Particle Chimes

iPad and iPhone

Contents

1. Particle Chimes 7
2. Your first sound 10
2.1 What happens on a clean install 10
2.2 Touch the ribbon 10
2.3 Try a different sound 10
2.4 Turn a knob 10
2.5 Where to go next 12
3. Play and Studio 13
3.1 Switching surfaces 13
Which one opens first 13
3.2 How the sound is built 13
3.3 Play 14
3.4 Studio 16
iPad 16
iPad — compact windows 16
iPhone 17
3.5 Where to go next 19
4. The performance ribbon 20
4.1 The three modes 20
NOTES 20
FREE 20
TEXTURE 20
4.2 FIXED: the theremin column 20
4.3 The KEY chip and octave 21
4.4 Ridge density 21
4.5 The settings sheet 21
5. The AUTO player 22
5.1 Turning it on 22
5.2 The three patterns 22
5.3 Tempo 22
Following a host transport 22
5.4 Movement 23
5.5 Where to go next 23
6. Tuning 24
6.1 Built-in tunings 24

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6.2 Reference pitch 24
6.3 Importing a Scala file 24
6.4 How tuning interacts with the scale 24
6.5 MTS-ESP 24
6.6 What gets saved 25
7. Presets and favorites 26
7.1 What's in the sheet 26
7.2 Loading a sound 27
7.3 Saving your own sound 27
7.4 Deleting 28
7.5 Favorites 28
8. Particle modes 29
8.1 Switching engines 29
8.2 GRAINS 29
8.3 LOOP 29
8.4 STRETCH 30
8.5 What doesn't change 30
8.6 Where to go next 30
9. Visualizers 31
9.1 Picking a skin 31
9.2 What reacts to sound 33
9.3 What reacts to touch 33
9.4 Freeze and maximize 33
9.5 Recording and exporting video 35
9.6 Hi-Res Visuals 36
9.7 Sleep Mode 37
9.8 What's New 40
9.9 Where to go next 40
10. Visualizer skin catalog 41
10.1 Free 41
Cloud 41
Cymatic Lines 41
Liquid Mercury 41
Ocean Current 41
Signal Flow 41
10.2 Flow Pack 42
Indigo Ink 42
Candy Swirl 43

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Squid Ink 43
Creamsicle 43
Bioluminescence 43
Jet Stream 43
Magma 43
10.3 Scientific Pack 44
Scope 44
Trace 44
Spectrograph 44
Ripple Tank 44
Chladni Dust 44
Harmonograph 45
Seismograph 45
Oscilloscope 45
Rosette 45
10.4 Fractal Pack 45
Julia Bloom 46
Spiral Bloom 46
Fractal Tree 47
Radial Mandala 47
String Weave 48
Shattered Light 48
Obsidian Bloom 49
10.5 Complete Collection 49
Coral Bloom 49
Harmonic Filaments 49
Tidal Glass 49
Tidepool 49
Aurora Loom 50
Strings 50
Cloth Mesh 50
10.6 Black & White 50
Bands 50
Halftone 50
Rorschach 51
Word Flipper 51
Word Flipper Paper 51
ASCII 51

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Rorschach Wall 51
Turing 51
10.7 Experimental 52
Fireflies 52
Koi Pond 52
Frost 53
11. External displays 54
11.1 Connecting 54
11.2 Two modes 54
Dedicated (default) 54
Mirror 54
11.3 Resolution and quality 54
11.4 Streaming 54
11.5 Where to go next 55
12. Particle Chimes as an AUv3 56
12.1 The plugin's interface 56
12.2 MIDI 56
12.3 Automatable parameters 57
12.4 What's recalled but not automatable 58
12.5 Factory presets 58
13. Settings reference 59
13.1 SETTINGS (performance ribbon gear icon) 59
Root & Scale 59
AUTO 59
Tuning 60
Movement 60
Fixed pitch and ridge density 60
13.2 CHIMES (Resonator panel gear icon) 60
13.3 Play mode knobs 61
Resonator card 61
Particles 61
13.4 Studio effects panels 61
Delay 61
Bloom 62
14. Troubleshooting 63
15. Lineage 64
15.1 Rings: the resonators 64
15.2 The alternate firmware: Mini-Elements 64

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15.3 Clouds: the particles 64
15.4 What's ours 64

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1. Particle Chimes

An ambient synthesizer for iPad and iPhone. A resonator you can pluck, bow, or scrape, with a granular effect engine that creates a cloud of sound, and dozens of visualizations that respond to whatever you're playing.

Particle Chimes runs two ways:

- **Standalone**, as its own app.
- **As an AUv3 instrument** inside a host like AUM or Logic Pro, alongside your other tracks.

The app has two surfaces. **Play** is the fast way in: a handful of knobs, a sound browser, and a big visual. **Studio** is the same instrument with every control exposed, laid out across each section of the synth, resonator, particles, delay, and reverb.

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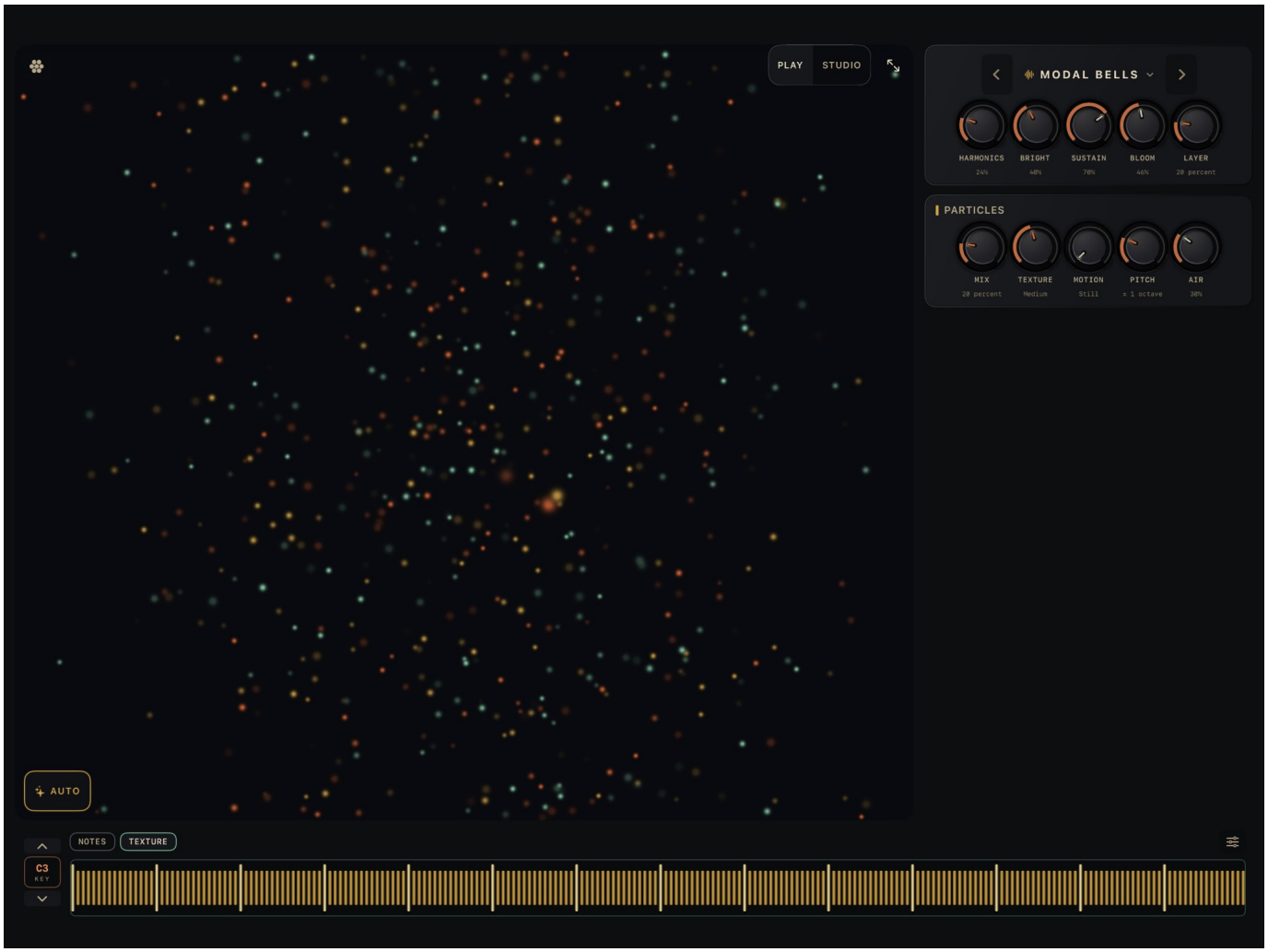

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Your first sound

From opening the app to playing something in about two minutes.

Get started →

Play and Studio

What the two surfaces show, and how to move between them.

Read the interface guide →

The performance ribbon

The touch strip at the bottom of the screen: NOTES, FREE, TEXTURE, FIXED.

Learn the ribbon →

Inside a host

Loading Particle Chimes as an AUv3 instrument, and what's automatable.

AUv3 hosting →

Guide works through the instrument: the Play and Studio layout, the performance ribbon and its four modes, the AUTO player, microtonal tuning, presets and favorites. **Reference** is for looking things up: every visualizer skin and what happens when you touch it, the full SETTINGS sheet, and the AUv3 parameter list for automating Particle Chimes from a host. The appendix has troubleshooting and the instrument's lineage.

This manual describes the current build of Particle Chimes. It doesn't cover tvOS.

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2. Your first sound

Open Particle Chimes for the first time and it plays itself.

2.1 What happens on a clean install

Let it run for a few seconds before you touch anything. A brand-new install opens full-screen into **Play**, the simplified surface. It loads a factory sound called **Modal Bells**, with the **Ocean Current** visual behind it. By default the AUTO player is active, and so is MOVEMENT drift, modulating a set number of parameters with gentle LFOs. That starts a simple ambient progression you can add to by tapping the performance ribbon at the bottom or strumming the screen.

> **Returning to a clean install**
>
> If you've used the app before (a saved sound, or a visualizer skin you've picked), the app will open with Auto off instead. The plays-itself intro is first-run only.

A first install also opens a three-card **WELCOME** sheet over the top of all this: Sounds, Visuals, and Studio, one card each pointing at the sound stepper, the visualizer picker, and the PLAY/STUDIO switch. It plays right through it, so you can read the cards while the intro is already going. Swipe through and tap **Start playing** on the last card, or just dismiss the sheet.

If you've used the app before and a new version adds something worth knowing, you get a **WHAT'S NEW** sheet instead, once per version, the first time you open the updated app. You can reopen the same note later from the **What's New** row at the bottom of the visualizer picker (see Visualizers). Neither sheet appears when Particle Chimes is running as the AUv3 plugin inside a host.

Modal Bells is a modal resonator patch with a moderate level of granular processing, which creates a touch of drone underneath, with reverb tying it all together.

2.2 Touch the ribbon

Drag your finger along the gold ridged strip at the bottom of the screen: the **performance ribbon**. Tap the individual segments to play notes, or strum across the whole ribbon. That's **NOTES** mode, the default. Play over whatever AUTO and the drone are already doing. The performance ribbon covers the other modes. Try **TEXTURE** mode for something different. The textured surface is guiro-like in the way it responds, clicking from note to note as you cross the ridges, and each new note re-triggers.

2.3 Try a different sound

Above the ribbon in the main sounds panel is the presets picker. Tap the chevrons on either side to step through other sounds. Tap the name to open the sound browser, explore the preset groups: Getting Started, String, Bells & Mallets, Voices & Organs, Slow Time, Choirs & Ensembles, Loops & Echoes, Grain Gardens, and a six-rung Calm ↔ Chaos ladder that runs from a bare strum up to a runaway chorus. Tap any preset to load it.

Getting Started leads the browser: six sounds pulled from further down the list so a first visit sees the instrument's range in one stop — Modal Bells, Sympathetic String, Velvet Voice, Kalimba, Chime Halo, and Cathedral.

2.4 Turn a knob

Play gives you ten knobs across two panels:

- The **resonator panel**, under the preset name: Harmonics, Bright, Sustain, Bloom, Layer.
- **Particles**, the granular effect: Mix, Texture, Motion, Pitch, Air.

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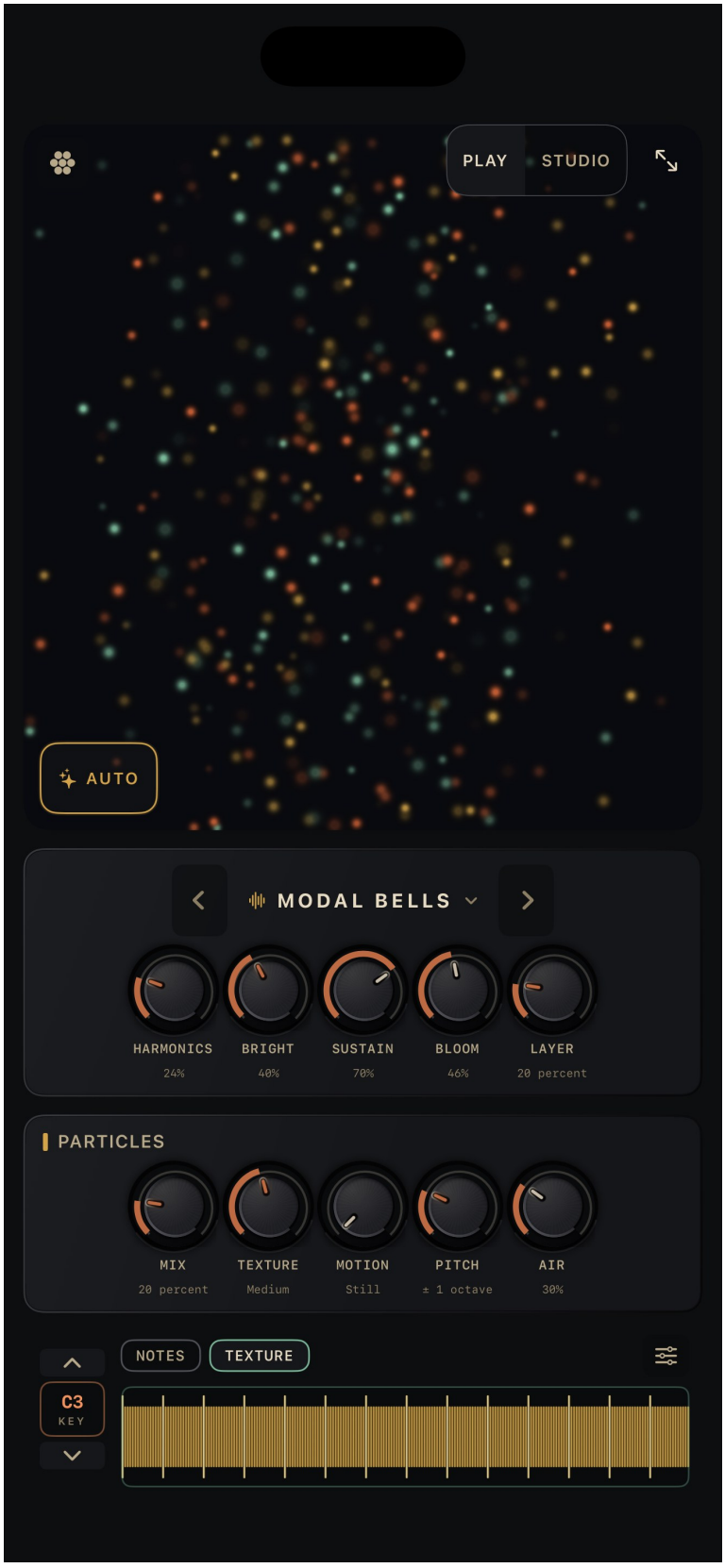
Turn Bloom up. The resonator's tail thickens and starts to feed back on itself. Turn Mix up and the granular layer comes forward. Layer sets the level of the sustaining second voice, the wash underneath; it also controls the level of the strums on the visualization. Every knob's range and default is in the settings reference.



