

Jaws

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INTRODUCING...

Jaws is what we coined a 'dynamic bitcrusher'. It has all the stuff you would expect from a bitcrusher: bit reduction, sample rate reduction, a pre-amp, etc. But it also features a host of modulation options. You can modulate the bit depth, the sample rate, as well as the mix. On top of that Jaws also has a resonant multi filter that you can modulate as well.

That means you can use Jaws in the usual way: to add a little of the charm of the samplers from the 80s by reducing the bit depth or the sample rate. An input and output filter, a vintage colored pre-amp and u-law noise reduction make it possible to approximate this old school sound more closely. Or use Jaws to destroy your sound completely if you are more into 'industrial'.

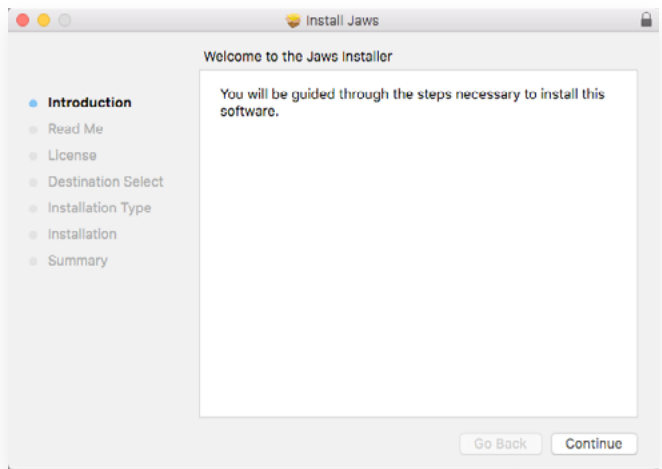
But what Jaws is really about is that you can use all those effects in a creative, fluid way. With the Envelope Follower you can add more crunch to the loud parts of your track (or the softer parts). The LFO makes it possible to create all kinds of weird oscillating effects. If you use this subtly you can add some 'jitter' to the sound. On extreme settings you can really go through the roof, and alter the sound beyond recognition.

INSTALLATION

Jaws comes in the form of a single installer for all available plugin formats: VST2, VST3, AAX, and Audio Units.

MAC OS X

1. If you have not already done so, please download and run the latest Jaws installer from www.112dB.com/download. Double click the Jaws Installer.pkg file to start the installer.
2. It is recommended to have a quick look at the readme if this is a new installation or an update, as it may contain important last-minute information that was not available at the time of writing.
3. You will be asked to agree to the terms of the license agreement.
4. The installer installs all plugin formats (VST2, VST3, AAX, and Audio Units) by default.
5. You will be prompted for your Mac password to complete the installation.
6. If the installer detects you haven't activated your license yet, the 112dB license manager will be started.



WINDOWS

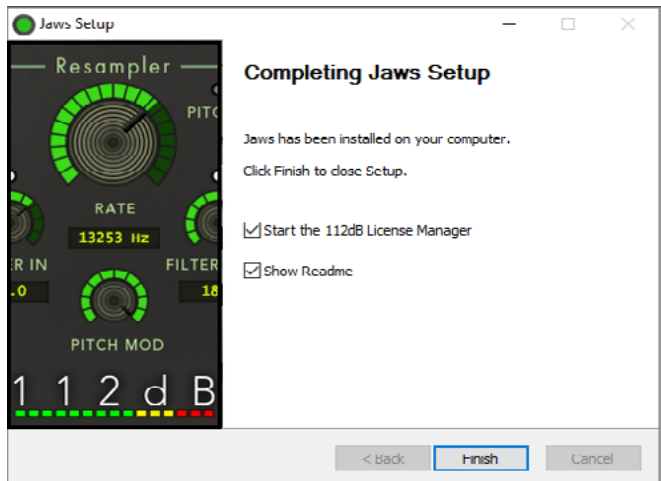
1. If you have not already done so, please download and run the latest Jaws installer from www.112dB.com/download. Double click the Jaws Installer.exe file to run the setup program.
Windows might give you the following warning: 'Do you want to allow this app from an unknown publisher to make changes to your device?' You can safely ignore this, and click 'yes'.
2. You will be asked to agree to the terms of the license agreement.

