



ENFORCER

ADVANCED SUB SWEETENER

USER MANUAL

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1. PREFACE

Ever wasted your time adding sub sweeteners to every single shot of a fully automatic weapon? Ever got stuck layering a kick drum with controllable and tunable low-end or enhance live drums with well defined punch? Having a hard time adding steady weight to every single footstep? Look no further, Enforcer is the Swiss Army Knife for punch, low-end, sub power, kick... you name it.

Enforcer, a kick drum designer with benefits, can be triggered by your source audio material. Thus it becomes easy and convenient to pimp up existing percussive audio material. Beef up sounds or add only a hint of weight, exchange kick drum tails and tune them easily using semitones or completely exchange given source sounds. To top it off, there is a dynamics section which you can use to clean up low frequencies or make space for the heavy bass load to come. A scalpel for punch with unmatched precision.

Have fun, push your sub to the limits - in an extremely controllable way.

1.1. Minimum System Requirements

WINDOWS:

Windows 8 (64-bit), 8 GB RAM, Intel® Core™ i5
OpenGL 2.1 capable GPU

MAC:

macOS 10.13 (64-bit), 8 GB RAM, Apple Silicon or Intel® Core™ i5
OpenGL 2.1 capable GPU

1.2. Installation

After downloading and opening the installer for the ENFORCER plug-in please follow the on-screen instructions to install the ENFORCER plug-in. Files will be copied into the common VST2.4, AU (macOS only) or Pro Tools plug-in folders on your computer. Your host should recognize the plug-in automatically with the next restart and you will be asked to register the ENFORCER with your iLok account. If the host does not recognize the plug-in automatically, please follow these instructions for manual installation:

1.2.1. Windows

If your host does not recognize the plug-in, you might need to manually copy it to the host specific plug-in path. Please locate the plug-ins folder and copy the “ENFORCER.dll” from the folder you selected during the ENFORCER installation to this host specific folder.

1.2.2. macOS

On macOS you will find the standard plug-in folders in the system library folders. The paths are as follows:

Audio Units (AU): /Library/Audio/Plug-Ins/Components

VST/VST3: /Library/Audio/Plug-Ins/VST and /Library/Audio/Plug-Ins/VST3

AAX: /Library/Application Support/Avid/Audio/Plug-Ins

AU and VST/VST3 plug-ins may be placed in the user's library folders under as well:

USER/Library/Audio/Plug-Ins

1.3. iLok Registration

During the first start of your host after installation, the iLok registration window pops up. ENFORCER is licensed using the PACE Licensing Platform. You need to have an iLok account to use it, however setting up an iLok account is free. You will find all necessary information on how to setup your account on www.ilok.com. You can either directly authorize your computer (machine authorization) or use a 2nd or higher generation iLok hardware dongle. A second or third generation iLok (iLok2 or iLok3) is a product of PACE that can be purchased at www.ilok.com or from any participating music retailer.

Next: please download the iLok License Manager at www.ilok.com.

After your purchase, you automatically receive an order confirmation from us containing the download link for the installer plus a 30 digit long iLok activation code (i.e. 1234-1234-1234-1234-1234-1234-1234-12).

- To activate this license, open the iLok License Manager application.
- Either select the menu *Licenses -> Redeem Activation Code* or click on the small Redeem Activation Code Icon on the upper right of the application.
- You should then copy paste the entire code you received from us into the entry form. Select your iLok as the activation location to immediately activate the license on this iLok and confirm the location.
- Now you are ready to go. Here is a step by step tutorial for that: <http://www.youtube.com/watch?v=1cOGCkRz5hk>

2. QUICK START

Create a mono or stereo audio track and import percussive audio material that you want to use ENFORCER on. Setup the DETECTOR (the big circle in the middle of the GUI) in a way that only those parts rise above the UPPER THRESHOLD that should trigger the ENFORCER and the LOWER THRESHOLD to a value that needs to be reached before the ENFORCER triggers again. Use SCALE, RELEASE and if needed the FILTER section to do so.

There is a visualization in form of a frequency dependent animation in the DETECTOR as well as a vertical orange highlight when ENFORCER gets triggered.

Once you are set, select different presets for a good starting point.

3. GUI OVERVIEW

IMPORTANT: Every white element in the interface is either a button, a knob or a numeric input and can be altered or pressed.