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2.5 Where to go next

- Play and Studio: what each surface shows, and how to switch between them.
- The performance ribbon: NOTES, FREE, TEXTURE, and the FIXED theremin column.
- The AUTO player: what's generating notes on its own, and how to shape or tempo-sync it.
- Visualizers: the full skin catalog and what each one does when you touch the screen.
- Record a video of what you played: audio and visuals together, exported to your Photos library. It is the most asked-about feature and the hardest to stumble on, so: it is called **Record Performance**, it lives in the **skin picker**, and it is at the **bottom of the sheet, below the whole skin list**.

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3. Play and Studio

Particle Chimes has two surfaces sharing one instrument. Everything you play or dial in on one carries straight over to the other; switching surfaces never resets your sound.

3.1 Switching surfaces

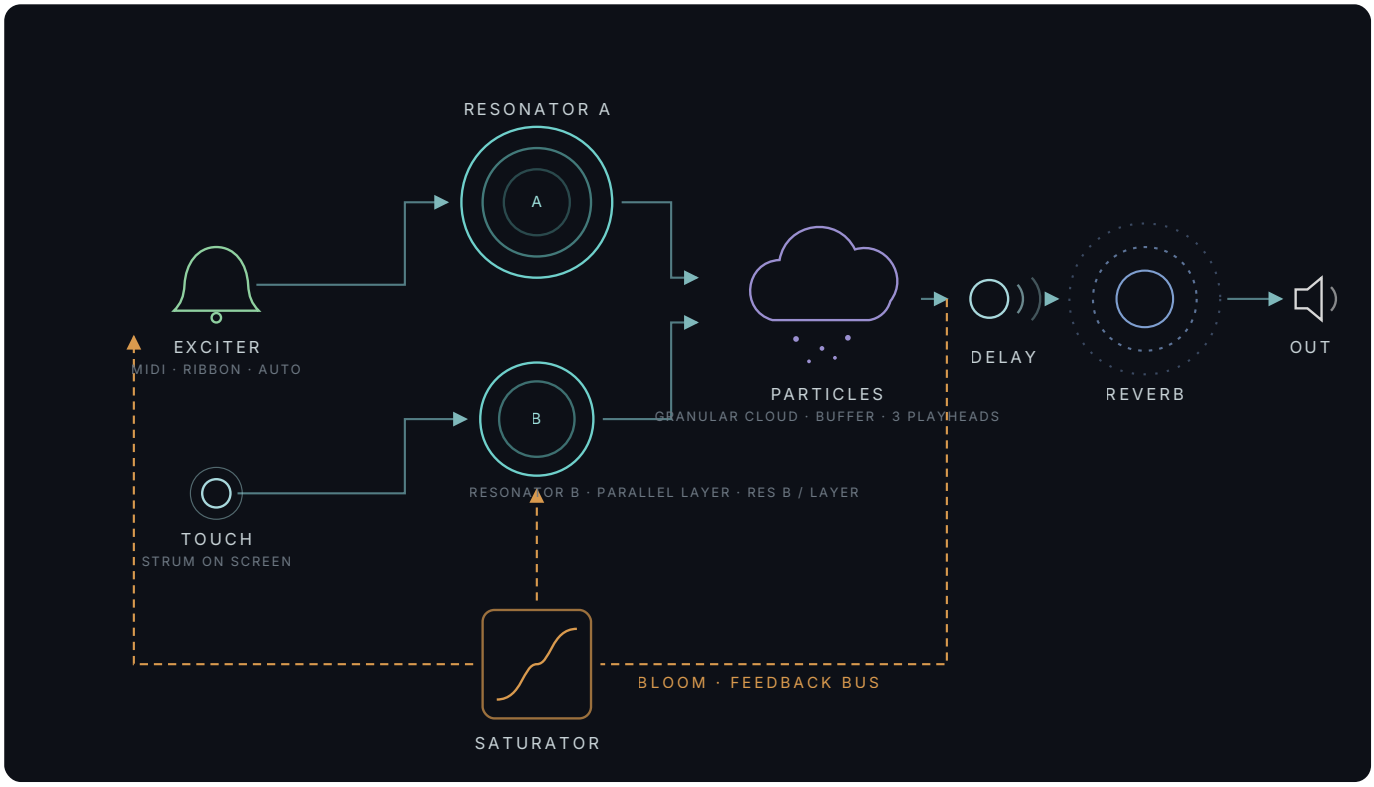
Tap the half you're not on in the **PLAY | STUDIO** pill to switch. The pill is two text segments on a dark scrim; look for it over the visual in Play, in the top bar on iPad Studio, and in the visual cluster on iPhone Studio.

Which one opens first

A clean install opens into **Play**. If the app finds evidence you've used it before (a saved user preset, or a visualizer skin you've picked), it opens into **Studio** instead. After that it remembers whichever surface you last had open and returns to it on the next launch.

3.2 How the sound is built

One signal path runs underneath both surfaces:



The **exciter** (MIDI notes, the performance ribbon, or the AUTO player) and your **touch** on the visual strike two **resonators**. A is the main voice. B (labelled **Layer** in the app) is the parallel sustain voice you hear as the wash under the sound. Their ringing feeds the **particle cloud**, a granular engine that continuously records the resonators into a buffer and reads it back with three playheads. From there the sound passes through the **delay** and the **reverb** to the output. The amber loop is **Bloom**: a feedback bus that taps the sound after the cloud and folds it back into the resonators through a soft saturator, so the instrument can swell and self-sustain.

Every block in this diagram maps to a Studio panel. The same schematic runs in the app as the free **Signal Flow** visualizer skin, drawn live from the signal: pick it from the skin picker and watch a strike ring the resonators, smear into the cloud, and loop back as bloom.

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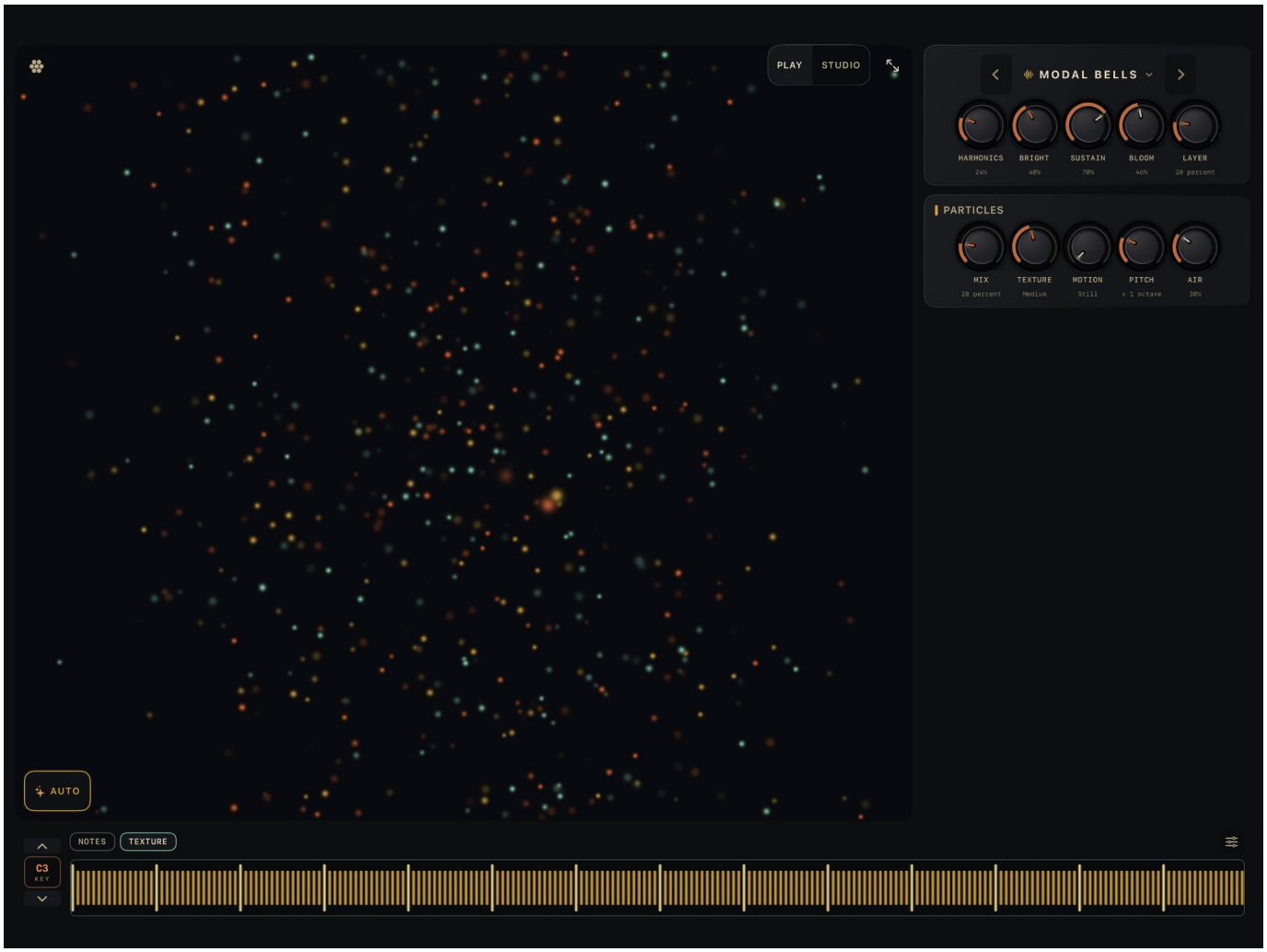
3.3 Play

Play is one layout that adapts to your device and orientation: portrait, landscape, or a maximized full-screen mode. It always shows three things:

- The **visual** (the "hero"), full-bleed behind everything.
- Two knob cards: the **resonator card** under the sound-name stepper (Harmonics, Bright, Sustain, Bloom, Layer) and **Particles** (the grain stream: Mix, Texture, Motion, Pitch, Air). Layer is the level of the second, sustaining resonator voice, the drone-like wash under the sound; it reads "Off" when turned all the way down.
- The **performance ribbon** along the bottom, in NOTES and TEXTURE modes only. FREE mode is Studio-only.



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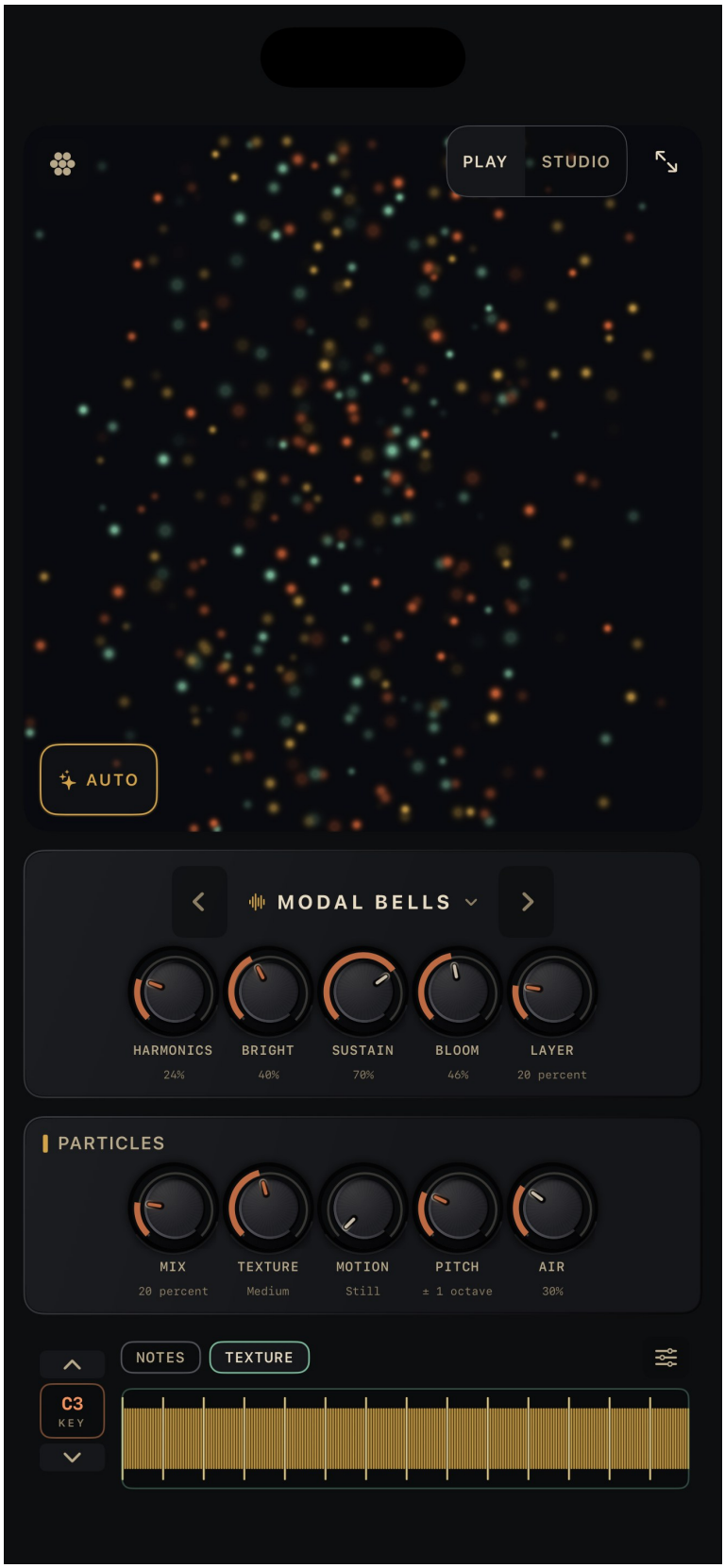

Above the resonator card, the preset picker shows the current sound's name with a chevron on either side; tap the name to open the sound browser. See Presets and favorites for what's in there.

A few controls sit over the visual itself. The **AUTO** chip starts and stops the self-playing pattern; long-press it for its settings (see The AUTO player). The visualizer-skin picker is the flower button at the top left of the visual, and a maximize button at the top right hides everything but the visual and the ribbon.

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3.4 Studio

Studio exposes every control on the sound, arranged differently on iPad and iPhone.

iPad

On a window at least 1000×740 points (a full-size iPad in either orientation, including most Slide Over and Split View states, but not a small multitasking sliver), Studio is one page: everything sits on-screen at once, scaled to fill the window, with the performance ribbon pinned at native size along the bottom. Smaller iPad windows fall back to the three-column layout further down this page.

The one-page layout stacks a top bar, a three-column control band, a buffer and playheads row, and the ribbon:

- The **top bar** carries the wordmark on the left, the sound-name stepper in the center (tap the name to open the sound browser), and the PLAY/STUDIO pill on the right.
- **Resonator and Exciter** sits in the left column: the resonator model stepper, its four knobs, the exciter's knobs and character stepper, MOTOR, and the polyphony stepper. If the window is tall enough, Bloom's card sits underneath it in the same scrolling column; on a shorter window, Bloom moves into the FX dock below instead (see Reverb/Delay/Bloom below).
- The visual hero fills the center column, with its own AUTO transport (start/stop plus a settings chevron) sitting beside the performance ribbon at the bottom of the page rather than over the visual.
- **Particles** sits in the right column: the cloud's grain controls, and below them a two- or three-tab **FX dock** holding Delay and Reverb (and Bloom too, when the window is too short to give Bloom its own card next to the resonator).
- Below the three columns, a row shows the buffer waveform on the left and the three playheads on the right, spanning the same width as the columns above them.
- The maximize toggle collapses the resonator and particles columns down to the visual and the ribbon, the same as the compact layout below.

