



Fishtail 1.0 User Guide

iPhone and iPad tested in AUM

Mac plug-in tested in Logic Pro

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iPhone and iPad: Fishtail 1.0, build 359, iOS or iPadOS 17 or later

Mac: Fishtail for Mac 1.0, build 361, macOS 14 or later, Apple silicon

Verified hosts: AUM on iPhone and iPad; Logic Pro 12.3 on Mac

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1. What Fishtail does

Fishtail creates and controls MIDI notes.

MIDI is control data. It can tell another app or plug-in which note to play, when to play it, how hard to play it, and when to stop it.

Fishtail does not contain a synthesiser for its generated parts. It cannot make the instrument sound by itself. A separate receiving instrument is required.

On iPhone and iPad, use Fishtail inside a host such as AUM. Route Fishtail's MIDI output to a receiver. A receiver can be a synthesiser, sampler, or another app that accepts MIDI.

On Mac, use the Fishtail plug-in in Logic Pro. Route its Instrument Output to one or more Logic Software Instrument tracks.

Pulse plays the reference pitch. **Ticker** plays a utility metronome. Neither control plays the generated composition.

Fishtail has a standalone Mac app. Use the Fishtail plug-in in Logic Pro to send generated MIDI to another Mac instrument. The standalone app does not send generated MIDI to another Mac instrument.

Supported release builds

Platform	Release	Minimum system	Processor	Verified host
iPhone	Fishtail 1.0, B359	iOS 17	arm64 device	AUM
iPad	Fishtail 1.0, B359	iPadOS 17	arm64 device	AUM
Mac plug-in	Fishtail for Mac 1.0, B361	macOS 14	Apple silicon arm64	Logic Pro 12.3

The main interface shows **B359** on iPhone and iPad. It shows **B361** on Mac.

2. Basic terms

The following terms are used throughout this guide.

Term	Meaning in this guide
Host	The app that loads Fishtail and manages connections. AUM and Logic Pro are hosts.
Receiver	A synthesiser, sampler, or other instrument that accepts MIDI and makes sound.
Route	A connection that sends MIDI from one place to another.
MIDI	Note and control messages. MIDI is not recorded instrument audio.
AUv3	Apple's Audio Unit extension format. A host loads the Fishtail AUv3 plug-in.
Take	One completed set of MIDI made by <code>Generate</code> . Each take keeps its own number.
Current	The take that is ready to play now.
Next	One take waiting to become Current after the whole Current take ends.
Editable recipe	The visible Structure, Arrangement, and generation settings. These settings can differ from Current.
Section	One part of the form. A section has bars, key, mode, time signature, cadence, role, treatment, and expression settings.
Reference	A named note and exact frequency used to calculate pitches. The default is A3 at 220 Hz.
Tuning	The set of frequency relationships used for the notes.
Pitch bend	A MIDI message that moves a played note above or below its normal pitch.
Semitone	One step between adjacent piano keys. The output labels shorten semitone to <code>st</code> .
MPE	MIDI Polyphonic Expression. It uses separate MIDI channels so notes can receive separate pitch changes.
MTS	MIDI Tuning Standard. Fishtail can export a tuning table as a <code>.syx</code> file.
Scala	A tuning-file format. Fishtail exports a <code>.scl</code> scale and a <code>.kbm</code> keyboard map.
CV	Control voltage. Fishtail can export audio files for pitch, gate, and clock voltages (this is an experimental feature).
Link	Ableton Link. It shares tempo, beat position, and optional start or stop information between compatible apps.

3. First sound on iPhone or iPad in AUM

These steps use one Fishtail MIDI output and one receiving instrument. They use `Normal 12-ET`, so the receiver needs no special pitch-bend setup.

Install the required apps

Install Fishtail and AUM on the same iPhone or iPad. Install or choose a sound-producing AUv3 instrument that AUM can load.

Hear one take in AUM

Goal: Hear a Fishtail take through one receiving instrument.

Before starting: Open a new AUM session. Make sure the device volume is at a safe level.

Steps:

1. Tap the add-channel button in AUM.
2. Add an Audio channel.
3. Tap the empty input slot on that channel.
4. Choose Fishtail from the installed AUv3 instruments.
5. Add a second Audio channel.
6. Tap the empty input slot on the second channel.
7. Choose a sound-producing instrument.
8. Tap AUM's Z-shaped MIDI routing button.
9. Find Fishtail's `00 All` source in the MIDI Routing Matrix.
10. Find the receiving instrument in the destination list.
11. Tap the matrix cell that connects `00 All` to the receiving instrument.
12. Close the MIDI Routing Matrix.
13. Tap Fishtail to open its interface.
14. Expand `Arrangement` if it is closed.
15. Tap `D4`.
16. Leave `Output` set to `Normal 12-ET`.
17. Tap `Generate`.
18. Wait for the take to become ready.
19. Tap `Play`.

Expected result: Fishtail sends MIDI through `00 All`. The receiving instrument makes sound. Its AUM level meter moves.

If it does not work: Check that the receiver can make sound from its own keyboard. Check that `00 All` is connected to that receiver in the MIDI Routing Matrix. Check that the receiver's Audio channel reaches AUM's hardware output. Check that Fishtail has a generated Current take. Check that the device and AUM channel levels are not muted.

`Link` is not required for this procedure.

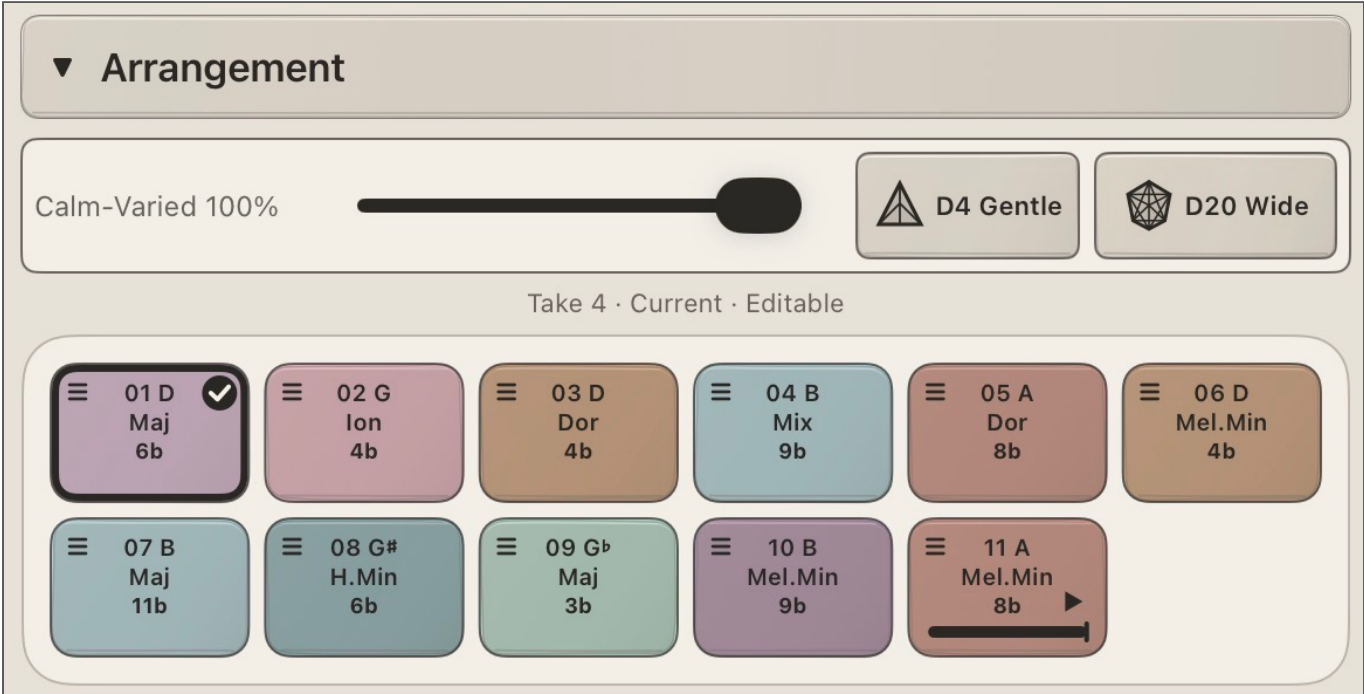


Figure 1. The B359 Arrangement panel. Choose D4 or D20 before the first Generate.

Use seven separate receivers in AUM

Fishtail exposes eight fixed MIDI outputs in AUM. `00 All` carries the combined result. Outputs `01` through `07` carry individual parts.

Fishtail output	Part
<code>00 All</code>	All generated parts together
<code>01 Bass</code>	Bass
<code>02 Tenor</code>	Tenor
<code>03 Alto</code>	Alto
<code>04 Soprano</code>	Soprano
<code>05 Bloom B</code>	Bloom Bass
<code>06 Bloom Oct</code>	Bloom Octave
<code>07 Shimmer</code>	Shimmer

Route the seven parts in AUM

Goal: Send each Fishtail part to a separate receiving instrument.

Before starting: Load Fishtail and seven sound-producing instruments in AUM. Leave Fishtail at **Output: Normal 12-ET**.

Steps:

1. Open AUM's MIDI Routing Matrix.
2. Connect **01 Bass** to the Bass receiver.
3. Connect **02 Tenor** to the Tenor receiver.
4. Connect **03 Alto** to the Alto receiver.
5. Connect **04 Soprano** to the Soprano receiver.
6. Connect **05 Bloom B** to the Bloom Bass receiver.
7. Connect **06 Bloom Oct** to the Bloom Octave receiver.
8. Connect **07 Shimmer** to the Shimmer receiver.
9. Remove any unwanted **00 All** connection.
10. Return to Fishtail.
11. Tap **Generate**.
12. Wait for the take to become ready.
13. Tap **Play**.

Expected result: Each receiver responds only to its connected part. Several receivers can sound at the same time.

If it does not work: Check each matrix cell. Check that **Output** shows **Normal 12-ET**. Check that each receiver's Audio channel reaches AUM's hardware output. A part can be silent when the chosen **Voices/Layout** or generated take contains no notes for that part.

Add split pitch bend to seven AUM receivers

Goal: Send the selected tuning separately to all seven AUM receivers.

Before starting: Complete the seven-receiver procedure. Set every receiver's pitch-bend range to plus or minus 2 semitones.

Steps:

1. Tap Fishtail to open its interface.
2. Expand **Intonation**.
3. Tap **Output**.
4. Choose **01-07 split bend +/-2 st**.
5. Tap **Play**.

Expected result: Each named output sends notes and pitch-bend messages for its part.

If it does not work: Check every receiver's pitch-bend range. Check that each receiver accepts a pitch-bend range of plus or minus 2 semitones. Return to **Normal 12-ET** to check the MIDI routes without tuning offsets.

4. First sound on Mac in Logic Pro

Install Fishtail for Mac from the Mac App Store. The app contains the Fishtail AUv3 plug-in. There is no separate plug-in installer.

Logic calls the connection from one instrument plug-in to another **Internal MIDI In**.

Logic does not show an output called **00 All**. A receiving track with **MIDI In Channel** set to **All** is the combined route. For separate parts, use seven receiving tracks set to channels **1** through **7**. Normally use either the combined receiver or the seven separate receivers. Monitoring both duplicates the parts.

Hear one take in Logic Pro

Goal: Hear a Fishtail take through one Logic Software Instrument.

Before starting: Install Fishtail for Mac. Open an empty Logic project.

Steps:

1. Click **Add Tracks** in Logic.
2. Select **Software Instrument & MIDI**.
3. Select **A Software Instrument**.
4. Click **Create**.
5. Click the new track's **Instrument** slot.
6. Choose **Fishtail for Mac** from the Audio Units instrument list.
7. Click **Add Tracks**.
8. Add a second Software Instrument track.
9. Load a sound-producing instrument on the second track.
10. Select the second track.
11. Show the **Track Inspector**.
12. Open **Internal MIDI In**.
13. Open **Instrument Output**.
14. Choose the track that contains Fishtail.
15. Set **Record** to **Both**.
16. Set **MIDI In Channel** to **All**.
17. Enable the orange **I** Input Monitoring button on the receiving track.
18. Open the Fishtail plug-in window.

19. Expand **Arrangement** if it is closed.
20. Click **D4**.
21. Leave **Output** set to **Normal 12-ET**.
22. Click **Generate**.
23. Wait for the take to become ready.
24. Click **Play**.

Expected result: Fishtail sends MIDI to the receiving Logic track. The receiving instrument makes sound. Its track meter moves.

If it does not work: Check that the second track contains an instrument. Check that its orange **I** button is on. Check that **Internal MIDI In** points to Fishtail's **Instrument Output**. Check that **MIDI In Channel** is **All**. Check that Fishtail has a Current take. Close and reopen Logic if Fishtail is missing from the Audio Units instrument list.

Use seven separate receivers in Logic Pro

Logic receives the seven parts from one Fishtail **Instrument Output**. Each receiving track filters one MIDI channel.