Tool Tips will be displayed when you hover 3 seconds above any parameter.

3.1. HEADER



From left to right you will find the following:

3.1.1. ENFORCER | BOOM



The name of the plug-in ENFORCER combined with the “BOOM Interactive“-logo will bring you to the credits and copyright.

3.1.2. PRESETS



By left clicking in the middle of the preset name – “INIT” by default – a drop down menu opens which shows you several categories, each containing a set of presets. Even if you work on music, don’t hesitate to try out the SFX presets and the other way round. You might find something that works in your current situation in categories not labelled specific to your needs.

The little white arrows on the left and right of the current preset name load the previous or next preset.

You can also save and load presets by right clicking onto the presets dropdown menu.

3.1.3. A > B COMPARISON



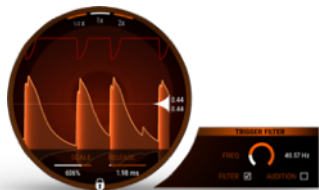
On the right next to the PRESETS you will find three buttons. [A], [>] (or [<] when B is selected) and [B]. This is the A/B comparison feature. By default A is selected and B is empty. You can copy the A settings to B when A is selected by clicking the arrow ">" button. Click on [B] and hit the "<" to copy B to A. Now you can change the settings in either A or B and switch between them to check if altered settings suit your content better. You can even compare to another preset. The current comparison slot [A] or [B] will be replaced by new settings when you load a preset. The unselected slot stays untouched for comparison.

3.1.4. SC, SIDECHAIN



The [SC] button activates or deactivates the SIDECHAIN mode. This makes it possible to trigger the ENFORCER using a different source. The DETECTOR will show you the SIDECHAIN signal instead of the actual input signal. However, the DUCKING / DUCKING FILTER function (found in ADVANCED mode) and DRY/WET still applies to the original input signal on the track ENFORCER is used on.

3.2. DETECTOR & TRIGGER FILTER



The DETECTOR is the heart of the Enforcer, shown in the big circle in the middle of the GUI and it is what makes the ENFORCER really special. There are several ways to tweak the display to get very tight control of when the ENFORCER should be triggered.

3.2.1. INPUT METER & EFFECT METER

To the left of the DETECTOR you can find a INPUT METER that gives you a quick amplitude overview of the dry input signal. On the right of the DETECTOR you will find a EFFECT METER that displays the amplitude of the wet effect signal Enforcer produces.

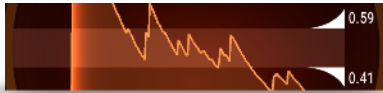


3.2.2. ZOOM 1/2x, 1x, 2x



At the top of the DETECTOR you will find three little ZOOM indicators. These alter the speed and therefore the amount of time you can overview within the DETECTOR. This can help to find the right settings. By default, it is set to 1x.

3.2.3. THRESHOLDS



The THRESHOLDS determine when the ENFORCER gets triggered and how long it should wait until it gets triggered again.

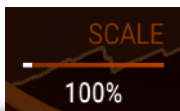
3.2.3.1. UPPER THRESHOLD

The UPPER THRESHOLD sets the value that needs to be reached in order to trigger the ENFORCER. It is comparable to a compressor threshold, which determines when the compressor starts working. Set it as low as possible and as high as needed. You can either drag it or double click to input numeric values.

3.2.3.2. LOWER THRESHOLD

The LOWER THRESHOLD determines which level the DETECTOR needs to fall below before the ENFORCER can be triggered again. This avoids an overload of trigger points.

3.2.4. SCALE



SCALE basically zooms the amplitude in and out. There are two situations that can make this useful.

- First, your input signal is simply too quiet to get reasonable peaks for an easy DETECTOR setup. You can simply zoom in vertically to get better control.
- Secondly, you can push the scale up further to see more detail in the quieter portion of the input signal. This is useful to catch the onset of transients earlier.

3.2.5. RELEASE



The RELEASE lets you smooth the DETECTOR waveform. This is helpful with very dynamic input material to get rid of a lot of peaks or transients. The result is less trigger points and a less hectic waveform display.

3.2.6. TRIGGER FILTER

Another option to alter the DETECTOR visualization and behavior is the TRIGGER FILTER – a bandpass which isolates certain frequencies within your signal to trigger only specific spots of the input signal depending on the frequency.

