MPC MOD-SYNTH

Build sounds.
Play, loop and arrange.

THE ILLUSTRATED USER HANDBOOK

English edition | Version 0.9.79
Android & Windows | 18 October 2026

A practical guide to sound design, live effects, sampling, sequencing, recording and reusable groups.

Includes step-by-step melody/bass/drum timeline workflow, the updated Looper V2 and a complete alphabetical module-help reference.

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01. Start here

MPC Mod-Synth is a modular instrument and effects environment for Android and Windows. A patch combines sound sources, processors, control modules and cables. You can play it live, sequence notes, process an instrument, record loops or arrange a song. This handbook describes version 0.9.79, dated 18 October 2026.

1. For a first listen, tap the preset dropdown, select a factory preset, then press Load preset. Play the bottom keyboard for a synth patch. Some sequence presets start automatically; timeline songs need Play from start.

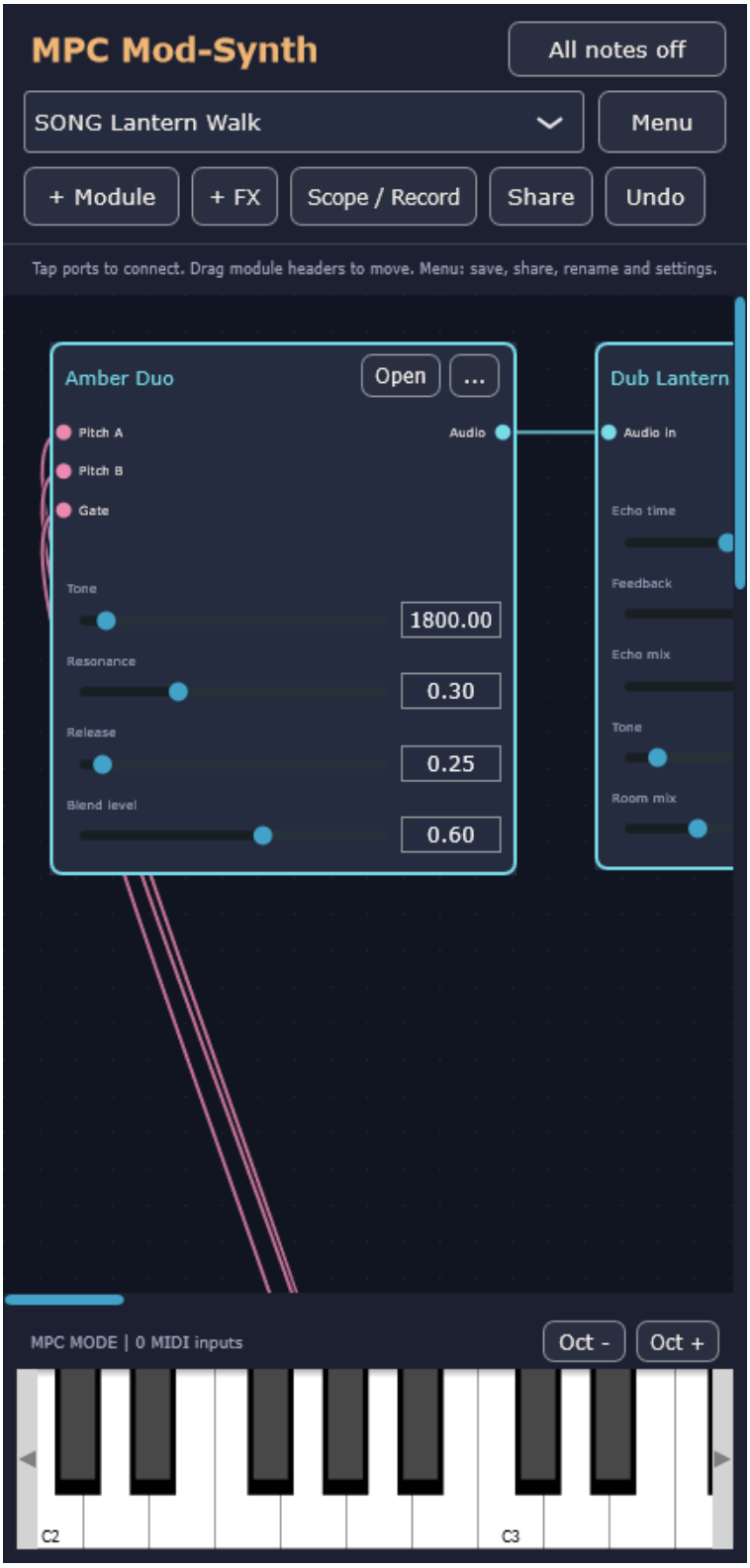
2. Use + Module to add a component. Use + FX for an effect insertion workflow. Menu contains settings, saving and the larger workspace tools.

3. Start with a moderate output level. All notes off releases stuck notes; it does not disconnect a running audio source or necessarily stop a sequence.

4. Save a native patch before experimenting. Use Undo for patch edits, and keep named copies of important sounds.

Screenshots in this handbook are genuine app captures. Most were generated with 0.9.79 in phone or desktop layouts; the Wavetable Builder figure comes from an earlier build. Device appearance can differ. Diagrams are explanatory routing illustrations, not screenshots.

Start here | screen guide



The main workspace with a reusable group. The keyboard remains available below the canvas.

02. Audio setup and reliable performance

The audio buffer applies to the entire engine: synthesizers, samplers, effects and live input. A smaller buffer reduces part of the delay but leaves less time for processing.

1. Open Menu > Settings > Audio / EFX. Select the intended output. Connect a USB audio interface if you want to process a guitar, bass or microphone.

2. Use Refresh devices after changing hardware. Confirm the selected device and input channel, enable input when needed, and grant the requested microphone permission.

3. Start at 48 kHz and an available buffer of at least 480 samples. If there are irregular crackles, raise the buffer one step and compare the same patch. Try 240 only when stable on your device.

4. For live effects, use a wired interface and headphones. Bluetooth and hardware monitoring paths can add latency beyond the app buffer.

5. Check Audio In and output levels before adding distortion. Reduce gain if the signal clips. Lower the output before reconnecting hardware.

Android live input is designed for recognized external inputs; a MIDI-only keyboard is not an audio interface. Check input enablement after reconnecting. Avoid microphone-to-speaker feedback. A successful build cannot establish low-latency performance on every phone.

03. MIDI devices, channels and controllers

MIDI carries performance instructions, not sound. An attached keyboard can control the app while audio still leaves through the selected phone or USB audio output.

1. Open Settings > MIDI and enable the intended input. Use Refresh devices after connecting a keyboard. Match the receiving module channel to the keyboard transmit channel.

2. Use MIDI In for the native automatic keyboard-voice workflow. MIDI Notes In exposes explicit note/gate voices for patching individual oscillators. Choose the number of voices you need.

3. Add MIDI CC for a knob, wheel or pedal. Set the channel and CC number, or choose Learn CC and move the controller. Connect its Control output to a modulation input.

4. Use the module numeric-entry control (123 where shown) when an exact channel, note or CC number is difficult to set with a slider.

5. To send MIDI, choose an output in Settings and use MIDI Note Out, MIDI CC Out or MIDI PC Out. Note Out needs Pitch, Gate and optionally Velocity; it is not the same as MIDI Notes In.

6. For external sync, enable the MIDI source and send clock plus transport. MIDI Clock In exposes clock/reset/run signals. Configure the receiving sequencer clock mode. Song Timeline transport has a separate internal clock in this edition.

If notes stick, use All notes off and check the MIDI connection and gate path. A MIDI interface does not automatically provide an audio input. PC Out changes a program on external equipment; it does not load a preset inside the app.

04. The canvas, modules and connections

Modules are freely placed on the canvas. Inputs are on the left and outputs on the right. Connect an output to a compatible input, then follow the cable to understand the signal path.

1. Add a module with + Module and select a category. Drag its header to reposition it; operate controls inside the card without dragging the header.

2. Pan the background or use the scrollbars to navigate. On touch devices, use two fingers to zoom. Collapse a large module with its dedicated header icon.

3. Select a port and then its destination to make a cable. Audio ports connect to audio; control ports connect to control. One source can feed several destinations.

4. Select a cable to inspect it, adjust its amount or remove it. Scrolling should preserve the selection. Use the cancel-selection control when finished. Cable insertion offers compatible modules for inserting a processor between the endpoints.

5. Use the module menu (...) for operations such as duplicating, naming, deleting or opening a separate view. Duplicate retains module settings; check the resulting routing before playing.

6. Use the module overview in the menu to find a named module in a large patch. Use the ? button for concise module-specific help.

An accepted control cable is not a guarantee that its numerical units match. Pitch, normalized CV and gate signals have different meanings. Read the next chapter before connecting imported and native pitch modules.

05. Audio, pitch, gates and modulation

Cyan audio ports carry sound. Magenta control ports carry values or timing. The port name tells you what the destination expects; colour alone does not specify the numerical range.

1. Audio: route Oscillator, Sampler or Audio In through filters/effects to Audio Out. Mix multiple sound sources with an audio mixer and leave headroom.

2. Native Pitch: most native note inputs use MIDI note numbers. C4 is 60 in the app. Connect Step Sequencer Pitch or Piano Roll Pitch to these inputs.

3. Normalized pitch: imported ZOIA-style pitch commonly uses 0 = A0, with 1/120 per semitone. Pitch / CV converts between this range and MIDI notes: note = 21 + CV x 120.

4. Gate: a high value holds a note or envelope open. Trigger: a rising edge starts an event. A Clock is a stream of timing pulses; it is not audio.

5. Modulation: LFO Control and Drawable LFO Value are both control signals. Their ranges and shapes depend on settings. Use CV Math to scale or offset movement before the destination.

6. A magenta modulation indicator shows an effective value. The amber base control remains editable. Reduce cable amount or source depth if a destination jumps to its limits.

Do not connect Step Sequencer Pitch directly to Transpose: use its normalized CV output. The transpose convention is described in the sequencing chapter.

06. Build your first playable synth

A basic subtractive synth needs a pitch source, oscillator, envelope, amplitude stage and output. Start with the native MIDI In and an Oscillator in Auto MIDI mode.

1. Add MIDI In, Oscillator, ADSR, Low-pass Filter, VCA and Audio Out.

2. Connect MIDI In Pitch to Oscillator Pitch and MIDI In Gate to ADSR Gate.

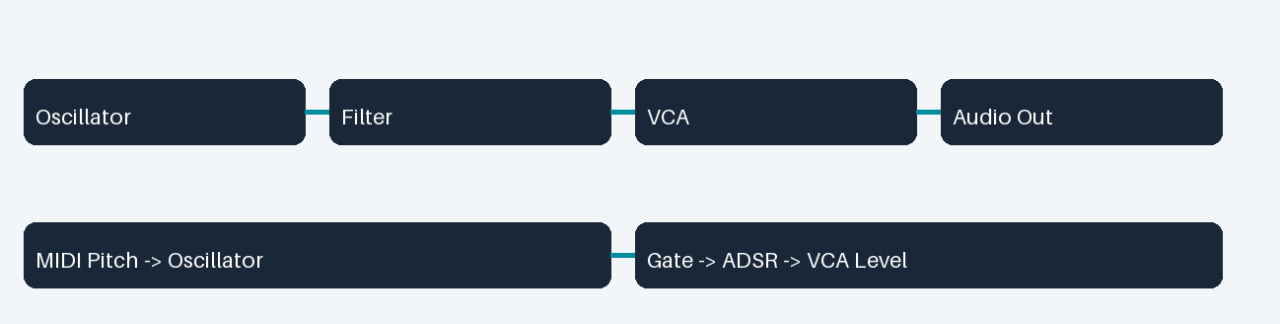
3. Connect Oscillator Audio to Low-pass Filter Audio, the filter output to VCA Audio, and VCA Audio to Audio Out Left / Mono.

4. Connect ADSR Envelope to VCA Level. Choose a saw wave, a moderate filter cutoff and a short but non-zero attack/release.

5. Play the screen keyboard. Set the output quietly first. Raise cutoff to brighten the sound and lengthen release for a softer ending.

6. Add Delay after the VCA if you want echoes to continue after a key is released. Save the result as a native patch.

For explicit sequencer voices, use Mono or Poly 8 oscillator modes and connect the corresponding gates. These modes differ from the automatic MIDI voice workflow.



Signal flow for a simple synth: audio through the filter/VCA; pitch and envelope on separate control paths.

07. Polyphony and layered instruments

Multiple oscillators can share one pitch signal for a layered sound. Polyphony means several independently gated notes, not simply several oscillator modules.

1. For a layered monophonic sound, send one Pitch to two oscillators. Tune the second slightly differently, mix their audio, then pass the mix through a common filter and VCA.

2. For native keyboard patches, Auto MIDI preserves the automatic voice workflow. Match MIDI channel and envelope routing.

