

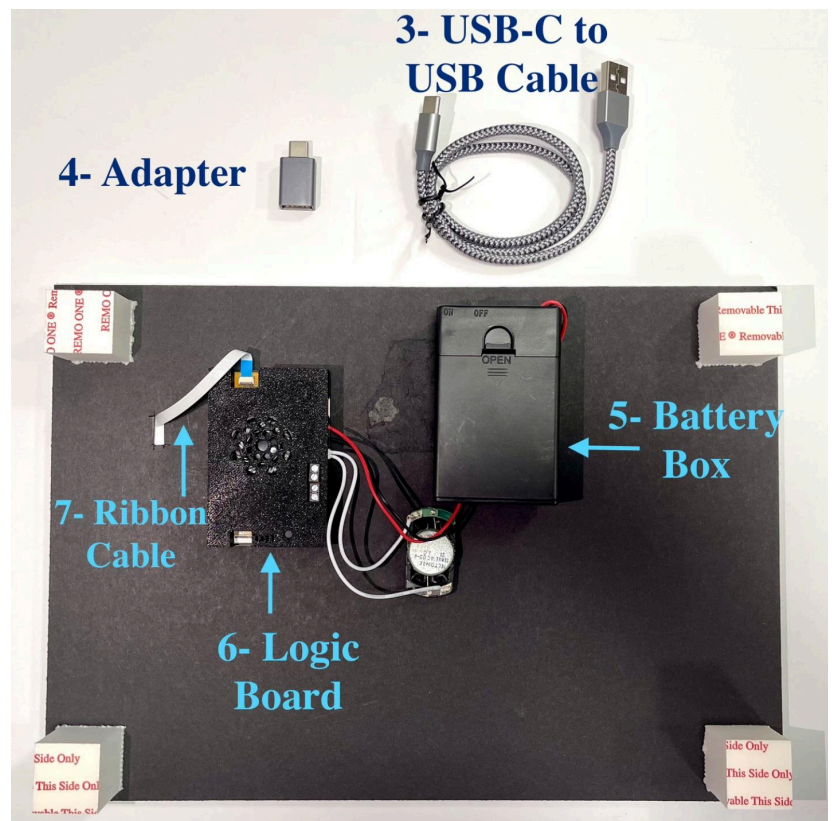
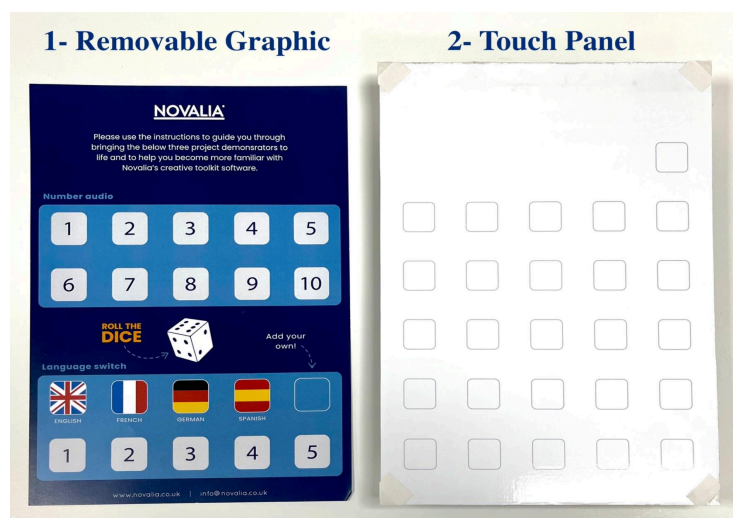
AUDIO POSTER

TouchGUI Guide

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1- What's in the box?

1. **Graphic:** Placed on top of the panel and can be removed & replaced.
2. **Touch Panel:** Contains 26 touchpads.
3. **USB-C to USB cable:** For connecting the touch panel to the computer.
4. **Adapter:** Only for computers that don't have a USB port. Can be attached to the cable.
5. **Battery box:** Powers the touch panel for stand-alone use.
6. **Logic Board:** Connects to the computer via the cable to enable building your experience on TouchGUI.
7. **Ribbon Cable:** Connects the touch panel to the logic board.



2- TouchGUI Overview

TouchGUI (Touch Graphical User Interface) is a powerful tool for creating custom audio experiences that can be transferred directly onto a touch panel. This tool supports a wide range of functionality, allowing you to design audio interactions with varying levels of complexity. Experiences can be as simple as assigning a single sound to each touchpad, or more complex logic-based experiences with multiple sounds per touchpad. To enable these logic-based functions, we've developed a few core concepts, which we will cover in this document.

