ROXSYN

For over 10 years, we have proven our commitment to innovation and usability by introducing many new technologies to iOS: from the first iOS synthesizer in 2008, to the platform's first professional tonewheel organ emulator, to **Roxsyn** — a guitar / bass synthesizer unlike anything else that came before.

What makes Roxsyn so different from all the other guitar synths? At its heart is a groundbreaking technology we call "Metamorphic Guitar Synthesis." Our unique technology breaks the mold: it doesn't use pitch tracking or "guesstimation" to derive its results. Hence, there's also none of the typical glitches and tracking errors that come from pitch tracking guitar synths. It also doesn't use guitar-to-MIDI conversion routines that turn the guitar — an immensely expressive instrument in its own right — into a poorly executed MIDI keyboard substitute. Instead, it works off a symbiosis between the guitar and Roxsyn's unique synthesis technology. It is a synth _truly_ designed for guitar; something that opens up to every nuance of your playing, from vibrato to bends, slides, dynamics, and anything else in between. A lot of that is sadly lost in the G2M synths that hitherto dominated the market. Here, however, your guitar and style are just as an integral part of the complete picture as the synth itself.

Thank you for supporting Yonac in our long quest to bring the future to music today. And as always, Rock On!

 - The Yonac Team

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GETTING STARTED

Connecting Your Guitar or Bass

Use an iOS-compatible USB or Lightning audio or guitar interface to connect your guitar with your iOS device. Ensure your audio interface is updated with the latest firmware so that it is fully compatible with the newest iOS. Avoid placing any virtual or physical effects before Roxsyn.

If your audio / guitar interface has a gain knob, adjust it to obtain a moderately strong output that is free of distortion and clipping. Once the hardware gain level is set, you can always change the instrument gain on the fly using the INPUT GAIN knob located on the upper left of the Roxsyn synth panel.

Use the ON button on the very upper right of the screen (located in the navigation bar) to turn on or bypass Roxsyn. Use MASTER GAIN to set the final output gain of the synth. If you wish, add your dry instrument signal by using the INSTRUMENT GAIN knob.

Adjusting the Auto-Trigger

The envelopes in Roxsyn are controlled by on / off signals automatically generated by the special TRIGGER unit. For best results, take a moment to familiarize yourself with the settings and functionality of this important module.

The trigger-on and trigger-off messages are generated around note attack and decay as you play your guitar or bass. Trigger on messages are sent to envelopes and LFOs to reset them. Trigger off messages are sent to an envelope (if the envelope's TRIG OFF switch is enabled) to put it in its release stage.

Use the THRESHOLD and DYNAMICS settings to tune the response of the trigger module to suit your guitar, pickups,

and playing style. Once you are familiar with their operation, you can also manipulate these settings to obtain legato or staccato effects.

Here are some example settings for common pickups and playing styles. The exact values may change according to the input gain of your audio interface, pickups and playing style, so these are just some general suggestions.

Single Coils with Low to Moderate Output

These are pickups with a wide dynamic range, but relatively lower output. For lead playing, the THRESHOLD knob is usually kept at the middle, and DYNAMICS is set around 3/4 the way up.

THRESHOLD around -30dB, DYNAMICS around -6dB

Vintage Style Humbuckers

Humbuckers typically have higher output, but a more compressed dynamic range. Increasing the threshold and dynamics may suit them better.

THRESHOLD around -25dB, DYNAMICS around -3dB

Lead Playing

Use THRESHOLD values near the middle and DYNAMICS in the -6 to -3dB range to follow lead attack better.

Rhythm / Chordal Playing

Use THRESHOLD values in the middle to 3/4 range and adjust DYNAMICS to ensure accurate envelope triggering.

As an additional feature, higher DYNAMICS values will provide a more staccato envelope response, whereas reducing DYNAMICS will give you a more legato feel.

Using External Triggers

You can also use external controls to generate on and off trigger messages. These sources include MIDI expression pedals or switches, or even MIDI triggers from a sequencer, DAW or another app. The external trigger receiver parameter is MIDI-learnable: please refer to the section about MIDI learn to assign the Roxsyn external trigger receiver with a MIDI CC. When you are ready to use an external trigger, make sure to toggle the TRIGGER SOURCE button to EXT.

Aside from automatic and external triggers, Roxsyn envelopes and LFOs can also be actuated by Roxsyn's built-in arpeggiator. For more information, please refer to the relevant section below.

Setting Processing Quality

By default, Roxsyn works at the best processing quality. However, if you own an older device, or are using Roxsyn along with other music apps or audio units, you may wish to economize on the CPU demand. You can set the synthesizer audio processing quality by going to the PREFS panel. BEST will provide the highest level of audio processing, whereas BETTER will balance quality with CPU usage.

