

# Owner's Manual

YONACKAULDRON  
SMART ANALOG CIRCUIT MODELING SYNTHESIZER

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**Congratulations** and **Thank You** for choosing Kauldron Synthesizer. As one of the pioneers of iOS music, Yonac is proud to introduce our latest generation synthesis and audio processing technologies. We hope you will be satisfied with your choice, and have countless productive hours filled with music and fun!

We developed completely new circuit modeling technologies to give Kauldron a truly authentic analog synth tone. These rich analog textures are complemented by a highly versatile but easy-to-use modulation system that really opens up Kauldron's potential. The result is a pure, head-on sound that requires little or no help from FX or post-production to sound big.

We also take pride in pushing the envelope. In fact, Kauldron introduces the next generation of our intelligent preset creation system, SPAWN<sup>2</sup>. First sketched out in our now-classic Magellan, SPAWN<sup>2</sup> incorporates all-new AI and predictive algorithms to give you unprecedented control over how new presets are made. New preset, after preset, after preset at the mere touch of button — that's how the modern world should be.

In that vein, Kauldron is also our first universal synth — it will run natively on your iPad or iPhone, with no feature compromised. It is also an AUv3 plugin, meaning that you can launch it in any iOS DAW that has the AUv3 capability and get cracking, just as folks on fancy desktop systems do. It will even run as a full-screen plugin on the latest iOS versions (again, provided the DAW or host has that features) — and is one of the first to do so. MIDI, IAA, Audiobus, Ableton Link...it's all there, calmly brewing your next musical escapade in the Yonac Kauldron.

