



Qithesizer

 **ROBKO**

Digital art crafting, sharing and learning made easy.

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Introduction

Thank you for supporting **Qithesizer**!

Qithesizer is a powerful multi-engine hybrid software synthesizer. Designed with wind controller in mind, it combines virtual analog, wavetable, and physical modeling in one. Explore all sound possibilities with finesse and ease!

This manual applies to Qithesizer V1.10.

Installing Qithesizer

You can download and install Qithesizer from the App Store. Qithesizer works on following devices:

- iPhone (iOS 15.0 or later)
- iPad (iPadOS 15.0 or later)
- Mac (macOS 12.0 or later and a Mac with Apple M1 chip or later)

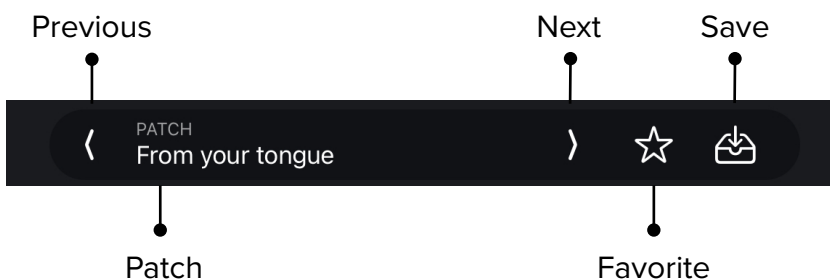
Interface Description



I. Patch Area



To get started with Qithesizer, an array of patches are there for you to play with, including Factory Patches, Template Patches and Artist Packs modulated by world-class producers and artists. Choose a patch and craft sounds like they do.

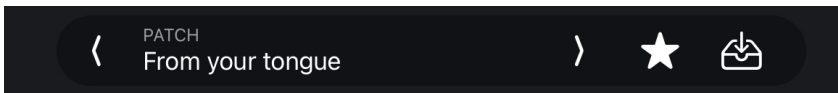


1. Favorites




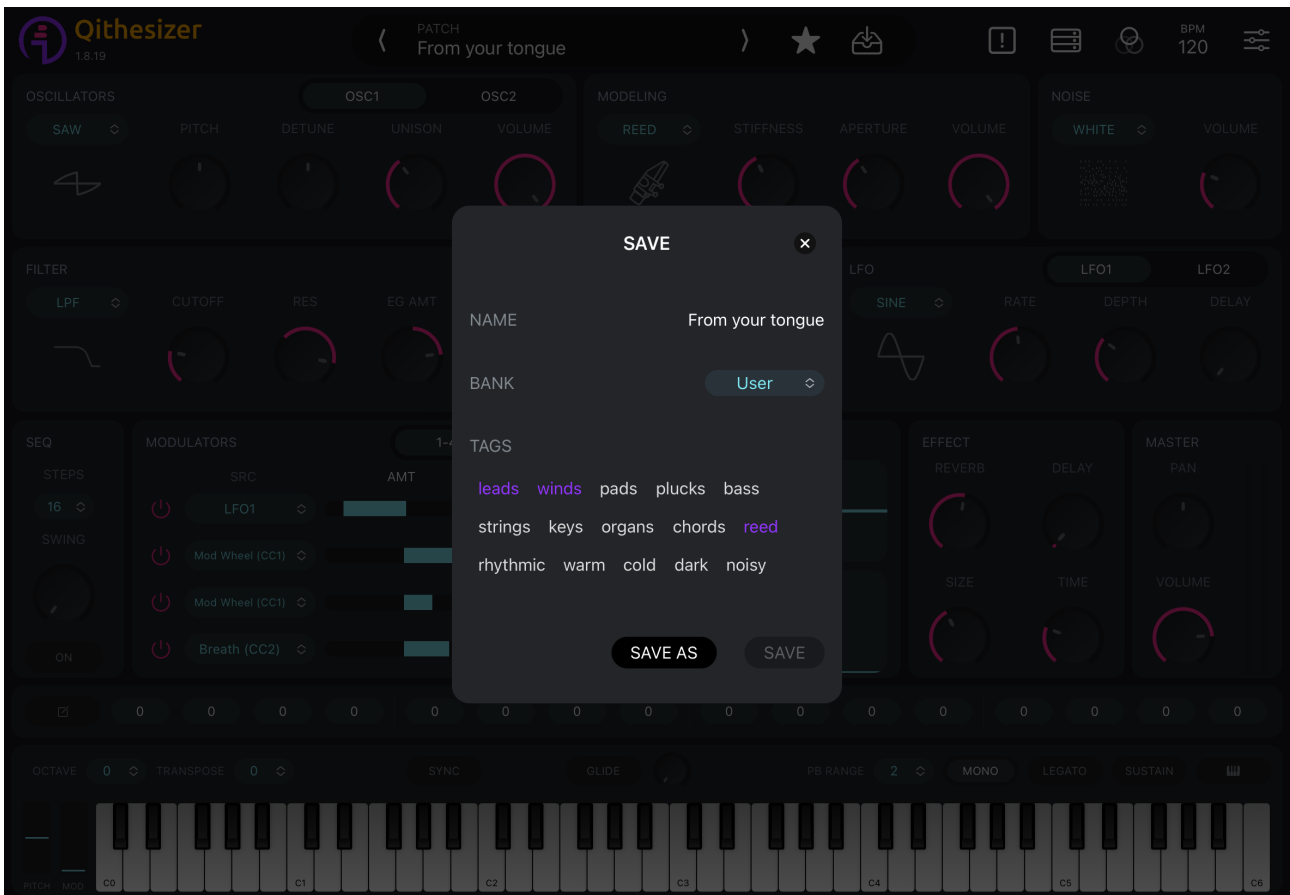
Click  to add your favorite patches to the "Favorite" bank.

Click  to unfavorite it.



2. Save

Click  and enter **SAVE** menu.



NAME

Name your new patch.

BANK

Select a path to save the patch. "User" by default. (V1.8 only supports **User** bank as saving path.)

TAGS

Add tags for patches.

Saving Options

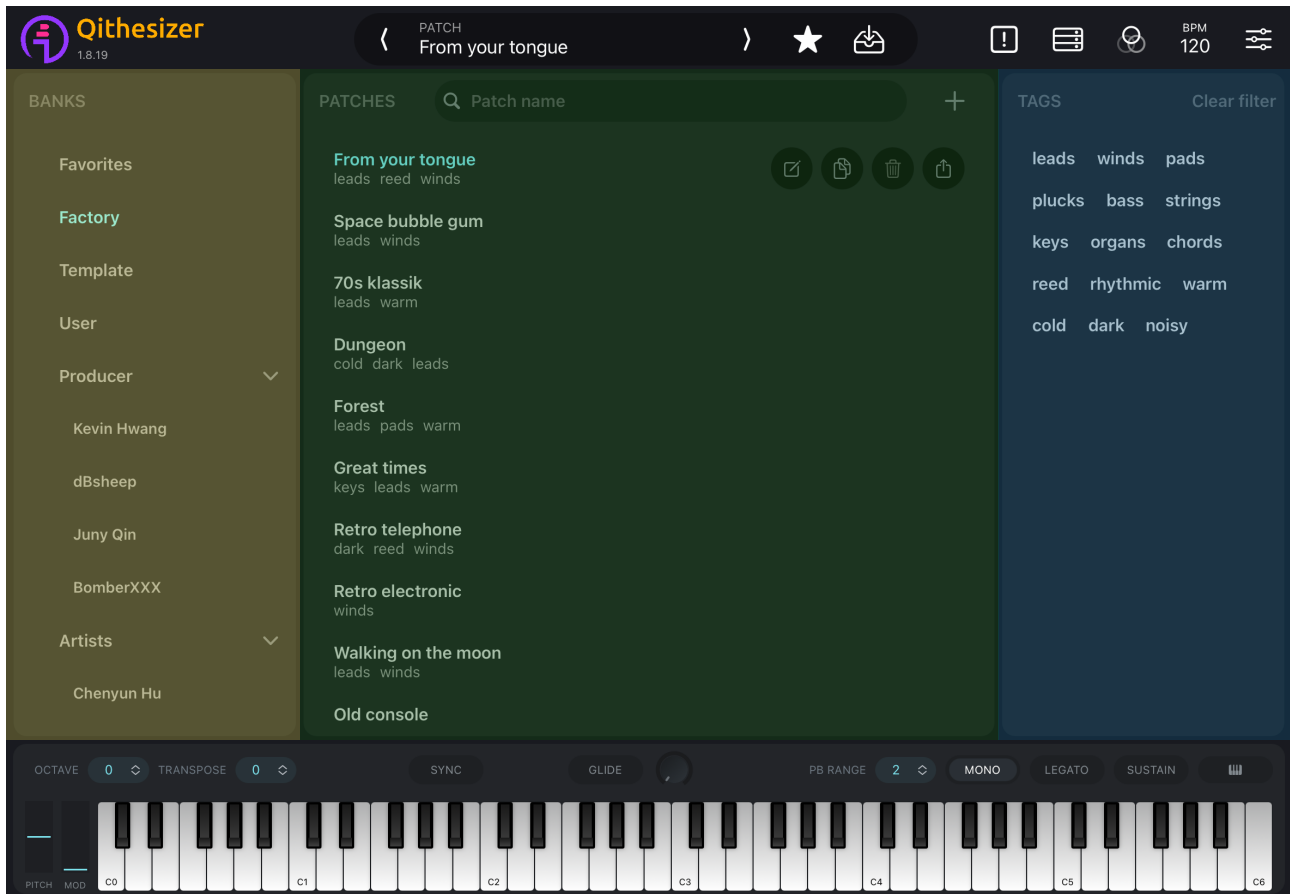
2 options are available: **SAVE** and **SAVE AS**.