3. The setup program detects whether you already have VST or AAX plugins on your system and selects the plugin formats it installs accordingly. If you wish you may override this choice and manually select your desired plugin formats during step 3 of the installation set up: 'Choose Components'.
4. By default Jaws installs to \Program Files\112dB\Jaws. In general, it is not recommended to change this but if you have a compelling reason to do so, either type in the desired directory in the Destination Folder box, or click on the Browse button and select the directory .
5. The 112dB License Manager installs by default to \Program Files\112dB. It is recommended not to change this, to prevent installing the license manager twice, but if you insist follow the same procedure as in step 4.
6. If you opted to install the VST plugin, the Choose VST Location step is one you should pay attention to. The setup program should detect your default plugin folder, but you may prefer another directory for your plugins – particularly if you use multiple hosts – in which case you will need to manually direct the installer to the desired directory.
7. If you chose to install both the 32-bit and 64-bit VST plugin, you need to repeat step 6 for the 64-bit plugin.
8. The Start Menu Folder step is for convenience. It points to the 112dB License Manager and this manual. It should be noted that these files can be found on your hard drive as well, the license manager in the \Program Files\112dB folder, and the manual in the \Program Files\112dB\ Jaws folder (or wherever the installer was directed in Step 4 and 5). So if you like to keep your start menu clean, you can safely select 'Do Not Create Shortcuts'.

9. After Jaws installs, Setup is complete and you may click the Finish button. It is recommended to view the readme if this is a new installation or an update, as it may contain important last-minute information that was not available at the time of writing.

By default 'Start the 112dB License Manager' will be

selected. Keep it selected if you haven't activated your license yet, and want to activate it now. If you already have a license installed, you can deselect it.



AUTHORIZATION

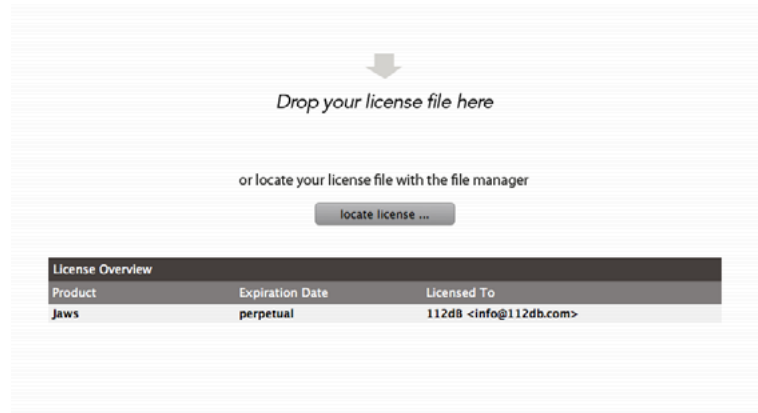
With your purchase or demo download you should have received an email containing a license file (in the form of an XML-document). Save this license file to your computer.

When you install Jaws for the first time, the 112dB License Manager will be started automatically. Drag and drop your license file on the license manager window. Or alternatively click on 'locate license...', navigate to the folder where you saved the license file, select it, and click 'Open'. You can decide to skip this step, and activate your license later. In that case you will have to start the license manager yourself (see 'Where do I find the license manager').

FROM DEMO TO PERMANENT LICENSE

To replace a demo license with a permanent license, first save the permanent XML license from your purchase confirmation email to your computer. Open the 112dB License Manager. Drag and drop your license file on the license manager window to

activate Jaws. Or alternatively click on 'locate license...', navigate to the folder where you saved the license file, select it, and click 'Open'. In your License Overview you will now see 'perpetual' instead of a specific expiry date for Jaws under 'Expiration Date'.



WHERE CAN I FIND THE LICENSE MANAGER?

