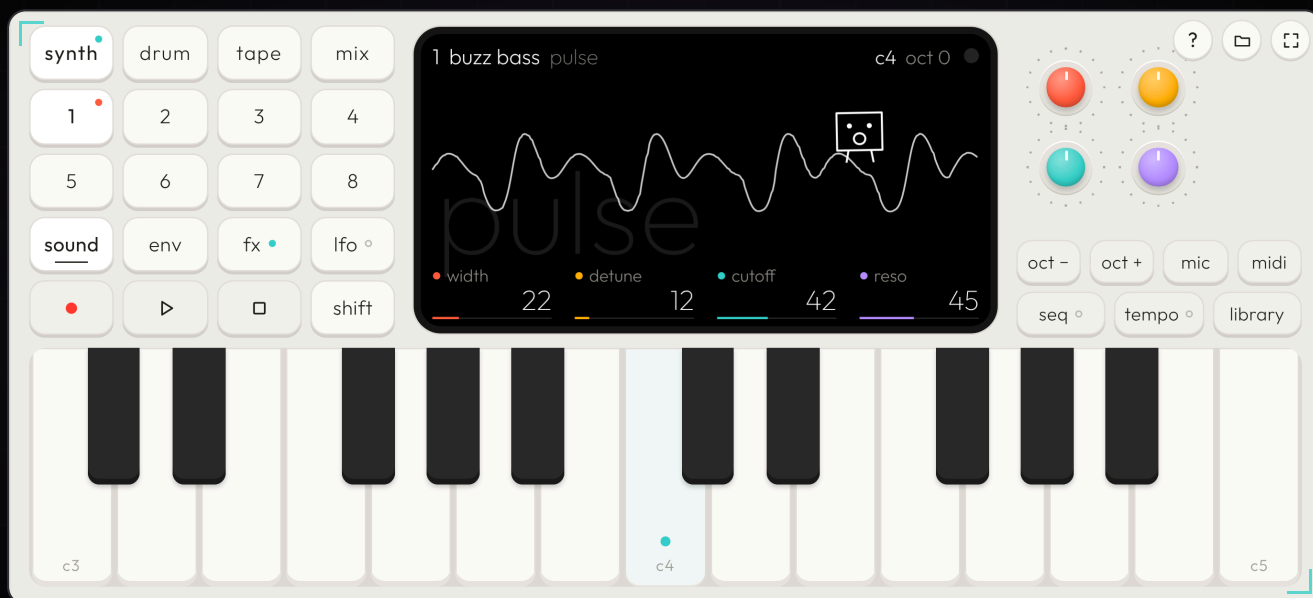


FIELD MANUAL

sketchbox

A POCKET STUDIO FOR YOUR PHONE

Synths, drum kits, a sampler, eight tracks of tape, song sections, sequencers and a mastering desk, all in one page that runs in your browser.



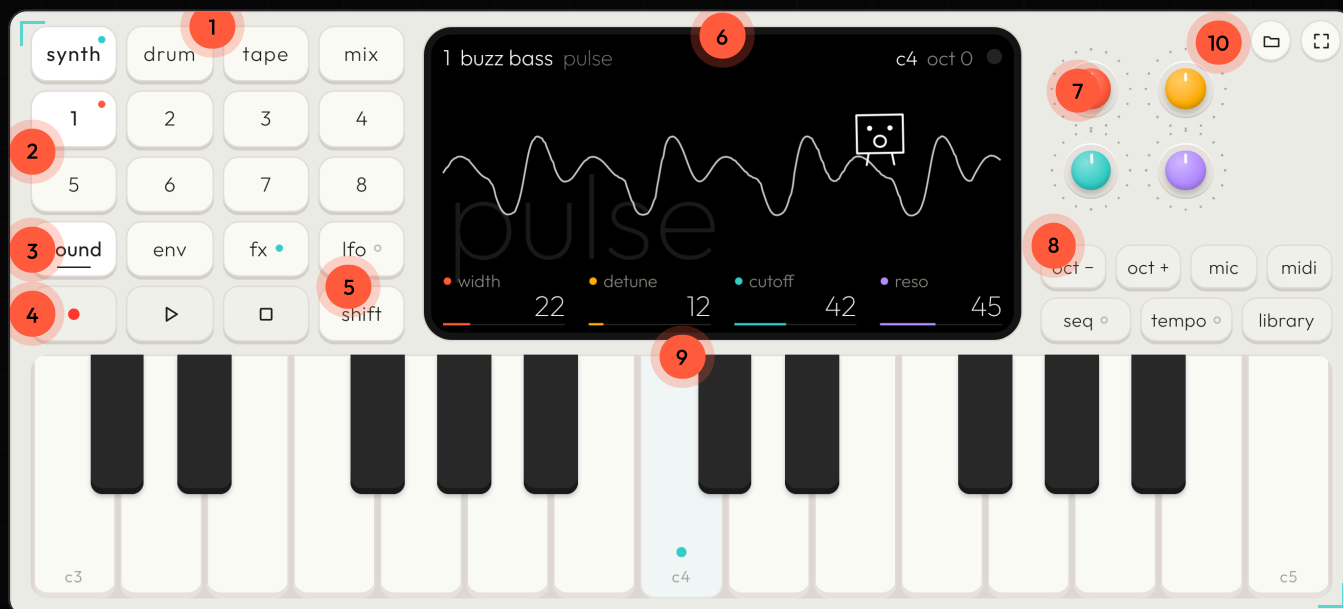
VERSION 1

LANDSCAPE · ANDROID · IPHONE

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00 · AT A GLANCE



- 1 modes:** synth, drum, tape (tap again for song) and mix.
- 2 number keys 1-8:** sounds or kits. In tape and mix they become tape tricks, and in song view, section tools.
- 3 page keys:** the four pages for the current mode, or tracks in tape.
- 4 transport:** record, play and stop.
- 5 shift:** hold it, or tap it once, to reach each key's second job.
- 6 display:** shows the page you're on. Its footer always labels the four knobs.
- 7 four knobs:** drag up or right to turn. Their colours match the footer.
- 8 utility keys:** ◀ ▶ (octave, key, or tape wind), mic, midi, seq, tempo, library / solo.
- 9 keyboard:** two octaves, multi-touch. Press lower on a key to play it louder.
- 10 manual, projects & full screen:** ? opens this manual, the folder saves and opens projects.

getting started

Open Sketchbox in Chrome on Android or Safari on iPhone, turn your phone sideways, and tap start. Everything you make is saved on the phone as you go.

on iPhone add Sketchbox to your home screen for full-page mode. Safari can't make a web page full screen, so in Safari tap the share button, then **Add to Home Screen**, and open Sketchbox from its new icon. It fills the whole screen with no address bar. Do this before you start: the home-screen app keeps its own projects and library, separate from Safari's.



FIG 1.1 START SCREEN

starting up

Browsers only allow sound after a tap, so Sketchbox begins on a start screen. Choose **Start playing** or **Start in full screen**.

Use a page served over https. The mic, MIDI and the precise recorder all need a secure page. MIDI works in Chrome; Safari on iPhone has no MIDI support.

full screen & projects

The round buttons in the top-right corner open this manual (?), your projects (the folder), and switch full screen on or off. If you leave the app and come back, one tap on the full-screen button puts you straight back in.

