

Zynther

User Guide

A synthesizer with three engines, one-finger chords, an arpeggiator and a looper, all in time with the Beatz apps nearby. For iPhone and iPad, and as an Audio Unit in your favorite music apps.

Version 1.1 · Pretty Kitty · nickhwang.com/zynther

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1 Getting started

Zynther is a synth you play on a piano keyboard. Choose a sound, shape it, let one finger play a chord or an arpeggio, and loop what you play, all locked to one tempo.

The first time you open Zynther, a short welcome tour introduces the essentials. You can bring it back at any time from **About (ⓘ) › Show the welcome tour**, and **Show tips again** brings back the tips that appear the first time you visit each page. Zynther always plays in landscape.

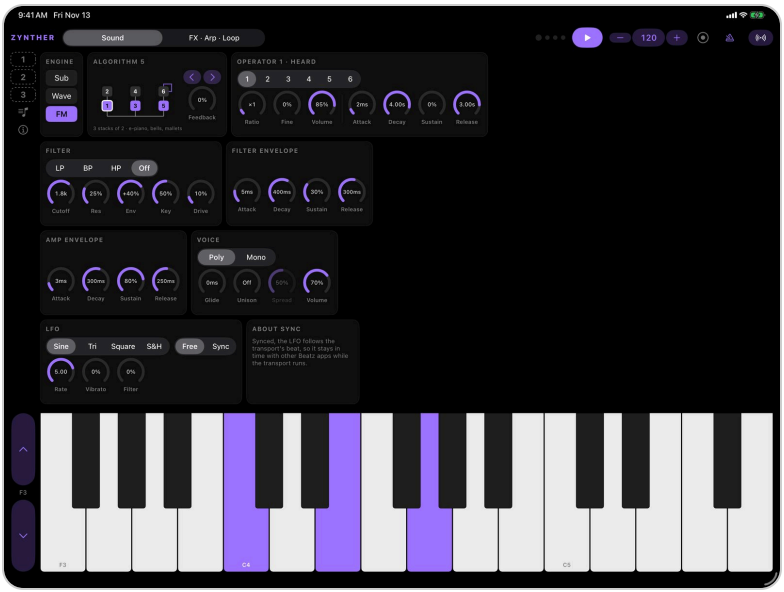


Zynther on iPhone: the top bar, the preset column on the left, the FM page, and the keyboard.

The screen at a glance

- **The top bar:** the page picker, then play and stop, tempo, recording, the metronome and Sync.
- **The preset column** on the left: your three preset slots, the factory sounds (♫) and About (ⓘ).
- **The page** of sound controls: **Osc** (called **Wave** or **FM** when that engine is chosen), **Filter**, **Amp**, **LFO**, **FX**, **Arp** and **Loop**. When a page is wider than the screen, swipe it sideways; a fade and an arrow show there's more.
- **The keyboard** fills the rest of the screen.

On iPad and other big screens, Zynther shows two or four pages at once, and the picker chooses between groups: with four, **Sound** shows Osc, Filter, Amp and LFO together, and the second group shows FX, Arp and Loop.



On iPad, the Sound group shows four pages at once.

The top bar

CONTROL	WHAT IT DOES
▶ Play / Stop	Starts and stops the transport. While it runs, the arpeggiator, Repeat, the synced LFO and the looper lock to its beat, and the metronome clicks. The four dots beside it show the beats of the bar.
– Tempo +	Tap the number repeatedly to tap in a tempo. – and + nudge it by one BPM.
● Record	Records everything Zynther plays as a take. Touch and hold it to see your takes (chapter 8).
Metronome	Turns the click on and off. The click is never recorded.
Sync	Opens Sync & MIDI, to play in time with nearby devices and connect MIDI keyboards (chapter 9).

The keyboard

Play chords with several fingers, or slide along the keys. The arrows on the left shift the keyboard by an octave, two up or two down; the note name between them is the lowest key. Zynther plays up to eight notes at once.

Gestures

Knobs	Drag up or down to turn. Drag sideways for fine adjustments. Double-tap to reset to the default.
Preset slots	Tap to save or recall; touch and hold for more (chapter 2).
Wavetable picture	Drag sideways across it to move through the table (chapter 3).
FM diagram	Tap an operator to edit it (chapter 3).

