

# Streaming from Hand Engine To MotionBuilder

This document will take you through the steps of connecting to MotionBuilder with a Hand Engine data stream.

## Requirements

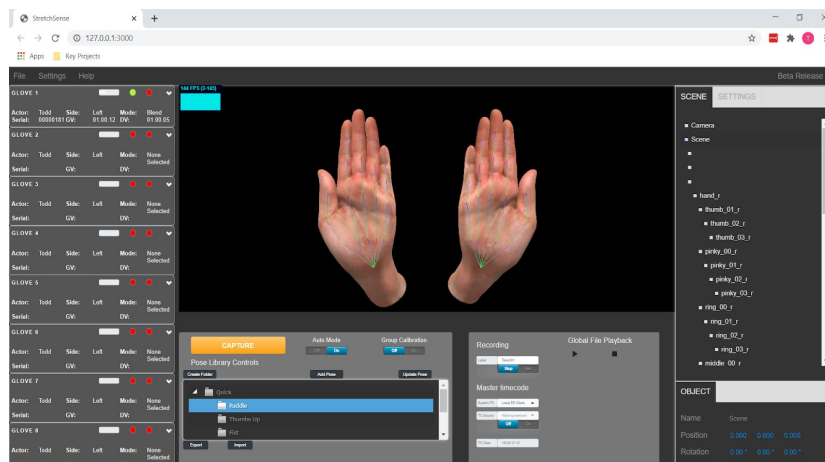
- StretchSense Hand Engine: Email [mcpsupport@stretchsense.com](mailto:mcpsupport@stretchsense.com) for details
- MotionBuilder: Supports version 2016 to 2020
- MotionBuilder Plugin: Included in the install directory of StretchSense Hand Engine
- Operating System: Windows 10

## Related Documents

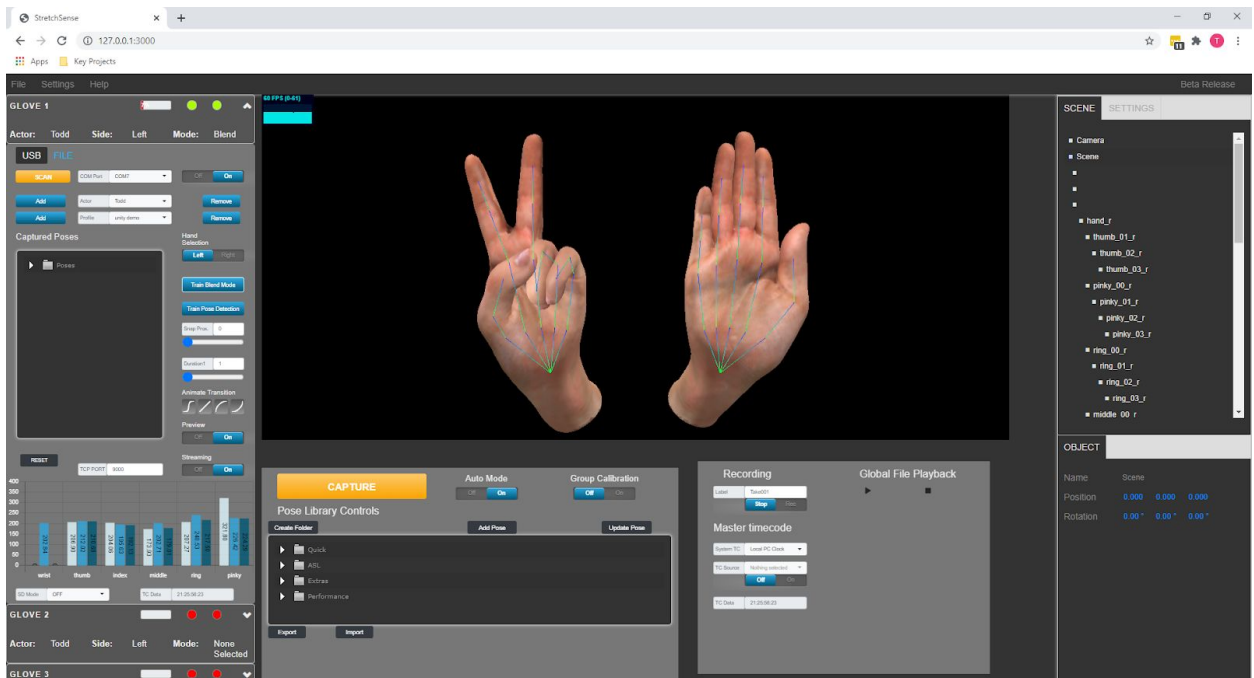
- DOC-5002 - Setting up COM Port for Wired USB Connection
- DOC-5003 - StretchSense USB Dongle Setup Guide
- DOC-5004 - StretchSense MoCap Pro Glove Firmware Update Guide
- DOC-5008 - StretchSense UltraSync One Module Configuration
- DOC-5009 - StretchSense Hand Engine Installation Guide
- DOC-5010 - StretchSense Hand Engine User Guide
- DOC-5011 - Streaming from Hand Engine to Unity
- DOC-5012 - Streaming from Hand Engine to UE4 (Unreal)
- DOC-5014 - Streaming from Hand Engine to MotionBuilder
- DOC-5019 - MoCap Pro Glove Production Ready Checklist
- DOC-5020 - Remapping to a Custom Character Hand in Hand Engine