MOTOR is a chip that cycles OFF → SLOW → MED → FAST → OFF each time you tap it; it turns on a slow rotation in the resonator's tone, modeled on a vibraphone's motor-driven discs. See Settings reference for MOTOR's DEPTH control and what SLOW/MED/FAST actually mean.

iPad — compact windows

Below the one-page layout's size gate, Studio uses three columns under a different top bar. **Resonator and Exciter** is on the left: the resonator model stepper, its four knobs, the exciter's knobs and character stepper, MOTOR, and the polyphony stepper. The visual hero is in the center. The effects stack is on the right:

- **Reverb**: Wet, Size, Damp, Shimmer, plus a HOLD chip that freezes the tail.
- **Delay**, a stereo delay running before the reverb: Mix, Fdbk, Time, and Tone knobs, plus **SYNC** and **PING-PONG** chips. SYNC switches the delay time to tempo-synced divisions in place of milliseconds. PING-PONG alternates the repeats left and right. Mix defaults to zero, so the delay is silent until you raise it.
- **Bloom**, the feedback bus that feeds the sound back into the resonator. It carries a **LAYER** selector for the second resonator voice (Off, Track, Note, Open; see below) and its output **LEVEL**.

The LAYER modes govern what the second resonator voice does when you strum the visualization.

- **Note** is what the factory sounds use, Modal Bells included. It tracks pitch across the screen, quantized to the scale you have selected, left to right. Strum horizontally and it plays like a harp.
- **Track** follows the performance ribbon: it sounds whatever note you last played there, so it stays tonal with what you are playing.
- **Open** holds the root. Strumming the visualization always plays the root of your selected scale, for example C2.
- **Off** silences the second voice.

Three rows sit below the columns. **Buffer**: a SYNC chip, a length slider, and the sample-buffer waveform with a FREEZE chip. **Particles**: the cloud's Mix slider and its six grain knobs. **Playheads**: three heads, each with Position (Pos), Speed (Spd), Pitch (Pit), and Pan, plus a BPM stepper. The performance ribbon spans the full width underneath.

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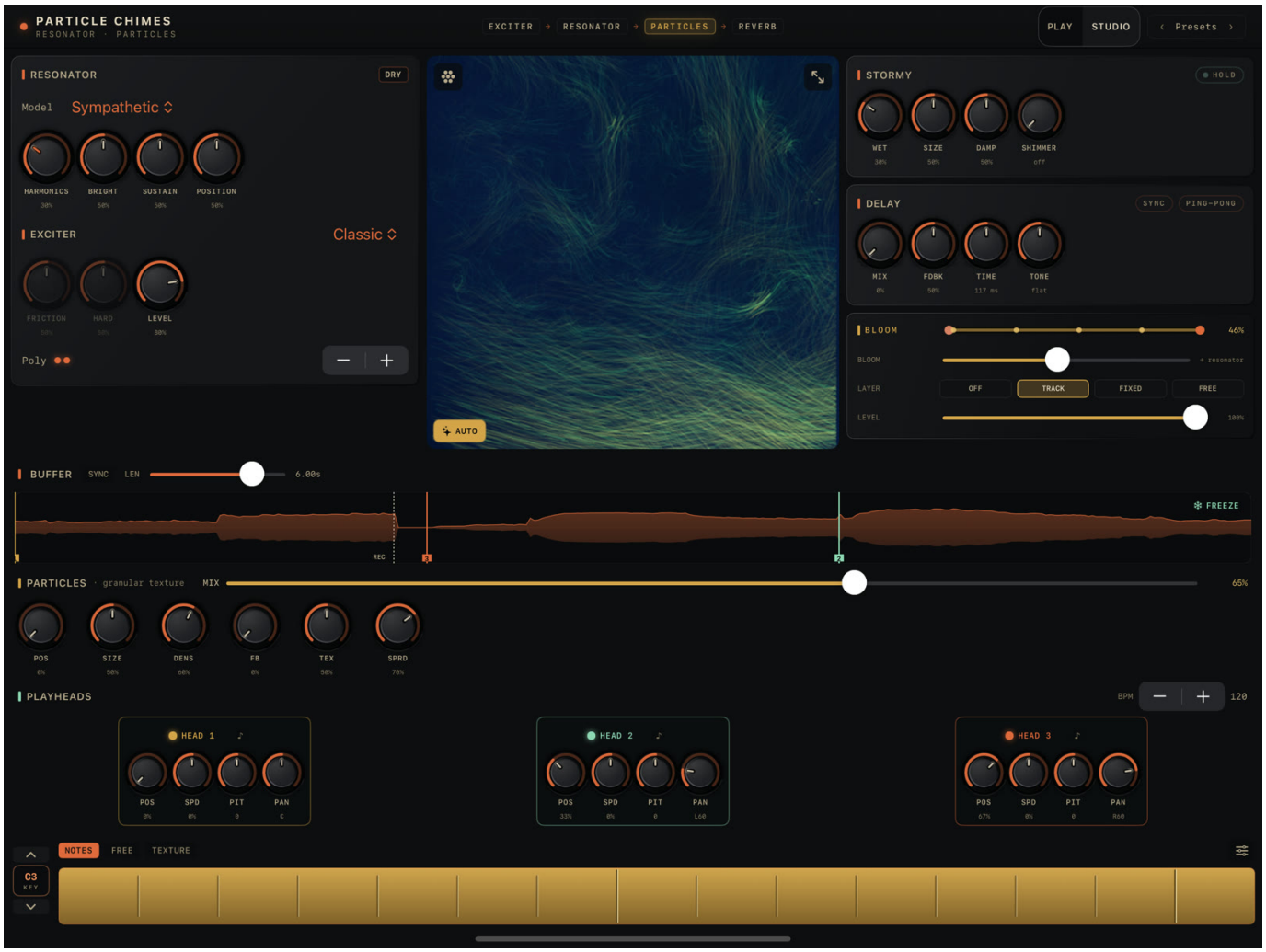
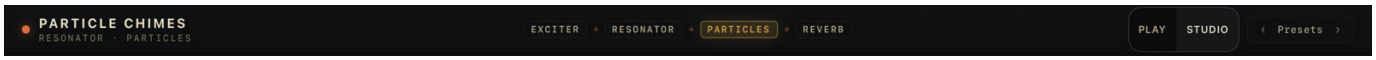


The **top bar** carries the wordmark on the left, and the PLAY/STUDIO pill plus a Presets strip on the right. Across the center runs a display-only signal-path breadcrumb: Exciter → Resonator → Particles → Reverb, with Particles lit up gold. Tap **‹ Presets ›** to open the same sound browser Play uses.



Tap maximize to collapse the three-column layout down to the visual and the ribbon. Tap it again to bring the columns back.

iPhone

Studio swaps the three columns for swipeable pages: **CHIMES**, **PARTICLES**, **HEADS**, **FX**. CHIMES holds the resonator and exciter (including MOTOR), PARTICLES the buffer and cloud, HEADS the three playheads, FX the reverb, delay, and bloom panels. Above them sits a persistent visual with its own Freeze and AUTO chips and its own Presets button; there's no top bar on iPhone. The performance ribbon stays pinned at the bottom underneath the paged content, so you can reach it from any page. The maximize toggle works the same way as iPad's.

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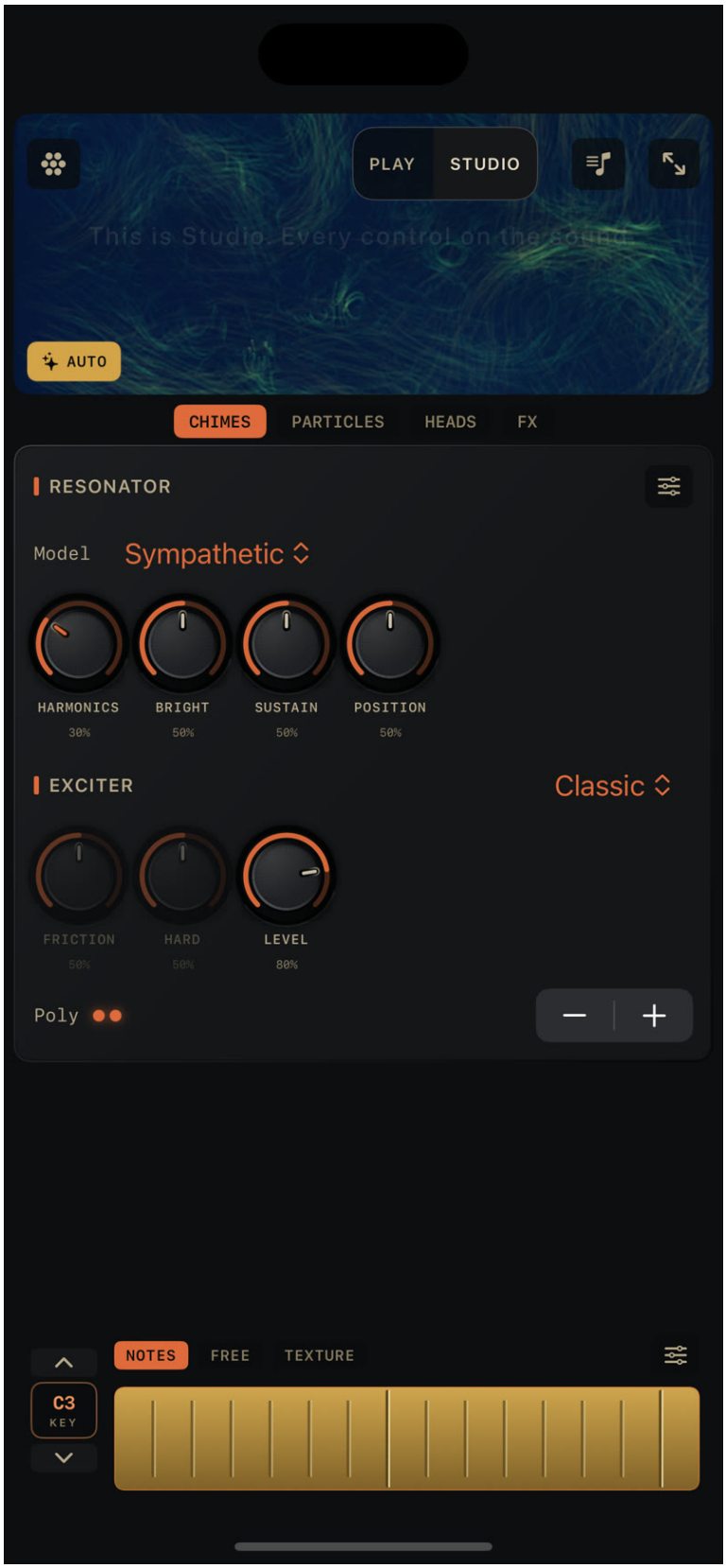

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Inside a host

Hosts like AUM sometimes hand Particle Chimes a window that counts as "regular" width but is too short for the three-column iPad layout. The app checks the window size itself, not just the size class, and falls back to the iPhone-style paged layout when the window is too short or too narrow. A cramped AUM window still gets a usable, more compact Studio.

3.5 Where to go next

- The performance ribbon: every mode, FIXED, and ridge density.
- The AUTO player: the self-playing generator and its tempo sync.
- Presets and favorites: the sound browser in full.
- Particle modes: GRAINS, LOOP, and STRETCH, the three ways PARTICLES can play back the tape.
- Visualizers: picking and reading the hero visual.

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4. The performance ribbon

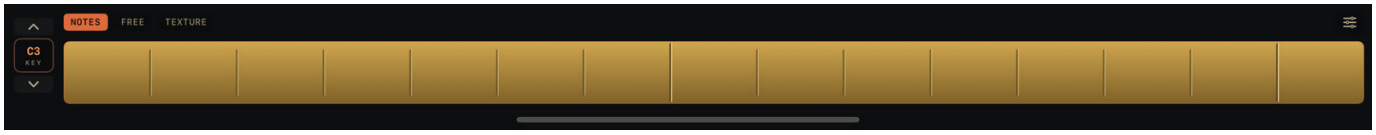
The gold ridged strip across the bottom of the screen is the performance ribbon. It's the instrument's main touch surface, and it's there in both Play and Studio. It has three playing modes. A FIXED toggle turns it into a theremin, the KEY chip sets root and scale, and a ridge-density setting changes how finely it's divided.

4.1 The three modes

Mode chips sit at the top-left of the ribbon's header. Play offers NOTES and TEXTURE; Studio adds FREE.

NOTES

Play in the scale. Drag across the ribbon and it snaps to the scale: you feel it click from degree to degree as you cross each ridge boundary. Moving to a new degree re-triggers the note, and how fast you drag sets the velocity. NOTES is the default mode and the one most sounds are designed around.

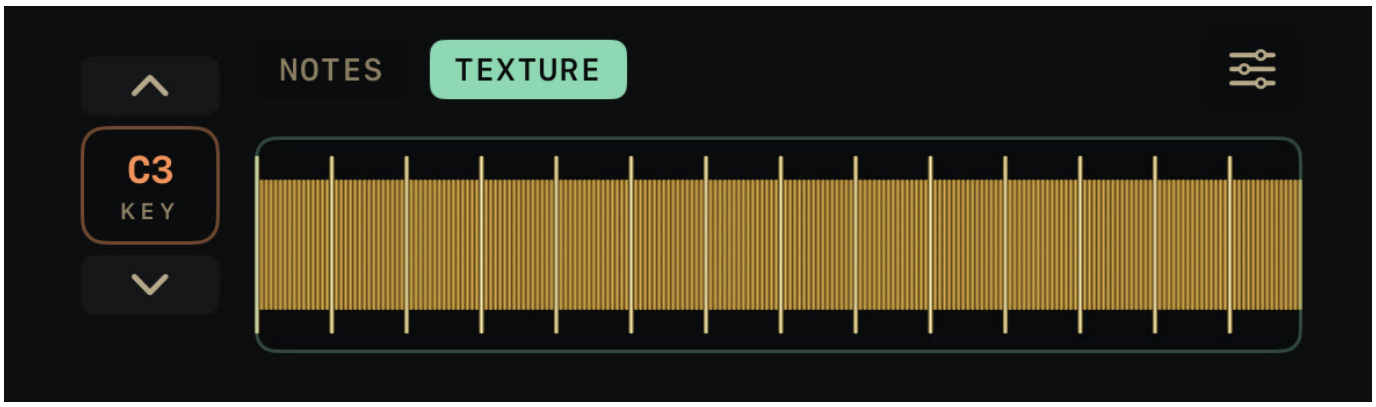


FREE

Studio only. Use it to glide. The same drag, but continuous: no snapping, no re-triggering, just a glide (portamento) from wherever you land to wherever you drag next. The ribbon looks different here. It's drawn as one unbroken brushed-gold plate with no separate note plates, and only faint lines marking each octave for orientation. FREE is fretless.

TEXTURE

A guiro. Every ridge your finger crosses fires one grain at that ridge's pitch, and how fast you drag sets both the rate of grains and their velocity. Hold still and it's silent; TEXTURE only speaks while you're moving. You'll feel a light tick for each ridge crossed, and a heavier thunk when a crossing carries you into a new note, not just a new ridge inside the same note.



4.2 FIXED: the theremin column

Toggle **FIX** in the ribbon's settings sheet and the left-hand octave column becomes a vertical theremin. Your vertical position on the column sets one pitch, and that pitch plays across the ribbon's full width no matter where you touch it horizontally. Each mode still behaves like itself at that one fixed pitch: NOTES and FREE hold it as a drone, TEXTURE scrapes it as a single-pitch guiro.

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4.3 The KEY chip and octave

To change root or scale, tap the KEY chip in the ribbon's left column. The chip shows your current octave (for example "C3") under the label KEY, and the chevrons above and below it step the whole ribbon up or down an octave (clamped to a four-and-a-bit-octave range overall).

Tapping the chip opens a popover with:

- A **Root** picker: the twelve pitch classes, segmented.
- A **Family** picker: Pentatonic, Major & Modes, Minor, and Blues & Symmetric.
- A grid of scale chips for whichever family is selected. There are 23 scales in total across the four families, from major/minor and the modes through blues, whole-tone, and a handful of non-Western five- and seven-note scales (Hirajoshi, In-sen, Iwato, Egyptian, Hungarian Minor, Phrygian Dominant among them).

If a microtonal tuning with a note count other than 12 is active, the scale chips gray out. The tuning's own note ladder takes over, and a caption tells you which tuning is driving it. The root picker stays live either way.