3.2.6.1. *FREQ, FREQUENCY*



Set the frequency of the TRIGGER FILTER at which the bandpass should be.

3.2.6.2. *FILTER*



Activates or deactivates the TRIGGER FILTER.

3.2.6.3. *AUDITION*



For the ease of use you can audition the bandpassed input signal. That makes it a lot easier to find the right frequency Enforcer uses to be triggered.

TIP: When using the TRIGGER FILTER, the whole displayed waveform will change accordingly. In most cases you will have to alter the Thresholds to get the right trigger spots. Do not forget to use SCALE and RELEASE to make your life easier.

3.3. PITCH & AMPLITUDE



On the left you will find PITCH and AMPLITUDE, the most important parameters to tweak a sound to your needs.

When Enforcer gets triggered, it generates a signal which is starting from the LO PITCH, rising over the ATTACK time of the pitch up to the HI PITCH and falls back to LO PITCH over the DECAY. Use the attack time for detailed transient shaping.

3.3.1. *HI, HIGH PITCH*

HI, the HIGH PITCH, determines which frequencies will be reached after the attack (ATT) time. In most common situations this alters the sound into a more subtle, soft direction when lower frequencies / tones are used and a punchier, probably even harsh sound when higher frequencies / tones are used. Either left click on the knob drag up or down or enter a value numerically by double clicking on the numbers. Pressing shift while dragging the HI PITCH changes the LO PITCH by the same amount.

3.3.2. *LO, LOW PITCH*

LO or LOW PITCH determines the starting frequency and even more important the ending frequency when the end of the decay (DEC) time is reached. In most common situations this defines the overall frequency / tone the sound is perceived in general. Either left click on the

knob drag up or down or enter a value numerically by double clicking on the numbers. To make tuning easier, holding down shift while dragging the frequency / tone with the mouse changes the HI PITCH by the same amount.

3.3.3. [♪], KEY MODE

On the right next to the HI and LO knobs you can find a radio button to toggle between frequency mode and key mode. In key mode you can “tune” the effect sound in a musical manner. Either drag the knob or enter keys like G#1 or B2 to change the tone. If there is a – or + next to the key, you most likely switched from frequency to tone and the set frequency is between two semitones. Therefore, “A1-“ means the set frequency is a bit lower than A1, “G#1+” means a bit higher than G#1.

3.3.4. LINK PITCH

Between the HI and LO PITCH values you will find a chain symbol. By pressing the chain symbol you can link HI and LO PITCH and LO PITCH gets control over HI PITCH in relation to the previously set amount. Automation of HI PITCH when link is activated will have no effect, however you can automate both by using the automation of LO PITCH.

3.3.5. MIDI MODE

MIDI in general is an alternate way to trigger Enforcer without the need for the Detector. Every key plays back the settings currently set in the Enforcer. Simply create a MIDI track in your host and select Enforcer's MIDI input to trigger it. If the little MIDI icon below the LO PITCH KEY MODE option has been activated, LO PITCH will be controlled via keyboard input. That means you can alter the PITCH by playing the desired key on your keyboard. This work either with activated LINK PITCH or without.

3.3.6. ATT, PITCH ATTACK

The ATT, or PITCH ATTACK shows how much time it takes for the frequency / tone to go from the starting LO frequency to the HI frequency. Set a time by dragging the slider or number with the mouse from left to right or using numeric input by double clicking on the ms (millisecond) value. Change the basic curve type by right clicking on the GRAPH display and change the curve behavior by dragging the curve up and down. A small dot shows the current position of the sound generator within the curve.

3.3.7. DEC, PITCH DECAY

The DEC, or PITCH DECAY shows how much time it takes for the frequency / tone to go back from the HI frequency to the LO frequency after the ATT. Set a time by dragging the slider or number with the mouse from left to right or using numeric input by double clicking on the ms (millisecond) value. Change the basic curve type by right clicking on the graphical curve display and change the curve behavior by dragging the curve up and down. A small dot shows the current position of the sound generator within the curve.

3.3.8. ATT, AMPLITUDE ATTACK

The AMPLITUDE ATTACK (ATT) behaves the same way as the PITCH ATTACK but it changes the loudness behavior rather than the frequency / tones. Using high AMPLITUDE ATTACK times result in smooth, soft starts, short or even zero millisecond ATTACK times can create clicky, smacking sounds.