3- Your First Touch Panel Experience

Let's dive in by playing your first demo on the touch panel. The panel you received already contains a demo for you to try out. Here's how to get started:

1. **Powering the Panel:** Switch the battery box to "**ON**" to power your panel.
2. **Graphic Overlay:** Place the provided graphic overlay on top of the touch panel using the corner pieces. This will help you understand what each touchpad contains.

The touch panel includes three interactive demos:

- **Numbers Demo** (*First Two Rows*): Tap the pads on the first two rows to audibly hear a number.

Note: To experience the audio change in the following two demos, be sure to let the audio finish before touching the panel again.
- **Dice Demo** (*Center Pad*): Tap the dice pad once to hear, "**The number is**" followed by "**One**". Tap again and you hear a new random number. Repeat that multiple times and you will hear numbers between 1 and 6.
- **Languages Demo** (*Last Two Rows*): Start by tapping a language pad to select a language. Then, tap a number in the final row to hear that number announced in your selected language.

Enjoy exploring the demos!

4- Installing TouchGUI

If you haven't done so already, go to novalia.co.uk/audioposter to download the **TouchGUI Software & Demo Project** named **Single-touch-Demo**.

1. **For Windows** - Double click the **.exe** file to install.
 - On some computers you may be asked if you wish to install this or told it is not secure, click '**more info**' to see the option to agree to install the software.

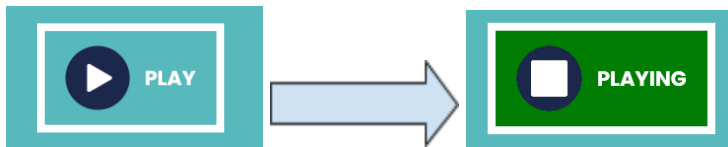
2. **For Mac**– Double click on the **.pkg** installer file & follow the instructions to install.
 - **Requires MacOS 13 or higher.**
3. Once installed, search and open the software tool **'TouchGUI'**.
4. On opening the software you will see the **Creator Kit** page.
5. Make sure your battery box is **switched off**, then connect your touch panel using the provided cable.
6. Tap the pads on your panel and you will see the touchpads on the screen responding to your touches!
7. Brief overview of the main tabs:
 - **'Creator Kit'** tab: This is where the magic begins and you can create, simulate and transfer your demo experiences.
 - **'Heatmap'**: Click on the "Heatmap" tab, you will see a colour scale on the left, and a grid of rectangles with values, each representing a touchpad on the panel. These values indicate whether the touchpads are touched and by how much. This is where touchpad sensitivities are adjusted.
 - **'Drawing'** and **'App Settings'**: Not relevant to this touch panel.
 - **'Device Info'** tab: Shows information about the connected device and can be used to update the PCBs' firmware, the ones you received should already be up to date.

5- Playing The Demo As a Simulation

- **Demo Simulation**: This feature allows you to play the demo on your computer to see how it sounds before transferring it to your touch panel. It's useful for testing the demo to see if it needs any changes.
- **Opening the demo**: We're going to see how to play the demo titled "Single-touch-demo" as a simulation.
 1. Click **"Open Demo"** from the left part of the top bar. Browse to the location of the folder.
 2. **On Windows**: inside the folder, select the **file** titled **"Single-touch-demo.cfg"**.
 3. **On Mac**: Select the **"Single-touch-demo" folder** itself and Click **"Open"**.
- Now that the demo has opened, let's start the simulation
 1. **Adjust Your Computer Volume**

Audio will play from your computer speakers, so ensure your volume is turned up.
 2. **Start the Simulation**

Click the **"Play"** icon in the top bar. The button will turn green, indicating the simulation is active.



3. **Click the touchpads:** Click on any touchpads and you should hear sounds from your computer. This is the same demo that you previously played on the touch panel!
4. **Stop the simulation:** Click the **"Stop"** icon to stop the simulation after you've finished experimenting with it.

6- Remaking the demo

Now that you've seen examples of the demos you can create with this tool, let's start rebuilding them together. This will help you get familiar with the features used to bring these demos to life!

Let's start by Creating a new project

1. Click **"New Demo"** located in the top bar.
2. A dialog box will popup containing two fields. Enter the project name and select where you want the project to be created.
3. Select **"Create"**, now you have a new empty project.

Uploading a Graphic

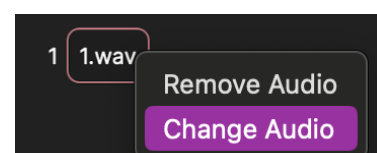
Using a graphic helps simulate the touch panel experience before printing the graphic. It also helps in knowing which touchpads to use.

1. Click on any touchpad and the settings menu will show to the right.
2. Scroll down to the **"Interface"** tab and click the arrow to expand the tab.
3. Click the **"+"** next to **"Background"**, go to the [Single-touch-demo/ImageFiles](#) and select the image titled **"Single-touch-demo-artwork.jpg"** provided.