Logic MIDI In Channel	Fishtail part
1	Bass
2	Tenor
3	Alto
4	Soprano
5	Bloom Bass
6	Bloom Octave
7	Shimmer

Do not create an eighth receiver for **08 Extra**. That route is reserved for file export. It is not an eighth live part in this setup.

Route the seven parts in Logic Pro

Goal: Send each Fishtail part to a separate Logic Software Instrument track.

Before starting: Create one track containing Fishtail. Create seven receiving Software Instrument tracks. Load a sound-producing instrument on every receiving track.

Steps:

1. Open Fishtail.
2. Expand **Intonation**.
3. Click **Output**.

4. Choose **Logic Ch 1-7 / AU 01-07 bend +/-2 st**.
5. Select the Bass receiving track.
6. Set **Internal MIDI In** to Fishtail's **Instrument Output**.
7. Set **Record** to **Both**.
8. Set **MIDI In Channel** to **1**.
9. Enable the orange **I** Input Monitoring button.
10. Select the Tenor receiving track.
11. Set **Internal MIDI In** to Fishtail's **Instrument Output**.
12. Set **Record** to **Both**.
13. Set **MIDI In Channel** to **2**.
14. Enable the orange **I** Input Monitoring button.
15. Select the Alto receiving track.
16. Set **Internal MIDI In** to Fishtail's **Instrument Output**.
17. Set **Record** to **Both**.
18. Set **MIDI In Channel** to **3**.
19. Enable the orange **I** Input Monitoring button.
20. Select the Soprano receiving track.
21. Set **Internal MIDI In** to Fishtail's **Instrument Output**.
22. Set **Record** to **Both**.
23. Set **MIDI In Channel** to **4**.
24. Enable the orange **I** Input Monitoring button.
25. Select the Bloom Bass receiving track.
26. Set **Internal MIDI In** to Fishtail's **Instrument Output**.
27. Set **Record** to **Both**.
28. Set **MIDI In Channel** to **5**.
29. Enable the orange **I** Input Monitoring button.
30. Select the Bloom Octave receiving track.
31. Set **Internal MIDI In** to Fishtail's **Instrument Output**.
32. Set **Record** to **Both**.
33. Set **MIDI In Channel** to **6**.
34. Enable the orange **I** Input Monitoring button.
35. Select the Shimmer receiving track.
36. Set **Internal MIDI In** to Fishtail's **Instrument Output**.
37. Set **Record** to **Both**.
38. Set **MIDI In Channel** to **7**.
39. Enable the orange **I** Input Monitoring button.
40. Set each receiving instrument's pitch-bend range to plus or minus 2 semitones.
41. Open Fishtail.

42. Click **Generate**.
43. Wait for the take to become ready.
44. Click **Play**.

Expected result: Each Logic receiver responds to its assigned Fishtail part. The seven meters can show activity at the same time. A Bloom receiver remains silent when the generated take contains no notes for that Bloom part.

If it does not work: Check that all seven orange **I** buttons are on. Check that all seven tracks point to the same Fishtail **Instrument Output**. Check that the channels are exactly **1** through **7**. Check that Fishtail shows **Logic Ch 1-7 / AU 01-07 bend +/-2 st**. Check that each track contains an instrument. Check that each instrument's pitch-bend range is plus or minus 2 semitones.

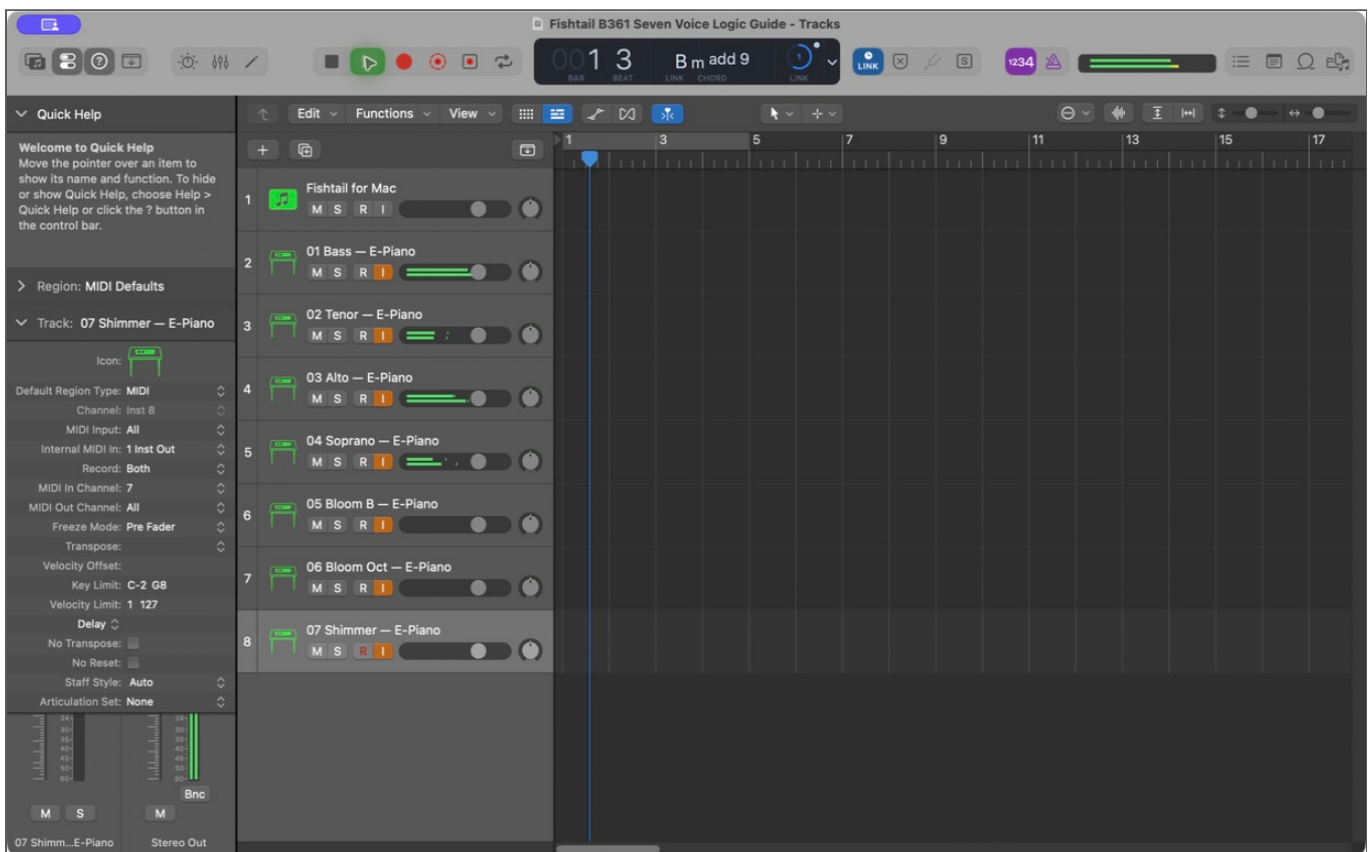


Figure 2. Logic Pro 12.3 routing. One Fishtail Instrument Output feeds seven channel-filtered receivers.

The exact control used to set pitch-bend range depends on the receiving instrument. Confirm that instrument's pitch bend setting before using a bend output.

5. MIDI and audio signal paths

Fishtail sends MIDI. The receiver makes audio.

One receiver in AUM

Fishtail 00 All MIDI → AUM MIDI route → receiving instrument → AUM audio channel → device output

Seven receivers in AUM

Fishtail 01–07 MIDI outputs → seven AUM MIDI routes → seven receiving instruments → AUM audio channels → device output

One receiver in Logic

Fishtail Instrument Output → Logic Internal MIDI In set to All → receiving Software Instrument → Logic Stereo Out

Seven receivers in Logic

Fishtail Instrument Output → seven Logic Internal MIDI In routes → channels 1–7 → seven Software Instruments → Logic Stereo Out

Fishtail's AUv3 audio output is a stereo utility output. Pulse plays the current reference pitch. Ticker follows the current Tempo and swing and uses its own Ticker Time Sig. The generated parts leave as MIDI.

6. Current, Next, and the editable recipe

These three items are different.

Item	What it contains	When it changes
Current	Frozen MIDI that is ready to play now	A successful Generate while stopped, a selected take while stopped, or a whole-piece handoff
Next	One frozen take waiting for the Current take to end	A successful Generate while playing, or a selected take while playing
Editable recipe	Visible controls used for a future generation	As soon as Structure or Arrangement settings are edited

Changing a recipe control does not rewrite Current. The take/status control can show **Changes** while the old Current is still ready.

Changing **Reference Note**, exact reference Hz, **Tuning**, **Output**, or **Tempo** acts on Current immediately. **Rate** changes playback only. Structure, Arrangement, and swing settings require a new **Generate**.

Only one Next can wait at a time. A later successful Generate while playing replaces the waiting Next. It does not replace the Current take.

At the natural end of the whole Current take, a waiting Next becomes Current. A section loop does not perform this handoff.

7. Generate and retain a take

The transport button is labelled **Generate**. It can be shortened to **Gen** when the plug-in is narrow. After a take exists, selecting **Generate** can open a sheet titled **Regenerate**.

Each successful Generate makes a numbered take. Fishtail retains up to 32 takes.

Generate the first Current take

Goal: Create MIDI from the visible recipe.

Before starting: Choose **D4** or **D20**. Stop playback.

Steps:

1. Set any required Structure controls.
2. Set any required Arrangement controls.
3. Set any required swing controls.
4. Select **Generate**.
5. Wait for generation to finish.

Expected result: A new numbered take becomes Current. The take/status control shows its take number.

If it does not work: Check that the Arrangement contains at least one section. Check the status message. Check whether **Takes** already contains 32 takes.

Prepare Next while Current plays

Goal: Create one take that waits until Current ends.

Before starting: Play a Current take.

Steps:

1. Change the editable recipe.

2. Select **Generate**.
3. Wait for generation to finish.

Expected result: Current continues. The new take is marked **Next**. It becomes Current at the natural whole-piece boundary.

If it does not work: Check that whole-piece playback is active. Check **Takes** for a row marked **Next**. Stop a selected-section loop before waiting for a whole-piece handoff.

Make a different random form

Goal: Replace the editable Arrangement with a new form source.

Before starting: Open **Arrangement**.

Steps:

1. Set **Calm – Varied** to the required amount.
2. Select **D4** for the narrower form roll.
3. Select **Generate** when the required form is visible.

Expected result: D4 changes the visible recipe. Generate creates a new take from that recipe.

If it does not work: Check that **Arrangement** is open. Use **D20** instead when the task requires the wider form roll.

After a take exists, selecting **D4** or **D20** can open a generation-choice sheet. Follow the labels shown in the sheet. The main transport **Generate** command remains a direct command.

8. Structure

Structure controls affect the next successful Generate. They do not rewrite Current.

Control	Values	Default	Effect
Composer	Imitation & Invention ; Counterpoint ; Fugue State ; Dub Gravity	Imitation & Invention	Selects the composition method
Voices/Layout	Four-part; Bass/Alto/Soprano; Bass/Soprano	Four-part	Selects active main voices
Breathing	0%–100%	74%	Sets continuity and spacing
Density	0%–100%	26%	Sets note activity
Rhythm Motion	0%–100%	18%	Sets rhythmic activity
Bass Pedal	Off or On	Off	Enables the Bass pedal treatment
Tenor Pedal	Off or On	Off	Enables the Tenor pedal treatment
Alto Pedal	Off or On	Off	Enables the Alto pedal treatment

Control	Values	Default	Effect
Soprano Pedal	Off or On	Off	Enables the Soprano pedal treatment
Gravity Velocity	Off or On in Settings	On	On uses generated velocity shaping; Off uses a constant velocity of 88

Fugue State can produce a processed take that is longer than the visible recipe.

Change Structure

Goal: Use new Structure settings for the next take.

Before starting: Open Structure .

Steps:

1. Select a Composer .
2. Select a Voices/Layout .
3. Set Breathing .
4. Set Density .
5. Set Rhythm Motion .
6. Set each required Pedal switch.
7. Select Generate .

Expected result: A new take uses the selected Structure settings. The previous Current remains unchanged until Generate succeeds.

If it does not work: Check that the required voice is present in Voices/Layout . Check that the take/status control no longer shows Changes after generation.

9. Arrangement

Arrangement is the visible form recipe. It contains one or more section tiles.

D4 makes a weighted starting form. D20 uses a wider set of form choices. Calm – Varied changes how broadly the next D4 or D20 result varies. Its default is Varied 16% .

Tap a section tile on iPhone or iPad. Click a section tile on Mac. The selected tile controls the Section definition panel.

