actronika

unitouch studio
User Manual

Date	Ver.	Ref.	Description	Author	Approved by
14/12/2022	1.0	USUM001	First version	Mercado	Begeot

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Introduction

When opening Unitouch Studio this is the first screen that we can see. The UI can be divided into 3 modules:

1. The Sensation Library
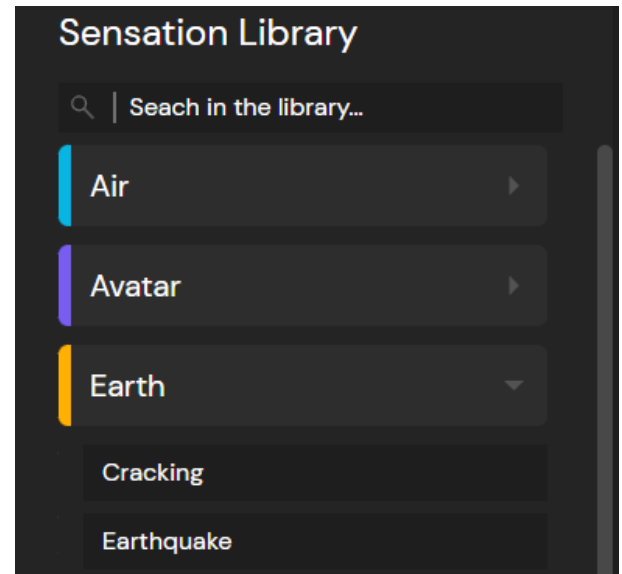2. The Spatialization Workspace
3. The Timeline
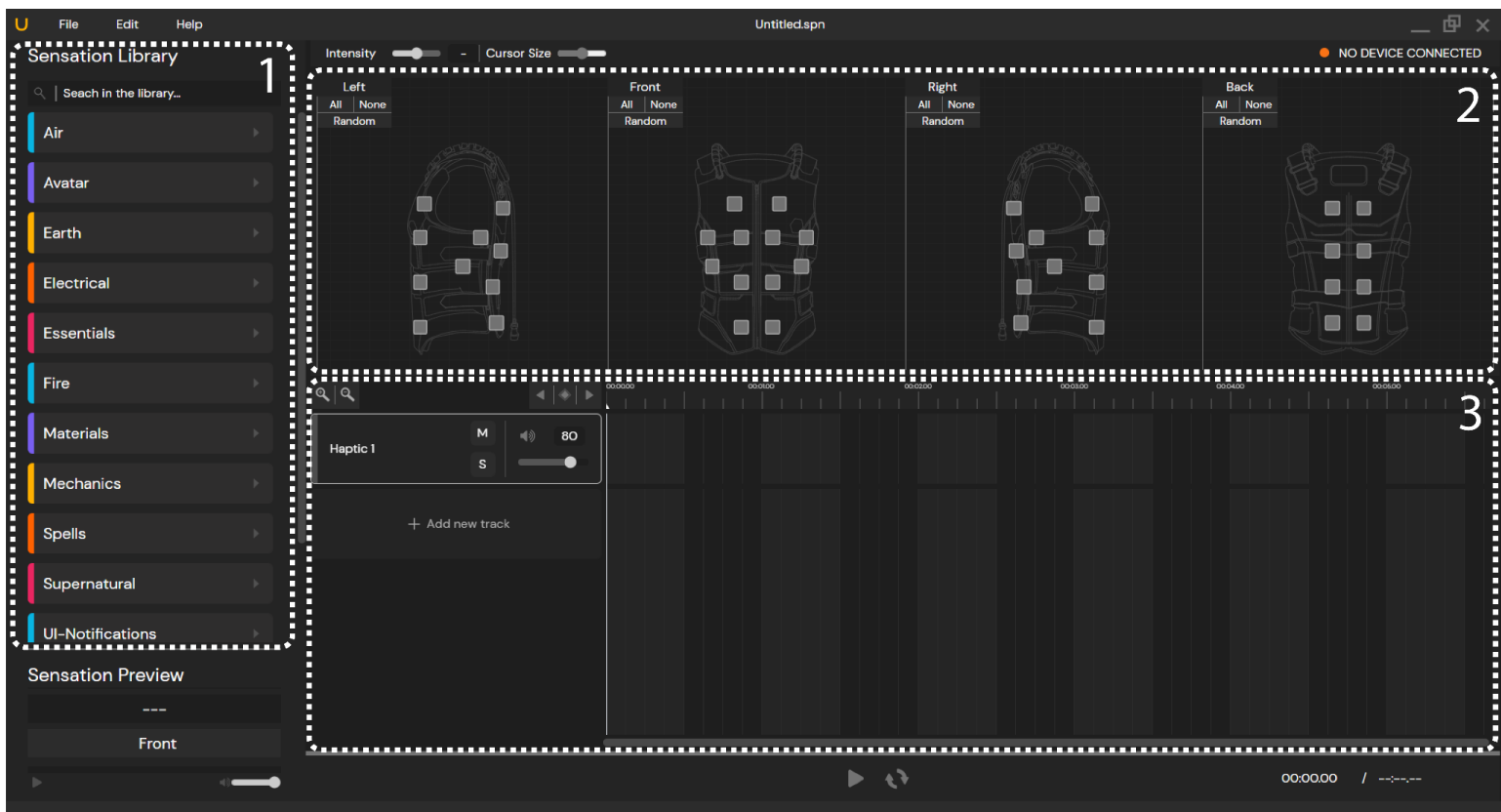
Exploring an effect

