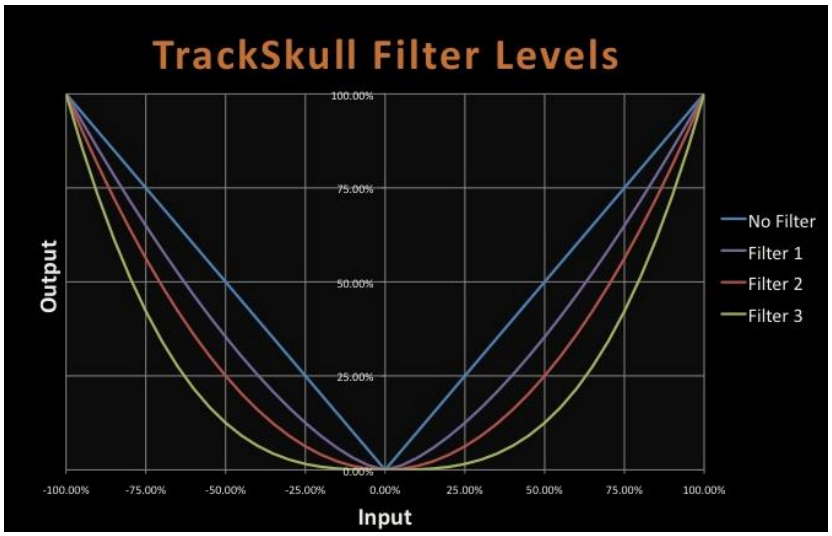
Centering (TrackIR only)

Centering is pretty simple. When using the TrackIR system, you need to tell TrackSkull what you consider "centered". In other words, what you want the default (or at rest) position of your head to be.

To do this, look straight ahead and hold still. Then click the [Center] button under the "Camera" box on the left-hand side. That's it!

Filtering

Filtering gives you the ability to have a more stable center position and more controlled movements. Filtering can apply to the TrackIR camera or joystick. There are 3 levels of filtering available. The picture below shows a representation of what is happening between the input (joystick or TrackIR) and what TrackSkull is using. This option can be found on the lower left-hand side.



For example: Filter level 3 requires you to move almost 20% before any movement is seen by TrackSkull.

Smoothing (TrackIR only)

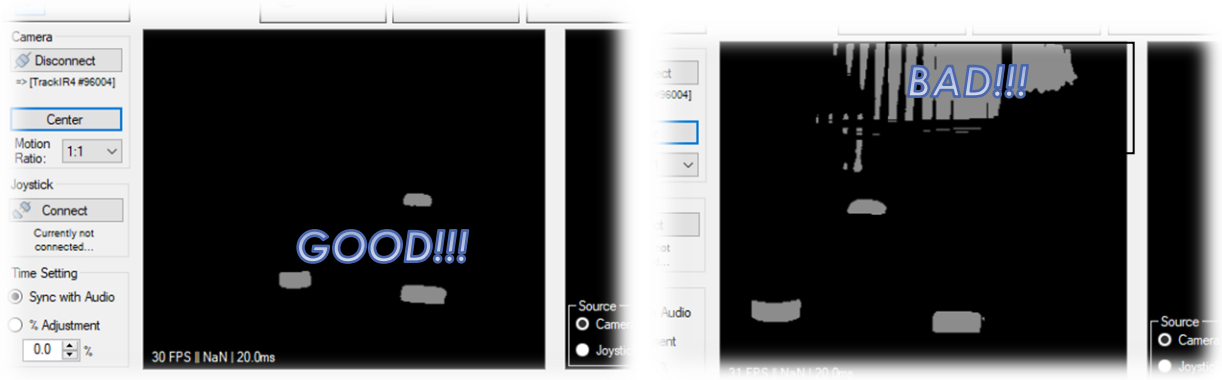
To put it simply, this cleans up the output from the TrackIR system. If you experience any type of twitching or instability when using the TrackIR system, increasing Smoothing can help. This option can be found on the lower left-hand side.

On Screen Feedback

TrackSkull offers a few ways to see what is being outputted from the TrackIR system or joystick. These are to aid you on what will be exported to VSA or sent to your servo controller board directly.