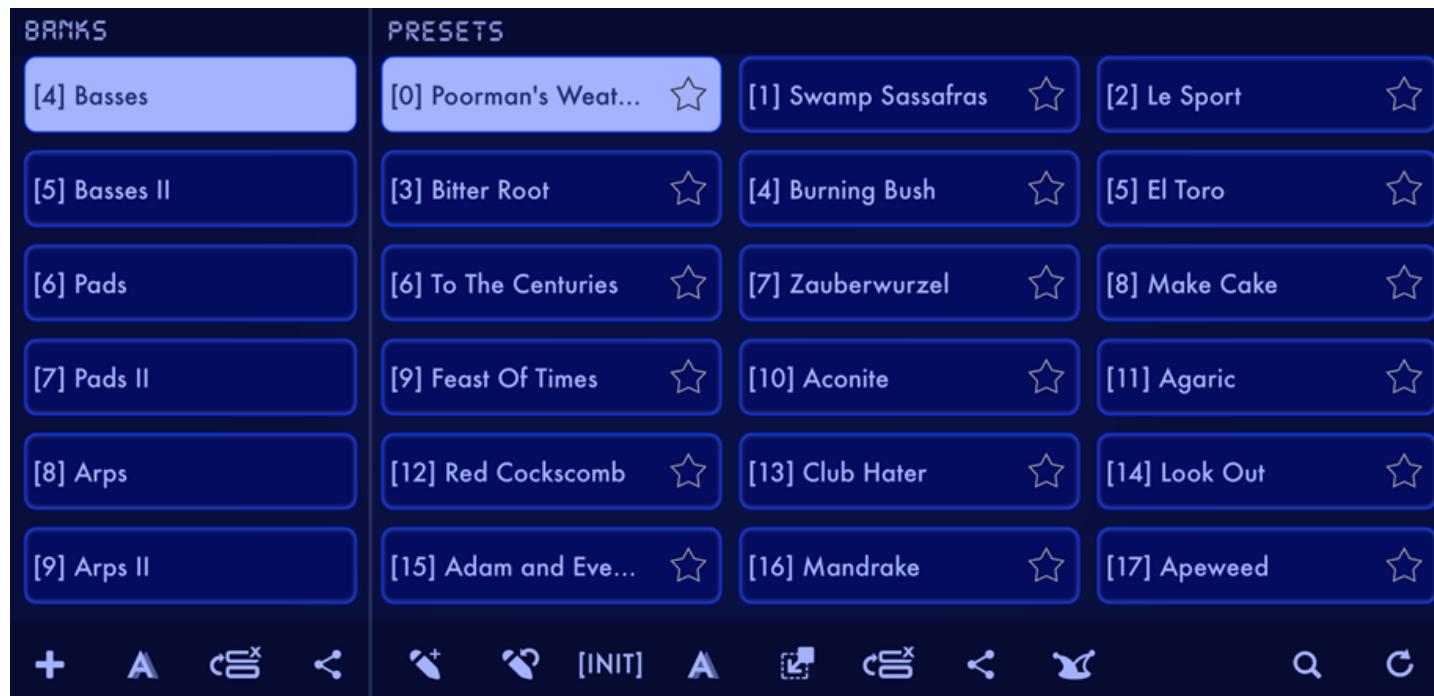
Musical Wishes,

The Yonac Team

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# PRESETS



To load a preset: Select a bank and then select a preset to load.

NOTE: Some Bank and Preset operations may not be available in the Audio Unit version. You can access these options by opening the app instead.

## **Bank Operations**

- NEW BANK: Create a new, blank bank.
- RENAME: Rename the selected bank.
- EDIT: Enable reordering and deleting of banks.
- SHARE: Display bank import/export options.

## **Preset Operations**

- NEW PRESET: Save the current synth settings as a new preset into the selected bank.
- OVERWRITE: Save the changes made to the currently selected preset.
- INIT: Load the basic 'INIT' preset. Useful when starting to write a new synth preset from scratch.
- RENAME: Rename the selected preset.
- MOVE: Move a preset into a different bank.
- EDIT: Enable reordering and deleting of presets.
- SHARE: Display preset import/export options.
- JOKER HAT: Randomly select a preset from the file system and load it.

- FAVORITE: Touch the star to add the preset into the Favorites bank. There can be up to 256 favorite presets.

### **Other Operations**

- SEARCH: Search for a preset.
- RESTORE FACTORY: Reinstall factory presets that come packaged with Cauldron.

# **SYNTH**



## **BASIC**

- Vol: Specify the amplitude of the overall synth output signal.
- Pan: Set the stereo location of the overall synth signal.
- Legato: Activate the legato effect.
- Poly/Mono: Choose between polyphonic or monophonic synth modes.

- KB Hold: When activated, continues sustaining a note even if the corresponding key on the keyboard is released.

## **SIGNAL GENERATION**

### All Oscillators:

- Wave: Select the waveform for each oscillator.
- PW (Pulse Width): Specify the duty cycle when the square (aka pulse) waveform is selected.
- OCT: Specify the oscillator's output octave.
- VOL: Specify the amplitude of the oscillator's signal.

### Oscillator 2:

- Tune: Change the tuning of the oscillator relative to oscillator 1.
- FM: Specify the amount of frequency modulation from oscillator 2 into oscillator 1.

### Oscillator 3:

- Tune: Change the tuning of the oscillator relative to oscillator 1.
- KB Track: When disabled, oscillator 3 will output a fixed signal regardless of the note being played. The frequency of the signal can be changed using the OCT and TUNE controls.

## **GENERAL**

- Phase Reset: When enabled, resets the signal phase of all three oscillators for each new note.
- Osc Sync: Resets the phases of oscillators 2 & 3 when oscillator 1 starts a new period.
- Noise: Set the noise generator level.
- Pink/White: Select the type of noise being generated.
- Glide: Specify the time and/or rate of the glissando effect between notes.

- Glide Algorithm: Select between modern & retro glide algorithms. In the retro mode, the amount of time that glide takes will depend on the distance between two notes, and the glissando will follow a unique 'curve'.

## **MAXIMIZER**

The Maximizer module helps instantly obtain big, punchy synth sounds. It can also be manipulated to create true chorus or flange effects that do not suffer from 'thinness' usually associated with FX processors. By using the DRIFT control, effects such as octaved accompaniment or complex frequency interactions could be obtained. The SPREAD control can help obtain massive, true stereophonic synth sounds.

- VOICES: Specify the number of 'unison' voices generated for each note.
- DRIFT: Specify the frequency difference among the unison voices.
- SPREAD: Set the stereo spread of the unison voices.

Note: In higher VOICE settings, maximum polyphony may be throttled to reduce CPU demand.