PRESETS

All the parameters found on the SYNTH, MOD/ARP, and FX panels are saved to and loaded from presets, except these globals:

- INPUT GAIN
- TRIGGER SOURCE
- TRIGGER THRESHOLD
- TRIGGER GATE

All other parameters, including ones in the PREFS dropdown are also global.

Bank Operations

- o NEW BANK: Create a new, blank bank.

- o RENAME: Rename the selected bank.

- o EDIT: Enable reordering and deleting of banks.

- o SHARE: Display bank import/export options.

Preset Operations

- o NEW PRESET: Save the current synth settings as a new preset into the selected bank.

- o OVERWRITE: Save the changes made to the currently selected preset.

- o INIT: Load the basic 'INIT' preset. Useful when starting to write a new synth preset from scratch.

- o RENAME: Rename the selected preset.

- o MOVE: Move a preset into a different bank.

- o EDIT: Enable reordering and deleting of presets.

- o SHARE: Display preset import/export options.

- o JOKER: Randomly select a preset from the file system and load it.

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

Other Operations

- o SEARCH: Search for a preset.

- o RESTORE FACTORY: Reinstall factory presets that come packaged with Roxsyn.

SYNTH

Voice 1-3

At the heart of Roxsyn are three individually configurable metamorphic synth signal generators, called "Voices".

SHAPE: Choose the waveshape output by the voice. Each waveshape has a unique tonality and profile.

VOL & PAN: Adjust the voice gain and location in the stereo field.

OCT & DETUNE: Specify the pitch shift in octaves and semitones/cents relative to the input instrument frequency.

FILTER SELECT: Send the voice output to either or both filter banks.

INS > SYN

Roxsyn also allows you to pass your instrument signal through the synth filters & envelopes via the INS > SYN module. Use the VOL and PAN parameters to specify the gain and location of the signal. Use FILTER SELECT to send the instrument signal to either or both filter banks.

FILTERS

Roxsyn features two independently operating filter banks. Each filter bank offers a variety of analog-modeling filter types, as well as multiple filter parameters and a special trigger-controlled envelope for varying the filter frequency. You can choose which filter to edit via the EDIT FILTER selector.

Global Filter Controls

FILTER BALANCE: Specify the balance between Filter 1 and 2 outputs.
INVERT PAN: Select to invert the stereo image of the Filter 2 output with respect to Filter 1. This feature may come in handy when programming big, layered synth sounds.

Non-Global Controls

DRIVE: Specify the input stage gain of the LP, HP or BP type filters. You can use this parameter to subtly alter the tonality and harmonic content of the filtered signal, much like an analog filter.

TYPE: Select the filter type: Low-Pass, High-Pass, Band-Pass and a special voice-emulating formant filter. You can also bypass the filter by selecting OFF.

FREQ: Set the cutoff frequency of the filter

RESO: Specify the resonance, or emphasis, of the filter

Filter Envelopes

Roxsyn's filter envelopes are specially designed for the way guitar and bass signals behave. They are actuated by the trigger module (see Getting Started for more information). You can create many unique sounds using the envelope faders in tandem with filter FREQ and CONTOUR controls.

At each trigger event, the envelope will start at the beginning of the attack stage, with the filter frequency set by the FREQ parameter. After finishing the attack stage, the filter will have reached the filter frequency set by the CONTOUR parameter. Next, the envelope will run through the decay stage, ending at the value (located between FREQ and CONTOUR) specified by the SUSTAIN LEVEL.

- o Attack (A): Specify the duration of the filter envelope attack stage
- o Decay (D): Specify the duration of the filter envelope decay stage
- o Sustain Time: Specify the duration of the sustain stage of the envelope, before it automatically enters the release stage. If set to maximum value, the sustain stage lasts until a trigger-off message is received (TRIG OFF has to be

enabled for this).
- o Sustain Level: Specify the level of the filter envelope when sustain stage is reached. This is a proportional value that lies between the FREQ and CONTOUR settings.
- o Release (R): Specify the duration of the filter envelope release stage.
- o Contour: Specify the filter frequency that is reached at the end of the ATTACK period. Positive values will provide a frequency greater than that specified by FREQ, whereas negative values will provide a value less than FREQ. Setting contour to or near 0 will disable the filter envelope.
- o Trig Off: If selected, the envelope will respond to trigger-off messages sent by the Roxsyn trigger module. In this state, trigger off messages will cause the envelope to always advance to the release stage. If trig off is not selected, the envelope will run through all the stages until it reaches release.