4.4 Ridge density

RIDGE DENSITY in the settings sheet sets how many ridges sit inside each note. It has three chips: COARSE gives 4 ridges, MED gives 8, and FINE gives 16 (the default). A finer density gives TEXTURE mode more grains per note and a more granular feel under your finger. Coarse gives you fewer, chunkier steps.

4.5 The settings sheet

Tap the gear icon in the ribbon's header to open **SETTINGS**. Everything about the ribbon and the instrument's playing state is on that one sheet, in this order: Root & Scale, AUTO, Tuning, Movement, Fixed Pitch, and Ridge Density. The settings reference has the full control-by-control list.

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5. The AUTO player

AUTO is a self-playing note generator built into the resonator. Turn it on and it starts feeding itself notes from the current scale. Leave it running on its own, play over it on the performance ribbon.

5.1 Turning it on

The **AUTO** chip sits at the bottom left of the visual in both Play and Studio. Tap it to start or stop a generative pattern; the chip pulses in time with each step it plays. Long-press it to open its settings.

AUTO keeps running when you switch between Play and Studio. As an AUv3 instrument it keeps running even if a host temporarily closes the plugin window, because the pattern clock lives in the audio engine itself, not the interface.

5.2 The three patterns

A segmented picker in AUTO's settings chooses how it generates notes:

- **Turing**, the default. A looping shift register of scale degrees (8 steps by default): each step either survives from the last loop or gets rewritten, so the pattern drifts and occasionally repeats without looping exactly. A **LOOP** slider sets how likely a step is to survive (0 to 100%, default 85%); push it toward 100% and the pattern locks into a fixed loop. Think of the slider as setting how ever-changing or how repetitive the sequence is. A **New loop** button reseeds the whole register for a fresh pattern.
- **Arp** steps up, down, up-down, or randomly through a triad built on the current scale degrees. A Direction picker appears only in this mode.
- **Drift** is a weighted random walk across scale degrees, favoring small steps over big jumps.

Arp and Drift both expose a **PROB** slider (0 to 100%, default 100%) that sets the chance any given step plays a note versus staying silent. It is a good way to create rhythmic variation.

5.3 Tempo

A **SYNC · tempo** toggle switches AUTO between two clock sources:

- **Synced** (the default): a **RATE** slider steps through sixteen musical divisions, from 4 whole notes down to a 32nd, in strict duration order, with dotted and triplet values interleaved where they fall between the plain divisions:

  `4/1 · 2/1 · 1/1 · 1/2· · 1/2 · 1/4· · 1/2t · 1/4 · 1/8· · 1/4t · 1/8 · 1/16· · 1/8t · 1/16 · 1/16t · 1/32`

  The default is **1/4·** (dotted quarter). Standalone, a **BPM** stepper sets the tempo directly, from 20 to 300. Inside a host, this row shows "HOST · *n*"; the host's own tempo drives it, and you can't override it from the plugin. - **Free**: RATE becomes a straight time slider, 0.25 to 4 seconds per step, unrelated to any tempo.

Following a host transport

As an AUv3, AUTO can start and stop with your host's own transport instead of needing its own tap. A **FOLLOW HOST TRANSPORT** toggle in the SETTINGS sheet's AUTO section, off by default, watches for the host's play/stop edges: turn it on, and the next time the host starts rolling, AUTO starts with it; when the host stops, AUTO stops. In between, the AUTO chip still works as a manual override, so you can silence AUTO while the host keeps playing, or start it up again without touching the host. The toggle only appears inside a host; there's no host transport to follow standalone, so the row doesn't show there at all.

> **Automating AUTO's tempo from a host**
>
> Sync on/off, the division, and the free-running rate are all AU parameters a host can automate or record. See the AUv3 parameter reference. Whether AUTO is **on** is not automatable: that state resets on every load, so a saved sound never starts playing itself the moment you open it.

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5.4 Movement

MOVEMENT sits below AUTO in the settings sheet: a slow, independent drift applied to five knob values at once (brightness, cloud texture, cloud spread, drone level, and drone detune). Each one wanders on its own multi-second cycle, so the combined motion never quite repeats. It's a toggle plus a **DEPTH** slider (0 to 100%, default 25%) that scales how far it wanders. Turn Movement off and every drifting value snaps back to exactly where you left it; nothing is left mid-drift.

Two knobs in Play's resonator card, **Bright** and **Layer**, show a faint gold halo while Movement is active, so you can see which controls are being nudged.

5.5 Where to go next

- The performance ribbon: AUTO shares its key/scale with the ribbon.
- Tuning: how a microtonal tuning changes the note ladder AUTO draws from.
- AUv3: which AUTO fields are host-automatable.

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6. Tuning

Particle Chimes can retune away from standard 12-note equal temperament. Pick one of four built-in tuning systems, or import a Scala (`.scl`) file. Tuning lives under **TUNING**, in the same settings sheet as the performance ribbon's key and scale.

6.1 Built-in tunings

To retune, tap a chip in the tuning row:

- **STANDARD**: tuning off. The performance ribbon's normal 23-scale system runs in plain 12-tone equal temperament.
- **12-TET**: 12-tone equal temperament, tunable to a reference pitch other than 440 Hz.
- **Just Major**: 5-limit just intonation, a 7-note scale.
- **Pythagorean**: the 12-note Pythagorean tuning (stacked pure fifths).
- **Bohlen-Pierce**: a non-octave tuning, 13 steps to the *tritave* (3/1) instead of 12 steps to the octave.

6.2 Reference pitch

With any tuning besides STANDARD active, a **REF · A4 = *n* Hz** slider appears: 415 to 466 Hz in 1 Hz steps, default 440 Hz. It retunes the whole instrument, including the drone, in real time as you move it.

6.3 Importing a Scala file

Tap **Load .scl...** and pick a Scala `.scl` file. A valid one becomes an extra tuning chip, active immediately, labeled with the file's own name. Anything that doesn't parse as a proper Scala file shows an inline error: "Not a readable Scala .scl file." A tuning has to arrive as a file; there's no way to paste tuning text directly.

6.4 How tuning interacts with the scale

The 23-scale chip grid on the KEY popover only makes sense over a 12-note tuning. When the active tuning divides its period into something other than 12 steps (Just Major has 7, Bohlen-Pierce has 13, and a custom `.scl` might have any count) the scale chips gray out and a caption tells you the scale is set by the tuning. 12-TET and Pythagorean both still divide into 12, so the scale grid stays live and composes normally on top of them: "Dorian in Pythagorean" works. The root picker stays live under every tuning, including the non-12 ones.

The performance ribbon and the AUTO player always read the same composed key/scale/tuning, so switching a tuning on retunes both at once. They never drift apart.

> ⚠ **FREE mode stays 12-TET**
>
> The ribbon's FREE mode glides continuously and isn't quantized to a scale. It keeps plain 12-tone semitone spacing even when a microtonal tuning is active. NOTES, TEXTURE, and the FIXED theremin column all snap to the tuning's own note ladder. FREE doesn't.

6.5 MTS-ESP

While any tuning is active, Particle Chimes also connects to MTS-ESP, the shared microtonal-tuning standard other apps and plugins can broadcast to. If a live MTS-ESP master is present, it takes over the pitches. With no master present, the instrument falls back to whichever tuning you've selected locally.

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6.6 What gets saved

- **Standalone app**: your tuning choice, reference pitch, and any imported `.scl` are remembered on the device across launches, but they are **not** part of a saved sound. Sharing or reloading a `.json` preset doesn't carry your tuning with it. Tuning is a device-wide setting, not a per-sound one.
- **As an AUv3**: tuning **is** captured in the host's own session save. Save your DAW project and reopen it, and you get back the exact tuning bank, reference pitch, and any custom `.scl` you had loaded.

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7. Presets and favorites

Particle Chimes calls a saved setup a **sound**, not a preset. One sheet handles browsing, loading, saving, and favoriting all of them, and it's the same sheet in Play and Studio. Open it from the sound-name stepper in Play, or the **‹ Presets ›** button in Studio's top bar (iPad) or visual cluster (iPhone).

7.1 What's in the sheet

Top to bottom:

1. A **Save current…** button, which expands into a name field inline.
2. **INSTRUMENT** chips: six resonator models (Modal, Sympathetic, String, Sympathetic (Quantized), String + Reverb, FM Voice). Tapping one switches the resonator's underlying model and changes nothing else about the sound. The sound's displayed name becomes that model's name.
3. **FAVORITES**: everything you've starred, from any of the sections below. Hidden entirely until you've starred something.
4. **BASELINES**, Studio only. Four fixed engineering starting points (Bloom Zero / Dry Resonator, Gentle Cloud, Full Bloom, Frozen Glass), each shown with a subtitle of its raw values.
5. A **KEEP KEY & AUTO** toggle, off by default. Turn it on and loading a curated sound below no longer resets your current root, scale, or AUTO pattern; only the sound itself changes. User sounds never carry key information either way, so this toggle doesn't affect them.
6. The **curated library**, 39 sounds grouped into **Getting Started** (six openers pulled from further down the list, so a new sound only needs one stop to see the instrument's range: Modal Bells, Sympathetic String, Velvet Voice, Kalimba, Chime Halo, Cathedral), **String**, **Bells & Mallets**, **Voices & Organs**, four groups added in 1.1 (**Slow Time**, **Choirs & Ensembles**, **Loops & Echoes**, **Grain Gardens**), and a six-rung **Calm ↔ Chaos** ladder (Bare Strum → Glass Bells → Chime Halo → Slow Bloom → Cathedral → Runaway Chorus) that runs from restrained to unhinged.
7. **YOURS**: anything you've saved yourself.

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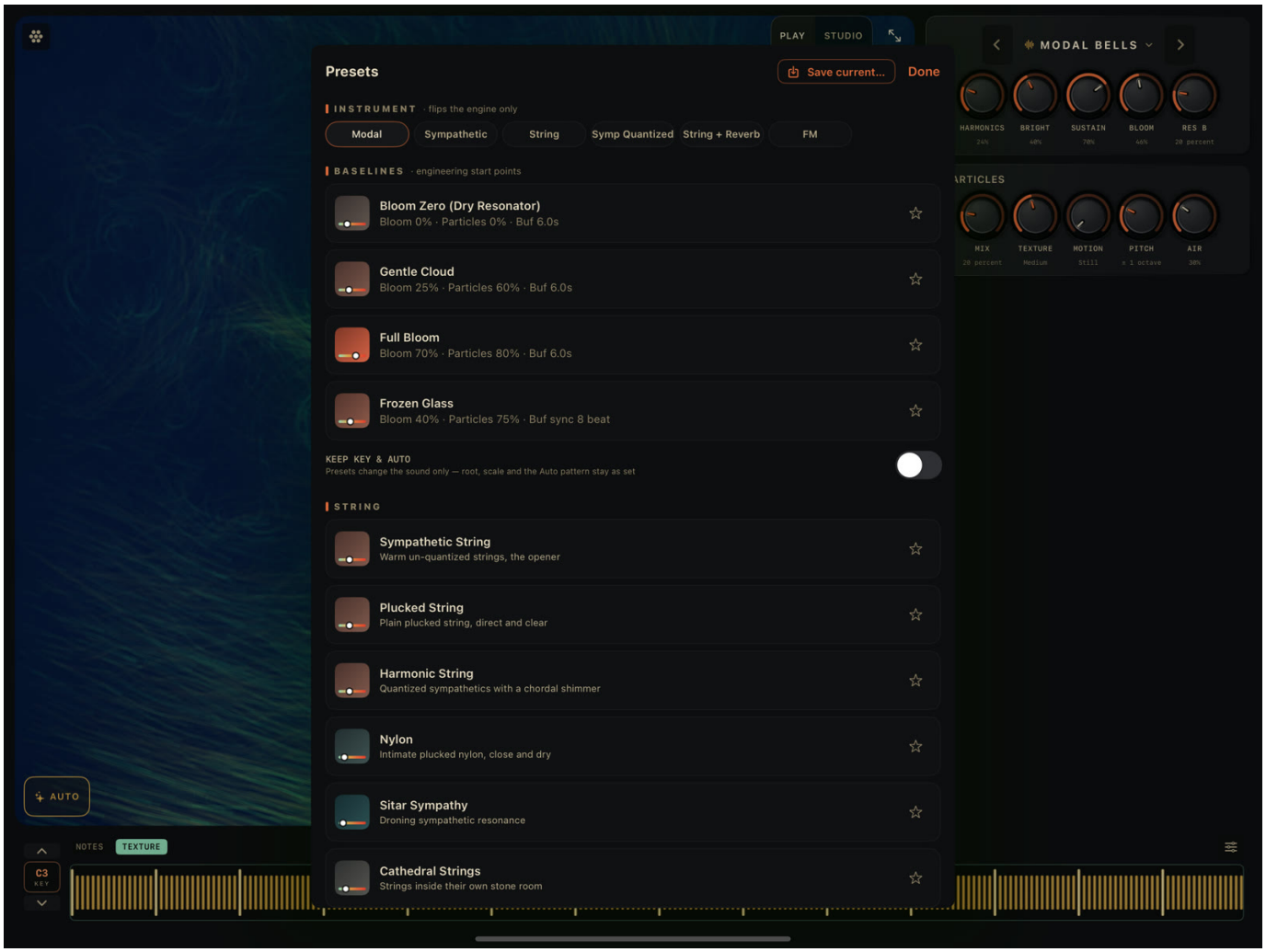

7.2 Loading a sound

Tap any row to load it. The sheet closes.

> **A note on 1.1 and older sounds**
>
> As of 1.1, each resonator voice strikes with its own envelope; before, every voice shared one strike path. This reaches every preset and every saved sound, because they all go through the resonator's exciter. Nothing about a saved sound is lost or changed: every knob, head, scale, and tuning value loads exactly as you saved it. The difference is only in how the engine renders those values into sound.

7.3 Saving your own sound

Tap **Save current...**, type a name, and tap Save (it stays disabled until you type something). Saving under a name that already exists overwrites it without asking. There's no confirmation prompt, so double-check the name before you save over something.

User sounds live as individual files on the device. There's currently no way to rename one after the fact: delete it and re-saved under a new name. That starts a fresh favorite star, since the old one was tied to the old name.

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7.4 Deleting

User sounds show a trash icon on their row. Deleting one removes it from the list and doesn't interrupt whatever's currently playing, even if it's the sound you just deleted.

7.5 Favorites

Tap the star on any row (instrument, curated, baseline, or user) to favorite it. The star is its own tap target, separate from the row itself, so starring something doesn't load it. A favorited sound shows up twice: once in the FAVORITES section at the top, and once in its normal home section further down, star filled in both places.

Favorites are shared between the standalone app and the AUv3 plugin. Star something in one and it shows up starred in the other; both read from the same on-device storage.

Visualizer skins can be favorited the same way, from the skin picker, not this sheet. See Visualizers.

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8. Particle modes

PARTICLES has three playback engines: **GRAINS**, **LOOP**, and **STRETCH**. All three read the same continuously-recording tape (the buffer you see in the waveform view), but they play it back in different ways. Switch between them from the ENGINE row in Studio.

8.1 Switching engines

Studio's PARTICLES area (the iPhone PARTICLES page, or the Particles column on iPad) has a row of pills: **GRAINS**, **LOOP**, **STRETCH**. Tap one to switch. Play's simplified Particles card doesn't carry the engine switch; if a preset uses LOOP or STRETCH, Play plays it that way, you just can't change the engine from there.

Switching engines doesn't touch the tape. The same recorded audio keeps playing, read back under whatever rules the new engine uses. Controls that don't apply to the engine you're on hide rather than showing dimmed, so the panel only shows what's live.

8.2 GRAINS

The granular cloud: three playheads scan across the tape independently, each spawning a stream of overlapping grains. This is the mode Particle Chimes has always had. POSITION, SIZE, DENSITY, TEXTURE, SPREAD, FEEDBACK, TONE, JITTER and SEED all work as before, and every head has its own SPD/DIV, PITCH, and PAN.