Presets only support **SAVE AS**, while "User" patch works with both saving options.

3. Patch

Click patch name to expand PATCH view.

3 sections are shown on display: **BANKS**, **PATCHES** and **TAGS**.



(1) BANKS

Favorites

Patches you favorited.

Factory

Factory patches proudly crafted by Qithesizer Sound Engineering Team.

Template

Template patches including basic waveforms and physical modeling based patches.

User

For newly added/edited patches.

Producer & Artists

Patches designed by world-class producers and artists.

(2) PATCHES

Find the patches by selecting **BANKS** and **TAGS**. The following actions are available in **PATCH** view:

SEARCH

Search patches by name in search bar.

ADD 

Add a new patch to the **User** bank.

EDIT 

Enter **SAVE** menu.

COPY 

Copied patch will appear in the **User** bank, named as "{patch name}-copy".

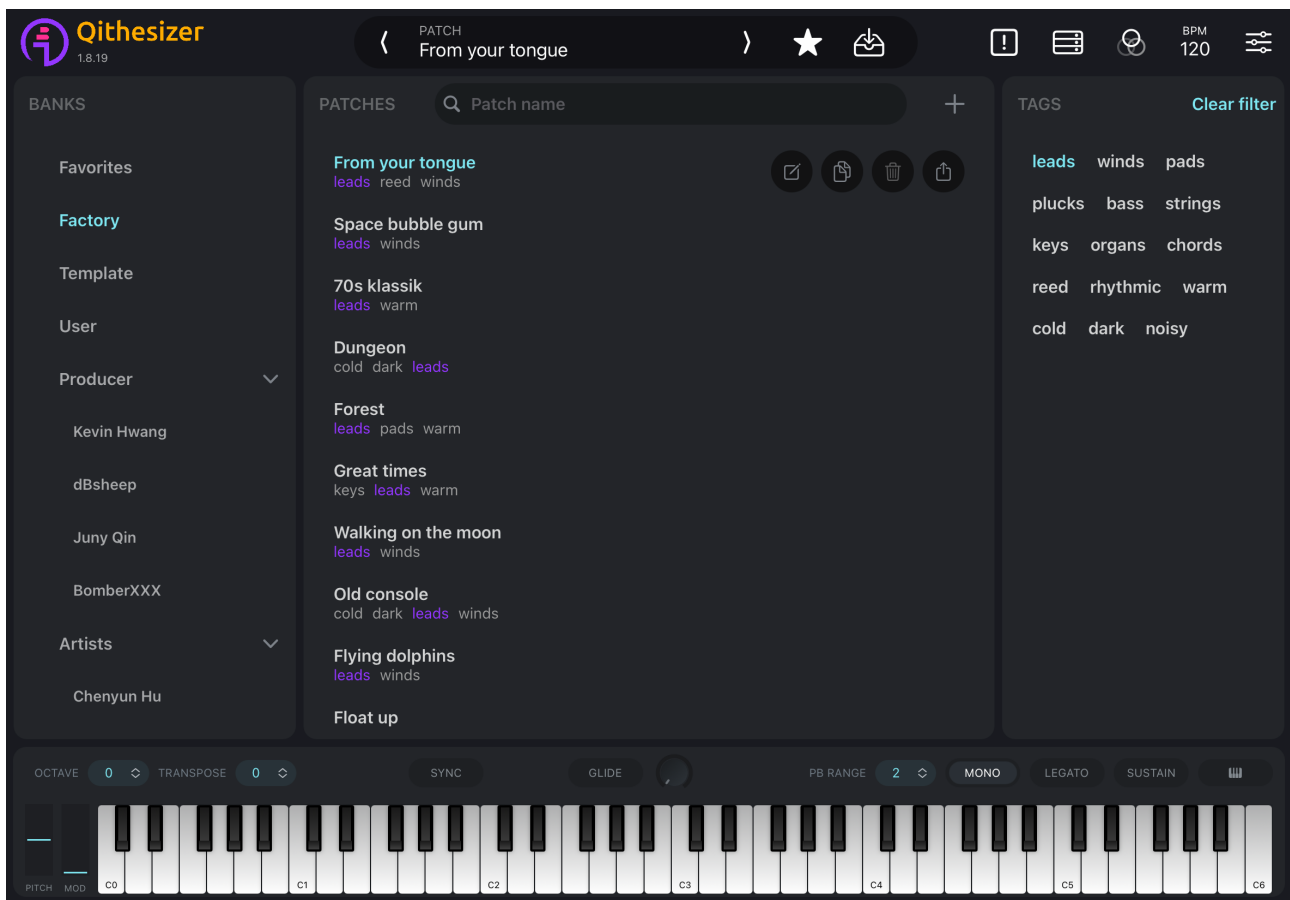
DELETE 

Delete **User** patches. Not applied to presets.

SHARE 

Share the patch to other iOS devices.