Audio Format: Sound files used in this tool must be in **.WAV** format.

Audio Cell

- This is where you click **"+"** to **upload** an audio.
- Right click to **replace** or **remove** an audio



Remaking the Numbers demo

This is the simplest form that a demo can take, where each touchpad contains only one audio.

1. **Touchpads used:** For this demo, we're using Touchpads 2 through 11.



2. Select Touchpad 2 and the **Touchpad Settings** will open to the right.
3. Click the audio cell and select the file "**1.wav**" from the [Single-touch-demo/AudioFiles](#).



4. **Sounds used:** We will be uploading sound files "**1.wav**" through "**10.wav**".
5. Click on the next Touchpad and upload the next number sound file.
6. After you've uploaded all the sound files, Click "**Play**" to start the simulation.
7. Click the Touchpads and you'll hear the numbers on your computer speaker!

Save & Transfer

Now that we've simulated the demo and ensured it works as expected, we are ready to transfer it to be played on the touch panel:

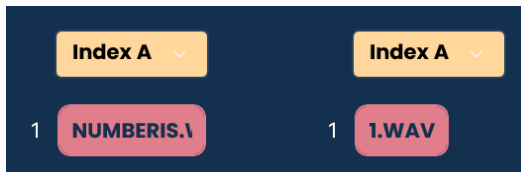
1. **Stop** the simulation.
2. **Connect** your panel using the cable.
3. Click "**Save**" to store the changes and prepare the binary file.
4. Click "**Transfer**" for the file to be transferred and wait for it to complete.
5. **Playing the panel**
 - a. To play the touch panel without having to disconnect the USB cable, **switch on** the "**Stand-Alone**" toggle located in the top bar.
 - b. Or you could **disconnect the cable**, **switch "On"** the battery box to eliminate the need for the computer.

6. Your panel is now ready to use! You'll notice only the two rows contain audios, and the rest of the panel doesn't have any sounds.

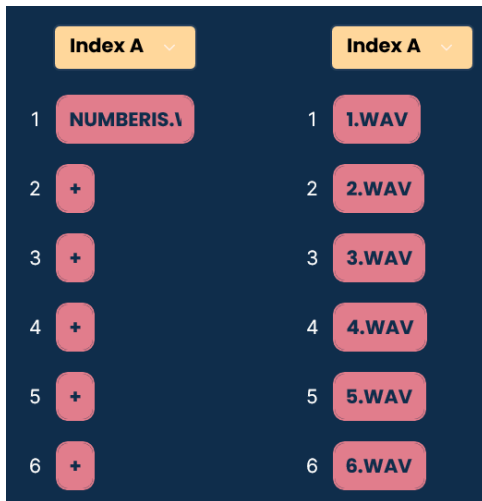
Remaking the Dice demo

Next, we'll explore features that enable each touchpad to play multiple sounds. For example, in the dice demo, you heard **"The number is"** followed by a random number between 1 & 6. Let's walk through how to create this!

1. **Touchpad used:** Touchpad 14.
2. **Sounds used:** **"Numberis.wav"** and numbers **"1.wav"** through **"6.wav"**
3. Click on touchpad 14, and upload **"Numberis.wav"** to the audio cell.
4. **Adding a Column:** Click the "+" next to **"Columns"** to add another column. A new audio cell will appear in another column
5. Click on it to upload **"1.wav"**. Your audios should look like the image below:



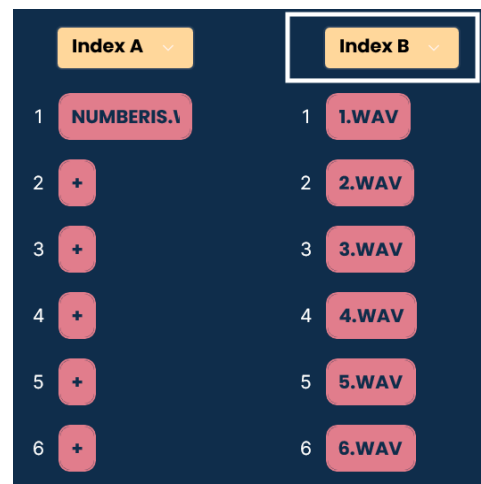
6. **Simulate:** Start the simulation by clicking **"Play"** in the top bar, then click on the touchpad, you should hear **"The number is"** followed by **"One"**
7. **Sound Concatenation:** This feature, known as concatenation, lets you play multiple sounds in sequence with a single tap. You can add up to three columns, enabling up to three sounds to play consecutively.
8. Now, stop the simulation so we can continue building the dice demo.
9. **Adding rows:** Click the "+" next to **"Rows"** to add additional rows, we'll need a total of 6 rows.
10. **Add the numbers:** Click on each cell in the second column to add the number sound files. You should end up with the following image:



11. **Simulate:** Click **“Play”** again to start the simulation, then tap the dice touchpad. You’ll notice that the same sound plays each time (**“Number is”** followed by **“One”**)—only the first row is played! Let’s see how we can get the demo to select different rows.
12. **Indexes:** Allows you to add multiple sounds to a column in the form of rows, where for each column only one sound is selected to play at a time. That selection is made using **“Follow-on Logic”**. Let’s explore this.
13. As you’ve just seen in the simulation, the index by default will always point to **row 1**.
14. **Goal:** The goal here is to always have
 - a. Column 1 say **“The number is”**.
 - b. Column 2 say **one of the six sounds** added.