2 Sounds and presets

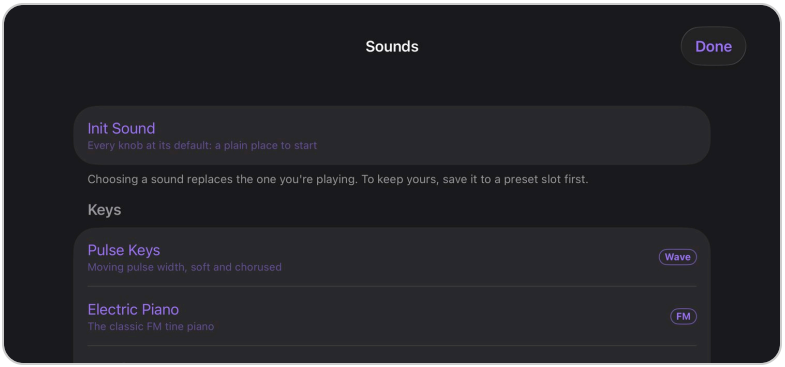
Start from one of 23 factory sounds, make it your own, and keep it in one of three preset slots.

The factory sounds

Tap 🎵 under the preset slots. The sounds are grouped into Keys, Bass, Lead, Pad, Pluck & Bell, Arp & Chord, and FX. Each shows a short description and the engine it uses. Tap one to play it. The full list is in chapter 11.

Init Sound, at the top of the list, sets every knob back to its default: a plain place to start building your own sound.

> **Good to know:** Choosing a sound replaces the one you're playing. To keep yours, save it to a preset slot first. Your saved presets are never changed by choosing a sound.



The Sounds list, with Init Sound at the top.

Your preset slots

The slots **1**, **2** and **3** at the top of the left column hold sounds of your own.

- **Tap an empty slot** (dashed outline) to save the sound you're playing into it.
- **Tap a saved slot** to bring its sound back. The current slot is highlighted.
- A **white dot** on the current slot means you've changed the sound since you saved or recalled it.
- **Touch and hold a slot** for **Save over preset**, **Recall** and **Clear**.

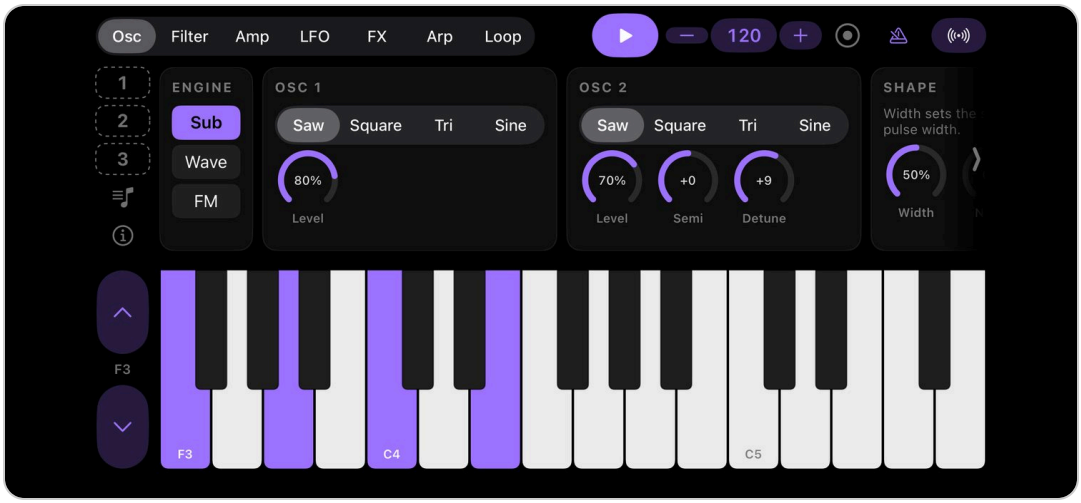
Zynther also remembers the sound you were playing when you close it, so it's there next time.

3 The engines

The first page chooses where the sound comes from. Pick **Sub**, **Wave** or **FM** in the Engine panel; the rest of the page changes to that engine's controls, and the page takes its name.

Sub: two oscillators and noise

The classic recipe for basses, brass, pads and leads: two oscillators and noise, shaped by the filter on the next page.