(3) TAGS

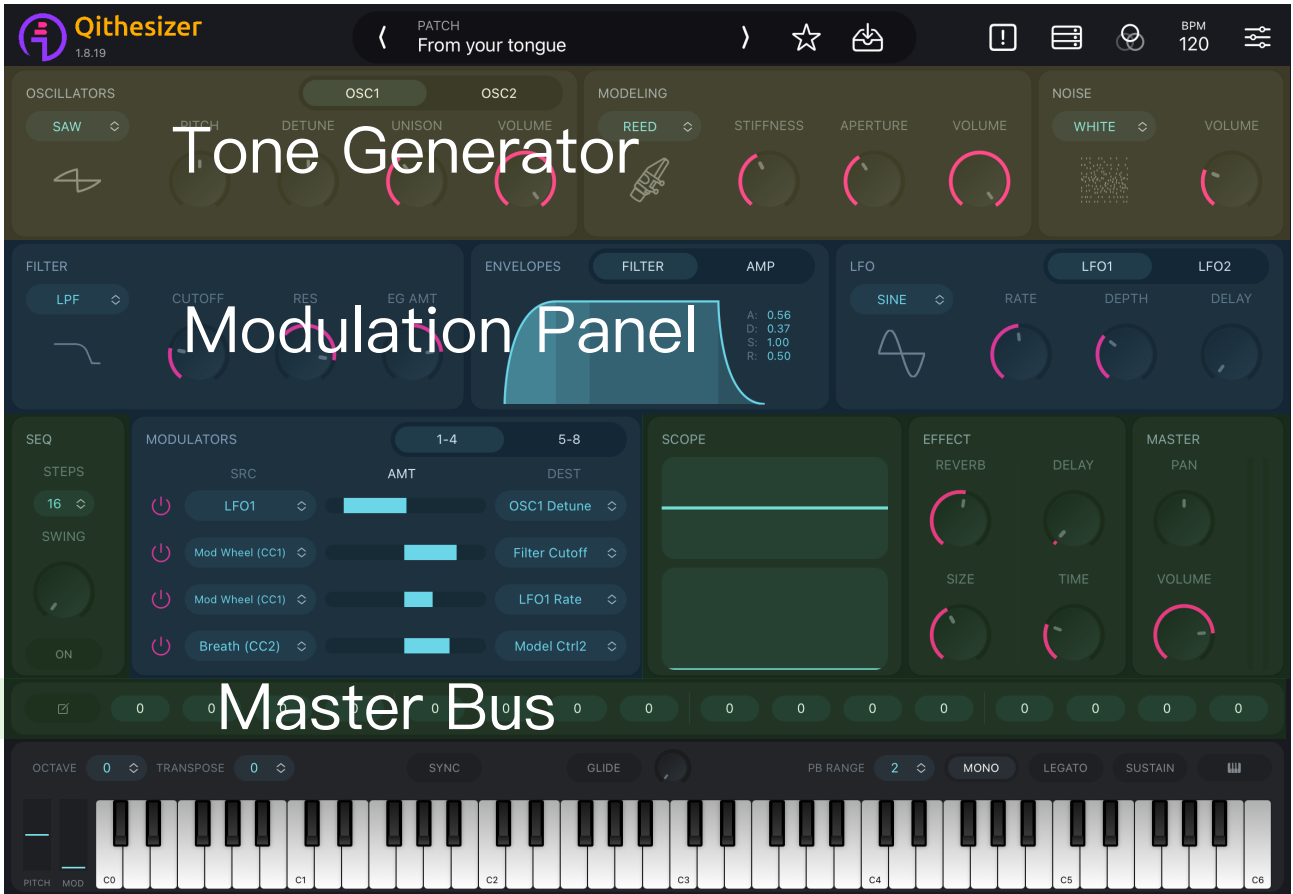


TAGS contains 15 patch tags, while each patch can be assigned up to 5 tags. Search patches by selecting tags. Press **Clear filter** to clear the selected tags.

If there are no patches shown, please apply other filters.

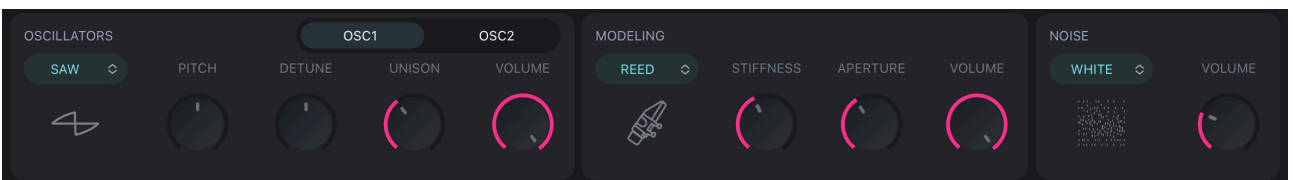
II. Modulation Area

3 sections are included in Modulation area: **Tone Generator**, **Modulation Panel** and **Master Bus**.



1. Tone Generator

Including **OSCILLATORS**, (physical) **MODELING** and **NOISE** (generator). They forms the first building block of sounds.

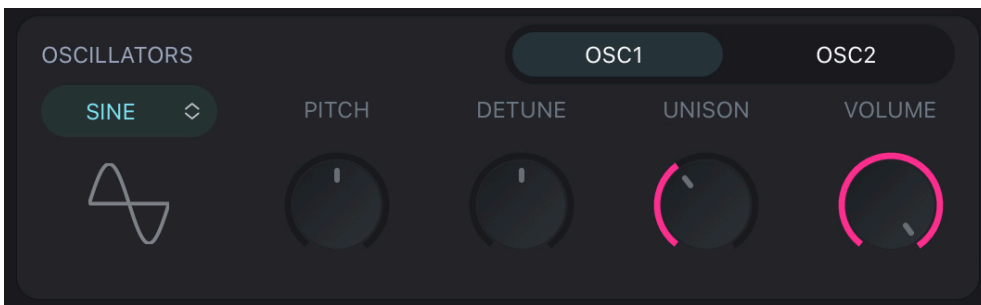


(1) OSCILLATORS

Including **OSC1** and **OSC2**, with 9 wavetable categories available. Layer oscillators to synthesize sounds.



Modulate each oscillator with the following controls to create various different textures to your patch:



PITCH

Raises or lowers oscillator pitch by semitones. Values range from -24 to 24 (4-octave range in total). 0 by default (i.e. no change in pitch).

DETUNE

Raises or lowers oscillator pitch by cents (1/100 of a semitone). Values range from -50 to 50. 0 by default.

UNISON

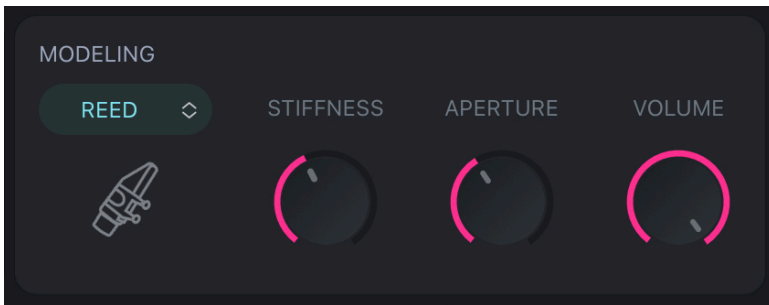
Multiplies the oscillator voice up to 8 times to generate richer harmonics. Values range from 1 to 8. 1 by default (i.e. no unison). Only works in **MONO** mode.

VOLUME

Adjusts oscillator volume. Values range from 0 to 10 (0 means OSC Off). 10 by default for **OSC 1**. 0 by default for **OSC 2**.

(2) MODELING

3 types of physical instruments available: **REED**, **PIPE** and **BOWED**. Select and modulate parameters to simulate acoustic sound sources.



REED

STIFFNESS, APERTURE, VOLUME

PIPE

JET DELAY, BRH PRES (breath pressure), VOLUME

BOWED

BOW PRES (bow pressure), POSITION, VOLUME

You may also select a physical modeling based preset from **Template** bank and start further modulation.

Dial **VOLUME** to 0 to turn off physical modeling.

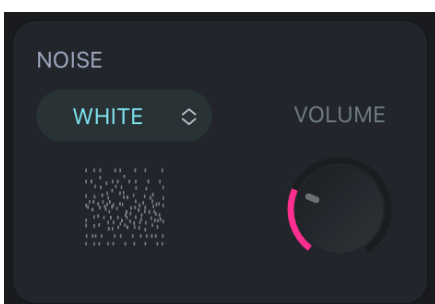
(3) NOISE

Further increases complexity of sounds by producing a “random” signal.

To add **NOISE** to sound, select a noise type and adjust **VOLUME**. 3 noise types are available: **WHITE**, **BROWNIAN** and **PINK**. Dial **VOLUME** to 0 to mute **NOISE**.

Here are some ideas for using **NOISE**:

- Layer **NOISE** with triangle or sine wave to simulate sound of breath or air.
- Feed **NOISE** into **LPF** to simulate sound of wind.
- Feed **NOISE** into **HPF** to produce hissing sound.