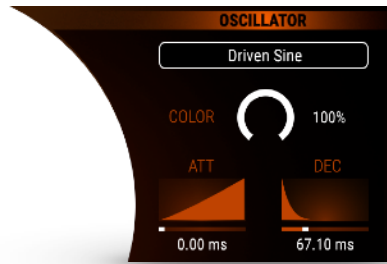
3.3.9. DEC, AMPLITUDE DECAY

Again, the AMPLITUDE DECAY (DEC) behaves the same way as the PITCH DECAY but it changes the loudness rather than the frequency. Short Decay times create more knocking, punching sound; longer decay time in more boomy, sustained sounds.

TIP: There are two things to consider.

- If the overall AMPLITUDE time (ATT + DEC) is higher than the overall PITCH time, the LO PITCH will be static near the end.
- A shorter combined AMPLITUDE time compared to the combined PITCH time might fade out the effect sound even before the LO PITCH has been reached. This can be very nice, but this way it is harder to tune the resulting sound.

3.4. OSCILLATOR



The OSCILLATOR is the engine of the ENFORCER. There are different synthesizers that you can choose from to alter the overall sonic experience.

3.4.1. COLOR

To get control over the different synthesizers, we introduced a COLOR parameter. The lower the color, the softer, more sinus-like the resulting sound will be. The higher the COLOR the more character and overtones will be produced.

3.4.2. ATT, COLOR ATTACK

Similar to PITCH ATTACK and AMPLITUDE ATTACK, the COLOR ATTACK determines how long it takes to reach the set amount of maximum COLOR.

3.4.3. DEC, COLOR DECAY

Similar to PITCH DECAY and AMPLITUDE DECAY, the COLOR DECAY determines how long it takes to go from the set maximum COLOR back to zero COLOR.

The two categories **DUCKING & SETTINGS** are found in **EXPERT** mode to the top right of the GUI.



3.5. DUCKING



The DUCKING makes room to push the low frequencies ENFORCER produces to give more headroom and an overall lower acoustic experience. Thus the DUCKING is dependent on the combined AMPLITUDE time for perfect precision.

3.5.1. GAIN

GAIN sets the full spectrum DUCKING of the original input signal corresponding to the length of the AMPLITUDE ATT + DEC.

3.5.2. FILTER

ENFORCER can produce very low frequencies. To avoid rumbling and a low frequency mess, the DUCKING FILTER helps you to clean up. It is a notch filter that removes exactly

the frequencies the Enforcer produces. The result is a lot less obvious compared to the DUCKING GAIN; at the same time it can shape the output signal less extremely.

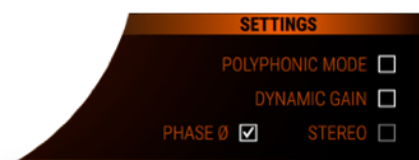
3.5.3. ATT, DUCKING ATTACK

In order to be able to shape the DUCKING behavior for both, the full spectrum DUCKING GAIN and the DUCKING FILTER there is yet another envelope. The shape can be altered in the same way as the other envelopes, however the time is controlled via a ratio between DUCKING ATTACK and DUCKING DECAY, having a total length of AMPLITUDE ATTACK + AMPLITUDE DECAY. Using this parameter, you can for example let all the transients of the original signal pass through and only duck when the Enforcer reaches very low frequencies.

3.5.4. DEC, DUCKING DECAY

Being the opposite of DUCKING ATTACK, this parameter gives you control over the DUCKING DECAY. You can create extremely pumping results or smooth and subtle DUCKING behaviors.

3.6. SETTINGS



3.6.1. POLYPHONIC MODE

By default, ENFORCER is set to monophonic mode. The basic idea is that you want to create extremely controllable low frequency audio material. POLYPHONIC MODE might be useful in certain situations but should be used with caution. When activated it can easily add low frequencies to an unpleasant amount.

3.6.2. DYNAMIC GAIN

This option rides the Enforcer effect sound along with the input signal. Thus when the input signal gets softer, the wet Enforcer signal follows and the other way around. This gives less control in the low end, but can be specifically helpful to maintain dynamics of a live drum kit or in foley situations etc.