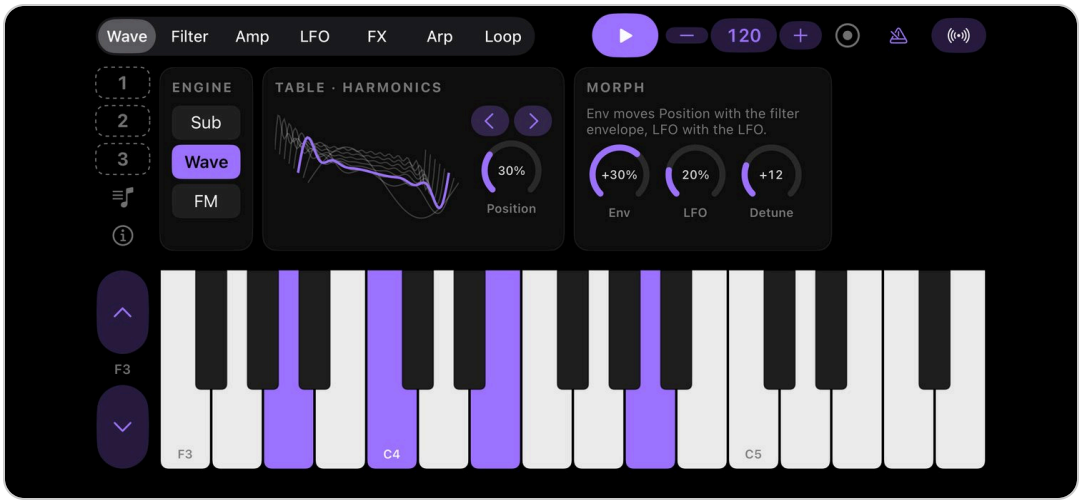


The Sub engine: Osc 1, Osc 2 and Shape.

Osc 1	**Wave**: saw, square, triangle or sine. **Level** sets its volume.
Osc 2	The same waves and Level, plus **Semi** (±24 semitones, for octaves and intervals) and **Detune** (±50 cents). A few cents of detune makes the sound wider.
Shape	**Width** sets the pulse width of the square wave, from hollow to thin. **Noise** mixes in white noise, for breath, wind and percussion.

Wave: a wave that morphs

A wavetable is a run of waves. **Position** picks a point along it, blending smoothly between neighbours, so moving it changes the tone in a way a filter can't.



The Wave engine: the table's frames drawn back to front, with the current position highlighted.

Table	Choose with the arrows: **Basic** (sine to triangle to saw to square), **Pulse**, **Harmonics** (harmonics fade in one by one, like drawbars), **Sync** (the sweep of a hard-synced oscillator), **Fold** and **Steps** (a sine with fewer and fewer levels).
Position	Where in the table you are. Turn the knob or drag sideways across the picture.
Env	Moves Position with the filter envelope on every note, forward or (below zero) backward.
LFO	Moves Position with the LFO, for a wave that keeps shifting.
Detune	Adds a second, detuned copy of the wave, up to 50 cents apart, for a thicker sound.

FM: six operators

FM builds sounds from six sine waves, called **operators**, that bend each other's pitch. It's the sound of classic electric pianos, bells, mallets, organs and punchy basses.

- The operators you **hear** are filled purple along the bottom of the diagram. The ones stacked above **bend** the operator beneath them, which adds brightness and harmonics.
- The **algorithm** sets how the six connect. Choose among all 32 with the arrows; the line under the diagram says what each one suits, such as "e-piano, bells, mallets".
- One operator feeds back into itself or its stack (the loop on the diagram). **Feedback** sets how much, from smooth to buzzy.
- While you play, each operator glows with how strongly it sounds, and its lines light up with how hard it bends.

EDITING AN OPERATOR

Tap an operator in the diagram, or choose 1–6 above the knobs. The panel's title says whether it's heard or which operators it bends.

Ratio	Its pitch as a multiple of the note: ×0.5, or ×1 to ×16. Whole-number ratios sound harmonic; high ratios on a modulator give bell-like tones.
Fine	Raises the ratio by a fraction, for inharmonic, metallic sounds or slow beating.
Volume / Bright	On a heard operator, its volume. On a modulator it's called **Bright**: how hard it bends its target.
Attack … Release	The operator's own envelope. On a modulator, the envelope shapes the brightness over each note: a fast decay gives the "tine" of an electric piano.

FM sounds usually leave the filter off; turn it on (chapter 4) if you want to darken one.

4 Filter, Amp and LFO

These pages work with every engine: the filter shapes the tone, the amp envelope shapes each note's volume, and the LFO adds movement.