The Sensation Library

The Sensation library allows the user to explore the different effects that are embedded in the Skinetic Card. There are several categories in this library, covering many scenarios.

You can expand the categories to discover the different effects that comprise them.

Previewing a sensation (Effect)

Before inserting an effect into the timeline, you can preview it on different sides of Skinetic. You can click on the effect you want to try and then go down to the Sensation Preview submodule and select the side of the Skinetic (Front, Back, Left, and Right) in which you want to feel the preview. The play button will start with the sensation preview, and the volume can be fixed with the slider on the right.
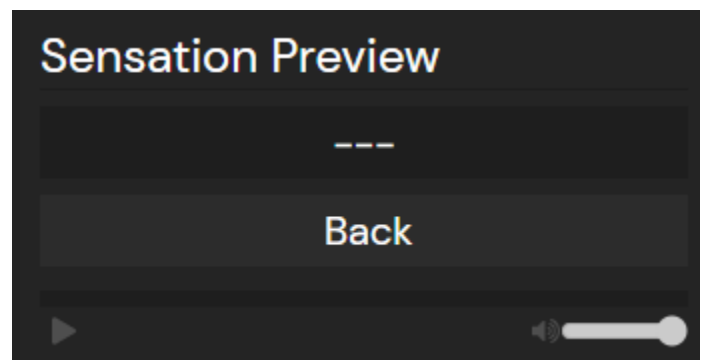
Creating a Spatialized Sequence

As mystical as it sounds, time and space are fundamental for the functioning of Unitouch Studio. The point of this tool is to create haptic sensations that are distributed at several points of the Skinetic which can change over time.

Unitouch Studio allows you to play with the timing and spatial distribution of an effect by adding keyframes. A keyframe in Unitouch Studio represents an spatial distribution of an effect on a given point in time. Keyframes are later used to interpolate (animate) the effects over the Skinetic in a sequence. Once a keyframe is set, then you can define the intensity of the sample over the Skinetic actuators. In this context, setting up the intensity of the actuators in a given keyframe works as a first level volume control.

Adding an effect into the timeline

Once you have selected an effect from the Sensation Library, you can click and drag it into the timeline. A track is added by default into the timeline.
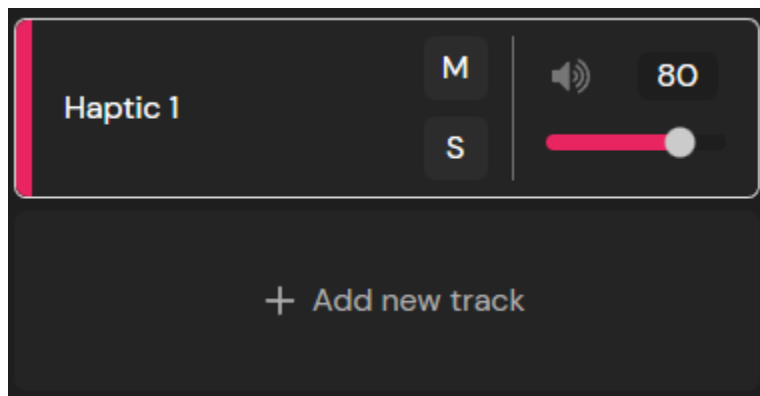
To add more tracks, simply click on the add new track button.

We consider an effect added into the timeline as a sample. Samples contain the effect that is spatialized across the vest and that is placed on a given point on the timeline.