Section definition

Control	Values or range	Rule
Bars controls	1–64 bars	A newly added copied section is capped at 4 bars

Control	Values or range	Rule
Move left or right	One position	Unavailable at the first or last position
Add section	One copied section	Uses up to 4 bars from the selected section
Duplicate section	One full copy	Keeps the selected section's bar length
Delete section	Delete selected	Unavailable when one section remains
Key	A, Bb, B, C, Db, D, Eb, E, F, Gb, G, Ab	Used by the next Generate
Mode	Ionian, Major, Mixolydian, Dorian, Lydian, Aeolian, Harmonic Minor, Gravity Melodic Minor, Phrygian	Used by the next Generate
Time Sig	4/4, 3/4, 6/8, 2/2, 5/4, 7/8, 9/8	Used by the next Generate
Cadence	Plagal, Authentic, Modal, Dub Suspension, Minor Authentic	Used by the next Generate
Role	Normal, Development, Refrain	First section is locked to Normal
Treatment	Straight, Gentle, Dubby	Available choices depend on Role

Change one section

Goal: Change the recipe for one section.

Before starting: Open Arrangement . Select a section tile. Open Section definition .

Steps:

1. Set the number of bars.
2. Select Key .
3. Select Mode .
4. Select Time Sig .
5. Select Cadence .
6. Select Role .
7. Select Treatment .
8. Select Generate .

Expected result: The visible recipe changes before generation. A new take contains the edited section after Generate succeeds.

If it does not work: Check that the required section tile is selected. Check whether the first section has locked Role or Treatment values. Check that the take/status control no longer shows Changes after generation.

Add, copy, move, or delete a section

Goal: Change the section list.

Before starting: Select a section. Open `Section definition`.

Steps:

1. Select one section command.
2. Select the required section after the list changes.
3. Select `Generate`.

Expected result: The editable section list changes immediately. Current changes only after Generate succeeds.

If it does not work: Check whether the selected section is at the end of the allowed move direction. Keep at least one section.

Expression and Bloom

Open `Expression & Bloom` inside the selected section.

Control	Values or range	Default
<code>Energy Contour</code>	Natural, Rise, Fall, Arch, Valley, Swell	Natural
<code>Register Span</code>	0%–100%	50%
<code>Register Lift</code>	–100%–100%	Center
<code>Bloom Pressure</code>	0%–100%	Neutral at 50%
<code>Keyboard Bloom</code>	Off or On	Off

These controls affect the next successful Generate.

Change Expression and Bloom

Goal: Apply new expression settings to one section.

Before starting: Select a section. Open `Section definition`. Open `Expression & Bloom`.

Steps:

1. Select `Energy Contour`.
2. Set `Register Span`.
3. Set `Register Lift`.
4. Set `Bloom Pressure`.
5. Set `Keyboard Bloom`.
6. Select `Generate`.

Expected result: The next generated take uses the selected section settings.

If it does not work: Check that the correct section is selected. Check that Generate completes.

10. Feel

Some Feel controls act immediately. Other Feel controls require Generate.

Control	Range or values	Default	Takes effect
Pitch	Normal chooser C0–B6; extended technical range	A3, 220 Hz	Immediately
Fine	–100.0 to +100.0 cents	0.0 cents	Immediately
Tempo	20–220 BPM	60 BPM	Immediately
Rate	1/4x, 1/2x, 1x, 2x, 4x	1x	Playback only
Pulse	Off or On	Off	Immediately; utility reference audio only
Pulse Level	0%–100%	25%	Immediately
Rational Swing	0%–100%	0%	Next Generate
Irrational Swing	0%–100%	0%	Next Generate
Irrational Swing Feel	Hybrid Drift, Living Drift, Natural, Comptroller Time (Experimental)	Natural	Next Generate
Ticker	Off or On	Off	Immediately; reference audio only
Ticker Time Sig	4/4, 3/4, 6/8, 2/2, 5/4, 7/8, 9/8	4/4	Ticker metronome only; does not change a section's Time Sig
Ticker Level	0%–100%	22%	Immediately
Hide visual / Show visual	Hidden or shown	Shown	Display only
Fullscreen / Close	Open or closed	Closed	Display only

Changing Pitch changes the reference and can also change the derived Tempo. Use the Intonation controls when an exact reference value is required.

Rate does not change the exported MIDI. It resets to 1x after host-session recall. During Link playback, a Rate change takes effect on the next Link beat.

Comptroller Time (Experimental) shows a warning and requires Use Comptroller. It can change the processed bar lengths and total duration. It does not change Current until Generate succeeds.

Set Tempo

Goal: Set the live playback tempo.

Before starting: Open **Feel**.

Steps:

1. Set **Tempo** to the required BPM.

Expected result: Current and later playback use the selected tempo. A playing take follows the live tempo change.

If it does not work: Check whether Link is controlling the shared tempo. Check the tempo value in the transport readout.

Change playback Rate

Goal: Play Current at a fraction or multiple of its normal rate.

Before starting: Make a Current take. Open **Feel**.

Steps:

1. Select **Rate**.
2. Choose 1/4x, 1/2x, 1x, 2x, or 4x.

Expected result: Playback uses the selected rate. Exported MIDI remains unchanged.

If it does not work: During Link playback, wait for the next Link beat. Check that the displayed Rate changed.

Check the reference with Pulse

Goal: Hear the current reference as utility audio.

Before starting: Lower **Pulse Level**. Make sure the host can hear Fishtail's audio output.

Steps:

1. Turn **Pulse** on.
2. Set **Pulse Level**.
3. Turn **Pulse** off when the check is complete.

Expected result: Fishtail's utility audio output plays the reference pulse. Generated parts are still MIDI.

If it does not work: Check Fishtail's audio route in the host. Check **Pulse Level**. Check the device or Logic output level.

Check a meter with Ticker

Goal: Hear a reference ticker in a selected meter.

Before starting: Lower `Ticker Level`. Open `Feel`.

Steps:

- 1. Select the Ticker `Time Sig`.
- 2. Turn `Ticker` on.
- 3. Set `Ticker Level`.
- 4. Turn `Ticker` off when the check is complete.

Expected result: Fishtail's utility audio output plays the ticker. The selected Ticker meter does not change any section `Time Sig`.

If it does not work: Check Fishtail's audio route in the host. Check `Ticker Level`.

11. Intonation

Intonation controls can change a live Current take. After a Current take exists, they do not require another Generate.

Reference

`Reference Note` attaches a note name to an exact frequency. The default is A3 at 220.000000 Hz.

The presets are:

Preset	Result
<code>A3 220</code>	A3 = 220 Hz
<code>A3 216</code>	A3 = 216 Hz
<code>C4 256</code>	C4 = 256 Hz

The exact reference field accepts frequencies from 0.03125 to 2000 Hz. The ordinary note chooser shows C0–B6.

Set an exact reference

Goal: Set a named note to an exact frequency.

Before starting: Open `Intonation`.

Steps:

- 1. Select `Reference Note`.

2. Choose a note.
3. Select the exact reference Hz field.
4. Enter a positive frequency.
5. Finish editing the field.

Expected result: The reference readout changes. Current playback, Pulse, Ticker, tuning export, and later MIDI export use the new reference.

If it does not work: Check that the number is positive. Use one of the three presets to restore a known value.

Tuning

Tuning value	Output table
Equal Temperament	Twelve equal semitone steps per octave
Just Major	Major-reference rational ratios
Just Minor	Minor-reference rational ratios
Pythagorean	Ratios derived from pure fifths
Dub Intonation	Fishtail's Dub tuning ratios
Super Symmetry Intonation	Fishtail's Super Symmetry tuning ratios
Werckmeister III	Werckmeister III temperament table

Change Tuning

Goal: Apply a tuning table to Current and later output.

Before starting: Open **Intonation**. Use a receiver setup that can represent the chosen tuning.

Steps:

1. Select **Tuning**.
2. Choose one tuning.

Expected result: Fishtail recalculates live pitch output and exported tuning data.

If it does not work: Check **Output**. **Normal 12-ET** cannot carry independent microtonal offsets. For live tuning, use a matching pitch-bend or MPE receiver. Alternatively, export MTS or Scala files, load them into a compatible receiver, and set Fishtail **Output** to **Normal 12-ET**.

12. MIDI output modes and receiver setup

Changing **Output** releases sounding generated notes before the mode changes. The receiver must match the selected mode.

Output modes

Platform	Exact Output label	Receiver setup
All	Normal 12-ET	One receiver. No pitch-bend setup. Non-equal tuning offsets are not sent.
All	00 All bend +/-2 st	One receiver. Pitch-bend range ± 2 semitones.
iPhone and iPad	01-07 split bend +/-2 st	Seven AUM routes. Each receiver uses ± 2 semitones.
Mac	Logic Ch 1-7 / AU 01-07 bend +/-2 st	Seven Logic channel filters or seven AU routes. Each receiver uses ± 2 semitones pitch bends.
All	MPE bend +/-48 st	One MPE receiver. Per-note pitch-bend range ± 48 semitones.

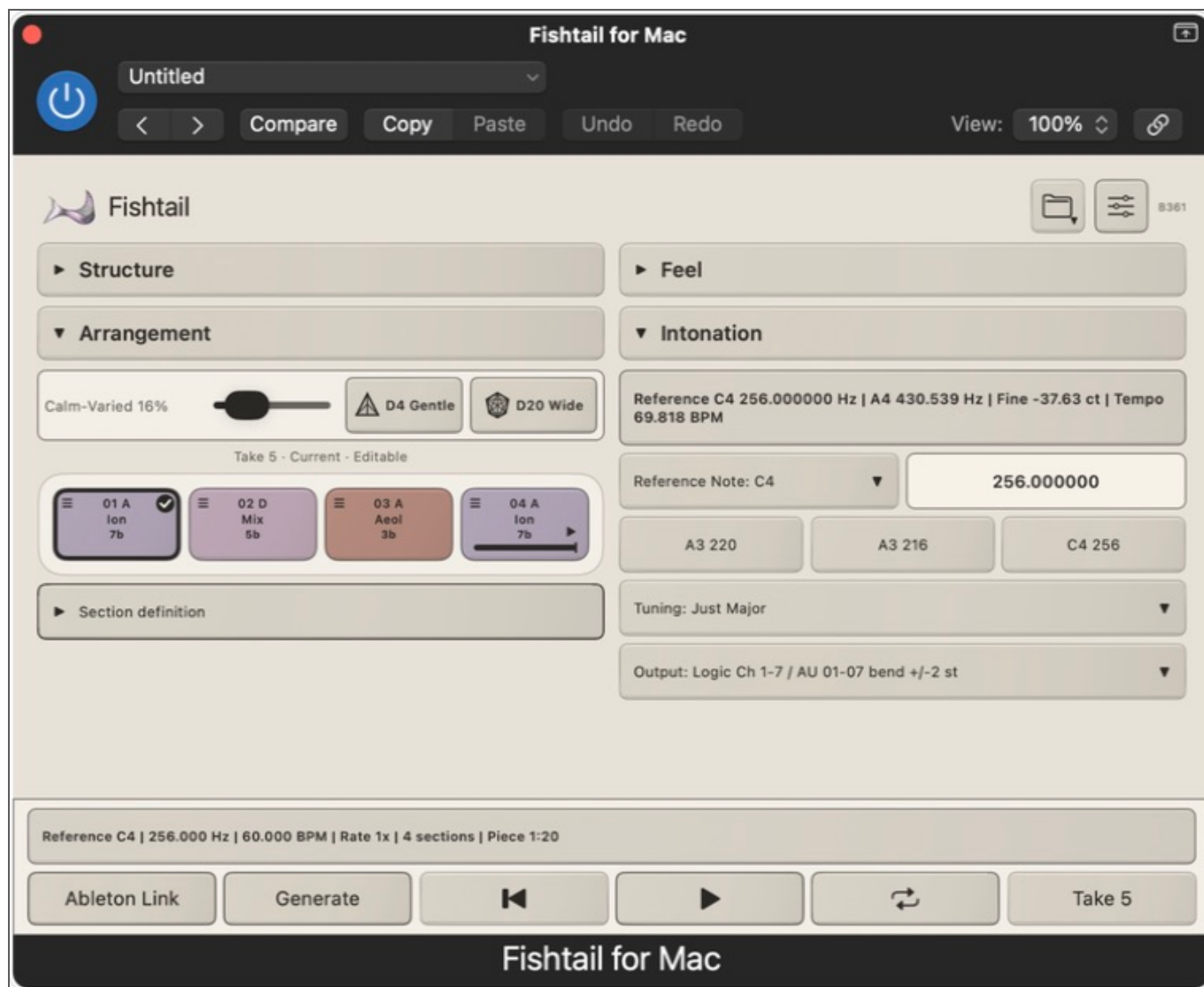


Figure 3. For Logic and AU hosts.

Use combined pitch bend

Goal: Send microtonal pitch through one receiver.

Before starting: Route `00 All` to one receiver. Set the receiver's pitch-bend range to plus or minus 2 semitones.

Steps:

1. Open `Intonation`.
2. Select `Output`.
3. Choose `00 All bend +/-2 st`.
4. Select the required `Tuning`.
5. Start Current.