Unless you changed the install location of the 112dB folder during the installation process, the 112dB License Manager can be found here:

Windows: \Program Files\112dB

Mac: /Applications/112dB

TROUBLESHOOTING

Some email clients do not like plain text attachments. For this reason the license is attached in both text (.xml) and zipped (.zip) formats. If you receive an error message saying that the 112dB Jaws.xml license is invalid or corrupt, the most likely cause is that it got corrupted during email transfer. In this case please save the 112dB Jaws License.zip attachment to your computer instead, unzip the file—this will produce a 112dB Jaws License.xml file—and try authorizing again.

SUPPORT

Should you encounter any problems during the authorization process please contact our support staff via email at <support@112dB.com>. We will accommodate you as soon as possible.

INSTALLING ON MULTIPLE COMPUTERS

You can use the Jaws license file to authorize the plugin multiple times. Our plugins do not rely on a dongle or challenge/response authorization for copy protection, as we think these schemes place an unnecessary burden on the customer. Instead we protect our plugins by means of a *license file*—a text file that holds your personal authorization. This file is not tied to a specific computer system, only to a specific person. Thus you can use the same license file for authorizing a copy of our plugins on any system, now and at any point in the future, as long as it is yours. This way you can install and use the plugin on your studio setup, your home computer, and your travel notebook at the same time.

UNINSTALLING

The uninstaller for Jaws can be found here:

Mac: /Applications/112dB/Jaws

Windows: \Program Files\112dB\Jaws

In addition the uninstaller for Jaws will be listed on Windows under Control Panel » Add/Remove Programs.

OPERATION

TOOLTIPS

If you're lost, hovering over any item of the interface brings up a floating tooltip window with a brief description of that control's function.

NUMERICAL VALUE DISPLAY

When you turn a knob the precise value of the knob you are manipulating will be displayed in the display below the knob. You can also enter the desired value in the display.

FINETUNE

Do you need to finetune the setting of a knob? Cmnd-click-drag makes very small moves with the knob possible.

RESET TO DEFAULT VALUE

<Alt>-clicking knobs and sliders will reset them to their default value. This can be handy if you would like to undo some programming you have done.

MOUSEWHEEL

All interface controls – knobs, sliders, even buttons – support mousewheel control. If your mouse is equipped with a scrollwheel simply hover the mouse pointer above the control you want to adjust and move the wheel up (to increase its value) or down (to decrease it).

MIDI AUTOMATION

In addition to host-based automation, all “useful” controls can be controlled by an external MIDI keyboard or MIDI controller. To assign a MIDI control simply right-click (ctrl-click) on the knob or slider in question and a window will pop up: ‘Start MIDI learn’. Click on this window, and move the control on your external MIDI keyboard or controller you want to assign. If everything goes as expected you will now see the knob moving when you move the control on your MIDI keyboard. Right-click (ctrl-click) on the control and click on ‘Stop MIDI learn’. Do you want to detach the knob again? Right (ctrl)-click on the knob, and choose: ‘Detach from midi automation’



RESIZABLE GUI

Jaws' GUI can be resized to fit more comfortably on your screen. Ctrl-click on the GUI background. This will open a pop-up window with seven sizes to choose from: 60%, 80%, 100%, 120%, 140%, 180% and 200%.

PRESETS

For quick access to presets there's the **preset menu**: a drop-down list of presets you can scroll through. Clicking on the display at the top will open up a menu. At the bottom of it you will find two items: Factory Presets, and User Presets. Factory Presets contains the presets that come with Jaws. They can't be altered. Under User Presets you will find the presets that you added yourself. Those you can change in any way you like.

Alternatively you can use the prev/next buttons next to the preset menu to move one preset up or down.



CREATING NEW PRESETS

You found a great new setting for Jaws that you want to save as a preset? Use 'save' to save it under the current name (the name that is shown in the display). 'Save as' gives you the option to choose a different name and/or a different location for your preset.