Setting Up Keyframes

Samples that are recently inserted into the timeline contain a default keyframe. This keyframe has a default spatialization at the front of the vest with an intensity value of 80. The toolbar at the topmost bar of the Spatial Workspace contains two sliders: the Intensity slider which controls the intensity that can be set to the actuators on a given keyframe and the cursor size in case that the user desires to set the intensity into multiple actuators by holding the left mouse button.
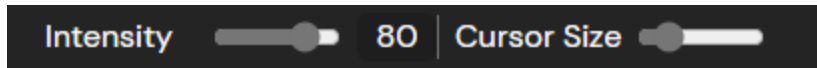
Clicking on an actuator sets its intensity at the current value of the Intensity slider. Clicking on it again sets the intensity to 0, thus, deactivating the actuator. You can deactivate several actuators in the brush mode by holding shift and the left mouse button and hovering over the actuators. Additionally, you can set (or deactivate) all actuators in a given intensity for each one of the views. You can also set random intensities on a random set of actuators.
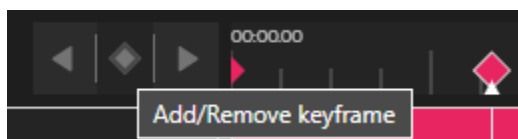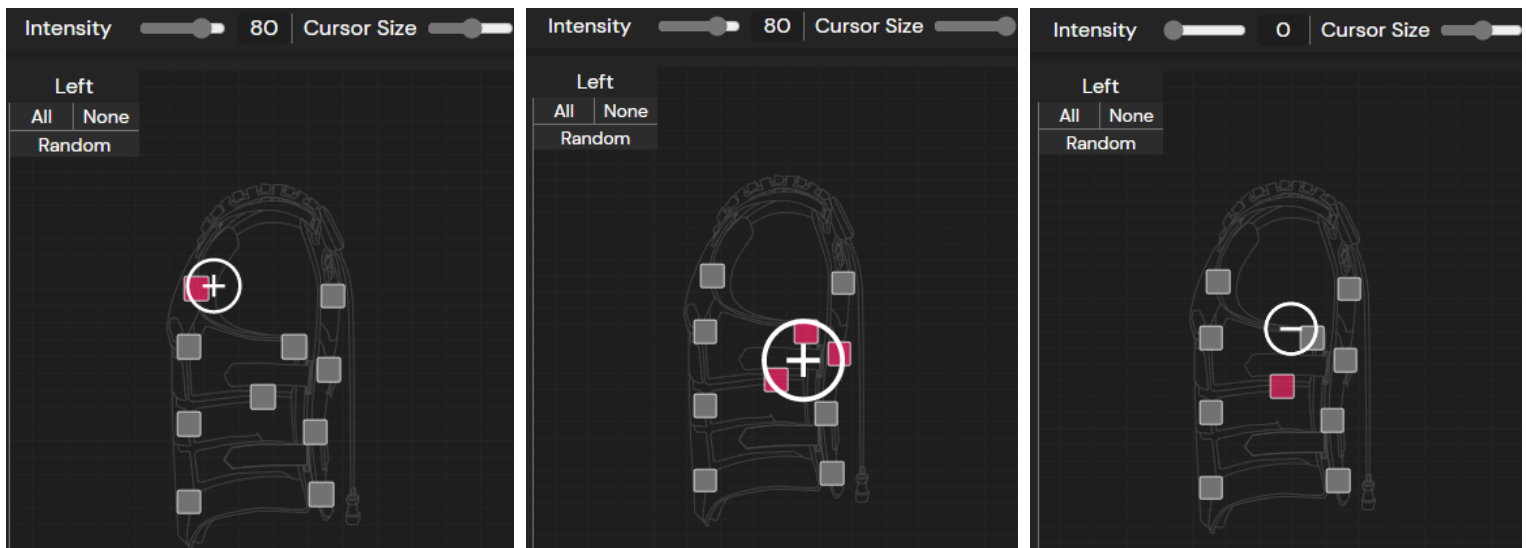

To add a new keyframe, select a sample in the timeline and then set the time marker on a position within the sample. Then, go to the keyframe toolbox and click on the Add Keyframe button.

