

# Pipa

## Expressive Vocal Synthesizer



## Welcome!

This is the user manual for **Pipa**, a vocal synthesizer available for iPad (AUv3) and Mac & Windows (AU/VST3/AAX). It has been designed and developed by Klevgrand, a small studio in Stockholm, Sweden. This instrument is a crossover between a wavetable synthesizer and a granulating sample player specialized in generating vocal sounds. Pipa simulates the sound of human voices in a new way; instead of using ordinary samples or processing oscillators with formant filters, Pipa uses a large database of wavetables extracted from real vocal samples. The benefit of this technique is that it's possible to seamlessly morph between those wavetables with proper phase alignment. This technique enables Pipa to continuously make transitions between pitch, formants and dynamics which is very useful in musical contexts.

[Get the iOS version at the App Store](#)

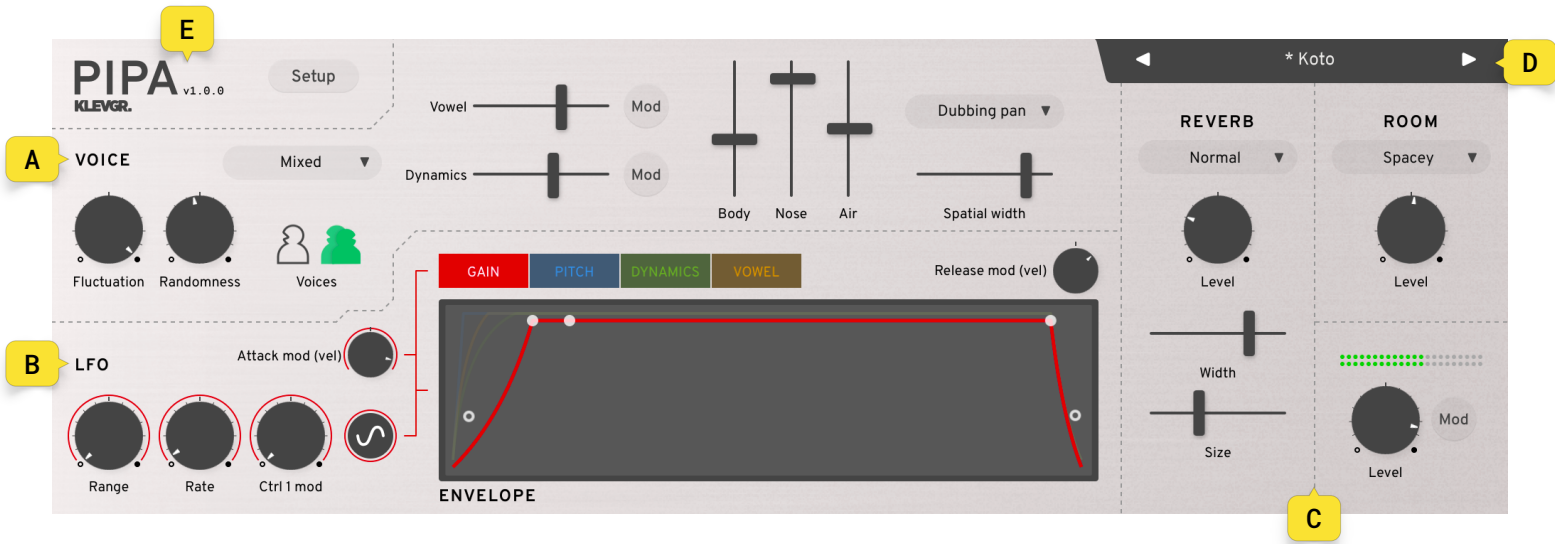
[Get the AU / VST / AAX version at klevgrand.se](#)

## LICENSING (DESKTOP ONLY)

Until unlocked, the plug-in will output 1 second of silence now and then. To unlock the full version, click the Demo label (bottom left corner) and type/paste your license key.



Note that Pipa consumes quite some CPU - especially on processors with smaller L2 cache. We recommend that you download the demo and make sure your system handles the plug-in before purchasing.



## User interface

The main view is divided into 7 different parts:

- A. Voice** (What voice to be used and how it should sound)
- B. LFO/Envelope** (How the voice should be altered over time)
- C. Reverb, Room & Output**
- D. Presets**
- E. Header** (Title and setup)

### A. Voice

This part of the user interface handles the setup and sound of the voice rendering.

#### 1. Voice Type

Click to choose between male, female and mixed (male and female depending on pitch).