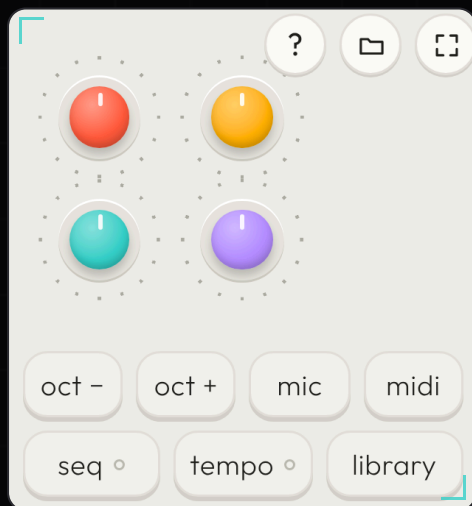


FIG 1.2 KNOBS AND UTILITY KEYS

knobs

The four knobs turn freely, with no end stops. Drag up or right to increase and down or left to decrease. Hold **shift** while turning for fine adjustment. The footer of the display names each knob's job and shows its value, colour-matched .

shift

Hold **shift** and press another key to reach that key's second job. You can also tap shift once to latch it for the next key press, which makes one-handed use easy. In tape and mix, holding shift relabels the number keys so you can see their second jobs.

keyboard

Two octaves, multi-touch. Slide between keys to glide from note to note, and press lower on a key to play it louder. In synth mode the ◀ ▶ keys read **oct -** **oct +**.

On a computer, the letter keys play too: A S D F G H J K L ; ' are the white keys from the lowest C, W E T Y U O P the black keys, and Z / X change octave.

tip every change saves itself as you go. Use projects (section 10) to keep separate songs and switch between them.

synth

Eight sound slots, each with six engines to choose from, an envelope, three layered effects and two LFOs.

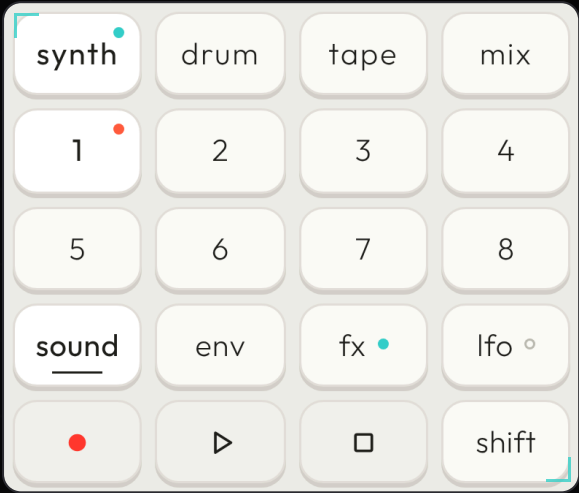


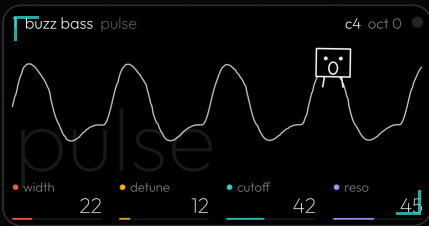
FIG 2.1 SYNTH MODE KEYS

slots and pages

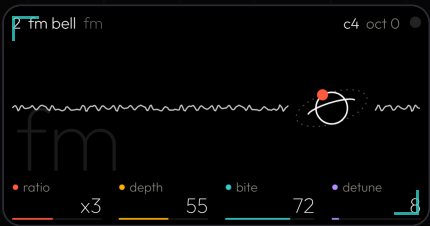
Number keys 1 – 8 pick a sound slot. You fill the slots from the library (section 04). Below them are the four pages: **sound** **env** **fx** **lfo**.

- **shift** + **sound** chooses the engine.
- **shift** + **env** opens the play page.
- **shift** + **fx** chooses an effect for the current slot.
- **shift** + **lfo** turns the LFO you're viewing on or off.
- **shift** + a number resets that slot to its starter sound.

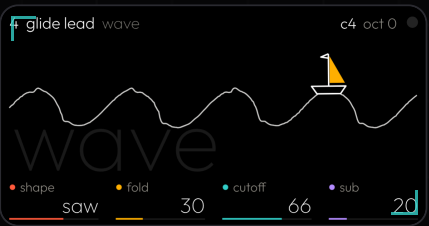
engines



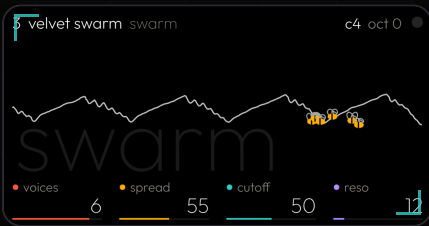
PULSE A HOPPING BOX



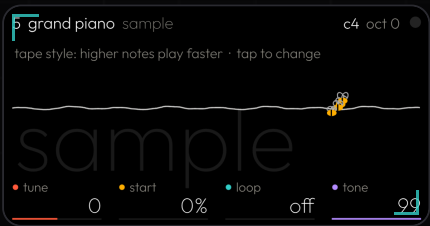
FM PLANET AND MOON



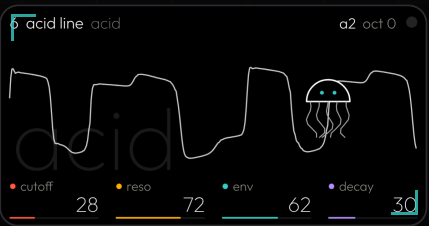
WAVE A BOAT ON THE WAVE



SWARM A CLOUD OF BEES



SAMPLE ANY RECORDING, PLAYED ACROSS THE KEYS



ACID A SQUELCHY BASS LINE, AFTER THE CLASSIC BOX

ENGINE	● KNOB 1	● KNOB 2	● KNOB 3	● KNOB 4
pulse	width	detune	cutoff	reso
fm	ratio	depth	bite (attack brightness)	detune
wave	shape (sine, tri, saw, square)	fold	cutoff	sub
swarm	voices (1–7)	spread	cutoff	reso
sample	tune (semitones)	start	loop (off, or loop from a point)	tone
acid	cutoff	reso	env (how far each note snaps open)	decay

record a sound in synth mode, hold **mic** for up to 12 seconds. Sketchbox trims the recording, finds its note and puts it on the current sound with the sample engine, ready to play across the keys. On the sample screen, tap the display to switch between **pitch only** (every key keeps the recording's length; the default for your own recordings) and **tape style** (higher keys play faster, lower keys slower; the default for built-in instruments).

envelope

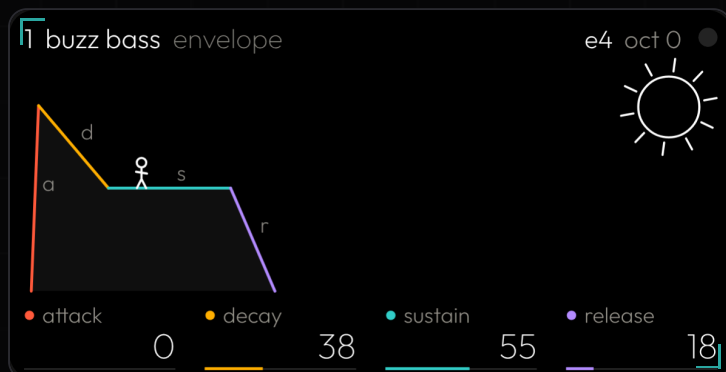


FIG 2.2 ENVELOPE, WITH A WALKER CLIMBING IT WHILE A NOTE IS HELD

The envelope shapes each note's volume over time: ● attack, ● decay, ● sustain and ● release. The sun grows with the level of the sound.