Once a keyframe has been added, you can proceed to set the corresponding intensities for the actuators. Keyframes can be moved at different points of the sample when selected and they can be copied, pasted and deleted. These options are available on the context menu that appears when you right click on the keyframe or by the shortcuts for Copy - Ctrl + C, Paste - Ctrl + V, and Delete (Backspace or Delete).
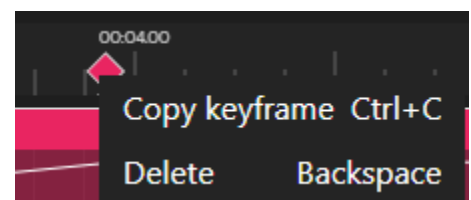
Setting Up Envelopes

Sometimes, manually setting volume transitions is tiring using exclusively keyframes, therefore we have integrated envelopes in Unitouch Studio. Envelopes work as a second level control that tweaks the volume of a sample at a given point in time. To add an envelope simply hover the mouse over the sample, this will set the volume of a sample.
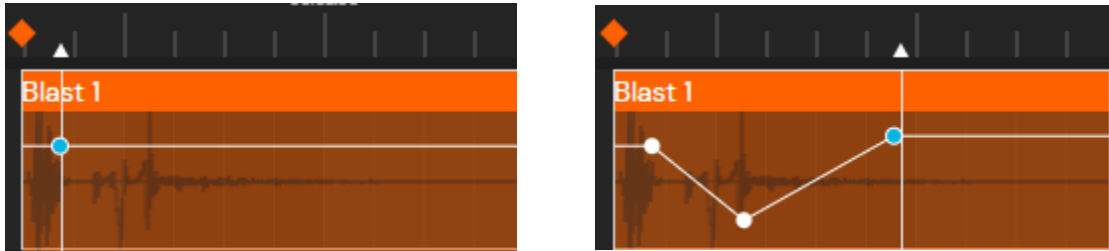
To add extra waypoints to the envelope, simply click on the line representing the envelope and hold the left mouse button while dragging the waypoints into another position. The waypoints can be deleted by pressing the Backspace or Delete key on the keyboard. An envelope can also be removed using the sample contextual menu that appears when right clicking over a sample.

Editing Samples

Cropping a Sample

The default operation that is available for editing a sample is cropping. The function gets activated after placing the cursor at the left and right sides of the sample's UI. You will notice that the cursor will change from the default arrow to a bracket.

Once the cursor has changed, you can click and drag the cursor for cropping a sample. You can only drag the cursor towards the interior of the sample. When the cursor bracket becomes red, it means that the sample cannot be further cropped.

Repeating a Sample

Inserted samples can be edited in the timeline. You can repeat a sample by placing the mouse button next to the rightmost part of a sample and holding the CTRL button. The cursor will change to the repeat sample mode. Then, you will need to hold down both CTRL and left mouse button while dragging the cursor to the right to repeat a sample.

Pitch shift a Sample

You can pitch shift a sample by simply placing the mouse button next to the rightmost part of a sample and holding the SHIFT key. The cursor will change to the elongate/shorten sample mode. Then, you will need to hold down both SHIFT and left mouse button while dragging the cursor to the right to elongate a sample or the left to shorten it.


Looping a Sample

You can loop a sample by activating this option in the sample contextual menu (right mouse button). If there are no samples on the right, the sample will then loop and the sequence will now become infinite. This will deactivate the looping button of the playback bar. You can also loop the sample by selecting it and then pressing Ctrl + L. Pressing this shortcut over a looped sample will deactivate the loop. The loop can also be deactivated using the option on the sample contextual menu.