#### 2. Fluctuation

This parameter controls the internal wavetable players morph speed. A high value makes it possible to make a quicker change of vowels and dynamics. This can also add some artifacts when vowels and dynamics are changing. A low value makes the transformations sound a bit more robotic, but also minimizes these artifacts.

#### 3. Randomness

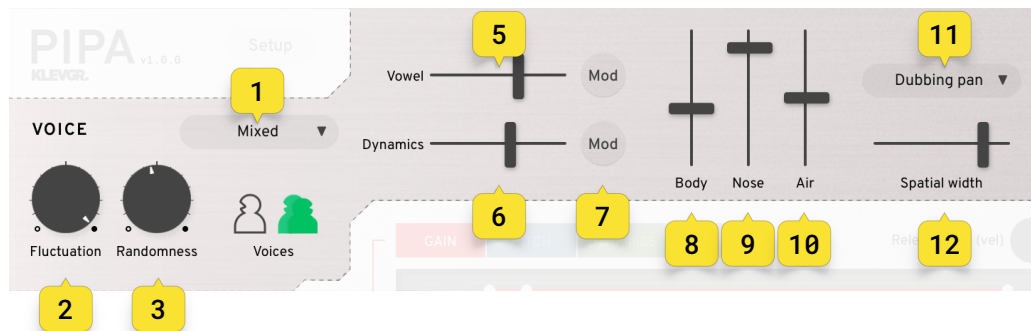
Adds small random values to pitch and envelope on each note-on event and both voices, if PIPA is set to two voices. Very useful when using two voices to make it sound as if it is a dub.

#### 4. Number of Voices

Choose between one single voice or two (doubling the note(s) played).

#### 5. Vowel

Sets the initial vowel value. The vowels ranges from a soft O to an open A.



## 6. Dynamics

Sets the initial dynamic value. A low value is a soft note (pianissimo), and a high value a strong (forte).

## 7. Vowel & Dynamics mods

These popups modulate the vowel and dynamics parameters by external input (Ctrl1 and Ctrl2 can be mapped to any MIDI control change, channel after touch or key tracking). A positive value adds the modulation value to the parameter, and a negative value subtracts the value.

## 8. Body

Increase or decrease the fundamental frequency.

## 9. Nose

Increases or decreases the area around 3kHz of the audio signal.

## 10. Air

Adds some subtle high frequency noise to the signal to simulate air flow

## 11. Pan mode / Spatial Width

There are three different ways of spatializing the voices. Click the drop down to choose one of them. The Spatial Width parameter determines the final width. The positioning of each voice happens at note-on, so this parameter won't pan any ongoing sounds if automated.

<b>Random Pan</b>	Pans the voice randomly.
<b>Panorama</b>	Pans according to frequency (from left to right)
<b>Dubbing Pan</b>	Spreads the voices – one to the left and one to the right. <i>Only works when number of voices is set to two.</i>

## B. LFO / Envelope

This section is based on four tabs: GAIN, PITCH, DYNAMICS, VOWEL. Click one of these tabs to select what LFO and envelope to control.

### 1. LFO Range

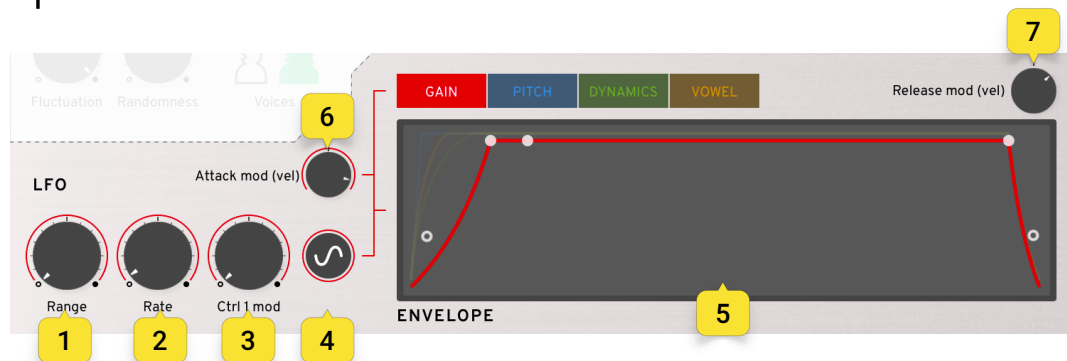
Sets the amplitude of the LFO output. This determines by how much the LFO will affect the selected parameter (gain, pitch, dynamic or vowel).

### 2. LFO Rate

Sets the frequency of the LFO output.

