

Easy Sound Designer

TouchDesigner custom sound
synthesizer

User manual - V 1.0



TenderWorld

Introduction

Overview

Easy Sound Designer is a simple and experimental sound creation tool built entirely in TouchDesigner. It is designed so that no prior knowledge of music theory, synthesizers, or audio software is needed to use it.

How It Works

All interactions happen through clicking buttons and adjusting sliders, with any change heard immediately. This direct approach allows users to explore sound intuitively without technical barriers or confusion.

Tutorial

A video tutorial is available, demonstrating how to use the system in real time. Together, this manual and the video offer a comprehensive guide to Easy Sound Designer.

Notes

Please note that Easy Sound Designer is an experimental tool; some features may be limited or under development. It runs exclusively within TouchDesigner, and users should ensure they have a compatible version installed.

Purpose

This tool is intended as a creative exercise to practice sound design, explore synthesizer concepts, and inspire further audio projects. Updates and improvements may be released over time to expand its capabilities.

Interface Overview



1. Clock / Speed

The tempo or overall speed controller of the system. Everything starts from here. When it's slow, the space feels more open; when it's fast, the beats come closer together.

2. Effect Buttons

Four buttons to add texture and character to the sound:

Distort – Noise and breakage.

Wave – Rapid, wavy movement.

Texture – Fine, rough details.

Hollow – Hollow and minimal sounds.

These are the tools for coloring the sound, giving it feeling and depth.

3. Sound Type / TYPE

Controls the character and structure of the sound:

Slider between Sharp Soft to define the sound's timbre.

Space to adjust the depth and breadth of the reverb.

VOICE 1 and VOICE 2 to select between two independent or combined tones.

4. Note Mode / NOTE MODE

How the notes behave over time:

Pulse – Notes start and stop quickly, like a sharp hit.

Fast – Notes come in and fade away fairly quickly.

Slow – Notes come in slowly and fade away gently.

5. Tone Control / MOOD

controls how bright or dull the sound feels.

Bright – Makes the sound feel lighter and more open.

Neutral – Keeps the sound balanced and natural.

Dark – Makes the sound feel deeper and more subdued.

6. Eight step sequencer

These are the played notes over the time based on the clock.

It's possible to turn the steps by clicking on them. a small rectangular light indicates the played step.

each step has a slider to change the notes for each step. (frequencies are quantized on major scale.)

7. General Controls

Play – starts and stops the sequencer playback.

Record – records the incoming audio signal live.

Volume – controls the final output level.

Clock

The Clock determines the internal timing of the synthesizer, acting as its heartbeat. It affects the sequencer's pace as well as any time-based modulation across the system.

Control Type

analog knob

Range

30 – 300 BPM

Function

Rotating the Clock knob adjusts the playback speed of the sequencer. Lower values create slower, more spacious rhythms, while higher values produce rapid, energetic pulses.

This control is central to shaping the groove and feel of your sound sequences. Use it in real-time performance to build tension or slow things down for atmosphere.

Tip

Pair low Clock values with Slow note mode for ambient textures. Use high Clock values with Pulse mode and Distort effect for glitchy rhythmic cuts.

Type

Control Type

3-way switch-style knob (Soft / Mid / Sharp)

Function

Changes the core tone quality (oscillators wave form).

Soft – Rounded, warm timbre

Sharp – Bright, biting character

Mid – A balanced tone in between

Space (Reverb)

Control Type

Rotary pot (limited knob)

Function

Adds reverb to the sound. The more you turn it up, the more space and depth the sound has. There are no tweakable parameters—it's designed to be instant and musical.

Voice 1 & Voice 2

These two controls adjust the pitch (frequency) of two separate sound generators (oscillators).

Control

Two independent limited knobs

Behavior

Each knob changes the tone's pitch. Adjusting them lets you create harmony (pleasant sound combinations) or dissonance (tense, clashing sounds) by setting different intervals between the two voices.

Usage

Experiment with small differences for chorus-like effects or wider intervals for more complex textures.

Effect buttons

There are four effect buttons that instantly change the sound's texture. You can turn each on or off independently, or combine them.

Buttons and their effects

Distort – Adds noise and a broken, rough quality to the sound, making it more aggressive.

Wave – Creates a fast, wavy movement in the sound.

Texture – Adds fine, sharp details that make the sound rougher.

Hollow – Produces a hollow, minimal tone by removing some frequencies.

Behavior

No extra settings—each effect is simply on or off.

Usage

Try combining effects for unique textures. For example, “Distort” + “Wave” for gritty but flowing sounds.

Note mode (Envelope)

This section controls how each note behaves over time—how it starts, how it holds, and how it fades away. It's essentially the envelope generator of the system, shaping the amplitude curve (the loudness shape) of each sound.

You can choose from three modes:

Pulse

Notes start and stop sharply, like a quick hit.
Attack is extremely short, Decay is immediate, and there is no Release phase.
Great for percussive or glitchy sounds.

Fast

Notes come in quickly and fade out fairly fast.
Short Attack, a slight Decay, and quick Release.
Useful for melodic lines that still feel crisp but not too abrupt.

Slow

Notes fade in slowly and fade out gently.
Longer Attack and Release, creating smooth transitions in and out.
Works well for ambient or evolving textures.

Each mode sets a fixed envelope curve behind the scenes.
There are no user-adjustable sliders for the envelope—but these three options provide expressive variety with minimal complexity.

8-step sequencer

The sequencer lets you create and arrange patterns of notes to play over time.

Step Programming

You have 8 steps that can be turned on or off. Each step triggers a note at the frequency set previously.

Playback Controls

Play/Pause – Start or stop the sequence.

Record – Captures the current sound output and saves it as an audio file.

Patterns

You can create simple repeating patterns by toggling steps. Currently, there's no built-in pattern saving or switching – everything is played live or recorded externally.

Usage Tips

Use the sequencer to build rhythmic or melodic loops. Combine with effects and note modes to create dynamic textures.

TenderWorld
Made with TouchDesigner and Python.