## **FILTER**

Kauldrone's multi-mode filter is a newly designed, analog-modeling -24dB/oct filter capable of self-oscillation. In addition to frequency controls, it allows 'driving' the virtual filter circuit for rich textures and different dynamic characteristics normally only available in analog equipment.

- TYPE: Select the filter type (None, Lowpass, Highpass, Bandpass).
- FREQ: Specify the center frequency ("cutoff") of the filter.
- RESO: Specify the resonance, or emphasis, of the filter.
- DIRT: Set the amount of filter circuit drive, thus changing the harmonic and dynamic characteristics of the sound.
- TRACK: Specify the amount of filter tracking along the keyboard.

- ATT: Specify the duration of the filter envelope attack stage.
- DCY: Specify the duration of the filter envelope decay stage.
- SUS: Specify the level of the filter envelope when sustain stage is set. This value will lie in the interval specified by the FREQ and AMNT controls.
- REL: Specify the duration of the envelope release stage.
- AMNT: Specify the filter envelope amount. Positive amounts will cause the filter frequency to rise during the attack period, whereas negative amounts will cause it to fall.

## **D-VCA**

Use the D-VCA envelope to shape the amplitude of the synth signal in time.

- ATT: Specify the duration of the envelope attack stage
- DCY: Specify the duration of the envelope decay stage
- SUS: Set the amplitude level during the sustain stage
- REL: Specify the duration of the envelope release stage
- ATT1/ATT2: Select the 'contour' of the envelope's attack stage. ATT2 will begin by building up amplitude quickly, whereas ATT1 will start more slowly and start building up more toward the middle of the attack period.

## **MODULATION**



Kauldron features a versatile and easy-to-use modulation system to deliver interesting new textures and sounds. The two LFOs, the special modulation envelope, as well as a host of other control sources could be combined to manipulate synth parameters in real time, including via MIDI controllers.

## **MOD MATRIX**

Select up to four target parameters to modulate. Each modulation matrix cell represents a target-modulator signal association.

A target can be modulated by a continuous signal alone (set under the 'MOD' section), such as an LFO or the mod envelope. It can also be manipulated via a control signal alone (for example, the modulation wheel or MIDI aftertouch). When a target is assigned both a modulator and a control, the control signal is used to vary the amplitude of the modulator signal. This scheme provides added versatility when playing live, and also allows interesting signal combinations.

- TARGET: Select a synth parameter to modulate.
- MOD: Select a continuous signal source or envelope as the modulator.
- MOD AMOUNT: Specify how much (and in which direction) the modulator signal changes the target parameter.
- CONTROL: If no modulator signal is selected, then the chosen control source directly manipulates the target. If a modulator signal is selected, then the control source is used to vary the amplitude or amount of the effect that the modulator signal has on the target synth parameter.
- CONTROL AMOUNT: Specify how much influence the control signal has on the target parameter or the modulator signal, depending on the configuration.

## **LFOs**

- WAVE: Select the LFO waveform. The last two settings generate 'random stepped' and 'random smooth' waveforms, respectively.
- RATE: Specify the period of the LFO waveform.
- PHASE: Specify the phase of the LFO waveform relative to default.
- DELAY: (TRIG & SHOT modes only) Specify the amount of time after a note trigger event that the LFO signal takes to reaches full amplitude.
- KB TRACK: Enable the LFO's rate to change according to the newest note.
- BPM Sync: Activate tempo syncing for the LFO rate.

- TRIGGER MODE: Select the LFO trigger mode.
  - CONT: LFO runs continuously.
  - TRIG: LFO phase is reset at every note-on event.
  - SHOT: At every note-on event, LFO generates one period of its signal and stops.

## **ENV**

After assigning the Mod Envelope to a target parameter on the Mod Matrix, you can vary the envelope parameters here.

- ATK: Specify the duration of the attack stage.
- DCY: Specify the duration of the decay stage.
- SUS: Specify the level of the signal during the sustain stage.
- REL: Specify the duration of the release stage.