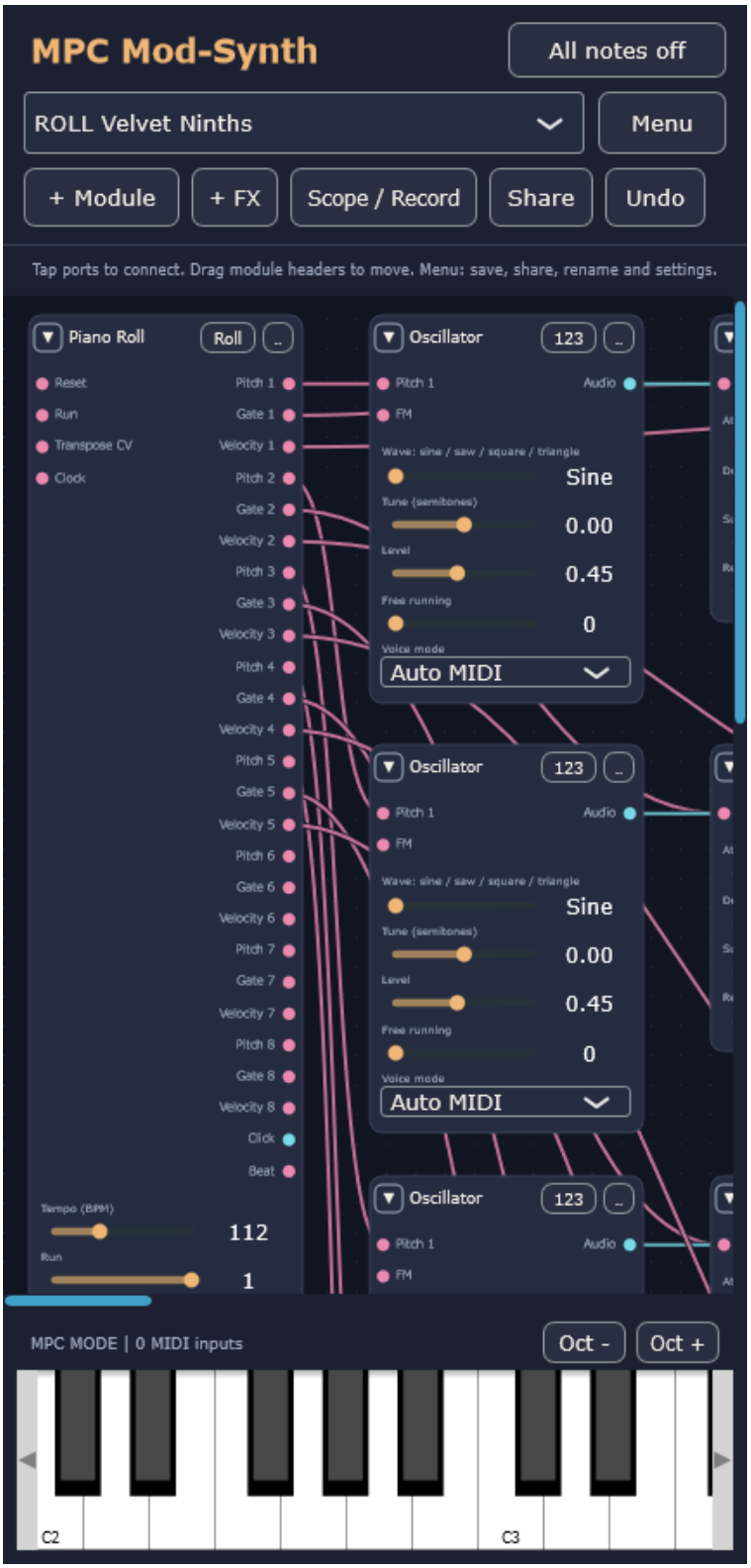
3. For Piano Roll chords on one basic oscillator, select Poly 8 and connect Pitch 1 / Gate 1 through the required Pitch / Gate pairs. Unconnected Poly 8 gates are silent.

4. Alternatively, use separate Mono oscillators for each Piano Roll voice. This allows different waveforms, envelopes and effects per note voice.

5. Lower individual levels when combining voices. Short non-zero attack/release settings help avoid abrupt note edges.

Poly 8 has built-in headroom, but later mixers, drive stages and effects can still overload. A slow envelope release can keep several old notes sounding while you play new ones.

Polyphony and layered instruments | screen guide



Piano Roll exposes individual voice connections. Connect both pitch and gate for each voice you use.

08. Modulation, macros and motion

Use modulation to make a patch evolve. An envelope follows a note, an LFO repeats, random CV changes unpredictably, and macros collect performance controls.

1. Connect LFO Control to a filter Cutoff or Wavetable Position input. Begin with a low depth; then adjust rate and cable amount.

2. Add Drawable LFO for custom movement. Draw the points or select a template. Step produces abrupt levels; Linear and Smooth create transitions.

3. Use its reset/retrigger and timing controls deliberately. Free movement is useful for pads; note retrigger repeats the contour with each played note.

4. Use CV Math, Slew or CV Filter to adapt the range or smooth abrupt movement. Combine a modulation source with an envelope through a multiplier for evolving depth.

5. Use Macro Control for a small set of performance gestures. Configure its mappings and test each target over the whole macro range.

6. Use Motion as a phone-movement source where sensors are available. Start with a small modulation depth and establish the neutral position before performing.

Control mappings are part of patch design. Keep large pitch jumps, high feedback and high distortion away from a full-range macro until you have tested the extremes.

09. Live guitar and bass effects

A live-effects patch needs a complete path from Audio In to Audio Out. An input meter moving only confirms that audio reaches the input module.

1. Connect Audio In Mono to a first effect, then route each output to the next effect and finally to Audio Out Left / Mono.

2. For a practical guitar chain, try Noise Gate > Drive > Cabinet Sim > Delay > Reverb. Start with modest drive, delay feedback and reverb mix.

3. Adjust input gain for a clean incoming level. Raise Drive for saturation and use its Output control to balance loudness. The magenta Drive input expects modulation, not the guitar signal.

4. For a touch wah, use Envelope Filter and adjust Sensitivity until normal picking moves the filter. For an audio-driven bass synth, try Instrument Synth; clean single notes work best for its suboctave.

5. If the effect seems absent, check interface direct monitoring. Hearing a loud hardware dry path can mask the processed app signal. Compare at matched levels using headphones.

Cabinet Sim is a lightweight filter model. Use Convolution with an appropriate impulse response for a different cabinet/room workflow. The app does not claim circuit-identical pedal models.



A reusable effect chain can process a live instrument or the output of a synth.

10. Noise gates and dynamics

A noise gate reduces low-level sound when you are not playing. It cannot distinguish every unwanted string movement from a deliberately played quiet note.

1. Place the gate before high-gain distortion to prevent noise being amplified. Listen with the drive active while adjusting it.

2. Stop playing and raise Threshold until the idle noise closes. Then play your quietest intended notes and lower the threshold enough to preserve them.

3. Use a short attack for a clear pick transient. Increase release if bass notes are cut off or the gate chatters while a note decays.

4. Use a compressor for level control rather than silence. Start with moderate ratio and avoid excessive makeup gain.

5. If a gate has a Sidechain input, use a cleaner signal for detection while processing the louder path. Leave it unconnected for normal self-detection.

Mechanical fret noise, string damping and pickup noise above the threshold can remain audible. More threshold is not always the right solution: technique, input gain and the position of distortion also matter.

11. Step Sequencer and transposition

Step Sequencer provides Pitch, normalized CV and Gate. It can drive a melody, modulation pattern or percussion trigger. Pattern files let you reuse notes without replacing the instrument.

1. Connect Pitch to a Mono oscillator Pitch and Gate to its Gate, or to ADSR Gate in an envelope/VCA patch. Set a short pattern, turn Run on and choose Tempo.

2. Choose notes, step count, direction, gate length and probability. Swing applies to internal-clock timing. Use numeric entry when exact notes or values are easier than dragging.

3. To synchronize modules, feed one Clock into their Clock inputs. Reset queues the first step for the next clock edge.

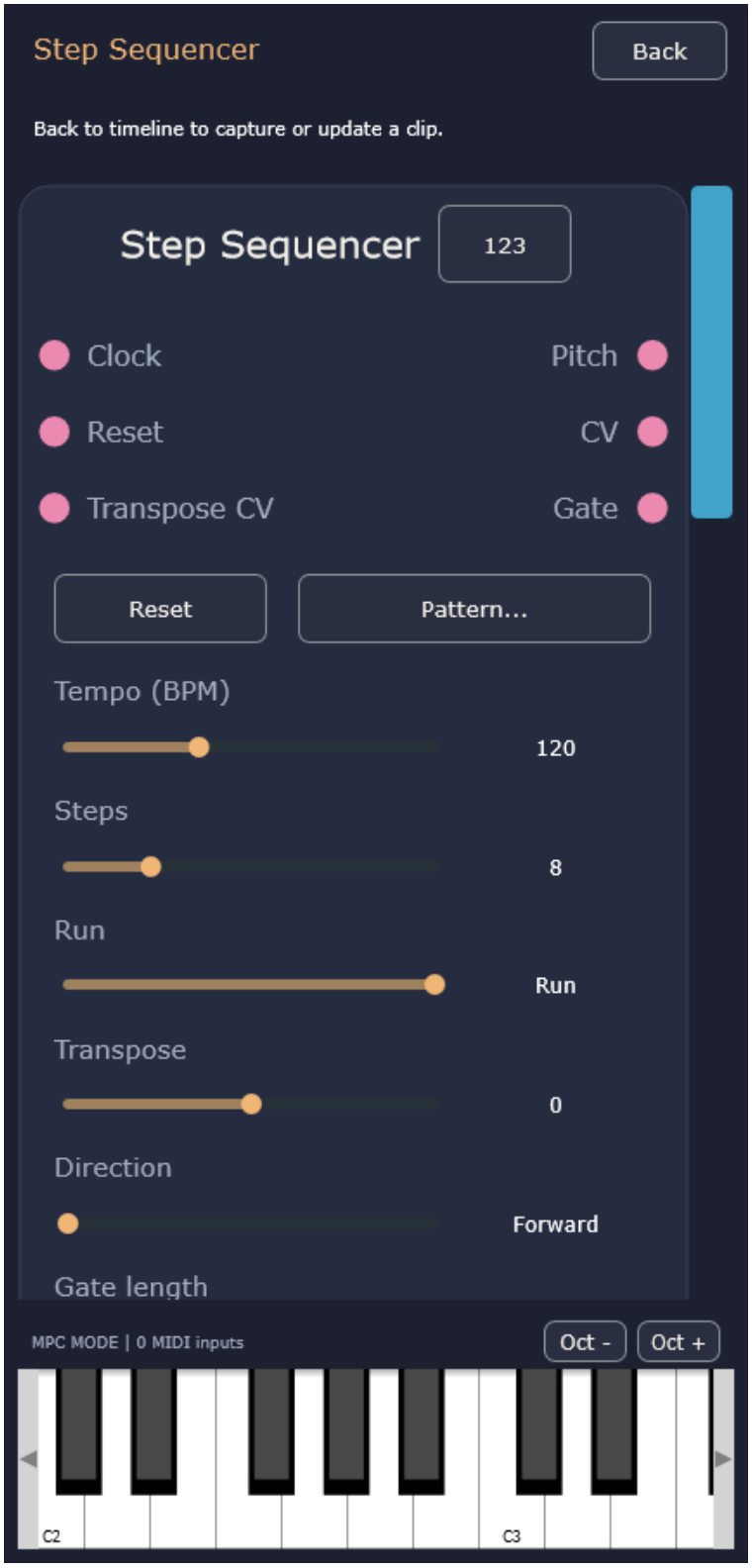
4. Set Transpose in semitones for a fixed offset. To automate it, connect another Step Sequencer CV output to Transpose. A C4 step (60/127) is neutral; C5 adds 12 semitones and C3 subtracts 12.

5. Clock the transposition sequencer more slowly, for example through Clock Divider, so the melody changes key after several steps. Use C4, F4, G4 and C4 for offsets 0, +5, +7 and 0.

6. Use Pattern to save/load .mpcseq files. Notes and rhythm settings are stored; the destination tempo, Run, cables and instrument remain in place.

For a kick, connect Gate to the drum Trigger. Pitch is not needed unless you intentionally want to tune the drum. A divider can trigger the kick at half the incoming pulse rate.

Step Sequencer and transposition | screen guide



Separate module view makes a long sequencer easier to edit without moving it on the canvas.

12. Piano Roll: notes, chords and MIDI files

Piano Roll is a note editor with up to eight simultaneous voices. It stores note pitch, start, duration and velocity; it does not store an entire instrument.

1. Add Piano Roll and open Roll in its header. Set the number of bars and grid before drawing. T in 1/16T or 1/32T means triplets; 1/64 is a straight sixty-fourth-note grid.

2. Use draw/move to place or reposition a note, resize to change duration, erase to remove notes and pan/scroll to navigate. Select a chord mode when you want major/minor or seventh/ninth shapes.