ORGANIZING PRESETS



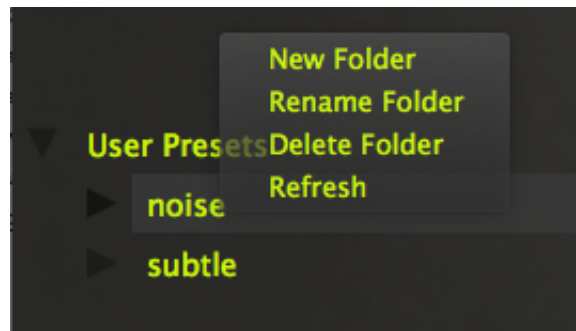
Clicking on the browse button will open the **preset manager**. At the left you see the preset folders, at the right the presets they contain. Click on a folder to see its contents. Double clicking a preset name will load the preset.

Right (ctrl)-clicking on the User Presets folder allows you to add new folders (**new folder**).

These new folders can be organized in any way you like. You can give them subfolders (**new folder**). Delete them (**delete folder**). Or give them a different name (**rename folder**).

If you moved a folder on your hard drive, or added or delete some presets there, **refresh** will update the presets in the preset manager accordingly.

If you want to change the location of your User Preset folder on your hard drive, that's possible too. Right (ctrl)-click on the User Presets folder, and select '**change path**'.



Clicking on the browse button again will close the preset browser window.

EXCHANGING PRESETS

You created a preset on another computer or want to use some presets that someone else made? No problem. Simply save the preset(s) in the folder User Presets on your computer. If you haven't changed the location of this folder, it can be found in /Documents/112dB/Jaws.

Or if you just want to have a quick look at a preset, use 'open' in the preset menu, go to the place where you saved your presets, select a preset, and click 'open'. Note that you have to save this preset to your User Presets if you want it to show up again next time.

THE KNOBS

INPUT SECTION



PRE-AMP (-12dB - +48dB)

Boosts or reduces the input signal. Boosting the input signal will also add a dose of vintage character to it. Reducing the gain of the input signal won't change the character.

QUANTIZER SECTION

BITS (0 - 16)

Sets the number of bits the input signal is degraded to.

BIAS (0 - 1)

Adds a DC component to the signal. By changing the bias, you can change the point where the bitcrusher will switch to another step. In practice this means that 0 will give you the most 'buzz', 1 is the most clean. This is especially noticeable if you reduce the signal to only a few bits..

DITHER (0 - 1)

Adds noise to mask harmonic distortions. With low bit depths, quantization errors will create a square wave after a sound. Dither adds noise to let the sound disappear into noise rather than a pulse. The higher you will set this knob, the more noise will be added. Zero means no noise. Adding dither only works if the bias is higher than 0.

BIT MOD (-16 - +16)

Modulates the bit rate. The number stands for the modulation depth in bits. The actual amount of modulation however is determined by multiplying the bit depth with the modulation signal (the signal coming from the envelope follower and/or the LFO). In other words: modulation amount = number of bits + (depth * modulation signal). So for example if the modulation signal will range from - 0.5 to 0,5, bits is set to 5, and bit mod to 2, the modulation amount will swing back and forth between 4 and 6 bit.

U-LAW (ON/OFF)

Applies the u-law (also called mu-law) algorithm for noise reduction. It reduces the dynamic range of a signal and filters out the noise from less important frequencies. It was used by many 8-bit samplers from the 80's and is still used to reduce noise in telecommunications in the United States and Japan. The rest of the world uses a similar, but incompatible algorithm: a-law.



RESAMPLER SECTION

RATE (36 Hz – 44100 Hz)

Sets the frequency at which the signal is resampled.

FILTER IN (-48 – +48)

Shifts the cut off point of the input filter. The input filter is a steep low pass filter which purpose is to make sure that the input signal doesn't contain frequencies higher than Nyquist. The cutoff point is therefore set relative to the sample rate. The filter is deliberately not perfect: the filters in old samplers aren't either. Shifting the cutoff point will either remove some of that aliasing or add some aliasing.