### 3. Ctrl1 mod

Sets how much Ctrl1 should affect the LFO range.



LFO output. This determines by how much

#### 4. Wave selector

Click to reveal a popup of different waveforms that the LFO should output.

#### 5. Envelope (ADSR/AR/WEIGHT)

Interact with the envelope by clicking and dragging. Each envelope has Attack Time, Attack Curve and Release Curve. **Note that the Release Time is shared between all tabs, and the gain envelope also has a decay and sustain level** (those are not available for PITCH, DYNAMICS and VOWEL).

All tabs except gain have a weight parameter. This parameter sets how much of the selected parameter (pitch, dynamics or vowel) should be affected, both in positive and negative directions. Dynamics and Vowel weight offers full range, and the pitch weight goes from -2 octaves to +2 octaves.

#### 6. Envelope Attack Mod (vel)

Sets how much the attack time should be affected by velocity. A positive value shortens the attack time at higher velocities, and a negative value shortens the attack time at lower velocity values.

#### 7. Envelope Release mod (vel)

Sets how much the release time should be affected by velocity. A positive value shortens the release time at higher velocities, and a negative value shortens the release time at lower velocity values. **Please note that this parameter affects all the envelopes.**

## C. Reverb, Room & Output

#### 1. Reverb type selector

There are 6 different reverb algorithms to choose from.

#### 2. Reverb Level

Sets the gain level of the wet signal.

#### 3. Reverb Width

Sets the stereo width.

#### 4. Reverb Size

Sets the size of the simulated space (and decay time).

#### 5. Room type selector

There are 5 different rooms to choose from.

#### 6. Room Level

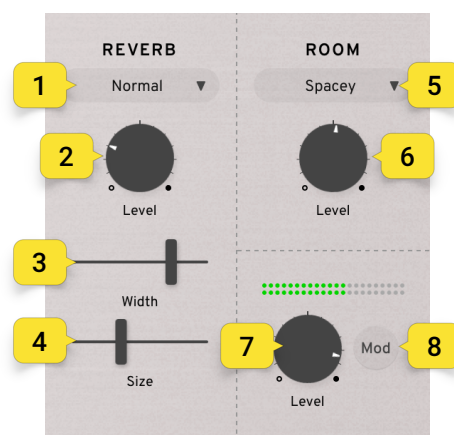
Sets the gain level of the wet signal.

#### 7. Output Level

Sets the output gain level.

#### 8. Output Mod

This popup modulates the gain level by external input (Ctrl1 and Ctrl2 can be mapped to any MIDI control change, channel after touch or key tracking). A positive value adds the modulation value to the parameter, and a negative value subtracts the value. Note that the gain modulation occurs before both the room and reverb modules in opposite to the output level parameter.



## D. Presets

Click on the preset name to reveal a list of factory presets, or on the left/right arrows to step through the list. The factory presets are divided into 6 categories and contains a wide selection of patches that works great as is, but also as a starting point for further tweaking.

<b>General</b>	A set of natural sounding sounds in different flavours and variations.
<b>Pads</b>	These patches are softer and meant to sound organic and musical, but not necessarily human.
<b>Vocal effects</b>	Different transitions between formants and dynamics that renders a couple of pronunciations.
<b>Leads</b>	All these patches are in legato mode and meant to be used as melody/lead sounds.
<b>Experimental</b>	The more edgier and unexpected set of patches.
<b>Basics</b>	Static vowels. Good to have as a starting point when creating new patches.

## E. Header

### SETUP

This popup sets how external input should be handled and processed within the plugin.

### CTRL 1 / CTRL 2

These two modulators can be used to affect various parameters like vowel, dynamics, gain, pitch and LFO range.

#### 1. Source

Click to select what Ctrl1 / Ctrl2 should be mapped to.

#### 2. Learn

All MIDI CC's are not available in the Source list. If you'd like to use some other MIDI CC, this function can be handy. Click to start learning mode and then send a MIDI CC to the plugin (the Learn button will change back to normal state as soon as a MIDI CC event is received, and the Source will update).