JITTER now reads out in milliseconds rather than a percentage: it's the same scatter control, but the readout tells you an actual time offset instead of an abstract number, so the same knob position means the same thing regardless of how long your buffer is.

8.3 LOOP

The tape becomes a looping delay. Each of the three heads is a tap: a fixed read point behind the record head, so playing a note repeats out of each active head at its own delay time. Head enable, PITCH, and PAN work as in GRAINS; DENSITY, TEXTURE, SPREAD, and JITTER are hidden, since nothing reads them in this mode.

- **TIME** (the shared POSITION knob, and each head's own POSITION knob) sets the delay time. Free-running, it's a percentage of the tape. Under CLOCK = SYNC, each head's TIME becomes a whole-number multiple of the main synced division instead: **1x, 2x, 3x, or 4x**. 1x is the main division itself; the three heads default to 1x, 2x, and 3x, so a fresh loop patch is already a simple multi-tap delay out of the box.
- **FREEZE** stops the tape from recording and turns the current buffer into a repeating loop. Once frozen, **LENGTH** (the shared SIZE knob, relabeled) sets how much of the captured tape repeats, and each head's **PITCH** knob is relabeled **RATE**: it's the frozen loop's playback speed, since speeding up a fixed-length loop is the same thing as raising its pitch. Un-freezing goes back to a live, recording tape and LENGTH/RATE stop doing anything.

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8.4 STRETCH

A pitched loop player. One shared read position moves across a span of the tape, and up to three voices sound it back at up to three different pitches at once, formant-preserving (a WSOLA time-stretch, so pitch and playback speed are independent).

- **ANCHOR** (the shared POSITION knob, relabeled) is where that shared read position sits on the tape.
- **WINDOW** (the shared SIZE knob, relabeled) is the stretch algorithm's own analysis window, a quality/character control rather than a time or pitch.
- **SPD** is the playhead's speed as an absolute rate over the tape: 100% is normal forward speed, 0% parks the read position in place, and negative values run it backward. Entering STRETCH on a patch whose speed was left at 0 nudges it to 50% so the mode doesn't come in silent-feeling; touch it and that nudge is gone for good.
- **LENGTH** sets the span the read position loops across, in the tape's own domain (the same seat LOOP's per-head LENGTH uses). Left alone it follows the shared tape length.
- **LOCK** decides whether STRETCH is one chord or three independent voices:
- **Locked (default):** heads 2 and 3 mirror head 1's shared loop transport, and each head's own **PITCH** picks a note of the chord. Only head 1 shows SPD; the loop's timing is one shared thing, voiced three ways.
- **Unlocked:** heads 2 and 3 get their own independent SPD (and their own sync division under CLOCK = SYNC), so all three voices can run at different rates over the same underlying loop span, not just different pitches.

Every head keeps its own enable toggle, PITCH, and PAN regardless of lock state. Turning off every head silences STRETCH the same way it silences GRAINS or LOOP; nothing auto-re-enables a head for you.

FREEZE in STRETCH parks the tape's record head only. The loop transport keeps running either way, so freezing STRETCH doesn't stop or restart playback the way it does in LOOP.

8.5 What doesn't change

FEEDBACK, TONE, and MIX work the same across all three engines. FREEZE is on every engine's panel, doing a different thing in each: in GRAINS it parks the record head; in LOOP it's what turns the tape into a repeating loop; in STRETCH it parks the record head without touching the loop.

8.6 Where to go next

- Play and Studio: where PARTICLES sits in each surface's layout.
- Settings reference: every control's range and default, including the ones this page only names.

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9. Visualizers

The full-screen graphic behind the instrument, the "hero," is always on. It's a renderer (a "skin") reacting live to what you play, and on many skins to your touch on the screen.

9.1 Picking a skin

Tap the small icon button over the top-left of the hero to open the skin picker: a scrolling list grouped into Favorites, Free, Flow Pack, Scientific Pack, Fractal Pack, Complete Collection, and Experimental. Each row shows a thumbnail, the skin's name, a one-line description, and a star. Tap a row to switch to that skin and close the sheet. Tap is the only gesture here; there's no swipe or long-press shortcut.

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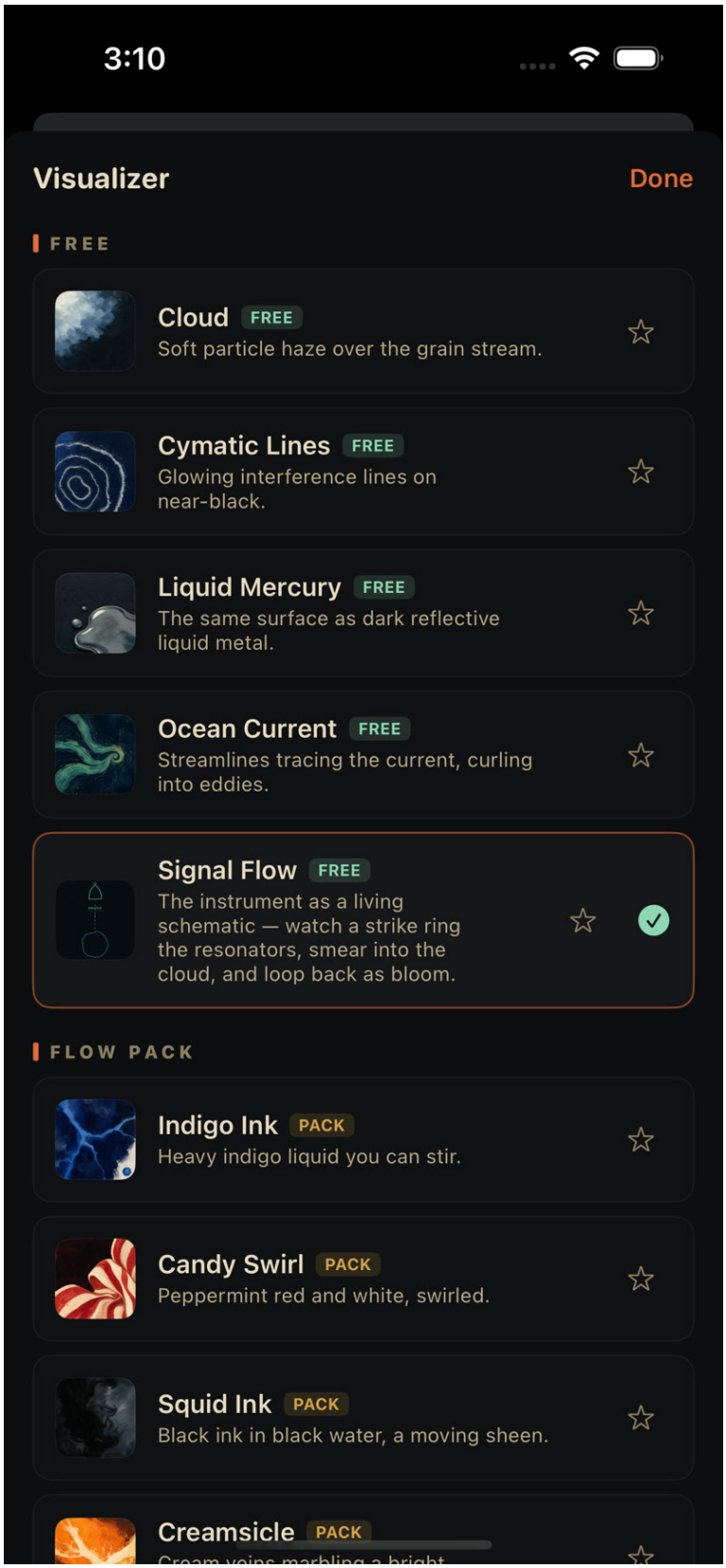

Tap the star on any row to favorite it, same idea as favoriting a sound (see Presets and favorites). Starring adds the skin to your Favorites group at the top of the list; it doesn't select the skin.

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9.2 What reacts to sound

Every skin reads the same feed: each active voice's pitch and energy, note onsets as they happen, and the resonator's raw output. Some skins (Scope, Trace, Harmonograph, Seismograph, and Oscilloscope) draw literal representations of the audio signal: waveforms, an XY phosphor trace, a strip-chart. Most of the rest turn sound into a simulated physical process: a wave tank, a fluid, a field of fireflies, a growing fractal.

9.3 What reacts to touch

Touch on the hero (position, drag, speed) reaches whichever renderer is active as a single shared signal, and each skin decides for itself whether and how to use it. Most skins do something: they push, pluck, melt, gather, or otherwise disturb the simulation at your fingertip. A handful (Scope, Trace, Harmonograph, Seismograph, Rosette) are watch-only and never respond to touch at all; Oscilloscope replaces touch response with two persistent sliders. The full skin-by-skin breakdown is in the visualizer skin catalog.

The skin shapes the touch sound too

Notes you play by touch, not by MIDI, run through a short attack-shaping envelope, and the app picks that envelope from your active skin: a plucked, string-like attack under the string/fiber skins, a softer flowing attack under the ink and liquid skins, a duller dust-settling attack under the particle/cymatic skins, and so on. Change the skin and the touch-strum character changes with it. There's no control for this; it follows the skin.

9.4 Freeze and maximize

Two more chips sit over the hero alongside the skin picker. Tap **FREEZE** to hold the particle-cloud stream where it is; it stops reading on across the buffer. Tap the maximize button (the diagonal-arrows icon) to expand the hero to fill the whole screen, hiding the surrounding panels until you tap it again.

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9.5 Recording and exporting video

Where to find it

Video export is not a menu of its own, and it is not called "export". It lives in the **skin picker**, under the name **Record Performance**, and it sits **at the top of the sheet, above the skin list** (moved up in 1.0.3; it used to be at the very bottom). Open the picker with the small icon button over the top-left of the hero. Recording and exporting are one flow: you record a take first, and the export options come up when you stop.

Recording and export are part of Studio, so they need the in-app unlock. On a free install the row reads **Part of Studio**, and tapping it takes you to the unlock rather than starting a recording.

Standalone app only

Record Performance is in the standalone Particle Chimes app. It is **not** available when you run Particle Chimes as an AUv3 plugin inside AUM, Logic, Cubasis or any other host: the row is absent from the picker rather than locked, so there is nothing to find. Record in the host instead, and use the standalone app when you want the visuals captured with the audio.

Tap **Record Performance**. The picker closes, a red REC banner appears at the top of the screen, and the app starts capturing your audio and the visual together. Tap the banner (or the row again) to stop, and the **Export Video** sheet opens:

- **Aspect**: Portrait (9:16), Square (1:1), or Landscape (16:9).
- **Resolution**: 1080p or 4K.
- An estimated duration and file size for the take, updated as you switch options.

Pick your settings and tap **Export**. The video renders offscreen and saves to your Photos library. Export replays your performance through the renderer, so it comes out clean at full quality, with no UI chrome, at whichever aspect and resolution you picked. Nothing is screen-recorded. You can export the same take again at different settings, but only until you close the sheet. As the sheet notes, a replay can differ in small ways from what you saw live.

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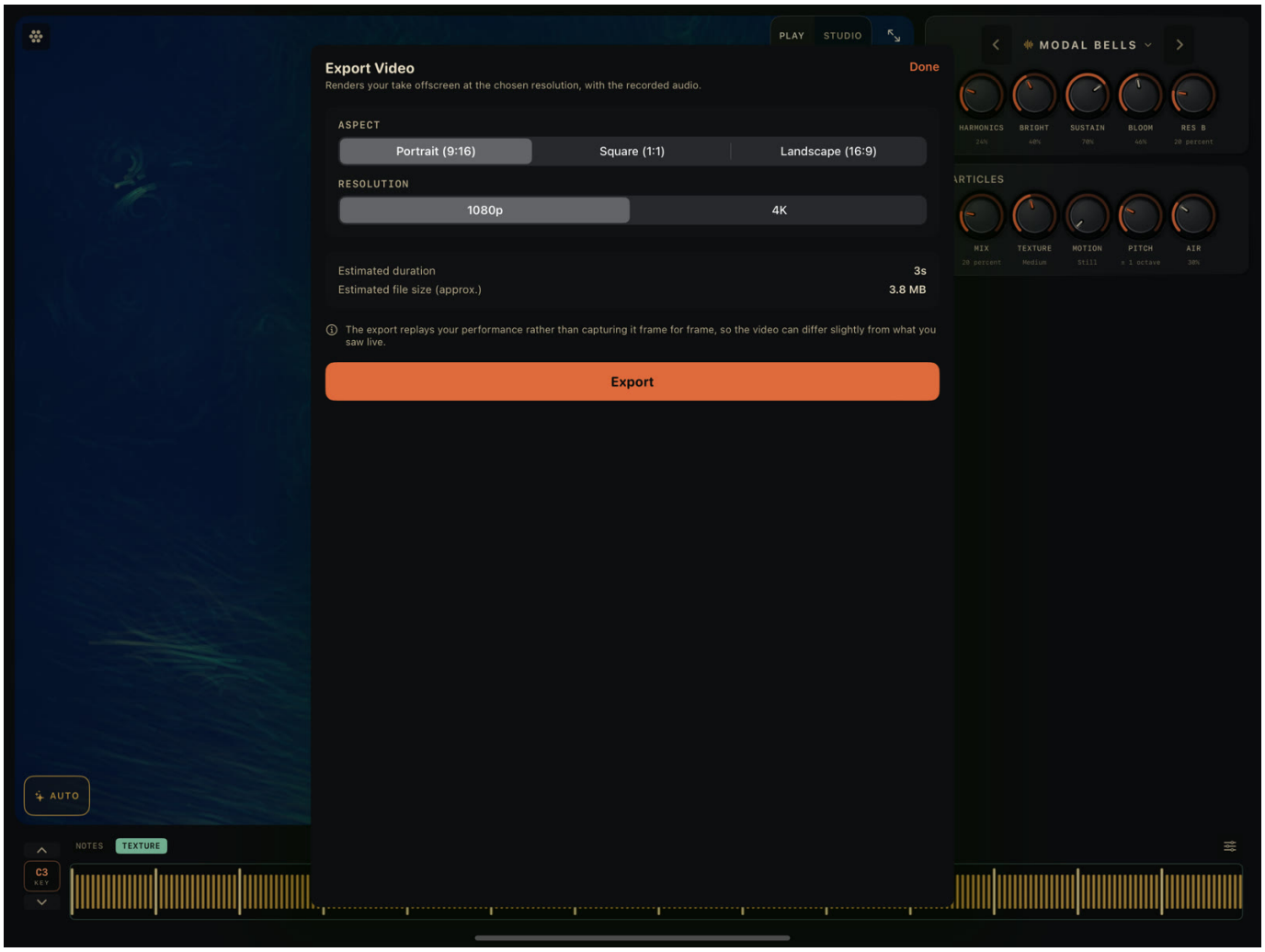

9.6 Hi-Res Visuals

A toggle in the skin picker, reading **Hi-Res Visuals: sharper skins, uses more battery**. On it renders the visualizer at a higher quality tier; off it stays at the normal tier.

Hi-Res is part of Studio, so it needs the in-app unlock. Without it the row reads **Sharper skins. Part of Unlock Everything** and opens the unlock instead of toggling. Setting the preference before you buy is fine: it takes effect the moment the unlock lands.

> ⚠ **Standalone app only, and only on some iPads**
>
> The toggle appears **only in the standalone app**, and only on devices whose GPU can sustain it: A14, M1 and later qualify, as do the larger older iPad Pros (A12X and A12Z). On anything else, and in the AUv3, the row is hidden rather than disabled.

Two things override the setting while it is on, both automatic:

- **Low Power Mode** drops the visualizer to a lower tier than normal, whether or not Hi-Res is on.
- **Thermal pressure** drops it back to the normal tier once the device gets hot.

So Hi-Res is a ceiling, not a floor. If the picture looks softer than you expect, check Low Power Mode first.

Hi-Res is not tied to the export resolution. Video export renders offscreen at whatever resolution you pick in the Export Video sheet, independent of this toggle.

Hi-Res applies to an attached external display too. See External displays.