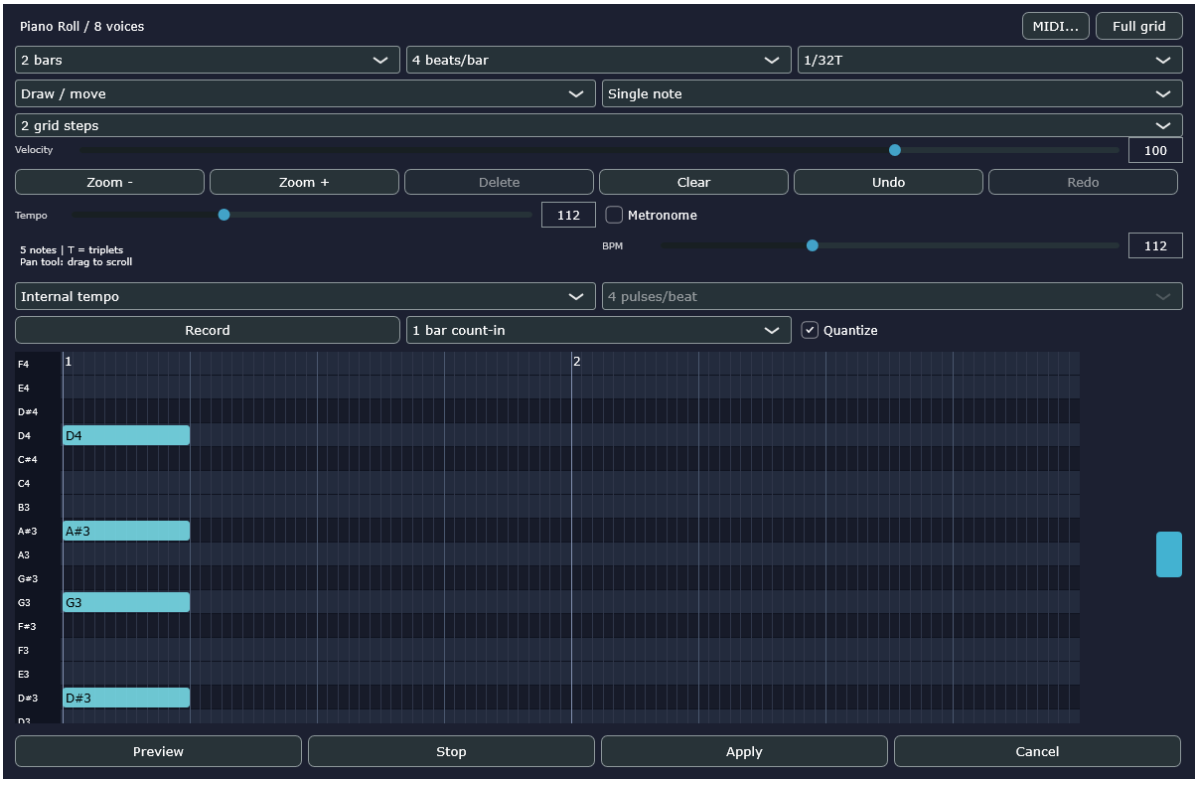
3. Connect its voice outputs to a Poly 8 oscillator or separate Mono voice chains. Add an Audio Out path. Chords need more than the first pitch output.

4. Use Preview to audition the draft. Apply keeps your changes; Cancel restores the original patch notes.

5. Open MIDI... to import a .mid file. For multitrack files, select the note track you want. The app imports notes, not the original instruments or audio.

6. Save MIDI to exchange note data. Controller automation and the patch sound are not part of this MIDI export.

The editor supports up to 16 bars, 512 notes and eight simultaneous voices. Its configurable beats-per-bar setting is separate from the Song Timeline, which uses 4/4.



Piano Roll editor. Wide layouts provide more room for moving and resizing notes.

13. Piano Roll: recording and clock sources

Piano Roll records one pass of MIDI or screen-keyboard playing into its draft pattern. Choose the clock source first so the count-in and performance follow the intended timing.

1. Internal uses the module Tempo without a clock cable. Clock input uses rising pulses; match Clock pulses per beat to the source. MIDI Clock uses incoming clock and Start/Stop/Continue.

2. Set the pattern length. Choose no count-in, one bar or two bars. Enable Quantize if you want note starts and ends aligned to the current grid.

3. Press Record, wait through the count-in and play. The visible screen keyboard can be used as well as an external keyboard.

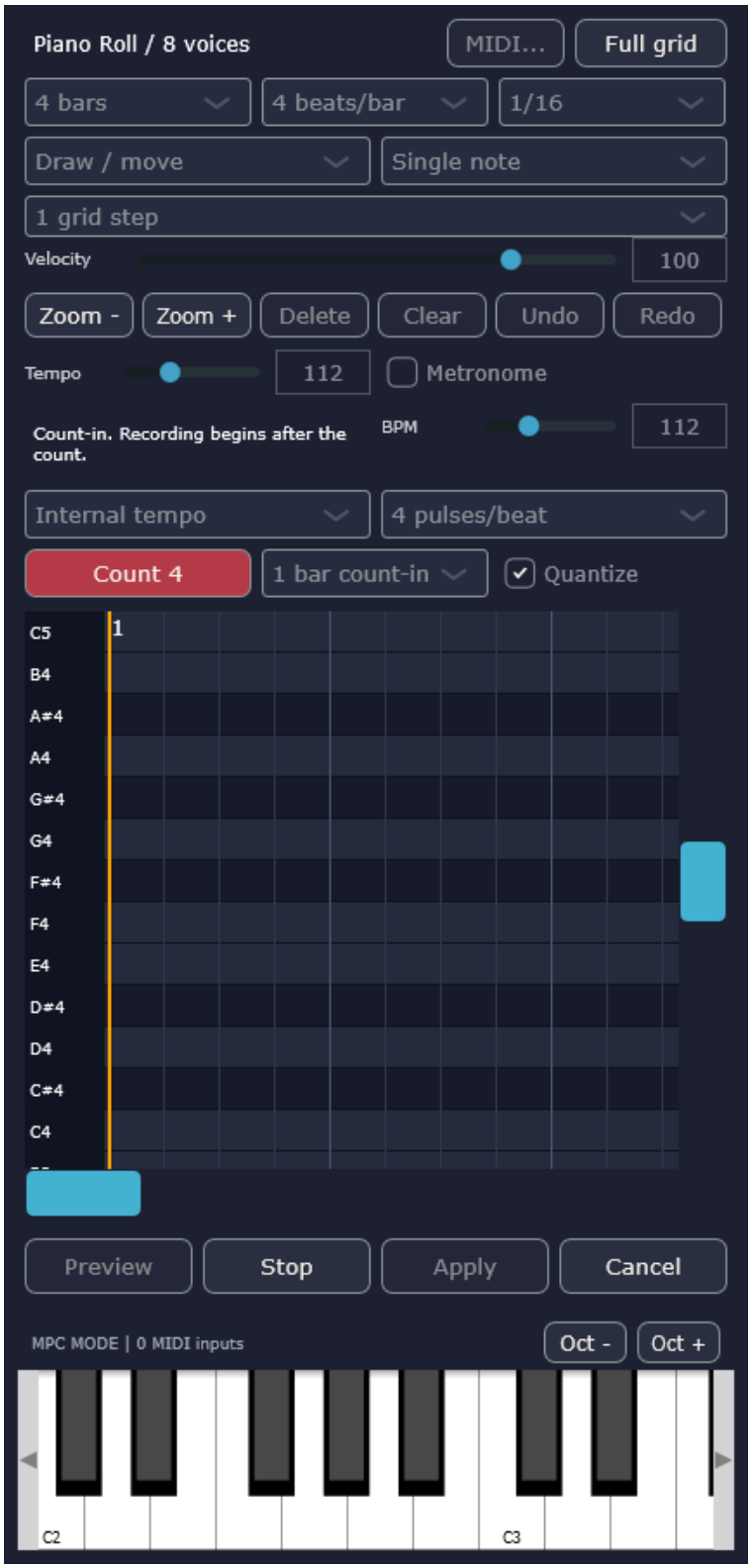
4. Recording ends at the pattern length. Stop closes held notes. Sustain-pedal duration is included in the captured note lengths.

5. Listen to the draft, use Undo if needed, then Apply. Cancel restores the original patch. Remember that recording replaces the draft take rather than creating a separate timeline clip.

6. The independent metronome has separate Click audio and Beat pulse outputs. Its own BPM is not the timing source for the recording count-in.

Missing external clock stops gates. Check the sender transport and input settings before assuming the note editor is broken.

Piano Roll: recording and clock sources | screen guide



Count-in with the screen keyboard visible. Record a draft, then Apply when satisfied.

14. Drum machines and rhythmic patches

The 808 and 909 modules combine individually editable instruments with a stereo mix. They are original digital approximations with substantial sound controls, not exact circuit emulations.

1. Add an 808 or 909 module. Tap a pad to audition it and select its instrument. Sound shows its main parameters; Advanced reveals additional shaping; Mixer provides level, pan, mute and solo.

2. Connect Left and Right to Audio Out. MIDI defaults to channel 10; check the selected pad note number if triggering from a keyboard.

3. To use a Step Sequencer, select the kick pad and connect the sequencer Gate to its Trig input. Use a second sequencer or Euclidean module for hats and a third for snare.

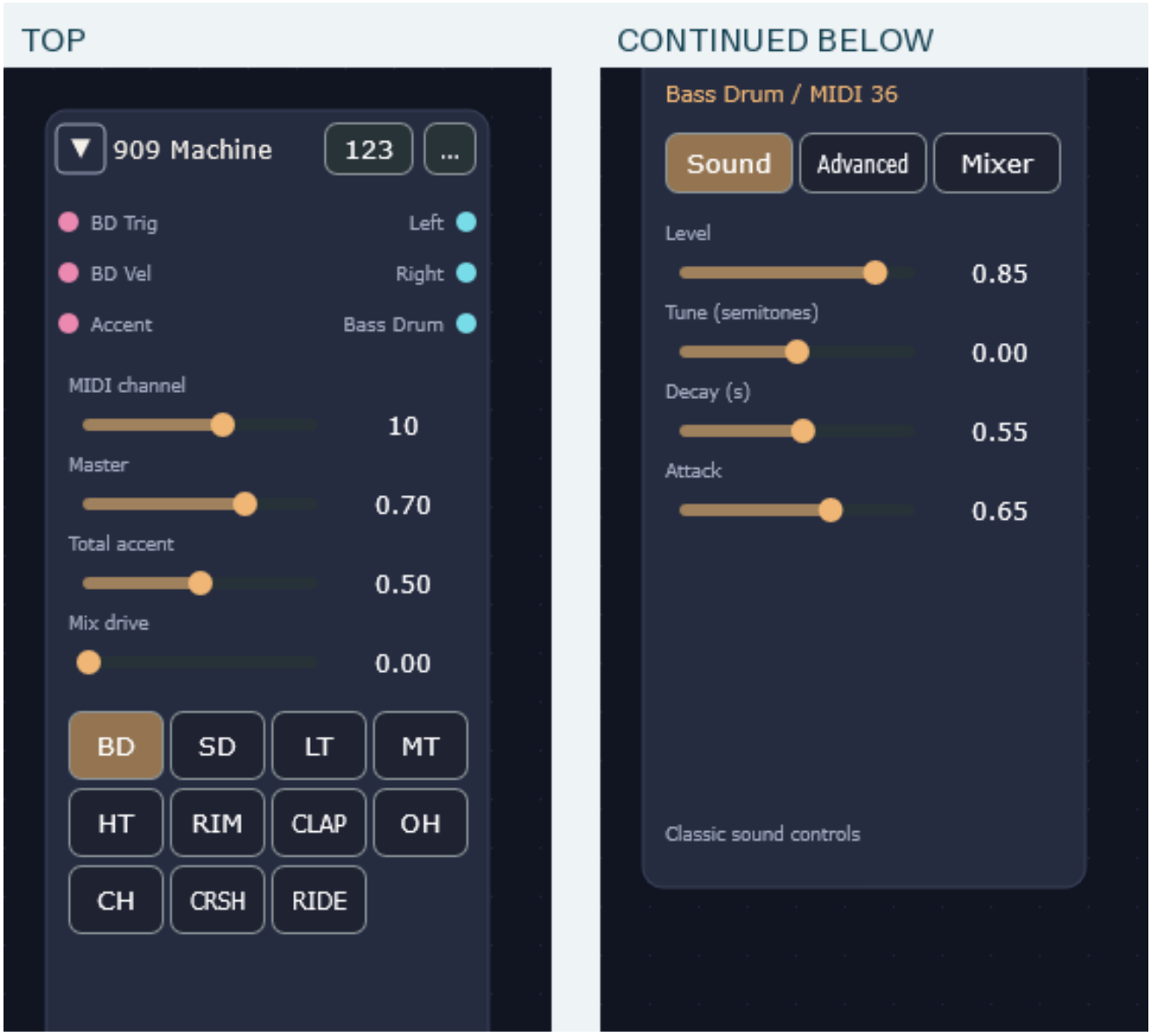
4. Feed all rhythmic sources from one Clock. Adjust step counts or divide the clock for different hit rates. Gate must cross the trigger threshold again for each hit.

5. Connect Vel or Accent control signals for dynamics. Closed hats choke open hats. Lower the master or individual levels if the combined kit overloads.

6. Use individual outputs for separate effects. These outputs do not have the same pan/master processing as the stereo mix. Avoid accidentally monitoring both paths twice.

There is no internal TR-style pattern/song editor in these drum modules. Use the app sequencers and timeline. Factory categories include drum and song patches; some kits wait for pad or MIDI input.