Expected result: The receiver gets combined notes and pitch-bend messages for the selected `Reference` and `Tuning`.

If it does not work: Check the receiver's bend range. Check that the receiver accepts pitch bend. Check that only the intended `00 All` route is connected.

Use MPE

Goal: Send separate per-note pitch changes to one MPE receiver.

Before starting: Route `00 All` to an MPE-capable receiver. Enable the receiver's MPE or MIDI Mono mode. Set its pitch range to 48 semitones.

Steps:

- 1. Open `Intonation`.
- 2. Select `Output`.
- 3. Choose `MPE bend +/-48 st`.
- 4. Select the required `Tuning`.
- 5. Start Current.

Expected result: Notes use separate MPE channels and per-note bends.

If it does not work: Check that the receiver's MPE mode is on. Check that its pitch range is 48 semitones. Check that it is listening to all required MPE channels.

`Live Outputs: 8 Fixed` in Settings is a read-only status. It is not a switch. After an app update, remove and reload Fishtail if the host still shows an older output list.

13. Transport, sections, repeat, Cue, and Link

Main transport

Control	Result
<code>Link</code>	Opens Link settings
<code>Generate</code> or narrow <code>Gen</code>	Creates a take
<code>Cue</code>	Stops generated playback and prepares the start
<code>Play</code>	Starts Current
<code>Stop</code>	Stops Current and releases active notes
<code>Off</code>	Whole-piece repeat is off
<code>Loop</code>	Repeats Current from start to end
<code>Bounce</code>	Repeats Current forward and backward
<code>Choose Take</code> , <code>Take N</code> , or <code>Changes</code>	Opens <code>Takes</code> and reports Current or pending edits

The repeat control cycles **Off** → **Loop** → **Bounce** → **Off**. Changing it during playback does not restart the take.

A ready Next has priority at the whole-piece boundary. It becomes Current and keeps the selected whole-piece repeat mode.

Loop the whole take

Goal: Repeat Current from start to end.

Before starting: Make a Current take.

Steps:

1. Select the repeat control until it shows **Loop**.
2. Select **Play**.

Expected result: Current restarts after its whole-piece end.

If it does not work: Check that the repeat control shows **Loop**. Check whether a waiting Next became Current at the boundary.

Use Bounce

Goal: Alternate forward and reverse whole-take playback.

Before starting: Make a Current take.

Steps:

1. Select the repeat control until it shows **Bounce**.
2. Select **Play**.

Expected result: Current alternates direction at each whole-piece boundary.

If it does not work: Check that the repeat control shows **Bounce**. Check whether a waiting Next became Current at the boundary.

Return to the start with Cue

Goal: Stop Current and prepare its start.

Before starting: Make a Current take.

Steps:

1. Select **Cue**.

Expected result: Playback stops. Current remains selected and is prepared at its start.

If it does not work: Select **Stop**, then select **Cue** again. Cue does not generate or select another take.

Section actions

Select a section tile. Tap or click the selected tile once more to open its action menu. A rapid double-tap starts a section loop instead.

- Play
- Stop
- Loop
- Export Section
- Export Section Channels
- Cancel

Play from one section

Goal: Start Current at the selected section.

Before starting: Generate a Current take whose form matches the visible Arrangement.

Steps:

1. Select the required section tile.
2. Open Section actions.
3. Select Play.

Expected result: Playback starts at the selected section and continues to the end.

If it does not work: Check that Current matches the visible recipe. Check that the section action is available.

Loop one section

Goal: Repeat only the selected section.

Before starting: Generate a Current take whose form matches the visible Arrangement.

Steps:

1. Select the required section tile.
2. Open Section actions.
3. Select Loop.

Expected result: The selected section repeats. A waiting Next does not take over while the section loop is active.

If it does not work: Check that Current matches the visible recipe. Stop playback before selecting a different section.

Ableton Link

Link is optional. It is not required for local Generate or Play. Enable it when Fishtail must share tempo and beat position with another Link-enabled app.

Selecting **Link** opens the Link settings. Link can share tempo and beat position with compatible apps. Start and stop sharing requires corresponding settings on both sides.

Join a Link session

Goal: Share tempo and beat position with another Link-enabled app.

Before starting: Put both devices or apps on the same permitted local network. Enable Link in the other app.

Steps:

1. Select **Link** in Fishtail.
2. Enable Link in the Link settings.
3. Close the Link settings.

Expected result: The Link status reports an enabled or connected state. Tempo and beat position follow the Link session.

If it does not work: Allow local-network access. Check that Link is enabled in the other app. Check that both apps can use the same local network.

Use Link with Logic Pro

Goal: Synchronize Fishtail and Logic.

Before starting: Open a Logic project that contains the Fishtail plug-in.

Steps:

1. Control-click Logic's control-bar **Sync** button.
2. Choose **Ableton Link**.
3. Open Logic's Synchronization project settings.
4. Set **Sync Mode** to **Ableton Link**.
5. Enable **Transmit and Receive Start/Stop** when shared transport is required.
6. Click **Link** in Fishtail.
7. Enable Link in the Link settings.
8. Enable **Sync Start/Stop** in Fishtail when shared transport is required.

Expected result: Fishtail and Logic share tempo and beat position. They share start and stop only when both start/stop settings are enabled.

If it does not work: Check the Logic Sync mode. Check both Link switches. Check both start/stop switches. Confirm that local-network access is allowed.

14. Takes and history

The visible retained-take page is named **Takes**.

Fishtail retains up to 32 generated takes. There is no delete-take command. A new take is not silently written over an old one.

The transport take/status control opens **Takes**. Its label can be:

- **Choose Take** before a take is Current
- **Take N** when a numbered take is Current
- **Changes** when the editable recipe differs from Current

Each row can show one or more status words:

Status	Meaning
Current	Ready to play now
Editable	Matches the visible recipe
Next	Waiting for the whole Current take to end
Edits Pending	The visible recipe differs from that take
Selected	Selected in the Takes page

Select a take while stopped

Goal: Make one retained take Current.

Before starting: Stop playback. Open **Takes**.

Steps:

1. Select the required **Take N** row.
2. Select **Done**.

Expected result: The selected take becomes Current.

If it does not work: Check that playback is stopped. Check the row for **Current**.

Prepare a retained take as Next

Goal: Queue one retained take after the playing Current take.

Before starting: Play Current. Open **Takes**.

Steps:

1. Select the required **Take N** row.
2. Select **Done**.

Expected result: The selected row is marked **Next**. It becomes Current at the whole-piece boundary.

If it does not work: Check that whole-piece playback is active. Stop a selected-section loop.

Change the take order

Goal: Change the order used by `Play in Order`.

Before starting: Open `Takes`.

Steps:

1. Drag a take's reorder handle to the required position.

Expected result: The row changes position. Its permanent Take number does not change.

If it does not work: Use `Move Earlier` or `Move Later` when those commands are shown.

Play takes in order

Goal: Advance through the displayed take order.

Before starting: Put at least two takes in the required order. Open `Takes`.

Steps:

1. Turn `Play in Order` on.
2. Select the first required take.
3. Select `Done`.
4. Select `Play`.

Expected result: Fishtail advances at each whole-piece boundary. It stops advancing after the final displayed take.

If it does not work: Check that `Play in Order` is on. Check that a selected-section loop is not active. Check the displayed order.

15. Projects, Save, Open, Undo, and host recall

The `Project` menu contains:

- `New Project`
- `Open Project...`
- `Save Project`
- `Save Project As...`

Fishtail project files use the `.fishtail` extension.

Save a new project file

Goal: Store the open Fishtail project in a `.fishtail` file.

Before starting: Stop playback. Make sure the system Files sheet can open.

Steps:

1. Select `Project`.
2. Select `Save Project As...`.
3. Choose a folder.
4. Enter a filename that ends in `.fishtail`.
5. Confirm the save.

Expected result: Fishtail writes and validates the new project file.

If it does not work: Check available storage. Keep the `.fishtail` extension. Choose another writable folder.

Save changes to the current project

Goal: Update the current `.fishtail` file.

Before starting: Open or save a project file first.

Steps:

1. Select `Project`.
2. Select `Save Project`.

Expected result: The current file is updated. A new project with no path opens Save As instead.

If it does not work: Use `Save Project As...`. Check available storage.

Open a project

Goal: Replace the open state with a saved `.fishtail` project.

Before starting: Save any work that must be kept.

Steps:

1. Select `Project`.
2. Select `Open Project...`.
3. Choose one `.fishtail` file.
4. Confirm replacement when asked.

Expected result: Fishtail validates the file before replacing the open project. The saved recipe, Current, Takes, order, and history are restored.

If it does not work: Check that the selected file is a Fishtail project. Try another copy of the file. An invalid or oversized file does not replace the open project.

Start a new project

Goal: Replace the open state with a new untitled project.

Before starting: Save any work that must be kept.

Steps:

1. Select **Project**.
2. Select **New Project**.
3. Confirm replacement when asked.

Expected result: Playback stops. A new untitled state opens.

If it does not work: Close any open document sheet. Select **New Project** again.

Undo and Redo

Undo last instrument edit and **Redo last instrument edit** are in **Arrangement** → **Section definition**.

Undo and Redo can restore the editable state and a retained take when that take is still available in history. Playback stops during the change. A new edit after Undo clears Redo.

Undo one edit

Goal: Restore the preceding editable state.

Before starting: Open **Section definition**. Make at least one instrument edit.

Steps:

1. Select **Undo last instrument edit**.

Expected result: The preceding state returns. Playback stops.

If it does not work: Check that an earlier edit exists. Undo is unavailable at the beginning of history.

Redo one edit

Goal: Restore one state removed by Undo.

Before starting: Use Undo without making another edit.

Steps:

1. Select **Redo last instrument edit**.

Expected result: The next state returns. Playback stops.

If it does not work: Check that no new edit was made after Undo.

Host-session recall

AUM and Logic can store Fishtail state inside a host session or project.

Host recall restores the recipe, exact Current take, Takes list, displayed order, Next, and play-order position.

Host recall does not restore Undo/Redo history. It resets `Rate` to 1x. It does not create or reconnect an independent `.fishtail` file path. The host stores its own MIDI and audio routes.

16. MIDI, MTS, Scala, and CV export

MIDI export

Export Take writes the selected take as one combined Standard MIDI File.

Export Channels writes a multitrack Standard MIDI File with tempo information and separated route tracks. It includes the reserved export-only **08 Extra** track.

The selected retained take does not become Current or Next merely because it is exported.

Reference, **Tuning**, **Output**, and **Tempo** values are captured when export starts. The selected take keeps its frozen timing. Playback **Rate** is ignored.

Export one retained take

Goal: Write one combined MIDI file.

Before starting: Open **Takes**. Select a retained take.

Steps:

1. Select **Export Take**.
2. Choose a destination in the Files sheet.
3. Confirm the export.

Expected result: One Standard MIDI File is written. The selected take is not recalled or queued.

If it does not work: Check that a take is selected. Check available storage. Choose another writable folder.

Export separated channels

Goal: Write a multitrack MIDI file with separated routes.

Before starting: Open **Takes**. Select a retained take.

Steps:

1. Select **Export Channels**.
2. Choose a destination in the Files sheet.
3. Confirm the export.

Expected result: One multitrack Standard MIDI File is written with tempo data and route tracks.

If it does not work: Check that a take is selected. Check available storage.

Export one section

Goal: Write the selected processed section as combined MIDI.

Before starting: Generate a Current take that matches the visible Arrangement. Select a section tile.

Steps:

- 1. Open `Section actions`.
- 2. Select `Export Section`.
- 3. Choose a destination.
- 4. Confirm the export.

Expected result: One MIDI file containing the selected processed section is written.

If it does not work: Check that a Current take exists. Check that Current matches the visible Arrangement.

Export one section as channels

Goal: Write the selected processed section with separated routes.

Before starting: Generate a Current take that matches the visible Arrangement. Select a section tile.

Steps:

- 1. Open `Section actions`.
- 2. Select `Export Section Channels`.
- 3. Choose a destination.
- 4. Confirm the export.

Expected result: One channel-separated MIDI file containing the selected processed section is written.

If it does not work: Check that a Current take exists. Check that Current matches the visible Arrangement.

Export Tempo Lattice

`Export Tempo Lattice` is in Settings. It is On by default.

Setting	MIDI file result
On	Writes the frozen tempo lattice as a tempo map and uses note positions before the timing lattice
Off	Writes one BPM and keeps the performed timing in the note positions

Both settings describe the same frozen performance. This setting affects export only.

MTS and Scala

No generated take is required for tuning-file export.

Export MTS

Goal: Write the Current tuning as one MIDI Tuning Standard file.

Before starting: Set the required `Reference Note`, exact Hz, and `Tuning`.

Steps:

1. Open `Settings`.
2. Select `Export Current Tuning`.
3. Select `MTS (.syx)`.
4. Choose a destination.
5. Confirm the export.