15. **Column Indexes:**

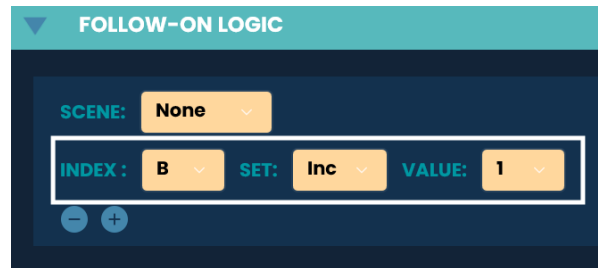
- a. **Column 1 Index:** Remains the same **“Index A”**. And we **will not add** a follow-on logic for **“Index A”**.
- b. **Column 2 Index:** Change it to **“Index B”**. Your audios should look like this photo, and we **will add** a follow-on Logic for **“Index B”**



16. **Follow-on Logic:** As explained in step 13, without any follow-on logic, the indexes will default to row 1 each time. Follow-on logic allows us to have the indexes point to different rows, enabling variation.

- The follow-on effect happens **after** a touchpad is tapped and the sound finishes playing, hence the name **“Follow-on”**. Let’s see how this works in action.

17. We only want to change **Index B**’s number, therefore let’s set **“Index B”** to **“Increment”** by **“One”** each time, as shown in the photo:



18. **Play the Simulation:**

- The first time you’ll click the touchpad, you’ll hear **“The number is”** followed by **“One”**, then **“Index B”** will be incremented by 1 and become 2.
 - On the next touchpad click, you’ll hear **“The number is”** followed by **“Two”**.
 - Everytime you click it, you will hear the next number, until you reach 6, then the follow-on will wrap the Index back to Row 1, because we only have six rows.
- Now, while you were adjusting the **“Index B”** follow-on, you will have noticed that there are several operations to change the Index’s value: **None, Set Increment, Decrement & Random**.

19. To have a proper dice functionality where we hear a random number each time, we’ll use the **“Random”** option.

20. Remember to **stop the simulation** everytime you want to make adjustments.

21. Change **Index B**’s follow-on to have the following setting: Change



the operation to **“Random”** with an **“Upper Range”** of 6. This will randomise **“Index B”** every time to a value between 1 & 6.

22. **Play the simulation** to see this in effect, then feel free to **Save, Transfer & Toggle** on the Stand-Alone Mode to **play the demo on your panel!**

23. You can also experiment with using the other operations & simulate it to see the effect!

24. Congratulations! You’ve now learned about two very important concepts: **Audio Concatenation & Index Follow-on Logic!**