Drum machines and rhythmic patches | screen guide



909 Sound page. Select a different instrument to expose its controls and ports.

15. Sampler: loops and one-shots

Sampler plays imported WAV or MP3 audio. It can preserve stereo, choose a mono channel or mix, and embed the audio in your native patch.

1. Open the sampler import control and choose a file. Preview it and select the desired channel/range before committing. The native Sampler supports up to 60 seconds.

2. For a backing loop, enable Loop and Playback: play. Leave Pitch unconnected to avoid unintended pitch/speed changes. Route Left and Right for stereo, or Audio for the mono mix.

3. For a kick sample, disable looping and send rising Gate/Trigger events to start playback. Set Root note so the desired pitch corresponds to the original speed.

4. For notes, connect Pitch and Trigger/Gate appropriately. Gate mode stops when the gate falls; a one-shot is better when a short trigger should play the whole drum.

5. To run at half a trigger rate, insert Clock Divider before the trigger destination. Match the source loop tempo manually when using a backing loop.

6. Save a native patch to include the sample. Keep a separate copy of the source file for later editing.

Tune and pitch alter playback speed as well as pitch: this is not tempo-independent time stretching. Long embedded audio can exceed community upload limits. An MP3 is decoded for playback; it is not a wavetable by itself.

16. Sample Slicer and Drum Rack

Sample Slicer turns a recording into playable regions. Drum Rack gives eight one-shot pads. Choose the module according to whether you want slices of one recording or separate drum sounds.

1. For Sample Slicer, load a mono/stereo WAV or MP3 up to five minutes. Open Samples > Edit slices / trim.

2. Preview the audio, zoom in and choose a useful region. Move slice boundaries to the intended attacks. Apply embeds up to 120 seconds as mono with 1-16 slices.

3. Use Slice or normalized Slice CV to select a region: 0 is the first, 1 is the last. A Trigger starts it. Pitch is relative to Root note.

4. Changing the Slices count uses equal divisions until the saved custom count is restored. End can trigger another event when a region finishes.

5. For Drum Rack, tap a pad and open Pad samples to import a WAV. Each pad supports up to two seconds, stored as mono 24 kHz. Set its MIDI note, Tune, Level and Pan.

6. Save the patch to retain embedded samples. Check that you have permission to redistribute any audio included in a public preset.

Slicing is not automatic time stretching or transient detection. Long slicer sources use reduced storage rate where necessary. Previewing a source and applying the edited region are separate steps.

17. Wavetable Oscillator and Builder

A wavetable is a set of short repeating waveforms. Converting a recording into a wavetable changes its character; use Sampler when you want the original phrase to sound natural.

1. Add Wavetable Oscillator and try a built-in bank. Connect pitch and an appropriate envelope/gate path. Position moves through the frames; an LFO can animate this input.

2. Press Load WAV. Source... lets you choose Left, Right, another channel or Mix, and a region anywhere in the file. Open in builder shows the prepared waveform.

3. Use Hear selection to audition the source. Zoom and drag the selection boundaries. Detect cycle estimates a period for a sustained single note; Snap zeros aligns to nearby rising crossings.

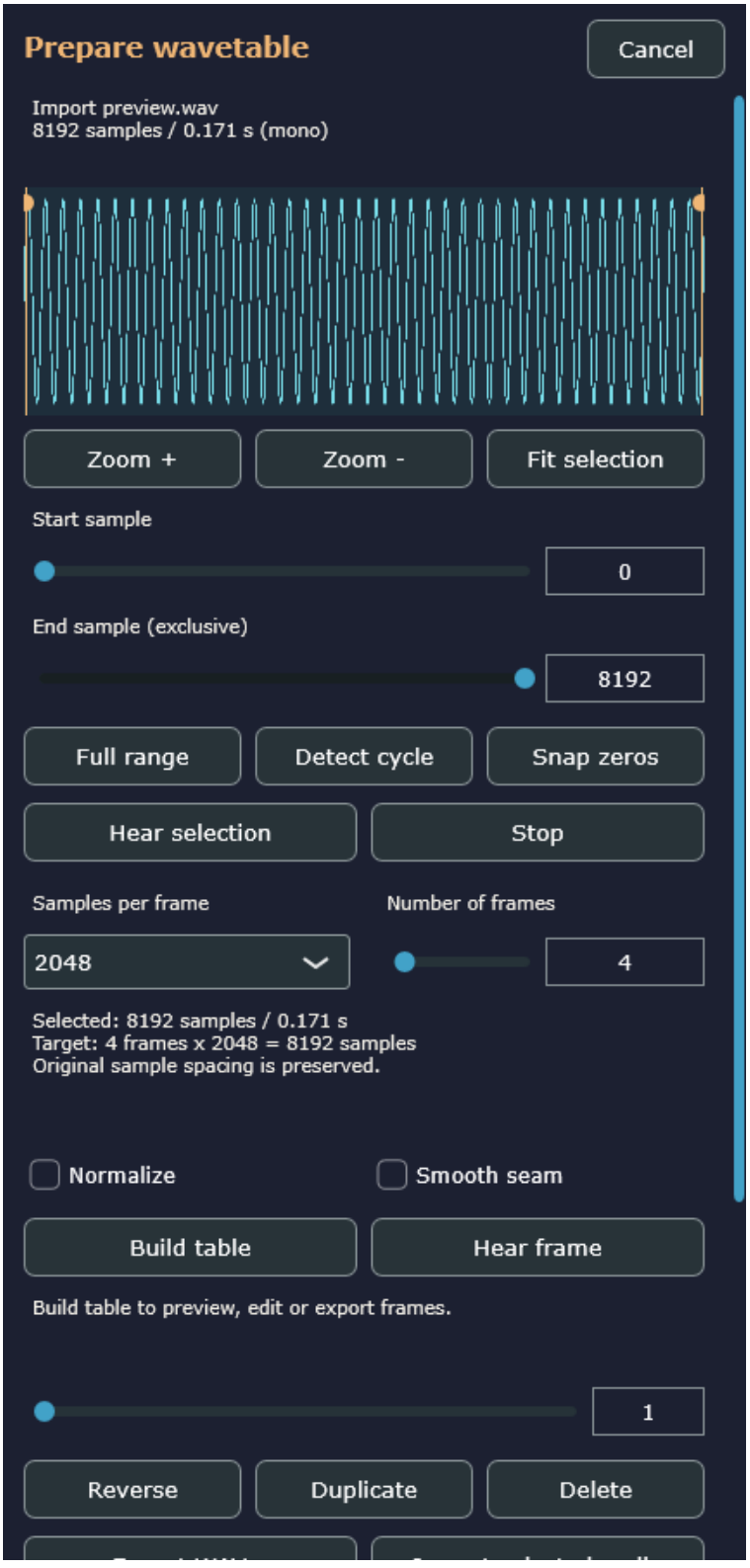
4. Set Samples per frame (64-4096, powers of two) and Number of frames (1-64). Enable Normalize and Smooth seam as useful, then Build table.

5. Use Hear frame to audition a prepared frame. Reverse, Duplicate and Delete edit frames. Changing the source range or rebuilding discards those frame edits.

6. Use Import selected audio to install the table. Export WAV saves a mono 48 kHz, 16-bit table for reuse.

Stereo WAVs are supported as sources, but the resulting oscillator table is mono. Large sources are region-based; at most two million mono editing samples are retained. Silent, DC-only, corrupt or unsupported compressed WAV files cannot make a useful table.

Wavetable Oscillator and Builder | screen guide



Earlier-build Wavetable import illustration. Current controls include source preview, region selection and frame processing.

18. Looper V2: make your first loop

Looper V2 records live audio against a musical timing reference. In 0.9.79 your live input remains audible after recording, even when Overdub is off. Loop level controls only the recorded loop.

1. Connect Audio In > your effects > Looper V2 > Audio Out. Verify that you can hear your instrument before recording.

2. For a predictable first attempt, select Internal timing, choose the tempo, set Bars to 4 and use After count-in. Set Count-in bars to 1 and Click to Recording/count-in or Always.

3. Press Record and wait for the preparation bar. Play through the full four-bar take. Watch status and bar/beat progress.

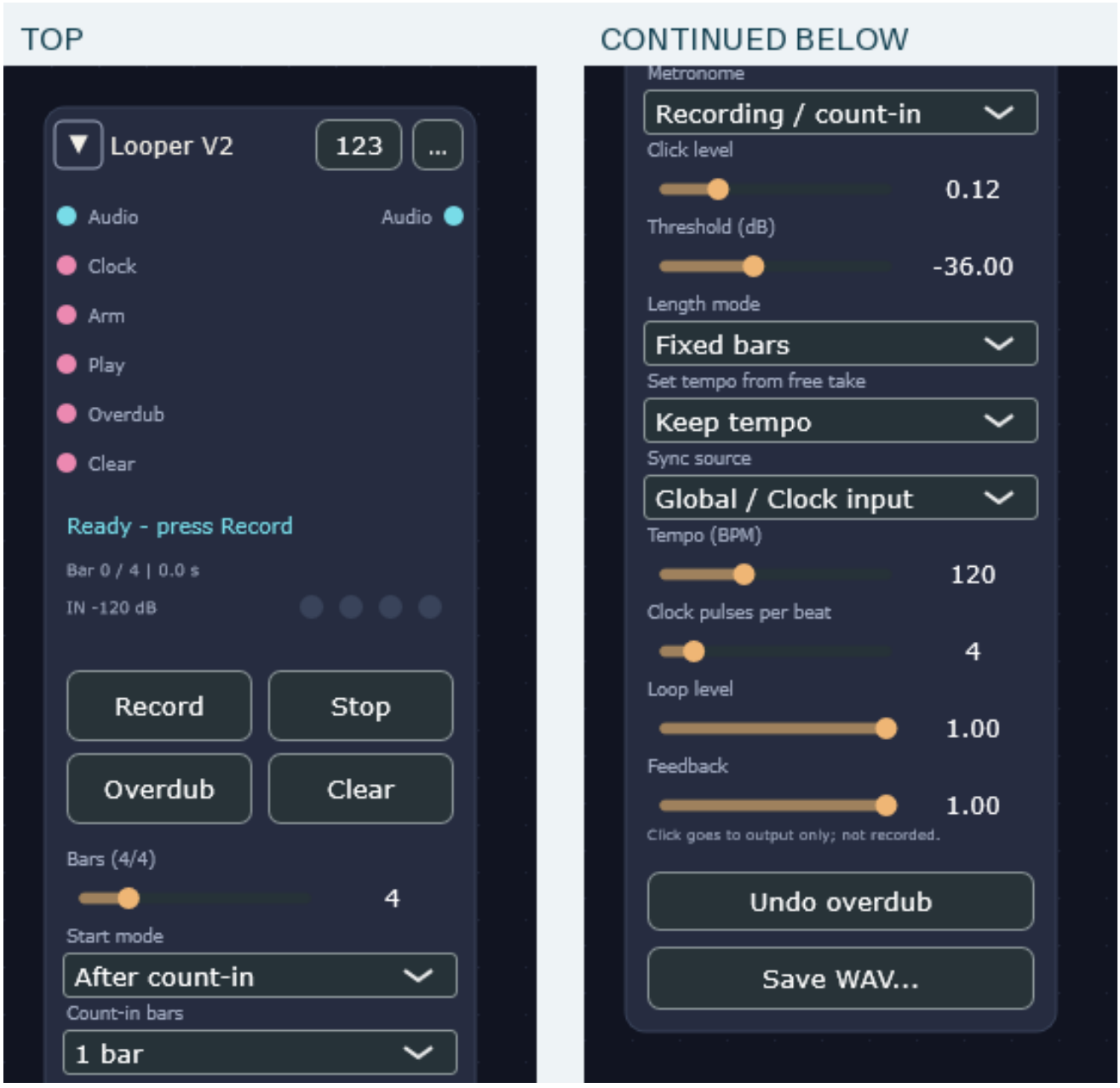
4. At the end, playback begins. Keep playing: you should hear both the recorded loop and your new live playing. Leave Overdub off if you only want to practise over it.

5. Lower Loop level to balance the loop against your instrument. Stopping playback silences the recorded loop, while live input continues through the module.

6. Use Clear to remove the take. Save WAV exports the loop; save the native patch to retain its completed embedded audio.

Use headphones for the metronome: the click is routed to output and excluded from the internal loop recording, but a microphone can pick up speaker sound acoustically.

Looper V2: make your first loop | screen guide



Looper V2 in 0.9.79. Loop level replaces the former wet/dry Mix label.

19. Looper V2: start modes, overdub and free length

Choose a start mode for the way you perform. A threshold start is useful for an unaccompanied instrument; a count-in is easier when you want to enter exactly on a beat.

1. After count-in gives a preparation period before a full take. On first sound waits until the input crosses Threshold. Next bar joins the running clock at its next bar.

2. Global follows the first Clock module or an explicit Clock input, with internal BPM fallback. MIDI Clock requires external clock and transport. Match pulses per beat when using a clock cable.

3. Turn Overdub on to add another layer while the loop plays. Feedback controls how much of the old layer is retained. Turn Overdub off when the layer is finished.

4. Undo overdub restores the latest layer starting point. Finish an overdub before saving or exporting the loop.

5. Free length records until Record is pressed again, up to 192 seconds. Use Internal timing for a freely timed first take. Optional tempo derivation uses the selected bar count and take duration.