#### 3. Attack

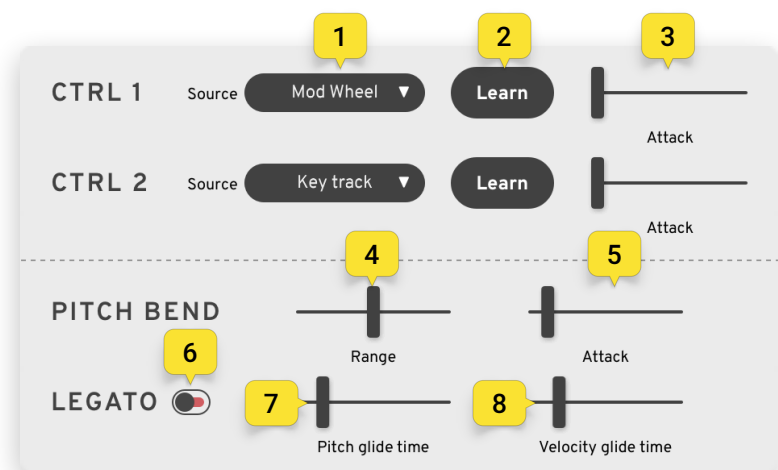
Sets the smoothness of changes when new values are sent.

#### 4. Pitch Bend Range

Number of semitones. From 1 to 24.

#### 5. Pitch Bend Attack

Sets the smoothness of changes when new values are sent.



## 6. Legato Switch

If set to ON (green) Pipa will be in legato mode, only playing one note at a time.

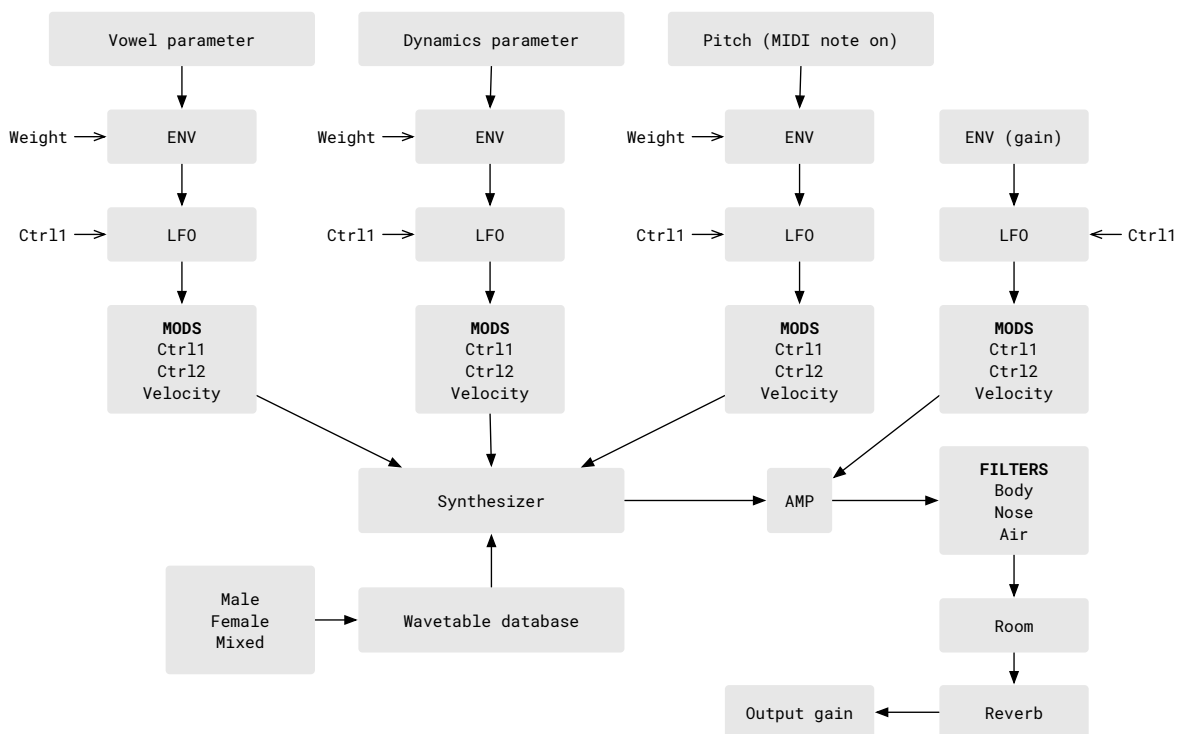
## 7. Legato Pitch Glide Time

Time for the pitch to alter to the next tone (assuming it was played when another note was down).

## 8. Legato Velocity Glide Time

Time for the velocity value to alter when a new note-on is sent (assuming it was played when another note was down).

# Signal Flow



# Specifications / System requirements

Mac	Windows	iOS
64 bit AU/VST3/AAX plug-in macOS 10.9+ OpenGL	64 bit VST3/AAX plug-in Windows 7+ SP1 or higher	AUv3 plug-in iPad Air 2 or better iOS 9.1+