Expected result: Fishtail writes one `.syx` file containing a 128-note tuning table.

If it does not work: Check the destination. Confirm that the receiving software or hardware supports MTS bulk tuning data.

Export Scala

Goal: Write the Current tuning as a Scala scale and keyboard map.

Before starting: Set the required `Reference Note`, exact Hz, and `Tuning`.

Steps:

1. Open `Settings`.
2. Select `Export Current Tuning`.
3. Select `Scala (.scl + .kbm)`.
4. Choose a destination.
5. Confirm the export.

Expected result: Fishtail writes one `.scl` file and one `.kbm` file.

If it does not work: Check the destination. Keep the `.scl` and `.kbm` files together.

Experimental Analogue CV

Warning: Use CV files only with calibrated DC-coupled outputs and matching control-voltage hardware. Never route CV files to speakers or headphones. A wrong voltage range can damage connected equipment.

CV export requires a generated take. It writes 48 kHz, 24-bit mono WAV files in a ZIP package. The package can contain Pitch, Gate, Clock, calibration, tuning, MIDI, and manifest files.

Control	Values	Default
Parts	Bass; Main 4; All 7	All 7
Pitch standard	1 V/oct; 1.2 V/oct; Hz/V	1 V/oct
Output calibration	−10 to +10 V; −5 to +5 V; 0 to +10 V; 0 to +5 V	−10 to +10 V
Gate	+5 V; +10 V; Inverted 5 V; Inverted 10 V	+5 V
Clock	Off; Tempo lattice pulses; Bar starts; 24 PPQN	Off
Length	First 60 seconds; Whole take	Whole take

S-trigger and contact-closure inputs require an external adapter. Fishtail refuses combinations that do not fit the selected voltage range.

Export experimental CV files

Goal: Render a ZIP package for matching control-voltage equipment.

Before starting: Generate a take. Obtain the required voltage, gate, pitch, and clock specifications from the receiving hardware manual.

Steps:

1. Open **Settings**.
2. Select **Experimental Analogue CV**.
3. Select **Parts**.
4. Select the pitch standard.
5. Select the output calibration.
6. Select **Gate**.
7. Select **Clock**.
8. Select **Length**.
9. Select **Review and export analogue CV**.
10. Read the size and safety review.
11. Select **Render ZIP**.
12. Keep Fishtail open until the Files sheet appears.
13. Choose a destination.
14. Confirm the export.

Expected result: Fishtail writes a ZIP package containing the selected digital files.

If it does not work: Check that a take exists. If the selected retained take does not contain Clock timing data, set **Clock** to Off. Choose **First 60 seconds** if the whole package exceeds a size limit. Check available temporary and destination storage.

17. Settings, appearance, accessibility, and manual

Settings

Group	Control	Result
Appearance	System, Light, Dark	Changes display appearance immediately
Generation	Gravity Velocity	Affects the next Generate
MIDI Outputs	Export Tempo Lattice	Affects MIDI export only
MIDI Outputs	Live Outputs: 8 Fixed	Read-only output status
Tuning Files	Export Current Tuning	Opens MTS and Scala export choices
Analogue CV	Experimental Analogue CV	Opens CV export settings
Guide	User Manual	Opens the PDF
About	Credits	Opens credits

Appearance is not saved in a `.fishtail` project or restored by a host session.

Change appearance

Goal: Choose how the interface follows light or dark appearance.

Before starting: Open `Settings`.

Steps:

1. Select `System`, `Light`, or `Dark`.
2. Select `Close`.

Expected result: The interface changes immediately. Sound and exported files do not change.

If it does not work: Choose `System`. Check the device or Mac appearance setting.

Bundled manual

Open or share the bundled manual

Goal: Read or copy the PDF included with the installed build.

Before starting: Open `Settings`.

Steps:

1. Select `User Manual`.

2. Select **Share** when a copy is required.
3. Choose a share destination.
4. Select **Done**.

Expected result: The searchable PDF opens. Share sends a copy to the selected destination.

If it does not work: Check available storage for a saved copy.

The **User Manual** button opens the PDF included with the installed build. It does not download this website edition.

18. Platform and host differences

Item	iPhone and iPad in AUM	Mac in Logic Pro
Shipping build	B359	B361
Minimum system	iOS/iPadOS 17	macOS 14
Processor	arm64 iPhone or iPad	Apple silicon arm64
Plug-in route	Named AU MIDI output cable	Logic Instrument Output plus channel filter
Combined output	00 All	Instrument Output , receiver channel All
Split output label	01-07 split bend +/-2 st	Logic Ch 1-7 / AU 01-07 bend +/-2 st
Split receiver selection	AUM MIDI Routing Matrix	Logic MIDI In Channel 1-7
Musical receiver	AUv3 instrument or routed app	Logic Software Instrument
Host state	AUM session	Logic project
Standalone use	Installed app supplies the AUv3	Standalone B361 does not forward generated MIDI to a receiver
Action word	Tap	Click

Both plug-ins provide the eight fixed AU MIDI cable names. In Logic, use one Instrument Output with MIDI channels 1–7.

Host routes belong to AUM or Logic. They are not stored in a **.fishtail** project.

19. Troubleshooting by symptom

No instrument sound

1. Confirm that the receiver can make sound by itself.
2. Confirm that Fishtail has a Current take.
3. Confirm that Fishtail is playing.
4. Confirm the MIDI route.
5. Confirm the receiver's audio route.
6. Confirm that no required channel is muted.
7. Confirm that the device or Logic output is not muted.

Pulse or Ticker sounds, but the take does not

Pulse and Ticker use Fishtail's utility audio output. The take uses MIDI.

1. Check the MIDI route from Fishtail to the receiver.
2. Check that the receiver contains a sound.
3. Check the receiver's audio output.

Receiver plays the wrong pitches

1. Check Fishtail's exact **Output** label.
2. Check the receiver's pitch-bend range.
3. Check whether the receiver supports MPE when MPE is selected.
4. Check that the required **Tuning** is selected.
5. Use **Normal 12-ET** to test ordinary note routing.

All seven parts play on one receiver

In AUM, remove an unwanted **00 All** route. Connect only the required named output to each receiver.

In Logic, set each receiver's **MIDI In Channel** to its assigned number instead of **All**.

One of the seven parts is silent

1. Check that the receiver can make sound.
2. Check its exact route or MIDI In Channel.
3. Check Input Monitoring in Logic.
4. Check whether **Voices/Layout** contains that main part.
5. Check whether the generated take contains notes for that support part.

Fishtail does not appear in AUM

1. Close and reopen AUM.
2. Open the AUv3 instrument list again.
3. Look for Fishtail.
4. AUM may list the plug-in as `amy_cin: Fishtail Canary B81`.
5. Restart the device after an app update if the AU list remains stale.

Fishtail does not appear in Logic

1. Confirm that Fishtail for Mac is installed.
2. Confirm that the Mac uses Apple silicon.
3. Confirm that macOS is version 14 or later.
4. Close and reopen Logic.
5. Open the Audio Units instrument list again.
6. Use Logic's Audio Unit Manager to check validation if the item remains missing.
7. If Logic still does not list Fishtail, open the Fishtail app once, close it, and reopen Logic.

Logic receiver meter does not move

1. Enable the orange `I` Input Monitoring button.
2. Set `Internal MIDI In` to Fishtail's `Instrument Output`.
3. Set `Record` to `Both`.
4. Set the required `MIDI In Channel`.
5. Start a Current take in Fishtail.

`Changes` remains visible

`Changes` means that the editable recipe differs from Current.

1. Stop playback when a new Current is required immediately.
2. Select `Generate`.
3. Wait for generation to finish.

Next does not become Current

1. Check that a row in **Takes** is marked **Next**.
2. Let the whole Current take reach its natural end.
3. Stop a selected-section loop.
4. Check whether playback was stopped before the boundary.

Generate is unavailable or refused

1. Choose **D4** or **D20**.
2. Check that the Arrangement contains a section.
3. Open **Takes**.
4. Check whether 32 takes are already retained.
5. Save the project before starting a new project when all 32 must be kept.

A project will not open

1. Confirm that the file ends in **.fishtail**.
2. Try the original file instead of a transferred copy.
3. Check available memory and storage.
4. Keep the open project unchanged until another copy has been verified.

Link does not connect

1. Enable Link in every participating app.
2. Allow local-network access.
3. Put the apps or devices on the same permitted local network.
4. Check the Link status in Fishtail.
5. Check start/stop settings separately when tempo works but transport does not.

CV export is refused

1. Confirm that a take exists.
2. Confirm that the pitch and Gate values fit the selected output calibration.
3. If the selected retained take does not contain Clock timing data, set **Clock** to Off.
4. Select **First 60 seconds** for a smaller package.
5. Check temporary and destination storage.

20. Complete control reference

The following reference lists controls that can appear in disclosures, menus, compact or wide layouts, and iPhone, iPad, Mac plug-in, or standalone Mac views.

The tables below list each control's location, available values, effect, and saved-state behaviour.

Current and Next

Control and location	Platform	Values and default	Purpose and timing	Saved state
Choose Take; Take N; Changes transport take/status control	iOS/iPadOS; Mac	Choose Take; Take 1 through Take 32; Changes Default: Choose Take	Shows Current take identity or pending recipe changes and opens Takes Takes effect: Immediately as state changes Applies to: Status and Takes access Limit: Changes means Current is unchanged until Generate	Project: Yes, as project state Host: Current identity only

Generating and regenerating a take

Control and location	Platform	Values and default	Purpose and timing	Saved state
Generate; Gen transport	iOS/iPadOS; Mac	Generate; shortened to Gen only when the button is too narrow Default: Generate	Creates a numbered take from the visible recipe Takes effect: When the take passes validation Applies to: Stopped: new Current; playing: sole Next Limit: At 32 retained Takes, generation is refused; Current and Takes remain unchanged	Project: Yes, after successful generation Host: Current only

Structure

Control and location	Platform	Values and default	Purpose and timing	Saved state
Structure main disclosure	iOS/iPadOS; Mac	Open; closed Default: Closed	Shows or hides Structure controls Takes effect: Immediately Applies to: Display only Limit: Disclosure state does not change music	Project: No Host: No
Composer Structure	iOS/iPadOS; Mac	Imitation & Invention; Counterpoint; Fugue State; Dub Gravity Default: Imitation & Invention	Selects the composition method for a generated take Takes effect: Next successful Generate Applies to: Next only Limit: Fugue State can make the processed take longer than the visible recipe	Project: Yes Host: Yes
Voices/Layout Structure	iOS/iPadOS; Mac	Bass / Tenor / Alto / Soprano; Bass / Alto / Soprano; Bass / Soprano Default: Bass / Tenor / Alto / Soprano	Selects the active main voices Takes effect: Next successful Generate Applies to: Next only Limit: Pedals for voices outside the selected layout are unavailable	Project: Yes Host: Yes

Control and location	Platform	Values and default	Purpose and timing	Saved state
Breathing Structure	iOS/iPadOS; Mac	0% to 100% Default: 74%	Sets continuity and spacing in the generated material Takes effect: Next successful Generate Applies to: Next only Limit: Does not rewrite Current	Project: Yes Host: Yes
Density Structure	iOS/iPadOS; Mac	0% to 100% Default: 26%	Sets generated note activity Takes effect: Next successful Generate Applies to: Next only Limit: Does not rewrite Current	Project: Yes Host: Yes
Rhythm Motion Structure	iOS/iPadOS; Mac	0% to 100% Default: 18%	Sets rhythmic activity over the length of the piece Takes effect: Next successful Generate Applies to: Next only Limit: Does not rewrite Current	Project: Yes Host: Yes
Bass Pedal Structure	iOS/iPadOS; Mac	Off; On Default: Off	Enables the Bass pedal treatment Takes effect: Next successful Generate Applies to: Next only Limit: Available only when the layout contains Bass	Project: Yes Host: Yes
Tenor Pedal Structure	iOS/iPadOS; Mac	Off; On Default: Off	Enables the Tenor pedal treatment Takes effect: Next successful Generate Applies to: Next only Limit: Unavailable in layouts without Tenor	Project: Yes Host: Yes
Alto Pedal Structure	iOS/iPadOS; Mac	Off; On Default: Off	Enables the Alto pedal treatment Takes effect: Next successful Generate Applies to: Next only Limit: Unavailable in layouts without Alto	Project: Yes Host: Yes
Soprano Pedal Structure	iOS/iPadOS; Mac	Off; On Default: Off	Enables the Soprano pedal treatment Takes effect: Next successful Generate Applies to: Next only Limit: Available only when the layout contains Soprano	Project: Yes Host: Yes
Gravity Velocity Settings > Generation	iOS/iPadOS; Mac	Off; On Default: On	Enables generated velocity shaping Takes effect: Next successful Generate Applies to: Next only Limit: Off uses fixed note-on velocity 88	Project: Yes Host: Yes