6. Changing playback tempo resamples the stored loop and changes pitch. External MIDI clock is not rewritten by the free-take tempo option.

Looper V2 stores mono audio at 24 kHz. The older Looper is a separate, short runtime looper; its recorded contents are not embedded in saved presets. Choose V2 for persistent musical takes.

20. Reusable groups: build your own effect

Groups organize existing modules without changing the underlying signal graph. A saved .mpcgroup is a reusable building block that can be inserted into another patch.

1. Build and test a chain, for example Drive > Delay > Reverb. Keep the external Audio In and final Audio Out outside the group if you want to reuse it behind synths too.

2. Open Menu > Module groups. Select New group, enter a name, tick the effect modules and press Create / update.

3. Choose Exposed ports to decide which inputs/outputs appear on the group card. Ports used by external cables must remain exposed.

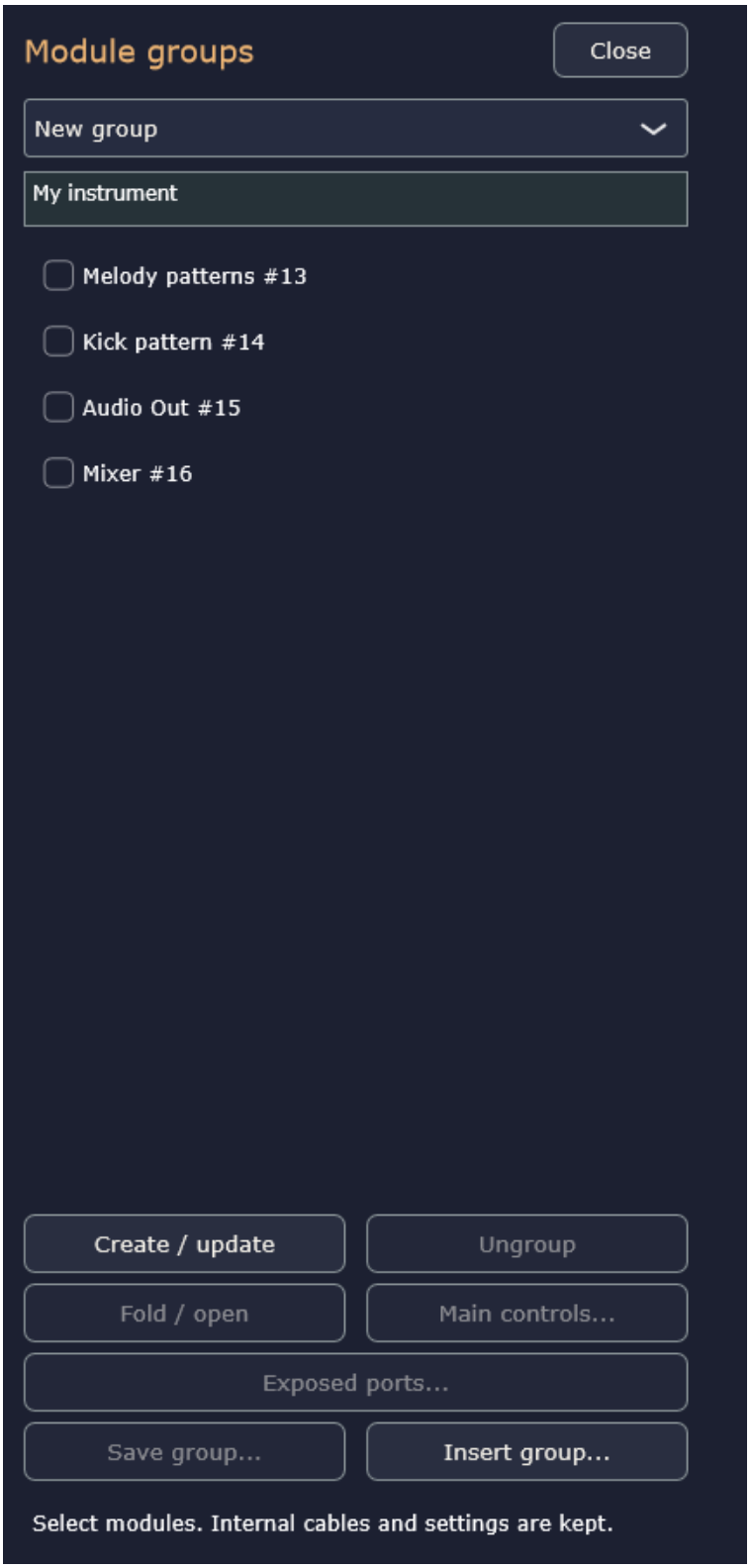
4. Choose Main controls and select up to eight useful parameters, such as Drive, Delay time, Feedback and Reverb mix. These edit the original internal parameters.

5. Select Save group to write a .mpcgroup. It contains modules, settings, internal cables, internal macro mappings and embedded samples. External cables are not included.

6. In another patch, use Insert group. It adds the group without replacing existing modules. Connect a synth, sampler or Audio In to the group input, then connect the group output onward.

Groups cannot nest, and one module belongs to at most one group. Ungroup removes the wrapper but retains the modules and cables. Save the entire native patch when you want the surrounding routing too.

Reusable groups: build your own effect | screen guide



Group editor: membership, exposed ports and main controls define the reusable package.

21. Focus on a group or a single module

Focused editing reduces visual clutter while the whole patch continues to run. It does not duplicate the selected instrument or disconnect hidden cables.

1. Press Open on a group card to show only its internal modules and cables. External connections remain active but are hidden in this view.

2. Edit controls and internal routing normally. Pan or zoom to reach other members. New or duplicated modules inside the focused view join that group.

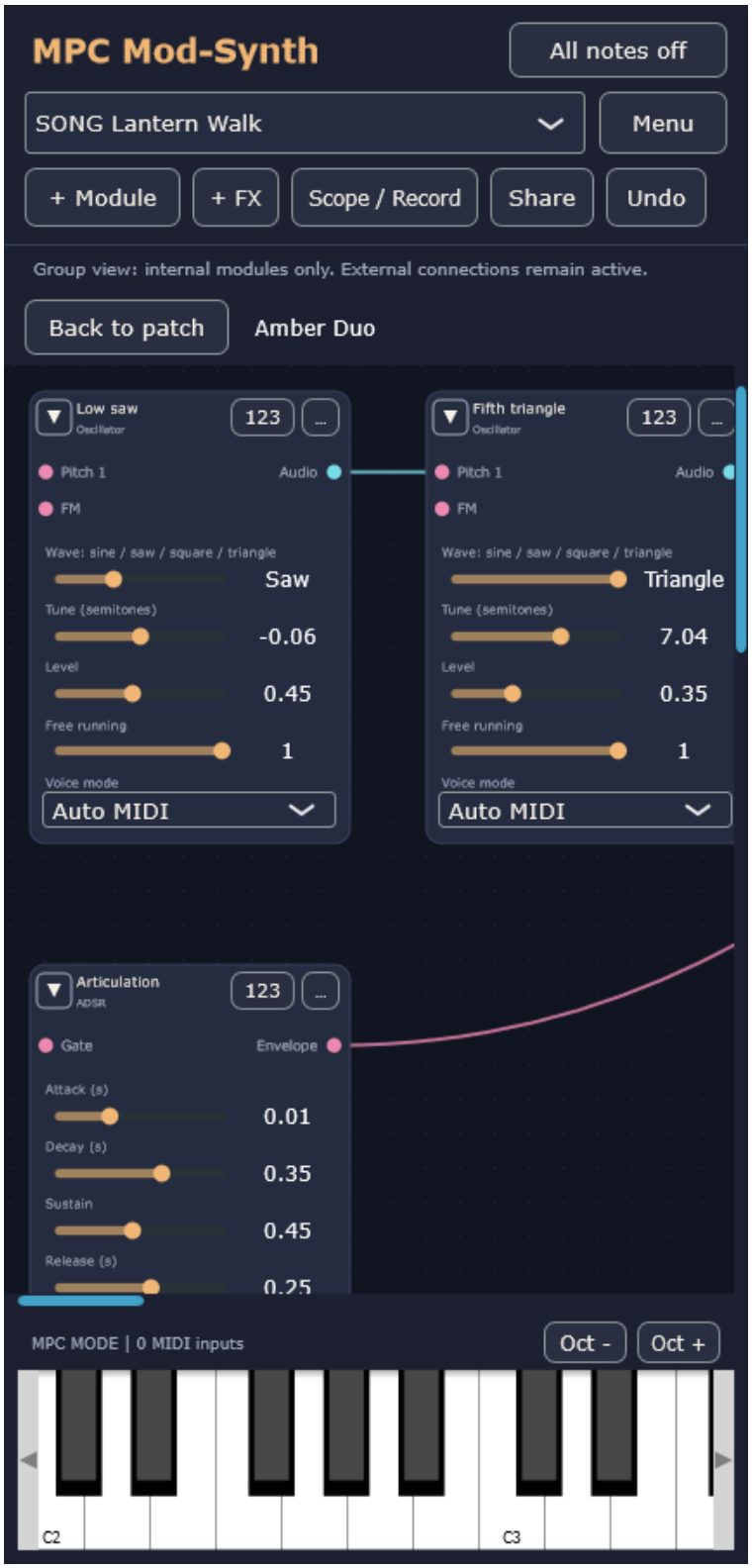
3. Press Back to patch to restore the previous canvas view. Fold / open in Module groups remains available for expansion on the full canvas.

4. For a single module, open its (...) menu and choose Open module in separate view. It provides a large scrollable editor without header dragging or cable editing.

5. Piano Roll opens its dedicated editor. Return with Back, or use Apply to keep Piano Roll note edits.

A focused view is an editing aid. Muting, soloing or stopping other instruments requires their controls; simply hiding them does not silence them.

Focus on a group or a single module | screen guide



Group focus shows the original member modules, with Back to patch at the top.

22. Song Timeline: melody, bass and kick

The optional timeline arranges Step Sequencer or Piano Roll patterns. One track belongs to one sequencer module. A track is not an audio recording lane.

1. Build three working instrument paths: a melody sequencer and synth, a bass sequencer and synth, and a kick sequencer feeding a drum Trigger. Mix their audio into Audio Out. Name the source modules Melody, Bass and Kick.

2. Open Menu > Song timeline. Set 16 bars and a suitable song tempo. The timeline uses 4/4 and its own internal tempo.

3. Select Melody, set the clip name to Intro, start bar 1 and length 4. Press Capture as new clip to store its current pattern.

4. Select Bass and capture a four-bar clip at bar 5. Select Kick and capture a four-bar clip at bar 5. Different tracks can sound together.

5. Duplicate or create clips through bar 16. Drag clips horizontally to reposition by whole bars. Clips on the same track cannot overlap.

6. Enable Use song timeline and press Play from start. Use Stop to release arranged gates. Loop song repeats the arrangement. Save the native patch to retain the song.

With Use song timeline off, the ordinary module workflow remains active. When enabled, only sequencers with clips are taken over. External clock inputs on these sequencers are overridden; timeline MIDI-clock transport sync is not implemented.



Timeline clips are snapshots assigned to sequencer modules. The transport is independent of the editor being open.

23. Several patterns on the same track

Yes: Capture as new clip is the capture function. Each clip stores a copy of the notes, so one sequencer can provide Intro, Verse and Break without creating three instruments.

1. Select the sequencer in Song timeline. Open module in separate view, enter the Intro notes, then return. Enter Intro, start bar 1, length 4 and press Capture as new clip.

2. Press New pattern to clear clip selection. Open the source module and change the notes for Break. Return, name it Break, set bar 5 and length 4, then Capture as new clip.

3. The Intro keeps its original notes. Editing the source does not silently rewrite all previous clips.

4. To edit an existing clip, select it and press Load into module. This copies its stored notes into the source and opens the editor.

5. After editing, return and press Recapture notes. Only the selected clip pattern is replaced. Use Update clip for placement, name, length or transpose without replacing notes.

6. Duplicate copies the selected clip immediately after it. Extend song length if necessary. Save a native patch after completing the arrangement.

Capture stores note patterns, not sound-parameter automation. Arrangement edits stop playback and rebuild the graph; they are not seamless performance edits. Closing the timeline alone does not stop playback.

24. Export a song or record a performance

Offline song export and live recording serve different purposes. Export renders the arranged patch; recording captures what you actually perform.

1. For an arranged song, open Song timeline > Export song WAV... and choose a 2, 6 or 12-second effect tail. Select a destination and wait for completion.

2. The export is stereo 48 kHz, 24-bit PCM WAV. It renders the configured song length once even if Loop song is enabled. MP3 song encoding is not included in this release.

3. Offline export captures current patch settings, but not later live parameter moves, external MIDI playing, audio input or phone movement. Internally running modules can still contribute sound.

4. For a live performance, open Scope / Record and start recording. The main Recording indicator turns red. Perform, change controls and stop when finished.

5. Save/share the recorded WAV or create a video from the take. Video follows captured app views, including editors such as Piano Roll, rather than only a static patch overview.

6. Keep the original recording. Community video sharing limits the upload copy to 20 MB; larger originals can be retained. Choose a shorter range or a more compressed copy when prompted.