# ARP



- ON: Turn the arpeggiator on or off.
- MODE: Select the mode of operation for the arp. In LIVE mode, the arp will step through the notes currently pressed on the keyboard. In PROG mode, the arp will play a pre-programmed pattern when a key is pressed down; it will transpose the pattern with the MIDI note of the key. In PROG FIXED mode, the arp will play the pre-programmed pattern, but will not transpose the pattern.
- ALGORITHM: Select the arp stepping pattern.
- GATE: Specify length of each step relative to the arp note value.
- SWING: Set the amount of rhythmic swing.

- NOTE: Set the note value for the arp steps.
- NOTE RPT: Specify the number of times a step is repeated before moving on to the next one.
- OCT: Specify the number of octaves for the pattern to snap.
- OCT RPT: Indicate the number of times a pattern is repeated in each of the octaves set by the OCT knob.

### Arp Programming Area

Provide a pre-programmed pattern for the arp by selecting notes. The pattern can then be triggered by the keyboard when the Arp is in the PROG or PROG FIXED mode.

# FX



## MOD

Dual-mode stereo modulation effect.

- Flange/Chorus: Select between flanger and chorus modes.
- BPM Sync: Activate BPM syncing for the effect rate.
- RATE: Specify the speed of the modulation effect.
- SPREAD: Specify the stereo width of the modulation effect.
- DEPTH: Set the strength of the modulation effect.
- MIX: Specify the amount of modulated effect signal.

## DELAY

Stereo delay with BPM-syncing

- **BPM Sync:** Activate tempo syncing for the delay times.
- **MIX:** Set the overall amplitude of the delay signal.
- **TIME:** Set the delay time for the specific channel.
- **FEED:** Set delay feedback for the specific channel.

## **REVERB**

- **Size:** Select a room size for the reverb effect.
- **Time:** Specify the length of the reverb tail.
- **Damp:** Specify the tonality of the reverb signal.
- **Mix:** Set the overall amplitude of the reverb signal.

## **SPAWN<sup>2</sup>**

Kauldrone introduces the next generation of our Artificial Intelligence preset creation system, SPAWN<sup>2</sup>. This special system uses a combination of machine language and predictive algorithms to generate new presets at the touch of a button. Giving you unprecedented control on machine autonomy and deviation, SPAWN<sup>2</sup> helps you create anything from subtle variations on a patch to completely new sounds. Unlike completely random systems found in a few other synths, SPAWN<sup>2</sup> is able to generate an exceptionally high yield of usable presets per sequence of clicks.

Feel free to experiment with different combinations of algorithms and settings to find the results that best suit your tastes!

### **BASIC SPAWN<sup>2</sup>**

In this mode, the choices involved in writing a new preset are left completely up to SPAWN<sup>2</sup>.

- Select the 'BASIC' state via the MODE button, if not already selected.
- Touch the SPAWN<sup>2</sup> button to generate a new preset.
- If you like the new preset, don't forget to touch the SAVE button and follow the steps to save the preset into the file system.

## **EXPERT SPAWN<sup>2</sup>**



In this mode, you can select the foundation algorithm as well as specify the variation and autonomy parameters for each major synth module.

- Switch to the XPERT state via the MODE button, if needed.
- Specify the foundation algorithm via the ALGORITHM menu:
  - Cumulative: SPAWN<sup>2</sup> will create recursive variations on a starting preset after each time the SPAWN<sup>2</sup> button is pressed.

- Persistent: SPAWN<sup>2</sup> will create a different variation on the same preset after each time the SPAWN<sup>2</sup> button is pressed.
- Random: SPAWN<sup>2</sup> will itself decide the basic preset-writing approach.
- If desired, set the variation and autonomy amounts for the synth modules.
  - If either VARIATION or AUTONOMY is set to 0 for a module, no changes will be made to those modules.
  - Feel free to experiment with different combination of settings to find what you like the best.
- If using the Cumulative or Persistent algorithms, select the starting preset by going to the preset browser.
- Touch the SPAWN<sup>2</sup> button to generate a new preset
- If you like the result, don't forget to touch the SAVE button and follow the steps to save the preset into the file system.

## **ARP SPAWN<sup>2</sup>**

SPAWN<sup>2</sup> can also generate new arp programs in any listed scale or randomly.