Filter

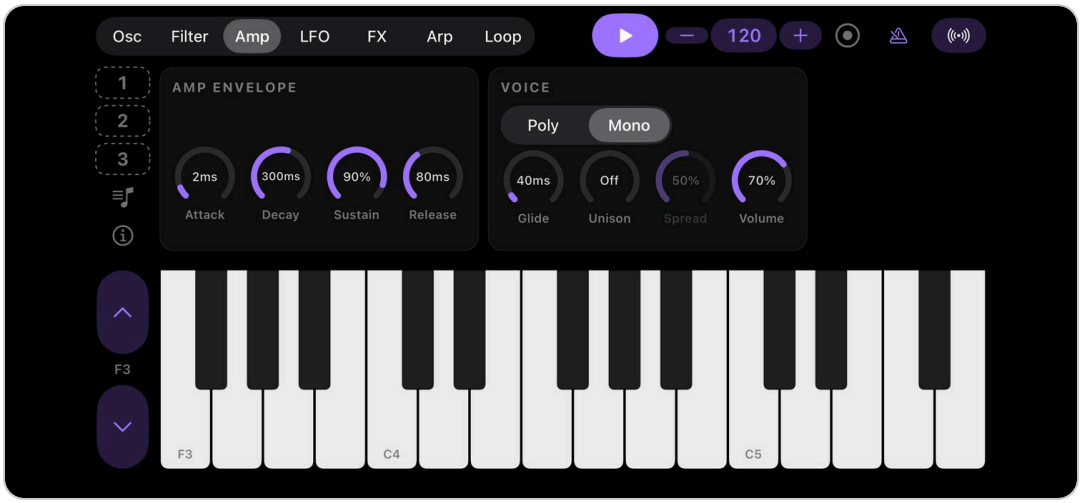


The Filter page: the filter and its own envelope.

Type	**LP** (low-pass) keeps the lows and takes away brightness; **BP** keeps a band in the middle; **HP** takes away the lows; **Off** bypasses the filter.
Cutoff	Where the filter starts working: how bright the sound is.
Res	Resonance: a peak at the cutoff, from subtle to squelchy.
Env	How far the filter envelope sweeps the cutoff on every note: up, or (below zero) down.
Key	Key tracking: higher notes open the filter more, so they stay as bright as low ones.
Drive	Saturation before the filter, for warmth and grit.

Filter envelope: Attack, Decay, Sustain and Release set how the cutoff moves over each note. The Wave engine's Env knob follows this envelope too.

Amp

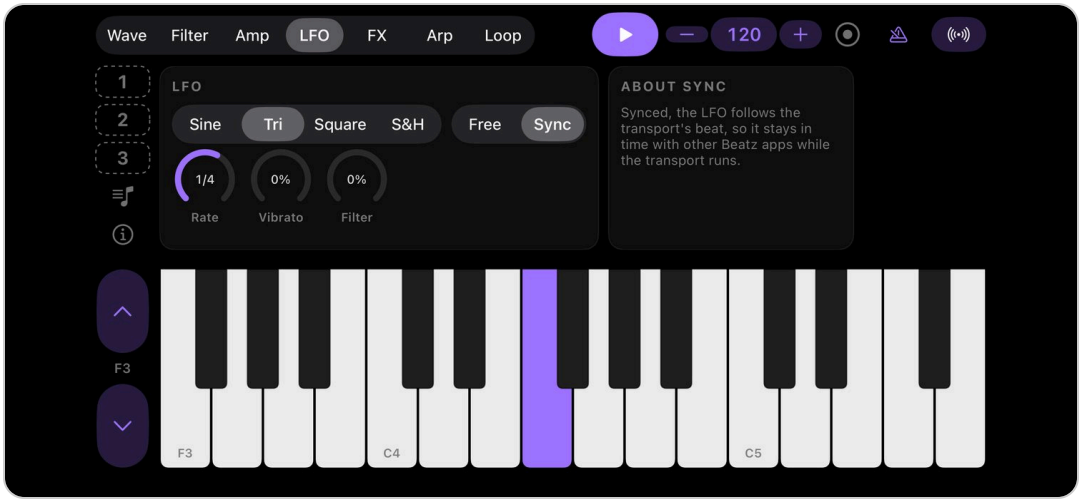


The Amp page: the amp envelope and the Voice panel.

Amp envelope: Attack is how long a note takes to reach full volume, **Decay** how long it falls to the **Sustain** level while you hold the key, and **Release** how long it fades after you let go.

Poly / Mono	**Poly** plays up to eight notes at once. **Mono** plays one at a time: a new key takes over without restarting the note, and letting it go returns to the key still held. Good for basses and leads.
Glide	Slides the pitch from one note to the next, up to one second. Most natural in Mono.
Unison	Stacks 2, 3 or 4 copies of each note. **Spread** detunes them and spreads them across the stereo field. Unison copies share the eight voices, so at 4× you can play two notes at once.
Volume	The overall volume of the sound.

LFO



The LFO page, synced to the tempo.