FILTER OUT (-48 – +48)

Shifts the cut off point of the output filter. The output filter is a steep lowpass filter which purpose is to make sure that the output signal doesn't contain frequencies higher than Nyquist. The cutoff point is therefore set relative to the sample rate. The filter is deliberately not perfect: the filters in old samplers aren't either. Shifting the cutoff point will either remove some of that aliasing or add some aliasing.

PITCH MOD (-120 – +120)

Sets Modulates the frequency rate. The number stands for the modulation depth in semitones. The actual amount of modulation however is determined by multiplying the pitch depth with the modulation signal (the signal coming from the envelope follower and/or the LFO). In other words: modulation amount = sample rate + (depth * modulation signal). So for example if the modulation signal will range from -0.5 to 0.5, the sample rate is set to 261.63, (which equals midi note 60) and pitch mod to 2 (semitones), the modulation amount will swing back and forth between midi note 59 and 61. This doesn't mean that you will be able to hear a tone go back and forth between those notes. Sample rate isn't related to pitch. You will only hear a change of pitch when the signal's pitch is higher than Nyquist (the sample rate / 2). The reason we use semitones instead of Hertz for this range is that it is a more natural concept, and makes it easier to predict what happens with the sample rate when you modulate.



PITCH-Q (ON/OFF)

Quantizes the sample rate to the closest midi pitch.

WHAT IS NYQUIST?

The Nyquist-theorem, from electronic engineer Harry Nyquist, states that to play back a tone of a certain frequency accurately you need to use a sample rate of at least twice this frequency. In other words: a frequency needs to be half the sample rate in order to be accurately represented. This frequency is called the Nyquist frequency, or simply 'Nyquist'. If a tone is higher than Nyquist you will get artifacts, and the tone will change in pitch. So for example midi note 60 (261.63 Hz) needs a sample rate of at least 523.26 Hz to be in tune.

MULTI FILTER SECTION

CUTOFF (0 - 127)

Sets the cutoff point of the filter in midi notes. For a low pass filter this is the point from which the high will be cut off, for a high pass filter the point from which the low will be cut off, and for a band pass filter it's the middle of the band.

RES (0 - 1)

Determines the resonance of the filter. Resonance boosts the frequencies around the cutoff frequency. 0 means no resonance.

TYPE (0 - 3)

Determines the filter type: 0 = off, 1 = LP (low pass), 2=BP (band pass), 3 = HP (high pass). It is also possible to put the filter type somewhere in between. If you set the filter type to 0.5 for example you will get a 50% mix between the clean signal and the low pass signal.

FILTER MOD (-120 - +120)

Modulates the cutoff point of the filter. The number stands for the modulation depth in



semitones. The actual amount of modulation however is determined by multiplying this cutoff depth with the modulation signal (the signal coming from the envelope follower and/or the LFO). In other words: modulation amount = cutoff + (depth * modulation signal). So for example if the modulation signal will range from - 0.5 to 0,5, the cutoff point is set to 60 (the middle C on the piano, or C4) and filter mod to 24 (24 semitones = 2 octaves), the modulation amount will swing back and forth between 48 (C3) and 72 (C5).

PRE / POST

Applies the filter before (pre) or after (post) the bit crushing core .

OUTPUT SECTION

OUTPUT (-24dB - +24dB)

Sets the output level of the bit crushing effect. In other words: it sets the output level before the mix is applied. If you want to adjust the output level of the mix you should use the gain knob in your DAW.

MIX (0 - 100%)

Allows you to mix between a dry and a wet signal.

MIX MOD (-100% - +100%)

Allows you to modulate the mix . 0% is no modulation. The mix mod depth ranges from -100% to 100%. The actual amount of modulation however is determined by multiplying the mix depth with the modulation signal (the signal coming from the envelope follower and/or the LFO). In other words: modulation amount = mix + (depth * modulation signal). So for example if the modulation signal will range from - 0.5 to 0,5, the mix is set to 0%, and mix mod to 100%, the modulation amount will swing back and forth between -50% and 50%. If the mix depth is negative, for example -100%, the modulation amount will swing back and forth between -50% and 50%. The maximum amount is 100% however, so if the mix is set to 100%, and mix mod to 100%, the modulation amount won't swing back and forth between 50% and 150%, but between 50% and 100%. Because the resulting modulation amount will be clipped between 0 and 100%.