## Setting up your MotionBuilder Project

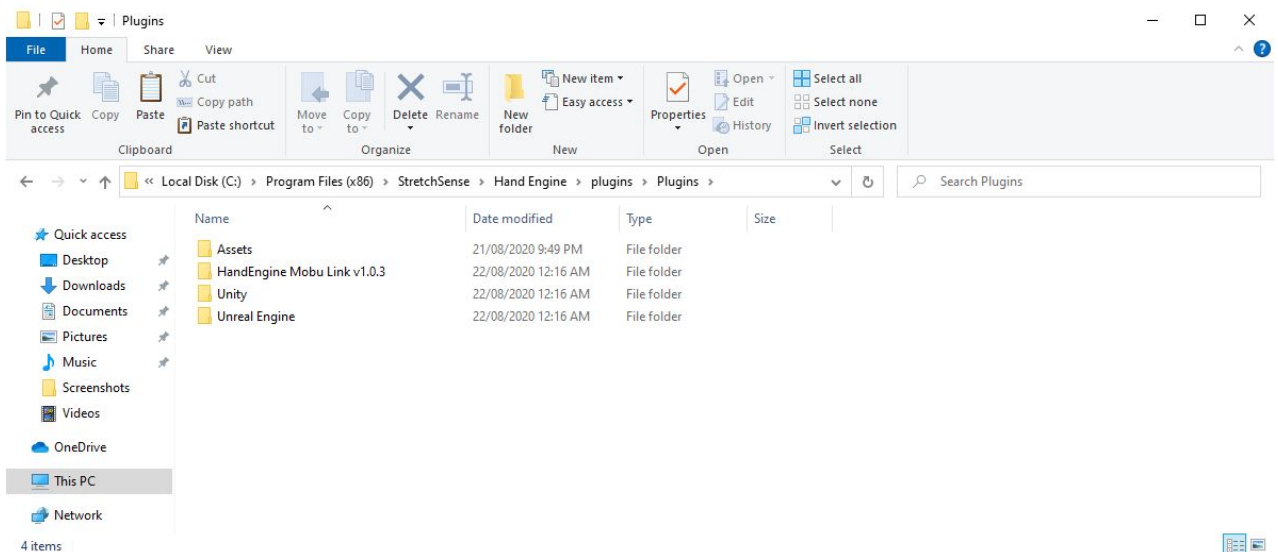
1. Download and Install the StretchSense Hand Engine and MotionBuilder
  - a. **NOTE:** for this example we are using version MoBu2019
2. Launch Hand Engine and setup hand
  - a. See **DOC-5010 - StretchSense Hand Engine User Guide** for glove calibration instructions