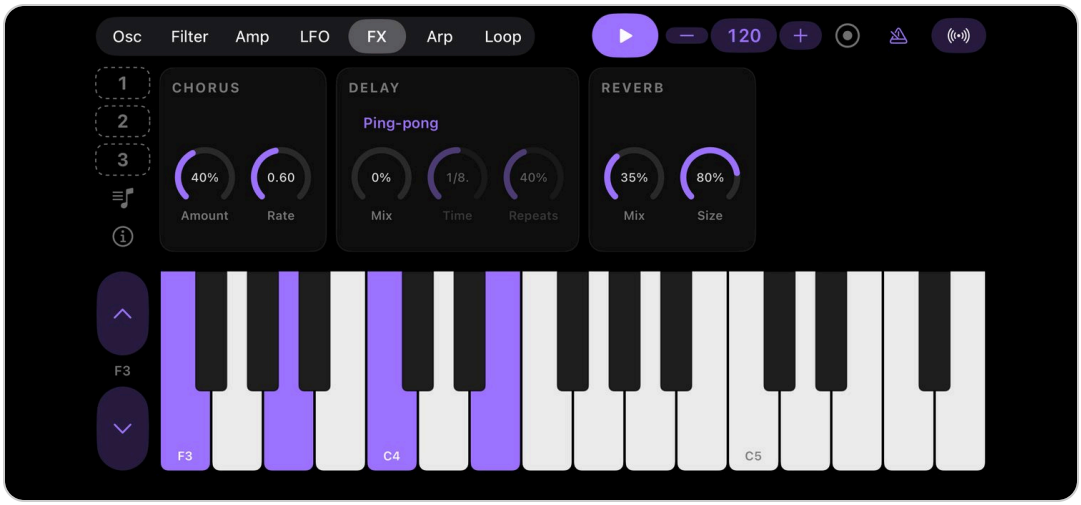
The LFO is a slow wave that moves other controls.

Wave	Sine, triangle, square, or **S&H** (sample and hold: a random step each cycle).
Free / Sync	**Free** sets the **Rate** in Hz. **Sync** locks it to the tempo, from 2 bars down to 1/16 per cycle. Synced, it follows the transport's beat, so it stays in time with other Beatz apps while the transport runs.
Vibrato	How much it wobbles the pitch.
Filter	How much it sweeps the cutoff, for wah and wobble.

With the Wave engine, the LFO knob on the first page also lets it move the wavetable's position.

5 FX

Three effects, in the order the sound passes through them. Each starts at zero; turn up its Amount or Mix to hear it.



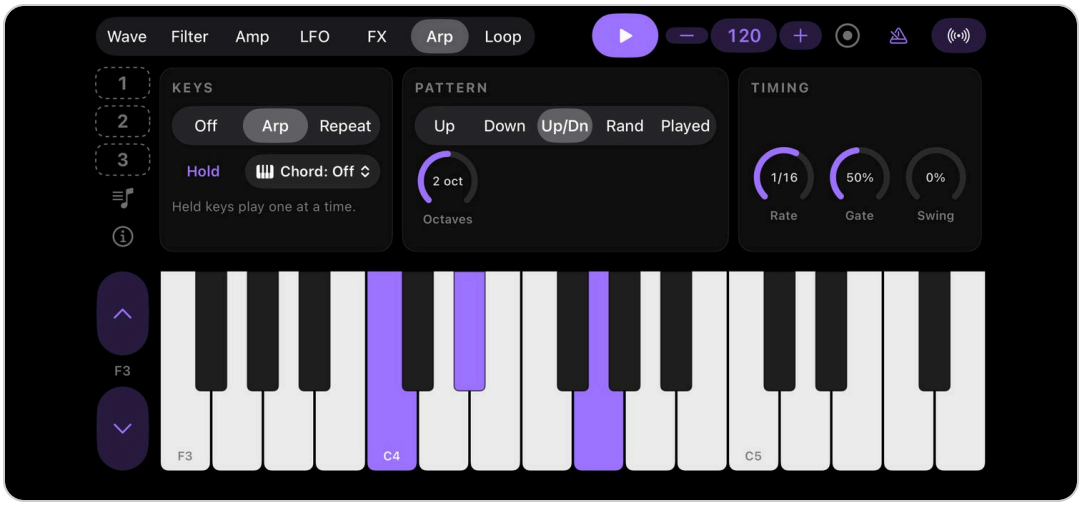
The FX page: chorus, delay and reverb.

Chorus	**Amount** thickens and widens the sound; **Rate** sets how fast it swirls.
Delay	Echoes in time with the tempo. **Mix** sets how loud they are, **Time** the note value (1/16, 1/8 triplet, 1/8, dotted 1/8, 1/4, dotted 1/4 or 1/2), and **Repeats** how long they keep going. **Ping-pong** bounces them between left and right.
Reverb	**Mix** puts the sound in a room; **Size** sets how big the room is.

The delay follows the tempo, including a tempo shared over Sync or set by a host app.

6 Arp, Repeat and chords

The Arp page decides what the keys do: play notes directly, play a whole chord from one key, or turn what you hold into a pattern in time.



The Arp page with the arpeggiator on.