Video creation is a post-recording step. Encoding can take time and platform support differs. Keep the app open until saving finishes. Use a long enough effect tail when exporting delay-heavy songs.

25. Presets, community and backups

A native patch is the safest way to retain the app sound, routing, groups and timeline. A rendered WAV is a performance; it does not let someone edit your patch.

1. Use the preset dropdown to search by name or category. Select a row, then Load preset. Save your own named copy before changing a factory sound.

2. Use Share for preset or recording sharing. A mpctoolkit.com account is needed to publish. Sign in or create an account using the available account links; account access is also available in Settings.

3. Save/remember login when offered so preset and video sharing can use the same account. Do not place credentials inside a preset description.

4. Enter a title and category; add a helpful description explaining whether the sound needs MIDI, live input, a clock or loaded samples. Include playing instructions and useful controls.

5. Download community presets in the app or from their website pages. A video can link to a matching community preset where supported. Keep local copies of your own files.

6. Share only audio you can redistribute. Embedded samples increase file size; native community uploads have an 8 MiB limit. New group/timeline format support depends on the installed website plugin.

The local group/timeline format is version 13. The project notes flag a required community-plugin update for this format; local saving works independently. This handbook does not claim the live website has already been updated.

26. ZOIA imports and current boundaries

The app can attempt to translate supported ZOIA .bin patches into its native graph. This is not a guarantee that every pedal module, saved state or option is supported, or that the sound is identical.

1. Save the current native patch first. Open Settings > ZOIA > Import ZOIA .bin... and select the file.

2. Read IMPORT and confirm the filename and attempt time. A stale report can belong to a previous attempt. Clear import result removes that report.

3. If import is blocked, the current patch remains unchanged. Read each BLOCKED reason; do not assume the old visible patch is the imported sound.

4. If loaded, test its audio source, input/output routing, MIDI channel and clock. Hardware controls may use clearly labelled app proxies.

5. Save a native patch for edits. Save unchanged original .bin preserves original bytes; it is not a new hardware export of the edited graph.

ZOIA export and ZOIA mode are disabled in this release because hardware exports were not reliable. No instructions in this handbook should be read as approval to export a new pedal patch. Native approximations may differ in DSP, parameter curves and timing.

27. Troubleshooting checklist

Change one thing at a time and compare the same patch. Include version, device, interface, sample rate, buffer size and the native patch when reporting a problem.

1. No sound: check media volume, selected output, Audio Out Master and the full audio path. Test a known factory synth with the screen keyboard. For explicit oscillator modes, verify both pitch and gate.

2. Live input silent: check external input selection, permission, enablement and the interface USB routing. An input meter alone does not confirm a working output path.

3. Only dry instrument: inspect effect mix and processing level, and check hardware direct monitoring. Do not compensate blindly by making the app very loud.

4. Looper only plays the take: install 0.9.79 or later. Live input should pass with Overdub off; Loop level controls the take. Verify the upstream instrument still reaches the looper.

5. Sequence silent: check Run, clock source, transport, pulses per beat, gate routing and muted mixers. A moving sequencer is not proof that a sound generator is connected.

6. Crackles: raise buffer size, reduce simultaneous voices/heavy effects, and compare rapid playing with slow playing. Use a short non-zero attack/release and check clipping. Larger buffers help underruns but not every kind of click.

7. Sample problems: test a local WAV, preview the chosen region and confirm Apply/import. Make sure Playback or Trigger is active. WAV filename extension alone does not guarantee a decodable file.

8. Community failure: check login, size limit, file format and exact server message. Group/timeline presets require compatible website-plugin support.

Known limits: 256 modules and 512 cables; eight native synth voices; timeline up to 256 bars and 128 clips. These are format/engine limits, not promises of real-time performance on a phone.

Module reference

Current module help, arranged alphabetically. Native and imported variants coexist. ZOIA export is disabled in this edition. Use the ? button in a module for its in-app help.

808 Drum Machine

Select a pad to play and edit that instrument. Sound shows the classic instrument controls; Advanced adds pitch envelopes, tone, decay, saturation and other sound-design options; Mixer provides level, pan, mute and solo. MIDI defaults to channel 10; the selected instrument's note number is shown above its tabs. Only the selected instrument's Trig/Vel/audio ports plus connected ports remain visible; select another pad to wire it. Trig responds to a rising gate above 0.5; Vel is 0-1, unconnected = 1. Accent multiplies hit strength using Total accent. Closed Hat chokes Open Hat. The Left/Right mix uses Master and Mix drive. Individual outputs use instrument Level, Mute and Solo, before Pan/Master/Mix drive. The 808 exposes tom/conga, rim/claves and clap/maracas as independent voices, rather than mutually exclusive hardware switches. The 909 uses separately voiced drums and an original generated metallic sample bank for hats/crash/ride, not original ROM samples. These are original digital approximations, not circuit-identical hardware emulations. Use an external Clock/Euclidean or Piano Roll patch for sequencing; no internal TR pattern/song editor.

909 Drum Machine

Select a pad to play and edit that instrument. Sound shows the classic instrument controls; Advanced adds pitch envelopes, tone, decay, saturation and other sound-design options; Mixer provides level, pan, mute and solo. MIDI defaults to channel 10; the selected instrument's note number is shown above its tabs. Only the selected instrument's Trig/Vel/audio ports plus connected ports remain visible; select another pad to wire it. Trig responds to a rising gate above 0.5; Vel is 0-1, unconnected = 1. Accent multiplies hit strength using Total accent. Closed Hat chokes Open Hat. The Left/Right mix uses Master and Mix drive. Individual outputs use instrument Level, Mute and Solo, before Pan/Master/Mix drive. The 808 exposes tom/conga, rim/claves and clap/maracas as independent voices, rather than mutually exclusive hardware switches. The 909 uses separately voiced drums and an original generated metallic sample bank for hats/crash/ride, not original ROM samples. These are original digital approximations, not circuit-identical hardware emulations. Use an external Clock/Euclidean or Piano Roll patch for sequencing; no internal TR pattern/song editor.

A/B Morph

Interpolates four control values between A and B. Assign destination parameters, then use Capture A and Capture B to read their current knob settings. Morph changes those values continuously; it does not switch entire patches or module layouts.

ADSR

An attack-decay-sustain-release envelope. A high Gate starts the attack and holds the sustain stage; lowering Gate starts release. Connect Envelope to VCA Level for note articulation or to a filter input for a changing tone.

Aliaser

Sample-and-hold audio rate reduction without bit-depth quantization. Frequency CV adds to the setting across roughly 27.5 Hz to 28 kHz. Low rates produce strong aliasing. Connect Audio to an audio path and Frequency to modulation.

Audio In

Brings the selected external audio input into the patch as Left, Right and Mono. Enable and configure input in Settings > Audio / EFX. The module meters show the input before its Gain knob; route its audio through effects to Audio Out.

Audio In Switch 16

Routes one of up to 16 audio inputs to Audio. Select CV adds to Select: zero is off, full scale selects the last enabled input. Fades smooth channel changes over a few milliseconds.

Audio Invert

Reverses audio polarity. It is useful in parallel routing, subtraction experiments and phase-related sound design. Polarity inversion alone normally does not sound different on a single isolated signal.

Audio Mixer 5

Mixes five audio inputs with independent gain controls in dB. Each Gain CV adds up to 120 dB per unit to its matching gain control, clamped to -100..20 dB. Use it for imported mixer structures or when each sound source needs its own level. Reduce gains to avoid clipping when summing several loud signals.

Audio Multiply

Multiplies two audio signals directly. Feeding two oscillators creates ring-modulation sidebands; use a VCA instead when the second source is an ordinary control envelope.

Audio Out

Routes the patch to the selected audio device. Left / Mono is copied to the right when Right is unconnected. Master controls the final level; this is the destination for your completed synth or effects chain.

Audio Switch

Selects between audio A and B with a short smoothing transition. Select below 0.5 chooses A and higher values choose B. Use it for dry/effect switching or alternate oscillator sources.

Band-pass Filter

Passes a region around Cutoff while reducing lower and higher frequencies. Resonance makes the selected region more prominent. Modulate Cutoff for vowel-like or wah-like sounds.

Bitcrusher

Reduces amplitude resolution and effective sample rate for digital grit. Lower bit depth adds quantization distortion; lower sample rate adds rough, aliased textures. Mix blends the processed signal with the original.

Cabinet Sim

A lightweight cabinet-style filter using low and high cuts. It reduces rumble and fizzy high frequencies after distortion. It is not an impulse-response loader or a model of a particular speaker cabinet.

Chord / Scale

Creates three pitch outputs from a root, chosen scale/key, chord type, inversion and octave. The voices are constrained by the selected scale, so the resulting intervals may differ from an unconstrained chord. Connect each pitch to an oscillator and use Gate for the shared articulation.

Chorus

Mixes the original signal with a short, moving delay for a thicker sound. Rate controls movement and Depth controls delay variation. Use moderate Mix on keys, pads or clean guitar. Direct phase uses the Phase control/input instead of the internal clock; Wave selects sine or triangle.

Clock

Generates timing pulses at the chosen tempo and steps per beat. MIDI sync follows incoming MIDI Clock and transport messages. Connect its output to several sequencers to keep them together; use a divider for slower patterns.

Clock Divider

Passes one pulse for every selected number of incoming clock pulses. Reset restarts the count. Use it to run a bass sequence more slowly than a melody sequence from the same clock.

Comparator

Compares Positive with Negative and outputs a high gate when Positive is greater than or equal to Negative. Threshold supplies Negative when unconnected. Bipolar makes the low state -1 instead of 0.

Compressor

Reduces gain when the detected signal exceeds Threshold. Ratio sets compression strength; Attack and Release control response, and makeup gain restores output level. An optional Sidechain input lets another signal control the gain reduction.

Constant

Produces a fixed bipolar control value. Use it for a bias, a modulation amount or a test signal when building control patches.

Convolution Reverb

Convolves mono audio with a WAV impulse response. A synthetic room impulse is included. Load IR WAV accepts up to 2 seconds; stereo input files become the selected mono channel or mix. The embedded IR is resampled during patch preparation and energy-limited. Mix blends aligned dry and wet signals. FFT processing adds 256 samples of latency (5.33 ms at 48 kHz) to both paths. Long impulses and high sample rates cost more CPU. This module is app-only.

CV ADSR

An ADSR envelope with modulation inputs for Attack, Decay, Sustain, Release and Hold. Gate starts the envelope; a rising Retrigger restarts it from zero. Hold keeps the attack peak before decay (zero disables it). Time CV values map exponentially from about 1.33 ms to 60 seconds. AD one-shot ignores gate release and completes Attack/Decay; Sustain and Release are unused in this mode. Use this for triggered percussion or modulated envelopes.

CV Channel

Applies a controllable bipolar gain to a control signal plus Input bias. Gain bias and Gain CV determine the scale. Use it for imported CV routing, attenuation or polarity changes.

CV Delay

Delays a control signal by the selected time, up to 60 seconds. Its internal control buffer runs at 1 kHz, so it is intended for modulation and control timing rather than audio.

CV Filter

Smooths a control signal with separate exponential Rise and Fall times. It approaches the target gradually, unlike the constant-rate ramps of Slew. Use it for gentle parameter transitions.

CV Flip Flop

Toggles between low and high on each rising Trigger. Use a momentary button to create a latch, or a clock to create a slower alternating state.

CV In Switch 16

Routes one of up to 16 control inputs to Control. Input biases add to incoming CV. Select spans Off (0) through the last input (1); values are rounded to the nearest selection. Audio uses a separate switch module.

CV Invert

Reverses the polarity of a control signal by multiplying it by -1. Use it to make two destinations move in opposite directions; add an offset separately if you need a positive-only result.

CV Mixer

Adds three control signals and applies a bipolar Scale. Combine slow modulation, envelopes and fixed offsets before sending them to a destination.

CV Multiply 8

Multiplies two to eight control values. Each input adds its own bias; zero at any active input makes the result zero. Use for modulation depth or combining gates.

CV Out Switch 1

A one-channel control gate used by compatible imports. Control plus Input bias passes when Select plus its bias reaches 0.5; otherwise the output is zero. This is not a multi-output router.

CV Out Switch 16

Routes Control to one selected output; the others output zero. Select spans Off (0) through the last output (1). Connect outputs to CV, gate or clock destinations.

CV Rectify

Outputs the absolute value of a control signal. Negative portions are flipped above zero. Use it to turn a bipolar LFO into repeated positive modulation peaks.

CV Scale / Offset

Scales and offsets a control signal. Use Scale to change modulation depth or polarity and Offset to move its center value. This is useful when adapting an LFO to the range expected by another module.

CV Slew

A CV-controlled linear slew limiter with input bias and separate rise/fall CV. Time CV ranges from immediate response to about 60 seconds. Use it for imported portamento or long control ramps.

CV Step Lookup

Selects a stored step using Position CV from 0 to 1. Each Step CV adds to that step value. Output holds the selected value; this is a CV-addressed sequence and does not advance from clock pulses.

CV Switch

Selects between two control signals. Select below 0.5 chooses A; 0.5 or higher chooses B. The knob is used when Select is unconnected; try a button or clock as the selector.

Delay

Adds delayed repetitions, with Time, Feedback and wet/dry Mix. Feedback recirculates the delayed signal. Put it after a VCA so echoes can continue after the original note ends.