- To generate a new preset with an included arp program, follow the above steps and make sure the ARP button is turned on. Select a musical scale from the adjoining menu if desired.
- Touch the SPAWN<sup>2</sup> button to generate a new preset
- If you like the result, don't forget to touch the SAVE button and follow the steps to save the preset into the file system.

TIP: If you just want to generate new arp patterns without causing any changes to the other elements of a preset, simply choose the PERSISTENT SPAWN<sup>2</sup> algorithm, set all module variations to 0, and select the preset you'd like to use with arp patterns. Again, don't forget to save anything you happened to like and wish to use in the future.

## **ADDITIONAL FUNCTIONS**

- • RESET: Resets the XPERT mode settings to defaults.
- • SAVE: Launches the Preset Manager to save the generated preset.

# **TEMPO CONTROLS**

Access tempo controls by touching the BPM display area of the Preset Name Display found on the upper taskbar (stand-alone version only).

- **BPM:** Touch to display the BPM set options, including tap tempo.
- **TAP TEMPO:** Tap a steady beat to set the BPM. It will take a second or two after the last tap for the reader to completely reset.
- **BPM Wheel:** Set the BPM by dragging this wheel.
- **BPM LOCK:** Enable to have preset BPM data be ignored during preset loads.
- **EXT CLOCK:** Disables KAULDRON's internal MIDI clock. In this mode, arp, metronome, and some BPM-synced parameters will not work, unless KAULDRON is being controlled by an external or virtual MIDI clock from a third party app or device.

# **ADVANCED MIDI**

Access advanced MIDI settings by pressing the PREFS menu button and then selecting Advanced MIDI Settings. Please see the Global Preferences section for information about basic MIDI settings.

## **MIDI IN ENABLE/DISABLE**

Use the switches on the MIDI Settings menu to enable/disable external or virtual MIDI in.

## **BLUETOOTH MIDI**

With the iOS device Bluetooth enabled, and an iOS compatible Bluetooth MIDI device in proximity, you can create a connection between KAULDRON and the MIDI device by launching this settings panel and following the instructions.

## **MIDI LEARN**

Turn MIDI learn on or off via the PREF->MIDI SETTINGS->MIDI LEARN Switch. Select the rectangular overlay on the MIDI-learnable parameter you wish to assign a CC. Once selected, manipulate the knob, button or control on your connected MIDI device that you'd like to assign to the parameter. Alternatively, double tap the parameter on the KAULDRON screen to display options for manual data entry. When finished, turn off MIDI LEARN and save your changes by launching the MIDI MAPS MANAGER (also in the MIDI Settings menu).

You can also map continuous control values to a specified range. With MIDI LEARN active, double tap a parameter to display advanced options. For continuous parameters, use the MIN and MAX fields to specify the range into which the CC value will map. For example, when MIN = 32 and MAX = 93, the value of 0 sent by the external controller will be mapped to 32, and 127 will be mapped to 93. Values between 0 and 127 will be mapped linearly to the interval (32,

93).

## **MIDI MAPS MANAGER**

This provides features for saving and loading MIDI CC Maps, as well as options for clearing all MIDI CC assignments at parameter, unit, and global levels. In addition, it provides a convenient list presentation of all the learnable KAULDRON parameters, organized into different units. You can 'learn' a given parameter by turning on the LEARN button, selecting the desired parameter and manipulating the component on your connected MIDI device to create the assignment. In addition, you can manually enter CC, Channel as well MIDI Value Range data for the selected parameter.

## **MIDI PROGRAM CHANGES**

Specify the MIDI Channel over which MIDI Bank and Program change messages are to be broadcast. You can use this setting to also ignore program change messages.

## **MIDI INPUT DEVICES**

See a list of physical (e.g., MIDI keyboards) or networked MIDI control devices currently available. Use the MIDI and CLOCK switches for each device to specify whether MIDI or MIDI clock messages from that device are to be ignored.

## **VIRTUAL KEYBOARD & RIBBON CONTROLLER**

- SCROLL LOCK: Toggle to lock the keyboard in place, or to scroll and resize it.
- RIBBON Controller: Optional ribbon controller lets you choose a musical key and scale, and also transmits

polyphonic aftertouch to the KAULDRON synth engine when touches are moved vertically. For more information, please refer to GLOBAL PREFERENCES.