What the keys do

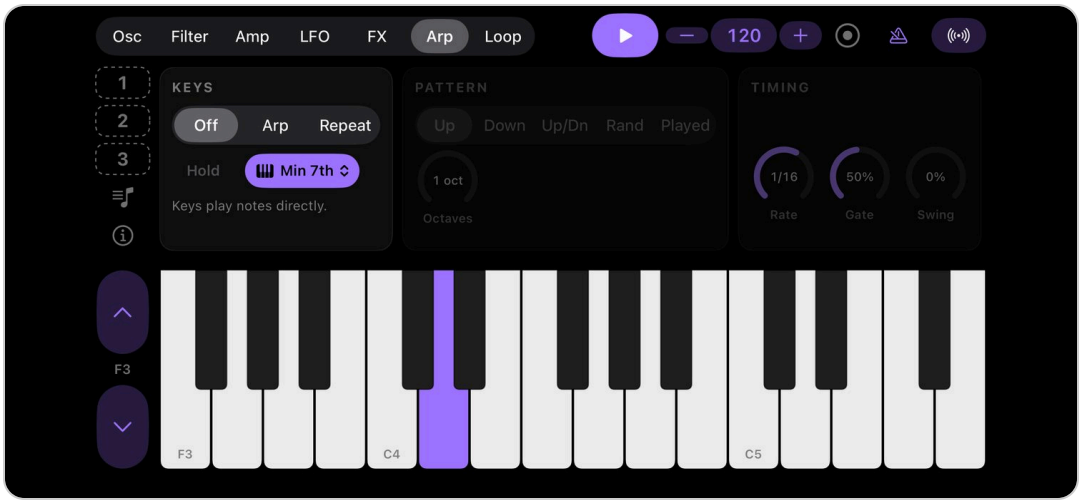
Off	Keys play notes directly.
Arp	The keys you hold play one at a time, in the order set by Pattern.
Repeat	The keys you hold play together, again and again, in time.
Hold	With Arp or Repeat, keeps the pattern going after you lift your fingers, until you play a new chord.

Auto-chord

Tap **Chord** to make one key play a whole chord: **Major**, **Minor**, **7th**, **Maj 7th**, **Min 7th**, **Sus 4** or **Power (5th)**. Every key plays that chord on its own note.

In Key plays the chord that fits the key and scale you choose (major or minor). In C major, C plays C major, D plays D minor, G plays G major, and so on, so every key sounds right. A key outside the scale plays a major chord.

Chords work with Arp and Repeat too: hold one key and it arpeggiates or repeats the whole chord. In Mono with Arp off, keys play single notes.



Chord set to Min 7th: one key plays the whole chord.

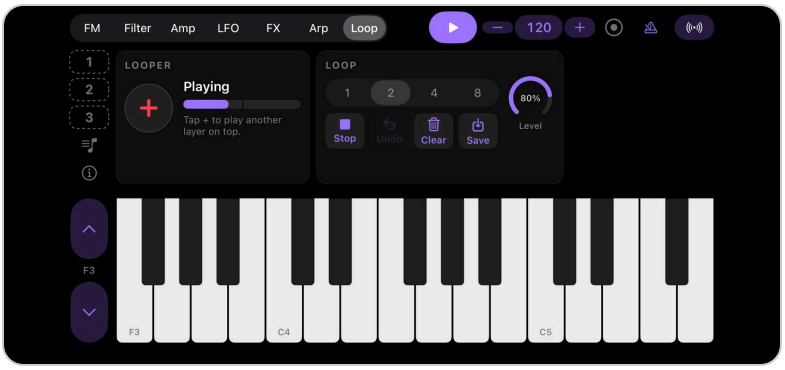
Pattern and timing

Pattern	For Arp: **Up**, **Down**, **Up/Dn**, **Rand** (random) or **Played** (the order you pressed the keys).
Octaves	For Arp: plays the pattern across 1, 2 or 3 octaves.
Rate	The step length: 1/4, 1/8, 1/8 triplet, 1/16, 1/16 triplet or 1/32.
Gate	How long each note lasts, as a share of a step: short and plucky, or smooth and legato.
Swing	Delays every second step, for a shuffle.

While the transport plays, the steps follow the shared beat, so they land in time with the looper and with other Beatz apps. When it's stopped, they run at the tempo from your first key.

7 The looper

Record what you play, and Zynther loops it. Keep playing on top, add layers, and take back the last one.



The Loop page with a 2-bar loop playing.

Recording a loop

1. Choose the loop's length under **Loop**: **1**, **2**, **4** or **8** bars.
2. Tap the red ● and play.
   - While the transport plays, recording waits for the next bar, so the loop starts on the beat. Tap again before then to cancel.
   - When the transport is stopped, recording starts at once.
3. When the bars are up, the loop plays back on its own.

The loop is recorded as audio, so you can change the sound, or switch on the arpeggiator, and play a new part over it.