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9.7 Sleep Mode

A row at the bottom of the skin picker, under the skin list. It fades the sound out after a set time and stops the engine, for falling asleep to a patch.

Sleep Mode is part of Studio, so it needs the in-app unlock. On a free install the row reads **Part of Studio: unlock to fade out and sleep**.

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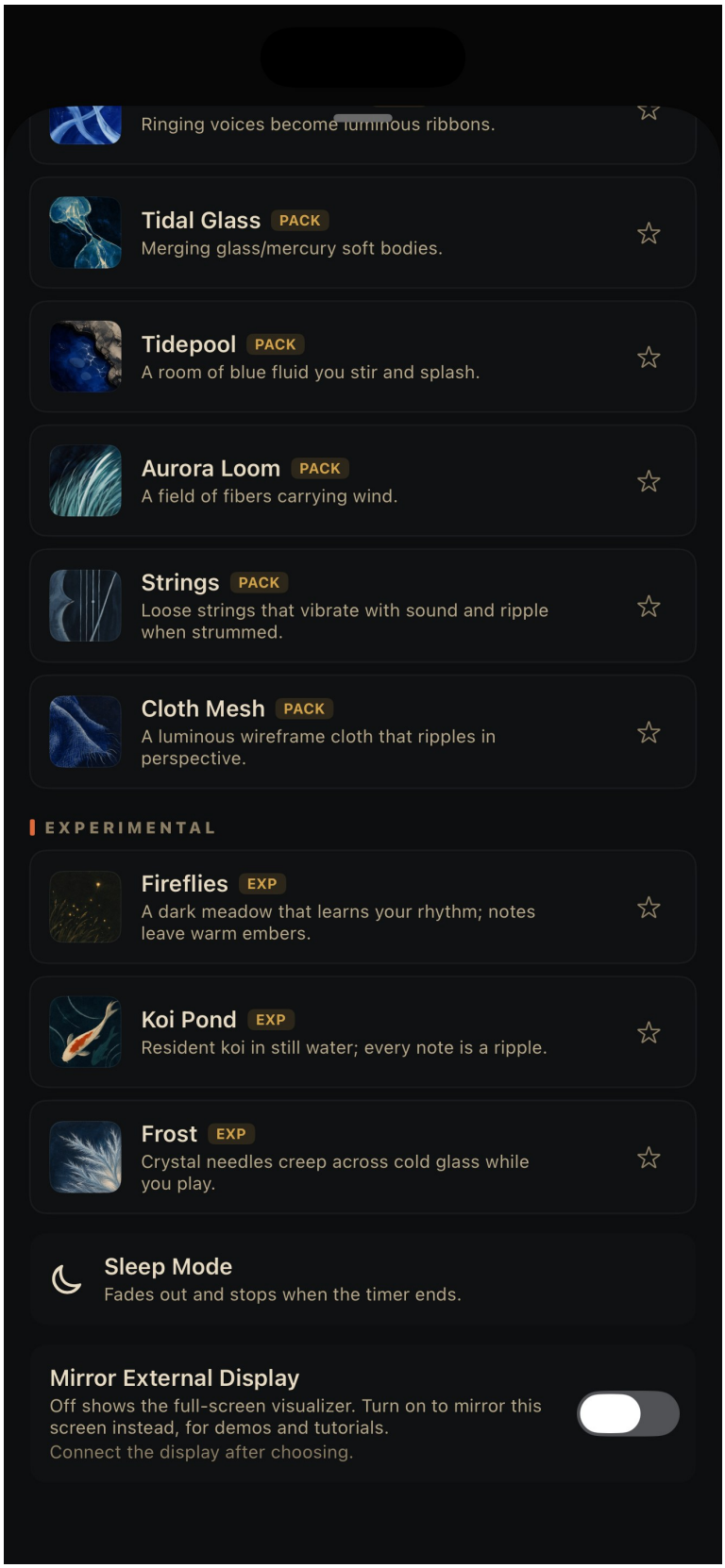

Standalone app only

Like Record Performance, Sleep Mode is absent in the AUv3. Hosts own the transport, so stopping playback is the host's job there.

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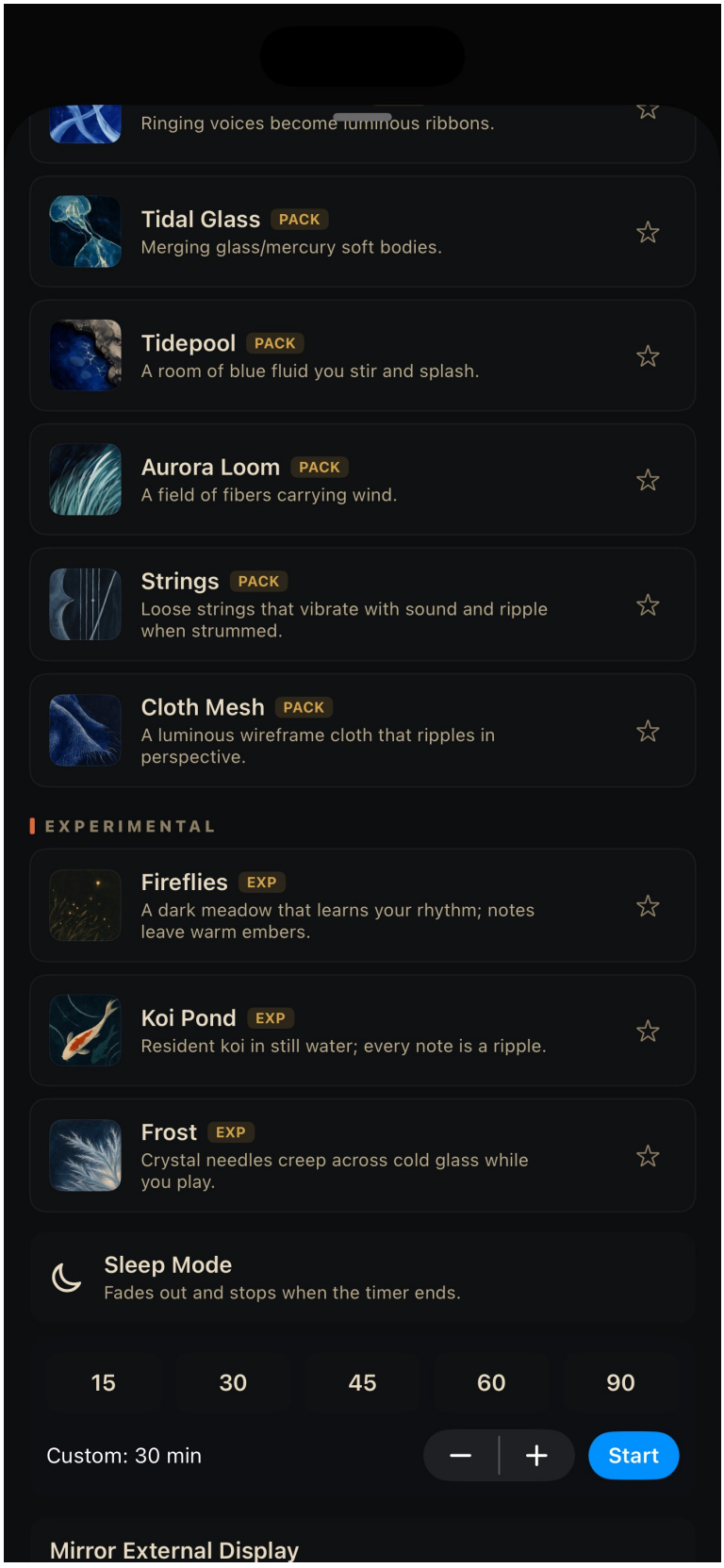
Tap the row to open the duration chooser. Presets are **15, 30, 45, 60 and 90 minutes**, or type a custom length (1 minute to 12 hours). Tap a duration and the row switches to a live countdown, which you can tap again to cancel.



When the timer reaches zero the sound fades out over **20 seconds**, then the auto-player stops and the audio engine halts. Re-arming part-way through a fade restores full level and starts the new timer, so you can change your mind while it is fading.

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9.8 What's New

A row at the very bottom of the skin picker, under Hi-Res Visuals. Tap it to reopen the release note for whichever version you're running, the same one that auto-presented the first time you opened this version of the app. It's absent when Particle Chimes is running as the AUv3 plugin. See Your first sound for when the note shows on its own.

9.9 Where to go next

Visualizer skin catalog: every skin, what it looks like, and exactly what happens when you touch it.

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10. Visualizer skin catalog

Every skin shipping in Particle Chimes, grouped the way the skin picker groups them.

10.1 Free

Cloud

Soft glowing particles spawn near each sound impulse and drift outward, fading as they go. A crisp foreground layer over a hazy background layer gives it depth. **Touch**: touching down kicks a ripple through nearby particles and pushes them outward; dragging spawns a trail of new ones at your fingertip.

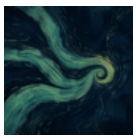
Cymatic Lines

A simulated wave surface, drawn as glowing interference lines on near black. Each ringing voice rains on it, one lane per voice, with pitch and pan setting where the impact lands. **Touch**: an active touch adds a strong, broad wave impact with a trailing wake, so you can visibly push the surface around by dragging.

Liquid Mercury

The same wave simulation as Cymatic Lines, shaded as a reflective liquid-metal surface. **Touch**: identical to Cymatic Lines. A broad impact plus a trailing wake while you drag.

Ocean Current



Streaklines tracing a flow field, curling into eddies. A brand-new install opens on this skin. **Touch**: dragging stirs the flow directly under your finger.

Signal Flow

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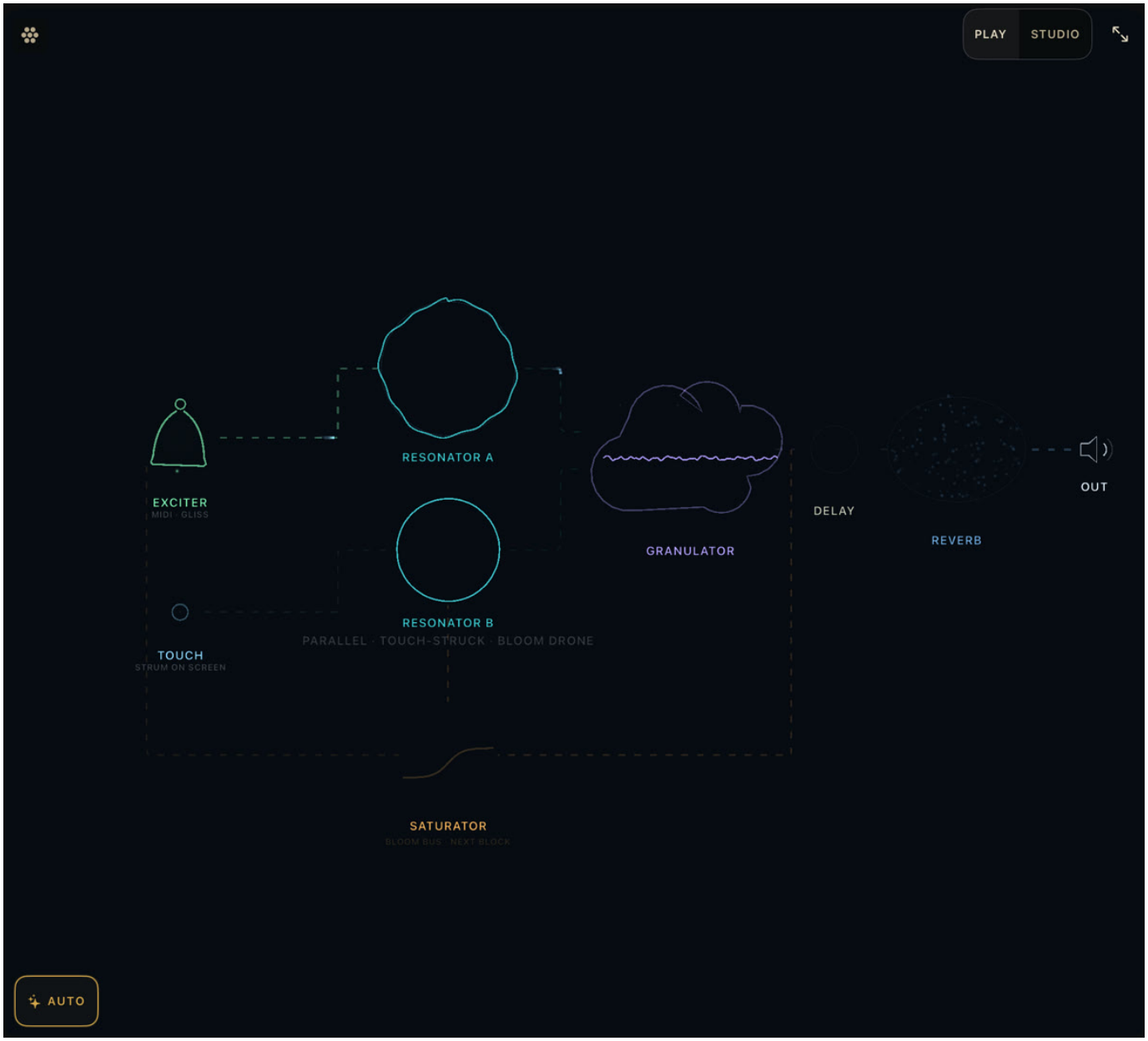
The instrument as a living schematic: the bell exciter strikes Resonators A and B, smears into the particle cloud, and loops back through the amber bloom bus. Every stage is driven by a tap on the signal at that point, so what you see pulsing is what you hear. **Touch**: the schematic's TOUCH node ripples when you touch down. Strumming the screen plays the instrument as usual, and you watch the strike travel the graph.



10.2 Flow Pack

One fluid simulation under all eight skins here (the same Navier-Stokes solver), painted with different palettes and treatments. Some render visible ink drops in a moving medium: drag to stir, and touching down leaves a drop of ink at your fingertip. The rest render only the flow itself as streaklines, so dragging stirs and there is no drop to leave.

Indigo Ink

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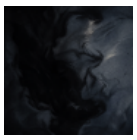
Heavy indigo dye in a stirrable fluid. **Touch**: stir plus ink drop.

Candy Swirl

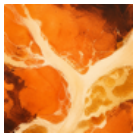
Peppermint red and white, swirled together. **Touch**: stir plus ink drop.

Squid Ink



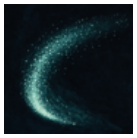
Black ink in black water: a moving sheen, no bright color. **Touch**: stir plus ink drop, dark on dark.

Creamsicle



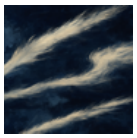
Cream veins marbling through a bright orange field. **Touch**: stir plus ink drop.

Bioluminescence



A dark sea that lights up where something just disturbed it, not by how loud it is. **Touch**: stir only. This one renders the flow itself, not dye in it, so there's no ink drop.

Jet Stream



White wind streaklines over a twilight-colored sky. **Touch**: stir only, no ink drop.

Magma

Molten folds crawling over dark basalt, glowing white-hot where the flow is fastest. **Touch**: stir only, no ink drop.

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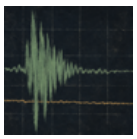
10.3 Scientific Pack

Instrument-style displays. Several of these draw the literal audio signal, not a simulated scene.

Scope

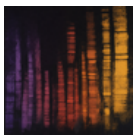
A stereo XY phosphor display: left channel on one axis, right on the other, with an afterglow trail and a brightness flash on each note onset. **Touch**: none. This is a watch-only display.

Trace



Two overlapping traces on a graticule. The amber lane scrolls a min/max waveform of the dry resonator; a faster green lane sweeps the full mix on top of it. **Touch**: none.

Spectrograph



A scrolling FFT waterfall: frequency running vertically, time flowing left, phosphor-colored. **Touch**: dragging spawns expanding ripple rings that trail along your swipe path.

Ripple Tank

Each ringing voice becomes a circular wave source. Pitch sets its spatial frequency, energy sets its amplitude, and the sources sum into an interference pattern. Two slow ambient sources run always, so the tank is never empty. **Touch**: an active touch fades in its own bright, localized wave source at your fingertip, fading back out on release.