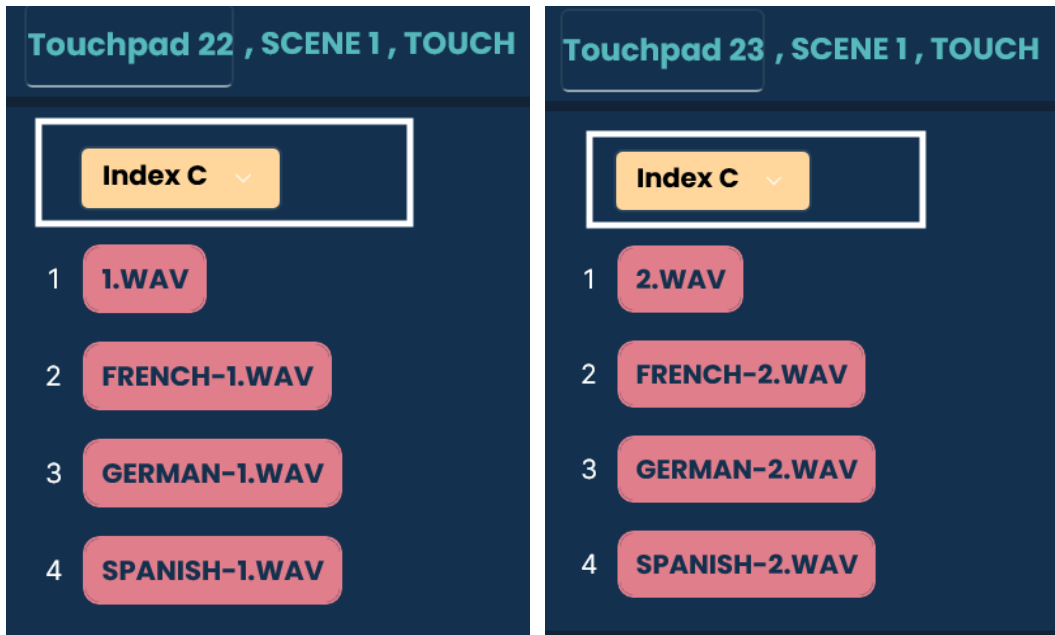
Remaking the Language demo

This demo provides another example of using **Index Follow-on Logic**. It's important to understand that **Follow-on logic** affects all the touchpads. **Example:** if a touchpad has a **Follow-on logic** that "**Sets**" "**Index C**" to "**row 2**", then any touchpad with an audio column assigned to "**Index C**" will play "**row 2**" the next time it's touched. Let's see how this demo portrays this.

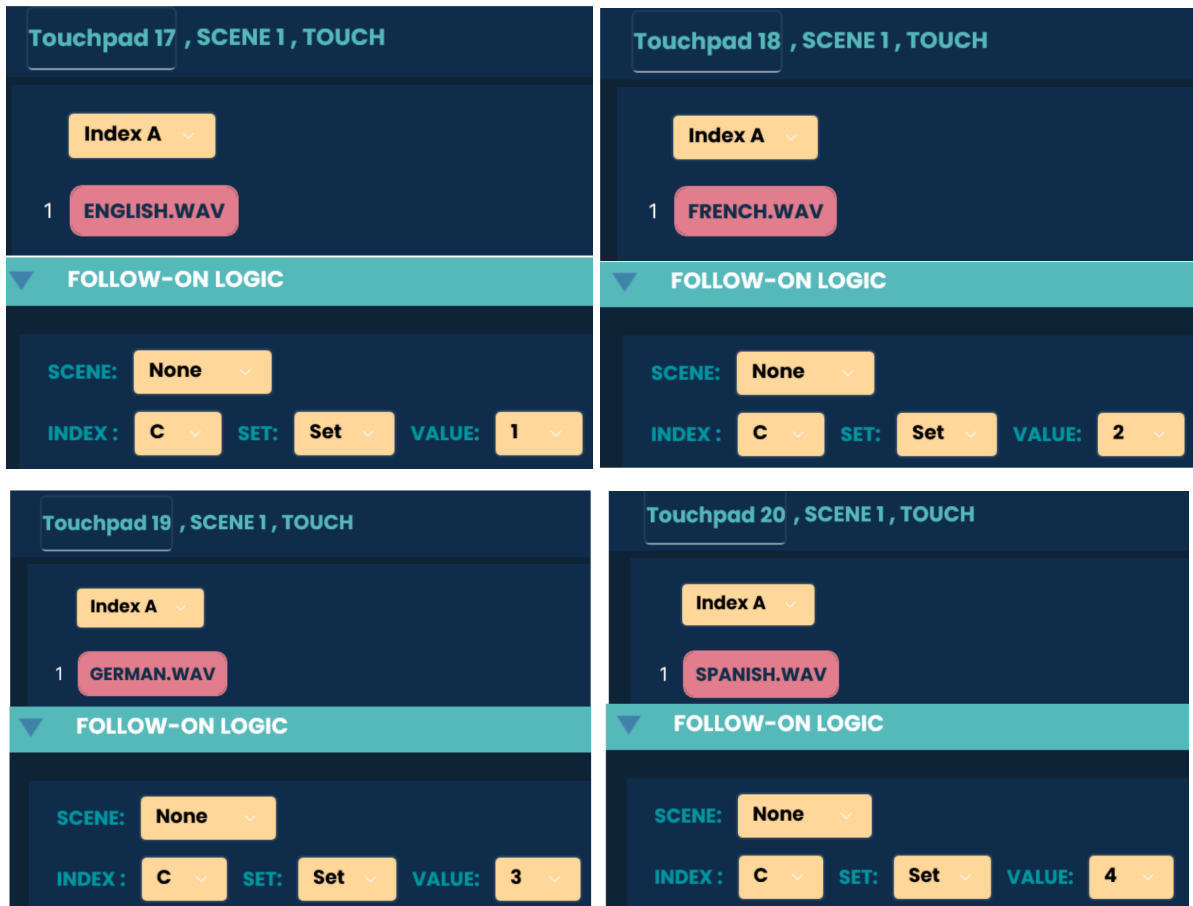
1. **Touchpads used:** 17 to 26.