Arrangement

Control and location	Platform	Values and default	Purpose and timing	Saved state
Arrangement main disclosure	iOS/iPadOS; Mac	Open; closed Default: Open	Shows or hides Arrangement controls Takes effect: Immediately Applies to: Display only Limit: Disclosure state does not change music	Project: No Host: No
Calm - Varied Arrangement	iOS/iPadOS; Mac	0% to 100% Default: Varied 16%	Sets how broadly D4 or D20 varies the form Takes effect: Next D4, D20, or Generate result Applies to: Next only Limit: Does not change an existing Current take	Project: Yes Host: Yes
D4; D4 Gentle; D4 Gentle Source Arrangement	iOS/iPadOS; Mac	Command Default: No form in a fresh project	Creates a weighted starting form or rolls a replacement form Takes effect: Immediately changes the editable recipe; generation follows the D4 workflow Applies to: Visible recipe and next generated take Limit: Choose D4 or D20 before the first Generate	Project: Yes, as the resulting recipe Host: Yes, as the resulting recipe

Control and location	Platform	Values and default	Purpose and timing	Saved state
D20; D20 Wide; D20 Wide Form Arrangement	iOS/iPadOS; Mac	Command Default: No form in a fresh project	Creates a broader starting form or rolls a replacement form Takes effect: Immediately changes the editable recipe; generation follows the D20 workflow Applies to: Visible recipe and next generated take Limit: Choose D4 or D20 before the first Generate	Project: Yes, as the resulting recipe Host: Yes, as the resulting recipe
Section tile Arrangement	iOS/iPadOS; Mac	One tile per section Default: No section until D4 or D20	Selects a section and shows its position and playhead state Takes effect: Immediately Applies to: Editable selection; playback start when stopped and Current matches Limit: The playhead hides when the visible recipe does not match Current	Project: Yes Host: Yes
Section definition Arrangement	iOS/iPadOS; Mac	Open; closed Default: Closed in compact presentation	Shows or hides selected-section edit controls Takes effect: Immediately Applies to: Display only Limit: A section must be selected	Project: No Host: No
Decrease bars; Increase bars Arrangement > Section definition	iOS/iPadOS; Mac	1 to 64 bars Default: Set by the generated source; a new copied section is capped at 4 bars	Changes the selected section length Takes effect: Next successful Generate Applies to: Next only Limit: Buttons stop at 1 and 64	Project: Yes Host: Yes
Move section left; Move section right Arrangement > Section definition	iOS/iPadOS; Mac	One position per command Default: Not applicable	Changes section order Takes effect: Immediately changes the editable recipe Applies to: Next only Limit: Unavailable at the first or last position	Project: Yes Host: Yes
Add section Arrangement > Section definition	iOS/iPadOS; Mac	Command Default: Not applicable	Adds a section copied from the selected section Takes effect: Immediately changes the editable recipe Applies to: Next only Limit: Copied bars are capped at 4	Project: Yes Host: Yes
Duplicate section Arrangement > Section definition	iOS/iPadOS; Mac	Command Default: Not applicable	Duplicates the selected section Takes effect: Immediately changes the editable recipe Applies to: Next only Limit: Preserves the selected section's bar length	Project: Yes Host: Yes
Delete section Arrangement > Section definition	iOS/iPadOS; Mac	Command Default: Not applicable	Deletes the selected section Takes effect: Immediately changes the editable recipe Applies to: Next only Limit: Unavailable when only one section remains	Project: Yes Host: Yes
Key Arrangement > Section definition	iOS/iPadOS; Mac	A; Bb; B; C; Db; D; Eb; E; F; Gb; G; Ab Default: Set by D4 or D20	Sets the selected section tonic Takes effect: Next successful Generate Applies to: Next only Limit: Displayed spelling is adapted to the selected mode	Project: Yes Host: Yes
Mode Arrangement > Section definition	iOS/iPadOS; Mac	Ionian; Major; Mixolydian; Dorian; Lydian; Aeolian; Harmonic Minor; Gravity Melodic Minor; Phrygian Default: Set by D4 or D20	Sets the selected section pitch collection Takes effect: Next successful Generate Applies to: Next only Limit: Exact display names are prettified	Project: Yes Host: Yes
Time Sig Arrangement > Section definition	iOS/iPadOS; Mac	4/4; 3/4; 6/8; 2/2; 5/4; 7/8; 9/8 Default: Set by D4 or D20	Sets the selected section meter Takes effect: Next successful Generate Applies to: Next only Limit: Independent of the Ticker time signature	Project: Yes Host: Yes

Control and location	Platform	Values and default	Purpose and timing	Saved state
Cadence Arrangement > Section definition	iOS/iPadOS; Mac	Plagal; Authentic; Modal; Dub Suspension; Minor Authentic Default: Set by D4 or D20	Sets the selected section ending type Takes effect: Next successful Generate Applies to: Next only	Project: Yes Host: Yes
Role Arrangement > Section definition	iOS/iPadOS; Mac	Normal; Development; Refrain Default: Normal for the first section	Sets the selected section role Takes effect: Next successful Generate Applies to: Next only Limit: The first section is locked to Normal	Project: Yes Host: Yes
Treatment Arrangement > Section definition	iOS/iPadOS; Mac	Straight; Gentle; Dubby, subject to Role Default: Straight for the first section	Sets the selected section treatment Takes effect: Next successful Generate Applies to: Next only Limit: Only valid Role and Treatment combinations are shown	Project: Yes Host: Yes
Expression & Bloom Arrangement > Section definition	iOS/iPadOS; Mac	Open; closed Default: Closed	Shows or hides expression controls Takes effect: Immediately Applies to: Display only Limit: A section must be selected	Project: No Host: No
Energy Contour Arrangement > Expression & Bloom	iOS/iPadOS; Mac	Natural; Rise; Fall; Arch; Valley; Swell Default: Natural	Sets the selected section energy shape Takes effect: Next successful Generate Applies to: Next only Limit: Does not rewrite Current	Project: Yes Host: Yes
Register Span Arrangement > Expression & Bloom	iOS/iPadOS; Mac	0% to 100% Default: 50%	Sets the selected section register width Takes effect: Next successful Generate Applies to: Next only Limit: Does not rewrite Current	Project: Yes Host: Yes
Register Lift Arrangement > Expression & Bloom	iOS/iPadOS; Mac	-100% to +100%; Center at 0% Default: Center	Moves the selected section register Takes effect: Next successful Generate Applies to: Next only Limit: Does not rewrite Current	Project: Yes Host: Yes
Bloom Pressure Arrangement > Expression & Bloom	iOS/iPadOS; Mac	0% to 100%; Neutral at 50% Default: Neutral	Sets extra Bloom activity for the selected section Takes effect: Next successful Generate Applies to: Next only Limit: Does not rewrite Current	Project: Yes Host: Yes
Keyboard Bloom Arrangement > Expression & Bloom	iOS/iPadOS; Mac	Off; On Default: Off	Enables Keyboard Bloom for the selected section Takes effect: Next successful Generate Applies to: Next only Limit: Does not rewrite Current	Project: Yes Host: Yes

Feel

Control and location	Platform	Values and default	Purpose and timing	Saved state
Feel main disclosure	iOS/iPadOS; Mac	Open; closed Default: Closed	Shows or hides Feel controls Takes effect: Immediately Applies to: Display only Limit: Disclosure state does not change music	Project: No Host: No
Pitch Feel	iOS/iPadOS; Mac	Slider maps MIDI -87 to 95; ordinary note chooser is C0 to B6 Default: A3 220.00 Hz	Chooses a reference-note anchor and changes its exact frequency Takes effect: Immediately Applies to: Current, live playback, Pulse, Ticker, and export Limit: Changing Pitch also changes derived Tempo unless the divisor yields the same value	Project: Yes Host: Yes

Control and location	Platform	Values and default	Purpose and timing	Saved state
Fine Feel	iOS/iPadOS; Mac	-100.0 to +100.0 cents Default: 0.0 cents	Offsets the reference frequency around the selected note Takes effect: Immediately Applies to: Current, live playback, Pulse, Ticker, and export Limit: At an endpoint, use Reference Note or exact Hz to move to the adjacent note	Project: Yes Host: Yes
Tempo Feel	iOS/iPadOS; Mac	20 to 220 BPM Default: 60 BPM	Chooses an integer divisor and displays the resulting BPM Takes effect: Immediately Applies to: Current live playback and export Limit: Tempo is derived from Reference frequency and an integer divisor	Project: Yes Host: Yes
Rate Feel	iOS/iPadOS; Mac	1/4x; 1/2x; 1x; 2x; 4x Default: 1x	Changes local playback speed without changing the take Takes effect: Immediately when stopped; next Link beat when playing Applies to: Live playback only Limit: Rate is never written to MIDI and resets to 1x on project or host restore	Project: No Host: No
Pulse Feel	iOS/iPadOS; Mac	Off; On Default: Off	Turns the reference sine tone on or off Takes effect: Immediately Applies to: Utility audio only Limit: This is reference audio, not generated musical audio; lower monitor level first	Project: Yes Host: Yes
Pulse Level Feel	iOS/iPadOS; Mac	0% to 100% Default: 25%	Sets Pulse level Takes effect: Immediately Applies to: Utility audio only Limit: Lower the level before enabling Pulse	Project: Yes Host: Yes
Hide visual; Show visual Feel	iOS/iPadOS; Mac	Shown; hidden Default: Shown	Hides or shows the optional Feel visual Takes effect: Immediately Applies to: Display only Limit: No musical or MIDI effect	Project: No Host: No
Fullscreen; Close Feel visual	iOS/iPadOS; Mac	Open; closed Default: Closed	Opens or closes the fullscreen Feel visual Takes effect: Immediately Applies to: Display only Limit: Reduce Motion changes presentation only	Project: No Host: No
Rational Swing Feel	iOS/iPadOS; Mac	0% to 100% Default: 0%	Adds regular swing to generated timing Takes effect: Next successful Generate Applies to: Next only Limit: The label shows Next Generate when Current differs	Project: Yes Host: Yes
Irrational Swing Feel	iOS/iPadOS; Mac	0% to 100% Default: 0%	Adds less regular timing displacement Takes effect: Next successful Generate Applies to: Next only Limit: The label shows Next Generate when Current differs	Project: Yes Host: Yes
Irrational Swing Feel Feel	iOS/iPadOS; Mac	Hybrid Drift; Living Drift; Natural; Comptroller Time (Experimental) Default: Natural	Chooses the rule used by Irrational Swing Takes effect: Next successful Generate; Ticker preview changes immediately Applies to: Next and utility preview Limit: Comptroller Time requires an experimental warning acknowledgement	Project: Yes Host: Yes
Ticker Feel	iOS/iPadOS; Mac	Off; On Default: Off	Turns the independent reference ticker on or off Takes effect: Immediately Applies to: Utility audio only Limit: Independent of Arrangement section meters	Project: Yes Host: Yes

Control and location	Platform	Values and default	Purpose and timing	Saved state
Time Sig: 4/4 Feel > Ticker	iOS/iPadOS; Mac	4/4; 3/4; 6/8; 2/2; 5/4; 7/8; 9/8 Default: 4/4	Sets the Ticker meter Takes effect: Immediately Applies to: Utility audio only Limit: Does not change section Time Sig or generated MIDI	Project: Yes Host: Yes
Ticker Level Feel > Ticker	iOS/iPadOS; Mac	0% to 100% Default: 22%	Sets Ticker level Takes effect: Immediately Applies to: Utility audio only Limit: Lower the level before enabling Ticker	Project: Yes Host: Yes

Intonation

Control and location	Platform	Values and default	Purpose and timing	Saved state
Intonation main disclosure	iOS/iPadOS; Mac	Open; closed Default: Closed	Shows or hides Intonation controls Takes effect: Immediately Applies to: Display only Limit: Disclosure state does not change music	Project: No Host: No
Reference Note Intonation; Settings > Reference	iOS/iPadOS; Mac	C0 to B6 Default: A3	Attaches a note name to the exact reference frequency Takes effect: Immediately Applies to: Current, live playback, Pulse, Ticker, and export Limit: Choosing a note sets its equal-tempered frequency before exact Hz is edited	Project: Yes Host: Yes
Exact reference Hz Intonation; Settings > Reference	iOS/iPadOS; Mac	Positive number; engine clamp 0.03125 to 2000 Hz Default: 220.000000 Hz	Sets the reference frequency as a positive number Takes effect: After editing ends or Done is chosen Applies to: Current, live playback, Pulse, Ticker, and export Limit: Invalid or non-positive text is rejected	Project: Yes Host: Yes
A3 220; A3 216; C4 256 Intonation; Settings > Reference presets	iOS/iPadOS; Mac	Three commands Default: A3 220	Sets an exact reference preset Takes effect: Immediately Applies to: Current, live playback, Pulse, Ticker, and export	Project: Yes Host: Yes
Tuning Intonation	iOS/iPadOS; Mac	Equal Temperament; Just Major; Just Minor; Pythagorean; Dub Intonation; Super Symmetry Intonation; Werckmeister III Default: Equal Temperament	Chooses the frequency table Takes effect: Immediately Applies to: Current, live playback, and export Limit: Normal 12-ET output cannot express a non-equal table by itself	Project: Yes Host: Yes