3.6.3. STEREO

Only available when DYNAMIC GAIN is activated, in STEREO MODE the Enforcer signal gets panned according to the input signal.

3.6.4. PHASE

In some cases you will recognise phase cancellation. To avoid this you can switch the phase of Enforcer's generated sound.

3.7. OUTPUT



3.7.1. DRY / WET

DRY/WET determines the ratio between the DRY, original input signal and the WET, synthesized signal ENFORCER produces.

3.7.2. GAIN

Because ENFORCER generates new audio material on top, the result can be louder than the original input signal. Gain gives you the option to lower the output gain.

3.7.3. OUTPUT METER

Between GAIN and SOFT CLIPPING you can find an OUTPUT METER. A red LED indicates digital clipping at ENFORCER's output.

3.7.4. SOFT CLIPPING

As a last little helper, SOFT CLIPPING avoids clipping of the combined output signal. When the output gets really loud, the SOFT CLIPPING will introduce a saturation effect that may or may not achieve the desired outcome. For clean, undistorted and unclipped results use GAIN instead and deactivate SOFT CLIPPING.

4. TIPS AND TRICKS

4.1. GENERAL

4.1.1. AVOID SUPER LOW FREQUENCIES

Assuming you have set everything up and found the right sound that suits your needs.

- Double check if perhaps the AMPLITUDE is longer than needed. There are several curve types available, so if the behavior of the AMPLITUDE is right, but you still cannot hear the last second anymore, try to get the same loudness behavior minus this one second, potentially using another curve.
- Use A/B comparison slots to check if you are on the right track. The reason is that low frequencies are power intense and you rather want to have controllable sub frequencies than something that just takes away energy from your mix.

4.1.2. SIDECCHAIN DUCKING

The DUCKING follows the envelope and the DUCKING envelope. Thus you can do some advanced envelope shapes here. It is possible to only use the DUCKING on a track by setting the DRY/WET to 0% (full dry). Thinking a bit further, you can also use any sidechain input and use only the ducking on the given track. A third option and probably really interesting, especially when the DUCKING FILTER is taken into account, is the possibility to copy paste Enforcer that has been used on a kickdrum or SFX track to another track or bus, then setting this to 0% DRY/WET and use the DUCKING. This way you can make room for the Enforcer in a complete mix or mixbus.

4.2. HEADER

4.2.1. A/B COMPARISON

Use A/B COMPARISON often. Use it to create backups of current settings and of course use it to compare the old settings to settings you just altered. It's easy to lose track of what you just did and the A/B COMPARISON really helps to stay focused on the main task: Listening rather than remembering what you just did.

4.2.2. SIDECCHAIN AND DUCKING

You are mixing a music track and want the kick to be enforced. What you would normally do is instantiating ENFORCER on the track containing the kick drum. However, sometimes it might make sense to put it onto a bus or even the master channel and trigger it via the original track using SIDECCHAIN. One benefit is that you can place it after a compressor or limiter to get more control and really push it in the end. Another useful scenario is that you can duck the full spectrum dry signal using the DUCKING feature to get more space for the ENFORCER output or clean up low frequency mess in the mix by using the DUCKING FILTER on the complete mix or a bus.

4.2.3. USE HIGHER FREQUENCIES

More punch is not necessarily lower frequencies. Do not always use the 16Hz (or probably even try to avoid these). Punch can be created using higher frequencies as well! If Enforcer creates low frequencies that you can not hear / monitor you should either raise the frequency or shorten the Amplitude rather than creating super low sub frequencies you cannot control acoustically.

5. END USER LICENSE AGREEMENT

The following End User License Agreement ("EULA") represents the contractual conditions between you ("Licensee" or "you") and BOOM Library ("BOOM", visit www.boomlibrary.com/about for the official legal company details and address) for the use of audio software plug-ins including related media, documentation (e.g. manuals) and other documents and materials (e.g. presets) manufactured by BOOM ("audio-plug-ins" or "software"). By installing and by registering the software on your computer, you declare yourself in agreement with these conditions. If you do not agree with these conditions, you are not allowed to install the software. Copyright laws and international copyright treaties, as well as other intellectual property laws and treaties protect the content. All rights not expressly granted to Licensee hereunder are reserved by BOOM.