play page

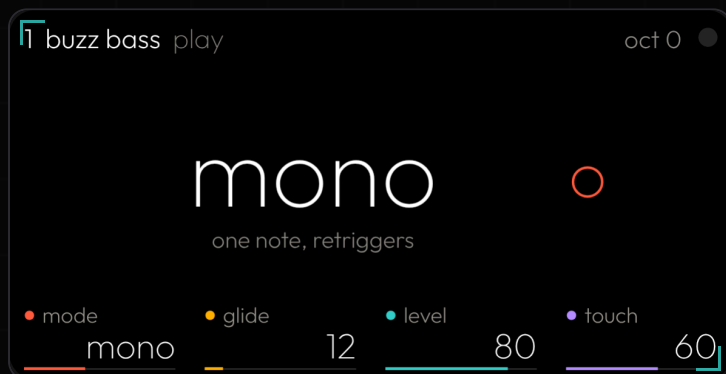


FIG 2.3 PLAY PAGE (SHIFT + ENV)

- **mode** poly plays chords of up to 12 notes. mono plays one note and retriggers it. legato plays one note with smooth slides.
- **glide** slide time between notes in mono and legato
- **level** the volume of the sound
- **touch** how much the key's velocity (or press position) affects volume

two LFOs

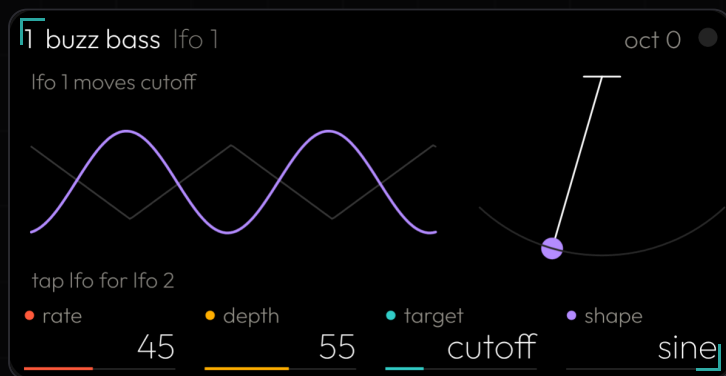


FIG 2.4 LFO: THE SELECTED WAVE IS BRIGHT, THE OTHER IS A GHOST LINE

Each sound has two LFOs. Tap **lfo** again to switch between LFO 1 and 2, and press **shift** + **lfo** to turn the one you're viewing on or off. The pendulum swings with the LFO.

● rate, ● depth, ● target, ● shape (sine, triangle, saw, square).

Targets: pitch, cutoff, volume, pan, or the other LFO's rate or depth. Pointing one LFO at the other builds sounds that keep evolving.

A MIDI mod wheel sets LFO 1's depth.

effects

Every sound and every drum kit has three effect slots, chained left to right. Layer up to three effects, in any order.

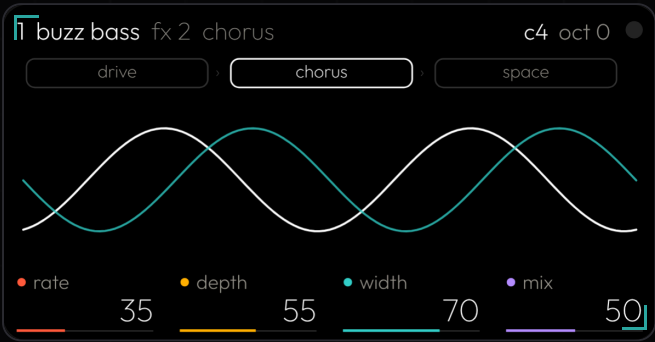


FIG 3.1 THE CHAIN STRIP: SLOT 2 IS SELECTED

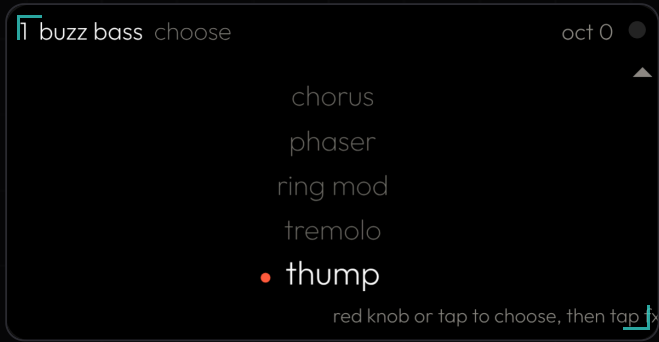


FIG 3.2 CHOOSING AN EFFECT (SHIFT + FX)

1. Go to the **fx** page. Tap **fx** again to step through slots 1, 2 and 3.
2. Press **shift** + **fx**, then turn the red knob or tap a name to choose an effect for that slot. The list scrolls to keep your choice in view. Choose empty to clear the slot.
3. Tap **fx** to close the list, then shape the effect with the four knobs.

EFFECT	1	2	3	4
delay	time	repeats	tone	mix
space	size	tone	predelay	mix
drive	gain	crush	tone	mix
filter	cutoff	reso	mode (low, band, high)	mix
chorus	rate	depth	width	mix
phaser	rate	depth	feedback	mix
ring mod	freq	tone	drift	mix
tremolo	rate	depth	stereo	shape
thump	squash	attack	release	mix

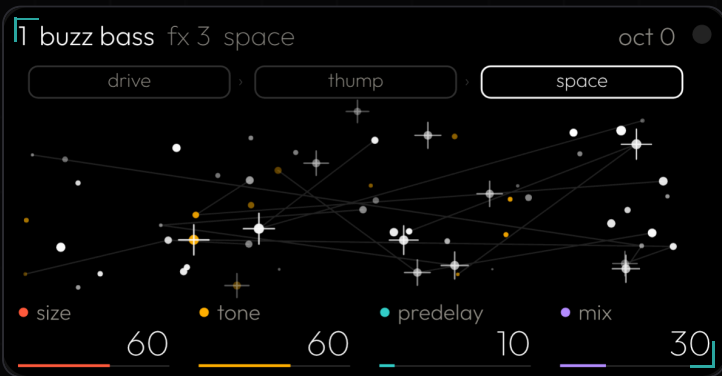


FIG 3.3 SPACE: A TWINKLING STAR FIELD

Each effect has its own visual. Delay bounces echo balls, space twinkles, drive is a flame (stepped when crushed), and filter draws its curve. Chorus overlaps waves, phaser sweeps notches, ring mod ripples, tremolo pulses and thump squashes a ball.

The LFO's cutoff target also sweeps any filter effect in the chain.

library

153 sounds and 50 drum kits, plus everything you make yourself. Browse, listen, then press a number key to save to that slot.