TrackIR Display

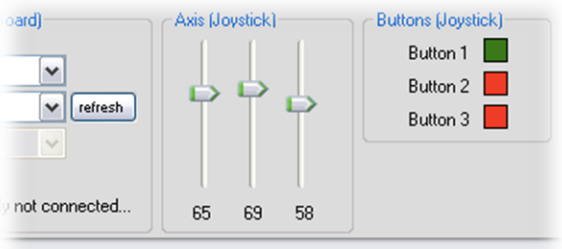
The TrackIR display will show you what the TrackIR camera is seeing. You should see 3 dots within the display; these are the 3 reflective sensors on your hat. If you see additional artifacts, the camera may be seeing other reflective surfaces or bright lights.



For best results, be sure to check that your head movements remain within the display window. If not, move back, away from the camera.

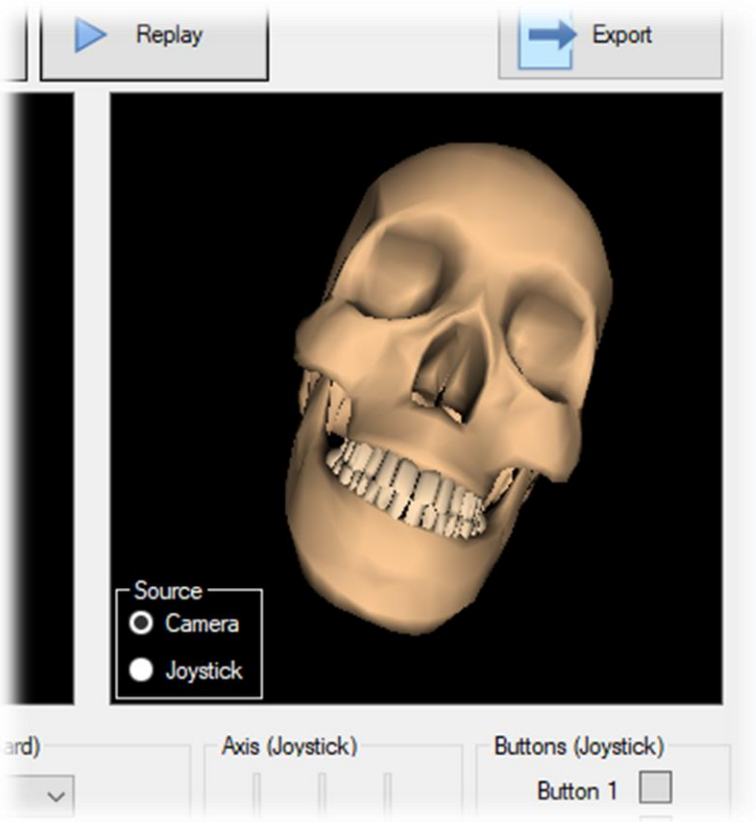
Joystick Feedback

You should see the 3 Axis and 3 boxes on the bottom right-hand corner within TrackSkull respond to your joystick movements.



3D Skull

The 3D skull represents the 3 axis of freedom; Nod, Tilt, and Rotate. This gives you a visual representation of how the 3 different axis interact with one another. The source of the 3D skull can come from either the TrackIR system or joystick. The selection can be made at the bottom left-hand side of the 3D skull box



Puppet Mode

Puppet Mode allows for you to control your servos directly from TrackSkull without having to first import a recording into VSA. Many users refer to it as "live" feedback.

For example, you can control a 3-axis skull by moving around a joystick or have it mimic your own head's movements.