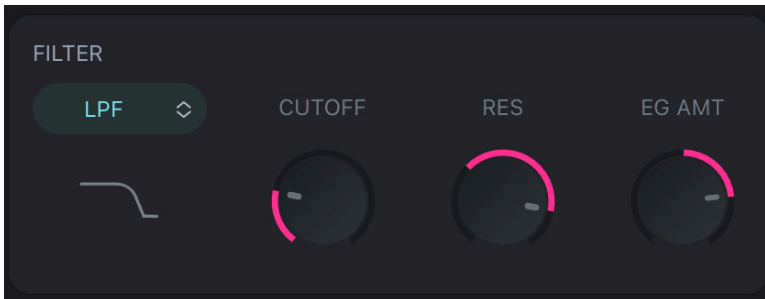


2. Modulation

(1) FILTER

Once the raw sound is generated by tone generators, **FILTER** can add further movement by attenuating certain frequencies and letting other frequencies unchanged.

Three types of filter can be set: **LPF** (Lowpass Filter), **HPF** (Highpass Filter) and **BPF** (Bandpass Filter).



a. LPF (Lowpass Filter)

LPF panel has 3 controls: **CUTOFF**, **RES** and **EG AMT**. With LPF, frequencies below the **CUTOFF** frequency are let unchanged while frequencies above are attenuated.

RES (Resonance)

Sets the amount of filter resonance at the cutoff frequency, making the filter self-oscillate. Values range from -20 to 40 dB. 0 by default.

EG AMT (Envelope Generator Amount)

Sets the Filter Envelope modulation depth, with a value from -1.00 to 1.00 . 0 by default.

b. HPF (Highpass Filter)

HPF attenuates frequencies below the cutoff frequency and lets higher frequencies unchanged. HPF panel has 3 controls: **CUTOFF**, **RES** and **EG AMT**.

c. BPF (Bandpass Filter)

BPF attenuates frequencies above and below the cutoff frequency, and lets only a small band of frequencies pass through.

BPF panel has 3 controls: **CUTOFF**, **WIDTH** and **EG AMT**.

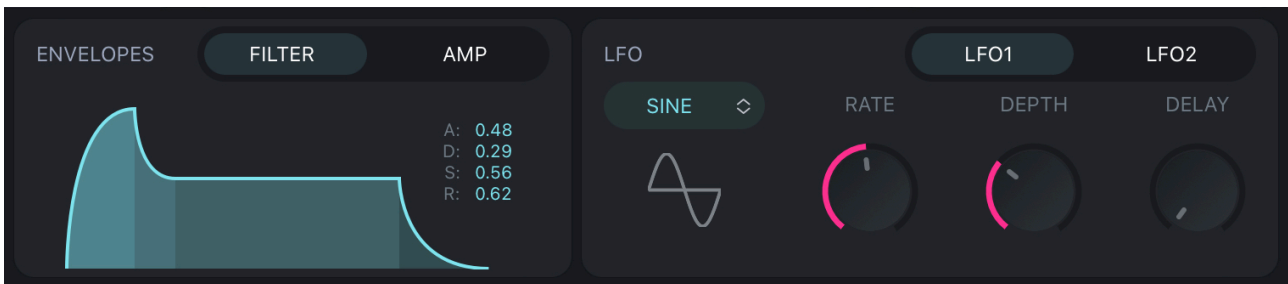
WIDTH

Adjusts the bandwidth of frequencies around the cutoff frequency that are allowed to pass through. Values range from 100 to 12000 . 100 by default.

(2) Modulation Source (SRC)

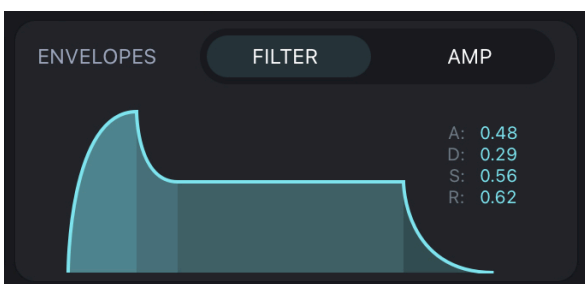
Filter section's output signal will be fed into an amplifier to amplify its volume. However, without sound modulation, the sound material might turn out static.

ENVELOPES and **LFOs** are two categories of modulation sources to modify other parameters. They are a vital component to sound design, adding dynamics and characters to sounds.



a. ENVELOPES

Determines how the sound unfolds over time by telling another parameter how to behave. **ENVELOPES** in Qithesizer follow the standard *ADSR model.



i. FILTER Envelope

Modulates **FILTER** by setting up envelope shape. When a note is being played, the brightness of sound can change over time.

The modulation depth is determined by the **EG AMT** control in **FILTER** panel.

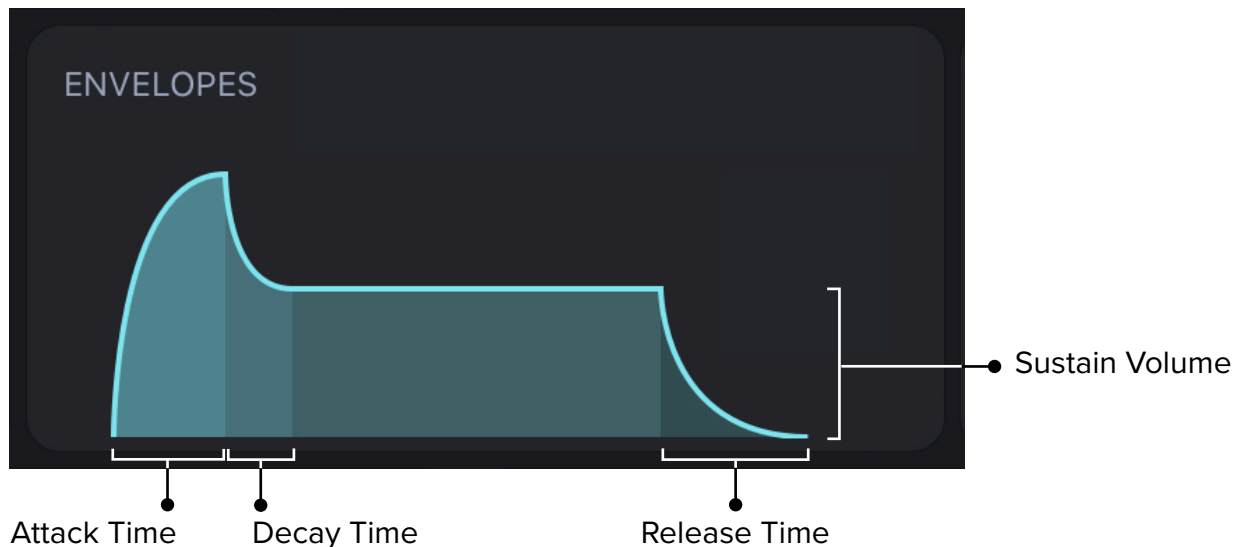
ii. AMP Envelope

Modulates amplitude over time by setting up envelope shape.

For example, a note played by violin may fade in softly at the beginning, with its volume gradually increasing. Then it may sustain at a consistent amplitude, and finally fade out. The sound of a snare drum takes the opposite approach, with a fast attack and decay.

* ADSR model

Defines ENVELOPES shape. **Attack time (A)**, **Decay time (D)**, **Sustain level (S)**, and **Release time (R)** refer to four stages of an envelope. Each control has its value from 0.00 to 1.00.



Attack Time (A)

Determines the time it takes for a note to reach full amplitude, or for the filter cutoff frequency to increase. Hold and drag attack area horizontally to adjust attack time.

Decay Time (D)

Determines the time it takes for a note to fall from its peak amplitude to its sustain amplitude. Hold and drag delay area horizontally to adjust delay time.

Sustain Volume (S)

Determines the amplitude or brightness of a held note. Hold and drag sustain area vertically to adjust sustain volume.