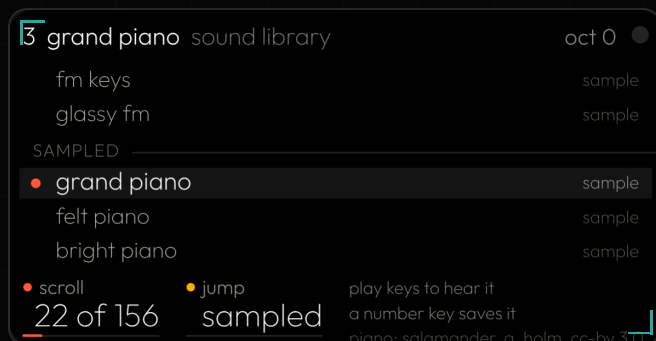


FIG 4.1 SOUND LIBRARY

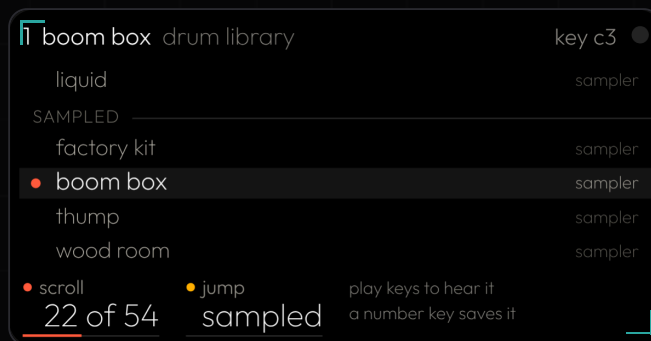


FIG 4.2 DRUM LIBRARY

browsing

- **library** opens the sound library in synth mode, or the drum library in drum mode.
- Scroll with the red knob, ◀▶, or by dragging the screen. The yellow knob jumps between categories.
- Whatever is highlighted is loaded straight away. Play the keys to hear it.
- Press **1**–**8** to save it to that slot. You can fill several slots before closing.
- Tap **library** again to close. The slot you were on goes back to what it was unless you saved over it.

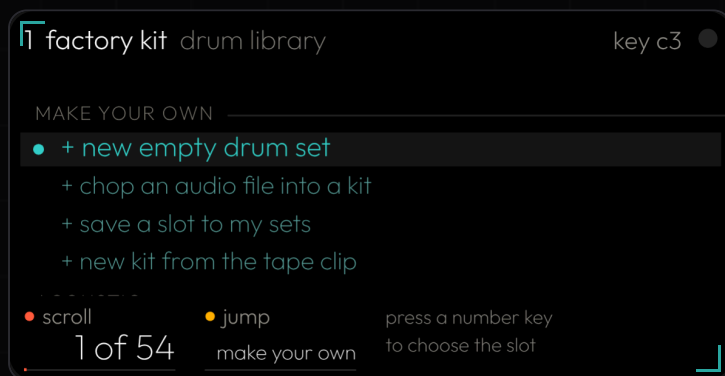


FIG 4.3 MAKE YOUR OWN

make your own

The top of each library holds actions. Highlight one, then press the number key for the slot it should use.

- **new sound from an audio file:** Sketchbox detects the file's pitch and spreads it across the keyboard.
- **new sound / kit from the tape clip:** uses audio you grabbed or cut on tape.
- **new empty drum set and chop an audio file into a kit:** see section 05.
- **save a slot to my sounds / my sets.**

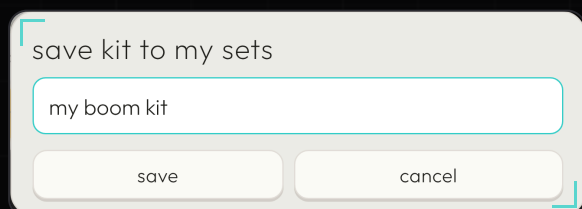


FIG 4.4 NAMING A KIT

naming, renaming, deleting

shift + **library** saves the current sound or kit and asks for a name. Anything you create (from a file, a chop or a tape grab) is saved automatically and you're asked to name it. Your items appear under **my sounds** and **my sets**.

On one of your own items: **shift** + ▶ renames it, and **shift** + ◀ deletes it (press twice to confirm).

drums

Each key is its own drum. Kits are either sampled, sliced from one recording, or synthesized from scratch.

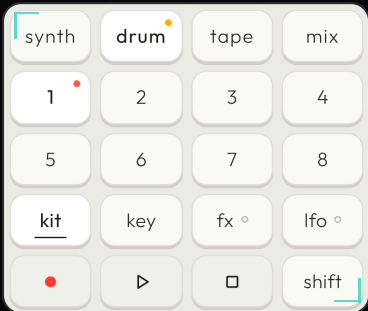


FIG 5.1 DRUM KEYS

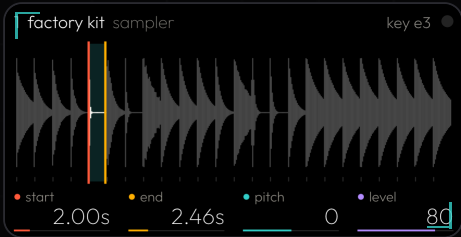


FIG 5.2 SAMPLER: THE KEY'S SLICE

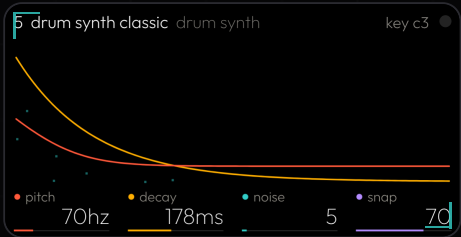


FIG 5.3 DRUM SYNTH CURVES

Play a key to select it, or step through keys with **key -** **key +**. The **kit** and **key** pages edit the selected key. **shift** + **kit** switches between sampler and drum synth.

	1	2	3	4
sampler · kit	start	end	pitch	level
sampler · key	play (once, hold, loop)	direction	pan	tone
drum synth · kit	pitch	decay	noise	snap
drum synth · key	level	pan	tone	body



FIG 5.4 KEY PAGE, WITH THE LOAD HINT

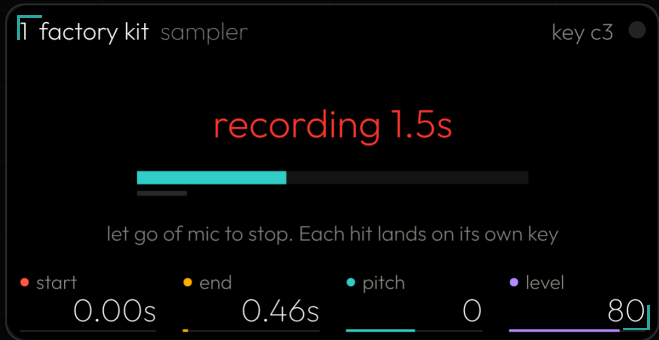


FIG 5.5 SAMPLING FROM THE MIC

build your own set

1. In the drum library, highlight **new empty drum set** and press a number key. You land on that kit's key page.
2. Select a key, then **tap the screen** to load an audio file onto it, or **hold mic** to record straight onto that key.
3. Repeat for other keys, then press **shift** + **library** to save the set with a name.