Layers

- Tap **+** to record another layer on top (overdub). Tap ✓ to stop adding.
- **Undo** takes the latest layer away.
- **Stop** silences the loop and keeps it; **Play** starts it again from the top.
- **Clear** erases it. A loop keeps its length, so clear it to choose another.
- **Level** sets how loud the loop plays.

While the transport plays, the loop stays locked to the beat, including the beat shared over Sync. If you change the tempo, the loop plays faster or slower, like tape.

Saving a loop

Tap **Save**:

- **Save to Beatz Library** makes it a sample you can load into Zampler, to chop, pitch and stretch.
- **Save as a Take** adds it to your takes, to export or share (chapter 8).

8 Recording and exporting

Recording a take

Tap ● in the top bar to record everything Zynther plays, except the metronome. Recording starts immediately, so keep playing; the time shows beside the button. Tap it again to stop, and the take is saved.

Your takes

Touch and hold ● to open Recording. You can also start and stop a take from there.

- Tap a take to export or share it.
- Touch and hold a take for **Save to Beatz Library** (to use it in Zampler), **Rename** and **Delete**. You can also swipe left to delete.

Exporting

Choose the format and, where it applies, the sample rate, bit depth or bit rate. **Normalize to –1 dBFS** raises the level to just under full scale. Then tap **Export**, and share the file.

FORMAT	USE IT FOR
WAV, AIFF	Uncompressed audio that opens anywhere.
CAF	Apple's format, 32-bit float with no size limit, for Logic and GarageBand.
FLAC, Apple Lossless	Smaller files with no loss of quality.
AAC	The smallest files, for sharing and messages.

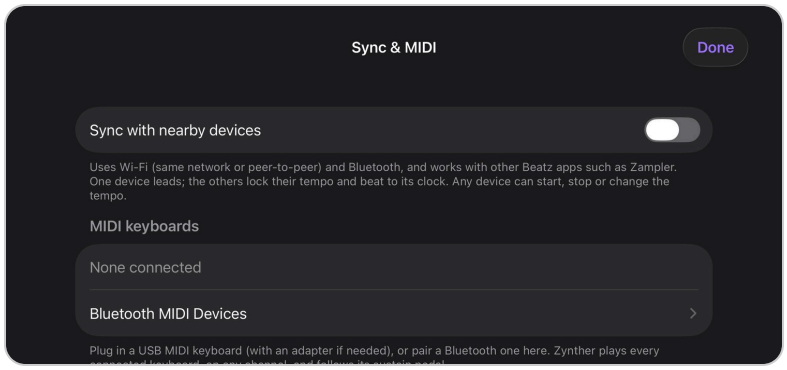
Exports are also saved in the Files app under **On My iPhone › Zynther › Exports** (On My iPad on iPad).

Sample rate

At the top of Recording, choose whether takes are recorded at **44.1** or **48 kHz**. Changing it briefly restarts the audio engine. If your audio device can't run at the chosen rate, takes are resampled at high quality when you stop.

9 Sync, MIDI and Zampler

Play in time with friends, and play Zynther from a real keyboard. Tap the Sync button at the right of the top bar to open Sync & MIDI.



Sync & MIDI.

Syncing devices

Turn on **Sync with nearby devices** on each device running Zynther or Zampler. They find each other over Wi-Fi (the same network, or directly, peer to peer) and Bluetooth; no internet or account is needed. Allow local network access when iOS asks.

- Up to eight devices share one tempo and start and stop together. Any device can start, stop or change the tempo.
- One device is the **leader**; the others lock their tempo and beat to its clock. Tap **Take the lead** to make this device the leader.
- The arpeggiator, Repeat, the synced LFO and the looper follow the shared beat, and the delay follows the shared tempo.
- **Peers** lists the devices found and the app each one runs. **Clock lock** shows how closely this device follows the leader.

MIDI keyboards

Plug in a USB MIDI keyboard (with an adapter if needed), or pair a Bluetooth one under **Bluetooth MIDI Devices**. Zynther plays every connected keyboard, on any channel, and follows its sustain pedal. Connected keyboards are listed here.

Zampler, Zynther's companion

Zampler is a pocket sampler from the makers of Zynther, sold separately on the App Store. The two apps connect:

- Sync keeps them on the same tempo and beat across nearby devices.
- Loops and takes you save to the Beatz library load straight into Zampler, ready to chop across pads, play in key or stretch into granular clouds.

10 Zynther as an Audio Unit

Zynther also runs inside music apps that host AUv3 instruments, such as GarageBand, Logic Pro for iPad, AUM, Loopy Pro, Cubasis and Drambo. It comes with the app; there is nothing extra to buy.