Release Time (R)

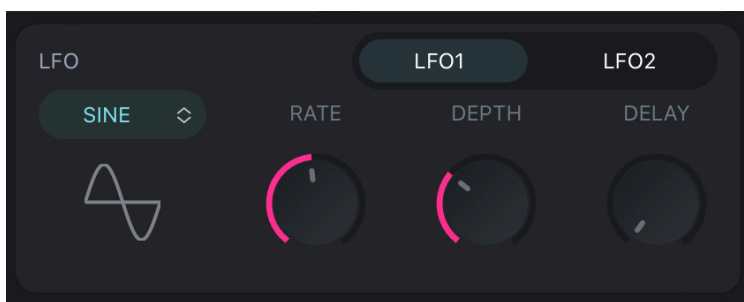
Determines the time it takes for a note to completely die away after the key has been released. Hold and drag release area horizontally to adjust release time.

b. LFO (Low-Frequency Oscillator)

Generates a periodic signal at a low frequency that is beneath human hearing range. While it does not directly add anything to audio content, LFOs can be used to continuously modulate oscillators, filters and other parameters, making the sound more dynamic. Effects may differ, depending on LFO waveforms.

For example, using a triangle or sine wave LFO as SRC to modulate OSC pitch can produce a vibrato effect, which is common on guitar amps. If the same waveform is assigned to Filter Cutoff, especially with BPF or LPF, a Wah-Wah sound can be produced.

2 LFOs, each with 4 waveforms to choose from: **Sine**, **Square**, **Saw** and **Triangle**.



i. RATE

Adjusts the frequency of LFO's output signal. Values range from from 0.0 to 20.0 Hz (cycles per sec). 0.0 Hz by default.

ii. DEPTH

Determines the overall output of LFO. Values range from 0.0 to 1.0.

iii. DELAY

Adjusts the time for LFO modulation amount to rise from 0 to the set DEPTH by milliseconds (ms) or note values. Values range from 0 to 6000 ms.

NOTE: LFOs should be used as a modulation source that is tied to a destination.

LFOs work in modulation matrix only when RATE and DEPTH values are not set to 0.

NOTE: In **SYNC** mode, the LFO RATE and DELAY length will sync with host tempo, which enhances the rhythm. The LFO RATE and DELAY length will represent note values such as 1 bar, 1/4 (crotchet), 1/4 T (crotchet triplet), etc.

(3) MODULATORS

The modulation matrix includes 11 SRCs (Modulation Source) and 27 DESTs (Modulation Destination).

Three parameters, SRC, AMT and DEST, constitute one modulation assignment. Up to 8 assignments can be created.

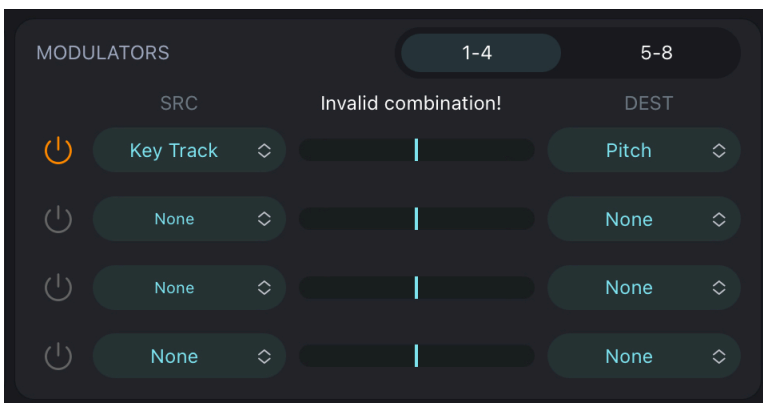
One or multiple SRCs can be linked to one or multiple DESTs. Adjust AMT to set the amount of modulation.

When you create multiple assignments with the same DEST, the modulation signals will be mixed together. When two identical modulation settings have opposite AMT value, the modulation signals will cancel each other out.

MODULATOR is OFF by default, with grey switch on display. OFF indicates no modulation. Activate **MODULATOR** by clicking the switch, the switch will turn red.

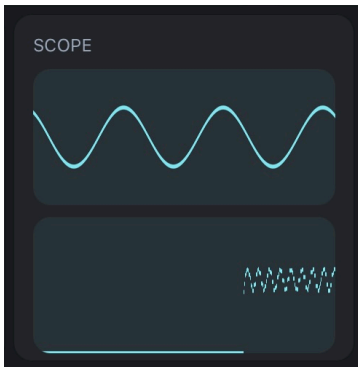


When the assigned modulation signals are bipolar, the switch will turn orange, warning “Invalid combination!”.



3. Master Bus

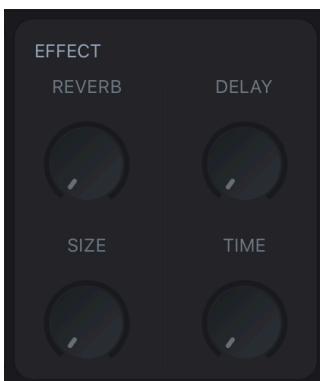
(1) SCOPE



Upper scope: The vertical axis represents amplitude. It displays the waveform in unit time.

Lower scope: The vertical axis represents volume while horizontal axis representing time, with 0 volume in the lowest position. It displays how waveform changes over time.

(2) EFFECT



a. REVERB & SIZE

The Reverb effect simulates sound reflections in acoustic environments such as room, concert hall or garage. It is controlled by 2 parameters: **REVERB** and **SIZE**. Reverb takes effect when neither parameter is set to 0.

REVERB

Adjusts Wet/Dry proportion of sound. 0 represents the original dry signal. When **REVERB** is set to 100, only the wet signal will be in the resulting output. (If **SIZE** is set to 0 at this point, no sound can be heard.)

SIZE

Adjusts the length of reverberation. Higher values replicate larger rooms.

b. DELAY & TIME

Produces an echo effect. It is controlled by 2 parameters: **DELAY** and **TIME**. Delay takes effect when neither parameter is set to 0.

DELAY

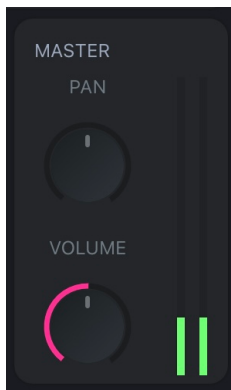
Adjusts the proportion of direct sound and reflected sound.

TIME

Adjusts the delay time in milliseconds. A distinct note repetition can be heard if **TIME** is set longer, while shorter delay time can simulate the ambience of a small room.

NOTE: In SYNC mode, delay time will sync with host tempo, enhancing the rhythm.

(3) MASTER



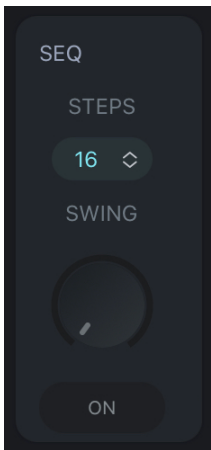
PAN

Controls the stereo pan of the output. Values range from -50 to 50 (Negative to left, positive to right). 0 by default (i.e. in the middle).

VOLUME

Adjusts the overall volume of the output. Values range from 0 to 10. 5 by default.

(4) SEQ (Sequencer)



A 16–step sequencer that can be used to arrange notes in any specific order.

Numbers in the sequence define the pitch of each note, which is added to the key you press on the keyboard. Values range from +12 to –12 semitones, with two octaves in total.


SEQ section also has a **SWING** knob and a **SEQ** switch. By adjusting **SWING**, you may change the rhythm between notes, creating rhythms like dotted notes.



To edit **SEQ**, Click  on the left side to expand **Scale** view.

11 types of scales are available, such as Major, Major Pentatonic, Minor Blues, Dorian etc. They can be used to create different music genres or moods.

Select a scale type, a set of corresponding intervals will appear on display. Select a note number and click **PREV** or **NEXT** to modify previous or next step in the sequence. Click **BYPASS** to skip a step. If a step is skipped (i.e., turned off), a rest will be placed.