- **PITCH WHEEL:** Momentarily shift the pitch of the synth audio. Pitch shift amount is settable within the Kauldron preferences.
- **MOD WHEEL:** Use to control a modulation target in real time. Refer to SYNTH section for more information about modulation.

# GLOBAL PREFERENCES

- **MIDI Note In Channel:** Specify the MIDI channel on which Kauldrone receives MIDI note, pitch and modulation wheel messages.
- **MIDI Note In Min:** Specify the lowest MIDI note that Kauldrone will accept. Kauldrone will ignore MIDI notes lower than the one set here.
- **MIDI Note In Max:** Specify the highest MIDI note that Kauldrone will accept. Kauldrone will ignore MIDI notes higher than the one set here.
- **MIDI Note In Shift:** Transpose the incoming MIDI note by the number of steps specified here.
- **Pitchbend Radius:** Set the number of semitones that the pitch wheel will cause a note's frequency to shift when moved in either direction. Set to 0 to turn off pitch bending altogether.
- **Virtual Keyboard:** Choose between the classic style of keyboard and the ribbon style on-screen controller. The ribbon controller provides polyphonic aftertouch, which is manipulated by moving the finger vertically on a given key. In addition, you can assign a musical key and scale to the ribbon controller.
- **Virtual KB Velocity (Standalone App Only):** Enables MIDI velocity for the onscreen keyboard. The sensitivity of the velocity recognizer can be adjusted to your playing style and other factors via the Sensitivity slider.
- **Buffer Size (Standalone App Only):** Specify the buffer size for audio processing. Smaller values equate to reduced latency, but at the same time place more demand on the CPU. The default setting is 256.

- NOTE: As the buffer size is a global property in iOS, the buffer size could be successfully set only if there is no other music or audio-related app currently open. All the music apps launched after the first one will typically inherit the 1st app's buffer size. Some apps may not be capable of running at certain buffer sizes. If you are having difficulties or encountering 'jittery' audio, first rule out that the cumulative demand on the CPU of all the open apps is not the culprit. Then, make sure that the current buffer size for iOS is compatible with all the open apps.
- Background Audio: Enable Kauldrone to run even if it's not the current app in focus.
  - WARNING: It is easy to forget that an app with Background Audio enabled is actually still running, even if not in the focus. To prevent accidentally draining your battery, please make sure you either turn off audio backgrounding or quit the app completely after your finished with your session.

# **Audio Unit, Inter-App Audio, Audiobus, Ableton Link**

## **Audio Unit**

KAULDROn comes packaged with its iOS Audio Unit plugin (KAULDROn AU) binary. You can use KAULDROn AU within an iOS DAW that is capable of hosting Audio Unit instrument plugins. Note that some of the features available in the standalone (app) version may not be available in the Audio Unit version, due to the restrictions and limitations imposed on Audio Units.

**DISCLAIMER:** Audio Units on iOS are a very recent technology, and as a result, there is a lot of variation among different hosting and plugin implementations, as well as their approaches to resource and memory management. In addition, Audio Units are currently restricted to a relatively small amount of memory, which they must share among all their instances. Although KAULDROn is optimized to perform as an Audio Unit plugin, running multiple instances will inevitably cause the memory limit to be reached, in which case iOS will “crash out” the plugin. We’re hoping that as devices and operating systems get more powerful, these restrictions will be eased and you will be assured a more satisfying experience with this and other Audio Units. Fullscreen AU requires iOS 11 or higher and a DAW with fullscreen plugins feature.

## **Inter-App Audio (Standalone App Only)**

KAULDROn can be used as an IAA instrument with an IAA compatible host, and features seamless integration via IAA with ToneStack, our flagship guitar, bass, and production effects platform for iOS. Please refer to the host’s documentation about how to connect with an IAA instrument.

## **Audiobus**

KAULDRON is available as an instrument/input in Audiobus sessions. In addition, it supports Audiobus state saving. Please refer to Audiobus documentation about how to use apps with Audiobus.

## **Ableton Link**

KAULDRON integrates Ableton Link functionality for BPM syncing. By connecting to a Link session you can share tempo data among apps or devices, and set the session BPM from a single app. For more information, please refer to Ableton's documentation.