ENV FOLLOWER SECTION

The envelope follower follows the amplitude of the input signal (in other words: the loudness), and converts it in a shape that can be used to modulate another source. If you use the envelope follower to modulate the bit rate for example, the sound will get more distorted as the sound gets louder.

A (0 – 50 ms)

Sets the attack time of the Envelope Follower. Determines how long it takes for the modulation signal to 'fade in'.

R (0 – 500 ms)

Sets the release time of the Envelope Follower. Determines the time it takes for the modulation signal to fade out.

GAIN (0 – 24dB)

Boosts the input signal of the Envelope Follower.



ENV/LFO SECTION

ENV/LFO (0 – 100%)

Allows you to mix between LFO and ENV. 0% means only envelope follower, 100% means only LFO. Everything else is a mix between both.

KNIGHT RIDER DISPLAY

Visualizes the mix between LFO and ENV, and shows you what kind of modulation will be applied. Please note: the display will be also active if the modulation is not actually applied because all mods knob are turned to zero.

LFO SECTION

An LFO, or 'Low Frequency Oscillator' is a special kind of oscillator that oscillates at very low frequencies. It is used to modulate other parts of the bitcrusher, the bits, the sample rate, the mix or the multi filter.

WAVEFORM

Sets the waveform for the LFO. The waveform determines the type of oscillating effect the LFO will create. You can choose between: Triangle, Sine, Saw up, Saw Down, Square, Exp (Exponential), 3 step, Rand(om) Glide, Rand(om)



Hold. You can set the amount with which the LFO affects its destination with the mod knobs in the sections above. All knobs on zero means the LFO will do nothing.

SYNC (ON/OFF)

Syncs the LFO to the tempo of the host.

BIPOLAR (ON/OFF)

By default the LFO is bipolar, it will go from -0.5 to +0.5. To match the envelope follower you can also set it to unipolar. In that case it will go from 0 to 1.

RATE (0.1 – 50 Hz) (2/1 – 1/64 T)

Sets the rate of the LFO in Hertz, or in time signatures if Sync is selected. For example if the tempo of the host is 120 bpm then 1/2 note will last 1/4 th second. We chose to use the standard musical notation for note value. T stands for triplet: playing three notes in the space of two. In other words: 1/1 T equals 2/3. A dot after a note adds half its value to it, making it one and a half times its original duration in total. In other words 1/1. stands for 1/1 +1/2= 3/2 note. A higher rate will produce a more rapid oscillating effect.

PHASE (0 – 360)

Sets the phase, the starting point of the LFO. Phase adjusts where (within its cycle) the LFO waveform will be restarted with respect to the play position of the host. Phase is disabled when sync is off.

ON (ON/OFF)

Gives you an easy way to bypass Jaws. When the light is on, the effect is applied to the signal. When it is off, the effect is disabled.

SYSTEM REQUIREMENTS

OPERATING SYSTEM

- Windows 7 or up (32 or 64-bit)
- Mac OS X 10.7 (Lion) or up (32 or 64 bit)

HOSTS

Jaws is compatible with any host that understands the AAX, VST, and/or Audio Units protocol.

UPDATES AND SUPPORT

Updates for Jaws will be made available at

<https://112dB.com/download>

For product support, questions, comments, feature suggestions, and anything you feel is worth sharing, please visit our forum at

<https://112dB.com/userforum>

Alternately, for more individual product support you may contact our support staff by email at

support@112dB.com

CREDITS

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Concept Klaus Voltmer | **Graphic design** Anouschka Busch

112dB team: Anouschka Busch, Klaus Voltmer, Martijn Zwartjes.

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Special shouts to our dedicated beta testers.