Whole-kit sampling: on the kit page, hold **mic** for up to 12 seconds. Sketchbox trims the recording, finds each hit and puts one on each key. **shift** + **mic** in drum mode chops the tape clip into the kit instead. A key-by-key edit works on any sampler kit.

tape

Eight tracks of up to six minutes each. Record, overdub, loop and edit, all saved on the phone automatically.

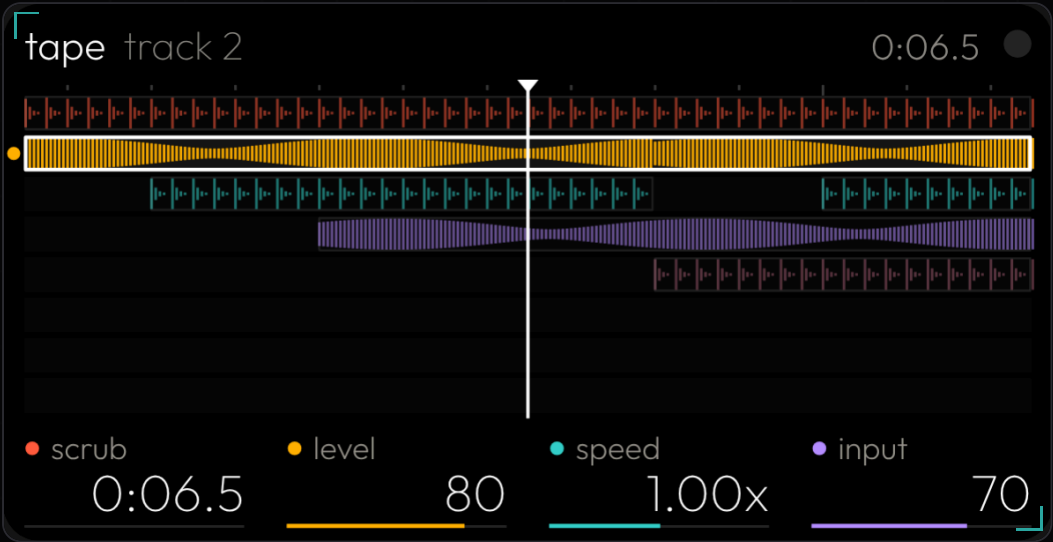


FIG 6.1 EIGHT LANES. TAKES ARE OUTLINED AND THE TAKE UNDER THE PLAYHEAD IS BRIGHT. SONG SECTIONS ADD LETTERED MARKERS HERE TOO

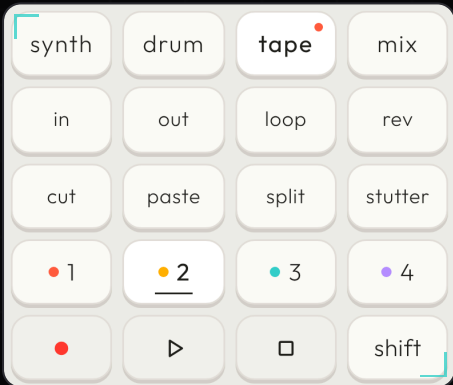


FIG 6.2 TAPE MODE KEYS

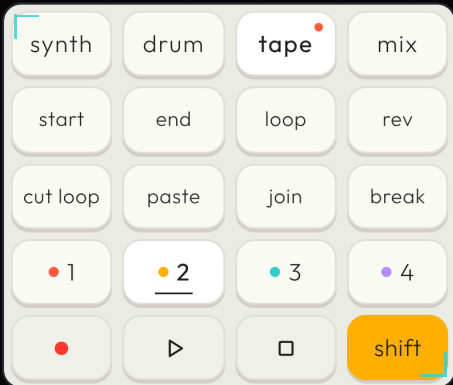


FIG 6.3 WITH SHIFT HELD

recording

1. Pick a track with the four track keys. Press the selected track again to flip between tracks 1–4 and 5–8.
2. Press to arm. Then press , or simply play a key. A key press starts the tape and the recording on the very first sample of that note, and starts any sequence on the same instant.
3. Press to stop. Press it again to go back to the start, or to loop in.

Takes overdub onto what's already there. **shift** + undoes the last take or edit, and **shift** + a track key (pressed twice) erases that track.

Knobs: scrub, track level, tape speed (0.5–2×), input level. Hold to rewind or fast-forward. **shift** + / jumps to the start or end.

KEY	TAP	WITH SHIFT
1	loop in	jump to start
2	loop out (turns loop on)	jump to end
3	loop on / off	—
4	reverse	—
5	cut the take under the playhead	cut just the loop region
6	paste the clip at the playhead	—
7	split the take at the playhead	join with the next take
8	stutter (hold)	break (hold)

song sections

Carve the tape into 4, 8 and 16-bar sections. Record each on a loop, then perform the song by queuing what plays next.

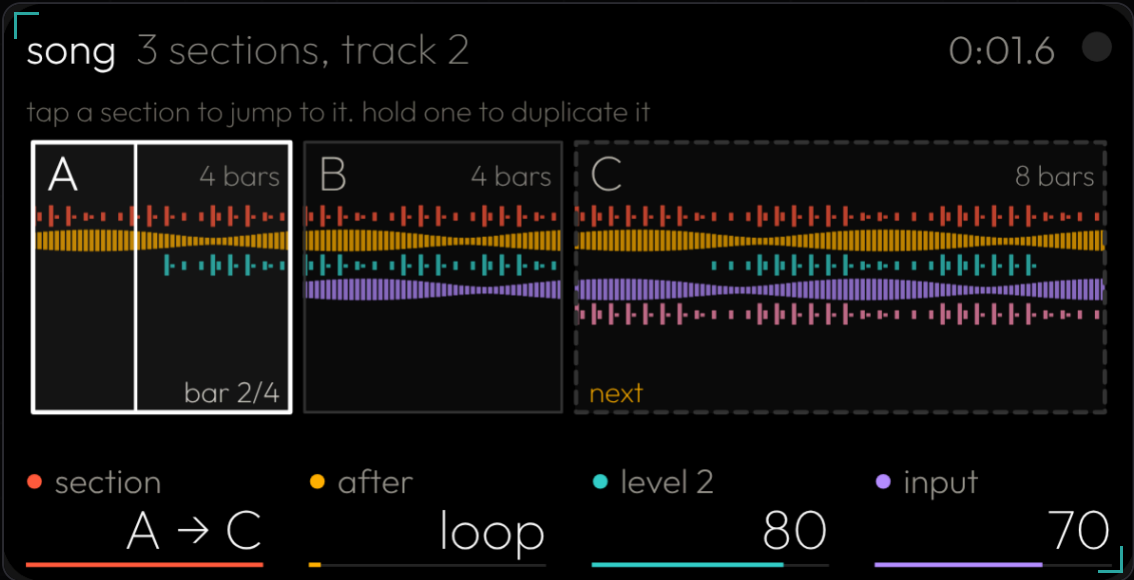


FIG 7.1 SONG VIEW: A IS PLAYING (BAR 2 OF 4) AND C IS QUEUED NEXT

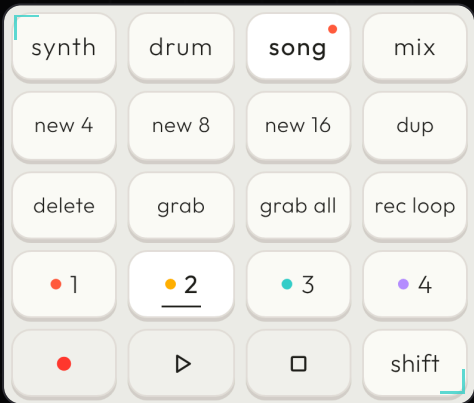


FIG 7.2 SECTION TOOLS ON THE NUMBER KEYS

making and recording

In tape mode, tap **tape** again to flip into song view. **new 4** **new 8** **new 16** add a section of that many bars at the current tempo, lettered A, B, C and so on.