MIDI output modes and receiver setup

Control and location	Platform	Values and default	Purpose and timing	Saved state
Output Intonation	iOS/iPadOS	Normal 12-ET; 00 All bend +/-2 st; 01-07 split bend +/-2 st; MPE bend +/-48 st Default: Normal 12-ET	Chooses how tuning is encoded into MIDI Takes effect: Immediately; sounding notes are released before mode change Applies to: Current, live playback, and export Limit: The receiver's bend range and channel mode must match	Project: Yes Host: Yes

Control and location	Platform	Values and default	Purpose and timing	Saved state
Output Intonation	Mac	Normal 12-ET; 00 All bend +/-2 st; Logic Ch 1-7 / AU 01-07 bend +/-2 st; MPE bend +/-48 st Default: Normal 12-ET	Chooses how tuning is encoded into MIDI Takes effect: Immediately; sounding notes are released before mode change Applies to: Current, live playback, and export Limit: In Logic split mode, use Instrument Output plus MIDI In Channels 1 through 7	Project: Yes Host: Yes
00 All AUM MIDI Routing Matrix; Mac plug-in Instrument Output	iOS/iPadOS; Mac	One fixed MIDI output Default: Always present	Carries the combined generated performance Takes effect: During playback Applies to: Live MIDI Limit: A receiver is required; on iOS the host must expose AUv3 MIDI outputs	Project: No Host: Host stores its route, not Fishtail
01 Bass AUM MIDI Routing Matrix; Logic Internal MIDI In channel 1 in split mode	iOS/iPadOS; Mac	One fixed MIDI output Default: Always present	Carries the Bass lane Takes effect: During playback Applies to: Live MIDI Limit: Use one mono-capable receiver at +/-2 st in split bend mode	Project: No Host: Host stores its route, not Fishtail
02 Tenor AUM MIDI Routing Matrix; Logic Internal MIDI In channel 2 in split mode	iOS/iPadOS; Mac	One fixed MIDI output Default: Always present	Carries the Tenor lane Takes effect: During playback Applies to: Live MIDI Limit: Unavailable musically when the selected layout has no Tenor material	Project: No Host: Host stores its route, not Fishtail
03 Alto AUM MIDI Routing Matrix; Logic Internal MIDI In channel 3 in split mode	iOS/iPadOS; Mac	One fixed MIDI output Default: Always present	Carries the Alto lane Takes effect: During playback Applies to: Live MIDI Limit: Unavailable musically when the selected layout has no Alto material	Project: No Host: Host stores its route, not Fishtail
04 Soprano AUM MIDI Routing Matrix; Logic Internal MIDI In channel 4 in split mode	iOS/iPadOS; Mac	One fixed MIDI output Default: Always present	Carries the Soprano lane Takes effect: During playback Applies to: Live MIDI Limit: Use one mono-capable receiver at +/-2 st in split bend mode	Project: No Host: Host stores its route, not Fishtail
05 Bloom B AUM MIDI Routing Matrix; Logic Internal MIDI In channel 5 in split mode	iOS/iPadOS; Mac	One fixed MIDI output Default: Always present	Carries the Bloom Bass support lane Takes effect: During playback Applies to: Live MIDI Limit: Use one mono-capable receiver at +/-2 st in split bend mode	Project: No Host: Host stores its route, not Fishtail
06 Bloom Oct AUM MIDI Routing Matrix; Logic Internal MIDI In channel 6 in split mode	iOS/iPadOS; Mac	One fixed MIDI output Default: Always present	Carries the Bloom octave lane Takes effect: During playback Applies to: Live MIDI Limit: Use one mono-capable receiver at +/-2 st in split bend mode	Project: No Host: Host stores its route, not Fishtail
07 Shimmer AUM MIDI Routing Matrix; Logic Internal MIDI In channel 7 in split mode	iOS/iPadOS; Mac	One fixed MIDI output Default: Always present	Carries the Shimmer support lane Takes effect: During playback Applies to: Live MIDI Limit: Use one mono-capable receiver at +/-2 st in split bend mode	Project: No Host: Host stores its route, not Fishtail

Control and location	Platform	Values and default	Purpose and timing	Saved state
Live Outputs: 8 Fixed Settings > MIDI Outputs	iOS/iPadOS; Mac	Read-only status Default: 8 Fixed	Reports the fixed live output topology Takes effect: When the AU node opens Applies to: Live MIDI status Limit: Reopen the AU node after an app update so the host re-reads the port list	Project: No Host: No

Transport, sections, Loop, Bounce, Cue, and Ableton Link

Control and location	Platform	Values and default	Purpose and timing	Saved state
Section actions Arrangement section tile	iOS/iPadOS; Mac	Play; Stop; Loop; Export Section; Export Section Channels; Cancel Default: Closed	Opens commands for the selected section Takes effect: Immediately Applies to: Live playback or export Limit: Play and export require a generated Current take	Project: No Host: No
Play Section actions	iOS/iPadOS; Mac	Play; Play from here; contextual unavailable labels Default: Stopped	Plays from the selected section to the end Takes effect: Immediately when Current is ready Applies to: Live playback Limit: Selected-section loop does not promote Next	Project: No Host: No
Stop Section actions; main transport changes from Play	iOS/iPadOS; Mac	Stop Default: Stopped	Stops Fishtail playback Takes effect: Immediately Applies to: Live playback Limit: Stop releases active generated notes	Project: No Host: No
Loop Section actions	iOS/iPadOS; Mac	Off; selected-section loop Default: Off	Loops the selected section Takes effect: Immediately Applies to: Live playback Limit: A selected-section loop does not hand off to Next	Project: No Host: No
Link; Ableton Link transport	iOS/iPadOS; Mac	Off; Enabled waiting; Connected; Unavailable, as shown by Link settings/status Default: Off in a fresh AU instance	Opens Ableton Link settings and arms synchronized operation Takes effect: Settings changes take effect through Link Applies to: Live synchronization only Limit: Optional for local Generate and Play; local-network permission may be requested	Project: No Host: No
Cue transport	iOS/iPadOS; Mac	Command Default: Stopped at start	Stops and returns generated playback to its prepared start Takes effect: Immediately Applies to: Live playback only Limit: Does not change the take	Project: No Host: No
Play; Stop transport	iOS/iPadOS; Mac	Play; Stop Default: Play unavailable until Current is ready	Starts or stops the generated Current take Takes effect: Immediately or at the synchronized Link start Applies to: Live playback only Limit: A receiving instrument is required for musical audio	Project: No Host: No
Loop; Bounce; Off transport	iOS/iPadOS; Mac	Off to Loop to Bounce to Off Default: Off	Chooses whole-piece repeat direction Takes effect: Immediately without restarting active playback Applies to: Live playback only Limit: At a whole-piece boundary, a ready Next takes priority and inherits the mode	Project: No Host: No

Takes and history

Control and location	Platform	Values and default	Purpose and timing	Saved state
Takes Takes page	iOS/iPadOS; Mac	0 to 32 rows Default: Empty	Lists exact retained generations Takes effect: After each successful generation or recall Applies to: Current, Next, selection, and export authority Limit: There is no delete-take command; no take is silently overwritten	Project: Yes Host: Yes; host recall restores the retained take order and position
Done Takes page; bundled documents	iOS/iPadOS; Mac; standalone	Command Default: Not applicable	Closes the open page Takes effect: Immediately Applies to: Display only	Project: No Host: No
Play in Order Takes page	iOS/iPadOS; Mac	Off; On Default: Off	Advances through the displayed take order at whole-piece boundaries Takes effect: Next whole-piece boundary Applies to: Live Current and automatic Next Limit: The final take does not wrap automatically	Project: Yes Host: Yes; host recall restores the retained take order and position
Take N row Takes page	iOS/iPadOS; Mac	Take 1 through Take 32; mutable play position Default: No rows before Generate	Selects or queues one retained take Takes effect: Stopped: becomes Current; playing: becomes sole Next Applies to: Current or Next Limit: The permanent Take number does not change when reordered	Project: Yes Host: Yes; host recall restores the retained take order and position
Current; Editable; Next; Edits Pending; Selected Takes row status	iOS/iPadOS; Mac	Status words can be combined Default: No row status before Generate	Describes each row's role Takes effect: Immediately Applies to: Status only Limit: Status is also exposed to accessibility; colour is not the only cue	Project: Yes, where part of project authority Host: Current, Next, order, and position are restored; Undo/Redo is not
Drag reorder handle; Move Earlier; Move Later Takes page	iOS/iPadOS; Mac	Any valid row position Default: Generation order	Changes the displayed play order Takes effect: Immediately Applies to: Future Play in Order sequence Limit: Does not rename or rewrite take MIDI	Project: Yes Host: Yes; host recall restores the retained take order and position

Projects, Save, Open, Save As, host recall, Undo, and Redo

Control and location	Platform	Values and default	Purpose and timing	Saved state
Project header	iOS/iPadOS; Mac	New Project; Open Project...; Save Project; Save Project As... Default: Closed	Opens the project command menu Takes effect: Immediately Applies to: Project files Limit: Commands are unavailable while a document operation is open	Project: No Host: No
New Project Project menu	iOS/iPadOS; Mac	Confirm or Cancel when replacing work Default: Not applicable	Starts an untitled project Takes effect: After confirmation Applies to: Replaces editable state and stops playback Limit: Unsaved work can be lost after confirmation	Project: Creates the new state Host: Not a host-session action
Open Project... Project menu	iOS/iPadOS; Mac	One selected .fishtail file Default: Not applicable	Opens a .fishtail document from Files Takes effect: After file validation and confirmation Applies to: Replaces editable state, Takes, history, and playback authority Limit: Invalid or oversized documents fail without replacing the open project	Project: Reads project data Host: Not a host-session action

Control and location	Platform	Values and default	Purpose and timing	Saved state
Save Project Project menu	iOS/iPadOS; Mac	Save; or Save As when no path exists Default: No path in a new or host-restored session	Saves to the current .fishtail file Takes effect: After the file is written and validated Applies to: Saves Current and project state Limit: A failed or oversized save does not replace the prior file	Project: Yes Host: No
Save Project As... Project menu	iOS/iPadOS; Mac	Files destination and filename Default: Timestamped .fishtail filename	Saves a new .fishtail file Takes effect: After the file is written and validated Applies to: Saves Current and project state Limit: Keep the .fishtail extension	Project: Yes Host: No
Undo last instrument edit Arrangement > Section definition	iOS/iPadOS; Mac	Up to 256 states Default: Unavailable in a new project	Restores the previous editable state and exact take when retained Takes effect: Immediately; playback stops Applies to: Current and editable state Limit: Undo/Redo is edit history, not the Takes list	Project: Yes, including retained exact takes within bounds Host: No
Redo last instrument edit Arrangement > Section definition	iOS/iPadOS; Mac	Up to 256 states Default: Unavailable until Undo	Restores the next editable state and exact take when retained Takes effect: Immediately; playback stops Applies to: Current and editable state Limit: A new edit after Undo clears Redo	Project: Yes, including retained exact takes within bounds Host: No

MIDI, MTS, Scala, and CV export

Control and location	Platform	Values and default	Purpose and timing	Saved state
Export Section Section actions	iOS/iPadOS; Mac	Files destination Default: Not applicable	Exports the selected processed section as combined MIDI Takes effect: When Export is chosen Applies to: Export only Limit: Requires a generated take; live Reference, Tuning, Output, and Tempo are captured	Project: No Host: No
Export Section Channels Section actions	iOS/iPadOS; Mac	Files destination Default: Not applicable	Exports the selected processed section as route-separated MIDI Takes effect: When Export is chosen Applies to: Export only Limit: Requires a generated take	Project: No Host: No
Export Take Takes page	iOS/iPadOS; Mac	Files destination Default: Unavailable until a take is selected	Exports the selected take as one combined Standard MIDI File Takes effect: When chosen Applies to: Export only Limit: Does not recall or queue the selected take; Rate is ignored	Project: No Host: No
Export Channels Takes page	iOS/iPadOS; Mac	Tempo track plus route tracks Default: Unavailable until a take is selected	Exports the selected take as a route-separated multitrack Standard MIDI File Takes effect: When chosen Applies to: Export only Limit: The file includes an export-only reserved Extra route in addition to the live routes	Project: No Host: No
Export Tempo Lattice Settings > MIDI Outputs	iOS/iPadOS; Mac	Off; On Default: On	Chooses how timing is represented in exported MIDI Takes effect: Next MIDI export Applies to: Export only Limit: Both settings represent the same frozen performance; the timing transform is not applied twice	Project: Yes Host: Yes