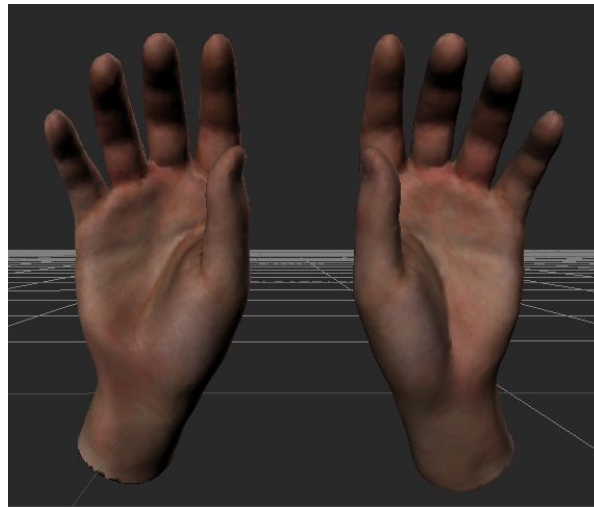
- Once the hand is trained, in the **Device Pane** on the left of the screen, enter your **TCP Port** number and set **Streaming** to **On**. Check that the **Streaming Status** light in the device title bar (the right traffic light indicator) has turned green.



- Next we need to add the plugin to MotionBuilder. To do this, first ensure MotionBuilder is closed. Then navigate to the installation directory of StretchSense Hand Engine (e.g. **C:\Program Files (x86)\StretchSense\Hand Engine\plugins\Plugins**), and then navigate to the **Hand Engine MoBu Link vx.y.z** to find the plugin corresponding to your version of MotionBuilder.



5. Copy the DLL matching your version of MotionBuilder (i.e. HandEngineMobuXX, where XX refers to version of Mobu) to the directory:  
**<MotionBuilder Install Directory>\Autodesk\MotionBuilder 20XX\bin\x64\plugins\**
6. The plugin is now installed in MotionBuilder, to test you can open the **Hands.fbx** asset. The Hands.fbx asset can be found in the **assets** directory in the installation directory of StretchSense Hand Engine (e.g. **C:\Program Files (x86)\StretchSense\Hand Engine\assets\**).

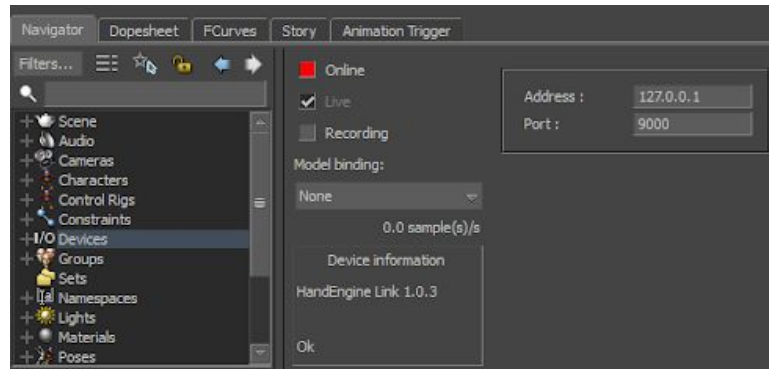


7. In **Resources > Asset Browser > Templates > Devices** find the device **OR - HandEngine Link** and drag this into the scene

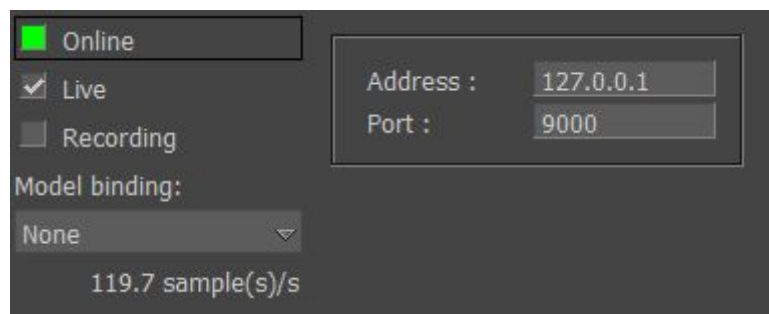


8. In the **Navigator > Devices** find the new **OR - HandEngine Link** device and then set the **IP Address** and **TCP Port** settings as specified in Hand Engine
  - a. **NOTE:** The default value for Address is **127.0.0.1** (= localhost), i.e., you are running Hand Engine on the same PC that you are running MoBu. If you have bound Hand Engine to a different IP address (e.g. if you are running Hand Engine and MoBu on different computers on the same LAN), use this IP address instead for **Host**.