rec loop arms the selected section and waits for **▶** or a key. It then records on repeat, so every pass layers on top. Each section remembers the track you recorded it on.

performing

While it plays, turn the red knob or tap a section to queue it. It flashes **next** and starts when the current one ends. The yellow knob sets what happens after a section: **loop**, **next** (play through in order) or **stop**.

building and sampling

dup, or hold a section	copies the section straight after itself across all 8 tracks. Everything after it shifts along.
delete	removes the section and its audio (press twice)
grab	copies the section from the selected track into the clip, without removing anything
grab all	copies a mix of every track in the section into the clip

sample your own loops layer several instruments on a section, **grab** or **grab all** it, then press **shift** + **mic**. In synth mode it plays across the keyboard as a new sound, and in drum mode it's chopped into a kit. Either way, it's saved to the library under the name you give it.

mixer

Levels and pan for all eight tracks, a master EQ, and a two-page mastering desk.

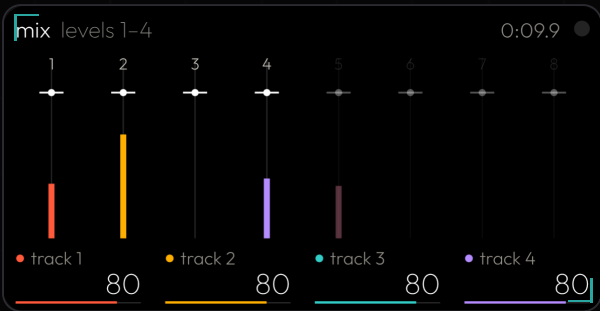


FIG 8.1 LEVELS: TRACKS 1-4 BRIGHT, 5-8 DIMMED

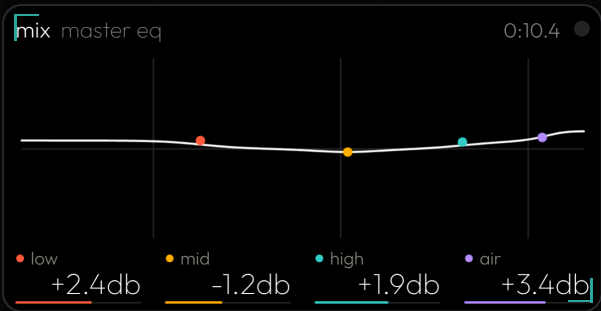


FIG 8.2 MASTER EQ

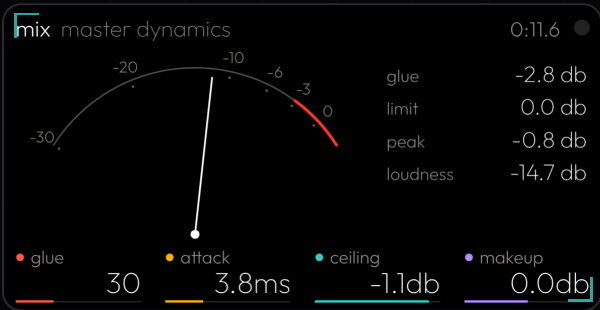


FIG 8.3 MASTER DYNAMICS AND NEEDLE METER

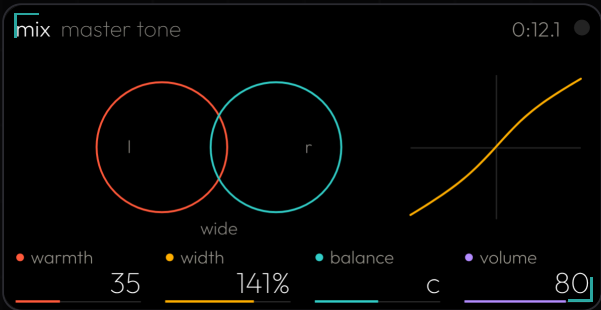


FIG 8.4 MASTER TONE: THE STEREO FIELD AND WARMTH CURVE

PAGE	1	2	3	4
level / pan	the four tracks in the current bank. Press level or pan again to flip between tracks 1-4 and 5-8.			
eq	low	mid	high	air
master · dynamics	glue (bus compression)	attack	ceiling (limiter)	makeup
master · tone	warmth (tape saturation)	width (mono to extra wide)	balance	volume

Press **master** again to switch between dynamics and tone. The dynamics page shows how much the glue and limiter are reducing, plus peak level and average loudness.

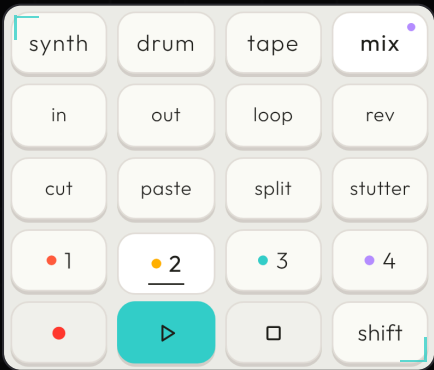


FIG 8.5 SOLO MODE: HOLDING TRACK 2

solo

In tape or mix mode, the library key becomes **solo**. Tap it to enter solo mode, then hold one or more track keys while the song plays. Only those tracks sound, and letting go brings everything back. To solo tracks 5-8, flip the bank first.

sequencers

The synth and the drums each have their own sequencer. Both lock to the same tempo, so they can run together.

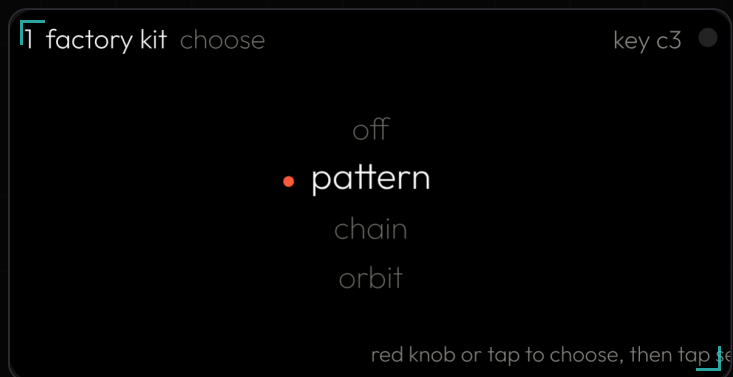


FIG 9.1 CHOOSING A SEQUENCER (SHIFT + SEQ)

playing a sequence

shift + **seq** chooses pattern, chain or orbit.
seq opens or closes the edit screen.