Loading it in GarageBand

1. Create a new song, or open one.
2. Swipe to **Audio Unit Extensions** in the instrument browser.
3. Choose **Zynther**. Its window opens above GarageBand's keyboard.

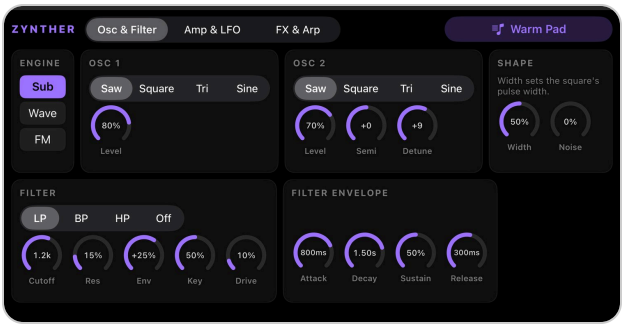
Other hosts list it as **Pretty Kitty: Zynther** among their instruments.

On a Mac

On a Mac with Apple silicon, Zynther also runs in Logic Pro and GarageBand. In GarageBand:

1. In **GarageBand › Settings**, check **Enable Audio Units** (under **Audio/MIDI**) and uncheck **Open Settings in Control View by Default**.
2. Create a **Software Instrument** track. In Smart Controls (press **B**), click the instrument slot at the top of **Plug-ins** and choose **AU Instruments › Pretty Kitty › Zynther**.
3. Click Zynther's name in the slot to open its window.

> **Only sliders?** GarageBand shows a plain list of controls instead of Zynther's window while **Open Settings in Control View by Default** is checked. Uncheck it and open the window again.



The plugin window, showing two pages at once, with the sound menu at the top right.

The plugin window

- The same pages as the app, except Loop: **Osc**, **Filter**, **Amp**, **LFO**, **FX** and **Arp**. The window shows as many as fit, and the picker chooses between them.
- The sound menu at the top right loads a factory sound and shows the current sound's name.
- The host's own keyboard plays it, or any MIDI keyboard connected to the host, with the sustain pedal.

Songs, presets and automation

- The arpeggiator, Repeat and the synced LFO follow the host's tempo and transport, and the delay follows its tempo.
- Your sound is saved with the song.
- The factory sounds appear in the host's preset menu, and you can save presets of your own through the host.
- Every control can be automated from the host.

> **Good to know:** The looper, the metronome, recording and Sync stay in the app; in a host, the host does those jobs.

11 Reference

Factory sounds

SOUND	KIND	ENGINE
Pulse Keys	Keys	Wave
Electric Piano	Keys	FM
Drawbar Organ	Keys	FM
Fat Bass	Bass	Sub
Acid Line	Bass	Sub
Sub Bass	Bass	Sub
Morph Bass	Bass	Wave
FM Bass	Bass	FM
Square Lead	Lead	Sub
Soft Brass	Lead	Sub
Fold Lead	Lead	Wave
Sync Sweep	Lead	Wave

SOUND	KIND	ENGINE
Digital Lead	Lead	FM
Warm Pad	Pad	Sub
String Machine	Pad	Sub
Glass Pad	Pad	Wave
Pluck	Pluck & Bell	Sub
FM Bell	Pluck & Bell	FM
Marimba	Pluck & Bell	FM
Arp Pluck	Arp & Chord	Sub
Chord Stab	Arp & Chord	Sub
Step Arp	Arp & Chord	Wave
Wind Sweep	FX	Sub

Files

In the Files app, open **On My iPhone › Zynther** (or On My iPad). **Takes** holds your takes and the loops saved as takes; **Exports** holds exported files. Loops and takes saved to the Beatz library go to a folder the Beatz apps share, where Zampler finds them.

Devices

Zynther runs on iPhone and iPad, in landscape, with iOS 18 or later. On iPad it shows several pages at once; on iPhone Duo it spreads out when you unfold it. It plays through any audio output iOS supports, and from USB and Bluetooth MIDI keyboards.

Privacy

No accounts, no ads, no tracking. Zynther doesn't use the microphone. Local network and Bluetooth access are used only for Sync and Bluetooth MIDI keyboards. The full policy is at nickhwang.com/beatz-privacy.

Help and feedback

Questions, ideas or problems: send a message through nickhwang.com/contact, or visit nickhwang.com/zynther. If Zynther helps you make music, a rating on the App Store helps others find it.

Quick tips

- Tap the BPM repeatedly to tap the tempo; – and + nudge it by one.
- Drag knobs vertically, or horizontally for fine control. Double-tap to reset.
- Tap an empty preset slot to save the sound; tap a saved one to recall it. A dot means it has changed since.
- Set Chord to In Key, and every key plays a chord that fits.
- Tap ● to record a take; touch and hold it for your takes.