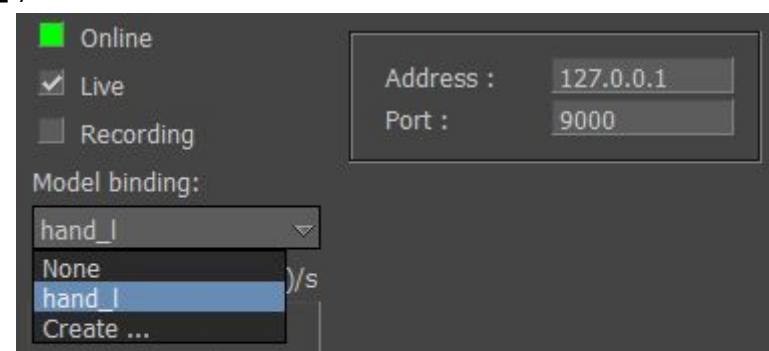
- b. **NOTE:** this is the step you need to repeat, if you turn **Streaming** to **Off** in Hand Engine as previously described.



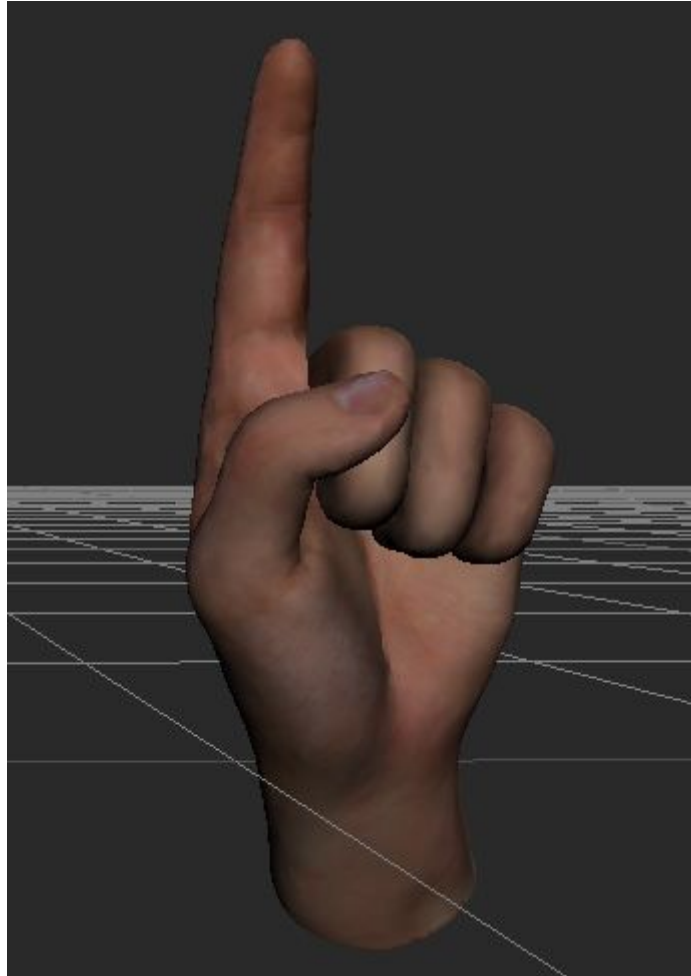
9. Press the online button and you should see the icon turn green and the sample(s)/s value increase signifying data arriving at Mobu.



10. From the model binding dropdown select **hand\_l** (note if **Right Hand** is selected in Hand Engine, the binding option will swap to **hand\_r**)



11. The hand in the scene should now move as you move your hand



12. To record an animation in MotionBuilder:

- a. First right click on the **Action** timeline and select **Time → Show as timecode**,
- b. Ensure **Recording** is ticked in the **Stretchsense HandLink Device**,
- c. Click the **Record** button in the MoBu **Transport Controls** and create/overwrite a take,
- d. Click the **Play** button in the MoBu **Transport Controls** to begin recording.
  - i. **NOTE:** Starting to record a take in MoBu will trigger Hand Engine to begin recording raw data simultaneously. The take name from MoBu will be sent to Hand Engine and the raw data file recorded by Hand Engine will be recorded in a new folder that follows the **<take name>\_<date>\_<time>** format.
  - ii. **NOTE:** To replay the take in MoBu, ensure **Live** is **unticked**, right click on the **Action** timeline and select **Time → Frame Take**, then click **Play**

## Revision Summary

Revision	Date	Notes
4	2020.10.02	Update for Beta4
3	2020.09.21	Update for Beta3.5
2	2020.08.21	Update for Beta3
1	2020.07.21	Initial version