With the edit screen closed, hold a key to play. For the synth, the key you hold transposes the sequence, with middle C (c4) playing it as written. Turn on hold (knob 4) to keep it running hands-free. While a drum pattern is held, the keys play drums over it.

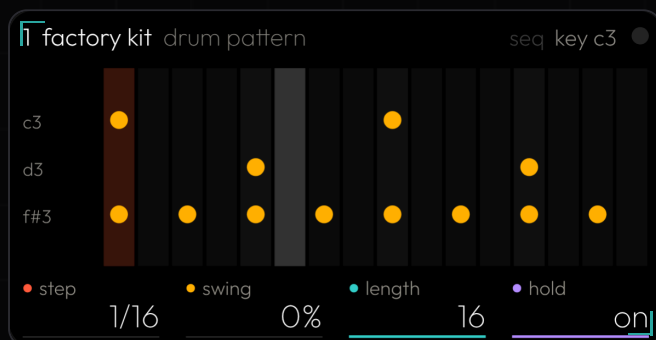


FIG 9.2 PATTERN: 16 STEPS, CHORDS ALLOWED

Pattern. Play keys to fill the step under the cursor, which then moves on. Press a note that's already there to remove it, or tap any cell on the grid. While the pattern runs, notes you play are recorded live. ◀▶ move the cursor, **shift** + ◀ clears a step, and **shift** + ▶ clears everything (press twice). Knobs: step, swing, length, hold.

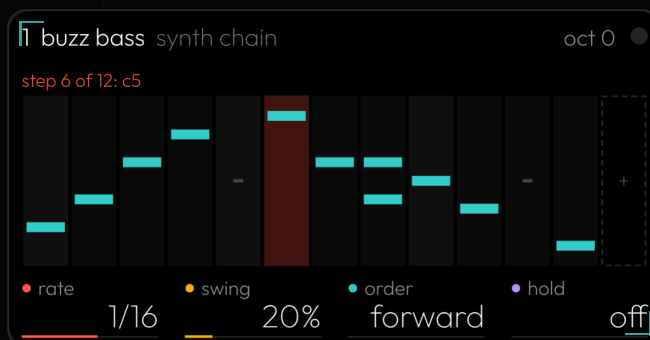


FIG 9.3 CHAIN: STEP 6 OF 12 SELECTED

Chain. Up to 99 steps. ◀▶ or a tap selects a step (you hear it). Play a key to replace it, or several keys at once for a chord. The dashed + slot adds to the end. **shift** + ▶ inserts a rest and **shift** + ◀ deletes. Knobs: rate (1/4 to 1/32 and triplets), swing, order (forward, reverse, bounce, random), hold.

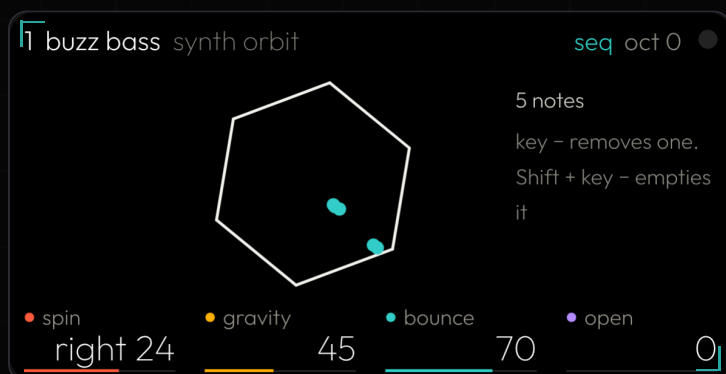


FIG 9.4 ORBIT

orbit

Every key you play drops a note into a spinning hexagon as a ball. Each wall hit plays its note, louder the harder it hits. Knobs: spin, gravity, bounce, and open, which widens a door in one wall so notes fall out over time. ◀ takes one out and **shift** + ◀ empties it.

tempo & metronome

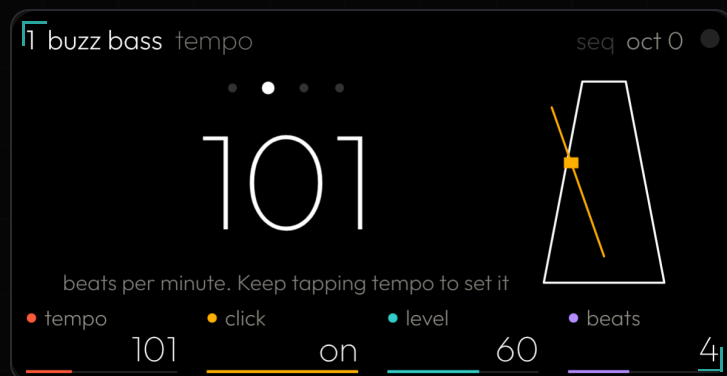


FIG 10.1 TEMPO SCREEN WITH THE METRONOME SWINGING

tempo opens the tempo screen. Keep tapping it in time to set the tempo by hand, or turn the red knob (40–240 bpm). **shift** + **tempo** turns the metronome on or off. It clicks while a sequencer or the tape is running and is never recorded. Knobs: tempo, click, level, beats per bar.

midi controllers

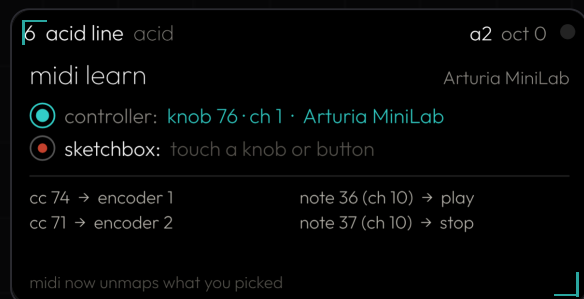


FIG 10.2 MIDI LEARN: WAITING FOR A KNOB OR BUTTON

- Plug in over USB, or pair Bluetooth in Android settings, then reload. Notes, velocity, pitch bend, sustain and mod wheel just work; channel 10 pads play drums.
- **shift** + **midi** starts learn. Move a control on your controller, then touch a knob or button here (either order). Learn keeps listening; tap **midi** to finish and save.
- Mappings are saved per controller. Endless knobs are detected automatically.
- In learn, pick something then tap **midi** to unmap it; **shift** + **midi** clears all.

projects

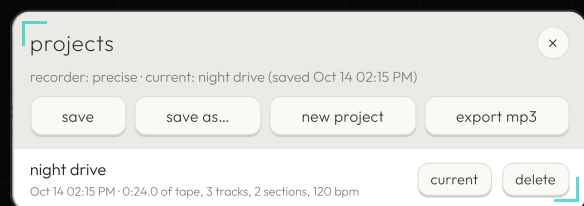


FIG 10.3 PROJECTS PANEL

The folder button opens projects.

- **save** stores everything: all audio, takes, sections, sequences, mixer, tempo, and your eight sounds and kits, including recorded samples. The first save asks for a name.
- **save as...** keeps a copy under a new name.
- **open** loads a project. If you have unsaved changes, it asks first. The page reloads, so tap start again afterwards.
- **new project** clears the tape, sections, sequences and mixer, and resets the tempo. Your sounds and kits stay.
- **export mp3** saves the song as an audio file (section 11).