Once you finish editing **SEQ** (**Scale** view closed, with  on display), hold and drag the step in the sequence to further change the note number. You may skip a step by clicking the note number.

In “**Settings – STEP SEQUENCER**”, you may choose to Show Interval Number to see the relation between the note numbers and intervals.



*** Correspondence between Note Numbers, Intervals and Abbreviations**

| Number of semitones | Minor, major or perfect intervals | Short |
|---------------------|------------------------------------|-------|
| 0 | Perfect Unison | P1 |
| ±1 | Minor Second | m2 |
| ±2 | Major Second | M2 |
| ±3 | Minor Third | m3 |
| ±4 | Major Third | M3 |
| ±5 | Perfect Fourth | P4 |
| ±6 | Augmented Fourth/ Diminished Fifth | A4/d5 |
| ±7 | Perfect Fifth | P5 |
| ±8 | Minor Sixth | m6 |
| ±9 | Major Sixth | M6 |
| ±10 | Minor Seventh | m7 |
| ±11 | Major Seventh | M7 |
| ±12 | Perfect Octave | P8 |

III. Performance Area



1. Global Settings



OCTAVE & TRANSPOSE

Adjusts the transpose (key).

TRANPOSE: from 5 semitones up to 6 semitones down (one octave in total).

OCTAVE: 3 octaves up and down.

PB RANGE

Switches the range of pitch bend control to either direction between 1, 2, 12, 24 and 48 semitones. Pitch bend is controlled by PITCH bend wheel at the bottom left.

2 by default (i.e. 2 semitones up and down).

SYNC

Synchronizes **LFO RATE** and **DELAY** length to the host tempo.

GLIDE

Works in **MONO** mode only. It has 2 controls, **GLIDE** switch and **GLIDE** knob. Dialing **GLIDE** knob will automatically turn it on.

MONO (monophonic)

The default setting is polyphonic, allowing up to 8 notes to be played at a time.

In **MONO** mode, only one note is allowed to be played at a time.

LEGATO

When turned on, the attack will not be re-triggered in transitions between notes.

SUSTAIN

Keeps the note in its sustain phase until turning off **SUSTAIN**. In **MONO** mode, only the last note sustains.

2. Keyboard



The keyboard section consists of a 73-key virtual keyboard, a pitch bend wheel and a modulation wheel. Click the rightmost “keyboard” button in Global Settings to expand the keyboard section.

PITCH

The leftmost pitch bend wheel bends the pitch up or down when playing a note. You may set the pitch bend range in **PB RANGE**.

MOD

The modulation wheel can be used as a modulation source for any type of modulation.

Qthesizer 1.8.19

PATCH: From your tongue

BPM: 120

OSCILLATORS

OSC1: SAW, PITCH, DETUNE, UNISON, VOLUME

OSC2: REED, STIFFNESS, APERTURE, VOLUME

MODELING

NOISE: WHITE, VOLUME

FILTER: LPF, CUTOFF, RES, EG AMT

ENVELOPES: FILTER, AMP

LFO: SINE, RATE, DEPTH, DELAY

A: 0.56
D: 0.37
S: 1.00
R: 0.50

OCTAVE: 0, TRANSPOSE: 0

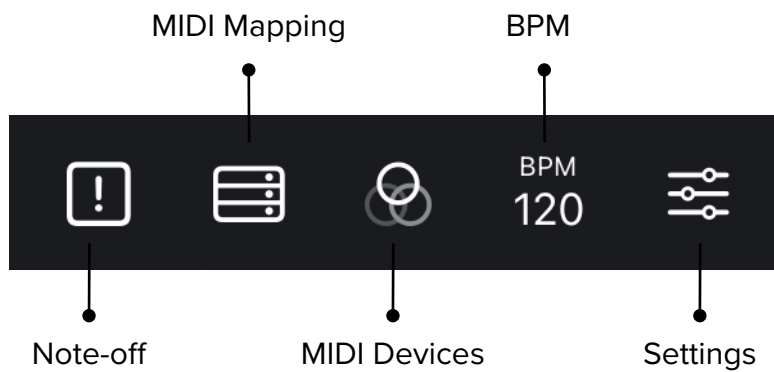
SYNC, GLIDE, PB RANGE: 2, MONO, LEGATO, SUSTAIN

PITCH MOD

C2 C3 C4

IV. Settings Area

Edits system settings and MIDI setup.




1. Note-off

Turns off all notes that are being played.

2. MIDI Mapping

Maps MIDI messages to the selected parameters, when connected to an external MIDI controller. Values range from 0 to 127.

Upon successful connection, click  and select parameters to be assigned/mapped. When a parameter is framed with green outlines, this parameter has been assigned to the MIDI controller.

Click unmapped parameters to add new assignments. Go to [Settings–MIDI Mapping](#) to delete a mapped parameter.



3. MIDI Devices

BLE MIDI and CORE MIDI INPUTS are supported.

BLE MIDI

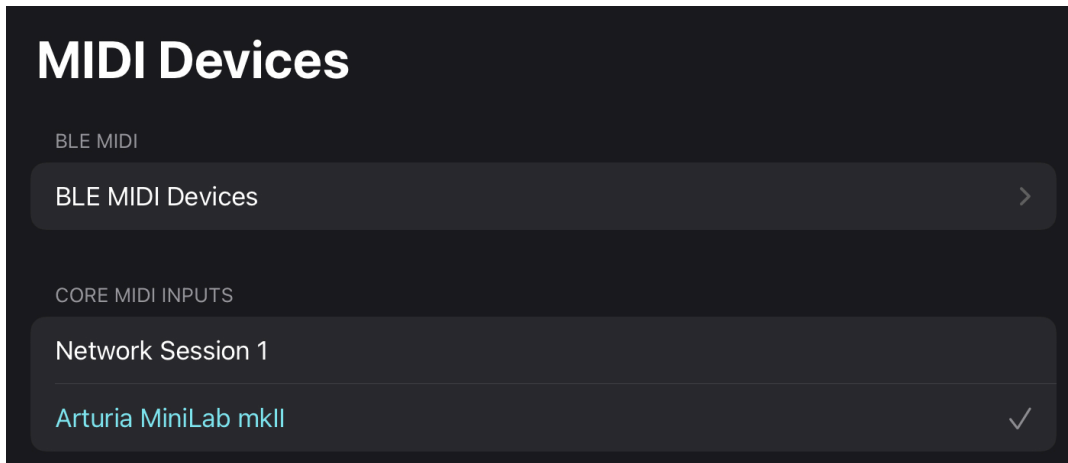
1. Make sure both iOS device and MIDI controller have enabled Bluetooth.
2. Click **BLE MIDI Devices** and enter the devices page.

3. Find your MIDI controller and tap to connect. "Connected" indicates successful connection.

CORE MIDI INPUTS

1. Use cable to connect your MIDI controller to iOS device.

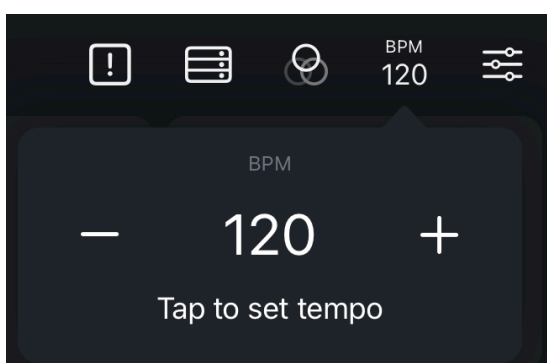
2. Find your MIDI controller and tap to connect.  indicates successful connection.