Device Control Proxy

Represents selected imported device-control functions with an app proxy. Bypass mode can pass the external input to the app output; Perform can request a fitted canvas view. Aux does not control a real pedal or external device. Review its function when adapting imported patches.

Drawable LFO

Draw a cyclic 32-point modulation curve or choose nine templates including Square, 4 pulses, 8 pulses and Staircase. Step, Linear and Smooth interpolate between points. Rate uses Hz or local Tempo/Cycle length. An external Clock measures one cycle per incoming edge interval. Note retrigger restarts each MIDI voice; Free keeps a common running phase. Reset restarts the cycle. Depth and Bipolar set the output range; Phase and End provide synchronization signals. Curve editing replaces hidden point values, which are saved with the patch.

Drive

A strong soft-clipping overdrive with tone filtering and wet/dry Mix. Drive CV is an optional control input, not an audio input. The IN and SAT indicators show input level and saturation activity; raise Drive or input gain for more distortion, then balance Output.

Drum Rack

Eight one-shot drum pads with an original synthetic kit. Tap pads, connect control triggers or send MIDI on the selected channel (default 10). Each pad has its own MIDI note, Tune, Level and Pan. Closed hat Pad 3 chokes open hat Pad 4. Pad samples imports a mono/stereo WAV with preview, up to 2 seconds per pad, stored as mono 24 kHz. Kits and samples are embedded when saving/sharing. The rack mixes to stereo.

Drum Synth Rack

Eight original synthesized drums: Kick, Snare, Clap, Closed/Open Hat, Tom, Rim/Clave and Cowbell. Tap a pad to play it and reveal its Tune, Decay, Character, Level and Pan controls. MIDI notes 36, 38, 39, 42, 46, 45, 37, 56 on the selected channel (default 10). Each Trig input responds to a rising gate; the matching Vel input is 0-1 and defaults to full velocity. Connect Euclidean Gate and Accent outputs for rhythmic patterns. Closed Hat chokes Open Hat, including simultaneous hits. Left/Right include Master and Mix drive. Eight mono individual outputs are after instrument Level but before Pan, Master and Mix drive; use these for separate effects. Character changes kick punch/click, snare noise, clap burst spacing or metallic overtones. Four KIT presets wait for pads/MIDI; four DRUM presets play automatically from a Clock module.

Envelope Filter

An automatic wah-style filter driven by the input loudness. Set the frequency range, Sensitivity, Resonance, filter type and sweep direction. Pick harder to move farther through the range; adjust Sensitivity to the instrument's level.

Envelope Follower

Converts audio loudness into a control signal. Attack and Release determine how quickly it follows changes; Sensitivity boosts the response, and Log output gives a logarithmic level indication. Use it to make another parameter respond to playing dynamics.

Euclidean Sequencer

Distributes a chosen number of pulses over a 1–32-step cycle. Rotate shifts the pattern; Gate, Accent and normalized Step are separate outputs. It runs at four steps per beat internally, or follows an external Clock. Use it for kick, percussion and evolving rhythmic layers.

Expression Proxy

A clearly labelled replacement for a hardware expression input. The Expression knob supplies the control value. Assign modulation or use another controller when adapting a pedal patch to the phone.

Extended CV Envelope

Extended envelope with optional delay, attack hold and sustain hold. Gate starts it; Retrigger restarts from zero. Immediate release responds to gate-off even in AD mode. Timing CV adds to each setting; exponential timing spans about 1.33 ms to 60 s, linear timing spans 0-60 s. Connect Envelope to VCA Level or filter modulation.

Extended CV Quantizer

Quantizes normalized pitch CV (0 = A0, one semitone = 1/120). Key and Scale CV add to their knobs; Extended enables 48 scale choices. Use Pitch/CV conversion for modules that expect MIDI note numbers. Connect to normalized oscillator pitch inputs.

Extended Delay Line

Audio delay up to the configured maximum, at most 16 seconds. Time and Mod accept normalized CV. Tap uses rising pulses to measure a period; imported saved timing assumes 48 kHz. Interpolation smooths fractional delay lengths. Imported buffers start empty.

Flanger

Mixes audio with a very short moving delay. Depth controls the sweep, Feedback increases the comb-filter character, and Mix controls the blend. It works well on noise, drums and distorted guitar.

Flexible LFO

Rate CV, Tap pulses or Linear CV set speed. Tap requires two rising edges; imported saved frequency starts playback. Swing changes the cycle midpoint, Phase offsets the waveform, Reset restarts it. Output is normalized CV, optionally bipolar; connect it to modulation inputs, not audio inputs.

FM Oscillator

A continuously running FM oscillator using normalized Pitch CV, with sine, square, triangle and saw waveforms. Audio FM adds exponential frequency modulation, and Duty CV affects pulse width. Frequency CV is a base offset: 0 corresponds to 27.5 Hz. Optional 2× oversampling increases processing work.

Frequency Shifter

Moves frequencies by a fixed number of hertz rather than a musical pitch ratio. Up and Down provide complementary shifted outputs. Small shifts create motion; larger shifts create inharmonic, metallic effects. This is different from Pitch Shifter. Mix and Level also accept smoothed additive CV.

Function Generator

An eight-point drawable control shape that can run once or loop. Duration sets its length, Curve chooses linear or smooth transitions, and Bipolar shifts the range. Rate CV changes playback speed and End pulses at the end of a cycle. Use it as a custom envelope or LFO.

Fuzz

Applies hard, slightly asymmetric clipping for a rougher distortion character. Gain controls clipping, Tone filters high frequencies, and Output balances level. Add Cabinet Sim after it for a less abrasive guitar sound.

FX Input

Provides an internal entry point for a reusable FX patch, with Left, Right and Mono outputs. Unlike Audio In, it processes connected patch audio rather than the phone interface. Use it when building effects that should be inserted after an existing synth.

Granular

Reads overlapping grains from an incoming audio buffer. Pitch, Grain size and Delay shape the texture; Freeze holds the buffered sound, Reverse reverses grain playback, and Feedback recirculates it. Texture changes the grain window. This is a compact live granular effect rather than a full sample editor.

Granular Capture

Captures live Audio and reads 1-8 overlapping grains. Size is exponential; Position chooses buffer age. Density creates gaps, Texture changes windows, Pitch spans +/-60 semitones. Freeze stops recording; release it to capture new audio. Controls add normalized CV to their settings. No recorded pedal audio is contained in an imported .bin.

Hall Reverb

A stereo hall-style reverb with Decay and Mix modulation inputs, plus Low EQ and Low pass controls. Connect both outputs for a wider tail. The algorithm approximates the module's role, not the precise sound of the hardware.

High-pass Filter

A resonant high-pass filter that removes low frequencies. Use it to reduce rumble before distortion or to thin a layered sound. Cutoff and Resonance accept modulation.

Instrument Synth

Transforms live guitar or bass audio through nonlinear shaping, an envelope-controlled filter and a suboctave divider. No MIDI note or pitch-tracking oscillator is needed. Sound selects Round, Growl or Edge; Sensitivity adapts the input, Character increases harmonic intensity, Filter/Sweep shape the response, Sub adds the divided signal, and Mix blends dry/wet. Single notes work best for the suboctave. Native MPC module. New smoothed CV inputs modulate Filter, Character, Sub, Sweep, Mix and Sensitivity. Filter CV spans five octaves per unit; Sensitivity adds 24 dB per unit; the other inputs add to their base knobs.

Keyboard 8

Eight configurable on-screen notes with normalized Pitch CV, Gate and Trigger outputs. Each note also accepts a CV offset. Use Pitch / CV to convert its pitch to MIDI-note units for native oscillators.

Legacy Ratio Clock

Legacy clock divider/multiplier. Send regular rising pulses to Clock. Ratio CV is approximated by divisions from 1/32 up to unity at 0.5 and multiplication up to x32. Two incoming pulses establish tempo. Reset restarts phase. Check old imported ratios by ear.

LFO

A slow modulation oscillator with sine, square, triangle, rising saw and falling ramp shapes. Depth sets modulation amount; Unipolar changes the output from bipolar movement to positive-only movement. Reset restarts the phase on a rising gate.

Logic Gate

Combines two gates using AND, OR, NOR, NAND, XOR, XNOR or NOT. Inputs above 0.5 count as high. Use it to combine rhythmic patterns or restrict a trigger to certain conditions.

Looper

Records a live audio loop of up to eight seconds. Record, Play and Clear can be controlled from inputs; overdub layers new audio using Feedback to retain the old loop. Speed, Reverse and One shot alter playback. Recorded loop contents are runtime state, not embedded sample data in a saved preset.

Looper V2

Live input always passes through, including after recording and when stopped. Loop level controls the recorded loop only; Overdub adds new playing to the recording. Connect Audio In -> effects -> Looper V2 -> Audio Out. Press Record: default is a one-bar count-in then four recorded bars. Metronome goes directly to stereo output, never into the recorded loop; headphones avoid acoustic bleed. After count-in gives preparation time, On first sound waits for the input threshold then starts a full take, Next bar joins the running clock. Legacy threshold-next-bar patches remain supported. Global follows the first Clock module or explicit Clock input, with internal BPM fallback; MIDI Clock waits for external transport. Click: Off, Recording/count-in, or Always. Free length records until Record is pressed again (192 seconds maximum); optional tempo derives the selected bar count from take duration, within 20-300 BPM. Use Internal tempo for a freely timed first loop. External MIDI Clock cannot be changed. Stop silences playback; resuming follows the clock; Overdub adds layers, Feedback retains the old layer. Undo overdub restores the latest layer's starting point. Status, bar/beat, progress, seconds and input dB are shown above the controls. Completed loops are embedded in presets. Storage is mono 24 kHz. Loop edges have a short fade; playback resamples to follow tempo, changing pitch too. Finish an overdub before saving.

Low-pass Filter

A resonant low-pass filter that removes high frequencies. Cutoff CV moves the frequency relative to the knob, while Resonance CV adds emphasis near the cutoff. Try ADSR or LFO modulation for a classic subtractive synth.

Macro Controls

One Macro knob drives four configurable control ranges and outputs. Assign controls maps each slot directly to a continuous parameter on another module; minimum and maximum are normalized to that parameter's range. Modulation moves the macro, and reversed ranges make destinations move in opposite directions.

MIDI CC In

Receives one MIDI continuous controller on the selected channel. Control is normally 0–1; Bipolar maps it to -1–1. Use Learn CC to select a controller by moving it, then connect Control to a modulation input.

MIDI CC Out

Converts a 0–1 control signal into MIDI CC values 0–127 on the chosen channel. Select and enable a MIDI output device in Settings. Use it to send LFOs, envelopes or macro movements to external equipment.

MIDI Clock In

Receives external MIDI timing: Quarter pulses every 24 ticks, Clock outputs each MIDI tick, Reset pulses on Start, and Run follows Start/Continue/Stop. Before clock or transport arrives, Run is off. Pulses last 1 ms. Choose the MIDI input in Settings.

MIDI In (Auto)

Converts the touch keyboard and incoming MIDI notes into per-voice Pitch, Gate, Velocity and Mod wheel signals. Start with Pitch to Oscillator, Gate to ADSR, and ADSR to VCA Level; the native synth engine provides up to eight voices.

MIDI Note Out

Sends MIDI notes from Pitch, Gate and Velocity. Pitch uses MIDI note numbers; a rising Gate starts a note and a falling Gate stops it. Pitch changes during a high gate retrigger the note. This is distinct from MIDI Notes In, which provides 1–8 pairs of note and gate outputs.

MIDI Notes In

Receives notes on one MIDI channel and distributes them to 1–8 explicit Note/Gate pairs. The Voices setting changes the visible outputs; disconnect higher pairs before reducing it. Route each pair to its own oscillator/envelope chain when designing explicit polyphony. Note outputs use MIDI note values.

MIDI PC Out

Sends a two-byte MIDI Program Change on each rising Trigger to the selected MIDI output. Channel is 1-16; Program uses 0-127 (some devices display 1-128). Program CV adds 128 program steps per control unit. Select the external output in Settings > MIDI. This does not load an app preset.

Mixer

Adds three audio signals and applies one common Gain. Use it to combine oscillators or parallel effect paths; reduce Gain when combining loud sources.

Modulated Delay

Delay with modulation, tap timing and selectable clean/tape/BBD voicing. Tap mode measures two rising pulses; Tap ratio shortens the measured period. Time, Feedback, Mod rate, Depth and Mix accept normalized CV. Delay storage is limited to 8 seconds. These are native approximations of pedal effects.

Multimode Distortion

Offers soft clip, hard clip, fold and asymmetric distortion modes. Drive is in dB; pre high-pass and post low-pass filters shape the distortion. Use Level to balance output, and add Cabinet Sim for guitar-focused patches. Tone, Mix and Level accept smoothed CV. Tone controls the post low-pass and spans five octaves per unit.

Multiplier

Multiplies two control values. Each knob supplies a value when its input is unconnected. It can scale modulation or combine an envelope with an LFO so the modulation fades in and out.

Noise

Generates White, Pink, Brown, Blue, Violet or Velvet noise. White is broadband, Pink and Brown are progressively darker, Blue and Violet emphasize higher frequencies, and Velvet uses sparse impulses. Use an envelope and filter for percussion or wind textures; ordinary synth voices require notes to run.