VCA Envelope

Use the virtual VCA envelope to shape the amplitude profile of the synth signal in time.

INPUTS: Select the source of the input signal into the envelope. You can choose either or both filter banks. If neither is selected, the VCA envelope is bypassed.

- o Attack (A): The duration of the envelope attack stage
- o Decay (D): The duration of the envelope decay stage
- o Sustain Time: Specify the duration of the sustain stage of the envelope, before it automatically enters the release stage. If set to maximum value, the sustain stage lasts until a trigger-off message is received (TRIG OFF has to be enabled for this).
- o Sustain Level: Amplitude level during the sustain stage
- o Release (R): The duration of the release stage, at the end of which the envelope reaches silence.
- o Trig Off: If selected, the envelope will respond to trigger-off messages sent by the Roxsyn trigger module. In this

state, trigger off messages will cause the envelope to always advance to the release stage. If trig off is not selected, the envelope will run through all the stages until it reaches release.

Noise Generator

- o Use the noise generator to add percussive or experimental dimensions to your synth patches. You can select the noise type via the PINK/WHITE toggle, and also specify the gain of the noise signal via NOISE VOL.

MODULATION

Roxsyn features a highly versatile and easy to use modulation system to add interesting textures and qualities to the synth signal. The two LFOs, the special modulation envelope, as well as a pair of MIDI-learnable control destinations can be used together to manipulate synth parameters in real time.

MOD MATRIX

Select up to four target parameters to modulate. Each modulation matrix row 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 by a control signal alone (typically Mod Ctrl 1 & 2, but also by an LFO or the mod envelope). 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.

- o TARGET: Select a synth parameter to modulate.
- o MOD: Select a continuous signal source or envelope as the modulator.
- o MOD AMOUNT: Specify how much (and in which direction) the modulator signal changes the target parameter.
- o 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.
- o CONTROL AMOUNT: Specify how much influence the control signal has on the target parameter or the modulator signal, depending on the configuration

LFOs

- o WAVE: Select the LFO waveform. The last two settings generate 'random stepped' and 'random smooth' waveforms, respectively.

- o RATE: Specify the frequency of the LFO waveform.
- o PHASE: Specify the phase of the LFO waveform relative to default.
- o DELAY: (TRIG & SHOT modes only) Specify the amount of time that the LFO signal takes to reach full amplitude after it is reset by a trigger event.
- o BPM Sync: Activate tempo syncing for the LFO rate.
- o TRIGGER MODE: Select the LFO trigger mode.
    - o CONT: LFO runs continuously.
    - o TRIG: LFO phase is reset at every trigger-on event.
    - o SHOT: At every trigger-on event, LFO generates one period of its signal and stops

MOD ENV

- o Attack (A): The duration of the envelope attack stage
- o Decay (D): The duration of the envelope decay stage
- o Sustain Time: Specify the duration of the sustain stage of the envelope, before it automatically enters the release stage. If set to maximum value, the sustain stage lasts until a trigger-off message is received (TRIG OFF has to be enabled for this).
- o Sustain Level: The level that the envelope rests during the sustain stage
- o Release (R): The duration of the release stage.
- o Trig Off: If selected, the envelope will respond to trigger-off messages sent by the Roxsyn trigger module. In this state, trigger off messages will cause the envelope to always advance to the release stage. If trig off is not selected, the envelope will run through all the stages until it reaches release.

ARP

Roxsyn features a very easy-to-use programmable arpeggiator that lets you turn sustained guitar notes into fast, complex musical patterns. Aside from arp controls, it also features ability to rhythmically trigger any combination of the Roxsyn filter, amp and mod envelopes, and even the LFOs. To enable you to combine arpeggios with simultaneous non-arpeggiated notes, the arp module is able to target any combination of the three metamorphic voices.

Programming Patterns

To program the arp, select the number of notes you want in the pattern by touching one of virtual "LEDs" located beneath the ARP PROGRAMMING STRIP. Touch and drag up or down on the cells in the strip to set the note shift for a particular step. The note shift is expressed in number of semitones relative to the actual note played on your guitar. You can also think of the shift in terms of number of frets.

For example, to program an ascending minor arpeggio (I-iii-V) of 4 steps, you could set STEP 0 to 0, STEP 1 to +3, STEP 2 to +7, and STEP 3 to +12. You then select the LED below STEP 4 to indicate that this pattern has 4 steps.