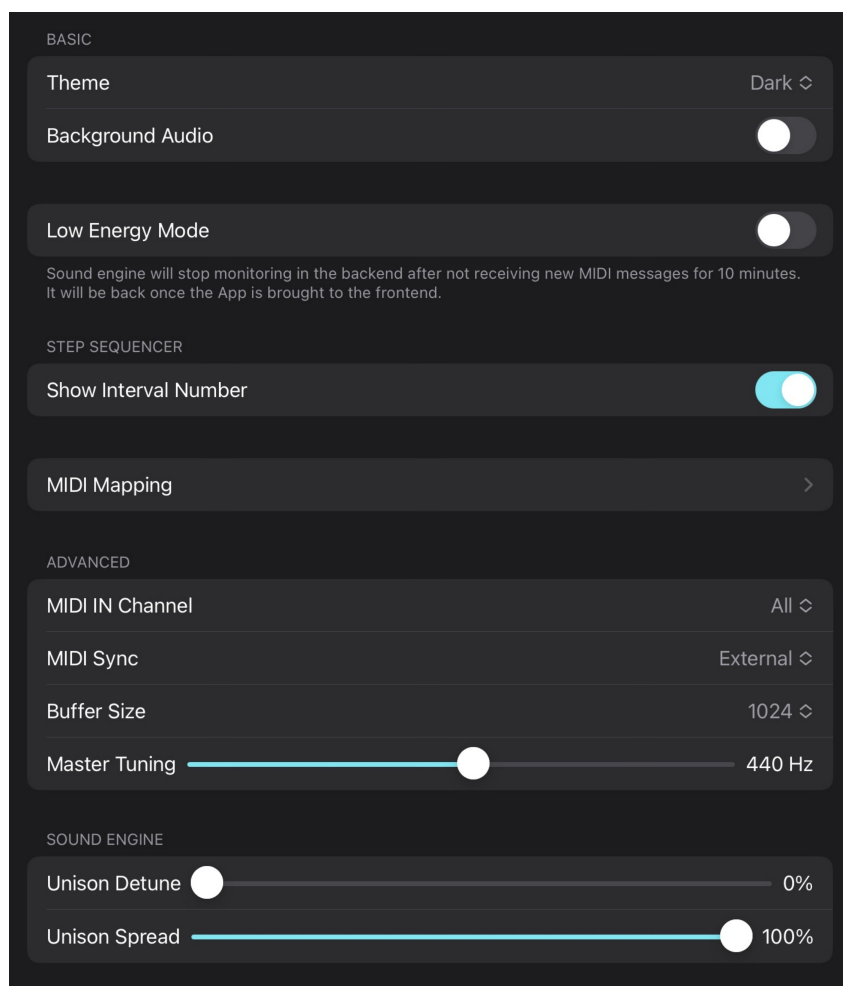
4. BPM

Values range from 1 to 200. To set tempo, you may click +/-, or, drag the number vertically. Tap-speed detection is also supported, meaning that by tapping on

, it will detect your tapping speed and adjust BPM accordingly.



5. Settings



(1) Basic Settings

Theme

3 themes are available: **Dark**, **Light** or **Auto**. **DARK** by default.

Background Audio

When turned on, it allows you to run Qithesizer in the backend and play patches. **OFF** by default.

Low Energy Mode

When turned on, Qithesizer will stop monitoring in the backend after not receiving new MIDI messages for 10 minutes. It will wake once the App is brought to the frontend.

MIDI Mapping

Shows the mapped parameters. You may also delete the unwanted assignments.

(2) Step Sequencer

Show Interval Number

When turned on, you may see note numbers for each interval in **Scale** view.



(3) Advanced Settings

MIDI IN Channel

Determines which channel to receive external MIDI data. All by default.

MIDI Sync

Determines whether Qithesizer runs its own tempo or synchronizes with external workstations. 3 modes are supported: **Internal**, **External** or **Auto**. External by default.

Buffer Size

Buffer size is the number of samples it takes to process input signals. A higher buffer size will take more time for the processing, resulting in greater latency. If buffer size is set low, the latency will decrease.

Buffer size settings in Qithesizer are 64, 128, 256, 512, 1024. The default setting is 1024.

However, the latency performance depends on various factors, including device's CPU. In some circumstances, you may encounter clicks, pops or errors when buffer size is too low. Please increase buffer size to avoid these issues.

Master Tuning

Adjusts the master reference tuning from its default value of A3 = 440 Hz.

(4) Sound Engine Settings

Unison Detune

Detunes unison voices. Only works when there are at least two voices active. 0% by default.


Unison Spread

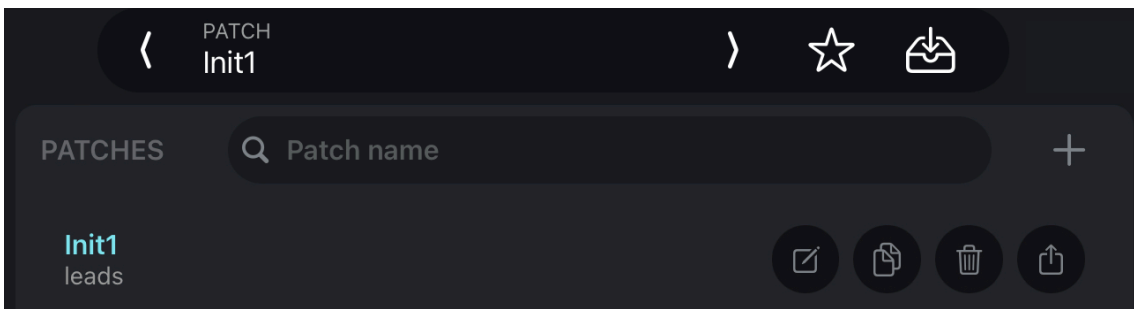
Adjusts the spreading amount between the voices. 100% by default, meaning a full spreading.

NOTE: "Unison Detune" and "Unison Spread" only work in MONO mode with UNISON not set to 0.

Quickstart

Create your own sound


1. Create a new, empty sound by clicking  from the **PATCHES** section in the **PATCH** view. A new patch 'Init {number}' will appear in the **User** bank. Click the patch bar on top of the **PATCH** view to return.