2. **Touchpads 17 to 20:** Will have sounds announcing the language names: **English, French, German & Spanish.**
3. **Touchpads 22 to 26:** Will contain the numbers in the four above mentioned languages.
4. Let's start by uploading the **numbers sounds** to **touchpads 22 through 26:**
 - a. Each touchpad represents a number. And each row in a touchpad represents a language. We are using **four languages**, therefore **four rows** will be used for each touchpad.
 - b. **Start** with **touchpad 22** which represents the number "**One**". For each row, upload the corresponding number for each language: **Row 1 for English, Row 2 for French, Row 3 for German & Row 4 for Spanish** as shown in the images below. Do this for the 5 touchpads 22 through 26.
 - c. Next, let's change the Column's Index for those 5 touchpads to "**Index C**" as shown in the images.



- d. **Index C**'s value will be set using the **Follow-on Logic** on the **language names touchpads**, to determine which language is picked.
5. Uploading **Language name sounds** to **touchpads 17 through 20 & setting their Follow-on Logic**:
- a. Upload the language name sound to each touchpad, as shown below, and keep their Column Index to **Index A**. We want these touchpads to always say the same thing, so we will not be setting any **Follow-on Logic** for **Index A**
 - b. Set **the Follow-on Logic** for these touchpads to "Set" "Index C" to the desired row as follows (also see the images):
 - i. **English** touchpad follow-on: **Set "Index C"** to row **1**.
 - ii. **French** touchpad follow-on: **Set "Index C"** to row **2**.
 - iii. **German** touchpad follow-on: **Set "Index C"** to row **3**.
 - iv. **Spanish** touchpad follow-on: **Set "Index C"** to row **4**.



6. **Start the simulation** and click the touchpads to see the demo in play! You are now experiencing how **one touchpad can affect another touchpad's sound!**
7. **Save, Transfer & Toggle** on the Stand-Alone Mode to **play the demo on your panel!**
8. Congratulations! You have now gone through building all the demos yourself and understanding the concepts behind them!

7- TouchGUI Glossary



Top Bar

Project

The project title is displayed on the top left.

New Demo

This is used to create a new demo

Open Demo

This is used to open an existing demo

Play

Used to start the simulation of the project.

Make sure you **turn up your computer's volume**.

When the simulation is on: Clicking a touch point on the screen or touching one on a connected touch panel will play the sound corresponding to the touchpad.

While the simulation is off: Clicking the touchpads will just open the touchpad's settings to be viewed and modified.

Stand-alone Mode

When the panel is connected, this mode lets you play the demo directly on the panel in stand-alone mode after clicking "**Transfer**," with sound output from the panel's speaker.

Scene

Scenes are like pages, so each scene is like an entirely new set of touchpads.

Save

Saves the changes to your demo project & prepares the binary files that will be "**Transferred**" to the touch panel.

Transfer

Transfers your project onto the touch panel. Once transfer completes you can either:

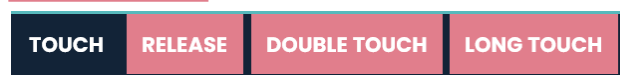
1. Toggle the sound source to Panel mode.
2. Or disconnect the cable and connect your battery pack.

Then, simply touch the touch panel to play your demo!

Touchpad Settings

touchpads settings can only be modified when the **simulation is off**.

1- Gestures



Each touchpad has 4 gestures that can trigger it. Each one can be considered as a separate touchpad. Select the intended gesture first, then proceed with configuring your settings.

Default option: "Touch".

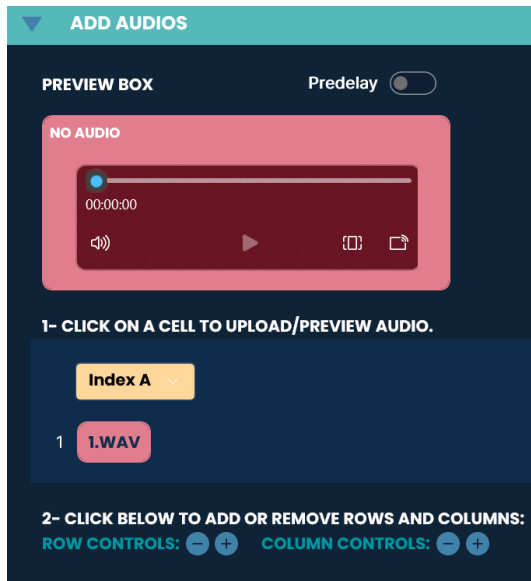
2- Touchpad Title & Clear Button



Title: Displays the selected touchpad's name, scene number & gesture. The name can be changed by clicking on the name and typing.

Clear Button: Resets the touchpad's settings back to default options and removes all audios.

3- Add Audios Tab



Audio cell



Referred to as an **audio cell**, this is where the audio file names are displayed.