Setup

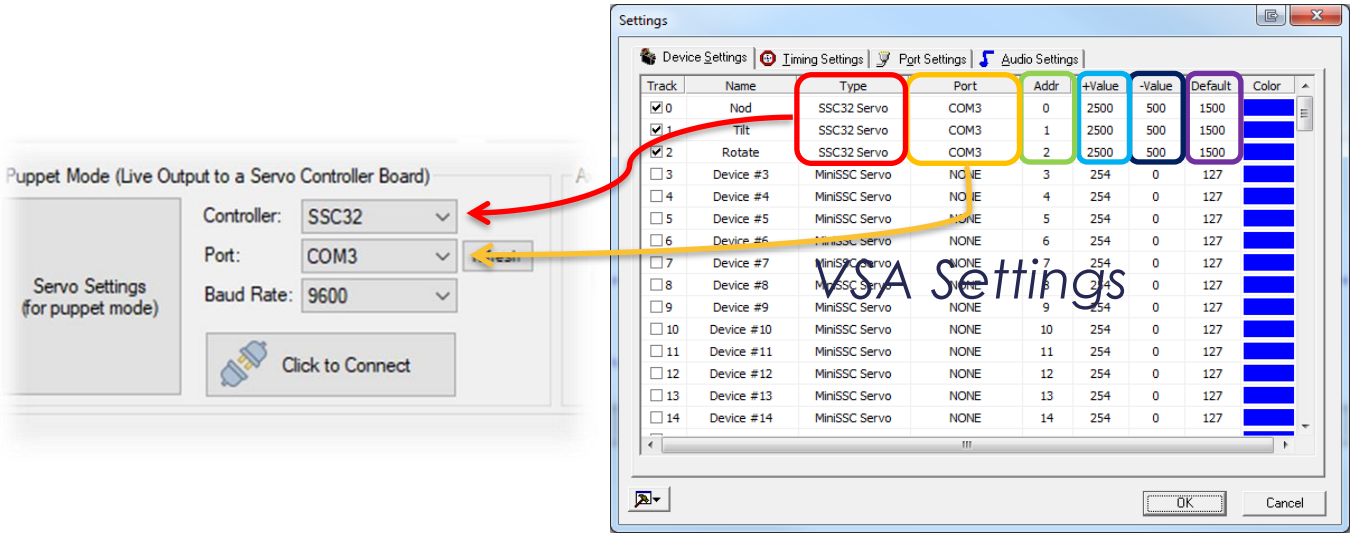
What you need to know:

- *What type of servo controller (miniSSC, SSC32, DMX, etc…)*
- *How to access it (Com port, baud rate, etc…)*
- *The parameters of each servo (address, max, min, default positions)*

NOTE: IF YOU ARE UNSURE, BUT HAVE VSA WORKING PROPERLY, YOU CAN FIND THESE SETTING THERE BY HITTING F3.

Controller Settings:

To setup "Puppet Mode", select your Controller, Port & Baud Rate (if applicable)



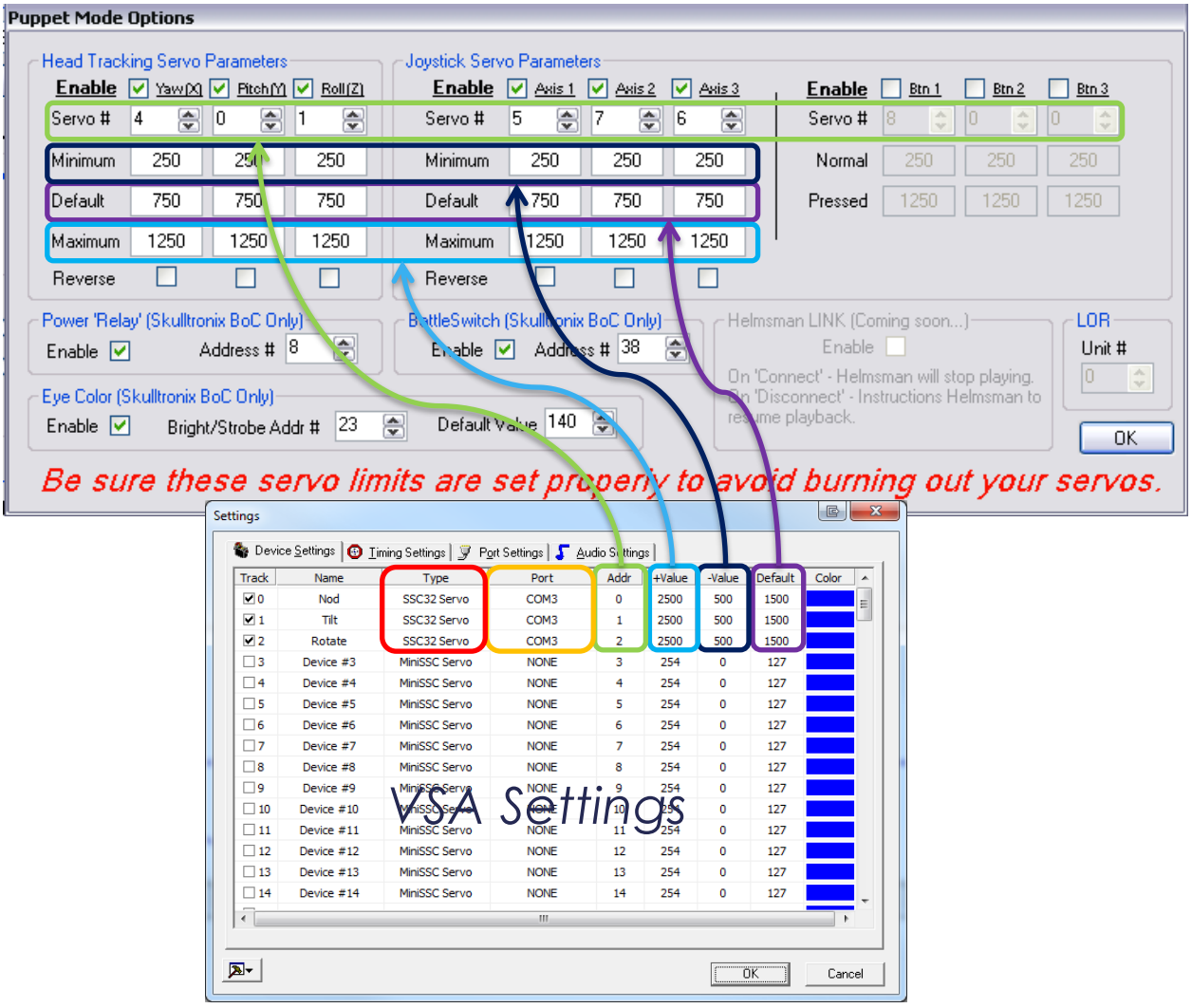
Servo Settings:

To setup your servos, click the big button labeled [Servo Settings] under the Puppet Mode box.

You will need to 'enable' each axis or button of the TrackIR system or Joystick that you wish to use for sending position data to your servo controller.

Then set the Servo #, Minimum, Default & Maximum servo position value.

NOTE: IF THE SERVO IS RESPONDING IN THE REVERSE DIRECTION AS EXPECTED, CHECK THE "REVERSE" CHECKMARK FOR THAT SERVO.



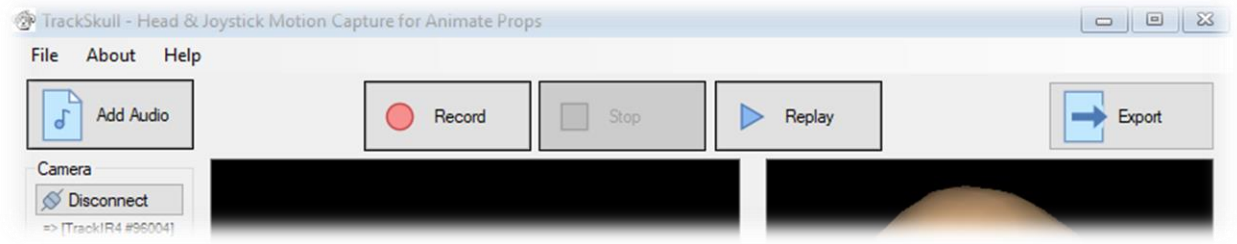
The [Power 'Relay' Setting] option is used when specific DMX controllers (such as the Skulltronix Board of Chuckee) have a specific address used to turn ON and OFF power to the servos. Consult your servo controller if this is required.

After setting up your servos, click [Connect] to connect to your servo controller.

Recording

Recording quite simply records the movements made with the TrackIR system or joystick. The recording can then be re-played in TrackSkull or exported for use in VSA.

Setup



To record your movements, click the large record button ***[Record]****.*

To stop recording, click the large stop button ***[Stop]****.*

To replay what you just recorded, click the large replay button ***[Replay]****.*

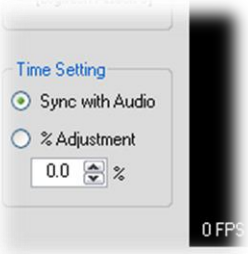
NOTE: IF YOU WISH TO USE "PUPPET MODE" WHILE RECORDING, MAKE SURE TO CONNECT TO YOUR SERVO CONTROLLER FIRST.

Audio

You can also play audio when recording to help you synchronize movements. To do this, simply click the [Add Audio] button and select the MP3 or Wave file you wish to use.

NOTE: IT IS BEST TO USE THE SAME AUDIO FILE THAT YOU WILL BE USING IN VSA (IF APPLICABLE) TO ENSURE PROPER SYNCHRONIZATION.

Adjustment



Occasionally recording can become out of sync. Such as, your movements will occur before or after the point in the audio where you wanted it to occur.