The top line shows the recorder in use. Precise is normal. Compatibility mode means the browser blocked the precise recorder.

export as mp3

Turn the finished song, or a single section, into an MP3 you can send, post or play anywhere.

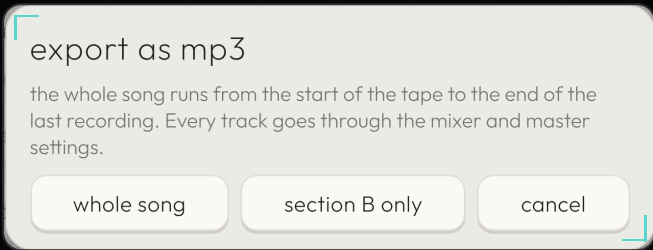


FIG 11.1 WHOLE SONG OR ONE SECTION

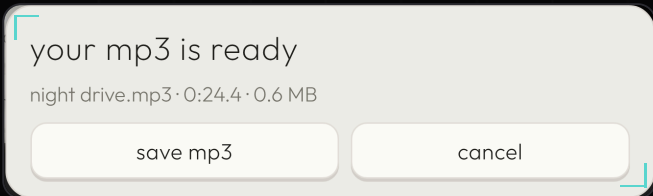


FIG 11.2 READY TO SAVE

exporting

1. Open projects (the folder button) and tap **export mp3**.
2. If the song has sections or a loop, choose the whole song or just the **current section / loop**.
3. Sketchbox mixes it down and encodes it, showing the progress on the display.
4. Check the name, length and size, then tap **save mp3**. On Android it goes to your Downloads folder. On iPhone the button reads **share / save** and opens the share sheet, so you can save to Files, AirDrop or message it.

what's in the file

length	from the start of the tape to the end of the last recording, or of the last song section if that's later
mix	all eight tracks at their mixer levels and panning, through the master EQ, warmth, glue, width, balance, volume and limiter, exactly as you hear it in mix mode. Solo is ignored.
format	192 kbps stereo MP3
name	your project's name, for example "night drive.mp3" or "night drive - section B.mp3"

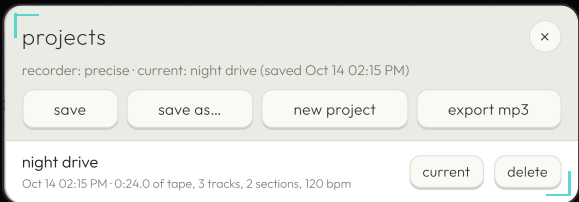


FIG 11.3 EXPORT MP3 SITS WITH THE PROJECT BUTTONS

tips

- Save the project first. The file is named after it, and you can always come back and export again.
- Use mix mode to balance levels and shape the master before you export. What you hear there is what you get.
- Export a single section to share an idea quickly, or to make a loop for another app.

good to know the MP3 encoder comes with the app; if it ever can't load, Sketchbox saves a WAV file of the same mix instead. Playback and sequencers stop while exporting. Export works when Sketchbox is opened directly; some embedded viewers can't save files.

quick reference

shift combinations

SHIFT +	SYNTH	DRUM	TAPE / SONG / MIX
number key	reset sound to its starter	reset kit (press twice if it holds your recording)	trick's second job (start, end, cut loop, join, break)
page key 1	choose engine	choose sampler / drum synth	tape: erase track (press twice)
page key 2	play page	—	—
fx	choose effect for this slot	choose effect for this slot	—
lfo	this LFO on / off	this LFO on / off	—
tape key	erase the whole tape (press twice)		
•	undo the last take, cut or paste		
▶ (play)	play backwards		
◀ / ▶	library: delete / rename your item · sequencer: delete / insert		jump to start / end
mic	map the tape clip across the keys	chop the tape clip into this kit	—
midi	MIDI learn		
seq	choose the sequencer type		
tempo	metronome on / off		
library	save this sound or kit to the library, with a name		—

what the keys do in each mode

KEYS	SYNTH	DRUM	TAPE	SONG	MIX
1-8	sounds	kits	tricks	section tools	tricks
page keys	sound · env · fx · lfo	kit · key · fx · lfo	tracks	tracks	level · pan · eq · master
◀ ▶	octave	select key	wind (hold)	wind (hold)	wind (hold)
knobs	page params	page params	scrub · level · speed · input	section · after · level · input	page params
library key	sound library	drum library	solo	solo	solo

troubleshooting

IF ...	TRY THIS
full screen won't switch on	Open the page in the browser itself, not inside another app's built-in browser. On iPhone, add Sketchbox to your home screen instead (section 01). A message explains why if full screen is refused. After coming back to the app, tap the corner button once.
the mic or MIDI is blocked	Allow them for the site in your browser settings. They need an https page, and some embedded viewers block them, so open the link directly.
recordings start late	Check the projects panel. "recorder: precise" should be showing. Arm, then start with ► or a key.
no sound	Make sure the instrument was started (the start screen) and the phone's volume is up. On iPhone, Sketchbox plays even with the silent switch on; after a call or the lock screen, tap anywhere to wake the sound. Turn up the track and master levels in mix.
a sound says it needs its sample	Its audio isn't stored in this browser. Load it again from the library, or re-import the file.
my work has gone	Projects and the library live in the browser you made them in. Each web address, and an iPhone home-screen icon, keeps its own. Clearing the browser's site data erases them.
export gave a wav, not an mp3	The MP3 encoder couldn't load, so Sketchbox saved a WAV of the same mix. Reload the page and export again.
export doesn't save	Some embedded viewers can't save files. Open Sketchbox directly in the browser and export again.
tape is full	Each track holds about 6 minutes. Cut or delete takes, or start a new project.

good to know

- A full 8-track tape uses roughly 550 MB of storage. Projects add a copy of their audio when saved.
- Key-started takes begin about 30 ms after the press. Sketchbox schedules that first note a moment ahead so the recording starts exactly on it.
- Knob changes on the master page affect playback and listening, not what's recorded to tape.
- The metronome is never recorded.
- Acid sounds: hit a key hard (or send velocity over 100) for the accent. In a mono sound, overlapping notes slide into each other, just like the classic bass line box.
- Drum & bass kits: the machine kits put eight acid notes on their top keys; the dnb, jungle and liquid kits put a tuned sub or reese bass there. Try the tempo around 170–175.
- Built-in instruments download the first time you pick them, then stay on the phone and work offline.
- Hearing clicks on a very busy project? On the start screen, tap **audio buffer** and choose steady.

credits

Grand piano samples: Salamander Grand Piano by Alexander Holm, licensed CC-BY 3.0 (creativecommons.org/licenses/by/3.0/), via the Tone.js audio collection. Sampled instruments: rendered from the FluidR3 GM soundfont by Frank Wen, MIT licence. Acoustic kits: Versilian Community Sample Library, CC0. The other drum kits and synth sounds are generated inside Sketchbox. Interface type: Outfit, licensed under the SIL Open Font License. MP3 encoding: lamejs, a JavaScript port of the LAME encoder, licensed LGPL-3.0, included with the app.

sketchbox
MAKE SOMETHING