Setting Up Tracks

Unitouch Studio allows the creation of spatialized sequences using a multi-track approach as if it was a digital audio workstation. You can create as many tracks as you want with the only limitation of not having more than 5 samples playing at the same time.
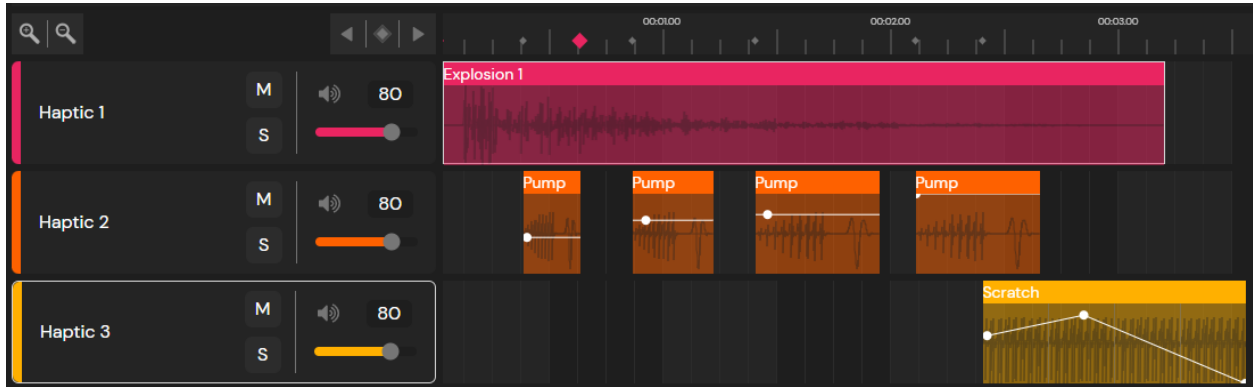
When having 5 samples playing at the same time, the UI will display in blue the overlapping region to warn the users of this limitation. When having more than 5 samples, the overlapping area will be displayed in red and the playback function will not be available as the asset is invalid.
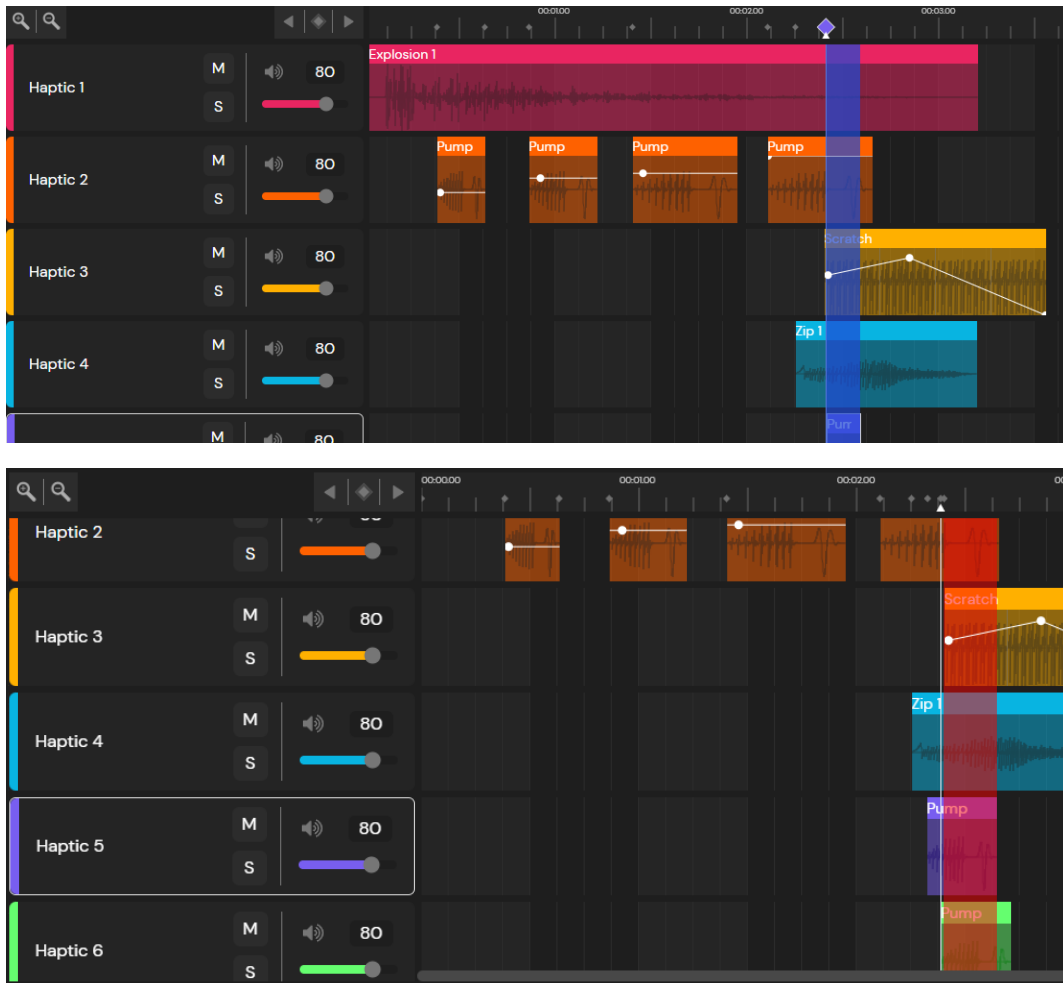
You can mix the tracks composing your sequence (third level volume control) on the rightmost part of the track UI. Additionally, you can mute tracks by clicking on the M button and you can solo tracks by clicking on the S button. Solo-ing a track will mute the rest of the tracks on the timeline. It is important to know that a track that was muted before a solo operation will rest mute if the solo operation is reverted.
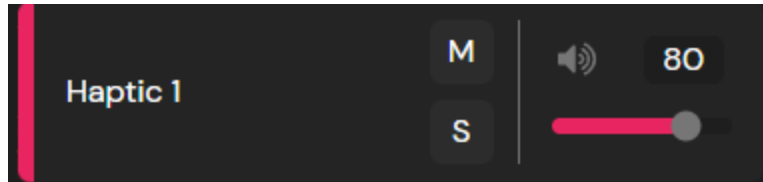
Timeline Navigation