By using "Time Settings", we can help resolve these issues. See the chart below for an explanation.

Setting	Result
Sync with Audio {Default}	*Rather than use your PC's internal clock to keep timing, we look at the play time of your audio to keep in sync with.*
% Adjustment	*Positive Percentage (%) = extended in VSA or TrackSkull Replay (slower)* *Negative Percentage (%) = shortened in VSA or TrackSkull Replay (faster)*

Export Recording to VSA, LOR or SceneBuilder

Now that you've created a great performance, how do we get it out of TrackSkull and into VSA, LOR or SceneBuilder?

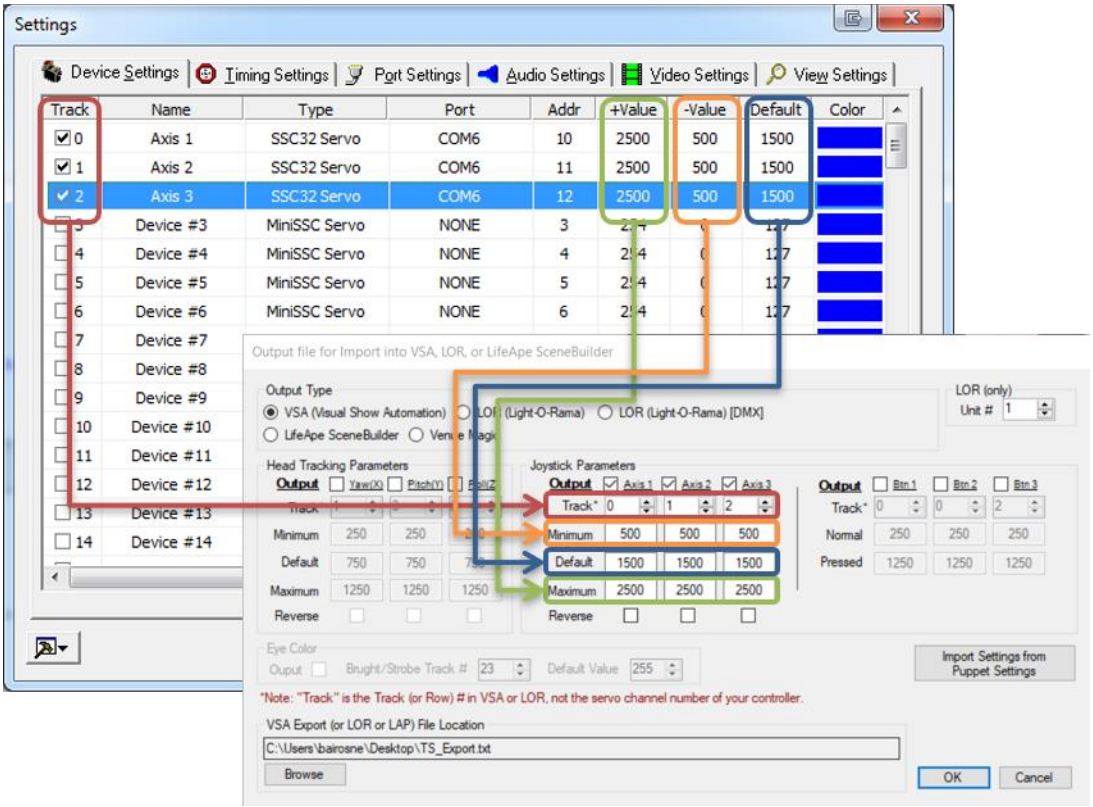
General

After your recording is complete, simply click the [Export] button in the upper right.

You will need to 'enable' each axis or button of the TrackIR system or Joystick that you wish to export from TrackSkull.

Then set the Track #, Minimum, Default & Maximum servo position value.

NOTE: IF THE SERVO IS RESPONDING IN THE REVERSE DIRECTION AS EXPECTED IN VSA, CHECK THE "REVERSE" CHECKMARK FOR THAT CHANNEL.



NOTE: IF YOU WERE USING "PUPPET MODE", YOU CAN USE THE "IMPORT SETTINGS" BUTTON TO COPY OVER YOUR PUPPET MODE SETTINGS.

IMPORTANT: MAKE SURE YOUR VALUES ARE EXACTLY THOSE OF VSA, IF NOT, A GENERIC IMPORT ERRORS WILL BE GIVEN BY VSA.