Section 1 – Introduction:

1. What You Get:

- a. You get to install the software on up to two computers that you, only, use. They can be your computer in an edit bay and a laptop for the field, or your computer at work (or school) and your computer at home, etc.
- b. Please note that you need a sequencer software to run our audio plug-ins which is not included in this license.
- c. You can copy the software only once, for the sole purpose of making a backup copy
- d. If you need licenses for multiple people or more workstations, you will need to get a multi-user license from us. Please contact us for multi-user pricing.
- e. If you are an educator and need a license for your lab please contact us for educational pricing.
- f. You can export, render out, re-record or otherwise save any type of sound, noise, music, pad ("work") created with our audio plug-in and its presets and use it as part of any video, game, audio library or other media production ("media projects"), even other people's media projects that you didn't do, if the works are made from the copy of the audio plug-in you have on your computer and used as per our End User License Agreement.

2. What You Don't Get:

- a. You don't get to make any other copies of the audio plug-in.
- b. Please don't share our audio plug-ins on the internet – we are a small company, and unlicensed copies hurt our ability to make the software better for you and bring you new products in the future.

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1. The enclosed audio plug-ins and related instructions are licensed (not sold) to you, and BOOM retains all ownership interests and intellectual property rights in the Software.

Section 3 – Software License:

1. BOOM grants you a nonexclusive, nontransferable license to (i) install and use one copy of the Software on up to no more than two (2) computers both of which must be owned and used by you and (ii) make one copy of the Software for back-up or archival purposes only.
2. The software cannot be installed on a network server, without contacting us and asking for a Network license required for each workstation served on such network. You may not:

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- b. remove any BOOM trademarks or copyright notices from;
- c. modify, translate or prepare derivative works of;
- d. use in a computer-based services business or publicly display visual output of;
- e. transmit by audio, digital or other electronic means or post software on any file-sharing site or
- f. reverse engineer, decompile or disassemble all or any portion of the audio plug-in in any form, except as expressly licensed herein.

Section 4 – Audio Rights (Rights to the works):

1. This license grants the rights to produce new works using our audio plug-in. Such new works can be created using the presets included in the audio plug-in. This license includes the worldwide, royalty-free, non-exclusive right to combine or sync works created with our audio plug-in into media projects without

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- b. obtaining additional clearances or permissions; or
- c. providing source attribution to BOOM.
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6. CHANGELOG

VERSION 1.2.2 (JUNE 2019)

- **[BUGFIX]** Fixed an issue causing broken GUI rendering on certain Windows systems with High DPI screens
- **[BUGFIX]** Fixed Init preset not loading correctly in Pro Tools after plugin instantiation

VERSION 1.2.1 (JANUARY 2019)

- **[BUGFIX]** Fixed a bug that caused a crash when using Enforcer in Direct Offline Processing Mode in Cubase 10

VERSION 1.2 (NOVEMBER 2018)

- **[NEW FEATURE]** NKS-Ready - Control Enforcer's parameters with KONTROL and MACHINE hardware from Native Instruments and load presets directly via the Complete Kontrol preset browser.

VERSION 1.1 (APRIL 2018)

- **[NEW FEATURE] MIDI-Mode added**
The MIDI symbol at the lower right of LO PITCH lets you control the LO PITCH via a MIDI keyboard. That means you can actually “play” Enforcer tonally via a MIDI keyboard. If you have link activated, it will automatically change HI PITCH corresponding to the MIDI keyboard input. If linked is off, HI PITCH will always remain the same, no matter what key you hit, LO PITCH however will change following to the pressed key.
- **[NEW FEATURE] Phase Invert**
Under EXPERT -> SETTINGS you now find a “phase invert” option.
- **[NEW FEATURE] Link HI and LO PITCH**
Between HI and LO PITCH there now is a chain symbol. If you link HI and LO PITCH the ratio between them will stay the same, but you can change both (or even automate both together) via the LO PITCH.
- **[NEW FEATURE] 15 New Presets**
Included are 15 new presets and one new category featuring called “MUSICAL TONAL”, featuring playable tonal presets.
- **[IMPROVEMENT]** In key mode, frequency knobs now snap to semitones
- **[BUGFIX]** Naming of automation for HI PITCH and LO PITCH was swapped
- **[BUGFIX]** On MacOS, Command-Click did not open pop up menus

VERSION 1.0 (MARCH 2018)

Initial Release