Noise Gate

Reduces unwanted audio during quiet passages. Threshold opens the gate, Hold keeps it open briefly, Release closes it smoothly, and Floor sets the closed level. Hysteresis helps prevent chatter. Optional Sidechain controls detection; Open indicates gate activity. Threshold, Release and Floor have smoothed CV inputs. Threshold adds 40 dB per CV unit, Floor adds 60 dB, and Release multiplies by 2^(4*CV).

Notch Filter

Removes a region around Cutoff while retaining frequencies on either side. Moving Cutoff creates a hollow, sweeping tone. Resonance changes the shape around the notch.

Onset Detector

Detects sudden increases in audio energy and outputs short triggers. Sensitivity controls responsiveness. Use picked guitar notes or drum hits to start envelopes or sequences; it is an onset detector, not a continuous gate or polyphonic note detector.

Oscillator

Basic sine, saw, square or triangle oscillator. Voice mode: Auto MIDI preserves keyboard polyphony and existing patches. Mono accepts one Pitch/Gate pair; without a Gate cable it runs continuously. Poly 8 mixes eight independent Pitch/Gate pairs: connect Piano Roll Pitch 1 / Gate 1 through Pitch 8 / Gate 8 to the matching inputs. Each gate uses the Gate attack/release controls; unused Poly 8 gates are silent. FM modulates all explicit voices; Tune and Level apply to all. Poly 8 includes fixed headroom. Use several Mono oscillators for different sounds per voice.

Phaser

Creates moving notches using a chain of all-pass filters. Rate and Depth control the sweep; Feedback strengthens its character and Mix sets the blend. Try it on sustained synths or guitar chords.

Phone Motion

Uses phone sensors as modulation: Tilt X, Tilt Y, Shake and Turn. Calibrate in a comfortable neutral position, then adjust Sensitivity, Smoothing and Dead zone. Turn is rotational speed, not compass heading. Unsupported or inactive sensors return toward neutral; the desktop preview has no phone sensors.

Piano Roll

Open Roll in the module header. Draw/move, resize, erase or pan in the editor. Grid: 1/16, 1/16T, 1/32, 1/32T or 1/64 (T = triplets). Up to 16 bars, 1-12 quarter-note beats per bar, 512 notes and 8 simultaneous voices. Single notes and major/minor 7th/9th chords. Each voice has Pitch (MIDI note), Gate and Velocity (0-1); connect a separate oscillator/envelope chain for each chord voice. Transpose CV follows Step Sequencer CV: C4 (60/127) is neutral, C5 adds 12 semitones. Run CV overrides Run. Reset restarts. Metronome has its own BPM and separate Click audio / Beat pulse outputs, and can run while the sequence is stopped. Clock source: Internal (default) uses Tempo with no cable. Clock input uses rising edges; match Clock pulses per beat to the source (e.g. 4). MIDI Clock uses incoming MIDI clock and Start/Stop/Continue. Set Tempo near the sender tempo for the initial interval estimate; subsequent pulses set the timing. Missing clock stops gates. MIDI... in the editor imports one chosen note track or saves notes, velocity, duration, meter and internal tempo as .mid. Controllers and sounds are not included. Record captures one pass from a MIDI keyboard or the visible screen keyboard, with no count-in or 1/2 bars of audible count-in. Optional Quantize uses the editor grid for note starts and ends. The count-in follows the selected clock, not the independent Click BPM. Stop closes held notes; recording ends at the pattern length. The take replaces the draft only; Undo restores it, Apply keeps it, Cancel restores the patch. Sustain pedal is baked into note lengths. At most 8 simultaneous voices and 512 notes. Editor Preview auditions the draft with the patch; Apply saves it, Cancel restores the original.

Pitch / CV

Converts between normalized pitch CV and MIDI note values. CV to note uses note = 21 + CV × 120; note to CV uses the inverse. Use this between Pitch Detector or Keyboard 8 and native oscillators, sequencers or MIDI Note Out.

Pitch Detector

Estimates the pitch of monophonic audio and outputs normalized Pitch CV. Clean, sustained single notes track better than chords, noisy signals or short transients. Use Pitch / CV in CV-to-note mode before a native Pitch input.

Pitch Shifter

Shifts incoming audio by a chosen number of semitones using overlapping delay windows. Mix blends shifted and original signals. Use octave shifts for doubling or small shifts for unusual layering; transient smearing and processing delay are part of this method.

Pixel

A visual indicator driven by CV or audio amplitude. Brightness, Source and Colour control its appearance. Use it to show gate activity or levels; it has no signal output and does not route audio onward.

Plucked String

A physically inspired plucked-string voice. A rising Trigger excites a string model; Pitch, Decay, Brightness and Pick position shape its tone. Excite adds an external excitation signal. Use short gates for bass, harp or plucked synth lines. Decay, Brightness, Pick and Level accept smoothed CV. Decay multiplies by 2^(4*CV); other new inputs add to the knob.

Probability Gate

Randomly accepts or rejects each incoming gate according to Probability plus its modulation input. Accepted and Rejected are separate outputs. Set Probability to 1 to pass every gate or to 0 to reject every gate.

Pushbutton

A touch control with momentary or latching behavior. Normally zero/one selects its resting polarity. Connect it to gates, switches, reset inputs or a Pixel to make an interactive patch.

Quantizer

Snaps MIDI-note pitch values to Chromatic, Major, Natural minor, Harmonic minor or Melodic minor scales. Root selects the key, with C = 0. Convert normalized pitch CV to note values first when necessary.

Random CV

Generates a new random value on each rising Trigger, or at the internal Rate when Trigger is unconnected. Bipolar selects -1–1 instead of 0–1. Feed it through a quantizer and pitch conversion as needed for random notes.

Ratchet

Each rising Trigger starts a burst of 1-8 gates. Clock sync estimates the interval from the previous two triggers and divides it by Repeats; the first burst uses Interval in milliseconds. Count CV adds up to seven repeats. A new trigger restarts the burst. Reset cancels it. End marks the last hit. Use it for drum rolls or repeated synth notes.

Ratio Clock

Ratio clock with tap input or a linear 0-40 Hz rate CV. Dividend and Divisor each span integers 1-32. Reset restarts phase. Connect Clock to sequencers; timing and rate curves approximate imported ZOIA clocks.

Resonator

Excites pitched resonances from incoming audio, with string, bell or metal modes. Pitch, Decay and Brightness shape the resonance, while Excitation boosts the input. Feed it noise bursts, drum hits or guitar for tuned textures. Brightness, Mix and Excitation also accept smoothed CV; Excitation adds 30 dB per unit.

Reverb

Adds a compact reverberant tail to a mono signal. Decay controls persistence, Damping softens the tail, and Mix balances dry and reverberated audio. This is an app reverb algorithm, not an exact pedal model.

Ring Modulator

Multiplies audio by an internal sine oscillator, creating metallic sidebands. Frequency sets the carrier, with optional frequency modulation. Use a low Mix for subtle movement or a high Mix for bell-like and robotic tones.

Sample & Hold

Captures the Control value at each rising Trigger and holds it until the next trigger. Track while high follows Control continuously while Trigger is high, then holds the last value. Initial value is restored when playback starts. Use Random CV or an LFO as the source and Clock as the trigger for stepped modulation.

Sampler

Plays WAV or MP3 audio up to 60 seconds with pitch, trigger, looping, reverse and start/end controls. Import can preserve stereo or select a mono mix/channel, with preview. Audio is a mono mix; Left and Right preserve stereo. Root note defines original speed; Tune changes pitch AND speed (no time stretching). Enable Loop and Playback: play for a backing loop, leaving Pitch unconnected. Gate mode stops playback when the gate falls. Audio is embedded in native presets; large loops can exceed the community 8 MiB limit.

Shelf / Bell EQ

Low shelf, bell or high shelf EQ. Audio goes through the filter. Gain, Frequency and Q accept normalized CV added to the knobs. Gain spans -40 to +40 dB. Imported tone controls may use several bands in series. Native EQ curves approximate ZOIA.

Slew Limiter

Limits how quickly a control value rises and falls using linear ramps. Rise and Fall have independent times and modulation inputs. Use it after stepped pitch for glide or after switches to soften abrupt control changes.

Slice Sampler

Load mono/stereo WAV or MP3 up to five minutes. Samples > Edit slices / trim opens a waveform editor with preview, zoom, trim and movable boundaries. Apply embeds up to 120 seconds as mono with 1-16 slices. Sources over 120 seconds use 24 kHz to limit memory. Custom boundaries are saved in presets. Changing the Slices knob to another count uses equal divisions until the saved count is restored. Select a region by Slice or normalized Slice CV (0 = first, 1 = last). Trigger starts a region; Pitch uses MIDI note numbers relative to Root note. Short edge fades reduce clicks. End emits a pulse when playback finishes. This is slicing, not time stretching or automatic transient detection.

Step Sequencer

Pattern saves/loads standalone .mpcseq files with notes, length, transpose, direction and rhythm controls. Tempo, Run, cables and sound modules are kept. A 1–32-step sequencer with Pitch, normalized CV and Gate outputs. It supports forward, reverse, ping-pong and random directions, gate length, probability and internal-clock swing. Connect Clock for external timing; Reset queues the first step for the next clock edge. Connect Pitch to a free-running oscillator and Gate to an envelope.

Stereo / Mid-Side

A stereo processor with width, mid/side gain, balance and output level. Left and Right provide the reconstructed stereo signal; Mid and Side expose those components separately. A mono input alone has no side information to widen. Balance, Level, Mid and Side accept smoothed CV. Mid and Side add twice the CV value.

Stereo Pan

Places a mono signal across Left and Right outputs using equal-power panning. Pan CV adds modulation to the knob position. Connect both outputs to Audio Out for stereo movement.

Stereo Width

Changes stereo width by adjusting side-channel gain in dB. Width CV adds to that setting. It requires stereo differences to create widening; identical left/right signals remain mono.

Stompswitch

An on-screen switch with momentary or latching behavior and a left/middle/right/external identity. Modules with the same switch identity can be operated together in the app. It represents a control function; it does not create a physical footswitch on the phone.

Tap LFO

A square control LFO with tap tempo. Two rising Tap pulses set the period (2-2400 BPM); Reset restarts the phase. Before new taps, the Tempo setting or restored import tempo is used. Connect Control to a sequencer Clock input.

Tap to CV

Measures the interval between rising Tap pulses and converts it to normalized CV using Min/Max limits and a linear or exponential curve. Min and Max CV add to the knobs. Output is suitable for modulation, not audio.

Tremolo

Modulates audio volume with an internal sine LFO. Depth controls the amount of volume change, and Rate CV varies speed. Put it after distortion for a clear rhythmic pulse.

Trigger

Turns a rising Gate into a pulse of a defined duration. Use it when a long gate should start a short event, such as a percussion envelope or a reset action.

UI Button

A momentary UI gate with a separate colour control value, used for imported ZOIA-style patches. Extended range preserves the patch option; this app does not reproduce every hardware button behavior. Use Pushbutton for a native latch.

VCA

Controls audio amplitude using its Level input and Gain knob. With no Level cable it passes audio at the knob gain. Connect an ADSR to Level to make notes open and close smoothly.

Wavefolder

Folds peaks back into the waveform instead of simply clipping them. Fold adds harmonics and Bias makes the response asymmetric; both accept modulation. Start with a sine or triangle wave for a clearly audible transformation. Mix and Level accept smoothed additive CV.

Wavetable Oscillator

Morphs between Basic, Vowel, Metal, Organ or imported User-bank frames. Position CV adds to Position. Pitch uses MIDI notes; FM adds pitch modulation scaled by FM depth (default 12 semitones). Level CV multiplies Level; Tune CV adds 24 semitones per unit within the +/-24 Tune range; Phase CV adds cycles to Phase; Reset restarts phase on a rising edge. The 3D view shows interpolated full-band shape, while audio playback uses pitch-dependent band limiting. Load WAV opens the source/builder workflow to choose channels, trim, resample and edit a mono table of up to 64 frames with 64-4096 samples per frame. The magenta Position marker shows live modulation without changing the saved base value.

ZOIA Channel Mixer

Mixes 2-8 mono or stereo channels. Gain CV adds to the normalized -100 to +20 dB gain setting; Pan CV moves the corresponding channel balance. Headroom controls the total output level. Audio ports accept audio, gain/balance ports accept modulation.

ZOIA Gate

Audio gate with normalized threshold (-110 to 0 dB), attack (0-100 ms) and release (50-2000 ms). Optional audio Sidechain controls detection. CV inputs add to their settings. Gate timing approximates ZOIA and may need adjustment for your source.

ZOIA Keyboard 40

Keyboard with up to 40 touch keys. Each note uses normalized pitch CV (0 is A0, each semitone is 1/120). Note CV adds to the key value. Note retains the last pitch, Gate is high while held, Trigger pulses when the selected key changes. MIDI keys matching a configured note also trigger it.

ZOIA Tremolo

Amplitude modulation with Fender-like, Vox-like, triangle, sine or square curves. Rate mode uses Rate CV, Tap mode measures rising Tap pulses, Direct mode uses Direct CV as phase. Depth adds to the setting. Curves approximate the pedal.