Arp Controls

- o   RUN: Turn the arp module on or off
- o   NOTE: The note value per step
- o   REPEATS: The number of times each step is repeated
- o   SWING: The amount of "swing" added to the rhythm
- o   ALG: The stepping pattern for the arp, including UP, DOWN, and multiple UP/DOWN, PEDAL and RANDOM modes

- o TRIG RESETS PATTERN: When enabled, the arp pattern is reset each time Roxsyn's trigger module sends an on message. Otherwise, the arp pattern repeats continuously.
- o TARGET VOICES: Specify which synth voices the arpeggiator controls. By targeting all the audible voices, you can have a normal arpeggio. By targeting some of the voices, you can have a combination of simultaneous arpeggiated and non-arpeggiated signals. You can also target none of the voices and use the arp as a form of "trance gate" through its envelope auto-trigger functionality

Arp Trigger Outputs

The arpeggiator is able to rhythmically trigger any of the four Roxsyn envelopes individually, and is also able to phase reset the LFOs when they are operating in TRIG or SHOT modes. You can specify which envelopes the arp triggers by selecting the LED-button above that envelope's name.

FX

Roxsyn features a carefully curated set of high-quality stereo effects, including tempo-syncable modulators, and a very powerful, fully configurable algorithmic reverb.

Graphic Equalizer

Use the frequency band faders to boost or cut the signal at the specified frequency. Use GAIN to increase or decrease the unit's output volume. Use LOCUT and HICUT to reduce the bass or treble content of the signal.

Chorus / Flanger

- o C/F: Select between chorus and flanger modes.
- o Rate: The speed of modulation
- o Depth: The depth of modulation
- o Spread: Stereo width of the modulated signal
- o Mix: Amount of wet signal added to the output
- o Sync: Enable BPM syncing for the RATE parameter

Phaser

- o Rate: The speed of modulation
- o Depth: The depth of the phaser "sweep"
- o Spread: Stereo width of the modulated signal
- o Sync: Enable BPM syncing for the RATE parameter

Stereo Delay

Stereo Delay features two independently configurable delay taps, as well as channel linking and tempo syncing abilities.

- o TIME: The delay time for the channel

- FEED: Delay feedback amount for the channel
- MIX: Amount of delayed signal added to the output
- PAN: Stereo location of the channel's delayed output
- CH LINK: when enabled, TIME parameters of the two channels are linked together, whereas other parameters remain independently adjustable
- SYNC: Enable BPM syncing for the TIME parameter

Reverb

- ROOMSIZE: The size of the virtual reverbration chamber
- TIME: Duration of the reverb tail
- DAMP: Amount of dampening applied to the reverb tail
- PRE: Length of predelay
- SPREAD: Stereo width of the reverb signal
- LOCUT: Bass reduction for the wet signal
- HICUT: Treble reduction for the wet signal
- EARLY: Volume level of the early reverb reflections
- LATE: Volume level of the late reverb reflections
- DRY: Volume level of the dry signal

TEMPO CONTROLS

Tempo controls available in standalone version only. Display tempo controls by touching the BPM display next to the preset display.

- o 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.

- o BPM Wheel: Set the BPM by dragging this wheel.

- o BPM LOCK: Enable to cause preset BPM data do be ignored upon future preset loads.

- o EXT CLOCK: Disables Roxsyn's internal MIDI clock. In this mode the metronome and some BPM-synced parameters will not work, unless Roxsyn is being controlled by an external or virtual MIDI clock from a third party app or device.

MIDI

ADVANCED MIDI

Access advanced MIDI settings by selecting the PREFS menu button and then selecting Advanced MIDI Settings.

MIDI IN ENABLE/DISABLE

Use the switches on the MIDI Settings menu to enable/disable external or virtual MIDI in. NOTE: it is preferable to set these switches in the OFF position when using Roxsyn as an AUv3 plugin, so as to prevent Roxsyn from receiving MIDI messages outside of the DAW's context.

BLUETOOTH MIDI

With the iOS device Bluetooth enabled, and an iOS compatible Bluetooth MIDI device in proximity, you can create a connection between Roxsyn 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 Roxsyn 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 accessed 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 and unit levels. MIDI Maps Manager also displays all learnable in list format for convenience.

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, and 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 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.

GLOBAL PREFERENCES

- 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 'Small.'
  - 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 Roxsyn 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 you are finished with your session.

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

AUDIO UNIT

Roxsyn comes packaged with its iOS Audio Unit effects plugin (Roxsyn AU) binary. You can use Roxsyn AU within an iOS DAW that is capable of hosting Audio Unit effect 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 context of Audio Unit hosting.

DISCLAIMER: Audio Units on iOS are restricted to a limited amount of memory, which they must share among all their instances. Although Roxsyn 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.

INTER-APP AUDIO (Standalone App Only)

Roxsyn can be used as an IAA effect 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

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

ABLETON LINK

Roxsyn 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.