Adding audio

- **Format:** must be in **WAV** file format.
- **Adding audios:** Simply click on the "+" cell and select your audio.

Preview audio (Preview box)

This is where audios can be previewed while simulation is off. Simply click on an audio cell & it will automatically play.

Remove audio

To remove audio right-click on the audio cell the relevant file and select 'remove audio'.

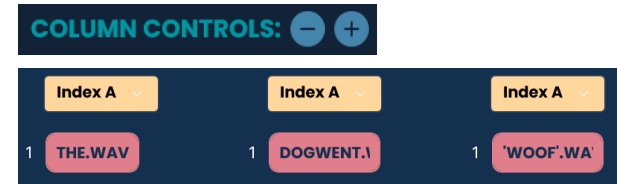
Replace audio

To change audio right-click on the audio cell containing the relevant file and select 'replace audio'.

Pre Delay Toggle

A pre-delay is the time before an audio plays. By default, this toggle is switched off. To set a pre-delay, click the toggle to turn it on. You'll see a zero next to each audio cell, indicating the delay time before the audio plays. Click on the zero and enter a number in milliseconds to change the delay (1000 milliseconds = 1 second).

Column Controls

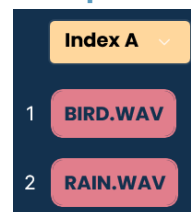


- **Purpose:** Allows you to upload up to three audios to be played sequentially when a touchpad is clicked. This is called "**Audio Concatenation**".
- **Adding Columns:** Click the "+" & "-" icons next to "**Column Controls**" to add up to 3 columns or remove them.

Row Controls



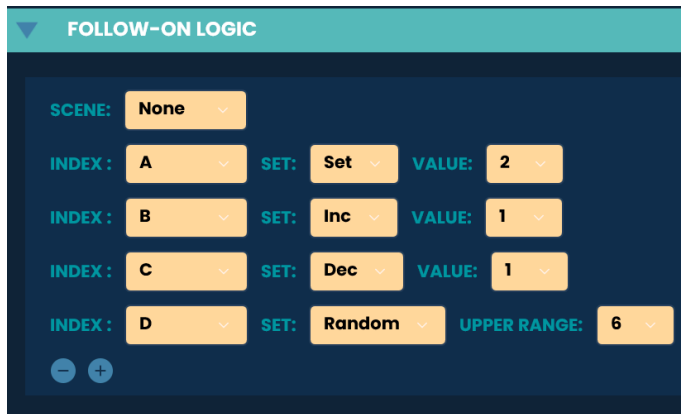
- **Purpose:** Allows you to add multiple sounds to the audio column in the form of rows, where for each column only one sound (row) is chosen to play at a time. That choice is made through setting the column's index number.
- **Adding Rows:** Click the "+" & "-" icons next to "**Row Controls**" to add & remove rows.
- **Example:** Set Index A to 2 (row 2).



- **Index options:** Columns can have Indexes **A, B, C, or D**.
- **Default value:** All indexes are set to 1 by default, meaning they all point to row 1.

- **Index numbers:** The number for those indexes can be set using **Follow-ons (Coming next)**.

4- Follow-On Logic Tab



Defines how to change the scene & index numbers after the touchpad is touched and its audio has finished playing.

Effect: The number change effect takes place on the next touch.

Follow on options: Index & Scene Follow-ons.

Index follow-on

This determines how an index (A, B, C or D) number is adjusted after the touchpad is activated.

Effect: Index follow-ons affects all touch points, meaning if a follow-on changes **Index A** to 3 (row 3), then on any touchpad audio column that is assigned to Index A, the 3rd row will be chosen. (If it contains audio).

Options:

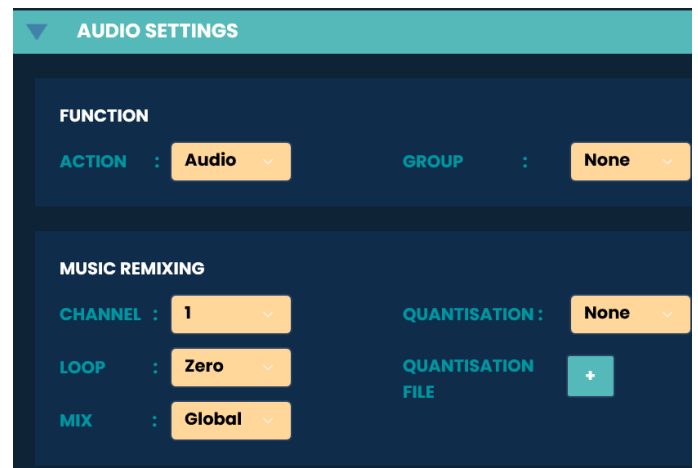
- **None (default option):** The index number does not change; it remains at its default value of 1.
- **Set:** sets the index to a specific value.
- **Increment** by a value (each time this follow on takes place the index will increment by this value).
- **Decrement** by a value (similar to increment).