A multitrack session in the timeline can be vertically scrolled by default using the mouse scroll button. The timeline UI also allows a 2D scroll by holding the mouse scroll and the mouse left button. You can also navigate the timeline both vertically and horizontally with the scroll bars.

Playback

For playback, Unitouch Studio allows a normal playback that can be triggered with the play button at the bottom center of the timeline, Playback can also be triggered by the space bar at the keyboard. You also have the option to loop the sequence by clicking the loop button (as playback) if there are no infinite samples on it.

Basic Operations

Saving a File

To save a file, simply go to the File Menu and select Save File (or Ctrl + S), select a target folder, select a name, and save the file.

Opening a File

To open a file, simply go to the File Menu and select Open File (or Ctrl + O), select a target folder, and select the file to open. If there are unsaved changes, the UI will ask you to save the previous work or discard it.

Creating a New File

To open a new file, simply go to the File Menu and select New File (or Ctrl + N), If there are unsaved changes, the UI will ask you to save the previous work or discard it.

Edit Operations

Other operations of classic programs such as undo (Ctrl + Z) and redo (Ctrl + Y) can be found in the Edit Menu.
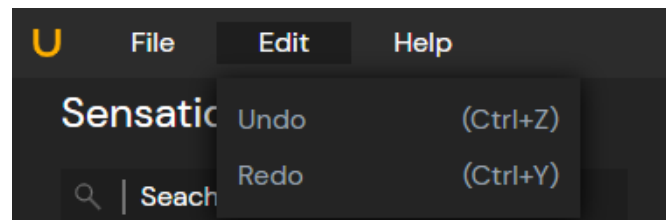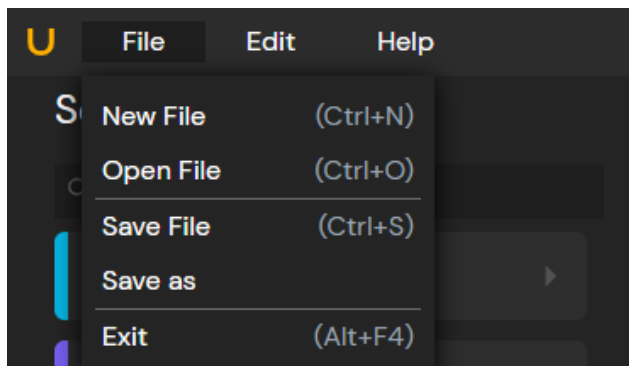
Glossary

Common Terms Used for Unitouch Studio

- **Haptic Effect:** A haptic effect is a vibrotactile sensation that can be played through a set of actuators localized in a haptic device (in this case, the Skinetic).
- **Spatialization:** A spatialization refers to the spatial distribution of an effect in a haptic device (in this case, the Skinetic) in a given point in time.
- **Sample:** A Sample is a Haptic Sensation inserted into the timeline that contains a defined spatialization.
- **Sequence:** A Sequence refers to the set of haptic samples arranged over time.
- Volume Envelope: A volume envelope is a dynamic volume control that is applied at different time points in a sample.
- **Track:** A track represents a layer where different samples can be stocked in order to organize a haptic sequence.
- **Keyframe**: A Keyframe defines an spatialization in a given sample at a given time period. Keyframes are used to interpolate the movement and/or intensity changes of spatial

Volume Control Levels

Unitouch Studio provides three different volume control levels which are described hereby:
- **Level I: Actuator Intensity:** The Level I refers to the effect volume intensity applied to a given actuator in a given point in time.
- **Level II: Sample Envelope:** The Level II refers to the volume envelope added to a sample. The volume can change dynamically as the effect interpolates at different intensities throughout the sample's playback.
- **Level III: Track Volume:** The Level III refers to the volume of a track that can have multiple samples with volume envelopes affecting several keyframes per sample.