Chladni Dust

Tens of thousands of particles continuously settle onto standing-wave "nodal line" patterns, the classic Chladni plate figures. The patterns morph slowly over time, and sound onsets scatter the dust before it resettles. **Touch**: scatters dust at the touch point, the same way a sound onset does.

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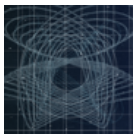
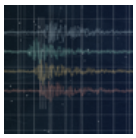
Harmonograph



A decaying Lissajous pendulum trace drawn from the live stereo signal, precessing slowly on its own. Note onsets widen the trace, flash it brighter, and nudge the precession permanently. **Touch**: none.

Seismograph



A four-pen strip-chart recorder, one pen per active voice, each kicked by that voice's onsets and settling with a spring-damped trace. **Touch**: a subtle brightness nudge on whichever pen's lane is nearest your finger. It's not enough to read as an interaction on its own.

Oscilloscope

A straight triggered oscilloscope with no automatic gain or timebase. You set both by hand. **Touch**: none. While this skin is active, two persistent sliders overlay the hero:

Control	Range	Default	Effect
LEVEL	0 to 100%	50%	Vertical gain, roughly 0.1× to 10×, logarithmic, 1× at the center.
SPEED	0 to 100%	50%	How much of the triggered window is swept across the screen, from the full window at 0% down to about an eighth of it at 100%.

Rosette

A harmonograph simulation, and the counterpart to Harmonograph above: that skin plots the raw audio signal, this one listens to the harmony. Two damped pendulums swing to the notes you play, one driven by the dominant voice's pitch class and one by the second voice (or a fifth above when you play alone). Voice energy sets their swing, and they ring down as the notes decay, while the drawing table slowly precesses and the pen inks into an accumulating drawing. A new note re-strikes the pendulums; silence lets the drawing finish itself. **Touch**: none. Like the other chart-style skins, it's watch-only.

10.4 Fractal Pack

Living fractals. Each one runs and evolves on its own. What touch does varies by skin: turn a page, plant a seed, bend the figure.

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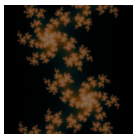
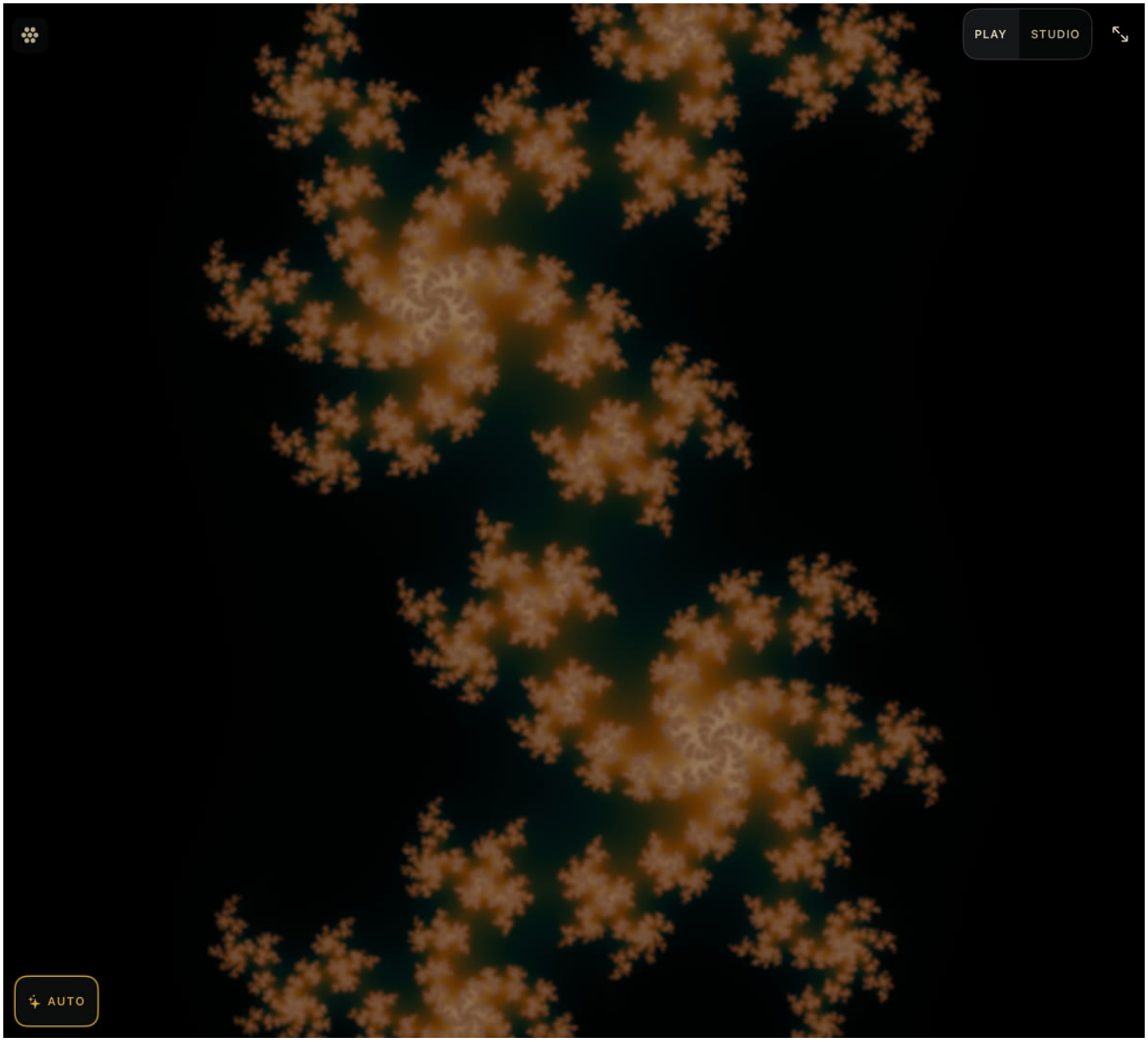
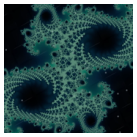
Julia Bloom



A living Julia-set fractal that grows and drifts on its own, its constant riding slowly around the edge of the Mandelbrot cardioid. **Touch**: tap to jump the fractal's constant toward roughly where you tapped, with a little randomness so repeated taps in one spot still vary. The same tap advances to the next of six curated color combinations. Both transitions ease.



Spiral Bloom



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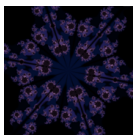
A woven double-spiral fractal, parked at a fixed constant and slowly turning on its own with one set palette. **Touch**: tap to nudge the constant off its resting point. It settles back over about six seconds.

Fractal Tree

A branching tree that curls its own growth into a spiral, breathing gently with the sound. **Touch**: tap to plant a whole new tree, up to four at once; a fifth tap replaces the oldest. Drag to bend the entire grove toward your finger's horizontal position. Let go and most of that bend stays as a standing lean.

Radial Mandala



A kaleidoscopic fractal folded into radial symmetry: stained-glass cells over dark spokes, in jewel tones. **Touch**: tap to advance the fold count to the next of six symmetry settings (5, 6, 7, 8, 10, or 12-fold) and to the next curated palette. Both ease.

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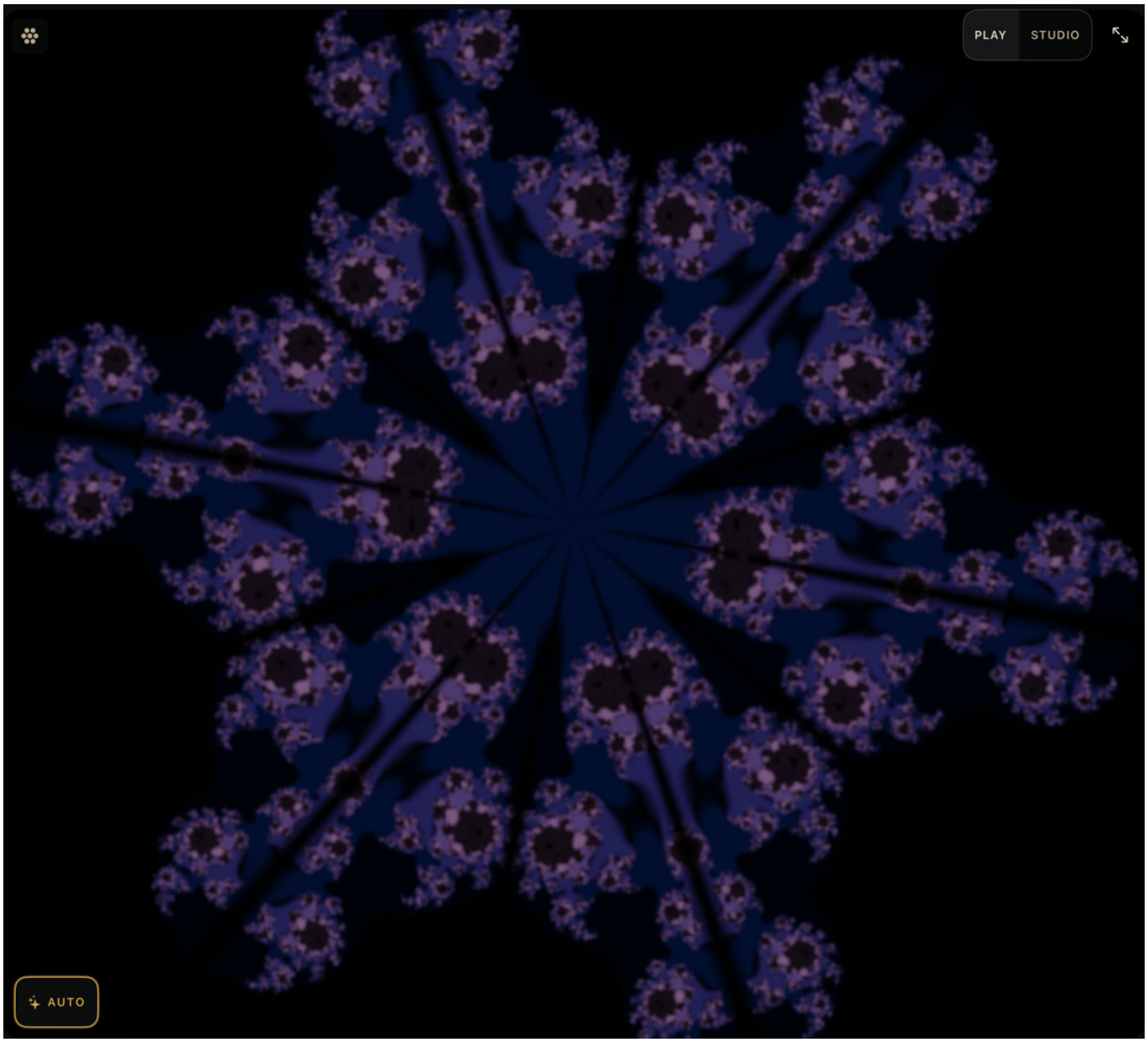
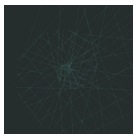
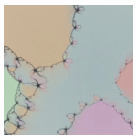


String Weave



A guilloche/string-art spiral of luminous threads, turning slowly on its own. **Touch**: drag to rotate the whole figure by hand, live, on top of its own autonomous spin. A small dead zone at the exact center is ignored. A quick tap anywhere pages to the next of six curated figures.

Shattered Light



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Five ink-wash color fields share one sheet, their borders bleeding where the underlying math roots collide. One voice drives each root's slow orbit, minutes long. **Touch**: drag to capture whichever root is nearest and pull it toward your finger; release it and it springs back into its own orbit. A quick, still tap pages to the next ink-wash color combination.

Obsidian Bloom

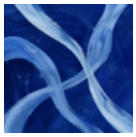
A pale-stone sculpture, raymarched in 3D, tumbling slowly in a dark void. Notes bloom soft nodules of warm light from within, and pitch sets the glow's hue. It's the only fully 3D skin, and the only one gated by device: on older hardware that can't render it fast enough it's hidden from the picker (roughly, anything older than an iPhone 8/X-class chip). **Touch**: drag to orbit the camera around the sculpture, grab-and-spin style. It springs back to its own slow tumble when you let go. A quick tap advances to the next of three glow-color pages.

10.5 Complete Collection

Coral Bloom

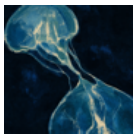
A slow reaction-diffusion simulation grown from sound-triggered nucleation points: organic green coral/moss growth with bright lime filaments along the growth front. **Touch**: injects a new growth point at your fingertip.

Harmonic Filaments



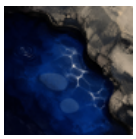
Up to four luminous ribbon strands, one per active voice, each a procedural curve shaped by that voice's pitch. They drift and cross, and a released voice leaves a fading ghost of its own strand behind. **Touch**: bends the strand field gently around your fingertip.

Tidal Glass



Eight to twenty-four soft "metaball" masses drift and merge, shaded like liquid glass or mercury. Sound swells add motion and swell their size. **Touch**: holding a touch attracts nearby masses toward your finger; a fast flick repels them.

Tidepool



A particle-based fluid simulation, up to 20,000 particles with neighbor forces, rendered as lit blue spheres. You never add particles to the room or remove them, only stir. **Touch**: your position, drag, and speed all feed directly into the fluid forces, so a swipe visibly carries the water with it.

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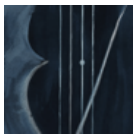
Aurora Loom

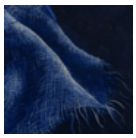
A dense curtain of near-vertical luminous fibers swaying in a sound-driven wind field, with brighter "gusts" where voices and onsets land. **Touch**: touch combs the fibers apart locally, and your drag motion sends a ripple rolling across the whole width of the curtain.

Strings



Rows of loose, glowing strings that vibrate with the sound and flash when a note lands near their position. **Touch**: dragging strums. Each new string your finger crosses gets plucked, harder the faster you're moving.

Cloth Mesh



A luminous wireframe cloth grid rippling in perspective; note onsets spawn a ripple positioned by pitch. **Touch**: dragging spawns a trail of ripples along the swipe path.

10.6 Black & White

Eight monochrome skins. Five of them (Bands, Halftone, Rorschach, Rorschach Wall, ASCII) read the same underlying fluid field as the Flow Pack, presented as a contour map instead of colored ink. **Touch**: dragging warps the pattern locally; it settles back once you lift your finger. Note onsets perturb it too, the same way they do in the Flow Pack.

Bands

Marbled black-and-white bands folding through a liquid.

Halftone

Newsprint dots that change size with the sound.

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Rorschach

A symmetric inkblot that changes shape with the sound.

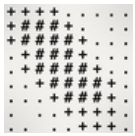
Word Flipper

A split-flap departure board. Each note turns another letter. **Touch**: drag fast enough across the board and it strums the flaps under your finger, the same way brushing a real split-flap sign would. A still touch does nothing.

Word Flipper Paper

The same board, printed dark on a pale page. **Touch**: same strum as Word Flipper.

ASCII



Shapes and movement drawn with text characters.

Rorschach Wall

The inkblot repeated edge to edge.

Turing

A slowly shifting labyrinth in black and white. **Touch**: dragging stirs the labyrinth locally rather than drawing on it; holding a touch down feeds it too.

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10.7 Experimental

Fireflies

A dark meadow of ambient fireflies that entrain their flicker to your playing's rhythm. A small pool of longer-lived "note fireflies" spawns one per onset; they linger and fade over about fifteen seconds. **Touch**: holding a touch gathers the ambient fireflies in toward your fingertip. Release and they disperse again.

Koi Pond

Five resident koi swim the pond on their own, each with a burst-glide-hover rhythm. Note onsets send ripples marching across the water. **Touch**: touching down drops a small ripple. A fast drag near a fish startles it into turning away and bursting into a quick swim. A slow or still touch tugs its next heading toward your finger out of curiosity.