- **Random:** Select a random number from 1 up to an upper range.

Scene follow-on

Determines which scene to go to after this touchpad is touched. Options are the same as indexes.

5- Audio Settings Tab



Action

Is what a touchpad does when clicked.

Options: Audio, Stop, Volume Up, Volume Down, Mute, Unmute.

Group

Allows multiple touchpads to have the same settings, without having to set them individually.

Example: When setting touchpad 1 to group A, touchpad 1 becomes the “*master*” for group A, and any touchpads also set to group A will have the same settings and audios as touchpad 1.

Channel

Determine which sounds can play simultaneously and which sounds stop others from playing.

Touchpads with the same channel:

If multiple touchpads are assigned to the same

channel, only one touchpad from that channel can play at a time.

- **Example:** if all touchpads containing drum sounds are set to "Channel 1", only one drum sound can play at once.

Touchpads with the different channels:

Touchpads assigned to different channels can play simultaneously.

- **Example:**
Drum sounds on "Channel 1".
piano sounds on "Channel 2".
Vocal sounds on "Channel 3" can all play simultaneously because they are on different channels.

Mix

Determines which channels are stopped when this touchpad is clicked.

Global Mix: Stops all audios from all channels.

- **Example:** If a touchpad is set to "Channel 1" and the mix is set to "Global", clicking this touchpad will stop all playing audios from all channels before playing this touchpad's sound.

Local Mix: Only stops audios that are on the same channel as the selected touchpad.

- **Example:** If a touchpad is set to "Channel 1" and the mix is set to "Local", clicking this touchpad will stop any audio playing on that same channel before playing the touchpad's sound.

Loop

Determines how many times the audio is repeated.

Options: Zero, One, Two, Three, Four, Infinity, Timeout.

Quantisation

Quantisation is a feature that is used in Music Remixing. It ensures all music loops play in sync by allowing precise control over when sounds start.

This feature requires uploading a **reference quantisation file**, this file has a global effect on all touch points.

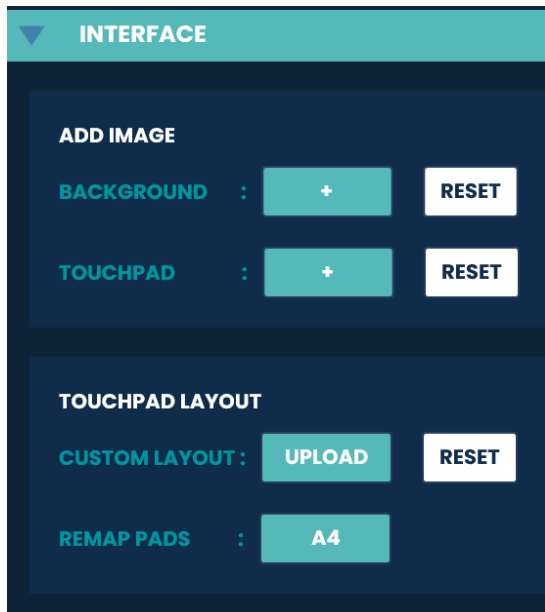
This **quantisation file** is considered one bar of music long. The length of this file is used to ensure all other audio loops match this duration, or a fraction or multiple of it, keeping everything perfectly timed.

Example: File duration = 4 seconds, this means 1 bar is 4 seconds long.

Options: None, Whole bar, half, quarter, eighth, sixteenth.

- **Quantisation Depth of 1:** The sound will not play immediately, instead it will wait to start until the beginning of the next bar of any already playing sounds. This ensures synchronisation with the already playing loops.
- **Quantisation Depth of 1/4:** The sound will start at the next quarter of a bar.
- **Quantisation Depth of 4:** The sound will begin at the start of the next four-bar cycle.

6- Interface Tab



Background Image (JPEG, JPG, PNG)

Used to upload matching background graphics that matches your touch panel poster. This allows you to simulate the touch panel experience on the Creator Kit without needing the actual touch panel.

Touchpad Image (JPEG, JPG, PNG)

Used to upload an image associated with this touchpad. While the simulation is playing, this image will be displayed only for the duration that this touchpad's sound is playing.

Remap Pads

Mapping determines which physical touch pad on the sensor PCB corresponds to which touch point on the printed conductive ink circuit and on the screen. This configuration is different for each A size touch panel.

Default option: A4.

Usage: Simply Click on the "A4" button, a popup will show up where you can select your desired

Mapping Option and then click "**Remap**".

Custom Layout

This setting is used **only for custom touchpad prints**. It allows the user to upload an **SVG file** that contains a different touchpad design than the default one, which matches the one they have printed on the touch panel.