Control and location	Platform	Values and default	Purpose and timing	Saved state
Export Current Tuning Settings > Tuning Files	iOS/iPadOS; Mac	MTS (.syx); Scala (.scl + .kbm) Default: Closed	Opens tuning-file export choices Takes effect: When an export format is chosen Applies to: Export only Limit: No generated take is required; keep the Scala pair together	Project: No Host: No
MTS (.syx) Export Current Tuning menu	iOS/iPadOS; Mac	One .syx file Default: Not applicable	Exports a 128-note MIDI Tuning Standard bulk dump Takes effect: When chosen Applies to: Export only Limit: The receiver must support the exported MTS message	Project: No Host: No
Scala (.scl + .kbm) Export Current Tuning menu	iOS/iPadOS; Mac	One .scl file and one .kbm file Default: Not applicable	Exports a Scala scale and keyboard mapping Takes effect: When chosen Applies to: Export only Limit: Keep both files together	Project: No Host: No
Experimental Analogue CV Settings > Analogue CV	iOS/iPadOS; Mac	Open configuration; Cancel; review and export Default: Closed	Opens experimental control-voltage file export Takes effect: After a generated take is ready Applies to: Export only Limit: Use calibrated DC-coupled outputs only; never route CV files to speakers or headphones	Project: No; its choices are device preferences Host: No
Parts Experimental Analogue CV	iOS/iPadOS; Mac	Bass; Main 4; All 7 Default: All 7	Chooses exported CV lanes Takes effect: Next CV export Applies to: Export only Limit: Each part creates Pitch and Gate files	Project: Device preference only Host: No
Pitch standard Experimental Analogue CV	iOS/iPadOS; Mac	1 V/oct; 1.2 V/oct; Hz/V Default: 1 V/oct	Chooses the voltage-to-pitch rule Takes effect: Next CV export Applies to: Export only Limit: Receiving hardware and calibration must match	Project: Device preference only Host: No
Output calibration Experimental Analogue CV	iOS/iPadOS; Mac	-10 to +10 V; -5 to +5 V; 0 to +10 V; 0 to +5 V Default: -10 to +10 V	Chooses the allowed voltage range Takes effect: Next CV export Applies to: Export only Limit: Export is refused if the selected pitch or Gate does not fit	Project: Device preference only Host: No
Gate Experimental Analogue CV	iOS/iPadOS; Mac	+5 V; +10 V; Inverted 5 V; Inverted 10 V Default: +5 V	Chooses Gate voltage and polarity Takes effect: Next CV export Applies to: Export only Limit: S-trigger and contact-closure inputs require an external adapter	Project: Device preference only Host: No
Clock Experimental Analogue CV	iOS/iPadOS; Mac	Off; Tempo lattice pulses; Bar starts; 24 PPQN Default: Off	Chooses an optional clock file Takes effect: Next CV export Applies to: Export only Limit: If the selected retained take does not contain Clock timing data, set Clock to Off or Regenerate	Project: Device preference only Host: No
Length Experimental Analogue CV	iOS/iPadOS; Mac	First 60 seconds; Whole take Default: Whole take	Chooses the rendered duration Takes effect: Next CV export Applies to: Export only Limit: Choose First 60 seconds if a whole take exceeds standard ZIP limits	Project: Device preference only Host: No
Review and export analogue CV Experimental Analogue CV navigation button	iOS/iPadOS; Mac	Command Default: Not applicable	Opens the final size and safety review Takes effect: Immediately Applies to: Export review Limit: Review the simultaneous output count and temporary-space estimate	Project: No Host: No

Control and location	Platform	Values and default	Purpose and timing	Saved state
Render Experimental CV?; Render ZIP Experimental Analogue CV review	iOS/iPadOS; Mac	Cancel; Render ZIP Default: Cancel	Confirms and renders the ZIP package Takes effect: After confirmation Applies to: Export only Limit: Keep Fishtail open until the Files sheet appears	Project: No Host: No

Settings, appearance, accessibility, and the bundled manual

Control and location	Platform	Values and default	Purpose and timing	Saved state
Settings header	iOS/iPadOS; Mac	Open; Close Default: Closed	Opens the separate Settings page Takes effect: Immediately Applies to: Display only Limit: Musical state is unchanged when the page opens	Project: No Host: No
Close Settings page; fullscreen view	iOS/iPadOS; Mac	Close Default: Not applicable	Closes the current overlay Takes effect: Immediately Applies to: Display only	Project: No Host: No
Pinch zoom whole instrument scroll surface	iOS/iPadOS; Mac	1.0x to 2.4x Default: 1.0x	Changes the interface scale Takes effect: Immediately Applies to: Display only Limit: Scroll to reach controls after enlarging the interface	Project: No Host: No
System; Light; Dark Settings > Appearance	iOS/iPadOS; Mac	System; Light; Dark; Auto may be spoken at some Dynamic Type sizes Default: System	Chooses interface appearance Takes effect: Immediately Applies to: Display only Limit: Does not change exported files or sound	Project: No Host: No
User Manual Settings > Guide; standalone app	iOS/iPadOS; Mac; standalone	Open; Share; Done Default: Closed	Opens the bundled searchable PDF Takes effect: Immediately Applies to: Display only Limit: The button opens the PDF included with the installed build and does not download the website edition	Project: No Host: No
Share bundled User Manual	iOS/iPadOS; Mac; standalone	System share destinations Default: Closed	Saves or sends a copy of the bundled PDF Takes effect: Immediately after destination choice Applies to: File copy only Limit: The destination app controls the final copy	Project: No Host: No

Credits, copyright, and licences

Control and location	Platform	Values and default	Purpose and timing	Saved state
Credits header artwork button; Settings > Credits	iOS/iPadOS; Mac; standalone	Open; Done Default: Closed	Opens the bundled credits Takes effect: Immediately Applies to: Display only	Project: No Host: No

21. Technical reference

This section gives implementation-level details. The first-sound procedures do not require this information.

Release targets and Audio Unit identity

Item	iPhone and iPad B359	Mac B361
Audio Unit type	aumu	aumu
Audio Unit subtype	F81C	FsMc
Audio Unit manufacturer code	AmCn	AmCn
MIDI outputs	Eight fixed named outputs	Eight fixed named outputs plus Logic channel mapping
Utility audio output	Stereo	Stereo

Pitch and cents

A cent is one hundredth of an equal-tempered semitone. Twelve semitones equal one octave.

For a reference frequency `f_reference`, a distance of `cents` gives:

$$\text{frequency} = f_reference \times 2^{(\text{cents} / 1200)}$$

The `Fine` range is -100 to +100 cents.

For equal temperament, MIDI note `note` relative to reference MIDI note `reference_note` uses:

$$\text{frequency}(\text{note}) = f_reference \times 2^{((\text{note} - \text{reference_note}) / 12)}$$

The `Reference Note` chooser covers C0 through B6. Exact reference frequency is limited to 0.03125–2000 Hz.

Ratio tuning

A ratio describes one frequency divided by another. For a ratio `r`, its equal-tempered distance in cents is:

$$\text{cents} = 1200 \times \log_2(r)$$

Fishtail stores the ratio or offset table for each `Tuning` model. The selected Reference anchors the table. The selected Output decides how the resulting offsets leave as MIDI or tuning files.

`Normal 12-ET` sends ordinary twelve-tone MIDI notes. It cannot send a different pitch offset for each note.

The ± 2 semitone modes send note messages plus pitch bends scaled for a receiver whose bend range is exactly ± 2 semitones.

`MPE bend +/-48 st` assigns notes to MPE channels and scales the bends for ± 48 semitones.

Fixed live routes

Index	AU cable	Logic split channel	Purpose
0	<code>00 All</code>	All	Combined performance
1	<code>01 Bass</code>	1	Bass
2	<code>02 Tenor</code>	2	Tenor
3	<code>03 Alto</code>	3	Alto
4	<code>04 Soprano</code>	4	Soprano
5	<code>05 Bloom B</code>	5	Bloom Bass
6	<code>06 Bloom Oct</code>	6	Bloom Octave
7	<code>07 Shimmer</code>	7	Shimmer

`08 Extra` is used in separated file export. It is not one of the eight fixed live AU cables.

Tempo, Rate, and the export lattice

Tempo is measured in beats per minute, or BPM.

For a frozen event time `t` and playback Rate `q`, the played time is:

$$\text{played_time} = t / q$$

For example, 2x plays the frozen time in half as many seconds. Rate is a live playback control. MIDI export ignores it.

With `Export Tempo Lattice` On, the MIDI file writes the take's tempo changes as a tempo map. With it Off, the file writes one BPM and keeps the performed timing in the note positions. Both settings represent the same performance.

Take and history bounds

Fishtail retains at most 32 Takes. A thirty-third Generate is refused instead of silently removing a retained take.

Undo and Redo retain up to 256 editable-state steps. Undo history is separate from Takes. A `.fishtail` project can store both. Host recall restores Takes but starts a new Undo/Redo history.

Project and host state

A `.fishtail` document stores musical state, the editable recipe, Current, retained Takes, play order, and bounded Undo/Redo history.

It does not store active playback, the current whole-piece repeat state, Link state, playback Rate, Appearance, or window layout as project state.

Host-session state restores the recipe, Current, retained take order, Next, and play-order position. It resets Rate to 1x. The host owns its channel, MIDI, and audio routes.

MIDI files

`Export Take` writes a combined Standard MIDI File.

`Export Channels` writes a tempo track and separated route tracks. Section exports write only the selected processed section.

Reference, Tuning, Output, and Tempo are read when export begins. The retained take contributes frozen note and timing material. Selecting a take for export does not make it Current or Next.

MTS and Scala files

MTS export writes one 128-note bulk tuning dump in a `.syx` file. A receiver must support that message.

Scala export writes a `.scl` file and a `.kbm` file. The `.scl` describes the scale. The `.kbm` maps that scale to MIDI notes and the selected reference. Keep the pair together.

Experimental CV package

Each selected part produces a 48 kHz, 24-bit mono Pitch WAV and Gate WAV. Optional Clock data uses its own WAV. The ZIP also contains calibration, tuning, MIDI, and manifest information.

For 1 V/oct, a one-volt change represents one octave. For 1.2 V/oct, a 1.2-volt change represents one octave. Hz/V uses voltage proportional to frequency.

The Gate choices set positive or inverted 5 V or 10 V logic. `24 PPQN` means 24 clock pulses per quarter note.

The generated files are digital samples. Their physical voltage depends on the calibrated DC-coupled converter and its gain. These files do not establish that a particular interface or synthesiser is safe or compatible. Check the hardware specifications before use.

22. Glossary

Term	Definition
Arrangement	The ordered section recipe visible in Fishtail.
Audio	A signal that can be heard after conversion through speakers or headphones.
AU MIDI cable	A named MIDI output that an AUv3 host can expose.
AUv3	Apple's Audio Unit extension format.
Bar	A group of beats defined by a time signature.
Beat	A regular time unit used by Tempo and Link.
Bend range	The number of semitones a receiver assigns to full-scale MIDI pitch bend.
BPM	Beats per minute.
Bounce	Whole-take repeat that alternates forward and reverse.
Cadence	The selected ending type for a section.
Channel	A numbered MIDI path inside a connection.
Current	The frozen take ready to play now.
CV	Control voltage.
Editable recipe	The visible settings used by the next Generate.
Export	Write external MIDI, tuning, or CV files.
Fine	Reference adjustment measured in cents.
Host	An app that loads Fishtail and controls routes and state.
Hz	Hertz, or cycles per second.
Link	Ableton Link tempo and beat synchronization.
Loop	Repeat the whole take or one selected section.
MIDI	Note and control messages, not instrument audio.
MPE	Per-note MIDI expression using multiple channels.
MTS	MIDI Tuning Standard.
Next	One frozen take waiting for the whole Current take to end.
Output	Fishtail's method for encoding pitches and parts into MIDI.
Pitch bend	A MIDI message that offsets note pitch.
Project	A <code>.fishtail</code> file containing Fishtail state.
Rate	A live playback multiplier.
Receiver	An instrument that accepts MIDI and makes sound.
Reference	A named note and exact frequency used to anchor tuning.
Route	A connection that sends MIDI from a source to a destination.

Term	Definition
Scala	A <code>.sc1</code> tuning scale and <code>.kbm</code> keyboard mapping.
Section	One editable part of the Arrangement.
Semitone	One adjacent-key step in twelve-tone equal temperament.
Take	One exact generated MIDI result.
Tempo	Playback speed measured in BPM.
Ticker	Optional utility audio for checking a meter.
Tuning	A table of pitch relationships.

23. Credits, copyright, and licences

Created by Amy McBride & OcularDebris.

Instrument concept, musical system, sound design, and development: Amy McBride.

Visual identity, artwork, and production design: OcularDebris.

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Fishtail includes the Ableton Link SDK under its bundled third-party licence. Open [Credits](#) in the app for the installed release's complete credit and licence text.

This guide covers Fishtail 1.0 for iOS build 359 and Fishtail for Mac build 361.