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Frost

Ice needles creep across the screen as you play, note onsets planting new seed crystals that grow outward. **Touch**: a moving touch melts the ice along the drag path, clearing space for new frost to grow back into later.

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11. External displays

Connect Particle Chimes to a second screen and it shows the visualizer full-screen there, while your iPad or iPhone keeps its whole instrument UI. Nothing to set up: it happens on connect.

External display is **free**. It is not part of Studio.

> ⚠ **Standalone app only**
>
> The second screen comes from the standalone Particle Chimes app. Running as an AUv3 inside AUM, Logic or Cubasis, the app cannot open a second window, so nothing appears on the external display.

11.1 Connecting

Both routes work the same way:

- **AirPlay** to an Apple TV, or to any AirPlay-capable TV or monitor.
- **Wired**, with a USB-C to HDMI adapter, a USB-C monitor cable, or a capture card.

The instrument keeps running on the device throughout. The external screen is a second view of the same performance, not a takeover.

11.2 Two modes

Dedicated (default)

The external screen shows **only the visualizer**, full-screen, with no controls, no chrome and no status bar. Your device keeps the ribbon, the tabs and every control exactly where they were.

This is the mode for playing to a room, and the one you want feeding a capture card.

Mirror

The external screen shows **exactly what is on your device screen**, controls included. Use it for teaching, demos and tutorials, where the point is showing someone where to put their fingers.

Turn it on in the **skin picker**, in the settings group at the bottom of the sheet, between Sleep Mode and Hi-Res Visuals:

Mirror External Display Off shows the full-screen visualizer. Turn on to mirror this screen instead, for demos and tutorials.

The toggle is free in both positions, and it takes effect straight away, including on a display that is already connected. There is no need to disconnect and reconnect.

11.3 Resolution and quality

The external view renders for the screen it is on, independently of what your device is drawing for itself. Hi-Res Visuals raises the quality tier of the visualizer, and Low Power Mode and thermal pressure lower it, exactly as they do on the device.

This has nothing to do with video export, which renders offscreen at whatever resolution you pick and ignores both.

11.4 Streaming

For OBS and similar, feed the **dedicated** view into a capture card over HDMI: it is already clean and chrome-free, so there is nothing to crop. Use **mirror** instead when the stream is a tutorial and the controls are the subject.

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11.5 Where to go next

- Visualizers — skins, Hi-Res, and recording a performance
- Settings reference

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12. Particle Chimes as an AUv3

Particle Chimes is an AUv3 **instrument**: Audio Unit type `aumu`, subtype `ChP1`, manufacturer `PFct`, listed in a host as "Plastic Factory: Particle Chimes." Load it from your host's instrument list, not its effects list. It registers as a synth/generator, so it won't appear in an effects-only slot.

12.1 The plugin's interface

The AUv3 view is the whole app interface: Play, Studio, the sound browser, the skin picker, all of it. It reports a preferred size of 1024×480 and resizes to whatever frame your host gives it.

> **Short, wide host windows**
>
> Some hosts hand out a window wide enough to report as "regular" width but too short in actual pixels for the full three-column Studio layout. AUM is the confirmed case. Particle Chimes checks the real window dimensions, not just the size class, and automatically drops to the compact phone-style layout so the performance ribbon doesn't get clipped off-screen.

12.2 MIDI

The plugin reads note-on, note-off, and All Notes Off (CC 123) directly from your host's MIDI stream. Pitch bend, other CCs, and aftertouch aren't currently handled.

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12.3 Automatable parameters

Seventeen core sound parameters are exposed as AU parameters. Automate or record them from your host like any other plugin parameter:

Parameter	Range	Default	Unit
Resonator Model	0 to 11 (indexed)	Modal	indexed
Structure	0 to 1	0.30	
Brightness	0 to 1	0.50	
Damping	0 to 1	0.50	
Position	0 to 1	0.50	
Polyphony	1 to 4 (indexed)	2	
Chord	0 to 10 (indexed)	0	
Bloom	0 to 1	0.46	
Texture Mix	0 to 1	0.65	
Cloud Texture	0 to 1	0.50	
Cloud Size	0 to 1	0.50	
Cloud Density	0 to 1	0.60	
Cloud Spread	0 to 1	0.70	
Reverb Mix	0 to 1	0.30	
Reverb Size	0 to 1	0.50	
Reverb Damping	0 to 1	0.50	
Reverb Pre-delay	0 to 200	0	ms

Three more cover AUTO's tempo sync:

Parameter	Range	Default	Unit
Auto Sync	on/off	on	boolean
Auto Division	0 to 15 (indexed, the 16-division ladder; see The AUTO player)	1/4 dotted	indexed
Auto Rate (Free)	0.25 to 4	0.75	seconds

AUTO's on/off switch is not automatable

Whether the pattern generator is running has no AU parameter, so a saved host session never starts playing a pattern on its own the moment it loads. Sync, division, and free rate are parameters; the on/off state resets with every session load.

AUTO can still start and stop itself, without automation, by watching your host's transport: turn on **FOLLOW HOST TRANSPORT** in AUTO's settings (off by default) and AUTO starts when the host starts playing and stops when it stops. See The AUTO player. This only shows up as an AUv3, since there's no host transport to follow standalone.

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12.4 What's recalled but not automatable

Your root note, scale, and any active tuning (bank, custom `.scl`, reference pitch) round-trip through the host's own session save and reload correctly. None of them are exposed as AU parameters, so you can't automate a key change from the host's automation lane. You only get back the key you had when you last saved.

12.5 Factory presets

Four factory presets come through the standard AU preset mechanism: **Bloom Zero (Dry Resonator)**, **Gentle Cloud**, **Full Bloom**, and **Frozen Glass**. They appear in your host's own preset menu, and they're separate from the sound library in the app's own preset browser.

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13. Settings reference

Ranges and defaults for every control in the SETTINGS sheet (the gear icon on the performance ribbon) and for Play mode's knobs. The links go to the fuller explanations.

13.1 SETTINGS (performance ribbon gear icon)

Opens from both Play and Studio, always in this order.

Root & Scale

See The performance ribbon.

Control	Type	Values
Root	Segmented picker	12 pitch classes
Family	Segmented picker	Pentatonic, Major & Modes, Minor, Blues & Symmetric
Scale	Chip grid	23 scales across the four families; grayed out under a non-12-note tuning

AUTO

See The AUTO player.

Control	Type	Values	Default
AUTO PLAY	Toggle	on/off	off
FOLLOW HOST TRANSPORT	Toggle (AUv3 only; not shown standalone)	on/off	off
Mode	Segmented picker	Turing, Arp, Drift	Turing
Direction	Segmented picker (Arp only)	Up, Down, Up·Down, Random	Up
SYNC · tempo	Toggle	on/off	on
RATE (synced)	Slider, 16 steps	the division ladder, 4/1 down to 1/32	1/4 dotted
RATE (free)	Slider, log taper	0.25 to 4 s	0.75 s
BPM	Stepper (standalone only; host-driven inside a DAW)	20 to 300	
PROB	Slider (Arp/Drift only)	0 to 100%	100%
LOOP	Slider (Turing only)	0 to 100%	85%
New loop	Button (Turing only)	reseeds the pattern	

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Tuning

See Tuning.

Control	Type	Values	Default
Tuning bank	Chip grid	STANDARD, 12-TET, Just Major, Pythagorean, Bohlen-Pierce, plus any imported `.scl`	STANDARD
REF · A4	Slider (shown once a tuning is active)	415 to 466 Hz	440 Hz
Load .scl…	Button → file picker	any valid Scala file	

Movement

See The AUTO player.

Control	Type	Values	Default
MOVEMENT	Toggle	on/off	off
DEPTH	Slider	0 to 100%	25%

Fixed pitch and ridge density

See The performance ribbon.

Control	Type	Values	Default
FIX	Toggle chip	on/off	off
RIDGE DENSITY	Chip row	COARSE (4 ridges/note), MED (8/note), FINE (16/note)	FINE

13.2 CHIMES (Resonator panel gear icon)

A second, smaller settings sheet titled CHIMES. It appears only in Studio on compact-width layouts (iPhone). On iPad the same controls sit inline in the Resonator panel, with DRY in the panel header. What it shows depends on the active resonator model:

Control	Shown for	Values	What it does
Scale	The sympathetic-string models	Oct, 5th, sus4, min, m7, m9, m11, 69, M9, M7, Maj	The chord the sympathetic strings are tuned to. The other models don't read it, so it's hidden for them.
VOICING	Sympathetic (Quantized) only	CLASSIC, BUTLER, SHRUTI	Which chord table the quantized model quantizes into. On this model the chord itself is driven by the Harmonics knob (shown as CHORD), and these chips choose the table it reads.
MOTOR DEPTH	Always	0 to 100%	60%
DRY	Always	on/off	A/B parity mode: forces the bare Classic resonator and bypasses the particle cloud, Bloom, and reverb so you hear the resonator alone. Non-destructive; switching it off restores everything as it was.

MOTOR DEPTH sets how far the vibraphone-style discs close, from barely moving to a pronounced wobble. It has no effect while MOTOR itself is off, and it keeps its value while off, so turning MOTOR back on picks up right where DEPTH was left. The MOTOR on/off chip lives on the resonator panel itself, not in this sheet; see Play and Studio.

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13.3 Play mode knobs

Ten knobs across two cards, all continuous 0 to 100% unless noted. See Your first sound and Play and Studio.

Resonator card

Knob	Default	Controls
Harmonics	30%	Resonator structure
Bright	55%	Resonator brightness
Sustain	70%	Resonator damping (inverted: higher Sustain, lower damping)
Bloom	46%	Feedback bus level
Layer	70%	Output level of the second (parallel-sustain) resonator voice; reads "Off" below 2%

Particles

Knob	Default	Controls
Mix	65%	Resonator/particle-cloud balance
Texture	50%	Cloud grain size and density together
Motion	0%	Per-head cloud speed and stereo spread together
Pitch	0%	Per-head pitch spread (unison up to roughly two octaves plus a fifth, depending on setting)
Air	30%	Reverb mix

13.4 Studio effects panels

The right column on iPad; the FX page on iPhone.

Delay

A stereo delay running before the reverb.

Control	Type	Values	Default
MIX	Knob	0 to 100%	0% (silent until raised)
FDBK	Knob	0 to 100%	50%
TIME	Knob	free: milliseconds; synced: musical divisions	mid-scale
TONE	Knob	dark ↔ flat ↔ bright	flat
SYNC	Chip	on/off; TIME reads in divisions of the tempo, not milliseconds	off
PING-PONG	Chip	on/off; repeats alternate left/right	off

Moving TIME used to glide the read pointer, which sweeps pitch as a side effect. As of 1.1 it crossfades between the old and new delay time instead (a short equal-power fade), so a TIME change no longer bends the pitch of what's repeating. This also governs LOOP mode's tap timing (see Particle modes), since the cloud's looping delay uses the same mechanism as the Delay module. There's no in-app switch for this on iOS yet: the new crossfade behavior is always on.

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Bloom

The feedback bus, plus the second resonator voice merged into the same panel.

Control	Type	Values	Default
BLOOM	Slider	0 to 100%, routed back into the resonator	46%
LAYER	Segmented	OFF, TRACK (follows the played note), FIXED (holds the root), FREE (un-quantized sympathetic wash, long ring)	TRACK
LEVEL	Slider	0 to 100%; the same value as Play's Layer knob	the sound's own value

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14. Troubleshooting

Common questions about Particle Chimes.

I can't find Particle Chimes in my host's instrument list

Look under instruments, not effects or FX. Particle Chimes is an AUv3 **instrument** (component type `aumu`), and hosts split their plugin browsers into instrument and effect sections, so it only appears in the instrument one. Load it onto an instrument track or slot there.

See AUv3 for its exact component identity.

AUTO isn't playing when I reopen a saved session

Tap the AUTO chip to start it again. AUTO's on/off state is intentionally left out of what gets saved, so a session never starts generating notes on its own the instant it loads. Its tempo sync settings (sync, division, rate) do come back correctly; only the running state doesn't.

A microtonal tuning doesn't carry over when I share a sound

Set the tuning again on the receiving device. In the standalone app, tuning is a device-wide setting and isn't part of an individual saved sound: your device remembers it across launches, but it doesn't travel with a `.json` preset file. See Tuning.

Inside a host as an AUv3 it works differently. Saving your DAW session does capture and restore your exact tuning along with everything else.

FREE mode on the performance ribbon doesn't sound microtonal

FREE is a continuous, unquantized glide, and it stays spaced in ordinary 12-tone semitones no matter which tuning is active. It's the one mode that does this.

Switch to NOTES, TEXTURE, or the FIXED theremin column. All three snap to the tuning's own note ladder.

Loading a sound changed my key or stopped my AUTO pattern

Loading a curated sound resets root, scale, and the AUTO pattern along with the sound itself. To keep what you had, turn on **KEEP KEY & AUTO** at the top of the sound browser before you load. See Presets and favorites.

This only comes up with the curated library and the factory baselines. User sounds you've saved yourself never carry key information either way.

I can't rename a saved sound

There's no rename, only save and delete. Save the sound again under the new name, then delete the old entry. That starts a fresh favorite star on the new name; the old star doesn't carry over.

A visualizer skin is missing from the picker

If the missing skin is Obsidian Bloom, it's a hardware floor, not a setting. Obsidian Bloom is the one fully 3D-raymarched skin, and it's gated to devices fast enough to render it: roughly anything at or newer than an iPhone 8/X-class chip. On older devices it's hidden from the picker, since it would run poorly there.

See Visualizer skin catalog.

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15. Lineage

Particle Chimes stands on open-source synthesizer DNA, and we want to be plain about where it comes from. Both halves of the engine, the ringing and the cloud, descend from Eurorack modules designed by Émilie Gillet of Mutable Instruments. She published her DSP code under the MIT license, and that is the reason instruments like this one can exist. The original sources live at github.com/pichenettes/eurorack.

15.1 Rings: the resonators

The resonator at the heart of Particle Chimes is a port of Rings, Mutable Instruments' modal resonator module (itself the resonator half of the larger Elements voice). All six of the instrument models in the sound browser are Rings models:

Particle Chimes instrument	Rings model
Modal	Modal resonator
Sympathetic	Sympathetic strings
String	Modulated/inharmonic string
FM Voice	2-op FM voice
Sympathetic (Quantized)	Quantized sympathetic strings (Western chords)
String + Reverb	String with reverb

Studio's model stepper goes further still, into the six string-synth models from Rings' hidden "Easter egg" mode: the formant, chorus, ensemble, and reverb variants.

The exciter section in Studio (Friction, Hard, Level, and the character stepper) is ported from **Elements**, Rings' bigger sibling: the bow, blow, and strike generators that Elements uses to drive the same kind of resonator.

15.2 The alternate firmware: Mini-Elements

That pairing, Rings' resonator driven by Elements' exciters, had already been done on the hardware. Lyle Mills' alternate Rings firmware, widely known as **Mini-Elements**, gives Rings an internal exciter borrowed from Elements: exactly the combination Particle Chimes ships as its exciter section. It's discussed on the Mutable Instruments forum. The firmware's expanded chord tables are in here too: the VOICING chips on the Sympathetic (Quantized) model switch between Rings' original chords (CLASSIC) and the Jon Butler (BUTLER) and Joe McMullen (SHRUTI) tables from that firmware.

15.3 Clouds: the particles

The granular half is the PARTICLES engine, a buffer and three playheads descended from Clouds, Mutable Instruments' granular texture synthesizer. Sound goes into a rolling buffer, and a cloud of overlapping grains reads it back at different positions, sizes, densities, and pitches. Here the cloud listens to the resonators instead of an external input. If you've patched a Clouds, the Particles panel's Pos, Size, Dens, and Tex controls will feel familiar.

15.4 What's ours

The instrument around these engines is original Plastic Factory work: the Play and Studio surfaces, the performance ribbon, the AUTO player, Bloom and its parallel sustain layer, the delay, the tuning system, and every visualizer skin. The vendored Mutable Instruments code retains its MIT copyright notices in the app's source. Thank you, Émilie.

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