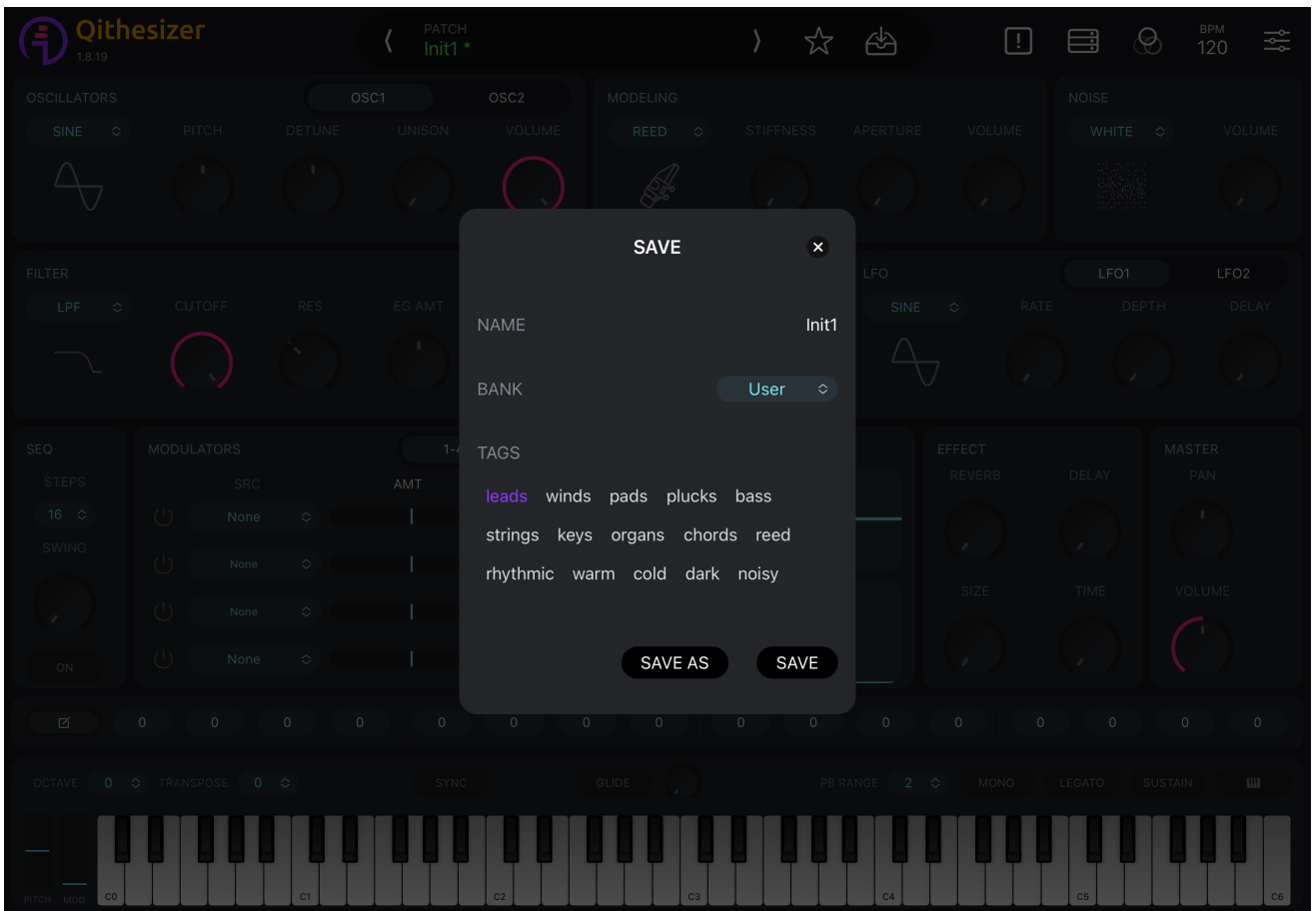
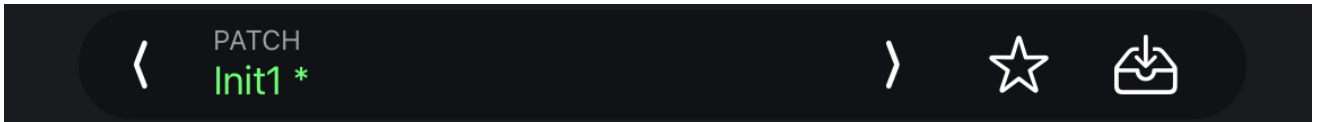


2. Select a wavetable and tweak the controls. You may choose any of the following steps to edit the sound:
 - (1) Use **Tone Generators** (**OSCILLATORS/MODELING/NOISE**) to generate the raw sound material. (**Necessary**)
 - (2) Configure **FILTER** to change the frequency content of the sound.
 - (3) Adjust **ENVELOPES** to shape how the sound evolves over time.
 - (4) Add a modulation source, such as **LFOs (Low-Frequency Oscillator)*** etc., to modify another parameter in **MODULATORS**. Set modulation amount by dragging the **AMT** slider between **SRC** and **DEST**.
 - (5) Modify the final audio output with a variety of different **EFFECTS**, such as **REVERB**, **DELAY**, etc.


* NOTE: LFOs should be used as a modulation source that is tied to a destination. LFOs work in modulation matrix only when **RATE** and **DEPTH** values are not set to 0.

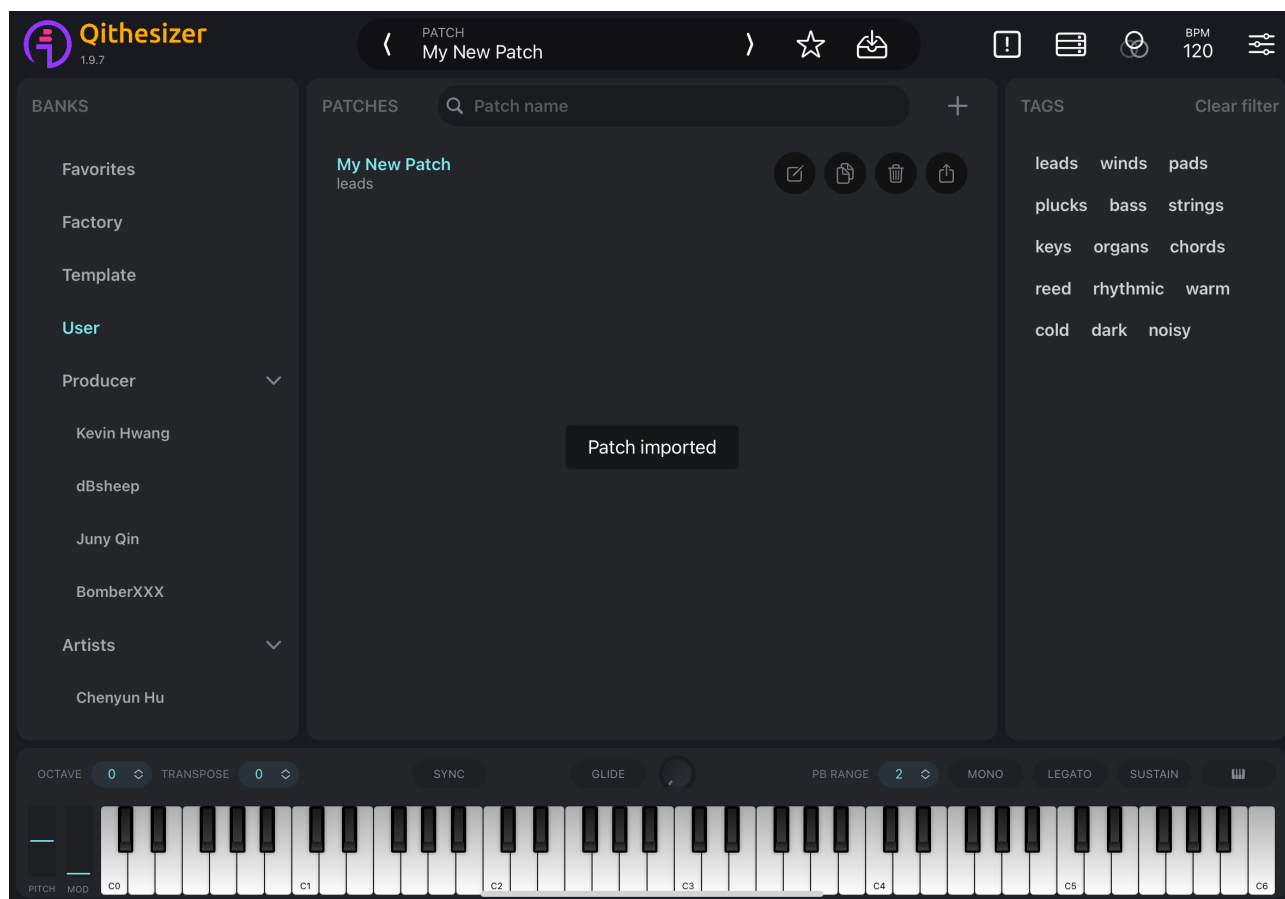
(For more on filters, envelopes and other modulation sources, please go through section "Interface Description" of this manual.)

3. After creating/modifying your sound, patch name in the patch bar will light up. Click  to set the name and tags for future reference. Click **SAVE** to save the patch.



Share your sound & edit on-the-go

To share the patch to other iOS devices, click  on the rightmost and AirDrop the patch file. Use Qithesizer on the other device to open the file.



Connect with Wind Synthesizer R1

1. Power up R1. Make sure both your R1 and your iOS device have enabled Bluetooth.
2. Enter **MIDI Devices – BLE MIDI Devices**. Find your R1 and tap to connect.
3. Go back to the main interface, select a patch and start playing.

AUv3 Extension

As shown on the next page, Qithesizer can be loaded as a plug-in directly into a host App or DAWs that support AUv3, such as Logic Pro, GarageBand, AUM, etc.

